ELECTRICAL SPECIFICATIONS (AS APPLICABLE)

DIVISION 16 - ELECTRICAL

SECTION 16000

BASIC ELECTRICAL REQUIREMENTS

A. NOTE

1. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS, APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 16.

2. THE CONTRACTOR FOR THIS DIVISION OF WORK IS REQUIRED TO READ THE SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL DIVISIONS OF WORK AND IS RESPONSIBLE FOR THE COORDINATION OF THIS WORK AND THE WORK OF HIS SUBCONTRACTORS WITH ALL DIVISIONS OF WORK. IT IS THIS CONTRACTORS RESPONSIBILITY TO PROVIDE HIS SUBCONTRACTORS WITH A COMPLETE SET OF BID DOCUMENTS.

3. THIS ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE COMPLETION AND INSPECTION OF THIS WORK TO COMPLY WITH TENANT/ARCHITECT'S SCHEDULE AND THE PROJECT COMPLETION DATE.

4. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTAL OF BID TO DETERMINE CONDITIONS AFFECTING THE WORK. ANY ITEMS WHICH ARE NOT COVERED IN THE BID DOCUMENTS OR ANY PROPOSED SUBSTITUTIONS SHALL BE LISTED SEPARATELY AND QUALIFIED IN THE CONTRACTORS BID. SUBMITTAL OF BID SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN PERFORMANCE OF HIS WORK.

5. REFER TO RESPONSIBILITY SCHEDULE FOR INFORMATION IN REGARD TO RESPONSIBILITY OF WORK OR ITEMS WHICH MAY AFFECT THE BID.

B. GENERAL REQUIREMENTS

1. THIS CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD OR ARCHITECTS SHALL BE PROVIDED BY THIS CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH THE LANDLORD AND ARCHITECTS, AS REQUIRED.

2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK, AND WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE FURNISHED AND INSTALLED AS PART OF THE CONTRACT.

3. WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE SYSTEM WITH THE MORE STRINGENT REQUIREMENTS AS DESIGNED AND DESCRIBED ON THESE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.

4. ALL WORK IN THIS SECTION SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.

5. ALL WORK SHALL BE PERFORMED IN A NEAT PROFESSIONAL MANNER USING GOOD CONSTRUCTION PRACTICES.

6. UNLESS SPECIFICALLY NOTED OTHERWISE, MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW, UNDERWRITERS LABORATORIES LISTED AND LABELED AND SIZED IN CONFORMITY WITH REQUIREMENTS OF STATE AND LOCAL CODES, WHICHEVER IS MORE STRINGENT.

7. THIS CONTRACTOR SHALL DO ALL CUTTING, CHASING AND CHANNELING REQUIRED FOR ANY WORK UNDER THIS DIVISION. CUTTING SHALL HAVE PRIOR APPROVAL BY THE ARCHITECTS AND THE LANDLORD. ALL PATCHING SHALL BE BY G.C. AND SHALL MATCH THE SURROUNDING SURFACES.

8. THE ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.

C. TEMPORARY LIGHT AND POWER

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY WIRING AND RELATED GROUND FAULT INTERRUPTION PROTECTION FOR LIGHT AND POWER FOR ALL CONTRACTORS AND SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY WIRING.

2. THE GENERAL CONTRACTOR SETS UP ALL ELECTRICAL UTILITIES IN THE NAME OF THE TENANT. TENANT PAYS FOR ALL UTILITIES THROUGHOUT CONSTRUCTION.

D. CODES

1. ALL WORK SHALL CONFORM TO THE LANDLORD'S CRITERIA, THE STATE'S, COUNTY'S, CITY'S AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. THIS CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS. THIS CONTRACTOR SHALL INCLUDE ANY CHANGES REQUIRED BY CODES IN THE BID AND IF THESE CHANGES ARE NOT INCLUDED IN THE BID, THEY MUST BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. AFTER CONTRACT IS AWARDED, CHANGE ORDERS FOR INCREASED COSTS DUE TO CODE ISSUES WILL NOT BE ACCEPTED BY OWNER, UNLESS ALLOWANCES HAVE PREVIOUSLY BEEN AGREED UPON.

E. LICENSES, PERMITS, INSPECTIONS & FEES

1. THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS, AND FEES REQUIRED OR RELATED TO HIS WORK.

2. FURNISH TO ARCHITECTS ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.

F. TRADE NAMES, MANUFACTURERS AND SHOP DRAWINGS

1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUAL OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO APPROVAL IN WRITING BY ARCHITECTS/ENGINEERS THROUGH SHOP DRAWING SUBMITTAL PROCESS FOR ACCEPTANCE PRIOR TO INSTALLATION. THE USE OF ANY UNATHORIZED EQUIPMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

2. GENERAL CONTRACTOR SHALL SUBMIT ONLY SUBSTITUTION REQUESTS TO ARCHITECTS/ENGINEERS FOR APPROVAL. SUBMISSIONS SHALL BE MADE EARLY ENOUGH IN PROJECT TO ALLOW FOUR (4) WORKING DAYS FOR ARCHITECTS/ENGINEERS REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BEAR THE STAMP AND/OR THE SIGNATURE OF THE GENERAL CONTRACTOR AND THE SUB-CONTRACTOR SHOWING THAT HE HAS REVIEWED AND CONFIRMED THAT THE SUBMITTALS ARE IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS OR INDICATE WHERE EXCEPTIONS HAVE BEEN TAKEN.

G. GUARANTEE

1. THE EQUIPMENT MANUFACTURER SHALL PROVIDE A 12 MONTH GUARANTEE TO TENANT FROM THE DATE OF ACCEPTANCE. THIS CONTRACTOR SHALL WARRANTY THE INSTALLATION OF THIS EQUIPMENT AND WILL BE RESPONSIBLE FOR ANY DAMAGE AND/OR MALFUNCTION CAUSED BY THE INSTALLATION. THIS CONTRACTOR SHALL NOT BEAR ADDITIONAL WARRANTIES BEYOND A COMPLETE WORKING SYSTEM.

H. RECORD DRAWINGS

1. THIS CONTRACTOR SHALL MAINTAIN ONE SET OF DRAWINGS ON THE JOB SITE UPDATED WEEKLY TO RECORD ALL DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS:

   a. LOCATION OF CONCEALED CONDUIT AND EQUIPMENT.

   b. REVISIONS, ADDENDUMS, AND CHANGE ORDERS.

   c. SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER TRADES.

2. AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THIS CONTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. FAILURE TO KEEP THESE RECORDS WILL ALLOW TENANT/ARCHITECTS TO DIRECT THE GENERAL CONTRACTOR TO PROVIDE THESE RECORDS AT HIS EXPENSE PRIOR TO FINAL PAYMENT.

I. DISCREPANCIES IN DOCUMENTS

1. DRAWINGS (PLANS, SPECIFICATIONS, AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE ELECTRICAL SYSTEMS. WHERE DRAWINGS, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE GENERAL CONTRACTOR IN WRITING, PRIOR TO SUBMITTAL OF BID. THE GENERAL CONTRACTOR IS RESPONSIBLE TO ADVISE PROJECT MANAGER, IN WRITING, OF VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE, TENANT/ARCHITECT'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

J. PHASING REQUIREMENTS

1. THIS CONTRACTOR IS TO INCLUDE IN HIS BID ALL NECESSARY SERVICE REQUIRED TO KEEP THE OPERATING PHASE OF THE STORE'S ELECTRICAL SERVICE IN OPERATION. CONTRACTOR MUST SCHEDULE IN WRITING WITH TENANT/ARCHITECTS AND THE LANDLORD ONE WEEK PRIOR TO ANY SHUT DOWN OF THE ELECTRICAL SYSTEM.

K. DEMOLITION

1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY THE GENERAL CONTRACTOR. COORDINATE WITH THE GENERAL CONTRACTOR ANY EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT.

2. THIS CONTRACTOR SHALL INCLUDE, AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING ELECTRICAL EQUIPMENT, CONDUITS, ETC. NOT TO BE REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE. CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED EQUIPMENT PRIOR TO REMOVAL. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF NOT APPLICABLE TO THE NEW WORK MUST BE REMOVED AND ROOF/WALL/FLOOR PATCHED/REPAIRED TO MATCH EXISTING STRUCTURE. EXISTING ABANDONED CONDUIT OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT. IF REQUIRED BY LANDLORD OR CODES, ABANDONED CONDUIT MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN BID PROPOSAL.

L. SLEEVES

1. THIS CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH IT'S RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR. CONTRACTOR MUST COORDINATE THROUGH THE LANDLORD ANY CORE DRILLING OR CUTTING OF OPENINGS IN MASONRY FLOORS OR WALLS.

2. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, "3M" FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THEIR FIRE RATING.

3. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS, AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL PIPING, SLEEVES SHALL BE NO. 22 U.S.G. GALVANIZED STEEL MINIMUM.

M. HANGERS

1. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK.

2. HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING. HANGING FROM METAL DECK IS NOT PERMITTED. HANGERS MUST BE ATTACHED TO UPPER CHORD OF BAR JOIST. WHERE INTERFERENCES OCCUR, AND IN ORDER TO SUPPORT DUCTWORK OR PIPING, THE CONTRACTOR MUST INSTALL TRAPEZE TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, AND OTHER EQUIPMENT. HANGER TYPES AND INSTALLATION METHODS ARE ALSO SUBJECT TO LANDLORD CRITERIA.

3. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DIELECTRICALLY SEPARATED.

N. FINAL ELECTRICAL INSPECTIONS

1. ASIDE FROM NORMAL INTERIM INSPECTIONS OF WORK IN PLACE, TENANT/ARCHITECTS MAY HAVE AN INDEPENDENT ELECTRICAL CONTRACTOR INSPECT THE FINISHED ELECTRICAL INSTALLATION UPON COMPLETION FOR COMPLIANCE WITH THE PLANS, SPECIFICATIONS AND CODES. THE INSTALLING CONTRACTOR WILL BE RESPONSIBLE TO BRING ALL ITEMS REPORTED BY THE INDEPENDENT ELECTRICAL CONTRACTOR UP TO PLANS AND SPECIFICATION REQUIREMENTS.

END OF SECTION 16000

SECTION 16050

BASIC ELECTRICAL MATERIAL AND METHODS

A. SCOPE OF WORK

1. THIS CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, AND FACILITIES NECESSARY FOR, REASONABLY IMPLIED AND INCIDENTAL TO, THE FURNISHING, INSTALLATION, COMPLETION AND TESTING OF ALL THE WORK FOR THE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS, TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

   a. A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM INCLUDING THE INSTALLATION OF SAFETY AND DISCONNECT SWITCHES, MOTOR STARTERS AND LIGHTING. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO INCLUDE IN HIS BID FOR PROVIDING SERVICE EQUIPMENT NECESSARY FOR TIE-IN TO LANDLORD'S DISTRIBUTION EQUIPMENT OR TO OBTAIN SERVICE FROM LOCAL UTILITY COMPANY. REFER TO ELECTRICAL RESPONSIBILITY SCHEDULE AND ELECTRICAL POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.

   b. CONTRACTOR MUST ALSO INCLUDE IN BID ALL NECESSARY MATERIALS REQUIRED TO COMPLETE THE SYSTEM INCLUDING, BUT NOT LIMITED TO, FEEDERS, BRANCH CIRCUITS, JUNCTION BOXES, OUTLET BOXES, WIRING DEVICES, COVER PLATES, CONDUITS, ETC.

   c. METERING AND CURRENT TRANSFORMERS AS REQUIRED BY DRAWINGS, UTILITY COMPANY, AND/OR LANDLORD.

   d. THE WIRING OF MECHANICAL EQUIPMENT AS OUTLINED ON THE BID SET DRAWINGS AND IN THE SPECIFICATIONS. WORK SHALL INCLUDE WIRING OF ALL STARTERS, DISCONNECTS, AND POWER WIRING OF MECHANICAL EQUIPMENT EXCEPT AS SPECIFICALLY NOTED OTHERWISE. ALL LOW VOLTAGE (24 VOLT) EMS TEMPERATURE CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR UNLESS NOTED SPECIFICALLY ON DRAWING.

   e. INSTALLATION OF LIGHT FIXTURES AND LAMPS AS SHOWN ON THE DRAWINGS INCLUDING ALL DEVICES, EQUIPMENT, ETC. REQUIRED FOR MOUNTING.

   f. A COMPLETE CONDUIT SYSTEM FOR TELEPHONE/DATA INCLUDING BRANCH CONDUITS, OUTLET BOXES, PULL WIRES, GROUND CONDUCTORS, COVER PLATES, ETC. OR AS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.

   g. A COMPLETE EMERGENCY AND EXIT LIGHTING SYSTEM AS SHOWN ON THE DRAWINGS.

   h. TEMPORARY SERVICE AS INDICATED IN THE SPECIFICATIONS, INCLUDING ITS REMOVAL.

   i. FINAL CONNECTIONS TO ALL SIGNS, CORNICE LIGHTING, CASE LIGHTING, ETC. AS SHOWN ON DRAWINGS.

   j. IF INDICATED ON DRAWINGS, INSTALLATION AND WIRING OF SPEAKERS, AMPLIFIERS, CONDUIT AND FINAL CONNECTIONS FOR SOUND SYSTEM AS SHOWN.

   k. SMOKE/FIRE ALARM WIRING, DEVICES AND CONDUIT, AS SHOWN OR DESCRIBED ON DRAWINGS OR AS NECESSARY TO MEET LANDLORD, STATE, LOCAL, INSURANCE AND FIRE DEPARTMENT REQUIREMENTS.

   l. INSTALLATION OF CONDUITS STUBBED TO ABOVE CEILING FOR HVAC. ALSO, ANY ADDITIONAL CONDUIT FOR HVAC CONTROL EQUIPMENT WHERE PLENUM RATED CABLES ARE NOT PERMITTED.

   m. BALANCING LOADS.

   n. AS-BUILTS, PANEL DESCRIPTION AND CIRCUIT BREAKER SPECIFIC LABELING.

2. THE FOLLOWING ITEMS OF ELECTRICAL CONSTRUCTION ARE NOT INCLUDED IN THIS CONTRACT:

   a. TELEPHONE INSTRUMENTS AND WIRING UNLESS NOTED OTHERWISE.

   b. DATA CABLE WIRING UNLESS NOTED OTHERWISE.

3. BEFORE STARTING WORK, THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, FIRE PROTECTION, MECHANICAL AND PLUMBING PLANS, SHOP DRAWINGS AND SPECIFICATIONS TO SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF THE ELECTRICAL SYSTEM, MATERIALS AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCES AND CONFRONTATIONS.

B. CONDUIT

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS SERVING ALL EQUIPMENT, INCLUDING BUT NOT LIMITED TO, LIGHTING, RECEPTACLES, HEATING, AIR CONDITIONING, PLUMBING EQUIPMENT, TELEPHONE, DATA, SPEAKERS, SECURITY, PAGER, TRAFFIC COUNTING SYSTEM AND ELECTRICAL EQUIPMENT.

2. ALL CONDUITS SHALL BE GALVANIZED IMC OR EMT UNLESS OTHERWISE SPECIFIED IN SPECIFICATIONS OR ON DRAWINGS. ALL CONDUIT IS TO BE UL LABELED. EMT CONNECTORS SHALL BE STEEL COMPRESSION OR SET SCREW TYPE. CONDUIT UNDER SLAB ON GRADE SHALL BE RIGID STEEL, OR SCHEDULE 40 PVC WITH RIGID STEEL ELLS WHERE PERMITTED BY LANDLORD OR CODE.

3. MINIMUM SIZE OF CONDUIT SHALL BE:

   a. MAIN FEEDER CONDUIT 2" OR LARGER FOR ALL APPLICATIONS.

   b. 1/2" FOR INDIVIDUAL LIGHTING FIXTURE CONNECTIONS OR TO INDIVIDUAL LIGHT SWITCHES (IF ACCEPTABLE BY THE LANDLORD AND LOCAL CODE OFFICIALS) AND 3/4" FOR ALL OTHER LOCATIONS.

   c. IF HVAC CONTROL WIRING IS REQUIRED TO BE RUN IN CONDUIT, IT SHALL BE A MINIMUM OF 3/4", UNLESS NOTED OTHERWISE ON DRAWINGS.

   d. ALL IN/UNDER FLOOR CONDUIT SHALL BE OF MINIMUM 3/4" SIZE.

4. SUPPORT ALL CONDUIT, INCLUDING SEISMIC AND SWAY BRACING, IN ACCORDANCE WITH THE NEC AND LOCAL CODES.

5. GENERALLY, ALL CONDUIT SHALL BE CONCEALED EXCEPT FOR UNFINISHED AREAS, SUCH AS EQUIPMENT ROOMS. EXPOSED CONDUIT SHALL BE ALLOWED ONLY AS NOTED ON PLAN AND AS APPROVED BY PROJECT MANAGER. PAINTING OF CONDUITS, NOTED ON DRAWINGS OR SPECIFICATIONS WILL BE BY GENERAL CONTRACTOR.

6. FLEXIBLE METAL CONDUIT OR MC TYPE CABLE:

   a. FLEXIBLE CONDUIT OR MC TYPE CABLE SHALL BE USED FOR THE FOLLOWING APPLICATIONS ONLY:

      1. FINAL CONNECTIONS TO MOTORS.
      2. FINAL CONNECTIONS INTO AND OUT OF THE TRANSFORMER.
      3. FINAL CONNECTIONS TO VIBRATING EQUIPMENT.
      4. INTER-CONNECTIONS BETWEEN ALL LIGHT FIXTURES AND HOMERUNS TO PANELS WHERE CODE ALLOWS.
      5. FINAL CONNECTIONS WHERE RIGID CONDUIT IN NOT PRACTICAL.
      6. IN WALLS (FOR LIGHT SWITCHES AND 120 VOLT POWER RECEPTACLES AND HVAC CONTROL EQUIPMENT).

   b. FLEXIBLE METAL CONDUIT OR MC TYPE CABLE MUST BE THE SAME SIZE AS THE IMC OR EMT CONDUIT TO WHICH IT IS CONNECTED. BOTH THE FLEXIBLE METAL CONDUIT AND IT'S FITTINGS ARE TO BE LISTED FOR GROUNDING. A GREEN GROUNDING CONDUCTOR SHALL BE INSTALLED. ALL CONNECTORS ARE TO BE OF A NEMA APPROVED TYPE.

   c. THE USE OF ROMEX, BX, ETC. IS PERMITTED ONLY IN RESIDENTIAL CONSTRUCTION NOT HIGHER THAN THREE STORIES.

   d. CONNECTION TO ANY OUTDOOR EQUIPMENT MUST BE WEATHERPROOF.

7. PROVIDE PULL-WIRE IN ALL EMPTY CONDUITS EXCEPT AS NOTED OTHERWISE ON DRAWINGS.

8. HOME RUNS AND MAIN CONDUIT RUNS ARE TO BE HELD TIGHT TO STRUCTURE ABOVE OR AS REQUIRED TO ALLOW PROPER SERVICE ACCESS AND OTHER TRADES WORK. CONDUIT MUST BE TRAPEZED TO ALLOW 3 FEET MINIMUM CLEARANCE ABOVE CEILING.

9. ALL CONDUITS MUST BE SIZED PER NEC AND LOCAL CODES.

10. ALL SENSORMATIC WIRING MUST BE PLACED IN CONDUIT (PVC PIPE NOT PERMITTED).

OUTLET BOXES

1. ALL OUTLET BOXES SHALL BE GALVANIZED PRESSED STEEL OF THE STANDARD KNOCKOUT TYPE. NO ROUND OUTLET BOXES SHALL BE PERMITTED UNLESS INDICATED AND FOR LIGHTING THAT REQUIRE SUCH CONFIGURATION. CONCEALED BOXES SHALL NOT BE LESS THAN 4" SQUARE AND 1 1/2" DEEP, WITH PLASTER RINGS.

2. ALL KNOCKOUT BOXES, UPON WHICH LIGHTING FIXTURES ARE TO BE INSTALLED, SHALL BE EQUIPPED WITH 3/8" FIXTURE STUDS.

3. EXTERIOR BOXES SHALL BE CAST RUST-RESISTING METAL WITH GASKETED COVERS.

C.

4. INSTALL BOXES RIGIDLY FROM BUILDING STRUCTURE AND SUPPORT INDEPENDENTLY OF THE CONDUIT SYSTEM. ALSO PROVIDE SUITABLE BOX EXTENSIONS TO EXTEND BOXES TO FINISHED FACES OF FLOORS, CEILINGS, WALLS ETC. ALL OUTLET BOXES TO BE PROVIDED WITH CADDY "QUICK-MOUNT BOX SUPPORT" TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.

5. UNLESS OTHERWISE NOTED ON DRAWINGS OR OTHERWISE REQUIRED BY THE NATIONAL ELECTRICAL CODE, HANDICAP CODES OR LOCAL CODES, OUTLET HEIGHTS SHALL BE AS FOLLOWS:

   a. SWITCH HEIGHT 48" FROM FINISHED FLOOR TO TOP OF OUTLET.

   b. CONVENIENCE OUTLETS:

   MOUNTED ON WALL NO MORE THAN 48-INCHES, MEASURED FROM TO TOP OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING AND; NO LESS THAN 15-INCHES, MEASURED FROM THE BOTTOM OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING, TO THE LEVEL OF THE FINISHED FLOOR OR WORKING PLATFORM UNLESS OTHERWISE INDICATED OR HORIZONTALLY MOUNTED IN BASEBOARD BENEATH CABINETS, AS SHOWN ON DRAWINGS, OR AS REQUIRED BY LOCAL CODES, SEE DRAWINGS.

   c. TELEPHONE OUTLETS SHALL BE LOCATED AS NOTED ON DRAWINGS.

JUNCTION AND PULL BOXES

1. THE PLANS INDICATE ONLY SCHEMATIC ROUTINGS FOR CONDUIT RUNS. THIS CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL BOXES WHERE REQUIRED BY FIELD CONDITIONS OR BY CODE.

2. BOXES AND COVERS SHALL BE GALVANIZED STEEL OF CODE GAUGE SIZE.

3. INSTALL BOXES RIGIDLY SUPPORTED FROM THE BUILDING STRUCTURE AND SUPPORTED INDEPENDENT OF THE CONDUIT SYSTEM.

D. 4. ARRANGE CIRCUITS TO AVOID THE USE OF JUNCTION BOXES IN INACCESSIBLE LOCATIONS. THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILINGS SHOULD BE LIMITED TO LOCATIONS NEAR ACCESS FRAMES USED FOR DIFFUSERS AND RETURN AIR GRILLES OR ACCESS PANELS AS LOCATED ON PLANS.

5. JUNCTION AND PULL BOXES MUST BE LABELED WITH CIRCUIT NUMBER IDENTIFICATION AND SYSTEM TYPE ON COVER.

WIRING

1. CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS SHALL BE COPPER AND THE AWG SIZE AND TYPE AS SHOWN ON DRAWINGS. MINIMUM WIRE SIZE #12. THE CONDUCTORS SHALL BE 600 VOLT INSULATION, TYPE THW, THWN OR THHN.

2. MINIMUM WIRE SIZE - 20 AMP BRANCH CIRCUIT SHALL BE AWG LISTED SIZE PER DISTANCE SHOWN BELOW. DISTANCE SHALL BE MEASURED FROM THE PANELBOARD CIRCUIT BREAKER TO THE FURTHEST OUTLET.

   a. #12 LESS THAN 100 FEET

E.

   b. #10 BETWEEN 100-150 FEET

   c. #8 BETWEEN 150 - 250 FEET

   d. #6 OVER 250 FEET

3. ON ALL 20 AMP BRANCH CIRCUITS, CONDUCTORS LARGER THAN #10 AWG SHALL BE REDUCED TO #10 AWG WITHIN 10 FEET OF PANEL BOARD AND DEVICE IN JUNCTION BOXES ON RATED TERMINAL STRIPS.

4. CONDUCTORS MAY BE STRANDED FOR SIZES #10 AWG AND LARGER. CONDUCTORS SIZE #12 SHALL BE SOLID (NOT STRANDED).

5. ALUMINUM CONDUCTORS ARE NOT PERMITTED, EXCEPT AT SERVICE ENTRANCE, WHERE REQUIRED BY LANDLORD. CONDUCTOR CONNECTION MUST BE PER MANUFACTURER'S REQUIREMENTS. CONTRACTOR MUST OBTAIN WRITTEN PERMISSION FROM GENERAL CONTRACTOR AND PROJECT MANAGER WHEN USED.

6. ALL WIRING SHALL BE IN CONDUIT, UNLESS SPECIFICALLY NOTED OTHERWISE (IE. LOW VOLTAGE PLENUM RATED WIRE).

7. THE USE OF SHARED NEUTRALS IS REQUIRED FOR LIGHTING CIRCUITS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODES. ALL OTHER EQUIPMENT REQUIRING A NEUTRAL CONDUCTOR SHALL HAVE A DEDICATED FULL SIZE NEUTRAL.

8. THE USE OF ROMEX, BX, ETC. IS PERMITTED ONLY IN RESIDENTIAL CONSTRUCTION NOT HIGHER THAN THREE STORIES.

9. WIRE CONNECTORS SHALL BE EQUAL TO "SCOTCH LOCK" FOR #8 AWG WIRE AND SMALLER AND EQUAL TO T & B "LOCKTIGHT" FOR #6 AWG AND LARGER.

10. ALL WIRING TO BE COLOR-CODED AS FOLLOWS:

120/208 VOLT SYSTEM	277/480 VOLT SYSTEM
NEUTRAL - WHITE	NEUTRAL - GRAY
PHASE A OR L1 - BLACK	PHASE A OR L1 - YELLOW
PHASE B 0R L2 - RED	PHASE B 0R L2 - ORANGE
PHASE C OR L3 - BLUE	PHASE C OR L3 - BROWN
GROUND - GREEN	GROUND - GREEN WITH YELLOW TRACER

ELECTRICAL SYMBOLS LIST

CLG.	WALL	FLR.	DESCRIPTION
			DUPLEX RECEPTACLE AT +15" FOR WALL MOUNTED U.O.N.
			DOUBLE DUPLEX RECEPTACLE AT + 15" FOR WALL MOUNTED U.O.N.
			GROUND FAULT INTERRUPTING DUPLEX RECEPTACLE
			DUPLEX RECEPTACLE WITH USB 2.0 PORT
			SPECIAL RECEPTACLE. SEE EQUIPMENT PLAN/INSTALLATION MANUAL FOR SPECS AND DETAILS.
			JUNCTION BOX
			COMBINATION TELEPHONE, DATA AND CABLE OUTLET AT +18" U.O.N. PROVIDE 1/2"C.O. STUBBED TO ACCESSIBLE CEILING SPACE
			TELEPHONE OUTLET; CAT5E CABLE. RJ11 TERMINATION MOUNTED AT +18" PROVIDE 1/2"C.O. STUBBED TO ACCESSIBLE CEILING SPACE
			DATA OUTLET; CAT5E CABLE, RJ45 TERMINATION MOUNTED AT +18" U.O.N. PROVIDE 1/2"C.O. STUBBED TO ACCESSIBLE CEILING SPACE
			CABLE OUTLET; RG-6 COAXIAL CABLE. MOUNTED AT +18" U.O.N. PROVIDE 1/2"C.O. STUBBED TO ACCESSIBLE CEILING SPACE
			LIGHTING FIXTURE WITH 90 MIN. EMER. BATTERY PACK OR ON INVERTER SEE LIGHT FIXTURE SCHEDULE FOR DETAILS AND SPECS
			CONDUIT STUB OUT, 3/4" MINIMUM - SEE PLANS FOR NOTES
			CONDUIT CONCEALED ABOVE CEILING OR IN WALLS
	A-1		HOMERUN TO PANEL "A", CIRCUITS #1
			GROUND CONNECTOR
			ELECTRICAL PANEL. REFER TO PANEL SCHEDULE FOR DETAILS.
			MAIN SWITCHBOARD OR POWER DISTRIBUTION BOARD
	1		DENOTES EQUIPMENT #1, SEE EQUIPMENT SCHEDULE FOR THE DETAILS AND EXACT SPECIFICATIONS.
	1		INDICATES PLAN NOTE NUMBER "1", SEE PLAN
	1		DENOTES MECHANICAL EQUIPMENT #1 SEE MECHANICAL DRAWINGS FOR THE DETAILS AND SPECIFICATIONS.
	$		SINGLE POLE SWITCH AT 48" U.O.N.
	$3		THREE-WAY SWITCH AT +48" U.O.N.
	$M		MANUAL MOTOR STARTER
	D		DIMMER SWITCH AT +48" U.O.N.
	D3		THREE-WAY DIMMER SWITCH AT +48" U.O.N.
	OS		OCCUPANCY AUTOMATIC WALL SWITCH SENSOR WITH SINGLE LEVEL SWITCHING AT +48" U.O.N./MANUFACTURER TO BE DETERMINED
	VS		VACANCY AUTOMATIC WALL SWITCH SENSOR WITH SINGLE LEVEL SWITCHING AT +48" U.O.N./MANUFACTURER TO BE DETERMINED
	OS/D		OCCUPANCY SENSOR SINGLE POLE SWITCH WITH DIMMER CONTROL FEATURE AT +48" U.O.N./MANUFACTURER TO BE DETERMINED
	OS		CEILING MOUNTED OCCUPANCY SENSOR MANUFACTURER TO BE DETERMINED
	VS		CEILING MOUNTED VACANCY SENSOR MANUFACTURER TO BE DETERMINED
	DL		CEILING MOUNTED DAYLIGHT SENSOR MANUFACTURER TO BE DETERMINED
S	C	S/C	HARD WIRED, WITH BATTERY BACKUP, SMOKE DETECTOR/CARBON MONOXIDE DETECTOR/MULTI-PURPOSE CARBON MONIXIDE & SMOKE DETECTOR.
	F		NON-FUSED/FUSED SWITCH, SIZE AS SHOWN IN THE PLAN
	M		MOTOR OUTLET - IDENTIFICATION
			TIME CLOCK WITH MANUAL BY-PASS SWITCH SEE LIGHTING CONTROL DIAGRAM FOR DETAILS
	S		GAS SOLENOID-SEE PLUMBING PLAN FOR EXACT LOCATION.
	CL		CURRENT LIMITER FOR TRACK LIGHTING FIXTURE. 1A RATED U.O.N.
	(E)		ABBREVIATION FOR EXISTING. EXISTING TO REMAIN U.O.N.

SYMBOL NOTES:

SYMBOL LIST SHOW IN FOR GENERAL REFERENCE ONLY. A PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWING FOR SPECIFIC SYMBOLS USED.

SHEET INDEX

E-0.0	ELECTRICAL SPECIFICATION
E-0.1	SINGLE LINE DIAGRAM/SCHEDULES
E-1.0	SITE PLAN
E-1.1	ELECTRICAL PLAN - ENLARGED
E-2.0	TITLE 24

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REGISTERED PROFESSIONAL ENGINEER MINH VAN TRAN No. E17378 Exp. 09/30/22 ELECTRICAL STATE OF CALIFORNIA

MONARCH BAY

MONARCH BAY DRIVE
DANA POINT, CA 92629

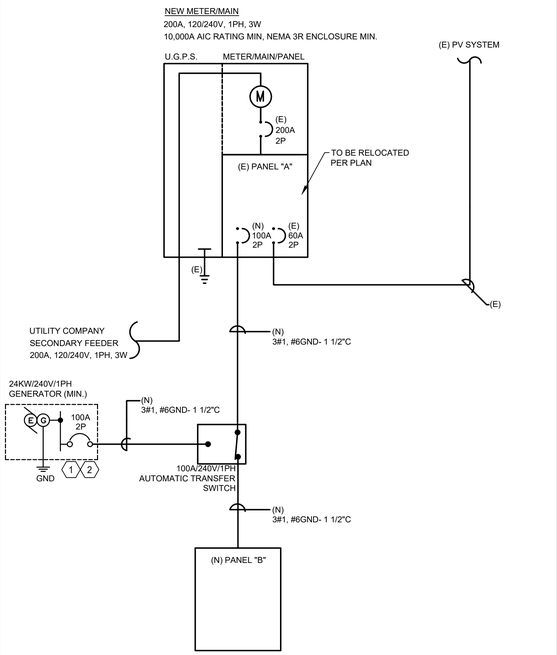
REVISION 1 2 3 4 5 6

DATE: 4/12/2021 SCALE: N.T.S.

SHEET TITLE: ELECTRICAL SPECIFICATION

SHEET NO.: E-0.0

CONTRACTOR TO FIELD VERIFY ACTUAL SITE CONDITION /EXACT SERVICE ENTRANCE AND SHALL NOTIFY ENGINEER(S) ANY DISCREPANCY WITH THE PLAN.



SINGLE LINE DIAGRAM

LIGHTING FIXTURE SCHEDULE

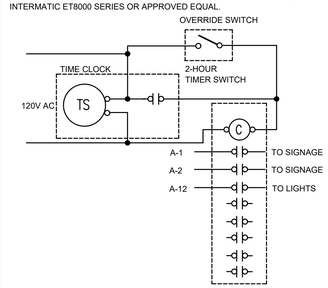
TYPE	DESCRIPTION	LAMP	VOLT	WATT
"L1"	LED STRIP LIGHT FIXTURE, DIMMABLE STRIP: MANUFACTURER TBD, MOUNT: CORE LIGHTING ALP-230N	LED	120	3W/FT
"L2"	LED RECESSED DOWNLIGHT, DIMMABLE PROVIDE OUTDOOR RATED FIXTURE FOR OUTDOOR LIGHTS, MANUFACTURER TBD	LED	120	15W
"L3"	LED WALL MOUNTED EXTERIOR LIGHT, DIMMABLE MANUFACTURER TBD	LED	120	20W
"EM"	EMERGENCY LED LIGHT WITH 90 MINUTES BATTERY PACK LITHIINIA EU2L (WALL), ELR2 (CEILING) SERIES OR EQUIVALENT	— —	120	----
"X"	LED EXIT SIGN WITH 90 MINUTES BATTERY PACK LITHIINIA EXR LED M6 OR EQUIVALENT	— —	120	----

NOTES:
1. FIXTURE SHALL HAVE MIN. OF 10 YEARS MANUFACTURER. WARRANTY ON ALL COMPONENTS.
2. FIXTURES SHALL HAVE APPROPRIATE U.L. LABEL (*i.e.*, DAMP OR WET) AS REQUIRED BY CODES AND ORDINANCES.
3. FIXTURES SHALL INCLUDE ALL ACCESSORIES FOR INSTALLATION ACCORDING TO MANUFACTURER'S SHOP DRAWINGS AND AS REQUIRED BY CODES AND LOCAL ORDINANCES.
4. PRIOR TO ORDERING ANY LIGHTING EQUIPMENT, THE CONTRACT OR SHALL COORDINATE ALL FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND CEILING CAVITY DEPTHS.
5. ALL LAMPS SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE ATTACHED FIXTURE SCHEDULE AND SPECIFICATIONS. ENSURE COMPATIBILITY BETWEEN FIXTURE, LAMP(S) AND BALLAST(S).
6. CONTRACTOR SHALL VERIFY FIXTURE VOLTAGES AND CEILING TRIM COMPATIBILITY PRIOR TO ORDERING FIXTURE.
7. PROVIDE APPROVED FIRE-RATED ENCLOSURES FOR ALL LIGHTING FIXTURES LOCATED IN FIRE-RATED CEILINGS.
8. LIGHTING FIXTURE CATALOG NUMBERS ARE SERIES TYPE ONLY. PROVIDE ALL NECESSARY HARDWARE AS REQUIRED BY THE SPECIFICATIONS, DRAWINGS, AND PROJECT CONDITIONS FOR A COMPLETE INSTALLATION.
9. ALL FIXTURES SHALL BE ORDERED WITH APPROPRIATE BALLAST(S) THAT HAVE U.L. AND CBM LABELS. ALL BALLASTS MUST CONFORM TO IECC REQUIREMENTS FOR PERFORMANCE. PROVIDE MULTIPLE BALLASTS FOR DUAL-LEVEL SWITCHING AND WIRING AS INDICATED ON THE PLANS.
10. ENSURE COMPATIBILITY OF ALL LIGHTING SYSTEM COMPONENTS, ESPECIALLY DIMMED SYSTEMS. FIXTURES, LAMPS, BALLST(S), AND DIMMING SYSTEMS/INDIVIDUAL CONTROLS MUST BE FACTORY CERTIFIED COMPATIBLE FOR FULL RANGE OF DIMMING COMPATIBILITY. 3
11. PROVIDE CLEARANCES FROM COMBUSTIBLES, A MINIMUM OF " (OTHER THAN AT POINTS OF 4 SUPPORT) AND 3" FROM INSULATION FOR RECESSED LIGHTING FIXTURES WHICH ARE NON-IC RATED.

EMERGENCY EXIT ILLUMINATION NOTES:

1. FIXTURES WITH 90 MIN. EMERGENCY BATTERY BACKUP SHALL BE WIRED AHEAD OF ANY LOCAL IN COMPLIANCE WITH NEC ARTICLE 700.
2. EMERGENCY LIGHTING UNITS SHALL BE EQUIPPED WITH FACTORY INSTALLED INTEGRAL TEST SWITCHES.
3. ILLUMINATION LEVELS IN THE ENTIRE EXIT ACCESS SHALL HAVE AVERAGE MINNIMUM OF 1FT CANDLE, ILLUMINATION LEVELS AT ANY ONE POINT SHALL BE AT LEAST 0.1FT CANDLE AND MAX TO MIN UNIFORM RATIO OF 40 PER CFC1008.3.5.
4. THE EMERGENCY POWER SYSTEM SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES AND SHALL CONSIST OF STORAGE BATTERIES, UNIT EQUIPMENT OR AN ON-SITE GENERATOR. THE INSTALLATION OF THE EMERGENCY POWER SYSTEM SHALL BE IN ACCORDANCE WITH SECTION 2702. CBC 1008.3.4.
5. EXIT SIGNS SHALL BE ILLUMINATED AT ALL TIMES. TO ENSURE CONTINUED ILLUMINATION FOR A DURATION OF NOT LESS THAN 90 MINUTES IN CASE OF PRIMARY POWER LOSS, THE SIGN ILLUMINATION MEANS SHALL BE CONNECTED TO AN EMERGENCY POWER SYSTEM PROVIDED FROM STORAGE BATTERIES, UNIT EQUIPMENT OR AN ON-SITE GENERATOR. THE INSTALLATION OF THE EMERGENCY POWER SYSTEM SHALL BE IN ACCORDANCE WITH CHAPTER 27.
6. EXIT AND EXIT ACCESS DOORS SHALL BE MARKED BY AN APPROVED EXIT SIGN READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL; PATH OF EGRESS TRAVEL TO EXITS AND WITHIN EXITS SHALL BE MARKED BY READILY VISIBLE EXIT SIGN TO CLEARLY INDICATE THE DIRECTION OF EGRESS TRAVEL; INTERVENING MEANS OF EGRESS DOORS WITH EXITS SHALL BE MARKED BY EXIT SIGNS. CBC 1013.1.
7. THE BOTTOM OF THE SIGN SHALL NOT BE LESS THAN 6 INCHES OR MORE THAN 8 INCHES ABOVE THE FLOOR LEVEL AND SHALL INDICATE THE PATH OF EXIT TRAVEL. FOR EXIT AND EXIT ACCESS DOORS, THE SIGN SHALL BE ON THE DOOR OR ADJACENT TO THE DOOR WITH THE CLOSEST EDGE OF THE SIGN OR MARKER WITHIN 4 INCHES OF THE DOOR FRAME.
8. TACTILE EXIT SIGNS SHALL BE PROVIDED WITH APPROPRIATE WORDS AT EXIT DOORS LEADING TO ENCLOSED EXIT STAIRWAYS AND EXIT DOORS LEADING TO OUTSIDE. CBC 1013.4.

S(Override) = LIGHTING OVERRIDE SWITCH, AT FRONT DOOR.
TC = LIGHTS TIME CLOCK WITH OVERRIDE ON/OFF CONTROL
SPECIFIC NOTES:
DESIGNATED NON EMERGENCY LIGHTING CIRCUITS SHALL BE CONTROLLED BY 24 HR TIME CLOCK THROUGH MULTI-POLE CONTACTOR. TIME CLOCK SHALL INCORPORATE AN AUTOMATIC HOLIDAY "SHUT-OFF" FEATURE. INTERMATIC ET8000 SERIES OR APPROVED EQUAL.



OUTDOOR LIGHTING CONTROL DIAGRAM

120V, SINGLE PHASE, MAX 3% VOLTAGE DROP

	LENGTH OF RUN					
	25'	50'	100'	150'	200'	AMP LOAD
COPPER	14	12	10	8	6	15 AMP
COPPER	12	12	8	6	4	20AMP
COPPER	10	10	6	4	4	30 AMP
COPPER	1	1	1	2/0	4/0	100 AMP
ALUMINUM	1/0	1/0	2/0	4/0	300	100 AMP
COPPER	3/0	3/0	3/0	300	500	200 AMP
ALUMINUM	250	250	300	600	900	200 AMP

NOTE:
THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.

KEYED SINGLE LINE DIAGRAM NOTES:

1. VERIFY WITH MANUFACTURER FOR ELECTRICAL INSTALLATION REQUIREMENTS. PROVIDE FUSE/DISCONNECT PER RECOMMENDATION IF NOT BUILT-IN.

2. VERIFY EXACT LOCATION WITH ARCHITECT/OWNER AND PROVIDE NEMA 3R ENCLOSURE RATING MIN. IF OUTDOOR.

PANEL "A"

VOLTS:120/240V PHASE: 1 SHORT CIRCUIT RATING: 10000A MAIN: 200A C.B.
MOUNTING: SURFACE WIRE: 3 ENCLOSURE: NEMA 3R RATED MIN. BUSSING: 200A

LOAD	*	A-VA	B-VA	BKR	CT	CT	BKR	A-VA	B-VA	*	LOAD
PRIMARY SIGNAGE	C	1200		20/1	1						
SECONDARY SIGNAGE	C		1200	20/1	2						
TIME CLOCK	C	200		20/1	3						
SPARE				20/1	4						
SPARE				20/1	5						
SPARE				20/1	6						
SPARE				20/1	7						
SPARE				20/1	8						
SPARE				20/1	9						
SPARE				60/2	10						
SPARE				---	11						
LANDSCAPE LIGHTING (XFMR)	L		1150	20/1	12						
SUBFEEDING PANEL "B"	P	8820		100/2	13						
-----	P		8700	---	14						
(2) IRRIGATION	N	1400		(2)20/1	15						
(2) IRRIGATION	N		1200	(2)20/1	16						
IRRIGATION	N	600		20/1	17						
SPARE				20/1	18						
PV SYSTEM				60/2	19						
-----				---	20						
PHASE TOTALS:		12220	12250	24470	=TOTAL CONNECTED LOAD,VA (FOR DEMAND LOAD SEE BELOW)						
PHASE AMPERES:		101.8	102.1								

*DEMAND LOAD CALCULATION:

L=LIGHTING LOADS:		1.25	X	2070	=	2588 VA
C=CONTINUOUS LOADS, OTHER:		1.25	X	3100	=	3875 VA
M=MOTOR LOADS (INCL LGST):		1.00	X	8960	=	8960 VA
LARGEST, VA:		0.25	X	0	=	0 VA
R=RECEPTACLES: 1ST 10K:		1.00	X	3420	=	3420 VA
BALANCE:		0.50	X	0	=	0 VA
K=KITCHEN LOADS: QTY:	0	1.00	X	820	=	820 VA
N=NONCONTINUOUS LOADS, OTHER:		1.00	X	6100	=	6100 VA
(P=PANEL, INCL. IN ABOVE)	TOTAL N.E.C. DEMAND LOAD				=	25763 VA = 107.3 AMPERES

NOTES:
- **EMPTY LOAD: SPACE**
- SHADED GRAY TEXT: EXISITNG TO REMAIN
- **PROVIDE SPLIT PHASE BERAKERS AS NECESSARY**

PANEL "B"

VOLTS:120/240V PHASE: 1 SHORT CIRCUIT RATING: 10000A MAIN: LUGS ONLY
MOUNTING: FLUSHED WIRE: 3 ENCLOSURE: NEMA 1 RATED MIN. BUSSING: 100A

LOAD	*	A-VA	B-VA	BKR	CT	CT	BKR	A-VA	B-VA	*	LOAD
GUARD HOUSE LIGHTS	L	420		20/1	1	2	20/1	180		R	GUARD RESTRM RECEPT.
GUARD DESK MONITOR/PHONE	R		700	20/1	3	4	20/1		800	R	GUARD EXT. MONITOR/RECEPT.
GUARD DESK MONITOR	R	1200		20/1	5	6	20/1	500		C	GUARD WATER DISP.
GUARD PRINTER	N		1400	20/1	7	8	15/2		880	M	WM/CU-1
GUARD HAOUSE CONV. OUTLET	R	540		20/1	9	10	---	880		M	-----
U/C REFRIG.	K		820	20/1	11	12	20/1		1200	M	GATE OPENER SW1
INSTAHOT	N	1500		20/1	13	14	20/1	1200		M	GATE OPENER SW2
GUARDHOUSE OUTDOOR LIGHTS	L		500	20/1	15	16	20/1				SPARE
SPARE				20/1	17	18	20/1				SPARE
SPARE				20/1	19	20	20/1		1200	M	GATE OPENER GUARD HOUSE 1
SPARE				20/1	21	22	20/1	1200		M	GATE OPENER GUARD HOUSE 2
SPARE				20/1	23	24	20/1		1200	M	GATE OPENER E1
SPARE				20/1	25	26	20/1	1200		M	GATE OPENER E2
SPARE				20/1	27	28					
SPARE				20/1	29	30					
PHASE TOTALS:		8820	8700	17520	=TOTAL CONNECTED LOAD,VA (FOR DEMAND LOAD SEE BELOW)						
PHASE AMPERES:		73.5	72.5								

*DEMAND LOAD CALCULATION:

L=LIGHTING LOADS:		1.25	X	920	=	1150 VA
C=CONTINUOUS LOADS, OTHER:		1.25	X	500	=	625 VA
M=MOTOR LOADS (INCL LGST):		1.00	X	8960	=	8960 VA
LARGEST, VA:		0.25	X	0	=	0 VA
R=RECEPTACLES: 1ST 10K:		1.00	X	3420	=	3420 VA
BALANCE:		0.50	X	0	=	0 VA
K=KITCHEN LOADS: QTY:	0	1.00	X	820	=	820 VA
N=NONCONTINUOUS LOADS, OTHER:		1.00	X	2900	=	2900 VA
(P=PANEL, INCL. IN ABOVE)	TOTAL N.E.C. DEMAND LOAD				=	17875 VA = 74.5 AMPERES

NOTES:
- **EMPTY LOAD: SPACE**

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REGISTERED PROFESSIONAL ENGINEER
MINH VAN TRAN
NO. E17376
Exp. 09/30/22
ELECTRICAL
STATE OF CALIFORNIA

MONARCH BAY

MONARCH BAY DRIVE
DANA POINT, CA 92629

REVISION

DATE: 4/12/2021
SCALE: N.T.S.

SHEET TITLE:
SINGLE LINE DIAGRAM/ SCHEDULES

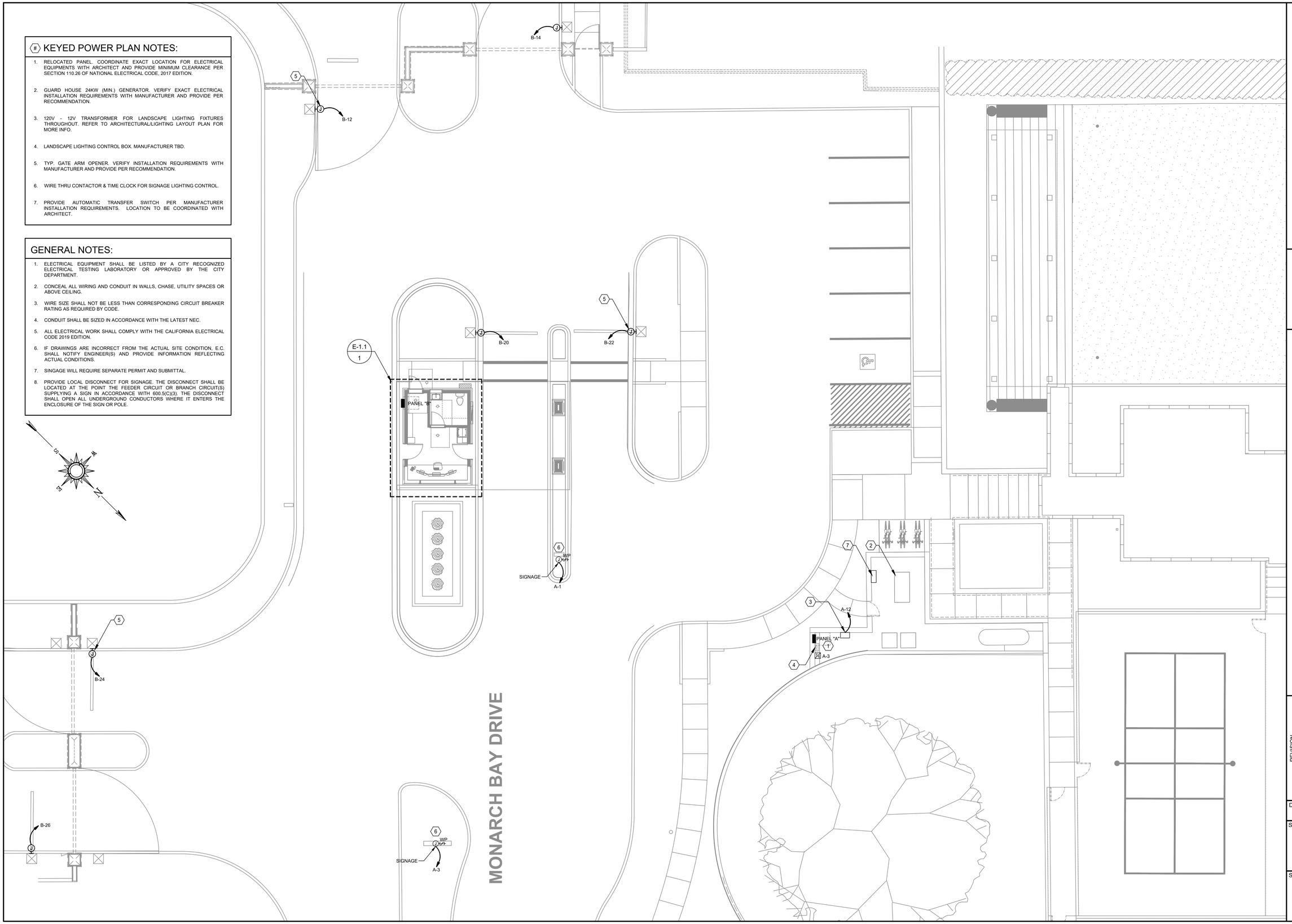
SHEET NO.:
E-0.1

KEYED POWER PLAN NOTES:

1. RELOCATED PANEL. COORDINATE EXACT LOCATION FOR ELECTRICAL EQUIPMENTS WITH ARCHITECT AND PROVIDE MINIMUM CLEARANCE PER SECTION 110.26 OF NATIONAL ELECTRICAL CODE, 2017 EDITION.
2. GUARD HOUSE 24KW (MIN.) GENERATOR. VERIFY EXACT ELECTRICAL INSTALLATION REQUIREMENTS WITH MANUFACTURER AND PROVIDE PER RECOMMENDATION.
3. 120V - 12V TRANSFORMER FOR LANDSCAPE LIGHTING FIXTURES THROUGHOUT. REFER TO ARCHITECTURAL/LIGHTING LAYOUT PLAN FOR MORE INFO.
4. LANDSCAPE LIGHTING CONTROL BOX. MANUFACTURER TBD.
5. TYP. GATE ARM OPENER. VERIFY INSTALLATION REQUIREMENTS WITH MANUFACTURER AND PROVIDE PER RECOMMENDATION.
6. WIRE THRU CONTACTOR & TIME CLOCK FOR SIGNAGE LIGHTING CONTROL.
7. PROVIDE AUTOMATIC TRANSFER SWITCH PER MANUFACTURER INSTALLATION REQUIREMENTS. LOCATION TO BE COORDINATED WITH ARCHITECT.

GENERAL NOTES:

1. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE CITY DEPARTMENT.
2. CONCEAL ALL WIRING AND CONDUIT IN WALLS, CHASE, UTILITY SPACES OR ABOVE CEILING.
3. WIRE SIZE SHALL NOT BE LESS THAN CORRESPONDING CIRCUIT BREAKER RATING AS REQUIRED BY CODE.
4. CONDUIT SHALL BE SIZED IN ACCORDANCE WITH THE LATEST NEC.
5. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CALIFORNIA ELECTRICAL CODE 2019 EDITION.
6. IF DRAWINGS ARE INCORRECT FROM THE ACTUAL SITE CONDITION, E.C. SHALL NOTIFY ENGINEER(S) AND PROVIDE INFORMATION REFLECTING ACTUAL CONDITIONS.
7. SINGAGE WILL REQUIRE SEPARATE PERMIT AND SUBMITTAL.
8. PROVIDE LOCAL DISCONNECT FOR SIGNAGE. THE DISCONNECT SHALL BE LOCATED AT THE POINT THE FEEDER CIRCUIT OR BRANCH CIRCUIT(S) SUPPLYING A SIGN IN ACCORDANCE WITH 600.5(C)(3). THE DISCONNECT SHALL OPEN ALL UNDERGROUND CONDUCTORS WHERE IT ENTERS THE ENCLOSURE OF THE SIGN OR POLE.



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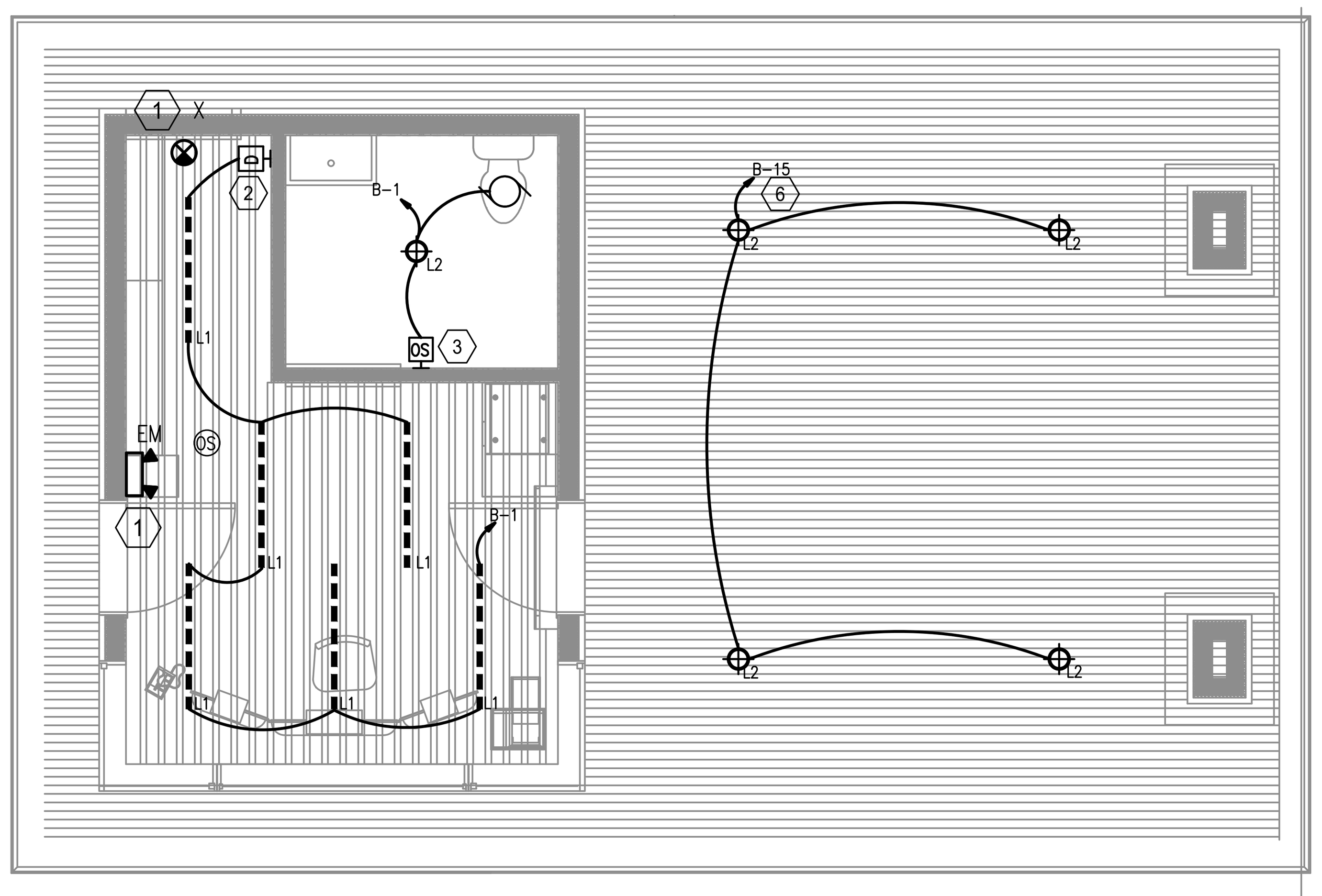
MONARCH BAY DRIVE
DANA POINT, CA 92629

REVISION

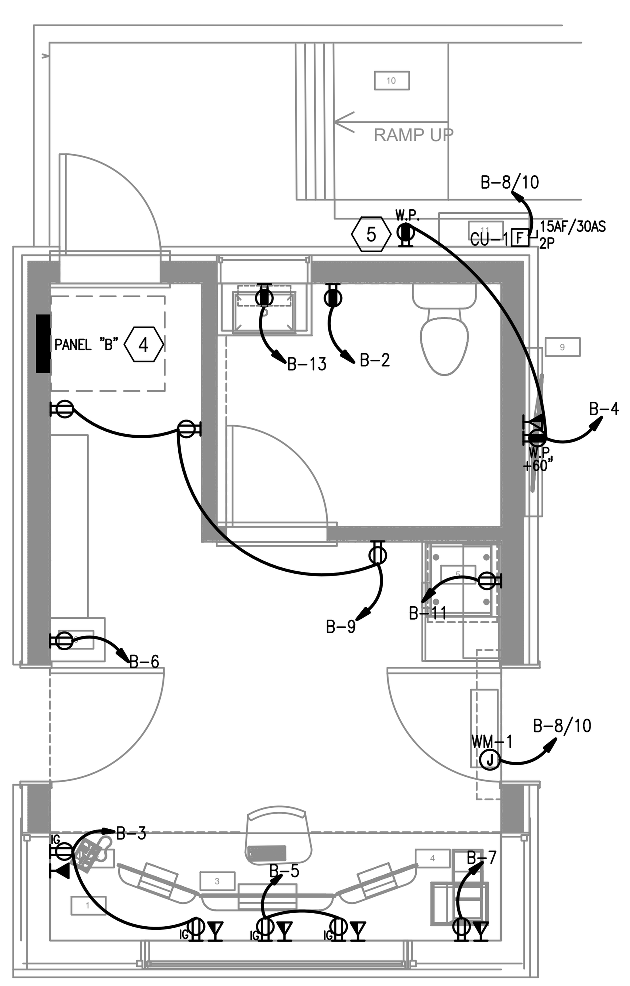
DATE:	SCALE:
4/12/2021	1/8" = 1'-0"

SHEET TITLE:
SITE PLAN

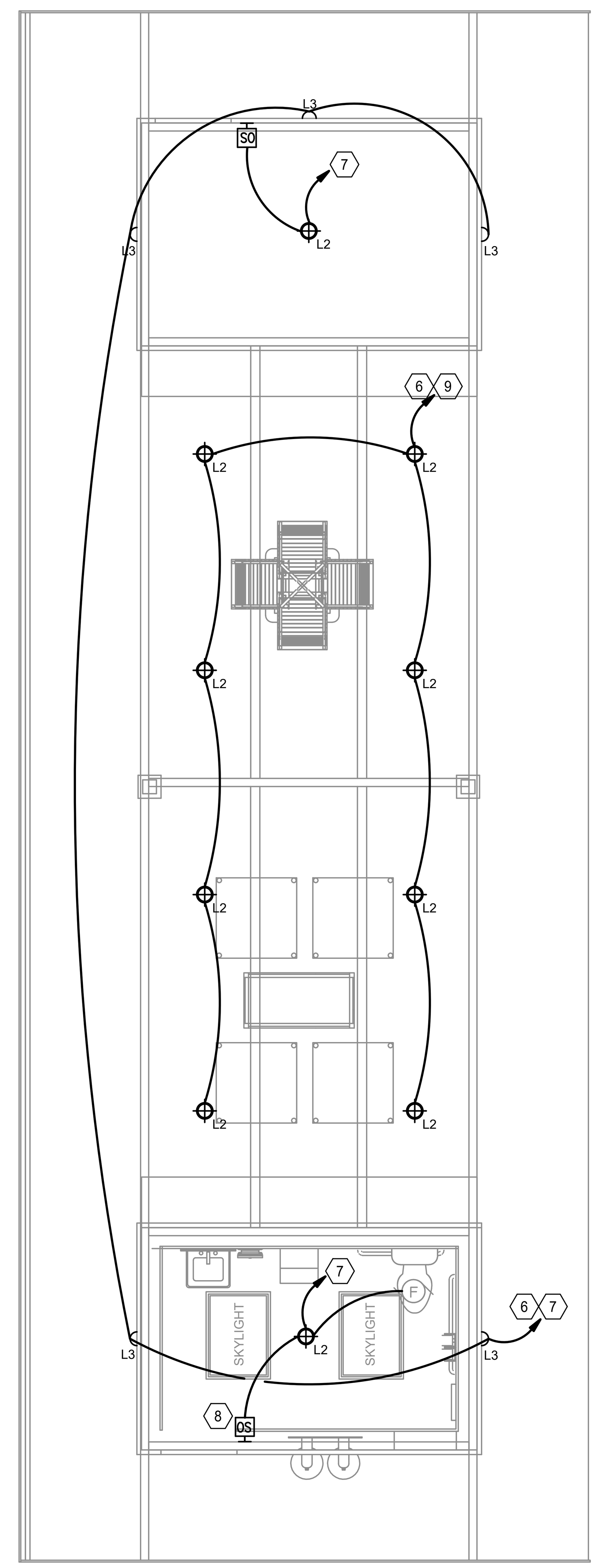
SHEET NO.:
E-1.0



LIGHTING PLAN - ENLARGED GUARD HOUSE



POWER PLAN - ENLARGED GUARD HOUSE



LIGHTING PLAN - ENLARGED PAVILION

KEYED PLAN NOTES:

1. CONTRACTOR SHALL CONNECT EMERGENCY/NL AND EXIT FIXTURES TO NEARBY ROOM LIGHTING CIRCUIT AHEAD OF LOCAL SWITCH.
2. G.C. TO VERIFY FINAL LOCATION OF SWITCH/DIMMER BANK WITH THE OWNER'S P.M.
3. INTERLOCK REST RM LIGHT WITH EXHAUST FAN. PROVIDE MANUAL MOTOR STARTER AT FAN MOTOR.
4. COORDINATE EXACT LOCATION FOR ELECTRICAL EQUIPMENTS IN FIELD WITH G.C. AND PROVIDE MINIMUM CLEARANCE PER SECTION 110.26 OF NATIONAL ELECTRICAL CODE, 2017 EDITION.
5. PROVIDE GFI/WATERPROOF/WEATHER RESISTANT RECEPTACLE WITHIN 25FT OF HEATING, AC, AND REFRIGERATION EQUIPMENT.
6. WIRE THROUGH PHOTOCELL AND MOTION SENSOR OR ASTRONOMICAL TIME CLOCK FOR ALL EXTERIOR LIGHT FIXTURES PER 2019 BEES SEC. 130.2.
7. EXISTING LIGHT FIXTURES TO BE REPLACED WITH LED FIXTURES. EXISTING CIRCUIT TO REMAIN AS-IS. FIXTURE REPLACEMENT ONLY.
8. INTERLOCK REST RM LIGHT WITH EXHAUST FAN IF NOT ALREADY EXISTING.
9. NEW LIGHT FIXTURE TO BE CONNECTED TO EXISTING WALL MOUNTED LIGHTING CIRCUITS.

NOTES:

DAYLIGHT CONTROL: COMBINED TOTAL GENERAL LIGHTING POWER IN PRIMARY SIDELIT DAYLIT ZONE IS LESS THAN 120 WATTS. NO DAYLIGHT CONTROL REQUIRED PER 2019 BUILDING ENERGY EFFICIENCY STANDARDS SECT 130.1(D)2.

GENERAL NOTES:

1. CONCEAL ALL WIRING AND CONDUIT IN WALLS, CHASE, UTILITY SPACES OR ABOVE CEILING.
2. WIRE SIZE SHALL NOT BE LESS THAN CORRESPONDING CIRCUIT BREAKER RATING AS REQUIRED BY CODE.
3. CONDUIT SHALL BE SIZED IN ACCORDANCE WITH THE LATEST NEC.
4. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CALIFORNIA ELECTRICAL CODE 2019 EDITION.
5. IF DRAWINGS ARE INCORRECT FROM THE ACTUAL SITE CONDITION, E.C. SHALL NOTIFY ENGINEER(S) AND PROVIDE INFORMATION REFLECTING ACTUAL CONDITIONS.
6. ALL LIGHT FIXTURE TYPES, SPECIFICATIONS, AND QUANTITIES ARE TO BE COORDINATED AND VERIFIED WITH ARCHITECT/OWNER.
7. OBTAIN APPROVAL ON LOCATION OF SWITCH/DIMMER/SENSOR WITH ARCHITECT AND OWNER AT SITE PRIOR TO ROUGH-IN.
8. COORDINATE LOCATIONS/HEIGHTS OF ALL RECEPTACLES FOR ELECTRICAL DEVICES WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
9. PROVIDE GFI PROTECTION AT ALL 125V, 15A OR 20A RECEPTACLES WITHIN 6' OF WATER SOURCES PER SECTION 210.8(B)(5) OF CALIFORNIA ELECTRICAL CODE, 2019 EDITION.
10. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE CITY DEPARTMENT.

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MONARCH BAY DRIVE
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REVISION

DATE: 4/12/2021

SCALE: 1/4" = 1'-0"

SHEET TITLE: ELECTRICAL PLAN- ENLARGED

SHEET NO.: E-1.1

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-E

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path.

Project Name:	MONARCH BAY	Report Page:	Page 1 of 7
Project Address:	MONARCH BAY DRIVE, DANA POINT, CA 92629	Date Prepared:	9/15/2020

A. GENERAL INFORMATION

01	Project Location (city)	DANA POINT	04	Total Conditioned Floor Area (ft²)	189
02	Climate Zone	6	05	Total Unconditioned Floor Area (ft²)	
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	

☐ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☐ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☐ Healthcare ☑ Other (write in): GUARD HOUSE

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☑ New Lighting System	Area Category	189		
	Add Parking Garage-Complete Bldg Method		Remove Parking Garage	
☐ Altered Lighting System				
	Add Altered Lighting System		Remove Last Altered System	
Total Area of Work (ft²)	189			

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1.	Allowed Lighting Power per §140.6(b) (Watts)						Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Results
	01	02	03	04	05		06	07		08	09
	Complete Building §140.6(c)1	Area Category §140.6(c)2	Area Category Additional §140.6(c)2G (+)	Tailored §140.6(c)3 (+)	Total Allowed (Watts)	≥	Total Designed (Watts)	Adjustments PAF Control Credits §140.6(a)2 (-)	=	Total Adjusted (Watts) *Includes Adjustments	05 Must be ≥ 08 §140.6
	(See Table I)	(See Table I)	(See Table J)	(See Table K)			(See Table F)	(See Table P)			
Conditioned:		87.6			= 87.6	≥	85		=	85	COMPLIES
Unconditioned:					=	≥			=		

Table Continued

Controls Compliance (See Table H for Details)	COMPLIES with Exceptional Conditions
Rated Power Reduction Compliance (See Table Q for Details)	Not Applicable

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Table H Indoor Lighting Controls Permit Applicant Notes:
GUARD HOUSE: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting;EXCEPTION 1 to §130.1(d)2
RESTROOM: RESTROOM. N/A.

Selections made in Table T have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector Pass	Fail
L1	LED STRIP LIGHT FIXTURE	☐	☐	3	Mfr. Spec[2]	24	☐	72	☐	☐
L2	LED RECESSED DOWNLIGHT	☐	☐	13	Mfr. Spec[2]	1	☐	13	☐	☐
							Total Designed Watts CONDITIONED SPACES:	85		

Reset | Add Row | Remove Last

[1] *FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*
[2] *Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

*Table Instructions: Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-Off Controls §130.1(c)	Field Inspector Pass	Fail
Not Required ≤ 10,000 SF	See Area/Space Level Controls	☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector Pass	Fail
GUARD HOUSE	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	Exempt*	Exempt*	☐	☐	☐
RESTROOM	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	Exempt*	Exempt*	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2

	13
	Plan Sheet Showing Daylit Zones:
GUARD HOUSE	*Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting;EXCEPTION 1 to §130.1(d)2*
RESTROOM	*RESTROOM. N/A.*

Reset | Add Row | Remove Last

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment: Area Category	PAF
GUARD HOUSE	All Other Space Types	0.4	141	56.4	☐	☐
RESTROOM	Restroom	0.65	48	31.2	☐	☐
		TOTAL:	189	87.6	See Tables J or P for detail	

Reset | Add Row | Remove Last

J. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This Section Does Not Apply

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This Section Does Not Apply

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This Section Does Not Apply

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This Section Does Not Apply

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS

This Section Does Not Apply

R. 80% LIGHTING POWER FOR ALTERATIONS - CONTROLS EXCEPTIONS

This Section Does Not Apply

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
◉	○	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why 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

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
○	◉	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐
○	◉	NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factors (PAF).	☐	☐

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:	Minh Tran	Documentation Author Signature:	Minh v Tran
Company:	CDI	Signature Date:	9/15/2020
Address:	16520 BAKE PARKWAY, SUITE 100	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	IRVINE, CA 92618	Phone:	949-336-6636

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 conform 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:	Minh Tran	Responsible Designer Signature:	Minh v Tran
Company :	CDI	Date Signed:	9/15/2020
Address:	16520 BAKE PARKWAY, SUITE 100	License:	E17378
City/State/Zip:	IRVINE, CA 92618	Phone:	949-336-6636

Add Responsible Person

CDI Circa Domini International, Inc.
Programing - Planning - Architecture - Interiors - Engineering
16520 BAKE PKWY IRVINE, CA
◊ Phone. (949) 336-6636 Fax. (949) 336-6636

REGISTERED PROFESSIONAL ENGINEER — MINH VAN TRAN — NO. E17378 — Exp. 09/30/22 — ELECTRICAL — STATE OF CALIFORNIA

MONARCH BAY
MONARCH BAY DRIVE
DANA POINT, CA 92629

REVISION

DATE: 4/12/2021
SCALE: N.T.S.

SHEET TITLE: TITLE 24- INDOOR

SHEET NO.: E-2.0

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 11/19) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.2, §140.7, and §141.0(b)2L for outdoor lighting scopes using the prescriptive path.			
Project Name: MONARCH BAY		Report Page:	Page 1 of 6
Project Address: MONARCH BAY DRIVE, DANA POINT, CA 92629		Date Prepared:	4/27/2021

A. GENERAL INFORMATION

01	Project Location (city)	DANA POINT	04	Total Illuminated Hardscape Area (ft^2)	2,293
02	Climate Zone	6			

03 Outdoor Lighting Zone per Title 24, Part 1 §10-114 or as designated by Authority Having Jurisdiction (AHJ):

- ☐ LZ-0: Very Low - Undeveloped Parkland
- ☐ LZ-1: Low - Developed Parkland
- ☐ LZ-2: Moderate - Rural Areas
- ☑ LZ-3: Moderately High - Urban Areas
- ☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval

B. PROJECT SCOPE

Table Instructions: Include any outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2L for alterations.

My project consists of:

01	02
☑ New Lighting System	Must Comply with Allowances from §140.7.
☐ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)? ◯ Yes ◯ No

03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method

[1] *FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100*

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Calculation of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2L										Compliance Results		
01	02	03	04	05	06		07		08	09		
General Hardscape Allowance §140.7(d)1	+ Per Application §140.7(d)2	+ Sales Frontage §140.7(d)2	+ Ornamental §140.7(d)2	+ Per Specific Area §140.7(d)2	OR Existing Power §141.0(b)2L	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 Must be ≥ 08**		
(See Table I)	(See Table J)	(See Table K)	(See Table L)	(See Table M)	(See Table N)				(See Table F)			
526.39	+	+	+	+	OR +		526.39	≥	280	**COMPLIES**		
Cutoff Compliance (See Table G for Details)							**Not Applicable**					
Controls Compliance (See Table H for Details)							**COMPLIES**					

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 11/19) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MONARCH BAY		Report Page:	Page 2 of 6
Project Address: MONARCH BAY DRIVE, DANA POINT, CA 92629		Date Prepared:	4/27/2021

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: For new or altered lighting systems demonstrating compliance with §140.7 (ie Table I has expanded for input), include all luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2L (ie Table N has expanded for input), include only new luminaires being installed and replacement luminaires being installed as part of the project scope (ie, do not include existing luminaires remaining or existing luminaires being moved).

Designed Wattage:

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Watts per luminaire[1,2]	How Wattage is determined	Total number luminaires[3]	Luminaire Status[4]	Excluded per §140.7(a)	Design Watts	Cutoff Req. ≥ 6,200 Initial lumen output §130.2(b)[4]	Field Inspector Pass	Fail
L2	LED RECESSED DOWNLIGHT ☐ Linear	15	Mfr. Spec[5]	12	New	☐	180	NA: <6,200 lumens	☐	☐
L3	LED WALL MOUNTED LED ☐ Linear	20	Mfr. Spec[5]	5	New	☐	100	NA: <6,200 lumens	☐	☐
					Total Designed Watts:		**280**			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b).

Reset | Add Row | Remove Last

[1] *FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)*
[2] *For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet for the luminaire should be indicated in column 05 instead of number of luminaires.*
[3] *Select "New" for new luminaires in a new outdoor lighting project or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope*
** Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output ≥ 6,200 unless exempted by §130.2(b).*

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 11/19) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MONARCH BAY		Report Page:	Page 3 of 6
Project Address: MONARCH BAY DRIVE, DANA POINT, CA 92629		Date Prepared:	4/27/2021

G. CUTOFF REQUIREMENTS (BUG)

This Section Does Not Apply

H. OUTDOOR LIGHTING CONTROLS

Table Instructions: Complete this table demonstrating compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank. For each requirement in columns 02 through 04, do not leave the field blank, instead select NA or Exempt* from the dropdown list to indicate not applicable or an exemption.*

Mandatory Controls

01	02	03	04	05	
Area Description	Shut-Off §130.2(c)1	Auto-Schedule §130.2(c)2	Motion Sensor §130.2(c)3	Field Inspector Pass	Fail
HARDSCAPE	Astronomical Timer	Yes	NA: Wall ≤ 24ft	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c).

Reset | Add Row | Remove Last

I. LIGHTING POWER ALLOWANCE (per §140.7)

Table Instructions: Please complete this table for areas using the allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lost it" Allowances are per Table 140.7-B. 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.

General Hardscape Allowance	01 "Use it or lose it" Allowances (select all that apply)			
	☐ Per Application	☐ Sales Frontage	☐ Ornamental	☐ Per Specific Area
☑	Table I (below)	Table J	Table K	Table L	Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 2 & 3)

02	03	04	05	06	07	08	09	10
Area Description	Surface Type	Area Wattage Allowance (AWA) Illuminated Area (ft^2)	Allowed Density (W/ft^2)	Area Allowance (Watts)	Linear Wattage Allowance (LWA) Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	Total General AWA + LWA (Watts)
HARDSCAPE	Concrete	2,293	0.03	68.79	269	0.4	107.6	176.39

Table Continued

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 11/19) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MONARCH BAY		Report Page:	Page 4 of 6
Project Address: MONARCH BAY DRIVE, DANA POINT, CA 92629		Date Prepared:	4/27/2021

						0

Reset | Add Row | Remove Last

Initial Wattage Allowance for Entire Site (Watts):	**350**
Total General Hardscape Allowance (Watts):	**526.39**

J. LIGHTING ALLOWANCE: PER APPLICATION

This Section Does Not Apply

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This Section Does Not Apply

L. LIGHTING ALLOWANCE: ORNAMENTAL

This Section Does Not Apply

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This Section Does Not Apply

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This Section Does Not Apply

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	◯	NRCI-LTO-01-E - Must be submitted for all buildings.	☐	☐
◉	◯	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.	☐	☐

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 11/19) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MONARCH BAY		Report Page:	Page 5 of 6
Project Address: MONARCH BAY DRIVE, DANA POINT, CA 92629		Date Prepared:	4/27/2021

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	◯	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls area added to ≤ 20 luminaires.	☐	☐

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 11/19) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MONARCH BAY		Report Page:	Page 6 of 6
Project Address: MONARCH BAY DRIVE, DANA POINT, CA 92629		Date Prepared:	4/27/2021

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:	Minh Tran	Documentation Author Signature:	Minh v Tran
Company:	CDI	Signature Date:	0/00/0000
Address:	16520 BAKE PARKWAY, SUITE 100	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	IRVINE, CA 92618	Phone:	949-336-6636

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 conform 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:	Minh Tran	Responsible Designer Signature:	Minh v Tran
Company :	CDI	Date Signed:	0/00/0000
Address:	16520 BAKE PARKWAY, SUITE 100	License:	E17378
City/State/Zip:	IRVINE, CA 92618	Phone:	949-336-6636

CDI Circa Domini International, Inc.
Programing - Planning - Architecture - Interiors - Engineering
16520 BAKE PKWY IRVINE, CA
◊ Phone. (949) 336-6636 Fax. (949) 336-6636

REGISTERED PROFESSIONAL ENGINEER
MINH VAN TRAN
NO. E17378
Exp. 09/30/22
ELECTRICAL
STATE OF CALIFORNIA

MONARCH BAY

MONARCH BAY DRIVE
DANA POINT, CA 92629

REVISION

DATE:	SCALE:
4/12/2021	N.T.S.

SHEET TITLE:
TITLE 24-OUTDOOR

SHEET NO.:
E-2.1