

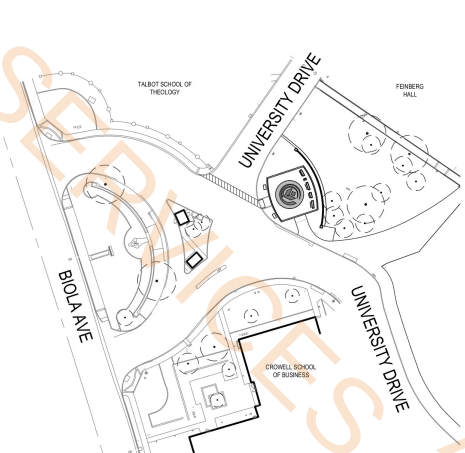
BIOLA UNIVERSITY ENTRY REHABILITATION PROJECT

13800 Biola Avenue, La Mirada, CA 90639
100% CONSTRUCTION DOCUMENT PACKAGE-12/12/25

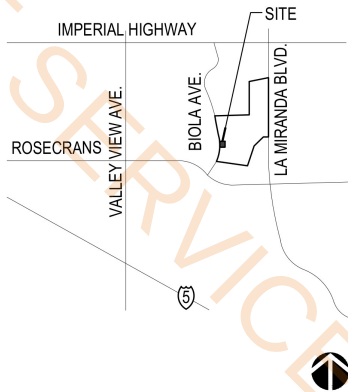
GENERAL NOTES

- THIS SET OF PLANS AND SPECIFICATIONS MUST BE KEPT ON THE JOB AT ALL TIMES AND IT IS UNLAWFUL TO MAKE ANY CHANGES OR ALTERATIONS ON THE SAME. THE STAMPING OF THE PLAN AND SPECIFICATIONS SHALL NOT BE HELD TO PERMIT OR BE AN APPROVAL OF THE VIOLATION OF ANY PROVISIONS OF ANY CITY ORDINANCE, STATE LAW OR FEDERAL LAW.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS GRADES, EXISTING STRUCTURES, AND FIELD CONDITIONS AT THE SITE BEFORE COMMENCING WORK. HE/SHE SHALL IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
- TYPICAL DETAILS SHALL APPLY IN GENERAL CONSTRUCTION WHERE NO DETAILS ARE GIVEN. THE CONSTRUCTION SHALL BE AS FOR SIMILAR WORK. OMISSIONS, AND/OR FIELD CONDITIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE WORK SO INVOLVED.
- REFERENCES OF THE A.S.T.M.S. AND THE CALIFORNIA BUILDING CODE SHALL BE TO THE LATEST EDITIONS AS ADOPTED BY THE CITY OF LA MIRANDA, CA.
- IMPORT SOIL SHALL BE APPROVED ON SITE BY OWNER'S REPRESENTATIVE. REFER TO SPECIFICATIONS FOR SOIL REQUIREMENTS. SOIL SHALL BE FREE FROM ROCK, DEBRIS, BERMUDA GRASS OR OTHER DELETERIOUS MATERIAL.
- AREAS WITHIN SCOPE OF WORK SHALL BE WEED KILLED WITH AN APPLICATION OF ROUNDUP TEN DAYS PRIOR TO START OF WORK. VERIFY WITH LANDSCAPE ARCHITECT.
- AREAS TO BE GRADED OR PAVED SHALL BE GRUBBED AND STRIPPED OF ALL VEGETATION, DEBRIS, AND OTHER DELETERIOUS MATERIAL. ALL LOOSE SOIL DISTURBED BY REMOVAL OF TREES, EXISTING FILL AND LOOSE OR DISTURBED TOPSOIL SHALL BE REMOVED.
- EXCESS SOIL SHALL BE REMOVED FROM SITE.
- SLEEVES: CONCRETE CONTRACTOR SHALL PROVIDE PVC UNDER PAVING. THE LOCATIONS SHALL BE COORDINATED WITH THE ELECTRIC CONTRACTOR AND IRRIGATION CONTRACTOR.
- REFER TO CONSTRUCTION LEGEND FOR ADDITIONAL INFORMATION.
- THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT WAS PREPARED BY KOUREY ENGINEERING.
- REINFORCING STEEL: A.S.T.M. A-615, GRADE 40 FOR ALL REINFORCING. MINIMUM CLEARANCE FOR BARS SHALL BE 3" AT BOTTOM OF FOOTING AN 1-1/2" AT BOTTOM OF SLABS ON GRADE.
- TYPICAL DETAILS SHALL APPLY IN GENERAL CONSTRUCTION WHERE NO DETAILS ARE GIVEN. THE CONSTRUCTION SHALL BE AS FOR SIMILAR WORK. OMISSIONS, AND/OR FIELD CONDITIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE WORK SO INVOLVED.
- THE USE OF ROLLED STEEL SECTIONS AND/OR BOLTS MANUFACTURED OUTSIDE THE UNITED STATES WILL REQUIRE VERIFICATION THAT THE PRODUCTS COMPLY WITH APPLICABLE ASTM STANDARDS. MILL CERTIFICATES WILL BE REQUIRED FOR ALL STEEL. STEEL GRADES OTHER THAN ASTM A36 WILL REQUIRE TESTING BY AN APPROVED LABORATORY. ALL FOREIGN BOLTS MUST BE APPROVED BY COUNTY OF LOS ANGELES BUILDING AND SAFETY PRIOR TO THEIR USE.
- CONTRACTOR TO PROTECT AND PRESERVE IN PLACE ALL EXISTING SURVEY MONUMENTS. ANY DISTURBED MONUMENTS SHALL BE RESET BY A LICENSED LAND SURVEYOR AND THE APPROPRIATE CORNER RECORD MUST BE FILED WITH LOS ANGELES COUNTY.
- PROVIDE SOIL ANALYSIS REPORT TO THE LOCAL AGENCY AS PART OF THE CERTIFICATE OF COMPLETION.

OVERALL SITE PLAN (NTS)



VICINITY PLAN (NTS)



DEMOLITION NOTES

- CONTRACTOR IS RESPONSIBLE FOR COMPLETE REMOVAL FROM SITE ALL MATERIAL UNLESS SPECIFIED ON THE CONSTRUCTION DOCUMENTS TO REMAIN, TO BE STORED ON SITE OR TURNED OVER TO CITY. SUCH MATERIALS INCLUDE BUT ARE NOT LIMITED TO; CONCRETE CURBS, ASPHALT CONCRETE, CONCRETE PAVING, CATCH BASINS, TREES AND SHRUBS, IRRIGATION VALVES, PIPING AND WIRING, CLEARING AND GRUBBING OF PLANT MATERIAL, POSTS, FIXTURES, FURNISHINGS, ANY FOUNDATIONS, AND OTHER MISCELLANEOUS OBJECTS NOT PERTINENT TO THE FINAL DESIGN. CONTRACTOR SHALL CLEAR SITE OF ANY REMAINING DEBRIS NOT IN STORAGE PRIOR TO BEGINNING NEW CONSTRUCTION. ALL DEBRIS SHALL BE LEGALLY DISPOSED IN ACCORDANCE WITH THE SPECIFICATIONS AND ACCEPTED STANDARD PRACTICES.
- CONTRACTOR TO PROCURE CITY AND/OR COUNTY CONSTRUCTION PERMITS AND LICENSES, INCLUDING MUNICIPAL BUSINESS LICENSE, AND PAY ALL CHARGES AND FEES FOR THE SAME WITHOUT COST TO THE OWNER.
- CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING AND LOCATING EXISTING UTILITIES PRIOR TO ANY DEMOLITION AND IS RESPONSIBLE FOR DAMAGE TO UTILITIES. NOTIFY USA ALERT @ 800-422-4133 (72) HOURS PRIOR TO START OF WORK.
- CONTRACTOR SHALL PROTECT ALL EXISTING CONSTRUCTION, MATERIALS AND PLANT MATERIAL TO REMAIN DURING DEMOLITION AND IS RESPONSIBLE FOR REPLACEMENT OR REPAIR OF ANY DAMAGED MATERIAL NOT SPECIFIED FOR REMOVAL.
- FOR TREE REMOVALS, REMOVE TREE ROOTS TO A MINIMUM DEPTH OF 4 FEET BELOW ROUGH GRADE, AND WITHIN A RADIUS OF APPROXIMATELY 7 FEET BEYOND THE TRUNK DIAMETER AT GRADE.
- FILL AND COMPACT EXCAVATED AREAS OF TREE AND STUMP REMOVAL. FILL IN 6 INCH LIFTS, EACH COMPACTED TO 90 PERCENT DENSITY.
- FILL AND COMPACT EXCAVATED AREAS OF STRUCTURE REMOVAL PER THE GEOTECHNICAL REPORT.
- CONTRACTOR SHALL REPORT ANY POTENTIAL PROBLEMS OR DISCREPANCIES TO THE OWNER PRIOR TO COMMENCING ANY DEMOLITION WORK. DO NOT WILLFULLY PROCEED WITH WORK AS SHOWN WHEN IT IS OBVIOUS THAT CONDITIONS AND/OR OBJECTS EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS AND/OR OBJECTS SHALL BE IMMEDIATELY BROUGHT TO THE OWNER'S ATTENTION. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
- CONTRACTOR SHALL SECURE THE CONSTRUCTION SITE FOR THE ENTIRE LENGTH OF THE CONSTRUCTION PERIOD, WITH A 6' HIGH TEMPORARY CHAIN LINK FENCE. LOCATION OF FENCE AND GATES SHALL BE THE PERIMETER OF THE PROJECT SITE BUT NOT RESTRICT ANY PUBLIC ACCESS IN ANY PUBLIC RIGHT OF WAYS. CONTRACTOR TO VERIFY EXACT LOCATION IN FIELD OF TEMPORARY FENCE PRIOR TO PLACEMENT.
- CONTRACTOR IS RESPONSIBLE FOR ALL EROSION CONTROL ON THE CONSTRUCTION SITE, DURING CONSTRUCTION AND THROUGH THE MAINTENANCE PERIODS.
- REMOVE OR DISPOSE OF CRUSHED ROCK, ASPHALT, CURBS, GUTTER, AND DEBRIS ON GROUND SURFACE PER PLAN.
- BREAK UP AND REMOVE EXISTING CONCRETE TO INDICATED LIMITS. CUT NEAT AND EVEN LINES WITH A CONCRETE CUTTING SAW. MINIMUM DEPTH OF CUT SHALL BE 1-1/2 INCHES, UNLESS OTHERWISE REQUIRED. REMOVE CONCRETE BROKEN BEYOND THE INDICATED LIMITS TO THE NEAREST JOINT OR SCORE LINE AND REPLACE WITH NEW CONCRETE TO MATCH EXISTING. REMOVED CONCRETE SHALL BE STOCKPILED IN SPECIFIED LOCATION SPECIFIED BY THE DRAWINGS AND SPECIFICATIONS, FOR LATER USE AS BROKEN CONCRETE PAVING.
- BREAK UP AND REMOVE AGGREGATE BASE MATERIAL UNDER PAVING BEING DEMOLISHED. REMOVE TWELVE INCHES OF SOIL UNDER ASPHALT BASE MATERIAL.
- ALL MATERIALS SPECIFIED TO BE REMOVED SHALL BE LEGALLY DISPOSED OF OFF-SITE PER LOCAL CODES AND REGULATIONS.
- CONTROL DUST AND NOISE DURING DEMOLITION OPERATIONS, PER LOCAL CODES. EXCESSIVE BLOWING DUST AND DEBRIS WILL NOT BE PERMITTED AT ANY TIME.
- CONDUCT DEMOLITION WORK IN ACCORDANCE WITH APPLICABLE SAFETY REQUIREMENTS OF THE CALIFORNIA ADMINISTRATIVE CODE, TITLE 19, THE LATEST CONSTRUCTION SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY, STATE OF CALIFORNIA, THE ASSOCIATED GENERAL CONTRACTORS' MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION, LATEST EDITION, AND THE APPLICABLE REQUIREMENTS OF THE UNIFORM BUILDING CODE, LATEST EDITION.
- CONFORM TO SPECIFICATIONS RELATING TO THE PROTECTION OF THE PUBLIC AND CONTRACTOR'S PERSONNEL AND THE FLOW OF TRAFFIC.
- REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- SEE SHEETS C1.0 FOR ADDITIONAL CIVIL DEMOLITION NOTES.

COMPLIANCE STATEMENT

I HAVE COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND THE LANDSCAPE REGULATIONS AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN.

SCOPE OF WORK

THE PROPOSED PROJECT CONSISTS OF A NEW PLAZA WITH A LARGE ENTRY SIGN AND UPGRADES TO PLANTING, IRRIGATION, AND LIGHTING.

PROJECT DATA

ADDRESS: 13800 BIOLA AVENUE, LA MIRADA, CA 90639
SITE AREA: 25,723 SQ. FT.
LANDSCAPE AREA: 7,973 SQ. FT.
TOTAL # OF TREES PER PLAN: 13 TREES
TOTAL # OF TREES REQUIRED (3 TREES/10,000 S.F.): 8 TREES

DEFERRED SUBMITTALS

ITEMS LISTED BELOW ARE DEFERRED SUBMITTALS TO BE FINALIZED DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS

- PRECAST CONCRETE LETTER SIGN
- PRECAST CONCRETE LETTER SIGN REINFORCEMENT
- PRECAST CONCRETE LETTER SIGN FOOTING DESIGN

PROJECT DIRECTORY

CLIENT:	BIOLA UNIVERSITY 13800 BIOLA AVENUE LA MIRADA, CA 90639
CIVIL:	WARE MALCOMB 915 WILSHIRE BLVD. SUITE 2150 LOS ANGELES, CA 90017 (310) 903-4019
LANDSCAPE:	EPTDESIGN 101 N. INDIAN HILL BOULEVARD, #C2-200 CLAREMONT, CA 91711 (626) 795-2008
STRUCTURAL:	IDG STRUCTURAL ENGINEERING 10866 WIMER COUNTRY RD. LOS ANGELES, CA 91040 (213) 315-2277
ELECTRICAL/LIGHTING:	WSP 515 S FIGUEROA ST, SUITE 1400 LOS ANGELES, CA 90017 (213) 362-9470
GEOTECHNICAL:	KOURY ENGINEERING 5711 SCHAEFER AVENUE CHINO, CA 91710 (909) 606-6111

WATER PURVEYOR

SUBURBAN WATER SYSTEMS
1325 N GRAND AVENUE, SUITE 100
COVINA, CA 91724

LAURA SAINZ
PHONE: 626-543-2565
FAX: 626-331-4848

POTABLE WATER PRESSURE AT P.O.C. - 89 PSI

NOTE:

- PLANTING AND IRRIGATION MAINTENANCE TO BE MANAGED BY BIOLA UNIVERSITY

SHEET INDEX

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C2.0	Erosion Control Plan	4
C2.1	Erosion Control Details	5
C3.0	Horizontal Control and Grading Plan	6
C3.1	Horizontal Control and Grading Plan	7
C4.0	Details	8
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L1.41	Elevations	12
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L3.01	Planting Plan	18
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L3.51	Planting Details	20
S0.01	General Notes	21
S0.02	General Notes	22
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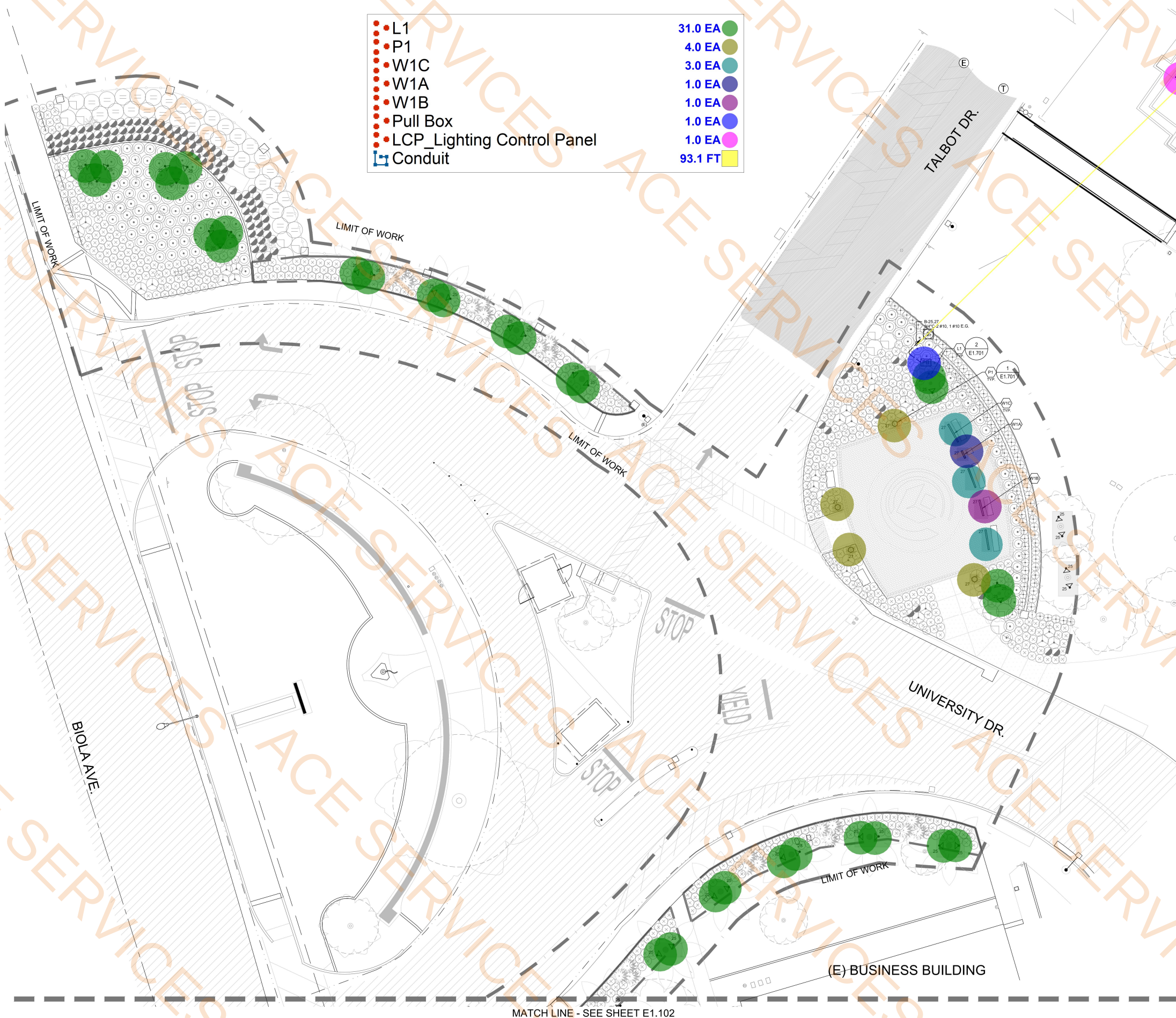
Revisions	By	Date

Job Number E25-046
Design Staff TS
Project Manager PF
Principal SC

Cover Sheet

L0.00

Construction Documentation
12 December, 2025

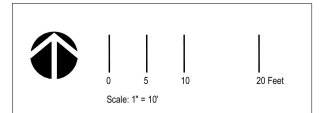


PLAN NOTES:

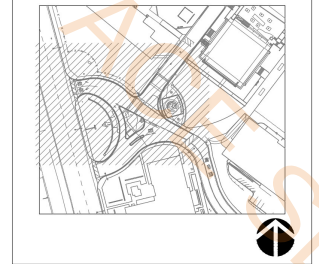
1. EXISTING PANEL LOCATED IN GROUND FLOOR ELECTRICAL ROOM OF FEINBERG HALL.
2. NEW BRANCH CIRCUITS ARE TO BE ROUTED TO EXISTING PANEL VIA EXISTING 1 1/4\"

SITE PLAN GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC. AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND SERVICE ALERT (USA) AT 1 (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4\"
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. - U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO BEGINNING TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
9. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.



Key Map



Biola University
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EPTDESIGN.COM

wsp

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Brad Nelson
Electrical Lead - Jeff Miller
WSP Job #: US0048581728

Revisions	By	Date

Job Number
Design Staff
Project Manager
Principal

EM
BN
RS

SITE
ELECTRICAL
PLAN

E1.101

Construction Documentation
5 December, 2025

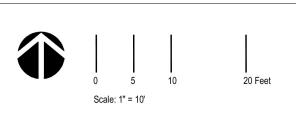
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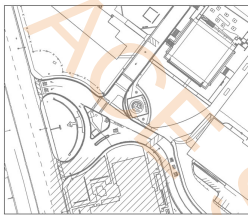
(E) BUSINESS BUILDING

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Project Leader - Brad Nelson
Electrical Lead - Jeff Miller
WSP Job #: US0048588.1728

Revisions	By	Date

Job Number
Design Staff EM
Project Manager BN
Principal RS

SITE
ELECTRICAL
PLAN

E1.102

Construction Documentation
5 December, 2025



WSP USA
15251 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Brad Nelson
Electrical Lead - Jeff Mizer
WSP Job #: US0048588.1728

PANEL B																			
MOUNTING		SURFACE		DOUBLE LUG		NO		VOLTS		120/208		MAIN		M.L.O.					
NEMA 3R		NO		200% NEUTRAL		NO		PHASE		3		BUS		100A					
FEED THRU		NO		I/G BUS		NO		WIRE		4		A.I.C.		10,000					
NOTES	LOCATION	A		B		C		L		T		C		R		M		K	
		T		O		I		N		T		C		R		I		E	
NOTES	LOCATION	A		B		C		L		T		C		R		M		K	
		T		O		I		N		T		C		R		I		E	
EXIST. LOAD	1080							20/1	1			2	20/1						
EXIST. LOAD			500					20/1	3			4	20/1						
EXIST. LOAD				500				20/1	5			6	20/1						
EXIST. LOAD	1260							20/1	7			8	20/1						
EXIST. LOAD			900					20/1	9			10	20/1						
EXIST. LOAD				1440				20/1	11			12	20/1						
EXIST. LOAD	1080							20/1	13			14	20/1						
EXIST. LOAD			1080					20/1	15			16	20/3						
EXIST. LOAD				1260				20/1	17			18	---						
EXIST. LOAD	1440							20/1	19			20	---						
EXIST. LOAD			1080					20/1	21			22	20/1						
EXIST. LOAD				900				20/1	23			24	---						
EXIST. LOAD								20/1	25			26	---						
EXIST. LOAD								20/1	27			28	---						
EXIST. LOAD								20/1	29			30	---						
F SITE SIGNAL LIGHTING	780							20/1	31			32	---						
F SITE SIGNAL LIGHTING			752					20/1	33			34	---						
SPACE								20/1	35			36	---						
		A= 9660 VA		B= 9052 VA		C= 8160 VA													
		PHASE A LCL= 195 VA		PHASE B LCL= 188 VA		PHASE C LCL= 0 VA													
		PHASE A W/LCL= 9855 VA		PHASE B W/LCL= 9240 VA		PHASE C W/LCL= 8160 VA													
		TOTAL VA= 26872		TOTAL LCL= 383		TOTAL VA W/LCL= 27255													
				AMPS= 76		HIGH PHASE AMPS= 82													

••Circuit BKR 20A/ 1Pole

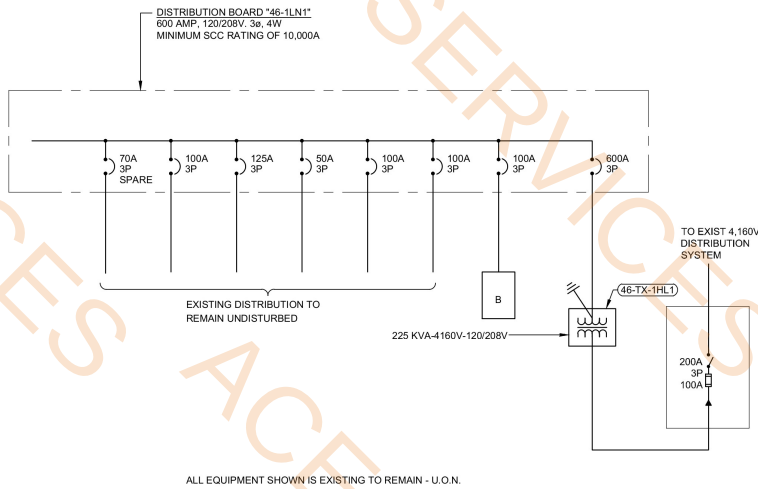
4.0 EA

GENERAL PANEL SCHEDULE NOTES:

- WHERE PANEL IS INDICATED TO INCLUDE FEED THRU LUGS, PROVIDE FEED THROUGH LUGS AT THE OPPOSITE END OF THE PANELBOARD FROM THE PANELBOARD MAIN LUGS.
- WHERE PANEL IS INDICATED TO INCLUDE DOUBLE LUGS, PROVIDE A DOUBLE LUG KIT AT THE SAME END OF THE PANELBOARD AS THE PANELBOARD MAIN LUGS.
- WHERE PANEL IS INDICATED TO INCLUDE 200% NEUTRAL, PROVIDE 200 PERCENT OF THE CURRENT CARRYING CAPACITY OF THE PHASE BUSING. OTHERWISE, NEUTRAL BISSING TO BE FULL SIZE AND RECTANGULAR.
- WHERE PANEL IS INDICATED TO INCLUDE AN I/G BUS, PROVIDE PANELBOARDS WITH AN ISOLATED GROUND BUS, DRILLED AND TAPPED FOR NUMBER OF ISOLATED GROUND CONDUCTORS SHOWN, AS WELL AS FOR ALL SPARES AND SPACES SHOWN ON THE PANELBOARD.
- WHERE PANEL CIRCUIT BREAKER RATING IS SHOWN AS SERIES RATED, PROVIDE CIRCUIT BREAKERS IN PANELBOARD WHICH ARE SERIES RATED WITH THE UPSTREAM SYSTEM FOR THE AVAILABLE FAULT CURRENT. THE PANELBOARD SHALL BE MARKED WITH THE SERIES CONNECTED RATINGS, AS WELL AS ALL MARKING AS REQUIRED BY THE NEC, OR CEC WHERE ADOPTED, 240.86(B).
- WHERE PANEL IS INDICATED AS RECESSED OR FLUSH MOUNTED, PROVIDE SPARE CONDUITS STUBBED UP INTO THE ACCESSIBLE CEILING SPACE. PROVIDE ONE (1) 3/4" CONDUIT ONLY FOR EACH THREE (3) SPARES OR SPACES. MINIMUM OF TWO (2). EACH CONDUIT SHALL BE TAGGED, CAPPED AND MARKED FOR FUTURE USE.
- ALL BISSING SHALL BE TIN PLATED ALUMINUM.
- ALL CIRCUIT BREAKERS USED AS SWITCHES SHALL BE UL LISTED AND LABELED "SWD" FOR SWITCHING DUTY.
- PROVIDE BREAKER INTERLOCK WITH ADJACENT BREAKER(S) FOR ANY MULTI-WIRE BRANCH CIRCUIT. BREAKER INTERLOCK GROUPING SHALL BE BY BRANCH CIRCUIT GROUP (i.e. MULTIPLE CIRCUITS SHARING A COMMON NEUTRAL (NEC, OR CEC WHERE ADOPTED, 210.4(B)), COMMON YONE (NEC, OR CEC WHERE ADOPTED, 210.7), DR FURNITURE SYSTEM NEC OR CEC WHERE ADOPTED, 605.5 AND 605.7). WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER INTERLOCKS TO EXISTING MULTI-WIRE BRANCH CIRCUITS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.
- PROVIDE BREAKER LOCK OFF DEVICE ON ANY CIRCUIT BREAKER FEEDING A TRANSFORMER AS REQUIRED, PER NEC, OR CEC WHERE ADOPTED, 450.14. WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER LOCK-OFF DEVICES TO EXISTING TRANSFORMER CIRCUIT BREAKERS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.
- ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE AND SHALL BE SUITABLE FOR 75 DEGREE IMPACTITY CONDUCTORS.
- PANELS SHALL BE OF THE DEAD FRONT SAFETY TYPE. PANELS SHALL BE MINIMUM 20" WIDE AND 5-3/4" DEEP UNLESS OTHERWISE NOTED ON PLAN.
- COORDINATE WITH APPLICABLE TRADE TO INSURE RECESSED MOUNTED PANELBOARDS WILL SEAT FLUSH IN THE WALLS PROVIDED. PANEL TRIMS SHALL HAVE CONCEALED DOORS AND FASTENERS WITH FLUSH TYPE COMBINATION LOCK AND DATCH. TWO MILLED TYPE KEYS SUPPLIED WITH EACH PANEL. ALL LOCKS SHALL BE KEVED ALIKE AND EACH DOOR SHALL HAVE A PLASTIC COVERED DIRECTORY FRAME WITH A TYPED IDENTIFICATION CARD OF ALL CIRCUIT AND PANEL NUMBERS FOR BRANCH CIRCUIT PANELBOARDS.
- UPON PROJECT COMPLETION, CONTRACTOR SHALL INSTALL TYPED AS-BUILT PANEL DIRECTORIES IN EACH PANEL WITHIN THE MFR-PROVIDED DIRECTORY HOLDER. THE DIRECTORY SHALL CLEARLY IDENTIFY EACH CIRCUIT TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. EACH CIRCUIT IDENTITY SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS PER NEC, OR CEC WHERE ADOPTED, ART 408.1 AND 408.4. HANDWRITTEN DIRECTORIES ARE UNACCEPTABLE. COPIES OF AS-BUILT PANEL SCHEDULES SHALL BE PLACED IN PANEL DIRECTORIES. E.C. TO INCLUDE ALL COSTS REQUIRED FOR LARGER-THAN-STANDARD CUSTOM PANEL DIRECTORY HOLDERS TO ACCOMMODATE COPIES OF AS-BUILT PANEL SCHEDULES.
- PANELBOARDS SHALL BE MANUFACTURED BY G.E., CUTLER-HAMMER, SIEMENS, OR SQUARE "D". FUSED PANEL BOARDS SHALL BE BY COOPER BUSSMANN.
- PROVIDE SHOP DRAWING SUBMITTAL PER THE ELECTRICAL SPECIFICATION SUBMITTAL REQUIREMENTS FOR EACH PANEL DEPICTING CONFORMANCE WITH THE ABOVE NOTES AND SCHEDULES.

SPECIFIC PANEL SCHEDULE NOTES:

- *A* PROVIDE LOCK-ON DEVICE.
- *B* PROVIDE PERMANENT LOCK-OFF DEVICE THAT SHALL REMAIN IN PLACE WITH OR WITHOUT THE LOCK INSTALLED, PER NEC, OR CEC WHERE ADOPTED, SECTION 110.25.
- *C* PROVIDE SHUNT TRIP DEVICE.
- *D* PROVIDE GFCI TYPE DEVICE.
- *E* PROVIDE A RED CIRCUIT BREAKER.
- *F* PROVIDE A NEW BREAKER TO MATCH THE EXISTING IN PANEL.
- *G* EXISTING BREAKER WITH NEW LOAD.
- *H* PROVIDE AFCI TYPE DEVICE COMPLYING WITH NEC, OR CEC WHERE ADOPTED, 210.12(A),(B),(C).



1 EXISTING SINGLE LINE DISTRIBUTION DIAGRAM

SCALE: N.T.S.

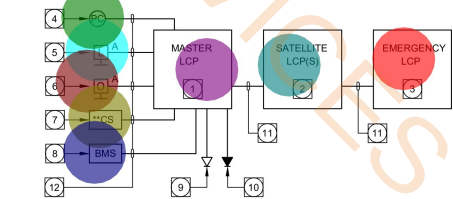
Revisions	By	Date

Job Number
Design Staff EM
Project Manager BN
Principal RS

SINGLE LINE
DIAGRAM

E1.401

3HTING CONTROL SYSTEM SCHEMATIC:



3HTING CONTROL SYSTEM SCHEMATIC PLAN NOTES:

MASTER LIGHTING CONTROL PANEL. SEE PLANS FOR EXACT LOCATION. REFER TO MASTER LIGHTING CONTROL PANEL SCHEDULE FOR MORE INFORMATION. PROVIDE 120V POWER AS REQUIRED. DO NOT USE LIGHTING BRANCH CIRCUIT FOR CONTROL PANEL POWER.

SATELLITE LIGHTING CONTROL PANEL(S). SEE PLANS FOR EXACT LOCATION AND QUANTITY. REFER TO SATELLITE LIGHTING CONTROL PANEL SCHEDULE(S) FOR MORE INFORMATION DO NOT USE LIGHTING BRANCH CIRCUIT FOR CONTROL PANEL POWER.

EMERGENCY LIGHTING CONTROL PANEL(S). PROVIDE 120V OR 277V UNSWITCHED NORMAL AND/OR EMERGENCY CIRCUIT. CONNECT CIRCUIT(S) AS REQUIRED SUCH THAT THE EMERGENCY LCP(S) FUNCTIONS IN A POWER OUTAGE BY TURNING ALL LIGHTING CIRCUITS CONTROLLED BY RESPECTIVE EMERGENCY LCP(S). SEE PLANS FOR EXACT LOCATION. REFER TO EMERGENCY LIGHTING CONTROL PANEL SCHEDULE FOR MORE INFORMATION.

EXTERIOR PHOTOCELL MOUNTED AT EXTERIOR ROOFTOP LOCATION FACING NORTH. SEE LIGHTING CONTROL PANEL SCHEDULE(S) AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

LOCAL SWITCHES UNDER A COMMON FACEPLATE. SEE LIGHTING CONTROL PANEL SCHEDULE(S) FOR EXACT QUANTITY AND SEE PLANS FOR EXACT LOCATION(S) AND LIGHTING CONTROL SWITCH FACEPLATE CONFIGURATION(S) FOR ADDITIONAL REQUIREMENTS.

VERRIDE SWITCHES) UNDER A COMMON FACEPLATE. SEE LIGHTING CONTROL PANEL SCHEDULE(S) FOR EXACT QUANTITY AND SEE PLANS FOR EXACT LOCATION(S) AND CONFIGURATION(S).

WHEN "IDCS/DPCS" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE PROVIDE 3/4" C. WITH REQUIRED CONDUCTORS TO EACH IDCS AND/OR DPCS PANEL OR INTERFACE DEVICES PER THEIR RESPECTIVE SCHEDULES, IF PROVIDED ON PROJECT. SEE LIGHTING CONTROL SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

WHEN "BMS" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH REQUIRED CONDUCTORS TO NEAREST BMS GATEWAY/INTERFACE DEVICE. COORDINATE LOCATION, CONDUCTOR QUANTITIES TYPES, AND TERMINATION LOCATIONS WITH MECHANICAL CONTROLS CONTRACTOR. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED. SEE LIGHTING CONTROL PANEL SCHEDULE(S) AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

WHEN "MODEM" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH CATEGORY 5 ANALOG FAX/MODEM LINE FROM LCP TELEPHONE MODEM TO NEAREST TELEPHONE BACKBOARD. TERMINATE CABLE AS REQUIRED TO OBTAIN CONNECTION SERVICE PROVIDER DIAL TONE. TEST CONNECTION WITH LCP MANUFACTURER TO ENSURE MANUFACTURER CAN PROVIDE REMOTE TROUBLESHOOTING SUPPORT, ETC. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED.

WHEN "SNMP" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH CATEGORY 6 DATA CABLE FROM LCP SNMP INTERFACE DEVICE TO NEAREST IDF CLOSET TO ALLOW COMMUNICATIONS PER THE LIGHTING CONTROL SYSTEM SCHEDULE AND SPECIFICATIONS. COIL 30' OF EXTRA CABLE WITHIN IDF CLOSET. COILED CABLE SHALL BE TAGGED NOTING FAR-END TERMINATION LOCATION AND "LIGHTING CONTROL SYSTEM LAN INTERFACE CABLE". ALL CONDUIT/PULL BOXES SHALL BE INSTALLED PER GENERAL COMMUNICATIONS PATHWAY NOTES. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED.

PROVIDE 3/4" CONDUIT MINIMUM, OR LARGER AS REQUIRED, WITH QUANTITY AND TYPE OF CONDUCTORS. PER MANUFACTURER'S RECOMMENDATIONS, FOR INTERCONNECTING MASTER AND SATELLITE PANELS. REFER TO MASTER RELAY SCHEDULE FOR NETWORKING TYPE.

PROVIDE 3/4" CONDUIT MINIMUM, OR LARGER AS REQUIRED, WITH QUANTITY AND TYPE OF CONDUCTORS PER MANUFACTURER'S RECOMMENDATIONS.

3HTING CONTROL SYSTEM REQUIREMENTS:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT INSTALLATION.

IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC FORMAT, TO PROVIDE CONTRACTOR INFORMATION THAT SUPPLEMENTS AND ENHANCES THE GENERALLY ACCEPTED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED IN CONNECTION WITH INSTALLATION OF THIS TYPE OF PRODUCT/SYSTEM.

THE CONTRACTOR SHALL ALSO INCORPORATE THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/REQUIREMENTS AS PART OF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENT REQUIREMENTS AND THE MANUFACTURER'S INSTALLATION REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY. UNLESS THE MORE STRINGENT REQUIREMENT VOIDS APPLICABLE WARRANTIES OR VIOLATES THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION, ANY SUCH CONFLICT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING THROUGH THE NORMAL RFI PROCESS.

REFER TO THE ASSOCIATED SCHEDULES, SCHEMATICS, DRAWINGS, AND SPECIFICATIONS FOR DETAILED INFORMATION/REQUIREMENTS ON THIS PRODUCT/SYSTEM.

3HTING CONTROL SYSTEM SPECIFICATIONS:

ALL EQUIPMENT SHALL BE NEW, OF CURRENT DESIGN, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF IEEE, NEMA, UL, ANSI AS WELL AS LOCAL JURISDICTION REQUIREMENTS. ALL EQUIPMENT SHALL BE FACTORY ASSEMBLED AND TESTED. THE LATEST PUBLISHED EDITION OF THE FOLLOWING DOCUMENTS SHALL APPLY TO THE MANUFACTURING AND INSTALLATION OF THE LIGHTING CONTROL SYSTEM:

- UL 916
- UL 924
- ASHRAE 90.1
- CALIFORNIA TITLE 24- WHERE ADOPTED
- ALL OTHER APPLICABLE STATE AND LOCAL ENERGY CODES
- NEC, OR CEC WHERE ADOPTED, ART. 409
- NEC, OR CEC WHERE ADOPTED, ART. 725
- NEC, OR CEC WHERE ADOPTED, ART. 700.10(B)

ALL COMPONENTS OF THE LIGHTING CONTROL SYSTEM SHALL BE MANUFACTURED BY A SINGLE MANUFACTURER. THE ENTIRE SYSTEM SHALL BE COVERED BY A TWO YEAR WARRANTY. TELEPHONE FACTORY SUPPORT SHALL BE AVAILABLE AT NO ADDITIONAL COST TO THE CONTRACTOR OR OWNER BOTH DURING AND AFTER THE WARRANTY PERIOD.

THE LIGHTING CONTROL PANELS SHALL BE FACTORY PRE-ASSEMBLED AND UL LISTED. PROVIDE COMPLETE WITH ALL REQUIRED CONTROL TRANSFORMERS AND REQUIRED VOLTAGE BARRIERS. WHEN DESIGNATED AS SURFACE MOUNTING, PROVIDE A SCREW-ON COVER. WHEN DESIGNATED AS FLUSH MOUNTING, PROVIDE A HINGED DOOR ASSEMBLY.

LIGHTING CONTROL RELAYS SHALL HAVE THE FOLLOWING CHARACTERISTICS:

- RATED FOR FULL CIRCUIT LOAD AND SUITABLE FOR ALL TYPES OF LAMP LOADS TO A MINIMUM OF 20 AMPERES AT 347 VAC (SINGLE POLE) AND 600 VAC (DOUBLE POLE).
- CONTAINED IN A MOLDED CASE CONTAINING BOTH HIGH AND LOW VOLTAGE TERMINALS AND SHALL HAVE A BUILT-IN OPERATING LEVER MARKED ON/OFF FOR MANUAL SWITCHING AT THE RELAY PANEL.
- RELAY LOAD CONTACTS SHALL BE ABLE TO SUSTAIN AVAILABLE FAULT CURRENTS AT THE LOCATION OF THE RELAY WITHIN THE ELECTRICAL SYSTEM AS INDICATED IN THE LIGHTING CONTROL SCHEDULE(S). ALL RELAYS SHALL BE CONSPICUOUSLY MARKED WITH THEIR RESPECTIVE SHORT CIRCUIT CURRENT RATING (SCCR). IN NO CASE SHALL A RELAY HAVE AN SCCR LESS THAN 14,000 AMPS.
- SHOULD A RELAY(S) INTERRUPTING CAPACITY BE INADEQUATE BASED ON AVAILABLE SYSTEM FAULT CURRENT, THE CONTRACTOR SHALL MAKE ONE OR MORE OF THE FOLLOWING MODIFICATIONS:
 - EXTEND THE LENGTH OF THE BRANCH CIRCUIT WIRING TO REDUCE THE AVAILABLE FAULT CURRENT TO A LEVEL THAT IS BELOW THE SCCR RATING OF THE RELAY(S).
 - RELOCATE LCP(S) IN ORDER TO EXTEND BRANCH CIRCUIT CONDUCTORS TO REDUCE THE AVAILABLE FAULT CURRENT TO A LEVEL THAT IS BELOW THE SCCR RATING OF THE RELAY(S).
 - UTILIZE A MECHANICALLY-HELD LATCHING LIGHTING CONTACTOR(S) WITH SUFFICIENT SCCR RATING(S). MINIMUM SCCR SHALL BE 14,000A. CONTACTOR(S) SHALL BE OF THE TYPE THAT AUTOMATICALLY CLOSSES UPON LOSS OF CONTROL POWER. CONTACTOR(S) SHALL CARRY CIRCUIT CURRENT WHICH, IN TURN, SHALL BE CONTROLLED BY THE LCP RELAY. NUMBER OF CONTACT POLES SHALL EQUAL NUMBER OF RELAY POLES SHOWN IN THE LIGHTING CONTROL PANEL SCHEDULE(S) FOR THAT PARTICULAR LOAD (EXAMPLE A 2-POLE RELAY REQUIRES USE OF A 2-POLE LIGHTING CONTACTOR). USING MULTIPLE CONTACTORS TO COMBINE OUTPUTS/RELAYS OF DIFFERENT RELAYS IS EXPRESSLY PROHIBITED. EACH CONTACTOR SHALL BE LABELED WITH THE CONTROLLING RELAY LCP NAME AND CONTROLLING RELAY ID #. SEE LABELING REQUIREMENTS WITHIN THE GENERAL ELECTRICAL SPECIFICATION. CONTACTORS SHALL BE LOCATED IN A NEMA ENCLOSURE ABOVE OR ADJACENT TO THEIR SERVING LIGHTING CONTROL PANEL. CONTRACTOR SHALL INCLUDE CONTACTOR CABINET LOCATION ON 1/4" SCALE ELECTRICAL ROOM SHOP DRAWING SUBMITTAL(S).

LIGHTING CONTROL SYSTEM SPECIFICATIONS - CONTD:

5. OVERRIDE AND LOCAL SWITCHES SHALL HAVE THE FOLLOWING CHARACTERISTICS:

- INTEGRAL LED'S INDICATING BOTH LOCATION (GREEN LIGHT ALWAYS ON), ON (RED LIGHT ON), AND OFF POSITIONS (RED LIGHT OFF).
- IDENTIFIED/LABELLED WITH A DESCRIPTION OF THE AREA CONTROLLED PER THE CONTROL PANEL SCHEDULE. SEE LCP FACE PLATE DETAILS FOR MORE INFORMATION.
- EACH SWITCH BUTTON SHALL BE 100% FIELD PROGRAMMABLE VIA LIGHTING CONTROL PANEL OR REMOTELY VIA LIGHTING CONTROL SOFTWARE TO CONTROL ANY RELAY(S) IN ANY LIGHTING CONTROL PANEL(S).
- EACH BUTTON SHALL BE CAPABLE OF BEING PROGRAMMED FOR ON ONLY, OFF ONLY, ON/OFF (TOGGLE), RAISE (DIM UP) AND LOWER (DIM DOWN). SWITCHES REQUIRING LOW VOLTAGE CONTROL WIRES TO BE MOVED FROM ONE INPUT TERMINAL TO ANOTHER TO ACCOMPLISH THESE FUNCTIONS ARE NOT ACCEPTABLE.
- IN ADDITION, SWITCHES LOCATED IN HIGH ABUSE AREAS OR IDENTIFIED ON PLANS AS HIGH-ABUSE SWITCHES (GYMNASIUMS, MECHANICAL EQUIPMENT ROOMS, MACHINE ROOMS, EXTERIOR SPORT COURTS, KITCHENS, ETC.) SHALL BE VANDAL RESISTANT, CONTAIN NO MOVING PARTS, AND BE TOUCH SENSITIVE AND AVAILABLE WITH UP TO TWO BUTTONS IN A SINGLE GANG. MULTI GANG VERSIONS SHALL ALSO BE AVAILABLE. HIGH ABUSE SWITCHES SHALL BE STAINLESS STEEL AND CAPABLE OF HANDLING BOTH HIGH ABUSE AND WASH DOWN LOCATIONS. EACH HIGH ABUSE SWITCH SHALL BE ABLE TO BE PROGRAMMED FOR ON, OFF, TOGGLE OR MAINTAIN OPERATION. SWITCHES MUST BE CAPABLE OF HANDLING ELECTROSTATIC DISCHARGES OF AT LEAST 30,000 VOLTS (10MSPARK) WITHOUT ANY INTERRUPTION OR FAILURE IN OPERATION.
- KEYED SWITCHES, IF REQUIRED ON PLANS, SHALL BE PROGRAMMABLE WITH PILOT LIGHT, AVAILABLE AS MOMENTARY "ON/OFF" OR AS CAPTIVE AS REQUIRED BY CALIFORNIA TITLE 24.

6. THE LIGHTING CONTROL SYSTEM CONTROLLER(S) SHALL BE LOCATED IN EACH MASTER AND EACH EMERGENCY LIGHTING CONTROL PANEL AND HAVE THE FOLLOWING CHARACTERISTICS:

- CONTAIN 1 OR MORE DIGITAL TIME CLOCK(S) (DTCs) THAT CONTROL AND PROGRAM THE ENTIRE LIGHTING CONTROL SYSTEM AND SUPPLY ALL TIME FUNCTIONS AND ACCEPT INTERFACE INPUTS AS DEFINED IN THE MASTER LIGHTING CONTROL SCHEDULE.
- LOCAL PROGRAMMING SHALL BE USER-FRIENDLY VIA BUTTONS ON AN LED OR LCD DISPLAY WITH ALL NECESSARY INSTRUCTIONS PRINTED ON THE "CONTROLLER" LABEL. NO AUXILIARY INSTRUCTION MANUALS SHALL BE REQUIRED.
- DIGITAL TIME CLOCK(S) FEATURES INCLUDE SEVEN DAY / HOLIDAY CONTROL, MINIMUM OF 32 DISCRETE SCHEDULES, EACH OF WHICH HAS ONE SET OF "ON" AND "OFF" TIMES PER DAY FOR EACH DAY OF THE WEEK AND FOR EACH OF TWO HOLIDAY LISTS, 15 YEAR NON-VOLATILE MEMORY TO MAINTAIN PROGRAMMING AND CLOCK TIME UPON LOSS OF POWER.
- ALLOW FOR AUXILIARY INPUT OF A MAINTAINED OR A MOMENTARY PULSE FROM OTHER BUILDING SYSTEMS (SECURITY, HVAC, BMS, CCTV, ETC.)
- PROVIDE A FLICK WARN OPTION FOR ALL OF THE VARIOUS CONTROL ZONES. A LOCAL SWITCH SHALL BE CAPABLE OF OVERRIDING AN OFF SWEEP WITHIN ITS RESPECTIVE LIGHTING CONTROL ZONE(S) DURING THE 5 MINUTE WARNING PERIOD. FLICK-WARN OPTION SHALL NOT BE ENABLED ON CIRCUITS SUPPORTING HID LAMP TYPES.
- SHALL CONTAIN PRE LOADED SOFTWARE CONFIGURED TO PRESENT A VISUAL REPRESENTATION OF EACH DEVICE ON THE SYSTEM, SHOW REAL TIME STATUS AND THE ABILITY TO CHANGE THE STATUS OF ANY INDIVIDUAL DEVICE, RELAY OR ZONE. THE SYSTEM SHALL BE CAPABLE OF RUNNING AN UPGRADED VECTOR-BASED GRAPHICS LIGHTING CONTROL SOFTWARE. THE SOFTWARE SHALL BE ACCESSIBLE TO A PC VIA MODEM AND/OR LOCAL AREA NETWORK CONNECTION.

7. THE PHOTOMETRIC SENSOR SHALL BE:

- CAPABLE OF SENSING LIGHT LEVEL CHANGES AS FOLLOWS: 1 TO 10, 1 TO 100, 1 TO 1000, AND 1 TO 10,000 FOOT-CANDELS.
- UNITS USED FOR EXTERIOR LIGHT CONTROL SHALL PROVIDE MULTIPLE TRIPS POINT FROM 1 ROOF MOUNTED UNIT. ALL TRIPS POINTS SHALL BE ABLE TO BE CHANGED LOCALLY AT THE NEAREST LIGHTING CONTROL PANEL CONTROLLER OR REMOTELY VIA LAN OR MODEM.

8. WHEN THE MASTER LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES COPPER COMMUNICATIONS MEDIA, PROVIDE MULTICONDUCTOR #18 COPPER WIRE OR LARGER AS RECOMMENDED BY THE MANUFACTURER AS NECESSARY TO CONNECT ALL ELEMENTS OF THE LIGHTING CONTROL SYSTEM. WHEN THE MASTER LIGHTING CONTROL PANEL SCHEDULE INDICATES FIBER COMMUNICATIONS MEDIA, PROVIDE FIBER OPTIC TRANSCEIVERS AS REQUIRED TO CONNECT VARIOUS MASTER AND/OR SATELLITE LIGHTING CONTROL PANELS TOGETHER VIA FIBER OPTIC CABLING. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING/EXAMINING TERMINATION POINTS, ROUTING AND GRADE OF FIBER OPTIC CABLING ALLOCATED FOR USE BY THE LIGHTING CONTROL SYSTEM AND ACCOMMODATE SUCH IN THE DESIGN OF THE LIGHTING CONTROL SYSTEM. SHOULD ANY ASPECT OF THE NEW OR EXISTING FIBER OPTIC CABLING SYSTEM BE UNCLEAR, THE CONTRACTOR SHALL ISSUE PRE-BID RFIS AS NECESSARY TO GAIN A COMPLETE UNDERSTANDING OF THE SYSTEM IN ORDER TO MAKE A COMPLETE LIGHTING CONTROL SYSTEM BID.

9. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES "IDCS/DPCS" INTERFACE, PROVIDE A DIGITAL INTERFACE OR CONTACT CLOSURE OUTPUT(S) FOR "FLICK-WARN", SWEEP-OFF AND SWEEP-ON OPERATION OF ANY DPCS UNIT(S) AND/OR IDCS UNIT(S) AS INDICATED IN IDCS OR DPCS SCHEDULES.

10. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES A "BMS" OPTION, PROVIDE ONE OR MORE OF DIRECT DIGITAL INTERFACES TO BUILDING AUTOMATION SYSTEMS:

"BACNET", "METASYS (N2)", "LON WORKS" AND "MODBUS" INTERFACE OPTIONS SHALL ALLOW THE LCP SYSTEM TO ACCEPT ON/OFF COMMANDS, TIME SCHEDULES AND REPORT STATUS OF ALL RELAYS IN ALL PANELS IN REAL TIME VIA THEIR RESPECTIVE COMMUNICATIONS PROTOCOL(S). INTERFACE CARDS SHALL SELF POPULATE EACH INDIVIDUAL RELAY AND EACH GROUP TO THE BMS.

"DMX512A" INTERFACES SHALL ALLOW THE LCP SYSTEM TO ACCEPT 14 GLOBAL DMX512A COMMANDS, EACH OF WHICH CAN BE MODIFIED LOCALLY OR REMOTELY USING LIGHTING CONTROLS MANUFACTURER SUPPLIED SOFTWARE. DMX INTERFACE CARD SHALL BE CONNECTED TO THE LIGHTING CONTROL SYSTEM IN SUCH A WAY AS TO PROVIDE REAL TIME RESPONSE FROM THE LIGHTING CONTROL SYSTEM TO DMX COMMANDS.

"CONTACT" INTERFACES SHALL CONSIST OF DRY CONTACT INPUT INTERFACE CARD(S) THAT PROVIDES 14 PROGRAMMABLE DRY CONTACT CLOSURE INPUTS PER CARD. USE SHIELDED CABLE TO CONNECT INPUT DEVICES TO INTERFACE CARD(S). CONTACT CLOSURE INTERFACE CARDS SHALL ALLOW THE LCP SYSTEM TO ACCEPT ON/OFF COMMANDS FOR INDIVIDUAL RELAYS OR GROUPS OF RELAYS BASED ON BMS TIME SCHEDULES.

CONTRACTOR SHALL PROVIDE PROTOCOL POINT ID/REGISTERS/BITMAPS FOR USE BY OTHERS TO ENABLE REPORTING/MONITORING/CONTROLLING/ADJUSTING OF THE LIGHTING CONTROL SYSTEM EQUIPMENT OPERATING PARAMETERS TO BUILDING MANAGEMENT SYSTEM (BMS) VIA BMS GATEWAY INTERFACE DEVICE AND OTHER REQUIRED ACCESSORIES. SEE BMS DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

THE E.C. SHALL INCLUDE ALL COSTS IN THE BASE BID TO INTEGRATE THE LIGHTING CONTROL SYSTEM WITH THE SPECIFIED BMS SYSTEM AND SYSTEM PROTOCOL, WHICH INCLUDES, BUT IS NOT LIMITED TO, COMMUNICATIONS INTERFACE MODULES, ALONG WITH POINT ID LISTS/REGISTERS, BITMAPS AND/OR CAD FILES OF EACH PIECE OF ELECTRICAL EQUIPMENT (PLAN VIEW/ELEVATION VIEW) AND MAN-HOURS AS NECESSARY TO ASSIST THE BMS CONTRACTOR IN COMMISSIONING THE BMS SYSTEM AS IT RELATES TO THE LIGHTING CONTROL SYSTEM WITH WHICH IT COMMUNICATES.

11. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES A "NETWORK INTERFACE" OPTION, PROVIDE ONE OR MORE OF THE FOLLOWING:

- "SNMP" INTERFACE OPTION SHALL ALLOW THE LCP SYSTEM, VIA PRE-INSTALLED LIGHTING CONTROL SYSTEM SOFTWARE, TO COMMUNICATE OVER THE LOCAL AREA NETWORK (LAN) TO ANY PC ON THE LAN USING LCP MANUFACTURER-FURNISHED CLIENT PC-COMPATIBLE SOFTWARE. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO INSTALL AND CONFIGURE A COPY OF SOFTWARE ON OWNER-FURNISHED PC OR SERVER AND MAKE FULLY FUNCTIONAL IN ALL ASPECTS.
- "WEB" INTERFACE OPTION SHALL ALLOW THE LCP SYSTEM, VIA PRE-INSTALLED LIGHTING CONTROL SYSTEM HTML WEB SERVER SOFTWARE, TO COMMUNICATE OVER THE LOCAL AREA NETWORK (LAN) TO ANY PC ON THE LAN USING ANY WEB BROWSER. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO CONFIGURE SOFTWARE TO OPERATE ON OWNER-FURNISHED LOCAL AREA NETWORK AND MAKE FULLY FUNCTIONAL IN ALL ASPECTS.

12. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES "MODEM" COMMUNICATIONS ARE REQUIRED, PROVIDE A PROGRAMMABLE FAX MODEM TO REMOTELY COMMUNICATE WITH THE LIGHTING CONTROL SYSTEM AND ITS PRE-LOADED SOFTWARE DESCRIBED ELSEWHERE IN THIS SPECIFICATION. CONTRACTOR SHALL INCLUDE ALL COSTS TO PROVIDE AN ANALOG LINE/PHONE JACK AS REQUIRED FOR THIS CONNECTION. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO CONFIGURE SOFTWARE TO OPERATE ON INSTALL ONE COPY OF SOFTWARE ON OWNER-FURNISHED COMPUTER AND MAKE SYSTEM SOFTWARE FULLY FUNCTIONAL IN ALL ASPECTS.

13. THE LOW VOLTAGE LIGHTING CONTROL SYSTEM SHALL BE PROGRAMMED / APPROVED BY A MANUFACTURER'S REPRESENTATIVE. CONTRACTOR TO INCLUDE THREE (3) HOURS OF INSTRUCTION PER MASTER PANEL. INSTRUCTIONS SHALL BE BY THE MANUFACTURER'S REPRESENTATIVE IN THE PRESENCE OF THE OWNER, SET-UP, COMMISSIONING OF THE LIGHTING CONTROL SYSTEM, AND OWNER INSTRUCTION INCLUDES:

- CONFIRMATION OF ENTIRE SYSTEM OPERATION AND COMMUNICATION TO EACH DEVICE.
- CONFIRMATION OF OPERATION OF INDIVIDUAL RELAYS, SWITCHES, OCCUPANCY SENSORS AND DAYLIGHT SENSORS.
- CONFIRMATION OF SYSTEM PROGRAMMING, PHOTOCELL SETTINGS, OVERRIDE SETTINGS, ETC.
- PROVIDE TRAINING TO COVER INSTALLATION, MAINTENANCE, TROUBLESHOOTING, PROGRAMMING, AND REPAIR AND OPERATION OF THE LIGHTING CONTROL SYSTEM.

14. COMPLY WITH APPLICABLE ENERGY CODE LIGHTING CONTROL SYSTEM ACCEPTANCE REQUIREMENTS TO INCLUDE VERIFICATION THAT LIGHTING CONTROLS WERE INSTALLED AND CALIBRATED CORRECTLY. THESE TESTS MAY REQUIRE THAT A RESPONSIBLE PARTY CERTIFY THAT CONTROLS ARE INSTALLED AND CALIBRATED PROPERLY. THIS SHALL BE THE INSTALLING CONTRACTOR'S RESPONSIBILITY.

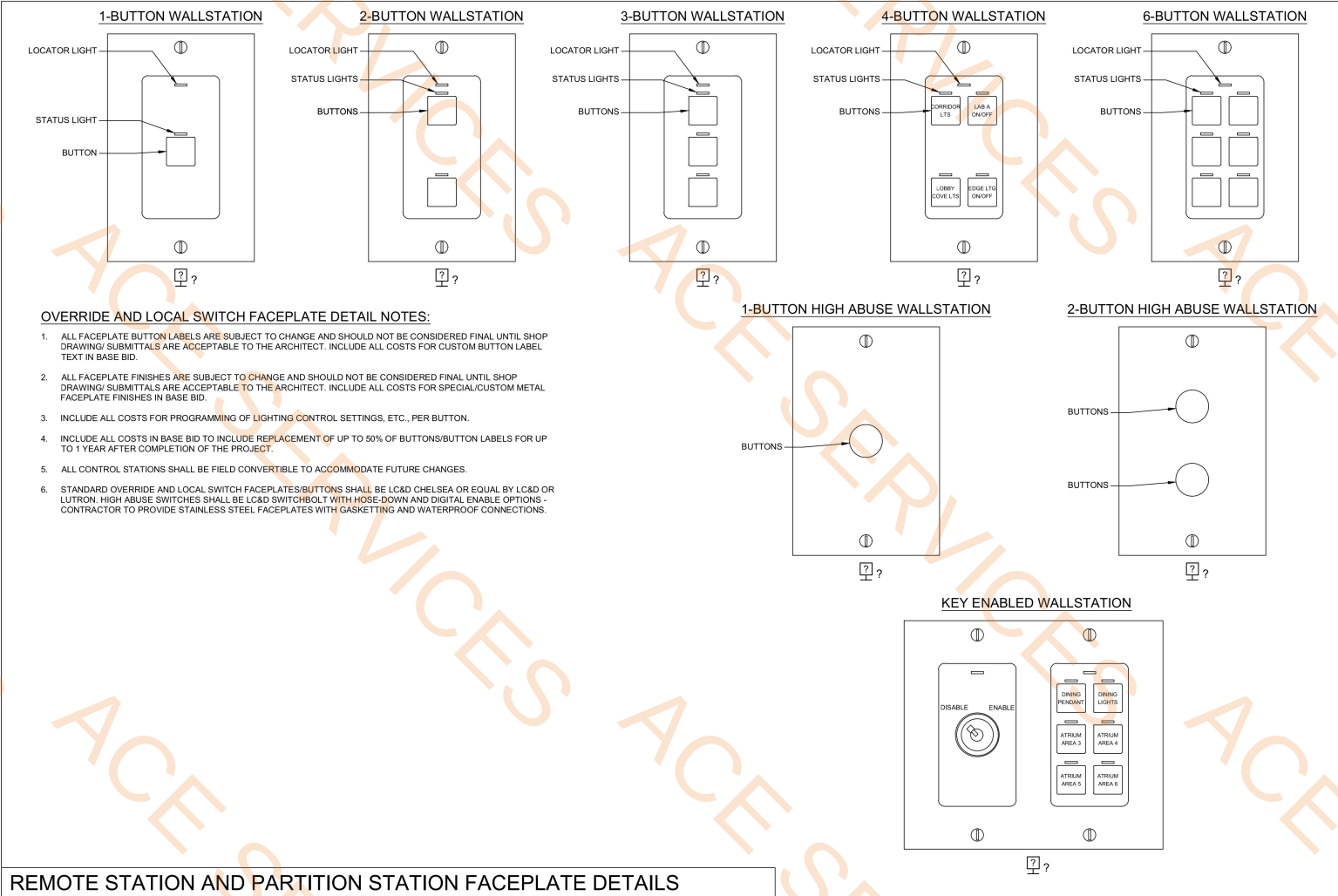
15. SHOP DRAWINGS SHALL BE SUBMITTED PER THE GENERAL SPECIFICATION REQUIREMENTS SHOWING ALL COMPONENTS, WIRING CONFIGURATIONS AND PROGRAMMING SCHEDULES. SUBMITTALS SHALL BE MADE SPECIFIC TO THE PROJECT - GENERIC SUBMITTALS SHALL BE REJECTED.

16. THE LOW VOLTAGE LIGHTING CONTROL SYSTEM SHALL BE MANUFACTURED BY COOPER, WATTSTOPPER OR EQUAL SYSTEM BY NULIGHT

MASTER LIGHTING CONTROL PANEL SCHEDULE -										LCP
MOUNTING	EXTERIOR PHOTO CELL	COMM MEDIA	DPCS / IDCS INTERFACE	BMS INTERFACE	NETWORK INTERFACE	MODEM	AVAILABLE FAULT CURRENT	REMARKS		
SURFACE	YES	COPPER	YES	CONTACT	SNMP	YES	-	-	-	
PANEL#	CKT#	RELAY	DESCRIPTION			LOCAL SWITCH	OVERRIDE SWITCH	ZONE NUMBER	MISCELLANEOUS	
B	25	1	TREE UP LIGHTS			-	-	1	-	
B	27	2	BOLLARD LTG / BIOLA LETTERS LTG			-	-	1	-	
-	-	3	SPARE			-	-	-	-	
-	-	4	SPARE			-	-	-	-	
-	-	5	SPARE			-	-	-	-	
-	-	6	SPARE			-	-	-	-	
-	-	7	SPARE			-	-	-	-	
-	-	8	SPARE			-	-	-	-	
ZONE NUMBER	TIME	PHOTO	DESCRIPTION			ZONE NUMBER	TIME	PHOTO	DESCRIPTION	
1	-	X	ON	OFF	SECURITY LIGHTING	5	-	-	-	
2	0600	2100	-	-	NORMAL BUSINESS HOURS	6	-	-	-	
3	-	2200	X	-	SITE SIGNAGE	7	-	-	-	
4	-	-	-	-	-	8	-	-	-	

- LCP Switch_ Wall Mounted
- LCP Override Switch_ Wall Mounted
- Exterior Photocell Mounted at Exterior Rooftop
- IDCS/DPCS Unit
- BMS Option
- Mater LCP
- Satellite LCP
- Emergency LCP

- 1.0 EA
- 1.0 EA
- 1.0 EA
- 1.0 EA
- 1.0 EA
- 1.0 EA
- 1.0 EA
- 1.0 EA



REMOTE STATION AND PARTITION STATION FACEPLATE DETAILS

Biola University
Main Entry Renovation

13800 Biola Ave,
La Mirada, California 90639

Client

Biola University

13800 Biola Ave,
La Mirada, California 90639
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WSP

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WSP Job #: US004858.1728

Revisions	By	Date

Job Number
Design Staff
Project Manager
Principal

-
EM
BN
RS

LIGHTING
CONTROL
PANEL

E1.404

Construction Documentation
12 December, 2025