# REPLACE LIGHTING CLC BALLROOM SC STATE PROJECT #H34-I369

## UNIVERSITY OF SOUTH CAROLINA UPSTATE

Spartanburg, South Carolina

## DESIGN TEAM

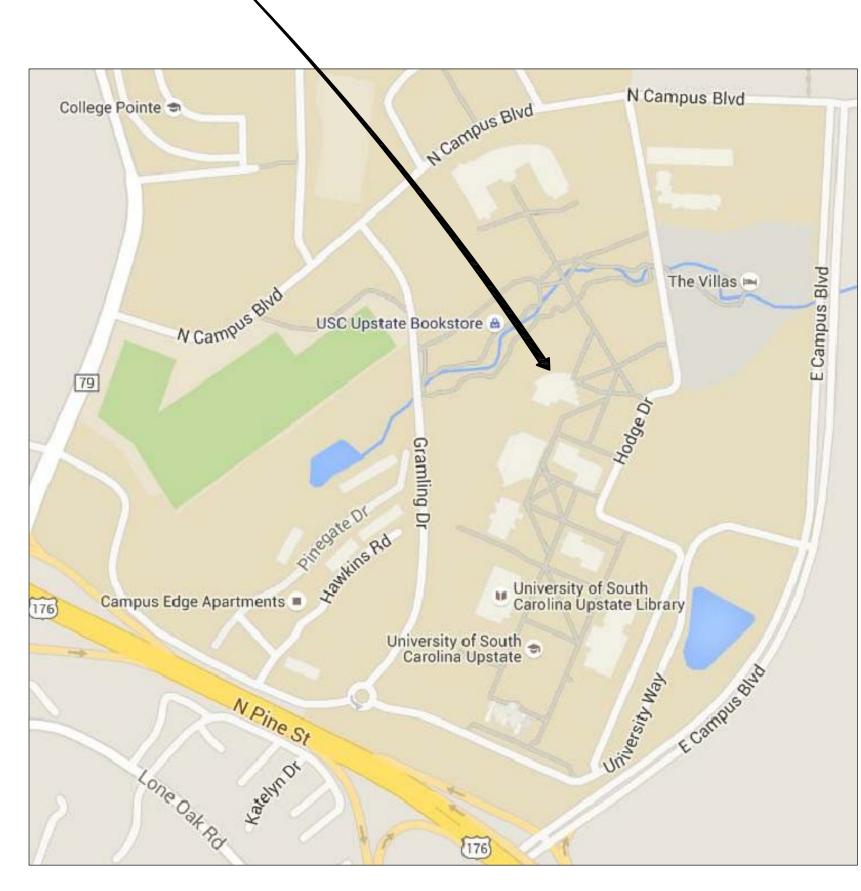
## **OWNER**

UNIVERSITY OF SOUTH CAROLINA UPSTATE 800 UNIVERSITY WAY SPARTANBURG, SC 29303 (864) 503-5538

#### ELECTRICAL ENGINEER

LAND ENGINEERING ASSOCIATES, LLC 262 SANDHURST ROAD, SUITE 101 COLUMBIA, SC 29210 (803) 528-1437 JOSEPH W. LAND, P.E.

## CAMPUS LIFE CENTER (CLC) AND BALLROOM



VICINITY MAP

## INDEX OF DRAWINGS

PROJECT TITLE SHEET

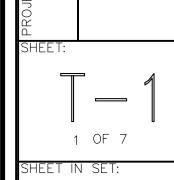
## ELECTRICAL DRAWINGS

E-1	GENERAL NOTES, LEGEND, DETAILS, AND SCHEDULES
E-2	PARTIAL THIRD FLOOR LIGHTING DEMOLITION PLAN

BALLROOM LIGHTING DEMOLITION PLAN

PARTIAL THIRD FLOOR LIGHTING RENOVATION PLAN BALLROOM LIGHTING RENOVATION PLAN

PARTIAL FIRST FLOOR POWER PLAN



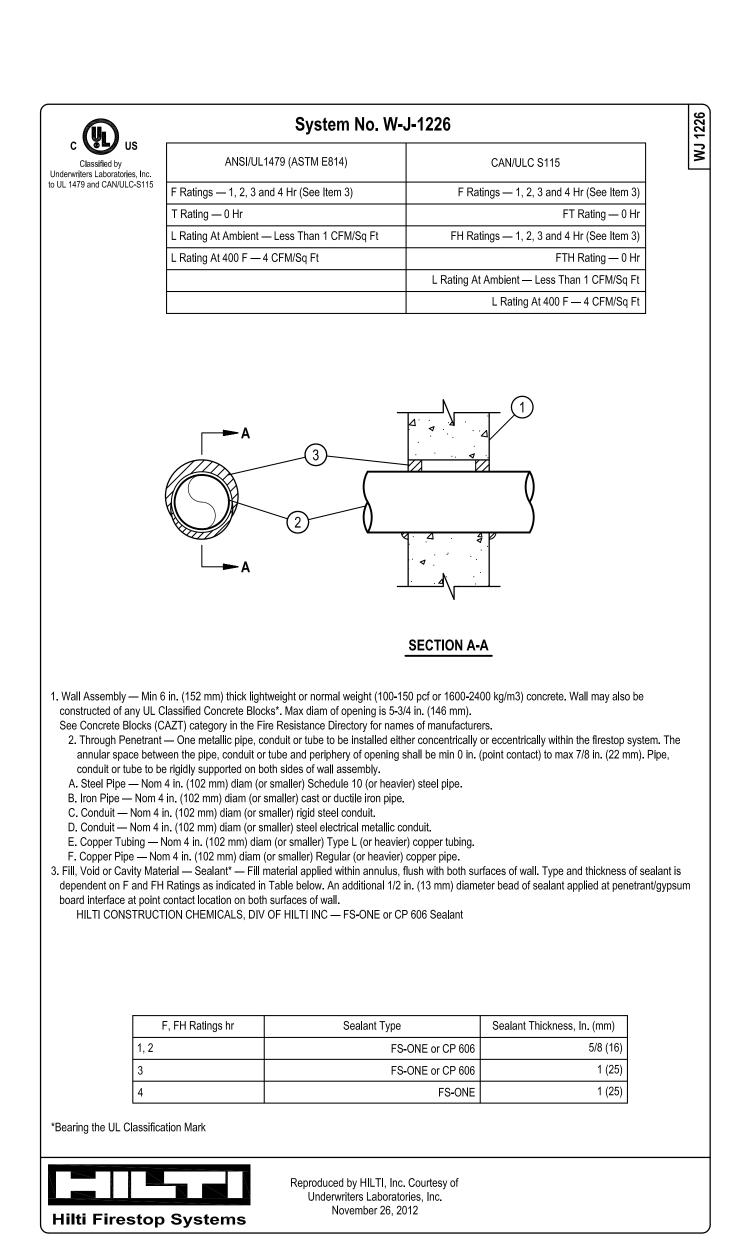
LIGHTING FIXTURE SCHEDULE											
SYMBOL	TYPE	DESCRIPTION	MANUFACTURER	MODEL NUMBER	OPTICAL ELEMENT	MOUNTING	VOLTS	LIGHT SOURCE			
·	Α	2'x2' DIRECT/INDIRECT L.E.D. STATIC GRID TROFFER.	METALUX	22EN-LD1-25-UNV-L840-CD1 with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	DIRECT/ INDIRECT w/CENTER BASKET	CEILING GRID RECESSED	120/277V UNIVERS.	L.E.D 2600 lumens, 4000K			
$\boxtimes$	AE	SAME AS FIXTURE TYPE "A" EXCEPT CONNECTED TO A GENERATOR-BACKED CIRCUIT.	METALUX	22EN-LD1-25-UNV-L840-CD1 with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	DIRECT/ INDIRECT w/CENTER BASKET	CEILING GRID RECESSED	120/277V UNIVERS.	L.E.D 2600 lumens, 4000K			
•	В	2'x2' STATIC DIRECT/INDIRECT L.E.D. GRID TROFFER.	METALUX	22EN-LD1-34-UNV-L840-CD1 with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	DIRECT/ INDIRECT w/CENTER BASKET	CEILING GRID RECESSED	120/277V UNIVERS.	L.E.D 3450 lumens, 4000K			
$\boxtimes$	BE	SAME AS FIXTURE TYPE "B" EXCEPT CONNECTED TO A GENERATOR-BACKED CIRCUIT.	METALUX	22EN-LD1-34-UNV-L840-CD1 with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	DIRECT/ INDIRECT w/CENTER BASKET	CEILING GRID RECESSED	120/277V UNIVERS.	L.E.D 3450 lumens, 4000K			
0	С	6" L.E.D. RECESSED DOWNLIGHT WITH DAMP LOCATION LISTING (FOR REMODEL APPLICATIONS).	COOPER	LD6AR-30-D010TE-ERM6A30-9-40- 6LM1-H-WF with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	CLEAR SEMI SPECULAR WHITE FLANGE	CEILING RECESSED	120/277V UNIVERS.	L.E.D 3000 lumens, 4000k			
•	CE	SAME AS FIXTURE TYPE "C" EXCEPT CONNECTED TO A GENERATOR-BACKED CIRCUIT.	COOPER	LD6AR-30-D010TE-ERM6A30-9-40- 6LM1-H-WF with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	CLEAR SEMI SPECULAR WHITE FLANGE	CEILING RECESSED	120/277V UNIVERS.	L.E.D 3000 lumens, 4000k			
\ <del>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</del>	D	8' WHITE TRACK LIGHTING SYSTEM WITH SIX L.E.D. TRACK/ SPOT LIGHTS (WHITE) AND DMX DIMMING FEATURE.	ALTMAN	(1) #ASL23320WH SMART-TRACKS (CUT TO FIT) WITH COUPLER & DMX. (6) #SSIQ38Y-RGBA-WHITE LED PAR TRACK HEADS (50 WATT)	WHITE TRACK HEADS WITH P95 DIFFUSION LENS	CEILING MOUNT VIA THREADED RODS	120V	L.E.D 6 HEADS, 50 WATTS AT FULL RGBA			
Ю	F	DECORATIVE L.E.D. WALL SCONCE WITH DIMMING DRIVER.	BROWNLEE	1375-RC-B12LED-40K-DIM with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	WHITE ACRYLIC	MOUNT OVER EXISTING BOX	120/277V UNIVERS.	L.E.D 1400 lumens, 4000k			
⊗ +⊗	-	EDGE-LIT L.E.D. EXIT SIGN WITH SINGLE FACE AND GREEN LETTERING. PROVIDE ARROWS/ CHEVRONS AS SHOWN ON PLAN.	SURE-LIGHTS	EUR-60-1-G with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	GREEN LETTERING	UNIVERSAL WALL OR CEILING	120/277V UNIVERS.	L.E.D COMPLY WITH 2012 IBC			
•	-	EDGE-LIT L.E.D. EXIT SIGN WITH DOUBLE FACE AND GREEN LETTERING. PROVIDE ARROWS/CHEVRONS AS SHOWN ON PLAN.	SURE-LIGHTS	EUR-60-2-G with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	GREEN LETTERING	UNIVERSAL WALL OR CEILING	120/277V UNIVERS.	L.E.D COMPLY WITH 2012 IBC			

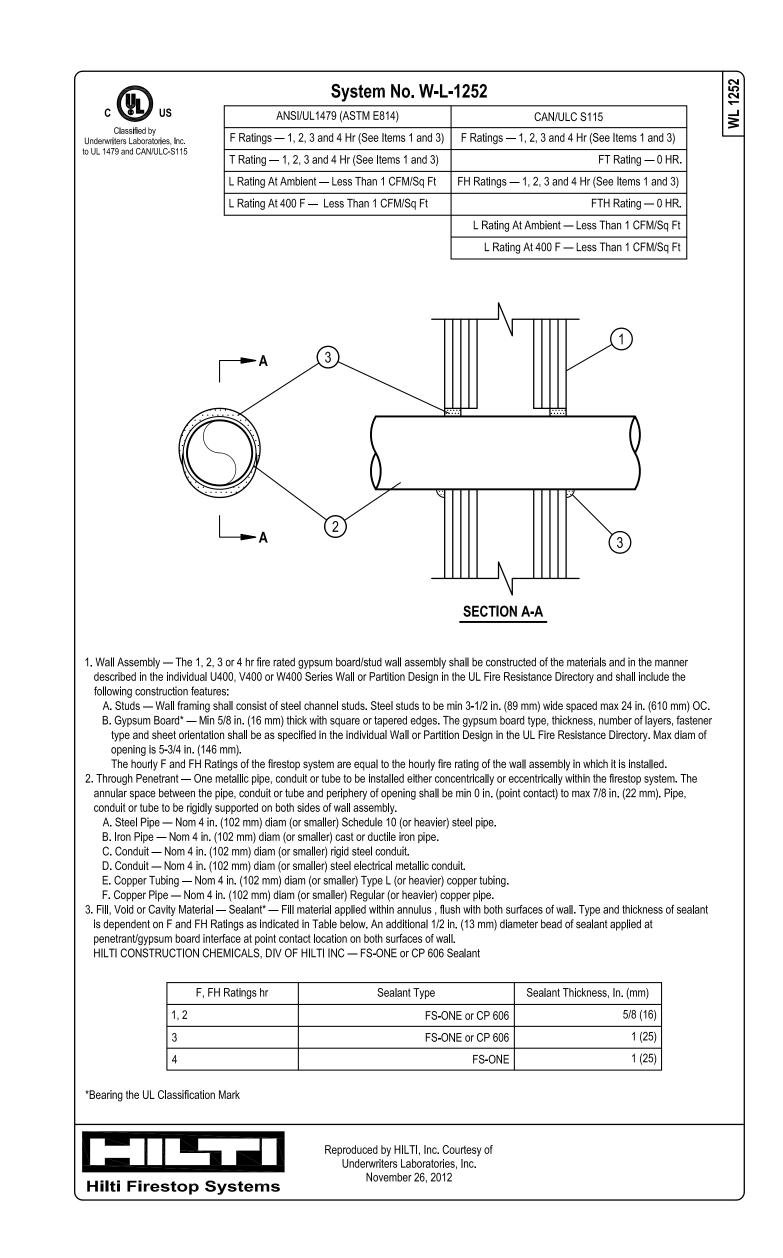
NOTE: PROVIDE GRID HOLD-DOWN CLIPS FOR EACH 2'x2' FIXTURE AS REQUIRED TO COMPLY WITH ASTM E-580 AND THE INTERNATIONAL BUILDING CODE.

## GENERAL DEMOLITION NOTES

- REMOVE AND LEGALLY DISPOSE OF ALL EXISTING LIGHTING FIXTURES, EXIT SIGNS AND ASSOCIATED BALLASTS AND LAMPS.
- . THE CONTRACTOR SHALL VISIT THE SITE/BUILDING TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID AND SHALL INCLUDE ALL WORK REQUIRED FOR COMPLETE

DEMOLITION IN HIS BID.









## GENERAL CONSTRUCTION NOTES

. PROVIDE ALL WORK IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:

> INTERNATIONAL BUILDING CODE 2012 EDITION

NFPA 70 - NATIONAL ELECTRICAL CODE 2011 EDITION

- 2. PROVIDE FIXTURES AS SHOWN IN THE LIGHTING FIXTURE SCHEDULE OR PRIOR-APPROVED EQUALS.
- TESTED & LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY. 4. PROVIDE SEISMIC WIRE SUPPORTS TO SUPPORT ALL NEW LIGHTING FIXTURES -

3. ALL FIXTURES AND ELECTRICAL MATERIALS SHALL BE U.L. TESTED & LISTED OR BE

- ENSURE INSTALLATION COMPLIES WITH ASTM E-580 AND THE INTERNATIONAL BUILDING CODE (TWO WIRES FOR EACH TROFFER AND ONE WIRE FOR EACH DOWNLIGHT). RACEWAYS SHALL BE EMT WITH COMPRESSION TYPE FITTINGS UNLESS NOTED OR
- DETAILED OTHERWISE. JUNCTION BOXES SHALL BE STEEL TYPE WITH SCREW COVER, SIZED AND SUPPORTED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. INSTALL ELECTRICAL SYSTEMS WITHOUT INTERFERING WITH DUCTS, PIPES, STRUCTURAL MEMBERS, OR OTHER SYSTEMS. PROVIDE A U.L. LISTED 2-HOUR RATED FIRESTOP SYSTEM FOR ALL WALL AND CEILING/FLOOR CONDUIT PENETRATIONS (HILTI OR EQUAL).
- . THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS BEFORE PLACING IN OPERATION. RESTORE FINISHED SURFACES IF DAMAGED AND DELIVER THE ENTIRE INSTALLATION IN AN APPROVED CONDITION. THE CONTRACTOR SHALL INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF ALL FIXTURES AND SYSTEMS. FURNISH 3 SETS OF OPERATION AND MAINTENANCE MANUALS TO THE OWNER FOR THE INSTALLED LIGHTING SYSTEM.
- THE CONTRACTOR SHALL GUARANTEE THE WORK INSTALLED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR AFTER DATE OF FINAL ACCEPTANCE. DEFECTS WHICH APPEAR AS A RESULT OF NORMAL USAGE SHALL BE REMEDIED BY THE CONTRACTOR TO THE COMPLETE SATISFACTION OF THE OWNER WITHOUT COST TO THE OWNER. SEE SPECIAL LIGHTING WARRANTY REQUIREMENTS IN LIGHTING FIXTURE SCHEDULE.
- B. CUTTING, DRILLING, AND PATCHING: PROVIDE CHASES, SLOTS, AND OPENINGS IN EXISTING BUILDING COMPONENTS TO ALLOW FOR ELECTRICAL INSTALLATIONS. PERFORM CUTTING, DRILLING, FITTING, AND PATCHING REQUIRED TO:

B) REMOVE AND REPLACE DEFECTIVE WORK THAT DOES NOT CONFORM TO

CONCEALED WORK.

- A) INSTALL EQUIPMENT, MATERIALS, AND RACEWAYS IN EXISTING STRUCTURES.
- REQUIREMENTS OF THE CONTRACT DOCUMENTS. C) UPON WRITTEN INSTRUCTIONS FROM THE ARCHITECT/ENGINEER, UNCOVER AND RESTORE WORK TO PROVIDE FOR ARCHITECT/ENGINEER OBSERVATION OF

PROTECT EXISTING STRUCTURES, FURNISHINGS, FINISHES, MECHANICAL SYSTEMS, AND ELECTRICAL SYSTEMS WHILE PERFORMING CUTTING, DRILLING, FITTING, AND PATCHING.

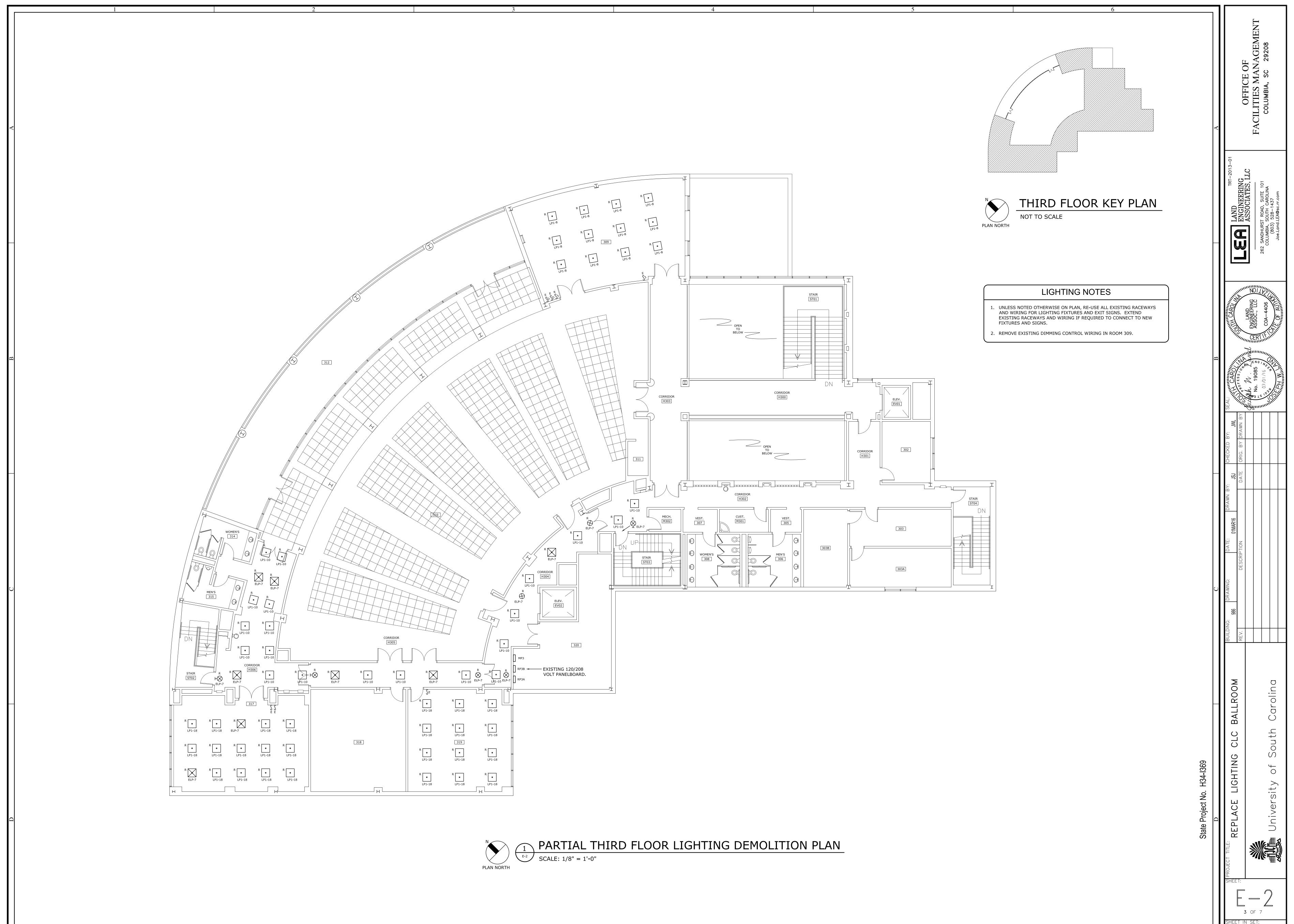
PATCH EXISTING SURFACES AND BUILDING COMPONENTS USING NEW MATERIALS THAT MATCH EXISTING MATERIALS. PATCHING SHALL BE PERFORMED BY EXPERIENCED INSTALLERS.

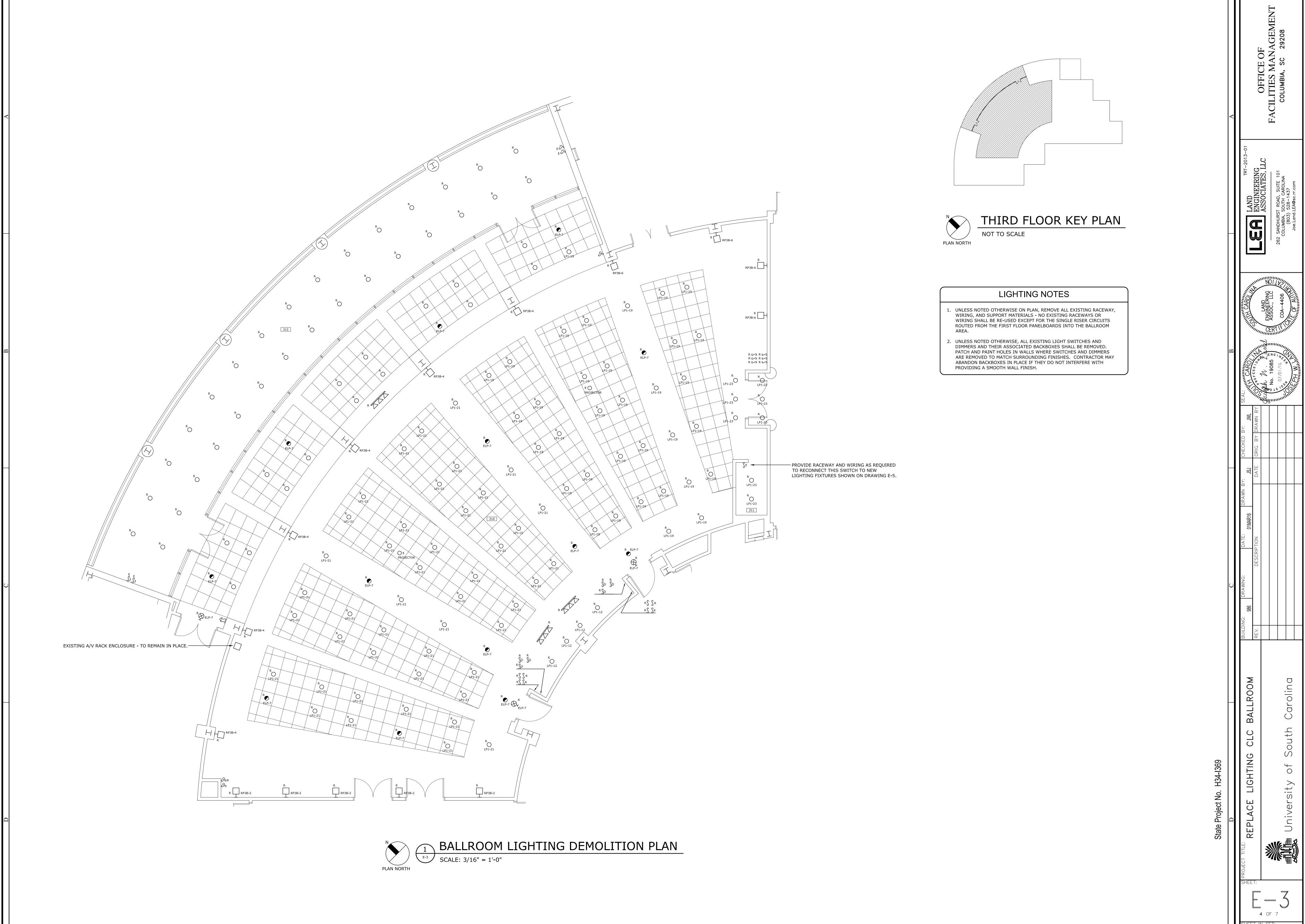
ELECTRICAL LEGEND							
SYMBOL	DESCRIPTION						
A •	LIGHTING FIXTURE; TYPE AND CIRCUIT NUMBER AS INDICATED ON PLAN. SEE THE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL SYMBOLS AND TYPES.						
_	CRESTRON RACK ENCLOSURE FOR HEAD-END EQUIPMENT. FLUSH MOUNT ENCLOSURE IN WALL WITH TOP AT 60 INCHES ABOVE FINISHED FLOOR.						
DEM-xx	CRESTRON #CLS-EXP-DIMFLV-CN DIMMER EXPANSION MODULE. MOUNT MODULE IN VERTICAL POSITION ABOVE EXISTING ACOUSTICAL DROP CEILING.						
SEM-xx	CRESTRON #GL-EXP-SW-CN GREEN-LIGHT SWITCHING EXPANSION MODULE. MOUNT MODULE IN VERTICAL POSITION ABOVE EXISTING ACOUSTICAL DROP CEILING.						
PLS-xx	CRESTRON #GLS-PLS-120/277 POWER LOSS SENSOR MODULE. MOUNT MODULE IN VERTICAL POSITION ABOVE EXISTING ACOUSTICAL DROP CEILING.						
Os	CRESTRON #GLS-ODT-C-CN DUAL TECHNOLOGY OCCUPANCY SENSOR. SEMI-FLUSH MOUNT SENSOR IN THE CENTER OF AN ACOUSTICAL CEILING TILE AND PROVIDE AN ERICO CEILING BRACKET TO SUPPORT SENSOR BACKBOX.						
<b>\$</b> k	CRESTRON CAMEO BACKLIT, TWO-BUTTON KEYPAD. FLUSH MOUNT KEYPADS AT HEIGHT AND ARRANGEMENT AS DIRECTED BY THE OWNER (TOP OF SWITCHES NOT HIGHER THAN 48 INCHES ABOVE FINISHED FLOOR).						
	0-10 VOLT, PLENUM RATED, DIMMER CONTROL WIRING - TYPES AND SIZES AS RECOMMENDED BY CRESTRON AND/OR WALL DIMMER MANUFACTURER, AS APPLICABLE.						
<b>\$</b> 3D	3-WAY DIMMER SWITCH. SWITCH SHALL BE COMPATIBLE WITH FIXTURES IT CONTROLS. FLUSH MOUNT SWITCH AT 42 INCHES ABOVE FINISHED FLOOR.						
	EXISTING PANELBOARD, SURFACE MOUNTED - TO REMAIN IN PLACE.						
	EXISTING CONTROL PANEL - TYPE AS INDICATED ON PLAN.						
• R	EXISTING 2'x2 RECESSED FLUORESCENT TROFFER, CONNECTED TO A NORMAL POWER CIRCUIT - REMOVE.						
R	EXISTING 2'x2 RECESSED FLUORESCENT TROFFER, CONNECTED TO A GENERATOR-BACKED POWER CIRCUIT - REMOVE.						
O R	EXISTING FLUORESCENT DOWNLIGHT, CONNECTED TO A NORMAL POWER CIRCUIT - REMOVE.						
<b>⊘</b> R	EXISTING FLUORESCENT DOWNLIGHT, CONNECTED TO A GENERATOR-BACKED POWER CIRCUIT - REMOVE.						
H□R	EXISTING FLUORESCENT WALL SCONCE CONNECTED TO A 120-VOLT NORMAL POWER CIRCUIT - REMOVE.						
<b>⊼</b> ∆∧ R	EXISTING TRACK LIGHTING - REMOVE.						
⊗ R	EXISTING CEILING MOUNTED EXIT SIGN - REMOVE.						
<b>H</b> ⊗ R	EXISTING WALL MOUNTED EXIT SIGN - REMOVE.						
SR	EXISTING SINGLE-POLE LIGHTING SWITCH - REMOVE.						
SE	EXISTING SINGLE-POLE LIGHTING SWITCH - TO REMAIN IN PLACE.						
R <b>∫</b> 3	EXISTING 3-WAY LIGHTING SWITCH - REMOVE.						
<b>E</b> ∫3	EXISTING 3-WAY LIGHTING SWITCH - TO REMAIN IN PLACE.						
R <b>S</b> D	EXISTING LIGHTING DIMMER SWITCH - REMOVE.						
EŜD	EXISTING LIGHTING DIMMER SWITCH - TO REMAIN IN PLACE.						

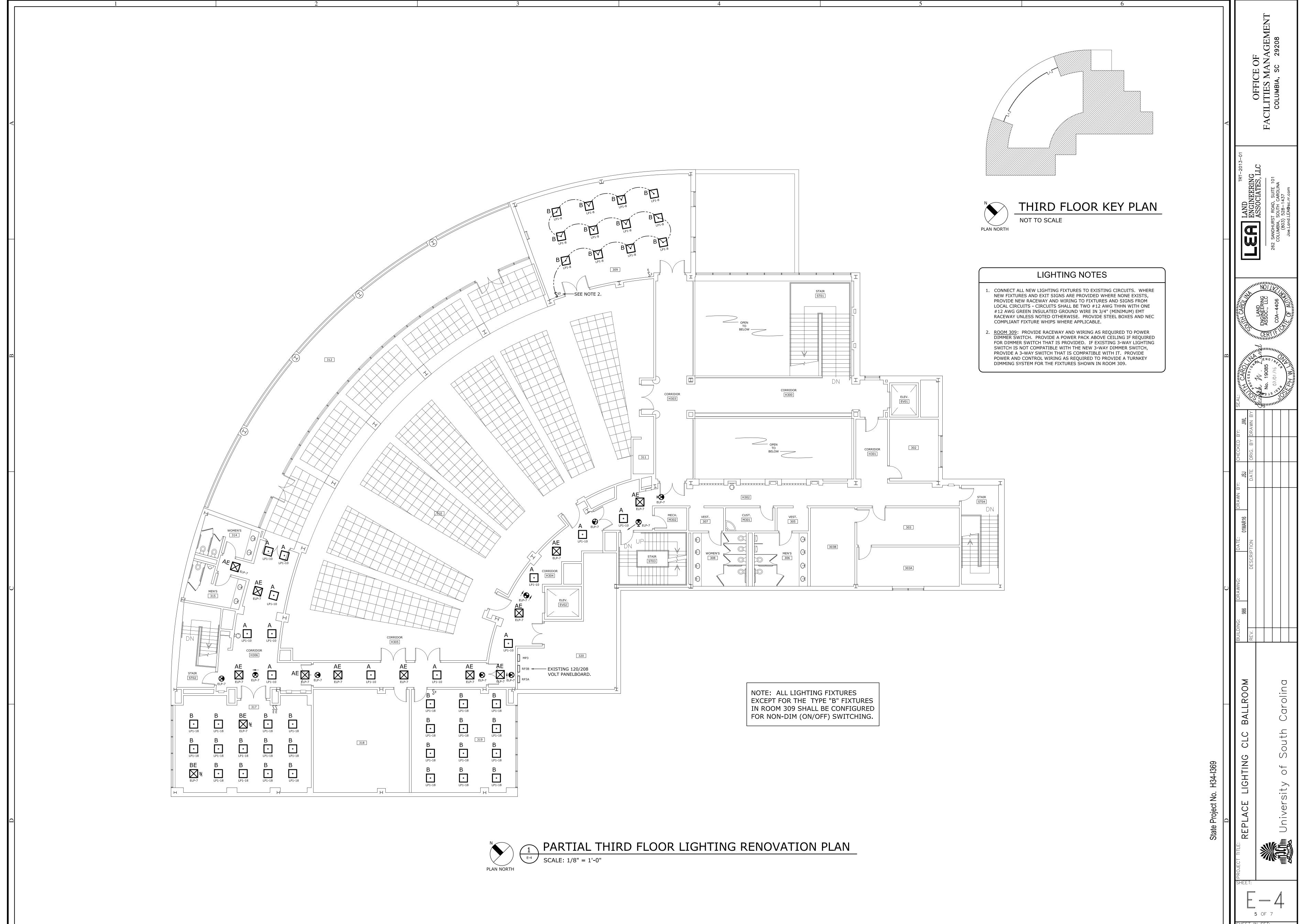
**B** 

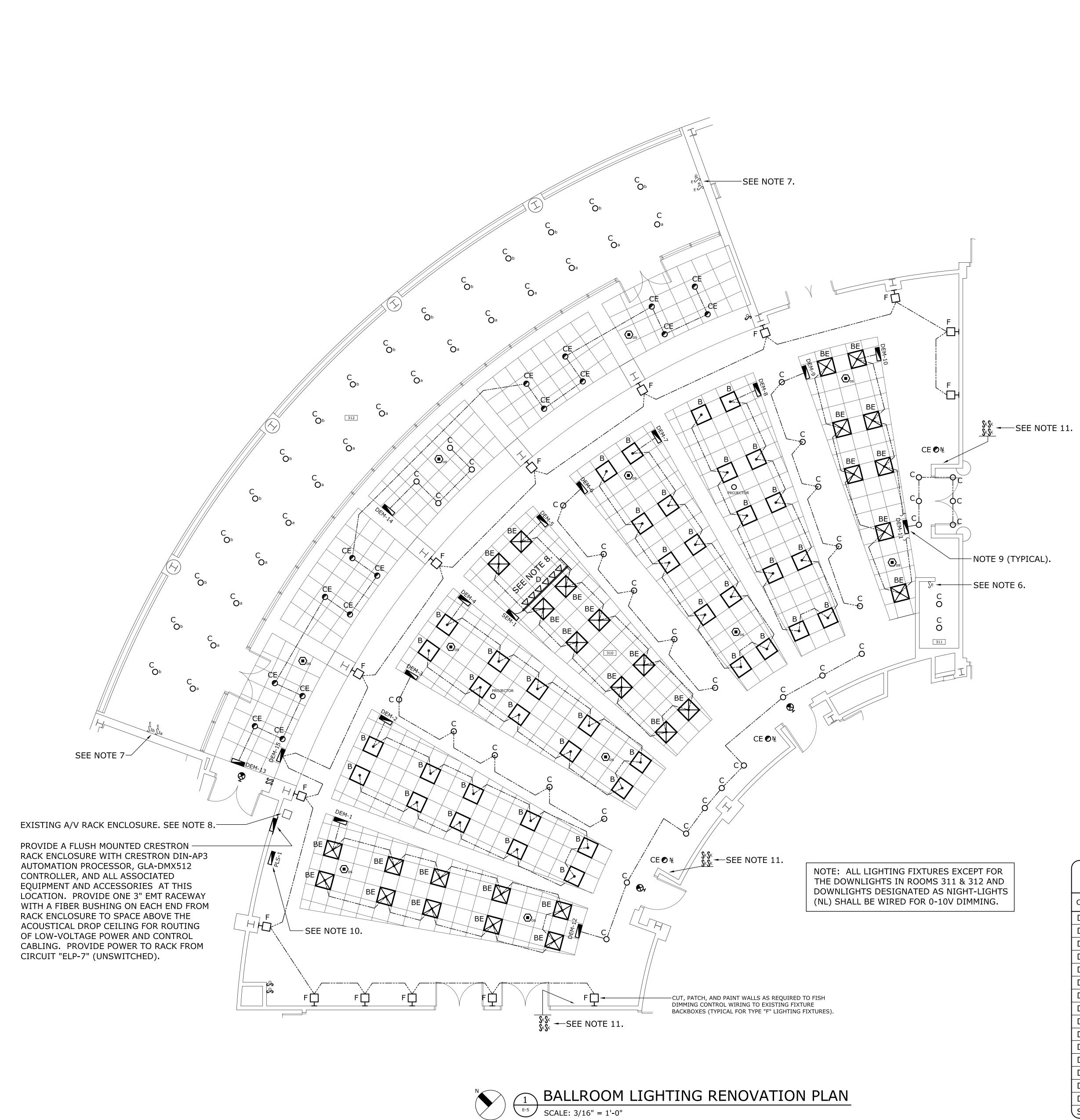


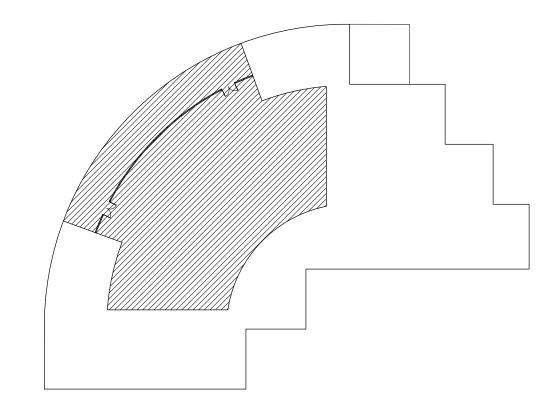
**2** OF 7













#### LIGHTING NOTES

- ALL LIGHTING FIXTURE AND EXIT SIGN CIRCUITS SHALL BE TWO #12 AWG THHN WITH ONE #12 AWG GREEN INSULATED GROUND WIRE IN 3/4" (MINIMUM) EMT RACEWAY UNLESS NOTED OTHERWISE. A DEDICATED NEUTRAL AND GROUND WIRE SHALL BE PROVIDED FOR EACH CIRCUIT -MULTI-WIRE CIRCUITS SHARING NEUTRALS AND GROUND WIRES SHALL NOT BE UTILIZED.
- 2. POWER ALL TYPE "B" LIGHTING FIXTURES & ASSOCIATED DIMMER EXPANSION MODULES SHALL BE SERVED FROM CIRCUIT LP1-19 UNLESS NOTED OTHERWISE ON PLAN.
- 3. POWER ALL TYPE "C" LIGHTING FIXTURES & ASSOCIATED DIMMER EXPANSION MODULES SHALL BE SERVED FROM CIRCUIT LP1-21 UNLESS NOTED OTHERWISE ON PLAN.
- 4. POWER ALL TYPE "BE" AND "CE" LIGHTING FIXTURES & ASSOCIATED DIMMER EXPANSION MODULES AND ALL EXIT SIGNS SHALL BE SERVED FROM CIRCUIT ELP-7 UNLESS NOTED OTHERWISE ON PLAN.
- 5. ALL TYPE "D" AND "F" LIGHTING FIXTURES AND ASSOCIATED EXPANSION MODULES SHALL BE SERVED FROM CIRCUIT RPB3-4 UNLESS NOTED OTHERWISE ON PLAN.
- 6. ROOM 311: NEW LIGHTING FIXTURES IN ROOM 311 SHALL BE CONNECTED TO THE EXISTING SINGLE-POLE LIGHTING SWITCH AND SHALL BE CONFIGURED FOR NON-DIM APPLICATION.
- 7. ROOM 312: NEW LIGHTING FIXTURES IN ROOM 312 (BALCONY) SHALL BE CONNECTED TO THE EXISTING 3-WAY LIGHTING SWITCHES AND SHALL BE CONFIGURED FOR NON-DIM APPLICATION. EXISTING SWITCHLEG WIRING CONTROLLED 1 OF 2 LAMPS IN EACH EXISTING FIXTURE. REMOVE EXISTING SWITCHLEG WIRING AND RECONFIGURE SUCH THAT ONE ROW OF FIXTURES IS CONTROLLED BY ONE OF THE EXISTING 3-WAY SWITCHES AT EACH END OF THE BALCONY AND THE SECOND ROW IS CONTROLLED BY THE OTHER TWO EXISTING 3-WAY SWITCHES.
- 8. PROVIDE PLENUM-RATED "DMX" LOW VOLTAGE CONTROL WIRING FROM TRACK LIGHTING FIXTURES TO CRESTRON GLA-DMX512 CONTROLLER IN CRESTRON RACK AND CONTROL CABLES TO INTERFACE WITH AN EXISTING CRESTRON SYSTEM IN THE BALLROOM. PROCURE THE SERVICES OF A FACTORY CERTIFIED CRESTRON TECHNICIAN TO WORK WITH THE OWNER TO DEVELOP AND PROGRAM CUSTOMIZED PRESETS USING COLOR AND BRIGHTNESS VARIATIONS OF THE SIX L.E.D. TRACK HEADS FOR DIFFERENT PRESET SCENES ON EXISTING CRESTRON TOUCH PADS.
- 9. PROVIDE PLENUM-RATED LOW-VOLTAGE POWER AND CONTROL CABLES OF TYPES AND SIZES AS RECOMMENDED BY CRESTRON FROM EACH DIMMER EXPANSION MODULE AND EACH GREEN-LIGHT SWITCHING EXPANSION MODULE TO THE THE CRESTRON RACK.
- 10. ROUTE UNSWITCHED CIRCUITS FOR LP1-19, LP1-21, AND RPB3-4 TO THE CRESTRON PLS-1 CONTROLLER FOR POWER LOSS DETECTION. PROVIDE PLENUM RATEDE CONTROL WIRING AS RECOMMENDED BY CRESTRON FROM THE PLS-1 CONTROLLER TO THE CRESTRON RACK.
- 1. EACH SWITCH BANK REFERENCED TO THIS NOTE SHALL CONFIGURED SUCH THAT THERE IS ONE "ALL ON" PRESET, ONE "ALL OFF" PRESET, AND SIX CUSTOMIZED PRESETS OF VARYING LIGHTING LEVELS. PROCURE THE SERVICES OF A FACTORY CERTIFIED CRESTRON TECHNICIAN TO WORK WITH THE OWNER TO DEVELOP AND PROGRAM THE SIX CUSTOMIZED PRESETS USING VARIATIONS OF THE FIFTEEN 0-10 VOLT DIMMING

## CRESTRON DIMMER SCHEDULE

		<u> </u>		
CHANNEL	LOAD DESCRIPTION	VOLTAGE	WATTS	PROTOCOL
DEM-1	L.E.D. TROFFER LIGHTING - GENERATOR BACKED	277	348	DMX
DEM-2	L.E.D. TROFFER LIGHTING - NORMAL POWER	277	348	0-10V
DEM-3	L.E.D. DOWN LIGHTING - NORMAL POWER	277	218	0-10V
DEM-4	L.E.D. TROFFER LIGHTING - NORMAL POWER	277	348	0-10V
DEM-5	L.E.D. TROFFER LIGHTING - GENERATOR BACKED	277	348	0-10V
DEM-6	L.E.D. DOWN LIGHTING - NORMAL POWER	277	218	0-10V
DEM-7	L.E.D. TROFFER LIGHTING - NORMAL POWER	277	348	0-10V
DEM-8	L.E.D. TROFFER LIGHTING - NORMAL POWER	277	348	0-10V
DEM-9	L.E.D. DOWN LIGHTING - NORMAL POWER	277	218	0-10V
DEM-10	L.E.D. TROFFER LIGHTING - GENERATOR BACKED	277	278	0-10V
DEM-11	L.E.D. DOWN LIGHTING - NORMAL POWER	277	262	0-10V
DEM-12	L.E.D. DOWN LIGHTING - NORMAL POWER	277	392	0-10V
DEM-13	L.E.D. DOWN LIGHTING - GENERATOR BACKED	277	698	0-10V
DEM-14	L.E.D. DOWN LIGHTING - NORMAL POWER	277	174	0-10V
DEM-15	L.E.D. WALL SCONCE LIGHTING - NORMAL POWER	120	180	0-10V
SEM-1	L.E.D. TRACK LIGHTING - NORMAL POWER	120	300	DMX-512

State Project No. H34-I369

REPLACE LI

