

ABBREVIATIONS		
AIC	=	SHORT-CIRCUIT AMPS INTERRUPTING CAPACITY
BSC	=	BIO-SAFETY CABINET
C.O.	=	CONDUIT ONLY
EM	=	EMERGENCY (OPTIONAL STANDBY)
NEC	=	NATIONAL ELECTRICAL CODE
PNL	=	PANEL
RECEPT.	=	RECEPTACLE
U.C.	=	UNDER COUNTER
U.O.N.	=	UNLESS OTHERWISE NOTED
W.P.	=	WEATHERPROOF

LAB ELECTRICAL GENERAL NOTES		
A.	CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH LAYOUT AND DETAIL CONDITIONS BY CONSULTING THE LABORATORY FURNISHINGS AND PLUMBING DRAWINGS WHICH SHOW SPACE LIMITATIONS AND EQUIPMENT MODIFICATIONS, RACEWAYS, UMBILICALS, REAGENT SHELVES, HOODS, ETC.	
B.	CONTRACTOR SHALL VERIFY EXACT REQUIREMENTS WITH OTHER TRADES PRIOR TO ANY JOB DIMENSIONS, FABRICATION AND INSTALLATION OF ELECTRICAL EQUIPMENT.	
C.	ALL CONDUIT AND J-BOXES IN CEILING AREA SHALL BE RUN IN A FUNCTIONAL PATTERN OR DIRECT UNIFORMITY (PARALLEL TO OR VERTICAL) WITH OTHER TRADES. (SPRINKLERS, PLUMBING LINES, DUCTS, STRUCTURAL MEMBERS, ETC.)	
D.	NO MORE THAN FOUR 90° BENDS SHALL EXIST IN ANY CONDUIT RUN. ELECTRICAL CONTRACTOR SHALL PROVIDE ADDITIONAL JUNCTION BOXES WHERE REQUIRED.	
E.	ALL RECEPTACLES SHALL BE IDENTIFIED AS TO PANEL AND CIRCUIT DESIGNATION (I.E., 1LPA-22) LOCATED NEAR BOTTOM OF RECEPTACLE. ALL RECEPTACLES EXCEPT FOR THE REGULAR 20A, 125V RECEPTACLES SHALL BE IDENTIFIED AS TO VOLTAGE, PHASE AND AMPERAGE (I.E., 208V, 1Ø, 3ØA) LOCATED NEAR TOP OF RECEPTACLE. USE ENGRAVED 1/8" BLACK LETTERS. RECEPTACLES ON EMERGENCY CIRCUITS SHALL BE LABELED "EMERG."	
F.	ALL CONDUITS AND SURFACE RACEWAYS SHALL CONTAIN SEPARATE EQUIPMENT GROUNDING CONDUCTOR SIZED PER N.E.C. TABLE 250.95.	
G.	ELECTRICAL RECEPTACLES SHALL BE SPACED AS SHOWN ON LABORATORY ELECTRICAL PLANS. RECEPTACLES SHALL NOT BE LOCATED BEHIND CUP SINKS OR SINKS. ALL RECEPTACLES SHALL BE OF GRAY COLOR.	
H.	ALL METALLIC OSHA AND FLAMMABLE STORAGE CABINETS SHALL BE GROUNDED. RUN AND CONNECT WITH 1/2" C, 1 #10 TO GROUND BUS OF NEARBY LABORATORY ELECTRICAL PANELBOARD SERVING RESPECTIVE AREA. SEE LAB FURNITURE DRAWINGS AND SPECIFICATIONS FOR TYPE OF CABINETS, LOCATIONS AND TERMINATIONS.	
I.	FURNISH AND INSTALL COMPLETE ELECTRICAL WORK FOR POWER CIRCUITS FOR ENVIRONMENTAL ROOM UP TO AND INCLUDING JUNCTION BOX OUTSIDE AND ABOVE ENVIRONMENTAL ROOM. ALSO FURNISH AND INSTALL COMPLETE ELECTRICAL WORK FOR POWER RECEPTACLES SHOWN IN ENVIRONMENTAL ROOMS AND COORDINATE ENTRANCE INTO ROOM WITH ENVIRONMENTAL ROOM MANUFACTURER. EXCEPT FOR REQUIREMENTS STATED ABOVE, ENVIRONMENTAL ROOM MANUFACTURER SHALL PROVIDE A COMPLETE PACKAGED ELECTRICAL WORK INCLUDING CONTROL PANEL WITH OVERCURRENT DEVICES AND COMPLETE WIRING UP TO POWER CIRCUIT JUNCTION BOX. ENVIRONMENTAL ROOM MANUFACTURER SHALL ALSO PROVIDE A COMPLETE ELECTRICAL WORK INCLUDING FUSED DISCONNECT SWITCHES AND MOTOR STARTERS FOR REMOTE COMPRESSORS. POWER CIRCUITS FOR REMOTE COMPRESSORS ARE PROVIDED UNDER CATEGORY "E" BUILDING ELECTRICAL DRAWINGS.	
J.	SURFACE METALLIC RACEWAYS SHALL BE COMPLETE, INCLUDING BASES, COVERS, END PLATES, WIRING, RECEPTACLES, FITTINGS AND CONNECTIONS, AND OF EXACT LENGTHS TO MATCH THE LENGTHS OF THE CABINETS AND SHELVINGS OR FLUSH WITH OUTSIDE FACES OF CENTER SHELF SUPPORTS FOR ISLAND BENCHES AS INDICATED ON LABORATORY FURNITURE SHOP DRAWINGS SINCE THE LENGTHS SHOWN ON ELECTRICAL DRAWINGS ARE ILLUSTRATIVE AND DIAGRAMMATIC ONLY AND ARE NOT ACCURATE. RACEWAY SHALL BE INSTALLED SO THAT NOTCH PROVIDED FOR REMOVING FACEPLATE SHALL BE AT BOTTOM.	
K.	WHERE ELECTRICAL WORK IS INDICATED FOR CONTRACTOR TO "PROVIDE" MEANS TO "FURNISH AND INSTALL".	
L.	CONDUCTORS SHALL BE TYPE "THHN" (DRY LOCATION) OR "THWN" (DRY AND WET LOCATIONS), RATED 600 VOLTS, COPPER.	
M.	ALL INDIVIDUAL WALL OUTLETS INCLUDING WALL OUTLETS FOR SURFACE METALLIC RACEWAYS SHALL BE RECESSED WALL TYPE, EXCEPT WHERE LOCATED ON SOLID CONCRETE WALLS AND INSIDE ENVIRONMENTAL ROOMS, SHALL BE SURFACE MOUNTED. SURFACE MOUNTED OUTLET BOXES SHALL BE CAST TYPE CROUSE HINDS "FS" OR "FD" TYPE, OR EQUAL. EXPOSED CONDUITS INSIDE ENVIRONMENTAL ROOMS SHALL BE RIGID STEEL.	
N.	RECESSED WALL OUTLETS LOCATED IN OPPOSITE SIDES OF COMMON WALL SHALL NOT BE INSTALLED BACK-TO-BACK.	
O.	FOR AIC RATINGS AND TYPE OF PANELBOARDS, SEE BUILDING ELECTRICAL DRAWINGS AND SPECIFICATIONS.	
P.	FOR CIRCUITING OF MULTI-OUTLET CIRCUITS FOR GENERAL PURPOSE RECEPTACLES IN RACEWAYS, SEE BASIC CIRCUITING METHOD ILLUSTRATIVE DETAIL 1/LE-12.	
Q.	FOR EVERY RECESSED WALL TYPE LABORATORY POWER PANELBOARD, PROVIDE SPARE 3/4-INCH CONDUITS FROM PANEL STUBBED UP INTO NEARBY ACCESSIBLE SPACE ABOVE CEILING OF RESPECTIVE LABORATORY AREA BEING SERVED. ONE CONDUIT FOR EVERY THREE SINGLE POLE SPARES AND SPACES INDICATED ON PANELBOARD SCHEDULE.	
R.	EACH LABORATORY POWER PANELBOARD SHALL BE PROVIDED COMPLETE WITH A 98 PERCENT CONDUCTIVITY COPPER GROUND BUS, SECURED TO THE INTERIOR OF THE ENCLOSURE, RATED NOT LESS THAN 25 PERCENT OF THE MAIN BUS AMPACITY. THE GROUND BUS SHALL HAVE A SEPARATE LUG FOR EACH GROUND CONDUCTOR.	
S.	AT CONDUIT TERMINATIONS, PROVIDE INSULATED BUSHINGS FOR CONDUCTOR PROTECTION.	

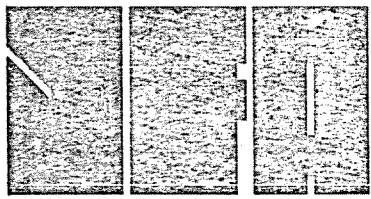
LABORATORY ELECTRICAL SYMBOLS LIST																						
SYMBOL	DESCRIPTION	REMARKS																				
	FLUSH FLOOR BOX WITH ELBOW AND FLUSH FLOOR COUPLING.																					
	DUPLEX RECEPTACLE OUTLET IN FLUSH FLOOR BOX.	A. PROVIDE MATCHING TYPE PLUGS FOR EACH RECEPTACLE EXCEPT FOR THE NEMA 5-20R (STRAIGHT BLADE) RECEPTACLE.  B. INDIVIDUAL RECEPTACLES SHALL BE @ +45" U.O.N.  C. WHERE INSTALLED IN SURFACE METALLIC RACEWAY, RECEPTACLES RATED 30A AND LARGER SHALL BE TWISTLOCK TYPE, INSTEAD OF THE STRAIGHT BLADE TYPE.  D. RECEPTACLES WITH SUBSCRIPT "EM" ARE ON EMERGENCY CIRCUITS (OPTIONAL STANDBY) AND OF RED COLOR. SEE GENERAL NOTES. INSTALL IN WALL AT +50"																				
	DUPLEX OUTLET - 20A, 125V, 2 POLE, 3 WIRE, NEMA 5-20R																					
	GROUND FAULT CIRCUIT INTERRUPTER (GFCI) DUPLEX OUTLET - 20A, 125V																					
	DOUBLE DUPLEX OUTLET																					
	SINGLE OUTLET 20A, 125V, 2 POLE, 3 WIRE, NEMA 5-20R. SUBSCRIPT INDICATES THE FOLLOWING: A = 30A, NEMA 5-30R																					
	SINGLE OUTLET 20A, 250V, 1 PHASE 2 POLE, 3 WIRE NEMA 6-20R. SUBSCRIPT INDICATES THE FOLLOWING: A = 30A, NEMA 6-30R																					
	SINGLE OUTLET- 20A, 125/250V, 3 POLE, 4 WIRE, GROUNDING, NEMA 14-20R. SUBSCRIPT INDICATES THE FOLLOWING: A = 30A, NEMA 14-30R																					
	OUTLET PROVIDED BY OTHER SECTION OF WORK	WHERE LOCATED IN FUME HOOD SHALL BE PROVIDED BY FUME HOOD MANUFACTURER																				
	TYPE "A" SURFACE MOUNTED DOUBLE COMPARTMENT METALLIC RACEWAY, SEE SPECS. AND REFERENCE NOTES BELOW.																					
	PEDESTAL MOUNTED RECEPTACLE OUTLETS. PEDESTAL COMPLETE WITH SAME FINISH FACEPLATE FURNISHED AND INSTALLED BY LABORATORY FURNISHING CONTRACTOR. RECEPTACLES FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.																					
	CIRCUIT BREAKER PANEL. SEE PANEL SCHEDULES FOR SIZE, PHASE, AMPS, AND VOLTAGE	MAX. +6'- 6" TO TOP																				
	2P OR 3P (AS REQUIRED) DISCONNECT SWITCH. LETTER SUBSCRIPTS INDICATE SWITCH SIZES AND NUMBER SUBSCRIPTS INDICATE DUAL-ELEMENT TIME DELAY FUSE SIZES, AS FOLLOWS: <table><tr><td>SWITCH SIZE</td><td>FUSE SIZE</td></tr><tr><td>A = 30 AMPS</td><td>15 = 15 AMP</td></tr><tr><td>B = 60 AMPS</td><td>20 = 20 AMP</td></tr><tr><td>C = 100 AMPS</td><td>30 = 30 AMP</td></tr><tr><td></td><td>35 = 35 AMP</td></tr><tr><td></td><td>40 = 40 AMP</td></tr><tr><td></td><td>45 = 45 AMP</td></tr><tr><td></td><td>50 = 50 AMP</td></tr><tr><td></td><td>60 = 60 AMP</td></tr><tr><td></td><td>ETC.</td></tr></table>	SWITCH SIZE	FUSE SIZE	A = 30 AMPS	15 = 15 AMP	B = 60 AMPS	20 = 20 AMP	C = 100 AMPS	30 = 30 AMP		35 = 35 AMP		40 = 40 AMP		45 = 45 AMP		50 = 50 AMP		60 = 60 AMP		ETC.	PROVIDE 250 VOLT, HEAVY DUTY TYPE +5'-0".
SWITCH SIZE	FUSE SIZE																					
A = 30 AMPS	15 = 15 AMP																					
B = 60 AMPS	20 = 20 AMP																					
C = 100 AMPS	30 = 30 AMP																					
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	ETC.																					
	REFERENCE NOTE DESIGNATION																					
	PANEL DESIGNATION																					
	INDICATES MOUNTING HEIGHT OF 45" FROM FINISHED FLOOR TO CENTER (U.O.N.) OF OUTLET BOX OR DEVICE	REFERENCE POINT AT FLOOR SHALL BE AT SAME FLOOR HIGH POINT SELECTED BY LAB FURNISHING CONTRACTOR AND SHALL BE THE COMMON ROOM REFERENCE POINT. COORDINATE WITH GENERAL CONTRACTOR.																				
	TV OUTLET	SHOWN FOR REFERENCE LOCATION ONLY. SEE BUILDING ELECTRICAL DRAWINGS FOR REQUIREMENTS.																				

REFERENCE NOTES (SURFACE METALLIC RACEWAYS):

- ALL SURFACE METALLIC RACEWAYS SHOWN (AT WALLS AND AT ISLAND BENCHES) SHALL BE DOUBLE COMPARTMENT TYPE. SEE SPECS. TOP COMPARTMENT SHALL BE COMMON FOR BOTH NORMAL POWER AND EMERGENCY (OPTIONAL STANDBY) POWER AND BOTTOM COMPARTMENT FOR TELCO/DATA SYSTEM. EACH COMPARTMENT SHALL HAVE SEPARATE COVER PLATES (IN 12-INCH SECTIONS).
- WHERE RACEWAYS ARE SHOWN WITH TELCO/DATA OUTLETS, PROVIDE CUTOUTS AND/OR OUTLETS IN THE TELCO/DATA COVERPLATES AS REQUIRED UNDER THE CATEGORY "E" BUILDING ELECTRICAL DRAWINGS.
- WHERE RACEWAYS ARE NOT SHOWN WITH TELCO/DATA OUTLETS, FOR EACH LENGTH OF RACEWAY RUNNING ALONG A WALL OR THE LENGTH OF AN ISLAND BENCH, PROVIDE ONE CUT-OUT SMOOTH KNOCKOUT TYPE FOR FUTURE PUNCH-OUT CENTERED ALONG THE LENGTH OF THE RACEWAY IN THE TELCO/DATA COVER PLATE. TYPE OF CUTOUT SHALL BE AS REQUIRED UNDER THE CATEGORY "E" BUILDING ELECTRICAL DRAWINGS.
- FOR EACH LENGTH OF RACEWAY RUNNING ALONG A WALL, STUB UP ONE 1-1/4" CONDUIT FROM THE OUTLET BOX FOR THE TELCO/DATA COMPARTMENT, UP IN WALL AND IN ACCESSIBLE CEILING AND TERMINATE IN NEARBY TELCO/DATA CLOSET.
- FOR EACH ISLAND BENCH, STUB ONE 1-1/4" CONDUIT AT TOP OF ISLAND BENCH UMBILICAL IN ACCESSIBLE CEILING SPACE AND RUN TO NEARBY TELCO/DATA CLOSET.
- SEE CATEGORY "E" BUILDING ELECTRICAL DRAWINGS FOR LOCATIONS OF TELCO/DATA CLOSETS.
- WALL MOUNTED RACEWAYS SHALL BE MOUNTED AT +45" U.O.N.
- SEE ISLAND BENCH DETAILS ON LAB FURNISHING DRAWINGS FOR LOCATIONS OF RACEWAYS AT ISLAND BENCHES.
- WHERE TELCO/DATA CABLING ARE REQUIRED, SEE CATEGORY "E" BUILDING ELECTRICAL DRAWINGS.

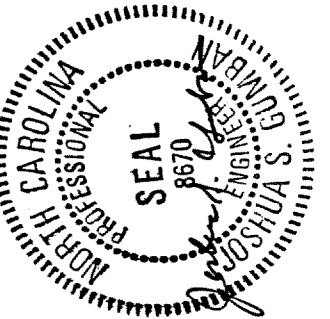
LABORATORY ELECTRICAL SYMBOLS LIST		
SYMBOL	DESCRIPTION	REMARKS
	CONDUIT RUN CONCEALED IN CEILING OR IN WALL U.O.N.	
	CONDUIT RUN EXPOSED	
	CONDUIT RUN IN OR BELOW FLOOR SLAB	
	FLEXIBLE CONDUIT	
	CONDUIT SEAL - VAPORPROOF	
	HOMERUN TO PANELBOARD "1LPA" WITH 4 #12 (PLUS EQUIPMENT GROUND - NOT SHOWN), 3/4"C AND CONNECT TO CIRCUITS 1, 3 AND 5. USE SIZE #10 CONDUCTORS FOR ANY 20A-120V BRANCH CIRCUIT RUN OVER 100 FT. IN LENGTH  CONDUIT RUNS WITHOUT HASHMARKS SHALL INDICATE 2 #12 (PLUS GROUND), 3/4"C, U.O.N.  ALL CONDUCTORS SHALL BE AWG SIZE #12 UNLESS OTHERWISE NOTED. WHERE SO NOTED, NUMBER DESIGNATED SHALL INDICATE THE AWG SIZE FOR CONDUCTORS TO BE USED. CONDUIT SIZE PER CONDUIT TABLE.	PROVIDE ALL CONDUIT RUNS WITH GREEN EQUIPMENT GROUNDING CONDUCTORS SIZED PER NEC TABLE 250-95. ALLOW FOR THE ADDITIONAL EQUIPMENT GROUNDING CONDUCTORS IN DETERMINING PROPER CONDUIT SIZES. LONGER HASHMARK INDICATES NEUTRAL CONDUCTOR.
	CONDUIT SIZE TABLE FOR #12 CONDUCTORS ( 3/4"C MIN.)  UP TO 8 #12 ——— = 3/4"C 9 #12 TO 13 #12 — = 1"C	
	CONDUIT SIZE TABLE FOR #10, #8, #6 AND #4 CONDUCTORS ( 3/4"C MIN.):  UP TO 6 #10 ——— = 3/4"C 7 #10 TO 11 #10 — = 1"C  UP TO 3 #8 ——— = 3/4"C 4 #8 TO 5 #8 ——— = 1"C 6 #8 TO 10 #8 ——— = 1-1/4"C  UP TO 2 #6 ——— = 3/4"C 3 #6 TO 4 #6 ——— = 1"C 5 #6 TO 7 #6 ——— = 1-1/4"C  UP TO 3 #4 ——— = 1"C 4 #4 TO 5 #4 ——— = 1-1/4"C 6 #4 TO 7 #4 ——— = 1-1/2"C	
	"IN USE" WARNING SIGN, RECESSED WALL AT +7'-6", WITH A 25W INC. LAMP.	C.W. COLE NO. S152 OR EQUAL.
	PUSHBUTTON STATION- "SQUARE D" CLASS 9001, TYPE KR-2R (RED)-H5 COMPLETE WITH KN-700 SERIES ENGRAVED LEGEND PLATE. OR APPROVED EQUAL. +4'-0"	ENGRAVE PLATE WITH RED LETTERS "POWER EMERGENCY OFF" COORDINATE LOCATION WITH BUILDING ELECTRICAL LIGHT SWITCHES
	TOGGLE SWITCH, +48". SUBSCRIPT INDICATES THE FOLLOWING: a, b, c, ...etc.= NUMBER OF SWITCHES.	
	WALL MOUNTED JUNCTION BOX, +45" U.O.N.	PIGTAIL INDICATES CONNECTION TO EQUIPMENT AS REQUIRED
	JUNCTION BOX IN ACCESSIBLE CEILING SPACE, U.O.N.	
	DATA OUTLET	INDIVIDUAL TELEPHONE AND DATA OUTLETS SHOWN ON LAB ELECTRICAL DRAWINGS FOR REFERENCE LOCATION ONLY. SEE BUILDING ELECTRICAL DRAWINGS FOR TYPE OF RESPECTIVE OUTLETS, CONDUIT AND WIRING REQUIREMENTS.
	TELEPHONE OUTLET	
	TELEPHONE OUTLET WALL MOUNTED +54"	

ADD ALTERNATE NOTES	
A. IN ROOMS DESIGNATED AS ADD ALTERNATE, THE BASE BID SHALL INCLUDE:	
1. ALL PANELBOARDS DESIGNATED TO SUCH ROOMS, COMPLETE AS INDICATED ON THE DRAWINGS.	
2. ALL BRANCH CIRCUIT WIRING FOR NORMAL AND EMERGENCY POWER AS INDICATED ON THE DRAWINGS FROM ASSIGNED PANELBOARDS TO:	
o. RECESSED WALL OUTLET BOXES FOR INDIVIDUAL RECEPTACLES AND WALL MOUNTED SURFACE METALLIC RACEWAYS. TAPE COONDUCTORS IN WALL OUTLET BOXES AND PROVIDE BLANK COVERS IN OUTLET BOXES.	
b. JUNCTION BOXES ABOVE CEILING NEAR UMBILICALS FOR ISLAND BENCHES AS INDICATED ON THE DRAWINGS. WHERE JUNCTION BOXES ARE NOT INDICATED, PROVIDE SUCH TERMINATING JUNCTION BOXES NEAR THE UMBILICALS. TAPE CONDUCTORS IN THE JUNCTION BOXES.	
3. FOR TELCO/DATA CONDUIT RUNS, PROVIDE 1-1/4" CONDUITS:	
o. FROM RECESSED WALL OUTLETS FOR SURFACE METALLIC RACEWAYS UP TO NEARBY TELCO/ DATA CLOSETS.	
b. FROM TOP OF UMBILICALS FOR ISLAND BENCHES TO NEARBY TELCO/DATA CLOSETS.	
4. "EMERGENCY OFF" POWER PUSHBUTTONS COMPLETE WITH CONDUIT AND WIRING TO RESPECTIVE PANELBOARDS.	
B. ADD ALTERNATE BID SHALL INCLUDE:	
1. COMPLETE SURFACE METALLIC RACEWAYS AS INDICATED ON THE WALLS AND ON THE ISLAND BENCHES AND THE EXTENSION OF THEIR RESPECTIVE BRANCH CIRCUITS TO THE RECEPTACLES IN THE SURFACE METALLIC RACEWAYS.	
2. INDIVIDUAL RECEPTACLES AS INDICATED AND CONNECTION OF RESPECTIVE CIRCUITS.	
3. EXTENSION OF TELCO/DATA SYSTEM AS REQUIRED.	



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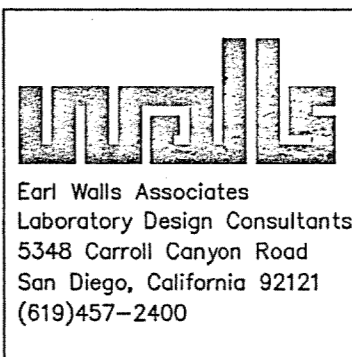


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SHEET TITLE:

LAB ELECTRICAL  
KEY SHEET

AS BUILT

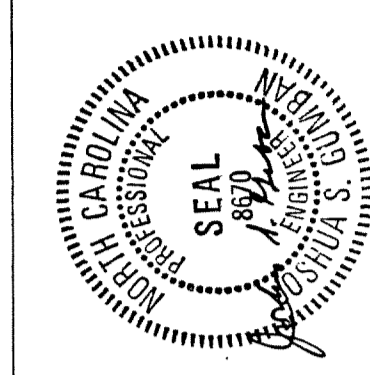


DRAWING REVISIONS:		
NO.	DATE	REMARKS

DATE:	5/16/84
PROJECT#:	8962
DESIGNED BY:	JSG
DRAWN BY:	GRM
CHECKED BY:	JSG

SHEET NO.:

LEO

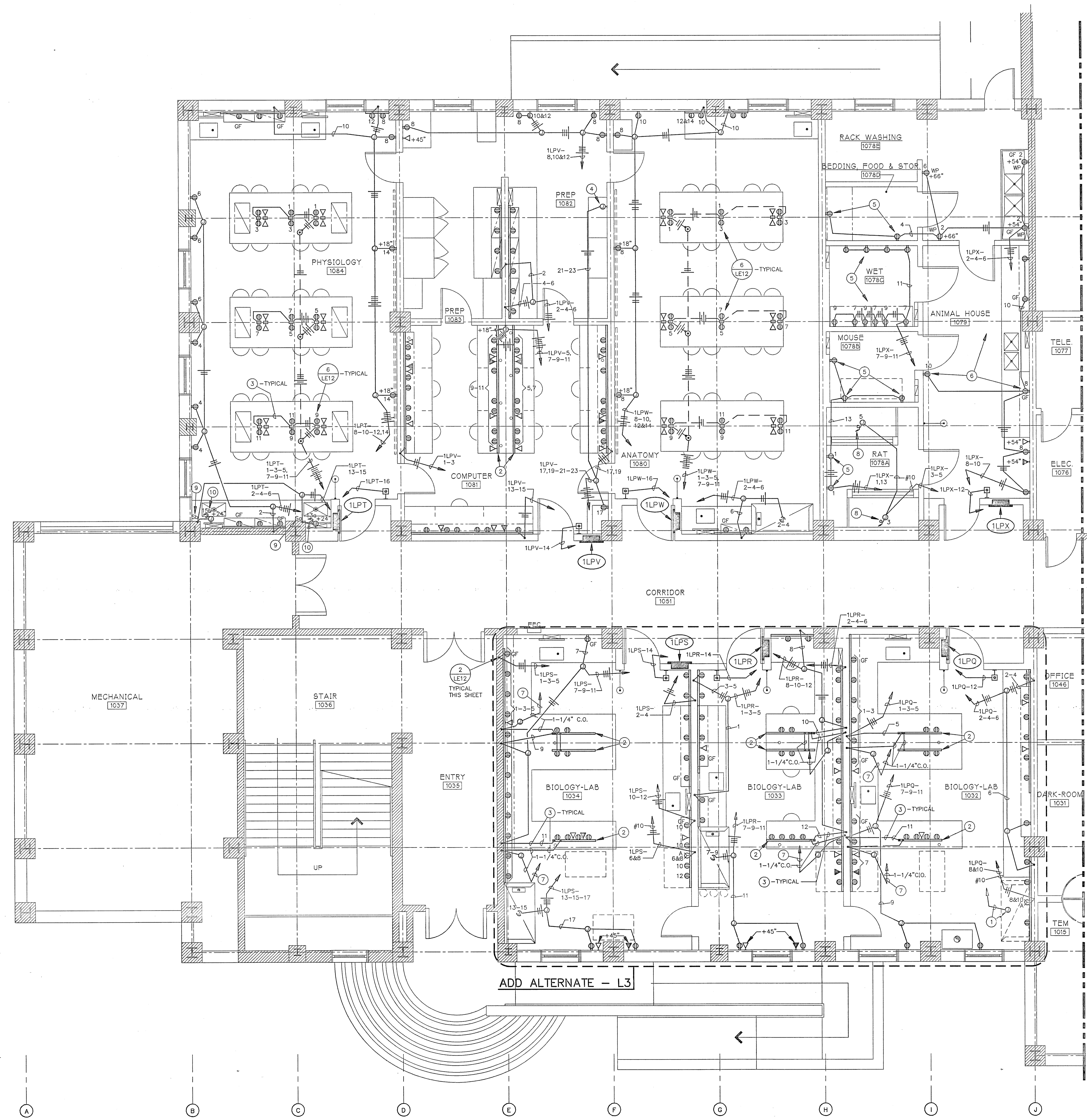


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CODE 44388 ITEM 301 ID#6069280301A

SHEET TITLE:

FIRST FLOOR PLAN - AREA ONE  
WEST

SHEET NO.:



- REFERENCE NOTES:
- 1 PROVIDE JUNCTION BOX IN ACCESSIBLE CEILING SPACE AND RUN 3/4" C.O. TO PANEL 1LPQ - FOR FUTURE FUME HOOD.
  - 2 INSTALL RACEWAYS UNDER BENCH AT +18". SEE LAB FURNITURE DRAWINGS.
  - 3 RUN CONDUIT UNDER BENCH.
  - 4 WITH BLANK COVER. LEAVE 12" TAPED PIGTAILS IN BOX FOR FUTURE.
  - 5 ALL RECEPTACLES IN ANIMAL AREAS 1078A, 1078B, 1078C AND BEDDING/FOOD STOR. SHALL BE WEATHERPROOF TYPE, INSTALLED AT +66".
  - 6 ALL RECEPTACLES IN ANIMAL HOUSE 1079 SHALL BE WEATHERPROOF TYPE, INSTALLED AT +54".
  - 7 TO NEARBY TELCO/DATA CLOSET. SEE CATEGORY "E" BUILDING ELECTRICAL DRAWINGS.
  - 8 W.P., CEILING MOUNTED. CONNECT TO ANIMAL CUBICLE.
  - 9 ENGRAVE SWITCHPLATE "DISPOSER"
  - 10 CONNECT TO 1/2 HP, 120V DISPOSER.

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


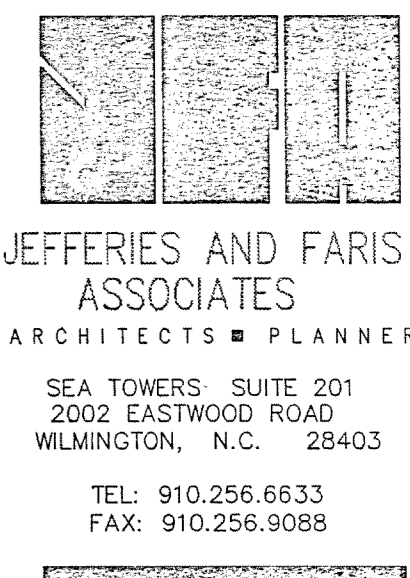
AREA ONE  
AS BUILT

DRAWING REVISIONS:		
NO.	DATE	REMARKS

DATE: 5/16/94  
PROJECT#: 8962  
DESIGNED BY: JSG  
DRAWN BY: MS  
CHECKED BY: JSG  
DATE: 5/16/94

SHEET NO.:

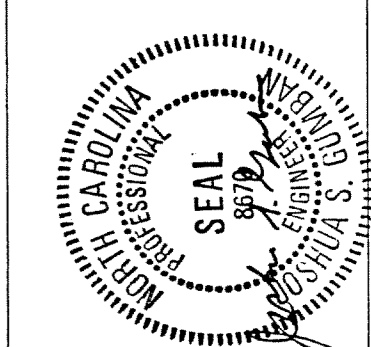




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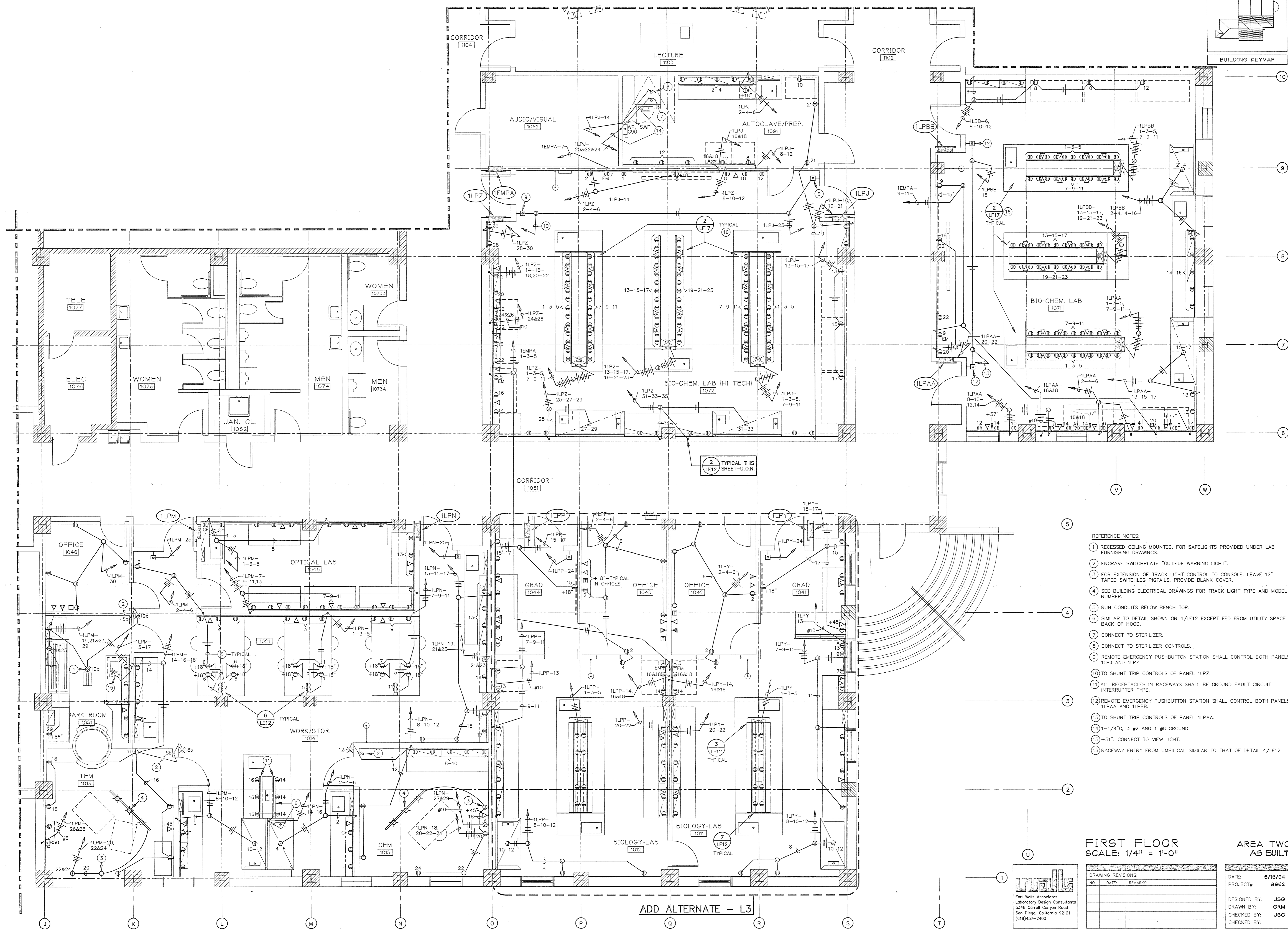
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CODE 44388 ITEM 301 ID#608428080A

SHEET TITLE:

FIRST FLOOR PLAN - AREA TWO  
WEST

SHEET NO.:

LE2



- ① RECESSED CEILING MOUNTED, FOR SAFELIGHTS PROVIDED UNDER LAB FURNISHING DRAWINGS.
- ② ENGRAVE SWITCHPLATE "OUTSIDE WARNING LIGHT".
- ③ FOR EXTENSION OF TRACK LIGHT CONTROL TO CONSOLE. LEAVE 12" TAPED SWITCHLEG PIGTAILS. PROVIDE BLANK COVER.
- ④ SEE BUILDING ELECTRICAL DRAWINGS FOR TRACK LIGHT TYPE AND MODEL NUMBER.
- ⑤ RUN CONDUITS UNDER BENCH TOP.
- ⑥ SIMILAR TO DETAIL SHOWN ON 4/E12 EXCEPT FED FROM UTILITY SPACE BACK OF HOOD.
- ⑦ CONNECT TO STERILIZER.
- ⑧ CONNECT TO STERILIZER CONTROLS.
- ⑨ REMOTE EMERGENCY PUSHBUTTON STATION SHALL CONTROL BOTH PANELS 1LPJ AND 1LPZ.
- ⑩ TO SHUNT TRIP CONTROLS OF PANEL 1LPZ.
- ⑪ ALL RECEPTACLES IN RACEWAYS SHALL BE GROUND FAULT CIRCUIT INTERRUPTER TYPE.
- ⑫ REMOTE EMERGENCY PUSHBUTTON STATION SHALL CONTROL BOTH PANELS 1LPAA AND 1LPBB.
- ⑬ TO SHUNT TRIP CONTROLS OF PANEL 1LPAA.
- ⑭ 1-1/4" C. 3 #2 AND 1 #8 GROUND.
- ⑮ +31". CONNECT TO VENT LIGHT.
- ⑯ RACEWAY ENTRY FROM UMBILICAL SIMILAR TO THAT OF DETAIL 4/E12.

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

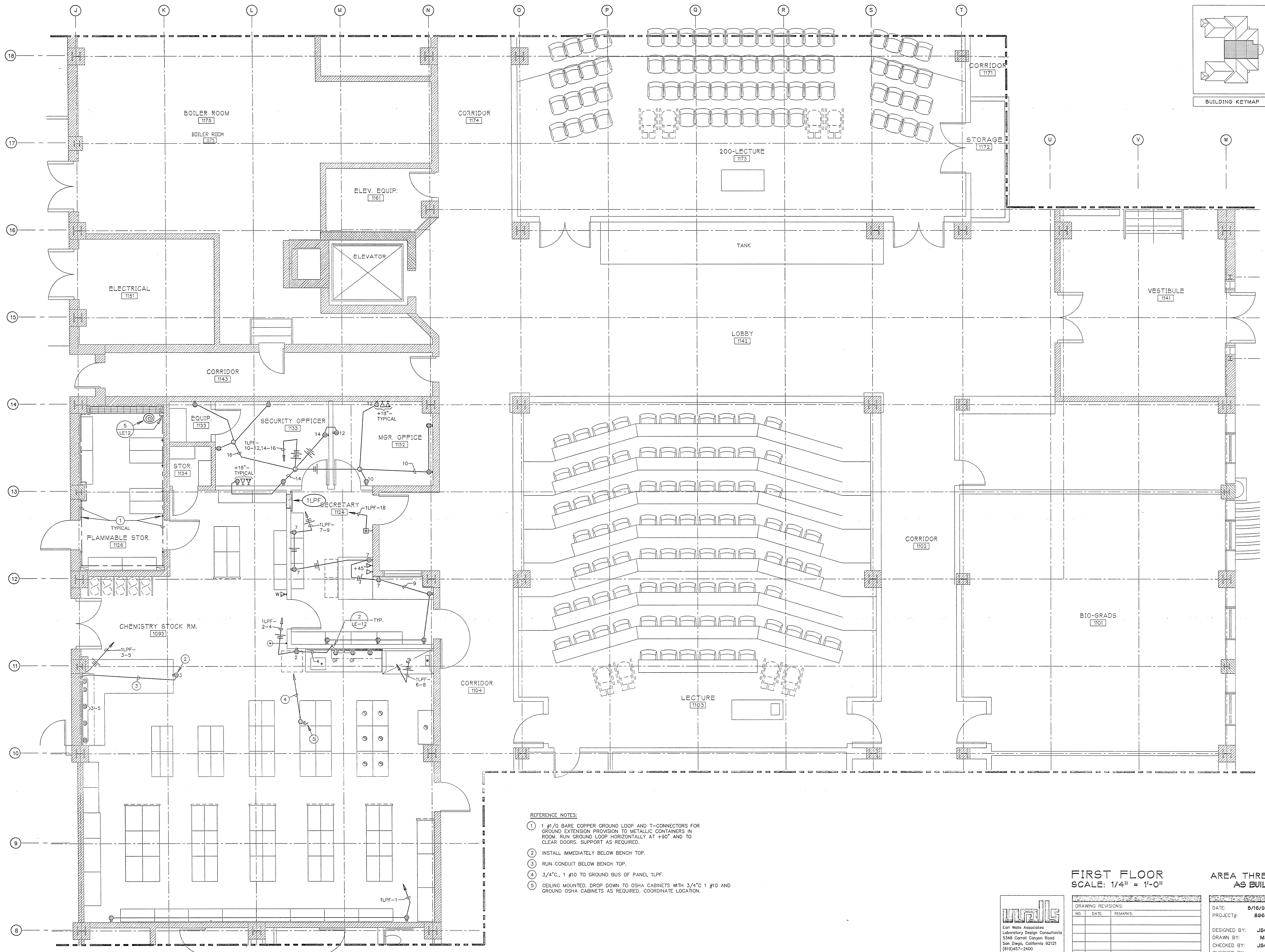
AREA TWO  
AS BUILT

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DATE:	5/16/94
PROJECT#:	8962
DESIGNED BY:	JSG
DRAWN BY:	GRM
CHECKED BY:	JSG
CHECKED BY:	

SHEET NO.:

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- REFERENCE NOTES:
- 1 #10 BARE COPPER GROUND LOOP AND T-CONNECTORS FOR GROUND EXTENSION PROVISION TO METALLIC CONTAINERS IN ROOM. RUN GROUND LOOP HORIZONTALLY AT +90° AND TO CLEAR DOORS. SUPPORT AS REQUIRED.
  - INSTALL IMMEDIATELY BELOW BENCH TOP.
  - RUN CONDUIT BELOW BENCH TOP.
  - 3/4" C., 1 #10 TO GROUND BUS OF PANEL 1LPF.
  - CEILING MOUNTED, DROP DOWN TO OSHA CABINETS WITH 3/4" C. 1 #10 AND GROUND OSHA CABINETS AS REQUIRED. COORDINATE LOCATION.

**unals**  
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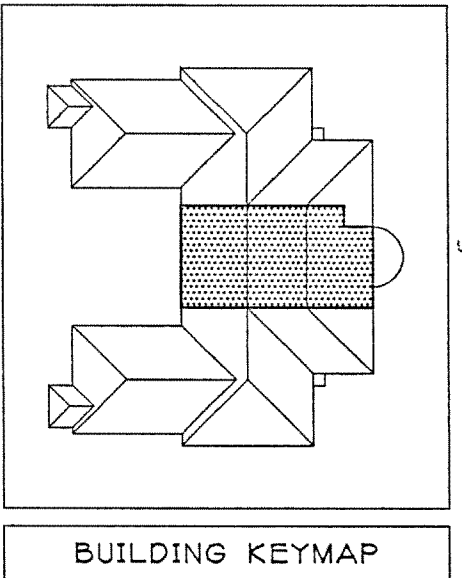
**FIRST FLOOR**  
SCALE: 1/4" = 1'-0"

**AREA THREE**  
AS BUILT

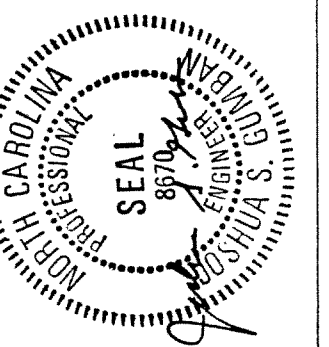
DRAWING REVISIONS:		
NO.	DATE	REMARKS

DATE: 5/16/94  
PROJECT#: 8962  
DESIGNED BY: JSB  
DRAWN BY: MS  
CHECKED BY: JSB

SHEET NO.:  
**LE3**



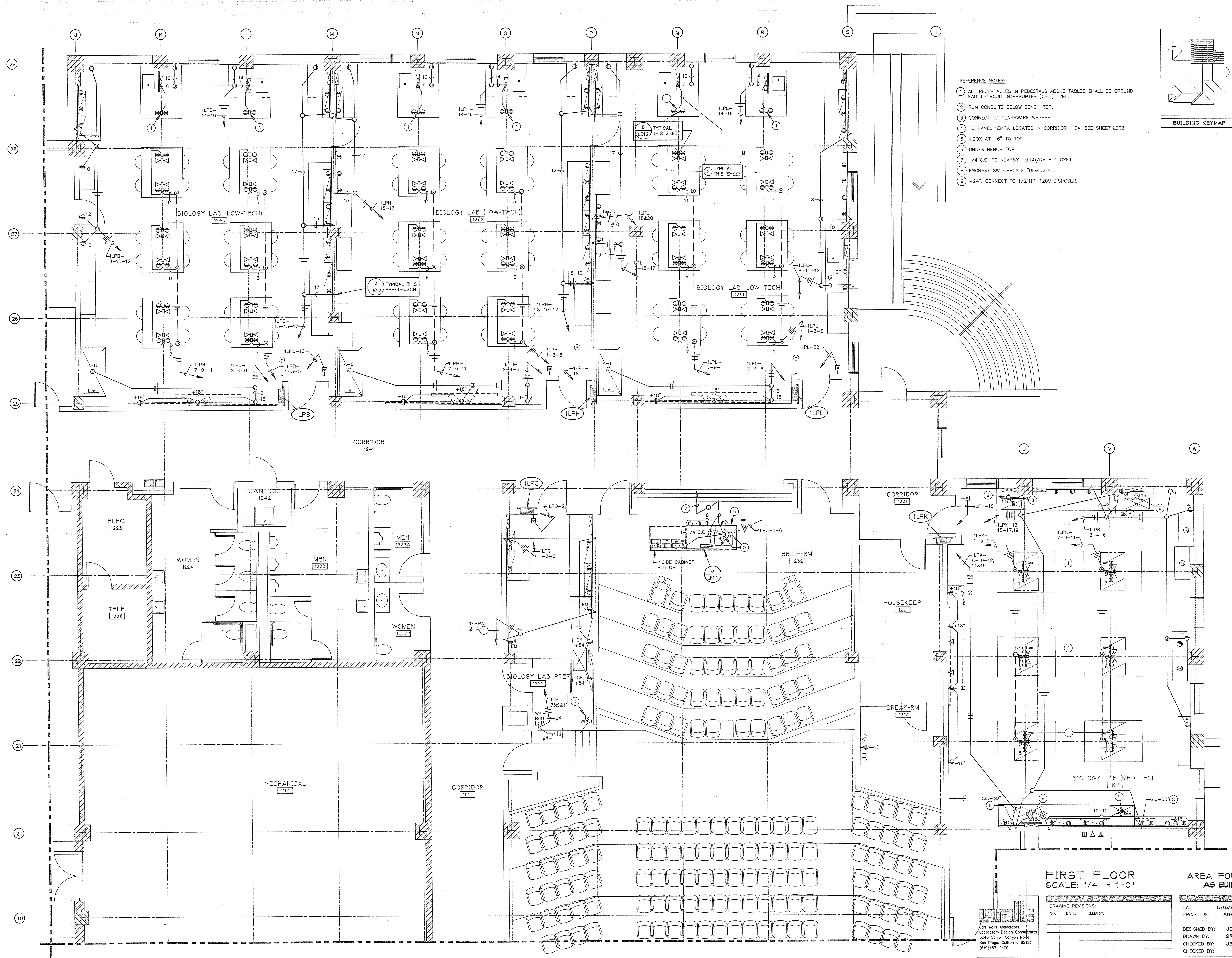
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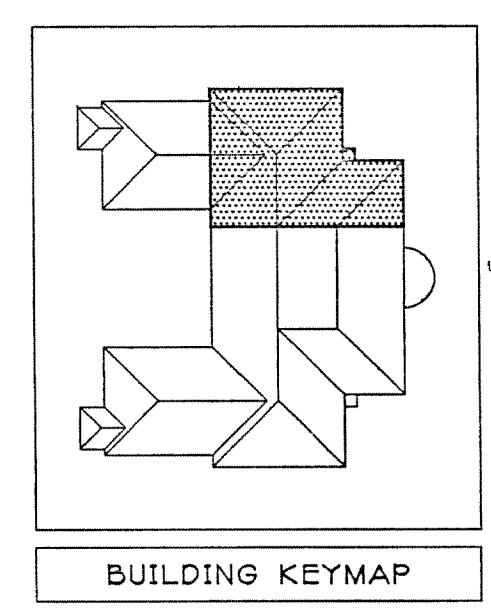
**SCIENCE BUILDING**  
UNIVERSITY OF NORTH CAROLINA AT WILMINGTON  
CODE 44300 ITEM 301 ID#6089280801A

SHEET TITLE:

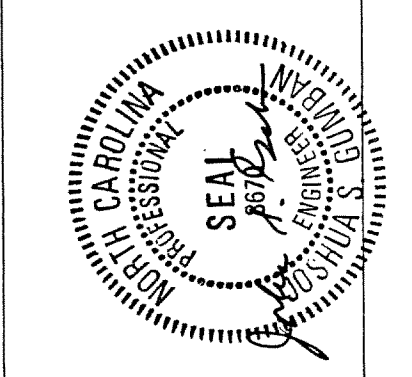
**FIRST FLOOR PLAN - AREA THREE**  
WEST



- REFERENCE NOTES:
- 1 ALL RECEPTACLES IN PEDESTALS ABOVE TABLES SHALL BE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE.
  - 2 RUN CONDUITS BELOW BENCH TOP.
  - 3 CONNECT TO GLASSWARE WASHER.
  - 4 TO PANEL 1EMPA LOCATED IN CORRIDOR 1104, SEE SHEET LE02.
  - 5 JBOX AT +6" TO TOP.
  - 6 UNDER BENCH TOP.
  - 7 1/4" C.O. TO NEARBY TELCO/DATA CLOSET.
  - 8 ENGRAVE SWITCHPLATE "DISPOSER".
  - 9 +24". CONNECT TO 1/2" HP, 120V DISPOSER.



JEFFERIES AND FARIS  
ASSOCIATES PLANNERS  
SEA TOWERS SUITE 201  
2002 EASTWOOD ROAD  
WILMINGTON, N.C. 28403  
TEL: 910.256.6633  
FAX: 910.256.9088



SCIENCE BUILDING  
UNIVERSITY OF NORTH CAROLINA AT WILMINGTON  
CODE 44388 ITEM 301 ID#60812B0301A

SHEET TITLE:

FIRST FLOOR PLAN - AREA FOUR  
WEST  
EAST

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

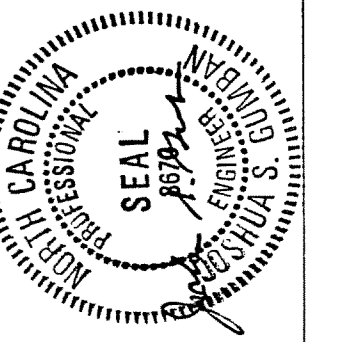
AREA FOUR  
AS BUILT

**inall**  
Earl Walls Associates  
Laboratory Design Consultants  
5348 Carroll Canyon Road  
San Diego, California 92121  
(619)457-2400

DRAWING REVISIONS:	
NO.	REMARKS

DATE: 5/16/94  
PROJECT#: 8962  
DESIGNED BY: JSG  
DRAWN BY: GRM  
CHECKED BY: JSG

SHEET NO.:  
**LE4**



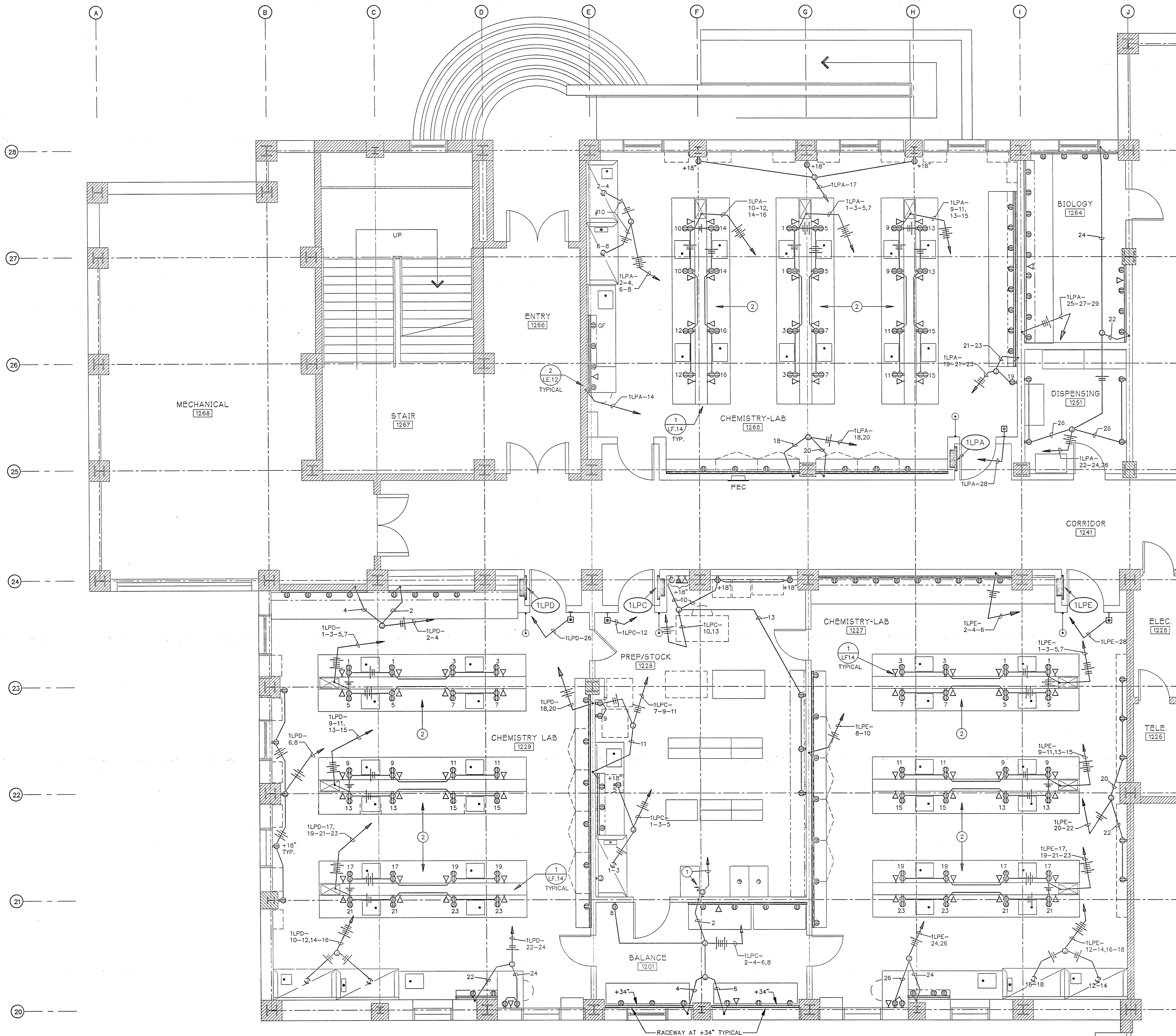
SCIENCE BUILDING  
UNIVERSITY OF NORTH CAROLINA AT WILMINGTON  
CODE 44300 ITEM 301 ID#6089280301A

SHEET TITLE:

FIRST FLOOR PLAN - AREA FIVE  
EAST

SHEET NO.:

LE5



REFERENCE NOTES:

- ① 3/4" C. 1 #10 TO GROUND BUS OF PANEL 1LPC.  
GROUND OSHA CABINET.
- ② ALL DUPLEX RECEPTACLES IN THESE ISLAND  
BENCHES SHALL BE GROUND FAULT CIRCUIT  
INTERRUPTER (GFCI) TYPE.

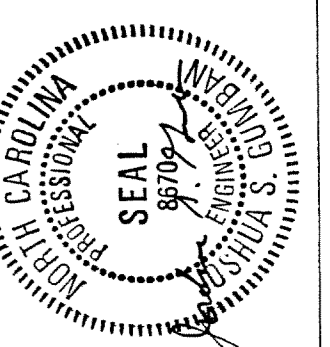
FIRST FLOOR  
SCALE: 1/4" = 1'-0"

AREA FIVE  
AS BUILT

**Earl Walls Associates**  
Laboratory Design Consultants  
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San Diego, California 92121  
(619)457-2400

DRAWING REVISIONS:		
NO.	DATE	REMARKS

DATE: 5/16/94  
PROJECT#: 8962  
DESIGNED BY: JSG  
DRAWN BY: MS  
CHECKED BY: JSG  
CHECKED BY:



SCIENCE BUILDING  
UNIVERSITY OF NORTH CAROLINA AT WILMINGTON  
CODE 44366 ITEM 301 ID#6084280301A

SHEET TITLE:

SECOND FLOOR PLAN - AREA ONE  
WEST

SHEET NO.:

LEG

ADD ALTERNATE - L5

- REFERENCE NOTES:
- ALL RECEPTACLE, OUTLETS, TV AND TELCO/DATA IN THIS ROOM SHALL BE AT +18"
  - TO EMERGENCY POWER PANEL LOCATED IN CORRIDOR 2051. SEE SHEET L7.

ADD ALTERNATE - L7

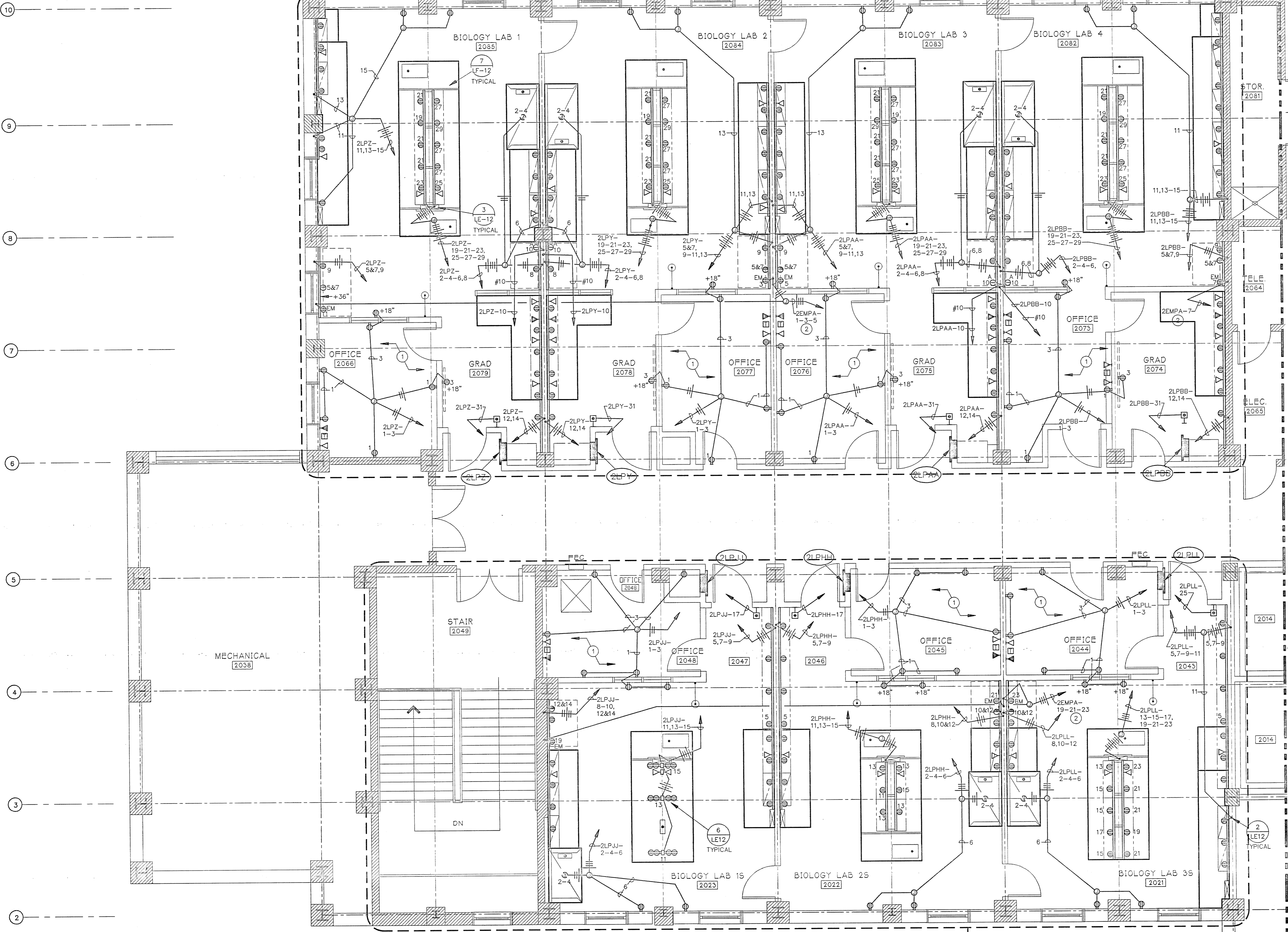
SECOND FLOOR  
SCALE: 1/4" = 1'-0"

AREA ONE  
AS BUILT

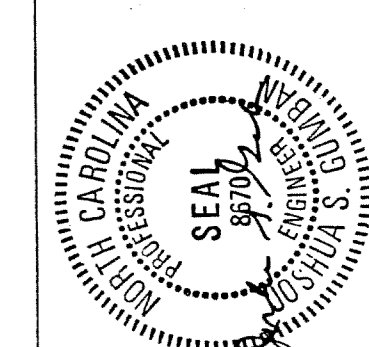
DRAWING REVISIONS:	
NO.	DATE: REMARKS:

DATE: 5/16/94  
PROJECT#: 8962  
DESIGNED BY: JSB  
DRAWN BY: GRM  
CHECKED BY: JSB

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BUILDING KEYMAP



SCIENCE BUILDING  
UNIVERSITY OF NORTH CAROLINA AT WILMINGTON  
CODE 49368 ITEM 301 ID#08120801A

SHEET TITLE:

SECOND FLOOR PLAN - AREA TWO  
WEST

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

AREA TWO  
AS BUILT

DRAWING REVISIONS		
NO.	DATE	REMARKS

DATE: 5/16/94  
PROJECT#: 8962  
DESIGNED BY: JSG  
DRAWN BY: GRM  
CHECKED BY: JSG  
CHECKED BY:

SHEET NO.:

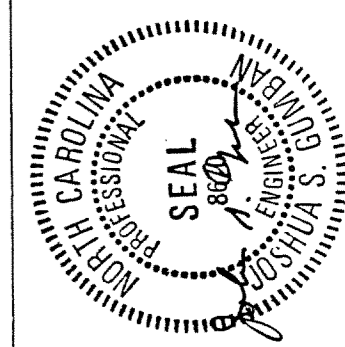
LE7

**WALLS**  
Earl Walls Associates  
Laboratory Design Consultants  
5348 Carroll Canyon Road  
San Diego, California 92121  
(619)457-2400

- REFERENCE NOTES:
- MAKE CONNECTION TO VACUUM PUMP RECEPTACLE IN CABINET BELOW. SEE LAB FURNISHING DWG. DETAIL.
  - ALL RECEPTACLE AND TELCO/DATA OUTLETS IN THIS ROOM SHALL BE AT +18".
  - 3/4" C, 2 #12, 2 #10 AND 1 #10 GROUND.
  - IN OVERHEAD SERVICE CARRIER SEE LAB FURNISHING DRAWINGS.
  - CONNECT TO GLASSWARE WASHER.
  - CONNECT TO STERILIZER CONTROLS.
  - CONNECT TO STERILIZER.
  - 3/4" C, 2 #12, 3 #10, AND 1 #10 GROUND.
  - EMERGENCY OFF PUSHBUTTON STATION SHALL DE-ENERGIZE BOTH PANELS 2LPFF AND 2LPGG.
  - TO SHUNT-TRIP MAIN BREAKER OF RESPECTIVE PANEL.
  - PROVIDE CONDUIT SEAL IN CONDUIT ENTERING ENVIRONMENTAL ROOM ENCLOSURE. COORDINATE LOCATION.
  - LOCATE J-BOX FOR ENVIRONMENTAL ROOM CONTROL OUTSIDE ABOVE ENVIRONMENTAL ROOM. COORDINATE LOCATION. EXTENSION TO ENVIRONMENTAL ROOM CONTROL PANEL BY ENVIRONMENTAL ROOM MGR.
  - 1-1/4" C, 3 #2 AND 1 #8 GROUND.
  - BOTH EMERGENCY OFF PUSHBUTTON STATIONS SHALL DE-ENERGIZE BOTH PANELS 2LPW AND 2LPX.
  - 3/4" C, 2 #12, 2 #10 AND 1 #10 GROUND.
  - J-BOX AT +6" TO TOP.
  - UNDER BENCH TOP.
  - TO NEARBY TELCO/DATA CLOSET. SEE CATEGORY "E" BUILDING ELECTRICAL DRAWINGS.

ADD ALTERNATE - L1



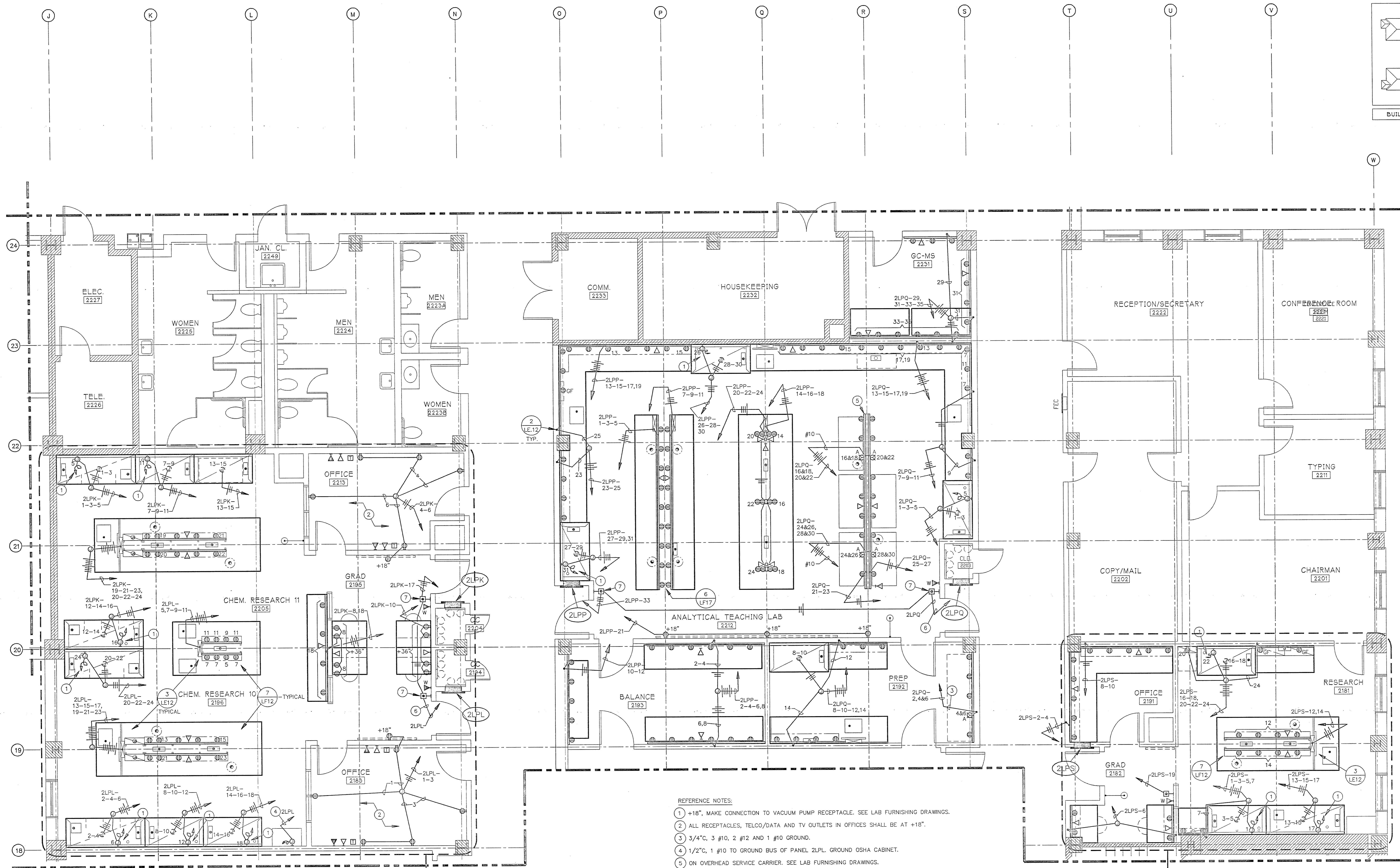


SCIENCE BUILDING  
UNIVERSITY OF NORTH CAROLINA AT WILMINGTON  
CODE 44388 ITEM 301 ID#6084280301A

SHEET TITLE:

SECOND FLOOR PLAN - AREA FOUR  
EAST

BUILDING KEYMAP



- REFERENCE NOTES:
- 1 +18", MAKE CONNECTION TO VACUUM PUMP RECEPTACLE. SEE LAB FURNISHING DRAWINGS.
  - 2 ALL RECEPTACLES, TELCO/DATA AND TV OUTLETS IN OFFICES SHALL BE AT +18".
  - 3 3/4"C, 3 #10, 2 #12 AND 1 #10 GROUND.
  - 4 1/2"C, 1 #10 TO GROUND BUS OF PANEL 2LPL. GROUND OSHA CABINET.
  - 5 ON OVERHEAD SERVICE CARRIER. SEE LAB FURNISHING DRAWINGS.
  - 6 TO SHUNT TRIP MAIN CIRCUIT BREAKER OF RESPECTIVE PANEL.
  - 7 EITHER OF THE TWO EMERGENCY OFF PUSHBUTTONS SHALL DE-ENERGIZE BOTH RESPECTIVE POWER PANELS.

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

AREA FOUR  
AS BUILT

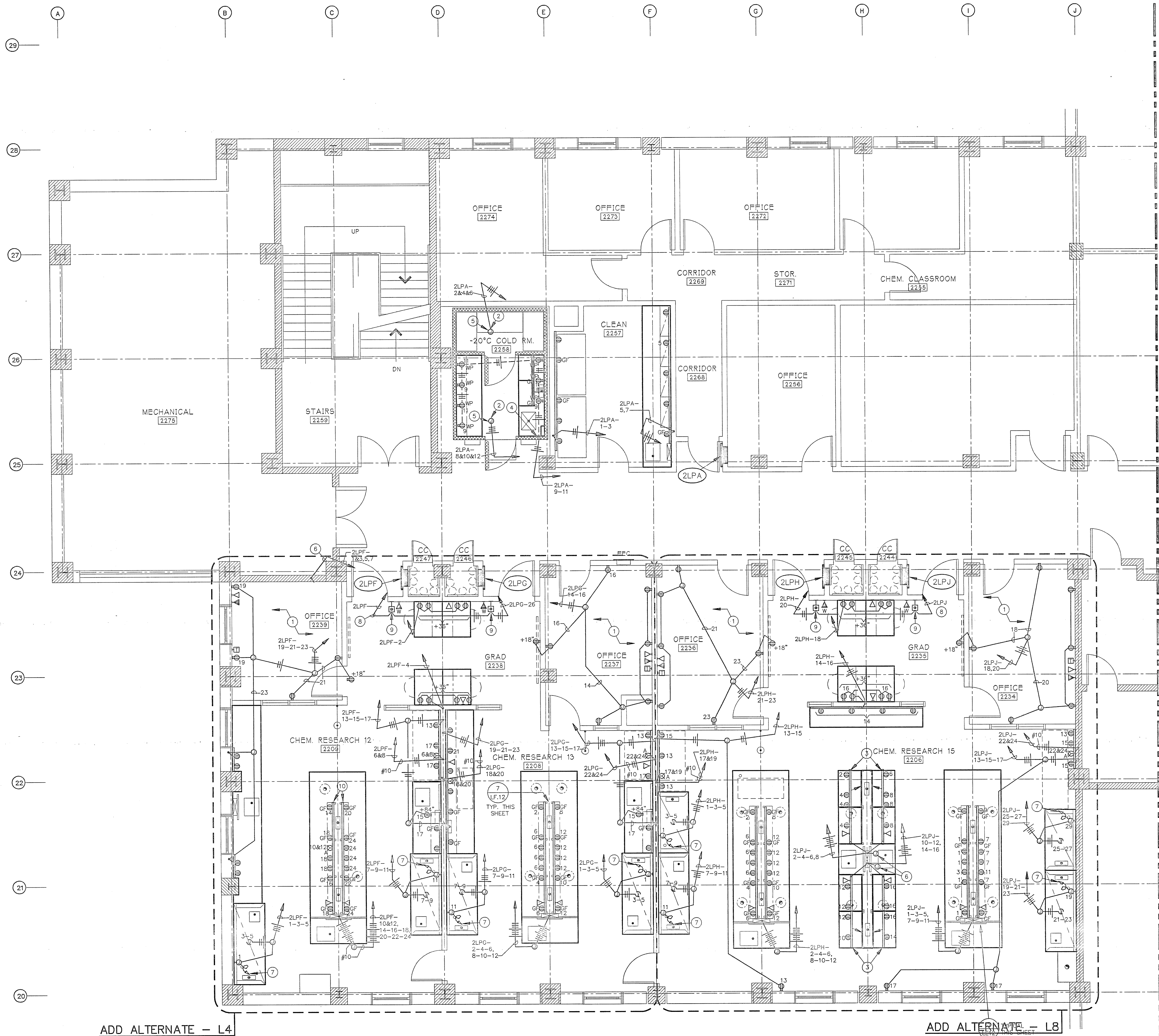
**Earl Watts Associates**  
Laboratory Design Consultants  
5348 Carroll Canyon Road  
San Diego, California 92121  
(619)457-2400

DRAWING REVISIONS:	
NO.	DATE: REMARKS:

DATE: 5/16/84  
PROJECT#: 8962  
DESIGNED BY: JSB  
DRAWN BY: GRM  
CHECKED BY: JSB

SHEET NO.:  
**LEO**





ADD ALTERNATE - L4

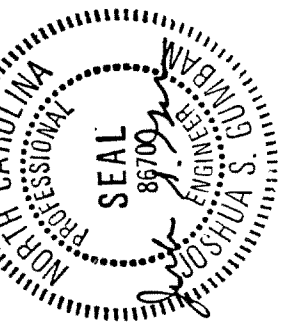
ADD ALTERNATE - L8

**JEFFRIES AND FARIS ASSOCIATES**  
ARCHITECTS • PLANNERS

SEA TOWERS, SUITE 201  
3002 EASTWOOD ROAD  
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BUILDING KEYMAP



SCIENCE BUILDING  
 UNIVERSITY OF NORTH CAROLINA AT WILMINGTON  
 CODE 49308 ITEM 301 ID#6089280301A

**REFERENCE NOTES:**

- 1 ALL RECEPTACLES, TELCO/DATA AND TV OUTLETS IN OFFICES SHALL BE AT AT +18".
- 2 INSTALL JUNCTION BOXES OUTSIDE AND ABOVE ENVIRONMENTAL ROOM ENCLOSURE.
- 3 ALL RECEPTACLES IN RACEWAY OF THIS ISLAND BENCH SHALL BE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE.
- 4 PROVIDE CONDUIT SEAL IN CONDUIT ENTERING COLD ROOM. COORDINATE LOCATION.
- 5 FOR ENVIRONMENTAL ROOM CONTROL PANEL EXTENSION TO CONTROL PANEL BY ENVIRONMENTAL ROOM MANUFACTURER.
- 6 LOCATE J.BOX INSIDE UMBILICAL.
- 7 MAKE CONNECTION TO VACUUM PUMP RECEPTACLE IN CABINET BELOW. SEE LAB FURNITURE DRAWINGS DETAIL.
- 8 TO SHUNT TRIP MAIN CIRCUIT BREAKER OF RESPECTIVE PANEL.
- 9 EITHER OF THE TWO EMERGENCY OFF PUSHBUTTONS SHALL DE-ENERGIZE BOTH RESPECTIVE POWER PANELS.
- 10 ALL WIRE SIZE IN RACEWAYS SHALL BE #10 AWG.
- 11 J.BOX AT +6" TO TOP.
- 12 UNDER BENCH TOP.
- 13 TO NEARBY TELCO/DATA CLOSET. SEE CATEGORY "E" BUILDING ELECTRICAL DRAWINGS.

**SECOND FLOOR**  
SCALE: 1/4" = 1'-0"

**AREA SIX**  
AS BUILT

**unwall**  
Earl Walls Associates  
Laboratory Design Consultants  
5340 Carroll Canyon Road  
San Diego, California 92121  
(619)457-2400

DRAWING REVISIONS:		
NO.	DATE	REMARKS

DATE: 5/16/94  
PROJECT#: 8962  
DESIGNED BY: JSG  
DRAWN BY: GRM  
CHECKED BY: JSG

SHEET NO.:

**LE11**



- A. FOR A SINGLE 20 AMPERE, 120 VOLT CIRCUIT HOMERUN ASSIGNED TO A RACEWAY, RECEPTACLES IN THE RACEWAY SHALL BE WIRED TO THAT CIRCUIT.
  - B. FOR MULTIPLE 20 AMPERE, 120 VOLT CIRCUIT HOMERUN ASSIGNED TO A RACEWAY, GENERAL PURPOSE RECEPTACLES SHALL BE WIRED ALTERNATELY IN ACCORDANCE WITH THE NUMBER OF ASSIGNED CIRCUITS (EXAMPLE: FOR TWO ASSIGNED CIRCUITS 1-3, RECEPTACLES SHALL BE WIRED AS 1, 3, 1, 3, 1, 3, 1, ETC. FOR THREE ASSIGNED CIRCUITS 1-3-5, RECEPTACLES SHALL BE WIRED AS 1, 3, 5, 1-3-5, 1, 3, ETC.) SEE PANEL SCHEDULES FOR CIRCUIT DESIGNATIONS.
2. NEMA 5-20R RECEPTACLES ON DEDICATED CIRCUITS ARE EACH DESIGNATED WITH THEIR ASSIGNED CIRCUITS.
3. 208 VOLT, 120/208 VOLT AND RECEPTACLES ARE EACH DESIGNATED WITH THEIR ASSIGNED CIRCUITS.
4. WHERE STANDARD CHEMICAL HOODS, WITH TWO DUPLEX RECEPTACLES EACH SIDE OF THE HOOD, ARE ASSIGNED WITH TWO CIRCUITS, RECEPTACLES SHALL BE WIRED ALTERNATELY FOR THE TWO ASSIGNED CIRCUITS.
5. SEE ILLUSTRATIVE PLANS "A" AND "B". PLAN "A" ILLUSTRATE ACTUAL POWER LAYOUT AS SHOWN ON FLOOR PLANS. PLAN "B" ILLUSTRATES ACTUAL CIRCUITING THE CONTRACTOR HAS TO EXECUTE.

[illegible]

DATE: 5/16/94  
PROJECT#: 8962  
DESIGNED BY: JSG  
DRAWN BY: GRM  
CHECKED BY: JSG  
CHECKED BY:

VOLTS 120/208, 3Ø, 4W VOLTS 277/480, 3Ø, 4W		BUS 100A, 225A, 400A MOUNTING RECESSED SURFACE		MAIN 125A 3P AUTO LUGS ONLY AREA SERVED RM. 1251, 1254, 1255		SHUNT-TRIP PANEL 1LPA				
DESCRIPTION	KVA	ØA	ØB	ØC	BKR	ØA	ØB	ØC	DESCRIPTION	
RECEPT-RM. 1245	.8	.8	.8	.8	20/1	1	2	20/1	1.2	HOOD - RM. 1245
	.8	.8	.8	.8	3	3	3	3	1.2	HOOD
	.8	.8	.8	.8	7	7	7	7	1.2	RECEPT.
	.8	.8	.8	.8	11	11	11	11	1.2	
	.8	.8	.8	.8	15	15	15	15	1.2	
	.8	.8	.8	.8	19	19	19	19	1.2	
	.8	.8	.8	.8	23	23	23	23	1.2	
	.8	.8	.8	.8	27	27	27	27	1.2	
	.8	.8	.8	.8	31	31	31	31	1.2	
	.8	.8	.8	.8	35	35	35	35	1.2	
	.8	.8	.8	.8	39	39	39	39	1.2	
	.8	.8	.8	.8	43	43	43	43	1.2	
	.8	.8	.8	.8	47	47	47	47	1.2	
	.8	.8	.8	.8	51	51	51	51	1.2	
	.8	.8	.8	.8	55	55	55	55	1.2	
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	.8	.8	.8	.8	91	91	91	91	1.2	
	.8	.8	.8	.8	95	95	95	95	1.2	
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	.8	.8	.8	.8	107	107	107	107	1.2	
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	.8	.8	.8	.8	115	115	115	115	1.2	
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	.8	.8	.8	.8	135	135	135	135	1.2	
	.8	.8	.8	.8	139	139	139	139	1.2	
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	.8	.8	.8	.8	511	511	511	511	1.2	
	.8	.8	.8	.8	515	515	515	515	1.2	
	.8	.8	.8	.8	519	519	519	519	1.2	
	.8	.8	.8	.8	523	523	523	523	1.2	
	.8	.8	.8	.8	527	527	527	527	1.2	
	.8	.8	.8	.8	531	531	531	531	1.2	
	.8	.8	.8	.8	535	535	535	535	1.2	
	.8	.8	.8	.8	539	539	539	539	1.2	
	.8	.8	.8	.8	543	543	543	543	1.2	
	.8	.8	.8	.8	547	547	547	547	1.2	
	.8	.8	.8	.8	551	551	551	551	1.2	
	.8	.8	.8	.8	555	555	555	555	1.2	
	.8	.8	.8	.8	559	559	559	559	1.2	
	.8	.8	.8	.8	563	563	563	563	1.2	
	.8	.8	.8	.8	567	567	567	567	1.2	
	.8	.8	.8	.8	571	571	571	571	1.2	
	.8	.8	.8	.8	575	575	575	575	1.2	
	.8	.8	.8	.8	579	579	579	579	1.2	
	.8	.8	.8	.8	583	583	583	583	1.2	
	.8	.8	.8	.8	587	587	587	587	1.2	
	.8	.8	.8	.8	591	591	591	591	1.2	
	.8	.8	.8	.8	595	595	595	595	1.2	
	.8	.8	.8	.8	599	599	599	599	1.2	
	.8	.8	.8	.8	603	603	603	603	1.2	
	.8	.8	.8	.8	607	607	607	607	1.2	
	.8	.8	.8	.8	611	611	611	611	1.2	
	.8	.8	.8	.8	615	615	615	615	1.2	
	.8	.8	.8	.8	619	619	619	619		

VOLTS 120/208, 3Ø, 4W VOLTS 480, 3Ø, 3W		BUS 100A, 225A 400A MOUNTING RECESSED SURFACE		MAIN 100 A-3P AUTO LUGS ONLY AREA SERVED LAB 1034		SHUNT-TRIP PANEL 1LPS			
DESCRIPTION	KVA	ØA	ØB	ØC	BKR	ØA	ØB	ØC	DESCRIPTION
RECEPT	.8	ØA	ØB	ØC	1	2	3	4	RECEPT
HOOD	1.2	ØA	ØB	ØC	5	6	7	8	SHUNT-TRIP CONTROL
RECEPT	.8	ØA	ØB	ØC	9	10	11	12	SPACE
SPACE		ØA	ØB	ØC	13	14	15	16	SPACE
SPACE		ØA	ØB	ØC	17	18	19	20	SPACE
SPACE		ØA	ØB	ØC	21	22	23	24	SPACE
SPACE		ØA	ØB	ØC	25	26	27	28	SPACE
SPACE		ØA	ØB	ØC	29	30	31	32	SPACE
SPACE		ØA	ØB	ØC	33	34	35	36	SPACE
SPACE		ØA	ØB	ØC	37	38	39	40	SPACE
SPACE		ØA	ØB	ØC	41	42	43	44	SPACE
SPACE		ØA	ØB	ØC	45	46	47	48	SPACE
SPACE		ØA	ØB	ØC	49	50	51	52	SPACE
SPACE		ØA	ØB	ØC	53	54	55	56	SPACE
SPACE		ØA	ØB	ØC	57	58	59	60	SPACE
SPACE		ØA	ØB	ØC	61	62	63	64	SPACE
SPACE		ØA	ØB	ØC	65	66	67	68	SPACE
SPACE		ØA	ØB	ØC	69	70	71	72	SPACE
SPACE		ØA	ØB	ØC	73	74	75	76	SPACE
SPACE		ØA	ØB	ØC	77	78	79	80	SPACE
SPACE		ØA	ØB	ØC	81	82	83	84	SPACE
SPACE		ØA	ØB	ØC	85	86	87	88	SPACE
SPACE		ØA	ØB	ØC	89	90	91	92	SPACE
SPACE		ØA	ØB	ØC	93	94	95	96	SPACE
SPACE		ØA	ØB	ØC	97	98	99	100	SPACE
SPACE		ØA	ØB	ØC	101	102	103	104	SPACE
SPACE		ØA	ØB	ØC	105	106	107	108	SPACE
SPACE		ØA	ØB	ØC	109	110	111	112	SPACE
SPACE		ØA	ØB	ØC	113	114	115	116	SPACE
SPACE		ØA	ØB	ØC	117	118	119	120	SPACE
SPACE		ØA	ØB	ØC	121	122	123	124	SPACE
SPACE		ØA	ØB	ØC	125	126	127	128	SPACE
SPACE		ØA	ØB	ØC	129	130	131	132	SPACE
SPACE		ØA	ØB	ØC	133	134	135	136	SPACE
SPACE		ØA	ØB	ØC	137	138	139	140	SPACE
SPACE		ØA	ØB	ØC	141	142	143	144	SPACE
SPACE		ØA	ØB	ØC	145	146	147	148	SPACE
SPACE		ØA	ØB	ØC	149	150	151	152	SPACE
SPACE		ØA	ØB	ØC	153	154	155	156	SPACE
SPACE		ØA	ØB	ØC	157	158	159	160	SPACE
SPACE		ØA	ØB	ØC	161	162	163	164	SPACE
SPACE		ØA	ØB	ØC	165	166	167	168	SPACE
SPACE		ØA	ØB	ØC	169	170	171	172	SPACE
SPACE		ØA	ØB	ØC	173	174	175	176	SPACE
SPACE		ØA	ØB	ØC	177	178	179	180	SPACE
SPACE		ØA	ØB	ØC	181	182	183	184	SPACE
SPACE		ØA	ØB	ØC	185	186	187	188	SPACE
SPACE		ØA	ØB	ØC	189	190	191	192	SPACE
SPACE		ØA	ØB	ØC	193	194	195	196	SPACE
SPACE		ØA	ØB	ØC	197	198	199	200	SPACE
SPACE		ØA	ØB	ØC	201	202	203	204	SPACE
SPACE		ØA	ØB	ØC	205	206	207	208	SPACE
SPACE		ØA	ØB	ØC	209	210	211	212	SPACE
SPACE		ØA	ØB	ØC	213	214	215	216	SPACE
SPACE		ØA	ØB	ØC	217	218	219	220	SPACE
SPACE		ØA	ØB	ØC	221	222	223	224	SPACE
SPACE		ØA	ØB	ØC	225	226	227	228	SPACE
SPACE		ØA	ØB	ØC	229	230	231	232	SPACE
SPACE		ØA	ØB	ØC	233	234	235	236	SPACE
SPACE		ØA	ØB	ØC	237	238	239	240	SPACE
SPACE		ØA	ØB	ØC	241	242	243	244	SPACE
SPACE		ØA	ØB	ØC	245	246	247	248	SPACE
SPACE		ØA	ØB	ØC	249	250	251	252	SPACE
SPACE		ØA	ØB	ØC	253	254	255	256	SPACE
SPACE		ØA	ØB	ØC	257	258	259	260	SPACE
SPACE		ØA	ØB	ØC	261	262	263	264	SPACE
SPACE		ØA	ØB	ØC	265	266	267	268	SPACE
SPACE		ØA	ØB	ØC	269	270	271	272	SPACE
SPACE		ØA	ØB	ØC	273	274	275	276	SPACE
SPACE		ØA	ØB	ØC	277	278	279	280	SPACE
SPACE		ØA	ØB	ØC	281	282	283	284	SPACE
SPACE		ØA	ØB	ØC	285	286	287	288	SPACE
SPACE		ØA	ØB	ØC	289	290	291	292	SPACE
SPACE		ØA	ØB	ØC	293	294	295	296	SPACE
SPACE		ØA	ØB	ØC	297	298	299	300	SPACE
SPACE		ØA	ØB	ØC	301	302	303	304	SPACE
SPACE		ØA	ØB	ØC	305	306	307	308	SPACE
SPACE		ØA	ØB	ØC	309	310	311	312	SPACE
SPACE		ØA	ØB	ØC	313	314	315	316	SPACE
SPACE		ØA	ØB	ØC	317	318	319	320	SPACE
SPACE		ØA	ØB	ØC	321	322	323	324	SPACE
SPACE		ØA	ØB	ØC	325	326	327	328	SPACE
SPACE		ØA	ØB	ØC	329	330	331	332	SPACE
SPACE		ØA	ØB	ØC	333	334	335	336	SPACE
SPACE		ØA	ØB	ØC	337	338	339	340	SPACE
SPACE		ØA	ØB	ØC	341	342	343	344	SPACE
SPACE		ØA	ØB	ØC	345	346	347	348	SPACE
SPACE		ØA	ØB	ØC	349	350	351	352	SPACE
SPACE		ØA	ØB	ØC	353	354	355	356	SPACE
SPACE		ØA	ØB	ØC	357	358	359	360	SPACE
SPACE		ØA	ØB	ØC	361	362	363	364	SPACE
SPACE		ØA	ØB	ØC	365	366	367	368	SPACE
SPACE		ØA	ØB	ØC	369	370	371	372	SPACE
SPACE		ØA	ØB	ØC	373	374	375	376	SPACE
SPACE		ØA	ØB	ØC	377	378	379	380	SPACE
SPACE		ØA	ØB	ØC	381	382	383	384	SPACE
SPACE		ØA	ØB	ØC	385	386	387	388	SPACE
SPACE		ØA	ØB	ØC	389	390	391	392	SPACE
SPACE		ØA	ØB	ØC	393	394	395	396	SPACE
SPACE		ØA	ØB	ØC	397	398	399	400	SPACE
SPACE		ØA	ØB	ØC	401	402	403	404	SPACE
SPACE		ØA	ØB	ØC	405	406	407	408	SPACE
SPACE		ØA	ØB	ØC	409	410	411	412	SPACE
SPACE		ØA	ØB	ØC	413	414	415	416	SPACE
SPACE		ØA	ØB	ØC	417	418	419	420	SPACE
SPACE		ØA	ØB	ØC	421	422	423	424	SPACE
SPACE		ØA	ØB	ØC	425	426	427	428	SPACE
SPACE		ØA	ØB	ØC	429	430	431	432	SPACE
SPACE		ØA	ØB	ØC	433	434	435	436	SPACE
SPACE		ØA	ØB	ØC	437	438	439	440	SPACE
SPACE		ØA	ØB	ØC	441	442	443	444	SPACE
SPACE		ØA	ØB	ØC	445	446	447	448	SPACE
SPACE		ØA	ØB	ØC	449	450	451	452	SPACE
SPACE		ØA	ØB	ØC	453	454	455	456	SPACE
SPACE		ØA	ØB	ØC	457	458	459	460	SPACE
SPACE		ØA	ØB	ØC	461	462	463	464	SPACE
SPACE		ØA	ØB	ØC	465	466	467	468	SPACE
SPACE		ØA	ØB	ØC	469	470	471	472	SPACE
SPACE		ØA	ØB	ØC	473	474	475	476	SPACE
SPACE		ØA	ØB	ØC	477	478	479	480	SPACE
SPACE		ØA	ØB	ØC	481	482	483	484	SPACE
SPACE		ØA	ØB	ØC	485	486	487	488	SPACE
SPACE		ØA	ØB	ØC	489	490	491	492	SPACE
SPACE		ØA	ØB	ØC	493	494	495	496	SPACE
SPACE		ØA	ØB	ØC	497	498	499	500	SPACE
SPACE		ØA	ØB	ØC	501	502	503	504	SPACE
SPACE		ØA	ØB	ØC	505	506	507	508	SPACE
SPACE		ØA	ØB	ØC	509	510	511	512	SPACE
SPACE		ØA	ØB	ØC	513	514	515	516	SPACE
SPACE		ØA	ØB	ØC	517	518	519	520	SPACE
SPACE		ØA	ØB	ØC	521	522	523	524	SPACE
SPACE		ØA	ØB	ØC	525	526	527	528	SPACE
SPACE		ØA	ØB	ØC	529	530	531	532	SPACE
SPACE		ØA	ØB	ØC	533	534	535	536	SPACE
SPACE		ØA	ØB	ØC	537	538	539	540	SPACE
SPACE		ØA	ØB	ØC	541	542	543	544	SPACE
SPACE		ØA	ØB	ØC	545	546	547	548	SPACE
SPACE		ØA	ØB	ØC	549	550	551	552	SPACE
SPACE		ØA	ØB	ØC	553	554	555	556	SPACE
SPACE		ØA	ØB	ØC	557	558	559	560	SPACE
SPACE		ØA	ØB	ØC	561	562	563	564	SPACE
SPACE		ØA	ØB	ØC	565	566	567	568	SPACE
SPACE		ØA	ØB	ØC	569	570	571	572	SPACE
SPACE		ØA	ØB	ØC	573	574	575	576	SPACE
SPACE		ØA	ØB	ØC	577	578	579	580	SPACE
SPACE		ØA	ØB	ØC	581	582	583	584	SPACE
SPACE		ØA	ØB	ØC	585	586	587	588	SPACE
SPACE		ØA	ØB	ØC	589	590	591	592	SPACE
SPACE		ØA	ØB	ØC	593	594	595	596	SPACE
SPACE		ØA	ØB	ØC	597	598	599	600	SPACE
SPACE		ØA	ØB	ØC	601	602	603	604	SPACE
SPACE		ØA	ØB	ØC	605	606	607	608	SPACE
SPACE		ØA	ØB	ØC	609	610	611	612	SPACE
SPACE		ØA	ØB	ØC	613	614	615	616	SPACE
SPACE		ØA	ØB	ØC	617	618	619	620	SPACE
SPACE		ØA	ØB	ØC	621	622	623	624	SPACE
SPACE		ØA	ØB	ØC	625	626	627	628	SPACE
SPACE		ØA	ØB	ØC	629	630	631	632	SPACE
SPACE		ØA	ØB	ØC	633	634	635	636	SPACE
SPACE		ØA	ØB	ØC	637	638	639	640	SPACE
SPACE		ØA	ØB	ØC	641	642	643	644	SPACE
SPACE		ØA	ØB	ØC	645	646	647	648	SPACE
SPACE		ØA	ØB						



