

EASTERN FLORIDA STATE COLLEGE

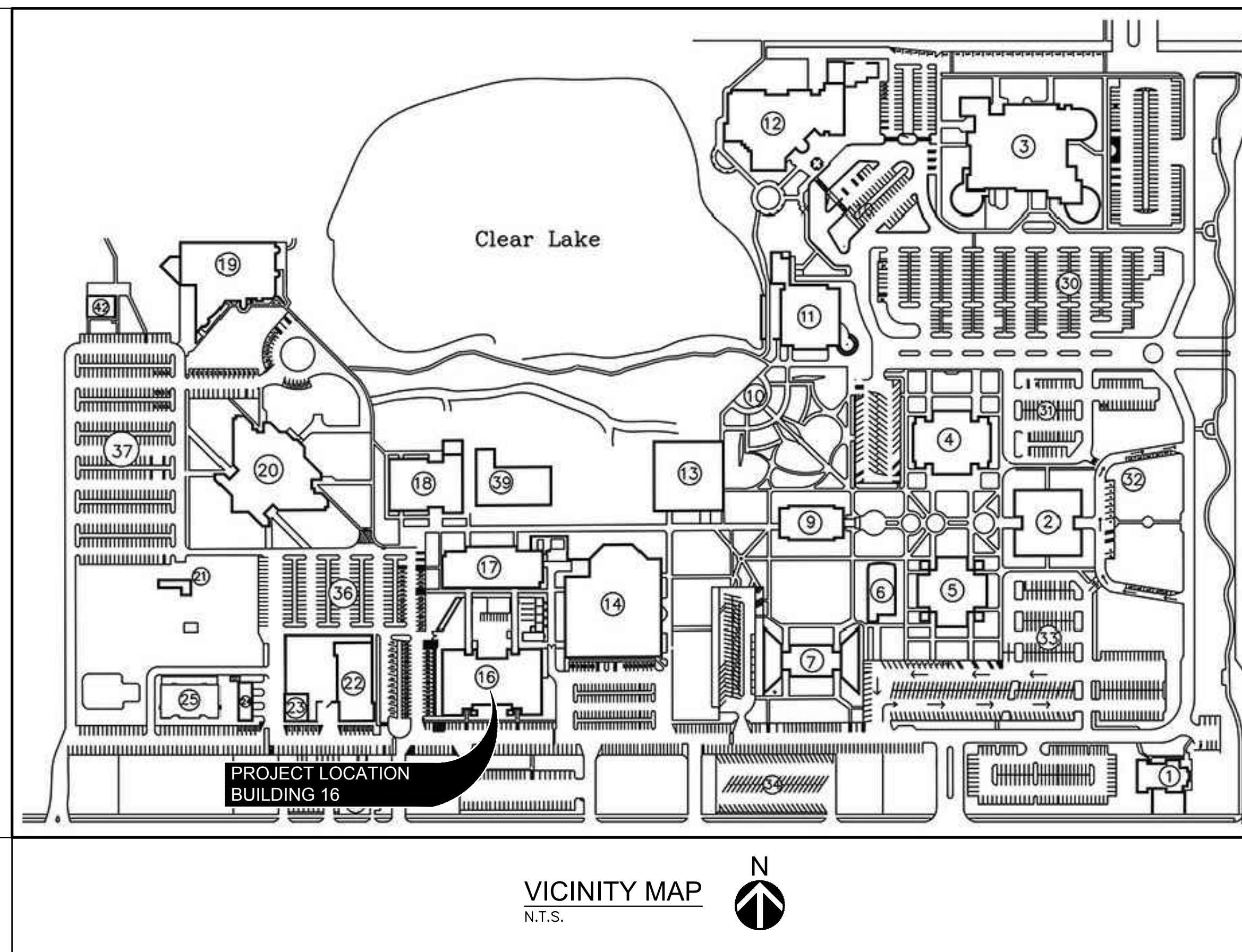
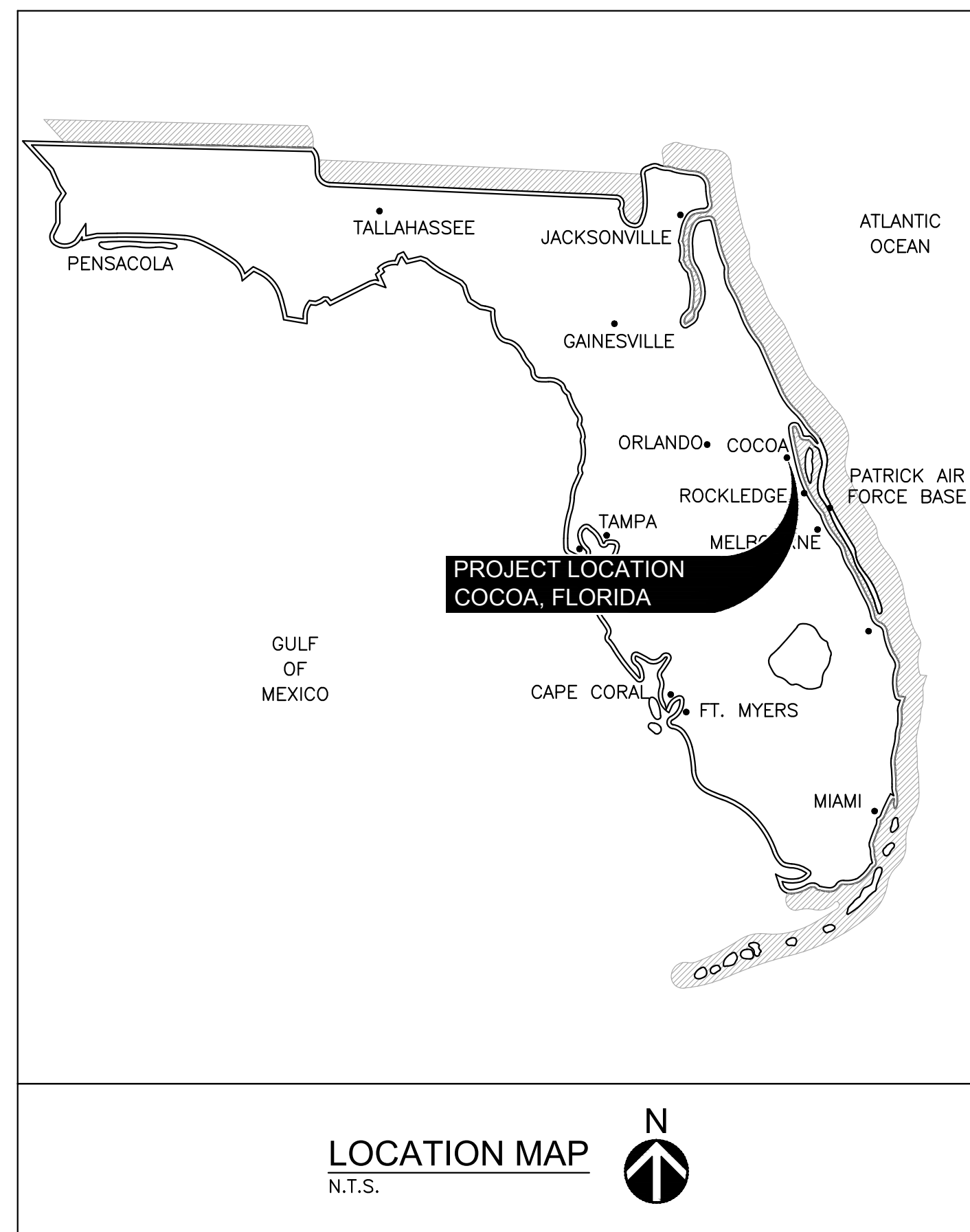
COCOA CAMPUS BUILDING 16

MECHANICAL AND ELECTRICAL UPGRADES

TO ROOMS 112 AND 145

1519 CLEARLAKE ROAD
COCOA, FL 32922

BID SET
2/20/2019



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REV	DATE	DESCRIPTION

EASTERN FLORIDA STATE COLLEGE
COCOA CAMPUS BUILDING 16 MECHANICAL AND
ELECTRICAL UPGRADES TO ROOMS 112 AND 145
1519 CLEARLAKE ROAD
COCOA, FL 32922

COVER SHEET AND INDEX

BID SET

VICTOR M. DIAZ
FL PE# 55919

PROJ.# 18-073
DATE 02/20/2019
DRAWN L. BECK
DESIGN V. DIAZ
CHECK V. DIAZ
FILE G-001.dwg

G-001
SHEET 1 OF 8

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ABBREVIATIONS:
(SOME MAY NOT BE USED)

Table with columns: ABBREVIATION, DESCRIPTION, ABBREVIATION, DESCRIPTION, ABBREVIATION, DESCRIPTION. Lists various abbreviations for building components, materials, and units.

DUCT LEGEND:
(SOME MAY NOT BE USED)

Table with columns: SYMBOL, DESCRIPTION. Lists symbols for various duct types, dampers, and connections.

MECHANICAL LEGEND:
(SOME MAY NOT BE USED)

Table with columns: SYMBOL, DESCRIPTION. Lists symbols for piping, valves, dampers, and other mechanical components.

GENERAL NOTES:

- 1. PROVIDE LABOR, MATERIALS, TOOLS, EQUIPMENT, AND DEVICES NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM IN ACCORDANCE WITH THE INTENT OF THE CONTRACT DRAWINGS. FULLY TEST, BALANCE, CLEAN AND LEAVE SYSTEMS IN A COMPLETE AND OPERATIONAL STATUS.
- 2. THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND DO NOT SHOW ALL OFFSETS, BENDS, ELBOWS, OR OTHER SPECIFIC ELEMENTS THAT MAY BE REQUIRED FOR PROPER INSTALLATION OF THE WORK. SUCH WORK SHALL BE FIELD VERIFIED AND CAREFULLY COORDINATED AT THE SITE BY THE CONTRACTOR.
- 3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE U.L. LISTED WHERE APPLICABLE. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS WITH ADEQUATE MAINTENANCE CLEARANCES AS SPECIFIED BY LOCAL CODES AND MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 4. PROVIDE WORK IN ACCORDANCE WITH THE ENTIRE FLORIDA BUILDING CODE, 6TH EDITION (2017) MECHANICAL, LATEST ADDENDUMS AND OTHER LOCAL CODES AND STANDARDS AS ENFORCED.
- 5. PROVIDE ALL SUPPLEMENTARY STEEL FOR SUPPORTS AND BRACING OF ALL PIPING AND DUCTWORK.
- 6. DO NOT ROUTE WATER PIPING OR DUCTWORK ABOVE ANY ELECTRICAL OR TELEPHONE PANELS.
- 7. PROVIDE PROTECTION FROM ELECTROLYTIC CORROSION FOR ALL CONNECTIONS AND POINTS OF CONTACT OF DISSIMILAR METALS USING DIELECTRIC ISOLATORS.
- 8. EXCEPT WHERE INDICATED IN DIMENSIONAL DETAIL, THE LOCATIONS OF MECHANICAL EQUIPMENT, DUCTS, PIPING, AND FITTINGS ARE ONLY APPROXIMATE. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND COORDINATED WITH OTHER TRADES.
- 9. TYPICAL DETAILS APPLY TO ALL SITUATIONS WHERE SIMILAR CONDITIONS EXIST AND ARE INTENDED TO BE USED AS NECESSARY FOR THE APPLICATION INTENDED UNLESS OTHERWISE INDICATED.
- 10. AT SUBSTANTIAL COMPLETION THE CONTRACTOR SHALL PROVIDE THE OWNER WITH FOUR (4) COPIES OF A HARD BOUND OPERATING & MAINTENANCE MANUAL (O & M) FOR ALL EQUIPMENT FURNISHED AND INSTALLED UNDER HIS WORK, OTHERWISE SYSTEMS INVOLVED WILL NOT BE ACKNOWLEDGED AS COMPLETE AND THEREFORE NOT ACCEPTED.
- 11. THE O & M MANUALS SHALL INCLUDE DETAILED CONTROL DRAWINGS FOR EACH SYSTEM. THEY SHALL INDICATE COMPONENTS USED AND THEIR RESPECTIVE LOCATIONS WITHIN THE BUILDINGS BEING SERVED. DRAWINGS SHALL LIST BUILDING AND ROOM NUMBERS. THE MANUFACTURER PARTS LIST AND SERIAL NUMBERS FOR ALL OPERATING EQUIPMENT SHALL ALSO BE INCLUDED.
- 12. TWO (2) COPIES OF AS-BUILT PRINTS SHALL BE PROVIDED TO THE OWNER AT THE DATE OF SUBSTANTIAL COMPLETION. THE DRAWINGS SHALL SHOW ALL EQUIPMENT, AND DUCTWORK WITH DIMENSIONS AND REFERENCE POINTS, OTHER CONCEALED NON-ACCESSIBLE WORK, BRANCHING ARRANGEMENT AND VALVE LOCATION FOR PIPING SYSTEMS, LOCATIONS OF DAMPERS, VAV BOXES AND HEATERS IN DUCT SYSTEMS. LOCATIONS OF CONTROL SYSTEM SENSORS AND OTHER CONTROL DEVICES, AND WORK OF CHANGE ORDERS NOT SHOWN ON CONTRACT DOCUMENTS.
- 13. PROVIDE ADDITIONAL PIPING SUPPORTS ON BOTH SIDES AND WITHIN 18" OF FIRE RATED WALL. PIPING SHALL NOT BE SUPPORTED FROM ANY FIRE RATED WALL.
- 14. ALL WALL MOUNTED THERMOSTATS SHALL BE INSTALLED AT AN ELEVATION OF 54" ABOVE FINISHED FLOOR TO THE TOP UNLESS OTHERWISE NOTED ON DRAWINGS. LOCATION OF THE WALL MOUNTED THERMOSTAT SHALL BE COORDINATED WITH OTHER TRADES FOR A NEAT APPEARANCE. FINAL LOCATION OF THERMOSTAT SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER OR HIS REPRESENTATIVE IN THE FIELD.
- 15. PENETRATIONS THROUGH SMOKE OR FIRE-RATED ASSEMBLIES: PENETRATIONS FOR PIPES, CONDUITS OR OTHER PURPOSES THROUGH ASSEMBLIES (FLOORS, ROOF, WALLS, PARTITIONS, ETC.) WITH A REQUIRED FIRE RESISTANCE RATING SHALL BE SEALED TO THE PENETRATING MEMBER IN AN APPROVED MANNER WHICH MAINTAINS THE REQUIRED FIRE RESISTANCE RATING OF THE ASSEMBLY AS FOLLOWS:
 - A. WHERE HOLES FOR PENETRATIONS ARE FORMED CIRCULAR OR CORE-BORED, THE PENETRATION SHALL BE PROTECTED WITH FIRE-SEAL BRAND SMOKE AND FIRE STOP FITTINGS MFG. BY O-Z GEDLEY, LINK SEAL BRAND BY THUNDER LINE OR AN EQUAL APPROVED BY ENGINEER.
 - B. WHERE HOLES FOR PENETRATIONS ARE IRREGULAR (NON-CIRCULAR) IN SHAPE, THE PENETRATION SHALL BE PROTECTED WITH DOW CORNING 3-6548, SILICONE RTV FOAM, 3M FIRE BARRIER PENETRATION SEAL SYSTEM OR AN EQUAL APPROVED BY THE ENGINEER.
- 16. PROVIDE SUBMITTALS AS INDICATED ON THE HVAC SUBMITTALS TABLE ON THIS DRAWING. MARK EQUIPMENT TO BE PROVIDED CLEARLY, INCLUDING OPERATING CAPACITIES AND REQUIREMENTS PER THE SCHEDULES AND SPECIFICATIONS.

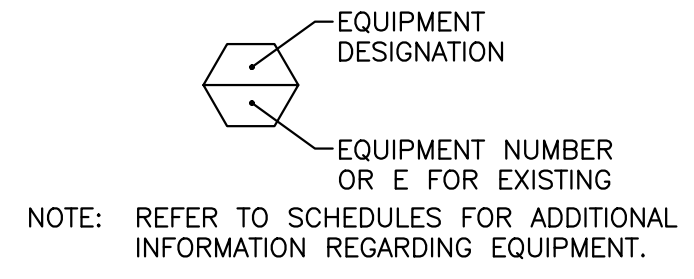
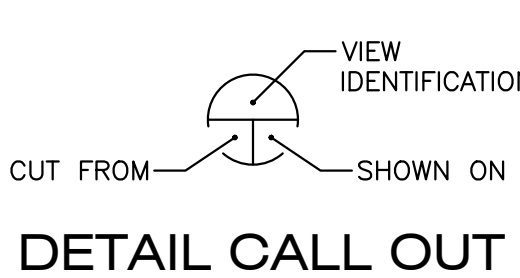
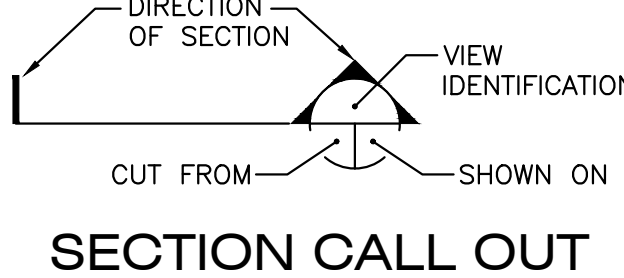
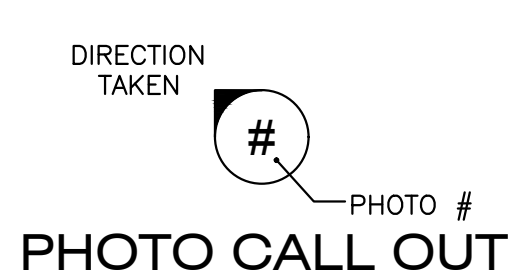
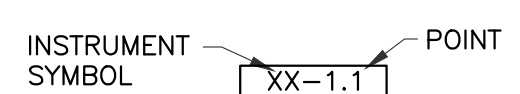
INSTRUMENTATION LEGEND:

Table with columns: SYMBOL, DESCRIPTION. Lists symbols for various instruments like pressure switches, flow switches, thermostats, etc.

HVAC SUBMITTALS

Table with columns: ITEM, PRODUCT DATA, SHOP DRAWINGS, TEST REPORTS, COORDINATION DRAWINGS, WIRING DIAGRAMS, O & M MANUAL. Lists submittal requirements for controls and accessories.

NOTES:
(1) FOR REVIEW
(2) FOR RECORD



NOTE: REFER TO SCHEDULES FOR ADDITIONAL INFORMATION REGARDING EQUIPMENT.



Table with columns: DATE, DESCRIPTION, REV. A grid for tracking revisions.

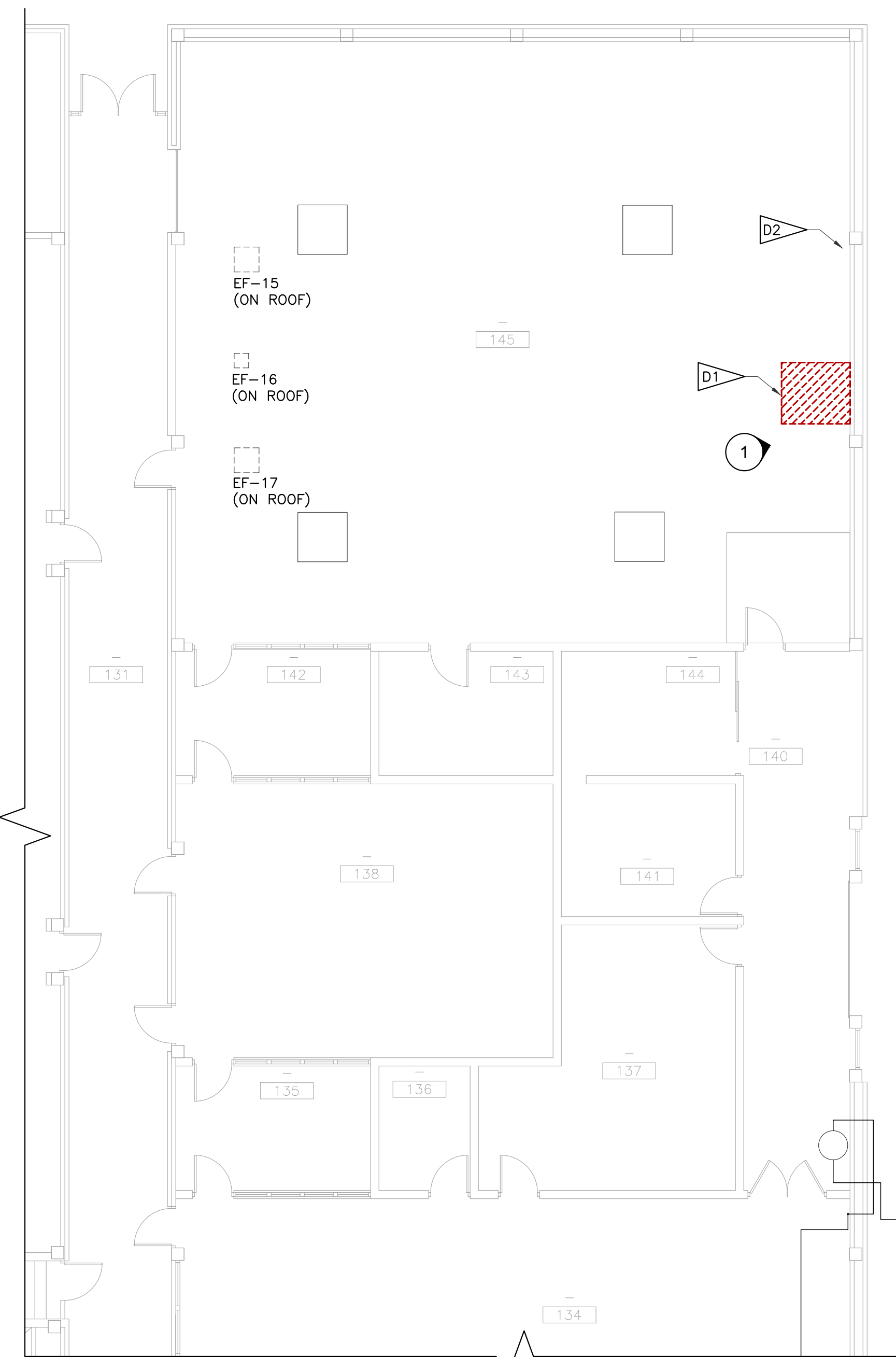
EASTERN FLORIDA STATE COLLEGE
COCO CAMPUS BUILDING 16 MECHANICAL AND ELECTRICAL UPGRADES TO ROOMS 112 AND 145
1519 CLEARLAKE ROAD
COCOA, FL 32922
MECHANICAL ABBREVIATIONS, LEGENDS AND NOTES

BID SET
LI LI
FL PE# 65631

Table with columns: PROJ.#, DATE, DRAWN, DESIGN, CHECK, FILE. Project information: PROJ.# 18-073, DATE 02/20/2019, DRAWN L. BECK, DESIGN LI LI, CHECK V. DIAZ, FILE M-001.dwg

M-001
SHEET 2 OF 8

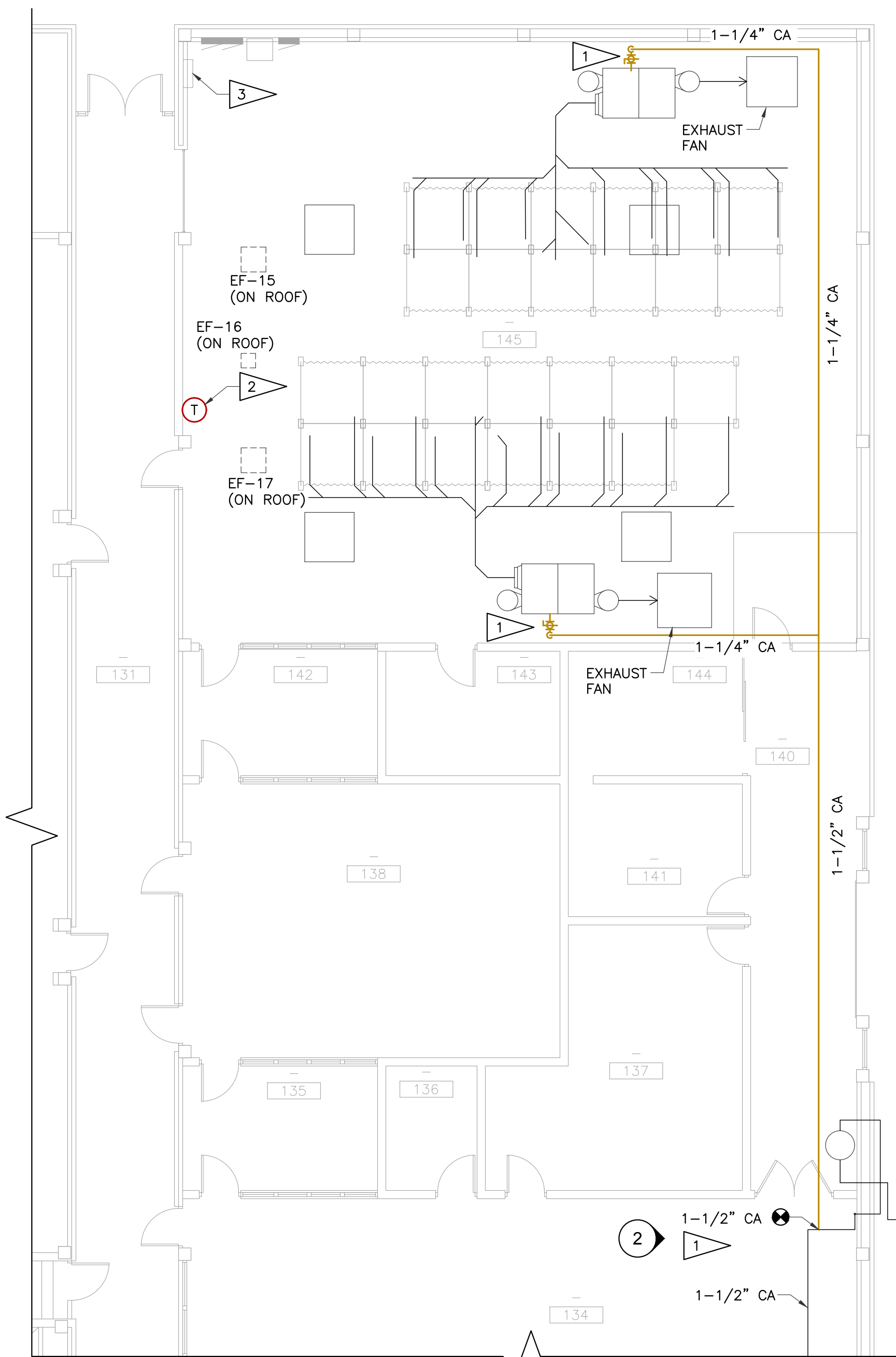
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HVAC PLAN - DEMO
3/16" = 1'-0"

DEMO FLAG NOTES:

- D1 DEMO EXISTING AC UNIT, DISCONNECT POWER AND CONDENSATE DRAIN.
- D2 THERE ARE TOTAL FIVE 60X42 LOUVERS, SOME OF THEM ARE COVERED WITH SHEET METAL COVER FROM INSIDE THE BUILDING. REMOVE ALL SHEET METAL COVER.



HVAC PLAN - NEW
3/16" = 1'-0"

NEW FLAG NOTES:

- 1 TAP 1-1/2" COMPRESSED AIR FROM EXISTING 2" ABOVE CEILING AND CONNECT TO LINCOLN EQUIPMENT. COMPRESSED AIR REQUIRED FOR SFB-12 IS 202 CFM AND FOR SFB-16 IS 269 CFM. REQUIRED AIR PRESSURE IS BETWEEN 58 PSI TO 75 PSI. EXISTING AIR COMPRESSOR IS 208 CFM AT 125 PSI. PROVIDE PRESSURE REGULATORS TO LINCOLN EQUIPMENT AS REQUIRED.
- 2 PROVIDE TEMPERATURE SENSOR AT LOCATION AS SHOWN.
- 3 PROVIDE CONTROL PANEL AT LOCATION SHOWN.

BASIS OF DESIGN:

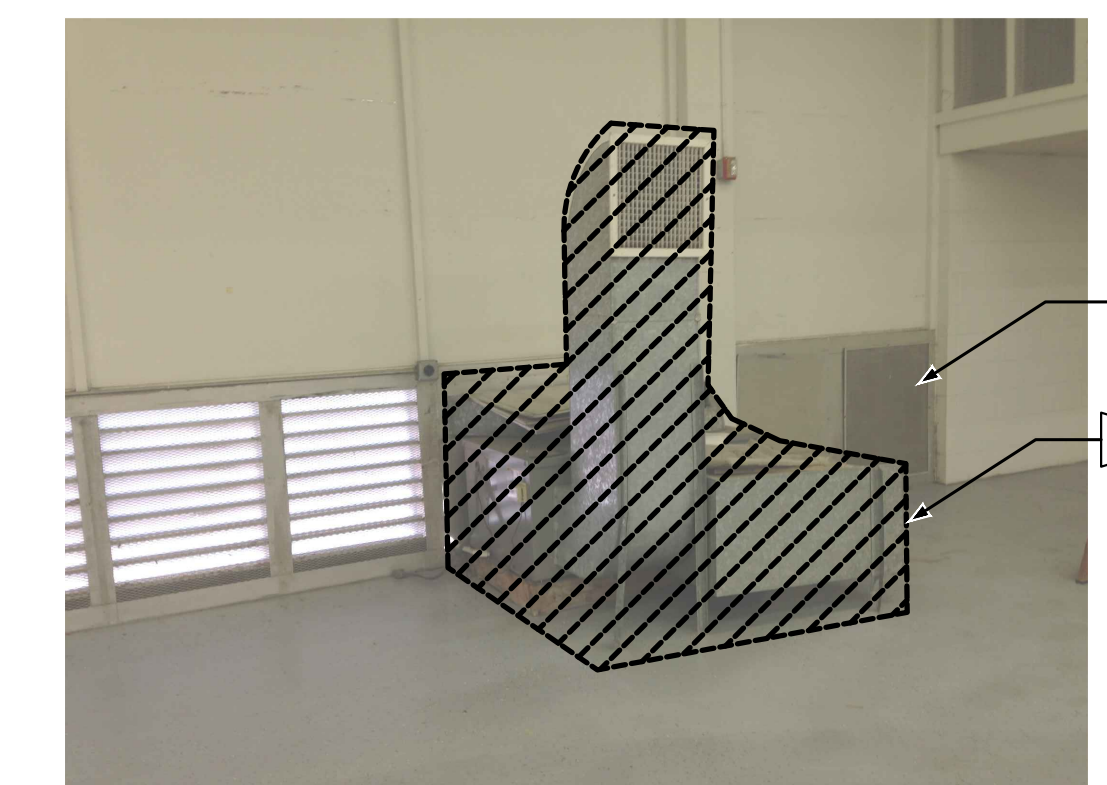
1. TOTAL EXHAUST FROM WELDING IS 16,250 CFM, 30% OA SHALL BE PROVIDED.
2. AIRFLOW FROM EXISTING EF-15 AND EF-17 IS 8050 CFM EACH. EF-15 OR EF-17 SHALL BE ON TO PROVIDE 30% OA WHEN WELDING EXHAUST FANS ARE ON. AIRFLOW FROM EXISTING EF-16 IS 1,150 CFM.

CONTROL SCOPE OF WORK:

1. PROVIDE CONTROLLER FOR LINCOLN EXHAUST FANS, EXISTING EF-15 EF-16 AND EF-17.
2. CONTROLLER SHALL BE CONNECTED TO BMS SYSTEM. CONTROL CONTRACTOR SHALL BE ALC.
3. SEQUENCE OF OPERATION:
DURING OCCUPIED HOURS, EF-16 SHALL BE ON. DURING UN-OCCUPIED HOURS, EF-16 SHALL BE OFF. WHEN ONE OR TWO WELDING EXHAUST FANS ARE ON, EF-15 OR EF-17 SHALL BE ON. IF SPACE TEMPERATURE IS HIGHER THAN 95°F (ADJUSTABLE) WITH EF-15 OR EF-17 IS ON. BOTH EF-15 OR EF-17 SHALL BE TURNED ON. LINCOLN EXHAUST FANS SHALL BE TURNED ON/OFF MANUALLY AND SHALL BE MONITORED BY THE CONTROL PANEL. IF LINCOLN EXHAUST FANS ARE ON DURING UNOCCUPIED HOURS, THEY SHALL BE TURNED OFF BY BUILDING MANAGEMENT SYSTEMS.

DDC POINTS LIST

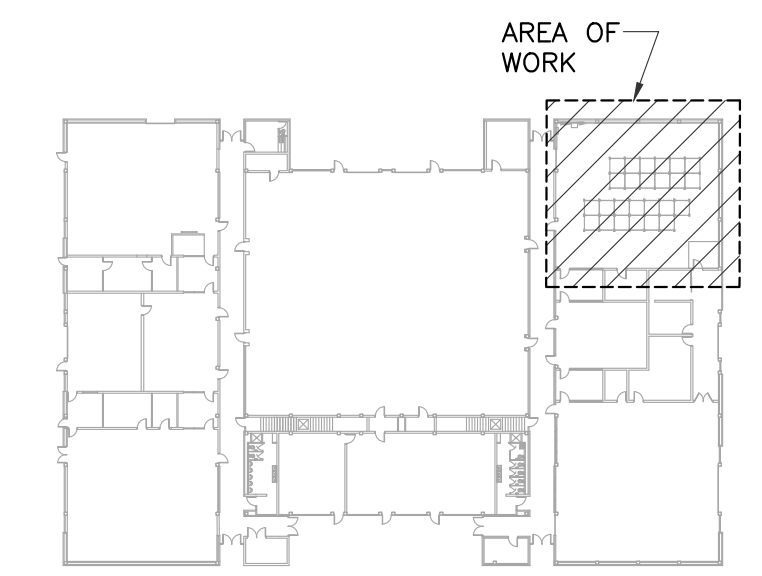
CONTROL POINTS	HARDWARE						SOFTWARE			TREND
	OUTPUT		INPUT				ALARM			
	DIGITAL	ANALOG	DIGITAL	ANALOG		DIGITAL	ANALOG			
	CONTROL RELAY	0-10 VOLT	CURRENT SWITCH	CURRENT SENSOR	TEMP.	PRESSURE	CHANGE OF STATE	HIGH LIMIT	LOW LIMIT	
EXHAUST EF-15 STATUS				X			X			X
EXHAUST EF-15 START/STOP	X									
EXHAUST EF-16 STATUS				X						X
EXHAUST EF-16 START/STOP	X									
EXHAUST EF-17 STATUS				X			X			X
EXHAUST EF-17 START/STOP	X									
WELDING EXHAUST FAN 1 STATUS				X			X			X
WELDING EXHAUST FAN 1 START/STOP	X									
WELDING EXHAUST FAN 2 STATUS				X			X			X
WELDING EXHAUST FAN 2 START/STOP	X									
SPACE TEMPERATURE TT					X					X



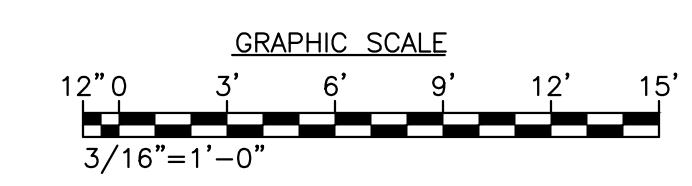
1 EXISTING AC UNIT
N.T.S.



2 EXISTING COMPRESSED AIR PIPING
N.T.S.



KEY PLAN
N.T.S.



REV	DATE	DESCRIPTION

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1519 CLEARLAKE ROAD
COCOA, FL 32922

BID SET
LI LI
FL PE# 65631

PROJ.# 18-073
DATE 02/20/2019
DRAWN L. BECK
DESIGN LI LI
CHECK V. DIAZ
FILE M-100.dwg

M-100
SHEET 3 OF 8

HVAC PLAN - DEMO & NEW

REV	DATE	DESCRIPTION

EASTERN FLORIDA STATE COLLEGE
 COCOA CAMPUS BUILDING 16 MECHANICAL AND ELECTRICAL UPGRADES TO ROOMS 112 AND 145
 1519 CLEARLAKE ROAD
 COCOA, FL 32922

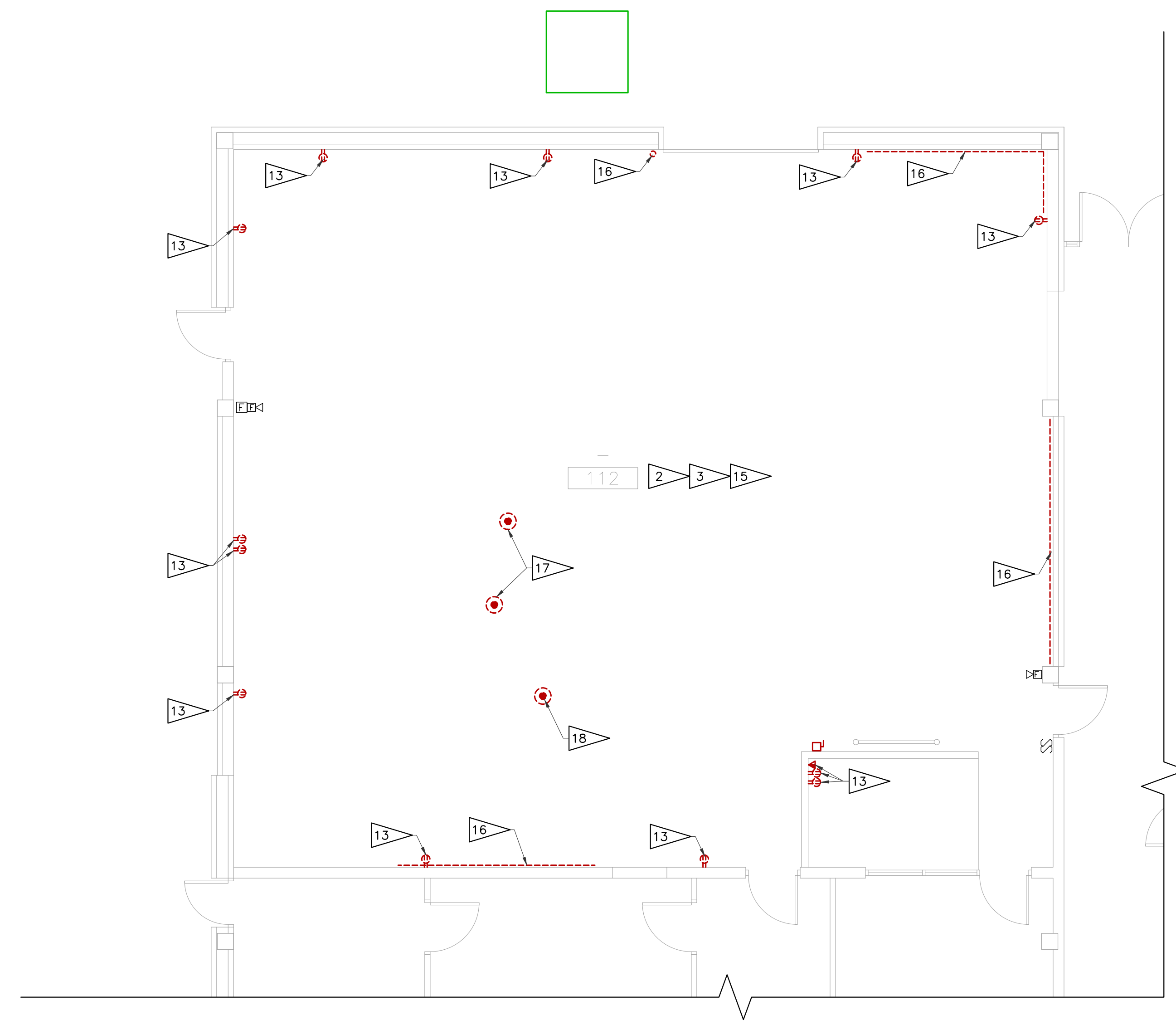
ELECTRICAL PLAN - DEMOLITION

BID SET

VICTOR M. DIAZ
 FL PE# 55919

PROJ.#	18-073
DATE	02/20/2019
DRAWN	L. BECK
DESIGN	V. DIAZ
CHECK	K. RENGARAJAN
FILE	E-100.dwg

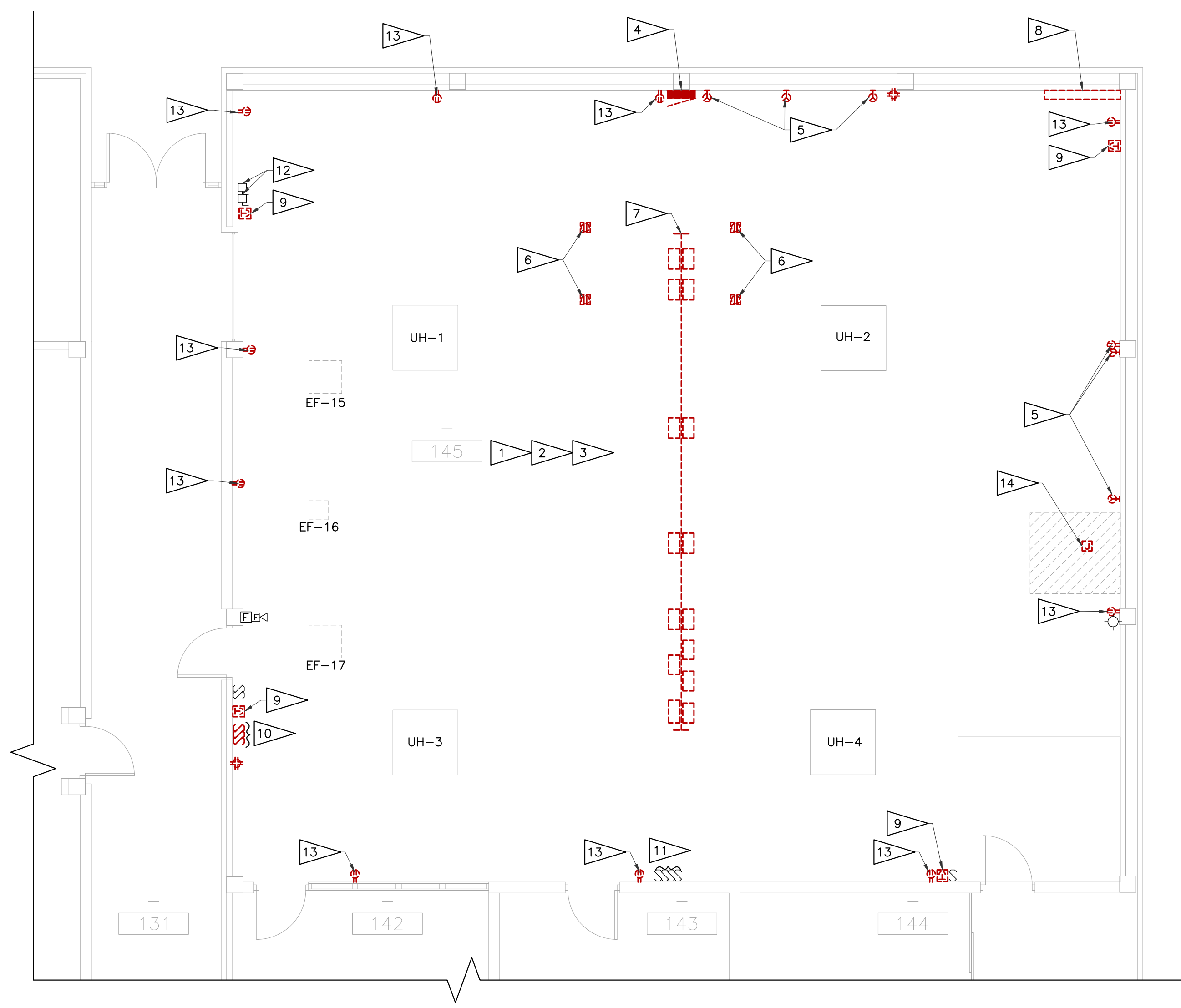
E-100
 SHEET 4 OF 8



ELECTRICAL PLAN - DEMOLITION ROOM 112
 3/16" = 1'-0"

ELECTRICAL LEGEND:

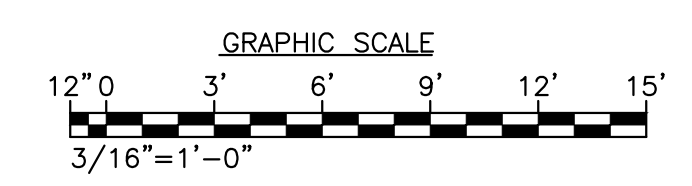
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	POWER PANELBOARD		DISCONNECT SWITCH XXX = SIZE YYY = FUSE (NF=NON-FUSED)
	DISTRIBUTION TRANSFORMER (VOLTAGE, PHASE, RATINGS AS INDICATED)		DUPLEX RECEPTACLE
	EQUIPMENT CONNECTION		GFI DUPLEX RECEPTACLE, WP=WEATHERPROOF COVER
	GROUNDING CIRCUIT		SPECIAL PURPOSE RECEPTACLE, AS SPECIFIED.
	MOTOR		



ELECTRICAL PLAN - DEMOLITION ROOM 145
 3/16" = 1'-0"

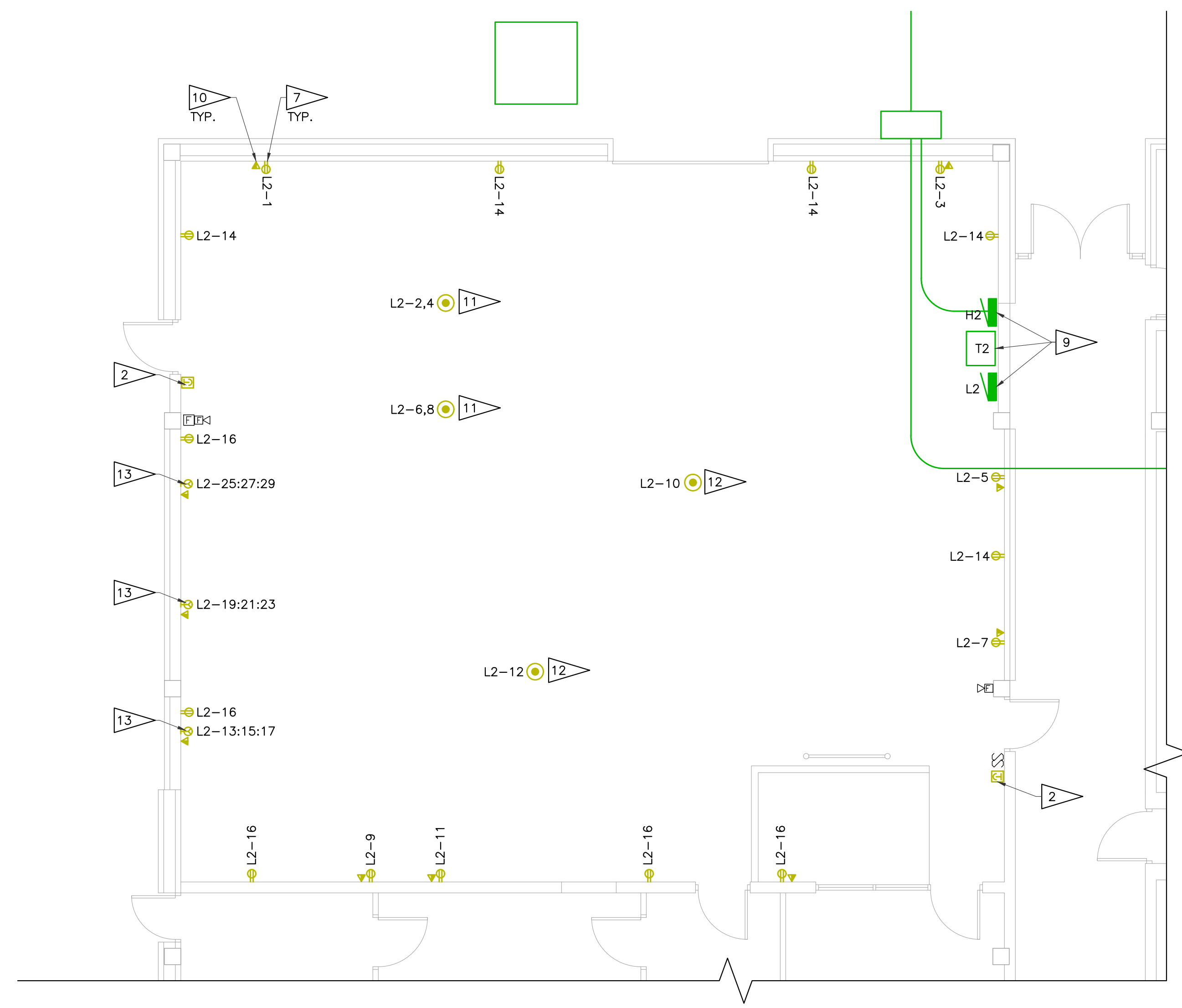
FLAG NOTES:

- 1 REMOVE ALL EXISTING CEILING TILES AND DISPOSE. EXISTING CEILING GRID TO REMAIN AND RE-USED. ALL EXISTING LIGHT FIXTURES TO REMAIN.
- 2 REMOVE ALL EXISTING UNUSED SURFACE MOUNTED OUTLET BOXES. REMOVE CONDUIT TO ABOVE THE CEILING GRID.
- 3 PROVIDE BLANK COVER PLATE ON ALL EXISTING UNUSED RECESSED OUTLET BOXES.
- 4 REMOVE EXISTING SURFACE MOUNTED PANELBOARD AND RETURN TO COLLEGE. REMOVE CONDUCTORS BACK TO SOURCE AND CONDUIT TO ABOVE THE CEILING GRID.
- 5 REMOVE EXISTING SURFACE MOUNTED OUTLET. REMOVE CONDUCTORS AND CONDUIT BACK TO SOURCE.
- 6 REMOVE EXISTING FLOOR RECEPTACLE STUBS. REMOVE CONDUCTORS BACK TO SOURCE. CUT CONDUIT FLUSH WITH FLOOR AND GROUT.
- 7 EXISTING BUSWAY SYSTEM MOUNTED AT CEILING LEVEL TO BE REMOVED. REMOVE COMPLETE, INCLUDING ALL ASSOCIATED MOUNTING HARDWARE, DISCONNECTS, ETC AND RETURN TO COLLEGE. REMOVE ALL ASSOCIATED CONDUCTORS BACK SOURCE. REMOVE CONDUIT UP TO ABOVE THE CEILING AND CAP.
- 8 EXISTING UNUSED TELEPHONE BACKBOARD AND EQUIPMENT TO BE REMOVED. REMOVE COMPLETE AND DISPOSE. REMOVE ALL ASSOCIATED CONDUCTORS BACK SOURCE.
- 9 EXISTING EMERGENCY STOP PUSHBUTTONS TO BE REMOVED AND REPLACED. REMOVE ALL ASSOCIATED CONDUCTORS BACK SOURCE.
- 10 EXISTING ON/OFF SWITCHES FOR EXHAUST FANS TO BE REMOVED. REMOVE ALL ASSOCIATED CONDUCTORS BACK SOURCE. REMOVE CONDUIT TO ABOVE THE CEILING GRID.
- 11 EXISTING ON/OFF SWITCHES FOR UNIT HEATERS TO REMAIN.
- 12 EXISTING DISCONNECT SWITCH FOR EF-15 AND 17 TO REMAIN.
- 13 EXISTING DUPLEX OR QUAD RECEPTACLE TO BE REMOVED. REMOVE ALL ASSOCIATED CONDUCTORS BACK SOURCE. PROVIDE BLANK COVER PLATE IN EMPTY RECESSED BOXES.
- 14 EXISTING HVAC EQUIPMENT TO BE REMOVED. REMOVE ALL ASSOCIATED CONDUCTORS BACK SOURCE. REMOVE CONDUIT TO ABOVE THE CEILING GRID.
- 15 EXISTING CEILING, CEILING GRID AND LIGHT FIXTURES TO REMAIN AND RE-USED.
- 16 REMOVE EXISTING SURFACE MOUNTED RACEWAY. REMOVE ALL ASSOCIATED CONDUCTORS BACK SOURCE.
- 17 REMOVE EXISTING POWER POLES AND RETURN TO COLLEGE. REMOVE ALL ASSOCIATED CONDUCTORS BACK SOURCE.
- 18 REMOVE EXISTING PENDANT CABLES IN THIS AREA BACK SOURCE.

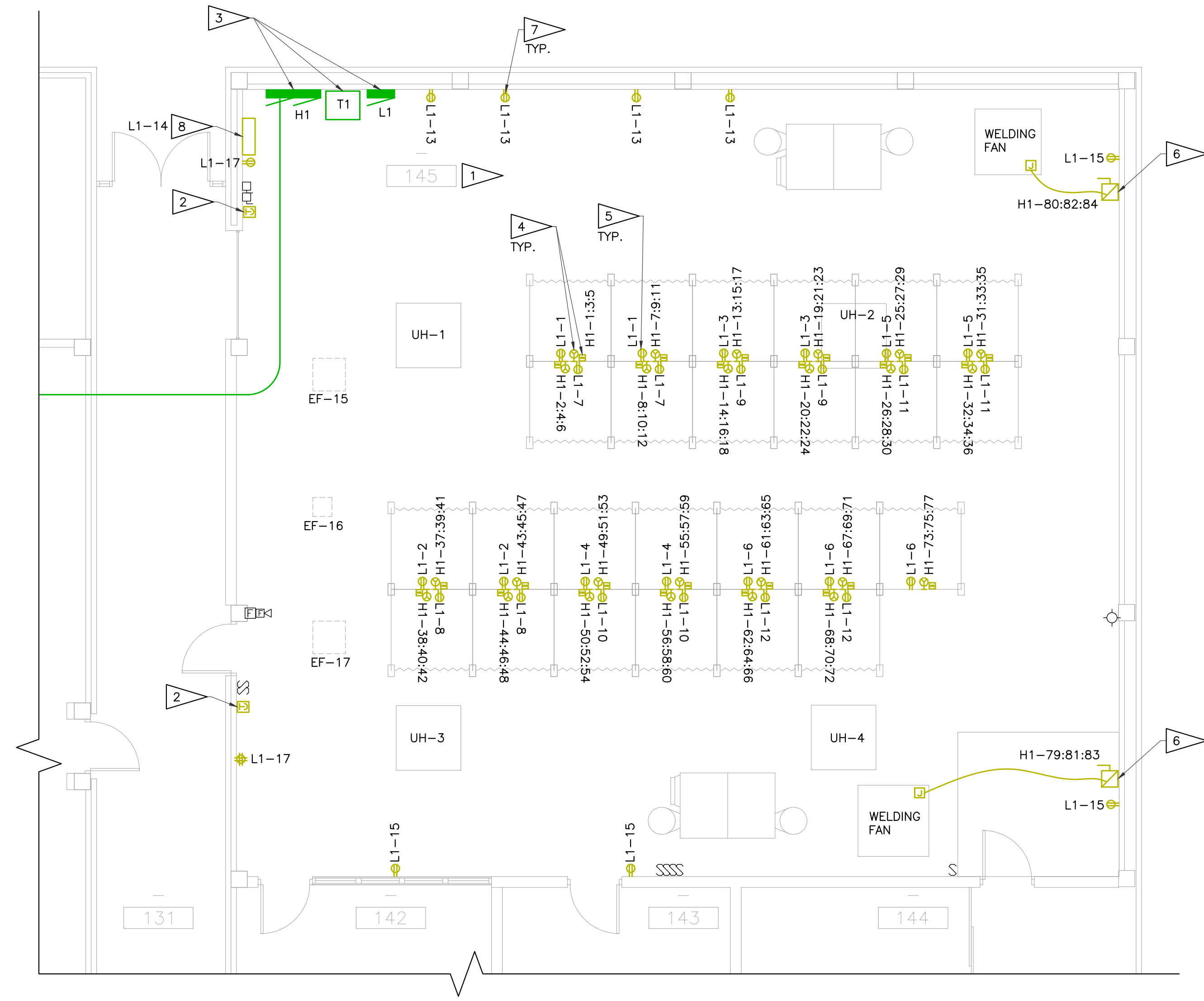


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REV	DESCRIPTION	DATE



ELECTRICAL PLAN - NEW WORK ROOM 112
 3/16" = 1'-0"



ELECTRICAL PLAN - NEW WORK ROOM 145
 3/16" = 1'-0"

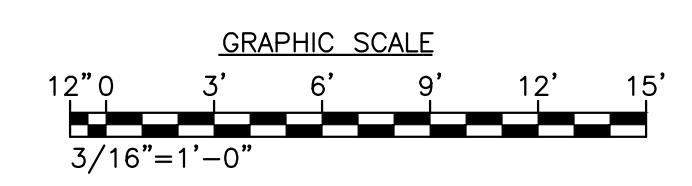
WELDING MACHINE BASIS OF DESIGN: LINCOLN POWER WAVE C300, 11MAX=14A, 11EFF=11A. PLUG CONNECTED AT 460V, 3ø.

GENERAL ELECTRICAL NOTES:

- APPLICABLE CODES:
 - FLORIDA BUILDING CODE 6TH EDITION
 - FLORIDA FIRE PREVENTION CODE 6TH EDITION
 - NATIONAL ELECTRICAL CODE 2014
- IT IS THE INTENT OF THESE CONTRACT DRAWINGS TO PROVIDE A COMPLETE AND WORKABLE FACILITY.
- DESIGN DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS, BENDS, ELBOWS, OR OTHER SPECIFIC ELEMENTS THAT MAY BE REQUIRED FOR PROPER INSTALLATION OF THE WORK. SUCH WORK SHALL BE VERIFIED AT THE SITE. ADDITIONAL BENDS, OFFSETS, AND CONDUIT AS REQUIRED BY VERTICAL AND HORIZONTAL EQUIPMENT LOCATIONS OR OTHER JOB CONDITIONS, SHALL BE PROVIDED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
- EXCEPT WHERE SHOWN IN DIMENSIONAL DETAIL, THE LOCATIONS OF EQUIPMENT SHOWN ON PLANS ARE APPROXIMATE. SUCH ITEMS SHALL BE PLACED TO ELIMINATE INTERFERENCE WITH OTHER EQUIPMENT. THE EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL APPLICABLE NATIONAL & LOCAL CODES.
- MATERIALS SHALL BE LISTED BY THE UNDERWRITER'S LABORATORIES, INC. SHOULD PLANS AND CODES CONFLICT, CONTACT THE CONSTRUCTION MANAGER. MAKE NO CHANGES, EVEN IN CASE OF CONFLICT, WITHOUT FIRST OBTAINING THE APPROVAL OF THE CONSTRUCTION MANAGER.
- GROUND EXPOSED, NON CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN METALLIC RACEWAYS.
- BONDING JUMPERS SHALL BE USED TO BOND CONDUIT TO ENCLOSURES, BOXES, AND EQUIPMENT WHERE CONCENTRIC OR ECCENTRIC KNOCKOUTS ARE USED.
- EQUIPMENT SIZES INDICATED ARE MINIMUM, BEFORE INSTALLING ANY WIRE OR CONDUIT, THE SUBCONTRACTOR SHALL OBTAIN THE EXACT EQUIPMENT REQUIREMENTS AND SHALL INSTALL WIRE, CONDUIT, CIRCUIT BREAKERS AND OTHER ITEMS OF THE CORRECT SIZE FOR THE EQUIPMENT ACTUALLY INSTALLED. HOWEVER, WIRE AND CONDUIT SIZES FOR THE EQUIPMENT SHALL BE TAKEN AS A MINIMUM AND SHALL NOT BE REDUCED WITHOUT WRITTEN APPROVAL.
- THE INSTALLATION OF THE ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF THE OTHER TRADES.
- THE INSTALLATION SHALL BE ACCOMPLISHED BY WORKERS SKILLED IN THIS TYPE OF WORK WITH APPROPRIATE LICENSES.
- THE CONTRACTOR SHALL INSTALL HIS WORK IN SUCH A MANNER AND AT SUCH A TIME AS WILL REQUIRE A MINIMUM OF CUTTING AND PATCHING OF THE BUILDING STRUCTURE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT EXISTING UTILITIES FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSE FOR REPAIR OR REPLACEMENT OF THE UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE COMPLETION OF THIS WORK.
- ALL BOLTS, NUTS, WASHERS, ETC. USED FOR GROUNDING AND BONDING CONNECTIONS SHALL BE SILICON BRONZE. CONTRACTOR SHALL UTILIZE CONNECTORS TO PREVENT GALVANIC ACTION.
- CONDUITS SHALL BE SUPPORTED BY SUITABLE CLAMPS, HANGERS OR STRAPS TO PROVIDE A RIGID INSTALLATION.
- CONDUIT SUPPORTS SHALL NOT BE FASTENED OR ATTACHED TO OTHER PIPES. PERFORATED STRAP HANGERS WILL NOT BE ALLOWED. EMPTY CONDUIT SHALL BE THOROUGHLY SWABBED OUT WITH DRY SWAB TO REMOVE MOISTURE AND DEBRIS BEFORE WIRE IS DRAWN IN. END OF CONDUIT SHALL BE TIGHTLY PLUGGED UNTIL WIRE IS PULLED. NO CONDUIT SHALL BE LOCATED TO IMPAIR THE STRENGTH OF STRUCTURAL MEMBERS. MAKE CHANGES IN DIRECTION OF RUNS WITH SYMMETRICAL BENDS. DO NOT INSTALL CRUSHED OR DEFORMED CONDUITS. AVOID TRAPPED CONDUITS. PREVENT PLASTER, DIRT, OR TRASH FROM LODGING IN CONDUIT, BOXES, FITTINGS. FREE CLOGGED CONDUITS OF OBSTRUCTIONS.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY LUGS FOR NEW PANELBOARDS AND ELECTRICAL EQUIPMENT TO HANDLE THE NUMBER AND SIZE OF CONDUCTORS SHOWN ON CONTRACT DOCUMENTS.

FLAG NOTES:

- AFTER ALL NEW ABOVE CEILING ELECTRICAL WORK IS COMPLETE, PROVIDE NEW CEILING TILES INTO EXISTING GRID.
- NEW SHUNT-TRIP PUSHBUTTON. PROVIDE WIRING AS REQUIRED IN 3/4" CONDUIT, AND CONNECT BOTH PANELS TOGETHER.
- NEW ELECTRICAL PANELS H1 AND L1 AND TRANSFORMER T1. REFER TO ONE-LINE DIAGRAM AND SCHEDULES FOR SIZES. PROVIDE YELLOW MARKING IN FLOOR ON FRONT OF EQUIPMENT.
- SURFACE MOUNTED WELDING MACHINE RECEPTACLE AND DISCONNECT. PROVIDE NEMA L16-50 RECEPTACLE AND 30A NON-FUSED DISCONNECT SWITCH. CIRCUIT AS INDICATED. REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES.
- SURFACE MOUNTED DUPLEX RECEPTACLE MOUNTED TO BOOTH PANEL TO BE USED FOR SMALL TOOLS. CIRCUIT AS INDICATED. REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES.
- VFD FOR WELDING FUME FAN. VFD IS PROVIDED BY LINCOLN ELECTRIC AND INSTALLED BY ELECTRICAL CONTRACTOR. CIRCUIT AS INDICATED. REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES. MAKE FINAL CONNECTION TO FAN MOTOR. INSTALL ASSOCIATED MANUAL ON/OFF PUSHBUTTON, PROVIDED BY LINCOLN ELECTRIC AND WIRE TO VFD. PROVIDE A 60A/NF/3P/N1 DISCONNECT SWITCH WIRED TO THE LINE SIDE OF VFD.
- NEW SURFACE MOUNTED WALL RECEPTACLES. CIRCUIT AS INDICATED. REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES.
- NEW BMS CONTROL PANEL. CIRCUIT AS INDICATED. REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES.
- NEW ELECTRICAL PANELS H2 AND L2 AND TRANSFORMER T2. REFER TO ONE-LINE DIAGRAM AND SCHEDULES FOR SIZES. PROVIDE YELLOW MARKING IN FLOOR ON FRONT OF EQUIPMENT.
- NEW SURFACE MOUNTED DATA OUTLET. PROVIDE 1" EC TO ABOVE THE CEILING. ALL CABLING INSTALLED BY THE COLLEGE.
- NEW POWER POLE WITH FOUR (4) DUPLEX RECEPTACLES AND FOUR (4) DATA OUTLETS. CIRCUIT AS INDICATED. REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES. DATA CABLING INSTALLED BY THE COLLEGE. COORDINATE EXACT LOCATION WITH NEW EQUIPMENT.
- NEW POWER POLE WITH TWO (2) DUPLEX RECEPTACLES AND TWO (2) DATA OUTLETS. CIRCUIT AS INDICATED. REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES. DATA CABLING INSTALLED BY THE COLLEGE. COORDINATE EXACT LOCATION WITH NEW EQUIPMENT.
- NEW SURFACE MOUNTED NEMA L21-20 RECEPTACLE. CIRCUIT AS INDICATED. REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES.

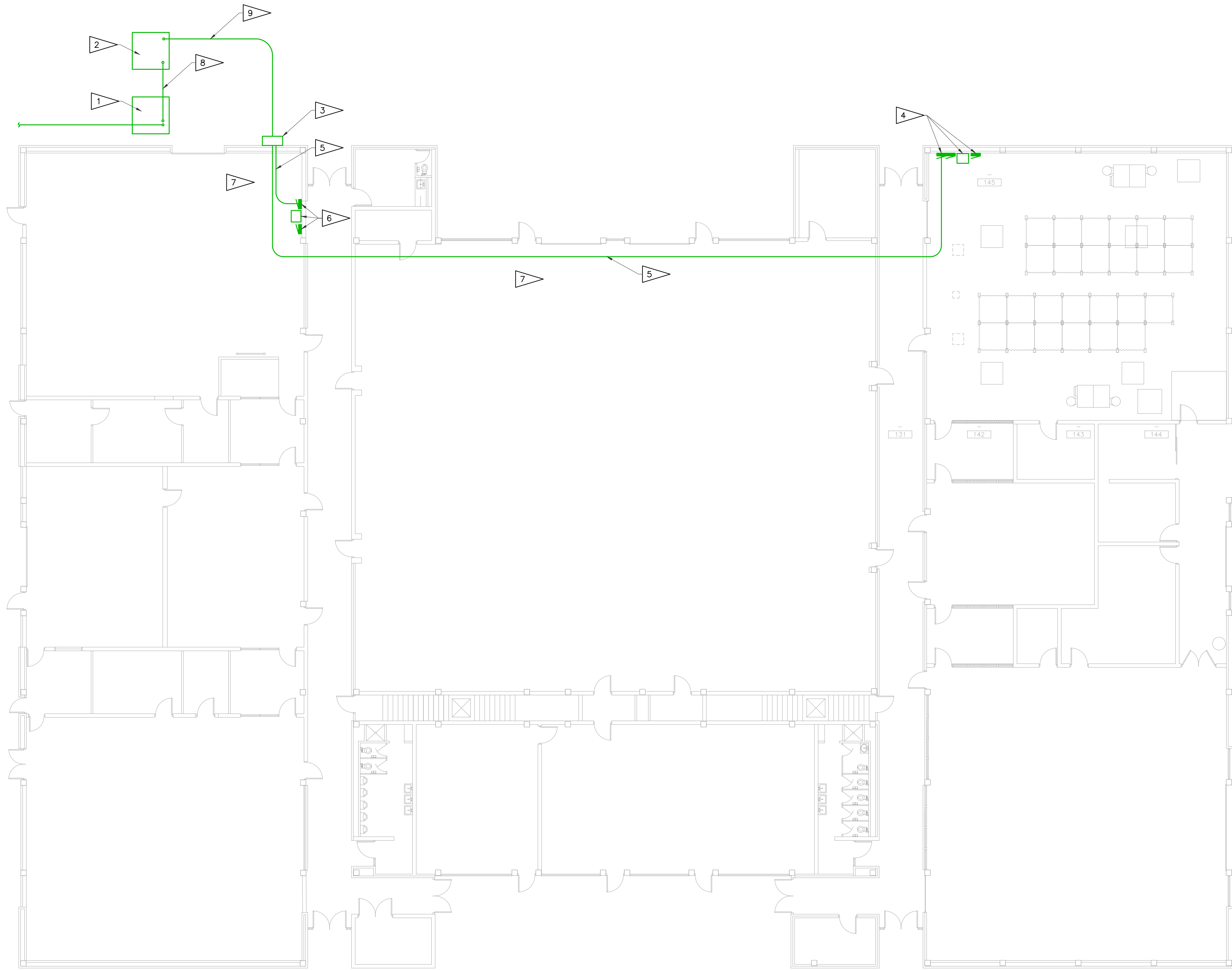


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D
C
B
A

1 2 3 4 5



FLAG NOTES:

- 1 EXISTING 208V FPL TRANSFORMER CURRENTLY SERVING THIS BUILDING. THIS TRANSFORMER WILL BE REPLACED BY FPL.
- 2 NEW 480V FPL TRANSFORMER FOR THIS BUILDING. INSTALL FIVE FEET AWAY FROM EXISTING TRANSFORMER. PROVIDE CONCRETE PAD PER FPL STANDARDS. CUT AND PATCH EXISTING CONCRETE AND ASPHALT AS REQUIRED FOR INSTALLATION.
- 3 NEW MDP16. REFER TO ONE-LINE DIAGRAM AND SCHEDULES FOR SIZES.
- 4 NEW ELECTRICAL PANELS H1 AND L1 AND TRANSFORMER T1. REFER TO ONE-LINE DIAGRAM AND SCHEDULES FOR SIZES.
- 5 REFER TO ONE-LINE DIAGRAM FOR CONDUCTORS SIZES.
- 6 NEW ELECTRICAL PANELS H2 AND L2 AND TRANSFORMER T2. REFER TO ONE-LINE DIAGRAM AND SCHEDULES FOR SIZES.
- 7 REMOVE AND RE-INSTALL ANY EXISTING CEILING IN THESE SPACES AS NEEDED TO ALLOW THE INSTALLATION OF NEW PANELS FEEDERS.
- 8 PROVIDE (2) 5" EC WITH PULLWIRES FOR FPL NEW MV CONDUCTORS FROM NEW TRANSFORMER TO EXISTING. CUT AND PATCH EXISTING CONCRETE AND ASPHALT AS REQUIRED FOR INSTALLATION.
- 9 NEW SERVICE CONDUCTORS. REFER TO ONE-LINE DIAGRAM FOR CONDUCTORS SIZES. CUT AND PATCH EXISTING CONCRETE AND ASPHALT AS REQUIRED FOR INSTALLATION.



REV	DESCRIPTION	DATE

EASTERN FLORIDA STATE COLLEGE
COCOA CAMPUS BUILDING 16 MECHANICAL AND ELECTRICAL UPGRADES TO ROOMS 112 AND 145
1519 CLEARLAKE ROAD
COCOA, FL 32922

ELECTRICAL SITE PLAN

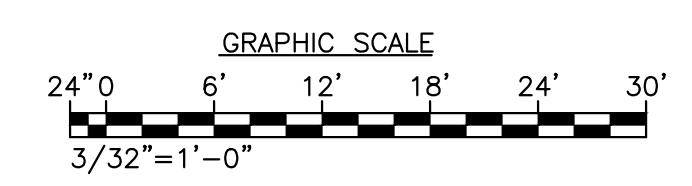
BID SET

VICTOR M. DIAZ
FL PE# 55919

PROJ.#	18-073
DATE	02/20/2019
DRAWN	L. BECK
DESIGN	V. DIAZ
CHECK	K. RENGARAJAN
FILE	E-102.dwg

E-102
SHEET 6 OF 8

ELECTRICAL SITE PLAN
3/32" = 1'-0"



D

C

B

A

PANELBOARD: H2											
V.P.W:480/277.30,4W						RATING: 150A					
BUS MATERIAL: COPPER						TYPE: M.C.B.					
REMARKS: MCB WITH SHUNT TRIP						BREAKER TYPE: BOLT-ON					
						ENCLOSURE: NEMA 1					
						LOCATION: ROBOTICS LAB					
CKT #	LOAD DESCRIPTION	WIRE SIZE	PHASE LOAD (VA)			CB TRIP	WIRE SIZE	LOAD DESCRIPTION	CKT #		
			P	A	B					C	
1	SPARE		1	20				SPACE	2		
3	SPARE		1	20				SPACE	4		
5	SPARE		1	20				SPACE	6		
7	SPACE		1	20				SPACE	8		
9	SPACE		1	20				SPACE	10		
11	SPACE		1	20				SPACE	12		
13	SPACE		1	20				SPACE	14		
15	SPACE		1	20				SPACE	16		
17	SPACE		1	20				SPACE	18		
19	SPACE		1	20				SPACE	20		
21	SPACE		1	20				SPACE	22		
23	SPACE		1	20				SPACE	24		
25					6040				26		
27	SPD	3 #10, 1 #10 GND, 3/4" C	3	30			5680	SEE ONE-LINE DIAGRAM	28		
29							5680	PANEL L2 (VIA XFMR)	30		
CONNECTED LOAD=			17400 VA	6040	5680	5680	DEMAND LOAD=			17400 VA	

PANELBOARD: L2											
V.P.W:208/120.30,4W						RATING: 100A					
BUS MATERIAL: COPPER						TYPE: M.C.B.					
REMARKS: MCB WITH SHUNT TRIP						BREAKER TYPE: BOLT-ON					
						ENCLOSURE: NEMA 1					
						LOCATION: ROBOTICS LAB					
CKT #	LOAD DESCRIPTION	WIRE SIZE	PHASE LOAD (VA)			CB TRIP	WIRE SIZE	LOAD DESCRIPTION	CKT #		
			P	A	B					C	
1	TEACHING DESK	2 #12, 1 #12 GND, 3/4" C	1	20	500	720		POWER POLE	2		
3	LAB EQUIPMENT	2 #12, 1 #12 GND, 3/4" C	1	20		500	720	POWER POLE	4		
5	LAB EQUIPMENT	2 #12, 1 #12 GND, 3/4" C	1	20			500	720	POWER POLE	6	
7	LAB EQUIPMENT	2 #12, 1 #12 GND, 3/4" C	1	20	500	720		POWER POLE	8		
9	LAB EQUIPMENT	2 #12, 1 #12 GND, 3/4" C	1	20			500	360	POWER POLE	10	
11	LAB EQUIPMENT	2 #12, 1 #12 GND, 3/4" C	1	20				500	360	POWER POLE	12
13			20	1	1200				GENERAL PURPOSE RECEP	14	
15	LAB EQUIPMENT	3 #12, 1 #12 GND, 3/4" C	3	20				1200	GENERAL PURPOSE RECEP	16	
17								1200	SPARE	18	
19									SPARE	20	
21	LAB EQUIPMENT	3 #12, 1 #12 GND, 3/4" C	3	20			1200		SPARE	22	
23								1200	SPARE	24	
25								1200	SPARE	26	
27	LAB EQUIPMENT	3 #12, 1 #12 GND, 3/4" C	3	20		1200			SPARE	28	
29								1200	SPARE	30	
31	SPARE	2 #12, 1 #12 GND, 3/4" C	1	20					SPARE	32	
33	SPARE	2 #12, 1 #12 GND, 3/4" C	1	20					SPARE	34	
35	SPARE	2 #12, 1 #12 GND, 3/4" C	1	20					SPARE	36	
37									SPARE	38	
39	SPD	3 #10, 1 #10 GND, 3/4" C	3	30					SPARE	40	
41									SPARE	42	
CONNECTED LOAD=			17400 VA	6040	5680	5680	DEMAND LOAD=			17400 VA	



REV	DESCRIPTION	DATE

EASTERN FLORIDA STATE COLLEGE
 COCOA CAMPUS BUILDING 16 MECHANICAL AND
 ELECTRICAL UPGRADES TO ROOMS 112 AND 145
 1519 CLEARLAKE ROAD
 COCOA, FL 32922

PANELBOARD SCHEDULES

BID SET

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 FL PE# 55919

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