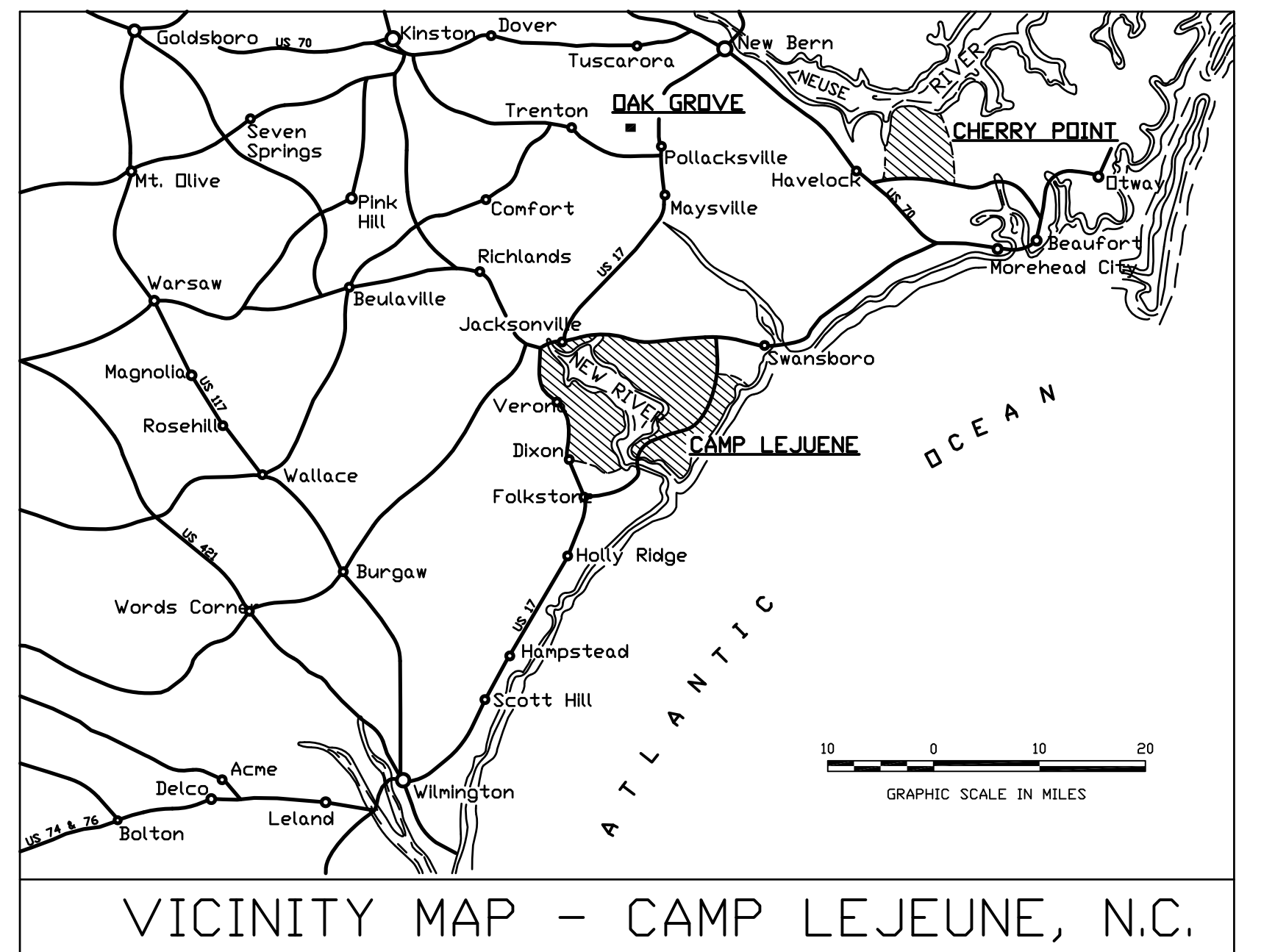


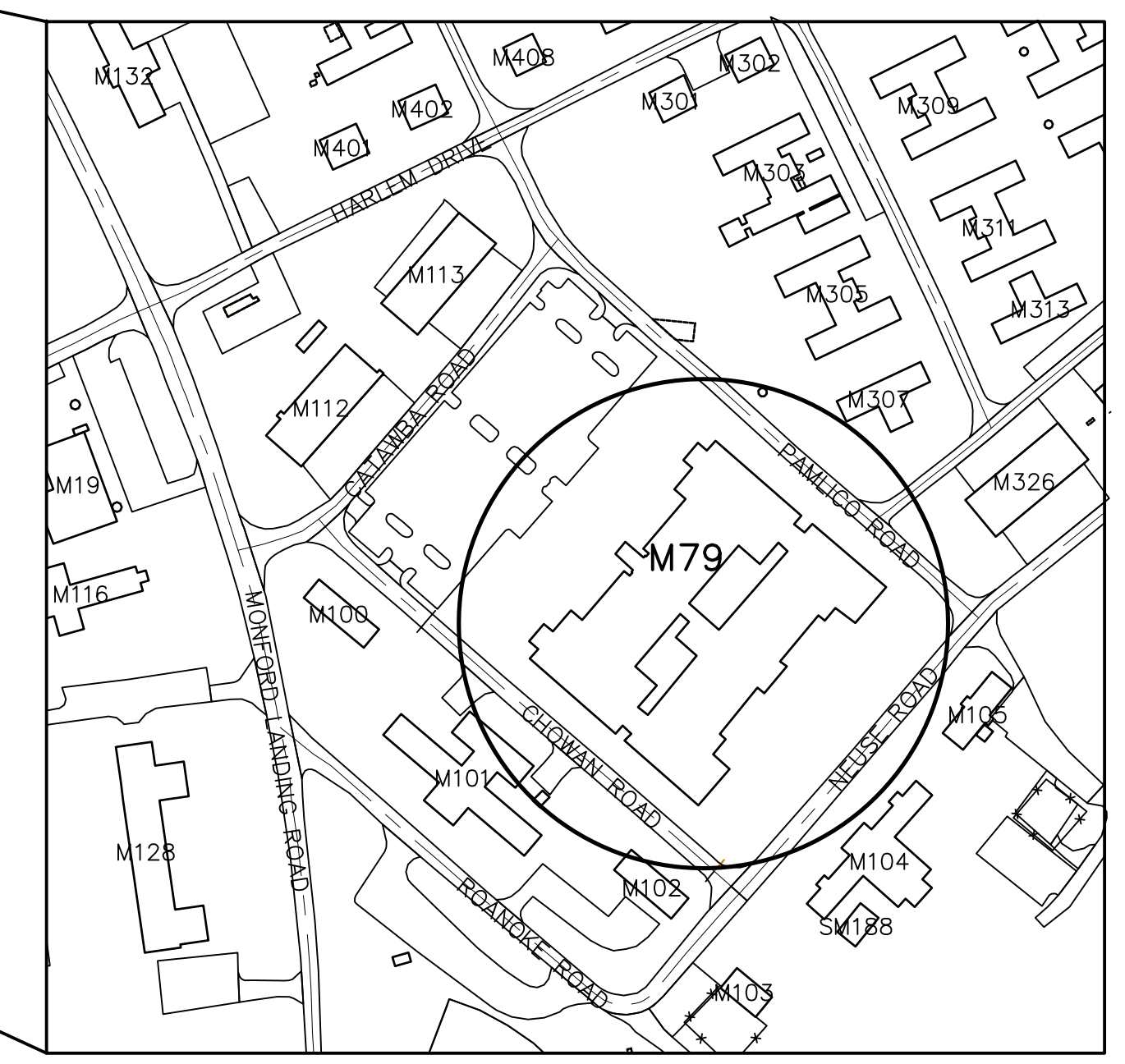
REVISIONS			
SYMBOL	DATE	APPROVED	



GRID LOCATION	AREA NAME
C3	AIR STATION
M6	AMPHIBIAN BASE
K13	ANTI-TANK RANGE
N11	BEACH
C7	BERKELEY MANOR
K10	COMBAT TOWN
M7	ENGINEER AREA (COURTHOUSE BAY)
K11	ENGINEER STOCKADE
H8	FRENCH CREEK
A2	GEIGER 'A'
B1	GEIGER 'B'
G7	HADNOT POINT AREA
B5	KNOX TRAILER PARK
H9	MAGAZINE AREA
B8	MIDWAY PARK
B4	MONTFORD POINT
E8	OPEN STORAGE AREA
D6	PARADISE POINT AREA
E2	RACE COURSE AREA
J5	RHODES POINT AREA
M3	RIFLE RANGE
A6	TARAWA TERRACE I & II
G13	TRIANGLE OUTPOST
D7	WATKINS VILLAGE
B7	US NAVAL HOSPITAL



VICINITY MAP - CAMP LEJEUNE, N.C.



MAP TAKEN FROM THE UPPER RIGHT OF GRID B4

PROJECT AREA MAP

NO SCALE

LIST OF DRAWINGS

NO.	PROJECT NO.	GRID	DESCRIPTION
1	60018910	T-1	LOCATION MAPS, DRAWING LIST, NOTES
2	60018911	A-1	EXISTING AND RENOVATED FLOOR PLANS
3	60018912	A-2	EXISTING AND RENOVATED CEILING PLANS
4	60018913	A-3	DETAIL SECTIONS
5	60018914	M-1	MECHANICAL SCHEDULES AND DETAILS
6	60018915	M-2	MECHANICAL DEMOLITION PLAN
7	60018916	M-3	MECHANICAL RENOVATED PLAN
8	60018917	E-1	ELECTRICAL LEGEND AND DETAILS
9	60018918	E-2	ELECTRICAL NOTES
10	60018919	E-3	PANEL SCHEDULES AND RISER DIAGRAMS
11	60018920	E-4	ELECTRICAL PANEL SCHEDULES
12	60018921	E-5	ELECTRICAL DETAILS
13	60018922	E-6	DEMOLITION POWER PLANS
14	60018923	E-7	RENOVATED POWER PLANS
15	60018924	E-8	RENOVATED TELECOM PLAN
16	60018925	E-9	RENOVATED LIGHTING PLAN



NORTH TOPSAIL

NORTH

LOCATION MAP - U. S. MARINE CORPS BASE - CAMP LEJEUNE, N.C.

DISCLOSURE OF INFORMATION CONTRACTOR SHALL COMPLY AS FOLLOWS:

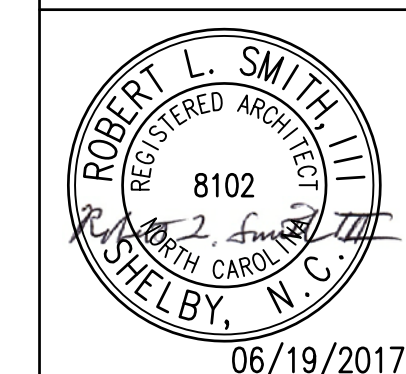
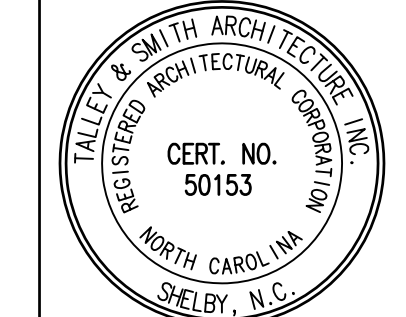
A. THE CONTRACTOR SHALL NOT RELEASE TO ANYONE OUTSIDE THE CONTRACTOR'S ORGANIZATION ANY UNCLASSIFIED INFORMATION, REGARDLESS OF MEDIUM (E.G., FILM, TAPE, DOCUMENT), PERTAINING TO ANY PART OF THIS CONTRACT OR ANY PROGRAM RELATED TO THIS CONTRACT, UNLESS:

(1) THE CONTRACTING OFFICER HAS GIVEN PRIOR WRITTEN APPROVAL; OR

(2) THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

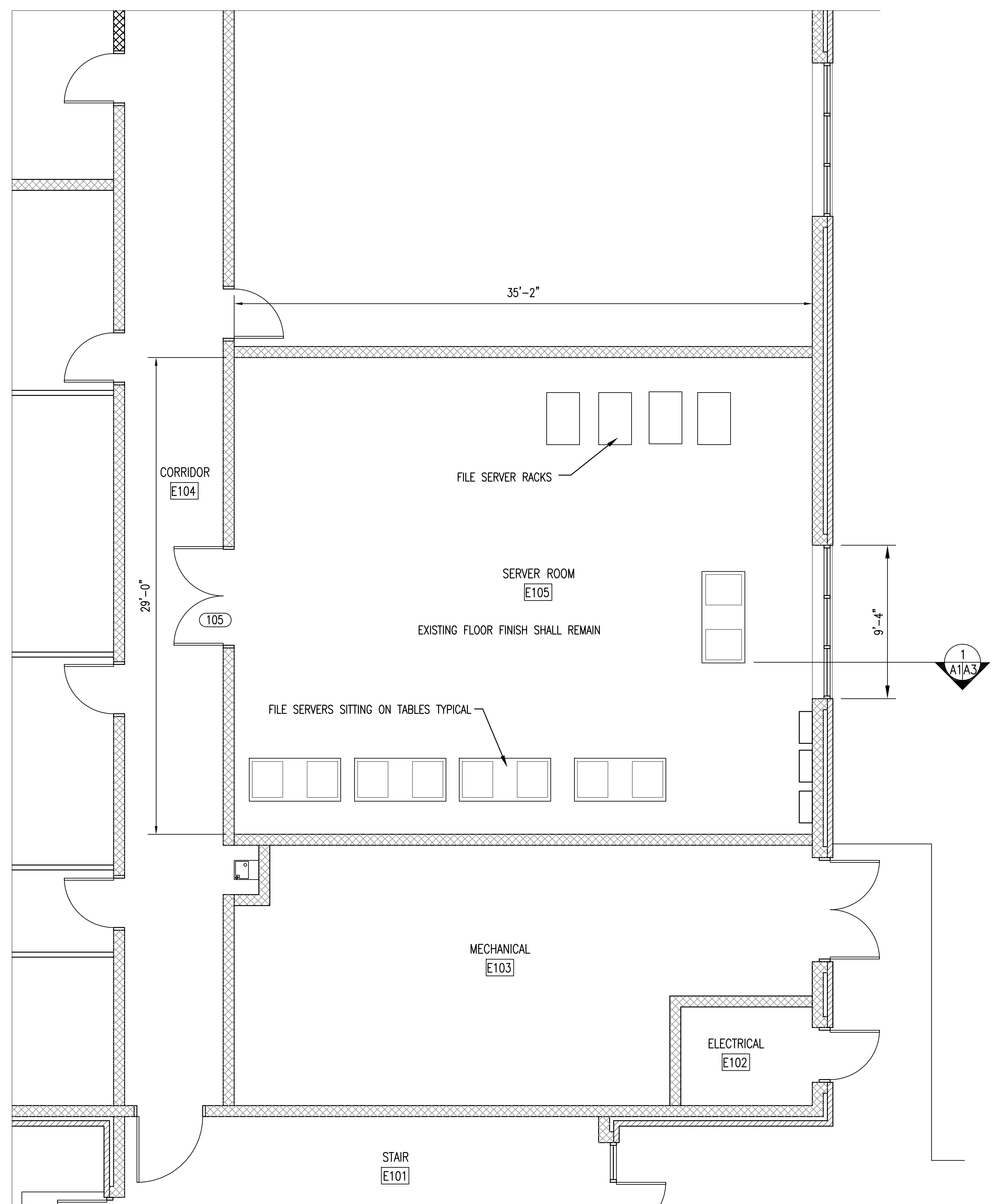
B. REQUESTS FOR APPROVAL SHALL IDENTIFY THE SPECIFIC INFORMATION TO BE RELEASED, THE MEDIUM TO BE USED, AND THE PURPOSE FOR THE RELEASE. THE CONTRACTOR SHALL SUBMIT ITS REQUEST TO THE CONTRACTING OFFICER AT LEAST 45 DAYS BEFORE THE PROPOSED DATE FOR RELEASE.

C. THE CONTRACTOR AGREES TO INCLUDE A SIMILAR REQUIREMENT ON EACH SUBCONTRACTOR UNDER THIS CONTRACT. SUBCONTRACTORS SHALL SUBMIT REQUESTS FOR AUTHORIZATION TO RELEASE THROUGH THE PRIME CONTRACTOR TO THE CONTRACTING OFFICER.

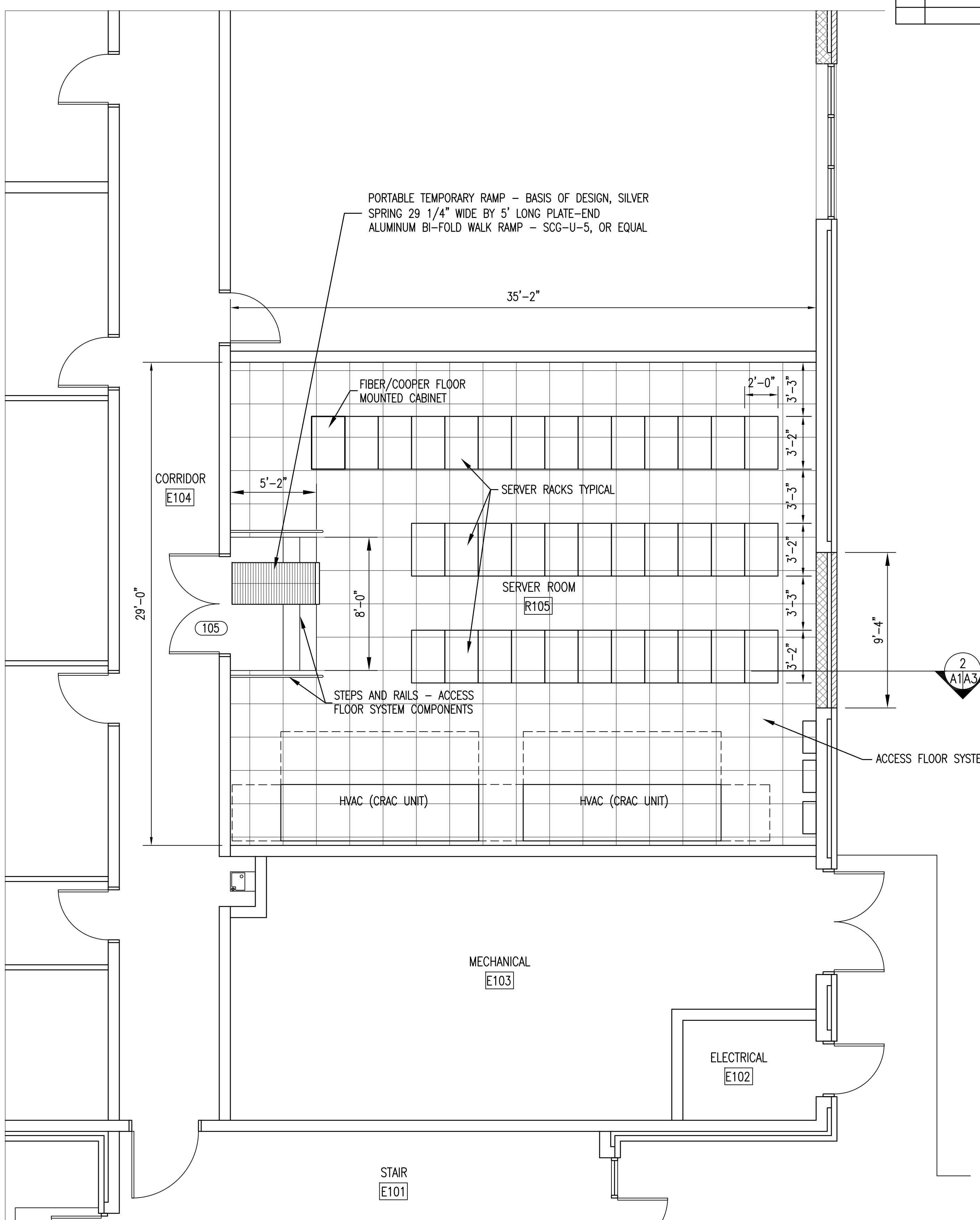


SHEET TITLE: <b>LOCATION MAPS, DRAWING LIST, NOTES</b>		<b>T-1</b>	
TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. Robert L. Smith III	DR. Steven C. Fender	DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA	
CHK. Robert L. Smith III	SUBMITTED BY:	DATE	SIZE
DESIGN DR.	DATE	8/2/2017	F
APPROVED:	DATE	8/2/2017	CODE IDENT. NO. 80091
SATISFACTORY TO:	DATE	8/2/2017	NAVFAC DRAWING NO. 60018910
SCALE: NOTED		SPEC. 05-17-0041	
SHEET 1 OF 16		CONST. CONTR. NO. N40085-17-B-0041	

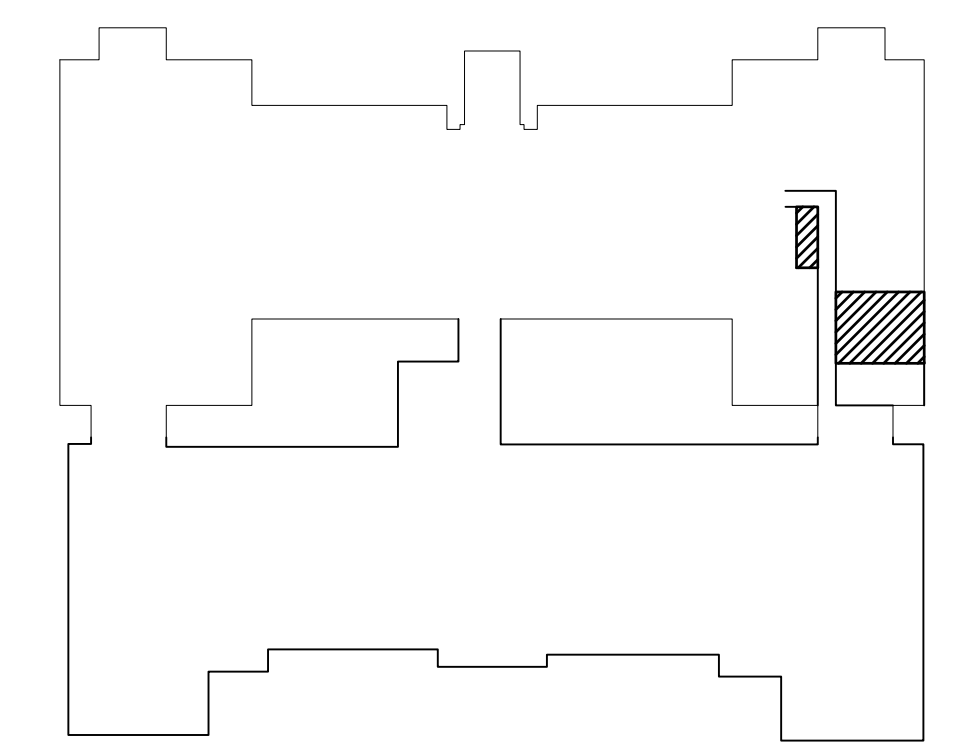
REVISIONS		
SYL.	DATE	APPROVED



EXISTING PARTIAL FLOOR PLAN **1**  
1/4" = 1'-0" A1/A1



RENOVATED PARTIAL FLOOR PLAN **2**  
1/4" = 1'-0" A1/A1

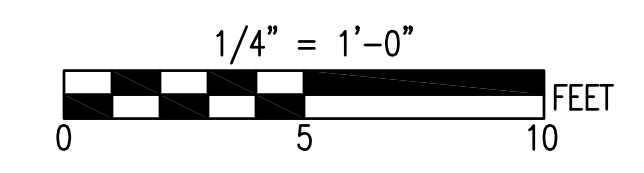


KEY PLAN  
NOT TO SCALE

- GENERAL NOTES ON THIS SHEET:
- FILE SERVERS SHALL REMAIN IN ROOM AND IN OPERATION DURING THIS PROJECT. CONTRACTOR SHALL PRESERVE AND PROTECT FILE SERVERS AT ALL TIME.
  - GOVERNMENT SHALL MOVE FILE SERVERS AS REQUIRED TO ALLOW WORK TO PROCEED IN THE ROOM. CONTRACTOR SHALL COORDINATE WITH GOVERNMENT CONCERNING SCHEDULING RELOCATION OF THE SERVERS IN THE ROOM.
- COLOR INFORMATION:
- RAISED ACCESS FLOOR - SHALL BE NEVAMAR, IVORY ESSENCE, ES2001FT, OR EQUAL BY FORMICA.
  - WALL PAINT - PROVIDE CREAM COLOR TO MATCH EXISTING. PAINT ANY BLANK ELECTRICAL PLATES COVERING ABANDONED WALL BOXES TO MATCH WALLS.

GENERAL NOTES:

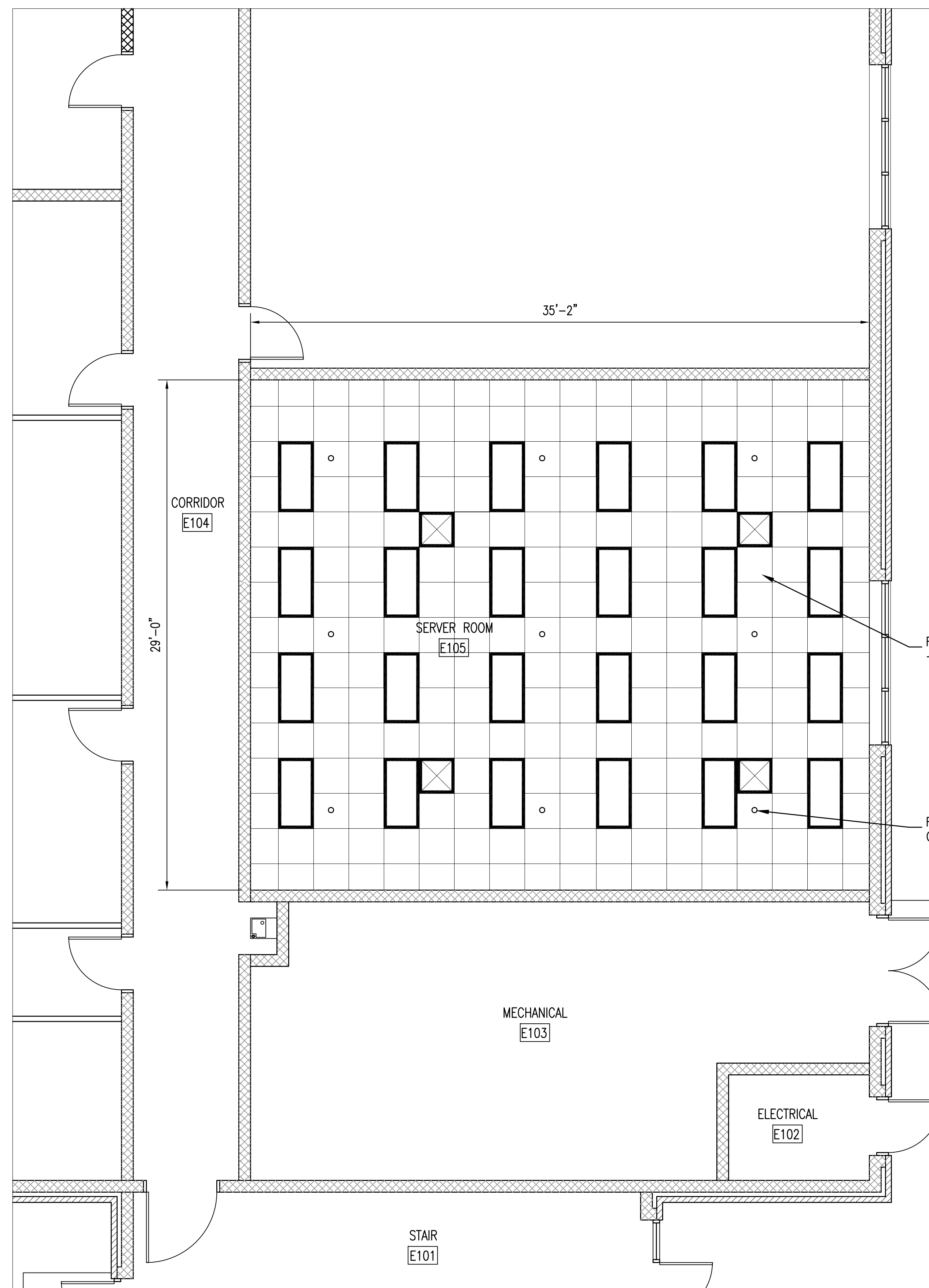
- DIMENSIONS ON PLANS ARE APPROXIMATE. VERIFY DIMENSIONS ON JOB.
- NOTING CONVENTION ON PLANS AND DETAILS: ON PLANS AND DETAILS TITLED AS "EXISTING CONDITIONS," ITEMS SHOWN AND NOTED ARE EXISTING UNLESS SPECIFICALLY INDICATED OTHERWISE. ON PLANS AND DETAILS TITLED AS "NEW" OR "RENOVATED CONDITIONS," ITEMS SHOWN AND NOTED ARE NEW OR ALTERED UNLESS SPECIFICALLY INDICATED OTHERWISE. TO DETERMINE FULL EXTENT OF WORK REQUIRED, COMPARE EXISTING CONDITIONS PLANS AND DETAILS TO NEW OR RENOVATED CONDITIONS PLANS AND DETAILS.
- THE WORDS "PAINT", "PAINTING", "REPAINT", OR "REFINISH" CARRY WITH THEM THE CONNOTATION THAT SURFACE PREPARATION, PRIMING (OR STAINING) AND NUMBER OF COATS OF PAINT (OR CLEAR FINISH) DESCRIBED IN THE SPECIFICATIONS ARE REQUIRED.
- PAINT COLORS ARE INTENDED TO BE SAME AS EXISTING UNLESS INDICATED OTHERWISE. CONTRACTING OFFICER SHALL MAKE FINAL SELECTION OF COLORS.
- CAULKING/SEALANT IS REQUIRED AT ALL LOCATIONS PRESENTLY HAVING OR NORMALLY REQUIRING CAULKING/SEALANT INCLUDING BUT NOT NECESSARILY LIMITED TO: DOORS, WINDOWS, LOUVERS, VENTS, MASONRY CONTROL AND EXPANSION JOINTS.
- WHERE NEW WORK IS REQUIRED THAT WILL REPLACE EXISTING MATERIALS THE NEW WORK SHALL MATCH THE EXISTING AS CLOSELY AS POSSIBLE.
- CONDITIONS, DETAILS, AND AREAS OF WORK SHOWN ON THESE DRAWINGS ARE BASED ON FIELD INVESTIGATIONS AND SHOULD REPRESENT CURRENT CONDITIONS. IF CONDITIONS ARE ENCOUNTERED THAT ARE SIGNIFICANTLY DIFFERENT FROM THOSE SHOWN, IMMEDIATELY NOTIFY CONTRACTING OFFICER OF SUCH CONDITIONS PRIOR TO PROCEEDING WITH WORK IN THE AREA IN QUESTION. MINOR VARIATIONS WITH LITTLE IMPACT ON THE SCOPE OF WORK SHALL NOT BE CONSIDERED SIGNIFICANT.
- WHERE AN ITEM OR FEATURE IS SHOWN ON DRAWINGS THAT DEPICT EXISTING CONDITIONS, AND SUCH ITEM OR FEATURE IS NOT SHOWN ON DRAWINGS THAT DEPICT NEW OR ALTERED CONDITIONS, IT IS INFERRED THAT THE ITEM OR FEATURE IS TO BE REMOVED AS PART OF THIS WORK AND ALL SURFACES DISTURBED ARE TO BE NEATLY REPAIRED AND PATCHED TO MATCH EXISTING UNLESS INDICATED OTHERWISE. INCLUDE SUCH WORK IN BID PRICE.
- WHERE AN ITEM OR FEATURE IS TO BE REMOVED THE REQUIREMENT FOR REMOVAL INCLUDES THAT ALL RELATED APPURTENANCES ALSO BE REMOVED UNLESS INDICATED OTHERWISE. FOR EXAMPLE, WHERE AN EXISTING DOOR AND FRAME ARE TO BE REMOVED, THE HARDWARE, THRESHOLD, STOPS, ETC. ARE ALSO TO BE REMOVED.
- FOR EACH ACTIVITY THAT INVOLVES DISTURBANCE TO AN EXISTING SURFACE OR SURFACES, THE ACTIVITY CARRIES WITH IT THE STIPULATION THAT ALL DISTURBED SURFACES BE NEATLY REPAIRED AND PATCHED TO MATCH EXISTING. FOR EXAMPLE, WHERE INTERIOR PARTITIONS ARE REMOVED IT IS REQUIRED THAT ANY DISTURBED WALL, FLOOR, CEILING, TRIMS, BASE, ETC. THAT REMAINS BE NEATLY REPAIRED AND PATCHED TO MATCH EXISTING.
- IF EXISTING MATERIALS CANNOT BE REPAIRED AND PATCHED, NEW MATERIALS SHALL BE PROVIDED. WHERE NEW MATERIALS ARE REQUIRED TO BE BUILT INTO THE EXISTING STRUCTURE OR MATERIALS, OR BUILT ADJOINING EXISTING STRUCTURE OR MATERIALS, THE TEXTURE AND FINISH OF THE NEW MATERIAL SHALL MATCH THE EXISTING AND SHALL BE NEATLY BLENDED INTO THE EXISTING. ALIGN NEW MASONRY JOINTING, VERTICAL OR HORIZONTAL LINES, METAL WALL PANELS, ETC. WITH EXISTING.
- HOLES AND OTHER DAMAGE CAUSED BY TEMPORARY INSTALLATIONS, BARRIERS, ETC. SHALL BE REPAIRED IN A MANNER COMPATIBLE WITH AND EQUAL TO EXISTING CONDITIONS.
- WHERE NEW WORK IS REQUIRED AND DRAWINGS AND SPECIFICATIONS ARE NOT SPECIFIC AS TO TYPE AND QUALITY OF WORK, PROVIDE TYPE AND QUALITY EQUAL TO OR BETTER THAN CORRESPONDING WORK ON EXISTING BUILDING. IN THE ABSENCE OF ANY CORRESPONDING WORK ON EXISTING BUILDING, PROVIDE FIRST QUALITY INDUSTRY STANDARD COMPATIBLE TO EXISTING BUILDING. CONTRACTING OFFICER SHALL MAKE FINAL DETERMINATION OF WHETHER OR NOT CONTRACTOR'S PROPOSED WORK COMPLIES.
- GOVERNMENT WILL REMOVE INTERIOR BUILDING CONTENTS. GOVERNMENT WILL MOVE STORAGE UNITS AND EQUIPMENT A MINIMUM OF 10' AWAY FROM EXTERIOR PERIMETER OF BUILDING.
- FOR ASBESTOS CONTAINING MATERIALS AND MATERIALS COATED WITH LEAD BASED PAINT SEE HAZARDOUS MATERIALS SHEET. SEE ASBESTOS AND LEAD BASED PAINT REPORT BOUND INTO PROJECT SPECIFICATIONS.



SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

	SHEET TITLE: PARTIAL FLOOR PLANS		<b>A-1</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
	DES: Robert L. Smith III		DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA
	DR: Steven C. Fender		
SUBMITTED BY: Robert L. Smith III		DATE: 06/19/2017	CODE IDENT. NO. <b>80091</b> CONST. CONTR. NO. <b>N40085-17-B-0041</b>
DESIGN DIR:		DATE:	SCALE: NOTED SPEC: 05-17-0041 SHEET 2 OF 16
APPROVED:		DATE:	
SATISFACTORY TO:		DATE:	

REVISIONS			
SYL.		DATE	APPROVED



**EXISTING CONDITIONS  
CEILING PLAN LEGEND**

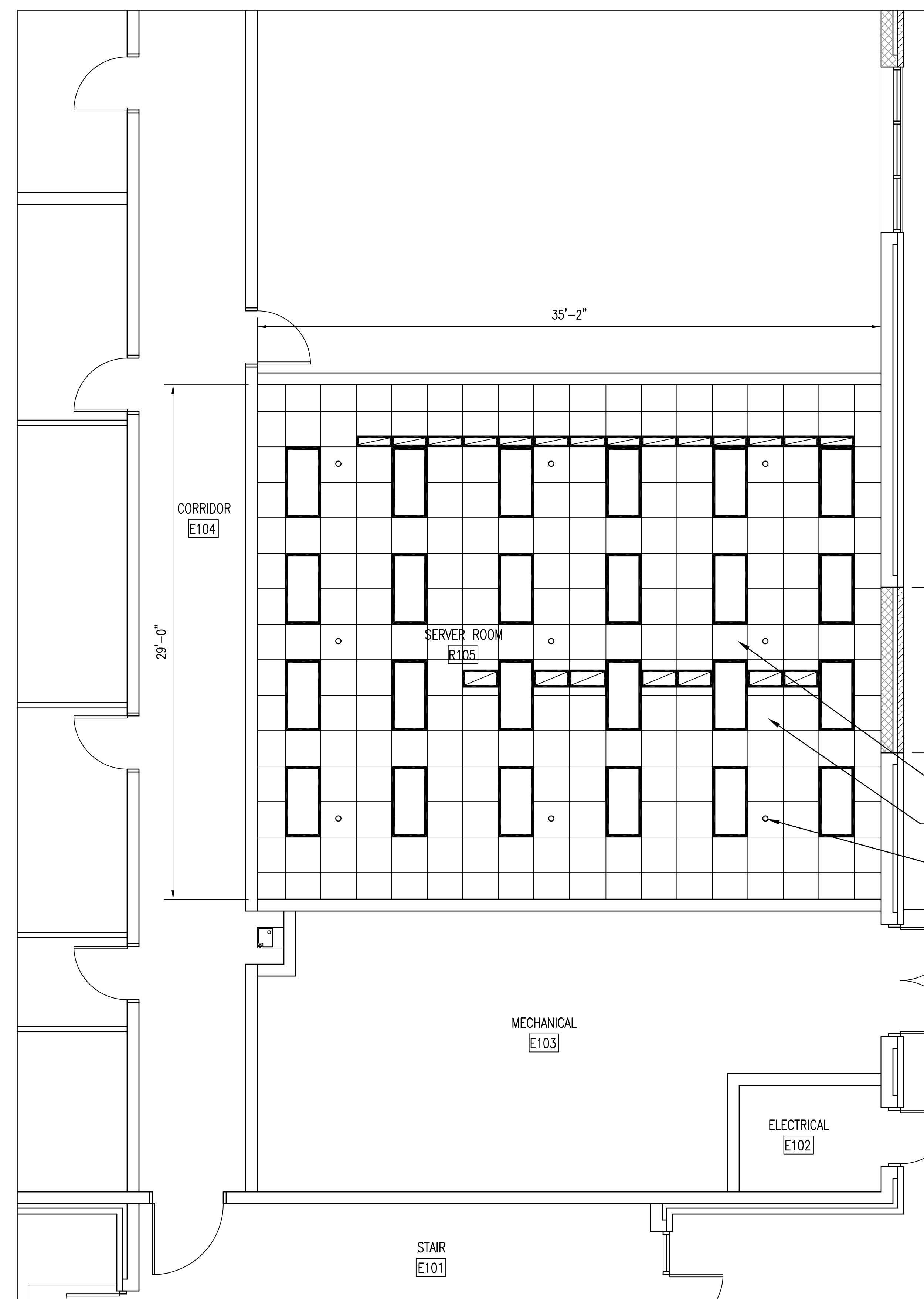
- 2' x 2" LAY-IN TILE CEILING GRID
- LIGHT FIXTURES  
SEE ELECT. DWGS.
- HVAC GRILLES SEE MECH.  
DRAWINGS
- FIRE SUPPRESSION  
SPRINKLER HEAD

**CEILING PLAN LEGEND**

THE CEILING PLANS ARE INTENDED TO SHOW MAJOR CEILING COMPONENTS FOR COORDINATION OF ALL TRADES. NOT ALL CEILING COMPONENTS ARE SHOWN NOR DO ALL THE COMPONENTS SHOWN ON THE LEGEND NECESSARILY OCCUR ON THIS PROJECT. SEE ALL DRAWINGS FOR COMPONENTS THAT OCCUR ON THE CEILINGS.

REMOVE EXISTING CEILING TILE AND GRID - SEE MECHANICAL & ELECTRICAL SHEETS

REMOVE EXISTING SPRINKLER HEADS AND CONCEALED ESCUTCHEONS



**RENOVATED CONDITIONS  
CEILING PLAN LEGEND**

- 2' x 2" LAY-IN TILE CEILING GRID
- LIGHT FIXTURES  
SEE ELECT. DWGS.
- HVAC EXHAUST GRILLES  
SEE MECH. DRAWINGS
- FIRE SUPPRESSION  
SPRINKLER HEAD

**CEILING PLAN LEGEND**

THE CEILING PLANS ARE INTENDED TO SHOW MAJOR CEILING COMPONENTS FOR COORDINATION OF ALL TRADES. NOT ALL CEILING COMPONENTS ARE SHOWN NOR DO ALL THE COMPONENTS SHOWN ON THE LEGEND NECESSARILY OCCUR ON THIS PROJECT. SEE ALL DRAWINGS FOR COMPONENTS THAT OCCUR ON THE CEILINGS.

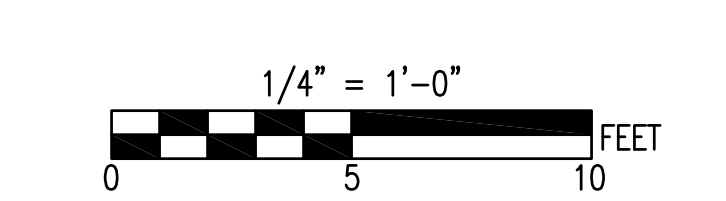
PROVIDE NEW CEILING TILE AND GRID - SEE MECHANICAL & ELECTRICAL SHEETS

NEW CEILING SHALL MATCH EXISTING HEIGHT AND CONFIGURATION

PROVIDE (9) NEW GLOBE SYSTEM SPRINKLER HEADS AND CONCEALED ESCUTCHEONS - CONTRACTOR SHALL ALSO PROVIDE (1) ADDITIONAL GLOBE SYSTEM HEAD AND WRENCH TO BE PLACED IN SPARE SPRINKLER CABINET.

EXISTING PARTIAL CEILING PLAN 1  
1/4" = 1'-0" A2 | A2

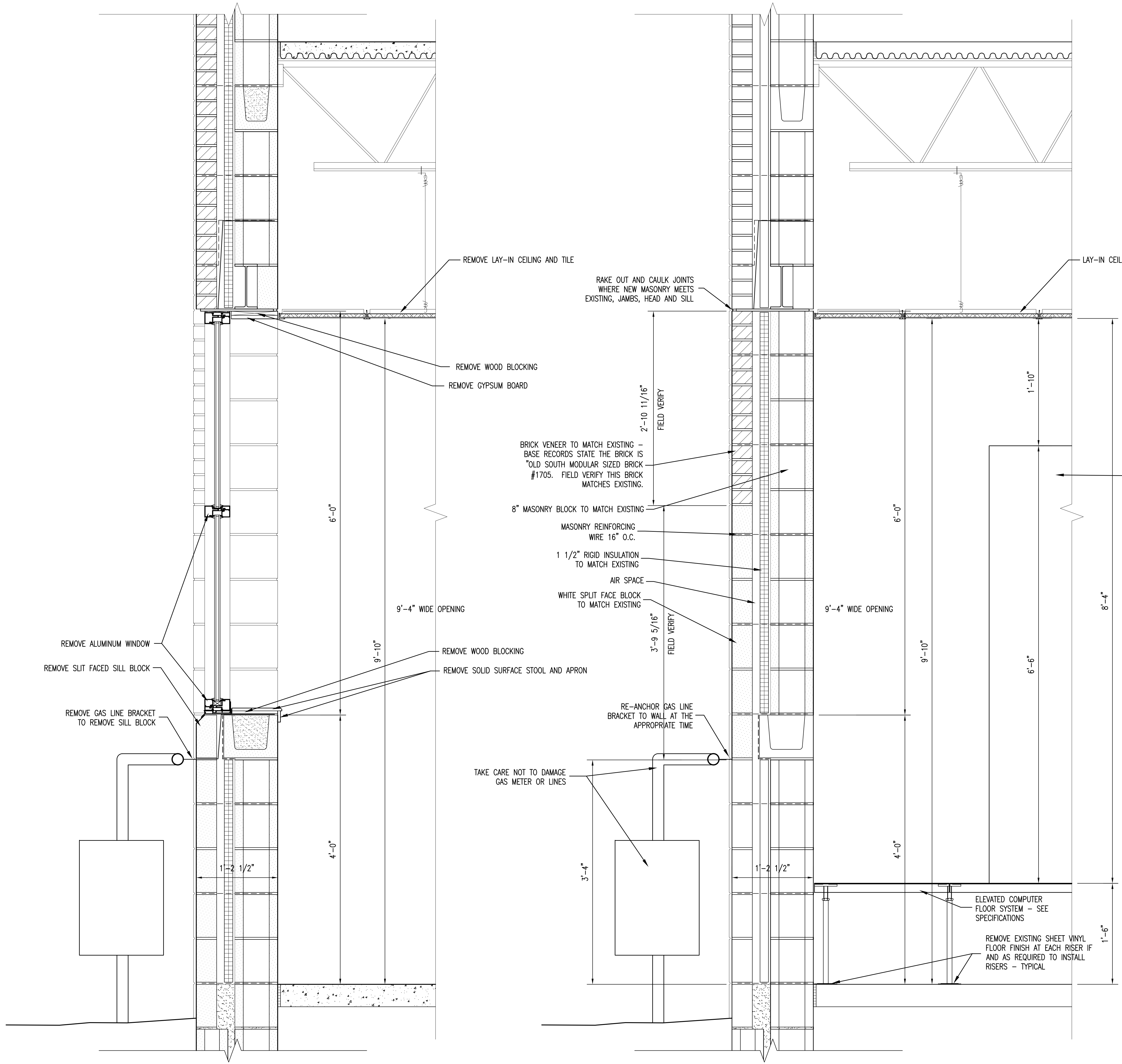
RENOVATED PARTIAL CEILING PLAN 2  
1/4" = 1'-0" A2 | A2



SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

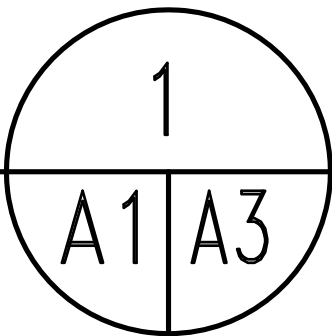
	SHEET TITLE:		<b>A-2</b>		
	PARTIAL CEILING PLANS				
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		<small>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND</small> <b>MARINE CORPS BASE</b> <small>CAMP LEJEUNE, NORTH CAROLINA</small>		
	DES. Robert L. Smith III DR. Steven C. Fender CHK. Robert L. Smith III SUBMITTED BY: DESIGN DIR.		<b>DESIGN SERVER ROOM &amp; CRAC SYSTEM AT BLDG. M79</b> <small>CAMP LEJEUNE, NORTH CAROLINA</small>		
APPROVED:	DATE:	SIZE:	CODE IDENT. NO.:	NAVFAC DRAWING NO.:	
		F	80091	60018912	
SATISFACTORY TO:	DATE:	SCALE:	CONST. CONTR. NO.:	SHEET 3 OF 16	
	06/19/2017	NOTED	05-17-0041		

REVISIONS		
SYL.	DATE	APPROVED



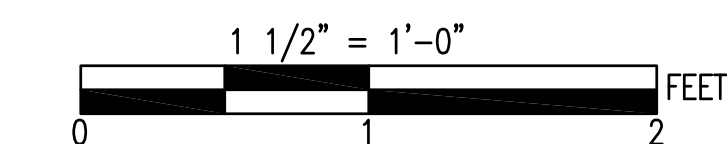
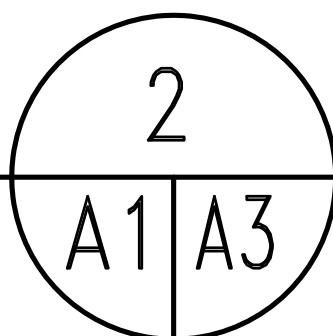
EXISTING CONDITIONS WALL SECTION 1

1 1/2" = 1'-0"



RENOVATED CONDITIONS WALL SECTION 2

1 1/2" = 1'-0"

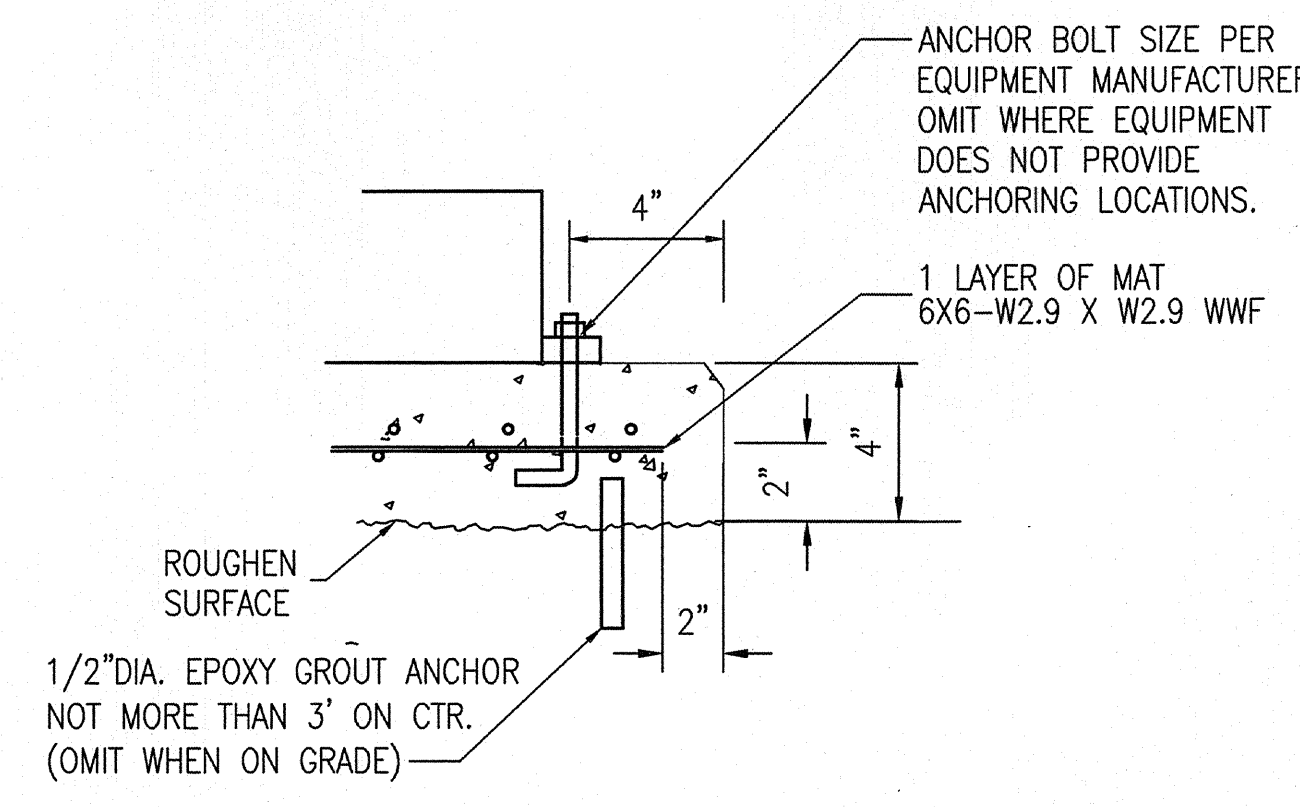


SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

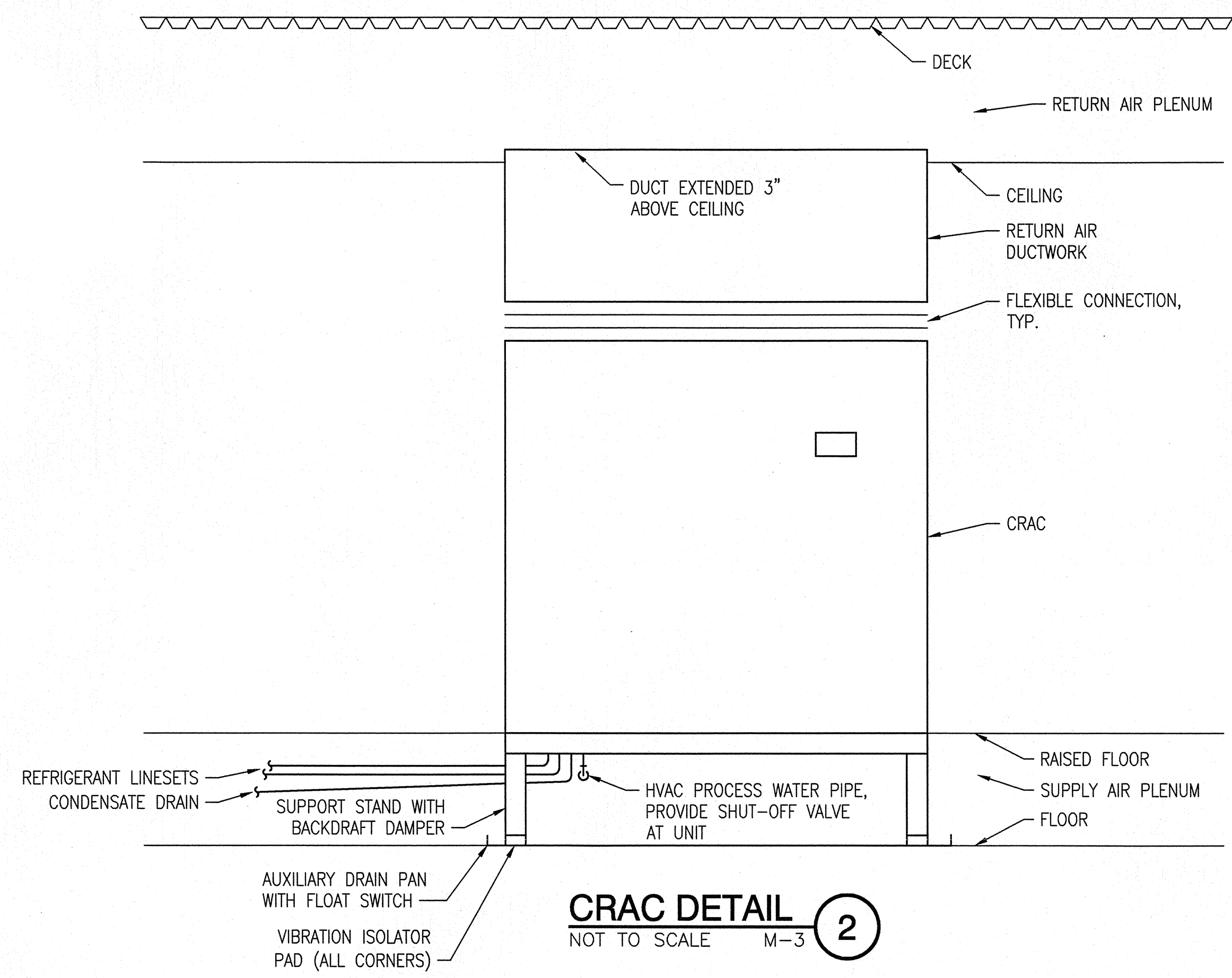
	SHEET TITLE: <b>DETAIL SECTIONS</b>		<b>A-3</b>
	<b>TALLEY &amp; SMITH ARCHITECTURE INC.</b> P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
	DES. Robert L. Smith III DR. Steven C. Fender CHK. Robert L. Smith III SUBMITTED BY: DESIGN DIR.		
	APPROVED:	DATE:	SIZE: <b>F</b>
SATISFACTORY TO:		DATE:	SCALE: NOTED
06/19/2017		SHEET 4 OF 16	

REVISIONS			
SYM.	DATE	APPROVED	

- NOTE:
- SINGLE LAYER OF MAT AND 2 ANCHOR BOLTS ARE ADEQUATE FOR ALL EQUIPMENT EXCEPT BOILERS OVER 400 MBH AND STORAGE TANKS.
  - MESH SHALL BE FURNISHED IN SHEETS.
  - ALL PAD EDGES SHALL BE CHAMFERED.
  - CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 PSI AT 28 DAYS.
  - ONLY ANCHOR EQUIPMENT WITH MANUFACTURER SUPPLIED ANCHOR MOUNTS.



**EQUIPMENT PAD DETAIL**  
NOT TO SCALE M-3 1



**CRAC DETAIL**  
NOT TO SCALE M-3 2

**COMPUTER ROOM AIR CONDITIONER SEQUENCE OF OPERATION**

**DESCRIPTION:** COMPUTER ROOM AIR CONDITIONER SYSTEM CONSISTING OF VARIABLE SPEED AIR VOLUME, VARIABLE CAPACITY DX COOLING, ELECTRIC REHEAT AND STEAM HUMIDIFIER. CONTROLLER SHALL PROVIDE INTERFACE TO THE DDC VIA A BACNET MS/TP INTERFACE.

CONTROLLER SHALL LEAD LAG THE UNITS AFTER 360 HOURS.

**RUN CONDITIONS - SCHEDULED:**  
THE UNIT SHALL BE ENABLED TO RUN TIMES WITH THE FOLLOWING SETPOINTS:

- A 72°F (ADJ.) RETURN AIR SETPOINT.
- A 59°F (ADJ.) HIGH RETURN AIR DEWPOINT SETPOINT.
- A 42°F (ADJ.) LOW RETURN AIR DEWPOINT SETPOINT.
- A 60% (ADJ.) HIGH RETURN AIR RELATIVE HUMIDITY SETPOINT.
- A 66°F (ADJ.) RETURN AIR RE-HEAT SETPOINT.

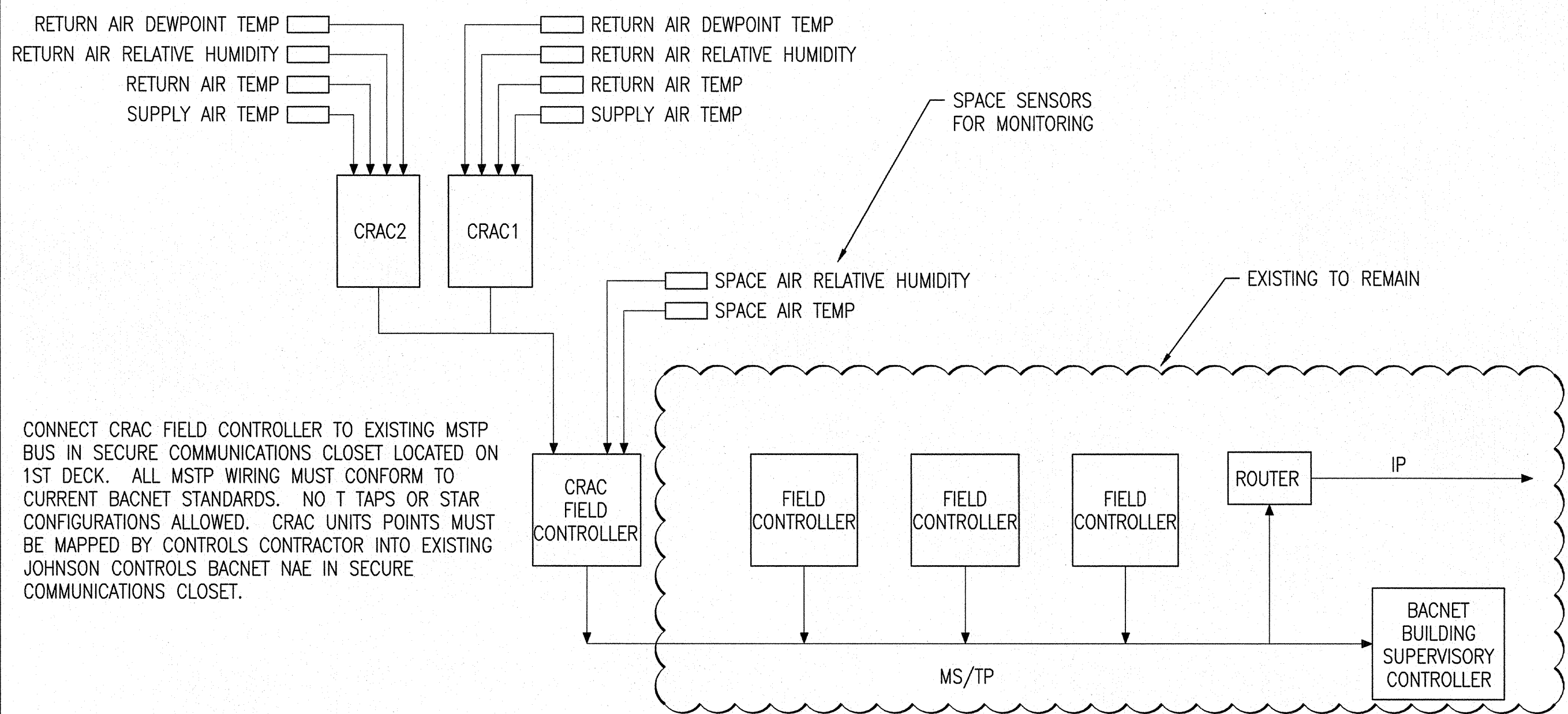
**VARIABLE FAN SPEED:**  
THE UNIT FAN SPEED SHALL MODULATE WITH BASED ON COMPRESSOR SPEED. THE FAN WILL START AT MINIMUM SPEED AND INCREASE SPEED PROPORTIONALLY BASED ON THE COMPRESSOR SPEED. FAN SHALL OPERATE AT MAXIMUM SPEED WHEN REHEAT OR HUMIDIFICATION IS REQUIRED.

**COMPRESSORS:**  
THE VARIABLE SPEED COMPRESSOR SHALL ENABLE AND MODULATE THE SPEED OF THE COMPRESSOR BASED ON RETURN AIR TEMPERATURE. IF THE VARIABLE SPEED COMPRESSOR DOES NOT SATISFY THE RETURN AIR TEMPERATURE SETPOINT, THEN THE FIXED SPEED COMPRESSOR SHALL ENABLE. THE VARIABLE SPEED COMPRESSOR SHALL CONTINUE TO MODULATE BASED ON RETURN AIR TEMPERATURE SETPOINT.

**DEHUMIDIFICATION:**  
THE DEHUMIDIFICATION SHALL BE ENABLED IF THE HIGH RETURN AIR DEWPOINT OR RELATIVE HUMIDITY IS ABOVE THE SETPOINTS AND UNIT IS NOT IN COOLING MODE. THE COMPRESSORS SHALL BE ENABLED AND MODULATE BASED ON THE DIFFERENCE BETWEEN RETURN AIR CONDITIONS AND SETPOINTS. IF RETURN AIR TEMPERATURE DROPS BELOW REHEAT SETPOINT, ELECTRIC REHEAT SHALL BE ENABLED AND MODULATE TO MAINTAIN SETPOINT.

**HUMIDIFICATION:**  
THE HUMIDIFICATION SHALL BE ENABLED IF THE LOW RETURN AIR DEWPOINT IS BELOW THE SETPOINT. THE STEAM GENERATOR SHALL MODULATE TO MAINTAIN SETPOINT.

**EMERGENCY SHUTDOWN:**  
UPON ACTIVATION OF EMERGENCY SHUTDOWN SWITCH, UNIT SHALL SHUTDOWN.



CONNECT CRAC FIELD CONTROLLER TO EXISTING MSTP BUS IN SECURE COMMUNICATIONS CLOSET LOCATED ON 1ST DECK. ALL MSTP WIRING MUST CONFORM TO CURRENT BACNET STANDARDS. NO T TAPS OR STAR CONFIGURATIONS ALLOWED. CRAC UNITS POINTS MUST BE MAPPED BY CONTROLS CONTRACTOR INTO EXISTING JOHNSON CONTROLS BACNET NAE IN SECURE COMMUNICATIONS CLOSET.

**CONTROL SYSTEM ARCHITECTURE**  
NOT TO SCALE M-3 3

**ABBREVIATIONS**

Abbreviation	Definition
AUTO	AUTOMATIC
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CRAC	COMPUTER ROOM AIR CONDITIONER
HPW	HVAC PROCESS WATER
HR	HOUR
HZ	HERTZ
IN	INCH
KW	KILOWATT
LB(S)	POUND(S)
MBH	1000 BRITISH THERMAL UNITS
MCA	MINIMUM CURRENT AMPACITY
MOCP	MAXIMUM OVERCURRENT PROTECTION
PH	PHASE
V	VOLTS
W.G.	WATER GAUGE

**MECHANICAL LEGEND**

CRAC#	COMPUTER ROOM AIR CONDITIONER NUMBER
S#	SUPPLY AIR GRATE NUMBER
R#	RETURN GRILLE NUMBER
IHP#	HEAT PUMP INDOOR UNIT NUMBER
OHP#	HEAT PUMP OUTDOOR UNIT NUMBER
COND#	CONDENSER UNIT NUMBER
(X)	EXISTING
(X)	ONE HOUR FIRE RATED WALL
(C)	CONNECTION POINT - NEW TO EXISTING
(H)	HUMIDITY SENSOR
(T)	TEMPERATURE SENSOR
(E)	EMERGENCY SHUTDOWN
(CFM)	GRILLE TAG - DRAWING CODE / CFM

**GRATE AND GRILLE SCHEDULE**

DRAWING CODE	TYPE	SERVICE	MODULE SIZE (IN.)	MOUNTING	NOTES	ACCESSORIES
S1	ONE-WAY DIRECTIONAL ROLLING TRAFFIC RATED FLOOR GRATE	SUPPLY	24 X 24	RAISED FLOOR	1,2	A
S2	TWO-WAY DIRECTIONAL ROLLING TRAFFIC RATED FLOOR GRATE	SUPPLY	24 X 24	RAISED FLOOR	1,2	B
R1	EGGCRATE GRILLE	RETURN	5 X 24	T-BAR	1	
R2	EGGCRATE GRILLE	RETURN	12 X 24	T-BAR	1	

NOTES:  
1. REFER TO SPECIFICATION SECTION 233733 FOR FURTHER INFORMATION.  
2. MATCHING ACCESSORY OF RAISED FLOOR SYSTEM.

ACCESSORIES:  
A. VOLUME DAMPER.  
B. 2 ZONE VOLUME DAMPER.

**COMPUTER ROOM AIR CONDITIONER POINTS LIST**

INDOOR UNIT CONTROL POINT DESCRIPTION	SOFTWARE POINTS	ALARMS		
		HIGH LIMIT	LOW LIMIT	ABNORMALITY
COOLING STAGE 1 COMMAND	AO			
COOLING STAGE 2 COMMAND	BO			
DISCHARGE AIR TEMPERATURE	AI	x	x	
RETURN AIR TEMPERATURE	AI	x	x	
RETURN AIR RELATIVE HUMIDITY	AI	x	x	
FAN COMMAND	AO			
FAN STATUS	BI			x
REHEAT OUTPUT	AO			
HUMIDIFIER OUTPUT	AO			
SPACE TEMPERATURE	AI	x	x	
SPACE RELATIVE HUMIDITY	AI	x	x	

**COMPUTER ROOM AIR CONDITIONER SCHEDULE**

DRAWING MARK	CONFIGURATION	COOLING 72 DB / 60 WB / 100 OADB		INDOOR UNIT				OUTDOOR UNIT				NOTES	ACCESSORIES					
		TOTAL (MBH)	SENSIBLE (MBH)	NOMINAL SA (CFM)	E.S.P. (N.W.G.)	REHEAT (KW)	HUMIDIFIER TYPE	POWER SUPPLY (LB/HR)	WEIGHT (LBS)	POWER SUPPLY (V/PH/HZ)	MCA			MOCP	WEIGHT (LBS)			
CRAC1/COND1	DOWNFLOW	310	260	12000	0.5	30	STEAM GENERATOR	30	460/3/60	110	125	2600	460/3/60	14.4	15	2400	1	A THRU M
CRAC2/COND2	DOWNFLOW	310	260	12000	0.5	30	STEAM GENERATOR	30	460/3/60	110	125	2600	460/3/60	14.4	15	2400	1	A THRU M

NOTES:  
1. REFER TO SPECIFICATION SECTION 23 73 33 FOR FURTHER INFORMATION.

ACCESSORIES:  
A. BACNET MS/TP INTERFACE.  
B. CONTROLLER WITH LEAD-LAG CAPABILITY.  
C. R-410A DUAL-CIRCUIT, VARIABLE FLOW COMPRESSOR SYSTEM.  
D. VARIABLE SPEED MULTIPLE ECM PLUG-FAN TYPE EVAPORATOR FAN SYSTEM WITH VFD.  
E. ECM CONDENSER FAN SPEED CONTROL FOR LOW TEMPERATURE OPERATION TO 0°F.  
F. VIBRATION ISOLATION PADS.  
G. 4" MERV 8 FILTERS.  
H. ENCLOSED FLOOR STAND WITH LOW-LEAKAGE AUTO-BACKDRAFT DAMPER ON SUPPLY.  
I. CONCRETE PAD FOR CONDENSING UNIT.  
J. SCR ELECTRIC HEAT.  
K. CONDENSER COIL TO BE COATED FOR EXPOSURE TO ASTM B117-90 3000 HOUR SALT SPRAY TEST WITH NO DEGRADATION.  
L. UNIT MOUNTED TEMPERATURE AND HUMIDITY SENSORS.  
M. SINGLE POINT POWER CONNECTION.

**CBHF Engineers, PLLC**  
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Wilmington, NC 28401  
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**TALLEY & SMITH ARCHITECTURE INC.**  
P.O. BOX 518 SHELBY, NC 28151-0518  
409 EAST MARION ST. SHELBY, NC 28150

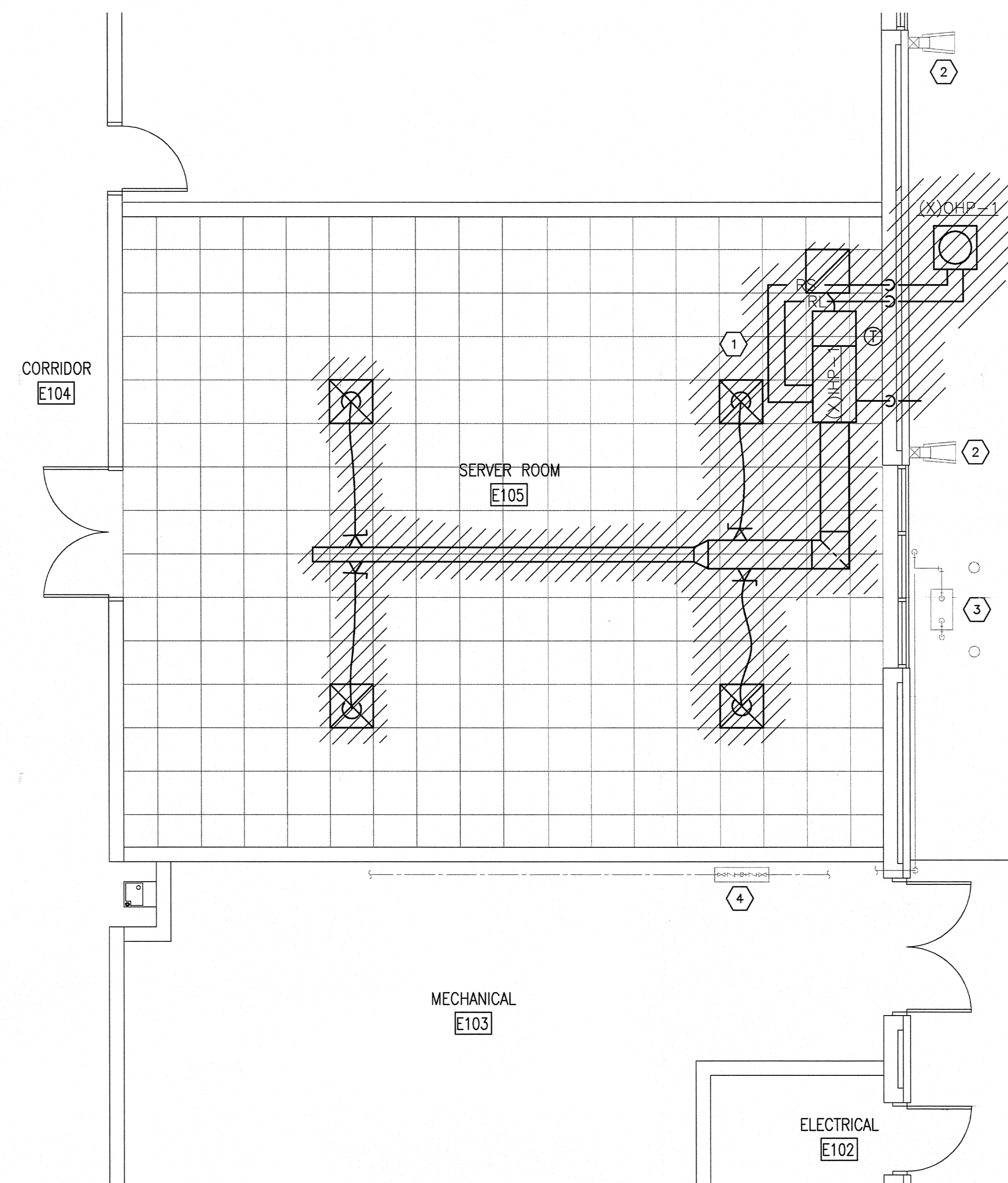
DEPARTMENT OF THE NAVY  
MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA

DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79  
CAMP LEJEUNE, NORTH CAROLINA

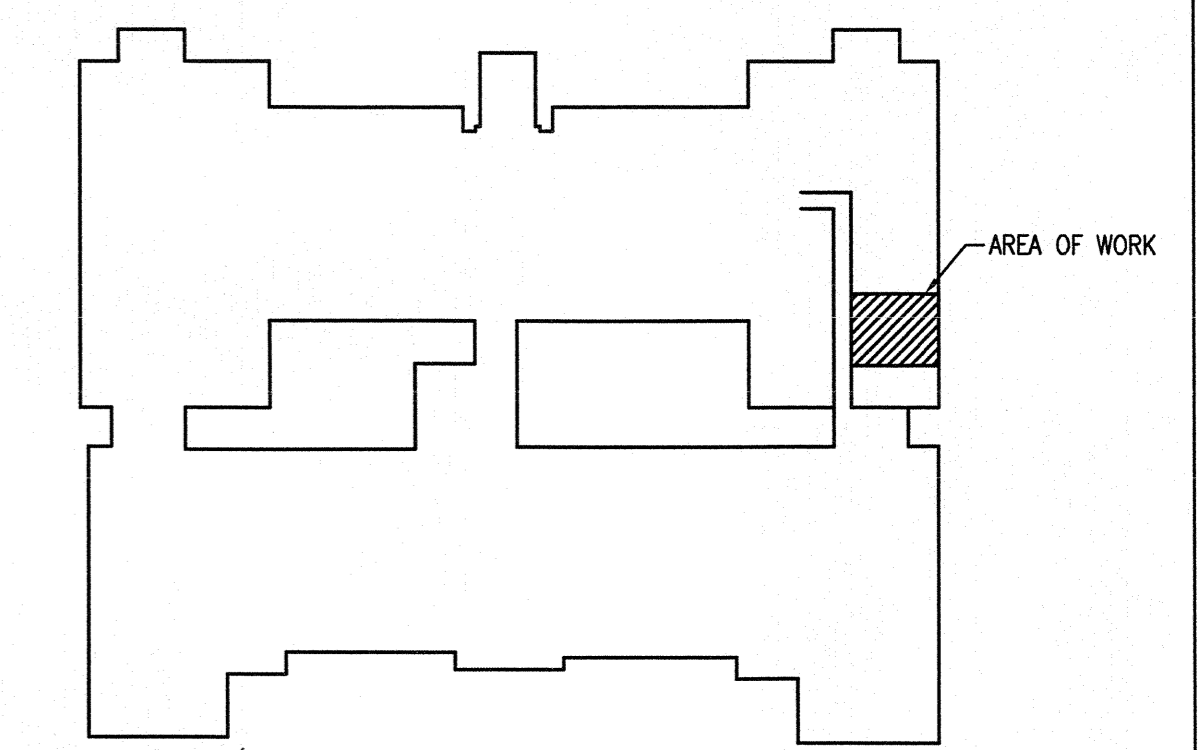
DES: ZBL  
DR: ZBL  
CHK: TOG  
SUBMITTED BY: TOG  
DESIGN DIR: T H BURTON, PE

APPROVED: DATE: SIZE: F CODE IDENT. NO.: 80091 NAVAFC DRAWING NO.: 60018914  
SATISFACTORY TO: DATE: SCALE: NOTED SPEC: 05-17-0041 SHEET 5 OF 16

REVISIONS		
SYM.	DATE	APPROVED

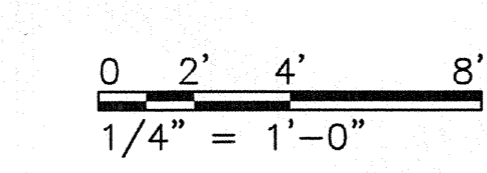


**MECHANICAL DEMOLITION PLAN** ①  
1/4" = 1'-0"



**KEYPLAN**  
PLAN NORTH  
NOT TO SCALE

- DEMOLITION KEYNOTES**
- ① DEMOLISH ALL MECHANICAL EQUIPMENT SERVING 105 SERVER ROOM INCLUDING BUT NOT LIMITED TO SPLIT SYSTEM, ASSOCIATED PIPING, CONTROLS AND AIR DISTRIBUTION. SEAL WALL PENETRATIONS - AIR TIGHT OR REUSE IN NEW WORK WHERE POSSIBLE.
  - ② EXISTING ROOF LEADER AND SPLASH BLOCK TO REMAIN - NO WORK.
  - ③ EXISTING GAS METER AND ASSOCIATED PIPING TO REMAIN - NO WORK.
  - ④ EXISTING DCW PRINCIPLE BACKFLOW PREVENTER AND PIPING TO REMAIN - SEE NEW WORK FOR TIE-IN.



 2248 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfengineers.com	SHEET TITLE: <b>MECHANICAL DEMOLITION PLAN</b>		<b>M-2</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
DES. ZBL DR. ZBL CHK. TOG SUBMITTED BY: TOG DESIGN DIR. T H BURTON, PE		DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
APPROVED: 		DATE: 6/19/17	SIZE: F CODE IDENT. NO.: 80091 NAIFAC DRAWING NO.: 60018915
SATISFACTORY TO:		DATE:	CONST. CONTR. NO.: 140085-17-B-0041 SCALE: NOTED SPEC: 05-17-0041 SHEET 6 OF 16

REVISIONS		
SYM.	DATE	APPROVED

**System No. C-AJ-5048**

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 2 Hr	FT Rating — 2 Hr
L Rating At Ambient — 4 CFM/sq ft	FH Rating — 2 Hr
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Rating — 2 Hr
W Rating — Class 1 (See Items 3A and 5)	L Rating At Ambient — 4 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft

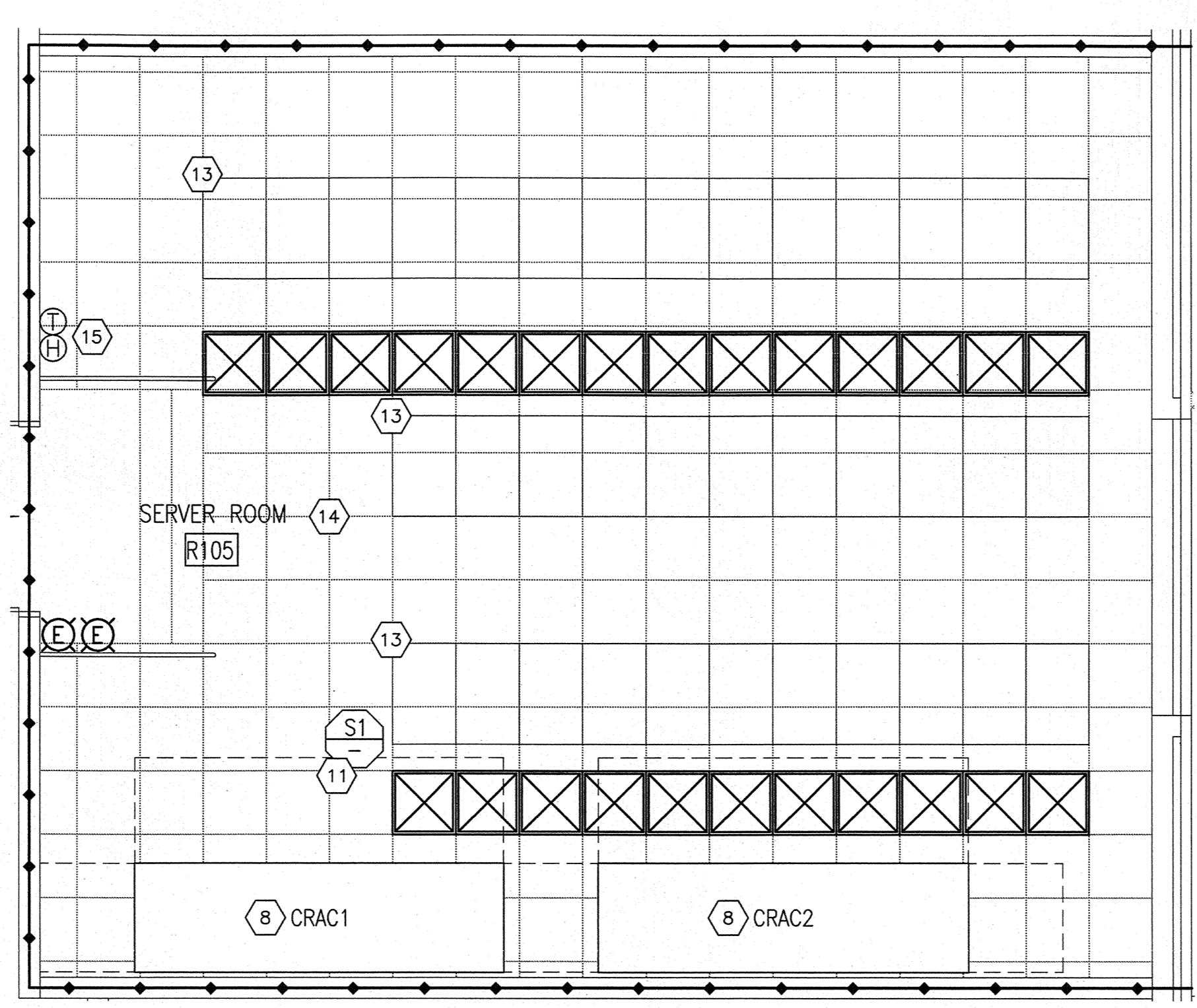
**SECTION A-A**

- FLOOR OR WALL ASSEMBLY — MIN 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M<sup>3</sup>) CONCRETE FLOOR OR MIN 5 IN. (127 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAX DIAM OF OPENING IS 8 IN. (203 MM). SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- STEEL PIPE — ONE 2 IN. (51 MM) DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
- PIPE COVERING\* — NOM 1 IN. (25 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. THE ANNULAR SPACE SHALL BE MIN 1 1/16 TO MAX 3-1/16 IN. (17.5 TO 78 MM). SEE PIPE AND EQUIPMENT COVERING — MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
- PVC JACKET+ — FOR W RATING, AN ADDITIONAL PVC JACKETING, SUPPLIED IN SHEET FORM, SHALL BE TIGHTLY WRAPPED AROUND THE ALL SERVICE JACKET ON THE PIPE COVERING WITH THE LONGITUDINAL SEAM CONTINUOUSLY SEALED USING THE ADHESIVE SUPPLIED WITH THE JACKET. THE JACKET IS TO BE NOM 48 IN. (1219 MM) WIDE BY NOM 20 OR 30 MIL (0.5 OR 0.8 MM) THICK. THE JACKET SHALL BE INSTALLED AT A POINT 36 IN. (914 MM) TO 40 IN. (1016 MM) ABOVE THE TOP SURFACE OF THE FLOOR ASSEMBLY AND SHALL EXTEND DOWNWARD INTO AND/OR THROUGH THE OPENING. SEE PLASTICS (QMF22) CATEGORY IN THE PLASTICS RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.
- PACKING MATERIAL — MIN 4 IN. (102 MM) THICKNESS OF MIN 4 PCF (64 KG/M<sup>3</sup>) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
- FILL, VOID OR CAVITY MATERIAL\* — SEALANT — MIN 1/2 IN. (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS. FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. W RATING APPLIES ONLY WHEN CP601S, CFS-S SIL GG, CFS-S SIL SL (FLOORS ONLY) OR CP604 SEALANT IS USED.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S, CP604, CP606, CFS-S SIL GG, CFS-S SIL SL (FLOORS ONLY), FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

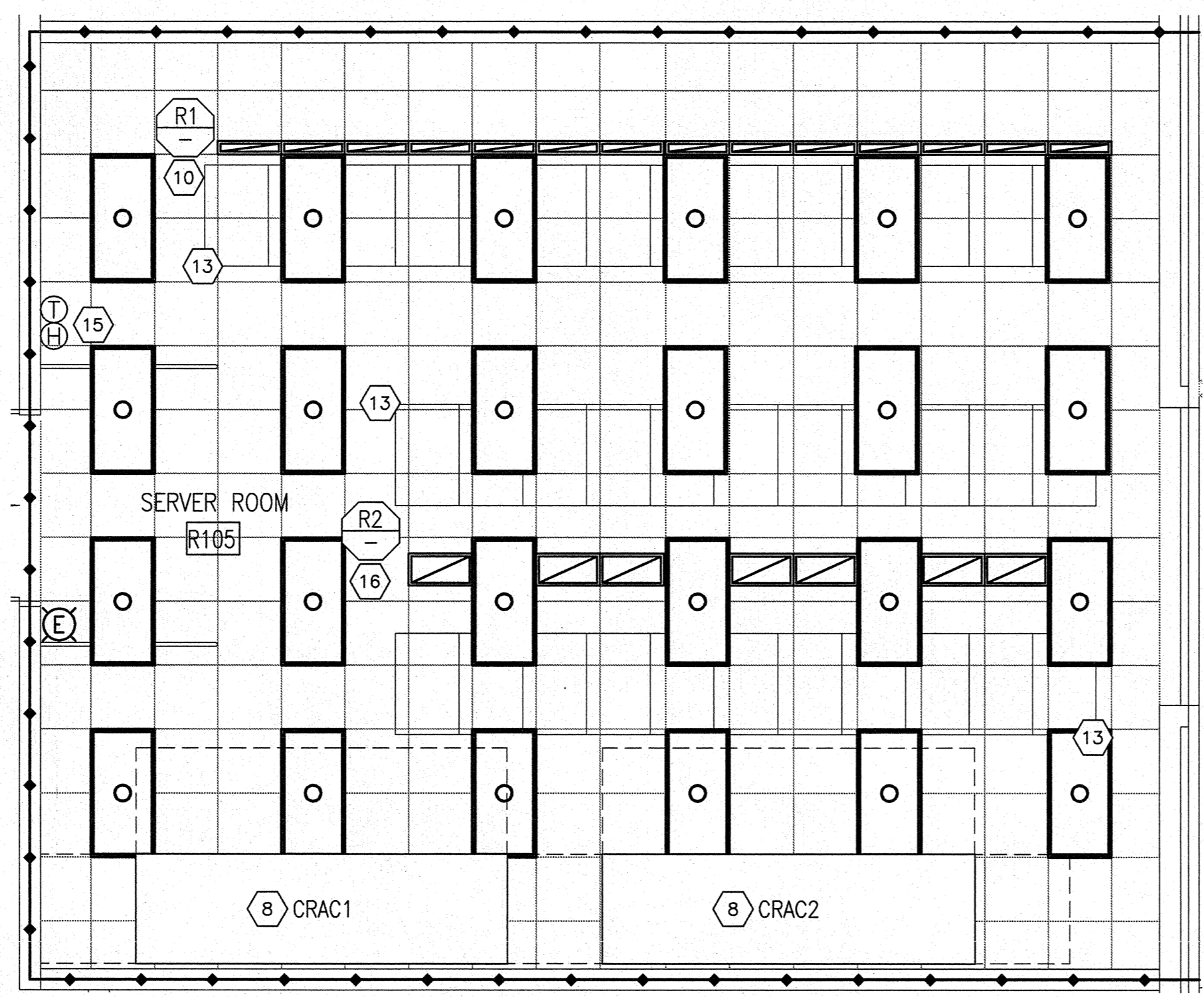
(NOTE: L RATINGS APPLY ONLY WHEN FS-ONE SEALANT IS USED.)

\* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

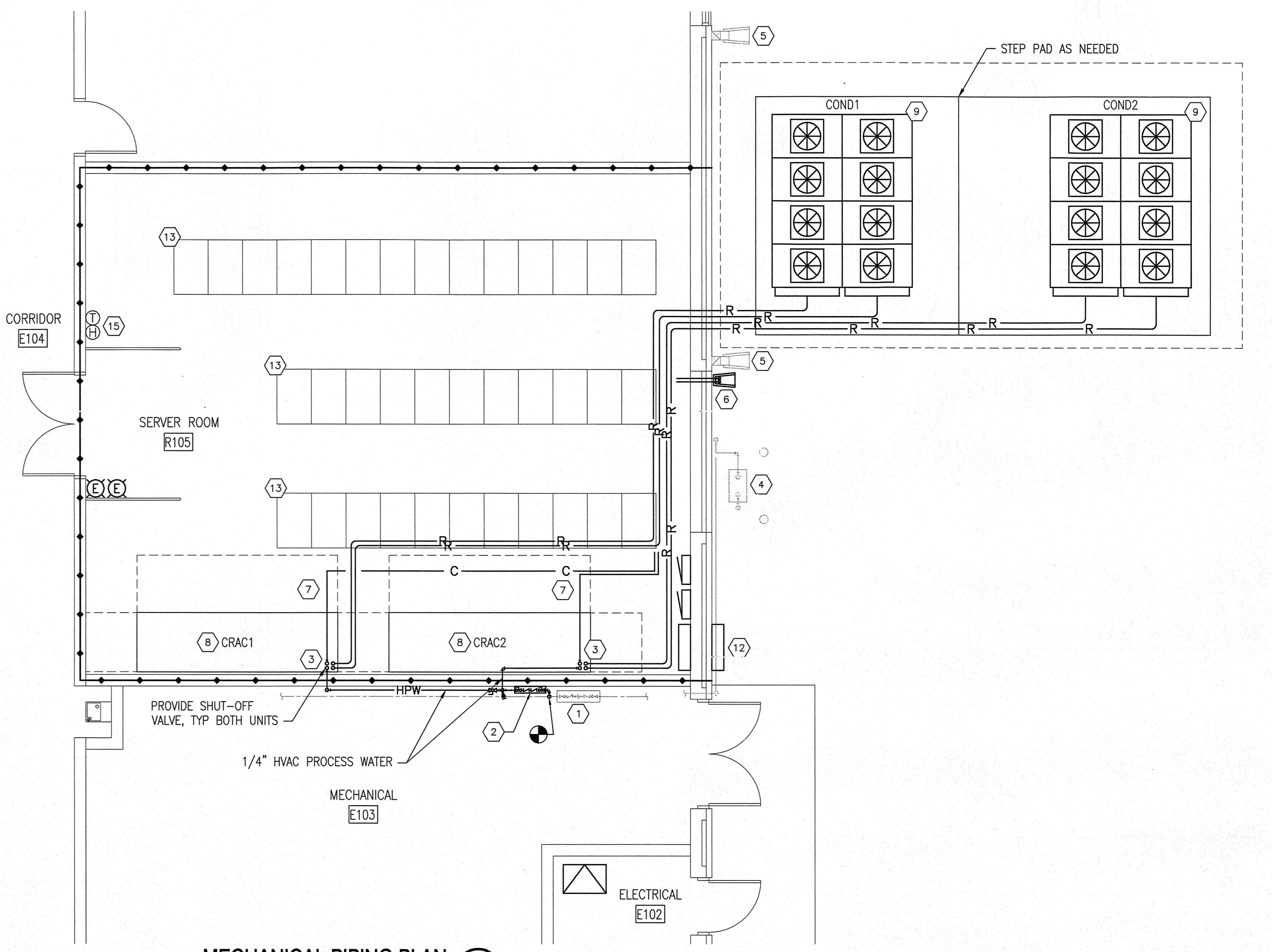
+ BEARING THE UL RECOGNIZED COMPONENT MARKING



**MECHANICAL FLOOR PLAN** ②  
1/4" = 1'-0"



**MECHANICAL CEILING PLAN** ③  
1/4" = 1'-0"

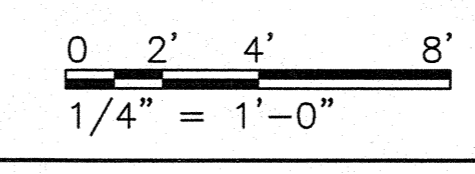
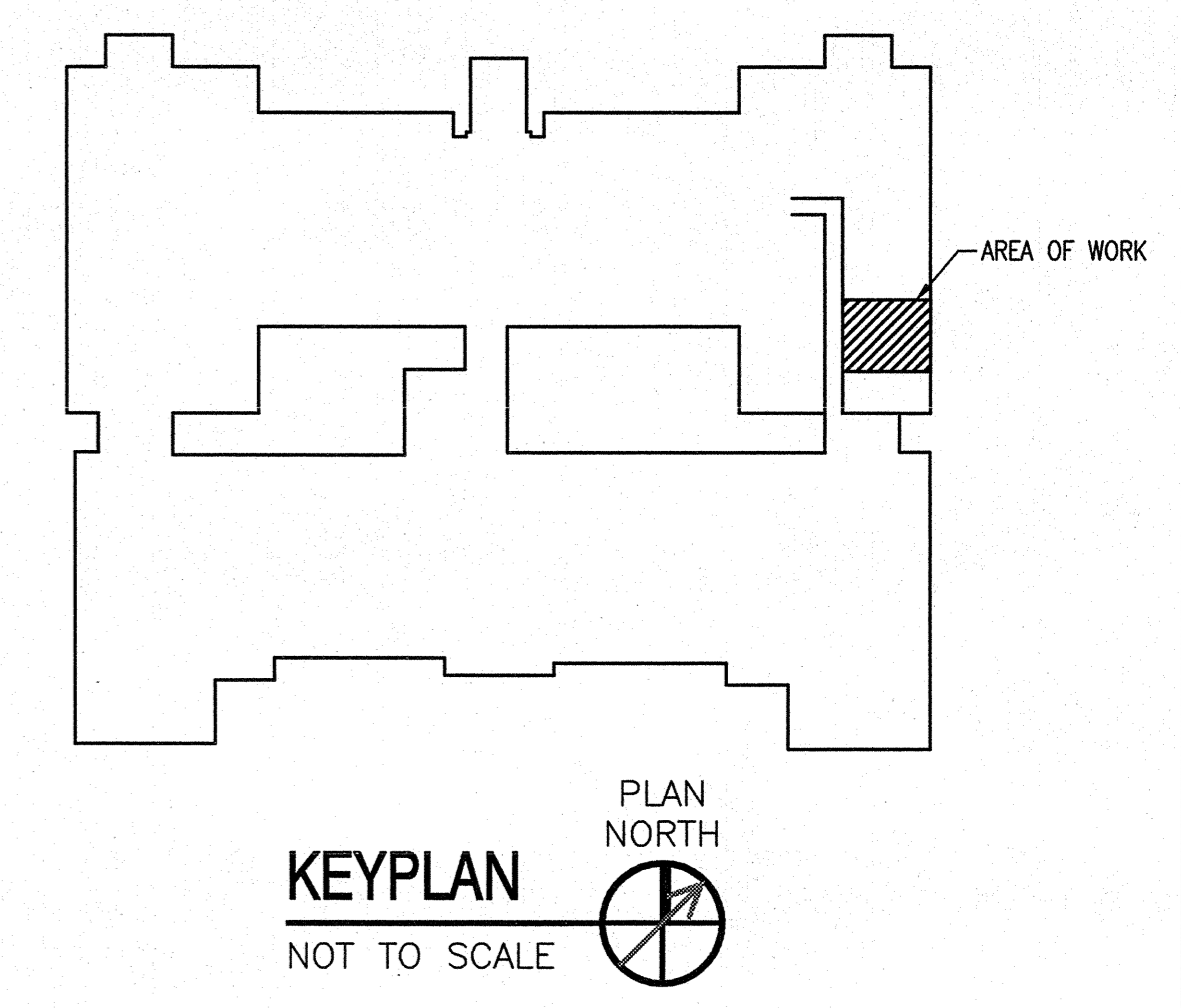


**MECHANICAL PIPING PLAN** ①  
1/4" = 1'-0"

- KEYED NOTES**
- EXISTING REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER.
  - PROVIDE NEW 1/2" DOUBLE CHECK BACKFLOW PREVENTER.
  - ROUTE PIPING THROUGH NEW RAISED FLOOR SYSTEM.
  - EXISTING GAS METER AND ASSOCIATED PIPING TO REMAIN — NO WORK. COORDINATE NEW WORK TO AVOID ANY INTERFERENCES.
  - EXISTING ROOF LEADER AND SPLASH BLOCK TO REMAIN — NO WORK. COORDINATE NEW WORK TO AVOID ANY INTERFERENCES.
  - PROVIDE SPLASH BLOCK.
  - ROUTE COMBINED HUMIDIFIER/CONDENSATE DRAINS AT 1/8"/FT MINIMUM SLOPE IN ORDER TO GRAVITY DRAIN TO SPLASH BLOCK.
  - PROVIDE NEW CRAC UNITS AS SCHEDULED. CONNECT SUPPLY AIR CONNECTION TO SUPPORT STAND, SERVING AS SUPPLY PLENUM. EXTEND RETURN AIR DUCT TO ABOVE NEW LAY-IN CEILING, TO SERVE A RETURN PLENUM. ENSURE MANUFACTURER'S RECOMMENDED CLEARANCES ARE MET.
  - PROVIDE NEW CONDENSING UNITS AS SCHEDULED ON NEW CONCRETE PAD. ENSURE MANUFACTURER'S RECOMMENDED CLEARANCES ARE MET.
  - TYPICAL OF 14 RETURN GRILLES.
  - TYPICAL OF ALL SUPPLY GRILLES.
  - ELECTRICAL PANELS — SEE ELECTRICAL SHEETS AND COORDINATE ALL WORK TO AVOID INTERFERENCES.
  - APPROXIMATE SERVER RACK LOCATIONS. REFER TO ARCHITECTURAL SHEETS FOR EXACT LOCATIONS.
  - RAISED FLOOR SYSTEM, REFER TO ARCHITECTURAL SHEETS FOR FURTHER INFORMATION.
  - TEMPERATURE AND HUMIDITY SENSORS FOR MONITORING ONLY.
  - TYPICAL OF 7 RETURN GRILLES

**GENERAL NOTES**

ALL NEW AND EXISTING PENETRATIONS INTO SERVER ROOM SHALL BE FIRE PROTECTED.



<b>CBHF</b> Engineers, PLLC 2248 Yarnwood Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5286 www.cbhfindesign.com	SHEET TITLE: <b>MECHANICAL RENOVATION PLANS</b>		<b>M-3</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 408 EAST MARION ST. SHELBY, NC 28150		
DES. ZBL DR. ZBL CHK. TOG SUBMITTED BY: TOG DESIGN DR. T H BURTON, PE	DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA
APPROVED: [Signature] DATE: 6/19/17	SIZE: F CODE IDENT. NO.: 80091	NAVFAC DRAWING NO.: 60018916 CONST. CONTR. NO.: N40085-17-B-0041	SATISFACTORY TO: [Signature] DATE: [Blank] SCALE: NOTED SPEC. 05-17-0041 SHEET 7 OF 16

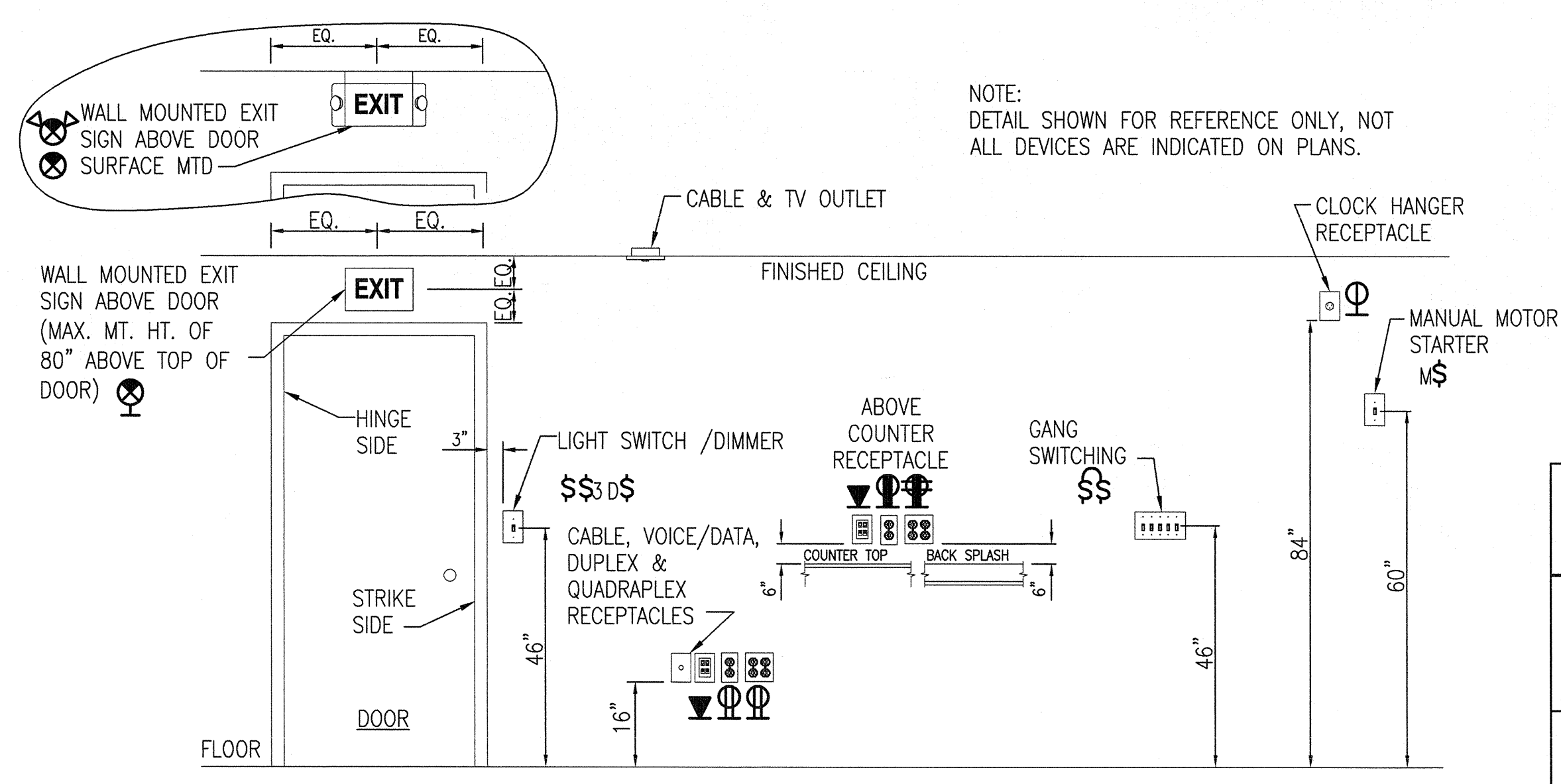
REVISIONS		
SYL	DATE	APPROVED

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	2x4 LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED LETTER INDICATES FIXTURE TYPE
	POWER & SWITCH LEG
	UNSWITCHED LEG
	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL) WP - LISTED WEATHER-RESISTANT TYPE DEVICE WITH WEATHERPROOF IN USE COVER GFI - GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 24" AFF LOCATE GFI TEST SWITCH IN A READILY ACCESSIBLE LOCATION TR - TAMPER RESISTANT
	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH. +##" - INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (IF GIVEN) (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, QUADPLEX, 120VAC, 20A MOUNTED 16" AFF UNLESS OTHERWISE NOTED (SEE ELECTRICAL MOUNTING HEIGHT DETAIL) WP - LISTED WEATHER-RESISTANT TYPE DEVICE WITH WEATHERPROOF IN USE COVER GFI - GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 24" AFF LOCATE GFI TEST SWITCH IN A READILY ACCESSIBLE LOCATION TR - TAMPER RESISTANT
	RECEPTACLE, QUADPLEX, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH. +##" - INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (IF GIVEN) (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	SPECIAL RECEPTACLE, SIZE AND CONFIGURATION AS INDICATED ON DRAWING
	RECEPTACLE, DUPLEX, 120VAC, 20A RECESSED FLOOR MOUNTED.
	DISCONNECT SWITCH, FUSED, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS ##A = DISCONNECT SIZE / # = NUMBER OF POLES / # = NEMA RATING, /##AF = FUSE SIZE
	RAISED FLOOR 5 GANG RECESSED FLOOR BOX. PROVIDE ELECTRICAL DEVICES WITHIN ACCORDING TO THE FLOOR BOX DETAIL(S).

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	PANELBOARD, SURFACE OR RECESSED MOUNTED AS SHOWN. SIZE, RATINGS, AND MOUNTING AS INDICATED ON PANEL SCHEDULE. CONTRACTOR IS RESPONSIBLE FOR REQUIRED CLEARANCE IN FRONT OF ELECTRICAL PANEL. SEE NEC TABLE 110.26 WORKING SPACES FOR ADDITIONAL CLEARANCE CONDITIONS.
	TRANSFORMER, SIZE AS INDICATED ON DRAWING
	CABLE TRAY, LADDER TYPE
	CONDUIT, HOME RUN TO PANEL BOARD
	1 HOUR RATED FIRE WALL
	DATA JACK WALL MOUNTED #G- # OF GANGS
	DATA JACK RECESSED FLOOR MOUNTED #G- # OF GANGS
	TELECOMMUNICATIONS GROUND BAR,
	HATCHING INDICATES ITEMS TO BE DEMOLISHED.
	ENLARGED PLAN
	ELEVATION

TYPICAL ABBREVIATIONS			
A, AMP	AMPERE	LP	LIGHTING PANEL, LIGHT POLE
AFF	ABOVE FINISHED FLOOR	LTG	LIGHTING
AFG	ABOVE FINISHED GRADE	MCB	MAIN CIRCUIT BREAKER
AHU	AIR HANDLING UNIT	MCC	MOTOR CONTROL CENTER
AIC	AMPERE INTERRUPTING CAPACITY	MCP	MOTOR CIRCUIT PROTECTOR
ATS	AUTOMATIC TRANSFER SWITCH	MDP	MAIN DISTRIBUTION PANEL
AWG	AMERICAN WIRE GAUGE	MFR	MANUFACTURER
BOF	BOTTOM OF FIXTURE	MH	MANHOLE
BRKR	BREAKER	MLO	MAIN LUGS ONLY
C, CND	CONDUIT	MTD	MOUNTED
CAB	CABINET	MTG	MOUNTING
CAT	CATALOG	MTS	MANUAL TRANSFER SWITCH
CL	CHLORINE	MV	MEDIUM VOLTAGE
CB	CIRCUIT BREAKER	NA, NEUT	NEUTRAL
CCTV	CLOSED CIRCUIT TELEVISION	NA	NOT APPLICABLE
CKT	CIRCUIT	NC	NORMALLY CLOSED
CLG	CEILING	NEC	NATIONAL ELECTRIC CODE
CP	CONTROL PANEL	NIC	NOT IN CONTRACT
CR	CONTROL RELAY, CORROSION RESISTANT	NL	NIGHT LIGHT
CS	CONTROL SWITCH	NO	NORMALLY OPEN
CV	CONTROL VALVE	NTS	NOT TO SCALE
CT	CURRENT TRANSFORMER	P	POLE
CU	COPPER	PA	PUBLIC ADDRESS
EF	EXHAUST FAN	PB	PULL BOX, PUSH-BUTTON
EMER	EMERGENCY	PF	POWER FACTOR
EMT	ELECTRICAL METALLIC TUBING	PH,	PHASE
ENCL	ENCLOSURE	PLC	PROGRAMMABLE LOGIC CONTROLLER
EQUIP	EQUIPMENT	PNL	PANEL
EWC	ELECTRIC WATER COOLER	PP	POWER PANEL, POWER POLE
EWB	ELECTRIC WATER HEATER	PT	POTENTIAL TRANSFORMER
EPRF	EXPLOSION PROOF	PWR	POWER
FA	FIRE ALARM	RECPT, RCP	RECEPTACLE
FAAP	FIRE ALARM ANNUNCIATOR PANEL	REQ'D	REQUIRED
FACP	FIRE ALARM CONTROL PANEL	RGS	RIGID GALVANIZED STEEL CONDUIT
FBO	FURNISHED BY OTHERS	RM	ROOM
FLA	FULL LOAD AMPS	RTU	REMOTE TELEMETRY UNIT
FLUOR	FLUORESCENT	DCM	DC MOTOR DRIVE
FLR	FLOOR	SH	SHEET
FWE	FURNISHED WITH EQUIPMENT	SM	SURFACE MOUNT
GEN	GENERATOR	SPEC	SPECIFICATION
G, GND	GROUND	SS	SELECTOR SWITCH
GFCI	GROUND FAULT CURRENT INTERRUPTER	SST	STAINLESS STEEL
HH	HANDHOLE	SW	SWITCH
HID	HIGH INTENSITY DISCHARGE	SWBD	SWITCHBOARD
HOA	HAND-OFF-AUTO	SWGR	SWITCH GEAR
HP	HORSE POWER	TEL	TELEPHONE
HPF	HIGH POWER FACTOR	TPS	TWISTED PAIR SHIELDED
HPS	HIGH PRESSURE SODIUM	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
HTR	HEATER	TYP	TYPICAL
HV	HIGH VOLTAGE	UGND	UNDERGROUND
Hz	HERTZ	UH	UNIT HEATER
IMC	INTERMEDIATE METALLIC CONDUIT	UON	UNLESS OTHERWISE NOTED
INCAND	INCANDESCENT	UTIL	UTILITY
JB	JUNCTION BOX	V	VOLTS
K	THOUSAND	VFD	VARIABLE FREQUENCY DRIVE
KCMIL	THOUSAND CIRCULAR MILLS	W	WIRE, WATT
KVA	KILOVOLT AMPERE	WH	WATT-HOUR
KW	KILOWATTS	WP	WEATHERPROOF
KWH	KILOWATT-HOURS	(X)	EXISTING DEVICE
		XFMR	TRANSFORMER

EX. LOAD SUMMARY	
VOLTAGE	PHASE
480	3
LARGEST MOTOR APPROX. AMPS	25 AMPS
LARGEST MOTOR APPROX. AMPS x .25	6 AMPS
<b>HVAC</b>	
CRAC1 (CRAC2 REDUNDANT)	73,164 VA
COND1 (COND2 REDUNDANT)	9,578 VA
RTU'S	144,375 VA
HEAT PUMP'S	14,560 VA
SUB-TOTAL HVAC DEMAND	241,677 VA
SUB-TOTAL HVAC DEMAND	291 AMPS
<b>EQUIPMENT</b>	
VAV BOXES	17,728 VA
EWC	4,200 VA
EF'S	3,102 VA
PROJECTOR	720 VA
INTERCOM	1,200 VA
ELEVATOR EQUIP/PIT	4,800 VA
INTRUSION DETECTION	1,200 VA
FIRE ALARM	1,200 VA
LAMINATOR	12,960 VA
L4A STUDIO	2,280 VA
DIMMER	18,000 VA
CLOCK	120 VA
DOOR RELEASE	1,920 VA
PUMP'S	51,250 VA
ELEVATOR	28,254 VA
SUB-TOTAL EQUIPMENT DEMAND	148,934 VA
SUB-TOTAL EQUIPMENT DEMAND	179 AMPS
ADD FOR LARGEST MOTOR	6 AMPS
TOTAL EQUIPMENT DEMAND	185 AMPS
<b>LIGHTING</b>	
LIGHTS (INTERIOR, BASED ON NEC 220.12)	104,263 VA
LIGHTS (EXTERIOR)	5,263 VA
TOTAL LIGHTING LOAD	109,526 VA
LIGHTING LOAD x 1.25	136,907 VA
TOTAL DEMAND FOR LIGHTING	165 AMPS
<b>RECEPTACLES</b>	
RECEPTACLES	550,080 VA
FIRST 10000VA	10,000 VA
REMAINDER @ 50%	270,040 VA
TOTAL DEMAND FOR RECEPTACLE	280,040 VA
TOTAL DEMAND FOR RECEPTACLE	337 AMPS
TOTAL DEMAND BUILDING AMPS	978 AMPS
TOTAL DEMAND BUILDING AMPS	812,754 VA
TOTAL BUILDING CONNECTED LOAD	1,050,217 VA
EXISTING 1000 AMP SERVICE IS ADEQUATE	



**ELECTRICAL DEVICES - MOUNTING HEIGHT DETAIL**  
NOT TO SCALE

 2248 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5296 www.cbhfindesign.com	SHEET TITLE: <b>ELECTRICAL LEGEND &amp; DETAILS</b>		<b>E-1</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA	
DES. RRD DR. RRD CHK. JPF SUBMITTED BY: DESIGN DR. T H BURTON, PE APPROVED:	DATE:	SIZE: <b>F</b> CODE IDENT. NO.: <b>80091</b> SATISFACTORY TO:	NAVFAC DRAWING NO.: <b>60018917</b> CONST. CONTR. NO.: <b>N40085-17-B-0041</b> SPEC. <b>05-17-0041</b>
SCALE: NOTED		SHEET 8 OF 16	


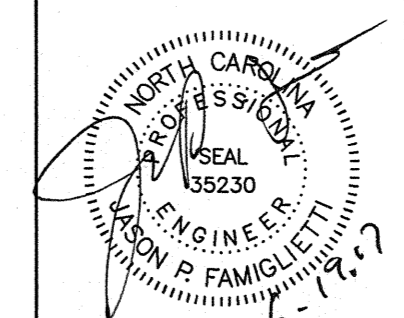
REVISIONS		
SYL	DATE	APPROVED

**GENERAL NOTES:**

- ALL ELECTRICAL WORK SHALL BE IN FULL COMPLIANCE WITH NFPA 70, THE NORTH CAROLINA STATE BUILDING CODE, ALL LOCAL CODES AND ORDINANCES AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- ALL EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION. ALL MATERIAL, EQUIPMENT AND DEVICES SHALL BE NEW CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. EQUIPMENT SHALL BE SUITABLE FOR ITS APPLICATION (E.G. WHEN INSTALLED OUTDOORS, IT SHALL BE WEATHERPROOF, ETC.)
- THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS FOR WORK REQUIREMENTS, THE AMOUNT OF SPACE AVAILABLE FOR ELECTRICAL EQUIPMENT, AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER.
- THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THOROUGHLY FAMILIARIZING HIMSELF WITH ANY CONTRACTUAL REQUIREMENTS AS MAY BE SET FORTH IN THE OTHER DIVISIONS OF THE PROJECT SPECIFICATIONS.
- UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. INCIDENTAL COMPONENTS MAY NOT BE SHOWN, AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THIS WORK, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ADDITIONAL CIRCUITS SHALL BE INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.
- TEMPORARY POWER CONNECTIONS AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ALL TEMPORARY EQUIPMENT WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR SHALL PROVIDE DETAILS, METHODS, MATERIALS, ETC. FOR REVIEW PRIOR TO MAKING TEMPORARY CONNECTIONS. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS INCLUDING CONTROL EQUIPMENT, MOTOR STARTERS, BRANCH AND FEEDER CIRCUIT BREAKERS, PANELBOARDS, TRANSFORMERS, ETC. FOR TEMPORARY POWER.
- THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF WORK AND ANY MINOR CORRECTIONS, CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT.
- ALL EQUIPMENT SHOWN DOTTED OR DASHED IS BY OTHERS OR IS EXISTING, AS NOTED.
- ALL ELECTRICAL EQUIPMENT SHALL, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT SHALL NOT BE STORED OUT OF DOORS, BUT SHALL BE STORED IN DRY PERMANENT SHELTERS. IF AN APPARATUS HAS BEEN DAMAGED, OR HAS BEEN SUBJECT TO POSSIBLE INJURY BY WATER OR THE ELEMENTS, SUCH DAMAGE SHALL BE REPLACED AT NO ADDITIONAL COST.
- DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
- CIRCUIT LAYOUTS ARE NOT INTENDED TO SHOW THE NUMBER OF FITTINGS, OR OTHER INSTALLATION DETAILS. UNLESS NOTED OTHERWISE, THE EXACT ROUTING OF FEEDER AND BRANCH CIRCUIT RACEWAYS AND CABLES IS THE RESPONSIBILITY OF THE CONTRACTOR. RISER AND GENERAL CIRCUIT ARRANGEMENTS ARE SHOWN SCHEMATICALLY/DIAGRAMMATICALLY ONLY. THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION.
- UNLESS DIMENSIONED, DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADJUST EXACT LOCATIONS AS REQUIRED TO SERVE THE INTENDED PURPOSE AND TO AVOID CONFLICTS AND INTERFERENCES WITH OTHER TRADES. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS OR DIMENSIONED ON THE ELECTRICAL DRAWINGS, VERIFY EXACT LOCATION WITH THE CONTRACTING OFFICER PRIOR TO ROUGH-IN.
- CONDUIT TERMINATING IN PRESSED STEEL BOXES SHALL HAVE DOUBLE LOCKNUTS AND INSULATED BUSHINGS. CONDUITS TERMINATING IN GASKETED ENCLOSURES SHALL BE TERMINATED WITH GROUNDING TYPE CONDUIT HUBS.
- BRANCH CIRCUIT HOMERUNS SHOWN ON DRAWINGS INDICATE PHASE CONDUCTORS, NEUTRAL, EQUIPMENT GROUND CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONTROL SHALL BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.
- SEAL ALL CONDUIT OPENINGS THROUGH EXTERIOR BUILDING WALLS WATERTIGHT.
- IN WET LOCATIONS AND EXTERIOR, ALL WIRING DEVICES SHALL BE WEATHER-RESISTANT LISTED WITH WEATHERPROOF WHILE IN USE COVER.
- RACEWAYS PENETRATING FLOORS, CEILINGS OR WALLS SHALL BE PROPERLY SEALED SMOKE/TIGHT.
- RACEWAYS PENETRATING RATED FLOOR, CEILING OR WALL ASSEMBLIES SHALL BE PROPERLY SEALED IN ACCORDANCE WITH THE CORRESPONDING UNDERWRITERS LABORATORIES (OR OTHER APPROVED THIRD PARTY TESTING AGENCY) APPROVED AND LISTED FIRESTOPPING MATERIALS AND MANUFACTURER APPROVED INSTALLATION TECHNIQUES COMPLYING WITH ALL APPLICABLE CODES. SEE ARCHITECTURAL DRAWINGS FOR IDENTIFICATION OF RATED WALLS AND CEILINGS.
- ALL RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE. IF APPLICABLE, MATCH EXISTING RACEWAY INSTALLATION METHODS AND ROUTINGS AT OR NEAR EXISTING FACILITIES.
- INSTALL EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS POSSIBLE. NO DIAGONAL RUNS WILL BE ALLOWED. ALL CONDUITS SHALL BE RUN STRAIGHT AND TRUE. RUN PARALLEL OR BANKED RACEWAYS TOGETHER ON COMMON SUPPORTS WHERE PRACTICAL. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL.
- PATCHING OF WATERPROOFED SURFACES SHALL RENDER THE AREA OF THE PATCHING COMPLETELY WATERPROOF.
- ALL MOTORS AND OTHER VIBRATING EQUIPMENT SHALL BE CONNECTED TO THE CONDUIT SYSTEM BY MEANS OF A SHORT SECTION (18 INCH MINIMUM) OF FLEXIBLE CONDUIT UNLESS OTHERWISE INDICATED. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED INSIDE THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.
- SURFACE MOUNTED PANELBOARDS, JUNCTION, OUTLET AND PULL BOXES, RACEWAYS, ETC., INSTALLED ON EXTERIOR SURFACES OR INSIDE ON EXTERIOR WALLS SHALL BE SUPPORTED BY SPACERS TO PROVIDE A 1/4" MINIMUM CLEARANCE BETWEEN THE WALL AND EQUIPMENT.
- CEILING MOUNTED DEVICES INSTALLED IN ACOUSTICAL TILE CEILING AREAS SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE WITH RODS OF SUFFICIENT SIZE TO PREVENT VERTICAL MOVEMENT OF THE OUTLET BOX. BRIDGES ALONE ARE NOT ADEQUATE UNLESS SPECIFICALLY APPROVED. CEILING MOUNTED EXIT LIGHT FIXTURES SHALL BE INSTALLED LEVEL. DO NOT SUPPORT DEVICES FROM ACOUSTICAL CEILING TILE.
- EXCAVATION AND TRENCHING REQUIRED FOR THE INSTALLATION OF ELECTRICAL POWER AND TELECOMMUNICATIONS RACEWAYS SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.

**DEMOLITION NOTES:**

- SELECTIVE ELECTRICAL DEMOLITION SHALL BE PROVIDED BY THE CONTRACTOR AS DESCRIBED HEREIN AND AS SHOWN ON THE CONTRACT DRAWINGS. GROSS DEMOLITION WILL BE PROVIDED BY THE GENERAL CONTRACTOR. IDENTIFY ACTIVE UTILITIES, AND AT THE APPROPRIATE TIME, DISCONNECT AND CAP OFF SUCH UTILITIES AND PROVIDE EXPERIENCED PERSONNEL ON SITE DURING GENERAL CONTRACTOR DEMOLITION OPERATIONS TO PERFORM SUCH OPERATIONS AND RESOLVE ISSUES. REMOVE MATERIALS NOTED FOR SALVAGE AND REUSE. IDENTIFY AND MARK WIRING AND DEVICES TO REMAIN FOR THE GENERAL CONTRACTOR.
- THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND CARRY OUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL WIRING DEVICES, BOXES, FIXTURES, EXPOSED ABANDONED RACEWAYS, HANGARS, ETC., AND THOSE MADE OBSOLETE BY THESE ALTERATIONS AND AS SHOWN ON THE ELECTRICAL DRAWINGS. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY ELECTRICAL WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY CONTRACTING OFFICER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS MAY EXIST.
- REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.
- ALL EXISTING ELECTRICAL EQUIPMENT AND DEVICES SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.
- VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS ARE AS SHOWN ON DRAWINGS.
- VERIFY THAT ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES.
- DISCONNECT AND/OR DE-ENERGIZE ELECTRICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL.
- PROVIDE TEMPORARY AND/OR PERMANENT WIRING AND CONNECTIONS AS SHOWN AND/OR AS REQUIRED BY CONDITIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, AND WHEN SUCH WORK IS SPECIFICALLY APPROVED BY THE CONTRACTING OFFICER AND PERMITTED BY REGULATORY AUTHORITIES, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.
- EXISTING ELECTRICAL SERVICE: COORDINATE POWER OUTAGES WITH THE CONTRACTING OFFICER AND UTILITY COMPANY. MAINTAIN EXISTING SYSTEMS IN SERVICE. DISABLE SYSTEMS ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM THE CONTRACTING OFFICER AT LEAST 24 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA.
- CONTINUOUS SERVICE IS REQUIRED ON ALL CIRCUITS AND OUTLETS AFFECTED BY THESE CHANGES, EXCEPT WHERE THE CONTRACTING OFFICER WILL PERMIT AN OUTAGE FOR A SPECIFIC TIME. OBTAIN CONTRACTING OFFICER'S CONSENT BEFORE REMOVING ANY CIRCUIT FROM CONTINUOUS SERVICE.
- PROTECT ALL EXISTING TELEPHONE, DATA, LIFE SAFETY SYSTEMS, FIRE ALARM, SECURITY, ACCESS CONTROL AND PUBLIC ADDRESS SYSTEMS IN AREAS NOT INCLUDED IN THE CONTRACT AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE CONTRACTING OFFICER IN WRITING IF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
- WHERE ELECTRICAL SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL BE PROTECTED FROM DAMAGE AND REMAIN OR BE SUITABLY RELOCATED UTILIZING MATCHING SIZE AND TYPE MATERIALS AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE CONTRACTING OFFICER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
- MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS PANEL AS APPROPRIATE.
- ENDS OF ALL CONDUITS TO REMAIN SHALL BE TIGHTLY PLUGGED TO EXCLUDE DUST AND MOISTURE WHILE THE BUILDING IS UNDER RENOVATION.
- PROTECT EXISTING CIRCUITS TO REMAIN AND EXTEND AS REQUIRED UTILIZING MATCHING CONDUCTORS AND CONDUIT SIZE AND TYPE.
- SECURE ALL CIRCUITS, RACEWAYS, CABLE AND CONDUCTORS THAT, AS A RESULT FROM THIS CONSTRUCTION, ARE ABANDONED OR UNUSED. REMOVE UNUSED EXPOSED CONDUIT AND WIRING BACK TO POINT OF CONCEALMENT INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILINGS. REMOVE UNUSED WIRING IN CONCEALED CONDUITS BACK TO SOURCE OR NEAREST POINT OF USAGE. BLANK ABANDONED KNOCKOUTS IN REMAINING BOXES. INSTALL BLANK PLATES FOR ALL UNUSED OUTLETS THAT WILL REMAIN AS A RESULT OF THIS CONSTRUCTION. ALL SUCH WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
- TRACE OUT EXISTING WIRING THAT IS TO BE RELOCATED OR REMOVED AND PERFORM THE RELOCATION OR REMOVAL WORK AS REQUIRED FOR A COMPLETE OPERATING AND SAFE SYSTEM.
- RECONNECT EXISTING CIRCUITS SEPARATED AS A RESULT OF THIS CONSTRUCTION.
- EXTEND EXISTING SWITCH LEGS TO NEW SWITCH LOCATIONS AS SHOWN AND/OR REQUIRED.
- DELIVER ALL REMOVED AND SALVAGED LIGHTING FIXTURES, WIRING DEVICES, SPEAKERS, ETC., TO THE GOVERNMENT, OR AT THE GOVERNMENT'S OPTION, DISPOSE OF PROPERLY OFF SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL ENVIRONMENTAL REGULATIONS. FEES ASSOCIATED WITH DISPOSAL SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID.
- PROTECT EXISTING CIRCUITS FEEDING LIGHTING FIXTURES FOR EXTENSION TO NEW AND RELOCATED LIGHTING FIXTURES.
- DO NOT DISTURB EXISTING DATA SYSTEMS, DEVICES OR CABLES UNLESS SPECIFICALLY NOTED OTHERWISE.
- ALL FLUSH MOUNTED WIRING DEVICES SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED. IT IS THE INTENTION OF THE THIS CONTRACT TO REMOVE ALL FLUSH MOUNTED DEVICES THAT CONFLICT WITH NEW CONSTRUCTION AND SECURE THEIR ASSOCIATED BRANCH CIRCUITS.
- COORDINATE WITH THE OTHER TRADES, PRIOR TO BID, AND INCLUDE IN THE BASE BID THE ELECTRICAL DISCONNECTION OF ANY EQUIPMENT BEING DEMOLISHED, EVEN IF NOT EXPLICITLY SHOWN. UNLESS NOTED OTHERWISE, REMOVE ALL DEMOLISHED EQUIPMENT FROM THE PROPERTY AND IDENTIFIED IN THE ELECTRICAL DRAWINGS.
- THESE DRAWINGS ARE COMPILED BY THE ARCHITECT/ENGINEER FROM THE GOVERNMENT'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL CIRCUITS, WIRING, CONDUIT, DIMENSIONS, POINTS OF ACCESS AND ALL FIELD CONDITIONS AFFECTING HIS WORK. BEGINNING OF DEMOLITION MEANS THE CONTRACTOR ACCEPTS EXISTING CONDITIONS.
- SEE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.

	SHEET TITLE:		ELECTRICAL NOTES		<b>E-2</b>
	2246 Veupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5269 www.cbhfengineers.com		TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
	DES:	RRD	DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA		
	DR:	RRD	DESIGN DIR: T H BURTON, PE		
	CHK:	JPF	APPROVED:	DATE:	SIZE: F CODE IDENT. NO.: 80091 NWFAC DRAWING NO.: 60018918
	SUBMITTED BY:		SATISFACTORY TO:	DATE:	CONST. CONTR. NO. N440085-17-B-0041 SCALE: NOTED SPEC: 05-17-0041 SHEET 9 OF 16

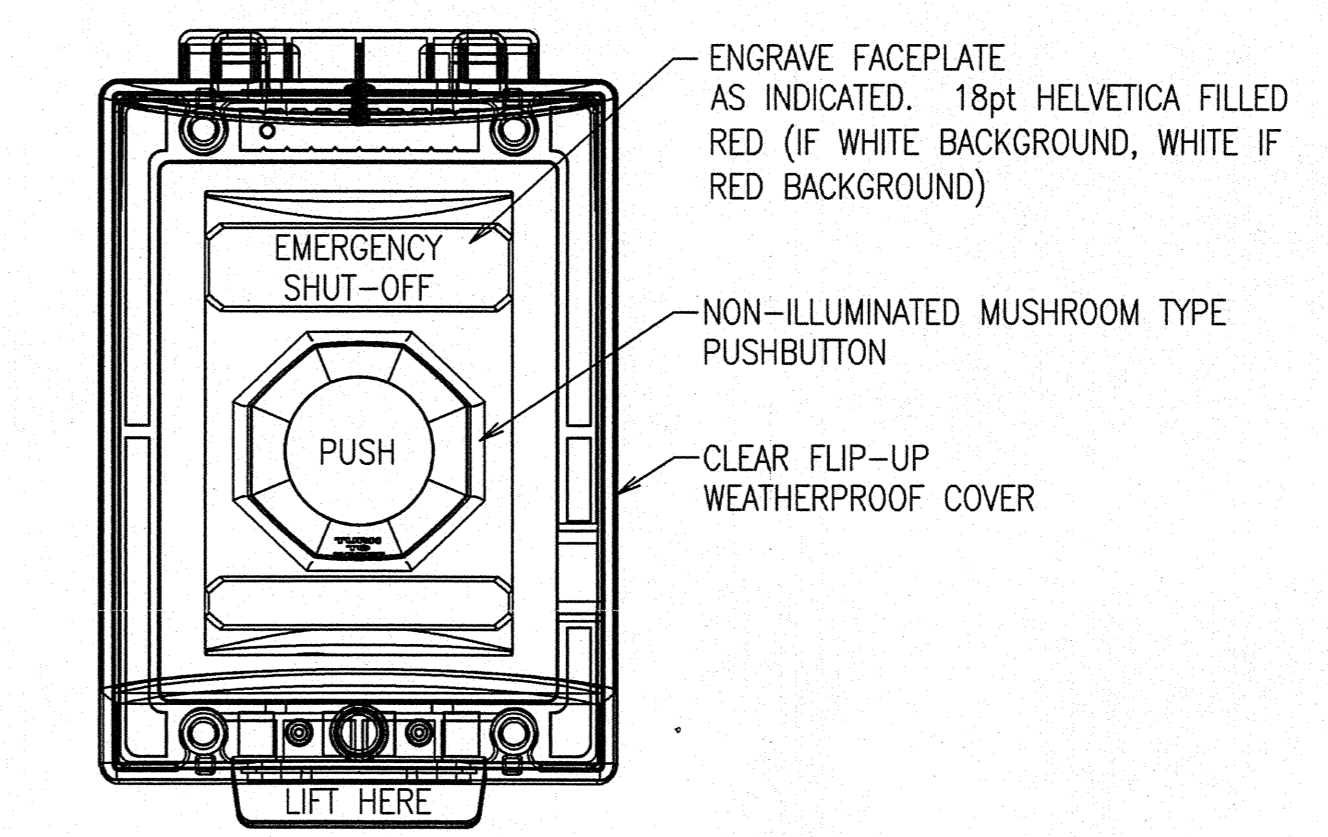
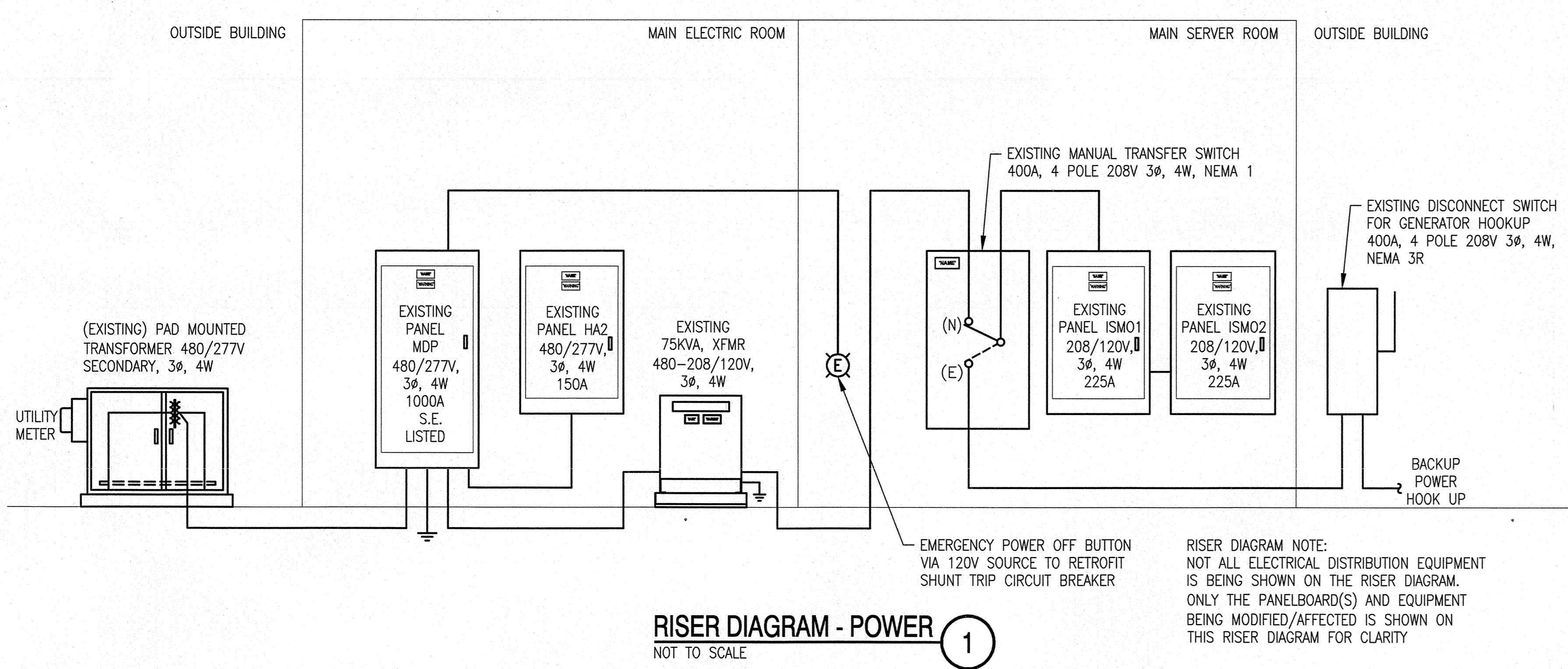
REVISIONS			
SYN.	DATE	APPROVED	

### EXISTING PANEL MDP (NEW WORK) SERVICE EQUIPMENT LISTED

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA			CKT #	CKT BKR	LOAD VA	LOAD SERVED
				A	B	C				
EXISTING PANEL HC		225/3	1	24,388	24,388		2	125/3	24,388	CRAC1 (NOTE 2)
"		/	/			24,388	/	/	24,388	"
EXISTING PANEL HA2		150/3	3	24,388			4	125/3	24,388	CRAC2 (NOTE 2)
"		/	/		24,388		/	/	24,388	"
EXISTING 75 KVA XFMR TO ISMO 1&2 (NOTE 3)		125/3	5				6	225/3		EXISTING PANEL HA
"		/	/				/	/		"
EXISTING PANEL HD		225/3	7				8			SPACE
"		/	/				/	/		"
EXISTING PANEL HB		225/3	9				10			SPACE
"		/	/				/	/		"
EXISTING PANEL MECHANICAL		300/3	11				12			SPACE
"		/	/				/	/		"
NOTE:				48,776	48,776	48,776	TOTAL VOLT AMPS		1,000	A. BUS (COPPER)
1. HVAC EQUIPMENT SHALL USE TYPE HACR BREAKERS.				176	176	176	CONN. AMPS		1,000	A. MAIN CIRCUIT BREAKER
2. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD.										GROUND FAULT PROTECTION REQUIRED AT MAIN
3. RETRO-FIT EXISTING CIRCUIT BREAKER WITH APPROPRIATE SHUNT TRIP KIT FROM MANUFACTURER.										42 KAIC MIN.

### EXISTING PANEL: HA2 (FED BY 150/3P) (NEW WORK)

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA			CKT #	CKT BKR	LOAD VA	LOAD SERVED
				A	B	C				
CHILL WATER PUMP #1	6,208	60/3	1	15,626			2	60/3	9,418	ELEVATOR
"	6,208	/	3		15,626		4	/	9,418	"
"	6,208	/	5			15,626	6	/	9,418	"
CHILL WATER PUMP #2	6,208	60/3	7	6,762			8	30/3	554	EXHAUST MECH ROOM
"	6,208	/	9		6,762		10	/	554	"
"	6,208	/	11			6,762	12	/	554	"
PUMP #3	2,333	30/3	13	2,887			14	30/3	554	UNKNOWN
"	2,333	/	15		2,887		16	/	554	"
"	2,333	/	17			2,887	18	/	554	"
PUMP #4	2,333	30/3	19	5,526			20	15/3	3,193	COND1 (NOTE 2)
"	2,333	/	21		5,526		22	/	3,193	"
"	2,333	/	23			5,526	24	/	3,193	"
SPACE			25	3,193			26	15/3	3,193	COND2 (NOTE 2)
SPACE			27		3,193		28	/	3,193	"
SPACE			29			3,193	30	/	3,193	"
SPACE			31				32			SPACE
SPACE			33				34			SPACE
SPACE			35				36			SPACE
SPACE			37				38			SPACE
SPACE			39				40			SPACE
SPACE			41				42			SPACE
NOTE:				33,995	33,995	33,995	TOTAL VOLT AMPS		225	A. BUS (COPPER)
1. HVAC EQUIPMENT SHALL USE TYPE HACR BREAKERS.				123	123	123	CONN. AMPS		225	A. MAIN LUGS
2. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD.										42 KAIC MIN.



<b>CBHF</b> Engineers, PLLC 2246 Yaspoun Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5286 www.cbhfengineers.com	SHEET TITLE: <b>ELECTRICAL</b>		<b>E-3</b>
	<b>PANEL SCHEDULES AND RISER DIAGRAMS</b>		
DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA
	DES. RRD DR. RRD CHK. JPF SUBMITTED BY: DESIGN DR. T H BURTON, PE	APPROVED: _____ DATE _____ SATISFACTORY TO: _____ DATE _____	

REVISIONS		
SYL.	DATE	APPROVED

### EXISTING PANEL: ISM01 VIA 75KVA XFMR (DEMOLITION)

TYPE: NEMA 1 BOLT-ON		208 MOUNT: SURFACE FEED: BOTTOM		120 V, 3 PH, 4 WIRE		GE A SERIES PANELBOARD CAT # AQF3422ABX				
LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA			CKT #	CKT BKR	LOAD VA	LOAD SERVED
				A	B	C				
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	1	1,080			2	20/1	900	RECEPTACLES NORTH AND SOUTH WALLS
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	3		900		4	20/1	720	RECEPTACLE FLOOR
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	5			180	6	-		SPACE
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	7	180			8	-		SPACE
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	9		180		10	-		SPACE
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	11			180	12	-		SPACE
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	13	180			14	-		SPACE
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	15		180		16	-		SPACE
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	17			180	18	-		SPACE
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	19	180			20	-		SPACE
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	21		360		22	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	23			360	24	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	25	360			26	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
RECEPTACLES EAST WALL (NOTE 1)	180	20/1	27		360		28	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
HEAT TRACE CHILLER	1,000	20/1	29			1,180	30	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
HEAT TRACE CHILLER	1,000	20/1	31	1,180			32	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
RECEPTACLE MECHANICAL ROOM	360	20/1	33		540		34	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
UNIT HEATER	1,200	20/1	35			1,380	36	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
DDC PANEL	400	20/1	37	580			38	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
SPARE	20/1	39			180		40	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
RECEPTACLE	540	20/1	41			720	42	20/1	180	RECEPTACLES EAST WALL (NOTE 1)
NOTES:				3,740	2,700	4,180	TOTAL VOLT AMPS		225 A. BUS (COPPER)	
1. CIRCUIT SHALL BE REMOVED AND LABELED AS SPARE.				57	62	36	CONN. AMPS		225 A. MAIN CIRCUIT BREAKER	
22 KAIC MIN.										

### EXISTING PANEL: ISM01 VIA 75KVA XFMR (NEW WORK)

TYPE: NEMA 1 BOLT-ON		208 MOUNT: SURFACE FEED: BOTTOM		120 V, 3 PH, 4 WIRE		GE A SERIES PANELBOARD CAT # AQF3422ABX				
LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA			CKT #	CKT BKR	LOAD VA	LOAD SERVED
				A	B	C				
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	1	1,260			2	20/1	900	RECEPTACLES NORTH AND SOUTH WALLS
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	3		1,080		4	20/1	720	RECEPTACLE FLOOR
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	5			720	6	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	7	720			8	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	9		720		10	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	11			720	12	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	13	720			14	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	15		720		16	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	17			720	18	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	19	720			20	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	21		720		22	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	23			720	24	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	25	720			26	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	27		720		28	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
HEAT TRACE CHILLER	1,000	20/1	29			1,360	30	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
HEAT TRACE CHILLER	1,000	20/1	31	1,360			32	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
RECEPTACLE MECHANICAL ROOM	360	20/1	33		720		34	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
UNIT HEATER	1,200	20/1	35			1,560	36	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
DDC PANEL	400	20/1	37	760			38	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
SPARE	20/1	39			360		40	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
RECEPTACLE	540	20/1	41			900	42	20/1	360	RECEPTACLES UNDERFLOOR / RACK (NOTE 1)
NOTES:				6,260	5,040	6,700	TOTAL VOLT AMPS		225 A. BUS (COPPER)	
1. NEW CIRCUIT USING EXISTING SPARE CIRCUIT BREAKER.				52	42	56	CONN. AMPS		225 A. MAIN CIRCUIT BREAKER	
2. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD.										
22 KAIC MIN.										

### EXISTING PANEL: ISM02 (DEMOLITION)

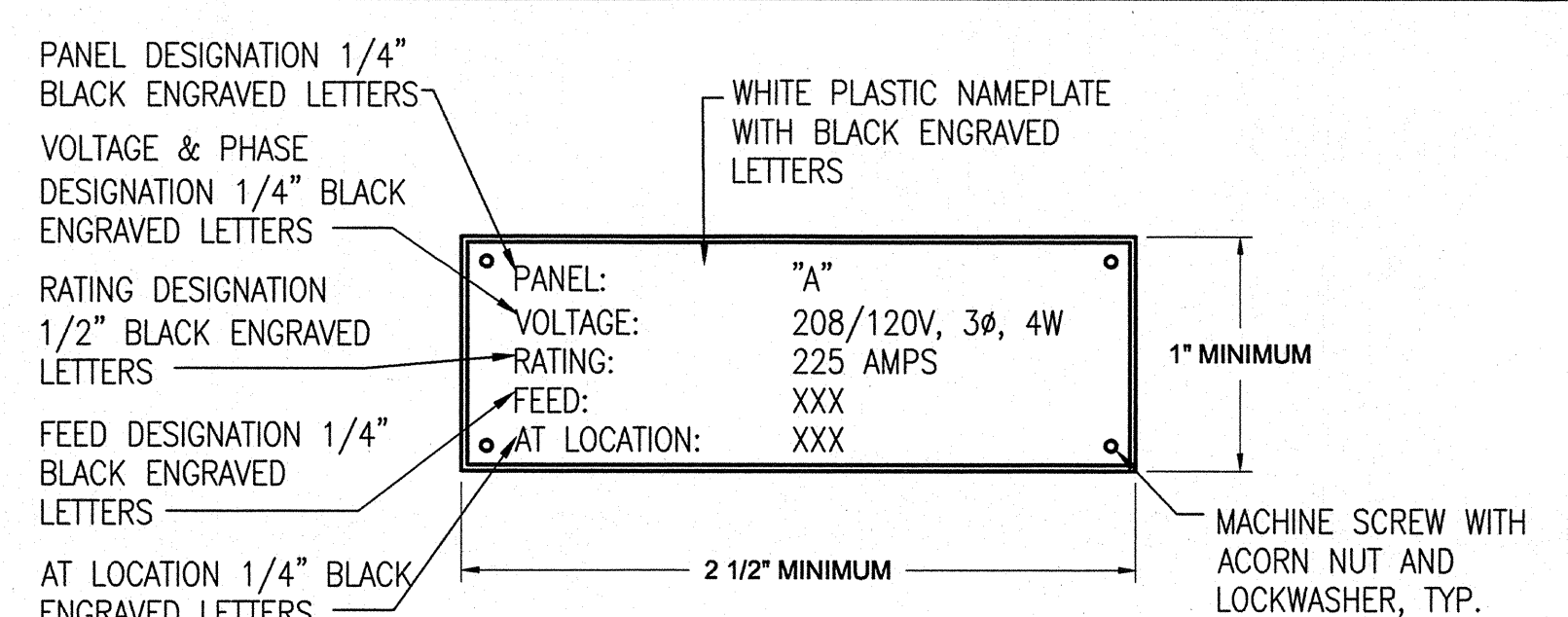
TYPE: NEMA 1 BOLT-ON		208 MOUNT: SURFACE FEED: BOTTOM		120 V, 3 PH, 4 WIRE		GE A SERIES PANELBOARD				
LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA			CKT #	CKT BKR	LOAD VA	LOAD SERVED
				A	B	C				
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	1	360			2	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	3		360		4	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	5			360	6	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	7	360			8	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	9		360		10	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	11			360	12	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	13	360			14	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	15		360		16	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	17			360	18	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	19	360			20	20/1	180	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	21		1,120		22	20/2	940	RECEPTACLE WEST WALL (NOTE 1)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	23			1,120	24	/	940	CONDENSING UNIT (NOTE 2)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	25	3,258			26	40/2	3,078	ISM0 AHU (NOTE 2)
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	27		3,258		28	/	3,078	"
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	29			1,180	30	30/1	1,000	30 AMP UPS
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	31	1,180			32	30/1	1,000	30 AMP UPS
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	33		980		34	30/2	800	SERVER OUTLET
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	35			980	36	/	800	"
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	37	980			38	30/2	800	SERVER OUTLET
RECEPTACLE WEST WALL (NOTE 1)	180	20/1	39		980		40	/	800	"
SPARE			41				42	20/1		SPARE
NOTES:				6,858	7,419	4,360	TOTAL VOLT AMPS		225 A. BUS (COPPER)	
1. CIRCUIT SHALL BE REMOVED AND LABELED AS SPARE.				57	62	36	CONN. AMPS		225 A. MAIN CIRCUIT BREAKER	
2. EQUIPMENT TO BE REMOVED, LABELED AS SPARE.										
22 KAIC MIN.										

### EXISTING PANEL: ISM02 (NEW WORK)

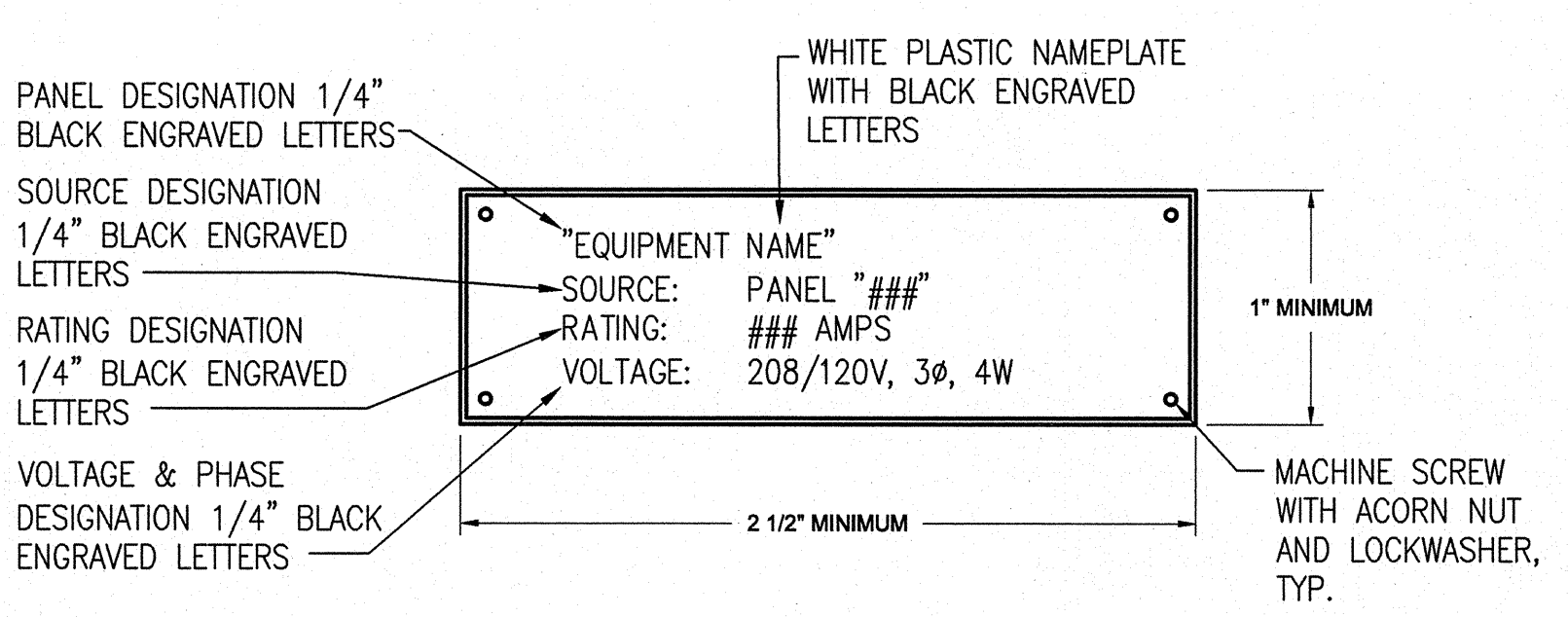
TYPE: NEMA 1 BOLT-ON		208 MOUNT: SURFACE FEED: BOTTOM		120 V, 3 PH, 4 WIRE		GE A SERIES PANELBOARD				
LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA			CKT #	CKT BKR	LOAD VA	LOAD SERVED
				A	B	C				
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	1	540			2	20/1	180	RECEPTACLES OUTDOOR EQUIPMENT
30 AMP RECEPTACLE (NOTE 2)	1,000	30/1	3		1,800		4	30/2	800	30 AMP RECEPTACLE (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	5			1,160	6	/	800	"
30 AMP RECEPTACLE (NOTE 2)	1,000	30/1	7	1,800			8	30/2	800	30 AMP RECEPTACLE (NOTE 2)
RECEPTACLES UNDERFLOOR / RACK (NOTE 1)	360	20/1	9		1,160		10	/	800	"
30 AMP RECEPTACLE (NOTE 2)	800	30/2	11			1,800	12	30/1	1,000	30 AMP RECEPTACLE (NOTE 2)
"	800	/	13	1,800			14	30/1	1,000	30 AMP RECEPTACLE (NOTE 2)
30 AMP RECEPTACLE (NOTE 2)	800	30/2	15		1,800		16	30/1	1,000	30 AMP RECEPTACLE (NOTE 2)
"	800	/	17			1,800	18	30/1	1,000	30 AMP RECEPTACLE (NOTE 2)
30 AMP RECEPTACLE (NOTE 2)	800	30/2	19	1,800			20	30/1	1,000	30 AMP RECEPTACLE (NOTE 2)
"	800	/	21		1,800		22	30/1	1,000	30 AMP RECEPTACLE (NOTE 2)
30 AMP RECEPTACLE (NOTE 2)	800	30/2	23			1,800	24	30/1	1,000	30 AMP RECEPTACLE (NOTE 2)
"	800	/	25	1,800			26	30/1	1,000	30 AMP RECEPTACLE (NOTE 2)
30 AMP RECEPTACLE (NOTE 2)	800	30/2	27		800		28			SPACE
"	800	/	29			1,800	30	30/1	1,000	30 AMP UPS
30 AMP RECEPTACLE (NOTE 2)	800	30/2	31	1,800			32	30/1	1,000	30 AMP UPS
"	800	/	33		1,600		34	30/2	800	SERVER OUTLET
30 AMP RECEPTACLE (NOTE 2)	800	30/2	35			1,600	36	/	800	"
"	800	/	37	1,600			38	30/2	800	SERVER OUTLET
30 AMP RECEPTACLE (NOTE 2)	800	30/2	39		1,600		40	/	800	"
"	800	/	41			800	42	20/1		SPARE
NOTES:				11,140	10,560	10,760	TOTAL VOLT AMPS		225 A. BUS (COPPER)	
1. NEW CIRCUIT USING EXISTING SPARE CIRCUIT BREAKER.				93	88	90	CONN. AMPS		225 A. MAIN CIRCUIT BREAKER	
2. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD.										
22 KAIC MIN.										

	SHEET TITLE:		<h1 style="margin: 0;">E-4</h1>
	<b>ELECTRICAL PANEL SCHEDULES</b>		
2248 Yalupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5286 www.cbhfengineers.com	<b>TALLEY &amp; SMITH ARCHITECTURE INC.</b> P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150	DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DESIGN: RRD CHECK: JPF SUBMITTED BY: DESIGN DR. T. H. BURTON, PE		DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA	
APPROVED:	DATE:	SIZE: F CODE IDENT. NO.: 80091	NAWAC DRAWING NO.: 60018920
SATISFACTORY TO:	DATE:	SCALE: NOTED	CONST. CONTR. NO.: N40085-17-B-0041 SHEET 11 OF 16

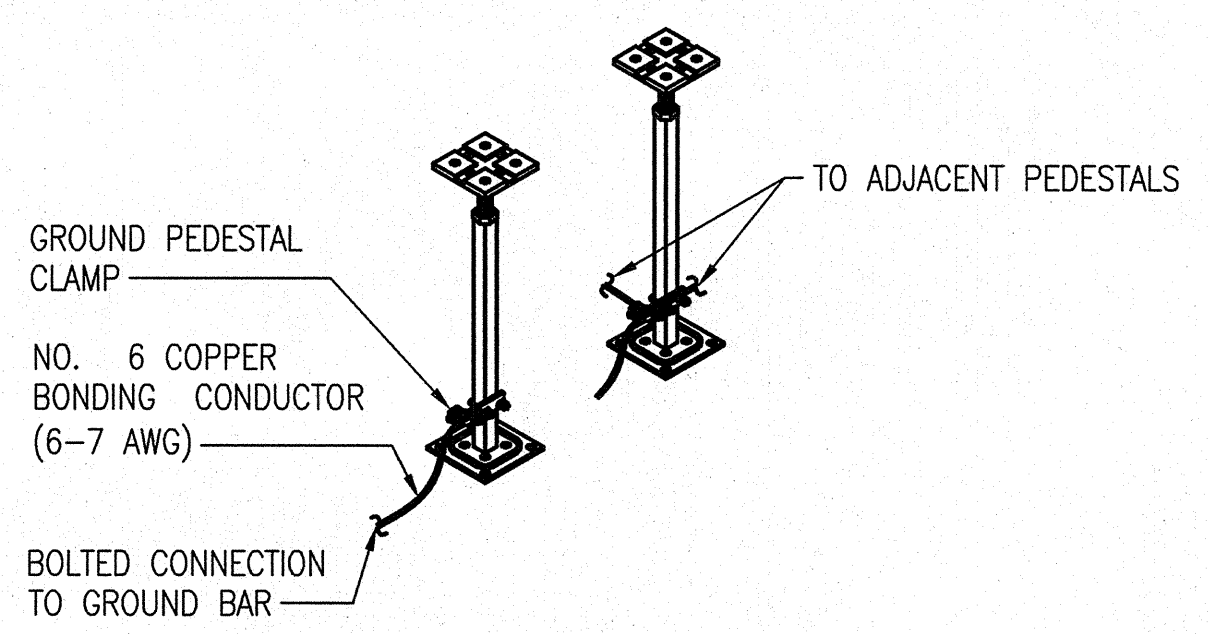
REVISIONS		
SYL	DATE	APPROVED



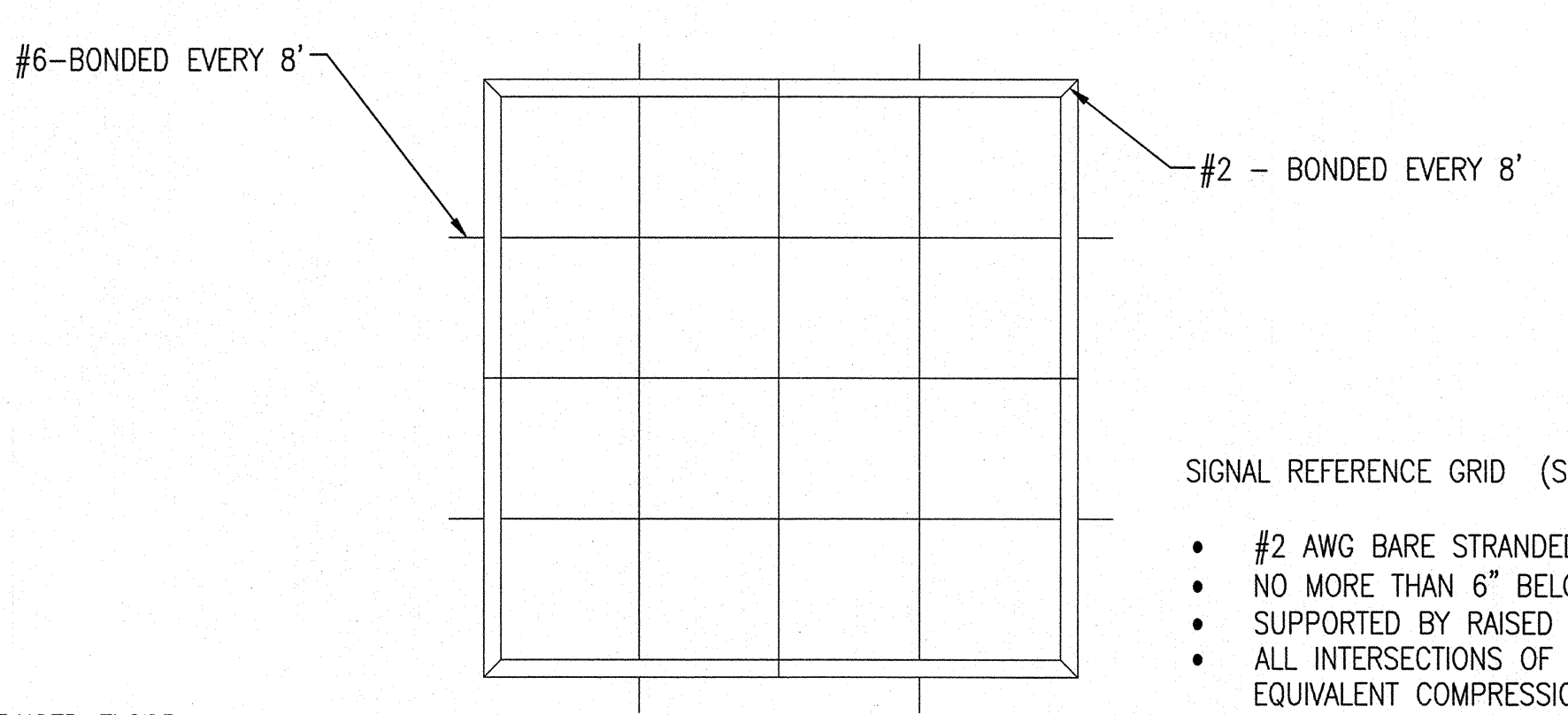
**PANELBOARD NAMEPLATE DETAIL** ①  
NOT TO SCALE



**TYPICAL EQUIPMENT NAMEPLATE DETAIL** ②  
NOT TO SCALE

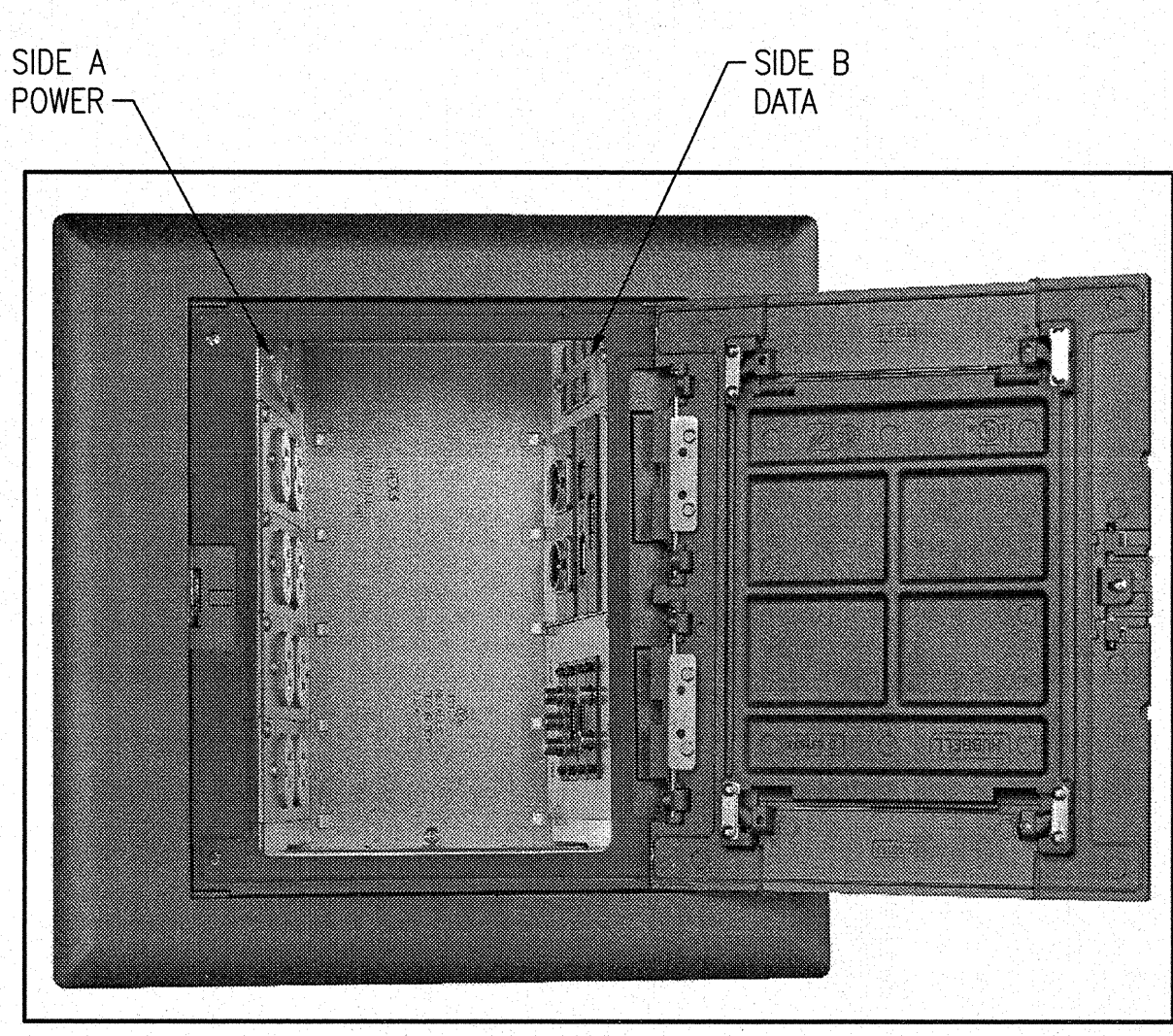


**RAISED FLOOR PEDESTAL GROUNDING DETAIL** ③  
NOT TO SCALE

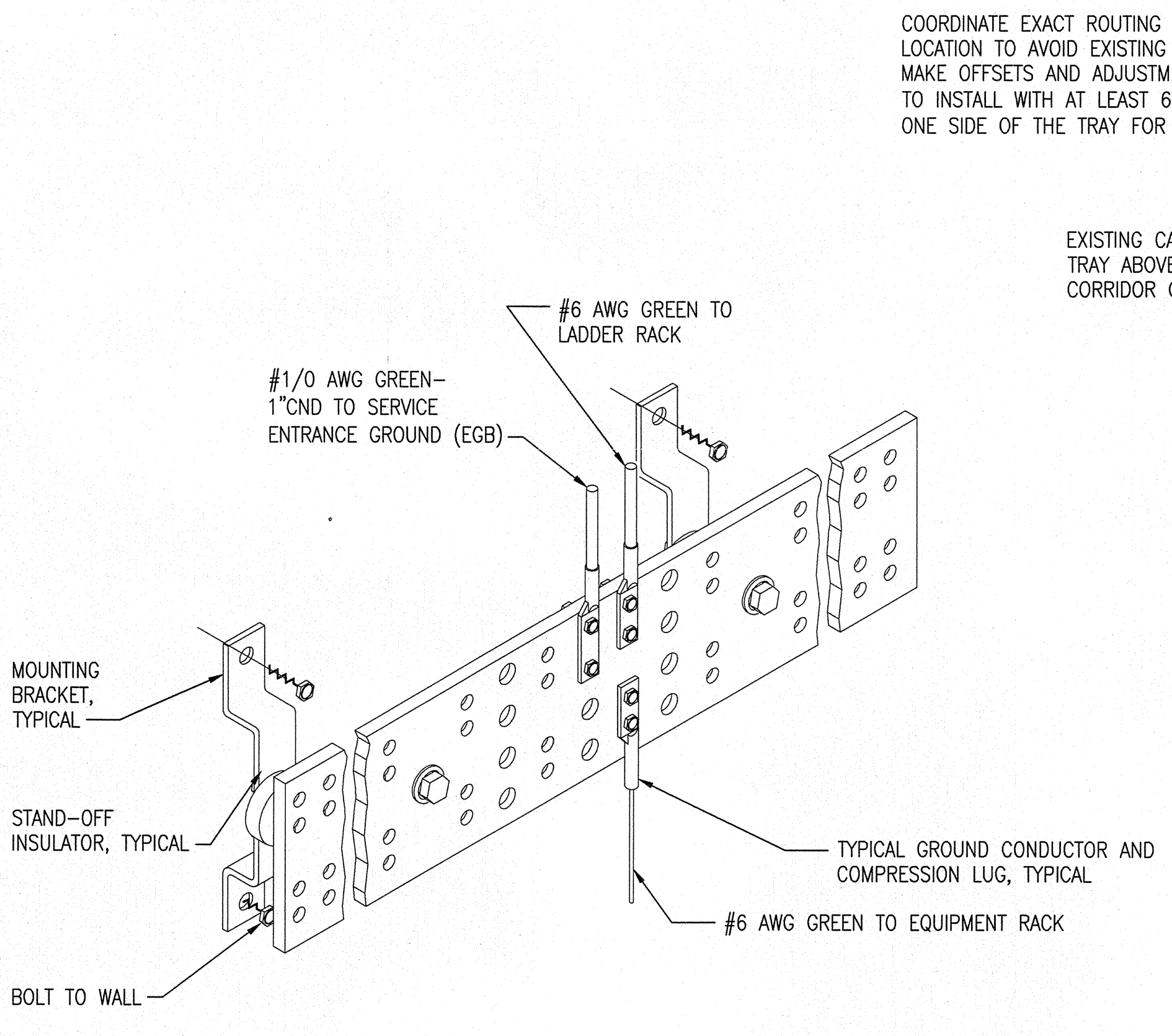


- RAISED FLOOR PERIMETER RING (PR):
- 4/0 AWG GREEN SHEATHED STRANDED COPPER.
  - SECURED TO STRUCTURAL FLOOR.
- SIGNAL REFERENCE GRID (SRG):
- #2 AWG BARE STRANDED CONDUCTOR
  - NO MORE THAN 6" BELOW LEVEL OF RAISED FLOOR.
  - SUPPORTED BY RAISED FLOOR STANCHIONS.
  - ALL INTERSECTIONS OF SRG DONE WITH T&B 53060 OR EQUIVALENT COMPRESSION CONNECTOR.
  - CONNECTION BETWEEN SRG AND PR DONE WITH COMPRESSION CONNECTORS.

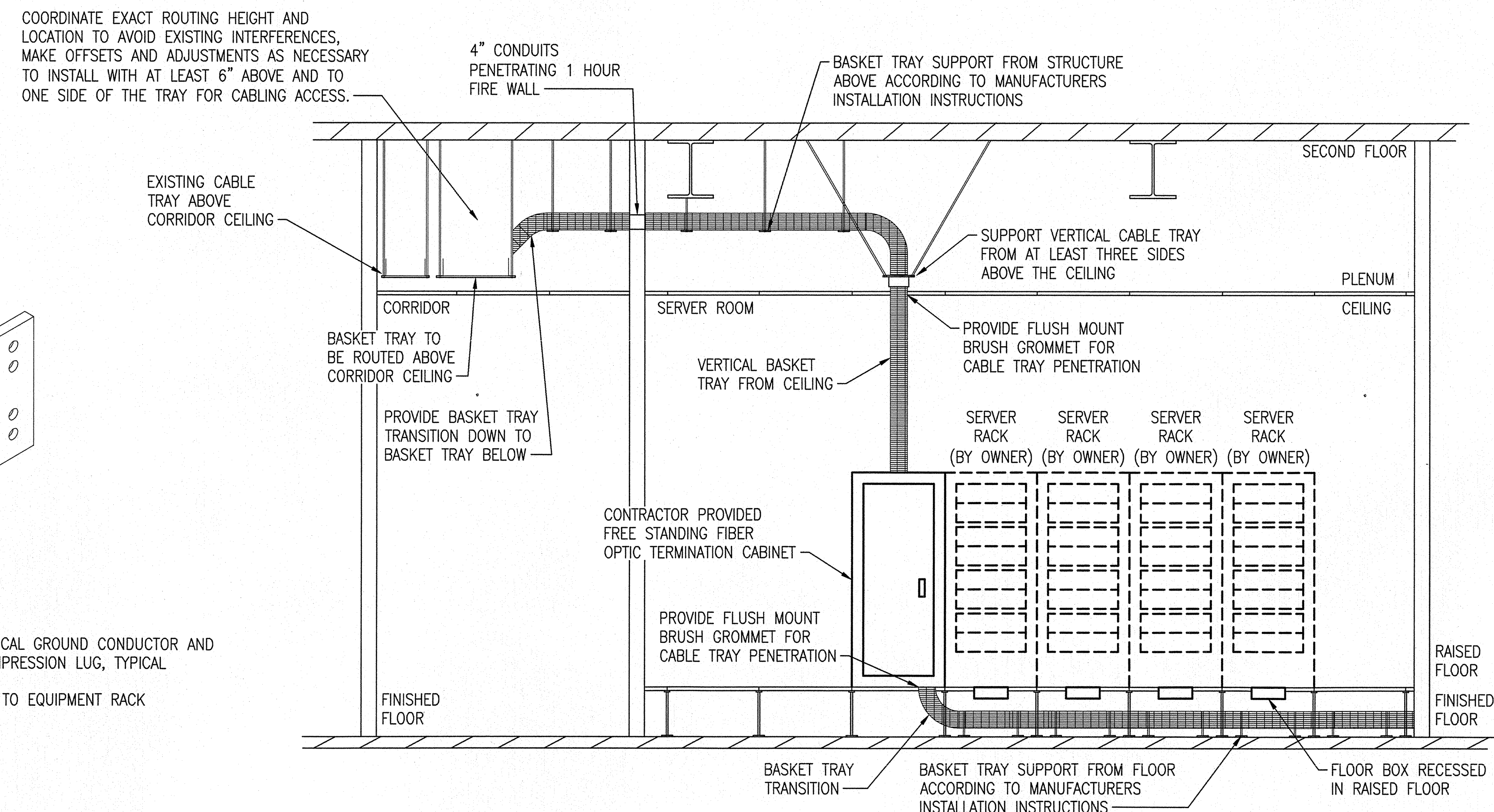
**RAISED FLOOR GROUNDING DETAIL** ⑤  
NOT TO SCALE



**FLOOR BOX DETAIL** ⑥  
NOT TO SCALE



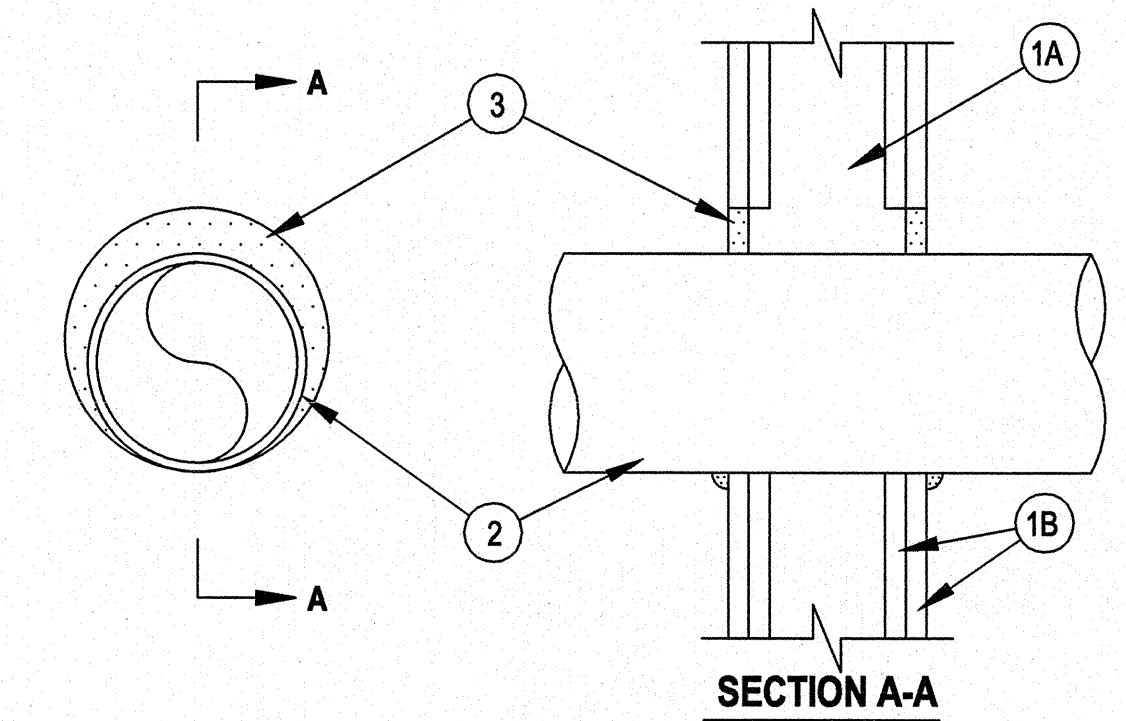
**TELECOMMUNICATIONS GROUND BAR DETAIL** ④  
NOT TO SCALE



**CABLE TRAY DIAGRAM** ⑦  
NOT TO SCALE

**System No W-L-1054**  
October 14, 2015

ANSI / UL1479 (ASTM E814)	CAN / ULC S115
F Ratings - 1 and 2 Hr (See Items 1 & 3)	F Ratings - 1 and 2 Hr (See Items 1 & 3)
T Ratings - 0 Hr	FT Ratings - 0 Hr
L Ratings at Ambient - Less Than 1 CFM / sq ft	FH Ratings - 1 and 2 HR (See Items 1 and 3)
L Ratings at 400 F - Less Than 1 CFM / sq ft	FTH Ratings - 0 Hr
	FTH Ratings - 0 Hr L Rating at Ambient - Less Than 1 CFM / sq ft
	L Ratings at 400 F - Less Than 1 CFM / sq ft



- WALL ASSEMBLY --- THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300A OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
    - STUDS --- WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC. WHEN STEEL STUDS ARE USED AND THE DIAM OF OPENING EXCEEDS THE WIDTH OF STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW-ATTACHED TO THE STEEL STUDS AT EACH END. THE FRAMED OPENING IN THE WALL SHALL BE 4 TO 6 IN. WIDER AND 4 TO 6 IN. HIGHER THAN THE DIAM OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 TO 3 IN. CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.
    - GYPSUM BOARD\* --- 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 32-1/4 IN. FOR STEEL STUD WALLS. MAX DIAM OF OPENING IS 14-1/2 IN. FOR WOOD STUD WALLS. THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.
  - THROUGH-PENETRANTS --- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 2-1/4 IN. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PIPE, CONDUIT OR TUBING MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45 DEGREES FROM PERPENDICULAR. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
    - STEEL PIPE --- NOM 30 IN DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
    - IRON PIPE --- NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
    - CONDUIT --- NOM 4 IN DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. DIAM STEEL CONDUIT.
    - COPPER TUBING --- NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
    - COPPER PIPE --- NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
  - FILL, VOID OR CAVITY MATERIAL\* --- SEALANT --- MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL, A MIN 1/2 IN. (13 MM) DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC --- FS-ONE SEALANT
- \*INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

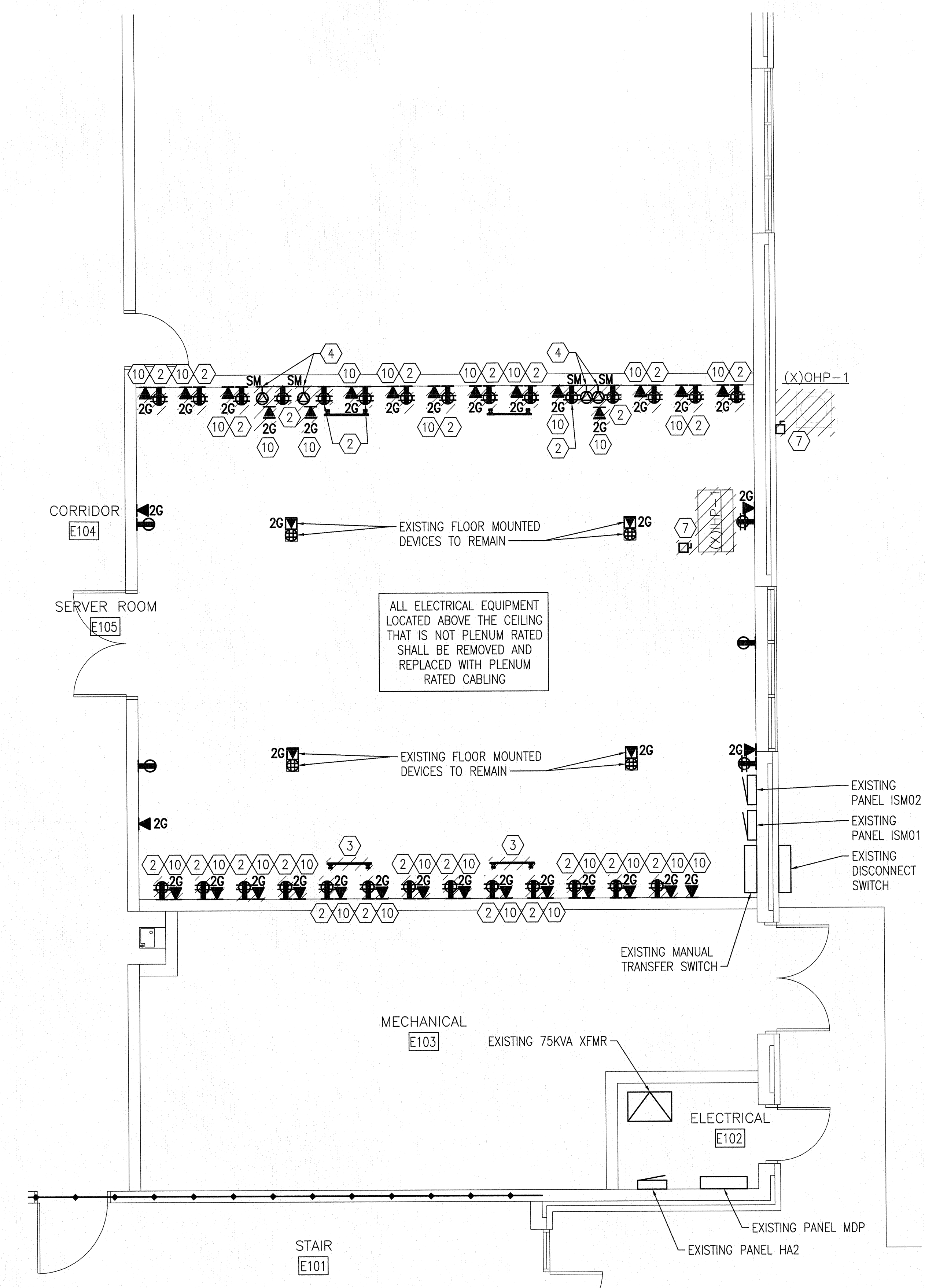
**1 HOUR FIREWALL PENETRATION DETAIL** ⑧  
NOT TO SCALE

<b>CBHF</b> Engineers, PLLC 2246 Yeasoun Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfindesigners.com	SHEET TITLE: <b>ELECTRICAL DETAILS</b>		<b>E-5</b> MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150 DES. RRD DR. RRD CHK. JPF SUBMITTED BY: DESIGN DIR. T. H. BURTON, PE		
APPROVED: [Signature] DATE: [Date]	SIZE: <b>F</b> CODE IDENT. NO.: <b>80091</b> NAVFAC DRAWING NO.: <b>60018921</b>	DATE: [Date] SCALE: NOTED SPEC: 05-17-0041	SHEET 12 OF 16

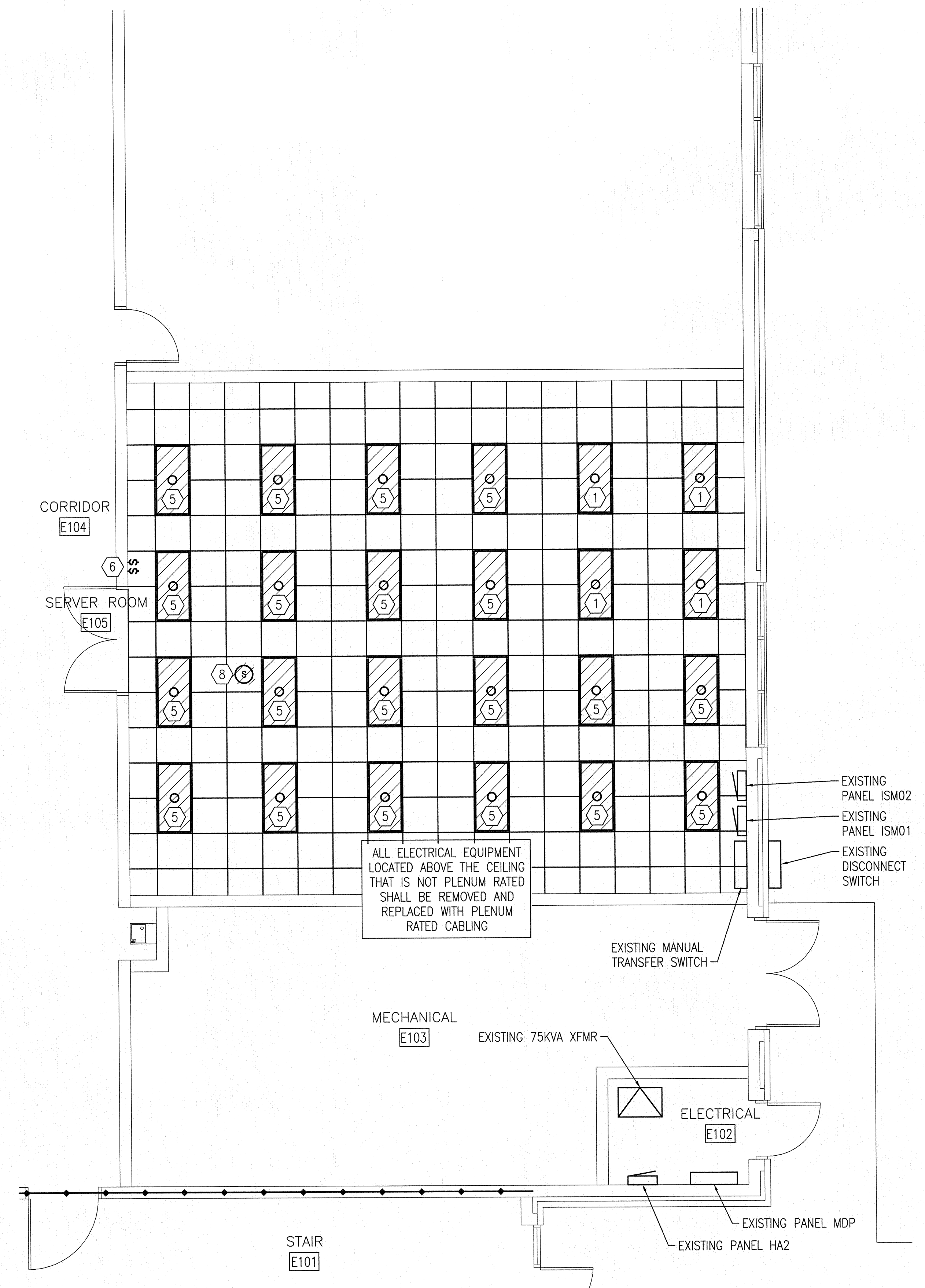
REVISIONS		
SYMBOL	DATE	APPROVED

- ### DEMOLITION NOTES
- ELECTRICAL DEMOLITION SHALL BE PROVIDED BY THE CONTRACTOR AS DESCRIBED HEREIN AND AS SHOWN ON THE CONTRACT DRAWINGS. IDENTIFY ACTIVE UTILITIES, AND AT THE APPROPRIATE TIME, DISCONNECT AND CAP OFF SUCH UTILITIES AND PROVIDE EXPERIENCED PERSONNEL ON SITE DURING DEMOLITION OPERATIONS TO PERFORM SUCH OPERATIONS AND RESOLVE ISSUES.
  - THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL, MECHANICAL, FIRE ALARM AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND CARRY OUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. SURVEY THE EXISTING BUILDING BEFORE SUBMITTING A BID AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS MAY EXIST.
  - THE CONTRACTOR SHALL REMOVE THE ENTIRE ELECTRICAL DISTRIBUTION SYSTEM IN ITS ENTIRETY WITH THE EXCEPTION OF RECESSED BOXES AND CONDUIT WHERE INDICATED ON THE ELECTRICAL DEMOLITION PLANS TO REMAIN. REMOVE ALL EXPOSED CONDUIT ON WALLS AND CEILINGS LEFT UNUSED AFTER DEMOLITION. ALL ITEMS TO BE REMOVED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ALL ELECTRICAL WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE CONTRACTING OFFICER.
  - EXISTING ELECTRICAL SERVICE: THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROVIDE FOR TEMPORARY POWER DURING DEMOLITION PHASE AND NEW WORK PHASE OF THIS PROJECT.
  - THE CONTRACTOR SHALL REMOVE THE ENTIRE DATA, TELEPHONE, AND ENERGY MANAGEMENT SYSTEMS, DEVICES AND CABLES UNLESS SPECIFICALLY NOTED OTHERWISE TO REMAIN. REMOVE ALL EXPOSED CONDUIT ON WALLS AND CEILINGS LEFT UNUSED AFTER DEMOLITION. OSP FEEDS SHALL ONLY BE REMOVED BY BASE TELEPHONE.
  - DELIVER ALL REMOVED AND SALVAGED WIRING DEVICES, ETC., TO THE GOVERNMENT, OR AT THE GOVERNMENT'S OPTION, DISPOSE OF PROPERLY OFF SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL ENVIRONMENTAL REGULATIONS. FEES ASSOCIATED WITH DISPOSAL SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID.
  - COORDINATE WITH THE OTHER TRADES, PRIOR TO BID, AND INCLUDE IN THE BASE BID THE ELECTRICAL DISCONNECTION OF ANY EQUIPMENT BEING DEMOLISHED, EVEN IF NOT EXPLICITLY SHOWN. UNLESS NOTED OTHERWISE, REMOVE ALL DEMOLISHED EQUIPMENT FROM THE PROPERTY AND IDENTIFIED IN THE ELECTRICAL DRAWINGS.
  - THESE DRAWINGS ARE COMPILED FROM THE GOVERNMENT'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL CIRCUITS, WIRING, CONDUIT, DIMENSIONS, POINTS OF ACCESS AND ALL FIELD CONDITIONS AFFECTING HIS WORK. BEGINNING OF DEMOLITION MEANS THE CONTRACTOR ACCEPTS EXISTING CONDITIONS.
  - THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL LAMPS CONTAINING MERCURY IN A LINED LANDFILL IN ACCORDANCE WITH NC GEN STATUTE 309.10M.

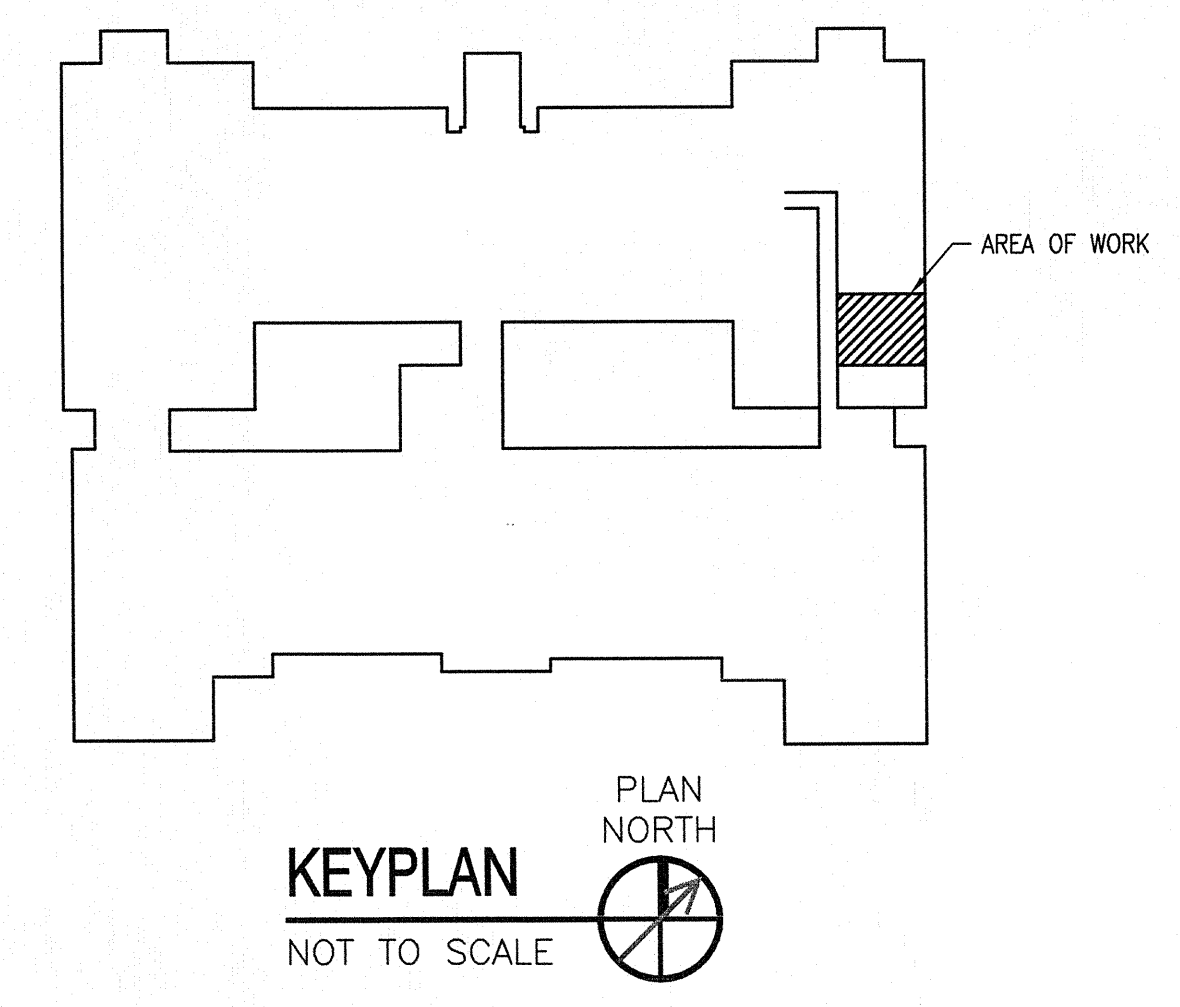
- ### DEMOLITION KEYED NOTES
- LIGHTING FIXTURE DISCONNECT, REMOVE, AND STORE FOR FUTURE RECONNECTION. LABEL AND COIL WIRING ABOVE THE CEILING FOR RECONNECTION AFTER DEMOLITION.
  - QUADRUPLUX RECEPTACLES: DISCONNECT AND REMOVE CONDUCTORS FOR BOTH CIRCUITS FEEDING DEVICES COMPLETE TO SOURCE, REMOVE RECEPTACLES, AND COVER PLATES. HEAVY DUTY PLASTIC BLANK COVER PLATES OVER BOTH BOXES IN THE BLOCK WALL, MATCH COLOR OF EXISTING DEVICES WITHIN THE ROOM.
  - GROUND BAR: RELOCATE GROUND BAR TO LOCATION SHOWN ON 1/E-7. DISCONNECT WIRING, REMOVE GROUND BAR AND CONDUIT TO ABOVE THE CEILING. CONTRACTOR SHALL PROVIDE GROUNDING CONDUCTOR TO MAINTAIN BUILDING GROUND, EXTEND TO EXISTING GROUND BUS AND THE OTHER GROUND BARS LOCATED WITHIN THE ROOM.
  - REMOVE SPECIAL RECEPTACLE AFTER EQUIPMENT ONCE SERVING CAN BE DISCONNECTED AND RELOCATED. REMOVE SURFACE MOUNTED DEVICE, BOX, CONDUIT AND BRANCH CIRCUITRY BACK TO PANEL ONCE RELOCATION IS READY.
  - LIGHTING FIXTURE SHALL BE TAKEN OUT OF THE GRID AND SUPPORTED FROM STRUCTURE ABOVE TO FACILITATE THE CEILING DEMOLITION.
  - EXISTING LIGHTING CONTROLS SHALL REMAIN.
  - EQUIPMENT SHALL BE REMOVED. REMOVE DISCONNECT SWITCH, WIRING, AND CONDUIT BACK TO SOURCE. LABEL CIRCUIT BREAKER FEEDING EQUIPMENT AS A SPARE IN THE PANELBOARD DIRECTORY.
  - REMOVE CEILING MOUNTED SPEAKER FROM CEILING AND SUPPORT FROM STRUCTURE ABOVE TO FACILITATE THE CEILING DEMOLITION.
  - REMOVE FIBER OPTIC JACK AND CABLING BACK TO SERVER ROOM 164. PROVIDE BLANK JACK COVERPLATE IN EMPTY LOCATION.
  - REMOVE ALL DATA AND FIBER CABLING BACK TO SERVER ROOM 164.



**1** EXISTING PARTIAL FIRST FLOOR POWER DEMOLITION PLAN  
1/4" = 1'-0"  
PLAN NORTH



**2** EXISTING PARTIAL FIRST FLOOR LIGHTING DEMOLITION PLAN  
1/4" = 1'-0"  
PLAN NORTH

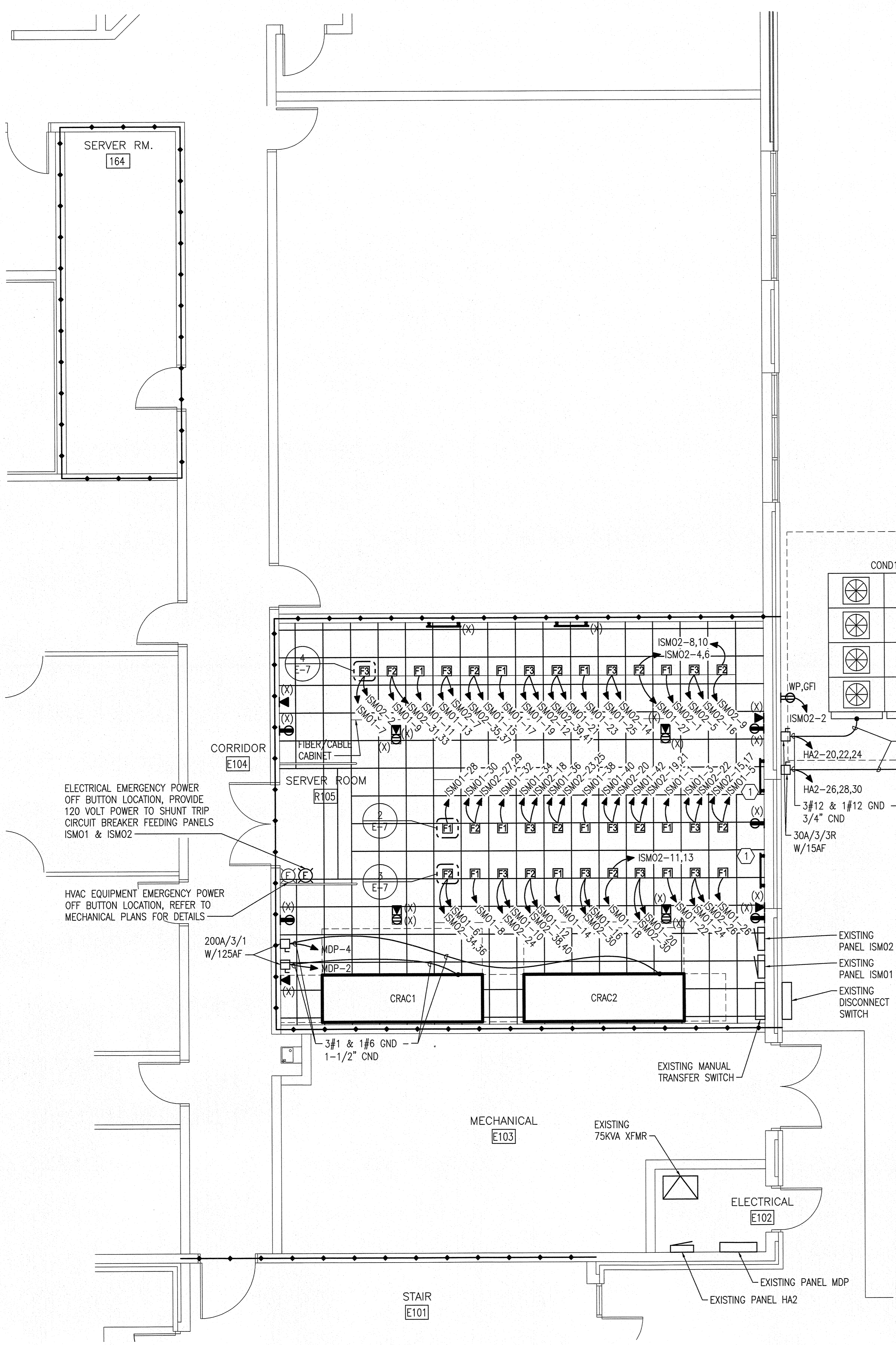


<b>CBHF</b> Engineers, PLLC 2246 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfengineers.com ©Copyright 2017 CBHF Engineers, PLLC NCIP #1008	SHEET TITLE: <b>ELECTRICAL</b> <b>1ST FLOOR POWER DEMOLITION PLANS</b>		<b>E-6</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARRIEN ST. SHELBY, NC 28150		
DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA	
DES. RRD DR. RRD CHK. JPF SUBMITTED BY: DESIGN DIR. T H BURTON, PE	APPROVED: DATE:	SIZE: <b>F</b> CODE IDENT. NO.: <b>80091</b> NAVFAC DRAWING NO.: <b>60018922</b>	CONST. CONTR. NO. <b>N40085-17-B-0041</b> SHEET <b>13</b> OF <b>16</b>
SATISFACTORY TO:		SCALE: <b>NOTED</b>	SPEC. <b>05-17-0041</b>

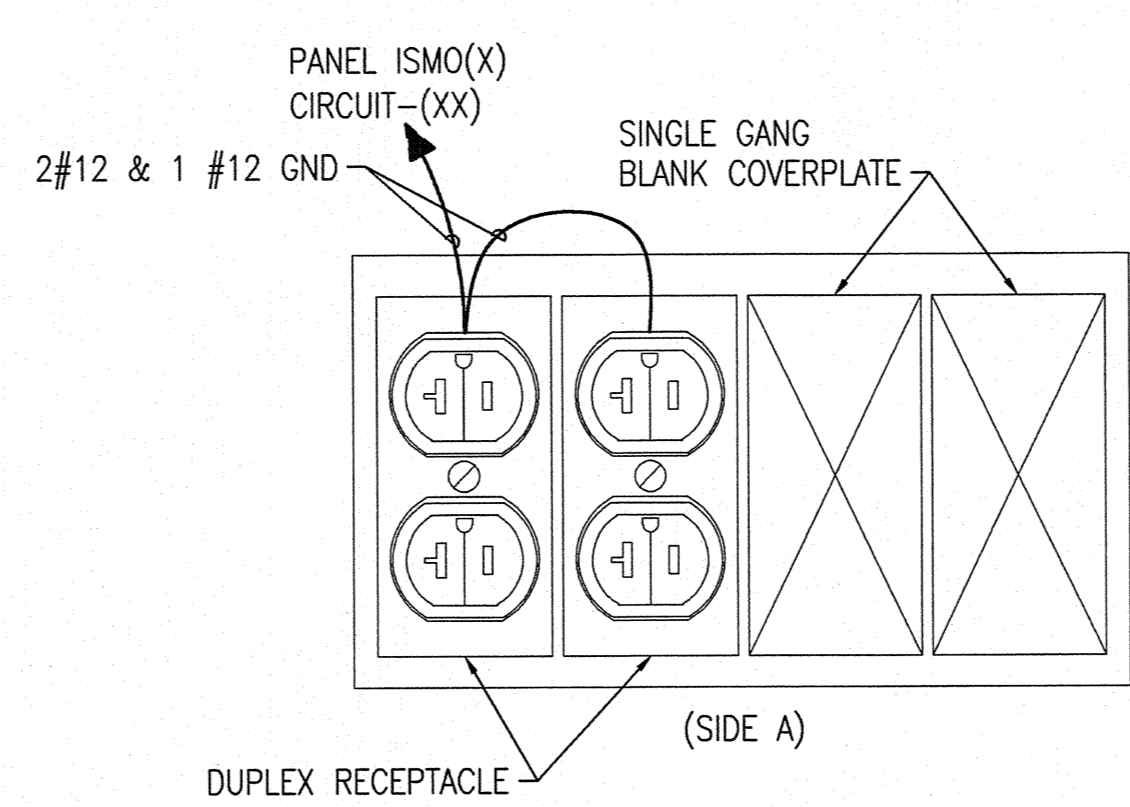
REVISIONS		
NO.	DATE	APPROVED

**KEYED NOTES**

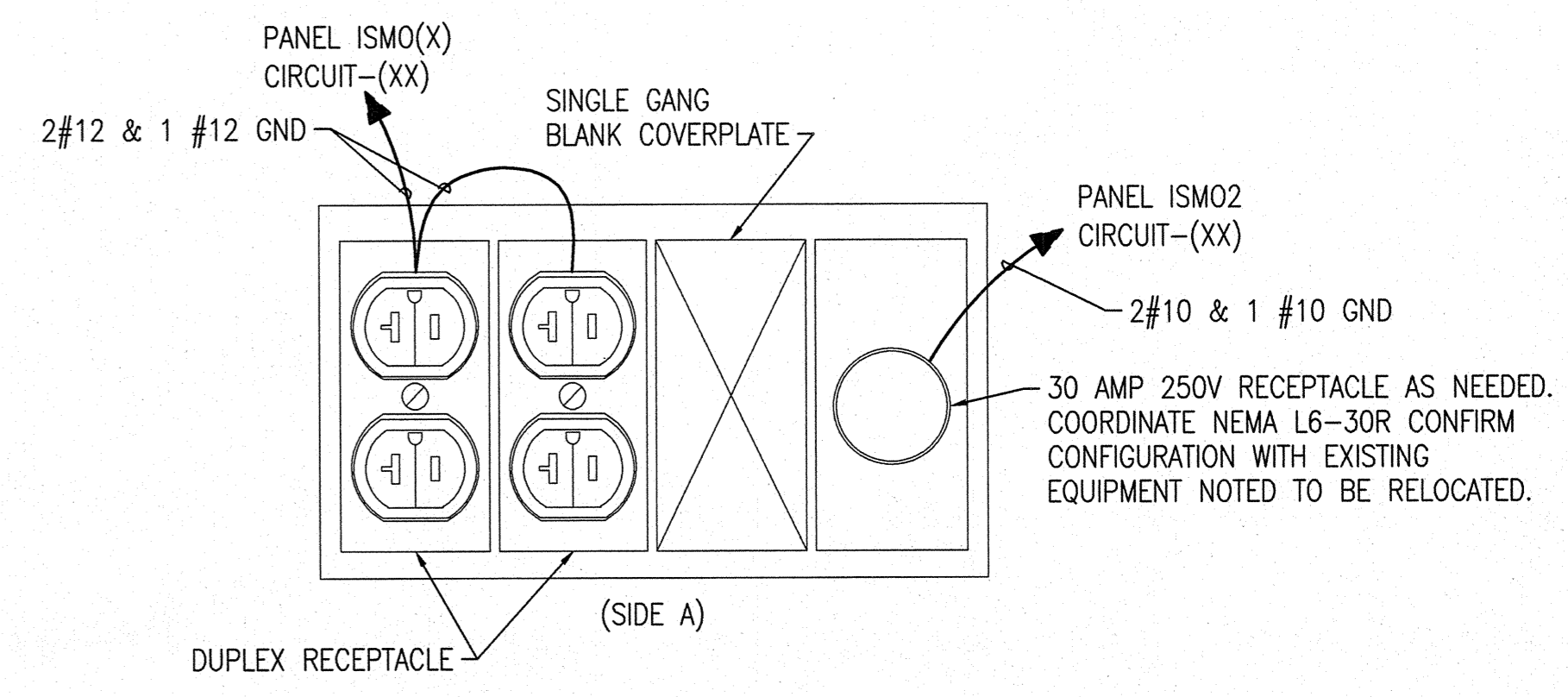
① GROUND BAR IN RELOCATED POSITION. PROVIDE NEW WIRING FROM EXISTING GROUNDING CIRCUIT.



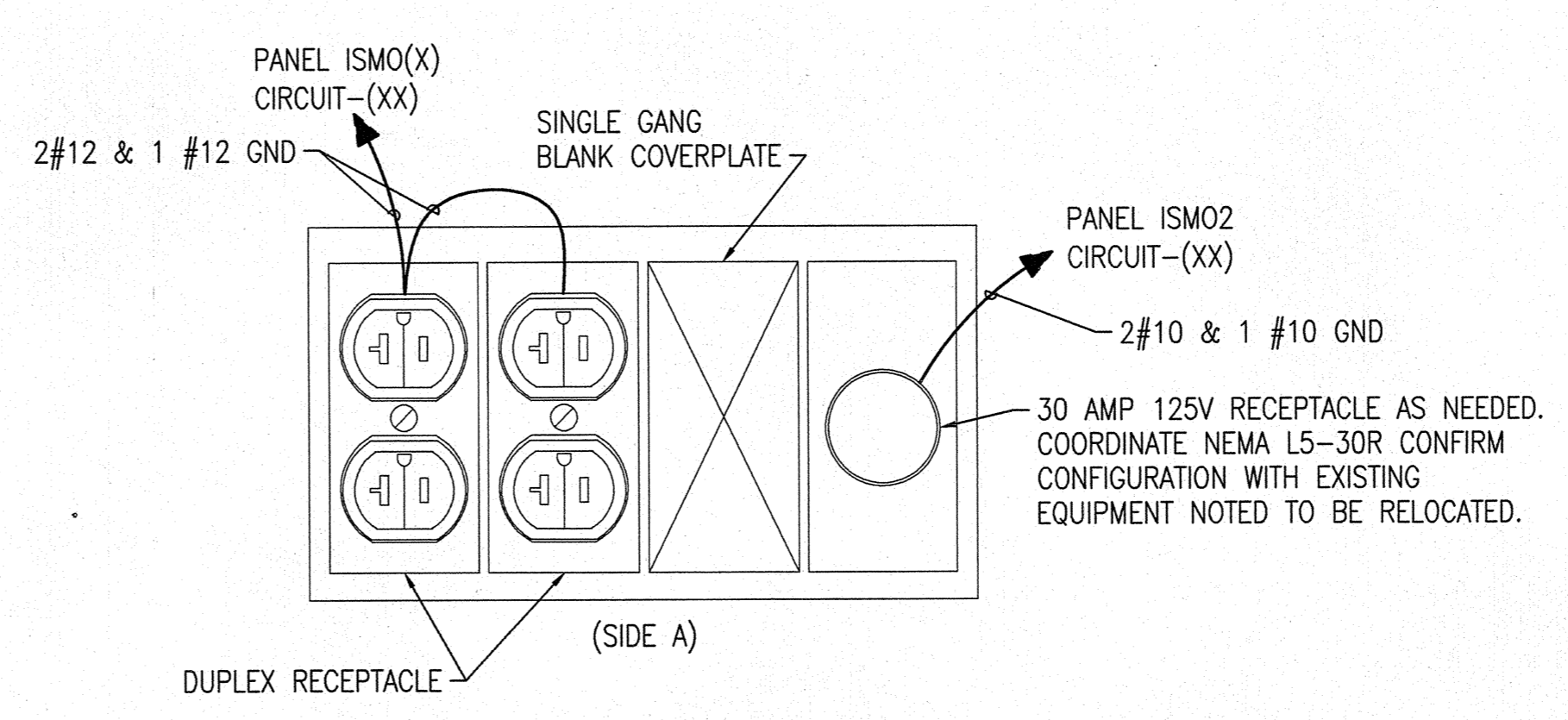
**1 PARTIAL FIRST FLOOR POWER PLAN**  
1/4" = 1'-0"



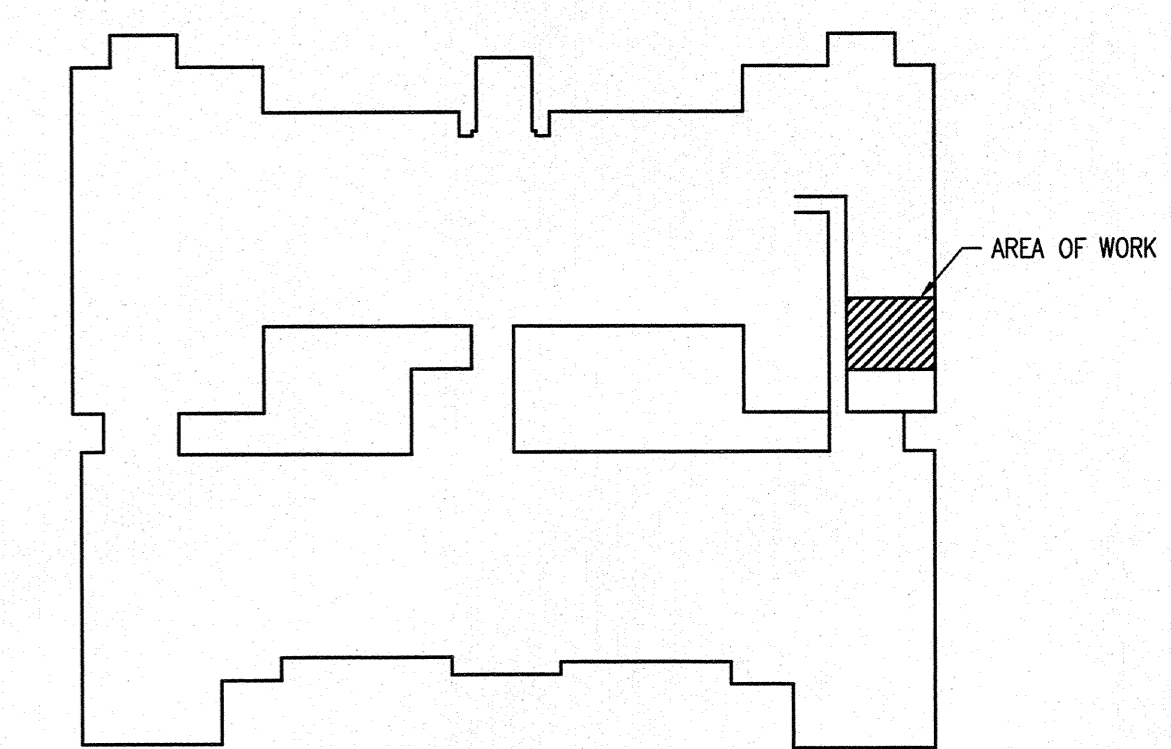
**2 TYPICAL 5 GANG FLOOR BOX (F1) DEVICE DETAIL**  
NOT TO SCALE



**3 TYPICAL 5 GANG FLOOR BOX (F2) DEVICE DETAIL**  
NOT TO SCALE



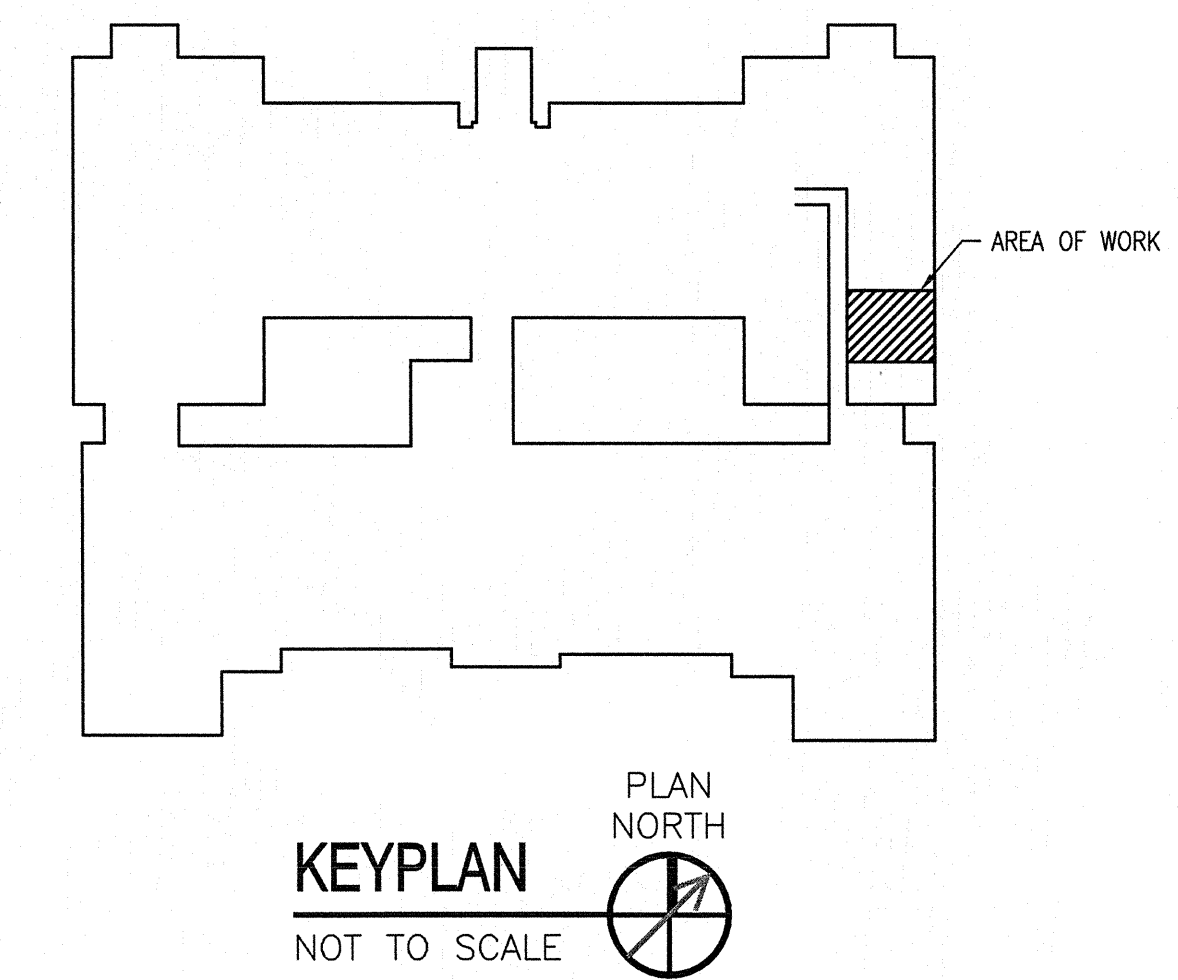
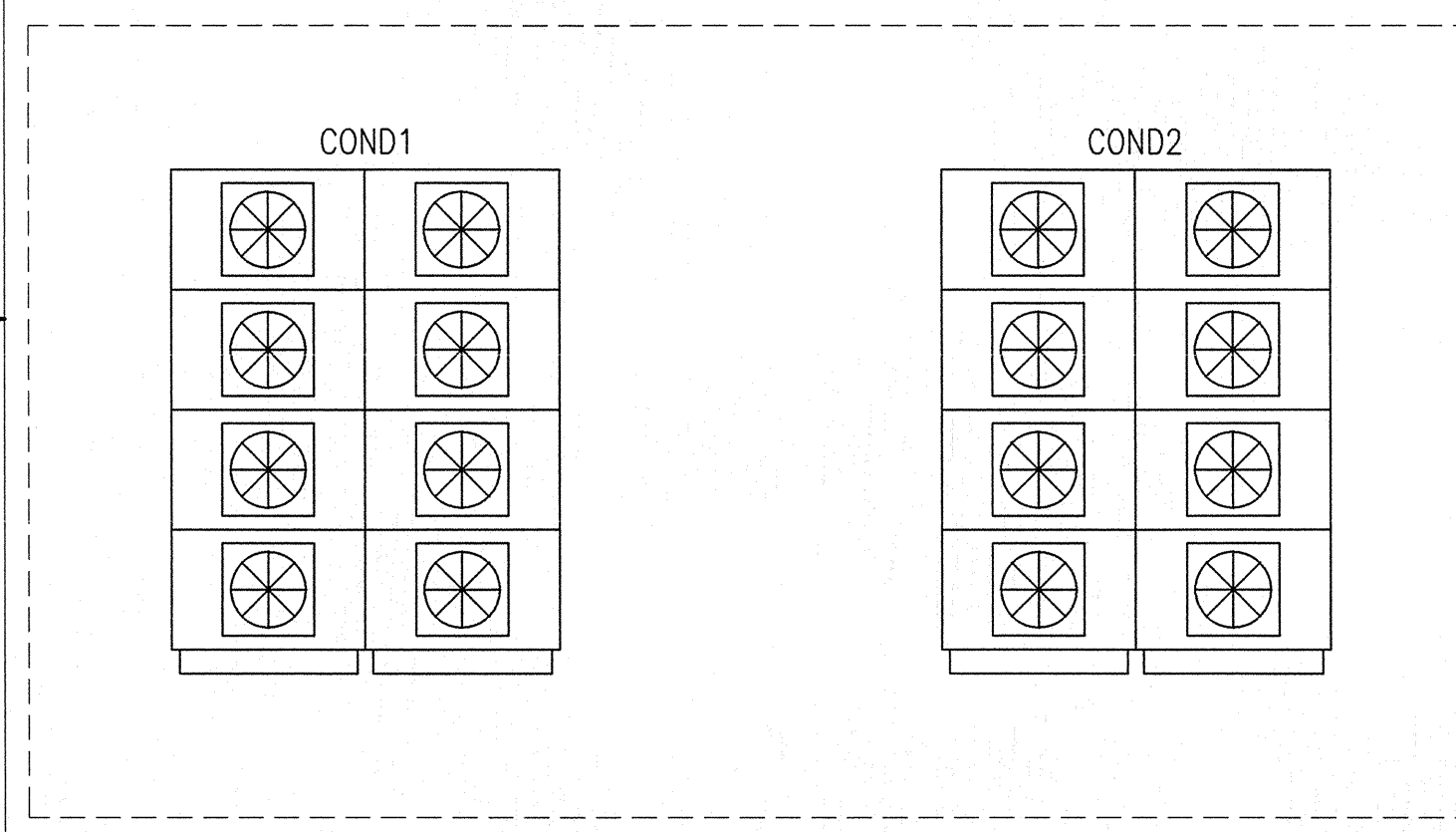
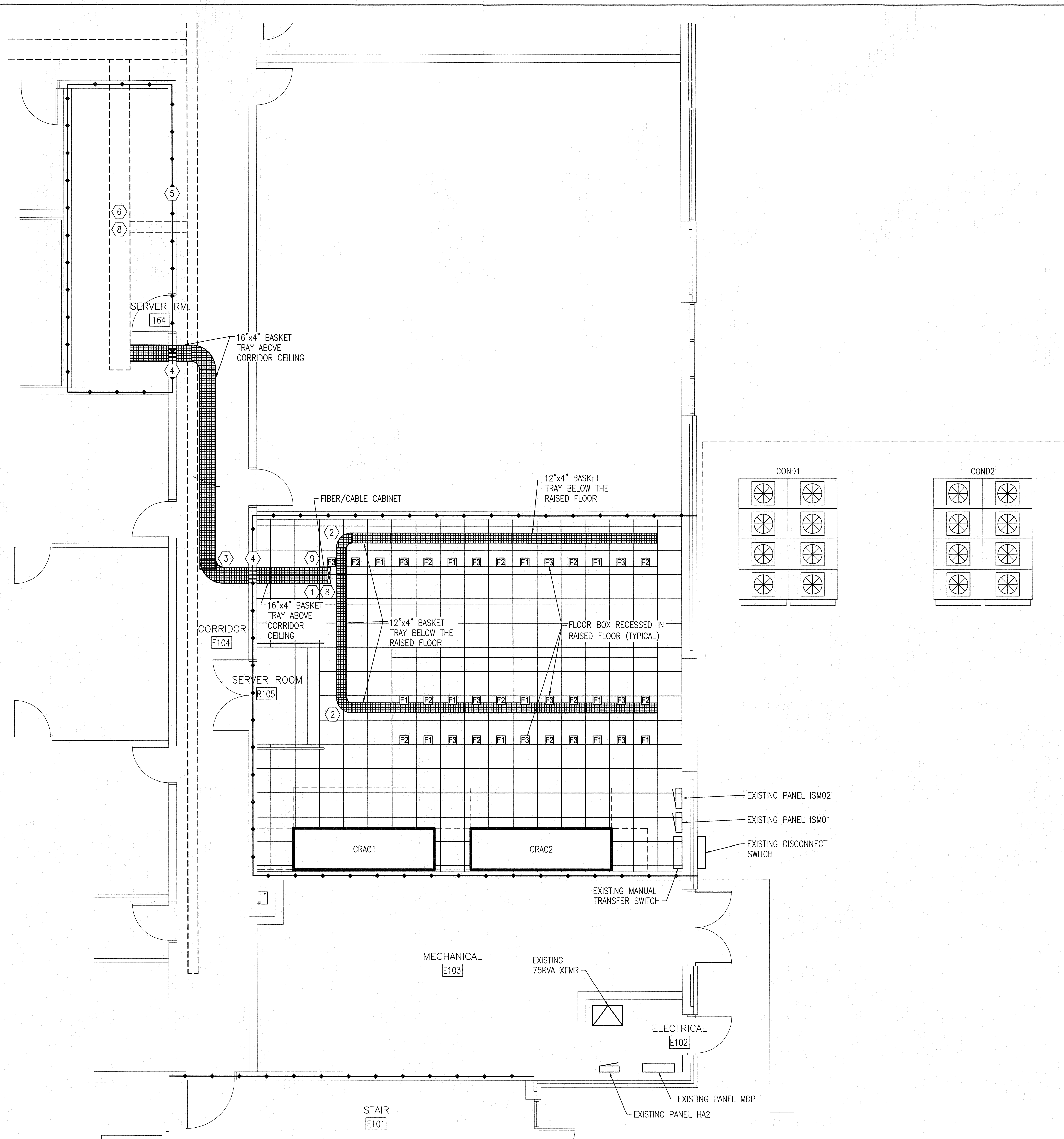
**4 TYPICAL 5 GANG FLOOR BOX (F3) DEVICE DETAIL**  
NOT TO SCALE



<b>CBHF</b> Engineers, PLLC 2248 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfindesign.com	SHEET TITLE: ELECTRICAL 1ST FLOOR POWER PLAN		<b>E-7</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
DEPARTMENT OF THE NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA		NAIFAC DRAWING NO. 60018923 CONST. CONTR. NO. N40085-17-B-0041 SHEET 14 OF 16
	DES. RRD	CHK. JPF	
SUBMITTED BY: DESIGN DIR. T H BURTON, PE	APPROVED:	DATE:	SIZE: F CODE IDENT. NO. 80091 SCALE: NOTED SPEC: 05-17-0041

REVISIONS		
SYM.	DATE	APPROVED

- KEYED NOTES**
- BASKET TRAY SHALL TRANSITION FROM ABOVE THE CEILING, THROUGH THE CEILING INTO THE CABLE/FIBER CABINET BELOW. PROVIDE OPENING TRIM IN CEILING FOR CABLE TRAY TRANSITION DOWN TO CABINET. CABLING SHALL PASS THROUGH THE CABINET TO CABLE TRAY BELOW THE RAISED FLOOR.
  - PROVIDE ALL REQUIRED BASKET TRAY TRANSITIONS/FITTINGS/ACCESSORIES ACCORDING TO THE MANUFACTURER SPECIFICATIONS, TYPICAL.
  - BASKET TRAY SHALL PENETRATE CORRIDOR WALL AT A HEIGHT ABOVE THE EXISTING CABLE TRAY IN THE CORRIDOR. COORDINATE EXACT HEIGHT OF CABLE TRAY IN THE FIELD WITH THE EXISTING CONDITIONS.
  - PROVIDE FOUR 4" CONDUIT SLEEVES THROUGH THE CORRIDOR WALL. ALL DATA CABLING IN BASKET TRAY SHALL PASS THROUGH THREE OF THE FOUR CONDUITS. SEAL ALL CONDUIT OPENINGS IN ACCORDANCE WITH FIRE STOPPING DETAIL AFTER CABLING HAS BEEN ROUTED. THE FOURTH CONDUIT SHALL BE SEALED FOR SPARE.
  - BASKET TRAY SHALL PENETRATE WALL INTO EXISTING ROOM ADJACENT TO EXISTING CABLE TRAY.
  - BASKET TRAY SHALL TERMINATE AT THE EXISTING CABLE TRAY IN THE ROOM. PROVIDE CABLING LONG ENOUGH TO REACH FAR SIDE OF SERVER ROOM.
  - BOND ALL METALLIC CABLE TRAY SECTIONS, FITTINGS, AND BOND THE CABLE TRAY SYSTEM TO THE TELECOMMUNICATIONS GROUND BUS BAR(S) LOCATED IN SERVER ROOM R105.
  - CONTRACTOR PROVIDED FREE STANDING FIBER OPTIC TERMINATION CABINET.
  - CONTRACTOR SHALL PROVIDE ONE 48 STRAND SINGLE MODE FIBER OPTIC CABLE AND ONE 48 STRAND MULTIMODE FIBER OPTIC CABLE FROM SERVER ROOM 164 IN CABLE TRAY ROUTED TO FIBER/CABLE CABINET LOCATED IN THE SERVER ROOM.

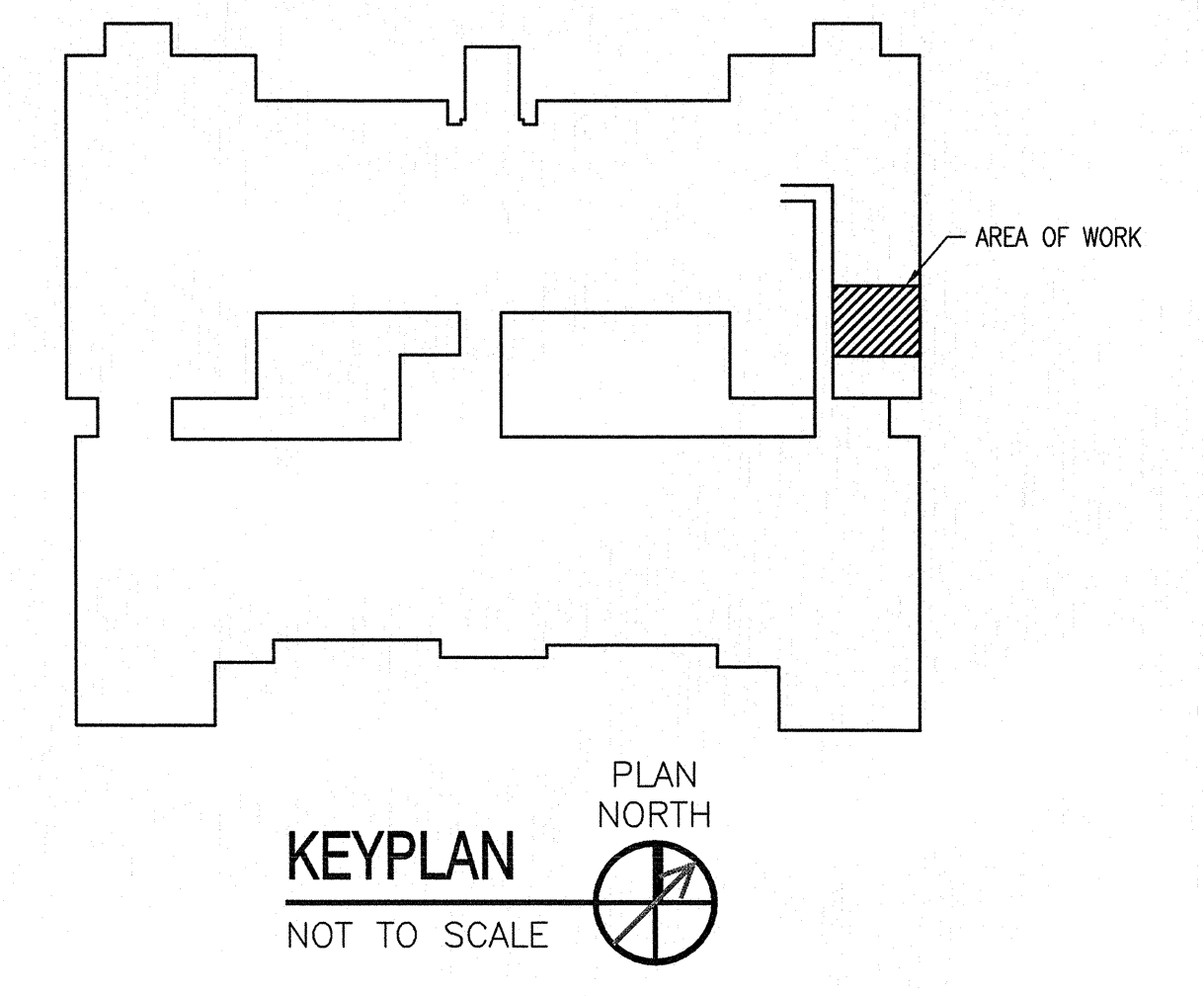
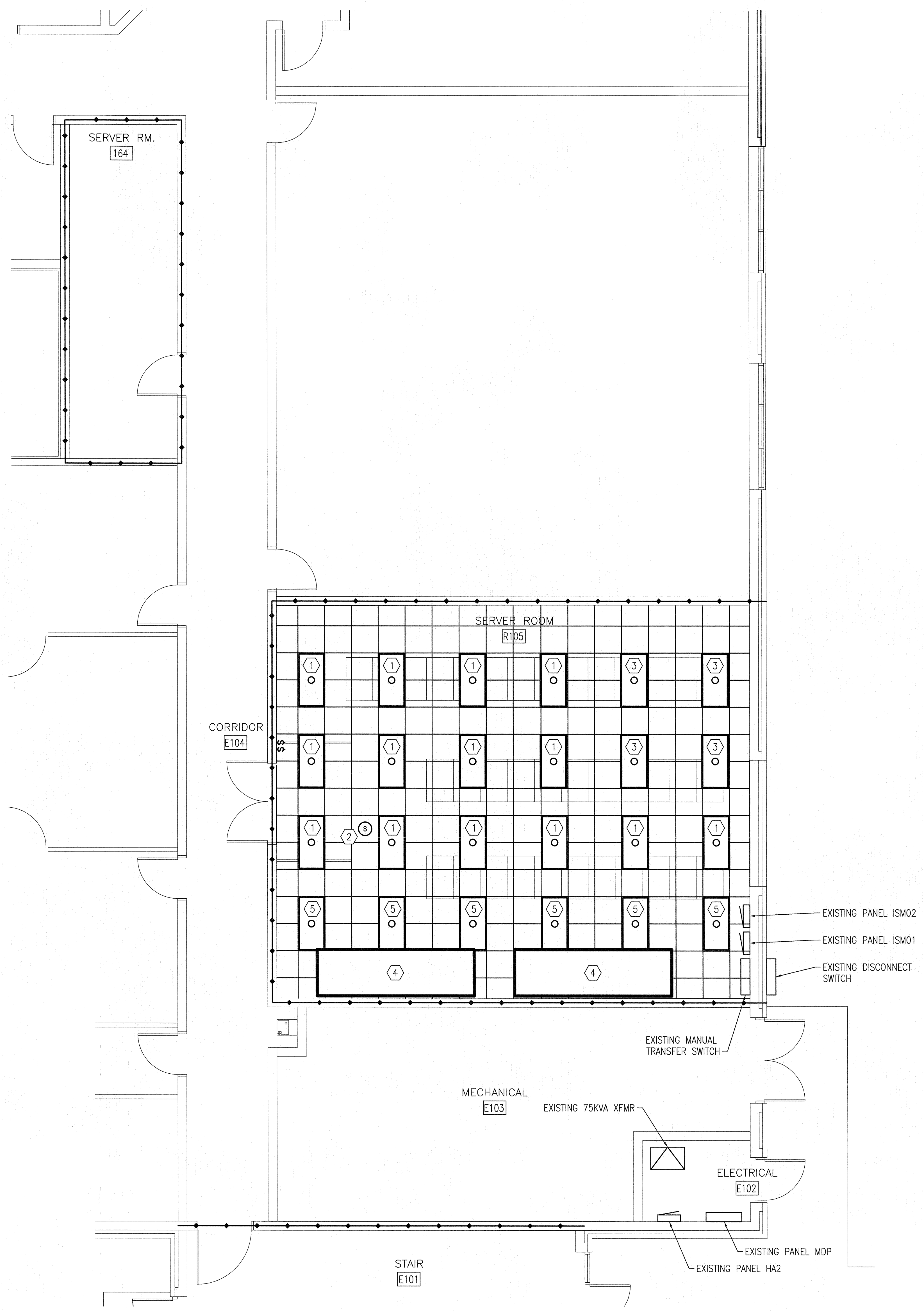


**1 PARTIAL FIRST FLOOR TELECOM PLAN**  
1/4" = 1'-0"  
PLAN NORTH

	SHEET TITLE: <b>ELECTRICAL PARTIAL 1ST FLOOR TELECOM PLAN</b>		<b>E-8</b>
	2246 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfengineers.com		
DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		DESIGN SERVER ROOM & CRAC SYSTEM AT BLDG. M79 CAMP LEJEUNE, NORTH CAROLINA	
DES. RRD DR. RRD CHK. JPF SUBMITTED BY: DESIGN DIR. T H BURTON, PE		APPROVED: _____ DATE _____ SATISFACTORY TO: _____ DATE _____	
CODE IDENT. NO. <b>80091</b> NAWFAC DRAWING NO. <b>60018924</b> CONST. CONTR. NO. <b>N40085-17-B-0041</b>		SCALE: NOTED SPEC: 05-17-0041 SHEET 15 OF 16	

REVISIONS		
SYM.	DATE	APPROVED

- KEYED NOTES**
- INSTALL LIGHT FIXTURE IN SAME LOCATION WITHIN THE CEILING GRID AS BEFORE DEMOLITION.
  - INSTALL SPEAKER IN SAME LOCATION AS BEFORE DEMOLITION. CONNECT TO EXISTING COILED WIRING ABOVE THE CEILING.
  - INSTALL LIGHT FIXTURE IN SAME LOCATION AS BEFORE DEMOLITION. CONNECT TO EXISTING COILED BRANCH CIRCUITRY ABOVE THE CEILING.
  - MECHANICAL EQUIPMENT AND DUCTWORK TO THE CEILING ABOVE.
  - RELOCATE LIGHT FIXTURE IN CEILING GRID AS REQUIRED TO FACILITATE MECHANICAL DUCTWORK FROM UNIT BELOW. EXTEND/MODIFY WIRING AS NECESSARY FOR RELOCATED POSITION. COORDINATE DUCTWORK DIMENSIONS IN THE FIELD WITH PURCHASED EQUIPMENT.



**1 PARTIAL FIRST FLOOR LIGHTING PLAN**

1/4" = 1'-0"

PLAN NORTH

<p>2248 Yeupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5288 www.cbhfengineers.com</p>	SHEET TITLE: <b>ELECTRICAL PARTIAL 1ST FLOOR LIGHTING PLAN</b>		<b>E-9</b>
	<p>DESIGNED BY: RRD</p> <p>CHECKED BY: JPF</p> <p>SUBMITTED BY:</p> <p>DESIGN DIR: T H BURTON, PE</p> <p>APPROVED:</p> <p>SATISFACTORY TO:</p>		
	<p>DATE: _____</p> <p>DATE: _____</p>	<p>SIZE: <b>F</b></p> <p>CODE IDENT. NO.: <b>80091</b></p> <p>SCALE: NOTED</p>	<p>NAVFAC DRAWING NO.: <b>60018925</b></p> <p>CONST. CONTR. NO.: <b>N40085-17-B-0041</b></p> <p>SPEC: 05-17-0041</p> <p>SHEET 16 OF 16</p>