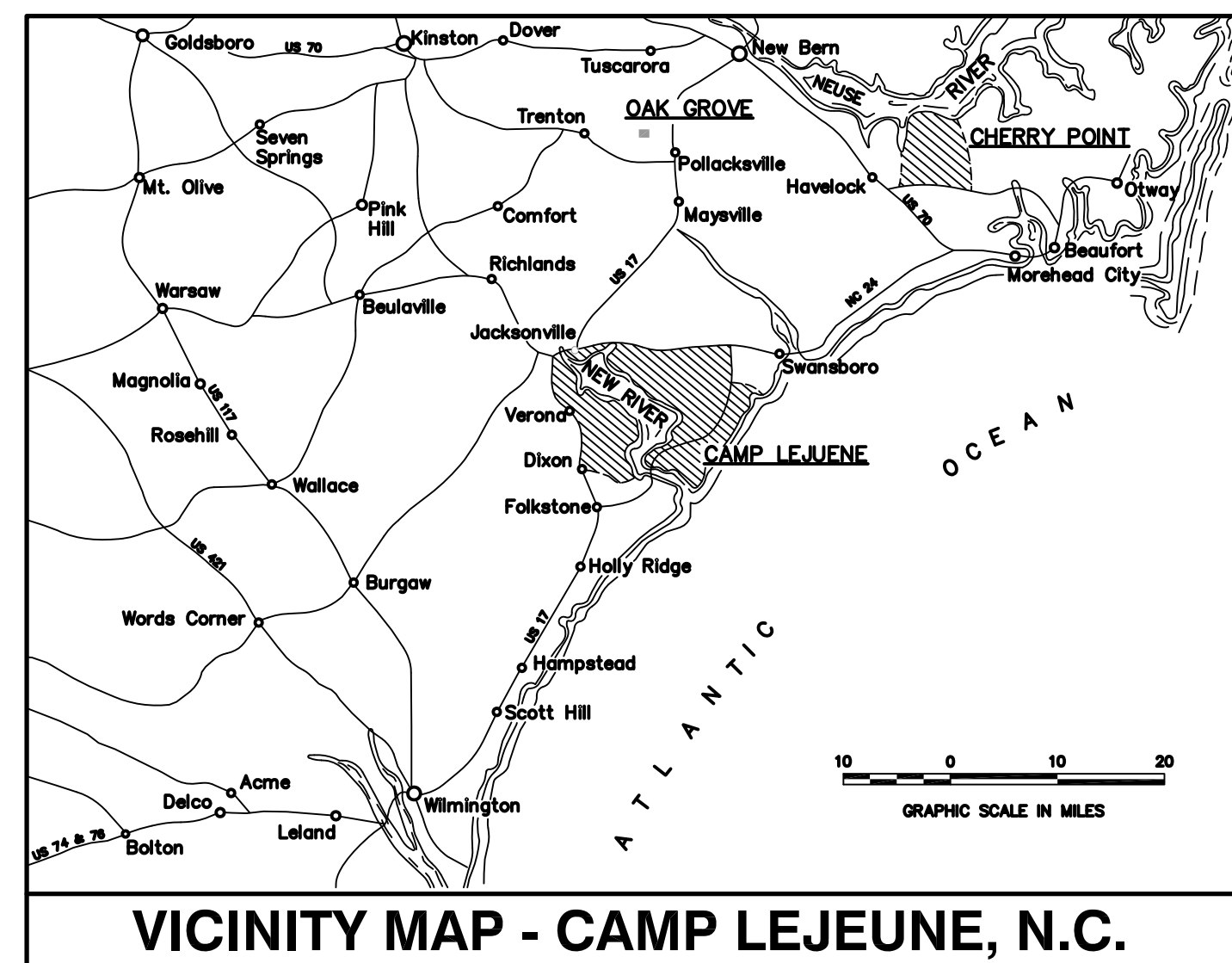
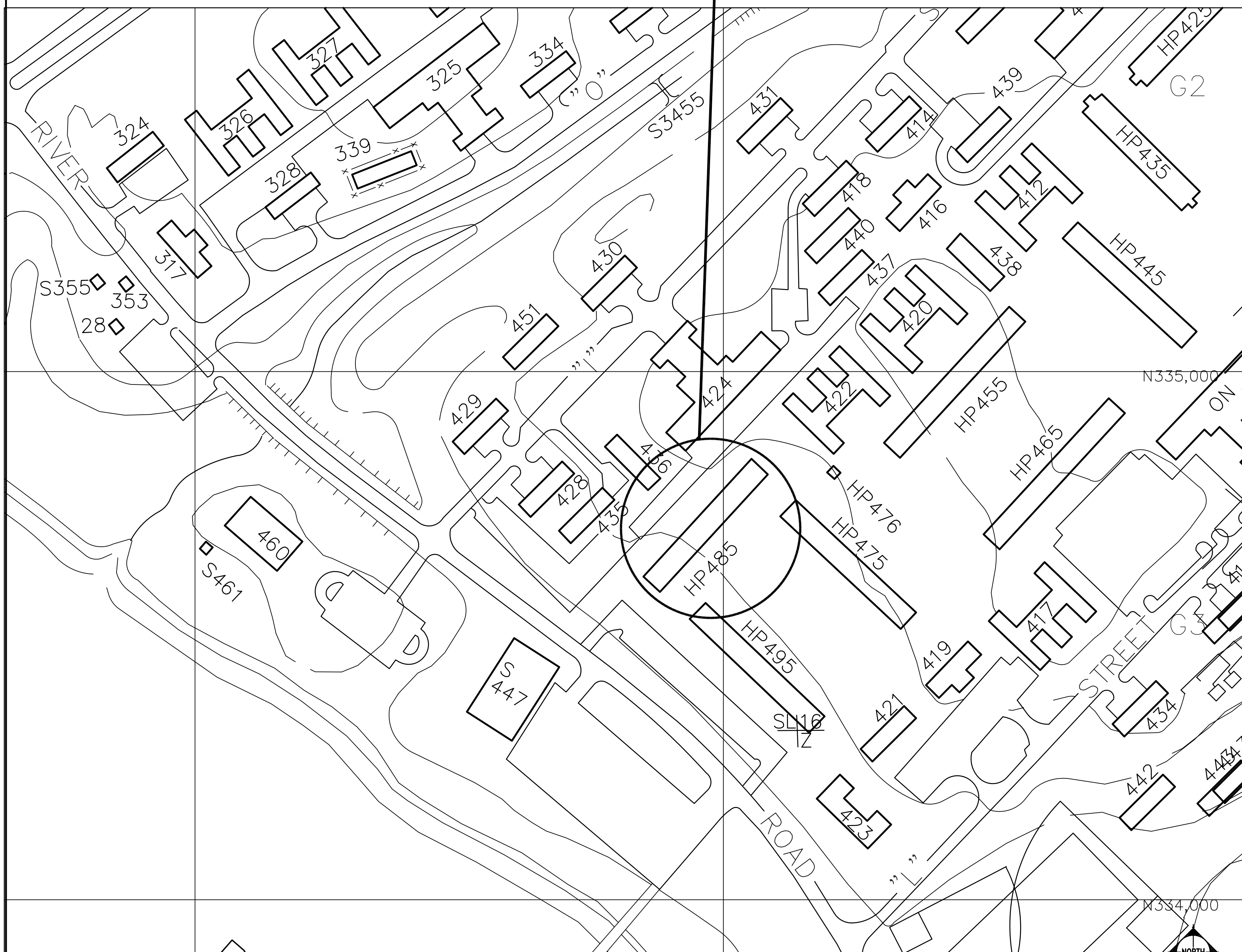


LOCATION OF BUILDING HP485



# REPAIR BEQ BUILDING HP485

## MARINE CORPS BASE CAMP LEJEUNE N.C.

SHEET # | NAVFAC # | PLATE # | SHEET TITLE

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05 OF 65	60007145	A-102	SECOND FLOOR PLAN
06 OF 65	60007146	A-103	THIRD FLOOR PLAN
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48 OF 65	60007188	P-401	ENLARGED PLUMBING SUPPLY AND DWV NEW WORK PLAN
49 OF 65	60007189	P-402	ENLARGED PLUMBING PIPING AND NEW WORK PLAN
50 OF 65	60007190	E-001	ELECTRICAL LEGEND AND GENERAL NOTES
51 OF 65	60007191	ES-101	ELECTRICAL DEMOLITION & NEW WORK SITE PLAN
52 OF 65	60007192	ED-101	ELECTRICAL DEMOLITION PLAN
53 OF 65	60007193	ED-401	ENLARGED ELECTRICAL DEMOLITION PLAN
54 OF 65	60007194	ED-402	ENLARGED ELECTRICAL DEMOLITION PLAN
55 OF 65	60007195	E-101	ELECTRICAL NEW WORK PLAN
56 OF 65	60007196	E-102	ATTIC ELECTRICAL NEW WORK PLAN AND SCHEMATIC
57 OF 65	60007197	E-401	ENLARGED ELECTRICAL NEW WORK PLAN
58 OF 65	60007198	E-402	ENLARGED FIRST FLOOR ELECTRICAL NEW WORK PLAN
59 OF 65	60007199	E-403	ENLARGED ELECTRICAL NEW WORK PLAN
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62 OF 65	60007202	E-503	ELECTRICAL DETAILS
63 OF 65	60007203	E-601	ELECTRICAL PANEL SCHEDULES
64 OF 65	60007204	E-602	ELECTRICAL PANEL SCHEDULES
65 OF 65	60007205	E-603	ELECTRICAL RISER DIAGRAMS

**ABBREVIATIONS**

MIN MINIMUM

LETTER INDICATES SECTION

NUMBER INDICATES ELEVATION OR DETAIL

LETTER INDICATES SECTION

SHEET NUMBER WHERE ELEVATION, SECTION OR DETAIL IS TAKEN

SHEET NUMBER WHERE ELEVATION, SECTION OR DETAIL IS DRAWN

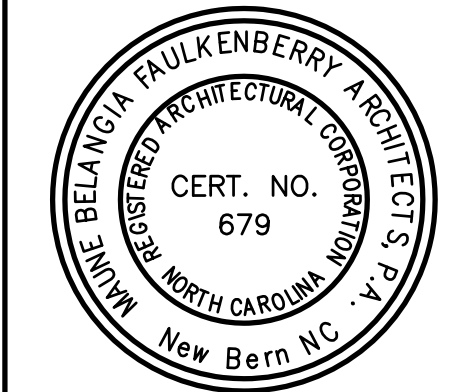
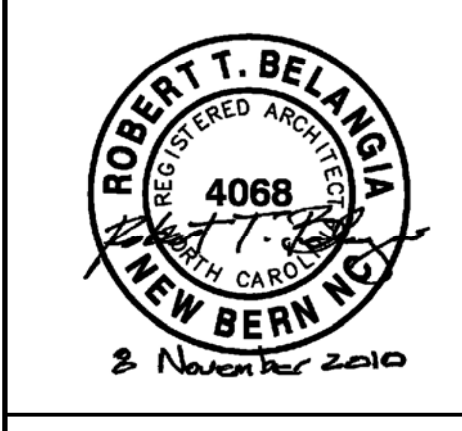
NUMBER INDICATES ELEVATION OR DETAIL

SHEET NUMBER WHERE ELEVATION, SECTION OR DETAIL IS TAKEN

SHEET NUMBER WHERE ELEVATION, SECTION OR DETAIL IS DRAWN

ADDITIONAL SHEET REFERENCES

**Elevation, Section or Detail Symbol**



**G-001**

MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

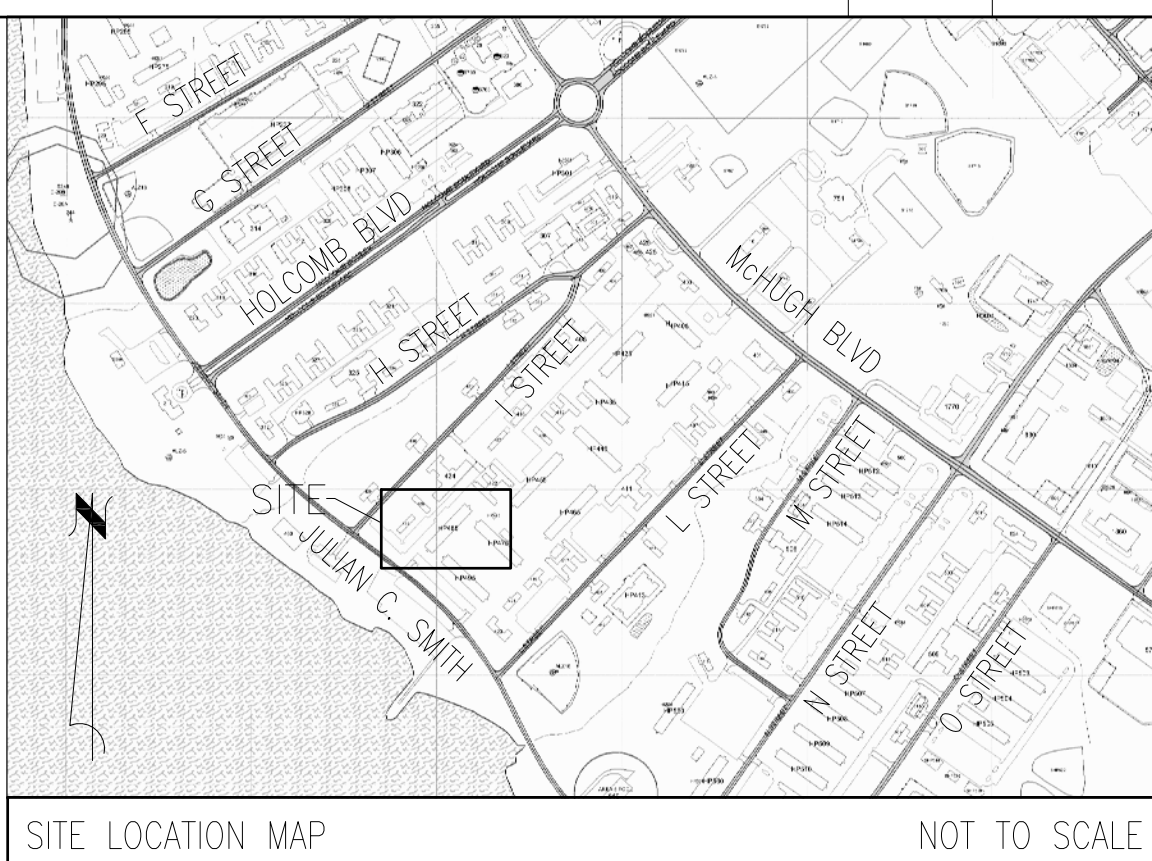
**REPAIR BEQ BUILDING HP485**

DES. RTB  
DR. SLA  
CHK. RTB  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC  
SATISFACTORY TO:

TITLE SHEET  
NAVFAC DRAWING NO. 60007141  
CONTR. NO. N40085-10-B-0070

SCALE: AS NOTED SPEC. 05-10-0070 SHEET 01 OF 65

SYM	REVISIONS	DATE	APPROVED



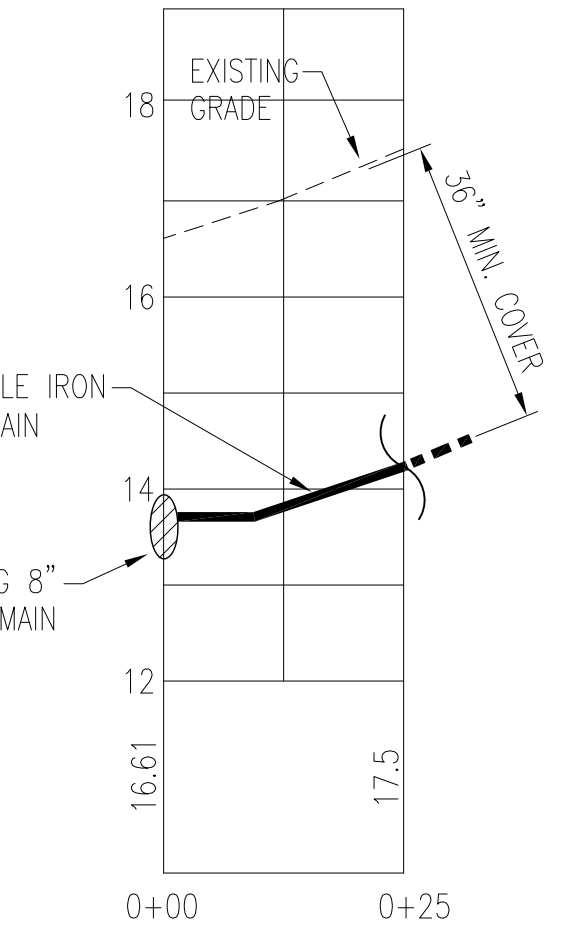
SITE LOCATION MAP NOT TO SCALE

ABBREVIATIONS	
CL	CENTER LINE
DA	DRAINAGE AREA
DI	DRAINAGE INLET
ELEV	ELEVATION
EX	EXISTING
EX. EXIST	EXISTING
HOR	HORIZONTAL
INV	INVERT
MAX	MAXIMUM
MIN	MINIMUM
OHE	OVERHEAD ELECTRIC
OC	ON CENTER
RC	REINFORCED CONCRETE
TC	TEMPORARY CONCRETE
TYP	TYPICAL
VERT	VERTICAL
W/F	WELDED WIRE FABRIC
%	AND PERCENT

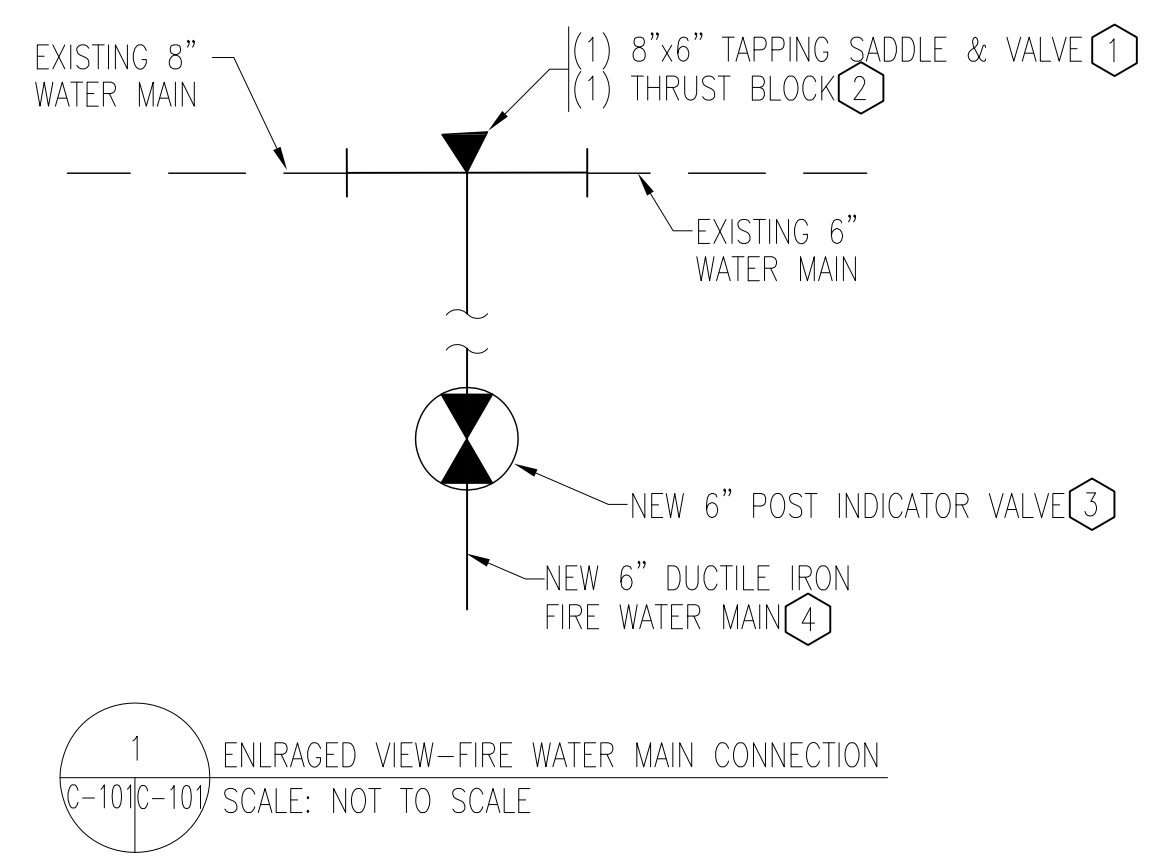
CIVIL LEGEND		
EXISTING	DESCRIPTION	NEW
	WATER VALVE	
	POST INDICATOR VALVE	
	THRUST BLOCK	
	SANITARY SEWER MANHOLE	
	ELECTRIC MANHOLE	
	COMMUNICATIONS MANHOLE	
	STORM DRAIN MANHOLE	
	SANITARY SEWER CLEANOUT	
	STORM DRAIN CLEANOUT	
	FIRE HYDRANT	
	FIRE HYDRANT THRUST BLOCK	
	LIGHT POLE	
	GUY WIRE	
	SANITARY SEWER (GRAVITY)	
	SANITARY SEWER (FORCE MAIN)	
	STORM SEWER	
	DOMESTIC WATER	
	UNDERGROUND STEAM	
	OVERHEAD ELECTRICAL	
	UNDERGROUND ELECTRICAL	
	FIRE WATER	
	CONCRETE	
	ASPHALT	
	TEMPORARY BENCHMARK	
	SPOT ELEVATIONS	
	CONTOUR LINES	
	TREE	
	SILT FENCE	
	SURVEY CONTROL POINT	
	SOURCE/RESTRICTION UNKNOWN	

JULIAN C. SMITH  
(RIVER RD)

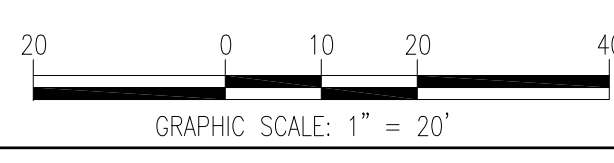
A SITE PLAN  
C-101C-101 SCALE: 1" = 20'



2 FIRE WATER MAIN - PROFILE  
C-101C-101 HOR. SCALE: 1"=20'  
VERT. SCALE: 1"=2'



1 ENLARGED VIEW-FIRE WATER MAIN CONNECTION  
C-101C-101 SCALE: NOT TO SCALE



AVOLIS ENGINEERING, P.A.  
P.O. BOX 15564  
NEW BERN, NC 28561  
PH: (252) 633-0088, FAX: (252) 633-6507

**GENERAL CONSTRUCTION NOTES:**

- THE LOCATION AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCANNING THE AREA OF WORK TO IDENTIFY TO HIS OWN SATISFACTION THE EXTENT OF UTILITIES PRESENT INCLUDING THE UTILITIES INDICATED TO BE PRESENT, THOSE NOT SHOWN, AND THOSE SHOWN TO BE IN A DIFFERENT LOCATION.
- PHYSICAL SITE FEATURES OUTSIDE THE AREA OF WORK OR THOSE FEATURES NOT RELEVANT TO THE WORK BEING PERFORMED ARE NOT SHOWN FOR CLARITY.
- ALL EXISTING VEGETATED AREAS DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE PROJECT VEGETATION PLAN, SEE DETAIL E, SHEET C-501.

**SPECIAL NOTE:**

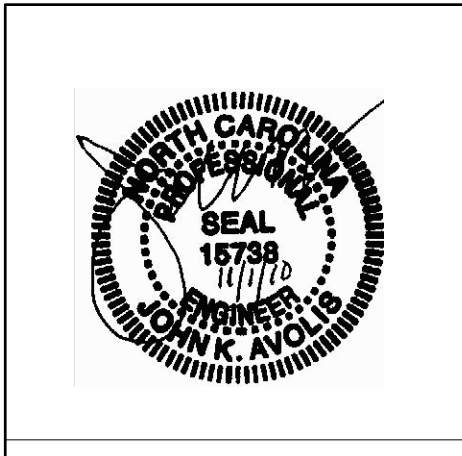
- THE CONTRACTOR SHALL PROVIDE A REDUCED PRESSURE DOUBLE CHECK BACKFLOW ASSEMBLY (RPZ) ON THE FIRE MAIN RISER IN THE MECHANICAL ROOM. THE RPZ SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARD AND CARRY THE ASSE SEAL OR APPEAR ON THE UNIVERSITY OF CALIFORNIA APPROVED LIST.

**SPECIAL SEEDING NOTE:**

THE ANGLE FOR GRADED SLOPES AND FILL SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICES OR STRUCTURES. IN ANY EVENT, SLOPES LEFT EXPOSED WILL, WITHIN 21 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION. ADDITIONALLY, WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS FROM THE COMPLETION OF THE PROJECT (WHICHEVER IS SHORTER), PERMANENT GROUND COVER SHALL BE ESTABLISHED.

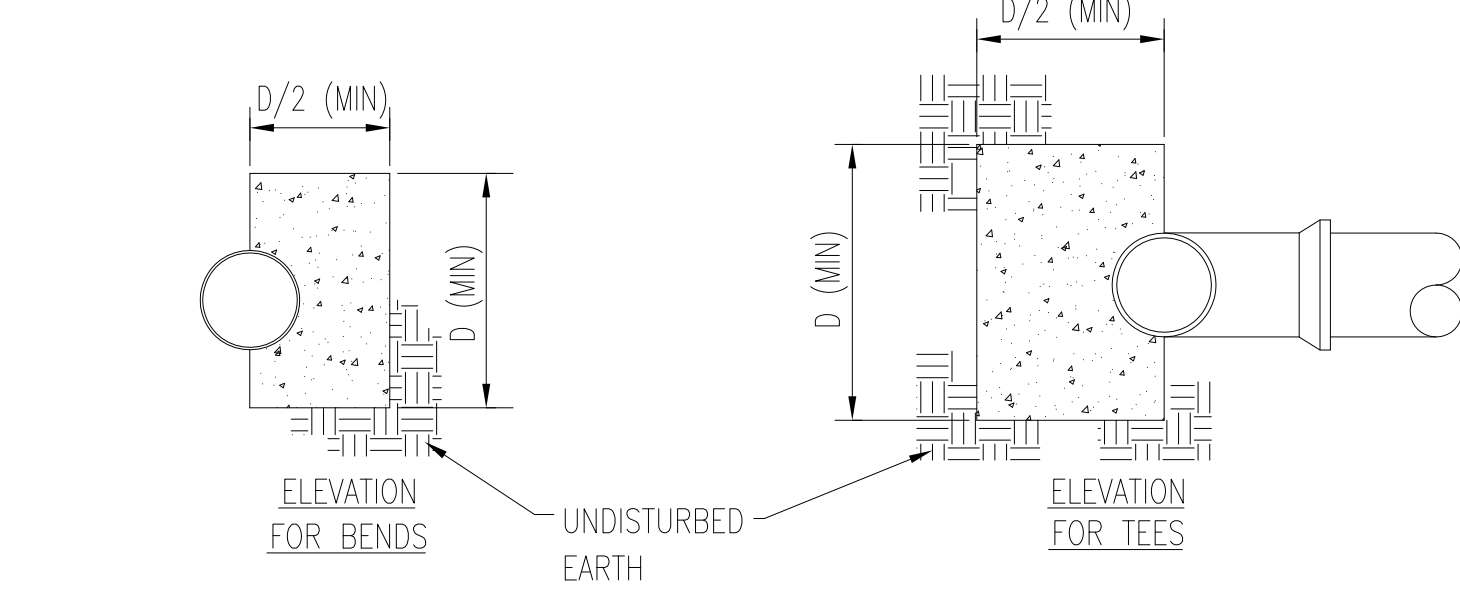
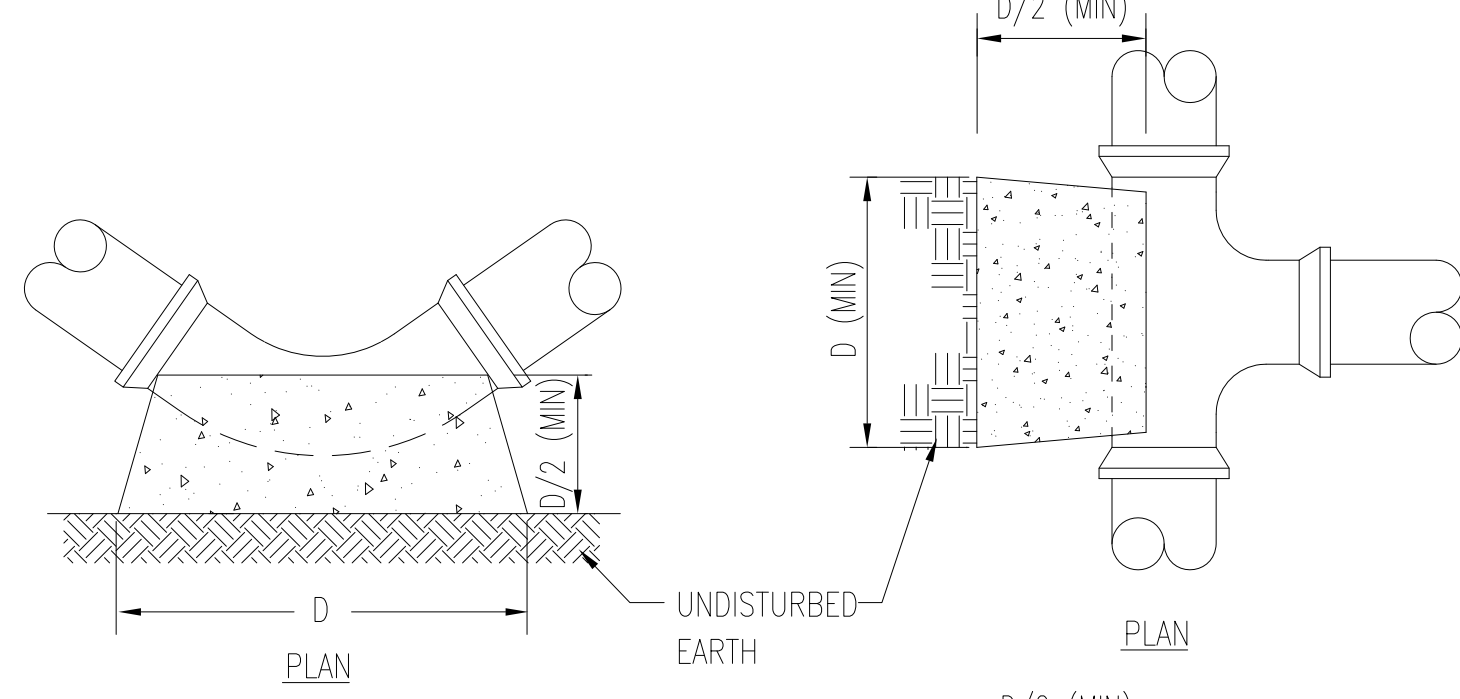
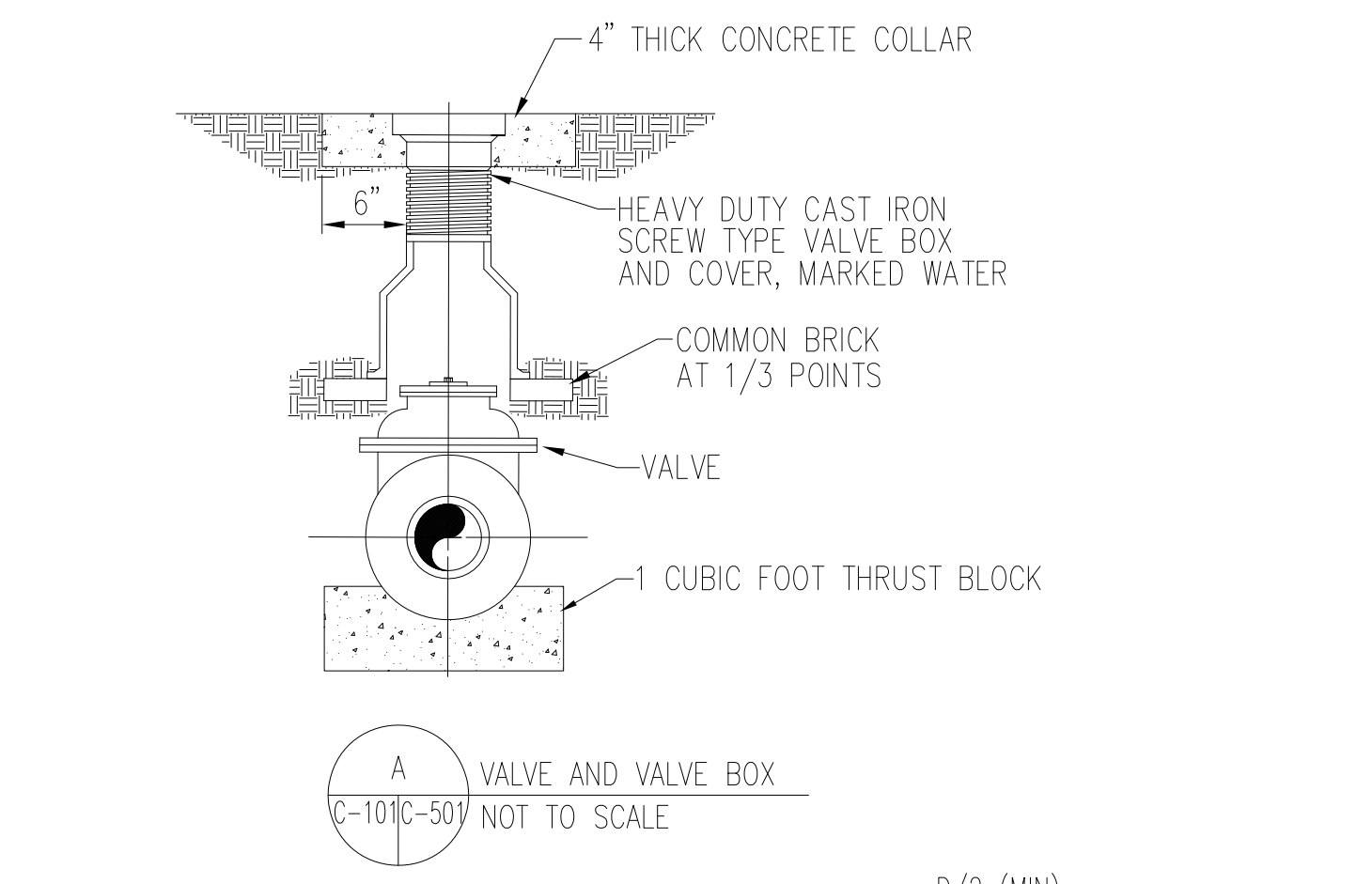
**NEW WORK ITEMS (THIS SHEET):**

- NEW 8" x 6" TAPPING SADDLE & VALVE - SEE DETAIL A, SHEET C-501 AND SPECIFICATIONS.
- THRUST BLOCK - SEE DETAIL B, SHEET C-501.
- NEW 6" POST INDICATOR VALVE - SEE DETAIL C, SHEET C-501 AND SPECIFICATIONS.
- PROVIDE ALL TRENCHING IN ACCORDANCE WITH DETAIL D, SHEET C-501.
- NEW 10" PVC ROOF LEADER, CONNECT TO EXISTING DROP INLET. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION.
- FINE GRADE AND COMPACT GEOTHERMAL WELL AREA TO REMOVE SURFACE IRREGULARITIES AND CREATE POSITIVE DRAINAGE. RE-ESTABLISH VEGETATION ON ALL DISTURBED AREAS IN ACCORDANCE WITH PROJECT VEGETATION PLAN. SEE DETAIL E, SHEET C-501
- GEOTHERMAL WELLS. SEE SHEET MS-101.
- CUT AND PATCH SIDEWALK TO INSTALL GEOTHERMAL WELL FIELD PIPING. PATCH SIDEWALK IN ACCORDANCE WITH DETAIL F, SHEET C-501.

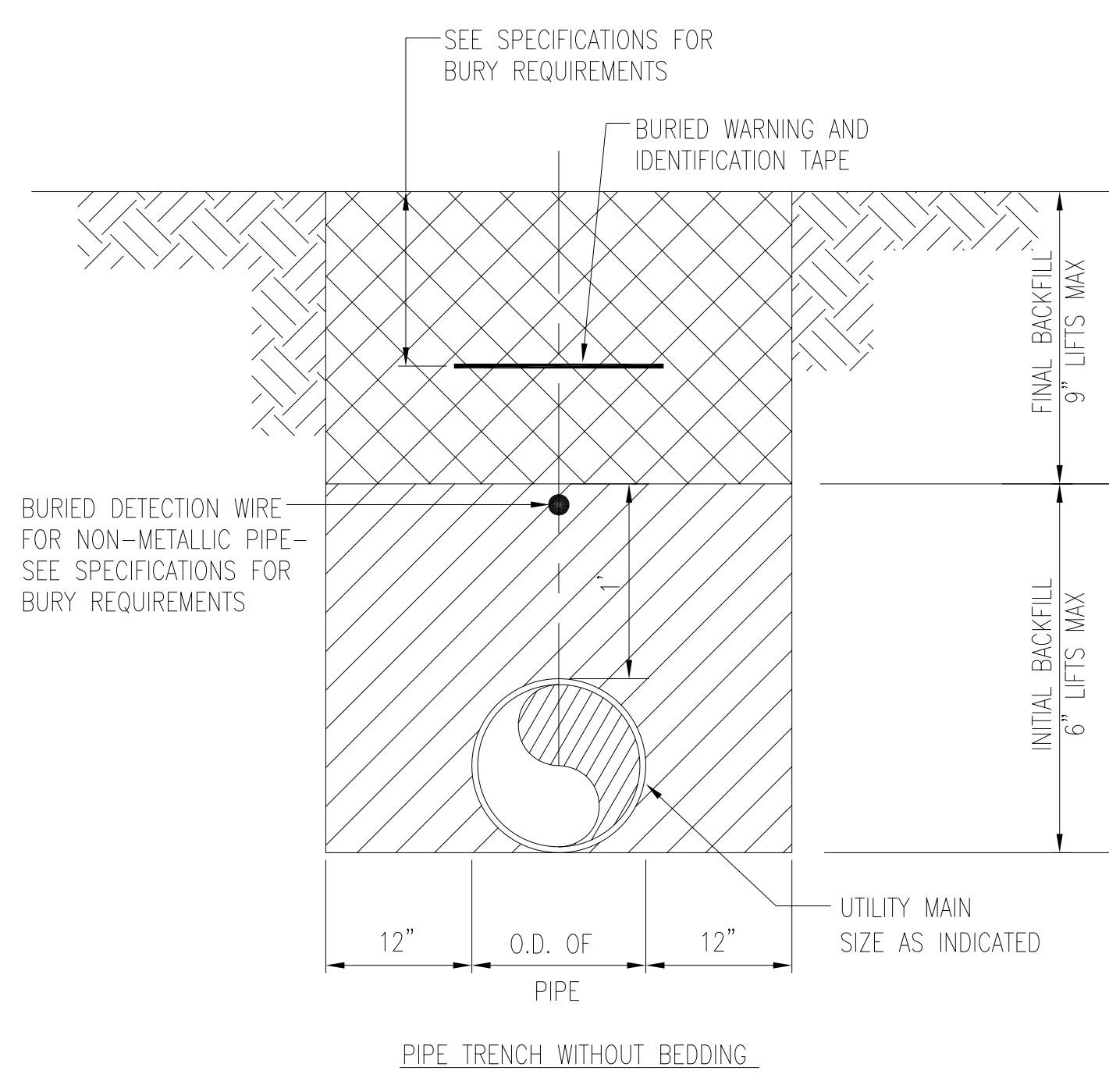


DES. J.K. AVOLIS, P.E. DR. MSP/WFF CHK. J.C. AVOLIS, P.E. SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE:	 317-C POLLOCK STREET NEW BERN, NC	<b>C-101</b>	
		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
		REPAIR BEQ BUILDING HP485 SITE PLAN	
		NAVFAC DRAWING NO. 60007142	CONST. CONTR. NO. N40085-10-D-0070 SPEC. 05-10-0070

REVISIONS		
SYM	DATE	APPROVED



THRUST BLOCK DIMENSION D (IN FEET)					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
2"-4"	1.3	1.6	1.2	0.9	0.8
6"	2.1	2.3	1.7	1.2	0.8
8"	2.5	2.8	2.2	1.5	1.0



D PIPE TRENCH SECTION  
C-101(C-50)  
NOT TO SCALE

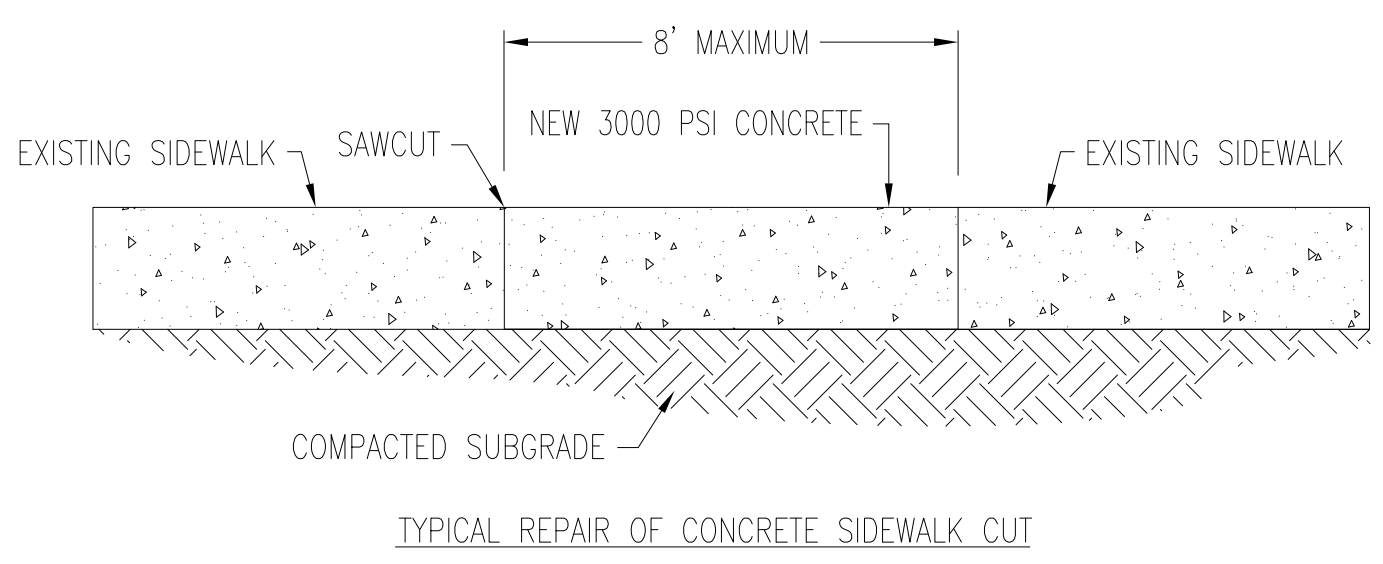
**VEGETATIVE SEEDING**  
AFTER COMPLETION OF GRADING ACTIVITIES AND THE CONSTRUCTION OF SWALES, ALL EXPOSED AREAS SHALL BE SEED TO THE FOLLOWING SPECIFICATIONS:

**SEED BED**  
LIME 1-1/2 TON PER ACRE  
FERTILIZER 1/2-TON PER ACRE  
SEED  
RYE GRASS 50 LBS PER ACRE  
TALL FESCUE 100 LBS PER ACRE  
MAY THROUGH AUGUST:  
CENTIPEDE 5 LBS PER ACRE

**PROCEDURE**  
STRAW MULCH SHALL BE APPLIED AT A RATE WHICH WILL INSURE APPROXIMATELY 75% COVERAGE OF THE SEED AREA. THE STRAW AND SOWN SEED WILL BE LIGHTLY DISCED INTO THE BED TO GIVE IT FURTHER RESISTANCE TO BLOWING AND WASHING.  
THE CONTRACTOR SHALL GUARANTEE A FULL STAND OF GRASS OVER THE ENTIRE DISTURBED AREA. IF NECESSARY THE CONTRACTOR WILL WET DOWN THE AREAS TO ASSIST IN SEED GERMINATION OR AID IN GROWTH IN TIMES OF EXCESSIVELY DRY WEATHER. A STAND OF GRASS WILL BE CONSIDERED ACCEPTABLE WHEN THE ENTIRE STAND OF GRASS IS AT LEAST FOUR INCHES HIGH AND HAS ACHIEVED AT LEAST 95% COVERAGE OF DISTURBED AREAS. RESEEDING WILL BE REQUIRED AS NECESSARY BY THE CONTRACTOR TO OBTAIN THE SPECIFIED STAND OF GRASS.

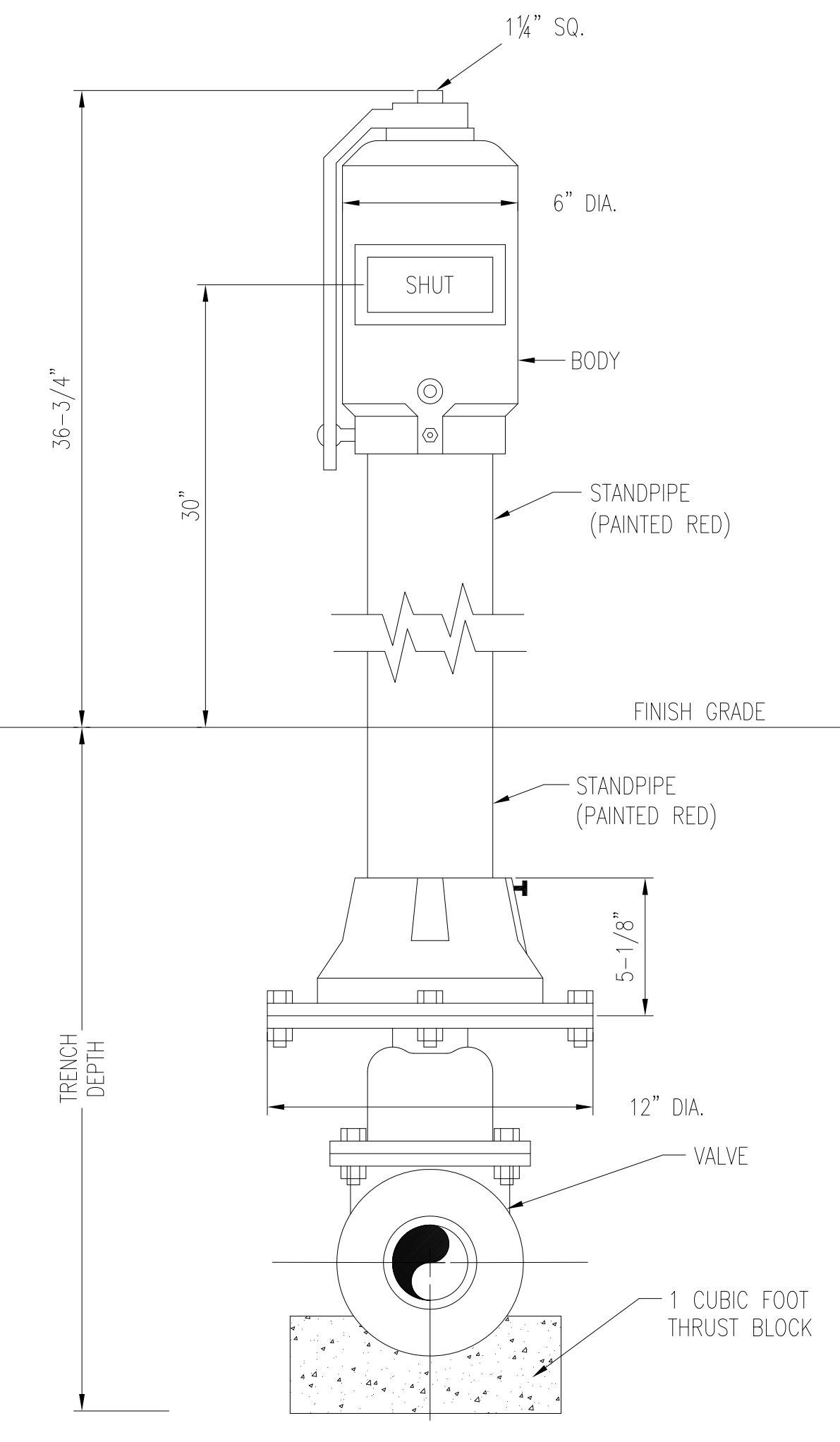
**SPECIAL SEEDING NOTE:**  
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E VEGETATION PLAN  
C-101(C-50)  
NOT TO SCALE



NOTE: REMOVE CONCRETE SIDEWALK AT JOINTS WHEN JOINTS ARE LOCATED WITHIN 5 FEET OF AREA OF WORK. CONCRETE FINISH & JOINT PATTERN SHALL MATCH EXISTING.

F CUT & PATCH  
C-101(C-50)  
NOT TO SCALE

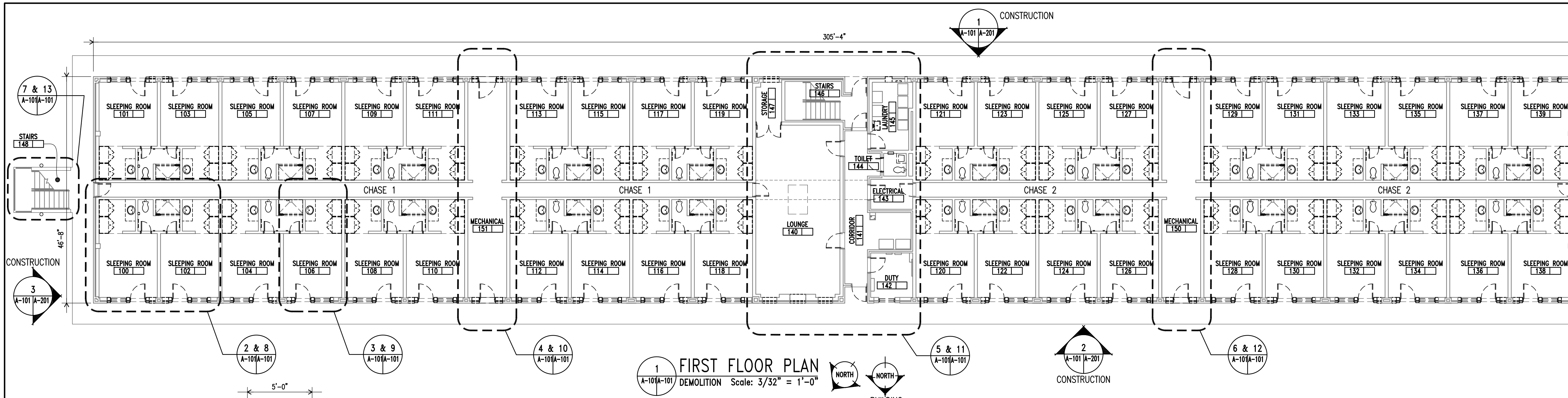


C POST INDICATOR VALVE  
C-101(C-50)  
NOT TO SCALE

AE PROJECT # 10025  
AVOLIS ENGINEERING, P.A.  
P.O. BOX 15564  
NEW BERN, NC 28561  
PH: (252) 633-0088, FAX (252) 633-6507



 317-C POLLOCK STREET NEW BERN, NC		<b>C-501</b>	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		<b>REPAIR BEQ</b> <b>BUILDING HP485</b> <b>DETAILS</b>	
DES. J.K. AVOLIS, P.E. DR. MSP/WFF CHK. J.C. AVOLIS, P.E. SUBMITTED BY: DESIGN DIR.	APPROVED: PWO OR OICC DATE:	SIZE: F CODE IDENT NO: 80091	NAVFAC DRAWING NO. 60007143 CONST. CONTR. NO. N40085-10-D-0070 SCALE: SPEC. 05-10-0070 SHEET 03 OF 65



**GENERAL NOTES**

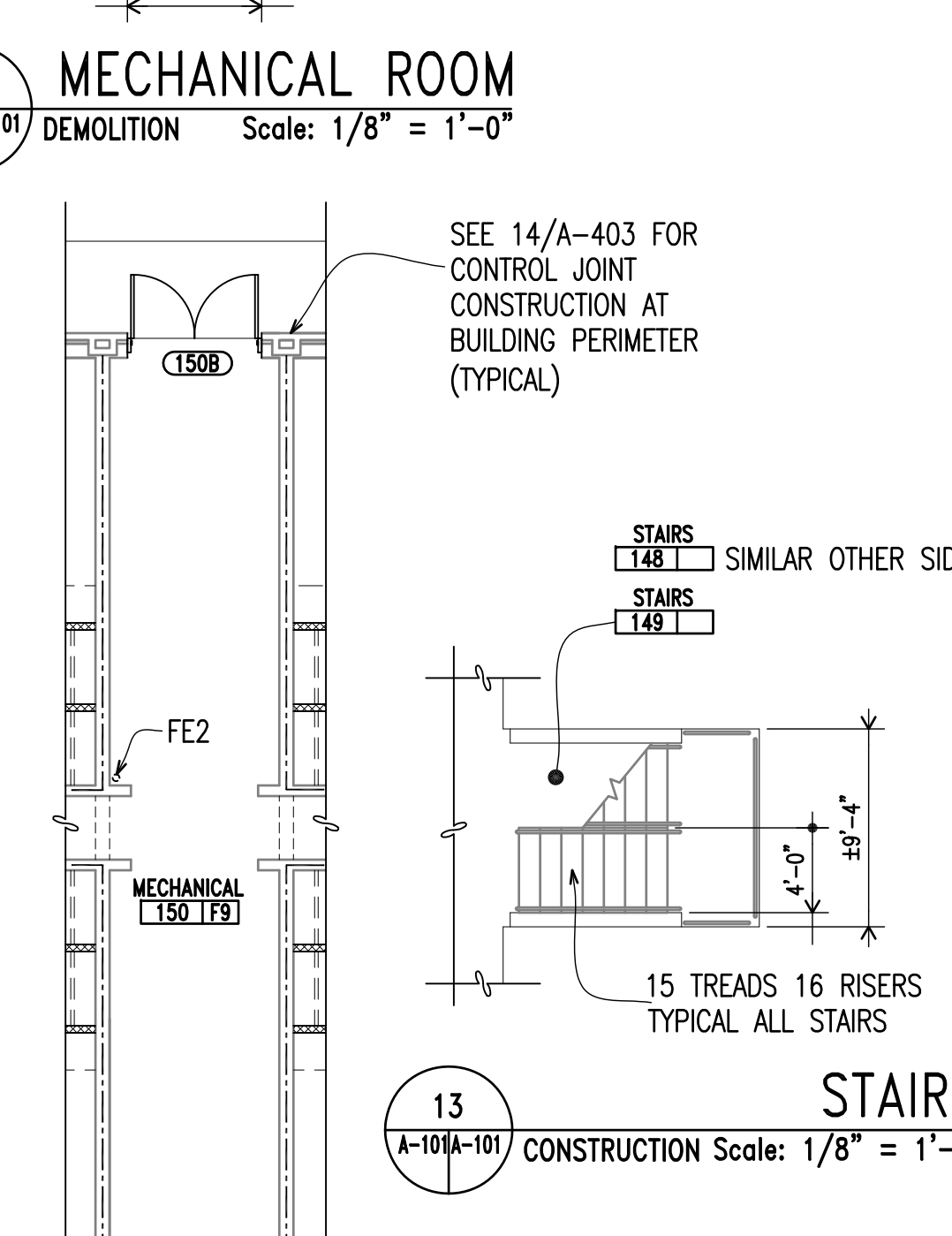
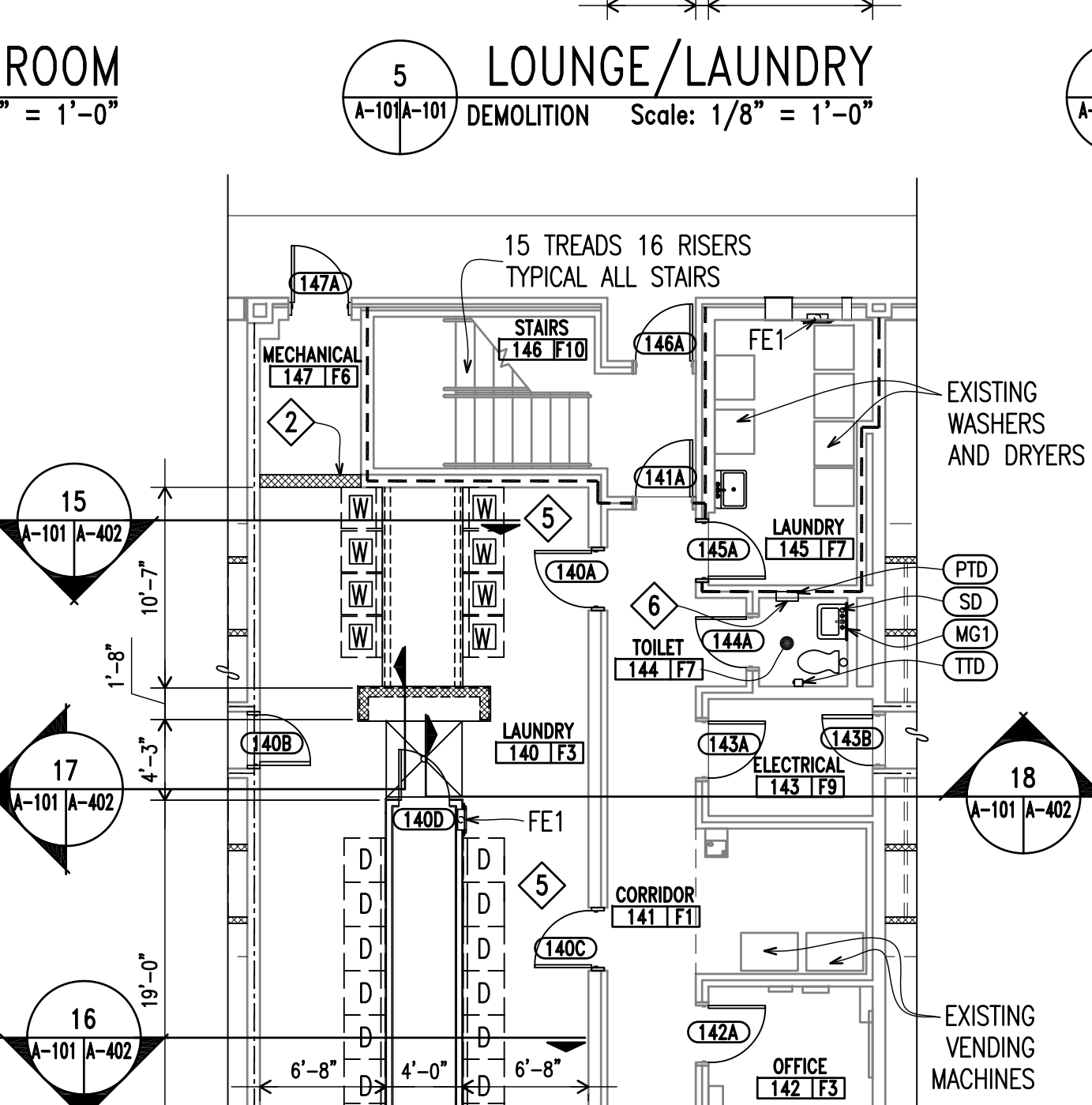
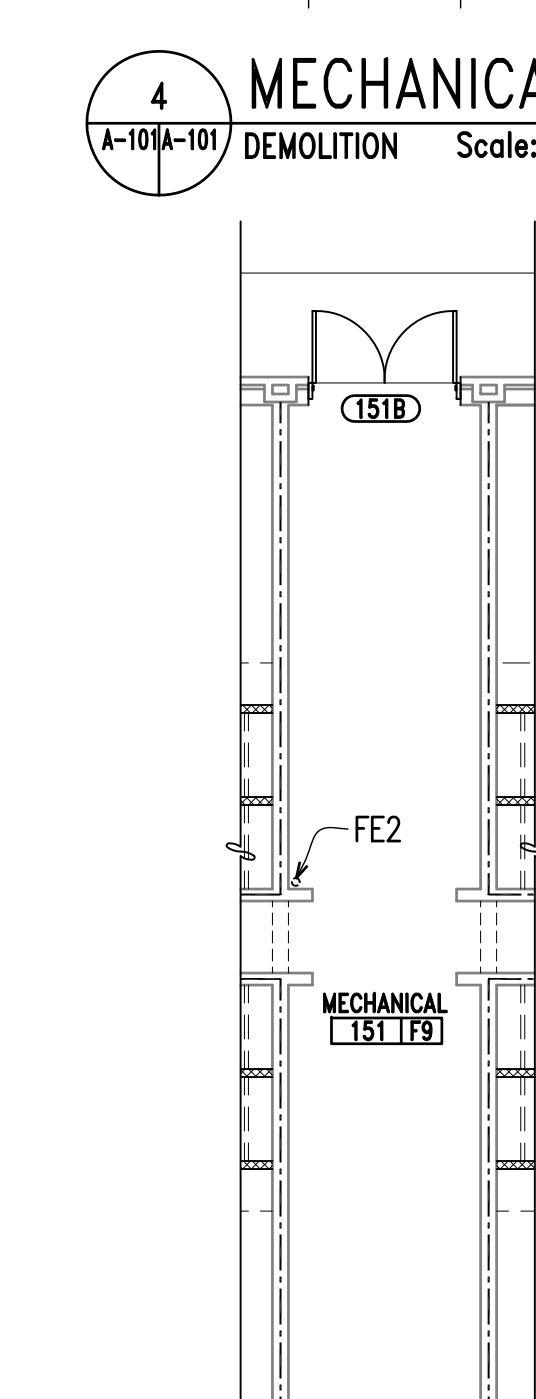
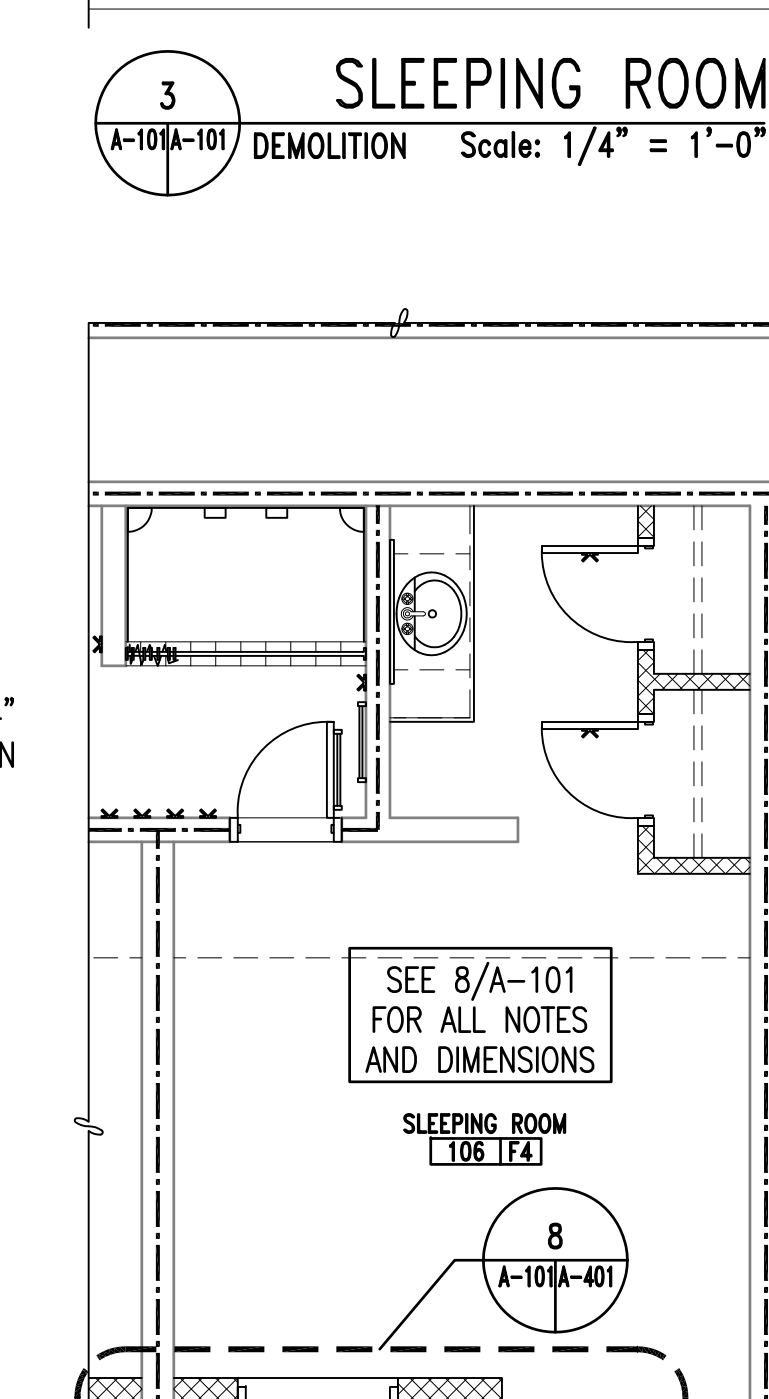
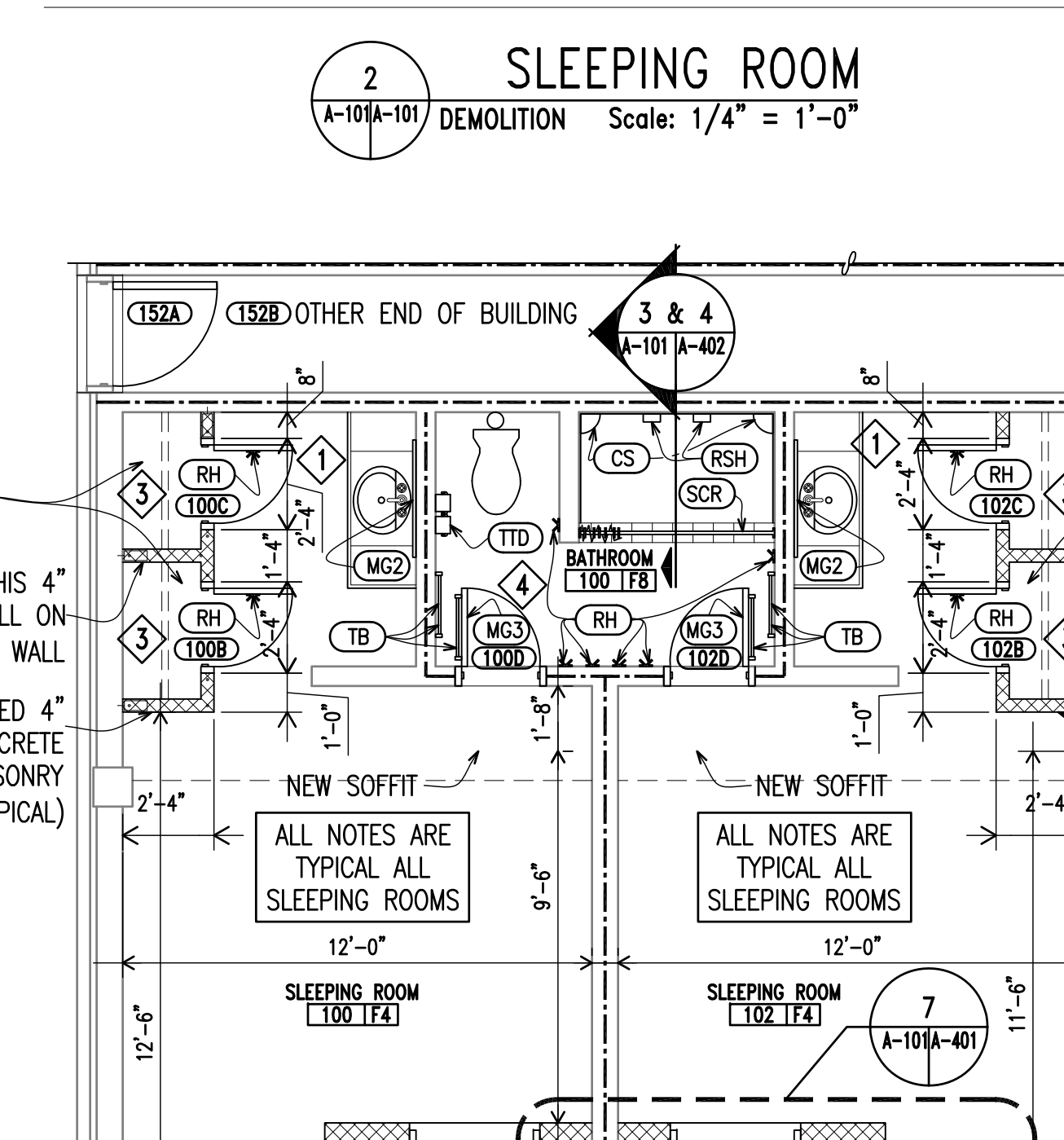
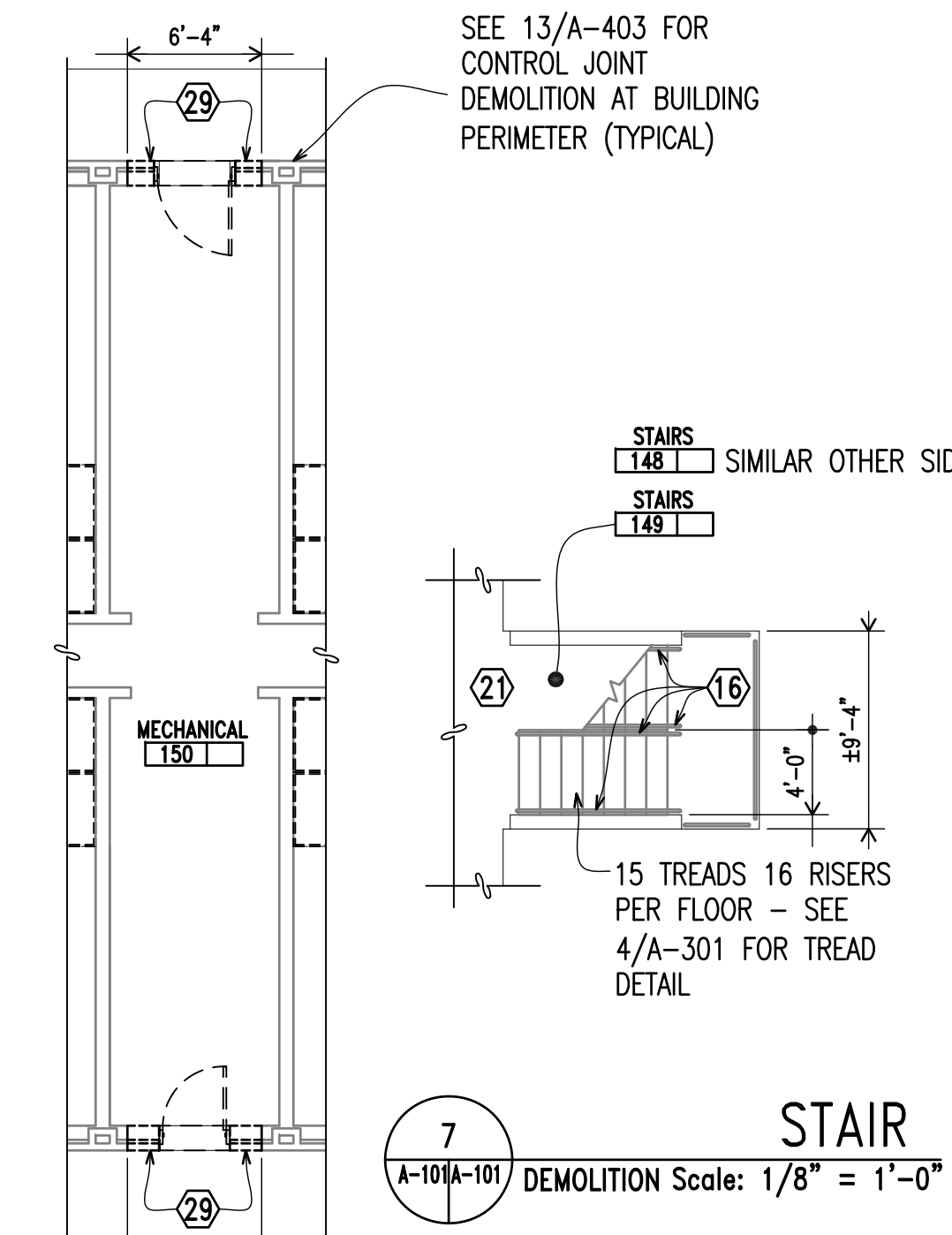
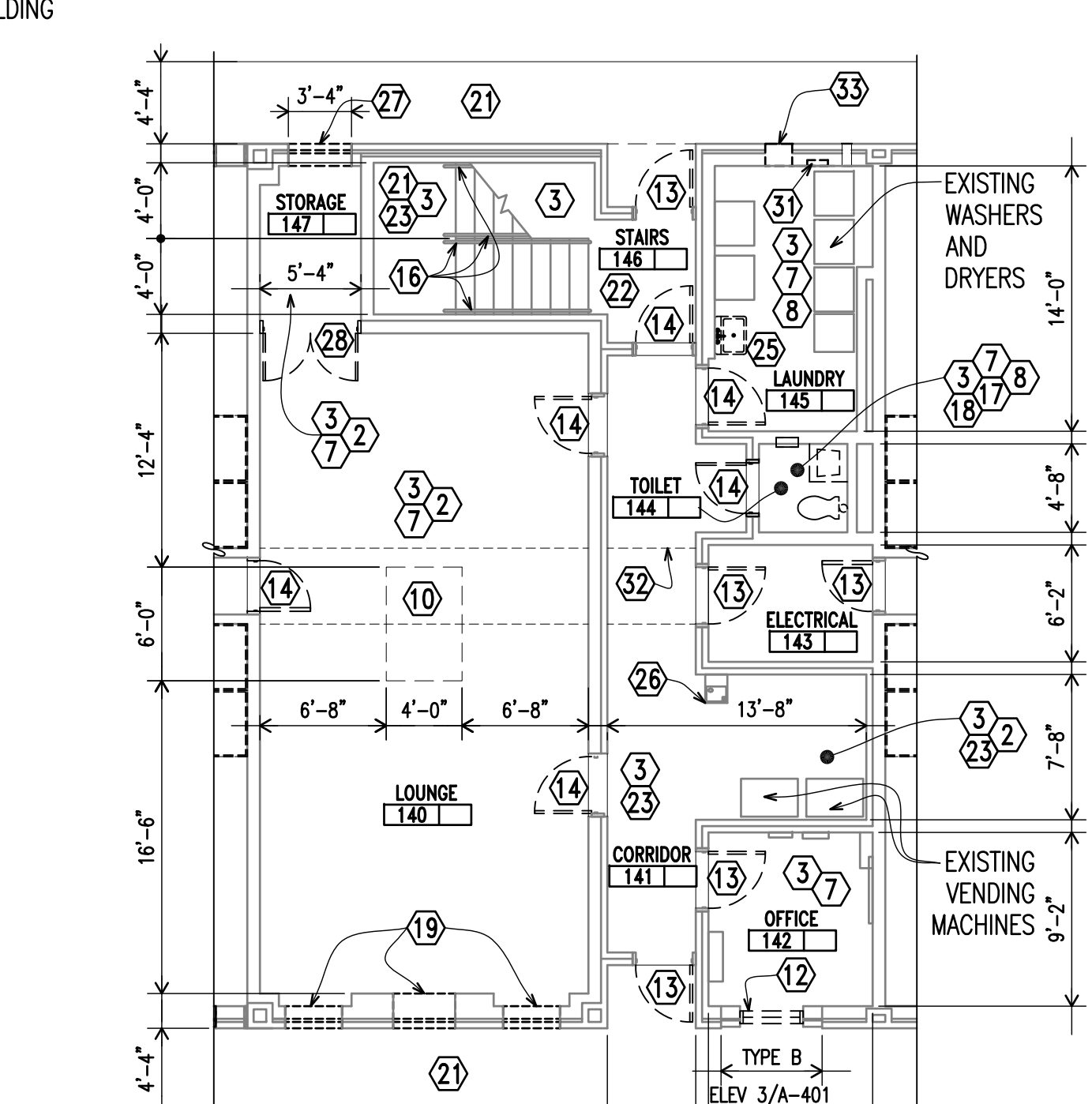
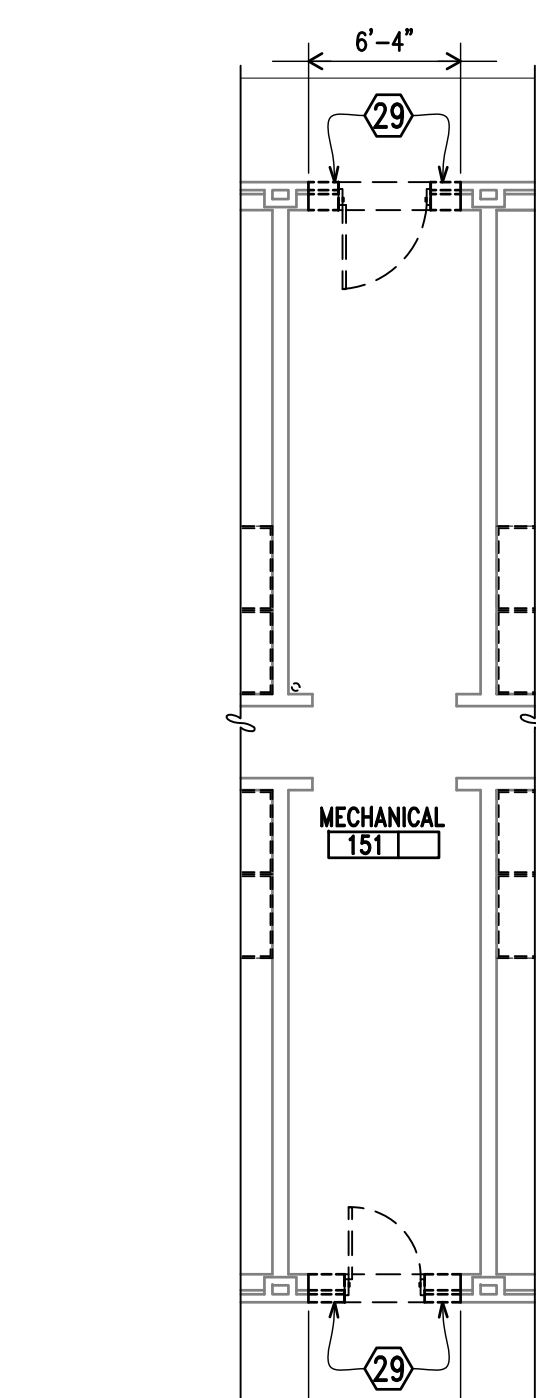
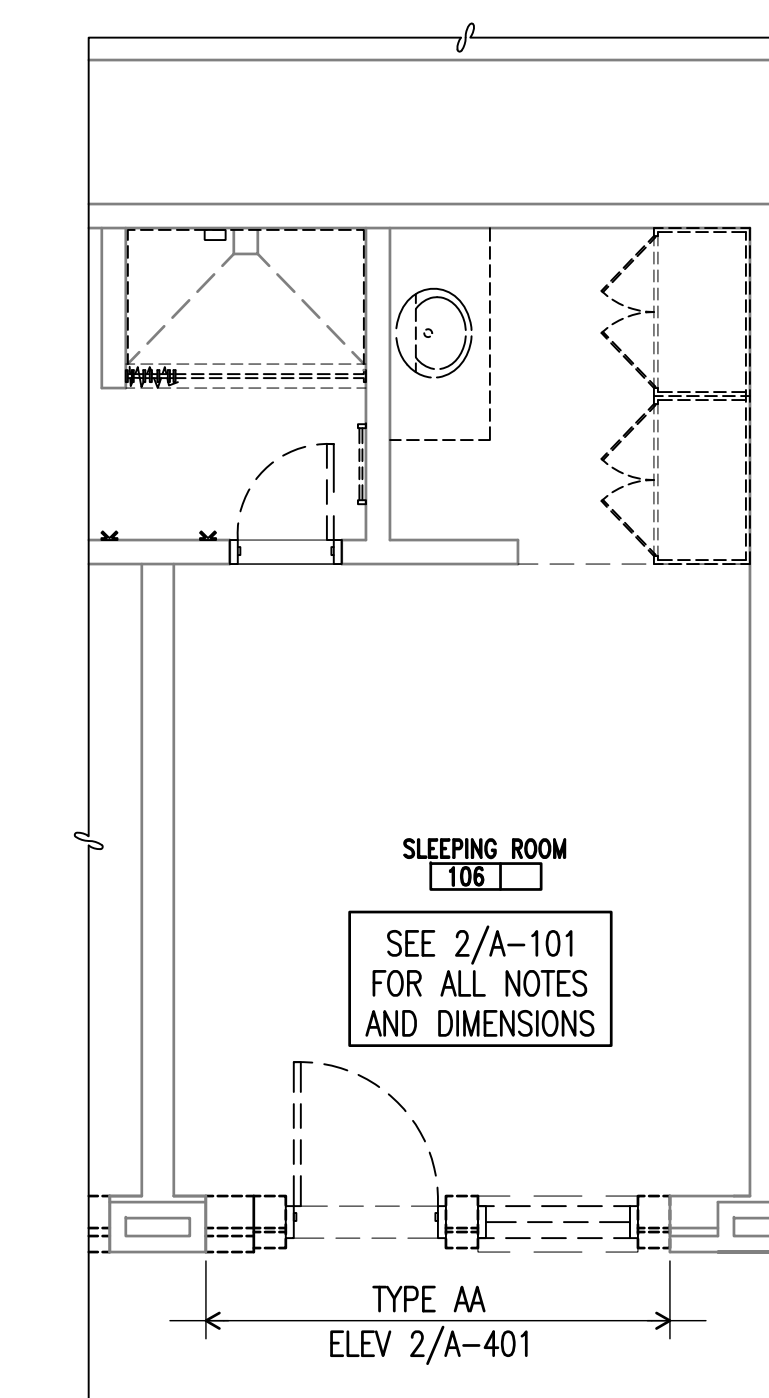
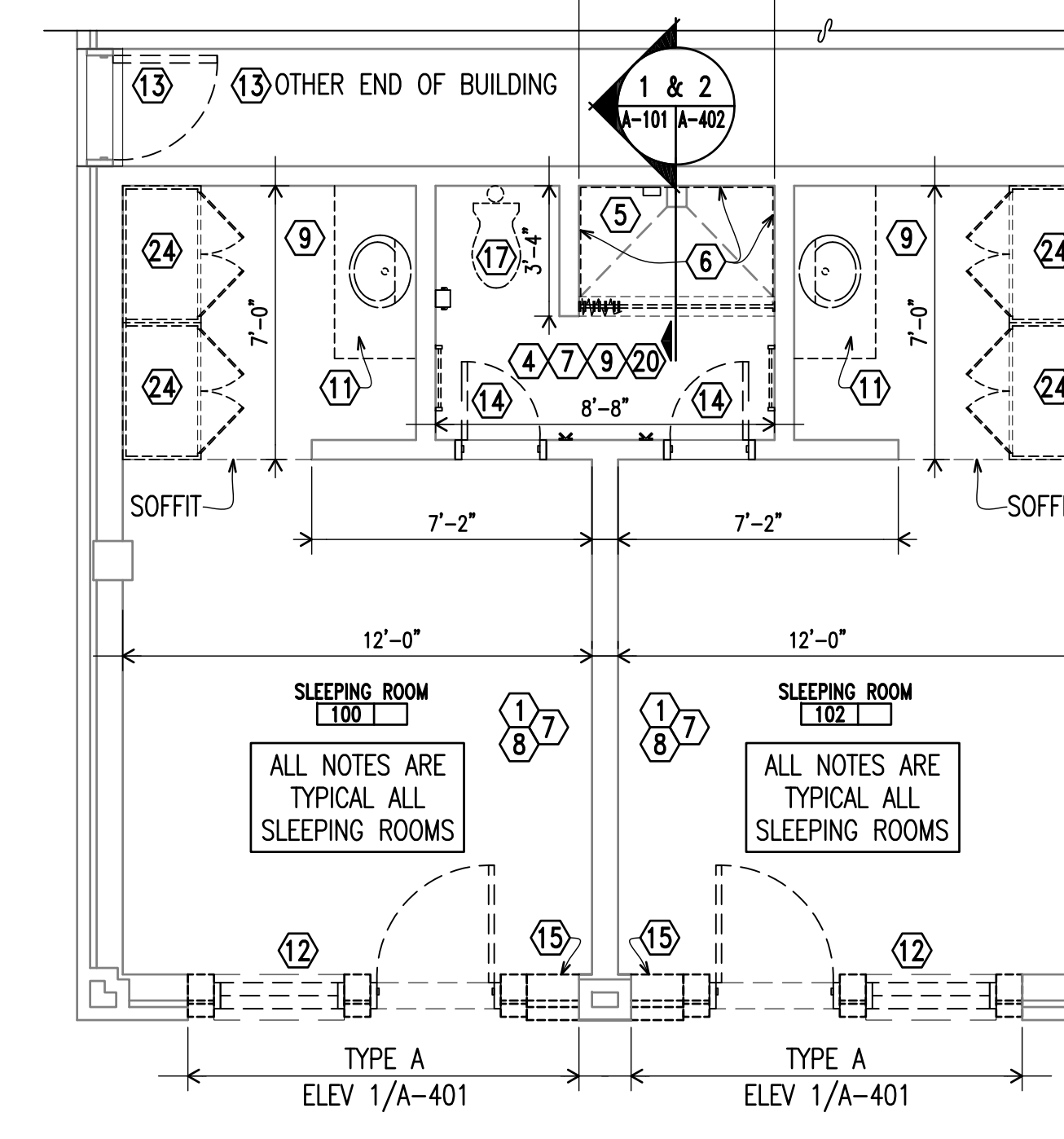
- SEE REFLECTED CEILING PLAN A-104 FOR AREAS TO RECEIVE NEW CEILING FINISHES, MATERIALS, HEIGHTS, ETC. SEE FINISH SCHEDULE SHEET A-601 FOR ALL MATERIAL AND COLOR SELECTIONS, AS PER FINISH DESIGNATIONS FOR EACH IDENTIFIED ROOM ON THE CONSTRUCTION PLAN. WHERE DOORS ARE INDICATED AS NUMBERED IN THE CONSTRUCTION PLAN, REFER TO THE DOOR SCHEDULE SHEET A-601 FOR NEW DOOR DESCRIPTIONS.
- THE CONTRACTOR SHALL PHOTOGRAPH, TAG, RECORD THE LOCATION OF, REMOVE FROM THE BUILDING, AND STORE EACH PIECE OF FURNITURE. THE CONTRACTOR SHALL PROVIDE AN ELECTRONIC COPY OF THE FURNITURE CONDITION PICTURES AND FURNITURE LOCATIONS TO THE GOVERNMENT ON CD. TYPICAL SLEEPING ROOM INCLUDES BUT IS NOT LIMITED TO: (1) METAL WARDROBES, (2) METAL RACKS, (3) MATTRESSES, (3) DESKS, (3) DESK CHAIRS, (3) NIGHT TABLES, AND (3) LAMPS. REFRIGERATOR, MICROWAVE, MIRRORS, RUGS, DRAPERIES, AND COMFORTERS. THE CONTRACTOR SHALL PROTECT EACH ITEM REMOVED FROM DAMAGE. THE CONTRACTOR SHALL PLACE ALL ITEMS REMOVED FROM THE BUILDING WITH EXCEPTION OF THE WARDROBES AND MIRRORS AND MATTRESSES, RUGS, DRAPERIES, AND COMFORTERS PRIOR TO PROJECT COMPLETION. CONTRACTOR SHALL DISPOSE OF ALL MATTRESSES AT A PERMITTED SOLID WASTE LANDFILL. CONTRACTOR WILL COORDINATE WITH BASE RECYCLING (452-4214) FOR TRANSPORTATION OF ALL AREA RUGS, DRAPERIES, AND COMFORTERS TO BLDG. 982 (PINEY GREEN ROAD) FOR RECYCLING. THE CONTRACTOR SHALL OFFER THE WARDROBES AND MIRRORS TO THE GOVERNMENT. IF THE GOVERNMENT REUSES THE WARDROBES AND MIRRORS, THE CONTRACTOR SHALL DISPOSE OF THE WARDROBES AND MIRRORS.
- WHERE DUCTWORK, PIPING, OR WIRING IS REMOVED, PATCH ALL HOLES IN WALLS AND CEILING WITH LIKE MATERIAL.

**GENERAL CONSTRUCTION NOTES**

- EXISTING DOOR FRAMES THAT ARE TO REMAIN ARE STEEL, WIRE BRUSH, CLEAN, AND PREPARE (BOTH SIDES) OF ALL FRAMES FOR NEW PAINT FINISHES. PAINT ALL DOOR FRAMES.
- DIMENSIONS ARE +/- VERY RARE DIMENSIONS.
- EXISTING INTERIOR WALLS ARE PAINTED CONCRETE MASONRY UNLESS NOTED OTHERWISE.
- 1 HOUR RATED WALL.
- 1/2 HOUR RATED WALL.

**KEYED DEMOLITION NOTES**

- REMOVE EXISTING RESILIENT TILE AND VINYL BASE. CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISHES.
- REMOVE EXISTING 2"x2" ACoustical CEILING AND SUSPENSION GRID INCLUDING BUT NOT LIMITED TO: ACoustical CEILING TILES, SUSPENSION SYSTEM, WIRES, HANGERS, ETC.
- REMOVE EXISTING VINYL BASE WHERE PRESENT - REMOVE AND GRIND SMOOTH EXISTING DECORATIVE CONCRETE COATING AND CLEAN AND PREPARE FOR NEW RESINOUS FLOOR FINISH WHERE INDICATED.
- REMOVE EXISTING THIN SET CERAMIC FLOOR TILE AND CERAMIC TILE WALL BASE. PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISH. REMOVE EXISTING MARBLE THRESHOLDS.
- REMOVE EXISTING CERAMIC FLOOR TILE, CEMENT MORTAR BED AND SHOWER PAN MEMBRANE. PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISH. SEE A-402 FOR DEMOLITION DETAILS.
- REMOVE EXISTING THIN SET CERAMIC WALL TILE. PREPARE EXISTING WALLS FOR NEW WALL FINISH.
- CLEAN AND PREPARE EXISTING PAINTED CONCRETE MASONRY WALLS FOR NEW PAINT FINISHES.
- CLEAN AND PREPARE EXISTING PAINTED (TEXTURED) PRECAST CONCRETE CHANNEL CEILING FOR NEW PAINT FINISHES.
- REMOVE EXISTING GYPSUM BOARD CEILING SOFFIT AND METAL FRAMING TO PERMIT INSTALLATION OF NEW MECHANICAL EQUIPMENT.
- REMOVE CONCRETE SLAB FOR INSTALLATION OF FLOOR DRAIN AND UNDER FLOOR WASTE PIPING.
- REMOVE EXISTING WOOD VANITY CABINET INCLUDING BUT NOT LIMITED TO: PORCELAIN SINK, PLUMBING TRIM, PLASTIC LAMINATE COUNTERTOP, AND WALL MOUNTED MIRROR ABOVE.
- REMOVE EXISTING INSET CONCRETE MASONRY AND BRICK MASONRY PANEL INCLUDING +/- 8"-8" HIGH: ALUMINUM WINDOW, BLIND, DRAPES, DOOR AND DOOR FRAME WHERE SHOWN. PREPARE REMAINING ROUGH OPENING FOR NEW WALL INSTALLATION.
- REMOVE EXISTING STEEL DOOR INCLUDING HINGES AND HARDWARE. SEE DOOR SCHEDULE ON SHEET A-601 FOR NEW DOOR REQUIREMENTS.
- REMOVE EXISTING STEEL DOOR FRAME AND DOOR AND PREPARE WALL FOR INSTALLATION OF NEW DOOR FRAME AND DOOR.
- REMOVE PORTION OF CONCRETE MASONRY AND BRICK MASONRY WALL +/- 8"-8" HIGH TO PERMIT CONSTRUCTION OF NEW ENTRY - TYPICAL.
- CLEAN EXISTING GALVANIZED STEEL GUARDRAIL, HANDRAIL, AND PICKETS.
- REMOVE EXISTING PLUMBING FIXTURES SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING WALL MOUNTED SINK. REMOVE TOILET ACCESSORIES INCLUDING 24" X 36" WALL MOUNTED MIRROR, SOAP DISPENSER, AND RECESSED PAPER TOWEL TRASH RECEPTACLE WHERE PRESENT.
- REMOVE PORTION OF CONCRETE MASONRY AND BRICK MASONRY TO PERMIT INSTALLATION OF NEW LOUVER. SEE MECHANICAL DRAWINGS FOR SIZES.
- REMOVE EXISTING TOILET ACCESSORIES INCLUDING BUT NOT LIMITED TO: TOILET TISSUE DISPENSER, SOAP DISPENSER, TOWEL BARS, ROBE HOOKS, SHOWER ROD AND SHOWER CURTAIN. (WHERE PRESENT)
- POWERWASH ALL EXISTING CONCRETE WALKING SURFACES ON ENTIRE BUILDING INCLUDING ALL STAIR RISERS AND TREADS, AND PREPARE FOR NEW RESINOUS CONCRETE COATING WHERE INDICATED.
- CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISHES.
- SCRUB AND RINSE ALL EXISTING INTERIOR BRICK MASONRY WITH BIODEGRADABLE CLEANER TO REMOVE BIOLOGICAL DEPOSITS AND DIRT.
- REMOVE EXISTING METAL WARDROBE LOCKERS +/- 3'-6" WIDE X +/- 7'-0" HIGH.
- REMOVE EXISTING LAUNDRY SINK. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING WALL MOUNTED DRINKING FOUNTAIN AND BOOTH WHERE PRESENT. PREPARE FOR INSTALLATION OF NEW DRINKING FOUNTAIN.

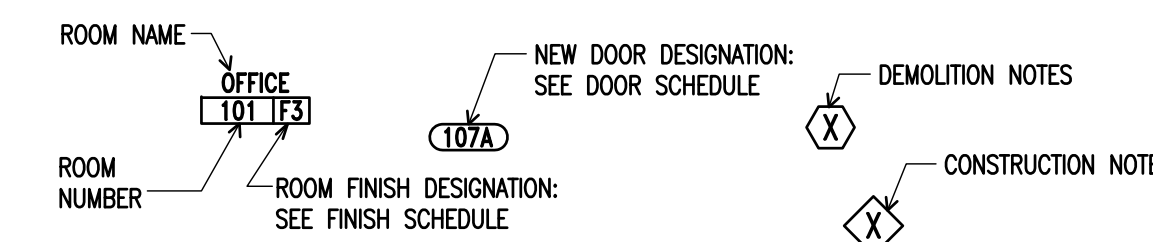


- REMOVE EXISTING BRICK AND CONCRETE MASONRY WALL TO CREATE A NEW FINISHED ROUGH OPENING TO ACCOMMODATE NEW DOOR AND FRAME +/- 8"-8" HIGH. REMOVE MASONRY TO 8" BELOW THE FINISHED FLOOR AND SEE SHEET A-602 FOR DETAILS. REMOVE ADDITIONAL MASONRY AT JAMBS TO PERMIT BONDING OF NEW MASONRY INTO EXISTING MASONRY.
- REMOVE EXISTING DOOR AND FRAME AND PREPARE OPENING FOR NEW CONCRETE MASONRY IN-FILL WALL.
- REMOVE EXISTING BRICK AND CONCRETE MASONRY WALL TO CREATE A NEW FINISHED ROUGH OPENING TO ACCOMMODATE NEW DOOR SILL AND FRAME +/- 8"-8" HIGH. REMOVE EXISTING +/- 8" CONCRETE SILL. REMOVE MASONRY TO 8" BELOW THE FINISHED FLOOR AND SEE 16/A-602 FOR DETAIL. REMOVE ADDITIONAL MASONRY AT JAMBS TO PERMIT BONDING OF NEW MASONRY INTO EXISTING MASONRY.
- PROVIDE OPENINGS IN MECHANICAL ROOM FLOORS FOR NEW VERTICAL DUCTWORK. SEE SHEETS MH-102 FOR MECHANICAL RISER. SEE 5/A-301 FOR FLOOR OPENING DETAIL.
- REMOVE PORTION OF EXISTING CONCRETE MASONRY WALL FOR INSTALLATION OF NEW SEMI-RECESSED FIRE EXTINGUISHER CABINET. REMOVE ALL EXISTING FIRE EXTINGUISHERS FROM BUILDING AND REPLACE WHERE INDICATED.
- REMOVE EXISTING METAL SOFFIT TO PERMIT RE-INSULATION OF EXISTING PIPING.
- REMOVE EXISTING METAL LOUVER AND REMOVE A PORTION OF EXISTING BRICK AND CONCRETE MASONRY WALL TO PERMIT INSTALLATION OF NEW LOUVER.

**KEYED CONSTRUCTION NOTES**

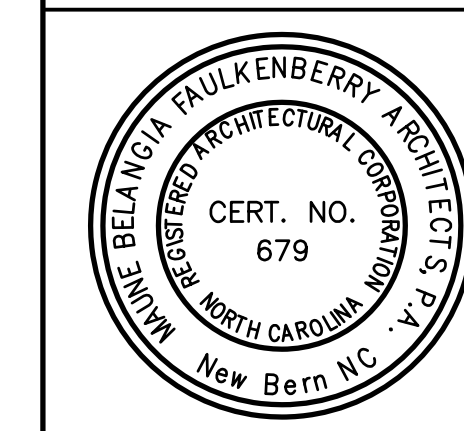
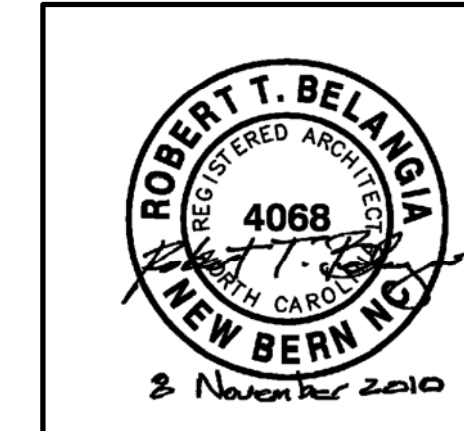
- PROVIDE NEW 4'-6" WIDE PLASTIC LAMINATE VANITY WITH PREMIUM SPECKLED COLOR SOLID SURFACE COUNTERTOP AND PORCELAIN DRAIN IN BOWL.
- PROVIDE 8" CONCRETE MASONRY +/- 8"-8" HIGH, INFILL WIDTH VARIES, SEE PLAN - PAINT WALL BOTH SIDES.
- SEE SHEET A-402 FOR CLOSET DETAILS AND ELEVATIONS.
- SEE SHEET A-402 FOR BATHROOM DETAILS AND ELEVATIONS.
- WASHERS AND DRYERS ARE NOT IN THE CONTRACT.
- PROVIDE CONCRETE MASONRY IN AREA WHERE RECESSED PAPER TOWEL DISPENSER WAS REMOVED.
- PROVIDE 3" X 3" X 1/2" GALVANIZED STEEL LINTEL MINIMUM BEARING 8" EACH SIDE FOR BRICK MASONRY OPENING, AND 8" BOND BEAM WITH (2) #4 BARS AND 3000 PSI PEA GRAVEL GROUT AT CONCRETE MECHANICAL OPENING. SEE MECHANICAL DRAWINGS FOR LOUVER SIZES.

FE1 - SEMI-RECESSED FIRE EXTINGUISHER CABINET & FIRE EXTINGUISHER  
FE2 - WALL MOUNTED FIRE EXTINGUISHER



**TOILET ACCESSORY SCHEDULE**

MARK	DESCRIPTION	QUANTITY
(RH)	DOUBLE ROBE HOOK	2
(TB)	TOWEL BAR: 24" (6) PER SLEEPING ROOM BATHROOM	6
(CS)	SOLID POLYMER CORNER SHELF (6) PER SLEEPING ROOM BATHROOM	6
(TID)	WALL MOUNTED TOILET TISSUE DISPENSER	2
(RSH)	CERAMIC TILE RECESSED SOAP HOLDER (2) PER SLEEPING ROOM BATHROOM	2
(SD)	SOAP DISPENSER	2
(SCR)	SHOWER ROD AND CURTAIN WITH HOOKS: WIDTH OF OPENING +/- 5'-4"	2
(MG1)	WALL MOUNTED MIRROR: 24" X 36"	2
(MG2)	WALL MOUNTED MIRROR: 36" X 36" - CENTERED	2
(MG3)	DOOR MOUNTED 17" X 60" MIRROR	2
(PTD)	SURFACE MOUNTED TOWEL DISPENSER	2



**A-101**

MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

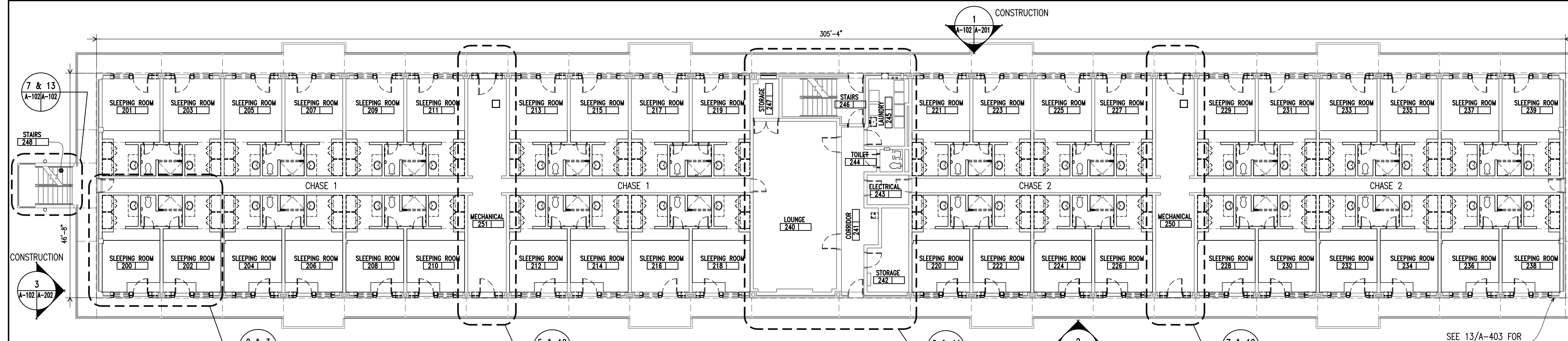
REPAIR BEQ BUILDING HP485

DES. RTB  
DR. SLA  
CHK. RTB  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE: \_\_\_\_\_  
SATISFACTORY TO: \_\_\_\_\_ DATE: \_\_\_\_\_

NAVFAC DRAWING NO. **60007144**

CONSTR. CONTR. NO. N40085-10-B-0070

SCALE: AS NOTED SPEC. 05-10-0070 SHEET 04 OF 65



**1 SECOND FLOOR PLAN**  
Scale: 3/32" = 1'-0"  
NORTH BUILDING

**GENERAL NOTES**

- SEE REFLECTED CEILING PLAN A-104 FOR AREAS TO RECEIVE NEW CEILING FINISHES, MATERIALS, HEIGHTS, ETC. SEE FINISH SCHEDULE SHEET A-601 FOR ALL MATERIAL AND COLOR SELECTIONS, AS PER FINISH DESIGNATIONS FOR EACH IDENTIFIED ROOM ON THE CONSTRUCTION PLAN. WHERE DOORS ARE INDICATED AS NUMBERED IN THE CONSTRUCTION PLAN, REFER TO THE DOOR SCHEDULE SHEET A-601 FOR NEW DOOR DESCRIPTIONS.
- THE CONTRACTOR SHALL PHOTOGRAPH, TAG, RECORD THE LOCATION OF, REMOVE FROM THE BUILDING, AND STORE EACH PIECE OF FURNITURE, THE CONTRACTOR SHALL PROVIDE AN ELECTRONIC COPY OF THE FURNITURE CONDITION PICTURES AND FURNITURE LOCATIONS TO THE GOVERNMENT ON CD. TYPICAL SLEEPING ROOM INCLUDES BUT IS NOT LIMITED TO: (1) METAL WARDROBES, (2) METAL RACKS, (3) MATTRESSES, (3) DESKS, (3) DESK CHAIRS, (3) NIGHT TABLES, AND (3) LAMPS, REFRIGERATOR, MICROWAVE, (2) MIRRORS, RUGS, DRAPERIES, AND COMFORTERS. THE CONTRACTOR SHALL PROTECT EACH ITEM REMOVED FROM DAMAGE. THE CONTRACTOR SHALL PLACE ALL ITEMS REMOVED BACK IN THE BUILDING WITH EXCEPTION OF THE WARDROBES AND MIRRORS AND MATTRESSES, RUGS, DRAPERIES, AND COMFORTERS PRIOR TO PROJECT COMPLETION. CONTRACTOR SHALL DISPOSE OF ALL MATTRESSES AT A PERMITTED SOLID WASTE LANDFILL. CONTRACTOR WILL COORDINATE WITH BASE RECYCLING (452-4214) FOR TRANSPORTATION OF ALL AREA RUGS, DRAPERIES, AND COMFORTERS TO BLUE-GO (GREEN ROAD) FOR RECYCLING. THE CONTRACTOR SHALL OBTAIN THE WARDROBES AND MIRRORS TO THE GOVERNMENT. IF THE GOVERNMENT REFUSES THE WARDROBES AND MIRRORS, THE CONTRACTOR SHALL DISPOSE OF THE WARDROBES AND MIRRORS.
- WHERE DUCTWORK, PIPING, OR WIRING IS REMOVED, PATCH ALL HOLES IN WALLS AND CEILING WITH LIKE MATERIAL.

**GENERAL CONSTRUCTION NOTES**

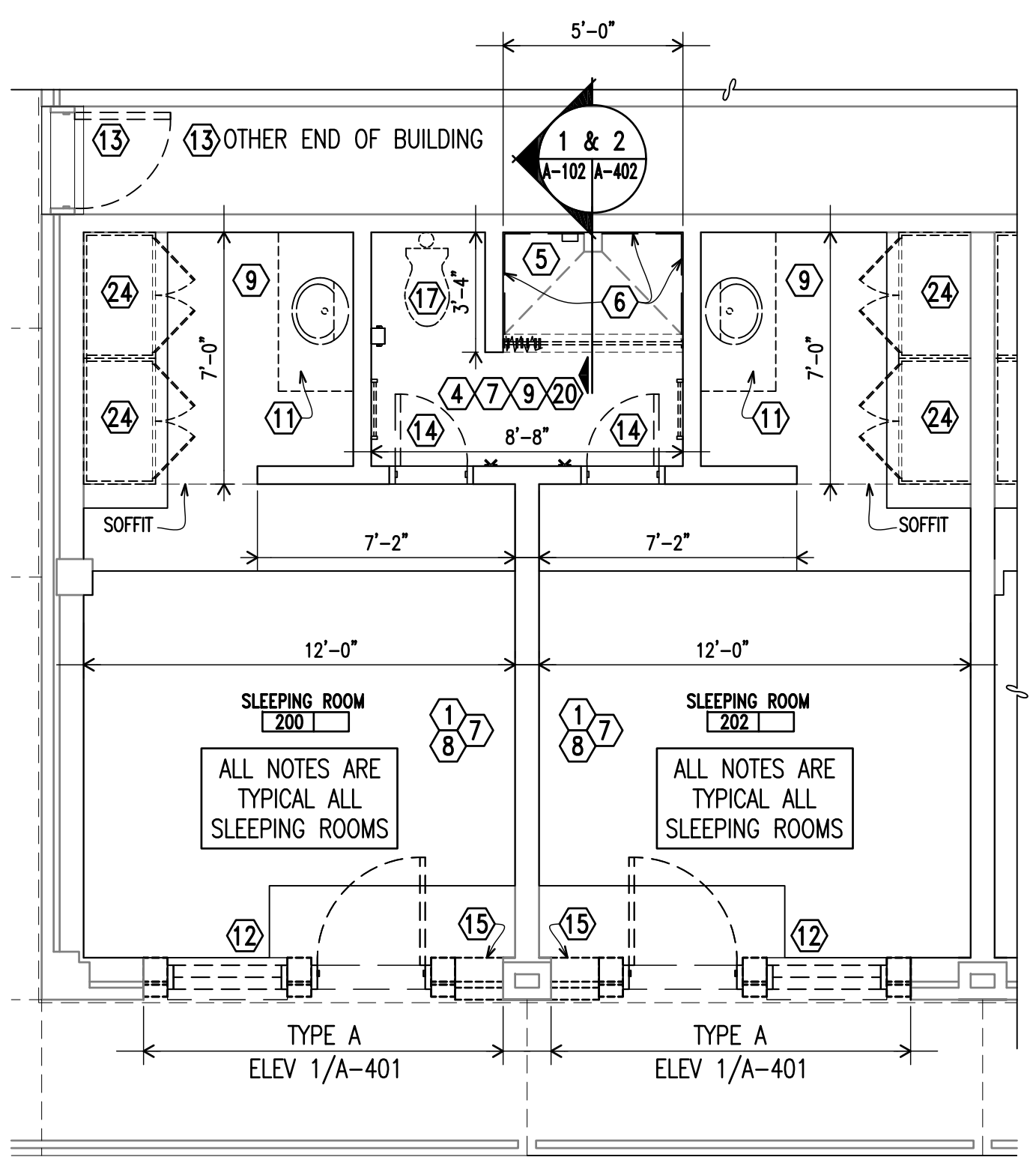
- EXISTING DOOR FRAMES THAT ARE TO REMAIN ARE STEEL, WIRE BRUSH, CLEAN, AND PREPARE (BOTH SIDES) OF ALL FRAMES FOR NEW PAINT FINISHES. PAINT ALL DOOR FRAMES.
- DIMENSIONS ARE +/- VERIFY ALL DIMENSIONS.
- EXISTING INTERIOR WALLS ARE PAINTED CONCRETE MASONRY UNLESS NOTED OTHERWISE
- 1 HOUR RATED WALL
- 1/2 HOUR RATED WALL

**KEYED DEMOLITION NOTES**

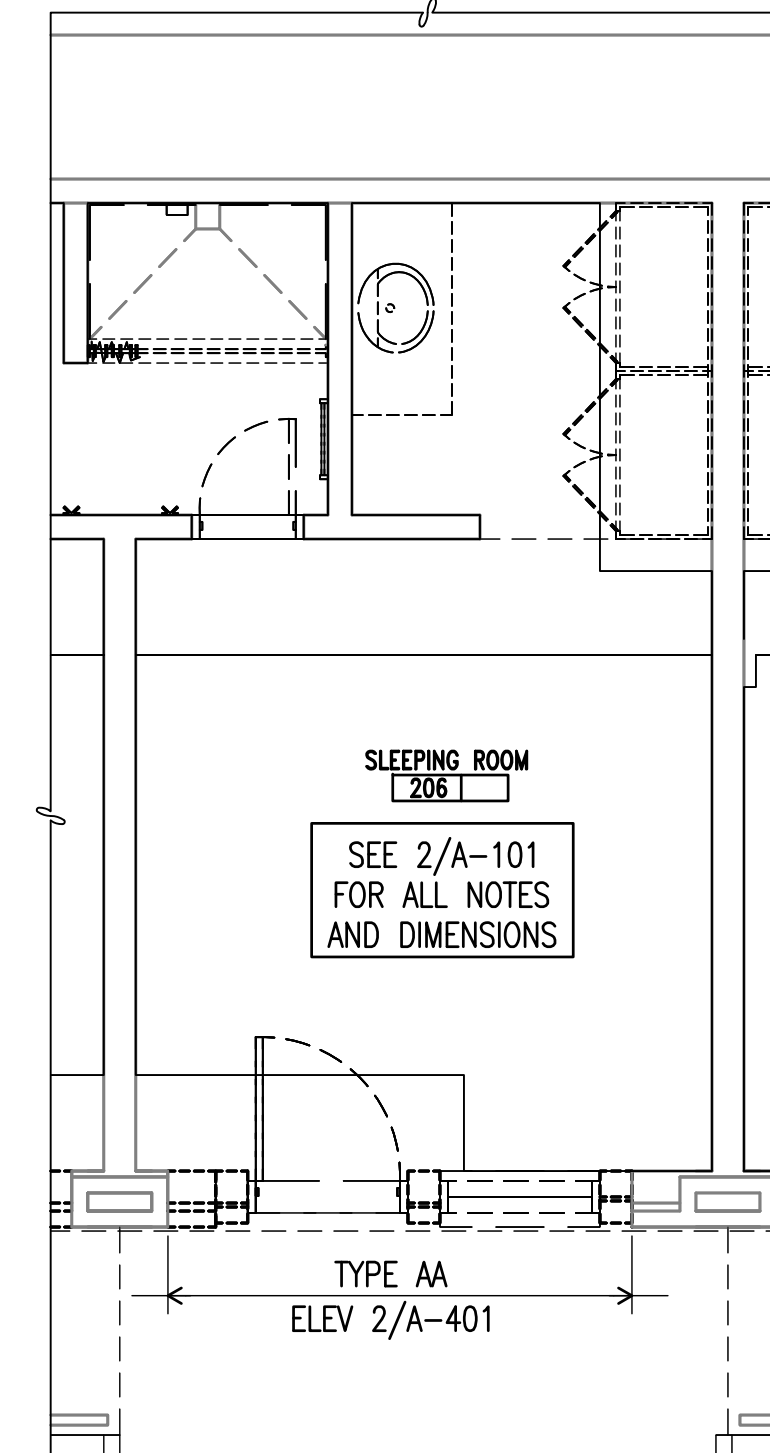
- REMOVE EXISTING RESILIENT TILE AND VINYL BASE. CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISHES.
- REMOVE EXISTING 2"x2" ACoustICAL CEILING AND SUSPENSION SYSTEM INCLUDING BUT NOT LIMITED TO: ACoustICAL CEILING TILES, SUSPENSION SYSTEM, WIRES, HANGERS, ETC.
- REMOVE EXISTING VINYL BASE WHERE PRESENT - REMOVE AND GRIND SMOOTH EXISTING DECORATIVE CONCRETE COATING AND CLEAN AND PREPARE FOR NEW RESINOUS FLOOR FINISH WHERE INDICATED.
- REMOVE EXISTING THIN SET CERAMIC FLOOR TILE AND CERAMIC TILE WALL BASE. PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISH. REMOVE EXISTING MARBLE THRESHOLDS.
- REMOVE EXISTING CERAMIC FLOOR TILE, CEMENT MORTAR BED AND SHOWER PAN MEMBRANE. PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISH. SEE A-402 FOR DEMOLITION DETAILS.
- REMOVE EXISTING THIN SET CERAMIC WALL TILE. PREPARE EXISTING WALLS FOR NEW WALL FINISH.
- CLEAN AND PREPARE EXISTING PAINTED CONCRETE MASONRY WALLS FOR NEW PAINT FINISHES.
- CLEAN AND PREPARE EXISTING PAINTED (TEXTURED) PRECAST CONCRETE CHANNEL CEILING FOR NEW PAINT FINISHES.
- REMOVE EXISTING GYPSUM BOARD CEILING SOFFIT AND METAL FRAMING TO PERMIT INSTALLATION OF NEW MECHANICAL EQUIPMENT.
- REMOVE CONCRETE SLAB FOR INSTALLATION OF FLOOR DRAIN AND UNDER FLOOR WASTE PIPING.
- REMOVE EXISTING WOOD VANITY CABINET INCLUDING BUT NOT LIMITED TO PORCELAIN SINK, PLUMBING TRIM, PLASTIC LAMINATE COUNTERTOP, AND WALL MOUNTED MIRROR ABOVE.
- REMOVE EXISTING INSET CONCRETE MASONRY AND BRICK MASONRY PANEL INCLUDING ±8'-8" HIGH: ALUMINUM WINDOW, BLIND, DRAPES, DOOR AND DOOR FRAME WHERE SHOWN. PREPARE REMAINING ROUGH OPENING FOR NEW WALL INSTALLATION.
- REMOVE EXISTING STEEL DOOR INCLUDING HINGES AND HARDWARE. SEE DOOR SCHEDULE ON SHEET A-601 FOR NEW DOOR REQUIREMENTS.
- REMOVE EXISTING STEEL DOOR FRAME AND DOOR AND PREPARE WALL FOR INSTALLATION OF NEW DOOR FRAME AND DOOR.
- REMOVE PORTION OF CONCRETE MASONRY AND BRICK MASONRY WALL ±8'-8" HIGH TO PERMIT CONSTRUCTION OF NEW ENTRY - TYPICAL.
- CLEAN EXISTING GALVANIZED STEEL GUARDRAIL, HANDRAIL, AND PICKETS.
- REMOVE EXISTING PLUMBING FIXTURES SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING WALL MOUNTED SINK. REMOVE TOILET ACCESSORIES INCLUDING 24" X 36" WALL MOUNTED MIRROR, SOAP DISPENSER, AND RECESSED PAPER TOWEL TRASH RECEPTACLE WHERE PRESENT.
- REMOVE PORTION OF CONCRETE MASONRY AND BRICK MASONRY TO PERMIT INSTALLATION OF NEW LOUVER. SEE MECHANICAL DRAWINGS FOR SIZES.
- REMOVE EXISTING TOILET ACCESSORIES INCLUDING BUT NOT LIMITED TO: TOILET TISSUE DISPENSER, SOAP DISPENSER, TOWEL BARS, ROBE HOOKS, SHOWER ROD AND SHOWER CURTAIN (WHERE PRESENT)
- POWERWASH ALL EXISTING CONCRETE WALKING SURFACES ON ENTIRE BUILDING INCLUDING ALL STAIR RISERS AND TREADS, AND PREPARE FOR NEW RESINOUS CONCRETE COATING WHERE INDICATED. (NOT USED SHEET A-101)
- CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISHES.
- SCRUB AND RINSE ALL EXISTING INTERIOR BRICK MASONRY WITH BIODEGRADABLE CLEANER TO REMOVE BIOLOGICAL DEPOSITS AND DIRT.
- REMOVE EXISTING METAL WARDROBE LOCKERS ±3'-6" WIDE X ±7'-0" HIGH.
- REMOVE EXISTING LAUNDRY SINK. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING WALL MOUNTED DRINKING FOUNTAIN AND BOOTH WHERE PRESENT. PREPARE FOR INSTALLATION OF NEW DRINKING FOUNTAIN.
- REMOVE EXISTING BRICK AND CONCRETE MASONRY WALL TO CREATE A NEW FINISHED ROUGH OPENING TO ACCOMMODATE NEW DOOR AND FRAME ±8'-8" HIGH. REMOVE MASONRY TO 8" BELOW THE FINISHED FLOOR AND SEE SHEET A-602 FOR DETAILS. REMOVE ADDITIONAL MASONRY AT JAMBS TO PERMIT BONDING OF NEW MASONRY INTO EXISTING MASONRY.
- REMOVE EXISTING DOOR AND FRAME AND PREPARE OPENING FOR NEW CONCRETE MASONRY IN-FILL WALL.
- REMOVE EXISTING BRICK AND CONCRETE MASONRY WALL TO CREATE A NEW FINISHED ROUGH OPENING TO ACCOMMODATE NEW DOOR SILL AND FRAME ±8'-8" HIGH. REMOVE EXISTING 3"± CONCRETE SILL. REMOVE MASONRY TO 8" BELOW THE FINISHED FLOOR AND SEE 16/A-602 FOR DETAIL. REMOVE ADDITIONAL MASONRY AT JAMBS TO PERMIT BONDING OF NEW MASONRY INTO EXISTING MASONRY.
- PROVIDE OPENINGS IN MECHANICAL ROOM FLOORS FOR NEW VERTICAL DUCTWORK. SEE SHEETS MH-102 FOR MECHANICAL RISER. SEE 5/A-301 FOR FLOOR OPENING DETAIL.
- REMOVE PORTION OF EXISTING CONCRETE MASONRY WALL FOR INSTALLATION OF NEW SEMI-RECESSED FIRE EXTINGUISHER CABINET. REMOVE ALL EXISTING FIRE EXTINGUISHERS FROM BUILDING AND REPLACE WHERE INDICATED.
- REMOVE EXISTING METAL SOFFIT TO PERMIT RE-INSULATION OF EXISTING PIPING.
- REMOVE EXISTING METAL LOUVER AND REMOVE A PORTION OF EXISTING BRICK AND CONCRETE MASONRY WALL TO PERMIT INSTALLATION OF NEW LOUVER.

**KEYED CONSTRUCTION NOTES**

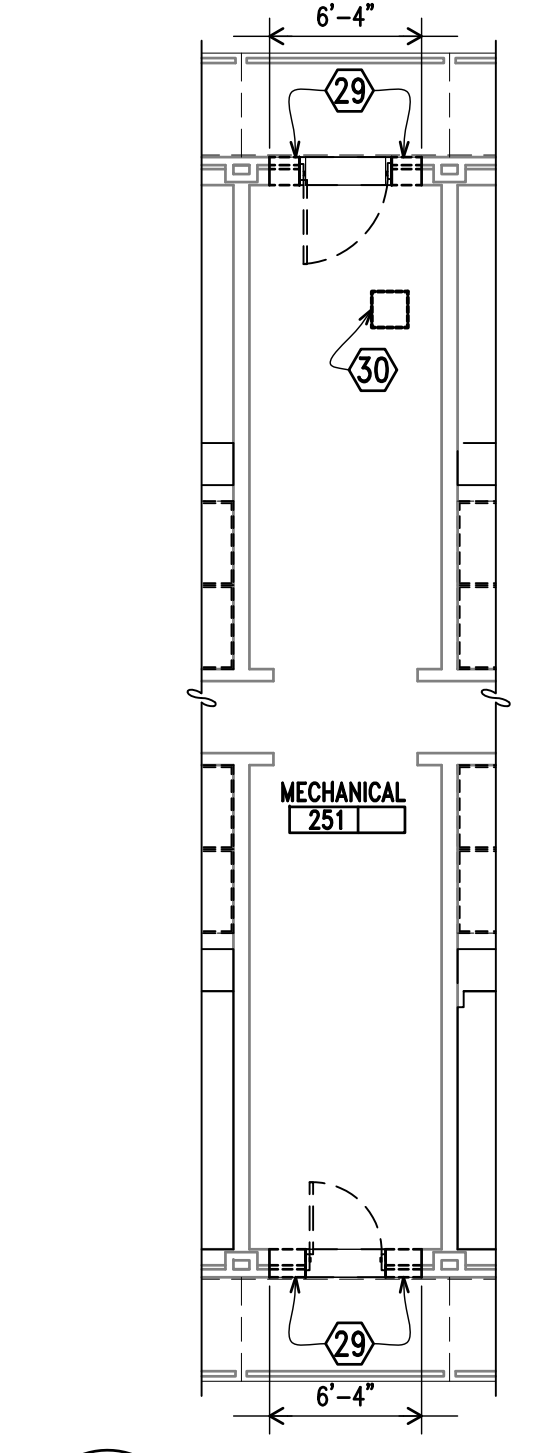
- PROVIDE NEW 4'-6" WIDE PLASTIC LAMINATE VANITY WITH PREMIUM SPECKLED COLOR SOLID SURFACE COUNTERTOP AND PORCELAIN DRAIN IN BOWL.
- PROVIDE 8" CONCRETE MASONRY ±6'-8" HIGH, INFILL WIDTH VARIES, SEE PLAN - PAINT WALL BOTH SIDES.
- SEE SHEET A-402 FOR CLOSET DETAILS AND ELEVATIONS.
- SEE SHEET A-402 FOR BATHROOM DETAILS AND ELEVATIONS.
- WASHERS AND DRYERS ARE NOT IN THE CONTRACT.
- PROVIDE CONCRETE MASONRY IN AREA WHERE RECESSED PAPER TOWEL DISPENSER WAS REMOVED.
- PROVIDE 3" X 3" X 1/2" GALVANIZED STEEL LITTLE MINIMUM BEARING 8" EACH SIDE FOR BRICK MASONRY OPENING, AND 8" BOND BEAM WITH (2) #4 BARS AND 3000 PSI PEA GRAVEL GROUT AT CONCRETE MASONRY OPENING. SEE MECHANICAL DRAWINGS FOR LOUVER SIZES.



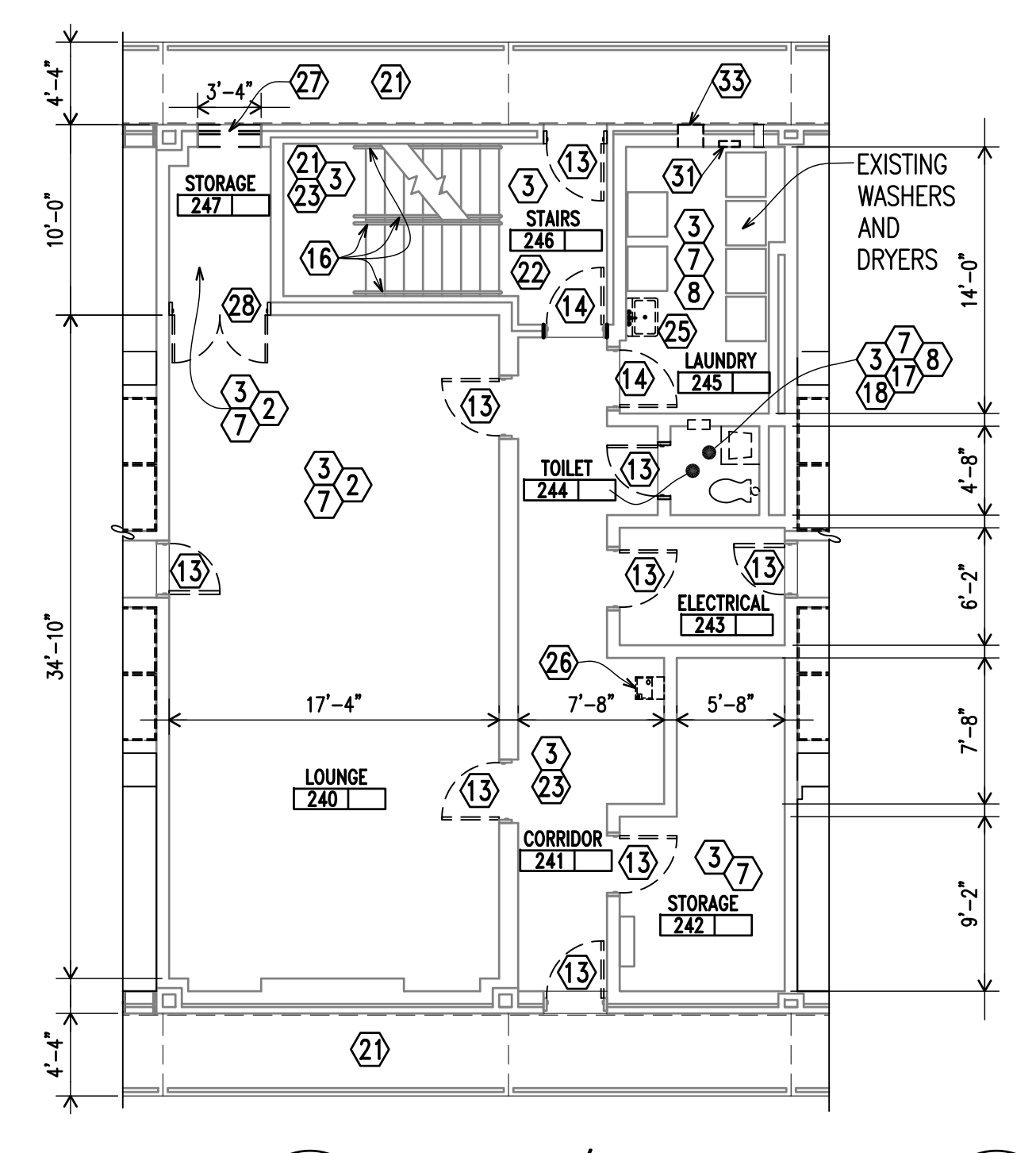
**2 SLEEPING ROOM**  
A-102A-102 DEMOLITION Scale: 1/4" = 1'-0"



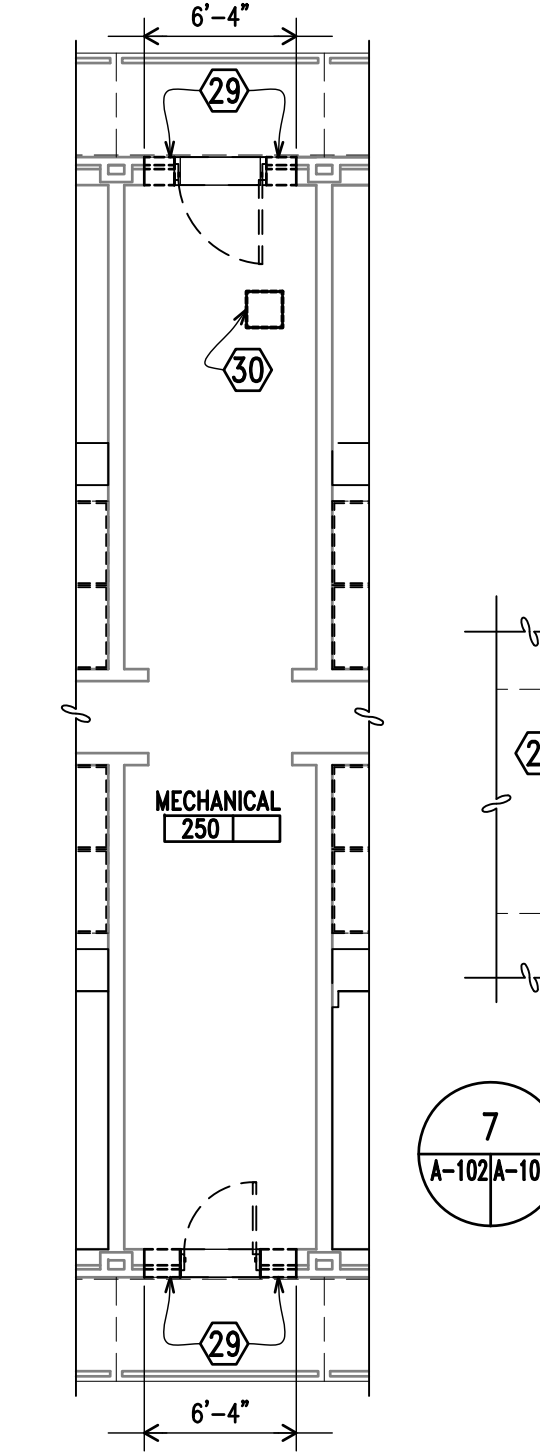
**3 SLEEPING ROOM**  
A-102A-102 DEMOLITION Scale: 1/4" = 1'-0"



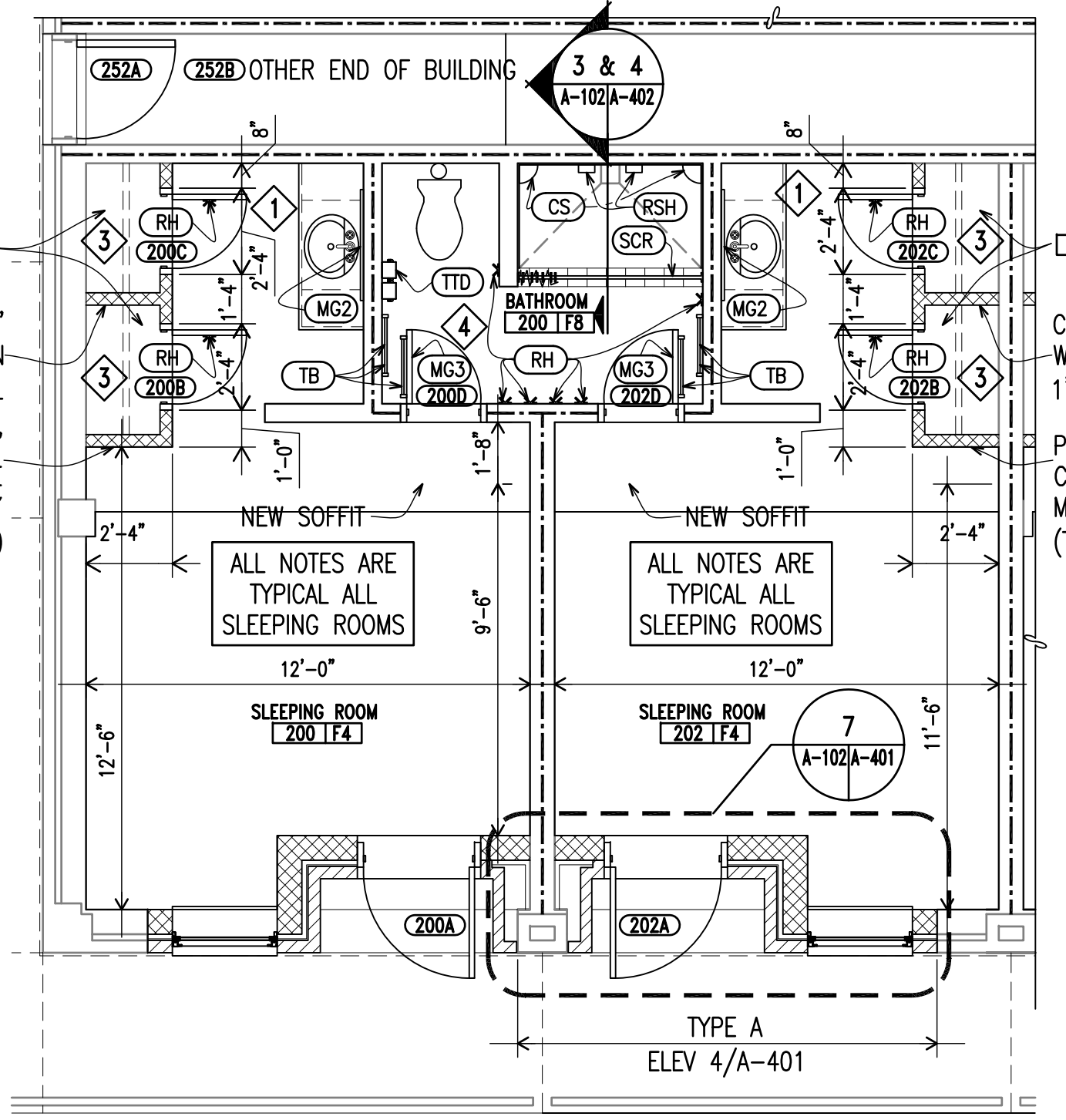
**4 MECHANICAL ROOM**  
A-102A-102 DEMOLITION Scale: 1/8" = 1'-0"



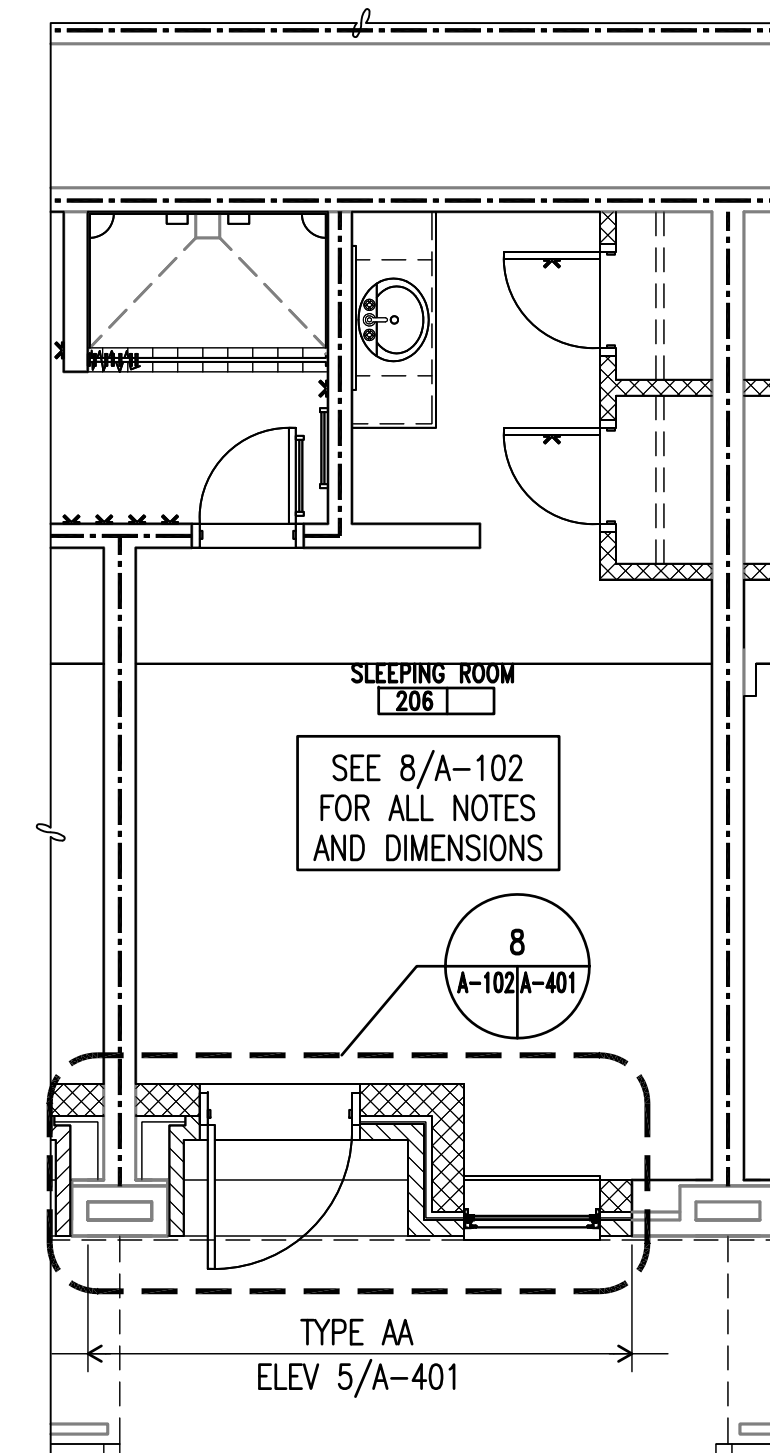
**5 LOUNGE/LAUNDRY**  
A-102A-102 DEMOLITION Scale: 1/8" = 1'-0"



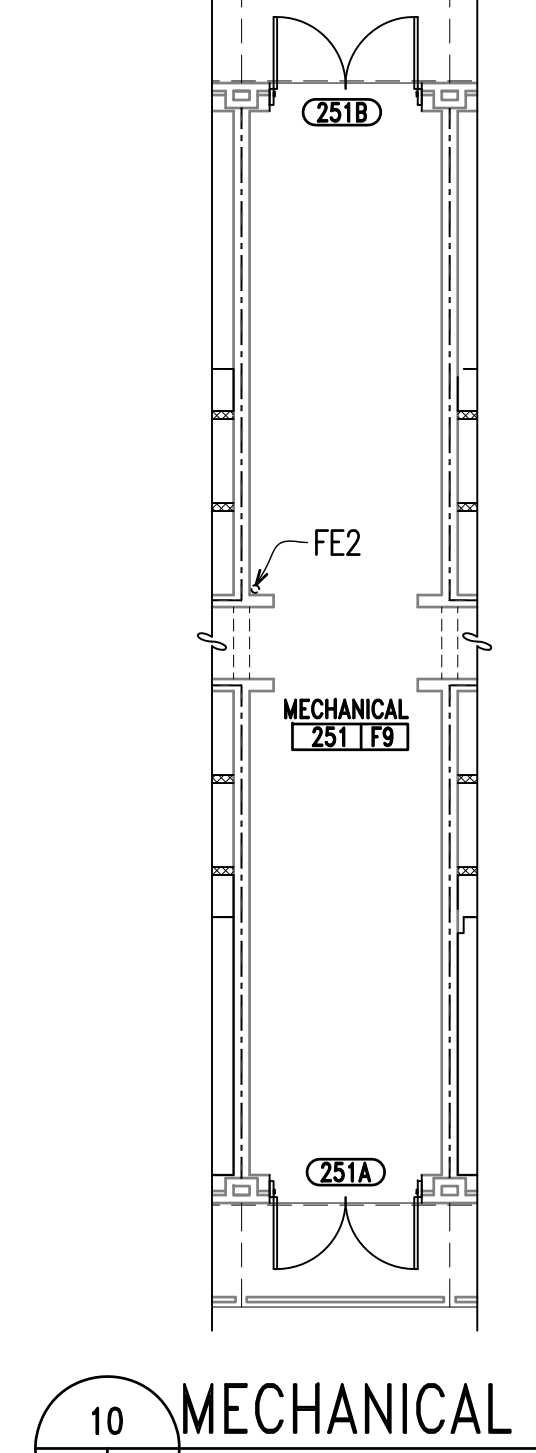
**6 MECHANICAL ROOM**  
A-102A-102 DEMOLITION Scale: 1/8" = 1'-0"



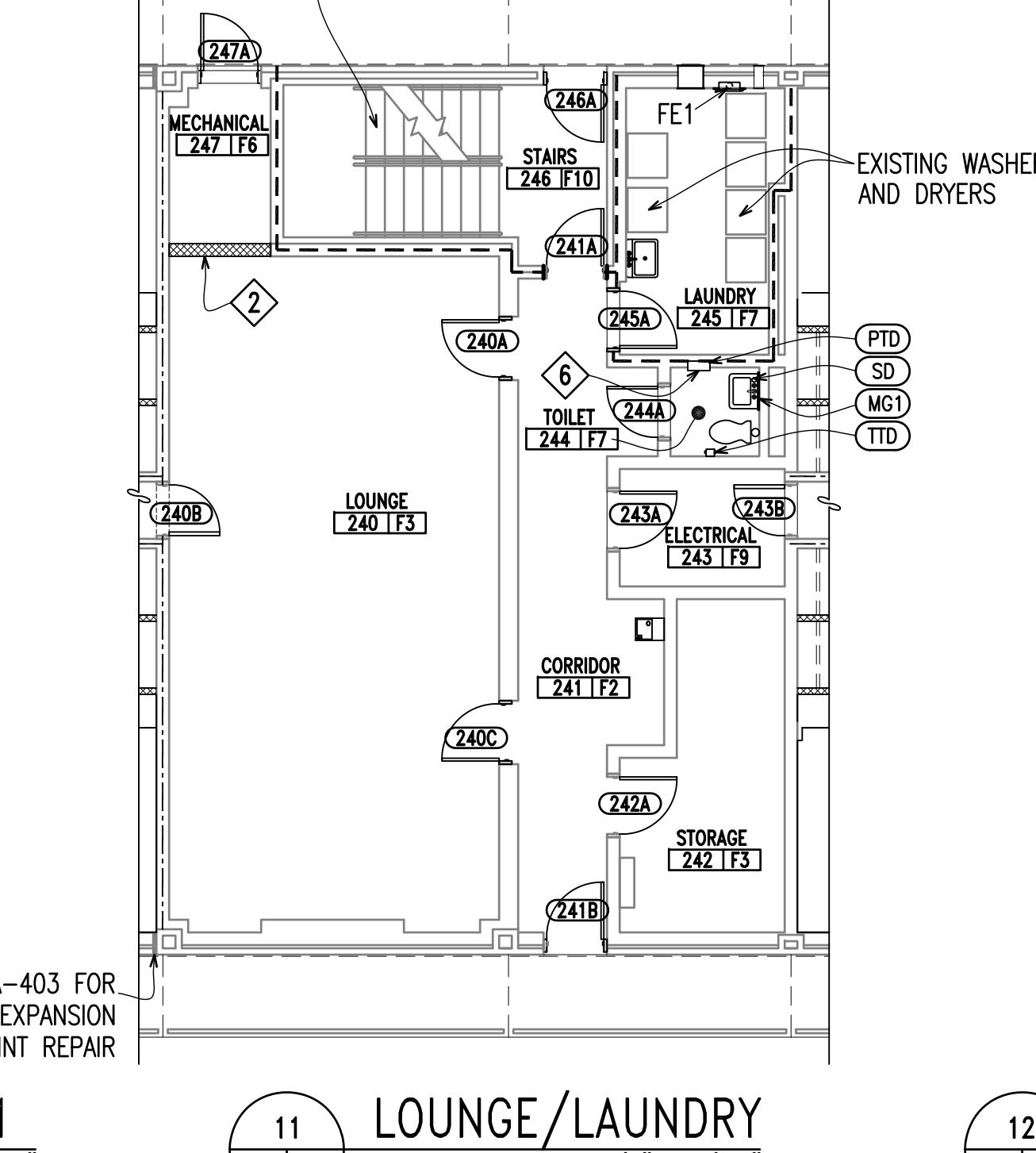
**8 SLEEPING ROOM**  
A-102A-102 CONSTRUCTION Scale: 1/4" = 1'-0"



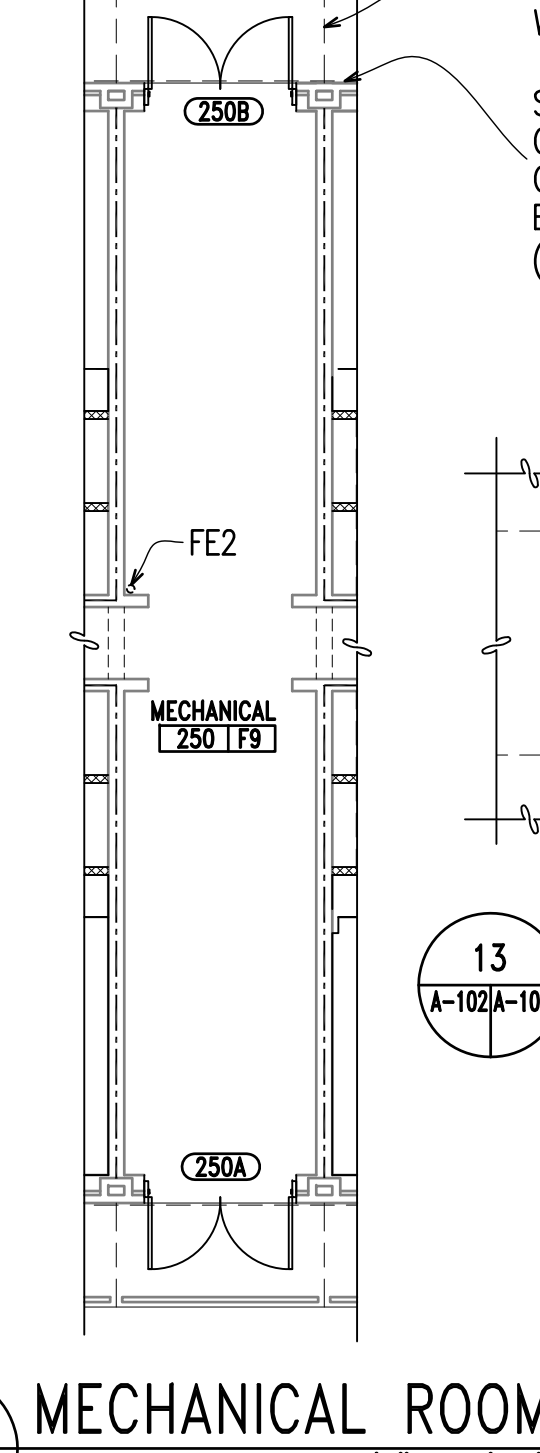
**9 SLEEPING ROOM**  
A-102A-102 CONSTRUCTION Scale: 1/4" = 1'-0"



**10 MECHANICAL ROOM**  
A-102A-102 CONSTRUCTION Scale: 1/8" = 1'-0"



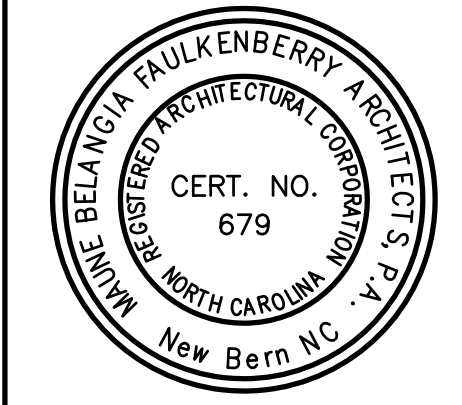
**11 LOUNGE/LAUNDRY**  
A-102A-102 CONSTRUCTION Scale: 1/8" = 1'-0"



**12 MECHANICAL ROOM**  
A-102A-102 CONSTRUCTION Scale: 1/8" = 1'-0"

**TOILET ACCESSORY SCHEDULE**

MARK	DESCRIPTION	(RH)	DOUBLE ROBE HOOK
(CS)	SOLID POLYMER CORNER SHELF (6) PER SLEEPING ROOM BATHROOM	(TB)	TOWEL BAR: 24" (6) PER SLEEPING ROOM BATHROOM
(TID)	WALL MOUNTED TOILET TISSUE DISPENSER	(MG1)	WALL MOUNTED MIRROR: 24" X 36"
(RSH)	CERAMIC TILE RECESSED SOAP HOLDER (2) PER SLEEPING ROOM BATHROOM	(MG2)	WALL MOUNTED MIRROR: 36" X 36" - CENTERED
(SD)	SOAP DISPENSER	(MG3)	DOOR MOUNTED 17" X 60" MIRROR
(SCR)	SHOWER ROD AND CURTAIN WITH HOOKS: WIDTH OF OPENING +/- 5'-4"	(PTD)	SURFACE MOUNTED TOWEL DISPENSER



**A-102**

MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ  
BUILDING HP485

DES. RTB  
DR. SLA  
CHK. RTB  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO.  
SATISFACTORY TO: DATE F 80091 60007145  
SCALE: AS NOTED SPEC. 05-10-0070 SHEET 05 OF 65

FE1 - SEMI-RECESSED FIRE EXTINGUISHER CABINET & FIRE EXTINGUISHER  
FE2 - WALL MOUNTED FIRE EXTINGUISHER

ROOM NAME: OFFICE 101 TFS  
ROOM NUMBER: 101A  
NEW DOOR DESIGNATION: SEE DOOR SCHEDULE  
DEMOLITION NOTES: (X)  
CONSTRUCTION NOTES: (X)

### GENERAL NOTES

- SEE REFLECTED CEILING PLAN A-104 FOR AREAS TO RECEIVE NEW CEILING FINISHES, MATERIALS, HEIGHTS, ETC. SEE FINISH SCHEDULE SHEET A-601 FOR ALL MATERIAL AND COLOR SELECTIONS, AS PER FINISH DESIGNATIONS FOR EACH IDENTIFIED ROOM ON THE CONSTRUCTION PLAN. WHERE DOORS ARE INDICATED AS NUMBERED IN THE CONSTRUCTION PLAN, REFER TO THE DOOR SCHEDULE SHEET A-601 FOR NEW DOOR DESCRIPTIONS.
- THE CONTRACTOR SHALL PHOTOGRAPH, TAG, RECORD THE LOCATION OF, REMOVE FROM THE BUILDING, AND STORE EACH PIECE OF FURNITURE. THE CONTRACTOR SHALL PROVIDE AN ELECTRONIC COPY OF THE FURNITURE CONDITION PICTURES AND FURNITURE LOCATIONS TO THE GOVERNMENT ON CD. TYPICAL SLEEPING ROOM INCLUDES BUT IS NOT LIMITED TO: (1) METAL WARDROBES, (2) METAL RACKS, (3) MATTRESSES, (3) DESKS, (3) DESK CHAIRS, (3) NIGHT TABLES, AND (3) LAMPS. REFRIGERATOR, MICROWAVE, (2) MIRRORS, RUGS, DRAPES, AND COMFORTERS. THE CONTRACTOR SHALL PROTECT EACH ITEM REMOVED FROM DAMAGE. THE CONTRACTOR SHALL PLACE ALL ITEMS REMOVED BACK IN THE BUILDING WITH EXCEPTION OF THE WARDROBES AND MIRRORS AND MATTRESSES, RUGS, DRAPES, AND COMFORTERS PRIOR TO PROJECT COMPLETION. CONTRACTOR SHALL DISPOSE OF ALL MATTRESSES WITH BASE PERMITTED SOLID WASTE LANDFILL. CONTRACTOR WILL COORDINATE WITH BASE RECYCLING (452-4214) FOR TRANSPORTATION OF ALL AREA RUGS, DRAPES, AND COMFORTERS TO BLDG. 8B2 (PINEY GREEN ROAD) FOR RECYCLING. THE CONTRACTOR SHALL OFFER THE WARDROBES AND MIRRORS TO THE GOVERNMENT. IF THE GOVERNMENT REUSES THE WARDROBES AND MIRRORS, THE CONTRACTOR SHALL DISPOSE OF THE WARDROBES AND MIRRORS.
- WHERE DUCTWORK, PIPING, OR WIRING IS REMOVED, PATCH ALL HOLES IN WALLS AND CEILING WITH LIKE MATERIAL.

### GENERAL CONSTRUCTION NOTES

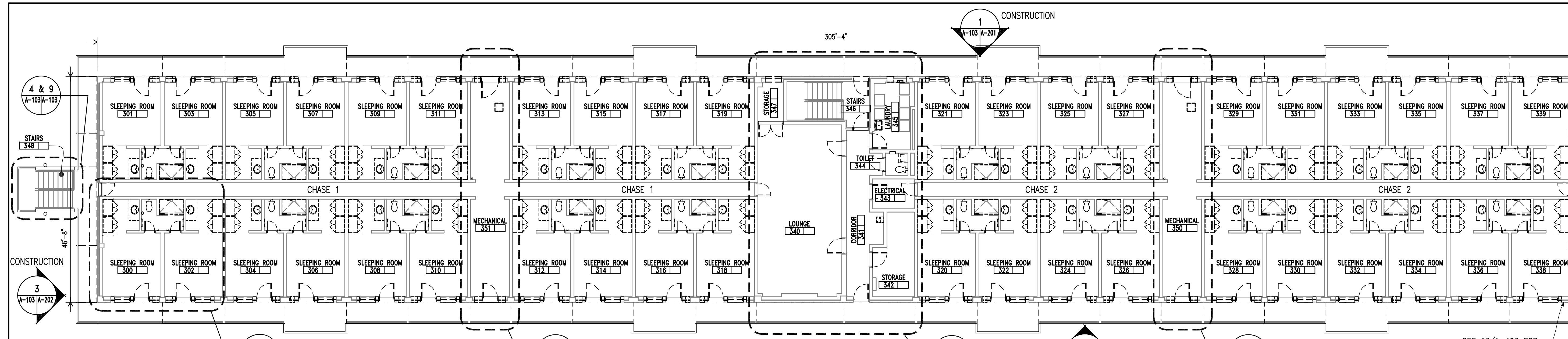
- EXISTING DOOR FRAMES THAT ARE TO REMAIN ARE STEEL, WIRE BRUSH, CLEAN, AND PREPARE (BOTH SIDES) OF ALL FRAMES FOR NEW PAINT FINISHES. PAINT ALL DOOR FRAMES.
- DIMENSIONS ARE +/- VERIFY ALL DIMENSIONS.
- EXISTING INTERIOR WALLS ARE PAINTED CONCRETE MASONRY UNLESS NOTED OTHERWISE.
- 1 HOUR RATED WALL.
- 1/2 HOUR RATED WALL.

### KEYED DEMOLITION NOTES

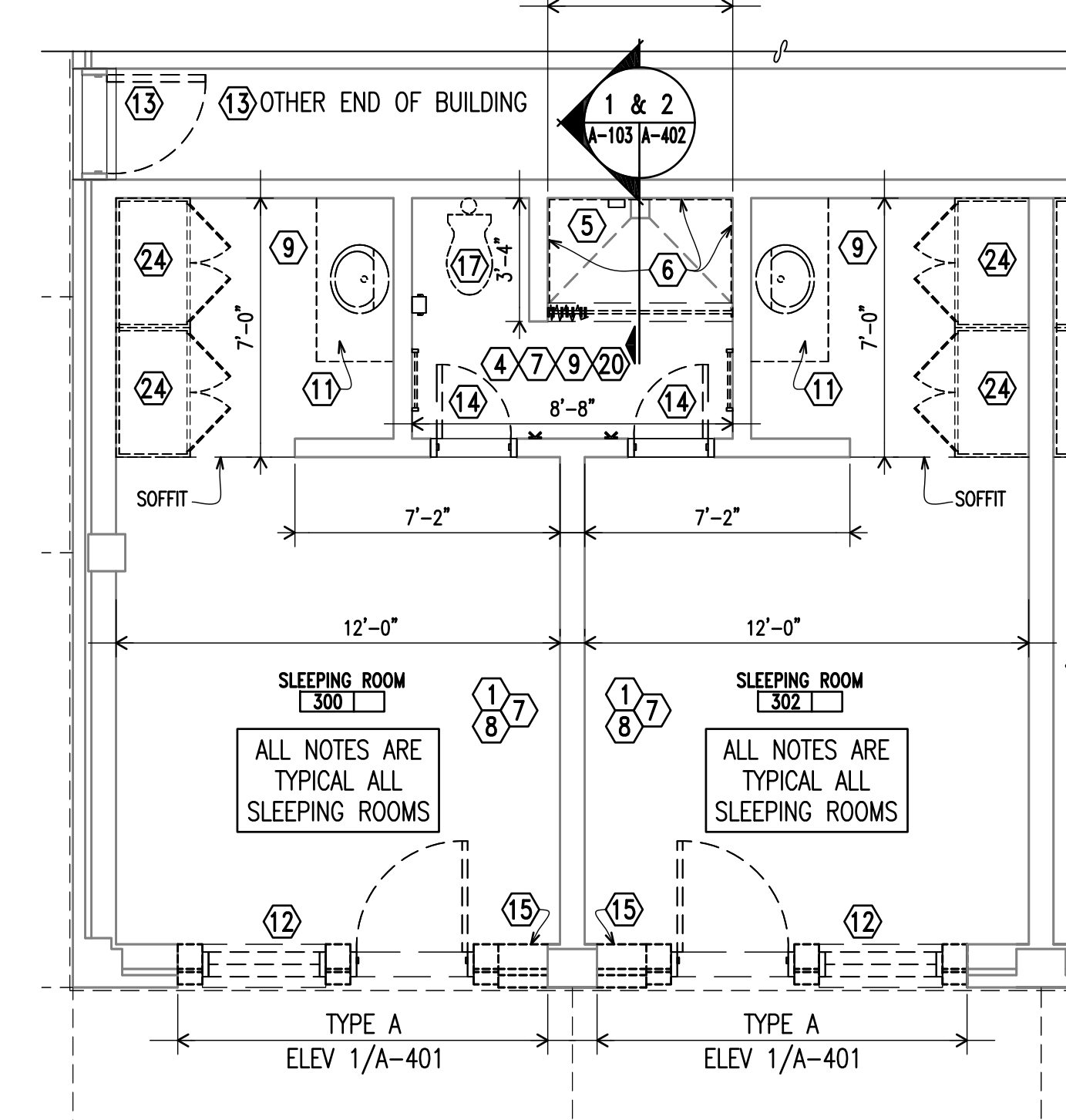
- REMOVE EXISTING RESILIENT TILE AND VINYL BASE. CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISHES.
- REMOVE EXISTING 2"x2" ACOUSTICAL CEILING AND SUSPENSION GRID INCLUDING BUT NOT LIMITED TO: ACOUSTICAL CEILING TILES, SUSPENSION SYSTEM, WIRES, HANGERS, ETC.
- REMOVE EXISTING VINYL BASE WHERE PRESENT - REMOVE AND GRIND SMOOTH EXISTING DECORATIVE CONCRETE COATING AND CLEAN AND PREPARE FOR NEW RESINOUS FLOOR FINISH WHERE INDICATED.
- REMOVE EXISTING THIN SET CERAMIC FLOOR TILE AND CERAMIC TILE WALL BASE. PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISH. REMOVE EXISTING MARBLE THRESHOLDS.
- REMOVE EXISTING CERAMIC FLOOR TILE, CEMENT MORTAR BED AND SHOWER PAN MEMBRANE. PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISH. SEE A-402 FOR DEMOLITION DETAILS.
- REMOVE EXISTING THIN SET CERAMIC WALL TILE. PREPARE EXISTING WALLS FOR NEW WALL FINISH.
- CLEAN AND PREPARE EXISTING PAINTED CONCRETE MASONRY WALLS FOR NEW PAINT FINISHES.
- CLEAN AND PREPARE EXISTING PAINTED (TEXTURED) PRECAST CONCRETE CHANNEL CEILING FOR NEW PAINT FINISHES.
- REMOVE EXISTING GYPSUM BOARD CEILING SOFFIT AND METAL FRAMING TO PERMIT INSTALLATION OF NEW MECHANICAL EQUIPMENT.
- REMOVE CONCRETE SLAB FOR INSTALLATION OF FLOOR DRAIN AND UNDER FLOOR WASTE PIPING.
- REMOVE EXISTING WOOD VANITY CABINET INCLUDING BUT NOT LIMITED TO: PORCELAIN SINK, PLUMBING TRIM, PLASTIC LAMINATE COUNTERTOP, AND WALL MOUNTED MIRROR ABOVE.
- REMOVE EXISTING INSET CONCRETE MASONRY AND BRICK MASONRY PANEL INCLUDING +/- 8"-8" HIGH: ALUMINUM WINDOW, BLIND, DRAPES, DOOR AND DOOR FRAME WHERE SHOWN. PREPARE REMAINING ROUGH OPENING FOR NEW WALL INSTALLATION.
- REMOVE EXISTING STEEL DOOR INCLUDING HINGES AND HARDWARE. SEE DOOR SCHEDULE ON SHEET A-601 FOR NEW DOOR REQUIREMENTS.
- REMOVE EXISTING STEEL DOOR FRAME AND DOOR AND PREPARE WALL FOR INSTALLATION OF NEW DOOR FRAME AND DOOR.
- REMOVE PORTION OF CONCRETE MASONRY AND BRICK MASONRY WALL +/- 8"-8" HIGH TO PERMIT CONSTRUCTION OF NEW ENTRY - TYPICAL.
- CLEAN EXISTING GALVANIZED STEEL GUARDRAIL, HANDRAIL, AND PICKETS.
- REMOVE EXISTING PLUMBING FIXTURES SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING WALL MOUNTED SINK. REMOVE TOILET ACCESSORIES INCLUDING 24" X 36" WALL MOUNTED MIRROR, SOAP DISPENSER, AND RECESSED PAPER TOWEL TRASH RECEPTACLE WHERE PRESENT.
- REMOVE PORTION OF CONCRETE MASONRY AND BRICK MASONRY TO PERMIT INSTALLATION OF NEW LOUVER. SEE MECHANICAL DRAWINGS FOR SIZES.
- REMOVE EXISTING TOILET ACCESSORIES INCLUDING BUT NOT LIMITED TO: TOILET TISSUE DISPENSER, SOAP DISPENSER, TOWEL BARS, ROBE HOOKS, SHOWER ROD AND SHOWER CURTAIN. (WHERE PRESENT)
- POWERWASH ALL EXISTING CONCRETE WALKING SURFACES ON ENTIRE BUILDING INCLUDING ALL STAIR RISERS AND TREADS, AND PREPARE FOR NEW RESINOUS CONCRETE COATING WHERE INDICATED.
- CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FLOOR FINISHES.
- SCRUB AND RINSE ALL EXISTING INTERIOR BRICK MASONRY WITH BIODEGRADABLE CLEANER TO REMOVE BIOLOGICAL DEPOSITS AND DIRT.
- REMOVE EXISTING METAL WARDROBE LOCKERS +/- 3'-6" WIDE X +/- 7'-0" HIGH.
- REMOVE EXISTING LAUNDRY SINK. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING WALL MOUNTED DRINKING FOUNTAIN AND BOOTH WHERE PRESENT. PREPARE FOR INSTALLATION OF NEW DRINKING FOUNTAIN.
- REMOVE EXISTING BRICK AND CONCRETE MASONRY WALL TO CREATE A NEW FINISHED ROUGH OPENING TO ACCOMMODATE NEW DOOR AND FRAME +/- 8"-8". REMOVE MASONRY TO 8" BELOW THE FINISHED FLOOR AND SEE SHEET A-602 FOR DETAILS. REMOVE ADDITIONAL MASONRY AT JAMBS TO PERMIT BONDING OF NEW MASONRY INTO EXISTING MASONRY.
- REMOVE EXISTING DOOR AND FRAME AND PREPARE OPENING FOR NEW CONCRETE MASONRY IN-FILL WALL.
- REMOVE EXISTING BRICK AND CONCRETE MASONRY WALL TO CREATE A NEW FINISHED ROUGH OPENING TO ACCOMMODATE NEW DOOR SILL AND FRAME +/- 8"-8". REMOVE EXISTING +/- 8" CONCRETE SILL REMOVE MASONRY TO 8" BELOW THE FINISHED FLOOR AND SEE 16/A-602 FOR DETAIL. REMOVE ADDITIONAL MASONRY AT JAMBS TO PERMIT BONDING OF NEW MASONRY INTO EXISTING MASONRY.
- PROVIDE OPENINGS IN MECHANICAL ROOM FLOORS FOR NEW VERTICAL DUCTWORK. SEE SHEETS MH-102 FOR MECHANICAL RISER. SEE 5/A-301 FOR FLOOR OPENING DETAIL.
- REMOVE PORTION OF EXISTING CONCRETE MASONRY WALL FOR INSTALLATION OF NEW SEMI-RECESSED FIRE EXTINGUISHER CABINET. REMOVE ALL EXISTING FIRE EXTINGUISHERS FROM BUILDING AND REPLACE WHERE INDICATED.
- REMOVE EXISTING METAL SOFFIT TO PERMIT RE-INSULATION OF EXISTING PIPING.
- REMOVE EXISTING METAL LOUVER AND REMOVE A PORTION OF EXISTING BRICK AND CONCRETE MASONRY WALL TO PERMIT INSTALLATION OF NEW LOUVER.

### KEYED CONSTRUCTION NOTES

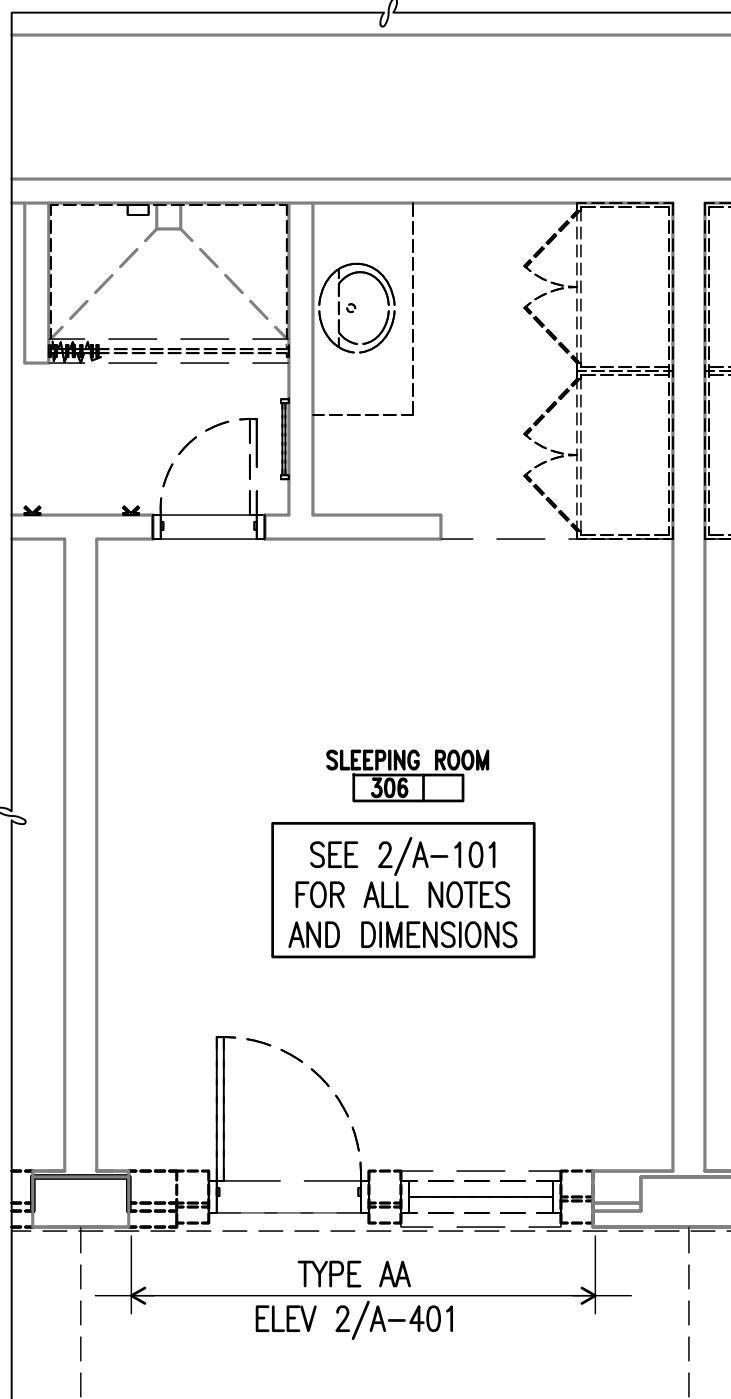
- PROVIDE NEW 4'-6" WIDE PLASTIC LAMINATE VANITY WITH PREMIUM SPECKLED COLOR SOLID SURFACE COUNTERTOP AND PORCELAIN DRIP IN BOWL.
- PROVIDE 6" CONCRETE MASONRY +/- 8"-8" HIGH, INFILL WIDTH VARIES, SEE PLAN - PAINT WALL BOTH SIDES.
- SEE SHEET A-402 FOR CLOSET DETAILS AND ELEVATIONS.
- SEE SHEET A-402 FOR BATHROOM DETAILS AND ELEVATIONS.
- WASHERS AND DRYERS ARE NOT IN THE CONTRACT.
- PROVIDE CONCRETE MASONRY IN AREA WHERE RECESSED PAPER TOWEL DISPENSER WAS REMOVED.
- PROVIDE 3" X 3" X 1/2" GALVANIZED STEEL LITEL MINIMUM BEARING 8" EACH SIDE FOR BRICK MASONRY OPENING, AND 8" BOND BEAM WITH (2) #4 BARS AND 3000 PSI GRAVEL GROUT AT CONCRETE MASONRY OPENING. SEE MECHANICAL DRAWINGS FOR LOUVER SIZES.



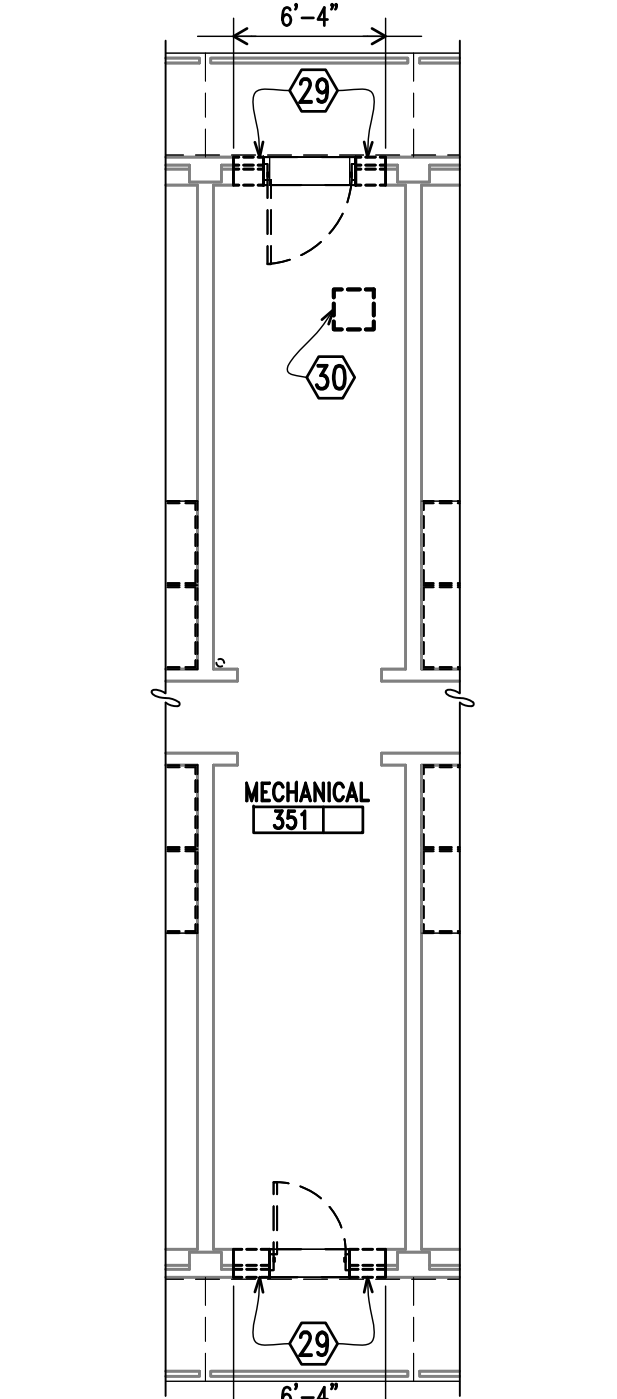
**1 THIRD FLOOR PLAN DEMOLITION**  
Scale: 3/32" = 1'-0"  
NORTH BUILDING



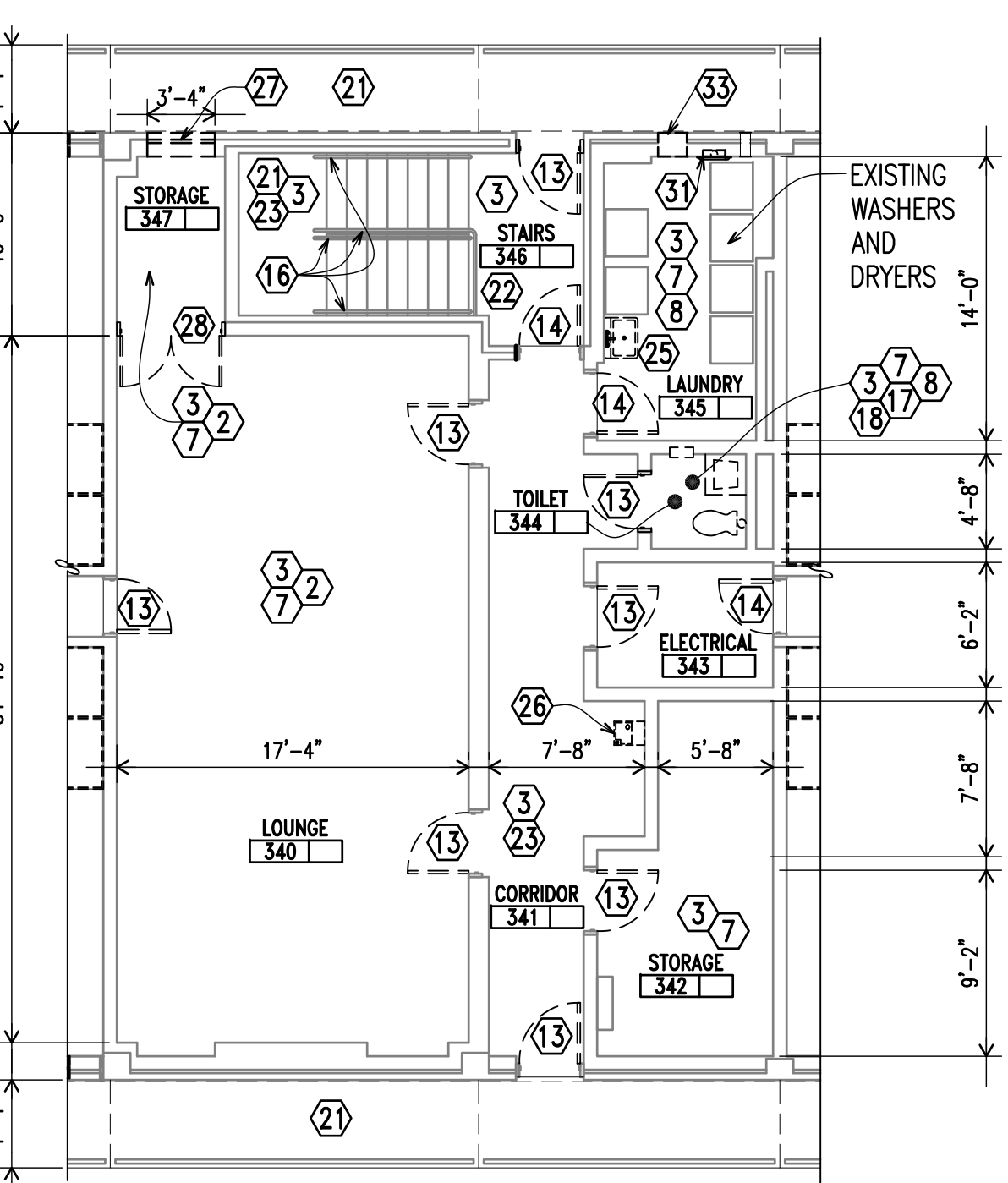
**2 SLEEPING ROOM DEMOLITION**  
Scale: 1/4" = 1'-0"



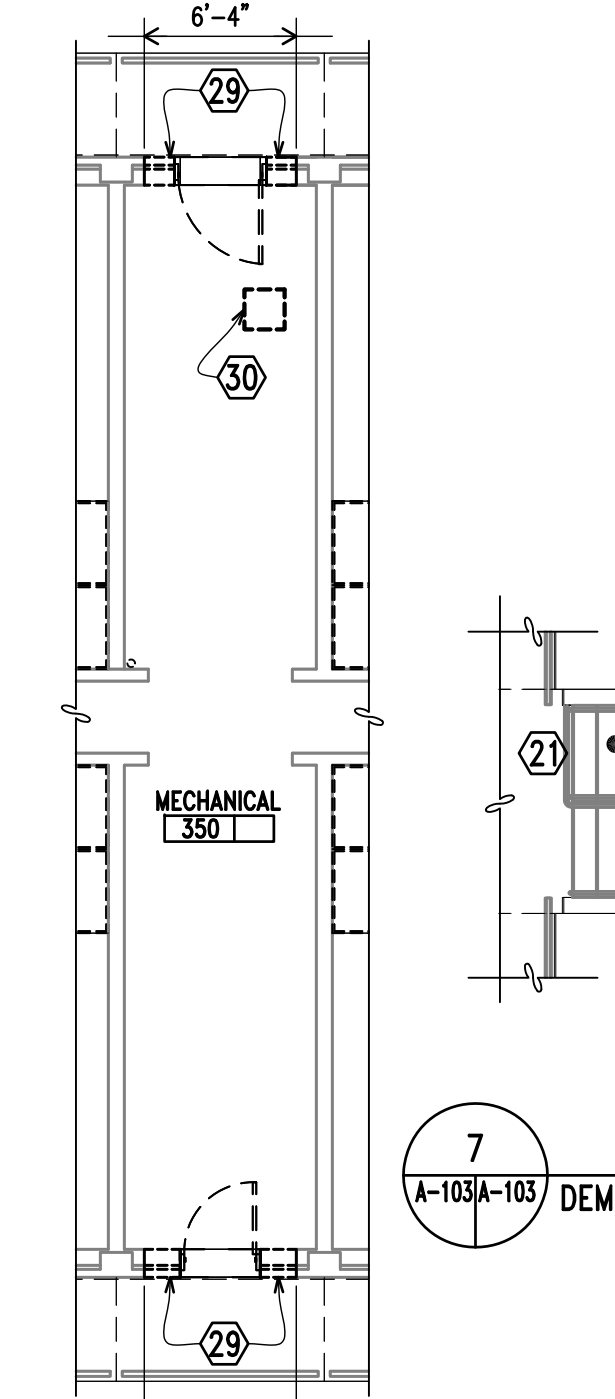
**3 SLEEPING ROOM DEMOLITION**  
Scale: 1/4" = 1'-0"



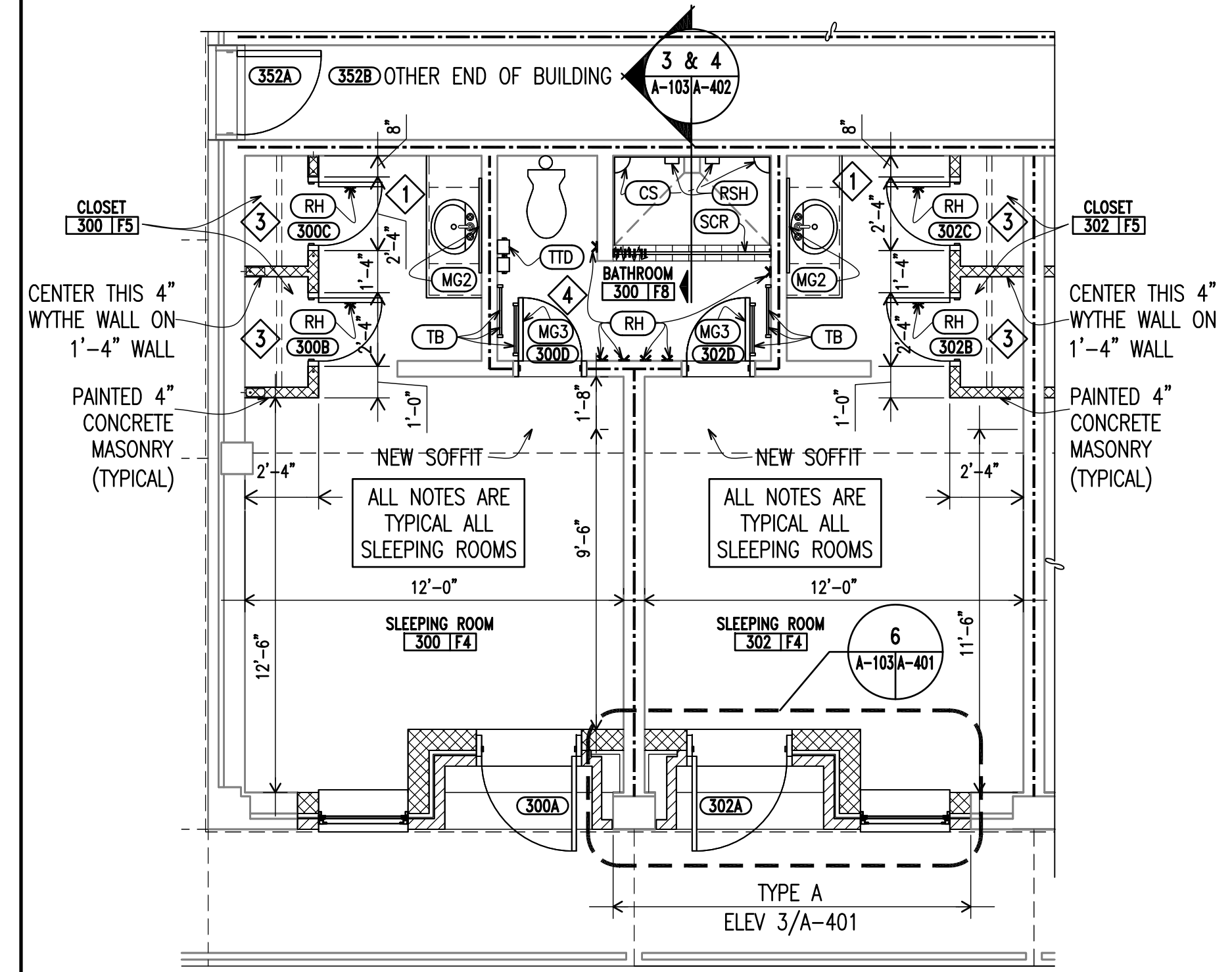
**4 MECHANICAL ROOM DEMOLITION**  
Scale: 1/4" = 1'-0"



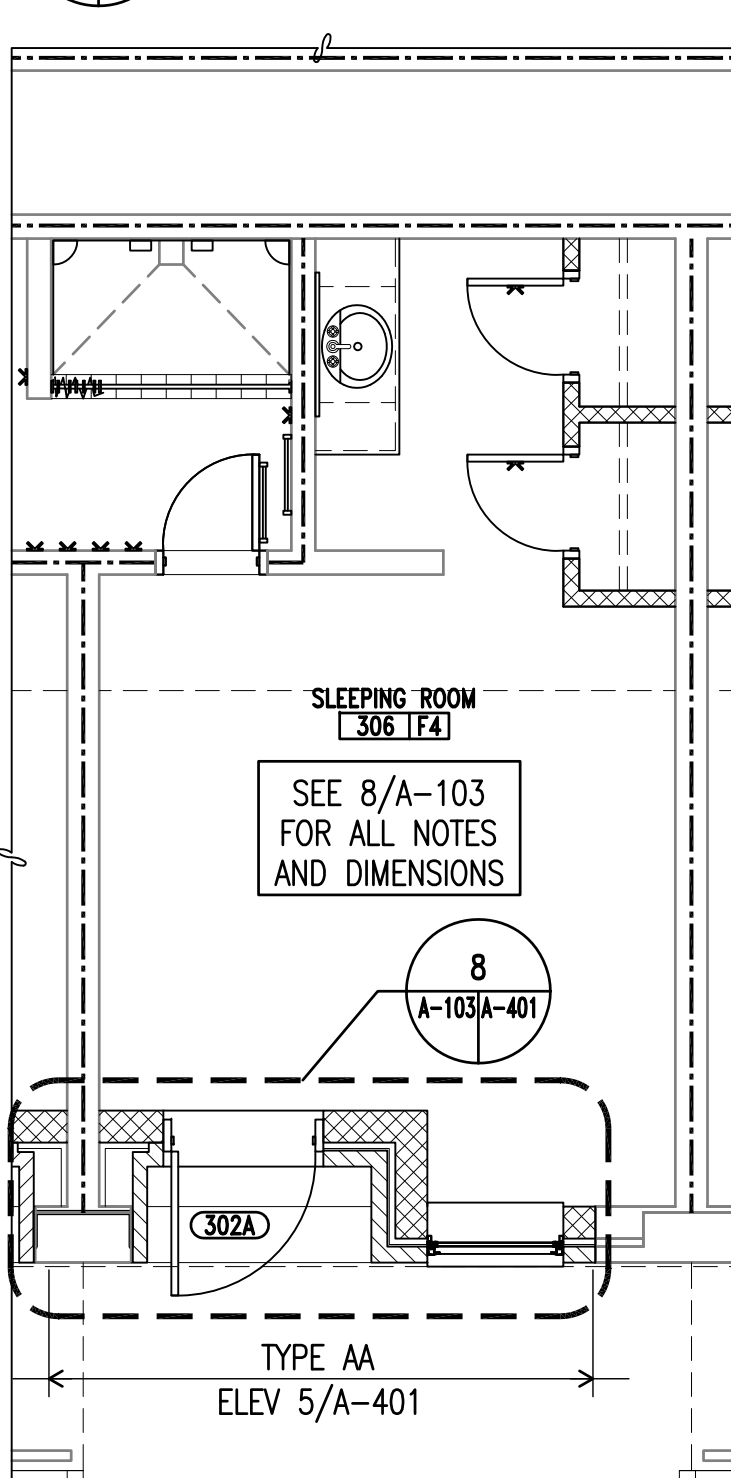
**5 LOUNGE/LAUNDRY DEMOLITION**  
Scale: 1/4" = 1'-0"



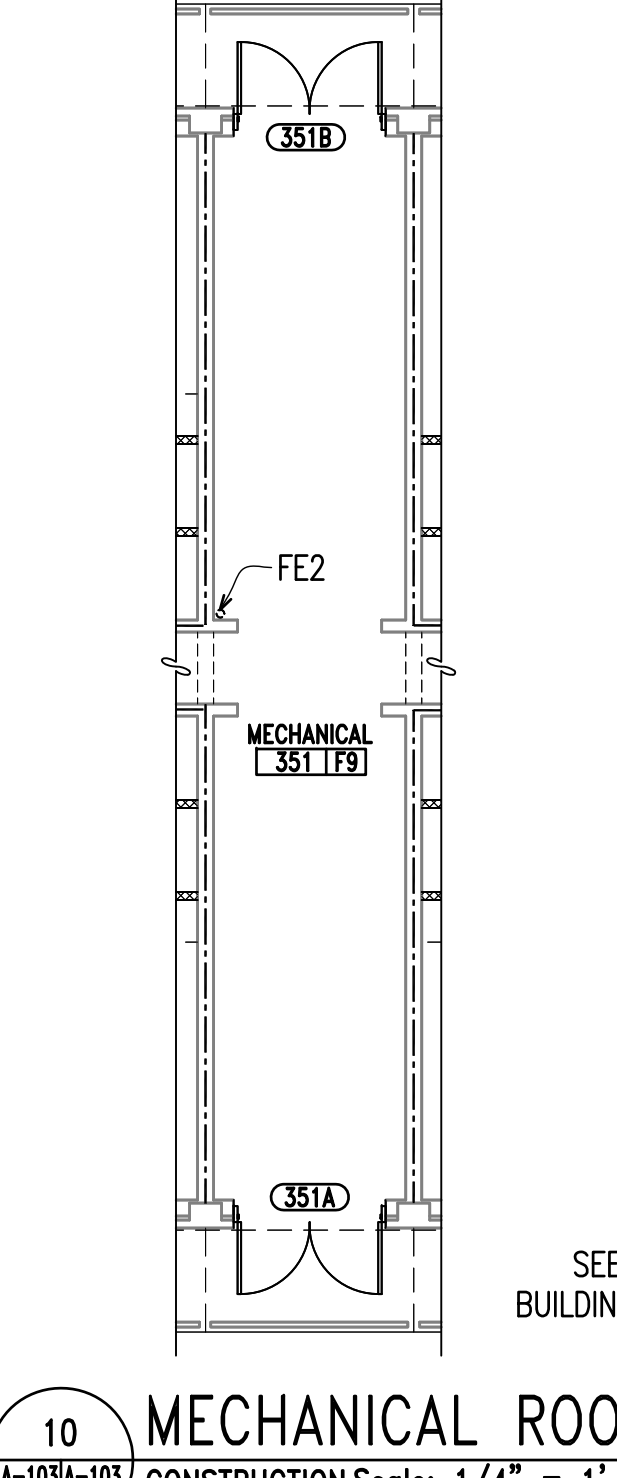
**6 MECHANICAL ROOM DEMOLITION**  
Scale: 1/4" = 1'-0"



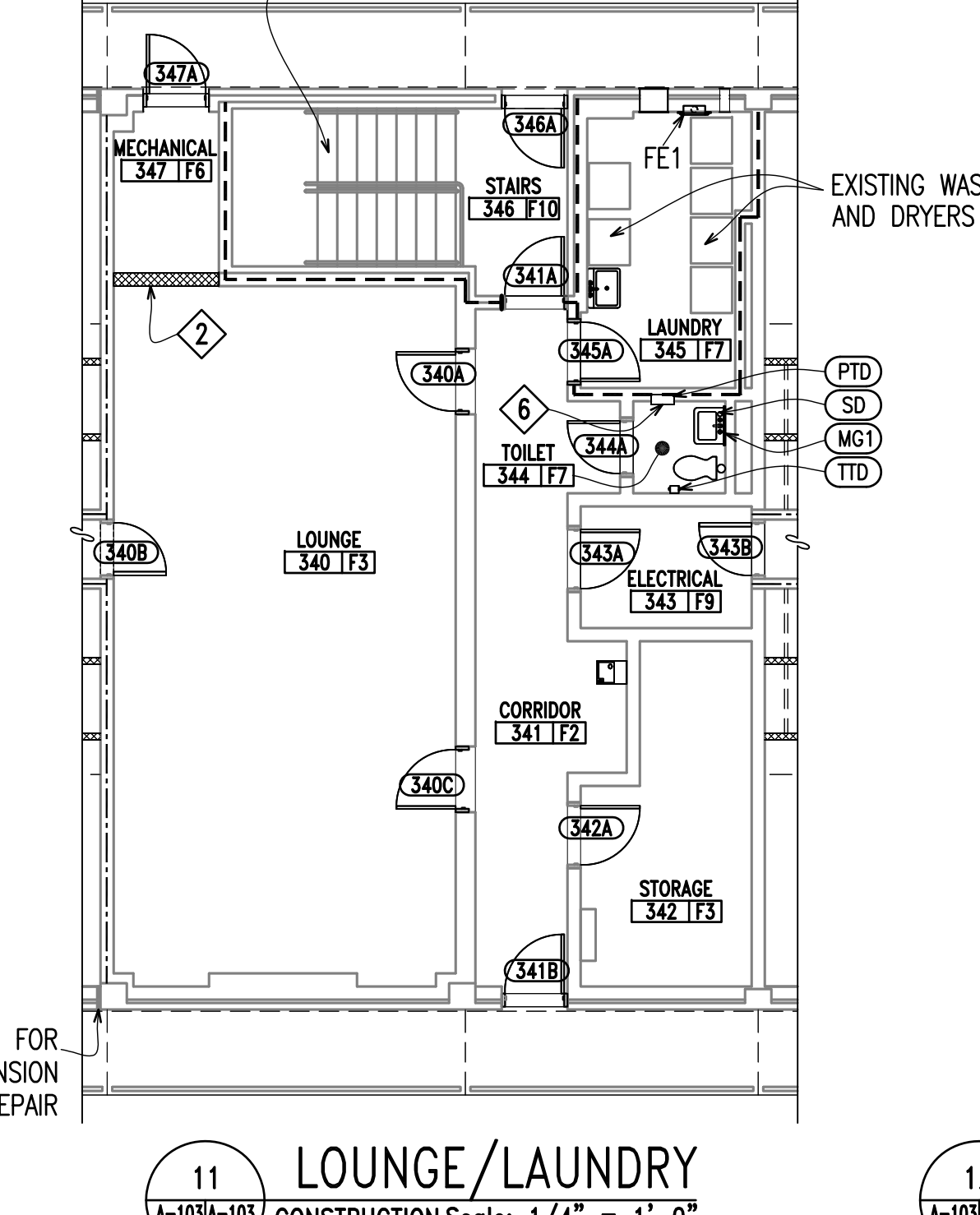
**8 SLEEPING ROOM CONSTRUCTION**  
Scale: 1/4" = 1'-0"



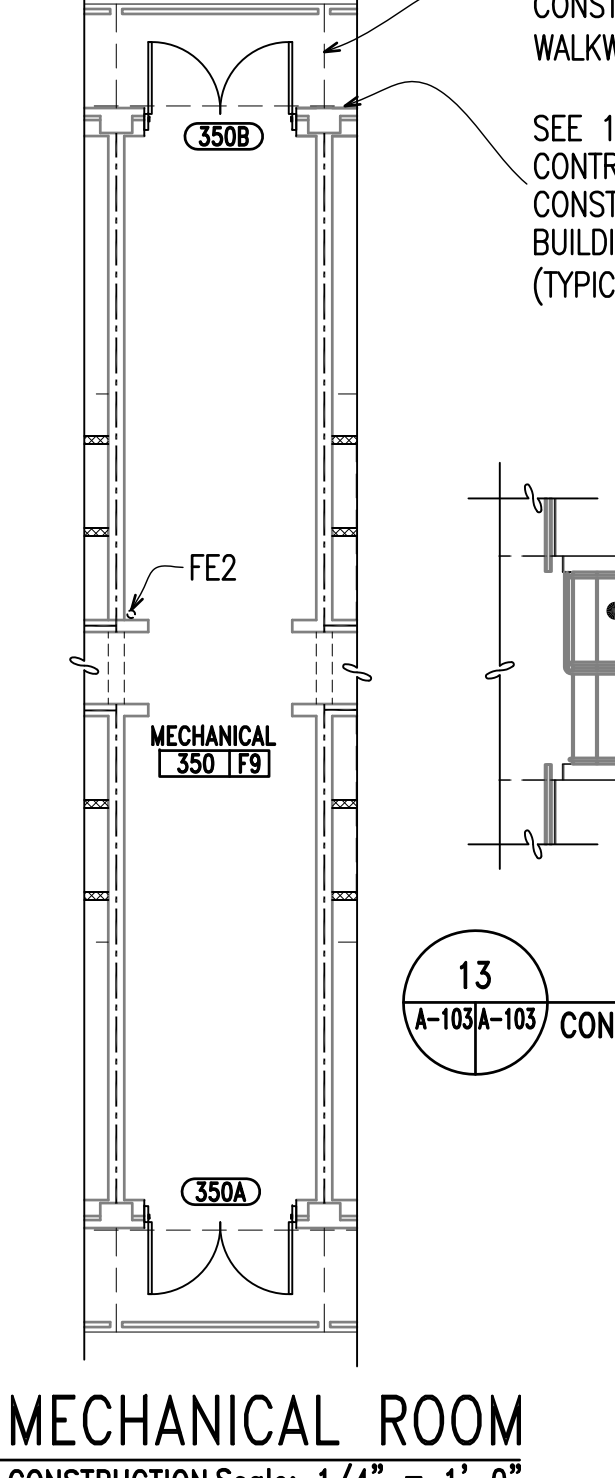
**9 SLEEPING ROOM CONSTRUCTION**  
Scale: 1/4" = 1'-0"



**10 MECHANICAL ROOM CONSTRUCTION**  
Scale: 1/4" = 1'-0"



**11 LOUNGE/LAUNDRY CONSTRUCTION**  
Scale: 1/4" = 1'-0"



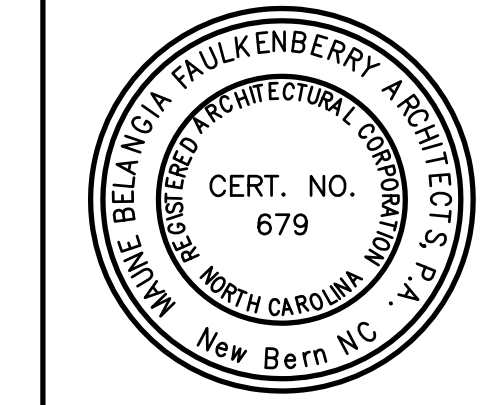
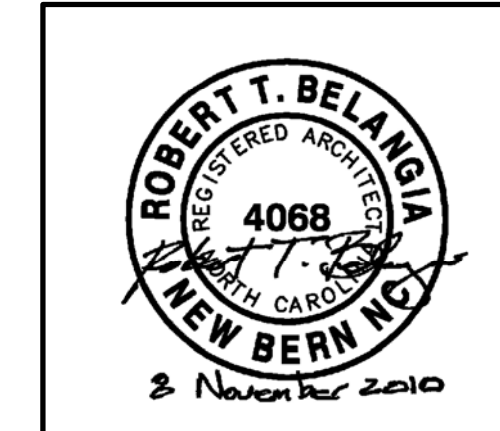
**12 MECHANICAL ROOM CONSTRUCTION**  
Scale: 1/4" = 1'-0"

### TOILET ACCESSORY SCHEDULE

MARK	DESCRIPTION	(RH)	DOUBLE ROBE HOOK
(CS)	SOLID POLYMER CORNER SHELF (6) PER SLEEPING ROOM BATHROOM	(TB)	TOWEL BAR: 24" (6) PER SLEEPING ROOM BATHROOM
(TTD)	WALL MOUNTED TOILET TISSUE DISPENSER	(MG1)	WALL MOUNTED MIRROR: 24" X 36"
(RSH)	CERAMIC TILE RECESSED SOAP HOLDER (2) PER SLEEPING ROOM BATHROOM	(MG2)	WALL MOUNTED MIRROR: 36" X 36" - CENTERED
(SD)	SOAP DISPENSER	(MG3)	DOOR MOUNTED 17" X 60" MIRROR
(SCR)	SHOWER ROD AND CURTAIN WITH HOOKS: WIDTH OF OPENING +/- 5'-4"	(PTD)	SURFACE MOUNTED TOWEL DISPENSER

FE1 - SEMI-RECESSED FIRE EXTINGUISHER CABINET & FIRE EXTINGUISHER  
FE2 - WALL MOUNTED FIRE EXTINGUISHER

ROOM NAME: OFFICE 101 TF3  
ROOM NUMBER: 101  
NEW DOOR DESIGNATION: SEE DOOR SCHEDULE  
DEMOLITION NOTES: X  
CONSTRUCTION NOTES: X



**A-103**

MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA

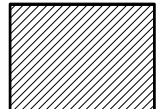
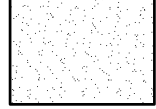
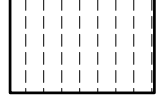
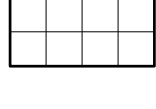
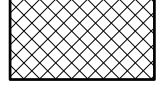


DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

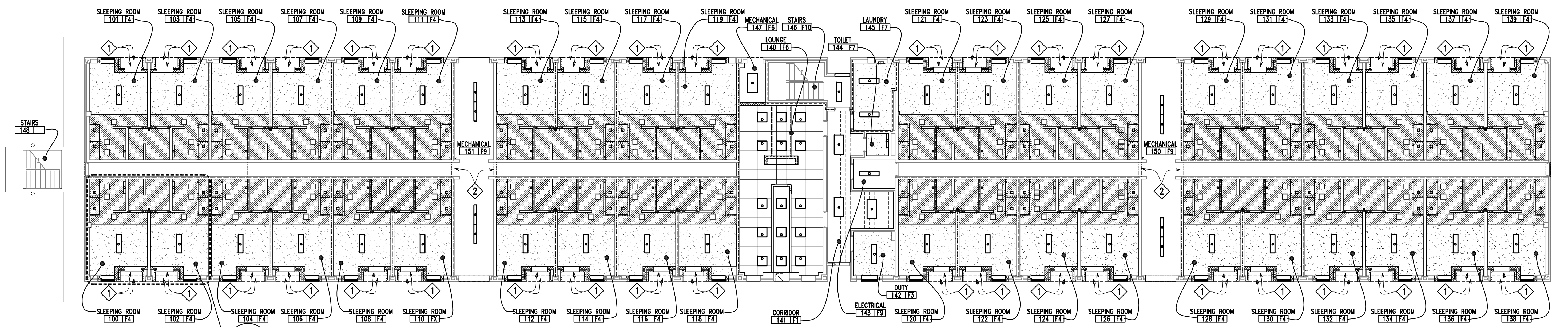
REPAIR BEQ  
BUILDING HP485

THIRD FLOOR PLAN  
NAVFAC DRAWING NO. 60007146

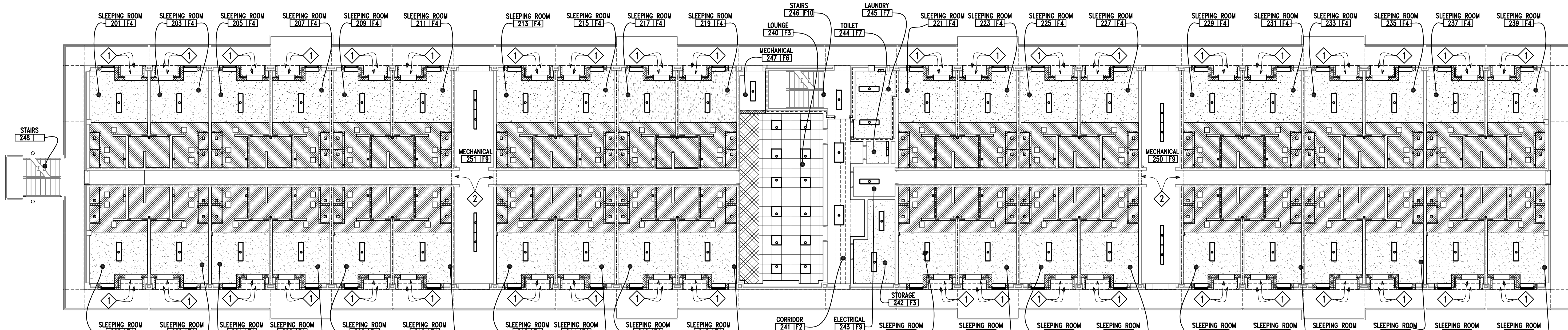
APPROVED: PWO OR OICC DATE: F 80091  
SATISFACTORY TO: DATE: SCALE: AS NOTED SPEC: 05-10-0070 SHEET 06 OF 65

**KEYED CEILING NOTES**

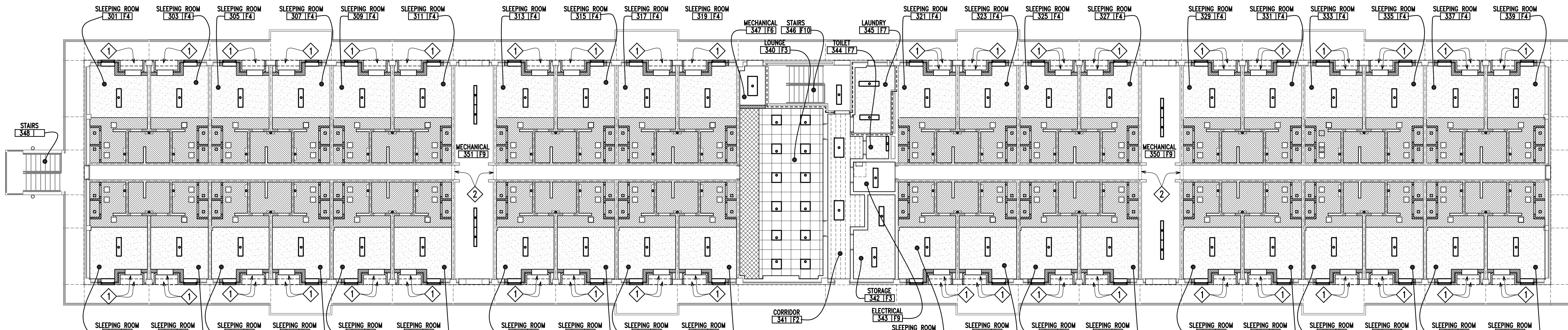
-  NEW 5/8" ABUSE RESISTANT FIBERGLASS-MAT FACED GYPSUM BOARD CEILING - 7'-0" A.F.F. - PAINT
-  PAINT EXISTING PAINTED (TEXTURED) PRECAST CONCRETE CHANNEL CEILING - 8'-8" A.F.F.
-  NEW METAL FLUSH PANEL CEILING, SEE DETAIL 4/A-104 - 8'-0" A.F.F.
-  NEW ACOUSTIC CEILING - 8'-0" A.F.F.
-  NEW PAINTED GYPSUM BOARD CEILING 6'-10" ABOVE FINISHED FLOOR.
-  REMOVE EXISTING PAINT FROM TEXTURED PAINTED PRECAST CONCRETE. CLEAN AND PREPARE UNPAINTED PRECAST CONCRETE FOR NEW CONCRETE SKIM COAT. PROVIDE CONCRETE SKIM COAT AT SLEEPING ROOM ENTRANCES TO MATCH EXISTING CONCRETE CEILING PLANKS.
-  PROVIDE 3-5/8" METAL STUDS @ 16" O.C. WITH 5/8" GYPSUM BOARD ON THREE (3) SIDES TO FORM AN 8" DEEP SOFFIT. GYPSUM TO BE TIGHT TO PENETRATIONS AND MUDDED TO FORM A SEAL.



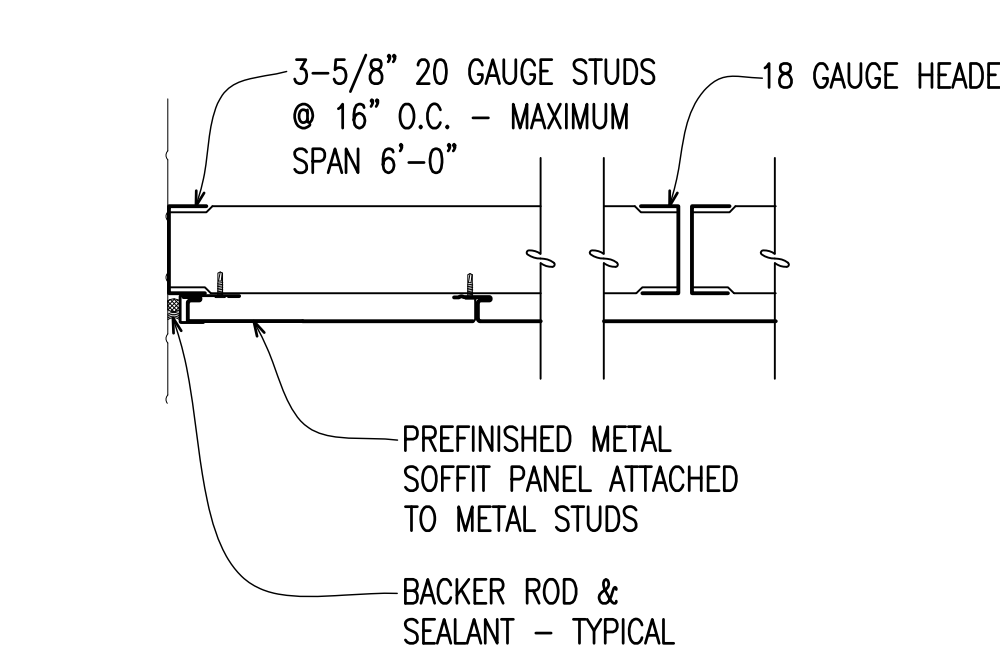
**1 FIRST FLOOR REFLECTED CEILING PLAN**  
 A-104/A-104 CONSTRUCTION Scale: 3/32" = 1'-0" BUILDING



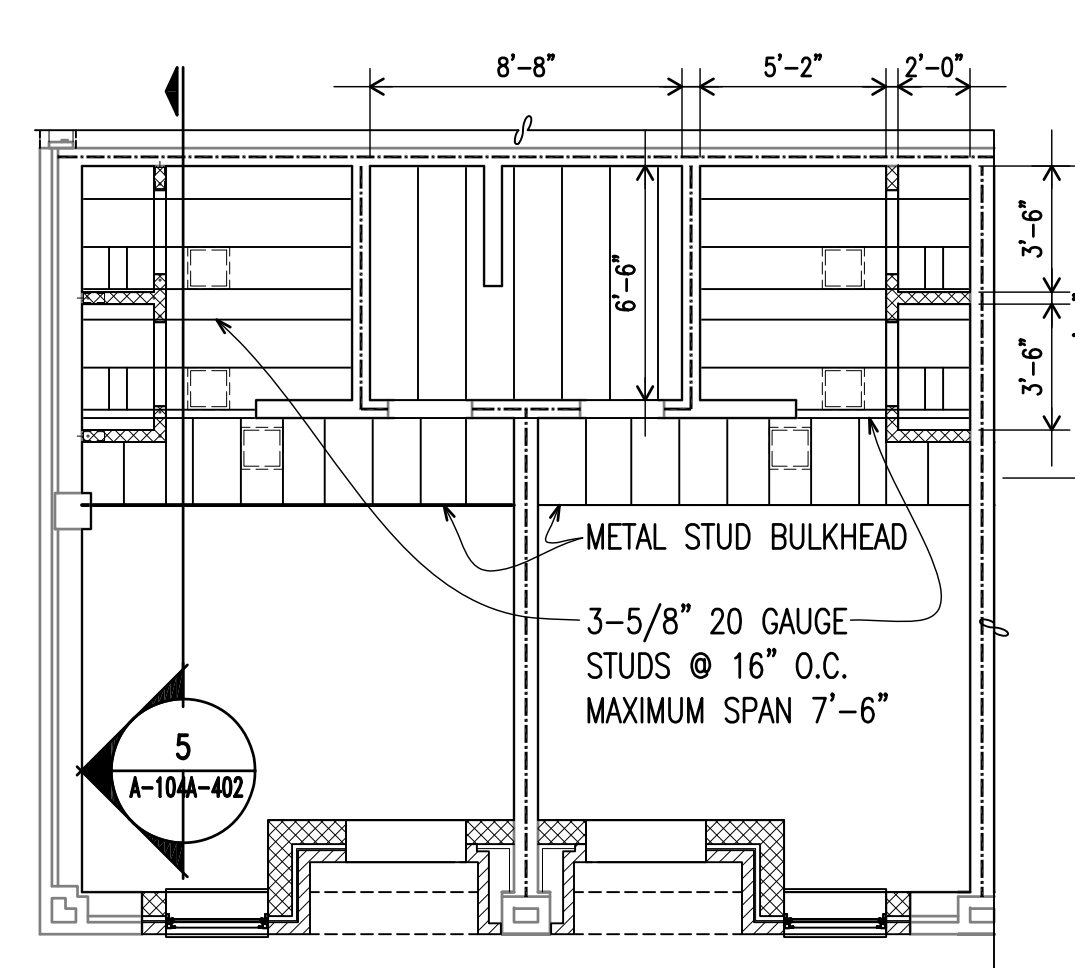
**2 SECOND FLOOR REFLECTED CEILING PLAN**  
 A-104/A-104 CONSTRUCTION Scale: 3/32" = 1'-0" BUILDING



**3 THIRD FLOOR REFLECTED CEILING PLAN**  
 A-104/A-104 CONSTRUCTION Scale: 3/32" = 1'-0" BUILDING

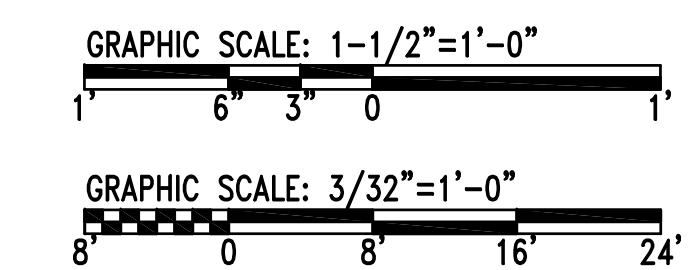



**4 METAL SOFFIT DETAIL**  
 A-104/A-104 CONSTRUCTION Scale: 1-1/2" = 1'-0"

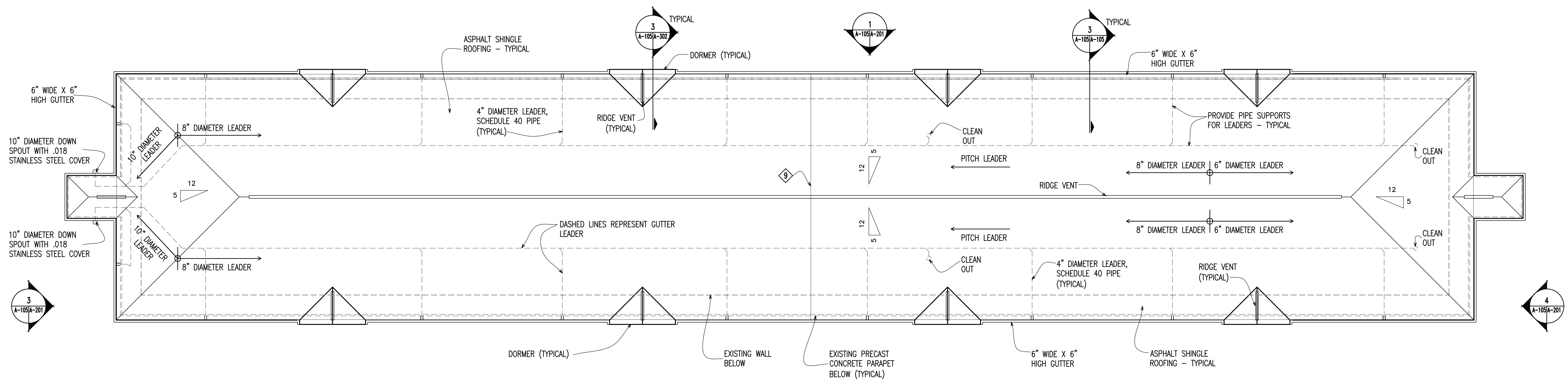


COORDINATE SOFFIT DIMENSIONS WITH MECHANICAL EQUIPMENT. LOCATE ACCESS PANELS NEAR MANUAL VOLUME DAMPER ORIENTATION. SEE 8/A-402 FOR 1/2 HOUR RATING REQUIREMENTS.

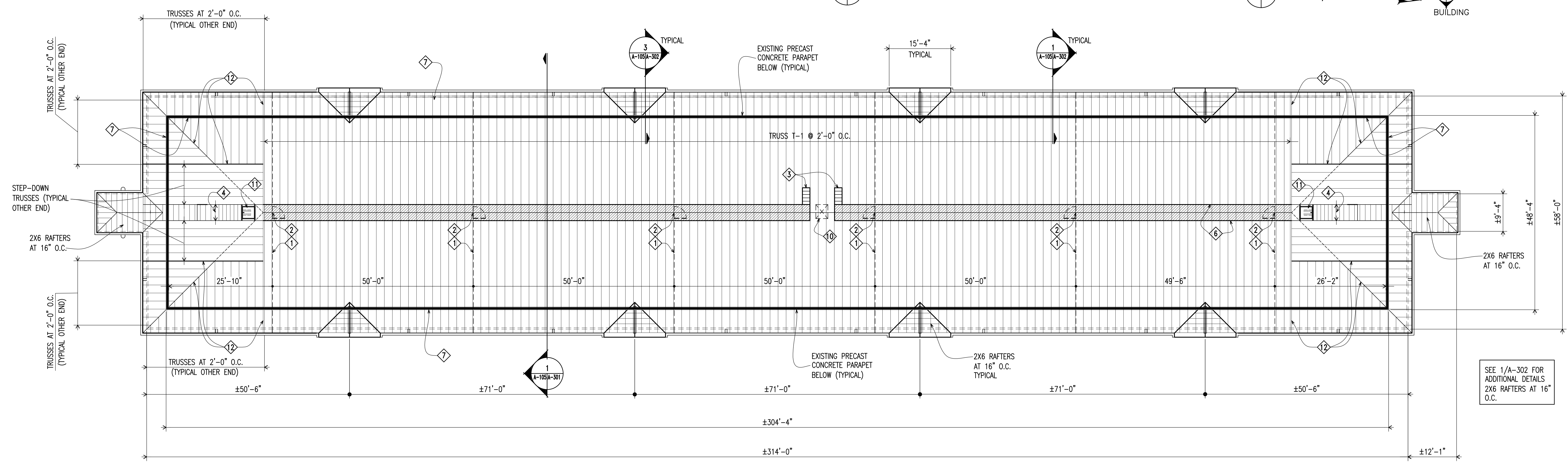
**5 SOFFIT FRAMING PLAN**  
 A-104/A-104 CONSTRUCTION Scale: 3/16" = 1'-0"



 ROBERT T. BELANGIA REGISTERED ARCHITECT NEW BERN, NC 2 November 2010	<b>A-104</b>	
	MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA DES. RTB DR. SLA CHK. RTB SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		REPAIR BEQ BUILDING HP485
REFLECTED CEILING PLAN NAVFAC DRAWING NO. 60007147 CONSTR. CONTR. NO. N40085-10-B-0070		REFLECTED CEILING PLAN NAVFAC DRAWING NO. 60007147 CONSTR. CONTR. NO. N40085-10-B-0070
SIZE: F 80091 DATE:	DATE:	SCALE: AS NOTED SPEC. 05-10-0070 SHEET 07 OF 65



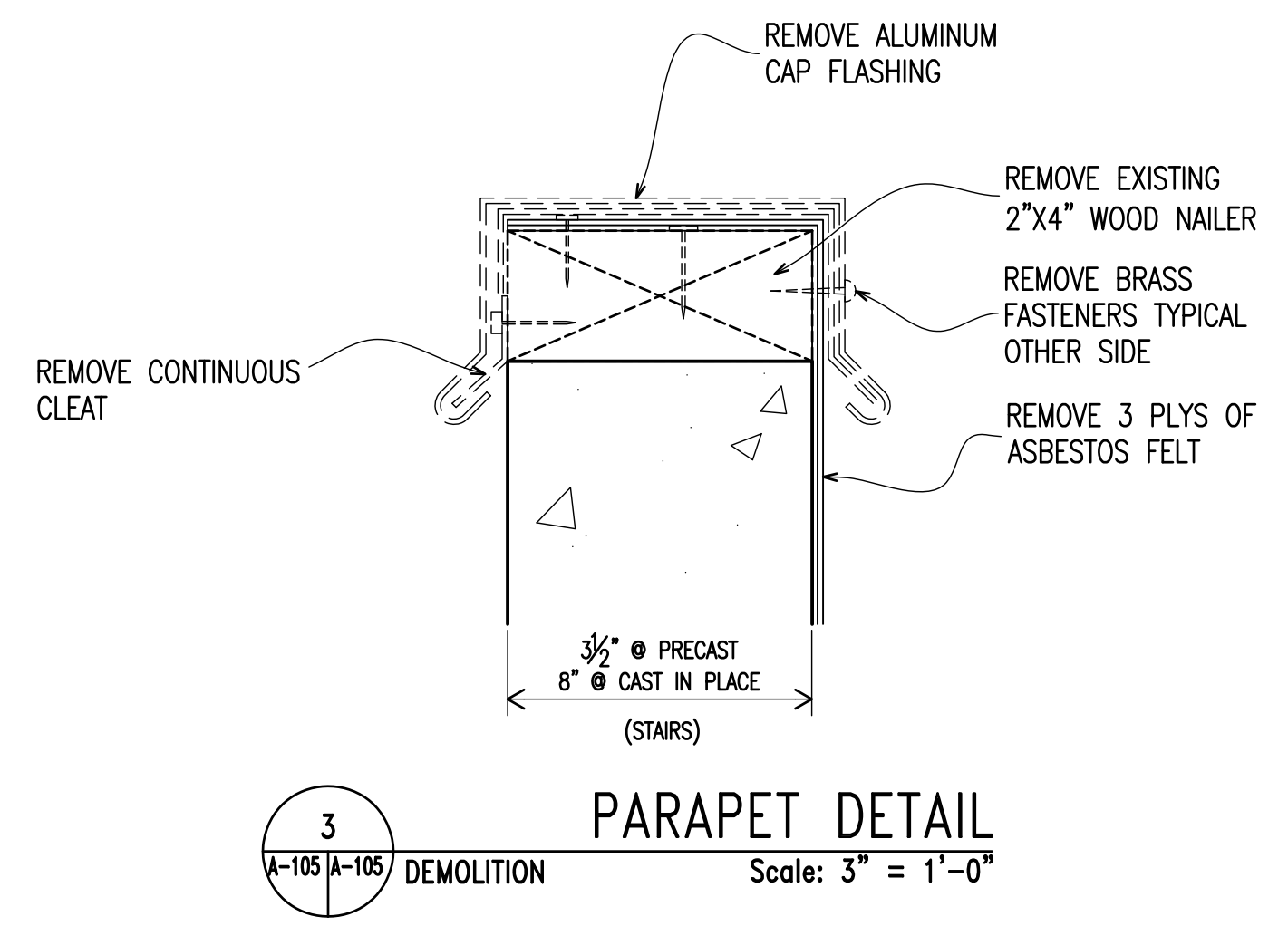
**1 ROOF PLAN**  
Scale: 3/32" = 1'-0"  
NORTH BUILDING



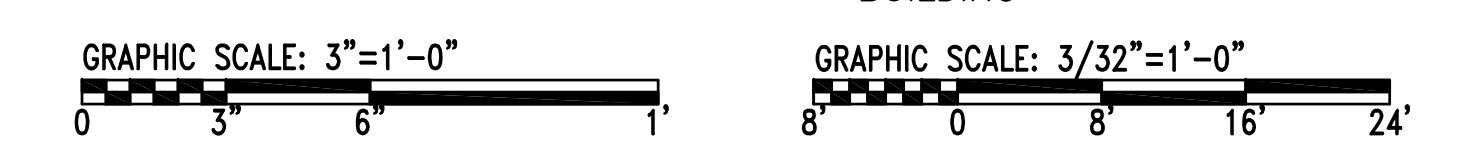
**2 ROOF FRAMING PLAN**  
Scale: 3/32" = 1' = 0"  
NORTH BUILDING

- PRE-FABRICATED WOOD TRUSS NOTES:**
- PRE-FABRICATED WOOD TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING UNIFORMLY DISTRIBUTED LOADS:  
TOP CHORD DEAD LOAD = 10 PSF  
BOTTOM CHORD DEAD LOAD = 5 PSF  
TOP CHORD LIVE LOAD = 20 PSF  
CATWALK LIVE LOAD = 40 PSF  
TOP CHORD UPLIFT = 10 PSF
  - TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING DEFLECTION CRITERIA:  
SPAN / TOTAL LOAD DEFLECTION = 240  
SPAN / LIVE LOAD DEFLECTION = 360
  - TRUSSES SHALL BE DESIGNED FOR PROFILES AND SPANS AS SHOWN ON PLAN, SECTIONS, AND ELEVATIONS.
  - TRUSS MANUFACTURER SHALL ADVISE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PREPARATION OF TRUSS SHOP DRAWINGS.

- KEYED NOTES:**
- DRAFTSTOP - SEE DETAIL 3/A-301
  - 3'-0" X 7'-0" X 1-3/4" STEEL DOOR. SEE #401A ON A-601
  - NEW 22-1/2" WIDE WOOD STAIR WITH 2X12 TREADS AND STRINGERS - BETWEEN TRUSSES
  - 2X6 FRAMING @ 16" O.C. (TYPICAL)
  - NOT USED
  - LINE OF CATWALK IN TRUSSES (4'-0" WIDE - 3/4" OSB) SEE 1/A-301
  - 2X6 WOOD STUD KNEE WALL - SEE DETAIL 1/A-302
  - NOT USED
  - ROOF EXPANSION JOINT - SEE DETAIL 5/A-201
  - REMOVE EXISTING HATCH AND PROVIDE NEW 2 HR RATED ATTIC ACCESS HATCH IN EXISTING OPENING - SEE 2/A-301
  - SPACE TRUSSES AT 3'-0" TO PERMIT INSTALLATION OF FUTURE ROOF HATCH. PROVIDE 2X6 PURLINS @ 16" O.C.
  - GIRDER TRUSS

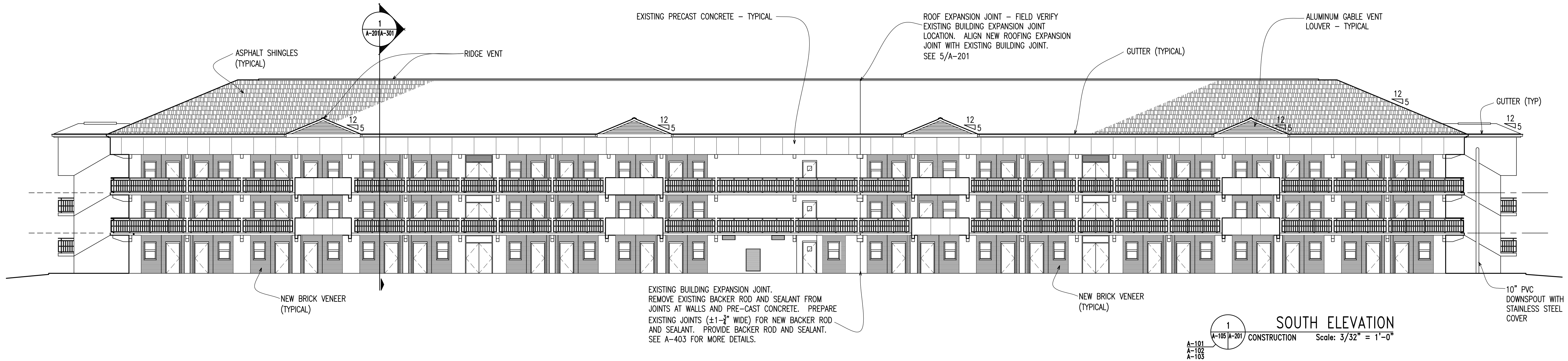


**3 PARAPET DETAIL**  
Scale: 3" = 1'-0"  
DEMOLITION

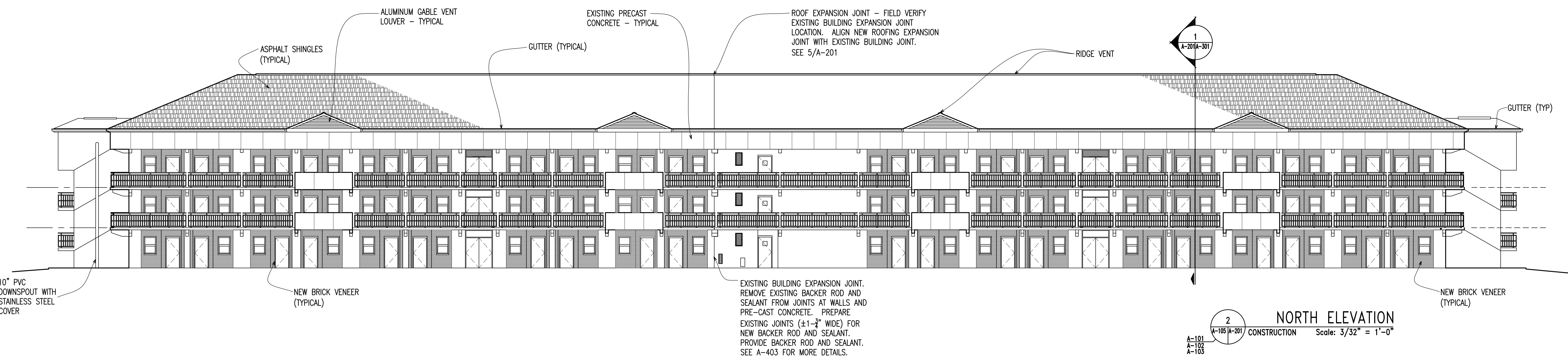


	<b>A-105</b>	
	MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA 1100 W. MARKET ST. SUITE 200 WASHINGTON, NC 27587 WWW.MBFAARCHITECTS.COM	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		<b>REPAIR BEQ</b> <b>BUILDING HP485</b>
DES. RTB DR. SLA CHK. RTB SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE: _____ SATISFACTORY TO: DATE: _____		
ROOF PLAN NAVFAC DRAWING NO. <b>60007148</b> CONSTR. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 08 OF 65		ROOF PLAN NAVFAC DRAWING NO. <b>60007148</b> CONSTR. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 08 OF 65

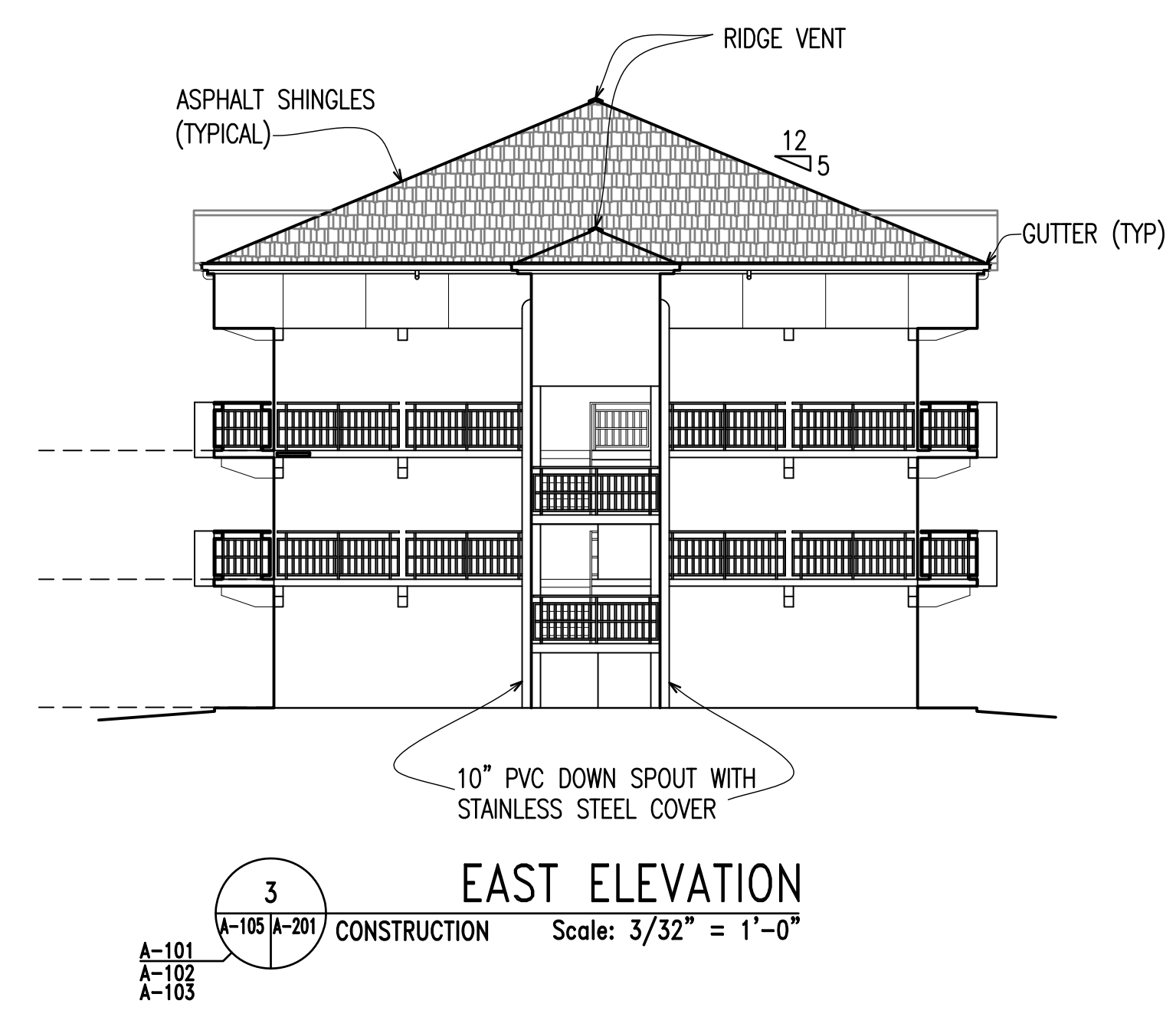




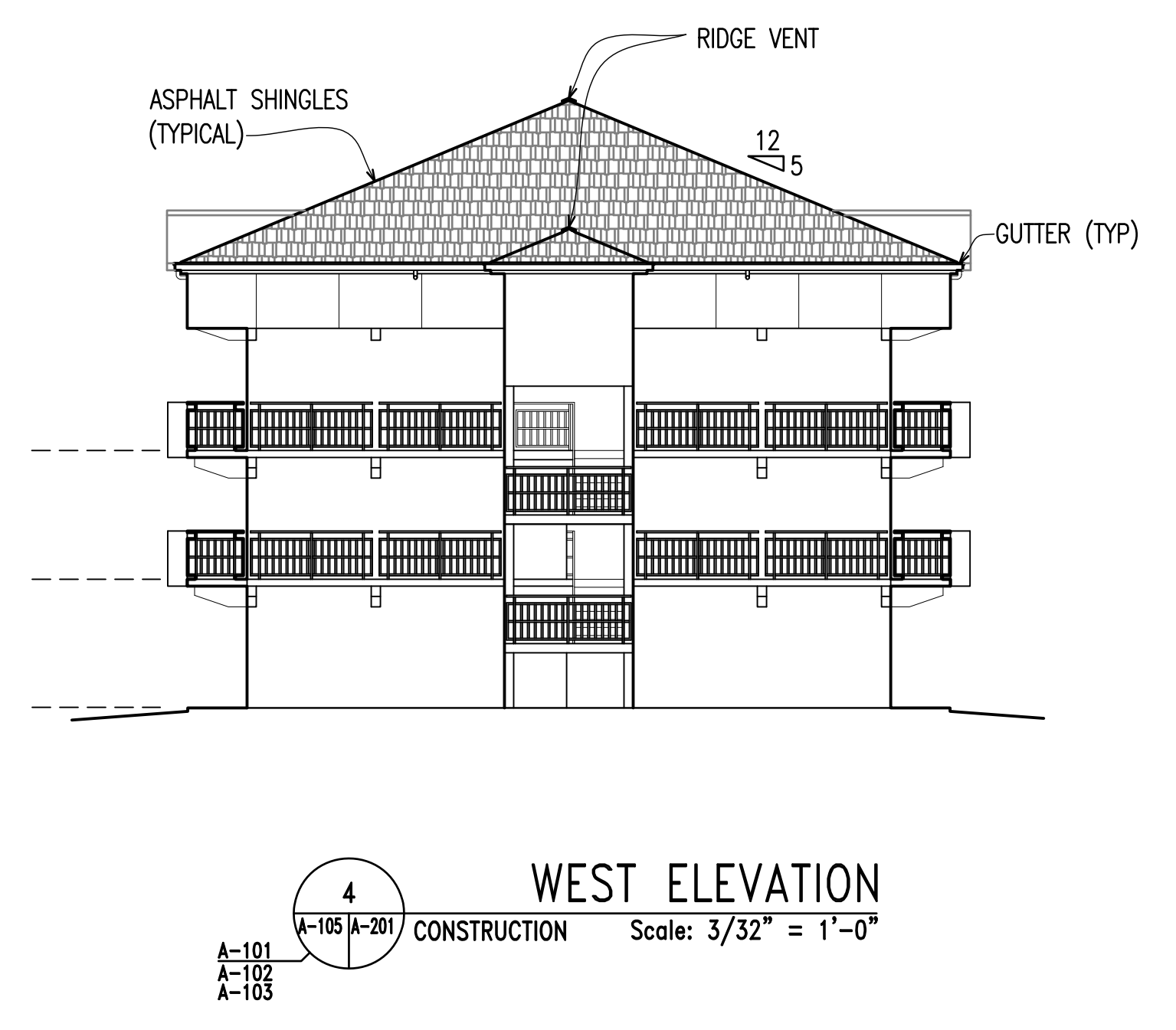
1 SOUTH ELEVATION  
A-101 A-102 A-103 CONSTRUCTION Scale: 3/32" = 1'-0"



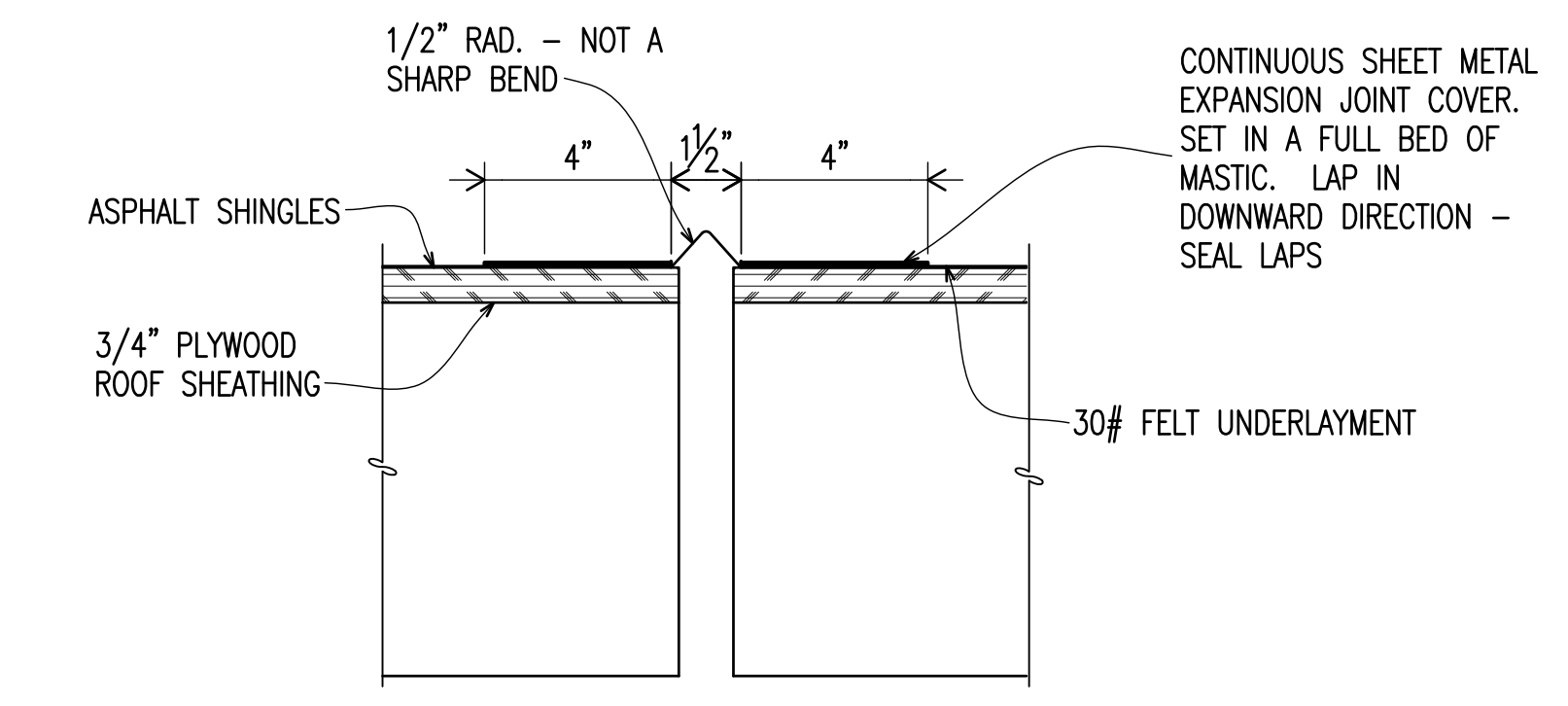
2 NORTH ELEVATION  
A-101 A-102 A-103 CONSTRUCTION Scale: 3/32" = 1'-0"



3 EAST ELEVATION  
A-101 A-102 A-103 CONSTRUCTION Scale: 3/32" = 1'-0"



4 WEST ELEVATION  
A-101 A-102 A-103 CONSTRUCTION Scale: 3/32" = 1'-0"

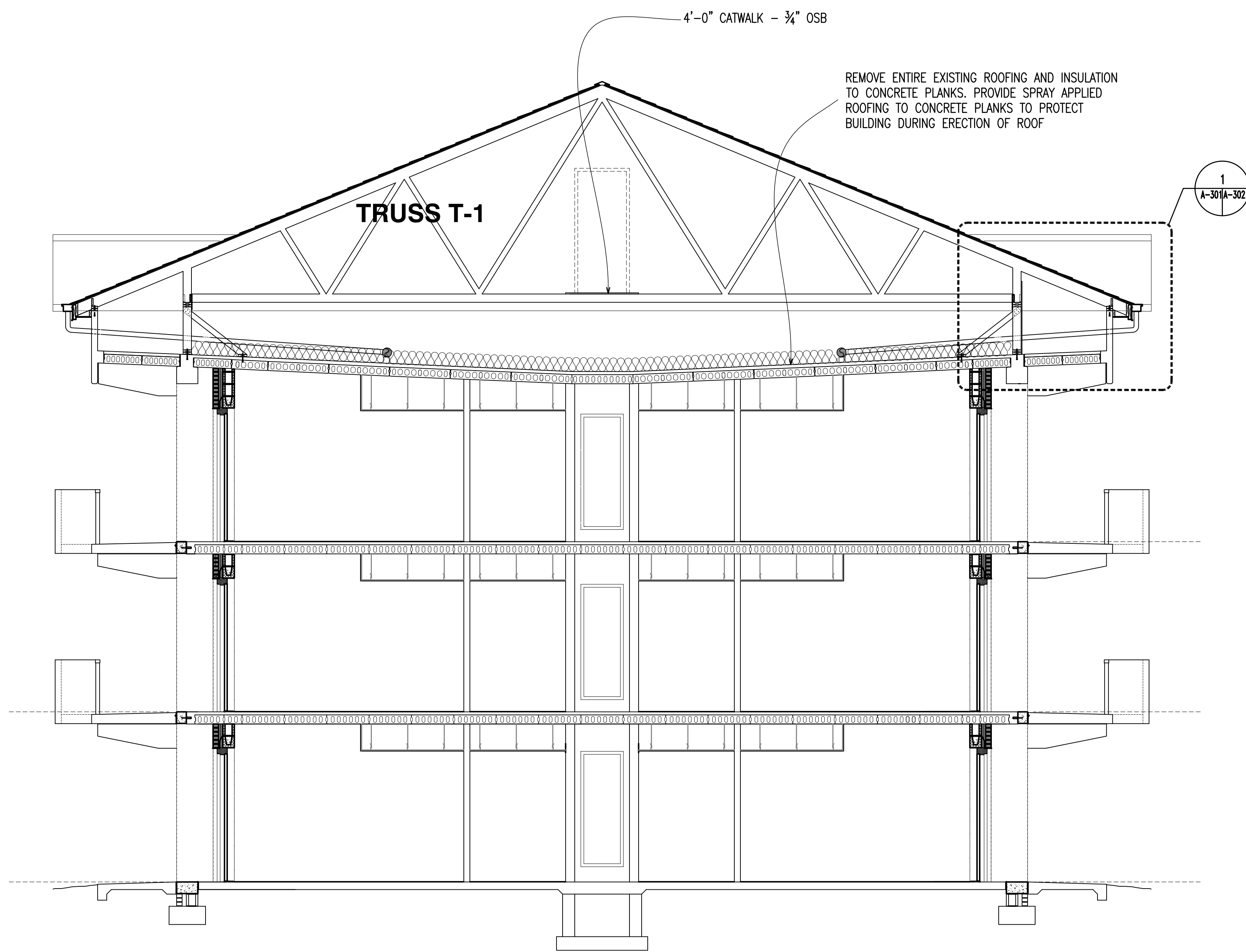


5 EXPANSION JOINT  
A-105 A-201 CONSTRUCTION Scale: 1-1/2" = 1'-0"

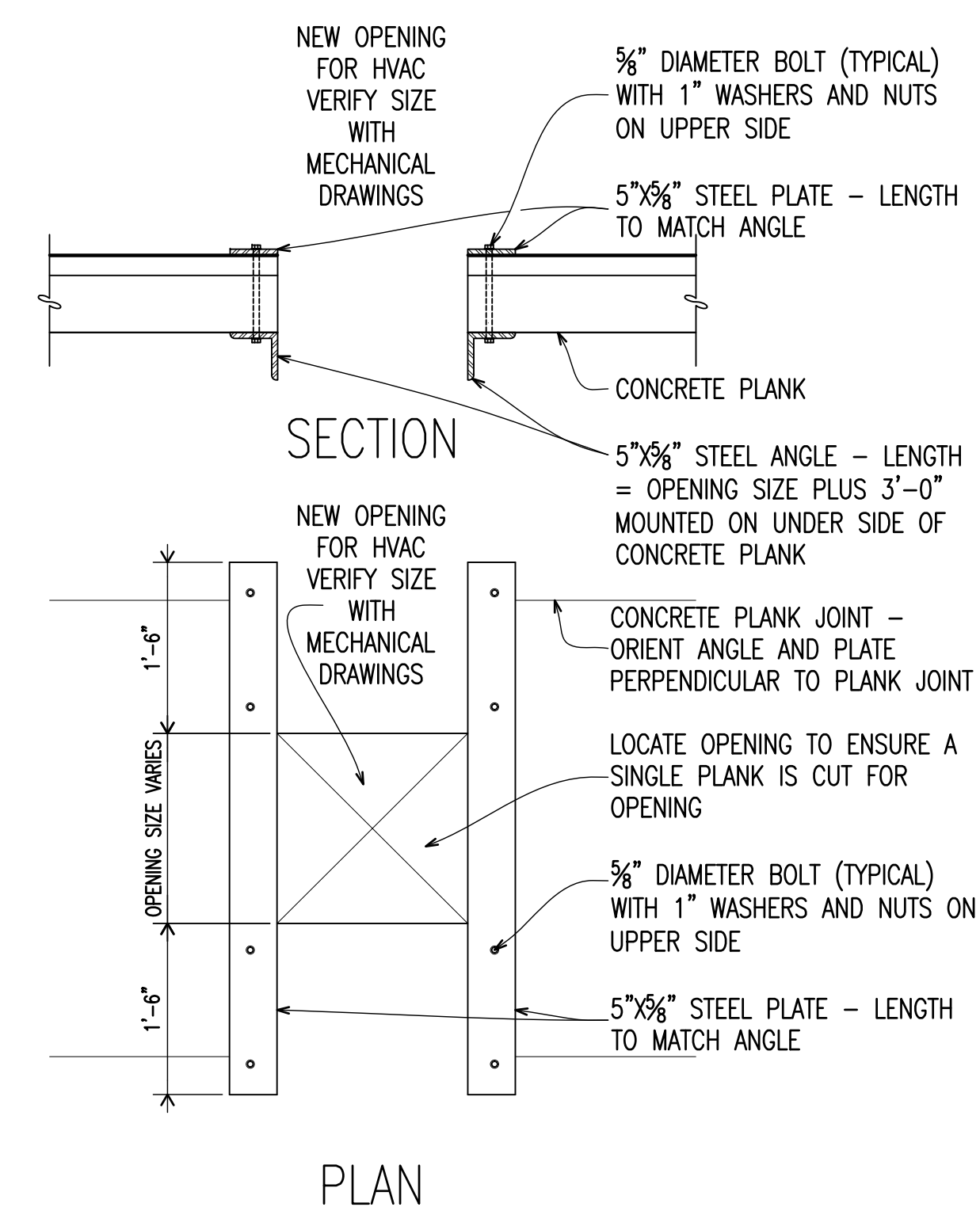
**CONSTRUCTION NOTES**  
SCRUB AND RINSE BY POWER WASHING ALL EXISTING EXTERIOR BRICK MASONRY, CONCRETE MASONRY WALKWAYS, AND PRECAST CONCRETE PANELS ON ENTIRE BUILDING WITH BIODEGRADABLE CLEANER TO REMOVE BIOLOGICAL DEPOSITS AND DIRT



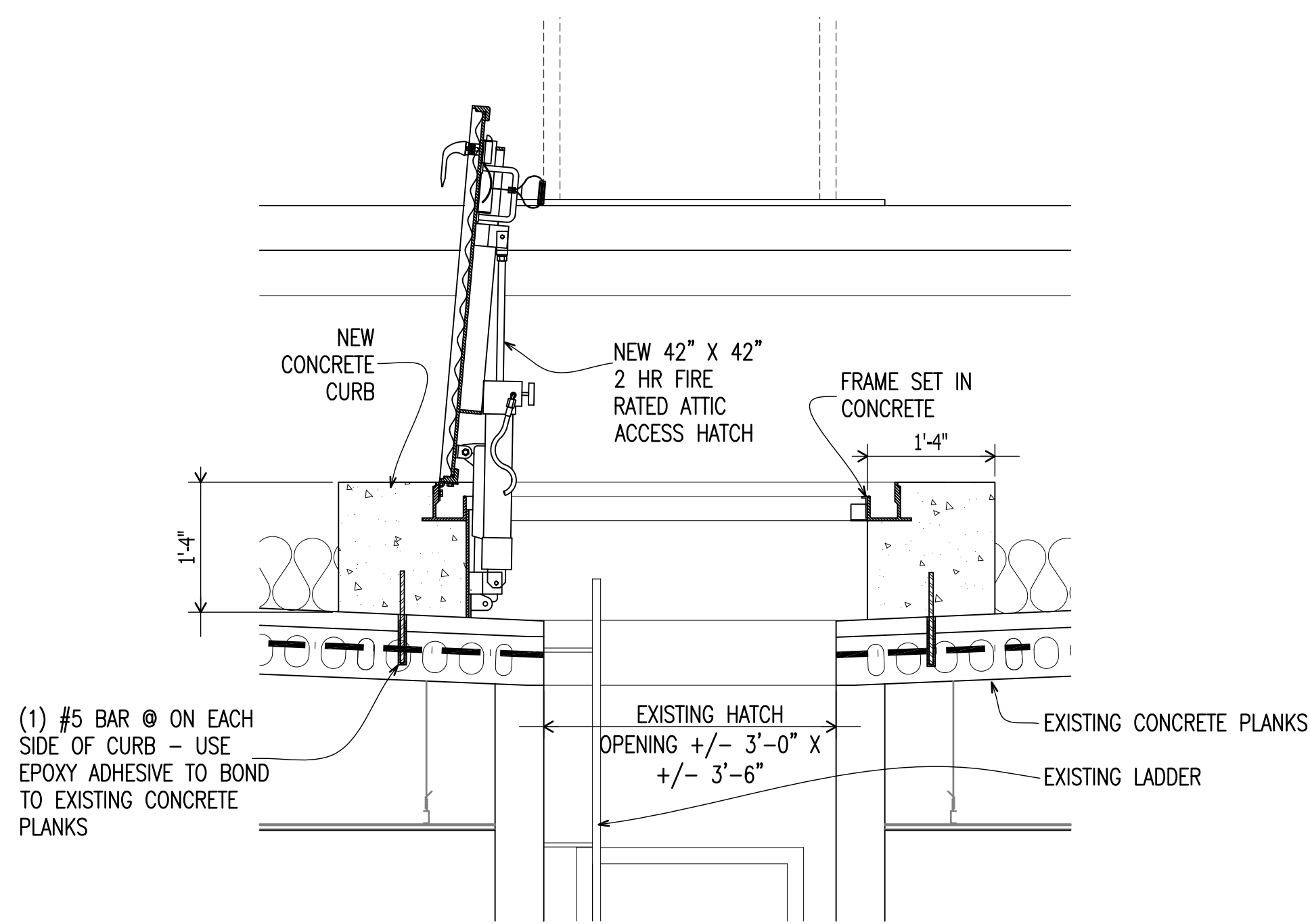
	<p><b>A-201</b></p>	
	<p>MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA 1100 W. HARRIS ST. SUITE 100 WELLSVILLE, NC 28688 WWW.MBFAC.COM</p>	
<p>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA</p>		<p>REPAIR BEQ BUILDING HP485</p>
<p>DES. RTB DR. SLA CHK. RTB SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:</p>		<p>DATE: _____ DATE: _____</p>
<p>SCALE: AS NOTED SPEC. 05-10-0070</p>		<p>NAVFAC DRAWING NO. <b>60007149</b> CONST. CONTR. NO. N40085-10-B-0070</p>
<p>SCALE: AS NOTED SPEC. 05-10-0070</p>		<p>SHEET 09 OF 65</p>



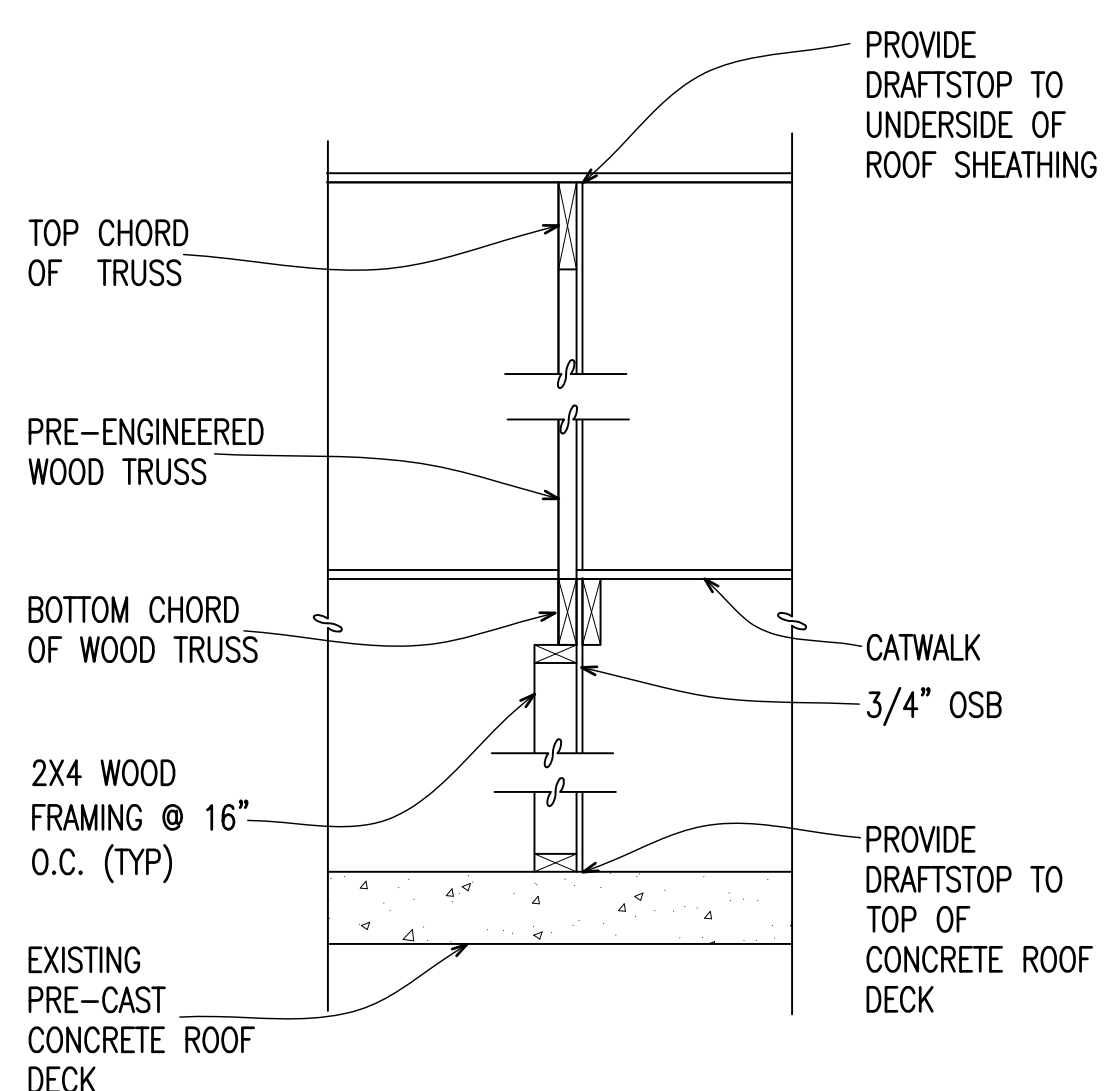
1 TYPICAL TRANSVERSE SECTION  
Scale: 1/4" = 1'-0"  
A-102  
A-103  
A-201  
A-105



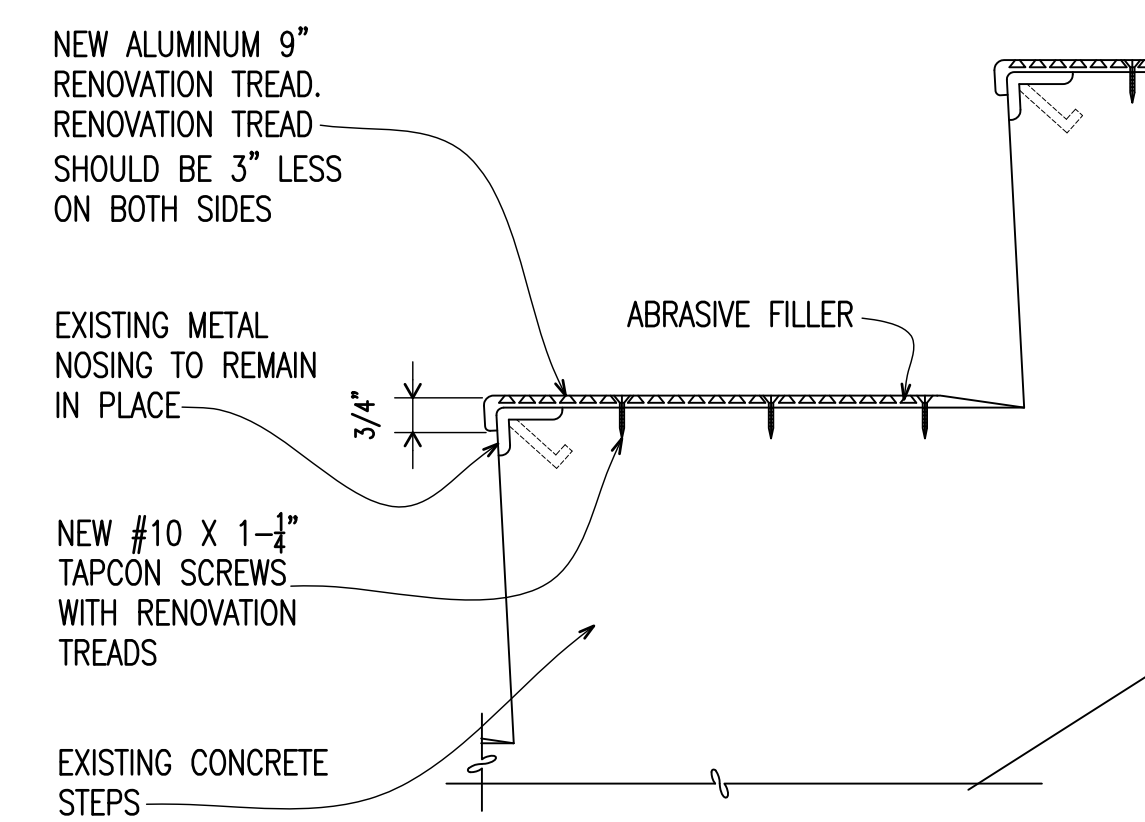
5 HVAC FLOOR OPENING DETAIL  
Scale: 3/4" = 1'-0"  
A-103  
A-102(A-301)



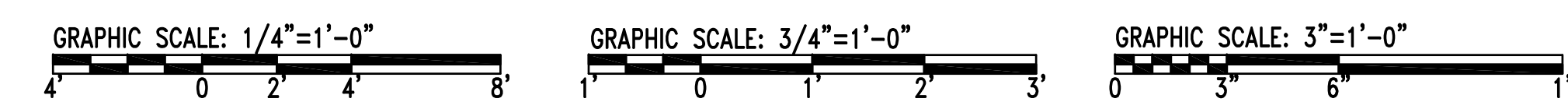
2 2 HR FIRE RATED ATTIC ACCESS  
Scale: 3/4" = 1'-0"  
A-301(A-301)



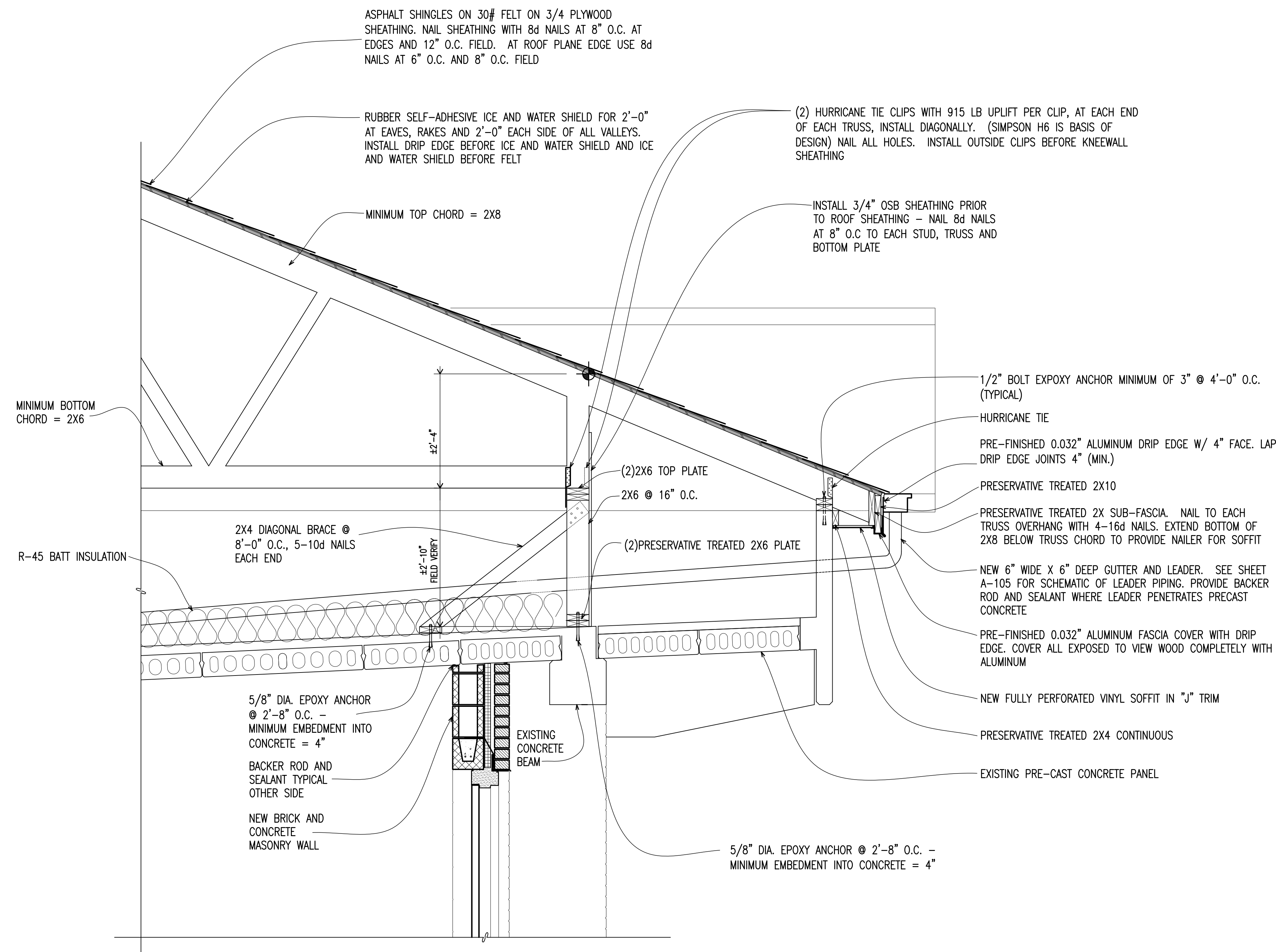
3 SECTION AT DRAFTSTOP  
Scale: 3/4" = 1'-0"  
A-105(A-301)



4 STAIR TREAD SECTION  
Scale: 3" = 1'-0"  
A-102  
A-103



	<b>A-301</b>	
	MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA <small>MAFA NO. 11077</small>	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		<b>REPAIR BEQ</b> <b>BUILDING HP485</b>
DESIGN DIR: RTB DR: SLA CHK: RTB SUBMITTED BY: DESIGN DIR: APPROVED: PWO OR OICC SATISFACTORY TO:		
BUILDING SECTION & DETAILS NAVFAC DRAWING NO. <b>60007150</b> CONST. CONTR. NO. N40085-10-B-0070		SIZE CODE IDENT NO. <b>F 80091</b>
SCALE: AS NOTED SPEC: 05-10-0070		SHEET 10 OF 65

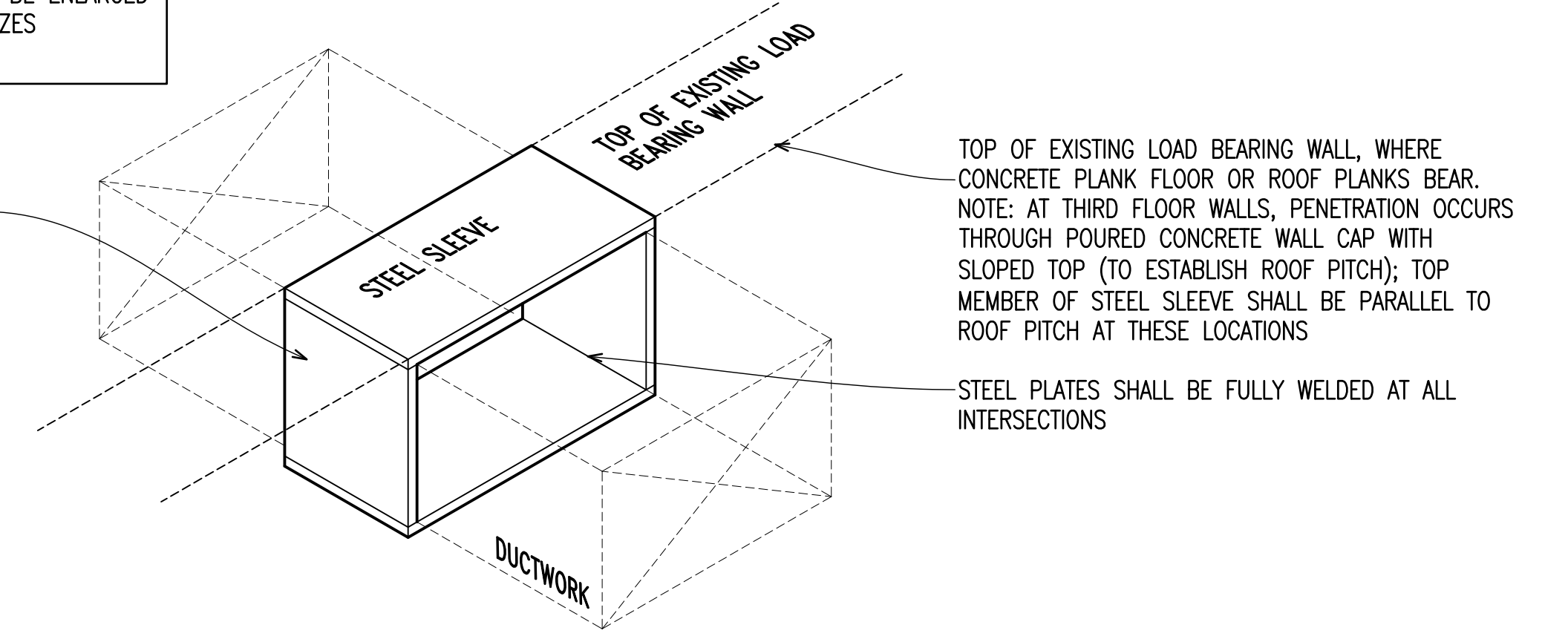


**1 TRUSS BEARING SECTION**  
 Scale: 3/4" = 1'-0"

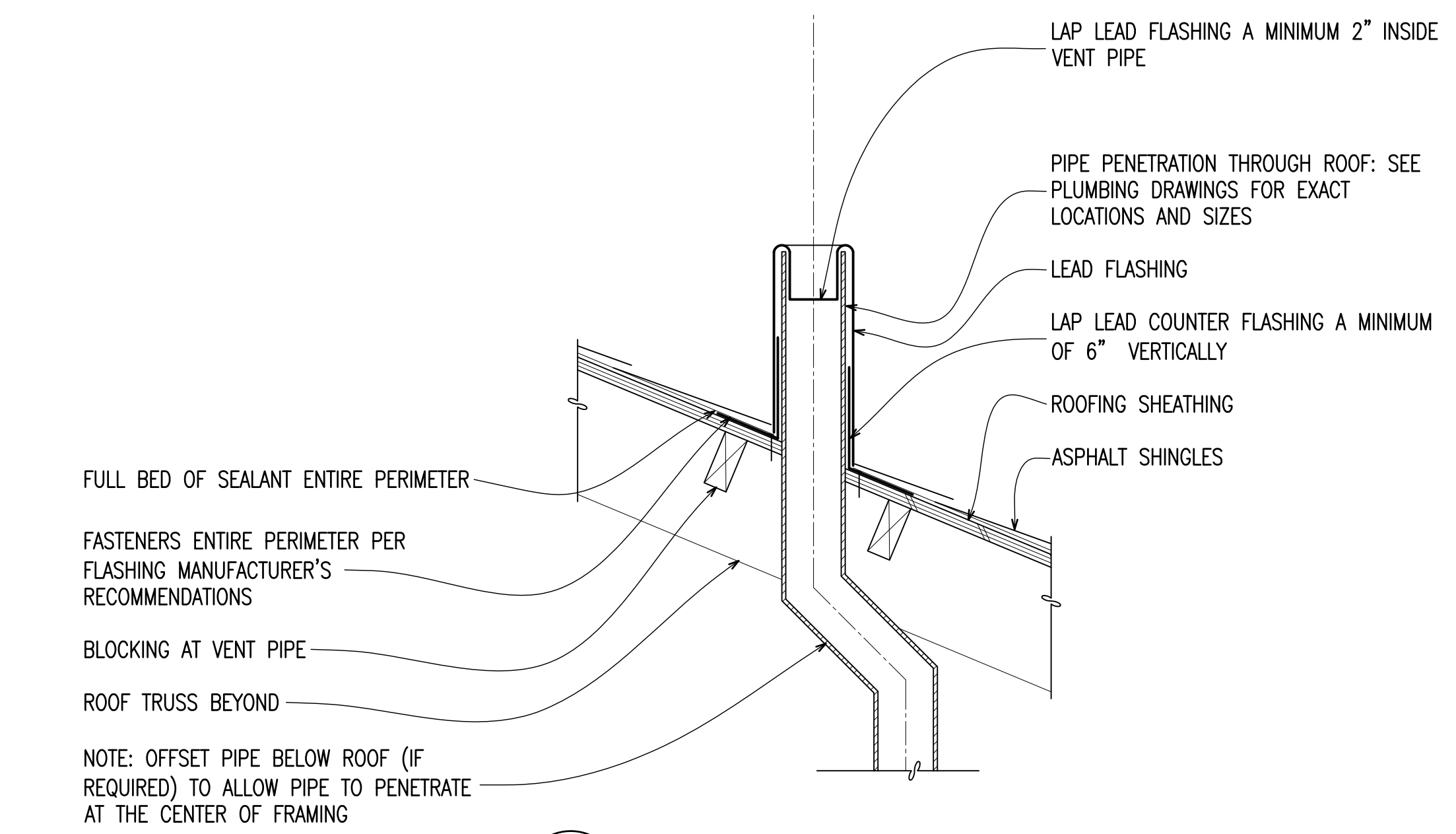
CONTRACTOR SHALL PROVIDE WELDED STEEL PLATE DUCT SLEEVES AT ALL LOCATIONS WHERE DUCTWORK PASSES THROUGH LOAD BEARING WALLS. EXISTING PENETRATIONS THROUGH WALLS SHALL BE ENLARGED WHERE REQUIRED TO ACCOMMODATE NEW DUCTWORK SIZES

DUCT SLEEVES SHALL BE CONSTRUCTED OF 1/2" STEEL PLATE, WELDED IN A RECTANGULAR 4 SIDED SLEEVE AS SHOWN, SIZED TO ACCOMMODATE SPECIFIC DUCTS AS SPECIFIED ON THE MECHANICAL PLANS, INCLUDING DUCT INSULATION WHERE IT IS CALLED FOR

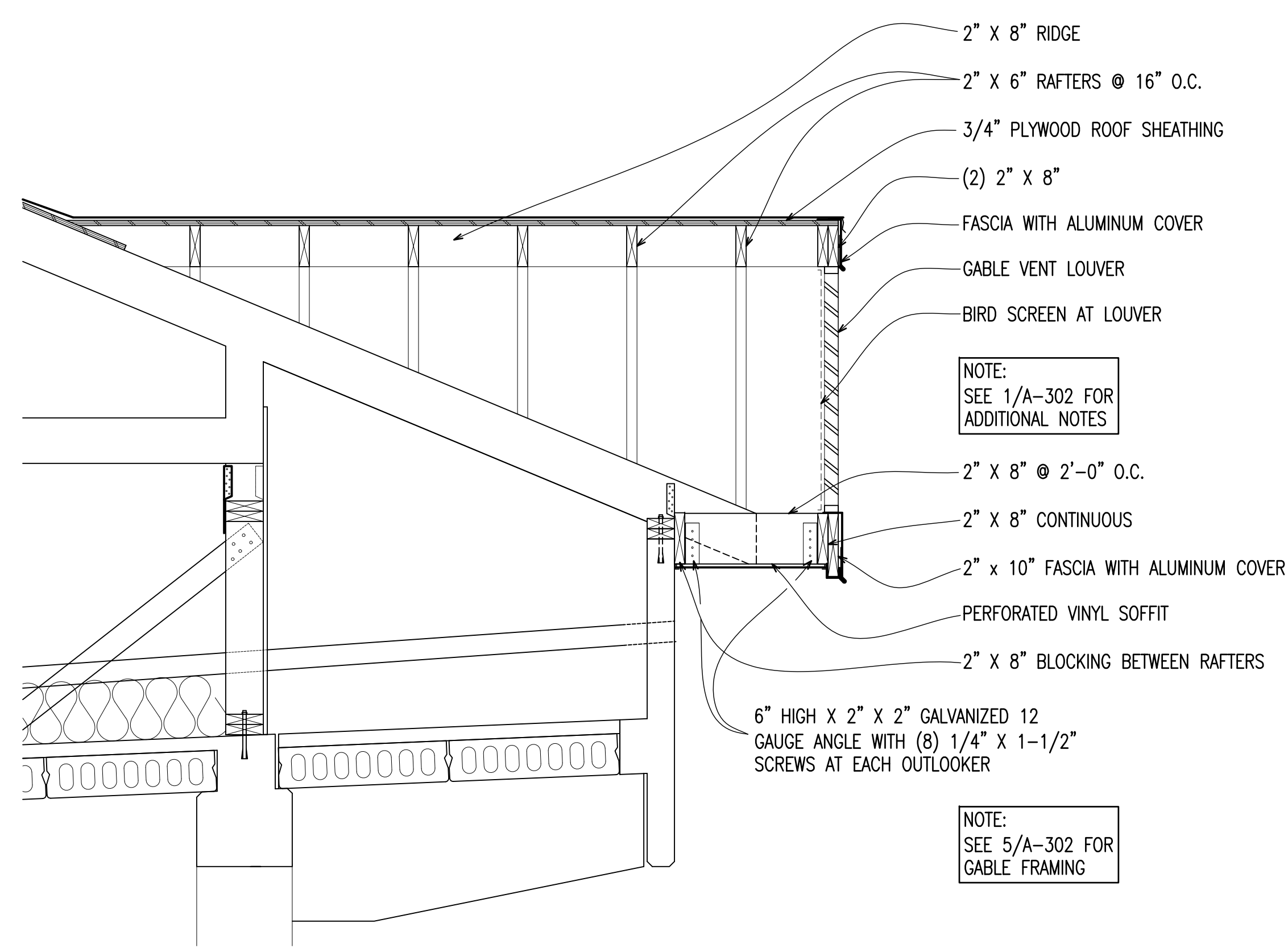
NOTE: SLEEVES ARE ONLY REQUIRED WHERE DUCTS PENETRATE LOAD BEARING WALLS. ALL 8" CONCRETE MASONRY WALLS AND 6" CONCRETE MASONRY MECHANICAL CHASE WALLS SHALL BE CONSIDERED TO BE LOAD BEARING, ALL OTHER WALLS SHALL BE CONSIDERED TO BE NON-LOAD BEARING



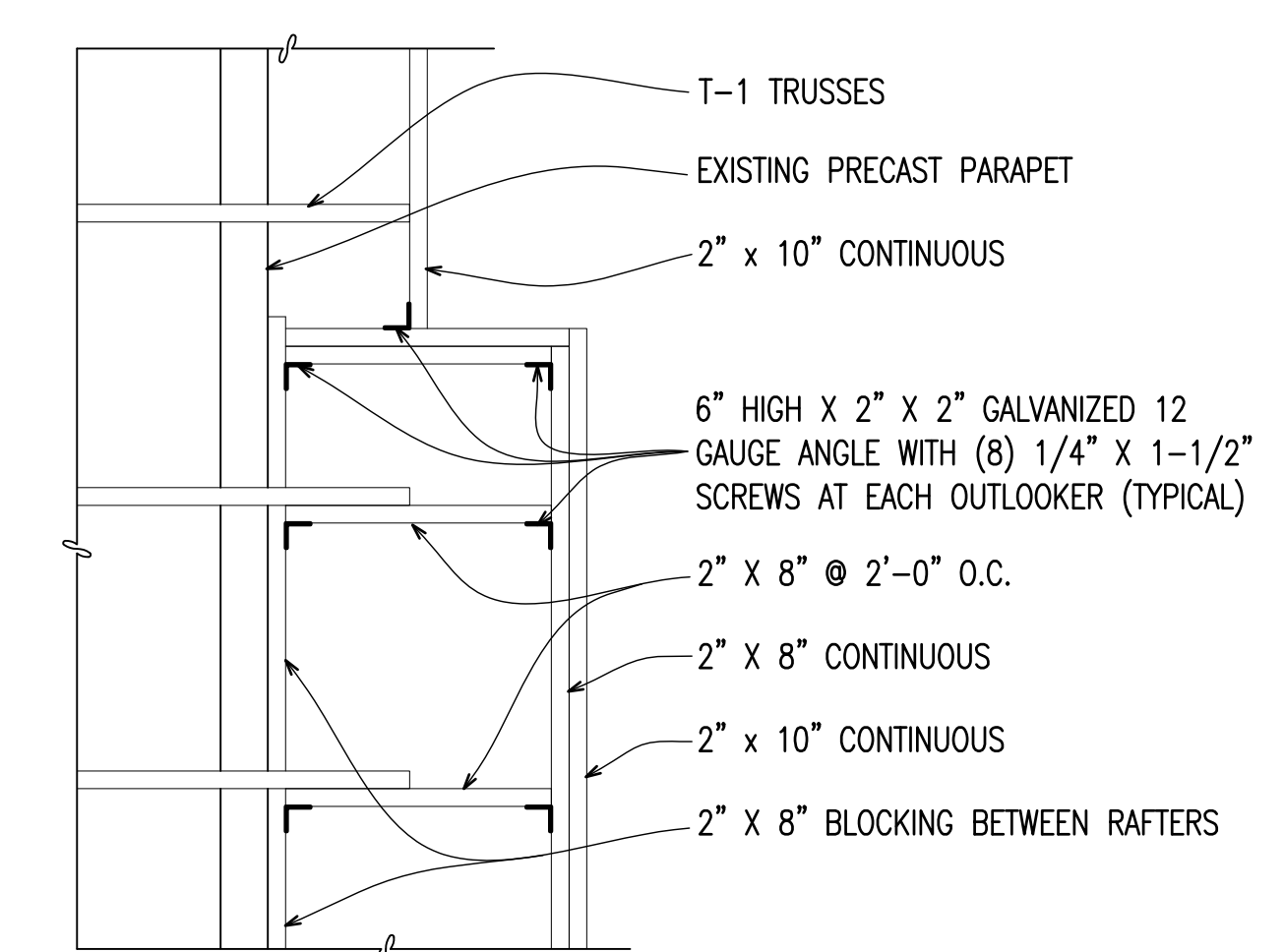
**4 DUCT SLEEVE DETAIL**  
 Scale: 1 1/2" = 1'-0"



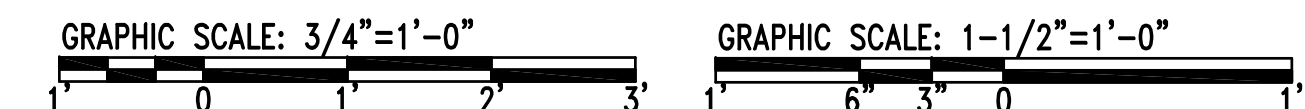
**2 THROUGH THE ROOF VENT**  
 Scale: 1-1/2" = 1'-0"



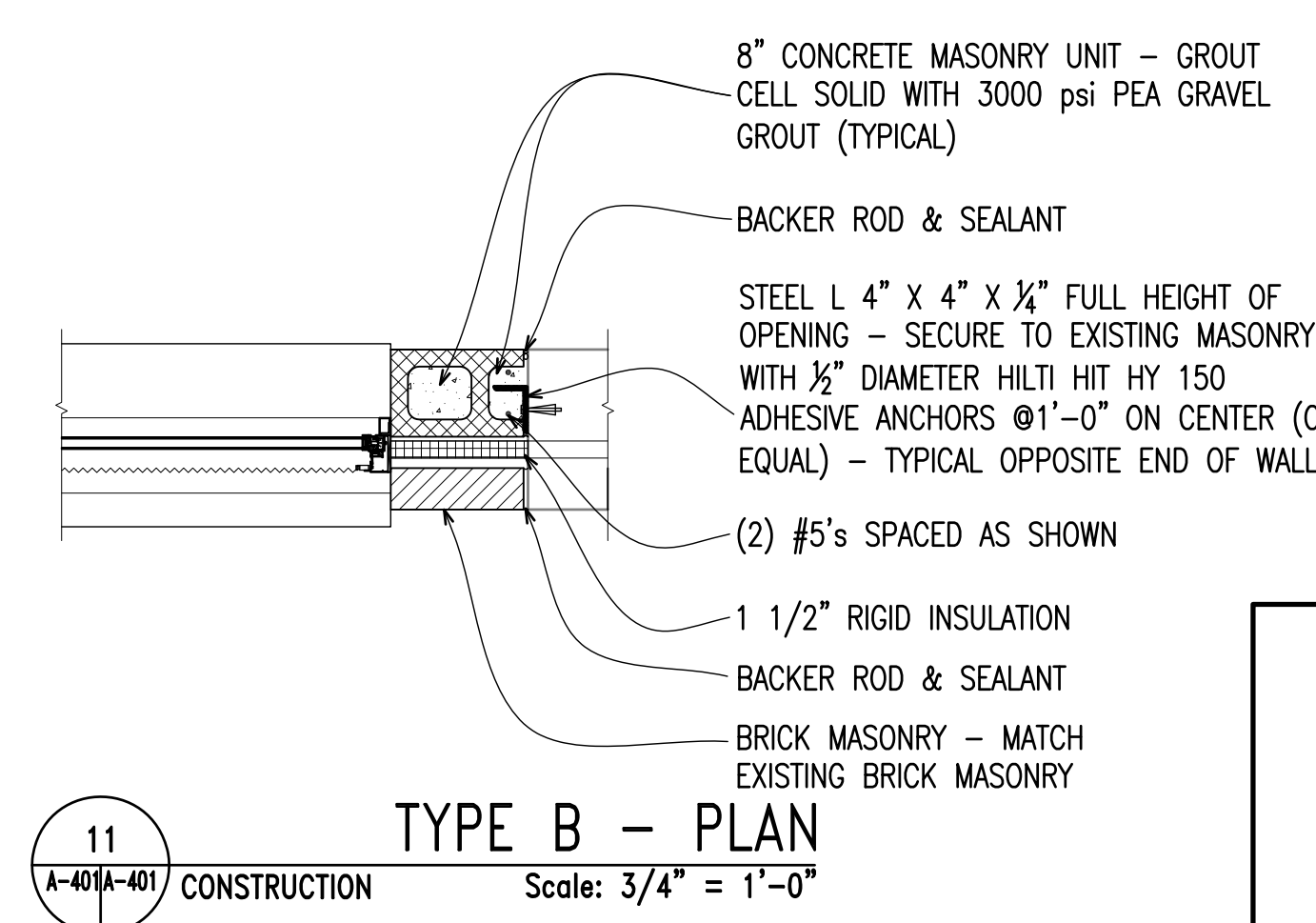
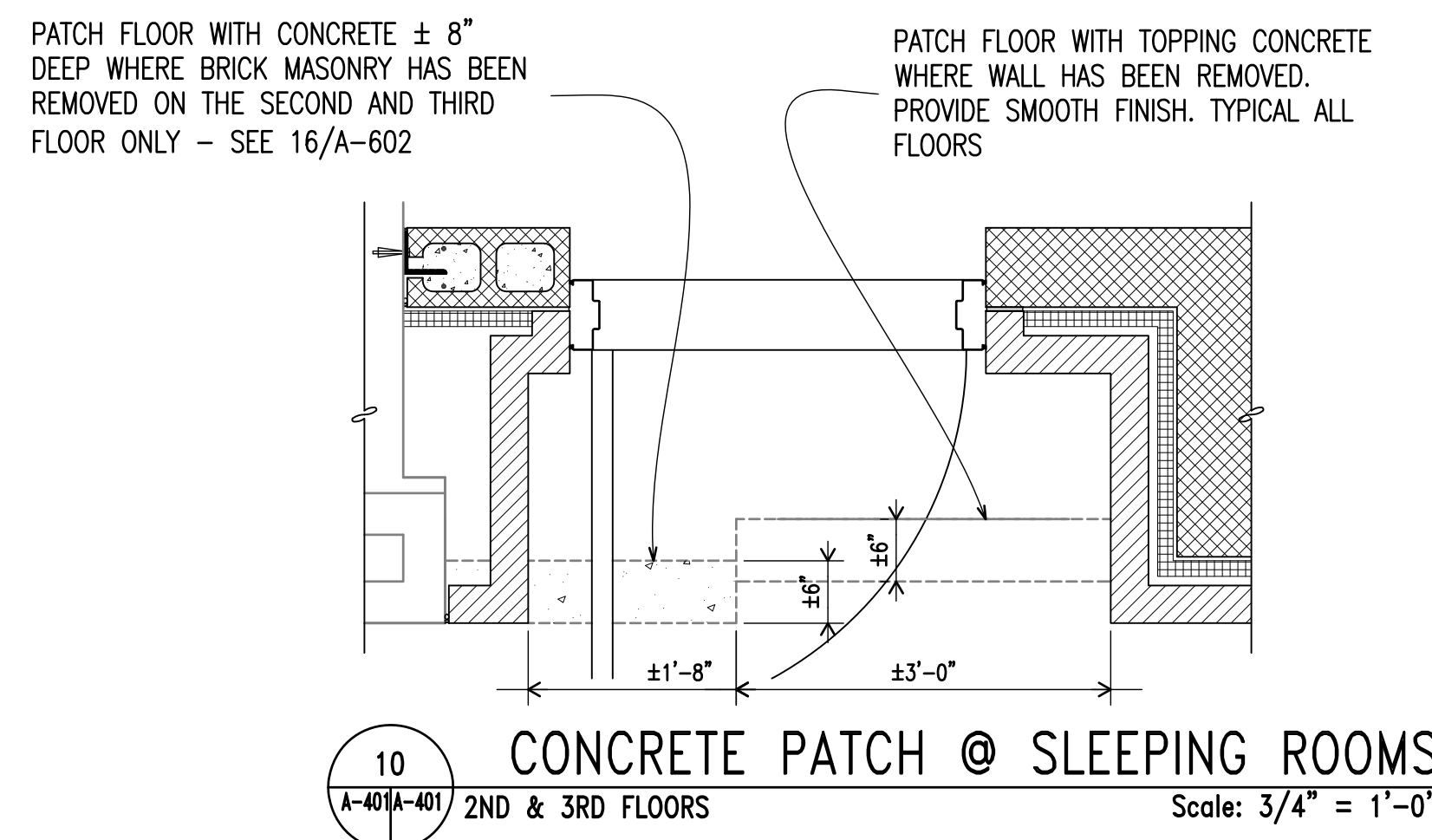
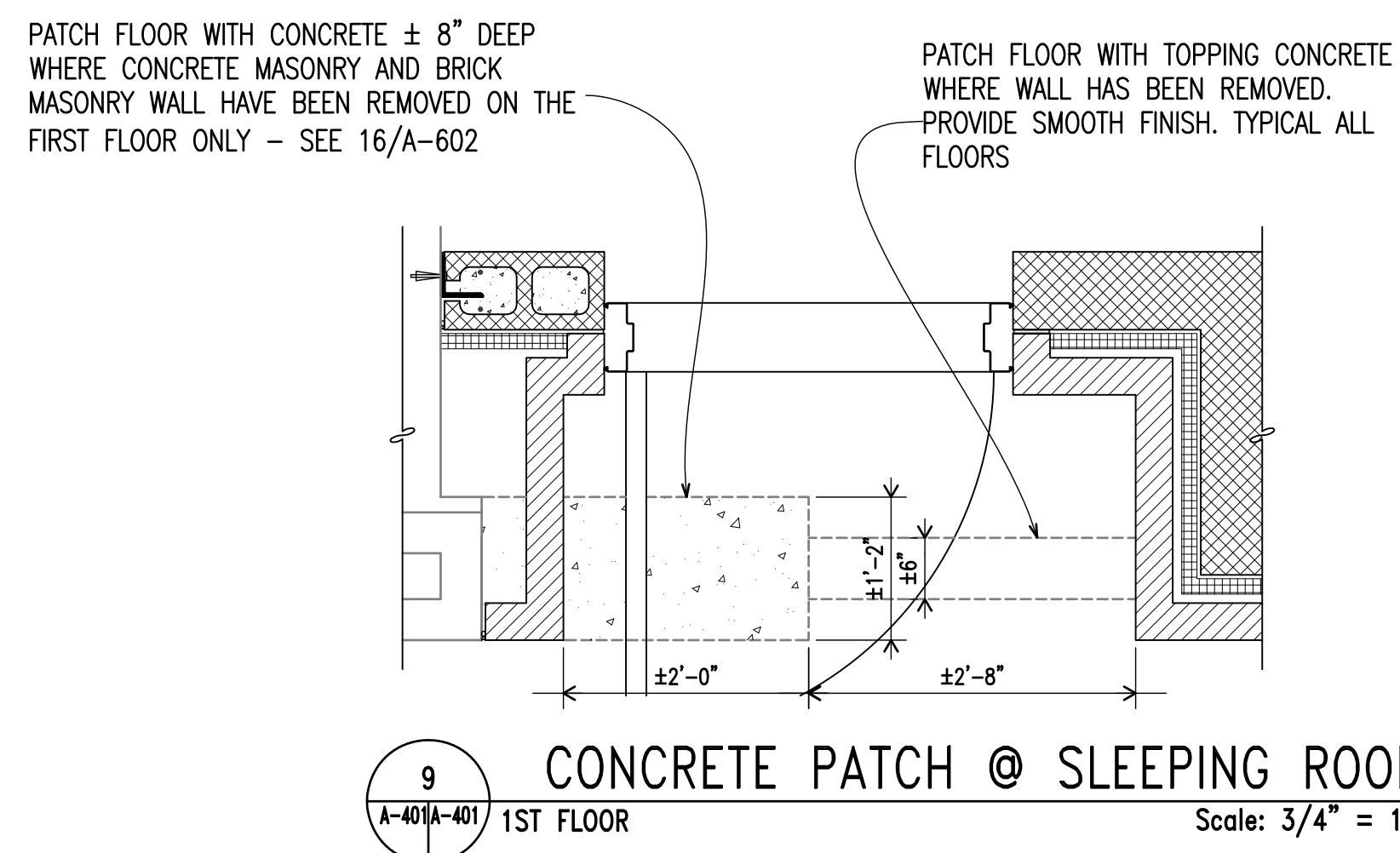
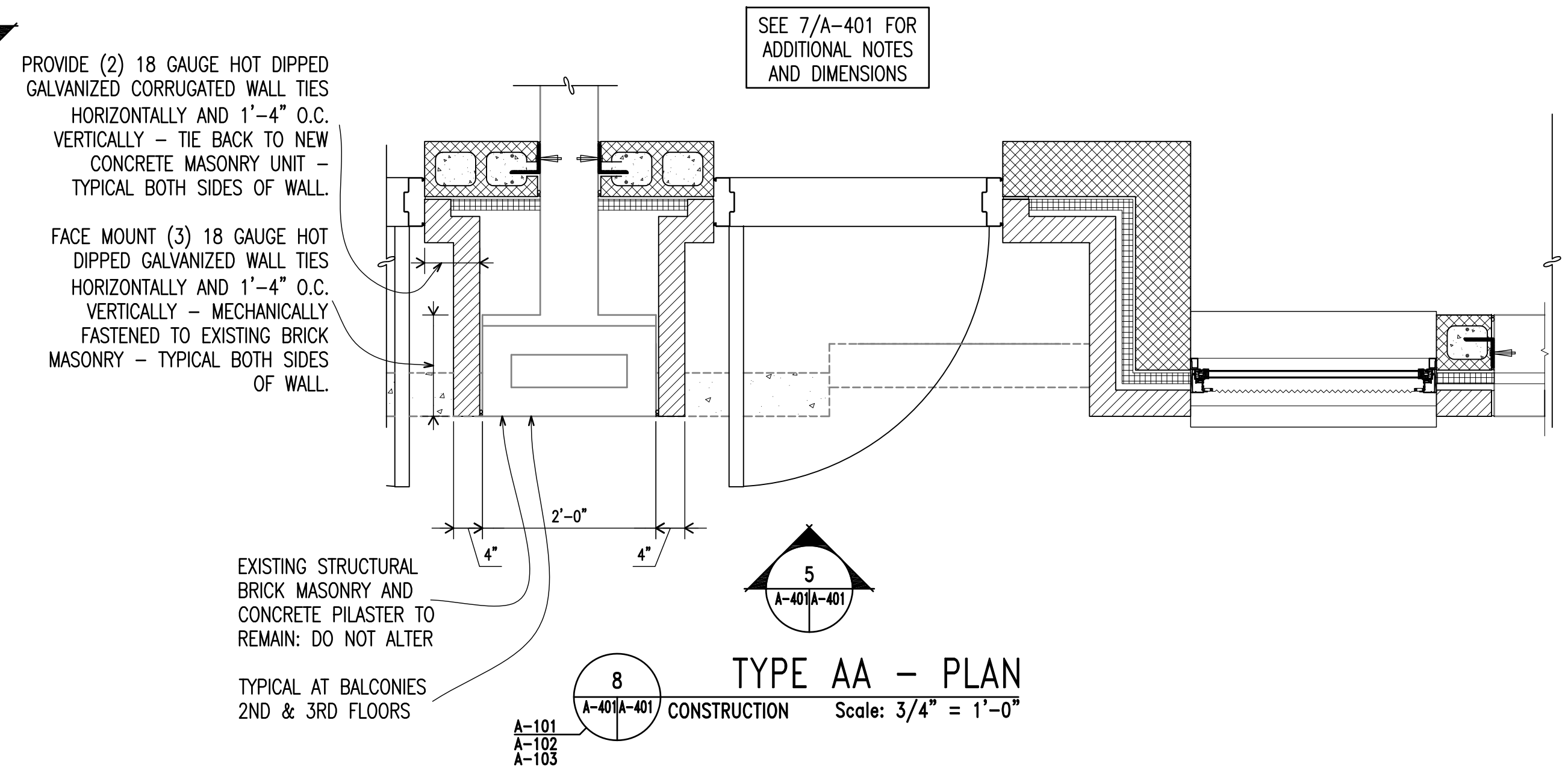
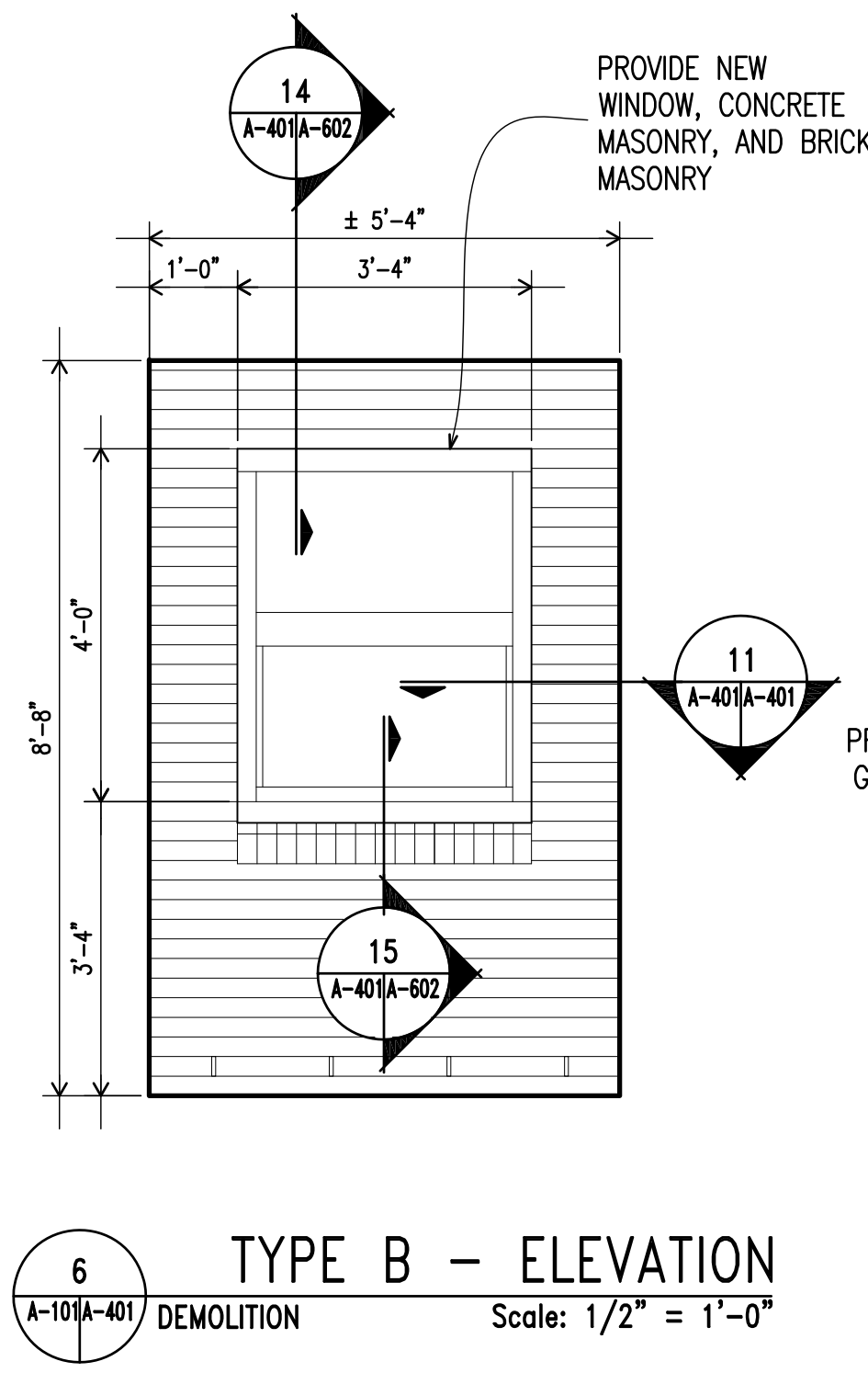
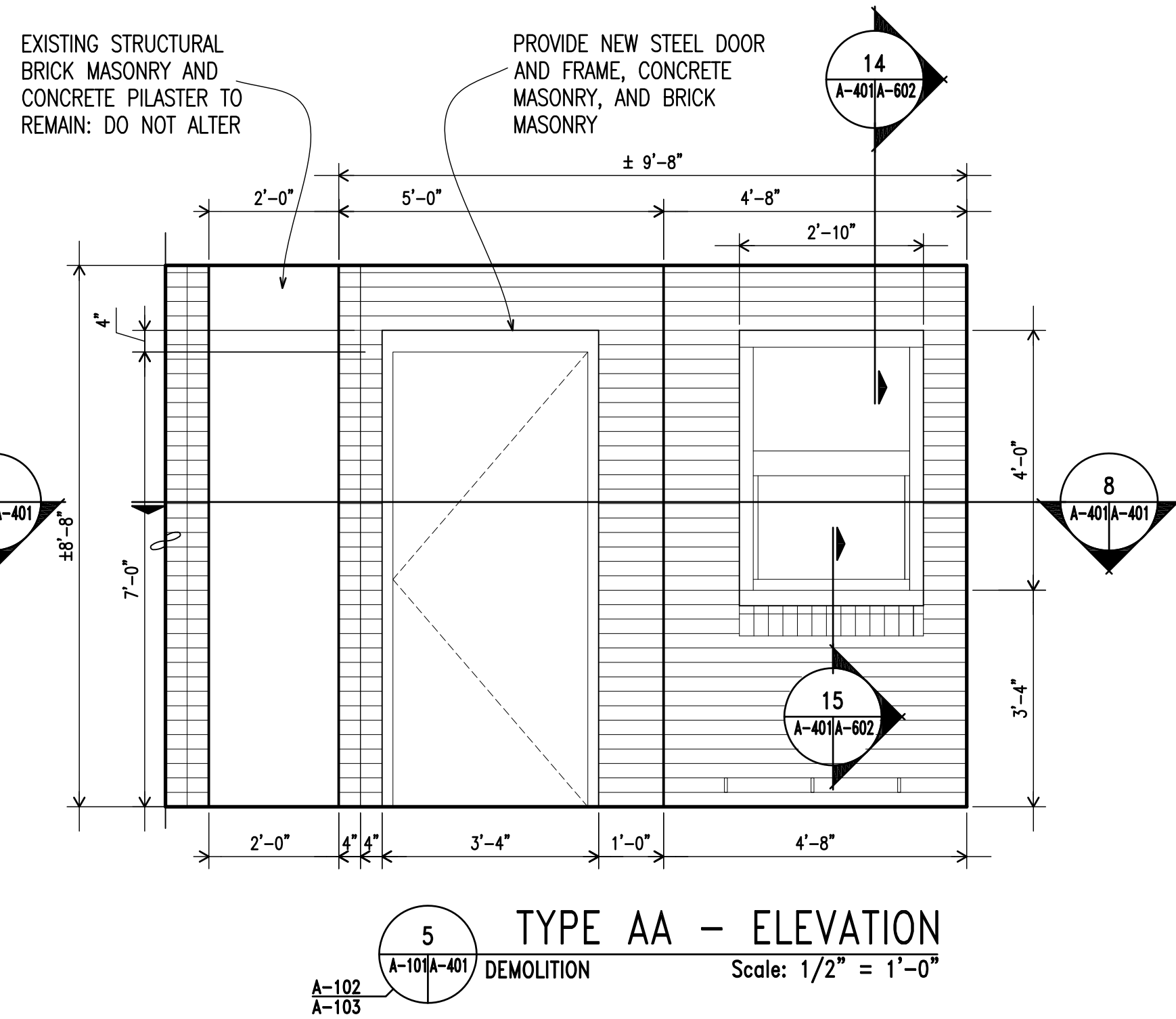
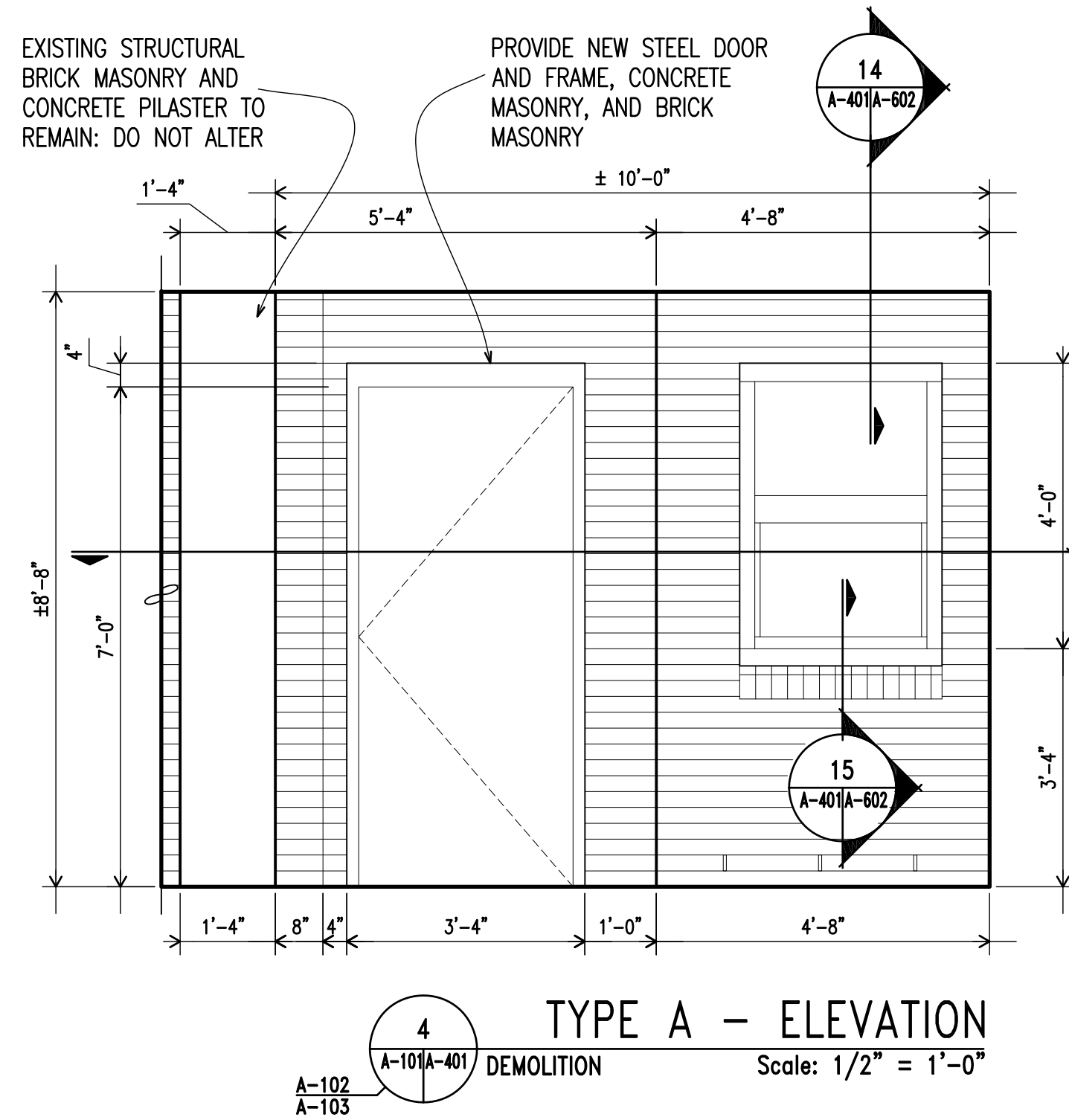
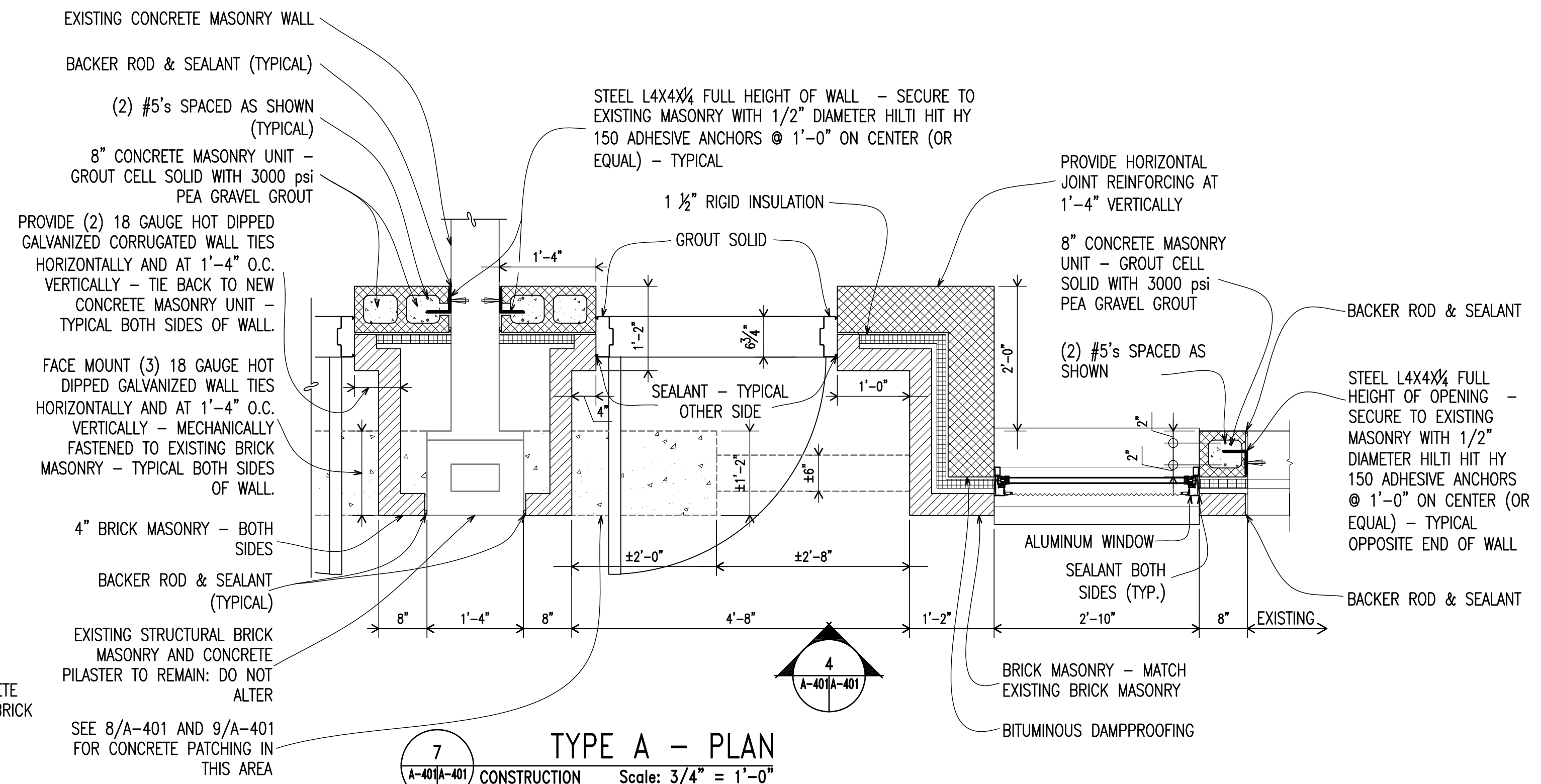
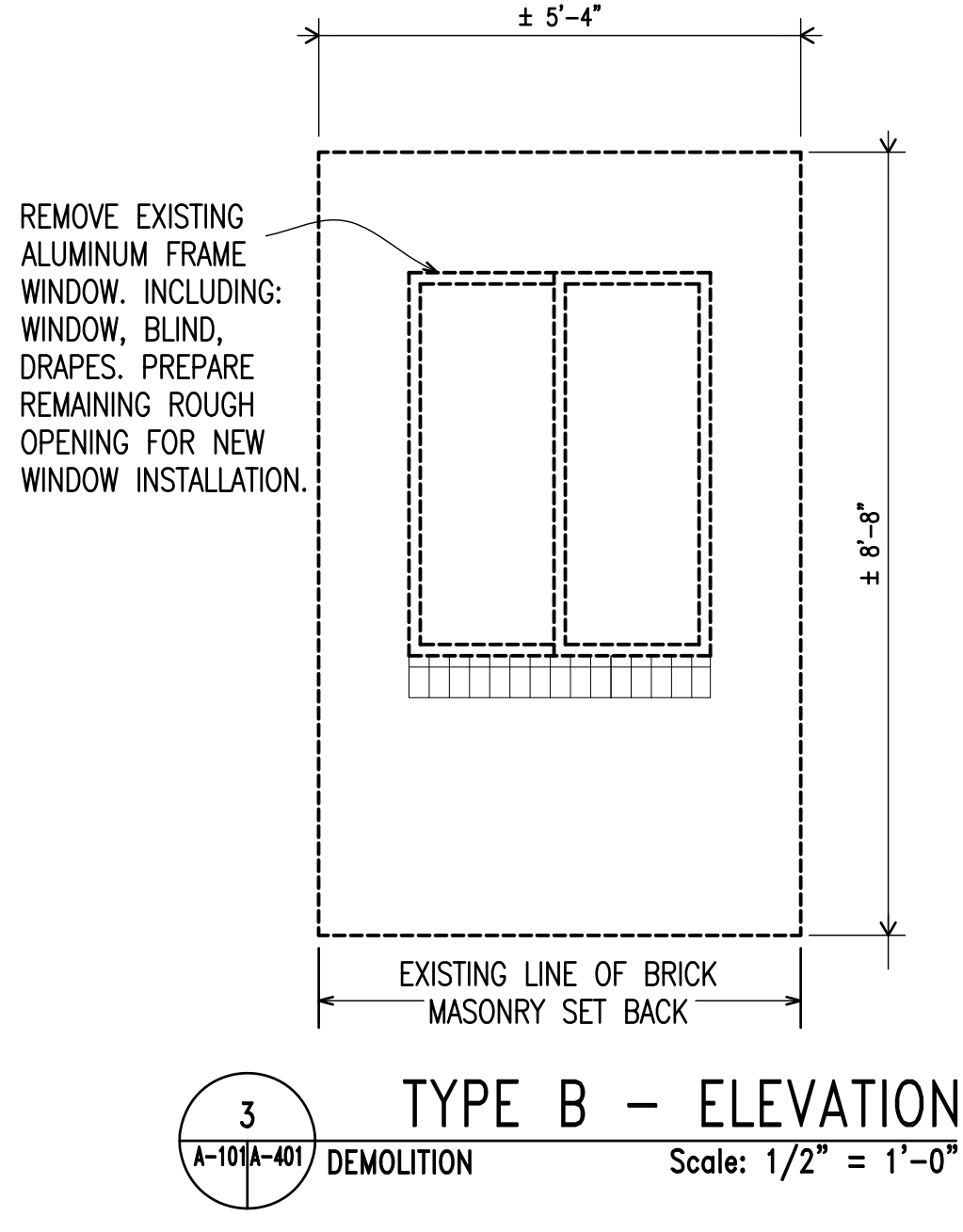
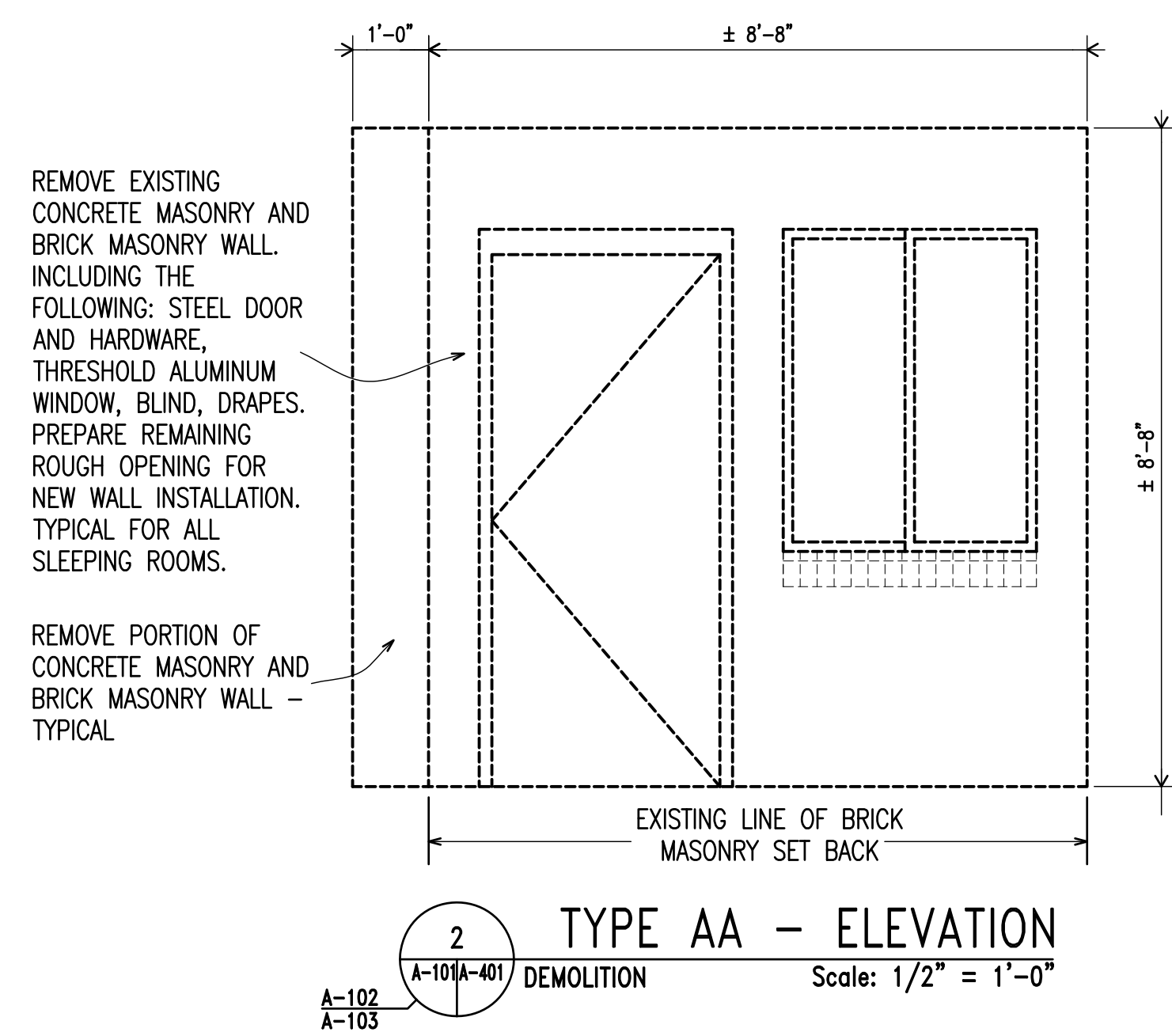
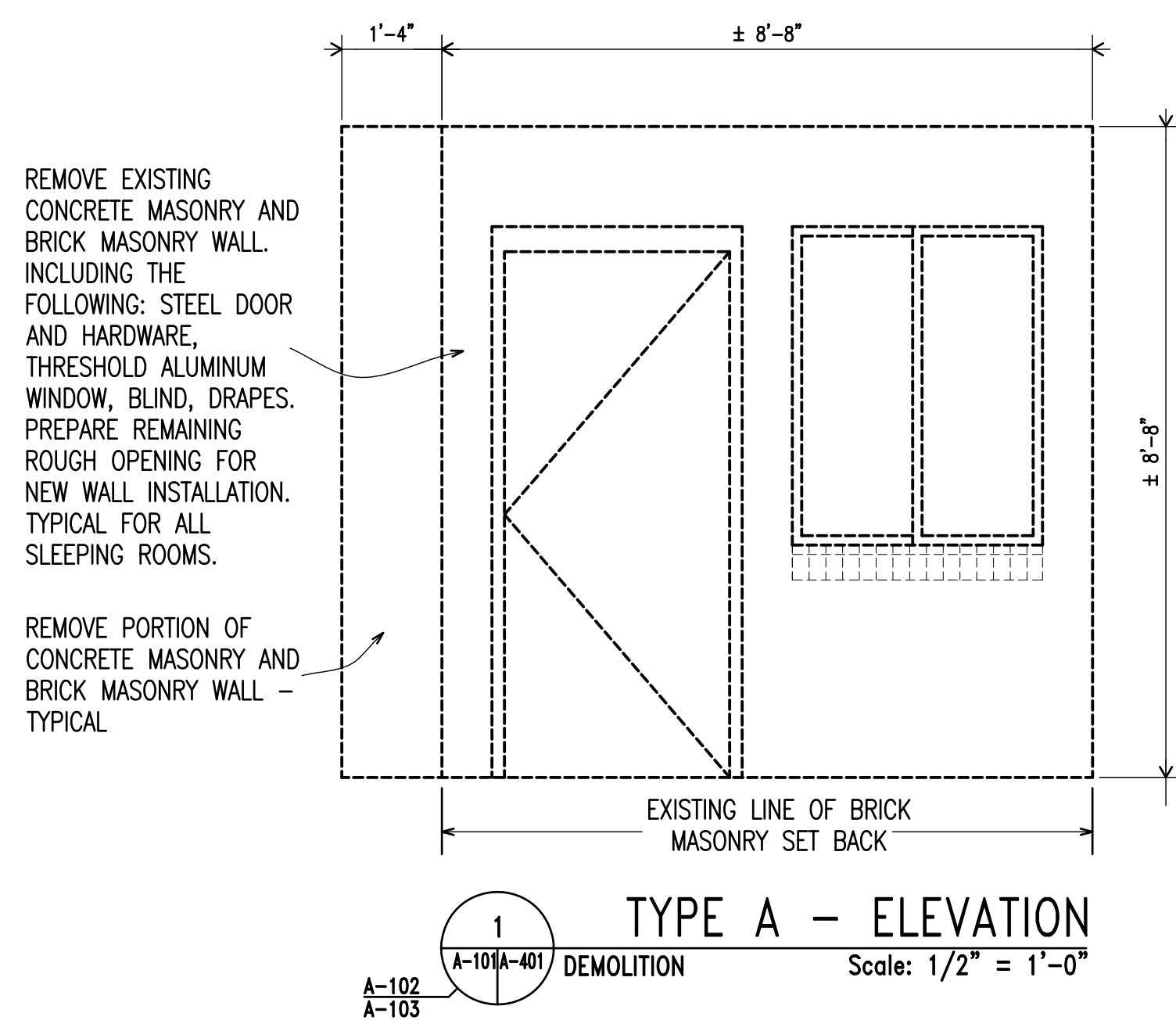
**3 SECTION AT GABLE**  
 Scale: 3/4" = 1'-0"



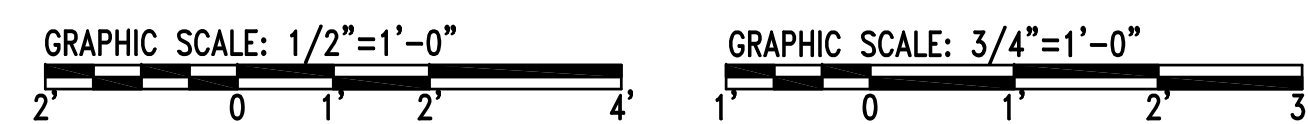
**5 FRAMING AT GABLE**  
 Scale: 3/4" = 1'-0"

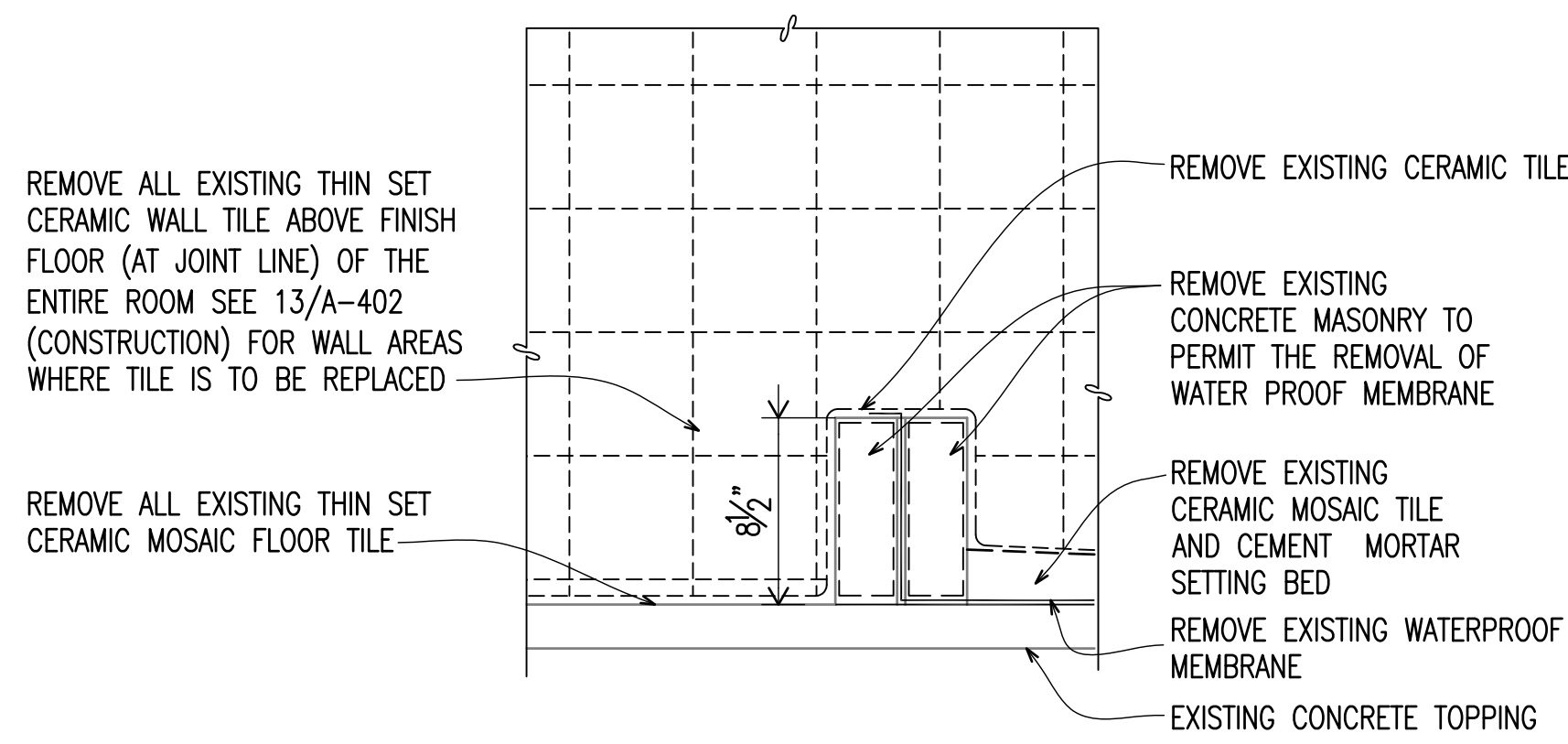


	<b>A-302</b>	
	MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA 2 NORTHERN 2010	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	<b>REPAIR BEQ BUILDING HP485</b>	
DES. RTB DR. SLA CHK. RTB SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:	DATE: _____ DATE: _____	SIZE: F CODE: 80091 IDENT NO.: 60007151 CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070
SECTION DETAILS NAVFAC DRAWING NO. 60007151 SHEET 11 OF 65		

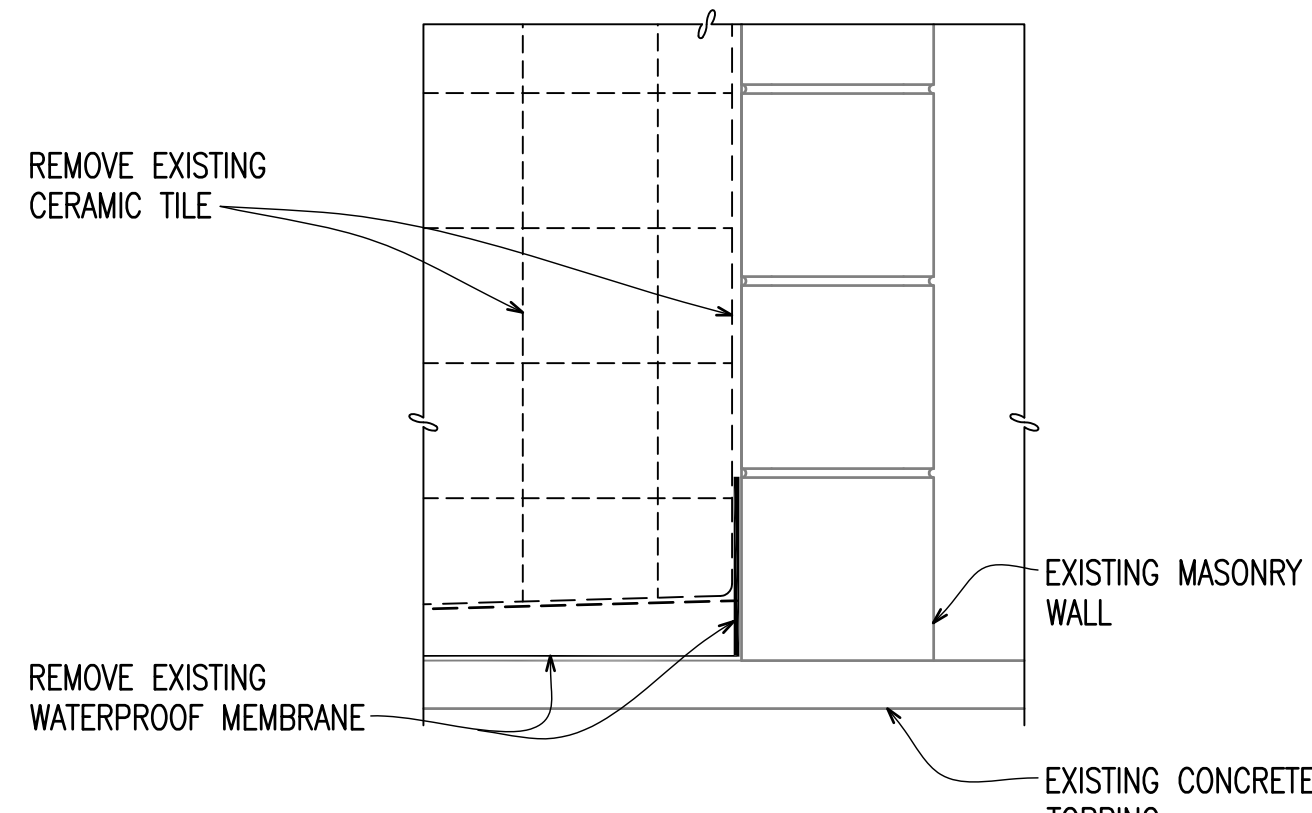


		A-401	
MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA 1007 W. CAMP LEJEUNE BLVD., SUITE 100 CAMP LEJEUNE, NC 28549 WWW.BELANGIAFAULKENBERRY.COM		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
REPAIR BEQ BUILDING HP485		DETAILS NAVFAC DRAWING NO. <b>60007152</b>	
DES. RTB DR. SLA CHK. RTB SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:	DATE: _____ DATE: _____	SIZE: F CODE: 80091 IDENT NO: 60007152 CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070	SHEET 12 OF 65

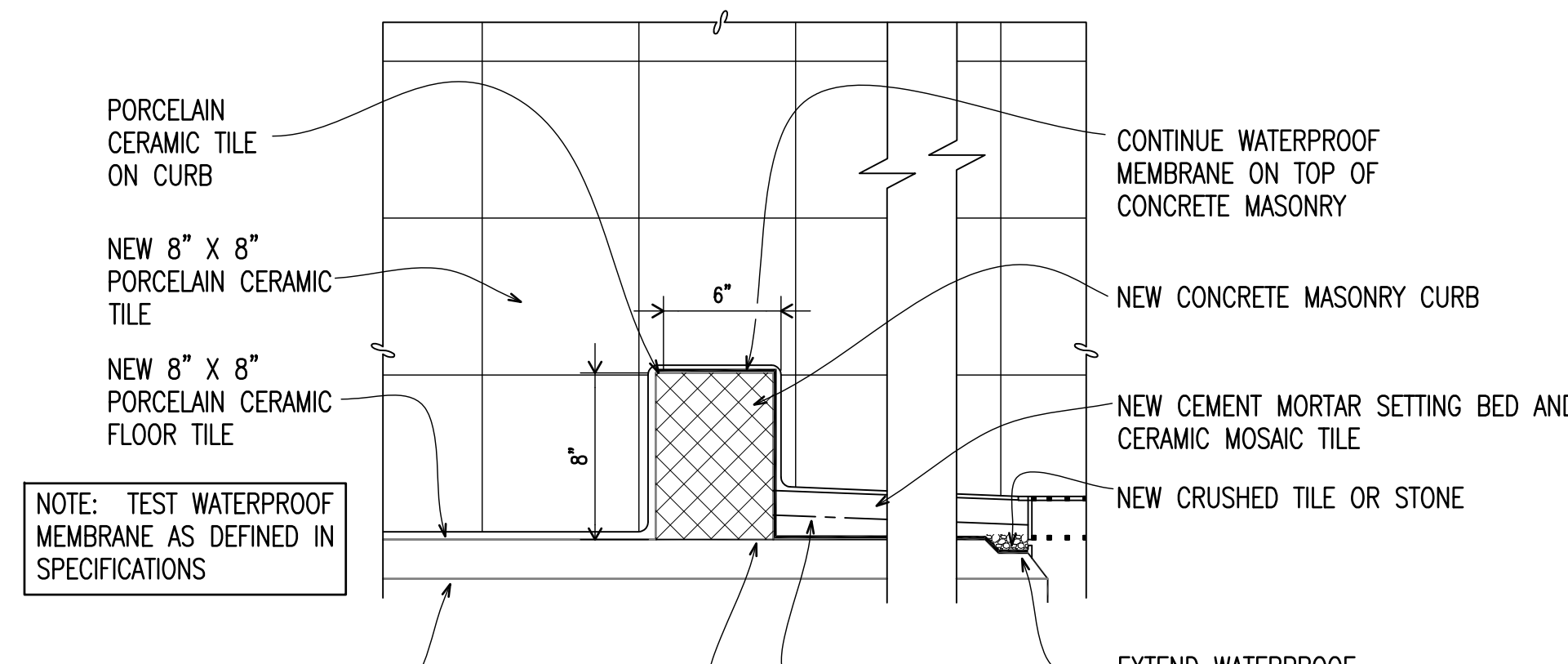




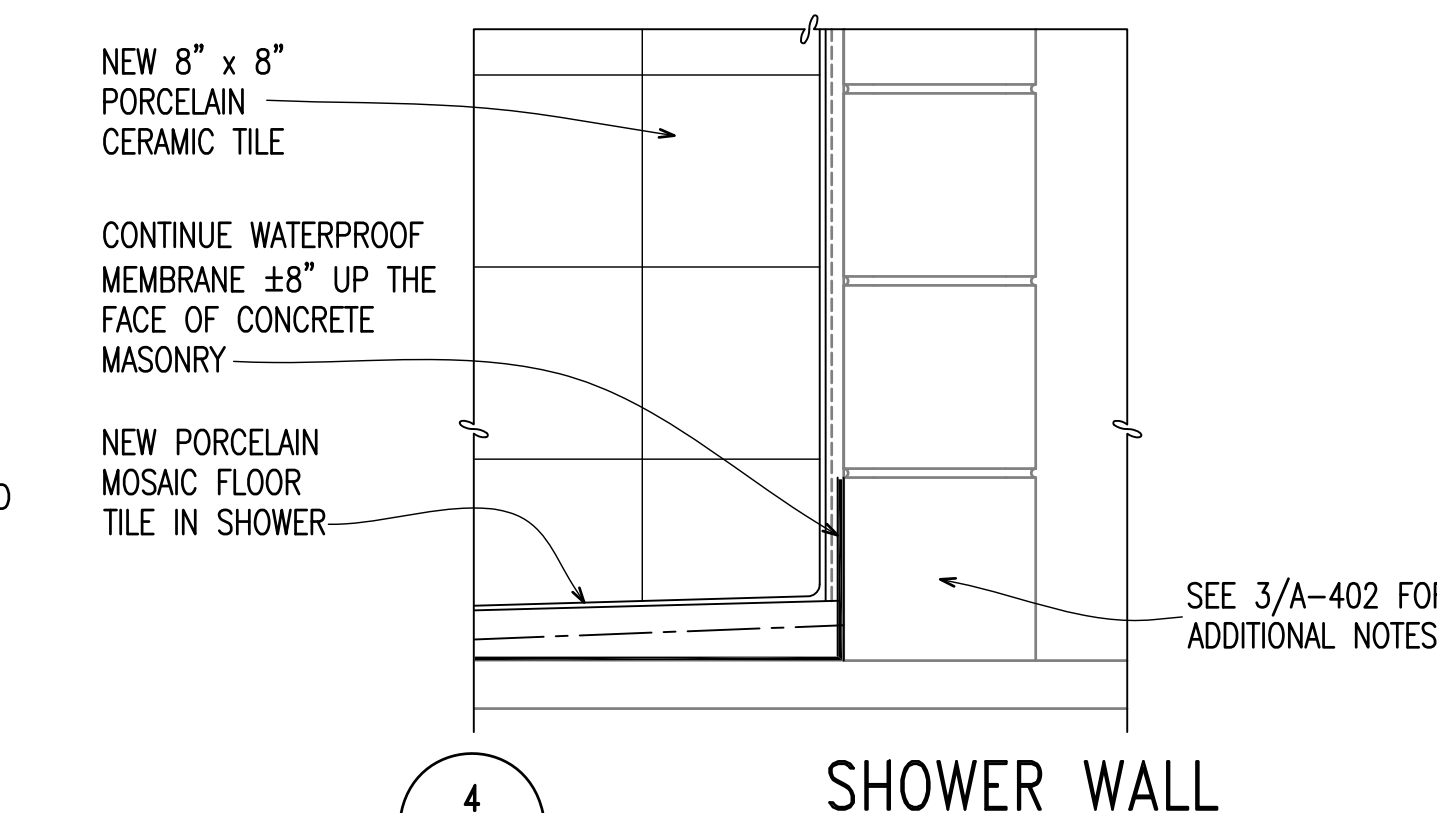
**1 SHOWER CURB**  
A-102 A-103 DEMOLITION Scale: 1-1/2" = 1'-0"



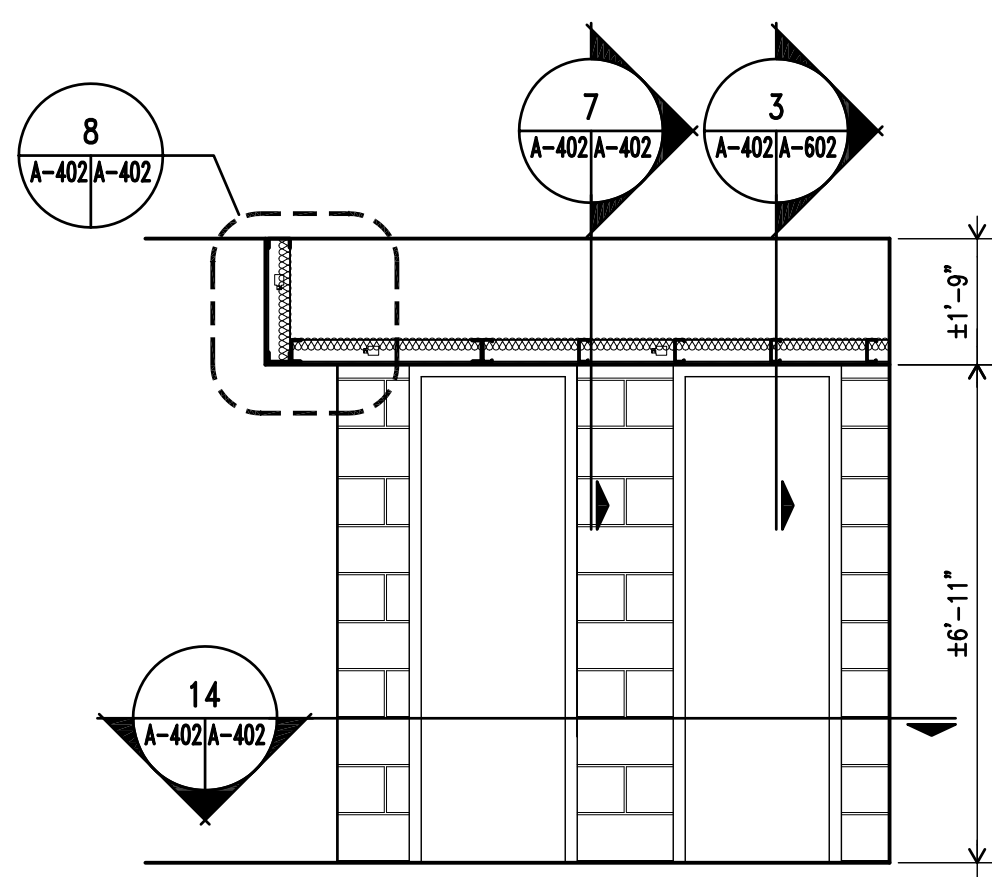
**2 SHOWER WALL**  
A-102 A-103 DEMOLITION Scale: 1-1/2" = 1'-0"



**3 SHOWER CURB**  
A-102 A-103 CONSTRUCTION Scale: 1-1/2" = 1'-0"

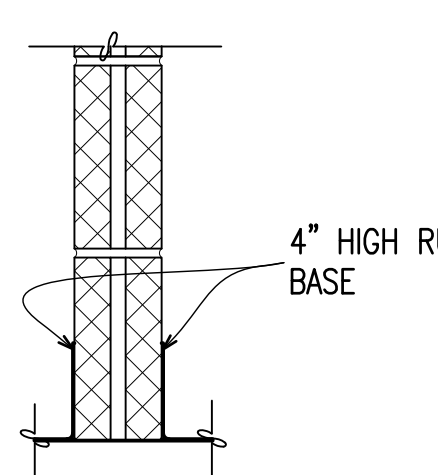


**4 SHOWER WALL**  
A-102 A-103 CONSTRUCTION Scale: 1-1/2" = 1'-0"

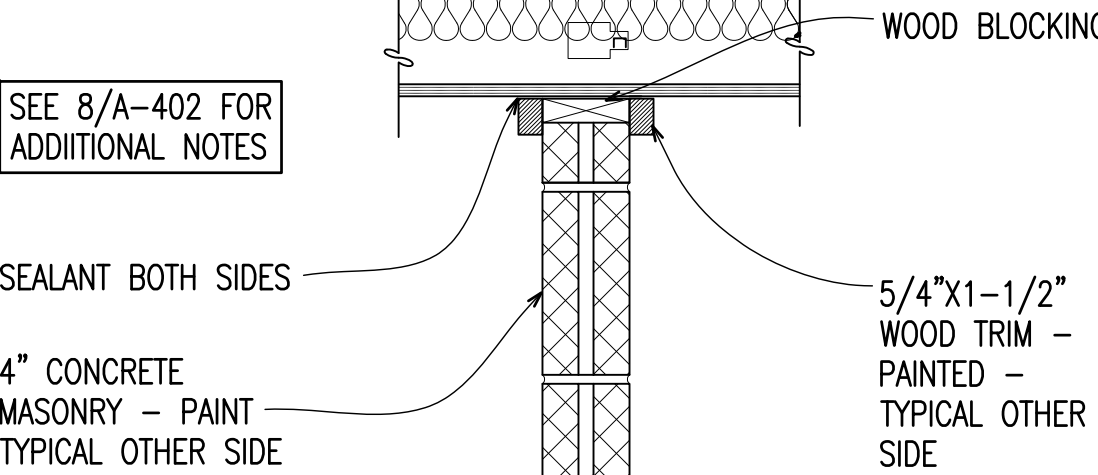


**5 CLOSET ELEVATIONS**  
A-402 A-402 CONSTRUCTION Scale: 3/8" = 1'-0"

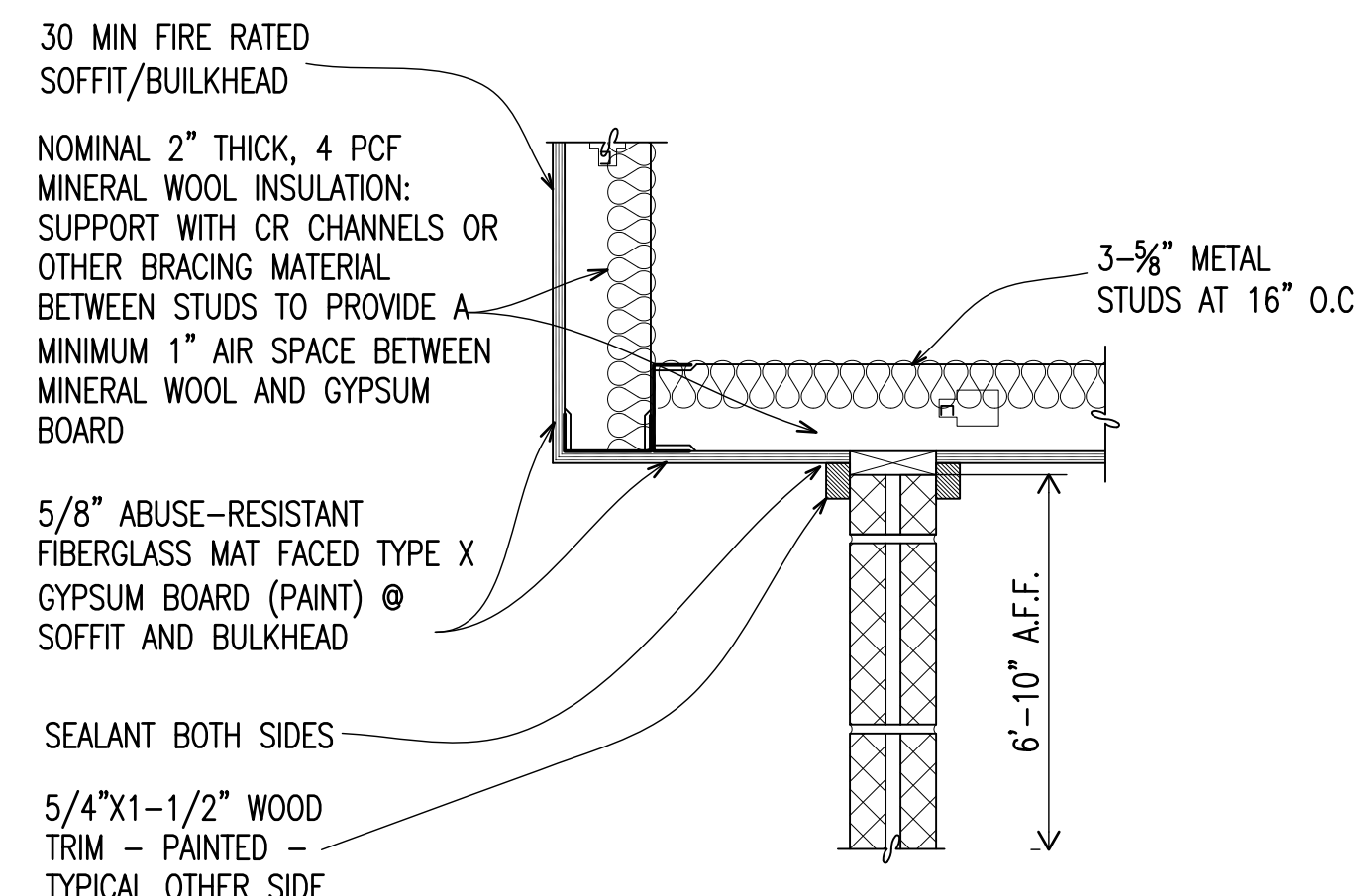
**SOFFIT/BULKHEAD - 30 MINUTE FIRE RATED**  
GYPSUM BOARD SHALL BE 5/8" THICK, WITH SQUARE, BEVELED OR TAPERED EDGES, APPLIED VERTICALLY OR HORIZONTALLY. VERTICAL JOINTS CENTERED OVER STUDS. ATTACHED TO STEEL STUDS WITH 1-1/4" LONG, TYPE S-12, STEEL SCREWS SPACED 8" O.C. AT THE PERIMETER OF THE BOARD AND 12" O.C. IN THE FIELD OF THE BOARD WHEN APPLIED VERTICALLY AND 8" O.C. AT THE PERIMETER OF THE BOARD AND IN THE FIELD OF THE BOARD WHEN APPLIED HORIZONTALLY.  
JOINTS: TREATED WITH GLASS FIBER TAPE AND LATEX MODIFIED PORTLAND CEMENT MORTAR OR ANSI A136 TYPE 1 ORGANIC ADHESIVE.  
JOINT TAPE COMPOUND: VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS; OPTIONAL NOMINAL 2" WIDE PAPER OR FIBERGLASS TAPE, CENTERED OVER JOINTS AND EMBEDDED IN FIRST LAYER OF COMPOUND.



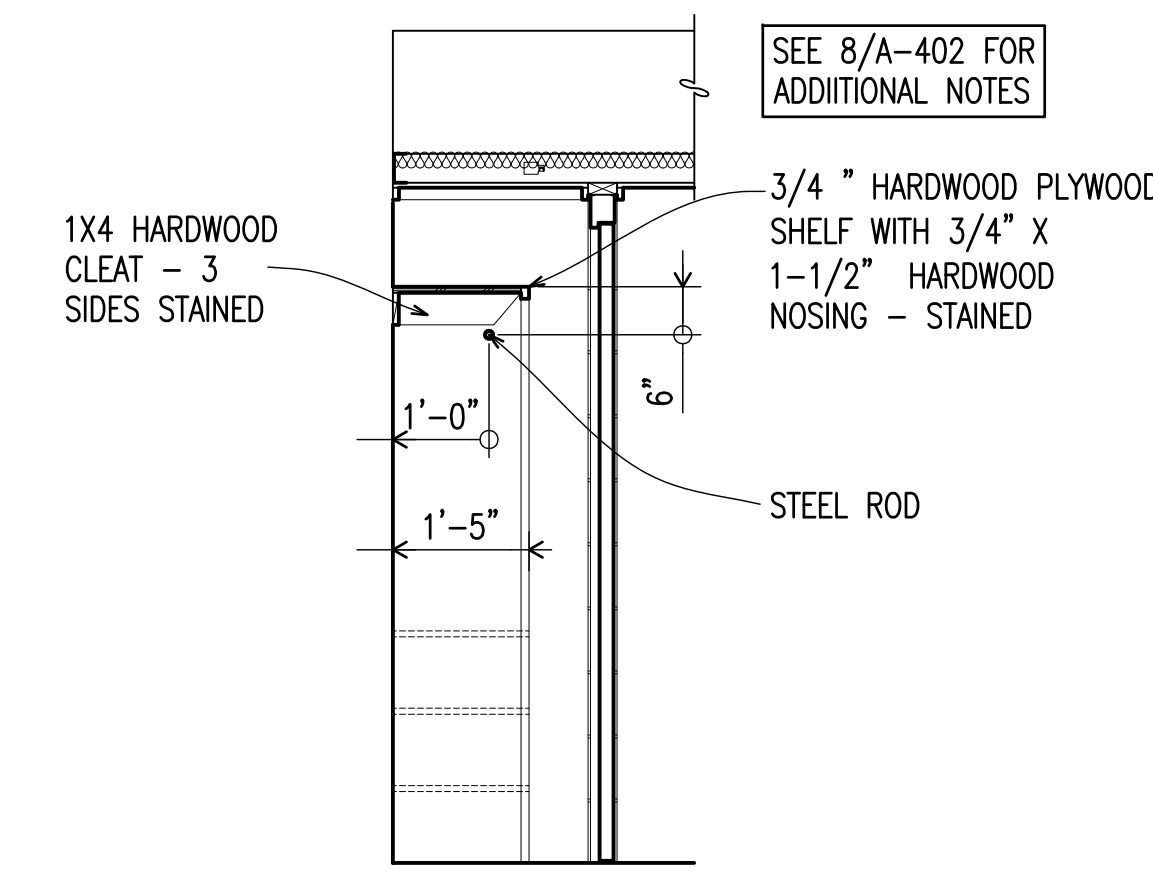
**6 CLOSET WALL**  
A-402 A-402 CONSTRUCTION Scale: 1/2" = 1'-0"



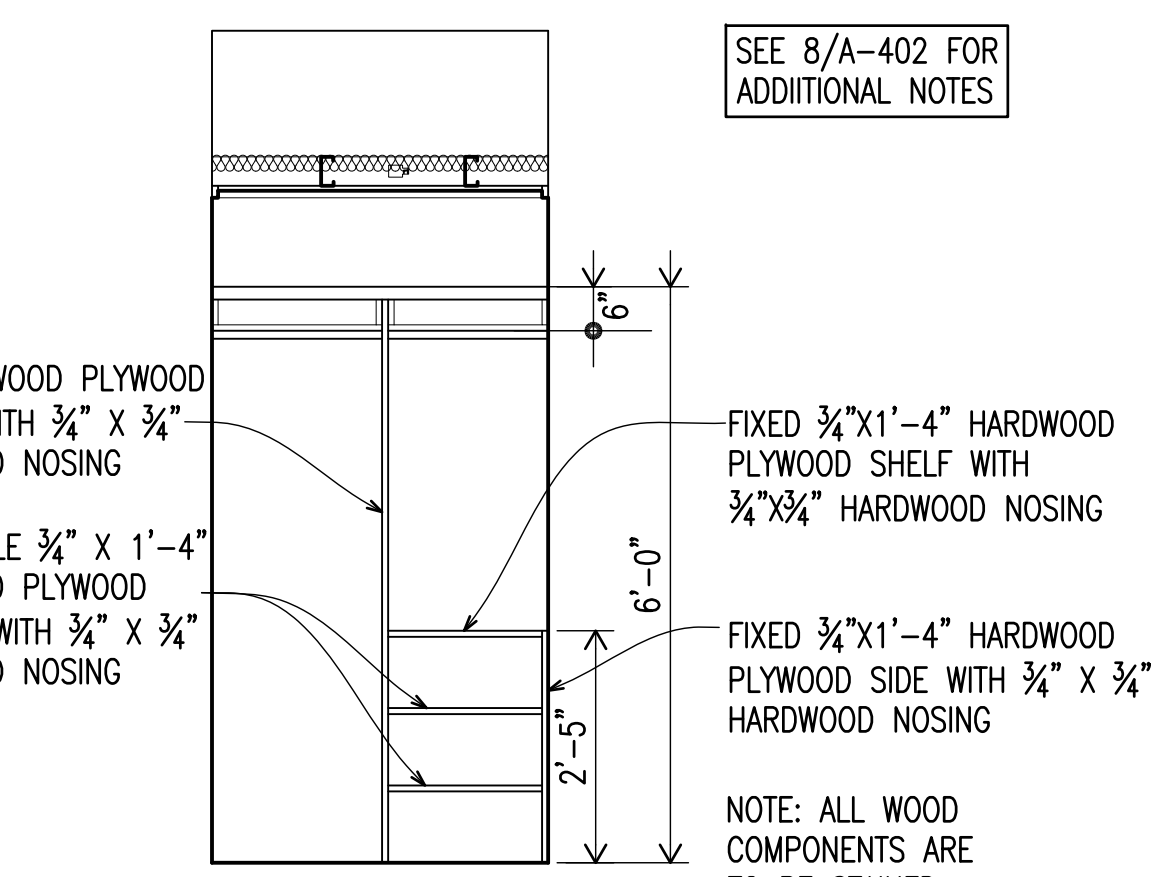
**7 CLOSET DETAIL**  
A-402 A-402 CONSTRUCTION Scale: 1-1/2" = 1'-0"



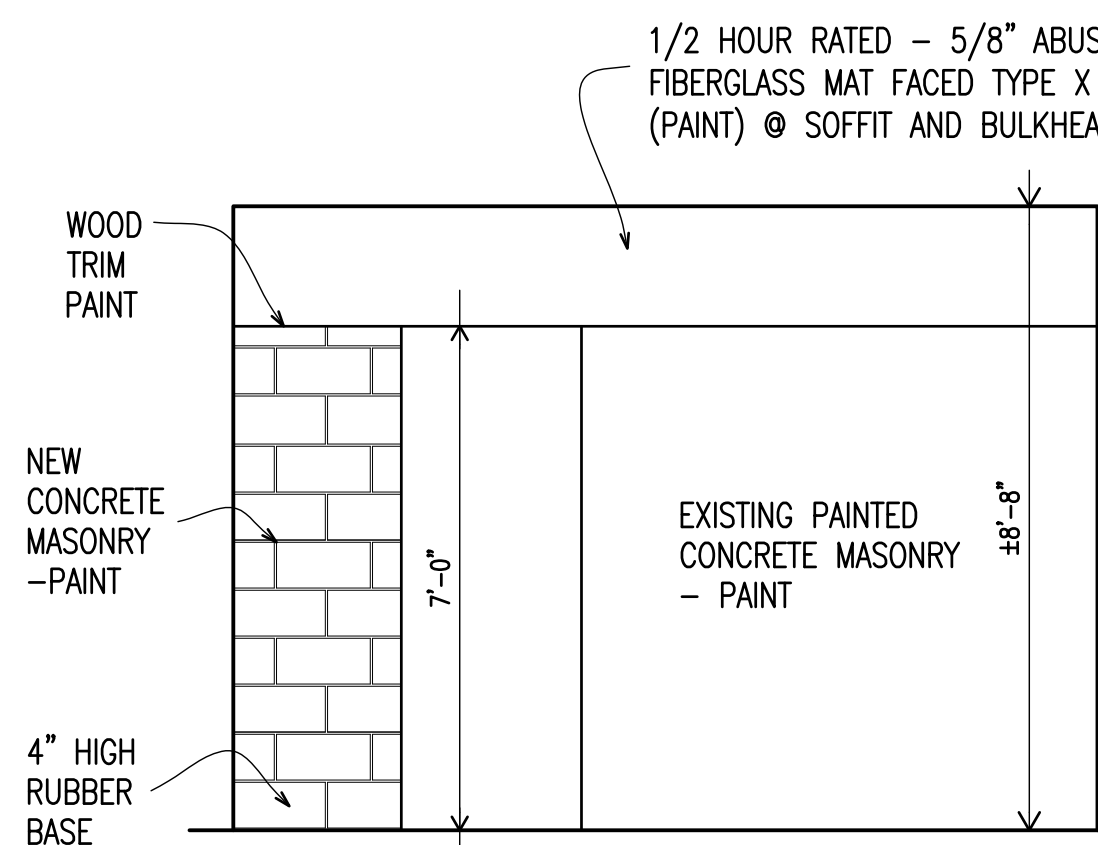
**8 SOFFIT DETAIL**  
A-402 A-402 CONSTRUCTION Scale: 1-1/2" = 1'-0"



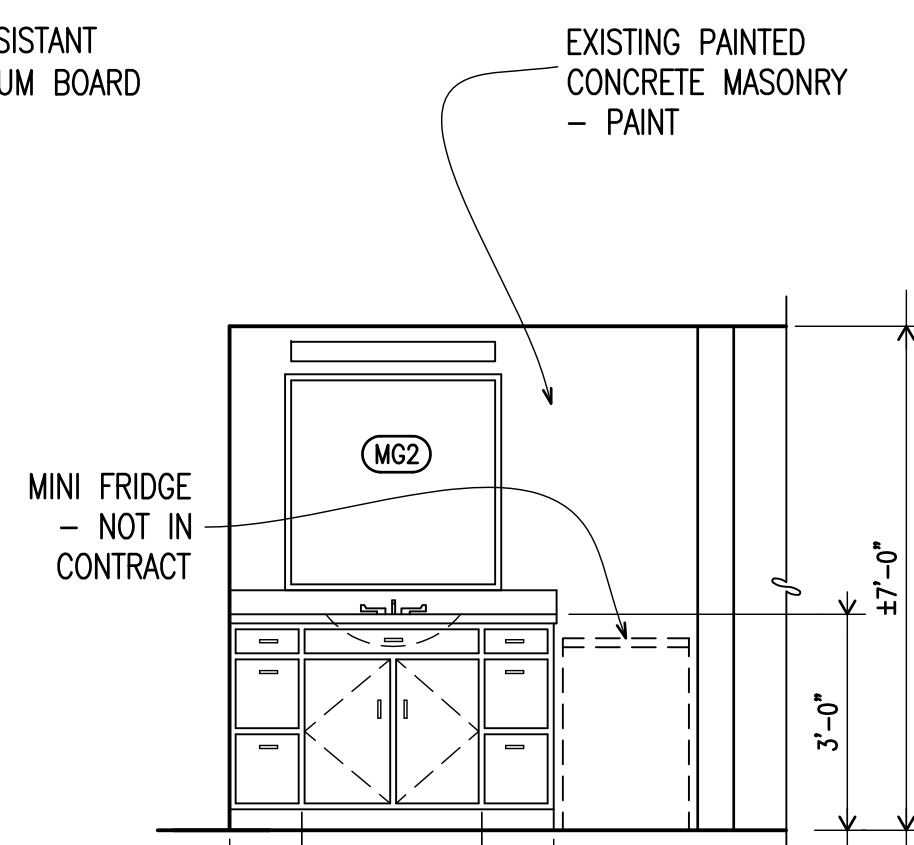
**9 CLOSET DETAIL**  
A-402 A-402 CONSTRUCTION Scale: 1/2" = 1'-0"



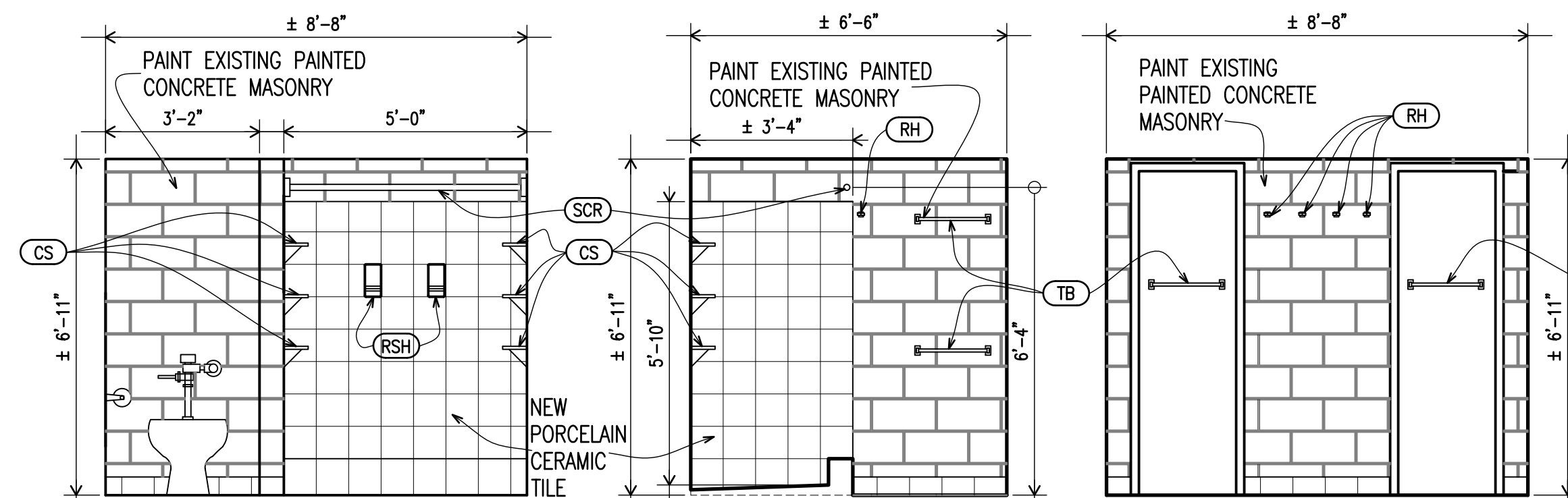
**10 CLOSET DETAIL**  
A-402 A-402 CONSTRUCTION Scale: 1/2" = 1'-0"



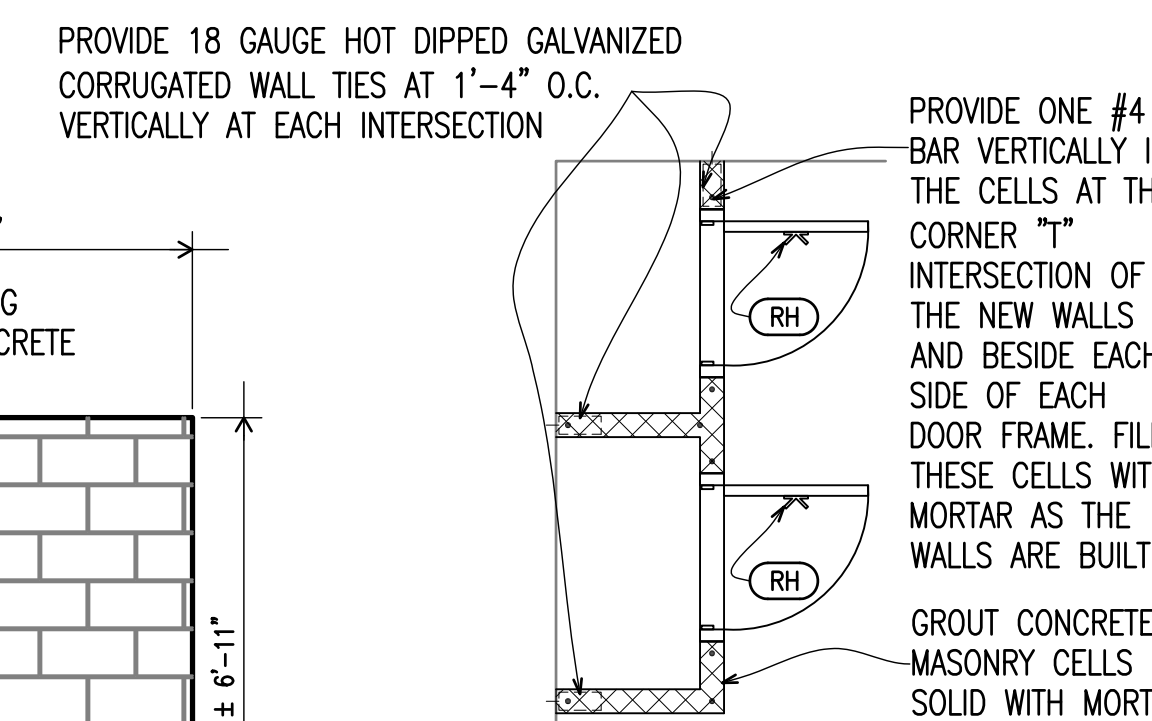
**11 CLOSET ELEVATIONS**  
A-402 A-402 CONSTRUCTION Scale: 3/8" = 1'-0"



**12 CLOSET ELEVATIONS**  
A-402 A-402 CONSTRUCTION Scale: 3/8" = 1'-0"



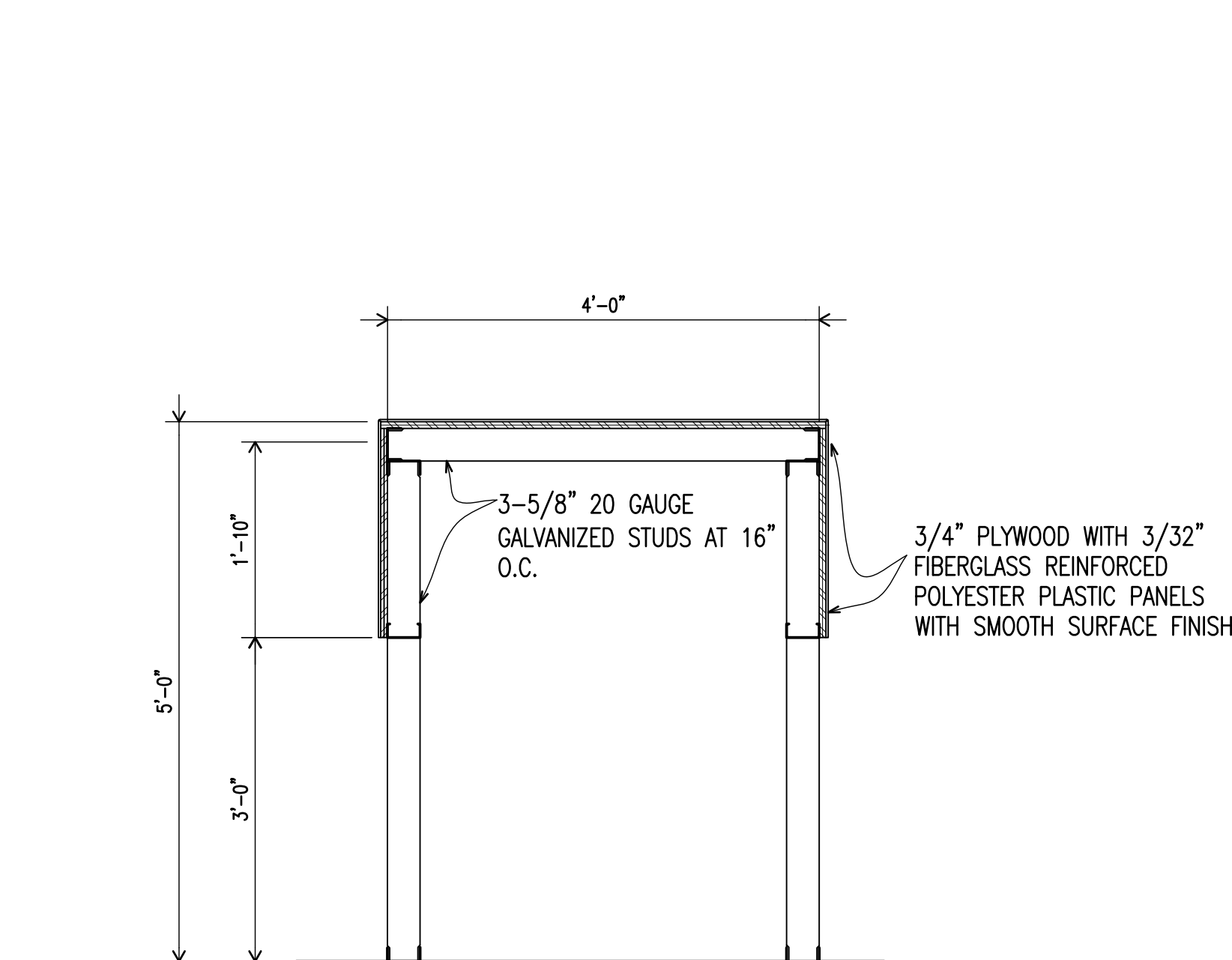
**13 BATHROOM ELEVATIONS**  
A-102 A-103 CONSTRUCTION Scale: 3/8" = 1'-0"



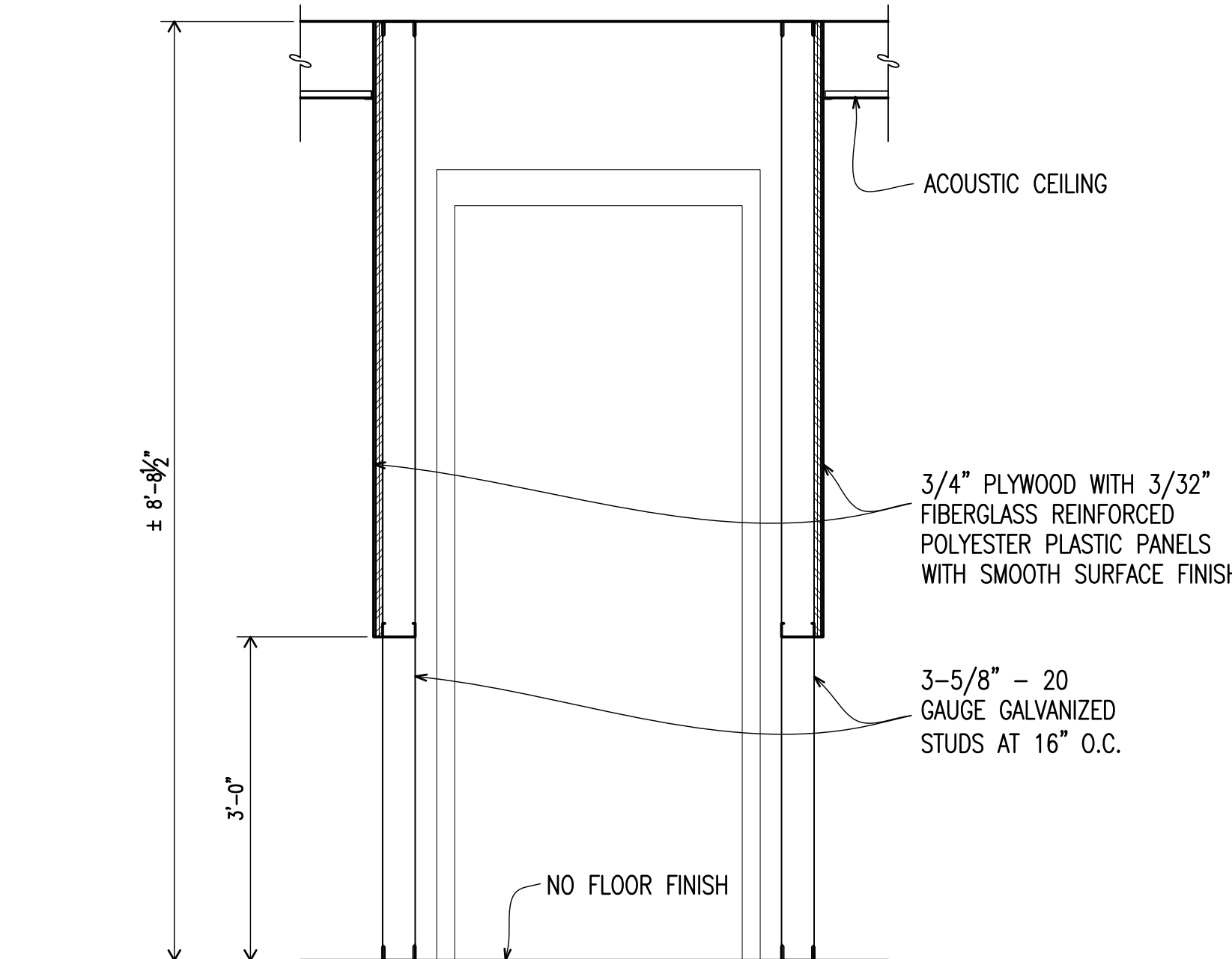
**14 CLOSET PLAN DETAIL**  
A-101 A-402 CONSTRUCTION Scale: 3/8" = 1'-0"

**TOILET ACCESSORY SCHEDULE**

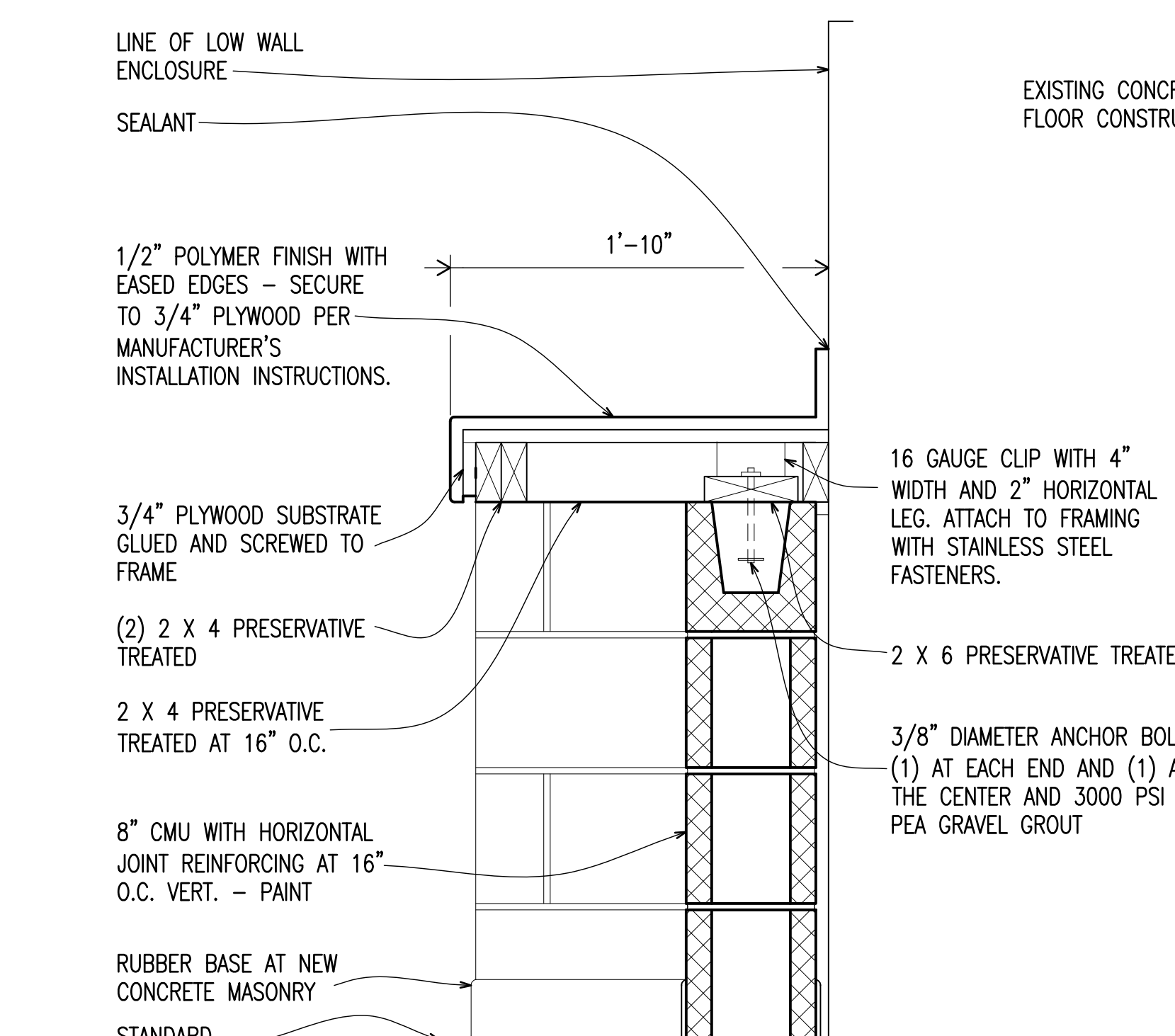
MARK	DESCRIPTION
CS	SOLID POLYMER CORNER SHELF (6) PER SLEEPING ROOM BATHROOM
TTD	WALL MOUNTED TOILET TISSUE DISPENSER
RSH	CERAMIC TILE RECESSED SOAP HOLDER (2) PER SLEEPING ROOM BATHROOM
SD	SOAP DISPENSER
SCR	SHOWER ROD AND CURTAIN WITH HOOKS: WIDTH OF OPENING +/- 5'-4"
RH	DOUBLE ROBE HOOK
TB	TOWEL BAR: 24" (6) PER SLEEPING ROOM BATHROOM
MG1	WALL MOUNTED MIRROR: 24" X 36"
MG2	WALL MOUNTED MIRROR: 36" X 36" - CENTERED
MG3	DOOR MOUNTED 17" X 60" MIRROR
PTD	SURFACE MOUNTED TOWEL DISPENSER



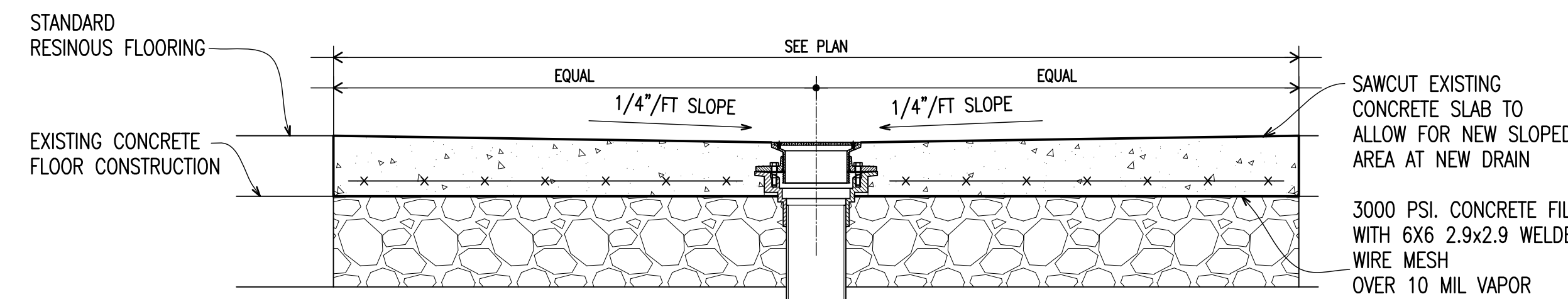
**15 SECTION THRU WASHER AREA LOW WALL**  
A-101 A-402 LAUNDRY ROOM Scale: 3/4" = 1'-0"



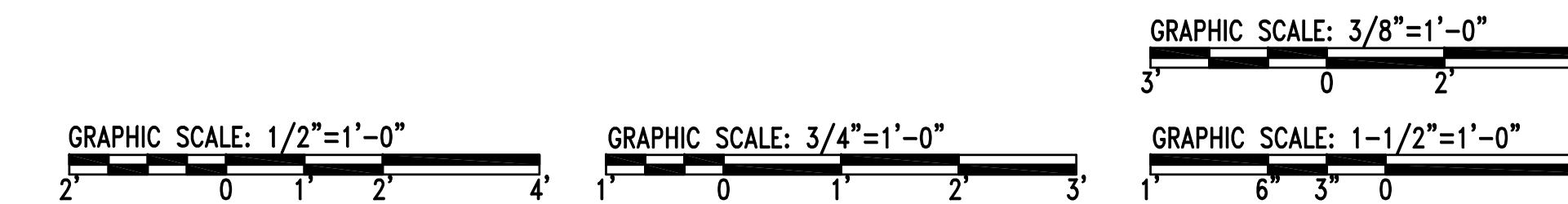
**16 SECTION THRU DRYER AREA FULL WALL**  
A-101 A-402 LAUNDRY ROOM Scale: 3/4" = 1'-0"



**17 SECTION THRU CLOTHES FOLDING TABLE**  
A-101 A-402 LAUNDRY ROOM Scale: 1-1/2" = 1'-0"



**18 CONC. FLOOR SLAB PATCH & FLOOR DRAIN**  
A-101 A-402 LAUNDRY ROOM Scale: 1-1/2" = 1'-0"



**ROBERT T. BELANGIA**  
REGISTERED ARCHITECT  
NEW BERN, NC  
2 November 2010

**A-402**

MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA

DES. RTB  
DR. SLA  
CHK. RTB  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE: \_\_\_\_\_

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ  
BUILDING HP485

DETAILS

APPROVED: PWO OR OICC DATE: \_\_\_\_\_

SCALE: AS NOTED

SIZE: F 80091

IDENT NO: 60007153

CONSTR. CONTR. NO. N40085-10-B-0070

SHEET 13 OF 65



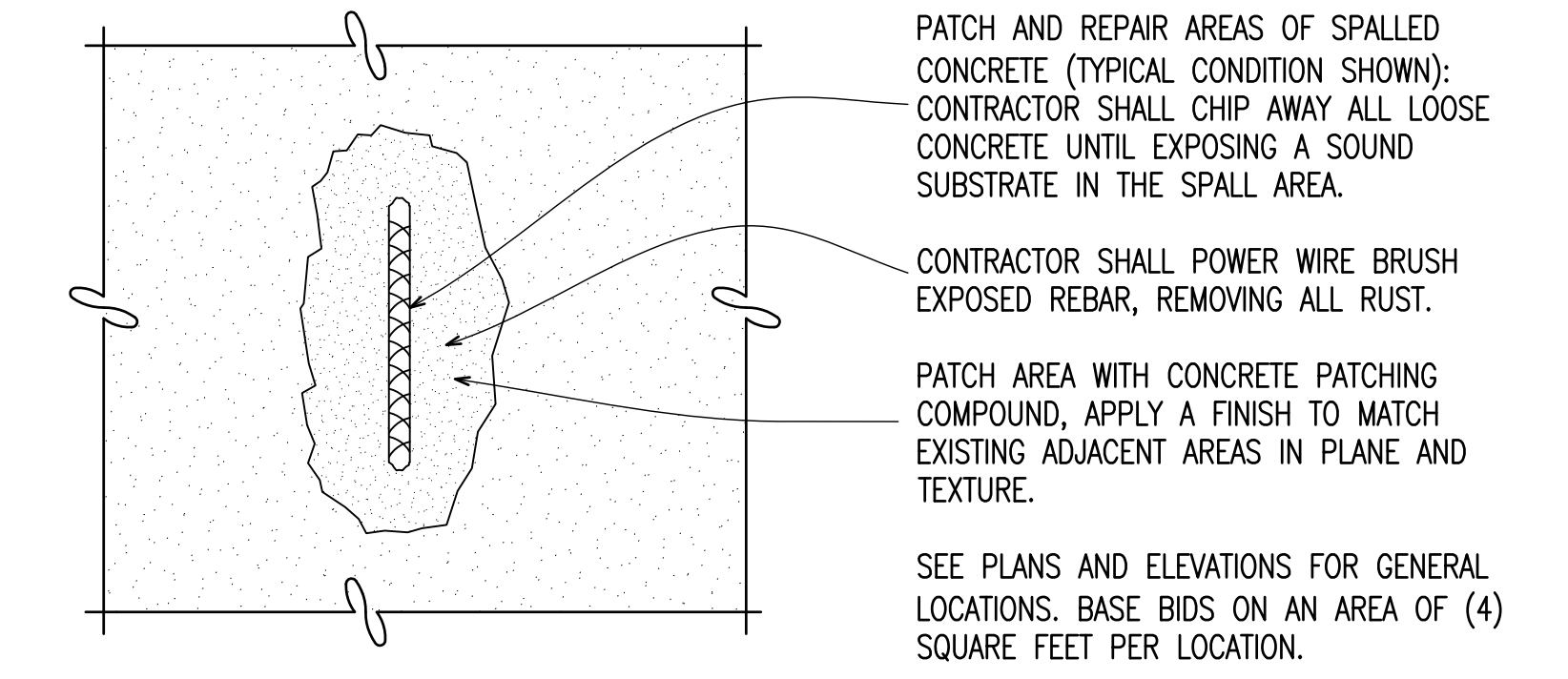
**1 TYPICAL SPALLING CONCRETE REPAIR**  
 24 LOCATIONS AT  $\pm 2\frac{1}{2}$ " DIAMETER X  $\pm \frac{1}{2}$ " DEEP  
 N.T.S.



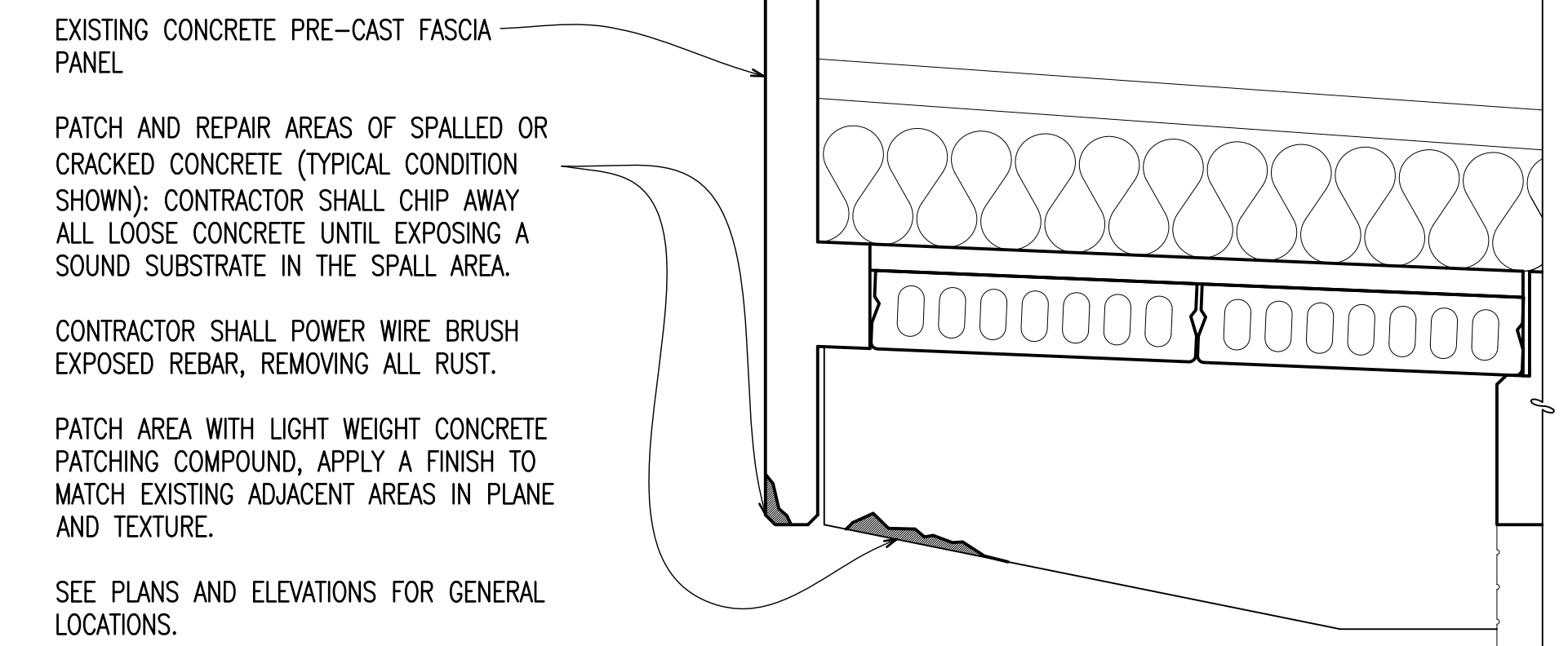
**3 TYPICAL SPALLING CONCRETE REPAIR**  
 30 LOCATIONS AT  $\pm 4$ " DIAMETER X  $\pm 1$ " DEEP  
 N.T.S.



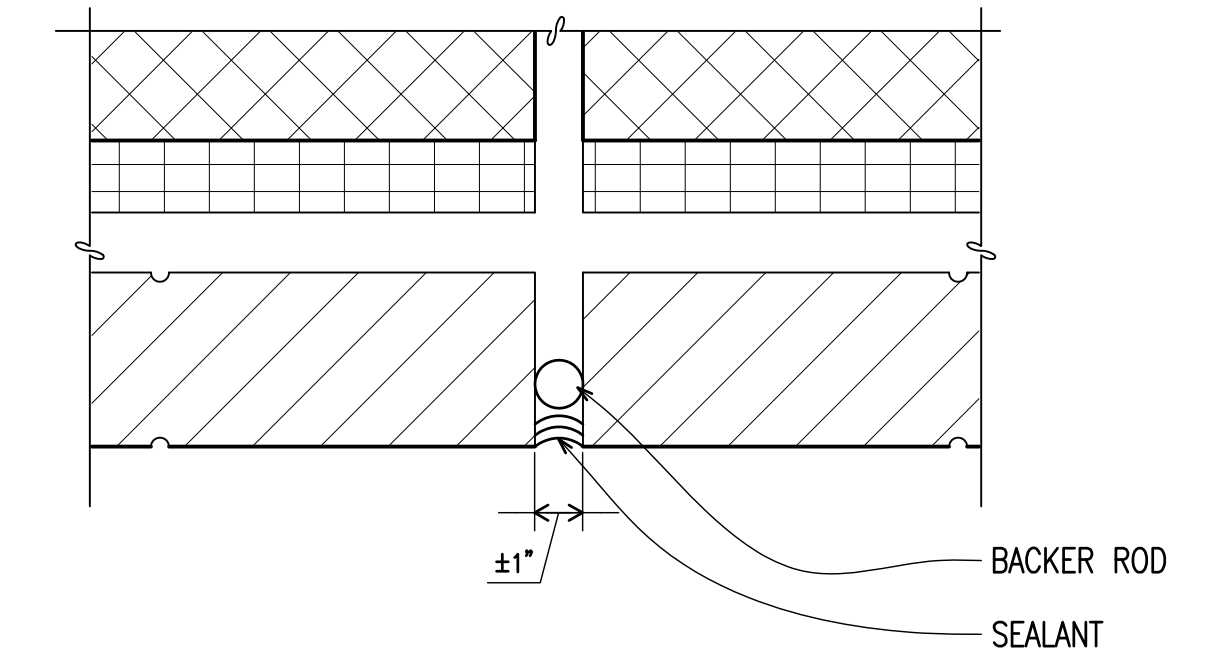
**5 TYPICAL CRACKED MASONRY REPAIR**  
 2 LOCATIONS AT  $\pm 12$ " IN LENGTH  
 N.T.S.



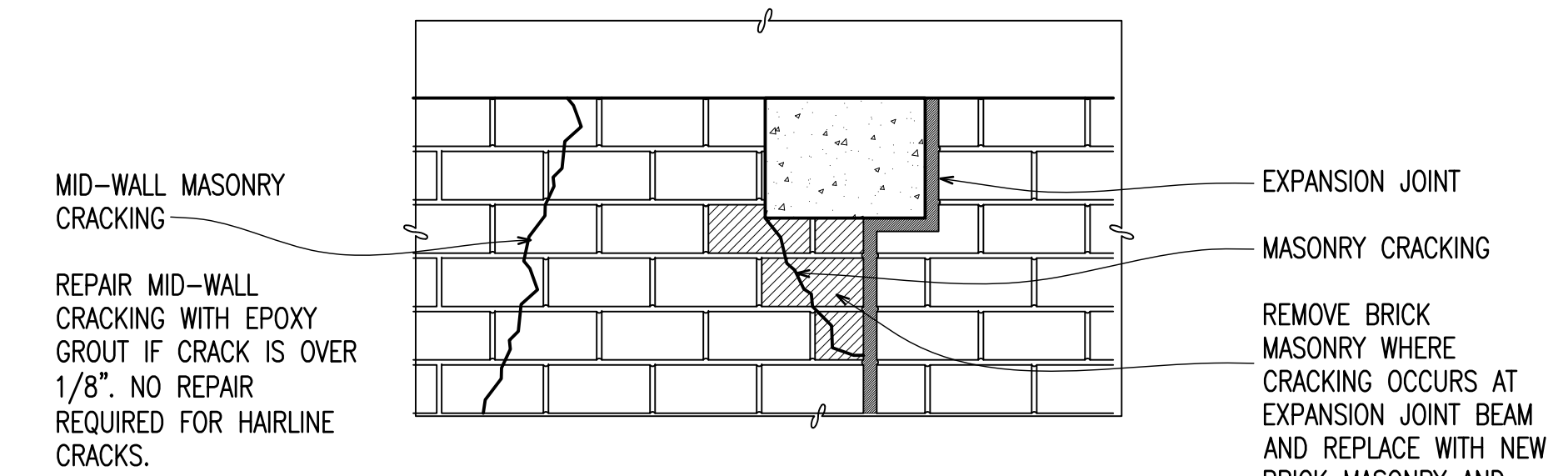
**7 TYPICAL SPALLING CONCRETE REPAIR**  
 N.T.S.



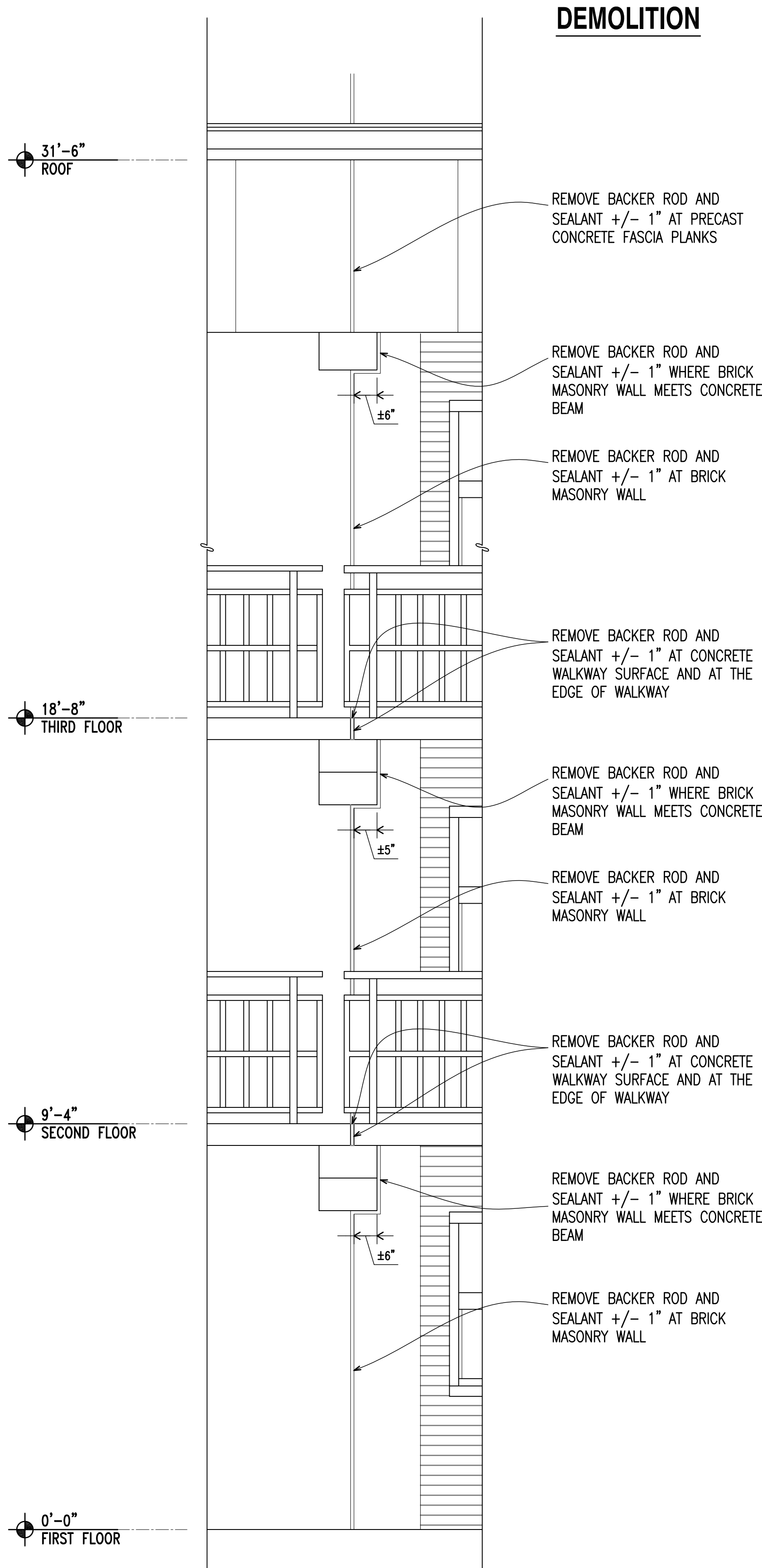
**8 TYPICAL SPALLING CONCRETE REPAIR**  
 FASCIA  
 1" = 1'-0"



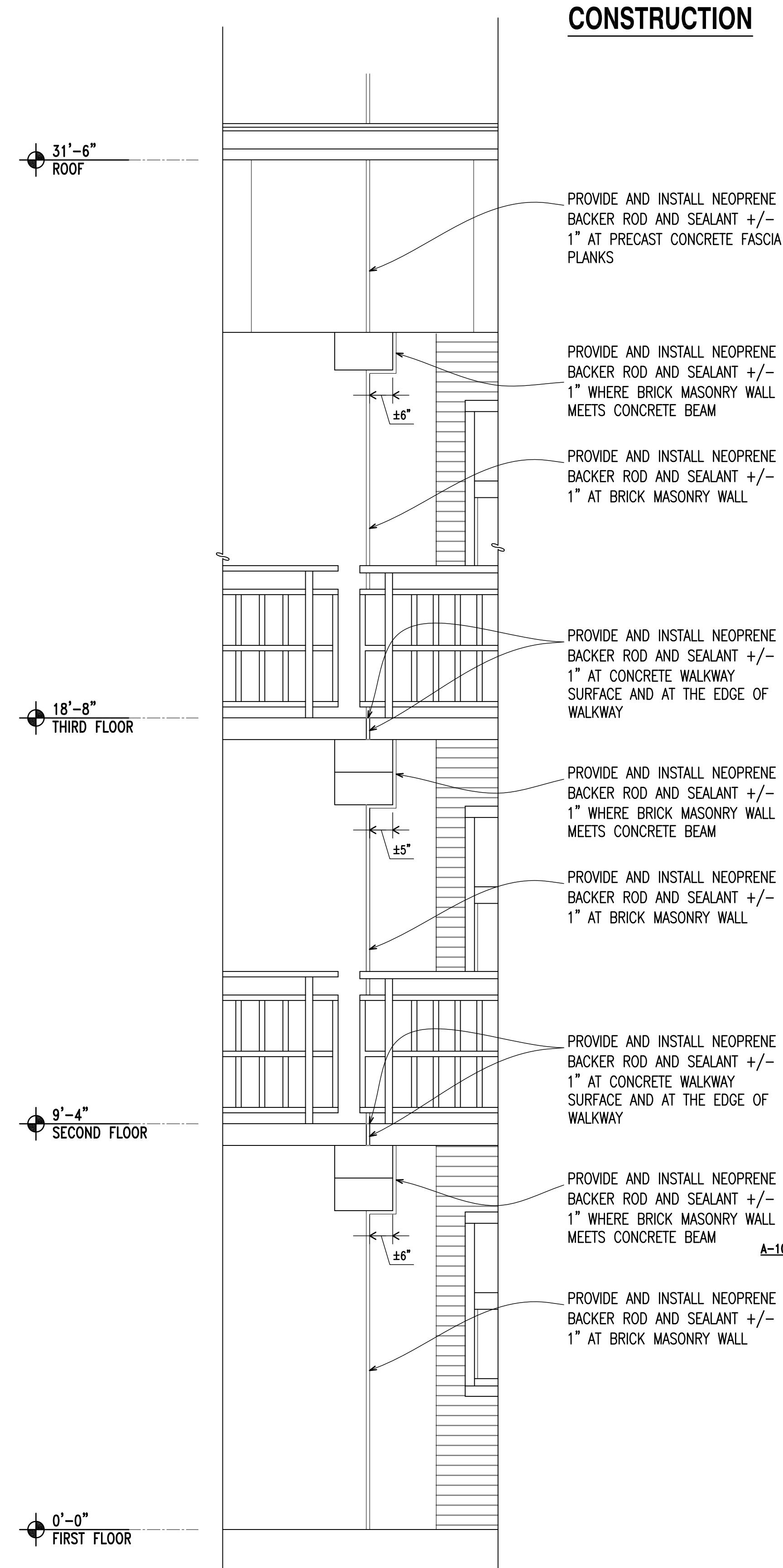
**9 TYPICAL EXPANSION JOINT**  
 Scale: 3" = 1'-0"



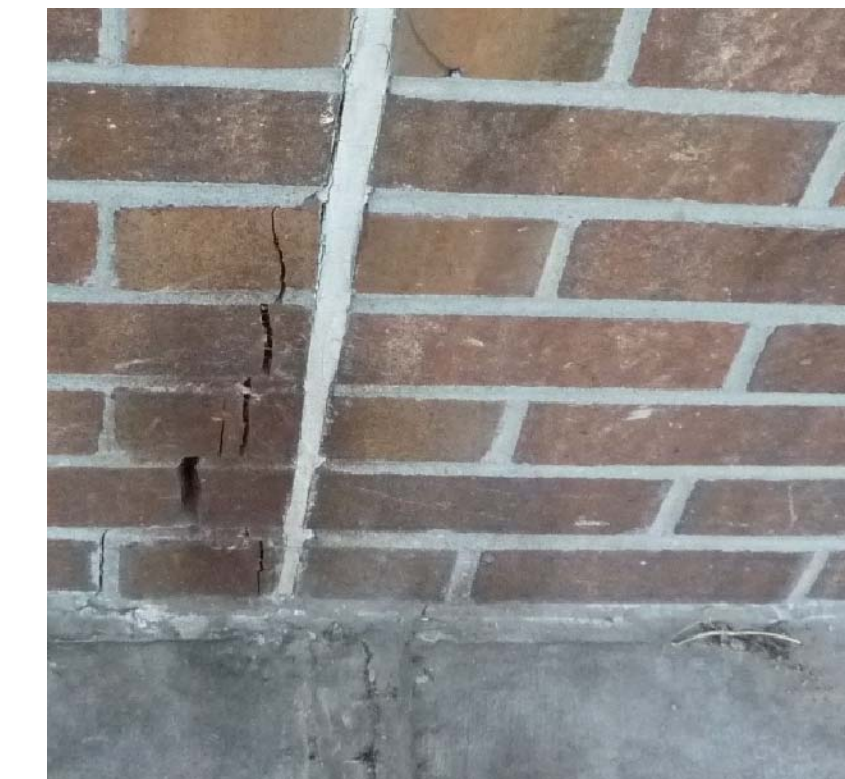
**10 TYPICAL BRICK MASONRY REPAIR**  
 Scale: 1" = 1'-0"



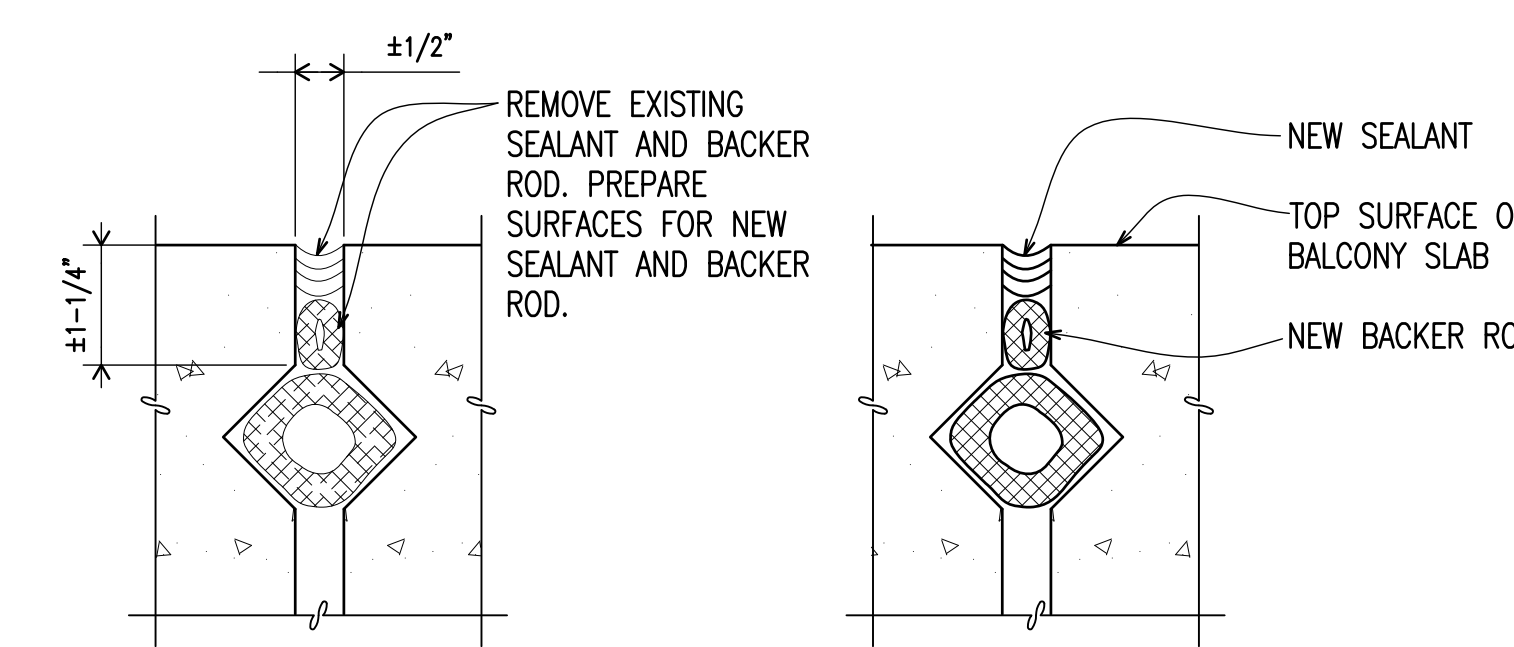
**2 TYPICAL EXPANSION JOINT REPAIR BUILDING ELEVATION**  
 DEMOLITION  
 Scale: 1/2" = 1'-0"



**4 TYPICAL EXPANSION JOINT REPAIR BUILDING ELEVATION**  
 CONSTRUCTION  
 Scale: 1/2" = 1'-0"

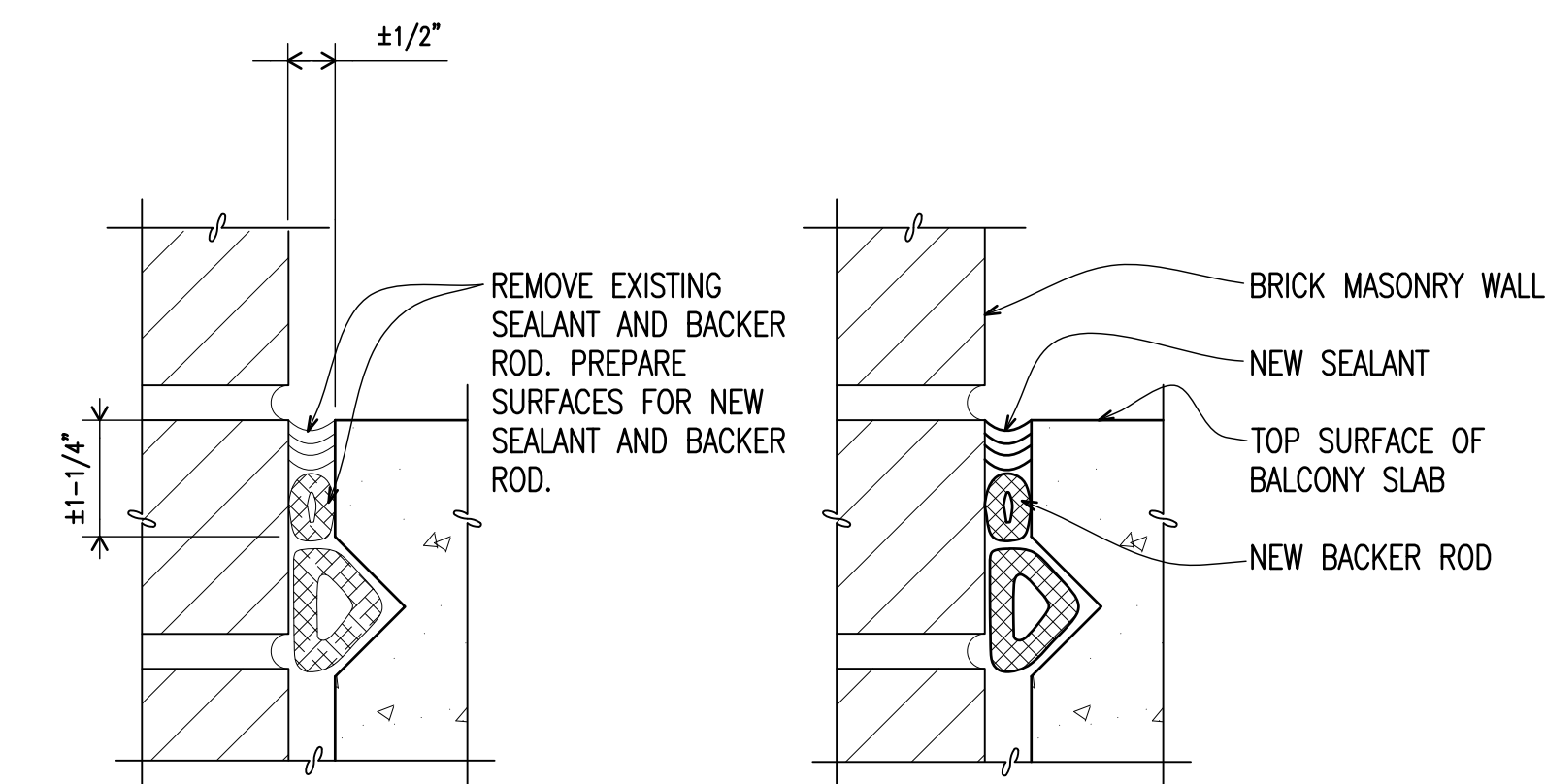


**6 TYPICAL CRACKED MASONRY REPAIR**  
 2 LOCATIONS AT  $\pm 12$ " IN LENGTH  
 N.T.S.



**11 CONTROL JOINT**  
 DEMOLITION Scale: 6" = 1'-0"

**12 CONTROL JOINT**  
 CONSTRUCTION Scale: 6" = 1'-0"



**13 CONTROL JOINT**  
 DEMOLITION Scale: 6" = 1'-0"

**14 CONTROL JOINT**  
 CONSTRUCTION Scale: 6" = 1'-0"

	<b>A-403</b>	
	MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA 2100 W. MARKET STREET, SUITE 200, WASHINGTON, NC 27681 WWW.BELANGIAFAULKENBERRY.COM	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		REPAIR BEQ BUILDING HP485
DES. RTB DR. SLA CHK. RTB SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE:		EXPANSION JOINT DEMOLITION & CONSTRUCTION DETAILS NAVFAC DRAWING NO. 60007154 CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 14 OF 65
SATISFACTORY TO: DATE:		F 80091







**CODE COMPLIANCE SUMMARY:**

- GENERAL**  
THE BARRACKS BUILDING IS A THREE-STORY STRUCTURE. THE BUILDING IS USED FOR RESIDENTIAL USE WITH INCIDENTAL MECHANICAL AND STORAGE AREAS.
- APPLICABLE CODES:**
  - a. NFPA 101 – LIFE SAFETY CODE (LSC), 2009 EDITION
  - b. INTERNATIONAL BUILDING CODE (IBC), 2006 EDITION
  - c. UFC 3-600-01 – FIRE PROTECTION ENGINEERING FOR FACILITIES, 14 JULY 2009
  - d. UFC 3-600-10N – FIRE PROTECTION ENGINEERING, AUGUST 2007
  - e. UFC 4-010-01 – DOD MINIMUM ANTI-TERRORISM STANDARDS FOR BUILDINGS, 14 JULY 2009
  - f. UFC 4-021-01 – MASS NOTIFICATION SYSTEMS, 9 APRIL 2008
- USE GROUP/OCCUPANCY:**  
GROUP R-2: RESIDENTIAL (IBC 310)  
HOTELS AND DORMITORIES (LSC 3.3.178)
- FIRE PROTECTION SYSTEMS:**  
NFPA 13 AUTOMATIC SPRINKLER SYSTEM (UFC 3-600-01, 4-2.2)  
NFPA 13R STANDARD FOR INSTALLATION OF SPRINKLER SYSTEM IN RESIDENTIAL OCCUPANCIES UP TO AND INCLUDING FOUR STORIES IN HEIGHT (UFC 3-600-01, 6-1.1)  
FIRE ALARM EVACUATION SYSTEM (UFC 3-600-01, 5-3.1)  
MASS NOTIFICATION SYSTEM (UFC 4-010-01, UFC 4-021-01)
- CONSTRUCTION TYPE:** TYPE III-B
- ALLOWABLE AREA & HEIGHT:**  
BASIC AREA (IBC TABLE 503) 16,000 SQ. FT.  
BASIC ALLOWABLE STORIES/HEIGHT: 3 ST./55 FT.
- ACTUAL AREA & HEIGHT:**  
TOTAL FOOTPRINT FLOOR AREA 13,875 SQ. FT.  
TOTAL BUILDING HEIGHT 3 STORIES
- FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS:**  
(IBC TABLE 601, TYPE III-B CONSTRUCTION)  
STRUCTURAL FRAME:  
INCL. COLUMNS, GIRDERS & TRUSSES 0 HR  
BEARING WALLS, INTERIOR 0 HR  
BEARING WALLS, EXTERIOR 2 HR  
NON-BEARING WALLS, INTERIOR & EXTERIOR 0 HR  
FLOOR CONSTRUCTION 0 HR  
ROOF CONSTRUCTION 0 HR
- INTERIOR WALL & CEILING FINISH:**  
(LSC 10.2, LSC 28.3.3.2)  
EXIT ENCLOSURES: MINIMUM CLASS B  
ACCESS CORRIDORS: MINIMUM CLASS C  
CLASSIFIED IN ACCORDANCE WITH ASTM E 84, AS FOLLOWS:  
CLASS A: FLAME SPREAD 0-25; SMOKE-DEVELOPED 0-450  
CLASS B: FLAME SPREAD 26-75; SMOKE-DEVELOPED 0-450  
CLASS C: FLAME SPREAD 76-200; SMOKE-DEVELOPED 0-450  
DROP-OUT CEILINGS (FOAM-GRID PANELS) ARE NOT PERMITTED [UFC 3-600-01, 2-6.1.1].
- FLOOR FINISH:**  
(LSC 10.2, LSC 28.3.3.3)  
EXITS AND EXIT ACCESS CORRIDORS: NO REQUIREMENT  
INTERIOR FLOOR FINISH SHALL BE DETERMINED BY NFPA 253 STANDARD METHOD OF TEST FOR CRITICAL RADIANT FLUX OF FLOOR COVERING SYSTEMS USING A RADIANT HEAT ENERGY SOURCE AND CLASSIFIED AS FOLLOWS:  
CLASS I: CRITICAL RADIANT FLUX NOT LESS THAN 0.45 W/CM<sup>2</sup>  
CLASS II: CRITICAL RADIANT FLUX NOT LESS THAN 0.22 W/CM<sup>2</sup>
- UNIT SEPARATION**  
EACH SLEEPING ROOM SHALL BE SEPARATED FROM OTHER SLEEPING ROOMS BY WALLS AND FLOORS CONSTRUCTED AS FIRE BARRIERS HAVING A FIRE RESISTANCE RATING OF NOT LESS THAN 1/2 HOUR [LSC 28.3.7.2].  
DOORS THAT OPEN ON TO EXTERIOR EXIT ACCESS BALCONIES SHALL BE SELF-CLOSING AND SELF-LATCHING. [LSC 28.3.6.2.3].
- EXTERIOR WAYS OF EXIT ACCESS**  
EXTERIOR EXIT ACCESS BALCONIES REQUIRE NO SEPARATION FROM THE INTERIOR OF THE BUILDING WHEN DEAD ENDS ON THE EXTERIOR EXIT ACCESS DO NOT EXCEED 20 FT. [LSC 7.5.3.3].
- OUTSIDE STAIRS**  
OUTSIDE STAIRS SERVING AN EXIT ACCESS BALCONY THAT HAS TWO REMOTE OUTSIDE STAIRWAYS SHALL BE PERMITTED TO BE UNPROTECTED. [LSC 7.2.2.6.3.1(1)].
- HAZARDOUS AREAS**  
LAUNDRY ROOMS OVER 100 SQ. FT. [LSC TABLE 28.3.2.2.2] WILL BE SEPARATED FROM OTHER AREAS BY 1-HOUR FIRE-RATED PARTITIONS AND SPRINKLERS.  
STORAGE ROOMS OVER 100 SQ. FT. [LSC TABLE 28.3.2.2.2] WILL BE SEPARATED FROM OTHER AREAS BY PARTITIONS THAT RESIST PASSAGE OF SMOKE.
- MEANS OF EGRESS:**  
OCCUPANT LOAD FACTORS (LSC TABLE 7.3.1.2)  
RESIDENTIAL USE: 200 SQ. FT./PERSON  
ACCESSORY BUSINESS USE: 100 SQ. FT./PERSON  
ACCESSORY ASSEMBLY: 15 SQ. FT./PERSON  
COMMON PATH OF TRAVEL: (LSC 28.2.5.4):  
RESIDENTIAL USE: 50 FT  
TRAVEL DISTANCE: (LSC 28.2.6):  
WITHIN A GUEST ROOM TO CORRIDOR DOOR: 125 FT  
FROM GUEST ROOM DOOR TO EXIT: 200 FT  
DEAD END CORRIDOR: (IBC 1017.3): 50 FT  
CAPACITY OF EXITS: (LSC TABLE 7.3.3.1):  
LEVEL COMPONENTS (WIDTH/PERSON) 0.2 IN (5 MM)/PERSON  
STAIRS (WIDTH/PERSON) 0.3 IN (7.6 MM)/PERSON
- ADDITIONAL LIFE SAFETY CRITERIA:**  
EMERGENCY LIGHTING SYSTEMS  
SHALL BE PROVIDED IN ACCORDANCE WITH LSC 7.9 [LSC 28.2.9.1].  
MEANS OF EGRESS  
SHALL BE PROVIDED WITH SIGNS IN ACCORDANCE WITH LSC 7.10 [LSC 28.2.10].  
SIGNS MUST HAVE LETTERING ON AN OPAQUE BACKGROUND. INTERNALLY ILLUMINATED SIGNS MUST BE LIGHT EMITTING DIODE (LED) TYPE, ELECTROLUMINESCENCE (LEC), OR COLD CATHODE TYPE. INCANDESCENT FIXTURES ARE NOT PERMITTED.  
RADIOLUMINOUS EXIT SIGNS ARE NOT PERMITTED [UFC 3-600-01, 2-5.2].  
PORTABLE FIRE EXTINGUISHERS  
NEW PORTABLE FIRE EXTINGUISHERS WILL BE PROVIDED THE MECHANICAL ROOMS AND LAUNDRY ROOMS. PORTABLE FIRE EXTINGUISHERS ARE NOT REQUIRED IN SPRINKLERED HOTEL AND DORMITORIES OCCUPANCIES [LSC 28.3.5.8]. FIRE EXTINGUISHERS MUST BE PROVIDED IN SEMI-RECESSED ENCLOSED CABINETS WITH THE EXCEPTION THAT FIRE EXTINGUISHER CABINETS ARE NOT REQUIRED IN THE MECHANICAL ROOMS [UFC 3-600-01, 4-9.1].
- FIRE DEPARTMENT (EMERGENCY) VEHICLE ACCESS:**  
RESIDENTIAL BUILDINGS SHALL BE PROVIDED WITH ALL-WEATHER GROUND ACCESS TO 3 SIDES OF THE BUILDING WITH A MINIMUM OF 2 SIDES HAVING ACCESS TO SLEEPING ROOMS TO ALLOW EMERGENCY VEHICLES UNIMPEDED ACCESS TO THE BUILDING.  
ALL-WEATHER GROUND ACCESS MUST BE PAVED, START FROM THE ROAD, AND TERMINATE NO FARTHER THAN 33 FT (10 M) FROM THE BUILDING. (UFC 3-600-01, 2-10.1)  
ALL FORCE PROTECTION EQUIPMENT, SUCH AS BOLLARDS OR GATES, MUST NOT REQUIRE MORE THAN ONE PERSON TO REMOVE OR OPEN. ACCESS MAY REQUIRE FIRE APPARATUS TO DRIVE OVER A CURB. ANY LOCKING DEVICE CONTROLLING VEHICLE ACCESS MUST BE UNDER CONTROL OF THE FIRE DEPARTMENT OR 24-HOUR SECURITY PERSONNEL LOCATED AT THE FACILITY.  
DIMENSIONS OF FIRE LANES AND TURNAROUNDS SHALL COMPLY WITH NFPA 1, UNIFORM FIRE CODE. (UFC 3-600-01, 2-10.2)  
ALL FIRE DEPARTMENT CONNECTIONS SHALL BE PROVIDED WITH SUITABLE ALL-WEATHER GROUND ACCESS SURFACE FOR PUMPER APPARATUS WITHIN 150 FT (45 M) [UFC 3-600-01, 2-10.4].  
FIRE DEPARTMENT ACCESS ROADS SHALL BE PROVIDED SUCH THAT ANY PORTION OF THE FACILITY OR ANY PORTION OF THE EXTERIOR WALL OF THE FIRST STORY OF THE BUILDING IS LOCATED NOT MORE THAN 450 FT (137 M) FROM FIRE DEPARTMENT ACCESS ROADS AS MEASURED BY AN APPROVED ROUTE AROUND THE EXTERIOR OF THE BUILDING [NFPA 1 18.2.3.2.2.1].

Occupant Load Summary					
Barracks HP485 - First Floor					
Area	Occupancy Use	Approx. Area (sq ft)	No. of Sleeping Rooms	Occupant Load Factor (sq ft/person)	Occupant Load (persons)
Sleeping Room	Residential	237 sq ft per sleeping room	40	200	80
Mechanical Rooms	Incidental	1900	-	300	7
Remaining Residential Areas (Laundry, Vending, etc.)	Residential	1252	-	200	7
Duty	Accessory Business	80	-	100	1
<b>Total</b>		<b>12712</b>			<b>95</b>

Occupant Load Summary					
Barracks HP485 - Second Floor					
Area	Occupancy Use	Approx. Area (sq ft)	No. of Sleeping Rooms	Occupant Load Factor (sq ft/person)	Occupant Load (persons)
Sleeping Rooms	Residential	237 sq ft per sleeping room	40	200	80
Mechanical Rooms	Incidental	1900	-	300	7
Lounge	Residential	609	-	15	41
Remaining Residential Areas (Laundry, Vending, etc.)	Residential	594	-	200	3
Duty	Accessory Business	129	-	100	2
<b>Total</b>		<b>12712</b>			<b>133</b>

Occupant Load Summary					
Barracks HP485 - Third Floor					
Area	Occupancy Use	Approx. Area (sq ft)	No. of Sleeping Rooms	Occupant Load Factor (sq ft/person)	Occupant Load (persons)
Sleeping Rooms	Residential	237 sq ft per sleeping room	40	200	80
Mechanical Rooms	Incidental	1900	-	300	7
Lounge	Residential	609	-	15	41
Remaining Residential Areas (Laundry, Vending, etc.)	Residential	594	-	200	3
Duty	Accessory Business	129	-	100	2
<b>Total</b>		<b>12712</b>			<b>133</b>

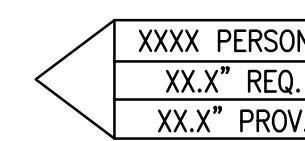
Egress Capacity Summary				
Barracks HP485 - Second Floor				
Egress Component	Door Clear Width (in.)	Stair Width (in.)	Available Capacity (a,b) (persons)	Required Egress Capacity
East Stair	-	48	160	45
Middle Stair	32	48	160	44
West Stair	-	48	160	44
<b>Total</b>		<b>144</b>	<b>480</b>	<b>133</b>

- a. Egress capacity based on 0.2 in. clear width per person for doors, ramps, and level components [LSC Table 7.3.3.1].  
b. Egress capacity based on 0.3 in. clear width per person for stairs [LSC Table 7.3.3.1].

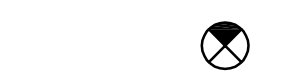
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<b>Total</b>		<b>144</b>	<b>480</b>	<b>133</b>

- a. Egress capacity based on 0.2 in. clear width per person for doors, ramps, and level components [LSC Table 7.3.3.1].  
b. Egress capacity based on 0.3 in. clear width per person for stairs [LSC Table 7.3.3.1].

**LEGEND:**



OCCUPANT LOAD USING EXITS  
REQUIRED EXIT WIDTH (IN.)  
PROVIDED EXIT WIDTH (IN.)



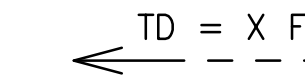
EXIT SIGN



NEW WALL MOUNTED FIRE EXTINGUISHER (2A-10B:C)



NEW SEMI-RECESSED FIRE EXTINGUISHER CABINET AND NEW FIRE EXTINGUISHER (2A-10B:C)



TRAVEL DISTANCE (FT.)

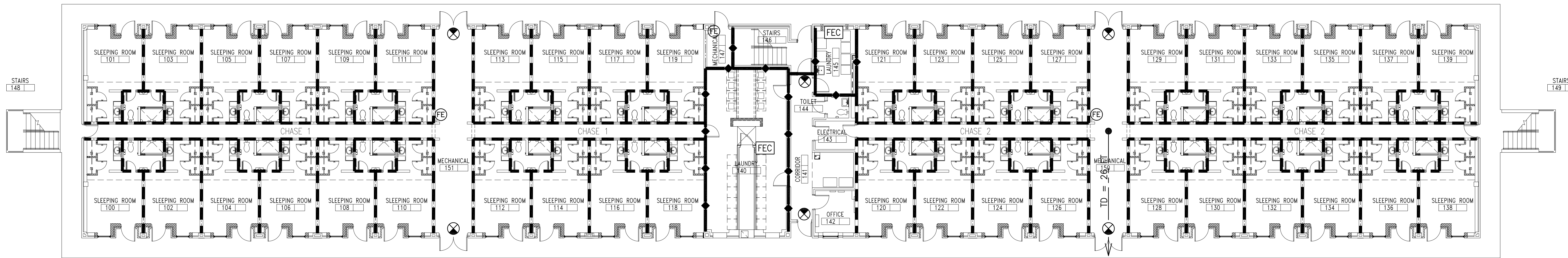


1/2 HOUR FIRE RESISTANCE RATING

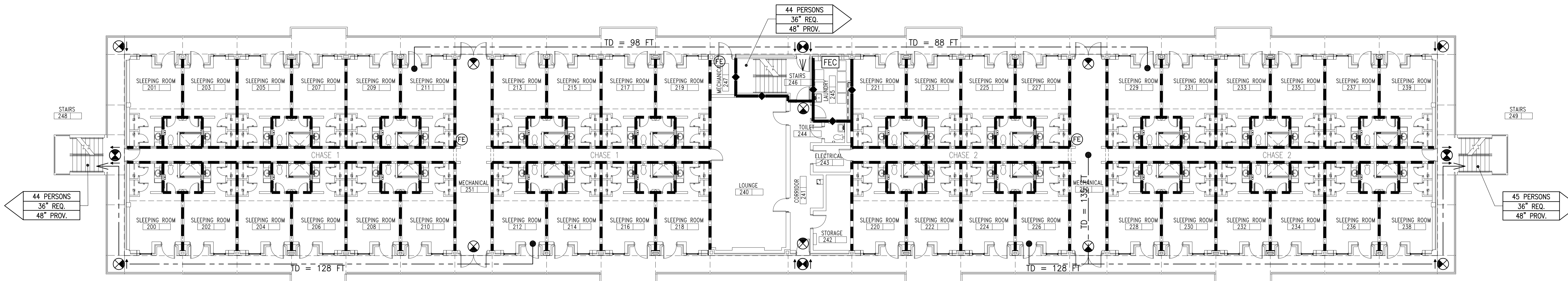


1 HOUR FIRE RESISTANCE RATING

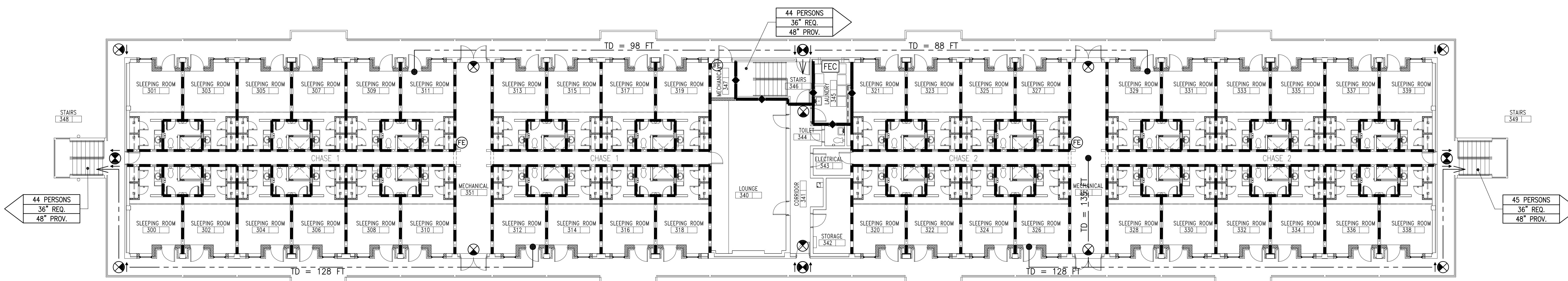
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	<p>MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA</p>	
<p>DES. WP/CS</p> <p>DR. JB</p> <p>CHK. SG/AK/DH</p> <p>SUBMITTED BY:</p> <p>DESIGN DIR.</p>		<p>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND</p> <p><b>MARINE CORPS BASE</b></p> <p>CAMP LEJEUNE, NORTH CAROLINA</p> <p><b>STRUCTURAL AND HVAC RENOVATION - HP485 BARRACK</b></p>
<p>APPROVED: PWO OR OICC DATE</p> <p>SATISFACTORY TO: DATE</p>		<p>LIFE SAFETY CODE COMPLIANCE SUMMARY</p> <p>NAVFAC DRAWING NO. <b>60007157</b></p> <p>CONST. CONTR. NO. N40085-10-B-0070</p> <p>SCALE: AS NOTED SPEC. 05-10-0070 SHEET 17 OF 65</p>



1 FIRST FLOOR PLAN  
 US-101LS-10 CONSTRUCTION Scale: 3/32" = 1'-0"  
 NORTH BUILDING



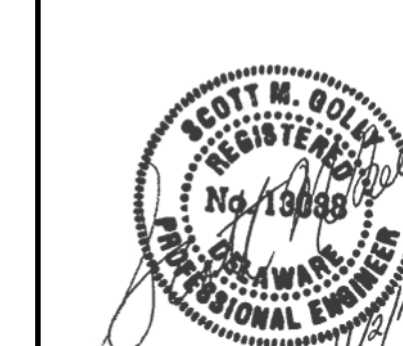
2 SECOND FLOOR PLAN  
 US-101LS-10 CONSTRUCTION Scale: 3/32" = 1'-0"  
 NORTH BUILDING



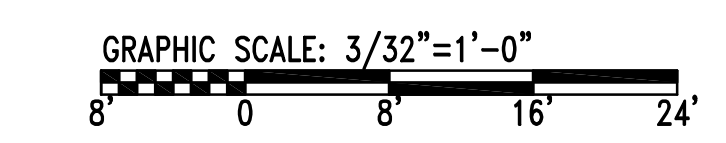
3 THIRD FLOOR PLAN  
 US-101LS-10 CONSTRUCTION Scale: 3/32" = 1'-0"  
 NORTH BUILDING

TRAVEL DISTANCE, COMMON PATH, AND DEAD END LIMITS[a] (by occupancy) [LSC Table A.7.6]					
Occupancy	Total Travel Distance (ft)	Travel Distance from Room door to Exit (ft)	Travel Distance within a Room (ft)	Common Path of Travel (ft)	Dead-end (ft)
Hotels and Dormitories	325	200	125	50	50

[a] Based on requirements for fully sprinklered buildings.



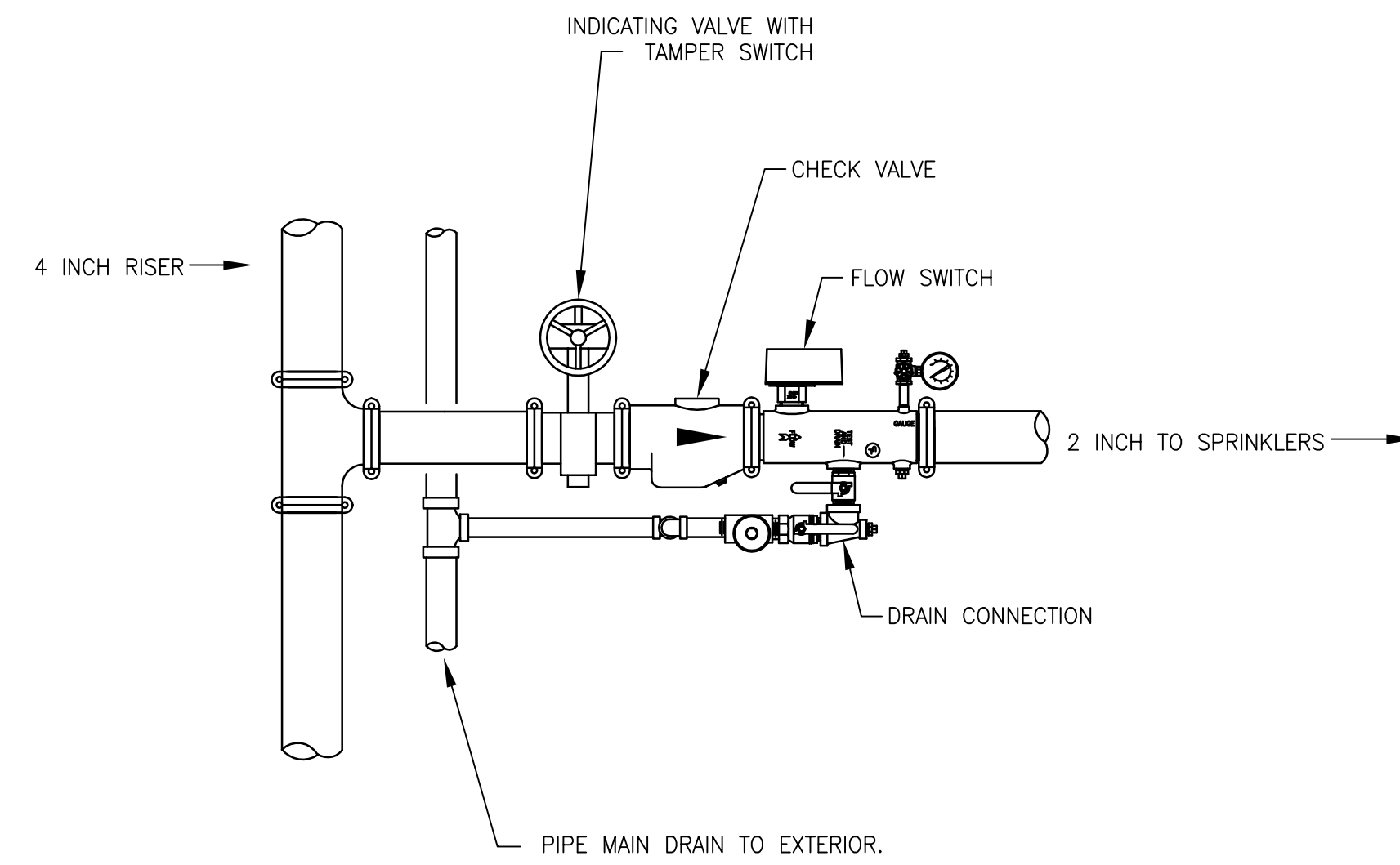
<b>LS-101</b> DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
<b>STRUCTURAL AND HVAC</b> <b>RENOVATION - HP485 BARRACK</b>	
DES. WP/CS DR. JB CHK. SG/AK/DH SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:	NAVFAC DRAWING NO. <b>60007158</b> CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 18 OF 65



REV. DATE: FILE NAME: P:\Project\_Directory\LS-101\HP485\Drawings\1007 LS-101.dwg LAYOUT NAME: LS-101 PLOTTED: Tuesday, November 02, 2010 4:12pm

**GENERAL NOTES:**

1. THE SCOPE OF WORK INCLUDES PROVIDING SPRINKLER PROTECTION FOR THE BUILDING IN ACCORDANCE WITH NFPA 13R, 2010.
2. THE SPRINKLER SYSTEM SERVICE MAIN SHALL BE PROVIDED WITH AN EXTERIOR POST INDICATOR VALVE. LOCATE PIV WHERE INDICATED ON CIVIL DRAWINGS.
3. CONTRACTOR SHALL MAKE PROVISIONS TO ENSURE ADEQUATE DRAINAGE OF ALL PIPING IN ACCORDANCE WITH NFPA 13.
4. SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY CALCULATED. CALCULATIONS SHALL BEGIN AT THE LOCATION OF THE WATER FLOW TEST. ALLOW 12 PSI PRESSURE LOSS IN CALCULATION FOR BACKFLOW PREVENTER.
5. ONLY LISTED AND APPROVED DEVICES AND MATERIALS AS SPECIFIED IN NFPA 13R OR NFPA 13 SHALL BE INSTALLED THROUGHOUT THE SYSTEM.
6. ONLY LISTED AND APPROVED NEW SPRINKLERS SHALL BE EMPLOYED IN THE INSTALLATION OF THE SPRINKLER SYSTEM.
7. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO SHOW THE EXACT LOCATIONS OF COMPONENTS, NOR SHOW ALL SYSTEM COMPONENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL OFFSETS OR FITTINGS REQUIRED FOR PROPER INSTALLATION, COORDINATION WITH OTHER TRADES, AND/OR TO MAINTAIN PROPER CLEARANCES. CONTRACTOR SHALL ALSO VERIFY STRUCTURAL, MECHANICAL, AND ELECTRICAL INSTALLATIONS AND DRAWINGS TO AVOID OBSTRUCTIONS OR INTERFERENCE WITH FIRE PROTECTION PIPING AND SPRINKLERS.
8. THE LOCATION OF THE DRAIN RISER AND DRAIN DISCHARGE SHALL BE COORDINATED WITH THE GOVERNMENT. ALL DRAINS SHALL DISCHARGE TO A PLASHPLATE AT THE BUILDING EXTERIOR.
9. EXPOSED PIPING SHALL NOT BE PERMITTED, UNLESS SPECIFICALLY APPROVED IN WRITING BY THE OWNERS REPRESENTATIVE (EXCEPT IN AREAS WITH NO FINISHED CEILING).
10. ADEQUATE CLEARANCE, AS DEFINED BY NFPA 13R, SHALL BE PROVIDED BETWEEN SPRINKLERS AND HEAT GENERATING DEVICES.
11. ALL PENETRATIONS THROUGH FIRE RESISTANCE RATED ASSEMBLIES SHALL BE SLEEVED AND SEALED WITH AN UNDERWRITERS LABORATORIES (UL) LISTED FIRE STOPPING SYSTEM.
12. ALL CORE DRILLING SHALL BE COORDINATED WITH STRUCTURAL ENGINEER.
13. ENTIRE SYSTEM SHALL BE FLUSHED AND HYDROSTATICALLY TESTED @ 200 PSI FOR 2 HOURS AS PER NFPA 13.
14. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND INFORMATION.
15. ALL PIPE SIZES INDICATED ON DRAWINGS ARE APPROXIMATE. ACTUAL PIPE SIZES SHALL BE DETERMINED VIA HYDRAULIC CALCULATIONS BY CONTRACTOR.
16. THE COMPONENTS OF HANGER ASSEMBLIES THAT DIRECTLY ATTACH TO THE PIPE OR TO THE BUILDING SHALL BE LISTED.
17. SPRINKLER CONTRACTOR SHALL COORDINATE WITH FIRE ALARM CONTRACTOR FOR CONNECTION TO FIRE ALARM SYSTEM AND TRANSMISSION TO CENTRAL STATION.
18. SPRINKLERS NEED NOT BE PROVIDED FOR OPEN BALCONIES AND OPEN EXTERIOR STAIRS. PROVIDE DRY SIDEWALL SPRINKLERS FED FROM THE WET PIPE SYSTEM AS NECESSARY FOR INTERIOR STAIR.



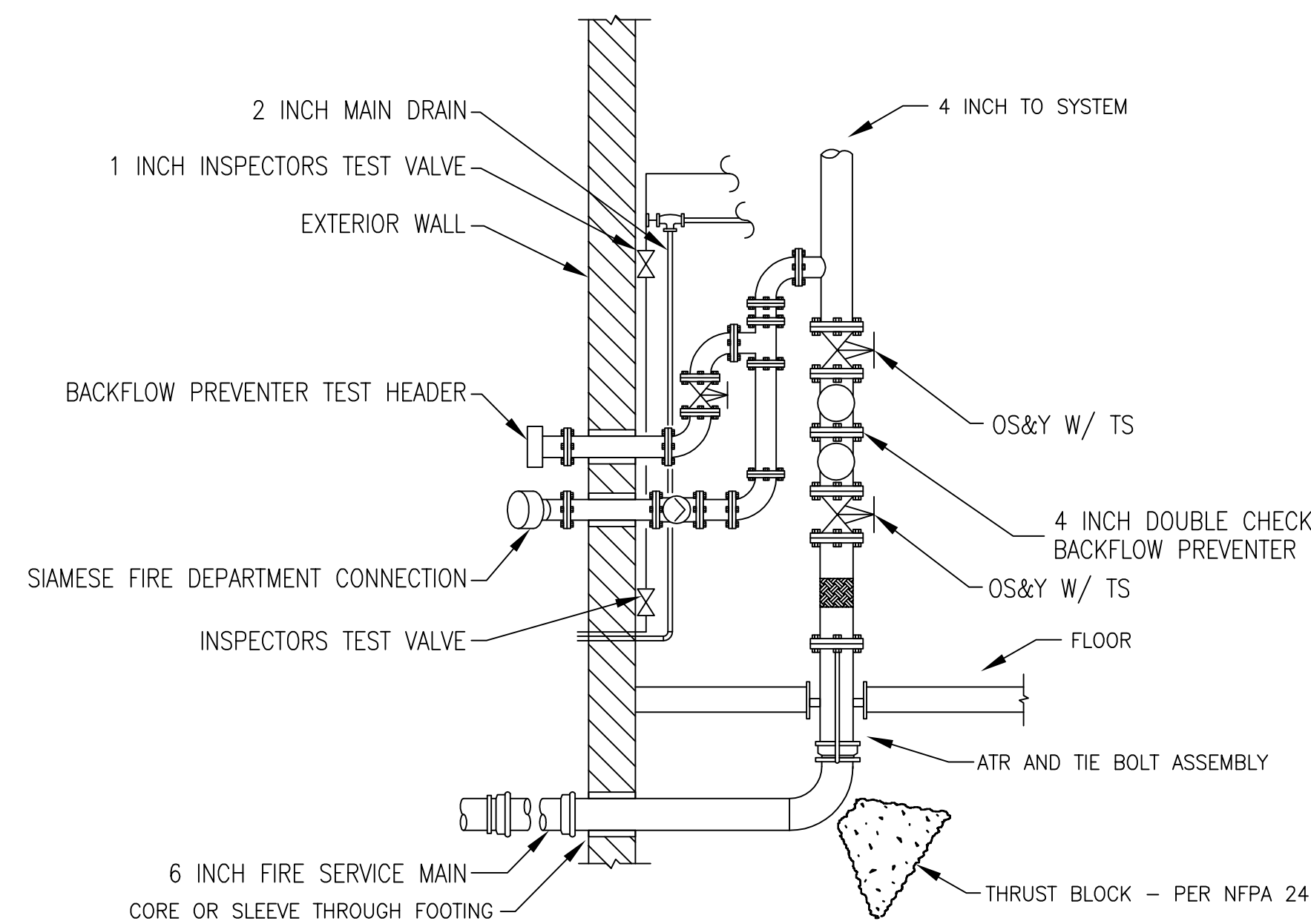
**1 FLOOR CONTROL ASSEMBLY**  
SCALE = N.T.S.

**SPRINKLER LEGEND:**

- NEW OVERHEAD SPRINKLER PIPING
- - - NEW UNDERGROUND PIPING
- - - EXISTING UNDERGROUND PIPING
- ⊕ OS&Y GATE VALVE
- ⊕ CHECK VALVE
- ⊕ SIAMESE FIRE DEPARTMENT CONNECTION
- ⊕ FLOOR CONTROL ASSEMBLY
- ⊕ PIPE TEE
- ⊕ CHANGE IN ELEVATION - TEE DOWN
- ⊕ PIPE ELBOW
- ⊕ CHANGE IN ELEVATION - ELBOW DOWN
- ⊕ PIPE UP
- ⊕ SYSTEM RISER
- ⊕ NIPPLE AND CAP - FLUSHING CONNECTION
- ⊕ WALL HYDRANT
- ⊕ BACKFLOW PREVENTOR TEST CONNECTION
- ⊕ RESIDENTIAL SIDEWALL SPRINKLER
- ⊕ RESIDENTIAL RECESSED PENDENT SPRINKLER
- ⊕ UPRIGHT SPRINKLER
- ⊕ HYDRAULIC REFERENCE NODE
- ⊕ POINT OF CONNECTION

**OCCUPANCY HAZARD LEGEND:**

- Ⓡ RESIDENTIAL HAZARD. A MINIMUM DESIGN DENSITY OF 0.05 gpm/ft<sup>2</sup>, WITH A DESIGN AREA OF THE FOUR MOST REMOTE SPRINKLERS.
- Ⓡ ORDINARY HAZARD GROUP 1 OCCUPANCY. A MINIMUM DESIGN DENSITY OF 0.15 gpm/ft<sup>2</sup>, WITH A DESIGN AREA OF 3,000 ft<sup>2</sup> AND A HOSE ALLOWANCE OF 500 gpm SHALL BE USED.
- Ⓡ LIGHT HAZARD. A MINIMUM DESIGN DENSITY OF 0.1 gpm/ft<sup>2</sup>, WITH A DESIGN AREA OF 3,000 ft<sup>2</sup> AND A HOSE ALLOWANCE OF 250 gpm SHALL BE USED.
- Ⓡ NO SPRINKLER PROTECTION

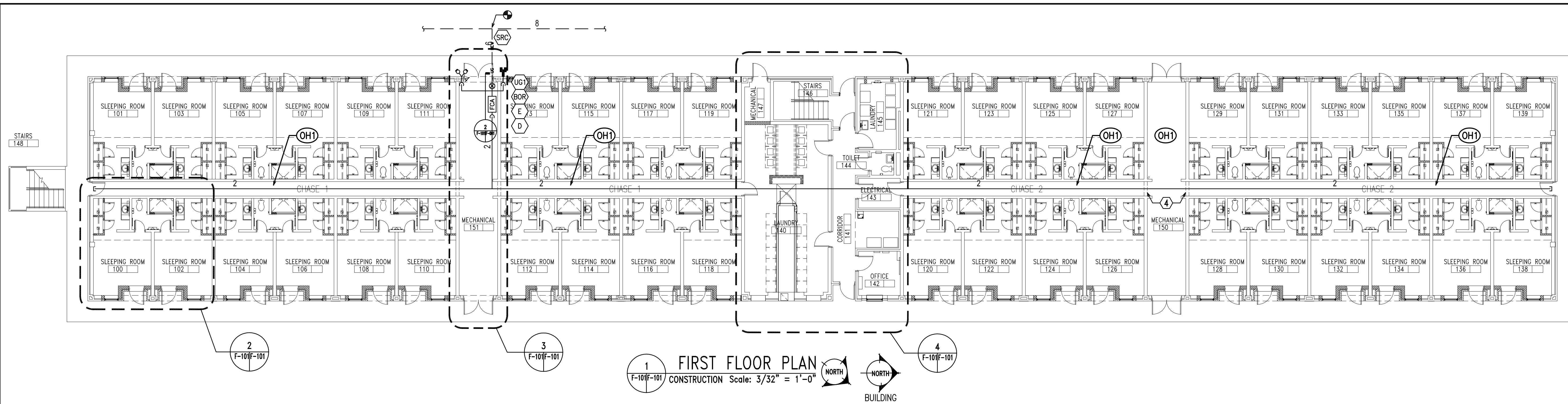


**2 WATER SERVICE ENTRANCE PIPING DETAIL**  
SCALE = N.T.S.

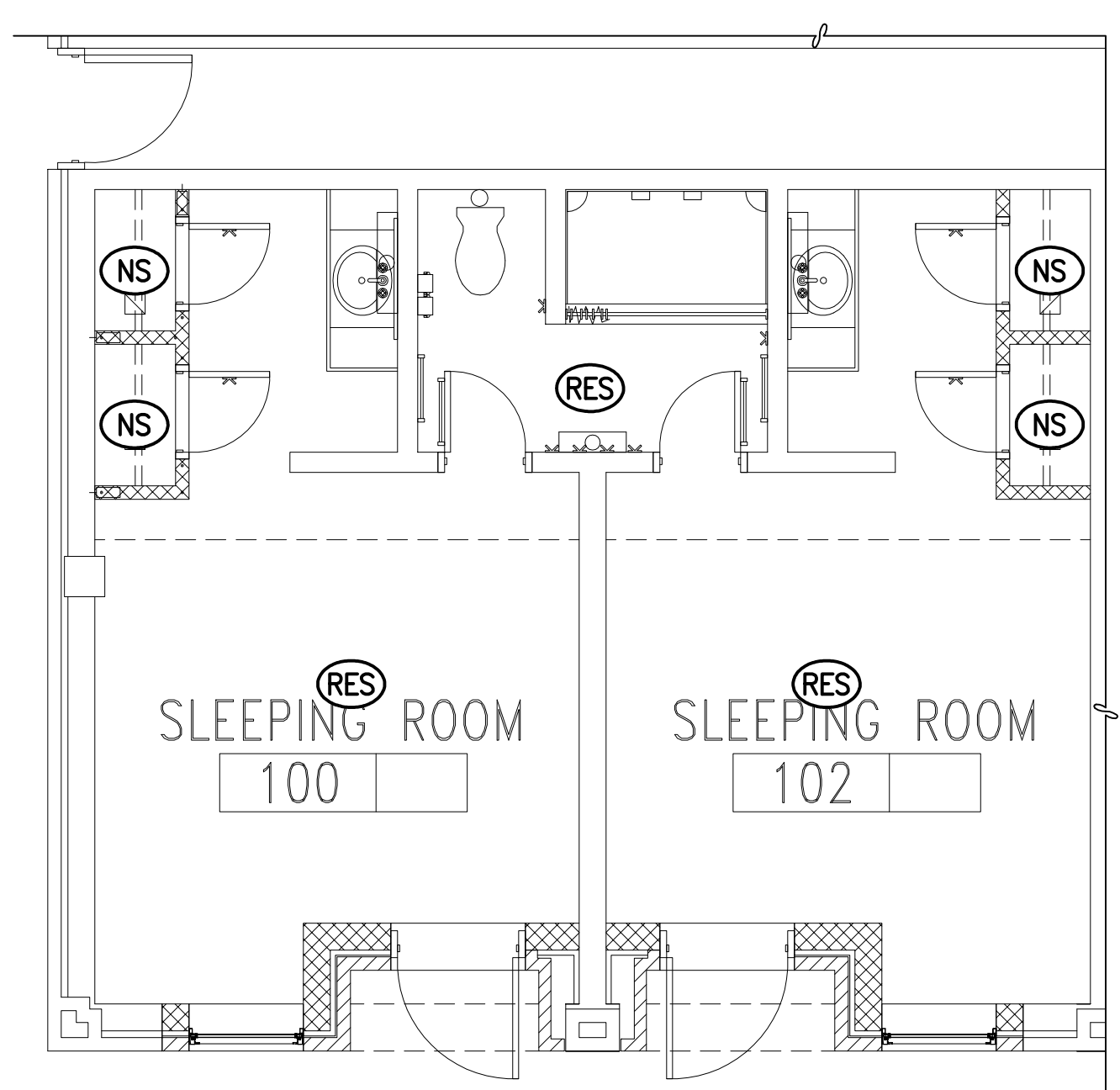
FIRE HYDRANT FLOW TEST DATA					
STATIC PRESSURE PSI	RESIDUAL PRESSURE PSI	FLOW RATE GPM	DATE TESTED	TEST HYDRANT	FLOW HYDRANT
62	58	1,190	6/22/10 1015 HRS	HYDRANT 3-134-8	HYDRANT 3-232-12

**HYDRANT FLOW TEST DATA**

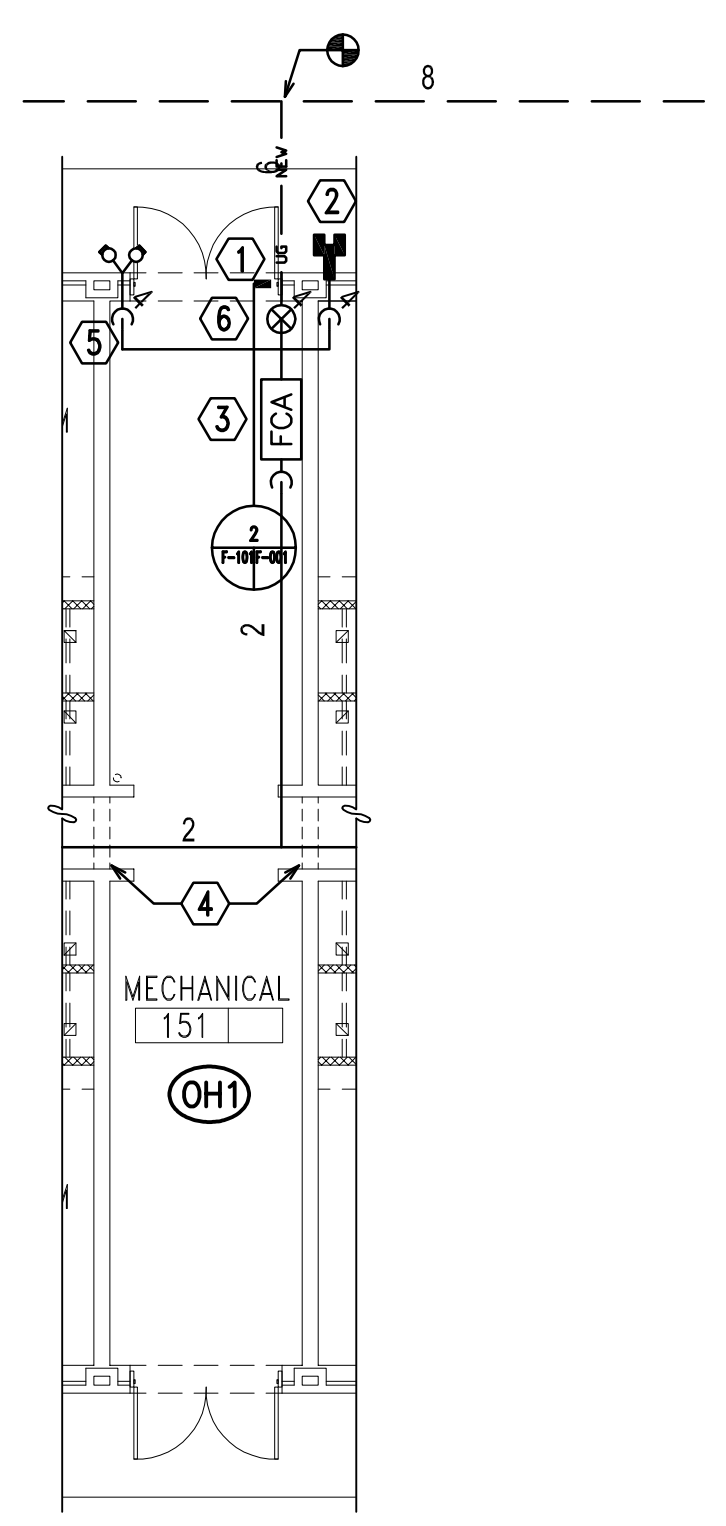
	<b>F-001</b>	
	MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA <b>STRUCTURAL AND HVAC RENOVATION - HP485 BARRACK</b>	
DES. WP/CS	SPRINKLER NOTES AND LEGEND	
DR. JB	NAVFAC DRAWING NO. 60007159	
CHK. SG/AK/DH	CONST. CONTR. NO. N40085-10-B-0070	
SUBMITTED BY:	F 80091	
DESIGN DIR.	SCALE: AS NOTED	
APPROVED: PWO OR OICC	DATE	SPEC. 05-10-0070
SATISFACTORY TO:	DATE	SHEET 19 OF 65



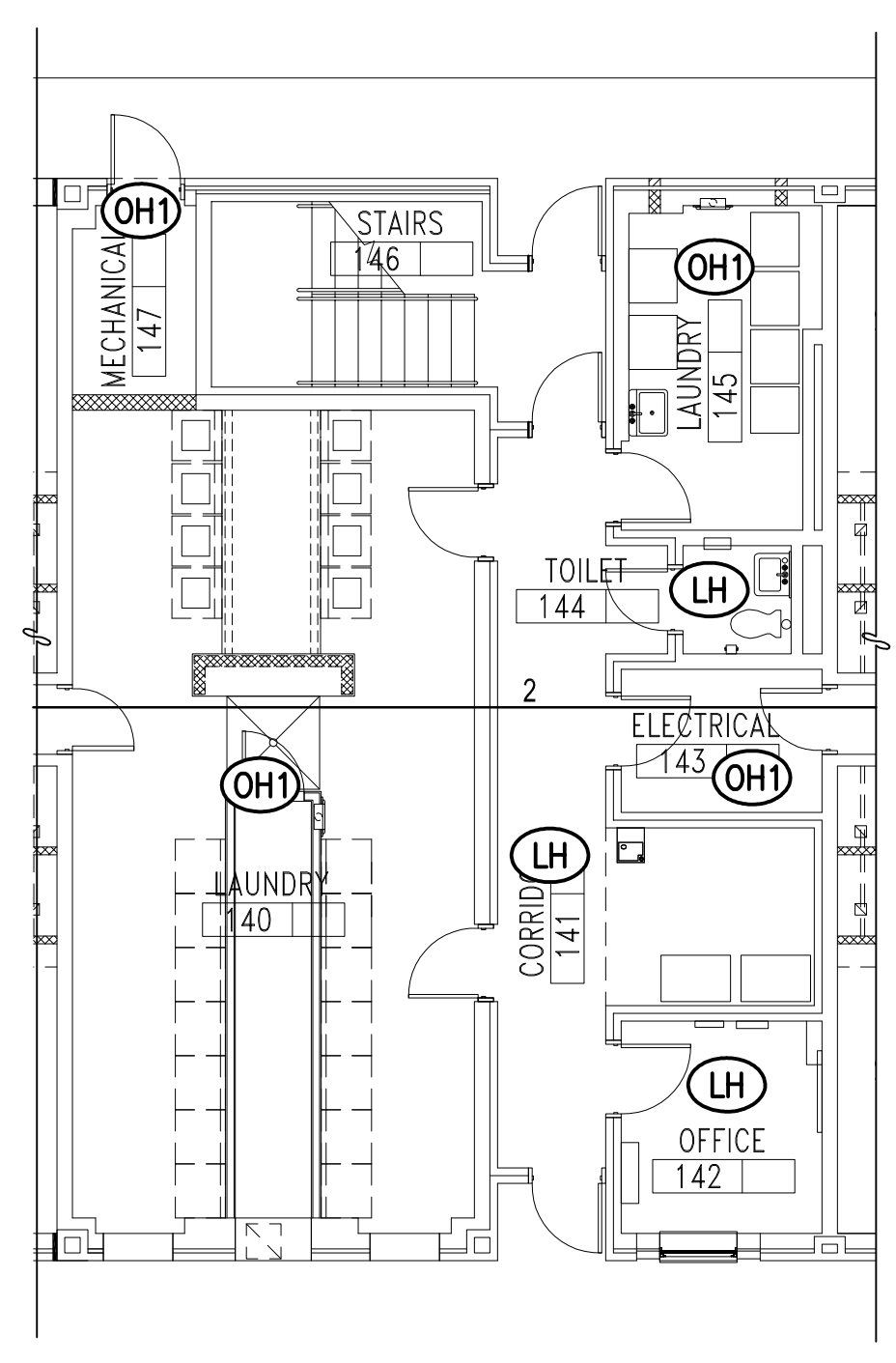
- SHEET NOTES**
- ① SIX INCH FIRE SERVICE MAIN - SEE CIVIL DRAWING FOR CONTINUATION AND LOCATION OF POST INDICATOR VALVE.
  - ② PROVIDE BACKFLOW PREVENTER TEST CONNECTION.
  - ③ PROVIDE FLOOR CONTROL ASSEMBLY. PIPE EXPRESS DRAIN TO EXTERIOR OF BUILDING. SEE DETAIL ON SHEET F-001.
  - ④ 8-INCH LINTEL PROVIDED AT OPENING IN ACCORDANCE WITH NFPA 13R SECTION 7.2.2.
  - ⑤ PROVIDE AUTOMATIC BALL-DRIP FOR FIRE DEPARTMENT CONNECTION. PIPE TO EXTERIOR.
  - ⑥ PROVIDE DOUBLE CHECK BACKFLOW PREVENTER ASSEMBLY IN VERTICAL.



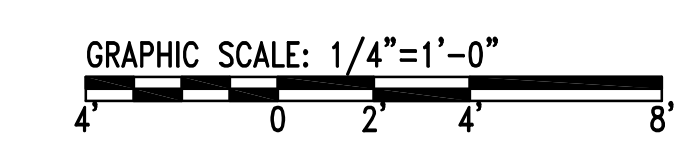
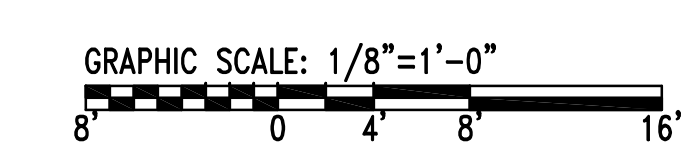
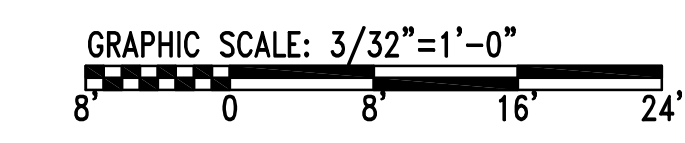
**2 SLEEPING ROOM**  
F-101F-101 CONSTRUCTION Scale: 1/4" = 1'-0"



**3 MECHANICAL ROOM**  
F-101F-101 CONSTRUCTION Scale: 1/8" = 1'-0"



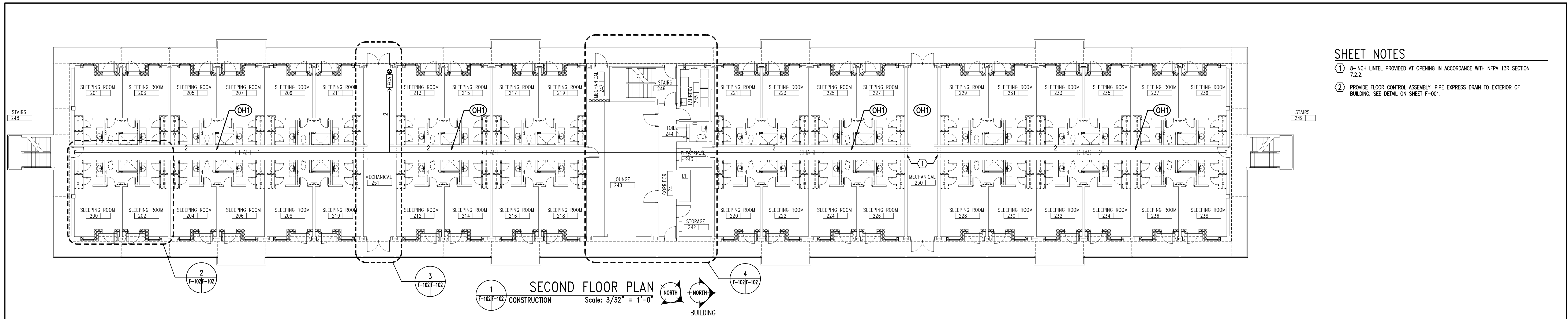
**4 LAUNDRY ROOM**  
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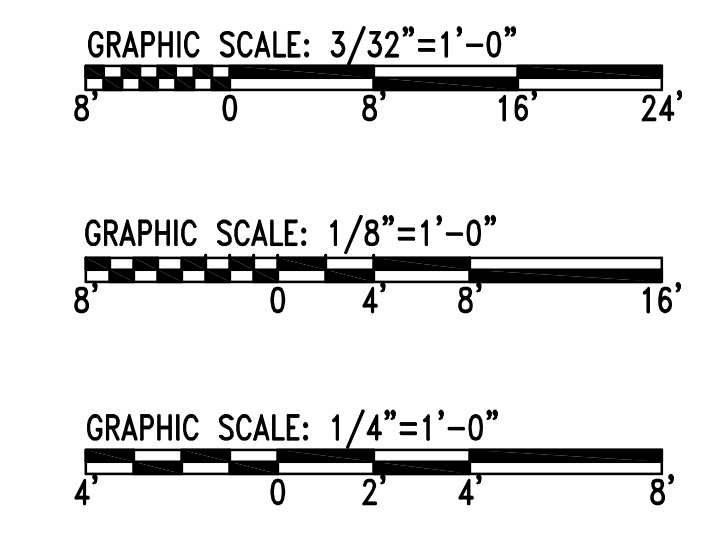
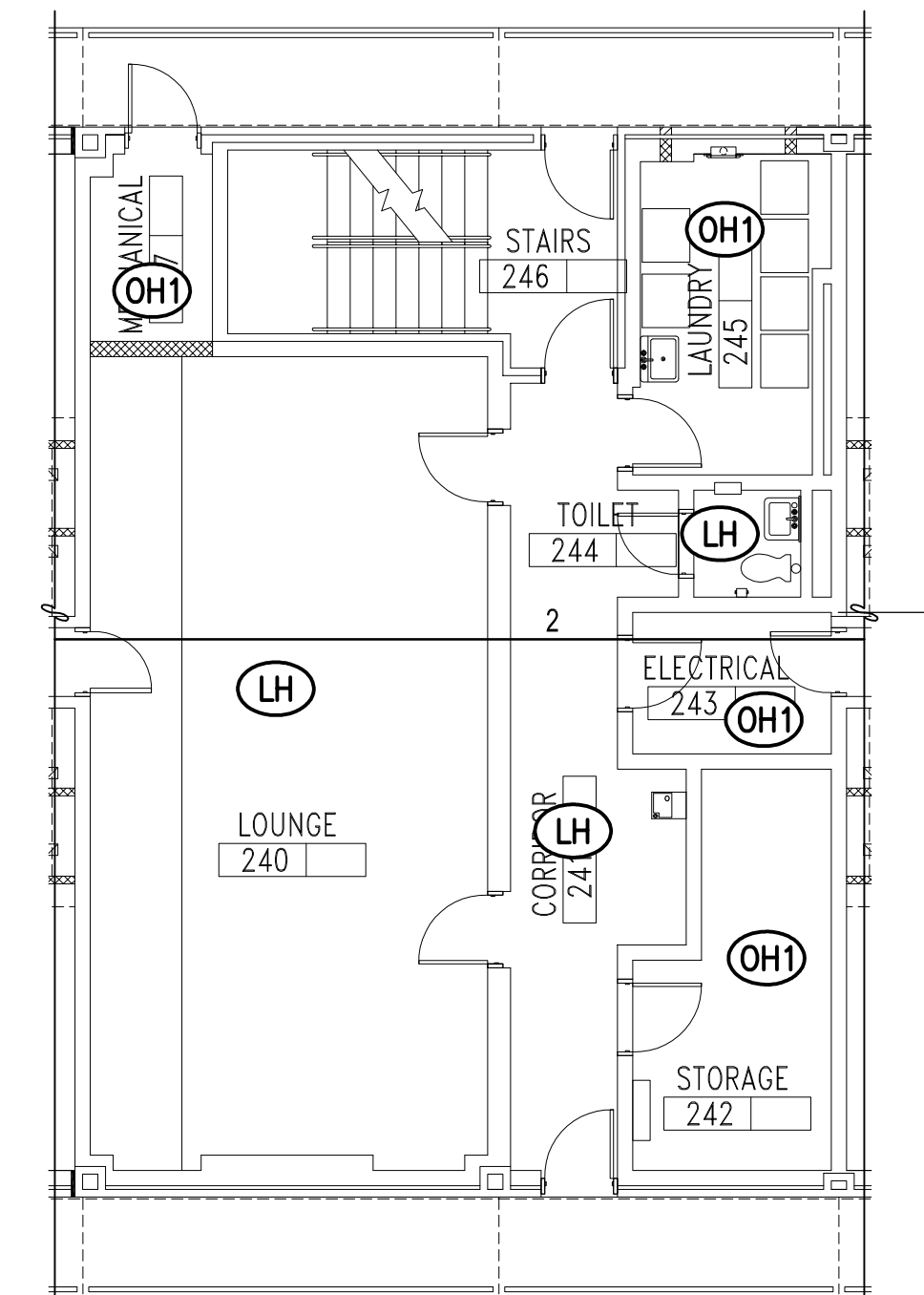
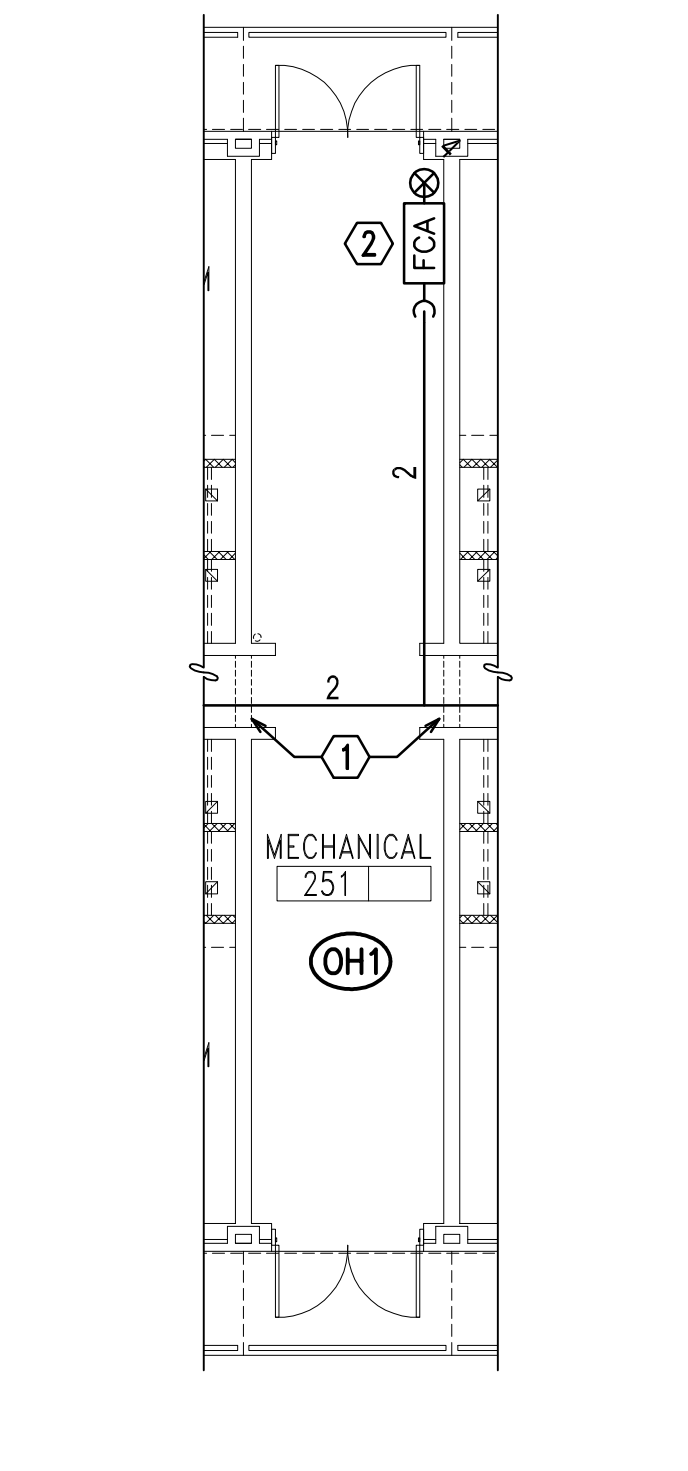
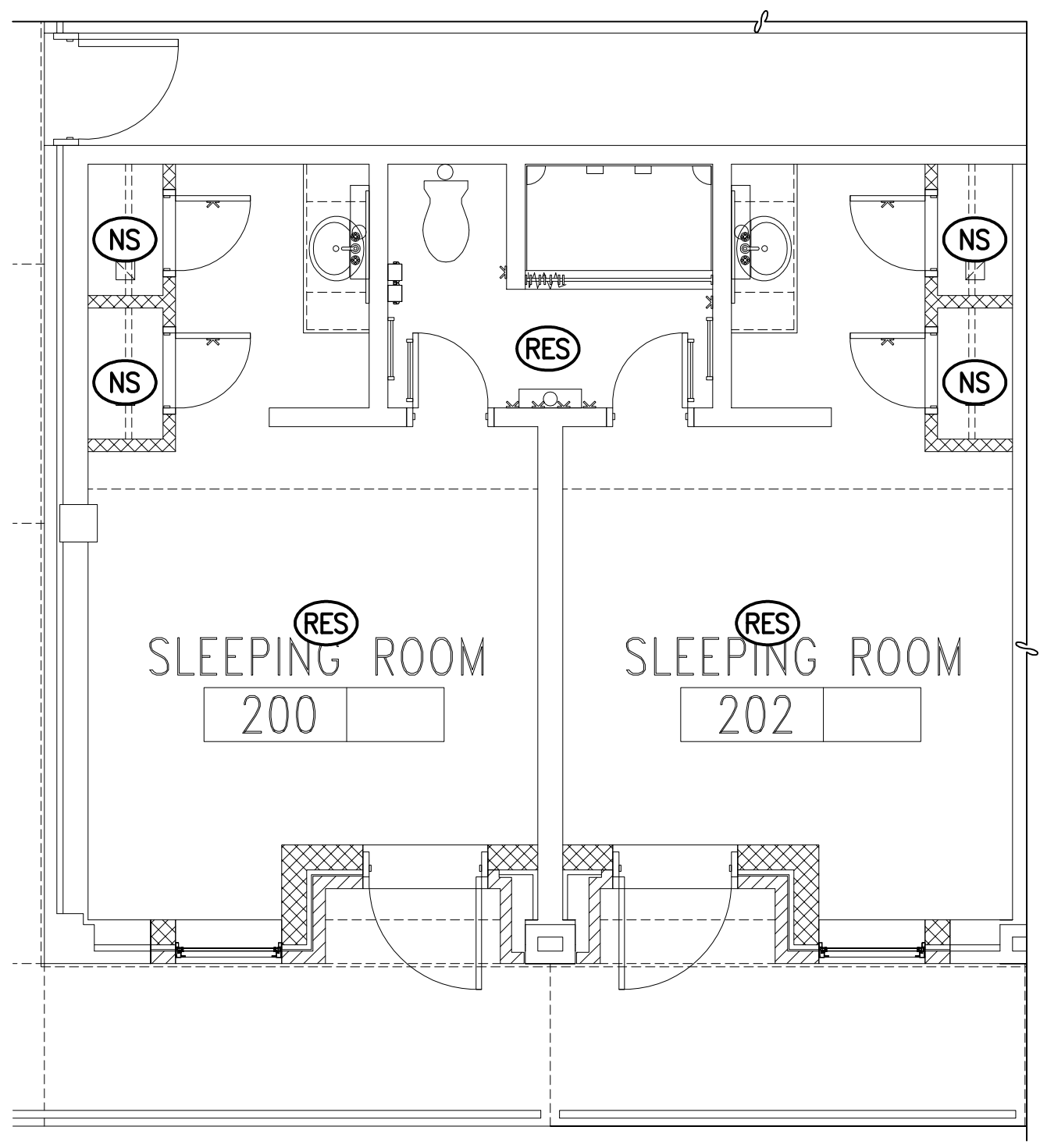
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		MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA <b>STRUCTURAL AND HVAC RENOVATION - HP485 BARRACK</b>	
DES. WP/CS	DR. JB	CHK. SG/AK/DH	SUBMITTED BY:
DESIGN DIR.	APPROVED: PWO OR OICC	DATE	SIZE CODE IDENT NO. NAVFAC DRAWING NO.
SATISFACTORY TO:	DATE	F 80091	60007160
SCALE: AS NOTED	SPEC. 05-10-0070	SHEET 20 OF 65	

REV/DATE: FILE NAME: P:\Project Directory\141000071000 HP485 Barracks\1007 F-101.dwg LAYOUT NAME: F-101 PLOT/DATE: Tuesday, November 02, 2010 4:12pm

REV: DATE: FILE: NAME: P:\Project\_Directory\LANR00071.000\_HP485\Drawings\1007\_F-102.dwg LAYOUT: NAME: F-102 PLOT: DATE: November 02, 2010 - 4:12pm



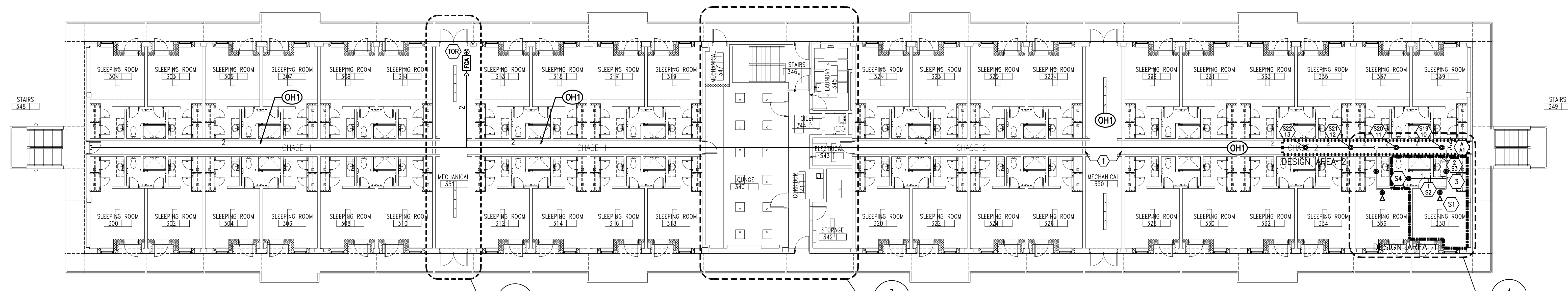
- SHEET NOTES**
- ① 8-INCH LITTEL PROVIDED AT OPENING IN ACCORDANCE WITH NFPA 13R SECTION 7.2.2.
  - ② PROVIDE FLOOR CONTROL ASSEMBLY, PIPE EXPRESS DRAIN TO EXTERIOR OF BUILDING. SEE DETAIL ON SHEET F-001.



		<b>F-102</b>	
		MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. WP/CS DR. JB CHK. SG/AK/DH SUBMITTED BY: DESIGN DIR.		<b>STRUCTURAL AND HVAC</b> <b>RENOVATION - HP485 BARRACK</b>	
APPROVED: PWO OR OICC DATE: _____ SATISFACTORY TO: DATE: _____		SECOND FLOOR PLAN NAVFAC DRAWING NO. <b>60007161</b> CONST. CONTR. NO. N40085-10-B-0070	
SIZE: <b>F 80091</b> SCALE: AS NOTED		SHEET 21 OF 65	

**SHEET NOTES**

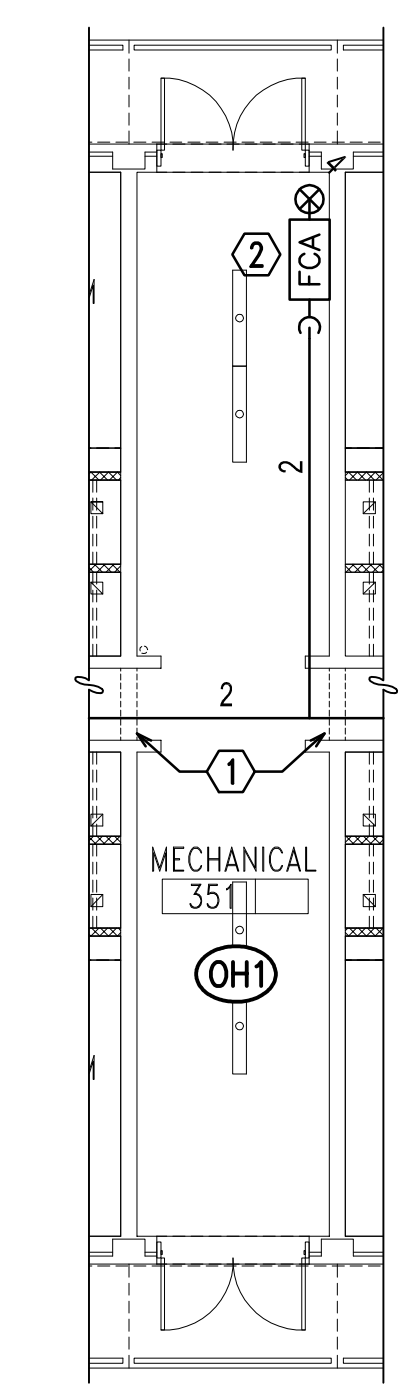
- ① 8-INCH LINTEL PROVIDED AT OPENING IN ACCORDANCE WITH NFPA 13R SECTION 7.2.2.
- ② PROVIDE FLOOR CONTROL ASSEMBLY, PIPE EXPRESS DRAIN TO EXTERIOR OF BUILDING. SEE DETAIL ON SHEET F-001.



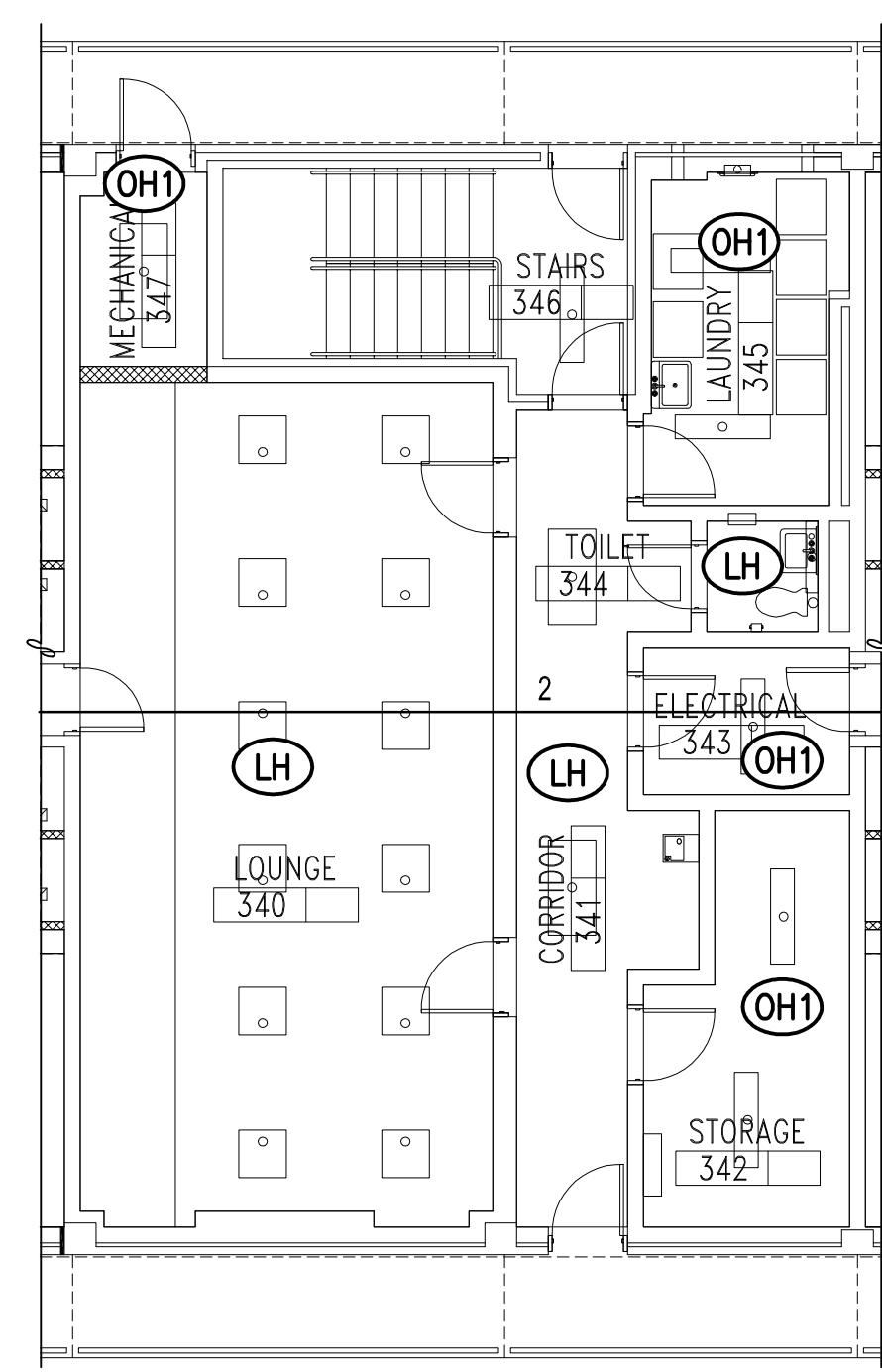
**THIRD FLOOR PLAN**  
Scale: 3/32" = 1'-0"

Remote Area 1		Flowing Heads	4	Start Head PSI	10.1
Wet / Dry	WET	Density	0.05	Start Head GPM	14
Hazard	RES	Area	N/A	SQFT per Head	144
Code	NFPA 13R	Lev/Mid Ratio	N/A	Elev-Hd to Riser (*)	---
Construction		Max Velocity	15.5	PSI -Hd to Riser	---
Source Name or Location	SR	GPM Req'd at Source	57.2	Inside Hose	0
PSI Avail at Source	62	Duration of Source	0	Outside Hose	0
PSI Req'd at Source	52	Req'd Source Volume	0.000		
Safety PSI	10				
Pressure	Available Pressure of 62 psi Exceeds Required Pressure of 52 psi				
Summary	This is a safety margin of 10 psi or 16 % of Supply				
Advanced	Max Density Available	---	PSI loss - TOR to Source	---	---
Summary	GPM at Max Available Density	---	Rock Demand	0.000	---

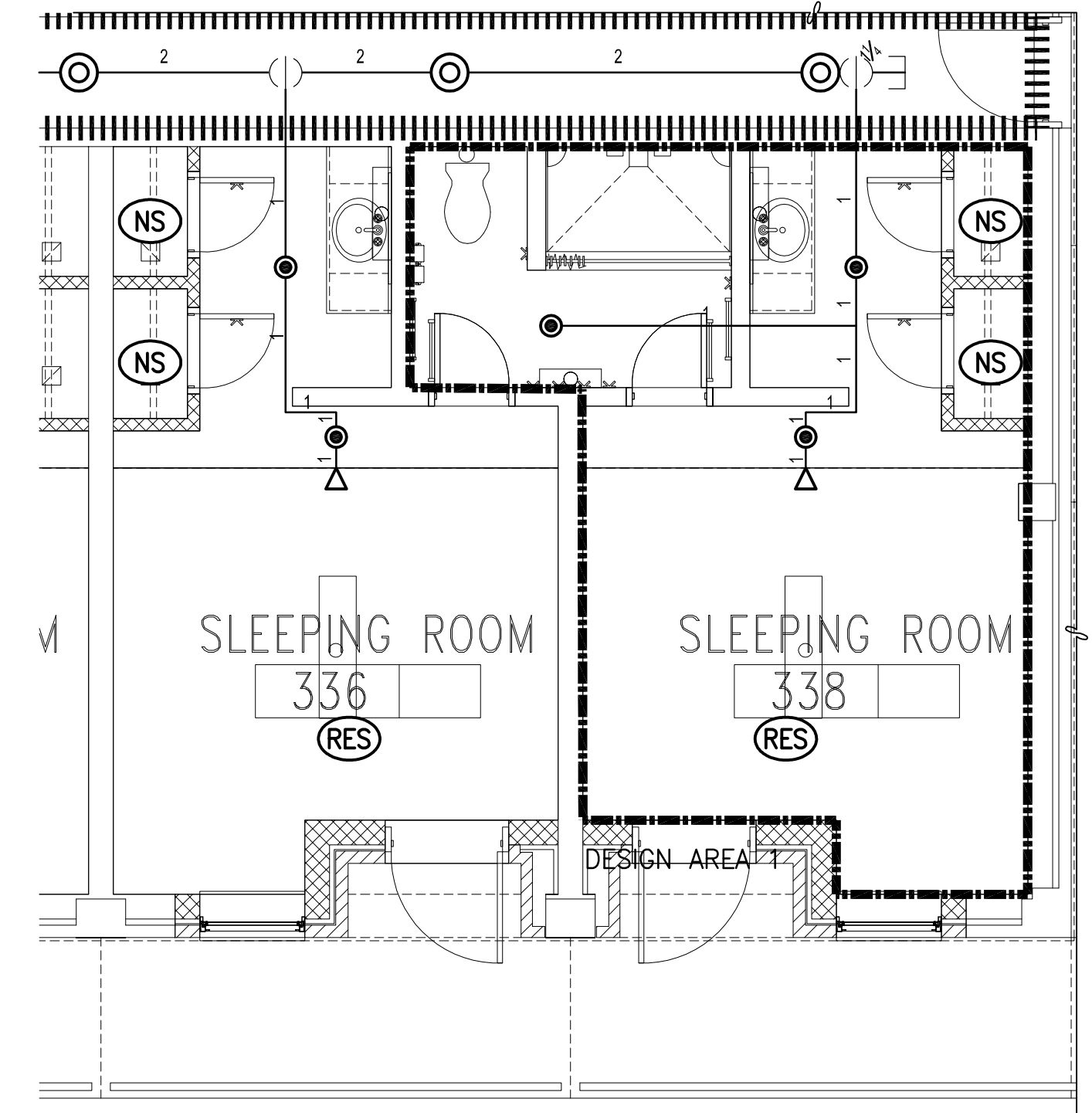
Remote Area 2		Flowing Heads	4	Start Head PSI	7
Wet / Dry	WET	Density	0.15	Start Head GPM	19.5
Hazard	OH1	Area	N/A	SQFT per Head	130
Code	NFPA 13/13R	Lev/Mid Ratio	N/A	Elev-Hd to Riser (*)	---
Construction		Max Velocity	7.5	PSI -Hd to Riser	---
Source Name or Location	SR	GPM Req'd at Source	79	Inside Hose	0
PSI Avail at Source	62	Duration of Source	0	Outside Hose	0
PSI Req'd at Source	53	Req'd Source Volume	0		
Safety PSI	9				
Pressure	Available Pressure of 62 psi Exceeds Required Pressure of 53 psi				
Summary	This is a safety margin of 9 psi or 14.5 % of Supply				
Advanced	Max Density Available	---	PSI loss - TOR to Source	---	---
Summary	GPM at Max Available Density	---	Rock Demand	0.000	---



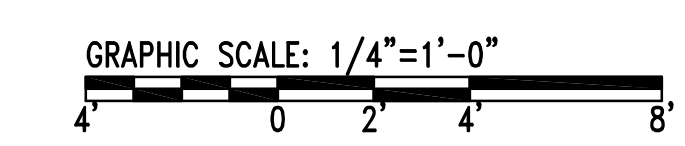
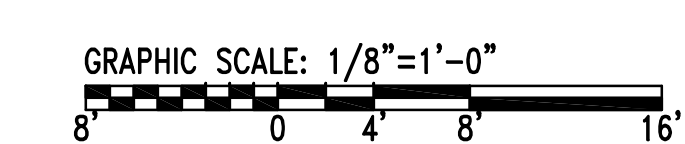
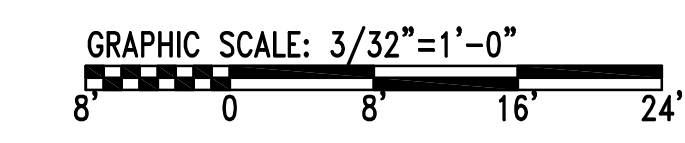
**2 MECHANICAL ROOM**  
Scale: 1/8" = 1'-0"



**3 LOUNGE/LAUNDRY**  
Scale: 1/8" = 1'-0"



**4 SLEEPING ROOM**  
Scale: 1/4" = 1'-0"

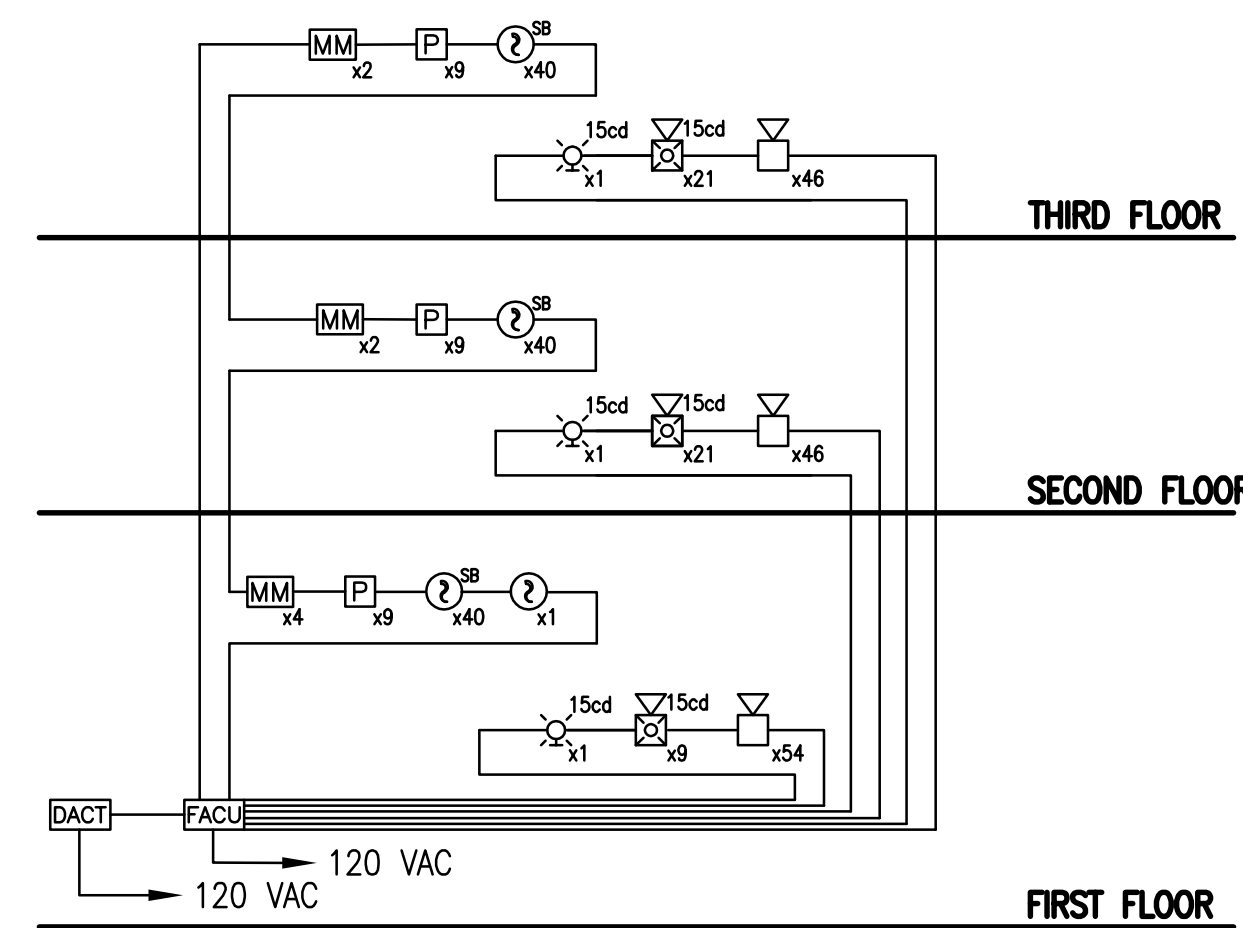


	<b>F-103</b>	
	MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. WP/CS DR. JB CHK. SG/AK/DH SUBMITTED BY: DESIGN DIR.		<b>STRUCTURAL AND HVAC</b> <b>RENOVATION - HP485 BARRACK</b>
APPROVED: PWO OR OICC DATE: _____ SATISFACTORY TO: DATE: _____		THIRD FLOOR PLAN NAVFAC DRAWING NO. <b>60007162</b> F 80091 CONST. CONTR. NO. N40085-10-B-0070
SCALE: AS NOTED SPEC. 05-10-0070		SHEET 22 OF 65

REV: DATE: FILE: NAME: P:\Project\_Directory\14N00071.000 HP485 Drawings\1007 F-103.dwg LAYOUT NAME: F-103 PLOTTED: Tuesday, November 02, 2010 4:12pm

**GENERAL NOTES:**

1. PROVIDE A COMPLETE AND OPERATIONAL ANALOG ADDRESSABLE FIRE ALARM SYSTEM FOR THE BUILDING. THE FIRE ALARM SYSTEM SHALL BE A VOICE NOTIFICATION SYSTEM AND SHALL ALSO PROVIDE MASS NOTIFICATION FOR THE BUILDING.
2. APPLICABLE CODES:  
NFPA 72, NATIONAL FIRE ALARM CODE, 2010 EDITION  
NFPA 70, NATIONAL ELECTRIC CODE, 2008 EDITION  
UFC 3-600-01, FIRE PROTECTION ENGINEERING FOR FACILITIES, 14 JULY 2009  
UFC 3-600-10N, FIRE PROTECTION ENGINEERING, AUGUST 2007  
UFC 4-021-01, DESIGN AND O&M: MASS NOTIFICATION SYSTEM, 9 APRIL 2008
3. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION. IF CONFLICTS OCCUR BETWEEN THE SPECIFICATION AND NFPA 72 THE MOST STRINGENT REQUIREMENT SHALL APPLY.
4. FIRE ALARM INITIATING DEVICE CIRCUITS LEAVING THE BUILDING SHALL BE PROVIDED WITH SURGE PROTECTION LISTED IN ACCORDANCE WITH UL 1449 AND SATISFYING THE REQUIREMENTS OF IEEE C62.41.
5. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN METAL RACEWAY. DO NOT INSTALL ANY OTHER WIRING IN FIRE ALARM RACEWAY.
6. NOTIFICATION APPLIANCES THAT ARE WALL MOUNTED SHALL BE INSTALLED 80" - 96" ABOVE THE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER.
7. MANUAL FIRE ALARM STATIONS SHALL BE MOUNTED 4' ABOVE THE FINISHED FLOOR.
8. VISUAL NOTIFICATION APPLIANCES SHALL BE SYNCHRONIZED WHEN IN THE SAME FIELD OF VIEW WITH A FLASH RATE BETWEEN 1 HZ AND 2 HZ.
9. AUDIBLE DEVICES SHALL PROVIDE A CIS SCORE GREATER THAN 0.7 IN EACH AREA WHERE BUILDING OCCUPANTS ARE NORMALLY FOUND.
10. THE DRAWINGS ARE CONCEPTUAL IN NATURE. THEY DO NOT SHOW THE EXACT LOCATION OF COMPONENTS NOR SHOW ALL SYSTEM COMPONENTS. THE INSTALLING CONTRACTOR SHALL PROVIDE ADDITIONAL COMPONENTS FOR A PROPERLY INSTALLED AND FUNCTIONAL SYSTEM.
11. FIRE ALARM CIRCUITS SHALL BE CLASS A.
12. ALL FIRE ALARM CONDUIT SHALL BE CONCEALED.

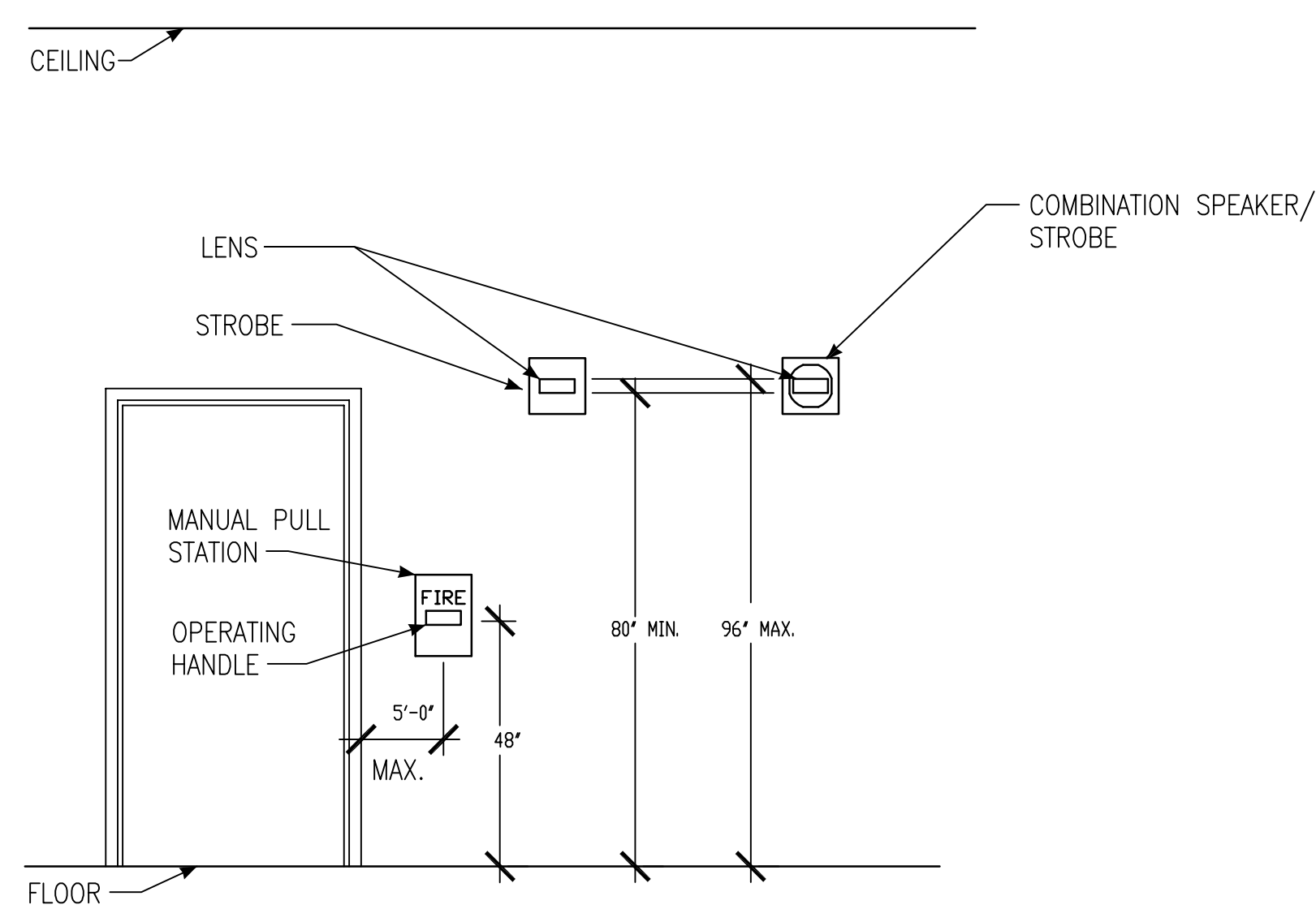


**FIRE ALARM RISER**

SCALE = N.T.S.

**LEGEND:**

- FACU** FIRE ALARM CONTROL/AUTONOMOUS UNIT
- LOC** LOCAL OPERATING CONSOLE
- DACT** DIGITAL ALARM COMMUNICATOR TRANSMITTER
- MM** MONITOR MODULE
- PI** MANUAL PULL STATION
- SD** SMOKE DETECTOR (SUBSCRIPT INDICATES SOUNDER BASE)
- WS** WALL MOUNTED SPEAKER/STROBE (SUBSCRIPT INDICATES DESIGN INTENSITY)
- W** WALL MOUNTED SPEAKER
- TS** TAMPER SWITCH
- WFS** WATER FLOW SWITCH
- WSB** WALL MOUNTED STROBE (SUBSCRIPT INDICATES DESIGN INTENSITY)
- WP** WEATHER PROOF



**TYPICAL MOUNTING HEIGHTS FOR WALL MOUNTED DEVICES**

SCALE = N.T.S.

FIRE ALARM INPUT	OPERATION									
	ACTIVATE AUDIBLE PA EVACUATION THROUGHOUT BUILDING	ACTIVATE AUDIBLE PA BROADCAST AND BROADCAST MIB MESSAGE	ACTIVATE VISUAL "ALERT" STROBES THROUGHOUT BUILDING	DISABLE NON-EMERGENCY LIVE PAGING FEATURE	ALARM CONDITION AT FACU	SUPERVISORY CONDITION AT FACU	MNS SUPERVISORY CONDITION AT FACU	TROUBLE CONDITION AT FACU	TRANSMIT SIGNAL TO REMOTE STATION	ACTIVATE SOUNDER BASE IN ADJOINING SLEEPING ROOM
MANUAL PULL STATION	•	•	•	•	•	•	•	•	•	•
AUTOMATIC SPRINKLER FLOW SWITCH	•	•	•	•	•	•	•	•	•	•
RESIDENTIAL SMOKE DETECTOR <sup>4</sup>	•	•	•	•	•	•	•	•	•	•
SYSTEM SMOKE DETECTOR	•	•	•	•	•	•	•	•	•	•
AUTOMATIC SPRINKLER SYSTEM TAMPER SWITCH	•	•	•	•	•	•	•	•	•	•
FACU CIRCUIT FAULT (OPEN, GROUND, SHORT)	•	•	•	•	•	•	•	•	•	•
OTHER TROUBLE CONDITION	•	•	•	•	•	•	•	•	•	•
PRIMARY AC POWER LOSS	•	•	•	•	•	•	•	•	•	•
<b>MASS NOTIFICATION INPUT</b>										
ACU/LOC EMERGENCY LIVE PAGING <sup>1</sup>	•	•	•	•	•	•	•	•	•	•
ACU/LOC EMERGENCY PRE-RECORDED MESSAGE SELECT <sup>1,2</sup>	•	•	•	•	•	•	•	•	•	•
ACU/LOC NON-EMERGENCY PRE-RECORDED MESSAGE SELECT <sup>1</sup>	•	•	•	•	•	•	•	•	•	•
ACU/LOC PRE-RECORDED "ALL CLEAR" <sup>1</sup>	•	•	•	•	•	•	•	•	•	•
WIDE AREA MNS NON-EMERGENCY MESSAGE BROADCAST <sup>2</sup>	•	•	•	•	•	•	•	•	•	•
WIDE AREA MNS EMERGENCY MESSAGE BROADCAST <sup>1,2</sup>	•	•	•	•	•	•	•	•	•	•
NON-EMERGENCY LIVE PAGING	•	•	•	•	•	•	•	•	•	•
DOD TELEPHONE SYSTEM NON-EMERGENCY PAGING	•	•	•	•	•	•	•	•	•	•

GENERAL: CONTRACTORS SHALL ENSURE MNS AND FA PRIORITIES ARE PROGRAMMED IN ACCORDANCE WITH UFC 4-021-01  
<sup>1</sup> EMERGENCY MNS MESSAGES (LIVE & PRE-RECORDED) SHALL TEMPORARILY OVERRIDE FIRE ALARM AUDIBLE EVACUATION AND DISABLE STROBES.  
<sup>2</sup> PRE-RECORDED MNS MESSAGES SHALL REPEAT FOR 10 MINS OR UNTIL MANUALLY RESET.  
<sup>3</sup> SUPERVISORY CONDITION ONLY OCCURS WHEN MNS SYSTEM IS OVERRIDING FIRE ALARM EVACUATION (ALARM CONDITION)  
<sup>4</sup> RESIDENTIAL SMOKE DETECTOR ACTIVATION SHALL ACTIVATE SOUNDER BASES IN SLEEPING ROOM OF ALARM AS WELL AS ADJOINING SLEEPING ROOM SHARING COMMON BATHROOM.

**FIRE ALARM MATRIX**

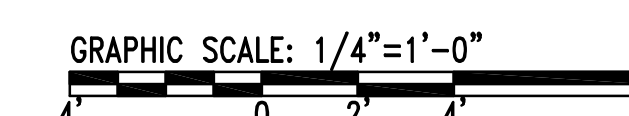
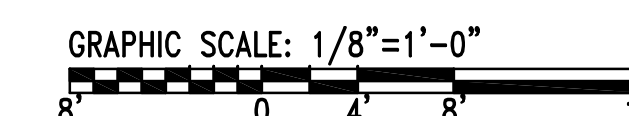
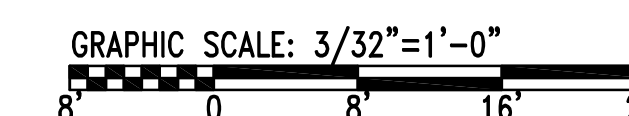
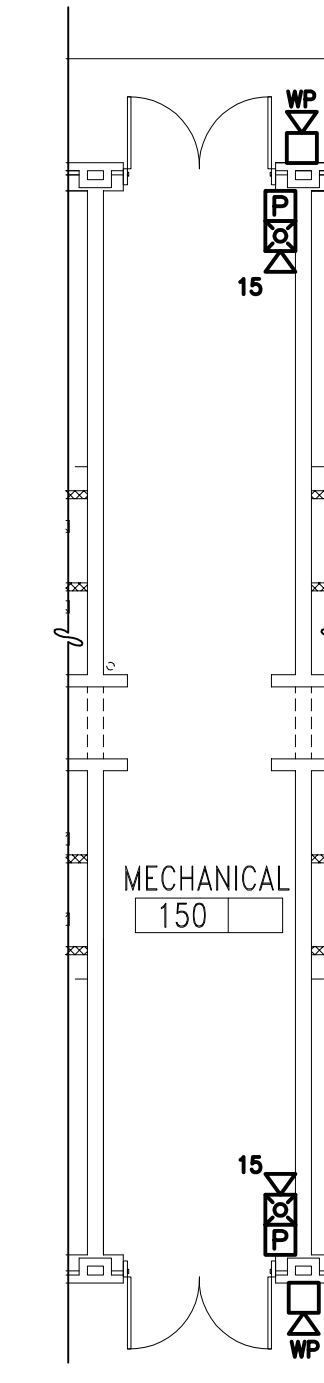
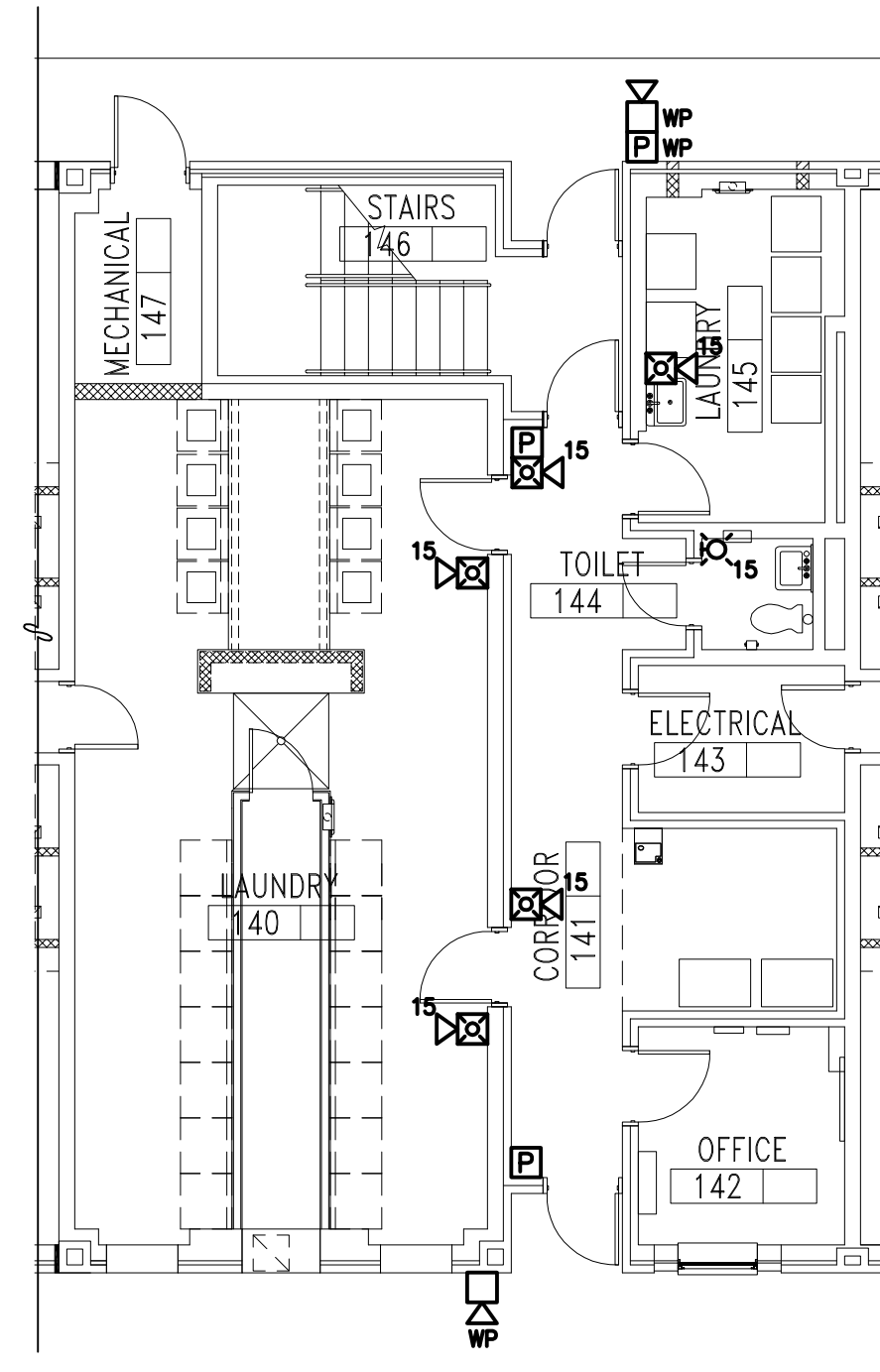
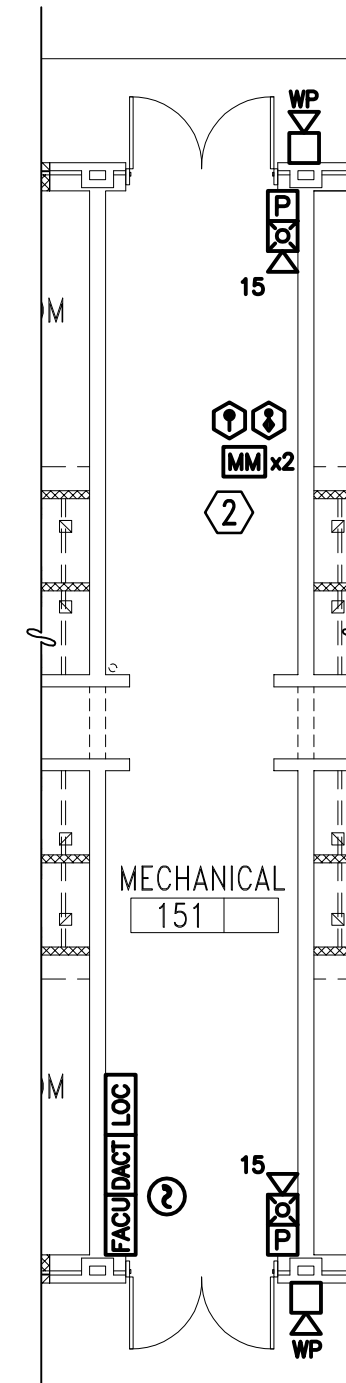
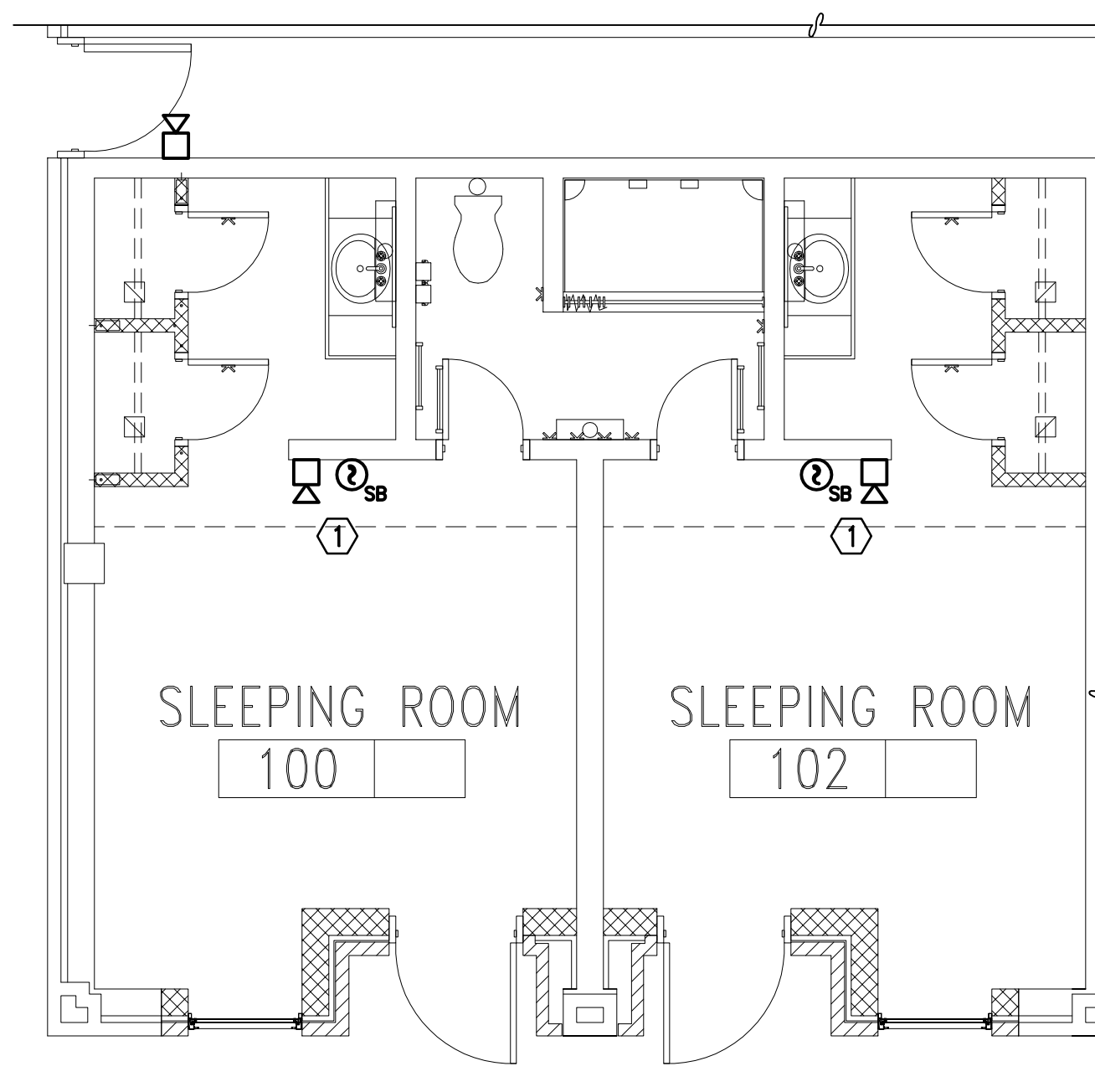
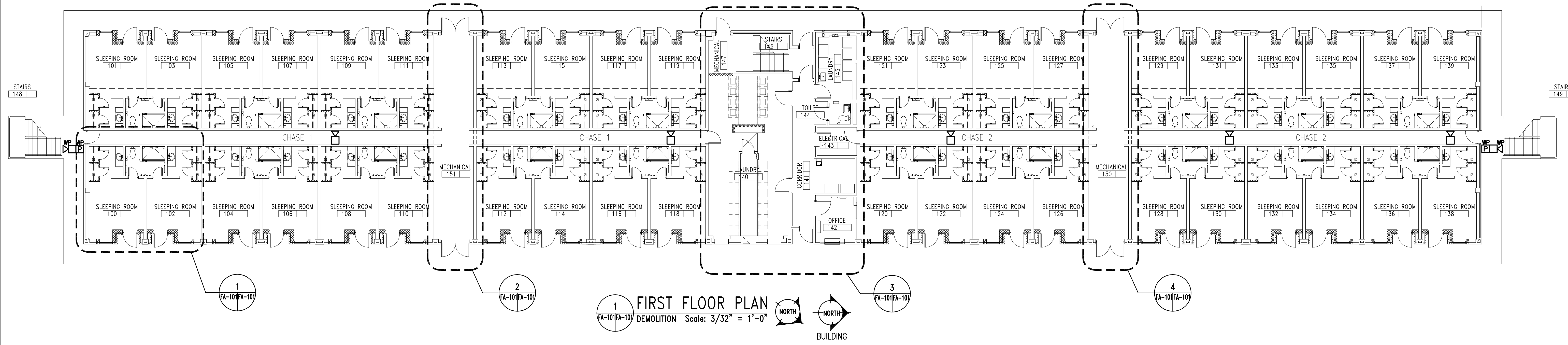
		<b>FA-001</b>	
		MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. WP/CS DR. JB CHK. SG/AK/DH SUBMITTED BY: DESIGN DIR.		STRUCTURAL AND HVAC RENOVATION - HP485 BARRACK	
APPROVED: PWO OR OICC DATE SATISFACTORY TO: DATE		GENERAL FIRE ALARM NOTES AND LEGEND NAVFAC DRAWING NO. <b>60007163</b> CONST. CONTR. NO. N40085-10-B-0070	
SIZE: F CODE: 80091		SCALE: AS NOTED SPEC: 05-10-0070 SHEET 23 OF 65	

**GENERAL NOTES**

1. THE EXISTING FIRE ALARM/MASS NOTIFICATION SYSTEM IS TO BE DEMOLISHED, INCLUDING ALL CONTROL PANELS, WIRING, INITIATING DEVICES AND NOTIFICATION APPLIANCES.
2. FURNISH AND INSTALL A NEW FIRE ALARM/MASS NOTIFICATION SYSTEM.
3. PROVIDE SMOKE DETECTION IN ACCORDANCE WITH NFPA 72 SECTION 10.15 OVER ALL HEAD-END EQUIPMENT.

**SHEET NOTES**

- 1 THE FIRE ALARM/MASS NOTIFICATION LAYOUT IS TYPICAL FOR ALL SLEEPING ROOMS.
- 2 CONTRACTOR TO PROVIDE MONITOR MODULES FOR WET-PIPE SPRINKLER SYSTEM.



		<b>FA-101</b>	
		MAUNE BELANGIA FAULKENBERRY ARCHITECTS, PA DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. WP/CS DR. JB CHK. SG/AK/DH SUBMITTED BY: DESIGN DIR.		<b>STRUCTURAL AND HVAC</b> <b>RENOVATION - HP485 BARRACK</b>	
APPROVED: PWO OR OICC DATE SATISFACTORY TO: DATE		NAVFAC DRAWING NO. <b>60007164</b> CONST. CONTR. NO. N40085-10-B-0070 F 80091	
SCALE: AS NOTED		SPEC. 05-10-0070 SHEET 24 OF 65	

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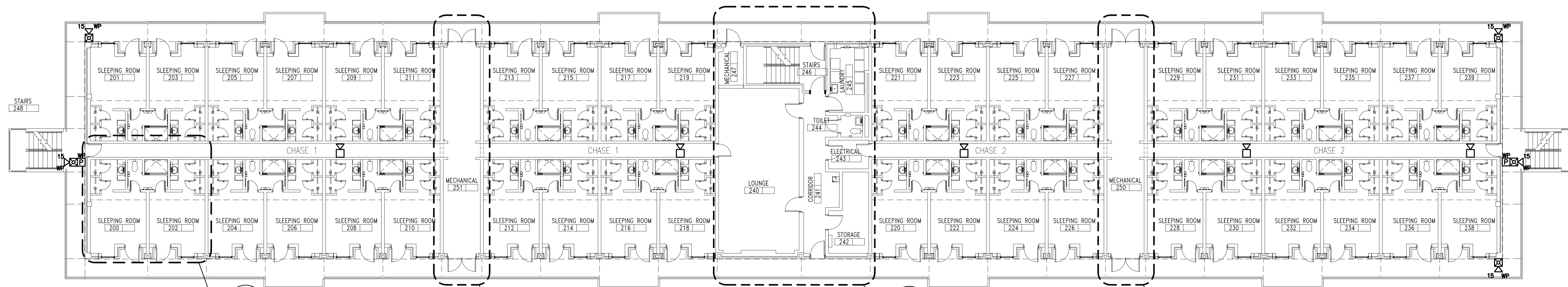


**GENERAL NOTES**

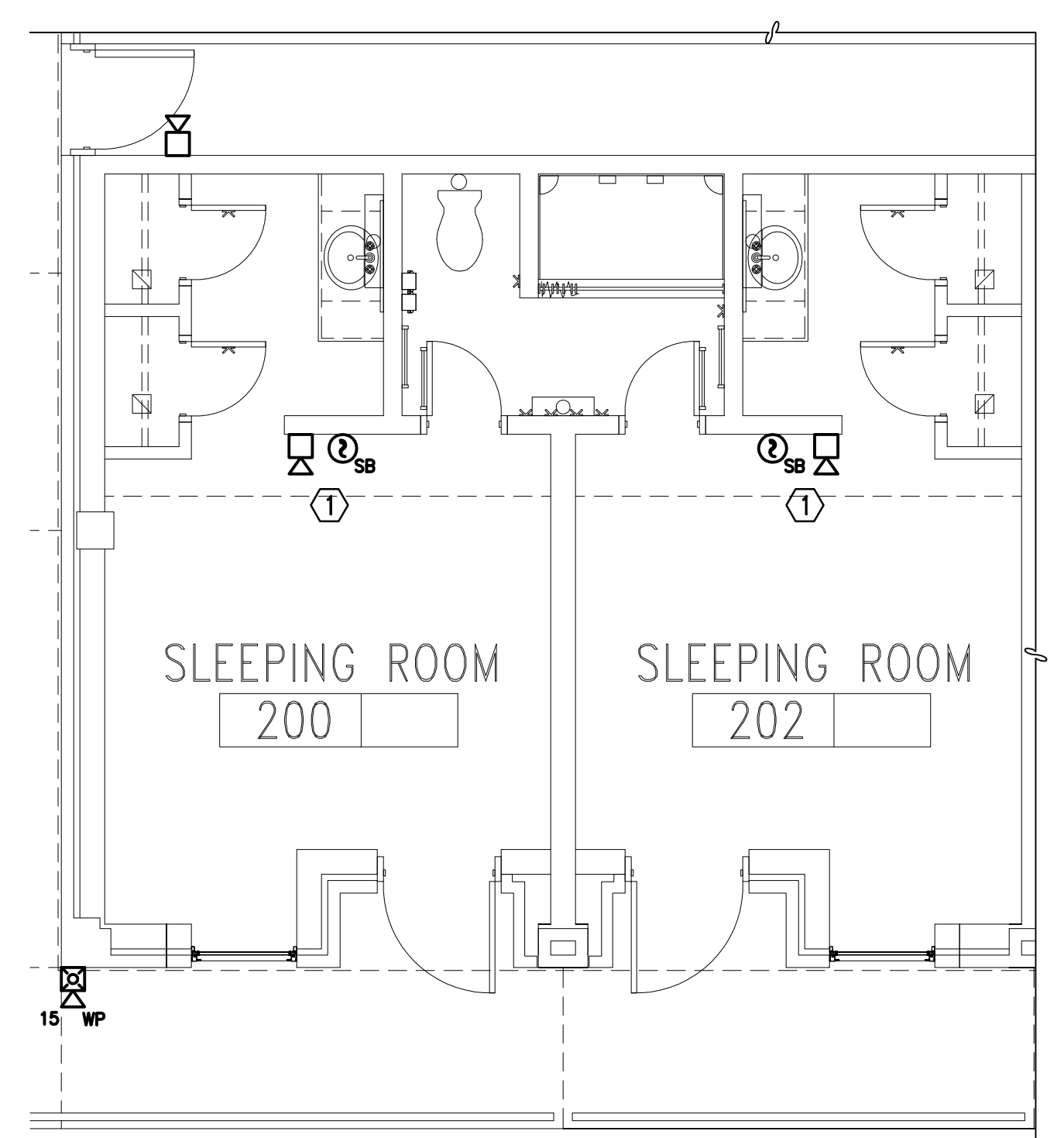
1. THE EXISTING FIRE ALARM/MASS NOTIFICATION SYSTEM IS TO BE DEMOLISHED, INCLUDING ALL CONTROL PANELS, WIRING, INITIATING DEVICES AND NOTIFICATION APPLIANCES.
2. FURNISH AND INSTALL A NEW FIRE ALARM/MASS NOTIFICATION SYSTEM.
3. PROVIDE SMOKE DETECTION IN ACCORDANCE WITH NFPA 72 SECTION 10.15 OVER ALL HEAD-END EQUIPMENT.

**SHEET NOTES**

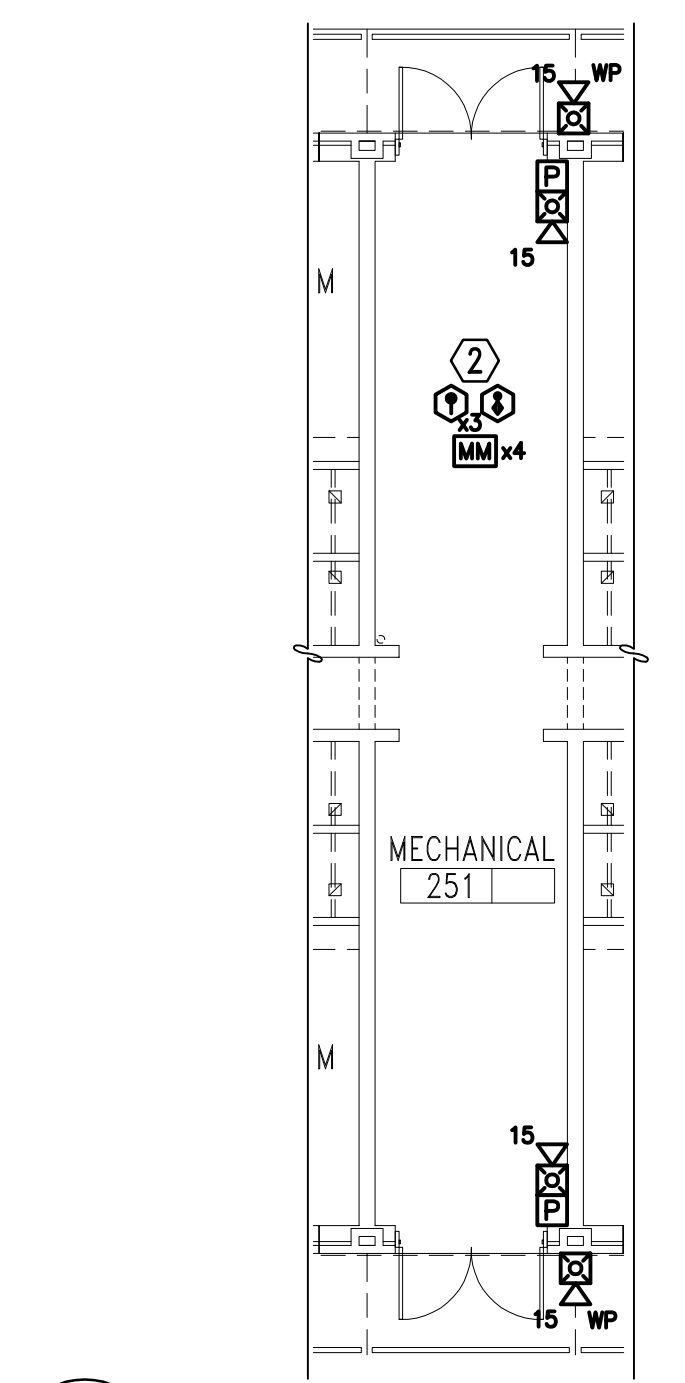
- 1 THE FIRE ALARM/MASS NOTIFICATION LAYOUT IS TYPICAL FOR ALL SLEEPING ROOMS.
- 2 CONTRACTOR TO PROVIDE MONITOR MODULES FOR WET-PIPE SPRINKLER SYSTEM.



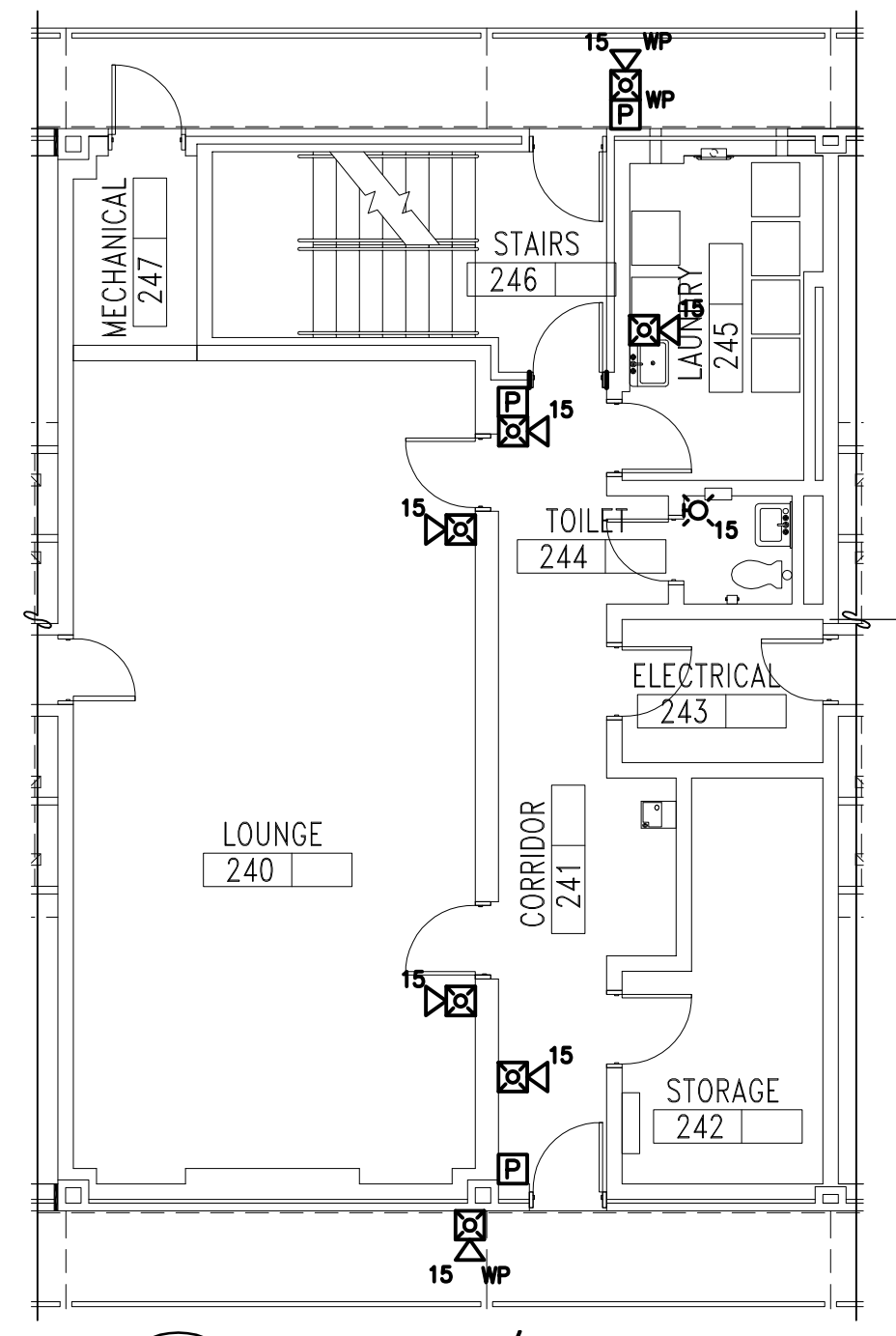
**SECOND FLOOR PLAN**  
 Scale: 3/32" = 1'-0"  
 NORTH BUILDING



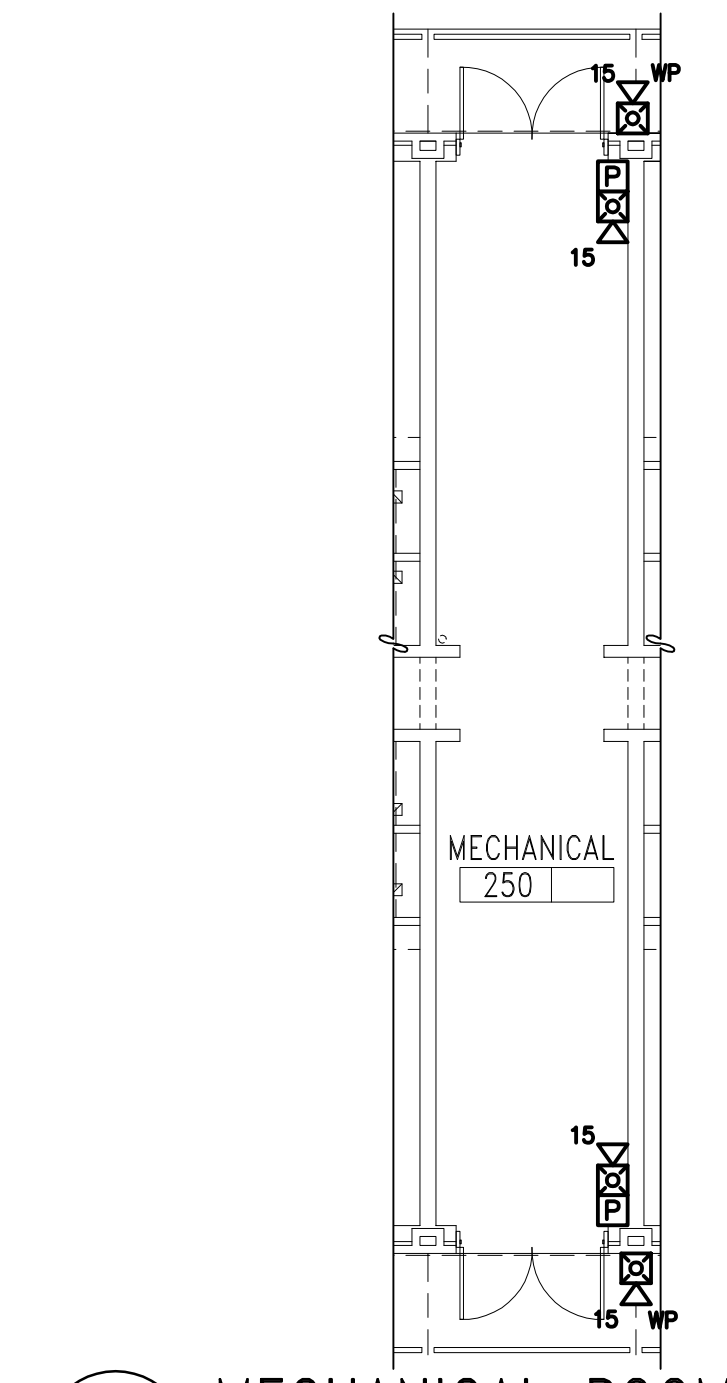
**1 SLEEPING ROOM**  
 FA-102FA-102 CONSTRUCTION Scale: 1/4" = 1'-0"



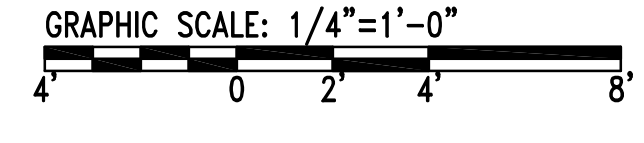
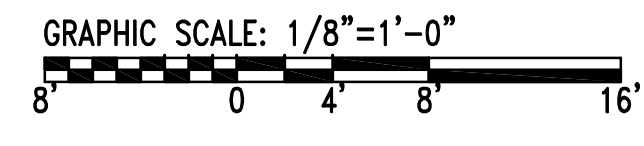
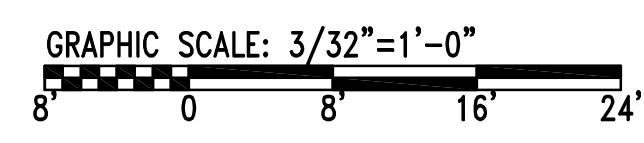
**2 MECHANICAL ROOM 251**  
 FA-102FA-102 CONSTRUCTION Scale: 1/8" = 1'-0"



**3 LOUNGE/LAUNDRY**  
 FA-102FA-102 CONSTRUCTION Scale: 1/8" = 1'-0"



**4 MECHANICAL ROOM 250**  
 FA-102FA-102 CONSTRUCTION Scale: 1/8" = 1'-0"



	<b>FA-102</b>	
	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. WP/CS DR. JB CHK. SG/AK/DH SUBMITTED BY: DESIGN DIR.	<b>STRUCTURAL AND HVAC</b> <b>RENOVATION - HP485 BARRACK</b>	
APPROVED: PWO OR OICC DATE SATISFACTORY TO: DATE	NAVFAC DRAWING NO. <b>60007165</b> CONST. CONTR. NO. N40085-10-B-0070	SECOND FLOOR PLAN SCALE: AS NOTED SPEC. 05-10-0070 SHEET 25 OF 65

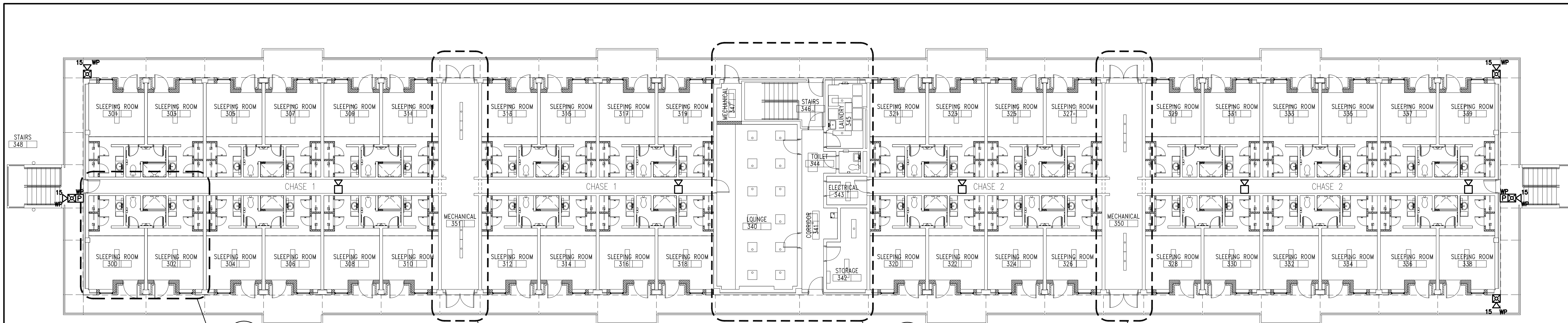
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**GENERAL NOTES**

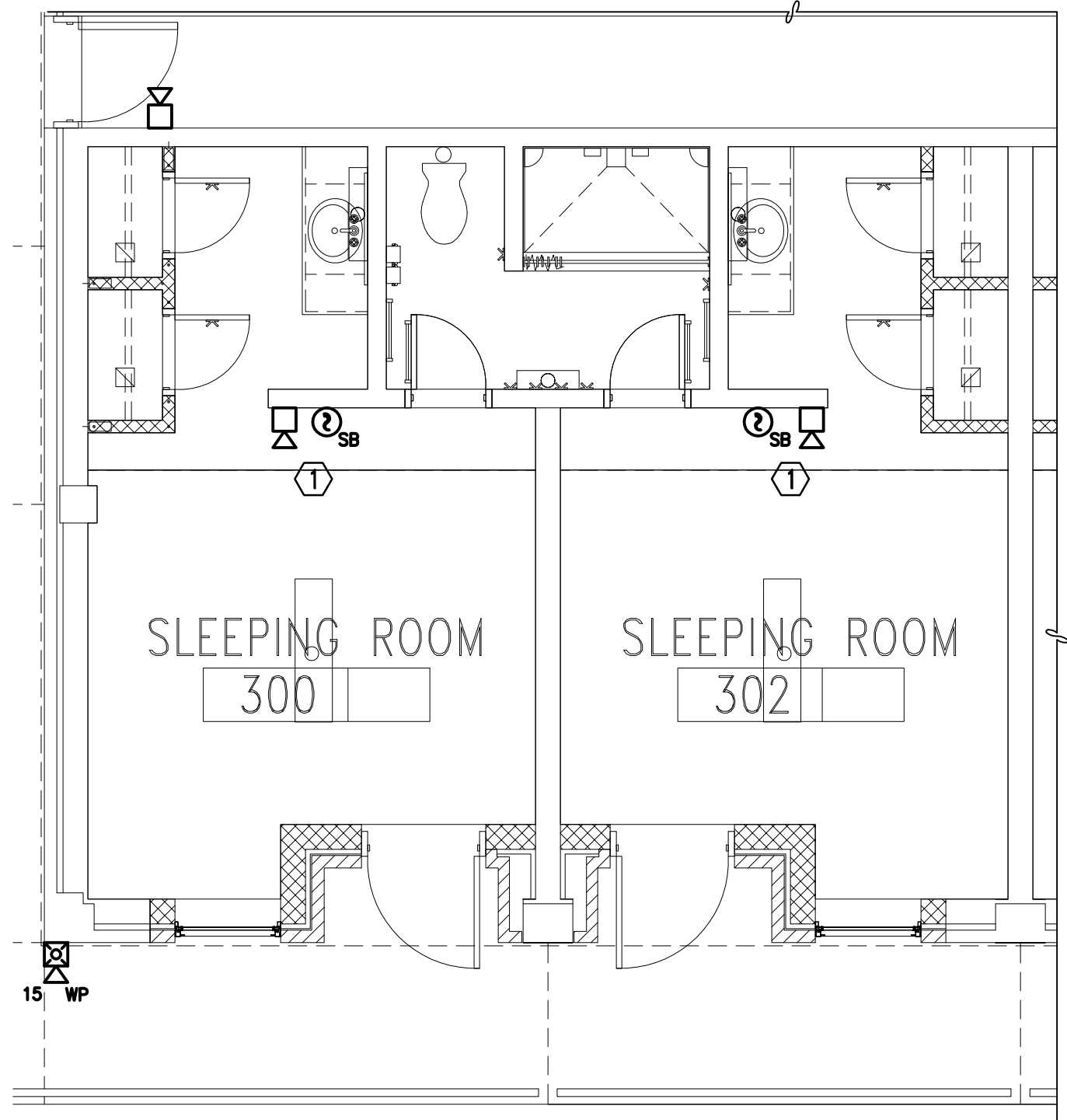
1. THE EXISTING FIRE ALARM/MASS NOTIFICATION SYSTEM IS TO BE DEMOLISHED, INCLUDING ALL CONTROL PANELS, WIRING, INITIATING DEVICES AND NOTIFICATION APPLIANCES.
2. FURNISH AND INSTALL A NEW FIRE ALARM/MASS NOTIFICATION SYSTEM.
3. PROVIDE SMOKE DETECTION IN ACCORDANCE WITH NFPA 72 SECTION 10.15 OVER ALL HEAD-END EQUIPMENT.

**SHEET NOTES**

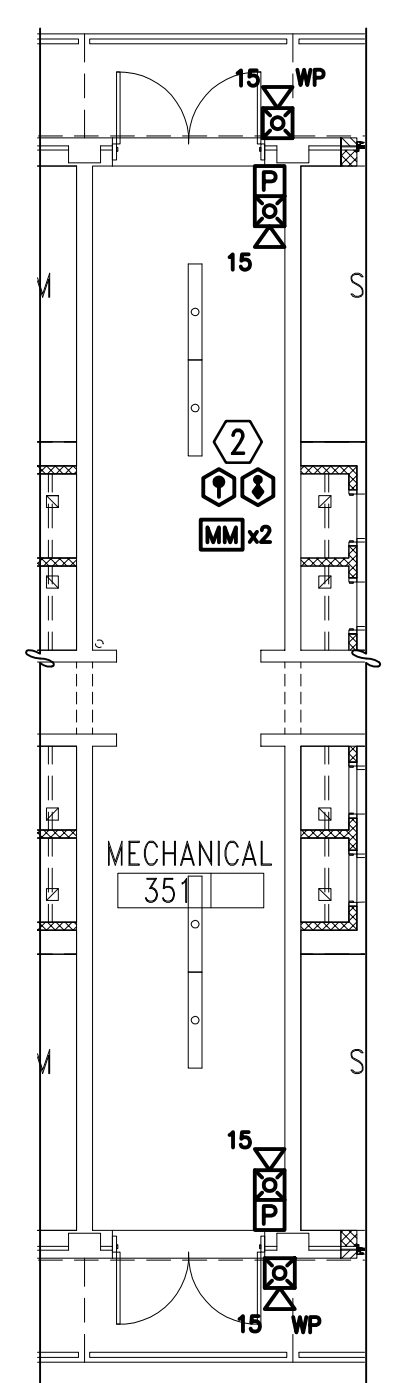
- 1 THE FIRE ALARM/MASS NOTIFICATION LAYOUT IS TYPICAL FOR ALL SLEEPING ROOMS.
- 2 CONTRACTOR TO PROVIDE MONITOR MODULES FOR WET-PIPE SPRINKLER SYSTEM.



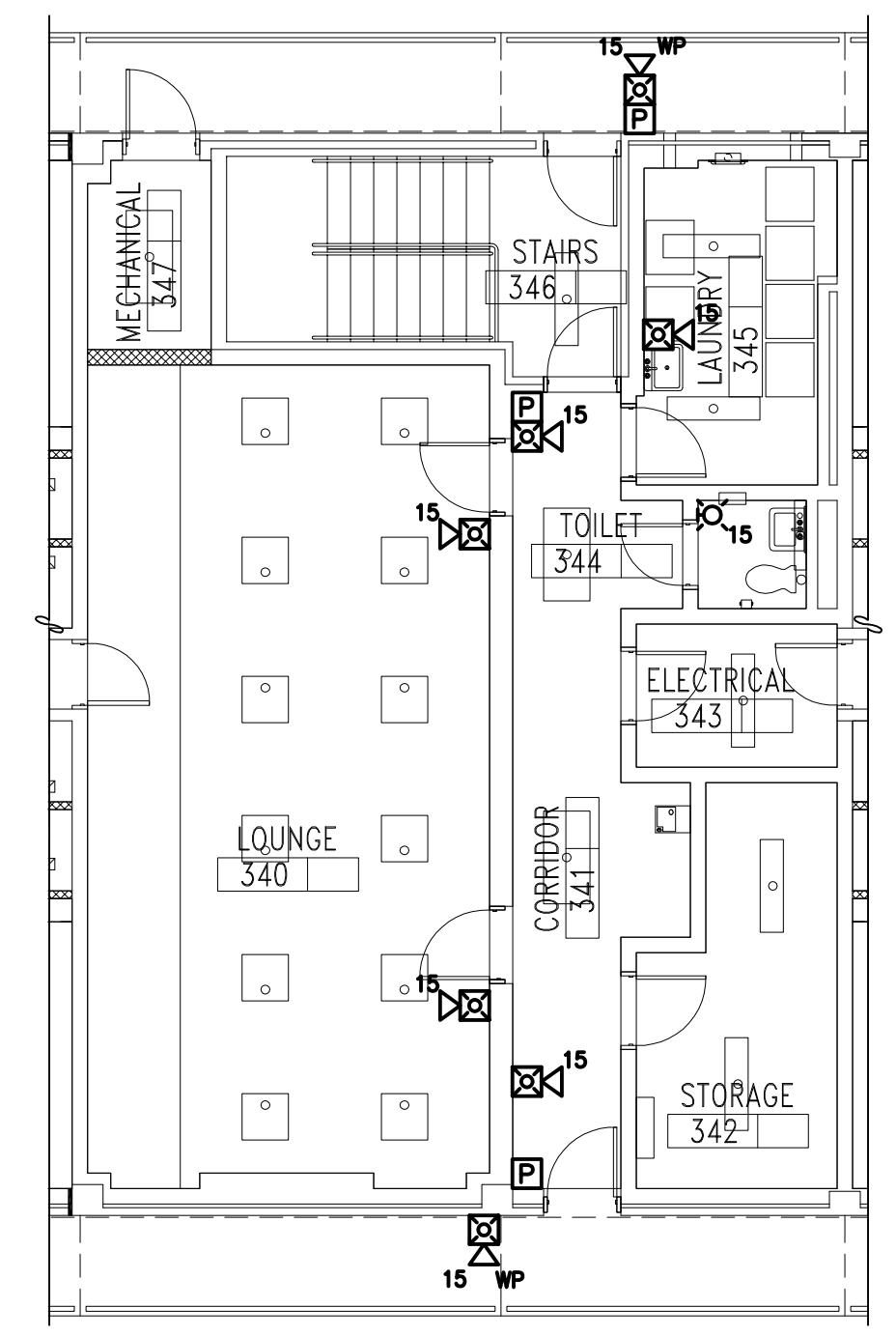
**THIRD FLOOR PLAN**  
Scale: 3/32" = 1'-0"  
NORTH BUILDING



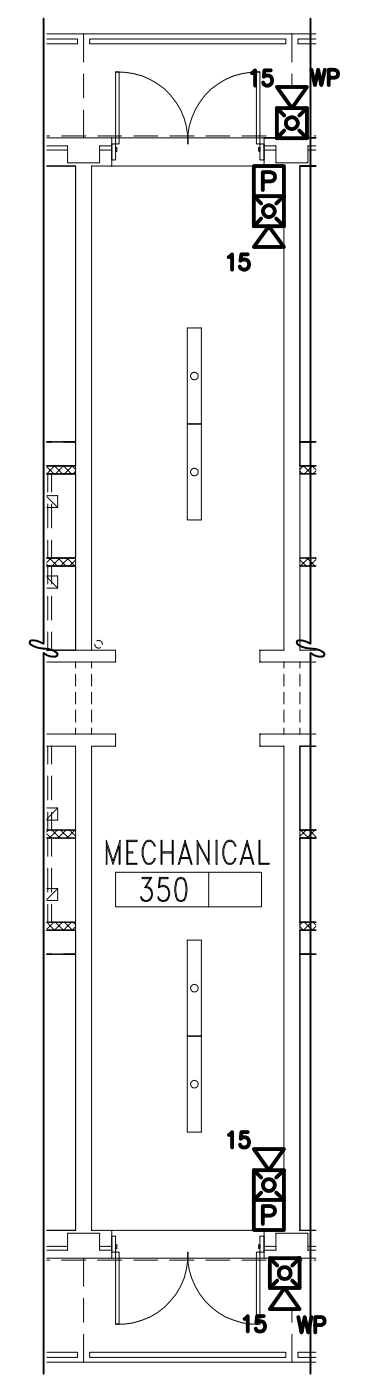
**1 SLEEPING ROOM**  
FA-103FA-103 CONSTRUCTION Scale: 1/4" = 1'-0"



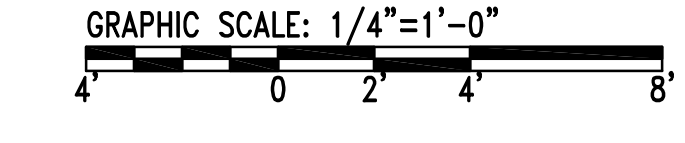
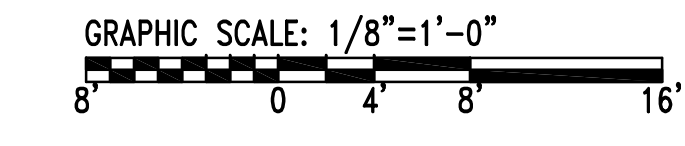
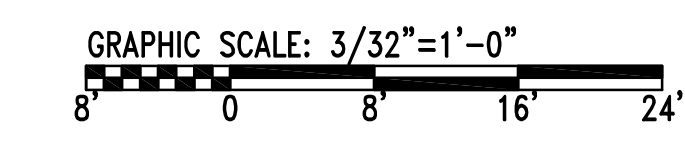
**2 MECHANICAL ROOM 351**  
FA-103FA-103 CONSTRUCTION Scale: 1/8" = 1'-0"



**3 LOUNGE/LAUNDRY**  
FA-103FA-103 CONSTRUCTION Scale: 1/8" = 1'-0"



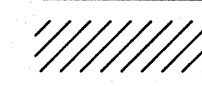
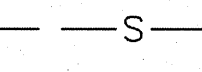
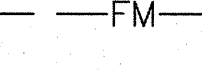
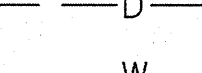
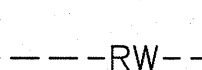
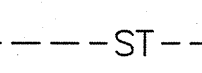
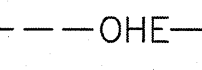
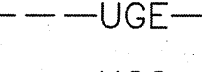
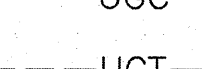
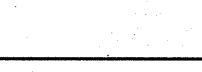
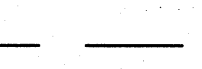
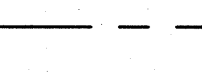
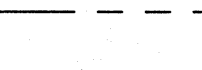




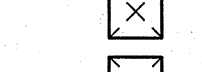
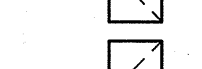
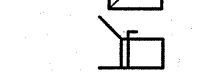

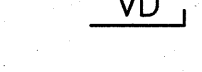
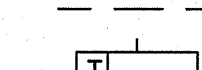
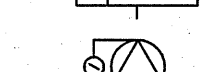
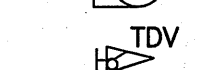
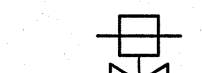
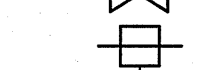
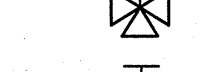
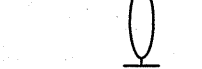
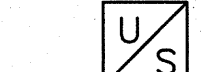
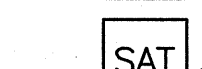
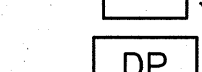
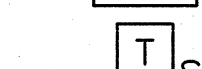
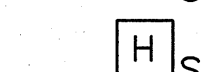

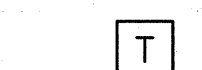


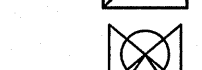
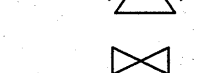


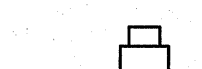
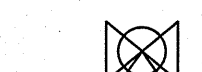
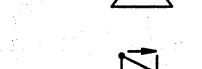
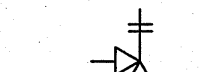



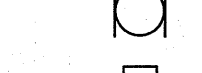
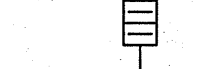



**4 MECHANICAL ROOM 350**  
FA-103FA-103 CONSTRUCTION Scale: 1/8" = 1'-0"



REV: DATE: FILE: NAME: P:\Project\_Directory\141800071.000 HP485\Drawings\1007 FA-103.dwg LAYOUT NAME: FA-103 PLOTTED: Tuesday, November 02, 2010 4:12pm

		<b>FA-103</b>	
		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. WP/CS DR. JB CHK. SG/AK/DH SUBMITTED BY: DESIGN DIR.		<b>STRUCTURAL AND HVAC</b> <b>RENOVATION - HP485 BARRACK</b>	
APPROVED: PWO OR OICC DATE: _____		NAVFAC DRAWING NO. <b>60007166</b>	
SATISFACTORY TO: DATE: _____		CONST. CONTR. NO. N40085-10-B-0070	
SCALE: AS NOTED		SHEET 26 OF 65	

**LEGEND**

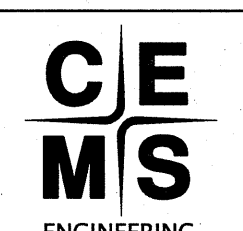
	MECHANICAL TO BE REMOVED	CHR	CHILLED WATER RETURN
	SANITARY SEWER (GRAVITY)	CHS	CHILLED WATER SUPPLY
	SANITARY SEWER (FORCE MAIN)	DTR	DUAL TEMPERATURE RETURN
	STORM SEWER	DTS	DUAL TEMPERATURE SUPPLY
	DOMESTIC WATER	PRV	PRESSURE RELIEF VALVE
	RAW WATER	U.G.	UNDERGROUND
	UNDERGROUND STEAM	EXP.	EXPANSION
	OVERHEAD ELECTRICAL	P	PUMP
	UNDERGROUND ELECTRICAL	TYP.	TYPICAL
	UNDERGROUND CABLE	FCU	FAN COIL UNIT
	UNDERGROUND COMMUNICATIONS	FPB	FAN POWERED BOX
	GEOHERMAL WATER SUPPLY	UH	UNIT HEATER
	GEOHERMAL WATER RETURN	EF	EXHAUST FAN
	COLD WATER, CW	DDC	DIRECT DIGITAL CONTROL
	HOT WATER, HW	SBC	SITE BUILDING CONTROLLER
	HOT WATER RECIRCULATING, HWR	DHP	DOMESTIC GEOHERMAL HEAT PUMP
	GEOHERMAL WATER SUPPLY	VFD	VARIABLE FREQUENCY DRIVE
	GEOHERMAL WATER RETURN	HP	GEOHERMAL HEAT PUMP
	GEOHERMAL WELL	OAU	OUTDOOR AIR UNIT
	SIDEWALL SUPPLY GRILLE	EMCS	EMERGENCY MONITORING AND CONTROLS SYSTEM
	SUPPLY DUCT	PPC	PUMP PLANT CONTROLLER
	EXHAUST DUCT/VENT	GSM	GEOHERMAL SMART WATER METER
	RETURN DUCT/GRILLE	DSM	DOMESTIC SMART WATER METER
	45° TAKE OFF	TCU	TERMINAL CONTROL UNIT
	FLEXIBLE DUCT	ECM	ELECTRONICALLY COMMUTATED MOTOR
	MANUAL VOLUME DAMPER	SBC	SUPERVISORY BUILDING CONTROLLER
	SOFFIT	CW	DOMESTIC COLD WATER
	TEMPERATURE SENSOR	HW	DOMESTIC HOT WATER
	PUMP	HWR	HOT WATER RECIRCULATION
	TRIPLE DUTY VALVE	HGRH	HOT GAS REHEAT
	SLOW ACTING 2-WAY CONTROL VALVE	OAT	OUTDOOR AIR TEMPERATURE SENSOR
	SLOW ACTING 3-WAY CONTROL VALVE	FD	FIRE DAMPER
	VARIABLE FREQUENCY DRIVE BYPASS	(E)	EXISTING
	UNIT START/STOP		POINT OF CONNECTION BETWEEN NEW AND EXISTING
	SUPPLY AIR TEMPERATURE SENSOR		POINT OF DISCONNECTION BETWEEN EXISTING TO REMAIN AND EXISTING TO BE REMOVED
	DIFFERENTIAL PRESSURE SENSOR		
	TEMPERATURE SENSOR		
	HUMIDITY SENSOR		
	DUCT TEMPERATURE SENSOR		
	PUMP START/STOP		
	AUTOMATIC THERMOSTATIC MIXING VALVE		
	GATE VALVE		
	MOTOR OPERATED DAMPER		
	THERMOSTAT		
	SLOW ACTING CONTROL VALVE		
	AUTOMATIC THERMOSTATIC MIXING VALVE		
	CHECK VALVE		
	TEMPERATURE & PRESSURE RELIEF VALVE		
	CIRCULATING PUMP		
	TEMPERATURE CONTROL PROBE		
	FULL PORT BALL VALVE		
	TEMPERATURE GAGE		

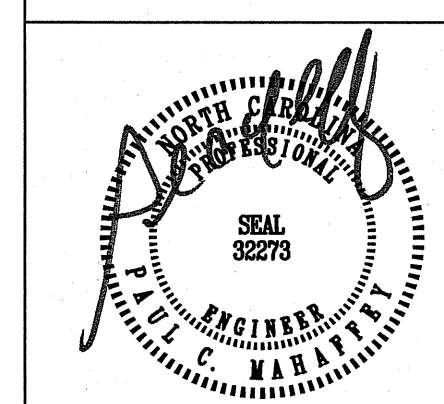
**GENERAL NEW WORK NOTES:**

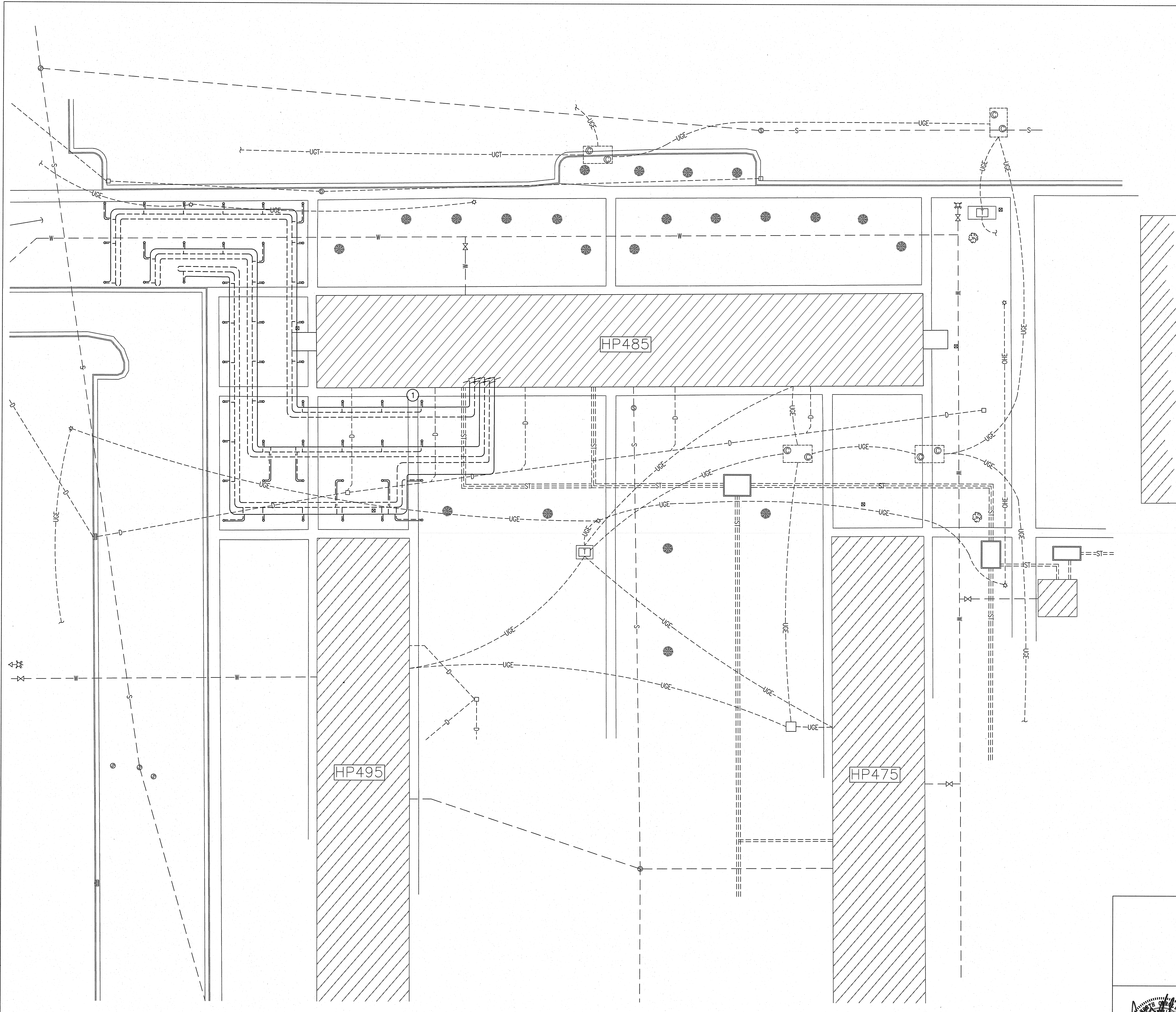
- DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT TO BE SCALED FOR DIMENSIONS, UNLESS DIMENSIONED.
- COORDINATE LOCATION OF MECHANICAL WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES.
- ALL EQUIPMENT, PIPE AND DUCTWORK SHALL BE SUPPORTED FROM BUILDING STRUCTURE ABOVE, UNLESS OTHERWISE NOTED.
- DUCTWORK SHALL BE GALVANIZED STEEL FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS.
- DUCT SIZES INDICATED ARE NET FREE INSIDE DIMENSIONS.

**GENERAL DEMOLITION NOTES:**

- REMOVAL OF EQUIPMENT, DUCTWORK, PIPING, ETC. IS TO INCLUDE ALL ASSOCIATED HANGERS, SUPPORTS, BRACKETS, CONTROLS, AIR DEVICES, EQUIPMENT FOUNDATION/MOUNTING PADS AND APPURTENANCES PHYSICALLY ATTACHED AT THE COMMENCEMENT OF DEMOLITION, UNLESS NOTED OTHERWISE.
- CONCEALED/BURIED PIPING MAY BE ABANDONED IN PLACE SO LONG AS IT DOES NOT INTERFERE WITH NEW WORK, UNLESS NOTED OTHERWISE.
- ALL EQUIPMENT REMOVED, NOT INDICATED TO BE REUSED SHALL BECOME THE PROPERTY OF THE CONTRACTOR, UNLESS NOTED OTHERWISE, AND SHALL BE TRANSPORTED BY THE CONTRACTOR OFF SITE.
- EXISTING EQUIPMENT INDICATED TO BE REUSED SHALL BE CLEANED AND SERVICED PRIOR TO REUSE.
- WHERE EQUIPMENT, DUCTWORK OR PIPING IS REMOVED AND NOT REPLACED, PATCH AND FINISH AREAS TO MATCH ADJACENT SURFACES.
- SEE ENLARGED PLANS FOR EQUIPMENT REMOVAL.
- ALL DUAL TEMPERATURE PIPING IN BUILDING TO BE REMOVED.

		<b>M-001</b>	
 <small>CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29466 (F)843.875.3837 (F)843.875.4209 www.cemsgroup.com CEMS Project #011594 Project Manager: P. Mahaffey</small>		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
		REPAIR BEO BUILDING HP485	
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR.		MECHANICAL LEGEND AND GENERAL NOTES NAVFAC DRAWING NO.	
APPROVED: PWO OR OICC DATE:		SIZE CODE IDENT NO.	
SATISFACTORY TO: DATE:		60007167	
		CONST. CONTR. NO. N40085-10-B-0070	
		SCALE: NOTED SPEC. 05-10-0070 SHEET 27 OF 65	





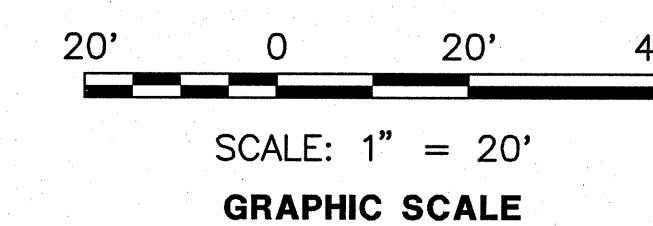
**GENERAL NOTES:**

1. MARK ALL EXISTING SITE UTILITIES IN AREAS WHERE NEW WORK IS CONDUCTED. WELL DRILLER TO COORDINATE WELL LOCATIONS WITH EXISTING UTILITIES SHOWN ON THIS DRAWING AND FOUND IN THE FIELD.
2. NO PARKING OF VEHICLES OR STORAGE OF MATERIALS, EQUIPMENT, AND SUPPLIES SHALL OCCUR UNDER, WITHIN, OR AROUND ANY TREE CANOPIES. IF THESE SPACES MUST BE USED, TREES IN THE LAYDOWN AREAS MUST BE PROTECTED.
3. CONTRACTOR TO ROUTE PIPING AROUND TREES AND BUSHES.
4. SEE SHEET M-502 FOR PIPE SIZING AND ROUTING DETAILS FOR GEOTHERMAL WATER SUPPLY AND RETURN LINES. WELLS TO BE SPACED AS SHOWN ON THIS SHEET.

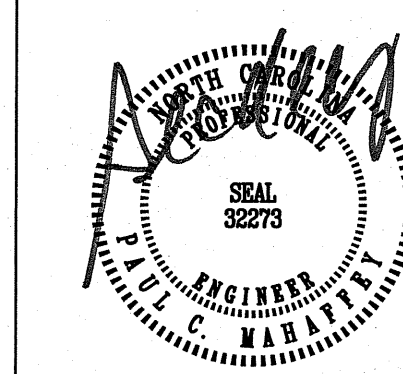
**NEW WORK KEYNOTES:**

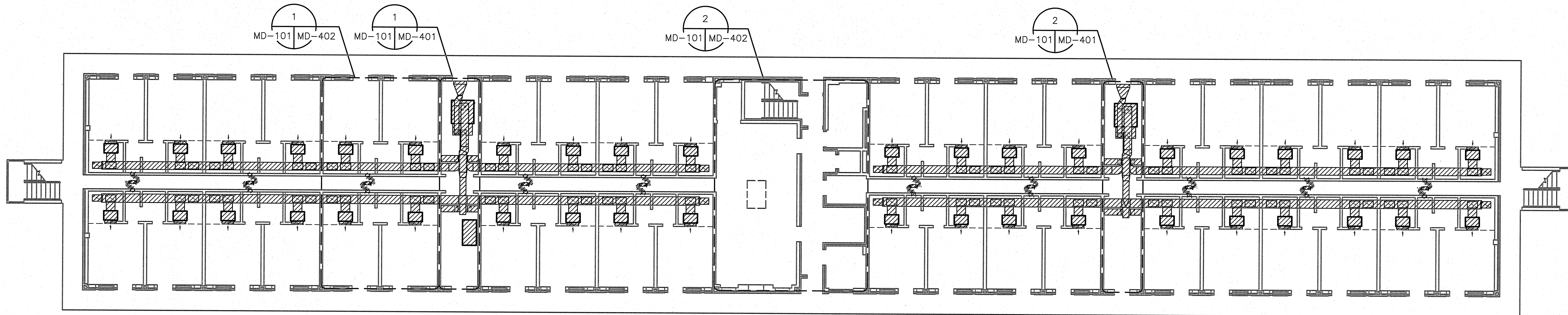
- ① GEOTHERMAL TEST BORE TO BE USED IN WELL FIELD.

**WELL GEOTHERMAL FIELD SITE PLAN**  
SCALE: 1" = 20'-0"

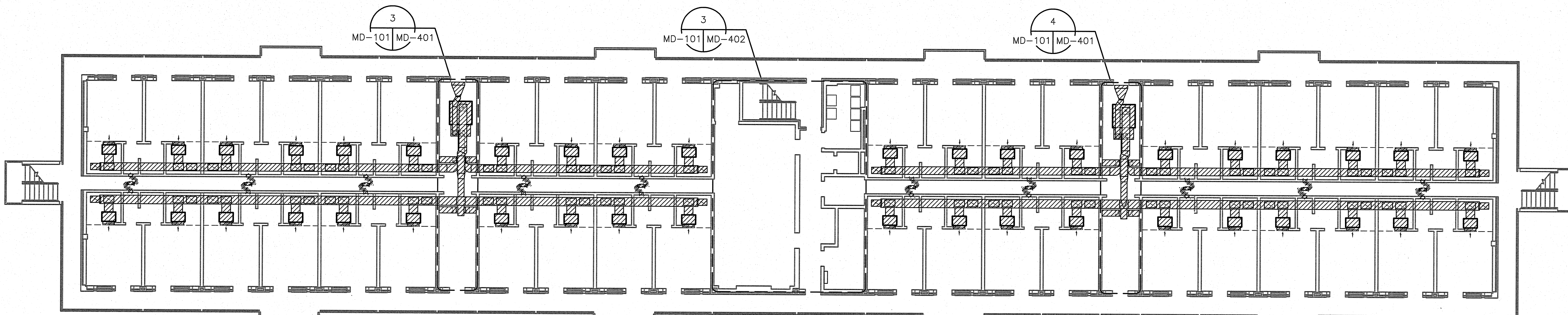


<b>MS-101</b>	
 <b>CEMS</b> ENGINEERING	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	REPAIR BEQ <b>BUILDING HP485</b>
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE:	WELL GEOTHERMAL FIELD SITE PLAN SIZE CODE IDENT NO. NAVFAC DRAWING NO. <b>F 80091 60007168</b>
SATISFACTORY TO: DATE:	CONST. CONTR. NO. N40085-10-B-0070 SCALE: SPEC. 05-10-0070 SHEET 28 OF 65

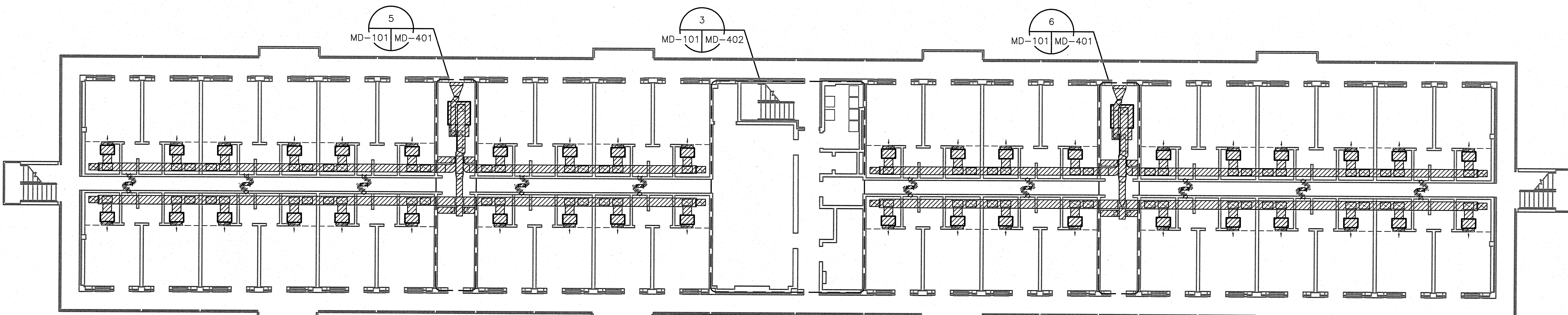




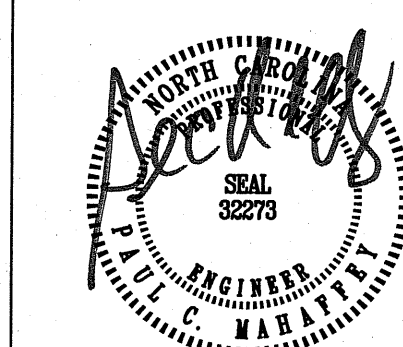
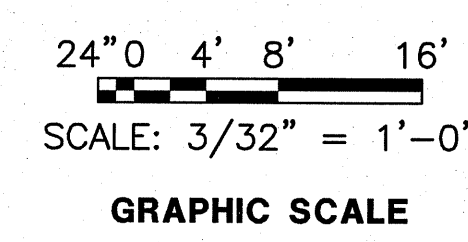
**FIRST FLOOR MECHANICAL DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"



**SECOND FLOOR MECHANICAL DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"

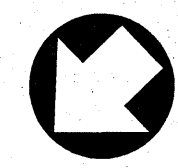
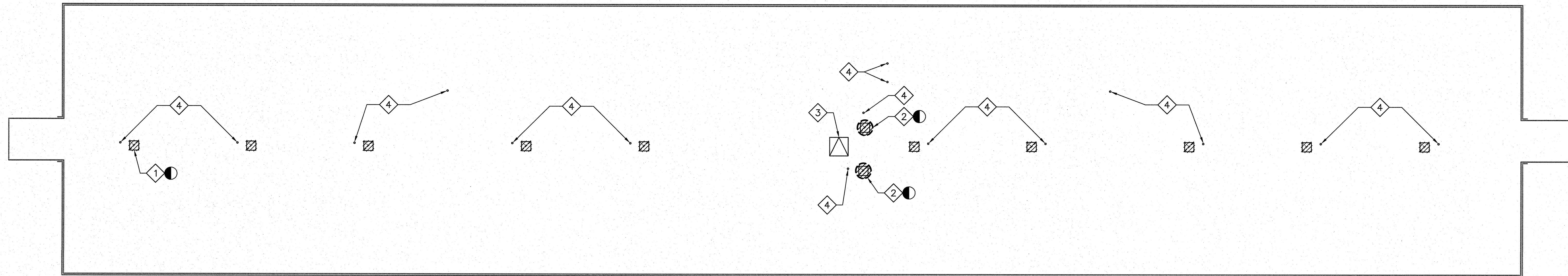


**THIRD FLOOR MECHANICAL DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"

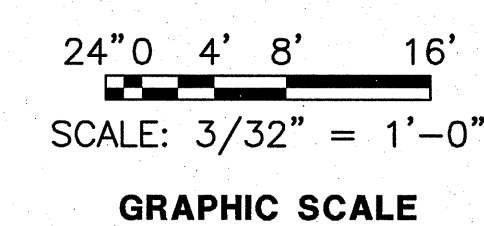


<b>CEMS</b> ENGINEERING <small>CEMS Engineering, Inc. 5500 Iron Horse Drive Lubbock, TX 79424 (817) 943-8775 www.cemsgroup.com CEMS Project #08158V Project Manager: P. Mahaffey</small>		<b>MD-101</b>	
		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:		<b>REPAIR BEQ</b> <b>BUILDING HP485</b> MECHANICAL DEMOLITION PLAN NAVFAC DRAWING NO. <b>60007169</b> CONST. CONTR. NO. N40085-10-B-0070	
DATE: _____ DATE: _____		SIZE CODE IDENT NO. <b>F 80091</b> SCALE: AS NOTED SPEC. 05-10-0070 <b>SHEET 29 OF 65</b>	

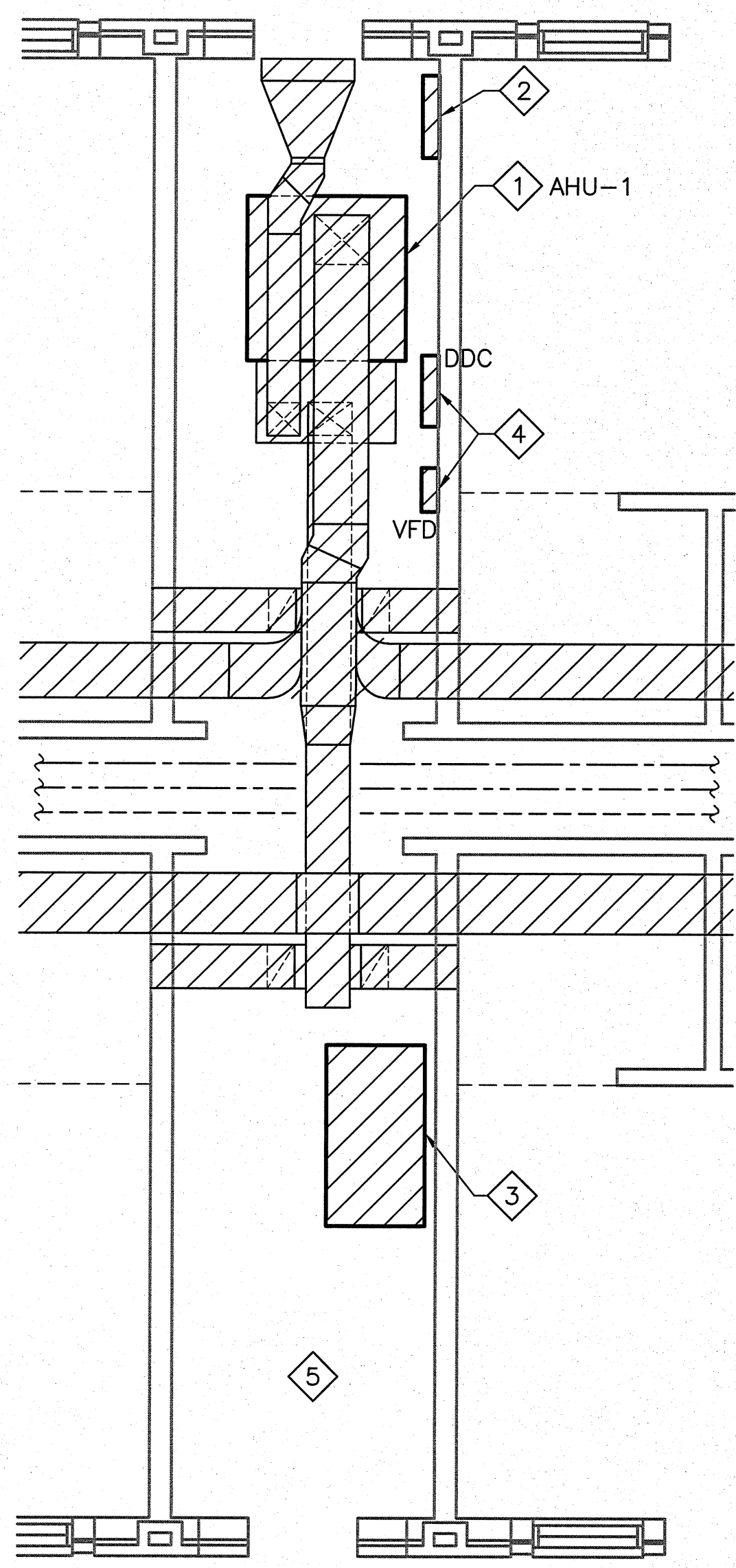
- DEMOLITION KEYNOTES:**
- 1 REMOVE EXISTING CURB MOUNTED RELIEF VENT. EXISTING CURB AND 12x12 EXHAUST DUCT TO REMAIN. TYPICAL FOR 10.
  - 2 EXISTING ROOF EXHAUST FAN TO BE REMOVED. EXISTING CURB AND 10x10 EXHAUST DUCT DOWN TO REMAIN.
  - 3 EXISTING ROOF HATCH TO REMAIN.
  - 4 EXISTING 4" VENT THRU ROOF TO BE EXTENDED UP THRU NEW ROOF - SEE DETAIL ON SHEET P-001.



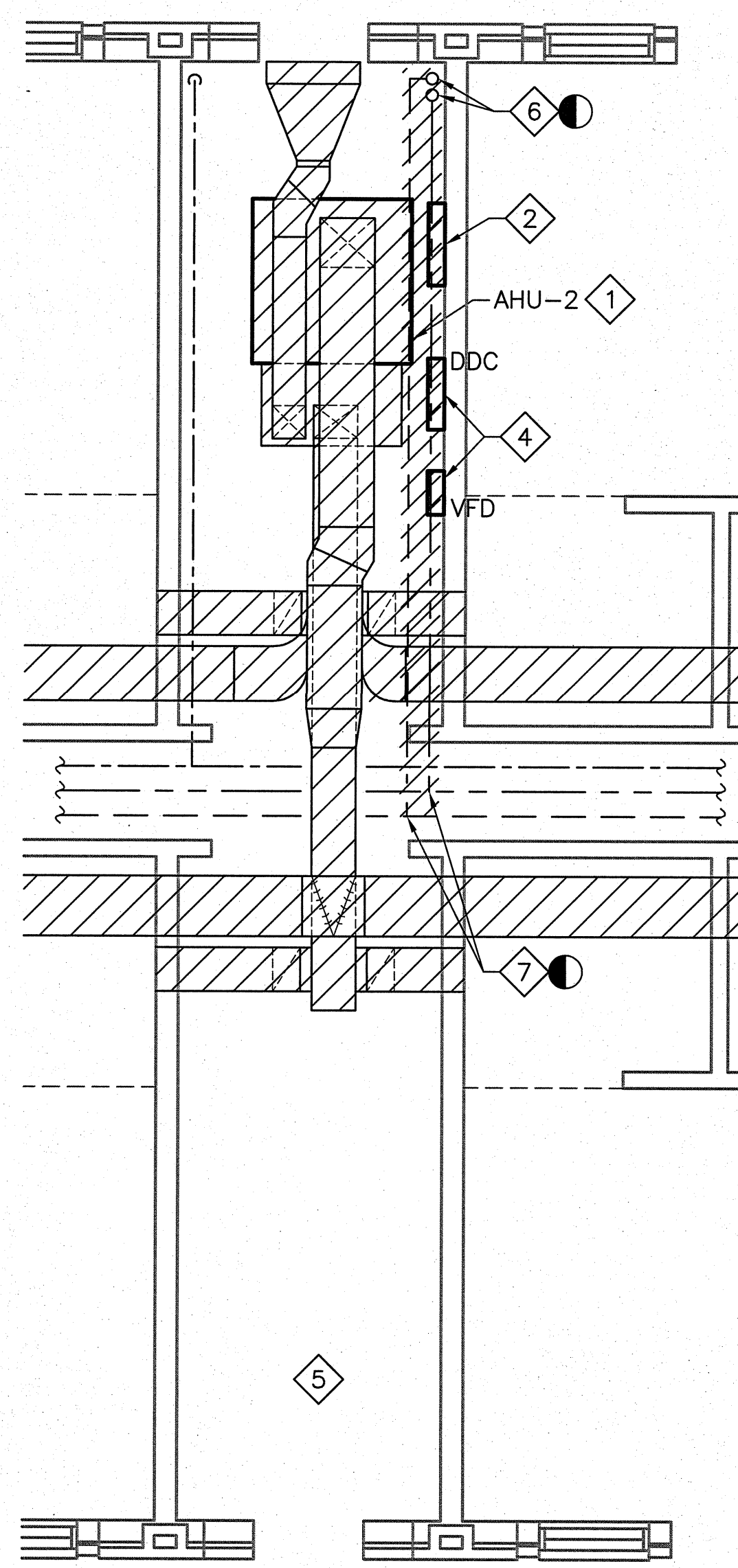
**ROOF MECHANICAL DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"



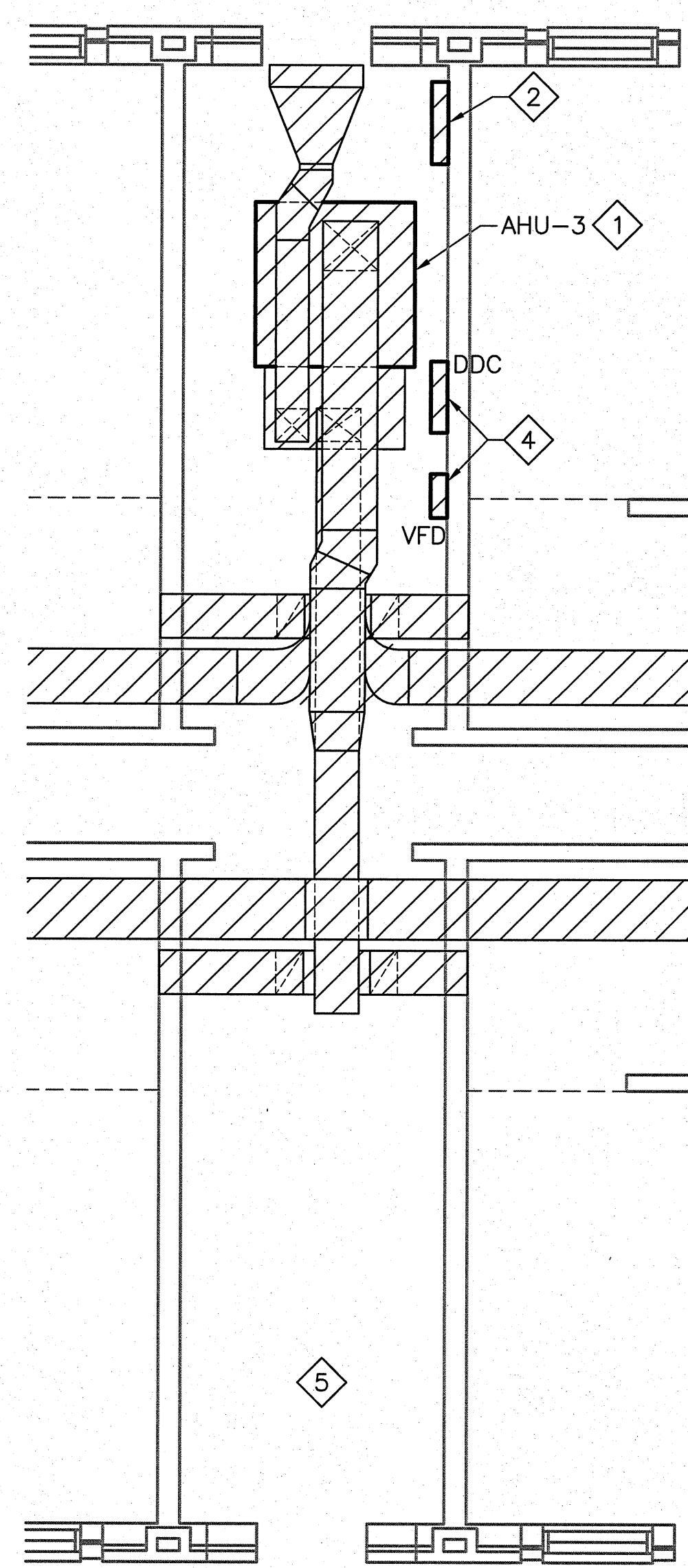
		<b>MD-102</b>	
 <small>CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29458 (F)843.875.3837 (F)843.875.4509 www.cemsengineering.com ©CEMS Project #091099 Project Manager: P. Mahaffey</small>	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		
	REPAIR BEQ BUILDING HP485		
 <small>DES. J. CARR</small> <small>DR. J. BARNES</small> <small>CHK. P. MAHAFFEY</small> <small>SUBMITTED BY:</small> <small>DESIGN DIR.</small> <small>APPROVED: PWO OR OICC</small>		ROOF MECHANICAL DEMOLITION PLAN <small>SIZE CODE IDENT NO.</small> NAVFAC DRAWING NO. <b>F 80091</b> <b>60007170</b> <small>SATISFACTORY TO:</small> <small>DATE</small> <small>CONST. CONTR. NO. N40085-10-B-0070</small>	
		<small>SCALE: AS NOTED</small>	<small>SPEC. 05-10-0070</small>
		<small>SHEET 30 OF 65</small>	



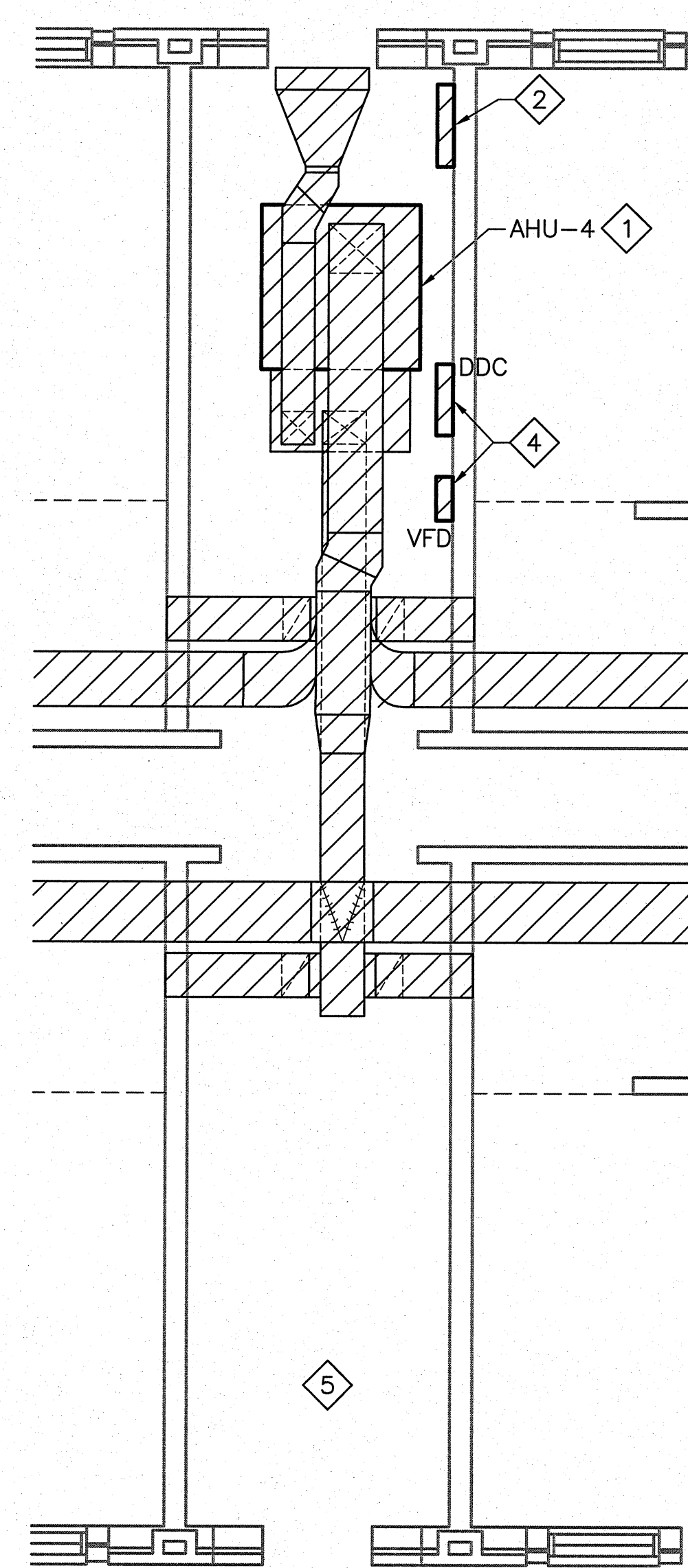
1 ENLARGED MECHANICAL DEMOLITION PLAN  
 MD-101 MD-401 SCALE: 1/4" = 1'-0"



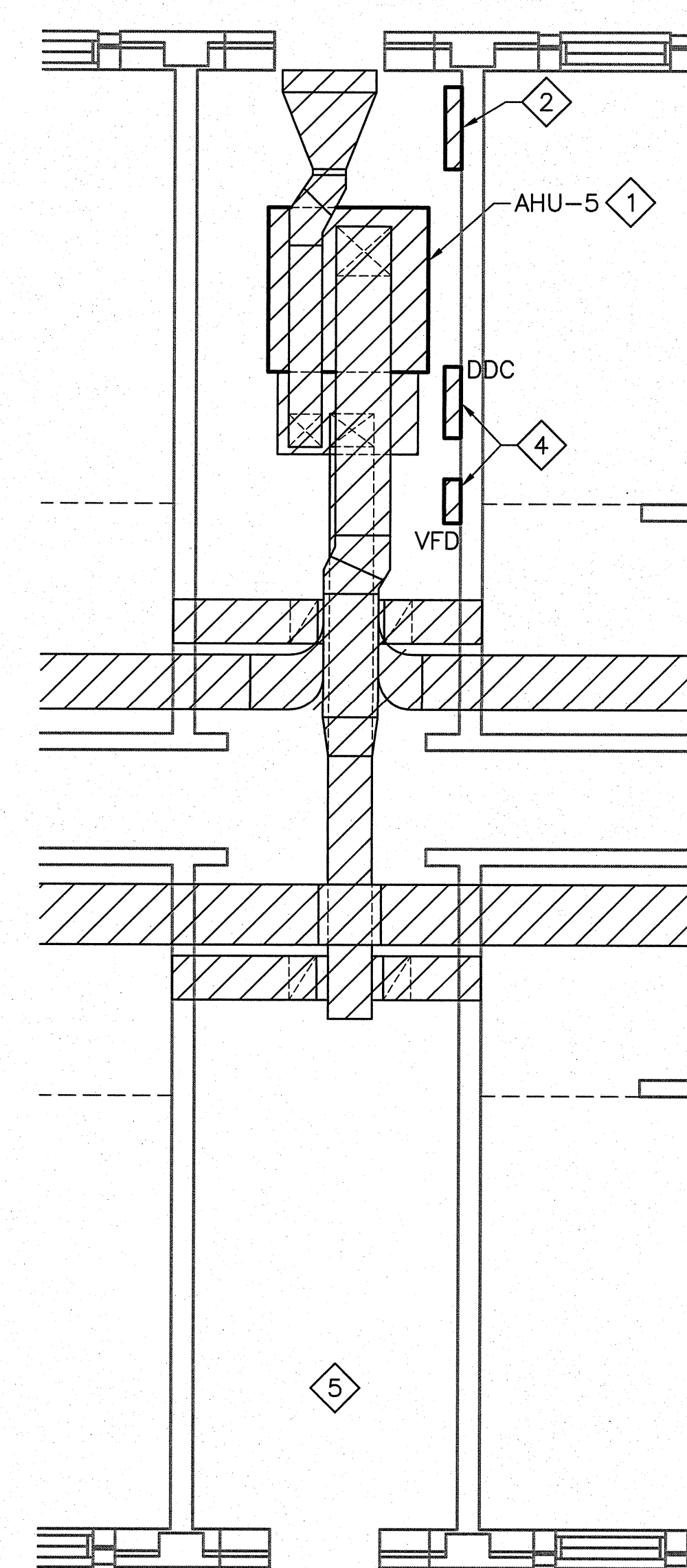
2 ENLARGED MECHANICAL DEMOLITION PLAN  
 MD-101 MD-401 SCALE: 1/4" = 1'-0"



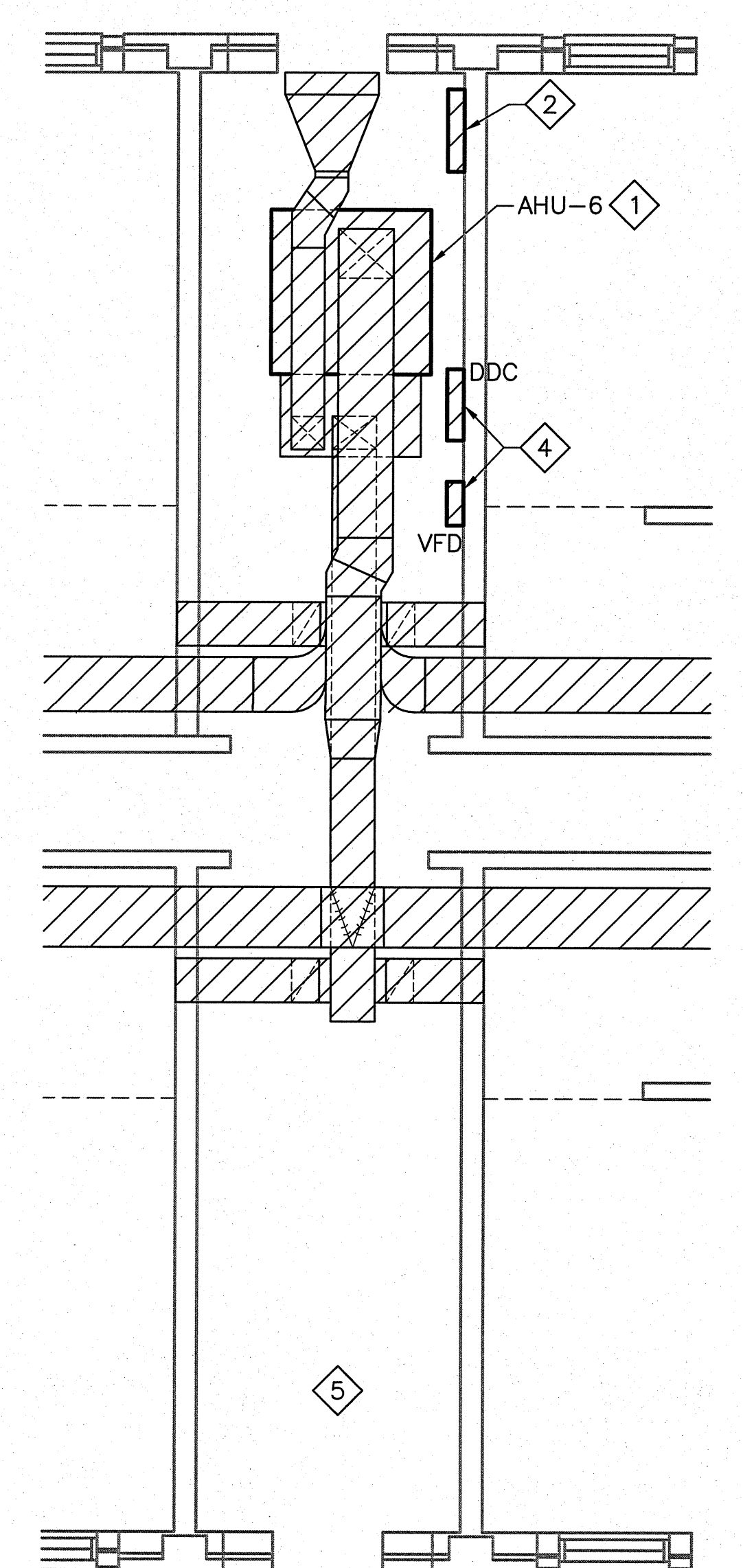
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 MD-101 MD-401 SCALE: 1/4" = 1'-0"



4 ENLARGED MECHANICAL DEMOLITION PLAN  
 MD-101 MD-401 SCALE: 1/4" = 1'-0"



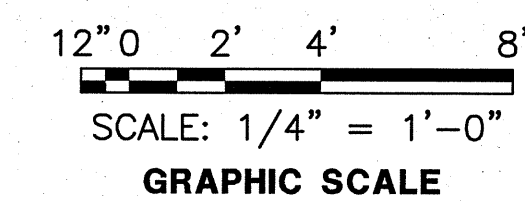
5 ENLARGED MECHANICAL DEMOLITION PLAN  
 MD-101 MD-401 SCALE: 1/4" = 1'-0"



6 ENLARGED MECHANICAL DEMOLITION PLAN  
 MD-101 MD-401 SCALE: 1/4" = 1'-0"

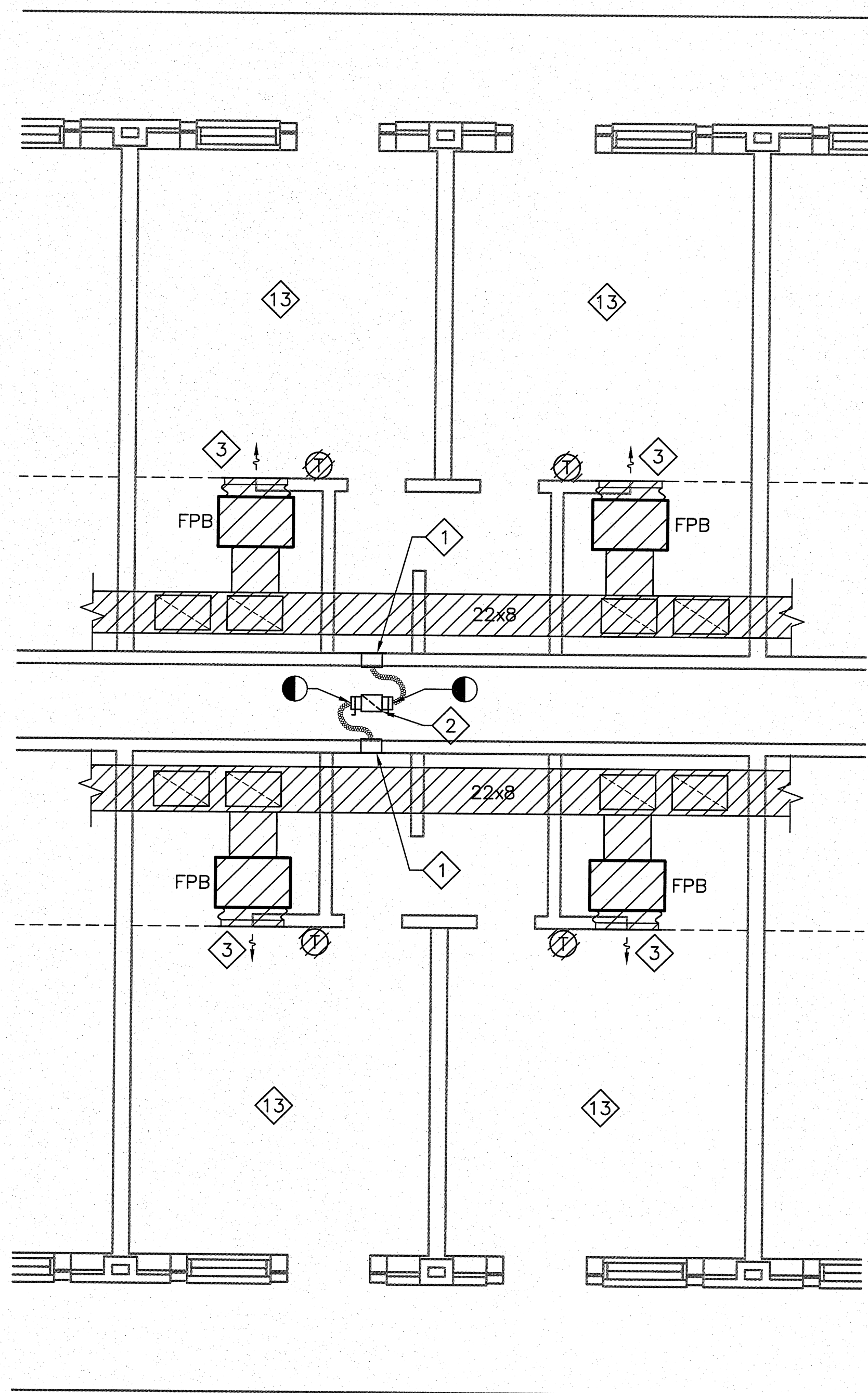
**DEMOLITION KEYNOTES:**

- 1 REMOVE AIR HANDLER, DUCTWORK, DUAL TEMPERATURE PIPING, CONTROLS, EQUIPMENT PAD, AND ALL ASSOCIATED PIPING IN THEIR ENTIRETY.
- 2 REMOVE PNEUMATIC CONTROL CABINET AND ASSOCIATED CONTROL AIR TUBING BACK TO AIR COMPRESSOR.
- 3 REMOVE AIR COMPRESSOR, AIR DRYER AND ALL ASSOCIATED CONTROL AIR TUBING. TURN OVER AIR COMPRESSOR TO GOVERNMENT.
- 4 REMOVE DDC AND VFD CONTROLS AND ALL ASSOCIATED CONDUIT AND WIRING.
- 5 COMMUNICATIONS WIRING SERVING SLEEPING ROOMS TO REMAIN.
- 6 REMOVE HW/HWR PIPING BACK TO FLOOR PENETRATION. PIPING TO BE CAPPED FLUSH WITH FLOOR.
- 7 REMOVE DOMESTIC HW/HWR PIPING UP TO BRANCHES RUNNING THE LENGTH OF THE BUILDING.

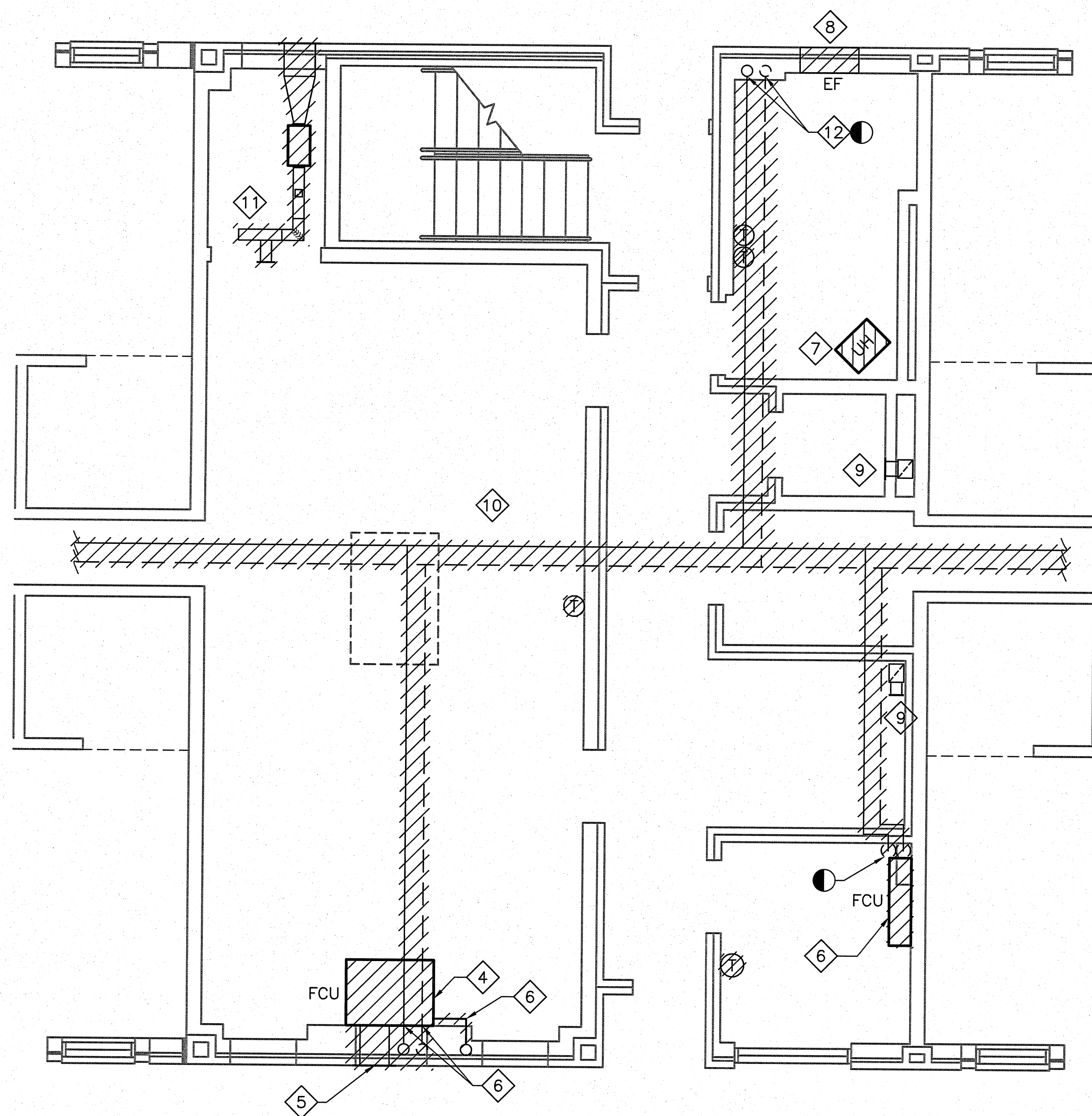


<b>MD-401</b>	
 <b>CEMS</b> ENGINEERING	CEMS Engineering, Inc. 3509 Iron Horse Drive Lenoir, NC 28656 (754) 875-3507 (754) 875-4509 www.cemsengineering.com CEMS Project #051509 Project Manager: P. Mahaffey
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
REPAIR BEQ BUILDING HP485	
ENLARGED MECHANICAL DEMOLITION PLAN	
DES. J. CARR	DATE
DR. J. BARNES	DATE
CHK. P. MAHAFFEY	DATE
SUBMITTED BY:	DATE
DESIGN DIR.	DATE
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE
SIZE CODE IDENT NO. <b>F 80091</b>	NAVFAC DRAWING NO. <b>60007171</b>
CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 31 OF 65	

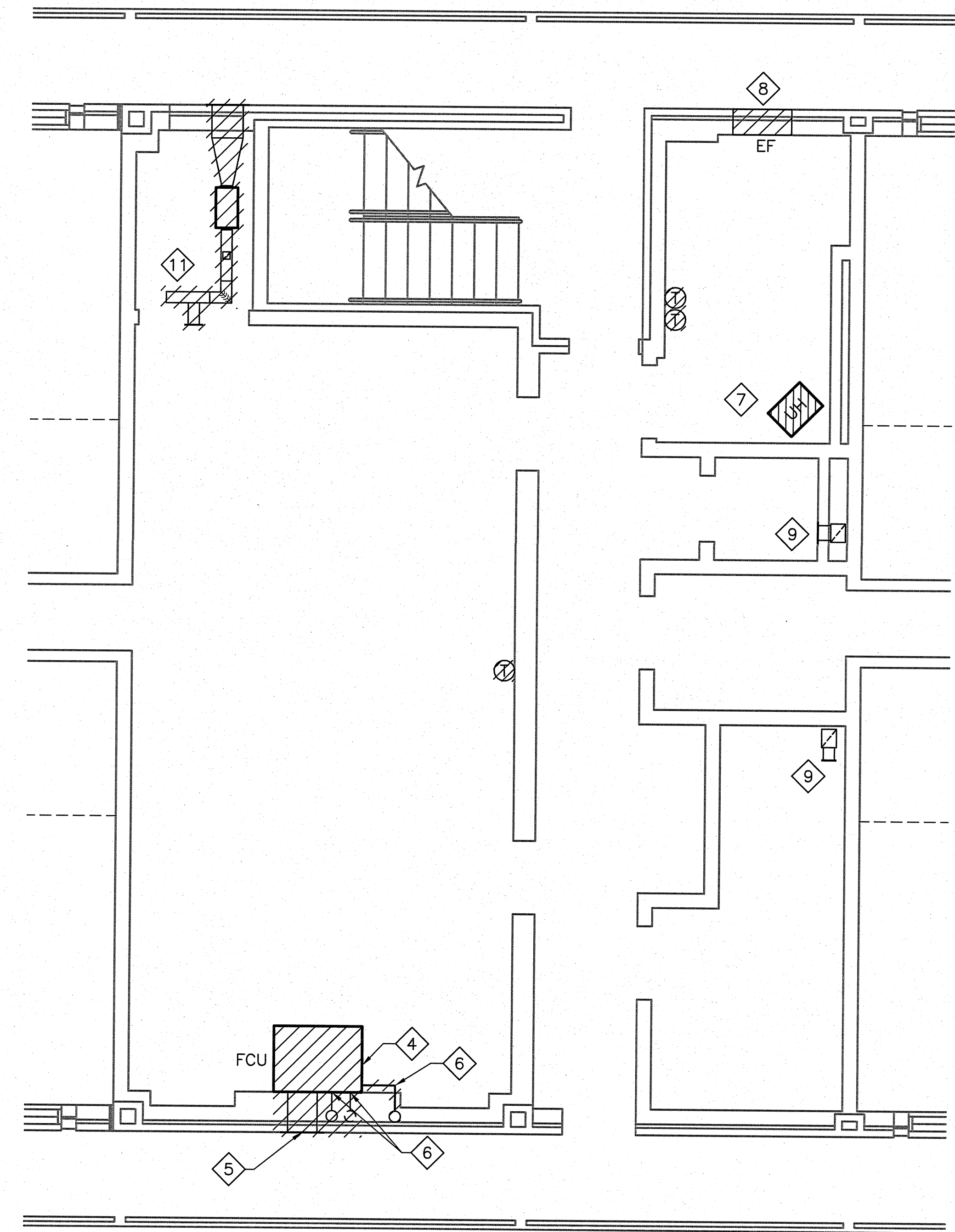




1 ENLARGED MECHANICAL DEMOLITION PLAN  
MD-101 MD-402 SCALE: 1/4" = 1'-0"



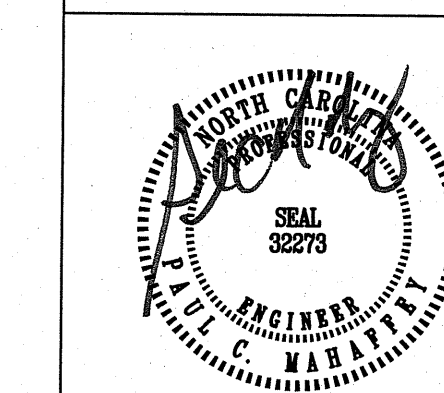
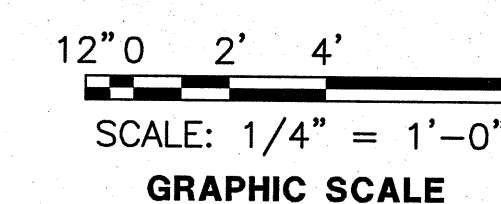
2 ENLARGED FIRST FLOOR MECHANICAL DEMOLITION PLAN  
MD-101 MD-402 SCALE: 1/4" = 1'-0"



3 ENLARGED SECOND AND THIRD FLOOR MECHANICAL DEMOLITION PLAN  
MD-101 MD-402 SCALE: 1/4" = 1'-0"

**DEMOLITION KEYNOTES:**

- 1 REMOVE EXISTING WALL MOUNTED EXHAUST FAN AND RELATED 4"Ø FLEX DUCT. REMOVE FLEX DUCT BACK TO EXISTING EXHAUST RISER. SEE RISER DIAGRAM ON SHEET M-603. RE-USE EXISTING WALL OPENING.
- 2 EXISTING EXHAUST RISER TO REMAIN.
- 3 REMOVE EXISTING FAN POWERED BOX (FPB), PNEUMATIC CONTROLS, RELATED CONTROL TUBING, ALL ASSOCIATED DUCTWORK, GRILLES, AND DIFFUSERS.
- 4 REMOVE EXISTING FAN COIL UNIT AND RELATED PNEUMATIC CONTROLS.
- 5 REMOVE EXISTING OUTSIDE AIR INTAKE. PROVIDE 1" INSULATED SHEET METAL CAP ON BACK OF OUTSIDE AIR LOUVER.
- 6 DISCONNECT EXISTING FAN COIL UNIT FROM EXISTING DTS/DTR AND CONDENSATE PIPING AT WALL. PROVIDE AND INSTALL PERMANENT CAPS TO CONDENSATE AND DTS/DTR PIPING FLUSH TO WALL.
- 7 REMOVE UNIT HEATER, THERMOSTAT, CONTROL WIRING, AND PIPING BACK TO WALL. PROVIDE AND INSTALL PERMANENT CAPS FLUSH TO WALL.
- 8 REMOVE EXHAUST FAN, GRAVITY SHUTTER AND ALL ASSOCIATED WIRING AND CONTROLS.
- 9 EXHAUST GRILLE AND RISER TO REMAIN.
- 10 REMOVE ALL DTS/DTR PIPING IN THE BUILDING.
- 11 REMOVE EXHAUST FAN, DUCTWORK, AND ALL ASSOCIATED WIRING AND CONTROLS.
- 12 REMOVE DTS/DTR PIPING IN BUILDING, ABANDON PIPING IN CHASE AND CAP DTS/DTR PIPING FLUSH TO WALL.
- 13 COMMUNICATIONS WIRING SERVING SLEEPING ROOMS TO REMAIN.



**CEMS**  
ENGINEERING

DES. J. CARR  
DR. J. BARNES  
CHK. P. MAHAFFEY  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC  
SATISFACTORY TO:

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CEMS Project #101509  
Project Manager: P. Mahaffey

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ  
BUILDING HP485

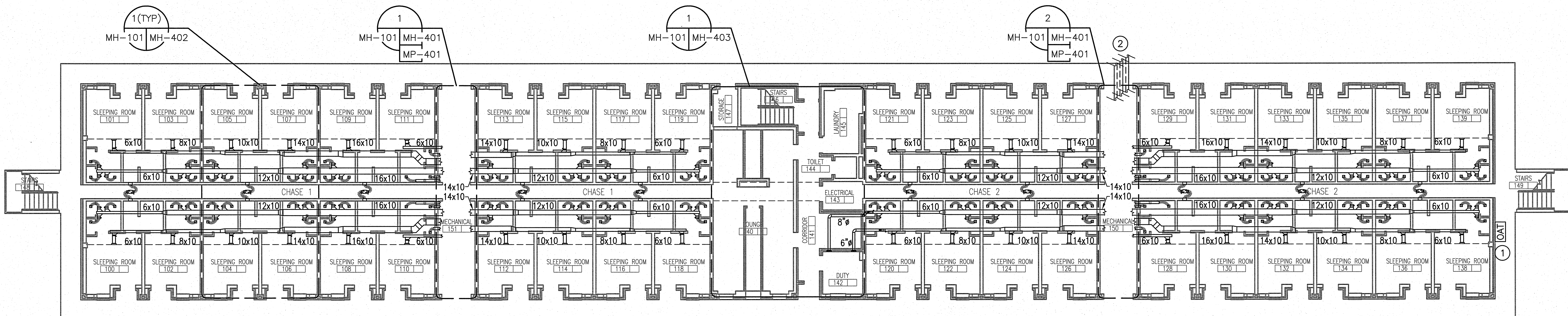
ENLARGED MECHANICAL DEMOLITION PLAN

DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO.  
F 80091 60007172  
CONST. CONTR. NO. N40085-10-B-0070

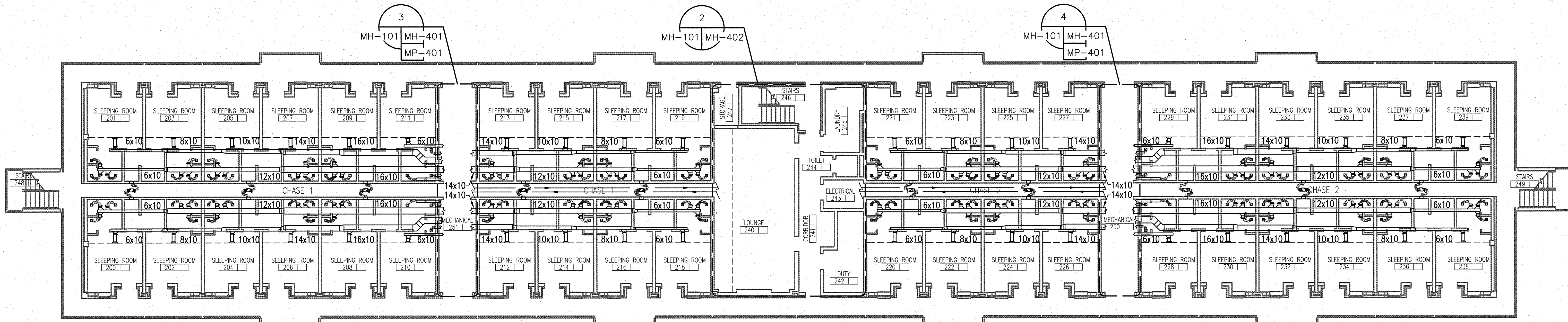
**MD-402**

SCALE: AS NOTED SPEC. 05-10-0070 SHEET 32 OF 65

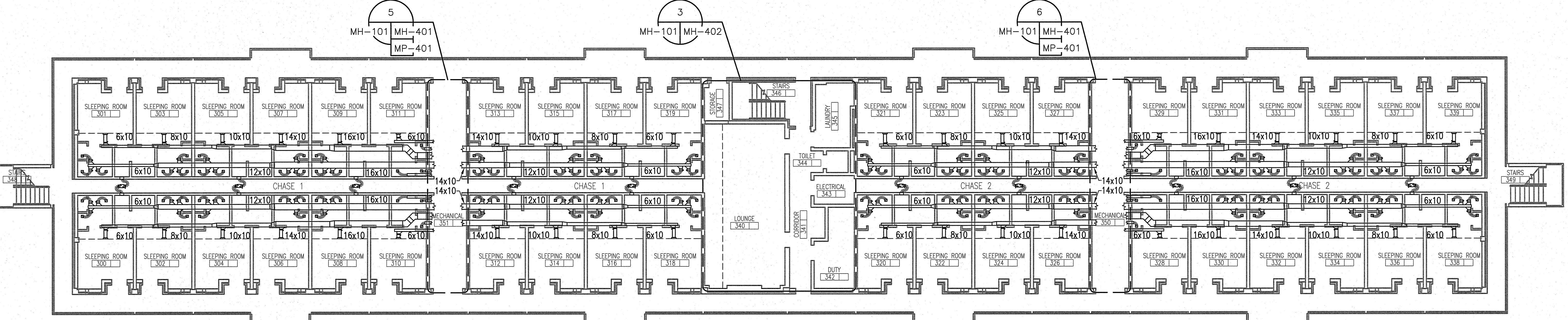




**FIRST FLOOR MECHANICAL NEW WORK PLAN**  
SCALE: 3/32" = 1'-0"

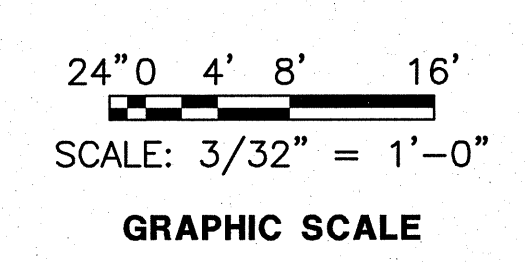


**SECOND FLOOR MECHANICAL NEW WORK PLAN**  
SCALE: 3/32" = 1'-0"



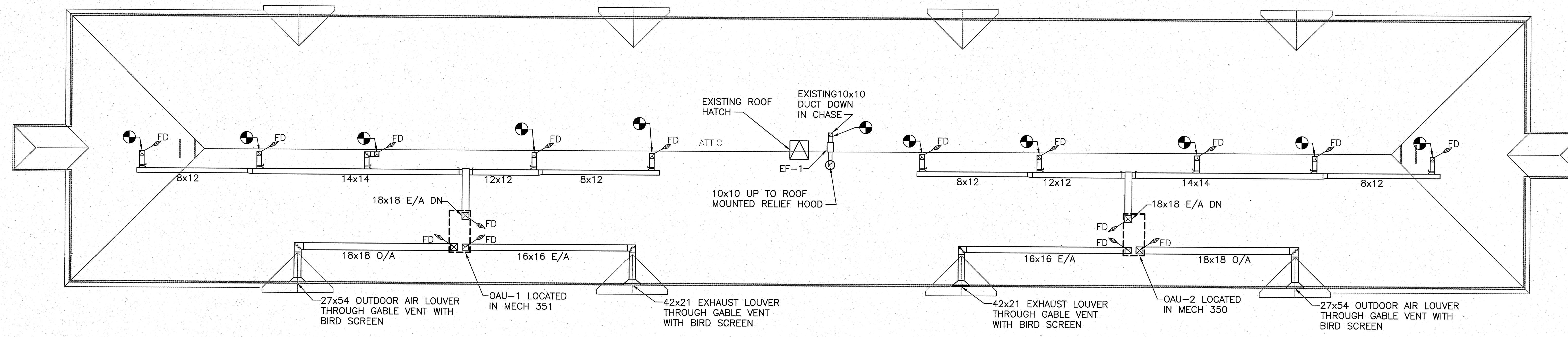
**THIRD FLOOR MECHANICAL NEW WORK PLAN**  
SCALE: 3/32" = 1'-0"

- KEYNOTES:**
- 1 PROVIDE AND INSTALL OUTDOOR AIR TEMPERATURE SENSOR IN WEATHERPROOF ENCLOSURE. PROVIDE AND INSTALL SHIELDS TO SHADE SENSOR FROM DIRECT SUNLIGHT.
  - 2 SEE SHEET MS-101 FOR GEOTHERMAL WELL FIELD PIPING CONTINUATION.

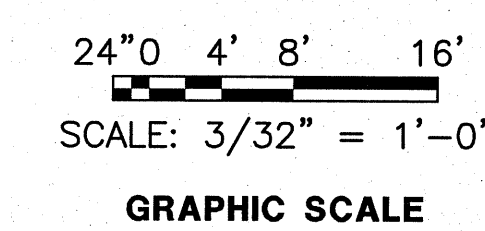


<b>MH-101</b>	
<b>C E M S</b> ENGINEERING <small>CEMS Engineering, Inc. 3508 Iron Horse Drive Ladson, SC 29496 (781) 876-9897 (781) 876-4509 www.cemsgroup.com CEMS Project #008156V Project Manager: P. Mahaffey</small>	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	REPAIR BEQ BUILDING HP485
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:	MECHANICAL NEW WORK PLAN NAVFAC DRAWING NO. <b>60007173</b> CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 33 OF 65

**GENERAL NOTE:**  
 1. EXTEND ALL NEW AND EXISTING PLUMBING VENTS THRU NEW ROOF. SEE DETAIL ON SHEET P-001.

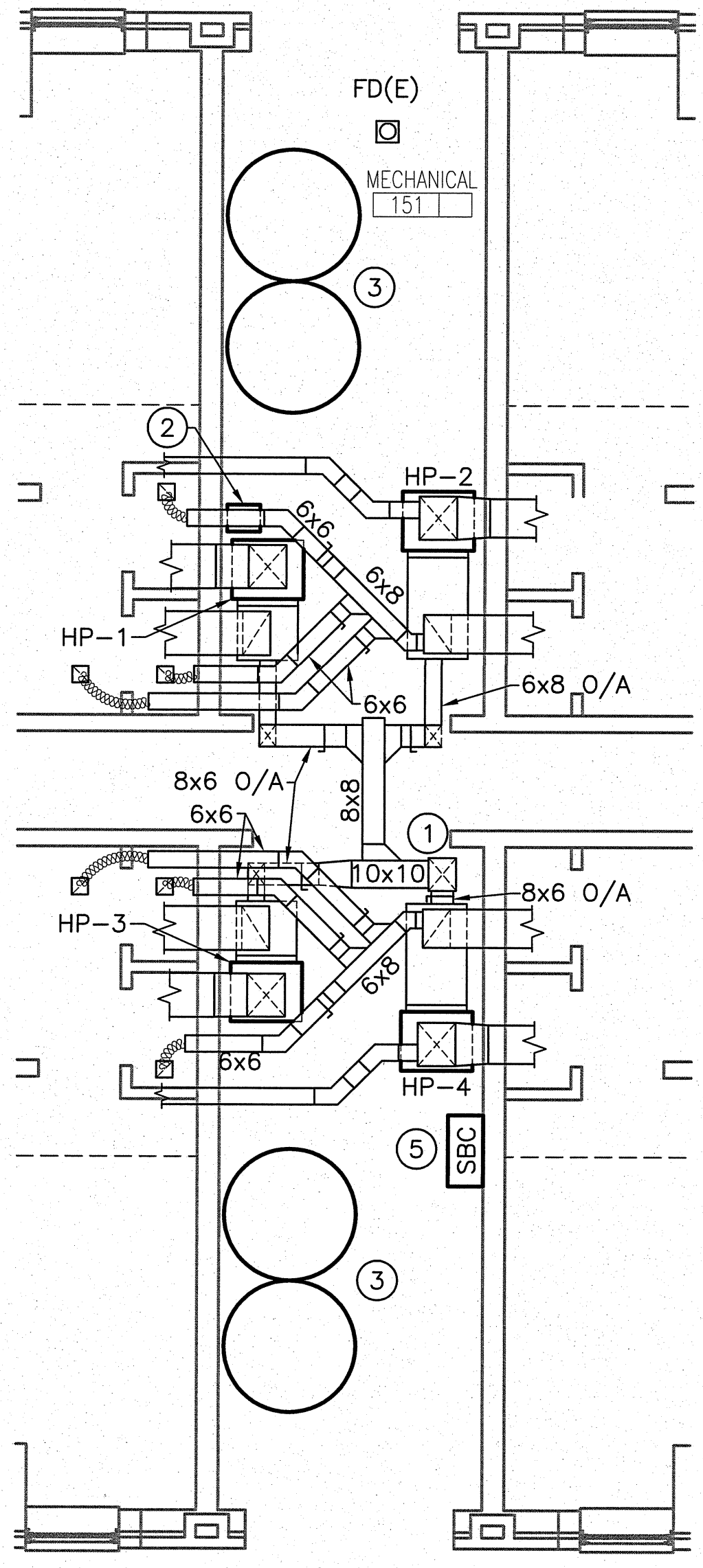


**ATTIC MECHANICAL NEW WORK PLAN**  
 SCALE: 3/32" = 1'-0"

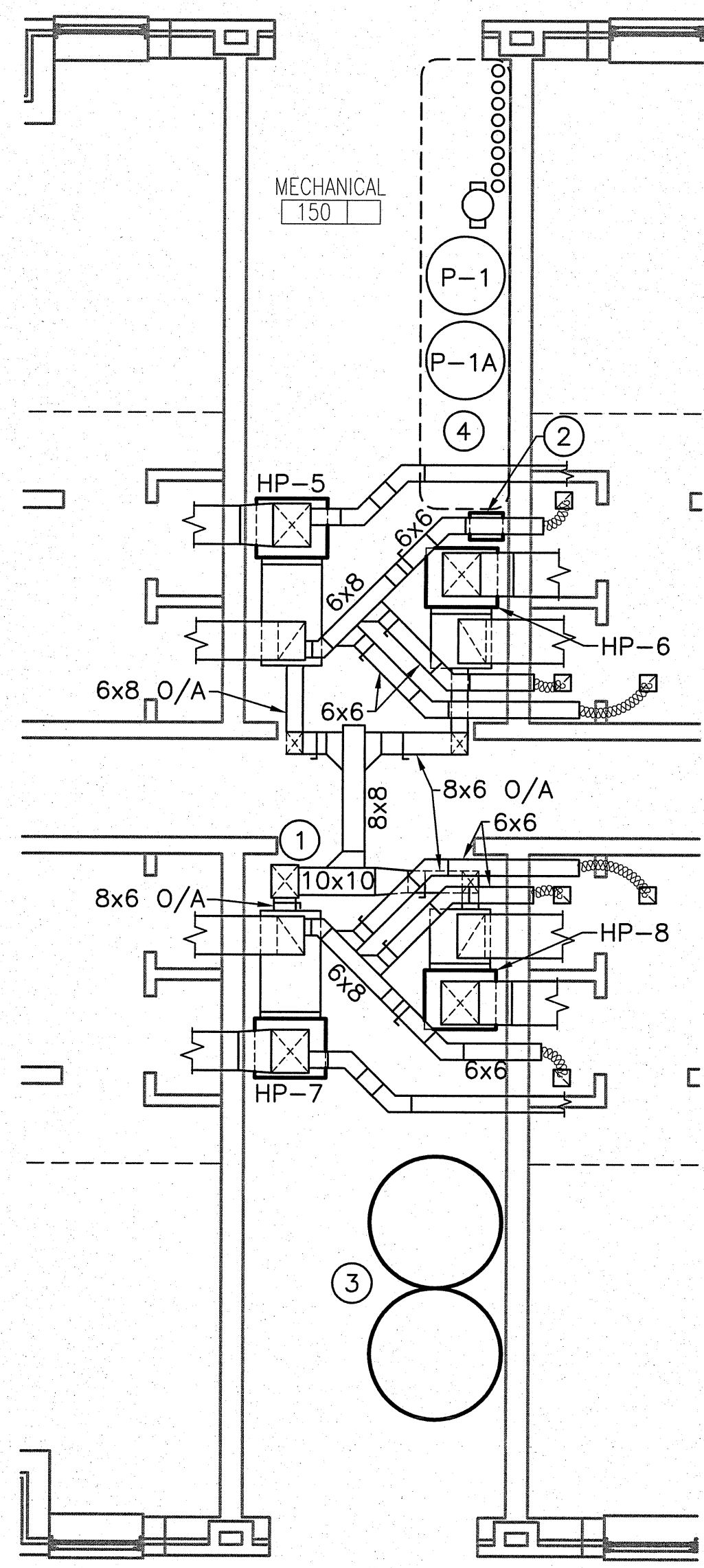


		<b>MH-102</b>	
 <b>CEMS</b> ENGINEERING	<small>CEMS Engineering, Inc.          3509 Iron Horse Drive          Ladsen, SC 29456          (P)943.875.3627          (F)943.875.4509          www.cemsgroup.com          CEMS Project #001591          Project Manager: P. Mahaffey</small>		
	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE: _____ SATISFACTORY TO: DATE: _____		REPAIR BEQ BUILDING HP485 ATTIC MECHANICAL NEW WORK PLAN NAVFAC DRAWING NO. <b>60007174</b> CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 34 OF 65	

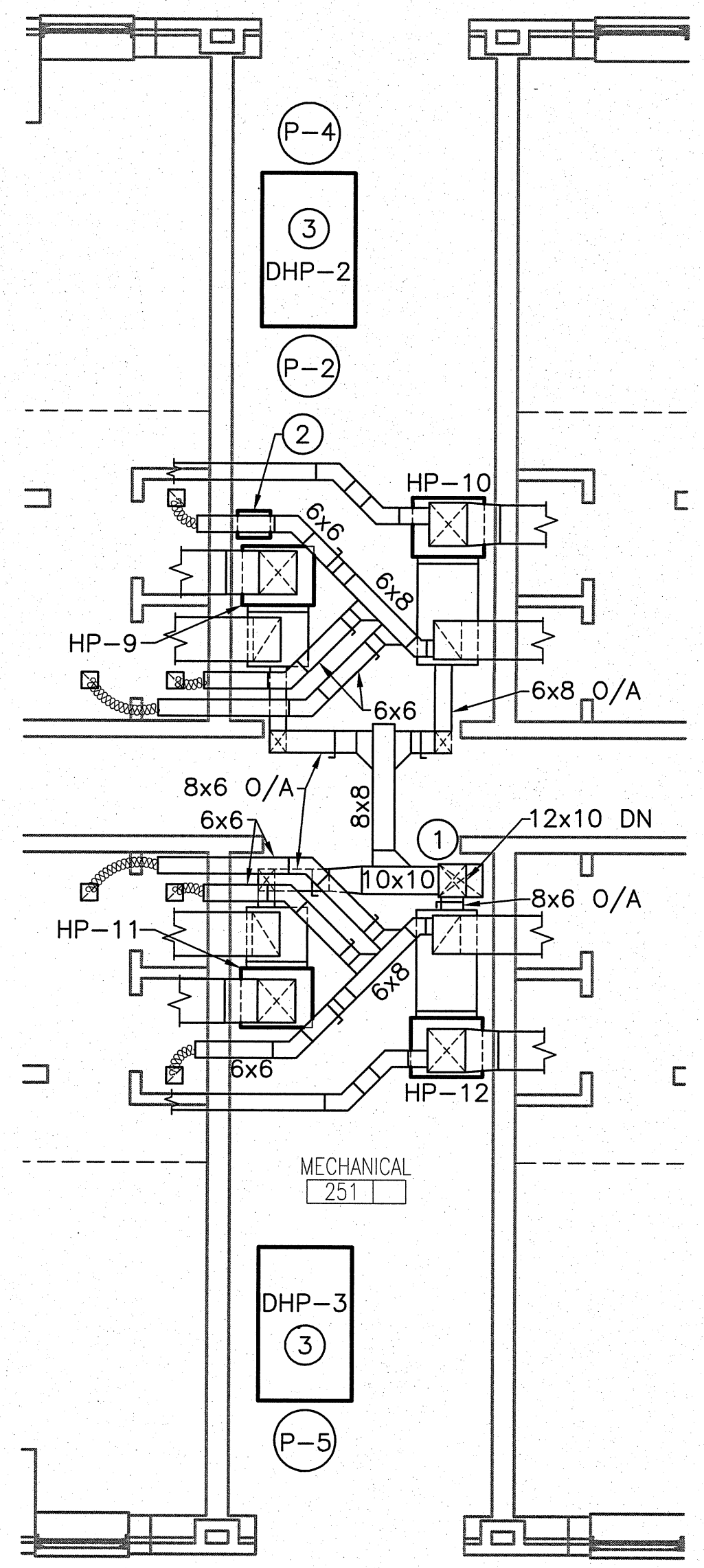




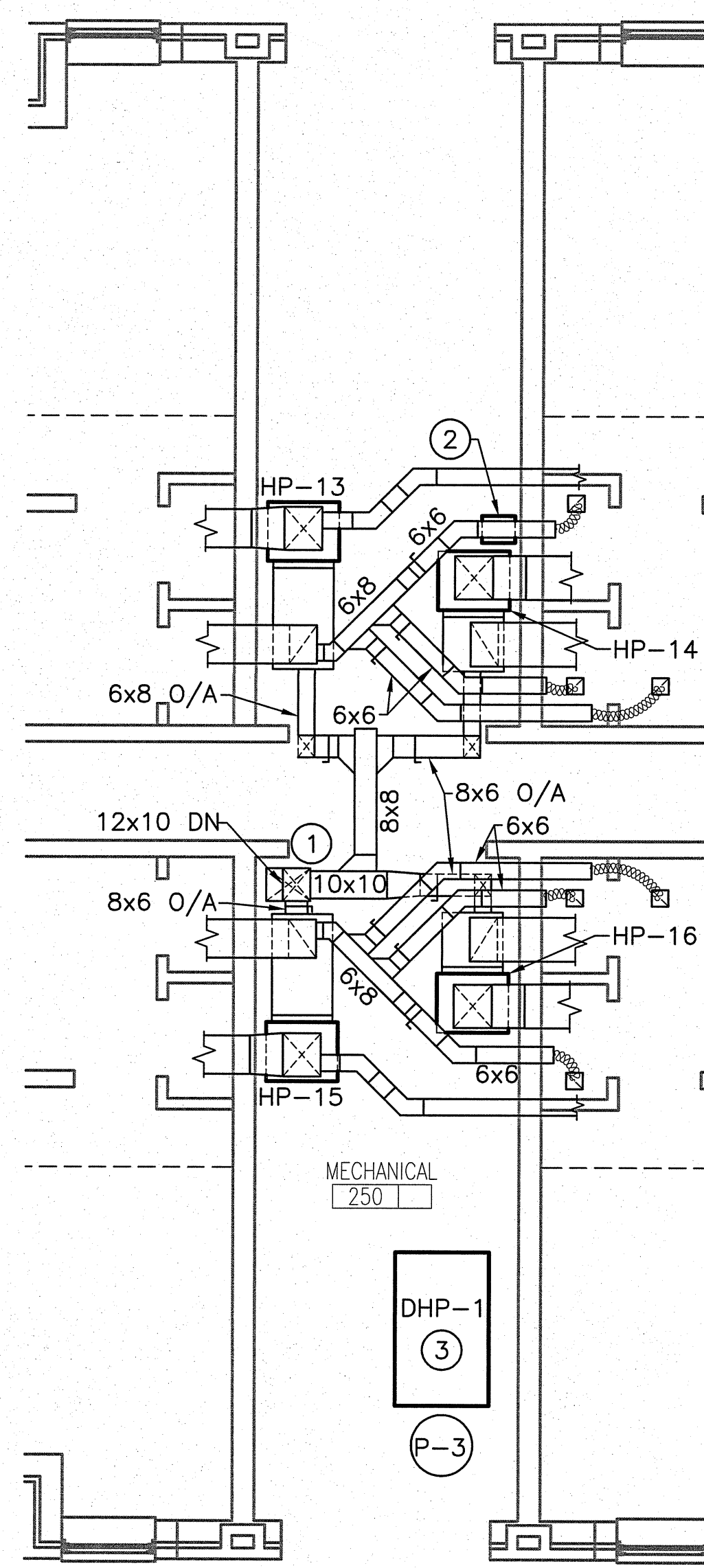
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 MH-101|MH-401 SCALE: 1/4" = 1'-0"



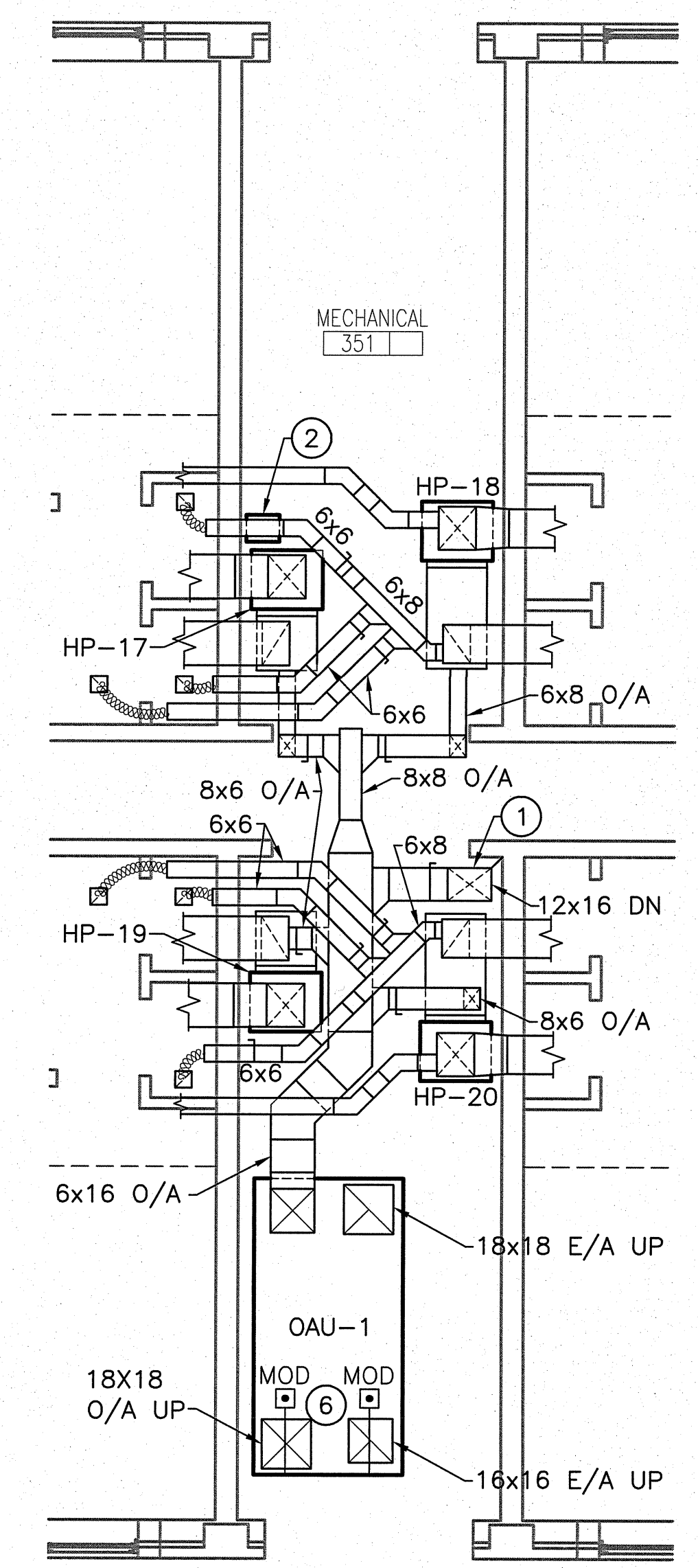
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 MH-101|MH-401 SCALE: 1/4" = 1'-0"



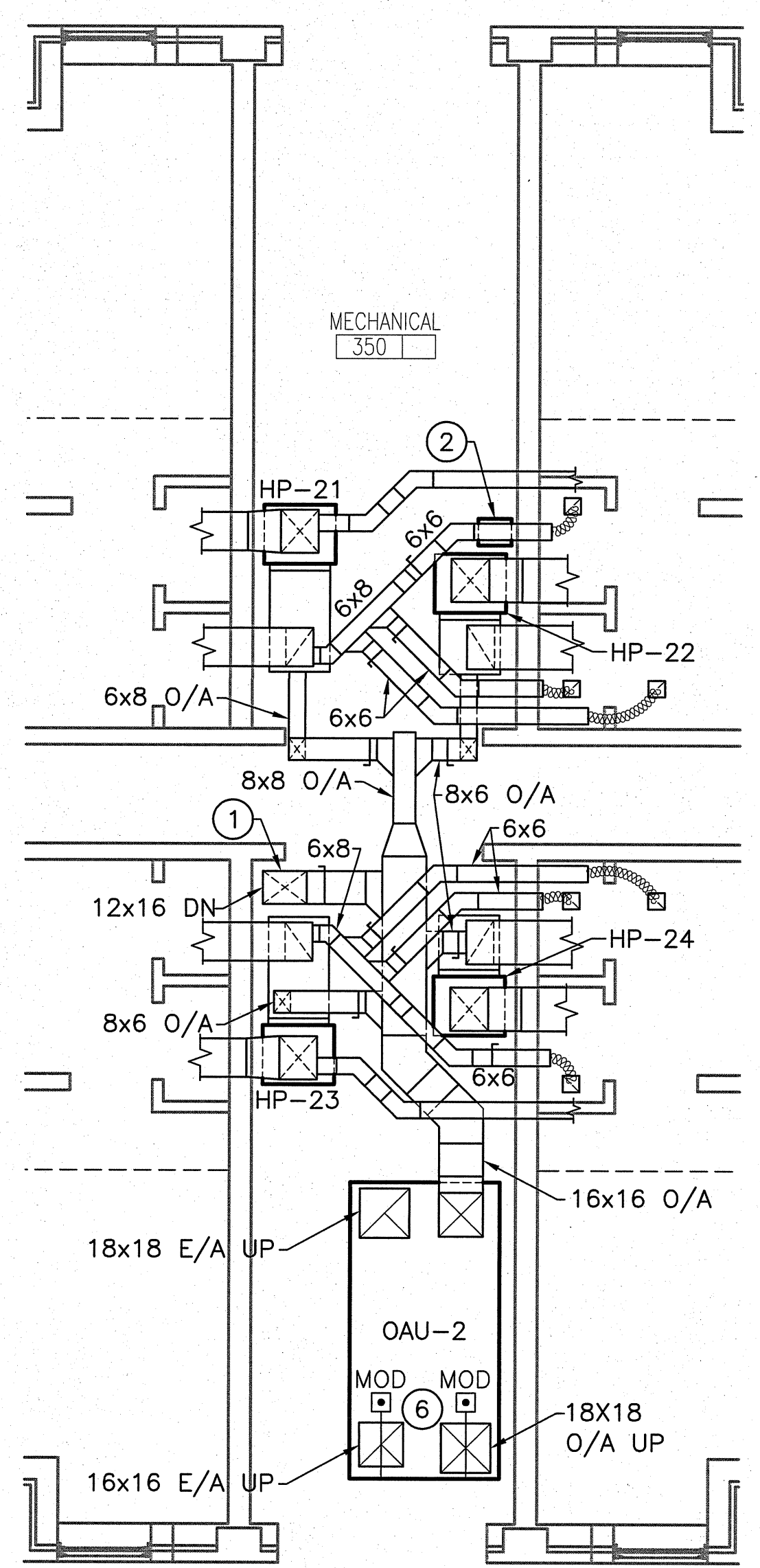
3 ENLARGED MECHANICAL NEW WORK PLAN  
 MH-101|MH-401 SCALE: 1/4" = 1'-0"



4 ENLARGED MECHANICAL NEW WORK PLAN  
 MH-101|MH-401 SCALE: 1/4" = 1'-0"



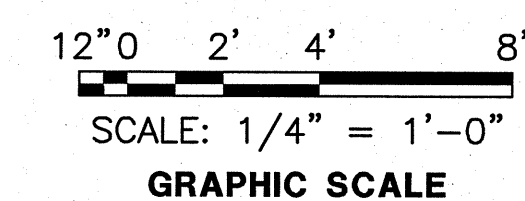
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 MH-101|MH-401 SCALE: 1/4" = 1'-0"



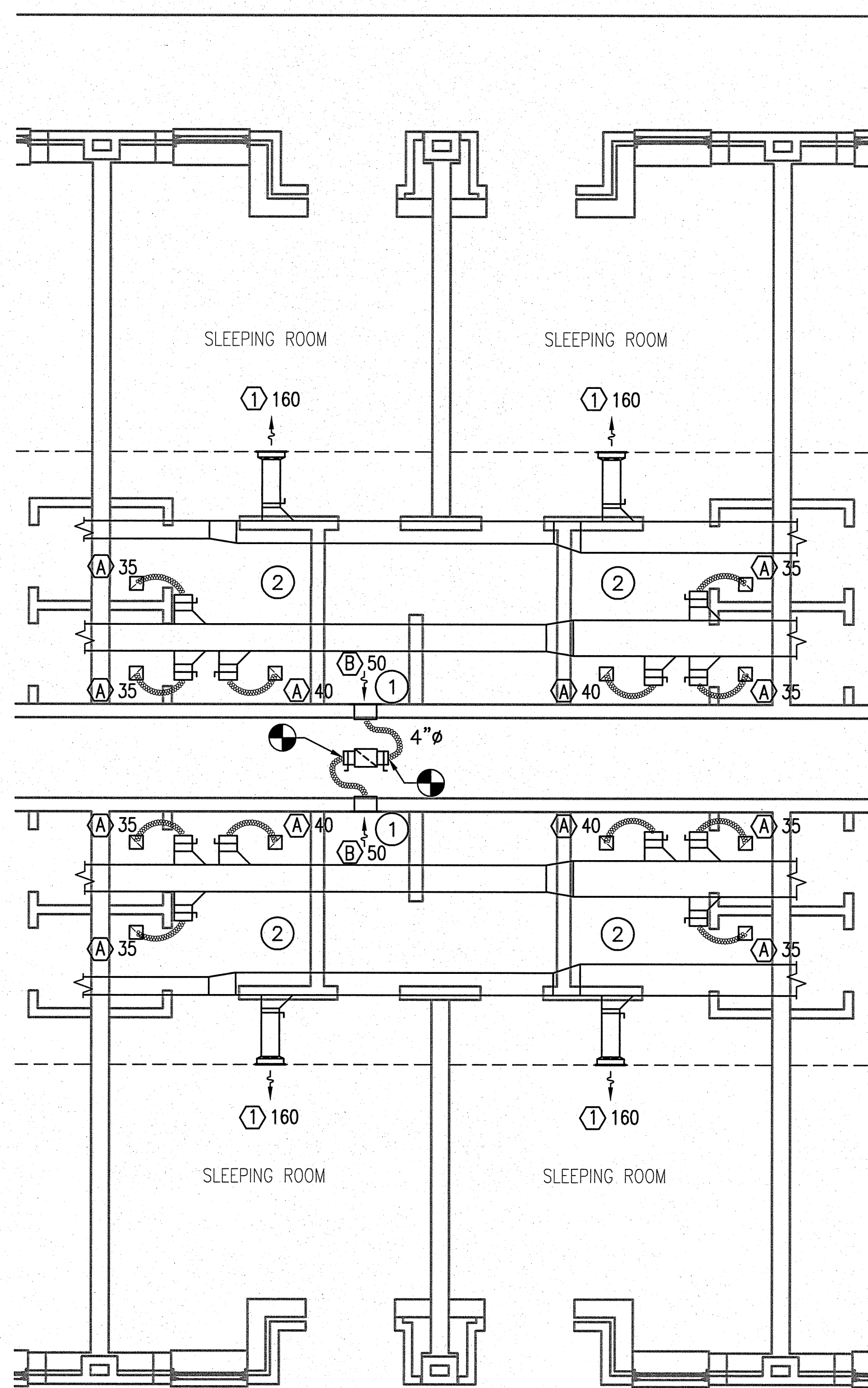
6 ENLARGED MECHANICAL NEW WORK PLAN  
 MH-101|MH-401 SCALE: 1/4" = 1'-0"

**NEW WORK KEYNOTES:**

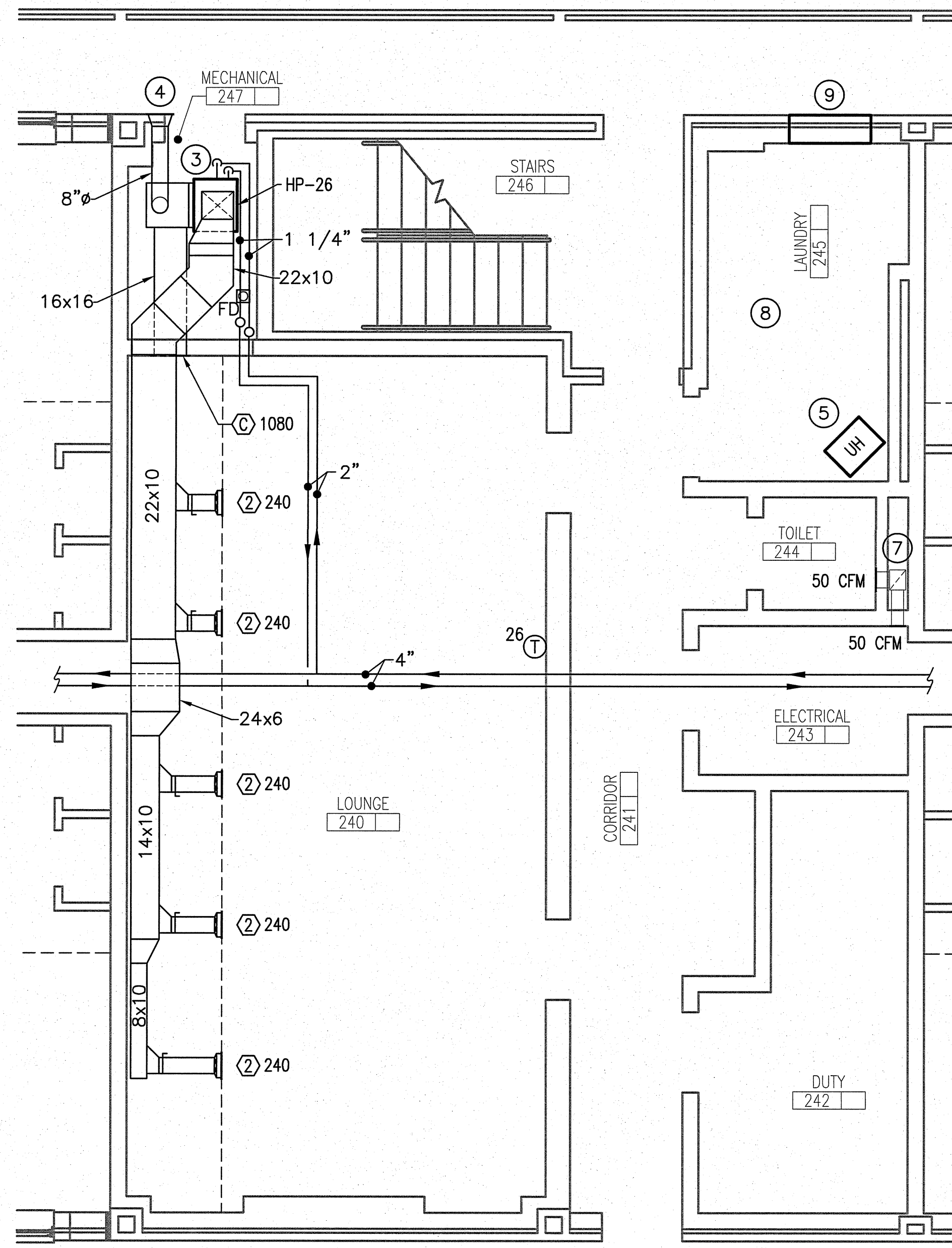
- 1 NEW OUTSIDE AIR DUCT DOWN WITH FIRE DAMPER AT EACH FLOOR. SEE ISOMETRIC DIAGRAMS SHEET M-603. SEE ARCHITECTURAL DRAWINGS FOR OPENING DETAILS.
- 2 PROVIDE DEHUMIDIFIER IN EACH MECHANICAL ROOM (6 TOTAL). DEHUMIDIFIER SHALL REMOVE MINIMUM 50 PINTS/DAY, BE ENERGY STAR QUALIFIED, AND HARD PIPED TO FLOOR DRAIN. DEHUMIDIFIER SHALL OPERATE DOWN TO 55°F ROOM TEMPERATURE.
- 3 SEE SHEET M-502 FOR DOMESTIC HOT WATER GEOTHERMAL HEAT PUMP AND HOT WATER STORAGE TANK DETAILS.
- 4 SEE SHEET M-501 FOR GEOTHERMAL PUMP DETAIL. SEE SHEET M-502 FOR HEADER PIPING DETAIL.
- 5 INSTALL SITE BUILDING CONTROLLER.
- 6 MOTOR OPERATED DAMPERS TO BE INSTALLED IN VERTICAL SECTION OF OUTDOOR AIR INTAKE AND EXHAUST DUCTS.



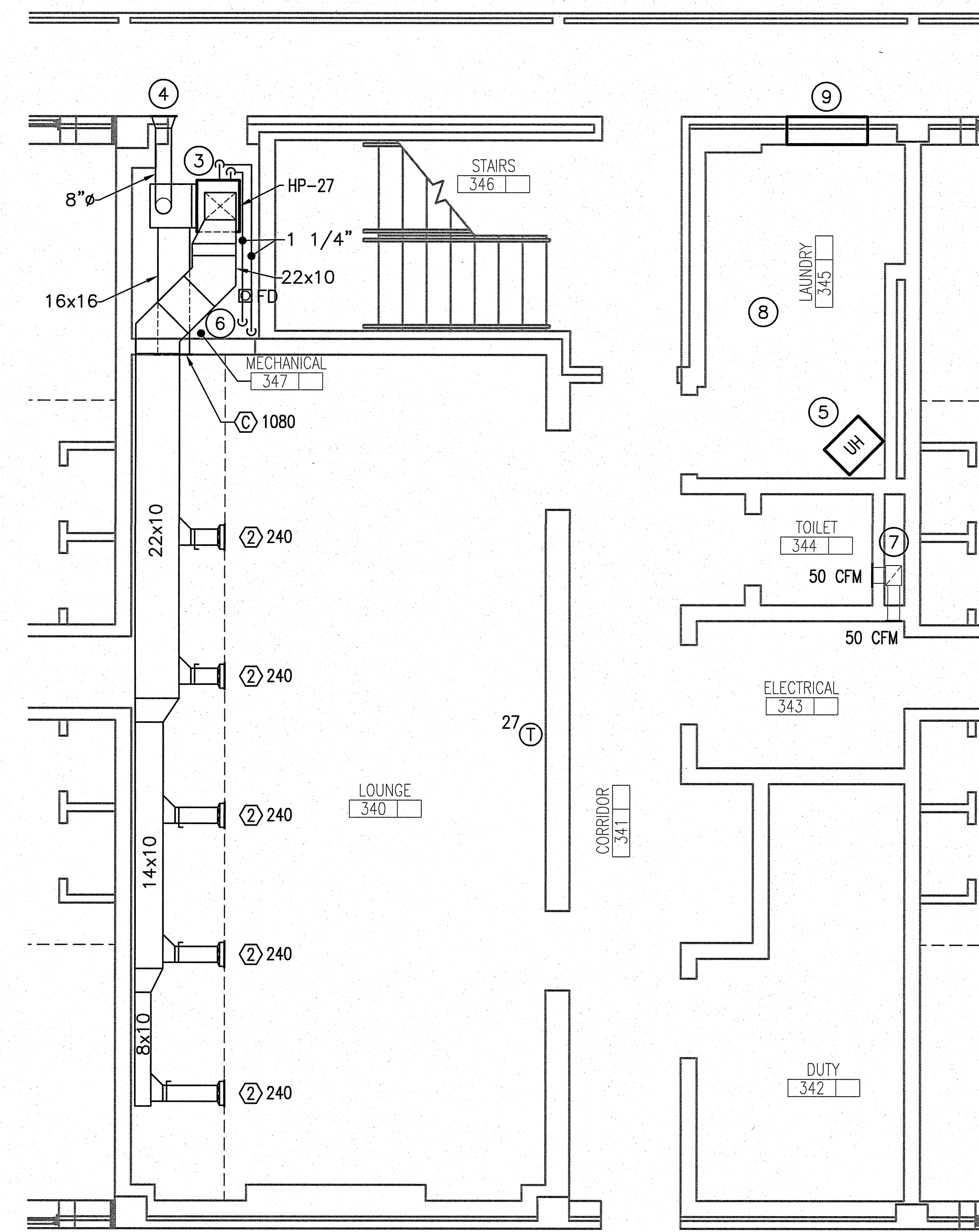
<b>MH-401</b>	
 <b>CEMS</b> ENGINEERING	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	REPAIR BEQ BUILDING HP485
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC	ENLARGED MECHANICAL NEW WORK PLAN NAVFAC DRAWING NO. <b>60007175</b> CONST. CONTR. NO. N40085-10-B-0070
SATISFACTORY TO:	DATE: <b>F 80091</b> SCALE: AS NOTED SPEC. 05-10-0070 SHEET 35 OF 65



1 TYPICAL ENLARGED ROOM NEW WORK PLAN  
MH-101/MH-402 SCALE: 1/4" = 1'-0"



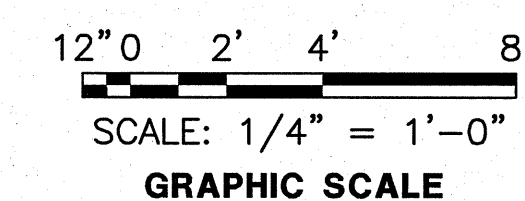
2 ENLARGED SECOND FLOOR MECHANICAL NEW WORK PLAN  
MH-101/MH-402 SCALE: 1/4" = 1'-0"



3 ENLARGED THIRD FLOOR MECHANICAL NEW WORK PLAN  
MH-101/MH-402 SCALE: 1/4" = 1'-0"

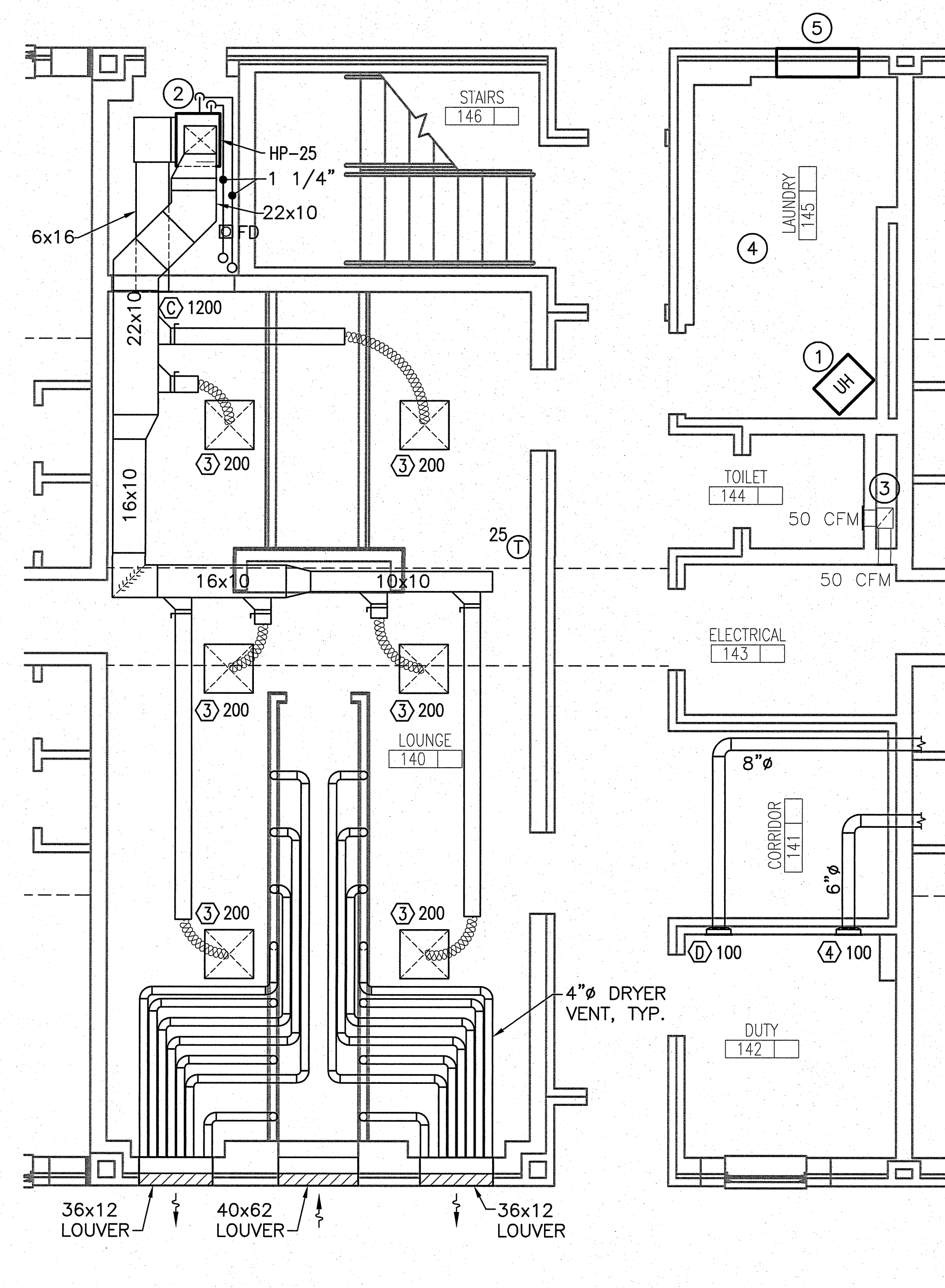
**NEW WORK KEYNOTES:**


- 1 PROVIDE AND INSTALL NEW EXHAUST GRILLE AND NEW FLEX DUCT TO RISER. SEE RISER DIAGRAM SHEET M-603. PROVIDE SQUARE TO ROUND TRANSITION TO NEW GRILLE AT EXISTING WALL OPENING.
- 2 SEE SHEET MH-101 FOR DUCT SIZING.
- 3 ROUTE CONDENSATE TO FLOOR DRAIN.
- 4 PROVIDE AND INSTALL NEW OUTDOOR AIR DUCT AND LOUVER, LOUVER TO BE 12x12.
- 5 PROVIDE AND INSTALL NEW 5KW UNIT HEATER, 20B/3/60. UNIT HEATER SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS INCLUDING MOUNTING CLEARANCE AND MOUNTING HEIGHT REQUIREMENTS. UNIT HEATER TO ENERGIZE WHEN ROOM TEMPERATURE DROPS BELOW 65°F.
- 6 PROVIDE AND INSTALL AUTOMATIC AIR VENTS TO GEOTHERMAL WATER SUPPLY INLET AND OUTLET PIPING DIRECTLY ABOVE ELBOWS AT THE HIGHEST POINT.
- 7 EXISTING EXHAUST RISER AND GRILLES.
- 8 PVC DRYER DUCTS TO BE REPLACED WITH FLEXIBLE METAL DRYER DUCTS.
- 9 INSTALL 34"x17" MAKE-UP AIR LOUVER WITH INSECT SCREEN. INTAKE LOUVER SHALL BE INSTALLED AT MAXIMUM HEIGHT IN ROOM. LOUVER TO BE EQUIVALENT TO GREENHECK BVF MODEL LOUVERS.



<b>MH-402</b>	
 CEMS Engineering, Inc. 3509 Iron Horse Drive Ladsen, SC 29456 (P)843.875.9937 (F)843.875.4509 www.cemsgroup.com ©2005 Project #001509 Project Manager: P. Mahaffey	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC	REPAIR BEQ BUILDING HP485 ENLARGED MECHANICAL NEW WORK PLAN NAVFAC DRAWING NO. <b>60007176</b> CONST. CONTR. NO. N40085-10-B-0070
SATISFACTORY TO: DATE:	SIZE CODE IDENT NO. <b>F 80091</b> SCALE: AS NOTED SPEC. 05-10-0070 SHEET 36 OF 65

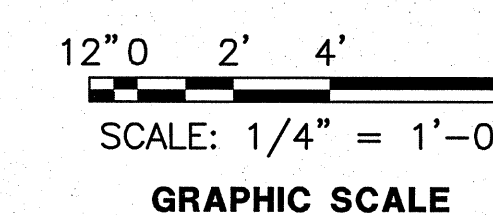


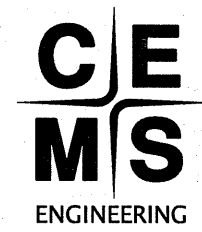



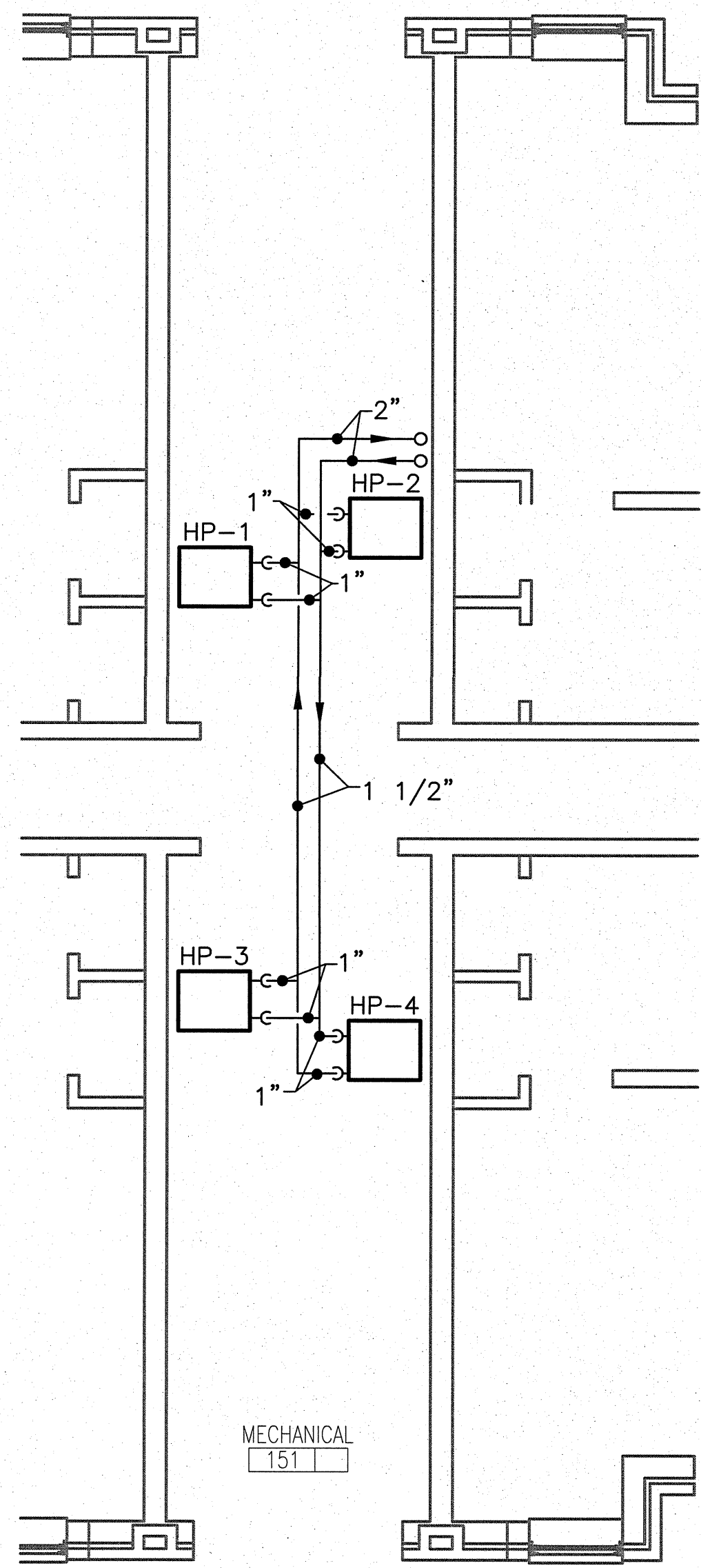

**ENLARGED FIRST FLOOR MECHANICAL NEW WORK PLAN**  
 MH-101 MH-403 SCALE: 1/4" = 1'-0"

**NEW WORK KEYNOTES:**

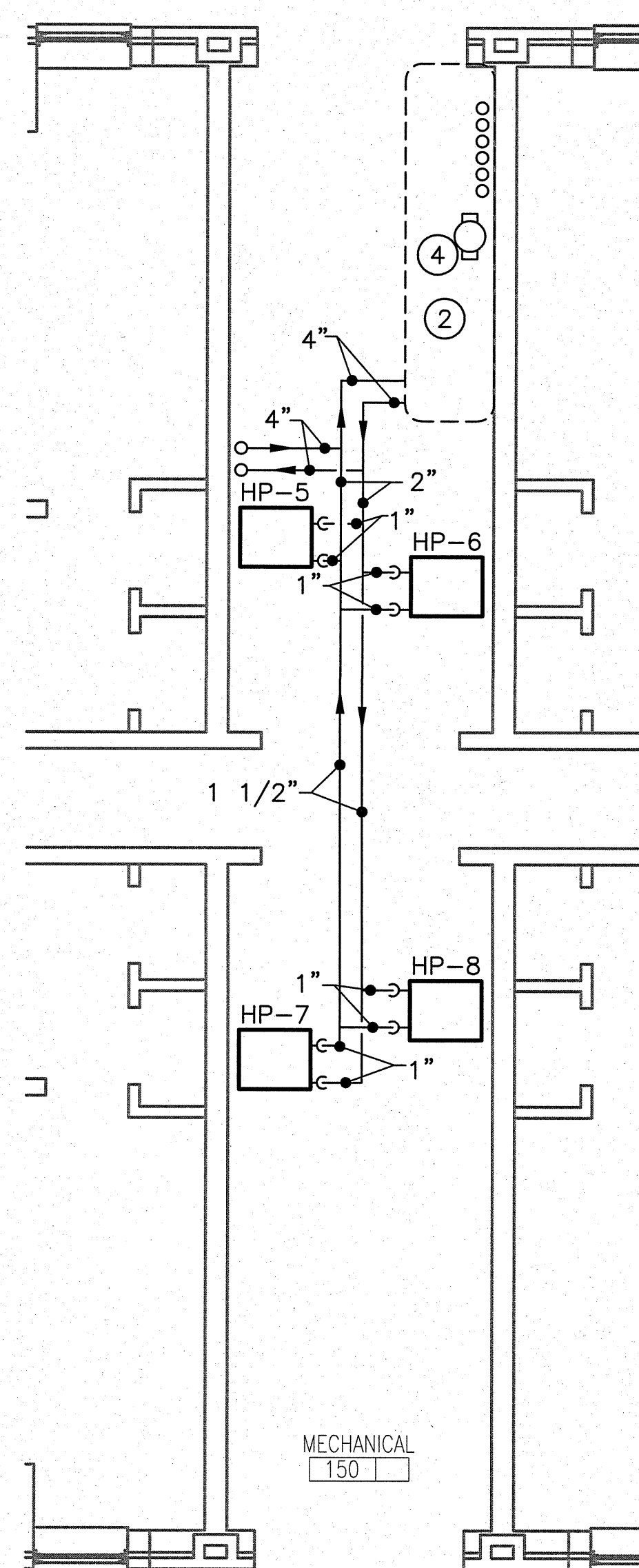
- ① INSTALL NEW 5KW UNIT HEATER, 208/3/60. UNIT HEATER SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS INCLUDING MOUNTING CLEARANCE AND MOUNTING HEIGHT REQUIREMENTS. UNIT HEATER TO ENERGIZE WHEN ROOM TEMPERATURE DROPS BELOW 65°F.
- ② ROUTE CONDENSATE TO FLOOR DRAIN.
- ③ EXISTING EXHAUST RISER AND GRILLES.
- ④ PVC DRYER VENTS TO BE REPLACED WITH FLEXIBLE METAL DRYER DUCTS.
- ⑤ INSTALL 34"x17" MAKE-UP AIR LOUVER WITH INSECT SCREEN. INTAKE LOUVER SHALL BE INSTALLED AT MAXIMUM HEIGHT IN ROOM. LOUVER TO BE EQUIVALENT TO GREENHECK BVF MODEL LOUVERS.



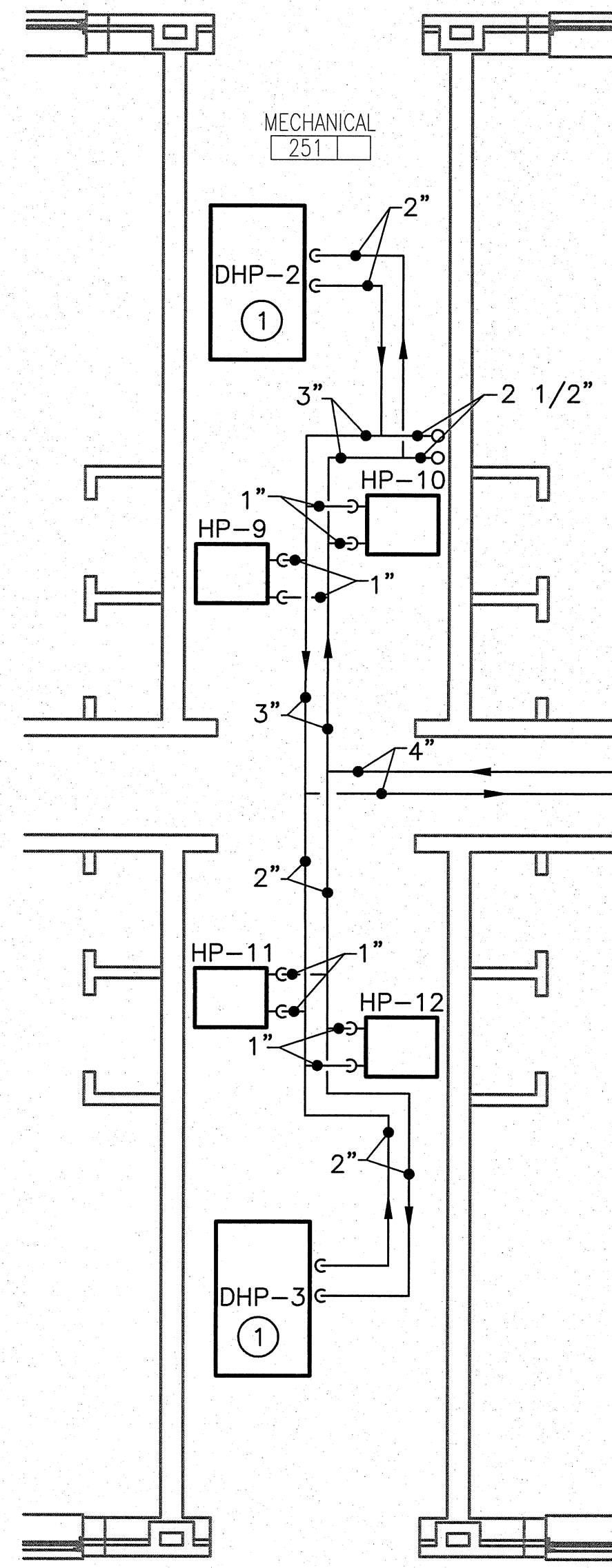
		<b>MH-403</b>	
 CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29456 (781) 875-3237 (781) 875-4509 www.cemsgroup.com CEMS Project #051501 Project Manager: P. Mahaffey	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		
	DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE:		REPAIR BEQ BUILDING HP485 ENLARGED FIRST FLOOR MECHANICAL NEW WORK PLAN NAVFAC DRAWING NO. <b>60007177</b> CONST. CONTR. NO. N40085-10-B-0070
		SATISFACTORY TO: DATE:	
		SCALE: AS NOTED SPEC. 05-10-0070 SHEET 37 OF 65	



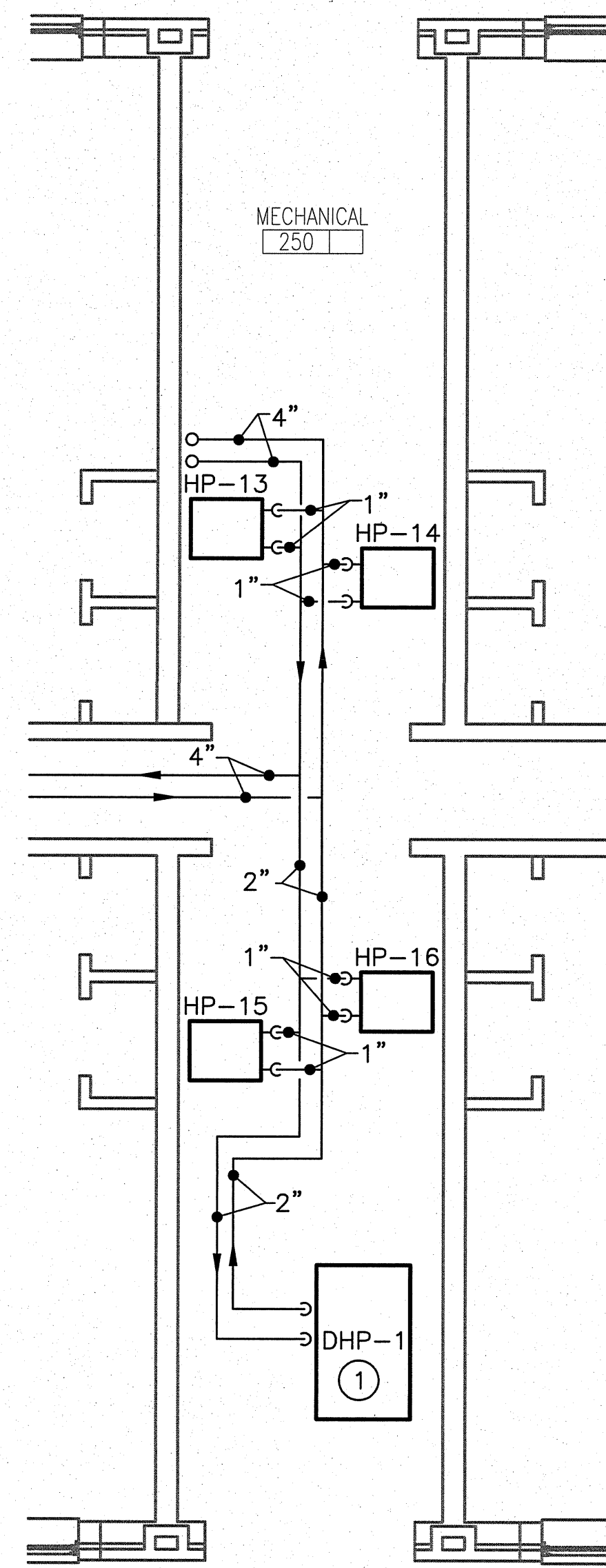
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 MH-101|MP-401 SCALE: 1/4" = 1'-0"



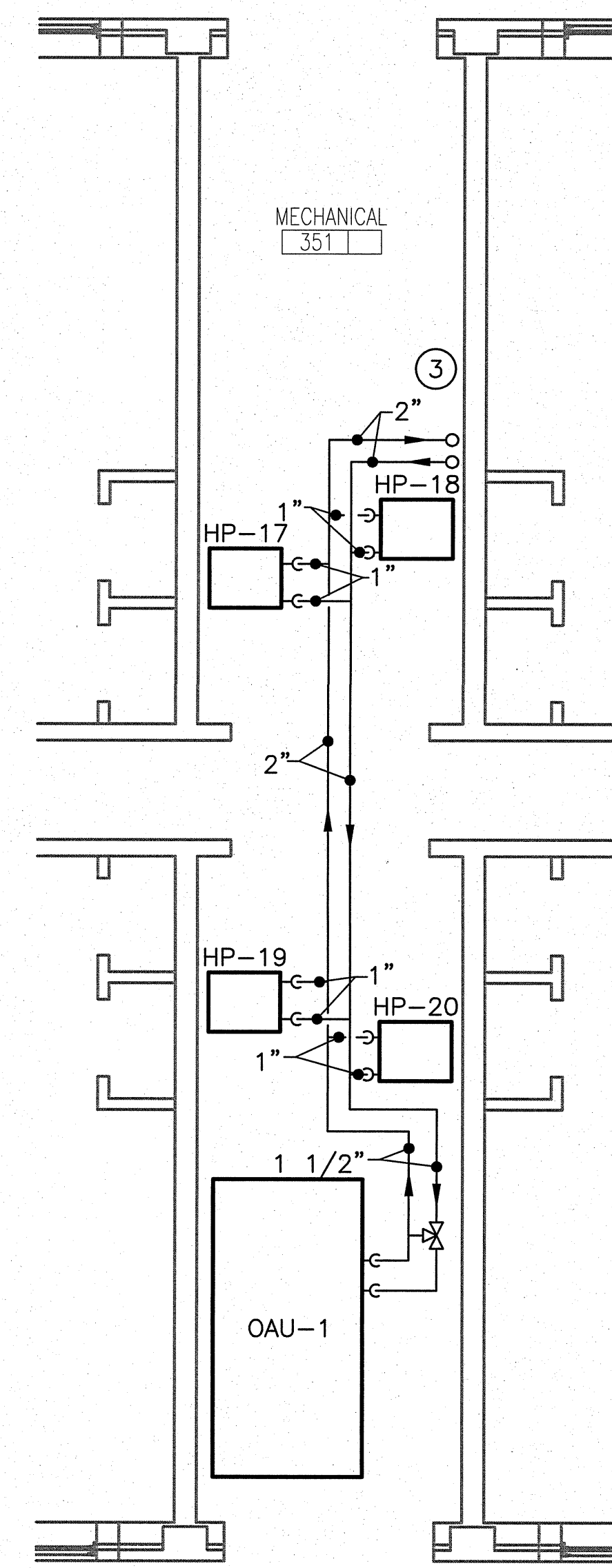
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 MH-101|MP-401 SCALE: 1/4" = 1'-0"



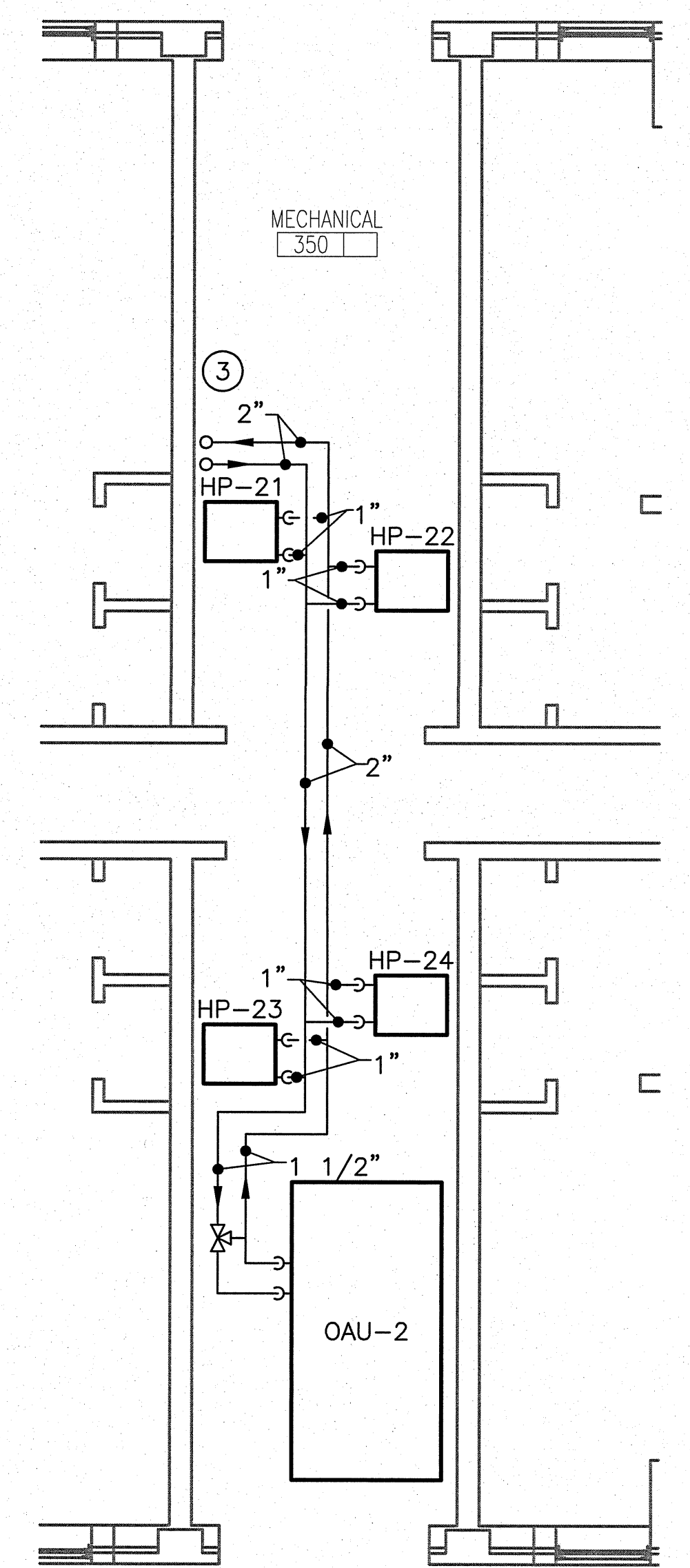
3 ENLARGED MECHANICAL NEW WORK PLAN  
 MH-101|MP-401 SCALE: 1/4" = 1'-0"



4 ENLARGED MECHANICAL NEW WORK PLAN  
 MH-101|MP-401 SCALE: 1/4" = 1'-0"



5 ENLARGED MECHANICAL NEW WORK PLAN  
 MH-101|MP-401 SCALE: 1/4" = 1'-0"



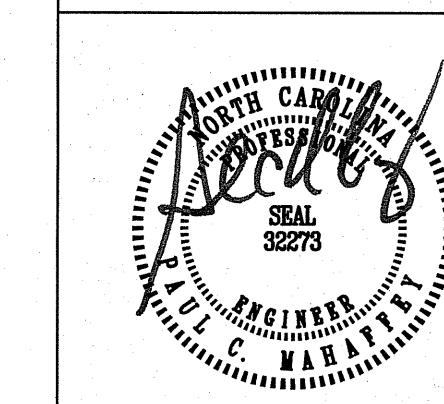
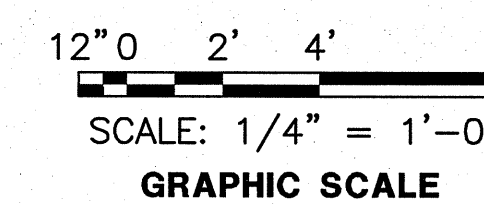
6 ENLARGED MECHANICAL NEW WORK PLAN  
 MH-101|MP-401 SCALE: 1/4" = 1'-0"

**GENERAL NEW WORK NOTE:**

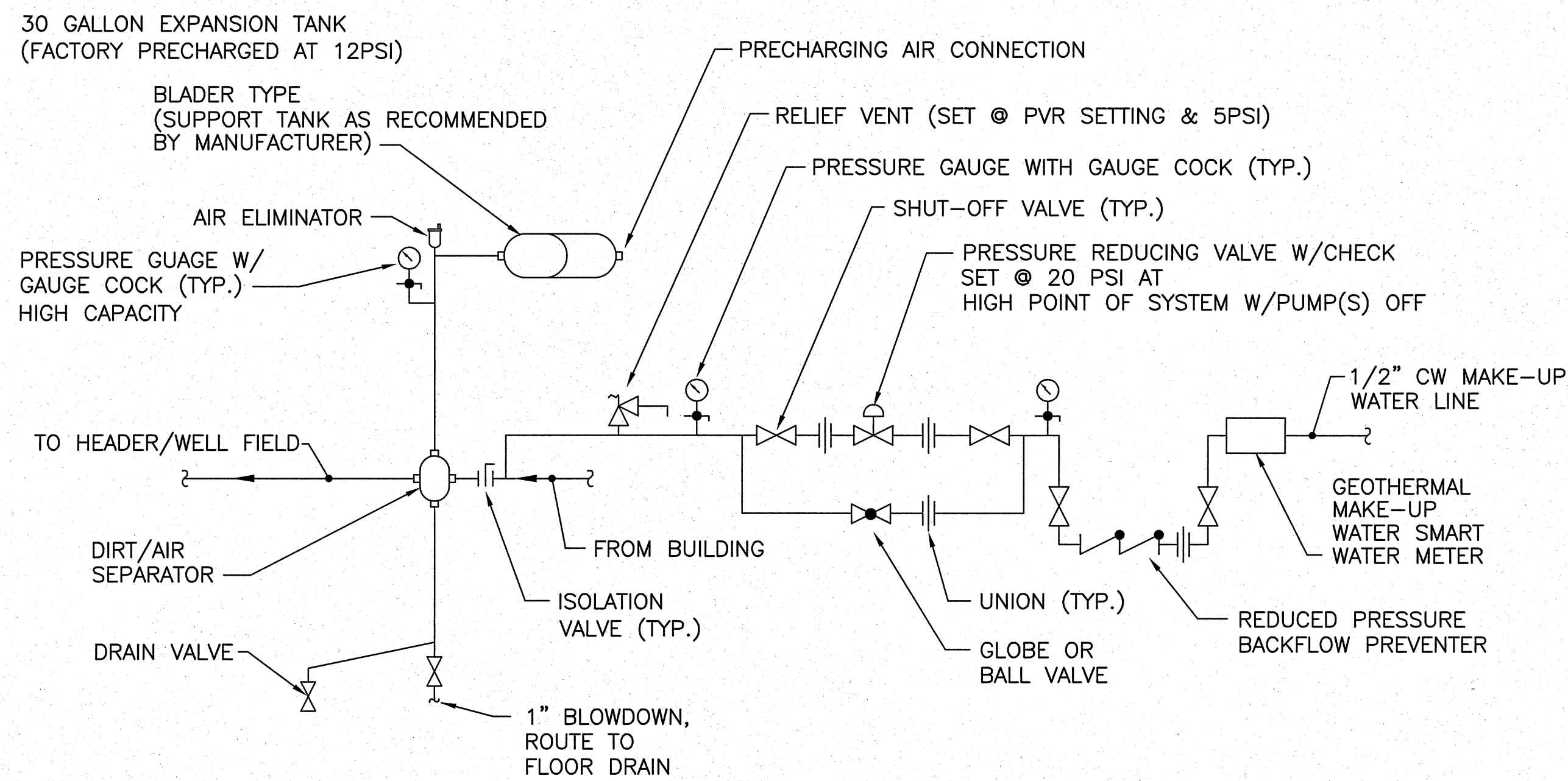
1. ALL GEOTHERMAL WATER PIPING IN BUILDING TO BE INSULATED PER SPECIFICATIONS.

**NEW WORK KEYNOTES:**

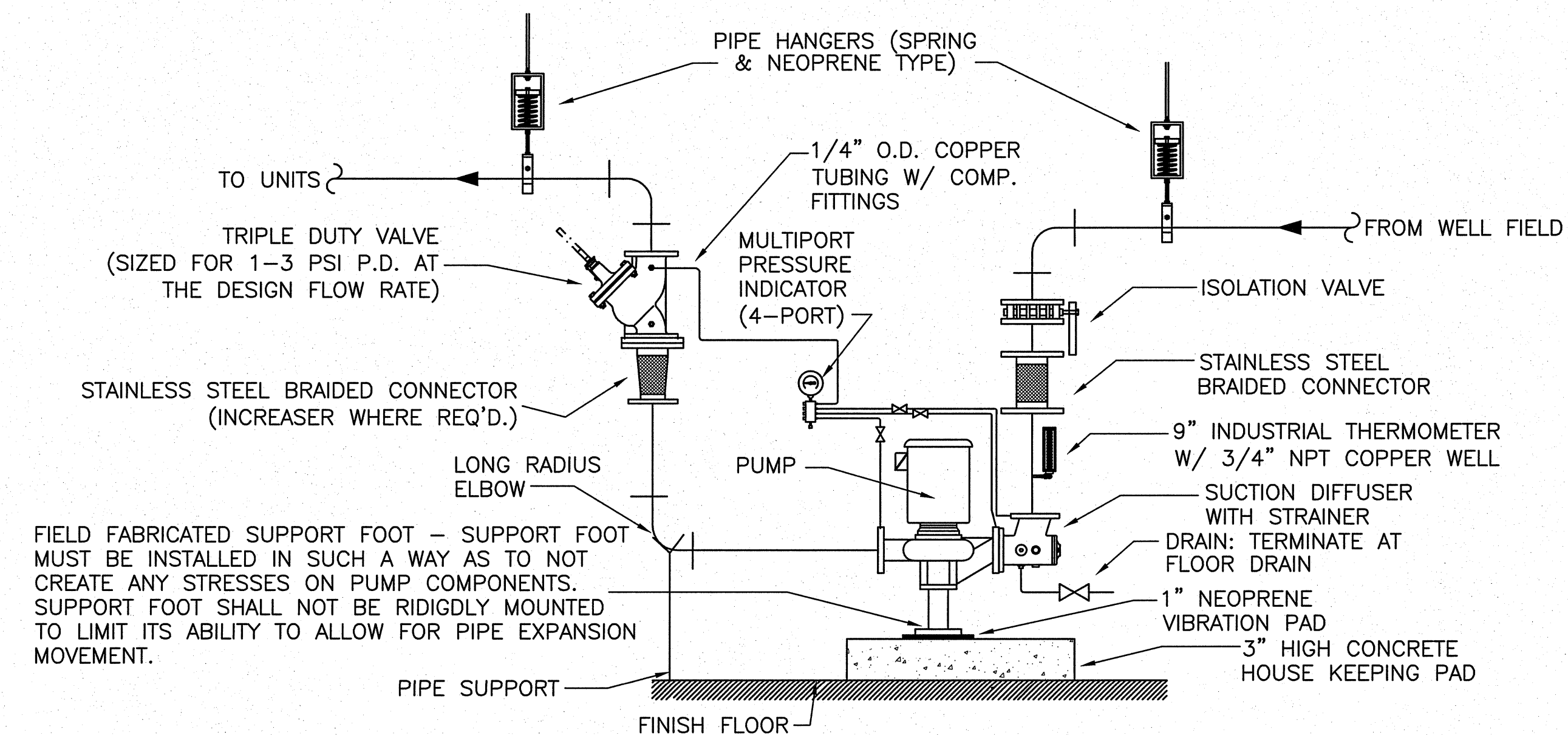
- 1 SEE SHEET M-502 FOR DOMESTIC GEOTHERMAL HEAT PUMP AND HOT WATER STORAGE TANK DETAILS.
- 2 SEE SHEET M-502 FOR HEADER PIPING DETAIL.
- 3 INSTALL AUTOMATIC AIR VENTS TO GEOTHERMAL SUPPLY INLET AND OUTLET PIPING AT HIGHEST POINT IN ROOM.
- 4 INSTALL GEOTHERMAL PUMP, DIRT AND AIR SEPARATOR, AND EXPANSION TANK. SEE SHEET M-501 FOR DETAILS.



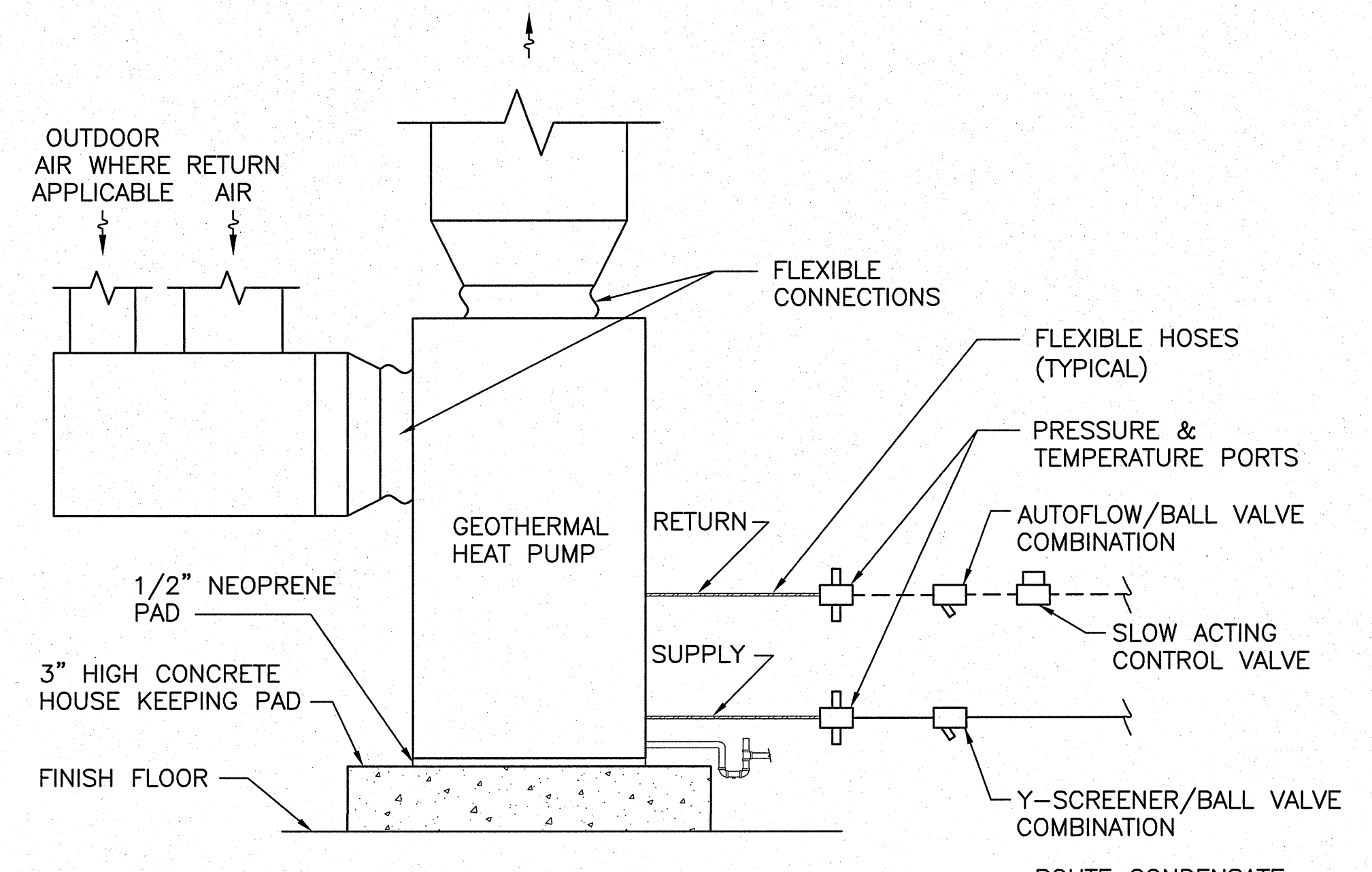
<b>MP-401</b>	
 CEMS Engineering, Inc. 3509 Iron Horse Drive Lenoir, NC 28645 (784) 875-9337 www.cemsgroup.com CEMS Project #08158V Project Manager: P. Mahaffey	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	REPAIR BEQ BUILDING HP485
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE: _____ SATISFACTORY TO: DATE: _____	ENLARGED MECHANICAL PIPING NEW WORK PLAN NAVFAC DRAWING NO. <b>60007178</b> CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 38 OF 65



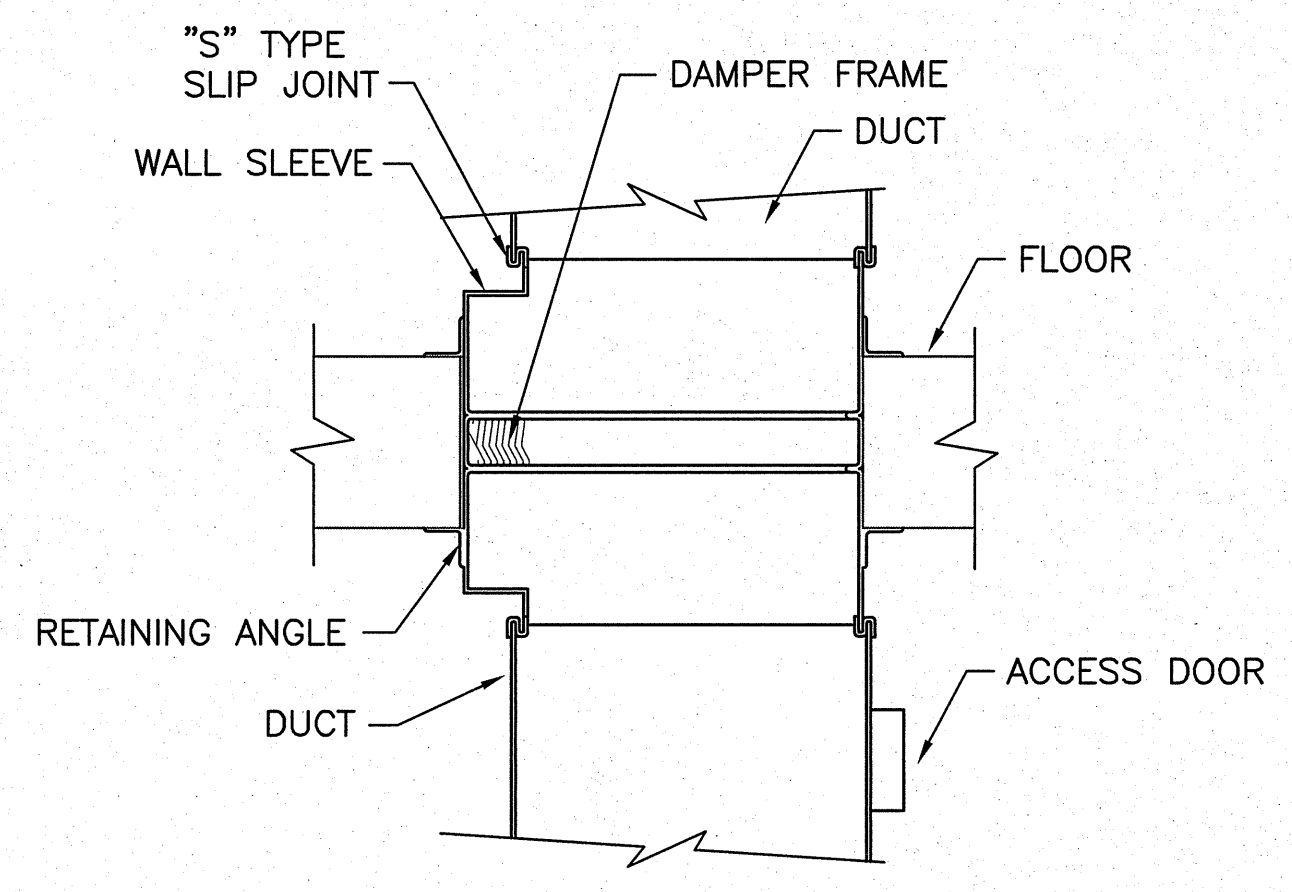
**EXPANSION TANK/DIRT AND AIR SEPARATOR DETAIL**  
SCALE: NOT TO SCALE



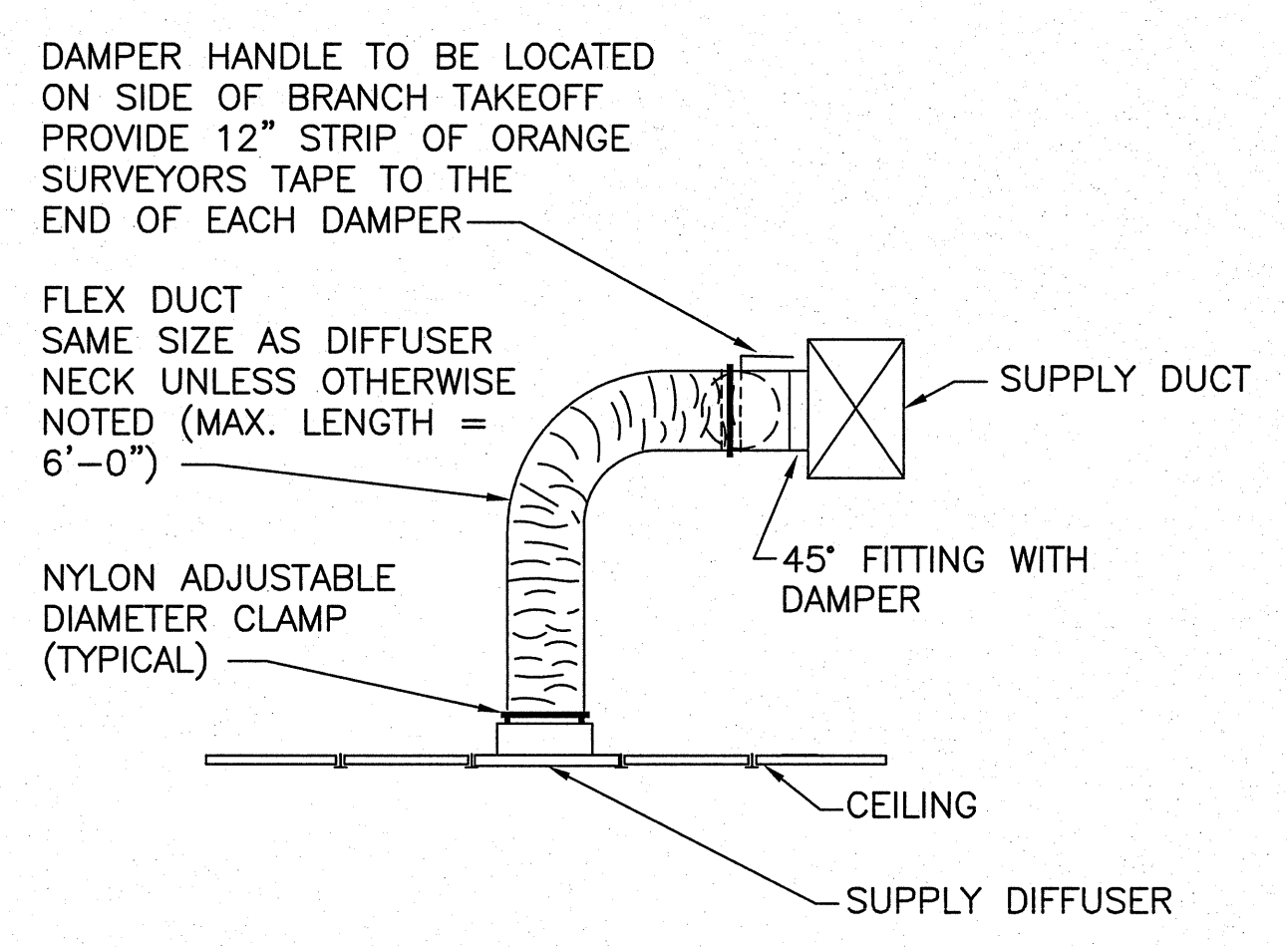
**GEOTHERMAL PUMP DETAIL**  
SCALE: NOT TO SCALE



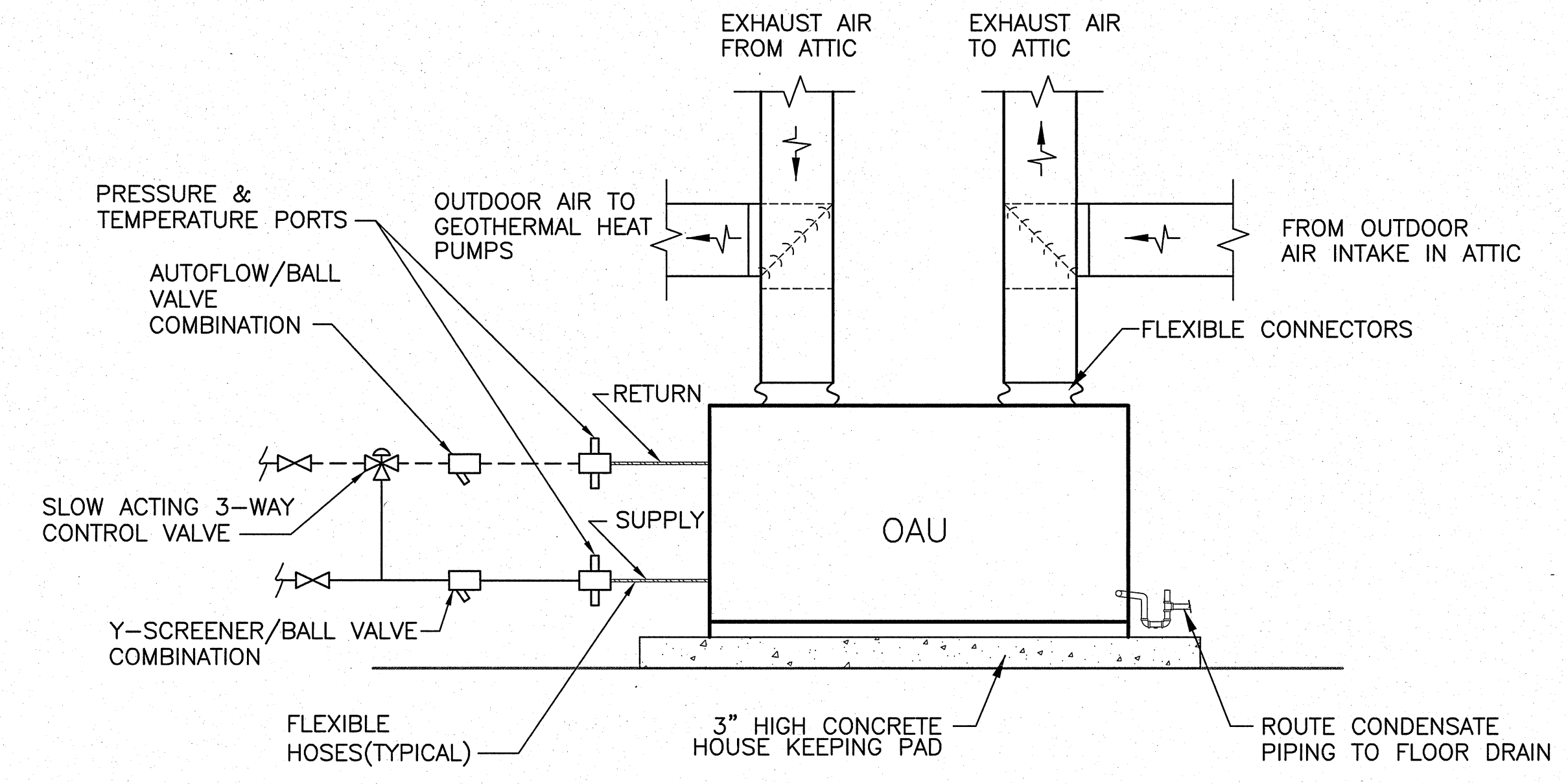
**GEOTHERMAL HEAT PUMP PIPING DETAIL**  
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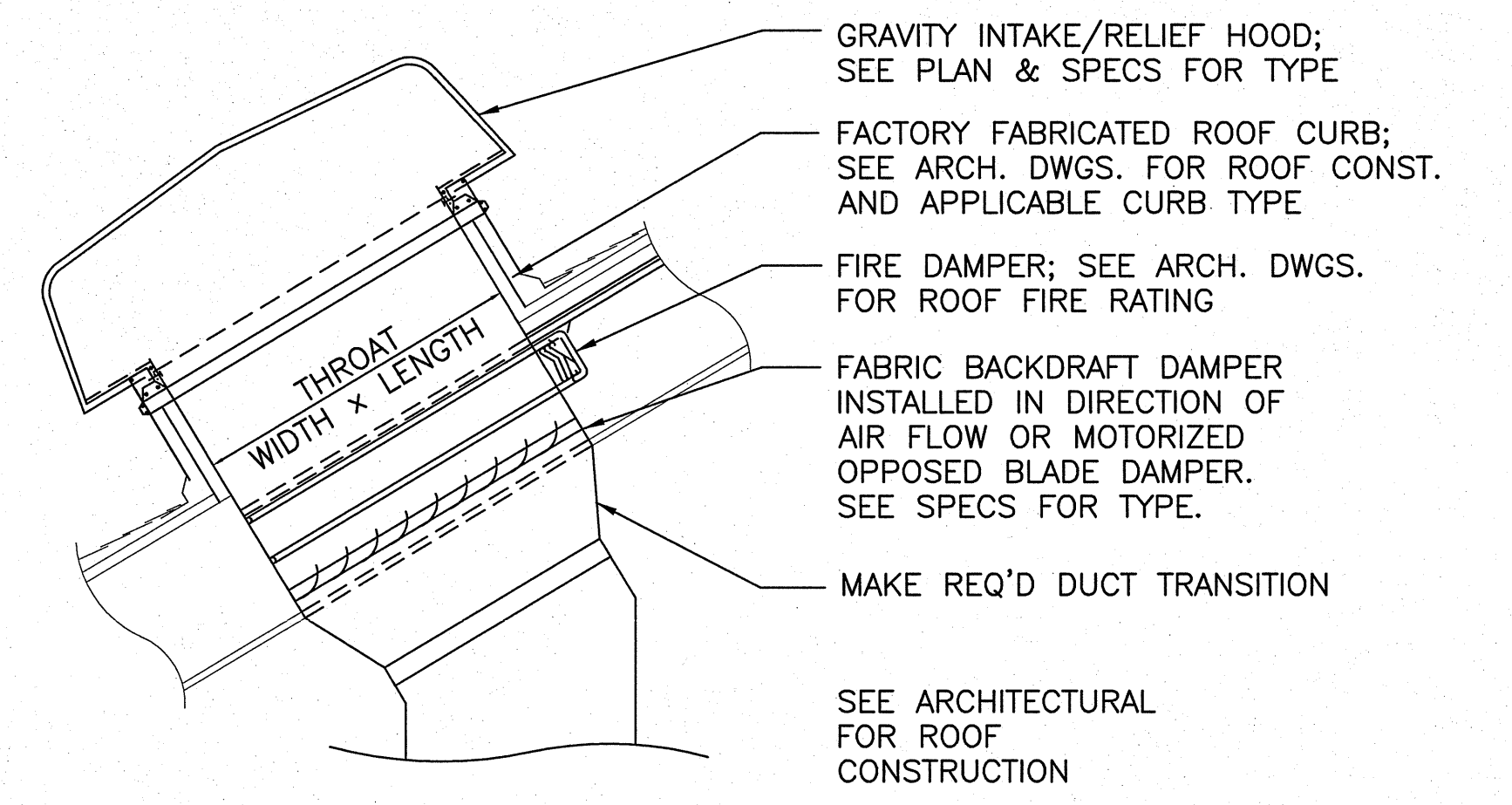
**HORIZONTAL FIRE DAMPER DETAIL**  
SCALE: NOT TO SCALE



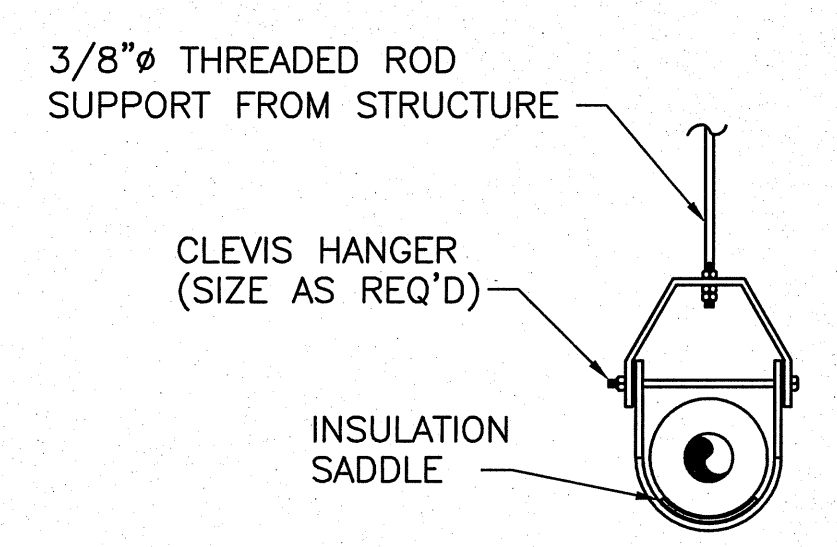
**TYPICAL FLEX DUCT DIFFUSER DETAIL**  
SCALE: NOT TO SCALE



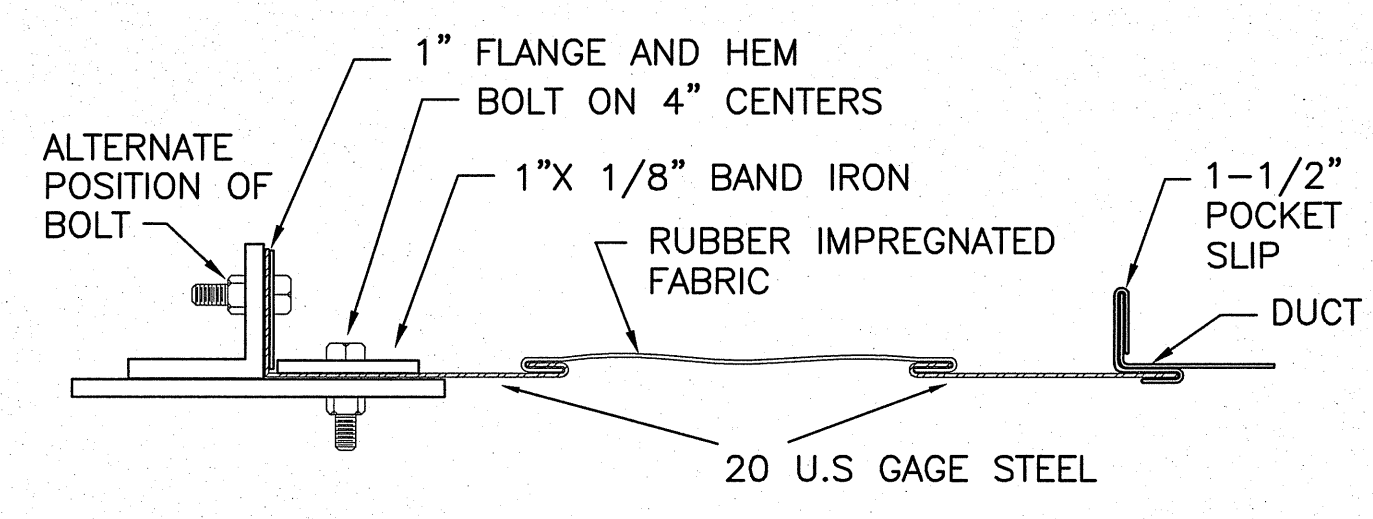
**GEOTHERMAL OUTSIDE AIR UNIT DETAIL**  
SCALE: NOT TO SCALE



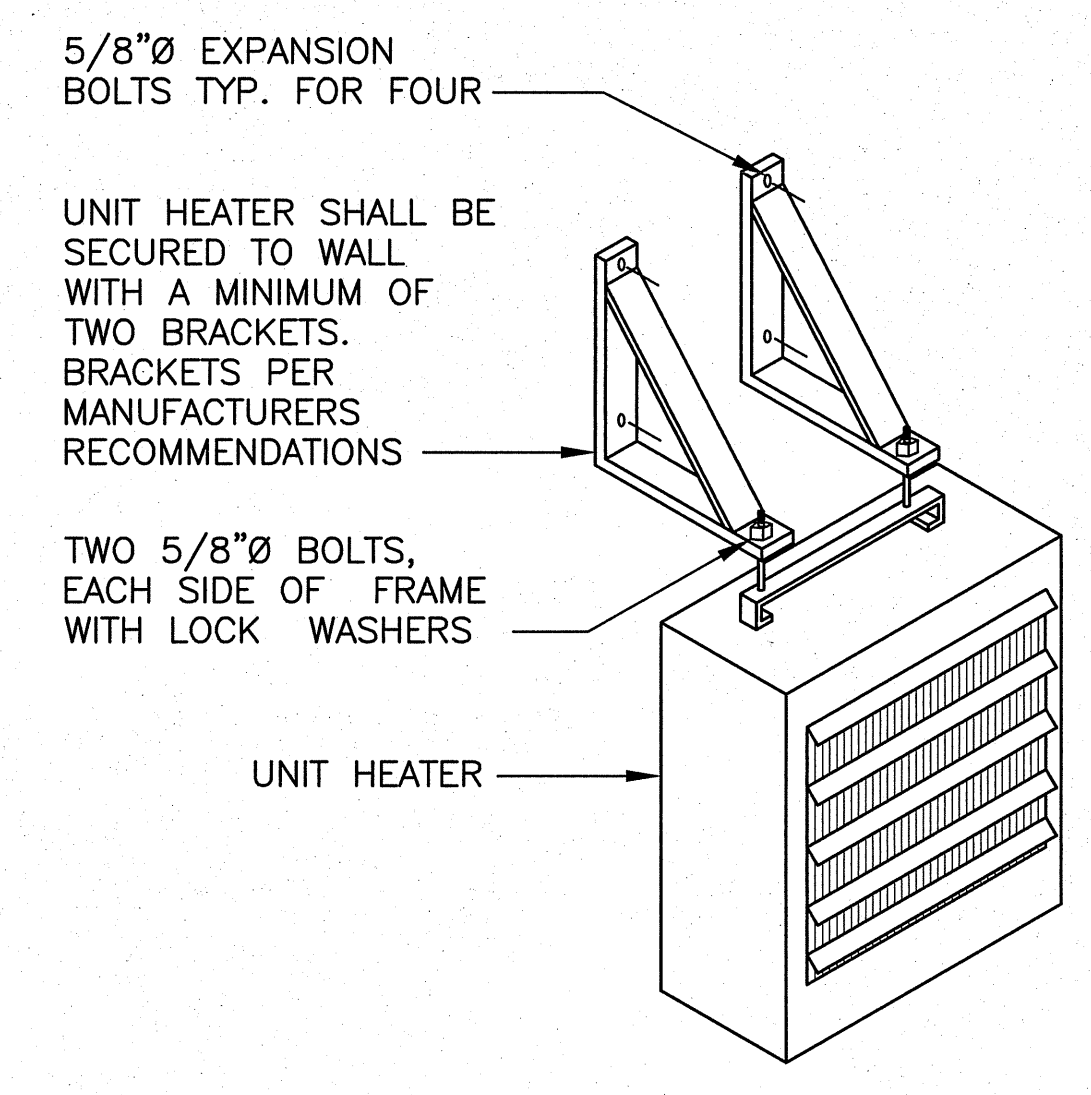
**GRAVITY INTAKE/RELIEF HOOD DETAIL**  
SCALE: NOT TO SCALE



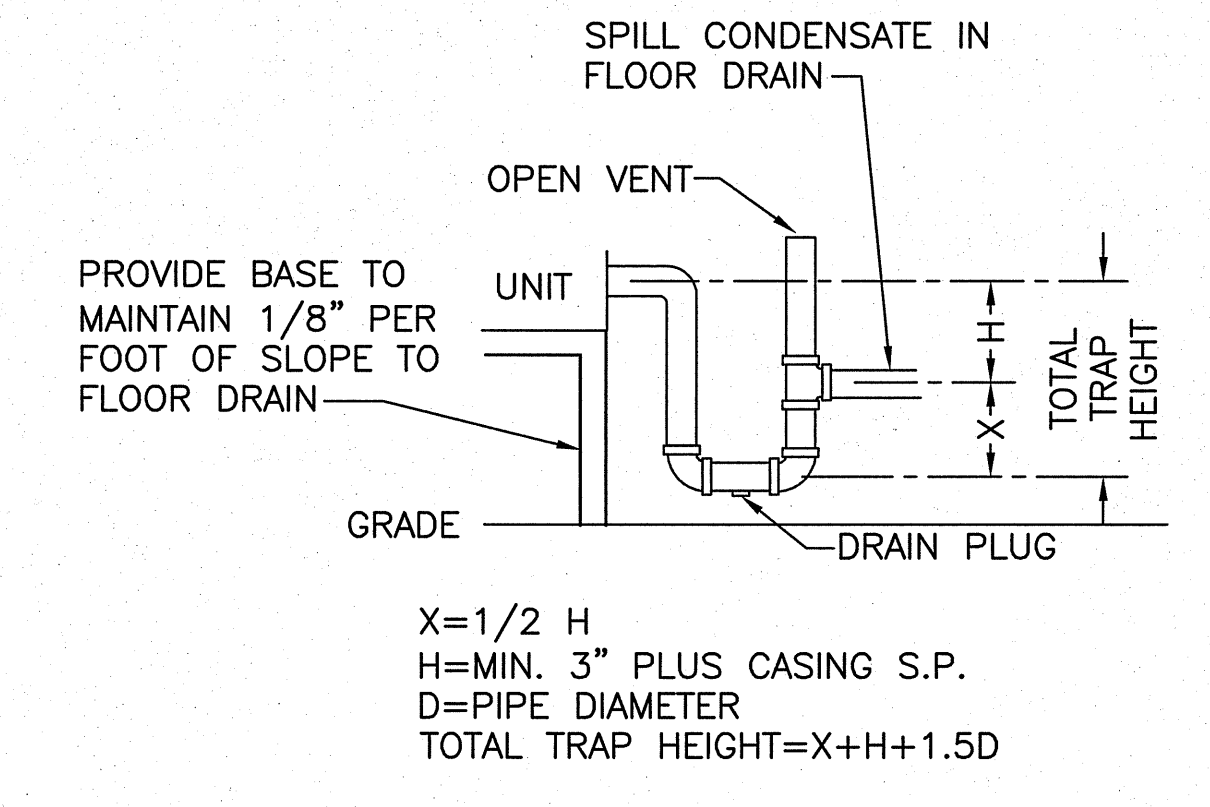
**TYPICAL PIPE SUPPORT DETAIL**  
SCALE: NOT TO SCALE



**TYPICAL FLEXIBLE CONNECTION**  
SCALE: NOT TO SCALE

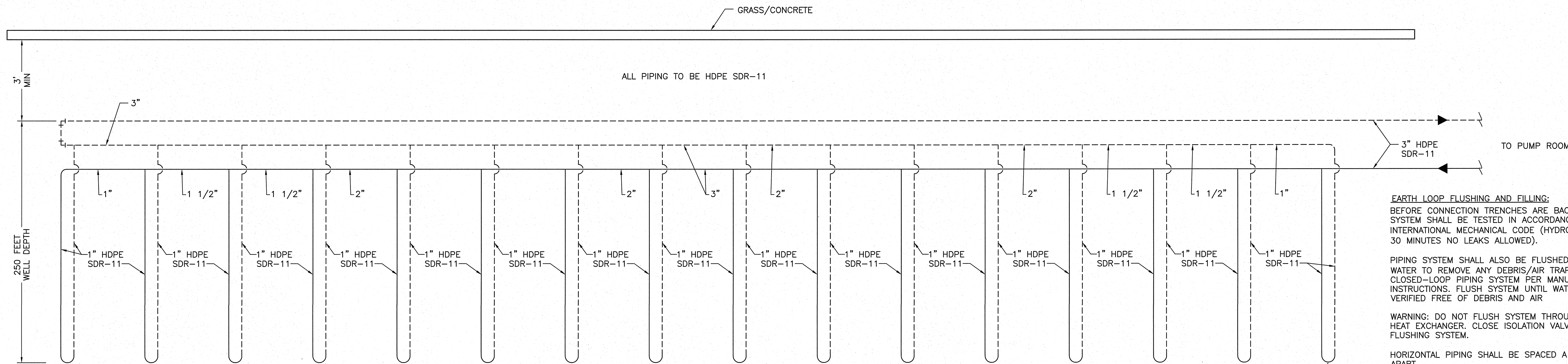


**ELECTRIC UNIT HEATER**  
SCALE: NOT TO SCALE



**TYPICAL CONDENSATE DRAIN DETAIL**  
SCALE: NOT TO SCALE

<b>M-501</b>	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
<b>REPAIR BEQ</b> <b>BUILDING HP485</b>	
MECHANICAL DETAILS NAVFAC DRAWING NO.	
DES. J. CARR	DATE
DR. J. BARNES	DATE
CHK. P. MAHAFFEY	DATE
SUBMITTED BY:	DATE
DESIGN DIR.	DATE
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE
SIZE CODE IDENT NO.	NAVFAC DRAWING NO.
F 80091	60007179
CONST. CONTR. NO. N40085-10-B-0070	SCALE: AS NOTED SPEC. 05-10-0070 SHEET 39 OF 65



**WELL FIELD/PIPE ROUTING DETAIL (TYPICAL)**  
SCALE: NOT TO SCALE

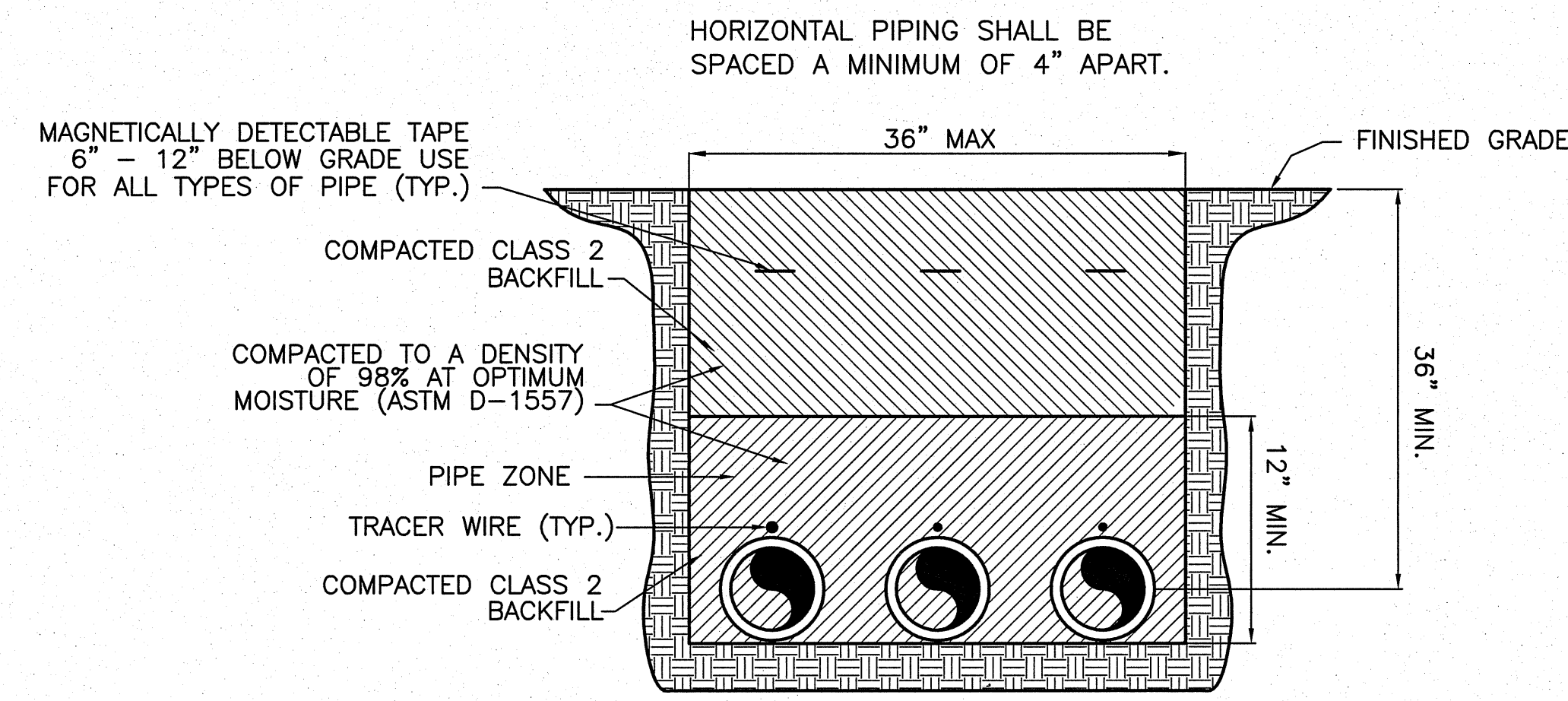
**FARTH LOOP FLUSHING AND FILLING:**  
BEFORE CONNECTION TRENCHES ARE BACKFILLED, THE LOOP SYSTEM SHALL BE TESTED IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE (HYDRO TO 100 PSI FOR 30 MINUTES NO LEAKS ALLOWED).

PIPING SYSTEM SHALL ALSO BE FLUSHED/PURGED WITH WATER TO REMOVE ANY DEBRIS/AIR TRAPPED IN THE CLOSED-LOOP PIPING SYSTEM PER MANUFACTURERS INSTRUCTIONS. FLUSH SYSTEM UNTIL WATER CLARITY CAN BE VERIFIED FREE OF DEBRIS AND AIR

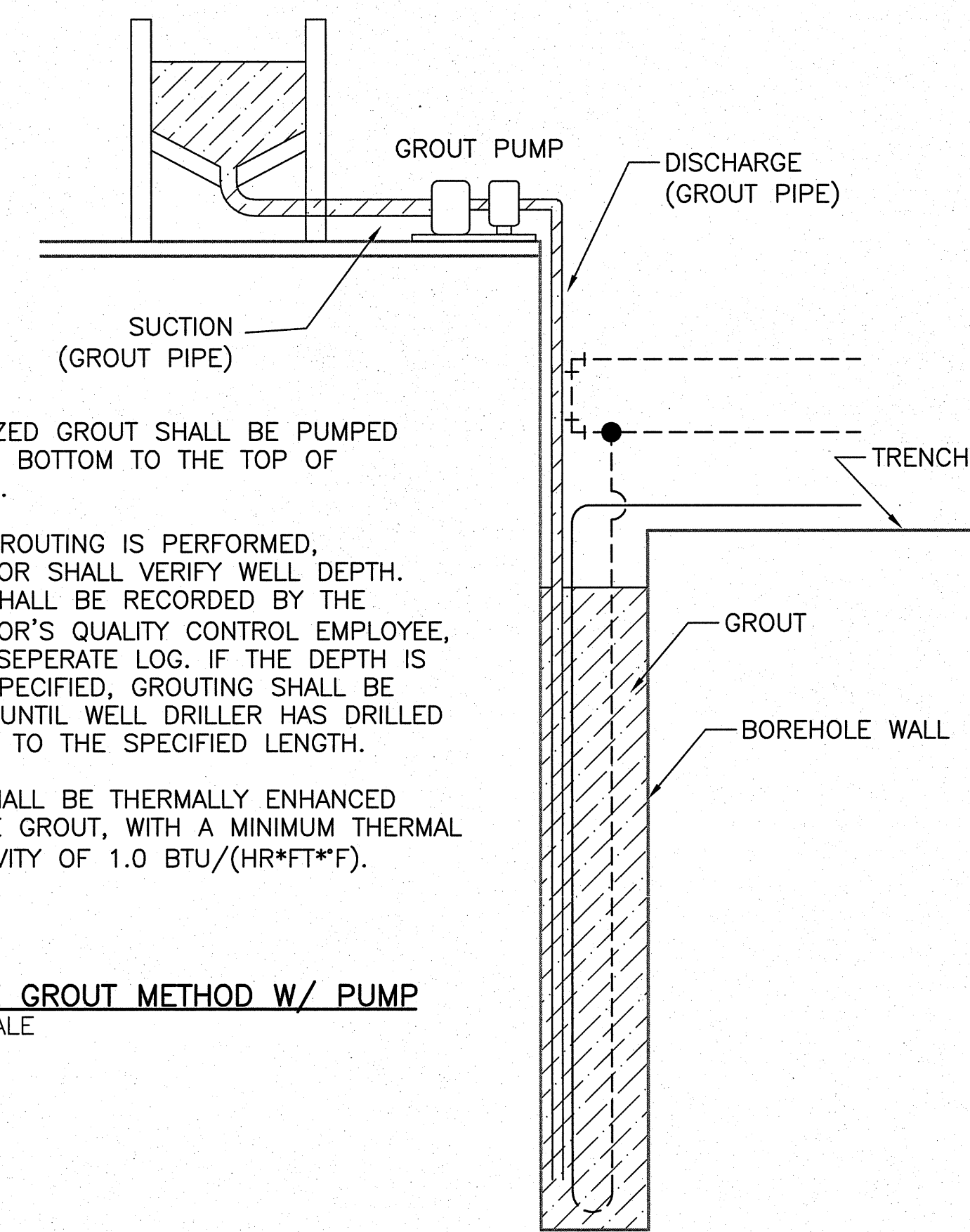
WARNING: DO NOT FLUSH SYSTEM THROUGH HEAT PUMP HEAT EXCHANGER. CLOSE ISOLATION VALVES BEFORE FLUSHING SYSTEM.

HORIZONTAL PIPING SHALL BE SPACED A MINIMUM OF 4" APART.

SEE SHEET MS-102 FOR WELL SPACING.

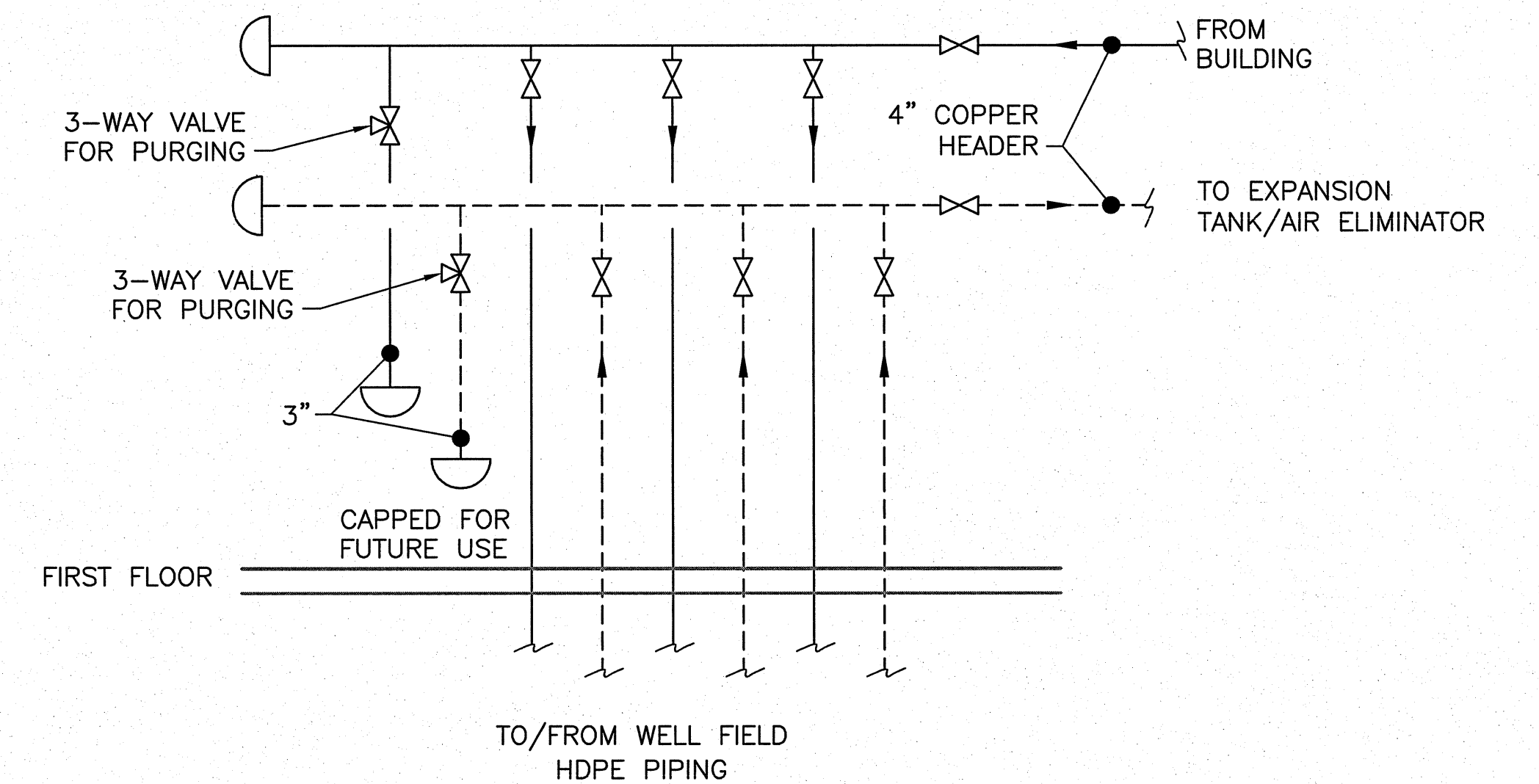


**BURIED GEOTHERMAL PIPE DETAIL**  
SCALE: NOT TO SCALE

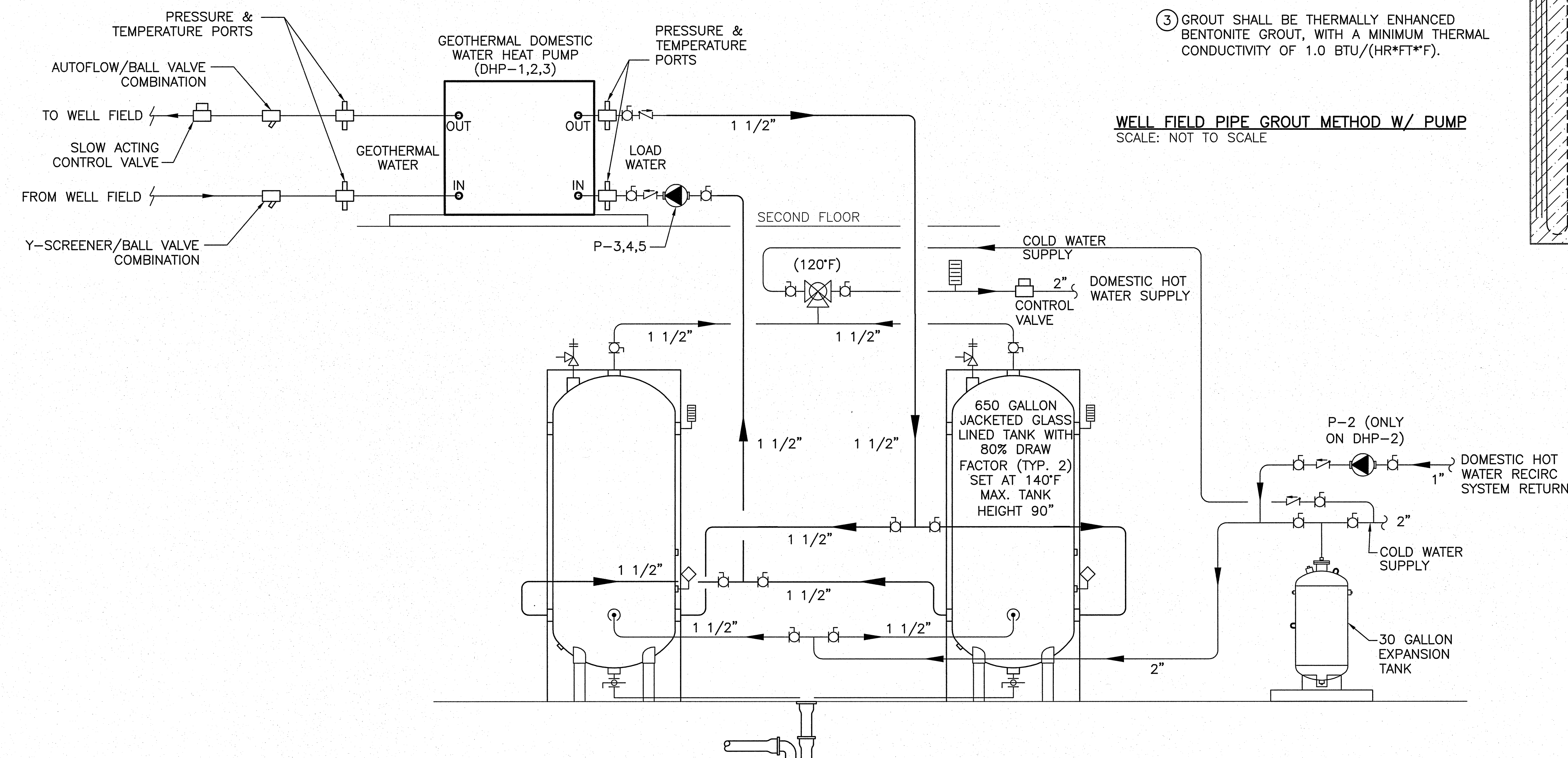


- NOTES:**
- 1 PRESSURIZED GROUT SHALL BE PUMPED FROM THE BOTTOM TO THE TOP OF BOREHOLE.
  - 2 BEFORE GROUTING IS PERFORMED, CONTRACTOR SHALL VERIFY WELL DEPTH. DEPTHS SHALL BE RECORDED BY THE CONTRACTOR'S QUALITY CONTROL EMPLOYEE, KEPT AS SEPERATE LOG. IF THE DEPTH IS NOT AS SPECIFIED, GROUTING SHALL BE STOPPED UNTIL WELL DRILLER HAS DRILLED THE WELL TO THE SPECIFIED LENGTH.
  - 3 GROUT SHALL BE THERMALLY ENHANCED BENTONITE GROUT, WITH A MINIMUM THERMAL CONDUCTIVITY OF 1.0 BTU/(HR\*FT\*F).

**WELL FIELD PIPE GROUT METHOD W/ PUMP**  
SCALE: NOT TO SCALE



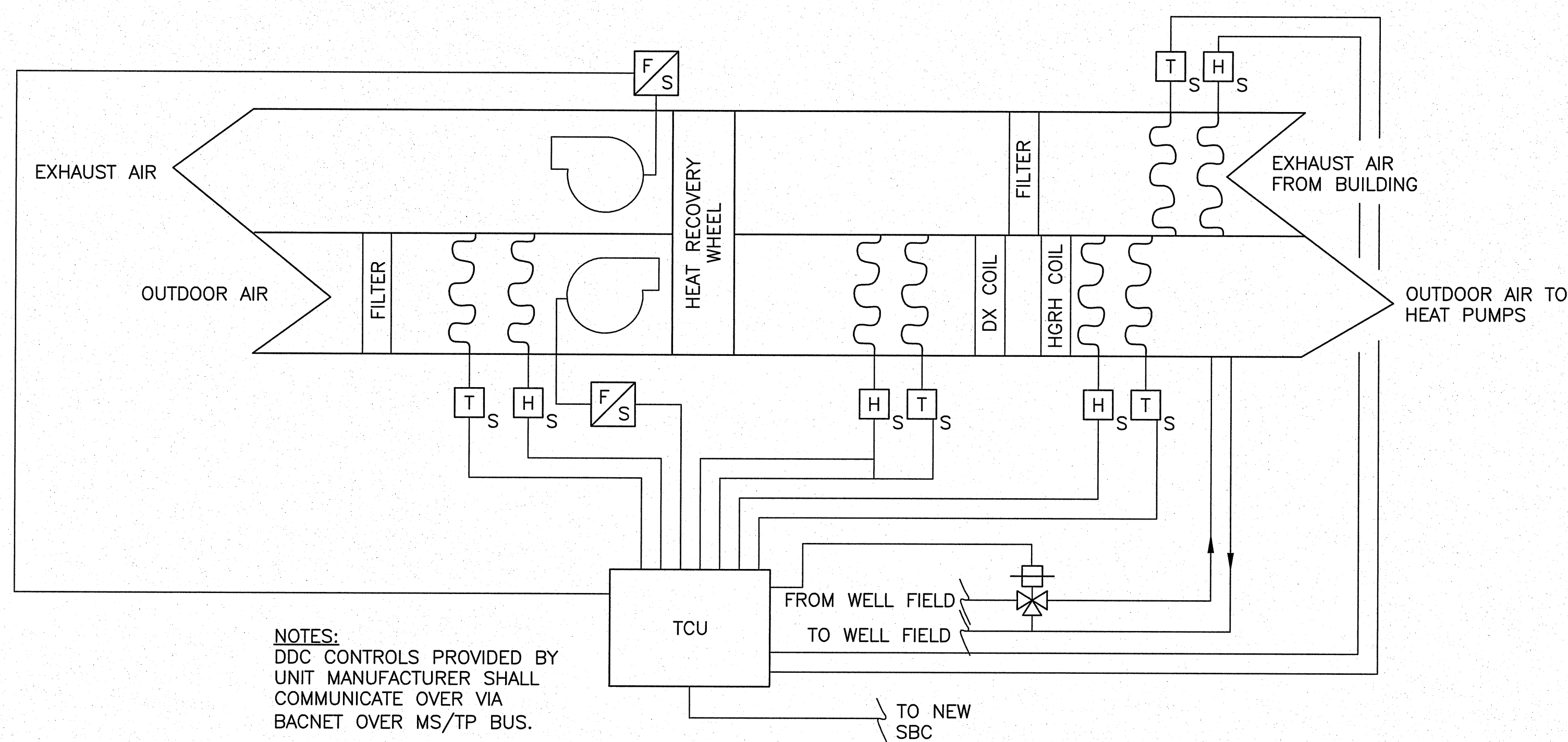
**HEADER PIPING DETAIL**  
SCALE: NOT TO SCALE



**DOMESTIC GEOTHERMAL HEAT PUMP AND HOT WATER STORAGE TANK PIPING DIAGRAM**  
SCALE: NOT TO SCALE

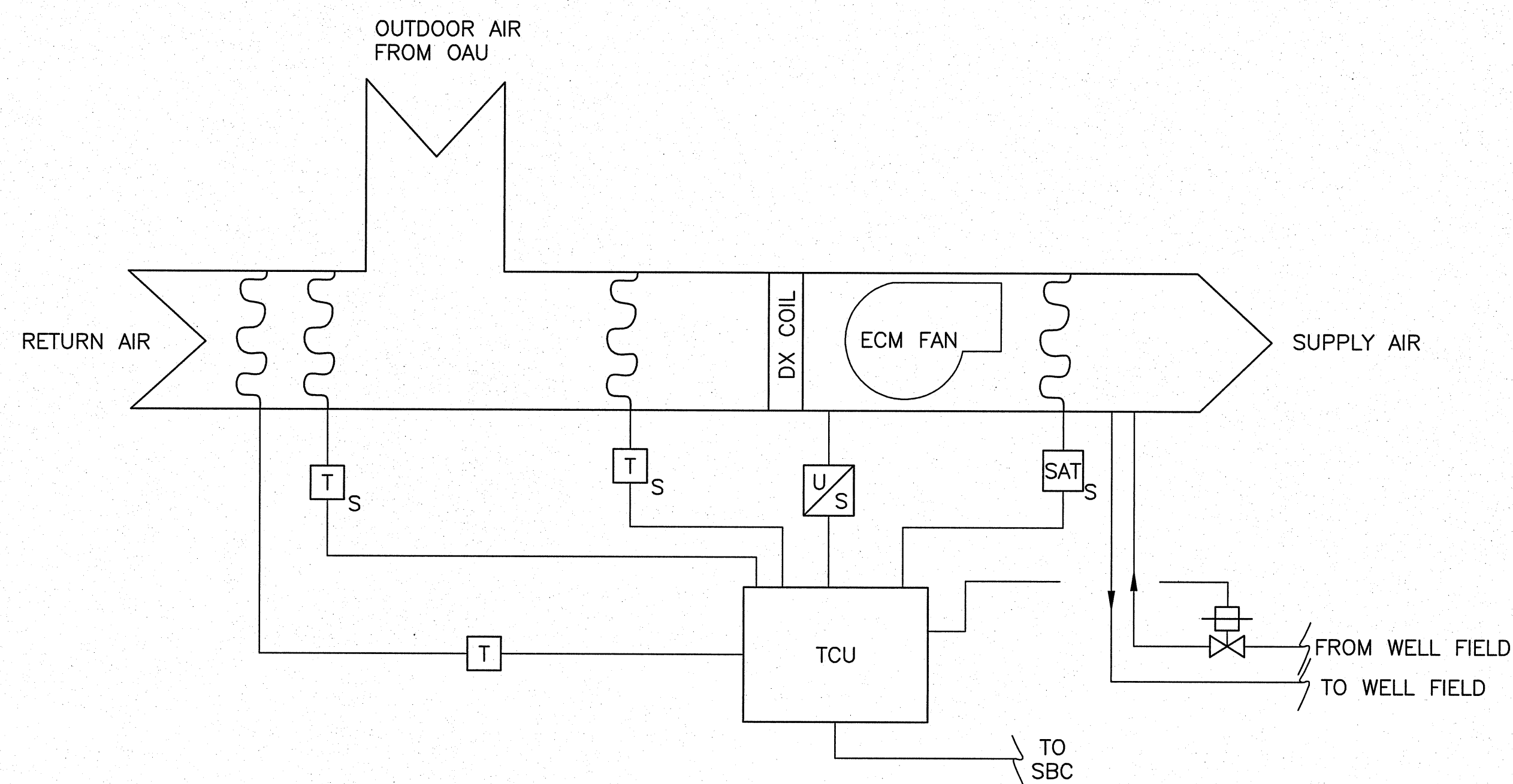
<b>M-502</b>	
<b>C/E M/S</b> ENGINEERING	CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29459 (704) 375-3007 (704) 375-4509 www.cemsgroup.com CEMS Project #00156V Project Manager: P. Mahaffey
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
REPAIR BEQ BUILDING HP485	
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC	MECHANICAL DETAILS NAVFAC DRAWING NO. 60007180 CONST. CONTR. NO. N40085-10-B-0070
SATISFACTORY TO: DATE	F 80091
SCALE: AS NOTED SPEC. 05-10-0070 SHEET 40 OF 65	



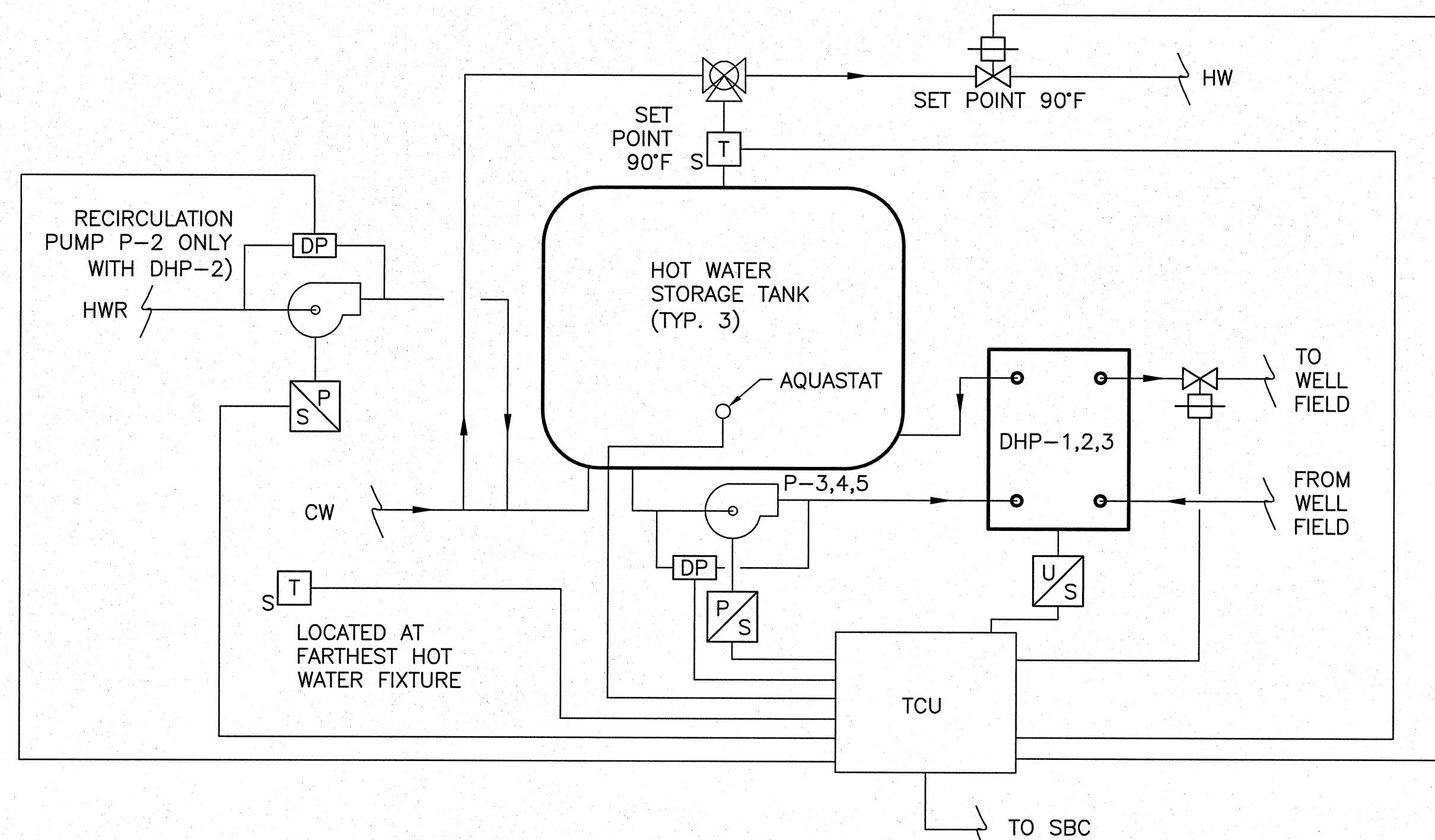


NOTES:  
DDC CONTROLS PROVIDED BY  
UNIT MANUFACTURER SHALL  
COMMUNICATE OVER VIA  
BACNET OVER MS/TP BUS.

**OUTDOOR AIR UNIT (OAU TYPICAL) CONTROL DIAGRAM**  
SCALE: NOT TO SCALE



**GEOTHERMAL HEAT PUMP (HP TYPICAL) CONTROL DIAGRAM**  
SCALE: NOT TO SCALE



**DOMESTIC GEOTHERMAL WATER SOURCE HEAT PUMP CONTROL DIAGRAM**  
SCALE: NOT TO SCALE

**SEQUENCE OF OPERATION:**

BUILDING CONSISTS OF LOCALIZED COOLING/HEATING SYSTEMS CONSISTING OF GEOTHERMAL HEAT PUMPS (HP). DOMESTIC HOT WATER WILL BE GENERATED VIA A WATER TO WATER GEOTHERMAL HEAT PUMP (DHP). EACH HP, OAU, AND DHP WILL BE CONNECTED TO A COMMON GEOTHERMAL WELL FIELD.

**OUTDOOR AIR UNIT (GEOTHERMAL HEAT PUMP) SEQUENCE OF OPERATION:**

A PROGRAMMABLE CONTROLLER CAPABLE OF STANDALONE OPERATION WILL CONTROL THE OUTDOOR AIR UNIT (OAU), SUBJECT TO OCCUPANCY SCHEDULES AND OCCUPANCY OVERRIDES THROUGH THE SUPERVISORY BUILDING CONTROLLER (SBC).

GENERAL: THE OAU CONSISTS OF A BUILT-UP FAN HOUSING, A HEATING/COOLING COIL WITH HOT GAS REHEAT AND A HEAT RECOVERY WHEEL PRETREATING OUTDOOR AIR CONTROLLED THROUGH THE DDC SYSTEM.

THE SEQUENCE OF OPERATION SHALL BE INITIATED BY THE DDC SYSTEM SCHEDULE.

IN THE OCCUPIED MODE, THE UNIT FANS AND HEAT RECOVERY WHEEL SHALL RUN CONTINUOUSLY.

IN THE UNOCCUPIED MODE THE UNIT SHALL BE DE-ENERGIZED.

3-WAY CONTROL VALVE: UPON A CALL FOR HEATING OR COOLING, THE 3-WAY CONTROL VALVE SHALL PROVIDE THE SCHEDULED FLOW RATE TO THE RESPECTIVE OAU. IN THE EVENT THAT HEATING OR COOLING IS NOT NEEDED, THE 3-WAY CONTROL VALVE SHALL ACT AS A GEOTHERMAL WATER BYPASS.

HEATING MODE: UNIT SHALL HEAT AIR TO 65°F. UNIT SHALL BE IN HEATING MODE WHEN OUTDOOR AIR IS 50°F OR BELOW.

COOLING MODE: UNIT SHALL COOL AIR TO 53°F TO DEHUMIDIFY, FOLLOWED BY HOT GAS REHEAT TO DISCHARGE OUTDOOR AIR AT 69°F. UNIT SHALL BE IN COOLING MODE WHEN OUTDOOR AIR IS 65°F OR ABOVE.

SAFETIES: UPON AN ALARM SIGNAL FROM THE SITE BUILDING CONTROLLER (SBC) THE UNIT SHALL DE-ENERGIZE.

WHEN OPERATING STATUS OF UNIT IS NOT PROVEN THE CONTROLLER SHALL DE-ENERGIZE THE UNIT AND AN ALARM SHALL BE DISPLAYED AT THE OPERATOR'S WORKSTATION.

**GEOTHERMAL HEAT PUMP (HP) SEQUENCE OF OPERATION:**

A PROGRAMMABLE CONTROLLER CAPABLE OF STANDALONE OPERATION WILL CONTROL THE GEOTHERMAL WATER SOURCE HEAT PUMP (HP), SUBJECT TO OCCUPANCY SCHEDULES AND OCCUPANCY OVERRIDES THROUGH THE SITE BUILDING CONTROLLER (SBC).

THE SEQUENCE OF OPERATION SHALL BE INITIATED BY THE DDC SYSTEM SCHEDULE.

IN THE OCCUPIED MODE THE UNIT SHALL MAINTAIN 75°F IN COOLING MODE AND 70°F IN HEATING MODE. THE UNIT SHALL PROVIDE 53°F DISCHARGE AIR TEMPERATURE IN COOLING AND 85°F IN HEATING. EACH HEAT PUMP SHALL BE PROVIDED WITH A RETURN DUCT MOUNTED THERMISTOR UPSTREAM OF THE INTRODUCTION OF OUTSIDE AIR. SPACE TEMPERATURE SHALL BE CONTROLLED BY THE SBC. EACH HP SHALL CONTINUALLY CIRCULATE AIR AT THE SPECIFIED MIN CFM ON SHEET M-604. UPON A CALL FOR HEATING OR COOLING, THE FAN SPEED SHALL BE CONTROLLED BY THE UNIT, THE CORRESPONDING SLOW ACTING CONTROL VALVE SHALL OPEN AND THE UNIT SHALL BE FULLY OPERATIONAL PER THE UNITS INTERNAL CONTROLS. WHEN THE SPACE TEMPERATURE IS SATISFIED THE COMPRESSOR SHALL DE-ENERGIZE AND THE SPECIFIED MIN CFMS SHALL BE MAINTAINED FOR CIRCULATION.

IN UNOCCUPIED MODE THE UNIT SHALL MAINTAIN 80°F IN COOLING MODE AND 60°F IN HEATING MODE.

SAFETIES: UPON AN ALARM SIGNAL FROM THE SITE BUILDING CONTROLLER (SBC) THE UNIT SHALL DE-ENERGIZE.

WHEN OPERATING STATUS OF UNIT IS NOT PROVEN THE CONTROLLER SHALL DE-ENERGIZE THE UNIT AND AN ALARM SHALL BE DISPLAYED AT THE OPERATOR'S WORKSTATION.

**DOMESTIC WATER TO WATER GEOTHERMAL HEAT PUMP SYSTEM (DHP-1,2,3, PUMPS P-3,4,5 AND P-2 RECIRC PUMP) SEQUENCE OF OPERATION:**

OCCUPIED MODE: DOMESTIC HOT WATER STORAGE TANKS SHALL MAINTAIN A TANK TEMPERATURE OF 140°F. IF TANK TEMPERATURE FALLS BELOW 135°F THE RESPECTIVE SLOW ACTING CONTROL VALVE SHALL BE OPENED AND THE RESPECTIVE DHP AND PUMP FOR EACH HOT WATER STORAGE TANK SHALL BE ENERGIZED. WHEN TANK TEMPERATURE REACHES 145°F THE RESPECTIVE SLOW ACTING CONTROL VALVE SHALL BE CLOSED AND THE RESPECTIVE DHP AND PUMP SHALL BE DE-ENERGIZED.

UNOCCUPIED MODE: ALL DHPs, ASSOCIATED PUMPS, AND RECIRCULATION PUMP SHALL BE DE-ENERGIZED.

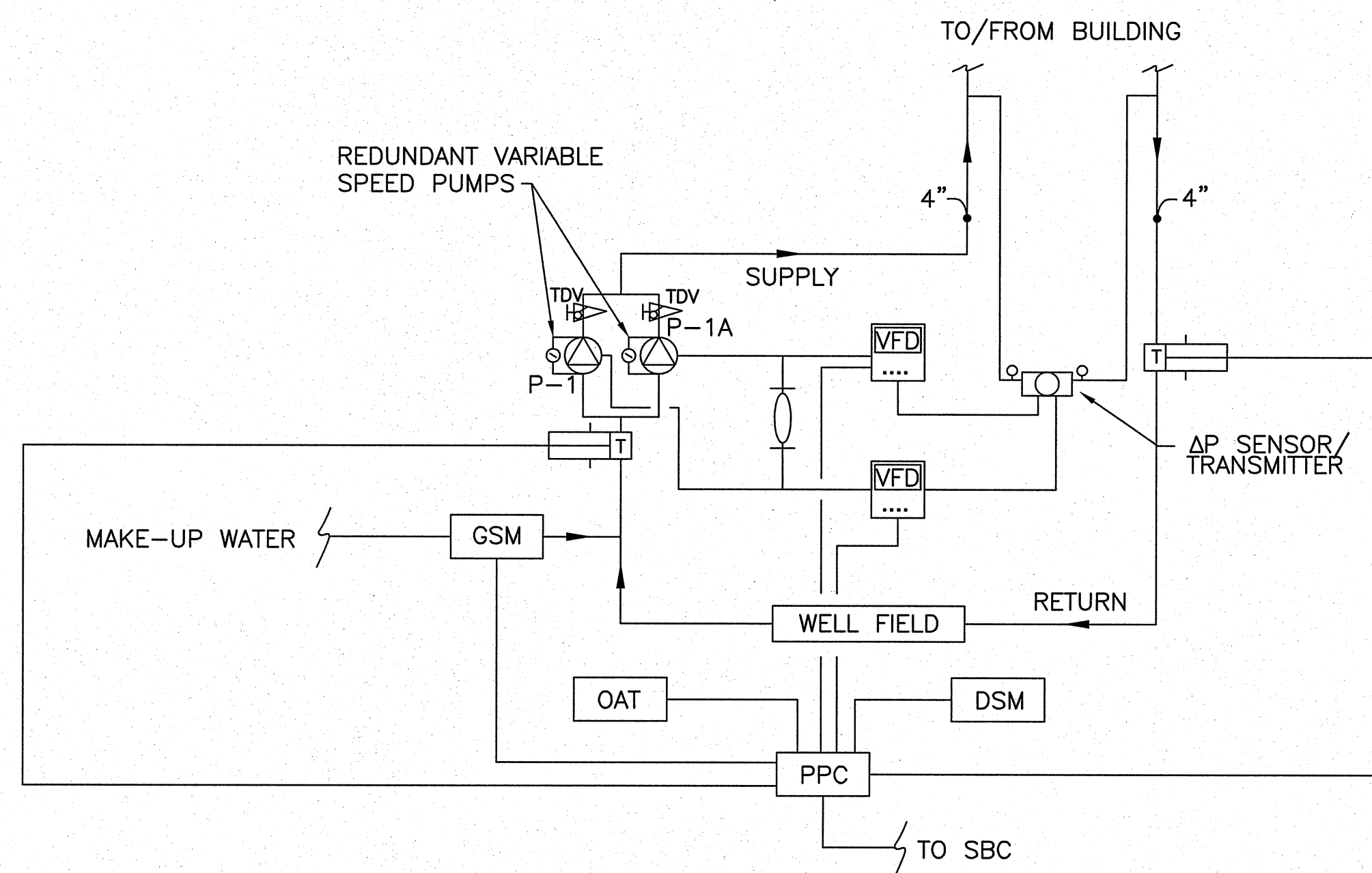
RECIRCULATION PUMP: RECIRCULATION PUMP(P-2) SHALL BE ENERGIZED IN OCCUPIED MODE IF THE TEMPERATURE SENSOR LOCATED AT THE FARTHEST HOT WATER RECEIVING FIXTURE INDICATES HOT WATER TEMPERATURES BELOW 105°F. IN THE EVENT THAT THE RECIRCULATION PUMP IS ENERGIZED THE PUMP SHALL RUN FOR 3 MINUTES BEFORE DE-ENERGIZING.

IN THE EVENT THAT THE TANK LEAVING WATER TEMPERATURE FROM A GIVEN HOT WATER TANK SYSTEM IS DETECTED BELOW 90°F THE ASSOCIATED 2-WAY CONTROL VALVE ON THE HOT WATER SUPPLY LINE SHALL BE CLOSED UNTIL TEMPERATURES ABOVE 100°F ARE PROVEN AT THE ASSOCIATED TEMPERATURE SENSOR.

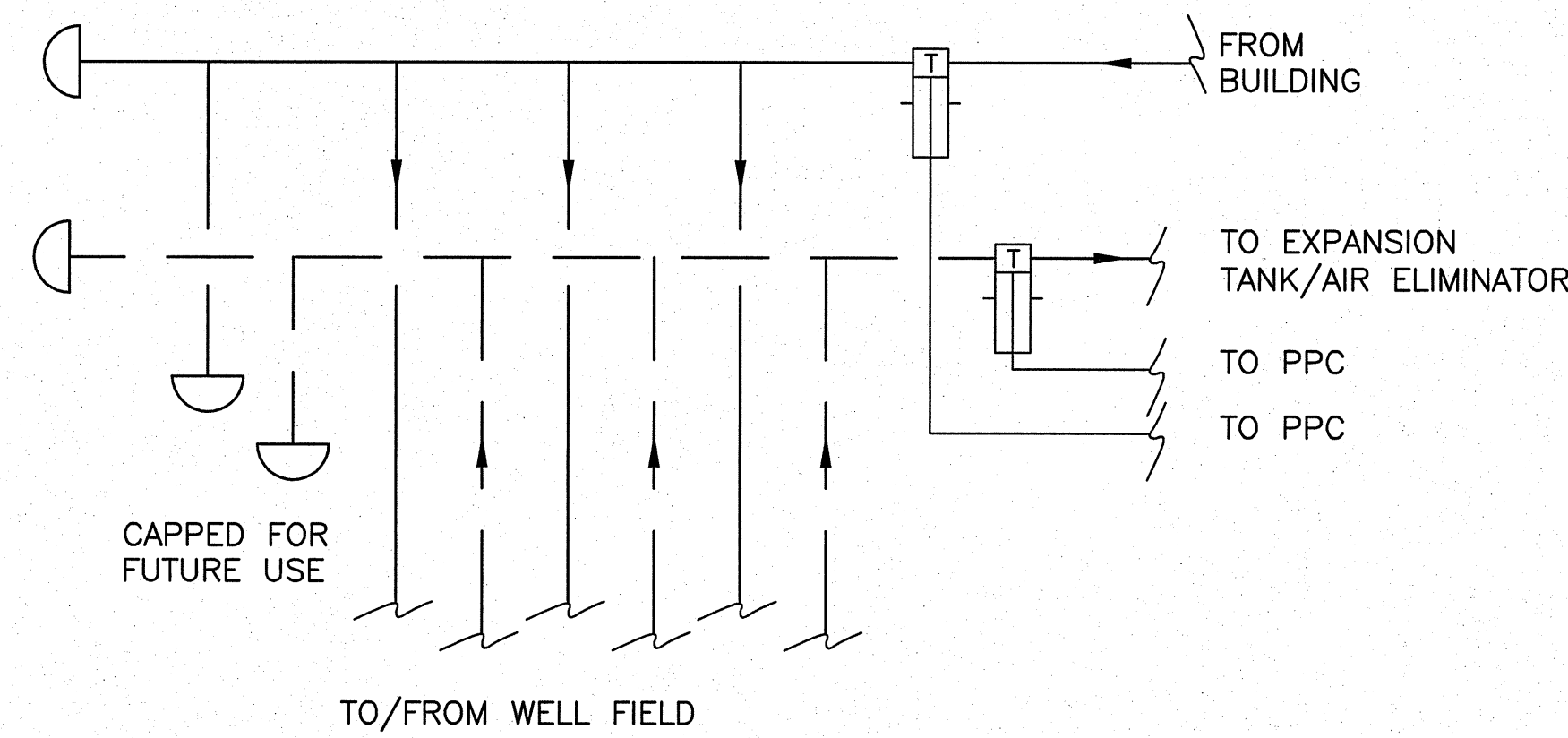
SITE BUILDING CONTROLLER SHALL INTERFACE WITH EQUIPMENT FOR STARTING/STOPPING DHPs, PUMPS, ALL EQUIPMENT AND FOR MONITORING HARDWARE INPUTS.

PROVIDE HOT WATER PUMPS WITH A HAND-OFF-AUTO SWITCH. IN THE "HAND" POSITION, THE PUMPS SHALL BE CONTROLLED MANUALLY.

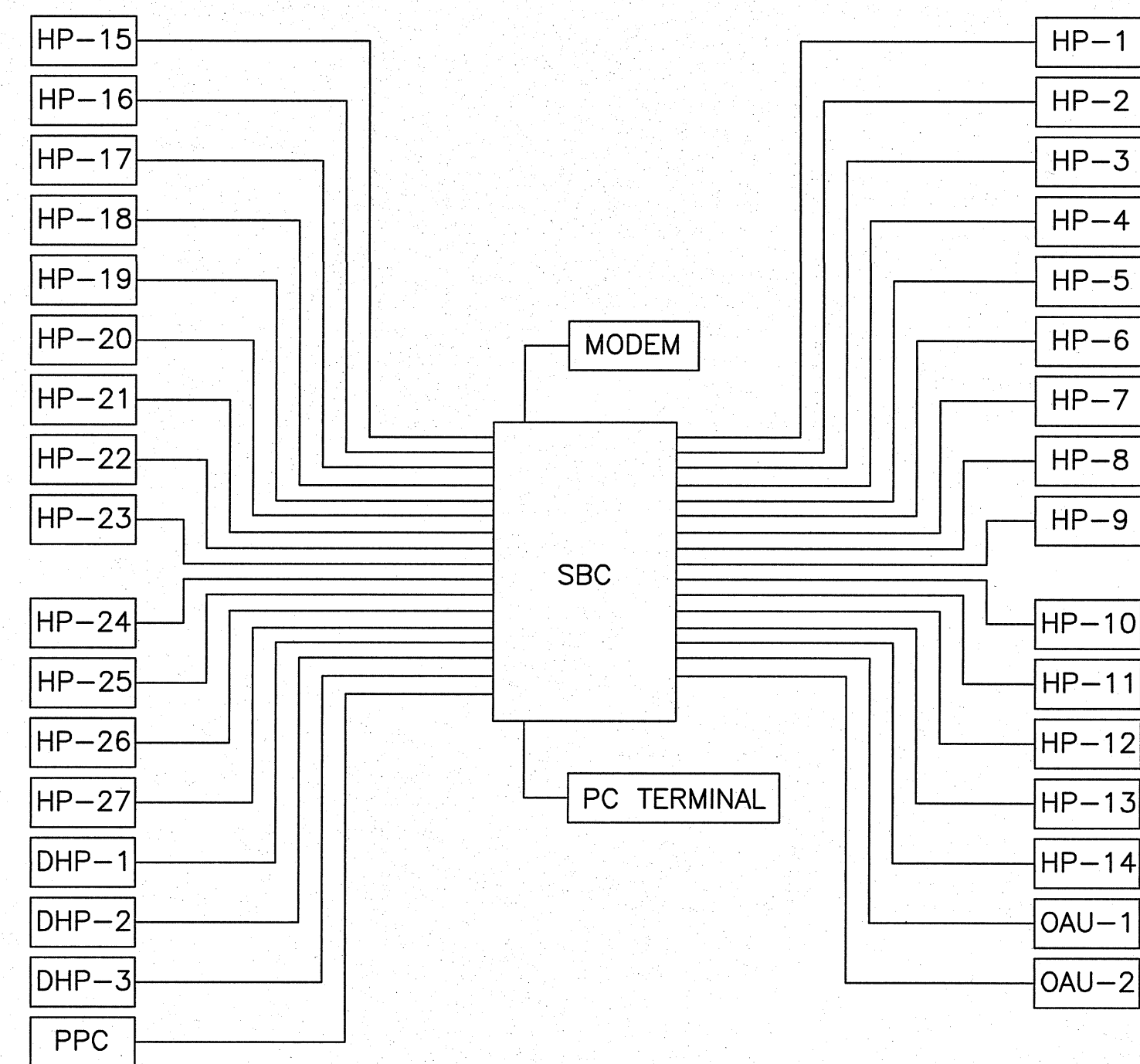
		<b>M-601</b>	
 CEMS Engineering, Inc. 3529 Iron Horse Drive Ladsen, SC 29458 (P)943.875.3627 (F)943.875.4509 www.cemsgroup.com CEMS Project #091594 Project Manager: P. Mahaffey	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		
	REPAIR BEQ BUILDING HP485		
CONTROL DRAWINGS AND SEQUENCE OF OPERATION NAVFAC DRAWING NO. <b>60007181</b>		CONST. CONTR. NO. N40085-10-B-0070	
SCALE: AS NOTED		SPEC. 05-10-0070	
SHEET 41 OF 65			



**GEOTHERMAL VARIABLE SPEED SYSTEM CONTROL DIAGRAM**  
SCALE: NOT TO SCALE



**GEOTHERMAL HEADER CONTROL DIAGRAM**  
SCALE: NOT TO SCALE



**SYSTEM NETWORK**  
SCALE: NOT TO SCALE

**GEOTHERMAL WATER SYSTEM (VARIABLE SPEED PUMPS P-1/P-1A) SEQUENCE OF OPERATION:**

UPON A CALL FOR COOLING OR HEATING FROM ANY HP, DHP, OR OAU, THE GEOTHERMAL WATER SYSTEM SHALL BE ENABLED FOR OPERATION. THE PRIMARY SYSTEM LEAD PUMP SHALL START AND RUN CONTINUOUSLY. THE HEAT PUMPS ARE INTERLOCKED WITH THE PUMPS AND SHALL NOT START UNTIL FLOW IS PROVEN. UPON FAILURE OF THE LEAD PUMP, THE LAG PUMP SHALL START UNTIL THE FAILURE IS RESOLVED. LEAD OPERATION SHALL SWITCH WEEKLY AS TO EQUALIZE RUNTIME.

THE VARIABLE SPEED DRIVE PUMPS RESPOND TO A DIFFERENTIAL PRESSURE SENSOR/TRANSMITTER WHICH IS SENSING ACROSS TYPICAL SUPPLY-RETURN BRANCH. UPON AN INCREASE IN DIFFERENTIAL PRESSURE THE CONTROLLER WILL OPERATE THE PUMPS AT A LOWER SPEED TO MAINTAIN THE ADJUSTABLE SETPOINT. UPON A DECREASE IN DIFFERENTIAL PRESSURE THE CONTROLLER WILL OPERATE THE PUMPS AT A HIGHER SPEED TO MAINTAIN THE ADJUSTABLE SETPOINT. THE DIFFERENTIAL PRESSURE SENSOR SHALL BE LOCATED AT THE LAST PIPING CIRCUIT TO MAXIMIZE PUMP SAVINGS.

PROVIDE PUMPS WITH A HAND-OFF-AUTO SWITCH. IN THE "HAND" POSITION, THE PUMPS SHALL BE CONTROLLED MANUALLY. PUMPS SHALL BE PROVIDED WITH AN ALTERNATOR TO PROMOTE EVEN WEAR (PUMPS SHALL NOT OPERATE IN PARALLEL).

GEOTHERMAL WATER SUPPLY AND RETURN TEMPERATURES TO BE MONITORED. TEMPERATURE SENSORS SHOULD BE INSTALLED IN THE GEOTHERMAL WATER LINES IN MECHANICAL ROOM 150. ONE SENSOR TO BE LOCATED IN THE GEOTHERMAL SUPPLY LINE AFTER GROUPING IN VALVE HEADER AND BEFORE ENTERING THE PUMP. AN ADDITIONAL SENSOR SHALL BE PLACED IN THE GEOTHERMAL RETURN LINE BEFORE SPLITTING AT THE VALVE HEADER. TEMPERATURES TO BE RECORDED CONTINUOUSLY AT 5 MINUTE INTERVALS.

UPON DETECTION OF WATER FLOW THROUGH THE GEOTHERMAL MAKE-UP WATER SMART WATER METER AN ALARM SHALL BE DISPLAYED AT THE OPERATORS DESK, INDICATING A LEAK IN THE GEOTHERMAL SYSTEM.

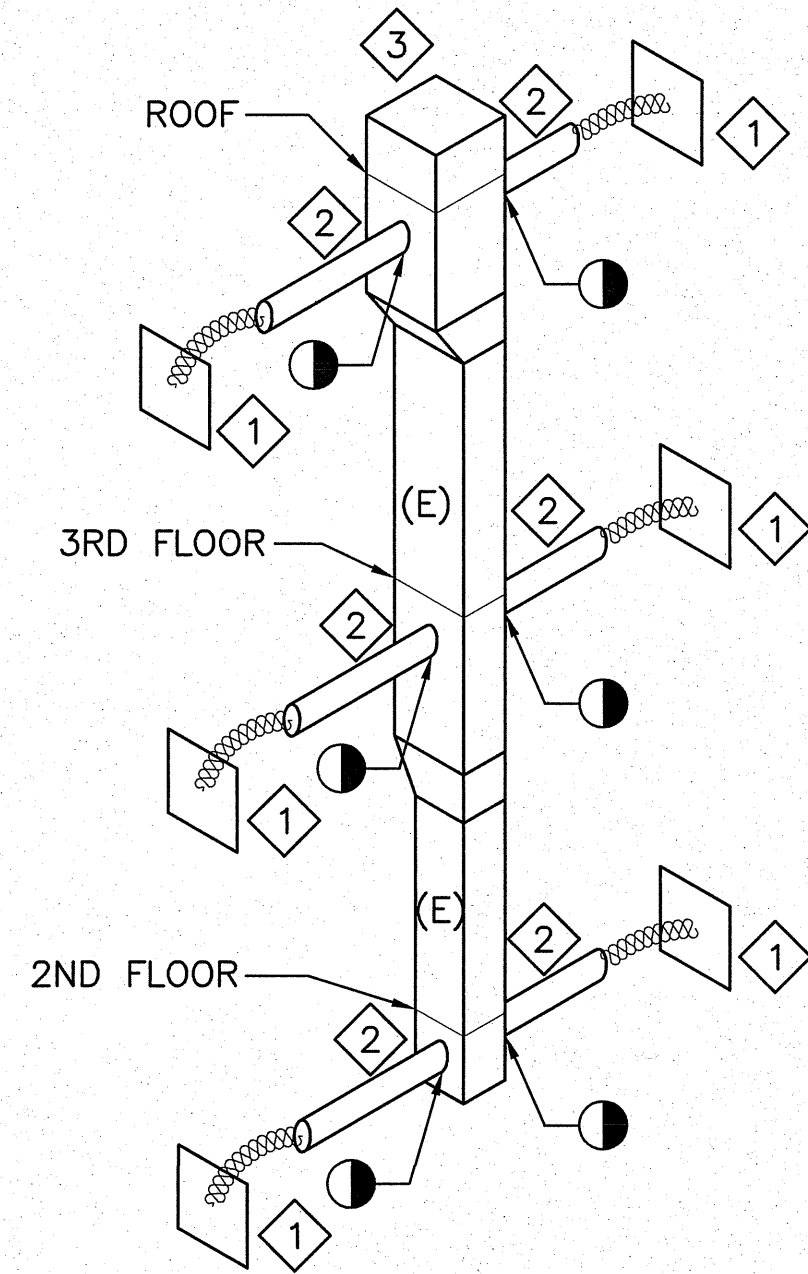
**EMERGENCY SHUT DOWN:**

A MOMENTARY SWITCH WITH COVER IN THE DUTY ROOM OR AN EMERGENCY SHUTDOWN CALL FROM THE SBC SHALL DE-ENERGIZE ALL HEAT PUMPS, OUTDOOR AIR UNITS, AND DOMESTIC WATER HEAT PUMPS, AND THE MOTOR OPERATED DAMPERS ON OUTDOOR AIR AND EXHAUST DUCTS IN MECHANICAL ROOMS 350 AND 351 SHALL BE CLOSED. THIS SHALL REQUIRE A RESET AT THE SUPERVISORY CONTROLLER OR A REMOTE RESET FROM THE EMCS SYSTEM.

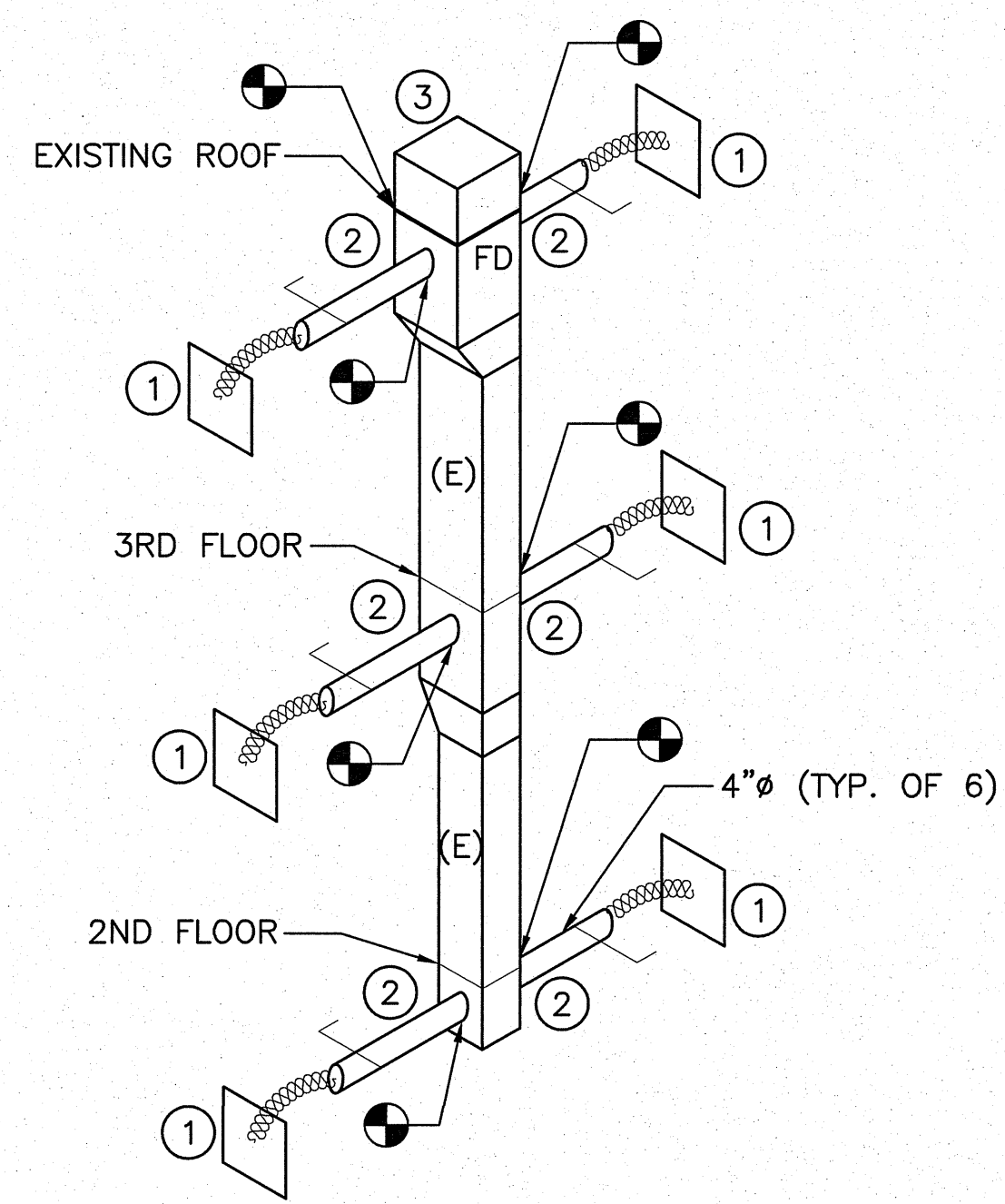
**SITE BUILDING CONTROLLER:**

SITE BUILDING CONTROLLER SHALL COMMUNICATE WITH JCI BASE WIDE MONITORING SYSTEM.

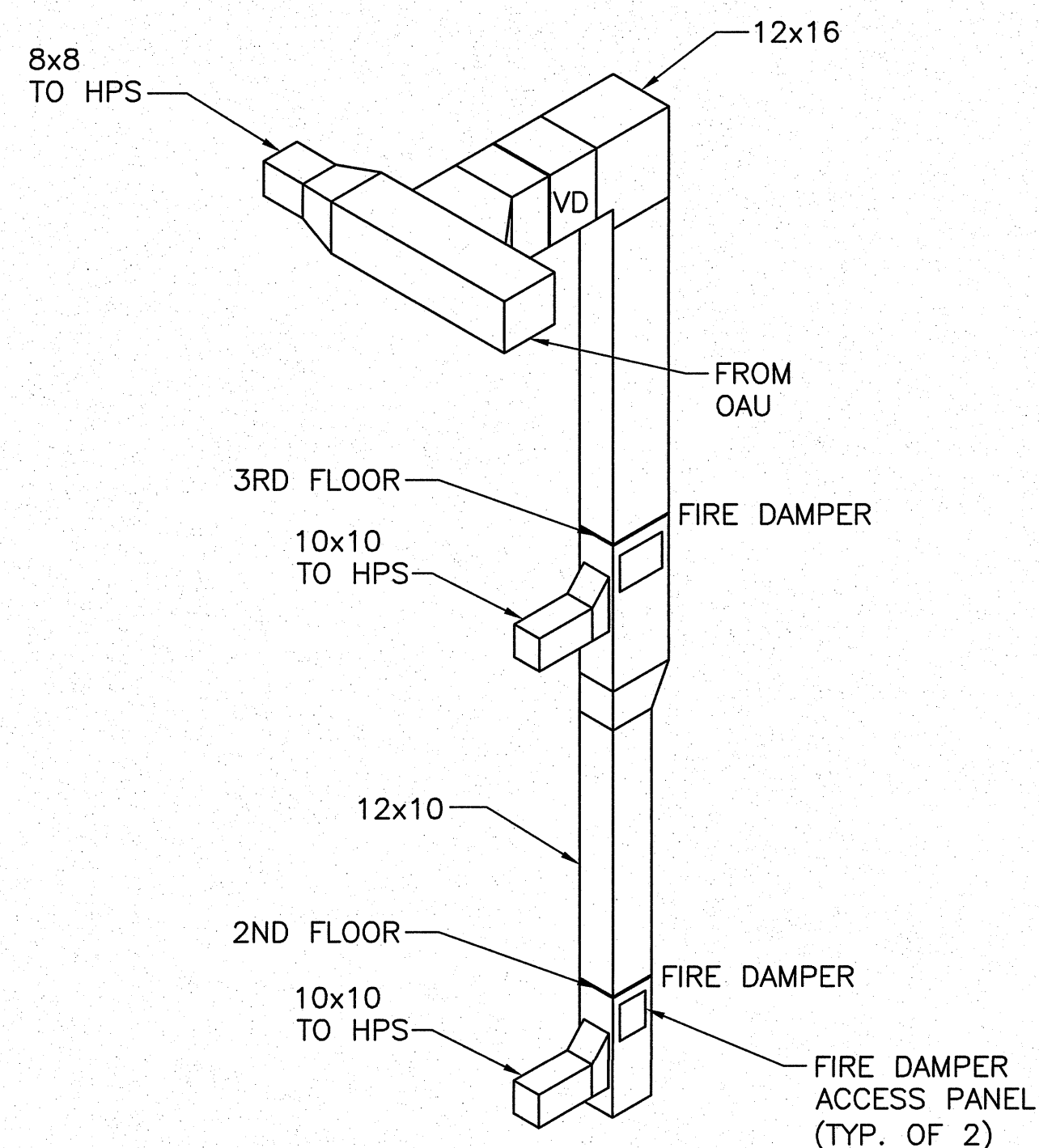
		<b>M-602</b>	
 CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29496 (794) 375-3537 (794) 375-4509 www.cemsgroup.com ©2002 Project #091594 Project Manager: P. Mahaffey		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE SATISFACTORY TO: DATE		REPAIR BEQ BUILDING HP485 CONTROL DRAWINGS AND SEQUENCE OF OPERATION NAVFAC DRAWING NO. <b>60007182</b> CONST. CONTR. NO. N40085-10-B-0070	
		F 80091 SCALE: NOTED SPEC. 05-10-0070 SHEET 42 OF 65	



TYPICAL EXHAUST RISER DIAGRAM - DEMOLITION  
SCALE: NOT TO SCALE



TYPICAL EXHAUST RISER DIAGRAM - NEW WORK  
SCALE: NOT TO SCALE



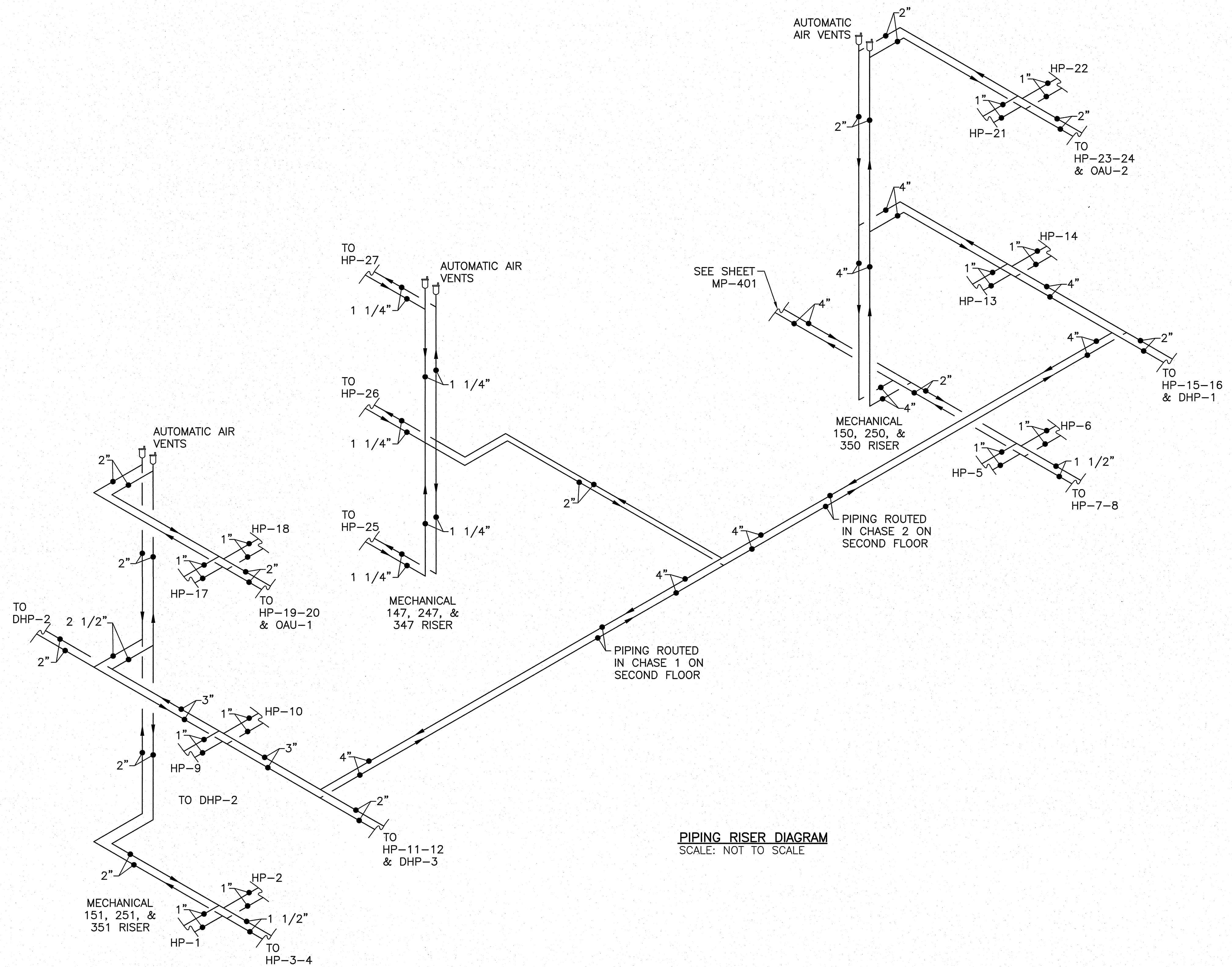
OUTDOOR AIR RISER (TYP. OF 2)  
SCALE: NOT TO SCALE

**DEMOLITION KEYNOTES:**

- ① REMOVE EXISTING SIDEWALL EXHAUST GRILLE.
- ② REMOVE EXISTING FLEX DUCT BACK TO EXISTING RISER.
- ③ CUT DOWN EXISTING EXHAUST RISER AS NEEDED FOR INSTALLATION OF NEW FIRE DAMPER AT THE EXISTING ROOF LINE.

**NEW WORK KEYNOTES:**

- ① PROVIDE AND INSTALL NEW SIDEWALL EXHAUST GRILLE IN EXISTING WALL OPENING.
- ② CONNECT NEW DUCT TO EXISTING RISER.
- ③ PROVIDE AND INSTALL FIRE DAMPER AT EXISTING ROOF LINE AND EXTEND NEW EXHAUST DUCT INTO ATTIC. SEE SHEET MH-102 FOR CONTINUATION.



PIPING RISER DIAGRAM  
SCALE: NOT TO SCALE

		<b>M-603</b>	
	CEMS Engineering, Inc. 3509 Iron Horse Drive Lufkin, SC 29656 (7843.875.5657) www.cemsgroup.com Project Manager: P. Mahaffey		
	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR.		<b>REPAIR BEQ</b> <b>BUILDING HP485</b> MECHANICAL DEMOLITION AND NEW WORK ISOMETRIC RISER DIAGRAMS	
APPROVED: PWO OR OICC	DATE	SIZE CODE IDENT NO.	NAVFAC DRAWING NO.
		F 80091	60007183
SATISFACTORY TO:	DATE	CONSTR. CONTR. NO. N40085-10-B-0070	
		SCALE: NONE	SPEC. 05-10-0070 SHEET 43 OF 65

### OUTDOOR AIR WATER SOURCE HEAT PUMP SCHEDULE

TAG	SUPPLY FAN		EXHAUST FAN		ROTARY HEAT WHEEL						COOLING CAPACITY @ 95°F ENTERING WATER (MBTUH)					HEATING CAPACITY @ 60°F ENTERING WATER (MBTUH)				SYS. VOLTS	FILTER	NOTES	GEOTHERMAL WATER FLOW (GPM)	PRES. DROP (FT HD)	DESIGN BASIS			
	SUPPLY CFM	EXHAUST CFM	HP	ESP IN WG	HP	ESP IN WG	EFFECTIVENESS	SUPPLY 'FDB/'FWB	EXHAUST 'FDB/'FWB	O/A ENTR. 'FDB/'FWB	MAX COIL FACE VELOCITY (FPM)	COIL LEAVING AIR 'FDB/'FWB	REHEAT LEAVING AIR °F	TOTAL	SENS.	EER WITH WHEEL	O/A ENTR. 'FDB/'FWB	LEAVING AIR	CAP.							COP WITH WHEEL		
OAU-1&2	1500	1500	1.5	0.5	1.0	0.5	75%	90.0/79.0 78.8/67.3	23.0/19.3 56.7/46.0	75.0/50% 86.2/75.4	68.0/35% 34.3/29.1	82.5/71.5	350	53/53	69.0	89.3	48.0	19.2	45.5	68.0 °F	24.4	5.5	208/60/3	2" PLEATED	①②③④⑤⑥⑦⑧⑨	16.8	12.6	GREENHECK ERCH-20M-15

**NOTES:**

- ① PROVIDE WITH SINGLE POINT POWER CONNECTION.
- ② EER REQUIREMENTS ARE MINIMUM ARI STANDARDS AND SHALL INCLUDE FAN MOTOR HEAT ADDITION.
- ③ FAN SECTIONS SHALL BE FACTORY PROVIDED WITH INTERNAL VIBRATION ISOLATION.
- ④ UNITS TO COME WITH SEA COAST CORROSION RESISTANT COATING.
- ⑤ PROVIDE WITH FACTORY INSTALLED DRAIN PAN AND FLOAT SWITCH FOR AUTOMATIC SHUT DOWN OF UNIT UPON HIGH CONDENSATE LEVELS.
- ⑥ UNIT SHALL BE FURNISHED WITH PREMIUM EFFICIENCY MOTORS.
- ⑦ UNIT SHALL BE FACTORY TESTED COMPLETE WITH ALL APPURTENANCES INTEGRAL. EACH UNIT SHALL INCLUDE OUTSIDE AIR AND EXHAUST AIR DAMPERS WITH ACTUATORS. UNIT CASING SHALL BE INTERNALLY INSULATED WITH A MINIMUM R VALUE OF 7 AND SHALL HAVE AN INTERNAL METAL LINER. UNITS SHALL BE PROVIDED IN SECTIONS AND ASSEMBLED WITHIN MECHANICAL ROOMS. COORDAINTE SERVICE ACCESS OPENINGS WITH PLAN LAYOUTS.
- ⑧ PROVIDE UNITS WITH HOT GAS REHEAT AND HOT GAS BYPASS.

### WATER SOURCE HEAT PUMP SCHEDULE

TAG	MIN CFM	O/A CFM	ENTERING AIR	E.S.P. I.W.G.	COOLING LEAVING AIR	FULL LOAD COOLING CAPACITY @ 85°F ENTERING WATER (MBTUH)				PARTIAL LOAD COOLING CAPACITY @ 85°F ENTERING WATER (MBTUH)				HEATING LEAVING AIR	FULL LOAD HEATING CAPACITY @ 60°F ENTERING WATER (MBTUH)			PARTIAL LOAD HEATING CAPACITY @ 60°F ENTERING WATER (MBTUH)			SYS. VOLTS	WATER FLOW (GPM)	PRES. DROP (FT HD)	DESIGN BASIS
						CFM	TOTAL	SENS.	EER	CFM	TOTAL	SENS.	EER		CFM	CAP.	COP	CFM	CAP.	COP				
HP-1 THRU 6 HP-8 THRU 24	400	125	80°F DB/67°F WB	0.4	53.0 °F	800	27.0	19.7	15.9	640	19.7	14.5	18.6	85 °F	800	21.7	5.1	640	17.4	6.0	208/60/1	5.0	1.9	FLORIDA HEAT PUMP #AP025
HP-7	400	125	80°F DB/67°F WB	0.4	53.0 °F	900	27.0	19.7	15.9	640	19.7	14.5	18.6	85 °F	900	21.7	5.1	640	17.4	6.0	208/60/1	5.0	1.9	FLORIDA HEAT PUMP #AP025
HP-25	0	0	80°F DB/67°F WB	0.4	53.0 °F	1200	36.5	28.9	15.2	900	26.2	21.0	20.7	85 °F	1200	32.6	5.0	900	24.4	5.0	208/60/1	9.0	5.4	FLORIDA HEAT PUMP #AP035
HP-26, 27	0	120	80°F DB/67°F WB	0.4	53.0 °F	1200	36.5	28.9	15.2	900	26.2	21.0	20.7	85 °F	1200	32.6	5.0	900	24.4	5.0	208/60/1	9.0	5.4	FLORIDA HEAT PUMP #AP035

**NOTES:**

1. PROVIDE WITH SINGLE POINT POWER CONNECTION.
2. EER REQUIREMENTS ARE MINIMUM ARI STANDARDS AND SHALL INCLUDE FAN MOTOR HEAT ADDITION.
3. FAN SECTIONS SHALL BE FACTORY PROVIDED WITH INTERNAL VIBRATION ISOLATION.
4. PROVIDE HEAT PUMPS WITH MINIMUM R-6 INSULATION ON WALL PANELS.
5. PROVIDE UNITS WITH 2" THICK DISPOSABLE FILTERS.
6. PROVIDE WITH FACTORY INSTALLED STAINLESS STEEL DRAIN PAN AND FLOAT SWITCH FOR AUTOMATIC SHUT DOWN OF UNIT UPON HIGH CONDENSATE LEVELS.
7. PROVIDE UNITS WITH ECM (ELECTRONICALLY COMMUTATED MOTORS) FANS AND TWO STAGE REFRIGERATION SYSTEMS.
8. UNITS TO HAVE BACNET CAPABLE DDC CONTROLS (PROVIDED BY UNIT MANUFACTURER OR CONTROLS CONTRACTOR).
9. MIN CFM FOR CONTINUOUS FAN ONLY OPERATION.

### DOMESTIC WATER HEAT PUMP SCHEDULE

TAG	SERVICE	TYPE	LOAD FLOW (GPM)	GEO WATER FLOW (GPM)	ENTERING LOAD FLUID (F)	LEAVING LOAD FLUID (F)	ENTERING SOURCE FLUID (F)	HEATING CAPACITY (MBTUH)	COP	REFRIGERANT	PRES. DROP (FT HD)	SET POINT TEMP (°F)	SYS. VOLTS	DESIGN BASIS
DHP-1,2,3	DOMESTIC HOT WATER	GEOTHERMAL HEAT PUMP	23.8	18.5	120	130	70	119.2	4.48	R-134A	9.0	140	208/60/3	HEAT HARVESTER #SS-10

### AIR DISTRIBUTION SCHEDULE

MARK	1	2	3	4	A	B	C	D
DESCRIPTION	SIDE WALL GRILLE	SIDE-WALL GRILLE	SUPPLY DIFFUSER	SIDE WALL GRILLE	RETURN GRILLE	EXHAUST GRILLE	RETURN GRILLE	RETURN GRILLE
MATERIAL	ALUM.	ALUM.	ALUM.	ALUM.	ALUM.	ALUM.	ALUM.	ALUM.
FINISH	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
DUCT CONNECTION SIZE	8"ø	8"ø	8"ø	6"ø	6"ø	4"ø	16x16	8"ø
FACE SIZE	8x12	8x16	24x24	8x10	8x8	8x8	20x20	8x12
MAXIMUM NC	30	30	30	30	30	30	30	30
FACE STYLE	RECT	RECT	SQUARE	RECT	SQUARE	SQUARE	SQUARE	RECT
FACE BLADE ARRANGEMENT (grilles & registers only)	N/A	N/A	N/A	N/A	PERF-ORATED	0° HORIZ	35° HORIZ	35° HORIZ
MOUNTING	SURFACE	SURFACE	LAY-IN	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
PATTERN (diffusers only)	THREE WAY	THREE WAY	N/A	THREE WAY	N/A	N/A	N/A	N/A
DAMPERS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**NOTES:**

1. A LIMITED AMOUNT OF AVAILABLE CEILING AREA MAY REQUIRE THE CEILING BE CUT TO ACCOMMODATE A SMALL GRILLE FACE IN LAY-IN AS WELL AS SURFACE MOUNT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING CEILING TYPE AND AVAILABLE SPACE WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS.
2. AIR DISTRIBUTION CALL-OUT (T) CFM MARK (T) CFM

### PUMP SCHEDULE

TAG	SERVICE	TYPE	FLOW (GPM)	HEAD (FT)	RPM	PUMP MIN. (EFF)	MOTOR DATA				DESIGN BASIS	
							DRIVES	HP	VOLTS	PHASE		HZ
P-1, P-1A	GEOTHERMAL HEAT PUMP	GEOTHERMAL PUMPS	236	51	1750	69%	VARIABLE FREQUENCY	5	208	3	60	B&G 80
P-2	DOMESTIC HOT WATER RECIRC.	INLINE PUMPS	10	17.5	3300	60%	CONSTANT SPEED	1/6	120	1	60	B&G PL-36
P-3,4,5	DOMESTIC HEAT PUMP CIRCULATOR	INLINE PUMPS	23.8	13.0	3300	60%	CONSTANT SPEED	1/6	120	1	60	B&G PL-36

### EXHAUST FAN SCHEDULE

MARK	AREA SERVED	TYPE	CFM	SP. IN. WATER	MOTOR	OPERATING POWER	FAN RPM	V/ø/HZ	DRIVE	MAX OPER. TEMP	CONTROL	NOTES	DESIGN BASIS
EF-1	RESTROOMS	IN-LINE CABINET	300	0.3	1/4 HP	0.04 HP	968	120/1/60	BELT	150°F	CONSTANT	①②③	GREENHECK BSQ-90-4

**NOTES:**

- ① PROVIDE WITH INTEGRAL BACKDRAFT DAMPERS.
- ② PROVIDE WITH SINGLE POINT POWER CONNECTION.
- ③ PROVIDE WITH INTEGRAL DISCONNECT SWITCH.

### DESIGN CONDITIONS

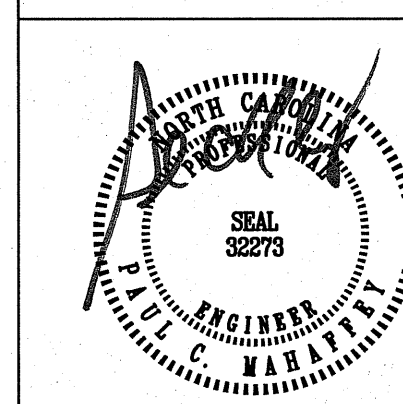
	OUTDOOR	INDOOR
SUMMER	90°DB/79°WB	75°DB/50°RH
WINTER	23°DB	68°DB

M-604

**C/E  
M/S**  
ENGINEERING

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CEMS Project #06158V  
Project Manager: P. Mahaffey

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA



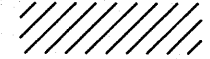











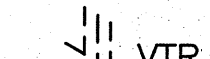











DES. J. CARR  
DR. J. BARNES  
CHK. P. MAHAFFEY  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE

REPAIR BEQ  
BUILDING HP485

MECHANICAL SCHEDULES  
NAVFAC DRAWING NO.  
**60007184**  
CONST. CONTR. NO. N40085-10-B-0070

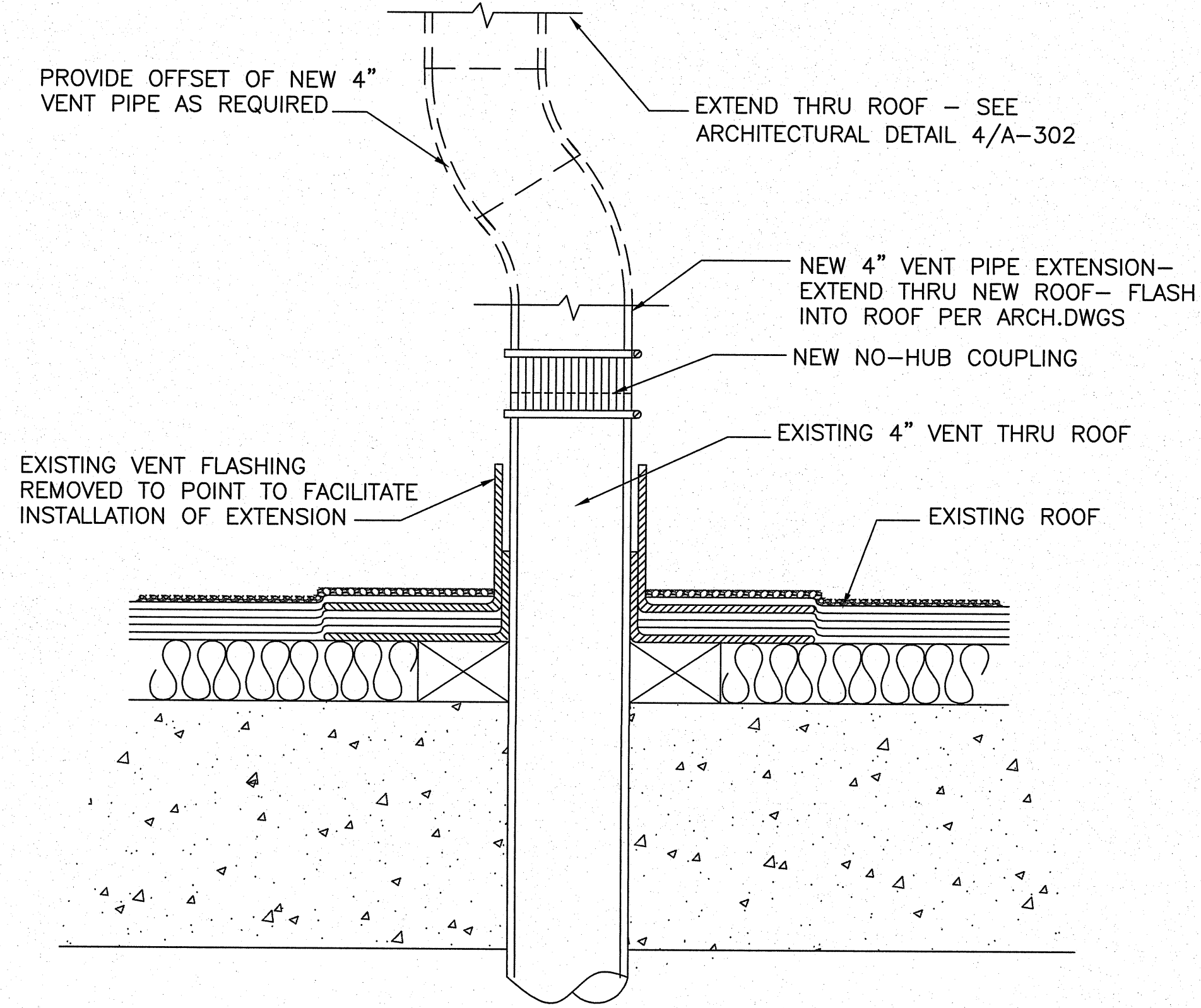
SATISFACTORY TO: DATE SCALE: AS NOTED SPEC. 05-10-0070 SHEET 44 OF 65

**LEGEND**

-  TO BE REMOVED
-  COLD WATER, CW
-  HOT WATER, HW
-  HOT WATER RECIRCULATING, HWR
-  WASTE, W
-  VENT, V
-  FLOOR CLEANOUT
-  FLOOR DRAIN
-  HUB DRAIN
-  BRANCH ISOLATION VALVE
-  WALL CLEANOUT
-  PIPE TURNING UP
-  PIPE TURNING DOWN
-  VENT THROUGH ROOF
-  POINT OF CONNECTION BETWEEN NEW AND EXISTING
-  FLOOR DRAIN W/ TRAP PRIMER
-  WATER HAMMER ARRESTOR
-  FLOOR CLEANOUT
-  POINT OF CONNECTION BETWEEN NEW AND EXISTING
-  PLUMBING FIXTURE DESIGNATION
-  DOWN
-  TYPICAL
-  DOMESTIC SMART WATER METER
-  EXISTING

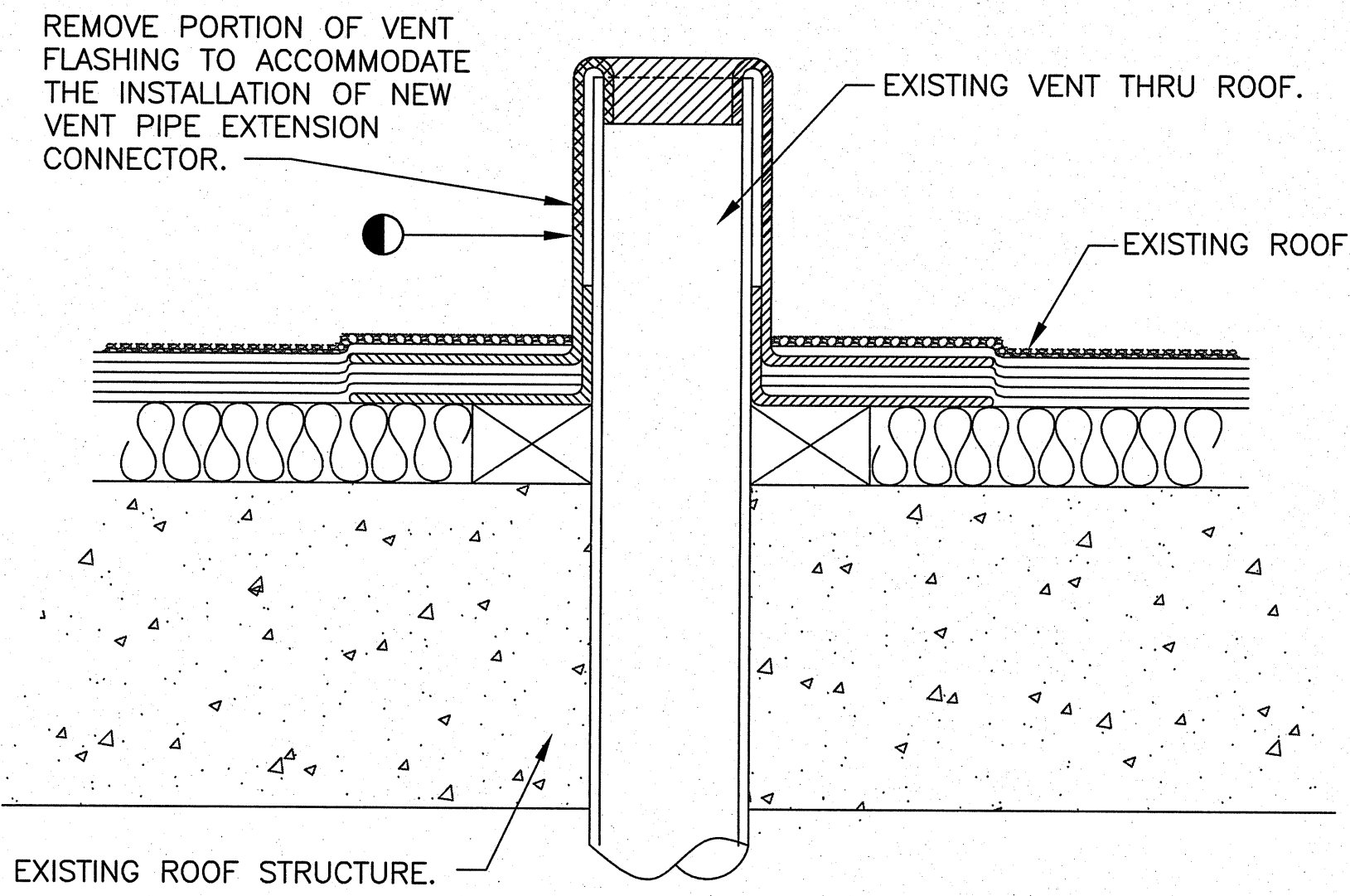
**GENERAL NEW WORK NOTES:**

1. LABOR, EQUIPMENT AND MATERIALS ARE TO BE PROVIDED TO COMPLETE THE PLUMBING WORK INDICATED ON THESE DRAWINGS AS REQUIRED BY LOCAL CODE AND ORDINANCES.
2. THE WORK SHALL INCLUDE WASTE, VENT, DOMESTIC COLD & HOT WATER PIPING, AS INDICATED ON THESE DRAWINGS. ALSO, THE HOOKUP OF FIXTURES SCHEDULED AND INSULATION OF PIPING SHALL BE INCLUDED.
3. ITEMS, SUCH AS FITTINGS, ETC. NOT MENTIONED BUT UNDERSTOOD TO BE NECESSARY TO COMPLETE THE PLUMBING SYSTEM SHALL BE INCLUDED.
4. SOIL, WASTE, VENT AND WATER PIPING MATERIALS MUST MEET OR EXCEED LOCAL CODES.
5. CLEAN OUTS FOR SOIL AND WASTE LINES AS SHOWN ON THE DRAWING MUST BE PROVIDED AND MEET OR EXCEED LOCAL CODES.
6. STUBS FOR THE DRAINAGE SYSTEM MUST BE CAPPED UNTIL FINISHED WORK IS INSTALLED.
7. WATER HAMMER ARRESTERS MUST BE PROVIDED IN ACCORDANCE WITH INTERNATIONAL PLUMBING CODES AND LOCAL ORDINANCES.
8. TRAP PRIMER VALVES SHALL BE LOCATED BELOW THE FIXTURE INDICATED. PRIMER LINES TO FLOOR DRAINS SHALL BE ROUTED DOWN INSIDE WALL AND BELOW SLAB. SEE FLOOR PLANS AND RISER DIAGRAMS.
9. LOCATE PLUMBING FIXTURES PER ARCHITECTURAL DRAWINGS. PIPING IS SHOWN IN GENERAL LOCATION. EXACT LOCATION WILL BE DETERMINED BY JOB CONDITIONS.
10. INSTALLATION SHALL BE PER PLANS AND SPECIFICATIONS AND NORTH CAROLINA PLUMBING CODE. SEE SPECIFICATIONS FOR PRODUCT AND INSTALLATION REQUIREMENTS.
11. COORDINATE LOCATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES.
12. ALL EQUIPMENT, AND PIPE ABOVE CEILING SHALL BE SUPPORTED FROM BUILDING STRUCTURE ABOVE, UNLESS OTHERWISE NOTED.

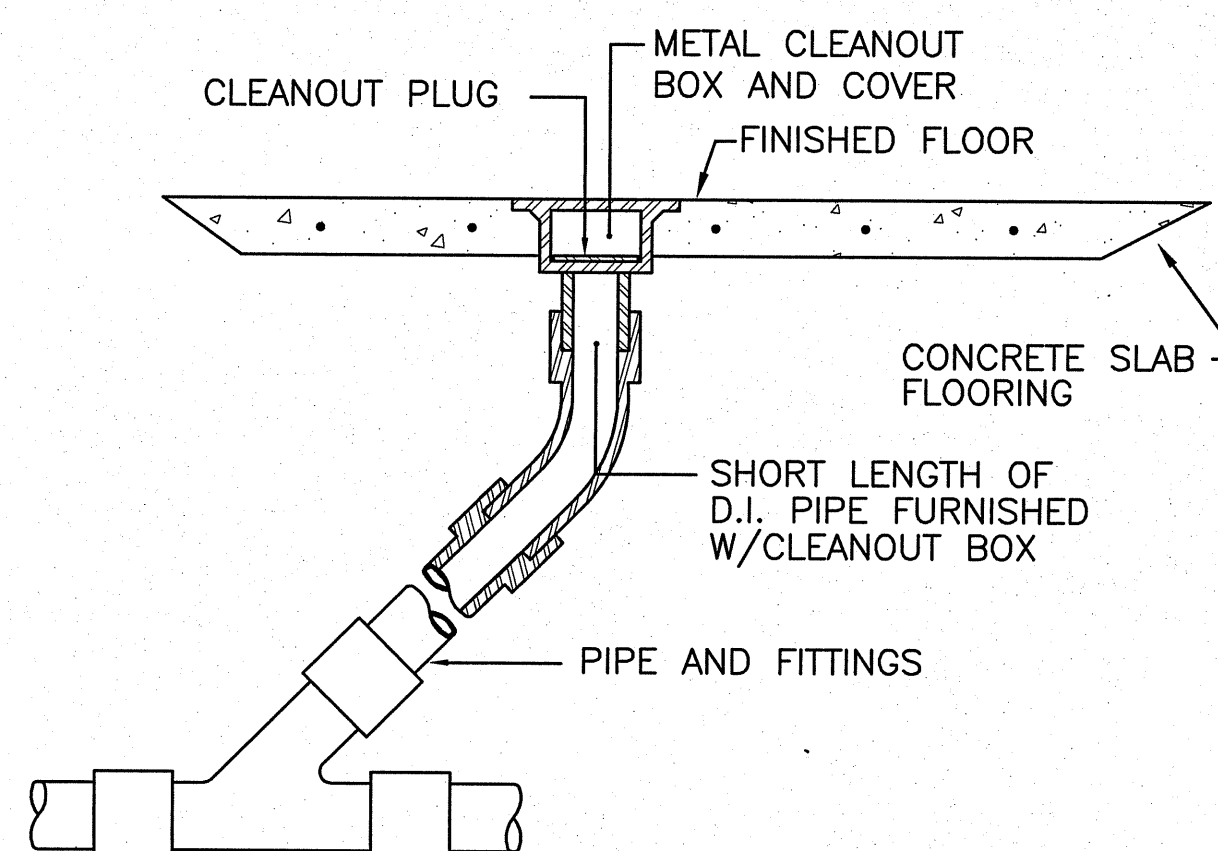


**EXISTING VENT EXTENSION DETAIL**  
SCALE: NOT TO SCALE

NOTE: CONTRACTOR SHALL HAVE THE OPTION OF PROVIDING NEW VENT EXTENSION PIPING TO MATCH EXISTING PIPE MATERIAL OR PROVIDING NEW PVC (SCH 40) EXTENSION. THE NEW NO-HUB COUPLING SHALL PROVIDE A TIGHT SEAL BETWEEN EXISTING STEEL VENT AND NEW STEEL VENT EXTENSION.



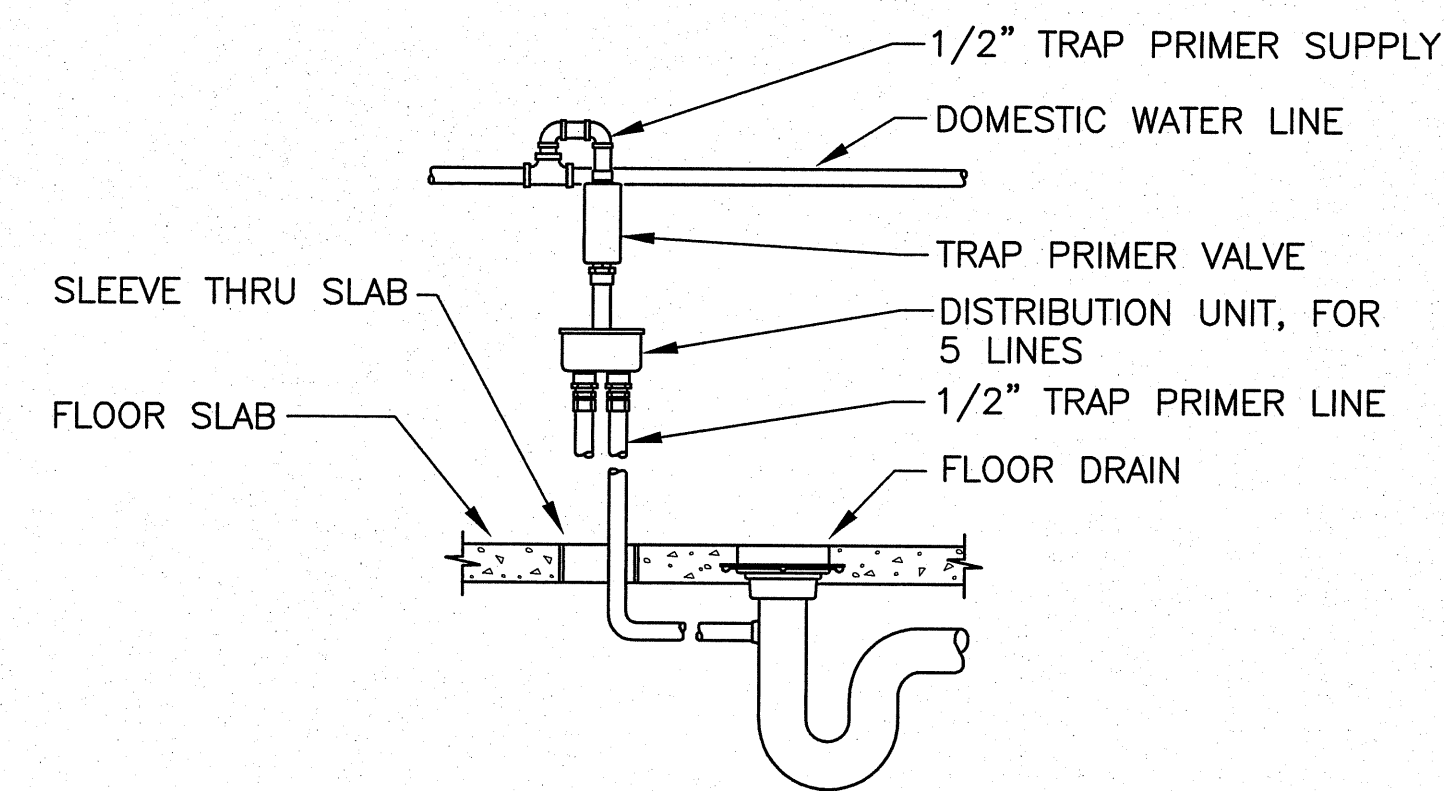
**EXISTING VENT THRU ROOF DETAIL**  
SCALE: NOT TO SCALE



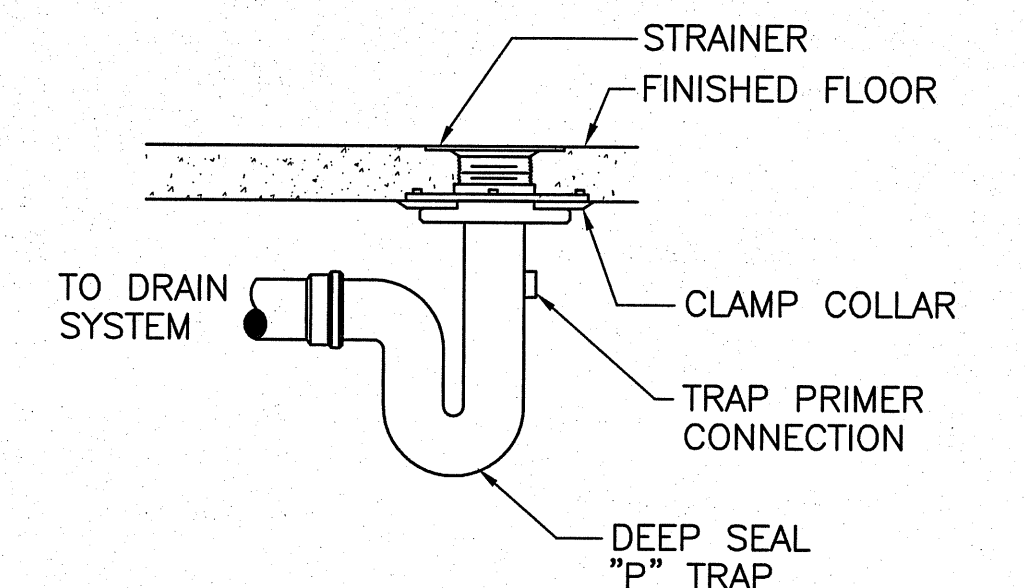
**TYPICAL FLOOR CLEANOUT DETAIL**  
SCALE: NOT TO SCALE

PLUMBING FIXTURE SCHEDULE						
SYMBOL	FIXTURE	PIPE SIZES				REMARKS
		C	W	DRAIN	VENT	
P1	DUAL FLUSH WATER CLOSET (FLUSH VALVE)	1"	--	3"	2"	SEE SPECIFICATIONS
P2	LAVATORY (COUNTER TOP)	1/2"	1/2"	1 1/4"	1 1/4"	SEE SPECIFICATIONS
P3	SHOWER	1/2"	1/2"	2"	2"	SEE SPECIFICATIONS
P4	LAVATORY (WALL HUNG)	1/2"	1/2"	1 1/4"	1 1/4"	SEE SPECIFICATIONS
P5	WASHER BOX	1/2"	1/2"	1 1/4"	1 1/4"	SEE SPECIFICATIONS
P6	WATER COOLER	1/2"	--	1 1/4"	2"	SEE SPECIFICATIONS
P7	SERVICE SINK	1/2"	1/2"	2"	2"	SEE SPECIFICATIONS
FD	FLOOR DRAIN	1/2"	--	2"	1 1/2"	SEE SPECIFICATIONS

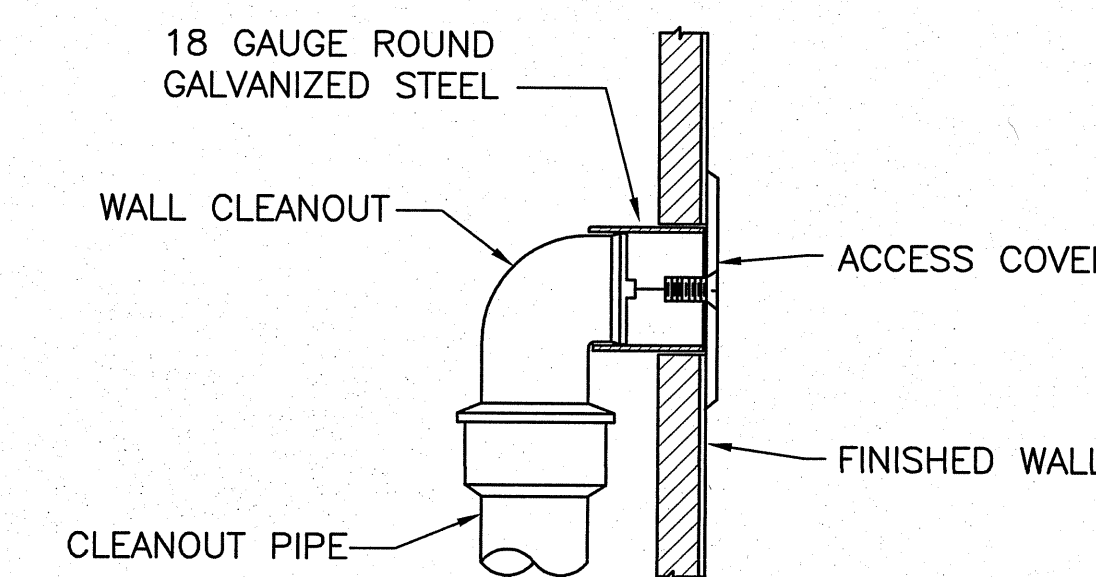
HAMMER ARRESTOR SCHEDULE			
ITEM	PDI UNIT	FIXTURE UNIT	MANUFACTURER
HA	B	12-32	JOSAM 75000 OR EQUIVALENT, ZURN, SMITH



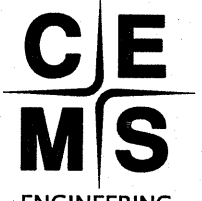
**TRAP SEAL PRIMER DETAIL**  
SCALE: NOT TO SCALE

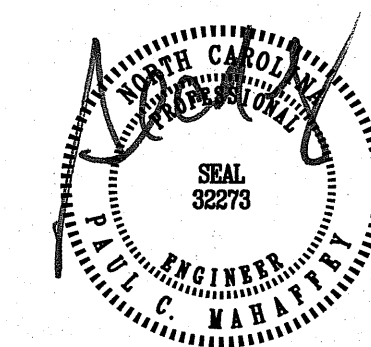


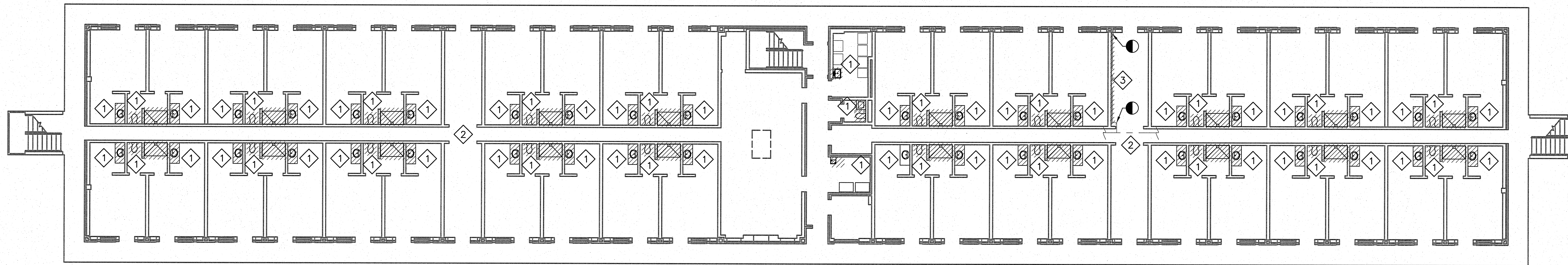
**TYPICAL FLOOR DRAIN DETAIL**  
SCALE: NOT TO SCALE



**WALL CLEANOUT DETAIL**  
SCALE: NOT TO SCALE

 CEMS Engineering, Inc. 3508 Iron Horse Drive Lenoir, NC 24556 (754) 875-3037 (754) 875-4558 www.cemsgroup.com CEMS Project #081509 Project Manager: P. Mahaffey		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		<b>P-001</b>	

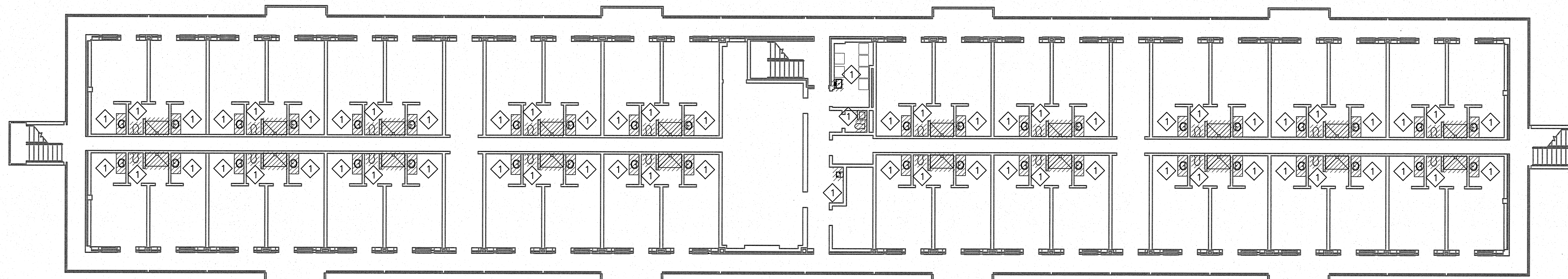




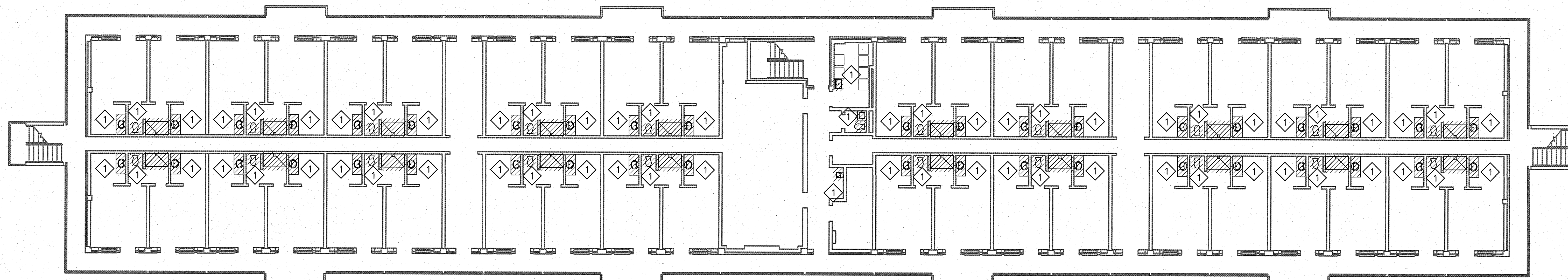
**FIRST FLOOR PLUMBING DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"

- GENERAL DEMOLITION NOTES:**
1. LOCATIONS OF EQUIPMENT, PIPING, ETC. IS DIAGRAMMATIC ONLY AND IS NOT INTENDED TO SHOW EXACT LOCATION.
  2. WHERE EQUIPMENT OR PIPING IS REMOVED AND NOT REPLACED, PATCH AND FINISH AREAS TO MATCH ADJACENT SURFACES.

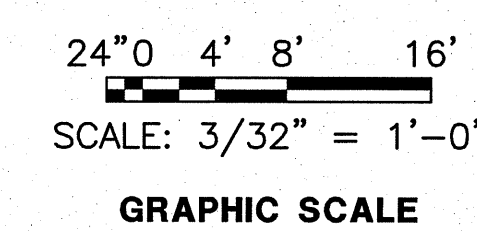
- DEMOLITION KEYNOTES:**
- 1 REMOVE ALL EXISTING PLUMBING FIXTURES. SUPPLY AND DWV PIPING TO REMAIN FOR REUSE IN NEW WORK.
  - 2 REMOVE PIPING INSULATION ON ALL EXISTING DOMESTIC COLD WATER, DOMESTIC HOT WATER, AND DOMESTIC HOT WATER RECIRCULATION PIPING IN FIRST FLOOR CHASES AND MECHANICAL ROOMS. PREPARE PIPING FOR REINSULATION.
  - 3 REMOVE SECTION OF CW SUPPLY LINE AND PREPARE FOR INSTALLATION OF NEW CW SUPPLY LINE TO ALLOW FOR CLEARANCE ABOVE NEW ELECTRICAL PANELS.



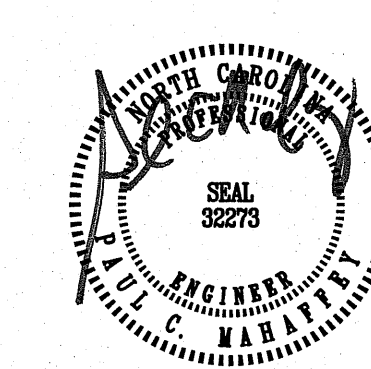
**SECOND FLOOR PLUMBING DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"

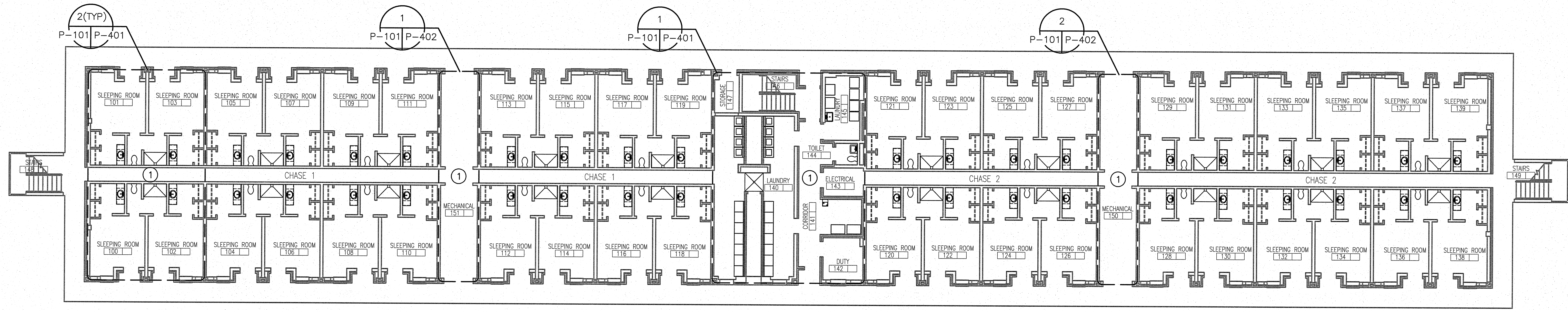


**THIRD FLOOR PLUMBING DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"

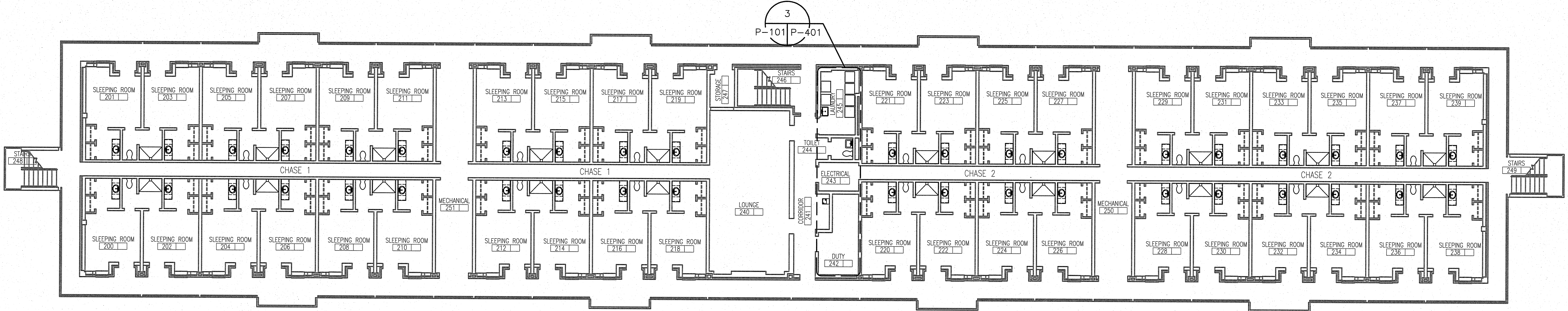


 CEMS Engineering, Inc. 5509 Iron Horse Drive Ladson, SC 29456 (714) 433-3337 (714) 433-4509 www.cemsengineering.com CEMSE Project #001500 Project Manager: P. Mahaffey		<b>PD-101</b>	
		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY:		REPAIR BEQ BUILDING HP485	
DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:		PLUMBING DEMOLITION PLAN NAVFAC DRAWING NO. <b>60007186</b>	
DATE:		SIZE CODE IDENT NO. <b>F 80091</b>	
DATE:		CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 46 OF 65	

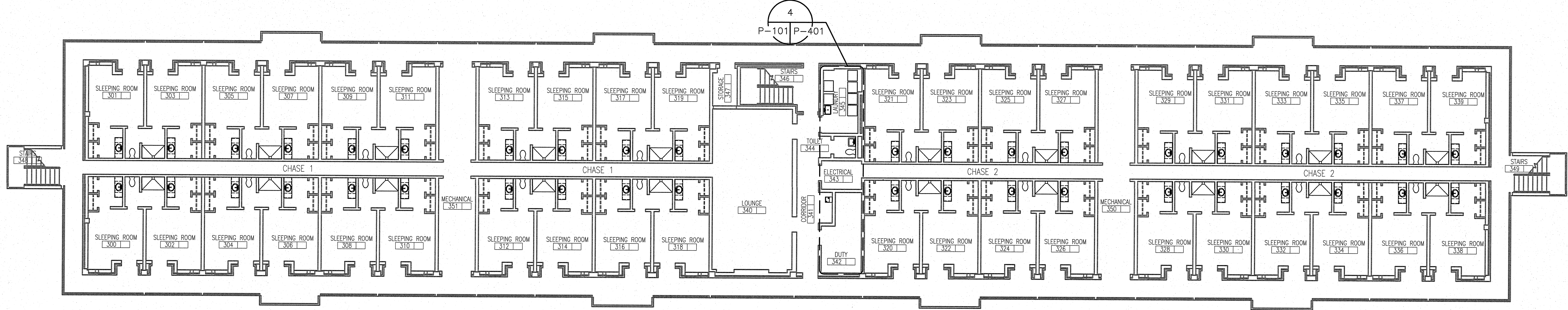




**FIRST FLOOR PLUMBING NEW WORK PLAN**  
SCALE: 3/32" = 1'-0"

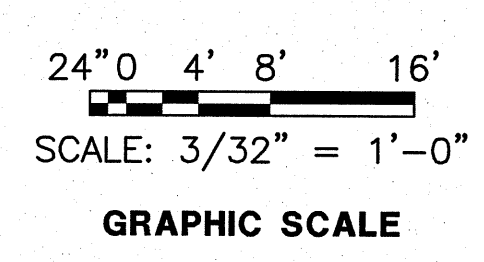


**SECOND FLOOR PLUMBING NEW WORK PLAN**  
SCALE: 3/32" = 1'-0"

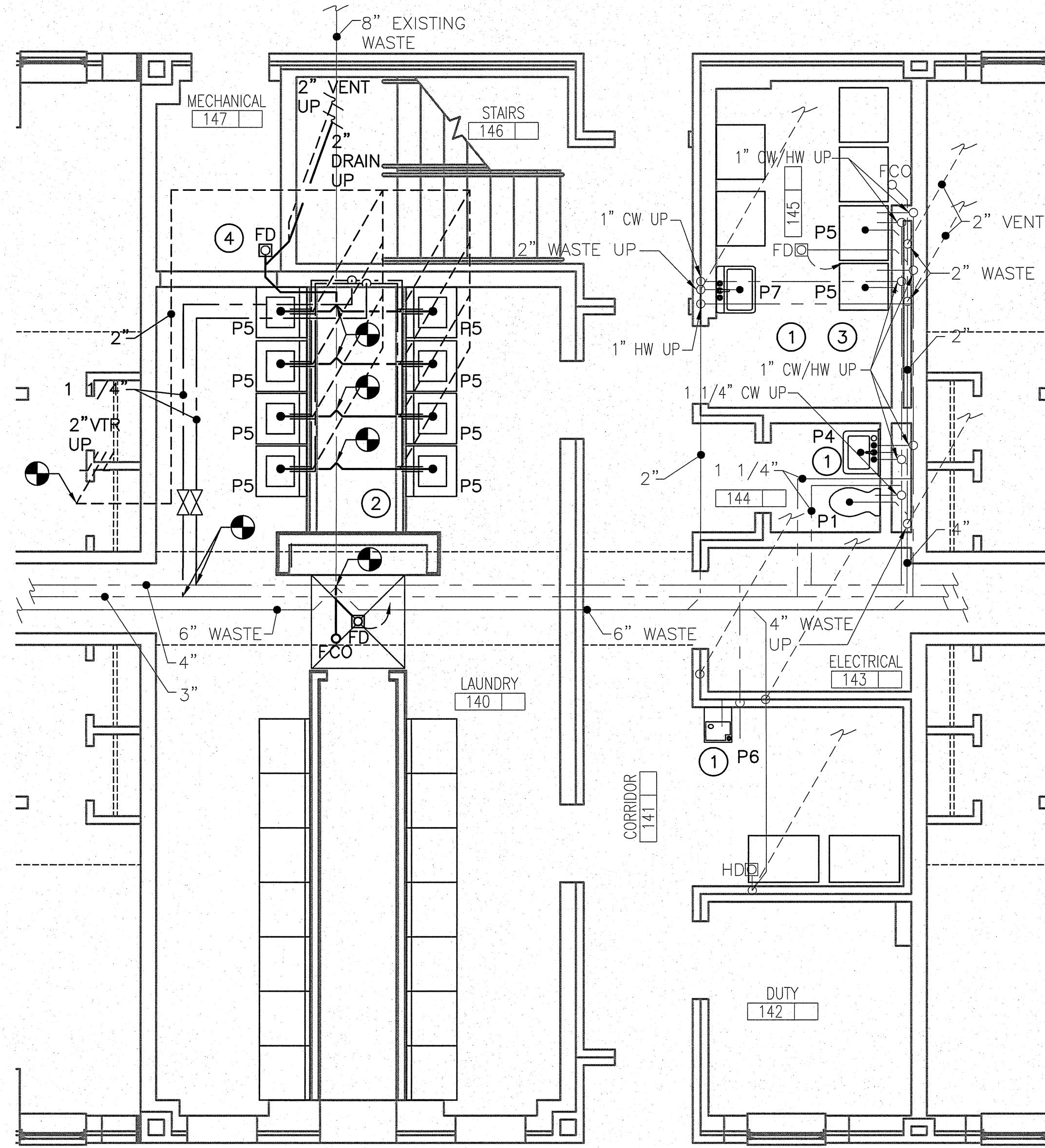


**THIRD FLOOR PLUMBING NEW WORK PLAN**  
SCALE: 3/32" = 1'-0"

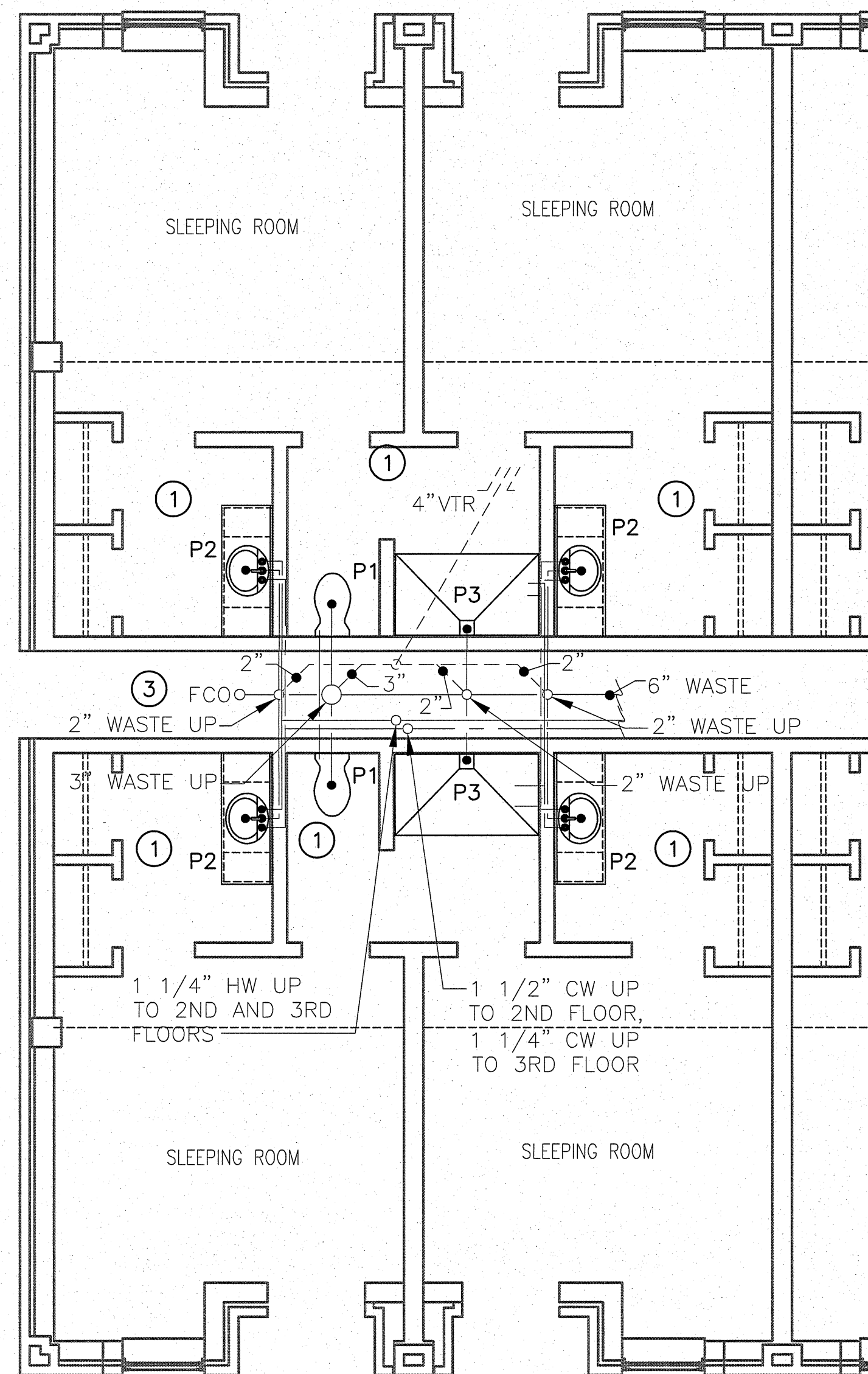
**NEW WORK KEYNOTES:**  
① REINSULATE ALL DOMESTIC COLD WATER, DOMESTIC HOT WATER, AND DOMESTIC HOT WATER RECIRCULATION PIPING IN FIRST FLOOR CHASES AND MECHANICAL ROOMS.



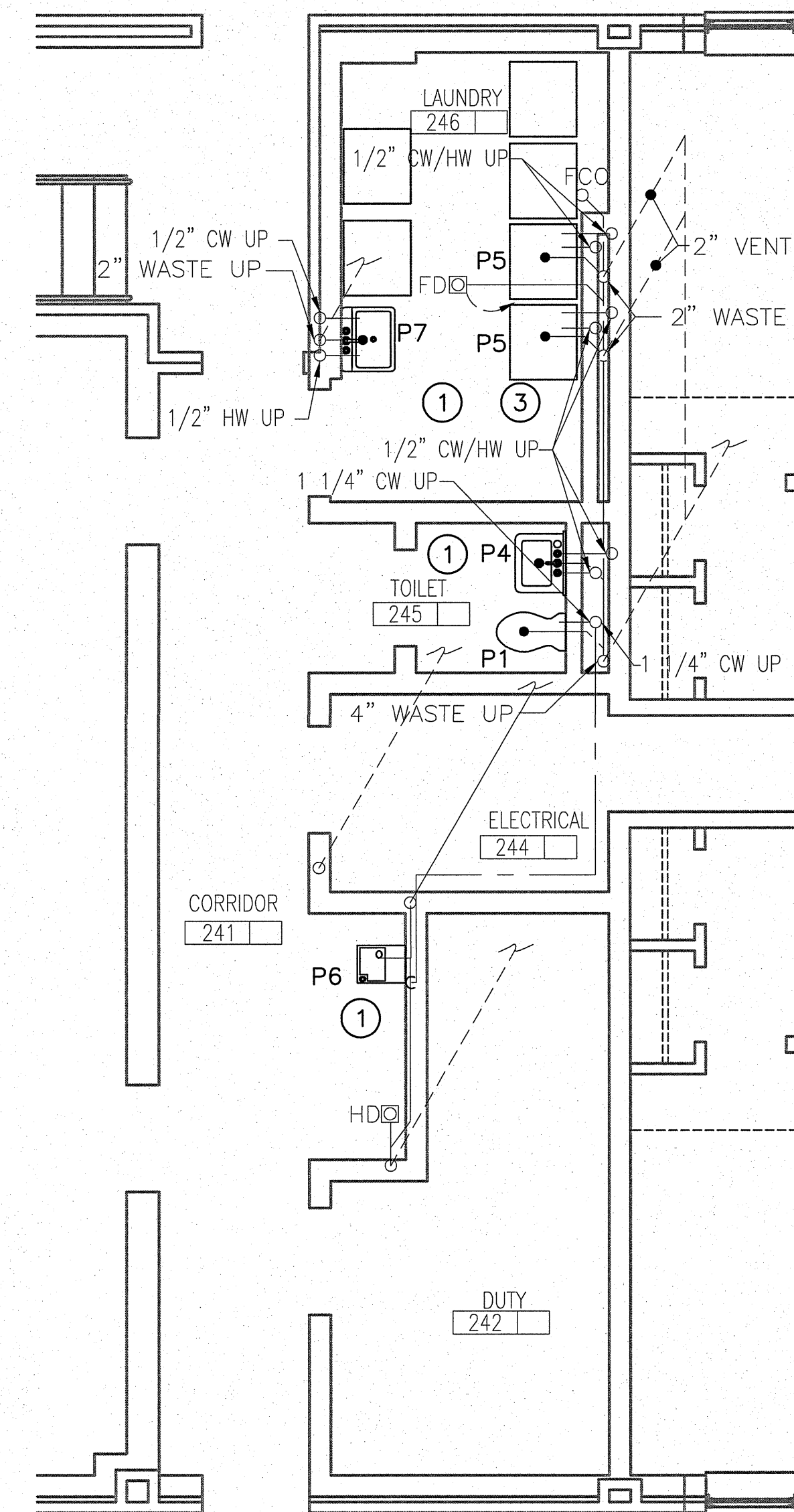
<b>CEMS</b> ENGINEERING CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29456 (784) 875-3037 (784) 875-4550 www.cemsgroup.com CEMS Project #001591 Project Manager: P. Mahaffey		<b>P-101</b> DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		
				REPAIR BEQ BUILDING HP485
DES. J. CARR	DATE	SIZE	CODE	IDENT NO.
DR. J. BARNES				
CHK. P. MAHAFFEY				
SUBMITTED BY:				
DESIGN DIR.				
APPROVED: PWO OR OICC	DATE	SIZE	CODE	IDENT NO.
SATISFACTORY TO:	DATE	SIZE	CODE	IDENT NO.
		PLUMBING NEW WORK PLAN		NAVFAC DRAWING NO.
		F 80091		60007187
		CONST. CONTR. NO. N40085-10-B-0070		
		SCALE: AS NOTED		SHEET 47 OF 65



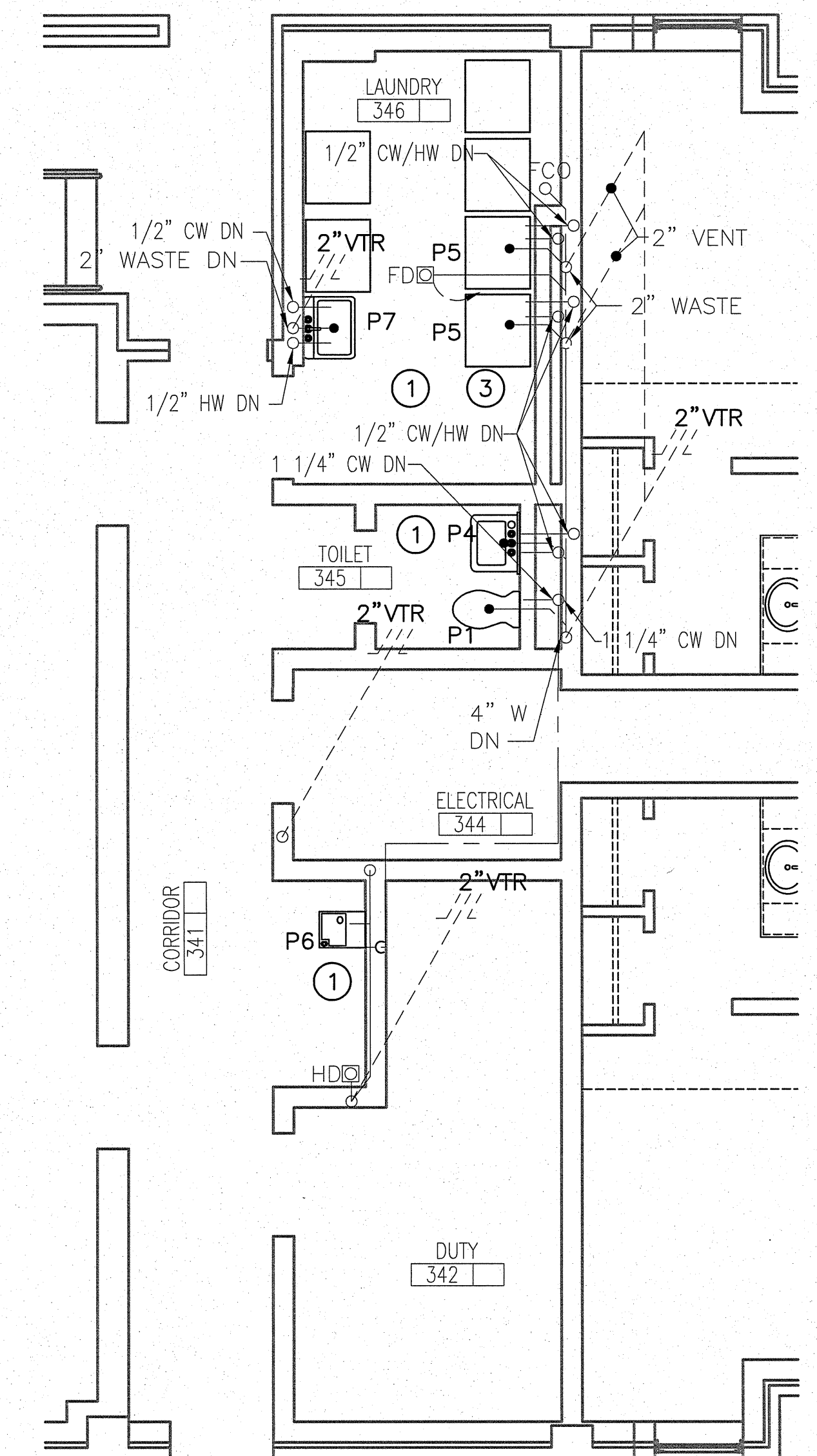
1 ENLARGED FIRST FLOOR PLUMBING NEW WORK PLAN  
SCALE: 1/4" = 1'-0"



2 ENLARGED PLUMBING NEW WORK PLAN  
SCALE: 1/4" = 1'-0"



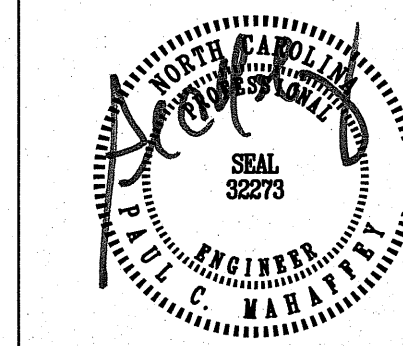
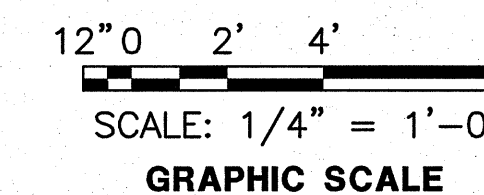
3 ENLARGED SECOND FLOOR PLUMBING NEW WORK PLAN  
SCALE: 1/4" = 1'-0"



4 ENLARGED THIRD FLOOR PLUMBING NEW WORK PLAN  
SCALE: 1/4" = 1'-0"

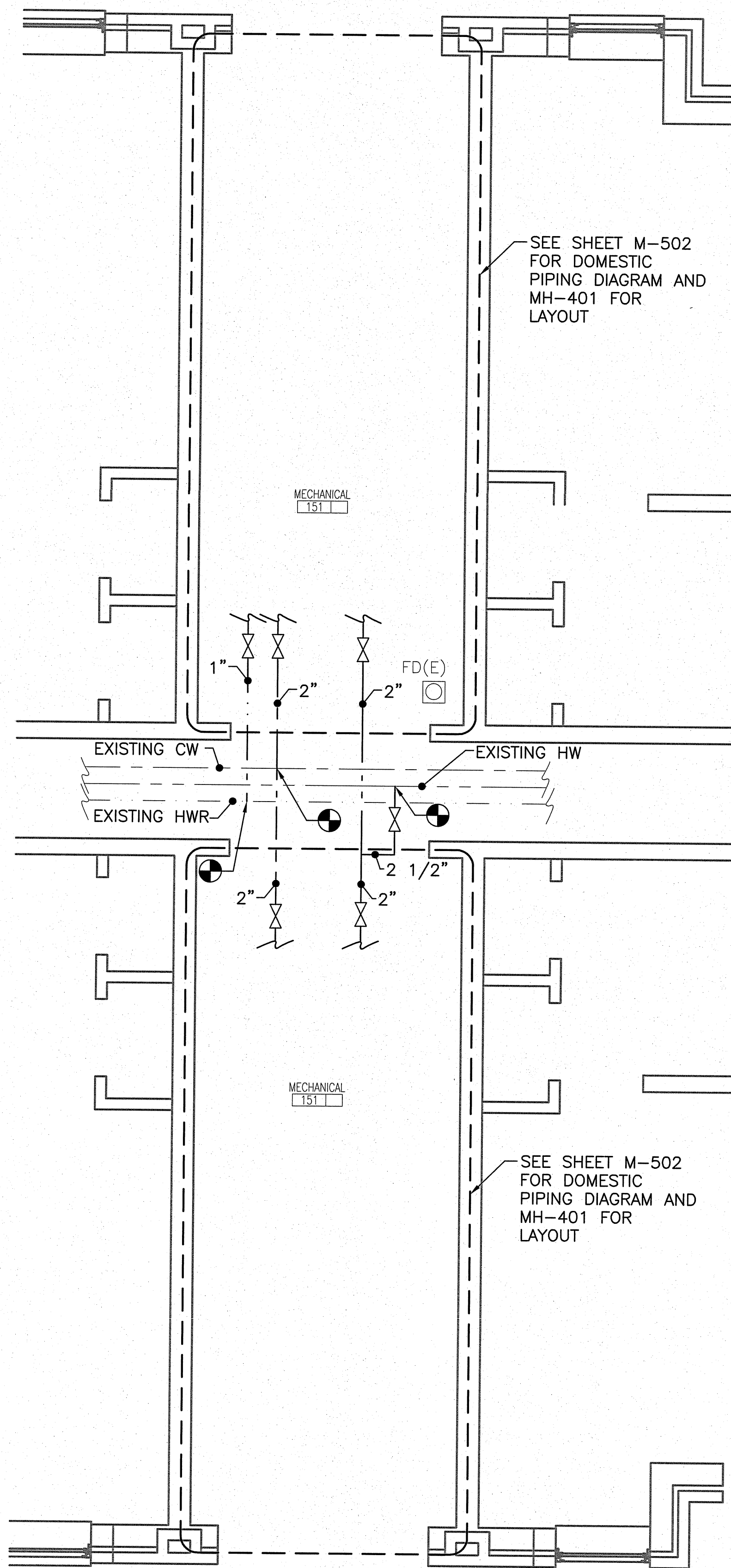
**NEW WORK KEYNOTES:**

- ① PROVIDE AND INSTALL NEW PLUMBING FIXTURES. CONNECT NEW FIXTURES TO EXISTING DWV AND SUPPLY PIPING.
- ② REMOVE SLAB AS NECESSARY FOR INSTALLATION OF NEW WASTE PIPING. CONTRACTOR SHALL VERIFY LOCATION AND FLOW DIRECTION OF EXISTING WASTE BEFORE INSTALLATION OF NEW.
- ③ EXISTING COLD AND HOT WATER SUPPLY LINES OVER ALL COMMON AREAS TO BE RE-INSULATED. NEW COLD AND HOT WATER SUPPLY LINES OVER ALL COMMON AREAS TO BE INSULATED.
- ④ SEE DWV PIPE RISER ON SHEET P-402 FOR IDENTICAL FLOOR DRAINS INSTALLED IN ROOMS 247 AND 347.

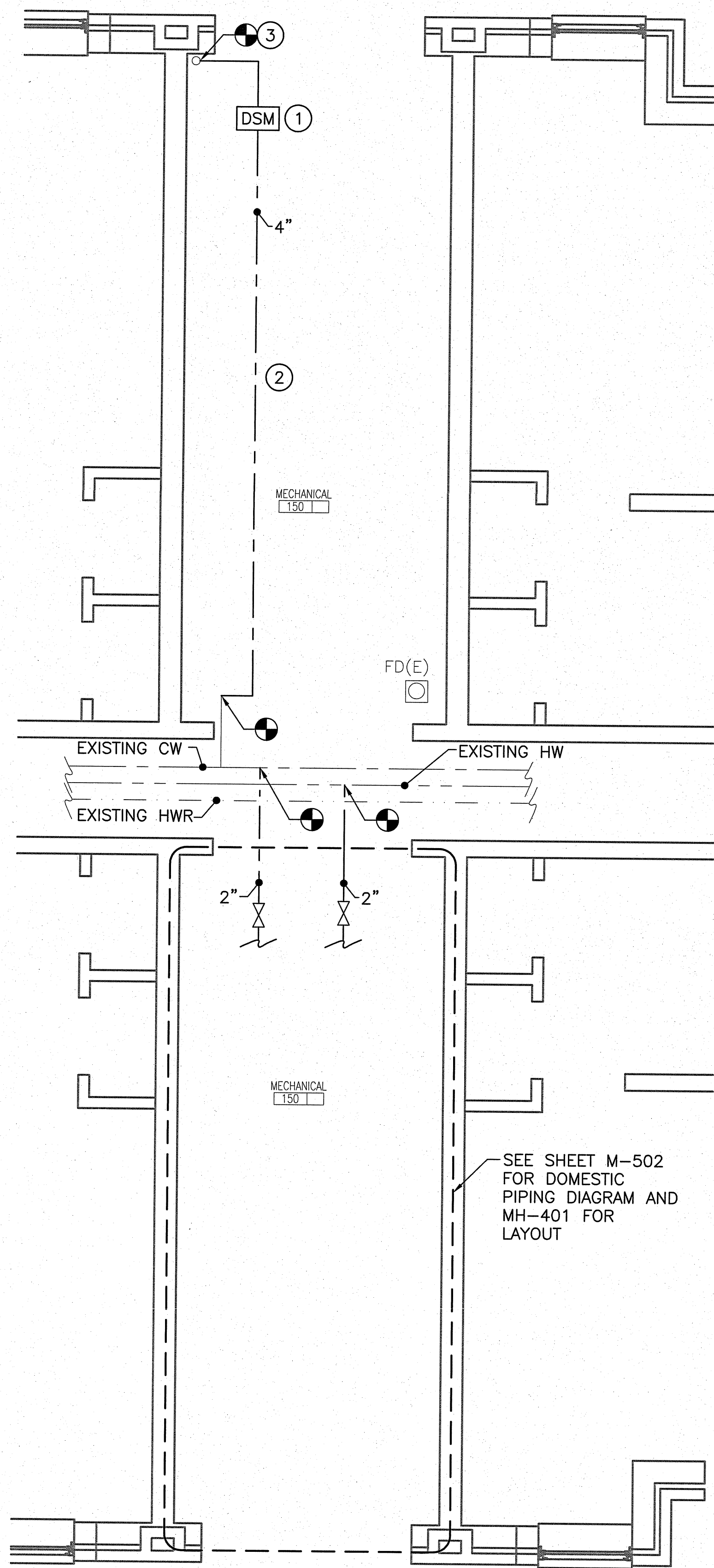


<b>P-401</b>	
 CEMS Engineering, Inc. 3509 Iron Horse Drive Lenoir, NC 24509 (757) 875-3507 (757) 875-4509 www.cemsgroup.com CEMS Project #051587 Project Manager: P. Mahaffey	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	REPAIR BEQ BUILDING HP485
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC	ENLARGED PLUMBING SUPPLY AND DWV NEW WORK PLAN NAVFAC DRAWING NO. <b>60007188</b> CONST. CONTR. NO. N40085-10-B-0070
SATISFACTORY TO:	DATE:
SCALE: AS NOTED SPEC. 05-10-0070 SHEET 48 OF 65	

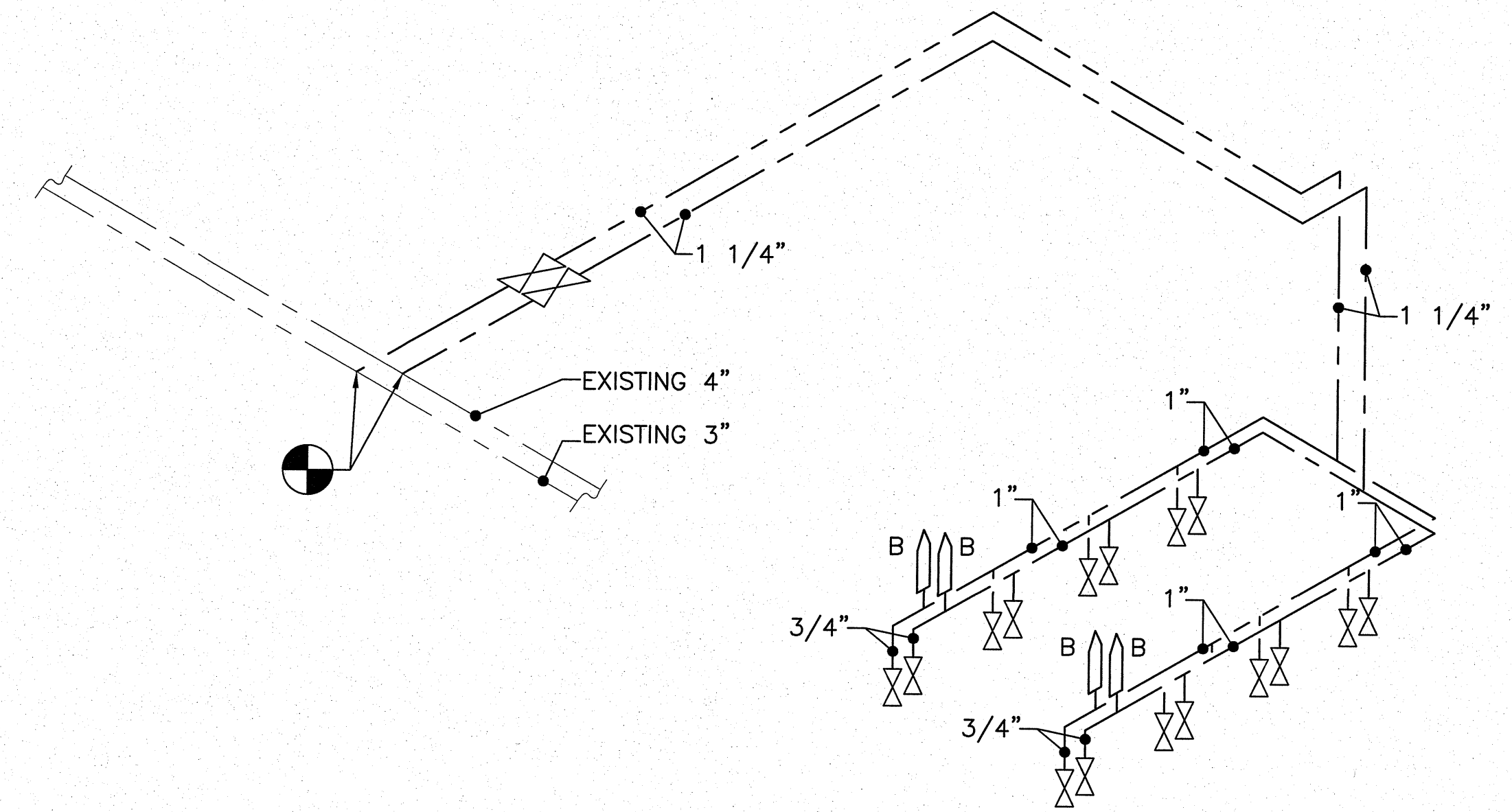




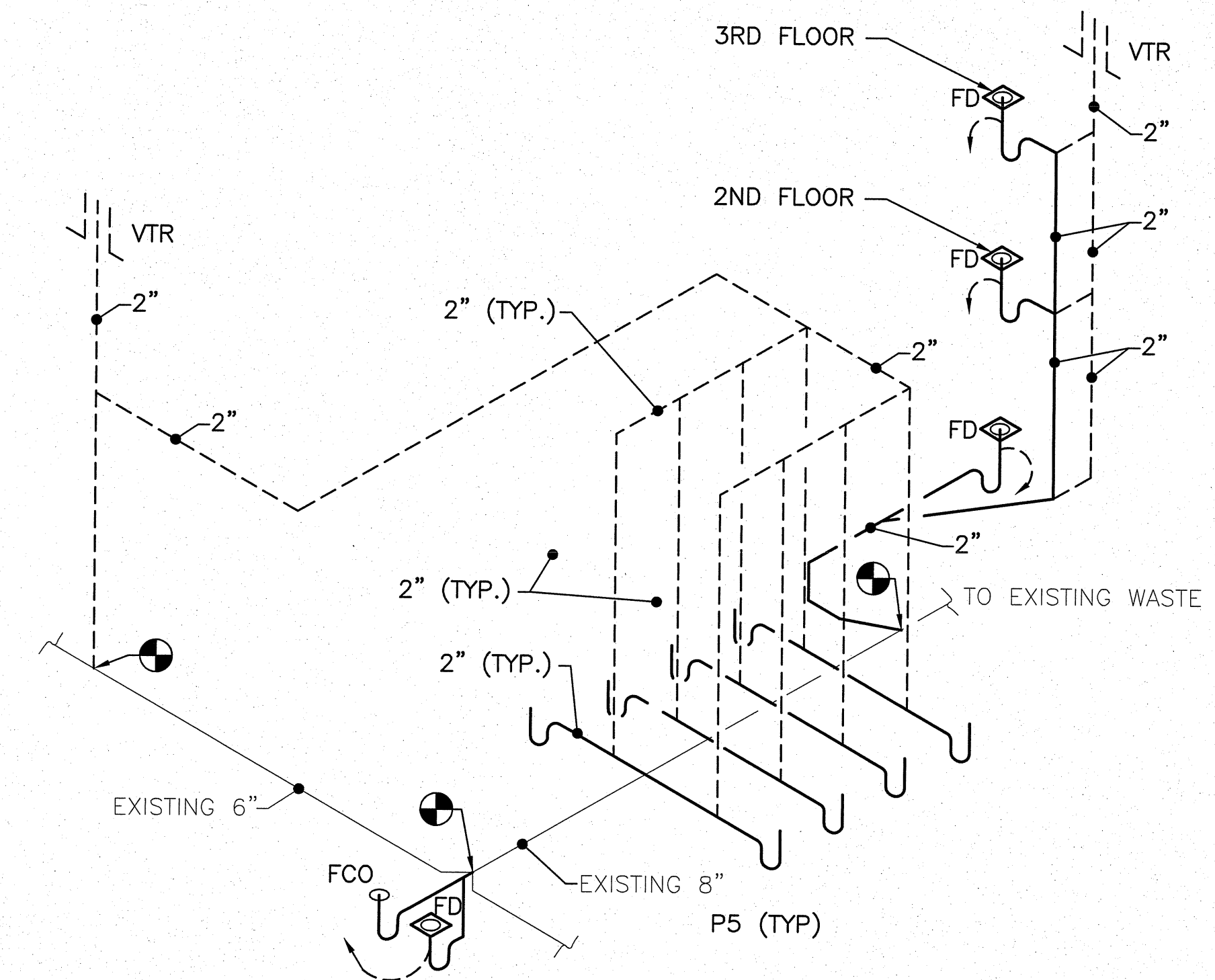
1  
P-101 P-402  
ENLARGED PLUMBING PIPING NEW WORK PLAN  
SCALE: 3/8" = 1'-0"



2  
P-101 P-402  
ENLARGED PLUMBING PIPING NEW WORK PLAN  
SCALE: 3/8" = 1'-0"



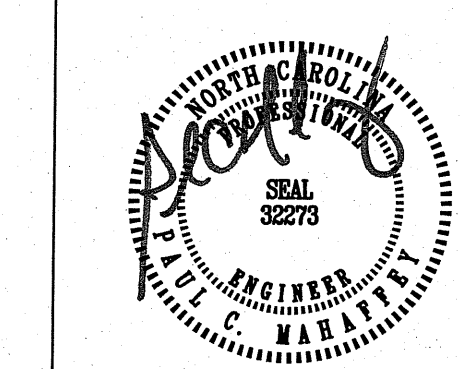
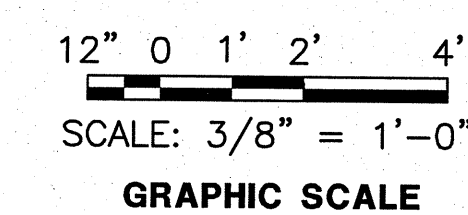
FIRST FLOOR LAUNDRY PLUMBING SUPPLY NEW WORK PLAN  
SCALE: NOT TO SCALE



FIRST FLOOR LAUNDRY PLUMBING DWV NEW WORK PLAN  
SCALE: NOT TO SCALE

**NEW WORK KEYNOTES:**

- ① NEW DOMESTIC SMART WATER METER TO REPORT BACK TO PUMP PLANT CONTROLLER.
- ② NEW CW SUPPLY LINE TO PROVIDE CLEARANCE ABOVE NEW ELECTRICAL PANELS.
- ③ EXISTING DOMESTIC WATER SUPPLY TO THE BUILDING.



**CEMS**  
ENGINEERING  
CEMS Engineering, Inc.  
3509 Iron Horse Drive  
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(784) 875-3537  
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www.cemsgroup.com  
CEMS Project #05150V  
Project Manager: P. Mahaffey

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

DES. J. CARR  
DR. J. BARNES  
CHK. P. MAHAFFEY  
SUBMITTED BY:

REPAIR BEQ  
BUILDING HP485

DESIGN DIR.  
APPROVED: PWO OR OICC DATE

ENLARGED PLUMBING PIPING NEW WORK PLAN  
NAVFAC DRAWING NO. 60007189  
F 80091  
CONST. CONTR. NO. N40085-10-B-0070

SATISFACTORY TO: DATE

SCALE: AS NOTED SPEC. 05-10-0070 SHEET 49 OF 65

**P-402**

**LEGEND**

- ⊙ JUNCTION BOX (WITH OR WITHOUT EQUIPMENT CONNECTION)
  - Ⓢ RECEPTACLE, 20AMP, 120 VOLT ('G' - INDICATES A GROUND FAULT RECEPTACLE. 'W' - INDICATES RAIN TIGHT WHILE IN USE)
  - ⊗ DRYER RECEPTACLE, 125/250V NEMA 14-30R
  - Ⓢ RECEPTACLE, 20AMP, 120 VOLT MOUNTED AT 48" AFF. ('G' - INDICATES A GROUND FAULT RECEPTACLE)
  - Ⓢ SWITCH, 20AMP ('P'-SWITCH WITH PILOT LAMP "ON" WHEN OFF; '3'-THREWAY; 'OS' - SWITCH EQUIPPED WITH OCCUPANCY SENSOR)
  - ⊙ CEILING MOUNTED OCCUPANCY SENSOR
  - ⊘ DISCONNECT, NON-FUSED
  - ⊘ DISCONNECT, FUSED
  - ⊠ MOTOR STARTER
  - Ⓜ TELEVISION OUTLET
  - ▼ PHONE/DATA OUTLET
  - Ⓢ EXHAUST FAN
  - Ⓢ FAN POWERED BOX
  - Ⓢ WALL MOUNTED LIGHT FIXTURE WITH MARK, SEE FIXTURE SCHEDULE
  - Ⓢ FLOURESCENT LIGHT FIXTURE, SEE FIXTURE SCHEDULE
  - Ⓢ WALL MOUNTED LIGHT FIXTURE, SEE FIXTURE SCHEDULE
  - Ⓢ EXIT LIGHT, LED, BATTERY BACK-UP (DARKENED SECTION IS FACE SIDE)
  - Ⓢ UNIT HEATER
  - Ⓢ LIGHTING CONTROL
  - Ⓢ TWO HEAD EMERGENCY LIGHT FIXTURE, SEE FIXTURE SCHEDULE
- UGP--- UNDERGROUND ELECTRICAL

**GENERAL ELECTRICAL NOTES (APPLIES TO ALL DRAWINGS):**

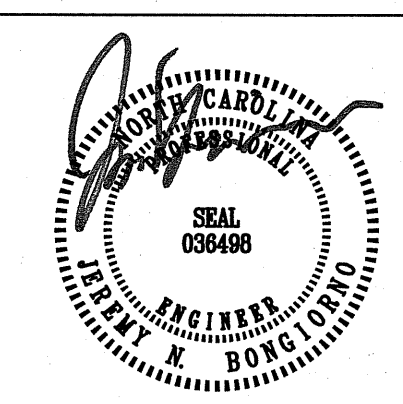
1. DEMOLITION PLANS ARE DIAGRAMMATIC AND MAY NOT REPRESENT ALL ITEMS TO BE REMOVED.
2. ALL CABLE TV, INTERCOM, TELEPHONE CONDUIT, CONDUCTORS AND CABINETS ASSOCIATED WITH BEQ ROOMS TO REMAIN IN PLACE. PRESERVE AND PROTECT ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH BEQ ROOMS. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS NEEDED TO THE COMMUNICATIONS. COORDINATE WITH LOCAL TELEPHONE SERVICE PROVIDER REGARDING ANY BEQ ROOM PHONE LINE MOVES, ADDITIONS, OR CHANGES. COORDINATE WITH BASE TELEPHONE REGARDING PHONE LINES IN COMMON AREAS AND OFFICES. ALL REPAIRS SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE FOR ANY QUESTIONS AT 910-451-9439 OR 910-451-4760.
3. ALL ELECTRICAL WORK IS TO BE DONE IN ACCORDANCE WITH THE CURRENT EDITION OF NFPA 70: NATIONAL ELECTRICAL CODE.
4. MATERIALS ARE TO BE NEW AND CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES, INC. (U.L.) AND THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA).
5. CONTRACTOR SHALL CONSIDER VOLTAGE DROP WHEN DETERMINING THE EXACT ROUTING OF BRANCH CIRCUIT AND FEEDER WIRING. ADJUST WIRE AND CONDUIT SIZE AS NECESSARY TO PREVENT A VOLTAGE DROP EXCEEDING 3% AT THE FURTHEST DEVICE LOCATION.
6. ALL PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS AND SMOKE PARTITIONS SHALL BE SEALED WITH AN APPROVED FIRE PROOFING SEALANT OR U.L. LISTED PENETRATION DEVICE.
7. ELECTRICAL DRAWING IS GENERALLY DIAGRAMMATIC. COORDINATE WORK WITH ALL TRADES PRIOR TO START OF CONSTRUCTION. BRANCH CIRCUIT CONDUIT ROUTING SHALL BE COORDINATED IN THE FIELD BY THE CONTRACTOR TO MEET SPECIFICATIONS, CODE REQUIREMENTS, AND TO PROVIDE A NEAT, WORKMAN LIKE, FULLY OPERATIONAL SYSTEM.
8. PROVIDE A TYPED SCHEDULE IN PANELBOARDS CLEARLY DESCRIBING THE LOCATION AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS.
9. CONTRACTOR IS TO BE AWARE OF ALL RULES, REGULATIONS, AND CODES REQUIRED FOR SUCCESSFUL COMPLETION OF CONSTRUCTION.
10. PROVIDE NECESSARY ACCESSORIES WITH LIGHT FIXTURES TO MATCH CEILING FINISH TYPE.
11. FIXTURE MOUNTING REQUIREMENTS TO BE COORDINATED WITH ARCHITECTURAL CEILING PLAN.
12. UNLESS NOTED OTHERWISE ALL ITEMS SHOWN ON NEW WORK SHEETS IS TO BE NEW AND INSTALLED.
13. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.
14. IT IS PERMISSIBLE TO RE-USE EXISTING UTILITY BOXES, CONDUIT, AND CONDUCTORS WHERE POSSIBLE FOR NEW DEVICES AND EQUIPMENT. ALL ITEMS BEING RE-USED MUST BE FREE OF DAMAGE OR DETERIORATION.

**E-001**

**C/E**  
**M/S**  
ENGINEERING

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(7843.875.3507)  
(7843.875.4509)  
www.cemsgengineering.com  
CEMS Project #08156V  
Project Manager: P. Mahaffey

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA



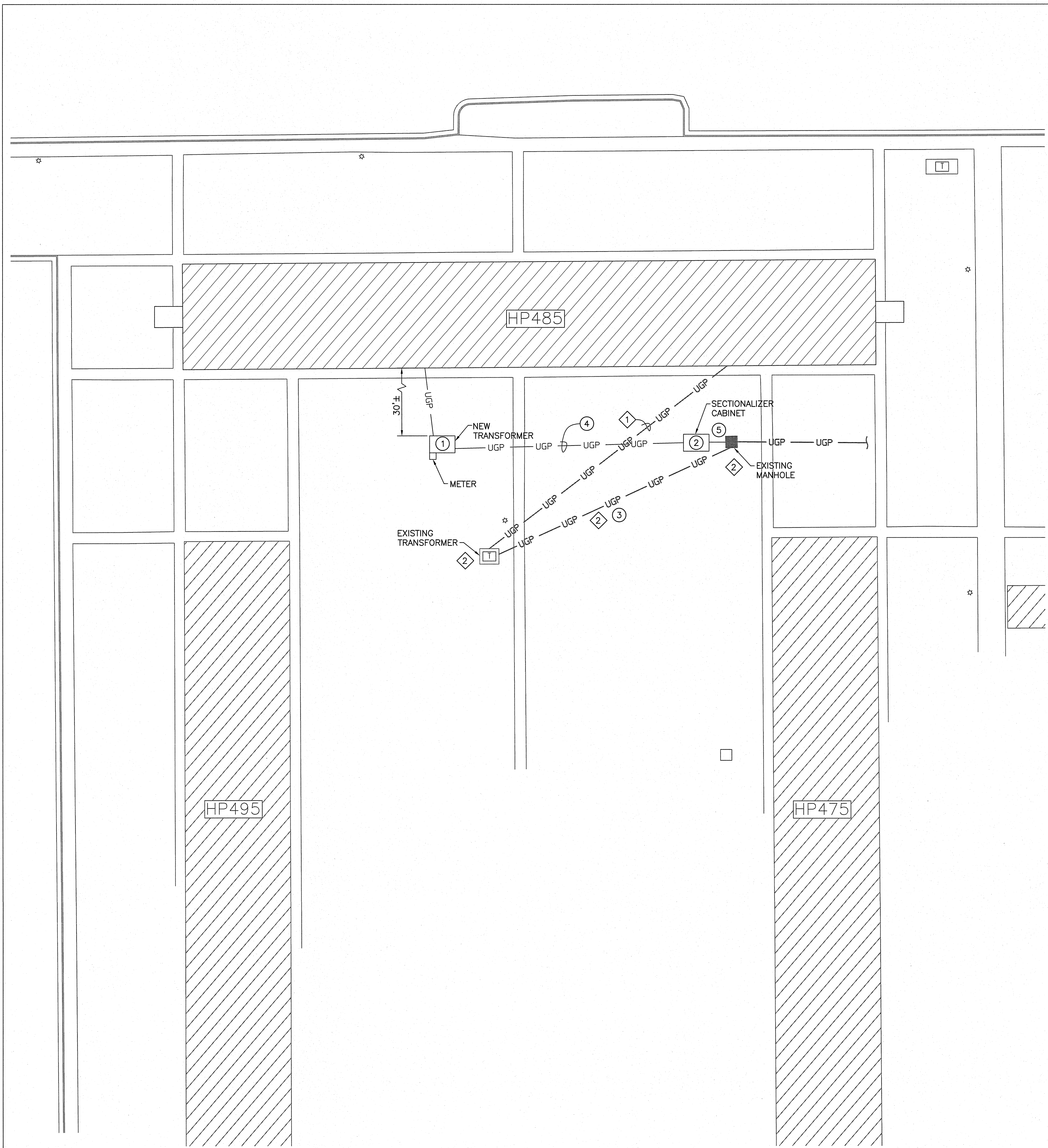
DES. R. ALVAR  
DR. C. COOPER  
CHK. J. BONGIORNO  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE  
SATISFACTORY TO: DATE

REPAIR BEQ  
BUILDING HP485

ELECTRICAL LEGEND AND GENERAL NOTES

SIZE CODE IDENT NO. 80091  
NAVAC DRAWING NO. 60007190  
CONST. CONTR. NO. N40085-10-B-0070

SCALE: NONE SPEC. 05-10-0070 SHEET 50 OF 65

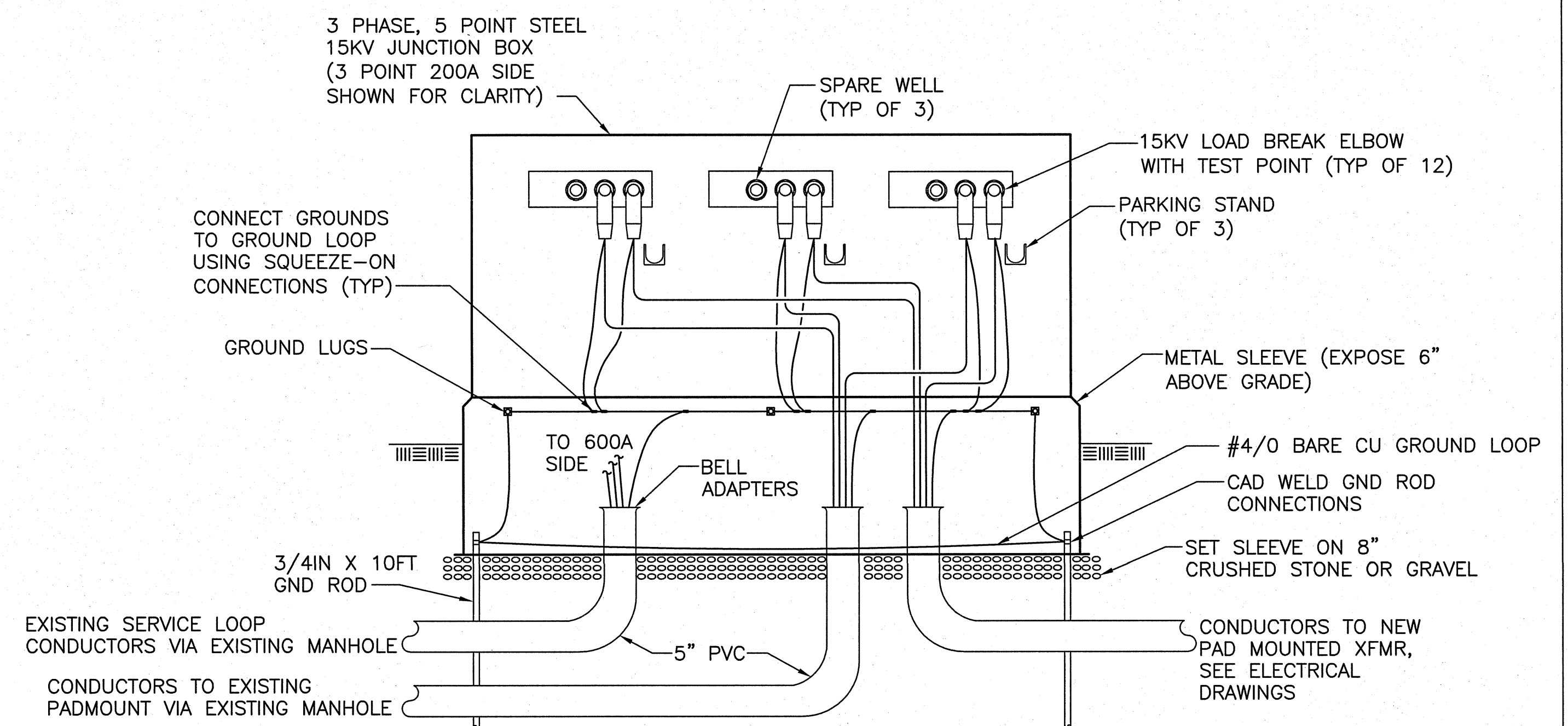


**DEMOLITION KEY NOTES:**

- ① REMOVE EXISTING SERVICE FEEDER TO HP485. ABANDON UNDERGROUND CONDUIT IN PLACE.
- ② REMOVE EXISTING PRIMARY LOOP CONDUCTORS FROM EXISTING TRANSFORMER BACK TO NEAREST EXISTING ELECTRICAL MANHOLE. IDENTIFY AND TAG CABLES FOR RE-USE. PRESERVE ENOUGH EXISTING PRIMARY CONDUCTOR FOR USE IN CONNECTING TO NEW SECTIONALIZER CABINET. CLEAN EXISTING CONDUIT FOR RE-USE FROM MANHOLE TO EXISTING TRANSFORMER.

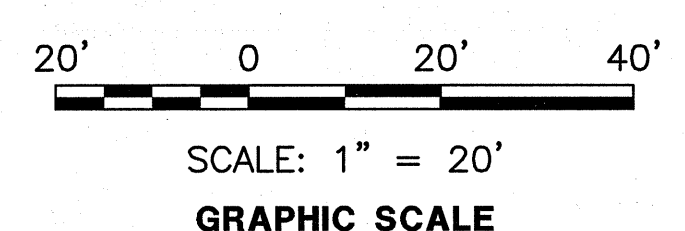
**NEW WORK KEYNOTES:**

- ① INSTALL NEW 750KVA, 12.47KV-208Y/120V PAD-MOUNTED TRANSFORMER WITH NEW CONCRETE PAD.
- ② PROVIDE NEW SECTIONALIZER CABINET ADJACENT TO EXISTING ELECTRICAL MANHOLE. SEE SECTIONALIZER CABINET DETAIL THIS SHEET. RE-USE PRESERVED PRIMARY CONDUCTORS FOR CONNECTION TO SECTIONALIZER CABINET.
- ③ PROVIDE NEW PRIMARY CONDUCTORS IN EXISTING CONDUIT FROM NEW SECTIONALIZER CABINET TO EXISTING TRANSFORMER VIA EXISTING MANHOLE.
- ④ PROVIDE NEW 2-WAY CONCRETE DUCT BANK. PROVIDE ONE 4" CONDUIT FOR PRIMARY CONDUCTORS FROM NEW SECTIONALIZER CABINET TO NEW TRANSFORMER. PROVIDE ONE SPARE 4" CONDUIT WITH PULLSTRING.
- ⑤ CORE-DRILL IN EXISTING ELECTRICAL MANHOLE FOR FOUR 5" PVC CONDUITS ON SIDE ADJACENT TO NEW SECTIONALIZER CABINET. ONE 5" FOR INCOMING LOOP FEED, ONE 5" FOR OUTGOING LOOP FEED, ONE 5" FOR PRIMARY FEED TO EXISTING TRANSFORMER AND ONE 5" SPARE.

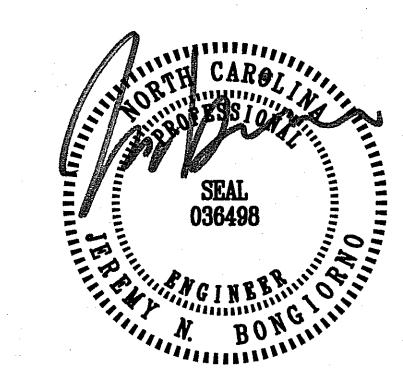


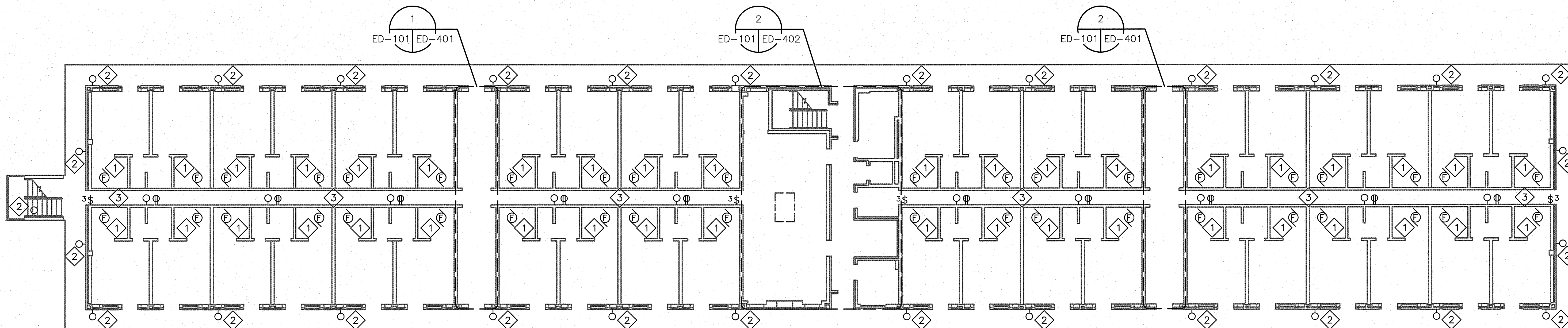
SECTIONALIZER CABINET DETAIL  
SCALE: NOT TO SCALE

**ELECTRICAL DEMOLITION & NEW WORK SITE PLAN**  
SCALE: 1" = 20'-0"

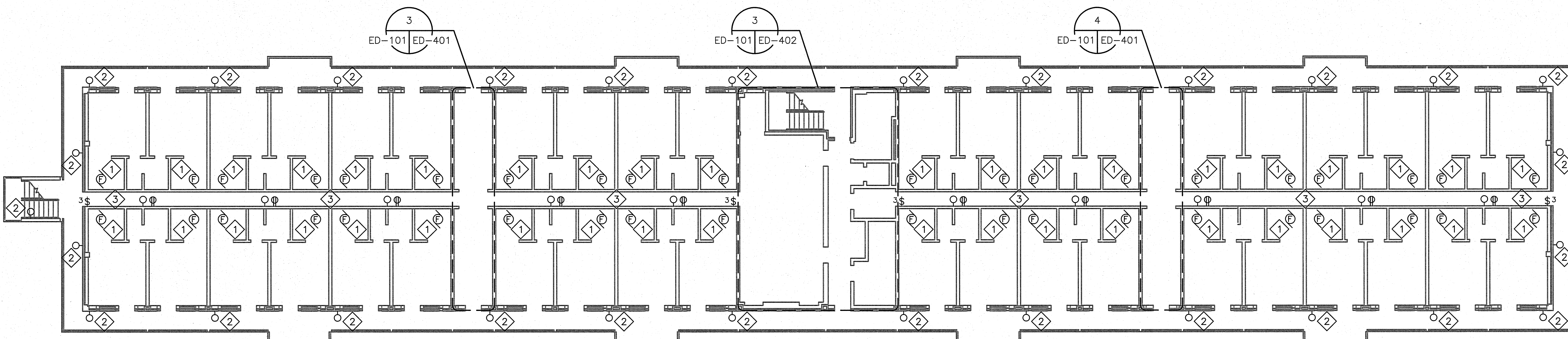


 CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29496 (784) 875-3537 www.cemsengineering.com CEMS Project #08158V Project Manager: P. Mahaffey		<b>ES-101</b>	
		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. J. CARR DR. J. BARNES CHK. P. MAHAFFEY SUBMITTED BY: DESIGN DIR.		REPAIR BEQ BUILDING HP485	
APPROVED: PWO OR OICC DATE: _____ SATISFACTORY TO: DATE: _____		ELECTRICAL DEMOLITION & NEW WORK SITE PLAN NAVFAC DRAWING NO. <b>60007191</b> SIZE CODE IDENT NO. <b>F 80091</b> CONST. CONTR. NO. N40085-10-B-0070 SPEC. 05-10-0070 SHEET 51 OF 65	

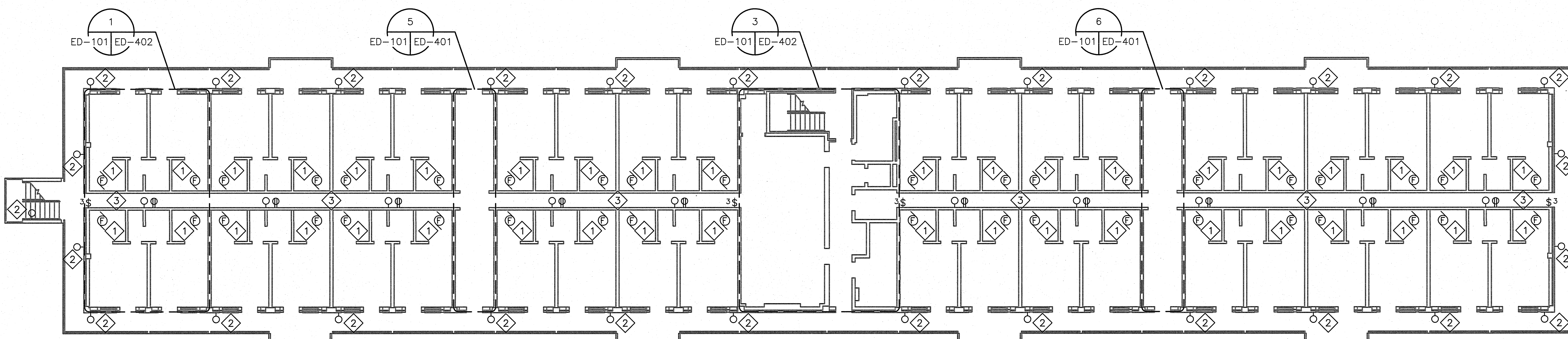




**FIRST FLOOR ELECTRICAL DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"



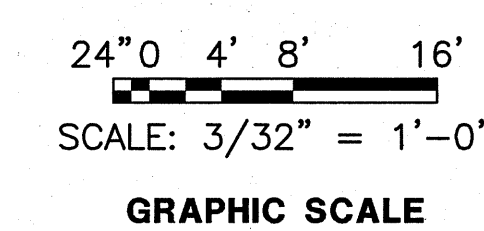
**SECOND FLOOR ELECTRICAL DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"



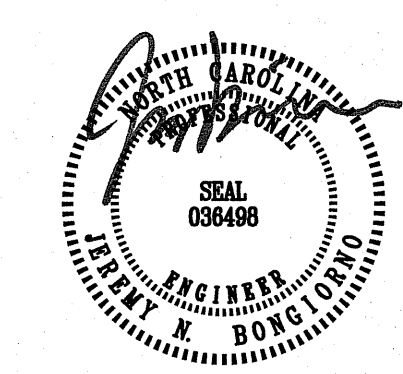
**THIRD FLOOR ELECTRICAL DEMOLITION PLAN**  
SCALE: 3/32" = 1'-0"

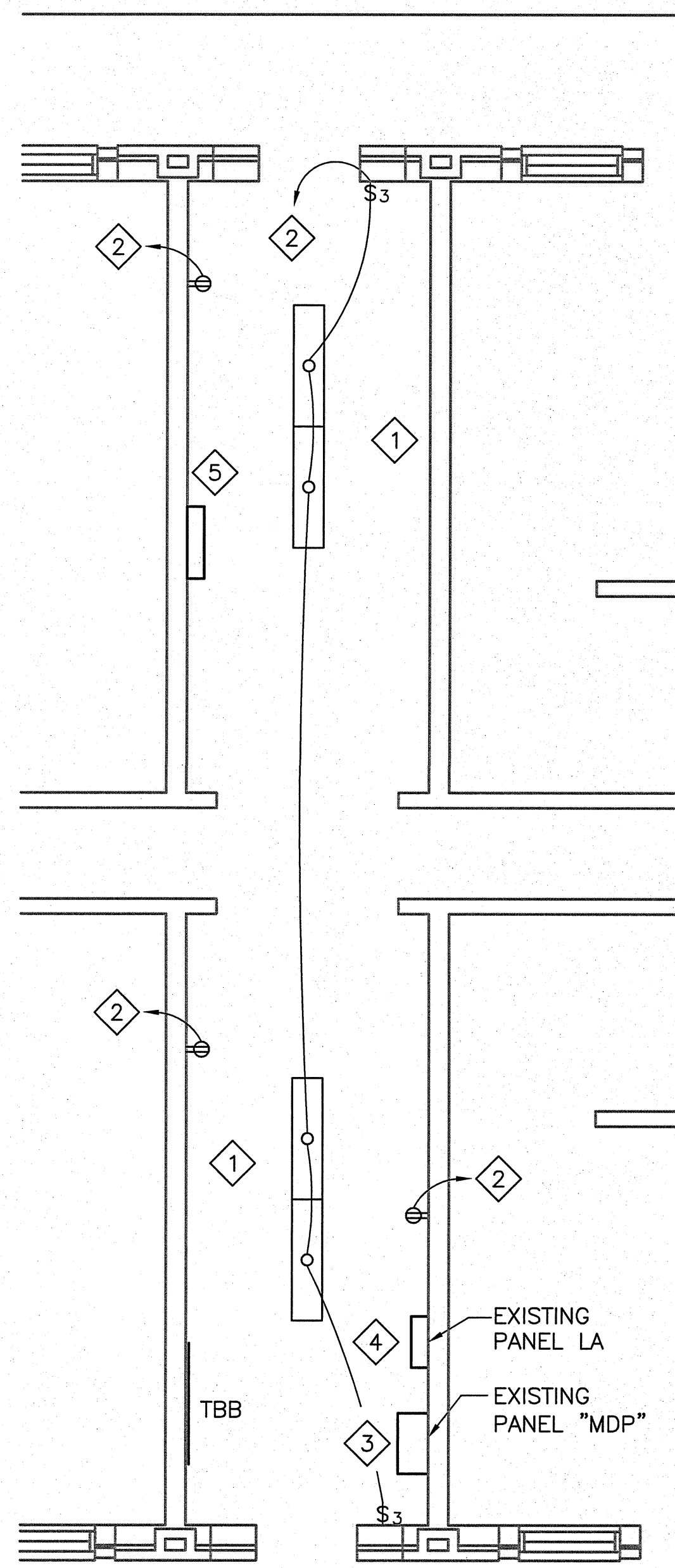
- DEMOLITION KEYNOTES:**
- 1 DISCONNECT POWER TO EXISTING FAN COIL UNIT TO BE REMOVED. REMOVE ASSOCIATED CONDUCTORS AND EXPOSED CONDUIT BACK TO SOURCE PANELBOARD.
  - 2 REMOVE ALL EXTERIOR FIXTURES AND ASSOCIATED CONDUCTORS, BOXES AND CONDUIT TO REMAIN FOR RE-USE WHERE POSSIBLE.
  - 3 REMOVE INTERIOR CHASE LIGHT FIXTURES, SWITCHES, RECEPTACLES, AND DEVICE PLATES, BOXES, CONDUCTORS, AND CIRCUITS TO REMAIN.

- GENERAL NOTES:**
1. EXTERIOR FIXTURES ON SECOND AND THIRD FLOORS ARE FED FROM FIRST FLOOR CIRCUITS.
  2. ALL EXISTING PANELBOARDS ARE TO BE REMOVED. ALL EXISTING CIRCUITS ARE TO BE RENUMBERED AND REFEED FROM NEW PANELBOARDS AS SHOWN.
  3. ALL CABLE TV, INTERCOM, TELEPHONE CONDUIT, CONDUCTORS AND CABINETS ASSOCIATED WITH BEQ ROOMS TO REMAIN IN PLACE. PRESERVE AND PROTECT ALL ASSOCIATED COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS NEEDED TO THE COMMUNICATIONS. COORDINATE WITH LOCAL TELEPHONE SERVICE PROVIDER REGARDING ANY BEQ ROOM PHONE LINE MOVES, ADDITIONS, OR CHANGES. ALL REPAIRS SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.
  4. DEMOLITION PLAN IS DIAGRAMMATIC AND MAY NOT REPRESENT ALL ITEMS TO BE REMOVED.
  5. REMOVE ALL EXIT AND EMERGENCY FIXTURES. EXISTING CONDUIT AND CONDUCTORS TO REMAIN FOR CONNECTION TO NEW EXIT AND EMERGENCY FIXTURES WHERE POSSIBLE.
  6. REMOVE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS AND AREAS SERVICED BY BASE TELEPHONE SYSTEM. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.

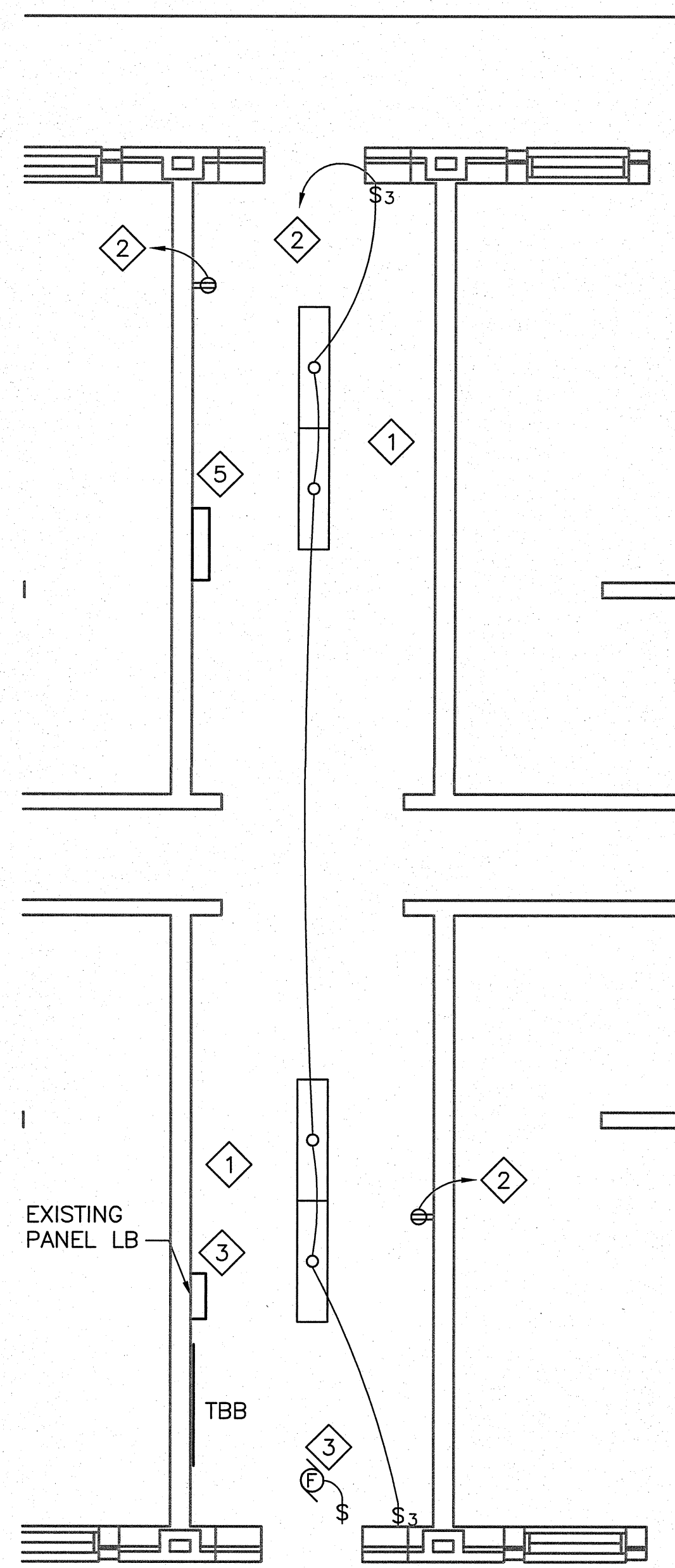


<p>CEMS ENGINEERING</p> <p>DES. R. ALVAR DR. C. COOPER CHK. J. BONGIORNO SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC SATISFACTORY TO:</p>		<p><b>ED-101</b></p>	
		<p>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA</p> <p>REPAIR BEQ BUILDING HP485</p> <p>ELECTRICAL DEMOLITION PLANS</p> <p>APPROVED: PWO OR OICC DATE: <b>F 80091</b> NAVFAC DRAWING NO. <b>60007192</b> CONST. CONTR. NO. N40085-10-B-0070</p> <p>SCALE: AS NOTED SPEC. 05-10-0070 SHEET 52 OF 65</p>	

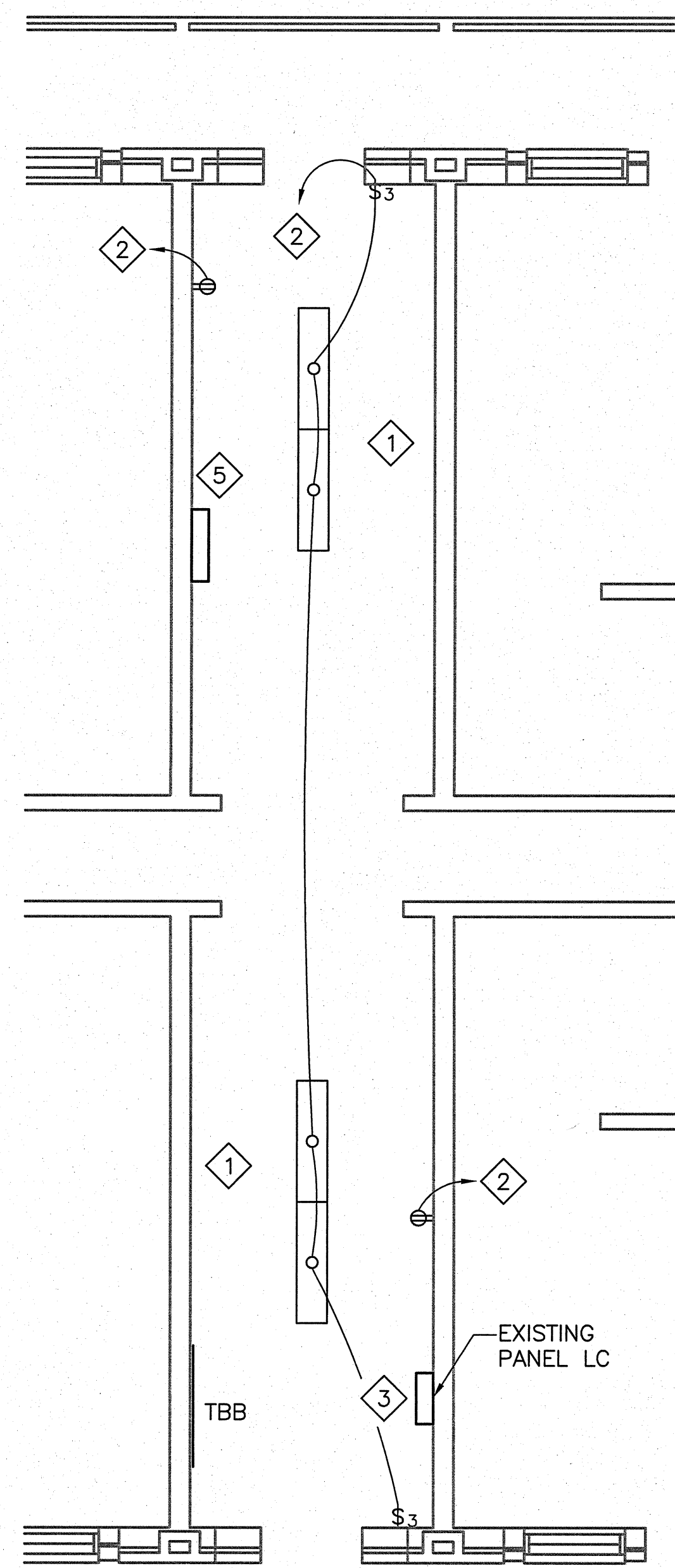




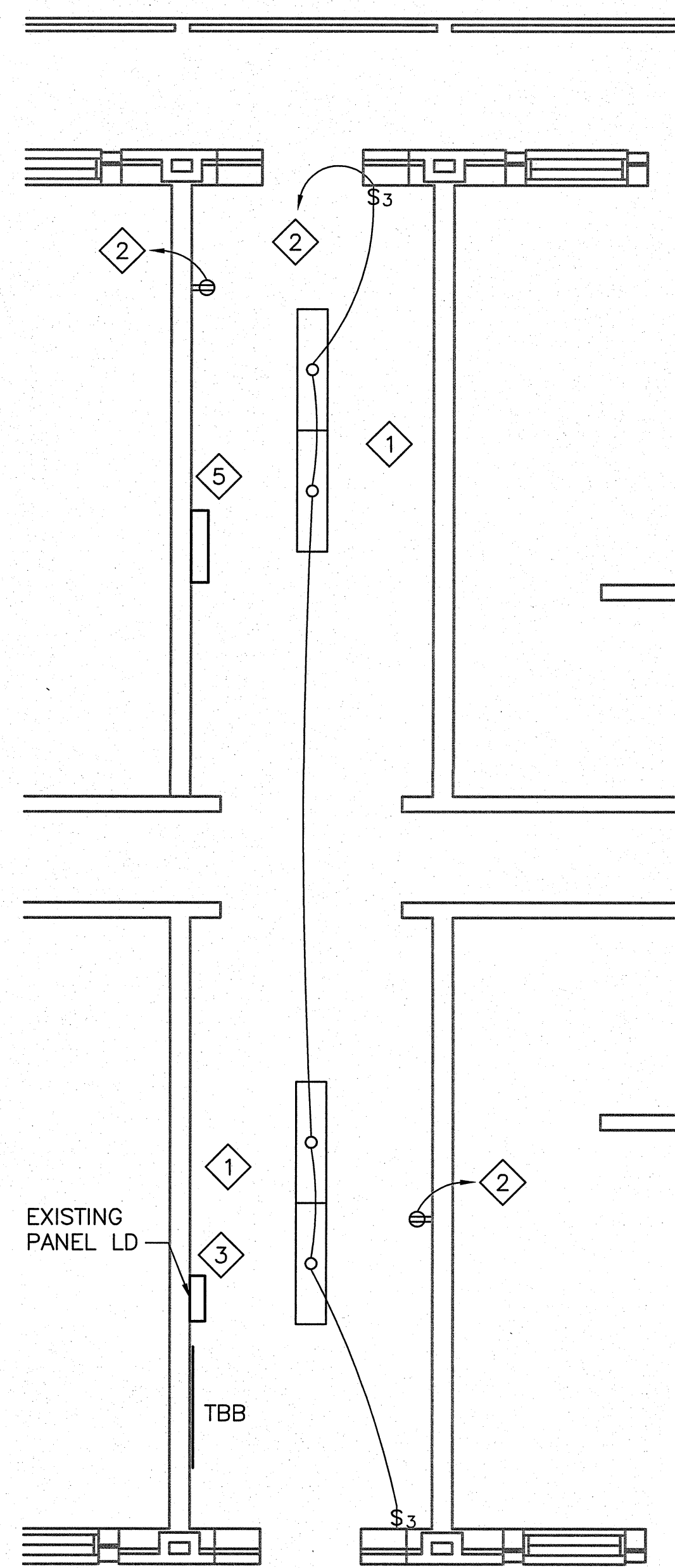
1 ENLARGED ELECTRICAL DEMOLITION PLAN  
ED-101 ED-401 SCALE: 1/4" = 1'-0"



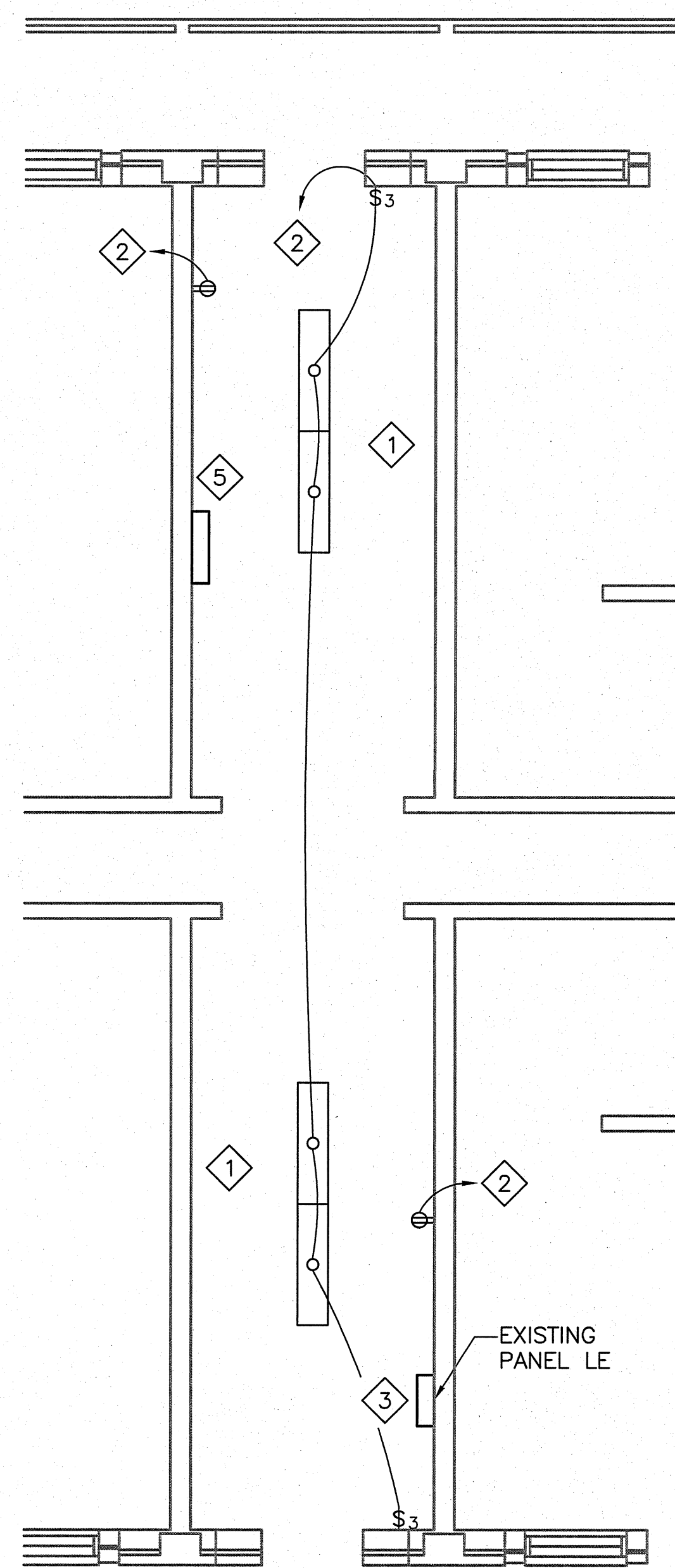
2 ENLARGED ELECTRICAL DEMOLITION PLAN  
ED-101 ED-401 SCALE: 1/4" = 1'-0"



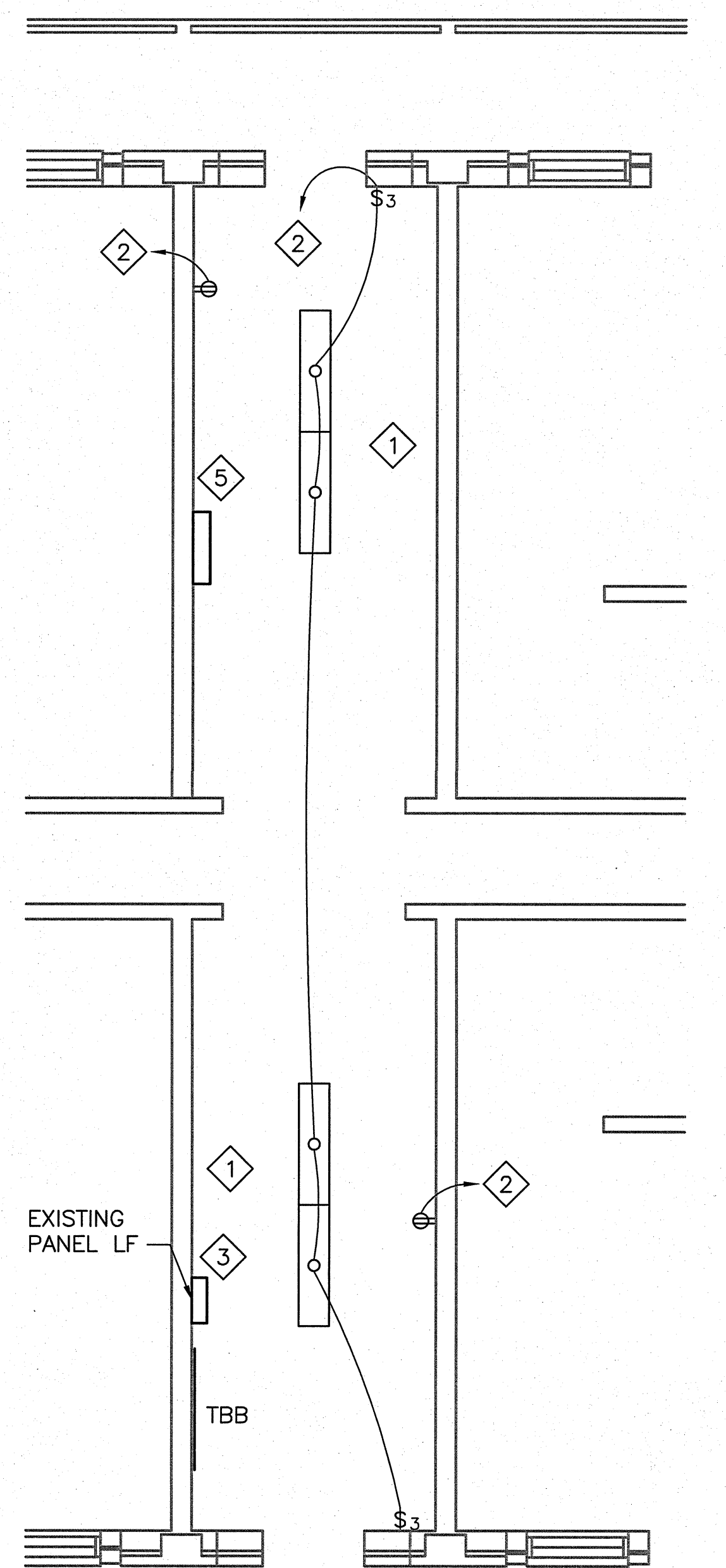
3 ENLARGED ELECTRICAL DEMOLITION PLAN  
ED-101 ED-401 SCALE: 1/4" = 1'-0"



4 ENLARGED ELECTRICAL DEMOLITION PLAN  
ED-101 ED-401 SCALE: 1/4" = 1'-0"



5 ENLARGED ELECTRICAL DEMOLITION PLAN  
ED-101 ED-401 SCALE: 1/4" = 1'-0"



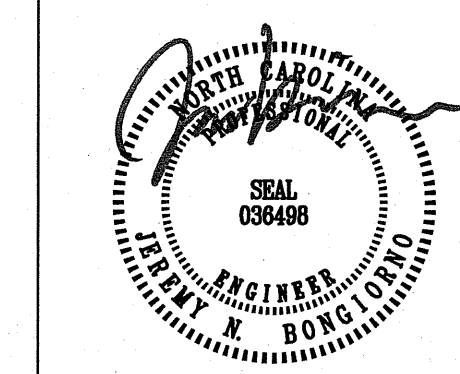
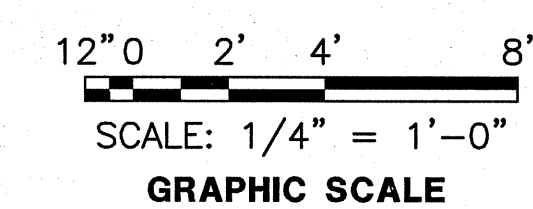
6 ENLARGED ELECTRICAL DEMOLITION PLAN  
ED-101 ED-401 SCALE: 1/4" = 1'-0"

**DEMOLITION KEYNOTES:**

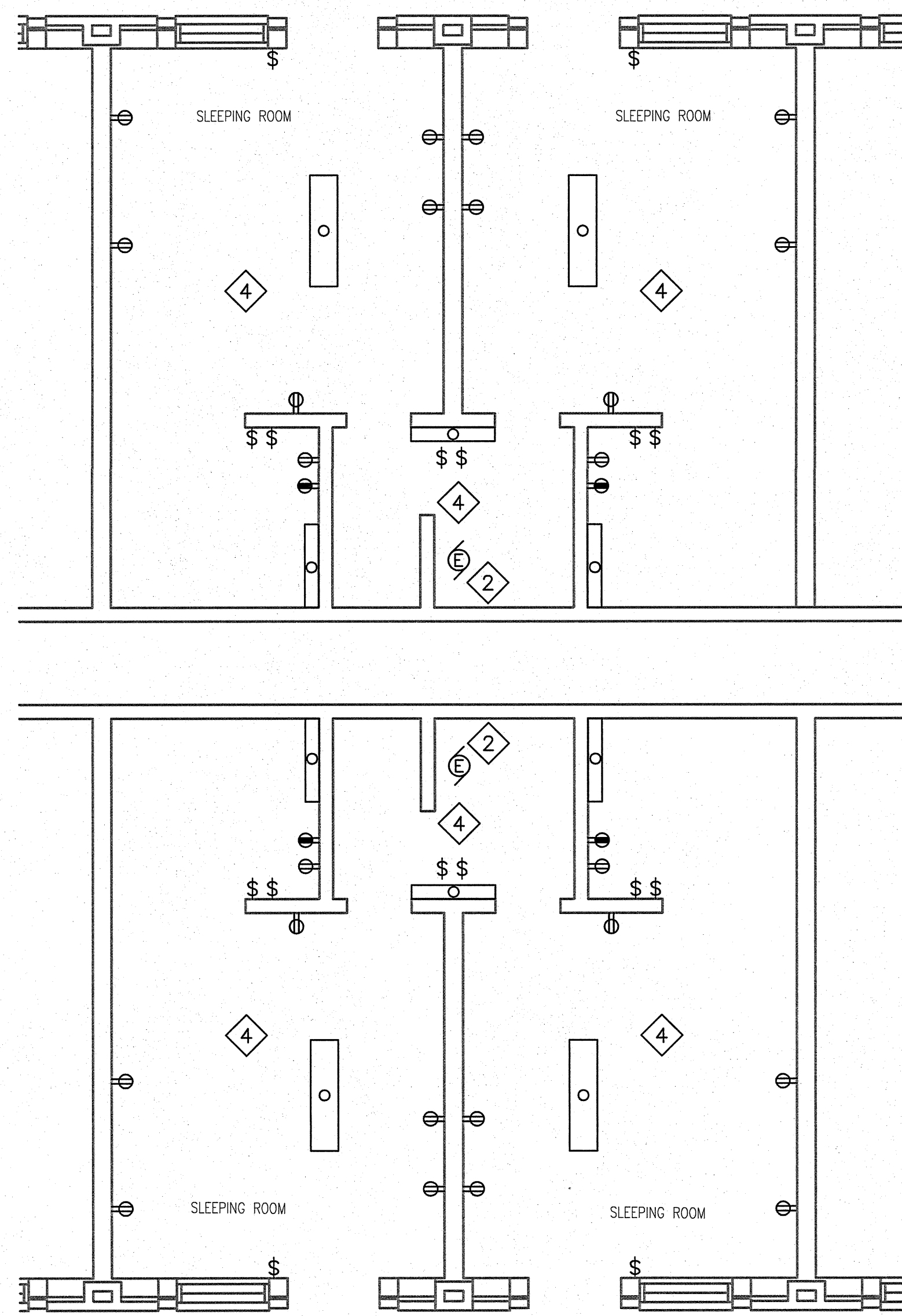
- 1 IN MECHANICAL ROOMS, REMOVE LIGHT FIXTURES, RECEPTACLES, SWITCHES, AND DEVICE PLATES. RE-USE BOXES AND CONDUIT WHERE POSSIBLE.
- 2 DISCONNECT HOMERUN FROM EXISTING PANEL AND RECONNECT TO NEW PANELBOARD CIRCUIT # AS SHOWN ON SHEET E-401.
- 3 REMOVE EXISTING PANELBOARDS, ASSOCIATED CONDUCTORS, AND EXPOSED CONDUIT. REMOVE ASSOCIATED CONDUCTORS AND EXPOSED CONDUITS TO SUBPANELS.
- 4 DISCONNECT EXISTING AIR COMPRESSOR. REMOVE ALL ASSOCIATED CONDUCTORS AND CONDUIT COMPLETE.
- 5 DISCONNECT EXISTING DDC AND VFD CONTROLS. REMOVE ALL ASSOCIATED CONDUCTORS AND CONDUIT COMPLETE.

**GENERAL NOTES:**

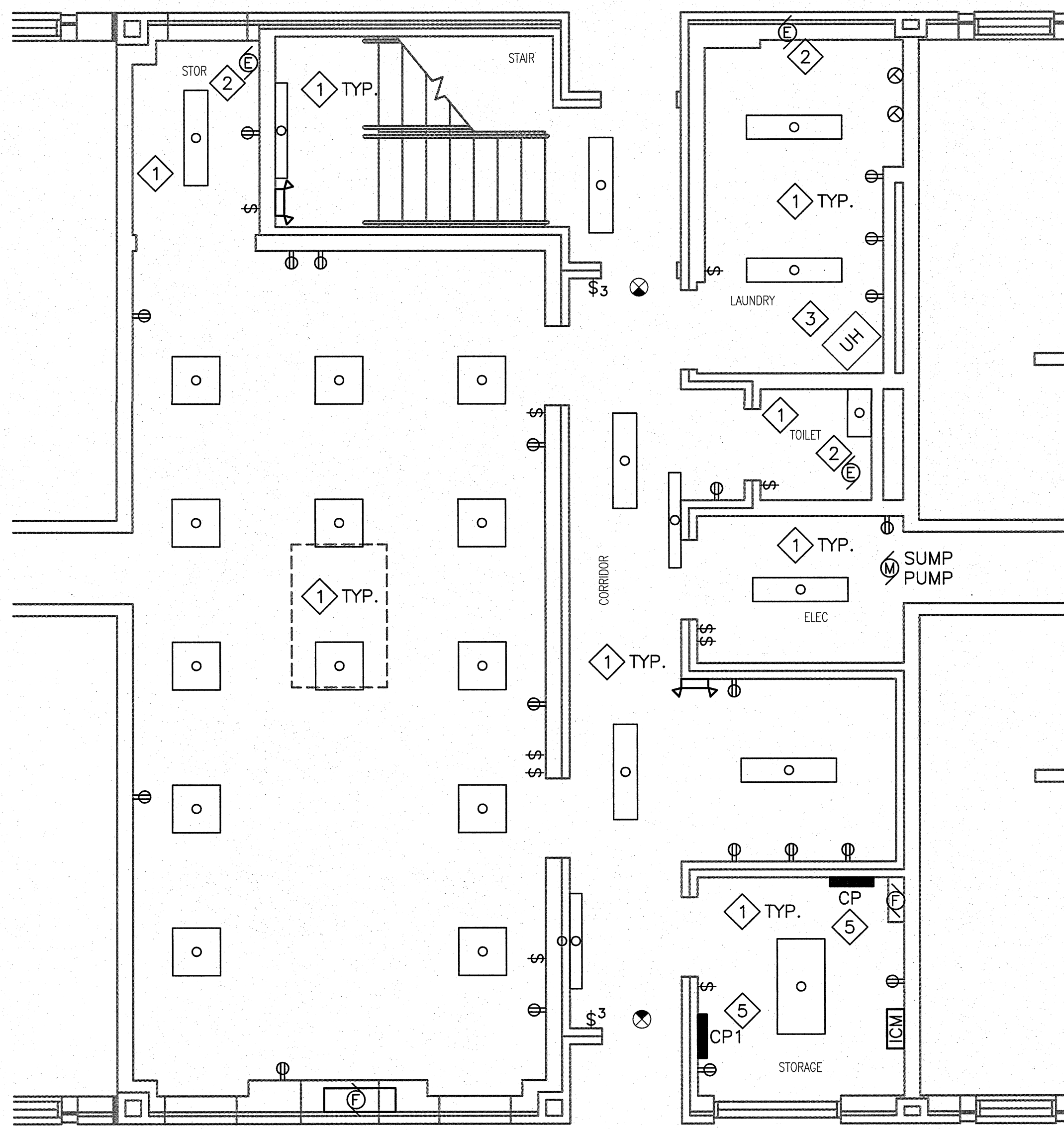
- 1. ALL CABLE TV, INTERCOM, TELEPHONE CONDUIT, CONDUCTORS AND CABINETS ASSOCIATED WITH BEQ ROOMS TO REMAIN IN PLACE. PRESERVE AND PROTECT ALL ASSOCIATED COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS NEEDED TO THE COMMUNICATIONS. COORDINATE WITH LOCAL TELEPHONE SERVICE PROVIDER REGARDING ANY BEQ ROOM PHONE LINE MOVES, ADDITIONS, OR CHANGES. ALL REPAIRS SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.
- 2. REMOVE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS AND AREAS SERVICED BY BASE TELEPHONE SYSTEM. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.



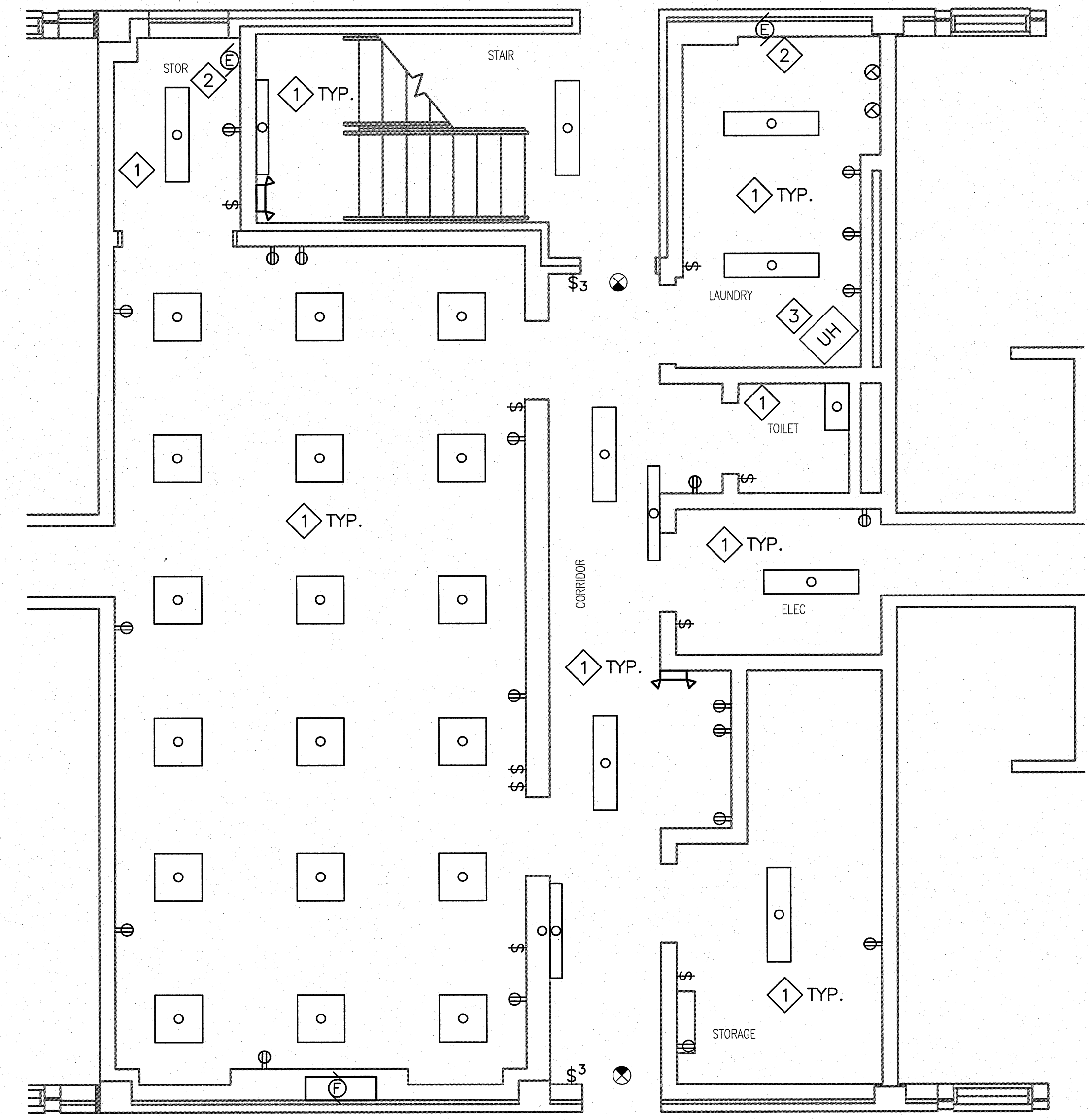
<b>ED-401</b>	
 <small>CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29496 (784) 875-3637 (784) 875-4509 www.cemsenengineering.com CEMS Project #08155V Project Manager: P. Mahaffey</small>	<small>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND</small> <b>MARINE CORPS BASE</b> <small>CAMP LEJEUNE, NORTH CAROLINA</small>
	<b>REPAIR BEQ</b> <b>BUILDING HP485</b>
<small>DES. R. ALVAR</small> <small>DR. C. COOPER</small> <small>CHK. J. BONGIORNO</small> <small>SUBMITTED BY:</small> <small>DESIGN DIR.</small> <small>APPROVED: PWO OR OICC</small>	<small>ENLARGED ELECTRICAL DEMOLITION PLANS</small> <small>NAVFAC DRAWING NO.</small> <b>60007193</b> <small>CONST. CONTR. NO. N40085-10-B-0070</small>
<small>SATISFACTORY TO:</small>	<small>SCALE: AS NOTED</small> <small>SPEC. 05-10-0070</small> <small>SHEET 53 OF 65</small>



1 TYPICAL ENLARGED ROOM DEMOLITION PLAN  
ED-101 ED-402 SCALE: 1/4" = 1'-0"



2 ENLARGED FIRST FLOOR ELECTRICAL DEMOLITION PLAN  
ED-101 ED-402 SCALE: 1/4" = 1'-0"



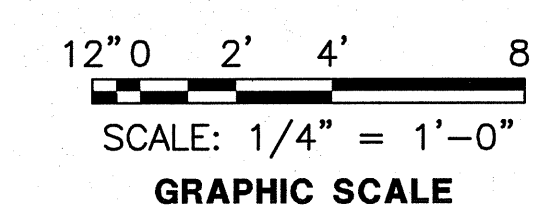
3 ENLARGED SECOND/THIRD FLOOR ELECTRICAL DEMOLITION PLAN  
ED-101 ED-402 SCALE: 1/4" = 1'-0"

**DEMOLITION KEYNOTES:**

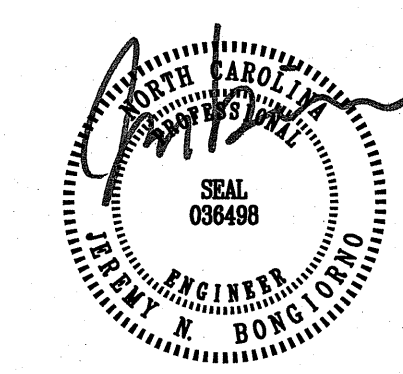
- 1 REMOVE LIGHT FIXTURES, RECEPTACLES, SWITCHES, AND DEVICE PLATES IN ROOM. REMOVE JUNCTIONS BOXES, CONDUCTORS, AND EXPOSED CONDUIT BACK TO SOURCE PANELBOARD.
- 2 DISCONNECT POWER TO EXHAUST FAN TO BE REMOVED. REMOVE ASSOCIATED CONDUCTORS AND EXPOSED CONDUIT BACK TO PANELBOARD.
- 3 REMOVE EXISTING UNIT HEATER ASSOCIATED CONDUCTORS BACK TO PANELBOARD.
- 4 IN SLEEPING ROOMS, REMOVE LIGHT FIXTURES, RECEPTACLES, SWITCHES AND DEVICE PLATES. REMOVE CONDUCTORS FROM DEVICE BOXES BACK TO PANELS. SEE SHEET E-403 FOR NEW WORK IN SLEEPING ROOMS.
- 5 REMOVE EXISTING PANELBOARDS COMPLETELY.

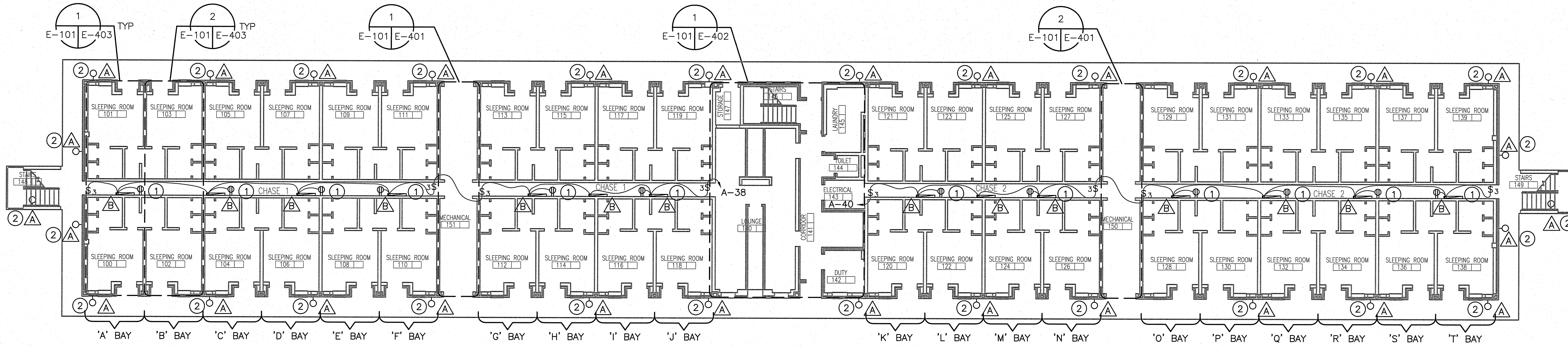
**GENERAL NOTES:**

- 1. ALL CABLE TV, INTERCOM, TELEPHONE CONDUIT, CONDUCTORS AND CABINETS ASSOCIATED WITH BEQ ROOMS TO REMAIN IN PLACE. PRESERVE AND PROTECT ALL ASSOCIATED COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS NEEDED TO THE COMMUNICATIONS. COORDINATE WITH LOCAL TELEPHONE SERVICE PROVIDER REGARDING ANY BEQ ROOM PHONE LINE MOVES, ADDITIONS, OR CHANGES. ALL REPAIRS SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.
- 2. DEMOLITION PLAN IS DIAGRAMMATIC AND MAY NOT REPRESENT ALL ITEMS TO BE REMOVED.
- 3. REMOVE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS AND AREAS SERVICED BY BASE TELEPHONE SYSTEM. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.



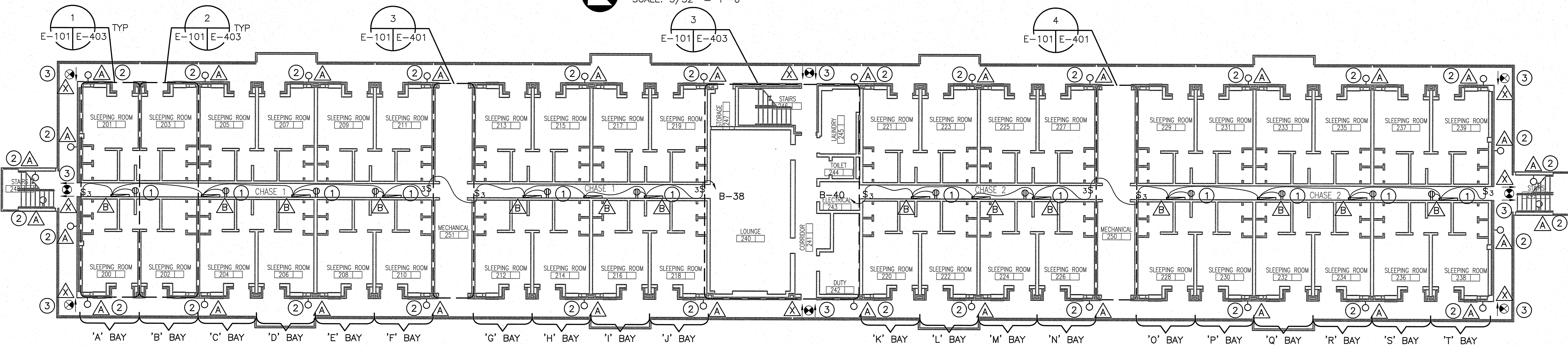
<b>ED-402</b>	
 CEMS ENGINEERING	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	<b>REPAIR BEQ</b> <b>BUILDING HP485</b>
DES. R. ALVAR DR. C. COOPER CHK. J. BONGIORNO SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE: _____ SATISFACTORY TO: DATE: _____	ENLARGED ELECTRICAL DEMOLITION PLANS SIZE CODE IDENT NO. NAVFAC DRAWING NO. <b>F 80091 60007194</b> CONST. CONTR. NO. 140085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 54 OF 65





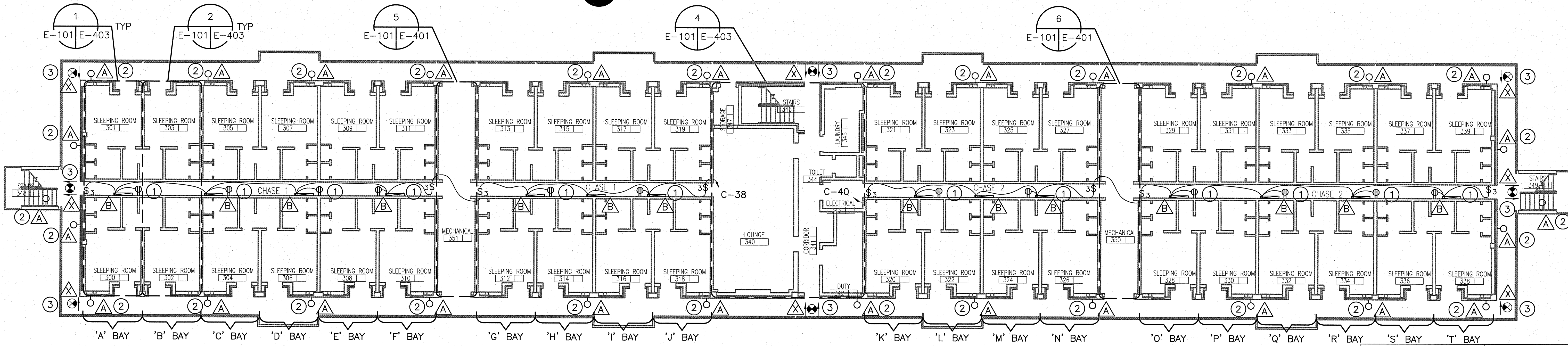
**FIRST FLOOR ELECTRICAL NEW WORK PLAN**

SCALE: 3/32" = 1'-0"



**SECOND FLOOR ELECTRICAL NEW WORK PLAN**

SCALE: 3/32" = 1'-0"



**THIRD FLOOR ELECTRICAL NEW WORK PLAN**

SCALE: 3/32" = 1'-0"

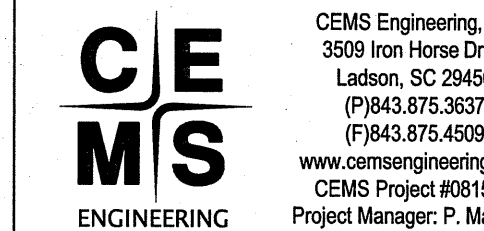
**NEW WORK KEYNOTES:**

- 1 INSTALL NEW FIXTURE 'B', RECEPTACLES, SWITCHES, AND DEVICE PLATES IN UTILITY CHASES.
- 2 INSTALL NEW EXTERIOR FIXTURE 'A' AT EXISTING BOX LOCATIONS. FIXTURE 'A' ON 1ST, 2ND, AND 3RD FLOORS TO BE FED FROM CIRCUITS G-4, H-4, AND J-4 RESPECTIVELY VIA TIMECLOCK/PHOTOCCELL.
- 3 INSTALL NEW EXIT SIGNS ON EXTERIOR OF SECOND & THIRD FLOORS. RUN CONDUIT ON BOTTOM OF UPPER SLAB.

**GENERAL NOTES:**

1. SEE SHEET E-502 FOR LIGHTING FIXTURE SCHEDULE.
2. ALL EXIT SIGNS TO BE ON CIRCUIT D-38.
3. IT IS PERMISSIBLE TO RE-USE EXISTING UTILITY BOXES, CONDUIT, AND CONDUCTORS WHERE POSSIBLE FOR NEW DEVICES AND EQUIPMENT. ALL ITEMS BEING RE-USED MUST BE FREE OF DAMAGE OR DETERIORATION.
4. PROVIDE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS AND AREAS SERVICED BY BASE TELEPHONE SYSTEM PER CAMP LEJEUNE COMMUNICATIONS SPECIFICATION 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.

**E-101**



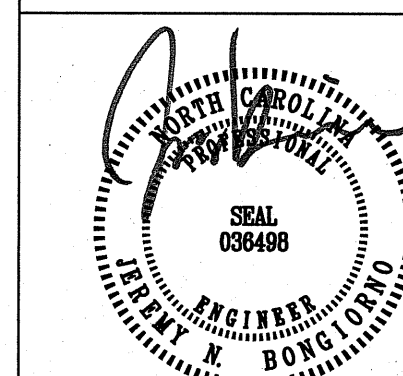
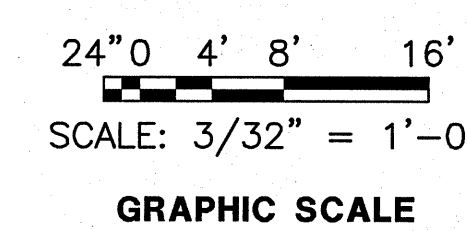
CEMS Engineering, Inc.  
3509 Iron Horse Drive  
Ladson, SC 29458  
(704) 875-9037  
(704) 875-4509  
www.cemsgroup.com  
CEMS Project #061609  
Project Manager: P. Mahaffey

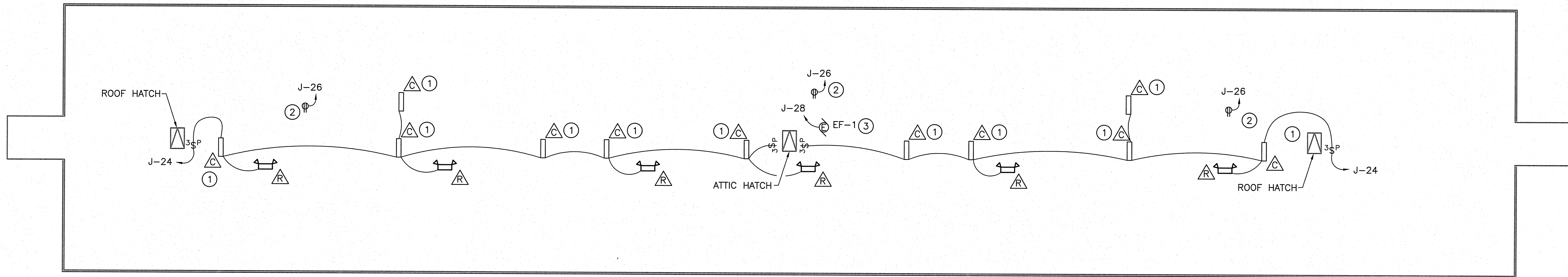
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ  
BUILDING HP485

DES. R. ALVAR  
DR. C. COOPER  
CHK. J. BONGIORNO  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE: \_\_\_\_\_  
SATISFACTORY TO: \_\_\_\_\_ DATE: \_\_\_\_\_

ELECTRICAL NEW WORK PLANS  
NAVFAC DRAWING NO. 60007195  
CONST. CONTR. NO. N40085-10-B-0070  
SCALE: AS NOTED SPEC. 05-10-0070 SHEET 55 OF 65

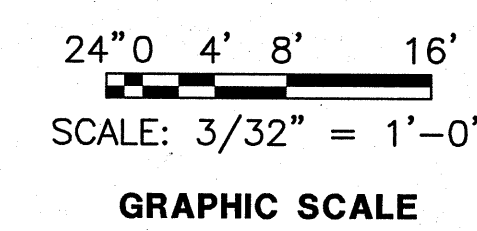




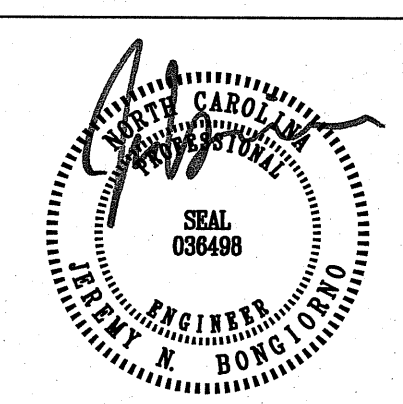
- NEW WORK KEYNOTES:**
- ① INSTALL NEW FIXTURES, SWITCHES, CONDUIT AND 2#12, 1#12G, 1/2" C CIRCUIT IN ATTIC. ATTACH FIXTURES TO TRUSSES ABOVE WALKWAY OPENING. ATTACH SWITCH TO ROOF FRAME ADJACENT TO ROOF AND ATTIC HATCHES.
  - ② INSTALL NEW RECEPTACLES, UTILITY BOX, CONDUIT AND 2#12, 1#12G, 1/2" C CIRCUIT TO RECEPTACLE.
  - ③ EF-1 PROVIDED WITH INTEGRAL DISCONNECT.

- GENERAL NOTES:**
1. SEE SHEET E-502 FOR LIGHTING FIXTURE SCHEDULE.
  2. TYPE 'R' FIXTURES TO BE FED FROM UNSWITCHED LEG OF NEAREST LIGHTING CIRCUIT.
  3. ALL NEW AND EXISTING PENETRATIONS ARE TO BE FIRE STOPPED TO MEET 2 HOUR RATING.

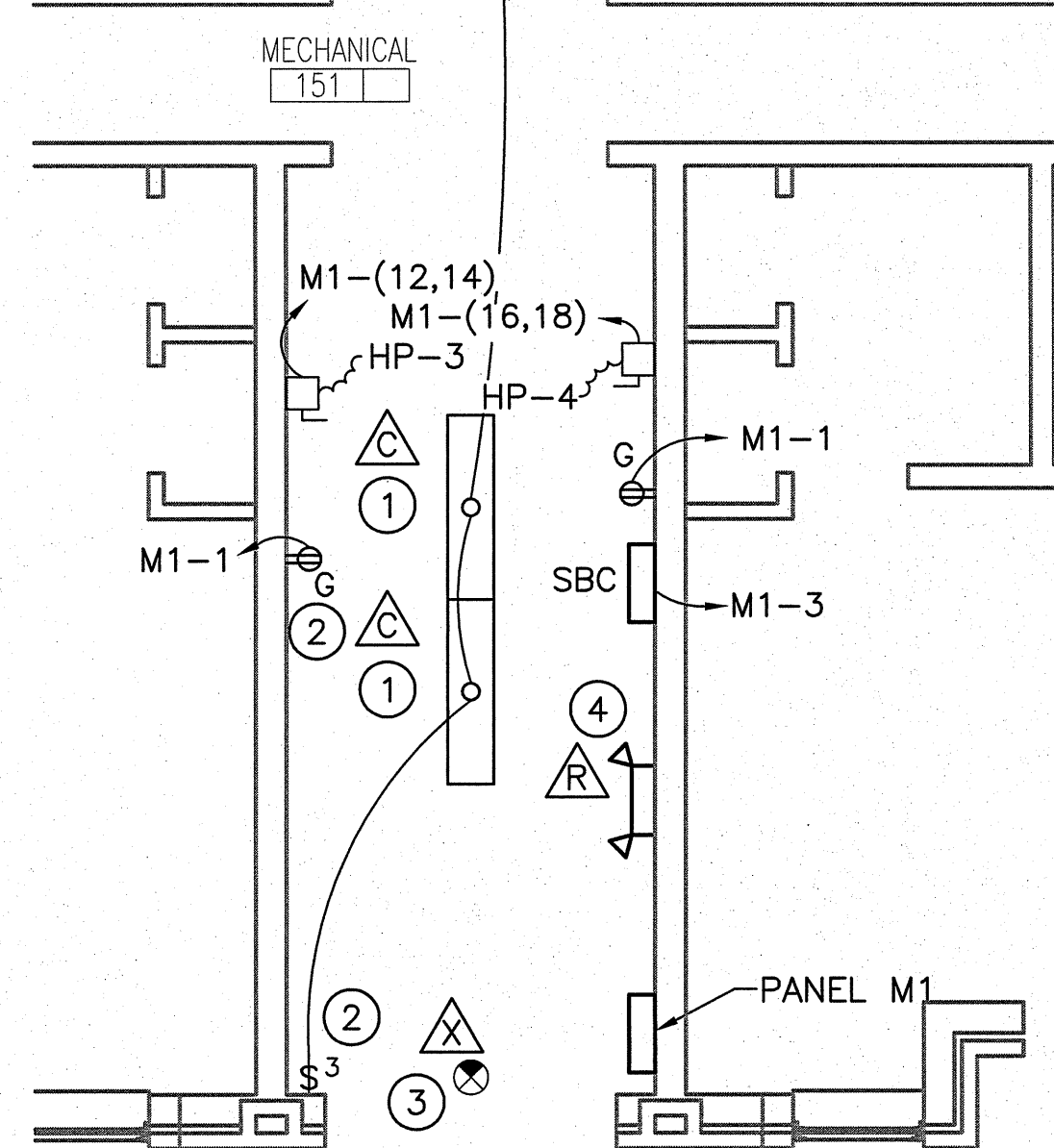
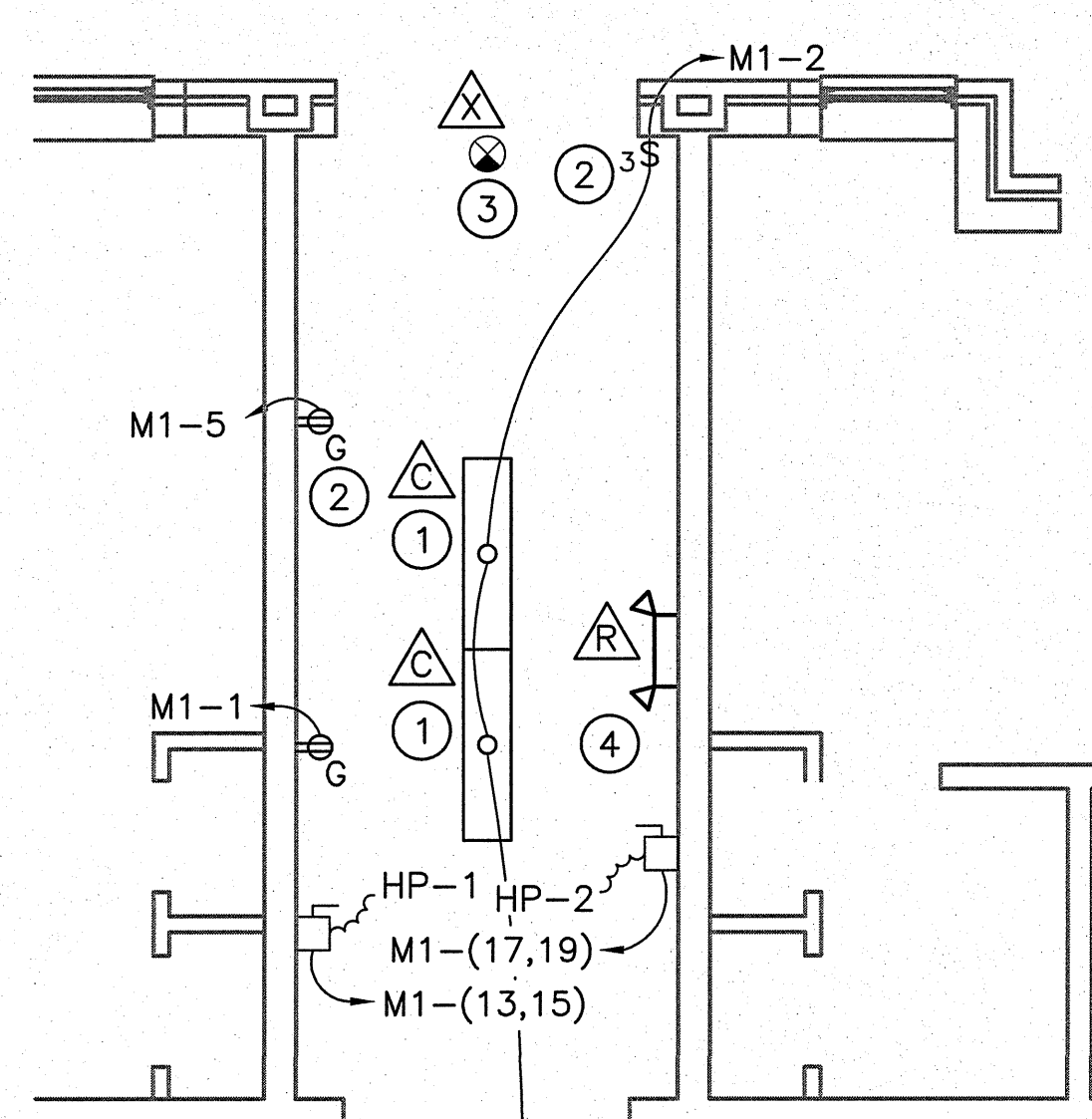
**ATTIC ELECTRICAL NEW WORK PLAN**  
SCALE: 3/32" = 1'-0"



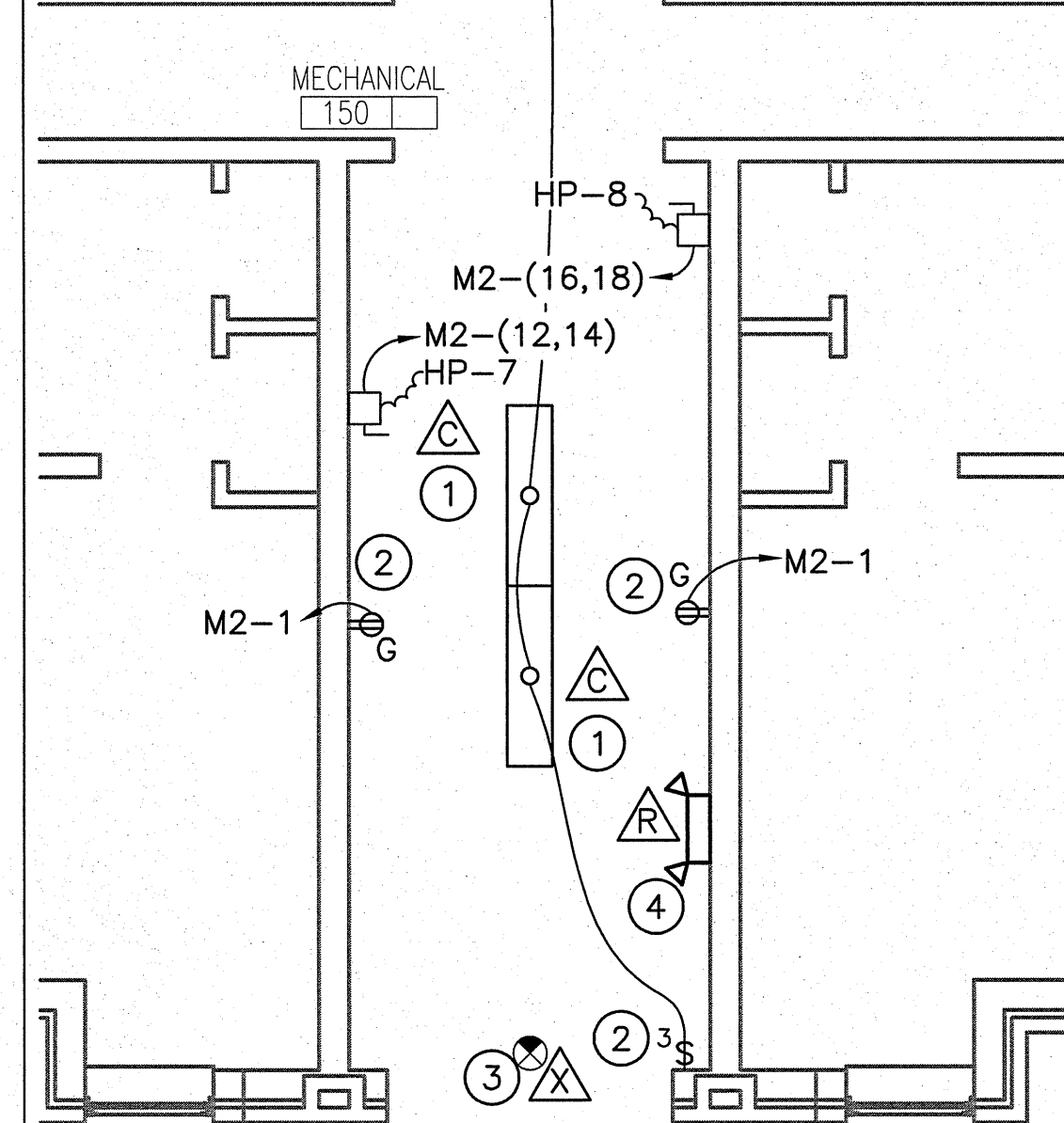
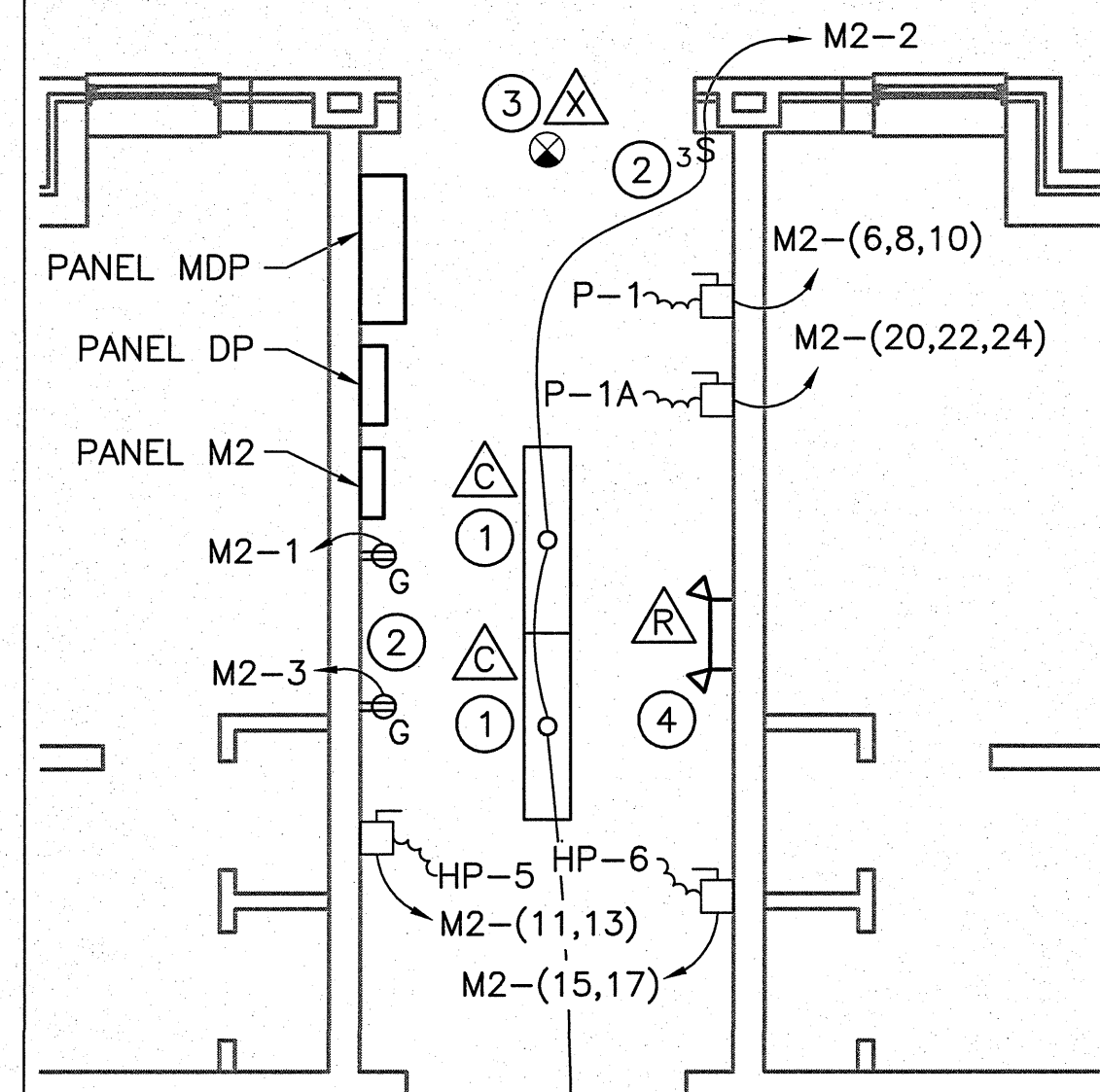
<b>E-102</b>	
<small>CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29458 (704) 433-8337 (704) 433-8338 www.cemsgroup.com CEMS Project #101591 Project Manager: P. Mahaffey</small>	<p style="text-align: center; margin: 0;"><b>DEPARTMENT OF THE NAVY</b> NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA</p> <p style="text-align: center; margin: 0;"><b>REPAIR BEQ</b> <b>BUILDING HP485</b></p> <p style="text-align: center; margin: 0;">ATTIC ELECTRICAL NEW WORK PLAN</p>
<small>DES. R. ALVAR</small> <small>DR. C. COOPER</small> <small>CHK. J. BONGIORNO</small> <small>SUBMITTED BY:</small> <small>DESIGN DIR.</small> <small>APPROVED: PWO OR OICC</small> DATE: _____ <small>SATISFACTORY TO:</small> DATE: _____	<small>SIZE CODE IDENT NO:</small> <b>F 80091</b> <small>NAVAFAC DRAWING NO.</small> <b>60007196</b> <small>CONST. CONTR. NO. N40085-10-B-0070</small> <small>SCALE: AS NOTED</small> <small>SPEC. 05-10-0070</small> <small>SHEET 56 OF 65</small>



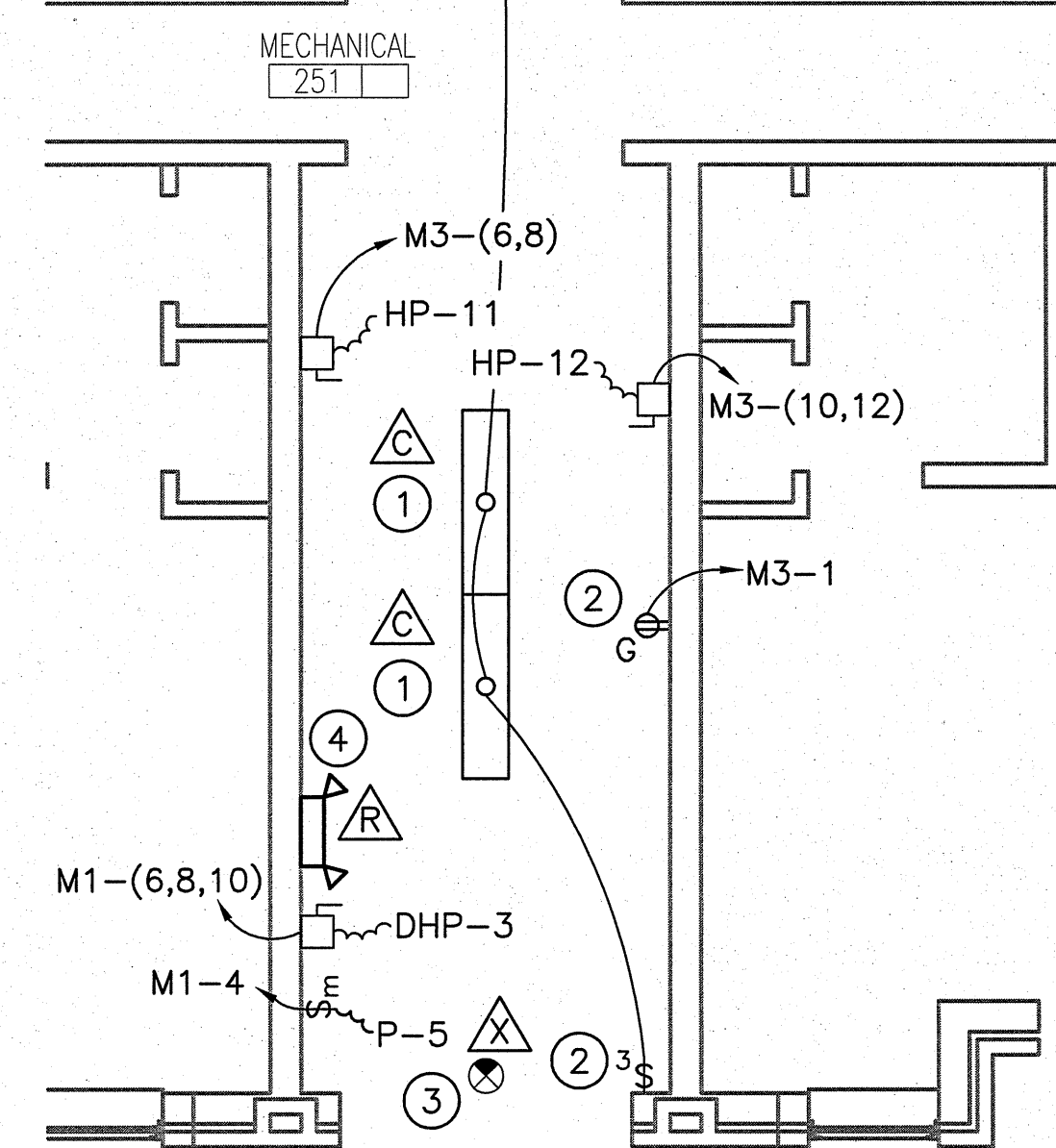
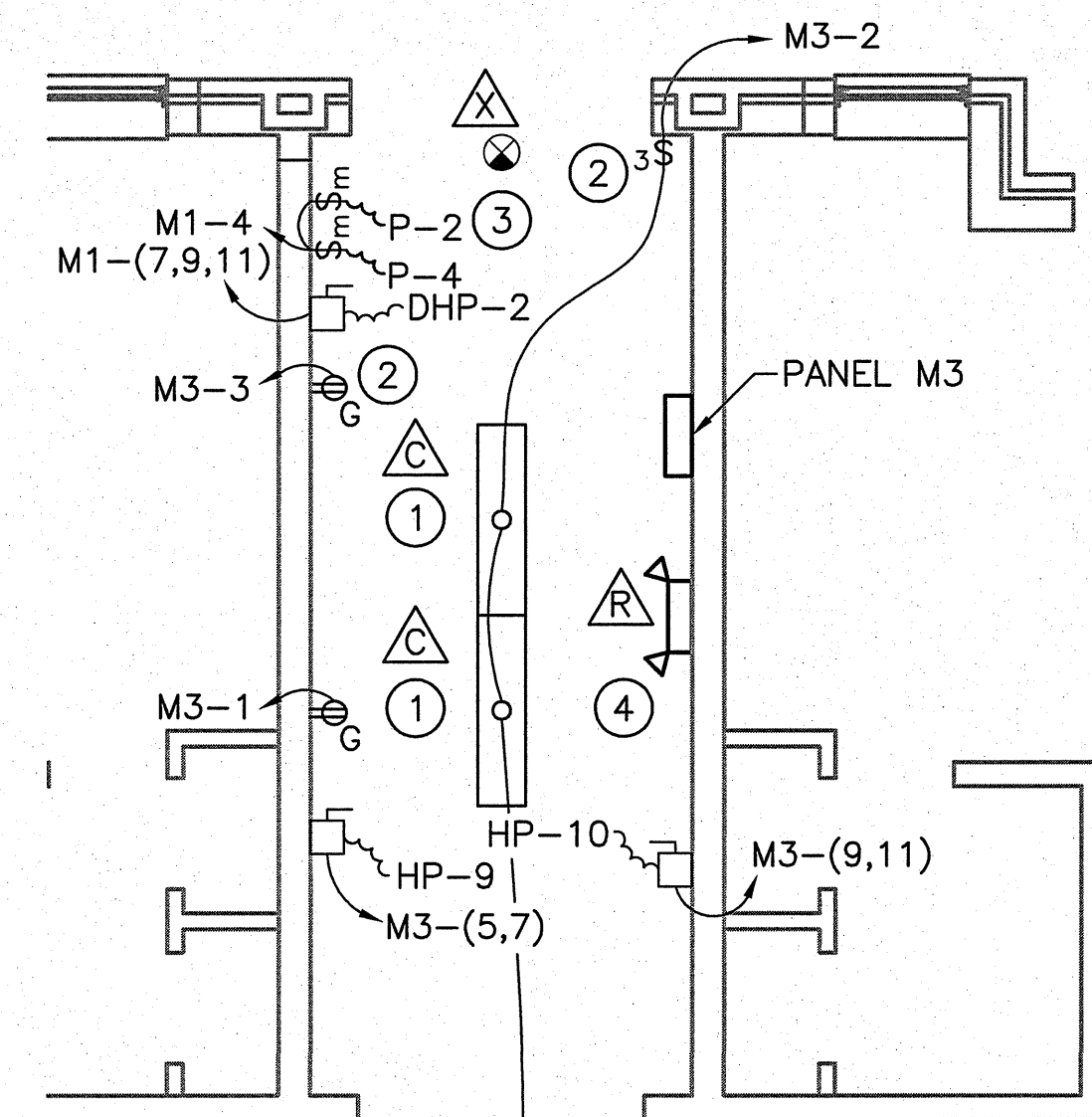




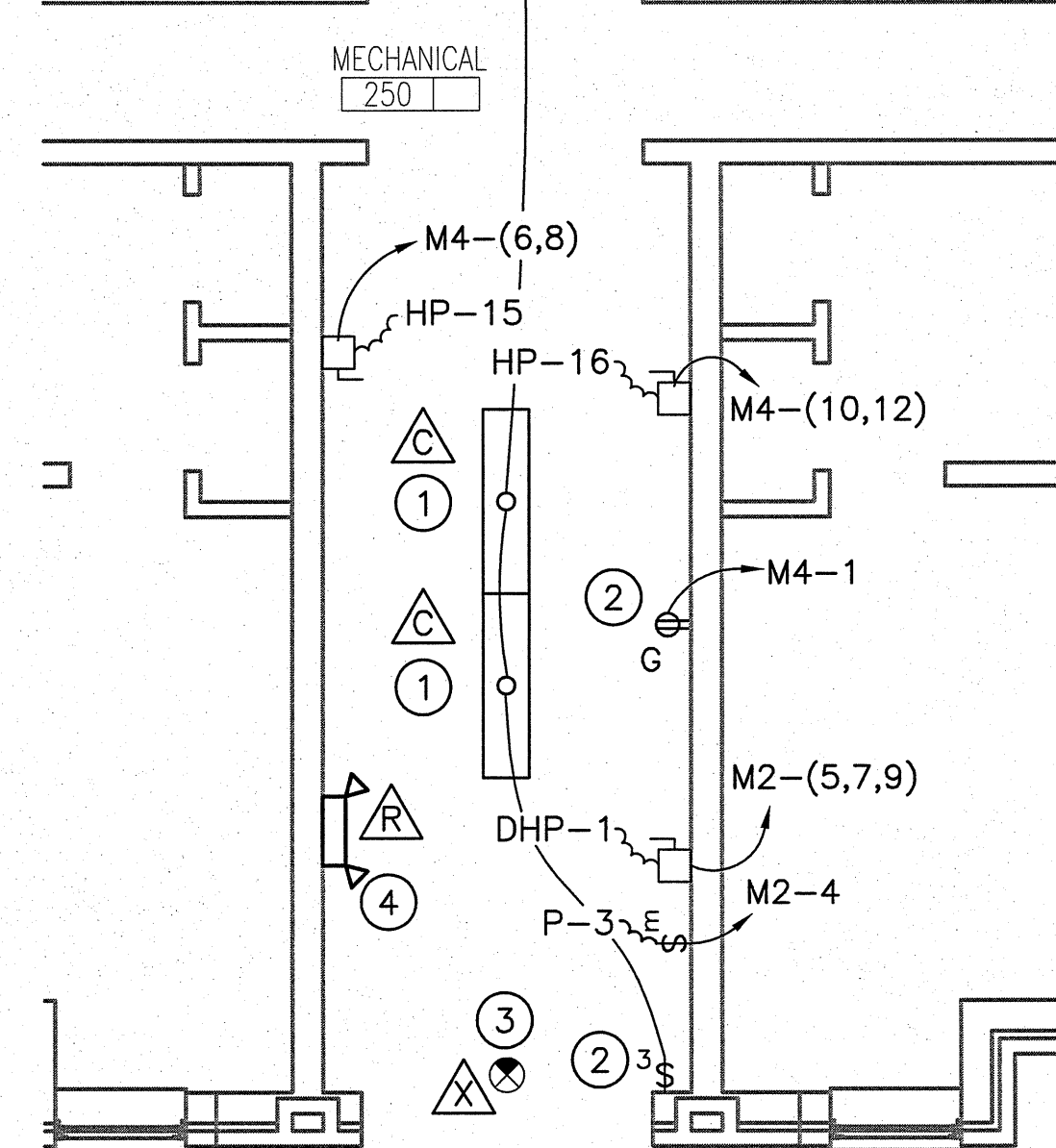
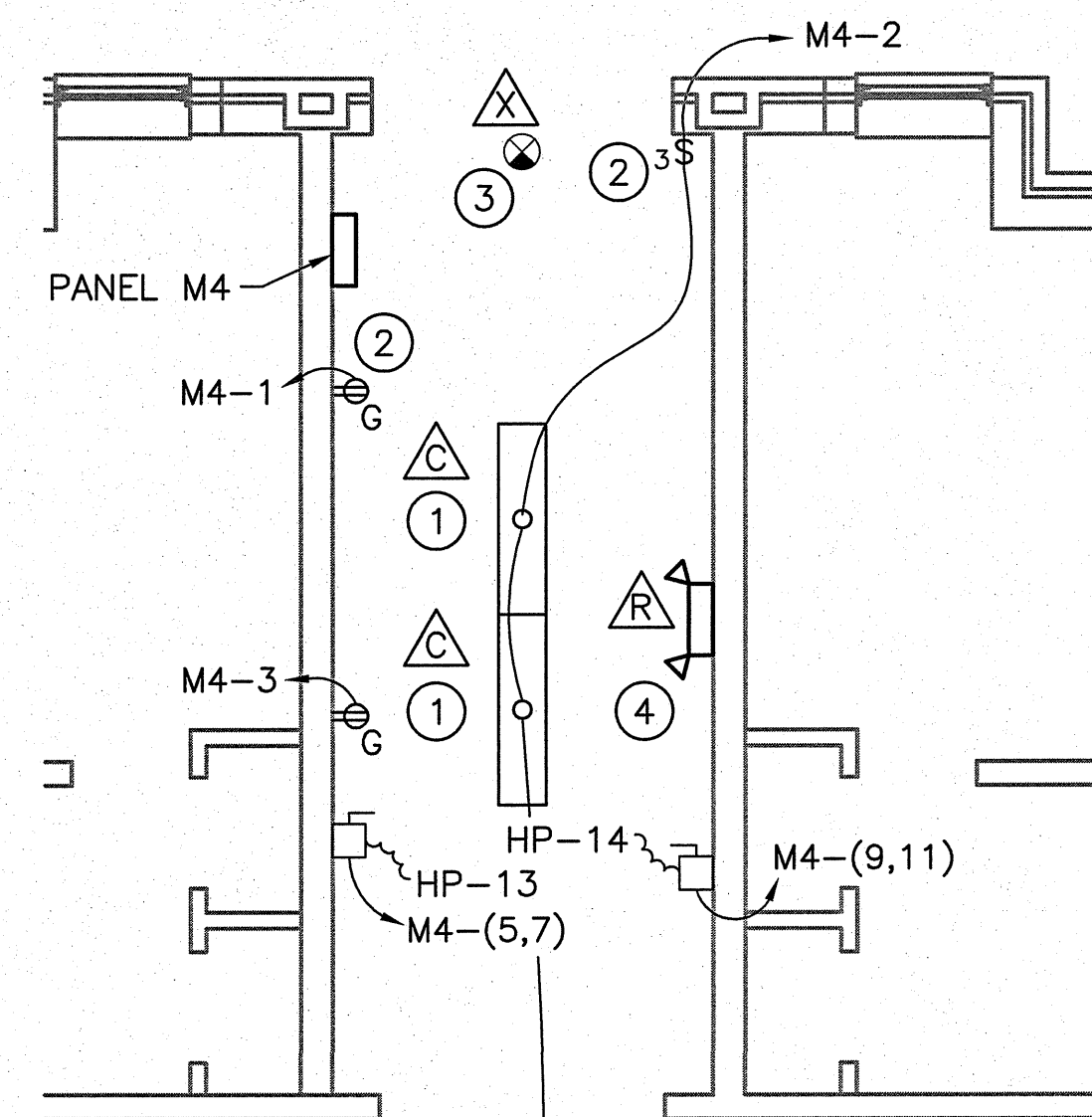
1 ENLARGED ELECTRICAL NEW WORK PLAN  
E-101 E-401 SCALE: 1/4" = 1'-0"



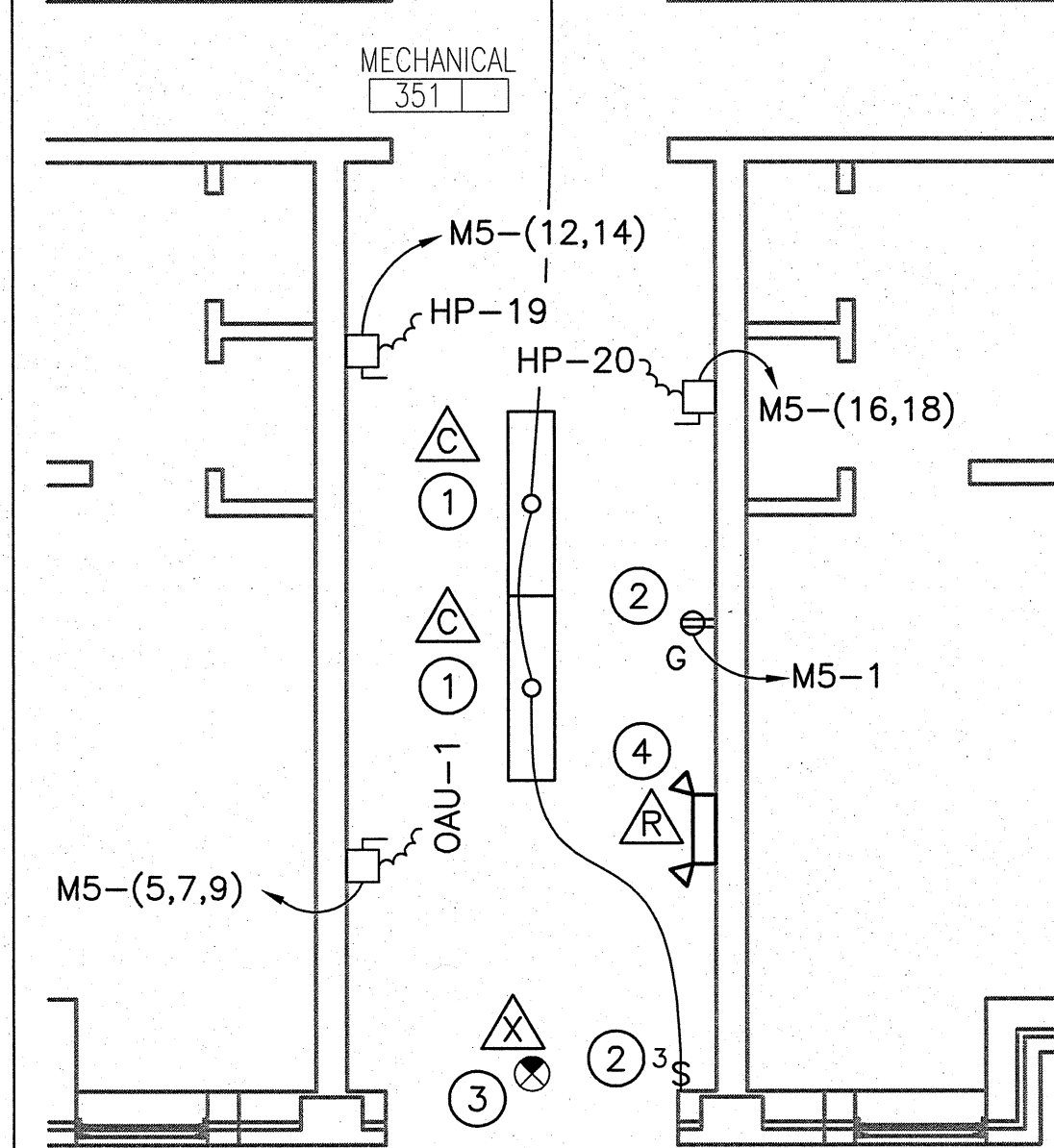
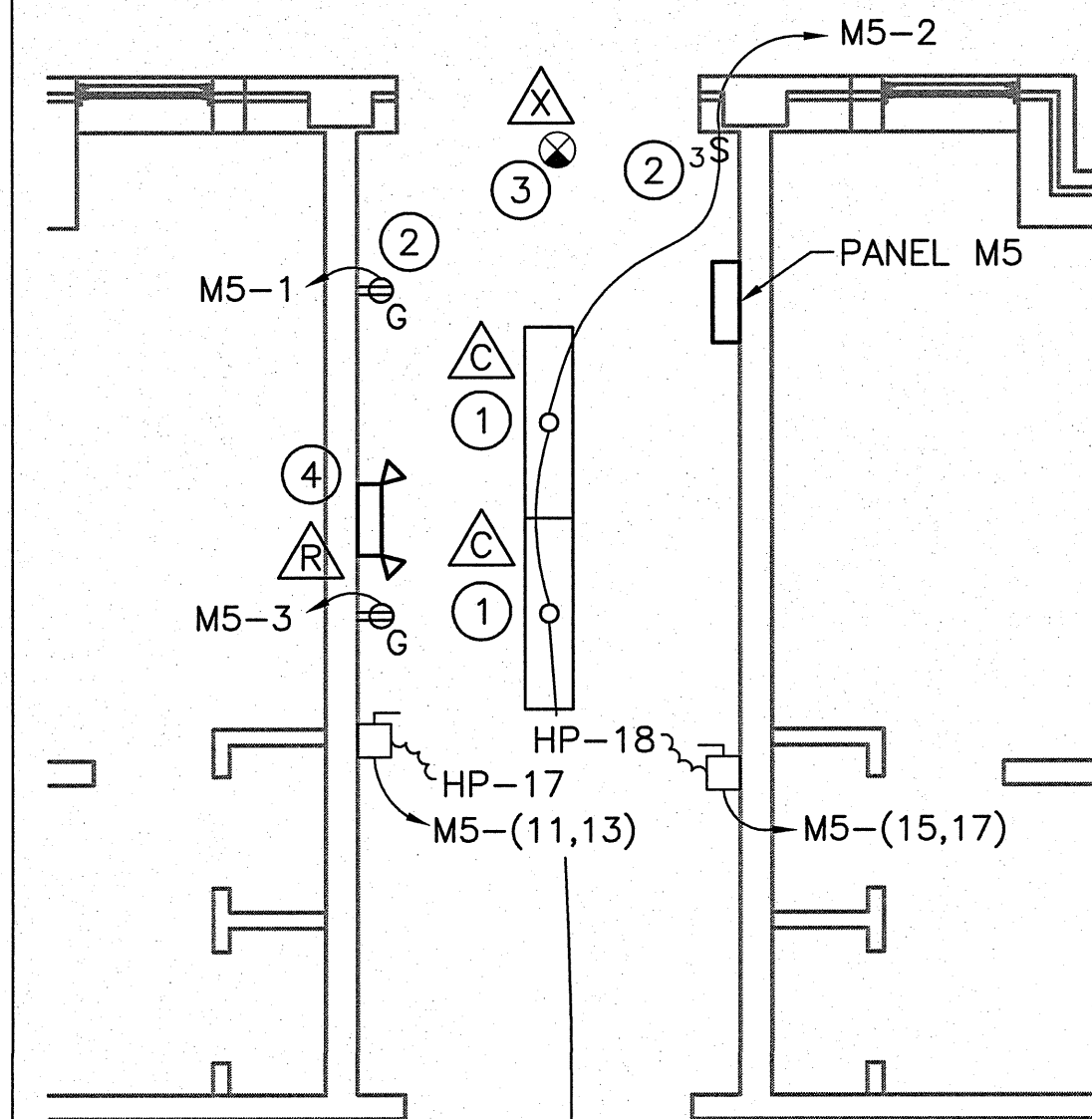
2 ENLARGED ELECTRICAL NEW WORK PLAN  
E-101 E-401 SCALE: 1/4" = 1'-0"



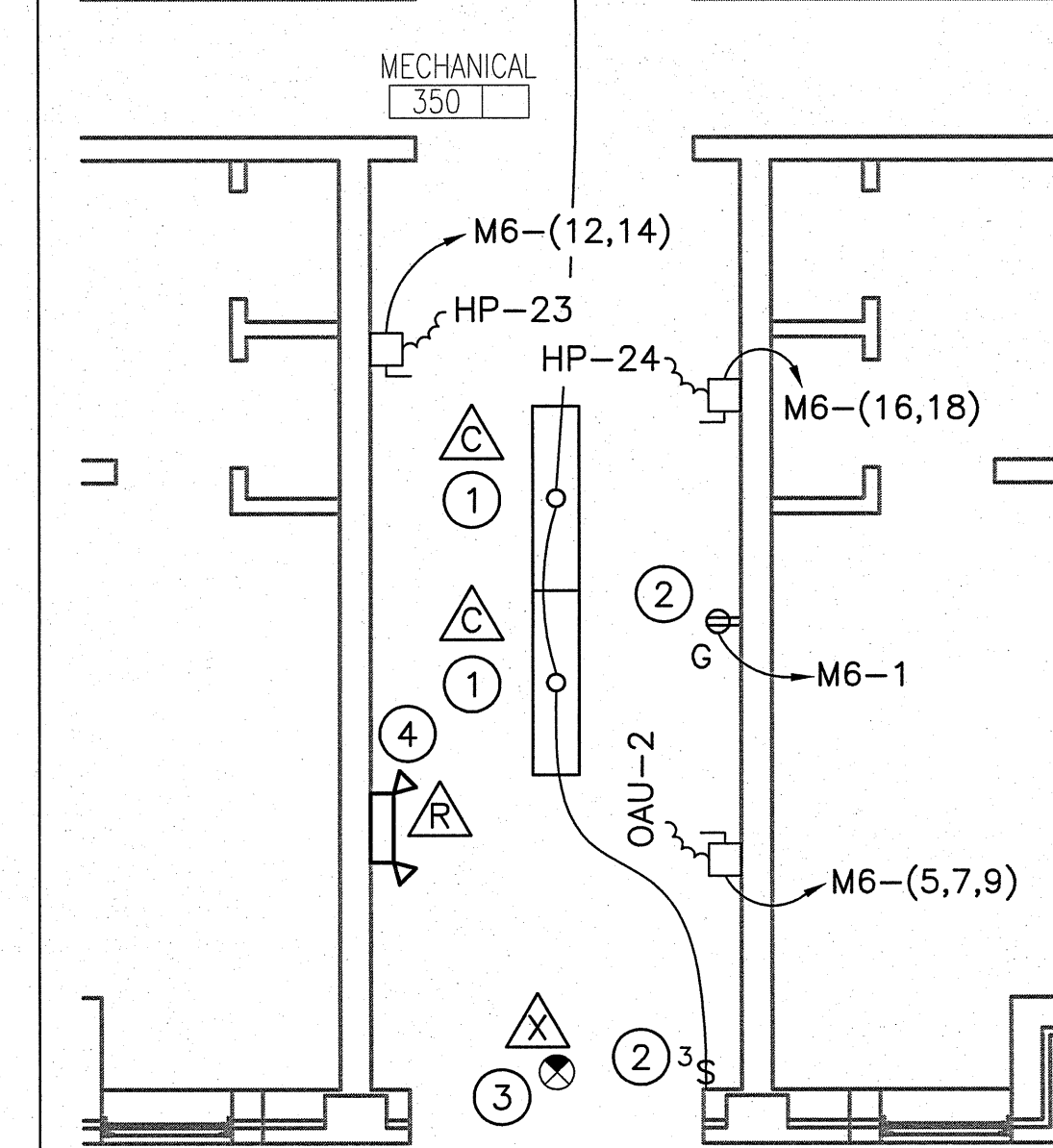
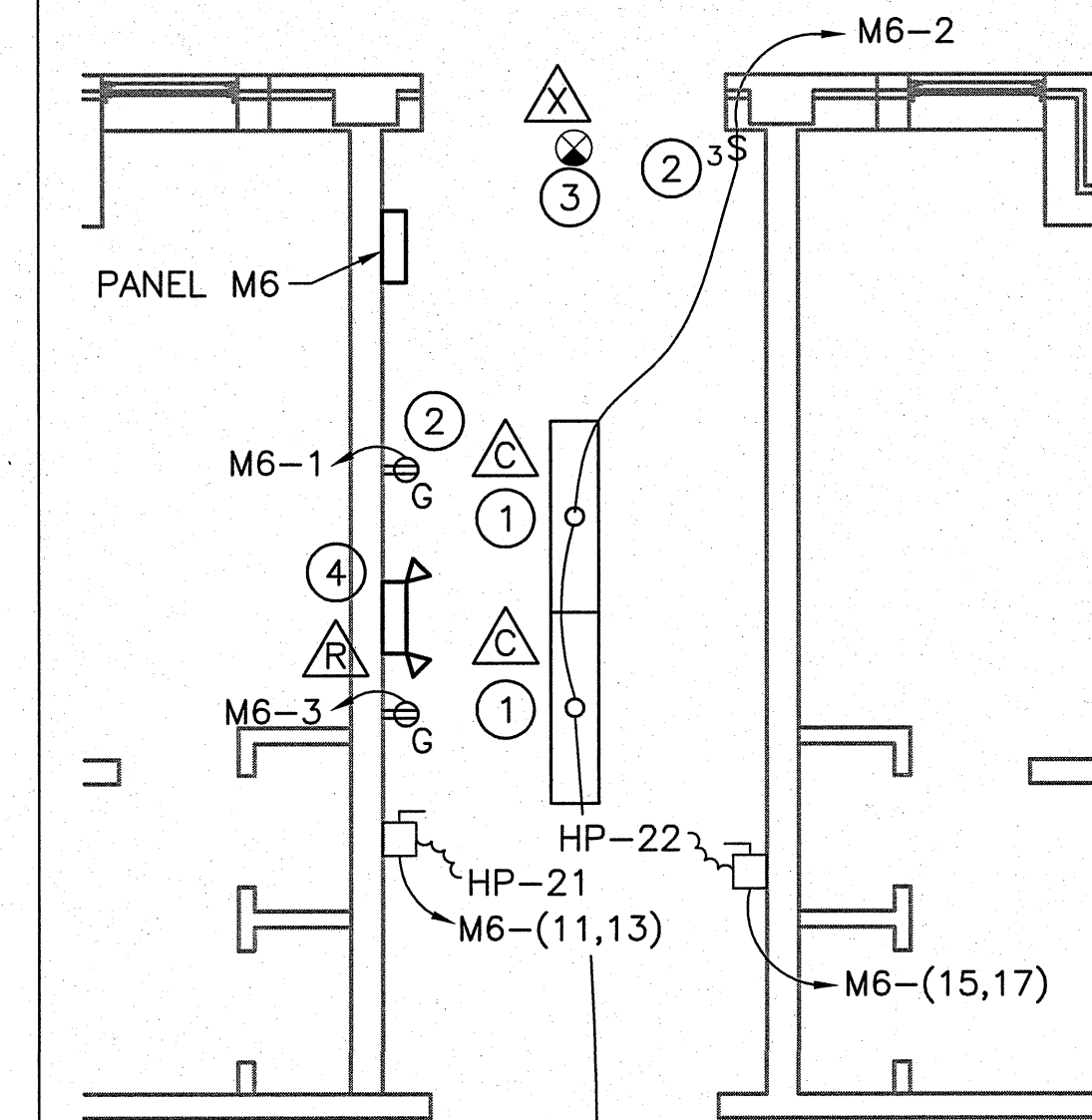
3 ENLARGED ELECTRICAL NEW WORK PLAN  
E-101 E-401 SCALE: 1/4" = 1'-0"



4 ENLARGED ELECTRICAL NEW WORK PLAN  
E-101 E-401 SCALE: 1/4" = 1'-0"



5 ENLARGED ELECTRICAL NEW WORK PLAN  
E-101 E-401 SCALE: 1/4" = 1'-0"



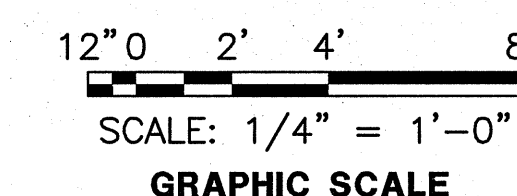
6 ENLARGED ELECTRICAL NEW WORK PLAN  
E-101 E-401 SCALE: 1/4" = 1'-0"

**NEW WORK KEYNOTES:**

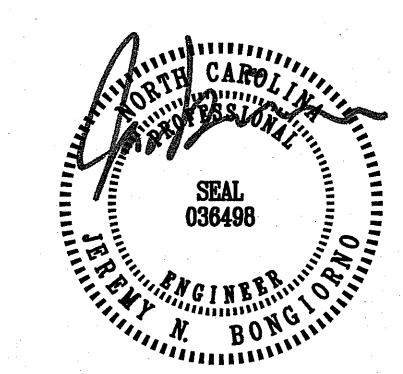
- 1 REPLACE LIGHT FIXTURES IN MECHANICAL ROOMS AS SHOWN.
- 2 REPLACE RECEPTACLES, SWITCHES AND DEVICE PLATES AS SHOWN.
- 3 ALL EXIT SIGNS TO BE ON CIRCUIT D-40.
- 4 ALL TYPE R FIXTURES TO BE FED FROM UNSWITCHED LEG OF NEAREST LIGHTING CIRCUIT.

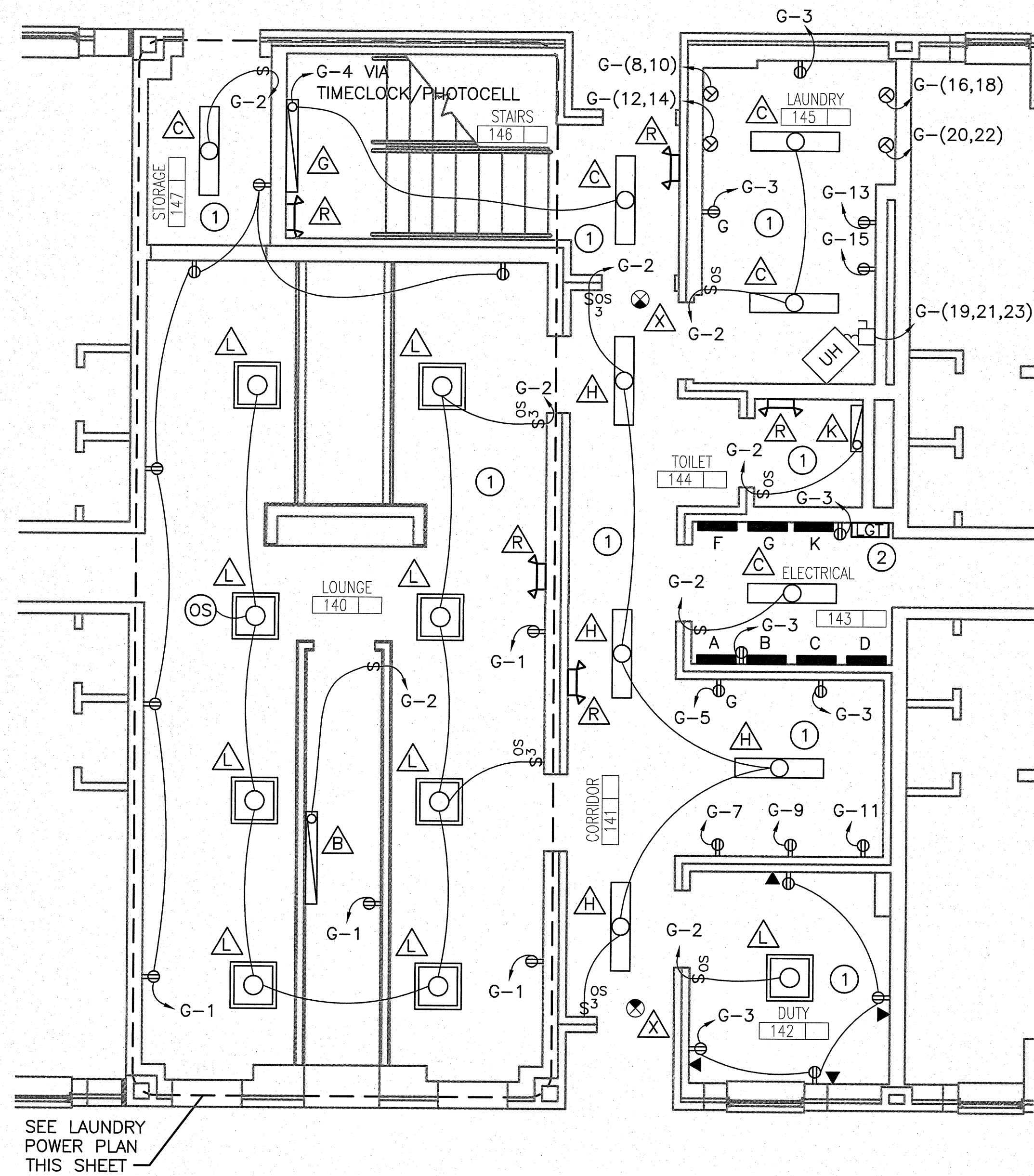
**GENERAL NOTES:**

1. SEE SHEET E-502 FOR LIGHTING FIXTURE SCHEDULE.
2. COORDINATE ELECTRICAL CONNECTIONS WITH MECHANICAL AND PLUMBING EQUIPMENT LOCATIONS.
3. ALL CABLE TV, INTERCOM, TELEPHONE CONDUIT, CONDUCTORS AND CABINETS ASSOCIATED WITH BEQ ROOMS TO REMAIN IN PLACE. PRESERVE AND PROTECT ALL ASSOCIATED COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS NEEDED TO THE COMMUNICATIONS. COORDINATE WITH LOCAL TELEPHONE SERVICE PROVIDER REGARDING ANY BEQ ROOM PHONE LINE MOVES, ADDITIONS, OR CHANGES. ALL REPAIRS SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.
4. PROVIDE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS AND AREAS SERVICED BY BASE TELEPHONE SYSTEM PER CAMP LEJEUNE COMMUNICATIONS SPECIFICATION 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.

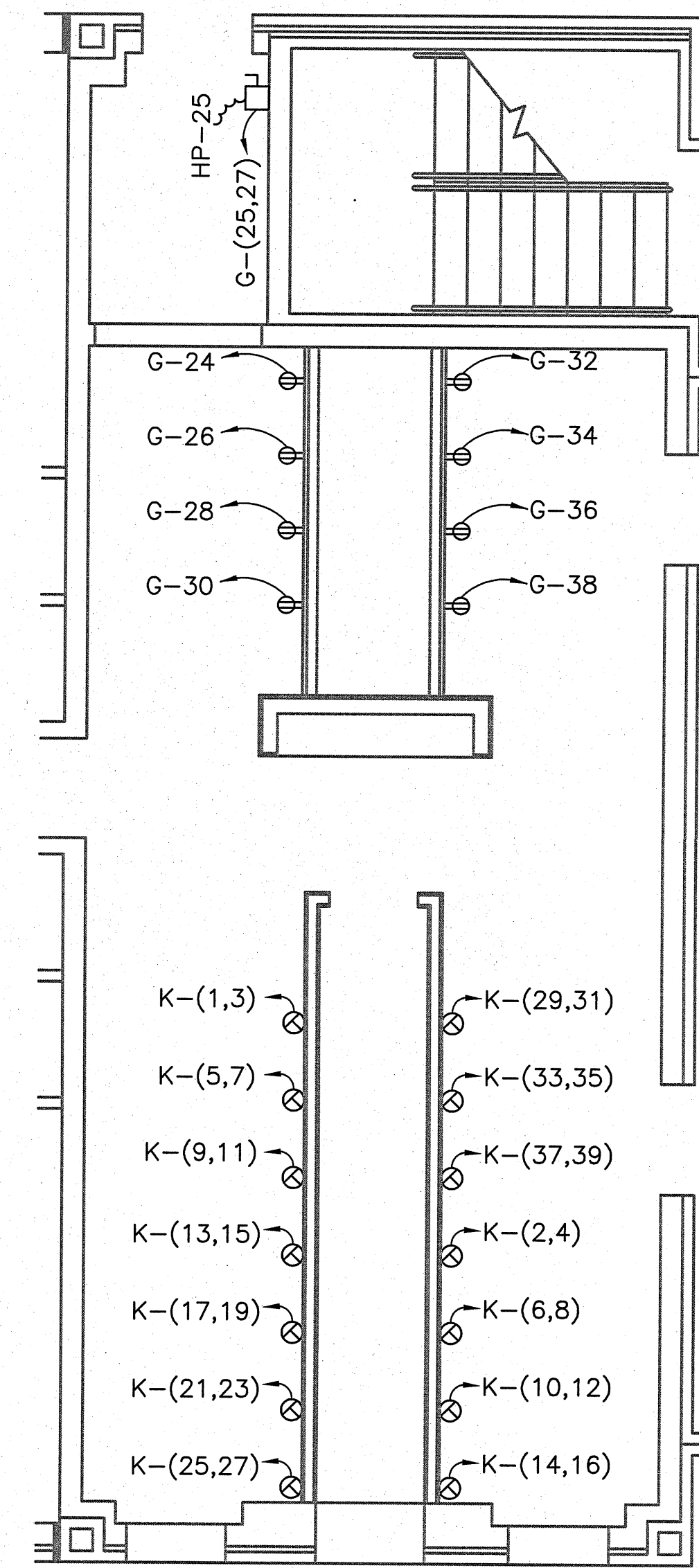


<b>E-401</b>	
 CEMS Engineering, Inc. 3509 Iron Horse Drive Lenoir, NC 28648 (754) 875-3507 (754) 875-4509 www.cemsgroup.com CEMS Project #08158V Project Manager: P. Mahaffey	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	REPAIR BEQ BUILDING HP485
DES. R. ALVAR DR. C. COOPER CHK. J. BONGIORNO SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE:	ENLARGED ELECTRICAL NEW WORK PLANS NAVFAC DRAWING NO. <b>60007197</b> CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 57 OF 65
SATISFACTORY TO: DATE:	F 80091





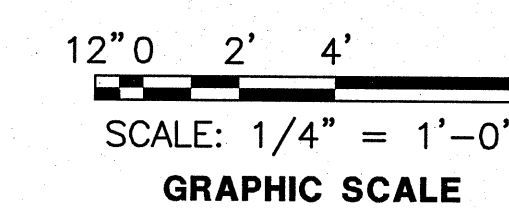
1  
E-101 | E-403 ENLARGED FIRST FLOOR ELECTRICAL NEW WORK PLAN  
SCALE: 1/4" = 1'-0"



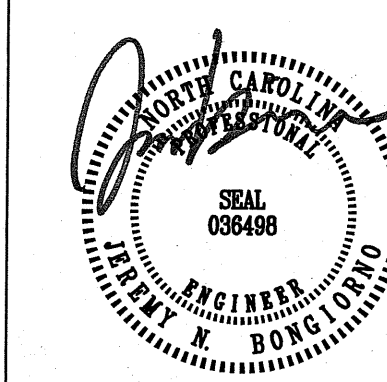
LAUNDRY POWER PLAN  
SCALE: 1/4" = 1'-0"

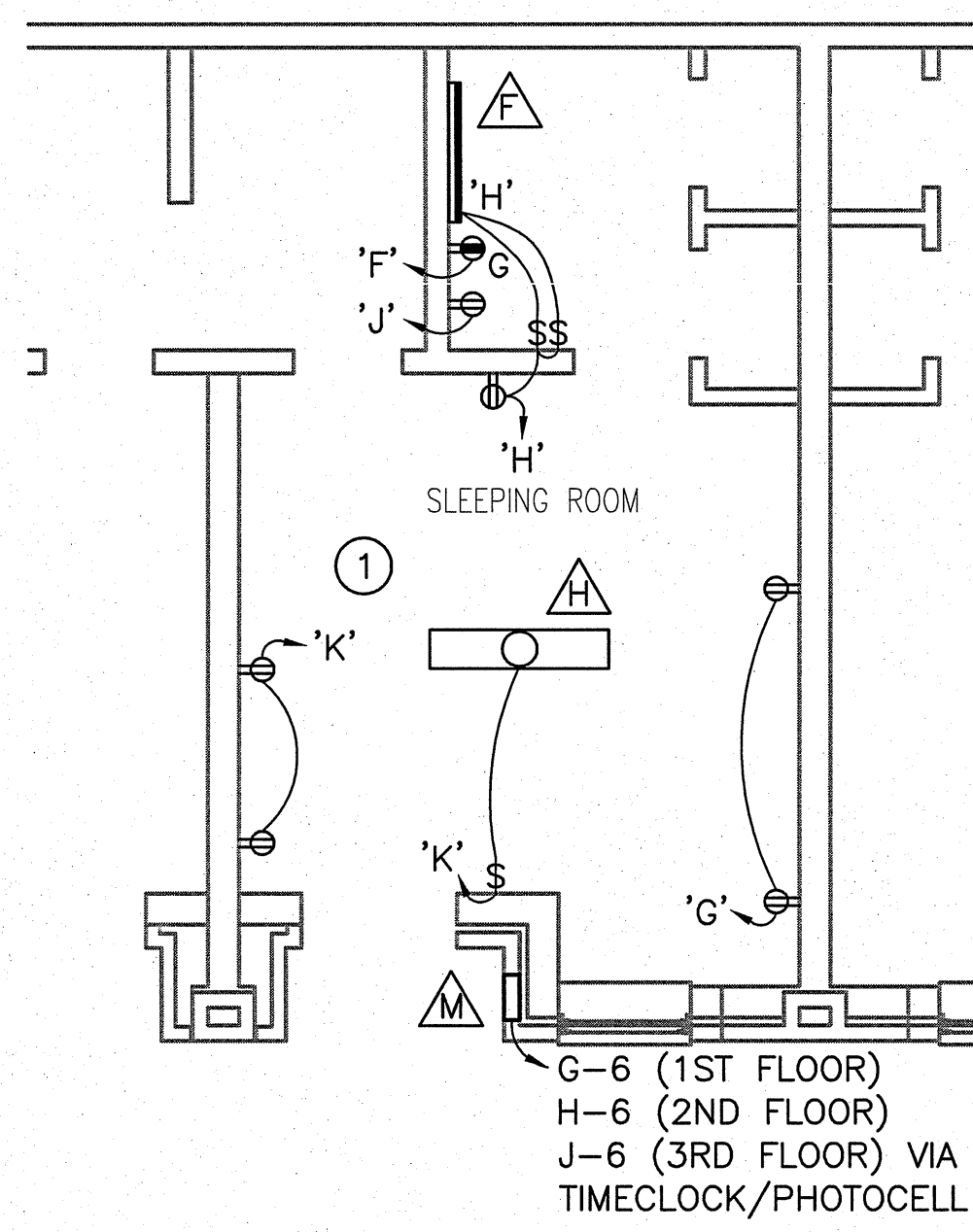
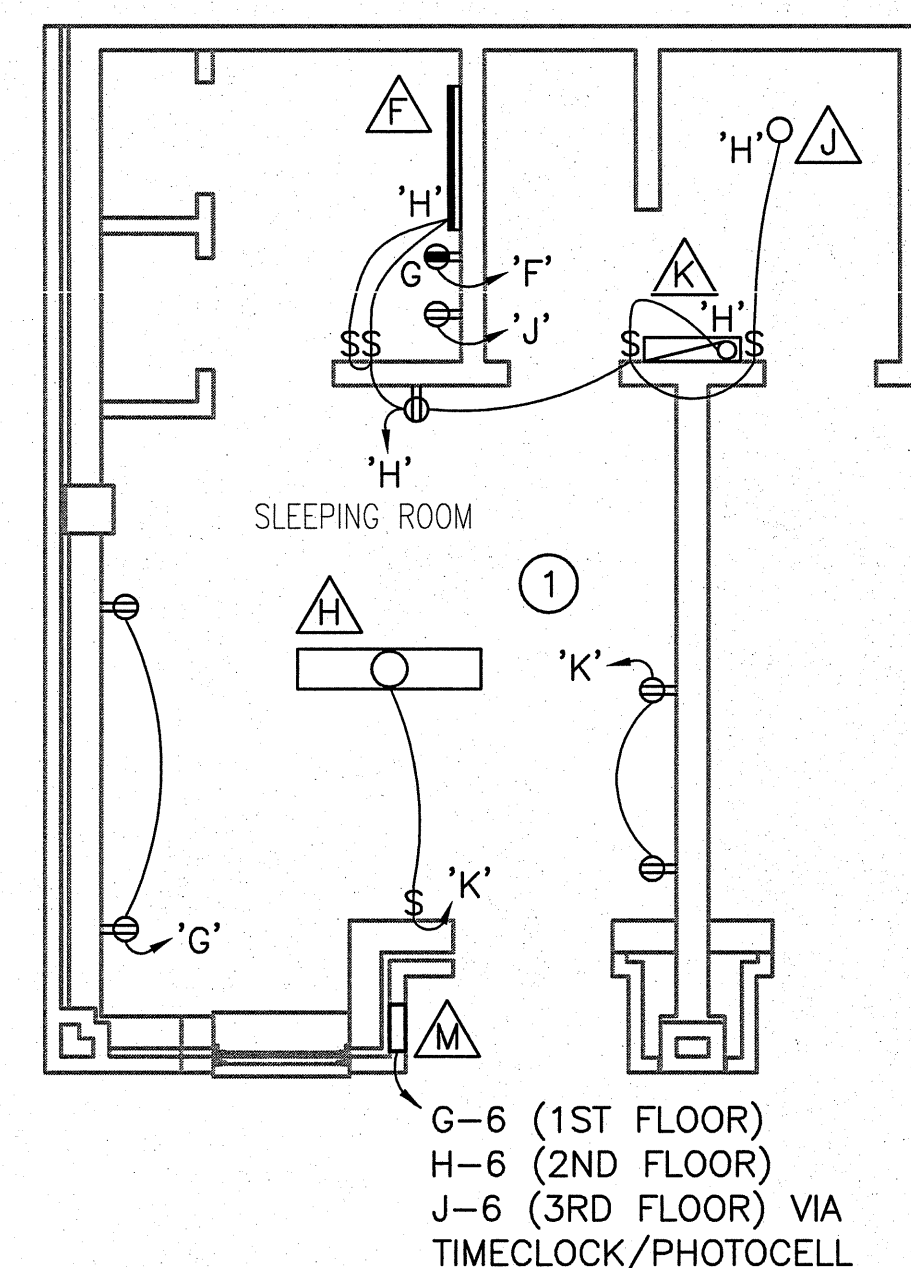
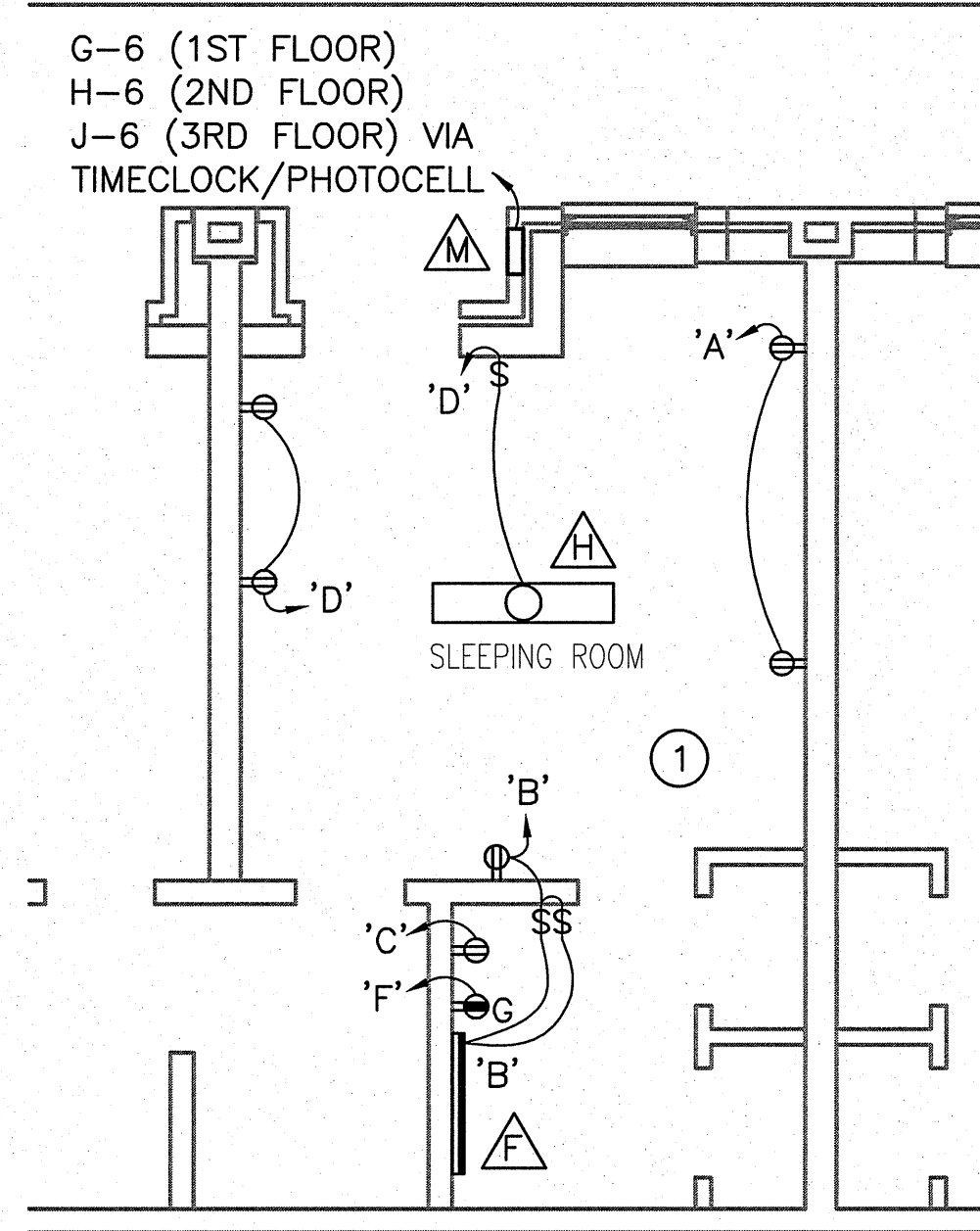
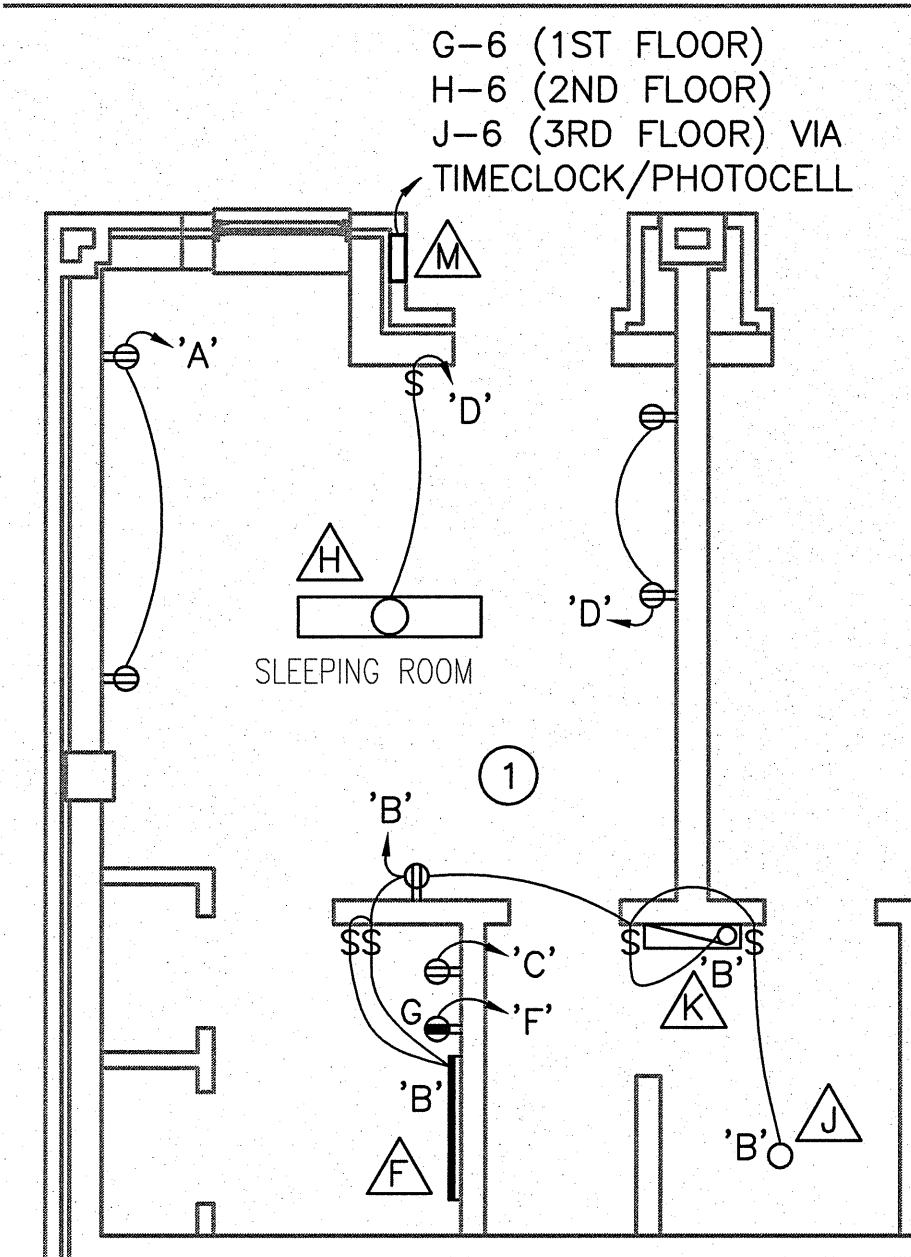
- NEW WORK KEYNOTES:**
- REPLACE ALL LIGHT FIXTURES, RECEPTACLES, SWITCHES AND DEVICE PLATES.
  - INSTALL NEW LIGHTING CONTROL PANEL WITH ELECTRONIC TIME CLOCK AND PHOTO ELECTRIC EYE CONTROL. INTEGRAL CONTACTOR TO BE 6 POLE, 20 AMP RATED, MAGNETIC LATCH HOLD.

- GENERAL NOTES:**
- SEE SHEET E-502 FOR LIGHTING FIXTURE SCHEDULE.
  - ALL EXIT SIGNS TO BE ON CIRCUIT D-38.
  - PROVIDE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS AND AREAS SERVICED BY BASE TELEPHONE SYSTEM PER CAMP LEJEUNE COMMUNICATIONS SPECIFICATION 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.



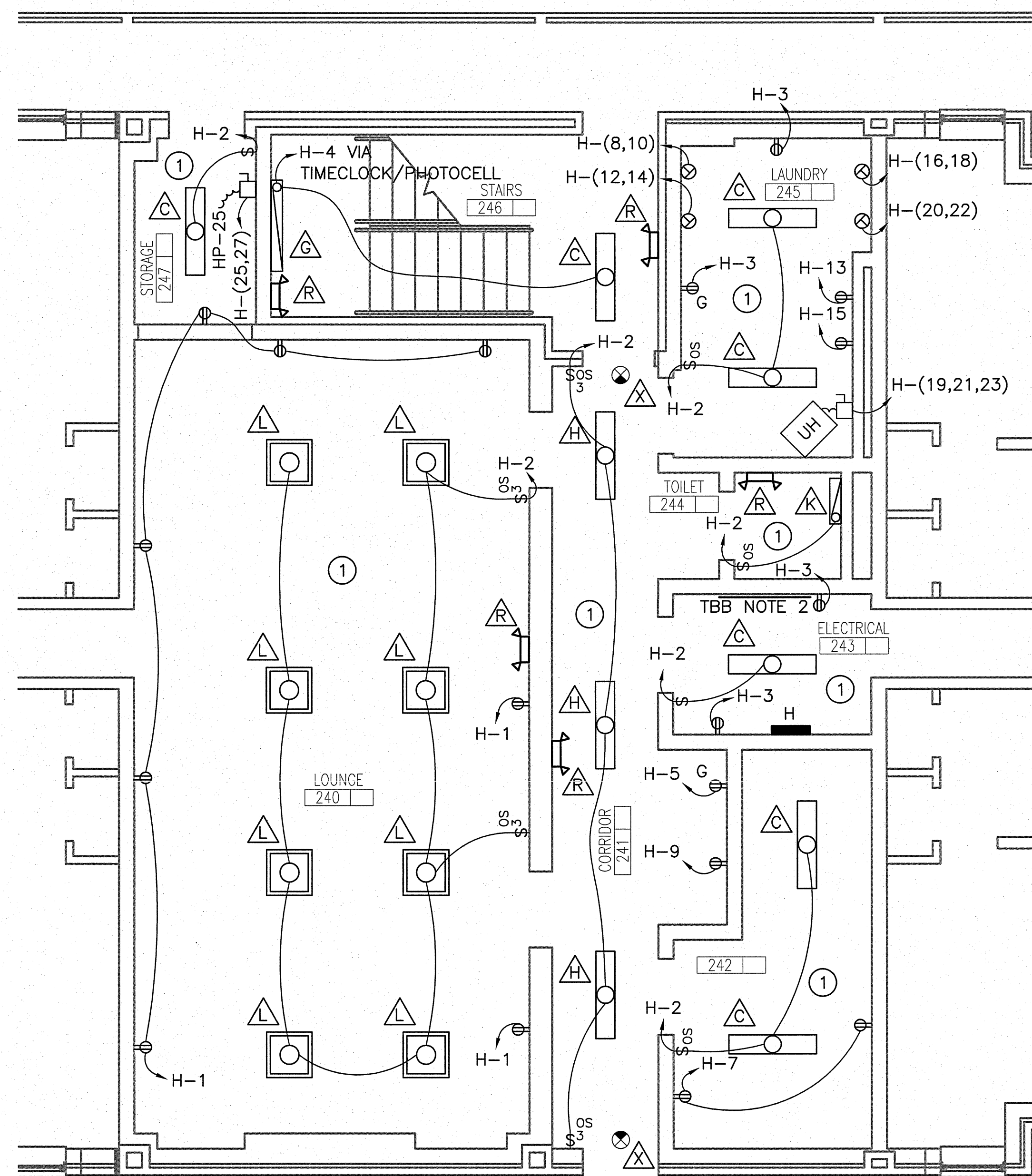
		<b>E-402</b>	
	CEMS Engineering, Inc. 3509 Iron Horse Drive Lottum, SC 29456 (794) 375-3037 (794) 375-4509 www.cemsengineering.com CEMS Project #061504 Project Manager: P. Maloney	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
	DES. R. ALVAR DR. C. COOPER CHK. J. BONGIORNO SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC DATE: _____ SATISFACTORY TO: DATE: _____	REPAIR BEQ BUILDING HP485 ENLARGED FIRST FLOOR ELECTRICAL NEW WORK PLANS SIZE CODE IDENT NO. NAVFAC DRAWING NO. <b>F 80091 60007198</b> CONST. CONTR. NO. N40085-10-B-0070 SCALE: AS NOTED SPEC. 05-10-0070 SHEET 58 OF 65	



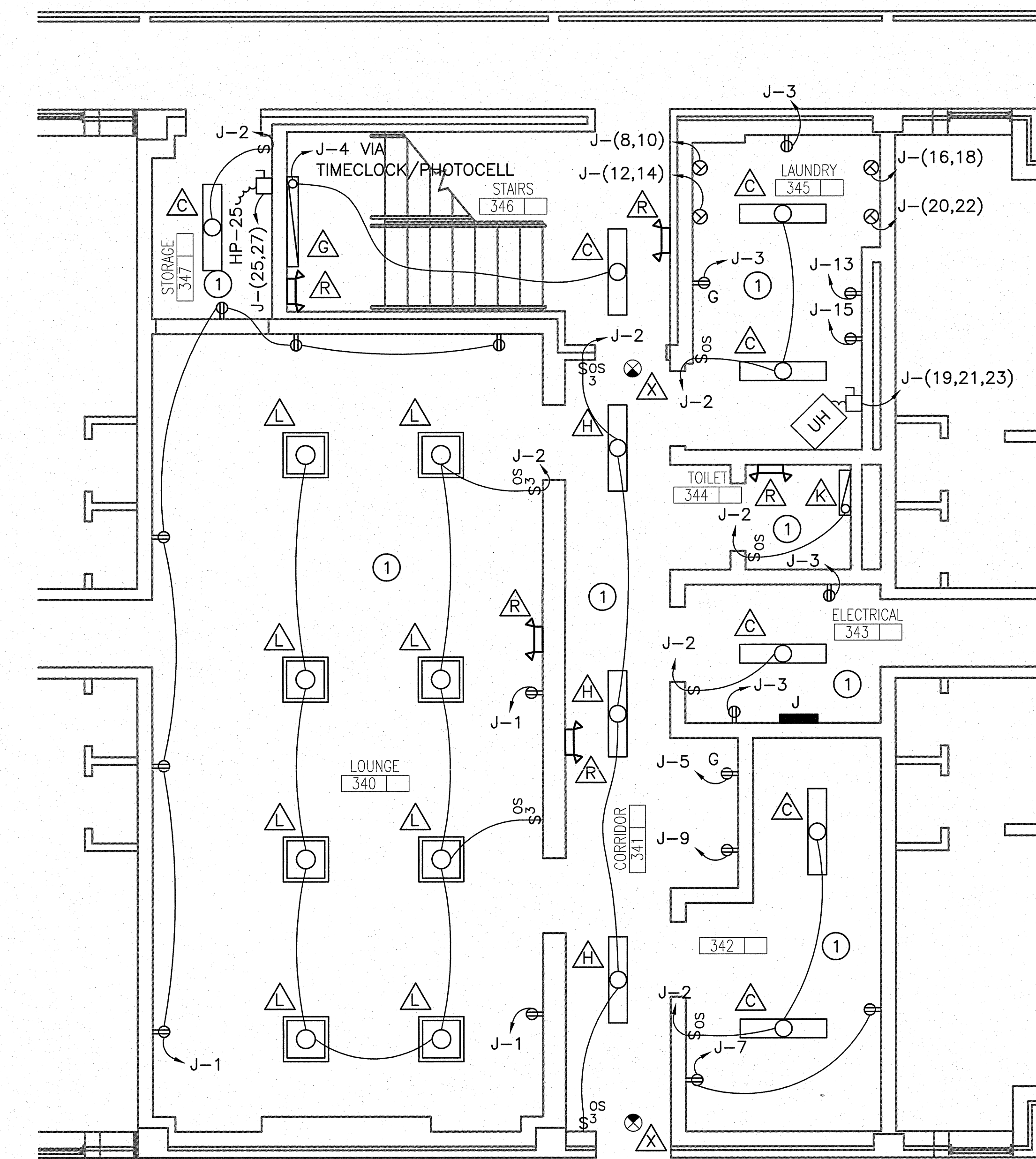


1 TYPICAL BAY FIRST, SECOND AND THIRD FLOOR NEW WORK PLAN  
E-101 | E-403 SCALE: 1/4" = 1'-0"

2 TYPICAL BAY FIRST, SECOND AND THIRD FLOOR NEW WORK PLAN  
E-101 | E-403 SCALE: 1/4" = 1'-0"



3 ENLARGED ELECTRICAL NEW WORK PLAN  
E-101 | E-403 SCALE: 1/4" = 1'-0"



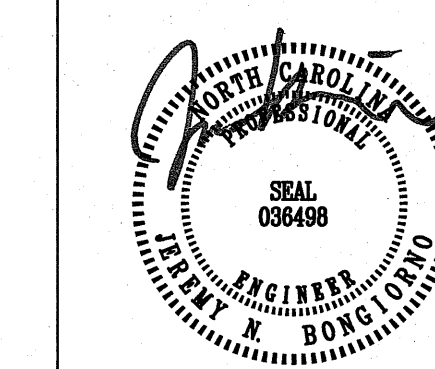
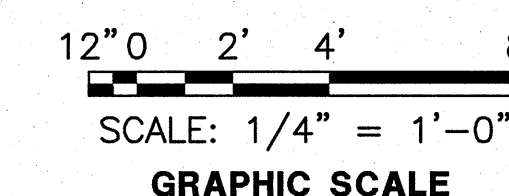
4 ENLARGED ELECTRICAL NEW WORK PLAN  
E-101 | E-403 SCALE: 1/4" = 1'-0"

**NEW WORK KEYNOTES:**

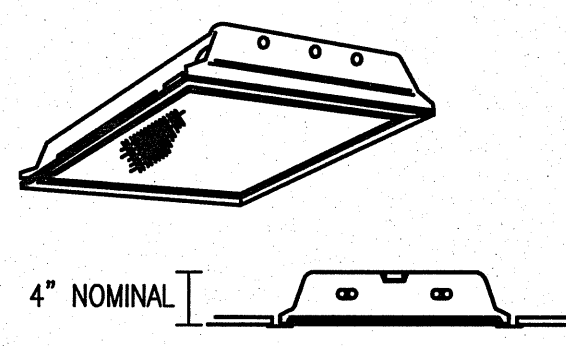
- 1 REPLACE ALL LIGHT FIXTURES, RECEPTACLES, SWITCHES AND DEVICE PLATES.

**GENERAL NOTES:**

- SEE SHEET E-502 FOR LIGHTING FIXTURE SCHEDULE.
- ALL EXIT SIGNS TO BE ON CIRCUIT D-38.
- ALL CABLE TV, INTERCOM, TELEPHONE CONDUIT CONDUCTORS AND CABINETS ASSOCIATED WITH BEQ ROOMS TO REMAIN IN PLACE PRESERVE AND PROTECT ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS NEEDED TO THE COMMUNICATIONS. COORDINATE WITH LOCAL TELEPHONE SERVICE PROVIDER REGARDING ANY BEQ ROOM PHONE LINE MOVES, ADDITIONS, OR CHANGES. ALL REPAIRS SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE FOR ANY QUESTIONS AT 910-451-9439 OR 910-451-4760.
- PROVIDE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS AND AREAS SERVICED BY BASE TELEPHONE SYSTEM PER CAMP LEJEUNE COMMUNICATIONS SPECIFICATION 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.



<b>E-403</b>	
 <small>CEMS Engineering, Inc. 3509 Iron Horse Drive Ladson, SC 29496 (704) 875-3507 (704) 875-4509 www.cemsgroup.com CEMS Project #08158V Project Manager: P. Mahaffey</small>	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	REPAIR BEQ BUILDING HP485
DES. R. ALVAR DR. C. COOPER CHK. J. BONGIORNO SUBMITTED BY: DESIGN DIR.	ENLARGED ELECTRICAL NEW WORK PLANS APPROVED: PWO OR OICC DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. SATISFACTORY TO: DATE F 80091 60007199 <small>SCALE: AS NOTED SPEC. 05-10-0070 SHEET 59 OF 65</small>



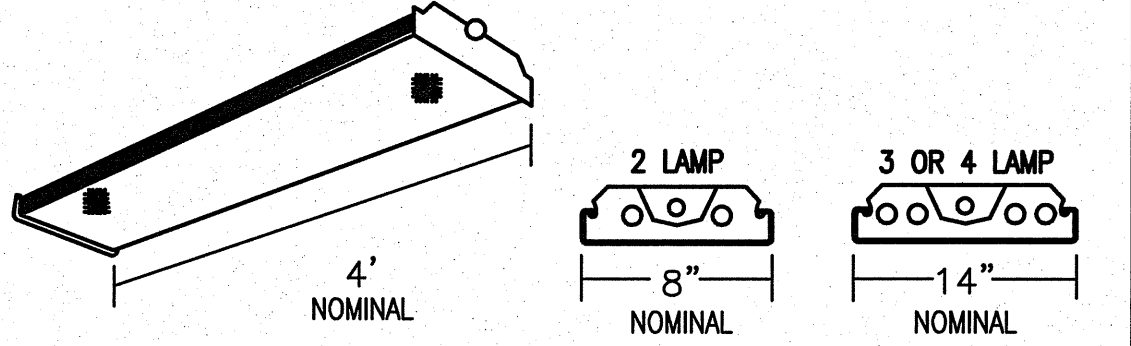
- LUMINAIRE REQUIREMENTS:**
- HOUSING - DIE-FORMED, COLD-ROLLED STEEL, WITH REINFORCEMENT RIBS FOR RIGIDITY. ENDCAPS SECURED WITH TABS, SCREWS OR RIVETS. FIXTURE SHALL NOT PERMANENTLY DEFORM OUT OF "SQUARE" WHEN PICKED UP FROM ANY CORNER. DEPTH AS INDICATED UNLESS SPECIFICALLY MANUFACTURED FOR OPTIMAL USE WITH T8 LAMPS.
  - FINISH - MULTI-STAGE PHOSPHATE BONDING TREATMENT FINISHED WITH HIGH REFLECTANCE (MINIMUM 85%), BAKED WHITE ENAMEL FINISH.
  - LENS - 100% ACRYLIC, CLEAR PRISMATIC, PATTERN #12 WITH MINIMUM 0.125" THICKNESS.
  - LAMPS - COMPACT FLUORESCENT TTS, OR LINEAR T8 TYPICALLY WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
  - BALLAST - CLASS P, THERMALLY-PROTECTED, HIGH POWER FACTOR ( $\geq .95$ ), ELECTRONIC TYPE WITH SOUND RATING A. SEE SPECIFICATION OR LIGHTING FIXTURE SCHEDULE FOR BALLAST OPTIONS AND SPECIFICS.
  - CERTIFICATION - UL LISTED AND LABELED.
  - PHOTOMETRICS - MINIMUM VALUE OF COEFFICIENT OF UTILIZATION (CU) AND EFFICIENCY, GIVEN INTERIOR CAVITY REFLECTANCES OF 80-50-20:
 

2 LAMP (F40/TTS)		3 LAMP (F40/TTS)	
RCR	CU	RCR	CU
1	72	1	66
2	64	2	59
3	58	3	53
4	52	4	47

 EFFICIENCY - 67%

PRISMATIC LENS RECESSED 2' X 2' FLUORESCENT TROFFER

REVISED: AUGUST 2004 LIGHTING PLATE: NL-3



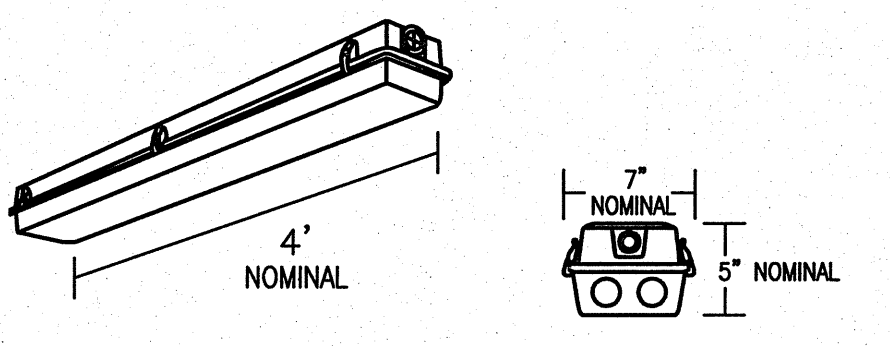
- LUMINAIRE REQUIREMENTS:**
- HOUSING - DIE-FORMED, COLD-ROLLED STEEL, WITH REINFORCEMENT RIBS FOR RIGIDITY. ENDCAPS SHALL BE SAME MATERIAL AS HOUSING, SECURED WITH TABS, SCREWS OR RIVETS. FIXTURE SHALL NOT PERMANENTLY DEFORM OUT OF "SQUARE" WHEN PICKED UP FROM ANY CORNER. ABLE TO BE FED FROM TOP OR END OF FIXTURE.
  - FINISH - MULTI-STAGE PHOSPHATE BONDING TREATMENT FINISHED WITH HIGH REFLECTANCE (MINIMUM 85%), BAKED WHITE ENAMEL FINISH.
  - LENS - 100% ACRYLIC, CLEAR PRISMATIC, LINEAR SIDE PRISMS AND PYRAMIDAL BOTTOM PRISMS FOR BRIGHTNESS CONTROL AND MINIMAL LAMP IMAGING, RESPECTFULLY. LENS SHALL BE CAPABLE OF BEING HINGED FROM EITHER SIDE.
  - LAMPS - LINEAR FLUORESCENT T8, TYPICALLY WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
  - BALLAST - CLASS P, THERMALLY-PROTECTED, HIGH POWER FACTOR ( $\geq .95$ ), ELECTRONIC TYPE WITH SOUND RATING A. SEE SPECIFICATION OR LIGHTING FIXTURE SCHEDULE FOR BALLAST OPTIONS AND SPECIFICS.
  - CERTIFICATION - UL LISTED AND LABELED.
  - PHOTOMETRICS - MINIMUM VALUE OF COEFFICIENT OF UTILIZATION (CU) AND EFFICIENCY, GIVEN INTERIOR CAVITY REFLECTANCES OF 80-50-20:
 

2 LAMP (F32/T8)	
RCR	CU
1	76
2	67
3	60
4	54

 EFFICIENCY - 76%

FLUORESCENT WRAPAROUND - UTILITY AREAS

REVISED: AUGUST 2004 LIGHTING PLATE: NL-11



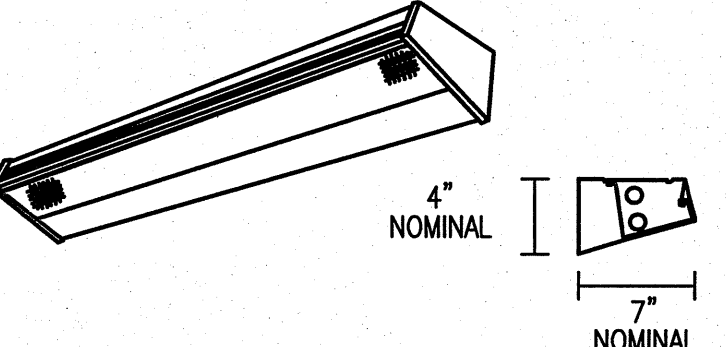
- LUMINAIRE REQUIREMENTS:**
- HOUSING - ONE-PIECE, IMPACT-RESISTANT, FIBERGLASS REINFORCED POLYESTER WITH ENCLOSED COLD-ROLLED STEEL WIREWAY.
  - FINISH - STEEL REFLECTOR WITH MULTI-STAGE PHOSPHATE BONDING TREATMENT FINISHED WITH HIGH REFLECTANCE (MINIMUM 85%), BAKED WHITE ENAMEL FINISH.
  - LENS - 100% CLEAR ACRYLIC/DR OPTICAL DIFFUSER. STIPPLED INTERIOR SURFACES AND SMOOTH EXTERIOR. CLOSED CELL NEOPRENE GASKET WITH CAPTIVE NONMETALLIC, SNAP ACTION CAM LATCHES TO SECURE LENS TO HOUSING.
  - LAMPS - LINEAR FLUORESCENT T8, TYPICALLY WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
  - BALLAST - CLASS P, THERMALLY-PROTECTED, HIGH POWER FACTOR ( $\geq .95$ ), ELECTRONIC TYPE WITH SOUND RATING A. SEE SPECIFICATION OR LIGHTING FIXTURE SCHEDULE FOR BALLAST OPTIONS AND SPECIFICS.
  - CERTIFICATION - UL LISTED AND LABELED. SUITABLE FOR DAMP OR WET LOCATION AS DESIGNATED IN LIGHTING FIXTURE SCHEDULE.
  - PHOTOMETRICS - MINIMUM VALUE OF COEFFICIENT OF UTILIZATION (CU) AND EFFICIENCY, GIVEN INTERIOR CAVITY REFLECTANCES OF 80-50-20:
 

2 LAMP (F32/T8)	
RCR	CU
1	78
2	67
3	58
4	51

 EFFICIENCY - 76%

FIBERGLASS HOUSING DAMP/WET LOCATION FLUORESCENT

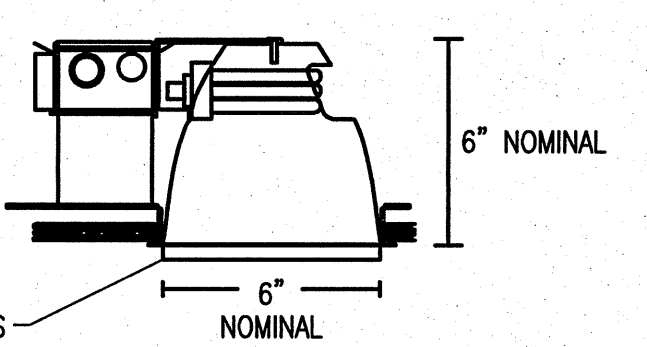
REVISED: AUGUST 2004 LIGHTING PLATE: NL-19



- LUMINAIRE REQUIREMENTS:**
- HOUSING - DIE-FORMED, HEAVY-GAUGE, COLD-ROLLED STEEL WITH ENDCAPS MADE FROM THE SAME MATERIAL AS HOUSING.
  - FINISH - MULTI-STAGE PHOSPHATE BONDING TREATMENT FINISHED WITH HIGH REFLECTANCE (MINIMUM 85%), BAKED WHITE ENAMEL FINISH. DARK BRONZE OR BLACK FINISH AVAILABLE. SEE LIGHTING FIXTURE SCHEDULE.
  - LENS - 100% ACRYLIC, HIGH-IMPACT, CLEAR PRISMATIC DIFFUSER.
  - LAMPS - LINEAR FLUORESCENT T8 TYPICALLY, WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
  - BALLAST - CLASS P, THERMALLY-PROTECTED, HIGH POWER FACTOR ( $\geq .95$ ), ELECTRONIC TYPE WITH SOUND RATING A. SEE SPECIFICATION OR LIGHTING FIXTURE SCHEDULE FOR BALLAST OPTIONS AND SPECIFICS.
  - CERTIFICATION - UL LISTED AND LABELED.
  - FIXTURE TYPES -
    - TYPE A - 2' LENGTH W/ 2-T8 FLUORESCENT LAMPS
    - TYPE B - 3' LENGTH W/ 2-T8 FLUORESCENT LAMPS
    - TYPE C - 4' LENGTH W/ 2-T8 FLUORESCENT LAMPS
  - OPTIONS -
    - FIXED UP AND DOWN LIGHT
    - SWITCHED UP AND/OR DOWN LIGHT
    - DOWN LIGHT ONLY WITH SOLID TOP

WALL-MOUNTED FLUORESCENT

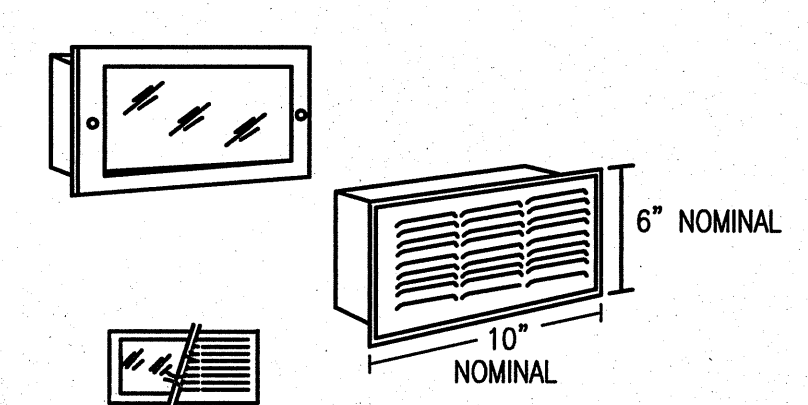
REVISED: AUGUST 2004 LIGHTING PLATE: NL-21



- LUMINAIRE REQUIREMENTS:**
- HOUSING - ONE-PIECE, DIE-STAMPED, COLD ROLLED STEEL OR ACRYLIC-ENAMELED ALUMINUM. PROVIDE WITH PRE-WIRED JUNCTION BOX HAVING SNAP-ON ACCESS COVER. ACCESS TO JUNCTION BOX FROM BELOW CEILING SHALL BE PROVIDED THROUGH FIXTURE AFTER REMOVAL OF REFLECTOR.
  - REFLECTOR - ONE-PIECE, CLEAR, SPUN ALUMINUM, IRIDESCENCE-SUPPRESSED.
  - BALLAST - CLASS P, MULTI-VOLT (120V-277V INPUT), HIGH POWER FACTOR ( $\geq .95$ ), PROGRAMMED RAPID START ELECTRONIC TYPE WITH  $\leq 10\%$  TOTAL HARMONIC DISTORTION. BALLAST SHALL BE CAPABLE OF UNIVERSALLY OPERATING 26W OR 32 WATT LAMPS.
  - LAMPS - MULTI-TUBE, COMPACT FLUORESCENT WITH 4-PIN BASE. PROVIDE WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
  - LENS/TRIM - \* OPTIONS INCLUDE DROPPED OR FLAT OPAL LEXAN; DROPPED OR FLAT OPAL GLASS; OR FRESNEL GLASS. SEE LIGHTING FIXTURE SCHEDULE.
  - CERTIFICATION - UL LISTED AND LABELED FOR DAMP LOCATIONS.

RECESSED COMPACT FLUORESCENT SHOWER LIGHT

REVISED: AUGUST 2004 LIGHTING PLATE: NL-38

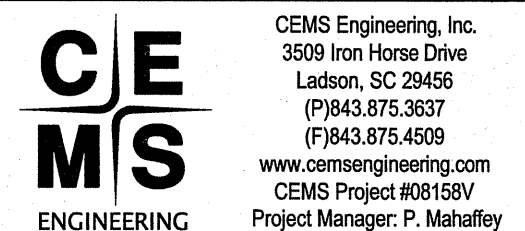


- LUMINAIRE REQUIREMENTS:**
- HOUSING - DIE-CAST ALUMINUM WITH WHITE BAKED ENAMEL FINISH.
  - REFLECTOR - ONE-PIECE, SPECULAR ALUMINUM.
  - FACEPLATE - DIE-CAST ALUMINUM IN LOUVERED OR OPEN LENS DESIGN. FINISH OPTIONS INCLUDE BRUSHED SATIN FINISH, BRONZE, BLACK, OR WHITE. FACEPLATE SHALL INCLUDE PRISMATIC OR DIFFUSE GLASS LENS. PROVIDE FULLY GASKETED FACEPLATE WHEN USED IN DAMP OR WET ENVIRONMENTS.
  - BALLAST - CLASS P, MULTI-VOLT (120V-277V INPUT), HIGH POWER FACTOR ( $\geq .95$ ), PROGRAMMED RAPID START ELECTRONIC TYPE WITH  $\leq 10\%$  TOTAL HARMONIC DISTORTION.
  - LAMPS - MULTI-TUBE, COMPACT FLUORESCENT WITH 4-PIN BASE. PROVIDE WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
  - CERTIFICATION - UL LISTED AND LABELED FOR DAMP OR WET LOCATIONS AS INDICATED.

STEP/NIGHT LIGHT

REVISED: AUGUST 2004 LIGHTING PLATE: NL-39

E-501



DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA

DES. R. ALVAR  
DR. C. COOPER  
CHK. J. BONGIORNO  
SUBMITTED BY:  
DESIGN DIR.

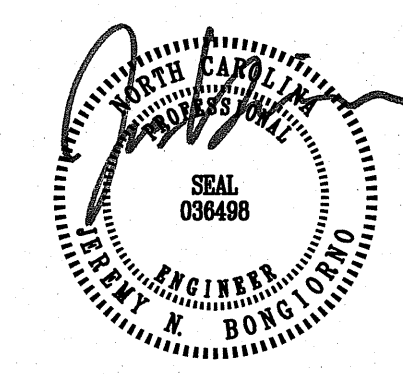
REPAIR BEQ  
BUILDING HP485  
ELECTRICAL LIGHTING DETAILS

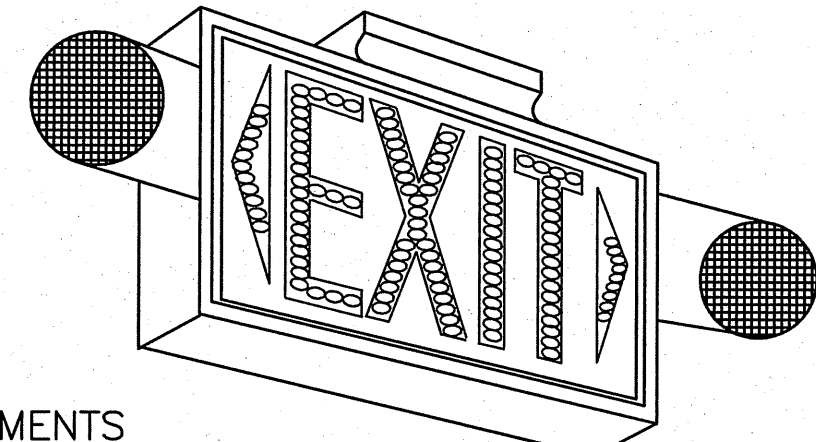
APPROVED: PWO OR OICC DATE

SIZE CODE IDENT NO. 80091  
NAVFAC DRAWING NO. 60007200

SATISFACTORY TO: DATE

CONST. CONTR. NO. N40085-10-B-0070  
SCALE: NONE SPEC. 05-10-0070 SHEET 60 OF 65





**LUMINAIRE REQUIREMENTS**

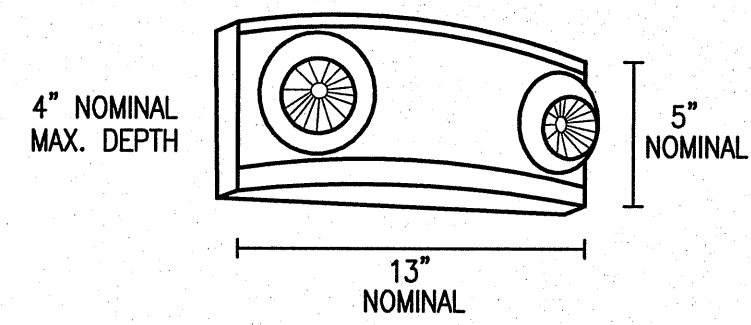
1. ALUMINUM, STEEL, THERMOPLASTIC OR POLYCARBONATE HOUSING.
2. BRUSHED ALUMINUM, THERMOPLASTIC OR STEEL STENCIL WITH LETTERS 6 INCHES TALL & 3/4 INCH WIDE STROKES AND PUNCH-OUT FACE FOR LED'S OR INTERNAL LED ILLUMINATION.
3. RED ILLUMINATION PROVIDED BY LIGHT EMITTING DIODES (LED). APPROXIMATELY 120 LED'S PER FACE. (NOT REQUIRED FOR INTERNALLY ILLUMINATED SIGNS.)
4. CLEAR PROTECTIVE NON-BREAKABLE LENS TO PROTECT LED'S. (NOT REQUIRED FOR INTERNALLY ILLUMINATED SIGNS.)
5. PROVIDE FAILURE, BROWN OUT PROTECTION & SURGE PROTECTION.
6. PROVIDE NI-CAD BATTERY POWER & SOLID STATE TYPE CHARGER.
7. PROVIDE UNIVERSAL ARROWS & BLANK-OFF PLATES.
8. PROVIDE SINGLE OR DOUBLE FACE AS INDICATED ON PLANS.
9. PROVIDE UNIVERSAL MOUNTING.
10. UNITS MOUNTED EXPOSED TO THE ELEMENTS OR IN CLASSIFIED AREAS SHALL HAVE UL LABEL AS INDICATED.
11. PROVIDE INTERNAL GREEN GROUNDING SCREW.
12. PROVIDE TEST BUTTON IN BOTTOM OF HOUSING.
13. PROVIDE INDICATOR LIGHTS IN FACE TO INDICATE WHEN UNIT IS ON NORMAL POWER OR ON BATTERY POWER.
14. HOUSING SHALL HAVE A MATTED WHITE FINISHED, EXCEPT AS SPECIFIED OTHERWISE.
15. LAMP HEADS (ROUND OR RECTANGULAR) AND SHALL BE FULLY ADJUSTABLE.
16. SWITCHING AND CONTROLS--FULLY AUTOMATIC, 90 MINUTE OPERATION. COMPLETELY SOLID STATE WITH AUTO TRANSFER AND LOW VOLTAGE CUTOFF. TEST SWITCH AND HIGH RATE INDICATING LIGHT.

**NOTES:**

1. UNIT IS AVAILABLE WITH WET LABEL.
2. UNIT IS AVAILABLE WITH DAMP LABEL.

**LED EXIT SIGN**

SKETCH DATE NOV 1996 CLNC | STYLE NL-61A



**LUMINAIRE REQUIREMENTS:**

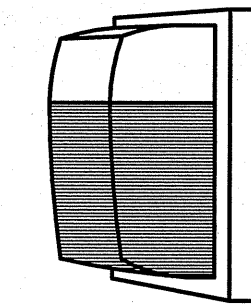
1. HOUSING - UV STABLE, FLAME-RATED, HIGH-IMPACT THERMOPLASTIC IN WHITE OR BLACK TEXTURED FINISH.
2. INTERNAL COMPONENTS - FULLY AUTOMATIC, SOLID STATE, CONSTANT VOLTAGE, CURRENT-LIMITED BATTERY CHARGER; MAINTENANCE-FREE LEAD-ACID BATTERY; AND BUILT-IN OVERLOAD AND LOW-VOLTAGE BATTERY PROTECTION.
3. EXTERIOR HOUSING INDICATORS - LED AC-ON INDICATOR AND INTEGRAL TEST SWITCH.
4. LAMP HEADS - UV STABLE, FLAME RATED POLYCARBONATE THERMOPLASTIC. MR16 HALOGEN LAMPS SHALL BE 5 WATTS, HIGH-OUTPUT OR AS INDICATED IN LIGHTING FIXTURE SCHEDULE.
5. MOUNTING - DIRECTLY TO 4" OCTAGONAL OR SQUARE OUTLET BOX.
6. CERTIFICATION - UL LISTED AND LABELED. COMPLIES WITH UL 924 AND NFPA 101 REQUIREMENTS. LISTED FOR DAMP LOCATIONS.
7. OPTIONS - VOLTMETER, VANDEL-RESISTANT SHIELD, SELF-DIAGNOSTIC/TESTING ELECTRONICS AND WIRE GUARD.

**DECORATIVE EMERGENCY LIGHTING UNIT**

REVISED: AUGUST 2004 | LIGHTING PLATE: NL-67

**LUMINAIRE REQUIREMENTS**

1. HOUSING SHALL BE ULTRA-VIOLET & IMPACT RESISTANT POLYCARBONATE DARK BRONZE. APPROX. 10" H X 5" W X 5" D.
2. PROVIDE WITH ALUMINUM OR POLYCARBONATE BACK PLATE.
3. PROVIDE POLYCARBONATE ULTRA-VIOLET RESISTANT PRISMATIC LENS.
4. PROVIDE HIGH POWER FACTOR ELECTRONIC BALLAST.
5. PROVIDE INTERNAL GREEN GROUNDING SCREW.
6. PROVIDE UL WET LABELED.
7. PROVIDE MAINTENANCE FREE, SEALED NICKEL CADMIUM BATTERY. BATTERIES SUPPLIED SHALL HAVE A 5 YEAR FULL WARRANTY. BATTERY CHARGER SHALL MEET UL 924 STANDARD.
8. POWER REQUIREMENTS: 120 VOLT, 0.15 AMPS, & 17 WATTS.



**LAMP REQUIREMENTS**

NORMAL ILLUMINATION: 1-13 WATT COMPACT FLUORESCENT.  
EMERGENCY ILLUMINATION: 2-4 VOLT, 4 WATT DC INCANDESCENT

**EXTERIOR WALL MOUNT FLUORESCENT COMBINATION EMERGENCY LUMINAIRE**

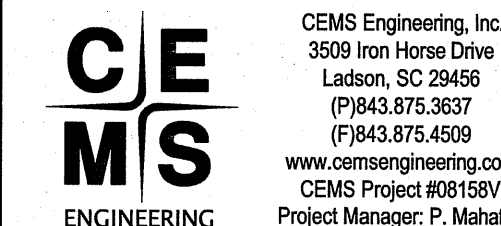
SKETCH DATE | STYLE NL-26A

**LIGHTING FIXTURE SCHEDULE**

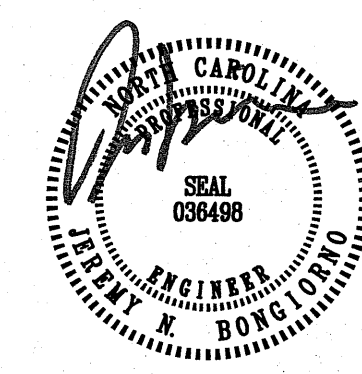
FIXTURE SYMBOL	SKETCH NO. & TYPE	NUMBER AND TYPE OF LAMPS	VOLTAGE	MOUNTING	NOTES
△	NL-26A	NORM 1-F13 EMRG 2-4W INCAN	120	WALL MTD.	
△	NL-19	2-F32/T8	120	WALL MTD.	①
△	NL-19	2-F32/T8	120	SURFACE CEILING	①
△	NL-21 TYPE B	2-F25/T8	120	WALL MTD.	②
△	NL-21 TYPE C	2-F32/T8	120	WALL MTD.	③
△	NL-11	2-F32/T8	120	SURFACE CEILING	
△	NL-38	1-F26/TRT	120	RECESSED CEILING	
△	NL-21 TYPE A	2-F17/T8	120	WALL MTD.	③
△	NL-3	2-F40/TT5	120	RECESSED CEILING	
△	NL-39	2-F7/T4	120	RECESSED WALL	④
△	NL-67	2-12W HALOGEN	120	WALL MTD. 8'-0" AFF	
△	NL-61A	LED	120	SURFACE CEILING	⑤

- ① PROVIDE FIXTURE LISTED FOR DAMP LOCATIONS.
- ② PROVIDE UP AND/OR DOWN LIGHT SWITCHED SEPARATELY.
- ③ PROVIDE DOWN LIGHT ONLY.
- ④ PROVIDE POLYCARBONATE FRONT LENS.
- ⑤ PROVIDE VANDAL-RESISTANT, WET LOCATION, EXIT SIGN WITH CAST ALUMINUM HOUSING.

**E-502**

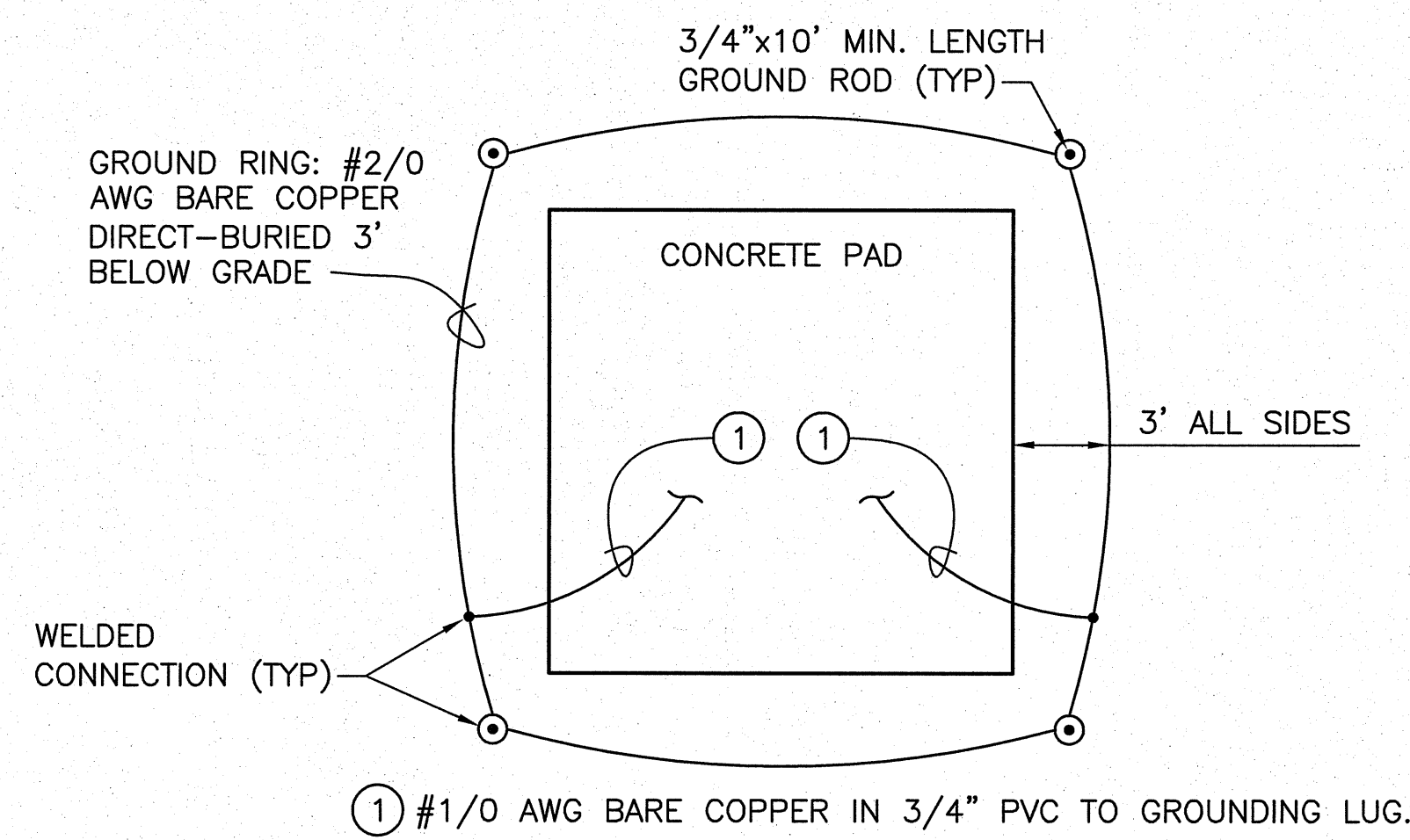


DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

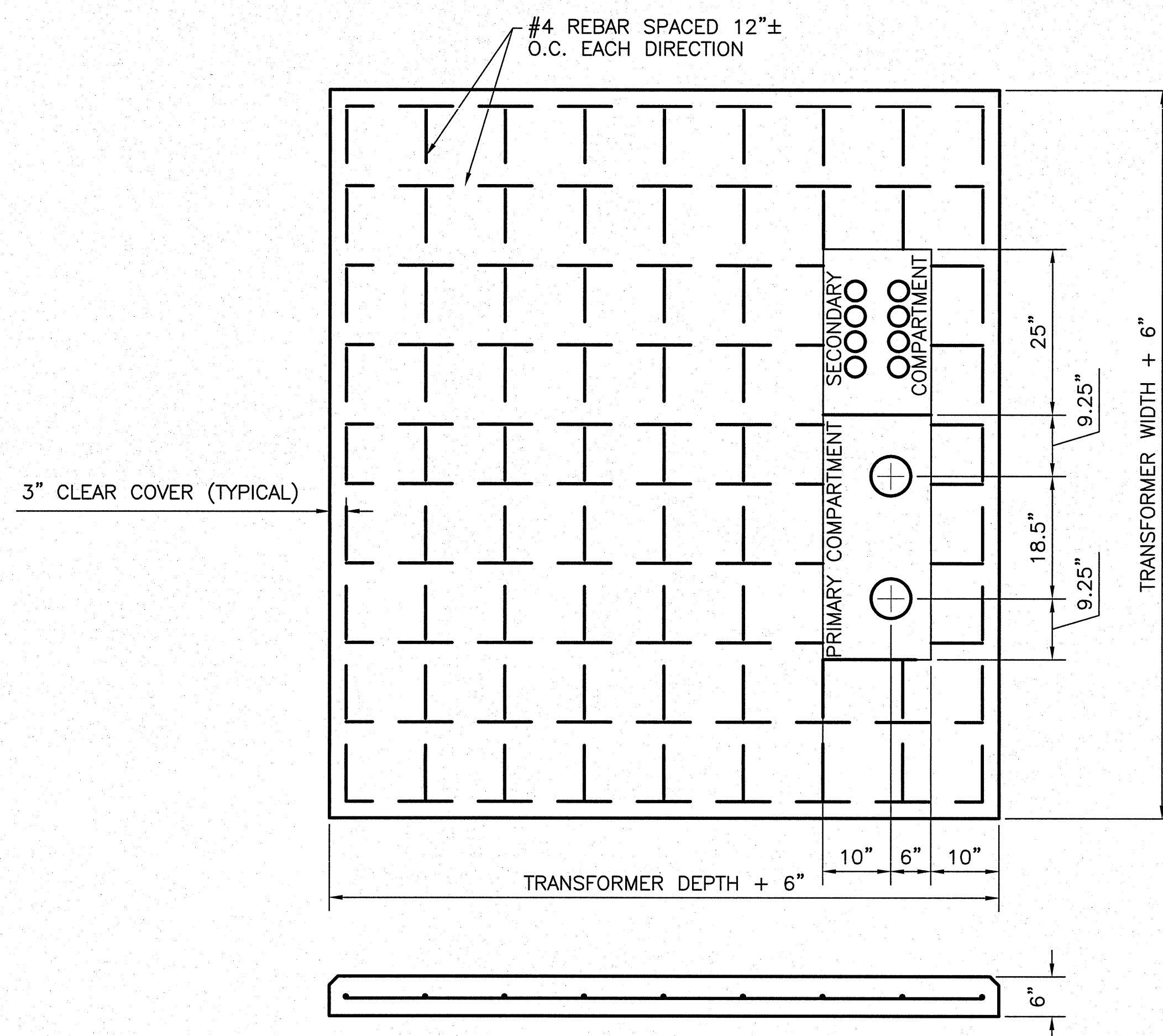


DES. R. ALVAR  
DR. C. COOPER  
CHK. J. BONGIORNO  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE  
SATISFACTORY TO: DATE

REPAIR BEQ  
BUILDING HP485  
ELECTRICAL LIGHTING DETAILS AND SCHEDULE  
NAVFAC DRAWING NO. 60007201  
CONST. CONTR. NO. N40085-10-B-0070  
SCALE: NONE SPEC. 05-10-0070 SHEET 61 OF 65



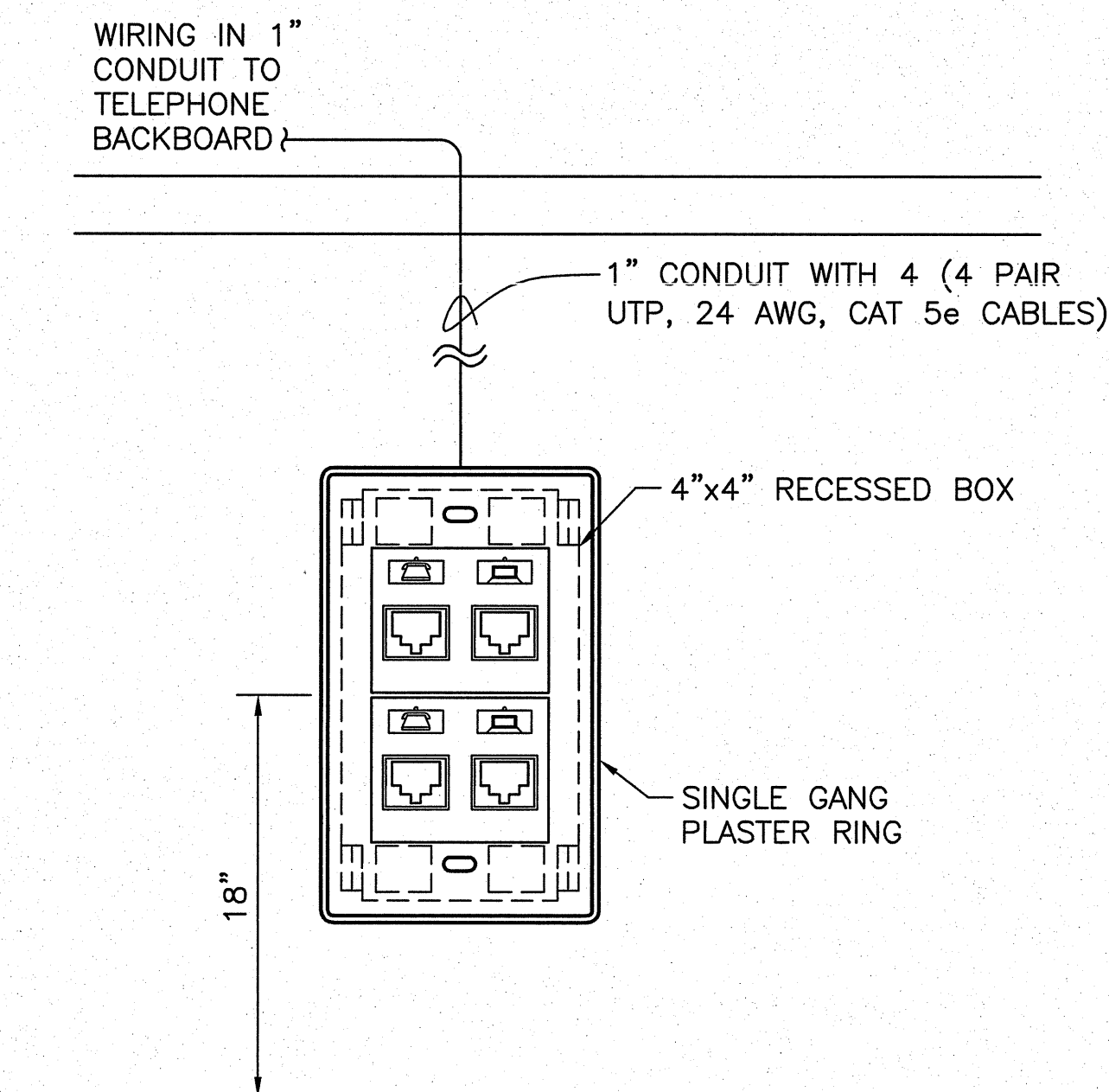
**SERVICE TRANSFORMER  
GROUNDING DETAIL**  
SCALE: NOT TO SCALE



**NOTES:**

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI MAX. AGGREGATE SIZE 1".
2. STEEL REINFORCING BARS ARE TO BE INTERMEDIATE GRADE BILLET STEEL BARS WITH 40,000 PSI MINIMUM YIELD STRENGTH, CONFORMING TO A.S.T.M. A615 GRADE 40.
3. PROVIDE MIN. CLEARANCE FROM EDGE OF PAD, TO ANY BUILDING, PROPERTY LINE, WALL, OR ANY OTHER OBSTRUCTION IN ACCORDANCE WITH SPECIFICATIONS.
4. FINAL LOCATION OF CONCRETE PAD TO BE SPOTTED IN THE FIELD BY THE CONTRACTING OFFICER.
5. IF LOCATION IS SUBJECT TO FLOODING, PAD SHALL BE ELEVATED ABOVE WATER LEVEL.
6. LOCATION MUST HAVE HEAVY TRUCK ACCESS NOT MORE THAN 1' FROM PAD.
7. ALL CONDUITS TO EXTEND 1" ABOVE TOP OF PAD.
8. COORDINATE PAD AND COMPARTMENT OPENING DIMENSION REQUIREMENTS WITH TRANSFORMER MANUFACTURER.

**SERVICE TRANSFORMER PAD DETAIL**  
SCALE: NOT TO SCALE



**GENERAL NOTE:**

1. ALL OF THE TELEPHONE/DATA WIRING IS TO BE HOMERUN FROM THE OUTLET BACK TO THE BACKBOARD. TO BE DONE WITH 1" CONDUIT THE ENTIRE LENGTH.
2. PROVIDE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS AND AREAS SERVICED BY BASE TELEPHONE SYSTEM PER CAMP LEJEUNE COMMUNICATIONS SPECIFICATION 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT BASE TELEPHONE REGARDING ANY COMMUNICATIONS QUESTIONS AT 910-451-9439 OR 910-451-4760.

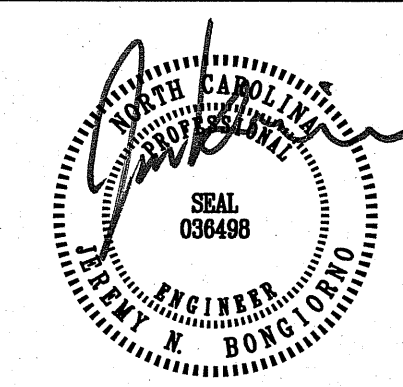
**TELEPHONE/DATA OUTLET DETAIL (TYPICAL)**  
SCALE: NOT TO SCALE

**E-503**

**C/E M/S**  
ENGINEERING

CEMS Engineering, Inc.  
3509 Iron Horse Drive  
Ladson, SC 29459  
(784) 325-3037  
(784) 325-4509  
www.cemsgroup.com  
CEMS Project #08155V  
Project Manager: P. Mahaffey

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA



DES. R. ALVAR  
DR. C. COOPER  
CHK. J. BONGIORNO  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE  
SATISFACTORY TO: DATE

REPAIR BEQ  
BUILDING HP485

ELECTRICAL DETAILS  
NAVFAC DRAWING NO.  
**60007202**  
CONSTR. CONTR. NO. N40085-10-B-0070

SCALE: NONE SPEC. 05-10-0070 SHEET 62 OF 65

PANEL NO. MDP
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 1600A MAIN CB 1600A
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. DP
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 400A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. A
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. B
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. C
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. D
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. F
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. G
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 225A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. H
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 225A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

PANEL NO. J
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 225A MAIN CB MLO
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA. Includes interrupting ampere current rating and total connected/demand info.

E-601
CEMS Engineering, Inc.
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA
REPAIR BEQ BUILDING HP485
DESIGN DIR. DR. C. COOPER
SUBMITTED BY: CHK. J. BONGIORNO
DATE: F 80091
SCALE: NONE SPEC. 05-10-0070 SHEET 63 OF 65

PANEL NO. K  
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 400A MAIN CB. MLO  
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA.  
Includes interrupting ampere current rating and total connected/demand calculations.

PANEL NO. M1  
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 225A MAIN CB. MLO  
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA.  
Includes interrupting ampere current rating and total connected/demand calculations.

PANEL NO. M2  
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 225A MAIN CB. MLO  
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA.  
Includes interrupting ampere current rating and total connected/demand calculations.

PANEL NO. M3  
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB. MLO  
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA.  
Includes interrupting ampere current rating and total connected/demand calculations.

PANEL NO. M4  
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB. MLO  
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA.  
Includes interrupting ampere current rating and total connected/demand calculations.

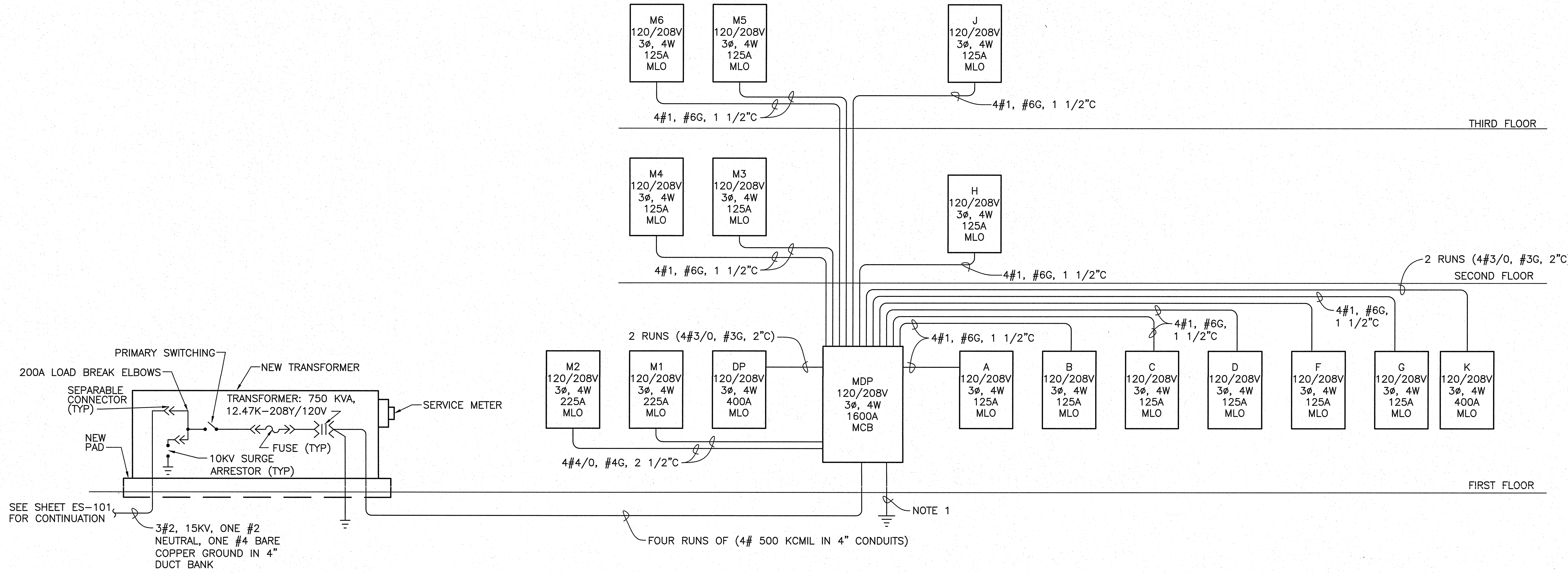
PANEL NO. M5  
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB. MLO  
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA.  
Includes interrupting ampere current rating and total connected/demand calculations.

PANEL NO. M6  
VOLTAGE 120/208 PHASE 3 WIRE 4 BUS SIZE 125A MAIN CB. MLO  
Table with columns: CKT. NO., BRKR. SIZE, LOAD, VA, CKT. NO., BRKR. SIZE, LOAD, VA.  
Includes interrupting ampere current rating and total connected/demand calculations.

EQUIPMENT SCHEDULE  
Table with columns: EQUIPMENT, FEEDER, DISCONNECT.  
Lists equipment like HP-1 THRU 24, HP-25 THRU 27, etc.

E-602  
CEMS Engineering, Inc.  
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
MARINE CORPS BASE  
CAMP LEJUNE, NORTH CAROLINA  
REPAIR BEQ  
BUILDING HP485  
DES. R. ALVAR  
DR. C. COOPER  
CHK. J. BONGIORNO  
SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE SIZE CODE IDENT NO.  
F 80091 60007204  
SATSFACTORY TO: DATE  
SCALE: NONE SPEC. 05-10-0070 SHEET 64 OF 65

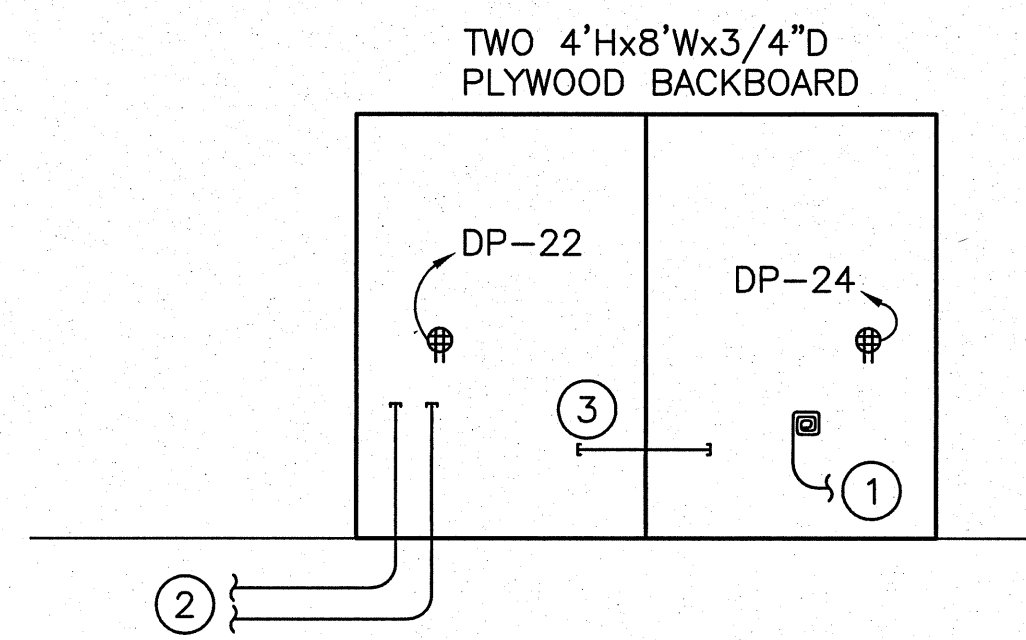




**ELECTRICAL RISER DIAGRAM**  
NO SCALE

**ELECTRICAL ONE-LINE RISER DIAGRAM GENERAL NOTES:**

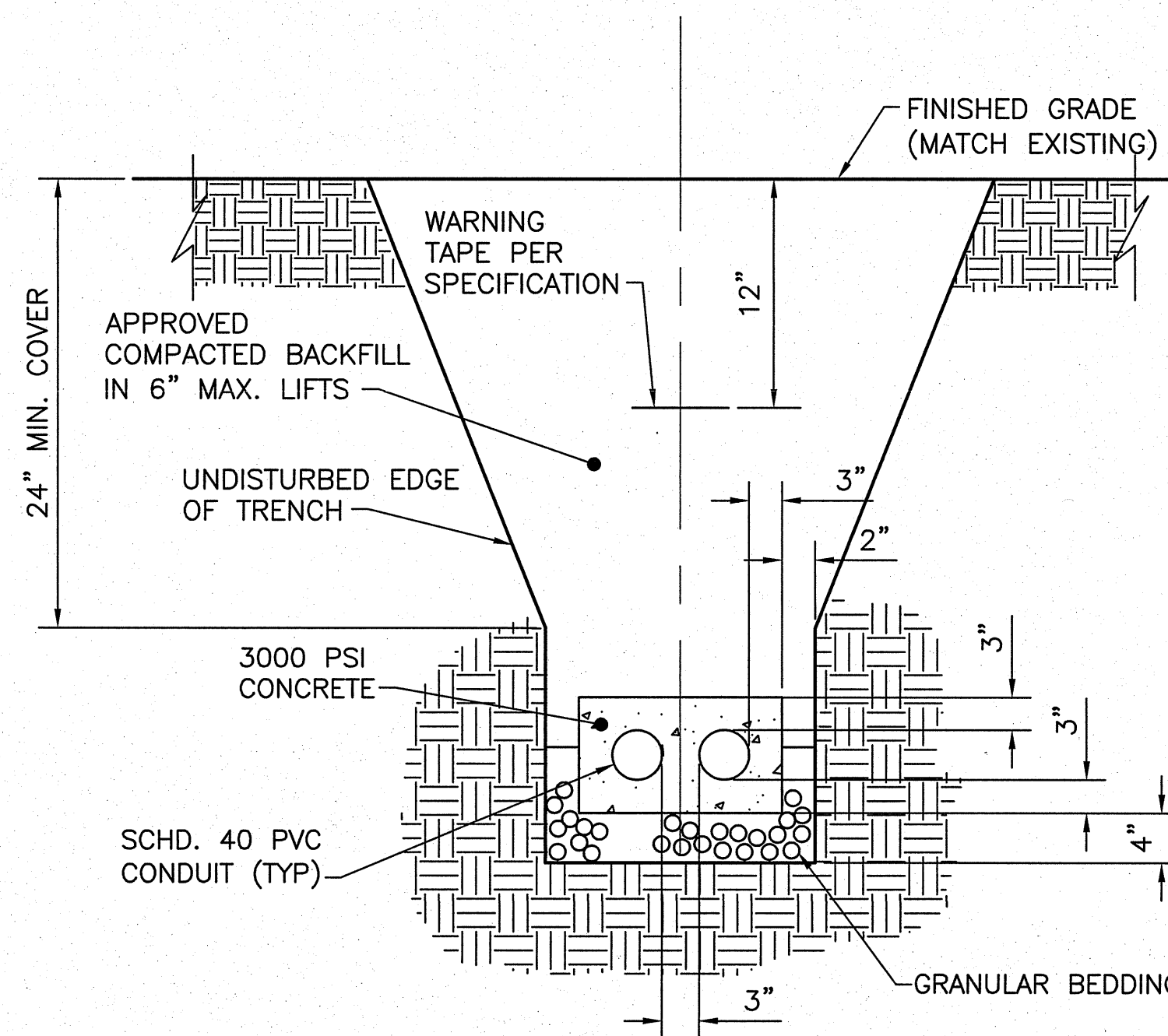
- INSTALL NEW GROUND CONDUCTOR, #3/0 BARE COPPER IN 3/4" TO 3/4"x10' COPPER CLAD GROUND ROD.
- TRANSFORMER TO CONTAIN BIODEGRADABLE DIELECTRIC FLUID.
- INSTALL NEW METER AT PAD MOUNTED TRANSFORMER. PROVIDE A SOCKET-MOUNTED ELECTRONIC PROGRAMMABLE OUTDOOR WATTHOUR METER, SURFACE MOUNTED FLUSH AGAINST THE SIDE OF THE LOW-VOLTAGE COMPARTMENT. METER SHALL EITHER BE PROGRAMMED AT THE FACTORY OR SHALL BE PROGRAMMED IN THE FIELD. WHEN FIELD PROGRAMMING IS PERFORMED, TURN FIELD PROGRAMMING DEVICE OVER TO THE CONTRACTING OFFICER AT COMPLETION OF PROJECT. METER SHALL BE COORDINATED TO SYSTEM REQUIREMENTS.
  - DESIGN: PROVIDE METER DESIGNED FOR USE ON A 3-PHASE, 4-WIRE, 208Y/120 VOLT SYSTEM 3 CURRENT TRANSFORMERS. INCLUDE NECESSARY KYZ PULSE INITIATION HARDWARE FOR ENERGY MONITORING AND CONTROL SYSTEM (EMCS).
  - COORDINATION: PROVIDE METER COORDINATED WITH RATIOS OF CURRENT TRANSFORMERS AND TRANSFORMER SECONDARY VOLTAGE.
  - CLASS: 20; FORM: 9S; ACCURACY: +/- 1.0 PERCENT; FINISH: CLASS II.
  - COVER: POLYCARBONATE AND LOCKABLE TO PREVENT TAMPERING AND UNAUTHORIZED REMOVAL.
  - KILOWATT-HOUR REGISTER: 5 DIGIT ELECTRONIC PROGRAMMABLE TYPE.
  - DEMAND REGISTER
    - PROVIDE SOLID STATE
    - METER READING MULTIPLIER
      - INDICATE MULTIPLIER ON THE METER FACE.
    - DEMAND INTERVAL LENGTH: SHALL BE PROGRAMMED FOR 15 MINUTES WITH ROLLING DEMAND UP TO SIX SUBINTERVALS PER INTERVAL.
  - METER FUSING: PROVIDE A FUSE BLOCK MOUNTED IN THE SECONDARY COMPARTMENT CONTAINING ONE FUSE PER PHASE TO PROTECT THE VOLTAGE INPUT TO THE WATTHOUR METER. SIZE FUSES AS RECOMMENDED BY THE METER MANUFACTURER.
  - SOCKET: IEEE C12.7. PROVIDE NEMA TYPE 3R, BOX-MOUNTED SOCKET HAVING AUTOMATIC CIRCUIT-CLOSING BYPASS AND HAVING JAWS COMPATIBLE WITH REQUIREMENTS OF THE METER. COVER UNUSED HUB OPENINGS WITH BLANK HUB PLATES. PAINT BOX MUNSELL 7GY3.29/1.5 GREEN TO MATCH THE PAD-MOUNTED TRANSFORMER TO WHICH THE BOX-MOUNTED SOCKET IS ATTACHED. THE MUNSELL COLOR NOTATION IS SPECIFIED IN ASTM D 1535.



**KEYNOTES:**

- GROUND FOR BACKBOARD TO BE MADE WITH #6 STRANDED COPPER IN 3/4" TO COPPER BUS BAR.
- TWO 4" EMPTY CONDUITS WITH PULLSTRING TO EXISTING TELEPHONE ENTRANCE RISER POINT. CAP AND MARK FOR USE BY BASE TELEPHONE OFFICE. COORDINATE WITH BASE TELEPHONE OFFICE.
- PROVIDE 1/4" X 4" X 10" COPPER BUS BAR WITH INSULATING BRACKETS AT TELEPHONE BACKBOARD.

**VOICE/DATA SYSTEM RISER**  
SCALE: NOT TO SCALE



**2 WAY DUCT BANK DETAIL**  
SCALE: NOT TO SCALE

**E-603**

**C/E M/S**  
ENGINEERING

CEMS Engineering, Inc.  
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CEMS Project #08158V  
Project Manager: P. Mahaffey

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA



DES. R. ALVAR  
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SUBMITTED BY:  
DESIGN DIR.  
APPROVED: PWO OR OICC DATE: \_\_\_\_\_  
SATISFACTORY TO: \_\_\_\_\_ DATE: \_\_\_\_\_

REPAIR BEQ  
BUILDING HP485  
ELECTRICAL RISER DIAGRAMS  
NAVFAC DRAWING NO.  
**60007205**  
CONST. CONTR. NO. N40085-10-B-0070  
SCALE: NONE SPEC. 05-10-0070 SHEET 65 OF 65

SIZE CODE IDENT NO.  
**F 80091**