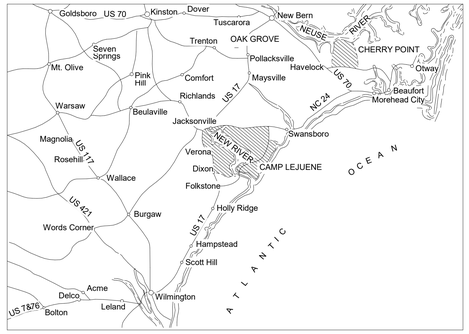
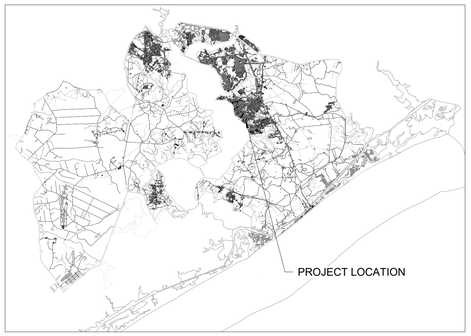
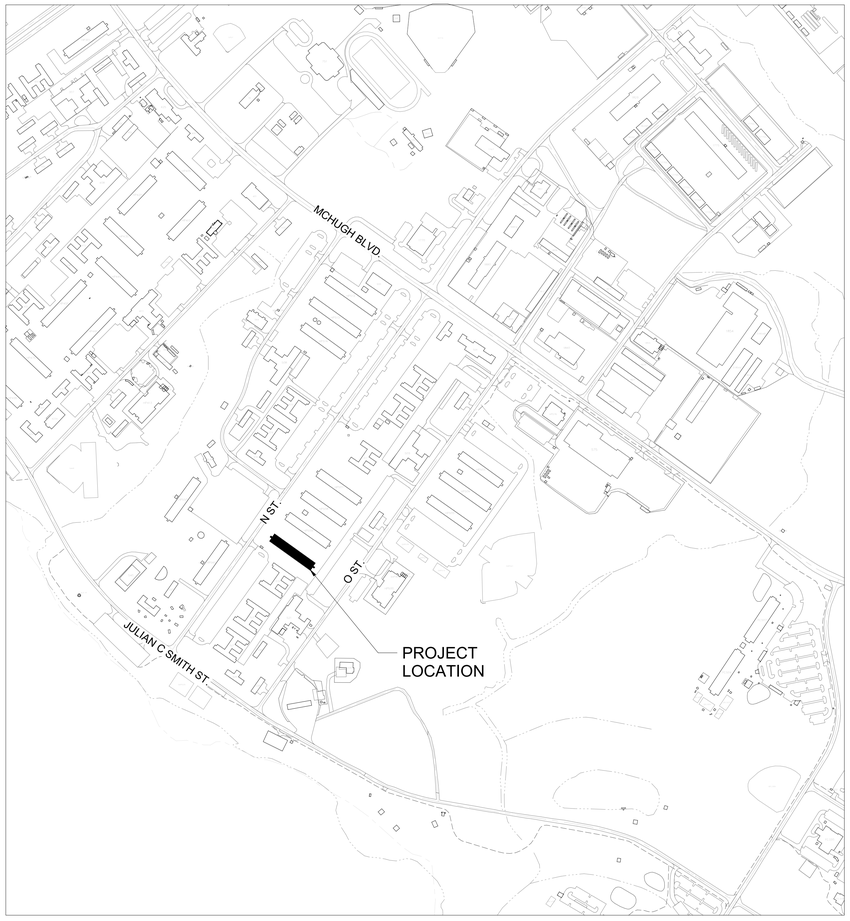
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 VICINITY MAP
SCALE: NOT TO SCALE



2 BASE MAP
SCALE: NOT TO SCALE



3 BASE LOCATION MAP
SCALE: NOT TO SCALE

REPAIR BEQ HP510

MCB CAMP LEJEUNE N.C.

PROJECT NO.: 18-0042

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3	60023961	LS102	LIFE SAFETY PLAN
4	60023962	H-101	ABATEMENT PLANS
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CIVIL			
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TOTAL: 143

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PLAN NORTH

MARK J. SMITH 4696 NORTH CAROLINA WINNABOW, NC

ISSUE DATE:15 MAY 2020

G-001

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108 Bentora Lodge Rd., Summerville, SC. 29485 843.875.3037
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

DES. M. SMITH
DR. P. HARRIS/ R. LEONARD
CHK. M. SMITH
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

REPAIR BEQ HP510

COVER SHEET

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023959

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: NONE | SPEC. 05-18-0042 | SHEET 1 OF 143

BUILDING CODE ANALYSIS
IBC 2015 / NFPA 101
INTERIOR AND EXTERIOR REPAIRS AT BEQ HP510
MCB CAMP LEJEUNE N.C.

BASIC BUILDING CODE INFORMATION

CONSTRUCTION CLASSIFICATION

TYPE: EXISTING TYPE IIB UNPROTECTED, NON-SPRINKLERED, EXTERIOR WALLS OF NON-COMBUSTIBLE MATERIALS (IBC 602)

OCCUPANCY GROUP:	**NFPA**	**IBC**
	DORMITORIES 6.1.9.1.4	R-2

DOES BUILDING REQUIRE INCIDENTAL USE AREA SEPARATION?:	☐ NO	☒ YES	(IBC 509)
DOES BUILDING HAVE ACCESSORY OCCUPANCY (IES)?:	☐ NO	☒ YES	(IBC 508.2)
WHAT PERCENT OF STORY IS ACCESSORY OCCUPANCY?:	5,276 SF		12.3%
MIXED OCCUPANCIES?:	☐ NO	☒ YES	(IBC 508.1)
NON SEPARATED?:	☒ NO	☐ YES	(IBC 508.3)
SEPARATED?:	☐ NO	☒ YES	(IBC 508.4)

BUILDING AREA

AREA LIMIT BY TABLE 506.2 OF IBC:	48, 000 SF (SM)	(AREA LIMITATION PER STORY)
AREA EXISTING PER STORY:	14,264 SF	(AREA PER STORY)
TOTAL EXISTING AREA OF BUILDING:	42,792 SF	

BUILDING HEIGHT

	AS DESIGNED		AS ALLOWED BY IBC	
	IN FEET	IN STORIES	IN FEET	IN STORIES
ALLOWABLE HEIGHT (PER IBC TABLE 504.3 AND 504.4)	45'-0"	3	75'-0"	5

GENERAL FIRE PROTECTION REQUIREMENTS

SEPARATIONS

FIREBLOCKING REQUIRED?:	☒ NO	☐ YES	PER IBC SECTION 718
DRAFTSTOPPING REQUIRED?:	☐ NO	☒ YES	PER IBC SECTION 718
SMOKE CONTROL SYSTEM REQUIRED?:	☒ NO	☐ YES	PER IBC SECTION 909
SMOKE BARRIERS REQUIRED?:	☒ NO	☐ YES	PER IBC SECTION 709
SMOKE PARTITION REQUIRED?:	☒ NO	☐ YES	PER IBC SECTION 710
FIRE PARTITION REQUIRED?:	☐ NO	☒ YES	PER NFPA 101 SECTION 28.3.7.2
FIRE BARRIER REQUIRED?:	☐ NO	☒ YES	PER IBC TABLE 508.4

ALARM AND DETECTION

FIRE ALARM SYSTEM REQUIRED?:	☒ NO	☐ YES	PER UFC 3-600-01 9-18.6.1 AND NFPA 101 13.3.4.1.1
FIRE ALARM SYSTEM PROVIDED?:	☐ NO	☒ YES	
EMERGENCY ALARM SYSTEM REQUIRED?:	☒ NO	☐ YES	PER IFC 908

SUPPRESSION

STANDPIPES REQUIRED?:	☒ NO	☐ YES	PER UFC 3-600-01 9-10.2.1 AND 9-10.2.2
SPRINKLERS REQUIRED?:	☐ NO	☒ YES	PER UFC 3-600-01 9-7.2.1.1
SPRINKLERS PROVIDED?:	☐ NO	☒ YES	
* PORTABLE EXTINGUISHERS REQUIRED?:	☒ NO	☐ YES	PER UFC 3-600-01 9-17.1
OTHER SUPPRESSION SYSTEMS REQUIRED?:	☒ NO	☐ YES	PER UFC 3-600-01
SMOKE AND HEAT VENTS REQUIRED?:	☒ NO	☐ YES	PER UFC 3-600-01

* EXTINGUISHERS NOT REQUIRED BUT PROVIDED

FIRE RESISTANCE RATING OF BUILDING ELEMENTS

BUILDING ELEMENT	RATING AS REQUIRED (IN HOURS)	RATING AS DESIGNED (IN HOURS)	NOTES
STRUCTURAL FRAME (PER IBC TABLE 601)	0 HR	0 HR	
BEARING WALLS EXTERIOR INTERIOR (PER IBC TABLE 601)	0 HR 0 HR	0 HR 0 HR	
NONBEARING WALLS AND PARTITIONS EXTERIOR INTERIOR (PER IBC TABLE 601 AND 602)	0 HR 0 HR	0 HR 0 HR	
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS (PER IBC TABLE 601)	0 HR	0 HR	
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS (PER IBC TABLE 601)	0 HR	0 HR	
FIRE WALLS (PER IBC TABLE 706.4)	N/A	N/A	
FIRE BARRIERS (PER IBC TABLE 707.3.10)	N/A	N/A	
INCIDENTAL ACCESSORY OCCUPANCIES (PER IBC TABLE 509)	0 HR	0 HR	SPRINKLER PROTECTION REQUIRED
INCIDENTAL USE SEPARATION WALLS (PER IBC TABLE 508.9 AND NFPA 101 TABLE 28.3.2.2.2)	1 HR	1 HR	
EXIT STAIR (PER NFPA 10,1 7.2.2.6.3.1 (1), 28.2.2.3 AND IBC SECTION 1022.1)	1 HR	1 HR	
HORIZONTAL EXIT (PER NFPA 101, 7.2.4 AND IBC SECTION 1025)	N/A	N/A	
EXIT ACCESS CORRIDOR/BALCONY WALLS (PER NFPA 101, 28.2.5.1, 7.5.3.3 AND IBC SECTION 1018.1)	0 HR	0 HR	
SHAFT WALLS INCLUDING ELEVATOR AND MECHANICAL SHAFTS (PER NFPA 101, TABLE 6.3.2.2 AND IBC SECTION 713)	N/A	N/A	
SHAFT ENCLOSURES (PER NFPA 101, TABLE 8.3.4.2 AND IBC TABLE 713)	N/A	N/A	
FIRE PARTITIONS (PER NFPA 101, 28.3.7.2)	1/2 HR	1/2 HR	
OPENING AND PROTECTIVE LISTING BY CATEGORY (FIRE SHUTTERS, DOORS, ETC. (PER IBC SECTION 716 AND TABLE 16.5)	N/A	N/A	
VERTICAL SEPARATION BETWEEN ASSEMBLY AND BUSINESS (PER IBC TABLE 508.4)	1 HR	1 HR	

MEANS OF EGRESS

CODE ITEM	REQUIRED	PROVIDED	NOTES
EGRESS WIDTH (PER NFPA 101, TABLE 7.3.3.1 AND 7.3.4)	64"	276"	290 PERSONS x .2" PER OCCUPANT = 58"
CORRIDOR WIDTH (PER NFPA 101, 28.2.3.3)	44"	64"	
CORRIDOR FIRE-RESISTANCE RATING (PER NFPA 101, 28.3.6.1.3)	0 HR	0 HR	OCCUPANT LOAD > 30, SPRINKLERED
STAIR WIDTH (PER NFPA 101, 28.3.6.1.3 AND TABLE 7.3.3.1)	96"	130"	290 PERSONS x .3" PER OCCUPANT = 87"
COMMON PATH OF EGRESS TRAVEL (PER NFPA 101, 28.2.5.4 AND TABLE A.7.6)	≤ 50	44'-0"	
EXIT ACCESS TRAVEL DISTANCE WITHIN SUITE (PER NFPA 101, 28.2.6.2)	≤ 125	24'-0"	
EXIT ACCESS TRAVEL DISTANCE (PER NFPA 101, 28.2.6.3.2)	≤ 200	136'-0"	
DEAD ENDS (PER NFPA 101, 28.2.5.6 AND TABLE A.7.6)	≤ 50'-0"	0'-0"	
MINIMUM NUMBER OF EXITS PER STORY (PER NFPA 101, 28.2.4.1)	≤ 2	3	
MINIMUM NUMBER OF EXITS PER SUITE (PER NFPA 101, 28.2.5.7)	≤ 1	1	
GUARDS (PER NFPA 101, 28.2.2.3, 7.2.2.4 AND 7.18)	42" HEIGHT ≤ 4" OPENING		

ADDITIONAL REQUIREMENTS

BUILDING ELEMENT	REQUIRED	PROVIDED	NOTES
ILLUMINATION OF EGRESS (PER NFPA 101, 28.2.9)	Y	Y	
EMERGENCY LIGHTING (PER NFPA 101, 28.2.9)	Y	Y	
SMOKE ALARMS (PER NFPA 101, 28.3.4.5)	Y	Y	
SUITE DOORS (PER NFPA 101, 28.3.6.2.3)	Y	Y	
EMERGENCY INSTRUCTIONS (PER NFPA 101, 28.7.4.1)	Y	Y	
EMERGENCY VEHICLE ACCESS ROAD (PER UFC 3-600-01, 2-10.1 AND 9-1.1)	33'-0" FROM EXTERIOR DOOR		
FORCE PROTECTION EQUIPMENT ON VEHICLE ACCESS ROAD (PER UFC 3-600-01, 9-1.3)	N/A	N/A	

BUILDING DESIGN OCCUPANT LOAD (PER NFPA TABLE 7.6.1.2)

OCCUPANCY	AREA	MAXIMUM AREA ALLOWED PER OCCUPANT	CALCULATED OCCUPANCY LOAD
FIRST FLOOR			
ACCESSORY (BUSINESS)	866 SF	100	9
ACCESSORY (INDUSTRIAL)	812 SF	300	3
RESIDENTIAL R-2	11625 SF	200	58
SECOND FLOOR			
ACCESSORY (ASSEMBLY)	683 SF	15	46
ACCESSORY (BUSINESS)	304 SF	100	3
ACCESSORY (INDUSTRIAL)	812 SF	300	3
RESIDENTIAL R-2	11633 SF	200	58
THIRD FLOOR			
ACCESSORY (ASSEMBLY)	683 SF	15	46
ACCESSORY (BUSINESS)	304 SF	100	3
ACCESSORY (INDUSTRIAL)	812 SF	300	3
RESIDENTIAL R-2	11633 SF	200	58
TOTAL	40167 SF		290

GROSS BUILDING AREA

AREA TYPE	AREA
GROSS BUILDING AREA	42,792 SF

REVISIONS

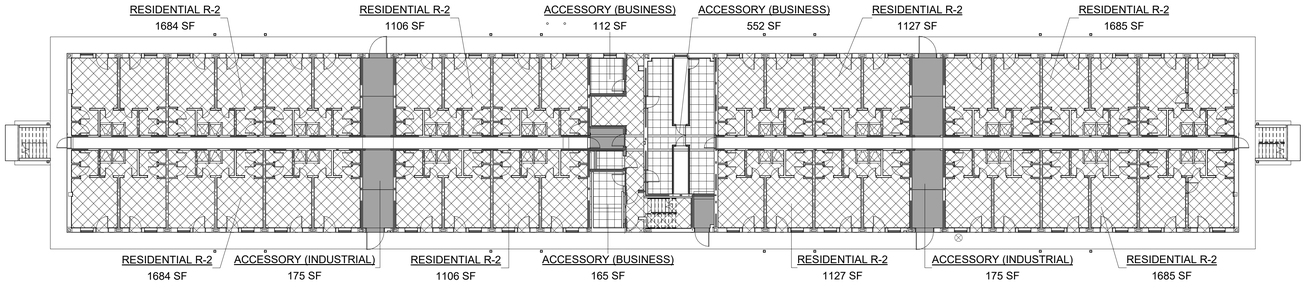
SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR OCCUPANCY PLAN
SCALE: 1/16" = 1'-0"



2 SECOND FLOOR OCCUPANCY PLAN
SCALE: 1/16" = 1'-0"



3 FIRST FLOOR OCCUPANCY PLAN
SCALE: 1/16" = 1'-0"

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OCCUPANCY LEGEND

- ACCESSORY (ASSEMBLY)
- ACCESSORY (BUSINESS)
- ACCESSORY (INDUSTRIAL)
- RESIDENTIAL R-2

PLAN NORTH

16 12 8 4 0 16 32

SCALE: 1/16"=1'-0"

GRAPHIC SCALE

MARK J. SHAW 4696 REGISTERED PROFESSIONAL ENGINEER WILMINGTON, NC

ISSUE DATE:15 MAY 2020

LS101

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

BUILDING CODE ANALYSIS

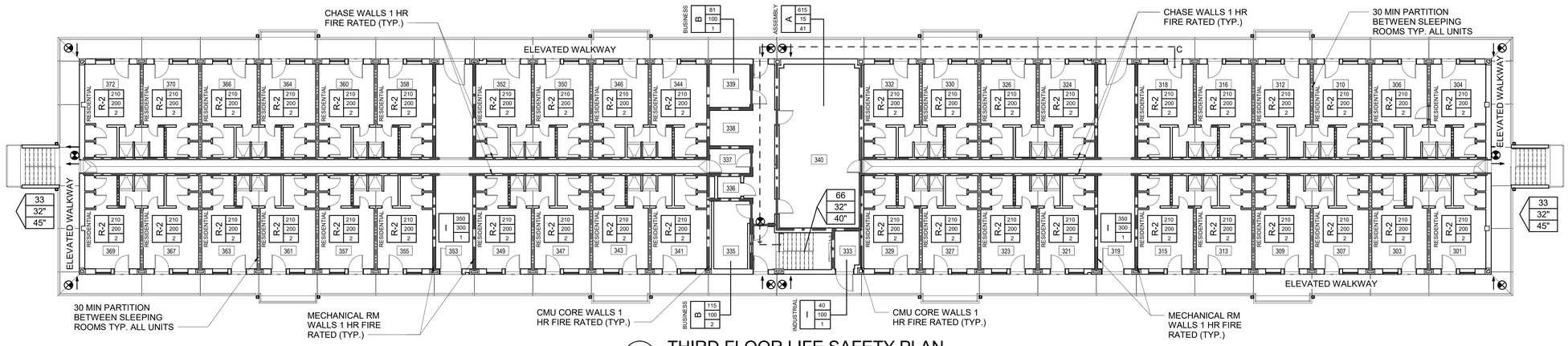
DES. M. LAZO	
DR. P. HARRIS/ B. SHAW	
CHK. M. LAZO	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023960

CONSTR. CONTR. NO.: N40085-18-B-0042

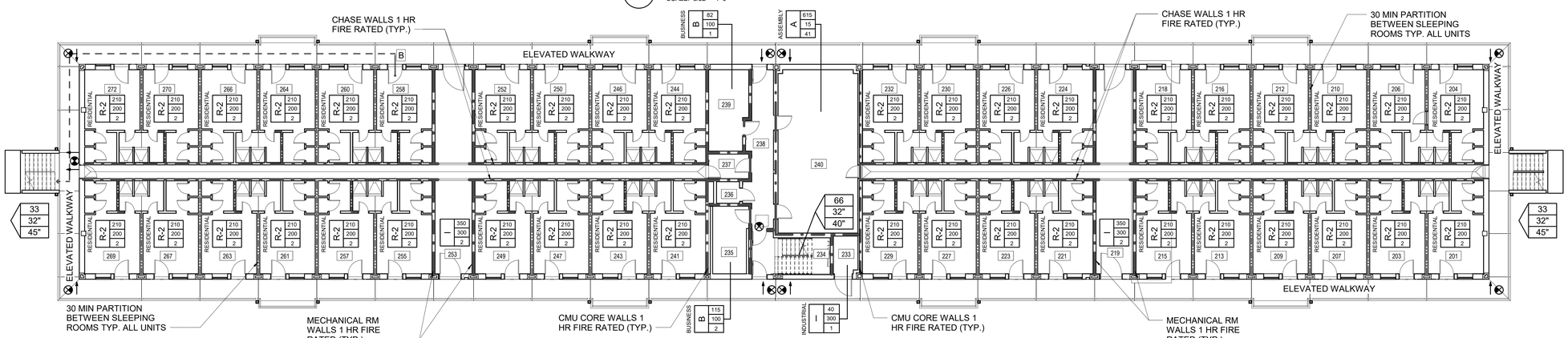
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 2 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



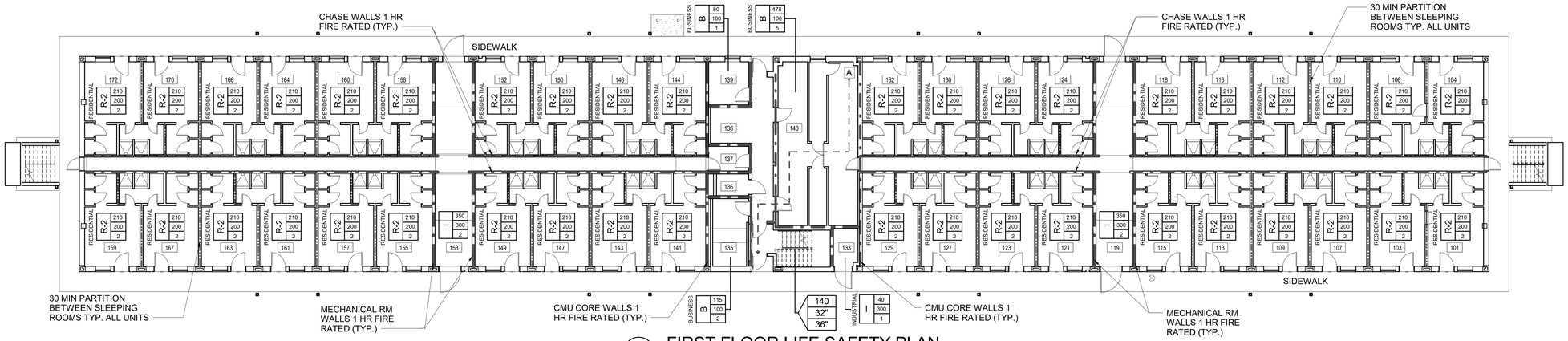
1 THIRD FLOOR LIFE SAFETY PLAN

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



2 SECOND FLOOR LIFE SAFETY PLAN

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



3 FIRST FLOOR LIFE SAFETY PLAN

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

ROUTE DISTANCES

MARK	LENGTH
A	58'-1"
B	106'-5"
C	141'-11"

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LIFE SAFETY LEGEND

- COMMON PATH OF TRAVEL DISTANCE
- FIRE EXTINGUISHER DISTANCE
- EGRESS TRAVEL DISTANCE
- 30 MINUTE FIRE RATED SEPARATION
- 1 HOUR FIRE RATED SEPARATION
- EXIT SIGN
- 1 HR HORIZONTAL SEPARATION

- R RESIDENTIAL OCCUPANCY
- B BUSINESS OCCUPANCY
- A ASSEMBLY

OCCUPANCY / ROOM AREA (SF) / OCCUPANT LOAD FACTOR / # OF OCCUPANTS

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

EVACUATION PLAN NOTES

1. PROVIDE AN EVACUATION PLAN GRAPHIC W/ BLDG. FLOOR PLAN ILLUSTRATING THE PATH OF EGRESS FROM THE SIGN LOCATION TO THE EXIT
2. THE GOVERNMENT SHALL MAKE FLOOR PLAN CAD FILES AVAILABLE
3. THE PATH OF EGRESS AND THE EXIT LOCATION SHALL BE BOLD RED
4. DESIGN THE GRAPHICS AND MOUNT THE SIGNAGE WITH THE FLOOR PLAN ORIENTATION TO MATCH THE ORIENTATION OF THE OBSERVER
5. SUBMIT SHOP DRAWINGS TO ROICC FOR APPROVAL BY FIRE DEPARTMENT OFFICIAL
6. SEE SHEET A-608

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

MARK J. SAPP 4696 REGISTERED PROFESSIONAL ENGINEER WINNABOW, NC

ISSUE DATE:15 MAY 2020

LS102

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.362.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

LIFE SAFETY PLAN

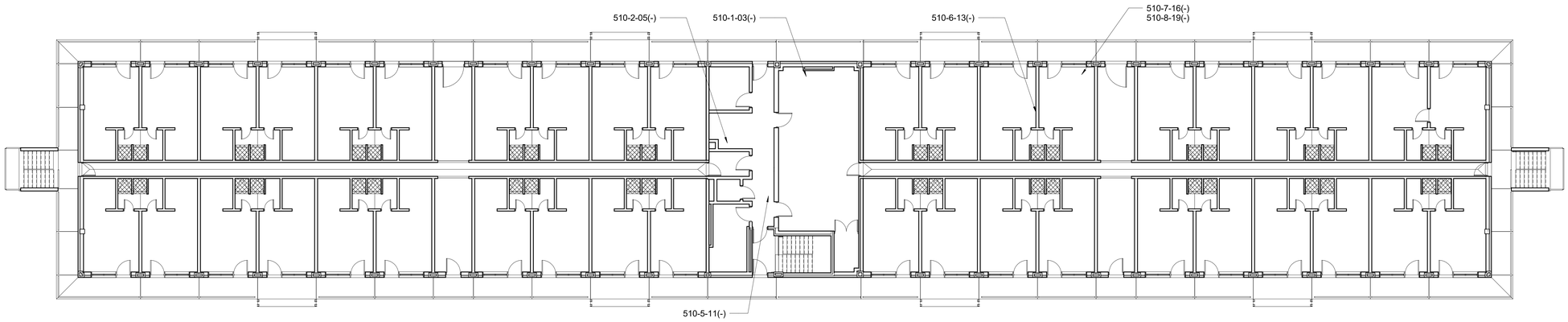
DES. M. LAZO	
DR. P. HARRIS/ B. SHAW	
CHK. M. LAZO	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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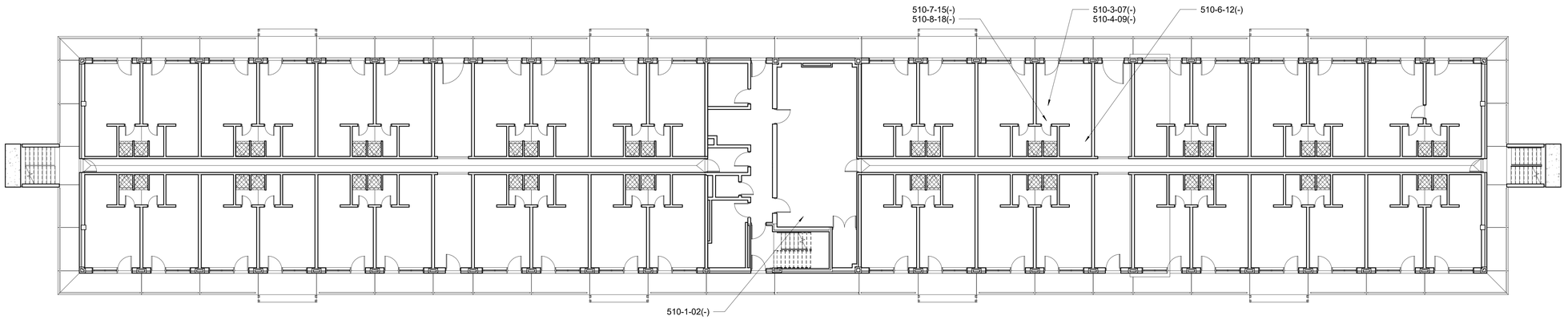
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED SPEC. 05-18-0042 SHEET 3 OF 143

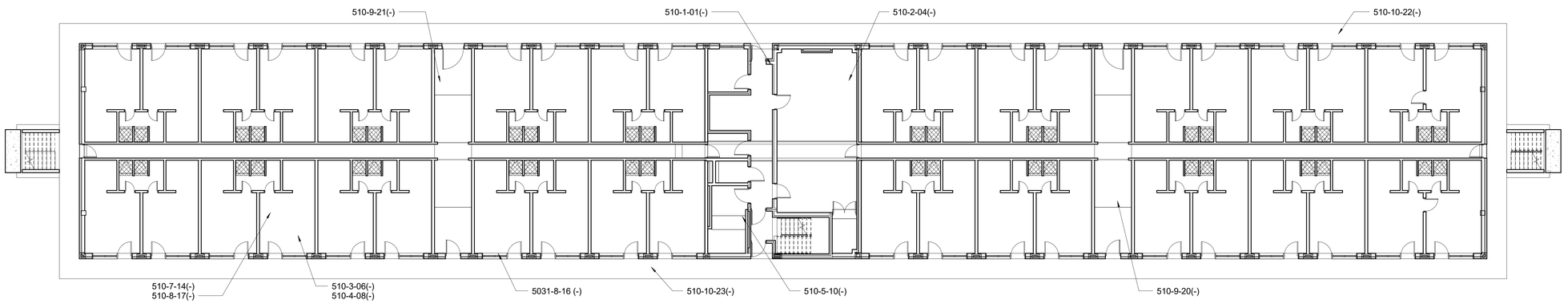
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR ABATEMENT PLAN
SCALE: 3/32" = 1'-0"



2 SECOND FLOOR ABATEMENT PLAN
SCALE: 3/32" = 1'-0"



3 FIRST FLOOR ABATEMENT PLAN
SCALE: 3/32" = 1'-0"

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ABATEMENT WORK NOTES

ABATE THE FOLLOWING:

SHOWER FLOOR TILE SETTING BED WATER PROOFING IS PRESUMED ACM. TEST SUSPICIOUS MATERIALS ENCOUNTERED DURING DEMOLITION.

CONSTRUCTION COST PROPOSAL SHALL INCLUDE COST FOR ABATEMENT OF 120 EACH. SHOWER PAN WATERPROOFING.

CR CONCRETE
[HM] HOMOGENOUS MATERIAL NUMBER
MR MECHANICAL ROOM
[P] PAINTED FLOOR

ID LEGEND

01-01 (+,-)
- SAMPLE IDENTIFICATION
- POSITIVE (+), NEGATIVE (-), OR TRACE (TR) FOR THE PRESENCE OF ASBESTOS
- HOMOGENOUS MATERIAL

12" BEIGE W/ BROWN FLOOR TILE AND MASTIC [HM01]

PLAN NORTH

16 8 0 16
SCALE: 3/32"=1'-0"
GRAPHIC SCALE

MARK J. SMITH 4696 NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT

ISSUE DATE:15 MAY 2020

H-101

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108 Bentora Lodge Rd., Summerville, SC. 29485 843.875.3637
350 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.343.1640
CEMS Project No: 1515W Project Manager: R. Alvar

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

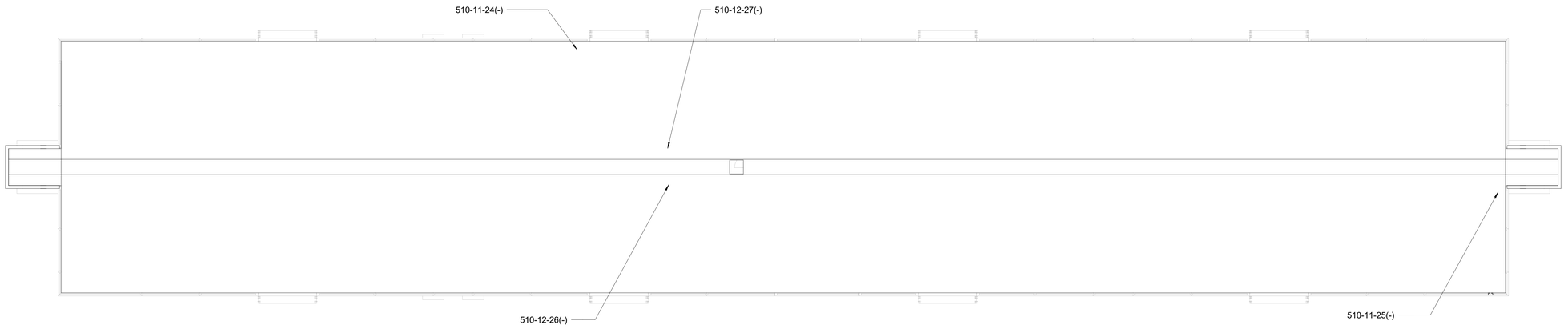
REPAIR BEQ HP510

ABATEMENT PLANS

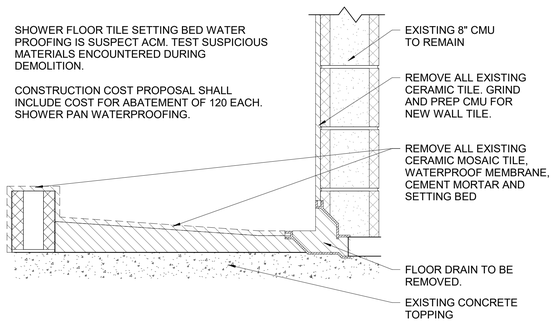
DES. M. SMITH	
DR. P. HARRIS/ R. LEONARD	
CHK. M. SMITH	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023962
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 4 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ROOF ABATEMENT PLAN
SCALE: 3/32" = 1'-0"



2 TYPICAL SHOWER ABATEMENT
SCALE: 1 1/2" = 1'-0"

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ABATEMENT WORK NOTES

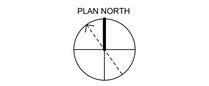
ABATE THE FOLLOWING:

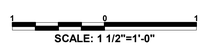
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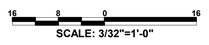
CONSTRUCTION COST PROPOSAL SHALL INCLUDE COST FOR ABATEMENT OF 120 EACH. SHOWER PAN WATERPROOFING.

CR CONCRETE
[HM] HOMOGENOUS MATERIAL NUMBER
MR MECHANICAL ROOM
[P] PAINTED FLOOR

ID LEGEND







GRAPHIC SCALES



ISSUE DATE:15 MAY 2020

H-102

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

REPAIR BEQ HP510

ABATEMENT ROOF PLAN

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023963

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 5 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

SURVEY LEGEND

EXISTING

- BUILDING OUTLINE
- 25 — CONTOUR
- UE DATUR — UNDERGROUND ELECTRICAL (REC DRAWING)
- EU_X — UNDERGROUND ELECTRICAL
- UNDERGROUND COMMUNICATIONS
- TU DATUR — TU DATUR — UNDERGROUND COMMUNICATIONS (REC DRAWING)
- W DATUR — WATER LINE (REC DRAWING)
- W_X — W_X — WATER LINE
- SS DATUR — SANITARY SEWER (REC DRAWING)
- SS_X — SS_X — SANITARY SEWER
- SD_X — SD_X — STORM DRAIN
- ST DATUR — STEAM LINE (REC DRAWING)
- DTS — DTS — DUAL TEMPERATURE SUPPLY
- DTR — DTR — DUAL TEMPERATURE RETURN
- EDGE OF PAVEMENT
- LIGHT POLE
- SANITARY SEWER MANHOLE
- BENCHMARK
- ELECTRICAL MANHOLE
- CONCRETE
- TELEPHONE PEDESTAL
- DROP INLET
- POST INDICATOR VALVE
- WATER VALVE
- HYDRANT
- CLEANOUT
- TREE

CIVIL LEGEND

EXISTING	NEW	
		BUILDING OUTLINE
25	25	CONTOUR
UE DATUR		UNDERGROUND ELECTRICAL (REC DRAWING)
EU_X	EU	UNDERGROUND ELECTRICAL
CU_X	CU	UNDERGROUND COMMUNICATIONS
TU DATUR — TU DATUR		UNDERGROUND COMMUNICATIONS (REC DRAWING)
W DATUR		WATER LINE (REC DRAWING)
W_X — W_X	W — W	WATER LINE
SS DATUR		SANITARY SEWER (REC DRAWING)
SS_X — SS_X	SS — SS	SANITARY SEWER
SD_X — SD_X	SD — SD	STORM DRAIN
	G — G — G	GAS SERVICE LINE (NOT IN CONTRACT)
ST DATUR		STEAM LINE (REC DRAWING)
DTS — DTS		DUAL TEMPERATURE SUPPLY
DTR — DTR		DUAL TEMPERATURE RETURN
		EDGE OF PAVEMENT
	SF — SF	SILT FENCE
		LIMITS OF DISTURBANCE
		LIMITS OF CONSTRUCTION
		DOWNSPOUT
		DRAIN BASIN / JUNCTION BOX
		INLET PROTECTION
		LIGHT POLE
		SANITARY SEWER MANHOLE
		BENCHMARK
		ELECTRICAL MANHOLE
		TELEPHONE PEDESTAL
		DROP INLET
	PIV	POST INDICATOR VALVE
		WATER VALVE
	WGM	GAS METER
		GAS VALVE
		HYDRANT
		CLEANOUT
		CONCRETE
		CONCRETE PAD (MECHANICAL YARD)
		CONSTRUCTION ENTRANCE
		GRASS / SOD AREAS
		TO BE DEMOLISHED
		ASPHALT PAVEMENT
		TREE
		TREE PROTECTION
	XX	SHEET KEYNOTE

ABBREVIATIONS:

INDUSTRIAL WASTE = INW
SANITARY SEWER = SS
STORM DRAINAGE = SD
POTABLE WATER = W
FIRE PROTECTION = F
STEAM = ST
POLYVINYL CHLORIDE PIPE = PVC
DUCTILE IRON PIPE = DIP
DUCTILE IRON = DI
RESTRAINED JOINT = RJ
HIGH DENSITY POLYETHYLENE = HDPE

EX. TOP OF PAVEMENT = ETP
TOP OF PAVEMENT = TOP
TOP OF CURB = TOC

EXISTING UTILITIES:

1. ALL IDENTIFIED UTILITIES BELOW ARE BASED ON THE INFORMATION PROVIDED BY MCB CAMP LEJEUNE / PUBLIC WORKS.
2. STEAM
   - 2.1. 2" & 4" OVERHEAD SERVICE
   - 2.2. SERVICE HAS BEEN DECOMMISSIONED
3. POTABLE WATER
   - 3.1. 8" WATER MAIN
   - 3.2. 6" WATER SERVICE
   - 3.3. 6" HYDRANT LEGS
4. FIRE PROTECTION
   - 4.1. 6" SERVICE LINE
5. SANITARY SEWER
   - 5.1. 8" SS MAIN
   - 5.2. 6" SS SERVICE
6. STORM DRAINAGE
   - 6.1. 12" & 15" SD MAIN
   - 6.2. 6" & 8" SERVICE LINE
7. NATURAL GAS
   - 7.1. 2" NG MAIN
   - 7.2. 3" SERVICE TO MECH. BLDG

LAND DISTURBANCE NOTES:

1. THE PROJECT AREA IS APPROXIMATELY 1.87 ACRES AS SHOWN BY THE LIMITS OF CONSTRUCTION. DISTURBED AREA IS APPROXIMATELY 0.99 ACRES AS SHOWN BY SILT FENCE UNLESS OTHERWISE SHOWN BY THE LIMITS OF DISTURBANCE.
2. ALL AREAS DISTURBED BY CONSTRUCTION OPERATIONS AND NOT PAVED SHALL BE SODDED/GRASSED. PROVIDE PERMANENT SODDING PER SHEET CP101. PROVIDE TEMPORARY SEEDING PER NCDEQ COVERAGE REQUIREMENTS, SEE SHEET C-501.
3. THE PROPERTY IS LOCATED WITHIN ONSLOW COUNTY, NORTH CAROLINA AND PART OF THE WHITE OAK RIVER BASIN. LOCATED ON CAMP LEJEUNE USGS QUAD SHEET AND OUTFALLS TO THE NEW RIVER, CLASS-SC; NSW.
4. THIS DEVELOPED PROPERTY LIES IN ZONE X PER FIRM COMMUNITY NO.370340, PANEL 4380, DATED EFFECTIVE DATE NOVEMBER 3, 2005.
5. THE DISTURBED ACREAGE IS 0.99 ACRES, OF WHICH 1505 SF IS NEW IMPERVIOUS AREA OR BUILT UPON AREA (BUA); THEREFORE, DOES NOT REQUIRE NORTH CAROLINA STATE PERMITTING FOR SEDIMENT & EROSION CONTROL, STORMWATER, OR A COASTAL AREA MANAGEMENT ACT (CAMA) MAJOR DEVELOPMENT PERMIT.

CONSTRUCTION SEQUENCE:

1. A LAND DISTURBANCE PRE-CONSTRUCTION CONFERENCE IS REQUIRED PRIOR TO ANY DISTURBANCE ACTIVITIES ON THE SITE. THE CONTRACTOR SHALL SCHEDULE THE MEETING TO OCCUR AT LEAST 48 HOURS PRIOR TO ANY DISTURBANCE ON THE SITE.
2. INSTALL SILT FENCE AND TEMPORARY GRAVEL CONSTRUCTION ENTRANCE WHERE INDICATED ON THE PLANS.
3. REMOVE ALL CONCRETE SIDEWALKS AND ANY SITE STRUCTURES/FEATURES SPECIFIED TO BE REMOVED ON THE PLANS.
4. TRENCHING AND INSTALLATION OF MECHANICAL PIPING/WELLS, WATER LINES, STORM DRAINAGE, SEWER LINES, AND ELECTRICAL LINES MAY BEGIN. SEQUENCE SHALL BE DICTATED BY WHETHER PRODUCTS/SUBMITTALS HAVE BEEN APPROVED. SEE MECHANICAL, PLUMBING, AND ELECTRICAL PLANS FOR MORE DETAILS AND IMPROVEMENTS WITHIN 5 FEET OF BUILDINGS.
5. FILL AND COMPACT ALL TRENCHES.
6. INSTALL ALL NEW CONCRETE SIDEWALK.
7. TEMPORARILY SEED ALL DISTURBED AREAS WITH GOOD GRASS PER GROUND COVER REQUIREMENTS IN NCDEQ EROSION CONTROL DESIGN MANUAL (SEE SHEET C-501).
8. PERMANENTLY SEED ALL DISTURBED AREAS WITH **SOD** PER SHEET CP101, ONCE ALL WORK IS COMPLETE.
9. MAINTAIN SEDIMENT TRAPPING DEVICES UNTIL SITE HAS BEEN STABILIZED. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE INSPECTIONS OF ALL CONTROL MEASURES ON A WEEKLY BASIS AND AFTER PERIODS OF RAINFALL. CONTRACTOR RESPONSIBLE FOR REPAIRING CONTROL MEASURES IMMEDIATELY UPON DISCOVERY.
10. WHEN CONSTRUCTION IS COMPLETE AND THE GROUND COVER IS ESTABLISHED, CALL FOR INSPECTION.
11. WHEN SITE IS APPROVED BY CONTRACTING OFFICER (ROICC) REMOVE SILT FENCE PER THE SILT FENCE MAINTENANCE NOTES ON DETAILS SHEET C-501.

GENERAL NOTES:

1. SEE SHEET C-501 THROUGH C-503 FOR CIVIL DETAILS.
2. ALL DISTURBED AREAS TO BE GRADED FOR POSITIVE DRAINAGE TO EXISTING STORM INLETS.
3. ALL AREAS WHERE EXISTING CONCRETE SLABS, SITE FEATURES, AND FOUNDATIONS ARE REMOVED SHALL BE FILLED TO EXISTING GRADE AND SLOPED FOR POSITIVE DRAINAGE.
4. ALL DISTURBED AREAS TO BE SODDED (PERMANENT) /GRASSED (TEMPORARY) AFTER GRADING ACTIVITY HAS BEEN COMPLETED. SEE SHEET CP101.
5. ALL DEMOLITION DEBRIS SHALL BE HAULED OFFSITE.
6. SAW CUT AND REMOVE ALL EXISTING CONCRETE SIDEWALK NOTED ON PLANS. PROVIDE NEAT AND CLEAN JOINTS AT SIDEWALK TO REMAIN.

   . CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL REMOVAL AND REPLACEMENT OF CONCRETE SIDEWALK AS NECESSARY TO CONSTRUCT THE PROJECT. SIDEWALK REMOVAL AND REPLACEMENT SHOWN IS THE MINIMUM AMOUNT REQUIRED TO CONSTRUCT THE PROJECT.
8. THE LOCATION, SIZES, AND DEPTHS OF EXISTING UTILITIES, INCLUDING SERVICE LATERALS, AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZES, AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.
9. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY OTHERS. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE.

   . CONTRACTOR TO COORDINATE LOCATION/MARKING OF EXISTING SITE UTILITIES IN AREAS WHERE WORK IS CONDUCTED, AND ENSURE THEY ARE TURNED OFF PROPERLY BEFORE BEGINNING CONSTRUCTION.
11. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE DONE TO ANY NEW AND EXISTING SITE ITEMS IN THE EXECUTION OF HIS WORK UNDER THIS SECTION.
12. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AND BE PREPARED TO ADEQUATELY CARE FOR AND SAFEGUARD HIMSELF AND THE GOVERNMENT FROM DAMAGE.

    . CONTRACTOR TO VERIFY EXISTING UTILITY (STORM DRAIN, WATER LINE, ETC...) LINE SIZES AND NOTIFY THE ENGINEER OF RECORD OF ANY DISCREPANCIES BEFORE ORDERING MATERIALS.
14. ALL WATER LINES TO BE RESTRAINED JOINT (RJ) DIP WITH MECHANICAL JOINTS AND THRUST BLOCKING.
15. PRIOR TO STORM DRAIN LINE INSTALLATION, THE CONTRACTOR MUST VERIFY ELEVATIONS OF ALL THE EXISTING UTILITIES AT ALL UTILITY CROSSINGS. IF CONFLICT EXISTS, CONTRACTOR SHALL RELOCATE UTILITIES AS NECESSARY AND NOTIFY THE CONTRACTING OFFICER (ROICC). CONTRACTOR TO TAKE EVERY MEASURE TO LOCALIZE OUTAGES TO BUILDING HP510. COORDINATE ALL NECESSARY OUTAGES WITH ROICC.
16. **CONTRACTOR TO ASSUME THAT POSSIBLE UNDERGROUND FEATURES/DEBRIS (ABANDONED UTILITIES, CONCRETE, ETC.) TO BE ENCOUNTERED DURING EXCAVATION AROUND NEW/ EXISTING MECHANICAL BUILDING(S) AND BEQ FOUNDATION. CONTRACTOR TO ASSUME THE FOLLOWING UNKNOWN QUANTITIES SHALL BE ENCOUNTERED AND INCLUDED IN BASE BID:**
    - **UNKNOWN 20 CY OF CONCRETE (REINFORCED / NON-REINFORCED)**
    - **UNKNOWN 150 LF OF ABANDONED UTILITIES**

BEQ HP510 COORDINATE TABLE

POINT #	LOCATION / BLDG CORNER	NORTHING	EASTING
1	NORTHWEST	333599.380	2497862.776
2	NORTHEAST	333421.888	2498111.529
3	SOUTHEAST	333383.909	2498084.490
4	SOUTHWEST	333561.432	2497835.721

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C-001

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MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 41438 JAMES C. MOORING 5/15/20

ISSUE DATE: 15 MAY 2020

DES.	C. MOORING
DR.	J. BARNES
CHK.	S. THOMAS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

REPAIR BEQ HP510

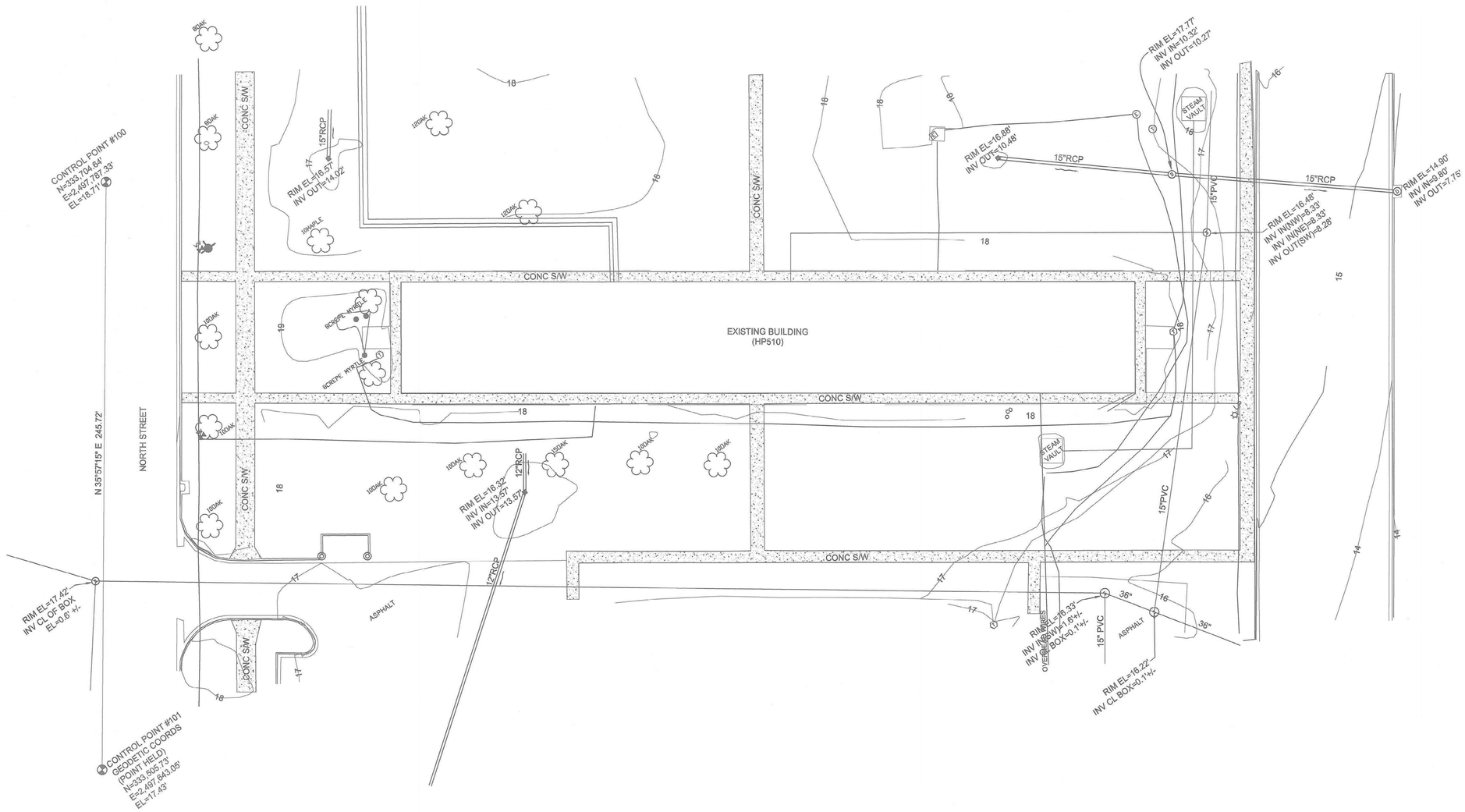
LEGEND AND GENERAL NOTES

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023964

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 6 OF 148

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 EXISTING TOPOGRAPHIC SURVEY
SCALE: 1" = 20'-0"

GENERAL NOTES

1. SEE SHEET C-001 FOR LEGEND.
2. SURVEY PROVIDED BY:
   MA ENGINEERING CONSULTANTS, INC.
   NC LICENSE #F-0160
   598 EAST CHATHAM STREET, SUITE 137
   CARY, NC 27511
   PHONE: (919) 297-0220
   FAX: (919) 297-02212
2. HORIZONTAL DATUM: NAD 1983/(2011) NC
   VERTICAL DATUM: NAVD 1988
3. SURVEY BASED ON PHYSICAL EVIDENCE FOUND ON MAY 2018.
4. BOUNDARY INFORMATION TAKEN FROM PLATS AS SHOWN.
5. UTILITY INFORMATION BASED ON OBSERVED INFORMATION, GEOPHYSICAL LOCATING, AND CAMP LEJEUNE GIS MAPPING.
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE COMMITMENT REPORT. MA ENGINEERING CONSULTANTS, INC., DOES NOT CLAIM THAT ALL MATTERS OF RECORD WHICH MAY OR MAY NOT AFFECT THE SUBJECT PROPERTY ARE SHOWN HEREON.
7. BROKEN LINES INDICATE PROPERTY LINES NOT SURVEYED.
8. THE OFF-SITE RIGHT-OF-WAY/PROPERTY LINE SHOWN HEREON IS FOR ILLUSTRATIVE PURPOSES ONLY. THE UNDERSIGNED CERTIFIES ONLY TO THE RIGHT-OF-WAY/PROPERTY LINES SURVEYED, AND DOES NOT CERTIFY TO THE RIGHT-OF-WAY WIDTH/PROPERTY LINE OF ANY ADJACENT PROPERTIES.
9. THE SUBJECT PROPERTY IS NOT LOCATED WITHIN 2000' OF A HORIZONTAL NGS MONUMENT.
10. HORIZONTAL COORDINATES BASED UPON VRS GPS OBSERVATIONS USING SPECTRA PRECISION "SP 80" UNITS. THE NETWORK POSITIONAL ACCURACY OF THE VRS DERIVED POSITIONAL COORDINATES MEETS OR EXCEEDS THE CLASS A HORIZONTAL POSITIONS. COORDINATES BASED UPON GEOID 12B NSRS 2011 AND HAVE A 95% CONFIDENCE RATING. VERTICAL DATUM HAS BEEN ADJUSTED TO NAVD '88.
11. PROPERTY MAY BE SUBJECT TO UNRECORDED RIGHT-OF-WAYS OR EASEMENTS NOT OBSERVED.
12. AREAS COMPUTED BY COORDINATE METHOD.
13. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY OTHERS. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT UTILITY LOCATOR AND CONTRACTING OFFICER (ROICC) AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF EXCAVATION OF DEMOLITION.

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

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2-12-19

NORTH CAROLINA PROFESSIONAL SEAL L-3967 SURVEYOR ANTHONY S. DIBONA

I hereby state that to the best of my professional knowledge, information, and belief, the survey shown hereon was made in accordance with the requirements of the standards of practice manual for surveying in NC, and meets or exceeds the requirements for a class A survey as specified therein; also there are no visible encroachments or projections other than shown.

Anthony S. DiBona 2-12-19

Anthony S DiBona, L-3967

N

20' 0 20' 40'

SCALE: 1" = 20'-0"

GRAPHIC SCALE

VF101

CEMS ENGINEERING | ARCHITECTURE
330-C Midland Parkway, Summerville, SC, 29485 843.879.3967
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.343.1640
CEMS Project No: 15VEEV Project Manager: R. ALVAR

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

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REPAIR BEQ HP510

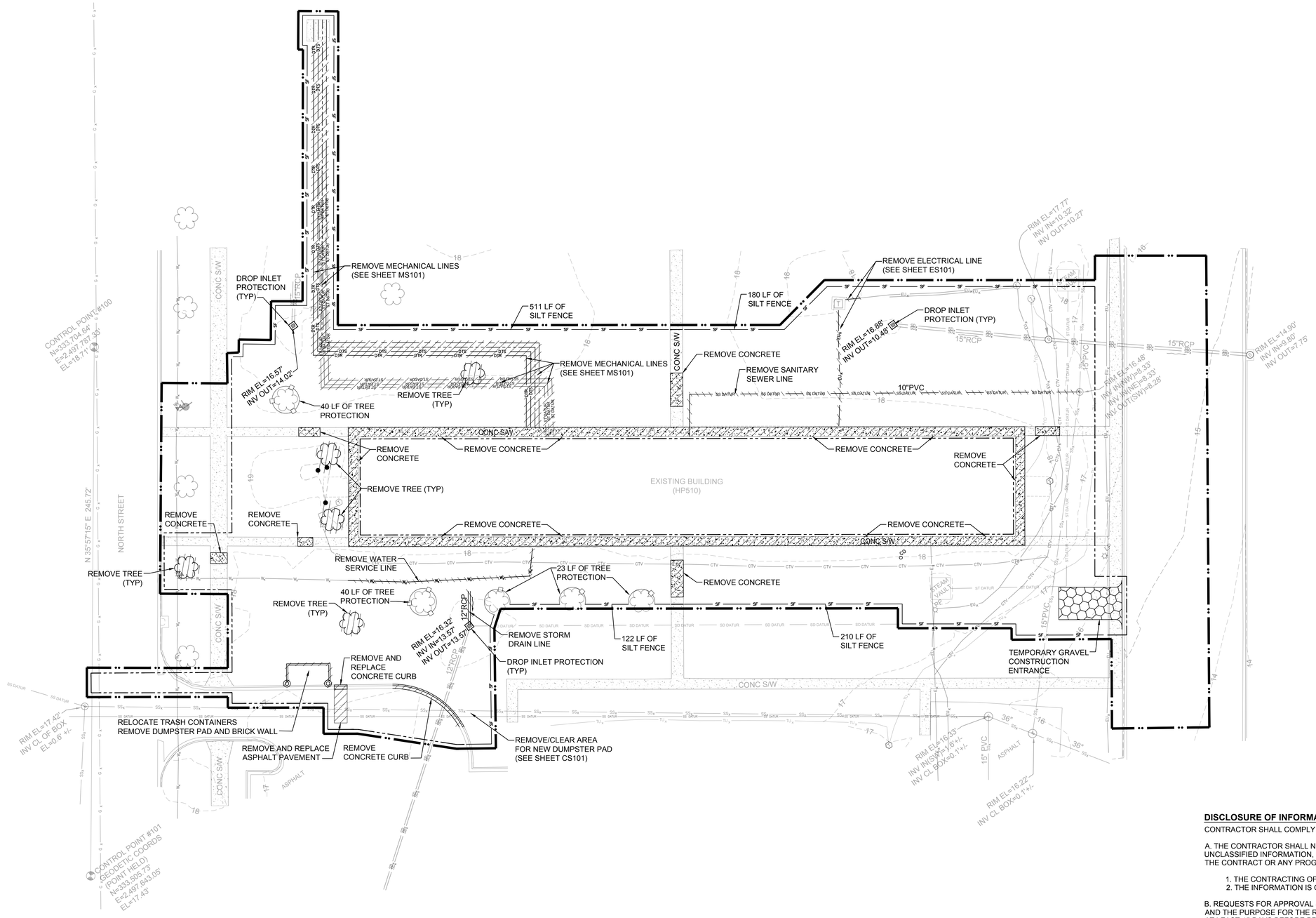
EXISTING TOPOGRAPHIC SURVEY

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023965
		CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED SPEC. 05-18-0042 SHEET 7 OF 147

ISSUE DATE: 15 FEB 2019

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

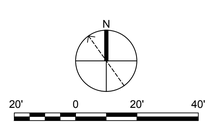


1 DEMOLITION / EROSION CONTROL PLAN

SCALE: 1" = 20'-0"

GENERAL NOTES

1. SEE SHEET C-001 FOR LEGEND.
2. BUILDING HP510 CONSISTS OF MULTIPLE DOWNSPOUTS EXITING BUILDING. THIS NETWORK IS TO BE REMOVED / ABANDONED IN THIS SCOPE OF WORK.
3. CONTRACTOR SHALL VERIFY THE EXACT LOCATION THROUGH AS-BUILTS OR SITE INVESTIGATION PRIOR TO DEMOLITION WORK.
4. THE EXISTING DOWNSPOUTS EXITING BUILDING HP510 SHALL BE ABANDONED AND CAPPED ONE (1') FOOT BEYOND THE EDGE OF SIDEWALK.
5. MANHOLE AND DROP INLET INVERT TO BE PLUGGED AFTER REMOVAL OF STORM/ SEWER LINE.
6. CONTRACTOR SHALL SAWCUT AT NEAREST JOINT(S) AND REMOVE ALL EXISTING CONCRETE SIDEWALK NOTED/SHOWN ON THIS SHEET. PROVIDE CLEAN AND NEAT CUT AT EXISTING JOINTS.
7. CONCRETE SIDEWALK REMOVAL / CUTS SHALL BE MADE BETWEEN EXISTING JOINTS, THUS REMOVE AND REPLACE A FULL SECTION.



SCALE: 1" = 20'-0"

GRAPHIC SCALE

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CD101

CEMS ENGINEERING | ARCHITECTURE
100 Benbora Lodge Road, Summerville, SC, 29485 843.875.3637
309 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1648
CEMS Project No: 1515V Project Manager: R. ALVAR

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ HP510

DEMOLITION / EROSION CONTROL PLAN

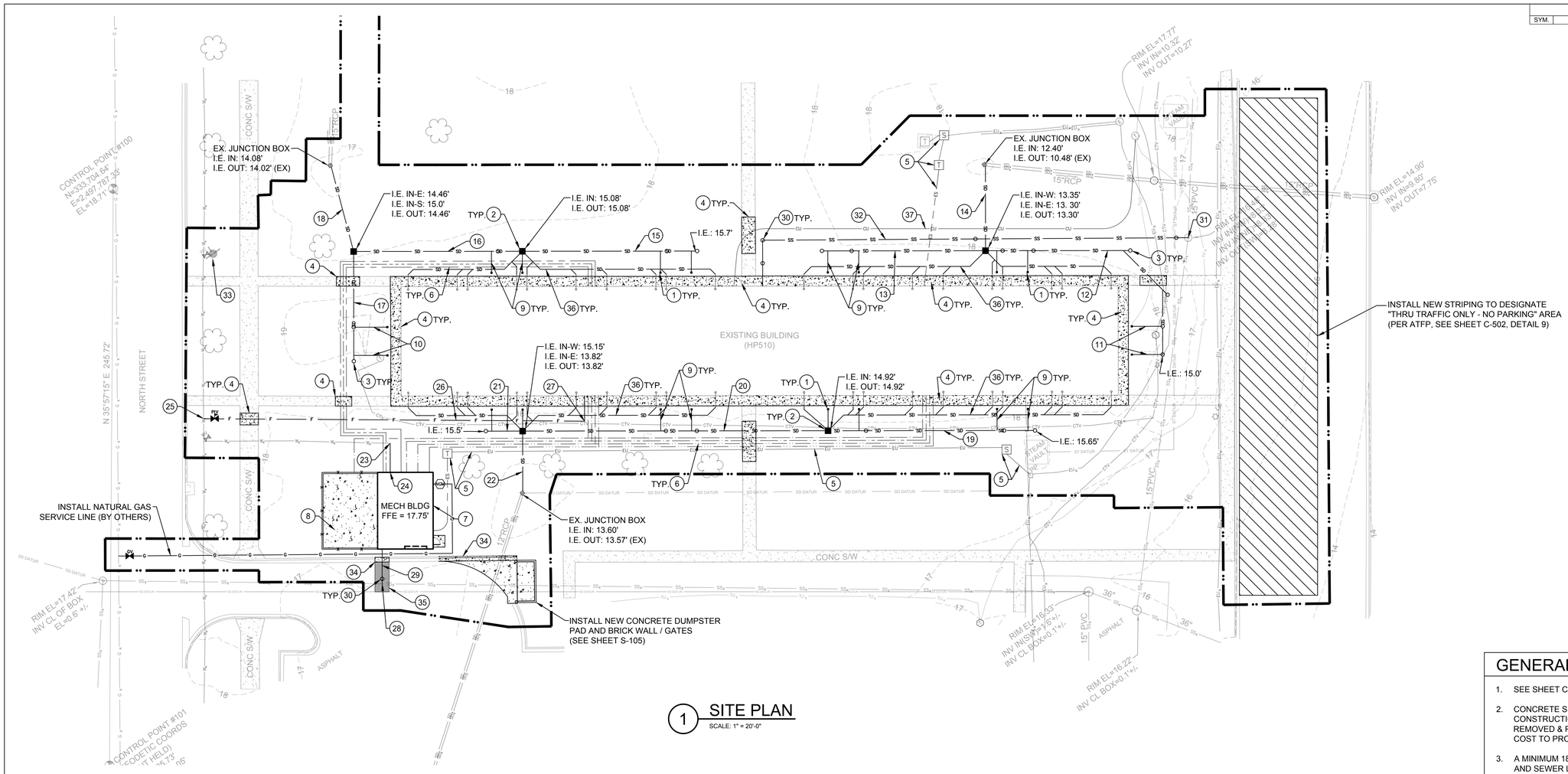
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 41438 JAMES C. MOORING REGISTERED 5/15/20

DES.	C. MOORING
DR.	J. BARNES
CHK.	S. THOMAS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 8 OF 143

REVISIONS			
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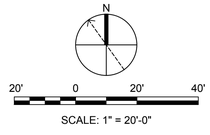
1 SITE PLAN
SCALE: 1" = 20'-0"

SHEET KEYNOTES:

1	CONNECT DRAINAGE TO ROOF DRAIN DOWNSPOUT (SEE ARCHITECTURAL FOR DOWNSPOUT LOCATIONS AND DETAIL 3/A-302)
2	STORM DRAIN BASIN - RIM ELEVATION TO MATCH EXISTING GRADE (SEE SHEET C-503 FOR DETAILS)
3	STORM DRAIN CLEANOUTS (SEE SHEET C-503 FOR DETAILS)
4	REMOVE & REPLACE CONCRETE SIDEWALK TO MATCH EXISTING ELEVATIONS (SEE SHEET C-502 FOR DETAILS)
5	ELECTRICAL LINES & EQUIPMENT (SEE ELECTRICAL - SHEET ES102)
6	MECHANICAL PIPING (SEE MECHANICAL - SHEET MS101)
7	MECHANICAL BUILDING (SEE SHEET S-104 AND A-104)
8	MECHANICAL YARD - CONCRETE PAD & FENCE ENCLOSURE (SEE ARCHITECTURAL & MECHANICAL)
9	9 LF OF 6" HDPE @ MIN. 1% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
10	14 LF OF 6" HDPE @ MIN. 1% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
11	13 LF OF 6" HDPE @ MIN. 1% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
12	110 LF OF 10" HDPE @ 1.5% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
13	67 LF OF 10" HDPE @ 2.0% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
14	36 LF OF 12" HDPE @ 2.5% - TIE TO EXISTING DROP INLET (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
15	72 LF OF 10" HDPE @ 0.85% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
16	72 LF OF 10" HDPE @ 0.85% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
17	45 LF OF 10" HDPE @ 1% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
18	38 LF OF 12" HDPE @ 1% - TIE TO EXISTING DROP INLET (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
19	86 LF OF 10" HDPE @ 0.85% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
20	129 LF OF 10" HDPE @ 0.85% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
21	14 LF OF 10" HDPE @ 2.5% (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
22	26 LF OF 12" HDPE @ 0.85% - TIE TO EXISTING DROP INLET (STORM DRAINAGE PIPING, SEE SHEET C-503 FOR DETAILS)
23	CONNECT TO EX. 8" WATER MAIN W/ 8"x4" RJ TEE (DOMESTIC)
24	25 LF OF 4" RJ DUCTILE IRON PIPE (DIP) - DOMESTIC WATER SERVICE LINE (SEE SHEET C-502 FOR DETAILS & SEE SHEET C-001 FOR GENERAL NOTE 14)
25	CONNECT TO EX. 8" WATER MAIN W/ 8"x6" RJ TAPPING SLEEVE & POST INDICATOR VALVE (FIRE PROTECTION)
26	174 LF OF 6" RJ DUCTILE IRON PIPE (DIP) - FIRE SERVICE LINE (SEE SHEET C-502 FOR DETAILS & SEE SHEET C-001 FOR GENERAL NOTE 14)
27	6" RJ (DIP) 90 DEG BEND
28	TAPPING SLEEVE CONNECTION TO EXISTING SANITARY SEWER MAIN
29	18 LF OF 4" PVC @ MIN. 1% - SANITARY SEWER SERVICE LINE (SEE SHEET C-502 FOR DETAILS)
30	SEWER CLEANOUTS (SEE SHEET C-502 FOR DETAILS)
31	CORE & BOOT CONNECTION TO EXISTING SANITARY SEWER MANHOLE
32	201 LF OF 8" PVC @ MIN. 2% - SANITARY SEWER SERVICE LINE (SEE SHEET C-502 FOR DETAILS)
33	INSTALL PERMANENT HYDRANT ADAPTER [FH TAG 5-310-12] 5" STORZ x 4.5" NST THREAD W/ CAP
34	REMOVE AND REPLACE CONCRETE CURB AND GUTTER TO MATCH EXISTING (SEE SHEET C-502 FOR DETAILS)
35	REMOVE AND REPLACE ASPHALT PAVEMENT TO MATCH EXISTING (SEE SHEET C-502 FOR DETAILS)
36	MECHANICAL CONDENSATE PIPING - 3" PVC SCH 80 @ MIN. 1.0% CONNECT TO NEW STORM DRAIN BASINS INSTALL TO INCLUDE ALL NECESSARY FITTINGS (SEE DETAIL 5/C-503)
37	TELECOMMUNICATIONS LINE (SEE ELECTRICAL - SHEET ES101)

GENERAL NOTES

1. SEE SHEET C-001 FOR PROJECT NOTES AND LEGEND.
2. CONCRETE SIDEWALKS AND/OR PAVEMENTS DAMAGED DUE TO CONSTRUCTION, BUT NOT DIRECTLY IDENTIFIED ON PLANS, SHALL BE REMOVED & RESTORED TO ORIGINAL CONDITIONS AT NO ADDITIONAL COST TO PROJECT (CONTRACTOR EXPENSE).
3. A MINIMUM 18" SEPARATION SHALL BE MAINTAINED WHEN WATER LINE AND SEWER LINE CROSS IN A PERPENDICULAR ALIGNMENT. A MINIMUM 10' HORIZONTAL SEPARATION SHALL BE MAINTAINED WHEN WATER LINE AND SEWER LINE ROUTE IN A PARALLEL ALIGNMENT. IF REQUIRED CLEARANCES CANNOT BE MAINTAINED, FERROUS PIPE MATERIAL (DUCTILE IRON OR STEEL ENCASEMENT) SHALL BE REQUIRED.



SCALE: 1" = 20'-0"

GRAPHIC SCALE

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CS101

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108 Bentons Lodge Road, Summerville, SC, 29485 843.875.3637
2306 N. 3rd St., Suite 110 W Wilmington, NC 28401 910.343.1640
CEMS Project No: 15152V Project Manager: R. ALVAR

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
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NORTH CAROLINA PROFESSIONAL SEAL 41438 ENGINEER JOSEPH A. MOORE 5/15/20

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REPAIR BEQ HP510

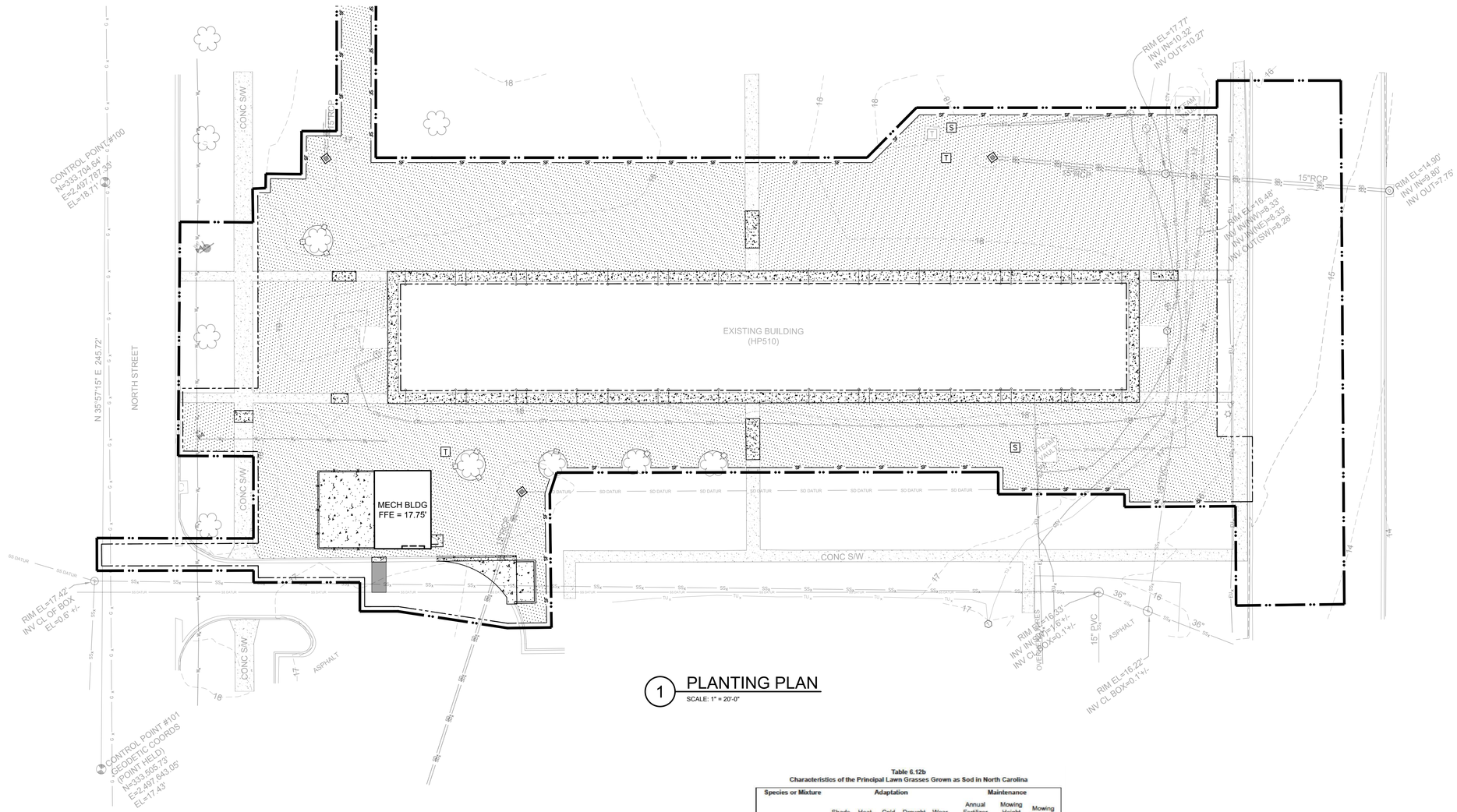
SITE PLAN

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023967

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SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 9 OF 143

REVISIONS			
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1 PLANTING PLAN

SCALE: 1" = 20'-0"

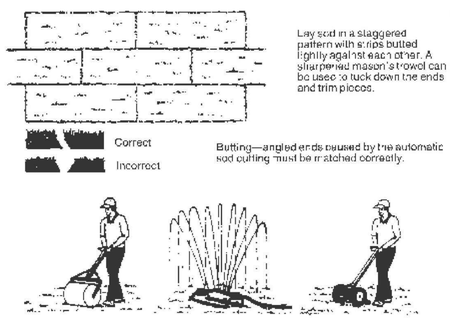


Figure 6.12a Proper installation of grass sod (modified from Va SWCC).

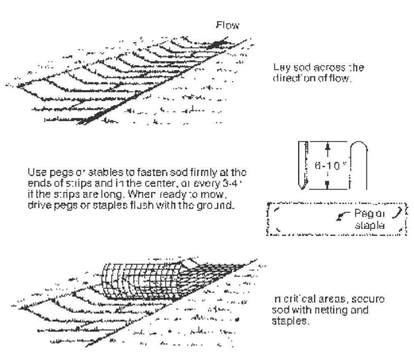


Figure 6.12b Installation of sod in waterways (modified from Va SWCC)

Table 6.12b
Characteristics of the Principal Lawn Grasses Grown as Sod in North Carolina

Species or Mixture	Adaptation					Maintenance		
	Shade	Heat	Cold	Drought	Wear	Annual Fertilizer (lb N/1000 ft²)	Mowing Height (in.)	Mowing Frequency
Kentucky bluegrass	good	fair	good	good	good	2.5-4	2	med.
Kentucky bluegrass/ Tall fescue	good	good	good	good	good	2.5-3	3	high
Tall fescue	good	good	good	good	good	2.5-3.5	3	high
Hybrid Bermudagrass	poor	good	poor	excel.	excel.	5-6	1	high
Centipedegrass	fair	good	poor	good	poor	0.5	1	low
St. Augustinegrass	good	good	poor	good	poor	2.5	2-3	med.
Zoysiagrass	fair	good	fair	excel.	good	1.5	1	high

Adapted from *Carolina Lawns*, NCAES Bulletin no. AG-69.

Table 6.12a
Types of sod Available in North Carolina

	Varieties	Region of Adaptation
Cool Season Grasses:		
Kentucky blugrass blend[1]		Mountains
Tall fescue blend	Adventure, Brookston, Falcon, Finelawn, Galway, Houndog, Jaguar, Olympic, Rebel	Mountains and Piedmont
Tall fescue/Kentucky bluegrass		Mountains and Piedmont
Warm Season Grasses:		
Hybrid Bermudagrass	Vamont, Tifway, Tifway II & Tifgreen	Piedmont and Coastal Plain
Zoysiagrass	Emerald, Meyer	Piedmont and Coastal Plain
Centipedegrass	No improved varieties	Piedmont and Coastal Plain
St. Augustinegrass	Raleigh	Piedmont and Coastal Plain

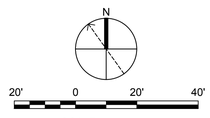
[1]A large number of varieties exist—consult suppliers and your local Agricultural Extension office for recommendations.

2 SODDING (*NCDEQ 6.12)

SCALE: NOT TO SCALE

GENERAL NOTES

1. SEE SHEET C-001 FOR LEGEND.
2. SEE SHEET C-501 FOR TEMPORARY SEEDING REQUIREMENTS AND OTHER NECESSARY GROUND COVER REQUIREMENTS.
3. SEE SHEET C-501 FOR SOD GRASS REQUIREMENTS.
4. ALL DISTURBED AREAS TO BE SODDED (PERMANENT) /GRASSED (TEMPORARY) AFTER GRADING ACTIVITY HAS BEEN COMPLETED. SEE SHEET CP101.
5. THE SODDING AREA FOR THIS PROJECT SITE IS APPROXIMATELY 0.90 ACRES (39,204 SF) AS SHOWN ON THIS SHEET. ANY ADDITIONAL SOD NEEDED IN EXCESS OF THIS AMOUNT WILL BE AT THE CONTRACTORS' EXPENSE, UNLESS APPROVED BY OWNER.
6. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE REPAIR OF ANY AREAS DISTURBED OUTSIDE OF THE LIMITS OF DISTURBANCE / SILT FENCE (AS DESIGNATED ON PLANS) IN THE EXECUTION OF HIS WORK. CONTRACTOR SHALL PROVIDED AND INSTALL SPECIFIED PERMANENT SOD AS NECESSARY TO PROPERLY REPAIR DAMAGED AREAS, AT NOT ADDITIONAL COST TO THE OWNER (CONTRACTOR'S EXPENSE).
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY MAINTAINING AND REPLACING DAMAGED SOD DURING PROJECT WORK AND/OR PRIOR TO RELEASING TO OWNER.
8. STANDARD STABILIZATION NOTE:
FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.



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CEMS Project No: 15102V Project Manager: S. ALVAR

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ HP510

PLANTING PLAN

DES.	C. MOORING
DR.	J. BARNES
CHK.	S. THOMAS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	

NORTH CAROLINA PROFESSIONAL SEAL 41438 ENGINEER MICHAEL S. ALVAR 5/15/20

APPROVED: PWO OR OICC	DATE	SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 10 OF 143

ISSUE DATE: 15 MAY 2020

UPLAND CAMP LEJEUNE SPECIFICATION:

1. AREA WILL BE TILLED TO 4" DEPTH.
2. APPLY LIME AT 70 POUNDS PER 1000 SQUARE FEET, OR 1.5 TONS PER ACRE.
3. APPLY 10-20-20 FERTILIZER AT A RATE OF 850 POUNDS PER ACRE OR 20 POUNDS PER 1000 SQUARE FEET. THE FERTILIZER SHOULD BE EITHER SLOW TIME RELEASE OR APPLIED IN TWO APPLICATIONS, HALF AT TIME OF PLANTING AND THE SECOND HALF AFTER PERMANENT SEED GERMINATES.
4. THE LIME AND FERTILIZER WILL BE WORKED INTO THE TOP 2 TO 4 INCHES OF SOIL PRIOR TO SEEDING.
5. SEED MIX AND RATE:

TEMPORARY SEEDING:
"*COOL SEASON*": PLANTED BETWEEN 1 SEPTEMBER AND FEBRUARY 28
120 POUNDS PER ACRE SOFT RED WINTER WHEAT (TRITICUM SPELTA)

"*WARM SEASON*": PLANTED BETWEEN 1 MARCH AND 31 AUGUST
65 POUNDS PER ACRE GERMAN (SETARIA ITALICA), BROWN TOP (SETARIA ITALICA), OR FOX TAIL MILLET (BRACHIARIA RAMOSUM)

STRAW MULCH: 4,000 POUNDS PER ACRE. THE GROUND SHOULD BE COMPLETELY COVERED WITH NO BARE SPOT LARGER THAN A QUARTER, THEN TACKED WITH EMULSIFIED ASPHALT. EMULSIFIED ASPHALT SHALL BE APPLIED AT A RATE HEAVY ENOUGH THAT THE ENTIRE AREA APPEARS BLACK IN COLOR.

6. UPON COMPLETION OF PROJECT, CONTRACTOR SHALL BE RESPONSIBLE FOR APPLY PERMANENT SOD IN ACCORDANCE WITH THE PLANS/SPECIFICATIONS.
7. UPON COMPLETION OF THE PROJECT, PRIOR TO LEAVING THE SITE, THE WATER MANAGEMENT BRANCH SHALL BE NOTIFIED TO INSPECT THE PROJECT, AS WELL AS THE CAMP LEJEUNE ENVIRONMENTAL BRANCH.
8. PERMANENT GROUND COVER WILL BE PROVIDED WITHIN THE SITE AREAS SCHEDULED FOR DEVELOPMENT WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOR ALL DISTURBED AREAS FOLLOWING COMPLETION OF ANY CONSTRUCTION OR DEVELOPMENT PHASE.
9. ROLLED EROSION CONTROL PRODUCTS TO BE INSPECTED DAILY AND AFTER EACH (1/2" OR GREATER) RAINFALL EVENT, REPAIR IMMEDIATELY.
10. ALL EROSION CONTROL MEASURES WILL BE INSPECTED DAILY TO ENSURE THAT CONSTRUCTION ACTIVITIES HAVE NOT COMPROMISED THE EFFECTIVENESS OF ANY OF THE MEASURES. SAID DAILY INSPECTION IS TO BE NOTED ON THE DAILY CQC REPORT.

GROUND COVER STATUTE REQUIREMENTS

1. PURSUANT TO G.S. 113A-57(2), THE ANGLE FOR GRADED SLOPES AND FILLS 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 7 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.
2. PURSUANT TO G.S. 113A-57(3), PROVISIONS FOR PERMANENT GROUNDCOVER SUFFICIENT TO RESTRAIN EROSION MUST BE ACCOMPLISHED FOR ALL DISTURBED AREAS WITHIN 14 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

CONSTRUCTION NOTES FOR GROUND COVER

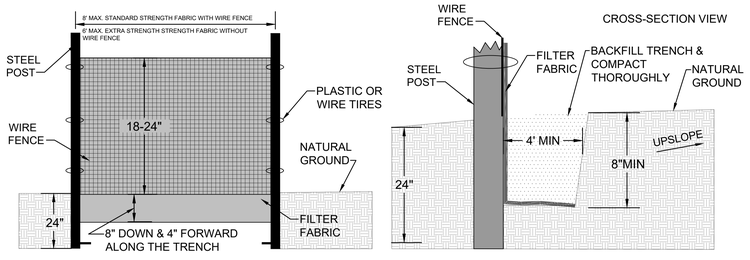
1. ESTABLISH GROUND COVER WITHIN 7 CALENDAR DAYS ON ALL EXPOSED SLOPES.
2. PROVIDE PERMANENT GROUND COVER WITHIN 14 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOR ALL DISTURBED AREAS FOLLOWING COMPLETION OF ANY CONSTRUCTION OR DEVELOPMENT PHASE.
3. FOR TEMPORARY GROUND COVER REQUIREMENTS SEE SHEET C-501.
4. FOR PERMANENT GROUND COVER SEE GRASSING/SODDING SEE SHEET CP101.
5. THE EROSION AND SEDIMENT NARRATIVE IS CONSIDERED TO BE PART OF THE EROSION CONTROL SITE PLAN AND IS TO BE MAINTAINED ON THE CONSTRUCTION SITE AT ALL TIMES.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

1 GROUND COVER REQUIREMENTS (SOD / SEEDING)

SCALE: NOT TO SCALE



FRONT VIEW SIDE VIEW

CONSTRUCTION NOTES FOR SEDIMENT FENCE

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24" ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4' MIN. OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8'-0" APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND TO A MINIMUM OF 2'-0".
6. EXTRA STRENGTH FILTER FABRIC WITH 6'-0" POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. STAPLE OR WIRE THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4" WIDE AND 8" DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12" OF THE FABRIC ALONG ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SEDIMENT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

MAINTENANCE NOTES FOR SEDIMENT FENCE

1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

2 SEDIMENT FENCE (*NCDEQ 6.62)

SCALE: NOT TO SCALE

1. CHOOSING APPROPRIATE TYPES OF SOD
THE TYPE OF SOD SELECTED SHOULD BE COMPOSED OF PLANTS ADAPTED TO BOTH THE SITE AND THE INTENDED PURPOSE. IN NORTH CAROLINA THESE ARE LIMITED TO CENTIPEDEGRASS ONLY. SPECIES SELECTION IS PRIMARILY DETERMINED BY REGION, AVAILABILITY, AND INTENDED USE (TABLE 6.12A). AVAILABILITY VARIES ACROSS THE STATE AND FROM YEAR TO YEAR. NEW VARIETIES ARE CONTINUALLY BEING DEVELOPED AND TESTED. A COMPLETE AND CURRENT LISTING OF SOD RECOMMENDATIONS CAN BE OBTAINED FROM SUPPLIERS OR THE STATE AGRICULTURAL EXTENSION OFFICE. SOD COMPOSED OF A MIXTURE OF VARIETIES MAY BE PREFERRED BECAUSE OF ITS BROADER RANGE OF ADAPTABILITY.

2. QUALITY OF SOD
USE ONLY HIGH-QUALITY SOD OF KNOWN GENETIC ORIGIN, FREE OF NOXIOUS WEEDS, DISEASE, AND INSECT PROBLEMS. IT SHOULD APPEAR HEALTHY AND VIGOROUS, AND CONFORM TO THE FOLLOWING SPECIFICATIONS:
- SOD SHOULD BE MACHINE CUT AT A UNIFORM DEPTH OF 1/2-2 INCHES (EXCLUDING SHOOT GROWTH AND THATCH)
- SOD SHOULD NOT HAVE BEEN CUT IN EXCESSIVELY WET OR DRY WEATHER.
- SECTIONS OF SOD SHOULD BE A STANDARD SIZE AS DETERMINED BY THE SUPPLIER, UNIFORM, AND UNTORN.
- SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT, AND RETAIN THEIR SIZE AND SHAPE WHEN LIFTED BY ONE END.
- HARVEST, DELIVERY, AND INSTALLATION OF SOD SHOULD TAKE PLACE WITHIN A PERIOD OF 36 HOURS.

3. SOIL PREPARATION
TEST SOIL TO DETERMINE THE EXACT REQUIREMENTS FOR LIME AND FERTILIZER. SOIL TESTS MAY BE CONDUCTED BY THE STATE SOIL TESTING LAB OR A REPUTABLE COMMERCIAL LABORATORY. INFORMATION ON FREE SOIL TESTING IS AVAILABLE FROM THE AGRONOMIC DIVISION OF THE NORTH CAROLINA DEPARTMENT OF AGRICULTURE OR THE AGRICULTURAL EXTENSION SERVICE. WHERE SODDING MUST BE PLANNED WITHOUT SOIL TESTS THE FOLLOWING SOIL AMENDMENTS MAY BE SUFFICIENT:
- PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (100 LB/1,000 FT2
- FERTILIZER AT A RATE OF 1,000 LB/ACRE (25 LB/1,000 FT2) OF 10-10-10 IN FALL OR 5-10-10 IN SPRING.

EQUIVALENT NUTRIENTS MAY BE APPLIED WITH OTHER FERTILIZER FORMULATIONS. THESE AMENDMENTS SHOULD BE SPREAD EVENLY OVER THE AREA, AND INCORPORATED INTO THE TOP 4-8 INCHES OF SOIL BY DISKING, HARROWING, OR OTHER EFFECTIVE MEANS. IF TOPSOIL IS APPLIED, FOLLOW SPECIFICATIONS GIVEN IN PRACTICE 6.04,TOPSOILING. PRIOR TO LAYING SOD, CLEAR THE SOIL SURFACE OF TRASH, DEBRIS, ROOTS, BRANCHES, STONES, AND CLODS LARGER THAN 2 INCHES IN DIAMETER. FILL OR LEVEL LOW SPOTS IN ORDER TO AVOID STANDING WATER. RAKE OR HARROW THE SITE TO ACHIEVE A SMOOTH AND LEVEL FINAL GRADE. COMPLETE SOIL PREPARATION BY ROLLING OR CULTIPACKING TO FIRM THE SOIL. AVOID USING HEAVY EQUIPMENT ON THE AREA, PARTICULARLY WHEN THE SOIL IS WET, AS THIS MAY CAUSE EXCESSIVE COMPACTION, AND MAKE IT DIFFICULT FOR THE SOD TO TAKE ROOT.

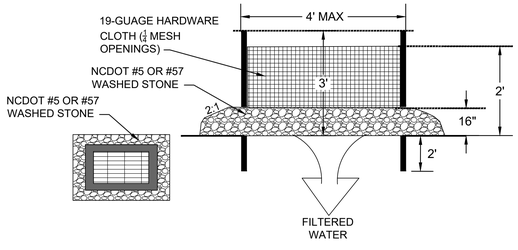
4. SOD INSTALLATION
A STEP-BY-STEP PROCEDURE FOR INSTALLING SOD IS ILLUSTRATED IN FIGURE 6.12A AND DESCRIBED BELOW:
- MOISTENING THE SOD AFTER IT IS UNROLLED HELPS MAINTAIN ITS VIABILITY. STORE IT IN THE SHADE DURING INSTALLATION.
- RAKE THE SOIL SURFACE TO BREAK THE CRUST JUST BEFORE LAYING SOD. DURING THE SUMMER, LIGHTLY IRRIGATE THE SOIL, IMMEDIATELY BEFORE LAYING THE SOD TO COOL THE SOIL, REDUCE ROOT BURNING, AND DIEBACK.
- DO NOT SOD ON GRAVEL, FROZEN SOILS, OR SOILS THAT HAVE BEEN TREATED RECENTLY WITH STERILANTS OR HERBICIDES.
- LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLED TO AND BUTTING TIGHTLY AGAINST EACH OTHER. STAGGER STRIPS IN A BRICK-LIKE PATTERN. BE SURE THAT THE SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHTLY TO PREVENT VOIDS. USE A KNIFE OR SHARP SPADE TO TRIM AND FIT IRREGULARLY SHAPED AREAS.
- INSTALL STRIPS OF SOD WITH THEIR LONGEST DIMENSION PERPENDICULAR TO THE SLOPE. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SECURE SOD WITH PEGS OR STAPLES.
- AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, ROLL SOD TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.
- AFTER ROLLING, IRRIGATE UNTIL THE SOIL IS WET 4 INCHES BELOW THE SOD.
- KEEP SODDED AREAS MOIST TO A DEPTH OF 4 INCHES UNTIL THE GRASS TAKES ROOT. THIS CAN BE DETERMINED BY GENTLY TUGGING ON THE SOD-RESISTANCE INDICATES THAT ROOTING HAS OCCURRED.
- MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS.

5. SODDED WATERWAYS
SOD PROVIDES A RESILIENT CHANNEL LINING, PROVIDING IMMEDIATE PROTECTION FROM CONCENTRATED RUNOFF AND ELIMINATING THE NEED FOR INSTALLING MATS OR MULCH. THE FOLLOWING POINTS APPLY TO THE USE OF SOD IN WATERWAYS:
- PREPARE THE SOIL AS DESCRIBED IN PRACTICE 6.30, GRASS-LINED CHANNELS. THE SOD TYPE MUST BE ABLE TO WITHSTAND THE VELOCITY OF FLOW SPECIFIED IN THE CHANNEL DESIGN (APPENDIX 8.05).
- LAY SOD STRIPS PERPENDICULAR TO THE DIRECTION OF FLOW, WITH THE LATERAL JOINTS STAGGERED IN A BRICK-LIKE PATTERN. EDGES SHOULD BUTT TIGHTLY TOGETHER (FIGURE 6.12B).
- AFTER ROLLING OR TAMPING TO CREATE A FIRM CONTACT, PEG OR STAPLE INDIVIDUAL SOD STRIPS TO RESIST WASHOUT DURING ESTABLISHMENT. JUTE OR OTHER NETTING MATERIAL MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION ON CRITICAL AREAS.

6. SODDING MAINTENANCE NOTES
- AFTER THE FIRST WEEK, WATER AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE IN THE ROOT ZONE AND PREVENT DORMANCY OF THE SOD
- DO NOT REMOVE MORE THAN ONE-THIRD OF THE SHOOT IN ANY MOWING.
- GRASS HEIGHT SHOULD BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED AFTER THE FIRST GROWING SEASON, ESTABLISHED SOD REQUIRES FERTILIZATION, AND MAY ALSO REQUIRE LIME.
- FOLLOW SOIL TEST RECOMMENDATIONS WHEN POSSIBLE, OR USE THE RATES IN TABLE 6.12B.

3 SOD GRASS REQUIREMENTS (PER NCDEQ 6.12)

SCALE: NOT TO SCALE



CONSTRUCTION NOTES FOR GRAVEL INLET PROTECTION

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINE GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUNDCOVER.

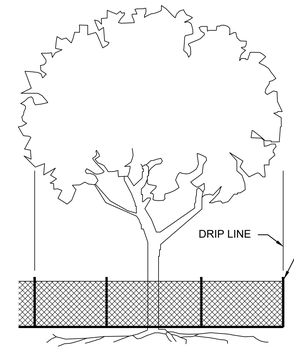
MAINTENANCE NOTE:

1. INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.

4 HARDWARE CLOTH & GRAVEL INLET PROTECTION (*NCDEQ 6.51)

SCALE: NOT TO SCALE

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



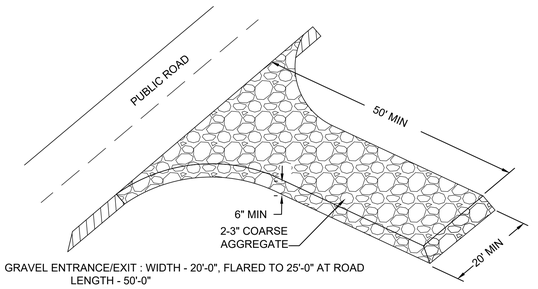
ROOT ZONE TO BE PROTECTED

NOTES:
1. PROVIDE PROTECTION FENCE FOR ALL TREES TO REMAIN WITHIN CONSTRUCTION AREA.
2. FENCES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
3. ADJUST FENCE AS NEEDED FOR EASE OF CONSTRUCTION TO INCLUDE NO LESS THAN 75% OF DRIP LINE AREA.

MINIMUM 4' HEIGHT ORANGE PLASTIC BARRIER FENCING. SET WITH #4 REBAR STAKES. PLACE REBAR SAFETY CAPS ON ALL EXPOSED REBAR ENDS. FENCE BARRIERS SHALL BE SQUARE (4 SIDED)

5 TREE PROTECTION DETAIL

SCALE: NOT TO SCALE



GRAVEL ENTRANCE/EXIT : WIDTH - 20'-0", FLARED TO 25'-0" AT ROAD
LENGTH - 50'-0"
GRADE - 2.0%

CONSTRUCTION NOTES FOR TEMPORARY ENTRY/EXIT PAD

1. CLEAR THE ENTRANCE/EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL, AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE.
5. USE WASHED STONE 2" TO 3" IN SIZE.
6. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. SHOULD MUD BE TRACKED OR WASHED OFF THE PROJECT SITE, IT MUST BE REMOVED IMMEDIATELY.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ENTRY/EXIT PAD DURING CONSTRUCTION.

MAINTENANCE NOTE:

1. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

6 GRAVEL ENTRANCE/EXIT DETAIL (*NCDEQ 6.06)

SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

C-501

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 1515SV Project Manager: R. ALVAR

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

REPAIR BEQ HP510

EROSION CONTROL DETAILS

NORTH CAROLINA REGISTERED PROFESSIONAL SEAL 41438 ENGINEER SCOTT A. MOORING
5/15/20

DES.	C. MOORING
DR.	J. BARNES
CHK.	S. THOMAS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

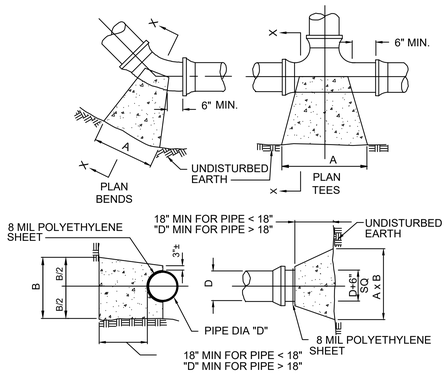
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CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: NONE | SPEC. 05-18-0042 | SHEET 11 OF 148

ISSUE DATE: 15 MAY 2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



SECTION X-X BENDS & TEES

PLAN & ELEVATION PLUGS

DESIGN PIPE PRESSURE = 150 psi
ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF

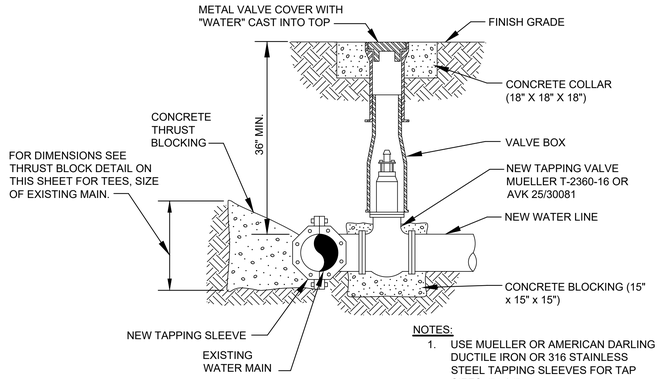
NOTES:

1. DIMENSIONS A & B SHALL BE DETERMINED IN THE FIELD AS REQUIRED TO PROVIDE THE GIVEN BEARING AREA AND TO MEET FIELD CONDITIONS.
2. SEE PIPING PLANS FOR THRUST BLOCK BEARING AREA (M.B.A) FOR PIPES GREATER THAN 48" DIA.

MIN. THRUST BLOCK BEARING AREAS (S.F.)

SIZE	90° BEND	45° BEND	22 1/2° BEND	TEES	PLUGS
	AxB	AxB	AxB	AxB	AxB
4	1.33	0.72	0.40	0.94	0.94
6	3.00	1.62	0.83	2.12	2.12
8	5.33	2.88	1.50	3.78	3.78

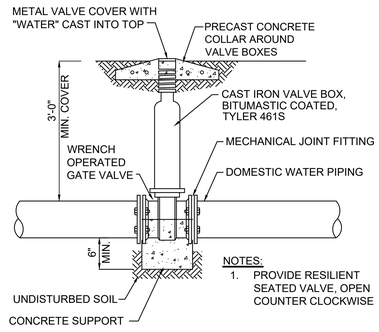
1 CONCRETE THRUST BLOCK DETAIL
SCALE: NOT TO SCALE



NOTES:

1. USE MUELLER OR AMERICAN DARLING DUCTILE IRON OR 316 STAINLESS STEEL TAPPING SLEEVES FOR TAP SIZES 4" - 24".

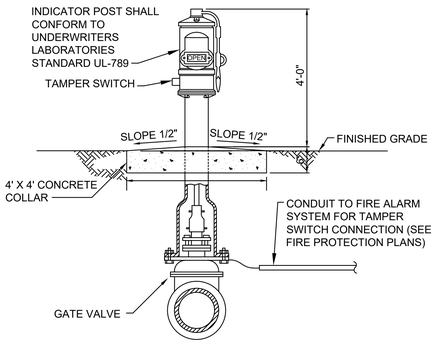
2 TAPPING SLEEVE AND VALVE
SCALE: NOT TO SCALE



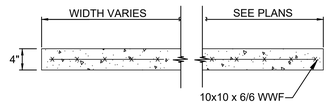
NOTES:

1. PROVIDE RESILIENT SEATED VALVE, OPEN COUNTER CLOCKWISE

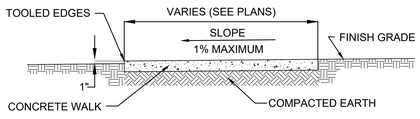
3 GATE VALVE SETTING
SCALE: NOT TO SCALE



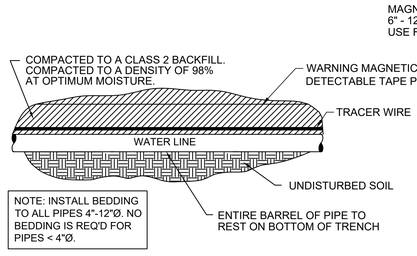
4 POST INDICATOR VALVE
SCALE: NOT TO SCALE



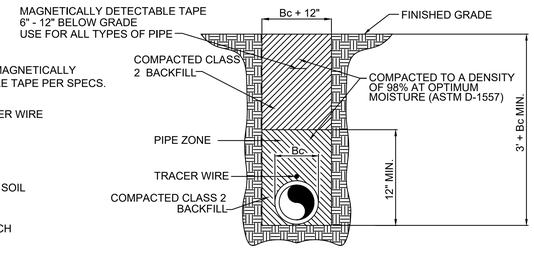
5 SIDEWALK DETAIL
SCALE: NOT TO SCALE



6 TYPICAL SIDEWALK SECTION
SCALE: NOT TO SCALE

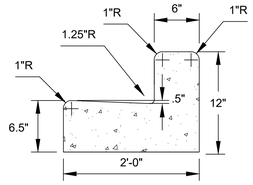


LONGITUDINAL SECTION



CROSS SECTION

7 TYPICAL WATER LINE BEDDING
SCALE: NOT TO SCALE



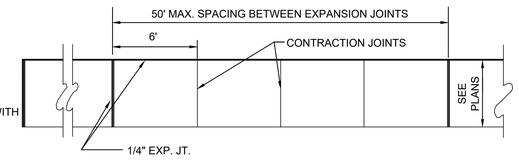
NOTES:

1. ALL CONCRETE SHALL BE 3500 PSI FIBER-MESH REINFORCED.
2. GUTTER SHALL PITCH IN DIRECTION OF DRAINAGE FLOW.
3. ADJUST GUTTER SLOPE AT ADA RAMPS TO BE LESS THAN 5%.
4. CURB AND GUTTER TO BE CONSTRUCTED IN 10 FOOT LENGTHS.
5. 1/2 INCH EXPANSION JOINTS SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 50 FEET AT THE ENDS AND MID-POINT OF RETURNS AND AT ANY POINT WHERE THE NEW CURB AND GUTTER ABUTS OTHER CONCRETE STRUCTURES & CONCRETE PAVEMENTS.
6. 5 FOOT LONG TRANSITIONS SHALL BE PROVIDED BETWEEN NORMAL GUTTER AND PITCHED GUTTER UNLESS OTHERWISE NOTED.

8 CONCRETE CURB & GUTTER
SCALE: NOT TO SCALE

NOTES

1. ALL SIDEWALKS SHALL BE 4" THICK.
2. CONTRACTION JOINTS SHALL BE SPACED AT 6'-0"
3. SIDEWALKS TO LIGHT BROOM FINISH
4. ALL JOINTS AND EDGES TO BE TOOLED.
5. SIDEWALKS TO BRUSHED AND TOOLED.
6. CONTRACTION JOINTS SHALL BE 1" DEEP AND EDGED WITH 1/8" RADIUS.
7. EXPANSION MATERIAL 1/2" THICK SHALL BE REQUIRED WHERE SIDEWALK ABUTS CONCRETE STRUCTURE.



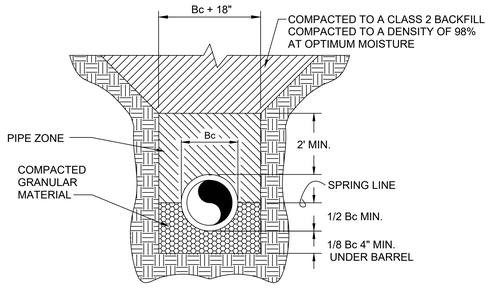
9 STANDARD JOINT LAYOUT FOR CONCRETE SIDEWALKS
SCALE: NOT TO SCALE

NCDOT DETAIL	(DETAIL REFERENCE)	DWG NO.
LINE TYPES AND OFFSETS	DIAGONAL LINE	1205.01
PAINTED ISLANDS		1205.09

NOTES:

1. ALL PAVEMENT MARKING COMPOUND SHALL BE THERMOPLASTIC PAVEMENT MARKING MATERIAL, EITHER HEATED IN PLACE OR EXTRUDED, IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS AND PROVISIONS (2012).
2. REFERENCE NCDOT ROADWAY STANDARD DRAWINGS (2012), "DIVISION 12 - PAVEMENT MARKINGS, MARKERS AND DELINEATION" FOR DETAILS LISTED ABOVE.
3. COLOR OF PAVEMENT MARKING SHALL COMPLY WITH NCDOT ROADWAY STANDARD DRAWINGS, UNLESS OTHERWISE SPECIFIED ON PLANS.

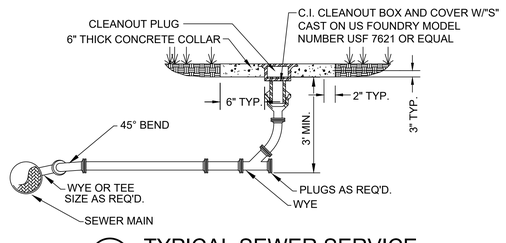
10 NCDOT PAVEMENT MARKING DETAILS
SCALE: NOT TO SCALE



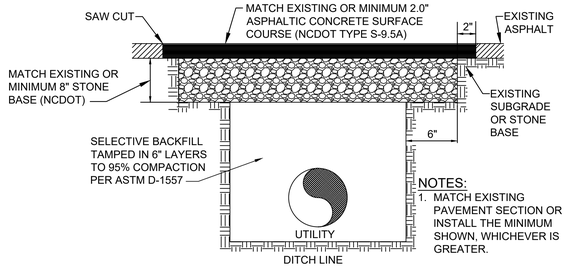
NOTES:

1. INSTALL APPROVED METAL DETECTION TAPE 18" FROM FINISHED GRADE
2. INSTALL ACCORDING TO ASTM D-2321
3. COMPACTED BACKFILL IN 6" MAX LIFTS.

11 BEDDING FOR PVC GRAVITY SEWER PIPE
SCALE: NOT TO SCALE



12 TYPICAL SEWER SERVICE
SCALE: NOT TO SCALE



NOTES:

1. MATCH EXISTING PAVEMENT SECTION OR INSTALL THE MINIMUM SHOWN, WHICHEVER IS GREATER.

13 PAVEMENT REPLACEMENT DETAIL
SCALE: NOT TO SCALE

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C-502

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Road, Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. ALVAR

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

REPAIR BEQ HP510

DETAILS

DES.	C. MOORING
DR.	J. BARNES
CHK.	S. THOMAS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 41438 JAMES A. MOORING 5/15/20

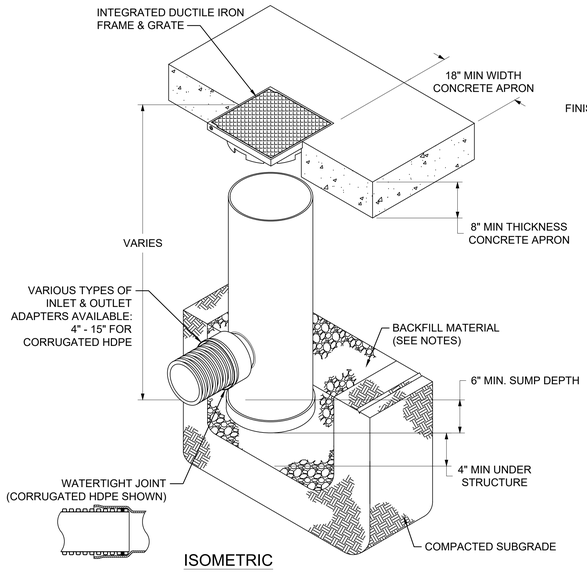
ISSUE DATE: 15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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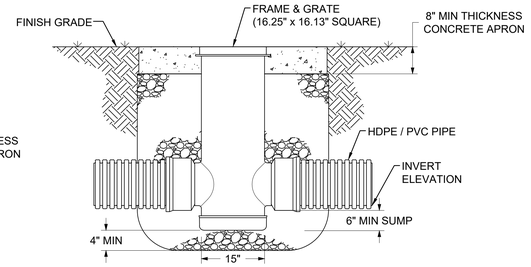
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: NONE | SPEC. 05-18-0042 | SHEET 12 OF 148

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



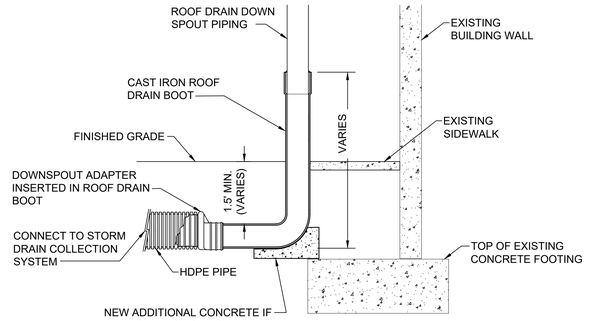
ISOMETRIC



ELEVATION

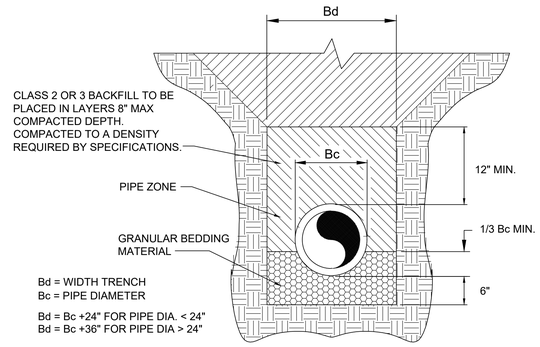
NOTES:
1. DRAIN BASIN SHALL BE MANUFACTURED FROM PVC PIPE STOCK, UTILIZING A THERMO-MOLDING PROCESS. MATERIAL SHALL CONFORM TO ASTM D1784 CELL CLASS 12454.
2. SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536, GRADE 70-50-05. COVERS SHALL MEET H-20 LOAD RATING.
3. FRAMES SHALL BE DUCTILE IRON PER ASTM A536, GRADE 70-50-05.
4. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
5. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
6. THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

1 DRAIN BASIN DETAIL
SCALE: NOT TO SCALE



NOTES:
1. DOWNSPOUT LAYOUT AND BOOT TYPE SHALL BE COORDINATED WITH ARCHITECTURAL PLANS.
2. ADAPTER CONNECTION AND PIPE JOINTS SHALL BE WATERTIGHT (WT).
3. CONTRACTOR SHALL BE RESPONSIBLE PROVIDING THE NECESSARY FITTINGS TO INSTALL ROOF DRAIN PIPING TO STORM DRAIN COLLECTION SYSTEM. SEE PLANS FOR COLLECTION SYSTEM LAYOUT AND LOCATIONS.

2 DOWNSPOUT CONNECTION
SCALE: NOT TO SCALE



CROSS SECTION

NOTES:
1. ALL STORM PIPES SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 (LATEST EDITION), WITH EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE.
2. Bd SHALL NOT BE GREATER THAN Bc PLUS 2' FOR PIPES UP TO AND INCLUDING 30" AND 3' FOR PIPES GREATER THAN 30" TO PERMIT SATISFACTORY JOINING AND TAMPING OF BEDDING MATERIAL UNDER AND AROUND PIPES.
3. BEDDING MATERIAL:
   3.1. 6" DEPTH - COMPACT MATERIAL PRIOR TO PIPE PLACEMENT
   3.2. 1/3Bc MIN. - LOOSE MATERIAL PLACEMENT AROUND PIPE

3 STORM PIPE BEDDING
SCALE: NOT TO SCALE

PLAN

"INLINE" STORM DRAIN CLEANOUT ELEVATION

"DEAD-END" STORM DRAIN CLEANOUT ELEVATION

NOTES:
1. PIPE SIZES SHALL CORRESPOND WITH PLANS AND SPECIFICATIONS.
2. PIPE JOINTS AND FITTINGS SHALL BE WATERTIGHT (WT) CONNECTIONS.
3. CONTRACTOR SHALL USE CAST IRON BOX W/ COVER AND THREADED CLEANOUT PLUG (END CAP) IF LOCATED IN PAVEMENT OR CONCRETE. KEEP 1" MIN. CLEARANCE OF PLUG.
4. CONCRETE COLLAR SHALL DESIGNED TO HAVE #3 BARS ALL AROUND W/ 6" OVERLAP. COLLAR SHALL BE MIN. 8" THICK. TOP OF COLLAR SHALL BE A MIN. 2" ABOVE FINISH GRADE.

4 STORM DRAIN CLEANOUT
SCALE: NOT TO SCALE

NOTES:
1. CLEANOUT TO BE LOCATED IN THE CENTER OF THE CONCRETE SIDEWALK. EVENLY SPACED FROM SIDEWALK EDGE AND BUILDING.
2. CLEANOUT LID / COVER TO HAVE A LOCKING MECHANISM (LOCK BOLT OR PENTAGON BOLT). TOOL TO UNLOCK LID SHALL BE PROVIDED TO CLIENT.
3. CLEANOUT LID / COVER TO BE EJ PRESCOTT MODEL 65004, AY MCDONALD MODEL 5614L (PS), BINGHAM & TAYLOR MODEL 8250 (4930) OR APPROVED EQUAL.

5 TYPICAL CONDENSATION LINE
SCALE: NOT TO SCALE

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C-503

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

NORTH CAROLINA PROFESSIONAL SEAL 41438 ENGINEER JAMES T. MOORING REGISTERED 5/15/20

ISSUE DATE: 15 MAY 2020

DES.	C. MOORING
DR.	J. BARNES
CHK.	S. THOMAS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

REPAIR BEQ HP510

DETAILS

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023971

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: NONE | SPEC. 05-18-0042 | SHEET 13 OF 148

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES:

1. THE STRUCTURE IS DESIGNED AS A STABLE UNIT AFTER ALL COMPONENT PARTS ARE IN PLACE. THEREFORE, THE CONTRACTOR/ERECTOR SHALL PROVIDE ALL NECESSARY SHORING AND BRACING AS REQUIRED TO ENSURE STABILITY DURING ERECTION.
2. WHEN A DETAIL IS SHOWN ON THE STRUCTURAL DRAWINGS FOR ONE CONDITION, IT SHALL APPLY TO ALL SIMILAR OR LIKE CONDITIONS, UNLESS NOTED OR SHOWN OTHERWISE ON THE DRAWINGS.
3. DESIGN CRITERIA:
   - A: ROOF LIVE LOAD: 20 PSF
   - B: GROUND SNOW LOAD, Pg: 10 PSF
   - C: WIND LOADS
     - a. ULTIMATE WIND SPEED, Vult: 140 MPH
     - b. NOMINAL WIND SPEED, Vasd: 108 MPH
     - c. RISK CATEGORY: II
     - d. WIND EXPOSURE: C
     - e. INTERNAL PRESSURE COEFFICIENT: ±0.18
     - f. PRESSURE COEFFICIENT ZONE WIDTH, a: 6 FT
     - g. COMPONENT AND CLADDING WIND PRESSURE:

		EFFECTIVE AREA (SF)			
		10		100	
WIND ZONES (SEE DIAGRAMS)	ROOF				
	1	30	-48	22	-44
	2	30	-83	22	-61
	3	30	-123	22	-96
	WALL				
	4	52	-57	44	-50
	5	52	-70	44	-55

   - D: SEISMIC LOADS
     - a. RISK CATEGORY: II
     - b. SEISMIC IMPORTANCE FACTOR, Ie: 1.00
     - c. MAPPED SPECTRAL RESPONSE, Ss = 0.15, S1 = 0.07
     - d. SITE CLASS: D
     - e. DESIGN SPECTRAL RESPONSE, Sds = 0.160, Sd1 = 0.112
     - f. SEISMIC DESIGN CATEGORY: B
     - g. BASIC SEISMIC FORCE RESISTING SYSTEM FOR NEW ROOF: LIGHT FRAMING WITH FLAT STRAP BRACING/BLOCKING
     - h. RESPONSE MODIFICATION COEFFICIENT, R = 4
     - i. SEISMIC RESPONSE COEFFICIENT, Cs: 0.046
     - j. DESIGN BASE SHEAR: N/A
     - k. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
4. THE STRUCTURE IS DESIGNED IN ACCORDANCE WITH IBC 2015, ASCE 7-10, UFC 3-301-01, AND UFC 4-010-01.
5. DESIGN, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL 14TH EDITION (AISC 325-11).
6. STRUCTURAL STEEL SHALL BE AS FOLLOWS:
   - a. W-SHAPES ASTM A992
   - b. PLATES, ANGLES, CHANNELS, MISC. STEEL ASTM A36
   - c. HSS ASTM A1085
7. STEEL DECK SHALL BE MINIMUM 3 SPAN CONDITION WITH THE FOLLOWING MINIMUM PROPERTIES.
   - ROOF:
     TYPE 1.5B22 (VULCRAFT)
     In = 0.183 in^4/ft. Ip = 0.155 in^4/ft.
     Sn = 0.192 in^3/ft. Sp = 0.186 in^3/ft. Fy = 33 ksi
   - FLOOR:
     TYPE 1.0C20 (VULCRAFT)
     In = 0.088 in^4/ft. Ip = 0.088 in^4/ft.
     Sn = 0.165 in^3/ft. Sp = 0.167 in^3/ft. Fy = 60 ksi
     5" CONCRETE SLAB W/ 6x6-W2.9xW2.9 WWR
8. 3/4" DIAMETER ASTM A325N BOLTS SHALL BE USED IN ALL STRUCTURAL STEEL BOLTED CONNECTIONS UNLESS NOTED OTHERWISE. TIGHTEN BOLTS TO TENSION REQUIRED BY AISC.
9. ALL WELDED CONSTRUCTION SHALL BE IN ACCORDANCE WITH AWS D1.1 AND AISC.
10. COLD FORMED STEEL DESIGN SHALL BE IN ACCORDANCE WITH THE AISI SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS, 2012 EDITION.
11. COLD FORMED STEEL SHALL BE DESIGNED FOR WIND LOADING NOTED ABOVE.
12. CONTRACTOR SHALL FULLY COORDINATE ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS (INCLUDING DIMENSIONS AND ELEVATIONS) AND SHALL FULLY RESOLVE ANY CONFLICTS PRIOR TO COMMENCING WORK.
13. FABRICATION DRAWINGS SHALL NOT BE REPRODUCTION OF STRUCTURAL CONTRACT DRAWINGS.
14. MISCELLANEOUS STRUCTURAL ITEMS, CONDITIONS OR PIECES OF STEEL MAY BE SHOWN ON ARCHITECTURAL DRAWINGS.
15. CONTRACTOR SHALL CONSULT ROICC FOR DIRECTION SHOULD UNCHARTED OR INCORRECTLY CHARTED PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING SITE CLEARING, GRADING AND EXCAVATION.

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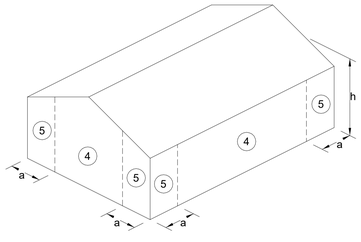
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COLD-FORMED METAL NOTES:

1. DESIGN, DETAIL AND ERECT COLD-FORMED METAL FRAMING IN ACCORDANCE WITH ASTM C955.
2. COLD-FORMED METAL FRAMING SIZES INDICATED ARE BASED ON A MINIMUM YIELD STRESS OF 33 KSI.
3. JOIST SUPPORTS MUST PROVIDE A MINIMUM 1 1/2" OF BEARING.
4. ALL JOISTS SHALL HAVE WEB STIFFENING AT SUPPORTS.
5. JOISTS TO HAVE A MINIMUM 10" OF UNPUNCHED WEB AT ENDS.
6. ALL LOAD BEARING AND SHEAR WALLS SHALL HAVE LATERAL BRIDGING AT MID-HEIGHT OF STUDS UNLESS NOTED OTHERWISE.
7. PROVIDE DIAGONAL WIND BRACING AS INDICATED OR AS SPECIFIED BY THE MANUFACTURER.
8. COLD-FORMED METAL FRAMING SHALL BE GALVANIZED IN ACCORDANCE WITH A653, G60.
9. GALVANIZING DAMAGED BY INSTALLATION OPERATIONS OR WELDING SHALL BE REPAIRED USING GALVANIZING REPAIR PAINT CONFORMING TO SSPC-PAINT 20 OR DOD-P-21035.
10. COLD-FORMED METAL FRAMING GAUGES AND SIZES ARE BASED UPON THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA).
11. METAL STUDS FOR BEARING SHALL BE SIZES INDICATED ON THESE DRAWINGS AND/OR THE TRUSS MANUFACTURER'S SUBMITTAL.
12. PROVIDE JOIST BRIDGING, BRACING AND WEB STIFFENERS IN ACCORDANCE WITH COLD-FORMED METALS FRAMING SYSTEM MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED IN THESE DRAWINGS, WHICHEVER IS THE GREATER REQUIREMENT.
13. PROVIDE DOUBLE STUDS AT EACH END OF X-BRACED PANEL. PROVIDE HOLD DOWN EACH SIDE OF DOUBLE STUD PER SHEET S-501.
14. SEE SHEET S-501 FOR SUGGESTED X-BRACED PANEL DETAIL.
15. SEE SHEET S-501 FOR TYPICAL COLD-FORMED METAL DETAILS.
16. STRUCTURAL STANDING SEAM METAL ROOF (SSSMR) PANELS, GAUGE, AND ATTACHMENTS SHALL RESIST APPLICABLE WIND UPLIFT LOADS AND A SERVICE SEISMIC ROOF DIAPHRAGM SHEAR OF 100 PLF. FLAT STRAP X-BRACED (SHEAR WALL) LOCATIONS MAY BE ADDED (NONE MAY BE REMOVED) AS REQUIRED TO ACCOUNT FOR A MANUFACTURERER'S LOAD RATING FOR THE ROOF PANEL'S DIAPHRAGM LOAD CAPACITY.

MASONRY NOTES:

1. CONCRETE MASONRY DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH TMS 402/602-13 (BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES) AND ASCE 7-10 (MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES).
2. MORTAR SHALL BE TYPE "S" WITH AN AVERAGE COMPRESSIVE STRENGTH OF 1,800 PSI AT 28 DAYS CONFORMING TO ASTM C270.
3. CONCRETE MASONRY SHALL BE GRADE AS SPECIFIED BY ASTM C90. NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNIT SHALL BE A MIN. 2,000 PSI. MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'm) SHALL BE 2,000 PSI PER TABLE 2 OF TMS 402/602-13 SPECIFICATIONS.
4. GROUT FOR USE IN MASONRY SHALL CONFIRM TO ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS.
5. ALL MASONRY SHALL BE LAID IN A RUNNING BOND U.N.O.
6. SEE SPECIFICATION SECTION 04 20 00 FOR ADDITIONAL INFORMATION.



WALL WIND ZONES

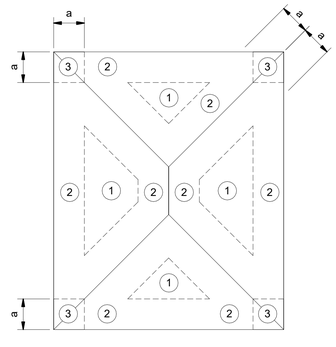
METAL TRUSS NOTES:

1. METAL TRUSSES SHALL BE DESIGNED, FABRICATED AND INSTALLED AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE, NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS 2012 AND AMERICAN IRON AND STEEL INSTITUTE STANDARD FOR COLD-FORMED STEEL FRAMING - TRUSS DESIGN 2012.
2. SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A REGISTERED ENGINEER.
3. PROVIDE HORIZONTAL BRIDGING AS SHOWN ON THE DRAWINGS AND/OR AS RECOMMENDED BY THE TRUSS MANUFACTURER, WHICHEVER IS GREATER.
4. THE TRUSS FRAMING SHOWN IS FOR INTENT OF DESIGN PURPOSES ONLY. FINAL FRAMING LAYOUT MAY VARY BASED UPON TRUSS MANUFACTURERS DESIGN.
5. COORDINATE TRUSS GIRDER BEARING POINTS WITH METAL FRAMING LAYOUT.
6. ROOF PURLINS TO BE SPACED AT 48" O.C. MAX. UNLESS SHOWN OTHERWISE.
7. TOP CHORD DEAD LOAD SHOWN BELOW INCLUDES 3 PSF FOR TRUSS SELF-WEIGHT.
8. UNIFORM LOADS INDICATED BELOW TO BE USED FOR DESIGN OF HIP AND/OR GIRDERS TRUSSES AS REQUIRED.
9. MAXIMUM LIVE LOAD DEFLECTION SHALL BE SPAN/240 FOR ROOF TRUSSES.
10. PERMANENT TRUSS BRIDGING AND TEMPORARY TRUSS BRACING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
11. ROOF TRUSSES SHALL BE DESIGNED FOR APPLICABLE WIND LOADS AS INDICATED IN GENERAL NOTES, IN COMBINATION WITH DEAD LOADS SHOWN BELOW.
12. TRUSS TO TRUSS CONNECTIONS SHALL BE DESIGNED BY TRUSS MANUFACTURER.
13. CONTRACTOR SHALL COORDINATE WITH APPLICABLE MECHANICAL LOADS AND CLEARANCES PRIOR TO ORDERING TRUSSES.
14. CONTRACTOR SHALL COORDINATE METAL TRUSS AND FALL PROTECTION SYSTEM LOCATIONS AND CONNECTIONS. TRUSS MANUFACTURER SHALL PROVIDE TRUSSES CAPABLE OF SUPPORTING LOADS INDUCED BY FALL PROTECTION SYSTEM.
15. ROOF TRUSS DESIGN LOADS TO BE AS FOLLOWS:

TOP CHORD LIVE LOAD	20 PSF
TOP CHORD DEAD LOAD	10 PSF
BOTTOM CHORD DEAD LOAD	10 PSF
BOTTOM CHORD LIVE LOAD	0 PSF

FOUNDATION NOTES:

1. STRUCTURAL FOUNDATION DESIGN IS BASED UPON AN ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 2,000 PSF.
2. LATERAL SOIL PRESSURE BASED ON SOIL DENSITY OF 120 PCF WITH AN ANGLE OF INTERNAL REPOSE OF 30 DEGREES.
3. ALL FOUNDATIONS ARE TO BEAR ON UNDISTURBED IN-SITU SOIL OR ON TESTED STRUCTURAL BACKFILL. FILL SHALL BE PLACED IN UNIFORM LIFTS OF NO MORE THAN 8 INCHES THICK AND COMPACTED TO 95% MODIFIED PROCTOR VALUE FOR BACKFILL IN ACCORDANCE WITH ASTM D-1557 (THIS INCLUDES THE LAYER OF CLEAN WASHED SAND OR STONE FOR SLABS ON GRADE). THE MAXIMUM PARTICLE SIZE FOR FILL PLACEMENT SHALL NOT EXCEED 2/3 OF THE LIFT THICKNESS.
4. MAINTAIN POSITIVE SURFACE DRAINAGE TO PREVENT THE ACCUMULATION OF WATER IN EXCAVATED AREAS.
5. MATERIAL TO BE USED AS FILL SHALL BE TESTED BY AN APPROVED TESTING LABORATORY TO DETERMINE SUITABILITY PRIOR TO BEING PLACED.
6. REMOVE ALL ORGANIC AND DELETERIOUS MATERIAL.
7. SURFACE AREAS AT GRADE AND AREAS TO RECEIVE FILL SOILS SHALL BE DETERMINED WITHIN ±2 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT DETERMINED FROM THE MODIFIED PROCTOR TEST.



HIP ROOF WIND ZONES (7° < Θ < 27°)

WOOD FRAMING NOTES:

1. STRUCTURAL DESIGN IS BASED UPON USE OF #2 SOUTHERN YELLOW PINE, KD-19.
2. ALL CONSTRUCTION IS TO CONFORM TO IBC 2015 AND ALL NAILING REQUIREMENTS SHALL BE AS PER IBC 2015 TABLES UNLESS NOTED OTHERWISE ON THE DRAWINGS. NAILING REQUIREMENTS ARE IN ADDITION TO THE REQUIREMENTS OF SPECIFIED TIMBER CONNECTIONS.
3. ALL NAILING REQUIREMENTS LISTED ARE BASED UPON THE USE OF COMMON WIRE NAILS (NOT SINKERS, BOX, ETC.).
4. TIMBER CONNECTIONS, INSTALLATION, & FASTENING SHALL BE AS SPECIFIED HEREIN OR AS SPECIFIED BY THE MANUFACTURER TO DEVELOP THE FULL STRENGTH OF EACH CONNECTOR.
5. ALL WOOD, GLULAM, LVL, ETC. MEMBERS EXPOSED TO THE ENVIRONMENT SHALL BE TREATED LUMBER IN ACCORDANCE WITH AWPA STANDARD C2.
6. MEMBERS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
7. MEMBERS SHALL BE CUT, NOTCHED, OR BORED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF AFPA-T901 FOR THE PASSAGE OF PIPES, WIRES, OR CONDUITS.
8. MEMBERS SHALL BE CLOSELY FITTED, ACCURATELY SET TO REQUIRED LINES AND LEVELS, AND RIGIDLY SECURED IN PLACE.
9. MEMBERS SHALL BE ALIGNED AND ALL CONNECTIONS COMPLETED BEFORE REMOVAL OF BRACING.
10. EXCEPT WHERE OTHERWISE INDICATED, JOISTS SHALL HAVE BEARINGS NOT LESS THAN 4 INCHES ON CONCRETE OR MASONRY AND 1 1/2 INCHES ON WOOD OR METAL.
11. SET STRUCTURAL MEMBERS LEVEL AND PLUMB, IN CORRECT POSITION.
12. MAKE PROVISION FOR ERECTION LOADS, AND FOR SUFFICIENT TEMPORARY BRACING TO MAINTAIN STRUCTURE SAFE, PLUMB, AND IN TRUE ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRACING.
13. CONSTRUCT LOAD BEARING MEMBERS FULL LENGTH AND WITHOUT SPLICES.
14. SECURE ROOF SHEATHING PERPENDICULAR TO FRAMING MEMBERS WITH ENDS STAGGERED AND SHEET ENDS OVER FIRM BEARING. USE SHEATHING CLIPS BETWEEN SHEETS BETWEEN ROOF FRAMING MEMBERS.
15. SECURE SUB-FLOOR PERPENDICULAR TO FLOOR FRAMING WITH END JOINTS STAGGERED AND SHEET ENDS OVER FIRM BEARING.
16. CONTRACTOR SHALL PROVIDE SOLID BLOCKING UNDER ALL COLUMNS, BEAMS, AND POINT LOADS.
17. TOLERANCE
    FRAMING MEMBERS: 1/4" FROM TRUE POSITION MAXIMUM
    SURFACE FLATNESS OF FLOOR: 1/4" IN 10 FEET.

CONCRETE NOTES:

1. CONCRETE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318-14; BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3,000 PSI AT 28 DAYS.
3. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60.
4. WELDED WIRE REINFORCEMENT SHALL BE ASTM A1064. WELDED WIRE REINFORCEMENT WILL BE PLACED AT MID DEPTH OF SLAB, UNLESS OTHERWISE NOTED.
5. PROPORTION AND DESIGN CONCRETE MIXES TO RESULT IN CONCRETE SLUMP AT POINT OF PLACEMENT NOT LESS THAN 3" AND NOT MORE THAN 5".
6. ADDITION OF WATER TO READY-MIX IN THE FIELD SHALL NOT BE ALLOWED.
7. DEPOSIT CONCRETE IN A CONTINUOUS OPERATION UNTIL THE PLACING OF CONCRETE IS COMPLETE. IF POUR IS TO BE DISCONTINUOUS, CONTRACTOR SHALL USE CONSTRUCTION JOINTS.
8. CONCRETE MUST BE CURED FOR A MINIMUM 21 DAYS PRIOR TO ANY ADHESIVE ANCHOR INSTALLATION.
9. SEE SECTION 20.6 OF ACI 318 FOR MINIMUM REINFORCED PROTECTION REQUIREMENTS.
10. SEE SPECIFICATION SECTION 03 30 50 FOR ADDITIONAL INFORMATION.
11. TYPICAL REINFORCEMENT SPLIES SHALL BE AS FOLLOWS:
    - 11.1 #4 BARS - 22" LAP
    - 11.2 #5 BARS - 28" LAP
    - 11.3 #6 BARS - 33" LAP
    - 11.4 #7 BARS - 48" LAP
    - 11.5 #8 BARS - 55" LAP

S-001

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 1515SV Project Manager: R. Alvar

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MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

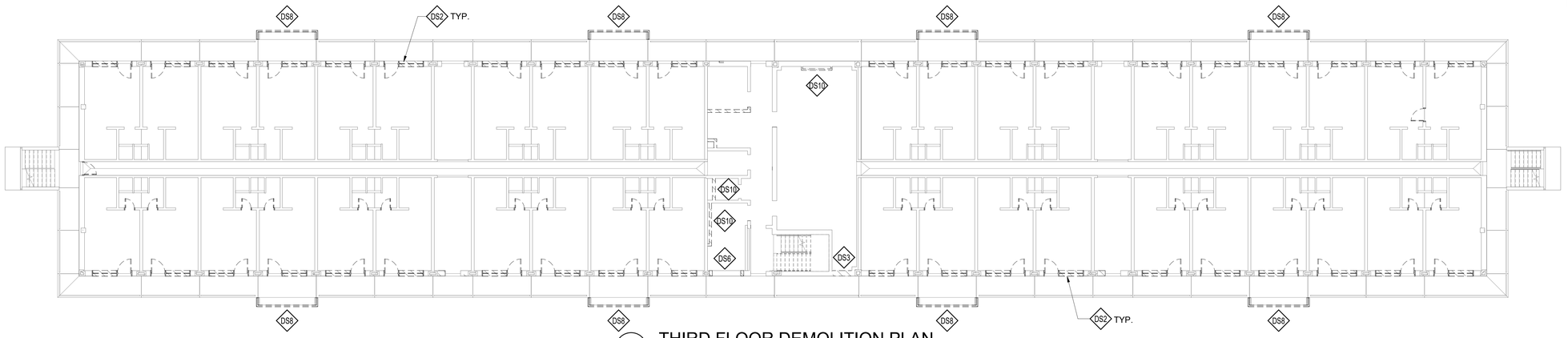
GENERAL NOTES AND DESIGN LOADS

DES. J. LI
DR. S. RYALS
CHK. E. WIETERS
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

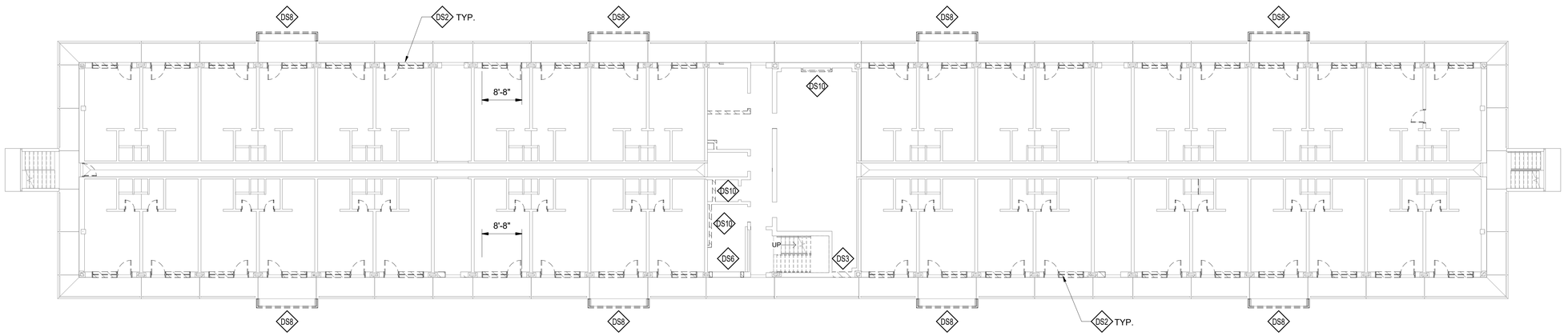
ISSUE DATE:15 MAY 2020

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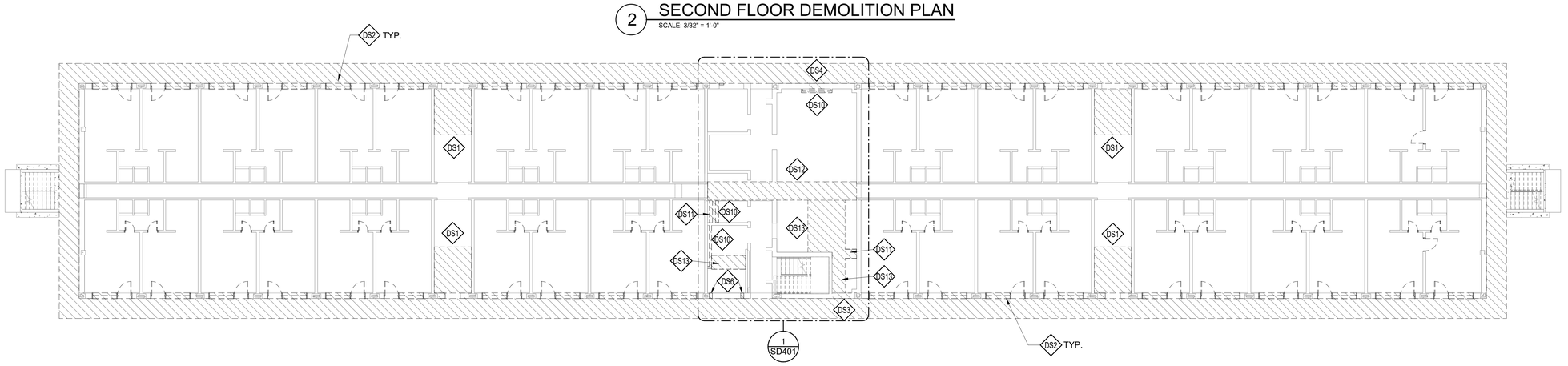
CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED SPEC. 05-18-0042 SHEET 14 OF 143



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



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



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

DISCLOSURE OF INFORMATION

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1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

LEGEND

ITEM TO BE DEMOLISHED

GENERAL NOTES

1. ALL EXISTING CONDITIONS AND STRUCTURAL MEMBERS SPECIFIED PER ORIGINAL DESIGN DOCUMENTS AND NON-DESTRUCTIVE SITE INVESTIGATIONS. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION/DEMOLITION.
2. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR ADDITIONAL DEMOLITION AND NOTES NOT SHOWN.
3. REINFORCE ALL NEW SLAB PENETRATIONS PER SLAB PENETRATION DETAILS ON SHEET S-502.
4. REVIEW ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR POTENTIAL HAZARDOUS MATERIALS PRIOR TO STARTING DEMOLITION WORK.

SHEET KEYNOTES

DS1 DEMOLISH EXISTING CONCRETE SLAB AS REQUIRED FOR INSTALLATION OF CONDUIT AND PIPING. COORDINATE W/ MECHANICAL, ELECTRICAL AND PLUMBING. ENSURE EXISTING FOUNDATIONS BELOW REMAIN INTACT AND UNDAMAGED.

DS2 REMOVE EXISTING DOOR/WINDOW FRAME SYSTEM TO PROVIDE ORIGINAL 8'-8"±x8'-8"± OPENING.

DS3 DEMOLISH EXISTING CMU WALL TO ELEVATION 8'-8" ABOVE FINISHED FLOOR (TO BOTTOM OF EXISTING CONC. BEAM) FOR INSTALLATION OF NEW DOOR. DEMOLISH EXISTING BRICK VENEER FULL HEIGHT OF STRUCTURE.

DS4 DEMOLISH EXISTING CMU AND BRICK VENEER WALL (INCLUDING EXISTING MECHANICAL LOUVER) FROM ELEVATION 1'-4" TO ELEVATION 8'-0" ABOVE FINISHED FLOOR FOR INSTALLATION OF NEW LOUVER. PROVIDE DEMOLITION AND CONSTRUCTION OF BRICK VENEER AND ITS SUPPORT PER ARCHITECTURAL DRAWINGS & SHEET S-302.

DS6 EXISTING LOUVER TO BE REMOVED AND OPENING TO BE INFILLED W/ CMU & BRICK VENEER.

DS8 DEMOLISH EXISTING PRECAST CONCRETE GUARDS (TYP. OF 8 PER FLOOR). GUARDS ARE WELDED TO EXISTING PLATES EMBEDDED INTO EXISTING CONCRETE SLAB.

DS10 DEMOLISH EXISTING CMU WALL.

DS11 DEMOLISH EXISTING CONCRETE SLAB ON GRADE FOR INSTALLATION OF NEW STRIP FOOTING.

DS12 DEMOLISH EXISTING CONCRETE SLAB AS INDICATED FOR NEW SLOPED FLOOR, FLOOR DRAIN, OR PLUMBING DEMOLITION. COORDINATE WITH ARCHITECTURAL AND PLUMBING DRAWINGS.

DS13 DEMOLISH EXISTING CONCRETE SLAB ON GRADE AS INDICATED FOR NEW SLOPED FLOOR, FLOOR DRAIN, OR PLUMBING DEMOLITION. COORDINATE WITH ARCHITECTURAL AND PLUMBING DRAWINGS.

ISSUE DATE:15 MAY 2020

SD101

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CEMS Project No: 15153V
Project Manager: R. Alvar

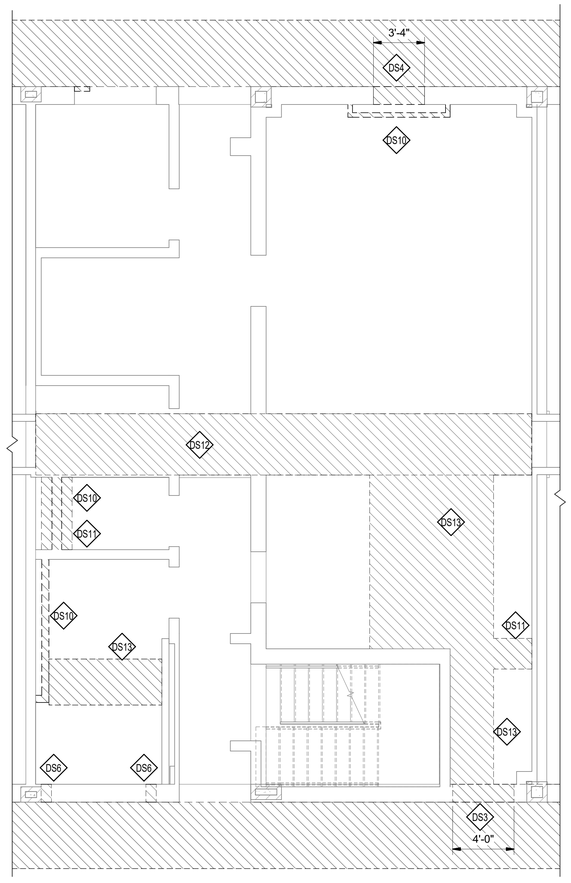
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

DEMOLITION PLANS

DES. J. LI	
DR. S. RYALS	
CHK. E. WIETERS	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023973
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 15 OF 143



1 ENLARGED FIRST FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
SD101

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

LEGEND

ITEM TO BE DEMOLISHED

GENERAL NOTES

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SHEET KEYNOTES

DS3	DEMOLISH EXISTING CMU WALL TO ELEVATION 8'-8" ABOVE FINISHED FLOOR (TO BOTTOM OF EXISTING CONC. BEAM) FOR INSTALLATION OF NEW DOOR. DEMOLISH EXISTING BRICK VENEER FULL HEIGHT OF STRUCTURE.
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DS6	EXISTING LOUVER TO BE REMOVED AND OPENING TO BE INFILLED W/ CMU & BRICK VENEER.
DS10	DEMOLISH EXISTING CMU WALL.
DS11	DEMOLISH EXISTING CONCRETE SLAB ON GRADE FOR INSTALLATION OF NEW STRIP FOOTING.
DS12	DEMOLISH EXISTING CONCRETE SLAB AS INDICATED FOR NEW SLOPED FLOOR, FLOOR DRAIN, OR PLUMBING DEMOLITION. COORDINATE WITH ARCHITECTURAL AND PLUMBING DRAWINGS.
DS13	DEMOLISH EXISTING CONCRETE SLAB ON GRADE AS INDICATED FOR NEW SLOPED FLOOR, FLOOR DRAIN, OR PLUMBING DEMOLITION. COORDINATE WITH ARCHITECTURAL AND PLUMBING DRAWINGS.

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PLAN NORTH

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"
GRAPHIC SCALE

SD401

CEMS
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CEMS Project No: 15102V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

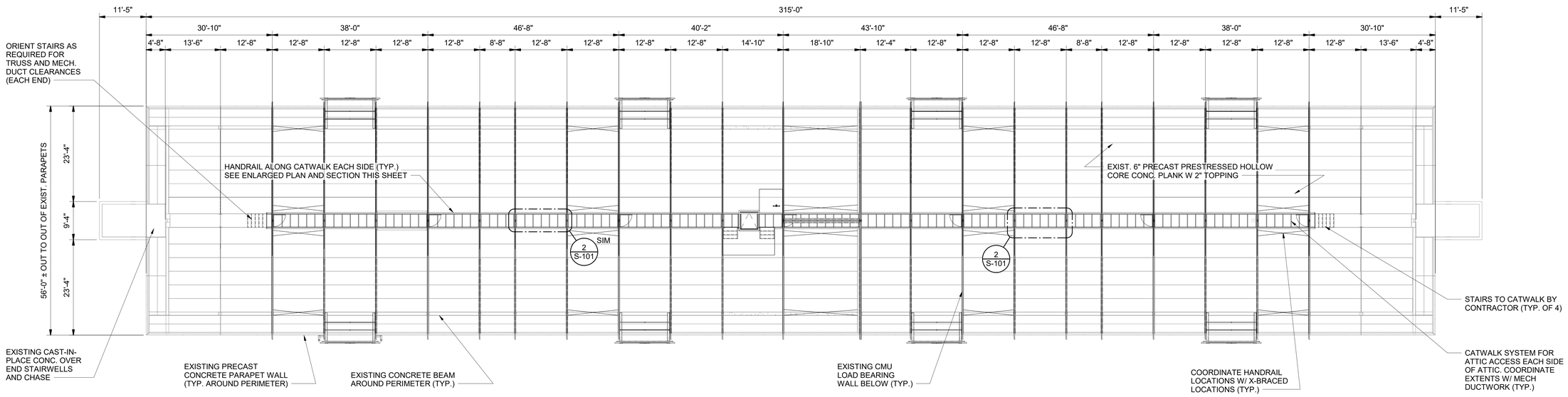
ENLARGED DEMOLITION PLAN

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL
ISSUE DATE:15 MAY 2020

DES. J. LI	
DR. S. RYALS	
CHK. E. WIETERS	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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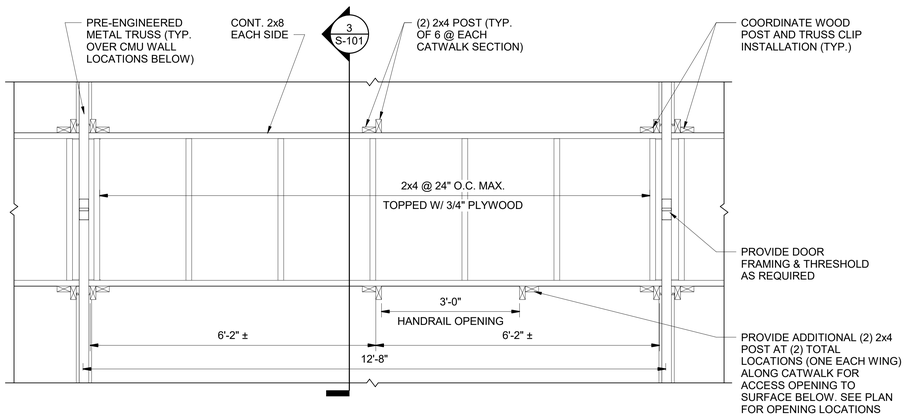
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 16 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 CATWALK FRAMING PLAN

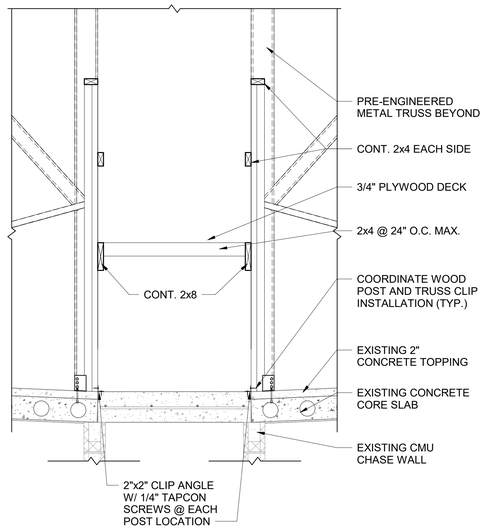
SCALE: 3/32" = 1'-0"



2 ENLARGED CATWALK PLAN

SCALE: 3/4" = 1'-0"

S-101



3 SECTION

SCALE: 3/4" = 1'-0"

S-101

DISCLOSURE OF INFORMATION

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GENERAL NOTES

1. REMOVE EXISTING BUILT-UP ROOFING SYSTEM TO 2" CONCRETE TOPPING BELOW IN ITS ENTIRETY FOR INSTALLATION OF NEW ROOFING SYSTEM (COORDINATE WITH ARCHITECTURAL DRAWINGS). NEW FRAMING SHALL BEAR ON EXISTING CONCRETE TOPPING/PLANK/BEAMS DIRECTLY.
2. ALL EXISTING CONDITIONS AND STRUCTURAL MEMBERS SPECIFIED PER ORIGINAL DESIGN DOCUMENTS AND NON-DESTRUCTIVE SITE INVESTIGATION. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION/DEMOLITION.
3. REINFORCE ALL NEW SLAB PENETRATIONS PER SLAB PENETRATION DETAILS ON SHEET S-502.
4. SEE SHEET S-303 FOR WALL PENETRATION INFORMATION.
5. PROVIDE 2 1/2" MINIMUM EDGE DISTANCE FOR ALL FASTENERS INTO EXISTING CONCRETE.
6. REVIEW ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR POTENTIAL HAZARDOUS MATERIALS PRIOR TO STARTING DEMOLITION WORK.

PLAN NORTH

2 1 0 2

SCALE: 3/4"=1'-0"

16 8 0 16

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

GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

S-101

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

CATWALK FRAMING PLANS

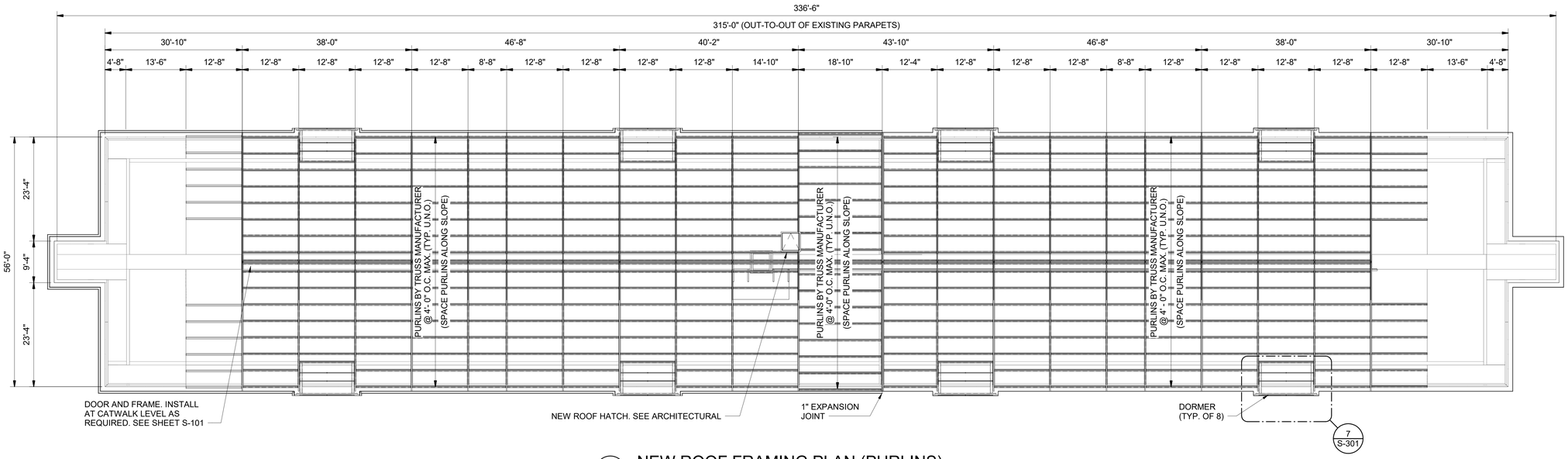
DES.	J. LI
DR.	S. RYALS
CHK.	E. WIETERS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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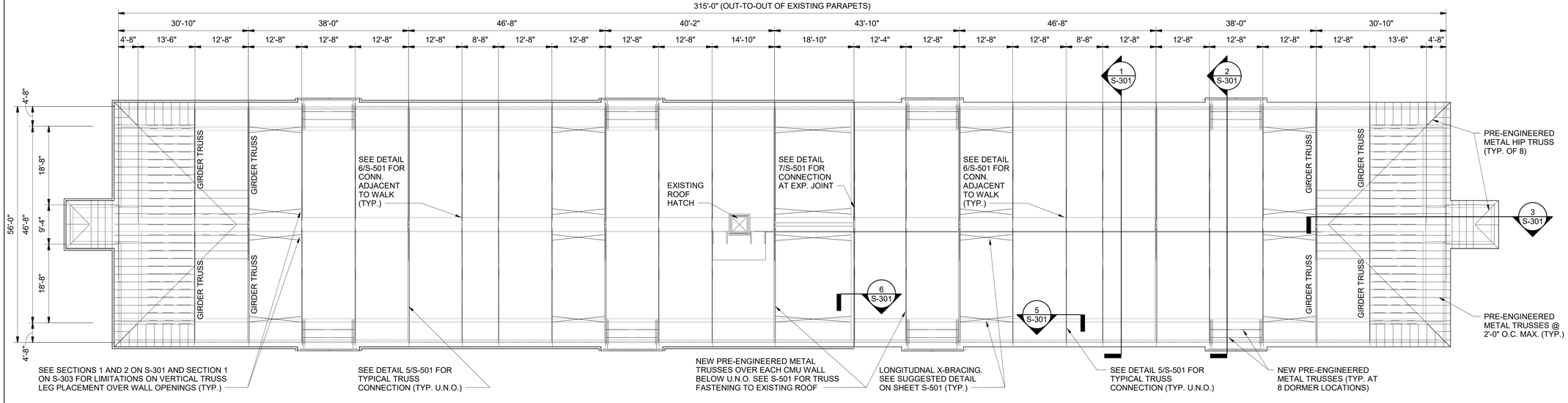
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED SPEC. 05-18-0042 SHEET 17 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 NEW ROOF FRAMING PLAN (PURLINS)
SCALE: 3/32" = 1'-0"



2 NEW ROOF FRAMING PLAN (TRUSSES)
SCALE: 3/32" = 1'-0"

GENERAL NOTES

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4. SEE SHEET S-303 FOR WALL PENETRATION INFORMATION.
5. PROVIDE 2 1/2" MINIMUM EDGE DISTANCE FOR ALL FASTENERS INTO EXISTING CONCRETE.
6. REVIEW ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR POTENTIAL HAZARDOUS MATERIALS PRIOR TO STARTING DEMOLITION WORK.
7. COORDINATE NEW ROOF FRAMING WITH NEW ROOF HATCH. SEE ARCHITECTURAL FOR DETAILS.
8. CONTRACTOR SHALL COORDINATE METAL TRUSS AND FALL PROTECTION SYSTEM LOCATIONS AND CONNECTIONS.

DRAFT STOP NOTES

1. PROVIDE DRAFT STOPS IN NEW ATTIC AT LOCATIONS SHOWN ON ARCHITECTURAL DRAWINGS.
2. DRAFT STOPS SHALL CONSIST OF 3/4" OSB ATTATCHED TO TRUSS FRAMING (ONE SIDE OF WALL REQUIRED).
3. PROVIDE DOOR AND FRAME AT LOCATIONS NOTED IN ARCHITECTURAL DRAWINGS.
4. DOOR HARDWARE TO INCLUDE PASSAGE LOCKSET (NON-LOCKABLE) AND DOOR CLOSER.

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PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

S-102

CEMS
ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V
Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

ROOF FRAMING PLANS

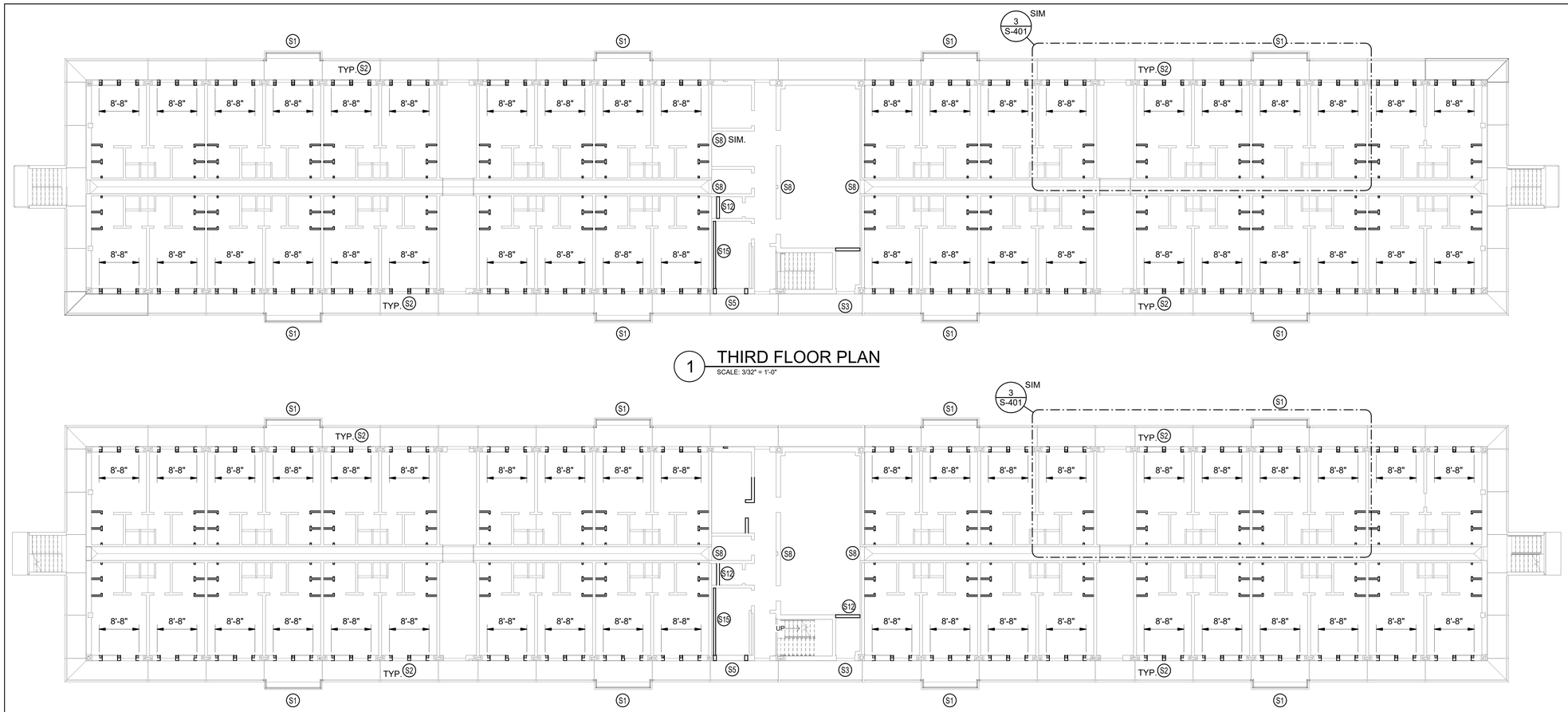
DES.	J. LI
DR.	S. RYALS
CHK.	E. WIETERS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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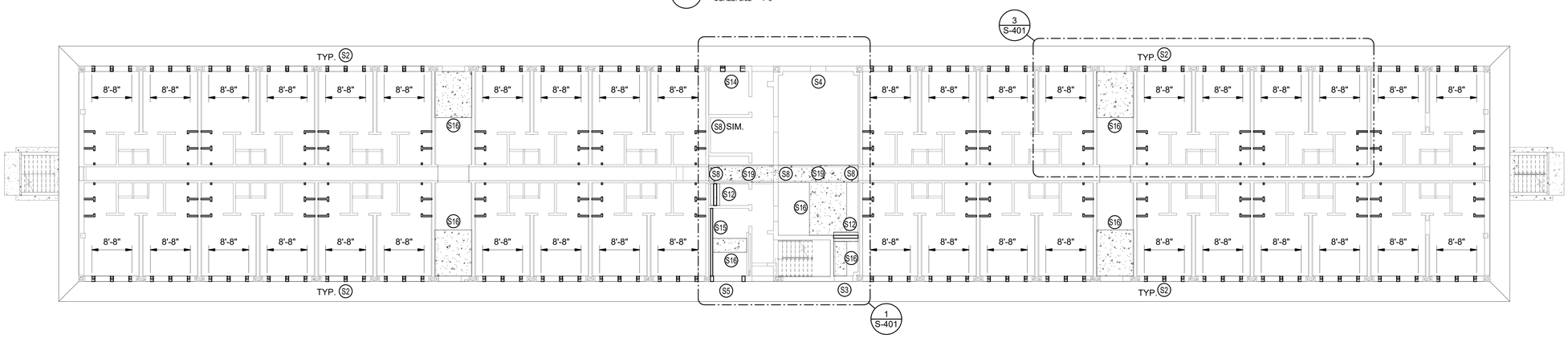
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED SPEC. 05-18-0042 SHEET 18 OF 143



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

2 SECOND FLOOR PLAN
SCALE: 3/32" = 1'-0"



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

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REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. ALL EXISTING CONDITIONS AND STRUCTURAL MEMBERS SPECIFIED PER ORIGINAL DESIGN DOCUMENTS AND NON-DESTRUCTIVE SITE INVESTIGATIONS. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION/DEMOLITION.
2. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR ADDITIONAL NEW WORK AND NOTES NOT SHOWN.
3. REINFORCE ALL NEW SLAB PENETRATIONS PER SLAB PENETRATION DETAILS ON SHEET S-502.
4. SEE SHEET S-401 FOR ADDITIONAL KEYNOTES.
5. NEW CONCRETE EQUIPMENT PADS SHALL BE 4" THICK MAX. (TYP. @ ALL MECH. ROOMS).
6. REVIEW ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR POTENTIAL HAZARDOUS MATERIALS PRIOR TO STARTING DEMOLITION WORK.

SHEET KEYNOTES

S1	NEW METAL HANDRAIL. SEE ARCHITECTURAL.
S2	NEW 8"x8" CMU W/ VERTICAL #5.
S3	OPENING FOR NEW DOOR. PROVIDE LINTEL PER SECTION 4/S-302.
S4	OPENING FOR NEW MECHANICAL LOUVER. PROVIDE LINTEL PER SECTION 5/S-302.
S5	INFILL OPENING FROM DEMOLISHED LOUVER WITH BRICK VENEER AND CMU AS REQUIRED.
S8	SEE DETAIL 1/S-503 FOR PENETRATION THROUGH EXISTING BOND BEAM.
S12	NEW 8" CMU W/ VERTICAL #5 @ 32" O.C. PROVIDE CONT. x 2'-0" x 12" STRIP FOOTING PER SECTION 7/S-302 ON FIRST FLOOR.
S14	INFILL PORTION OF EXISTING OPENING WITH CMU AND BRICK VENEER TO PROVIDE NEW 3'-4" WINDOW OPENING W/ VERT. #5.
S15	NEW 6" CMU W/ VERTICAL #5 @ 32" O.C.
S16	NEW 5" CONCRETE SLAB ON GRADE W/ 6x6-W2.0xW2.0 WWR AS REQUIRED. COORDINATE W/ ARCHITECTURAL, MECHANICAL AND PLUMBING FOR FLOOR SLOPE.
S19	NEW 5" CONC. SLAB ON 1.0C20 STEEL DECK W/ 6x6-W2.9xW2.9 WWR. CONTRACTOR TO ENSURE DECK STAYS IN PLACE DURING CONCRETE INSTALLATION.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

S-103

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.383.1646
CEMS Project No: 15102V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

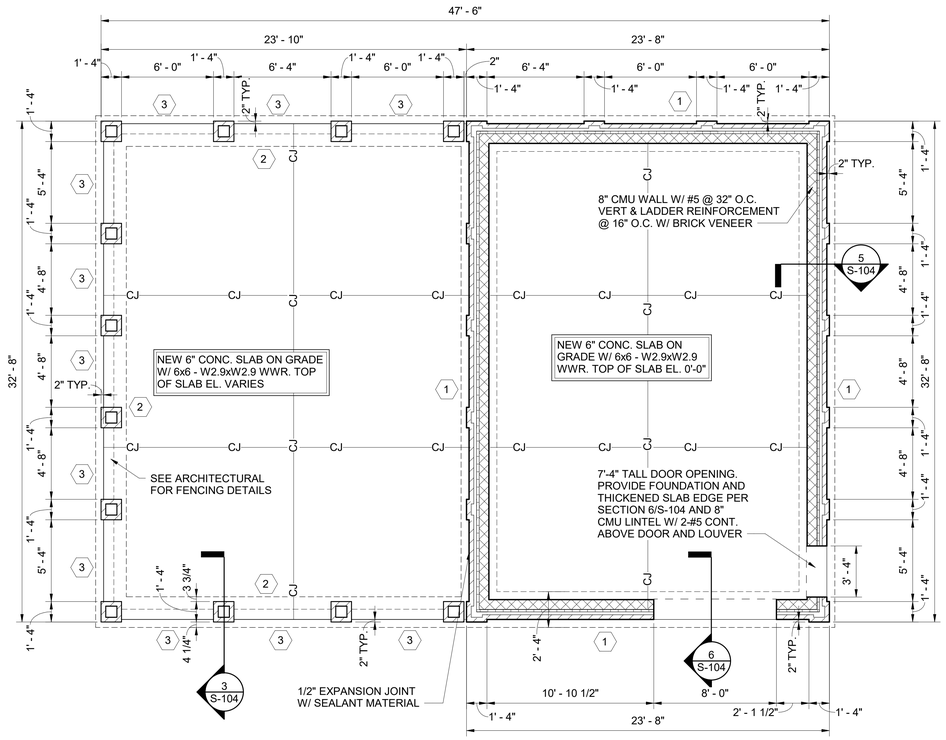
FLOOR PLANS

DES.	J. LI
DR.	S. RYALS
CHK.	E. WIETERS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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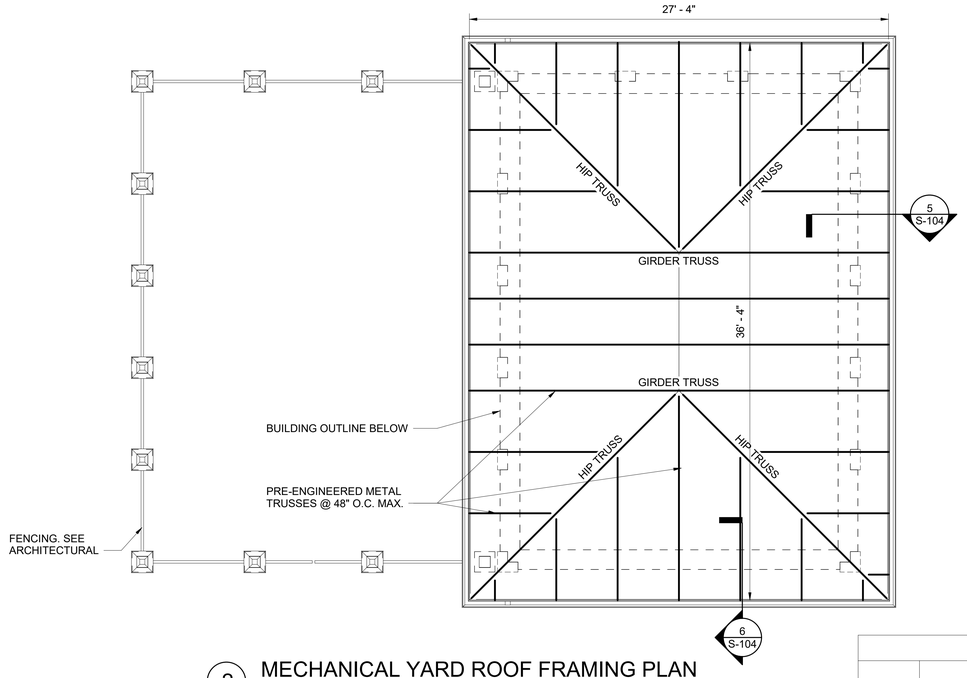
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 19 OF 143



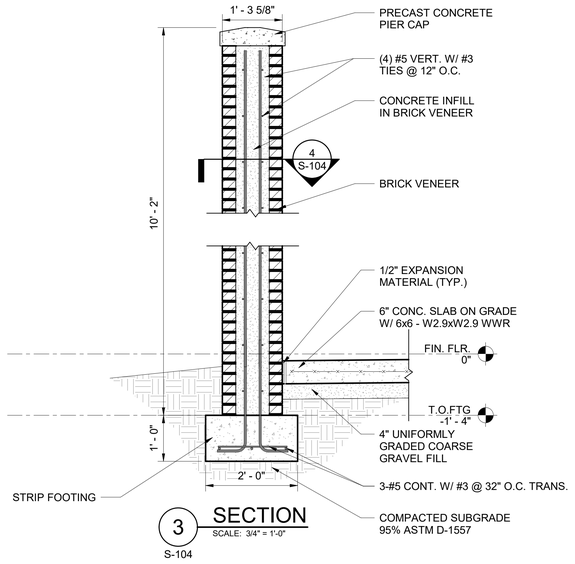
1 MECHANICAL YARD FOUNDATION PLAN

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



2 MECHANICAL YARD ROOF FRAMING PLAN

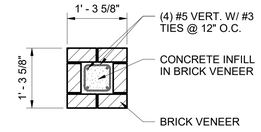
SCALE: 1/4" = 1'-0"



3 SECTION

SCALE: 3/4" = 1'-0"

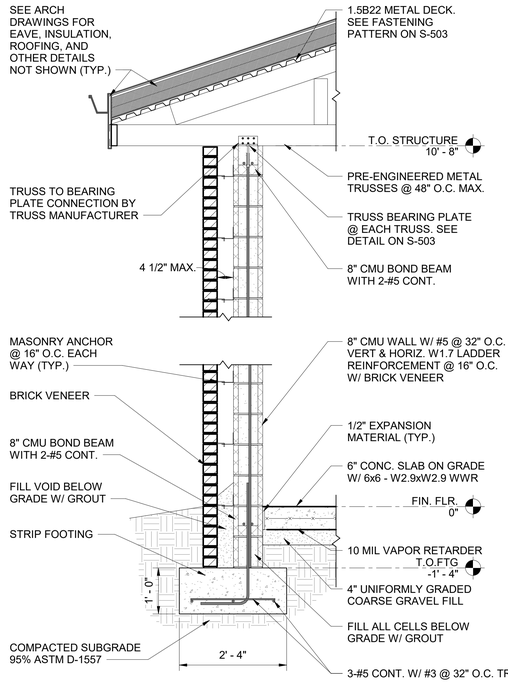
S-104



4 SECTION

SCALE: 3/4" = 1'-0"

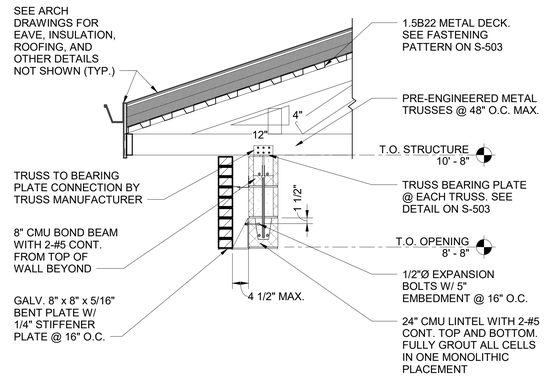
S-104

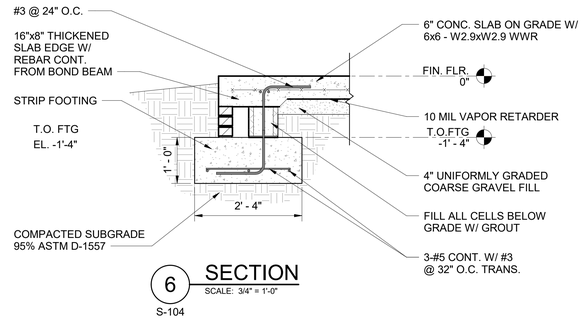


5 SECTION

SCALE: 3/4" = 1'-0"

S-104





6 SECTION

SCALE: 3/4" = 1'-0"

S-104

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

LEGEND

CJ	CONTROL JOINT. SEE SHEET S-503
	NEW CMU WALL
	NEW FOOTING
X	FOOTING TAG

GENERAL NOTES

1. COORDINATE W/ MECHANICAL EQUIPMENT MANUFACTURERS FOR REQUIRED LOCATIONS OF LEVEL HOUSEKEEPING PADS.

FOOTING SCHEDULE

	TYPE	FOOTING STEEL	TOP OF FOOTING	REMARKS
1	CONT. x 2'-4" x 12"	3-#5 CONT. W/ #3 @ 32" O.C. TRANS.	-1'-4"	STRIP FOOTING
2	CONT. x 2'-0" x 12"	3-#5 CONT. W/ #3 @ 32" O.C. TRANS.	-1'-4"	STRIP FOOTING
3	CONT. x 0'-8" x 1'-2"	2-#5 CONT.	-0'-2"	TURNDOWN SLAB

PLAN NORTH

4 3 2 1 0 4 8

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

2 1 0 2

SCALE: 3/4"=1'-0"

GRAPHIC SCALES

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S-104

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108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
350 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.383.1646
CEMS Project No: 15152V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

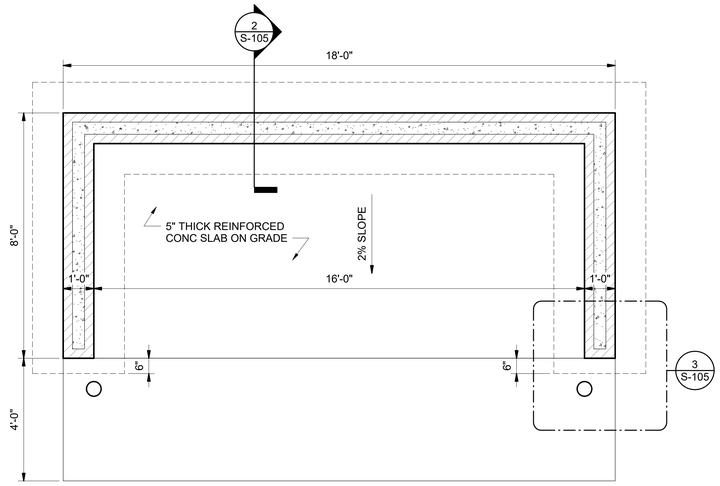
MECHANICAL YARD PLANS

DES. J. LI	
DR. S. RYALS	
CHK. E. WIETERS	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

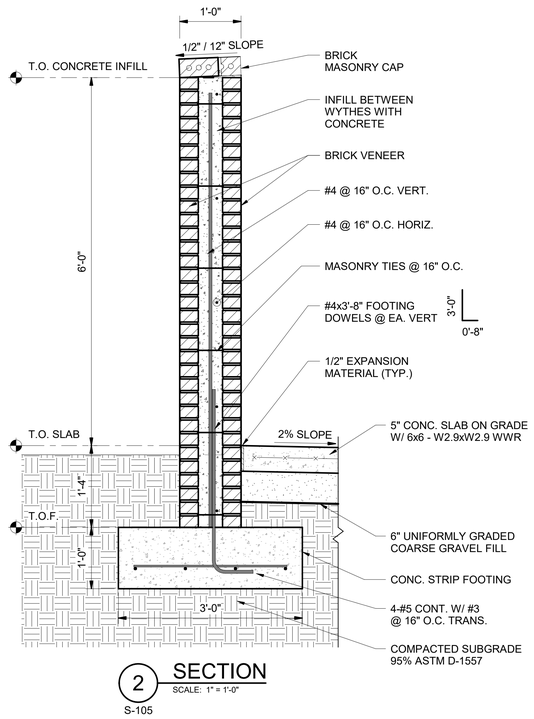
ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 20 OF 143

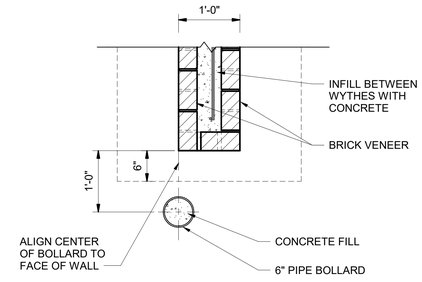
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 DUMPSTER ENCLOSURE PLAN
SCALE: 1/2" = 1'-0"



2 SECTION
SCALE: 1" = 1'-0"
S-105



3 BOLLARD PLAN DETAIL
SCALE: 1" = 1'-0"
S-105

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PLAN NORTH

1 1/2 0 1 2
SCALE: 1"=1'-0"

2 1 0 2 4
SCALE: 1/2"=1'-0"

GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

S-105

CEMS
ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1646
CEMS Project No: 10153V
Project Manager: R. Alvar

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

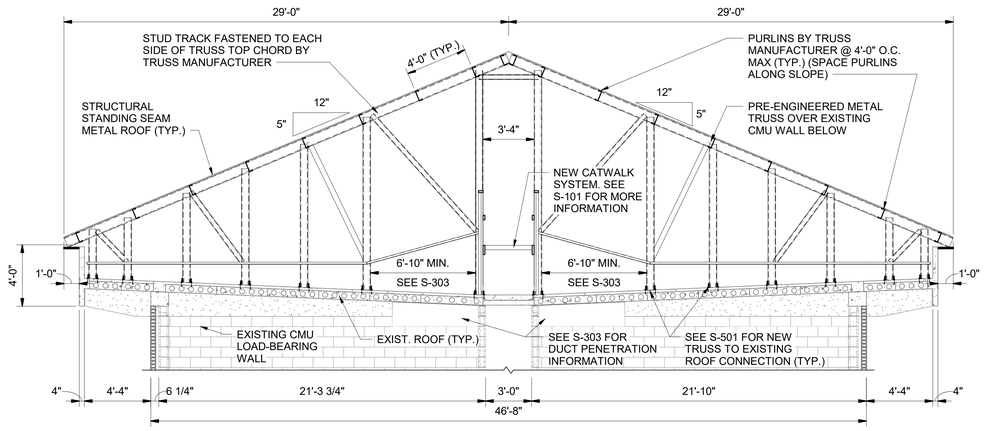
REPAIR BEQ HP510

DUMPSTER ENCLOSURE PLAN

DES.	J. LI
DR.	S. RYALS
CHK.	E. WIETERS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 21 OF 143

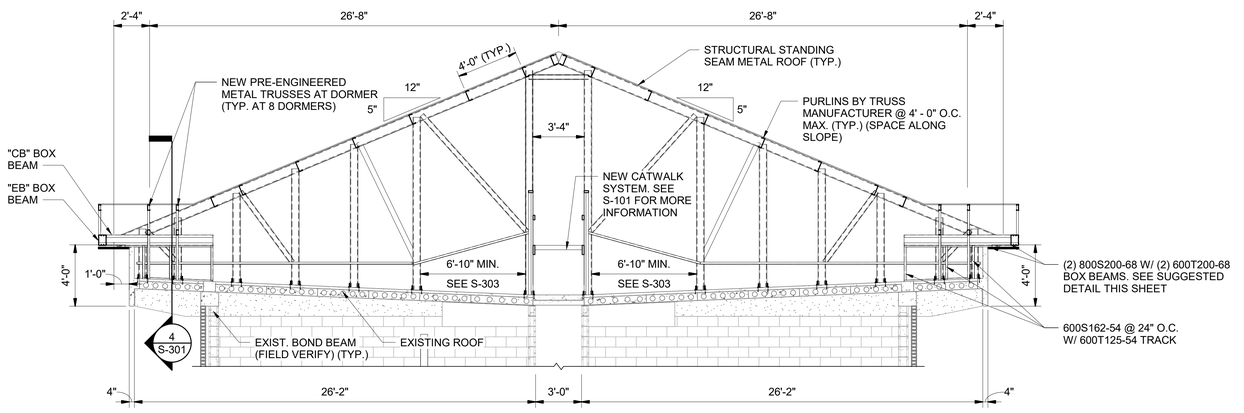
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 NEW ROOF FRAMING SECTION

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

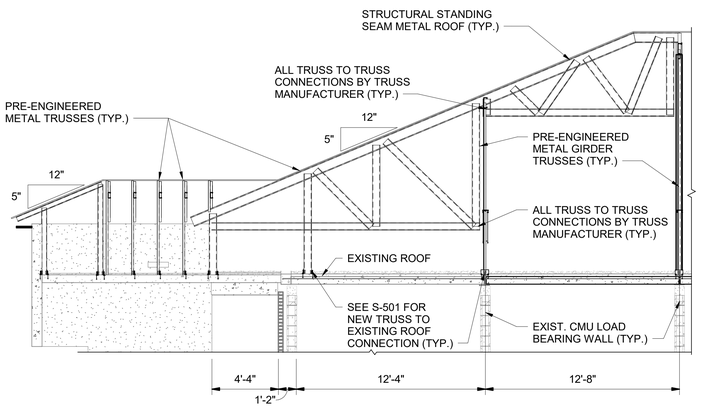
S-102



2 NEW ROOF FRAMING SECTION AT DORMERS

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

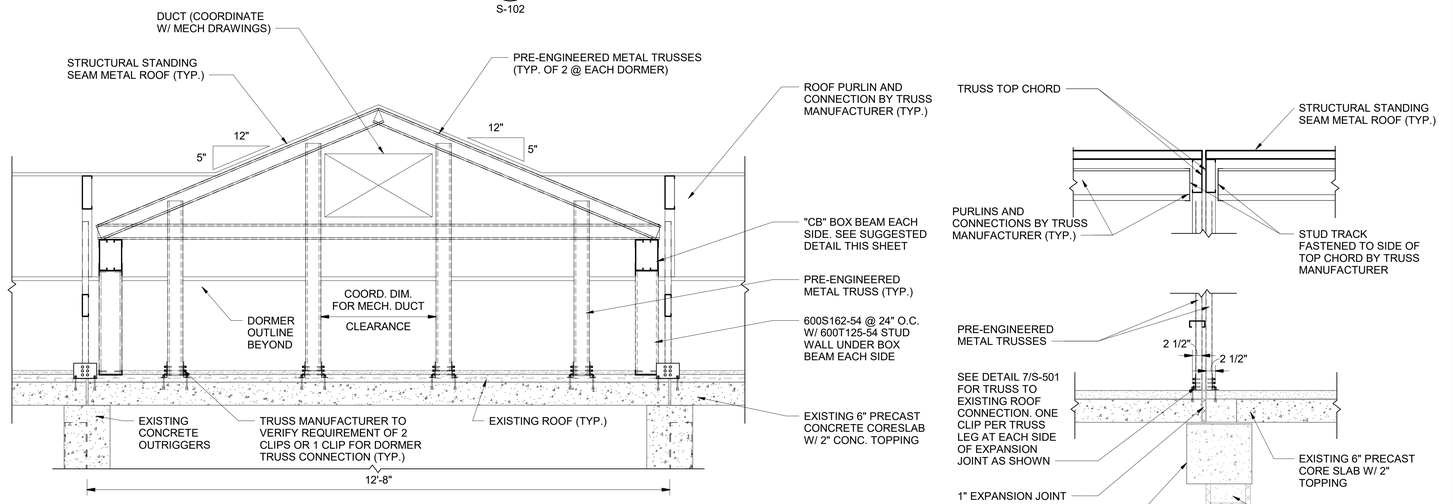
S-102



3 NEW END ROOF FRAMING SECTION

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

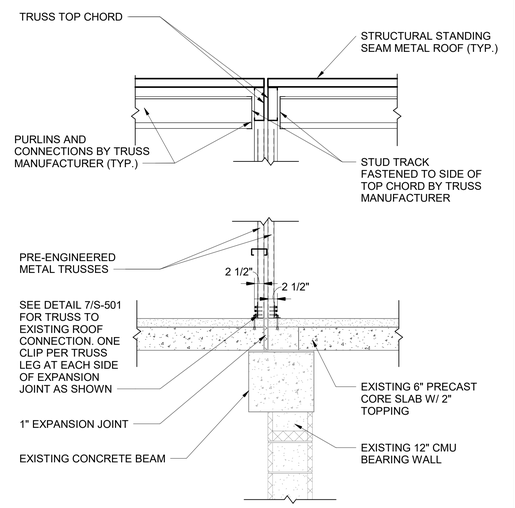
S-102



4 SECTION AT DORMER

SCALE: 3/4" = 1'-0"

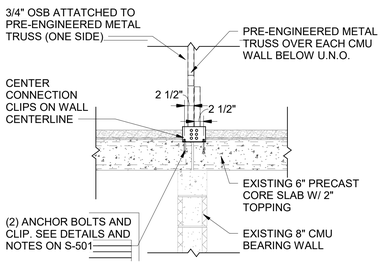
S-301



6 SECTION

SCALE: 3/4" = 1'-0"

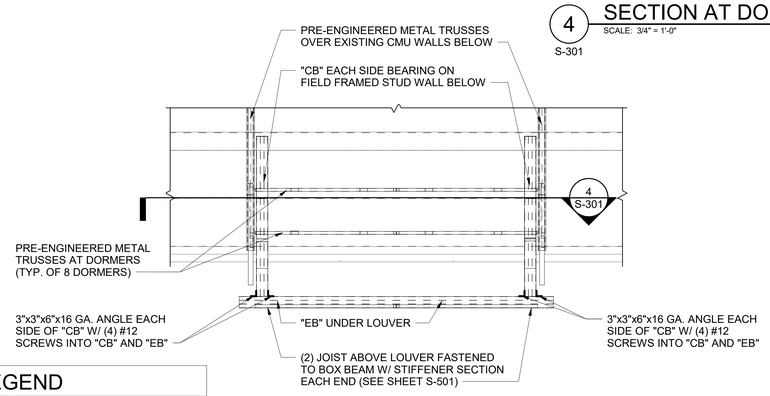
S-102



5 SECTION

SCALE: 3/4" = 1'-0"

S-102



7 ENLARGED DORMER PLAN

SCALE: 3/8" = 1'-0"

S-102



8 SUGGESTED BOX BEAM DETAIL

SCALE: NOT TO SCALE

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LEGEND

CB/EB	(2) 800S200-68 W/ (2) 600T200-68 TRACK BOX BEAM (TYP. OF 3 PER DORMER). SEE SUGGESTED DETAIL THIS SHEET.

2 1 0 2
SCALE: 3/4"=1'-0"

4 2 0 4
SCALE: 3/8"=1'-0"

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"

GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

S-301

CEMS ENGINEERING | ARCHITECTURE
109 Bentora Lodge Rd., Summerville, SC, 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15103V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

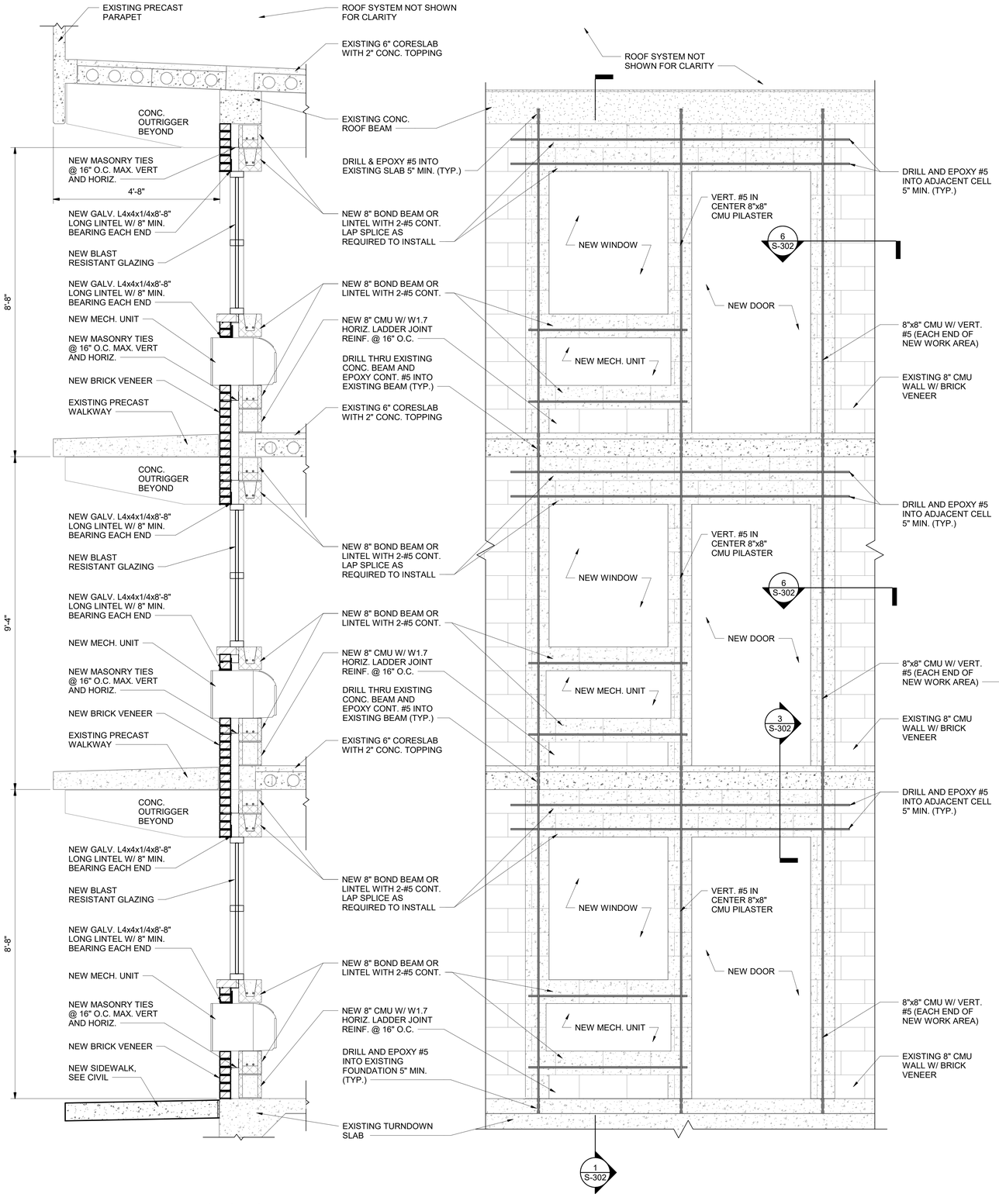
FRAMING SECTIONS AND DETAILS

DES.	J. LI
DR.	S. RYALS
CHK.	E. WIETERS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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CONSTR. CONTR. NO.: N40085-18-B-0042

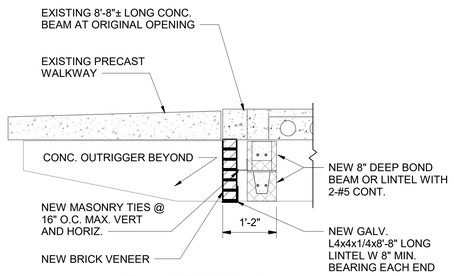
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 22 OF 143



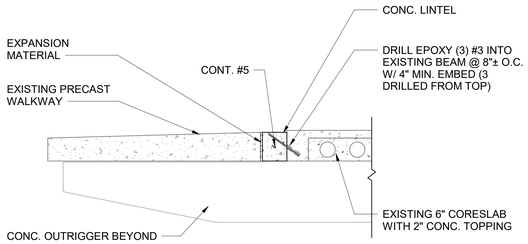
1 SECTION
SCALE: 3/4" = 1'-0"
S-302

2 SECTION
SCALE: 3/4" = 1'-0"
S-401

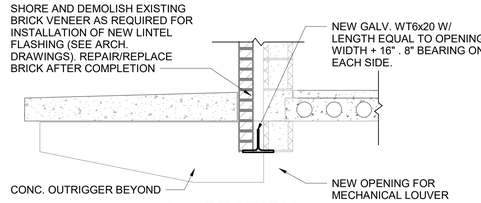
6 SECTION
SCALE: 3/4" = 1'-0"
S-302



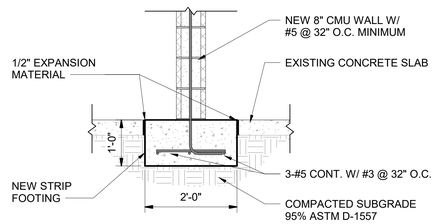
3 SECTION
SCALE: 3/4" = 1'-0"
S-302



4 SECTION
SCALE: 3/4" = 1'-0"
S-401



5 SECTION
SCALE: 3/4" = 1'-0"
S-401



7 SECTION
SCALE: 3/4" = 1'-0"
S-401

SCALE: 3/4"=1'-0"

GRAPHIC SCALE

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. ALL EXISTING CONDITIONS AND STRUCTURAL MEMBERS SPECIFIED PER ORIGINAL DESIGN DOCUMENTS AND NON-DESTRUCTIVE SITE INVESTIGATIONS. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION/DEMOLITION.
2. SEE ARCHITECTURAL DRAWINGS FOR ARCHITECTURAL ELEMENTS NOT SHOWN FOR CLARITY.

DISCLOSURE OF INFORMATION

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S-302

CEMS ENGINEERING | ARCHITECTURE
104 Bentons Lodge Rd., Summerville, SC. 29485 843.873.3637
100 Dunlap St., Suite 110, Wilmington, NC. 28401 910.383.1640
CEMS Project No: 181520 Project Manager: R. Alvar

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

REPAIRS BEQ HP510

CMU SECTIONS AND DETAILS

DES.	J. LI
DR.	S. RYALS
CHK.	E. WIETERS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

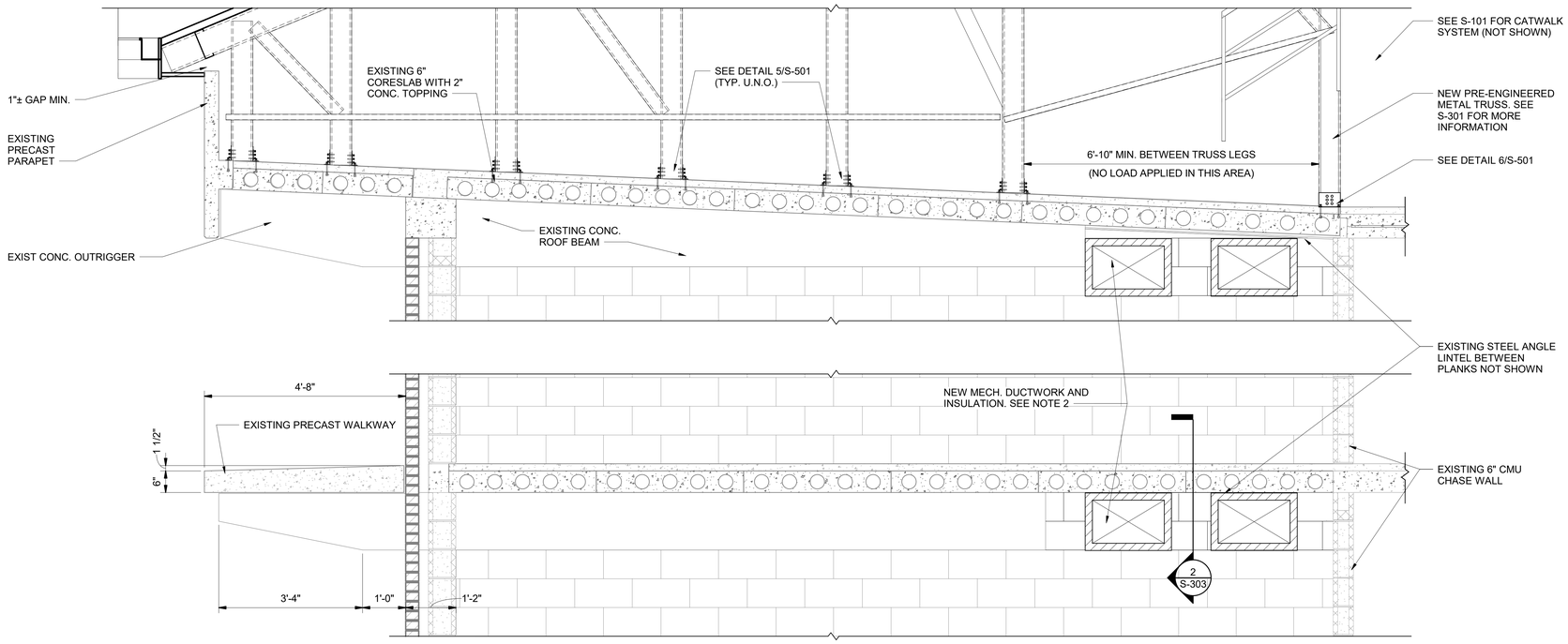
ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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CONSTR. CONTR. NO.: N40085-18-B-0042

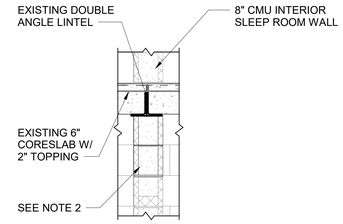
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 23 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 SECTION AT TYPICAL INTERIOR SUITE SEPARATION OR MECHANICAL ROOM WALL

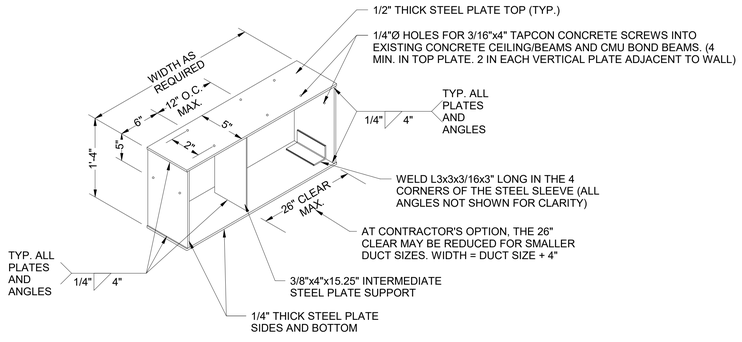
SCALE: 3/4" = 1'-0"



2 SECTION AT MECHANICAL OPENING

SCALE: 3/4" = 1'-0"

S-303



3 CMU WALL PENETRATION (6" CHASE WALL)

SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

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GENERAL NOTES

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2. EXISTING STEEL LINTEL AND ITS END BEARING MEMBERS SHALL REMAIN INTACT AND UNDAMAGED. REUSE ORIGINAL MECHANICAL CHASE FOR INSTALLATION OF NEW DUCT WORK. REMOVE EXISTING CMU INFILL AS REQUIRED AND INSTALL NEW INFILL AROUND NEW DUCTWORK TO PROVIDE SPACE SEPARATION AS REQUIRED BY ARCHITECTURAL AND FIRE PROTECTION.

2 1 0 2

SCALE: 3/4"=1'-0"

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

S-303

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

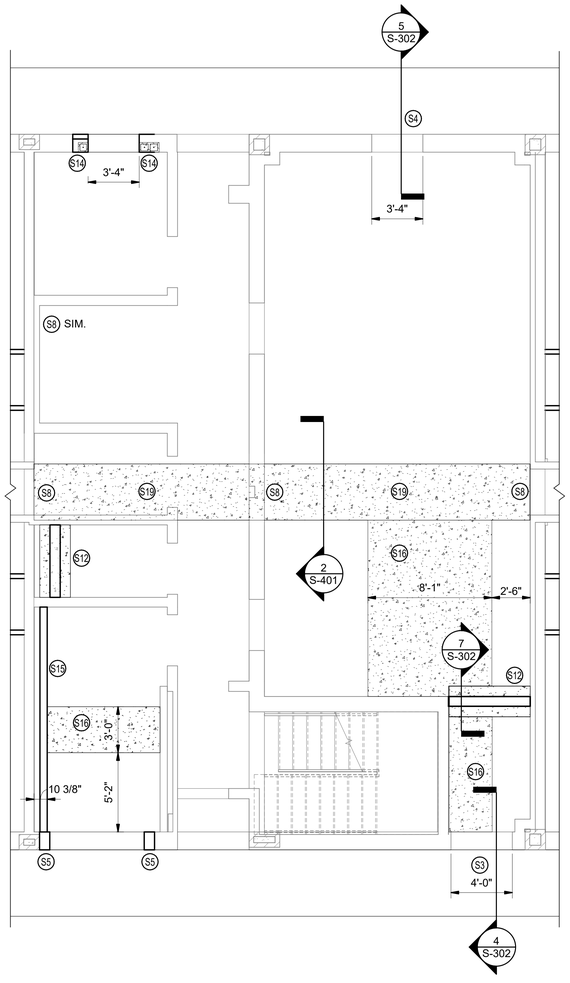
DES. J. LI
DR. S. RYALS
CHK. E. WIETERS
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

MECHANICAL OPENING SECTIONS AND DETAILS

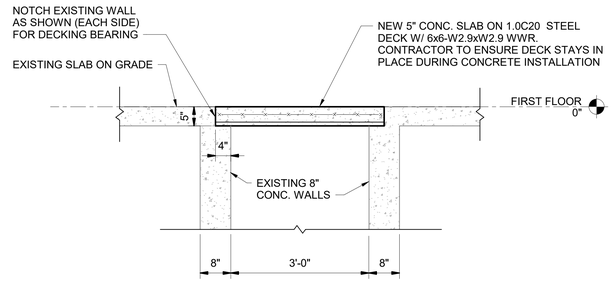
SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023982

CONSTR. CONTR. NO.: N40085-18-B-0042

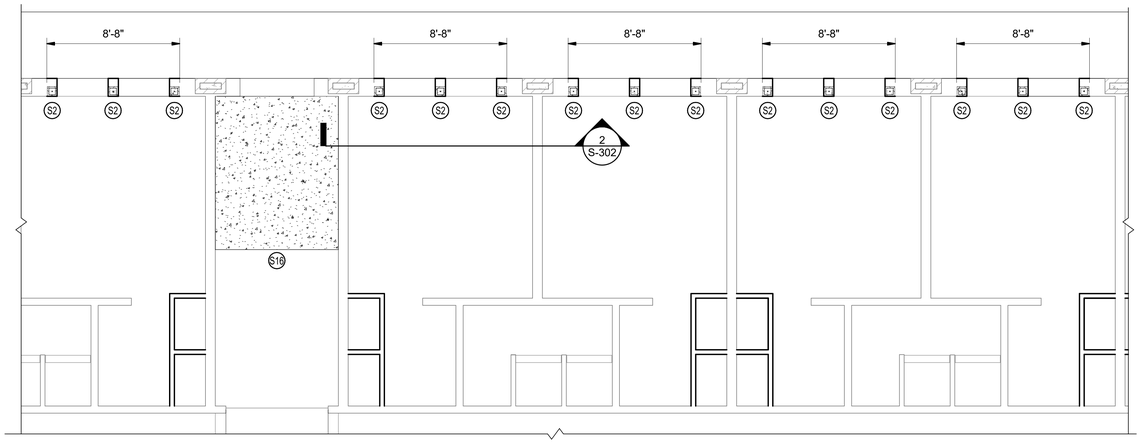
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 24 OF 143



1 ENLARGED FIRST FLOOR NEW WORK PLAN
SCALE: 1/4" = 1'-0"
S-103



2 SECTION
SCALE: 3/4" = 1'-0"
S-401



3 ENLARGED SLEEPING ROOM AND MECHANICAL NEW WORK PLAN
SCALE: 1/4" = 1'-0"
S-103

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

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2. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR ADDITIONAL NEW WORK AND NOTES NOT SHOWN.
3. REVIEW ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR POTENTIAL HAZARDOUS MATERIALS PRIOR TO STARTING DEMOLITION WORK.

SHEET KEYNOTES

S2	NEW 8"x8" CMU W/ VERTICAL #5.
S3	OPENING FOR NEW DOOR. PROVIDE LINTEL PER SECTION 4/S-302.
S4	OPENING FOR NEW MECHANICAL LOUVER. PROVIDE LINTEL PER SECTION 5/S-302.
S5	INFILL OPENING FROM DEMOLISHED LOUVER WITH BRICK VENEER AND CMU AS REQUIRED.
S8	SEE DETAIL 1/S-503 FOR PENETRATION THROUGH EXISTING BOND BEAM.
S12	NEW 8" CMU W/ VERTICAL #5 @ 32" O.C. PROVIDE CONT. x 2'-0" x 12" STRIP FOOTING PER SECTION 7/S-302 ON FIRST FLOOR.
S14	INFILL PORTION OF EXISTING OPENING WITH CMU AND BRICK VENEER TO PROVIDE NEW 3'-4" WINDOW OPENING W/ VERT. #5.
S15	NEW 6" CMU W/ VERTICAL #5 @ 32" O.C.
S16	NEW 5" CONCRETE SLAB ON GRADE W/ 6x6-W2.0xW2.0 WWR AS REQUIRED. COORDINATE W/ ARCHITECTURAL, MECHANICAL AND PLUMBING FOR FLOOR SLOPE.
S19	NEW 5" CONC. SLAB ON 1.0C20 STEEL DECK W/ 6x6-W2.9xW2.9 WWR. CONTRACTOR TO ENSURE DECK STAYS IN PLACE DURING CONCRETE INSTALLATION.

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PLAN NORTH

2 1 0 2
SCALE: 3/4"=1'-0"

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"

GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

S-401

CEMS ENGINEERING | ARCHITECTURE
109 Bentona Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED PLANS

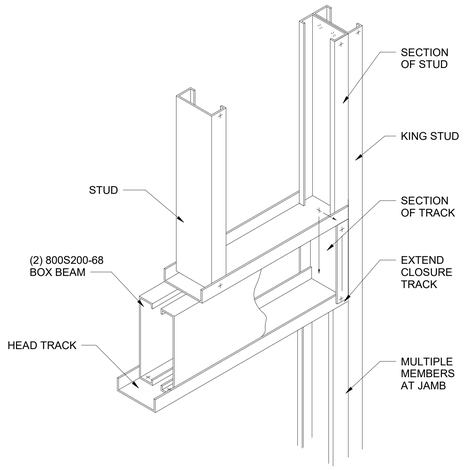
DES. J. LI	
DR. S. RYALS	
CHK. E. WIETERS	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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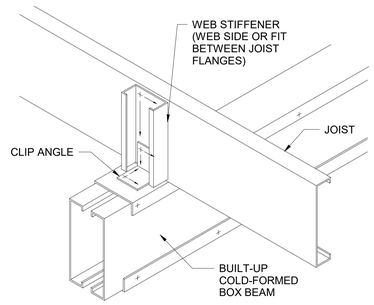
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 25 OF 143

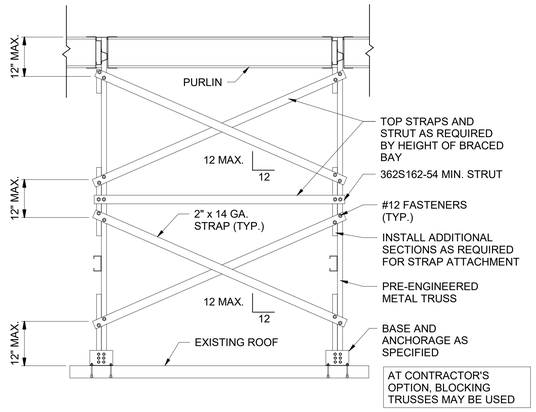
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



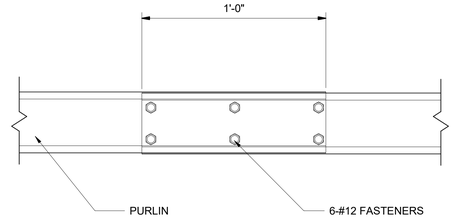
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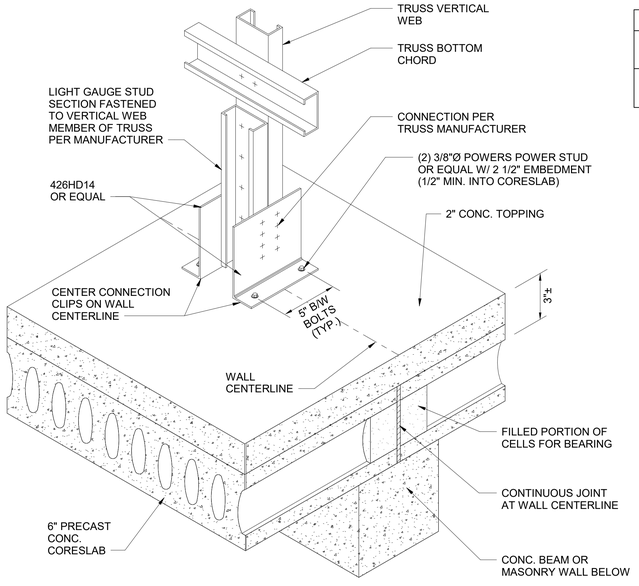
2 JOIST WEB STIFFNER DETAIL
SCALE: NOT TO SCALE



3 SUGGESTED LONGITUDINAL X-BRACING
SCALE: NOT TO SCALE

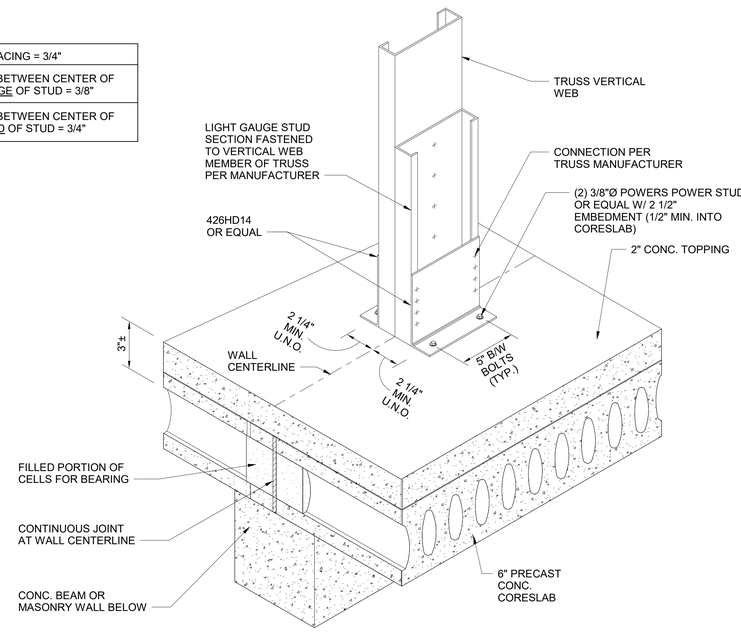


4 TYPICAL SPLICE DETAIL
SCALE: NOT TO SCALE

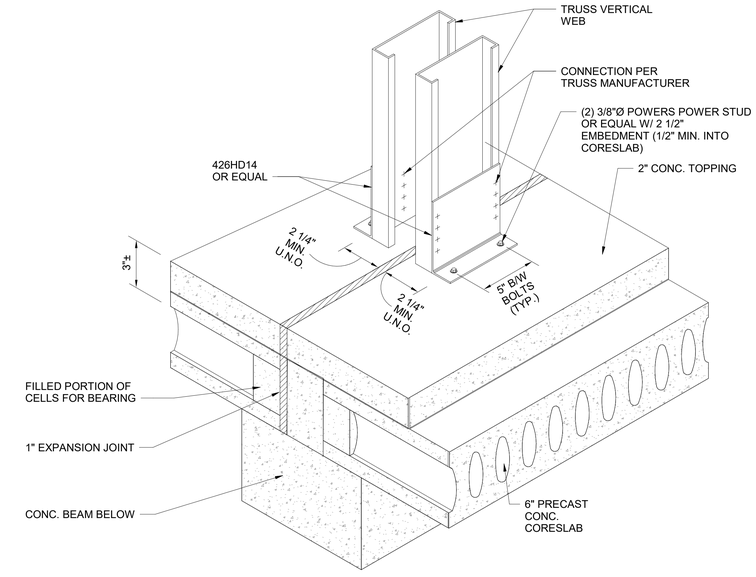


5 TYPICAL TRUSS CONNECTION U.N.O.
SCALE: NOT TO SCALE

MIN. SCREW SPACING = 3/4"
MIN. DISTANCE BETWEEN CENTER OF SCREW AND EDGE OF STUD = 3/8"
MIN. DISTANCE BETWEEN CENTER OF SCREW AND END OF STUD = 3/4"



6 TRUSS CONNECTION @ CHASE WALL ADJACENT TO CATWALK
SCALE: NOT TO SCALE



7 TRUSS CONNECTION @ EXPANSION JOINT
SCALE: NOT TO SCALE

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GENERAL NOTES

1. EACH ANCHOR BOLT TO EXISTING ROOF SLAB SHALL HAVE 2 1/2" MIN. EMBEDMENT (THROUGH 2" CONCRETE TOPPING AND 1/2" INTO CORE SLAB) AND SHALL HAVE A MIN. CAPACITY OF 750 LBS IN TENSION AND 500 LBS IN SHEAR IN f'c = 3,000 PSI CONCRETE, INCLUDING REDUCTION FOR BOLT SPACING.
2. 14 GA. MIN. CLIP ANGLES SHALL HAVE 1,500 LBS MIN. UPLIFT CAPACITY. FOR CLIP INSTALLATION, PROVIDE SIZE AND QUANTITY OF FASTENERS SHOWN OR AS SPECIFIED BY THE CLIP MANUFACTURER, WHICHEVER IS GREATER.
3. ALL FASTENERS FOR LIGHT GAUGE STEEL CONNECTIONS SHALL BE SELF-DRILLING, SELF-TAPPING.

S-501

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ROOF FRAMING DETAILS

DES.	J. LI
DR.	S. RYALS
CHK.	E. WIETERS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

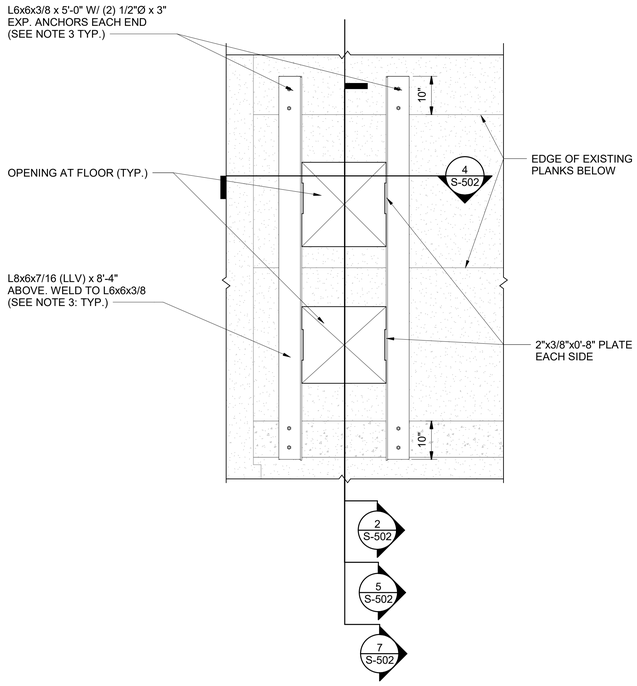
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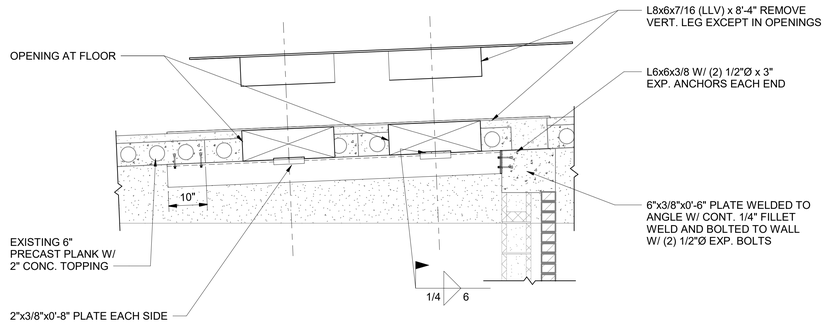
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ISSUE DATE:15 MAY 2020

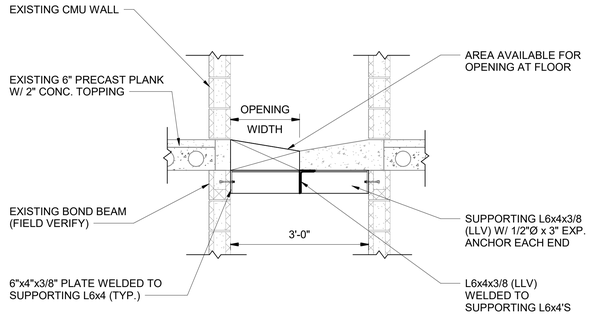
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



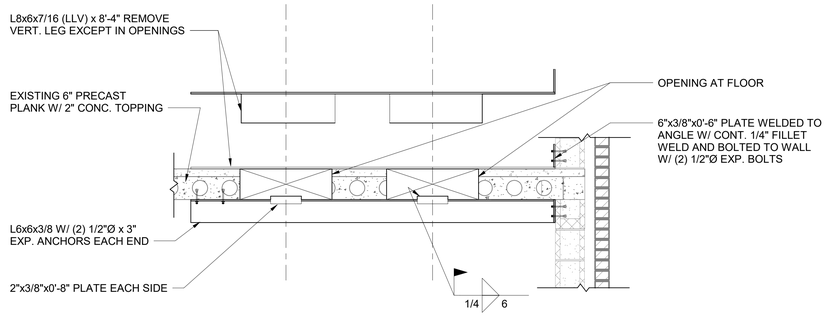
1 PENETRATION AT EXISTING CORESLAB PLAN (VIEW FROM BELOW)
SCALE: NOT TO SCALE



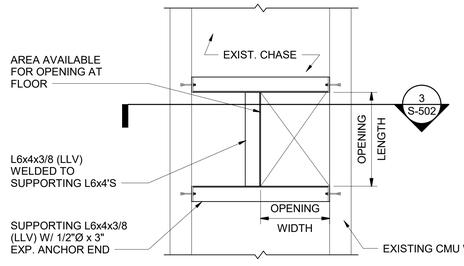
2 SECTION AT OPENING AGAINST WALL AT ROOF LEVEL (CORESLAB)
SCALE: NOT TO SCALE
S-502



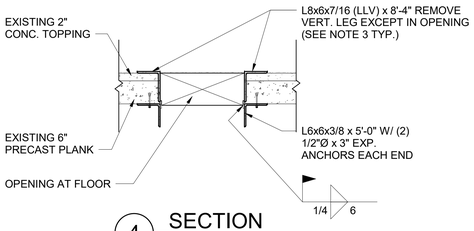
3 SECTION AT EXISTING CHASE (CAST-IN-PLACE)
SCALE: NOT TO SCALE
S-502



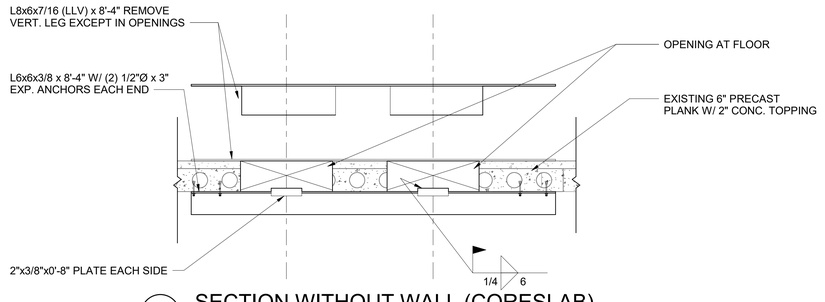
5 SECTION AT OPENING AGAINST WALL AT FLOOR LEVEL (CORESLAB)
SCALE: NOT TO SCALE
S-502



6 PENETRATION AT EXISTING CHASE (PLAN) (CAST-IN-PLACE)
SCALE: NOT TO SCALE



4 SECTION
SCALE: NOT TO SCALE
S-502



7 SECTION WITHOUT WALL (CORESLAB)
SCALE: NOT TO SCALE
S-502

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2. COORDINATE WITH MECHANICAL DRAWINGS FOR ROOF AND FLOOR PENETRATIONS.
3. ADJUST STEEL ANGLE LENGTHS AS REQUIRED IF PRECAST HOLLOW CORE PLANKS ARE NOT 3'-4" IN WIDTH (TYP.).
4. INSTALL ANGLES PRIOR TO CONCRETE EQUIPMENT PAD INSTALLATION.

S-502

CEMS ENGINEERING | ARCHITECTURE
100 Benbow Lodge Rd., Summerville, SC, 29485 843.875.3837
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15103V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

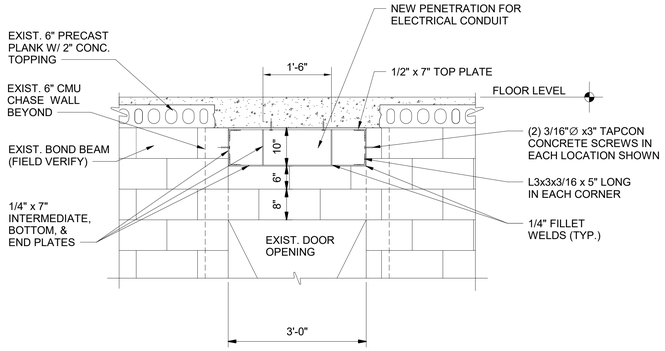
SECTIONS AND DETAILS

DES.	J. LI
DR.	S. RYALS
CHK.	E. WIETERS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

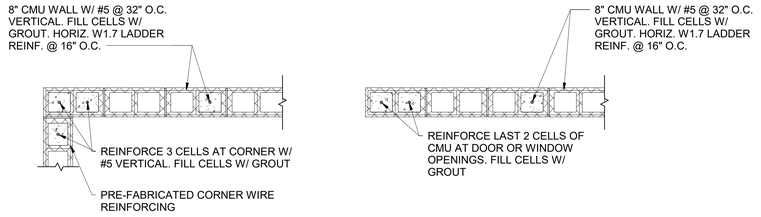
SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023985
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 27 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 DETAIL THROUGH BOND BEAM AT EXISTING CHASE

SCALE: NOT TO SCALE

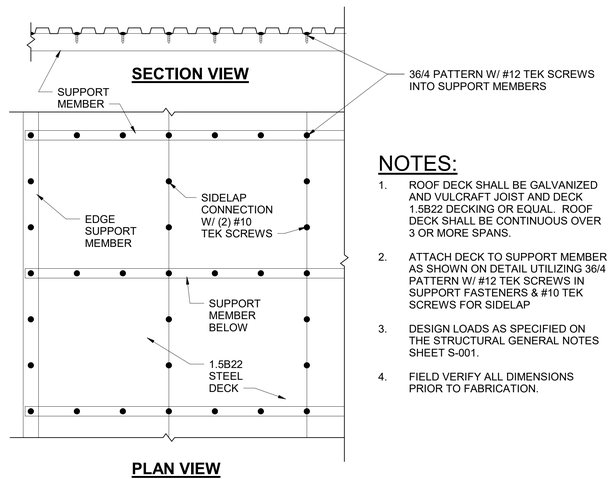


NOTES:

1. TYPICAL VERTICAL CMU REINFORCEMENT SHALL BE #5 @ 32" O.C. UNLESS NOTED OTHERWISE.
2. ALL CELLS BELOW GRADE SHALL BE FULLY GROUTED.

3 TYPICAL CMU REINFORCEMENT

SCALE: NOT TO SCALE

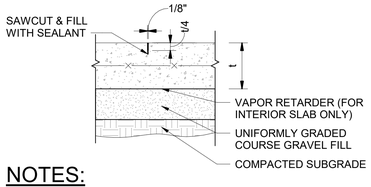


NOTES:

1. ROOF DECK SHALL BE GALVANIZED AND VULCRAFT JOIST AND DECK 1.5B22 DECKING OR EQUAL. ROOF DECK SHALL BE CONTINUOUS OVER 3 OR MORE SPANS.
2. ATTACH DECK TO SUPPORT MEMBER AS SHOWN ON DETAIL UTILIZING 36/4 PATTERN W/ #12 TEK SCREWS IN SUPPORT FASTENERS & #10 TEK SCREWS FOR SIDELAP
3. DESIGN LOADS AS SPECIFIED ON THE STRUCTURAL GENERAL NOTES SHEET S-001.
4. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

2 METAL DECK FASTENING DETAIL (SCREWS)

SCALE: NOT TO SCALE

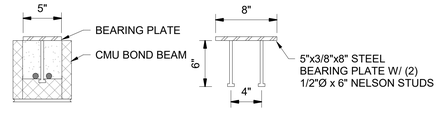


NOTES:

1. INSTALL CONTROL JOINTS SUCH THAT NO DIMENSION BETWEEN JOINTS EXCEEDS 16' OR 36t UNLESS NOTED OTHERWISE.
2. INSTALL CONTROL JOINTS SUCH THAT THE RECTANGULAR SECTIONS CREATED BETWEEN THE JOINTS DO NOT EXCEED A 1:1.25 MAXIMUM RATIO (i.e. 10'x12.5' SECTION).

4 CONTROL JOINT DETAIL

SCALE: NOT TO SCALE



NOTES:

1. ENSURE POSITIVE BEARING BETWEEN PLATE AND GROUT FILL.
2. ENSURE PLATE BEARS ON GROUT FILL. DO NOT BEAR PLATE ON BOND BEAM WALLS.

5 TRUSS BEARING PLATE DETAILS

SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

S-503

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 15152V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

SECTIONS AND DETAILS

DES. J. LI
DR. S. RYALS
CHK. E. WIETERS
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
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SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023986

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 28 OF 143

ARCHITECTURAL ABBREVIATIONS

A

A.F.F.	ABOVE FINISHED FLOOR
ACC. DR.	ACCESS DOOR/PANEL
A.F.	ACCESS FLOORING
ACCESS.	ACCESSORIES
ACOUST.	ACOUSTICAL
ACT.	ACTIVE
ADJ.	ADJUST/ADJUSTABLE
A.C.	AIR CONDITIONING
ALUM.	ALUMINUM
ADAAG	AMERICAN WITH DISABILTITES ACCESSIBILITY GUIDELINES
A.B.	ANCHOR BOLT
&	AND
ANG.	ANGLE
ANOD.	ANODIZED
APP.	APPROVED
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
A.W.I.	ARCHITECTURAL WOODWORK INSTITUTE
@	AT
AVG.	AVERAGE

B

BM.	BEAM
BLKG.	BLOCKING
BD.	BOARD
BTM.	BOTTOM
B.H.M.I.	BUILDER'S HARDWARE MANUFACTURER'S ASSOCIATION, INC.
BLDG.	BUILDING
B.U.R.	BUILT-UP ROOFING

C

CPT.	CARPET
CLG.	CEILING
CLG. HT.	CEILING HEIGHT
CTR.	CENTER
C. TO C.	CENTER TO CENTER
CL.	CENTERLINE
C.T.	CERAMIC TILE
CH.	CHANNEL
C.O.	CLEANOUT
CLR.	CLEAR
CLOS.	CLOSET
COL.	COLUMN
CO.	COMPANY
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONF.	CONFERENCE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
C.F.C.I.	CONTRACTOR FURNISHED / CONTRACTOR INSTALLED
C.J.	CONTROL JOINT
CORR.	CORRIDOR
C.Y.	CUBIC YARD

D

DESC.	DESCRIPTION
DET.	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
DISP.	DISPENSER
DR.	DOOR
DN.	DOWN
D.S.	DOWNSPOUT
DWG.	DRAWING

E

EA.	EACH
E.W.C.	ELECTRIC WATER COOLER
ELEC.	ELECTRICAL OR ELECTRIC
EL.	ELEVATION
E.R.D.	EMERGENCY ROOF DRAIN
ENGR.	ENGINEER
E.P.	EPOXY PAINT
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
ETR	EXISTING TO REMAIN
E.J. (EXP. JT.)	EXPANSION JOINT
EXP.	EXPANSION/EXPOSED
EXP. TO STRUCT.	EXPOSED TO STRUCTURE
EXT.	EXTERIOR
EIFS	EXTERIOR INSULATION FINISHING SYSTEM

ARCHITECTURAL ABBREVIATIONS

F

F.O.G.	FACE OF GIRT
FAC.	FACTORY
FT.	FEET
FV.	FIELD VERIFY
FIN.	FINISH
F.F.	FINISHED FLOOR
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
FLR.	FLOOR
F.D.	FLOOR DRAIN
FLOUR.	FLUORESCENT
FTG.	FOOTING
FDN.	FOUNDATION

G

GA.	GAGE OR GAUGE
GALV.	GALVANIZED
G.L.	GIRT LINE
GL.	GLASS
G.P.	GLOSS PAINT
GOVT.	GOVERNMENT
G.F.G.I.	GOVERNMENT FURNISHED / GOVERNMENT INSTALLED
GYP.	GYPSUM
GYP. BD. (GWB)	GYPSUM BOARD
G.B.F.	GYPSUM BOARD FURRING

H

HR.	HANDRAIL
HDW.	HARDWARE
H.V.A.C.	HEATING VENTILATION AND AIR CONDITIONING
HGT.	HEIGHT OR HIGH
H.P.	HIGH POINT
H.M.	HOLLOW METAL
HKS	HOOKS
HORIZ.	HORIZONTAL
HB	HOSE BIBB

I

IN.	INCH
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR

J

JAN.	JANITOR
J.C.	JANITOR'S CLOSET
JT	JOINT
JST.	JOIST
K.P.	KICK PLATE

L

LAM.	LAMINATE
LDG	LANDING
LAV.	LAVATORY
L.H.	LEFT HAND
LHR	LEFT HAND REVERSE
LT.	LIGHT
LTG	LIGHTING
LONG.	LONGITUDINAL
LVR.	LOUVER
LP.	LOW POINT

M

MGR.	MANAGER
MANUF.	MANUFACTURER
M.B.	MARKER BOARD
MAS.	MASONRY
M.O.	MASONRY OPENING
MATL.	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MET.	METAL
M.W.P.	METAL WALL PANEL
MIN.	MINIMUM
MISC.	MISCELLANEOUS

N

NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
N.I.C.	NOT IN CONTRACT
NTS	NOT TO SCALE
NO. (#)	NUMBER

O

OSHA	OCCUPATIONAL SAFETY AND HEALTH ACT
O.C.	ON CENTER

ARCHITECTURAL ABBREVIATIONS

O.W.	OPEN WEB
OPNG.	OPENING
OPP.	OPPOSITE
O.H.	OPPOSITE HAND
O.D.	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED

P

PT	PAINT
PR.	PAIR
PNL	PANEL
PART.	PARTITION
PLAS.	PLASTER
PLAN.	PLASTIC LAMINATE
PL	PLATE
PLYWD	PLYWOOD
LBS.	POUNDS
PSF	POUNDS/SQUARE FOOT
PSI	POUNDS/SQUARE INCH
PDU	POWER DISTRIBUTION UNIT
P.M.J.F.	PRE-MOLDED JOINT FILLER
PRE-FAB	PREFABRICATED

Q

Q.T.	QUARRY TILE

R

RAF	RAISED ACCESS FLOOR
RECEP.	RECEPTIONIST
REF.	REFERENCE
REINF.	REINFORCEMENT
REQ'D	REQUIRED
REV.	REVISIONS / REVISED
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
R.D.	ROOF DRAIN
RM.	ROOM
R.O.	ROUGH OPENING
RB	RUBBER BASE

S

SCHED.	SCHEDULE
SECT.	SECTION
S.G.	SEMI-GLOSS PAINT
SSK	SERVICE SINK
SHT. MET.	SHEET METAL
SIM.	SIMILAR
SCWD	SOLID CORE WOOD
STC	SOUND TRANSMISSION CLASS
SPEC.	SPECIFICATION
SFRM	SPRAYED FIRE-RESISTIVE MATERIAL
SQ.	SQUARE
ST.	STAIN
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED

T

T.B.	TACKBOARD
TEL.	TELEPHONE
TG	TEMPERED GLASS
THK.	THICK
T'HOLD	THRESHOLD
TOIL.	TOILET
TOC	TOP OF CONRETE
TC	TOP OF CURB
TOS	TOP OF STEEL
TW	TOP OF WALL
TU	TOUCH UP
TYP.	TYPICAL

U

UL	UNDERWRITERS LABORATORIES
UNFIN.	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE

V

V.T.R.	VENT THRU ROOF
VERT.	VERTICAL
VEST.	VESTIBULE
VCT	VINYL COMPOSITION TILE
VCB	VINYL COVE BASE

ARCHITECTURAL ABBREVIATIONS

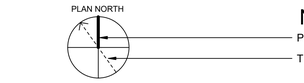
W

W.C.	WATER CLOSET
W.R.G.B.	WATER-RESISTANT GYP. BOARD
W.S.	WEATHERSTRIPPING
W.B.	WHITE BOARD
W.	WIDTH
WDW.	WINDOW
W.R.O.	WINDOW ROUGH OPENING
W.M.P.	WIRE MESH PARTITION
W/	WITH
W/O	WITHOUT
WD.	WOOD

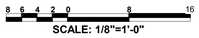
Y

YD.	YARD

SYMBOLS:



NORTH ARROW
PLAN NORTH ARROW
TRUE NORTH ARROW

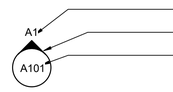


GRAPHIC SCALE

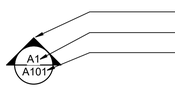
DRAWING SCALE INDICATOR



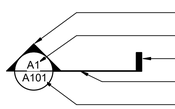
KEYNOTE INDICATORS
DEMOLITION KEYNOTE
NEW WORK KEYNOTE



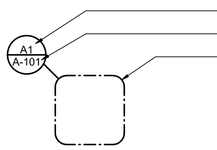
INTERIOR ELEVATION INDICATOR
DETAIL NUMBER
DIRECTION OF ELEVATION
SHEET DETAIL IS LOCATED ON



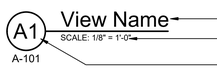
EXTERIOR ELEVATION INDICATOR
DIRECTION OF ELEVATION
DETAIL NUMBER
SHEET DETAIL IS LOCATED ON



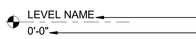
WALL/BUILDING SECTION INDICATOR
DIRECTION OF CUTTING PLANE
DETAIL NUMBER
LIMIT OF CUTTING PLANE
LINE OF CUTTING PLANE
SHEET DETAIL IS LOCATED ON



ENLARGED DETAIL/AREA INDICATOR
DETAIL NUMBER
SHEET DETAIL IS LOCATED ON
LIMIT OF ENLARGED AREA



DRAWING TITLE INDICATOR
DRAWING VIEW TITLE
DRAWING VIEW SCALE
DRAWING VIEW NUMBER

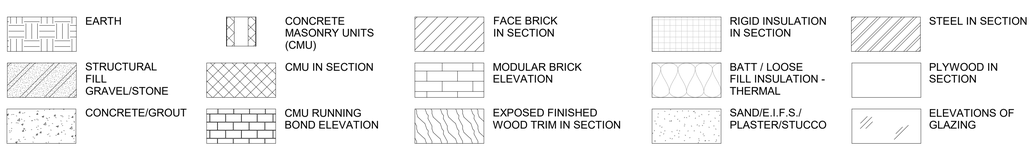


LEVEL INDICATOR
LEVEL NAME
ELEVATION HEIGHT



REVISION CLOUD AND NUMBER INDICATOR
REVISION NUMBER
LIMIT OF REVISION AREA

MATERIAL INDICATIONS:



GENERAL DEMOLITION NOTES:

1. THE SCOPE OF DEMOLITION WORK INCLUDES, BUT IS NOT LIMITED TO, THE DEMOLITION WORK SHOWN ON THE DRAWINGS. CONTRACTOR SHALL PERFORM ALL DEMOLITION AS REQUIRED TO COMPLETE THE NEW WORK, INCLUDING DEMOLITION NOT CALLED OUT ON THE DRAWINGS.
2. DEMOLITION SHOWN ON DRAWINGS DOES NOT REPRESENT THE FULL EXTENT OF REQUIRED DEMOLITION OR DEMOLITION PERFORMED BY OTHER TRADES. CONTRACTOR SHALL REVIEW ALL OTHER DISCIPLINES FOR FULL EXTENT OF DEMOLITION REQUIREMENTS PERTAINING TO EACH DISCIPLINE. ITEMS INCLUDED, BUT NOT LIMITED TO, ARE: CONCRETE FLOOR SLAB AND MASONRY WALLS, PLUMBING FIXTURES, MECHANICAL EQUIPMENT, LIGHT FIXTURES, ETC.
3. EXISTING CONDITIONS AND DIMENSIONS ARE SHOWN PER ORIGINAL DESIGN DRAWINGS AND NON-DESTRUCTIVE SITE INVESTIGATIONS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO START OF DEMOLITION/CONSTRUCTION AND NOTIFY GOVERNMENT PROMPTLY IF ANY DISCREPANCIES EXIST.
4. REMOVE EXISTING WORK/MATERIAL AS DESIGNATED IN ENTIRETY DOWN TO ORIGINAL SUBSTRATES TO PERMIT COMPLETION OF REPAIRS AND REPLACEMENTS.
5. EXISTING GROUNDS, NAILERS AND BLOCKING NOT OTHERWISE INDICATED TO BE REPLACED MAY REMAIN.
6. EXISTING CABLES, WIRES, SATELLITE OR MICROWAVE DISHES, ANTENNAS, AND ROOFTOP MECHANICAL, ELECTRICAL OR ELECTRONIC COMPONENTS TO BE REINSTALLED SHALL BE TEMPORARILY DISCONNECTED AND RECONNECTED BY QUALIFIED CRAFTSMEN.
7. WHERE DEMOLITION AND NEW WORK OCCURS, ANY LEAD PAINT PRESENT SHALL BE REMOVED PER STATE REGULATIONS BY APPROVED AND CERTIFIED ENTITIES. REFER TO LEAD AND ASBESTOS REPORT.
8. PATCH AND FINISH ALL HOLES IN WALLS, FLOOR AND CEILING WITH LIKE MATERIAL WHERE MECHANICAL AND ELECTRICAL ITEMS ARE REMOVED.
9. REMOVE ALL FIRE EXTINGUISHERS AND TURN OVER TO THE GOVERNMENT. DEMOLISH THE CABINET AND PREPARE OPENING FOR NEW CABINET.
10. POWER WASH ALL EXISTING CONCRETE HORIZONTAL AND VERTICAL SURFACES ON ENTIRE BUILDING INCLUDING STONE AGGREGATE FASCIA, SOFFIT, STAIR RISERS AND TREADS. PREPARE FOR SEALER OR DECORATIVE CONCRETE COATING WHERE INDICATED.
11. WASHERS AND DRYERS SHALL BE REMOVED BY GOVERNMENT.
12. SEE FURNITURE NOTES FOR DISPOSAL AND/OR STORAGE REQUIREMENTS.
13. REMOVE ALL EXISTING SIGNAGE AND HARDWARE COMPLETE. DRAFTSTOP DOOR HARDWARE TO REMAIN.

GENERAL NEW WORK NOTES:

1. WORK SHOWN ON THESE DRAWINGS SHALL BE NEW UNLESS NOTED OTHERWISE AS EXISTING.
2. THE DRAWINGS ARE A PART OF THE CONTRACT DOCUMENTS. THE DRAWINGS INDICATE THE GENERAL EXTENT OF THE WORK. THE DRAWINGS ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. WORK SHALL CONFORM TO APPLICABLE INDUSTRY AND MANUFACTURER'S PUBLISHED STANDARDS FOR QUALITY OF MATERIALS AND WORKMANSHIP AS WELL AS REQUIREMENTS IN THESE DRAWINGS AND SPECIFICATIONS. ANY CONFLICTING REQUIREMENTS SHALL BE BROUGHT TO THE CONTRACTING OFFICER'S ATTENTION PRIOR TO PROCEEDING WITH THE WORK.
4. THE CONTRACTOR SHALL PROTECT EXISTING IN-PLACE WORK AND NEW WORK.
5. WORK NOTED "N.I.C." OR "G.F.G.I." IS NOT PART OF THE CONSTRUCTION SCOPE OF WORK.
6. THE CONTRACTOR SHALL PAY FOR AND COORDINATE THE COLLECTION, SEPARATION, RECYCLE, REMOVAL AND LEGAL DISPOSAL OF MATERIALS AND RUBBISH.
7. THE CONTRACTOR SHALL VERIFY DIMENSIONS AND SHALL VERIFY NEW AND EXISTING CONDITIONS SHOWN ON THESE DRAWINGS AND AT THE SITE. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER IN WRITING OF ANY DIFFERING CONDITIONS BEFORE COMMENCEMENT OF WORK. COMMENCEMENT OF WORK SHALL CONSTITUTE ACCEPTANCE OF NEW OR EXISTING CONDITIONS.
8. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN. LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER IN WRITING OF ANY DIFFERING CONDITIONS BEFORE COMMENCEMENT OF WORK.
9. DIMENSIONS NOTED AS 'HOLD' SHALL NOT VARY BY MORE THAN 1/8" FINISHED SURFACE TO FINISHED SURFACE.
10. NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, AND ALTERATION OPERATIONS SHALL BE APPLIED.
11. DIMENSIONS SHOWN ARE TO FACE OF STRUCTURE UNLESS SPECIFICALLY NOTED OTHERWISE.
12. PROVIDE EXPANSION AND CONTROL JOINTS IN WORK PER PRODUCT MANUFACTURER'S STANDARDS.
13. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH APPLICABLE CODES, ORDINANCES AND REGULATORY AGENCIES AND SHALL OBTAIN NECESSARY BUILDING AND FIRE PERMITS FROM AUTHORITIES HAVING JURISDICTION.
14. DISSIMILAR METALS SHALL BE ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
15. PROVIDE ACCESS PANELS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR MECHANICAL EQUIPMENT AND PLUMBING WORK. ACCESS PANEL LOCATIONS SHALL BE REVIEWED WITH THE CONTRACTING OFFICER PRIOR TO PROCEEDING.
16. PIPES, DUCTS AND BUS DUCTS THAT PENETRATE FLOORS OR WALLS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE MOISTURE RESISTIVENESS, FIRE RATING, AND STRUCTURAL INTEGRITY OF THE BUILDING.
17. CONTRACTOR SHALL PLAN THE WORK TO PROVIDE ADEQUATE PROTECTION FOR PERSONS AND PROPERTY AT ALL TIMES, AND EXECUTE THE WORK IN SUCH A MANNER TO AVOID ANY HAZARD TO PERSONS AND PROPERTY.
18. CONTRACTOR SHALL COORDINATE THE PHASING OF THE WORK WITH CONTRACTING OFFICER PRIOR TO START OF WORK.

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

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

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

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

A-001

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CEMS Project No: 1515JV Project Manager: R. Alvar

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

JOHN J. SMITH 4696 NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT WILMINGTON, NC

ISSUE DATE:15 MAY 2020

DES. M. SMITH
DR. P. HARRIS/ R. LEONARD
CHK. M. SMITH
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

REPAIR BEQ HP510

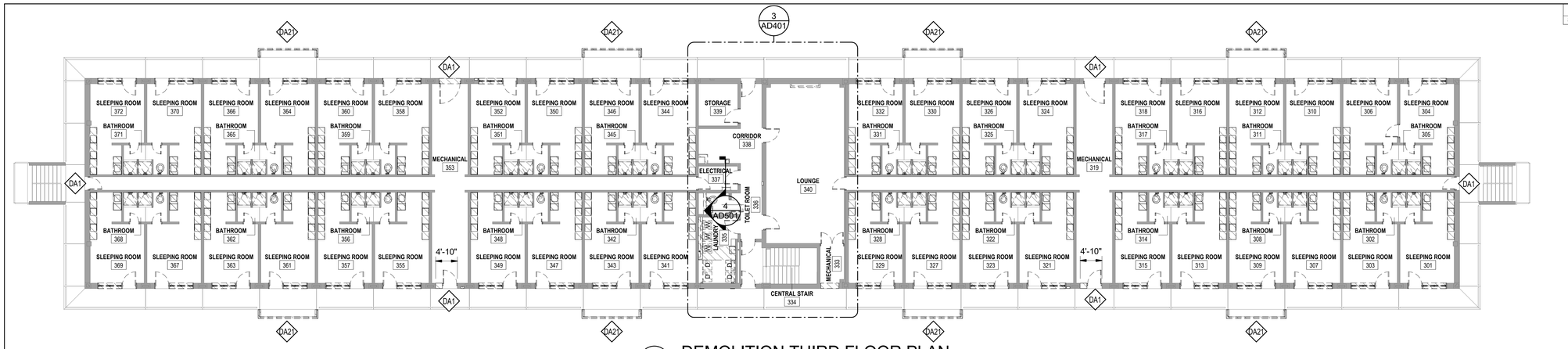
GENERAL NOTES AND LEGENDS

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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CONSTR. CONTR. NO.: N40085-18-B-0042

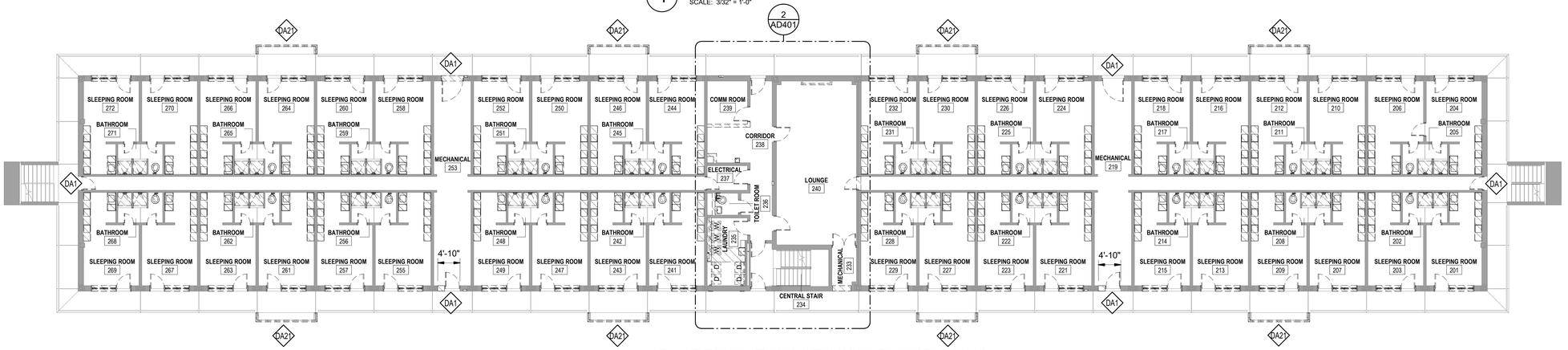
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 29 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



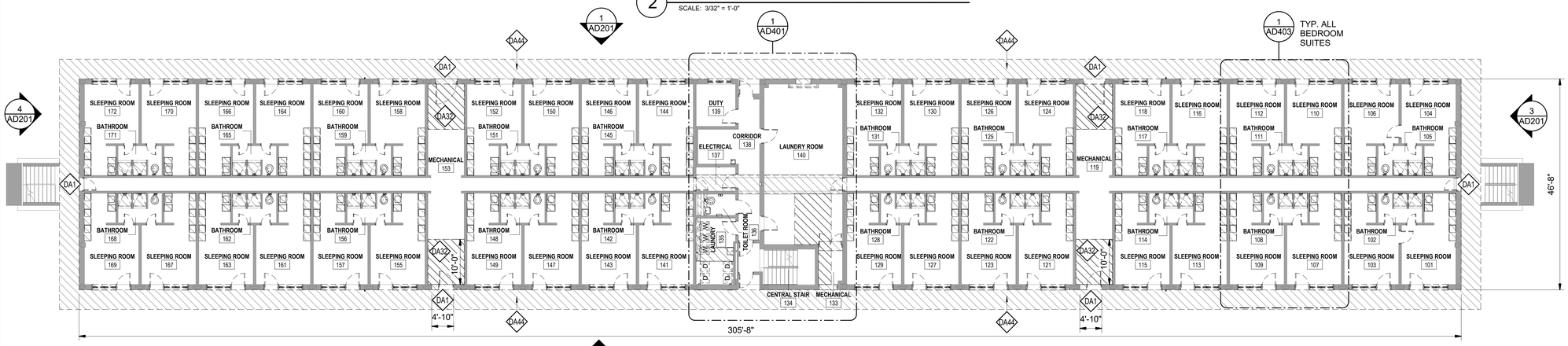
1 DEMOLITION THIRD FLOOR PLAN

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



2 DEMOLITION SECOND FLOOR PLAN

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



2 AD201

3 DEMOLITION FIRST FLOOR PLAN

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

DISCLOSURE OF INFORMATION

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LEGEND

EXISTING TO BE REMOVED. PATCH AND REPAIR

EXISTING TO REMAIN

GENERAL NOTES

1. DEMOLISH ALL SEALANT AND BACKER ROD AT ALL WALKWAYS ON SECOND AND THIRD DECKS. TO INCLUDE BETWEEN PLANKS AND FACE OF BRICK. SEE DETAILS 5 AND 6 ON AD501
2. DEMOLISH ALL EXPANSION JOINT MATERIAL AT ALL LOCATIONS. SEE DETAIL 7 ON AD501

SHEET KEYNOTES

DA1	DEMOLISH EXISTING DOOR AND FRAME COMPLETE. PREPARE OPENING FOR NEW DOOR AND FRAME.
DA21	DEMOLISH EXISTING CONCRETE GUARDRAILS AT BALCONY COMPLETE. PREPARE FOR NEW METAL GUARDRAIL.
DA32	DEMOLISH FLOOR FOR NEW MECHANICAL, ELECTRICAL AND PLUMBING WORK. SEE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR DETAILS.
DA44	DEMOLISH CONCRETE SIDEWALK ON GRADE.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

AD101

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.362.1646
CEMS Project No: 15153V Project Manager: R. Alvar

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

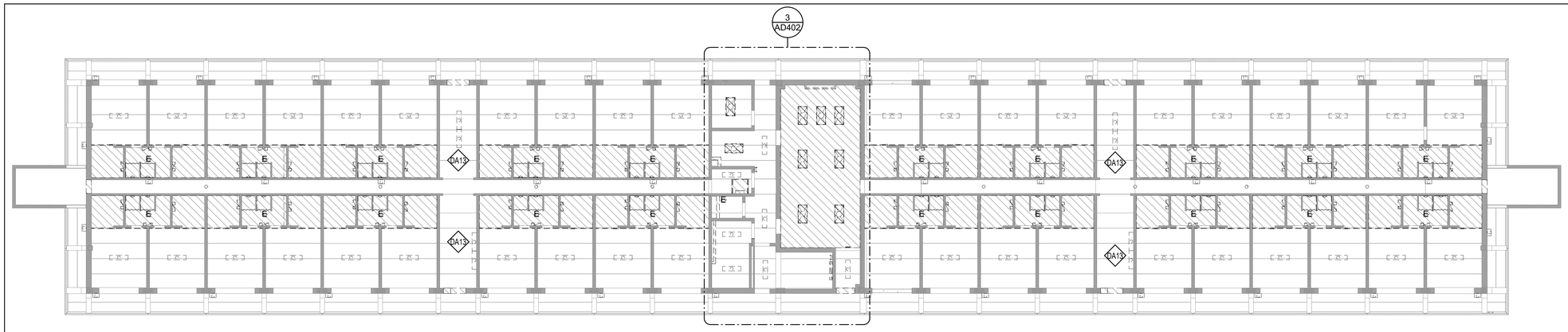
DES. M. SMITH	
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REPAIR BEQ HP510

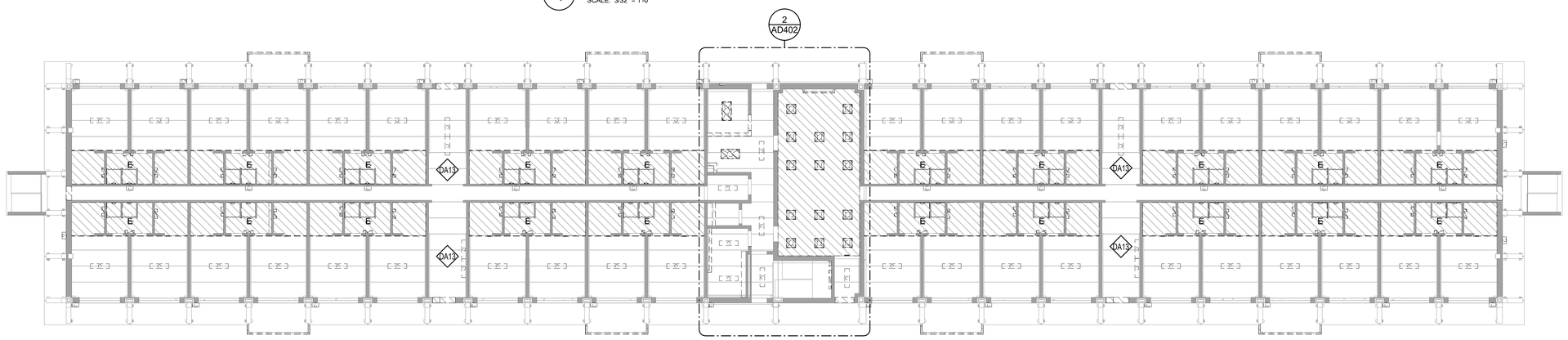
DEMOLITION FLOOR PLANS

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 30 OF 143

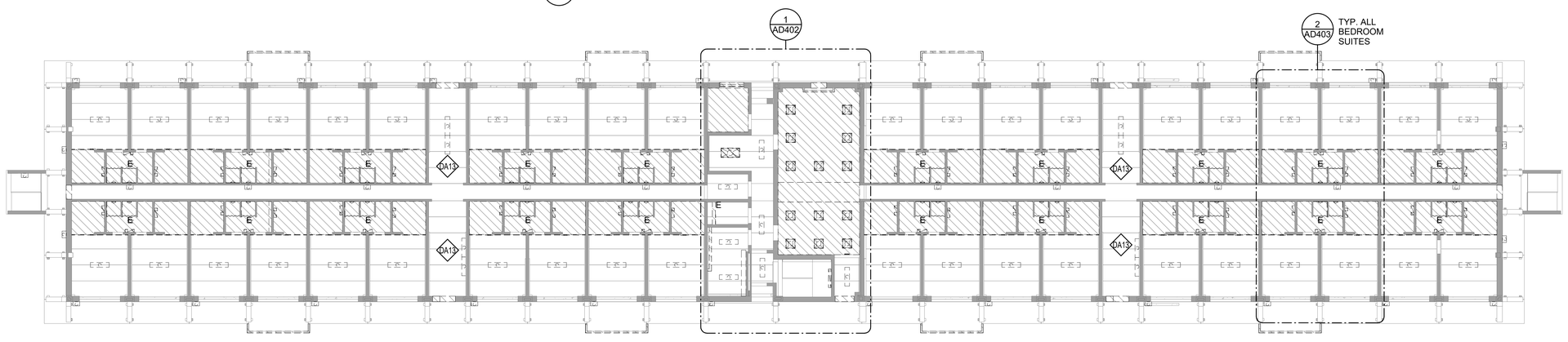
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 DEMOLITION THIRD FLOOR REFLECTED CEILING PLAN
SCALE: 3/32" = 1'-0"



2 DEMOLITION SECOND FLOOR REFLECTED CEILING PLAN
SCALE: 3/32" = 1'-0"



3 DEMOLITION FIRST FLOOR REFLECTED CEILING PLAN
SCALE: 3/32" = 1'-0"

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LEGEND

EXISTING TO BE REMOVED. PATCH AND REPAIR

EXISTING TO REMAIN

GENERAL NOTES

1. DEMOLISH ALL SEALANT AND BACKER ROD AT ALL WALKWAYS ON SECOND AND THIRD DECKS. TO INCLUDE BETWEEN PLANKS AND FACE OF BRICK. SEE DETAILS 5 AND 6 ON AD501
2. DEMOLISH ALL EXPANSION JOINT MATERIAL AT ALL LOCATIONS. SEE DETAIL 7 ON AD501

SHEET KEYNOTES

DA13 DEMOLISH EXISTING LIGHTING FIXTURE, SEE ELECTRICAL.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

JOSHUA J. SMITH 4696 NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT

ISSUE DATE:15 MAY 2020

AD102

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.362.1646
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

DEMOLITION REFLECTED CEILING PLANS

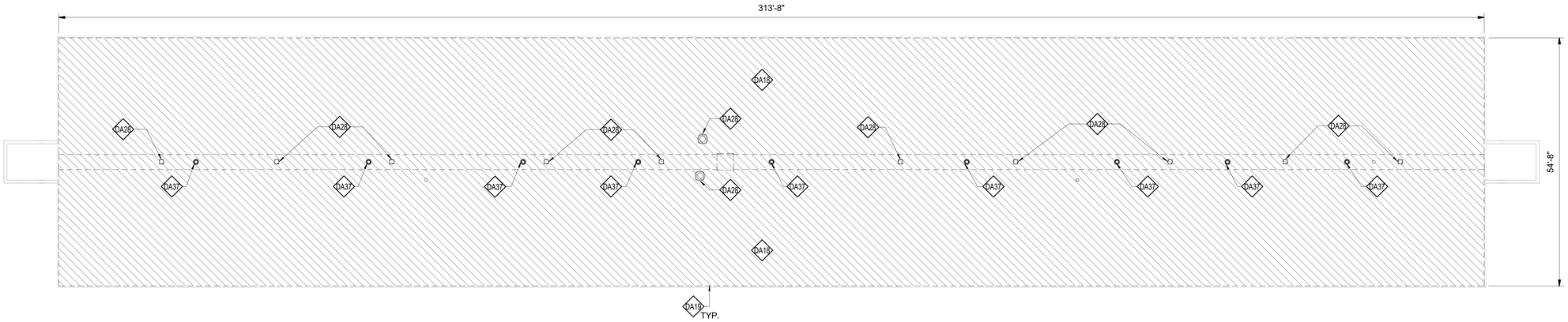
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
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SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023989

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 31 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 DEMOLITION ROOF PLAN

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

FURNITURE NOTES

1. THE CONTRACTOR SHALL MOVE ALL WHEELED DESK CHAIRS, COMFORTERS, REFRIGERATORS AND MICROWAVES TO BUILDING 1212 AND/OR BUILDING 1301 AT (910) 451-5762.
2. THE CONTRACTOR SHALL TRANSPORT ALL METAL WARDROBES, METAL SECRETARIES, AND METAL RACKS TO THE MARINE CORPS BASE CAMP LEJEUNE QUALIFIED RECYCLING PROGRAM'S TREATMENT AND PROCESSING (T AND P) FACILITY LOCATED OFF OF PINEY GREEN ROAD LOT.
   a. POC: ALICIA FILZEN, QUALIFIED RECYCLING PROGRAM (QRP) MANAGER FSC/RECYCLING, GF PUBLIC WORKS DIVISION, BLDG. 982, PINEY GREEN ROAD, CAMP LEJEUNE, NC 28547 AT (910) 451-2037 OR JASON CORNELISON (910) 451-4214.
   b. QRP HOURS OF OPERATION: 0700-1500 MONDAY THROUGH THURSDAY AND FRIDAY 0700-1400.
   c. THE CONTRACTOR SHALL FOLLOW THIS PROTOCOL:
      - THE CONTRACTOR MUST PRESENT A COPY OF THE APPROVED CONTRACT TO THE QRP MANAGER.
      - ONCE THE CONTRACT HAS BEEN RECEIVED BY THE QRP, THE CONTRACTOR CAN DELIVER THE SCRAP FURNITURE ITEMS TO THE QRP FACILITY ALSO KNOWN AS THE TREATMENT AND PROCESSING FACILITY (T AND P).
      - THE CONTRACTOR SHALL WEIGH LOAD ON THE BASE LANDFILL SCALES.
      - THE CONTRACTOR SHALL DUMP ALL ITEMS AT THE T AND P LOCATED ON PINEY GREEN ROAD AS INDICATED BY THE QRP PERSONNEL.
      - THE CONTRACTOR SHALL FOLLOW THE QRP PERSONNEL INSTRUCTIONS REGARDING PILE HEIGHT, LOCATION OF VARIOUS ITEMS, ETC.
      - THE CONTRACTOR SHALL RE-WEIGH, AFTER THE LOAD HAS BEEN EMPTIED, ON THE BASE LANDFILL SCALES AND PROVIDE WEIGHT TICKETS TO THE QRP.
3. THE CONTRACTOR SHALL DISPOSE OF ALL OF THE OTHER ITEMS INCLUDING BUT NOT LIMITED TO DESKS, NIGHT TABLES, MATTRESSES, WARDROBES, LAMPS, MIRRORS, AREA RUGS, AND DRAPERIES AT A PERMITTED OFF-SITE SOLID WASTE LANDFILL.

SHEET KEYNOTES

DA18 DEMOLISH EXISTING ROOFING DOWN TO CONCRETE DECK. DEMOLISH ALL ROOF MEMBRANE, INSULATION, PITCH POCKETS, FLASHINGS, ETC. COMPLETE.

DA19 DEMOLISH AND REMOVE ALL COPING AROUND PARAPET EDGE.

DA28 ALL EXISTING ROOF EXHAUST FANS AND HOODS TO BE REMOVED, SEE MECHANICAL. ALL PENETRATIONS ARE TO BE FILLED AND PATCHED TO MATCH EXISTING CONDITIONS.(UNLESS INDICATED TO REMAIN FOR REUSE BY MECHANICAL)

DA37 DEMOLISH EXISTING ROOF DRAINS AND LEADERS, CAP AT GROUND LEVEL. INFILL PENETRATIONS WITH MATERIAL TO MATCH EXISTING.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

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MARK J. SMITH 4696 NORTH CAROLINA REGISTERED

ISSUE DATE:15 MAY 2020

AD103

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ HP510

DEMOLITION ROOF PLAN

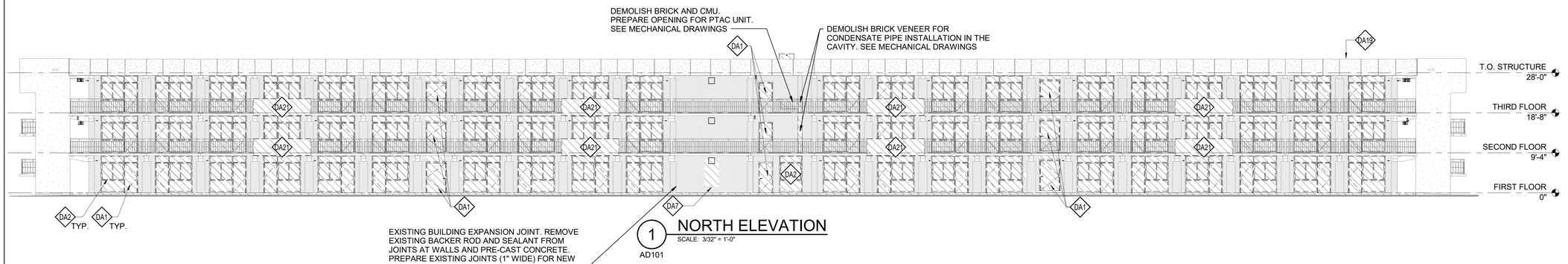
DES.	M. SMITH
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CHK.	M. SMITH
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DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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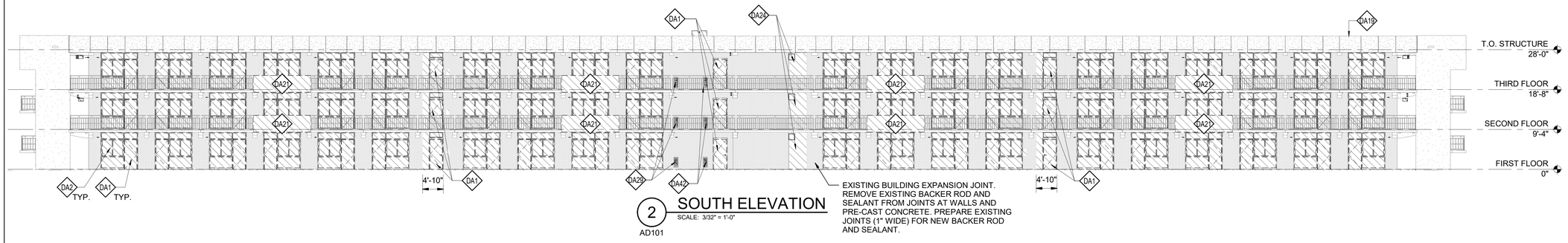
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SCALE: AS NOTED SPEC. 05-18-0042 SHEET 32 OF 143

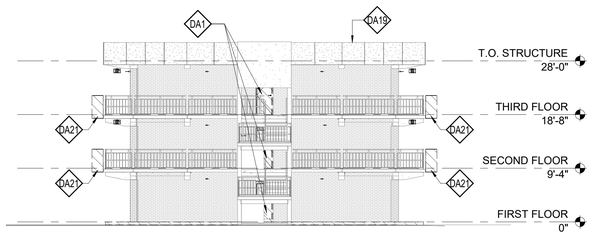
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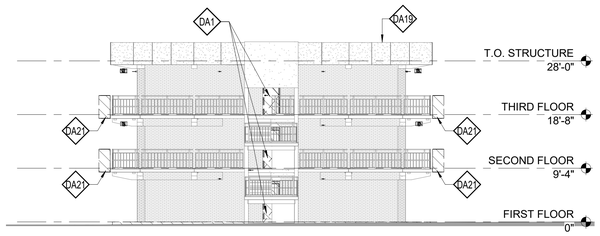
1 NORTH ELEVATION
SCALE: 3/32" = 1'-0"
AD101



2 SOUTH ELEVATION
SCALE: 3/32" = 1'-0"
AD101



3 EAST ELEVATION
SCALE: 3/32" = 1'-0"
AD101



4 WEST ELEVATION
SCALE: 3/32" = 1'-0"
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SHEET KEYNOTES

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DA2	DEMOLISH EXISTING WINDOW AND FRAME. PREPARE OPENING FOR NEW WINDOW AND FRAME.
DA7	DEMOLISH EXISTING EXTERIOR WALL FOR MECHANICAL LOUVER. COORDINATE WITH MECHANICAL. SEE SHEET A-401 FOR DETAILS.
DA19	DEMOLISH AND REMOVE ALL COPING AROUND PARAPET EDGE.
DA21	DEMOLISH EXISTING CONCRETE GUARDRAILS AT BALCONY COMPLETE. PREPARE FOR NEW METAL GUARDRAIL.
DA24	DEMOLISH PORTION OF EXISTING WALL; CLEAN AND PREP FOR NEW DOOR.
DA29	DEMOLISH EXISTING EXHAUST LOUVER COMPLETE AND PREPARE FOR INFILL.
DA42	DEMOLISH EXISTING EXHAUST LOUVER COMPLETE AND PREPARE OPENING FOR NEW LOUVER.

16 8 0 16
SCALE: 3/32"=1'-0"
GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

AD201

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.362.1646
CEMS Project No: 15153V
Project Manager: R. Alvar

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

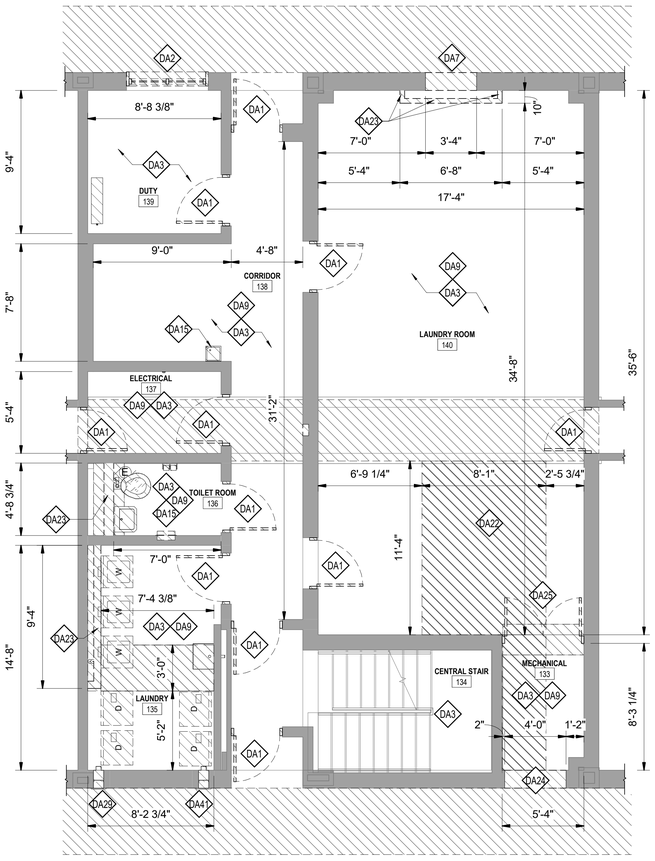
REPAIR BEQ HP510

DEMOLITION ELEVATIONS

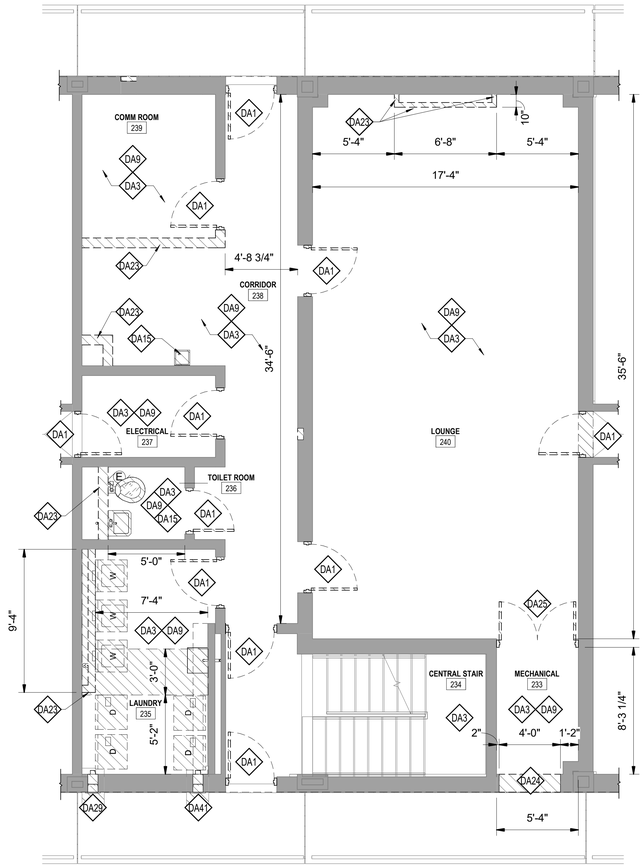
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SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 33 OF 143

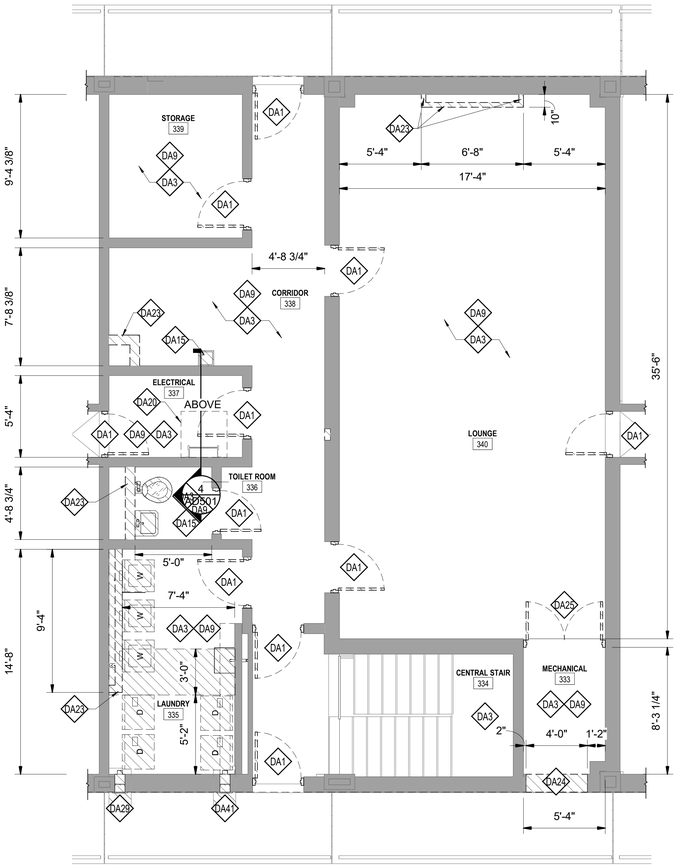
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED DEMOLITION FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"
AD101



2 ENLARGED DEMOLITION SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"
AD101



3 ENLARGED DEMOLITION THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"
AD101

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DA3	DEMOLISH EXISTING FLOOR FINISH COMPLETE. CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FINISHES.
DA7	DEMOLISH EXISTING EXTERIOR WALL FOR MECHANICAL LOUVER. COORDINATE WITH MECHANICAL. SEE SHEET A-401 FOR DETAILS.
DA9	CLEAN AND PREPARE EXISTING CONCRETE MASONRY WALLS FOR NEW PAINT. PATCH ALL DEFECTIVE AREAS PRIOR TO APPLICATION. SEE FINISH SCHEDULE.
DA15	DEMOLISH EXISTING PLUMBING FIXTURES AND TOILET ACCESSORIES, SEE PLUMBING.
DA20	DEMOLISH AND REMOVE EXISTING ROOF HATCH, PREPARE OPENING FOR NEW ROOF HATCH.
DA22	DEMOLISH FLOOR AS INDICATED FOR INSTALLATION OF NEW PLUMBING, FLOOR DRAIN AND SLOPED FLOOR. COORDINATE WITH PLUMBING AND STRUCTURAL.
DA23	DEMOLISH EXISTING CONCRETE MASONRY WALL.
DA24	DEMOLISH PORTION OF EXISTING WALL; CLEAN AND PREP FOR NEW DOOR.
DA25	DEMOLISH EXISTING DOOR AND FRAME COMPLETE.
DA29	DEMOLISH EXISTING EXHAUST LOUVER COMPLETE AND PREPARE FOR INFILL.
DA41	DEMOLISH PORTION OF EXISTING WALL; CLEAN AND PREPARE FOR NEW LOUVER.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

AD401

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
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MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

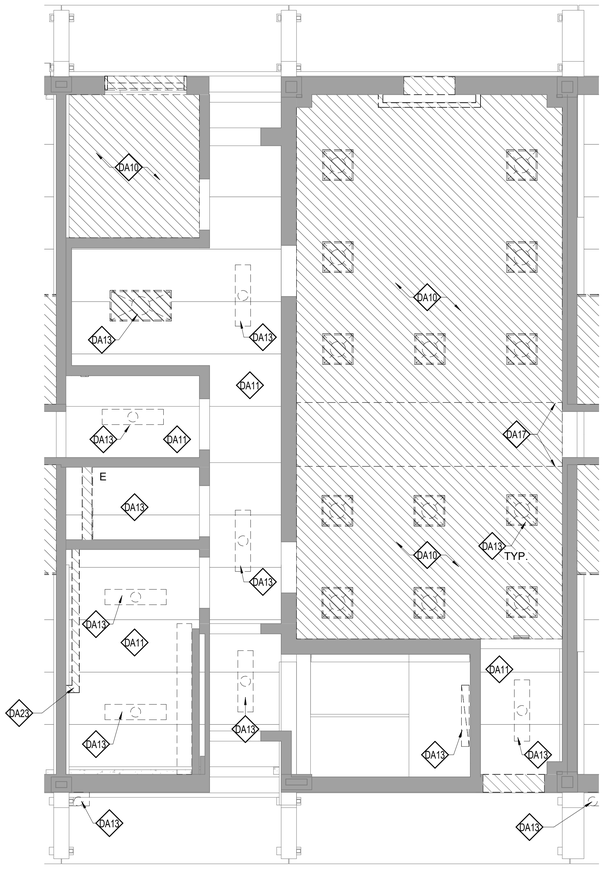
REPAIR BEQ HP510

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

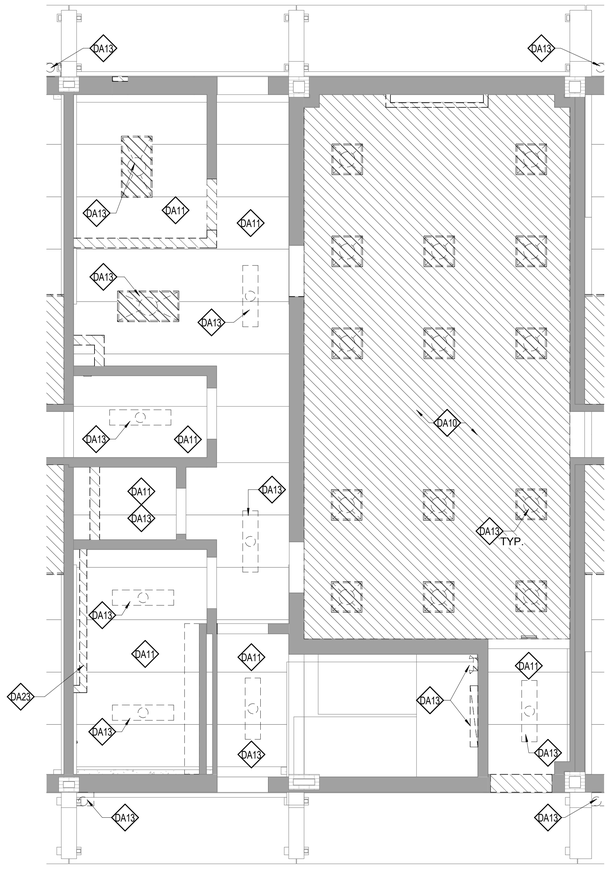
DEMOLITION ENLARGED CORE FLOOR PLAN

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023992
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 34 OF 143

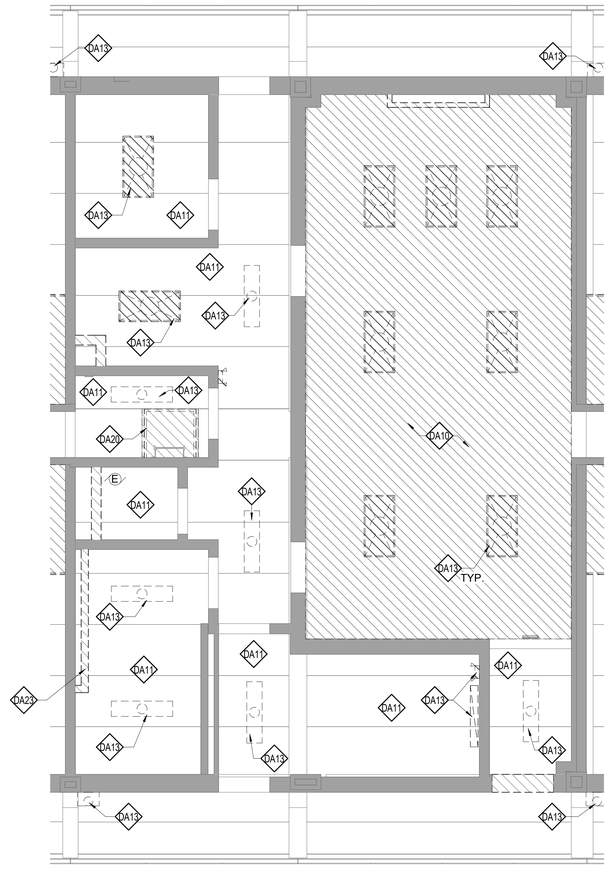
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED DEMOLITION FIRST FLOOR CORE REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"
AD102



2 ENLARGED DEMOLITION SECOND FLOOR CORE REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"
AD102



3 ENLARGED DEMOLITION THIRD FLOOR CORE REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"
AD102

DISCLOSURE OF INFORMATION

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LEGEND

EXISTING TO BE REMOVED. PATCH AND REPAIR

EXISTING TO REMAIN

GENERAL NOTES

1. DEMOLISH ALL SEALANT AND BACKER ROD AT ALL WALKWAYS ON SECOND AND THIRD DECKS. TO INCLUDE BETWEEN PLANKS AND FACE OF BRICK. SEE DETAILS 5 AND 6 ON AD501
2. DEMOLISH ALL EXPANSION JOINT MATERIAL AT ALL LOCATIONS. SEE DETAIL 7 ON AD501

SHEET KEYNOTES

DA10	DEMOLISH EXISTING CEILING AND SUSPENSION SYSTEM.
DA11	DEMOLISH ALL EXISTING CEILING FINISHES. REMOVE TEXTURED CEILING FINISH DOWN TO CONCRETE SUBSTRATE. PATCH ALL DEFECTIVE AREAS PRIOR TO APPLICATION. SEE FINISH SCHEDULE.
DA13	DEMOLISH EXISTING LIGHTING FIXTURE, SEE ELECTRICAL.
DA17	DEMOLISH EXISTING GYPSUM CEILING AND FRAMING. PREPARE FOR NEW GYPSUM CEILING.
DA20	DEMOLISH AND REMOVE EXISTING ROOF HATCH, PREPARE OPENING FOR NEW ROOF HATCH.
DA23	DEMOLISH EXISTING CONCRETE MASONRY WALL.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

AD402

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 151537V Project Manager: R. Alvor

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

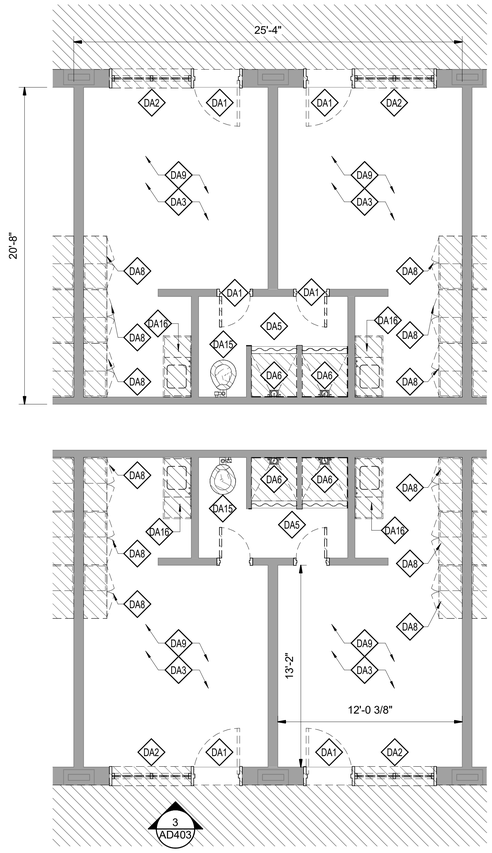
REPAIR BEQ HP510

DEMOLITION ENLARGED CORE REFLECTED CEILING PLANS

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

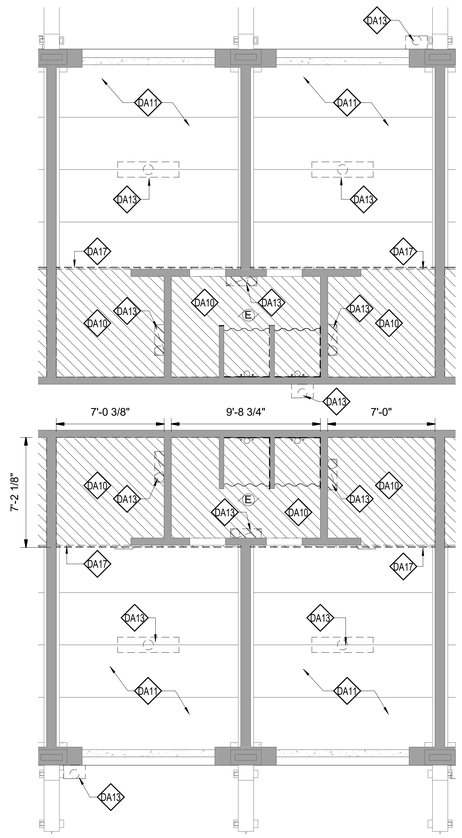
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E1	80091	60023993
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 35 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



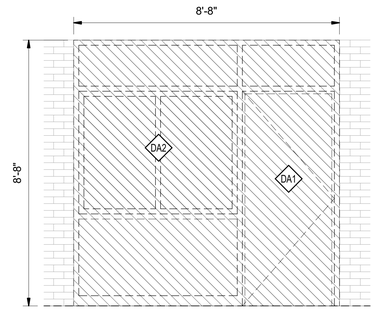
ENLARGED DEMOLITION SLEEPING ROOM FLOOR PLAN

1 AD101 — SCALE: 1/4" = 1'-0"



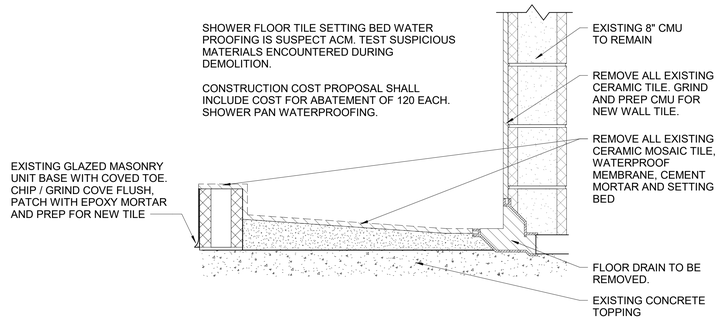
ENLARGED DEMOLITION SLEEPING ROOM REFLECTED CEILING PLAN

2 AD102 — SCALE: 1/4" = 1'-0"



DEMOLITION SLEEPING ROOM EXTERIOR ELEVATION

3 AD403 — SCALE: 1/2" = 1'-0"



TYPICAL SHOWER DEMOLITION

4 — SCALE: 1 1/2" = 1'-0"

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LEGEND

EXISTING TO BE REMOVED. PATCH AND REPAIR

EXISTING TO REMAIN

GENERAL NOTES

1. DEMOLISH ALL SEALANT AND BACKER ROD AT ALL WALKWAYS ON SECOND AND THIRD DECKS. TO INCLUDE BETWEEN PLANKS AND FACE OF BRICK. SEE DETAILS 5 AND 6 ON AD501
2. DEMOLISH ALL EXPANSION JOINT MATERIAL AT ALL LOCATIONS. SEE DETAIL 7 ON AD501

SHEET KEYNOTES

DA1	DEMOLISH EXISTING DOOR AND FRAME COMPLETE. PREPARE OPENING FOR NEW DOOR AND FRAME.
DA2	DEMOLISH EXISTING WINDOW AND FRAME. PREPARE OPENING FOR NEW WINDOW AND FRAME.
DA3	DEMOLISH EXISTING FLOOR FINISH COMPLETE. CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FINISHES.
DA5	DEMOLISH EXISTING THINSET CERAMIC TILE FLOOR TILE, CERAMIC WALL BASE AND THRESHOLDS. CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW PORCELAIN TILE INSTALLATION.
DA6	DEMOLISH EXISTING FLOOR DRAIN, SHOWER PAN, AND WATERPROOFING MEMBRANE COMPLETE. PREPARE FLOOR FOR NEW SHOWER PAN AND FLOOR DRAIN COVER.
DA8	REMOVE EXISTING METAL LOCKERS.
DA9	CLEAN AND PREPARE EXISTING CONCRETE MASONRY WALLS FOR NEW PAINT. PATCH ALL DEFECTIVE AREAS PRIOR TO APPLICATION. SEE FINISH SCHEDULE.
DA10	DEMOLISH EXISTING CEILING AND SUSPENSION SYSTEM.
DA11	DEMOLISH ALL EXISTING CEILING FINISHES. REMOVE TEXTURED CEILING FINISH DOWN TO CONCRETE SUBSTRATE. PATCH ALL DEFECTIVE AREAS PRIOR TO APPLICATION. SEE FINISH SCHEDULE.
DA13	DEMOLISH EXISTING LIGHTING FIXTURE, SEE ELECTRICAL.
DA15	DEMOLISH EXISTING PLUMBING FIXTURES AND TOILET ACCESSORIES, SEE PLUMBING.
DA16	DEMOLISH EXISTING VANITY CABINET, INCLUDING, BUT NOT LIMITED TO: PORCELAIN SINK, PLUMBING TRIM, PLASTIC LAMINATE COUNTERTOP, AND WALL MOUNTED MIRROR ABOVE.
DA17	DEMOLISH EXISTING GYPSUM CEILING AND FRAMING. PREPARE FOR NEW GYPSUM CEILING.

PLAN NORTH

1 0 1
SCALE: 1 1/2"=1'-0"

2 1 0 2 4
SCALE: 1/2"=1'-0"

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"

GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.362.1646
CEMS Project No: 15153V Project Manager: R. Alvar

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

AD403

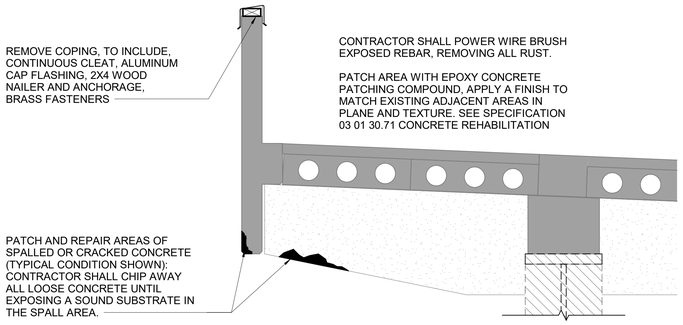
REPAIR BEQ HP510

DES. M. SMITH
DR. P. HARRIS/ R. LEONARD
CHK. M. SMITH
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

DEMOLITION ENLARGED SLEEPING ROOM PLAN, RCP, AND ELEVATIONS

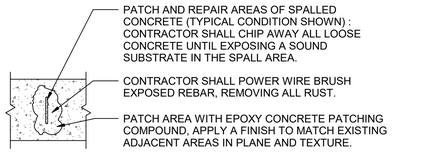
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 36 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



TYPICAL 10 LOCATIONS

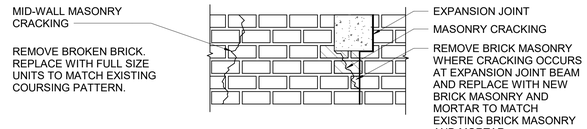
1 ROOF PARAPET CONDITION
SCALE: 1" = 1'-0"



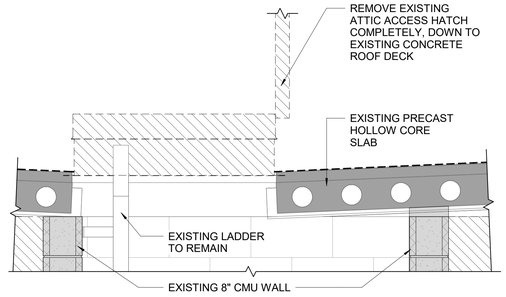
SEE SPECIFICATION 03 01 30.71 CONCRETE REHABILITATION

TYPICAL 60 LOCATIONS

2 TYPICAL SPALLING CONCRETE REPAIR
SCALE: 1 1/2" = 1'-0"

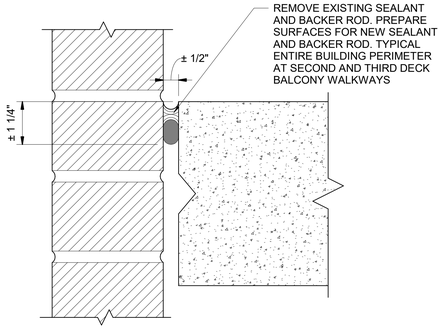


3 TYPICAL BRICK MASONRY REPAIR
SCALE: 1 1/2" = 1'-0"

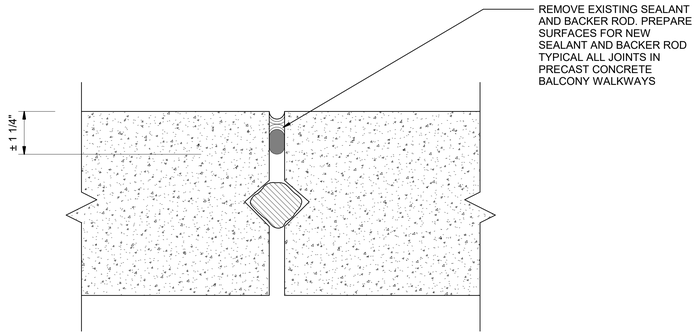


4 ROOF ACCESS HATCH
SCALE: 1" = 1'-0"

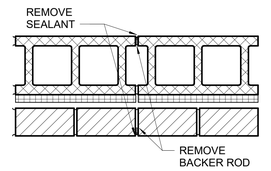
AD101



5 TYPICAL WALKWAY/BLDG JOINT DEMOLITION
SCALE: 6" = 1'-0"



6 TYPICAL WALKWAY JOINT DEMOLITION
SCALE: 6" = 1'-0"



7 TYPICAL EXPANSION JOINT DEMOLITION
SCALE: 1 1/2" = 1'-0"

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3" 2 1 0 3"
SCALE: 6"=1'-0"

1 0 1
SCALE: 1 1/2"=1'-0"

1 1/2 0 1 2
SCALE: 1"=1'-0"

GRAPHIC SCALES

BRIAN J. SMITH 4696 NORTH CAROLINA SUNNABON, NC

ISSUE DATE:15 MAY 2020

AD501

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.362.1646
CEMS Project No: 15153V Project Manager: R. Alvar

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

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

REPAIR BEQ HP510

DEMOLITION DETAILS

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023995

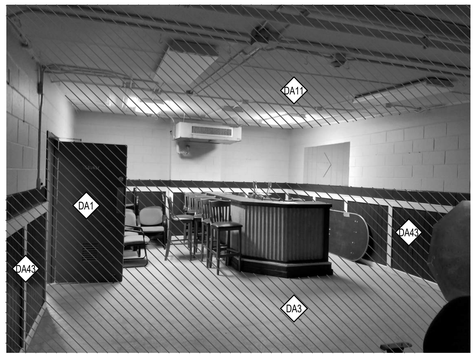
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 37 OF 143

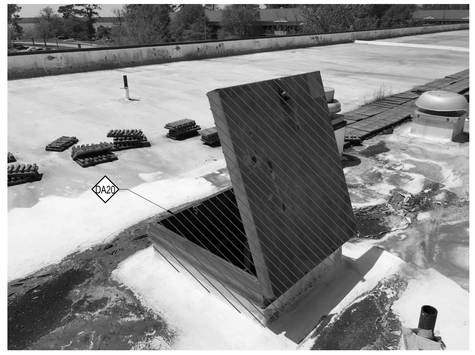
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 CONCRETE BALCONY GUARD DEMO
SCALE: NOT TO SCALE



2 LOUNGE DEMO
SCALE: NOT TO SCALE



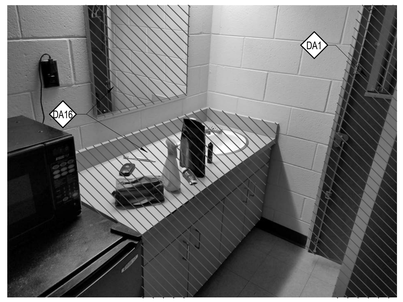
3 ROOF HATCH DEMO
SCALE: NOT TO SCALE



4 SLEEPING ROOM EXTERIOR DEMO
SCALE: NOT TO SCALE



5 SLEEPING ROOM INT SOFFIT DEMO
SCALE: NOT TO SCALE



6 VANITY DEMO
SCALE: NOT TO SCALE



7 SHOWER DEMO
SCALE: NOT TO SCALE

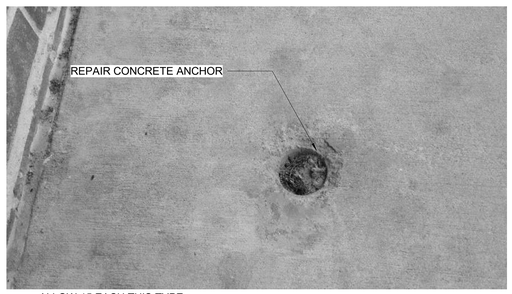


8 EDGE SPALL
SCALE: NOT TO SCALE



ALLOW 15 EACH THIS TYPE

9 OUTRIGGER SPALL
SCALE: NOT TO SCALE



ALLOW 15 EACH THIS TYPE

10 TOP ANCHOR SPALL
SCALE: NOT TO SCALE



ALLOW 60 EACH THIS TYPE

11 REBAR END SPALL
SCALE: NOT TO SCALE

SHEET KEYNOTES

DA1	DEMOLISH EXISTING DOOR AND FRAME COMPLETE. PREPARE OPENING FOR NEW DOOR AND FRAME.
DA2	DEMOLISH EXISTING WINDOW AND FRAME. PREPARE OPENING FOR NEW WINDOW AND FRAME.
DA3	DEMOLISH EXISTING FLOOR FINISH COMPLETE. CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW FINISHES.
DA4	DEMOLISH EXISTING CERAMIC WALL TILE COMPLETE. PREPARE CONCRETE MASONRY FOR NEW FINISHES.
DA5	DEMOLISH EXISTING THINSET CERAMIC TILE FLOOR TILE, CERAMIC WALL BASE AND THRESHOLDS. CLEAN AND PREPARE EXISTING CONCRETE SLAB FOR NEW PORCELAIN TILE INSTALLATION.
DA6	DEMOLISH EXISTING FLOOR DRAIN, SHOWER PAN, AND WATERPROOFING MEMBRANE COMPLETE. PREPARE FLOOR FOR NEW SHOWER PAN AND FLOOR DRAIN COVER.
DA11	DEMOLISH ALL EXISTING CEILING FINISHES. REMOVE TEXTURED CEILING FINISH DOWN TO CONCRETE SUBSTRATE. PATCH ALL DEFECTIVE AREAS PRIOR TO APPLICATION. SEE FINISH SCHEDULE.
DA14	DEMOLISH ALL EXISTING TOILET ACCESSORIES INCLUDING, BUT NOT LIMITED TO: TOILET TISSUE DISPENSER, SOAP DISPENSER, TOWEL BARS, SHOWER ROD, SHOWER CURTAIN, GRAB BAR AND INTEGRAL TRASH/TOWEL RECEPTACLE.
DA16	DEMOLISH EXISTING VANITY CABINET, INCLUDING, BUT NOT LIMITED TO: PORCELAIN SINK, PLUMBING TRIM, PLASTIC LAMINATE COUNTERTOP, AND WALL MOUNTED MIRROR ABOVE.
DA20	DEMOLISH AND REMOVE EXISTING ROOF HATCH, PREPARE OPENING FOR NEW ROOF HATCH.
DA21	DEMOLISH EXISTING CONCRETE GUARDRAILS AT BALCONY COMPLETE. PREPARE FOR NEW METAL GUARDRAIL.
DA31	DEMOLISH EXISTING GYPSUM WALLBOARD AND FRAMING.
DA43	REMOVE WAINSCOT. PATCH AND PREPARE WALL FOR NEW PAINT

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AD901

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3837
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 19153V Project Manager: R. Alvar

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

REGISTERED PROFESSIONAL ENGINEER 4696 NORTH CAROLINA WINNABOW, NC
ISSUE DATE:15 MAY 2020

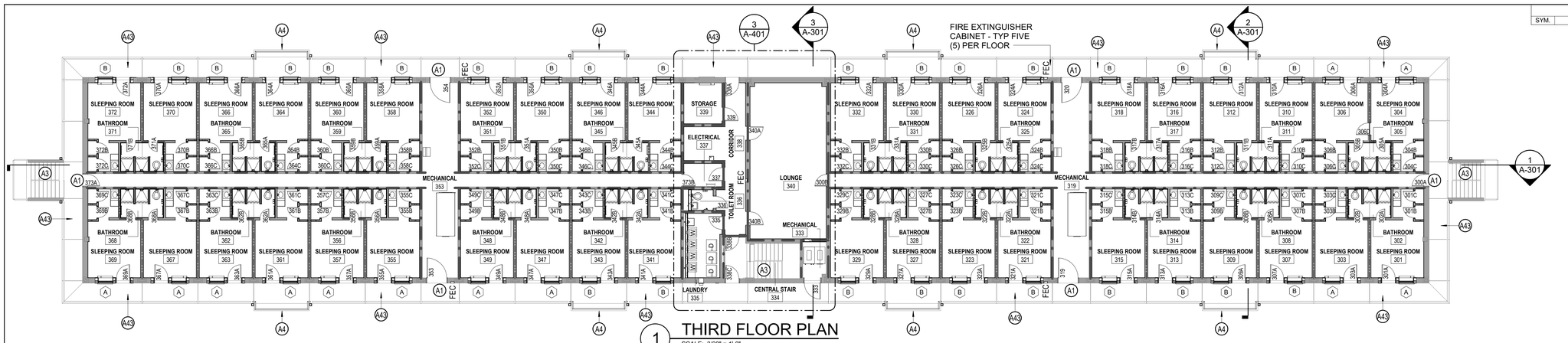
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

REPAIR BEQ HP510

DEMOLITION PHOTOS

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023996
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 38 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR PLAN

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

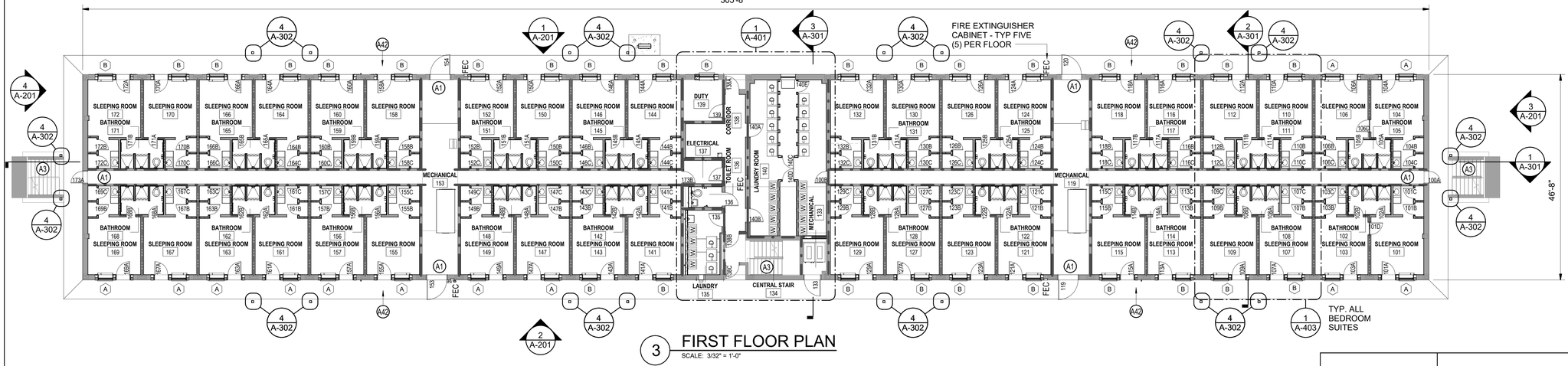
315'-0"



2 SECOND FLOOR PLAN

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

305'-8"



3 FIRST FLOOR PLAN

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

DISCLOSURE OF INFORMATION

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GENERAL NOTES

1. COORDINATE WITH DEMOLITION AND CONSTRUCTION PLANS AND NOTATION ON SHEETS AD101, AD102, AD401, AD402, AND A-101.
2. SEE REFLECTED CEILING PLAN A-102 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 ON SHEET A-602 FOR NEW DOOR DESCRIPTIONS, INCLUDING NEW DOOR FRAME.
3. SEE ENLARGED CONSTRUCTION PLANS AS DENOTED FOR SPECIFIC CONSTRUCTION SCOPE OF WORK AT INDICATED AREAS.
4. SEE LS101 LIFE SAFETY CODE COMPLIANCE SUMMARY AND LS102 LIFE SAFETY PLAN FOR LOCATIONS AND RATINGS OF FIRE RATED WALLS.
5. FOR ALL RESTROOMS, SEE ENLARGED PLANS AND ELEVATIONS SHEET FOR ALL ACCESSORIES AND DELINEATION OF FINISHES.

SHEET KEYNOTES

A1	DOOR AND FRAME. SEE DOOR SCHEDULE FOR DETAILS.
A3	RETROFIT STAIR TREAD INSTALLATION AT EACH STAIR NOSING/TREAD, SEE DETAIL 7/A-501.
A4	METAL GUARDRAIL AT BALCONY PROJECTION IN PLACE OF CONCRETE GUARDRAIL. EXISTING METAL GUARDRAIL AT WALKWAY TO REMAIN. SEE SHEET A-503 FOR DETAILS.
A42	NEW SIDEWALK. SEE 9/C-502
A43	EXTERIOR PEDESTRIAN TRAFFIC COATING AT ALL ELEVATED WALKWAYS AND STAIR LANDINGS. SEE SPECIFICATION 09 67 23.13

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

FRANK J. SMITH 4696 REGISTERED ARCHITECT KINNAKEET, NC

ISSUE DATE:15 MAY 2020

A-101

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

FLOOR PLANS

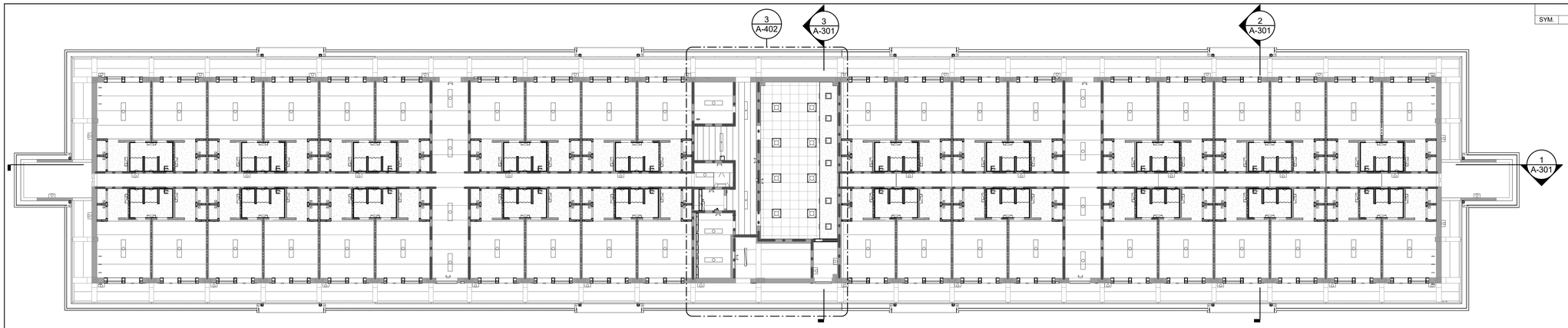
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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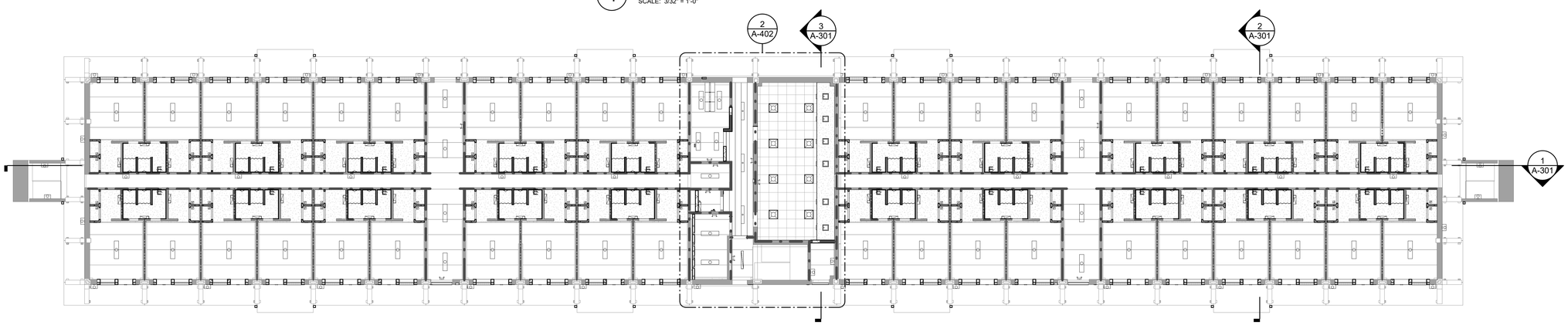
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED SPEC. 05-18-0042 SHEET 39 OF 143

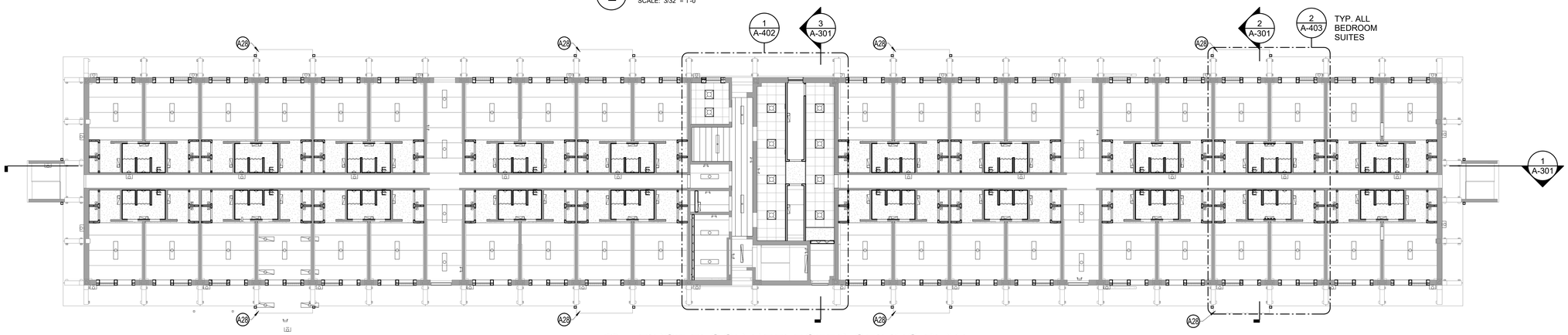
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR REFLECTED CEILING PLAN
SCALE: 3/32" = 1'-0"



2 SECOND FLOOR REFLECTED CEILING PLAN
SCALE: 3/32" = 1'-0"



3 FIRST FLOOR REFLECTED CEILING PLAN
SCALE: 3/32" = 1'-0"

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REFLECTED CEILING PLAN LEGEND

- RETURN DIFFUSER
- SUPPLY DIFFUSER
- 2X2 LIGHT FIXTURE
- 2X4 LIGHT FIXTURE
- 1X4 LIGHT FIXTURE
- VANITY LIGHT FIXTURE
- RECESSED LIGHT FIXTURE
- RECESSED SQUARE LIGHT FIXTURE
- CEILING MOUNTED LIGHT FIXTURE
- WALL MOUNT LIGHT FIXTURE
- EXIT SIGN
- RECTANGULAR EXHAUST FAN
- TYPE X IMPACT RESISTANT AND MOISTURE RESISTANT GWB CEILING
- 2 X 2 ACT CEILING
- METAL PANEL CEILING
- ACCESS PANEL
- CIRCULAR EXHAUST FAN

SHEET KEYNOTES

A28 REPAIR SPALLING CONCRETE.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

A-102

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Ledge Rd., Summerville, SC, 29485 843.873.3837
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CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIR BEQ HP510

REFLECTED CEILING PLANS

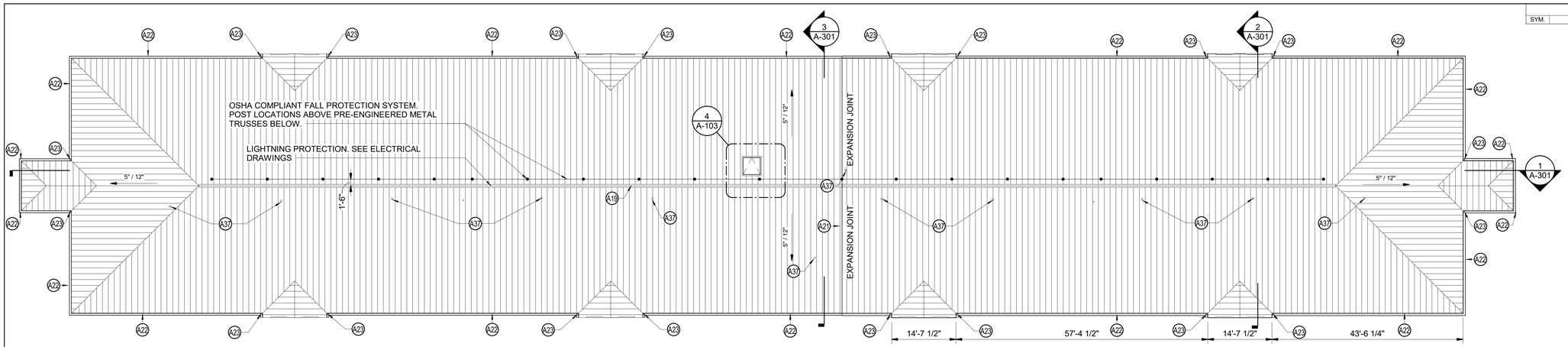
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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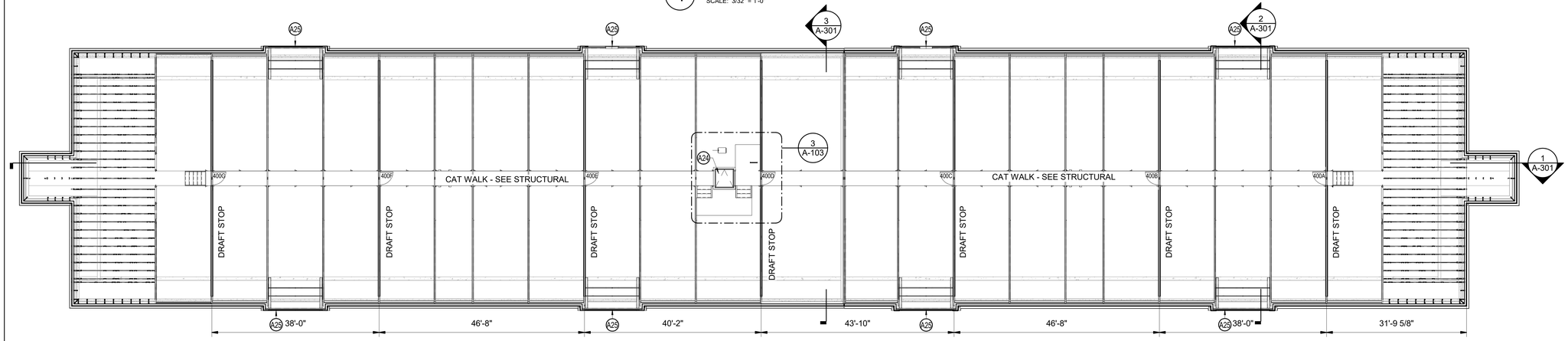
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED SPEC. 05-18-0042 SHEET 40 OF 143

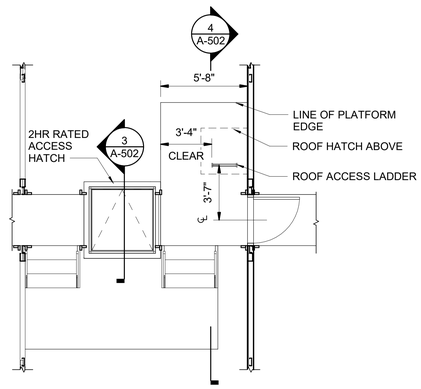
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



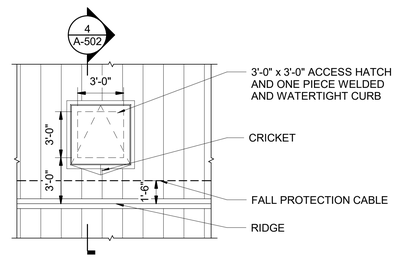
1 ROOF PLAN
SCALE: 3/32" = 1'-0"



2 ATTIC PLAN
SCALE: 3/32" = 1'-0"



3 ENLARGED PLAN - CATWALK
SCALE: 1/4" = 1'-0"
A-103



4 ENLARGED PLAN - ROOF HATCH
SCALE: 1/4" = 1'-0"
A-103

DISCLOSURE OF INFORMATION

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GENERAL NOTES

1. CONTRACTOR SHALL REPLACE DAMAGED SHEATHING IF ENCOUNTERED. BID SHALL INCLUDE 500 SF ROOF SHEATHING REPLACEMENT MATERIAL AND LABOR.

SHEET KEYNOTES

A19	RIDGE VENT
A21	ROOF EXPANSION JOINT - FIELD VERIFY EXISTING BUILDING EXPANSION JOINT LOCATION. ALIGN NEW ROOFING EXPANSION JOINT WITH EXISTING BUILDING JOINT.
A22	GUTTER
A23	DOWNSPOUT WITH 6X6 GALVANIZED STEEL COVER. SEE CIVIL FOR UNDERGROUND DRAIN CONNECTION DETAILS.
A24	ROOF ACCESS HATCH. SEE SHEET A-502 FOR DETAILS.
A25	ALUMINUM GABLE VENT LOUVER. SEE 5/A-502 FOR DETAILS.
A37	THROUGH ROOF PLUMBING VENT PENETRATION. SEE DRAWING 8/A-502 FOR DETAIL.

PLAN NORTH

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

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

GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

A-103

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

ROOF PLAN

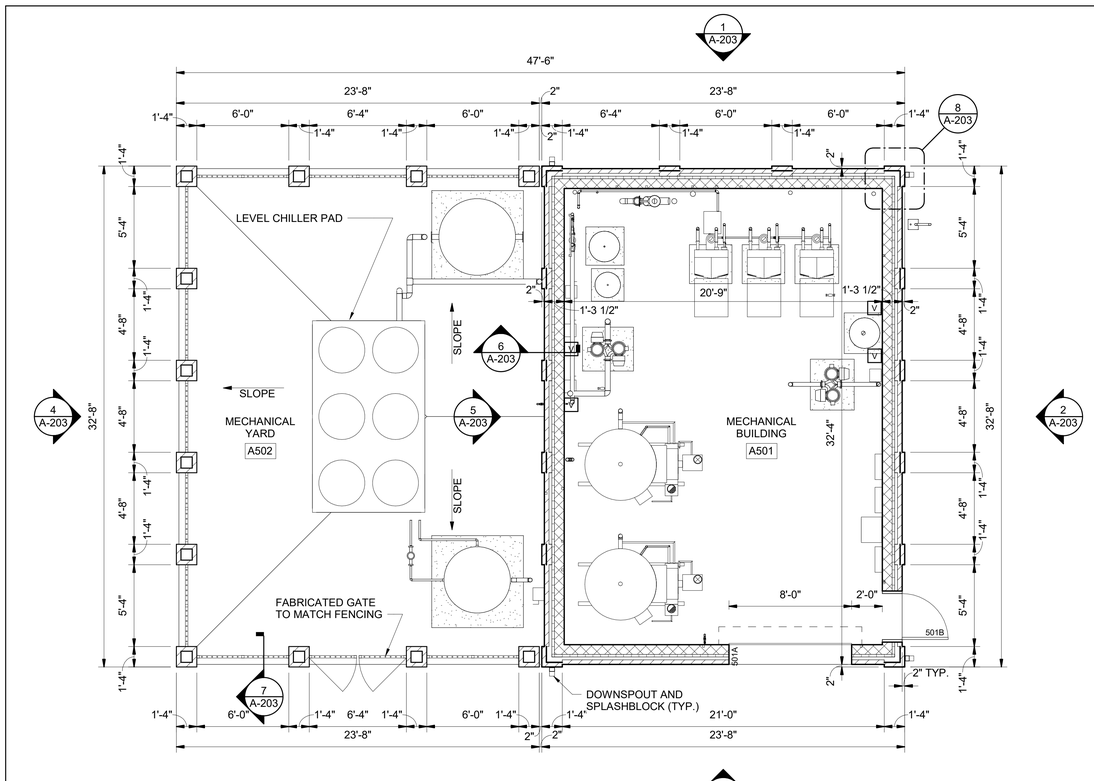
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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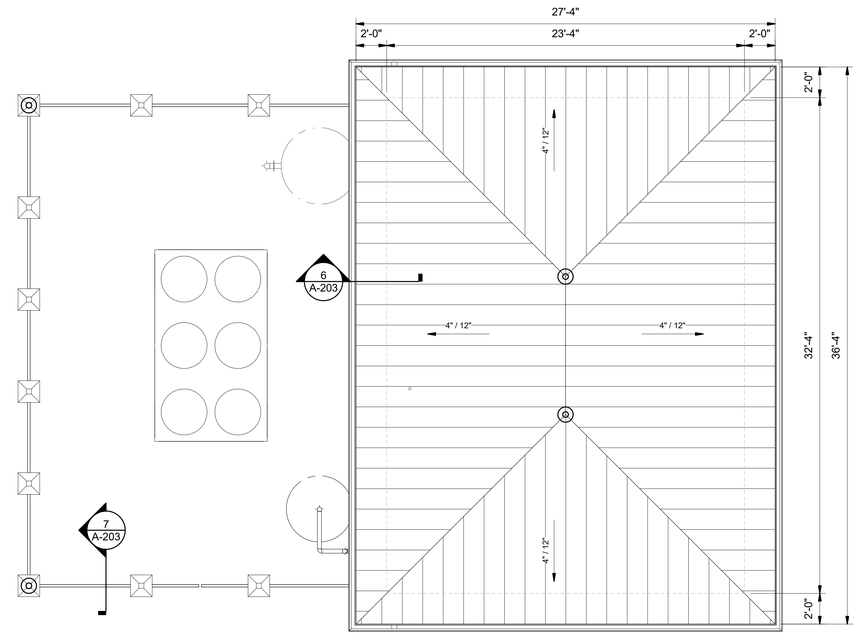
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 41 OF 143

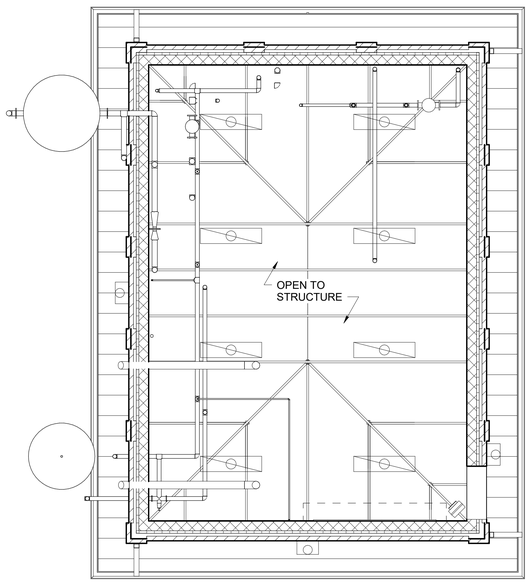
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 MECHANICAL YARD FLOOR PLAN
SCALE: 1/4" = 1'-0"



2 MECHANICAL YARD ROOF PLAN
SCALE: 1/4" = 1'-0"



3 MECHANICAL YARD REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

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PLAN NORTH

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"
GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

A-104

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3937
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

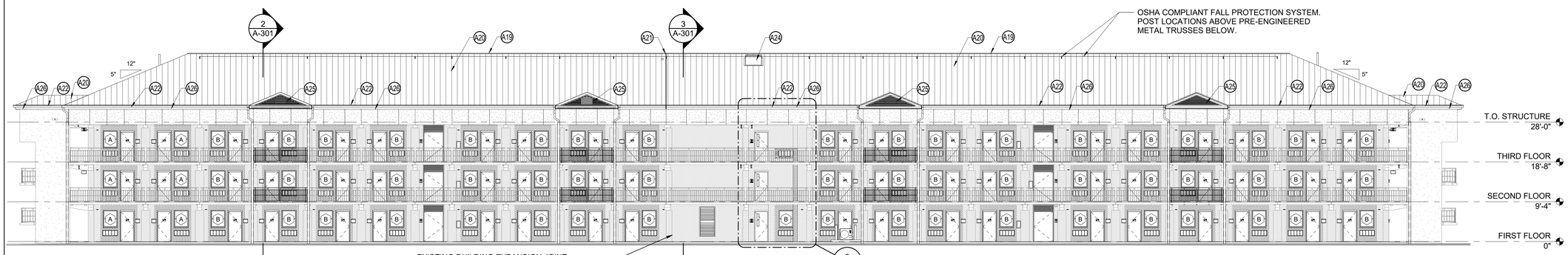
REPAIRS BEQ HP510

DES.	M. SMITH
DR.	R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

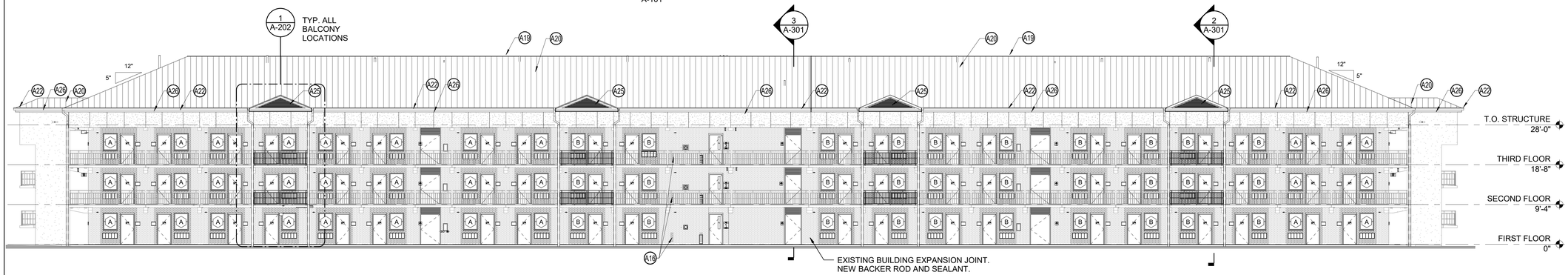
MECHANICAL YARD FLOOR, REFLECTED CEILING, AND ROOF PLAN

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 42 OF 143

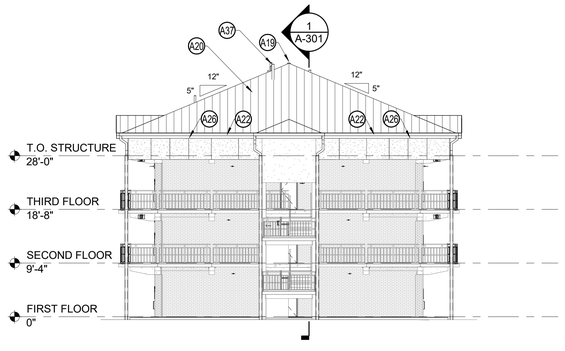
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SYM.	DESCRIPTION	DATE	APPROVED



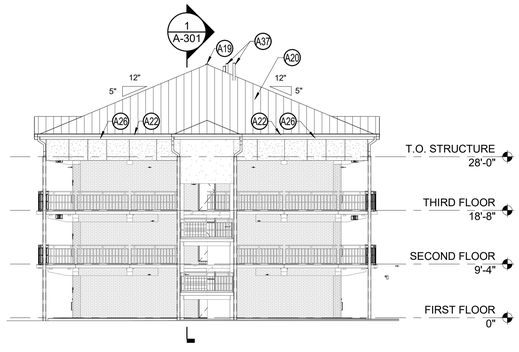
1 NORTH ELEVATION
SCALE: 3/32" = 1'-0"
A-101



2 SOUTH ELEVATION
SCALE: 3/32" = 1'-0"
A-101



3 EAST ELEVATION
SCALE: 3/32" = 1'-0"
A-101



4 WEST ELEVATION
SCALE: 3/32" = 1'-0"
A-101

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SHEET KEYNOTES

A16	INFILL EXISTING OPENING WITH CONCRETE AND BRICK MASONRY.
A19	RIDGE VENT
A20	STANDING SEAM METAL ROOF
A21	ROOF EXPANSION JOINT - FIELD VERIFY EXISTING BUILDING EXPANSION JOINT LOCATION. ALIGN NEW ROOFING EXPANSION JOINT WITH EXISTING BUILDING JOINT.
A22	GUTTER
A24	ROOF ACCESS HATCH. SEE SHEET A-502 FOR DETAILS.
A25	ALUMINUM GABLE VENT LOUVER. SEE 5/A-502 FOR DETAILS.
A26	ALUMINUM FASCIA.
A37	THROUGH ROOF PLUMBING VENT PENETRATION. SEE DRAWING 8/A-502 FOR DETAIL.

16 8 0 16
SCALE: 3/32"=1'-0"
GRAPHIC SCALE

JOHN J. SMITH 4696 REGISTERED ARCHITECT WINNABOW, NC
ISSUE DATE:15 MAY 2020

A-201

CEMS ENGINEERING | ARCHITECTURE
108 Bentona Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

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

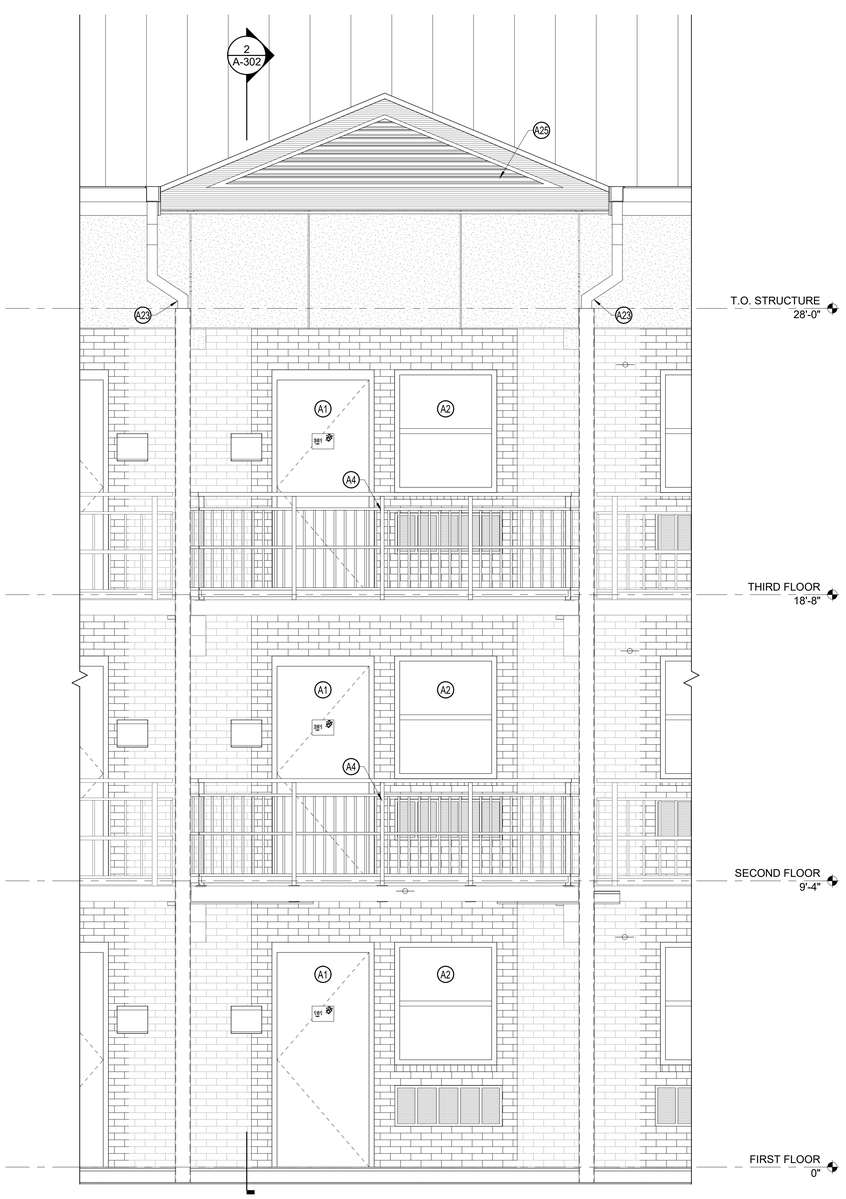
REPAIR BEQ HP510

BUILDING ELEVATIONS

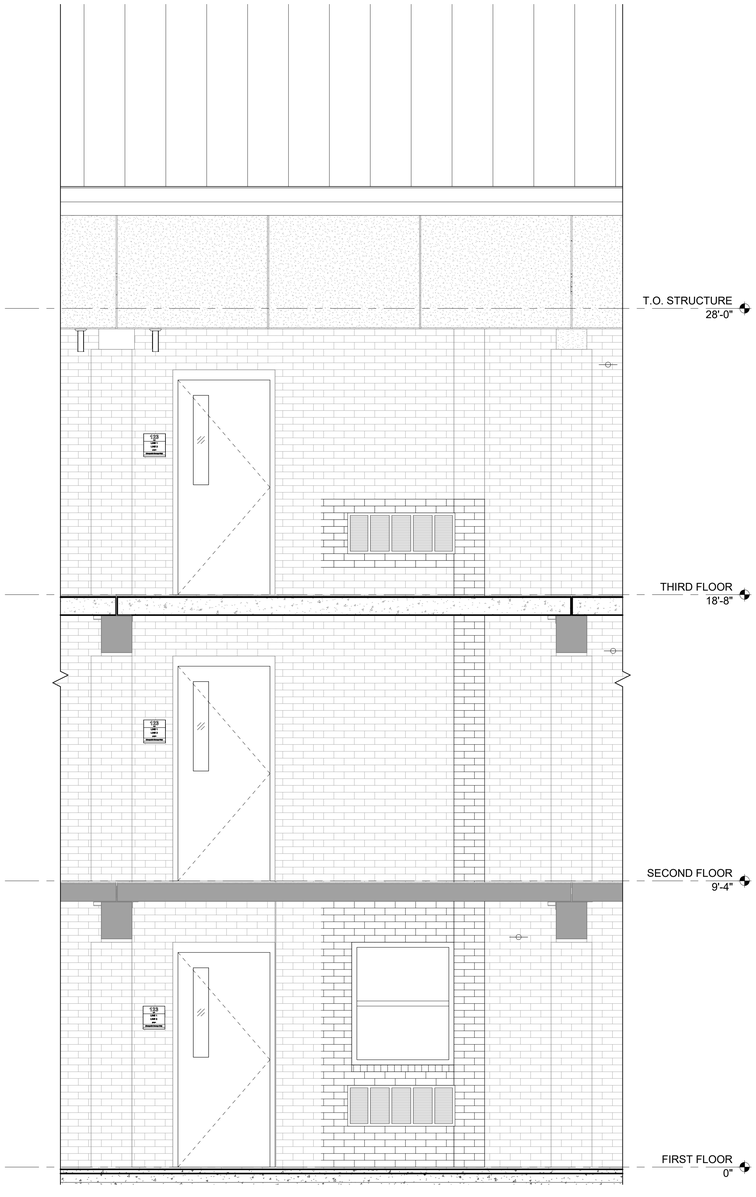
DES. M. SMITH	
DR. P. HARRIS/ R. LEONARD	
CHK. M. SMITH	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024001
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 43 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED ELEVATION - BALCONY
SCALE: 1/2" = 1'-0"
A-201



2 ENLARGED ELEVATION - COMMON AREA
SCALE: 1/2" = 1'-0"
A-201

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SHEET KEYNOTES

A1	DOOR AND FRAME. SEE DOOR SCHEDULE FOR DETAILS.
A2	WINDOW AND FRAME. SEE WINDOW SCHEDULE FOR DETAILS.
A4	METAL GUARDRAIL AT BALCONY PROJECTION IN PLACE OF CONCRETE GUARDRAIL. EXISTING METAL GUARDRAIL AT WALKWAY TO REMAIN. SEE SHEET A-503 FOR DETAILS.
A23	DOWNSPOUT WITH 6X6 GALVANIZED STEEL COVER. SEE CIVIL FOR UNDERGROUND DRAIN CONNECTION DETAILS.
A25	ALUMINUM GABLE VENT LOUVER. SEE 5/A-502 FOR DETAILS.

2 1 0 2 4
SCALE: 1/2"=1'-0"
GRAPHIC SCALE

MARK J. SMITH 4696 REGISTERED LANDSCAPE ARCHITECT WINNABOW, NC

ISSUE DATE:15 MAY 2020

A-202

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.362.1646
CEMS Project No: 15153V Project Manager: R. Alvar

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

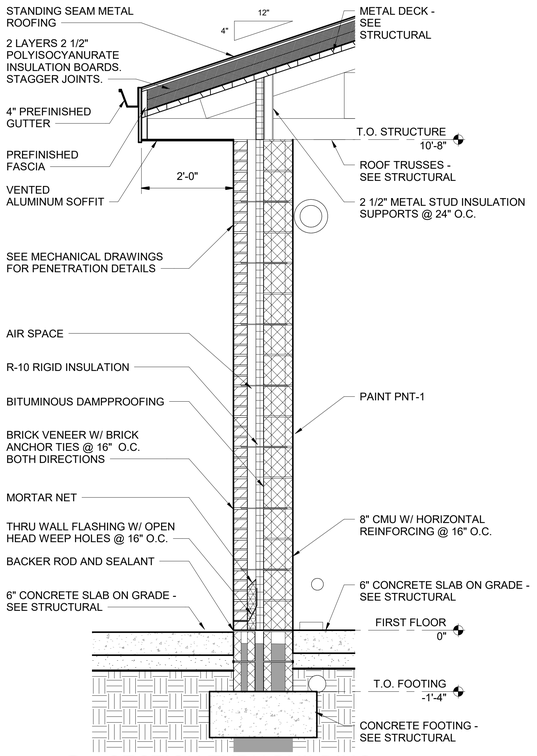
REPAIR BEQ HP510

ENLARGED BUILDING ELEVATIONS

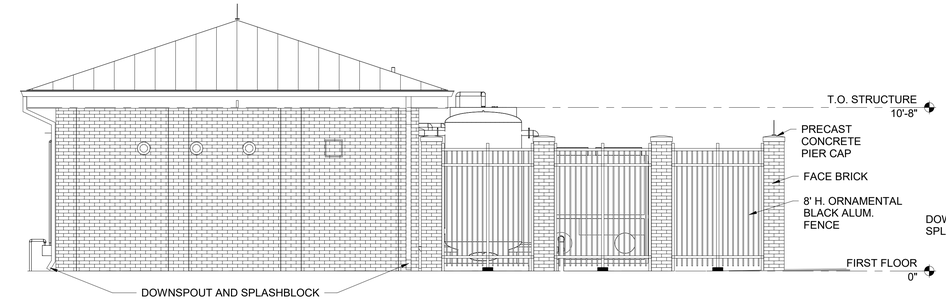
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024002
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 44 OF 143

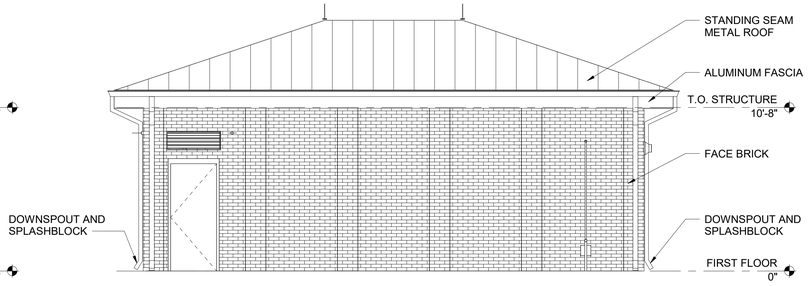
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



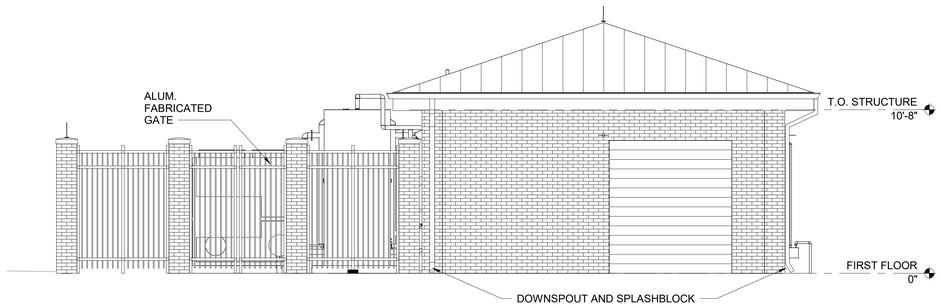
6 SECTION THRU BUILDING
SCALE: 3/4" = 1'-0"
A-104



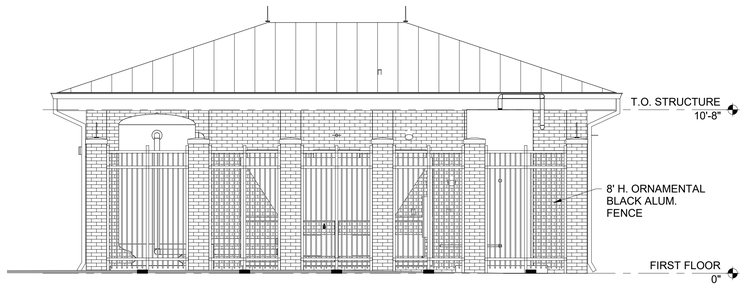
1 NORTH ELEVATION
SCALE: 1/4" = 1'-0"
A-104



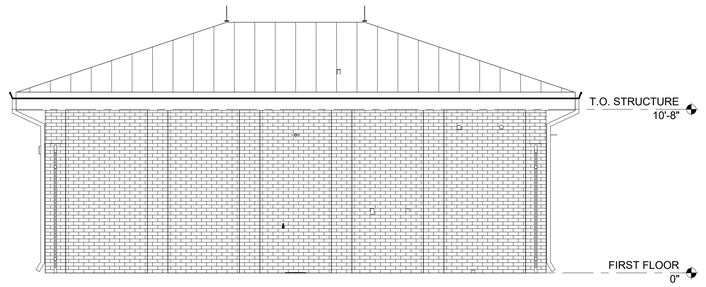
2 EAST ELEVATION
SCALE: 1/4" = 1'-0"
A-104



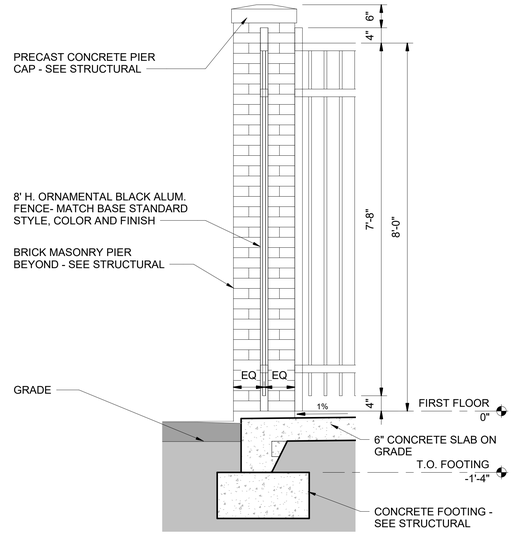
3 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"
A-104



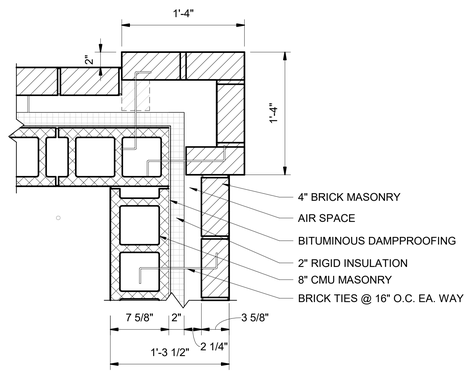
4 WEST ELEVATION
SCALE: 1/4" = 1'-0"
A-104



5 WEST ELEVATION - BUILDING
SCALE: 1/4" = 1'-0"
A-104



7 SECTION THRU MECH. YARD
SCALE: 3/4" = 1'-0"
A-104



8 CORNER PILASTER DETAIL
SCALE: 1 1/2" = 1'-0"
A-104

DISCLOSURE OF INFORMATION

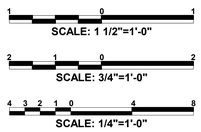
CONTRACTOR SHALL COMPLY AS FOLLOWS:

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GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

A-203

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

DES.	M. SMITH
DR.	R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

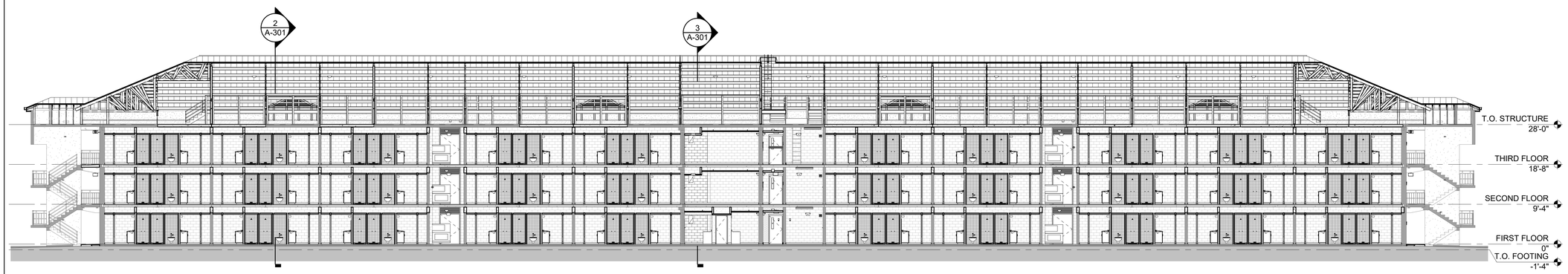
MECHANICAL YARD EXTERIOR ELEVATIONS, SECTIONS, AND DETAILS

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024003

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 45 OF 143

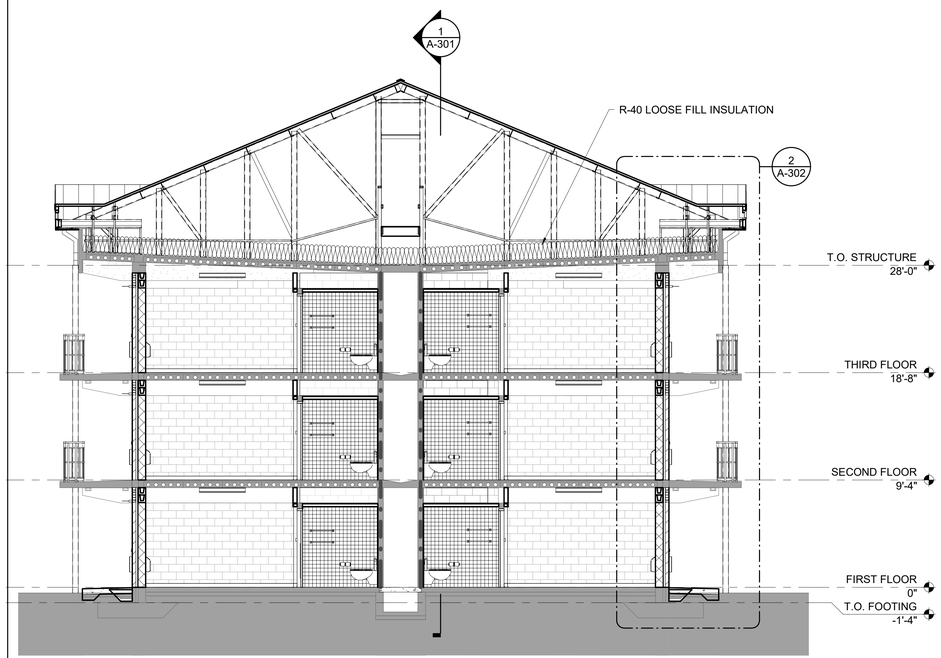
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 LONGITUDINAL SECTION

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

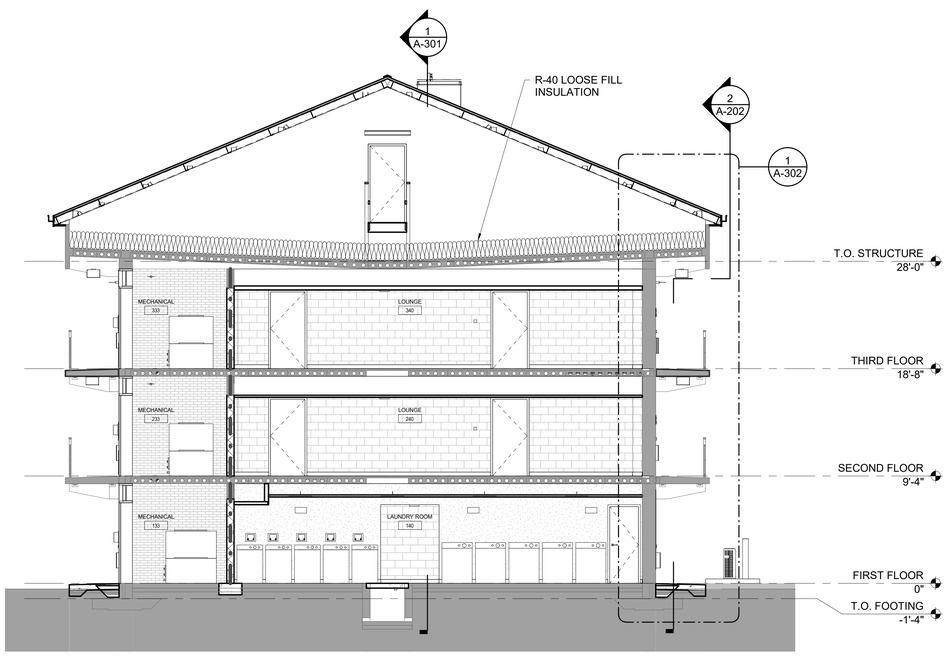
A-101



2 TYP. TRANSVERSE SECTION - SLEEPING ROOM

SCALE: 3/16" = 1'-0"

A-101



3 TYP. TRANSVERSE SECTION - COMMON AREA

SCALE: 3/16" = 1'-0"

A-101

DISCLOSURE OF INFORMATION

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8 4 0 8
SCALE: 3/16"=1'-0"

16 8 0 16
SCALE: 3/32"=1'-0"

GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

A-301

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.362.1646
CEMS Project No: 10153V
Project Manager: R. Alvar

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

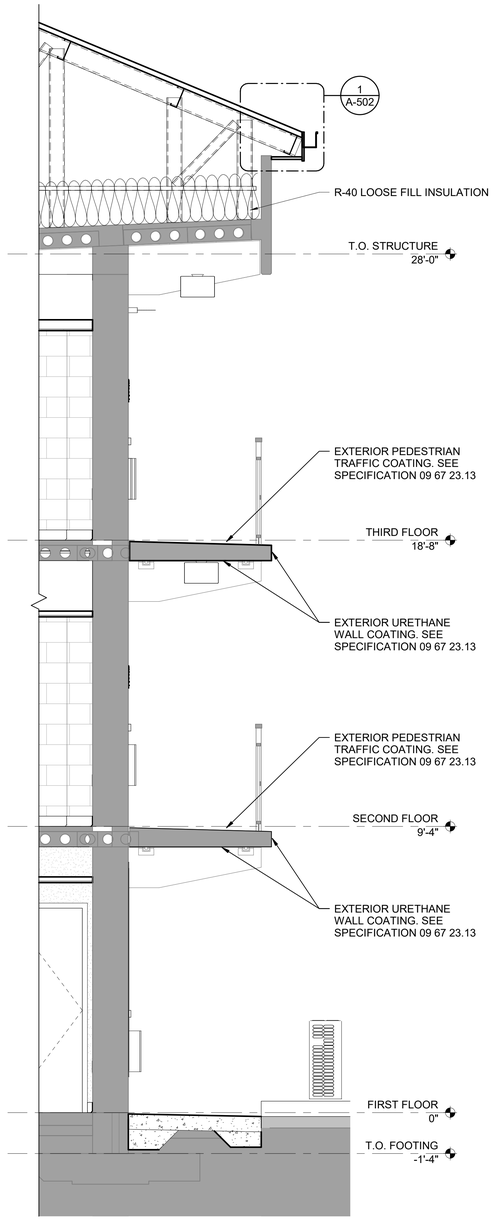
REPAIR BEQ HP510

BUILDING SECTIONS

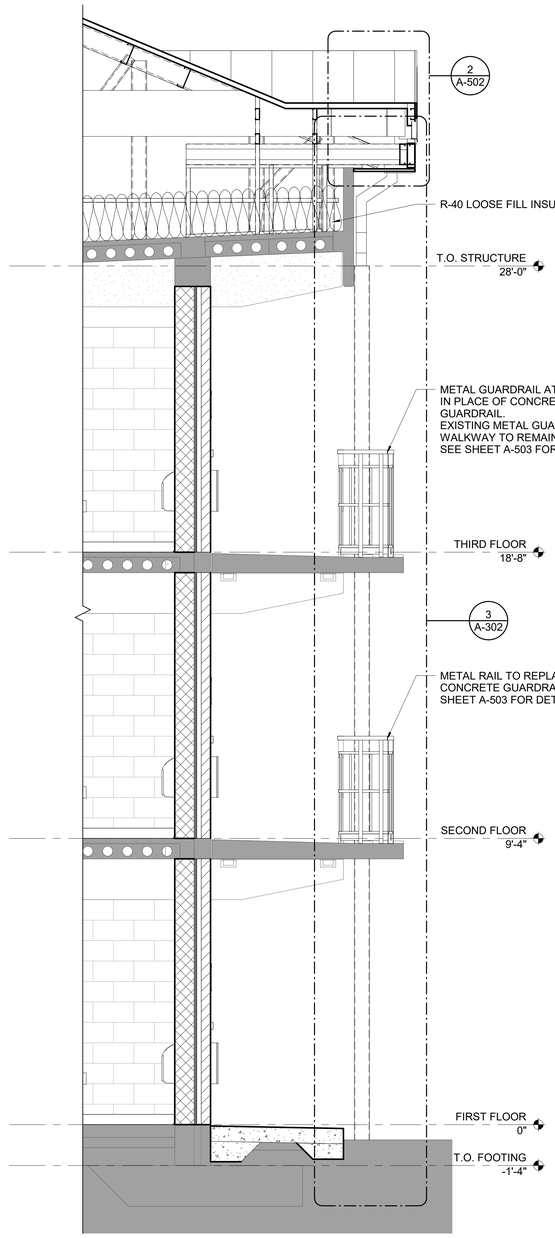
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024004
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 46 OF 143

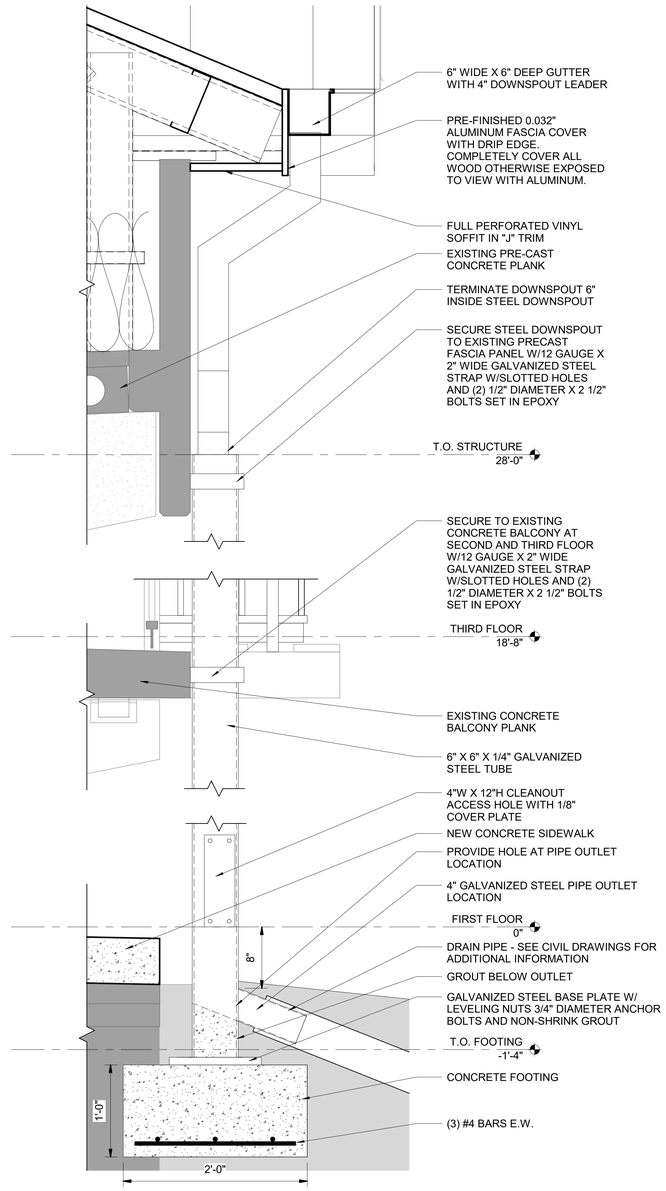
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



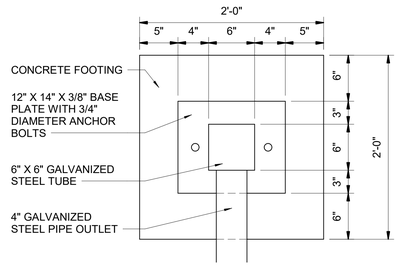
1 WALL SECTION - WALKWAY
SCALE: 1/2" = 1'-0"



2 WALL SECTION - BALCONY
SCALE: 1/2" = 1'-0"



3 DOWNSPOUT SECTION
SCALE: 1 1/2" = 1'-0"



4 DOWN SPOUT BASE
SCALE: 1 1/2" = 1'-0"

DISCLOSURE OF INFORMATION

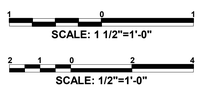
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GRAPHIC SCALES



ISSUE DATE:15 MAY 2020

A-302

CEMS ENGINEERING | ARCHITECTURE
109 Bentora Lodge Rd., Summerville, SC, 29485 843.873.3837
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

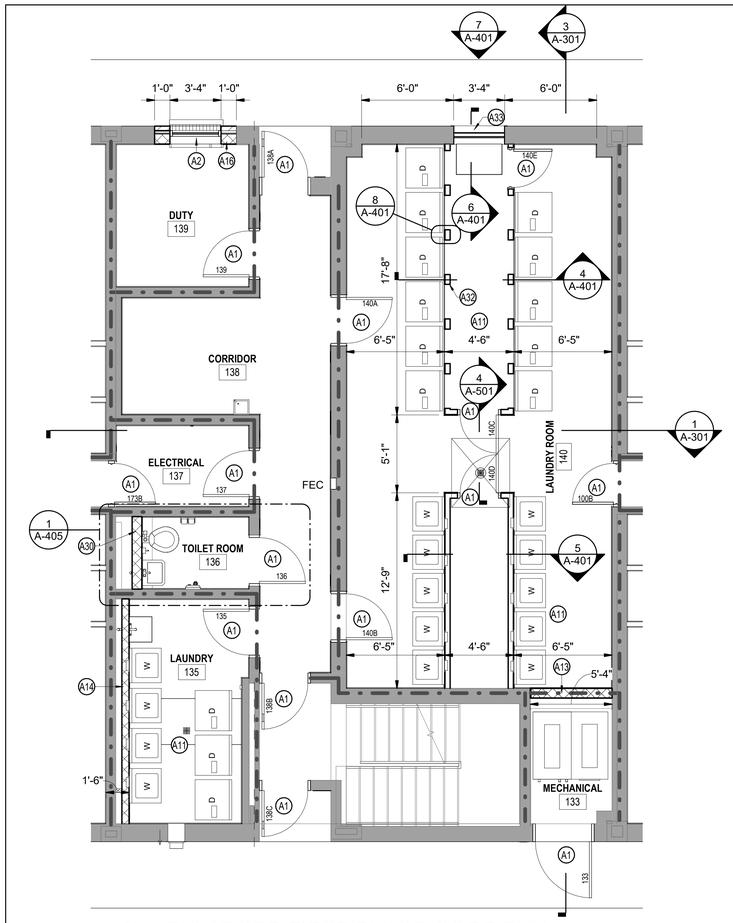
REPAIR BEQ HP510

WALL SECTIONS

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 47 OF 143

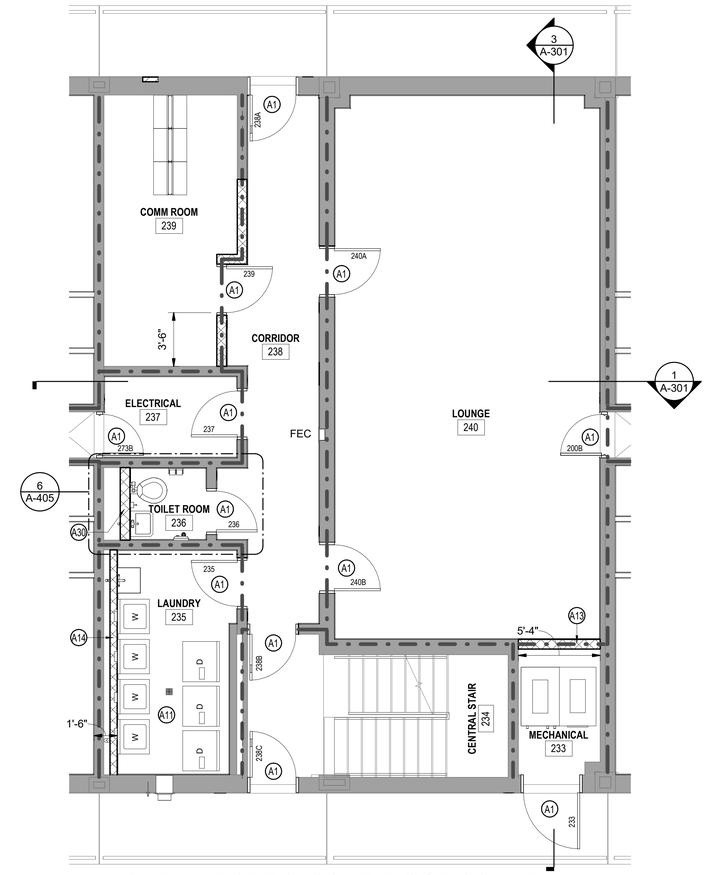
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED FIRST FLOOR CORE PLAN

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

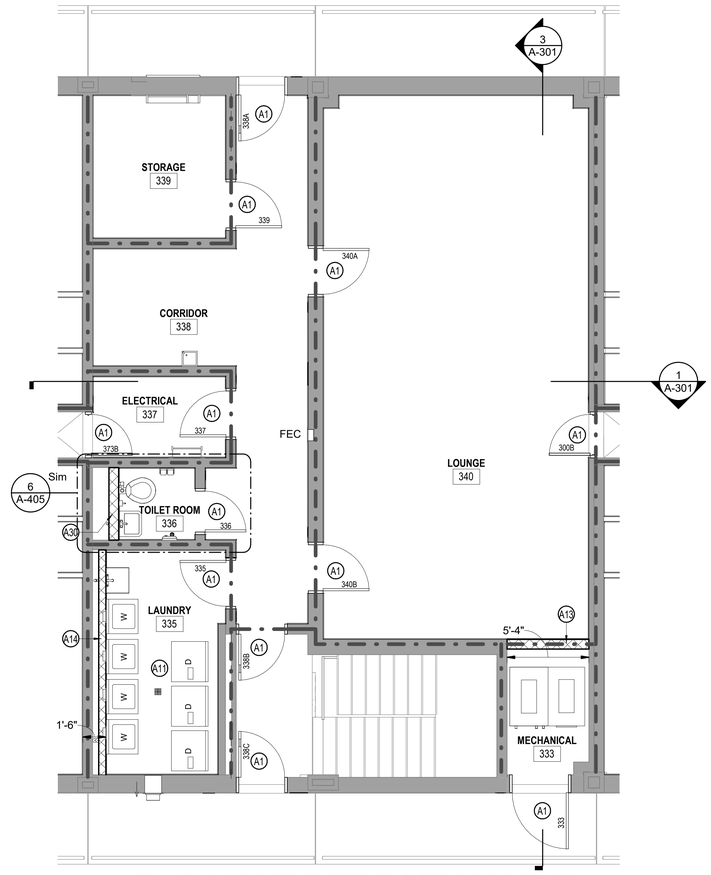
A-101



2 ENLARGED SECOND FLOOR CORE PLAN

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

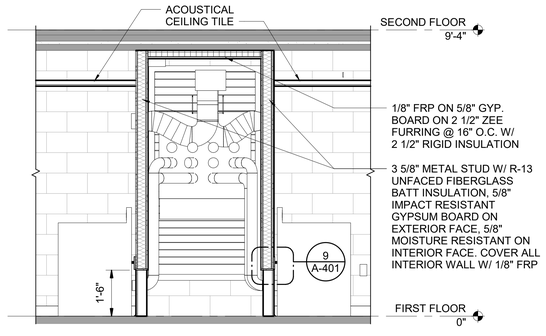
A-101



3 ENLARGED THIRD FLOOR CORE PLAN

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

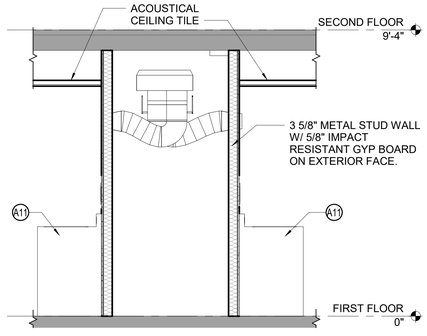
A-101



4 DRYER CHASE

SCALE: 1/2" = 1'-0"

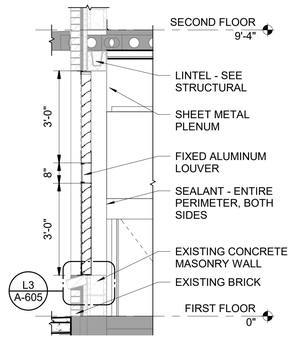
A-401



5 WASHING MACHINE CHASE

SCALE: 1/2" = 1'-0"

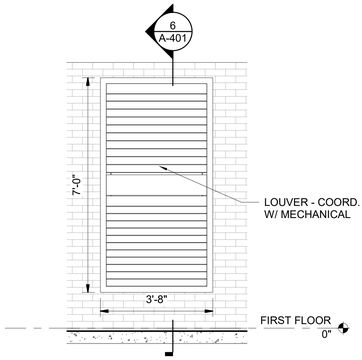
A-401



6 DRYER VENT SECTION

SCALE: 1/2" = 1'-0"

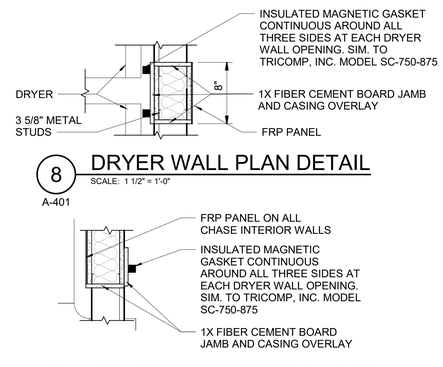
A-401



7 LOUVER ELEVATION

SCALE: 1/2" = 1'-0"

A-401



8 DRYER WALL PLAN DETAIL

SCALE: 1 1/2" = 1'-0"

A-401

9 DRYER WALL SECTION DETAIL

SCALE: 1 1/2" = 1'-0"

A-401

DISCLOSURE OF INFORMATION

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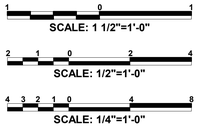
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SHEET KEYNOTES

A1	DOOR AND FRAME. SEE DOOR SCHEDULE FOR DETAILS.
A2	WINDOW AND FRAME. SEE WINDOW SCHEDULE FOR DETAILS.
A11	WASHERS AND DRYERS NOT IN CONTRACT.
A13	8" CONCRETE MASONRY WALL, INFILL WHERE EXISTING DOOR AND FRAME HAVE BEEN REMOVED. INFILL OF EXISTING MASONRY LINTEL AT 6'-8" A.F.F. X THE WIDTH OF THE PREVIOUS OPENING. PROVIDE (1) #4 BAR VERTICALLY IN THE CORNER CELLS WITH MORTAR AS THE WALLS ARE BUILT. PROVIDE 18 GAUGE HOT DIPPED GALVANIZED CORRUGATED WALL TIES AT 1'-4" O.C. VERTICALLY AT EACH INTERSECTION TO EXISTING MASONRY.
A14	6" CONCRETE MASONRY WALL A.F.F. TO THE UNDERSIDE OF STRUCTURE WHERE EXISTING WALL WAS REMOVED. PROVIDE OPENINGS FOR FIXTURES, COORDINATE WITH MECHANICAL AND PLUMBING FOR OPENING LOCATIONS.
A16	INFILL EXISTING OPENING WITH CONCRETE AND BRICK MASONRY.
A30	8" CONCRETE MASONRY WALL A.F.F. TO THE UNDERSIDE OF STRUCTURE WHERE EXISITNG WALL WAS REMOVED. PROVIDE OPENINGS FOR FIXTURES, COORDINATE WITH MECHANICAL AND PLUMBING FOR OPENING LOCATIONS.
A32	5/8" GYPSUM WALLBOARD ON 3 5/8" METAL STUD WALL.
A33	LOUVERED OPENING. SEE DETAIL 6/A-401.

PLAN NORTH





GRAPHIC SCALES



ISSUE DATE:15 MAY 2020

A-401

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.362.1646
CEMS Project No: 15153V Project Manager: R. Alvar

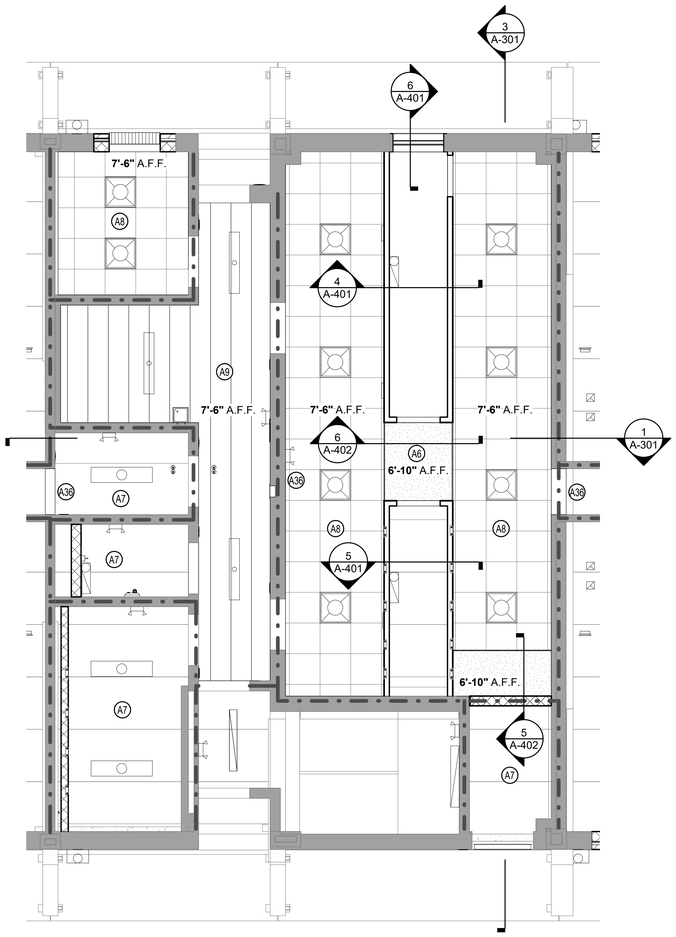
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ HP510

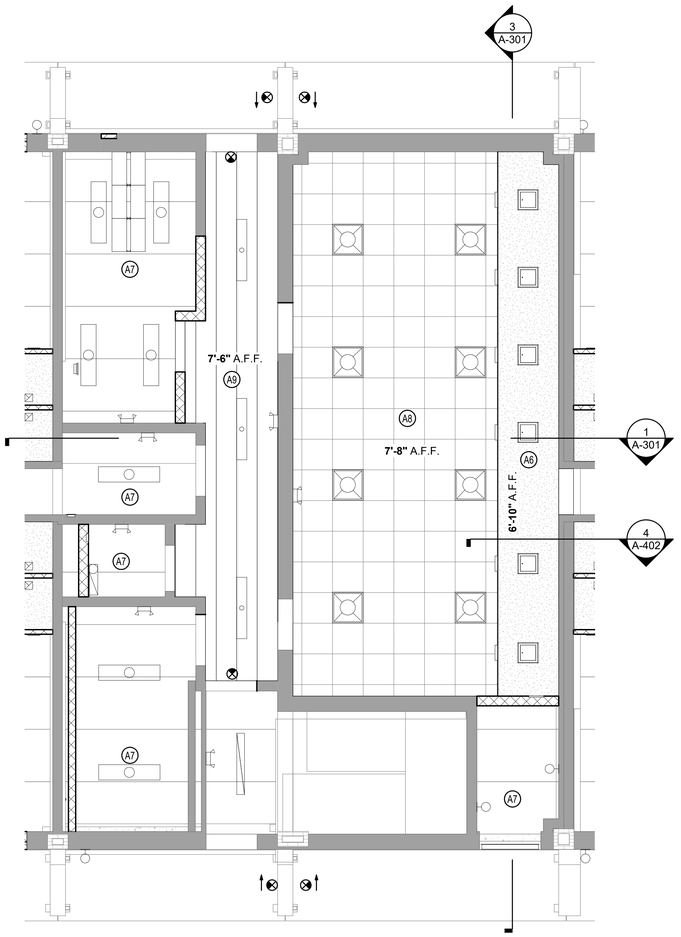
ENLARGED CORE FLOOR PLANS

DES. M. SMITH			
DR. P. HARRIS/ R. LEONARD			
CHK. M. SMITH			
SUBMITTED BY: CEMS ENGINEERING			
DESIGN DIR.			
APPROVED: PWO OR OICC	DATE	SIZE / CODE IDENT NO.	NAVFAC DRAWING NO.
		E1 / 80091	60024006
SATISFACTORY TO:	DATE		CONSTR. CONTR. NO.: N40085-18-B-0042
		SCALE: AS NOTED	SPEC. 05-18-0042 / SHEET 48 OF 143

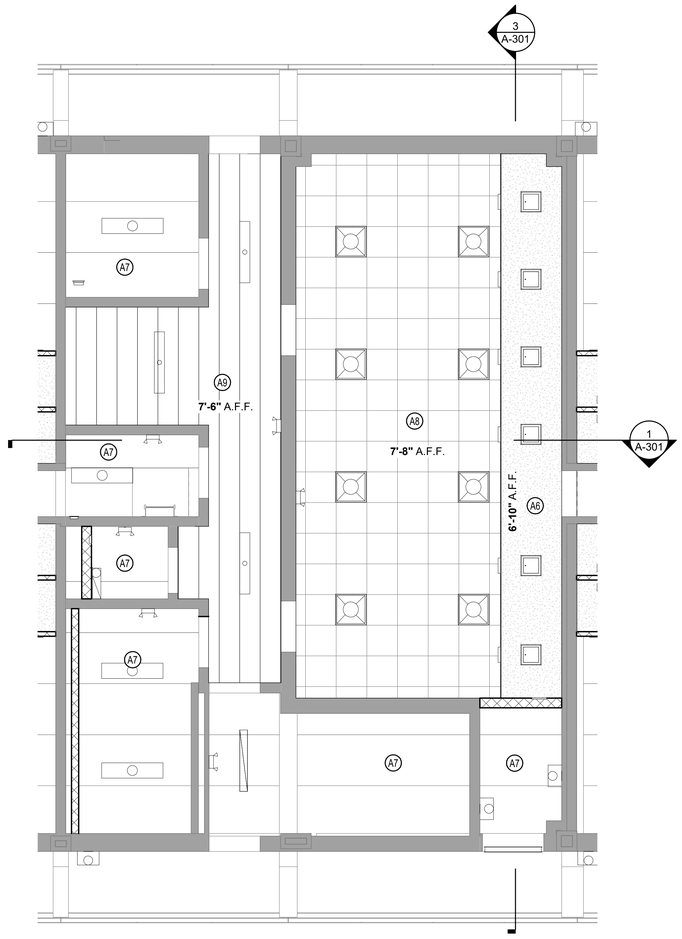
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



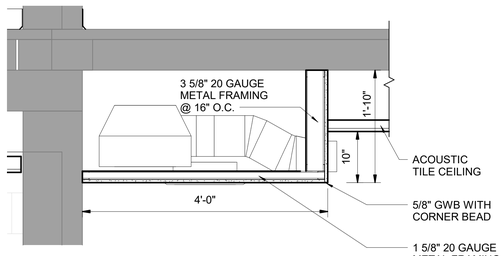
1 ENLARGED FIRST FLOOR CORE REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"
A-102



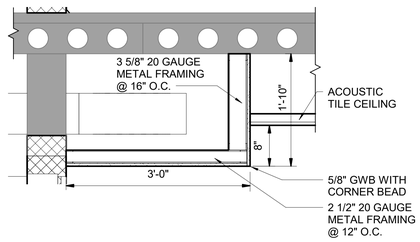
2 ENLARGED SECOND FLOOR CORE REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"
A-102



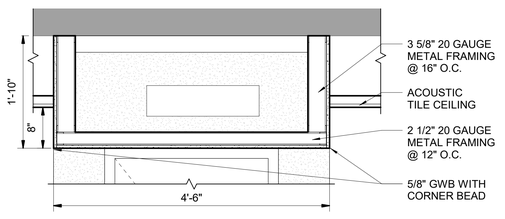
3 ENLARGED THIRD FLOOR CORE REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"
A-102



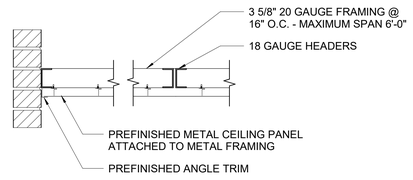
4 LOUNGE SOFFIT DETAIL
SCALE: 1" = 1'-0"
A-402



5 LAUNDRY SOFFIT DETAIL
SCALE: 1" = 1'-0"
A-402



6 LAUNDRY SOFFIT DETAIL
SCALE: 1" = 1'-0"
A-402



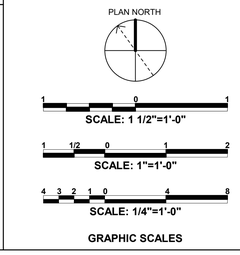
7 METAL CEILING DETAIL
SCALE: 1 1/2" = 1'-0"

REFLECTED CEILING PLAN LEGEND

- RETURN DIFFUSER
- SUPPLY DIFFUSER
- 2X2 LIGHT FIXTURE
- RECESSED LIGHT FIXTURE
- RECESSED SQUARE LIGHT FIXTURE
- METAL PANEL CEILING
- 2X4 LIGHT FIXTURE
- 1X4 LIGHT FIXTURE
- VANITY LIGHT FIXTURE
- TYPE X IMPACT RESISTANT & MOISTURE RESISTANT GWB CEILING
- 2 X 2 ACT CEILING
- CEILING MOUNTED LIGHT FIXTURE
- EXIT SIGN
- EXHAUST FAN
- ACCESS PANEL

SHEET KEYNOTES

A6	5/8" TYPE X IMPACT RESISTANT GYPSUM BOARD CEILING AND BULKHEAD (TYPICAL AT EACH LOUNGE AND LAUNDRY ROOM). SEE CORE AREA DETAILS ON A-402 FOR CEILING HEIGHTS AND STRUCTURAL REQUIREMENTS. ALL EXPOSED SURFACES SHALL BE PAINTED.
A7	EXISTING CONCRETE PLANK CEILING TO BE CLEANED AND PREPARED FOR NEW PAINT. SEE FINISH SCHEDULE.
A8	ACOUSTICAL CEILING TILE AND SUSPENSION SYSTEM.
A9	FLUSH PROFILE METAL PANEL CEILING. SEE DETAIL 7/A-402 FOR ASSEMBLY REQUIREMENTS.
A36	SEE CHASE WALL PENETRATION DETAIL 3/A-501



GRAPHIC SCALES

DISCLOSURE OF INFORMATION

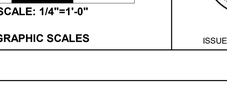
CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

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ISSUE DATE:15 MAY 2020

A-402

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.383.1640
CEMS Project No: 1515JV Project Manager: R. Alvar

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

REPAIR BEQ HP510

ENLARGED CORE REFLECTED CEILING PLANS

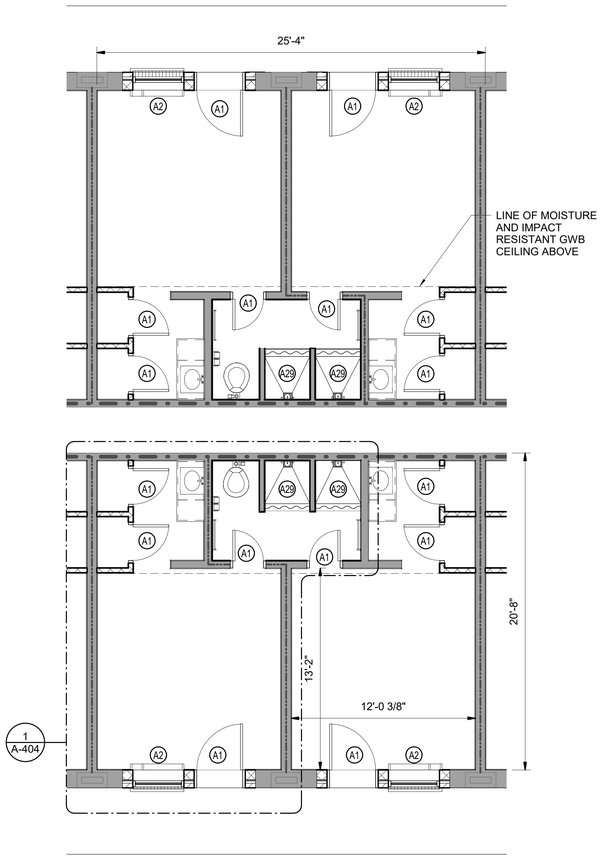
DES. M. SMITH	
DR. P. HARRIS/ R. LEONARD	
CHK. M. SMITH	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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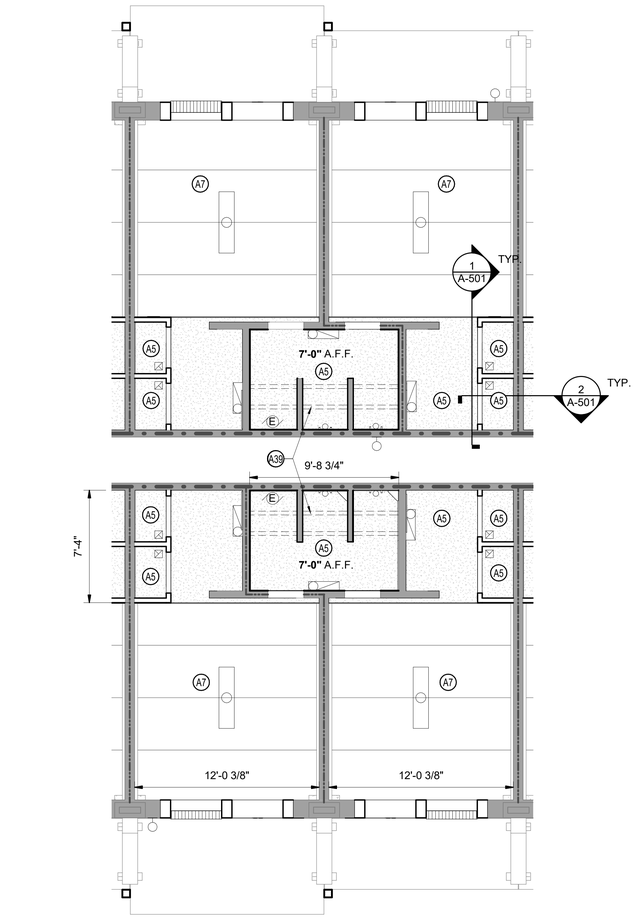
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 49 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED SLEEPING ROOM FLOOR PLAN
SCALE: 1/4" = 1'-0"
A-101



2 ENLARGED SLEEPING ROOM REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"
A-102

DISCLOSURE OF INFORMATION

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SHEET KEYNOTES

A1	DOOR AND FRAME. SEE DOOR SCHEDULE FOR DETAILS.
A2	WINDOW AND FRAME. SEE WINDOW SCHEDULE FOR DETAILS.
A5	5/8" TYPE X IMPACT AND MOISTURE RESISTANT GYPSUM BOARD CEILING AND BULKHEAD (TYPICAL AT EACH SLEEPING ROOM, INCLUDING BATHROOM/SHOWER AND VANITY/CLOSET AREA). SEE SLEEPING ROOM ELEVATIONS ON A-404 FOR CEILING HEIGHTS AND STRUCTURAL REQUIREMENTS. ALL EXPOSED SURFACES SHALL BE PAINTED.
A7	EXISTING CONCRETE PLANK CEILING TO BE CLEANED AND PREPARED FOR NEW PAINT. SEE FINISH SCHEDULE.
A29	FLOOR DRAIN IN SAME LOCATION AS EXISTING.
A39	SHOWER WALLS SHALL BE BRACED BY CEILING FRAMING MEMBERS. LAYOUT FRAMING MEMBERS TO CONSTRUCT MINIMUM TWO (2) 3 5/8" 20 GA. CEILING JOISTS PERPENDICULAR TO SHOWER WALLS ABOVE THE SHOWER AND THE WATER CLOSET TO CREATE A RIGID CONNECTION FULL WIDTH OF ROOM.

PLAN NORTH

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"
GRAPHIC SCALE

A-403

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.873.3837
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvor

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

REPAIR BEQ HP510

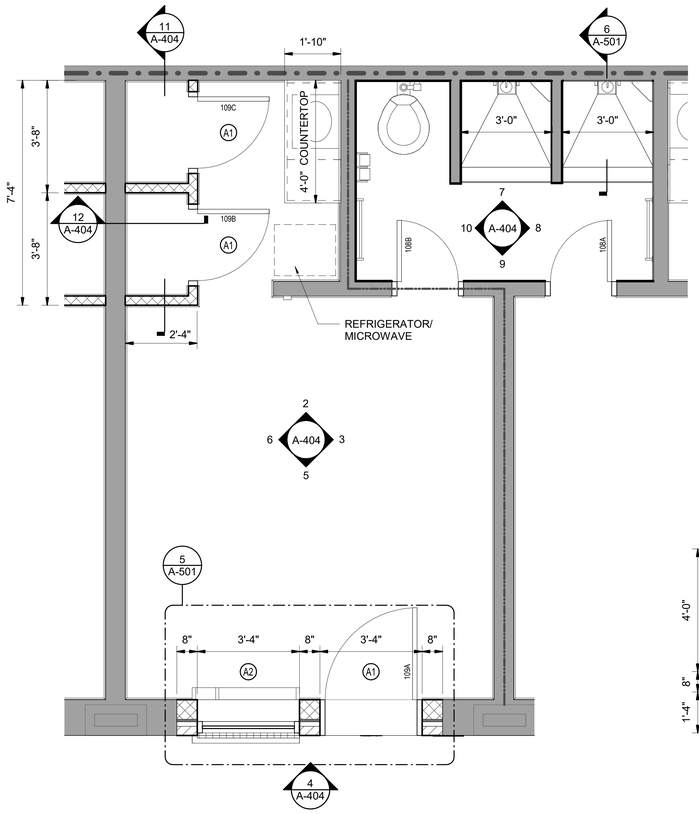
ENLARGED SLEEPING ROOM FLOOR PLAN AND REFLECTED CEILING PLANS

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

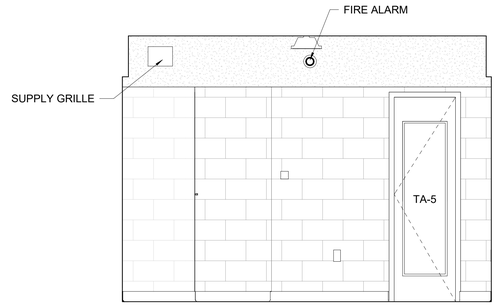
ISSUE DATE:15 MAY 2020

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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 50 OF 143

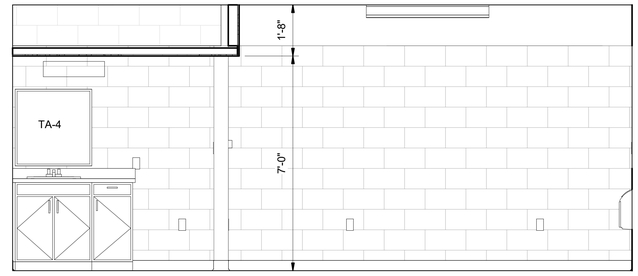
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



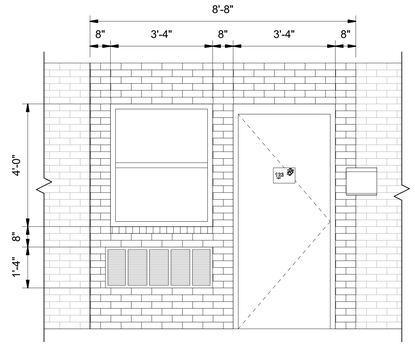
1 TYPICAL SLEEPING ROOM
SCALE: 1/2" = 1'-0"
A-403



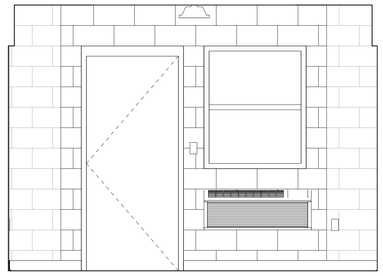
2 TYPICAL SLEEPING ROOM - SOUTH
SCALE: 1/2" = 1'-0"
A-404



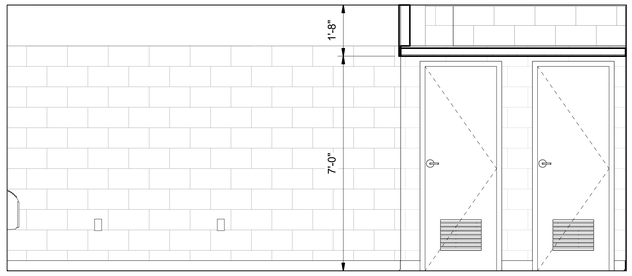
3 TYPICAL SLEEPING ROOM - WEST
SCALE: 1/2" = 1'-0"
A-404



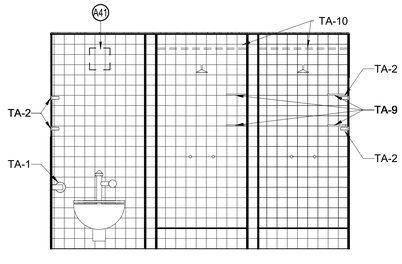
4 TYPICAL SLEEPING ROOM - EXTERIOR
SCALE: 1/2" = 1'-0"
A-404



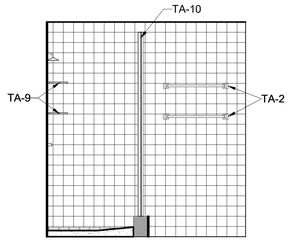
5 TYPICAL SLEEPING ROOM - NORTH
SCALE: 1/2" = 1'-0"
A-404



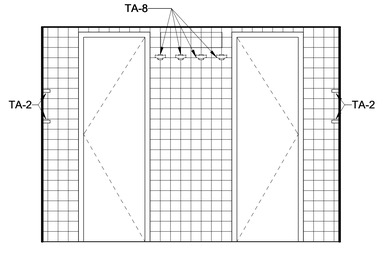
6 TYPICAL SLEEPING ROOM - EAST
SCALE: 1/2" = 1'-0"
A-404



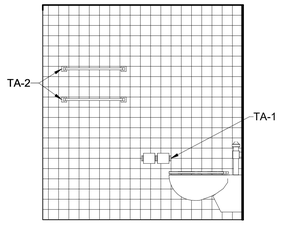
7 TYPICAL BATHROOM - SOUTH
SCALE: 1/2" = 1'-0"
A-404



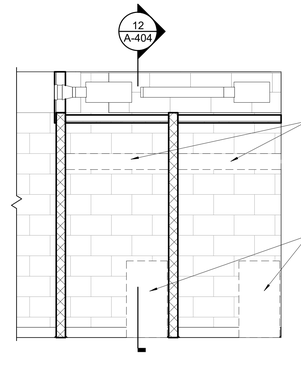
8 TYPICAL BATHROOM - WEST
SCALE: 1/2" = 1'-0"
A-404



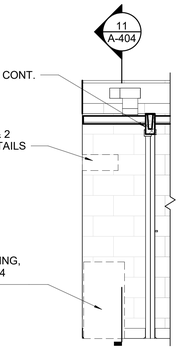
9 TYPICAL BATHROOM - NORTH
SCALE: 1/2" = 1'-0"
A-404



10 TYPICAL BATHROOM - EAST
SCALE: 1/2" = 1'-0"
A-404



11 CLOSET SECTION
SCALE: 1/2" = 1'-0"
A-404



12 CLOSET SECTION
SCALE: 1/2" = 1'-0"
A-404

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TOILET ACCESSORY SCHEDULE

TA-1	TOILET TISSUE DISPENSER
TA-2	TOWEL BAR 24" (4) PER SLEEPING ROOM BATHROOM
TA-3	WALL MOUNTED MIRROR 24" X 42"
TA-4	WALL MOUNTED MIRROR 30" X 30"
TA-5	DOOR MOUNTED FRAMELESS MIRROR 16" X 60" 1/4" THICK MAX TO CLEAR LEVER
TA-6	SOAP DISPENSER
TA-7	ELECTRIC HAND DRYER
TA-8	DOUBLE ROBE HOOK (4) PER SLEEPING ROOM
TA-9	SOLID SURFACE SHOWER SHELF
TA-10	SHOWER CURTAIN AND ROD

SHEET KEYNOTES

A1	DOOR AND FRAME. SEE DOOR SCHEDULE FOR DETAILS.
A2	WINDOW AND FRAME. SEE WINDOW SCHEDULE FOR DETAILS.
A41	INFILL ABANDONED HVAC PENETRATION WITH 8" CMU

PLAN NORTH

2 1 0 2 4

SCALE: 1/2"=1'-0"

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MARK J. SMITH 4696 REGISTERED ARCHITECT WINNABOW, NC

A-404

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

ENLARGED SLEEPING ROOM ELEVATIONS AND DETAILS

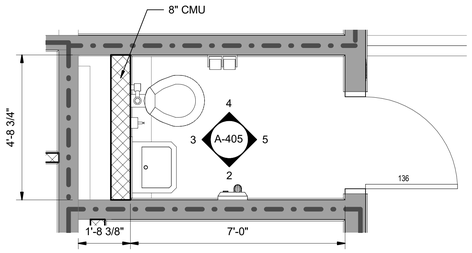
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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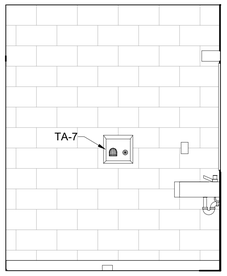
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 51 OF 143

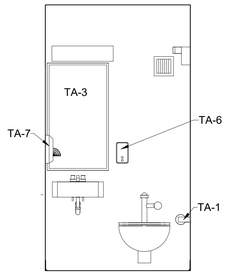
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



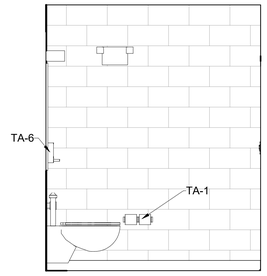
1 FIRST FLOOR PUBLIC TOILET
SCALE: 1/2" = 1'-0"
A-401



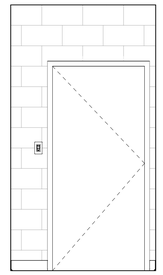
2 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"
A-405



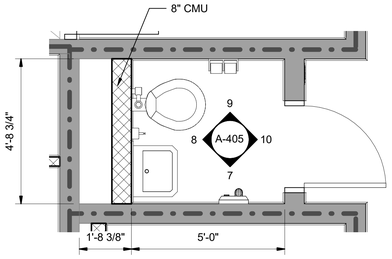
3 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"
A-405



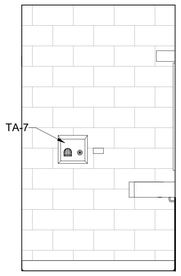
4 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"
A-405



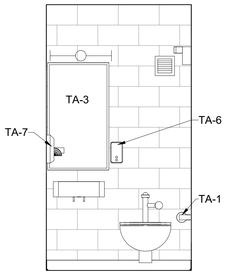
5 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"
A-405



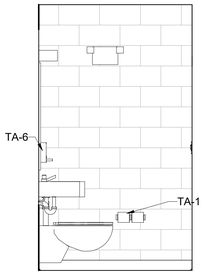
6 2ND AND 3RD FLOOR PUBLIC TOILET
SCALE: 1/2" = 1'-0"
A-401



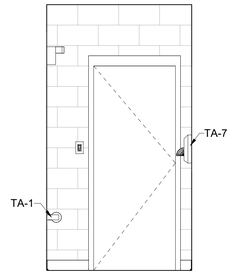
7 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"
A-405



8 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"
A-405

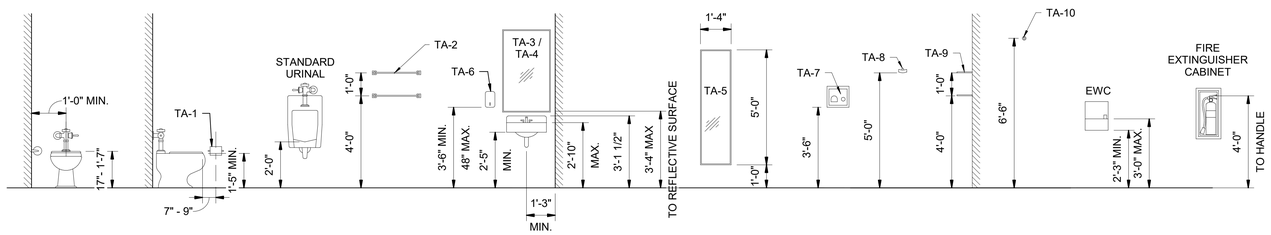


9 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"
A-405



10 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"
A-405

NOTE: HEIGHTS ARE FOR GENERAL USE - ALL ACCESSORIES MAY NOT BE USED FOR THIS PROJECT



11 STANDARD MOUNTING HEIGHTS
SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

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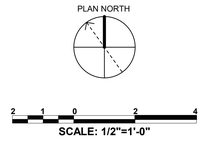
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TOILET ACCESSORY SCHEDULE

TA-1	TOILET TISSUE DISPENSER
TA-2	TOWEL BAR 24" (4) PER SLEEPING ROOM BATHROOM
TA-3	WALL MOUNTED MIRROR 24" X 42"
TA-4	WALL MOUNTED MIRROR 30" X 30"
TA-5	DOOR MOUNTED FRAMELESS MIRROR 16" X 60" 1/4" THICK MAX TO CLEAR LEVER
TA-6	SOAP DISPENSER
TA-7	ELECTRIC HAND DRYER
TA-8	DOUBLE ROBE HOOK (4) PER SLEEPING ROOM
TA-9	SOLID SURFACE SHOWER SHELF
TA-10	SHOWER CURTAIN AND ROD



GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

A-405

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

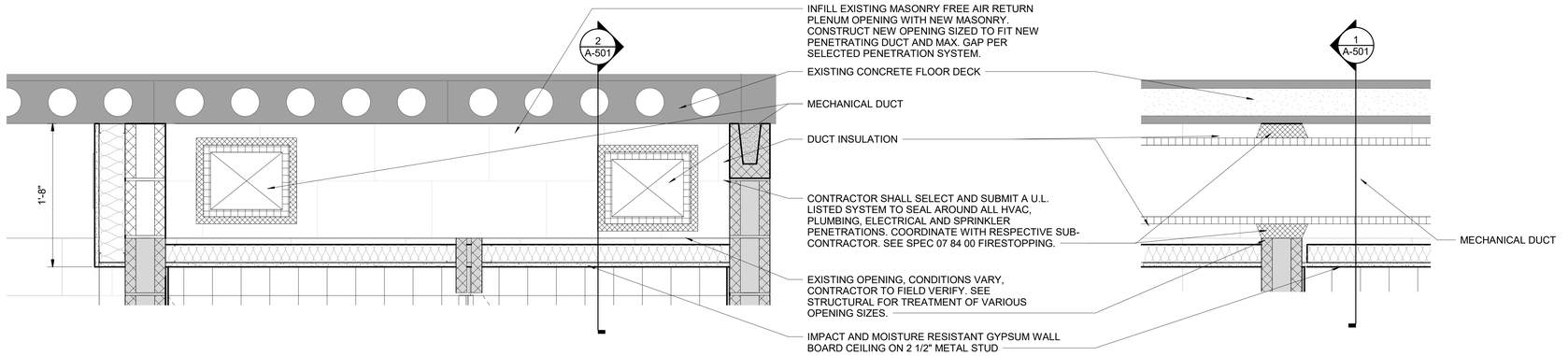
ENLARGED TOILET ROOM PLANS AND ELEVATIONS

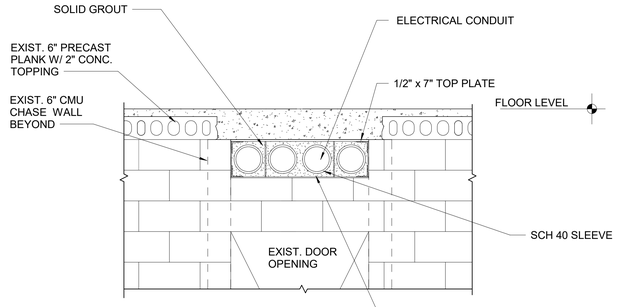
DES. M. SMITH	
DR. P. HARRIS/ R. LEONARD	
CHK. M. SMITH	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

MARK J. SMITH 4696 REGISTERED ARCHITECT HAVANA, NC

SIZE E1 | CODE IDENT NO. 80091 | NAVFAC DRAWING NO. 60024010
CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 52 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED





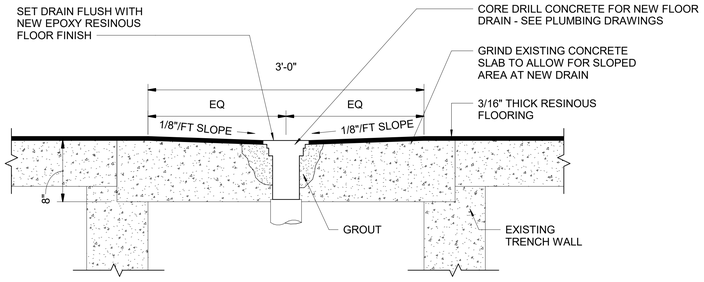
NOTE: CONTRACTOR SHALL SELECT AND SUBMIT A PENETRATION SYSTEM WITH A MINIMUM 1 HOUR 'F' AND 'T' RATING TO MEET OR EXCEED THE HOURLY RATING OF WALL OR FLOOR ASSEMBLY THAT IS PENETRATED.

CONDITIONS VARY. CONTRACTOR TO VERIFY EXISTING OPENING DIMENSIONS AND CONSTRUCT INFILL / ADAPT DETAIL TO SEAL PENETRATION AS THE SELECTED PENETRATION SYSTEM. SEE STRUCTURAL FOR VARIOUS OPENING TREATMENT

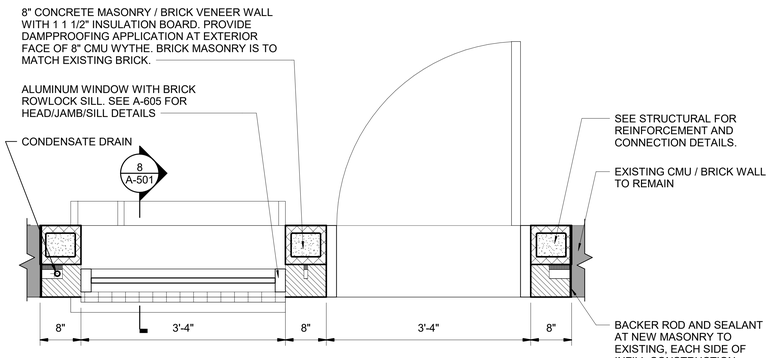
1 DUCTWORK PENETRATION SECTION
SCALE: 1 1/2" = 1'-0"
A-403

2 DUCTWORK PENETRATION SECTION
SCALE: 1 1/2" = 1'-0"
A-403

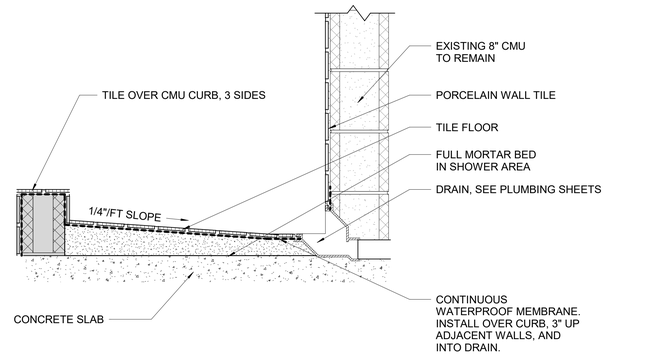
3 CHASE WALL PENETRATION
SCALE: 3/4" = 1'-0"



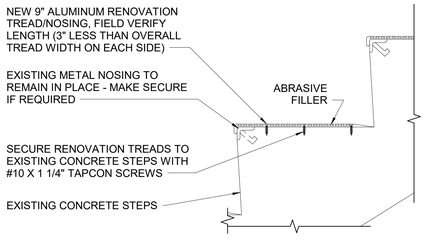
4 FLOOR DRAIN DETAIL
SCALE: 1 1/2" = 1'-0"
A-401



5 SLEEPING ROOM INFILL
SCALE: 1" = 1'-0"
A-404

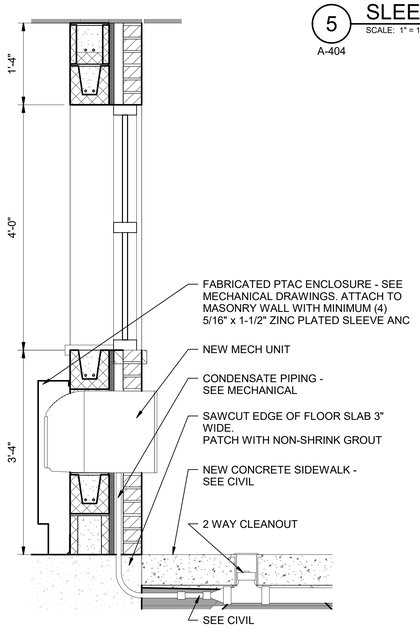


6 SHOWER DETAIL
SCALE: 1 1/2" = 1'-0"
A-404



NOTE: CUT EDGES OF RETROFIT TREADS AROUND EXISTING STEEL PIPE RAILINGS WHERE THEY EXIST

7 STAIR TREAD DETAIL
SCALE: 3" = 1'-0"



8 SLEEPING ROOM WALL SECTION
SCALE: 1" = 1'-0"
A-501

9 FLOOR EXPANSION JOINT DETAIL
SCALE: 6" = 1'-0"

DISCLOSURE OF INFORMATION

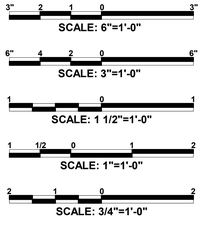
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GRAPHIC SCALES

MARK J. SMITH 4696 REGISTERED LANDSCAPE ARCHITECT WINNABOW, NC

ISSUE DATE:15 May 2020

A-501

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

DETAILS

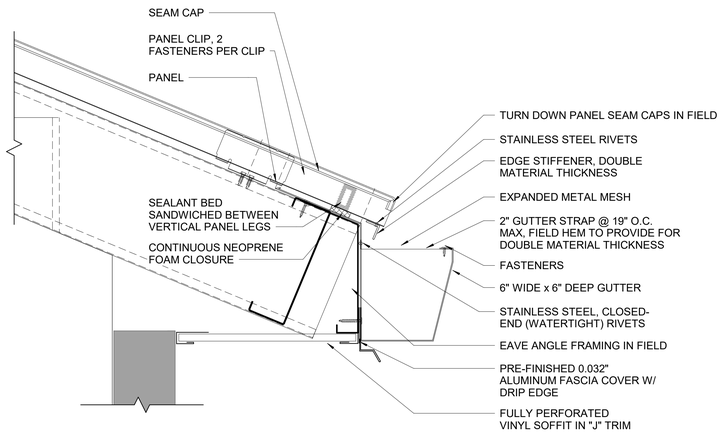
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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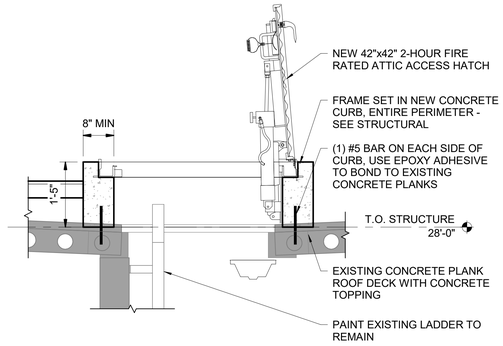
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 53 OF 143

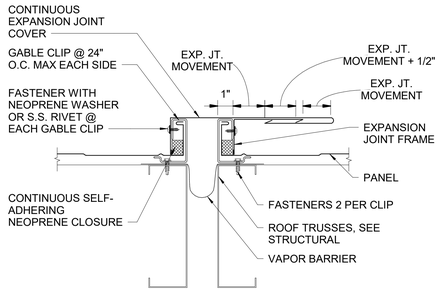
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



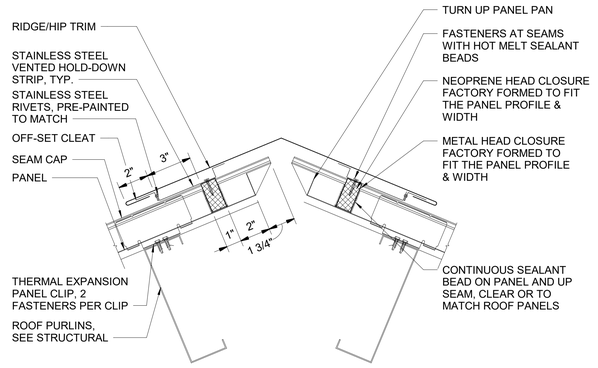
1 EAVE DETAIL TYP GUTTER
SCALE: 3" = 1'-0"
A-302



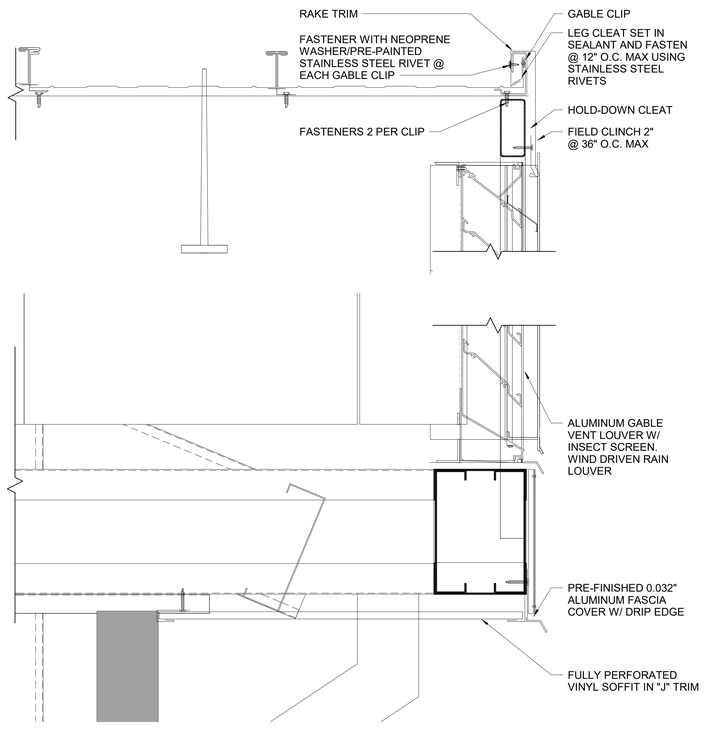
3 ATTIC ACCESS HATCH
SCALE: 3/4" = 1'-0"
A-103



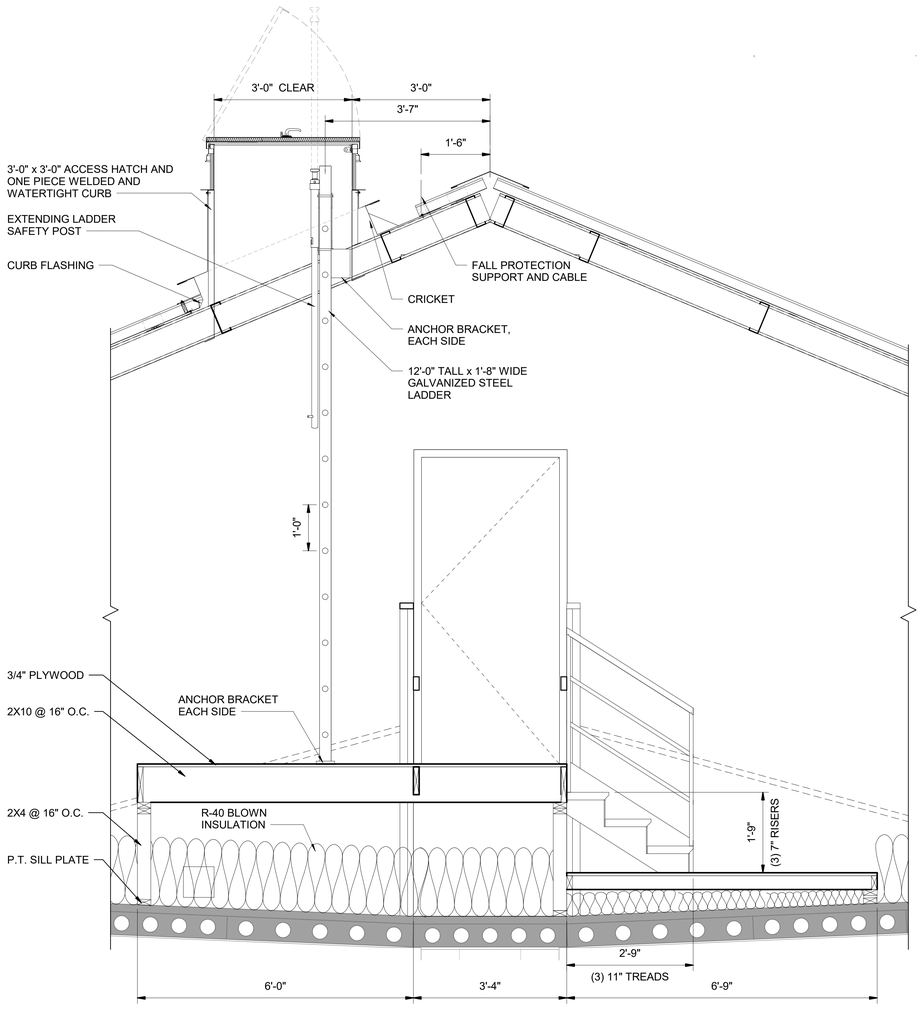
5 ROOF EXPANSION JOINT
SCALE: 3" = 1'-0"



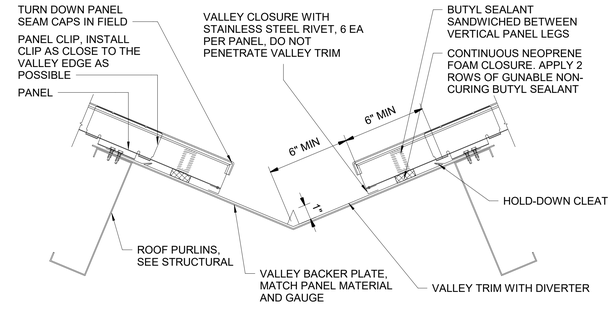
6 HIP/RIDGE DETAIL
SCALE: 3" = 1'-0"



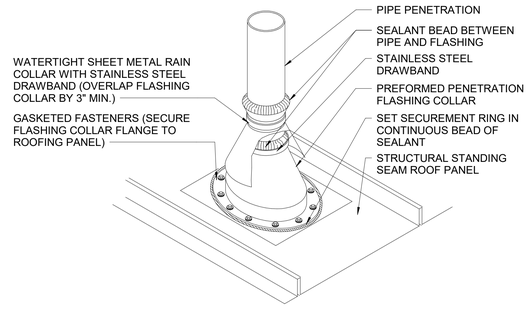
2 RAKE AND SOFFIT DETAIL AT DORMER
SCALE: 3" = 1'-0"
A-302



4 ROOF HATCH
SCALE: 3/4" = 1'-0"
A-103



7 CLOSED VALLEY DETAIL
SCALE: 3" = 1'-0"



8 PIPE PENETRATION DETAIL
SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

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6" 4 2 0 6"
SCALE: 3"=1'-0"

2 1 0 2
SCALE: 3/4"=1'-0"

GRAPHIC SCALES

MARK J. SMITH 4696 NORTH CAROLINA REGISTERED ARCHITECT BRUNSWICK, NC

ISSUE DATE:15 MAY 2020

A-502

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

ROOF DETAILS

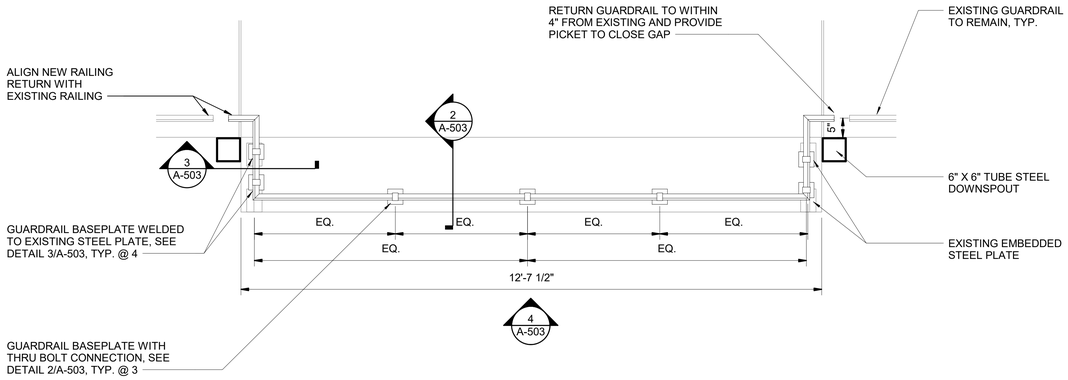
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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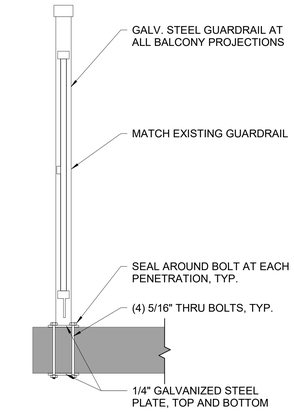
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 54 OF 143

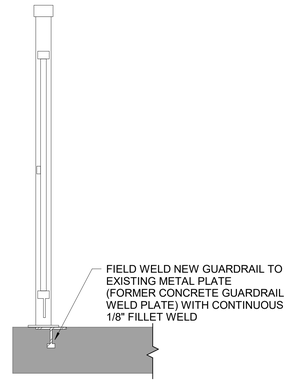
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



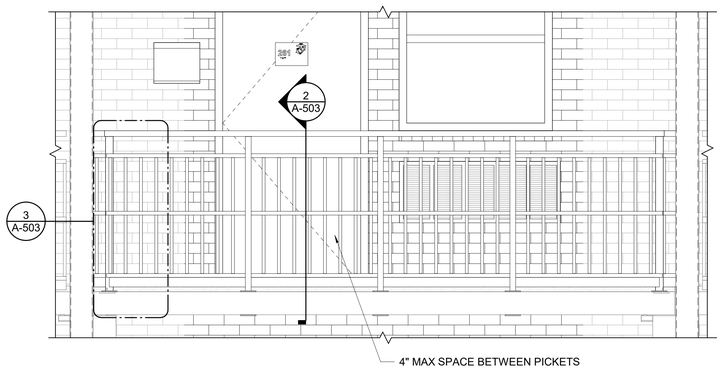
1 NEW RAILING PLAN
SCALE: 3/4" = 1'-0"



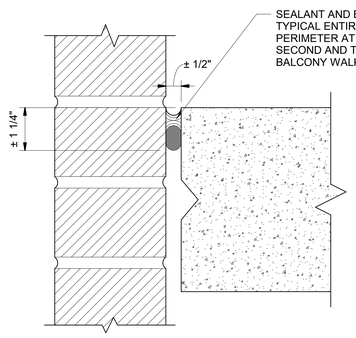
2 A-503 RAILING DETAIL - THRU BOLT
SCALE: 1 1/2" = 1'-0"



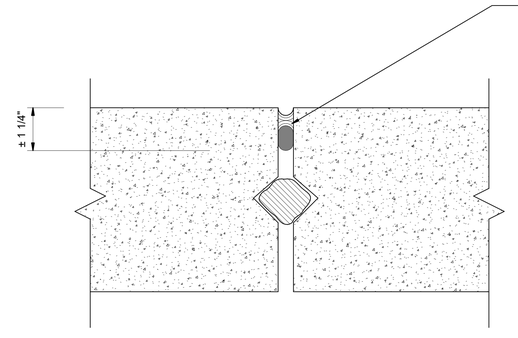
3 A-503 RAILING DETAIL - BASE PLATE
SCALE: 1 1/2" = 1'-0"



4 A-503 NEW RAILING ELEVATION
SCALE: 3/4" = 1'-0"



5 TYPICAL EXPANSION JOINT
SCALE: 6" = 1'-0"



6 TYPICAL EXPANSION JOINT
SCALE: 6" = 1'-0"

DISCLOSURE OF INFORMATION

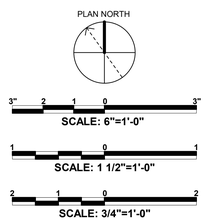
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GRAPHIC SCALES

MARK J. SMITH 4696 NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT

ISSUE DATE:15 MAY 2020

A-503

CEMS ENGINEERING | ARCHITECTURE
104 Bentons Lodge Rd., Summerville, SC. 29485 843.873.3637
100 Dunbar St. Suite 110, Wilmington, NC. 28401 910.383.1646
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIR BEQ HP510

RAILING DETAILS

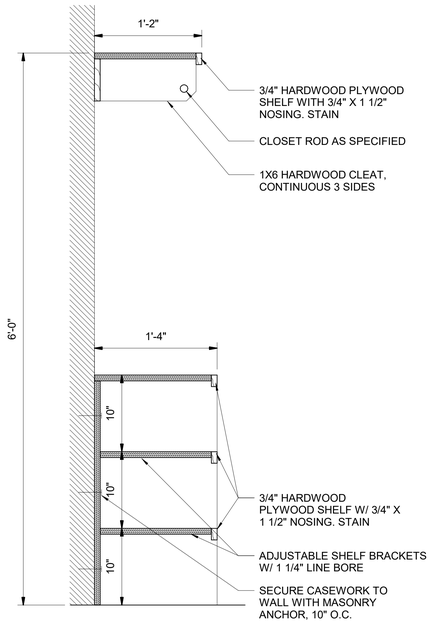
DES. M. SMITH	
DR. P. HARRIS/ R. LEONARD	
CHK. M. SMITH	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024013

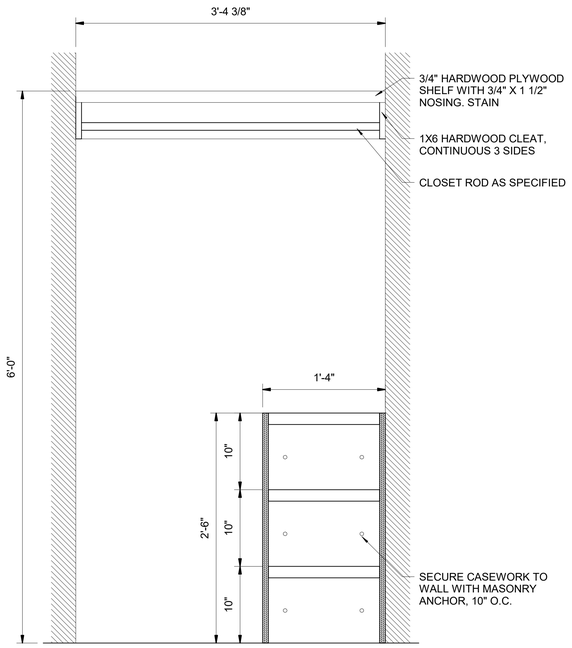
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 55 OF 143

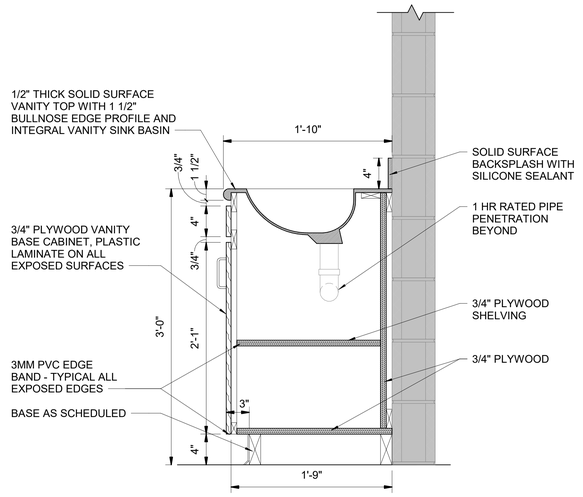
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



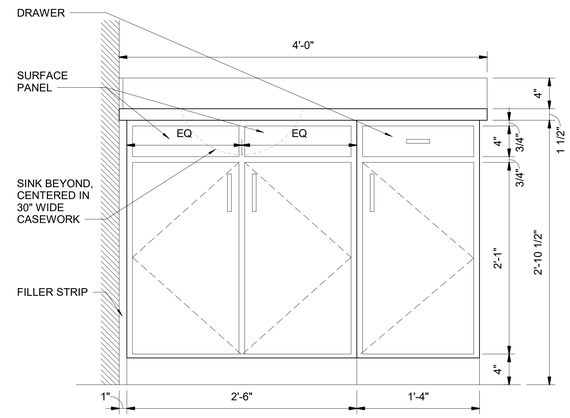
1 TYPICAL CLOSET CASEWORK SECTION
SCALE: 1 1/2" = 1'-0"



2 TYPICAL CLOSET CASEWORK ELEVATION
SCALE: 1 1/2" = 1'-0"



3 TYPICAL VANITY SECTION
SCALE: 1 1/2" = 1'-0"



4 TYPICAL VANITY ELEVATION
SCALE: 1 1/2" = 1'-0"

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1 0 1
SCALE: 1 1/2"=1'-0"
GRAPHIC SCALE

MARK J. SMITH 4696 NORTH CAROLINA REGISTERED ARCHITECT WINNABOW, NC
ISSUE DATE:15 MAY 2020

A-504

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

CASEWORK DETAILS

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024014
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 56 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

FINISH SCHEDULE - TYP SLEEPING ROOM

ROOM NO.	ROOM NAME	WALL FINISH				BASE FINISH				FLOOR	CEILING		NOTES AND REMARKS (SEE NOTES)
		NORTH	EAST	SOUTH	WEST	NORTH	EAST	SOUTH	WEST	MAT.	MAT.	HEIGHT	
101	SLEEPING ROOM	PNT-1	PNT-2	PNT-1	PNT-1	RB-1	RB-1	RB-1	RB-1	SRF-1	PNT-4	8'-8"	ACCENT WALL IS ON BATH SIDE OF ROOM
102	BATHROOM	PT-W1	PT-W1	PT-W1	PT-W1	PT-B1	PT-B1	PT-B1	PT-B1	PT-F1	PNT-4	8'-8"	

FINISH SCHEDULE

ROOM NO.	ROOM NAME	WALL FINISH				BASE FINISH				FLOOR	CEILING		NOTES AND REMARKS (SEE NOTES)
		NORTH	EAST	SOUTH	WEST	NORTH	EAST	SOUTH	WEST	MAT.	MAT.	HEIGHT	
FIRST FLOOR													
134	CENTRAL STAIR	--	--	--	--	--	--	--	--	CONC-2	--		CLEAN BRICK
138	CORRIDOR	--	--	--	--	SRF-2	SRF-2	SRF-2	SRF-2	SRF-2	--	8'-8"	CLEAN BRICK
139	DUTY	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	ACT-1	8'-8"	
137	ELECTRICAL	--	--	--	--	--	--	--	--	CONC-2	--	8'-8"	
135	LAUNDRY	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	PNT-4	8'-8"	
140	LAUNDRY ROOM	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	ACT-1	7'-6"	
119	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
133	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
153	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
136	TOILET ROOM	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	PNT-4	8'-8"	
SECOND FLOOR													
234	CENTRAL STAIR	--	--	--	--	--	--	--	--	CONC-2	--		CLEAN BRICK
239	COMM ROOM	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	CONC-2	PNT-4	8'-8"	
240	CORRIDOR	PNT-3	PNT-3	PNT-3	PNT-3	SRF-2	SRF-2	SRF-2	SRF-2	SRF-2	MTL-1	8'-0"	CLEAN BRICK
237	ELECTRICAL	--	--	--	--	--	--	--	--	CONC-2	--	8'-8"	
235	LAUNDRY	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	PNT-4	8'-8"	
241	LOUNGE	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	ACT-1	7'-8"	
219	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
233	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
254	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
236	TOILET ROOM	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	PNT-4	8'-8"	
THIRD FLOOR													
334	CENTRAL STAIR	--	--	--	--	--	--	--	--	CONC-2	--		CLEAN BRICK
340	CORRIDOR	PNT-3	PNT-3	PNT-3	PNT-3	SRF-2	SRF-2	SRF-2	SRF-2	SRF-2	MTL-1	8'-0"	CLEAN BRICK
337	ELECTRICAL	--	--	--	--	--	--	--	--	CONC-2	--	8'-8"	
335	LAUNDRY	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	PNT-4	8'-8"	
341	LOUNGE	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	ACT-1	7'-8"	
319	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
333	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
354	MECHANICAL	--	--	--	--	--	--	--	--	CONC-1	--	8'-8"	
339	STORAGE	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	PNT-4	8'-8"	
336	TOILET ROOM	PNT-3	PNT-3	PNT-3	PNT-3	RB-1	RB-1	RB-1	RB-1	SRF-2	PNT-4	8'-8"	

LEGEND OF COLORS AND FINISHES

MARK	MATERIAL	MANUFACTURER	COLOR	SIZE	COMMENTS
BASE					
PT-B1	PORCELAIN TILE BASE	DALTILE	PERSIAN GOLD	6" X 12"	COVE BASE
RB-1	RUBBER BASE	JOHNSONITE	BURNT UMBER 63	6" HEIGHT	120'-0" COIL STACK
SRF-2	STANDARD RESINOUS EPOXY FLOORING	STONEHARD STONTEC	DAKOTA BRONZE	MATCH EXISTING BASE HEIGHT	SMALL FLAKE
CEILING					
ACT-1	ACOUSTICAL CEILING TILE	---	WHITE	2'-0" X 2'-0"	---
MTL-1	METAL PANEL CEILING	FABRAL	REGAL WHITE	---	DECOR FLUSH SOFFIT PANELS
PNT-4	GYPSUM WALLBOARD	GLIDDEN	CRISP LINEN 61YY 89/040	---	HORIZONTAL AND VERTICAL FACE OF SOFFITS TO HAVE SAME FINISH
PNT-4	CONCRETE	GLIDDEN	CRISP LINEN 61YY 89/040	---	REMOVE TEXTURE
FLOORING					
CONC-1	EXPOSED CONCRETE	---	---	---	CLEANED
CONC-2	SEALED CONCRETE	---	CLEAR SEALER	---	CLEANED, PREPARED, SEALED
GR-1	PORCELAIN FLOOR GROUT	CUSTOM	122 LINEN	---	--
PT-F1	PORCELAIN FLOOR TILE	DALTILE	ASIAN BLACK	2" X 2"	---
SRF-1	STANDARD RESINUOUS EPOXY FLOORING	STONHARD STONTEC	IVORY CREST	---	SMALL FLAKE
SRF-2	STANDARD RESINUOUS EPOXY FLOORING	STONHARD STONTEC	DAKOTA BRONZE	---	SMALL FLAKE
MISC.					
EP-1	EXTERIOR TRIM PAINT (DOORS AND FRAMES)	GLIDDEN	RED BRICK	---	SUBMIT SAMPLE TO ROICC FOR BASE ARCHITECT APPROVAL
PL-1	PLASTIC LAMINATE	WILSONART	AMBER CHERRY	---	---
SG-1	SIGNAGE BACKGROUND	BESTSIGNSYSTEMS	BLACK	---	---
SG-2	SIGNAGE LETTERS	BESTSIGNSYSTEMS	WHITE	---	---
SS-1	SOLID SURFACE VANITY TOP	CORIAN	SANDSTONE	---	---
SS-2	SOLID SURFACE WINDOW STOOL	CORIAN	SANDSTONE	---	---
SS-3	SOLID SURFACE SHOWER SHELF	CORIAN	ECRU	---	---
SS-4	SOLID SURFACE VANITY BOWL	CORIAN	CAMEO WHITE	---	---
ST-1	STAINED CASEWORK - CLOSET SHELVING	GLIDDEN	LIGHT MAPLE	---	---
TP-1	TRIM PAINT (DOOR FRAMES AND METAL DOORS)	GLIDDEN	GREY TABBY	---	---
WALLS					
GR-2	PORCELAIN WALL GROUT	CUSTOM	122 LINEN	---	---
PNT-1	WALL PAINT	GLIDDEN	CRUSHED SILK PPG 1024-3	---	---
PNT-2	WALL PAINT - ACCENT COLOR	GLIDDEN	LAKEFRONT BLUE 90 BG 31/124	---	SLEEPING ROOM ACCENT WALL IS BATH SIDE OF ROOM
PNT-3	WALL PAINT	GLIDDEN	INDIAN MUSLIN PPG 1075-2	---	---
PT-W1	PORCELAIN WALL TILE	DALTILE	EGPYTIAN BEIGE	6" X 6"	---

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

GENERAL FINISH NOTES

1. MANUFACTURERS NAME AND COLOR IS PROVIDED SOLELY TO DEFINE THE INTENT OF THE DESIGN, COLOR AND QUALITY. PROPOSED SUBSTITUTIONS SHALL ADHERE TO THE INTENT OF THE DESIGN, COLOR AND QUALITY AND CONFORM TO SPECIFICATIONS.
2. FURNISH AND INSTALL MATERIALS IN COMPLIANCE WITH MANUFACTURER'S PRINTED SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
3. ANY DISCONTINUED ITEMS SHALL BE BROUGHT TO THE ATTENTION OF THE GOVERNMENT IMMEDIATELY. NOTIFY GOVERNMENT OF ANY ITEMS REQUIRING FURTHER CLARIFICATION OF FINISH SELECTION.
4. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING OF MATERIALS. DO NOT SCALE ARCHITECTURAL DRAWINGS.
5. CONTRACTOR SHALL PROVIDE MANUFACTURER'S RECOMMENDED MAINTENANCE INSTRUCTIONS ON ALL FINISH MATERIALS. SUBMIT SHOP DRAWINGS FOR ALL NEW MATERIALS INSTALLED.
6. INTERIOR CONSTRUCTION REQUIRING FINISH / COLOR SELECTION NOT NOTED WITHIN THE SCHEDULE SHALL BE SUBMITTED WITH SAMPLES OF FINISH / COLORS AVAILABLE, CLEARLY IDENTIFYING ANY THAT MIGHT BE AT A PREMIUM ABOVE THE PRODUCT BID.
7. FIRE HOSE CABINETS, FIRE EXTINGUISHER CABINETS, ELECTRICAL PANELS AND THE LIKE SHALL BE PAINTED TO MATCH THE ADJACENT WALL FINISHES UNLESS PRE-FINISHED.
8. FINISHES ARE DESIGNATED USING "PLAN NORTH".

FLOOR FINISH NOTES

1. FOLLOW MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS ON FLOORING PRODUCTS AND USE THE ADHESIVES, EQUIPMENT / TOOLS REQUIRED / RECOMMENDED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. REMOVE EXISTING FLOORING MATERIALS AND PREPARE SUB FLOOR PER MANUFACTURER'S INSTRUCTIONS AND SPECIFIED HEREIN.
3. FOLLOW MANUFACTURER'S PRINTED INSTRUCTIONS ON PROTECTION OF FLOORING MATERIAL AFTER INSTALLATION. PROTECT FLOORING AGAINST MARS, INDENTATIONS AND OTHER DAMAGE FROM CONSTRUCTION OPERATIONS, PLACEMENT OF EQUIPMENT AND FIXTURES DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. USE PROTECTION METHODS SPECIFIED OR RECOMMENDED BY THE FLOOR COVERING MANUFACTURER.
4. PROVIDE TRANSITION STRIPS WHERE DIFFERING MATERIALS ABUT UNLESS NOTED OTHERWISE. FLOOR FINISH CHANGES SHALL OCCUR UNDER THE DOOR CENTERLINE OR CENTER OF THE WALL OPENING.
5. FOLLOW TILE MANUFACTURER'S RECOMMENDED WIDTHS OF GROUT JOINTS.

WALL FINISH NOTES

1. A FINISH INDICATION ON A WALL SHALL MEAN THE ENTIRE WIDTH AND HEIGHT OF WALL IS TO BE FINISHED
2. MISCELLANEOUS GRILLS AND ACCESSORIES SHALL BE PAINTED TO MATCH ADJACENT WALL FINISHES UNLESS THEY ARE PREFINISHED.

MARK J. SMITH 4696 NORTH CAROLINA REGISTERED ARCHITECT

ISSUE DATE:15 MAY 2020

A-601

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15150V Project Manager: R. Alvar

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

REPAIR BEQ HP510

FINISH SCHEDULE AND DETAILS

DES. M. SMITH
DR. P. HARRIS/ R. LEONARD
CHK. M. SMITH
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024015

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 57 OF 143

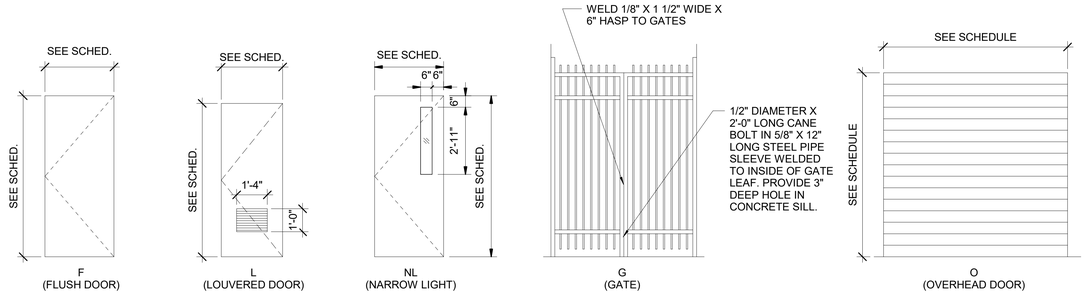
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

DOOR SCHEDULE - TYP SLEEPING ROOM

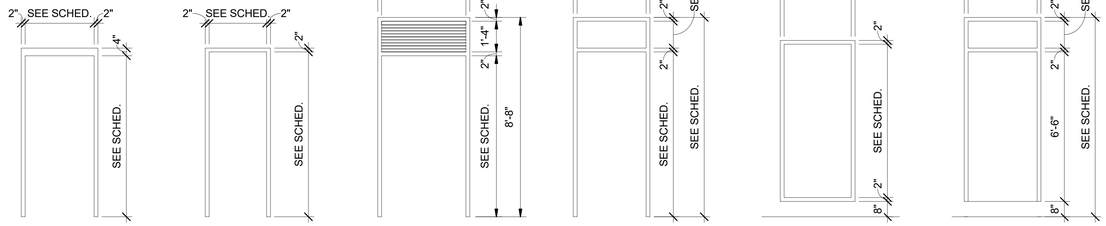
		DOOR						FIRE	FRAME							
		SIZE					UNDER					DETAILS				
NO.	TYPE	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	CUT	RATING	TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL	HARDWARE	COMMENTS
107A	F	3'-0"	7'-0"	1 3/4"	HM	PAINT	--		A	HM	PAINT	H2	J2	S1	HW1	(SLEEPING ROOM)
107B	L	2'-4"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H6	J6	S2	HW3	(CLOSET)
107C	L	2'-4"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H6	J6	S2	HW3	(CLOSET)
108A	F	2'-0"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H5	J10	S3	HW2	(BATHROOM)
108B	F	2'-0"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H5	J10	S3	HW2	(BATHROOM)

DOOR SCHEDULE

		DOOR						FIRE	FRAME							
		SIZE					UNDER					DETAILS				
NO.	TYPE	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	CUT	RATING	TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL	HARDWARE	COMMENTS
100A	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	--	P	HM	PAINT	H1	J1	S1	HW12	TRANSOM PANEL
100B	F	2'-8"	6'-0"	1 3/4"	HM	PAINT	--	45 MIN	N	HM	PAINT	H5	J5	S4	HW13	
101D	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	20 MIN	B	HM	PAINT	H5	J5	S2	HW2	
106D	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	20 MIN	B	HM	PAINT	H5	J5	S2	HW2	
119	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW15	TRANSOM LOUVER
120	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
133	F	3'-8"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H11	J1	S1	HW4	TRANSOM LOUVER
135	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H4	J4	S2	HW5	
136	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H4	J4	S2	HW6	
137	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H4	J4	S2	HW7	
138A	NL	3'-0"	7'-0"	1 3/4"	HM	PAINT	--	--	A	HM	PAINT	H3	J3	S1	HW9	
138B	NL	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H8	J8	S1	HW9	
138C	NL	3'-0"	7'-0"	1 3/4"	HM	PAINT	--	--	A	HM	PAINT	H8	J8	S1	HW9	
139	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H4	J4	S2	HW10	
140A	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H9	J9	S2	HW5	
140B	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H9	J9	S2	HW5	
140C	F	2'-6"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H7	J7	S2	HW14	
140D	F	2'-6"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H7	J7	S2	HW14	
140E	F	2'-6"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H7	J5	S2	HW14	
153	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
154	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S2	HW4	TRANSOM LOUVER
173A	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	--	P	HM	PAINT	H1	J1	S1	HW12	TRANSOM PANEL
173B	F	2'-8"	6'-0"	1 3/4"	HM	PAINT	--	45 MIN	N	HM	PAINT	H5	J5	S4	HW13	
200A	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	--	P	HM	PAINT	H1	J1	S1	HW12	TRANSOM PANEL
200B	F	2'-8"	6'-0"	1 3/4"	HM	PAINT	--	45 MIN	N	HM	PAINT	H5	J5	S4	HW13	
200D	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	20 MIN	B	HM	PAINT	H5	J5	S2	HW2	
219	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
220	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
233	F	3'-8"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H11	J1	S1	HW4	TRANSOM LOUVER
235	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H5	J5	S2	HW5	
236	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H5	J5	S2	HW6	
237	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H5	J5	S2	HW7	
238A	NL	3'-0"	7'-0"	1 3/4"	HM	PAINT	--	--	A	HM	PAINT	H1	J1	S1	HW9	
238B	NL	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H4	J4	S2	HW9	
238C	NL	3'-0"	7'-0"	1 3/4"	HM	PAINT	--	--	A	HM	PAINT	H1	J1	S1	HW9	
239	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H5	J5	S2	HW7	
240A	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H9	J9	S2	HW5	
240B	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H9	J9	S2	HW5	
253	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
254	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
273A	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	--	P	HM	PAINT	H1	J1	S1	HW12	TRANSOM PANEL
273B	F	2'-8"	6'-0"	1 3/4"	HM	PAINT	--	45 MIN	N	HM	PAINT	H5	J5	S4	HW13	
300A	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	--	P	HM	PAINT	H1	J1	S1	HW12	TRANSOM PANEL
300B	F	2'-8"	6'-0"	1 3/4"	HM	PAINT	--	45 MIN	N	HM	PAINT	H5	J5	S4	HW13	
306D	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	20 MIN	B	HM	PAINT	H5	J5	S2	HW2	
319	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
320	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
333	F	3'-8"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H11	J1	S1	HW4	TRANSOM LOUVER
335	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H5	J5	S2	HW5	
336	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	--	B	HM	PAINT	H5	J5	S2	HW6	
337	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H5	J5	S2	HW7	
338A	NL	3'-0"	7'-0"	1 3/4"	HM	PAINT	--	--	A	HM	PAINT	H1	J1	S1	HW9	
338B	NL	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H4	J4	S2	HW9	
338C	NL	3'-0"	7'-0"	1 3/4"	HM	PAINT	--	--	A	HM	PAINT	H1	J1	S1	HW9	
339	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H5	J5	S2	HW7	
340A	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H5	J5	S2	HW5	
340B	F	3'-0"	6'-8"	1 3/4"	HM	PAINT	--	45 MIN	B	HM	PAINT	H5	J5	S2	HW5	
353	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
354	F	4'-6"	7'-0"	1 3/4"	HM	PAINT	--	--	C	HM	PAINT	H1	J1	S1	HW4	TRANSOM LOUVER
373A	F	2'-8"	6'-8"	1 3/4"	HM	PAINT	--	--	P	HM	PAINT	H1	J1	S1	HW12	TRANSOM PANEL
373B	F	2'-8"	6'-0"	1 3/4"	HM	PAINT	--	45 MIN	N	HM	PAINT	H5	J5	S4	HW13	
400A	F	3'-0"	6'-8"	1 3/4"	WD	PAINT	--	--	B	WD	PAINT	H12	J12	S2	HW16	
400B	F	3'-0"	6'-8"	1 3/4"	WD	PAINT	--	--	B	WD	PAINT	H12	J12	S2	HW16	
400C	F	3'-0"	6'-8"	1 3/4"	WD	PAINT	--	--	B	WD	PAINT	H12	J12	S2	HW16	
400D	F	3'-0"	6'-8"	1 3/4"	WD	PAINT	--	--	B	WD	PAINT	H12	J12	S2	HW16	
400E	F	3'-0"	6'-8"	1 3/4"	WD	PAINT		--	B	WD	PAINT	H12	J12	S2	HW16	
400F	F	3'-0"	6'-8"	1 3/4"	WD	PAINT	--	--	B	WD	PAINT	H12	J12	S2	HW16	
400G	F	3'-0"	6'-8"	1 3/4"	WD	PAINT	--	--	B	WD	PAINT	H12	J12	S2	HW16	
501A	O	8'-0"	8'-8"	1"	STL	PRE-FINISHED	--	--	--	STL	PAINT	H13	J13	--	--	COILING DOOR
501B	F	3'-0"	7'-0"	1 3/4"	HM	PAINT	--	--	A	HM	PAINT	H14	J14	S1	HW9	



1 DOOR TYPES
SCALE: NOT TO SCALE



2 FRAME TYPES
SCALE: NOT TO SCALE

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DOOR GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DOOR AND FRAME OPENINGS PRIOR TO FABRICATION OF NEW DOORS.
2. ALL GLAZED EXTERIOR DOORS SHALL MEET STANDARDS AND REQUIREMENTS OF UFC 4-010-01, DOD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS.
3. ALL DOOR LITES AND SIDELITES SHALL BE TEMPERED OR LAMINATED GLASS. (SAFETY GLASS COMPLYING W/ CPSC 16 CFR 1201).
4. ALL NEW EXTERIOR DOORS SHALL BE INSULATED.
5. RETROFIT DOOR FRAMES CONSTRUCTED IN EXISTING WALLS SHALL BE KNOCK DOWN FRAMES
6. DOOR FRAMES CONSTRUCTED IN NEW WALLS SHALL BE FULLY WELDED
7. ALL DOOR FRAMES SHALL BE FULLY GROUTED

DOOR MATERIAL LEGEND

HM	HOLLOW METAL
WD	WOOD DOOR

MARK T. SMITH 4696 NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT WINNABOW, NC

ISSUE DATE:15 MAY 2020

A-602

CEMS ENGINEERING | ARCHITECTURE
109 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIR BEQ HP510

DOOR SCHEDULE AND DETAILS

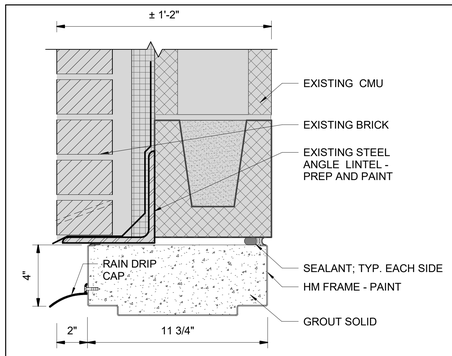
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DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

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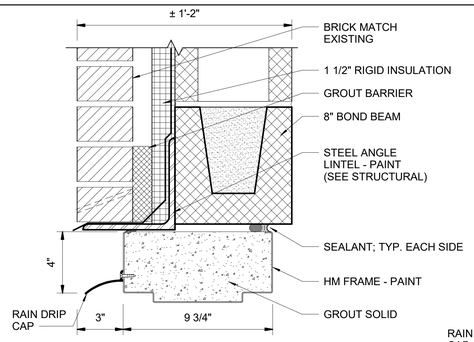
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 58 OF 143

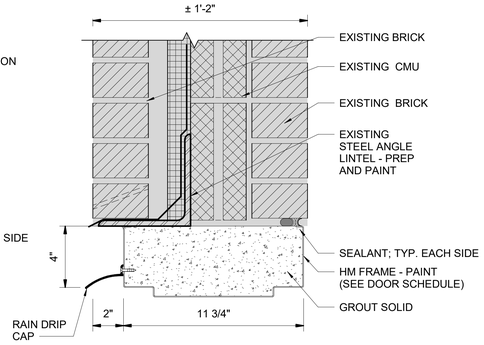
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SYM.	DESCRIPTION	DATE	APPROVED



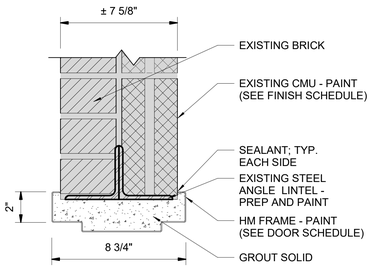
H1 HEAD DETAIL
SCALE: 3" = 1'-0"



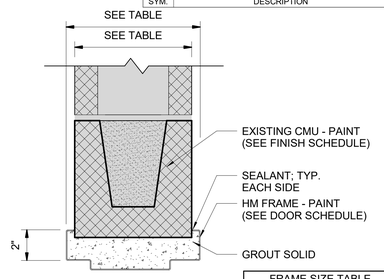
H2 HEAD DETAIL
SCALE: 3" = 1'-0"



H3 HEAD DETAIL
SCALE: 3" = 1'-0"

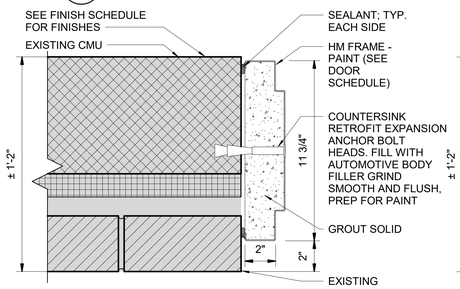


H4 HEAD DETAIL
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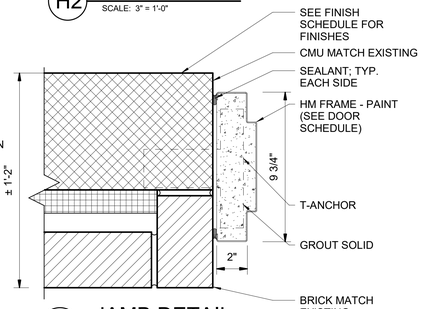


H5 HEAD DETAIL
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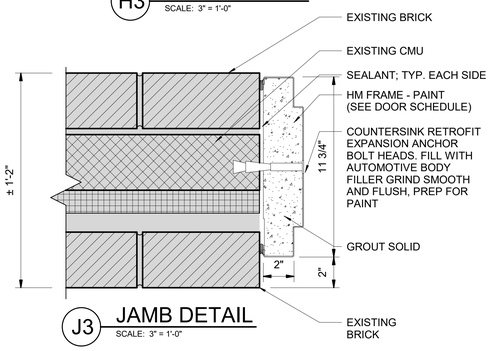
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8"	8 3/4"
12"	10 3/4"



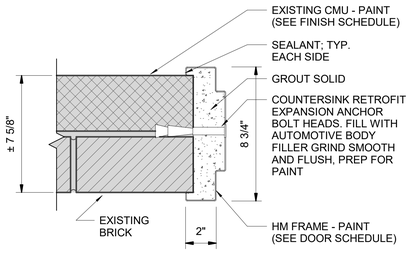
J1 JAMB DETAIL
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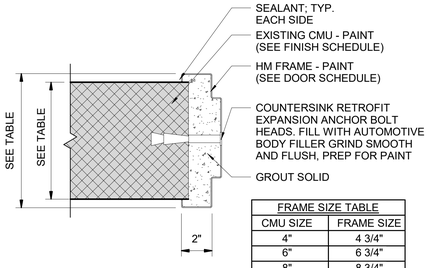
J2 JAMB DETAIL
SCALE: 3" = 1'-0"



J3 JAMB DETAIL
SCALE: 3" = 1'-0"

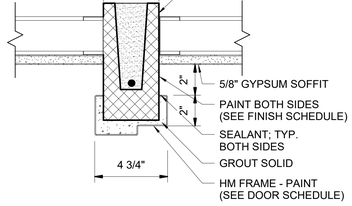


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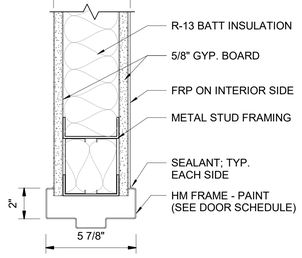


J5 JAMB DETAIL
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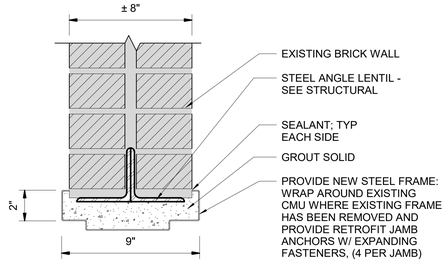
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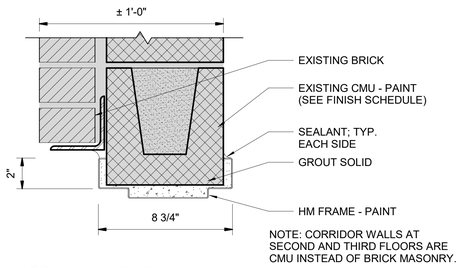
H6 HEAD DETAIL
SCALE: 3" = 1'-0"



H7 HEAD DETAIL
SCALE: 3" = 1'-0"

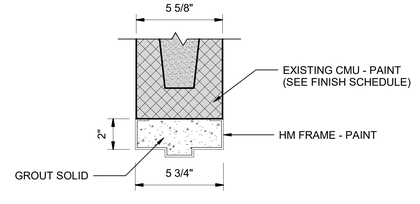


H8 HEAD DETAIL
SCALE: 3" = 1'-0"

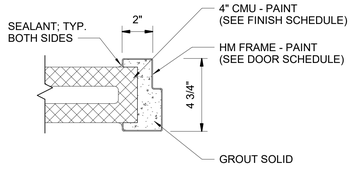


NOTE: CORRIDOR WALLS AT SECOND AND THIRD FLOORS ARE CMU INSTEAD OF BRICK MASONRY.

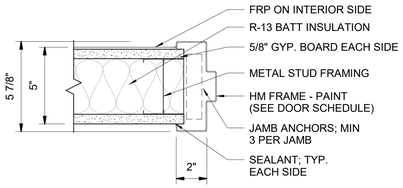
H9 HEAD DETAIL
SCALE: 3" = 1'-0"



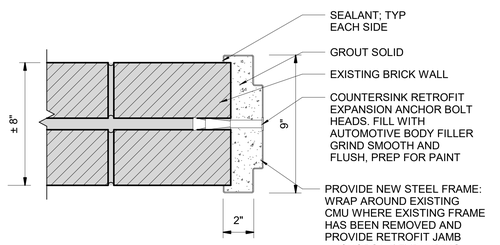
H10 HEAD DETAIL
SCALE: 3" = 1'-0"



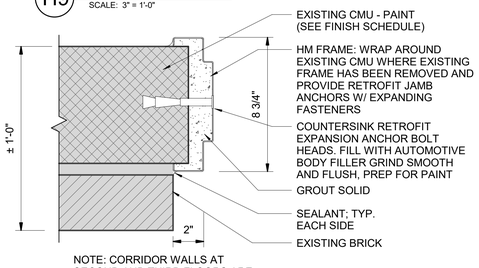
J6 JAMB DETAIL
SCALE: 3" = 1'-0"



J7 JAMB DETAIL
SCALE: 3" = 1'-0"

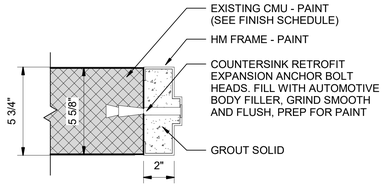


J8 JAMB DETAIL
SCALE: 3" = 1'-0"



NOTE: CORRIDOR WALLS AT SECOND AND THIRD FLOORS ARE CMU INSTEAD OF BRICK MASONRY.

J9 JAMB DETAIL
SCALE: 3" = 1'-0"



J10 JAMB DETAIL
SCALE: 3" = 1'-0"

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6" 4 2 0 6"
SCALE: 3"=1'-0"
GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

A-603

CEMS
ENGINEERING | ARCHITECTURE
100 Bentora Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15102V Project Manager: R. Alvar

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

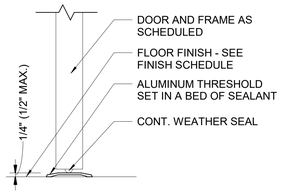
REPAIR BEQ HP510

DOOR DETAILS

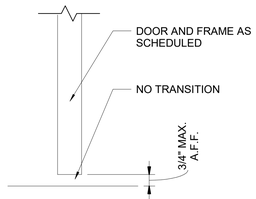
DES. M. SMITH	
DR. P. HARRIS/ R. LEONARD	
CHK. M. SMITH	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 59 OF 143

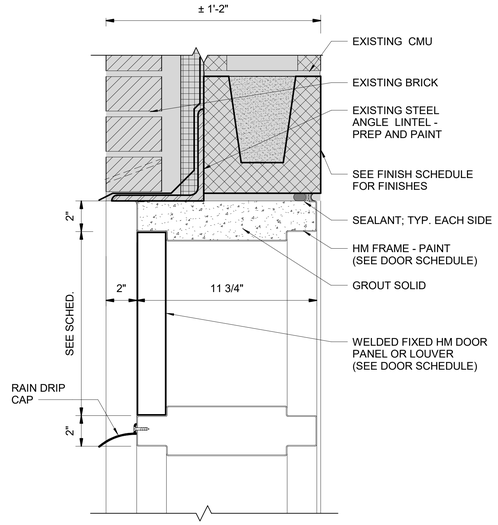
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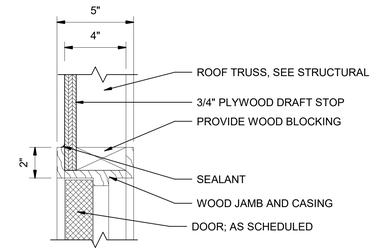
S1 SILL DETAIL
SCALE: 3" = 1'-0"



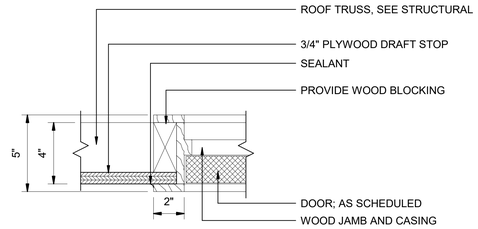
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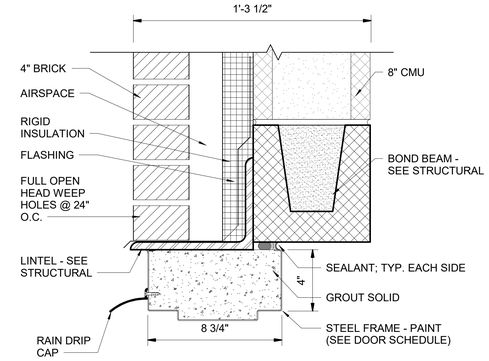
H11 TRANSOM HEAD DETAIL
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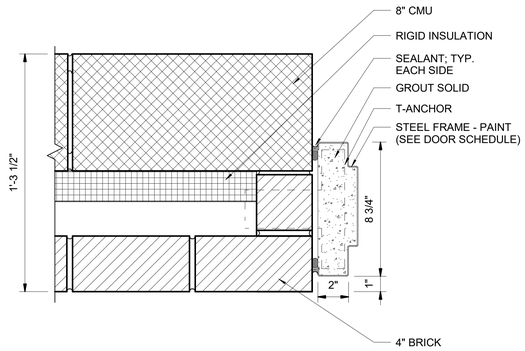
H12 HEAD DETAIL
SCALE: 3" = 1'-0"



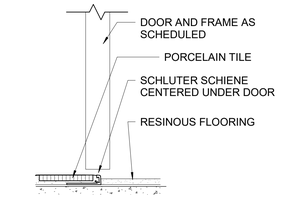
J12 JAMB DETAIL
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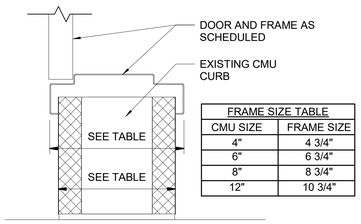
H14 HEAD DETAIL
SCALE: 3" = 1'-0"



J14 JAMB DETAIL
SCALE: 3" = 1'-0"

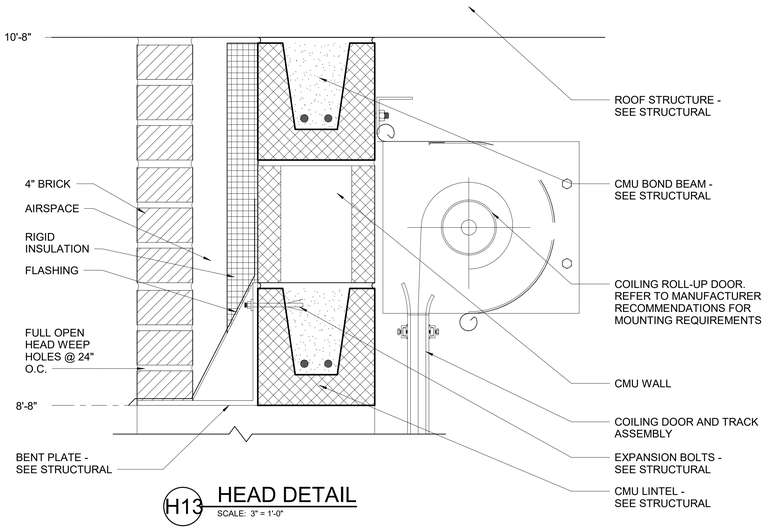


S3 SILL DETAIL
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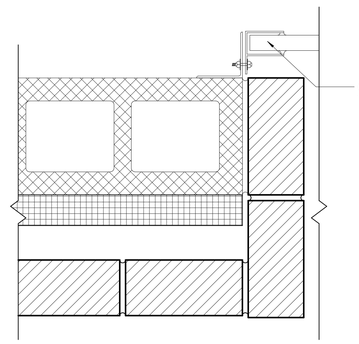


FRAME SIZE TABLE	
CMU SIZE	FRAME SIZE
4"	4 3/4"
6"	6 3/4"
8"	8 3/4"
12"	10 3/4"

S4 SILL DETAIL
SCALE: 3" = 1'-0"



H13 HEAD DETAIL
SCALE: 3" = 1'-0"



J13 JAMB DETAIL
SCALE: 3" = 1'-0"

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6" 4 2 0 6"
SCALE: 3"=1'-0"
GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

A-604

CEMS ENGINEERING | ARCHITECTURE
169 Sentora Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15102V Project Manager: R. Alvar

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

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

REPAIR BEQ HP510

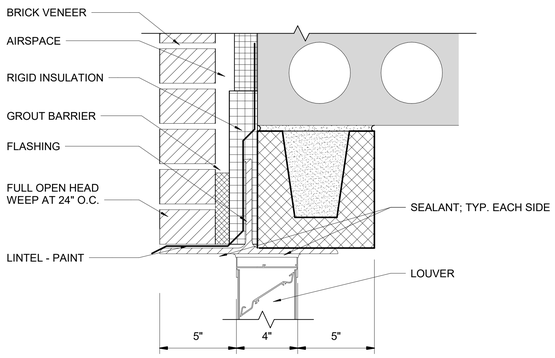
DOOR DETAILS

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 60 OF 143

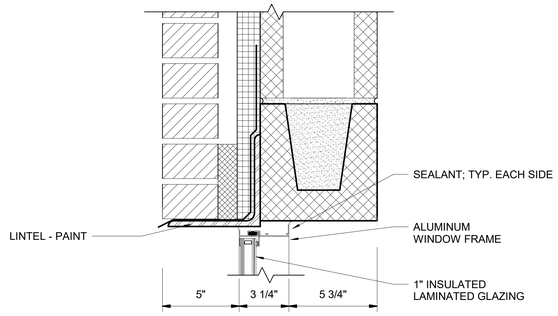
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

WINDOW SCHEDULE

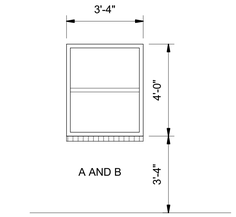
MARK	R.O. WIDTH	R.O. HEIGHT	FRAME FINISH	FRAME MATERIAL	GLAZING TYPE	GLAZING THICKNESS	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	HEAD HEIGHT	COMMENTS
A	3'-4"	4'-0"		ALUM	LAM	1"	W1	W2	W3	7'-4"	BLAST RESISTANT SINGLE HUNG ALUMINUM
B	3'-4"	4'-0"		ALUM	LAM	1"	W1	W2	W3	7'-4"	SINGLE HUNG ALUMINUM



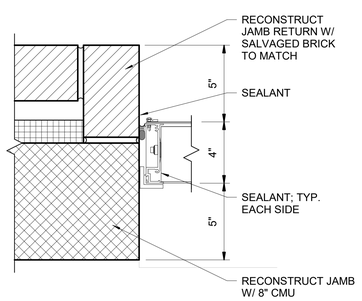
L1 LOUVER HEAD DETAIL
SCALE: 3" = 1'-0"



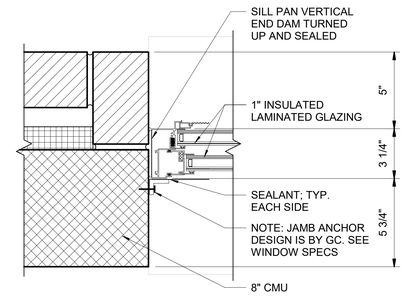
W1 TYPICAL HEAD DETAIL
SCALE: 3" = 1'-0"



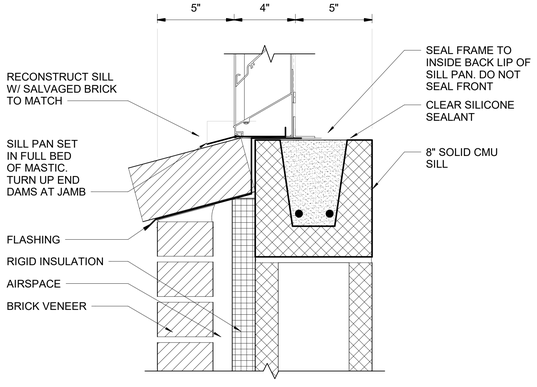
1 WINDOW TYPES
SCALE: NOT TO SCALE



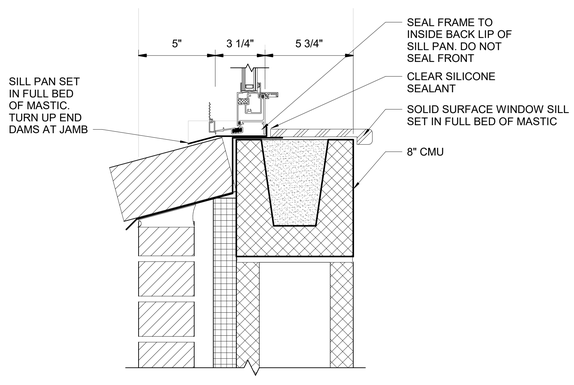
L2 LOUVER JAMB DETAIL
SCALE: 3" = 1'-0"



W2 TYPICAL JAMB DETAIL
SCALE: 3" = 1'-0"



L3 LOUVER SILL DETAIL
SCALE: 3" = 1'-0"



W3 TYPICAL SILL DETAIL
SCALE: 3" = 1'-0"

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

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

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

WINDOW GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL WINDOW OPENINGS AND HEIGHTS PRIOR TO FABRICATION.
2. ALL INTERIOR WINDOWS SHALL BE HOLLOW METAL WITH TEMPERED GLASS.

6" 4 2 0 6"
SCALE: 3"=1'-0"
GRAPHIC SCALE

MARK J. SMITH 4696 NORTH CAROLINA WINNABOW, NC
ISSUE DATE:15 MAY 2020

A-605

CEMS ENGINEERING | ARCHITECTURE
109 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

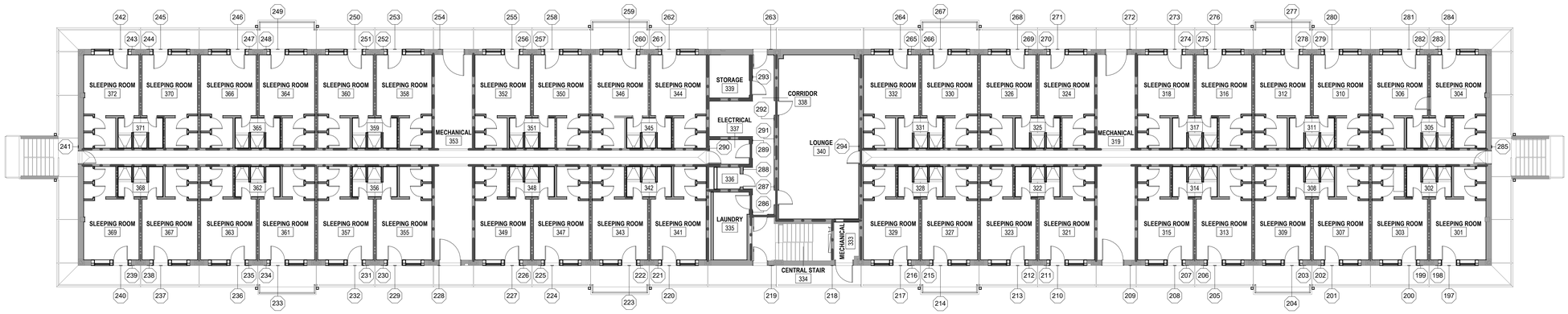
REPAIR BEQ HP510

WINDOW SCHEDULE AND DETAILS

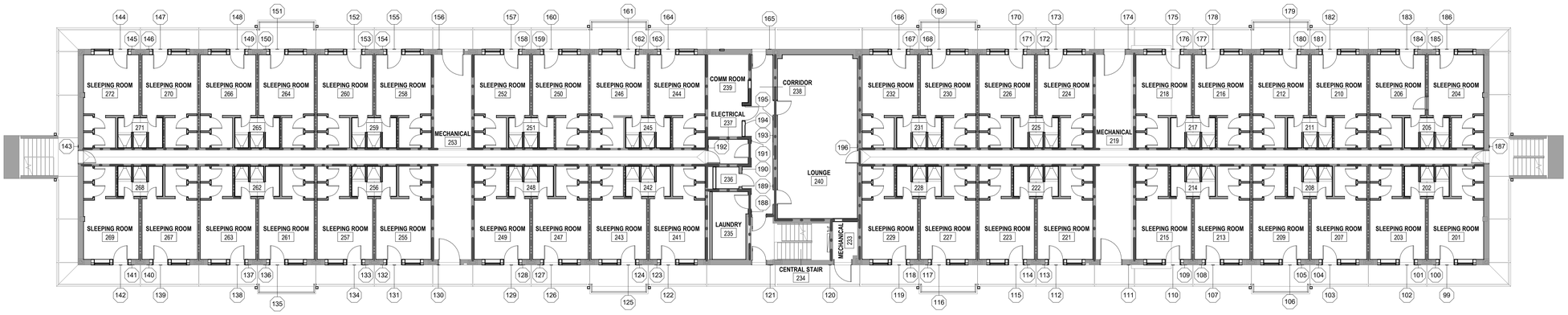
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024019
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 61 OF 143

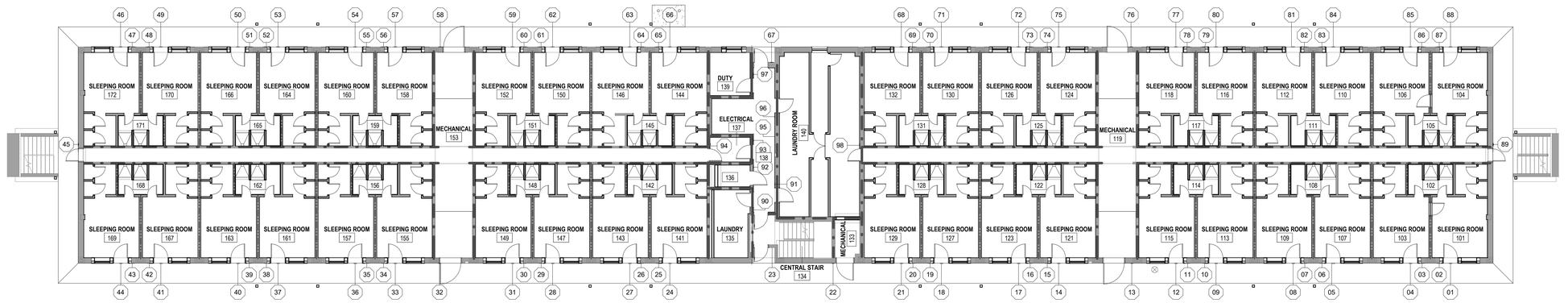
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR SIGNAGE PLAN
SCALE: 3/32" = 1'-0"



2 SECOND FLOOR SIGNAGE PLAN
SCALE: 3/32" = 1'-0"



3 FIRST FLOOR SIGNAGE PLAN
SCALE: 3/32" = 1'-0"

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GENERAL NOTES

1. REMOVE ALL EXISTING SIGNAGE & HARDWARE COMPLETE.

LEGEND

(1) SIGNAGE MARK TAG

PLAN NORTH

16 8 0 16
SCALE: 3/32"=1'-0"
GRAPHIC SCALE

MARK J. SMITH 4696 NAVAL ENGINEER NEW BERN, NC

ISSUE DATE:15 MAY 2020

A-606

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 1515JV Project Manager: R. Alvar

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

REPAIR BEQ HP510

SIGNAGE PLANS

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

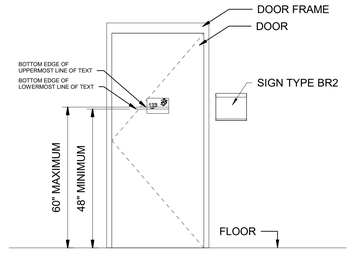
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E1	80091	60024020

CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED SPEC. 05-18-0042 SHEET 62 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

SIGNAGE SCHEDULE

MARK	CONSTRUCTION ROOM NO.	ASSIGNED ROOM NO.	SIGNAGE TYPE	ASSIGNED ROOM NAME	COMMENTS
01	101		BR1		
02	101		BR2		
03	103		BR2		
04	103		BR1		
05	107		BR1		
06	107		BR2		
07	109		BR2		
08	109		BR1		
09	113		BR1		
10	113		BR2		
11	115		BR2		
12	115		BR1		
13	119		MR2	MECHANICAL ROOM	
14	121		BR1		
15	121		BR2		
16	123		BR2		
17	123		BR1		
18	127		BR1		
19	127		BR2		
20	129		BR2		
21	129		BR1		
22	133		MR2	MECHANICAL ROOM	
23	134		LS2	CORRIDOR	
24	141		BR1		
25	141		BR2		
26	143		BR2		
27	143		BR1		
28	147		BR1		
29	147		BR2		
30	149		BR2		
31	149		BR1		
32	153		MR2	MECHANICAL ROOM	
33	155		BR1		
34	155		BR2		
35	157		BR2		
36	157		BR1		
37	161		BR1		
38	161		BR2		
39	163		BR2		
40	163		BR1		
41	167		BR1		
42	167		BR2		
43	169		BR2		
44	169		BR1		
45	100		MR2	CHASE	
46	172		BR1		
47	172		BR2		
48	170		BR2		
49	170		BR1		
50	166		BR1		
51	166		BR2		
52	164		BR2		
53	164		BR1		
54	160		BR1		
55	160		BR2		
56	158		BR2		
57	158		BR1		
58	154		MR2	MECHANICAL ROOM	
59	152		BR1		
60	152		BR2		
61	150		BR2		
62	150		BR1		
63	146		BR1		
64	146		BR2		
65	144		BR2		
66	144		BR1		
67	138		RM3	CORRIDOR	
68	132		BR1		
69	132		BR2		
70	130		BR2		
71	130		BR1		
72	126		BR1		
73	126		BR2		
74	124		BR2		
75	124		BR1		
76	120		MR2	MECHANICAL ROOM	
77	118		BR1		
78	118		BR2		
79	116		BR2		
80	116		BR1		
81	112		BR1		
82	112		BR2		
83	110		BR2		
84	110		BR1		
85	106		BR1		
86	106		BR2		
87	104		BR2		
88	104		BR1		
89	100		MR2	CHASE	
90	135		RM3	LAUNDRY ROOM	
91	140		RM3	LAUNDRY ROOM	
92	136		TL3	PUBLIC TOILET	
93	137		MR1	ELECTRICAL ROOM	
94	174		MR2	CHASE	
95	138		LS1	CORRIDOR	FIRE EVACUATION SIGNAGE
96	140		RM3	LAUNDRY ROOM	
97	139		RM3		
98	100		MR2	CHASE	
99	201		BR1		
100	201		BR2		
101	203		BR2		
102	203		BR1		
103	207		BR1		
104	207		BR2		
105	209		BR2		
106	209		BR1		
107	213		BR1		
108	213		BR2		
109	215		BR2		
110	215		BR1		
111	219		MR2	MECHANICAL ROOM	
112	221		BR1		
113	221		BR2		
114	223		BR2		
115	223		BR1		
116	227		BR1		
117	227		BR2		
118	229		BR2		
119	229		BR1		
120	233		MR2	MECHANICAL ROOM	
121	234		LS2	CORRIDOR	
122	241		BR1		
123	241		BR2		
124	243		BR2		
125	243		BR1		
126	247		BR1		
127	247		BR2		
128	249		BR2		
129	249		BR1		
130	253		MR2	MECHANICAL ROOM	
131	255		BR1		
132	255		BR2		
133	257		BR2		
134	257		BR1		
135	261		BR1		
136	261		BR2		
137	263		BR2		
138	263		BR1		
139	267		BR1		
140	267		BR2		
141	269		BR2		
142	269		BR1		
143	200		MR2	CHASE	
144	272		BR1		
145	272		BR2		
146	270		BR2		
147	270		BR1		
148	266		BR1		
149	266		BR2		
150	264		BR2		
151	264		BR1		
152	260		BR1		
153	260		BR2		
154	258		BR2		
155	258		BR1		
156	254		MR2	MECHANICAL ROOM	
157	252		BR1		
158	252		BR2		
159	250		BR2		
160	250		BR1		
161	246		BR1		
162	246		BR2		
163	244		BR2		
164	244		BR1		
165	238		RM3	CORRIDOR	
166	232		BR1		
167	232		BR2		
168	230		BR2		
169	230		BR1		
170	226		BR1		
171	226		BR2		
172	224		BR2		
173	224		BR1		
174	220		MR2	MECHANICAL ROOM	
175	218		BR1		
176	218		BR2		
177	216		BR2		
178	216		BR1		
179	212		BR1		
180	212		BR2		
181	210		BR2		
182	210		BR1		
183	206		BR1		
184	206		BR2		
185	204		BR2		
186	204		BR1		
187	200		MR2	CHASE	
188	235		RM3	LAUNDRY ROOM	
189	240		RM3		
190	236		TL4	PUBLIC TOILET	
191	237		MR1	ELECTRICAL ROOM	
192	273		MR2	CHASE	
193	238		LS1	CORRIDOR	FIRE EVACUATION SIGNAGE
194	239		RM3		
195	240		RM3		
196	200		MR2	CHASE	
197	301		BR1		
198	301		BR2		
199	303		BR2		
200	303		BR1		
201	307		BR1		
202	307		BR2		
203	309		BR2		
204	309		BR1		
205	313		BR1		
206	313		BR2		
207	315		BR2		
208	315		BR1		
209	319		MR2	MECHANICAL ROOM	
210	321		BR1		
211	321		BR2		
212	323		BR2		
213	323		BR1		
214	327		BR1		
215	327		BR2		
216	329		BR2		
217	329		BR1		
218	333		MR2	MECHANICAL ROOM	
219	334		LS2	CORRIDOR	
220	341		BR1		
221	341		BR2		
222	343		BR2		
223	343		BR1		
224	347		BR1		
225	347		BR2		
226	349		BR2		
227	349		BR1		
228	353		MR2	MECHANICAL ROOM	
229	355		BR1		
230	355		BR2		
231	357		BR2		
232	357		BR1		
233	361		BR1		
234	361		BR2		
235	363		BR2		
236	363		BR1		
237	367		BR1		
238	367		BR2		
239	369		BR2		
240	369		BR1		
241	300		MR2	CHASE	
242	372		BR1		
243	372		BR2		
244	370		BR2		
245	370		BR1		
246	366		BR1		
247	366		BR2		
248	364		BR2		
249	364		BR1		
250	360		BR1		
251	360		BR2		
252	358		BR2		
253	358		BR1		
254	354		MR2	MECHANICAL ROOM	
255	352		BR1		
256	352		BR2		
257	350		BR2		
258	350		BR1		
259	346		BR1		
260	346		BR2		
261	344		BR2		
262	344		BR1		
263	338		RM3	CORRIDOR	
264	332		BR1		
265	332		BR2		
266	330		BR2		
267	330		BR1		
268	326		BR1		
269	326		BR2		
270	324		BR2		
271	324		BR1		
272	320		MR2	MECHANICAL ROOM	
273	318		BR1		
274	318		BR2		
275	316		BR2		
276	316		BR1		
277	312		BR1		
278	312		BR2		
279	310		BR2		
280	310		BR1		
281	306		BR1		
282	306		BR2		
283	304		BR2		
284	304		BR1		
285	300		MR2	CHASE	
286	335		RM3	LAUNDRY ROOM	
287	340		RM3		
288	336		TL4	PUBLIC TOILET	
289	337		MR1	ELECTRICAL ROOM	
290	300		MR2	CHASE	
291	338		LS1	CORRIDOR	FIRE EVACUATION SIGNAGE
292	340		RM3		
293	339		RM3		
294	300		MR2	CHASE	



1 SIGNAGE MOUNTING HEIGHTS
SCALE: 1/2" = 1'-0"

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SIGNAGE MOUNTING NOTES

1. WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE.
2. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR.
3. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF A DOUBLE DOORS SIGN SHALL BE LOCATED ON THE NEAREST ADJACENT WALL.
4. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED AND 45 DEGREE OPTION.
5. ALL SIGNAGE SHALL CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL BARRIERS ACT (ABA) ACCESSIBILITY STANDARD FOR DEPARTMENT OF DEFENSE FACILITIES.
6. ALL SIGN CORNERS SHALL BE RADIUSED AT 1/2"
7. INDIVIDUAL SIGNS MAY NEED TO BE LARGER THAN SHOWN BASED ON ACTUAL TEXT.
8. NOT ALL SIGN TYPES SHOWN MAY BE REQUIRED IN THE FACILITY. SEE SIGNAGE SCHEDULE FOR REQUIRED TYPES.

2 1 0 2 4
SCALE: 1/2"=1'-0"
GRAPHIC SCALE

MARK J. SMITH 4696 REGISTERED LANDSCAPE ARCHITECT WINNABOW, NC

ISSUE DATE:15 MAY 2020

A-607

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

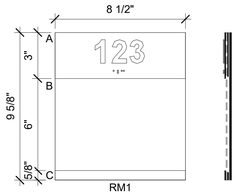
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES. M. SMITH	
DR. P. HARRIS/ R. LEONARD	
CHK. M. SMITH	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

REPAIR BEQ HP510

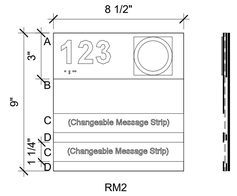
SIGNAGE SCHEDULE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024021
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 63 OF 143



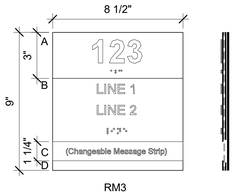
RM1

TYPE	RM1
STANDARD	STD1
LOCATION	TYP ROOM
BRAILLE	YES
MC LOGO	YES
INSERT A	COPY SIZE: 1.5"
INSERT B	PAPER INSERT 6 X 8.5
INSERT C	BLANK - 5/8" H.
INSERT D	
INSERT E	



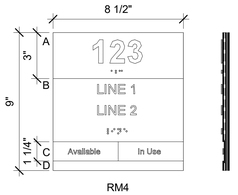
RM2

TYPE	RM2
STANDARD	STD1
LOCATION	TYP ROOM
BRAILLE	YES
MC LOGO	YES
INSERT A	COPY SIZE: 1.5"
INSERT B	BLANK
INSERT C	PAPER INSERT 1.25 X 9
INSERT D	BLANK - 5/8" H.
INSERT E	



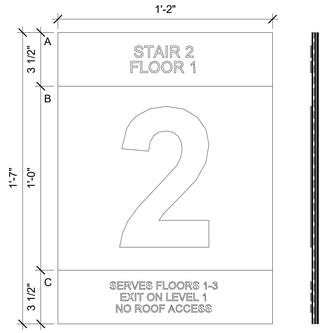
RM3

TYPE	RM3
STANDARD	STD1
LOCATION	TYP ROOM
BRAILLE	AS SHOWN
MC LOGO	NO
INSERT A	COPY SIZE: 1.5"
INSERT B	COPY SIZE: 5/8"
INSERT C	PAPER INSERT 1.25 X 9
INSERT D	BLANK - 5/8" H.
INSERT E	



RM4

TYPE	RM4
STANDARD	STD1
LOCATION	CONF. ROOM
BRAILLE	YES
MC LOGO	NO
INSERT A	COPY SIZE: 1.5"
INSERT B	COPY SIZE: 5/8"
INSERT C	SLIDER STRIP 1.25"
INSERT D	BLANK - 5/8" H.
INSERT E	

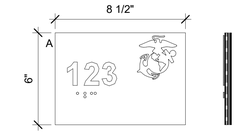


LS2

TYPE	LS2
STANDARD	STD1
LOCATION	STAIR SIGN
BRAILLE	NO
MC LOGO	NO
INSERT A	COPY SIZE: 0.75"
INSERT B	COPY SIZE: 9"
INSERT C	COPY SIZE: 0.50"
INSERT D	
INSERT E	

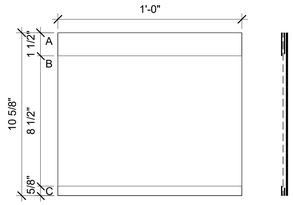


2 LOGO
SCALE: NOT TO SCALE



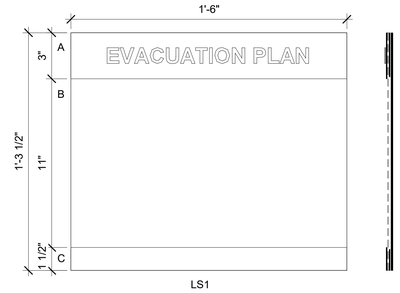
BR1

TYPE	BR1
STANDARD	STD1
LOCATION	SLEEP ROOM
BRAILLE	YES
MC LOGO	NO
INSERT A	COPY SIZE: 1.5"
INSERT B	
INSERT C	
INSERT D	
INSERT E	



BR2

TYPE	BR2
STANDARD	STD1
LOCATION	SLEEP ROOM
BRAILLE	NO
MC LOGO	NO
INSERT A	BLANK - 1.5" H.
INSERT B	PAPER INSERT 8.5 X 11
INSERT C	BLANK - 5/8" H.
INSERT D	
INSERT E	



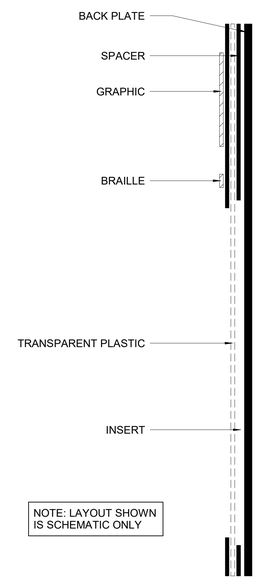
LS1

TYPE	LS1
STANDARD	STD1
LOCATION	EVACUATION PLAN
BRAILLE	NO
MC LOGO	NO
INSERT A	COPY SIZE: 1"
INSERT B	PAPER INSERT 11 X 17
INSERT C	BLANK - 1 1/2" H.
INSERT D	
INSERT E	

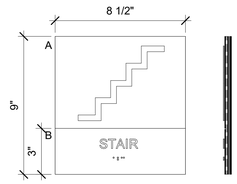
EVACUATION PLAN NOTES:

1. PROVIDE AN EVACUATION PLAN GRAPHIC W/ BLDG. FLOOR PLAN ILLUSTRATING THE PATH OF EGRESS FROM THE SIGN LOCATION TO THE EXIT
2. THE GOVERNMENT SHALL MAKE FLOOR PLAN CAD FILES AVAILABLE
3. THE PATH OF EGRESS AND THE EXIT LOCATION SHALL BE BOLD RED
4. DESIGN THE GRAPHICS AND MOUNT THE SIGNAGE WITH THE FLOOR PLAN ORIENTATION TO MATCH THE ORIENTATION OF THE OBSERVER
5. SUBMIT SHOP DRAWINGS TO ROICC FOR APPROVAL BY FIRE DEPARTMENT OFFICIAL

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

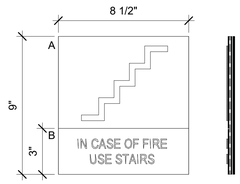


3 SIGN COMPONENTS
SCALE: NOT TO SCALE



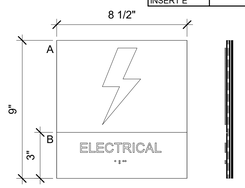
LS3

TYPE	LS3
STANDARD	STD1
LOCATION	STAIR SIGN
BRAILLE	YES
MC LOGO	NO
INSERT A	SYMBOL
INSERT B	COPY SIZE: 5/8"
INSERT C	
INSERT D	
INSERT E	



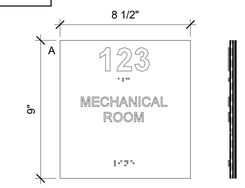
LS4

TYPE	LS4
STANDARD	STD1
LOCATION	STAIR SIGN
BRAILLE	NO
MC LOGO	NO
INSERT A	SYMBOL
INSERT B	COPY SIZE: 5/8"
INSERT C	
INSERT D	
INSERT E	



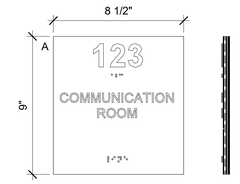
MR1

TYPE	MR1
STANDARD	STD1
LOCATION	MECHANICAL ROOM
BRAILLE	YES
MC LOGO	NO
INSERT A	SYMBOL
INSERT B	COPY SIZE: 5/8"
INSERT C	
INSERT D	
INSERT E	



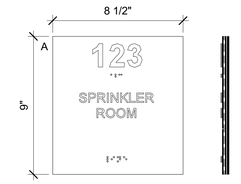
MR2

TYPE	MR2
STANDARD	STD1
LOCATION	MECHANICAL ROOM
BRAILLE	YES
MC LOGO	NO
INSERT A	COPY SIZE: 5/8"
INSERT B	
INSERT C	
INSERT D	
INSERT E	



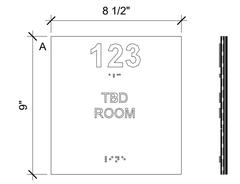
MR3

TYPE	MR3
STANDARD	STD1
LOCATION	COMMUNICATION ROOM
BRAILLE	YES
MC LOGO	NO
INSERT A	COPY SIZE: 5/8"
INSERT B	
INSERT C	
INSERT D	
INSERT E	



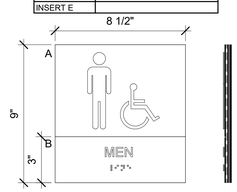
MR4

TYPE	MR4
STANDARD	STD1
LOCATION	SPRINKLER ROOM
BRAILLE	YES
MC LOGO	NO
INSERT A	COPY SIZE: 5/8"
INSERT B	
INSERT C	
INSERT D	
INSERT E	



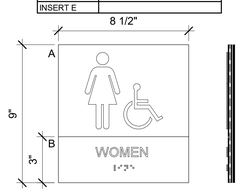
MR5

TYPE	MR5
STANDARD	STD1
LOCATION	TBD ROOM
BRAILLE	YES
MC LOGO	NO
INSERT A	COPY SIZE: 5/8"
INSERT B	
INSERT C	
INSERT D	
INSERT E	



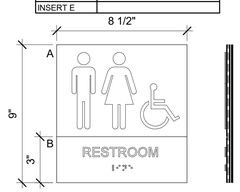
TL1

TYPE	TL1
STANDARD	STD1
LOCATION	BATHROOMS
BRAILLE	YES
MC LOGO	NO
INSERT A	SYMBOL
INSERT B	COPY SIZE: 5/8"
INSERT C	
INSERT D	
INSERT E	



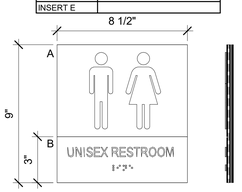
TL2

TYPE	TL2
STANDARD	STD1
LOCATION	BATHROOMS
BRAILLE	YES
MC LOGO	NO
INSERT A	SYMBOL
INSERT B	COPY SIZE: 5/8"
INSERT C	
INSERT D	
INSERT E	



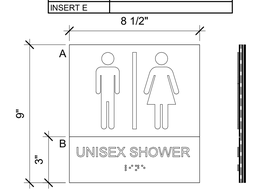
TL3

TYPE	TL3
STANDARD	STD1
LOCATION	BATHROOMS
BRAILLE	YES
MC LOGO	NO
INSERT A	SYMBOL
INSERT B	COPY SIZE: 5/8"
INSERT C	
INSERT D	
INSERT E	



TL4

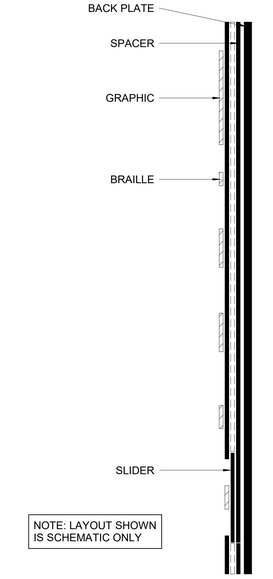
TYPE	TL4
STANDARD	STD1
LOCATION	BATHROOMS
BRAILLE	YES
MC LOGO	NO
INSERT A	SYMBOL
INSERT B	COPY SIZE: 5/8"
INSERT C	
INSERT D	
INSERT E	



TL5

TYPE	TL5
STANDARD	STD1
LOCATION	BATHROOMS
BRAILLE	YES
MC LOGO	NO
INSERT A	SYMBOL
INSERT B	COPY SIZE: 5/8"
INSERT C	
INSERT D	
INSERT E	

1 SIGN TYPES
SCALE: 3" = 1'-0"



4 SIGN COMPONENT - RM4
SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

6" 4 2 0 6"
SCALE: 3"=1'-0"
GRAPHIC SCALE

MARK J. SMITH 4696 REGISTERED LANDSCAPE ARCHITECT WINNABOW, NC

ISSUE DATE:15 MAY 2020

A-608

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIR BEQ HP510

SIGNAGE TYPES

DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024022
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 64 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

FIRE ALARM SYSTEM NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE DEPARTMENT OF DEFENSE UNIFIED FACILITIES CRITERIA (UFC) 3-600-01, NFPA 72 (2019 EDITION), NFPA 101 (2018 EDITION), AND ARTICLE 760 OF THE NATIONAL ELECTRICAL CODE (NFPA 70, 2020 EDITION).
2. AUTHORITY HAVING JURISDICTION (AHJ) SHALL APPROVE THE PLANS PRIOR TO START OF ANY WORK.
3. LOCATIONS OF ALL FIRE ALARM EQUIPMENT SHALL BE SUBJECT TO AHJ APPROVAL. NO CHANGE OR MODIFICATION TO THE SYSTEM OR PLANS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD. IF ANY SUBSTANTIAL CHANGES ARE MADE TO THE DRAWINGS PRIOR TO OR DURING INSTALLATION, AS BUILT PLANS SHALL BE PREPARED BY THE ENGINEER AND FILED WITH THE APPROPRIATE AGENCIES FOR FINAL ACCEPTANCE.
4. FIRE ALARM EQUIPMENT SHALL BE POWERED THROUGH AN APPROVED LOCKABLE CIRCUIT BREAKER PAINTED "FIRE DEPARTMENT" RED IN MAIN PANEL.
5. NO CONDUITS ARE TO ENTER BOTTOM OF A FIRE ALARM CONTROL PANEL REGARDLESS OF SYSTEM TYPE OR SIZE.
6. ALL FIRE ALARM PANELS SHALL BE GROUNDED USING A MINIMUM #10 AWG, GREEN THHN OR EQUIVALENT EQUIPMENT GROUNDING CONDUCTOR RUN BACK TO THE GROUNDING BUS IN THE MAIN SERVICE DISCONNECT.
7. DO NOT RUN FIRE ALARM CABLE IN THE SAME RACEWAY WITH NON FIRE ALARM CABLE.
8. AVOID INSTALLING FIRE ALARM CABLES NEAR SOURCES OF ALTERNATING CURRENT (LIGHTING, POWER, ETC).
9. ALL FIRE ALARM PANELS, JUNCTION BOX COVERS, ETC. SHALL BE PAINTED "FIRE DEPARTMENT RED".
10. ALL WIRING SHALL BE IN CONDUIT AND INSTALLED IN ACCORDANCE WITH ARTICLE 760 OF THE NATIONAL ELECTRICAL CODE.
11. ALL FIRE ALARM WIRE SHALL BE CLEARLY LABELED IN JUNCTION BOXES AND CABINETS. FURTHERMORE CONDUCTORS IN CABINETS SHALL BE FORMED SO THAT THEY DROP OFF DIRECTLY OPPOSITE TO ITS TERMINAL CONNECTION. ALL TERMINALS SHALL BE NUMBERED AND LABELED IN EVERY CABINET.
12. ANY REQUIREMENTS FOR SHIELDING CONDUCTORS OR RUNNING THEM IN SEPARATE RACEWAYS SHALL BE AS RECOMMENDED BY THE MANUFACTURER'S DOCUMENTATION.
13. ALL WIRING TO BE CHECKED TO INSURE THAT THEY ARE FREE OF ANY OPENS, SHORTS OR GROUNDS.
14. ALL FIRE ALARM PANELS, CABINETS AND DATA GATHERING PANELS SHALL BE CLEARLY LABELED USING A LAMINATE TYPE ENGRAVED LABEL.
15. OBSERVE ALL POLARITY ON ALL FIRE ALARM CIRCUITS. TEE TAPPING IS NOT PERMITTED ON ALARM NOTIFICATION APPLIANCE CIRCUITS (SPEAKERS, STROBES, HORNS, ETC.), INITIATING DEVICE CIRCUITS (SMOKE DETECTORS, WATERFLOW SWITCHES), AND CLASS A SIGNALING LINE CIRCUITS.
16. MANUAL PULL STATIONS SHALL BE MOUNTED 48 INCHES ABOVE THE FINISHED FLOOR (AFF) TO THE CENTER OF THE HANDLE.
17. MANUAL PULL STATIONS SHALL BE PAINTED "FIRE DEPARTMENT RED". THEY SHALL BE INSTALLED SO THAT THEY ARE KEPT UNOBSTRUCTED AT ALL TIMES.
18. CEILING MOUNTED SMOKE DETECTORS MUST BE MOUNTED AT LEAST 3 FEET FROM SUPPLY AIR REGISTERS.
19. ALL CEILING MOUNTED DEVICES MUST BE SECURELY FASTENED TO THE BUILDING STRUCTURE AND NOT TO THE CEILING GRID. FURTHERMORE, ALL WALL MOUNTED DEVICES SHALL BE SECURELY MOUNTED IN PLACE. PLASTIC ANCHORS ARE NOT ACCEPTABLE.
20. DUCT MOUNTED SMOKE DETECTORS SHALL BE MOUNTED AND LOCATED ON THE DUCTWORK IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ANY DUCT SMOKE DETECTORS MOUNTED ABOVE FINISHED CEILINGS OR IN REMOTE LOCATIONS SHALL BE FURNISHED WITH A REMOTE TEST STATION WITH KEY.
21. DEVICE LOCATIONS SHALL BE READILY ACCESSIBLE TO ALLOW FOR MAINTENANCE AND REPAIR.
22. WALL MOUNTED FIRE ALARM/MASS NOTIFICATION SPEAKERS SHALL HAVE THEIR TOPS MOUNTED NO LESS THAN 90"AFF AND BELOW THE CEILINGS AT DISTANCES OF NOT LESS THAN 6".
23. WALL MOUNTED FIRE ALARM/MASS NOTIFICATION STROBES AND/OR COMBINATION SPEAKER/STROBES SHALL BE MOUNTED SUCH THAT THE ENTIRE LENS IS AT 80" AFF. WHERE LOW CEILING HEIGHTS DO NOT PERMIT MOUNTING AT A MINIMUM OF 80", VISIBLE APPLIANCES SHALL BE MOUNTED WITHIN 6" OF THE CEILING.
24. EXTERIOR SPEAKERS AND PULL STATIONS SHALL BE RATED WEATHERPROOF.
25. ALL SIGNALING LINE CIRCUITS (SLC), INITIATING DEVICE CIRCUITS (IDC) AND NOTIFICATION APPLIANCE CIRCUITS SHALL BE CLASS 'A'.
26. ATTACH A LEGIBLE TYPED LABEL ON ALL ADDRESSABLE DEVICES TO INDICATE ITS ADDRESS. THIS INCLUDES PULL STATIONS, SMOKE,HEAT, CO AND DUCT DETECTORS, MODULES, TAMPERS AND WATERFLOW SWITCHES, SPEAKERS, STROBES AND SPEAKER ISOLATION, CONTROL MONITOR AND RELAY MODULES AND DEVICES.
27. FOR ANY DEVICE CONCEALED ABOVE A SUSPENDED CEILING, ATTACH A LEGIBLE TYPED LABEL TO THE CEILING GRID INDICATING THE DEVICE NOMENCLATURE AND ADDRESS SUCH THAT A FIREFIGHTER OR MAINTENANCE TECHNICIAN CAN LOCATE THE DEVICE TO PERFORM CORRECTIVE MAINTENANCE.

MASS NOTIFICATION SYSTEM NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE DEPARTMENT OF DEFENSE UNIFIED FACILITIES CRITERIA, UFC 4-021-01, UFC 4-10-01, & NFPA 72 (2019 EDITION).
2. OBSERVE ALL POLARITY ON ALL ALARM INDICATING DEVICE CIRCUITS (SPEAKERS, STROBES, HORNS, ETC.) TEE TAPPING IS NOT PERMITTED.

NOTES ON AUTONOMOUS CONTROL UNIT (ACU). THE ACU SHALL:

- BE AVAILABLE WITHOUT THE ACTIVATION OF STROBES TO PERFORM GENERAL PAGING OR OTHER NON EMERGENCY MESSAGES. A SEPARATE MICROPHONE MUST BE PROVIDED FOR THIS PURPOSE.
- HAVE THE ABILITY TO INTERRUPT PUBLIC ADDRESS SYSTEM ANNOUNCEMENTS (IF APPLICABLE) AND TO SILENCE BUILDING BACKGROUND MUSIC WHILE DELIVERING VOICE MESSAGES.
- BE ABLE TO ACCEPT VOICE MESSAGES FROM THE DEPARTMENT OF DEFENSE (DOD) INSTALLATION TELEPHONE SYSTEM.
- HAVE CONDUCTOR CONNECTIONS COMPLIANT WITH NFPA 72.
- HAVE ALL POWER SUPPLIES, CONNECTIONS TO THE LOCAL OPERATING CONSOLE (LOC), AND STROBE & SPEAKER WIRING MONITORED FOR INTEGRITY.
- BE ABLE TO SWITCH BETWEEN MASS NOTIFICATION SYSTEM AND FIRE ALARM NOTIFICATION FUNCTIONS WITHOUT GENERATING TROUBLE ALARMS IN EITHER SYSTEM.
- BE ABLE TO AUTOMATICALLY REPEAT PRE-RECORDED MESSAGES UNTIL THEY ARE TERMINATED.
- HAVE A MICROPHONE FOR DELIVERING LIVE VOICE MESSAGES.
- HAVE ADEQUATE DISCRETE OUTPUTS TO INITIATE TEXT SIGNS AND INITIATE STROBES.
- INTERFACE TO THE LOCAL OPERATING CONSOLE FOR INITIATING RECORDED MESSAGES AND DELIVERING LIVE VOICE MESSAGES FROM LOCATIONS IN THE BUILDING OTHER THAN AT THE AUTONOMOUS CONTROL UNIT.
- ESTABLISH PRIORITY FOR PASSING MESSAGES TO PREVENT INTERFERENCE BETWEEN THE ACU, LOC, AND WIDE AREA MASS NOTIFICATION SYSTEM (MNS) ON THE DOD INSTALLATION.
- ALLOW THE MASS NOTIFICATION SYSTEM TO TEMPORARILY OVERRIDE THE FIRE ALARM AUDIBLE MESSAGES AND VISUAL SIGNALS, AND TO PROVIDE INTELLIGIBLE VOICE COMMANDS DURING SIMULTANEOUS FIRE AND TERRORIST EVENTS. ALL OTHER FEATURES OF THE FIRE ALARM SYSTEM, INCLUDING THE TRANSMISSION OF SIGNALS TO THE FIRE DEPARTMENT, SHALL FUNCTION PROPERLY. MNS MESSAGES SHALL TAKE PRIORITY AND CONTINUE TO OVERRIDE FIRE ALARM AUDIBLE MESSAGES UNTIL THE MNS MESSAGE IS EITHER MANUALLY OR AUTOMATICALLY ENDED. IF NOT MANUALLY ENDED, THE MNS MESSAGE WILL AUTOMATICALLY END AFTER 10 MINUTES.
- PROVIDE A SUPERVISORY SIGNAL IF THE MNS IS USED TO OVERRIDE FIRE ALARM AUDIBLE MESSAGES AND VISIBLE SIGNALS DURING SIMULTANEOUS FIRE AND TERRORIST EVENTS. THE SUPERVISORY SIGNAL SHALL BE ANNUNCIATED AT THE FACP AND ANY REMOTE FIRE ALARM ANNUNCIATORS AND BE TRANSMITTED TO THE FIRE DEPARTMENT. THE VISUAL ANNUNCIATION OF THE SEPARATE SUPERVISORY SIGNAL SHALL BE DISTINCTLY LABELED OR OTHERWISE CLEARLY IDENTIFIED.
- REMOTE MONITORING OF TROUBLE, SUPERVISORY, AND ALARM FUNCTIONS TO A CONSTANTLY OCCUPIED LOCATION MEETING THE REQUIREMENTS OF NFPA 72.
- HAVE A SINGLE SWITCH OR OPERATING MECHANISM CAPABLE OF SHUTTING DOWN ALL HEATING, VENTILATING, AND AIR CONDITIONING (HVAC) EQUIPMENT IN THE FACILITY IN ACCORDANCE WITH THE REQUIREMENTS OF UFC 4-010-01. THIS SHUTDOWN CAPABILITY SHALL BE PROVIDED AT THE ACU.
- PROVIDE A COMPLETE SET OF SELF DIAGNOSTICS FOR THE CONTROLLER AND APPLIANCE NETWORK.
- HAVE A LOCAL DIAGNOSTIC INFORMATION DISPLAY.
- PROVIDE A LOCAL SYSTEM EVENT LOG FILE.
- HAVE ACTIONS TAKE PRECEDENCE OVER ACTIONS TAKEN AT ANY REMOTE LOCATION, INCLUDING THE LOCAL OPERATING CONSOLE, OR INPUTS FROM A WIDE AREA MNS.
- SHALL MEET STANDBY REQUIREMENTS OF CHAPTER 24 OF NFPA 72 FOR COMBINED SYSTEMS USING SEPARATE ENCLOSURES FOR FIRE ALARM CONTROL PANEL (FACP) AND ACU.
- IN THE CASE OF MULTIPLE ACU's CONTROLLING THE SAME NOTIFICATION APPLIANCE NETWORK, ONLY ALLOW ONE TO BE IN CONTROL AT ANY GIVEN TIME.

NOTES ON LOCAL OPERATING CONSOLE (LOC). LOC SHALL:

- HAVE INDIVIDUAL MANUAL ACTIVATING PUSH BUTTONS TO ACTIVATE THE MNS PRE-RECORDED MESSAGES. SIGNAGE SHALL BE PROVIDED TO ALLOW RAPID RECOGNITION OF THE MEANS OF INITIATING THE PRE-RECORDED MESSAGES.
- HAVE A REMOTE MICROPHONE STATION THAT EMULATES OPERATION OF THE MNS FROM THE ACU.
- PROVIDE A SINGLE SWITCH OR OPERATING MECHANISM CAPABLE OF SHUTTING DOWN ALL HVAC EQUIPMENT IN THE FACILITY IN ACCORDANCE WITH THE REQUIREMENTS OF UFC 4-010-01.
- BE PROTECTED IN A SMALL, WALL MOUNTED ENCLOSURE.
- HAVE SUPPLEMENTAL HEATING AND VENTILATION FOR THOSE ENCLOSURES LOCATED OUTDOORS OR IN AREAS WHERE THE LOC WILL BE EXPOSED TO TEMPERATURES OR HUMIDITY OUTSIDE OF THE MANUFACTURER'S DESIGN LIMITS.
- BE PROTECTED FROM TAMPERING BY USE OF A BREAK-GLASS, THUMB-LOCK, TAMPER WIRE, TAMPER ALARM, OR EQUIVALENT PROTECTION. THIS IS NOT REQUIRED IN THOSE FACILITIES WITH LIMITED ACCESS SO THAT UNAUTHORIZED USE WOULD NOT REASONABLY BE EXPECTED TO OCCUR. ENCLOSURES THAT CAN BE OPENED ONLY BY A KEY SHALL NOT BE USED.
- HAVE THE OPERATING CONTROLS BE CLEARLY IDENTIFIED.
- ALLOW ONLY ONE LOCATION TO BE IN CONTROL AT ANY GIVEN TIME, WHEN THERE ARE MULTIPLE CONTROL LOCATIONS IN THE SYSTEM.
- THE LOCATION HAVING CONTROL OF THE SYSTEM BE IDENTIFIED BY A VISIBLE INDICATION AT THAT LOCATION.
- HAVE MANUAL CONTROLS ARRANGED TO PROVIDE VISIBLE INDICATION OF THE ON/OFF STATUS FOR THEIR ASSOCIATED NOTIFICATION SIGNALING ZONE.
- IN THE CASE OF BEING PROVIDED WITH LIVE VOICE INSTRUCTIONS BE ABLE TO OVERRIDE PREVIOUSLY INITIATED SIGNALS TO THE SELECTED NOTIFICATION ZONE(S) AND SHALL HAVE PRIORITY OVER ANY SUBSEQUENT AUTOMATICALLY INITIATED SIGNALS TO THE SELECTED ZONE(S).

NOTE ON HVAC EMERGENCY MANUAL SHUTDOWN SWITCH:

- MANUAL STATION SHALL BE PAINTED WHITE WITH A PLACARD BEHIND IT INDICATING ITS FUNCTION "EMERGENCY HVAC SHUTDOWN"
- A DUAL ACTION STATION SHALL BE SPECIFIED.
- STI STOPPER II PLASTIC TAMPER COVER SHALL BE PROVIDED FOR EACH STATION.

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FA001

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MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

DES.	M. LAZO
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SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

5/15/2020

ISSUE DATE:15 MAY 2020

FIRE ALARM GENERAL NOTES, LEGENDS, AND DIAGRAMS

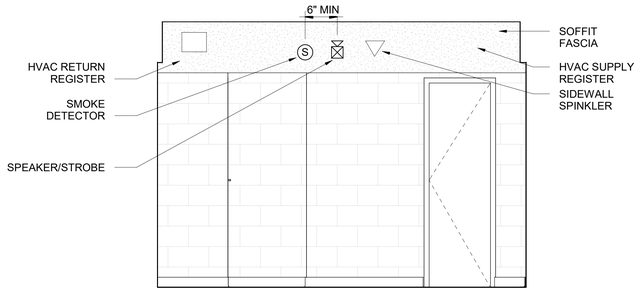
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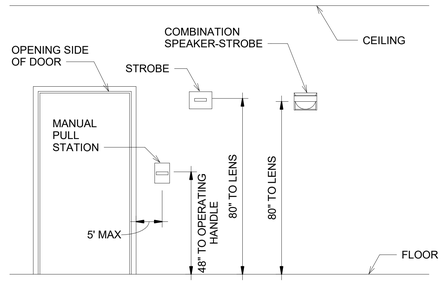
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LEGEND:

- FACP — FIRE ALARM/MASS NOTIFICATION CONTROL PANEL
- LOC — LOCAL OPERATING CONSOLE
- KNOX — KNOX BOX
- TVSS — TRANSIENT VOLT SURGE SUPPRESSOR
- DACT — DIGITAL ALARM COMMUNICATOR TRANSMITTER
- ACU — AUTONOMOUS CONTROL UNIT
- XMTR — RADIO TRANSMITTER
- CR — CONTROL RELAY
- MM — MONITOR MODULE
- SPEAKER/STROBE (CLEAR LENS)
- SPEAKER
- F — MANUAL PULL STATION
- R — RELAY
- H — EMERGENCY HVAC SHUTDOWN STATION
- TS — TAMPER SWITCH
- FS — FLOW SWITCH
- B — ELECTRIC WATERFLOW ALARM BELL
- S — SMOKE DETECTOR (IONIZATION)
- D — DUCT SMOKE DETECTOR
- STROBE (CLEAR LENS)
- RADIO TRANSMITTER ANTENNA
- CM — CEILING MOUNT
- WP — WEATHERPROOF
- EP — EXPLOSION PROOF



1 SLEEPING ROOM SMOKE DETECTOR DETAIL
SCALE: NOT TO SCALE



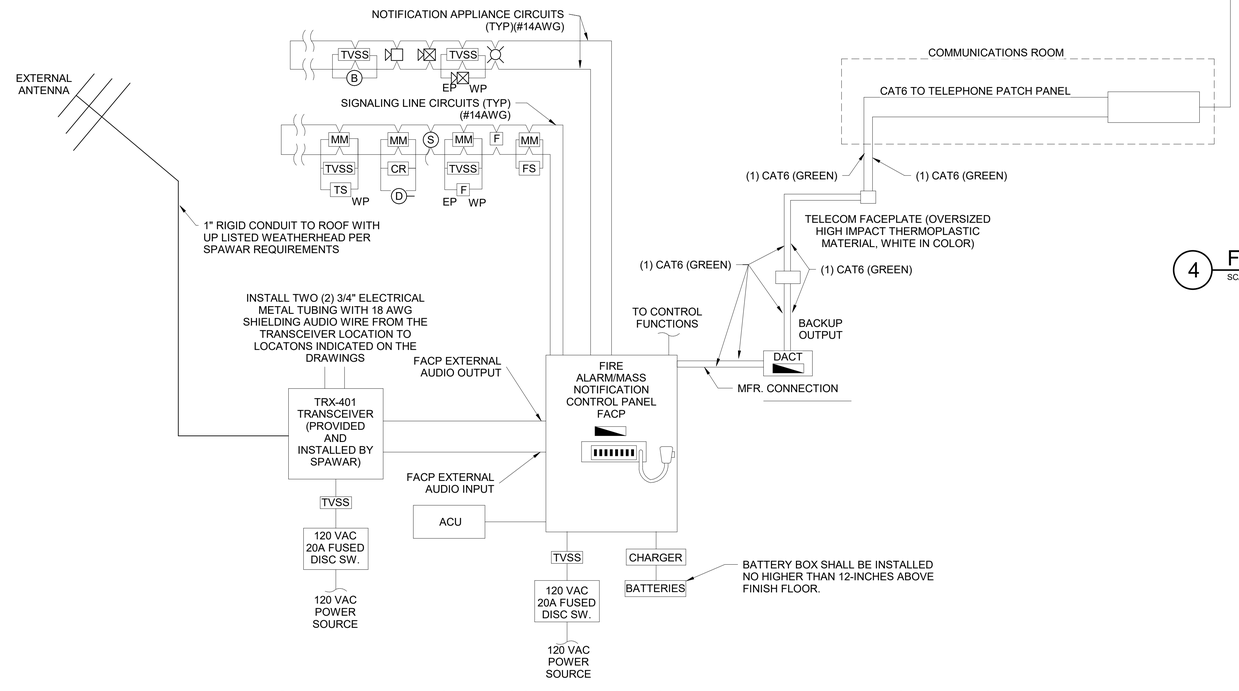
2 STANDARD MOUNTING HEIGHTS DETAIL
SCALE: NOT TO SCALE

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

SYSTEM INPUTS

	CONTROL UNIT ANNUNCIATION							NOTIFICATION							CONTROL FUNCTIONS				MNS FUNCTIONS					
	ACTIVATE COMMON ALARM SIGNAL	ACTIVATE AUDIBLE/VISUAL ALARM SIGNAL	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTIVATE AUDIBLE SUPERVISORY SIGNAL	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE AUDIBLE COMMON TROUBLE SIGNAL		TRANSMIT FIRE ALARM SIGNAL TO FIRE DEPARTMENT	TRANSMIT SUPERVISORY SIGNAL TO FIRE DEPARTMENT	TRANSMIT TROUBLE SIGNAL TO FIRE DEPARTMENT	SHUT DOWN AIR HANDLING UNITS + ERVS		TRANSMIT MNS MESSAGE ID CODE TO RECEIVING STATION	OVERRIDE FIRE ALARM AUDIBLE/VISUAL SIGNALS	ACTIVATE AMBER MNS VISUAL SIGNALS	OVERRIDE PRE-RECORDED MNS MESSAGE						
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
1 MANUAL PULL STATION	●	●							●													1
2 DUCT SMOKE DETECTOR	●	●							●				●				●					2
3 SMOKE DETECTOR	●	●							●													3
4 HEAT DETECTOR	●	●							●													4
5 SPRINKLER WATERFLOW SWITCH	●	●							●													5
6 SPRINKLER TAMPER SWITCH			●	●						●												6
7 FIRE ALARM AC POWER FAILURE					●	●					●											7
8 FIRE ALARM SYSTEM LOW BATTERY					●	●					●											8
9 OPEN CIRCUIT					●	●					●											9
10 GROUND FAULT					●	●					●											10
11 NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●					●											11
12 HVAC SHUTDOWN SWITCH			●	●						●			●				●					12
13 PRE-RECORDED MNS MESSAGE			●	●						●												13
14 LIVE MNS MESSAGE			●	●						●							●	●	●			14
15 CARBON MONOXIDE DETECTOR			●	●						●							●	●	●	●		15
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		



3 COMBINATION MASS NOTIFICATON AND FIRE ALARM RISER DIAGRAM
SCALE: NOT TO SCALE

COMBINATION FIRE ALARM/MNS REQUIREMENTS

1. AUDIOVISUAL NOTIFICATION APPLIANCES SHALL BE MARKED 'ALERT' OR 'EMERGENCY'. APPLIANCES SHALL NOT BE MARKED 'FIRE'.
2. ORDER OF ALARM PRECEDENCE SHALL BE AS FOLLOWS:
   1-FA/MNS MAIN PANEL MICROPHONE SHALL OVERRIDE ALL.
   2-LOC MICROPHONE SHALL OVERRIDE MNS MESSAGE.
   3-MNS MESSAGE SHALL OVERRIDE FIRE ALARM SYSTEM.
   4-FIRE ALARM SYSTEM SHALL OVERRIDE ALL OTHER SYSTEMS NOT PERTAINING TO PREVIOUSLY DESCRIBED ALARM PRECEDENCE.
3. MNS AND FIRE ALARM SHALL USE THE SAME AUDIO DEVICES FOR OPERATIONS.
4. EACH PRE-RECORDED MNS MESSAGE WHICH, ONCE ACTIVATED, SHALL SEND A UNIQUE ID CODE TO THE RECEIVING STATION TO IDENTIFY THE TYPE OF MESSAGE ACTIVATED. (I.E. CHEMICAL ATTACK TRANSMITS ID FOR CHEMICAL ATTACK MESSAGE).
5. CONTRACTOR SHALL NOT PROVIDE TRANSCEIVER UNIT. THIS UNIT WILL BE PROVIDED AND CONNECTED TO COMBINATION MNS/FIRE ALARM SYSTEM BY GOVERNMENT AGENCY SPAWAR.

4 FIRE ALARM/MASS NOTIFICATION SEQUENCE OF OPERATIONS MATRIX
SCALE: NOT TO SCALE

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FA002

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CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

FIRE ALARM/MASS NOTIFICATION LEGEND AND RISER DIAGRAM

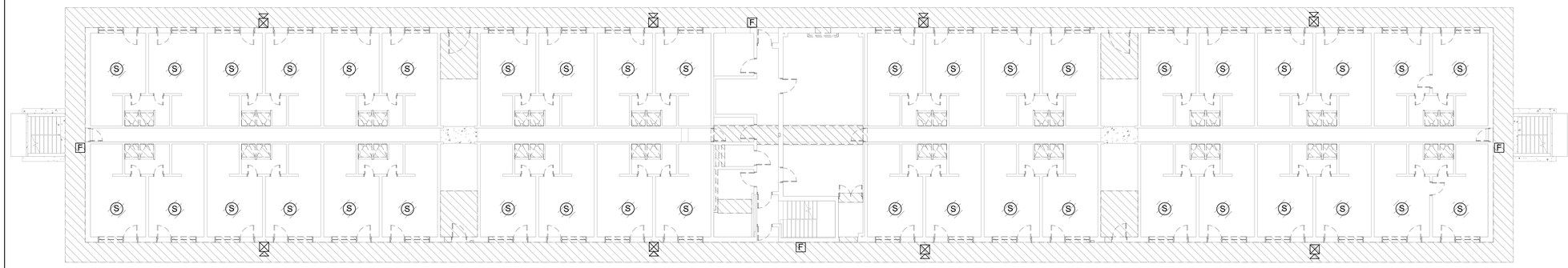
DES. M. LAZO
DR. B. SHAW
CHK. M. LAZO
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

NORTH CAROLINA 03180 5/15/2020

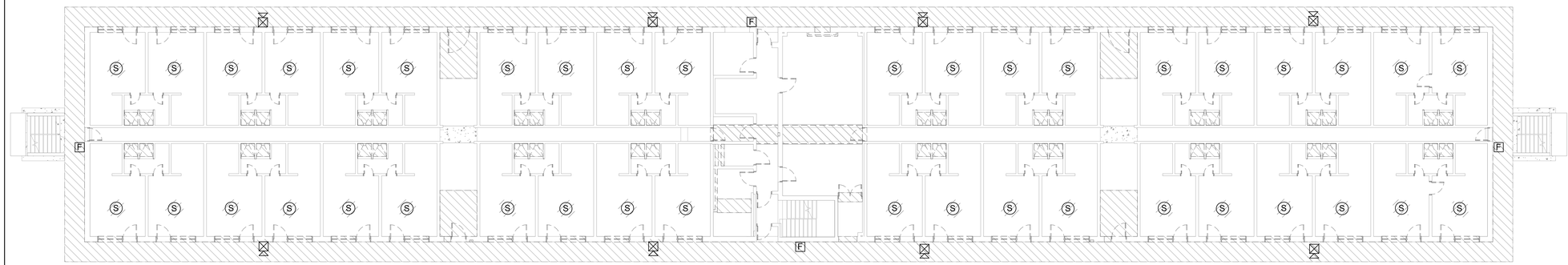
ISSUE DATE:15 MAY 2020

SIZE E1 | CODE IDENT NO. 80091 | NAVFAC DRAWING NO. 60024024
CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 66 OF 143

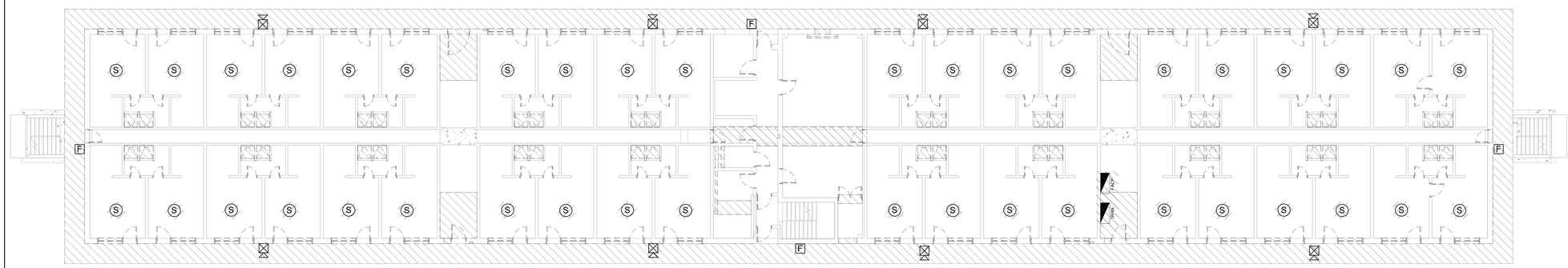
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SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR FIRE ALARM DEMOLITION PLAN
SCALE: 3/32" = 1'-0"



2 SECOND FLOOR FIRE ALARM DEMOLITION PLAN
SCALE: 3/32" = 1'-0"



3 FIRST FLOOR FIRE ALARM DEMOLITION PLAN
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GENERAL NOTES

1. DEMOLITION PLAN IS SCHEMATIC AND MAY NOT REPRESENT ALL ITEMS TO BE REMOVED.
2. REMOVE ALL WIRING, CONDUIT, JUNCTION BOXES, ETC. AND CUT BACK TO FIRE ALARM PANEL.
3. REMOVE FIRE ALARM PANEL, EXTENDER PANEL(S), BATTERY CABINET(S), AND EXISTING TRANSMITTER.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

5/15/2020

ISSUE DATE:15 MAY 2020

FD101

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CEMS Project No: 151S3V Project Manager: R. Alvar

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MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

FIRE ALARM DEMOLITION PLANS

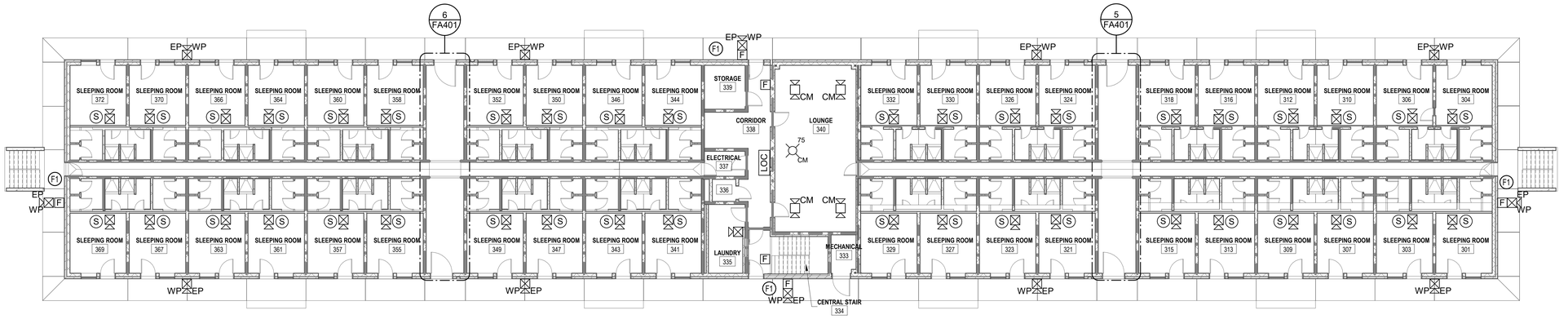
DES. M. LAZO	
DR. B. SHAW	
CHK. M. LAZO	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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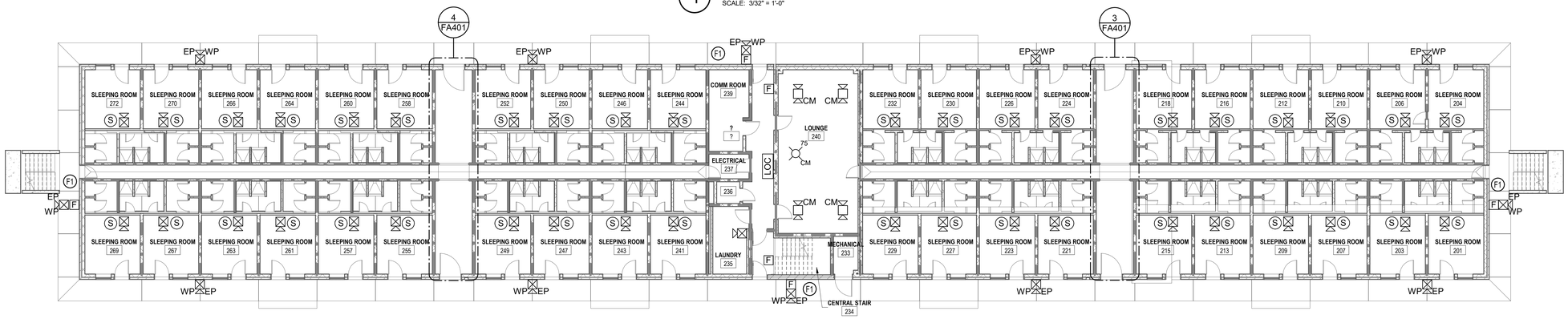
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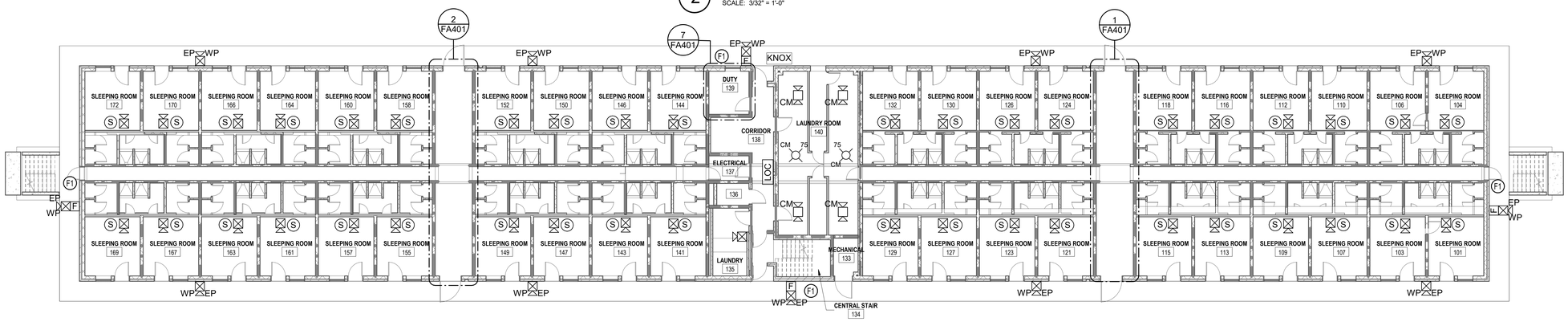
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SYM.	DESCRIPTION	DATE	APPROVED



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



2 SECOND FLOOR PLAN
SCALE: 3/32" = 1'-0"



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GENERAL NOTES

1. ALL SLEEPING ROOM NOTIFICATION APPLIANCES SHALL PRODUCE A LOW FREQUENCY SIGNAL IN ACCORDANCE WITH NFPA 72.

KEYNOTES

F1 INSTALL CONVENTIONAL WEATHERPROOF DEVICE ON BUILDING EXTERIOR CONNECTED TO AN ADDRESSABLE MONITOR MODULE LOCATED IN AN ADJACENT CONDITIONED SPACE.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

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FIRE ALARM/MASS NOTIFICATION PLANS

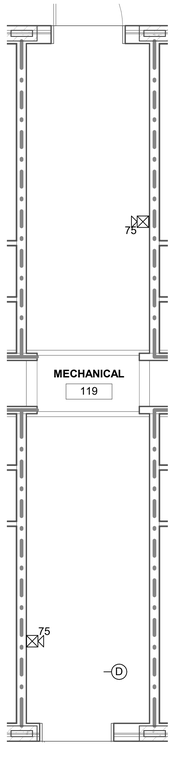
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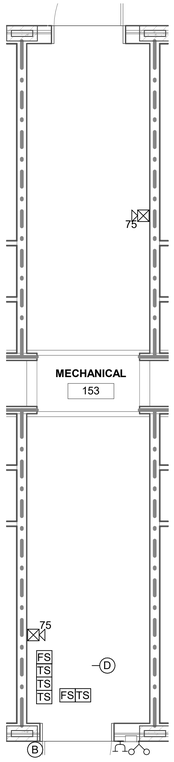
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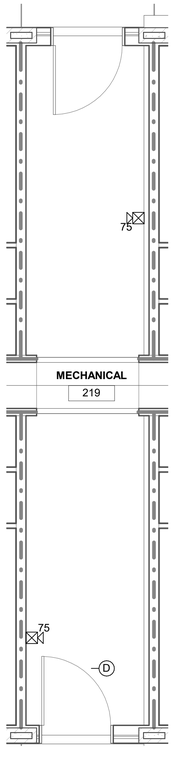
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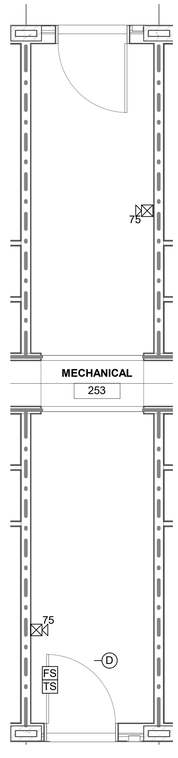
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FA101



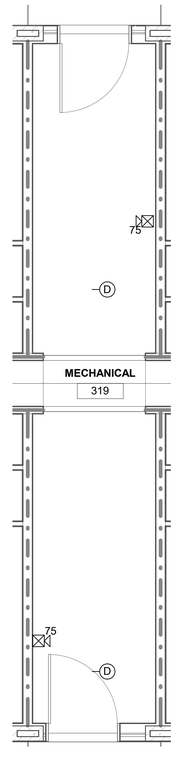
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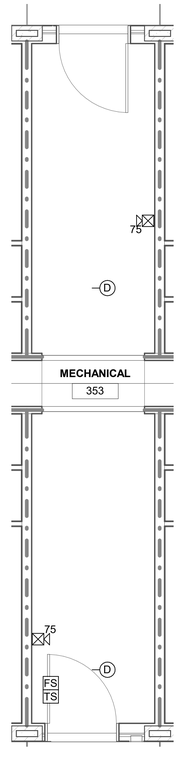
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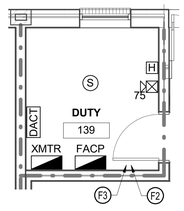
4 SECOND FLOOR MECHANICAL ROOM B PLAN
SCALE: 1/4" = 1'-0"
FA101



5 THIRD FLOOR MECHANICAL ROOM A PLAN
SCALE: 1/4" = 1'-0"
FA101



6 THIRD FLOOR MECHANICAL ROOM B PLAN
SCALE: 1/4" = 1'-0"
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7 DUTY ROOM PLAN
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KEYNOTES

F2 DOCUMENTATION CABINET LABELED "SYSTEM RECORD DOCUMENTS".
F3 PARTS BOX MOUNTED NO HIGHER THAN 3 FEET AFF.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

FA401

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC, 29485 843.875.3637
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CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED FIRE ALARM/MNS PLANS

DES.	M. LAZO
DR.	B. SHAW
CHK.	M. LAZO
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024027

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 69 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

FIRE PROTECTION LEGEND:

PROTECTED BY AUTOMATIC WET SPRINKLERS
HAZARD CLASSIFICATION: RESIDENTIAL
DESIGN DENSITY: 0.10 GPM/SQ.FT
AREA OF OPERATION: ALL RESIDENTIAL SPRINKLERS
WITHIN AS COMPARTMENT UP TO 4 SPRINKLERS
MAXIMUM SPRINKLER COVERAGE: 225 SQ.FT
HOSE STREAM ALLOWANCE: 100 GPM

PROTECTED BY AUTOMATIC WET SPRINKLERS
HAZARD CLASSIFICATION: LIGHT
DESIGN DENSITY: 0.10 GPM/SQ.FT
AREA OF OPERATION: 1500 SQ.FT
MAXIMUM SPRINKLER COVERAGE: 225 SQ.FT
HOSE STREAM ALLOWANCE: 250 GPM

PROTECTED BY AUTOMATIC WET SPRINKLERS
HAZARD CLASSIFICATION: ORDINARY
DESIGN DENSITY: 0.20 GPM/SQ.FT
AREA OF OPERATION: 2500 SQ.FT
MAXIMUM SPRINKLER COVERAGE: 130 SQ.FT
HOSE STREAM ALLOWANCE: 250 GPM
K-FACTOR: 8.0

FCA — FLOOR CONTROL ASSEMBLY

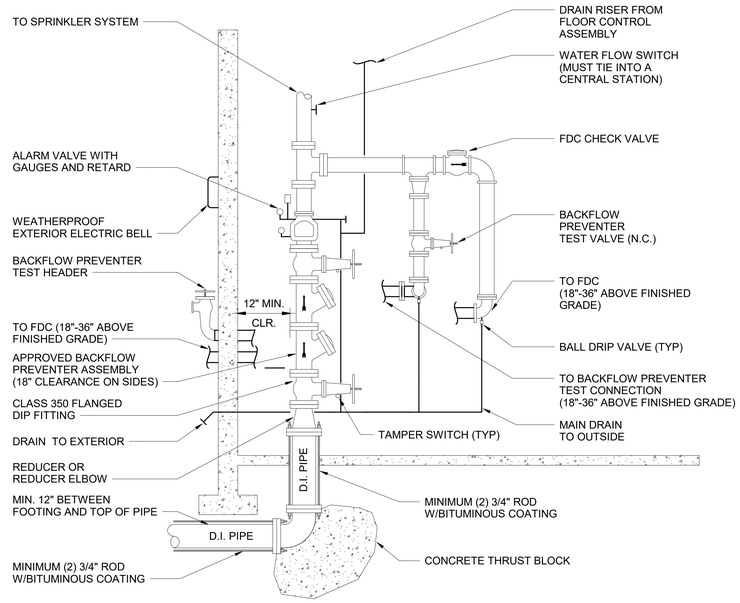
5-INCH STORZ FIRE DEPARTMENT CONNECTION

TEST CONNECTION

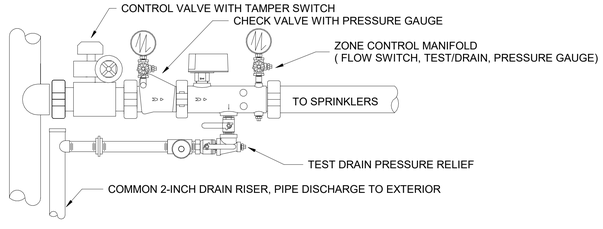
SPRINKLER RISER

SPRINKLER DESIGN DATA:

1. STATIC PRESSURE: 76 PSI
   RESIDUAL PRESSURE: 64 PSI
   RESIDUAL FLOW: 2251GPM
   STATIC HYDRANT #: ALONG 'O' STREET ACROSS FROM BLDG HP503
   FLOW HYDRANT #: ALONG 'O' STREET ACROSS FROM BLDG HP505
   DATE PERFORMED: MARCH 7, 2017
   TIME PERFORMED: 2:10



1 SPRINKLER RISER DETAIL
SCALE: NOT TO SCALE



2 FLOOR CONTROL ASSEMBLY
SCALE: 1 1/2" = 1'-0"

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FIRE SPRINKLER NOTES

1. AUTOMATIC SPRINKLER SYSTEMS HAVE BEEN SPECIFIED IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF NFPA 13 (2019 EDITION), UFC 3-600-1, AND IBC (2018 EDITION). CONTRACTOR SHALL PROVIDE DESIGN CALCULATIONS, DRAWINGS, AND COPIES OF ALL FLOW TEST DATA TO ENGINEER OF RECORD FOR REVIEW AND APPROVAL IN WRITING PRIOR TO PURCHASE AND INSTALLATION OF EQUIPMENT AND MATERIALS. NEW SYSTEM SHALL BE HYDRAULICALLY CALCULATED.

2. THE ARRANGEMENT AND PIPE SIZES FOR THE SPRINKLERS SHALL BE DETERMINED BY THE SPRINKLER CONTRACTOR. THE DETAILS INDICATED ARE FOR ILLUSTRATIVE PURPOSES ONLY.

3. SPRINKLER HEADS SHALL BE QUICK RESPONSE TYPE.

4. SCHEDULE 10 STEEL PIPE SHALL BE INSTALLED ON PIPE SIZES LARGER THAN 2 1/2", AND SCHEDULE 40 STEEL PIPE ON PIPE SIZES OF 2 1/2" AND SMALLER.

FX001

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

DES. M. LAZO
DR. B. SHAW
CHK. M. LAZO
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

5/15/2020

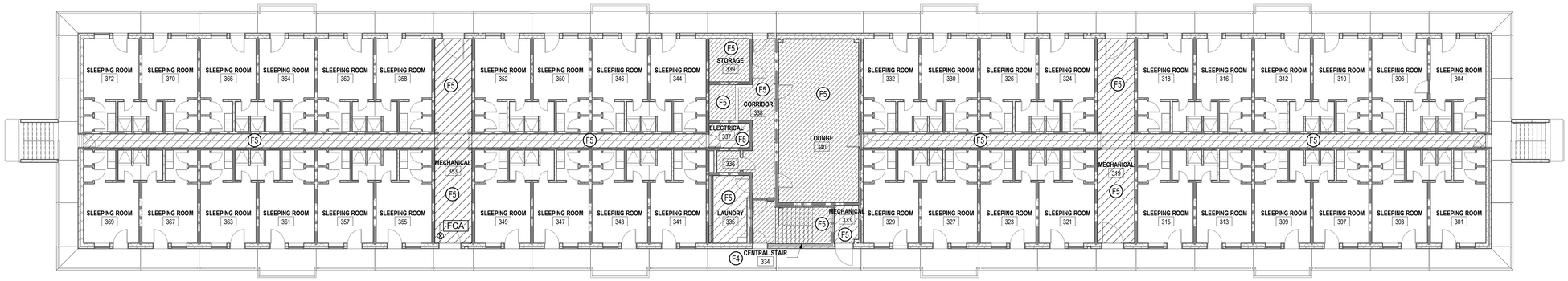
ISSUE DATE:15 MAY 2020

FIRE PROTECTION LEGEND, DETAILS, AND RISER DIAGRAM

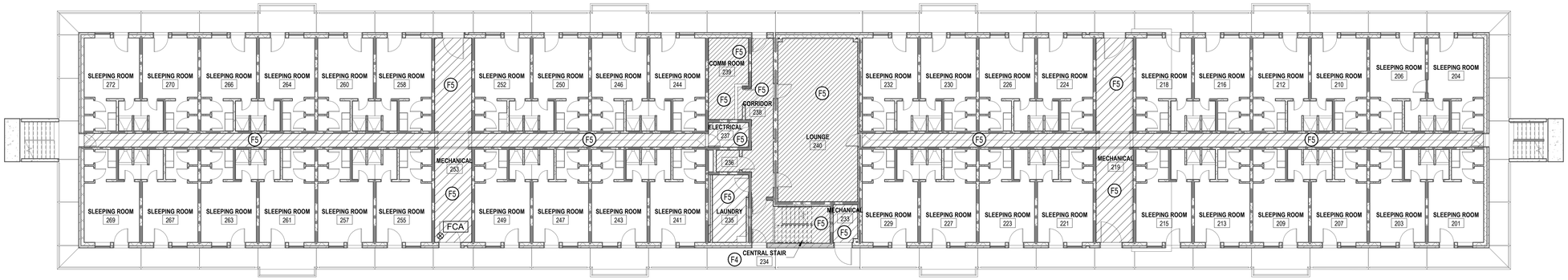
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E1	80091	60024028

CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 70 OF 143

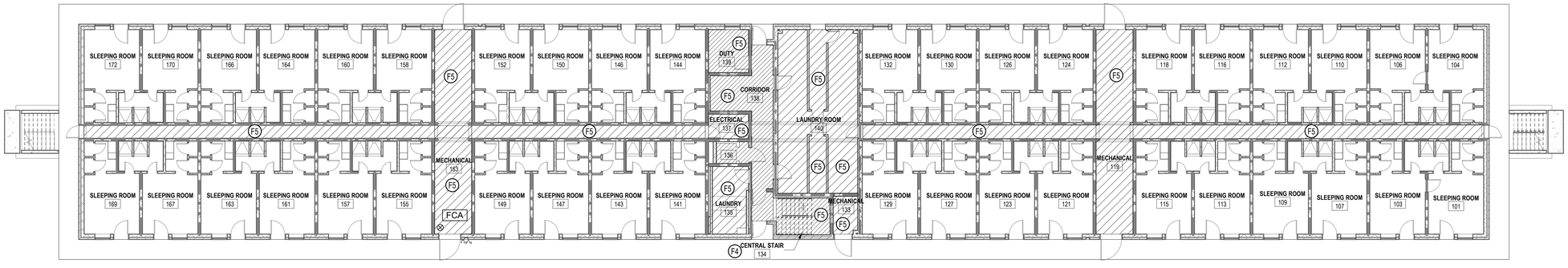
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



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



2 SECOND FLOOR PLAN
SCALE: 3/32" = 1'-0"



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

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KEYNOTES

F4 UTILIZE DRY SIDEWALL SPRINKLERS SUPPLIED BY THE WET-PIPE SYSTEM TO PROTECT CENTRAL STAIR.

F5 ALL SPRINKLER PIPING IN THIS AREA SHALL BE STEEL.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

FX101

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CEMS Project No: 15153V Project Manager: R. Alvar

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

DES. M. LAZO	REPAIRS BEQ HP510
DR. B. SHAW	
CHK. M. LAZO	
SUBMITTED BY: CEMS ENGINEERING	**FIRE PROTECTION PLANS**
DESIGN DIR.	
APPROVED: PWO OR OICC DATE	SIZE E1 / CODE IDENT NO. 80091 / NAVFAC DRAWING NO. 60024029
SATISFACTORY TO: DATE	CONSTR. CONTR. NO.: N40085-18-B-0042
	SCALE: AS NOTED / SPEC. 05-18-0042 / SHEET 71 OF 143

5/15/2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

PLUMBING LEGEND:

- TO BE REMOVED/DEMOLISHED
- DOMESTIC COLD WATER, DCW
- EXISTING DOMESTIC COLD WATER, DCW
- DOMESTIC HOT WATER, DHW
- EXISTING DOMESTIC HOT WATER, DHW
- DOMESTIC HOT WATER RECIRCULATION, DHWR
- EXISTING DOMESTIC HOT WATER RECIRCULATION, DHWR
- NATURAL GAS, NG
- EXISTING NATURAL GAS, NG
- VENT, V
- EXISTING VENT, V
- SANITARY, SS
- EXISTING SANITARY, SS
- 30-MIN FIRE RATED WALL
- 1-HOUR FIRE RATED WALL
- SHUT-OFF VALVE
- FLOOR CLEANOUT
- FLOOR DRAIN
- HOSE BIBB
- HOSE BIBB, WALL MOUNTED
- PIPE TURNING UP
- PIPE TURNING DOWN
- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- POINT OF DISCONNECTION BETWEEN EXISTING TO REMAIN AND EXISTING TO BE REMOVED
- WATER HAMMER ARRESTOR
- VTR
- P## — NEW WORK KEYNOTE
- PD## — DEMOLITION KEYNOTE

PLUMBING ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
B.E.	BOTTOM ELEVATION
BFP	BACK FLOW PREVENTER
BP	BOOSTER PUMP
BV	BALL VALVE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRCULATION
DN	PIPE TURNING DOWN
ET	EXPANSION TANK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FGCO	FINISH GRADE CLEANOUT
FS	FLOOR SINK
GM	GAS METER
GWH	GAS WATER HEATER
HA	WATER HAMMER ARRESTOR
HB	HOSE BIBB
HD	HUB DRAIN
IAW	IN ACCORDANCE WITH
MV	MIXING VALVE
N.T.S.	NOT TO SCALE
NG	NATURAL GAS
P-#	PLUMBING FIXTURE DESIGNATION
PRV	PRESSURE REDUCING VALVE
RCP	RECIRCULATION PUMP
RD	ROOF DRAIN
SD	SHOWER DRAIN
SNGM	SMART NATURAL GAS SERVICE METER
SP	SUMP PUMP
SS	SANITARY SEWER / WASTE
SWM	SMART WATER METER
TYP.	TYPICAL
UP	PIPE TURNING UP
V	VENT
VTR	VENT THROUGH ROOF
VTW	VENT THROUGH WALL
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WHB	HOSE BIBB, WALL MOUNTED

HAMMER ARRESTOR SCHEDULE

TAG	PDI SIZE	FIXTURE UNIT	MAX FLUID TEMP	CONNECTION PIPE SIZE	REMARKS
HA-B	B	1-11	180°F	3/4"	LOCATE IN ACCORDANCE WITH PDI WH 201 STD/ PROVIDE ACCESS DOORS AS REQ'D

NOTES:
1. UNIT MANUFACTURERS AND MODELS ARE BASIS OF DESIGN. BASIS OF DESIGN OR EQUAL ARE ACCEPTABLE.

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	PIPE SIZES				REMARKS
		C.W.	H.W.	DRAIN	VENT	
FCO	FLOOR CLEAN OUT			4"		SEE SPECIFICATIONS
FD	FLOOR DRAIN			3"		SEE SPECIFICATIONS
HB	HOSE BIB	3/4"				SEE SPECIFICATIONS
SD	SHOWER DRAIN			2"		SEE SPECIFICATIONS
WCO	WALL CLEAN OUT			4"		SEE SPECIFICATIONS
P-1	WATER CLOSET (FLUSH VALVE)	1"		4"	3"	SEE SPECIFICATIONS
P-2	LAVATORY (COUNTERTOP)	1/2"	1/2"	1 1/4"	1 1/4"	SEE SPECIFICATIONS
P-3	SHOWER MIXING VALVE	1/2"	1/2"			SEE SPECIFICATIONS
P-4	LAVATORY (WALL MOUNTED)	1/2"	1/2"	1 1/4"	1 1/4"	SEE SPECIFICATIONS
P-5	WASHER BOX	1/2"	1/2"	2"	1 1/4"	SEE SPECIFICATIONS
P-6	WATER COOLER	1/2"	0"	1 1/4"	1 1/4"	SEE SPECIFICATIONS
P-7	SERVICE SINK	1/2"	1/2"	1 1/2"		SEE SPECIFICATIONS

NOTES:
1. UNIT MANUFACTURERS AND MODELS ARE BASIS OF DESIGN. BASIS OF DESIGN OR EQUAL ARE ACCEPTABLE.
2. ALL FLOOR DRAINS CONNECTED TO THE SANITARY SEWER SYSTEM SHALL BE PROVIDED WITH APPROVED ELASTOMERIC TRAP GUARDS.

SUMP SYSTEM SCHEDULE

TAG	DESCRIPTION	GPM	FT. HEAD	MOTOR	
				HP	V/Ø/HZ
SP-1	SIMPLEX	50	15	1/2	120/1/60

NOTES:
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2. PROVIDE COMMERCIAL GRADE UNIT WITH SINGLE POINT POWER CONNECTION AND NEMA 4X WEATHERTIGHT CORROSION RESISTANCE ENCLOSURE.
3. PROVIDE WITH ALARM, LIGHTS, SILENCE SWITCH, AND REMOTE MONITORING CIRCUIT FOR OIL, HIGH LIQUID, AND HIGH AMPERAGE CONDITIONS.

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.WHERE EQUIPMENT OR PIPING IS REMOVED AND NOT REPLACED, PATCH AND FINISH AREAS TO MATCH ADJACENT SURFACES.

PLUMBING GENERAL NOTES:

1. ALL WORK SHOWN ON THESE DRAWINGS SHALL BE NEW UNLESS NOTED OTHERWISE AS EXISTING. PROVIDE LABOR, EQUIPMENT, AND MATERIALS TO COMPLETE THE PLUMBING WORK INDICATED ON THESE DRAWINGS.
2. THE WORK SHALL INCLUDE WASTE, VENT, DOMESTIC COLD WATER, AND DOMESTIC HOT WATER PIPING AS INDICATED ON THESE DRAWINGS. 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 ARRESTORS MUST BE PROVIDED IN ACCORDANCE WITH INTERNATIONAL PLUMBING CODES AND LOCAL ORDINANCES.
8. LOCATE PLUMBING FIXTURES PER ARCHITECTURAL DRAWINGS. PIPING IS SHOWN IN GENERAL LOCATION. EXACT LOCATION OF PIPING WILL BE DETERMINED BY JOB CONDITIONS.
9. INSTALLATION SHALL BE PER PLANS AND SPECIFICATIONS AND NORTH CAROLINA PLUMBING CODE. SEE SPECIFICATIONS FOR PRODUCT AND INSTALLATION REQUIREMENTS.
10. COORDINATE LOCATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES.
11. ALL EQUIPMENT AND PIPE ABOVE CEILING SHALL BE SUPPORTED FROM BUILDING STRUCTURE ABOVE UNLESS OTHERWISE NOTED.
12. FLOOR DRAINS SHALL BE DEEP SEAL TRAP TYPE WITH ELASTOMERIC TRAP GUARDS.
13. ALL PENETRATIONS, EXISTING AND NEW, THROUGH FIRE RATED WALLS, FLOORS, AND SMOKE PARTITIONS SHALL BE SEALED WITH AN APPROVED FIRE PROOFING SEALANT OR U.L. LISTED PENETRATION DEVICE.
14. REFER TO "HAZARDOUS MATERIALS INSPECTION REPORT" FOR ANY PENETRATIONS TO EXISTING ROOF DECK.

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P-001

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CEMS Project No: 15150V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

LEGEND, DETAILS, AND SCHEDULES

DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

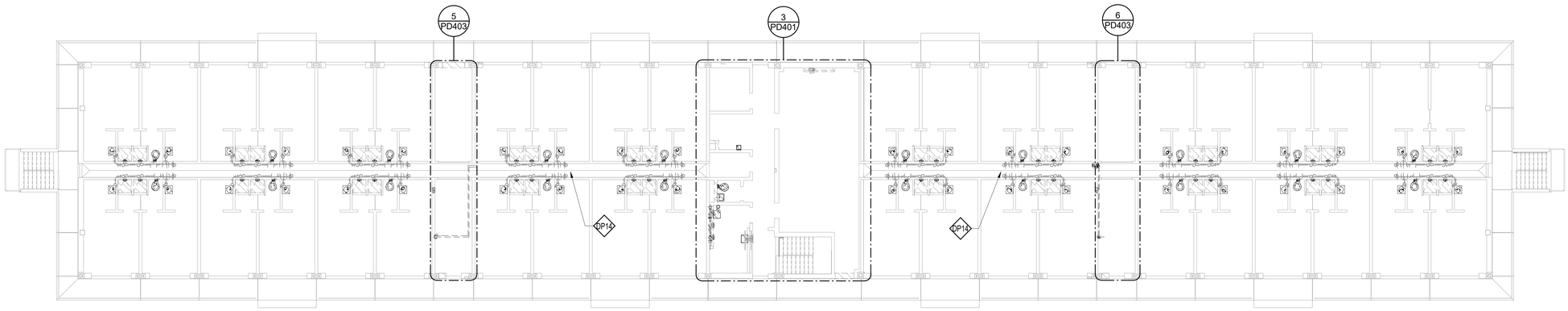
ISSUE DATE:15 MAY 2020

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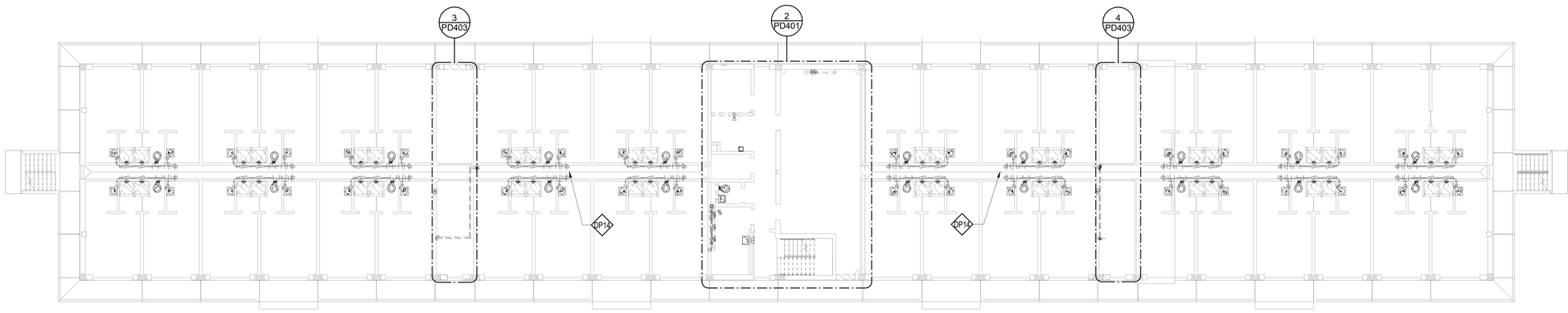
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 72 OF 143

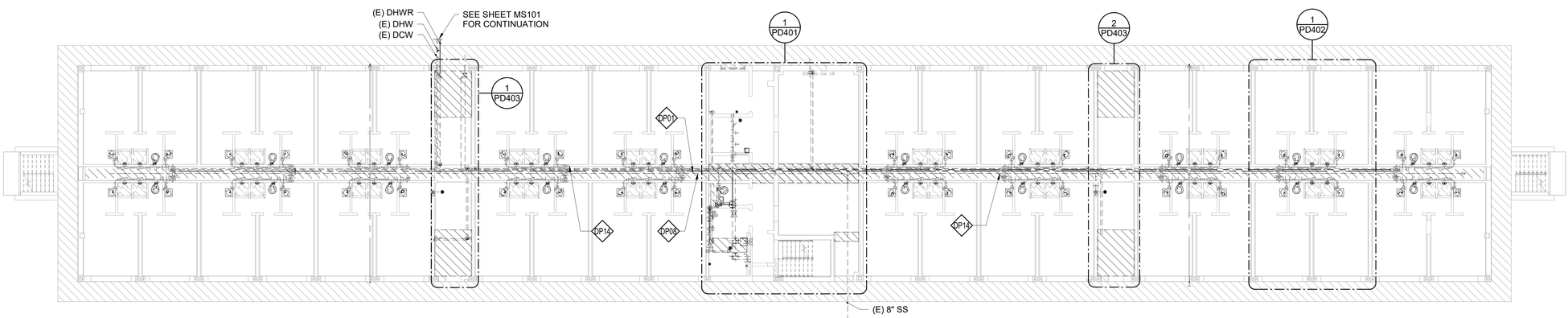
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



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



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



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

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SHEET KEYNOTES

DP01	DEMOLISH AND REMOVE EXISTING DCW, DHW, DHWR, AND SS PIPING RUNNING THROUGH FIRST FLOOR CHASE.BRANCH PIPING TO BE REUSED.
DP08	DEMOLISH AND REMOVE SUMP PUMP AND ASSOCIATED PIPING.
DP14	DEMOLISH AND REMOVE EXISTING ROOF DRAIN PIPING LOCATED WITHIN THE CHASE. PATCH ABANDONED PENETRATION WITH PERMANENT FORMWORK AND CONCRETE FULL DEPTH OF FLOOR.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

PD101

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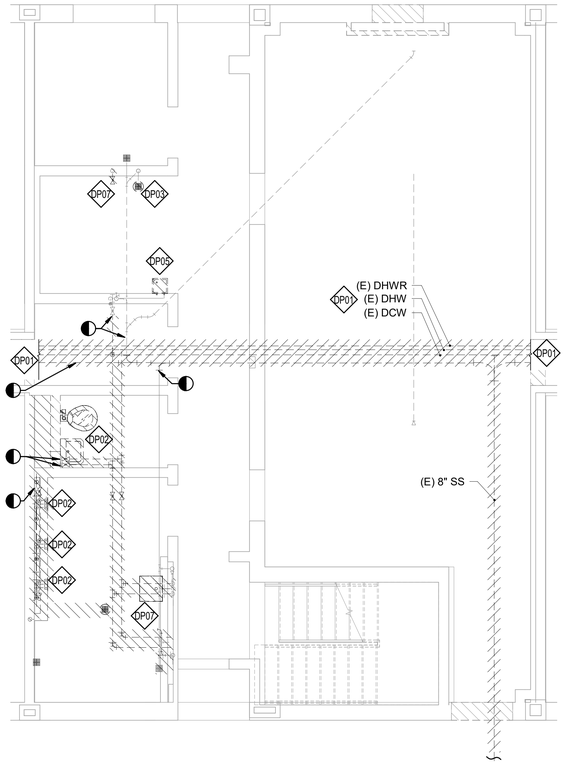
REPAIRS BEQ HP510

DEMOLITION PLANS

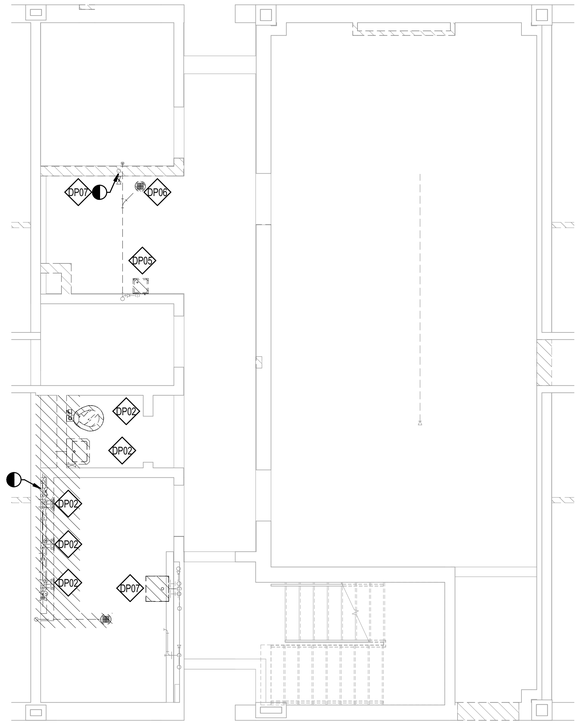
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024031
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 73 OF 143

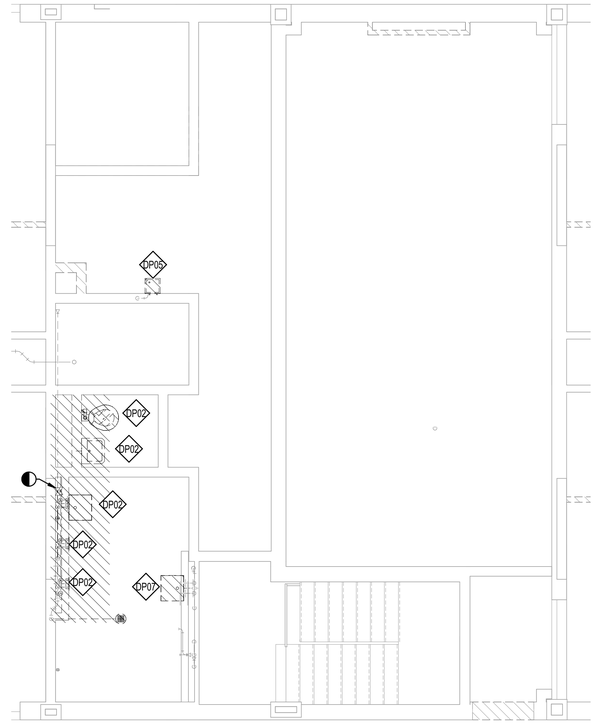
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



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



2 SECOND FLOOR CORE DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



3 THIRD FLOOR CORE DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

DISCLOSURE OF INFORMATION

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SHEET KEYNOTES

DP01	DEMOLISH AND REMOVE EXISTING DCW, DHW, DHWR, AND SS PIPING RUNNING THROUGH FIRST FLOOR CHASE.BRANCH PIPING TO BE REUSED.
DP02	DEMOLISH AND REMOVE EXISTING PLUMBING FIXTURES AND ASSOCIATED SUPPLY, SANITARY SEWER, AND VENT PIPING AS SHOWN. DISCONNECT PIPING AT POINT INDICATED.
DP03	DEMOLISH AND REMOVE EXISTING PLUMBING FIXTURES AS SHOWN. DOMESTIC WATER, SANITARY SEWER, AND VENT PIPING TO REMAIN FOR REUSE IN NEW WORK.
DP05	DEMOLISH AND REMOVE EXISTING WATER COOLER. ASSOCIATED SUPPLY, SANITARY SEWER, AND VENT PIPING TO REMAIN FOR REUSE IN NEW WORK.
DP06	DEMOLISH AND REMOVE EXISTING HUB DRAIN. CAP PIPING BELOW FLOOR.
DP07	DEMOLISH AND REMOVE EXISTING PLUMBING FIXTURES AND RELATED SUPPLY, SANITARY SEWER, AND VENT PIPING FLUSH TO WALL. CAP OPEN PIPING AND PATCH WALL.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

PD401

CEMS
ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

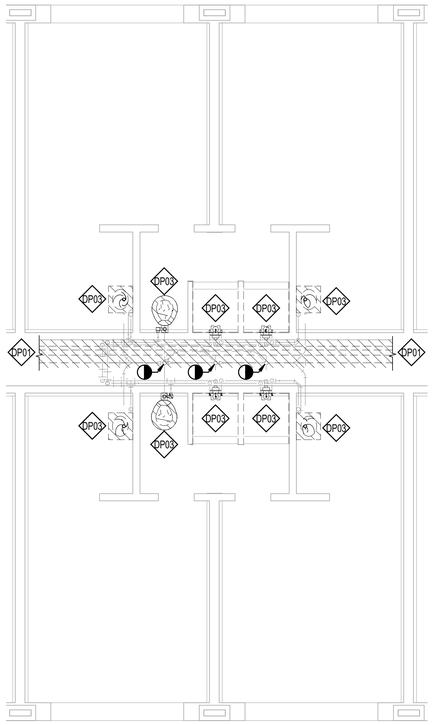
ENLARGED DEMOLITION PLANS

DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024032
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 74 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 TYPICAL SLEEP ROOM DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
PD101

DISCLOSURE OF INFORMATION

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SHEET KEYNOTES

DP01	DEMOLISH AND REMOVE EXISTING DCW, DHW, DHWR, AND SS PIPING RUNNING THROUGH FIRST FLOOR CHASE.BRANCH PIPING TO BE REUSED.
DP03	DEMOLISH AND REMOVE EXISTING PLUMBING FIXTURES AS SHOWN. DOMESTIC WATER, SANITARY SEWER, AND VENT PIPING TO REMAIN FOR REUSE IN NEW WORK.

PLAN NORTH

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

PD402

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED DEMOLITION PLANS

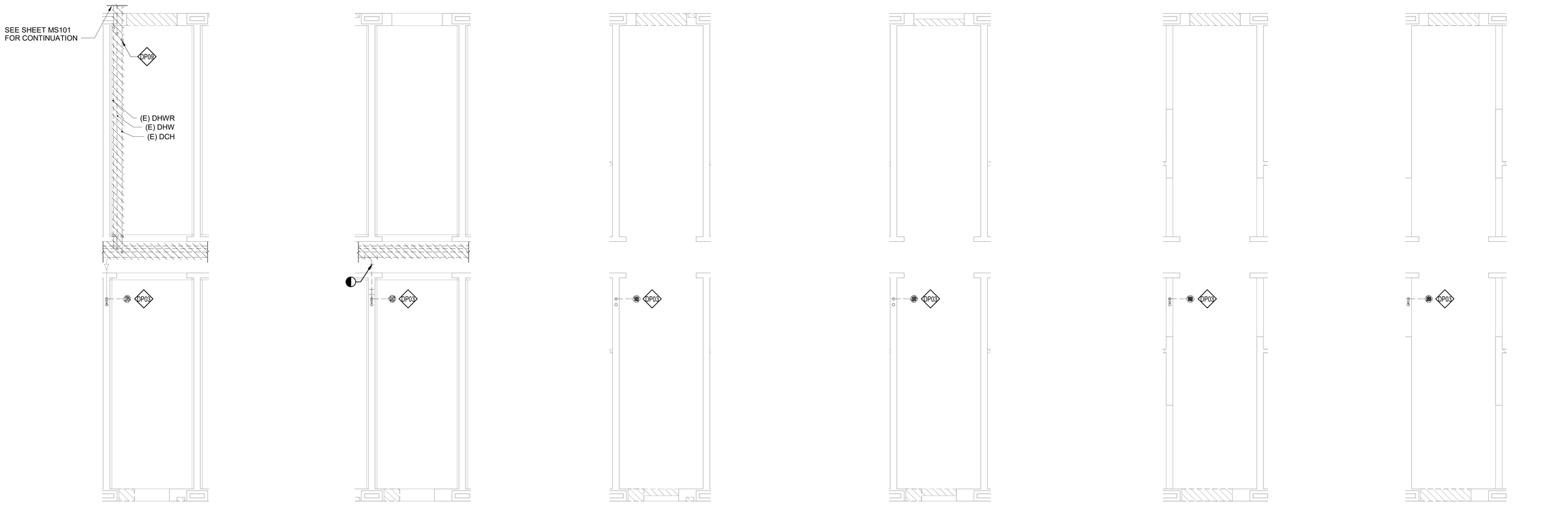
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024033

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 75 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 FIRST FLOOR MECHANICAL ROOM B DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
PD101

2 FIRST FLOOR MECHANICAL ROOM A DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
PD101

3 SECOND FLOOR MECHANICAL ROOM B DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
PD101

4 SECOND FLOOR MECHANICAL ROOM A DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
PD101

5 THIRD FLOOR MECHANICAL ROOM B DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
PD101

6 THIRD FLOOR MECHANICAL ROOM A DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
PD101

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GENERAL 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.

SHEET KEYNOTES

DP03 DEMOLISH AND REMOVE EXISTING PLUMBING FIXTURES AS SHOWN. DOMESTIC WATER, SANITARY SEWER, AND VENT PIPING TO REMAIN FOR REUSE IN NEW WORK.

DP09 DEMOLISH AND REMOVE DOMESTIC SUPPLY PIPE TO DISCHARGE SIDE OF COUPLING.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

PD403

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 1515DV Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED DEMOLITION PLANS

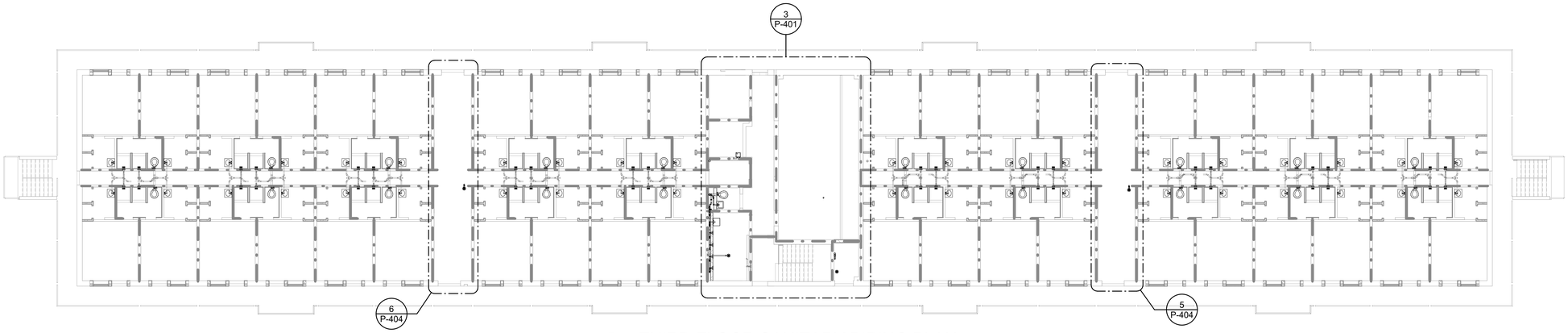
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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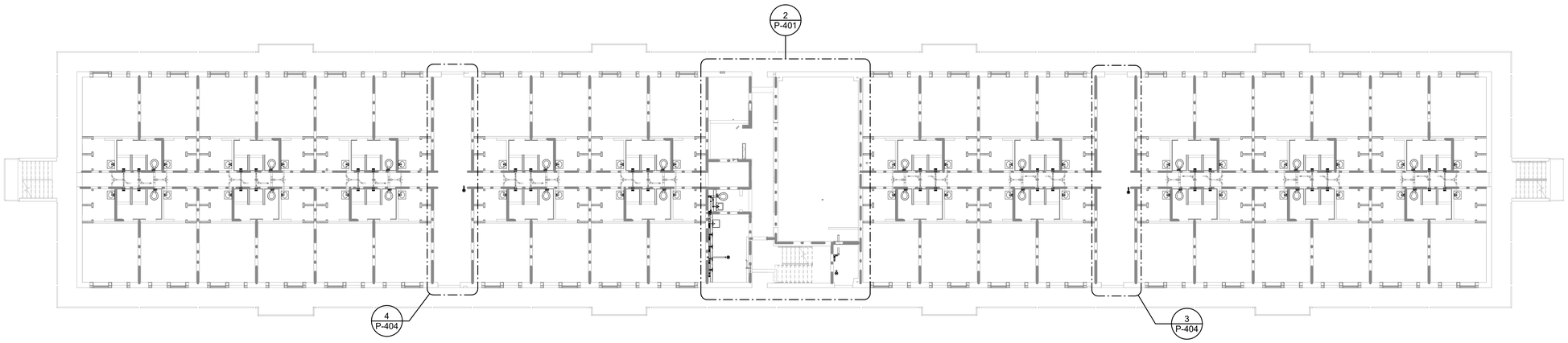
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 76 OF 143

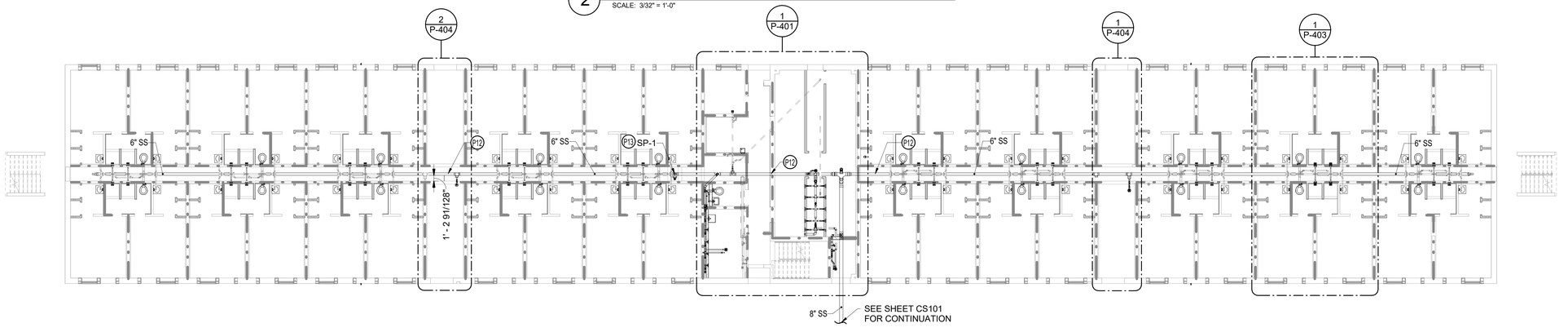
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR SANITARY PIPING PLAN
SCALE: 3/32" = 1'-0"



2 SECOND FLOOR SANITARY PIPING PLAN
SCALE: 3/32" = 1'-0"



3 FIRST FLOOR SANITARY PIPING PLAN
SCALE: 3/32" = 1'-0"

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SHEET KEYNOTES

P12 PROVIDE MAIN SANITARY PIPING ON FIRST FLOOR AND UNDER FLOOR SLAB AS SHOWN.

P13 PROVIDE SUMP PUMP IN THE GENERAL LOCATION SHOWN. ROUTE PIPING TO EXISTING SUMP PUMP TIE IN.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

NORTH CAROLINA REGISTERED ENGINEER SEAL 33273

ISSUE DATE:15 MAY 2020

P-101

CEMS ENGINEERING | ARCHITECTURE
109 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

SANITARY PIPING PLANS

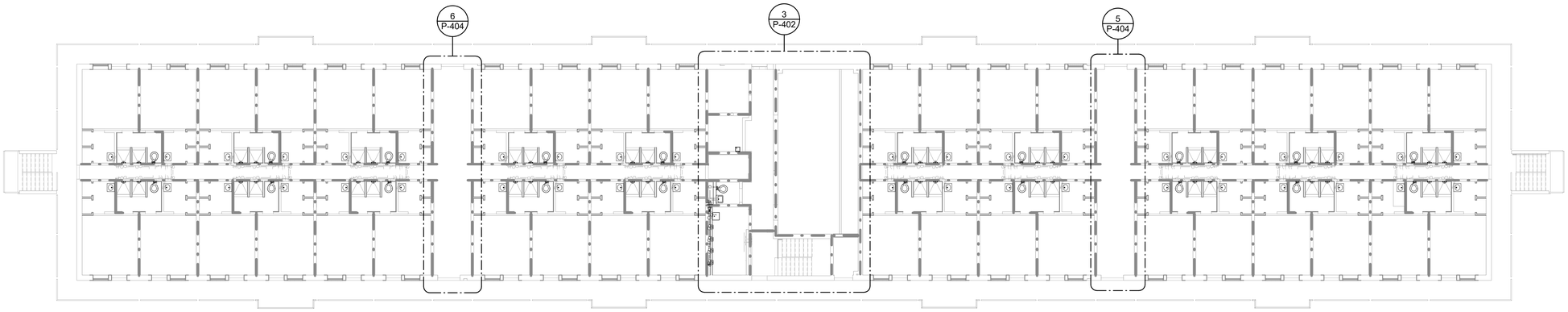
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

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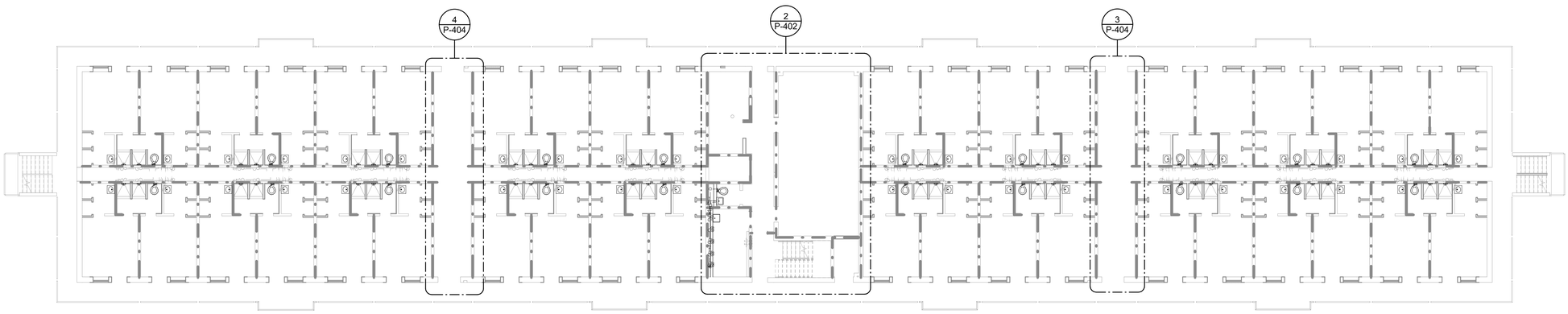
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SCALE: AS NOTED SPEC. 05-18-0042 SHEET 77 OF 143

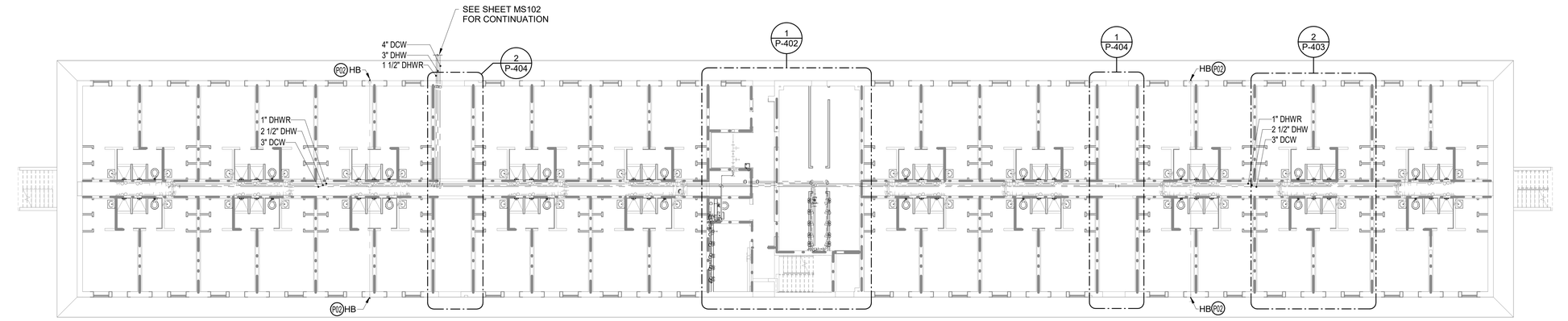
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR DOMESTIC PIPING PLAN
SCALE: 3/32" = 1'-0"



2 SECOND FLOOR DOMESTIC PIPING PLAN
SCALE: 3/32" = 1'-0"



3 FIRST FLOOR DOMESTIC PIPING PLAN
SCALE: 3/32" = 1'-0"

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SHEET KEYNOTES

P02 PROVIDE HOSE BIBB. CONNECT HOSE BIBB TO EXISTING SUPPLY PIPING.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

P-102

CEMS ENGINEERING | ARCHITECTURE
109 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3837
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

DOMESTIC PIPING PLANS

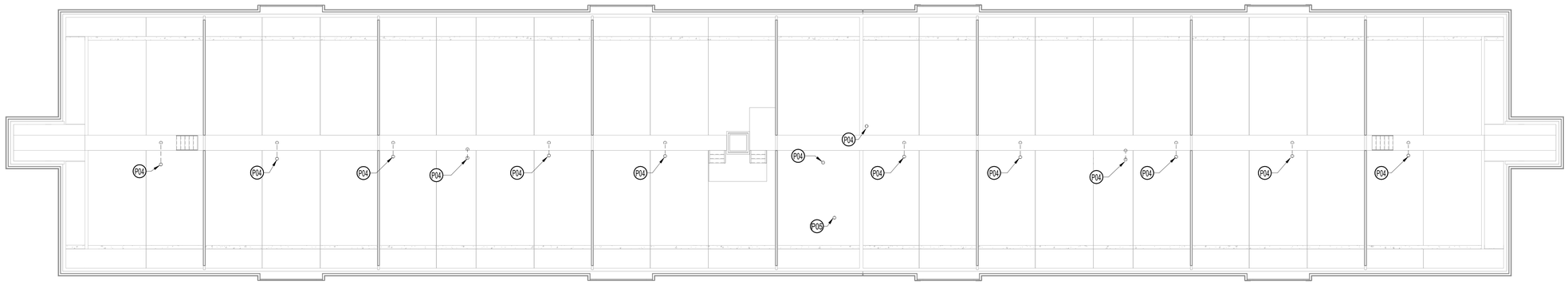
DES.	P. MAHAFFEY
DR.	N. FLEXNER
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SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024036

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 78 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ATTIC PIPING PLAN
SCALE: 3/32" = 1'-0"

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GENERAL NOTES

1. EXTEND ALL NEW AND EXISTING PLUMBING VENTS THROUGH NEW ROOF.
2. PIPING TO BE SCHEDULE 40 PVC.

SHEET KEYNOTES

P04 PROVIDE VENT PIPING EXTENSION THROUGH ROOF; CONNECT TO EXISTING VENT PIPING. ROUTE VENT PIPING TO AVOID CATWALK AND DUCTWORK.

P05 PROVIDE VENT PIPING THROUGH ROOF TO SERVE MECHANICAL ROOM.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

P-103

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

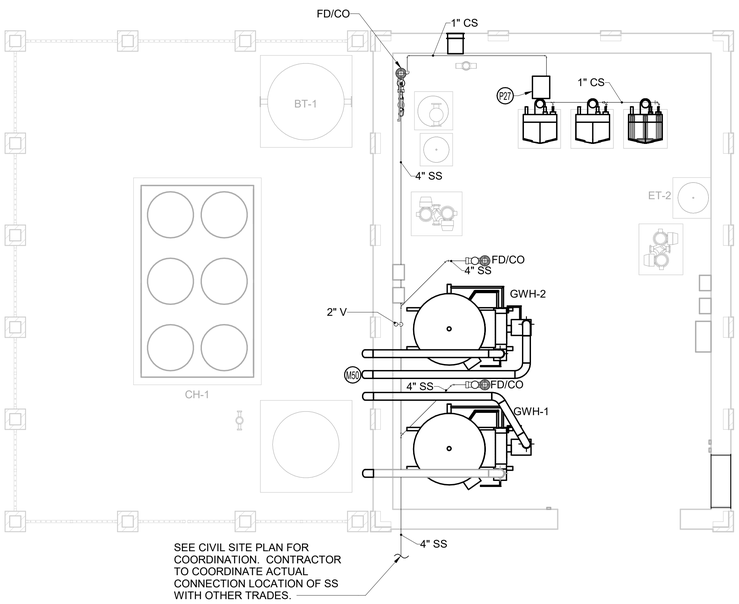
REPAIRS BEQ HP510

ATTIC PIPING PLAN

DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
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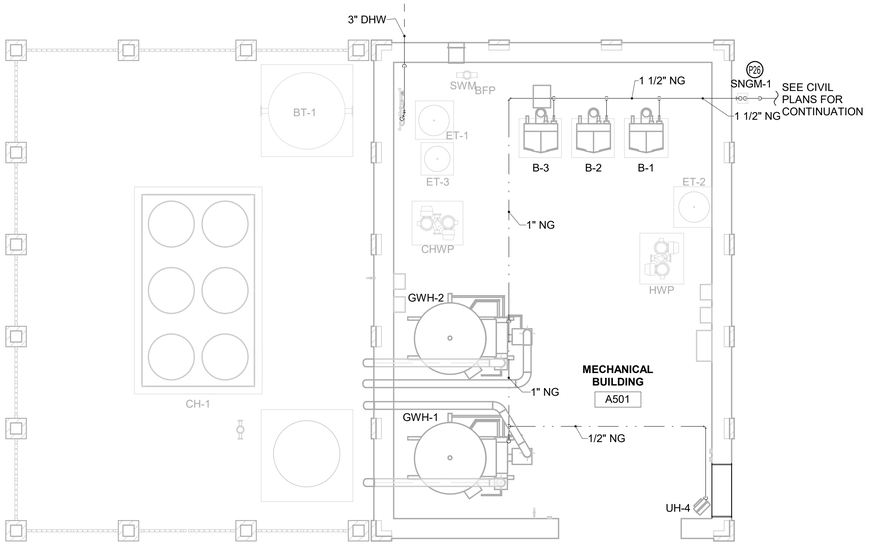
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E1	80091	60024037
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SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 79 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



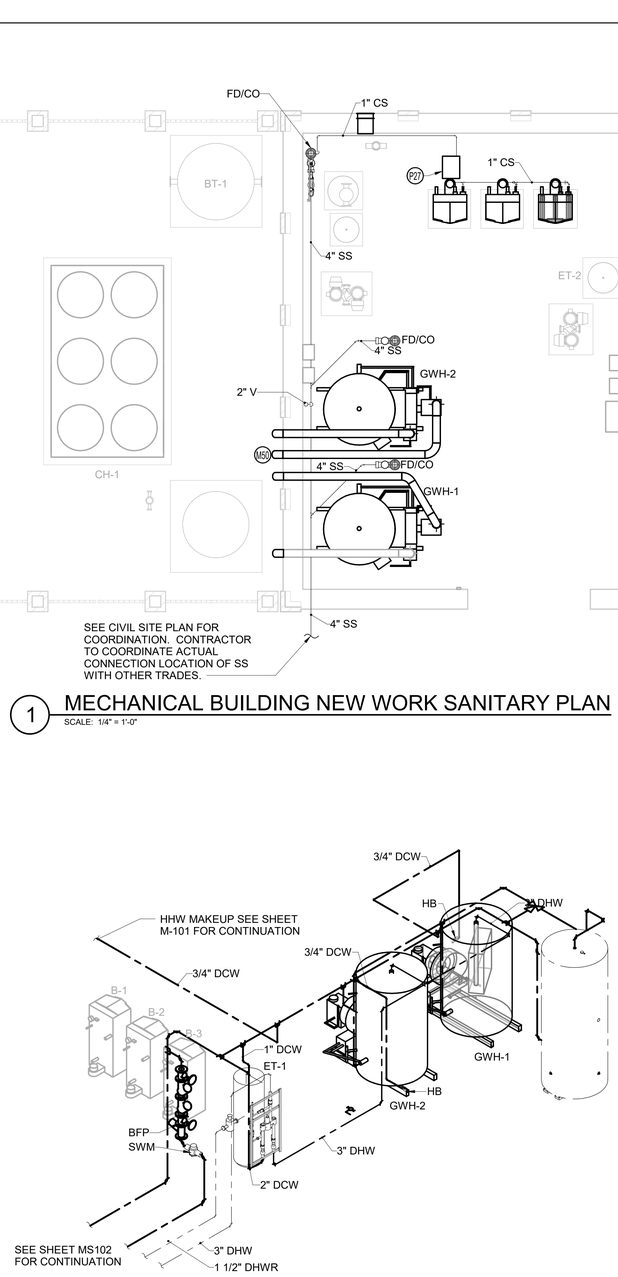
1 MECHANICAL BUILDING NEW WORK SANITARY PLAN

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



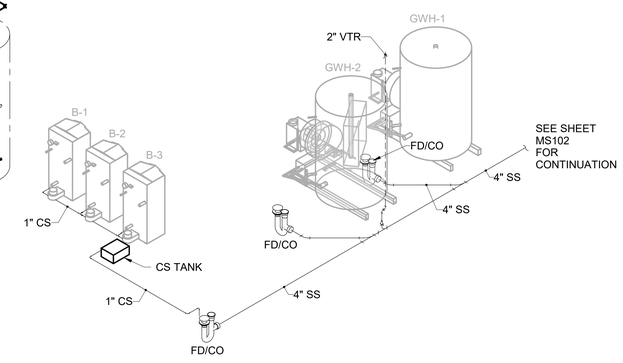
2 MECHANICAL BUILDING NEW WORK NATURAL GAS PLAN

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



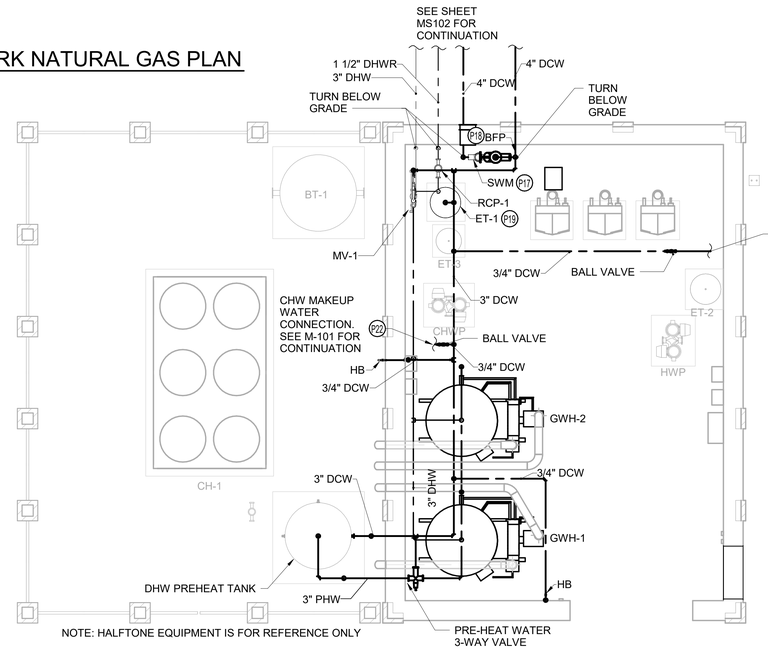
3 DOMESTIC PLUMBING RISER

SCALE: NOT TO SCALE



4 SANITARY PLUMBING RISER

SCALE: NOT TO SCALE



5 MECHANICAL BUILDING NEW WORK DOMESTIC PLAN

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

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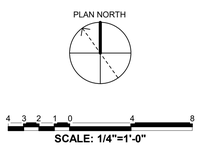
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GENERAL NOTES

1. PROVIDE ISOLATION VALVES AND FLEXIBLE CONNECTIONS FOR ALL MECHANICAL EQUIPMENT. SEE GAS TRAIN DETAIL SHEET P-502 FOR ALL GAS FIRED EQUIPMENT.

KEYNOTES

M50	PROVIDE VENT THROUGH EXTERIOR WALL AS SHOWN. REFER TO MANUFACTURER FOR EXACT TERMINATION AND SIZING REQUIREMENTS.
P17	DOMESTIC WATER SUPPLY TO THE BUILDING SHALL BE PROVIDED WITH DOMESTIC SMART WATER METER (SWM) COMMUNICATING VIA ITRON WATER ERT-60W OR AN APPROVED EQUIVALENT. SWM TO REPORT BACK TO BASEWIDE ITRON FIXED NETWORK 2.0 COMMUNICATING VIA A 900 MHz WIRELESS SIGNAL.
P18	PROVIDE BACKFLOW PREVENTER (BFP). THE INSTALLATION/TESTING OF BACKFLOW PREVENTION DEVICES ON POTABLE WATER LINES MUST BE DONE IN ACCORDANCE WITH THE SAFE DRINKING WATER ACT.
P19	PROVIDE DOMESTIC HOT WATER EXPANSION TANK ET-1.
P22	PROVIDE MAKE UP WATER PIPING TO HEATING AND COOLING SYSTEMS PER DETAIL 11 ON SHEET M-503.
P26	CONTRACTOR TO EXTEND NG PIPE TO EXTERIOR OF BUILDING IN LOCATION SHOWN. UTILITY SHALL PROVIDE 2 PSIG SERVICE, PROVIDE GAS METER AND MAKE ALL FINAL CONNECTIONS.
P27	PROVIDE CONDENSATE NEUTRALIZATION TANK FOR HHW BOILERS. PROVIDE TANK SIZED FOR TOTAL CAPACITY OF ALL BOILERS. THE TANK SHALL HAVE A REMOVABLE LID FOR INSPECTION AND MAINTENANCE WITHOUT TAKING THE TANK OUT OF SERVICE OR DISCONNECTING PIPE. ROUTE CPVC DISCHARGE PIPE TO FLOOR DRAIN SUCH THAT CONDENSATE DOES NOT DRAIN ON CONCRETE FLOOR.



ISSUE DATE:15 MAY 2020

P-104

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1646
CEMS Project No: 10153V Project Manager: R. Alvar

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

DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

REPAIRS BEQ HP510

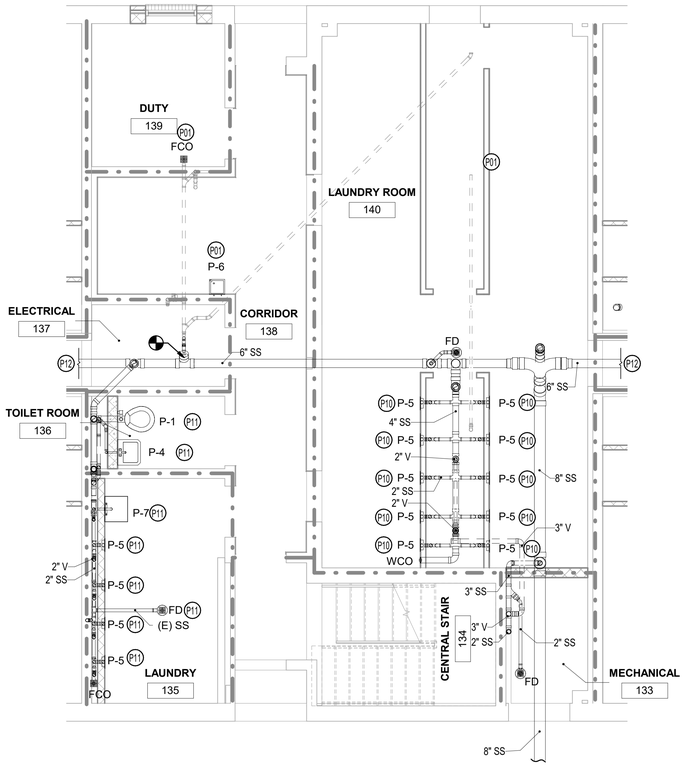
MECHANICAL BUILDING PLUMBING PLANS

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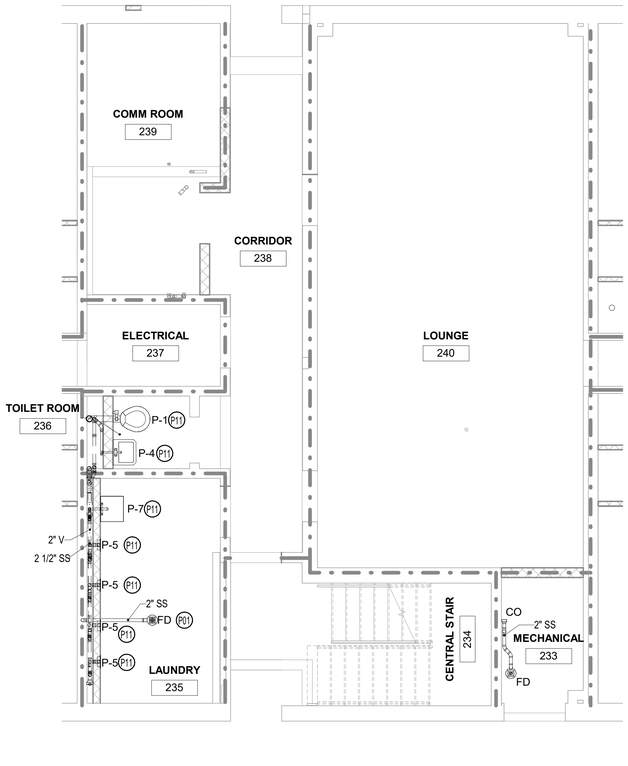
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED SPEC. 05-18-0042 SHEET 80 OF 143

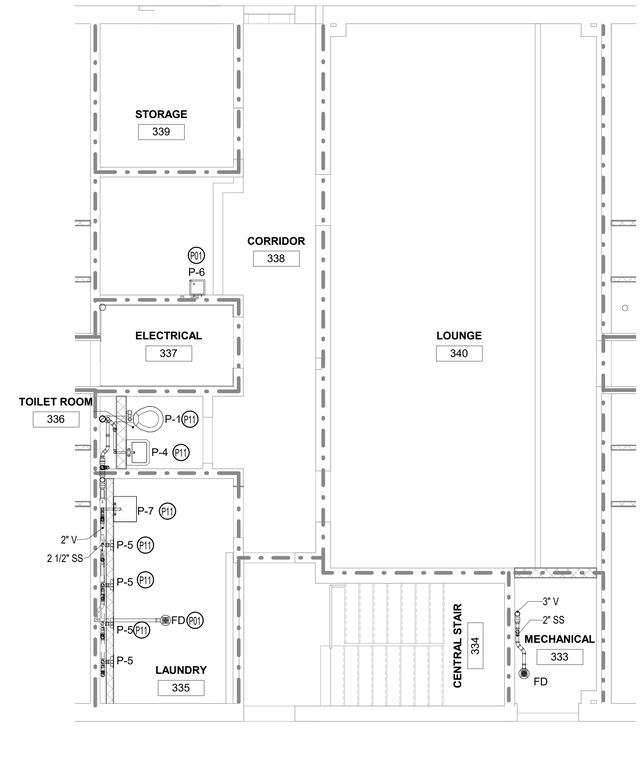
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 FIRST FLOOR CORE SANITARY PIPING PLAN
SCALE: 1/4" = 1'-0"



2 SECOND FLOOR CORE SANITARY PIPING PLAN
SCALE: 1/4" = 1'-0"



3 THIRD FLOOR CORE SANITARY PIPING PLAN
SCALE: 1/4" = 1'-0"

DISCLOSURE OF INFORMATION

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SHEET KEYNOTES

P01	PROVIDE PLUMBING FIXTURES AS SHOWN. CONNECT FIXTURES TO EXISTING SUPPLY WATER, SANITARY SEWER, AND VENT PIPING.
P10	PROVIDE PLUMBING FIXTURES, SUPPLY, SANITARY SEWER, AND VENT PIPING AS SHOWN.
P11	PROVIDE PLUMBING FIXTURES, SUPPLY, SANITARY SEWER, AND VENT PIPING. CONNECT PIPING AT POINT INDICATED
P12	PROVIDE MAIN SANITARY PIPING ON FIRST FLOOR AND UNDER FLOOR SLAB AS SHOWN.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

P-401

CEMS ENGINEERING | ARCHITECTURE
104 Summerville Lodge Rd., Summerville, SC. 29485 843.873.3637
200 Racine Dr., Suite 1, Wilmington, NC. 28401 910.383.1640
CEMS Project No: 15137 Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED SANITARY PIPING PLANS

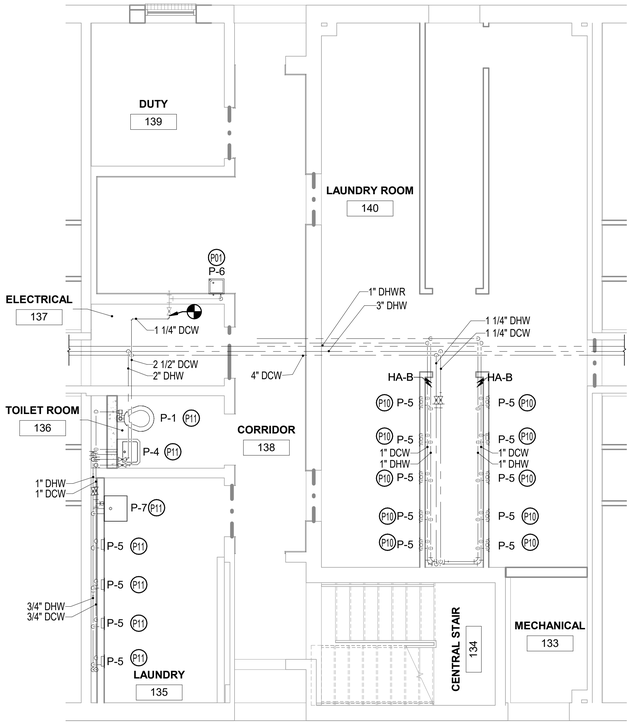
DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC DATE	
SATISFACTORY TO: DATE	

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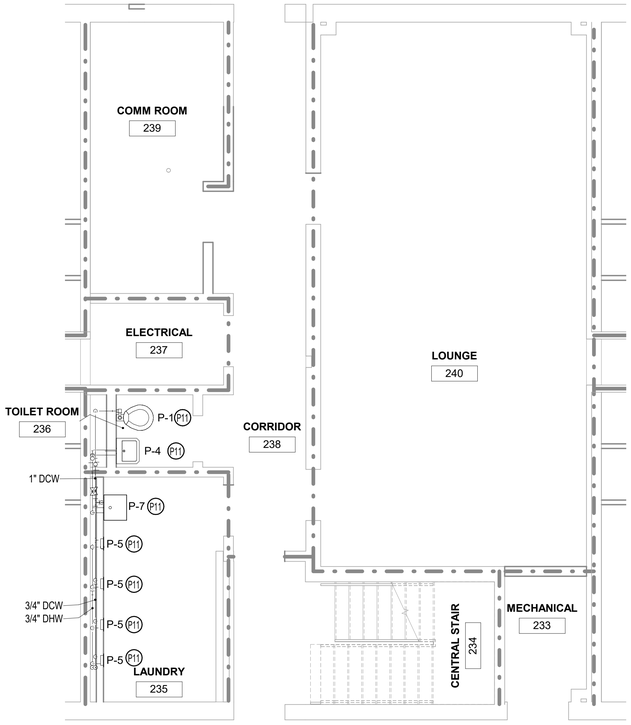
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 81 OF 143

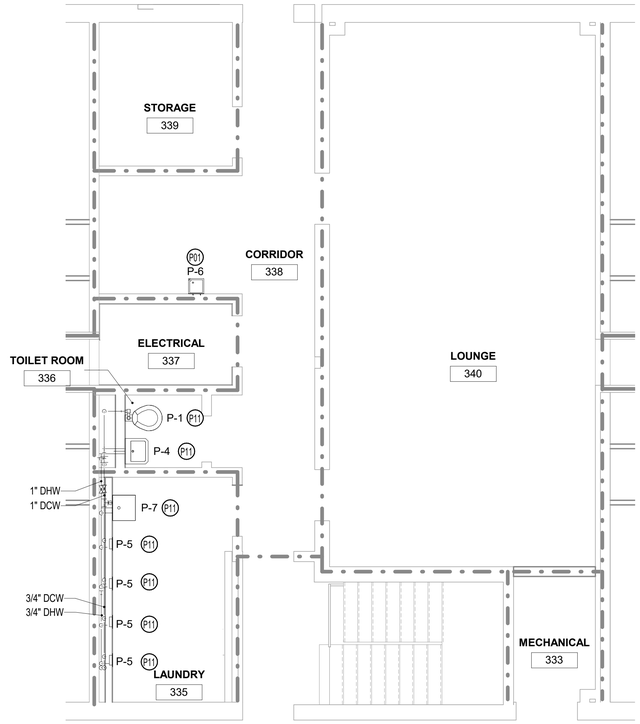
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 FIRST FLOOR CORE DOMESTIC PIPING PLAN
SCALE: 1/4" = 1'-0"
P-102



2 SECOND FLOOR CORE DOMESTIC PIPING PLAN
SCALE: 1/4" = 1'-0"
P-102



3 THIRD FLOOR CORE DOMESTIC PIPING PLAN
SCALE: 1/4" = 1'-0"
P-102

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SHEET KEYNOTES

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P10	PROVIDE PLUMBING FIXTURES, SUPPLY, SANITARY SEWER, AND VENT PIPING AS SHOWN.
P11	PROVIDE PLUMBING FIXTURES, SUPPLY, SANITARY SEWER, AND VENT PIPING. CONNECT PIPING AT POINT INDICATED

PLAN NORTH

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"
GRAPHIC SCALE

NORTH CAROLINA SEAL 32273 ENGINEER

ISSUE DATE:15 MAY 2020

P-402

CEMS ENGINEERING | ARCHITECTURE
109 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED DOMESTIC PIPING PLANS

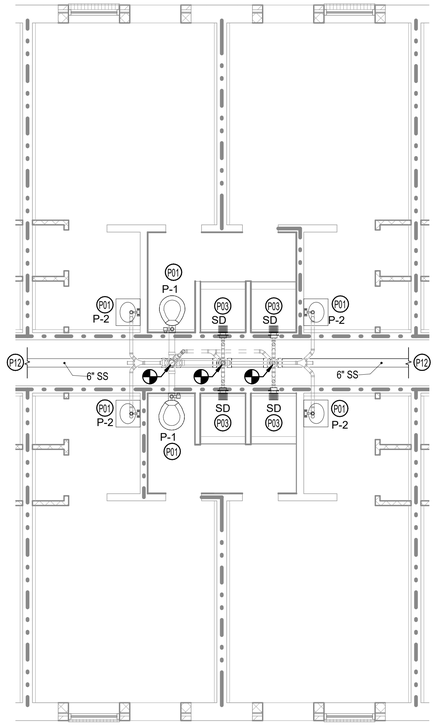
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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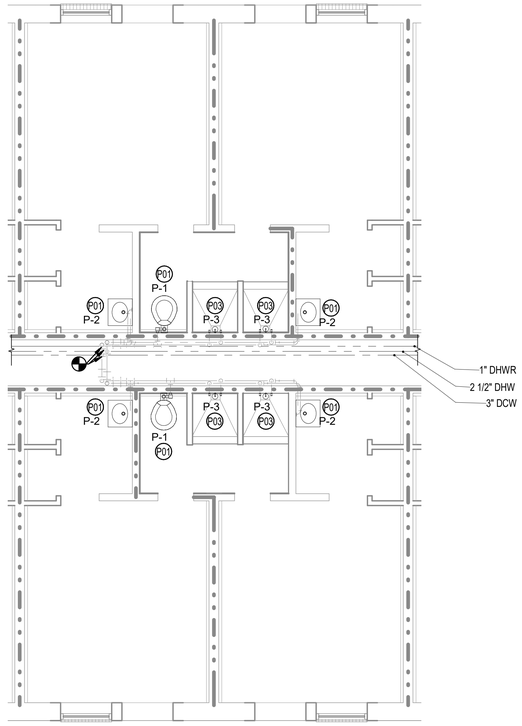
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 82 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 TYP SLEEP ROOM SANITARY PIPING PLAN
SCALE: 1/4" = 1'-0"
P-101



2 TYP SLEEP ROOM DOMESTIC PIPING PLAN
SCALE: 1/4" = 1'-0"
P-102

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P01	PROVIDE PLUMBING FIXTURES AS SHOWN. CONNECT FIXTURES TO EXISTING SUPPLY WATER, SANITARY SEWER, AND VENT PIPING.
P03	PROVIDE SHOWER FIXTURES INCLUDING SHOWER DRAIN. CONNECT DRAIN TO EXISTING SANITARY SEWER AND VENT PIPING.
P11	PROVIDE PLUMBING FIXTURES, SUPPLY, SANITARY SEWER, AND VENT PIPING. CONNECT PIPING AT POINT INDICATED
P12	PROVIDE MAIN SANITARY PIPING ON FIRST FLOOR AND UNDER FLOOR SLAB AS SHOWN.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

P-403

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED PIPING PLANS

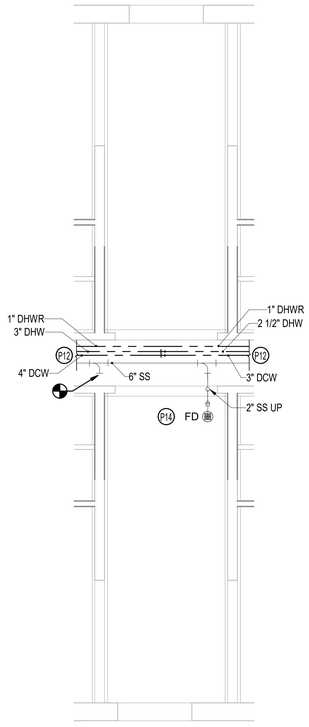
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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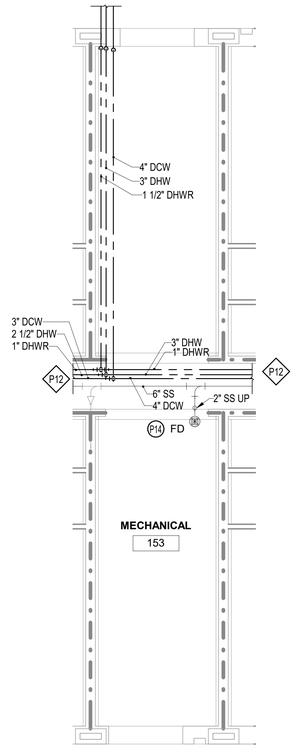
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 83 OF 143

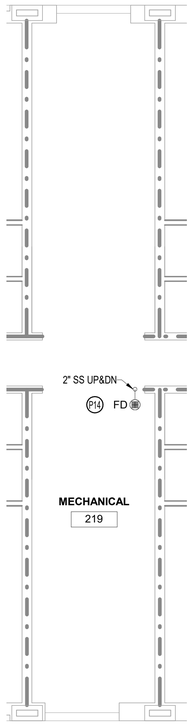
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SYM.	DESCRIPTION	DATE	APPROVED



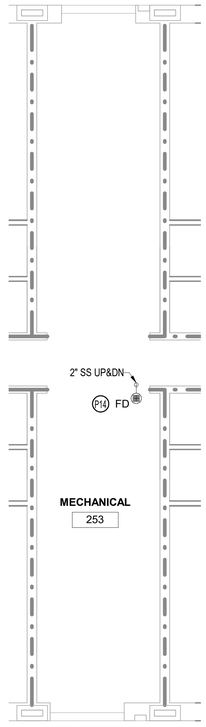
1 FIRST FLOOR MECHANICAL ROOM A PIPING PLAN
SCALE: 1/4" = 1'-0"



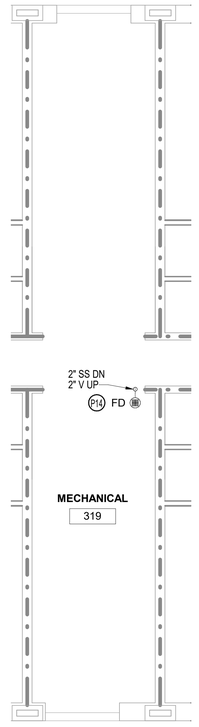
2 FIRST FLOOR MECHANICAL ROOM B PIPING PLAN
SCALE: 1/4" = 1'-0"



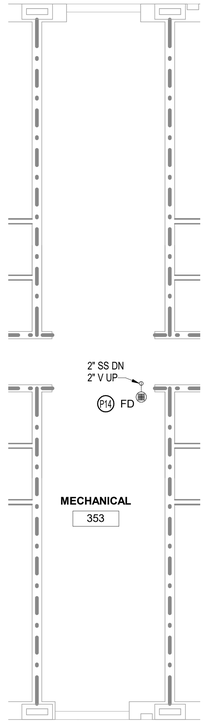
3 SECOND FLOOR MECHANICAL ROOM A PIPING PLAN
SCALE: 1/4" = 1'-0"



4 SECOND FLOOR MECHANICAL ROOM B PIPING PLAN
SCALE: 1/4" = 1'-0"



5 THIRD FLOOR MECHANICAL ROOM A PIPING PLAN
SCALE: 1/4" = 1'-0"



6 THIRD FOOR MECHANICAL ROOM B PIPING PLAN
SCALE: 1/4" = 1'-0"

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SHEET KEYNOTES

P12 PROVIDE MAIN SANITARY PIPING ON FIRST FLOOR AND UNDER FLOOR SLAB AS SHOWN.

P14 PROVIDE FLOOR DRAIN (FD). ROUTE PIPING TO MAIN SANITARY SEWER PIPING.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

P-404

CEMS ENGINEERING | ARCHITECTURE
100 Bentora Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15102V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED PIPING PLANS

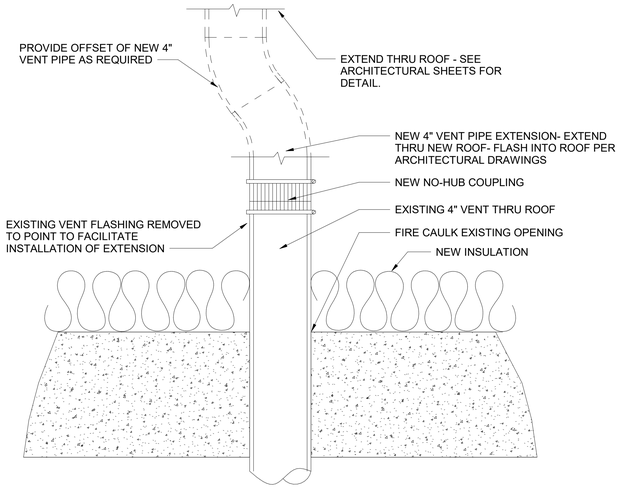
DES. P. MAHAFFEY
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CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
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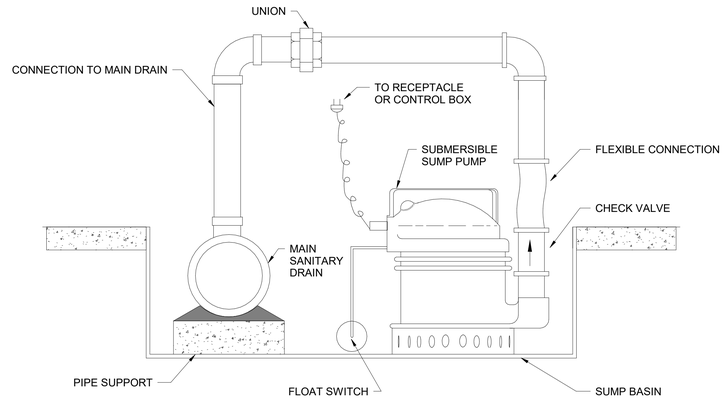
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 84 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

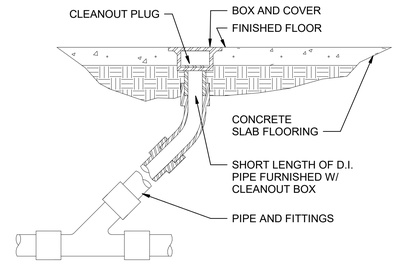


1 EXISTING VENT EXTENSION NEW WORK DETAIL
SCALE: NOT TO SCALE

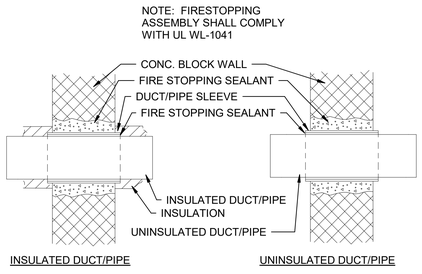


NOTE: PROVIDE AUDIBLE AND VISUAL ALARM LOCATE ADJACENT TO EQUIPMENT ROOM.

2 SUMP PUMP DETAIL
SCALE: NOT TO SCALE

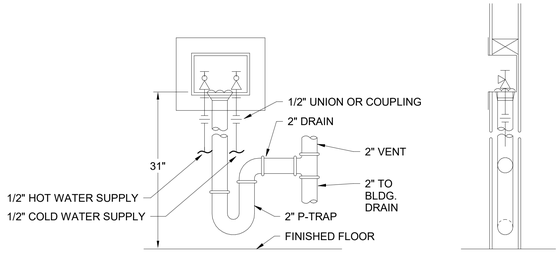


3 FLOOR CLEAN OUT DETAIL
SCALE: NOT TO SCALE

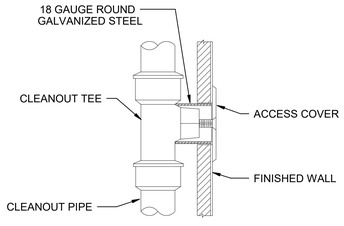


NOTE:
ALL NEW AND EXISTING PENETRATIONS TO BE PROPERLY FIRESTOPPED PER FIRE RATINGS.

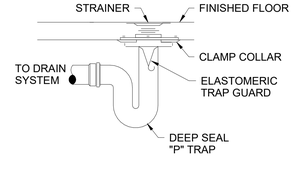
4 FIRESTOPPING PIPE PENETRATIONS DETAIL1
SCALE: NOT TO SCALE



5 SMALL LAUNDRY WASHER BOX DETAIL
SCALE: NOT TO SCALE



6 WALL CLEANOUT DETAIL
SCALE: NOT TO SCALE



7 FLOOR DRAIN DETAIL
SCALE: NOT TO SCALE

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P-501

CEMS ENGINEERING | ARCHITECTURE
104 Bentons Lodge Rd., Summerville, SC. 29485 843.873.3637
100 Princess Place, Wilmington, NC. 28401 910.383.1640
CEMS Project No: 15137 Project Manager: R. Alvar

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

REPAIRS BEQ HP510

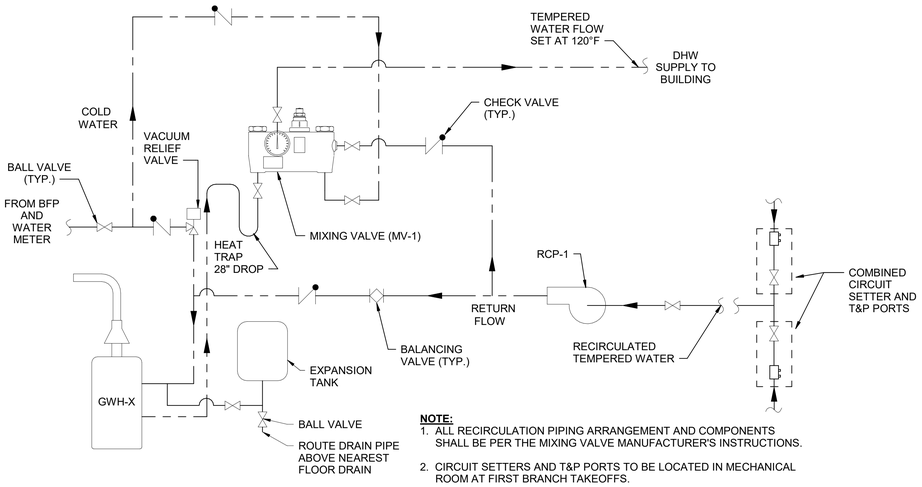
DETAILS

DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

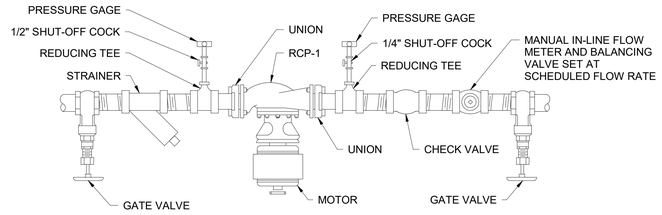
SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024043
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 85 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



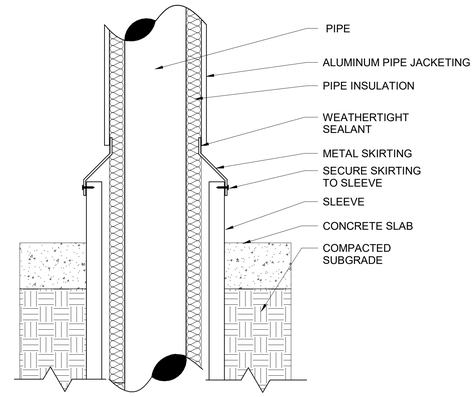
NOTE:
1. ALL RECIRCULATION PIPING ARRANGEMENT AND COMPONENTS SHALL BE PER THE MIXING VALVE MANUFACTURER'S INSTRUCTIONS.
2. CIRCUIT SETTERS AND T&P PORTS TO BE LOCATED IN MECHANICAL ROOM AT FIRST BRANCH TAKEOFFS.

1 DHW MIXING VALVE DETAIL
SCALE: NOT TO SCALE



NOTE: DDC SHALL CONTROL BASED ON OCCUPANCY; SEE SHEET MI110.

2 CIRCULATOR PUMP DETAIL
SCALE: NOT TO SCALE



NOTE:
1. ELECTRICAL BONDING AND GROUNDING SHALL BE PROVIDED IAW NFPA 70.

3 PIPE SLAB PENETRATION DETAIL
SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

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P-502

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

DETAILS

DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024044
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 86 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

RECIRCULATING PUMP SCHEDULE

TYPE	TYPE	CAPACITY	HEAD	MOTOR	
				HP	V/Ø/HZ
RCP-1	INLINE	10 GPM	25 FT	0.33 hp	115/1/60

NOTE:
1. SEE SHEET MI110 FOR CONTROLS.

SMART WATER METER SCHEDULE

TAG	SIZE	DESCRIPTION
SWM	4"	TURBINE TYPE CONFORMING TO AWWA C701

NOTE:
1. DOMESTIC WATER METER SHALL REPORT BACK WIRELESSLY VIA THE BASEWIDE ITRON FIXED NETWORK 2.0 COMMUNICATION VIA A 900 MHz WIRELESS SIGNAL.

BACKFLOW PREVENTOR SCHEDULE

TAG	SIZE	REMARKS
BFP	4"	RPZ TYPE

NOTE:
1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013.

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	PIPE SIZES				REMARKS
		C.W.	H.W.	DRAIN	VENT	
FD/CO	COMBINATION FLOOR DRAIN AND CLEAN OUT			4"		SEE SPECIFICATIONS
HB	HOSE BIB	3/4"				SEE SPECIFICATIONS

NOTE:
1. ALL FLOOR DRAINS CONNECTED TO THE SANITARY SEWER SYSTEM SHALL BE PROVIDED WITH APPROVED ELASTOMERIC TRAP GUARDS.

DHW MIXING VALVE SCHEDULE

TAG	FIXTURE	EWT	LWT	PIPE SIZES			REMARKS
				C.W.	H.W.	H.W.R.	
MV-1	MIXING VALVE STATION WITH RECIRCULATION	140°F	120°F	2"	2"	2"	SEE SPECIFICATIONS

DOMESTIC WATER HEATER SCHEDULE

TAG	TYPE	INPUT	STORAGE	RECOVERY RATE @ 100 RISE	EFFICIENCY	V/Ø/HZ	WEIGHT
GWH-1	NATURAL GAS CONDENSING	500,000 Btu/h	600 gal	587 GPH	94%	120/1/60	2430
GWH-2	NATURAL GAS CONDENSING	500,000 Btu/h	600 gal	587 GPH	94%	120/1/60	2430

NOTES:
1. PROVIDE MANUFACTURER CONCENTRIC DIRECT VENT SYSTEM FOR EACH WATER HEATER WITH HORIZONTAL SIDEWALL TERMINATION USING STAINLESS STEEL OR OTHER CATEGORY IV APPROVED MATERIAL.
2. PROVIDE BOILERS WITH REQUIRED CSD-1 CONTROL AND LOCATE EMERGENCY SHUTOFF SWITCH ON EXTERIOR OF MECHANICAL ROOM AS SHOWN ON PLANS.
3. PROVIDE BACNET MS/TP INTERFACE. COORDINATE WITH DDC CONTRACTOR AND CONTROLS PLANS FOR UNIT OPERATION.
4. PROVIDE 4" MINIMUM EQUIPMENT RAILS WITH ALL GAS STORAGE WATER HEATERS

DOMESTIC EXPANSION TANK SCHEDULE

TAG	SYSTEM	MIN ACCEPTANCE VOLUME (GAL)	MIN OPERATING TEMP./ PRESSURE (°F/PSIG)	MAX OPERATING TEMP./ PRESSURE (°F/PSIG)	PRECHARGE PRESSURE (PSIG)	SEPARATION
ET-1	DOMESTIC HOT WATER	130.0	40/13	140/150	13	BLADDER

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P-601

CEMS ENGINEERING | ARCHITECTURE
109 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

MECHANICAL BUILDING SCHEDULES

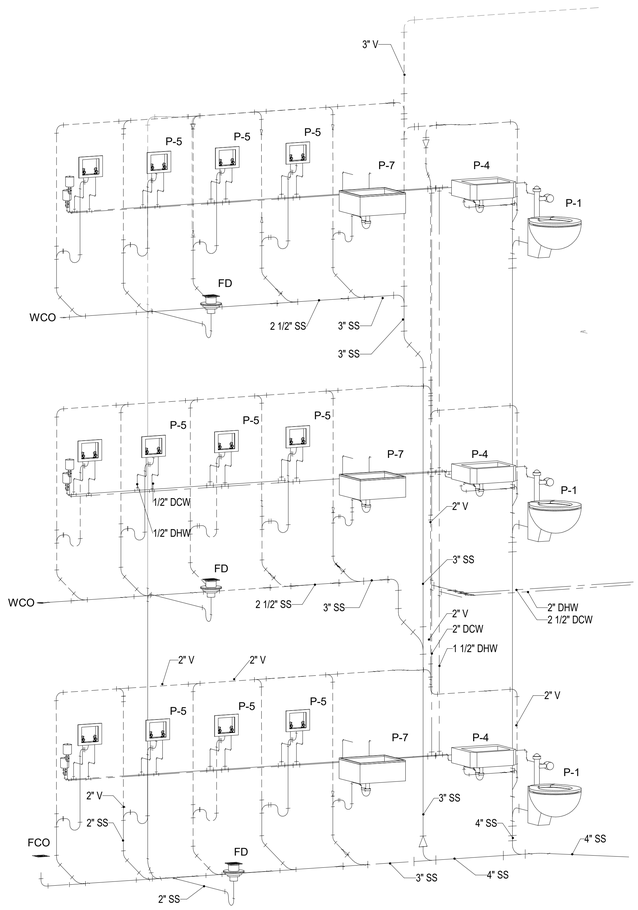


ISSUE DATE:15 MAY 2020

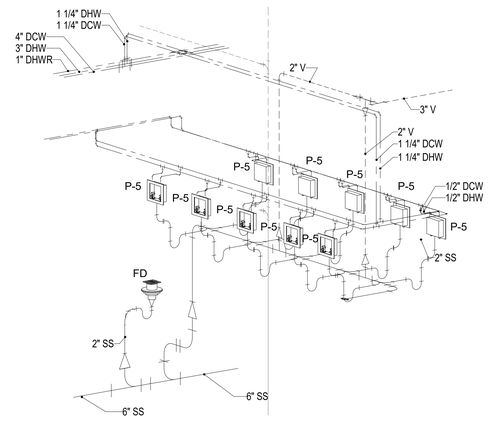
DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024045
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 87 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 SMALL LAUNDRY ISOMETRIC VIEW
SCALE: NOT TO SCALE



2 LAUNDRY ISOMETRIC VIEW
SCALE: NOT TO SCALE

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P-701

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1646
CEMS Project No: 10153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ISOMETRIC VIEWS

DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024046
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 88 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

LEGEND:

- TO BE REMOVED/DEMOLISHED
- EXISTING DUCTWORK/MECHANICAL (TO REMAIN)
- NEW DUCTWORK/MECHANICAL
- SUPPLY DIFFUSER
- RETURN GRILLE
- EXHAUST GRILLE
- SUPPLY DUCT UP OR DOWN
- RETURN DUCT UP OR DOWN
- EXHAUST DUCT UP OR DOWN
- FLEXIBLE DUCT-MAX. 5' LONG SEE SCHEDULE FOR SIZES
- SINGLE THICKNESS TURNING VANES ELBOW, TURNING VANES
- MANUAL VOLUME DAMPER
- (T)N THERMOSTAT, N DENOTES UNIT NUMBER
- (H)N HUMIDISTAT, N DENOTES UNIT NUMBER
- (C)(T)N THERMOSTAT AND CARBON DIOXIDE SENSOR, N DENOTES UNIT NUMBER
- SPIN-IN W/DAMPER (45° OR 90° TAP)
- DIRECTION OF FLOW
- DIRECTION OF AIRFLOW
- DUCT TRANSITION
- (X###) AIR DISTRIBUTION MARK, SEE SCHEDULE M-601
- REQUIRED EQUIPMENT CLEARANCES
- (E) DUAL TEMP SUPPLY, DUAL TEMP RETURN, DTS, DTR
- CHILLED WATER SUPPLY, CHWS
- CHILLED WATER RETURN, CHWR
- HEATING HOT WATER SUPPLY, HHWS
- HEATING HOT WATER RETURN, HHWR
- PRIMARY AND SECONDARY CONDENSATE , CS
- PIPE TURNING DOWN
- PIPE TURNING UP
- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- POINT OF DISCONNECTION BETWEEN EXISTING TO REMAIN AND EXISTING TO BE REMOVED
- NEW WORK KEYNOTE
- DEMOLITION KEYNOTE
- HORIZONTAL/VERTICAL FIRE DAMPER
- XX SLOPE
- ACCESS PANEL
- 30-MIN FIRE RATED SEPARATION
- 1-HR FIRE RATED SEPARATION
- Φ FLAT OVAL DUCTWORK
- Ø ROUND DUCTWORK
- (DP) REMOTE DIFFERENTIAL PRESSURE SENSOR

ABBREVIATIONS

(E)	EXISTING
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
CFS	CHEMICAL FEED SYSTEM
CH	CHILLER
CHWP	CHILLED WATER PUMP
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CP	CIRCULATING PUMP
CS	CONDENSATE
CV	CONTROL VALVE
DHU	DEHUMIDIFICATION UNIT
DOAS	DEDICATED OUTSIDE AIR SYSTEM
DTR	DUAL TEMPERATURE RETURN
DTS	DUAL TEMPERATURE SUPPLY
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
ES	HVAC EMERGENCY SHUTDOWN (MUSHROOM) SWITCH
EXP.	EXPANSION
F.C.	FLEXIBLE CONNECTION
FPB	FAN POWERED BOX TERMINAL UNIT
FRD	FIRE RATED DAMPER
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
IV	ISOLATION VALVE
LAT	LEAVING AIR TEMPERATURE
MOD	MOTOR OPERATED DAMPER
OA	OUTDOOR AIR
OAT	OUTDOOR AIR TEMPERATURE
OBD	OPPOSED BLADE DAMPER
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RA	RETURN AIR
RHS	RELATIVE HUMIDITY SENSOR
SA	SUPPLY AIR
SP	STATIC PRESSURE
TYP.	TYPICAL
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME TERMINAL UNIT
VFD	VARIABLE FREQUENCY DRIVE
W/	WITH

DESIGN CONDITIONS

OUTDOOR DESIGN CONDITIONS

SEASON	WB/DB (°F)
SUMMER	91/77
WINTER	22

DEHUMIDIFICATION CONDITIONS

MCDB (°F)	W (grains H2O/lbm dry air)
84	140

INDOOR DESIGN CONDITIONS

SPACE TYPE	SEASON	OCCUPIED	UNOCCUPIED
ALL	COOLING	76°F	84°F
	HEATING	70°F	55°F

DESIGN VENTILATION RATES

SPACE TYPE	CFM/PPL	CFM/FT²
BARRACKS SLEPING ROOM	5	0.06
CORRIDOR	0	0.06
LOBBY/PREFUNCTION	7.5	0.06
LOUNGES	7.5	0.06
OCCUPIABLE STORAGE	5	0.12

NOTE:
1. HVAC EQUIPMENT MUST BE SELECTED TO MEET BOTH THE SUMMER/WINTER DESIGN CONDITIONS AND THE DEHUMIDIFICATION CRITERIA.

GENERAL NOTES:

1. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT TO BE SCALED FOR DIMENSIONS, UNLESS DIMENSIONED.
2. ALL WORK SHOWN ON THESE DRAWINGS SHALL BE NEW UNLESS NOTED OTHERWISE AS EXISTING. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR FOR A COMPLETE AND OPERABLE SYSTEM. ALL WORK TO BE PERFORMED SHALL BE PROVIDED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
3. COORDINATE LOCATION OF MECHANICAL WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES.
4. ALL EQUIPMENT, PIPE AND DUCTWORK SHALL BE INSTALLED ABOVE CEILING STRUCTURE, UNLESS OTHERWISE NOTED.
5. ALL VFD-S FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
6. ALL PIPING AND MECHANICAL EQUIPMENT LOCATIONS AND SIZING BASED ON AS-BUILT DRAWINGS AND FIELD VERIFICATION. CONTRACTOR SHALL BECOME TOTALLY FAMILIARIZED WITH, AND VERIFY, ALL EXISTING CONDITIONS AND DIMENSIONS THAT AFFECT THIS CONTRACT.
7. DUCT SIZES INDICATED ARE NET FREE INSIDE DIMENSIONS.
8. PIPING AND EQUIPMENT LOCATIONS AND SIZES SHOWN ARE BASED ON VISUAL FIELD VERIFICATION.
9. ALL EQUIPMENT, PIPING, ETC. INDICATED TO BE REMOVED BY KEYED DEMOLITION NOTES IS EXISTING.
10. ALL EXISTING MECHANICAL SYSTEMS SHALL BE DEMOLISHED AND REMOVED BY THE CONTRACTOR. 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.
11. ALL DEMOLITION SHALL BE PER 02 41 00 SPECIFICATION.
12. ALL EXISTING EQUIPMENT AND PIPING INDICATED TO BE REUSED SHALL BE CLEANED, SERVICED, AND TESTED PRIOR TO REUSE.

DUCTWORK CONSTRUCTION AND LEAKAGE TESTING

SYSTEM	DUCT PRESSURE CLASS				DUCT SEAL AND LEAK CLASS				DUCT TEST PRESSURE: INCHES OF WATER COLUMN	NOTES
	INCHES OF WATER COLUMN				ROUND/OVAL		RECTANGULAR			
	SUPPLY DUCT	RETURN DUCT	EXHAUST DUCT	OUTSIDE AIR DUCT	DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT SEAL CLASS	DUCT LEAK CLASS		
DOAS	1.0	-	-	-	A	3	A	6	1.0	1
	-	-1.0	-	-	A	3	A	6	1.0	1
	-	-	-	1.0	A	3	A	6	1.0	1

NOTE:
1. TEST IN ACCORDANCE WITH SPECIFICATION UFGS 23 05 93, TESTING, ADJUSTING, AND BALANCING FOR HVAC AND THE PROCEDURES IN SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL. 100% DUCT AIR LEAKAGE TESTING SHALL BE CONDUCTED.

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M-001

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

GENERAL NOTES AND LEGENDS

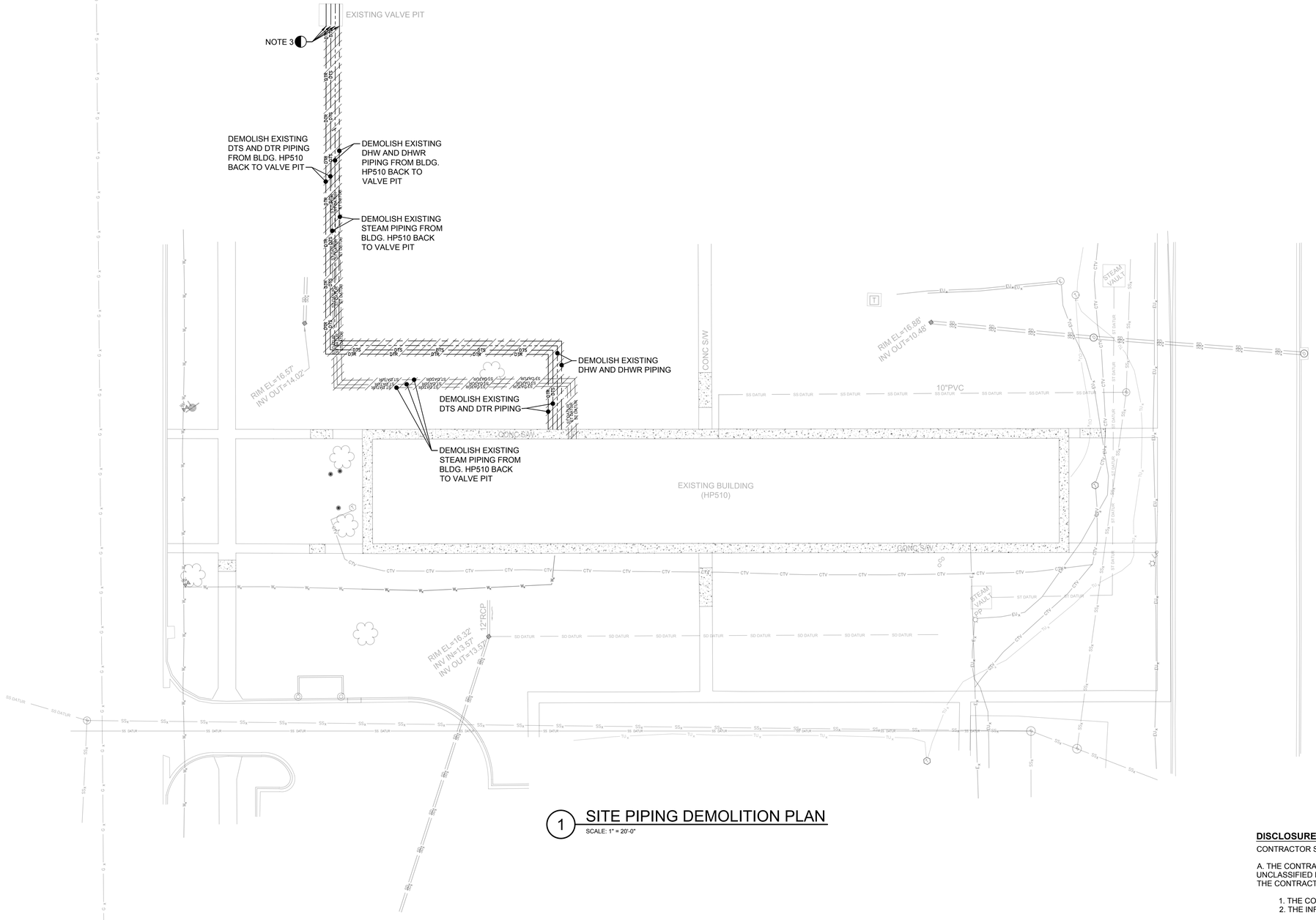
DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

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SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024047

CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED SPEC. 05-18-0042 SHEET 89 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 SITE PIPING DEMOLITION PLAN
SCALE: 1" = 20'-0"

N

20' 0 20' 40'

SCALE: 1" = 20'-0"

GRAPHIC SCALE

GENERAL NOTES

1. SEE SHEET M-001 FOR LEGEND AND GENERAL NOTES.
2. COORDINATE ALL DEMOLITION AND NEW UTILITIES WITH THE CIVIL SITE PLANS.
3. CONTRACTOR SHALL CLOSE ISOLATION VALVES AND PERMANENTLY BLANK FLANGES TO DISABLE PIPING.

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MS101

CEMS
ENGINEERING | ARCHITECTURE
100 Business Lodge Road, Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15132V Project Manager: R. ALVAR

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

REPAIR BEQ HP510

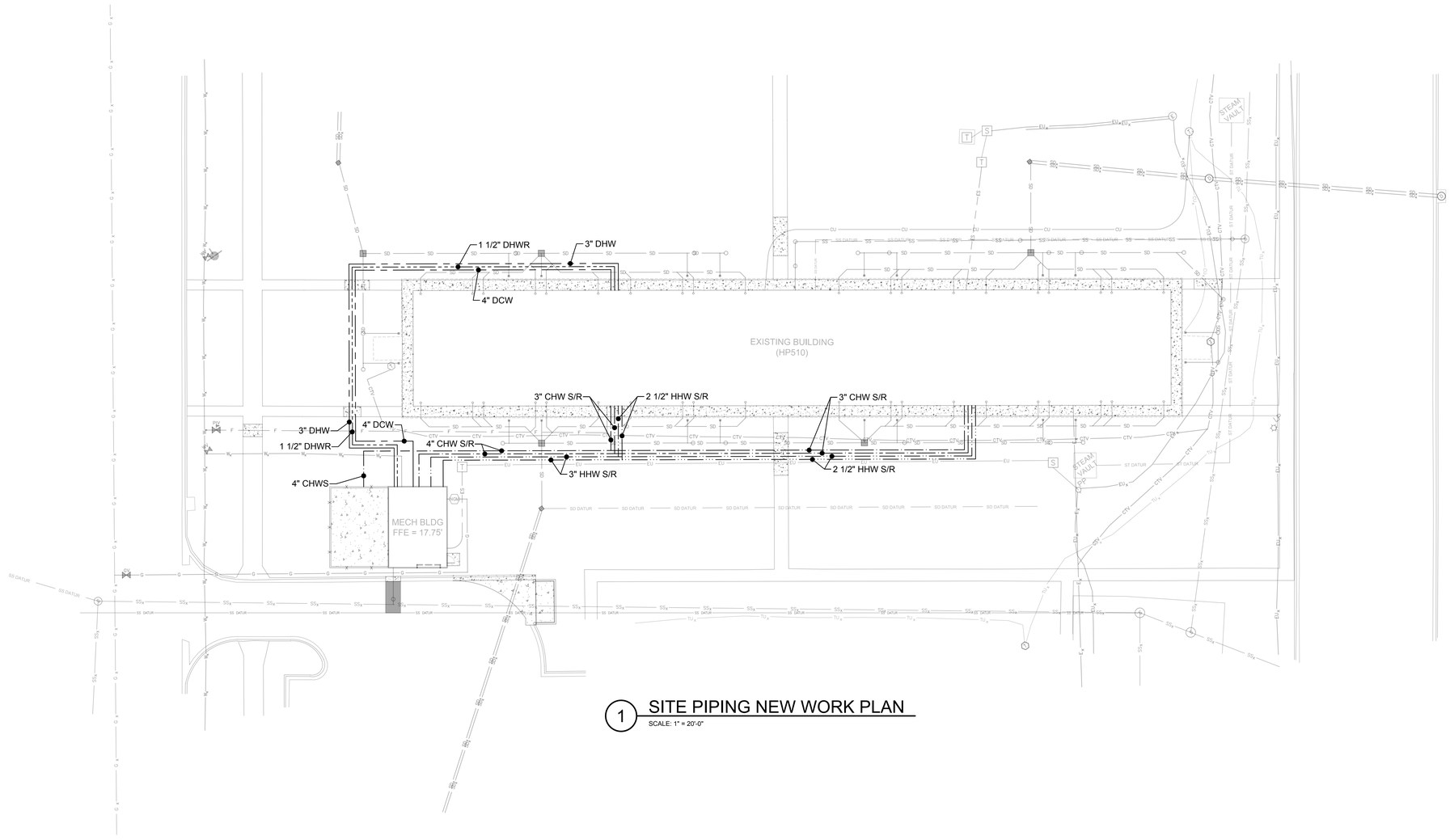
SITE PIPING DEMOLITION PLAN

DES. N. BOSTIC	
DR.	
CHK. B. TURKALL	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE: 15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024048
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 90 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 SITE PIPING NEW WORK PLAN
SCALE: 1" = 20'-0"

GENERAL NOTES

1. SEE SHEET M-001 FOR LEGEND AND GENERAL NOTES.
2. COORDINATE ALL DEMOLITION AND NEW UTILITIES WITH THE CIVIL SITE PLANS.

DISCLOSURE OF INFORMATION

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N

20' 0 20' 40'

SCALE: 1" = 20'-0"

GRAPHIC SCALE

MS102

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Road, Summerville, SC, 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. ALVAR

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

DES.	N. BOSTIC
DR.	J. BARNES
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

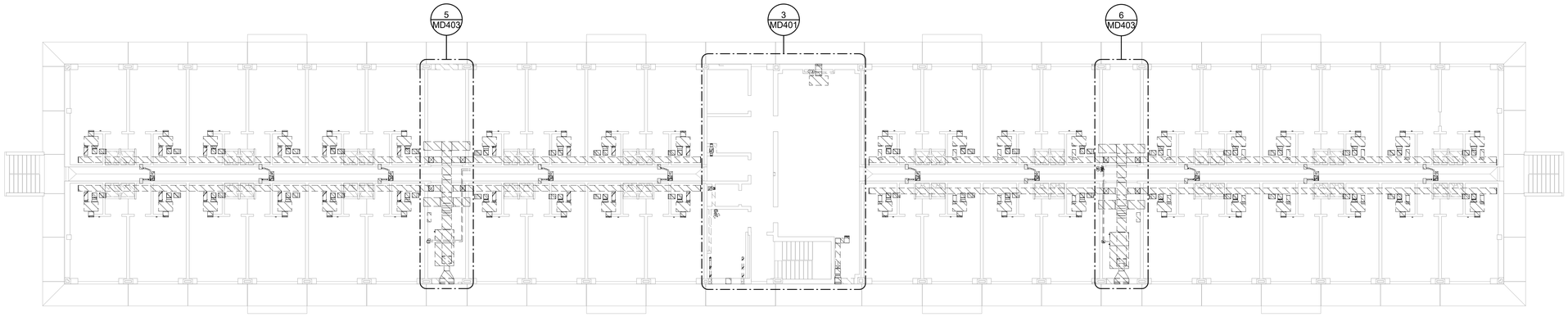
REPAIR BEQ HP510

SITE PIPING PLAN

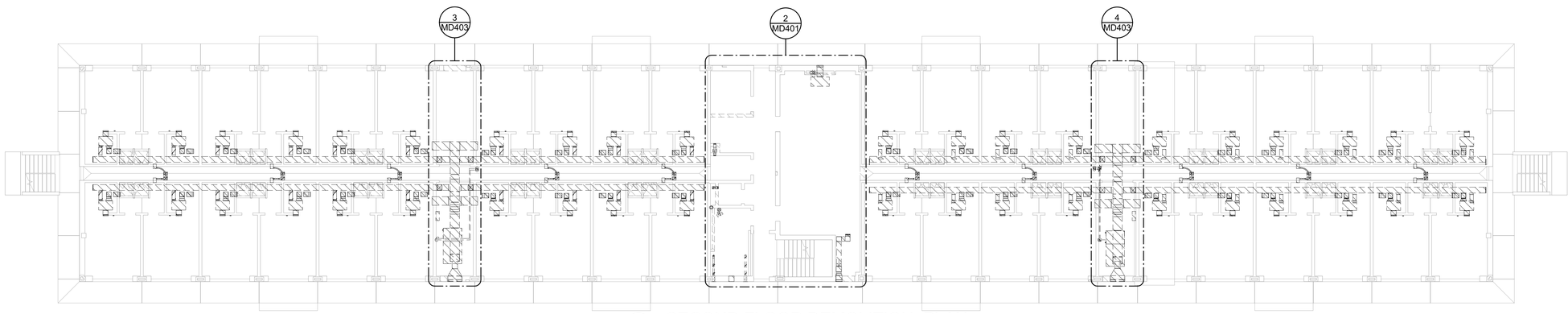
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SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 91 OF 143

ISSUE DATE: 15 MAY 2020

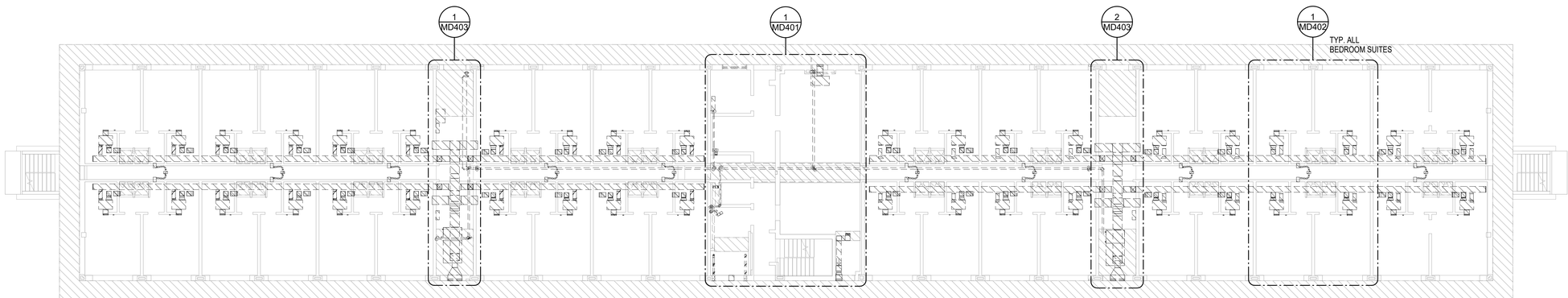
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



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



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



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

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PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MD101

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.383.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

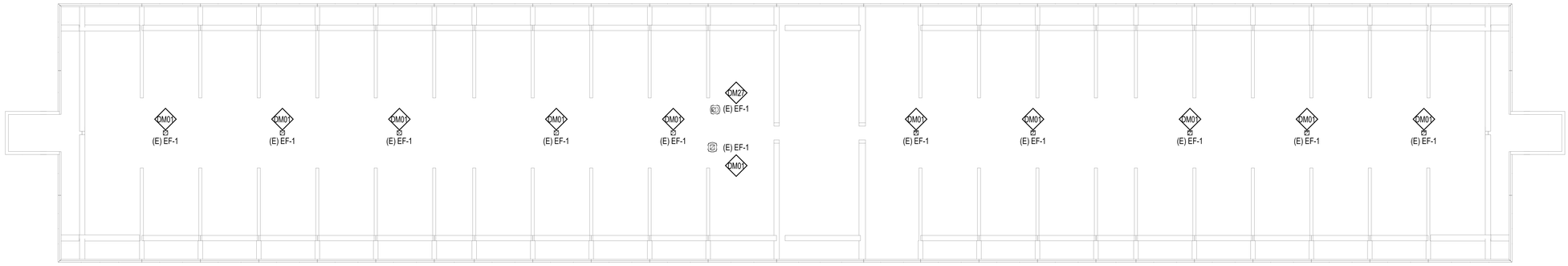
REPAIRS BEQ HP510

DEMOLITION PLANS

DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. B. TURKALL	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024050
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 92 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ROOF DEMOLITION PLAN

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

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SHEET KEYNOTES

DM01 DEMOLISH AND REMOVE ALL EXHAUST FANS AND HOODS LOCATED ON ROOF, RELATED DUCTWORK AND RISERS, MOUNTING/SUPPORTS, CONTROLS/WIRING, AND ASSOCIATED ACCESSORIES COMPLETE. REMOVE ROOFCAP AND CURB. CONTRACTOR SHALL PROVIDE AND MAINTAIN A SYSTEM TO KEEP THE BUILDING WATERPROOF.

DM27 DEMOLISH AND REMOVE ALL EXHAUST FANS AND HOODS LOCATED ON ROOF, RELATED DUCTWORK AND RISERS, MOUNTING/SUPPORTS, CONTROLS/WIRING, AND ASSOCIATED ACCESSORIES COMPLETE. REMOVE ROOFCAP AND CURB. SEE ARCHITECTURAL PLANS FOR REPAIR DETAIL.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MD102

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ROOF DEMOLITION PLAN

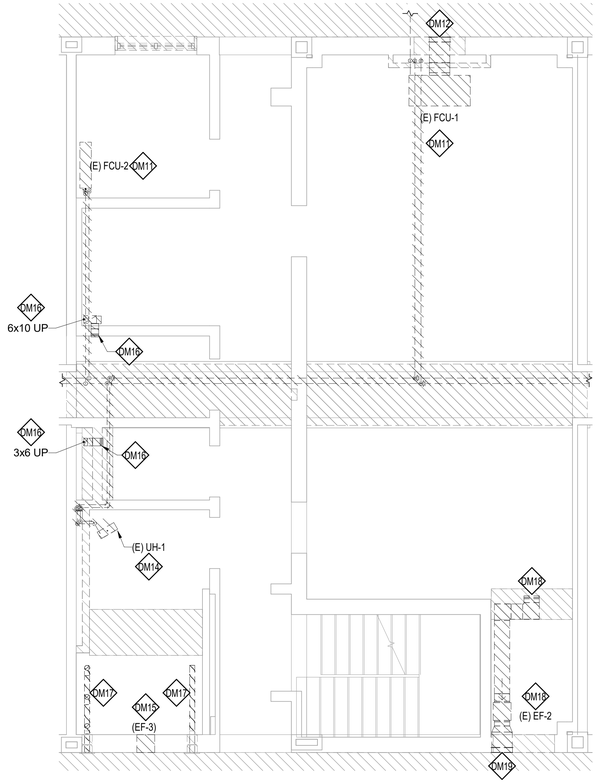
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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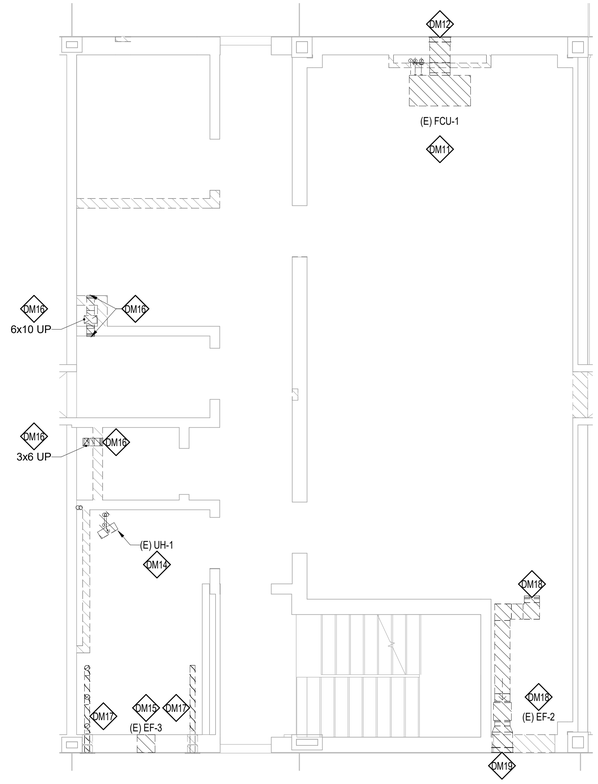
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 93 OF 143

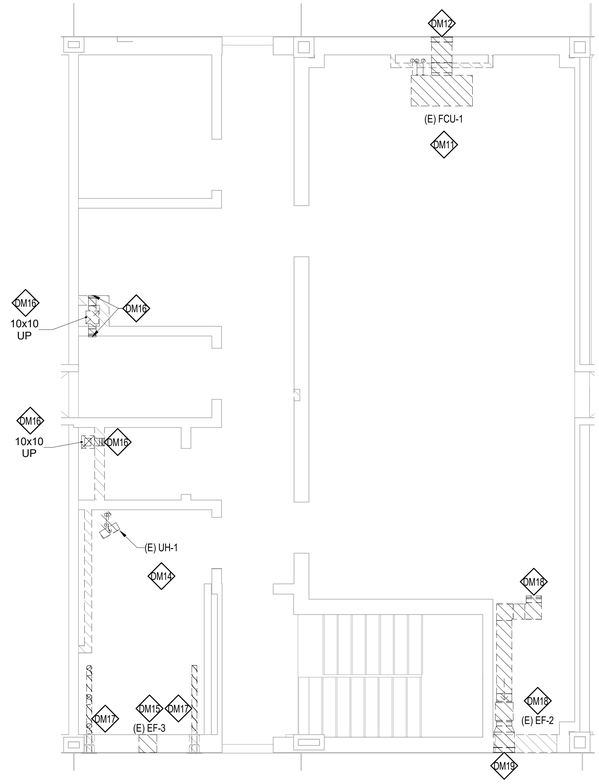
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED FIRST FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101



2 ENLARGED SECOND FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101



3 ENLARGED THIRD FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101

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SHEET KEYNOTES

DM11	DEMOLISH AND REMOVE EXISTING FAN COIL UNIT AND ALL RELATED DUCTWORK, PIPING, AND PNEUMATIC CONTROLS COMPLETE.
DM12	DEMOLISH AND REMOVE EXISTING OUTSIDE AND RETURN AIR INTAKES COMPLETE, INCLUDING LOUVERS.
DM14	DEMOLISH AND REMOVE EXISTING UNIT HEATER, THERMOSTAT, CONTROL WIRING, AND PIPING COMPLETE.
DM15	DEMOLISH AND REMOVE EXISTING EXHAUST FAN, GRAVITY SHUTTER, LOUVER, AND ALL ASSOCIATED WIRING AND CONTROLS COMPLETE.
DM16	DEMOLISH AND REMOVE EXHAUST GRILLES AND ALL ASSOCIATED DUCTWORK, DAMPERS, HANGERS, AND SUPPORTS COMPLETE TO ATTIC. DEMOLITION WILL REQUIRE PARTIAL REMOVAL OF SECTIONS OF THE EXISTING CHASE WALL. UPON COMPLETION OF BOTH THE DEMOLITION AND THE INSTALLATION OF THE NEW SYSTEM IN THE CHASE, THE CONTRACTOR SHALL REPAIR CHASE WALL COMPLETE WITH NEW MATERIALS MATCHING THE EXISTING. SEE ARCHITECTURAL DETAILS.
DM17	DEMOLISH AND REMOVE DRYER EXHAUST PVC HEADER, LOUVER, AND RELATED ACCESSORIES SERVING LAUNDRY ROOM COMPLETE.
DM18	DEMOLISH AND REMOVE EXISTING EXHAUST FAN, DUCTWORK, GRILLES, AND CONTROL WIRING COMPLETE.
DM19	DEMOLISH AND REMOVE LOUVER.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MD401

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED DEMOLITION PLANS

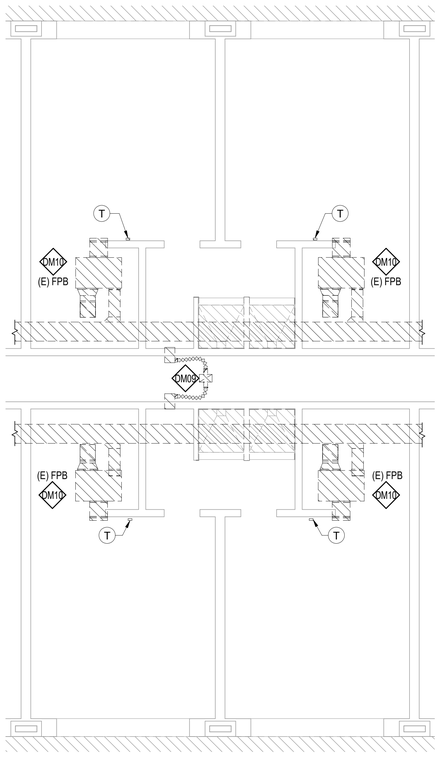
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024052

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 94 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED TYPICAL SLEEPING ROOM DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101

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SHEET KEYNOTES

DM09	DEMOLISH AND REMOVE EXISTING WALL MOUNTED EXHAUST FANS, RELATED FLEX DUCT, AND EXISTING EXHAUST RISER COMPLETE.
DM10	DEMOLISH AND REMOVE EXISTING TERMINAL UNIT, THERMOSTAT, PNEUMATIC CONTROLS, RELATED CONTROL TUBING, AND ALL ASSOCIATED DUCTWORK, GRILLES, AND DIFFUSERS COMPLETE.

PLAN NORTH

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"
GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MD402

CEMS
ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED DEMOLITION PLAN

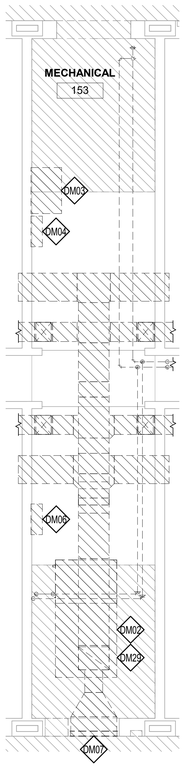
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

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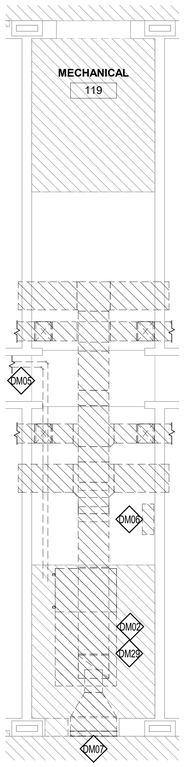
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 95 OF 143

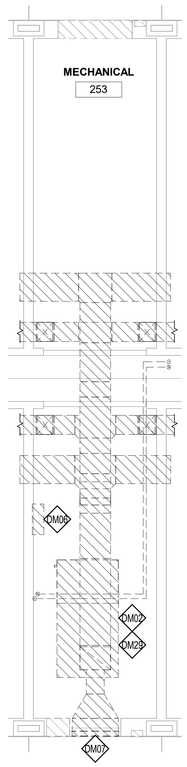
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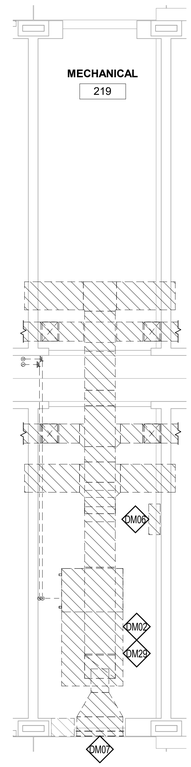
1 FIRST FLOOR MECHANICAL ROOM B DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101



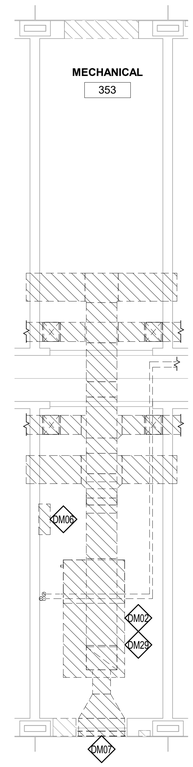
2 FIRST FLOOR MECHANICAL ROOM A DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101



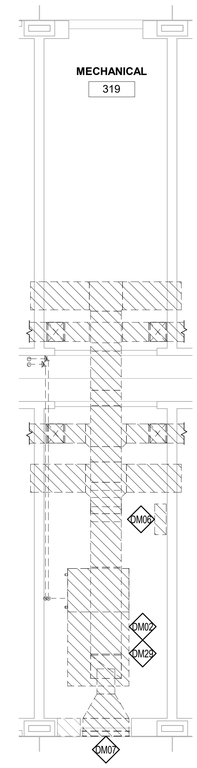
3 SECOND FLOOR MECHANICAL ROOM B DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101



4 SECOND FLOOR MECHANICAL ROOM A DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101



5 THIRD FLOOR MECHANICAL ROOM B DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101



6 THIRD FLOOR MECHANICAL ROOM A DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
MD101

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SHEET KEYNOTES

DM02	DEMOLISH AND REMOVE AIR HANDLER, DUCTWORK, DUAL TEMPERATURE PIPING, CONTROLS, EQUIPMENT PAD, AND ALL ASSOCIATED PIPING COMPLETE.
DM03	DEMOLISH AND REMOVE AIR COMPRESSOR, AIR DRYER, AND ALL ASSOCIATED PNEUMATIC CONTROLS AND TUBING COMPLETE.
DM04	DEMOLISH AND REMOVE PNEUMATIC CONTROL PANEL AND ALL ASSOCIATED CONTROLS AND TUBING COMPLETE.
DM05	DEMOLISH AND REMOVE DTS/DTR PIPING SERVICE THROUGHOUT BUILDING AND BELOW GRADE COMPLETE.
DM06	DEMOLISH AND REMOVE CONTROL PANEL AND ALL ASSOCIATED WIRING AND DEVICES COMPLETE.
DM07	DEMOLISH AND REMOVE LOUVER ABOVE DOOR.
DM29	DEMOLISH AND REMOVE ANY EXISTING CONCRETE HOUSEKEEPING PADS.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MD403

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.362.1646
CEMS Project No: 10153V
Project Manager: R. Alvar

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

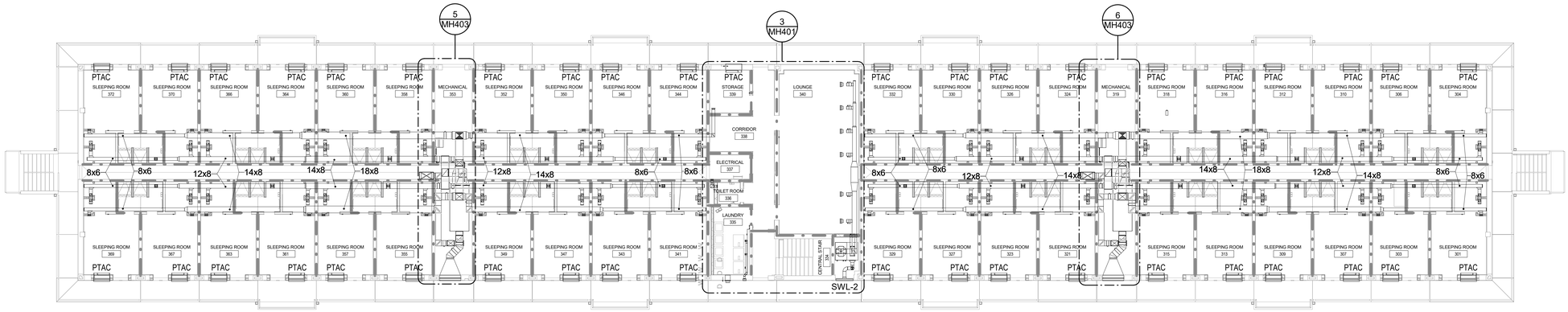
REPAIRS BEQ HP510

ENLARGED DEMOLITION PLANS

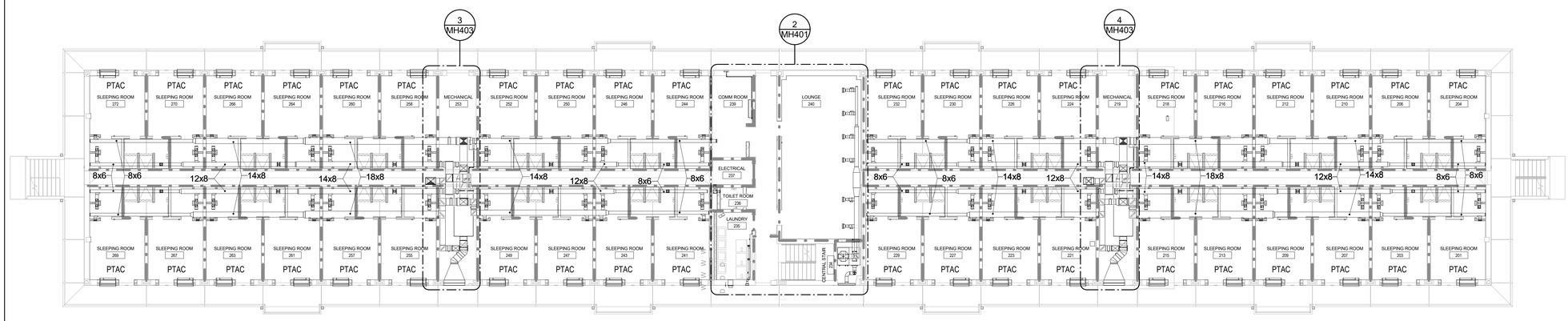
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024054
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 96 OF 143

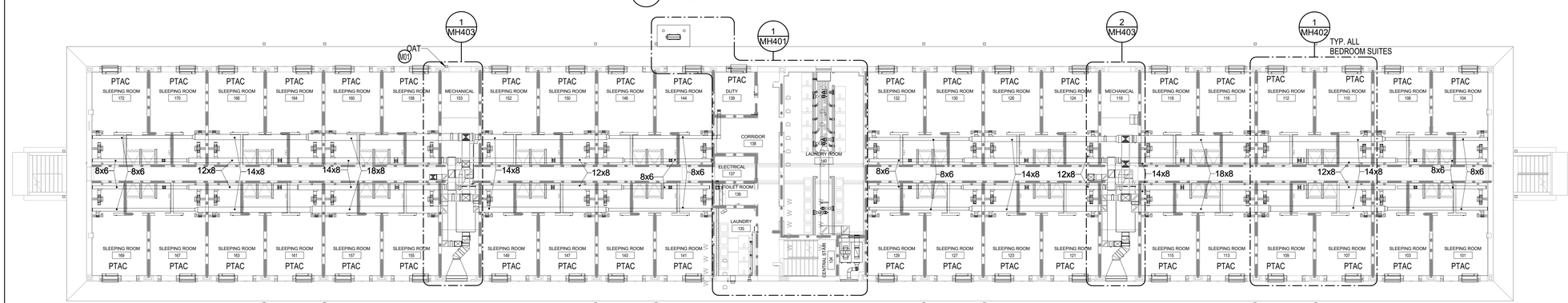
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 THIRD FLOOR DUCTWORK PLAN
SCALE: 3/32" = 1'-0"



2 SECOND FLOOR DUCTWORK PLAN
SCALE: 3/32" = 1'-0"



3 FIRST FLOOR DUCTWORK PLAN
SCALE: 3/32" = 1'-0"

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SHEET KEYNOTES

M01 PROVIDE OUTDOOR AIR TEMPERATURE SENSOR IN WEATHERPROOF ENCLOSURE. PROVIDE SHIELDS TO SHADE SENSOR FROM DIRECT SUNLIGHT.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MH101

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC, 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1646
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

FLOOR PLANS

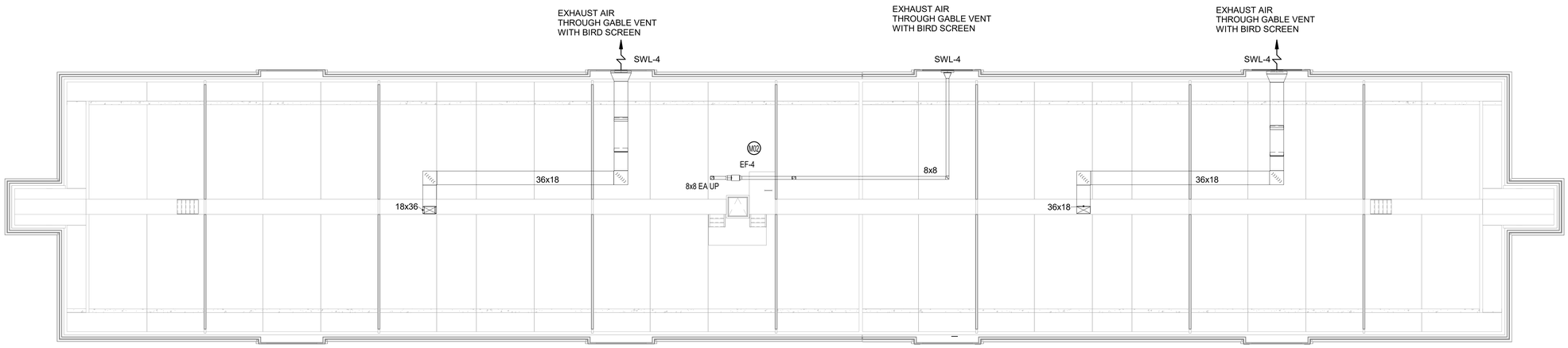
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024055

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 97 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



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

DISCLOSURE OF INFORMATION

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GENERAL NOTES

1. SEE M-701 RISER DIAGRAM FOR DUCT SIZES, FIRE DAMPER, AND VOLUME DAMPER LOCATIONS.
2. FIRE DAMPERS ARE TO BE MOUNTED TO THE UNDERSIDE OF ATTIC FLOOR AND ACCESSIBLE FROM CHASE.

SHEET KEYNOTES

M02 PROVIDE NEW EXHAUST FAN (EF-4) AS SHOWN.

PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MH102

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ATTIC PLAN

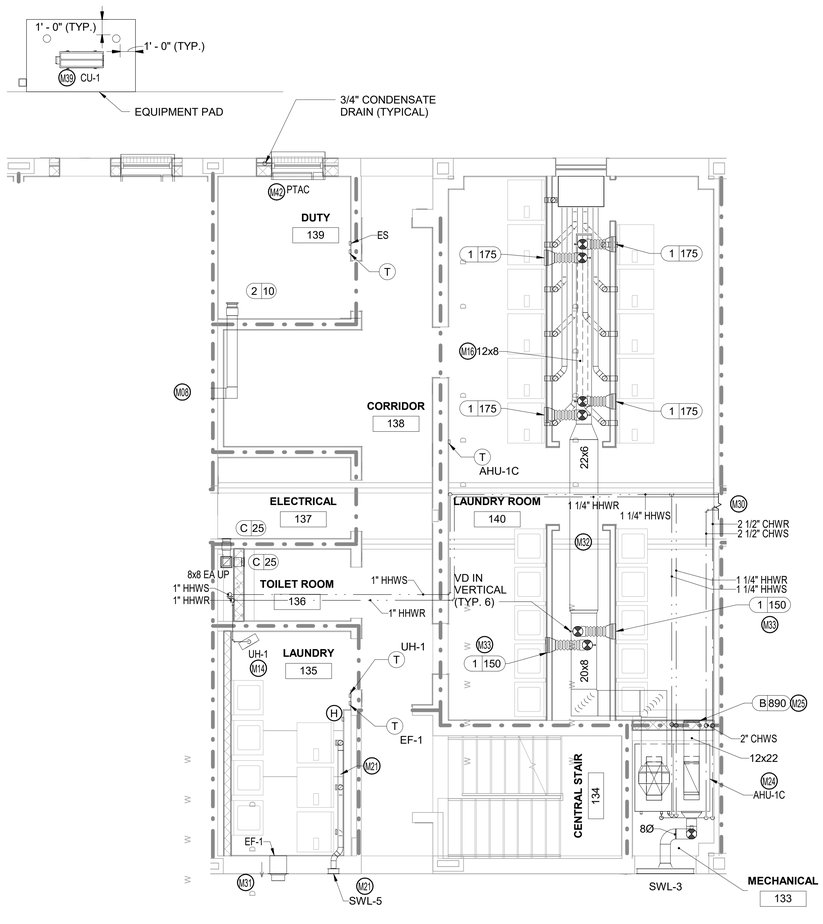
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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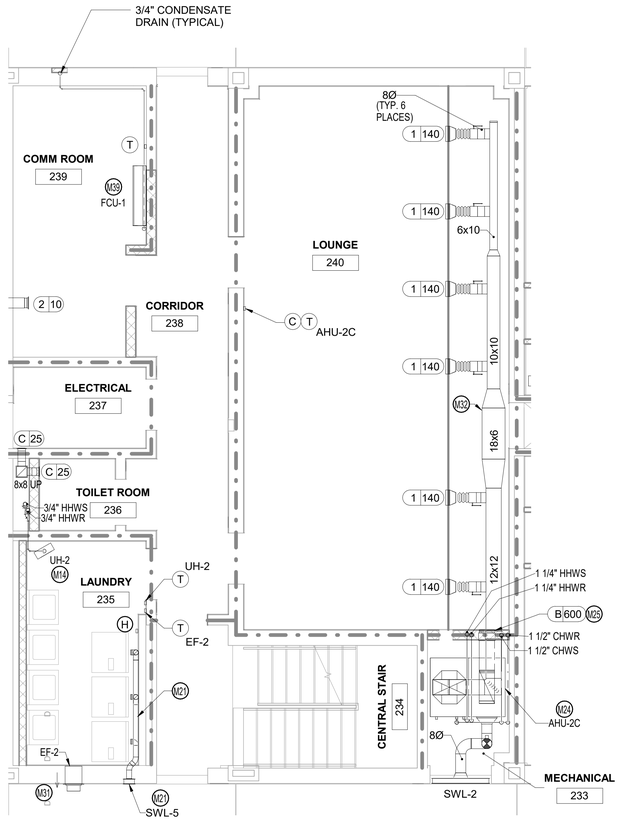
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 98 OF 143

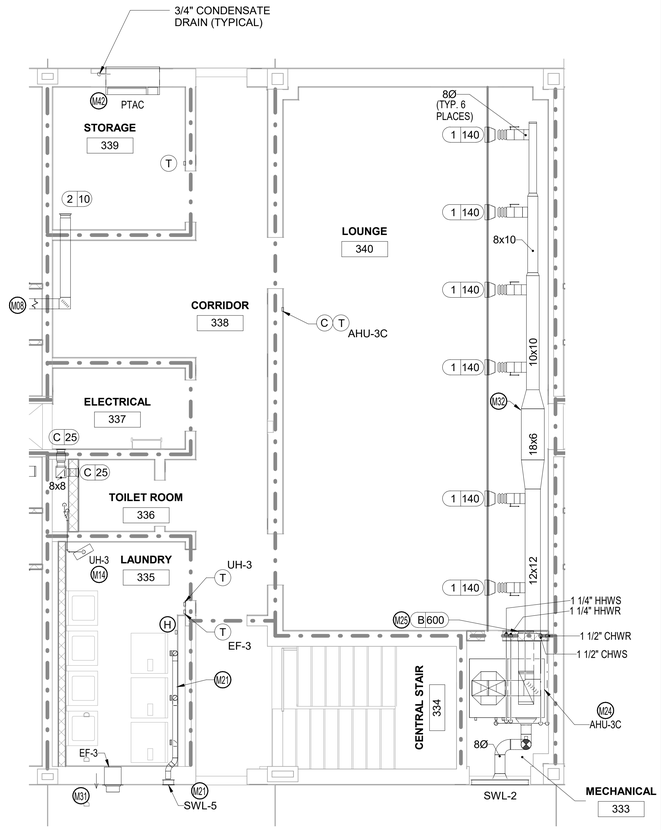
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"
MH101



2 ENLARGED SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"
MH101



3 ENLARGED THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"
MH101

SHEET KEYNOTES

M08	OPENING SURROUNDING SUPPLY/RETURN DUCT PENETRATIONS TO BE SEALED UP TO MEET NECESSARY FIRE RATING REQUIREMENTS. SEE ARCHITECTURAL SHEETS FOR DETAILS.
M14	NEW UNIT HEATER WITH RELATED HHWS/HHWR PIPING INCLUDING CONTROLS AND WIRING.
M16	DUCT ROUTED THROUGH DRYER CHASE TO BE INSULATED AND JACKETED TO MEET EXTERIOR DUCT CONSTRUCTION REQUIREMENTS.
M21	PROVIDE 4"Ø DRYER VENTS AND WALL LOUVER. VENTS TO BE ROUTED INDEPENDENTLY AND STACKED FOR EACH DRYER. CONNECT TO EXISTING DRYERS AND NEW WALL LOUVER. FIELD VERIFY EXISTING DRYER VENT LOCATION.
M24	PROVIDE AIR HANDLING UNIT AND RELATED SUPPLY/RETURN/OUTSIDE AIR DUCTWORK. SYSTEM SHALL INCLUDE CONTROLS, WIRING, CONDENSATE DRAIN PIPING, AND ALL APPURTENANCES COMPLETE. UNIT SHALL BE FULLY SERVICEABLE AND CONTRACTOR SHALL COMPLY WITH MANUFACTURER CLEARANCES.
M25	PROVIDE RETURN AIR DUCTWORK WITH GRILLE AS SHOWN. MOUNT GRILLE ALONG CEILING.
M30	SEE SHEET MP101 FOR CONTINUATION OF PIPING.
M31	PROVIDE EF-1,2,3 IN EXISTING PENETRATION. ENLARGE AND PATCH PENETRATION AS TO MAKE WEATHERTIGHT.
M32	INSTALL DUCTWORK IN SOFFIT BELOW MECHANICAL AND DOMESTIC PIPING. SEE P-402 AND PLUMBING SHEETS FOR COORDINATION.
M33	MOUNT SIDEWALL DIFFUSER ALONG CEILING.
M39	PROVIDE CU-1 AND FCU-1 PER MFR INSTRUCTIONS. ROUTE REFRIGERANT LINES SET AND COVER ADJACENT TO NEARBY DOWNSPOUT UP TO SECOND FLOOR, CONTINUE COVER IN HORIZONTAL ACROSS BALCONY; MOUNT TIGHT TO 3RD FLOOR BALCONY. PROVIDE BOLLARDS PER BOLLARD DETAIL. UNIT TO BE PROVIDED WITH MANUFACTURERS THERMOSTAT (WIRED OR WIRELESS). CONTROLS CONTRACTOR TO PROVIDE WALL MOUNTED SENSOR, ADJACENT TO THERMOSTAT, FOR MONITORING PURPOSES ONLY.
M42	PTAC UNITS SHALL BE PROVIDED WITH LIGATURE PROOF PROTECTIVE COVERS, A CORROSION RESISTANT CHASSIS, POWER CORDS, AND 3/4 IN CONDENSATE DRAIN WITH EXTERIOR CLEANOUT. THE 3/4" CONDENSATE DRAIN STACK IS LOCATED IN THE AIR GAP BETWEEN BRICK AND BLOCK. PTAC CANDENSATE DRAIN SHALL BE INSTALLED WITH CONDENSATE DRAIN CENTERED INTHE AIR GAP. PROVIDE AND INSTALL 3/4"CLEANOUT ON THE 3RD FLOOR FLUSH WITH THE EXTERIOR BRICK. SEE SITE PLANS FOR DETAILS.

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PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

MH401

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.362.1646
CEMS Project No: 10153V
Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

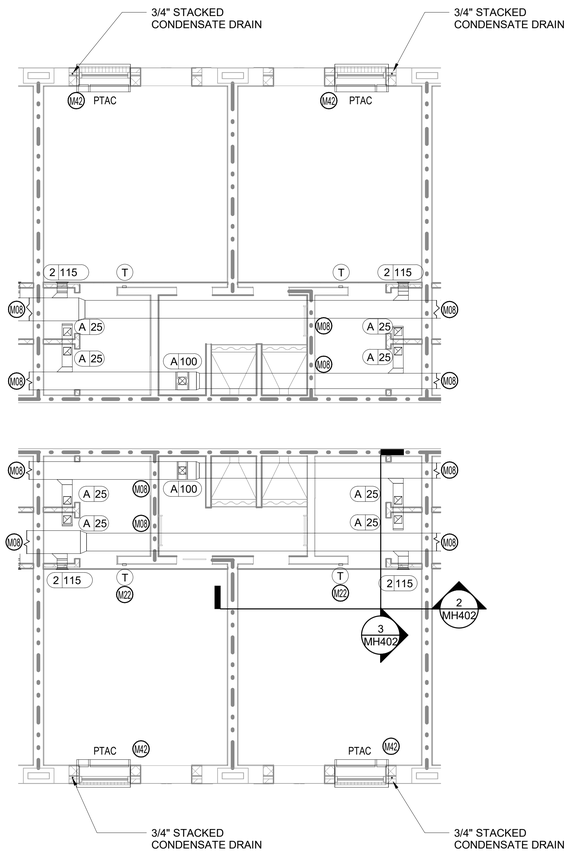
ENLARGED PLANS

DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. B. TURKALL	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024057
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 99 OF 143

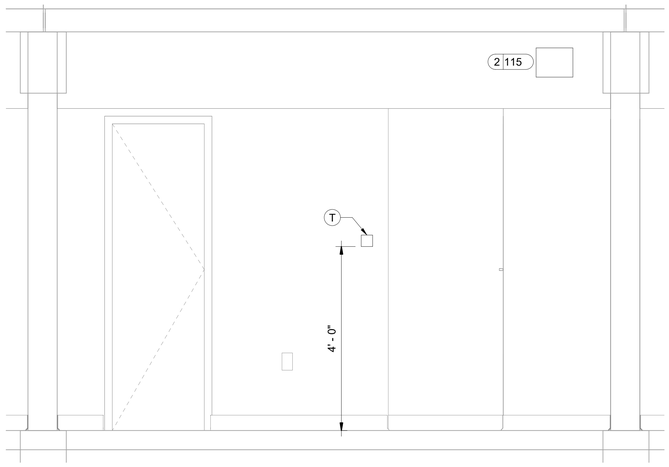
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 ENLARGED TYPICAL SLEEPING ROOM PLAN

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

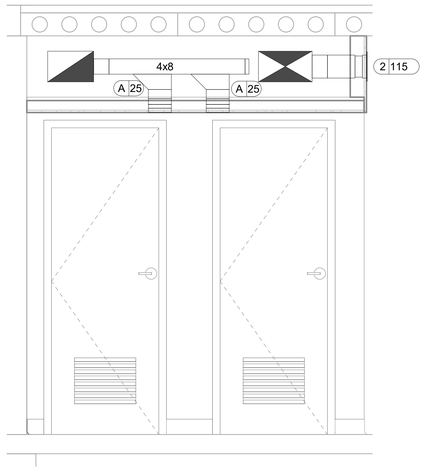
MH101



2 SOFFIT SECTION VIEW

SCALE: 3/4" = 1'-0"

MH402



3 CLOSET SECTION VIEW

SCALE: 3/4" = 1'-0"

MH402

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SHEET KEYNOTES

M08	OPENING SURROUNDING SUPPLY/RETURN DUCT PENETRATIONS TO BE SEALED UP TO MEET NECESSARY FIRE RATING REQUIREMENTS. SEE ARCHITECTURAL SHEETS FOR DETAILS.
M22	PROVIDE SLEEPING ROOMS WITH A TEMPERATURE SENSOR TO BE MONITORED BY DDC.
M42	PTAC UNITS SHALL BE PROVIDED WITH LIGATURE PROOF PROTECTIVE COVERS, A CORROSION RESISTANT CHASSIS, POWER CORDS, AND 3/4 IN CONDENSATE DRAIN WITH EXTERIOR CLEANOUT. THE 3/4" CONDENSATE DRAIN STACK IS LOCATED IN THE AIR GAP BETWEEN BRICK AND BLOCK. PTAC CANDENSATE DRAIN SHALL BE INSTALLED WITH CONDENSATE DRAIN CENTERED INTHE AIR GAP. PROVIDE AND INSTALL 3/4"CLEANOUT ON THE 3RD FLOOR FLUSH WITH THE EXTERIOR BRICK. SEE SITE PLANS FOR DETAILS.

PLAN NORTH

2 1 0 2

SCALE: 3/4"=1'-0"

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MH402

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.362.1646
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED PLANS AND SECTIONS

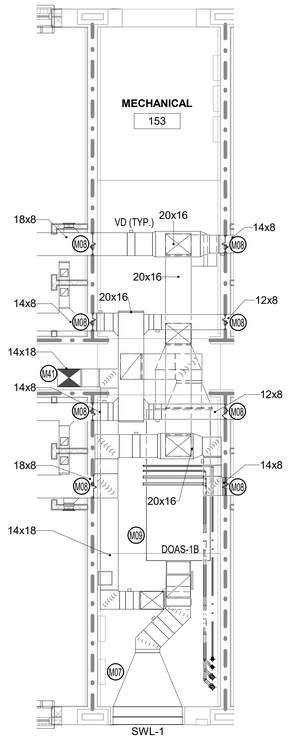
DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. B. TURKALL	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024058

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 100 OF 143

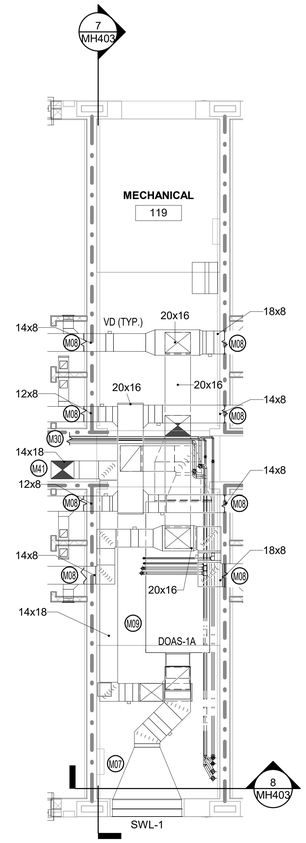
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 FIRST FLOOR MECHANICAL ROOM B PLAN

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

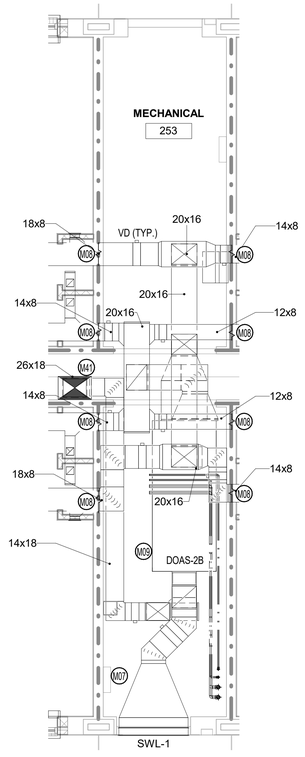
MH101



2 FIRST FLOOR MECHANICAL ROOM A PLAN

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

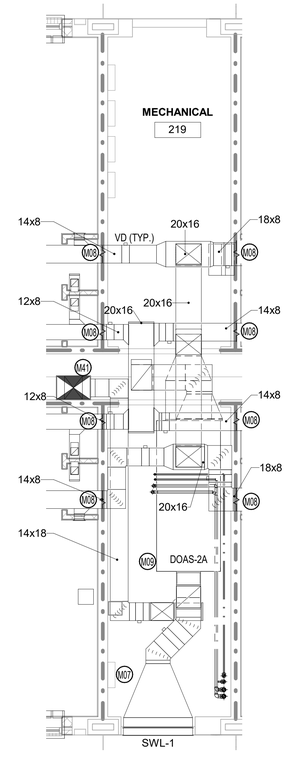
MH101



3 SECOND FLOOR MECHANICAL ROOM B PLAN

SCALE: NOT TO SCALE

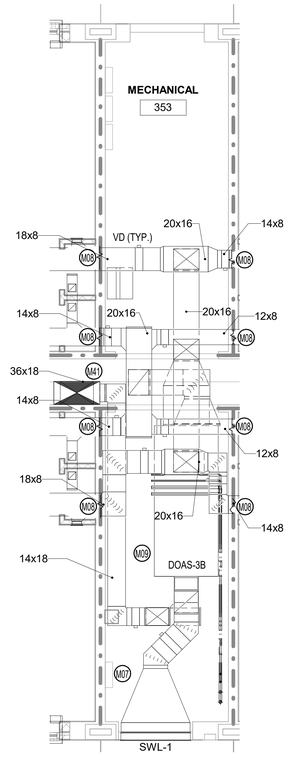
MH101



4 SECOND FLOOR MECHANICAL ROOM A PLAN

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

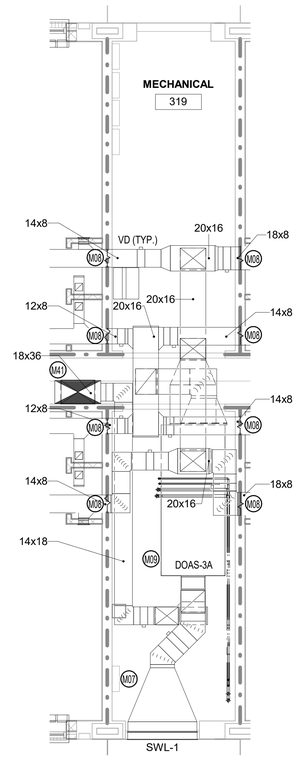
MH101



5 THIRD FLOOR MECHANICAL ROOM B PLAN

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

MH101

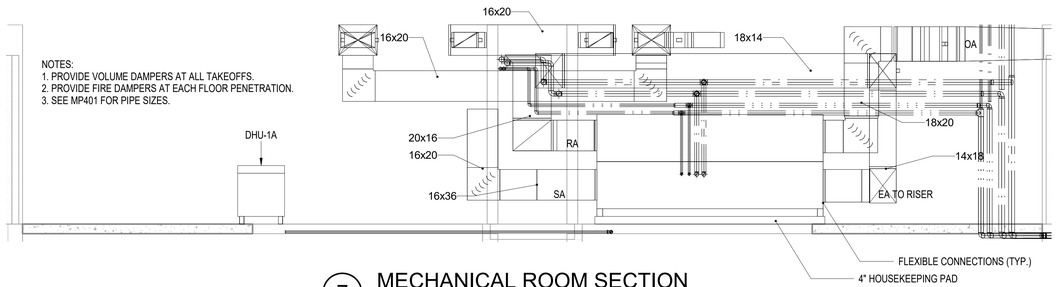


6 THIRD FLOOR MECHANICAL ROOM A PLAN

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

MH101

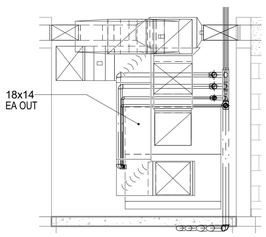
NOTES:
1. PROVIDE VOLUME DAMPERS AT ALL TAKEOFFS.
2. PROVIDE FIRE DAMPERS AT EACH FLOOR PENETRATION.
3. SEE MP401 FOR PIPE SIZES.



7 MECHANICAL ROOM SECTION

SCALE: 3/8" = 1'-0"

MH403



8 MECHANICAL ROOM SECTION

SCALE: 3/8" = 1'-0"

MH403

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SHEET KEYNOTES

M07	PROVIDE DIRECT DIGITAL CONTROL PANEL (DDC) AS SHOWN.
M08	OPENING SURROUNDING SUPPLY/RETURN DUCT PENETRATIONS TO BE SEALED UP TO MEET NECESSARY FIRE RATING REQUIREMENTS. SEE ARCHITECTURAL SHEETS FOR DETAILS.
M09	DEDICATED OUTDOOR AIR SYSTEMS (DOAS) TO BE FULLY SERVICEABLE FROM THE TOP, END, AND OUTDOOR AIR SIDES OF THE UNIT INCLUDING BUT NOT LIMITED TO THE FILTERS, ENTHALPY PLATES, FANS, MOTORS, BELTS, SENSORS, AND CONTROLS COMPLETE. PROVIDE HOUSEKEEPING PAD FOR MOUNTING.
M30	SEE SHEET MP101 FOR CONTINUATION OF PIPING.
M41	PROVIDE ONE HOUR FIRE RATED DAMPER FOR EXHAUST DUCT PENETRANTIONS ACCESSABLE THROUGH FLOOR SLAB WITH ACCESS HATCH ACCESSABLE THROUGHT THE MECHANICAL ROOM.

GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

MH403

CEMS
ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.873.3637
1760 Eastwood Rd., Wilmington, NC. 28401 910.383.1640
CEMS Project No: 15137V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

ENLARGED PLANS

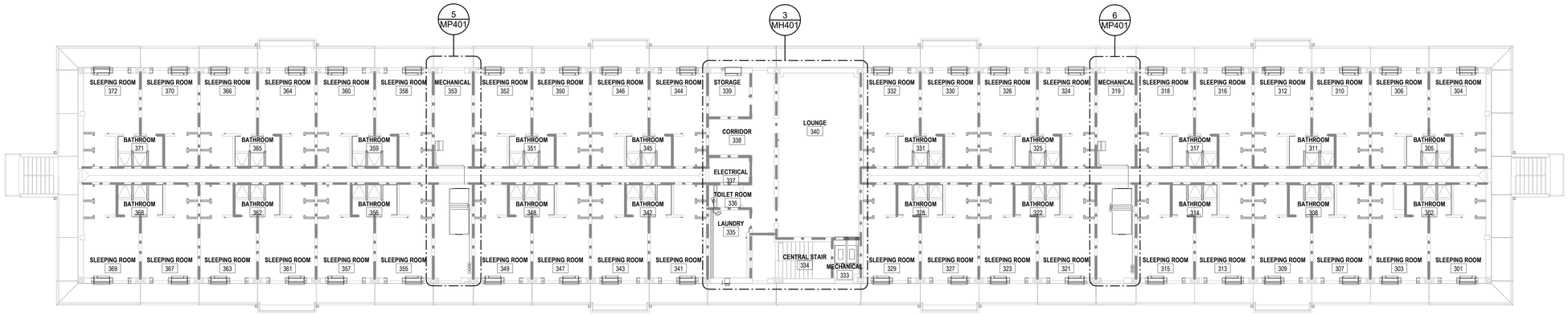
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024059

CONSTR. CONTR. NO.: N40085-18-B-0042

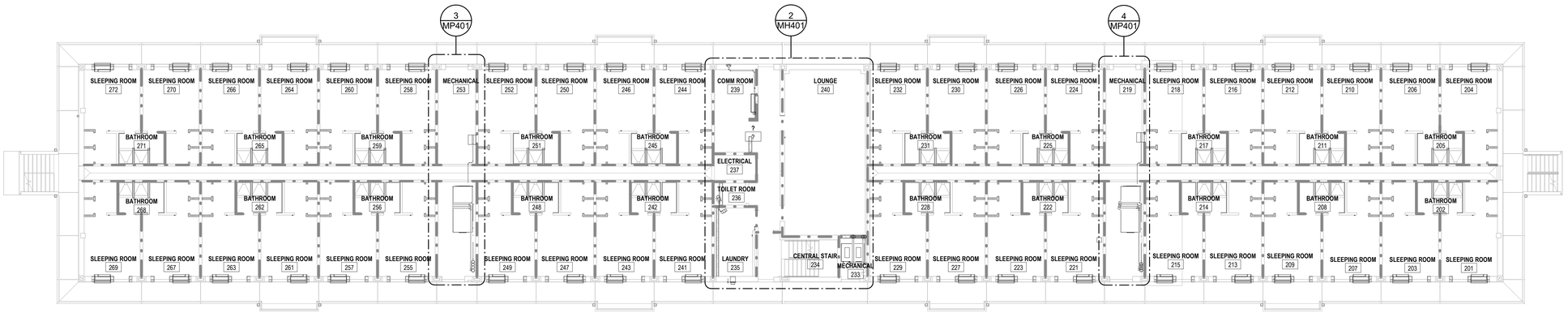
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 101 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



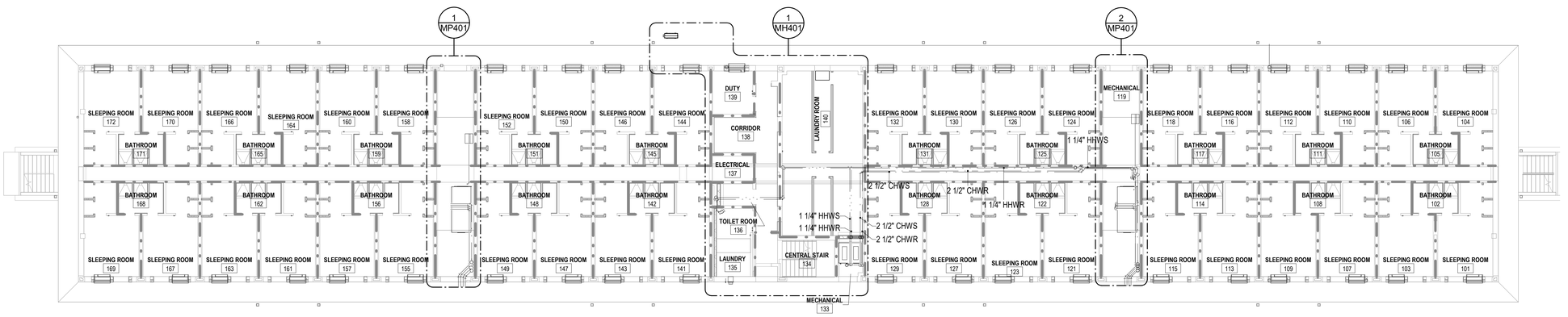
1 THIRD FLOOR PIPING PLAN

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



2 SECOND FLOOR PIPING PLAN

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



3 FIRST FLOOR PIPING PLAN

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

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PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MP101

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvor

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

FLOOR PLANS

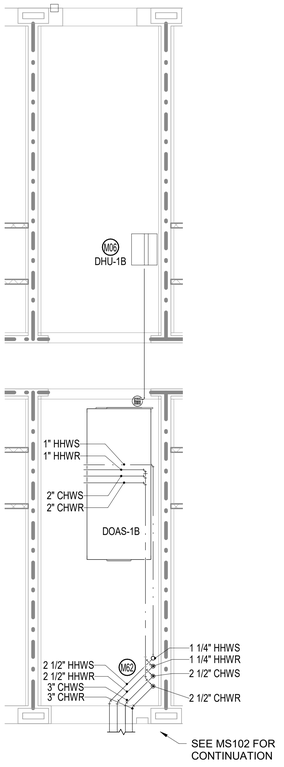
DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024060

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 102 OF 143

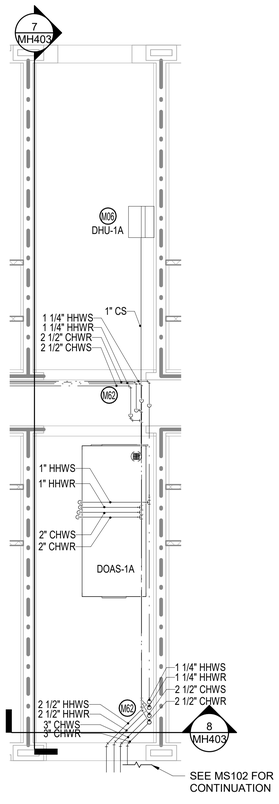
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 FIRST FLOOR MECHANICAL ROOM B PLAN

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

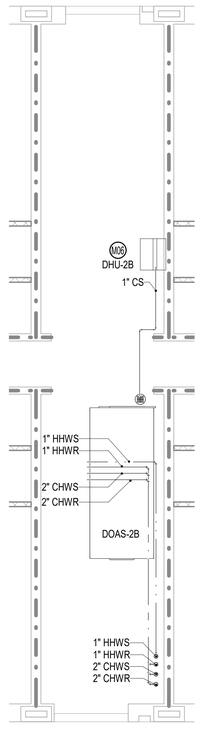
MP101



2 FIRST FLOOR MECHANICAL ROOM A PLAN

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

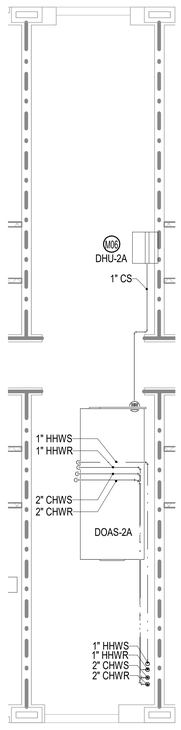
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3 SECOND FLOOR MECHANICAL ROOM B NEW WORK PLAN

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

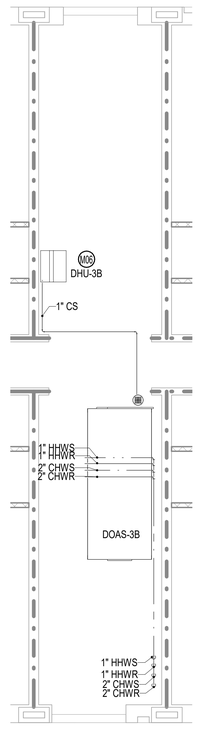
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4 SECOND FLOOR MECHANICAL ROOM A NEW WORK PLAN

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

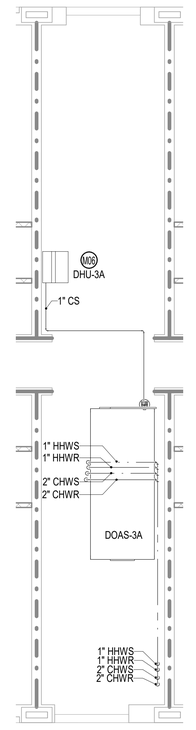
MP101



5 THIRD FLOOR MECHANICAL ROOM B NEW WORK PLAN

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

MP101



6 THIRD FLOOR MECHANICAL ROOM A NEW WORK PLAN

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

MP101

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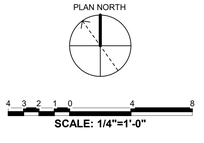
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SHEET KEYNOTES

M06 PROVIDE DEHUMIDIFIER IN EACH MECHANICAL ROOM (6 TOTAL). DEHUMIDIFIER SHALL BE HARD PIPED TO FLOOR DRAIN. PROVIDE METAL STAND OR EQUIPMENT PAD IF NEEDED TO MEET CONDENSATE SLOPE REQUIREMENTS. DEHUMIDIFER SHALL NOT BE PLUG-IN TYPE, BUT MUST BE HARD WIRED, SEE ELECTRICAL SHEETS. DEHUMIDIFIER SET POINT SHALL BE 55% RELATIVE HUMIDITY.

M62 PROVIDE ISOLATION VALVES FOR CHILLED AND HOT WATER SUPPLY AND RETURN PIPING AS NOTED. PROVIDE BALANCE VALVES ON BRANCH CHILLED WATER AND HOT WATER RETURN PIPING TO CORE AREA AIR HANDLERS AND UNIT HEATERS.



GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

MP401

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CEMS Project No: 15153V Project Manager: R. Alvar

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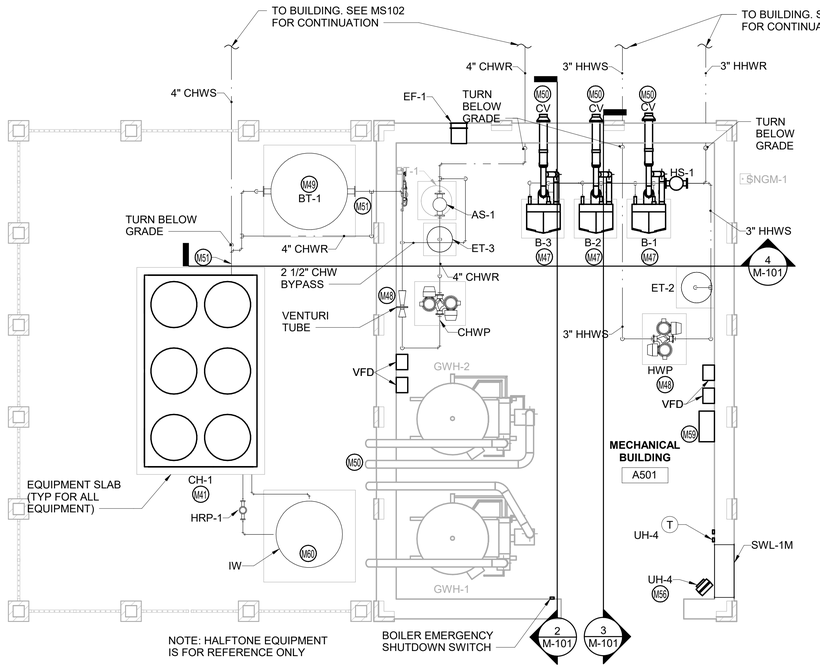
ENLARGED PLANS

DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
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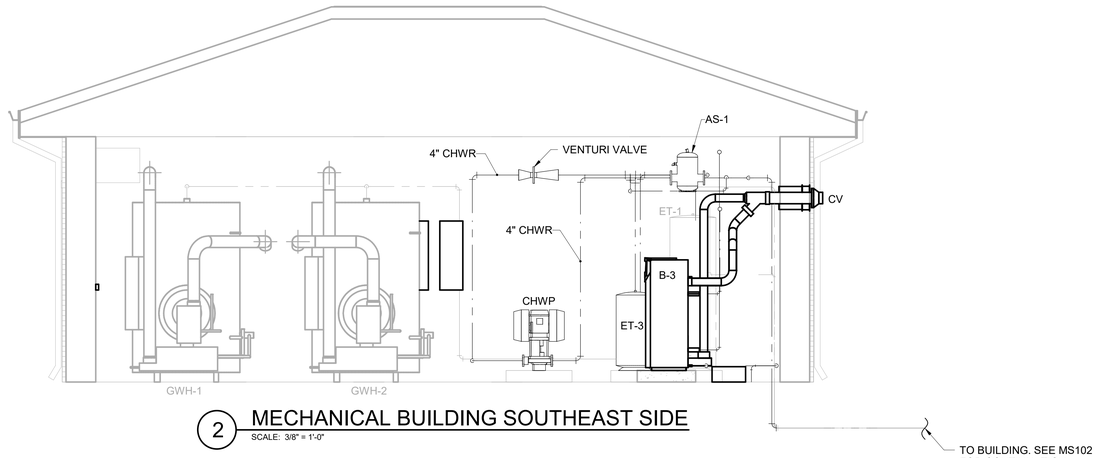
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CONSTR. CONTR. NO.: N40085-18-B-0042

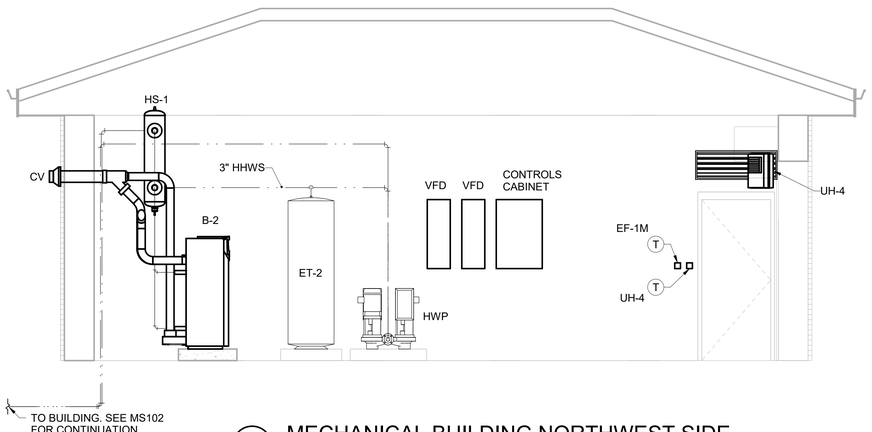
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 103 OF 143



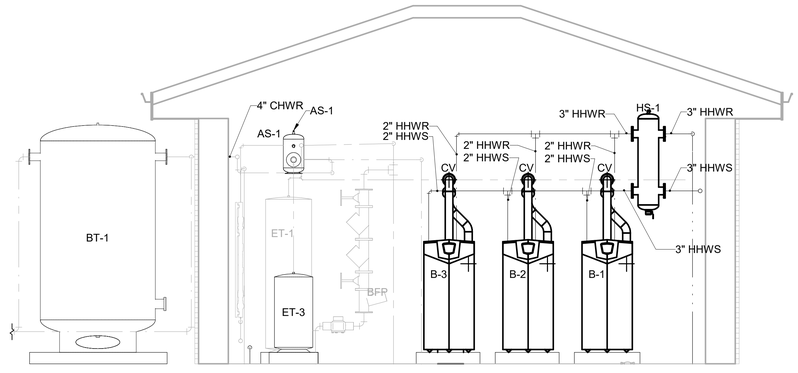
1 MECHANICAL BUILDING NEW WORK PLAN
SCALE: 1/4" = 1'-0"



2 MECHANICAL BUILDING SOUTHEAST SIDE
SCALE: 3/8" = 1'-0"



3 MECHANICAL BUILDING NORTHWEST SIDE
SCALE: 3/8" = 1'-0"



4 BOILER SECTION
SCALE: 3/8" = 1'-0"

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. SEE PLUMBING PLANS FOR GAS WATER HEATER (GWH), CONDENSATE NEUTRALIZATION TANKS, AND EXPANSION TANK (ET-1)

SHEET KEYNOTES

M41 PROVIDE CHILLER (CH-1) COMPLETE WITH FLOW SWITCH, STRAINER, T&P TEST PLUGS, DRAIN VALVE, SHUTOFF VALVES, AND TEMPERATURE CONTROL ELEMENT. SEE CHILLER PIPING DETAIL. INSTALL DIRT AND AIR SEPARATOR IN CHILLED WATER RETURN LINE PIPING. INSTALL CHILLER ON MINIMUM 1" NEOPRENE ISOLATION PADS.

M47 PROVIDE BOILER (B) COMPLETE WITH ASSOCIATED PIPING, CONTROLS AND WIRING, PIPE SUPPORTS, VALVES AND RELATED DEVICES. BOILER SHALL BE MOUNTED ON 4" HOUSEKEEPING PAD. ROUTE CONDENSATE TO NEAREST FLOOR DRAIN. ROUTE FLUE TO EXTERIOR WALL AS SHOWN.

M48 PROVIDE CHW/HW PUMP SYSTEM COMPLETE WITH CONTROLS AND WIRING, RELATED VALVES, PIPE SUPPORTS AND ACCESSORIES INCLUDING EXPANSION TANK, CHEMICAL FEED TANK AND AIR SEPARATOR.

M49 PROVIDE BAFFLED THERMAL BUFFER TANK. PROVIDE AIR ELIMINATOR ATOP THE INERTIA TANK. TANK TO BE LOCATED ON AN EQUIPMENT PAD.

M50 PROVIDE VENT THROUGH EXTERIOR WALL AS SHOWN. REFER TO MANUFACTURER FOR EXACT TERMINATION AND SIZING REQUIREMENTS.

M51 EXPOSED CHILLED WATER PIPING TO HAVE HEAT TRACE APPLIED AND WRAPPED IN INSULATION. INDIVIDUAL PIECES OF EQUIPMENT AND CHILLED WATER PIPING TO HAVE HEAT TRACE APPLIED IN SECTIONS TO FACILITATE EASE OF HEAT TRACE, PIPING, OR EQUIPMENT REPLACEMENT IN THE EVENT OF FUTURE REPAIRS.

M56 PROVIDE UNIT HEATER, PIPING, AND CONTROLS.

M59 PROVIDE CONTROL CABINET AS SHOWN.

M60 PROVIDE INDIRECT WATER HEATER SUITABLE FOR USE IN DOMESTIC WATER SERVICE AND EXTERIOR INSTALATION ON AN EQUIPTMENT PAD.

PLAN NORTH

4 2 0 4
SCALE: 3/8"=1'-0"

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"

GRAPHIC SCALES

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ISSUE DATE:15 MAY 2020

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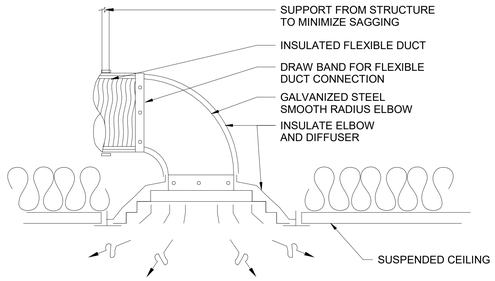
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
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REPAIRS BEQ HP510

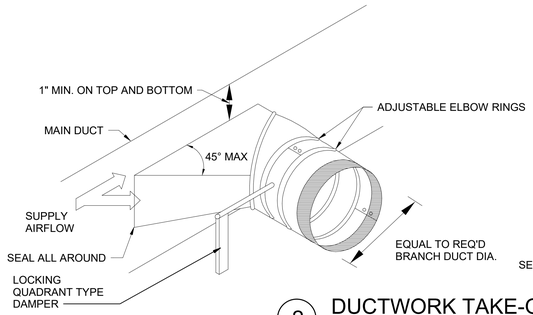
MECHANICAL BUILDING PLAN AND SECTIONS

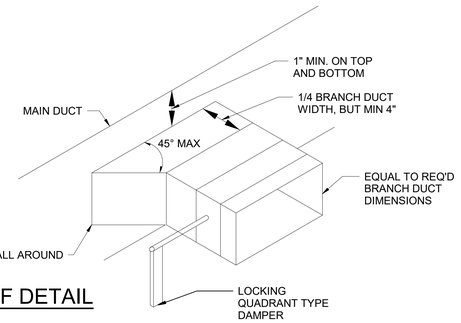
DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC DATE	SIZE E1 / CODE IDENT NO. 80091 / NAVFAC DRAWING NO. 60024062
SATISFACTORY TO: DATE	CONSTR. CONTR. NO.: N40085-18-B-0042
	SCALE: AS NOTED / SPEC. 05-18-0042 / SHEET 104 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

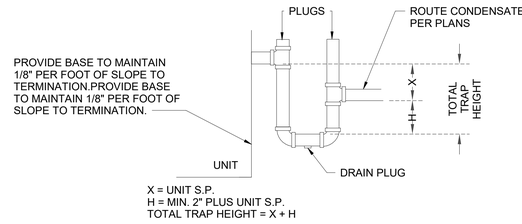


1 TYP. DIFFUSER DETAIL
SCALE: NOT TO SCALE

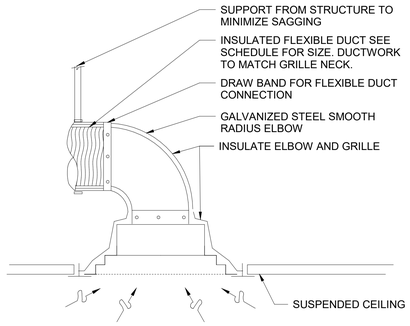




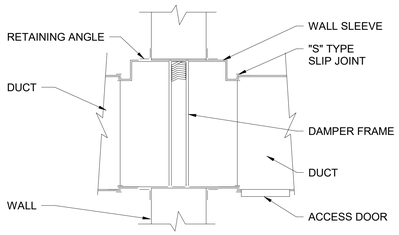
2 DUCTWORK TAKE-OFF DETAIL
SCALE: NOT TO SCALE



3 CONDENSATE DRAIN TRAP DETAIL
SCALE: NOT TO SCALE

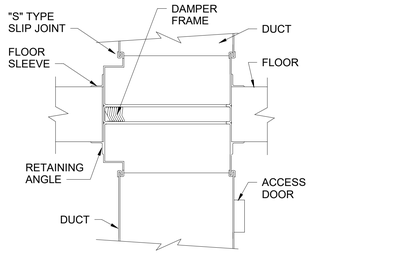


4 RETURN GRILLE DETAIL
SCALE: NOT TO SCALE



NOTE: MOUNTING ANGLES SHALL BE A MINIMUM OF 1-1/2" x 1-1/2" x 16 GAGE, BOLTED WITH 1/4" X 20 BOLTS, WELDED, OR SCREWED WITH NO. 10 SCREWS TO DAMPER FRAME. USE MINIMUM OF TWO FASTENERS PER SIDE, ONE FASTENER 1/2" FROM EACH CORNER WITH MAXIMUM FASTENER SPACING OF 8-1/2". CLEARANCE OF THE DAMPER SLEEVE FROM THE WALL OPENING SHALL BE A MINIMUM OF 1/8" PER FOOT OF WIDTH OR HEIGHT. THE SLEEVE MAY REST ON THE BOTTOM OF THE OPENING, AND NEED NOT BE CENTERED.

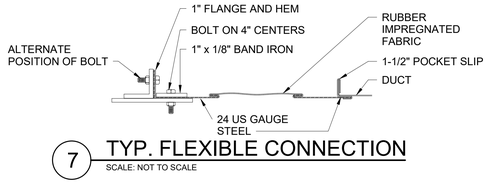
5 VERTICAL FIRE DAMPER DETAIL
SCALE: NOT TO SCALE



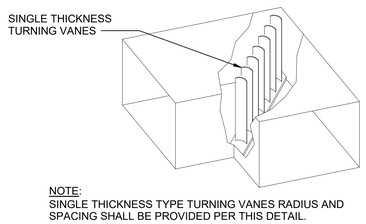
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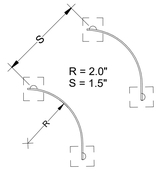
CLEARANCE OF THE DAMPER SLEEVE FROM THE WALL OPENING SHALL BE A MINIMUM OF 1/8" PER FOOT OF WIDTH OR HEIGHT. THE SLEEVE MAY REST ON THE BOTTOM OF THE OPENING, AND NEED NOT BE CENTERED.

6 HORIZONTAL FIRE DAMPER DETAIL
SCALE: NOT TO SCALE



7 TYP. FLEXIBLE CONNECTION
SCALE: NOT TO SCALE

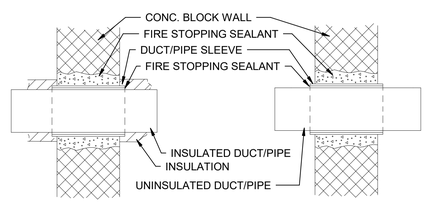




NOTE:
SINGLE THICKNESS TYPE TURNING VANES RADIUS AND SPACING SHALL BE PROVIDED PER THIS DETAIL.

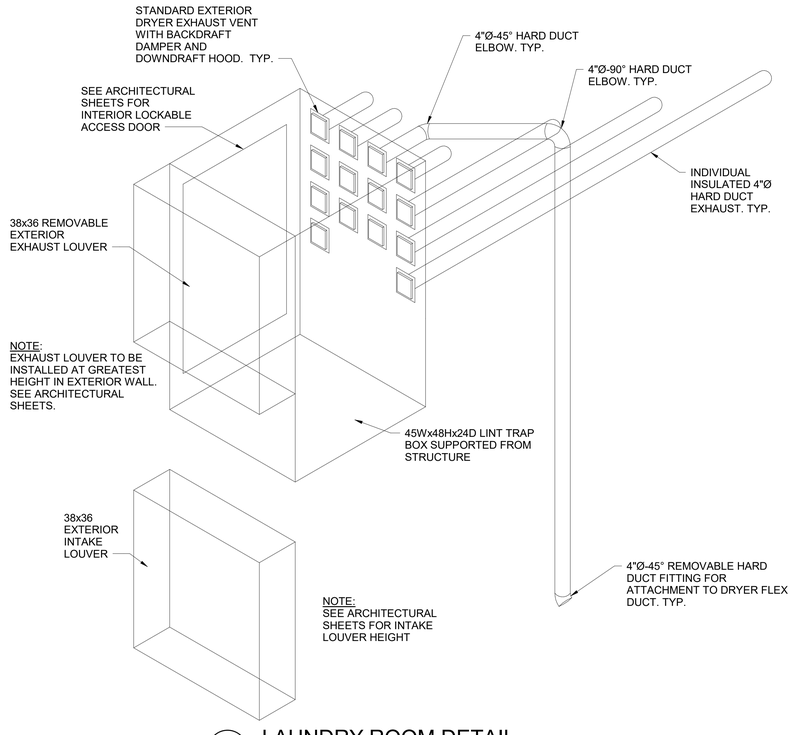
8 SINGLE THICKNESS VANE ELBOW DETAIL
SCALE: NOT TO SCALE

NOTE: FIRESTOPPING ASSEMBLY SHALL COMPLY WITH UL WL-1041

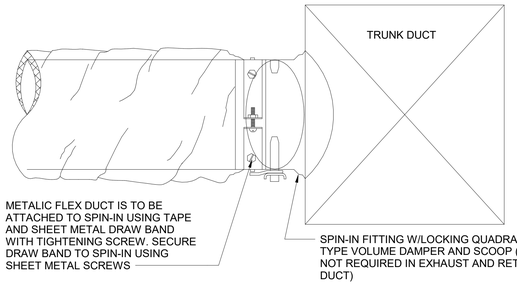


NOTE:
ALL NEW AND EXISTING PENETRATIONS TO BE PROPERLY FIRESTOPPED PER FIRE RATINGS.

9 FIRESTOPPING DUCT/PIPE PENETRATIONS DETAIL
SCALE: NOT TO SCALE



10 LAUNDRY ROOM DETAIL
SCALE: NOT TO SCALE



11 SLEEPING ROOM EXHAUST DUCT CONNECTION
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M-501

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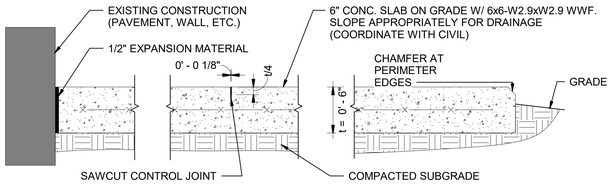
DETAILS

DES. P. MAHAFFEY	
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E1	80091	60024063
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 105 OF 143

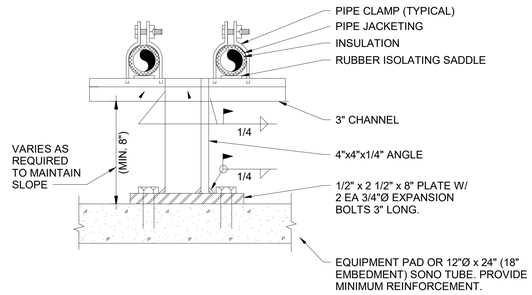
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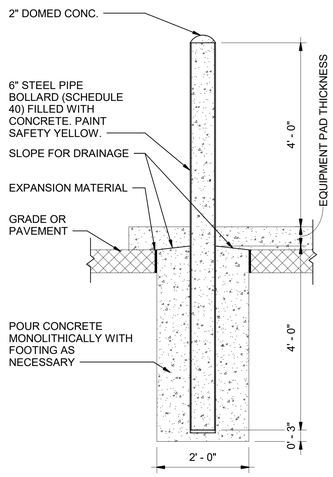
NOTES:

1. INSTALL CONTROL JOINTS SUCH THAT NO DIMENSION BETWEEN JOINTS EXCEEDS 16' OR 3t MEASURED IN FEET, WHICHEVER IS LESSER (i.e. FOR A 4" THICK SLAB, MAX. CONTROL JOINT SPACING = 3*4 = 12').
2. INSTALL CONTROL JOINTS SUCH THAT THE RECTANGULAR SECTIONS CREATED BETWEEN THE JOINTS DO NOT EXCEED A 1:1.5 MAXIMUM RATIO (i.e. 10'x15' SECTION).
3. 6" SLAB SHOWN IS FOR TYPICAL CONSTRUCTION. ADJUST CONTROL JOINT DEPTH AND SPACING BASED ON ACTUAL SLAB THICKNESS (t) PROVIDED.
4. PROVIDE 6" MIN. BETWEEN EQUIPMENT AND EDGE OF SLAB.
5. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3,000 PSI AT 28 DAYS.
6. WELDED WIRE FABRIC SHALL BE ASTM A1064. WELDED WIRE FABRIC WILL BE PLACED AT MID DEPTH OF SLAB, UNLESS OTHERWISE NOTED.
7. ADDITION OF WATER TO READY-MIX IN THE FIELD SHALL NOT BE ALLOWED.
8. CONCRETE MUST BE CURED FOR A MINIMUM 21 DAYS PRIOR TO ANY ADHESIVE ANCHOR INSTALLATION.

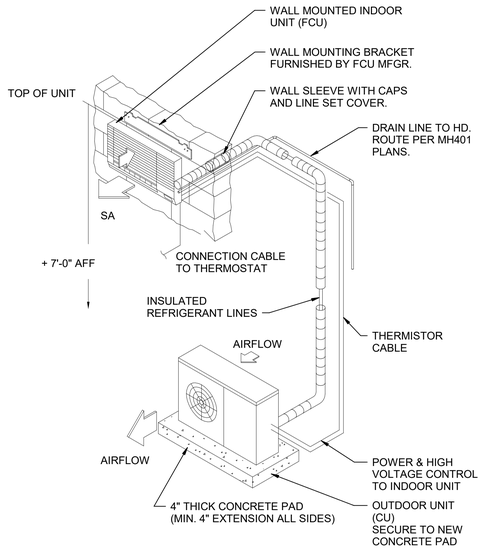
1 EQUIPMENT PAD DETAIL
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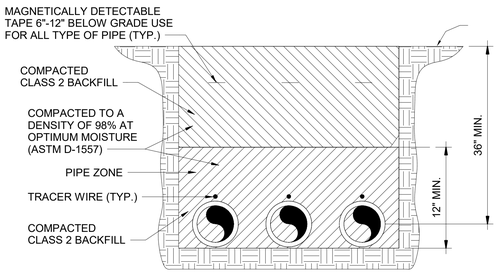
2 EXTERIOR PIPE SUPPORT DETAIL
SCALE: NOT TO SCALE



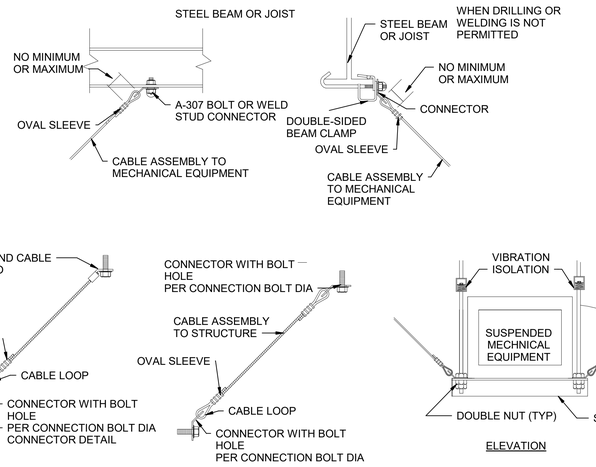
3 BOLLARD DETAIL
SCALE: NOT TO SCALE

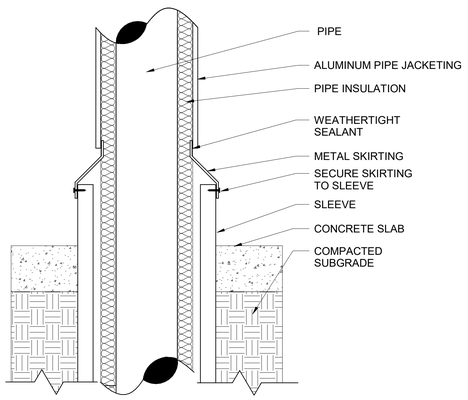


4 SPLIT SYSTEM DETAIL
SCALE: NOT TO SCALE



5 BURIED PIPING DETAIL
SCALE: NOT TO SCALE

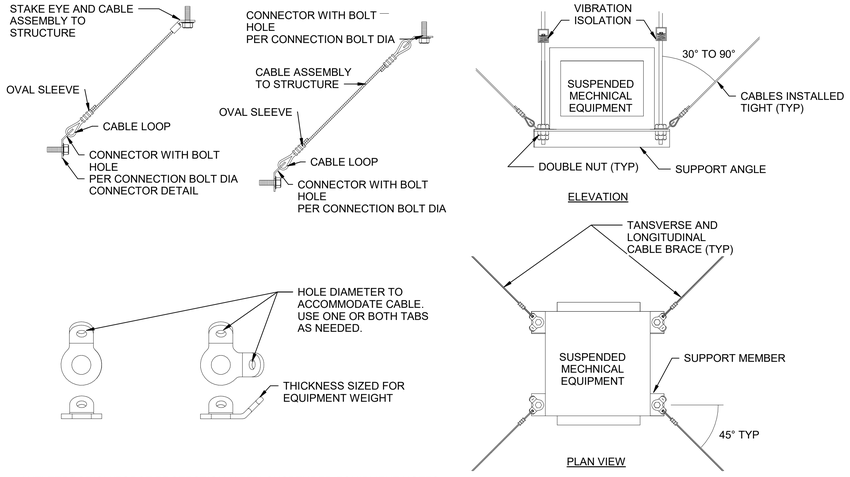




NOTE:

1. ELECTRICAL BONDING AND GROUNDING SHALL BE PROVIDED IAW NFPA 70.

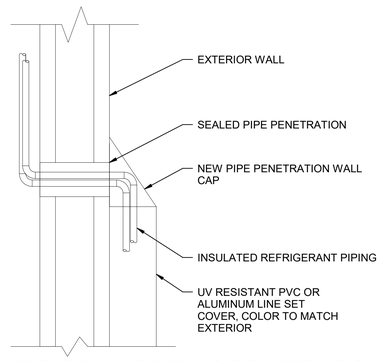
6 PIPE SLAB PENETRATION DETAIL
SCALE: NOT TO SCALE



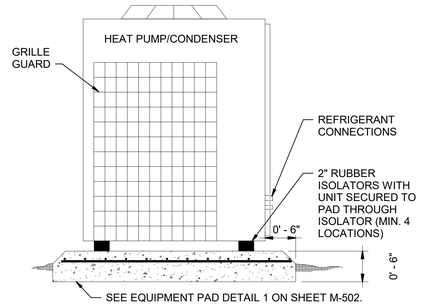
ANTI-TERRORISM/FORCE PROTECTION (ATFP) SUSPENDED EQUIPMENT NOTES:

1. ALL SUSPENDED MECHANICAL EQUIPMENT WEIGHING OVER 31 POUNDS SHALL BE INSTALLED TO RESIST FORCES OF 0.5 TIMES THE EQUIPMENT WEIGHT IN ANY DIRECTIONAND 1.5 TIMES THE EQUIPMENT WEIGHT IN THE DOWNWARD DIRECTION.

7 ATFP SUSPENDED EQUIPMENT BRACING DETAILS
SCALE: NOT TO SCALE



8 REFRIGERANT PIPING PENETRATION DETAIL
SCALE: NOT TO SCALE



9 CONDENSOR PAD DETAIL
SCALE: NOT TO SCALE

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M-502

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

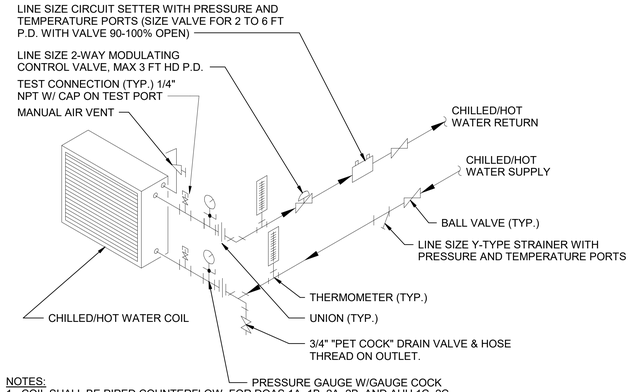
DETAILS

DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

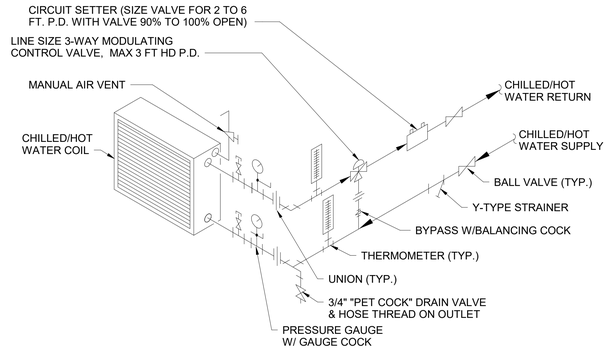
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 106 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



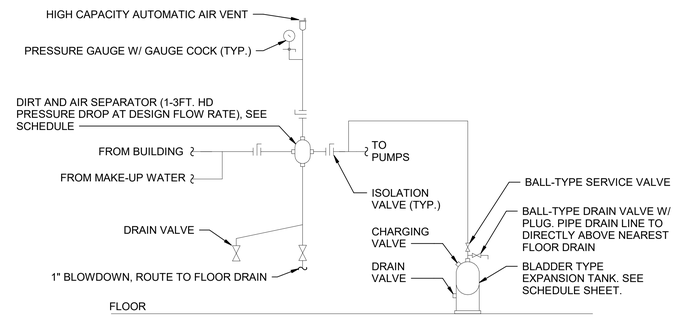
NOTES:
1. COIL SHALL BE PIPED COUNTERFLOW. FOR DOAS 1A, 1B, 2A, 2B, AND AHU 1C, 2C.
2. COIL SHALL BE FURNISHED WITH MANUAL AIR VENT PIPED TO ABOVE PIPE MAIN.
3. SET CIRCUIT SETTER DURING INSTALLATION FOR MIN 2FT. P.D.

1 TYPICAL 2-WAY CHILLED/HOT WATER COIL PIPING DETAIL
SCALE: NOT TO SCALE

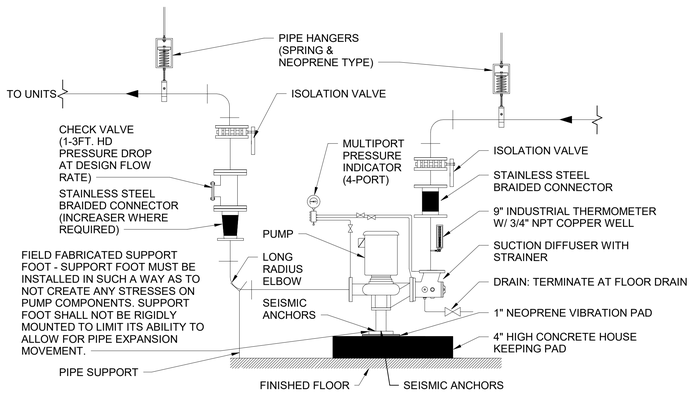


NOTES:
1. COIL SHALL BE PIPED COUNTERFLOW. FOR DOAS 3A, 3B, AND AHU 3C
2. COIL SHALL BE FURNISHED WITH MANUAL AIR VENT PIPED TO ABOVE PIPE MAIN.
3. SET CIRCUIT SETTER DURING INSTALLATION FOR MIN. 2 F.T. P.D.

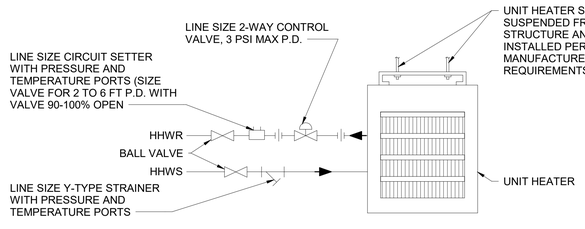
2 TYPICAL 3-WAY CHILLED/HOT WATER COIL PIPING DETAIL
SCALE: NOT TO SCALE



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

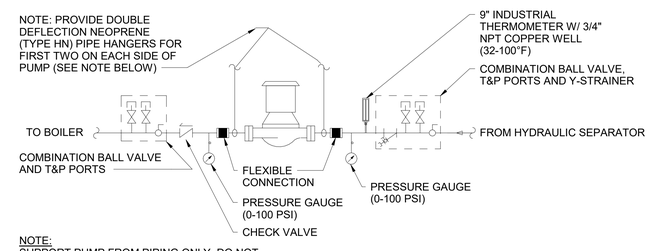


4 VERTICAL INLINE PUMP DETAIL (FLOOR MOUNTED)
SCALE: NOT TO SCALE



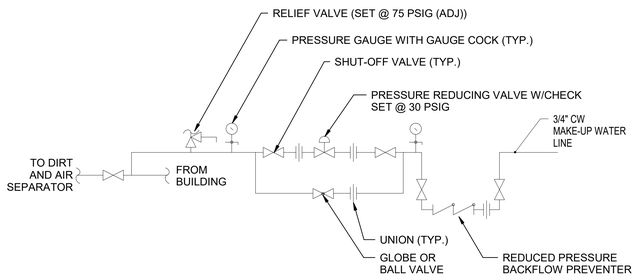
NOTE: SEE DETAIL A2 ON SHEET M-001 FOR ATFP SUSPENDED EQUIPMENT BRACING.

5 HOT WATER UNIT HEATER DETAIL
SCALE: NOT TO SCALE

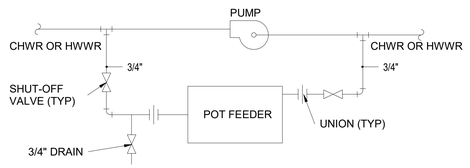


NOTE:
SUPPORT PUMP FROM PIPING ONLY. DO NOT SUPPORT PUMP FROM MOTOR.

6 BOILER PRIMARY LOOP INLINE PUMP DETAIL
SCALE: NOT TO SCALE



7 TYPICAL MAKE-UP WATER ASSEMBLY DETAIL
SCALE: NOT TO SCALE



8 CHEMICAL FEED DETAIL
SCALE: NOT TO SCALE

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M-503

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CEMS Project No: 15153V Project Manager: R. Alvar

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MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

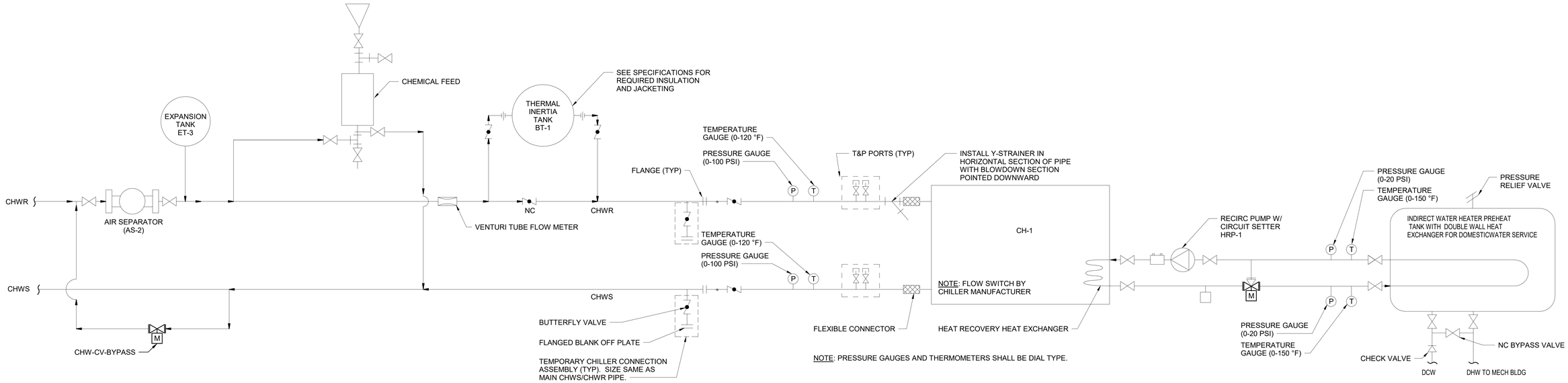
DETAILS

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CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 107 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 CHILLER PIPING DETAIL
SCALE: NOT TO SCALE

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GENERAL NOTES

1. PROVIDE EQUIPMENT PAD AND FLEXIBLE CONNECTIONS FOR ALL MECHANICAL EQUIPMENT DUCTWORK AND PIPING

M-504

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1646
CEMS Project No: 10153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

DETAILS AND SECTIONS

DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

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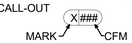
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 108 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

AIR DISTRIBUTION SCHEDULE

TAG	SYSTEM TYPE	MATERIAL	FINISH	FACE STYLE	FACE SIZE	NECK SIZE	MAX NC	FACE BLADE ARRANGEMENT	MOUNTING	DAMPER
1	SUPPLY AIR	ALUMINUM	WHITE	RECTANGLE	12" X 6"	8" DIA	30	DOUBLE DEFLECTION -AIRFOIL	SURFACE	OBD
2	SUPPLY AIR	ALUMINUM	WHITE	RECTANGLE	8" X 6"	8" X 6"	30	DOUBLE DEFLECTION -AIRFOIL	SURFACE	OBD
A	EXHAUST AIR	ALUMINUM	WHITE	SQUARE	6" X 6'	6" DIA	30	1/2" X 1/2" X 1/2" - 48° CUBE CORE, SIGHT PROOF	SURFACE	OBD
B	RETURN AIR	ALUMINUM	WHITE	RECTANGLE	12" X 22"	12" X 22"	30	1/2" X 1/2" X 1/2" - 48° CUBE CORE, SIGHT PROOF	SURFACE	OBD, FD
C	EXHAUST AIR	ALUMINUM	WHITE	SQUARE	8" X 6"	6" DIA	30	1/2" X 1/2" X 1/2" - 48° CUBE CORE, SIGHT PROOF	SURFACE	OBD, FD

NOTES:
1. A LIMITED AMOUNT OF AVAILABLE CEILING AREA MAY REQUIRE THE CEILING TO BE CUT TO ACCOMODATE A SMALL GRILLE FACE IN LAY-IN AS WELL AS SURFACE MOUNT.
2. PROVIDE OPPOSED BLADE DAMPERS (OBD) WITH KEYED SECURITY ADJUSTABLE SCREW.
3. AIR DISTRIBUTION CALL-OUT



UNIT HEATER SCHEDULE

TAG	AREA SERVED	TYPE	FAN TYPE	CFM	HEATING CAPACITY	EWT	FLOW	HEAD	WEIGHT	MOTOR HP	V/Ø/HZ
UH-1	LAUNDRY 133	HORIZONTAL HYDRONIC	PROPELLER	245	16,000 Btu/h	140 °F	0.80 GPM	1.00 FT	80	16 W	115/1/60
UH-2	LAUNDRY 233	HORIZONTAL HYDRONIC	PROPELLER	245	16,000 Btu/h	140 °F	0.80 GPM	1.00 FT	80	16 W	115/1/60
UH-3	LAUNDRY 333	HORIZONTAL HYDRONIC	PROPELLER	245	16,000 Btu/h	140 °F	0.80 GPM	1.00 FT	80	16 W	115/1/60

NOTES:
1. UNIT CASING SHALL BE 20 GAUGE STEEL.
2. HOT WATER COILS SHALL BE HEAVY WALL DRAWN SEAMLESS COPPER TUBING WITH ALUMINUM FINS. ELEMENT TUBES SHALL BE BRAZED INTO EXTRUDED HEADER JUNCTIONS.
3. FAN PROPELLER SHALL BE ALUMINUM BLADE MECHANICALLY FASTENED TO STEEL HUB.
4. FAN MOTOR SHALL BE ODP AND PERMANENTLY LUBRICATED.

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	CFM	ESP IWG	HP	V/Ø/HZ	CONTROL	WEIGHT	NOTE
EF-1	LAUNDRY 133	170	0.10	0.16	115/1/60	LOCAL	30 LB	1,2
EF-2	LAUNDRY 233	170	0.10	0.16	115/1/60	LOCAL	30 LB	1,2
EF-3	LAUNDRY 333	170	0.10	0.16	115/1/60	LOCAL	30 LB	1,2
EF-4	CORE RESTROOMS AND ELECTRICAL ROOMS	100	0.75	0.50	115/1/60	DDC	60 LB	3

NOTES:
1. PROVIDE A DIRECT DRIVE SIDEWALL MOUNTED PROPELLER FAN. FAN ARRANGEMENT SHALL BE EXHAUST.
2. FAN PROPELLER SHALL BE STATICALLY AND DYNAMICALLY BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-05.
3. FAN MOTOR SHALL BE TEFC OR TEAO AND PERMANENTLY LUBRICATED WITH A MAXIMUM CONTINUOUS OPERATING TEMPERATURE OF 130°F. ODP MOTORS ARE ACCEPTABLE IN INLINE FANS.

PTAC SCHEDULE

		COOLING		HEATING						
Mark	EER (BTUH/WATT HRS)	CAPACITY (BTU/H)	INDOOR CFM	CAPACITY (BTU/H)	INDOOR CFM	STRIP SIZE	DEHUMIDIFICATION (PINTS/HR)	WEIGHT (LBS)	AMPS	VOLTAGE
PTAC	11.2	12000	320	9900	350	3.0 KW	3.1	99	11.8	208/1/60

NOTES:
1. PROVIDE PACKAGED TERMINAL HEAT PUMP WITH AUXILIARY ELECTRIC HEAT AND POWER CORD.
2. PTAC SHOULD BE CORROSION RESISTANT AND FITTED WITH A METAL LIGATURE PROOF SECURITY COVER.
3. PROVIDE UNIT WITH WALL SLEEVE, POLYCARBONATE OR STAINLESS STEEL DRAIN PAN, CENTER HOLE CONDENSATE DRAIN KIT, AND OUTDOOR GRILLE.
4. THE ROOM SHALL BE PROVIDED WITH A WALL MOUNTED PROGRAMMABLE THERMOSTAT AND INTERFACED WITH DDC CONTROL SYSTEM.

DESIGN CONDITIONS

OUTDOOR DESIGN CONDITIONS

SEASON	WB/DB (°F)
SUMMER	91/77
WINTER	22

DEHUMIDIFICATION CONDITIONS

MCDB (°F)	W (grains H2O/lbm dry air)
84	140

INDOOR DESIGN CONDITIONS

SPACE TYPE	SEASON	OCCUPIED	UNOCCUPIED
ALL	COOLING	76°F	84°F
	HEATING	70°F	55°F

DESIGN VENTILATION RATES

SPACE TYPE	CFM/PPL	CFM/FT²
BARRACKS SLEPING ROOM	5	0.06
CORRIDOR	0	0.06
LOBBY/PREFUNCTION	7.5	0.06
LOUNGES	7.5	0.06
OCCUPIABLE STORAGE	5	0.12

CORE AIR HANDLING UNIT SCHEDULE

	SA CFM		OA	EAT			LAT					CHILLED WATER SECTION							HOT WATER COIL SECTION								ELECTRICAL DATA		
				SUMMER			SUMMER					CAPACITY																		
TAG	MIN	MAX	CFM	DB	WB	WINTER	DB	WB	WINTER	ESP IWG	TOTAL SP IWG	TOTAL	SENS	FLOW	EWT	LWT	HD LOSS	VALVE TYPE	CAPACITY	FLOW	EWT	LWT	HD LOSS	VALVE TYPE	FILTER	WEIGHT	STANDARD MOTOR HP	FLA	V/Ø/HZ
AHU-1C	500	1,000	110	78 °F	65 °F	64 °F	51 °F	51 °F	95 °F	0.75	2.75	38,680 Btu/h	29,160 Btu/h	6.40 GPM	42 °F	54 °F	5 FT	2-WAY	33,480 Btu/h	1.70 GPM	140 °F	100 °F	5 FT	2-WAY	MERV 11	700 LB	1.00	2	208/3/60
AHU-2C	420	840	240	78 °F	65 °F	64 °F	51 °F	51 °F	95 °F	0.75	2.50	32,491 Btu/h	24,494 Btu/h	5.40 GPM	42 °F	54 °F	5 FT	2-WAY	28,123 Btu/h	1.40 GPM	140 °F	100 °F	5 FT	2-WAY	MERV 11	700 LB	1.00	2	208/3/60
AHU-3C	420	840	240	78 °F	65 °F	64 °F	51 °F	51 °F	95 °F	0.75	2.50	32,491 Btu/h	24,494 Btu/h	5.40 GPM	42 °F	54 °F	5 FT	3-WAY	28,123 Btu/h	1.40 GPM	140 °F	100 °F	5 FT	3-WAY	MERV 11	700 LB	1.00	2	208/3/60

NOTES:
1. PROVIDE WITH DIRECT DRIVE PLENUM FANS WITH VARIABLE SPEED ECM MOTORS.
2. PROVIDE 22 GAUGE GALVANIZED STEEL EXTERIOR CASING WITH 1" THICK CLOSED CELL FOAM INSULATION (NON VOC) FOR ENTIRE UNIT.
3. PROVIDE 18 GAUGE STAINLESS STEEL CONDENSATE DRAIN PANS.
4. PROVIDE 4" HOUSEKEEPING PAD.

DEDICATED OUTSIDE AIR SYSTEM SCHEDULE

TAG	SUPPLY FAN			EXHAUST FAN			FILTRATION		WEIGHT	DIMENSIONS			FIXED PLATE (SUMMER)				COOLING							FIXED PLATE (WINTER)		HEATING (RE-HEAT POSITION)						ELECTRICAL DATA	
	CFM	ESP IWG	HP	CFM	ESP IWG	HP	SA	EA		WIDTH (IN)	LENGTH (IN)	HEIGHT (IN)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	FLOW (GPM)	PRESSURE DROP (FT-WG)	EWT (°F)	LWT (°F)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	LAT (°F)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	FLOW (GPM)	PRESSURE DROP (FT-WG)	EAT DB (°F)	LAT (°F)	TOTAL CAPACITY(MBH)	V/Ø/HZ	FLA (A)
DOAS-1A	2,310	1.00	3.0	2,000	1.50	3.0	MERV 8	MERV 8	1000 LB	50	118	62	91	77.02	81	71	28.3	14.0	42	54	203.83	103.24	51	22	68	140	100	5	.6	45	85	99.4	208/3/60	22
DOAS-1B	2,300	1.00	3.0	2,000	1.50	3.0	MERV 8	MERV 8	1000 LB	50	118	62	91	77.02	81	71	28.3	14.0	42	54	203.83	103.24	51	22	68	140	100	5	.6	45	85	99.4	208/3/60	22
DOAS-2A	2,310	1.00	3.0	2,000	1.50	3.0	MERV 8	MERV 8	1000 LB	50	118	62	91	77.02	81	71	28.3	14.0	42	54	203.83	103.24	51	22	68	140	100	5	.6	45	85	99.4	208/3/60	22
DOAS-2B	2,300	1.00	3.0	2,000	1.50	3.0	MERV 8	MERV 8	1000 LB	50	118	62	91	77.02	81	71	28.3	14.0	42	54	203.83	103.24	51	22	68	140	100	5	.6	45	85	99.4	208/3/60	22
DOAS-3A	2,310	1.00	3.0	2,000	1.50	3.0	MERV 8	MERV 8	1000 LB	50	118	62	91	77.02	81	71	28.3	14.0	42	54	203.83	103.24	51	22	68	140	100	5	.6	45	85	99.4	208/3/60	22
DOAS-3B	2,300	1.00	3.0	2,000	1.50	3.0	MERV 8	MERV 8	1000 LB	50	118	62	91	77.02	81	71	28.3	14.0	42	54	203.83	103.24	51	22	68	140	100	5	.6	45	85	99.4	208/3/60	22

NOTES:
1. PROVIDE ALL OUTSIDE AIR INTAKES AND EXHAUST AIR OPENINGS WITH LOW AIR LEAKAGE DAMPERS THAT ARE AUTOMATICALLY CLOSED WHEN THE EMERGENCY AIR SHUTOFF SWITCH IS ACTIVATED. THE LOW LEAKAGE DAMPERS SHALL HAVE MAXIMUM LEAKAGE RATES OF 3 CFM/SQUARE FOOT WITH A DIFFERENTIAL PRESSUREOF ONE INCH GAGE ACROSS THE DAMPER..
2. DOAS UNIT SHALL BE EQUIPPED WITH FIXED PLATE HEAT EXCHANGER CAPABLE OF BOTH SENSIBLE AND LATENT ENERGY WITH AN EXHAUST AIR TRANSPORT RATIO OF LESS THAN 0.5% AS TESTED TO AHRI 1060. THE CASING LEAKAGE RATE SHALL NOT EXCEED 0.50 CFM PER SQUARE FOOT OF CASING SURFACE AREA AT POSITIVE PRESSURE +5" WC AND -6" WC AT NEGATIVE PRESSURE SECTIONS.
3. PROVIDE 22 GAUGE GALVANIZED STEEL EXTERIOR CASING WITH 1" THICK CLOSED CELL FOAM INSULATION (NON VOC) FOR ENTIRE UNIT.
4. PROVIDE 18 GAUGE STAINLESS STEEL CONDENSATE DRAIN PANS.
5. PROVIDE UNIT WITH SINGLE POINT POWER CONNECTION.

SPLIT SYSTEM SCHEDULE

		INDOOR SECTION			COOLING							
		TOTAL	AIR ENTR.									
TAG	DESCRIPTION	CFM	DB	WB	NOM. CAPACITY	SENS. CAPACITY	SEER	MCA	MOP	V/Ø/HZ	FILTER	REMARKS
FCU-1	WALL MOUNTED UNIT	450	80 °F	67 °F	18,000 Btu/h	12,000 Btu/h	20	18.1	30	208/1/60	WASHABLE	WIRED THERMOSTAT
CU-1	INVERTER DRIVEN CONDENSING UNIT				18,000 Btu/h	12,000 Btu/h	20	18.1	30	208/1/60	N/A	HEAT PUMP DISABLED

NOTES:
1. PROVIDE FCU WITH WIRED WALL-MOUNTED CONTROLLER AND ACCESSORY CONDENSATE PUMP.
2. MOUNT OUTDOOR EQUIPMENT TO PROVIDE MINIMUM OF 2" CLEARANCE FROM CONCRETE.
3. PROVIDE CU WITH CAPABILITY TO OPERATE AT LOW AMBIENT OF MINIMUM 14 F.

SIDEWALL LOUVER SCHEDULE

TAG	DESCRIPTION	AIRSTREAM	DESIGN VELEOCITY	MIN FREE AREA	CFM	FACE SIZE
SWL-1	BAKED ENAMEL - MATCH EXTERIOR COLOR	OUTSIDE AIR	842 FT/MIN	2.4 SF	2300	54" X 16"
SWL-2	BAKED ENAMEL - MATCH EXTERIOR COLOR	OUTSIDE AIR	382 FT/MIN	2.2 SF	240	44" X 16"
SWL-3	BAKED ENAMEL - MATCH EXTERIOR COLOR	OUTSIDE AIR	455 FT/MIN	2.2 SF	150	44" X 16"
SWL-4	SEE ARCHITECTURAL	EXHAUST	1038 FT/MIN	6.2 SF	6000	11' X 2'3" GABLED
SWL-5	SEE ARCHITECTURAL	DRYER	800 FT/MIN	0.75 SF	600	8" X 24"

NOTE:
1. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATION 08 91 00. THIS SCHEDULE PROVIDED FOR COORDINATION PURPOSES ONLY.

DEHUMIDIFIER SCHEDULE

TAG	AREA SERVED	AIRFLOW	MOISTURE REMOVAL CAPACITY (Pints/Day)	V/Ø/HZ
DHU-1A	MECHANICAL 118	400 CFM	150	115/1/60
DHU-1B	MECHANICAL 152	400 CFM	150	115/1/60
DHU-2A	MECHANICAL 218	400 CFM	150	115/1/60
DHU-2B	MECHANICAL 252	400 CFM	150	115/1/60
DHU-3A	MECHANICAL 318	400 CFM	150	115/1/60
DHU-3B	MECHANICAL 352	400 CFM	150	115/1/60

NOTES:
1. PROVIDE DEHUMIDIFIER WITH METAL STAND OR EQUIPTMENT PAD TO ALLOW FOR CONDENSATE PIPING TO DRAIN.
2. PROVIDE CONDENSATE PIPING TO THE NEAREST RECEPTOR.
3. PROVIDE WITH A WIRED CONNECTION. PLUG-IN NOT ACCEPTABLE
4. DEHUMIDIFIER SHOULD BE SET AT 55% RELATIVE HUMIDITY.

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M-601

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
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CEMS Project No: 1515SV Project Manager: R. Alvar

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

REPAIRS BEQ HP510

SCHEDULES

DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	B. TURKALL
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024067
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 109 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

AIR COOLED WATER CHILLER SCHEDULE

TAG	TYPE	TONS	EER	IPLV EER	OUTSIDE AMBIENT °F	DESIGN FLOW	EWT	LWT	HD LOSS	FLA	MCA	MOCP	V/Ø/HZ	REFRIGERANT TYPE
CH-1	SCROLL	110	10.5	14.7	95	187 GPM	54 °F	42 °F	11.2 FT	27 A	226 A	250	460/3/60	R410A

NOTES:
1. PROVIDE WITH SINGLE POINT POWER CONNECTION, ALUMINUM MICROCHANNEL CONDENSER COILS, LOW AMBIENT OPERATION DOWN TO 20°F, AND VFD'S FOR CONDENSER FANS.
2. PROVIDE EACH CHILLER WITH A 120V SERVICE OUTLET AND STEP DOWN TRANSFORMER.
3. PROVIDE CHILLER PACKAGE WITH BACNET MS/TP INTERFACE. COORDINATE WITH DDC CONTRACTOR AND CONTROLS PLANS FOR UNIT OPERATION.
4. PROVIDE HEAT RECOVERY WITH MANUFACTURERS RECOMMENDED PIPING COMPONENETS.

MECHANICAL PUMP SCHEDULE

								MOTOR	
TAG	SERVICE	TYPE	DRIVE	FLOW	HEAD	RPM	PUMP MIN (EFF)	HP	V/Ø/HZ
CHWP	CHILLED WATER	VERTICAL TWIN	VFD	187 GPM	65 FT	1800	65%	7.5	460/3/60
HWP	HEATED HOT WATER	VERTICAL TWIN	VFD	60 GPM	65 FT	1800	65%	3.0	460/3/60

NOTES:
1. BASIS OF DESIGN PUMPS ARE VARIABLE SPEED, VERTICAL TWIN INLINE TYPE.
2. PROVIDE TWIN PUMP WITH AN INDIVIDUAL POWER CONNECTION FOR EACH PUMP MOTOR.

HYDRONIC EXPANSION TANK SCHEDULE

TAG	SYSTEM	MIN ACCEPTANCE VOLUME (GAL)	MIN OPERATING TEMP./ PRESSURE (°F/PSIG)	MAX OPERATING TEMP./ PRESSURE (°F/PSIG)	PRECHARGE PRESSURE (PSIG)	SEPARATION
ET-2	HEATED HOT WATER	20.0	50F/12.0 PSIG	140/22	20	BLADDER
ET-3	CHILLED WATER	10.0	42F/12.0 PSIG	90/150	20	BLADDER

NOTE:
1. PROVIDE EXPANSION TANK RATED FOR 200°F AND 150 PSIG WORKING PRESSURE.

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	DRIVE	CONTROL	CFM	ESP IWG	HP	V/Ø/HZ
EF-1	MECHANICAL BUILDING	DIRECT DRIVE	WALL MOUNTED SWITCH	650	0.1	0.05	115/1/60

NOTES:
1. PROVIDE A DIRECT DRIVE SIDEWALL MOUNTED PROPELLER FAN. FAN ARRANGEMENT SHALL BE EXHAUST. PROVIDE WITH WALL SLEEVE AND BIRD SCREEN.
2. FAN PROPELLER SHALL BE ALUMINUM BLADE MECHANICALLY FASTENED TO STEEL HUB; WHEEL SHALL BE STATICALLY AND DYNAMICALLY BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-05.
3. FAN MOTOR SHALL BE TEFC OR TEAO AND PERMANENTLY LUBRICATED WITH A MAXIMUM CONTINUOUS OPERATING TEMPERATURE OF 130°F.
4. PROVIDE FAN CONTROL SWITCH LOCATED NEAR ENTRANCE.

UNIT HEATER SCHEDULE

TAG	AREA SERVED	TYPE	FAN TYPE	CFM	HEATING CAPACITY	MAX GAS INLET PRESSURE (I.W.G.)	WEIGHT	FAN HP	V/Ø/HZ
UH-4	MECHANICAL BUILDING	NATURAL GAS	PROPELLER	500	30,000 Btu/h	14	55	.06	115/1/60

NOTES:
1. PROVIDE 82% HIGH-EFFICIENCY, SEPARATED -COMBUSTION, POWER VENTED, GAS-FIRED UNIT HEATER.
2. HEAT EXCHANGER SHALL BE EQUIPPED WITH A MULTI-CELL, MULTI-PASS SERPENTINE STYLE 316 STAINLESS STEEL HEAT EXCHANGER.
3. BURNER SHALL BE A SINGLE PIECE ASSEMBLY WITH A SINGLE ORIFICE.
4. UNIT CONTROLS SHALL INCLUDE A SINGLE STAGE GAS VALVE; DIRECT SPARK MULTI-TRY IGNITION WITH ELECTRONIC FLAME SUPERVISION WITH TIMED LOCKOUT.
5. CABINET SHALL BE CONSTRUCTED OF G30 GALVANIZED STEEL.

AIR AND DIRT SEPARATOR SCHEDULE

TAG	TYPE	SYSTEM	RATED FLOW RATE (GPM) AT 4.9 FPS	CONNECTION SIZE (IN)
AS-1	COALESCING	CHW	187	4

NOTE:
1. AIR AND DIRT SEPARATOR SHALL BE EQUIPPED WITH BLOWDOWN VALVE AND REMOVABLE FILTER MEDIA.

HYDRAULIC SEPARATOR SCHEDULE

TAG	TYPE	SYSTEM	FLOW RATE (GPM)	CONNECTION SIZE (IN)
HS-1	COALESCING	HHW	60	3

NOTES:
1. HYDRAULIC SEPARATOR SHALL HAVE INTEGRATED AIR AND DIRT SEPARATOR CAPABLE OF PARTICLE REMOVAL DOWN TO 5 MICRONS, FACTORY EQUIPPED WITH AN AUTOMATIC AIR VENTING DEVICE, AND A FACTORY INSTALLED BOTTOM BLOWDOWN VALVE.
2. SHALL BE DESIGNED AND CONSTRUCTED PER ASME BPV CODE SECTION VIII DIV 1.
3. SHALL BE EQUIPPED W/ 304 STAINLESS COALESCENCE PALL RINGS.
4. PROVIDING INDIVIDUAL AIR AND DIRT SEPARATOR AND HYDRAULIC SEPARATOR IS ACCEPTABLE IF ALL PRIOR REQUIREMENTS ARE MET.

BUFFER TANK SCHEDULE

TAG	CAPACITY
BT-1	500 gal

NOTE:
1. PROVIDE BUFFER TANK WITH INTERNAL BAFFLE, AIR VENT ATOP TANK, INCLUDING A DRAIN, FLANGED LOW CONNECTIONS AND 4 LEG STANDS FOR MOUNTING TO CONCRETE PAD.

SIDEWALL LOUVER SCHEDULE

TAG	MIN VELOCITY	MAX VELOCITY	DESCRIPTION	FACE SIZE	CFM
SWL-1M	500	N/A	BAKED ENAMEL - MATCH EXTERIOR COLOR	40" x 12"	650

NOTES:
1. SEE ARCHITECTURAL PLANS FOR SIDEWALL LOUVER SCHEDULES. APPROXIMATE FACE SIZES ARE SHOWN HERE FOR COORDINATION PURPOSES ONLY.
2. PROVIDE ALL OUTSIDE AIR INTAKES, RELIEF AIR, AND EXHAUST AIR OPENINGS WITH LOW LEAKAGE DAMPERS. THE LOW LEAKAGE DAMPERS SHALL HAVE MAXIMUM LEAKAGE RATES OF 3 CFM/SQUARE FOOT WITH A DIFFERENTIAL PRESSURE OF ONE INCH OF WATER GAGE ACROSS THE DAMPER.

NATURAL GAS FIRED CONDENSING BOILER SCHEDULE

TAG	TYPE	INPUT	OUTPUT	MAX NG INPUT PRESSURE (I.W.G.)	NOMINAL FLOW	EFFICIENCY	EWT	LWT	V/Ø/HZ
B-1	FIRE TUBE	399,900 Btu/h	379,000 Btu/h	14	20 GPM	95%	100 °F	140 °F	115/1/60
B-2	FIRE TUBE	399,900 Btu/h	379,000 Btu/h	14	20 GPM	95%	100 °F	140 °F	115/1/60
B-3	FIRE TUBE	399,900 Btu/h	379,000 Btu/h	14	20 GPM	95%	100 °F	140 °F	115/1/60

NOTES:
1. PROVIDE FIRETUBE BOILER WITH VARIABLE PRIMARY FLOW CAPABILITY. COORDINATE BOILER MINIMUM FIRE FLOW RATE WITH PUMP CONTROLS TO PREVENT TRIPPING BOILER SAFETIES.
2. PROVIDE MANUFACTURER CONCENTRIC DIRECT VENT SYSTEM FOR EACH BOILER WITH HORIZONTAL SIDEWALL TERMINATION USING STAINLESS STEEL OR OTHER CATEGORY IV APPROVED MATERIAL.
3. PROVIDE BOILERS WITH REQUIRED CSD-1 CONTROL AND LOCATE EMERGENCY SHUTOFF SWITCH ON EXTERIOR OF MECHANICAL ROOM AS SHOWN ON PLANS.
4. PROVIDE A SINGLE CONDENSATE NEUTRALIZATION KIT FOR CONNECTION WITH ALL NEW BOILERS. CONDENSATE NEUTRALIZATION KIT SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE BACNET MS/TP INTERFACE.
6. PROVIDE BOILER MANUFACTURER APPROVED AND BOILER CONTROLLABLE PRIMARY/CIRCULATING PUMP WITH VARIABLE SPEED MOTOR RATED AT BOILER MAX FLOW AND 25 FT OF HEAD MINIMUM.

INDIRECT WATER HEATER SCHEDULE

TAG	STORAGE
IW	600 gal

NOTES:
1. PROVIDE TANK WITH INTERNAL BAFFLE, AIR VENT ATOP TANK, DRAIN, FLANGED LOW CONNECTIONS, AND 4 LEG STANDS FOR MOUNTING TO CONCRETE PAD.
2. INSULATE TANK IAW SPECIFICATION 23 07 00.

DHW HEAT RECOVERY PUMP SCHEDULE

				MOTOR	
TYPE	TYPE	CAPACITY	HEAD	HP	V/Ø/HZ
HRP-1	INLINE	70 GPM	35 FT	1.00 hp	208/1/60

NOTES:
1. PROVIDE ECM PUMP.

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M-602

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CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

MECHANICAL BUILDING SCHEDULES

DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

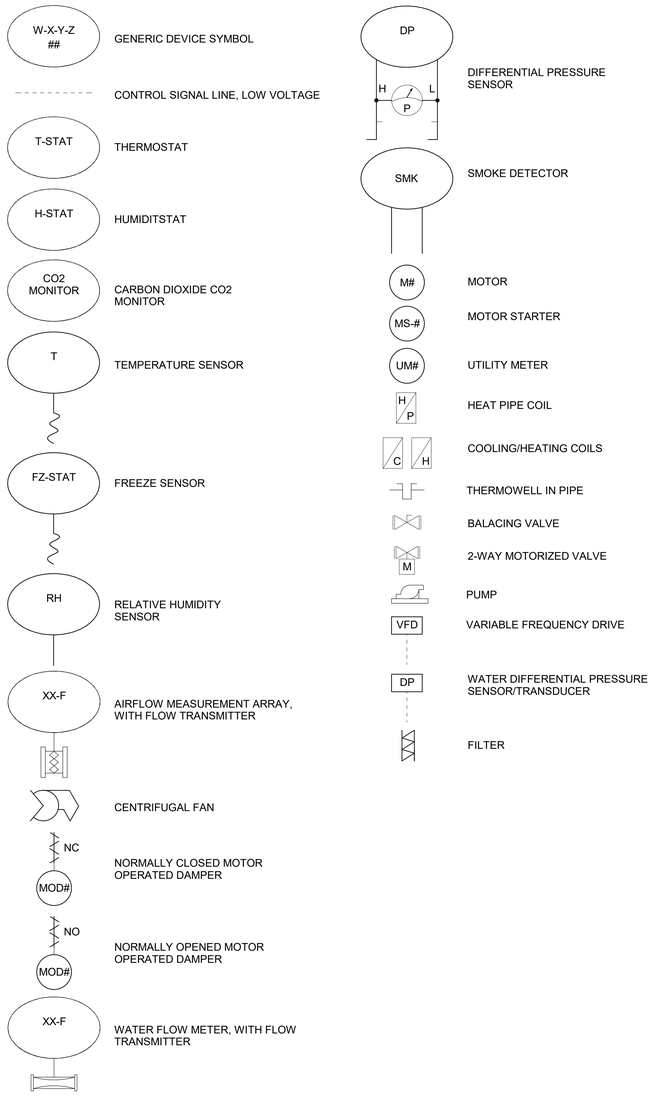
ISSUE DATE:15 MAY 2020

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CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 110 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

LEGEND:



ABBREVIATIONS

2P	TWO-POSITION (CONTROL SIGNAL)
ADJ.	ADJUSTABLE
AFMA	AIRFLOW MEASUREMENT ARRAY
AFMD	AIRFLOW MEASURMENT DEVICE
AFMS	AIRFLOW MEASUREMENT STATION
AHU	AIR HANDLING UNIT
ALM	ALARM
ASC	APPLICATION SPECIFIC CONTROLLER
AV	ANALOG VARIABLE
B-AAC	BACNET ADVANCED APPLICATION CONTROLLER
B-BC	BACNET BUILDING CONTROLLER
BA	BYPASS AIR
BLDG	BUILDING
BMFM	BI-DIRECTION MAGNETIC FLOW METER
BUT	BUTTON
BV	BINARY VARIABLE
C	COMMAND (MODULATING CONTROL SIGNAL)
CD	COLD DECK
CH	CHILLER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	COOLING
CO2	CARBON DIOXIDE
COM	COMMON
COMP	COMPARATOR
CP	CONFIGURATION PROPERTY
CT	CURRENT TRANSFORMER/SWITCH
CV	CONTROL VALVE
D	DAMPER
DA	DISCHARGE AIR
DB	DEADBAND
DCV	DEMAND CONTROLLED VENTILATION
DDC	DIRECT DIGITAL CONTROL(LER)
DIFF	DIFFERENCE
DIR	DIRECT (CONTROL ACTION)
DIS	DISABLE
DISP	DISPLAY
DP	DIFFERENTIAL PRESSURE
DX	DIRECT EXPANSION (UNIT)
EA	EXHAUST AIR
ECM	ELECTRONICALLY COMMUTATED MOTOR
EF	EXHAUST FAN
ENA	ENABLE
EOL	END OF LINE
ES	HVAC EMERGENCY SHUTDOWN MOMENTARY SWITCH
ESW	END SWITCH
EW	ENTHALPY WHEEL
F	FLOW
FAP	FIRE ALARM PANEL
FLT	FILTER
FRD	FIRE DAMPER
FZ	FREEZE
HD	HOT DECK
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HL	HIGH LIMIT
HR	HEAT RECOVERY
HTG	HEATING
HUM	HUMIDIFIER
I/O	INPUT/OUTPUT
IAW	IN ACCORDANCE WITH
LDP	LOCAL DISPLAY PANEL

ABBREVIATIONS

LL	LOW LIMIT
M & C	MONITORING & CONTROL (SOFTWARE)
MA	MIXED AIR
MC	MOTOR CONTROL
MFM	MAGNETIC FLOW METER
MINOA	MINIMUM OUTSIDE AIR
MOD	MOTOR OPERATED DAMPER
MOV	MOTOR OPERATED VALVE
MS	MOTOR STARTER
MV	MIXING VALVE
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NCI	NETWORK CONFIGURATION INPUT
NO	NORMALLY OPEN
OA	OUTDOOR AIR
OATS	OUTDOOR AIR SENSOR
OCC	OCCUPIED
ODT	ON DELAY TIMER
OWS	OPERATOR WORKSTATION
P	PRESSURE
PCM	PROGRAMMABLE CONTROL MODULE
PHW	PREHEAT WATER
PIU	POWERED INDUCTION UNIT
PMP	PUMP
POS	POSITION
PP	POSITIVE POSITIONER
PPC	PROGRAMMABLE PROCESS CONTROLLER
PPM	PARTS PER MILLION
R	RELAY
RA	RETURN AIR
REV	REVERSE (CONTROL ACTION)
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RLA	RELIEF AIR
RM	ROOM
RST	RESET
RT	RATE
S	STATUS
SA	SUPPLY AIR
SBC	SUPERVISORY BUILDING CONTROLLER
SCHD	SCHEDULER
SEC	SECONDARY
SF	SUPPLY FAN
SMK	SMOKE
SMV	SOURCE MOTORIZED VALVE
SNVT	STANDARD NETWORK VARIABLE TYPE
SP	SETPOINT
SPD	SPEED
SS	START/STOP COMMAND
STAT	THERMOSTAT
SYS	SYSTEM
T	TEMPERATURE
TAP	TAP, PRESSURE
TS	TEMPERATURE SENSOR (PIPE MOUNT)
UM	UTILITY METER
UNOCC	UNOCCUPIED
V	VALVE
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB (TEMPERATURE)
ZN	ZONE

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MI001

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CEMS Project No: 15102V Project Manager: R. Alvaz

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

CONTROLS LEGEND

DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

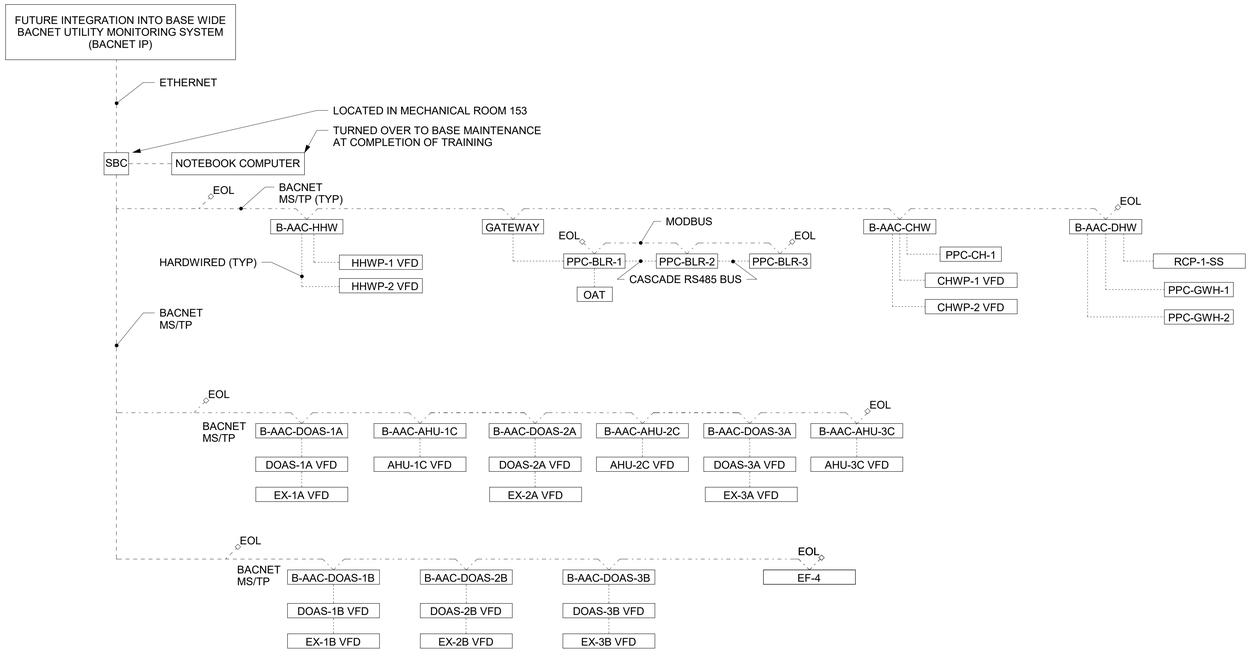
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CONSTR. CONTR. NO.: N40085-15-D-0858

SCALE: AS NOTED | SPEC. 15-18-0042 | SHEET 111 OF 143

ISSUE DATE:15 MAY 2020

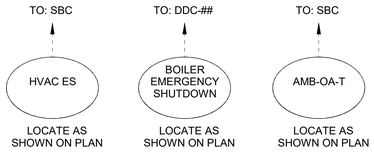
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 SYSTEM NETWORK
SCALE: NOT TO SCALE

GENERAL NOTES:

1. DIRECT DIGITAL CONTROLS (DDC) SYSTEM SHALL BE PROVIDED TO OPERATE BUILDING MECHANICAL SYSTEMS AS DESCRIBED IN THE SEQUENCE OF OPERATION. ALL SOFTWARE SHALL BE BACNET COMPATIBLE.
2. ALL CONTROL DEVICES SHALL BE ELECTRICALLY OR ELECTRONICALLY OPERATED. PNEUMATIC CONTROL DEVICES SHALL NOT BE USED.
3. INDIVIDUAL CONTROLLERS SHALL BE PROVIDED FOR EACH PIECE OF EQUIPMENT OR SYSTEM. ALL CONTROLLERS SHALL COMMUNICATE WITH THE DDC PANEL. THE DDC PANEL SHALL BE CAPABLE OF INTERFACING WITH ALL EQUIPMENT AND SYSTEMS CONTROLLERS THROUGHOUT THE DDC SYSTEM. ALL SETPOINTS AND PARAMETERS SHALL BE ACCESSIBLE THROUGH THE DDC PANEL.
4. THE DDC SYSTEM SHALL COMMUNICATE WITH THE SBC AND BASE WIDE ENERGY MANAGEMENT CONTROLS SYSTEM (EMCS).
5. EMERGENCY HVAC SHUT-DOWN SWITCHES ARE PROVIDED AND INSTALLED BY THE HVAC CONTROLS CONTRACTOR. ALL HVAC SHUT-DOWN SWITCHES SHALL SHUT DOWN MECHANICAL EQUIPMENT AS INDICATED ON SEQUENCE INCLUDING EQUIPMENT WHICH IS IN THE "HAND" OR "BY-PASS" MODES. SHUTDOWN SHALL BE ACCOMPLISHED VIA A HARDWIRE INTERLOCK AND A DDC COMMAND.
6. ALL OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL BE LOW LEAKAGE TYPE WITH AUTOMATIC MOTOR OPERATERS TO AUTOMATICALLY CLOSE UPON EMERGENCY HVAC SHUTDOWN. PROVIDE ALL OUTSIDE AIR INTAKES, AND EXHAUST OPENINGS WITH LOW LEAKAGE DAMPERS THAT ARE AUTOMATICALLY CLOSED WHEN THE EMERGENCY AIR DISTRIBUTION SHUTOFF SWITCH IS ACTIVATED. THE LOW LEAKAGE DAMPERS WILL HAVE MAXIMUM LEAKAGE RATES OF 3 CFM/SQUARE FOOT (15 LITERS/SECOND/SQUARE METER) WITH A DIFFERENTIAL PRESSURE OF ONE INCH OF WATER GAGE (250 PA) ACROSS THE DAMPER.
7. ADDITIONAL EQUIPMENT/SYSTEM ALARMS SHALL BE PROVIDED FOR EQUIPMENT SPECIFIC ALARMS NOT INCLUDED WITHIN THIS SEQUENCE OF OPERATION OR POINTS LIST. DDC CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR TO DETERMINE THE NUMBER OF POINTS REQUIRED FOR CONTROLS PROVIDED BY MANUFACTURER.



2 SBC AND HVAC ES CONTROL DIAGRAM
SCALE: NOT TO SCALE

HVAC EMERGENCY SHUTDOWN:

UPON AN EMERGENCY SHUTDOWN CALL FROM THE DDC CONTROL SYSTEM OR BUILDING MASS NOTIFICATION SYSTEM, ALL UNITS SHALL BE DE-ENERGIZED AND ALL OUTSIDE AIR AND EXHAUST MOTOR OPERATED DAMPERS SHALL BE CLOSED. THIS SHALL REQUIRE A RESET AT THE DDC CONTROL SYSTEM OR A REMOTE RESET FROM THE UMCS (UTILITY MONITORING AND CONTROLS SYSTEM). SEE PLANS FOR LOCATIONS OF EMERGENCY HVAC SHUTDOWN MUSHROOM SWITCHES.

SBC AND HVAC ES POINTS LIST

POINT NAME	HARWARE AI	AO	BI	BO	SOFTWARE AV	BV	LOOP	SCHED	TREND	ALARM	FAILURE MODE	SHOW ON GRAPHIC
AMB-OA-T / AMBIENT OA TEMP [°F]	•								•			•
BOILER EMERGENCY SHUTDOWN			•							•		•
DOMESTIC WATER SMART METER (GPM)	•								•			•
ELECTRICITY USAGE (KW)	•								•			•
HVAC EMERGENCY SHUTDOWN			•							•		•

NOTES:
1. POINTS LIST IS THE MINIMUM REQUIRED FOR OPERATION. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POINTS AND MONITORING POINTS FOR A COMPLETE AND OPERABLE SYSTEM

DISCLOSURE OF INFORMATION

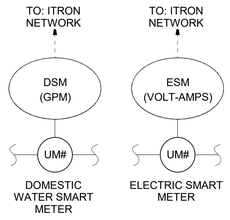
CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

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

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

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



NOTE: PROVIDE ITRON COMPATIBLE METERS. METERS SHALL REPORT BACK TO BASEWIDE ITRON FIXED NETWORK 2.0 COMMUNICATING VIA A 900 MHz WIRELESS SIGNAL.

3 DCW AND POWER CONTROL DIAGRAM
SCALE: NOT TO SCALE

MI002

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15150V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

CONTROLS AND OPERATION

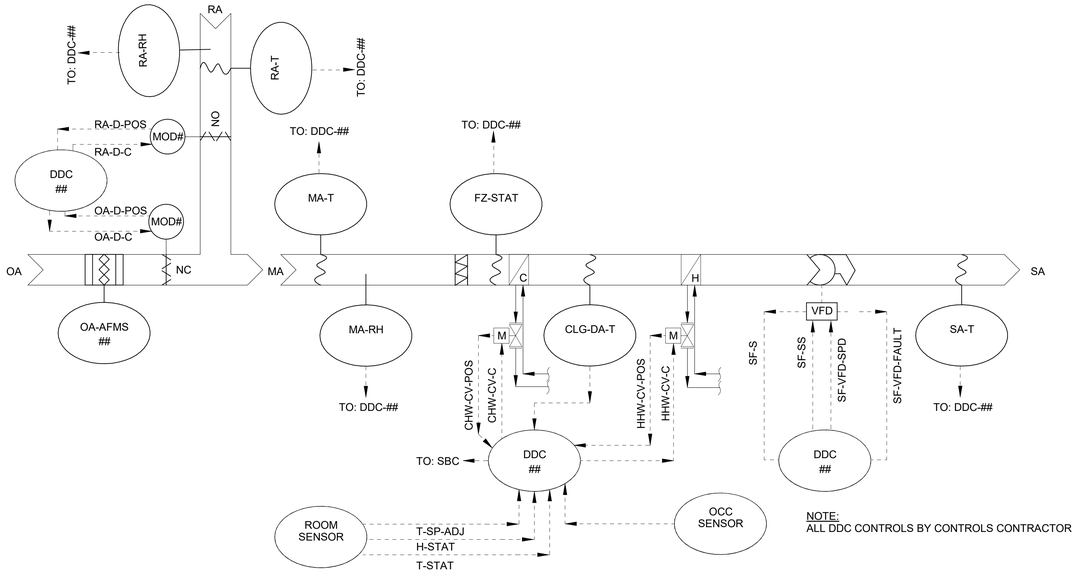
DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024070

CONSTR. CONTR. NO.: N40085-15-D-0858
SCALE: AS NOTED SPEC. 15-18-0042 SHEET 112 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



NOTE:
ALL DDC CONTROLS BY CONTROLS CONTRACTOR

1 CORE AHU CONTROL DIAGRAM
SCALE: NOT TO SCALE

CORE AHU POINTS LIST

POINT NAME	HARWARE AI	AO	BO	BI	SOFTWARE AV	BV	LOOP	SCHED	TREND	ALARM	FAILURE MODE	SHOW ON GRAPHIC
CHW-CV-C / CHILLED WATER VALVE CONTROL [% OPEN]		•										
CHW-CV-POS / CHILLED WATER VALVE POSITION [% OPEN]	•								•			•
CLG-DA-T / COOLING DISCHARE AIR TEMP [°F]	•								•			•
COOLING SETPOINT [°F]					•				•			•
FZ-STAT / FREEZESTAT [°F]				•						•		•
H-STAT / SPACE RELATIVE HUMIDITY [% RH]	•								•			•
HEATING SETPOINT [°F]					•				•			•
HHW-CV-C / HEATING HOT WATER VALVE CONTROL [% OPEN]		•										
HHW-CV-POS / HEATING HOT WATER VALVE POSITION [% OPEN]	•								•			•
MA-RH / MIXED AIR RELATIVE HUMIDITY [% RH]	•								•			•
MA-T / MIXED AIR TEMP [°F]	•								•	•		•
OA-D-C / OUTSIDE AIR DAMPER CONTROL [% OPEN]		•										
OA-D-POS / OUTSIDE AIR DAMPER POSITION [% OPEN]	•								•			•
OA-F / OA AIRFLOW [CFM]	•								•	•		•
OCC-S / OCCUPANCY STATUS [ON/OFF]				•					•			•
OCCUPANCY TIMER [MIN]							•					
RA -T / RETURN AIR TEMP [°F]	•								•			•
RA-D-C / RETURN AIR DAMPER CONTROL [% OPEN]		•										
RA-D-POS / RETURN AIR DAMPER POSITION [% OPEN]	•											•
RA-RH / RETURN AIR RELATIVE HUMIDITY [% RH]	•								•			•
SA-T / SUPPLY AIR TEMP [°F]	•								•	•		•
SF-S / SUPPLY FAN STATUS [HZ]	•											•
SF-SS / SUPPLY FAN START/STOP			•									•
SF-VFD-FAULT / SUPPLY FAN VFD FAULT				•						•		•
SF-VFD-SPD / SUPPLY FAN VFD SPEED [HZ]		•							•			•
T-SP-ADJ / ZONE TEMPERATURE SETPOINT ADJUST [°F]	•											•
T-STAT / SPACE TEMP [°F]	•								•			•

NOTES:
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DISCLOSURE OF INFORMATION

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CORE AREA AIR HANDLING UNITS SEQUENCE OF OPERATION:

GENERAL: UNITS ARE SINGLE ZONE VARIABLE AIR VOLUME AHU WITH A MIXING BOX, CHILLED WATER COOLING COIL, HOT WATER REHEAT COIL, AND DIRECT DRIVE FAN MOTOR WITH A VFD.

SENSORS: SENSORS SHALL BE PROVIDED AS REQUIRED BY THIS SEQUENCE OF OPERATION, THE CONTROL DIAGRAM, AND THE ASSOCIATED POINTS LIST.

SYSTEM START-UP:
UPON ENERGIZING THE UNIT, THE AHU DDC SHALL COMMAND OPEN THE OUTDOOR AIR DAMPER AND OPEN THE RETURN AIR DAMPER AND, UPON PROOF OF DAMPER POSITIONS, COMMUNICATE THE FAN MOTOR TO RUN.

DEFAULT MODE FOR UNIT STARTUP IS OCCUPIED, COOLING MODE.

SYSTEM SHUT-DOWN: THE SHUT DOWN SEQUENCE WHEN THE SYSTEM IS SHUT DOWN BY A SAFETY ALARM OR STOP COMMAND SHALL INCLUDE:
- THE SUPPLY FAN SHALL BE POWERED OFF.
- THE OUTSIDE AIR DAMPERS SHALL CLOSE.
- RETURN AIR DAMPERS SHALL OPEN.
- THE COOLING COIL SHALL BE MODULATED INTO THE CLOSED POSITION.
- THE HEATING COIL SHALL BE MODULATED INTO THE FULLY OPEN POSITION.

NORMAL MODES:

OCCUPIED MODE
UPON A ROOM OCCUPANCY DETECTION, THE AHU DDC SHALL ENTER OCCUPIED MODE. AHU RETURN DAMPER IS OPEN, OUTSIDE AIR DAMPER IS OPENED, FAN SHALL ENERGIZE TO 75% (ADJ.) AND RUN CONTINUOUSLY.

COOLING MODE: THE CHILLED WATER VALVE SHALL MODULATE TO MAINTAIN A SUPPLY AIR TEMPERATURE SETPOINT OF 53°F (ADJ.). HOT WATER VALVE SHALL CLOSE.

HEATING MODE: THE HOT WATER VALVE SHALL MODULATE TO MAINTAIN A SUPPLY AIR TEMPERATURE SETPOIUNT OF 85°F (ADJ.). CHILLED WATER VALVE SHALL CLOSE.

DEHUMIDIFICATION MODE: WHEN THE SPACE RELATIVE HUMIDITY RISES ABOVE 60% RH (ADJ.):
- THE SUPPLY FAN SHALL MODULATE TO 50% (ADJ.) AIR FLOW.
- THE CHILLED WATER VALVE SHALL MODULATE TO MAINTAIN 50 °F (ADJ.) COOLING COIL TEMPERATURE SETPOINT.
- THE HOT WATER VALVE SHALL MODULATE TO MAINTAIN 75°F (ADJ.) SUPPLY AIR TEMPERATURE SETPOINT.

WHEN THE SPACE RELATIVE HUMIDITY FALLS BELOW 45% RH (ADJ.), THE UNIT SHALL RETURN TO NORMAL OPERATION.

UNOCCUPIED MODE:
IF THE ROOM OCCUPANCY SENSOR DOES NOT DETECT AN OCCUPANCY CONDITION FOR 30 MINUTES, THE AHU DDC SHALL ENTER UNOCCUPIED MODE AS FOLLOWS:
- FULLY OPEN THE RETURN AIR DAMPER
- FULLY CLOSE THE OUTSIDE AIR DAMPER
- CLOSE THE HEATING AND COOLING COIL CONTROL VALVES
- STOP THE FAN

THE AHU DDC SHALL THEN RESPOND TO ROOM STAT CALLS FOR COOLING/HEATING IN THE UNOCCUPIED MODE BY ENGAGING THE COOLING/HEATING MODES TO MAINTAIN A SPACE TEMPERATURE OF:
- MINIALLY HEATED TO 55 °F (ADJ.)
- MINIMUMLY COOLED TO 85 °F (ADJ.)

SAFETY: THE FOLLOWING SAFETY DEVICES MUST BE MANUALLY RESET THROUGH THE BUILDING:

FREEZESTAT: THE SPDT-TYPE FREEZESTAT SHALL BE CALIBRATED TO 38 °F. UPON ACTUATION, THE DDC SHALL CLOSE THE OUTSIDE AIR DAMPER, FULLY OPEN THE RETURN AIR DAMPER, CLOSE THE CHILLED WATER VALVES TO 25%, OPEN AND MODULATE THE HOT WATER CONTROL VALVE TO PROVIDE A MAXIMUM OF 95°F SUPPLY AIR.

COOLING MODE HIGH SUPPLY AIR TEMPERATURE: IF THE COOLING COIL CONTROL VALVE IS FULLY OPEN AND SUPPLY AIR TEMPERATURE RISES TO 58°F (ADJ.) OR HIGHER FOR GREATER THAN 3 MINUTES, THE AHU DDC SHALL SIGNAL A HIGH SUPPLY AIR TEMPERATURE ALARM AT THE BEQ SBC.

HEATING MODE, LOW SUPPLY AIR TEMPERATURE: IF THE HEATING COIL CONTROL VALVE IS FULLY OPEN AND SUPPLY AIR TEMPERATURE FALLS TO 65°F (ADJ.) OR LOWER FOR GREATER THAN 3 MINUTES, THE AHU DDC SHALL SIGNAL A LOW SUPPLY AIR TEMPERATURE ALARM AT THE BEQ SBC.

SUPPLY FAN FAILURE ALARM: IF ANY OF THE FOLLOWING OCCUR, THE AHU DDC SHALL SIGNAL AN ALARM AT THE BEQ SBC:
- SUPPLY FAN COMMAND DOES NOT MATCH THE STATUS .
- SUPPLY FAN VFD FAULT.

FIRE ALARM SHUTDOWN: IF THE BUILDING FIRE ALARM CONTROL PANEL SIGNALS AN ALARM, THE AHU DDC SHALL IMMEDIATELY INITIATE SHUT DOWN MODE.

SUPPLY FAN OVERRIDE: OVERRIDE OF THE FAN OPERATION SHALL BE MADE AVAILABLE AT THE UNIT IN A ON/OFF/AUTO SWITCH AND THROUGH PROGRAMMING CHANGES AT THE MAIN DDC CONTROL PANEL AND AT THE BEQ SBC.

ATFP EMERGENCY ACTUATION: IF THE HVAC ATFP SHUTDOWN SIGNAL IS RECEIVED, THE AHU DDC SHALL IMMEDIATELY INITIATE SHUT DOWN MODE.
ATFP SHUTDOWN SHALL BE ACCOMPLISHED BY BOTH A HARDWIRED SHUTDOWN WIRED IN SERIES WITH OTHER SAFETIES AND AN AHU DDC SHUTDOWN REQUIRING A MANUAL RESET.

NOTE: PARAMETERS SHOWN ARE TO BE ADJUSTABLE. THE HEATING AND COOLING OFFSETS ARE TO BE INDEPENDENTLY ADJUSTABLE.

NOT FOR CONSTRUCTION

MI101

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300 North 3rd St, Ste 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

CENTER ROOM AHU CONTROLS AND OPERATION

DES. N. FLEXNER			
DR. N. FLEXNER			
CHK. P. MAHAFFEY			
SUBMITTED BY:			
DESIGN DIR.			
APPROVED: PWO OR OICC DATE	SIZE E1	CODE IDENT NO. 80091	NAVFAC DRAWING NO. 60024071
SATISFACTORY TO: DATE			CONSTR. CONTR. NO.: N40085-15-D-0858
	SCALE: AS NOTED	SPEC. 15-18-0042	SHEET 113 OF 143

ISSUE DATE:15 MAY 2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

DOAS POINTS LIST

POINT NAME	HARWARE				SOFTWARE						FAILURE MODE	SHOW ON GRAPHIC
	AI	AO	BO	BI	AV	BV	LOOP	SCHED	TREND	ALARM		
CHW -CV-C / CHILLED WATER VALVE CONTROL [% OPEN]		●							●			●
CHW-CV-POS / CHILLED WATER VALVE POSITION [% OPEN]	●								●			●
CLG-DA-T / COOLING DISCHARE AIR TEMP [°F]	●								●			●
COOLING SETPOINT [°F]					●				●			●
DA-T / DISCHARGE AIR TEMP [°F]	●								●			●
EA-D-C / EXHAUST AIR DAMPER CONTROL [OPEN/CLOSE]		●									OPEN	●
EA-D-POS / EXHAUST AIR DAMPER POSITION [OPEN/CLOSE]	●										OPEN	●
EA-F / EA AIRFLOW [CFM]	●								●			●
EA-RH / EXHAUST AIR RELATIVE HUMIDITY [%]	●								●			●
EA-S / EA FAN STATUS [ON/OFF]				●					●	●		●
EA-SPD / EA FAN SPEED [HZ]		●							●			●
EA-SS / EA FAN START/STOP			●						●			●
EA-T / EXHAUST AIR TEMP [°F]	●								●			●
FZ-STAT / FREEZESTAT [°F]				●						●		●
HEATING SETPOINT [°F]					●				●			●
HHW-CV-C / HEATING HOT WATER VALVE CONTROL [% OPEN]		●										
HHW-CV-POS / HEATING HOT WATER VALVE POSITION [% OPEN]	●								●			●
HTG-T / HEATING AIR TEMPERATURE [°F]	●									●		
MA-T / MIXED AIR TEMP [°F]	●								●	●		●
OA-D-C / OUTSIDE AIR DAMPER CONTROL [OPEN/CLOSE]		●							●		CLOSE	●
OA-D-POS / OUTSIDE AIR DAMPER POSITION [OPEN/CLOSE]	●								●		CLOSE	●
OA-T / OUTDOOR AIR TEMPERATURE	●								●			●
RA-RH / RETURN AIR RELATIVE HUMIDITY[%]	●								●			●
RA-T / RETURN AIR TEMP [°F]	●								●			●
SA-F / OAVAV SUPPLY AIR VOLUME [CFM]	●								●			●
SA-S / SA FAN STATUS [ON/OFF]				●					●	●		●
SA-SPD / SA FAN SPEED [HZ]		●										●
SA-SS / SA FAN START/STOP			●						●			●
SMK / DUCT SMOKE DETECTOR				●						●		●

NOTES:

1. POINTS LIST IS THE MINIMUM REQUIRED FOR OPERATION. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POINTS AND MONITORING POINTS FOR A COMPLETE AND OPERABLE SYSTEM

DOAS (TYP. OF 6) SEQUENCE OF OPERATIONS:

GENERAL: DOAS IS CONTINUOUS RUN, CONSTANT-VOLUME EXHAUST AIR, CONSTANT VOLUME SUPPLY AIR UNIT EQUIPPED WITH VARIABLE SPEED CONTROL ON BOTH FANS.

START-UP MODE:
UPON ENERGIZING THE UNIT, THE DOAS DDC SHALL SIGNAL THE DAMPER ACTUATORS TO OPEN THE OUTSIDE AIR AND EXHAUST AIR DAMPERS. UPON PROOF OF DAMPERS OPEN POSITION, THE SUPPLY AND EXHAUST FANS SHALL RUN.

OCCUPIED MODE (24/7 OPERATION):

THE DOAS SHALL RUN CONTINUOUSLY.

DURING OPERATION, THE DOAS DDC SHALL CONTINUOUSLY MONITOR THE EXHAUSTAND SUPPLY AIR FLOW RATE (CFM) AND THE DOAS DDC SHALL SIGNAL THE FANS TO ADJUST FAN SPEED TO MAINTAIN A CONSTANT EXHAUST AND SUPPLY AIR FLOW RATES PER THE SCHEDULED RATES.

IF THE OUTSIDE AIR TEMPERATURE IS ABOVE 50°F AND BELOW 85°F, THE COOLING COIL VALVE SHALL OPEN AND MODULATE TO PROVIDE 51°F (ADJ.) COOLING SUPPLY AIR TEMPERATURE AND THE HEATING COIL VALVE SHALL MODULATE TO PROVIDE A HEATING DISCHARGE AIR TEMPERATUE OF 68°F (ADJ.).

IF THE OUTSIDE AIR TEMPERATURE IS ABOVE 85°F (ADJ.), THE COOLING VALVE SHALL OPEN AND MODULATE TO PROVIDE 51°F (ADJ.) COOLING DISCHARGE AIR TEMPERATURE AND THE HEATING COIL VALVE SHALL MODULATE TO PROVIDE A HEATING DISCHARGE AIR TEMPERATURE OF 55°F (ADJ.).

IF THE OUTSIDE AIR TEMPERATURE IS BELOW 50°F (ADJ.) AND ABOVE 30°F (ADJ.), THE COOLING COIL VALVE SHALL BE CLOSED AND THE HEATING COIL VALVE SHALL MODULATE TO PROVIDE A HEATING DISCHARGE AIR TEMPERATURE OF 68°F (ADJ.).

IF THE OUTSIDE AIR TEMPERATURE IS BELOW 30°F (ADJ.), THE COOLING COIL VALVE SHALL BE CLOSED AND THE HEATING COIL VALVE SHALL MODILATE TO PROVIDE A HEATING DISCHARGE TEMPERATURE OF 80°F (ADJ.).

EMERGENCY MODE:
ATFP EMERGENCY ACTUATION: IF THE HVAC ATFP SHUTDOWN SIGNAL IS RECEIVED, THE DOAS DDC SHALL IMMEDIATELY DE-ENERGIZE BOTH FANS AND BOTH DAMPERS SHALL CLOSE.

ATFP SHUTDOWN SHALL BE ACCOMPLISHED BY BOTH A HARDWIRED SHUTDOWN WIRED IN SERIES WITH OTHER SAFETIES AND AN DOAS DDC SHUTDOWN REQUIRING A MANUAL RESET.

SAFETY SHUTDOWN AND ALARMS: ALL ALARMS IN THE POINTS SCHEDULE SHALL BE SENT TO THE DOAS DDC SYSTEM AND AT THE BEQ SBC IF AN ALARM CONDITION OCCURS.

FIRE ALARM SHUTDOWN: IF THE BUILDING FIRE ALARM CONTROL PANEL SIGNALS AN ALARM, ALL FANS SHALL DE-ENERGIZE AND BOTH DAMPERS SHALL CLOSE.

SMOKE DETECTION SHUTDOWN/ALARM: UPON A RETURN AIR SMOKE DETECTOR ACTIVATION, THE DOAS SHUTDOWN SHALL BE ACCOMPLISHED VIA HARDWIRE INTERLOCK AND AN DOAS DDC COMMAND. WHEN THE SENSOR SENSES SMOKE, THE FANS SHALL BE DE-ENERGIZED, BOTH DAMPERS CLOSED AND AN ALARM SHALL BE SENT TO THE BEQ SBC AND BUILDING FIRE ALARM CONTROL PANEL. MANUAL RESET OF SMOKE DETECTOR IS REQUIRED.

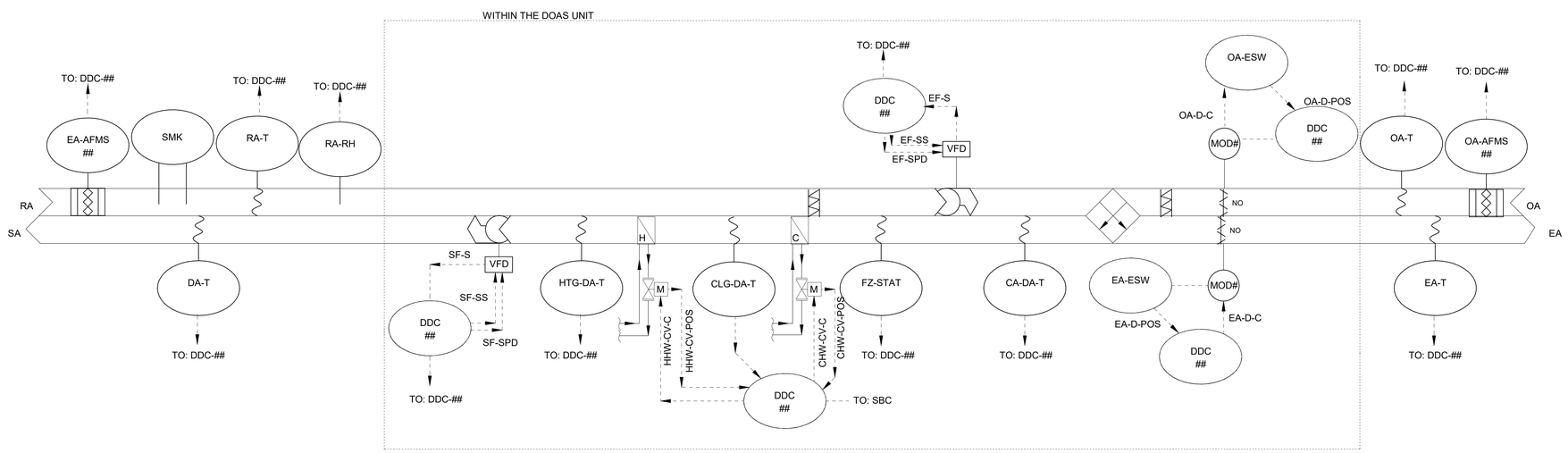
OUTSIDE AIR DAMPER AND EXHAUST AIR DAMPER FAILURE: IF THE EITHER DAMPER IS COMMANDED OPEN BUT THE STATUS IS CLOSED, THE DOAS DDC SHALL SIGNAL AN ALARM AT THE BEQ SBC.

SUPPLY AND EXHAUST FAN FAILURE ALARMS: IF ANY OF THE FOLLOWING OCCUR, THE DOAS DDC SHALL SIGNAL AN ALARM AT THE BEQ SBC.
- SUPPLY/EXHAUST FAN COMMAND IS ON AND STATUS IS OFF
- SUPPLY/EXHAUST FAN VFD FAULT

FREEZESTAT: THE SPDT-TYPE FREEZESTAT SHALL BE CALIBRATED TO 38°F. UPON ACTUATION, THE DDC SHALL OPEN THE CHILLED WATER CONTROL VALVE TO 25%.

FREEZESTAT ALARM: UPON ACTUATION OF THE FREEZESTAT (38°F) THE AHU DDC SHALL SIGNAL AN ALARM AT THE BEQ SBC.

NOTE: PAREMETERS SHOWN ARE ADJUSTABLE. THE HEATING AND COOLING OFFSETS ARE TO BE INDEPENDENTLY ADJUSTABLE.



1 DOAS CONTROLS DIAGRAM
SCALE: NOT TO SCALE

NOTE:
ALL DDC BY CONTROLS CONTRACTOR

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MI102

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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
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REPAIRS BEQ HP510

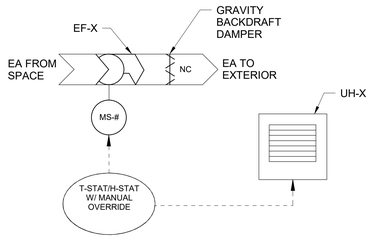
DOAS CONTROLS AND OPERATION

DES. N. FLEXNER	
DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC DATE	SIZE E1 / CODE IDENT NO. 80091 / NAVFAC DRAWING NO. 60024072
SATISFACTORY TO: DATE	CONSTR. CONTR. NO.: N40085-15-D-0858
	SCALE: AS NOTED / SPEC. 15-18-0042 / SHEET 114 OF 143

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 33273

ISSUE DATE:15 MAY 2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 EF-1-3 AND UH-1-3 CONTROL DIAGRAM
SCALE: NOT TO SCALE

EF-1-3 AND UH-1-3 SYSTEM SEQUENCE OF OPERATION:

GENERAL: THIS SYSTEM SHALL CONSIST OF ONE (1) EXHAUST FAN, ONE (1) GRAVITY BACKDRAFT DAMPER, AND A HEATING HOT WATER UNIT HEATER. THE EXHAUST FAN IS A SIDEWALL, DIRECT DRIVE, PROPELLER TYPE. THE DAMPER IS LOW-LEAKAGE TYPE. THE UNIT HEATER IS A PROPELLER TYPE WITH A 2-WAY CONTROL VALVE. A PROGRAMMABLE CONTROLLER CAPABLE OF STANDALONE OPERATION WILL CONTROL THE SYSTEM. THIS SYSTEM SHALL NOT BE CONNECTED TO THE BUILDING DDC.

TIMED MANUAL OVERRIDE MODE: WHEN INITIATED THIS MODE SHALL ENERGIZE THE EXHAUST FAN FOR AN ADJUSTABLE TIMED DURATION (MAX DURATION OF 60 MINUTES).

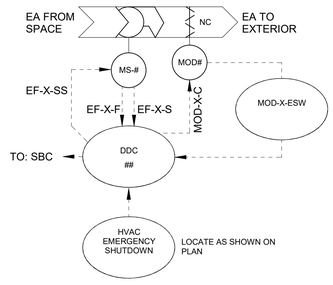
TEMPERATURE/HUMIDITY CONTROL MODE: DURING THIS MODE, THE SYSTEM SHALL OPERATE AS FOLLOWS:

THE EXHAUST FAN SHALL BE ENERGIZED DURING THE FOLLOWING CONDITIONS: SPACE TEMPERATURE IS GREATER THAN 78°F (ADJ.) OR SPACE RELATIVE HUMIDITY IS GREATER THAN 60% (ADJ.).

THE EXHAUST FAN SHALL BE DE-ENERGIZED DURING THE FOLLOWING CONDITIONS: SPACE TEMPERATURE IS LESS THAN 75°F (ADJ.) AND SPACE RELATIVE HUMIDITY IS LESS THAN 50% (ADJ.).

THE UNIT HEATER SHALL BE ENERGIZED DURING THE FOLLOWING CONDITION: SPACE TEMPERATURE IS LESS THAN 50°F (ADJ.).

THE UNIT HEATER SHALL BE DE-ENERGIZED DURING THE FOLLOWING CONDITION: SPACE TEMPERATURE IS GREATER THAN 60°F (ADJ.).



2 EF-4 CONTROL DIAGRAM
SCALE: NOT TO SCALE

EF-4 SYSTEM SEQUENCE OF OPERATION:

GENERAL: THIS SYSTEM SHALL CONSISTS OF ONE (1) EXHAUST FAN AND ONE (1) MOTORIZED DAMPER. THE EXHAUST FAN IS AN INLINE, DIRECT DRIVE, CENTRIFUGAL TYPE. THE MOTORIZED DAMPER IS LOW-LEAKAGE TYPE WITH ACTUATOR INSTALLED OUTSIDE OF THE AIRSTREAM. OCCUPANCY SHALL BE DETERMINED BASED ON THE SBC.

OCCUPIED MODE: DURING THIS MODE, THE SYSTEM COMPONENTS SHALL OPERATE AS FOLLOWS:

EF-4: THE EXHAUST FAN SHALL BE ENERGIZED.
MOD-X: THE MOTORIZED DAMPER SHALL BE FULLY OPENED.

UNOCCUPIED MODE: DURING THIS MODE, THE SYSTEM COMPONENTS SHALL OPERATE AS FOLLOWS:

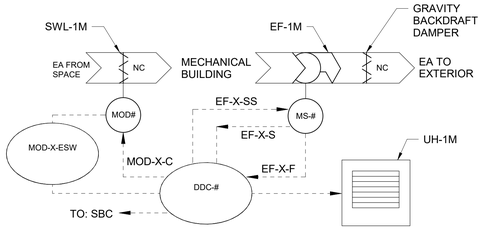
EF-4: THE EXHAUST FAN SHALL BE DE-ENERGIZED.
MOD-X: THE MOTORIZED DAMPER SHALL BE FULLY CLOSED.

ALARMS: THE FOLLOWING ALARMS SHALL BE DISPLAYED AND REQUIRE MANUAL RESET AT THE DDC PANEL.
1. MOTORIZED DAMPER FAILURE: IF FOR A DURATION OF 5 MINUTES (ADJ.) ANY OF THE FOLLOWING OCCUR, AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
   A. MOTORIZED DAMPER COMMAND IS OPEN AND END SWITCH INDICATES CLOSED.
   B. MOTORIZED DAMPER COMMAND IS CLOSE AND END SWITCH INDICATES OPENED.
2. EMERGENCY SHUTDOWN: IF THE HVAC EMERGENCY SHUTDOWN SIGNAL IS RECEIVED, THE EXHAUST FAN SHALL BE DE-ENERGIZED, THE MOTORIZED DAMPER SHALL BE FULLY CLOSED, AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.

EF-4 POINTS LIST

POINT NAME	HARWARE				SOFTWARE						FAILURE MODE	SHOW ON GRAPHIC
	AI	AO	BO	BI	AV	BV	LOOP	SCHED	TREND	ALARM		
EF-X-F / FAN FAILURE				•						•	OFF	•
EF-X-S / FAN STATUS				•					•			•
EF-X-SS / FAN ON/OFF			•						•			•
MOD-X-C / MOD OPEN/CLOSE			•						•			•
MOD-X-ESW / MOD END SWITCH				•					•	•		•
OCC / BUILDING OCCUPANCY STATUS						•						•

NOTES:
1. POINTS LIST IS THE MINIMUM REQUIRED FOR OPERATION. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POINTS AND MONITORING POINTS FOR A COMPLETE AND OPERABLE SYSTEM



3 EF-1M AND UH-1M CONTROL DIAGRAM
SCALE: NOT TO SCALE

EF-1M AND UH-1M SYSTEM SEQUENCE OF OPERATION:

GENERAL: THIS SYSTEM SHALL CONSIST OF ONE (1) EXHAUST FAN, ONE (1) GRAVITY BACKDRAFT DAMPER, ONE (1) MOTORIZED DAMPER (FOR SWL-1M), AND A NATURAL GAS FIRED UNIT HEATER. THE EXHAUST FAN IS A SIDEWALL, DIRECT DRIVE, PROPELLER TYPE. THE MOTORIZED DAMPER IS LOW-LEAKAGE TWO POSITION TYPE. THE UNIT HEATER IS A PROPELLER TYPE WITH A NATURAL GAS FURNACE.

TIMED MANUAL OVERRIDE MODE: WHEN INITIATED THIS MODE SHALL ENERGIZE THE EXHAUST FAN FOR AN ADJUSTABLE TIMED DURATION (MAX DURATION OF 60 MINUTES).

TEMPERATURE/HUMIDITY CONTROL MODE: DURING THIS MODE, THE SYSTEM SHALL OPERATE AS FOLLOWS:

THE MOTORIZED DAMPER SHALL OPEN AND THE EXHAUST FAN SHALL BE ENERGIZED DURING THE FOLLOWING CONDITIONS: SPACE TEMPERATURE IS GREATER THAN 85°F (ADJ.) OR SPACE RELATIVE HUMIDITY IS GREATER THAN 60% (ADJ.).

THE EXHAUST FAN SHALL BE DE-ENERGIZED AND THE MOTORIZED DAMPER SHALL CLOSE DURING THE FOLLOWING CONDITIONS: SPACE TEMPERATURE IS LESS THAN 85°F (ADJ.) AND SPACE RELATIVE HUMIDITY IS LESS THAN 50% (ADJ.).

THE UNIT HEATER SHALL BE ENERGIZED DURING THE FOLLOWING CONDITION: SPACE TEMPERATURE IS LESS THAN 50°F (ADJ.).

THE UNIT HEATER SHALL BE DE-ENERGIZED DURING THE FOLLOWING CONDITION: SPACE TEMPERATURE IS GREATER THAN 60°F (ADJ.).

EF-1M POINTS LIST

POINT NAME	HARWARE				SOFTWARE						FAILURE MODE	SHOW ON GRAPHIC
	AI	AO	BO	BI	AV	BV	LOOP	SCHED	TREND	ALARM		
EF-X-F / FAN FAILURE				•						•	OFF	•
EF-X-S / FAN STATUS				•					•			•
EF-X-SS / FAN ON/OFF			•						•			•
MOD-X-C / MOD OPEN/CLOSE			•						•			•
MOD-X-ESW / MOD END SWITCH				•					•	•		•

DISCLOSURE OF INFORMATION
CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

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

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

MI103

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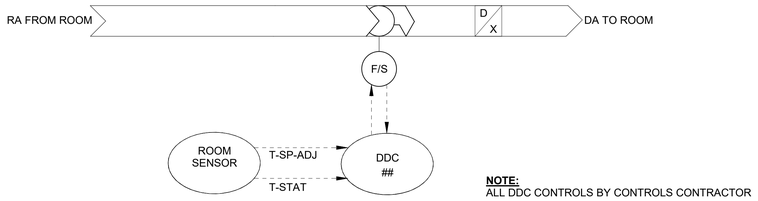
REPAIRS BEQ HP510

EF CONTROLS AND OPERATION

DES. P. MAHAFFEY	
DR. N. FLEXNER	
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SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC DATE	SIZE E1 / CODE IDENT NO. 80091 / NAVFAC DRAWING NO. 60024073
SATISFACTORY TO: DATE	CONSTR. CONTR. NO.: N40085-15-D-0858
	SCALE: AS NOTED / SPEC. 15-18-0042 / SHEET 115 OF 143

ISSUE DATE:15 MAY 2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



NOTE:
ALL DDC CONTROLS BY CONTROLS CONTRACTOR

1 PTAC CONTROLS DIAGRAM
SCALE: NOT TO SCALE

PACKAGED TERMINAL AIR CONDITIONER (PTAC) SEQUENCE OF OPERATION (TYPICAL ALL PTAC'S):

GENERAL: PACKAGED TERMINAL AIR CONDITIONING UNIT EQUIPPED WITH HEAT PUMP HEATING AND COOLING FAN.

NORMAL MODES:
COOLING MODE: IF THE ROOM STAT CALLS FOR COOLING, THE PTAC DDC SHALL ACTIVATE COOLING MODE TO MAINTAIN ROOM STAT SETPOINT 76°F (ADJ.).

HEATING MODE: IF THE ROOM STAT CALLS FOR HEATING, THE PTAC DDC SHALL ACTIVATE HEATING MODE TO MAINTAIN ROOM STAT SETPOINT 70°F (ADJ.).

OVERRIDE MODES:
UNOCCUPIED MODE: UNOCCUPIED MODE SHALL BE AVAILABLE AS AN OVERRIDE AT THE BEQ B-BC ONLY. UPON ENTERING BUILDING UNOCCUPIED MODE, THE ROOM STAT SHALL COMMAND THE PTAC DDC TO STOP THE PTAC FAN, THE ROOM STAT SHALL CONTINUE TO MONITOR SPACE TEMPERATURE AND PROVIDE CONTROL SIGNALS TO THE PTAC.

PTAC POINTS LIST

POINT NAME	HARWARE				SOFTWARE						FAILURE MODE	SHOW ON GRAPHIC
	AI	AO	BO	BI	AV	BV	LOOP	SCHED	TREND	ALARM		
T-SP-ADJ / ZONE SETPOINT ADJUST	•											•
T-STAT / ZONE TEMP [°F]	•								•			•

NOTES:
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NOT FOR CONSTRUCTION

MI104

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REPAIRS BEQ HP510

PTAC CONTROLS AND OPERATION

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DESIGN DIR.	
APPROVED: PWO OR OICC DATE	
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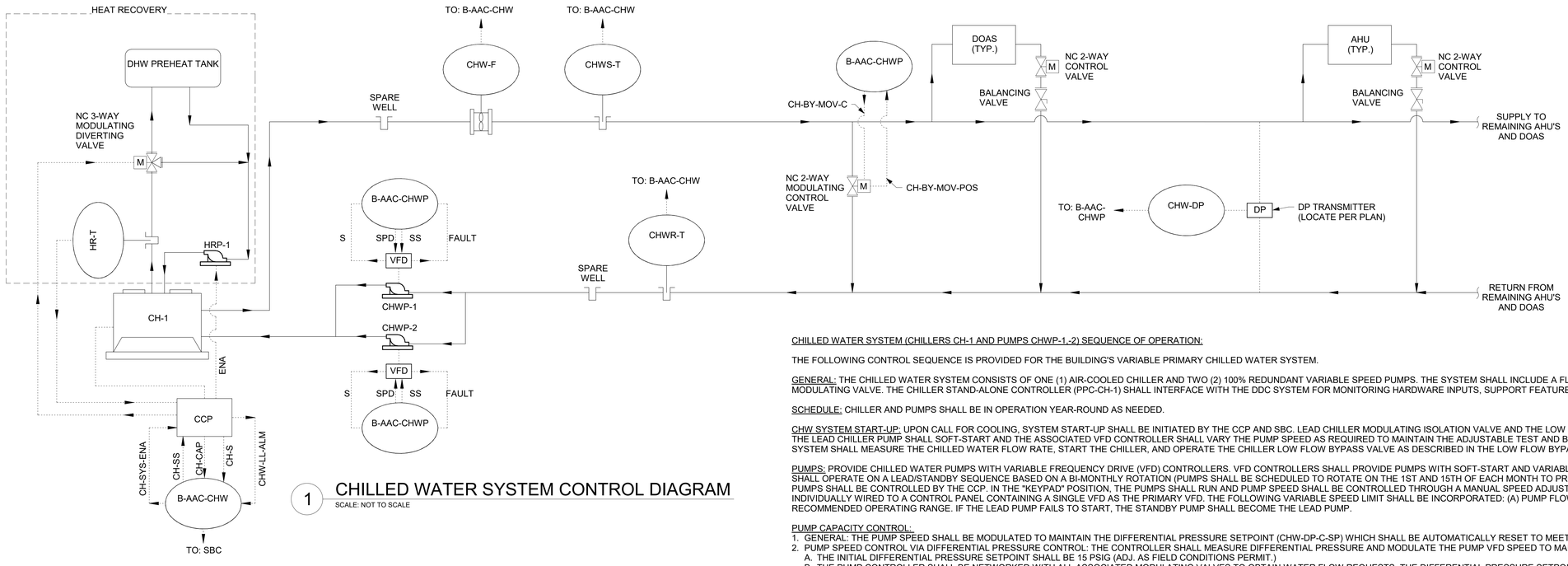
SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024074

CONSTR. CONTR. NO.: N40085-15-D-0858

SCALE: NONE | SPEC. 15-18-0042 | SHEET 116 OF 143

ISSUE DATE:15 MAY 2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 CHILLED WATER SYSTEM CONTROL DIAGRAM
SCALE: NOT TO SCALE

CHW POINTS LIST

POINT NAME	HARWARE AI	AO	BO	BI	SOFTWARE AV	BV	LOOP	SCHED	TREND	ALARM	FAILURE MODE	SHOW ON GRAPHIC
CH-CAP / CHILLER CAPACITY [TON]	•								•			•
CH-S / CHILLER STATUS [ON/OFF]				•						•		•
CHW-BY-F-SP / CHW BYPASS FLOW SETPOINT [GPM]					•							•
CHW-BY-MOV-C / CHW BYPASS VALVE CONTROL [% OPEN]		•										•
CHW-BY-MOV-P / CHW BYPASS VALVE POSITION [% OPEN]	•											•
CHW-DP-C / CHW DIFFERENTIAL PRESSURE CONTROL [FT H2O]	•									•		•
CHW-DP-SP / CHW DIFFERENTIAL PRESSURE SETPOINT [FT H2O]					•							•
CHW-F / CH FLOW [GPM]	•								•	•		•
CHW-LL / CHILLER LOW WATER LEVEL ALARM				•						•	SYSTEM SHUTDOWN	•
CHW-SYS-ENA / CHW SYSTEM ENABLE [ON/OFF]			•									•
CHWP-1-ENA / PUMP ENABLE [ON/OFF]			•									•
CHWP-1-FBK / PUMP FEEDBACK/FAULT ALARM	•											•
CHWP-1-S / PUMP STATUS [ON/OFF]				•						•	PUMP OFF	•
CHWP-1-SPD / PUMP SPEED [HZ]		•										•
CHWP-1-SPD-SP / PUMP SPEED SETPOINT [HZ]					•							•
CHWP-2-ENA / PUMP ENABLE [ON/OFF]			•									•
CHWP-2-FBK / PUMP FEEDBACK/FAULT ALARM	•											•
CHWP-2-S / PUMP STATUS [ON/OFF]				•						•	PUMP OFF	•
CHWP-2-SPD / PUMP SPEED [HZ]		•										•
CHWP-2-SPD-SP / PUMP SPEED SETPOINT [HZ]					•							•
CHWR-T / CHWR TEMP [°F]	•								•			•
CHWS-T / CHWS TEMP [°F]	•								•	•		•

NOTES:
1. POINTS LIST IS THE MINIMUM REQUIRED FOR OPERATION. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POINTS AND MONITORING POINTS FOR A COMPLETE AND OPERABLE SYSTEM

CHILLED WATER SYSTEM (CHILLERS CH-1 AND PUMPS CHWP-1,-2) SEQUENCE OF OPERATION:

THE FOLLOWING CONTROL SEQUENCE IS PROVIDED FOR THE BUILDING'S VARIABLE PRIMARY CHILLED WATER SYSTEM.

GENERAL: THE CHILLED WATER SYSTEM CONSISTS OF ONE (1) AIR-COOLED CHILLER AND TWO (2) 100% REDUNDANT VARIABLE SPEED PUMPS. THE SYSTEM SHALL INCLUDE A FLOW METER AND LOW FLOW BYPASS WITH 2-WAY MODULATING VALVE. THE CHILLER STAND-ALONE CONTROLLER (PPC-CH-1) SHALL INTERFACE WITH THE DDC SYSTEM FOR MONITORING HARDWARE INPUTS, SUPPORT FEATURES, AND STRATEGIES DESCRIBED BELOW.

SCHEDULE: CHILLER AND PUMPS SHALL BE IN OPERATION YEAR-ROUND AS NEEDED.

CHW SYSTEM START-UP: UPON CALL FOR COOLING, SYSTEM START-UP SHALL BE INITIATED BY THE CCP AND SBC. LEAD CHILLER MODULATING ISOLATION VALVE AND THE LOW FLOW BYPASS VALVE SHALL BE IN THE FULLY OPEN POSITION. THE LEAD CHILLER PUMP SHALL SOFT-START AND THE ASSOCIATED VFD CONTROLLER SHALL VARY THE PUMP SPEED AS REQUIRED TO MAINTAIN THE ADJUSTABLE TEST AND BALANCE DIFFERENTIAL PRESSURE SETPOINT. THE DDC SYSTEM SHALL MEASURE THE CHILLED WATER FLOW RATE, START THE CHILLER, AND OPERATE THE CHILLER LOW FLOW BYPASS VALVE AS DESCRIBED IN THE LOW FLOW BYPASS SECTION.

PUMPS: PROVIDE CHILLED WATER PUMPS WITH VARIABLE FREQUENCY DRIVE (VFD) CONTROLLERS. VFD CONTROLLERS SHALL PROVIDE PUMPS WITH SOFT-START AND VARIABLE SPEED OPERATION. REDUNDANT PUMPS CHWP-1/CHWP-2 SHALL OPERATE ON A LEAD/STANDBY SEQUENCE BASED ON A BI-MONTHLY ROTATION (PUMPS SHALL BE SCHEDULED TO ROTATE ON THE 1ST AND 15TH OF EACH MONTH TO PROMOTE EVEN WEAR/USAGE). IN THE "REMOTE" SETTING, THE PUMPS SHALL BE CONTROLLED BY THE CCP. IN THE "KEYPAD" POSITION, THE PUMPS SHALL RUN AND PUMP SPEED SHALL BE CONTROLLED THROUGH A MANUAL SPEED ADJUSTMENT INTEGRAL TO THE VFD. EACH PUMP MOTOR SHALL BE INDIVIDUALLY WIRED TO A CONTROL PANEL CONTAINING A SINGLE VFD AS THE PRIMARY VFD. THE FOLLOWING VARIABLE SPEED LIMIT SHALL BE INCORPORATED: (A) PUMP FLOW CONTROL SHALL BE LIMITED IAW THE VFD MANUFACTURER RECOMMENDED OPERATING RANGE. IF THE LEAD PUMP FAILS TO START, THE STANDBY PUMP SHALL BECOME THE LEAD PUMP.

PUMP CAPACITY CONTROL:
1. GENERAL: THE PUMP SPEED SHALL BE MODULATED TO MAINTAIN THE DIFFERENTIAL PRESSURE SETPOINT (CHW-DP-C-SP) WHICH SHALL BE AUTOMATICALLY RESET TO MEET ZONE WATER FLOW DEMANDS.
2. PUMP SPEED CONTROL VIA DIFFERENTIAL PRESSURE CONTROL: THE CONTROLLER SHALL MEASURE DIFFERENTIAL PRESSURE AND MODULATE THE PUMP VFD SPEED TO MAINTAIN AN OPTIMIZED DIFFERENTIAL PRESSURE SETPOINT.
   A. THE INITIAL DIFFERENTIAL PRESSURE SETPOINT SHALL BE 15 PSIG (ADJ. AS FIELD CONDITIONS PERMIT.)
   B. THE PUMP CONTROLLER SHALL BE NETWORKED WITH ALL ASSOCIATED MODULATING VALVES TO OBTAIN WATER FLOW REQUESTS. THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET BASED ON ZONE WATER FLOW REQUESTS, DERIVED FROM VALVE POSITION AND MEETING WATER FLOW AND SPACE TEMPERATURE REQUIREMENTS.
   C. AS WATER FLOW REQUESTS DECREASE WHEN ALL ZONE VALVES ARE THROTTLING CLOSED THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE INCREMENTALLY RESET DOWN BY 2 PSIG (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) TO A MINIMUM OF 5 PSIG (ADJ. AS FIELD CONDITIONS PERMIT) OR THE PUMP VFD HAS REACHED ITS LOWEST OPERATING SPEED LIMIT.
   D. AS WATER FLOW REQUESTS INCREASE WHEN ALL ZONE VALVES ARE THROTTLING OPEN AND AT LEAST ONE ZONE VALVE IS GREATER THAN 95% OPEN AND SPACE TEMPERATURE IS NOT SATISFIED, THE DIFFERENTIAL PRESSURE SETPOINT SHALL INCREMENTALLY RESET UP BY 2 PSIG (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) TO A MAXIMUM OF 30 PSIG (ADJ. AS FIELD CONDITIONS PERMIT).
   E. IF THE DIFFERENTIAL PRESSURE INCREASES ABOVE 115% OF PEAK OPERATING PSIG (ADJ), THE PUMP VFD SHALL RESET TO ITS LOWEST OPERATING SPEED LIMIT AND AN ALARM SHALL BE GENERATED.

LOW FLOW BYPASS: PROVIDE A CHILLED WATER LOW FLOW BYPASS AS DETAILED AND SPECIFIED THROUGHOUT. LOW FLOW BYPASS TWO-WAY MODULATING CONTROL VALVE SHALL MODULATE TO MAINTAIN 100 GPM (ADJ.) DURING PART LOAD OPERATION BASED ON INSTANTANEOUS CHILLED WATER FLOW RATE AT THE FLOW METER ON THE DISCHARGE SIDE OF THE CHILLERS. IN THE EVENT THAT THE FLOW METER READS A FLOW RATE GREATER THAN 100 GPM (ADJ.), THE TWO-WAY BYPASS VALVE SHALL BE CLOSED AT A MODERATE RATE. IN THE EVENT THAT THE FLOW METER READS A FLOW RATE LESS THAN 100 GPM (ADJ.), THE TWO-WAY BYPASS VALVE SHALL MODULATE TO MAINTAIN THE MINIMUM FLOWS PREVIOUSLY MENTIONED. MINIMUM FLOWS SHALL BE MAINTAINED IAW CHILLER MANUFACTURER TO PREVENT CHILLER SAFETY FAILURE.

HEAT RECOVERY LOOP: PROVIDE A HEAT RECOVERY LOOP AS DETAILED AND SPECIFIED THROUGHOUT. THE HEAT RECOVERY PUMP (HRP-1) SHALL BE ENERGIZED ANY TIME A CHILLER COMPRESSOR IS OPERATING. THE STORAGE TANK BYPASS THREE-WAY MODULATING DIVERTING VALVE SHALL MODULATE TO MAINTAIN 95°F (ADJ.) LEAVING CHILLER'S ENERGY RECOVERY HEAT EXCHANGER (HR-T). IN THE EVENT HR-T RISES ABOVE 140°F (ADJ.) HEAT RECOVERY SHALL BE DISENGAGED BY DEENERGIZING THE HEAT RECOVERY PUMP. UPON HR-T DROPPING BELOW 120° (ADJ.) HEAT RECOVERY SHALL BE REENGAGED.

CHW SHUTDOWN: SYSTEM SHUTDOWN SHALL BE INITIATED BY THE CCP AND SBC. CHILLER BYPASS VALVE SHALL OPEN, THEN CHILLER SHALL SHUT DOWN FIRST FOLLOWED BY THE PUMPS BEING SET TO MINIMUM FLOW AND THEN DE-ENERGIZED.

SENSORS: SENSORS SHALL BE PROVIDED AS REQUIRED BY THIS SEQUENCE OF OPERATION, THE CONTROL DIAGRAM, AND THE ASSOCIATED POINTS LIST.

SAFETY SHUTDOWN AND ALARMS: ALL ALARMS SHALL BE DISPLAYED AND REQUIRE MANUAL RESET AT THE LOCAL DDC PANEL.

1. EMERGENCY SHUTDOWN: IF THE HVAC EMERGENCY SHUTDOWN SIGNAL IS RECEIVED, THE CHW SYSTEM SHALL SHUTDOWN AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
2. HIGH/LOW CHILLED WATER SUPPLY TEMPERATURE ALARM: CHWS TEMPERATURE SENSOR SHALL BE INSTALLED AFTER THE CHILLERS AND IN A LOCATION TO PROVIDE AN ACCURATE SUPPLY WATER TEMPERATURE. IF THE CHWS TEMPERATURE (CHWS-T) IS NOT WITHIN +/- 5°F OF CHWS-T-SP FOR 5 MINUTES (ADJ.) OR LONGER, AN ALARM SHALL BE SENT TO THE DDC SYSTEM. IF CHWS TEMPERATURE IS GREATER THAN 75°F OR LESS THAN 38°F, THE CHW SYSTEM SHALL SHUTDOWN AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
3. CHILLER LOW WATER LIMIT: IF THE WATER LEVEL REACHES THE LOW LIMIT, THE CHW SYSTEM SHALL SHUTDOWN AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
4. PUMP FAILURE: IF ANY OF THE FOLLOWING OCCUR, AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
   A. PUMP COMMAND IS ON AND STATUS IS OFF
   B. PUMP VFD FAULT

CHILLER STATUS REPORT -
PROVIDE AN OPERATING STATUS REPORT FOR THE CHILLER. THE REPORT SHALL PROVIDE THE OPERATOR WITH CRITICAL CHILLER OPERATING DATA.
- COMPRESSOR ON/OFF STATUS
- COMPRESOR STARTS/RUN HOURS
- COMPRESSOR PHASE 1/2/3 PERCENT RLA - SEPARATE FOR EACH COMPRESSOR
- COMPRESSOR CURRENT DRAW - RLA PERCENT
- ACTIVE CHILLER DIAGNOSTICS OR ALARMS
- LEAVING CHILLED WATER TEMPERATURE
- ENTERING CHILLED WATER TEMPERATURE
- EVAPORATOR FLOW RATE
- CHILLED WATER SETPOINT
- REFRIGERANT TEMPERATURE EVAPORATOR - SEPARATE FOR EACH CIRCUIT
- OPERATING MODE
- CHILLER MODEL AND SERIAL NUMBER
- OUTSIDE AIR DRY BULB

FREEZE PROTECTION
BAS SHALL BE CAPABLE OF ACCEPTING AND OVERRIDE SIGNAL FROM CHILLER CONTROLLER TO ENERGIZE PUMPS FOR FREEZE PROTECTION OF CHILLER EVAPORATOR.

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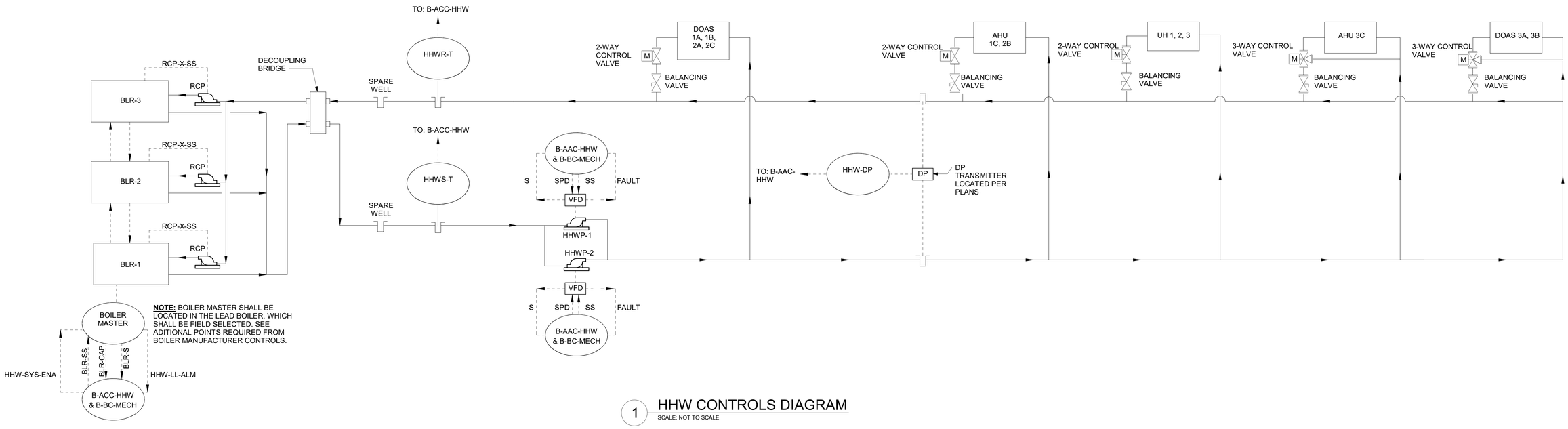
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CHW CONTROLS AND OPERATION

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SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC DATE	SIZE E1 / CODE IDENT NO. 80091 / NAVFAC DRAWING NO. 60024075
SATISFACTORY TO: DATE	CONSTR. CONTR. NO.: N40085-15-D-0858
	SCALE: AS NOTED / SPEC. 15-18-0042 / SHEET 117 OF 143

ISSUE DATE:15 MAY 2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 HHW CONTROLS DIAGRAM
SCALE: NOT TO SCALE

HHW POINTS LIST

POINT NAME	HARWARE				SOFTWARE						FAILURE MODE	SHOW ON GRAPHIC
	AI	AO	BO	BI	AV	BV	LOOP	SCHED	TREND	ALARM		
B-1-CAP / BOILER CAPACITY [% CAPACITY]	•								•			•
B-1-EWT / BOILER ENTERING WATER TEMP [°F]	•								•			
B-1-FR / BOILER FIRING RATE	•								•			
B-1-LWT / BOILER LEAVING WATER TEMP [°F]	•								•			
B-1-S / BOILER STATUS [ON/OFF]				•						•		•
B-1-SS / BOILER START/STOP [ON/OFF[			•									•
B-1-W-LL / BOILER LOW WATER LEVEL ALARM				•						•	SYSTEM SHUTDOWN	•
B-2-CAP / BOILER CAPACITY [% CAPACITY]	•								•			•
B-2-EWT / BOILER ENTERING WATER TEMP [°F]	•								•			
B-2-FR / BOILER FIRING RATE	•								•			
B-2-LWT / BOILER LEAVING WATER TEMP [°F]	•								•			
B-2-S / BOILER STATUS [ON/OFF]				•						•		•
B-2-SS / BOILER START/STOP [ON/OFF]			•									•
B-2-W-LL / BOILER LOW WATER LEVEL ALARM				•						•	SYSTEM SHUTDOWN	•
B-3-CAP / BOILER CAPACITY [% CAPACITY]	•								•			•
B-3-EWT / BOILER ENTERING WATER TEMP [°F]	•								•			
B-3-FR / BOILER FIRING RATE	•								•			
B-3-LWT / BOILER LEAVING WATER TEMP [°F]	•								•			
B-3-S / BOILER STATUS [ON/OFF]				•						•		•
B-3-SS / BOILER START/STOP [ON/OFF]			•									•
B-3-W-LL / BOILER LOW WATER LEVEL ALARM				•						•	SYSTEM SHUTDOWN	•
B-DP-C / HHW DIFFERENTIAL PRESSURE CONTROL [FT H20]	•									•		•
B-DP-SP / HHW DIFFERENTIAL PRESSURE SETPOINT [FT H20]					•							•
HHW-GPM-FM / HHW FLOW [GPM]	•								•	•		•
HHW-SYS-ENA / HHW SYSTEM ENABLE [ON/OFF]			•									•
HHWP-1-ENA / HHW PUMP 1 ENA [ON/OFF]			•									•
HHWP-1-F-ALM / HHW PUMP 1 FAILURE ALM	•											•
HHWP-1-S / HHW PUMP 1 STATUS [ON/OFF]				•						•	PUMP OFF	•
HHWP-1-SPD / PUMP SPEED [HZ]		•										•
HHWP-1-SPD-SP / PUMP SPEED SETPOINT [HZ]					•							•
HHWP-2-ENA / HHW PUMP 2 ENABLE [ON/OFF]			•									•
HHWP-2-FBK / HHW PUMP 2 FEEDBACK/FAULT ALARM	•											•
HHWP-2-S / HHW PUMP 2 STATUS [ON/OFF]				•						•	PUMP OFF	•
HHWP-2-SPD / PUMP SPEED [HZ]		•										•
HHWP-2-SPD-SP / PUMP SPEED SETPOINT [HZ]					•							•
HHWR-T / HHW TEMP [°F]	•								•			•
HHWS-T / HHW TEMP [°F]	•								•	•		•

NOTES:
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MI106

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MARINE CORPS BASE
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REPAIRS BEQ HP510

HHW CONTROLS

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DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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E1	80091	60024076

CONSTR. CONTR. NO.: N40085-15-D-0858

SCALE: AS NOTED SPEC. 15-18-0042 SHEET 118 OF 143

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REVISIONS			
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HEATING HOT WATER (HHW) SYSTEM (BOILERS B-1, B-2, B-3 AND PUMPS HHWP-1/HHWP-2) SEQUENCE OF OPERATION (SEE HEATING HOT WATER SYSTEM CONTROL DIAGRAM):

THE FOLLOWING CONTROL SEQUENCE IS PROVIDED FOR THE BUILDINGS VARIABLE PRIMARY-SECONDARY HOT WATER SYSTEM.

GENERAL: THE HEATING HOT WATER SYSTEM CONSISTS OF THREE (3) NATURAL GAS, FIRE-TUBE, CONDENSING BOILERS WITH ASSOCAITED VARIABLE SPEED PRIMARY PUMPS, AND TWO (2) 100% REDUNDANT VARIABLE SPEED SECONDARY PUMPS (VERTICAL INLINE TWIN PUMP). THE BOILER MASTER SHALL CONTROL THE BOILERS AND PRIMARY HEATING HOT WATER PUMPS. THE BOILER MASTER SHALL INTERFACE WITH THE DDC SYSTEM FOR MONITORING HARDWARE INPUTS, SUPPORT FEATURES, AND STRATEGIES DESCRIBED BELOW. THE BOILER MASTER SHALL BE ABLE TO RESET THE HOT WATER LEAVING TEMPERATURE. THE SECONDARY HEATING HOT WATER PUMPS SHALL BE CONTROLLED BY THE HEATING HOT WATER SYSTEM CONTROLLER (B-ACC-HHW).

SCHEDULE: BOILER AND HOT WATER PUMPS SHALL BE IN OPERATION YEAR-ROUND AS NEEDED.

BOILER STAGING: THE BOILER MASTER SHALL PROVIDE INTERNALLY GENERATED STAGING COMMANDS COORDINATED TO MAINTAIN A SUPPLY HOT WATER TEMPERATURE PER THE BOILER TEMPERATURE RESET CURVE. BOILER SHALL NOT OPERATE UNTIL SYSTEM FLOW IS PROVEN VIA FLOW SWITCH COMMUNICATION.

PRIMARY PUMPS: PROVIDE HOT WATER PUMPS WITH VARIABLE SPEED (ECM) CONTROLLERS. SPEED CONTROLLER SHALL PROVIDE PUMPS WITH VARIABLE SPEED OPERATION. EACH BOILER SHALL BE PROVIDED WITH A PUMP CONTROLLED BY THE BOILERS STAND-ALONE CONTROLLER. BOILER PUMPS SHALL BE CONTROLLED TO MAINTAIN A MINIMUM 40°F (ADJ.) TEMPERATURE DIFFERENTIAL ACROSS THE BOILERS.

SECONDARY PUMPS: PROVIDE HOT WATER PUMPS WITH VARIABLE FREQUENCY DRIVE (VFD) CONTROLLERS. VFD CONTROLLERS SHALL PROVIDE PUMPS WITH SOFT-START AND VARIABLE SPEED OPERATION. REDUNDANT PUMPS HHWP-1/HHWP-2 SHALL OPERATE ON A LEAD/STANDBY SEQUENCE BASED ON A BI-MONTHLY ROTATION (PUMPS SHALL BE SCHEDULED TO ROTATE ON THE 1ST AND 15TH OF EACH MONTH TO PROMOTE EVEN WEAR/USAGE). IN THE "REMOTE" SETTING, THE PUMPS SHALL BE CONTROLLED BY THE DDC CONTROLLER. IN THE "KEYPAD" POSITION, THE PUMPS SHALL RUN AND PUMP SPEED WILL BE CONTROLLED THROUGH A MANUAL SPEED ADJUSTMENT INTEGRAL TO THE VFD. EACH PUMP MOTOR SHALL BE INDIVIDUALLY WIRED TO A CONTROL PANEL CONTAINING A SINGLE VFD AS THE PRIMARY VFD. THE FOLLOWING VARIABLE SPEED LIMIT SHALL BE INCORPORATED: (A) PUMP FLOW CONTROL SHALL BE LIMITED IAW THE VFD MANUFACTURER RECOMMENDED OPERATING RANGE. IF THE LEAD PUMP FAILS TO START, THE STANDBY PUMP SHALL BECOME THE LEAD PUMP.

PUMP CAPACITY CONTROL:

1. GENERAL: THE PUMP SPEED SHALL BE MODULATED TO MAINTAIN THE DIFFERENTIAL PRESSURE SETPOINT (HHW-DP-C-SP) WHICH SHALL BE AUTOMATICALLY RESET TO MEET ZONE WATER FLOW DEMANDS.
2. PUMP SPEED CONTROL VIA DIFFERENTIAL PRESSURE CONTROL: THE CONTROLLER SHALL MEASURE DIFFERENTIAL PRESSURE AND MODULATE THE PUMP VFD SPEED TO MAINTAIN AN OPTIMIZED DIFFERENTIAL PRESSURE SETPOINT.
   A. THE INITIAL DIFFERENTIAL PRESSURE SETPOINT SHALL BE 10 PSIG (ADJ. AS FIELD CONDITIONS PERMIT.)
   B. THE PUMP CONTROLLER SHALL BE NETWORKED WITH ALL ASSOCIATED MODULATING VALVES TO OBTAIN WATER FLOW REQUESTS. THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET BASED ON ZONE WATER FLOW REQUESTS, DERIVED FROM VALVE POSITION AND MEETING WATER FLOW AND SPACE TEMPERATURE REQUIREMENTS.
   C. AS WATER FLOW REQUESTS DECREASE WHEN ALL ZONE VALVES ARE THROTTLING CLOSED THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE INCREMENTALLY RESET DOWN BY 2 PSIG (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) TO A MINIMUM OF 5 PSIG (ADJ. AS FIELD CONDITIONS PERMIT) OR THE PUMP VFD HAS REACHED ITS LOWEST OPERATING SPEED LIMIT.
   D. AS WATER FLOW REQUESTS INCREASE WHEN ALL ZONE VALVES ARE THROTTLING OPEN AND AT LEAST ONE ZONE VALVE IS GREATER THAN 95% OPEN AND SPACE TEMPERATURE IS NOT SATISFIED, THE DIFFERENTIAL PRESSURE SETPOINT SHALL INCREMENTALLY RESET UP BY 2 PSIG (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) TO A MAXIMUM OF 25 PSIG (ADJ. AS FIELD CONDITIONS PERMIT).
   E. IF THE DIFFERENTIAL PRESSURE INCREASES ABOVE 115% PEAK OPERATING PSIG (ADJ), THE PUMP VFD SHALL RESET TO ITS LOWEST OPERATING SPEED LIMIT AND AN ALARM SHALL BE GENERATED.

HHW START-UP: SYSTEM START-UP SHALL BE INITIATED BY THE DDC SYSTEM. THE LEAD PUMP SHALL SOFT-START AND THE ASSOCIATED VFD CONTROLLER SHALL VARY THE PUMP SPEED AS SET BY THE DDC SYSTEM. THE BOILER MASTER SHALL START THE BOILERS AS DESCRIBED IN THE BOILER STAGING SECTION.

HHW SHUTDOWN: SYSTEM SHUTDOWN SHALL BE INITIATED BY THE DDC SYSTEM OR BOILER EMERGENCY SHUTDOWN SWITCH. THE BOILERS SHALL SHUTDOWN FIRST AND THEN THE LEAD PUMP SHALL BE SET TO MINIMUM FLOW AND THEN DE-ENERGIZED.

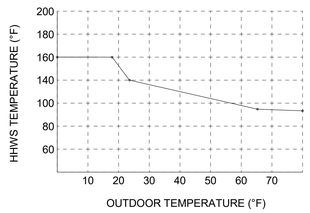
SENSORS: SENSORS SHALL BE PROVIDED AS REQUIRED BY THIS SEQUENCE OF OPERATION, THE CONTROL DIAGRAM, AND THE ASSOCIATED POINTS LIST.

SAFETY SHUTDOWN AND ALARMS: ALL ALARMS SHALL BE DISPLAYED AND REQUIRE MANUAL RESET AT THE LOCAL DDC PANEL.

1. EMERGENCY SHUTDOWN: IF THE HVAC EMERGENCY SHUTDOWN SIGNAL IS RECEIVED, THE HHW SYSTEM SHALL SHUTDOWN USING A SOFTWARE COMMAND AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
2. HIGH/LOW HEATING HOT WATER SUPPLY TEMPERATURE ALARM: HHWS TEMPERATURE SENSOR SHALL BE INSTALLED AFTER THE BOILERS AND IN A LOCATION TO PROVIDE AN ACCURATE SUPPLY WATER TEMPERATURE. IF THE HHWS TEMPERATURE (HHWS-T) IS NOT WITHIN +/- 10°F OF HHWS-T-SP FOR 5 MINUTES (ADJ.) OR LONGER, AN ALARM SHALL BE SENT TO THE DDC SYSTEM. IF THE HHWS-T IS GREATER THAN 170°F (ADJ.) FOR 5 MINUTES (ADJ.) OR LONGER, THE BOILERS SHALL BE DE-ENERGIZED AND REQUIRE MANUAL RESET.
3. BOILER LOW WATER LIMIT: IF THE WATER LEVEL REACHES THE LOW LIMIT, THE HHW SYSTEM SHALL SHUTDOWN AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
4. PUMP FAILURE: IF ANY OF THE FOLLOWING OCCUR, AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
   A. PUMP COMMAND IS ON AND STATUS IS OFF
   B. PUMP VFD FAULT

MONITORING:
THE HHWS CONTROLLER SHALL MONITOR THE BOILERS PACKAGED CONTROLS AND REPORT THE FOLLOWING TO THE DDC SYSTEM:

A. BOILER ON/OFF
B. BOILER STATUS
C. HHWS TEMPERATURE SETPOINT
D. BOILER ALARMS
E. HHWS TEMPERATURE
F. HHWR TEMPERATURE
G. SYSTEM WATER FLOW
H. BOILER OPERATING CAPACITY (%)



1 BOILER TEMPERATURE RESET CURVE
SCALE: NOT TO SCALE

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HHW SEQUENCE OF OPERATION

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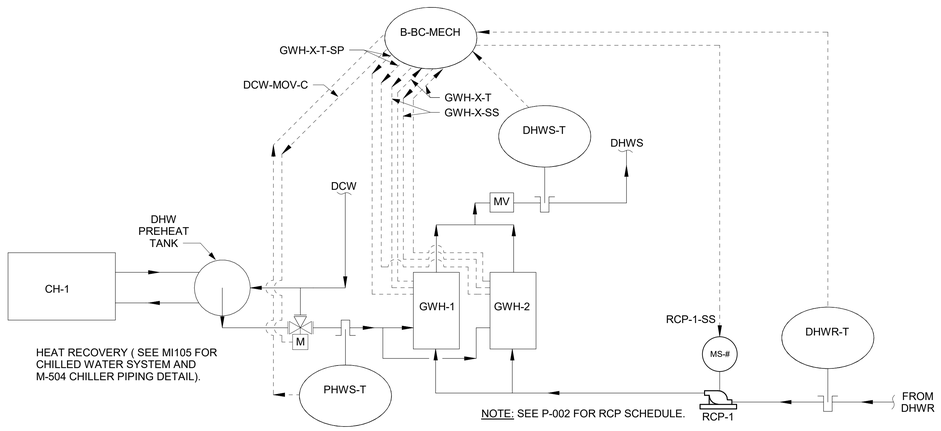
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E1	80091	60024077

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SCALE: AS NOTED SPEC. 15-18-0042 SHEET 119 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 DHW RECIRC CONTROLS DIAGRAM

SCALE: NOT TO SCALE

DHW RECIRC POINTS LIST

POINT NAME	HARWARE				SOFTWARE						FAILURE MODE	SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM		
DCW-MOV-C / DOMESTIC COLD WATER MAKEUP 3-WAY VALVE				•								•
DHWR-T / DHWR TEMP	•											•
DHWS-T / DHWS TEMP	•									•		•
GWH-X-SS / GWH START/STOP				•								•
GWH-X-T / GWH TEMPERATURE [°F]	•								•			•
GWH-X-T-SP / GWH TEMPERATURE SETPOINT [°F]	•											•
PHWS-T / PRE-HEAT WATER TEMP	•									•		•
RCP-X-SS / RCP START/STOP				•								•

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DOMESTIC HOT WATER SYSTEM (GWH-1, GWH-2, AND RCP-1):

GENERAL: THIS SYSTEM IS A DOMESTIC HOT WATER RECIRCULATION SYSTEM. IT CONSISTS OF TWO (2) GAS WATER HEATERS (GWH-X) AND RECIRCULATION PUMP (RCP-1). DDC CONTROLS SHALL MONITOR AND CONTROL GWH-1, GWH-2, AND RCP-1 OPERATION.

A PROGRAMMABLE CONTROLLER CAPABLE OF STAND-ALONE OPERATION SHALL MONITOR GWH-X AND RCP-1 OPERATIONAL STATUS (ON/OFF). THE CONTROLLER SHALL CONTROL RCP-1 OPERATION BASED ON RETURN DOMESTIC HOT WATER TEMPERATURE AND OCCUPANCY SCHEDULE. MANUAL OVERRIDE MODES SHALL BE INITIATED FROM THE DDC SYSTEM.

DURING UNOCCUPIED MODE, GWH-X SHALL BE DE-ENERGIZED AND RCP-1 SHALL BE DE-ENERGIZED.

DURING OCCUPIED MODE, GWH-X SHALL OPERATE TO MAINTAIN 140°F STORAGE WATER TEMPERATURE; THE MIXING VALVE (MV) SHALL OPERATE TO MAINTAIN 120°F DOMESTIC HOT WATER SUPPLY TEMPERATURE. RCP-1 SHALL ENERGIZE WHEN RETURN DOMESTIC HOT WATER TEMPERATURE IS LESS THAN OR EQUAL TO 112°F (ADJ.), AND SHALL BE DE-ENERGIZED WHEN RETURN DOMESTIC WATER TEMPERATURE IS GREATER THAN 117°F (ADJ.).

DOMESTIC COLD WATER MAKEUP 3-WAY VALVE SHALL DIVERT INCOMING WATER TO PREHEAT TANK. WHEN PREHEAT WATER SUPPLY TEMP DROPS BELOW 50°F, VALVE SHALL MODULATE TO DIVERT MAKEUP WATER DIRECTLY TO WATER HEATERS.

DURING MANUAL OVERRIDE MODE, GWH-X SHALL OPERATE TO MAINTAIN 140°F STORAGE WATER TEMPERATURE; RCP-1 SHALL ENERGIZE.

A HIGH TEMPERATURE ALARM SHALL INTIATE UPON HOT WATER SUPPLY TEMPERATURE ABOVE 125°F.

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DHW CONTROLS AND OPERATION

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CONSTR. CONTR. NO.: N40085-15-D-0858

SCALE: AS NOTED SPEC. 15-18-0042 SHEET 120 OF 143

LEGEND:

- RECEPTACLE, 20A, 120VOLT ('G' - INDICATES GROUND FAULT RECEPTACLE; 'W' - INDICATES A WEATHER PROOF WHILE IN USE RECEPTACLE)
- RECEPTACLE, 20A, 120VOLT MOUNTED AT 48" AFF. ('G' - INDICATES A GROUND FAULT RECEPTACLE)
- QUADRAPLEX 20A, 120VOLT RECEPTACLE, 18"AFF
- DRYER RECEPTACLE 30A, 125/250V 4 WIRE
- RECEPTACLE, 20A, 250V, NEMA 6-20P
- $ SWITCH, 20A ('3' - DENOTES THREEWAY, 'OS' - DENOTES DUAL TECHNOLOGY OCCUPANCY SENSOR; 'D' - DENOTES DIMMER SWITCH; 'm' - DENOTES MOTOR RATED SWITCH)
- WP WALL PHONE OUTLET, (1) CAT6 CABLE TO STUDDED FACEPLATE MOUNTED AT 52" AFF PER BASE SPECIFICATION 27 10 00
- DUAL TELECOM OUTLET, (2) CAT6, IN SUPPORT OF BAS/FACP/DDC, INSTALLED IN PANEL PER BASE SPECIFICATION 27 10 00
- TELECOM WORK AREA OUTLET, OFFICIAL SERVICE, (4) CAT6 MOUNTED AT 18" AFF PER BASE SPECIFICATION 27 10 00, SEE DETAIL '1' ON SHEET E-502
- TELEPHONE BACKBOARD (8'x4'x3/4")
- TV OUTLET (2) CAT6 AND (1) COAX MOUNTED AT 42" AFF PER BASE SPECIFICATION 27 10 00, SEE DETAIL '3' ON SHEET E-502
- TELECOM WORK AREA OUTLET, NON-OFFICIAL, (2) CAT6, (1) COAX MOUNTED AT 42" AFF PER BASE SPECIFICATION 27 10 00, SEE DETAIL '3' ON SHEET E-502
- WP WIRELESS ACCESS POINT (WAP), TWO CAT6 CABLES IN 4" SQUARE BOX PER DEVICE LOCATION IN 1"C TO CABLE TRAY
- S EXISTING RECESSED INTERCOM SPEAKER
- 2'x2' RECESSED LED LIGHT FIXTURE, SEE SHEET E-501 FOR LIGHT FIXTURE SCHEDULE
- 4' SURFACE MOUNTED SEALED LED LIGHT FIXTURE, SEE SHEET E-501 FOR LIGHT FIXTURE SCHEDULE
- RECESSED 4' LED LIGHT, SEE SHEET E-501 FOR LIGHT FIXTURE SCHEDULE
- 4' SURFACE MOUNTED LED WRAPAROUND, SEE SHEET E-501 FOR LIGHT FIXTURE SCHEDULE
- 2' WALL MOUNTED VANITY LED LIGHT FIXTURE, SEE SHEET E-501 FOR LIGHT FIXTURE SCHEDULE
- EXTERIOR LED WALL PACK FIXTURE, SEE SHEET E-501 FOR LIGHT FIXTURE SCHEDULE
- EMERGENCY LIGHT FIXTURE, SEE SHEET E-501 FOR LIGHT FIXTURE SCHEDULE
- EXIT SIGN, SEE SHEET E-501 FOR LIGHT FIXTURE SCHEDULE
- OS OCCUPANCY SENSOR, DUAL TECHNOLOGY, CEILING MOUNTED
- PC PHOTOCELL
- PANELBOARD SURFACE MOUNTED
- FACP FIRE ALARM CONTROL PANEL (FACP)
- XMTR FIRE ALARM TRANSMITTER (XMTR)
- MECHANICAL EQUIPMENT CONTROL PANEL
- J JUNCTION BOX
- E EXHAUST FAN
- DISCONNECT SWITCH, NON-FUSED
- DISCONNECT SWITCH, FUSED
- MOTOR STARTER SWITCH
- V VARIABLE FREQUENCY DRIVE (VFD), FURNISHED BY MECHANICAL CONTRACTOR - INSTALLED BY ELECTRICAL CONTRACTOR
- LGT EXTERIOR LIGHTING CONTROL
- LIGHTNING PROTECTION CONDUCTOR
- AIR TERMINAL
- 3/4"x10' COPPER CLAD GROUND ROD
- EU_x EXISTING ELECTRICAL UNDERGROUND
- CU_x EXISTING COMMUNICATIONS UNDERGROUND
- EU NEW ELECTRICAL PRIMARY UNDERGROUND CONDUCTORS
- ES NEW ELECTRCIAL SECONDARY UNDERGROUND CONDUCTORS
- CU NEW COMMUNICATIONS UNDERGROUND
- 1" PVC CONDUIT UNDERGROUND, SEE SHEET ES102 AND ES103
- 1 HOUR FIRE WALL RATING
- 30 MINUTE FIRE WALL RATING

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GENERAL ELECTRICAL NOTES (APPLIES TO ALL DRAWINGS):

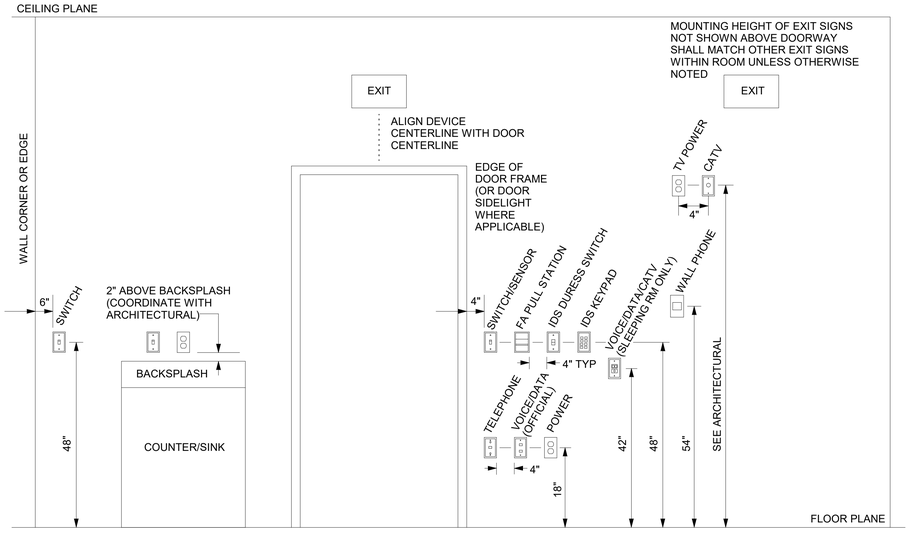
1. THE CONTRACTOR MUST POSSESS A VALID NORTH CAROLINA PUBLIC UTILITY - ELECTRICAL, CONTRACTOR'S LICENSE AND BE INSURED TO DO SUCH WORK IN THE STATE OF NORTH CAROLINA.
2. DEMOLITION PLANS ARE DIAGRAMMTIC AND MAY NOT REPRESENT ALL ITEMS BEING REMOVED.
3. COORDINATE WITH BASE TELEPHONE REGARDING PHONE LINES IN COMMON AREAS AND OFFICES. PROVIDE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES PER CAMP LEJEUNE COMMUNICATIONS SPECIFICATION 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT CONSTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.
4. ALL WORK AND MATERIALS, UNLESS NOTED OTHERWISE AS EXISTING, ON NEW WORK SHEETS ARE NEW AND MUST BE PROVIDED AND INSTALLED BY THE CONTRACTOR. MATERIALS ARE TO CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES, INC. (U.L.) AND THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA). ELECTRICAL INSTALLATION MUST CONFORM TO REQUIREMENTS OF NFPA 70, NFPA 101, NECA 1, AND REQUIREMENTS SPECIFIED HEREIN. WORK PLACE MUST MEET REQUIREMENTS OF NFPA 70E.
5. ANY PROVIDED WIRE AND CONDUIT SIZES ARE BASED ON MINIMUM INSTALLATION REQUIREMENTS. CONTRACTOR MUST CONSIDER VOLTAGE DROP WHEN DETERMINING THE EXACT ROUTING OF BRANCH CIRCUIT AND FEEDER WIRING. ADJUST WIRE AND CONDUIT SIZE TO PREVENT A BRANCH CIRCUIT VOLTAGE DROP EXCEEDING 3% AND A FEEDER CIRCUIT VOLTAGE DROP EXCEEDING 2% AT THE FURTHEST DEVICE LOCATION.
6. ALL PENETRATIONS, EXISTING AND NEW, THROUGH FIRE RATED WALLS, FLOORS AND SMOKE PARTITIONS MUST 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 MUST 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 MUST 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 MUST BE COORDINATED WITH ARCHITECTURE CEILING PLAN.
12. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.
13. SITE ELECTRICAL PLANS ARE PARTIALLY DIAGRAMMATIC. REFER TO CIVIL DRAWINGS FOR GUIDANCE ON DIMENSIONS, DETAILS AND BUILDING ORIENTATION. INSTALL ELECTRICAL SYSTEMS WITHOUT INTERFERING WITH OTHER SYSTEMS.
14. CONTRACTOR MUST FIELD VERFY UNDERGROUND UTILITY LOCATIONS PRIOR TO USING MECHANICAL TRENCHERS OR DIGGERS.
15. VERIFY ALL EQUIPMENT CHARACTERISTICS AND MOUNTING REQUIREMENTS PRIOR TO INSTALLATION. PROVIDE PROPER MOUNTING ACCESSORIES TRIMS, ETC. TO SUIT THE SYSTEM.
16. REPLACE ALL PAVEMENTS, SIDEWALKS, AND CURBS DEMOLISHED DURING THE EXCAVATION TO MATCH EXISTING.
17. ONLY EXISTING ELECTRICAL SYSTEMS DIRECTLY AFFECTING THIS CONTRACT ARE SHOWN.
18. FOR CLARITY, WIRING AND CONDUITS ARE NOT SHOWN. THE ARRANGEMENT AND ROUTING OF THE CIRCUITS MUST BE IN ACCORDANCE WITH GENERALLY ACCEPTED GOOD PRACTICE FOR ELECTRICAL WORK AND NFPA 70 REQUIREMENTS.
19. PROVIDE GROUNDING BUSHINGS, WEDGES, AND JUMPERS TO BOND ELECTRICAL SYSTEM.
20. REFER TO RISER DIAGRAMS FOR NUMBER(S) AND SIZE(S) OF WIRING AND CONDUIT(S), AND EQUIPMENT RATING.
21. SEAL ALL CONDUIT AND RACEWAY PENETRATIONS.
22. ALL CONDUCTORS ARE COPPER UNLESS NOTED OTHERWISE. PROVIDE INSULATED CONDUCTORS WITH EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) IN CONDUIT AND RACEWAYS; WIRE AND CONDUIT SIZES AS INDICATED. SYSTEM VOLTAGE 277/480 AND 120/208 VOLTS. INSULATION SHALL BE 600 VOLT, TYPE THWN/THHN EXCEPT TYPE TW FOR GROUNDING CONDUCTOR.
23. CONTRACTOR MUST MAKE NECESSARY ARRANGEMENTS FOR SHORT TERM POWER INTERRUPTION, IF NECESSARY, WITH THE GOVERNMENT. PROVIDE NEW ELECTRICAL SYSTEM TO THE MAXIMUM EXTENT POSSIBLE PRIOR TO CHANGE OVER AND DEMOLITION OF EXISTING TO REDUCE OUTAGE DURATION. NECESSARY POWER OUTAGES MUST BE MINIMAL AND BE PREARRANGED BY CONTRACTOR.
24. CONTRACTOR MUST BE RESPONSIBLE FOR APPLYING FOR ENERGIZED WORK PERMIT. CONTRACTOR MUST MEET AND COMPLETE ALL REQUIREMENTS ASSOCIATED WITH THIS PROCESS.
25. COORDINATE WITH THE MECHANICAL PLANS FOR THE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT BEFORE ROUGHING IN. ALL MECHANICAL EQUIPMENT MUST BE ROUGHED IN AND WIRED ACCORDING TO THE SHOP DRAWINGS.
26. COORDINATE PANELBOARD AND LIGHTING LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO ROUGH IN.
27. WHEN REMOVAL OF ELECTRICAL ITEMS LEAVES HOLES AND DAMAGED SURFACES EXPOSED IN THE FINISHED WORK, PATCH AND REPAIR THESE HOLES AND DAMAGED SURFACES TO MATCH ADJACENT FINISHED SURFACES AND FIRE RATINGS.

GENERAL COMMUNICATION NOTES (APPLIES TO ALL DRAWINGS):

1. AS IT PERTAINS TO DEMOLITION:
   - A. REMOVE ALL CABLE TV (CATV), TELEPHONE, WIRELESS ACCESS POINT (WAP), CONDUCTORS AND CABINETS ASSOCIATED WITH THE BEQ ROOMS. OFFICIAL OUTSIDE PLANT (OSP) TO BE REMOVED BACK TO NEAREST MANHOLE AS DESIGNATED BY TELECOMMUNICATIONS SUPPORT DIVISION (TSD). COMMERCIAL OSP (25 PAIR) TO BE PRESERVED UP TO AND THROUGH SPLICE IN FIRST DECK CHASE. CATV OSP TO BE PRESERVED UP TO SPLICES IN FIRST DECK CHASE. IF NECESSARY TO RELOCATE/REMOVE EXISTING CABINETS, LIGHTNING PROTECTION, BACKBOARDS, OR OTHER COMMUNICATIONS EQUIPMENT; COORDINATION SHALL BE DONE WITH MCIEAST-MCB, G-6, TSD VIA OICC. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS NEEDED TO THE COMMUNICATIONS SYSTEM THAT THEY HAVE CAUSED. COORDINATE WITH TSD VIA OICC ON ANYTHING NOT COVERED OR FOR ANY QUESTIONS. ALL REPAIRS SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR IAW UFGS 27 10 00.
   - B. CONTRACTOR TO COORDINATE THE REMOVAL OF EXISTING CATV CABLING AND EQUIPMENT WITH BOINGO VIA ROICC.
2. AS IT PERTAINS TO NEW WORK:
   - A. PROVIDE/INSTALL ALL COMMUNICATIONS CABLING FOR CATV, CLOSED CIRCUIT TELEVISION (CCTV), WAP, TELE/DATA, EQUIPMENT, RACKS, CABINETS, PATHWAY (CONDUIT IF REQUIRED), BACKBOARDS, GROUNDING, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS, DUTY AREAS, COMMON AREAS, SLEEPING ROOMS, AND ANY OTHER AREAS SERVICED BY TSD PER CAMP LEJEUNE SPECIFICATION 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT TSD VIA OICC CONSCTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.
   - B. BUILDING WIRING SHALL BE CAT6 DUAL MOLDED 8P8C JACKS WITH A MINIMUM OF TWO CABLES PER FACEPLATE IN SLEEPING ROOMS AND FOUR CABLES PER FACEPLATE IN WORK AREAS. IN SLEEPING AREAS ONLY ONE FACEPLATE PER USER ON OPPOSITE WALLS, FOR EXAMPLE A TWO OCCUPANT ROOM WOULD HAVE ONE FACEPLATE. SLEEPING AREAS HAVE 2-CAT6 AND 1-RG-6 PER FACEPLATE. OFFICIAL FACEPLATES ALL IAW CAMP LEJEUNE UFGS 27 10 00. TELE/COMM OUTLET FACEPLATE SHALL BE STANDARD DOUBLE GANG BOX AND CONDUIT SIZED PER CAMP LEJEUNE UFGS 27 10 00. OUTLETS CAN BE COMBINED WITH CATV DROPS TO REDUCE CONDUIT AND BOXES. BASKET TRAY SHOULD FEED FROM A COMM. ROOM ON THE SAME OR ONE FLOOR ABOVE OR BELOW VIA 4" SLEEVES/CONDUIT.
   - C. BACKBONE COPPER CABLE SHALL BE SIZED EQUAL TO OFFICIAL OSP ENTRANCE CABLES. COMMERCIAL SHALL BE PRESERVED UP TO AND THROUGH OSP SPLICE. COORDINATE WITH TSD.
   - D. ENSURE ADEQUATE COMMUNICATIONS BACK BOARD PER COMM. SYSTEM. BACKBOARD SHALL BE MIN. 8'H x 4'W x 3/4" A/C GRADE FIRE RETARDANT PLYWOOD. ENSURE THERE IS ACCESS (CLOSE TO BACKBOARD) TO MAIN BUILDING GROUND ATTACHED TO A GROUNDING BUS BAR (TMGB) OR TGB FOR ANY BONDING. TMGB SHOULD BE (4 INCHES BY MIN 10 INCHES BY 1/4 THICK COPPER) PRE-DRILLED WITH A MINIMUM #6 GREEN SHEATHED STRANDED WIRE DOUBLE LUG CONNECTED AND CRIMPED EXTENDED FROM THE ELECTRICAL MAIN DISTRIBUTION PANEL AND BUILDING STEEL. TGB IS SAME EXCEPT 2 INCHES. ALL GROUNDING AND BONDING SHALL BE IAW ANSI/TIA-607 AND CURRENT INDUSTRY BEST PRACTICES.
   - E. LABELING IN SLEEPING ROOMS SHALL BE IN ACCORDANCE WITH INDUSTRY STANDARDS WHICH INLUDES ROOM # AND PORT # IN THE ROOM (BUILDING NUMBER IS NOT NEEDED); WORK AREA OUTLETS SHALL BE LABELED PER UFGS 27 10 00. PROVIDE COMPLETE TEST REPORTS AND "AS BUILT" FLOOR PLAN WITH LOCATIONS OF ALL PORTS AND NUMBERING ON PORTS IN .DWG AND .PDF FORMAT TO TSD VIA OICC.
   - F. ALL OTHER ITEMS ARE COVERED IN AND SHALL BE IN ACCORDANCE WITH MCB CAMP LEJEUNE TELEPHONE SPECIFICATIONS SECTION 27 10 00 AND MCB CAMP LEJEUNE TELEPHONE SPECIFICATIONS SECTION 33 82 00.
   - G. ALSO UNLESS OTHERWISE STATED CURRENT BASE TELE SPECS 27 10 00 WILL APPLY ALONG WITH ALL REFERENCES IT CONTAINS. IF YOU HAVE ANY QUESTIONS CONTACT OICC.
   - H. FOR CATV FOLLOW SPECS SECTION 27 54 00 .00 20 COMMUNITY ANTENNA TELEVISION (CATV) SYSTEMS.
   - I. OFFICIAL CABLING SHALL BE GREEN AND COMMERCIAL CABLING (SLEEPING ROOMS) SHALL BE BLUE.

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED



1 TYPICAL MOUNTING HEIGHTS
SCALE: NOT TO SCALE

E-001

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

GENERAL NOTES AND LEGEND

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

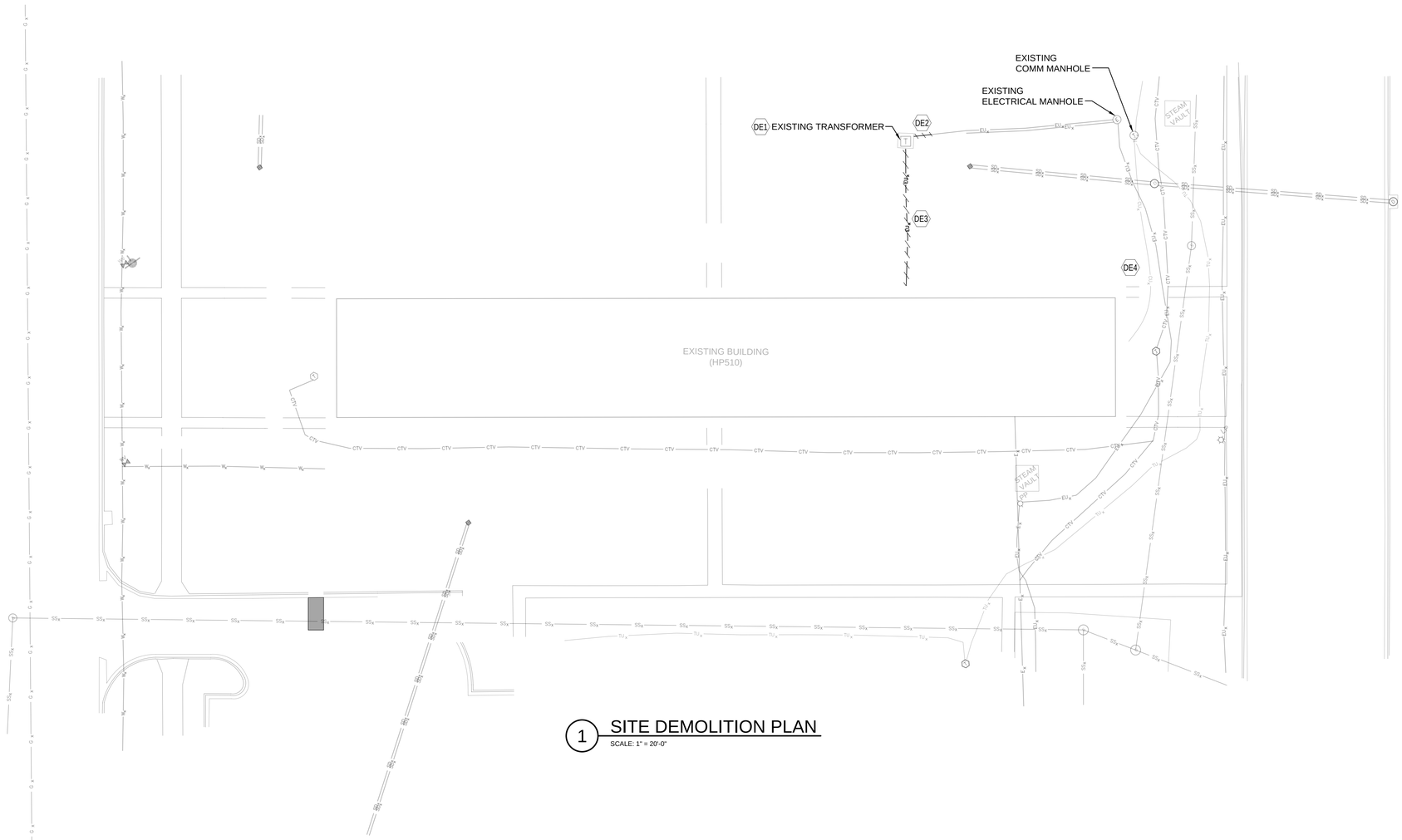
ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024078

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 121 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 SITE DEMOLITION PLAN

SCALE: 1" = 20'-0"

GENERAL NOTES

1. SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.

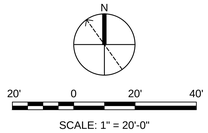
SHEET KEYNOTES

DE1 EXISTING SERVICE TRANSFORMER TO REMAIN.

DE2 DISCONNECT, PULL BACK, AND PRESERVE PRIMARY CONDUCTORS. DEMOLISH DUCTBANK BACK TO POINT SHOWN ON SHEET 'ES102'.

DE3 DEMOLISH SECONDARY SERVICE CONDUCTORS AND CONDUIT FROM EXISTING SERVICE TRANSFORMER TO MAIN DISTRIBUTION PANEL IN BUILDING HP510.

DE4 CUT COMMERCIAL CABLING IN CHASEWAY ON BUILDING SIDE OF SPLICE CASE. LEAVE SPLICE CASE INTACT IN CHASEWAY. DEMOLISH CABLING FROM WITHIN BUILDING. PRESERVE AND PROTECT UNDERGROUND COMMUNICATIONS LINE FROM MANHOLE TO CHASE.



SCALE: 1" = 20'-0"

GRAPHIC SCALE

DISCLOSURE OF INFORMATION

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1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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ES101

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100 Bentons Lodge Road, Summerville, SC, 29485 843.871.3537
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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ HP510

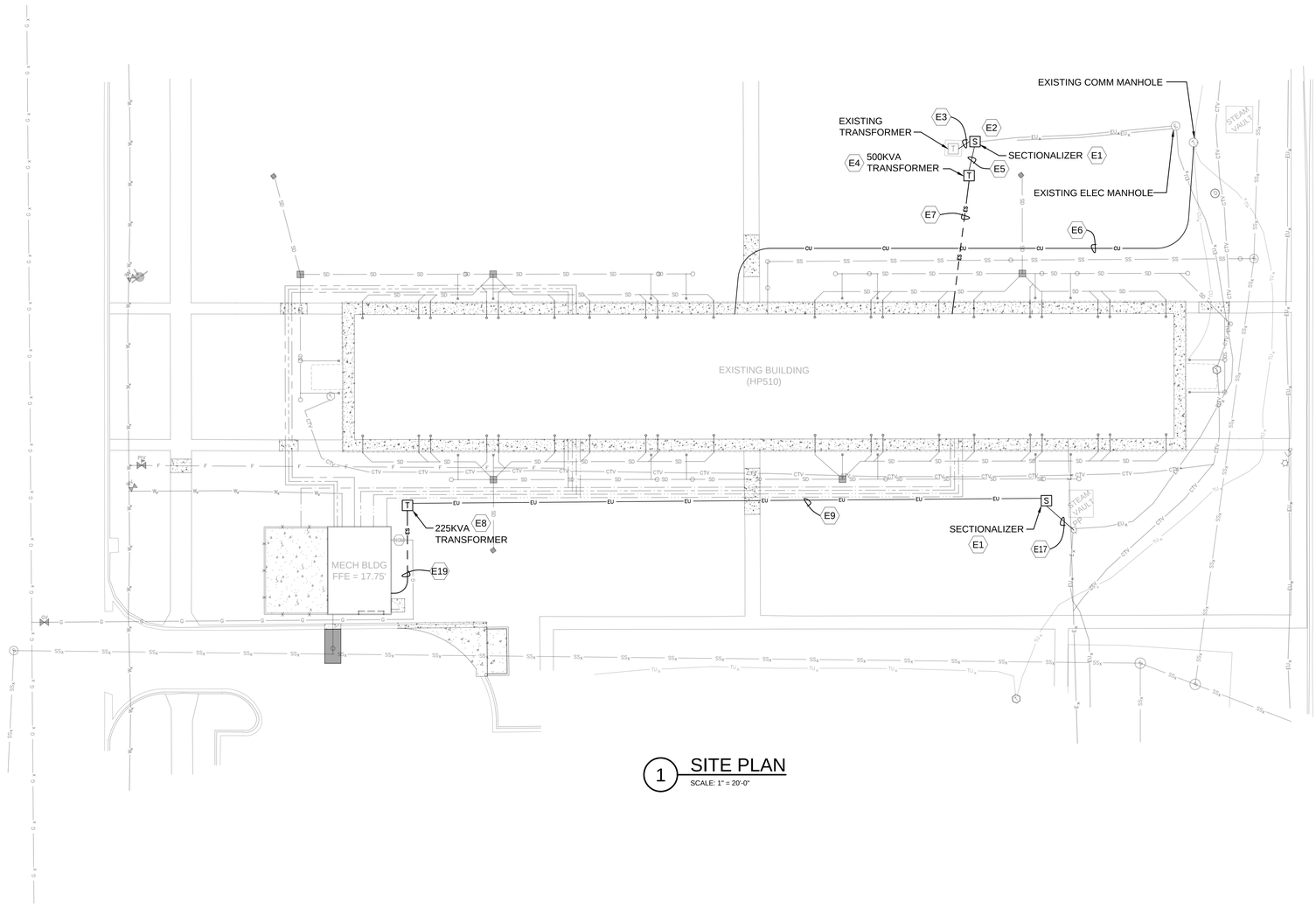
SITE DEMOLITION PLAN

DES.	N. HEBEL
DR.	N. HEBEL
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

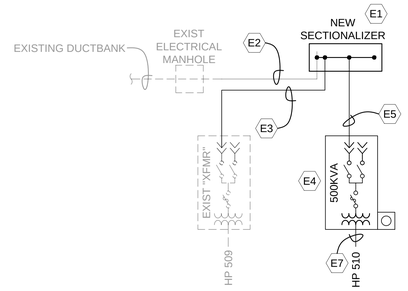
ISSUE DATE: 15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 122 OF 143

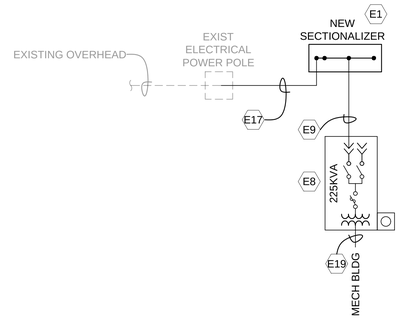
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 SITE PLAN
SCALE: 1" = 20'-0"



2 PRIMARY BEQ CIRCUIT RISER - HP510
SCALE: NOT TO SCALE



3 PRIMARY CIRCUIT RISER - MECH BLDG
SCALE: NOT TO SCALE

GENERAL NOTES

1. SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.
2. PROVIDE 20A, 120V CIRCUIT FOR RECIRCULATION PUMP IN HP507 MECHANICAL ROOM. PROVIDE 20A-1POLE CIRCUIT BREAKER IN CLOSEST EXISTING PANEL LOCATED WITHIN SAME MECHANICAL ROOM. PROVIDE 20A MOTOR RATED SWITCH AND 2#12, #12G IN 3/4" CONDUIT FROM THE PANEL TO PUMP.

SHEET KEYNOTES

E1 PROVIDE SECTIONALIZER CABINET WITH LOOP FEED ADAPTER FOR 1 SET OF WELLS. SEE DETAIL ON SHEET 'E-503' AND SHEET 'E-103'.

E2 RECONNECT EXISTING CONDUCTORS SAVED DURING DEMOLITION TO NEW SECTIONALIZER CABINET.

E3 PROVIDE PRIMARY CONDUCTORS IN TWO WAY DUCTBANK FROM SECTIONALIZER CABINET TO EXISTING HP509 TRANSFORMER. PROVIDE 3#2, 15KV, #2N WITH 133% EPR INSULATION IN 5"C DUCTBANK.

E4 PROVIDE 500KVA, 12.47KV-208Y/120V PAD-MOUNTED TRANSFORMER AND UNDERGROUND SECONDARY SERVICE. SEE SHEET E-604 FOR RISER FOR CONDUCTORS AND CONDUIT SIZING.

E5 PROVIDE PRIMARY CONDUCTORS IN TWO WAY DUCTBANK FROM SECTIONALIZER CABINET TO 750KVA PAD-MOUNTED TRANSFORMER. PROVIDE 3#2, 15KV, #2N WITH 133% EPR INSULATION IN 5"C DUCTBANK.

E6 PROVIDE 4 INCH CONDUIT FROM TELECOMM ROOM 239 TO EXISTING TELECOMM MANHOLE, AS DESIGNATED BY TSD. SEE SHEET E-502 FOR CONTINUATION.

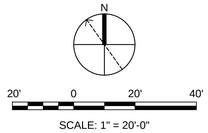
E7 PROVIDE UNDERGROUND SECONDARY SERVICE FROM 500KVA SERVICE TRANSFORMER TO PANEL 'MDP'. SEE ELECTRICAL RISER ON SHEET E-605 FOR CONDUCTORS AND CONDUIT SIZING.

E8 PROVIDE 225KVA, 12.47KV-480/277V PAD-MOUNTED TRANSFORMER AND UNDERGROUND SECONDARY SERVICE TO PANEL 'H1'. SEE SHEET E-606 FOR RISER FOR CONDUCTORS AND CONDUIT SIZING

E9 PROVIDE PRIMARY CONDUCTORS IN 5" CONDUIT AND TWO WAY DUCTBANK FROM NEW SECTIONALIZER CABINET TO 225KVA TRANSFORMER. SEE ELECTRICAL RISER ON SHEET E-606 FOR CONDUCTORS AND CONDUIT SIZING.

E17 PROVIDE PRIMARY CONDUCTORS IN TWO WAY DUCTBANK FROM EXISTING POWER POLE TO SECTIONALIZER. PROVIDE 3#2, 15KV, #2N WITH 133% EPR INSULATION IN 5"C DUCTBANK.

E19 PROVIDE UNDERGROUND SECONDARY SERVICE FROM 225KVA SERVICE TRANSFORMER TO PANEL 'H1'. SEE ELECTRICAL RISER ON SHEET E-606 FOR CONDUCTORS AND CONDUIT SIZING.



SCALE: 1" = 20'-0"

GRAPHIC SCALE

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ES102

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108 Bentonra Lodge Road, Summerville, SC, 29485 843.875.3577
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CEMS Project No: 15132V Project Manager: R. ALVAR

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

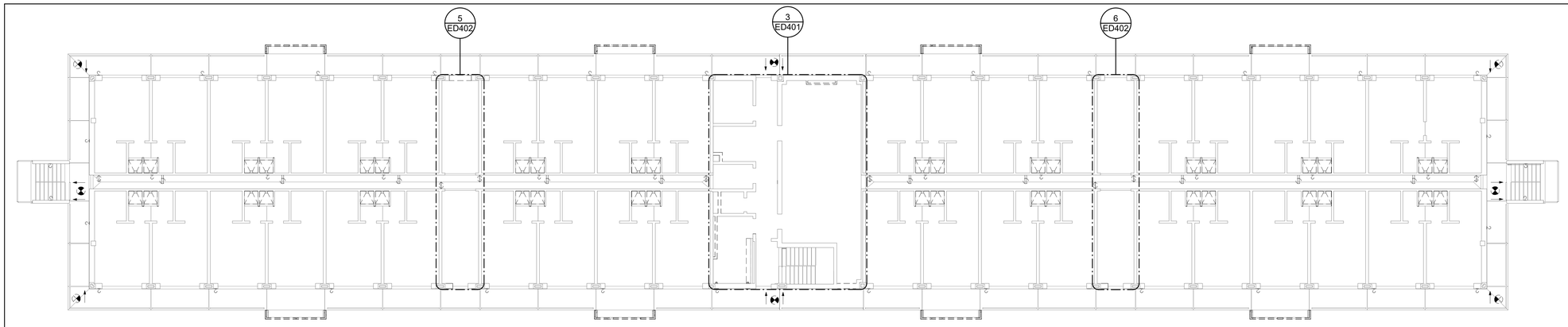
REPAIR BEQ HP510

SITE PLAN

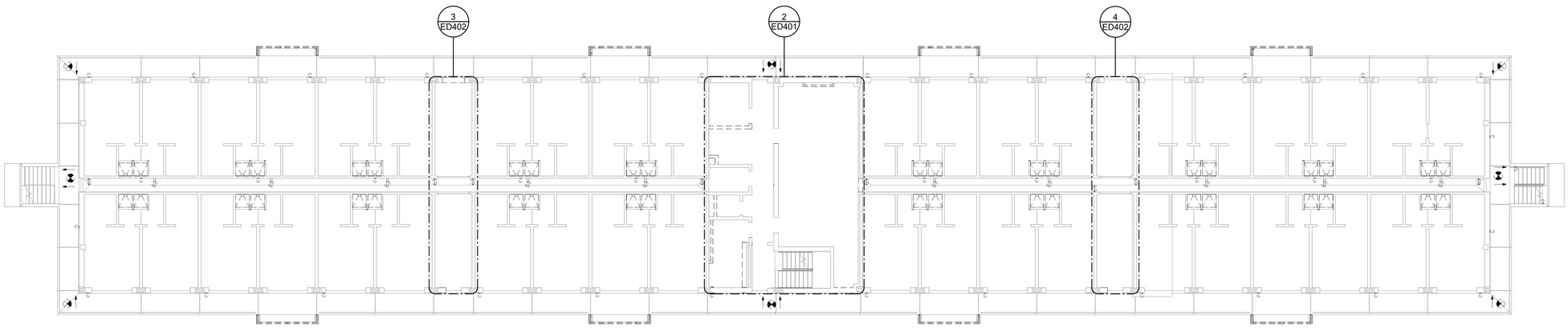
DES.	N. HEBEL
DR.	N. HEBEL
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE: 15 MAY 2020

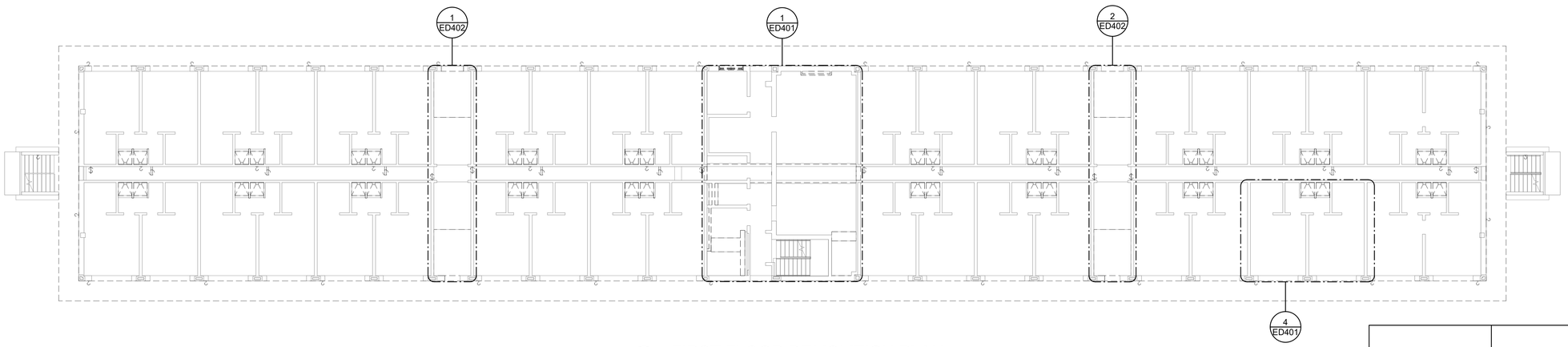
SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024080
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 123 OF 143



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



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



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

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. DEMOLITION PLAN IS DIAGRAMMATIC AND MAY NOT REPRESENT ALL ITEMS TO BE REMOVED.
2. ALL EXISTING ELECTRICAL SYSTEMS TO BE REMOVED COMPLETE UNLESS NOTED OTHERWISE. REMOVE ALL PANELBOARDS, PANEL FEEDERS, LIGHT FIXTURES, WIRING DEVICES, CONDUIT, AND WIRING COMPLETE.
3. SEE E-001 FOR COMMUNICATIONS AND CATV DEMOLTION NOTES.
4. DEMOLISH EXISTING INTERCOM SYSTEM COMPLETELY. SEE SHEET ED401 FOR SPEAKER LOCATIONS.

DISCLOSURE OF INFORMATION

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PLAN NORTH

16 8 0 16
SCALE: 3/32"=1'-0"
GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

ED101

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CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

DEMOLITION PLANS

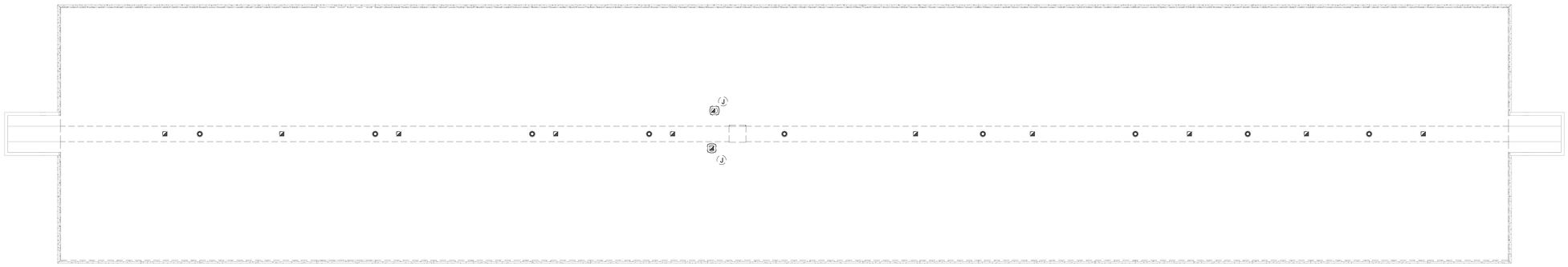
DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024081
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 124 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. SEE SHEET E-001 FOR GENERAL NOTES AND LEGEND.
2. DEMOLITION PLAN IS DIAGRAMMATIC AND MAY NOT REPRESENT ALL ITEMS TO BE REMOVED.
3. ALL EXISTING ELECTRICAL SYSTEMS TO BE REMOVED COMPLETE UNLESS NOTED OTHERWISE. REMOVE ALL PANELBOARDS, PANEL FEEDERS, LIGHT FIXTURES, WIRING DEVICES, CONDUIT, AND WIRING COMPLETE.



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

DISCLOSURE OF INFORMATION

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PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

ED102

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 1515SV Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ROOF DEMOLITION PLAN

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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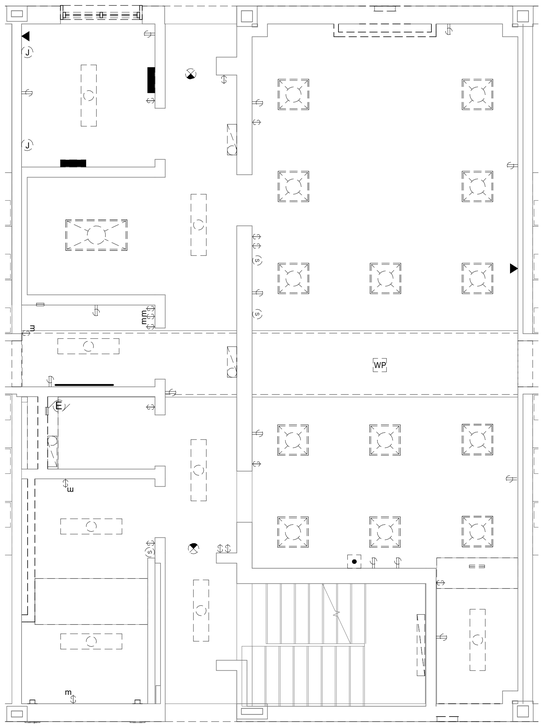
CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 125 OF 143

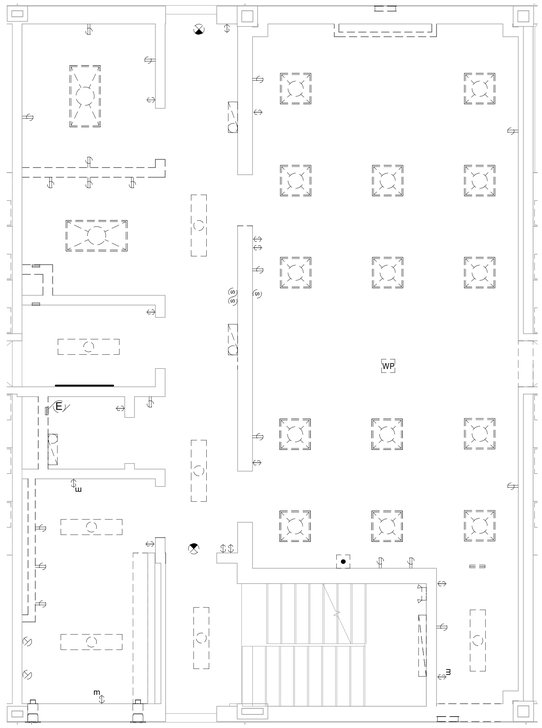
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

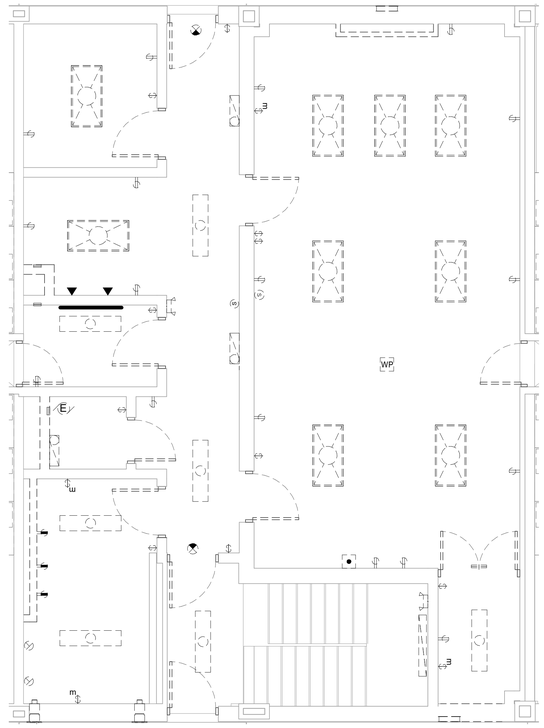
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3. SEE E-001 FOR COMMUNICATIONS AND CATV DEMOLTION NOTES.
4. REMOVE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH DUTY AREAS AND COMMON AREAS SERVICED BY BASE TELEPHONE SYSTEM. CONTACT CONSTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.
5. DEMOLISH EXISTING INTERCOM SYSTEM COMPLETE.



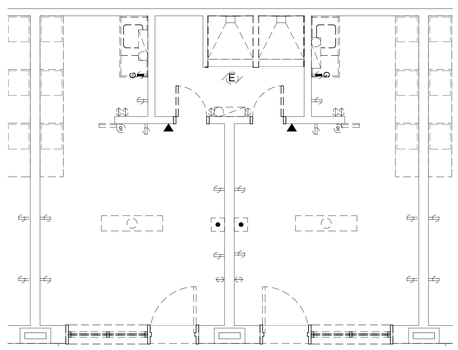
1 ENLARGED FIRST FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
ED101



2 ENLARGED SECOND FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
ED101



3 ENLARGED THIRD FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
ED101



4 ENLARGED SLEEPING ROOM DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
ED101

NOTES:

1. IN EACH SLEEPING ROOM, DEMOLISH EXISTING SURFACE MOUNTED RACEWAYS, FITTINGS, SURFACE MOUNTED BOXES, AND COMMUNICATIONS FACEPLATES AND CABLES USED IN TELE/COMM NETWORK. PATCH EXISTING HOLE IN CHASE WITH MORTAR.

PLAN NORTH

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"
GRAPHIC SCALE

DISCLOSURE OF INFORMATION

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ISSUE DATE:15 MAY 2020

ED401

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

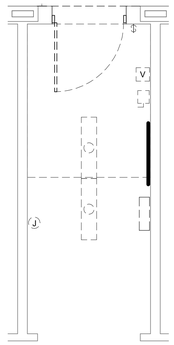
ENLARGED DEMOLITION PLANS

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

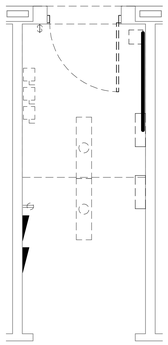
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CONSTR. CONTR. NO.: N40085-18-B-0042

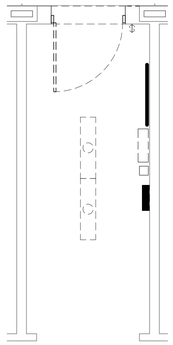
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 126 OF 143



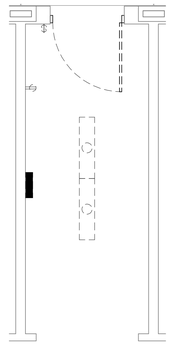
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SCALE: 1/4" = 1'-0"



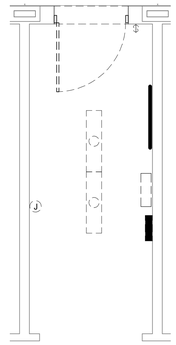
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SCALE: 1/4" = 1'-0"



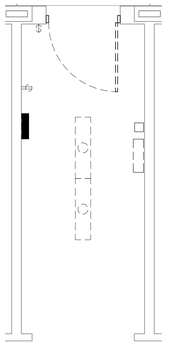
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SCALE: 1/4" = 1'-0"



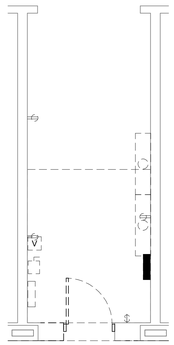
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SCALE: 1/4" = 1'-0"

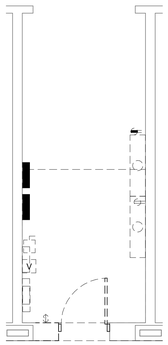


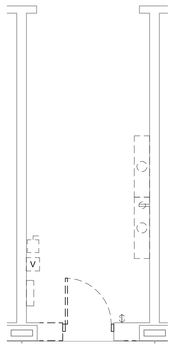
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SCALE: 1/4" = 1'-0"

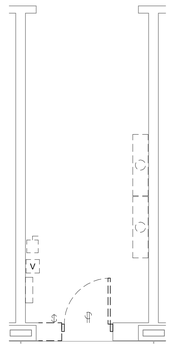


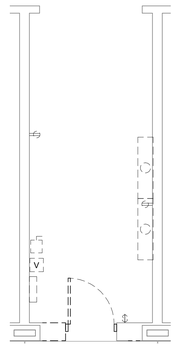
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SCALE: 1/4" = 1'-0"

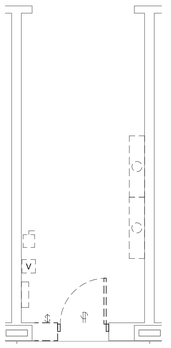












REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

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3. SEE SHEET E-001 FOR COMMUNICATIONS AND CATV DEMOLITION NOTES.

DISCLOSURE OF INFORMATION

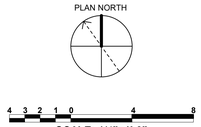
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GRAPHIC SCALE

ED402

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ENLARGED DEMOLITION PLANS

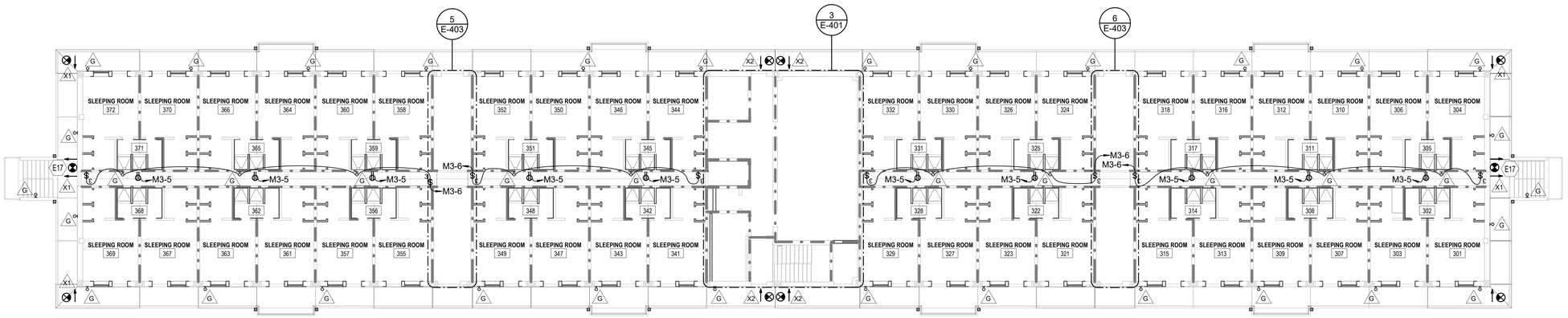
DES.	N. HEBEL
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DESIGN DIR.	
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ISSUE DATE:15 MAY 2020

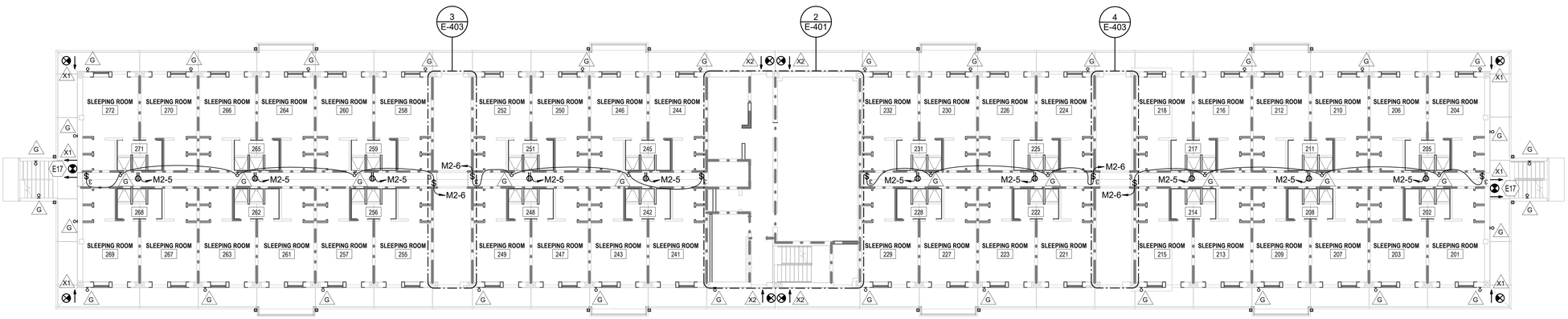
SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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CONSTR. CONTR. NO.: N40085-18-B-0042

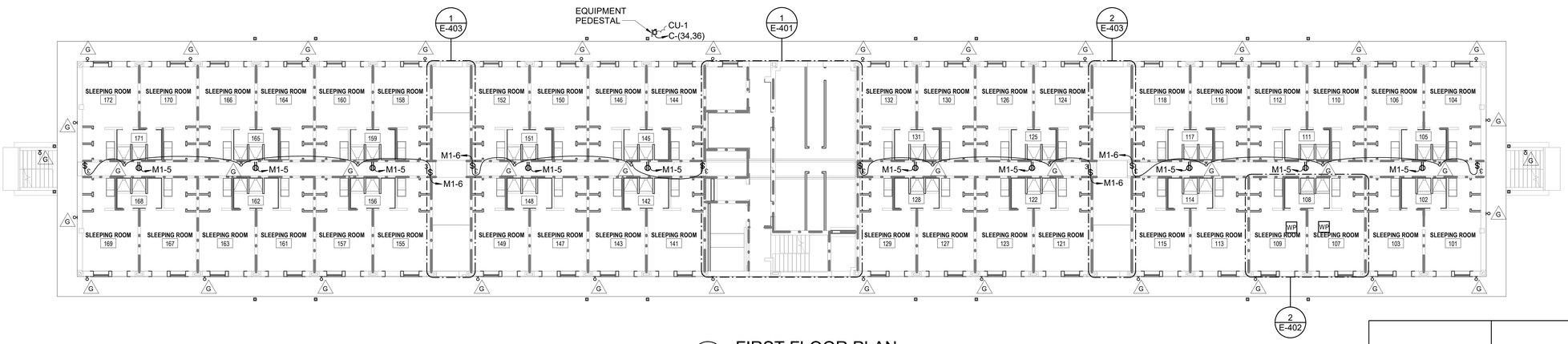
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 127 OF 143



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



2 SECOND FLOOR PLAN
SCALE: 3/32" = 1'-0"



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

PLAN NORTH

16 8 0 16
SCALE: 3/32"=1'-0"
GRAPHIC SCALE

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. SEE SHEET E-001 FOR GENERAL NOTES AND LEGEND.
2. SEE SHEET E-501 FOR LIGHTING FIXTURE SCHEDULE.
3. 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 CONSTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.
4. SEE PANEL SCHEDULES FOR CIRCUITING OF TYPE 'G' FIXTURES, RECEPTACLES, AND SWITCHES IN 1ST, 2ND, AND 3RD FLOOR UTILITY CHASES.
5. EXTERIOR BALCONY FIXTURE TYPE 'G' MUST BE AT ELEVATION AND INTERVALS OF DEMOLISHED FIXTURES. EXTERIOR BALCONY FIXTURE TYPE 'G' ON 1ST, 2ND, AND 3RD FLOOR TO BE FED FROM CIRCUITS C-21, K-31, AND Q-21 RESECTIVELY VIA TIMECLOCK/PHOTOCELL.
6. EXIT SIGNS ON EXTERIOR OF 2ND AND 3RD FLOORS MUST HAVE ASSOCIATED CONDUIT RUN ON BOTTOM OF UPPER SLAB.
7. ALL TYPE 'X1' AND 'X2' FIXTURES ARE TO BE FED FROM UNSWITCHED LEG OF NEAREST LIGHTING CIRCUIT.
8. MOUNT EXTERIOR EXIT SIGNS TO SIDE OF STRUCTURAL OUTRIGGERS UNLESS SPECIFIED OTHERWISE.

SHEET KEYNOTES

E17 DOUBLE FACE EXTERIOR EXIT SIGN TO BE WALL MOUNTED AT 7'-6" AFF.

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E-101

CEMS
ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

FLOOR PLANS

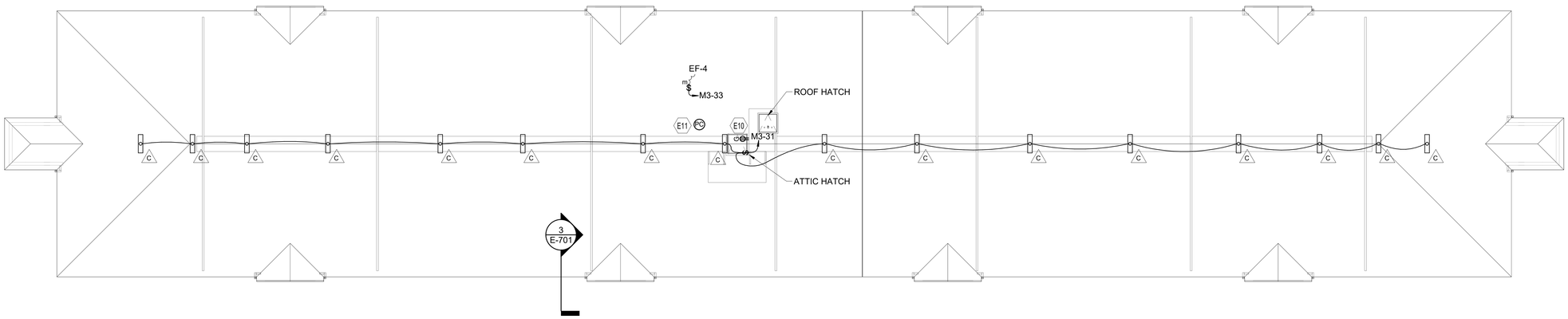
DES.	N. HEBEL
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SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
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ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024085

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 128 OF 143



1 ATTIC PLAN

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

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. SEE SHEET E-001 FOR NOTES AND LEGEND.
2. SEE SHEET E-501 FOR LIGHTING FIXTURE SCHEDULE.

SHEET KEYNOTES

E10 CONNECT NEW RECEPTACLE TO UNSWITCHED LEG OF ATTIC LIGHTING CIRCUIT.

E11 PROVIDE PHOTOCELL MOUNTED ON ROOF PEAK AND CONNECT TO EXTERIOR LIGHTING CONTROL PANEL.

DISCLOSURE OF INFORMATION

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PLAN NORTH

16 8 0 16

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

E-102

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ATTIC PLAN

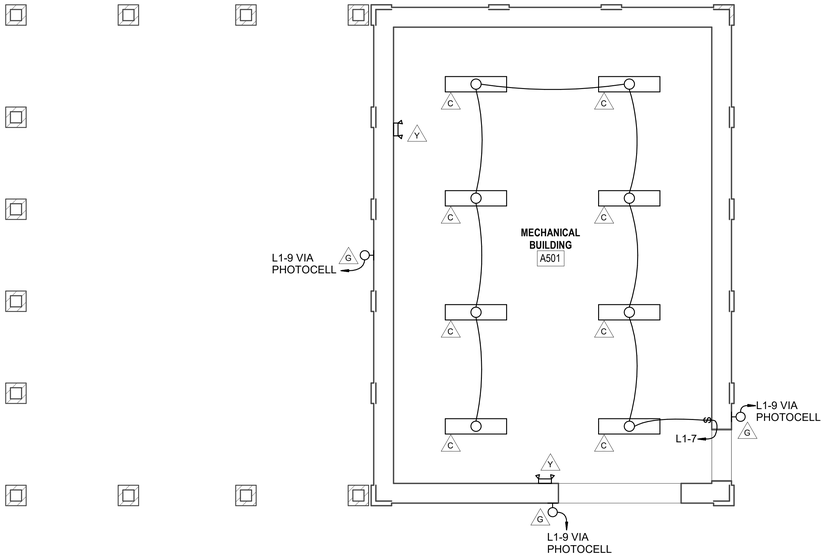
DES.	N. HEBEL
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SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
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SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024086

CONSTR. CONTR. NO.: N40085-18-B-0042

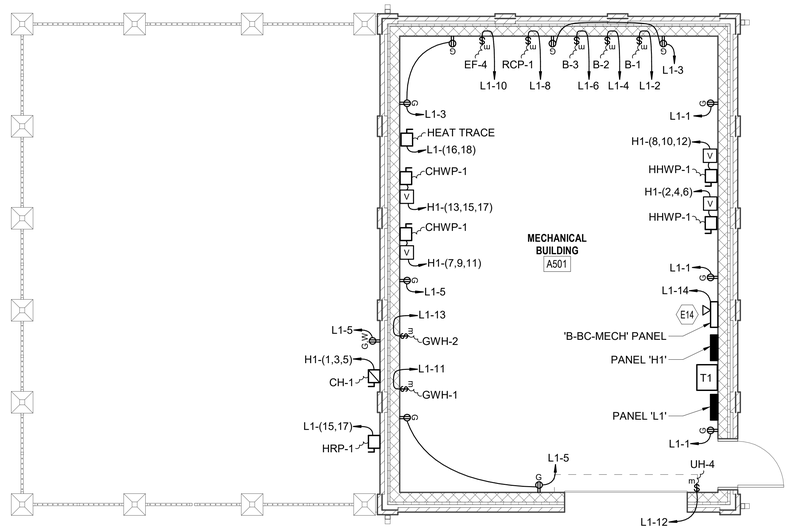
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 129 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



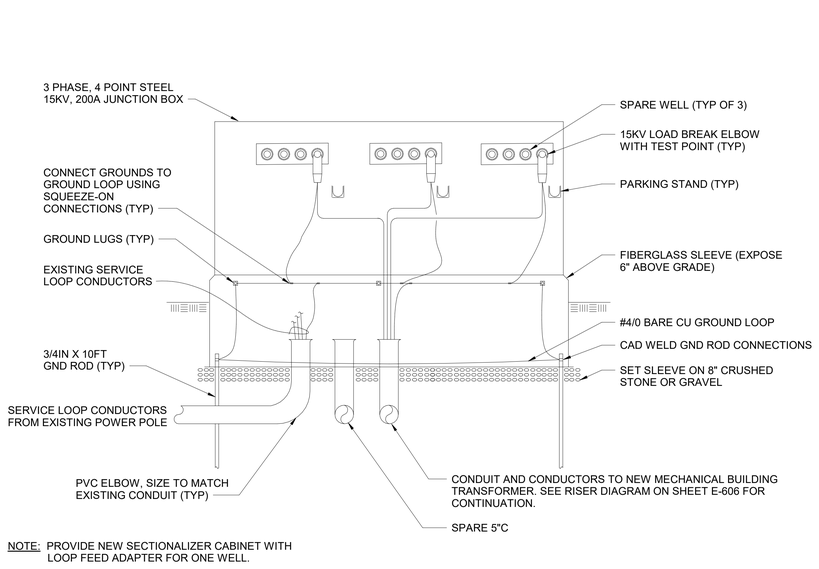
1 MECHANICAL BUILDING 510A/CHILLER YARD LIGHTING PLAN

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



2 MECHANICAL BUILDING 510A/CHILLER YARD POWER PLAN

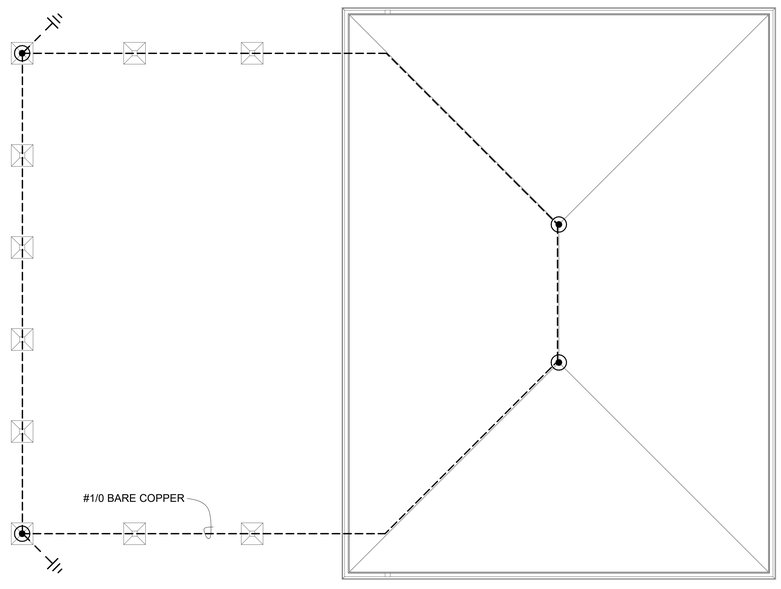
SCALE: 1/4" = 1'-0"



NOTE: PROVIDE NEW SECTIONALIZER CABINET WITH LOOP FEED ADAPTER FOR ONE WELL.

3 MECHANICAL BUILDING HP510A SECTIONALIZER CABINET DETAIL

SCALE: NOT TO SCALE



4 MECHANICAL BUILDING 510A LIGHTNING PROTECTION PLAN

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

DISCLOSURE OF INFORMATION

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

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

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

GENERAL NOTES

1. SEE SHEET E-001 FOR GENERAL NOTES AND LEGEND.
2. SEE SHEET E-501 FOR LIGHTING FIXTURE SCHEDULE.
3. SEE E-001 FOR COMMUNICATIONS AND CATV NOTES.
4. COORDINATE PANELBOARD AND LIGHTING LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO ROUGH IN.

SHEET KEYNOTES

E14 PROVIDE TWO CAT 6 CABLES INSTALLED PER DIVISION 27 SPECIFICATIONS BACK TO TELEPHONE BACKBOARD IN ROOM 239. CONNECT DIRECT TO SBC CABINET.

PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

E-103

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.873.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

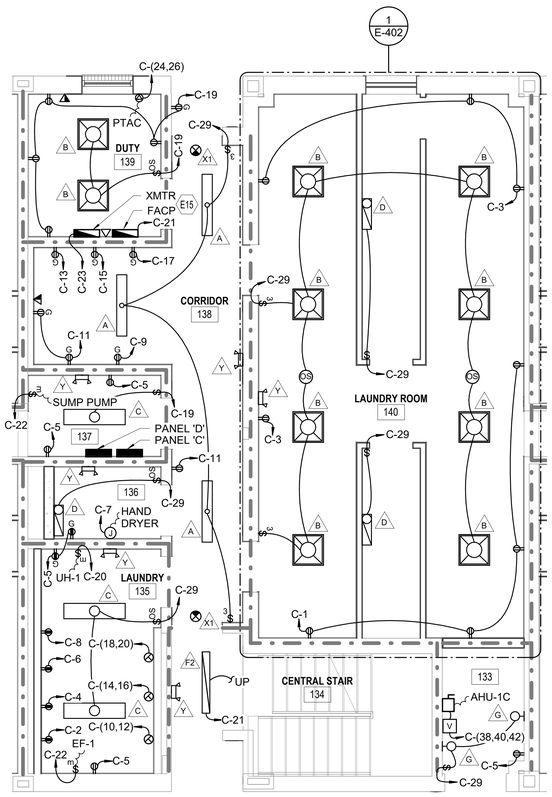
MECHANICAL BUILDING 510A PLANS

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

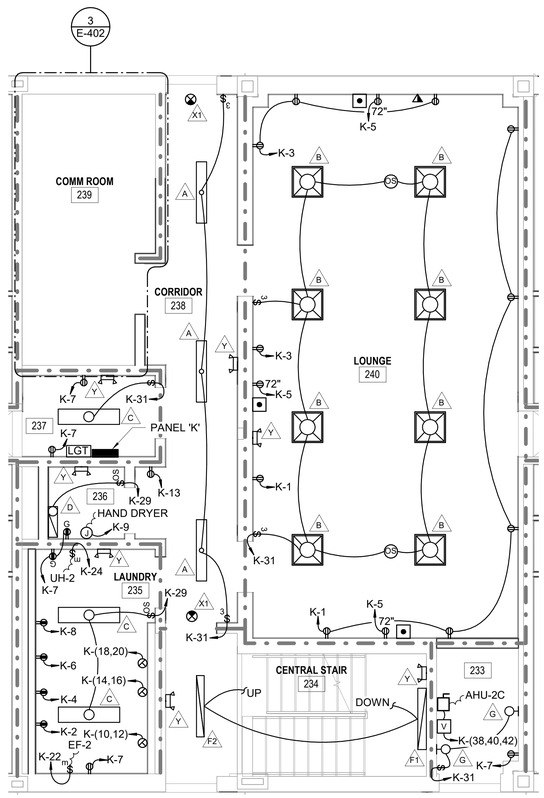
SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024087

CONSTR. CONTR. NO.: N40085-18-B-0042

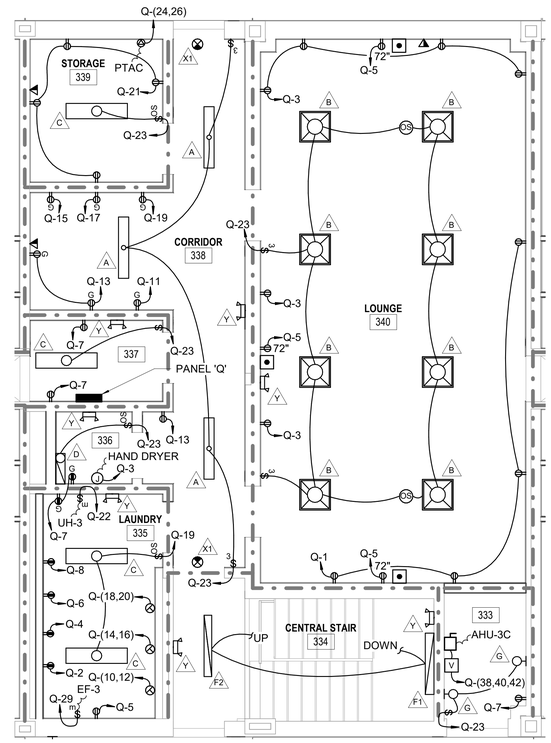
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 130 OF 143



1 ENLARGED FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"
E-101



2 ENLARGED SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"
E-101



3 ENLARGED THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"
E-101

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. SEE SHEET E-001 FOR GENERAL NOTES AND LEGEND.
2. SEE SHEET E-501 FOR LIGHTING FIXTURE SCHEDULE.
3. ALL 'Y' AND 'X' TYPE FIXTURES ARE TO BE FED FROM UNSWITCHED LEG OF NEAREST LIGHTING CIRCUIT. MOUNT 'X' TYPE FIXTURES LOCATED IN COORIDOR TO WALL ABOVE DOOR.
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 CONSTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.
5. HORIZONTAL CATV COAX FROM BEQ ROOMS TO THE CHASE WAY ARE TO BE REMOVED AND REPLACED WITH NEW.
6. ALL AHU UNITS SHALL BE PROVIDED WITH DEDICATED CONTROLS, CIRCUIT, CONDUIT, AND WIRING. COORDINATE FINAL CONNECTION WITH MANUFACTURER'S REQUIREMENTS.
7. FACP TO TO HAVE TWO GREEN CAT 6 CABLES TO COMM ROOM.
8. DRYER CIRCUITS TO BE 2#10, #10N, #10G 3/4"C.

SHEET KEYNOTES

E15 PROVIDE TWO CAT 6 CABLES INSTALLED IN 1" CONDUIT BACK TO TELEPHONE BACKBOARD IN ROOM 239. CONNECT DIRECT TO FACP CABINET.

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

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PLAN NORTH

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"
GRAPHIC SCALE

ISSUE DATE:15 MAY 2020

E-401

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC, 29485 843.875.3937
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

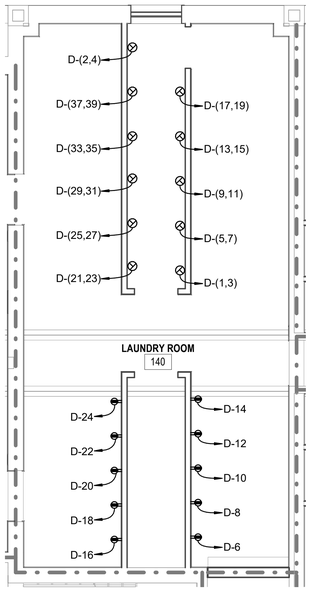
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

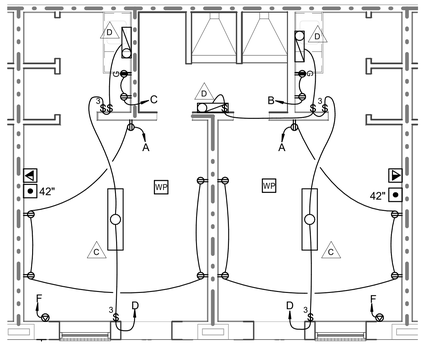
ENLARGED PLANS

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024088
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 131 OF 143



1 ENLARGED LAUNDRY PLAN
SCALE: 1/4" = 1'-0"
E-401

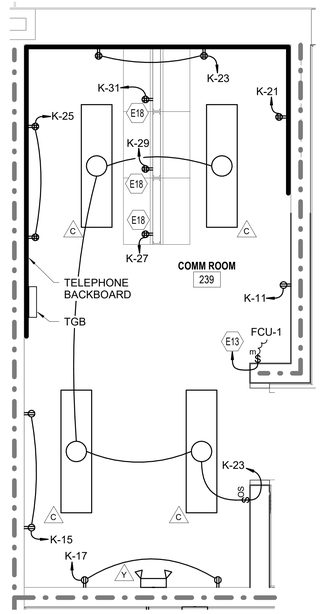


2 TYPICAL ENLARGED SLEEPING ROOM PLAN
SCALE: 1/4" = 1'-0"
E-101

NOTES:

CKT 'A' - RECEPTACLES - ROOM
CKT 'B' - RECEPTACLES - GFCI/REFRIGERATOR
CKT 'C' - RECEPTACLES - GFCI/REFRIGERATOR
CKT 'D' - LIGHTING
CKT 'F' - PTAC CIRCUIT (HVAC)

SEE PANEL SCHEDULES FOR SPECIFIC ROOM CIRCUITS.



3 ENLARGED COMMUNICATIONS ROOM PLAN
SCALE: 1/2" = 1'-0"
E-401

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. SEE SHEET E-001 FOR GENERAL NOTES AND LEGEND.
2. SEE SHEET E-501 FOR LIGHTING FIXTURE SCHEDULE.
3. ALL 'X' AND 'Y' TYPE FIXTURES ARE TO BE FED FROM UNSWITCHED LEG OF NEAREST LIGHTING CIRCUIT. MOUNT 'X' TYPE FIXTURES LOCATED IN COORIDOR TO WALL ABOVE DOOR.
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 SPECIFICATIONS 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT CONSTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.
5. HORIZONTAL CATV COAX FROM BEQ ROOMS TO THE CHASE WAY ARE TO BE REMOVED AND REPLACED WITH NEW.
6. DRYER CIRCUITS TO BE 2#10, #10N, #10G 3/4"C

SHEET KEYNOTES

E13 PROVIDE 1" CONDUIT WITH PULLSTRING TO CU-1. COORDINATE WITH MECHANICAL REFRIGERANT LINE ROUTING TO BE USED FOR CONDUIT.

E18 QUADRAPLEX RECPETACLE TO BE INSTALLED 6 INCHES ABOVE AND 6 INCHES BEHIND TOP OF EACH TELECOMMUNICATIONS RACK.

DISCLOSURE OF INFORMATION

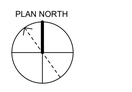
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SCALE: 1/2"=1'-0"



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

GRAPHIC SCALES



ISSUE DATE:15 MAY 2020

E-402

CEMS ENGINEERING | ARCHITECTURE
100 Bentora Lodge Rd., Summerville, SC, 29485 843.873.3837
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

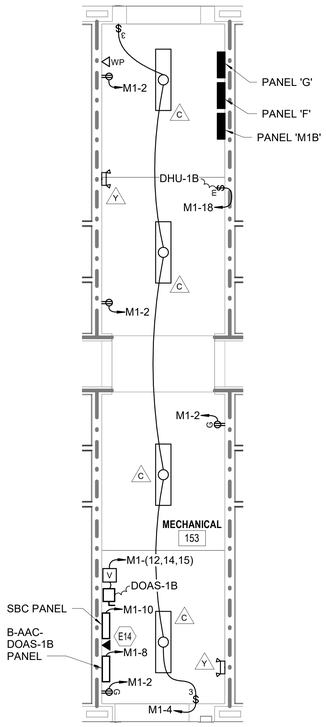
ENLARGED PLANS

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

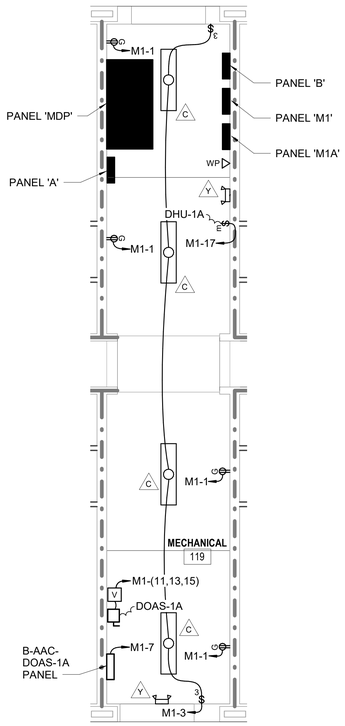
SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
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CONSTR. CONTR. NO.: N40085-18-B-0042

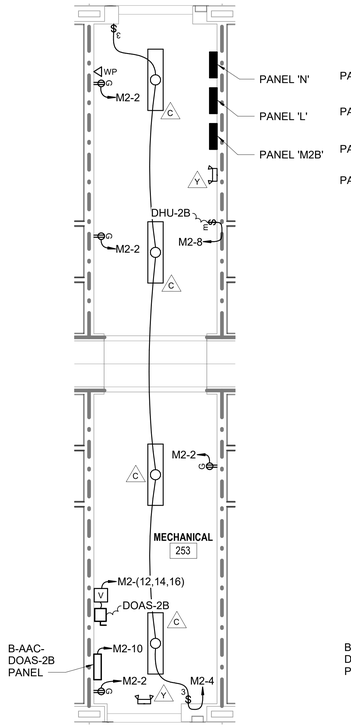
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 132 OF 143



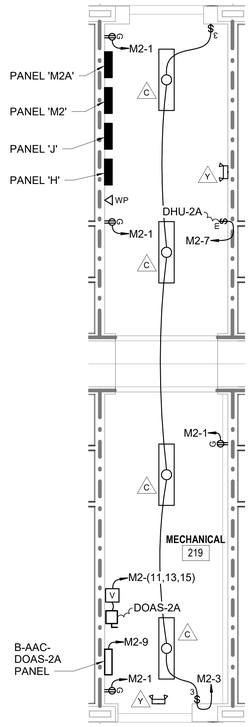
1 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
E-101



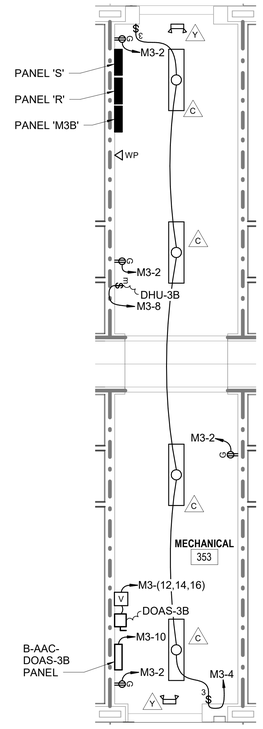
2 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
E-101



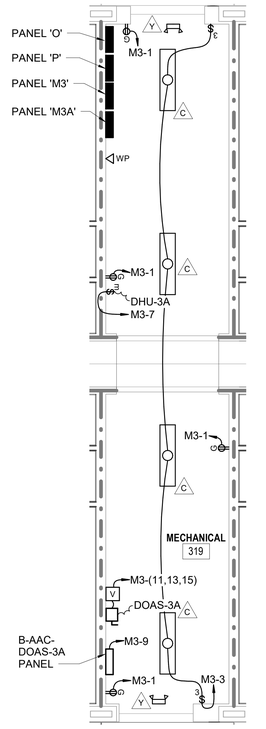
3 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
E-101



4 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
E-101



5 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
E-101



6 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
E-101

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

GENERAL NOTES

1. SEE SHEET E-001 FOR GENERAL NOTES AND LEGEND.
2. SEE SHEET E-501 FOR LIGHTING FIXTURE SCHEDULE.
3. COORDINATE PANELBOARD AND LIGHTING LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO ROUGH IN.
4. MECHANICAL EQUIPMENT DDC PANELS TO HAVE TWO GREEN CAT 6 CABLES TO COMM ROOM.

SHEET KEYNOTES

E14 PROVIDE TWO CAT 6 CABLES INSTALLED PER DIVISION 27 SPECIFICATIONS BACK TO TELEPHONE BACKBOARD IN ROOM 239. CONNECT DIRECT TO SBC CABINET.

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PLAN NORTH

4 3 2 1 0 4 8

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

GRAPHIC SCALE

E-403

CEMS
ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15152V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
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REPAIRS BEQ HP510

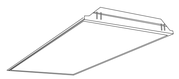
ENLARGED PLANS

DES. N. HEBEL
DR. C. COOPER
CHK. S. PERKINS
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024090
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 133 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-FORMED, COLD ROLLED STEEL, PAINTED AFTER FABRICATION. EXTRUDED ALUMINUM DOOR WITH SPRING-LOADED CAM LATCHES. HIGH REFLECTANCE, WHITE POLYESTER POWDER-COATED FINISH. OPTIONAL SIZES OF 1FT x 4FT, 2FT x 2FT, AND 2FT x 4FT AVAILABLE.
2. LIGHT SOURCE - LED BOARD OR ARRAY WITH MINIMUM 50K HOURS RATED LIFE AT L70, 3500K COLOR TEMPERATURE UON, MAXIMUM 4-STEP MCADAM ELLIPSE BINNING TOLERANCE FOR COLOR CONSISTENCY, MINIMUM EFFICACY OF 90 LUMENS/WATT, WITH A MINIMUM CRI OF 80. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, < 20% TOTAL HARMONIC DISTORTION. STEP-DIMMABLE OR FULLY DIMMABLE AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL 1598, DAMP LOCATION, DLC QUALIFIED, AND ROHS COMPLIANT. COMPLIES WITH LM79, LM80 AND TM21 TESTING STANDARDS. UL 924 WHEN EQUIPPED WITH EMERGENCY BATTERY BACK-UP. IC RATED WHEN INDICATED.
6. MOUNTING - RECESSED IN SUSPENDED ACOUSTICAL TILE OR HARD CEILING.
7. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

PRISMATIC LENS LED TROFFER

REVISED:	APRIL 2016	LIGHTING PLATE:	NL-3



LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-FORMED, COLD-ROLLED STEEL, WITH REINFORCEMENT RIBS FOR RIGIDITY; ENDCAPS SAME MATERIAL AS HOUSING, SECURED WITH TABS, SCREWS OR RIVETS. OPTIONAL LENGTHS OF 2FT OR 4FT.
2. FINISH - MULTI-STAGE PHOSPHATE BONDING TREATMENT FINISHED WITH HIGH-REFLECTANCE, WHITE POLYESTER POWDER COAT, PAINTED AFTER FABRICATION.
3. LENS - 100% VIRGIN ACRYLIC, CLEAR PRISMATIC DIFFUSER WITH MINIMUM 0.1 INCH THICKNESS, CONTINUOUSLY SUPPORTED ALONG SIDES OF LUMINAIRE.
4. LIGHT SOURCE - SOLID STATE LEDS WITH MINIMUM 50K HOURS RATED LIFE AT L70, 3500K CCT UON, MINIMUM 80 CRI, MAXIMUM 4-STEP MCADAM ELLIPSE BINNING TOLERANCE FOR COLOR CONSISTENCY, AND MINIMUM EFFICACY OF 95 LUMENS/WATT. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
5. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, < 20% TOTAL HARMONIC DISTORTION. OPTIONAL STEP-DIMMABLE OR FULLY DIMMABLE AS INDICATED.
6. CERTIFICATION - UL 1598, DAMP LOCATION, DLC QUALIFIED, AND ROHS COMPLIANT. COMPLIES WITH LM79, LM80 AND TM21 TESTING STANDARDS. UL 924 WHEN EQUIPPED WITH EMERGENCY BATTERY BACK-UP.
7. MOUNTING - SURFACE ON CEILING OR SUSPENDED.
8. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

SURFACE LED WRAPAROUND

REVISED:	APRIL 2016	LIGHTING PLATE:	NL-5

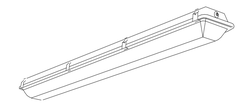


LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-FORMED, COLD-ROLLED STEEL, WITH REINFORCEMENT RIBS FOR RIGIDITY; END CAPS SAME MATERIAL AS HOUSING, SECURED WITH TABS, SCREWS OR RIVETS. WHITE ENAMEL FINISH APPLIED AFTER FABRICATION. OPTIONAL LENGTHS OF 2FT OR 4FT.
2. LENS - ACRYLIC PRISMATIC OR WHITE OPAL TO PROVIDE EVEN ILLUMINATION AND TO ELIMINATE PIXILATION FROM LED LIGHT SOURCE.
3. LIGHT SOURCE - SOLID STATE LEDS WITH MINIMUM 50K HOURS RATED LIFE AT L70, 3500K CCT UON, MINIMUM 80 CRI, MAXIMUM 4-STEP MCADAM ELLIPSE BINNING TOLERANCE FOR COLOR CONSISTENCY, AND MINIMUM EFFICACY OF 90 LUMENS/WATT. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, < 20% TOTAL HARMONIC DISTORTION. ON-OFF CONTROL, STEP-DIMMABLE OR FULLY DIMMABLE AS INDICATED.
5. CERTIFICATION - UL 1598, DAMP LOCATION, DLC QUALIFIED, AND ROHS COMPLIANT. COMPLIES WITH LM79, LM80 AND TM21 TESTING STANDARDS. UL 924 WHEN EQUIPPED WITH EMERGENCY BATTERY BACK-UP.
6. MOUNTING - SURFACE.
7. OPTIONS - INTEGRAL MOTION SENSOR, EMERGENCY BACK-UP.
8. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

WALL MOUNTED LED

REVISED:	APRIL 2016	LIGHTING PLATE:	NL-9



LUMINAIRE REQUIREMENTS:

1. HOUSING - FIBERGLASS OR FIBERGLASS-REINFORCED POLYESTER OUTER HOUSING, WITH ALUMINUM COMPONENT TRAY AND HEAT SINK. OPTIONAL LENGTHS OF 4FT OR 8FT.
2. LENS - IMPACT-RESISTANT ACRYLIC OR OPTIONAL POLYCARBONATE, WITH CONTINUOUS CLOSED-CELL POLYURETHANE GASKET, SECURED WITH STAINLESS STEEL OR POLYCARBONATE LATCHES.
3. LIGHT SOURCE - SOLID STATE LEDS WITH MINIMUM 50K HOURS RATED LIFE AT L70, 3500K CCT UON, MINIMUM 80 CRI, MAXIMUM 4-STEP MCADAM ELLIPSE BINNING TOLERANCE FOR COLOR CONSISTENCY, AND MINIMUM EFFICACY OF 100 LUMENS/WATT. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, < 20% TOTAL HARMONIC DISTORTION. ON-OFF CONTROL, STEP-DIMMABLE OR FULLY DIMMABLE AS INDICATED.
5. CERTIFICATION - UL 1598, WET LOCATION (IP65, IP66, IP67), DLC QUALIFIED, AND ROHS COMPLIANT. COMPLIES WITH LM79, LM80 AND TM21 TESTING STANDARDS. UL 924 WHEN EQUIPPED WITH EMERGENCY BATTERY BACK-UP.
6. MOUNTING - SURFACE-MOUNTED OR SUSPENDED FROM CEILING.
7. OPTIONS - POWER CORD, INTEGRAL MOTION SENSOR, EMERGENCY BACK-UP.
8. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LED ENCLOSED AND GASKETED

REVISED:	APRIL 2016	LIGHTING PLATE:	NL-11

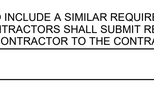


LUMINAIRE REQUIREMENTS:

1. HOUSING - ONE-PIECE, DIE-CAST ALUMINUM WITH BAKED-ON POLYESTER POWDER COAT FINISH IN BLACK.
2. DIFFUSER - CLEAR PRISMATIC, UV-STABILIZED, INJECTION-MOLDED POLYCARBONATE WITH MINIMUM 1/8" THICKNESS. DIFFUSER SECURED WITH TAMPER-RESISTANT STAINLESS STEEL SCREWS. BLACK HORIZONTAL FRONT EYELID FOR CUTOFF.
3. GASKET - ONE-PIECE, CLOSED-CELL NEOPRENE TO DISCOURAGE MOISTURE, INSECTS AND DEBRIS.
4. POWER SUPPLY/LED DRIVER - CLASS 1 DRIVER SHALL OPERATE AT 120/277 VOLTS, 50/60 HZ, WITH OTHER VOLTAGES OPTIONAL; POWER FACTOR GREATER THAN 0.9 AND THD LESS THAN 20% AT FULL LOAD. MINIMUM EFFICACY SHALL BE 60 LM/W AT MAXIMUM 600mA OPERATING CURRENT.
5. LED OPTICAL ASSEMBLY - PRECISION MOLDED ACRYLIC LENS PROVIDED FOR MULTIPLE HIGH-POWERED LEDS PRODUCING NEMA TYPE III DISTRIBUTION OR AS OTHERWISE INDICATED. BUG UPLIGHT RATING OF U0. WITH GLARE RATING AS DETERMINED BY LIGHTING ZONE INSTALLED. MUNIMUM COLOR RENDERING INDEX (CRI) SHALL BE 70 FOR CORRELATED COLOR TEMPERATURE (CCT) OF 4000- 4500 DEGREES K.
6. CERTIFICATION - UL LISTED AND LABELED FOR WET LOCATIONS.

WALL-MOUNTED HIGH ABUSE FIXTURE

REVISED:	AUGUST 2004	LIGHTING PLATE:	NL-48

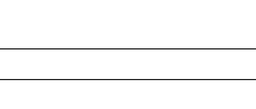


LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST ALUMINUM. SINGLE OR DOUBLE FACED AS INDICATED
2. FINISH (ON CAST ALUMINUM HOUSING ONLY) - TEXTURED POWDER COAT FINISH OPTIONS INCLUDE WHITE, WHITE WITH BRUSHED ALUMINUM FACE, BLACK, OR BLACK WITH BRUSHED ALUMINUM FACE.
3. LETTERS/CHEVRONS - MINIMUM 6" HIGH WITH 3/4" STROKE. RED OR GREEN LETTERS AS INDICATED. PROVIDE CHEVRONS AS INDICATED EITHER LEFT, RIGHT OR BOTH DIRECTIONS AS INDICATED. CHEVRONS PUNCHED OUT THROUGH HOUSING.
4. EMERGENCY PACK - SOLID-STATE, CONSTANT-CURRENT TYPE BATTERY CHARGER WITH MAINTENANCE-FREE, NICKEL-CADMIUM BATTERY, AC-ON INDICATOR LAMP AND TEST SWITCH.
5. MOUNTING - UNIVERSAL MOUNTING KIT FOR CEILING, WALL OR END-OF-FIXTURE MOUNTING.
6. ILLUMINATION - PROVIDED BY RED, GREEN OR WHITE HIGH-OUTPUT LEDS INSIDE OF FIXTURE HOUSING. PROVIDE POLYSTYRENE DIFFUSER IN COLOR INDICATED WITH FREQUENCY-MATCHED SILKSCREEN COATING FOR MAXIMUM LED LIGHT OUTPUT.
7. CERTIFICATION - UL LISTED AND CERTIFIED FOR DAMP LOCATIONS.

LED EXIT SIGN

REVISED:	AUGUST 2004	LIGHTING PLATE:	NL-63



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

LIGHTING FIXTURE SCHEDULE

FIXTURE SYMBOL	STYLE NO. AND TYPE	NUMBER AND TYPE OF LAMPS	VOLTAGE	MOUNTING	NOTES
A	NL-3	21W LED 2700 LUMENS	120	RECESSED CEILING	1
B	NL-3	26W LED 3300 LUMENS	120	RECESSED CEILING	2
C	NL-5	53W LED 5500 LUMENS	120	SURFACE MTD.	
D	NL-9	32W LED 3500 LUMENS	120	WALL MTD. 7'-0" A.F.F.	3
E	NL-11	46W LED 5000 LUMENS	120	WALL MTD. 6'-6" A.F.F.	
F	NL-11	46W LED 5000 LUMENS	120	SURFACE MTD.	
G	NL-48	16W LED, 3500K	120	WALL MTD. 7'-6" A.F.F.	4,7
H	NL-63	LED	120	WALL MTD. 8'-0" A.F.F.	5
J	NL-63	LED	120	WALL MTD. 8'-0" A.F.F.	5,6
K	NL-67	LED	120	WALL MTD. 8'-0" A.F.F.	

NOTES:
1. FIXTURE TO BE 1'x4'.
2. FIXTURE TO BE 2'x4'.
3. FIXTURE TO BE 2' LENGTH.
4. FIXTURE TO BE LED EQUIVALENT OF FIXTURE PLATE NL-48.
5. FIXTURE TO BE HIGH ABUSE.
6. EQUIPPED WITH TWO EMERGENCY HEADS.
7. PROVIDE ALL EXTERIOR 'G' TYPE LIGHT FIXTURES WITH EMERGENCY BATTERY UNLESS NOTED OTHERWISE. FIXTURES IN MECHANICAL CHASES DO NOT REQUIRE BATTERIES.

1 EXTERIOR LIGHTING SCHEMATIC
SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

E-501

CEMS ENGINEERING | ARCHITECTURE
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300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

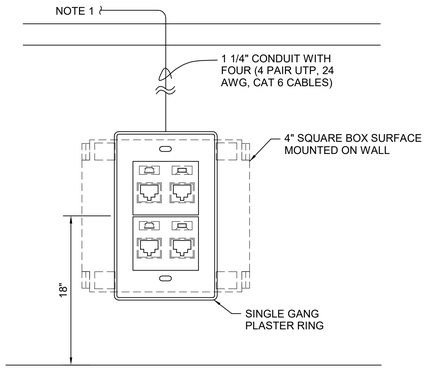
LIGHTING DETAILS AND SCHEDULE

DES. N. HEBEL
DR. C. COOPER
CHK. S. PERKINS
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024091
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 134 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



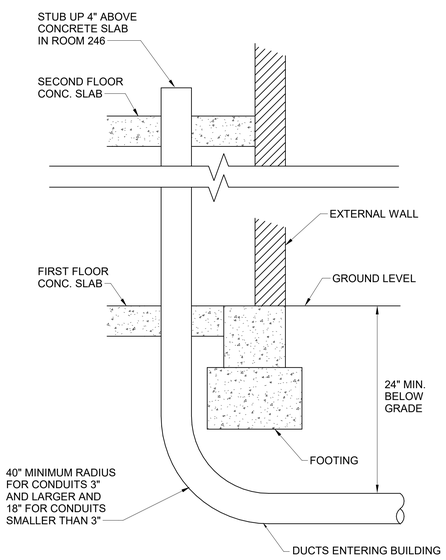
NOTES:

1. ALL OF THE TELEPHONE/DATA WIRING IS TO BE IN AN APPROVED PATHWAY FROM THE OUTLET BACK TO THE BACKBOARD PER SPECIFICATIONS AND STANDARDS. OPEN FACE TELECOMM SUPPORTS SUCH AS BRIDAL RINGS AND J-HOOKS ARE NOT AUTHORIZED.

2. PROVIDE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS (WHERE APPLICABLE) 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 CONSTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.

1 OFFICE TELEPHONE/DATA OUTLET DETAIL (TYPICAL)

SCALE: NOT TO SCALE



4 DUCT ENTRY INTO BUILDING

SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

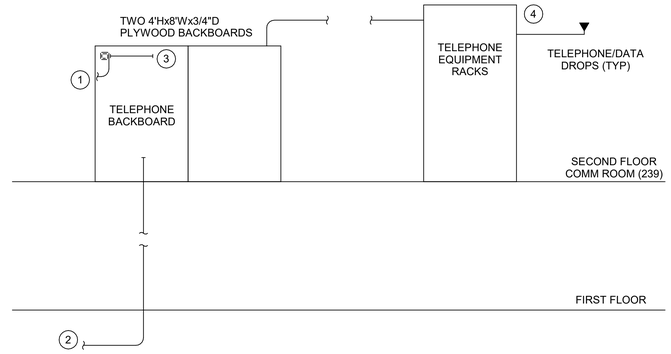
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C. THE CONTRACTOR AGREES TO INCLUDE A SIMILAR REQUIREMENT IN EACH SUBCONTRACT UNDER THIS CONTRACT. SUBCONTRACTORS SHALL SUBMIT REQUESTS FOR AUTHORIZATION TO RELEASE THROUGH THE PRIME CONTRACTOR TO THE CONTRACTING OFFICER.



KEYNOTES:

1. GROUND FOR BACKBOARD TO BE MADE WITH GREEN SHEATH #6 STRANDED COPPER IN 3/4"C TO COPPER BUS BAR.
2. FROM TELECOMMUNICATIONS MANHOLE, AS SHOWN ON ES101, PROVIDE SERVICE ENTRANCE IN (1) - 4 INCH PVC BELOW GRADE/SLAB WITH TRANSITION TO (1) - 4 INCH EMT ABOVE GRADE/SLAB TO ROOM 239 AS DESIGNATED BY TSD. SEE ES101 FOR CONTINUATION.
3. PROVIDE 1/4"x4"x10" COPPER BUS BAR WITH INSULATING BRACKETS AT TELEPHONE BACKBOARD IN ACCORDANCE WITH ANSI/TIA-607.
4. CONDUITS SHOULD EITHER COME UP FROM THE FLOOR OR DOWN FROM THE CEILING AND TERMINATE 3" ON THE BACKBOARD AND ALL BE BONDED TOGETHER AND GROUNDED WITH A GROUNDING LUG ON THE END.

NOTES:

1. COORDINATE BACKBOARD LOCATION WITH BASE TELEPHONE.
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 CONSTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.
3. PROVIDE 1 1/4" CONDUIT WITH TWO CAT 6 CABLES FROM TELECOMMUNICATIONS RACK TO FACP. PROVIDE DUAL DATA/COMMUNICATIONS JACK IN FACP. COORDINATE WITH LOCATION OF RACK AND FINAL LOCATION OF FACP.
4. TELEPHONE BACKBOARDS - PROVIDE VOID-FREE, INTERIOR GRADE PLYWOOD 3/4" THICK. BACKBOARDS SHALL BE FIRE RETARDANT TREATED PLYWOOD, WITH THE FIRE STAMP VISIBLE. BOARDS SHOULD BE INSTALLED 4' WIDTH BY 8' HEIGHT SECURELY FASTENED TO THE WALL ANYWHERE EQUIPMENT IS TO BE MOUNTED.
5. ALL METALLIC CONDUIT AND EQUIPMENT MUST BE BONDED TO THE TMGB AND BUILDING GROUND PER ANSI/TIA-607 WITH MINIMUM #6 STRANDED GREEN SHEATH CONDUCTOR.
6. ALL CONDUITS NEED TO BE SECURELY MOUNTED, FIRE STOPPED, AND OVER LAP THE BACKBOARD BY 3-6".
7. INSTALL CABLES IN AN APPROVED PATHWAY PER THE SPECIFICATIONS AND STANDARDS; INSTALL ALL LADDER RACKS WITHIN TELECOMM ROOM, PATCH PANELS, CABINETS, BUILDING PROTECTORS, OSP CABLE, RISER CABLE, AND EQUIPMENT IAW BASE TELE 27 10 00. OPEN FACE TELECOMMUNICATIONS SUPPORTS ARE NOT ACCEPTABLE, E.G. BRIDAL RINGS AND J-HOOKS ARE NOT ACCEPTABLE.

2 VOICE/DATA SYSTEM RISER

SCALE: NOT TO SCALE



NOTES:

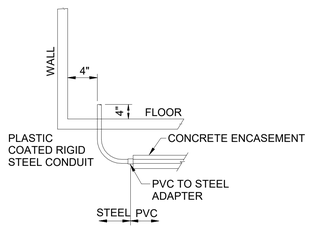
1. PROVIDE SELF-ADHESIVE VINYL LABEL TO AFFIX TO ELECTRICAL EQUIPMENT TO WARN OF ARC FLASH HAZARDS.
2. THE LABEL FORMAT AND TEXT SHALL BE IN ACCORDANCE WITH THE FIGURE.
3. THE LABEL SHALL BE LOCATED ON THE EQUIPMENT TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.
4. THE SIZE OF THE LABEL SHALL BE:

EQUIPMENT TYPE:	HEIGHT	WIDTH
INDOOR	2"	3"
OUTDOOR	4"	6"

5. A DOWNLOADABLE WINDOWS METAFILE IS AVAILABLE ON THE WHOLE BUILDING DESIGN GUIDE WEBSITE (WWW.WDBG.ORG) FOR USE IN A LABEL MAKING MACHINE.
   A. THE FILE IS LOCATED ON THE "NAVFAC CADD DETAILS" PAGE. TO NAVIGATE TO THIS LOCATION, FOLLOW: HOME>DOCUMENTS & REFERENCES> CCB> CADD LIBRARY>NAVFAC CADD RESOURCES> NAVFACE CADD DETAILS.
   B. ALTERNATIVELY, TYPE IN THE FOLLOWING ADDRESS IN INTERNET EXPLORER: HTTP://WWW.WBDG.ORG/CCB/BROWSE_CAT.PHP?0=78&C+232

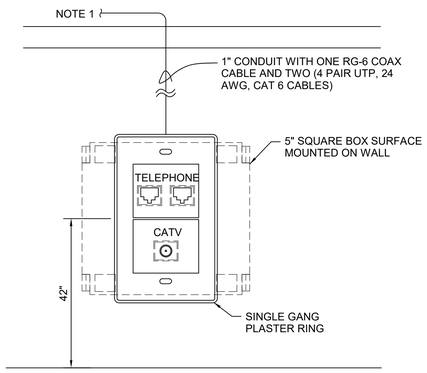
6 ARC FLASH LABEL DETAIL

SCALE: NOT TO SCALE



5 ENCASED UNDERSLAB STUB-UPS

SCALE: NOT TO SCALE

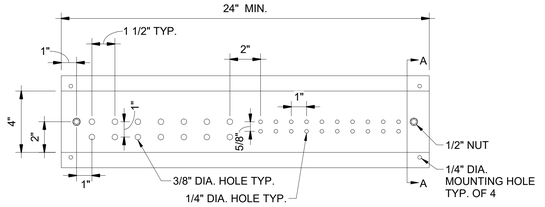


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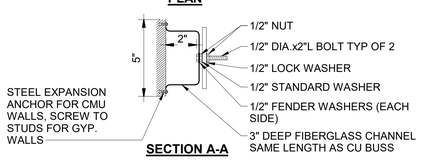
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2. PROVIDE ALL COMMUNICATIONS CABLING, EQUIPMENT, AND JACK SET ASSEMBLIES ASSOCIATED WITH OFFICE AREAS (WHERE APPLICABLE) AND AREAS SERVICED BY BASE TELEPHONE SYSTEM PER CAMP LEJEUNE COMMUNICATIONS SPECIFICATION 27 10 00. ALL WORK SHALL BE DONE BY A QUALIFIED COMMUNICATIONS SUBCONTRACTOR. CONTACT CONSTRUCTION MANAGER REGARDING ANY COMMUNICATIONS QUESTIONS.
3. IN EACH SLEEPING ROOM, PROVIDE TWO TELEPHONE AND ONE CATV JACK IN EACH FACEPLATE. PROVIDE ONE FACEPLATE CONFIGURATIONS PER SLEEPING ROOM FOR A COMBINED TOTAL FOUR TELEPHONE DROPS AND TWO CATV DROPS.

3 SLEEPING ROOM TELEPHONE/CATV OUTLET DETAIL (TYPICAL)

SCALE: NOT TO SCALE



PLAN



SECTION A-A

GENERAL NOTES:

1. ALL HARDWARE SHOWN SHALL BE STAINLESS STEEL.
2. PROVIDE 1 MOUNTING POINT PER 24" OF BAR LENGTH.
3. HOLES MAY BE ADDED IF REQUIRED.

7 GROUNDING BAR DETAIL

SCALE: NOT TO SCALE

E-502

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300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15102V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

DETAILS

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

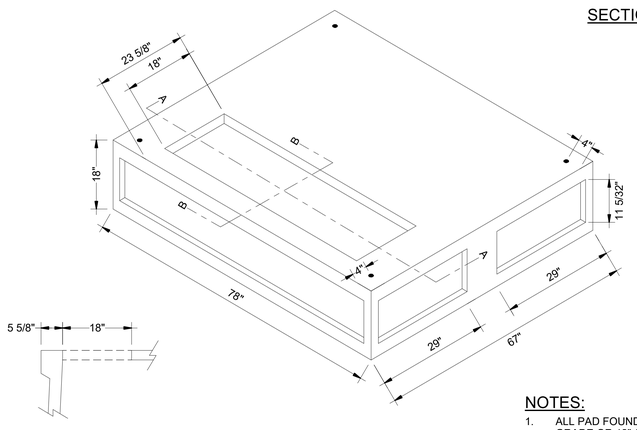
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CONSTR. CONTR. NO.: N40085-18-B-0042

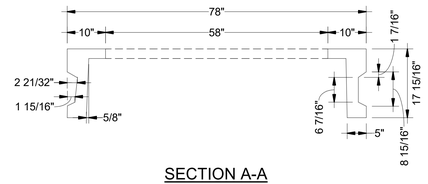
SCALE: AS NOTED SPEC. 05-18-0042 SHEET 135 OF 143

ISSUE DATE:15 MAY 2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



SECTION B-B



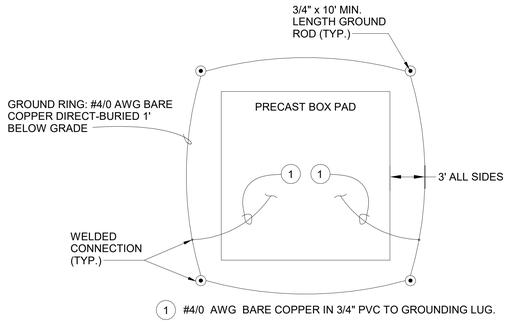
SECTION A-A

NOTES:

1. ALL PAD FOUNDATIONS SHALL HAVE CUT TO GRADE OR 12" OF 95% COMPACTED FILL.
2. PAD FOUNDATION SHALL HAVE MINIMUM 12" COMPACTED ABC STONE WITH FILL AND STONE TWICE AS WIDE AS PAD BEARING POINTS.
3. PAD TOP SHALL BE MINIMUM 8"ABOVE AND PAD BOTTOM 8" BELOW SURROUNDING GRADE.
4. PAD SIZE SHALL BE COORDINATED FOR TRANSFORMER SIZE BEFORE ORDERING.

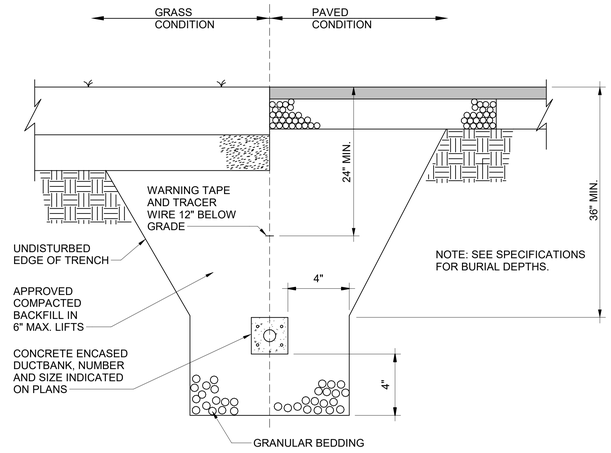
1 SERVICE TRANSFORMER PAD WITH VAULT DETAIL

SCALE: NOT TO SCALE



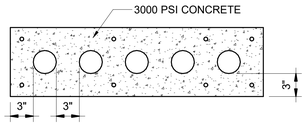
2 SERVICE TRANSFORMER GROUNDING DETAIL

SCALE: NOT TO SCALE



3 CONCRETE ENCASED DUCTBANK TRENCH DETAIL

SCALE: NOT TO SCALE

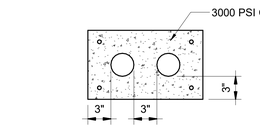


NOTE:

1. AT EACH CORNER AND MIDDLE, PROVIDE #4 REINFORCING ROD INSTALLED AT 1 1/2" FROM DUCT BANK SURFACE FOR ALL DUCT BANKS UNDER ROADWAYS OR PARKING AREAS.

5 5-WAY CONCRETE ENCASED DUCTBANK DETAIL

SCALE: NOT TO SCALE

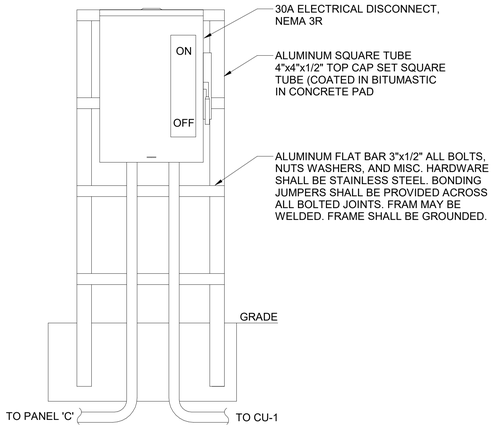


NOTE:

1. AT EACH CORNER, PROVIDE #4 REINFORCING ROD INSTALLED AT 1 1/2" FROM DUCT BANK SURFACE FOR ALL DUCT BANKS UNDER ROADWAYS OR PARKING AREAS.

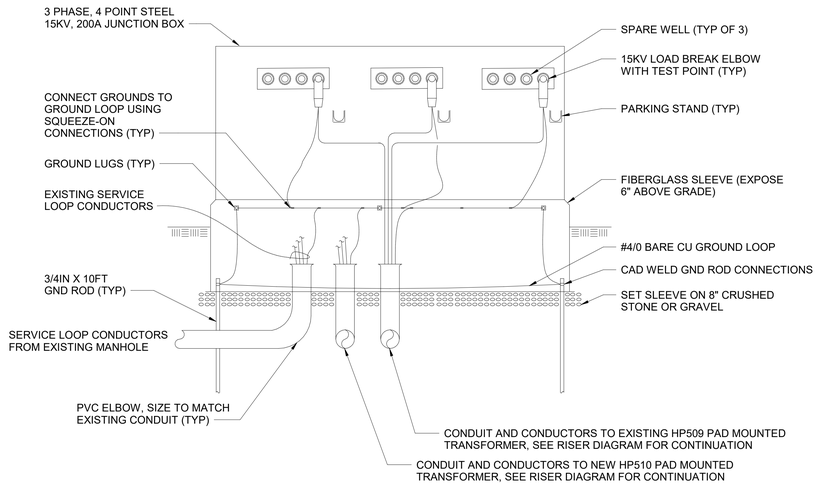
4 2-WAY CONCRETE ENCASED DUCTBANK DETAIL

SCALE: NOT TO SCALE



7 EQUIPMENT PEDESTAL DETAIL

SCALE: NOT TO SCALE



NOTE: PROVIDE NEW SECTIONALIZER CABINET WITH LOOP FEED ADAPTER FOR ONE WELL.

6 HP510 SECTIONALIZER CABINET DETAIL

SCALE: NOT TO SCALE

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

E-503

CEMS ENGINEERING | ARCHITECTURE
100 Bentora Lodge Rd., Summerville, SC, 29485 843.873.3837
300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15103V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

DETAILS

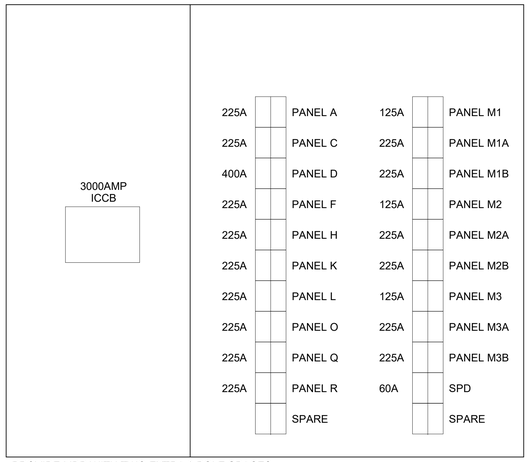
DES. N. HEBEL
DR. C. COOPER
CHK. S. PERKINS
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024093
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 136 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

PANEL 'MDP' 3000AMP, 208Y/120V, 3Ø, 4W, 65kAIC RATING



PROVIDE MDP WITH TWO EXTRA 3 POLE SPACES.

LOADS:

PANEL A -	51,060 VA
PANEL C -	41,538 VA
PANEL D -	63,000 VA
PANEL F -	51,060 VA
PANEL H -	51,060 VA
PANEL K -	33,571 VA
PANEL L -	51,060 VA
PANEL O -	51,060 VA
PANEL Q -	37,346 VA
PANEL R -	51,060 VA
PANEL M1 -	25,000 VA
PANEL M1A -	49,100 VA
PANEL M1B -	49,100 VA
PANEL M2 -	25,000 VA
PANEL M2A -	49,100 VA
PANEL M2B -	49,100 VA
PANEL M3 -	25,000 VA
PANEL M3A -	49,100 VA
PANEL M3B -	49,100 VA
TOTAL:	851,535 VA

PANEL NO. A

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM. 104,106 (A)	1800	A	2	20	RCPT- RM. 101,103 (A)	1800	A
A	3	20	RCPT- RM. 104 (B)	1530	B	4	20	RCPT- RM. 101 (B)	1530	A
A	5	20	RCPT- RM. 106 (C)	1530	C	6	20	RCPT- RM. 103 (C)	1530	A
A	7	20	LGT- RM. 101-106 (D)	492	A	8	20	RCPT- RM. 107,109 (A)	1800	A
A	9	20	RCPT- RM. 110,112 (A)	1800	B	10	20	RCPT- RM. 107 (B)	1530	A
A	11	20	RCPT- RM. 110 (B)	1530	C	12	20	RCPT- RM. 109 (C)	1530	A
A	13	20	RCPT- RM. 112 (C)	1530	A	14	20	RCPT- RM. 113,115 (A)	1800	A
A	15	20	LGT- RM. 107-112 (D)	492	B	16	20	RCPT- RM. 113 (B)	1530	A
A	17	20	RCPT- RM. 116,118 (A)	1800	C	18	20	RCPT- RM. 115 (C)	1530	A
A	19	20	RCPT- RM. 116 (B)	1530	A	20	20	SPARE		
A	21	20	RCPT- RM. 118 (C)	1530	B	22	20	SPARE		
A	23	20	LGT- RM. 113-118 (D)	492	C	24	20	SPARE		
	25	20	SPARE		A	26				
	27	20	SPARE		B	28				
	29	20	SPARE		C	30				
	31	20	SPARE		A	32				
	29				B	34				
	31				C	36				
	37				A	38				
	39				B	40	125	PANEL 'B'	17322	
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 51,060 VA
TOTAL DEMAND 44,856 VA 125 AMPS

A - CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X) - DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. B

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM 124,126 (A)	1800	A	2	20	RCPT- RM 121,123 (A)	1800	A
A	3	20	RCPT- RM. 124 (B)	1530	B	4	20	RCPT- RM. 121 (B)	1530	A
A	5	20	RCPT- RM. 126 (C)	1530	C	6	20	RCPT- RM. 123 (C)	1530	A
A	7	20	LGT- RM. 121-126 (D)	492	A	8	20	RCPT- RM 127,129 (A)	1800	A
A	9	20	RCPT- RM 130,132 (A)	1800	B	10	20	RCPT- RM. 127 (B)	1530	A
A	11	20	RCPT- RM. 130 (B)	1530	C	12	20	RCPT- RM. 129 (C)	1530	A
A	13	20	RCPT- RM. 132 (C)	1530	A	14	20	SPARE		
A	15	20	LGT- RM. 127-132 (D)	492	B	16	20	SPARE		
	17	20	SPARE		C	18	20	SPARE		
	19	20	SPARE		A	20	20	SPARE		
	21	20	SPARE		B	22	20	SPARE		
	23	20	SPARE		C	24	20	SPARE		
	25				A	26				
	27				B	28				
	29				C	30				
	31				A	32				
	33				B	34				
	35				C	36				
	37				A	38				
	39				B	40				
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 20,424 VA
TOTAL DEMAND 17,322 VA 48 AMPS

A - CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X) - DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. C

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
	1	20	RCPT- 140	720	A	2	20	RCPT- WASHER 135	800
	3	20	RCPT- 140	720	B	4	20	RCPT- WASHER 135	800
	5	20	RCPT- 133, 135, 136, 137	1080	C	6	20	RCPT- WASHER 135	800
	7	30	HAND DRYER 136	2700	A	8	20	RCPT- WASHER 135	800
	9	20	RCPT- EWC	600	B	10	30	DRYER 135	5000
	11	20	RCPT- 138	540	C	12			
	13	20	RCPT- VENDING	1200	A	14	30	DRYER 135	5000
	15	20	RCPT- VENDING	1200	B	16			
	17	20	RCPT- VENDING	1200	C	18	30	DRYER 135	5000
	19	20	RCPT- 139	900	A	20			
L,R	21	20	FACP 139	600	B	22	20	SUMP PUMP	300
L,R	23	20	XMTR 139	600	C	24			
L	25	20	UH-1 135	300	A	26	20	PTAC	2455
	27	20	EF-1 135	300	B	28			
	29	20	LGT- 133, 135-140	1066	C	30	20	SPARE	
	31	20	LGT- 134, EXTERIOR	835	A	32	20	SPARE	
	33	20	SPARE		B	34	25	CU-1	3952
	35				C	36			
	37				A	38	20	AHU-1C RM. 133	2070
	39				B	40			
	41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 41,538 VA
TOTAL DEMAND 38,436 VA 107 AMPS

L - CIRCUIT BREAKER TO BE LOCK-ON TYPE
R - CIRCUIT BREAKER HANDLE TO BE RED IN COLOR

NOTE:
1. IN ADDITION TO THE PANEL NAMEPLATE. PROVIDE A LABEL WITH THE FOLLOWING INSCRIPTION: 'FIRE PROTECTION/LIFE SAFETY EQUIPMENT'. CONSTRUCT AND FASTEN LABEL INDENTICAL TO THE PANEL NAMEPLATE. EXCEPT THE LABEL MUST BE RED LAMINATE PLASTIC WITH WHITE CENTER CORE.

PANEL NO. D

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 400A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	30	DRYER 138	5000	A	2	30	DRYER 138	5000
3				B	4			
5	30	DRYER 138	5000	C	6	20	RCPT- WASHER 138	800
7				A	8	20	RCPT- WASHER 138	800
9	30	DRYER 138	5000	B	10	20	RCPT- WASHER 138	800
11				C	12	20	RCPT- WASHER 138	800
13	30	DRYER 138	5000	A	14	20	RCPT- WASHER 138	800
15				B	16	20	RCPT- WASHER 138	800
17	30	DRYER 138	5000	C	18	20	RCPT- WASHER 138	800
19				A	20	20	RCPT- WASHER 138	800
21	30	DRYER 138	5000	B	22	20	RCPT- WASHER 138	800
23				C	24	20	RCPT- WASHER 138	800
25	30	DRYER 138	5000	A	26	20	SPARE	
27				B	28			
29	30	DRYER 138	5000	C	30			
31				A	32			
33	30	DRYER 138	5000	B	34			
35				C	36			
37	30	DRYER 138	5000	A	38			
39				B	40			
41	20	SPARE		C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 63,000 VA
TOTAL DEMAND 59,898 VA 166 AMPS

PANEL NO. F

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM. 158,160 (A)	1800	A	2	20	RCPT- RM. 155,157 (A)	1800	A
A	3	20	RCPT- RM. 158 (B)	1530	B	4	20	RCPT- RM. 155 (B)	1530	A
A	5	20	RCPT- RM. 160 (C)	1530	C	6	20	RCPT- RM. 157 (C)	1530	A
A	7	20	LGT- RM. 155-160 (D)	492	A	8	20	RCPT- RM. 161,163 (A)	1800	A
A	9	20	RCPT- RM. 164,166 (A)	1800	B	10	20	RCPT- RM. 161 (B)	1530	A
A	11	20	RCPT- RM. 164 (B)	1530	C	12	20	RCPT- RM. 163 (C)	1530	A
A	13	20	RCPT- RM. 166 (C)	1530	A	14	20	RCPT- RM. 167,169 (A)	1800	A
A	15	20	LGT- RM. 161-166 (D)	492	B	16	20	RCPT- RM. 167 (B)	1530	A
A	17	20	RCPT- RM. 170,172 (A)	1800	C	18	20	RCPT- RM. 169 (C)	1530	A
A	19	20	RCPT- RM. 170 (B)	1530	A	20	20	SPARE		
A	21	20	RCPT- RM. 172 (C)	1530	B	22	20	SPARE		
A	23	20	LGT- RM. 167-172 (D)	492	C	24	20	SPARE		
	25	20	SPARE		A	26	20	SPARE		
	27	20	SPARE		B	28	20	SPARE		
	29	20	SPARE		C	30	20	SPARE		
	31	20	SPARE		A	32	20	SPARE		
	33	20	SPARE		B	34	20	SPARE		
	35	20	SPARE		C	36	20	SPARE		
	37				A	38				
	39				B	40	125	PANEL 'G'	17322	
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 51,060 VA
TOTAL DEMAND 44,856 VA 125 AMPS

A - CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X) - DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. G

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM 144,146 (A)	1800	A	2	20	RCPT- RM 141,143 (A)	1800	A
A	3	20	RCPT- RM. 144 (B)	1530	B	4	20	RCPT- RM. 141 (B)	1530	A
A	5	20	RCPT- RM. 146 (C)	1530	C	6	20	RCPT- RM. 143 (C)	1530	A
A	7	20	LGT- RM. 141-146 (D)	492	A	8	20	RCPT- RM 147,149 (A)	1800	A
A	9	20	RCPT- RM 150,152 (A)	1800	B	10	20	RCPT- RM. 147 (B)	1530	A
A	11	20	RCPT- RM. 150 (B)	1530	C	12	20	RCPT- RM. 149 (C)	1530	A
A	13	20	RCPT- RM. 152 (C)	1530	A	14	20	SPARE		
A	15	20	LGT- RM. 147-152 (D)	492	B	16	20	SPARE		
	17	20	SPARE		C	18	20	SPARE		
	19	20	SPARE		A	20	20	SPARE		
	21	20	SPARE		B	22	20	SPARE		
	23	20	SPARE		C	24				
	25	20	SPARE		A	26				
	27	20	SPARE		B	28				
	29	20	SPARE		C	30				
	31				A	32				
	33				B	34				
	35				C	36				
	37				A	38				
	39				B	40				
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 20,424 VA
TOTAL DEMAND 17,322 VA 48 AMPS

A - CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X) - DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

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

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

E-601

CEMS ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.362.1646
CEMS Project No: 10153V
Project Manager: R. Alvar

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

REPAIRS BEQ HP510

PANEL SCHEDULES

ROBERT A. ALVAR NC REG. NO. 29610 ENGINEER

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024094

CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED SPEC. 05-18-0042 SHEET 137 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

PANEL NO. H

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM. 204,206 (A)	1800	A	2	20	RCPT- RM. 201,203 (A)	1800	A
A	3	20	RCPT- RM. 204 (B)	1530	B	4	20	RCPT- RM. 201 (B)	1530	A
A	5	20	RCPT- RM. 206 (C)	1530	C	6	20	RCPT- RM. 203 (C)	1530	A
A	7	20	LGT- RM. 201-206 (D)	492	A	8	20	RCPT- RM. 207,209 (A)	1800	A
A	9	20	RCPT- RM. 210,212 (A)	1800	B	10	20	RCPT- RM. 207 (B)	1530	A
A	11	20	RCPT- RM. 210 (B)	1530	C	12	20	RCPT- RM. 209 (C)	1530	A
A	13	20	RCPT- RM. 212 (C)	1530	A	14	20	RCPT- RM. 213,215 (A)	1800	A
A	15	20	LGT- RM. 207-212 (D)	492	B	16	20	RCPT- RM. 213 (B)	1530	A
A	17	20	RCPT- RM. 216,218 (A)	1800	C	18	20	RCPT- RM. 215 (C)	1530	A
A	19	20	RCPT- RM. 216 (B)	1530	A	20	20	SPARE		
A	21	20	RCPT- RM. 218 (C)	1530	B	22	20	SPARE		
A	23	20	LGT- RM. 213-218 (D)	492	C	24	20	SPARE		
	25	20	SPARE		A	26	20	SPARE		
	27	20	SPARE		B	28	20	SPARE		
	29	20	SPARE		C	30	20	SPARE		
	31	20	SPARE		A	32	20	SPARE		
	33				B	34				
	35				C	36				
	37				A	38				
	39				B	40	125	PANEL 'J'	17322	
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 51,060 VA
TOTAL DEMAND 44,856 VA 125 AMPS

A - CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X) - DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. J

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM 224, 226 (A)	1800	A	2	20	RCPT- RM 221, 223 (A)	1800	A
A	3	20	RCPT- RM. 224 (B)	1530	B	4	20	RCPT- RM. 221 (B)	1530	A
A	5	20	RCPT- RM. 226 (C)	1530	C	6	20	RCPT- RM. 223 (C)	1530	A
A	7	20	LGT- RM. 221-226 (D)	492	A	8	20	RCPT- RM 227,229 (A)	1800	A
A	9	20	RCPT- RM 230,232 (A)	1800	B	10	20	RCPT- RM. 227 (B)	1530	A
A	11	20	RCPT- RM. 230 (B)	1530	C	12	20	RCPT- RM. 229 (C)	1530	A
A	13	20	RCPT- RM. 232 (C)	1530	A	14	20	SPARE		
A	15	20	LGT- RM. 227-232 (D)	492	B	16	20	SPARE		
	17	20	SPARE		C	18	20	SPARE		
	19	20	SPARE		A	20	20	SPARE		
	21	20	SPARE		B	22	20	SPARE		
	23	20	SPARE		C	24	20	SPARE		
	25				A	26				
	27				B	28				
	29				C	30				
	31				A	32				
	33				B	34				
	35				C	36				
	37				A	38				
	39				B	40				
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 20,424 VA
TOTAL DEMAND 17,322 VA 48 AMPS

A- CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X)- DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. K

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
	1	20	RCPT- 240	720	A	2	20	RCPT- WASHER 235	800	
	3	20	RCPT- 240	720	B	4	20	RCPT- WASHER 235	800	
	5	20	RCPT- 240 TV	900	C	6	20	RCPT- WASHER 235	800	
	7	20	RCPT- 233, 235-237	1080	A	8	20	RCPT- WASHER 235	800	
	9	30	HAND DRYER 236	2700	B	10	30	DRYER 235	5000	
	11	20	RCPT - 239 COMM. RM.	360	C	12				
	13	20	RCPT - 239 COMM. RM.	720	A	14	30	DRYER 235	5000	
	15	20	RCPT - 239 COMM. RM.	720	B	16				
	17	20	SPARE		C	18	30	DRYER 235	5000	
	19	20	SPARE		A	20				
	21	20	RCPT- 239 COMM. RM.	360	B	22	20	SPARE		
	23	20	RCPT- 239 COMM. RM.	720	C	24	20	SPARE		
	25	20	RCPT- 239 COMM. RM.	720	A	26	20	UH-2 235	300	L
	27	20	RCPT- 239 COMM. RACK	360	B	28	20	EF-2 235	300	
	29	20	RCPT- 239 COMM. RACK	360	C	30				
	31	20	RCPT- 239 COMM. RACK	360	A	32				
	33	20	LGT- 233, 235-240	1066	B	34				
	35	20	LGT- EXTERIOR	835	C	36				
	37				A	38				
	39				B	40	20	AHU-2C 233	2070	
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 33,571 VA
TOTAL DEMAND 30,469 VA 85 AMPS

L - CIRCUIT BREAKER TO BE LOCK-ON TYPE

PANEL NO. L

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM. 258,260 (A)	1800	A	2	20	RCPT- RM. 255,257 (A)	1800	A
A	3	20	RCPT- RM. 258 (B)	1530	B	4	20	RCPT- RM. 255 (B)	1530	A
A	5	20	RCPT- RM. 260 (C)	1530	C	6	20	RCPT- RM. 257 (C)	1530	A
A	7	20	LGT- RM. 255-260 (D)	492	A	8	20	RCPT- RM. 261,263 (A)	1800	A
A	9	20	RCPT- RM. 264,266 (A)	1800	B	10	20	RCPT- RM. 261 (B)	1530	A
A	11	20	RCPT- RM. 264 (B)	1530	C	12	20	RCPT- RM. 263 (C)	1530	A
A	13	20	RCPT- RM. 266 (C)	1530	A	14	20	RCPT- RM. 267,269 (A)	1800	A
A	15	20	LGT- RM. 261-266 (D)	492	B	16	20	RCPT- RM. 267 (B)	1530	A
A	17	20	RCPT- RM. 270,272 (A)	1800	C	18	20	RCPT- RM. 269 (C)	1530	A
A	19	20	RCPT- RM. 270 (B)	1530	A	20	20	SPARE		
A	21	20	RCPT- RM. 272 (C)	1530	B	22	20	SPARE		
A	23	20	LGT- RM. 267-272 (D)	492	C	24	20	SPARE		
	25	20	SPARE		A	26	20	SPARE		
	27	20	SPARE		B	28	20	SPARE		
	29	20	SPARE		C	30	20	SPARE		
	31	20	SPARE		A	32	20	SPARE		
	33	20	SPARE		B	34	20	SPARE		
	35	20	SPARE		C	36	20	SPARE		
	37				A	38				
	39				B	40	125	PANEL 'N'	17322	
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 51,060 VA
TOTAL DEMAND 44,856 VA 125 AMPS

A- CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X)- DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. N

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM 244,246 (A)	1800	A	2	20	RCPT- RM 241,243 (A)	1800	A
A	3	20	RCPT- RM. 244 (B)	1530	B	4	20	RCPT- RM. 241 (B)	1530	A
A	5	20	RCPT- RM. 246 (C)	1530	C	6	20	RCPT- RM. 243 (C)	1530	A
A	7	20	LGT- RM. 241-246 (D)	492	A	8	20	RCPT- RM 247,249 (A)	1800	A
A	9	20	RCPT- RM 250,252 (A)	1800	B	10	20	RCPT- RM. 247 (B)	1530	A
A	11	20	RCPT- RM. 250 (B)	1530	C	12	20	RCPT- RM. 249 (C)	1530	A
A	13	20	RCPT- RM. 252 (C)	1530	A	14	20	SPARE		
A	15	20	LGT- RM. 247-252 (D)	492	B	16	20	SPARE		
	17	20	SPARE		C	18	20	SPARE		
	19	20	SPARE		A	20	20	SPARE		
	21	20	SPARE		B	22	20	SPARE		
	23	20	SPARE		C	24				
	25	20	SPARE		A	26				
	27	20	SPARE		B	28				
	29	20	SPARE		C	30				
	31				A	32				
	33				B	34				
	35				C	36				
	37				A	38				
	39				B	40				
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 20,424 VA
TOTAL DEMAND 17,322 VA 48 AMPS

A- CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X)- DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. O

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM. 304,306 (A)	1800	A	2	20	RCPT- RM. 301,303 (A)	1800	A
A	3	20	RCPT- RM. 304 (B)	1530	B	4	20	RCPT- RM. 301 (B)	1530	A
A	5	20	RCPT- RM. 306 (C)	1530	C	6	20	RCPT- RM. 303 (C)	1530	A
A	7	20	LGT- RM. 301-306 (D)	492	A	8	20	RCPT- RM. 307,309 (A)	1800	A
A	9	20	RCPT- RM. 310,312 (A)	1800	B	10	20	RCPT- RM. 307 (B)	1530	A
A	11	20	RCPT- RM. 310 (B)	1530	C	12	20	RCPT- RM. 309 (C)	1530	A
A	13	20	RCPT- RM. 312 (C)	1530	A	14	20	RCPT- RM. 313,315 (A)	1800	A
A	15	20	LGT- RM. 307-312 (D)	492	B	16	20	RCPT- RM. 313 (B)	1530	A
A	17	20	RCPT- RM. 316,318 (A)	1800	C	18	20	RCPT- RM. 315 (C)	1530	A
A	19	20	RCPT- RM. 316 (B)	1530	A	20	20	SPARE		
A	21	20	RCPT- RM. 318 (C)	1530	B	22	20	SPARE		
A	23	20	LGT- RM. 313-318 (D)	492	C	24	20	SPARE		
	25	20	SPARE		A	26	20	SPARE		
	27	20	SPARE		B	28	20	SPARE		
	29	20	SPARE		C	30	20	SPARE		
	31	20	SPARE		A	32	20	SPARE		
	33				B	34				
	35				C	36				
	37				A	38				
	39				B	40	125	PANEL 'P'	17322	
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 51,060 VA
TOTAL DEMAND 44,856 VA 125 AMPS

A- CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X)- DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. P

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM 324,326 (A)	1800	A	2	20	RCPT- RM 321,323 (A)	1800	A
A	3	20	RCPT- RM. 324 (B)	1530	B	4	20	RCPT- RM. 321 (B)	1530	A
A	5	20	RCPT- RM. 326 (C)	1530	C	6	20	RCPT- RM. 323 (C)	1530	A
A	7	20	LGT- RM. 321-226 (D)	492	A	8	20	RCPT- RM 327,329 (A)	1800	A
A	9	20	RCPT- RM 330,332 (A)	1800	B	10	20	RCPT- RM. 327 (B)	1530	A
A	11	20	RCPT- RM. 330 (B)	1530	C	12	20	RCPT- RM. 297 (C)	1530	A
A	13	20	RCPT- RM. 332 (C)	1530	A	14	20	SPARE		
A	15	20	LGT- RM. 327-332 (D)	492	B	16	20	SPARE		
	17	20	SPARE		C	18	20	SPARE		
	19	20	SPARE		A	20	20	SPARE		
	21	20	SPARE		B	22	20	SPARE		
	23	20	SPARE		C	24				
	25	20	SPARE		A	26				
	27	20	SPARE		B	28				
	29	20	SPARE		C	30				
	31				A	32				
	33				B	34				
	35				C	36				
	37				A	38				
	39				B	40				
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 20,424 VA
TOTAL DEMAND 17,322 VA 48 AMPS

A- CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X)- DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. Q

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
	1	20	RCPT- 340	900	A	2	20	RCPT- WASHER 335	800	
	3	20	RCPT- 340	900	B	4	20	RCPT- WASHER 335	800	
	5	20	RCPT- 340 TV	900	C	6	20	RCPT- WASHER 335	800	
	7	20	RCPT- 333, 335-337	1080	A	8	20	RCPT- WASHER 335	800	
	9	30	HAND DRYER 336	2700	B	10	30	DRYER 335	5000	
	11	20	RCPT- EWC	600	C	12				
	13	20	RCPT- 338	540	A	14	30	DRYER 335	5000	
	15	20	RCPT- VENDING	1200	B	16				
	17	20	RCPT- VENDING	1200	C	18	30	DRYER 335	5000	
	19	20	RCPT- VENDING	1200	A	20				
	21	20	RCPT- 339	900	B	22				
	23	20	LGT- 333, 335-340	1066	C	24				
	25	20	LGT- EXTERIOR	835	A	26	20	PTAC	2455	
L	27	20	UH-3 335	300	B	28				
	29	20	EF-3 335	300	C	30				
	31	20	SPARE		A	32				
	33	20	SPARE		B	34				
	35	20	SPARE		C	36				
	37	20	SPARE		A	38				
	39	20	SPARE		B	40	20	AHU-3C 332	2070	
	41	20	SPARE		C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 37,346 VA
TOTAL DEMAND 34,244 VA 95 AMPS

L - CIRCUIT BREAKER TO BE LOCK-ON TYPE

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

E-602

CEMS
ENGINEERING | ARCHITECTURE
108 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
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CEMS Project No: 10153V
Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

PANEL SCHEDULES

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 29610

ISSUE DATE:15 MAY 2020

DES. N. HEBEL
DR. C. COOPER
CHK. S. PERKINS
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024095

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED SPEC. 05-18-0042 SHEET 138 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

PANEL NO. R

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM. 358,360 (A)	1800	A	2	20	RCPT- RM. 355,357 (A)	1800	A
A	3	20	RCPT- RM. 358 (B)	1530	B	4	20	RCPT- RM. 355 (B)	1530	A
A	5	20	RCPT- RM. 360 (C)	1530	C	6	20	RCPT- RM. 357 (C)	1530	A
A	7	20	LGT- RM. 355-360 (D)	492	A	8	20	RCPT- RM. 361,363 (A)	1800	A
A	9	20	RCPT- RM. 364,366 (A)	1800	B	10	20	RCPT- RM. 361 (B)	1530	A
A	11	20	RCPT- RM. 364 (B)	1530	C	12	20	RCPT- RM. 363 (C)	1530	A
A	13	20	RCPT- RM. 366 (C)	1530	A	14	20	RCPT- RM. 367,369 (A)	1800	A
A	15	20	LGT- RM. 361-361 (D)	492	B	16	20	RCPT- RM. 367(B)	1530	A
A	17	20	RCPT- RM. 370,372 (A)	1800	C	18	20	RCPT- RM. 369 (C)	1530	A
A	19	20	RCPT- RM. 370 (B)	1530	A	20	20	SPARE		
A	21	20	RCPT- RM. 372 (C)	1530	B	22	20	SPARE		
A	23	20	LGT- RM. 367-372 (D)	492	C	24	20	SPARE		
	25	20	SPARE		A	26	20	SPARE		
	27	20	SPARE		B	28	20	SPARE		
	29	20	SPARE		C	30	20	SPARE		
	31	20	SPARE		A	32	20	SPARE		
	33	20	SPARE		B	34	20	SPARE		
	35	20	SPARE		C	36	20	SPARE		
	37				A	38				
	39				B	40	125	PANEL 'S'		17322
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 51,060 VA
TOTAL DEMAND 44,856 VA 125 AMPS

A- CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X)- DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. S

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
A	1	20	RCPT- RM 344,346 (A)	1800	A	2	20	RCPT- RM 341,343 (A)	1800	A
A	3	20	RCPT- RM. 344 (B)	1530	B	4	20	RCPT- RM. 341 (B)	1530	A
A	5	20	RCPT- RM. 346 (C)	1530	C	6	20	RCPT- RM. 343 (C)	1530	A
A	7	20	LGT- RM. 341-346 (D)	492	A	8	20	RCPT- RM 347,349 (A)	1800	A
A	9	20	RCPT- RM 350,352 (A)	1800	B	10	20	RCPT- RM. 347 (B)	1530	A
A	11	20	RCPT- RM. 350 (B)	1530	C	12	20	RCPT- RM. 349 (C)	1530	A
A	13	20	RCPT- RM. 352 (C)	1530	A	14	20	SPARE		
A	15	20	LGT- RM. 347-352 (D)	492	B	16	20	SPARE		
	17	20	SPARE		C	18	20	SPARE		
	19	20	SPARE		A	20	20	SPARE		
	21	20	SPARE		B	22	20	SPARE		
	23	20	SPARE		C	24	20	SPARE		
	25				A	26				
	27				B	28				
	29				C	30				
	31				A	32				
	33				B	34				
	35				C	36				
	37				A	38				
	39				B	40				
	41				C	42				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 20,424 VA
TOTAL DEMAND 17,322 VA 48 AMPS

A - CIRCUIT BREAKER TO BE ARC-FAULT CIRCUIT-INTERRUPTER TYPE
(X) - DENOTES TYPICAL SLEEPING ROOM CIRCUIT. SEE ENLARGED ROOM NEW WORK PLAN.

PANEL NO. M1

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	RCPT - RM. 152	720	A	2	20	RCPT - RM. 118	720
3	20	LGT- RM. 152	118	B	4	20	LGT - RM. 118	118
5	20	RCPT - 1ST UTILITY CHASE	1440	C	6	20	LGT - 1ST UTILITY CHASE	1440
7	20	DHU-1B 152	1782	A	8	20	SBC PANEL	360
9	20	B-AAC-AHU-1B PANEL	360	B	10	20	B-ACC-AHU-1A PANEL	360
11				C	12			
13	30	DOAS-1B 152	7920	A	14	30	DOAS-1A 118	7920
15				B	16			
17	20	SPARE		C	18	20	DHU-1A 118	1782
19	20	SPARE		A	20			
21	20	SPARE		B	22			
23	20	SPARE		C	24			
25	20	SPARE		A	26			
27	20	SPARE		B	28			
29	20	SPARE		C	30			
31	20	SPARE		A	32			
33	20	SPARE		B	34			
35				C	36			
37				A	38			
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 25,400 VA
TOTAL DEMAND 22,296 VA 62 AMPS

PANEL NO. M1A

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	PTAC - RM 101 (F)	2455	A	2	20	PTAC - RM 104 (F)	2455
3				B	4			
5	20	PTAC - RM 103 (F)	2455	C	6	20	PTAC - RM 106 (F)	2455
7				A	8			
9	20	PTAC - RM 107 (F)	2455	B	10	20	PTAC - RM 110 (F)	2455
11				C	12			
13	20	PTAC - RM 109 (F)	2455	A	14	20	PTAC - RM 112 (F)	2455
15				B	16			
17	20	PTAC - RM 113 (F)	2455	C	18	20	PTAC - RM 116 (F)	2455
19				A	20			
21	20	PTAC - RM 115 (F)	2455	B	22	20	PTAC - RM 118 (F)	2455
23				C	24			
25	20	PTAC - RM 121 (F)	2455	A	26	20	PTAC - RM 124 (F)	2455
27				B	28			
29	20	PTAC - RM 123 (F)	2455	C	30	20	PTAC - RM 126 (F)	2455
31				A	32			
33	20	PTAC - RM 127 (F)	2455	B	34	20	PTAC - RM 130 (F)	2455
35				C	36			
37	20	PTAC - RM 129 (F)	2455	A	38	20	PTAC - RM 132 (F)	2455
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 49,100 VA
TOTAL DEMAND 45,998 VA 128 AMPS

PANEL NO. M1B

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	PTAC - RM 141 (F)	2455	A	2	20	PTAC - RM 144 (F)	2455
3				B	4			
5	20	PTAC - RM 143 (F)	2455	C	6	20	PTAC - RM 146 (F)	2455
7				A	8			
9	20	PTAC - RM 147 (F)	2455	B	10	20	PTAC - RM 150 (F)	2455
11				C	12			
13	20	PTAC - RM 149 (F)	2455	A	14	20	PTAC - RM 152 (F)	2455
15				B	16			
17	20	PTAC - RM 155 (F)	2455	C	18	20	PTAC - RM 158 (F)	2455
19				A	20			
21	20	PTAC - RM 157 (F)	2455	B	22	20	PTAC - RM 160 (F)	2455
23				C	24			
25	20	PTAC - RM 161 (F)	2455	A	26	20	PTAC - RM 164 (F)	2455
27				B	28			
29	20	PTAC - RM 163 (F)	2455	C	30	20	PTAC - RM 166 (F)	2455
31				A	32			
33	20	PTAC - RM 167 (F)	2455	B	34	20	PTAC - RM 170 (F)	2455
35				C	36			
37	20	PTAC - RM 169 (F)	2455	A	38	20	PTAC - RM 172 (F)	2455
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 49,100 VA
TOTAL DEMAND 45,998 VA 128 AMPS

PANEL NO. M2

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	RCPT - RM. 252	720	A	2	20	RCPT - RM. 218	720
3	20	LGT- RM. 252	118	B	4	20	LGT - RM. 218	118
5	20	RCPT - 2ND UTILITY CHASE	1440	C	6	20	LGT- 2ND UTILITY CHASE	1440
7	20	DHU-2B 252	1782	A	8	20	DHU-2A 218	1782
9	20	B-AAC-AHU-2B PANEL	360	B	10	20	B-ACC-AHU-2A PANEL	360
11				C	12			
13	30	DOAS-2B 252	7920	A	14	30	DOAS-2A 218	7920
15				B	16			
17	20	SPARE		C	18			
19	20	SPARE		A	20			
21	20	SPARE		B	22			
23	20	SPARE		C	24			
25	20	SPARE		A	26			
27	20	SPARE		B	28			
29	20	SPARE		C	30			
31	20	SPARE		A	32			
33	20	SPARE		B	34			
35				C	36			
37				A	38			
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 25,400 VA
TOTAL DEMAND 22,296 VA 62 AMPS

PANEL NO. M2A

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	PTAC - RM 201 (F)	2455	A	2	20	PTAC - RM 204 (F)	2455
3				B	4			
5	20	PTAC - RM 203 (F)	2455	C	6	20	PTAC - RM 206 (F)	2455
7				A	8			
9	20	PTAC - RM 207 (F)	2455	B	10	20	PTAC - RM 210 (F)	2455
11				C	12			
13	20	PTAC - RM 209 (F)	2455	A	14	20	PTAC - RM 212 (F)	2455
15				B	16			
17	20	PTAC - RM 213 (F)	2455	C	18	20	PTAC - RM 216 (F)	2455
19				A	20			
21	20	PTAC - RM 215 (F)	2455	B	22	20	PTAC - RM 218 (F)	2455
23				C	24			
25	20	PTAC - RM 221 (F)	2455	A	26	20	PTAC - RM 224 (F)	2455
27				B	28			
29	20	PTAC - RM 223 (F)	2455	C	30	20	PTAC - RM 226 (F)	2455
31				A	32			
33	20	PTAC - RM 227 (F)	2455	B	34	20	PTAC - RM 230 (F)	2455
35				C	36			
37	20	PTAC - RM 229 (F)	2455	A	38	20	PTAC - RM 232 (F)	2455
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 49,100 VA
TOTAL DEMAND 45,998 VA 128 AMPS

PANEL NO. M2B

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	PTAC - RM 241 (F)	2455	A	2	20	PTAC - RM 244 (F)	2455
3				B	4			
5	20	PTAC - RM 243 (F)	2455	C	6	20	PTAC - RM 246 (F)	2455
7				A	8			
9	20	PTAC - RM 247 (F)	2455	B	10	20	PTAC - RM 250 (F)	2455
11				C	12			
13	20	PTAC - RM 249 (F)	2455	A	14	20	PTAC - RM 252 (F)	2455
15				B	16			
17	20	PTAC - RM 255 (F)	2455	C	18	20	PTAC - RM 258 (F)	2455
19				A	20			
21	20	PTAC - RM 257 (F)	2455	B	22	20	PTAC - RM 260 (F)	2455
23				C	24			
25	20	PTAC - RM 261 (F)	2455	A	26	20	PTAC - RM 264 (F)	2455
27				B	28			
29	20	PTAC - RM 263 (F)	2455	C	30	20	PTAC - RM 266 (F)	2455
31				A	32			
33	20	PTAC - RM 267 (F)	2455	B	34	20	PTAC - RM 270 (F)	2455
35				C	36			
37	20	PTAC - RM 269 (F)	2455	A	38	20	PTAC - RM 272 (F)	2455
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 49,100 VA
TOTAL DEMAND 45,998 VA 128 AMPS

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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E-603

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.875.3837
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

PANEL SCHEDULES



ISSUE DATE:15 MAY 2020

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024096

CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 139 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

PANEL NO. M3

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	RCPT - RM. 352	720	A	2	20	RCPT - RM. 318	720
3	20	LGT- RM. 352	118	B	4	20	LGT - RM. 318	118
5	20	RCPT - 3RD UTILITY CHASE	1440	C	6	20	LGT - 3RD UTILITY CHASE	1440
7	20	DHU-3B 352	1782	A	8	20	DHU-3A 318	1782
9	20	B-AAC-AHU-3B PANEL	360	B	10	20	B-ACC-AHU-3A PANEL	360
11				C	12			
13	30	DOAS-3B 352	7920	A	14	30	DOAS-3A 318	7920
15				B	16			
17	20	SPARE		C	18	20	SPARE	
19	20	SPARE		A	20	20	SPARE	
21	20	SPARE		B	22	20	SPARE	
23	20	SPARE		C	24	20	SPARE	
25	20	SPARE		A	26	20	SPARE	
27	20	SPARE		B	28	20	SPARE	
29	20	SPARE		C	30	20	SPARE	
31	20	LGT- ATTIC	360	A	32	20	SPARE	
33	20	EF-4	360	B	34			
35				C	36			
37				A	38			
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 25,400 VA
TOTAL DEMAND 22,296 VA 62 AMPS

PANEL NO. M3A

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	PTAC - RM 301 (F)	2455	A	2	20	PTAC - RM 304 (F)	2455
3				B	4			
5	20	PTAC - RM 303 (F)	2455	C	6	20	PTAC - RM 306 (F)	2455
7				A	8			
9	20	PTAC - RM 307 (F)	2455	B	10	20	PTAC - RM 310 (F)	2455
11				C	12			
13	20	PTAC - RM 309 (F)	2455	A	14	20	PTAC - RM 312 (F)	2455
15				B	16			
17	20	PTAC - RM 313 (F)	2455	C	18	20	PTAC - RM 316 (F)	2455
19				A	20			
21	20	PTAC - RM 315 (F)	2455	B	22	20	PTAC - RM 318 (F)	2455
23				C	24			
25	20	PTAC - RM 321 (F)	2455	A	26	20	PTAC - RM 324 (F)	2455
27				B	28			
29	20	PTAC - RM 323 (F)	2455	C	30	20	PTAC - RM 326 (F)	2455
31				A	32			
33	20	PTAC - RM 327 (F)	2455	B	34	20	PTAC - RM 330 (F)	2455
35				C	36			
37	20	PTAC - RM 329 (F)	2455	A	38	20	PTAC - RM 332 (F)	2455
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 49,100 VA
TOTAL DEMAND 45,998 VA 128 AMPS

PANEL NO. M3B

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 225A MLO

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1	20	PTAC - RM 341	2455	A	2	20	PTAC - RM 344	2455
3				B	4			
5	20	PTAC - RM 343	2455	C	6	20	PTAC - RM 346	2455
7				A	8			
9	20	PTAC - RM 347	2455	B	10	20	PTAC - RM 350	2455
11				C	12			
13	20	PTAC - RM 349	2455	A	14	20	PTAC - RM 352	2455
15				B	16			
17	20	PTAC - RM 355	2455	C	18	20	PTAC - RM 358	2455
19				A	20			
21	20	PTAC - RM 357	2455	B	22	20	PTAC - RM 360	2455
23				C	24			
25	20	PTAC - RM 361	2455	A	26	20	PTAC - RM 364	2455
27				B	28			
29	20	PTAC - RM 363	2455	C	30	20	PTAC - RM 366	2455
31				A	32			
33	20	PTAC - RM 367	2455	B	34	20	PTAC - RM 370	2455
35				C	36			
37	20	PTAC - RM 369	2455	A	38	20	PTAC - RM 372	2455
39				B	40			
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 49,100 VA
TOTAL DEMAND 45,998 VA 128 AMPS

PANEL NO. H1

VOLTAGE 277/480V PHASE 3 WIRE 4 BUS SIZE 400A MCB 400A

CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA
1				A	2			
3	250	CHILLER	187976	B	4	20	HHWP-1	3984
5				C	6			
7				A	8			
9	20	CHWP-1	8753	B	10	20	HHWP-1	3984
11				C	12			
13				A	14			
15	20	CHWP-1	8753	B	16	30	SPARE	
17				C	18			
19				A	20			
21	30	SPARE		B	22			
23				C	24			
25				A	26			
27				B	28			
29				C	30			
31				A	32			
33				B	34			
35				C	36			
37				A	38			
39	30	SPD		B	40	70	PANEL 'L1' VIA XFMR 'T1'	7918
41				C	42			

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 22,000 A. RMS SYM.

TOTAL CONNECTED 221,368 VA
TOTAL DEMAND 182,466 VA 220 AMPS

PANEL NO. L1

VOLTAGE 120/208V PHASE 3 WIRE 4 BUS SIZE 125A MCB 125A

	CKT. NO.	BRKR SIZE	LOAD	VA		CKT. NO.	BRKR SIZE	LOAD	VA	
	1	20	RCPT- A501	720	A	2	20	B-1	300	L
	3	20	RCPT- A501	720	B	4	20	B-2	300	L
	5	20	RCPT- A501, EXTERIOR	720	C	6	20	B-3	300	L
	7	20	LGT- A501	472	A	8	20	RCP-1	600	
	9	20	LGT- EXTERIOR	36	B	10	20	EF-1M	660	
L	11	20	GWH-1	300	C	12	20	UH-1M	300	L
L	13	20	GWH-2	300	A	14	20	'B-BC-MECH' PANEL	360	
	15	20	HRP-1	1830	B	16	20	HEAT TRACE	900	
	17				C	18				
	19	20	SPARE		A	20				
	21	20	SPARE		B	22				
	23	20	SPARE		C	24				
	25	20	SPARE		A	26				
	27	20	SPARE		B	28				
	29	20	SPARE		C	30				

INTERRUPTING AMPERE CURRENT RATING FOR THIS ASSEMBLY SHALL BE 10,000 A. RMS SYM.

TOTAL CONNECTED 7,918 VA
TOTAL DEMAND 7,918 VA 22 AMPS

L - CIRCUIT BREAKER TO BE LOCK-ON TYPE

EQUIPMENT SCHEDULE

EQUIPMENT	FEEDER	DISCONNECT
RCP-1	2#12, #12G, 3/4"C	20A MOTOR RATED SWITCH
DHU-1A,1B,2A,2B,3A,3B	2#12, #12G, 3/4"C	20A MOTOR RATED SWITCH
UH-1,2,3,4	2#12, #12G, 3/4"C	20A MOTOR RATED SWITCH
DOAS-1A,2A,3A	3#10, #10G, 3/4"C	30/3/240V/NF/N1
DOAS-1B,2B,3B	3#10, #10G, 3/4"C	30/3/240V/NF/N1
AHU-1C,2C,3C	3#12, #12G, 3/4"C	30/3/240V/NF/N1
EF-1,2,3,4	2#12, #12G, 3/4"C	20A MOTOR RATED SWITCH
PTAC	2#12, #12G, 3/4"C	NEMA 6-20R RECEPTACLE
HHWP-1, 2	3#12, #12G, 3/4"C	30/3/600V/NF/N1
CHWP-1, 2	3#12, #12G, 3/4"C	30/3/600V/NF/N1
CU-1	2#10, #10G, 3/4"C	30/2/250V/NF/3R
FCU-1	1"C W/PULLSTRING	20A MOTOR RATED SWITCH
HEAT TRACE	2#12, #12G, 3/4"C	30/2/250V/NF/3R
HAND DRYER	2#10, #10G, 3/4"C	JUNCTION BOX
HRP-1	2#12, #12G, 3/4"C	30/2/250V/NF/3R

BEQ HP510 LOAD ANALYSIS

EQUIPMENT	QTY	V/PH	HP	VA/EA.	VA/TOTAL CONNECTED	DEMAND FACTOR	VA/TOTAL DEMAND
RCTPS-GENERAL PURPOSE (1ST 10 KVA)		120/1		180	10,000	X 1.0	10,000
RCPTS-GENERAL PURPOSE (REMAINDER)		120/1		180	155,120	X 0.5	77,560
RCTPS-REFRIGERATORS/MICROWAVE	120	120/1		1,350	162,000	X 1.0	162,000
RCTPS-DRYERS	20	208/1		5,000	100,000	X 1.0	100,000
RCTPS-WASHING MACHINES	22	120/1		800	17,600	X 1.0	17,600
HAND DRYERS	3	120/1		2700	8,100	X 1.0	8,100
LIGHTING		120/1			27,283	X 1.0	27,283
LARGEST MOTOR- DOAS-1A	1	208/3	6.0		7,920	X 1.25	9,900
OTHER MOTORS	8	208/3			45,810	X 1.0	45,810
PTAC - HVAC EQUIPMENT	122	208/1			299,510	X 1.0	299,510
OTHER MOTORS	20	120/1			13,752	X 1.0	13,752
ELECTRONICS		120/1			4,440	X 1.0	4,440
		TOTAL			851,535		775,955
		AMPS					2,156

TRANSFORMER = TOTAL CONNECTED LOAD X 0.7 = 543,169 VA

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ISSUE DATE:15 MAY 2020

E-604

CEMS
ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.383.1646
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

PANEL SCHEDULES

DES. N. HEBEL	
DR. C. COOPER	
CHK. S. PERKINS	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024097
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 140 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

ELECTRICAL ONE-LINE RISER GENERAL NOTES:

1. INSTALL NEW GROUND CONDUCTOR, #3/0 BARE COPPER IN 3/4"C TO 3/4"x10' COPPER CLAD GROUND ROD. EXTEND AND CONNECT EQUIPMENT GROUNDING CONDUCTOR TO BUILDING MAIN WATER SERVICE AND PLACE BONDING JUMPERS AROUND VALVES AND METERS TO ENSURE FULL BONDING OFMETALLIC WATER SYSTEM.

2. TRANSFORMER TO CONTAIN BIODEGRADABLE DIELECTRIC FLUID.

3. INSTALL NEW METER ON SECONDARY SIDE OF TRANSFORMER COMPARTMENT. PROVIDE A SOCKET-MOUNTED ELECTRONIC PROGRAMMABLE OUTDOOR WATTHOUR METER, SURFACE MOUNTED. 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.
   - A. DESIGN: PROVIDE METERS DESIGNED FOR USE ON A 3-PHASE, 4WIRE, 208Y/120 AND 480/277 VOLT SYSTEM WITH 3 CURRENT TRANSFORMERS. INCLUDE NECESSARY KYZ PULSEINITIATION HARDWARE FOR ENERGY MONITORING AND CONTROL SYSTEM (EMCS).
   - B. COORDINATION: PROVIDE METER COORDINATED WITH RATIOS OF CURRENT TRANSFORMERS AND TRANSFORMER SECONDARY VOLTAGE.
   - C. CLASS: 20; FORM: 9S; ACCURACY: =/- 1.0 PERCENT; FINISH: CLASS II.
   - D. COVER: POLYCARBONATE AND LOCKABLE TO PREVENT TAMPERING AND UNAUTHORIZED REMOVAL,
   - E. KILOWATT-HOUR REGISTER: 5 DIGIT ELECTRONIC PROGRAMMABLE TYPE.
   - F. DEMAND REGISTER
     - a. PROVIDE SOLID STATE
     - b. METER READING MULTIPLIER
       - INDICATE MULTIPLIER ON THE METER FACE.
     - c. DEMAND INTERVAL LENGTH: SHALL BE PROGRAMMED FOR 15 MINUTES WITH ROLLING DEMAND UP TO SIX SUBINTERVALS PER INTERVAL.
   - G. METER FUSING: PROVIDE A FUSE BLOCK MOUNTED IN THE SECONDARY VOLTAGE INPUT TO THE WATTHOUR METER. SIZE FUSES AS RECOMMENDED BY THE METER MANUFACTURER.
   - H. 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.

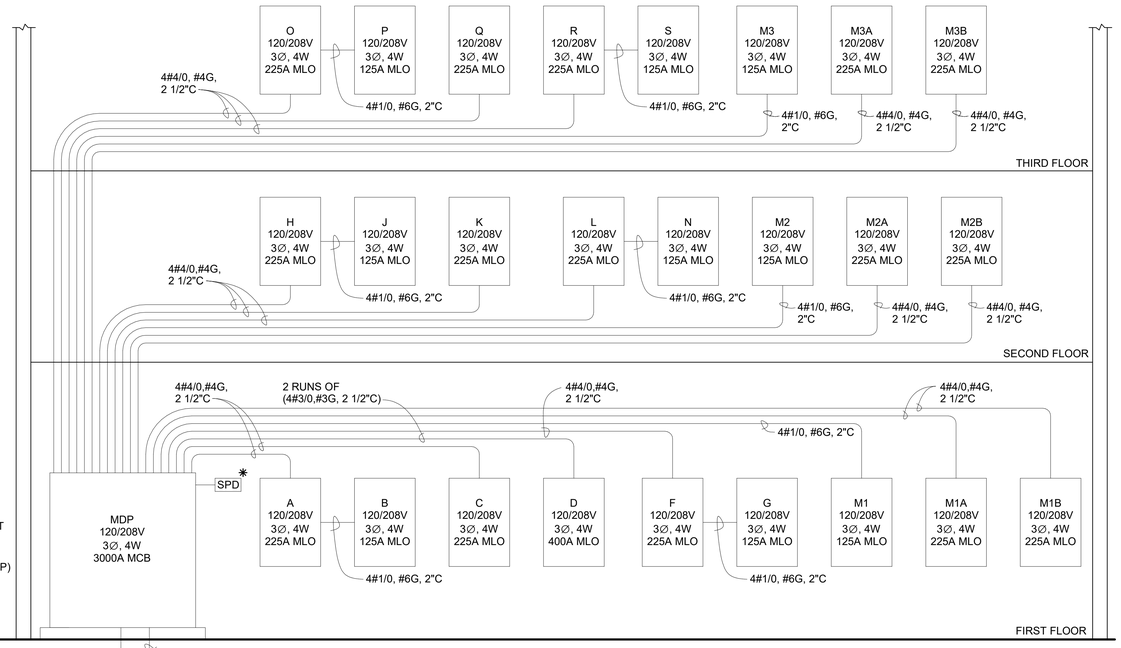
4. CONTRACTOR TO RUN NEW SECONDARY UNDER EXISTING FOUNDATION, AVOIDING EXISTING PILES AND/OR FOOTINGS UP TO MDP PANEL LOCATION. SECONDARY SERVICE MAY REQUIRE 6' ± DEPTHS TO ACCOMPLISH THE INSTALLATION.

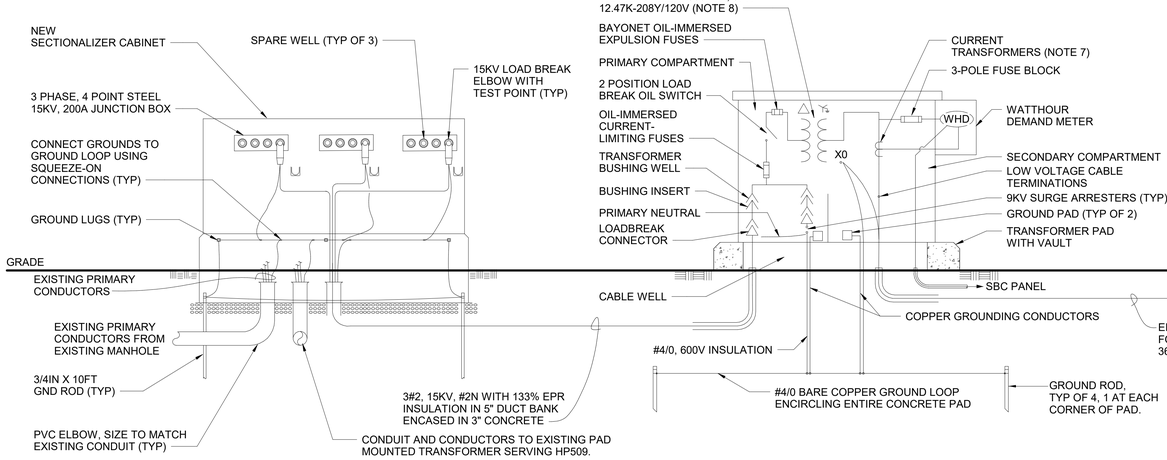
5. PROVIDE 4" CONCRETE HOUSEKEEPING PAD FOR PANEL MDP.

6. GROUND ROD CONNECTIONS SHALL BE IRREVERSIBLE COMPRESSION OR EXOTHERMIC WELD.

7. CT RADIO 1200/5, RF 1.5, METER ACC. CLASS 0.3 THRU B-0.5.

8. TRANSFORMER DELTA-WYE TYPE, MAX IMPEDANCE 5%.





1 ELECTRICAL RISER DIAGRAM
SCALE: NOT TO SCALE

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E-605

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 10153V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

ELECTRICAL RISER DIAGRAM

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

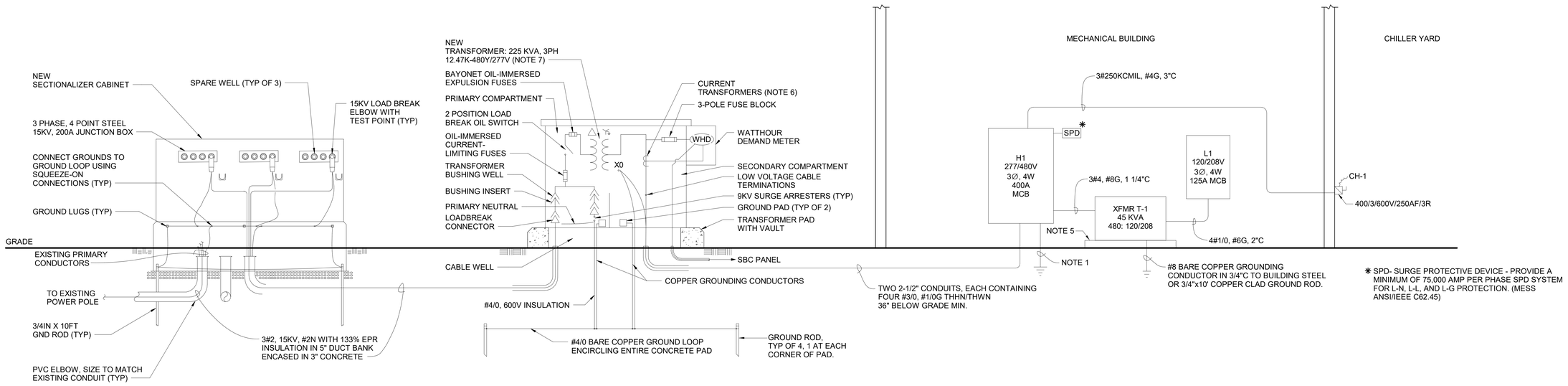
ISSUE DATE:15 MAY 2020

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CONSTR. CONTR. NO.: N40085-18-B-0042

SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 141 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



1 MECHANICAL BUILDING ELECTRICAL RISER DIAGRAM
SCALE: NOT TO SCALE

ELECTRICAL ONE-LINE RISER GENERAL NOTES:

1. INSTALL NEW GROUND CONDUCTOR, #1/0 BARE COPPER IN 3/4"C TO 3/4"x10' COPPER CLAD GROUND ROD. EXTEND AND CONNECT EQUIPMENT GROUNDING CONDUCTOR TO BUILDING MAIN WATER SERVICE AND PLACE BONDING JUMPERS AROUND VALVES AND METERS TO ENSURE FULL BONDING OFMETALLIC WATER SYSTEM.
2. TRANSFORMER TO CONTAIN BIODEGRADABLE DIELECTRIC FLUID.
3. INSTALL NEW METER ON SECONDARY SIDE OF TRANSFORMER COMPARTMENT. PROVIDE A SOCKET-MOUNTED ELECTRONIC PROGRAMMABLE OUTDOOR WATTHOUR METER, SURFACE MOUNTED. 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.
   - A. DESIGN: PROVIDE METERS DESIGNED FOR USE ON A 3-PHASE, 4WIRE, 208Y/120 AND 480/277 VOLT SYSTEM WITH 3 CURRENT TRANSFORMERS. INCLUDE NECESSARY KYZ PULSEINITIATION HARDWARE FOR ENERGY MONITORING AND CONTROL SYSTEM (EMCS).
   - B. COORDINATION: PROVIDE METER COORDINATED WITH RATIOS OF CURRENT TRANSFORMERS AND TRANSFORMER SECONDARY VOLTAGE.
   - C. CLASS: 20; FORM: 9S; ACCURACY: =/- 1.0 PERCENT; FINISH: CLASS II.
   - D. COVER: POLYCARBONATE AND LOCKABLE TO PREVENT TAMPERING AND UNAUTHORIZED REMOVAL.
   - E. KILOWATT-HOUR REGISTER: 5 DIGIT ELECTRONIC PROGRAMMABLE TYPE.
   - F. DEMAND REGISTER
     - a. PROVIDE SOLID STATE
     - b. METER READING MULTIPLIER
       - INDICATE MULTIPLIER ON THE METER FACE.
     - c. DEMAND INTERVAL LENGTH: SHALL BE PROGRAMMED FOR 15 MINUTES WITH ROLLING DEMAND UP TO SIX SUBINTERVALS PER INTERVAL.
   - G. METER FUSING: PROVIDE A FUSE BLOCK MOUNTED IN THE SECONDARY VOLTAGE INPUT TO THE WATTHOUR METER. SIZE FUSES AS RECOMMENDED BY THE METER MANUFACTURER.
   - H. 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.
4. CONTRACTOR TO RUN NEW SECONDARY UNDER EXISTING FOUNDATION, AVOIDING EXISTING PILES AND/OR FOOTINGS UP TO PANEL 'H1' LOCATION. SECONDARY SERVICE MAY REQUIRE 6' ± DEPTHS TO ACCOMPLISH THE INSTALLATION.
5. GROUND ROD CONNECTIONS SHALL BE IRREVERSIBLE COMPRESSION OR EXOTHERMIC WELD.
6. CT RADIO 200/5, RF 4.0, METER ACC. CLASS 0.3 THRU B-0.1.
7. TRANSFORMER DELTA-WYE TYPE, MAX IMPEDANCE 3.5%.

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

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

1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

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

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

E-606

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.353.1640
CEMS Project No: 15152V Project Manager: R. Alvar

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

REPAIRS BEQ HP510

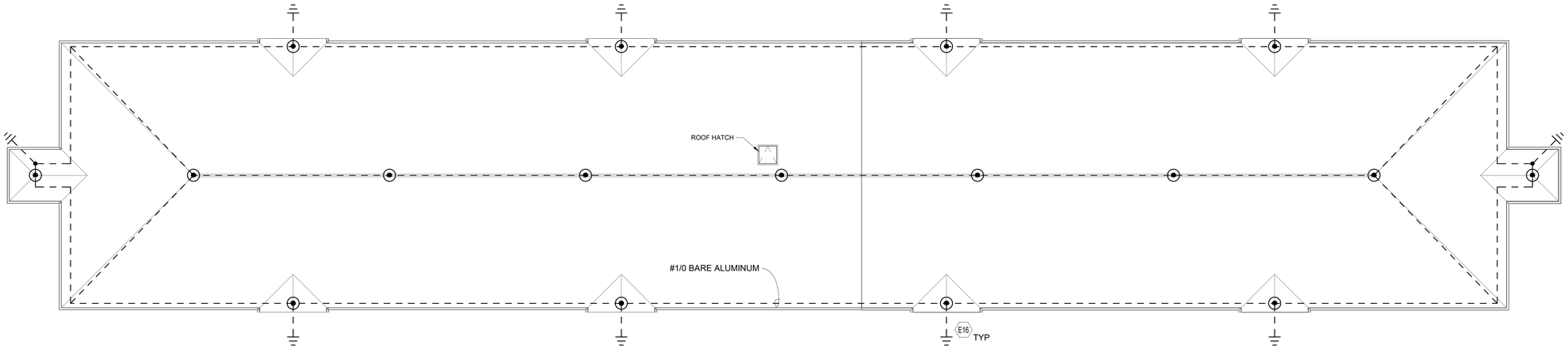
MECHANICAL BUILDING ELECTRICAL RISER DIAGRAM

DES. N. HEBEL
DR. C. COOPER
CHK. S. PERKINS
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

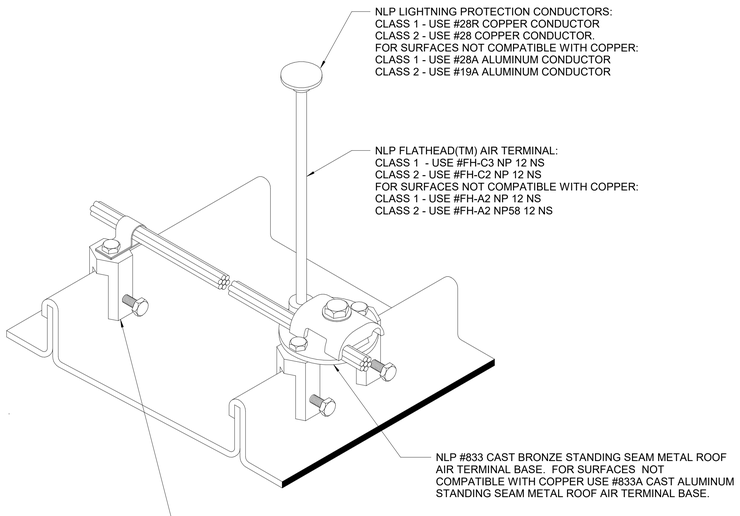
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		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 142 OF 143

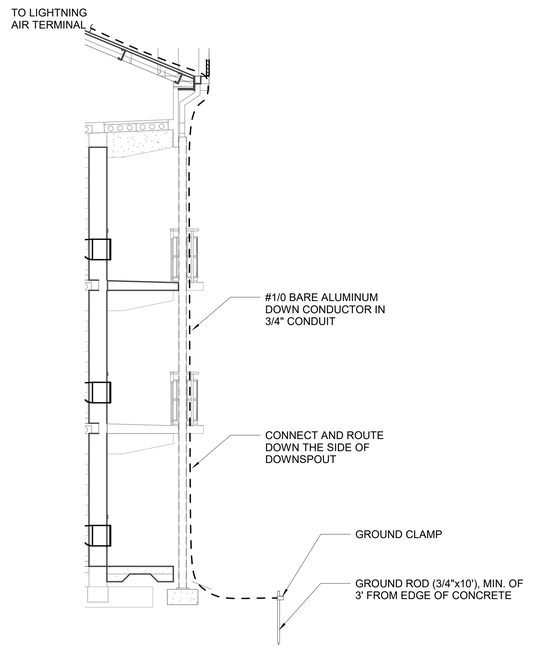
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



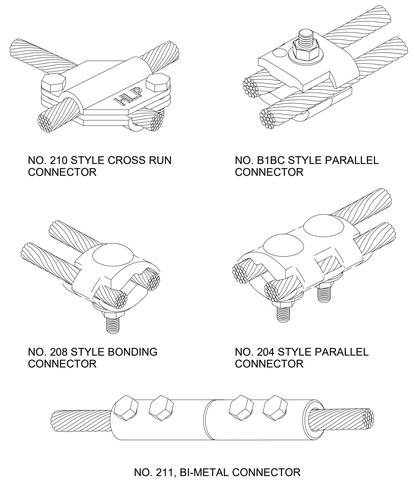
1 LIGHTNING PROTECTION PLAN
SCALE: 3/32" = 1'-0"



2 TYPICAL AIR TERMINAL WITH BASE
SCALE: NOT TO SCALE



3 ROOF CONNECTION DOWN TO LEAD TO GROUND ROD
SCALE: 1/4" = 1'-0"



4 TYPICAL CABLE CONNECTIONS
SCALE: NOT TO SCALE

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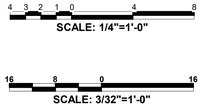
GENERAL NOTES

1. SEE SHEET E-001 FOR GENERAL NOTES AND LEGEND.

SHEET KEYNOTES

E16 LIGHTNING PROTECTION DOWN CONDUCTOR TO BE INSTALLED ON STEEL DOWNSPOUT TUBE.





GRAPHIC SCALES

ISSUE DATE:15 MAY 2020

E-701

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

REPAIRS BEQ HP510

LIGHTNING PROTECTION PLAN AND DETAILS

DES.	N. HEBEL
DR.	C. COOPER
CHK.	S. PERKINS
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

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