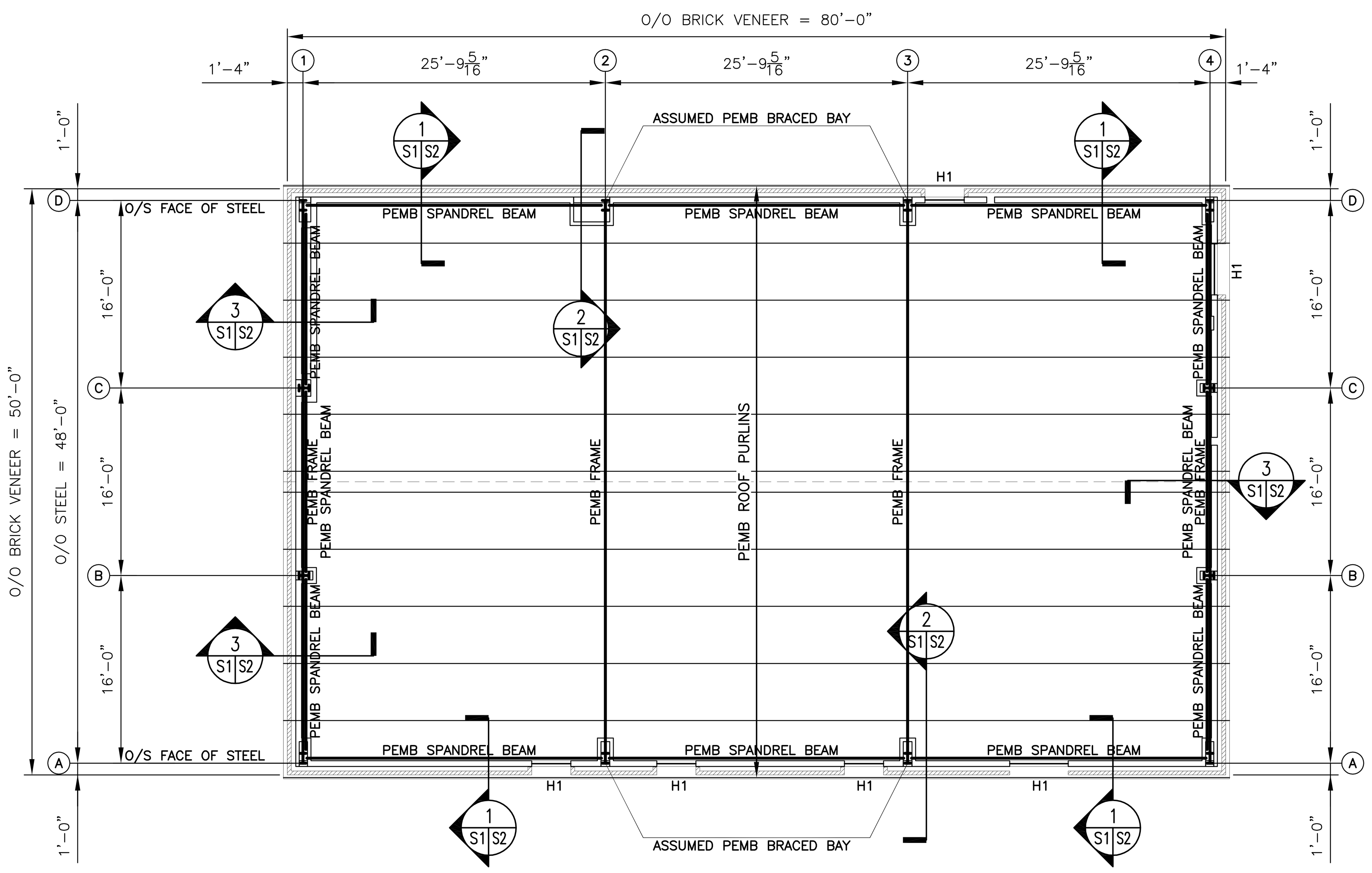
REVISIONS			
SYM.		DATE	APPROVED



ROOF FRAMING PLAN

1 S2|S2 — SCALE 1/4" = 1'-0"

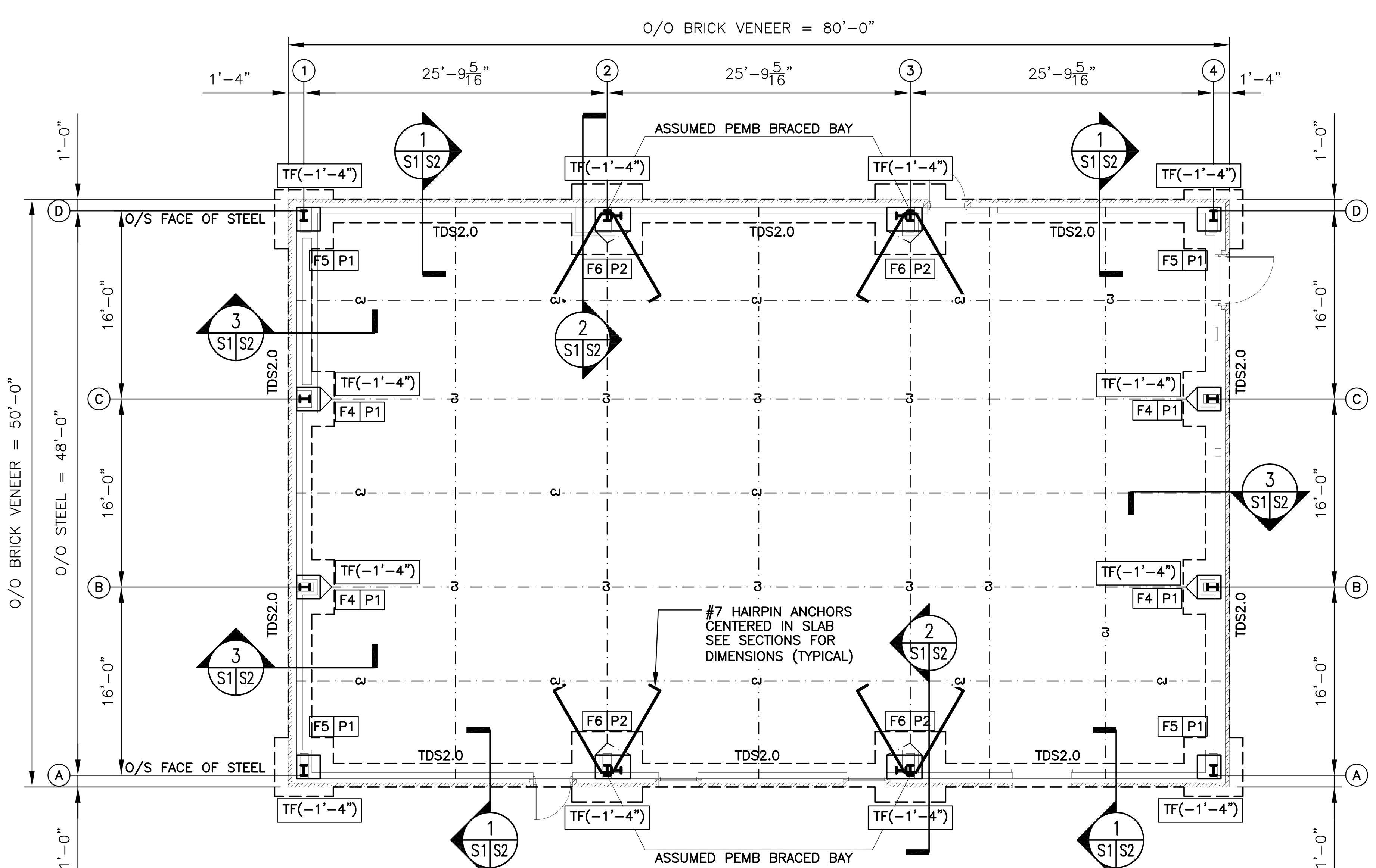
- SEE SECTION CUTS FOR FRAMING DETAILS
- "H1" INDICATES OPENING HEADER TYPE (SEE SCHEDULE THIS SHEET)

PRE-ENGINEERED METAL BUILDING (PEMB) SUPPLIER TO DESIGN AND FURNISH ALL NECESSARY SPANDREL BEAMS / SUPPORTS AROUND THE PERIMETER OF THE STRUCTURE TO SUPPORT AND RESIST ALL LATERAL LOADS IMPOSED BY THE LIGHT GAUGE METAL WALLS.

HEADER SCHEDULE

MARK	HEADER/SILL/JAMB SIZE	REMARKS
H1	HEADER – (1)600S300-54mil STUD & (1)600T150-43mil TRACK SILL – (1)600S250-43mil STUDS & (1)600T150-43mil TRACK JAMB – (1)600S250-54mil STUDS & (1)600T150-43mil TRACK	TRACK / STUDS

* STUD TO TRACK ATTACHMENT W/ (2) #12 SCREWS AT 12"oc
* BRICK LINTEL – (1)L3½"x3½"x5/16" W/ 8" BEARING
* HEADER/SILL ATTACHMENT TO JAMB W/ AL600 CLIP & (4) #12 SCREWS EACH LEG



FOUNDATION PLAN

1 S1|S1 — SCALE 1/4" = 1'-0"

- FLOOR SLAB TO BE 6" CONCRETE w/ #4 BARS @ 12" O.C. EACH WAY (CENTERED IN SLAB) ON VAPOR BARRIER AND 4" STONE BASE
- TOP OF FOOTING LOCATION TO BE (-1'-4") BELOW FIN. FLR. 0'-0"
- "CJ" INDICATES CONSTRUCTION/CONTROL JOINTS (SEE DETAIL THIS SHEET)
- "FX" INDICATES FRAME FOOTING TYPE (SEE SCHEDULE THIS SHEET)
- "PX" INDICATES FRAME PIER TYPE (SEE SCHEDULE THIS SHEET)

THE FOUNDATION DESIGN IS BASED ON PRELIMINARY/ASSUMED METAL BUILDING FRAMING REACTIONS. THE FINAL/ACTUAL METAL BUILDING REACTIONS ARE TO BE PROVIDED TO THE CONTRACTING OFFICER BY THE GENERAL CONTRACTOR. THE DESIGN SHOWN IN THESE CONTRACT DOCUMENTS SHALL BE VERIFIED BY THE CONTRACTING OFFICER PRIOR TO FABRICATION AND CONSTRUCTION OF FOUNDATIONS. ANY DISCREPANCIES BETWEEN THE PRELIMINARY FOUNDATION DESIGN AND FINAL PRE-ENGINEERED METAL BUILDING REACTIONS SHALL BE COORDINATED TO FINALIZE THE FOUNDATION DESIGN.

GENERAL NOTES

FOUNDATION NOTES:

A PRESUMPTIVE ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF WAS USED FOR THE DESIGN OF THE FOUNDATIONS. IF EXISTING CONDITIONS OR TESTS SUGGEST THAT THE SOIL IS QUESTIONABLE OR UNSUITABLE, THE CONTRACTOR IS TO NOTIFY THE ARCHITECT AND ENGINEER PRIOR TO FOUNDATION CONSTRUCTION.

THE SOILS ENGINEER OR HIS REPRESENTATIVE SHALL INSPECT ALL SUBGRADE WORK PRIOR TO THE PLACEMENT OF ANY REINFORCING STEEL OR CONCRETE AND SHALL PERFORM TESTS TO VERIFY THAT SUCH WORK IS IN CONFORMANCE WITH THE PROCEDURES NOTED IN THE CONTRACT DOCUMENTS.

CONCRETE NOTES:

CONCRETE PLACEMENT AND QUALITY: PER RECOMMENDATIONS IN ACI SP-15.

DEBRIS: REMOVE ALL DEBRIS FROM FORMS BEFORE PLACING CONCRETE.

SEGREGATION OF AGGREGATES: DO NOT DROP CONCRETE THROUGH REINFORCING STEEL SO AS TO CAUSE SEGREGATION OF AGGREGATES.

INSERTS: SECURELY POSITION ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING DOWELS, BOLTS, ANCHORS, PIPES AND SLEEVES IN THE FORMS BEFORE PLACING CONCRETE.

CONSTRUCTION JOINTS: OBTAIN THE ARCHITECTS APPROVAL OF JOINT LOCATIONS IN ALL SLABS, BEAMS, AND SHEAR WALLS. REMOVE LAITANCE AND CLEAN SURFACE OF CONCRETE CONSTRUCTION JOINTS

REBAR GRADES: ALL REINFORCING STEEL TO BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60. ALL ACCESSORIES ARE TO BE INCLUDED. BARS ARE TO BE COLD BENT IN SHOP. BAR SUPPORTS ARE TO BE SPACED IN ACCORDANCE WITH ACI 315 AND CRSI. ALL BAR SPLICES ARE TO BE CONSIDERED CLASS "B" – CLASS "B" SPLICES ARE TO BE LAPPED A DISTANCE OF $1.3L_d$. COMPRESSION REINFORCING SHALL BE LAPPED A MIN. OF 40 BAR DIAMETERS

REBAR COVER: ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS "CLEAR" ARE TO CENTER OF STEEL MINIMUM REBAR COVER (CLEAR) FOR NONPRESTRESSED CONCRETE SHALL BE AS FOLLOWS:

LOCATION	MIN. COVER (CLEAR)	TOLERANCES
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"	3/8"
EXPOSED TO EARTH OR WEATHER:		
#5 AND SMALLER BARS	1 1/2"	3/8"
#6 AND LARGER BARS	2"	3/4"
NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:		
STRUCTURAL SLABS AND WALLS	3/4"	1/8"
BEAMS AND COLUMNS (PRIMARY REINFORCEMENT, TIES, STIRRUPS AND SPIRALS)	1 1/2"	3/8"
SLABS ON GRADE	1 1/2"	1/4"

TOLERANCES OF REBAR PLACEMENT: TOLERANCE FOR LONGITUDINAL LOCATION OF BENDS AND ENDS OF REINFORCEMENT SHALL BE PLUS OR MINUS 2 INCHES EXCEPT AT DISCONTINUING ENDS OF MEMBERS WHERE TOLERANCES SHALL BE PLUS OR MINUS 1/2 INCH.

CONCRETE QUALITY:

CONCRETE USE:	STRENGTH @ 28 DAYS	SLUMP	AIR	AGGREGATE SIZE	AGGREGATE TYPE
FOUNDATIONS	4000	5"	–	1 1/2"	ASTM C33
EXTERIOR SLABS	5000	5"	4–6%	1"	ASTM C33
SLAB ON GRADE	4000	5"	–	1"	ASTM C33

DO NOT ADD WATER TO CONCRETE MIX AT SITE UNLESS APPROVED BY ARCHITECT

CONCRETE: NORMAL WEIGHT CONCRETE SHALL HAVE A MINIMUM UNIT WEIGHT OF 145 POUNDS PER CUBIC FOOT.

AGGREGATE: NORMAL WEIGHT AGGREGATE CONFORMING TO ASTM C33.

AGGREGATE SIZE CONFORMING TO:
3/4" ASTM C67
1" ASTM C67
1 1/2" ASTM C67

CEMENT: TYPE I

CONCRETE AGE: NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT UNLESS APPROVED BY ARCHITECT.

LIGHT GAGE METAL NOTES:

ALL METAL STUDS AND ACCESSORIES SHALL BE OF THE TYPE, SIZE, AND SPACING AS SHOWN ON THE DRAWINGS AND SHALL BE MANUFACTURED BY AN APPROVED SUPPLIER.

ALL STRUCTURAL MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH AISI "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STRUCTURAL MEMBERS," LATEST ADDITION.

ALL FRAMING SHALL BE FORMED FROM CORROSION-RESISTANT STEEL, MEETING THE REQUIREMENTS OF ASTM A446 WITH A MINIMUM STRENGTH OF 40 KSI FOR SJ STUDS AND 33 KSI FOR CR RUNNERS.

FASTENING OF COMPONENTS SHALL BE MADE WITH SELF-DRILLING SCREWS OR WELDING. SCREWS TO BE OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION. ALL WELDS TO BE TOUCHED UP WITH ZINC PAINT.

STUDS ARE TO BEAR DIRECTLY ON THE CR RUNNERS SO THAT FASTENERS DO NOT SUPPORT THE FULL SHEAR STRENGTH OF THE CONNECTION.

TEMPORARY BRACING SHALL BE PROVIDED UNTIL ERECTION IS COMPLETED.

APPENDIX B

STRUCTURAL DESIGN

STRUCTURAL DESIGN IS BASED ON THE 2018 NORTH CAROLINA BUILDING CODE

DESIGN LOADS: OCCUPANCY CATEGORY I

IMPORTANCE FACTORS: WIND (I_W) 1.00; SNOW (I_S) 1.00; SEISMIC (I_E) 1.00

LIVE LOADS: ROOF 20 psf; COLLATERAL 6 psf; MEZZANINE N/A psf; FLOOR N/A psf

SNOW LOAD: Pg = 10.0 psf; Ce = 1.0 psf; Ct = 1.0 psf

WIND LOAD: BASIC WIND SPEED V_{ult} = 145 mph (ASCE 7-10)
EXPOSURE CATEGORY C
INTERNAL PRESS. COEF: GC_{pi} = *MB
COMPONENTS & CLADDING WIND PRESSURES (V_{ult}):
ROOF ZONE 1 = 37 PSF — ROOF OH ZONE 1 = 61 PSF
ROOF ZONE 2 = 63 PSF — ROOF OH ZONE 2 = 100 PSF
ROOF ZONE 3 = 96 PSF
WALL ZONE 4 = 41 PSF
WALL ZONE 5 = 50 PSF
WIND BASE SHEARS (FOR MWRFS) Vx = *MB Vy = *MB

SEISMIC DESIGN CATEGORY A
COMPLIANCE WITH SECTION 1616.4 ONLY? [X] NO [ ] YES

SEISMIC DESIGN CATEGORY [X] B [ ] C [ ] D

SEISMIC DESIGN CATEGORY B, C & D
PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
SEISMIC USE GROUP IV
SPECTRAL RESPONSE ACCELERATION S_S 15.7 %g; S_1 7.3 %g; S_{DS} 16.7 %g; S_{D1} 11.7 %g
SPECTRAL RESPONSE COEFFICIENT: C_S *MB
RESPONSE MODIFICATION COEFFICIENT: R *MB
SITE CLASSIFICATION D [ ] FIELD TEST [X] PRESUMPTIVE [ ] HISTORICAL DATA
BASIC STRUCTURAL SYSTEM (CHECK ONE) (*MB – LATERAL RESISTING SYSTEM)
___ BEARING WALL ___ DUAL W/ SPECIAL MOMENT FRAME
___ BUILDING FRAME ___ DUAL W/ INTERMEDIATE R/C OR SPECIAL STEEL
X MOMENT FRAME ___ INVERTED PENDULUM
SEISMIC BASE SHEAR Vx = *MB Vy = *MB
ANALYSIS PROCEDURE ___ SIMPLIFIED, X EQUIVALENT LATERAL FORCE, ___ MODAL
ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? YES

LATERAL DESIGN CONTROL? EARTHQUAKE *MB WIND *MB

SOIL BEARING CAPACITIES:
FIELD TEST (PROVIDE COPY OF TEST REPORT) ____ psf
PRESUMPTIVE BEARING CAPACITY 2000 psf
PILE SIZE, TYPE, AND CAPACITY

*MB – INDICATES DESIGN CRITERIA PROVIDE BY METAL BUILDING MANUFACTURER

PRE-ENGINEERED METAL BUILDING:

CODES: METAL BUILDING TO BE DESIGN BASED ON BUILDING CODES AND LOADS LISTED ON THIS SHEET AND REQUIREMENTS OF METAL BUILDING MFRS. ASSOCIATION.

FOUNDATION DESIGN HAS BEEN BASED ON ASSUMED METAL BUILDING FRAME REACTIONS. ACTUAL REACTIONS ARE TO BE PROVIDED TO THE ARCHITECT BY THE CONTRACTOR FROM THE METAL BUILDING MANUFACTURER. THE DESIGN SHOWN IN THESE CONTRACT DOCUMENTS WILL BE VERIFIED BY THE ARCHITECT/ENGINEER PRIOR TO FABRICATION AND CONSTRUCTION OF FOUNDATIONS.

COLLATERAL ROOF LOAD SHALL BE 6 PSF

FRAME DRIFT DEFLECTION LIMIT: H/240

STABILITY:

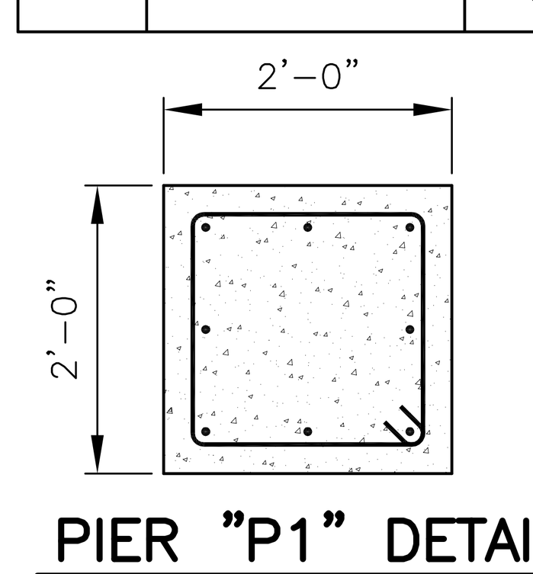
STABILITY FOR BUILDINGS IS PROVIDED BY PRE-ENGINEERED METAL BUILDING FRAMES OF STEEL. PROVIDE BRACING AS REQUIRED FOR WALLS AND COLUMNS UNTIL STRUCTURAL FRAME IS COMPLETE.

FOOTING SCHEDULE

MARK	FOOTING SIZE	REINFORCING
F6	6'-0" X 6'-0" X 18" DEEP	(7) #5 BARS E.W. TOP AND BOTTOM
F5	5'-0" X 5'-0" X 16" DEEP	(6) #5 BARS E.W.
F4	4'-0" X 4'-0" X 14" DEEP	(5) #5 BARS E.W.

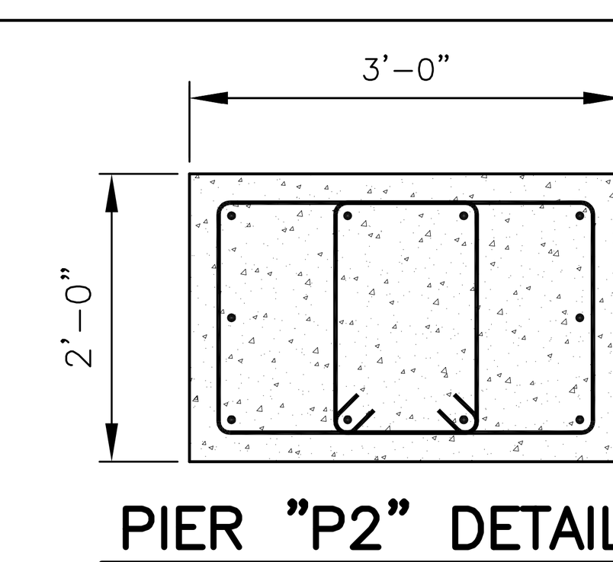
PIER SCHEDULE

MARK	PIER SIZE	REINFORCING
P1	2'-0" X 2'-0"	(8) #6 DOWELS w/ #3 TIES @ 4" O.C. (3 MIN.)
P2	2'-0" X 3'-0"	(10) #6 DOWELS w/ #3 TIES @ 4" O.C. (3 MIN.)



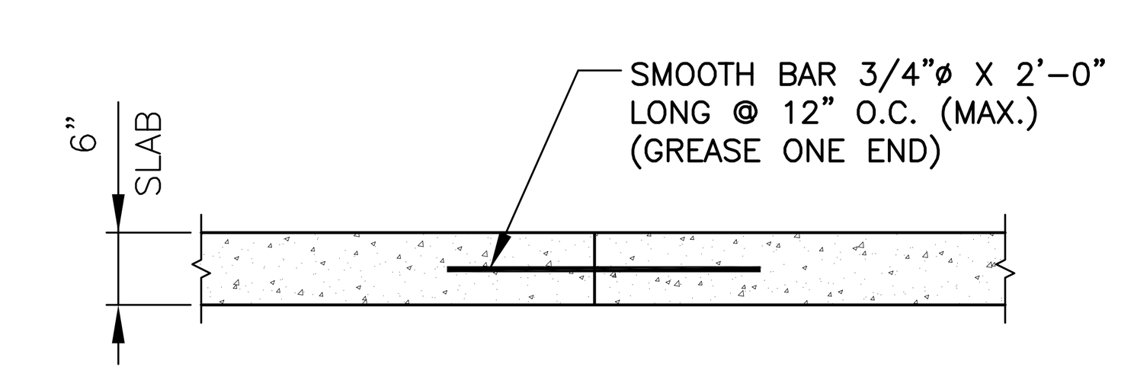
PIER "P1" DETAIL

NO SCALE



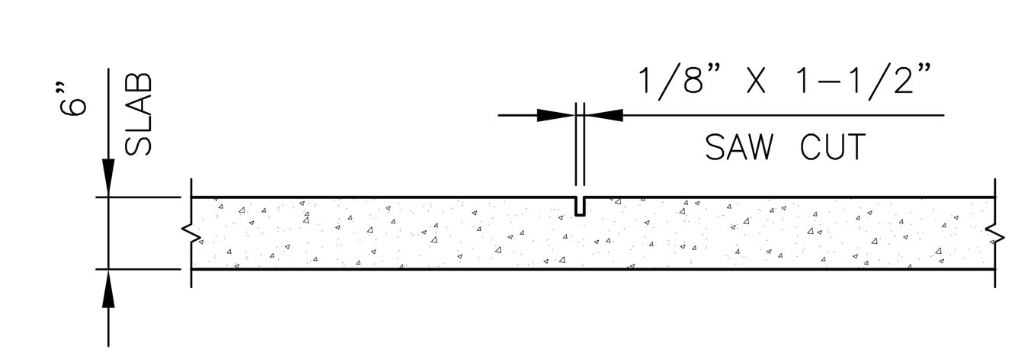
PIER "P2" DETAIL

NO SCALE



FLOOR CONSTRUCTION JOINT DETAIL

NO SCALE



FLOOR CONTROL JOINT DETAIL

NO SCALE

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27874 JASON M. REEP 8/19/2021

SHEET TITLE: PLANS & GENERAL NOTES — S-1

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

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

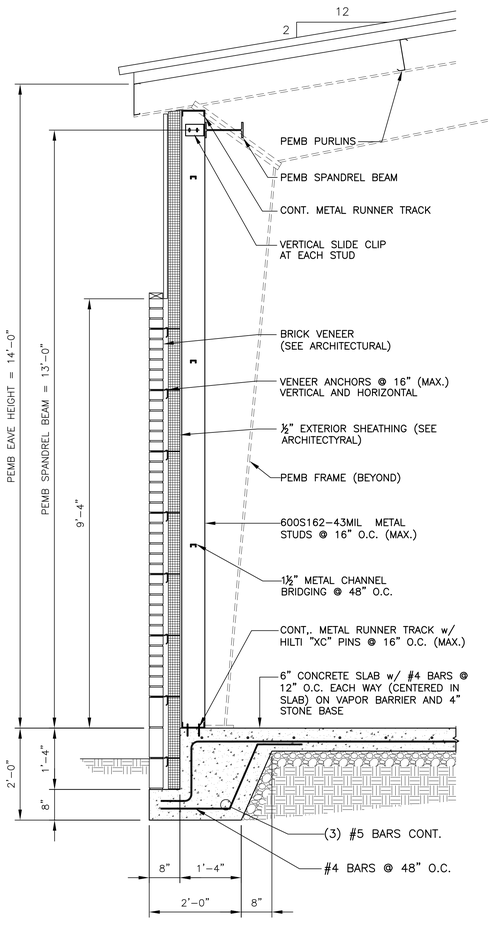
DES.	Jason M. Reep, PE
DR.	Jason M. Reep, PE
CHK.	Jason M. Reep, PE
SUBMITTED BY:	
DESIGN DIR.	T H BURTON, PE
APPROVED:	DATE
SATISFACTORY TO:	DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

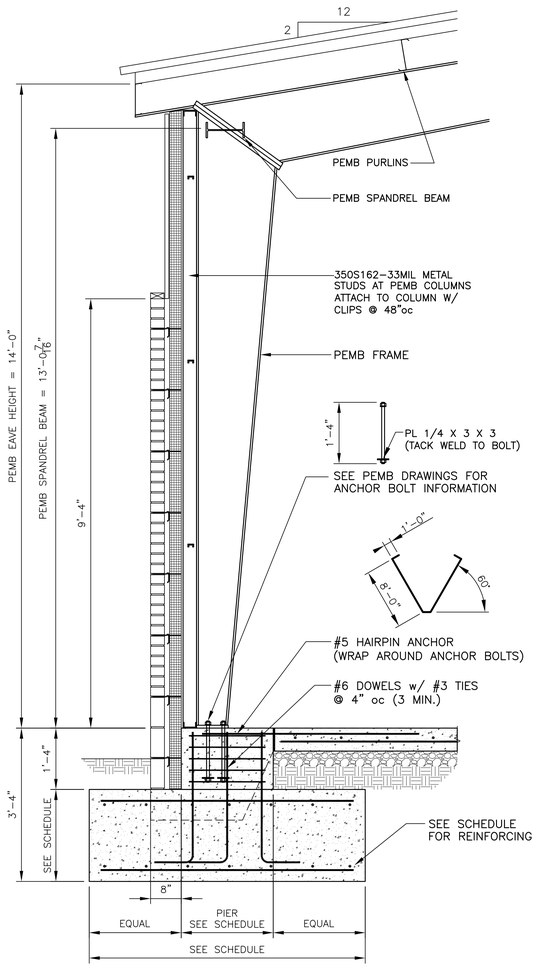
SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	60035454
		CONST. CONTR. NO.

SCALE: NOTED — SPEC. 05-21-0010 —

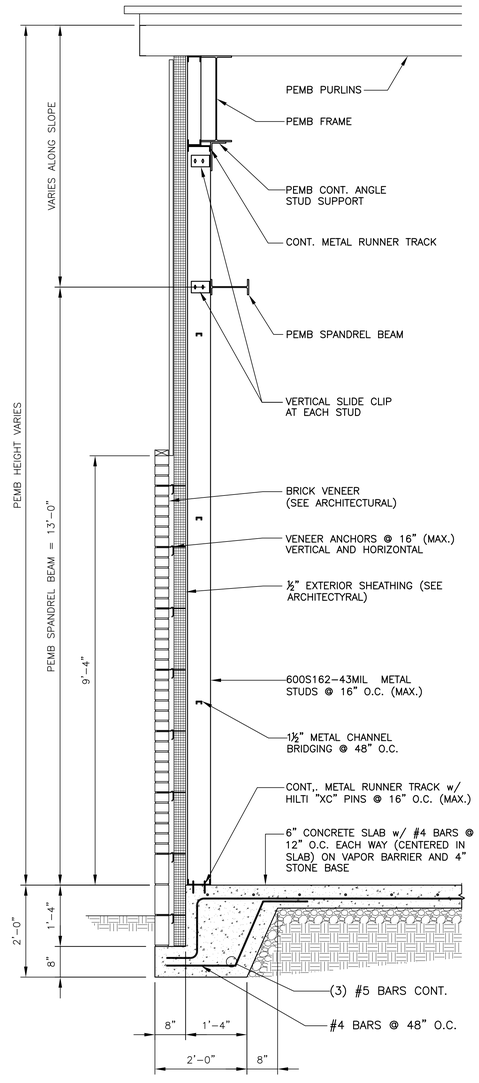
REVISIONS			
SYM.		DATE	APPROVED



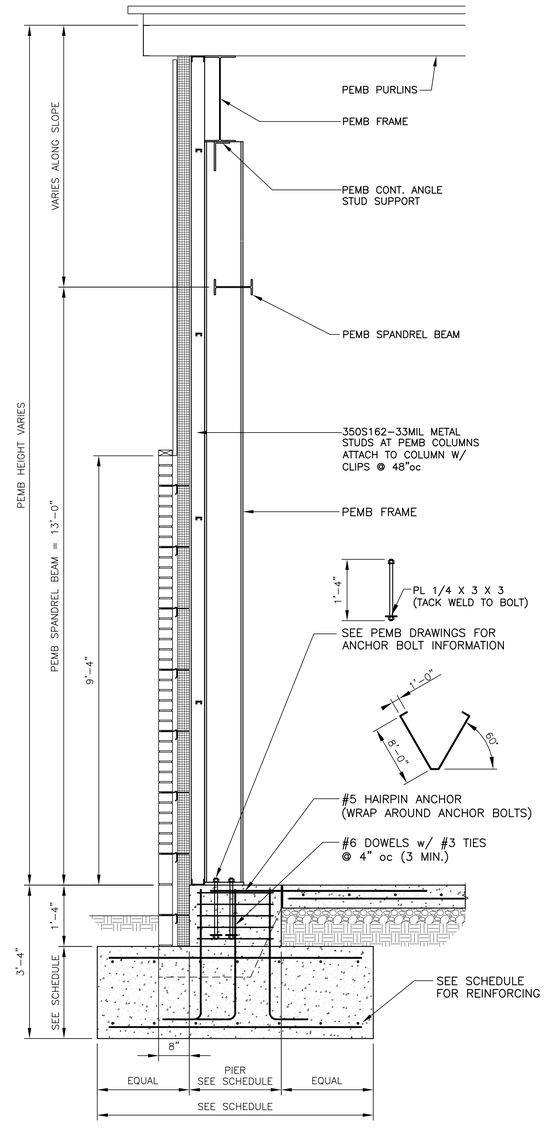
1 S2 S1 FRAMING SECTION
SCALE 3/4" = 1'-0"



2 S2 S1 FRAMING SECTION
SCALE 3/4" = 1'-0"



3 S2 S1 FRAMING SECTION
SCALE 3/4" = 1'-0"



4 S2 S1 FRAMING SECTION
SCALE 3/4" = 1'-0"

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
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NORTH CAROLINA PROFESSIONAL SEAL 27874 ENGINEER JASON M. REEP
8/13/2021

SHEET TITLE: SECTIONS & TYPICAL DETAILS

S-2

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

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

DES.	Jason M. Reep, PE
DR.	Jason M. Reep, PE
CHK.	Jason M. Reep, PE
SUBMITTED BY:	
DESIGN DIR.	T H BURTON, PE
APPROVED:	DATE
SATISFACTORY TO:	DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	60035455

CONST. CONTR. NO.

SCALE: NOTED | SPEC. 05-21-0010 | SHEET 15 OF 43

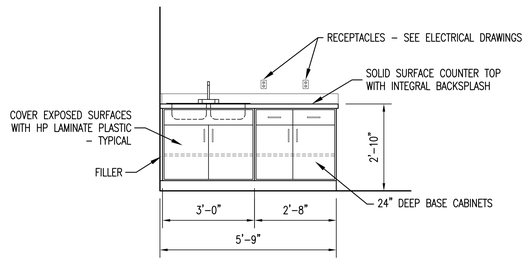
FINISH SCHEDULE

R100 ← SEE THIS SYMBOL ON FLOOR PLANS FOR CORRESPONDING ROOM NUMBER

ROOM NO.	ROOM NAME	FLOOR			BASE			WALL					CEILING				CEILING HT.	REMARKS	ROOM NO.
		SEALED CONCRETE	24" X 24" RUBBER TILE	1" X 1" CERAMIC TILE	4" COVED RUBBER	4" COVED CERAMIC		GYPSUM BOARD ABUSE RESISTANT TYPE X	4" X 12" CERAMIC UP 8'-0"	ACCENT 4" X 12" CERAMIC 2 COURSES	WIRE CAGE		OPEN TO STRUCTURE	24" X 24" LAY-IN ACOUSTICAL TYPE	GYPSUM BOARD			PROVIDE APPLIED FLOOR, WALL BASE, WALL AND CEILINGS INDICATED IN THIS SCHEDULE.	
R101	GROUP OFFICE	•			•			•			•		•				–	–	R101
R102	CLASSROOM		•		•			•						•			9'-0"	–	R102
R103	BREAK/ELECTRICAL	•			•			•					•				–	–	R103
R104	HALL	•			•			•					•				–	–	R104
R105	HEAD #1			•		•			•	•					•		8'-0"	SEE COLOR FINISH SCHEDULE	R105
R106	HEAD #2			•		•			•	•					•		8'-0"	SEE COLOR FINISH SCHEDULE	R106
R107	CLOSET	•			•			•							•		8'-0"	–	R107
R108	EVALUATION LAB		•		•			•					•				–	–	R108
R109	CORRIDOR	•			•			•					•				–	–	R109
R110	WIRE CAGE #1	•			•			•			•		•				–	–	R110
R111	WIRE CAGE #2	•			•			•			•		•				–	–	R111
R112	UNCLASSIFIED OFFICE	•			•			•					•				–	–	R112

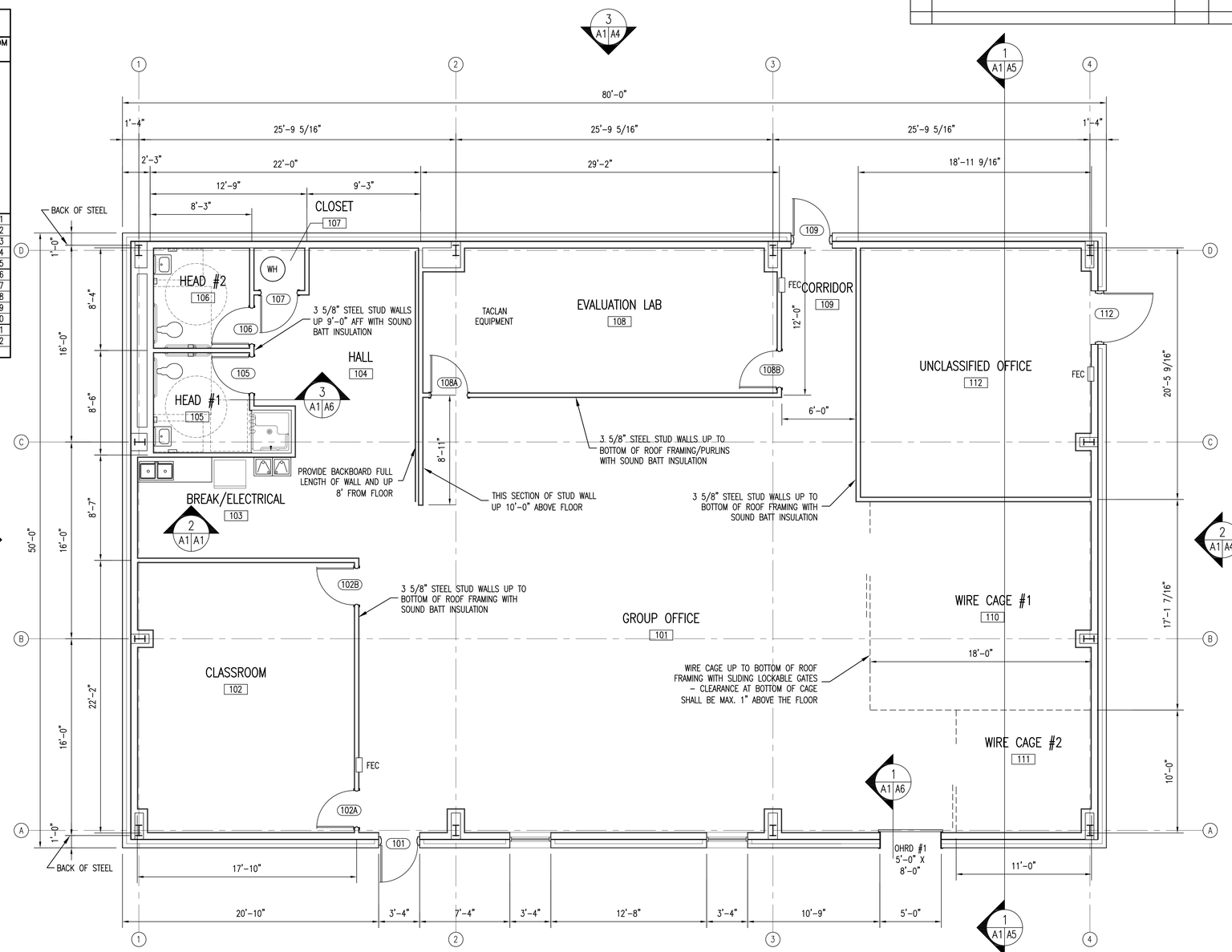
GENERAL NOTES CONCERNING THE FINISH SCHEDULE:

1. GYPSUM BOARD WALL AND CEILING PAINTS SHALL BE EGGSHELL UNLESS NOTED OTHERWISE.
2. WHERE CONCRETE IS INDICATED ON FINISH SCHEDULE THE CONCRETE FLOORS ARE TO BE CLEANED THOROUGHLY. REMOVE PAINT OR OTHER PRODUCTS FROM THE FLOORS. AFTER CONCRETE HAS BEEN CLEANED, COAT WITH SEALER – SEE SPECIFICATIONS DIVISION 9, SECTION 09 90 00, COATING TABLE FOR INTERIOR CONCRETE, EPOXY SEALER.
3. CONCRETE FLOOR JOINTS SHALL BE FILLED WITH MOISTURE INSENSITIVE POLYUREA ELASTOMER JOINT FILLER. SEE SPECIFICATIONS.
4. IF REQUIRED, THE GOVERNMENT WILL INSTALL PAINTED LINES ON CONCRETE FLOORS.



CASEWORK ELEVATION 2 / A1|A1
SCALE 1/2" = 1'-0"

EXTERIOR COLOR SELECTIONS BY BASE ARCHITECT.



FLOOR PLAN 1 / A1|A1
SCALE 1/4" = 1'-0"

1/4" = 1'-0"
0 5 10 FEET

N

INTERIOR COLOR SCHEDULE

COLORS INDICATED IN THIS SCHEDULE ARE BASED ON BASE "COOL PALETTE". EQUAL MANUFACTURERS TO THOSE SCHEDULED ARE ACCEPTABLE.

FLOOR

CONCRETE
EPOXY SEALER, SEE DIV. 9, SECTION 09 90 00, INTERIOR CONCRETE TABLE 3, FLOORS, EPOXY SEALER SPEC

RUBBER TILE
JOHNSONITE, ORGANICS – QUANTUM RH8, 24" X 24", 1/8" THICK, 402007003

PORCELAIN
DALTILE, KEYSTONES SERIES, COLORBODY PORCELAIN, COLOR SUEDE GRAY D208, 1"x1"

GROUT
CUSTOM BUILDING PRODUCTS, #370 DOVE GRAY

BASE

4" COVED RUBBER
JOHNSONITE, TA4 GATEWAY

4" COVED CERAMIC
DALTILE, COVED BASE A3401, MATTE SUEDE GRAY 0782, 4"x4"

GROUT
CUSTOM BUILDING PRODUCTS, #370 DOVE GRAY

WINDOW TREATMENTS

AWARD BLINDS – SIGNATURE BLACKOUT VINYL ROLLER SHADES – PEWTER. CURVED FASCIA – ALUMINUM

WALLS

PAINT GYPSUM BOARD WALLS
WALL – S-W, SNOWBOUND (SW 7004), EGGSHELL
WOOD TRIM – S-W, FOLKSTONE (SW 6005), SEMI GLOSS

INTERIOR MASONRY WALLS
WALL – S-W, SNOWBOUND (SW 7004), GLOSS

CERAMIC WALL TILE
WALL TILE: DALTILE, GLAZED CERAMIC, BISCUIT K175, 4"x12"
ACCENT WALL TILE: DALTILE, GLAZED CERAMIC, SUEDE GRAY 0182, 2 COURSES OF 4"x12" WITH BOTTOM COURSE AT APPROXIMATELY 44" AFF.

GROUT
CUSTOM BUILDING PRODUCTS, #172 URBAN PUTTY BETWEEN THE TWO ACCENT COURSES, USE A GRAY GROUT THAT MOST CLOSELY MATCHES THE ACCENT TILE

CEILING

GYP BOARD (PAINT)
S-W, PEARLY WHITE (SW 7009), EGGSHELL

ACOUSTICAL LAY-IN
ARMSTRONG, CORTEGA, MEDIUM TEXTURE

STEEL DOORS

DOORS: S-W TOQUE WHITE (SW 7003), GLOSS FINISH

FRAMES: S-W FOLKSTONE, (SW 6005), GLOSS FINISH

STEEL DOORS & FRAMES

INTERIOR, AND INTERIOR PORTION OF EXTERIOR, DOORS AND FRAMES
S-W, ICE CUBE (SW 6252) (SEMI GLOSS)

CASEWORK TOPS AND LAMINATE

BREAK ROOM
TOP – DUPONT, CORIAN, CONCRETE
BODY – WILSONART, NORTH SEA, D90-60 MATTE FINISH

REVISIONS			
SYM.		DATE	APPROVED

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

TALLEY & SMITH ARCHITECTURAL CORPORATION, INC. REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA SHELBY, N.C. CERT. NO. 50153

ROBERT L. SMITH III REGISTERED ARCHITECT 8102 NORTH CAROLINA SHELBY, N.C. 19 AUG 2021

FLOOR PLAN — A-1

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

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

DES. Robert L. Smith III
DR. Steven C. Fender
CHK. Robert L. Smith III
SUBMITTED BY:
DESIGN DIR. T H Burton, PE
APPROVED: DATE
SATISFACTORY TO: DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

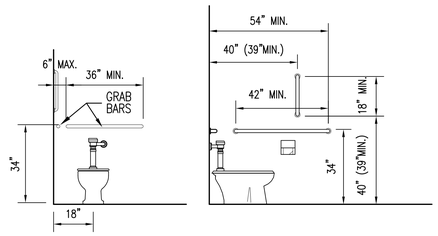
SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 60035456 | CONST. CONTR. NO.
SCALE: NOTED | SPEC. 05-21-0010 | SHEET 16 OF 43

REVISIONS			
SYM.		DATE	APPROVED

TOILET ACCESSORIES: SEE PLAN

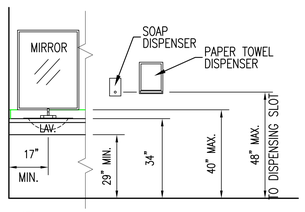
(1) TOILET PAPER DISPENSER	(5) 42" & 18" GRAB BARS	(9) HI/LOW EWC WITH BOTTLE FILLER
(2) PAPER TOWEL DISPENSER	(6) 36" GRAB BAR	(10) COLLAPSIBLE VINYL THRESHOLD WITH SHOWER
(3) SOAP DISPENSER	(7) TOWEL HOOK	
(4) 24" x 36" MIRROR	(8) SHOWER CURTAIN AND ROD	

TOILET ACCESSORIES SHOWN ON DRAWINGS ARE TO INDICATE LOCATIONS AND ITEMS REQUIRED. SIZES OF TOILET ACCESSORIES SHOWN MAY OR MAY NOT MATCH ITEMS SPECIFIED TO BE PROVIDED.



MOUNTING HEIGHTS @ H/C TOILET

NOT TO SCALE

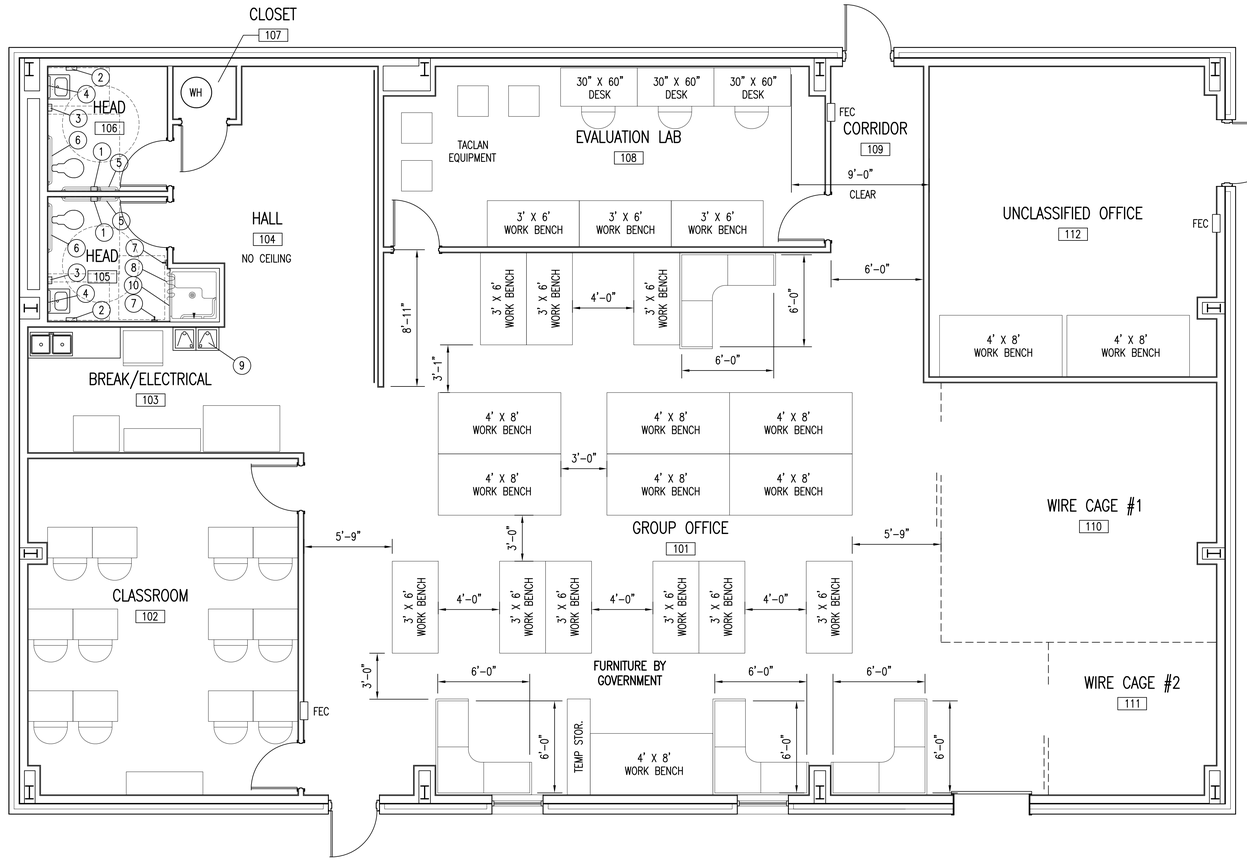


NOTE:
VERIFY LOCATION OF DISPENSERS ON PLAN

MOUNTING HEIGHTS @ H/C LAVATORY

NOT TO SCALE

TOILET ACCESSORIES SEE FLOOR PLAN



FURNITURE LAYOUT PLAN 1 A2 A2

SCALE 1/4" = 1'-0"

1/4" = 1'-0"

0 5 10 FEET

N

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

TALLEY & SMITH ARCHITECTURE INC. REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 50153 SHELBY, N.C.

ROBERT L. SMITH III REGISTERED ARCHITECT 8102 NORTH CAROLINA SHELBY, N.C.

19 AUG 2021

FURNITURE LAYOUT AND DETAILED TOILET PLAN — A-2

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

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

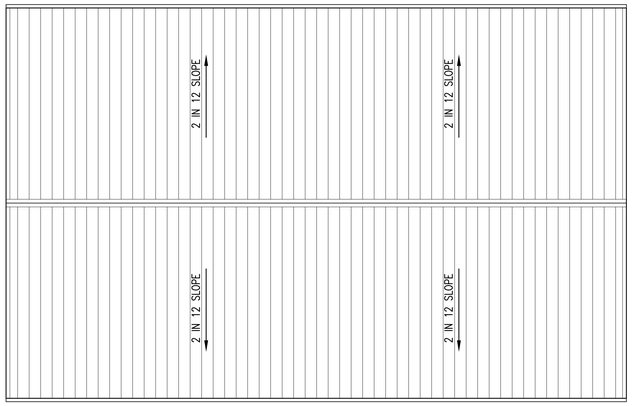
DES. Robert L. Smith III
DR. Steven C. Fender
CHK. Robert L. Smith III
SUBMITTED BY:
DESIGN DIR. T H Burton, PE
APPROVED: DATE
SATISFACTORY TO: DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 60035457 | CONST. CONTR. NO.

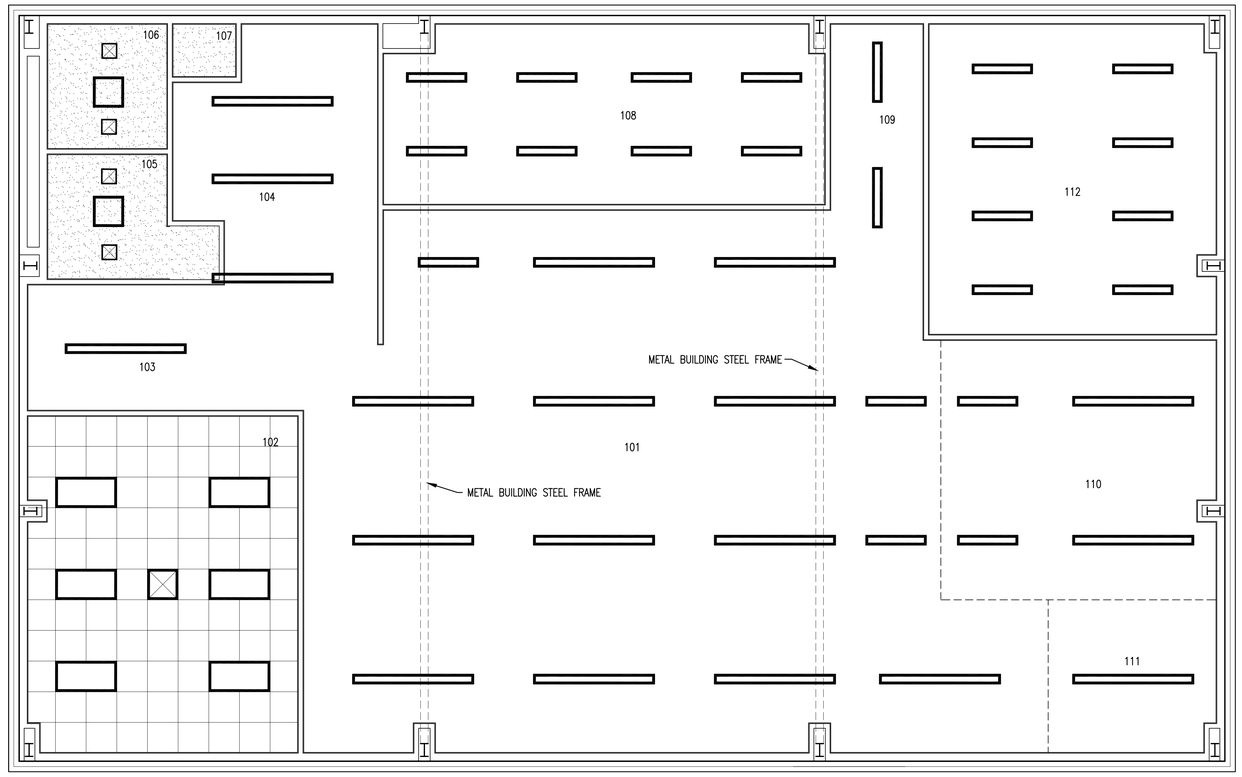
SCALE: NOTED | SPEC. 05-21-0010 | SHEET 17 OF 43

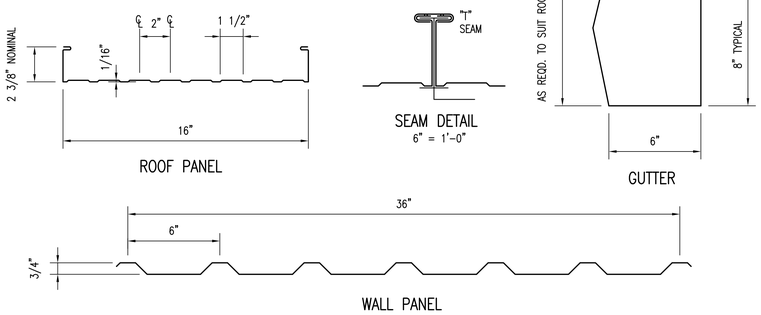
REVISIONS			
SYM.		DATE	APPROVED



ROOF PLAN 2 A3|A3

SCALE 1/8" = 1'-0"





ROOF PANEL

SEAM DETAIL
6" = 1'-0"

GUTTER

WALL PANEL

STANDING SEAM METAL ROOF SYSTEM
ROOF COMPONENT CONFIGURATIONS 5 A3|A3

3" = 1'-0"

RENOVATED CONDITIONS CEILING PLAN LEGEND

- 2' x 2" LAY-IN TILE CEILING GRID — CEILING HEIGHTS – SEE FINISH SCHEDULE ON SHEET A-1
- GYPSUM BOARD
- OPEN TO BOTTOM OF METAL BUILDING STRUCTURE/INSULATION ABOVE
- LIGHT FIXTURES SEE ELECT. DWGS.
- HVAC UNITS, SUPPLY AND EXHAUST GRILLES SEE MECH. DRAWINGS

CEILING PLAN LEGEND

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

CEILING PLAN 1 A3|A3

SCALE 1/4" = 1'-0"

1/4" = 1'-0"
0 5 10 FEET

N

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

TALLEY & SMITH ARCHITECTURE INC. REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA SHELBY, N.C. CERT. NO. 50153

ROBERT L. SMITH III REGISTERED ARCHITECT 8102 NORTH CAROLINA SHELBY, N. C.

19 AUG 2021

CEILING AND ROOF PLAN — A-3

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

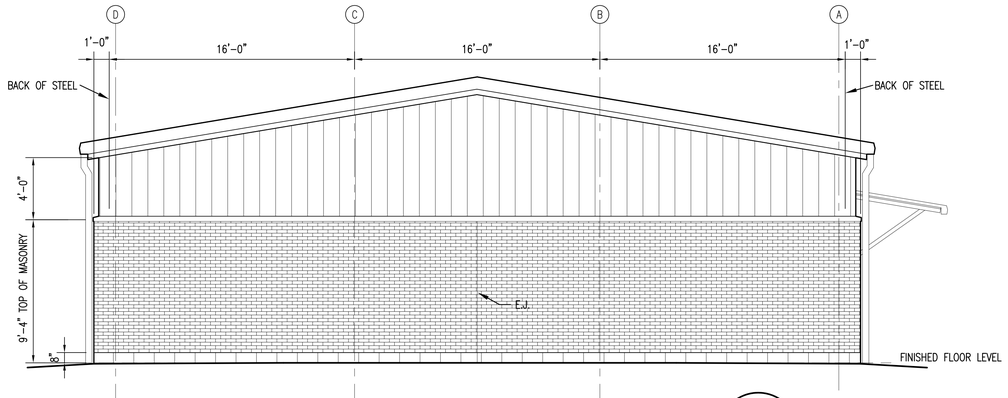
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

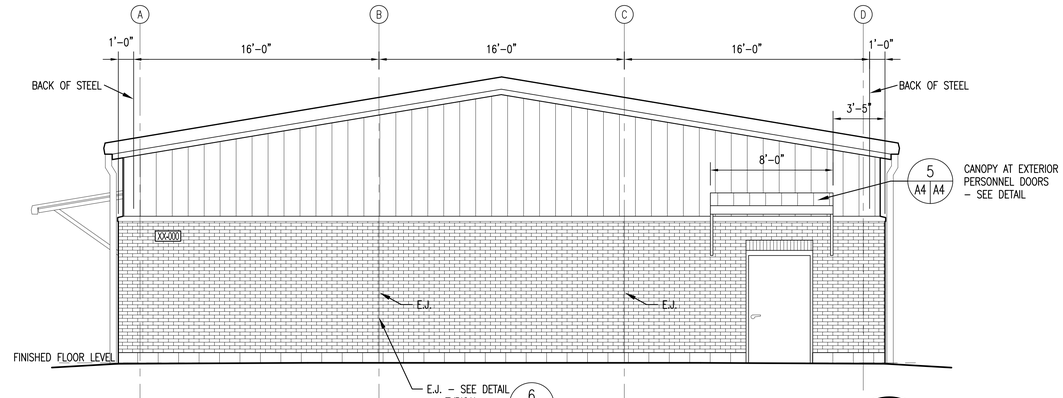
DES.	Robert L. Smith III
DR.	Steven C. Fender
CHK.	Robert L. Smith III
SUBMITTED BY:	
DESIGN DIR.	T H Burton, PE
APPROVED:	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	60035458
		CONST. CONTR. NO.
SCALE: NOTED	SPEC. 05-21-0010	SHEET 18 OF 43

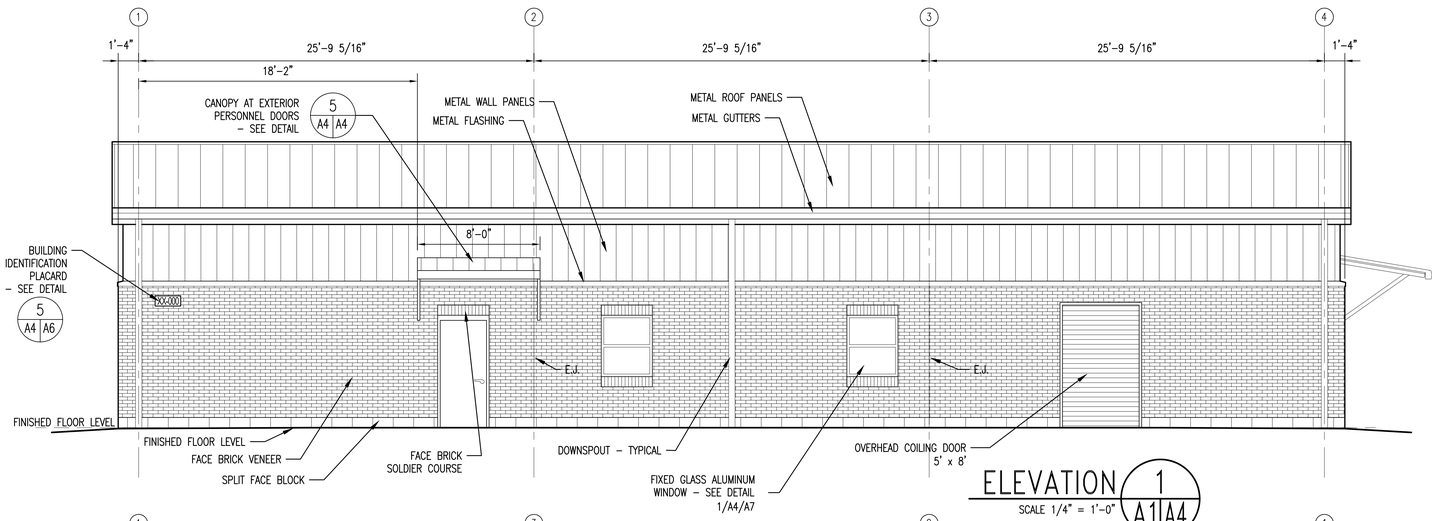
REVISIONS			
SYM.		DATE	APPROVED



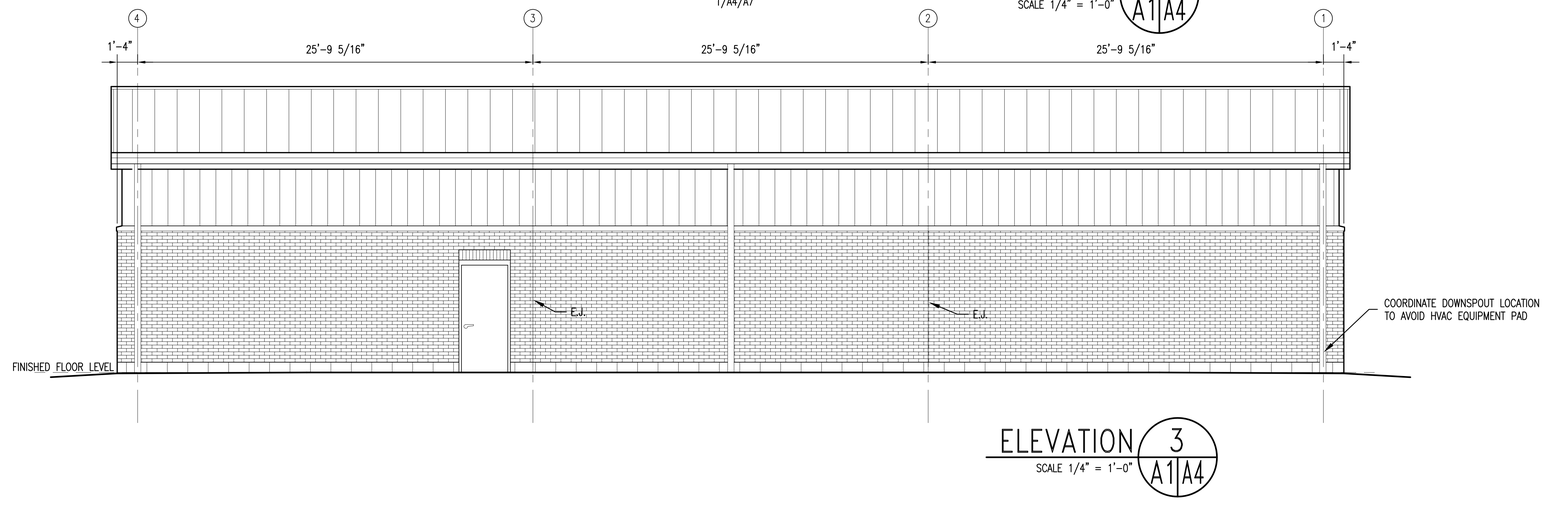
ELEVATION 4 (A1|A4)
SCALE 1/4" = 1'-0"



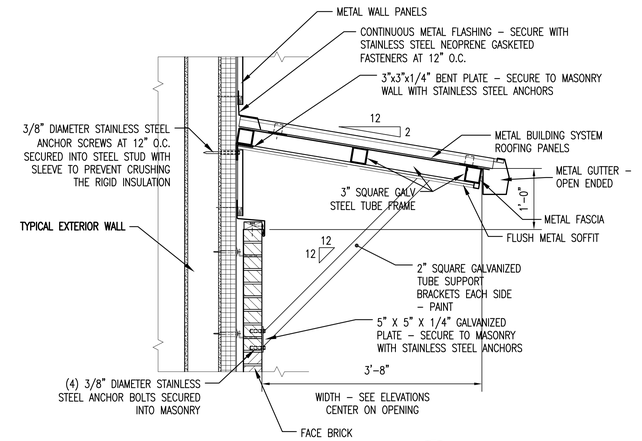
ELEVATION 2 (A1|A4)
SCALE 1/4" = 1'-0"



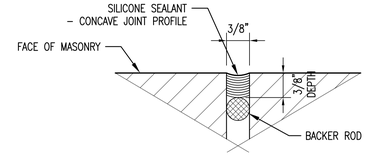
ELEVATION 1 (A1|A4)
SCALE 1/4" = 1'-0"



ELEVATION 3 (A1|A4)
SCALE 1/4" = 1'-0"



CANOPY DETAIL 5 (A4|A4)
SCALE 1" = 1'-0"



MASONRY EXPANSION JOINT 6 (A4|A4)
SCALE 12" = 1'-0"

1/4" = 1'-0"
0 5 10 FEET

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

TALLEY & SMITH ARCHITECTURE, INC. REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA SHELBY, N.C. CERT. NO. 50153

ROBERT L. SMITH III REGISTERED ARCHITECT 8102 NORTH CAROLINA SHELBY, N.C.
19 AUG 2021

ELEVATIONS — A-4

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

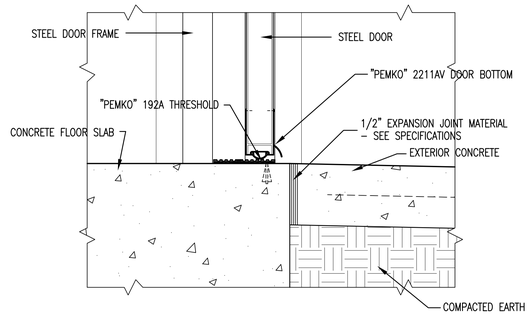
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	Robert L. Smith III
DR.	Steven C. Fender
CHK.	Robert L. Smith III
SUBMITTED BY:	
DESIGN DIR.	T H Burton, PE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

APPROVED: DATE	SIZE: F	CODE IDENT. NO.: 80091	NAVFAC DRAWING NO.: 60035459
SATISFACTORY TO: DATE	SCALE: NOTED	SPEC.: 05-21-0010	CONST. CONTR. NO.: SHEET 19 OF 43

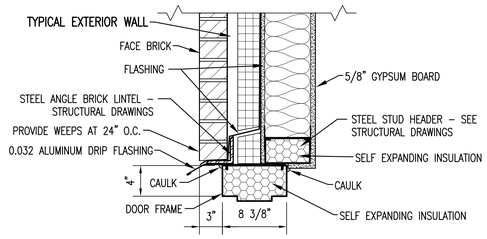
REVISIONS			
SYM.		DATE	APPROVED



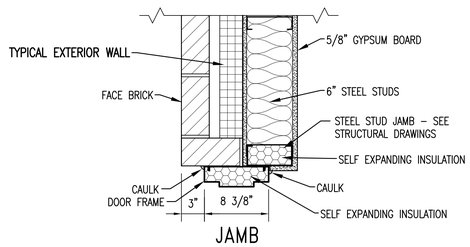
T–1

THRESHOLD DETAIL

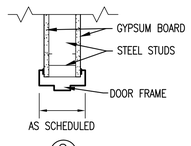
3" = 1'–0"



HEAD



JAMB

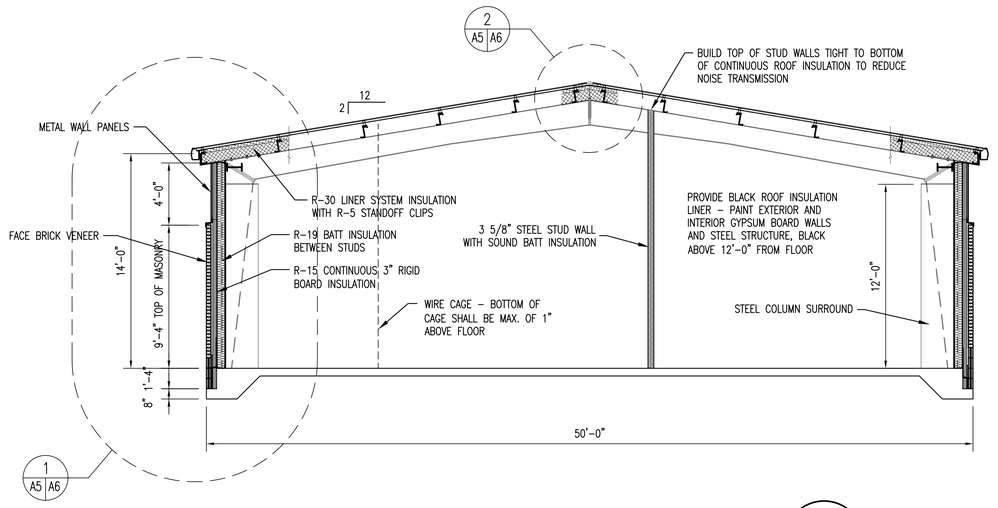


TYPICAL HEAD AND JAMB SECTIONS AT EXTERIOR DOORS

1 2

DOOR FRAME POSITION DETAILS

1 1/2" = 1'–0"



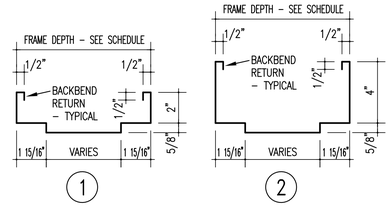
BUILDING SECTION 1 A1 A5

SCALE 1/4" = 1'–0"

DOOR AND FRAME SCHEDULE

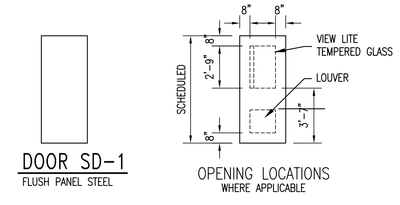
(101) ← see this symbol on floor plans for corresponding door number

DOOR NO.	DOOR SIZE	DOOR TYPE	GLASS PANEL	LOUVER OR UC	HDW. NO.	UL LABEL HOURLY RATING	FRAME TYPE	FRAME DEPTH	FRAME POSITION	THRESH DETAIL	LINTEL	REMARKS	DOOR NO.
101	3–0 x 7–0	SD–1	–	–	1	–	SDF–1	8 1/2"	1	T–1	STEEL STUD LINTEL & BRICK LINTEL	PANIC DEVICE HARDWARE	101
102A	3–0 x 7–0	SD–1	3 X 33	–	2	–	SDF–2	6"	2	NONE	STEEL STUD LINTEL	–	102A
102B	3–0 x 7–0	SD–1	3 X 33	–	2	–	SDF–2	6"	2	NONE	STEEL STUD LINTEL	–	102B
105	3–0 x 7–0	SD–1	–	–	3	–	SDF–2	6"	2	MARBLE	STEEL STUD LINTEL	–	105
106	3–0 x 7–0	SD–1	–	–	3	–	SDF–2	6"	2	MARBLE	STEEL STUD LINTEL	–	106
107	3–0 x 7–0	SD–1	–	–	4	–	SDF–2	6"	2	NONE	STEEL STUD LINTEL	–	107
108A	3–0 x 7–0	SD–1	3 X 33	–	2	–	SDF–2	6"	2	NONE	STEEL STUD LINTEL	–	108A
108B	3–0 x 7–0	SD–1	3 X 33	–	2	–	SDF–2	6"	2	NONE	STEEL STUD LINTEL	–	108B
109	3–0 x 7–0	SD–1	–	–	1	–	SDF–1	8 1/2"	1	T–1	STEEL STUD LINTEL & BRICK LINTEL	PANIC DEVICE HARDWARE	109
112	4–0 x 7–0	SD–1	–	–	1	–	SDF–1	8 1/2"	1	T–1	STEEL STUD LINTEL & BRICK LINTEL	PANIC DEVICE HARDWARE	112
–	–	–	–	–	–	–	–	–	–	–	–	–	–



FRAME SECTIONS

3" = 1'–0" NOTE THAT BACKBEND RETURNS ARE REQUIRED.

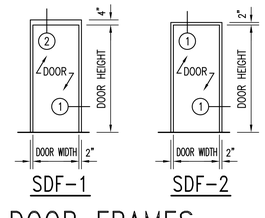


DOOR SD–1
FLUSH PANEL STEEL

OPENING LOCATIONS WHERE APPLICABLE

DOOR TYPES

1/4" = 1'–0"



SDF–1 SDF–2

DOOR FRAMES

1/4" = 1'–0" SDF = STEEL DOOR FRAME

1/4" = 1'–0" FEET 0 5 10
1 1/2" = 1'–0" FEET 0 1 2
3" = 1'–0" INCHES 0 3 6 12

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G–1

TALLEY & SMITH ARCHITECTURE, INC. REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50153 NORTH CAROLINA SHELBY, N.C.

ROBERT L. SMITH III REGISTERED ARCHITECT 8102 NORTH CAROLINA SHELBY, N.C. 19 AUG 2021

DOOR SCHEDULE AND DETAILS — A–5

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151–0518
409 EAST MARION ST. SHELBY, NC 28150

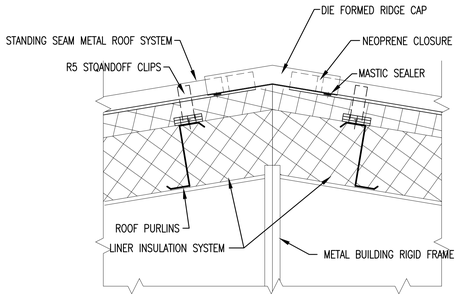
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES. Robert L. Smith III
DR. Steven C. Fender
CHK. Robert L. Smith III
SUBMITTED BY:
DESIGN DIR. T H Burton, PE
APPROVED: DATE
SATISFACTORY TO: DATE

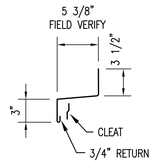
CONSTRUCT MARSOC
G–6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	60035460
		CONST. CONTR. NO.
SCALE: NOTED	SPEC. 05–21–0010	SHEET 20 OF 43

REVISIONS			
SYM.		DATE	APPROVED

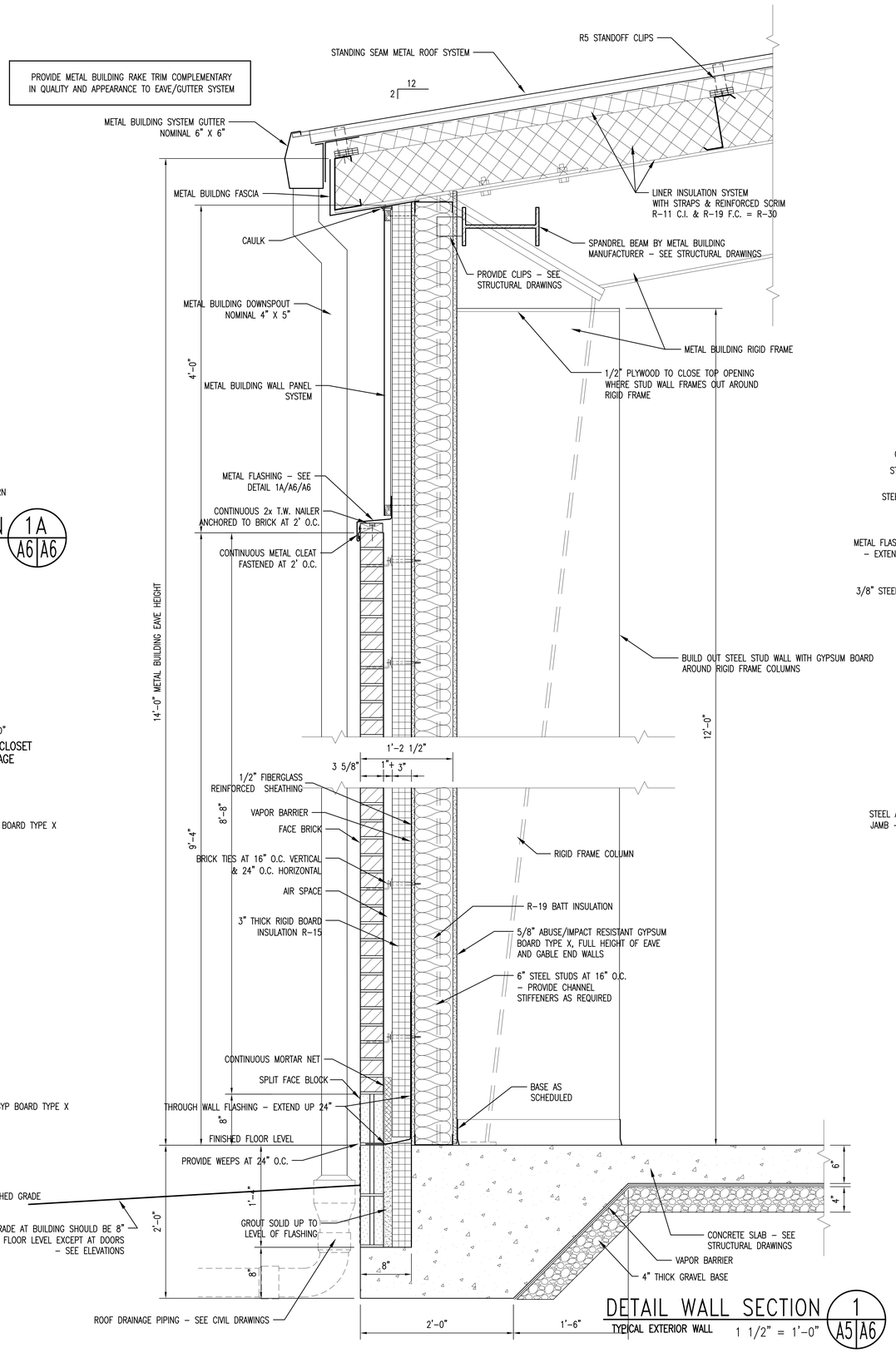


DETAIL SECTION 2
1 1/2" = 1'-0"

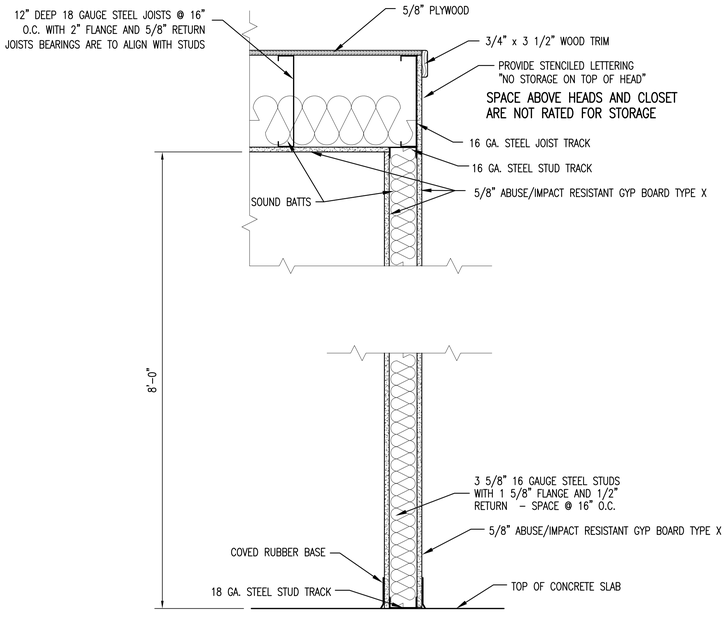


DETAIL SECTION 1A
1 1/2" = 1'-0"

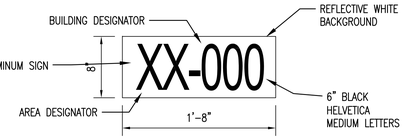
PROVIDE METAL BUILDING RAKE TRIM COMPLEMENTARY IN QUALITY AND APPEARANCE TO EAVE/GUTTER SYSTEM



DETAIL WALL SECTION 1
TYPICAL EXTERIOR WALL 1 1/2" = 1'-0"

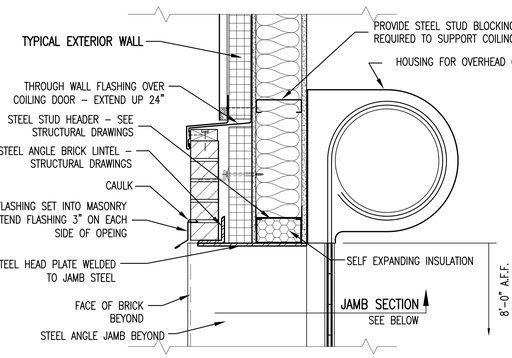


UNISEX TOILET WALL SECTION 3
1 1/2" = 1'-0"

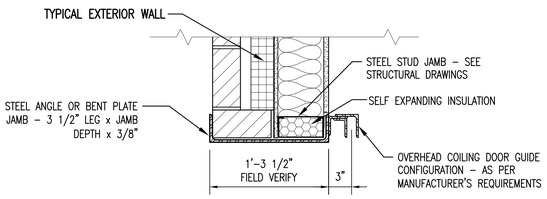


NOTES:
1. REFERENCE THE SIGN POLICY FOR MARINE CORPS BASE CAMP LEJEUNE, BASE ORDER 11014.3 DATED 28 AUGUST 2003
2. ADHERE SIGN TO EXTERIOR WALL WITH SILICONE ADHESIVE
3. FINAL TYPE AND LOCATION WILL BE PROVIDED BY THE ROICC

BUILDING IDENTIFICATION PLACARD 5
1 1/2" = 1'-0" A4|A6



HEAD SECTION



JAMB SECTION

OVERHEAD DOOR DETAIL 2
1 1/2" = 1'-0" A1|A6

1 1/2" = 1'-0"
0 1 2 FEET

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

TALLEY & SMITH ARCHITECTURE, INC. REGISTERED ARCHITECTURAL COMPANY NORTH CAROLINA CERT. NO. 50153 SHELBY, N.C.

ROBERT L. SMITH III REGISTERED ARCHITECT 8102 NORTH CAROLINA SHELBY, N.C.

19 AUG 2021

SHEET TITLE: WALL SECTIONS — A-6

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

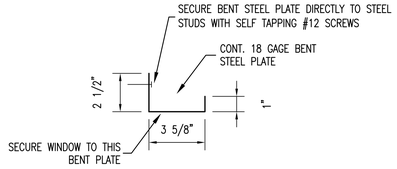
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	Robert L. Smith III
DR.	Steven C. Fender
CHK.	Robert L. Smith III
SUBMITTED BY:	
DESIGN DIR.	T H Burton, PE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

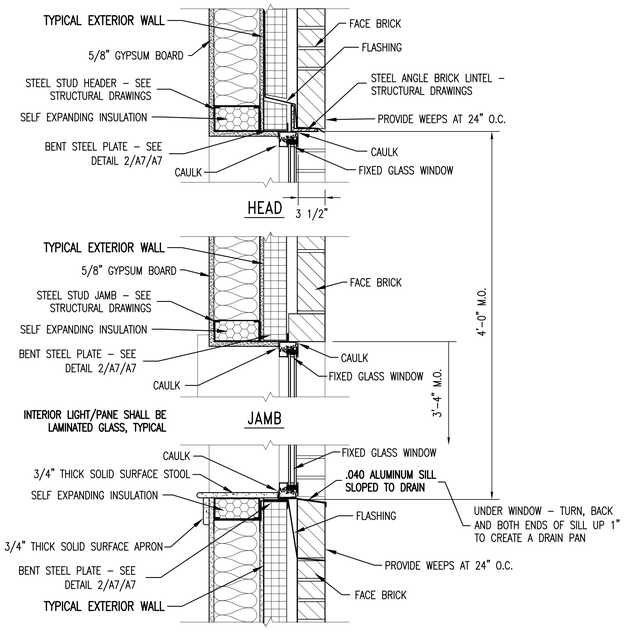
APPROVED: DATE	SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
	F	80091	60035461
SATISFACTORY TO: DATE			CONST. CONTR. NO.
	SCALE: NOTED	SPEC. 05-21-0010	SHEET 21 OF 43

REVISIONS			
SYM.		DATE	APPROVED



BENT PLATE DETAIL 2 / A7 | A7

3" = 1'-0"



WINDOW DETAIL 1 / A4 | A7

1 1/2" = 1'-0"

1 1/2" = 1'-0"

0 1 2 FEET

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

TALLEY & SMITH ARCHITECTURE, INC. REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 50153 SHELBY, N.C.

ROBERT L. SMITH III REGISTERED ARCHITECT 8102 NORTH CAROLINA SHELBY, N.C.

19 AUG 2021

SHEET TITLE: DETAIL SECTIONS — A-7

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

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

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

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SUBMITTED BY:	
DESIGN DIR.	T H Burton, PE
APPROVED:	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
E1	80091	60035462

CONST. CONTR. NO.

SCALE: NOTED | SPEC. 05-21-0010 | SHEET 22 OF 43

GENERAL:

1. REFER TO FA-3 FOR DETAIL DIAGRAMS AND SEQUENCE OF OPERATIONS MATRIX.
2. THE LAYOUT SHOWN, IS TO CONVEY THE DESIGN INTENT. THE FINAL SYSTEM LAYOUT FOR THE AREA OF WORK SHALL BE COMPLETED BY THE CONTRACTOR IN ACCORDANCE WITH LISTED DESIGN CRITERIA.
3. INSTALL DOCUMENTATION CABINET ADJACENT TO FIRE ALARM CONTROL PANEL. A STEEL CABINET WITH LOCKING, HINGE-MOUNTED DOOR PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS" THAT STORES PAPER COPIES OF LIFE SAFETY, AND FIRE ALARM AS-BUILT DRAWINGS AND NFPA 72 RECORD OF COMPLETION IN PAPER FORMAT. IN ADDITION, A CD/DVD OF SITE-SPECIFIC SOFTWARE, FIRE ALARM AS-BUILT DRAWINGS, NFPA 72 RECORD OF COMPLETION AND O & M MANUALS STORED IN A CD JEWEL CASE. CABINET TO BE SIZED TO HANDLE THE CONTENTS.

DESIGN CRITERIA – FIRE ALARM/MASS NOTIFICATION SYS.

THE SYSTEM SHALL COMPLY WITH THE FOLLOWING CODES AND STANDARDS.

1. NFPA 70 NATIONAL ELECTRICAL CODE – 2020 ED.
2. NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE – 2019 ED.
3. NFPA 101 LIFE SAFETY CODE – 2021 ED.
4. UFC 1-200-01 GENERAL BUILDING REQUIREMENTS
5. UFC 3-600-01 DESIGN: FIRE PROTECTION ENGINEERING FOR FACILITIES
6. UFC 3-520-01 INTERIOR ELECTRICAL SYSTEM
7. UFC 4-021-01 DESIGN AND O&M: MASS NOTIFICATION SYSTEMS

CONTROL PANEL:

1. THE FIRE ALARM MASS NOTIFICATION CONTROL PANEL (FMCP) SHALL BE A SITE PROGRAMMABLE ADDRESSABLE SYSTEM WITH VOICE EVACUATION.
2. THE FMCP SHALL BE LOCATED IN AN YEAR-ROUND ENVIRONMENTALLY CONDITIONED SPACE AND RECESSED WHEN IN A FINISHED SPACE.
3. THE FMCP SHALL HAVE AN 80 CHARACTER (MIN.) LCD ALPHANUMERIC DISPLAY AND A 400 EVENTS NON-VOLATILE HISTORY LOG MEMORY.
4. CABINETS/PANELS (CONTROL, BATTERY, LOC, POWER BOOSTER, ETC.) SHALL BE RECESSED PANEL WHEN LOCATED IN A FINISHED SPACE.
5. ALL CONTROL FUNCTIONS SHALL BE ACCESSIBLE ONLY BY USER CODE OR SECURED BEHIND A LOCKED CABINET.

INTERFACE/CONTROLS:

1. MONITORING MODULES AND CONTROL MODULES/RELAYS SHALL BE ADDRESSABLE AND LOCATED WITHIN 36" OF THE SPECIFIC DEVICE OR EQUIPMENT IT CONTROLS OR MONITORS.

POWER/BATTERIES:

1. PRIMARY AC POWER TO THE SYSTEM SHALL BE FED FROM A DEDICATED CIRCUIT WITH A RED CIRCUIT BREAKER AND A LOCK OPEN DEVICE.
2. SECONDARY POWER SHALL BE BY RECHARGEABLE BATTERIES SIZED TO OPERATE THE SYSTEM FOR EITHER 48 HRS IN STANDBY/ SUPERVISOR MODE WITH AN ADDITIONAL 15 MIN IN ALARM OR 60 MIN FULL ALARM IMMEDIATELY AFTER LOSS OF PRIMARY POWER, WHICHEVER IS GREATER.
3. THE SYSTEM SHALL INCLUDE FULLY AUTOMATIC, SOLID STATE BATTERY CHARGER(S) UTILIZING A TRICKLE-CHARGE OR A FLOAT-CHARGE. THE CHARGER(S) SHALL HAVE THE CAPACITY TO RECHARGE BATTERIES TO 95% OF FULL CHARGE WITHIN 48 HOURS.
4. THE BATTERIES WITH CHARGER(S) SHALL BE HOUSED IN THE FMCP CABINET OR AN ADJACENT BATTERY CABINET. BATTERY CABINET SHALL NOT BE INSTALLED MORE THAN 12 INCHES ABOVE THE FINISHED FLOOR. POWER BOOSTERS WITH CHARGER(S), SHALL BE LOCATED ON THE FLOOR OR IN THE ZONE IT SERVES.

INITIATING CIRCUITS (SLC):

1. THE NEW INITIATING CIRCUITS SHALL BE CLASS "B".
2. SMOKE DETECTORS CONNECTED TO THE FMCP SHALL HAVE AN ADJUSTABLE ALARM VERIFICATION FEATURE, INITIALLY SET AT 20 SECONDS.
3. SMOKE DETECTORS SHALL BE PHOTO-ELECTRIC UNLESS NOTED OTHERWISE.
4. MANUAL PULL STATIONS SHALL BE ADDRESSABLE DOUBLE ACTION TYPE WITH MECHANICAL RESET FEATURES. IF RESET BY KEY, IT SHALL BE THE SAME AS REQUIRED FOR THE CONTROL PANEL.

NOTIFICATION CIRCUITS (NAC):

1. THE NEW NOTIFICATION CIRCUITS SHALL BE A CLASS "B".
2. THE AUDIBLE ALARM NOTIFICATION SHALL BE BY VOICE EVACUATION SYSTEM IN THE AREA OF WORK. SPEAKERS SHALL HAVE MANUALLY SELECTABLE MULTI/VARIABLE WATTAGE, 0.25 TO 1.0 WATTS IN 0.25 WATT INCREMENTS. INITIAL SETTING TO BE AT 0.50 WATTS.
3. VOICE MESSAGES SHALL BE FEMALE, AND UTILIZE THE INSTALLATIONS STANDARD SIGNALS AND MESSAGES. MESSAGES SHALL BE APPROVED BY THE SERVING FIRE DEPARTMENT OR AHJ.
4. THE NUMBER AND PLACEMENT OF SPEAKER(S) TO BE SUFFICIENT TO PROVIDE 0.70 (CSI SCORE) AUDIBILITY RATING WITHIN THE BUILDING.
5. VISUAL NOTIFICATION DEVICES SHALL BE PROVIDED IN ALL NORMALLY OCCUPIED, PUBLIC, AND COMMON USE AREAS. OFFICES DESIGNED FOR FOUR OR MORE PERSONS SHALL HAVE VISUAL NOTIFICATION.
6. VISUAL NOTIFICATION DEVICES SHALL BE PROVIDED IN ALL NORMALLY UNOCCUPIED AREAS GREATER THAN 900 SQ. FT. SUCH AS MECH., ELECTRICAL, STORAGE, COMMUNICATIONS, JANITORS ROOMS, AND SIMILAR SPACES.
7. STROBES SHALL HAVE MANUALLY SELECTABLE CANDELA RATINGS, 15 TO 110 CANDELA. CANDELA RATING SHALL BE BASED ON LOCATION AND QUANTITY IN A ROOM IN ACCORDANCE WITH NFPA 72.
8. VISIBLE NOTIFICATION APPLIANCES SHALL HAVE CLEAR LENS IN A WHITE HOUSING MARKED "ALERT" IN RED.

WIRING, CONDUIT:

1. CONDUCTORS TO BE RUN IN 3/4" MINIMUM RIGID METAL CONDUIT (EMT). PROVIDE CONDUIT SIZES, QUANTITIES, AND CONFIGURATION IN ACCORDANCE WITH LISTED DESIGN CRITERIA AND MANUFACTURER'S APPROVED SHOP DRAWINGS.
2. CONDUCTORS SHALL BE EITHER STRANDED OR SOLID COPPER. 18 AWG MIN FOR SLC AND 16 AWG MIN. FOR NAC CIRCUITS
3. CONDUIT, WIRES, AND CABLES IN FINISHED SPACES SHALL BE CONCEALED IN WALLS, CEILING, AND SIMILAR SPACES.
4. CONDUCTORS TO RUN SPLICE FREE FROM DEVICE TO DEVICE. WIRE NUTS, CRIMPED CONNECTORS, OR TWISTING OF CONDUCTORS IS PROHIBITED.
5. RUN ALL WIRING TO AND WITHIN THE CONTROL PANEL IN THE VERTICAL OR HORIZONTAL PLANE, MAKE ALL TURNS AT 90 DEGREES ANGLES, AND TIGHTLY BUNDLED AND WRAPPED. IDENTIFY ALL CONDUCTORS INDIVIDUALLY WITH PERMANENT PRINTED LABELS AFFIXED WITH SHRINK WRAP.
6. DEVICE CONNECTIONS SHALL BE THE DEVICE SCREW TERMINALS OR TERMINAL STRIPS MOUNTED WITHIN THE JUNCTION BOX.
7. CONDUIT, JUNCTION/BACK BOXES, COVERS, AND COUPLINGS ARE TO BE FACTORY PAINTED RED IN UNFINISHED AREAS (E.G. ABOVE CEILINGS, IN MECHANICAL ROOMS, ETC).
8. CONDUIT, JUNCTION/BACK BOXES, COVERS AND COUPLINGS ARE PERMITTED TO BE PAINTED TO MATCH ROOM FINISH. THE INSIDE COVER OF JUNCTION BOXES TO BE IDENTIFIED AS "FIRE ALARM". CONDUIT TO HAVE 3/4" RED BANDS EVERY 20 FT AND BOTH SIDES OF ALL FLOORS, WALLS, AND CEILING PENETRATIONS.
9. 120 VAC CIRCUITS TO CONTROL PANELS, SUBPANELS, TRANSMITTERS, AMPLIFIER PANELS, AND BOOSTER PANELS SHALL BE EQUIPPED WITH SURGE PROTECTION DEVICE (SPD). THE SPD SHALL BE LOCATED IN AN ADJACENT HINGED TERMINAL BOX.

LOCAL OPERATING CONSOLE (LOC):

1. PROVIDE A SEPARATE LOC NEAR THE BUILDING'S MAIN ENTRANCE, EXCEPT IN A LOCKED ROOM OR CLOSET. ONLY 1 LOC IS NEEDED, IN ADDITION TO THE FAA.
2. PROVIDE A SINGLE MUSHROOM TYPE EMERGENCY SHUTOFF SWITCH THAT IS A DIFFERENT COLOR THAN FIRE ALARM PULL STATIONS.
3. LOC SHALL BE IN A SMALL, SEMI-RECESSED WALL MOUNTED ENCLOSURE IN AN AREA WITH HEATING AND VENTILATION.
4. PROVIDE SIGNAGE ON THE OUTSIDE OF THE ENCLOSED LOC.

REVISIONS			
SYM.		DATE	APPROVED

LEGEND:

F	MANUAL PULL STATION
S	SMOKE DETECTOR
#	SPEAKER STROBE; # INDICATES CANDELA RATING
#	WALL MOUNT STROBE; # INDICATES CANDELA RATING
	SPEAKER
FMCP	FIRE ALARM MASS NOTOFICATION CONTROL PANEL
TRNS	MASS NOTIFICATION TRANSMITTER
LOC	LOCAL OPERATING CONSOLE
EOL	END OF LINE RESISTOR
MIC	MICROPHONE
SP	SURGE PROTECTION
DACT	DIGITAL ALARM COMMUNICATION TRANSMITTER
FAA	FIRE ALARM ANNUNCIATOR
K	KNOX BOX
FAD	FIRE ALARM DOCUMENT CABINET

SUBSCRIPTS:

(WP) WEATHERPROOF

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

Lovett Consultants
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Fire Protection & Building Code Specialists
NC Firm License No: P-0246

NORTH CAROLINA PROFESSIONAL SEAL 040804 ENGINEER JENNIFER L. LOVETT
19 AUG 21

SHEET TITLE:
FIRE ALARM LEGEND AND NOTES

FA-1

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

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

DES.	GMM
DR.	GLP
CHK.	JLL
SUBMITTED BY:	
DESIGN DIR.	T H BURTON, PE
APPROVED:	DATE
SATISFACTORY TO:	DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

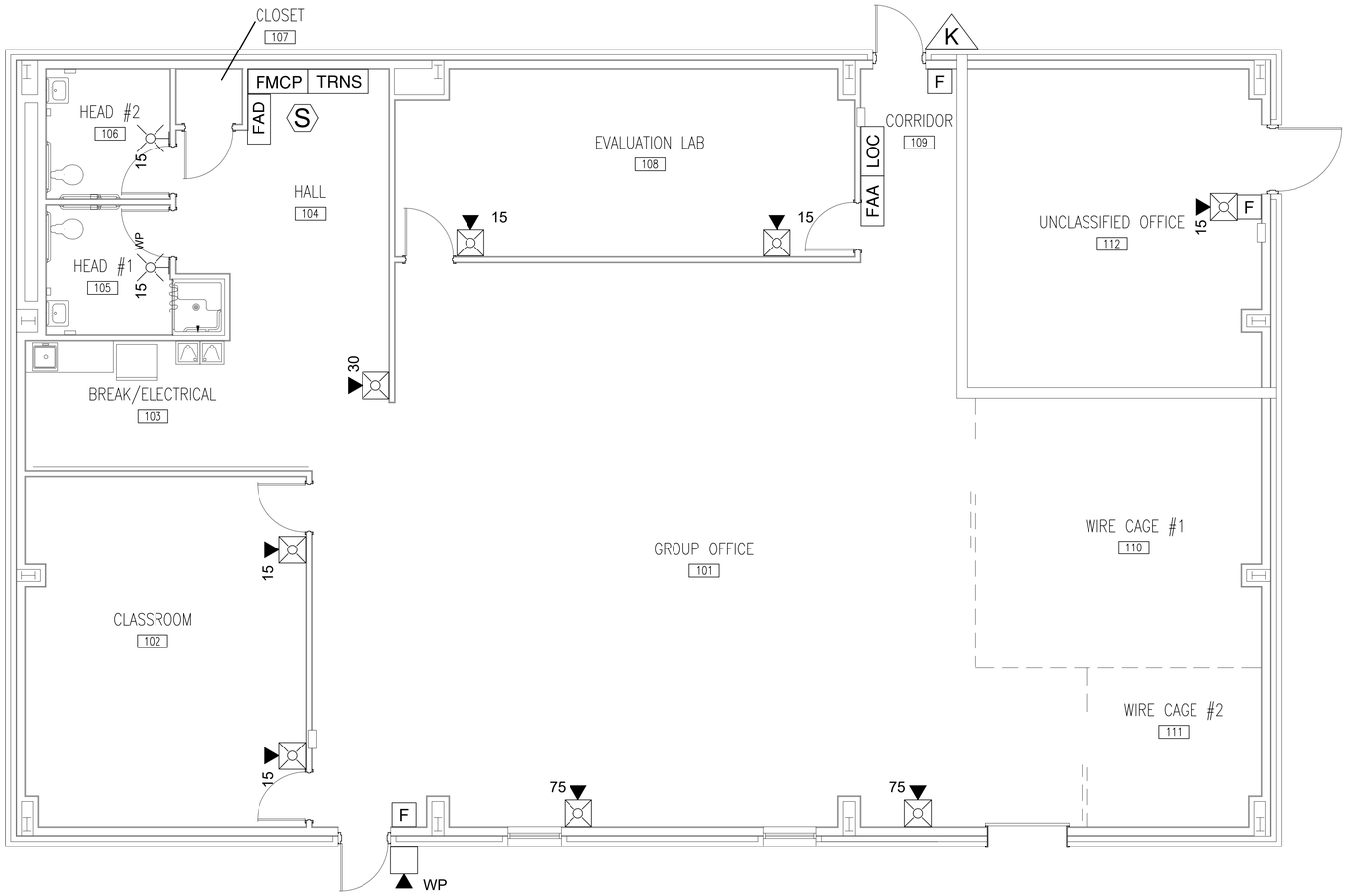
SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	60035463
		CONST. CONTR. NO.

SCALE: NOTED | SPEC. 05-21-0010 |

REVISIONS			
SYM.		DATE	APPROVED

SHEET NOTES:

1. REFERENCE FA-1 FOR NOTES AND LEGEND.



FIRE ALARM FLOOR PLAN

1/4" = 1'-0"

1
FA 2

N

1/4" = 1'-0"
0 5 10 FEET

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

Lovett Consultants
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Fire Protection & Building Code Specialists
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NORTH CAROLINA PROFESSIONAL SEAL 040604 ENGINEER JENNIFER L. LOVETT
19 AUG 21

SHEET TITLE: FIRE ALARM FLOOR PLAN

FA-2

TALLEY & SMITH ARCHITECTURE INC.
P.O. BOX 518 SHELBY, NC 28151-0518
409 EAST MARION ST. SHELBY, NC 28150

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

DES.	GMM
DR.	GLP
CHK.	JLL
SUBMITTED BY:	
DESIGN DIR.	T H BURTON, PE
APPROVED:	DATE
SATISFACTORY TO:	DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	60035464
		CONST. CONTR. NO.
SCALE: NOTED	SPEC. 05-21-0010	SHEET 24 OF 43

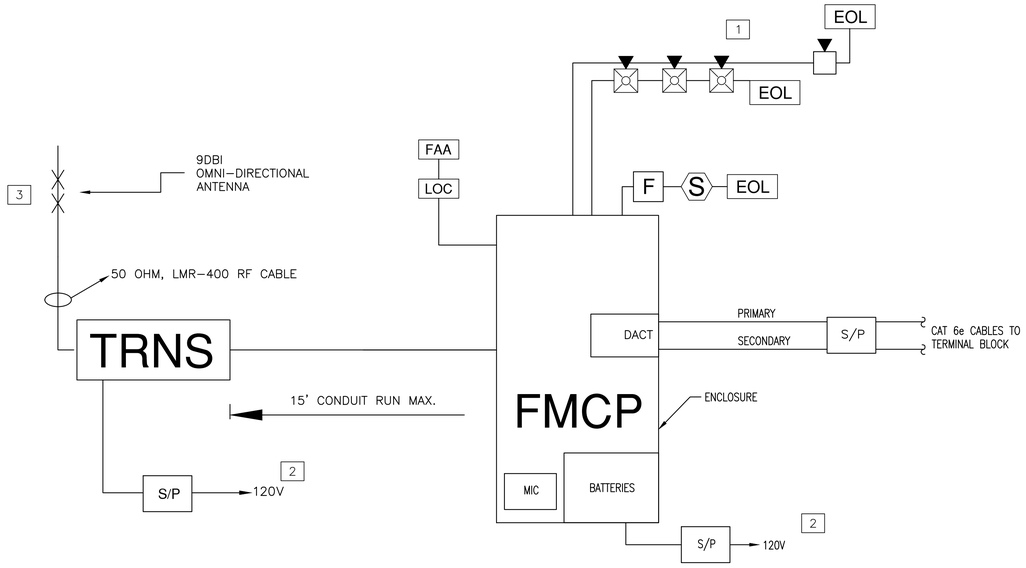
REVISIONS			
SYM.		DATE	APPROVED

SHEET NOTES:

1. REFERENCE FA-1 FOR NOTES AND LEGEND.
2. REFER TO FA-2 FOR FLOOR PLAN.

KEY NOTES:

1	SEE FLOOR PLAN FOR EXACT NUMBER AND LOCATION OF INITIATING AND NOTIFICATION DEVICES.
2	CIRCUIT PROVIDED W/ RED BREAKERS, LOCK OPEN DEVICE AND FED FROM THE SAME ELECTRICAL PANEL.
3	4 FEET ABOVE THE APEX OF THE ROOFLINE WITH A UL LISTED WEATHERHEAD.



RISER DETAIL — 1 / FA 3

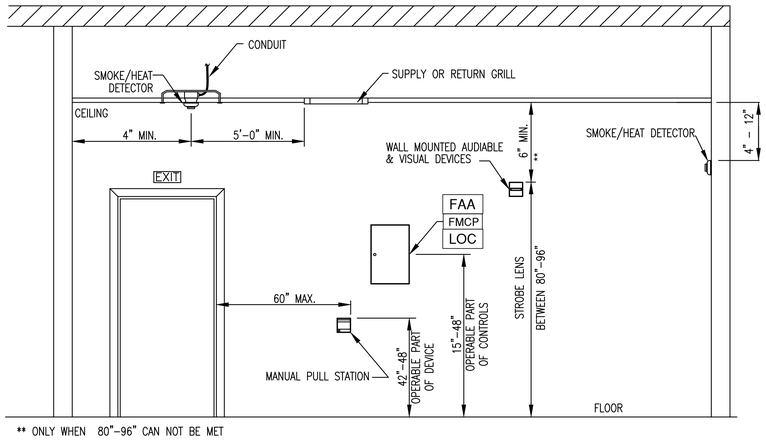
NTS

ACTION DEVICE INITIATED \ ACTION TO BE NITIATED	ACTUATE AUDIBLE & VISUAL ALARM SIGNAL INDICATOR & ALARM @ FACP	ACTUATE AUDIBLE & VISUAL TROUBLE SIGNAL INDICATOR & ALARM @ FACP	DISPLAY / PRINT CHANGE OF STATUS ON FACP	TRANSMIT SIGNAL TO MONITORING STATION	ACTUATE FIRE ALARM AUDIBLE MESSAGE	ACTIVATE ALERT VISUAL APPLIANCES	OVERRIDE PRE-RECORDED DIGITIZED VOICE MESSAGE
MANUAL PULL STATION	X		X	X	X	X	
GENERAL SMOKE DETECTOR	X		X	X	X	X	
FIRE ALARM AC POWER FAILURE		X	X	X			
FIRE ALARM SYS LOW BATTERY		X	X	X			
OPEN CIRCUIT/GROUND FAULT		X	X	X			
NOTIFICATION APPLIANCE SHORT		X	X	X			
LIVE VOICE MESSAGE	X		X	X	X	X	X
MASS NOTIFICATION MESSAGE	X		X	X	X	X	X
LOCAL OPERATING CONSOLE	X		X	X	X	X	X

DISREGARD OPERATIONAL DEVICES AND RELATED OUTPUTS IF THEY ARE NOT PROVIDED WITHIN THE BUILDING.

OPERATIONAL MATRIX — 2 / FA 3

NTS



** ONLY WHEN 80"-96" CAN NOT BE MET

MOUNTING HEIGHTS — 3 / FA 3

NTS

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

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NORTH CAROLINA PROFESSIONAL SEAL 040604 ENGINEER JENNIFER L. LOVETT
19 AUG 21

SHEET TITLE: **FIRE ALARM DETAILS** — FA-3

TALLEY & SMITH ARCHITECTURE INC.
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409 EAST MARION ST. SHELBY, NC 28150

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

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SUBMITTED BY:	
DESIGN DIR.	T H BURTON, PE
APPROVED:	DATE
SATISFACTORY TO:	DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	60035465
		CONST. CONTR. NO.
SCALE: NOTED	SPEC. 05-21-0010	SHEET 25 OF 43

PLUMBING FIXTURE SCHEDULE

DRAWING CODE	FIXTURE		DESCRIPTION	NOTES	PIPE SIZE			
					DCW	DHW	WASTE	VENT
WC1	FLUSH VALVE WATER CLOSET, FLOOR MTD.DUAL FLUSH, 1.6/1.1GPF, ADA	BOWL	16.5" HIGH BOWL, ELONGATED, VITREOUS CHINA, 2" MIN. TRAPWAY, TOP SPUD, FLOOR MOUNT	6	1"	-	4"	2"
		FLUSH VALVE	11.5" HIGH, 1.6/1.1 HARD WIRED, SENSOR OPERATED, DUAL FLUSH, WITH OVERRIDE					
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE; HEIGHT 17-19" AFF					
LAV1	LAVATORY WALL HUNG, 0.5GPM, ADA	BOWL	20x18 VITREOUS CHINA, RIM 34" AFF MAX.	1,2,3,9,	1/2"	1/2"	2"	2"
		FAUCET	4" CENTERSET, HARDWIRED SENSOR OPERATED,					
		DRAIN	GRID STRAINER					
		MIXING VALVE	LEAD FREE THERMOSTATIC MIXING VALVE - SETPOINT = 90°F INSTALL ON HOT WATER SUPPLY, ASSE 1070					
SK1	2-COMPARTMENT COUNTERTOP SINK, 7.5" DEEP	BOWL	33x22x7.5, 18 GA S.S.	2,4,5,9,11	1/2"	1/2"	2"	2"
		FAUCET	180° SWING SPOUT, SINGLE LEVER HANDLE, 3 HOLE, 1.5GPM, SOLID BRASS CONSTRUCTION, CHROME FINISH					
		DRAIN	BASKET STRAINER					
SH1	PREFAB TRANSFER SHOWER, ADA	ENCLOSURE	36x36 ACRYLIC- 1/2" CURB MAX. w/ GRAB BARS, FOLD-UP SEAT, CENTER DRAIN, CURTAIN ROD AND SHOWER CURTAIN		1/2"	1/2"	2"	2"
		VALVE	PRESS. BALANCED MIXING VALVE, LEVER HANDLE, DIVERTER, HEAD W/ ARM, FLANGE, WALL/HAND SHOWER, FLEXIBLE METAL HOSE, IN-LINE VAC. BREAKER, 30"SLIDE BAR, 1.5GPM					
		DRAIN	4-3/8" DIA. NICKEL BRONZE STRAINER, PVC					
EWC1	WALL HUNG WATER COOLER, ADA	FIXT	SPLIT LEVEL, S.S. TOP, LIGHT GREY BODY, BOTTLE FILLING STATION, 8 GPH @ 50/80/90, 120V/1PH WITH FILTER	1,10	1/2"	-	2"	2"
EWH1	ELECTRIC WATER HEATER, 40 GAL	FIXT	GLASS-LINED TANK, DUAL 4500W, 208V/1PH, NON-SIMULT.	8	3/4"	3/4"	-	-
		EXP TANK	2 GAL DIAPHRAGM				-	-
FCO	FLOOR CLEANOUT	FIXT	C.I. BODY, 6-1/2"TOPS, ADJUSTABLE, SCORIATED, NICKEL BRONZE TOP			-	-	MATCH -
GCO	GRADE CLEANOUT	FIXT	C.I. BODY, RECESSED BRONZE PLUG.			-	-	MATCH -
WCO	WALL CLEANOUT	FIXT	ROUND S/S ACCESS COVER & SCREW, RECESS BRONZE THRD. PLUG			-	-	MATCH -
FD1	FLOOR DRAIN	FIXT	ADJUSTABLE, SCH. 40 HUB CONNECTION, ABS/PVC BASE ADAPTOR, ROUND NICKLE BRONZE STRAINER, TRAP PRIMER CONNECTION	7		-	-	MATCH -
WH1	WALL HYDRANT	FIXT	BRASS BODY, 3/4"HOSE THREAD, ANTI-SIPHON, LOOSE KEY			3/4"	-	- -
OB1	ICE MAKER BOX	FIXT	ABS HOUSING, 1/4 TURN BALL VALVE, CHROME PLATED BRASS, SHOCK ARRESTORS			1/2"	-	- -
RPZ	BACKFLOW PREVENTER	FIXT	REDUCED PRESSURE TYPE, MOUNT APPROX. 36" A.F.F.			2'	-	- -

NOTES
1. PROVIDE MATCHING CAST IRON AND STEEL FLOOR SUPPORT CARRIER WITH BEARING PLATE AND WALL HANGER.
2. PROVIDE BRASS 1-1/2" TAILPIECE, CAST BRASS SLIP JOINT P-TRAP WITH CLEANOUT; PROVIDE ADA OFFSET ARRANGEMENT WHERE REQUIRED.
3. PROVIDE ADA INSULATION KIT
4. COORDINATE WITH MILLWORK.
5. COORDINATE ADA MILLWORK ENCLOSURE FOR WATER AND DRAIN PIPING UNDER SINK.
6. TRIP LEVER OR FLUSH HANDLE TO BE LOCATED ON WIDE SIDE OF STALL OR TOILET ROOM.
7. PROVIDE TRAP PRIMER
8. FIELD ROUTE 1" DRAIN PAN DRAIN PIPING TO CLOSEST INDIRECT DRAIN OR SPILL TO GRADE.
9. PROVIDE 1/2" IPS X 3/8" OD ANGLE BRASS STOP(S) WITH RIGID COPPER RISERS. ALL EXPOSED PIPING SHALL BE CHROME PLATED.
10. PROVIDE 1/2"IPS x 3/8" O.D. BRASS STOP CONCEALED BEHIND CABINET.
11. PROVIDE AND INSTALL DISPOSAL.

PLUMBING GENERAL NOTES:

1. SCOPE OF WORK: THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS DESCRIBE SCOPE OF WORK REQUIRED FOR PLUMBING SYSTEMS. LABOR AND MATERIAL SHALL BE PROVIDED AS REQUIRED FOR A COMPLETE, WORKMANLIKE INSTALLATION OF ALL SYSTEMS SHOWN ON DIAGRAMMATIC DRAWINGS AND/OR AS SPECIFIED HEREIN.
2. DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED EQUIPMENT AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING PLUMBING SYSTEMS.
3. CODE COMPLIANCE: COMPLY WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INSOFAR AS THEY APPLY:

   INTERNATIONAL PLUMBING CODE (CODE), LATEST EDITION AND REVISIONS.
   UFC 3-420-01
4. SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.
5. PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH SCHEDULE AND REQUIREMENTS OF THE GENERAL CONTRACTOR. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.
6. COORDINATION: COORDINATE PLUMBING WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. ARRANGE PLUMBING SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST LAYOUT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO PROPERLY INSTALL EQUIPMENT.
7. EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.
8. LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.
9. STORAGE SPACE: CONSULT WITH THE GENERAL CONTRACTOR REGARDING JOB SITE STORAGE FOR PLUMBING MATERIALS TO BE INSTALLED UNDER THIS PROJECT. STORAGE SPACE MUST BE SECURED AND CONTRACTOR'S REPRESENTATIVE MUST BE ON JOB BEFORE ANY MATERIAL MAY BE RECEIVED.
10. CLEANUP: REMOVE ALL DEBRIS GENERATED IN THE ACCOMPLISHMENT OF WORK UNDER THIS PROJECT. CLEAN, REPLACE OR REPAIR ALL SURFACES SOILED OR DAMAGED DURING THE COURSE OF THE WORK. REMOVE DEBRIS DAILY SO TO MAINTAIN SAFE WORKING CONDITIONS.
11. RECORD DRAWINGS: MAINTAIN ONE SET OF "RED-LINED" RECORD DRAWINGS ON SITE AT ALL TIMES AND PROVIDE DRAWINGS TO ARCHITECT/ENGINEER PRIOR TO FINAL INSPECTION.

PLUMBING LEGEND

CA	COMPRESSED AIR PIPING
C	CONDENSATE PIPING
140°F	DOMESTIC 140°F WATER PIPING
140R	DOMESTIC 140°F RETURN WATER PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER CIRCULATION PIPING
	DOMESTIC HOT WATER PIPING
F	FILTERED WATER PIPING
SP	FIRE SPRINKLER PIPING
FM	FORCE MAIN PIPING
NG	GAS PIPING (NAT. OR LP)
GW	GREASE WASTE PIPING
N2	NITROUS OXIDE PIPING
O2	O2 (OXYGEN) PIPING
OD	OVERFLOW ROOF DRAIN PIPING
RD	ROOF DRAIN PIPING
	SANITARY VENT PIPING
	SANITARY WASTE PIPING
T	TEPID WATER PIPING
VAC	VACUUM PIPING
	BACKFLOW PREVENTION DEVICE
	BALL VALVE
	CHECK VALVE
	CIRCUIT SETTER (BALANCING VALVE)
	CIRCULATION PUMP
	CONTROL VALVE
	EXTENT OF DEMOLITION
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
	GAS-REGULATOR VALVE
	GATE VALVE
	GATE VALVE IN RISER
GCO	GRADE CLEANOUT
HB	HOSE BIBB
	PIPE CAP
	PIPE ELBOW
	PIPE ELBOW DOWN
	PIPE ELBOW UP
	PIPE TEE
	PIPE TEE DOWN
	PIPE TEE UP
SP FM	SUMP PUMP
1	DEMOLITION KEYED NOTE TAG
1	NEW WORK KEYED NOTE
	POINT OF CONNECTION - NEW TO EXISTING
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
M 140°F	THERMOSTATIC MIXING VALVE
WCO	WALL CLEANOUT
WH	WALL HYDRANT
	WASHING MACHINE BOX
SA	WATER HAMMER ARRESTOR

NOTE: ALL ITEMS LISTED IN THIS SCHEDULE MAY NOT BE USED IN PROJECT

PLUMBING ABBREVIATIONS

(X)	EXISTING
AAV	AIR ADMITTANCE VALVE
A.F.F.	ABOVE FINISHED FLOOR
A.R.C.I.	ACID RESISTANT CAST IRON
ADA	AMERICANS WITH DISABILITIES ACT
BRZ.	BRONZE
BT	BATHTUB
C.I.	CAST IRON
CO	CLEANOUT
CONC.	CONCRETE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DIA.	DIAMETER
E.C.I.	ENAMELED CAST IRON
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
GA.	GAUGE
GAL.	GALLON
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWH	GAS-FIRED WATER HEATER
HB	HOSE BIBB
INCL.	INCLUDED
KS	KITCHEN SINK
LAV	LAVATORY
LP	LIQUID PROPANE
MS	MOP SERVICE BASIN
NAT.	NATURAL GAS
NKL.	NICKEL
NON SIMULT.	NON SIMULTANEOUS
O.F.L.C.	OPEN FRONT LESS COVER
OB	OUTLET BOX
OC	ON CENTER
ORDL	OVERFLOW ROOF DRAIN LEADER
PC	PLUMBING CONTRACTOR
PRESS. BAL.	PRESSURE BALANCED
RCVY.	RECOVERY
RDL	ROOF DRAIN LEADER
SA	WATER HAMMER ARRESTOR
SH	SHOWER
SK	SINK
SLD.	SLIDE
SS	STAINLESS STEEL
TDH	TOTAL DYNAMIC HEAD
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VC	VITREOUS CHINA
VR	VANDAL RESISTANT
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

PLUMBING LOADS

WASTE (DRAINAGE FIXTURE UNITS)	12.5
WATER	32 GPM

REVISIONS			
SYM.		DATE	APPROVED

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

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NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
19 AUG 21

SHEET TITLE: PLUMBING LEGEND. ABBREVIATIONS SCHEDULES AND NOTES

P-1

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

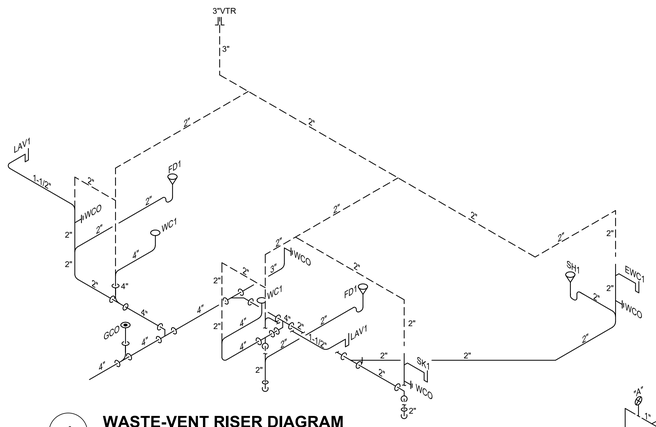
DES. JBS
DR. JBS
CHK. DMH
SUBMITTED BY:
DESIGN DIR. T H BURTON, PE
APPROVED: DATE
SATISFACTORY TO: DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

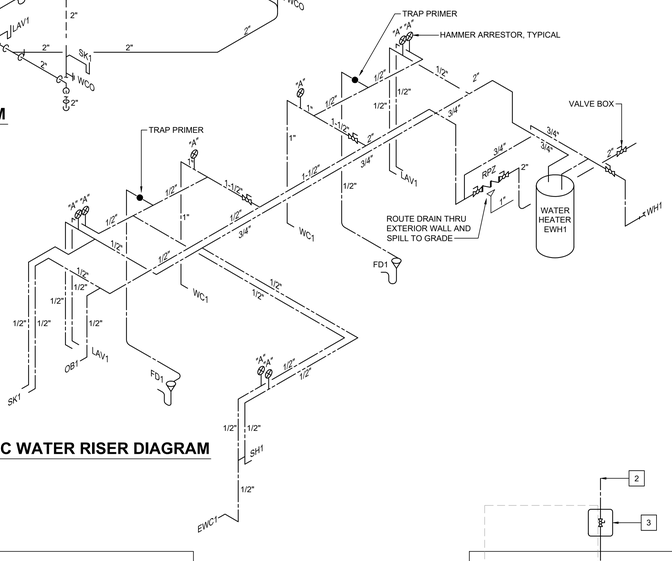
SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 60035466 | CONST. CONTR. NO.

SCALE: NOTED | SPEC. 05-21-0010 | SHEET 26 OF 43

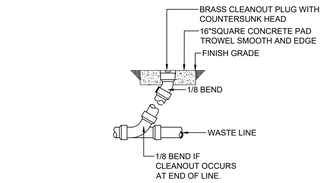
REVISIONS			
SYM.		DATE	APPROVED



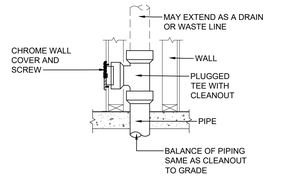
4 WASTE-VENT RISER DIAGRAM
NOT TO SCALE



5 DOMESTIC WATER RISER DIAGRAM
NOT TO SCALE



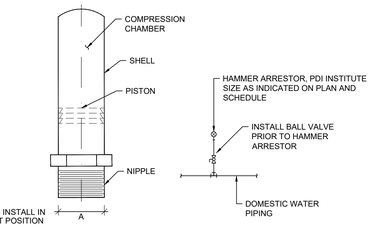
GRADE CLEANOUT (GCO)



NOTE: CLEANOUT TO BE FLUSH WITH FINISHED WALL.

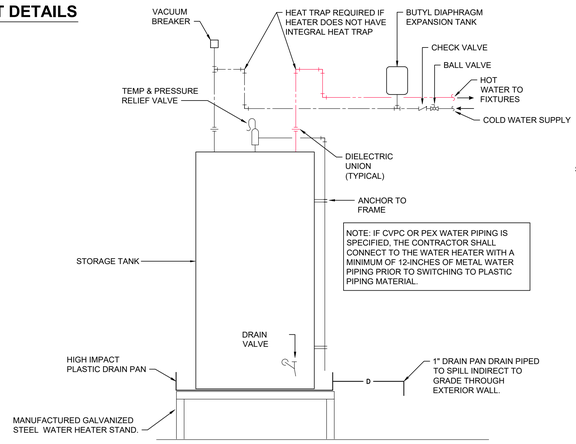
WALL CLEANOUT (WCO)

6 TYPICAL CLEANOUT DETAILS
NOT TO SCALE



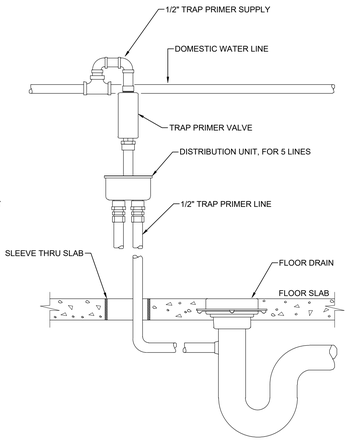
P.D.I. SYMBOL	FIXTURE UNIT RATING	A SIZE
A	1-11	1/2"
B	12-32	3/4"
C	33-60	1"
D	61-113	1"
E	114-154	1"
F	155-330	1"

7 HAMMER ARRESTOR SCHEDULE AND DETAIL
NOT TO SCALE

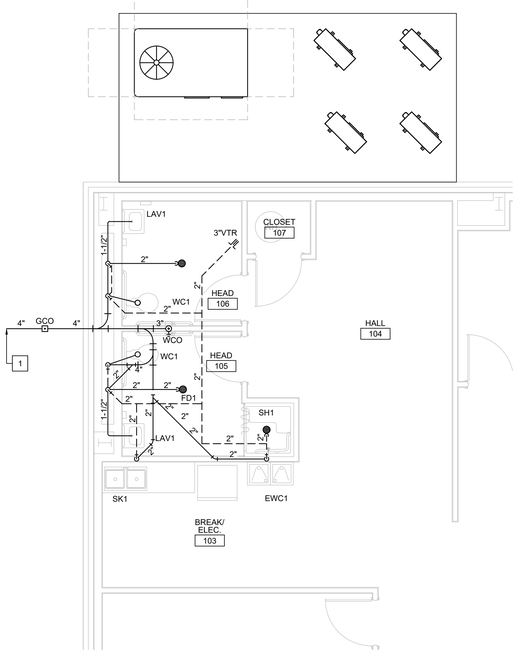


NOTE: IF CVPC OR PEX WATER PIPING IS SPECIFIED, THE CONTRACTOR SHALL CONNECT TO THE WATER HEATER WITH A MINIMUM OF 12-INCHES OF METAL WATER PIPING PRIOR TO SWITCHING TO PLASTIC PIPING MATERIAL.

8 ELECTRIC WATER HEATER DETAIL
NOT TO SCALE

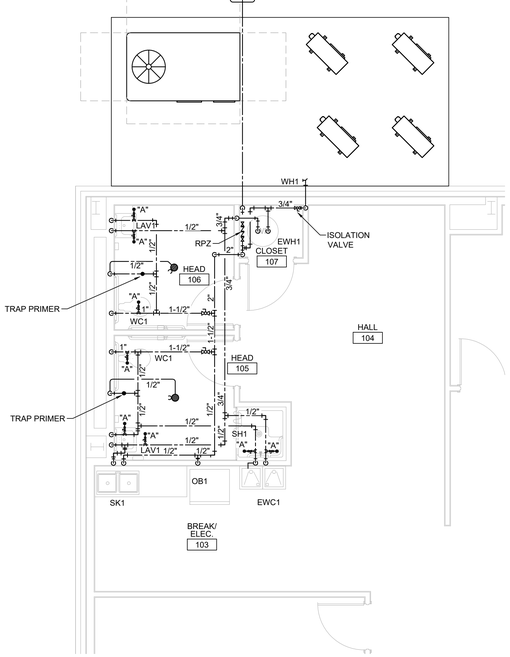


9 TRAP PRIMER DETAIL
NOT TO SCALE



2 PARTIAL WASTE-VENT PLAN
1/4" = 1'-0"

PLAN NORTH

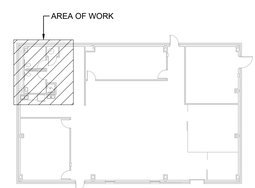


3 PARTIAL DOMESTIC WATER PLAN
1/4" = 1'-0"

PLAN NORTH

KEYED NOTES

1	4" WASTE. SEE SITE UTILITY DRAWING C-5 FOR CONTINUATION
2	2" DOMESTIC WATER SERVICE. SEE SITE UTILITY DRAWING C-5 FOR CONTINUATION.
3	MAIN SHUTOFF VALVE IN VALVE BOX



1 KEYPLAN
NOT TO SCALE

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

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19 AUG 21

SHEET TITLE: PLUMBING PLANS AND RISER DIAGRAM

P-2

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

DES. JBS
DR. JBS
CHK. DMH
SUBMITTED BY:
DESIGN DIR. T H BURTON, PE
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CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
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SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 60035467 | CONST. CONTR. NO.
SCALE: NOTED | SPEC. 05-21-0010 | SHEET 27 OF 43

REVISIONS			
SYM.		DATE	APPROVED

ABBREVIATIONS

Term	Abbreviation
ABOVE FINISHED FLOOR	AFF
ABOVE SEA LEVEL	ASL
ACROSS THE LINE	ACL
AIR CONDITION(-ING, -ED)	AIR COND
AIR-HANDLING UNIT	AHU
AMBIENT	AMB
AMERICAN NATIONAL STANDARDS INSTITUTE	ANSI
AMPERE (AMP, AMPS)	AMP
APPARATUS DEW POINT	ADP
APPROXIMATE	APPROX
ANTI-TERRORISM / FORCE PROTECTION	ATFP
ATMOSPHERE	ATM
AVERAGE	AVG
BRAKE HORSEPOWER	BHP
BROWN & SHARPE WIRE GAGE	B&S
BRITISH THERMAL UNIT	BTU
BUILDING	BLDG
CELSIUS	°C
CHILLED WATER RETURN	CHWR
CHILLED WATER SUPPLY	CHWS
COEFFICIENT, VALVE FLOW	CV
COMPRESSOR	COMP
CONDENS(-ER, -ING, -ATION)	COND
CONNECTION	CONN
COEFFICIENT OF PERFORMANCE FACTOR	COP
COOLING LOAD	CLG LOAD
CUBIC FEET	CU FT
CUBIC INCH	CU IN
CUBIC FEET PER MINUTE	CFM
CFM, STANDARD CONDITIONS	SCFM
DECIBEL	DB
DEGREE	DEG OR °
DEW-POINT TEMPERATURE	DPT
DIAMETER	DIA
DIAMETER, INSIDE	ID
DIAMETER, OUTSIDE	OD
DIFFERENCE OR DELTA	DIFF
DRY-BULB TEMPERATURE	DBT
ENERGY EFFICIENCY RATING	ERR
EFFICIENCY	EFF
ELEVATION	EL
EMERGENCY POWER OFF	EPO
ENTERING	ENT
ENTERING WATER TEMPERATURE	EWT
ENTERING AIR TEMPERATURE	EAT
EXTERNAL AMBIENT TEMPERATURE	EAT
FACE VELOCITY	FVEL
FAHRENHEIT	°F
FEET PER MINUTE	FPM
FEET PER SECOND	FPS
FOOT OR FEET	FT
GAGE OR GAUGE	GA
GALLONS	GAL
GALLONS PER HOUR	GPH
GALLONS PER MINUTE	GPM
GALLONS PER DAY	GPD
GRAINS	GR
HEAD	HD
HEIGHT	HGT
HIGH-PRESSURE STEAM	HPS
HORSEPOWER	HP
HOUR(S)	HR
HUMIDITY, RELATIVE	RH
INTERGRATED PART LOAD VALUES	IPLV
INCH	IN.
IRON PIPE SIZE	IPS
KILOVOLT-AMP	KVA
KILOWATT	KW
KILOWATT HOUR	KWH
LEAVING AIR TEMPERATURE	LAT
LEAVING WATER TEMPERATURE	LWT
LENGTH	LG
LINEAR FEET	LF
LOW-PRESSURE STEAM	LPS
MAXIMUM	MAX
MEDIUM-PRESSURE STEAM	MPS
MILES PER HOUR	MPH
MINIMUM	MIN.
MINUTE	MIN
MANUFACTURER	MFR
NOISE CRITERIA	NC
NON-STANDARD PART LOAD	NPLV
NORMALLY OPEN	NO
NORMALLY CLOSED	NC
NOT APPLICABLE	N/A
NOT IN CONTACT	N I C
NOT TO SCALE	NTS
NUMBER	NO
ON CENTER	OC
OUNCE	OZ
OUTSIDE AIR	OA
PARTS PER MILLION	PPM
PERCENT	%
POUNDS	LBS
POUNDS PER SQUARE FOOT	PSF
PRESSURE	PRESS
QUANTITY	QTY
RATED LOAD AMPS	RLA
RECIRCULATE	RECIRC
REFRIGERANT (12, 22, ETC.)	R12, R22
RELATIVE HUMIDITY	RH
RETURN AIR	RA
REVOLUTIONS PER MINUTE	RPM
REVOLUTIONS PER SECOND	RPS
SAFETY FACTOR	SF
SECOND	S
SHADING COEFFICIENT	SC
SPECIFICATION	SPEC
SQUARE	SQ
STANDARD	STD
STATIC PRESSURE	SP
SUPPLY	SPLY
SUPPLY AIR	SA
TEMPERATURE	TEMP
TEMPERATURE DIFFERENCE	TD
THERMOSTAT	T STAT
TONS OF REFRIGERATION	TONS
TO BE DETERMINED	TBD
TOTAL DYNAMIC HEAD	TDH
U-FACTOR	U
VARIABLE AIR VOLUME	VAV
VELOCITY	VEL
VENTILATION, VENT	VENT
VERTICAL	VERT
VOLT	V
VOLT AMPERE	VA
VOLUME	VOL
WATER PRESSURE DROP	WPD
WATT	W
WATT-HOUR	WH
WEIGHT	WT
WET BULB	WB
YARD	YD
YEAR	YR

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

MECHANICAL GENERAL NOTES

1. SCOPE OF WORK: THESE DRAWINGS AND SPECIFICATIONS DESCRIBE THE SCOPE OF WORK REQUIRED FOR PROJECT MECHANICAL HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL REQUIRED FOR COMPLETE, FULLY FUNCTIONING MECHANICAL SYSTEMS COMPLYING WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
2. DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED EQUIPMENT AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING HVAC SYSTEMS.
3. CODE COMPLIANCE: COMPLY WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INSOFAR AS THEY APPLY:
   A. INTERNATIONAL MECHANICAL CODE, LATEST EDITION AND REVISIONS

   INCLUDE ALL WORK TO COMPLY WITH CODES WHETHER INDICATED ON DRAWINGS OR NOT. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN DRAWINGS AND CODES PRIOR TO BEGINNING WORK.
4. MANUFACTURER'S RECOMMENDATIONS: INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. WORKMANSHIP: UTILIZE SKILLED MECHANICS TO OBTAIN A HIGH QUALITY PROFESSIONAL FINISH INSTALLATION WHEN COMPLETED. WORK OF UNACCEPTABLE QUALITY SHALL BE REMOVED AND REWORKED AT NO ADDITIONAL COST. ENGINEER SHALL BE THE JUDGE OF WORKMANSHIP AND THEIR OPINION WILL BE FINAL. IN ADDITION, ANY EXISTING CONSTRUCTION DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT NO ADDITIONAL COST.
6. SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.
7. PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH SCHEDULE AND REQUIREMENTS OF THE OWNER. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.
8. COORDINATION: COORDINATE MECHANICAL WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. LAYOUT MECHANICAL WORK SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST ARRANGEMENT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO PROPERLY INSTALL EQUIPMENT.
9. EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.
10. LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.
11. STORAGE SPACE: CONSULT WITH THE OWNER REGARDING JOB SITE STORAGE FOR MECHANICAL MATERIALS TO BE INSTALLED UNDER THIS PROJECT. STORAGE SPACE MUST BE SECURED AND CONTRACTOR'S REPRESENTATIVE MUST BE ON JOB BEFORE ANY MATERIAL MAY BE RECEIVED.
12. CLEANUP: REMOVE ALL DEBRIS GENERATED IN THE ACCOMPLISHMENT OF WORK UNDER THIS PROJECT. CLEAN, REPLACE OR REPAIR ALL SURFACES SOILED OR DAMAGED DURING THE COURSE OF THE WORK. REMOVE DEBRIS DAILY SO TO MAINTAIN SAFE WORKING CONDITIONS.

MECHANICAL LEGEND

AT	ANTI-TERRORISM / FORCE PROTECTION SWITCH
CO2	CARBON DIOXIDE SENSOR
	CEILING EXHAUST AIR GRILLE
	CEILING RETURN AIR / TRANSFER AIR GRILLE
	CEILING SUPPLY AIR DIFFUSER / GRILLE
C	CONDENSATE PIPING
AIR TYPE DESIGNATOR / AIRFLOW, CFM	DIFFUSER / REGISTER / GRILLE TAG
E	EMERGENCY STOP
H	HUMIDISTAT / HUMIDITY SENSOR
	MANUAL VOLUME DAMPER
M	MOTORIZED DAMPER
R	REFRIGERANT LINE-SET PIPING
	RETURN, EXHAUST OR TRANSFER AIR FLOW
	SUPPLY AIR FLOW
TH	T-STAT / HUMIDISTAT OR TEMP/HUMIDITY SENSOR
T	THERMOSTAT / TEMPERATURE SENSOR

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

PACKAGED UNIT SCHEDULE

DRAWING CODE	SYSTEM TYPE	COOLING (AHRI STANDARD)			HOT GAS REHEAT		AUXILIARY HEATER		NATURAL GAS HEATING			EVAPORATOR FAN			ELECTRICAL			WEIGHT (LBS.)	NOTES	ACCESSORIES
		TOTAL (MBH)	SENSIBLE (MBH)	EFFICIENCY	REHEAT CAPACITY (MBH)	COOLING LDB W/ REHEAT (°F)	ELECTRIC (KW)	STAGES	GAS INPUT (MBH)	GAS OUTPUT (MBH)	STAGES	SUPPLY AIRFLOW (CFM)	OUTSIDE AIRFLOW (CFM)	ESP (IN. WG.)	POWER SUPPLY (V/PH/HZ)	MCA	MOCP			
PU1	AIR CONDITIONER	59.4	39.0	SEER 15.0	37.7	75.8	23.0	2	80.0	64.0	1	1,900	250	0.90	208/3/60	66.0	70	1,025	1	A - E

NOTES: 1 REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATING, AND COOLING SYSTEM FOR FURTHER INFORMATION.

ACCESSORIES: A HOT-GAS REHEAT FOR DEHUMIDIFICATION
B BACNET MS/TP CONTROLS INTERFACE WITH LOCAL TOUCHSCREEN DISPLAY BY EQUIPMENT MANUFACTURER
C HAIL GUARDS
D HINGED ACCESS DOORS
E PHASE MONITOR

MINI-SPLIT SYSTEM SCHEDULE

DRAWING CODE (IDU / ODU)	INDOOR UNIT CONFIGURATION	SYSTEM TYPE	ARI COOLING 80/67/95		ARI HEATING 70/47	MIN SEER	MIN HSPF	INDOOR UNIT				OUTDOOR UNIT				REFRIGERANT PIPING		NOTES	ACCESSORIES
			TOTAL (MBH)	MIN. (MBH)	TOTAL (MBH)			FAN SA MIN-MAX (CFM)	ELECTRICAL VOLTAGE (V/PH/HZ)	ELECTRICAL MCA (AMPS)	WEIGHT (LBS)	ELECTRICAL VOLTAGE (V/PH/HZ)	ELECTRICAL MCA (AMPS)	ELECTRICAL MOCP (AMPS)	WEIGHT (LBS)	MAXIMUM LENGTH (FT.)	MAXIMUM HEIGHT DIFFERENTIAL (FT.)		
DAH1 / DHP1	CEILING CASSETTE - 4 WAY	HEAT PUMP	9.0	4.8	11.0	20.2	10.0	230 - 335	208/1/60	0.3	31	208/1/60	14.0	24	129	65.0	40.0	1,2	A - D
DAH2 / DHP2	WALL MOUNTED	HEAT PUMP	24.0	10.0	26.0	21.4	11.0	570 - 775	208/1/60	1.0	46	208/1/60	19.0	26	153	165.0	100.0	1,2,3	A - D
DAH3 / DHP3	WALL MOUNTED	HEAT PUMP	24.0	10.0	26.0	21.4	11.0	570 - 775	208/1/60	1.0	46	208/1/60	19.0	26	153	165.0	100.0	1,2,3	A - D
DAH4 / DHP4	WALL MOUNTED	HEAT PUMP	6.0	1.7	8.7	33.1	13.5	117 - 437	208/1/60	1.0	29	208/1/60	10.0	15	82	65.0	40.0	1,2,3	A - D

NOTES: 1 REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS.
2 ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT AND CONDUCTOR FROM OUTDOOR UNIT TO INDOOR UNIT.
3 MOUNT INDOOR UNIT AT 9 FT ABOVE FINISHED FLOOR WHILE MAINTAINING MANUFACTURERS RECOMMENDED CLEARANCES.

ACCESSORIES: A MANUFACTURER'S STANDARD SEACOAST COATING PROTECTION ON OUTDOOR UNIT
B CONCRETE MOUNTING PAD FOR OUTDOOR UNIT
C WIRED WALL-MOUNTED REMOTE CONTROLLER
D BACNET MSTP DDC CONTROL SYSTEM INTERFACE

POWER VENTILATOR SCHEDULE

DRAWING CODE	FAN TYPE	FAN WHEEL	SERVICE	DRIVE TYPE	DAMPER	MOTOR ENCLOSURE	CAPACITIES			ELECTRICAL					SONES	WEIGHT (LBS.)	NOTES	ACCESSORIES
							AIRFLOW (CFM)	ESP (IN. WG.)	FAN RPM	MOTOR TYPE	MOTOR SIZE (W)	V/PH/HZ	FLA	MOCP				
PV1	CEILING-MOUNTED VENTILATORS	STEEL HUB AND BLADES	EXHAUST	DIRECT	BACKDRAFT	TEFC	120	0.25	1,118	PSC	23	120/1/60	0.5	-	0.7	17	1,2	A
PV2	CEILING-MOUNTED VENTILATORS	STEEL HUB AND BLADES	EXHAUST	DIRECT	BACKDRAFT	TEFC	70	0.25	851	PSC	13	120/1/60	0.2	-	0.3	12	1,2	A

NOTES: 1 REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATING, AND COOLING SYSTEM FOR FURTHER INFORMATION.
2 CONTROLLED VIA ON/OFF SWITCH. REFER TO ELECTRICAL PLANS.

ACCESSORIES: A GRAVITY DAMPER

LOUVER SCHEDULE

DRAWING CODE	TYPE	FRAME	DESCRIPTION	MATERIAL	LOUVER DEPTH (IN.)	SIZE (W x H) (IN.)	SERVICE	AIRFLOW (CFM)	PERFORMANCE RATINGS FREE AREA (SF)	S.P. LOSS (IN. H20)	WATER PENETRATION (OZ./SF)	NOTES	ACCESSORIES
L1	FIXED	CHANNEL	HORIZONTAL, WIND-DRIVEN-RAIN-RESISTANT	ALUMINUM	6	12 x 12	EXHAUST	190	0.36	0.04	0.00	1,2	A
L2	FIXED	CHANNEL	HORIZONTAL, WIND-DRIVEN-RAIN-RESISTANT	ALUMINUM	6	18 X 18	INTAKE	335	1.00	0.02	0.00	1,2	A

NOTES: 1 REFER TO SPECIFICATION SECTION 08 91 00 METAL WALL LOUVERS FOR FURTHER INFORMATION.
2 FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLOR AND GLOSS.

ACCESSORIES: A BIRD SCREENING (MATERIAL TO MATCH LOUVER MATERIAL)

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

DRAWING CODE	TYPE	SERVICE	NECK SIZE (IN.)	MODULE SIZE (IN.)	MATERIAL	FINISH	MOUNTING	NOTES	ACCESSORIES
S1	SQUARE CEILING DIFFUSER	SUPPLY	6Ø	12 X 12	ALUMINUM	WHITE	CEILING SURFACE	1,2	A
S2	SPIRAL DUCT GRILLE, DOUBLE DEFLECTION	SUPPLY	14 X 6	-	ALUMINUM	BLACK	DUCT SURFACE	1,2	A
R1	FIXED FACE GRILLE	RETURN	26 X 16	-	ALUMINUM	BLACK	DUCT SURFACE	1	-

NOTES: 1 REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATING, AND COOLING SYSTEM FOR FURTHER INFORMATION.
2 DUCT BRANCH CONNECTION SIZE TO BE EQUAL TO THE NECK SIZE OF DIFFUSER UNLESS NOTED OTHERWISE ON PLANS.

ACCESSORIES: A VOLUME DAMPER

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

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NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HANN
19 AUG 21

SHEET TITLE: MECHANICAL SCHEDULES, NOTES, LEGENDS AND ABBREV.

M-1

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

DES. CRG
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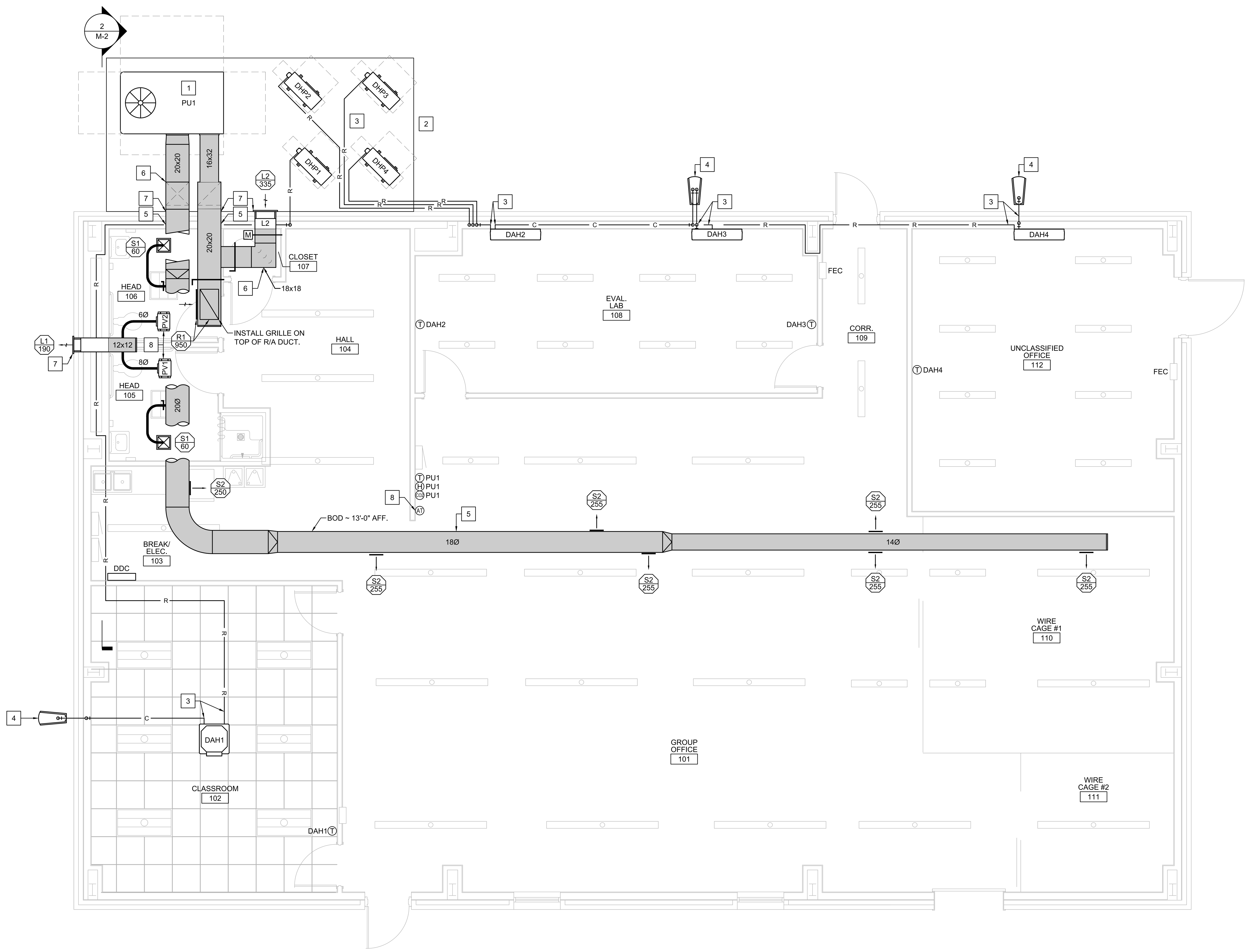
CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 60035468 | CONST. CONTR. NO.
SCALE: NOTED | SPEC. 05-21-0010 | SHEET 28 OF 43

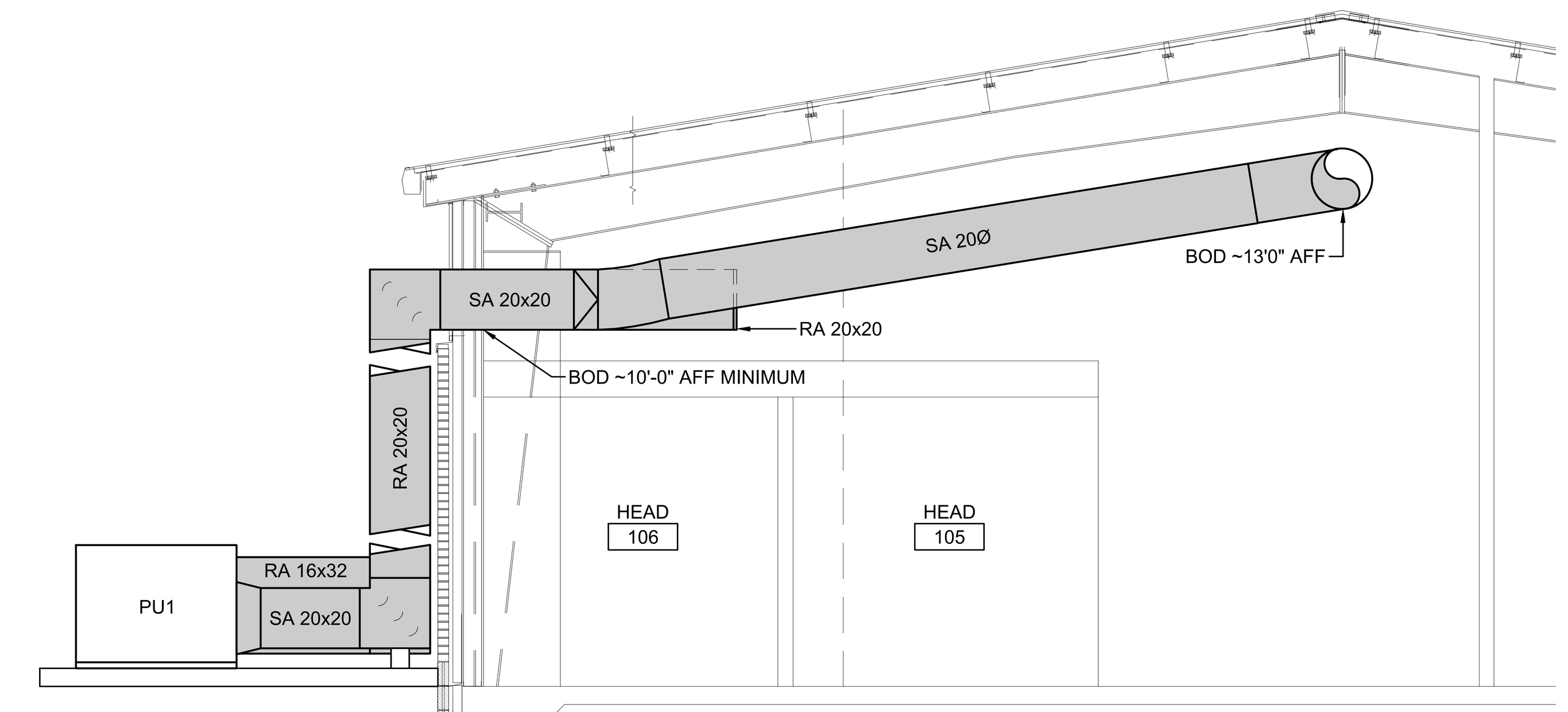
CONSTRUCTION KEYED NOTES

1. INSTALL NEW PACKAGED UNIT ON CONCRETE PAD. ROUTE DUCT ADJACENT TO BUILDING EXTERIOR. PROVIDE FLASHING AND SEAL AGAINST WEATHER. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION. ALL EXTERIOR DUCTWORK MUST BE FACTORY PRE-INSULATED PER SPECIFICATIONS. SUPPORT DUCTWORK PER MANUFACTURER'S RECOMMENDATIONS.
2. INSTALL OUTDOOR UNITS (DHP1,DHP2,DHP3,DHP4) ON NEW CONCRETE PAD IN THE LOCATION SHOWN ON PLANS WHILE MAINTAINING MANUFACTURERS RECOMMENDED CLEARANCES. ROUTE REFRIGERANT PIPING TO ASSOCIATED INDOOR UNIT.
3. ROUTE CONDENSATE AND REFRIGERANT PIPING IN GENERAL ROUTE INDICATED ON PLAN. PROVIDE FACTORY FABRICATED PIPE SUPPORTS, 4' ON CENTER OUTDOORS. CONCEAL ABOVE CEILINGS AND INSIDE WALLS WHERE POSSIBLE. PROVIDE PIPING COVER WHERE EXPOSED TO VIEW (INSIDE AND OUTSIDE)
4. PENETRATE CONDENSATE PIPING 1'-0" ABOVE FINISHED GRADE AND THEN DOWN TO SPLASHBLOCK.
5. BOTTOM OF RETURN / SUPPLY DUCTWORK AT APPROXIMATELY 10'-0" THROUGH EXTERIOR WALL. RETURN DUCT TO RUN STRAIGHT OUT FROM WALL. SUPPLY DUCTWORK TO SLOPE UP PARALLEL TO ROOF LINE UNTIL ~ 13'-0" BOD. SEE SECTION 2/M-2. COORDINATE WITH E.C. TO AVOID CONFLICTS WITH CABLE TRAYS. INTERIOR DUCTWORK MUST BE FLAT BLACK IN COLOR.
6. PROVIDE TURNING VANES IN NON-RADIUS MAKE-UP & SUPPLY AIR 90'S AND 45'S, TYP.
7. INSTALL LOUVER A MINIMUM OF 10' ABOVE GRADE. PROVIDE DUCT SECURITY BARS FOR ALL DUCT EXTERIOR WALL PENETRATIONS.
8. ATFP SHUTDOWN - MANUAL EPO INSIDE BUILDING WILL HARDWIRE SHUTDOWN, PU1,PV1 AND PV2. SEE CONTROLS DRAWINGS FOR MORE INFORMATION.

REVISIONS			
SYM.		DATE	APPROVED



1 FLOOR PLAN
1/4" = 1'-0"
PLAN NORTH



2 SECTION - PU1 DUCTWORK
1/4" = 1'-0"
PLAN NORTH

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

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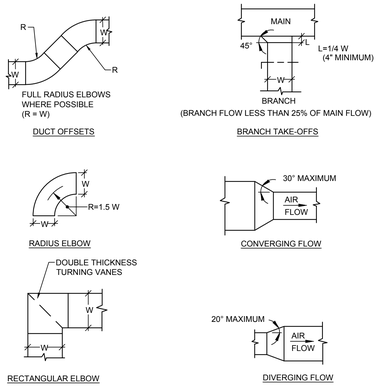
19 AUG 21

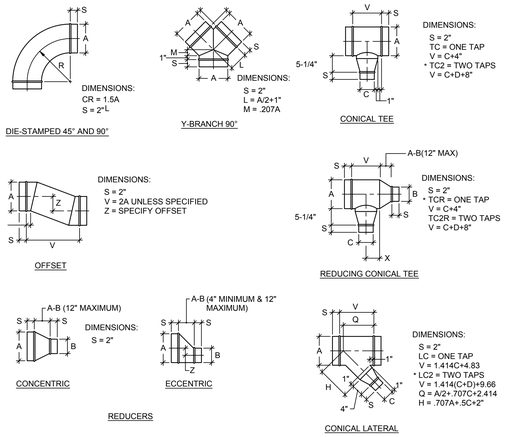
SHEET TITLE:	MECHANICAL FLOOR PLAN
	M-2
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE	CAMP LEJEUNE, NORTH CAROLINA
DES. CRG	CONSTRUCT MARSOC G-6 SUPPORT FACILITY CAMP LEJEUNE, NORTH CAROLINA
DR. CRG	
CHK. DMH	
SUBMITTED BY:	
DESIGN DIR. T H BURTON, PE	
APPROVED: DATE	SIZE F
	CODE IDENT. NO. 80091
	NAVFAC DRAWING NO. 60035469
SATISFACTORY TO: DATE	CONST. CONTR. NO.
SCALE: NOTED	SPEC. 05-21-0010
	SHEET 29 OF 43

REVISIONS			
SYM.		DATE	APPROVED



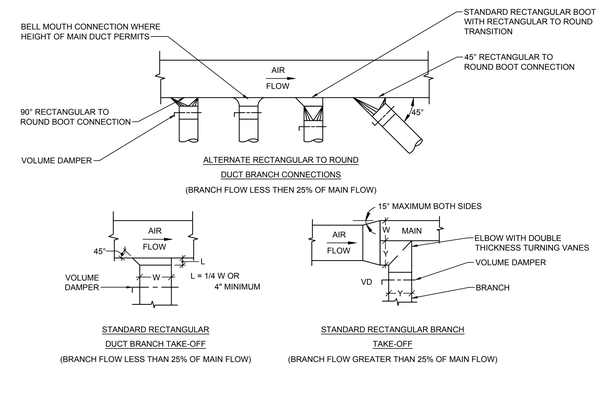
1 RECTANGULAR DUCT FITTING DETAILS

NOT TO SCALE



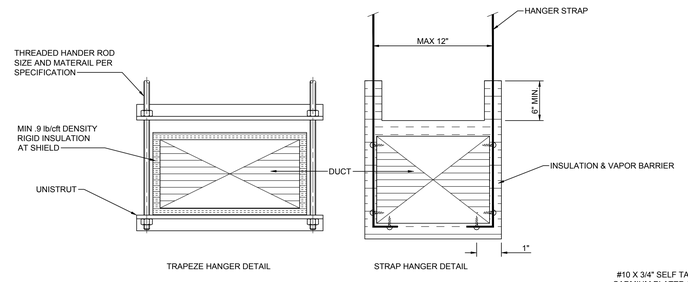
2 ROUND DUCT FITTING DETAILS

NOT TO SCALE



3 RECTANGULAR TO ROUND DUCT FITTING DETAILS

NOT TO SCALE

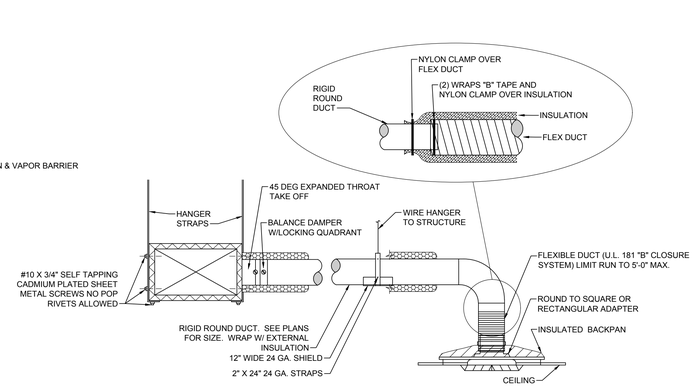


NOTES:

1. TRAPEZE HANGERS SHALL BE PROVIDED FOR ALL DUCT WORK. TRAPEZE HANGERS CANNOT BE USED FOR BRANCH DUCT WORK 12" IN WIDTH AND SHORTER REFER TO STRAP HANGER DETAIL.
2. SUPPORTS SHALL BE SPACED AND SIZED AS PER SPECIFICATIONS.
3. RIGID INSULATION SHALL EXTEND MINIMUM OF 3" BEYOND STRUT ON BOTH SIDES. MAINTAIN VAPOR BARRIER ACROSS STRUT.

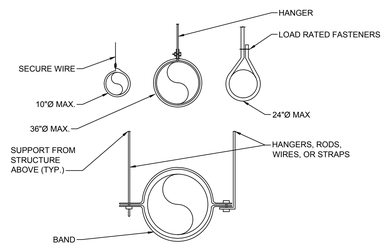
4 DUCT SUPPORT DETAIL

NOT TO SCALE



5 TYPICAL DIFFUSER CONNECTION DETAIL

NOT TO SCALE



6 ROUND DUCT SUPPORT DETAIL

NOT TO SCALE

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19 AUG 21

SHEET TITLE: MECHANICAL DETAILS

M-3

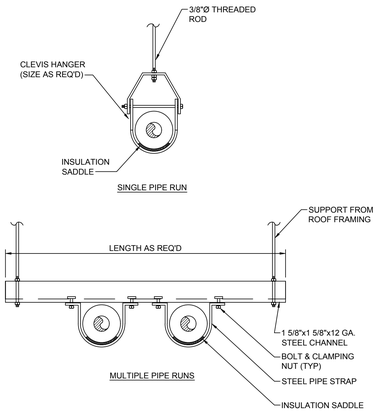
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

DES. CRG	
DR. CRG	
CHK. DMH	
SUBMITTED BY:	
DESIGN DIR. T H BURTON, PE	
APPROVED: DATE	
SATISFACTORY TO: DATE	

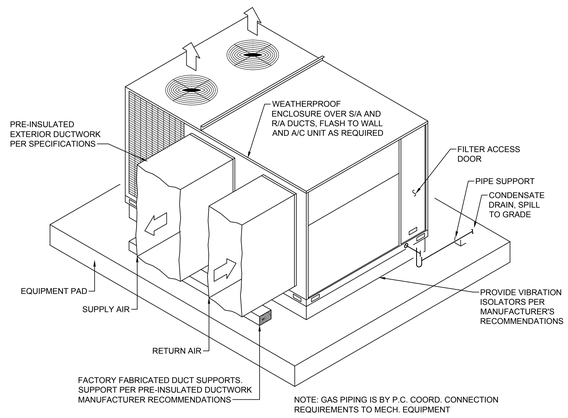
SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	60035470
		CONST. CONTR. NO.
SCALE: NOTED	SPEC. 05-21-0010	SHEET 30 OF 43

REVISIONS			
SYM.		DATE	APPROVED



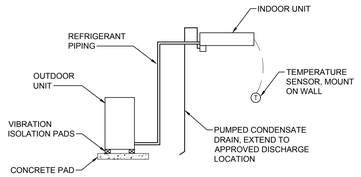
1 PIPE SUPPORT DETAIL

NOT TO SCALE



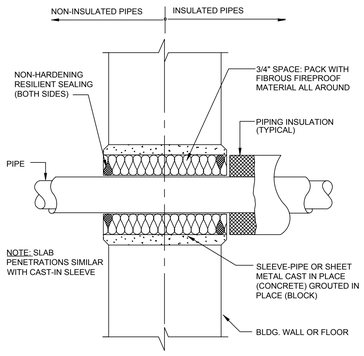
2 CONCRETE PAD MOUNTED PACKAGED UNIT HORIZONTAL AIR DISCHARGE DETAIL

NOT TO SCALE



3 DUCTLESS SPLIT SYSTEM DETAIL

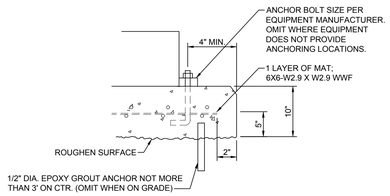
NOT TO SCALE



4 WALL PENETRATION DETAIL - PIPING

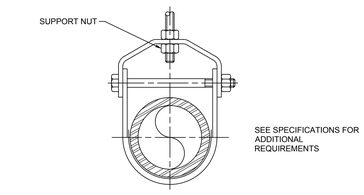
NOT TO SCALE

NOTE:
1. MESH SHALL BE FURNISHED IN SHEETS.
2. ALL PAD EDGES SHALL BE CHAMFERED.
3. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 PSI AT 28 DAYS
4. ONLY ANCHOR EQUIPMENT WITH MANUFACTURER SUPPLIED ANCHOR MOUNTS



5 EQUIPMENT PAD-EXTERIOR DETAIL

NOT TO SCALE



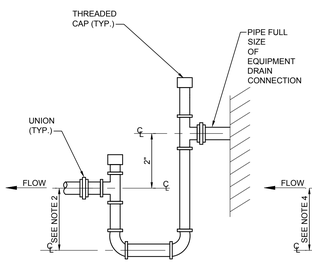
HEAVY DUTY CLEVIS HANGER (FOR 1/2" UP TO & INCL. 2" PIPE)

NOTES:

1. THIS DETAIL MUST BE USED AS A GUIDE. ALL HANGERS MUST MEET THE REQUIREMENTS OF THE SPECIFICATION.
2. PIPE 6" AND LARGER MUST HAVE ROLLER SUPPORTED WITH DUAL RODS.
3. FOR CHW SERVICE OVER 3" REPLACE SADDLE WITH 12" LONG 14 GA SHIELD WITH RIGID INSULATION BETWEEN PIPE AND SHIELD.
4. WHERE TRAPEZE HANGERS ARE USED FOR HEATING HOT WATER PROVIDE ROLLERS.
5. PIPE SUBJECT TO DAMAGE MUST HAVE PADDED HANGER.

6 PIPE HANGER SUPPORT DETAIL

NOT TO SCALE



NOTES:

1. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
2. HEIGHT MUST BE EQUAL TO UNIT MAXIMUM TOTAL STATIC PRESSURE PLUS 1/2".
3. HEIGHT MUST BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".
4. HEIGHT MUST BE 1/2 OF HEIGHT INSTALLED IN NOTE 3.
5. PIPE TO NEAREST DRAIN.
6. TRAP MUST NOT BLOCK ACCESS TO EQUIPMENT
7. PROVIDE UNIONS AT INLET AND OUTLET OF TRAP.

7 CONDENSATE DRAIN DETAIL

NOT TO SCALE

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

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19 AUG 21

SHEET TITLE: MECHANICAL DETAILS

M-4

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

DES. CRG
DR. CRG
CHK. DMH
SUBMITTED BY:
DESIGN DIR. T H BURTON, PE
APPROVED: DATE
SATISFACTORY TO: DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 60035471 | CONST. CONTR. NO.

SCALE: NOTED | SPEC. 05-21-0010 | SHEET 31 OF 43

REVISIONS			
SYM.		DATE	APPROVED

SEQUENCE OF OPERATION - PACKAGED UNIT

SEQUENCE OF OPERATIONS: PU1

BUILDING AUTOMATION SYSTEM INTERFACE:
THE BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER OCCUPIED BYPASS, MORNING WARM-UP/PRE-COOL, OCCUPIED/UNOCCUPIED AND HEAT/COOL MODES. IF COMMUNICATION IS LOST WITH THE BAS THE CONTROLLER SHALL OPERATE USING DEFAULT MODES AND SETPOINTS.

OCCUPIED:
DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE OUTSIDE AIR DAMPER SHALL OPEN TO MAINTAIN MINIMUM VENTILATION REQUIREMENTS. THE DX COOLING AND THE ELECTRIC HEAT SHALL CONTROL TO MAINTAIN THE ACTIVE SPACE TEMPERATURE SETPOINT. IF THE SPACE TEMPERATURE SENSOR FAILS, THE DX COOLING AND ELECTRIC HEAT SHALL BE DISABLED AND AN ALARM SHALL ANNUNCIATE AT THE BAS.

UNOCCUPIED:
WHEN THE SPACE TEMPERATURE IS BELOW THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL BE COMMANDED ON, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND THE ELECTRIC HEAT SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) PLUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP AND THE ELECTRIC HEAT SHALL BE DISABLED. WHEN THE SPACE TEMPERATURE IS ABOVE THE UNOCCUPIED COOLING SETPOINT OF 80.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL BE COMMANDED ON, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND THE DX COOLING SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) MINUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP, THE DX COOLING SHALL BE DISABLED AND THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED.

OPTIMAL START:
THE BAS SHALL MONITOR THE SCHEDULED OCCUPIED TIME, OCCUPIED SPACE SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL START OCCURS.

MORNING WARM-UP MODE:
DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT A MORNING WARM-UP MODE SHALL BE ACTIVATED. WHEN MORNING WARM-UP IS INITIATED, THE UNIT SHALL ENABLE THE HEATING AND FAN(S). THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE SPACE TEMPERATURE REACHES THE OCCUPIED HEATING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

PRE-COOL MODE:
DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, PRE-COOL MODE SHALL BE ACTIVATED. WHEN PRE-COOL IS INITIATED, THE UNIT SHALL ENABLE THE FAN AND COOLING. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE SPACE TEMPERATURE REACHES OCCUPIED COOLING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

OPTIMAL STOP:
THE BAS SHALL MONITOR THE SCHEDULED UNOCCUPIED TIME, OCCUPIED SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL STOP OCCURS. WHEN THE OPTIMAL STOP MODE IS ACTIVE THE UNIT CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE TO THE SPACE TEMPERATURE OFFSET SETPOINT. OUTSIDE AIR DAMPER SHALL REMAIN ENABLED TO PROVIDE MINIMUM VENTILATION.

OCCUPIED BYPASS:
THE BAS SHALL MONITOR THE STATUS OF THE ON AND CANCEL BUTTONS OF THE SPACE TEMPERATURE SENSOR. WHEN AN OCCUPIED BYPASS REQUEST IS RECEIVED FROM A SPACE SENSOR, THE UNIT SHALL TRANSITION FROM ITS CURRENT OCCUPANCY MODE TO OCCUPIED BYPASS MODE AND THE UNIT SHALL MAINTAIN THE SPACE TEMPERATURE TO THE OCCUPIED SETPOINTS (ADJ.).

HEAT/COOL MODE:
WHEN THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING SETPOINT THE MODE SHALL TRANSITION TO COOLING. WHEN THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING SETPOINT THE MODE SHALL TRANSITION TO HEATING. WHEN THE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT OR BELOW THE OCCUPIED HEATING SETPOINT THE MODE SHALL REMAIN IN ITS LAST STATE. IF THE SPACE TEMPERATURE SENSOR FAILS THE MODE SHALL REMAIN IN ITS LAST STATE AND AN ALARM SHALL ANNUNCIATE AT THE BAS. IF THE LOCAL AND COMMUNICATED SETPOINTS FAIL THE CONTROLLER SHALL DISABLE THE SUPPLY FAN AND AN ALARM SHALL ANNUNCIATE AT THE BAS.

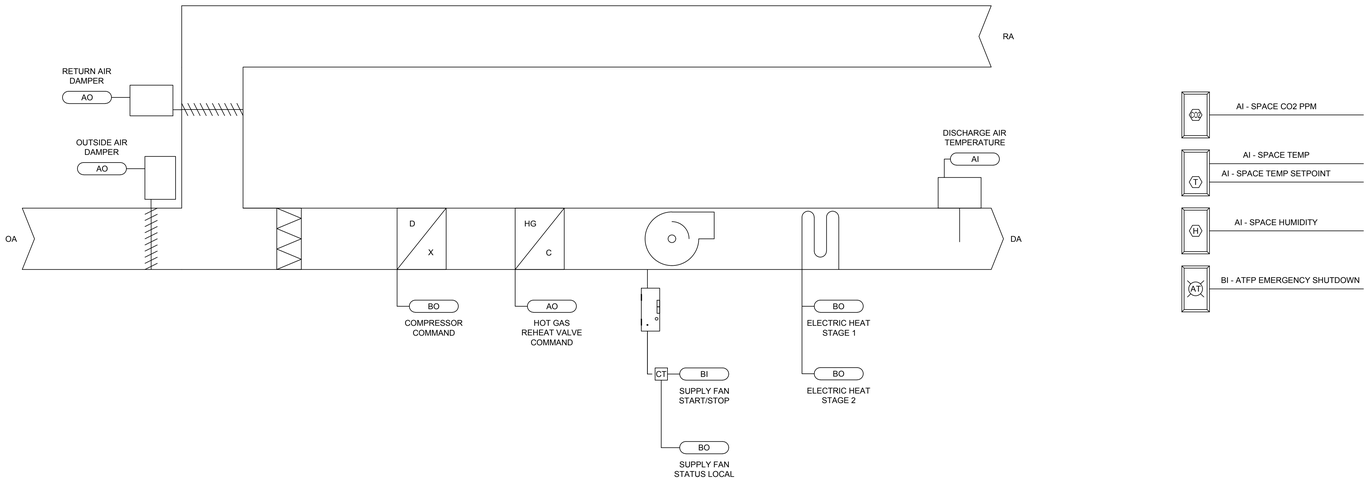
DEHUMIDIFICATION:
THE UNIT SHALL BE IN DEHUMIDIFICATION MODE IF THE SPACE HUMIDITY IS ABOVE THE DEHUMIDIFICATION SETPOINT. IN THE DEHUMIDIFICATION MODE, THE SUPPLY AIR FAN SHALL BE ENABLED, THE OUTSIDE AIR DAMPER SHALL BE COMMANDED TO MINIMUM POSITION, AND THE UNIT CONTROLLER SHALL ENERGIZE MECHANICAL COOLING AND THE REHEAT SOLENOID.

VENTILATION CONTROL:
WHEN THE SPACE CO2 LEVEL IS GREATER THAN OR EQUAL TO THE DESIGN MINIMUM CO2 SETPOINT, THE OUTDOOR AIR DAMPER SHALL OPEN TO THE DESIGN MINIMUM OUTDOOR AIR DAMPER SETPOINT. WHEN THE SPACE CO2 LEVEL IS LESS THAN OR EQUAL TO THE DCV MINIMUM CO2 SETPOINT, THE OUTDOOR AIR DAMPER SHALL CLOSE TO THE DCV MINIMUM OUTDOOR AIR DAMPER SETPOINT.

SUPPLY FAN:
THE SUPPLY FAN SHALL BE ENABLED WHILE IN THE OCCUPIED MODE AND CYCLED ON DURING THE UNOCCUPIED MODE.

SHUTDOWN:
ON POWER INTERRUPTION OR FAN SHUTDOWN. THE UNIT PACKAGED CONTROLLER SHALL CLOSE THE ISOLATION DAMPERS.

ATFP SHUTDOWN:
MANUAL EPO INSIDE BUILDING WILL HARDWIRE SHUTDOWN PU1.



1 PU - PACKAGED UNIT CONTROL SCHEMATIC
NOT TO SCALE

POINTS LIST - PACKAGED UNIT

	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	SHOW ON GRAPHIC
ATFP EMERGENCY SHUTDOWN			X							X	X
COMPRESSOR COMMAND				X							X
DISCHARGE AIR TEMP LOCAL	X									X	X
ELECTRIC HEAT STAGE 1				X							X
ELECTRIC HEAT STAGE 2				X							X
HOT GAS REHEAT VALVE COMMAND		X									X
RETURN AIR DAMPER		X									X
OUTSIDE AIR DAMPER COMMAND		X									X
RETURN AIR DAMPER COMMAND		X									X
SPACE CO2 LOCAL	X									X	
SPACE HUMIDITY LOCAL	X									X	X
SPACE TEMPERATURE LOCAL	X									X	X
SPACE TEMPERATURE SETPOINT LOCAL	X										X
SUPPLY FAN START/STOP	X			X							X
SUPPLY FAN STATUS LOCAL	X		X								X
APPLICATION MODE									X		
BAS COMMUNICATION STATE									X	X	
COMPRESSOR ENABLE									X		X
COMPRESSOR LOCKOUT STATUS									X		
COOL OUTPUT									X		
FAN MODE COMMAND						X			X		
HEAT/COOL MODE REQUEST						X			X		X
HEAT OUTPUT									X		
OCCUPANCY STATUS						X			X		X
OCCUPIED COOLING SETPOINT					X				X		X
OCCUPIED HEATING SETPOINT					X				X		X
OUTSIDE AIR DAMPER MINIMUM POSITION					X				X		X
SPACE CO2 HIGH LIMIT					X				X		
TIMES OVERRIDE STATUS									X		
UNOCCUPIED COOLING SETPOINT					X				X		X
UNOCCUPIED HEATING SETPOINT					X				X		X

SEQUENCE OF OPERATION - DUCTLESS SPLIT SYSTEM

DUCTLESS SPLIT SYSTEM UNITS

GENERAL:
1. A MICROPROCESSOR-BASED CONTROLLER (FURNISHED WITH THE UNIT) SHALL CONTROL THE SPLIT SYSTEM AIR CONDITIONING UNIT.
2. THE INDOOR EVAPORATOR UNIT FAN AND DX COOLING SYSTEM SHALL BE STARTED AND STOPPED VIA THE MICROPROCESSOR BASED CONTROLS.
3. A SPACE TEMPERATURE SENSOR WILL MONITOR THE ROOM CONDITIONS FOR TEMPERATURE ALARM MONITORING THROUGH THE BUILDING AUTOMATION SYSTEM (BAS).

SYSTEM DESCRIPTION:
1. THE SYSTEM IS A DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT.

2. THE OUTDOOR CONDENSING UNIT IS LOCATED REMOTELY.

SYSTEM CONTROL:
TEMPERATURE CONTROL:
A. INDOOR UNIT:
1) ON A RISE IN SPACE TEMPERATURE ABOVE THE ACTIVE SET POINT, THE MICROPROCESSOR CONTROLLER SHALL INDEX THE INDOOR UNIT EVAPORATOR FAN TO RUN. THE FAN SHALL RUN INITIALLY AT A PREDETERMINED SPEED UPON STARTUP. IN AUTO MODE, THE INDOOR EVAPORATOR FAN SHALL CYCLE WITH A CALL FOR COOLING, AND THE FAN SHALL SWITCH VIA THE MICROPROCESSOR CONTROLS BETWEEN LOW SPEED AND HIGH SPEED BASED UPON THE ROOM TEMPERATURE DEVIATION FROM THE SET POINT.

2) THE MICROPROCESSOR CONTROLLER WILL ENERGIZE THE OUTDOOR COMPRESSOR TO RUN UPON A CALL FOR COOLING, BASED UPON THE SET POINT ENTERED INTO THE MICROPROCESSOR CONTROLLER.

3) UPON A DROP IN SPACE TEMPERATURE, THE MICROPROCESSOR WILL DE-ENERGIZE THE COMPRESSOR. THE INDOOR UNIT FAN WILL CONTINUE TO RUN FOR A PRE-DETERMINED CYCLE LENGTH TO DISSIPATE REMAINING ENERGY FROM THE COIL. THE UNIT CONTROLS SHALL INCLUDE AN ANTI-CYCLE TIMER TO PREVENT MULTIPLE STARTS ON THE COMPRESSOR.

BAS INTERFACE:

1. A TEMPERATURE SENSOR SHALL BE WIRED TO THE BAS TO MONITOR THE ACTIVE SPACE TEMPERATURE. THE BAS SHALL INITIATE AN ALARM WHENEVER THE SPACE TEMPERATURE RANGES BEYOND THE HIGH OR LOW LIMITS DEFINED FOR THE SPACE (85F HIGH ALARM/65F LOW ALARM, ADJ.).

2 CONTROL DIAGRAM - DUCTLESS SPLIT SYSTEM
NOT TO SCALE

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

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19 AUG 21

SHEET TITLE: MECHANICAL CONTROLS

M-5

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

DES. CRG
DR. CRG
CHK. DMH
SUBMITTED BY:
DESIGN DIR. T H BURTON, PE
APPROVED: DATE
SATISFACTORY TO: DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 60035472 | CONST. CONTR. NO.

SCALE: NOTED | SPEC. 05-21-0010 | SHEET 32 OF 43

REVISIONS			
SYM.		DATE	APPROVED

SEQUENCE OF OPERATION - OUTSIDE AIR MONITORING

OUTSIDE AIR CONDITIONS:
THE CONTROLLER SHALL MONITOR THE OUTSIDE AIR TEMPERATURE AND HUMIDITY AND CALCULATE THE OUTSIDE AIR ENTHALPY ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.

ALARM SHALL BE GENERATED AS FOLLOWS:
- SENSOR FAILURE: SENSOR READING INDICATES SHORTED OR DISCONNECTED SENSOR. IN THE EVENT OF A SENSOR FAILURE, AN ALTERNATE OUTSIDE AIR CONDITIONS SENSOR SHALL BE MADE AVAILABLE TO THE SYSTEM WITHOUT INTERRUPTION IN SENSOR READINGS.

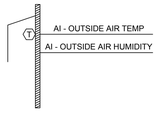
IF AN OA TEMP SENSOR CANNOT BE READ, A DEFAULT VALUE OF 65°F WILL BE USED.

IF AN OA HUMIDITY SENSOR CANNOT BE READ, A DEFAULT VALUE OF 50 % WILL BE USED.

OUTSIDE AIR TEMPERATURE HISTORY:
THE CONTROLLER SHALL MONITOR AND RECORD THE HIGH AND LOW TEMPERATURE READINGS FOR THE OUTSIDE AIR. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

OUTSIDE AIR MONITORING POINTS

	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	SHOW ON GRAPHIC
OUTSIDE AIR HUMIDITY	X								X		X
OUTSIDE AIR TEMP	X								X		X
OUTSIDE AIR ENTHALPY					X				X		X
OUTSIDE AIR HUMIDITY (ALTERNATE)					X				X		
OUTSIDE AIR TEMP (ALTERNATE)					X				X		
HIGH TEMP MONTH-TO-DATE									X		X
HIGH TEMP TODAY									X		X
HIGH TEMP YEAR-TO-DATE									X		X
LOW TEMP MONTH-TO-DATE									X		X
LOW TEMP TODAY									X		X
LOW TEMP YEAR-TO-DATE									X		X
SENSOR FAILURE										X	



1 CONTROL DIAGRAM - OUTSIDE AIR MONITORING
NOT TO SCALE

SEQUENCE OF OPERATION - ELECTRIC METER

ELECTRIC METER:
PROVIDE ENHANCED POWER AND ENERGY METER WITH BUILT-IN INTEGRATOR AND POWER SUPPLY FOR THE CTS. METER SHALL HAVE ON BOARD DATA LOGGING CAPABILITY AS WELL AS OUTPUT TO SBC VIA NATIVE BACNET MS/TP. PLACE METER INDOORS AT BUILDING MAIN DISTRIBUTION PANEL (MDP). THIS METER SHALL BE PROVIDED IN ADDITION TO ANY OTHER POWER METERS REQUIRED BY DIVISION 26 (ELECTRICAL) OR DIVISION 33 (UTILITIES).

ELECTRICAL METER SHALL MONITOR AND TREND THE FOLLOWING POINTS:
- POWER (3-PHASE TOTAL & PER PHASE): REAL (KW), REACTIVE (KVAR), AND APPARENT (KVA)
- POWER FACTOR: 3-PHASE AVERAGE & PER PHASE
- PRESENT POWER DEMAND: REAL (KW), REACTIVE (KVAR), AND APPARENT (KVA)
- PEAK POWER DEMAND: REAL (KW), REACTIVE (KVAR), AND APPARENT (KVA)
- CURRENT: 3-PHASE AVERAGE AND PER PHASE
- VOLTAGE: LINE-LINE AND LINE-NEUTRAL (3-PHASE AVERAGE & PER PHASE)
- FREQUENCY
- ACCUMULATED NET ENERGY: REAL (KWH), REACTIVE (KVARH), AND APPARENT (KVAH)
- ACCUMULATED REAL ENERGY BY PHASE (KWH)

2 ELECTRIC METERING REQUIREMENTS
NOT TO SCALE

SEQUENCE OF OPERATION - WATER FLOW METER

WATER METER:
THE CONTROLLER SHALL MONITOR THE WATER METER FOR WATER CONSUMPTION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.

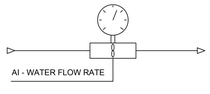
ALARM SHALL BE GENERATED AS FOLLOWS:
- METER FAILURE: SENSOR READING INDICATES A LOSS OF PULSE OUTPUT FROM THE WATER METER.

PEAK DEMAND HISTORY:
THE CONTROLLER SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE WATER METER. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

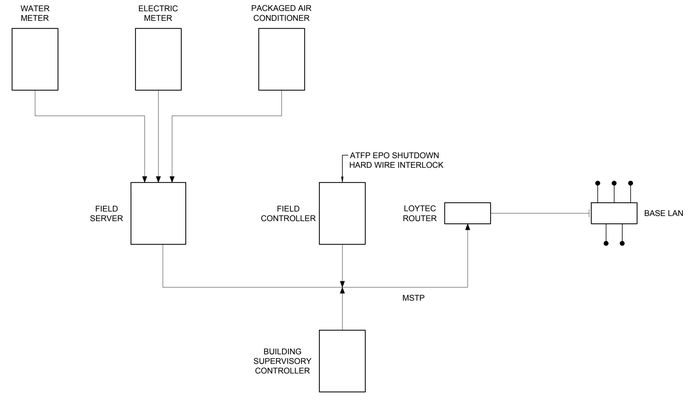
USAGE HISTORY:
THE CONTROLLER SHALL MONITOR AND RECORD WATER METER READINGS SO AS TO PROVIDE A WATER CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

WATER FLOW METER POINTS

	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	SHOW ON GRAPHIC
WATER FLOW RATE	X										
DEMAND									X		X
PEAK MONTH-TO-DATE									X		X
PEAK TODAY									X		X
PEAK YEAR-TO-DATE									X		X
USAGE MONTH-TO-DATE									X		X
USAGE TODAY									X		X
USAGE YEAR-TO-DATE									X		X
METER FAILURE										X	



3 WATER FLOW METER CONTROL SCHEMATIC
NOT TO SCALE



4 ECMS NETWORK DIAGRAM
NOT TO SCALE

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET G-1

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19 AUG 21

SHEET TITLE: MECHANICAL CONTROLS

M-6

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

DES. CRG
DR. CRG
CHK. DMH
SUBMITTED BY:
DESIGN DIR: T H BURTON, PE
APPROVED: DATE
SATISFACTORY TO: DATE

CONSTRUCT MARSOC
G-6 SUPPORT FACILITY
CAMP LEJEUNE, NORTH CAROLINA

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 60035473 | CONST. CONTR. NO.
SCALE: NOTED | SPEC. 05-21-0010 | SHEET 33 OF 43