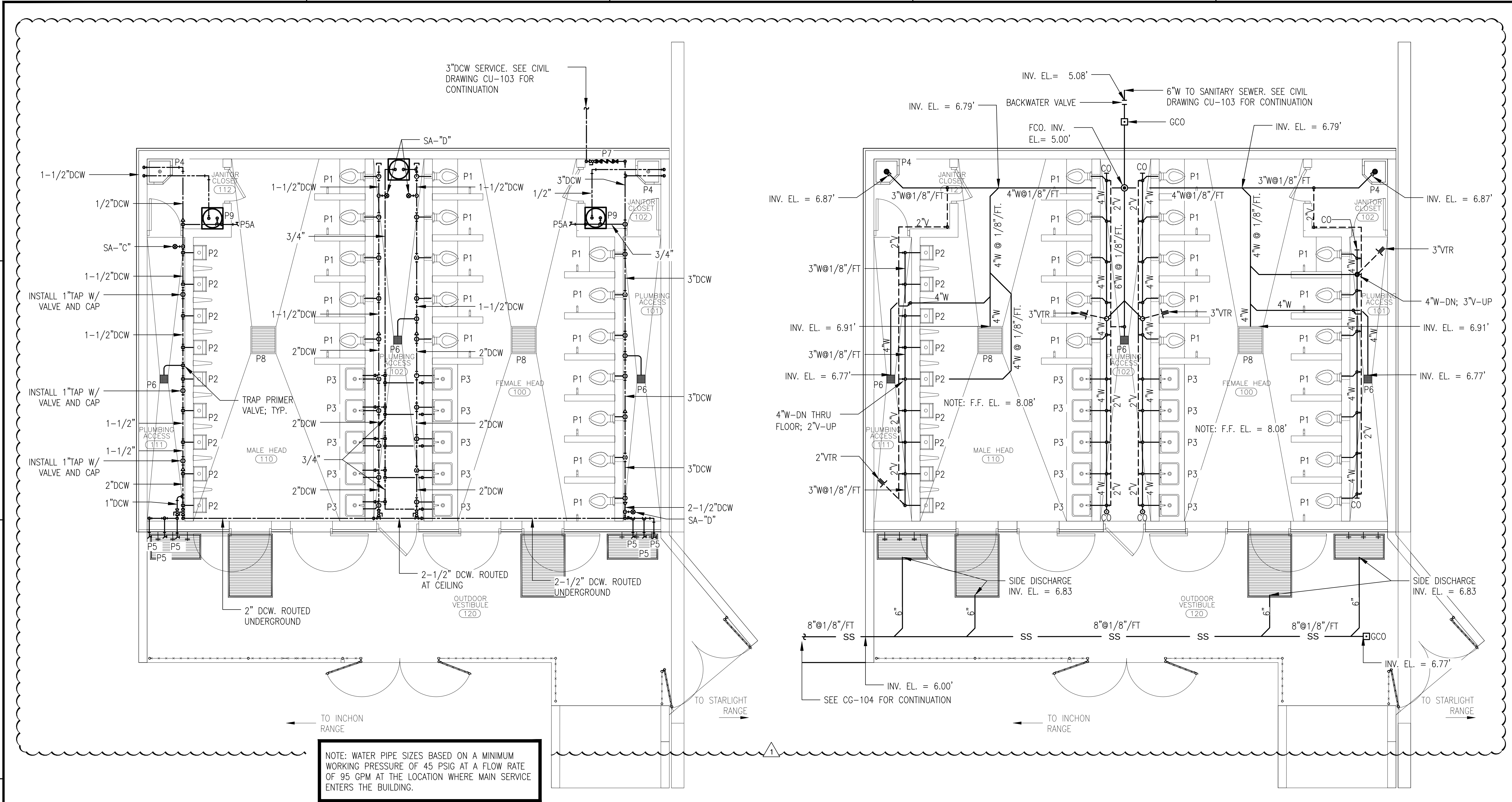


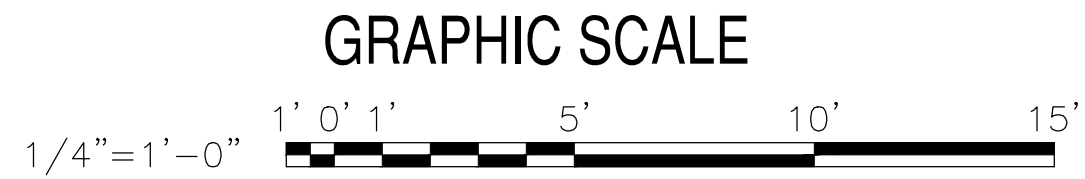
D
C
B
A



NOTE: WATER PIPE SIZES BASED ON A MINIMUM WORKING PRESSURE OF 45 PSIG AT A FLOW RATE OF 95 GPM AT THE LOCATION WHERE MAIN SERVICE ENTERS THE BUILDING.

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

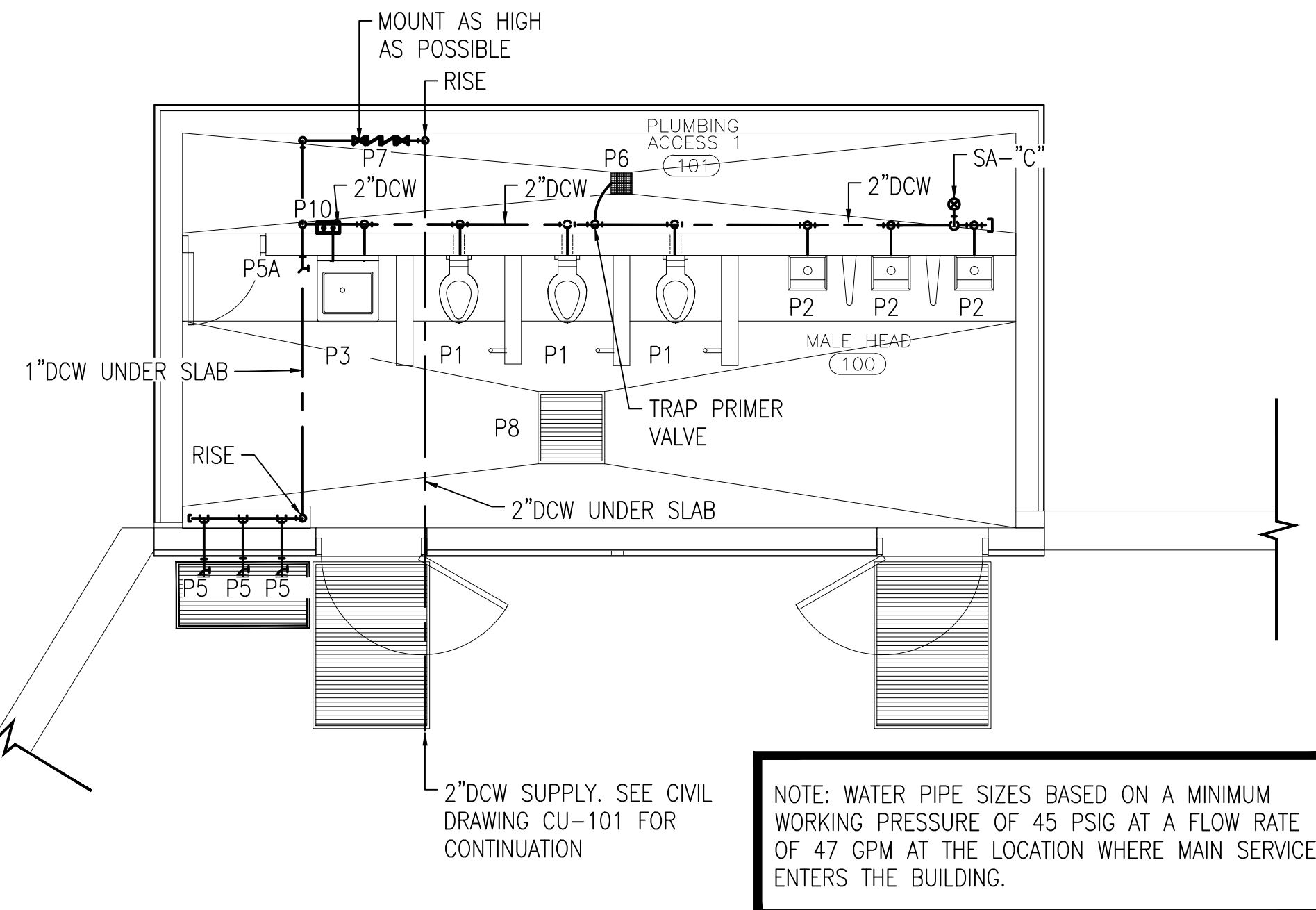
WASTE-VENT PLAN
1/4"=1'-0"



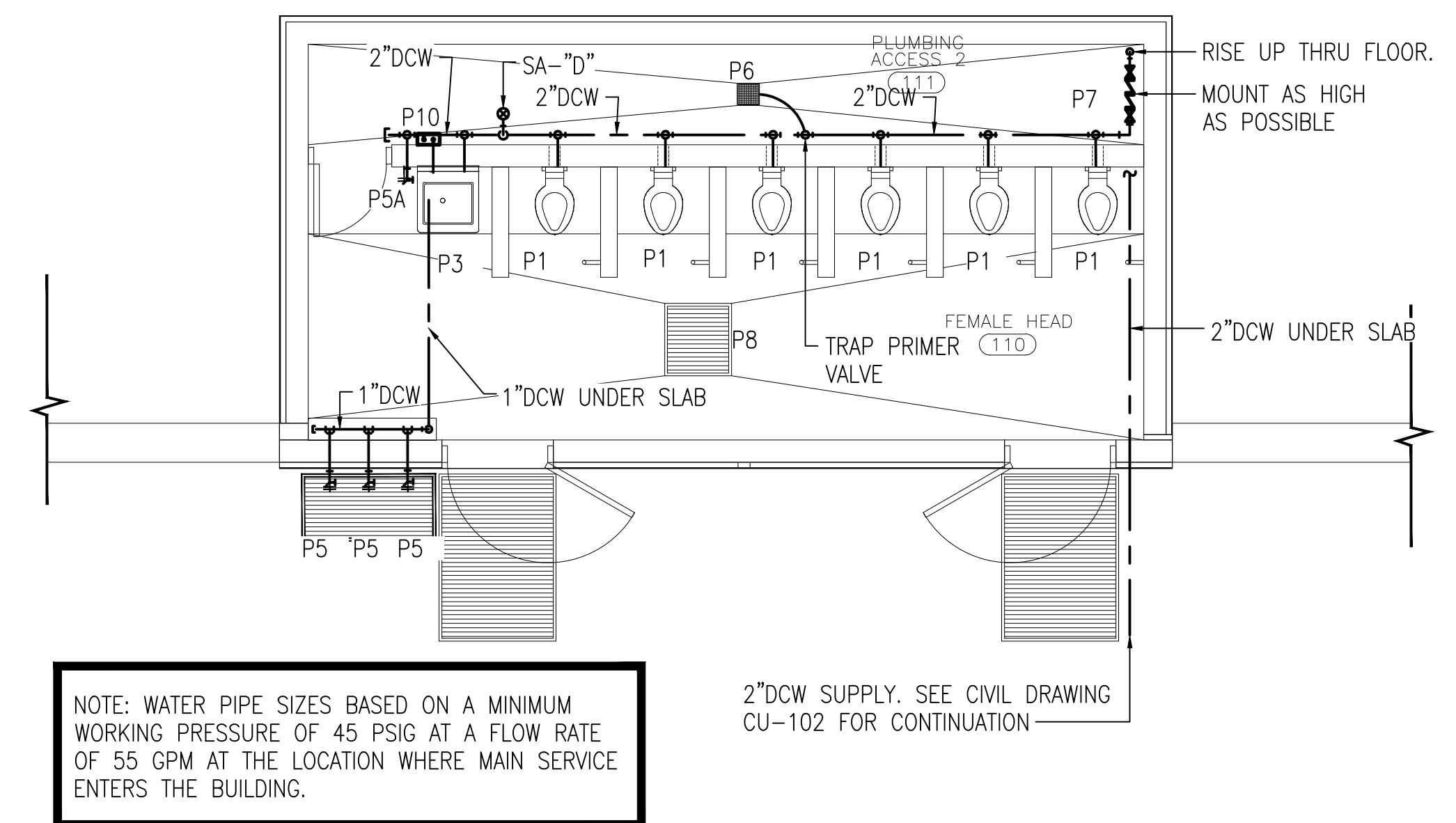
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Corporate License No. for Engineering Services C-5556

DATE: 8/16/16	
DESCRIPTION: ADDITIONAL WATER HEADERS	
SYMBOL: [Symbol]	
[NAVFAC Logo]	
[Professional Engineer Seal: NORTH CAROLINA PROFESSIONAL ENGINEER, DIVISION 10, SEAL 23551, 08/16/16]	
[CBHF Engineers, PLLC Logo]	
3808 Park Avenue Wilmington, NC 28403 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfindesign.com	
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APPROVED: [Signature]	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO: [Signature] DATE: [Date]	
DESIGNED BY: JBS	DRAWN BY: JBS
IN/OUT: EH	CHK: DMH
BRANCH MANAGER: NY	
CHIEF ENGINEER/ARCH: [Signature]	
FIRE PROTECTION: [Signature]	
NAVFACILITIES ENGINEERING COMMAND	
NAVAL FACILITIES ENGINEERING COMMAND - MIDATLANTIC	
LAFAYETTE COMPLEX, WAREHOUSE, PERINNA	
U.S. MARINE CORPS RECRUIT DEPOT	
PARRIS ISLAND, SC	
RANGE SAFETY IMPROVEMENTS & MODERNIZATION	
300 YARD HEADS PLUMBING PLANS	
SCALE: AS NOTED	
PROJECT NO.: 1354718	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO. 12724031	
SHEET 166 OF 213	
P-101	
DRAWING REVISION: 10 MARCH 2009	

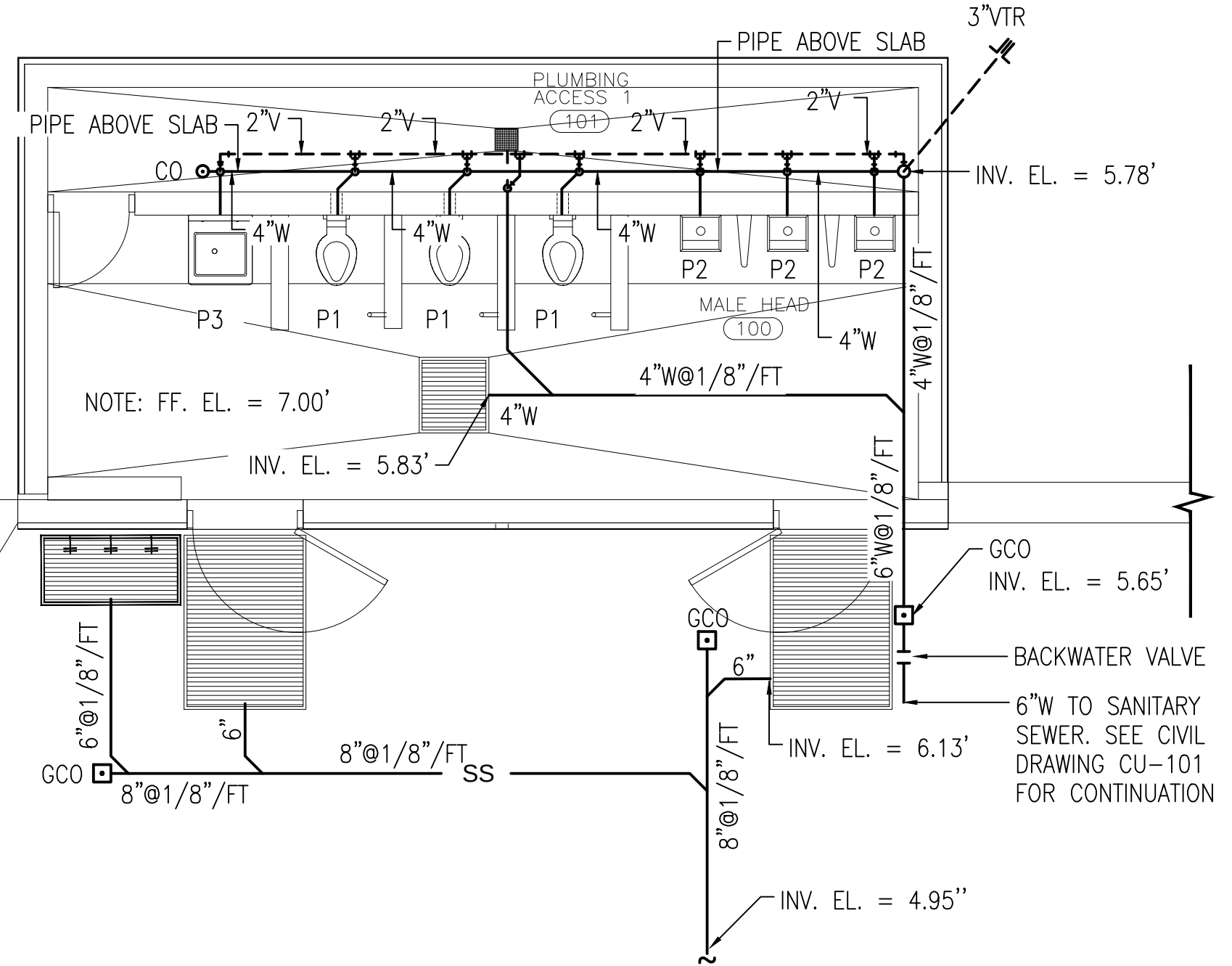
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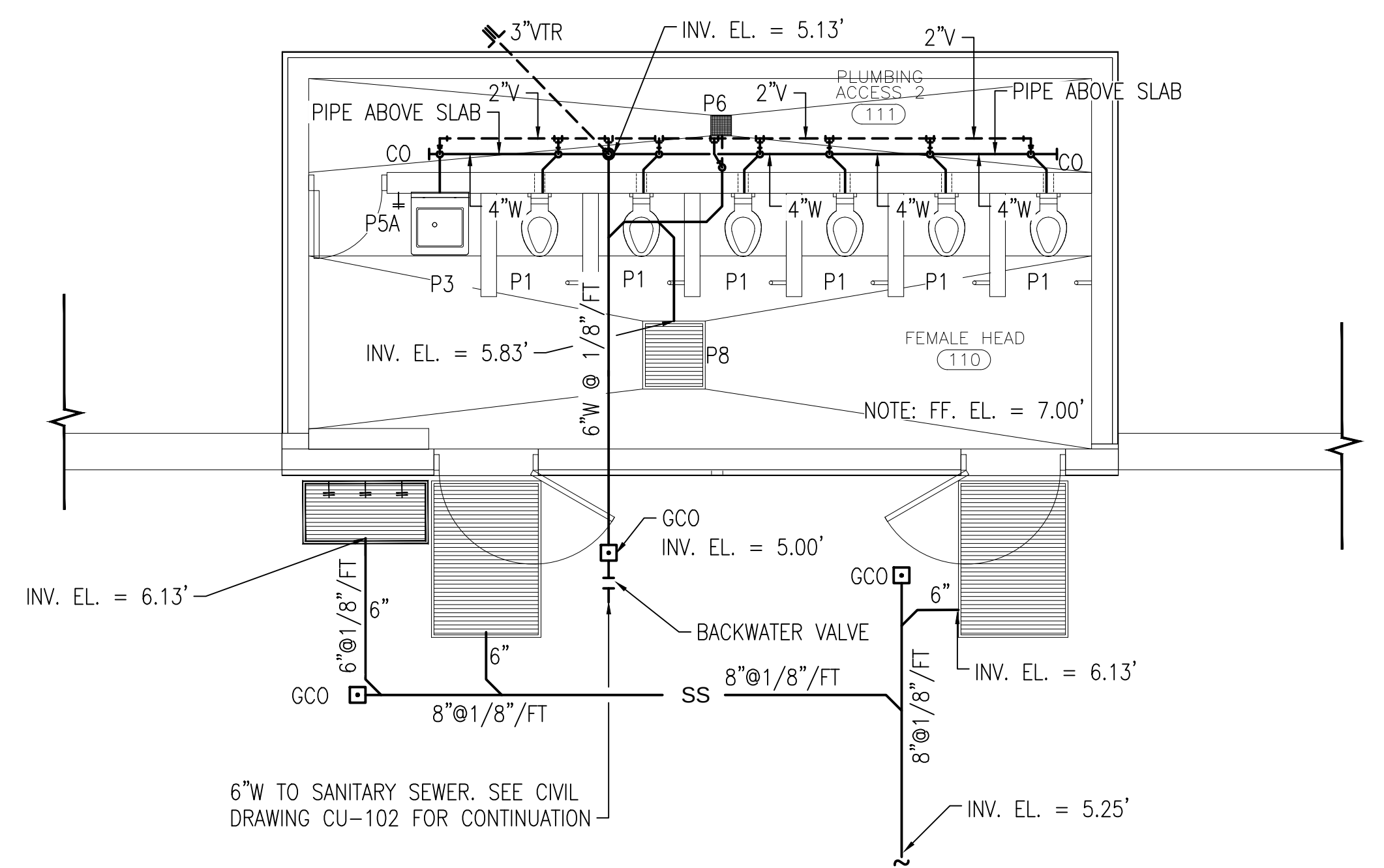
MALE PIT HEAD DOMESTIC WATER PLAN
1/4"=1'-0"



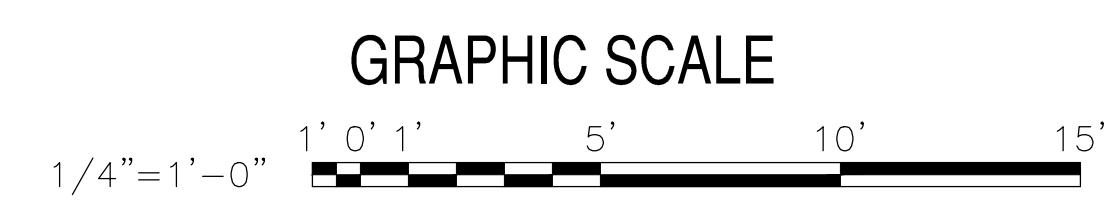
FEMALE PIT HEAD DOMESTIC WATER PLAN
1/4"=1'-0"



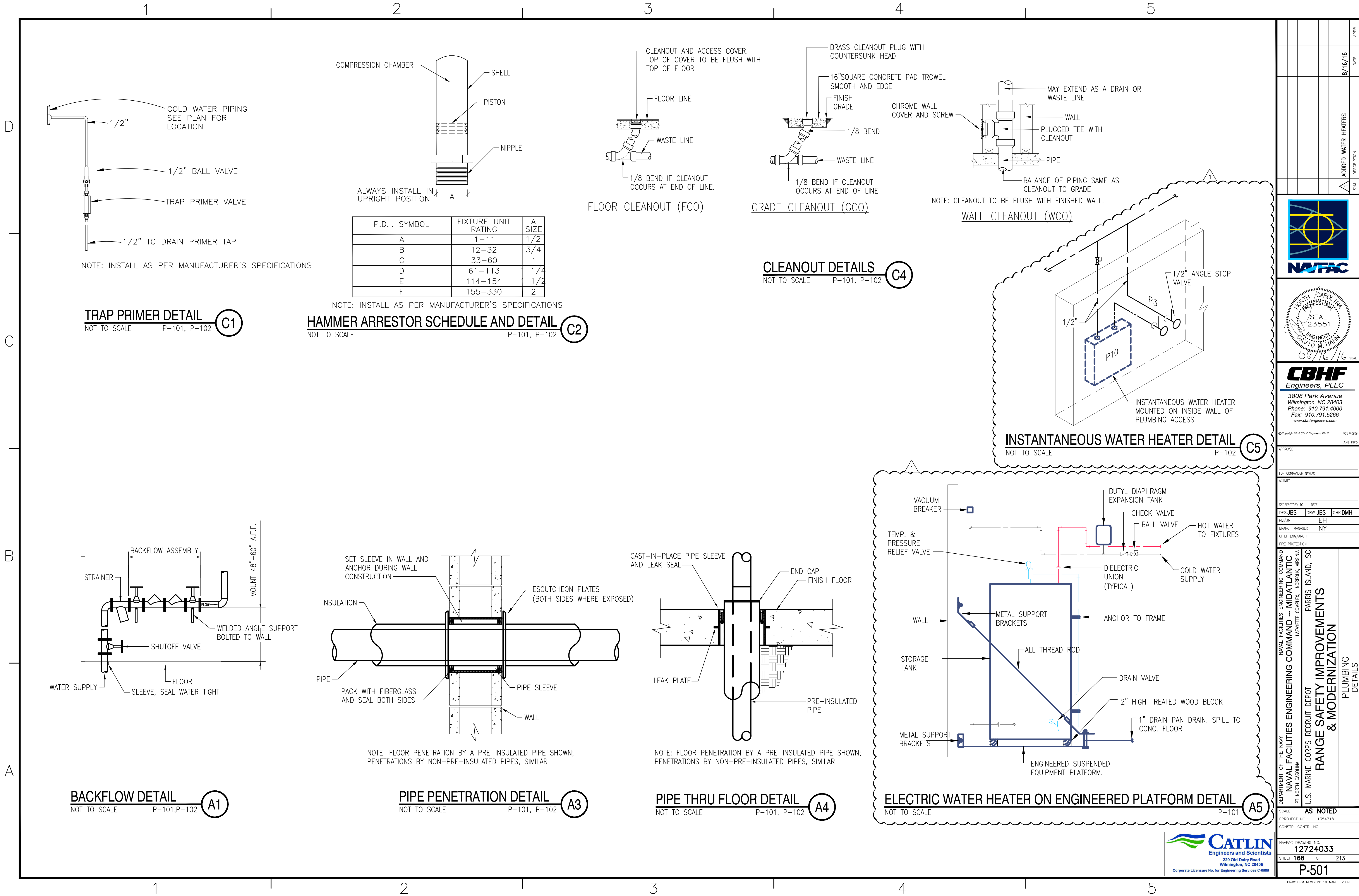
MALE PIT HEAD WASTE-VENT PLAN
1/4"=1'-0"



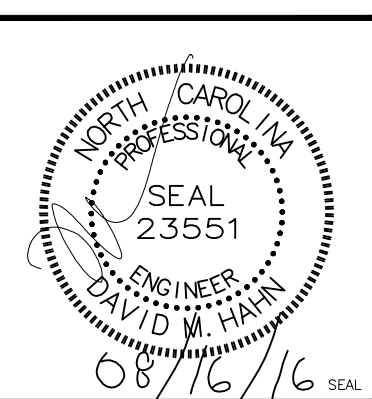
FEMALE PIT HEAD WASTE-VENT PLAN
1/4"=1'-0"



DATE: 8/16/16		APPR:
DESCRIPTION: ADD'D WATER HEADERS		SYN:
CBHF Engineers, PLLC 3808 Park Avenue Wilmington, NC 28403 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfindengineers.com		
APPROVED: _____ FOR COMMANDER NAVFAC		
ACTIVITY:		
SATISFACTORY TO: _____ DATE: _____ DES: JBS DRW: JBS CHK: DMH		
PW/DM: _____		
BRANCH MANAGER: _____		
CHIEF ENG/ARCH: _____		
FIRE PROTECTION: _____		
NAVFAC COMMAND: MIDATLANTIC NAVAL FACILITIES ENGINEERING COMMAND - MIDATLANTIC LAFAYETTE COMPLEX, WAREHOUSE, WAREHOUSE, WAREHOUSE PARRIS ISLAND, SC		
U.S. MARINE CORPS RECRUIT DEPOT PIT HEADS PLUMBING PLANS		
SCALE: AS NOTED		
PROJECT NO.: 1354718		
CONSTR. CONTR. NO.:		
NAVFAC DRAWING NO. 12724032		
SHEET 167 OF 213		
P-102		
DRAWING REVISION: 10 MARCH 2009		



DATE	8/16/16
DESCRIPTION	ADDED WATER HEATERS
SYN	



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A/E INFO

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FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES: JBS DRW: JBS CHK: DMH

PM/DM: EH

BRANCH MANAGER: NY

CHIEF ENG/ARCH

FIRE PROTECTION

NAVFACILITIES ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND ~ MIDATLANTIC

101 NORTH CAROLINA

U.S. MARINE CORPS RECRUIT DEPOT

PARRIS ISLAND, SC

RANGE SAFETY IMPROVEMENTS

PLUMBING DETAILS

SCALE: AS NOTED

PROJECT NO.: 1354718

CONSTR. CONTR. NO.

NAVFAC DRAWING NO. 12724033

SHEET 168 OF 213

P-501

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DRAWING REVISION: 10 MARCH 2009

DRAWING CODE	FIXTURE	NOTES	PIPE SIZE			
			DCW	DHW	WASTE	VENT
P1	SIPHON JET, FLOOR MTD, BACK OUTLET WATER CLOSET; 1.28GPF		1"	—	4"	2"
P2	WALL HUNG URINAL; 0.56GPF		1"	—	2"	2"
P3	STAINLESS STEEL SERVICE SINK	1	1/2"	—	2"	2"
P4	MOP SINK		1/2"	—	3"	2"
P5	WALL FAUCET		3/4"	—	—	—
P5A	WALL FAUCET		3/4"	—	—	—
P6	FLOOR DRAIN	2	—	—	MATCH	—
P7	DOUBLE CHECK BACKFLOW PREVENTER	3	MATCH			
P8	SAND TRAP		—	—	4"	
P9	20 GALLON, 240V/1/60, 2.5KW ELECTRIC TANK WATER HEATER		1/2"	1/2"	—	—
P10	240V/1/60, 3.3KW, INSTANTANEOUS WATER HEATER, WALL MOUNT		1/2"	1/2"	—	—
NOTES	1. INSTALL CAST-IRON P-TRAP. 2. INSTALL TRAP PRIMER. 3. MOUNT AS HIGH AS POSSIBLE IN PIPE ACCESS. 4. MOUNT AS HIGH AS POSSIBLE IN JAN. CLOSET.					

PLUMBING LOADS - 300YD HEAD	
WASTE (DRAINAGE FIXTURE UNITS)	140
WATER	98GPM

NOTE: WATER PIPE SIZES BASED ON A MINIMUM WORKING PRESSURE OF 45 PSIG AT A FLOW RATE OF 98 GPM AT THE LOCATION WHERE MAIN SERVICE ENTERS THE BUILDING.

WASTE (DRAINAGE FIXTURE UNITS)	27
WATER	49 GPM

NOTE: WATER PIPE SIZES BASED ON A MINIMUM WORKING PRESSURE OF 45 PSIG AT A FLOW RATE OF 49 GPM AT THE LOCATION WHERE MAIN SERVICE ENTERS THE BUILDING.

WASTE (DRAINAGE FIXTURE UNITS)	39
WATER	55 GPM

NOTE: WATER PIPE SIZES BASED ON A MINIMUM WORKING PRESSURE OF 45 PSIG AT A FLOW RATE OF 55 GPM AT THE LOCATION WHERE MAIN SERVICE ENTERS THE BUILDING.

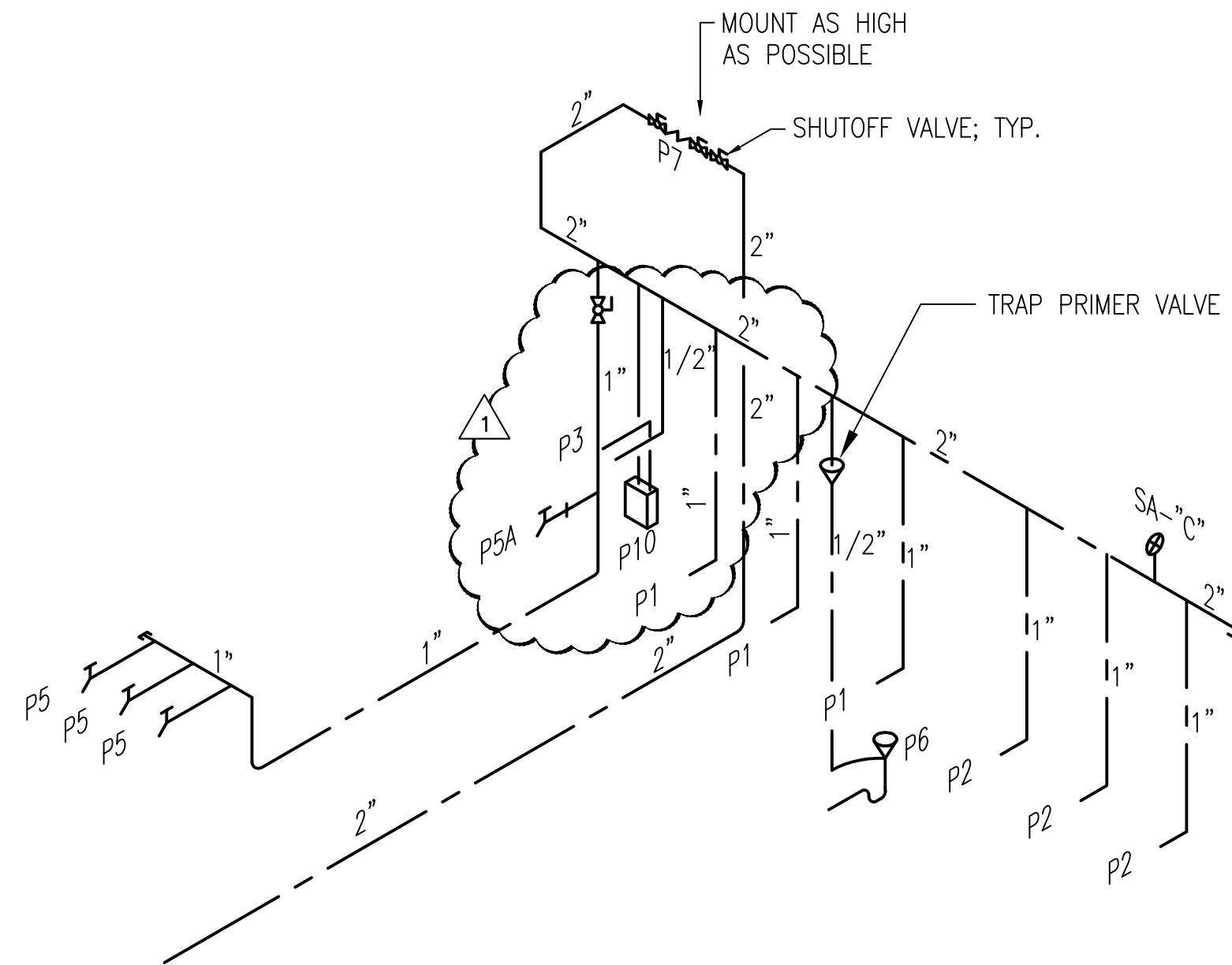
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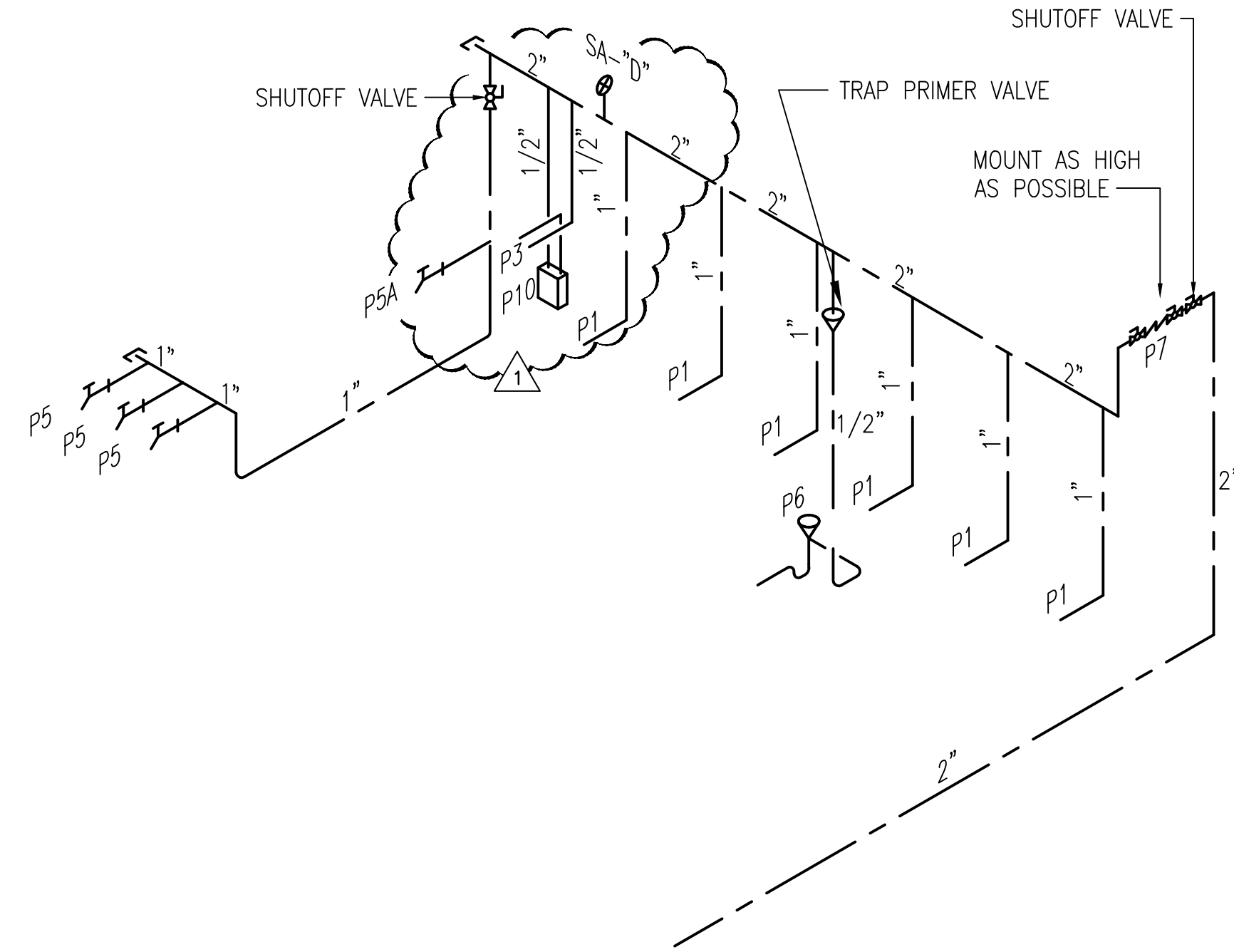
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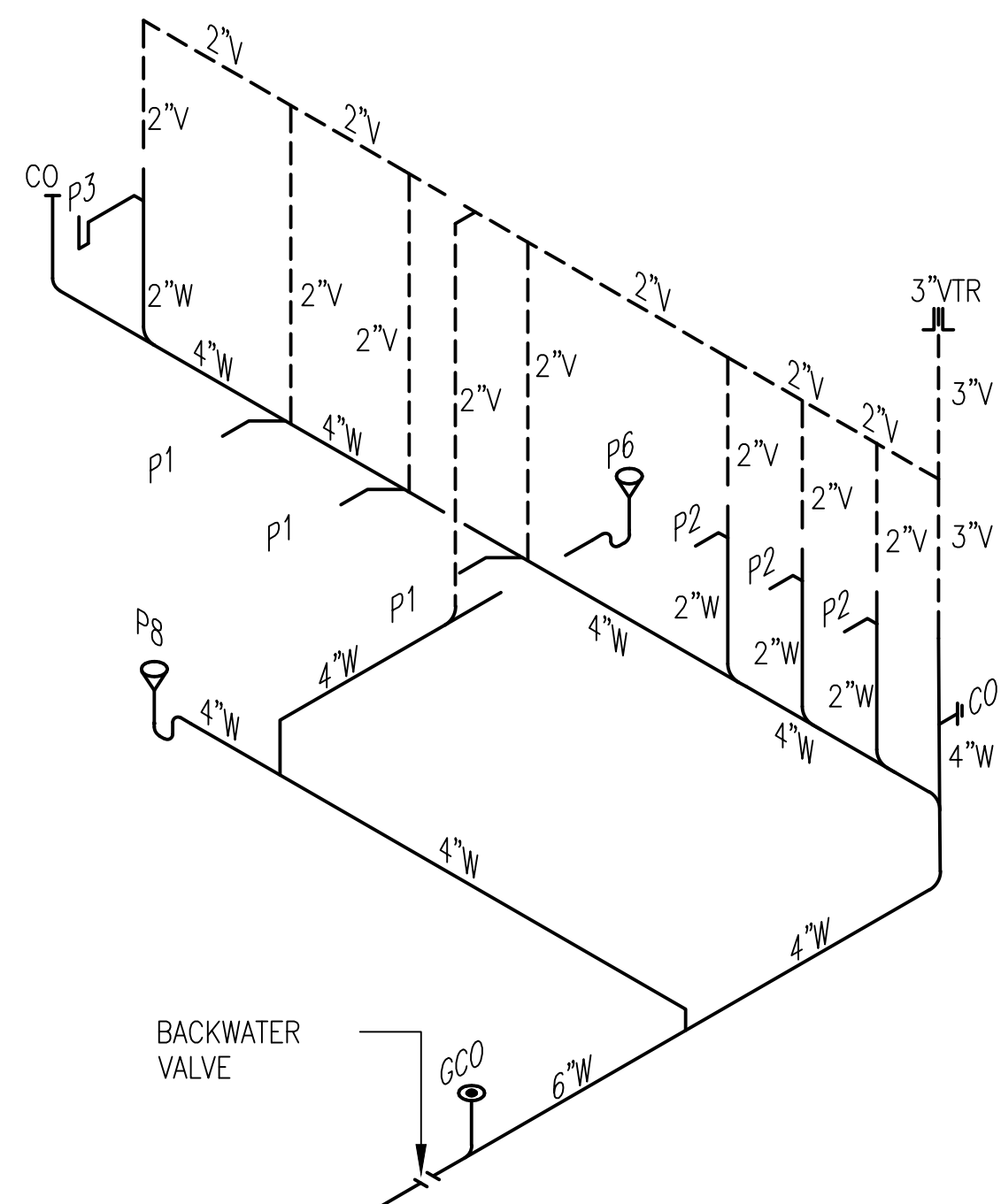
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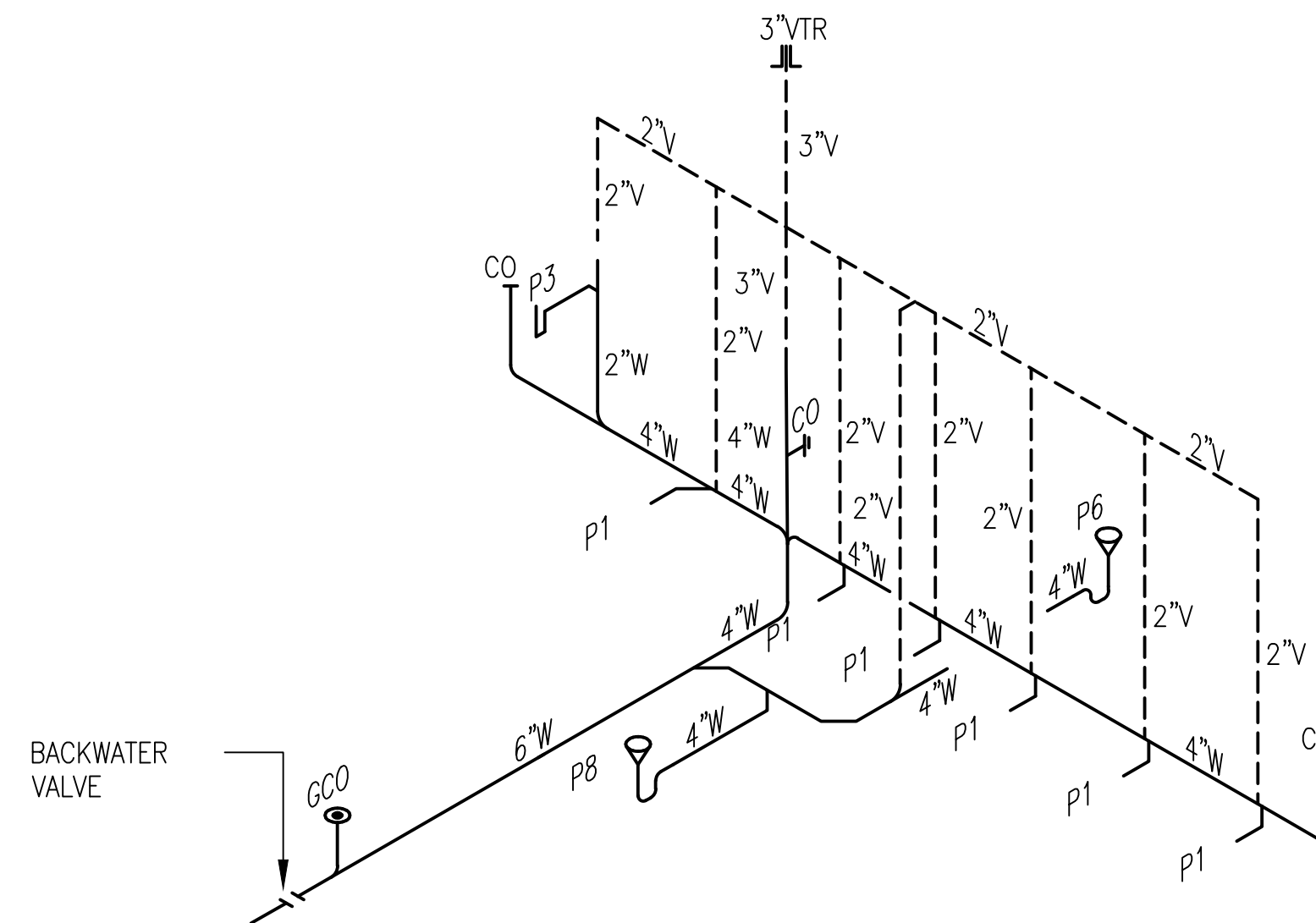
MALE PIT HEAD DOMESTIC WATER RISER DIAGRAM (C2)
NOT TO SCALE P-102



FEMALE PIT HEAD DOMESTIC WATER RISER DIAGRAM (C4)
NOT TO SCALE P-102



MALE PIT HEAD WASTE-VENT RISER DIAGRAM (A2)
NOT TO SCALE P-102



FEMALE PIT HEAD WASTE-VENT RISER DIAGRAM (A4)
NOT TO SCALE P-102

DATE	8/16/16	APPROVED
DESCRIPTION	ADDED WATER HEATERS	
SYMBOL		

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FOR COMMANDER NAFAC

ACTIVITY

SATISFACTORY TO DATE

DES. JBS	DRW. JBS	CHK. DMH
----------	----------	----------

PM/DM: EH
BRANCH MANAGER: NY
CHIEF ENG/ARCH: NY
FIRE PROTECTION: NY

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MIDATLANTIC
LAFAYETTE COMPLEX, WAREHOUSES, VIRGINIA
PARRIS ISLAND, SC
U.S. MARINE CORPS RECRUIT DEPOT
RANGE SAFETY IMPROVEMENTS & MODERNIZATION
PLUMBING RISER DIAGRAMS

SCALE: AS NOTED
PROJECT NO.: 1354718
CONSTR. CONTR. NO.

NAVFAC DRAWING NO. 12724036
SHEET 171 OF 213
P-603

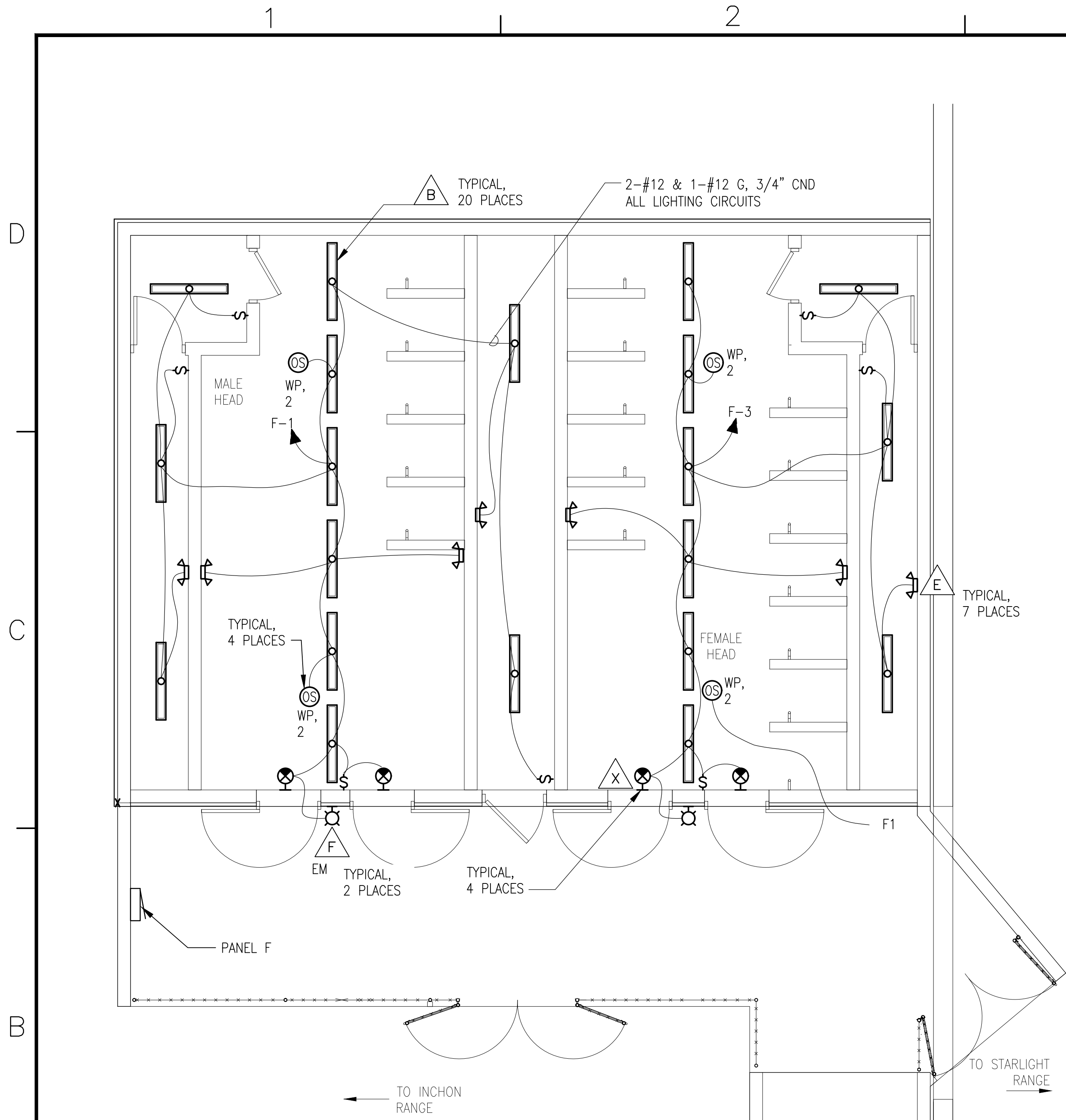
DRAWFORM REVISION: 10 MARCH 2009

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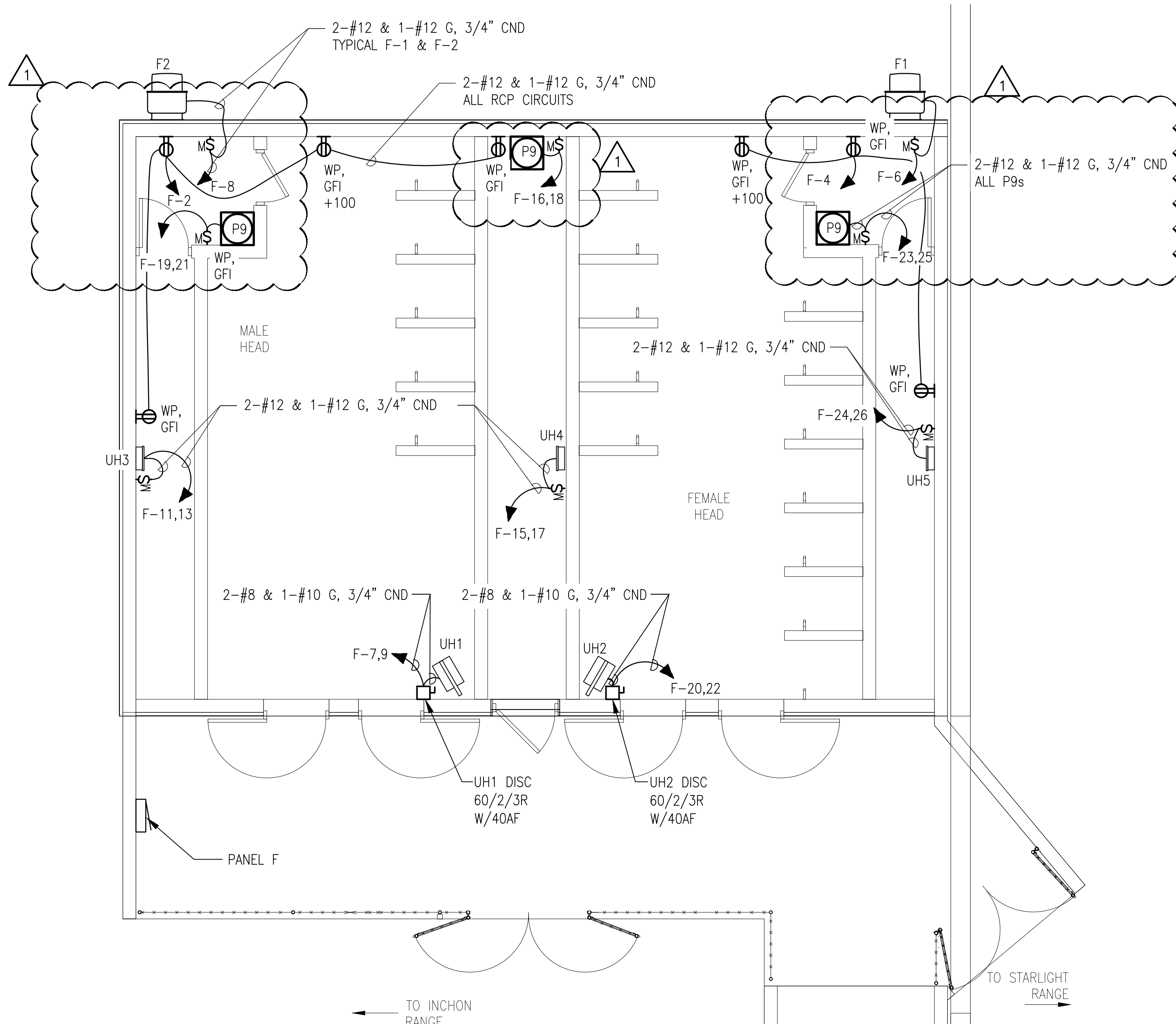
C

B

A



ELECTRICAL LIGHTING PLAN 300 YARD HEADS BUILDING **B1**
1/4"=1'-0" ES-104



ELECTRICAL POWER PLAN 300 YARD HEADS BUILDING **B4**
1/4"=1'-0" ES-104

1/4"=1'-0" 1' 0' 1' 5' 10' 15'

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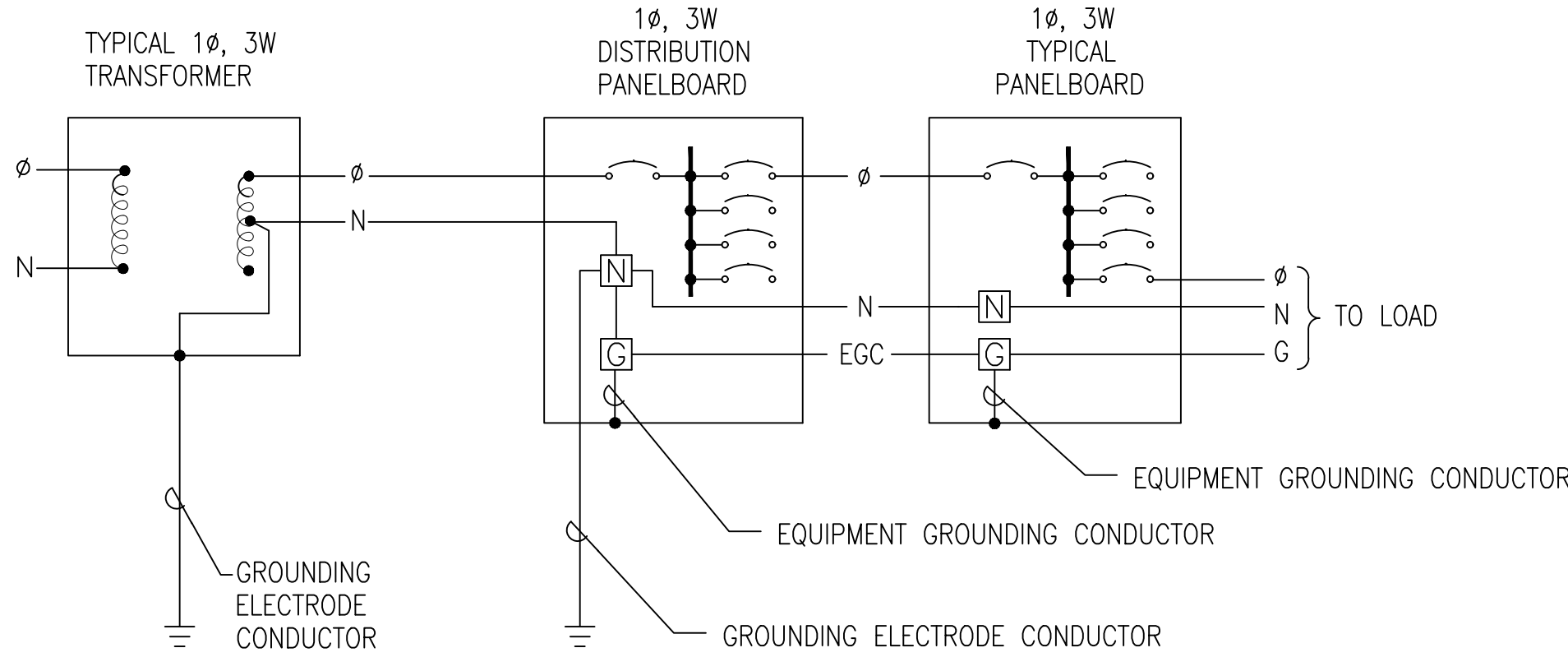
DATE	8/16/16
SYN	DESCRIPTION
ADDED WATER HEATERS	
NAVFAC	
SEAL	
CBHF Engineers, PLLC 3808 Park Avenue Wilmington, NC 28403 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfindesign.com	
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FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE	
DES/MDM	DRW/MDM
PM/DM	EH
BRANCH MANAGER	NY
CHIEF ENG/ARCH	
FIRE PROTECTION	
NAVFAC ENGINEERING COMMAND	
MIDATLANTIC	
LAFAYETTE COMPLEX, WAREHOUSE, WAREHOUSE	
PARRIS ISLAND, SC	
U.S. MARINE CORPS RECRUIT DEPOT	
RANGE SAFETY IMPROVEMENTS & MODERNIZATION	
ENLARGED ELECTRICAL PLANS	
SCALE: AS NOTED	
PROJECT NO.: 1354718	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO. 12724059	
SHEET 194 OF 213	
E-401	
DRAWING REVISION: 10 MARCH 2009	

LOAD SUMMARY PANEL F

VOLTAGE	PHASE
240	1
LARGEST MOTOR APPROX. AMPS	6 AMPS
LARGEST MOTOR APPROX. AMPS x .25	1 AMPS
HVAC	
UH1	7,440 VA
UH2	7,440 VA
UH3	1,992 VA
UH4	1,992 VA
UH5	1,992 VA
F1	696 VA
F2	696 VA
SUB-TOTAL HVAC DEMAND	22,248 VA
SUB-TOTAL HVAC DEMAND	93 AMPS
EQUIPMENT	
LIFT STATION	2,800 VA
LIFT STATION CONTROLS	500 VA
P9 (3 TOTAL)	7,500 VA
SUB-TOTAL EQUIPMENT DEMAND	10,800 VA
SUB-TOTAL EQUIPMENT DEMAND	45 AMPS
ADD FOR LARGEST MOTOR	1 AMPS
TOTAL EQUIPMENT DEMAND	46 AMPS
LIGHTING	
LIGHTS (INTERIOR, BASED ON NEC 220.12)	7,525 VA
LIGHTS (EXTERIOR)	32 VA
TOTAL LIGHTING LOAD	7,557 VA
LIGHTING LOAD x 1.25	9,446 VA
TOTAL DEMAND FOR LIGHTING	39 AMPS
RECEPTACLES	
RECEPTACLES	2,190 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	2,190 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	9 AMPS
TOTAL DEMAND BUILDING AMPS	188 AMPS
TOTAL DEMAND BUILDING AMPS	45,032 VA
TOTAL BUILDING CONNECTED LOAD	42,795 VA

LOAD SUMMARY PANEL MDP

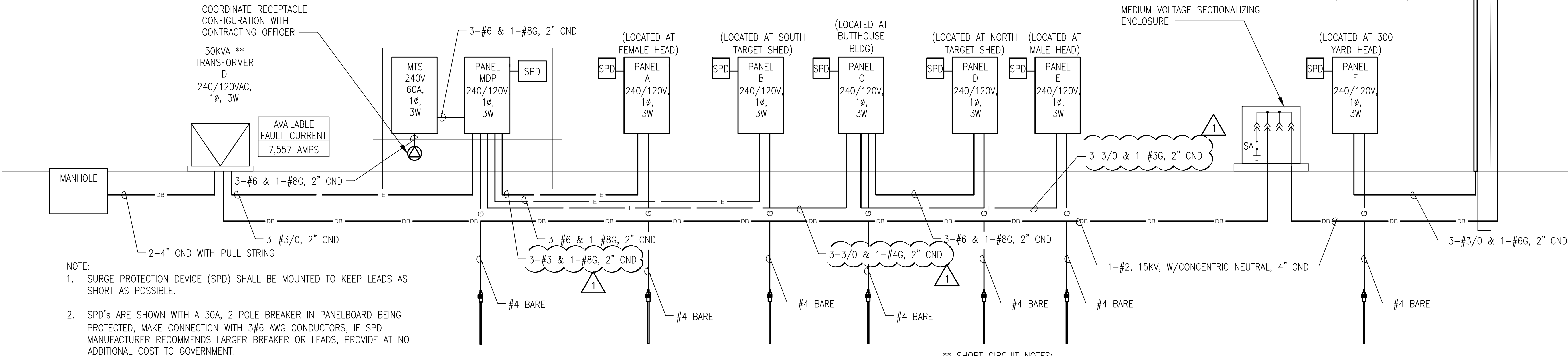
VOLTAGE	PHASE
240	1
LARGEST MOTOR APPROX. AMPS	4 AMPS
LARGEST MOTOR APPROX. AMPS x .25	1 AMPS
HVAC	
PTH1	1,056 VA
UH6	5,040 VA
UH7	1,992 VA
UH8	5,040 VA
UH9	1,992 VA
DU1	612 VA
DU2	612 VA
F3	528 VA
F4	528 VA
SUB-TOTAL HVAC DEMAND	17,400 VA
SUB-TOTAL HVAC DEMAND	73 AMPS
EQUIPMENT	
P10 (2 TOTAL)	6,600 VA
SUB-TOTAL EQUIPMENT DEMAND	6,600 VA
SUB-TOTAL EQUIPMENT DEMAND	28 AMPS
ADD FOR LARGEST MOTOR	1 AMPS
TOTAL EQUIPMENT DEMAND	29 AMPS
LIGHTING	
LIGHTS (INTERIOR, BASED ON NEC 220.12)	9,996 VA
LIGHTS (EXTERIOR)	1,304 VA
TOTAL LIGHTING LOAD	11,300 VA
LIGHTING LOAD x 1.25	14,125 VA
TOTAL DEMAND FOR LIGHTING	59 AMPS
RECEPTACLES	
RECEPTACLES	4,140 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	4,140 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	17 AMPS
TOTAL DEMAND BUILDING AMPS	177 AMPS
TOTAL DEMAND BUILDING AMPS	42,529 VA
TOTAL BUILDING CONNECTED LOAD	39,440 VA



BONDING AND GROUNDING DIAGRAM

NOT TO SCALE

C5



- NOTE:
- SURGE PROTECTION DEVICE (SPD) SHALL BE MOUNTED TO KEEP LEADS AS SHORT AS POSSIBLE.
 - SPD's ARE SHOWN WITH A 30A, 2 POLE BREAKER IN PANELBOARD BEING PROTECTED, MAKE CONNECTION WITH 3#6 AWG CONDUCTORS, IF SPD MANUFACTURER RECOMMENDS LARGER BREAKER OR LEADS, PROVIDE AT NO ADDITIONAL COST TO GOVERNMENT.

- ** SHORT CIRCUIT NOTES:
- SHORT CIRCUIT CALCULATION COMPLETED ON 06/13/2016. BASED ON A (1)50KVA POLE MOUNTED TRANSFORMER @ 1.31% IMPEDANCE, AND 1.51 X/R. VERIFY ACTUAL PARAMETERS WITH UTILITY COMPANY PRIOR TO INSTALLATION.
 - SHORT CIRCUIT CALCULATION COMPLETED ON 06/13/2016. BASED ON A (1)50KVA PAD MOUNTED TRANSFORMER @ 1.31% IMPEDANCE, AND 1.51 X/R. VERIFY ACTUAL PARAMETERS WITH UTILITY COMPANY PRIOR TO INSTALLATION.
 - SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH MAX. AVAILABLE FAULT CURRENT, INCLUDING THE DATE THE FAULT CURRENT CALCULATIONS WERE PERFORMED, PER NEC 110.24

ELECTRICAL RISER

NOT TO SCALE

A3



DATE	8/16/16	
DESCRIPTION	ADDED WATER HEATERS	
SYMBOL		
NAVFAC		
W. ENGINEER		
3808 Park Avenue		
Wilmington, NC 28403		
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Fax: 910.791.5266		
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APPROVED	A/E INFO	
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES MDM	EDW MDM	CHK WAC
PA/DM	EH	
BRANCH MANAGER	NY	
CHIEF ENG/ARCH		
FIRE PROTECTION		
NAVAL FACILITIES ENGINEERING COMMAND	MIDATLANTIC	
NAVAL FACILITIES ENGINEERING COMMAND	LAFAYETTE COMPLEX, WAREHOUSE, VIRGINIA	
U.S. MARINE CORPS RECRUIT DEPOT	PARRIS ISLAND, SC	
RANGE SAFETY IMPROVEMENTS & MODERNIZATION		
ELECTRICAL RISER DIAGRAMS		
SCALE:	AS NOTED	
PROJECT NO.:	1354718	
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO.	12724072	
SHEET	207	OF 213
E-601		
DRAWING REVISION: 10 MARCH 2009		

PANEL: MDP												
TYPE: NEMA 3R BOLT-ON		240 MOUNT: FEED:	120 SURFACE BOTTOM	V, 1	1 PH,		3 WIRE		PROVIDE IF CHECKED:		XX XX	EQUIP. GROUND BUS NEUTRAL BUS GUTTER TAPS SUB-FEED LUGS
LOAD SERVED		LOAD VA	CKT BKR	CKT #			CKT #	CKT BKR	LOAD VA	LOAD SERVED		
PANEL A		6,340	100/2	1	A	B	2	60/2		SPARE		
		7,084		3		7,084	4					
PANEL B		1,104	60/2	5	1,104		6	60/2		SPARE		
		228		7		228	8					
PANEL C, D & E		15,242	150/2	9	15,242		10			SPACE		
		15,352		11		15,352	12			SPACE		
SPACE				13			14			SPACE		
SPACE				15			16			SPACE		
RCP:		180	20/1	17	180		18			SPACE		
SPACE				19			20			SPACE		
SPD			30/2	21			22			SPACE		
				23			24			SPACE		
NOTE:					22,866	22,664	TOTAL VOLT AMPS		200 A. BUS (COPPER)			
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.					191	189	CONN. AMPS		200 A. MAIN CIRCUIT BREAKER			
22 KAIC MIN.												

PANEL: B												
TYPE: NEMA 3R BOLT-ON		240 MOUNT: FEED:	120 SURFACE BOTTOM	V,	1 PH,	3	WIRE	PROVIDE IF CHECKED:		XX XX	EQUIP. GROUND BUS NEUTRAL BUS GUTTER TAPS SUB-FEED LUGS	
LOAD SERVED		LOAD VA	CKT BKR	CKT #	A		B	CKT #	CKT BKR	LOAD VA	LOAD SERVED	
LTGS: INTERIOR		384	20/1	1	1,104			2	20/1	720	RCP:	
LTGS: EXTERIOR		228	20/1	3			228	4	20/1		SPARE	
SPARE			20/1	5				6	20/1		SPARE	
SPARE			20/1	7				8	20/1		SPARE	
SPD			30/2	9				10			SPACE	
				11				12			SPACE	
NOTE:					1,104		228	TOTAL VOLT AMPS		60 A. BUS (COPPER)		
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.					9		2	CONN. AMPS		60 A. MAIN CIRCUIT BREAKER		
22 KAIC MIN.												

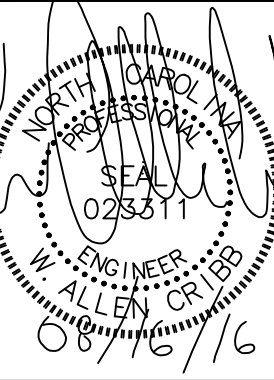
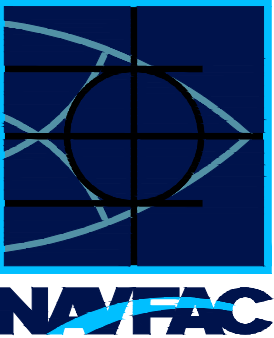
PANEL: A												
TYPE: NEMA 3R BOLT-ON		240 MOUNT: FEED:	120 SURFACE BOTTOM	V,	1 PH,		3	WIRE	PROVIDE IF CHECKED:		XX XX	EQUIP. GROUND BUS NEUTRAL BUS GUTTER TAPS SUB-FEED LUGS
LOAD SERVED	LOAD VA	CKT BKR	CKT #			CKT #	CKT BKR	LOAD VA	LOAD SERVED			
LTG	286	20/1	1	A	B	2	20/1	360	RCP			
SPARE		15/1	3	646		4	40/2	2,520	UH6			
F3	528	15/1	5	3,048		6		2,520				
DU1	498	15/1	7		1,494	8	15/2	996	UH7			
SPARE		20/1	9	996		10		996				
LTG TUNNEL	700	20/1	11		1,420	12	20/1	720	RCP: TUNNEL			
P10	1,650	20/2	13	1,650		14			SPACE			
	1,650		15		1,650	16			SPACE			
SPACE			17			18			SPACE			
SPACE			19			20			SPACE			
SPD		30/2	21			22			SPACE			
			23			24			SPACE			
NOTE:				6,340	7,084	TOTAL VOLT AMPS		100 A. BUS (COPPER)				
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.				53	59	CONN. AMPS		100 A. MAIN CIRCUIT BREAKER				
22 KAIC MIN.												

PANEL: C													
TYPE: NEMA 1 BOLT-ON DOOR-IN-DOOR WITH-IN HINGED TRIM FRONT COVER			240 MOUNT: FEED:	120 SURFACE BOTTOM	V,	1 PH,	3	WIRE	PROVIDE IF CHECKED:	XX XX	EQUIP. GROUND BUS NEUTRAL BUS GUTTER TAPS SUB-FEED LUGS		
LOAD SERVED	LOAD VA	CKT BKR	CKT #			CKT #	CKT BKR	LOAD VA	LOAD SERVED				
LTG	86	20/1	1	A	B	2	20/1	180	RCP:				
RCP:	180	20/1	3		540	4	20/1	360	RCP:				
RCP:	180	20/1	5	540		6	20/1	360	RCP:				
RCP:	180	20/1	7		540	8	20/1	360	RCP:				
RCP:	180	20/1	9	684		10	20/2	504	PTH1				
SPARE		20/1	11		504	12		504					
SPARE		20/1	13			14	20/1		SPARE				
SPARE		20/1	15			16	20/1		SPARE				
SPARE		20/1	17			18	20/1		SPARE				
SPARE		20/1	19			20	20/1		SPARE				
LTG: BUTT WALL	416	20/1	21	416		22	20/1		SPARE				
LTG BUTT WALL	432	20/1	23		1,536	24	60/2	1,104	PANEL D				
SPACE			25	228		26		228					
SPD		30/2	27		6,340	28	100/2	6,340	PANEL E (SEE NOTE 2)				
			29	5,664		30		5,664					
NOTE:				7,798	9,460	TOTAL VOLT AMPS		225	A. BUS (COPPER)				
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.				65	79	CONN. AMPS		150	A. MAIN CIRCUIT BREAKER (SEE NOTE 2)				
2. CONTRACTOR SHALL PROVIDE BREAKER WITH OVERSIZED LUGS. FOR MAIN BREAKER.												22 KAIC MIN.	

APPR
DATE
8/16/16

ADDED WATER HEATERS

SYN
DESCRIPTION



CBHF
Engineers, PLLC
3808 Park Avenue
Wilmington, NC 28403
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE
DES:MDM DPM:MDM CHK:WAC
PM/DM: EH
BRANCH MANAGER: NY
CHIEF ENG/ARCH:
FIRE PROTECTION:
NAVFACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MIDATLANTIC
LAFAYETTE COMPLEX, WAREHOUSING, VIRGINIA
PARRIS ISLAND, SC
U.S. MARINE CORPS RECRUIT DEPOT
**RANGE SAFETY IMPROVEMENTS
& MODERNIZATION**
ELECTRICAL PANEL SCHEDULES

SCALE: **AS NOTED**
EPROJECT NO.: 1354718
CONSTR. CONTR. NO.:
NAVFAC DRAWING NO.: **12724073**
SHEET **208** OF 213
E-602
DRAWFORM REVISION: 10 MARCH 2009

D

C

B

A

PANEL: D											
TYPE: NEMA 3R BOLT-ON		240 MOUNT: FEED:	120 SURFACE BOTTOM	V,	1 PH,	3	WIRE	PROVIDE IF CHECKED:	XX XX	EQUIP. GROUND BUS NEUTRAL BUS GUTTER TAPS SUB-FEED LUGS	
LOAD SERVED	LOAD VA	CKT BKR	CKT #			CKT #	CKT BKR	LOAD VA	LOAD SERVED		
LTGS: INTERIOR	384	20/1	1	1,104		2	20/1	720	RCP:		
LTGS: EXTERIOR	228	20/1	3			228	4	20/1	SPARE		
SPARE		20/1	5				6	20/1	SPARE		
SPARE		20/1	7				8	20/1	SPARE		
SPD		30/2	9				10		SPACE		
			11				12		SPACE		
NOTE:				1,104		228		TOTAL VOLT AMPS		60 A. BUS (COPPER)	
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.				9		2		CONN. AMPS		60 A. MAIN CIRCUIT BREAKER	
22 KAIC MIN.											

PANEL: E											
TYPE: NEMA 3R BOLT-ON		240 MOUNT: FEED:	120 SURFACE BOTTOM	V,	1 PH,	3	WIRE	PROVIDE IF CHECKED:	XX XX	EQUIP. GROUND BUS NEUTRAL BUS GUTTER TAPS SUB-FEED LUGS	
LOAD SERVED	LOAD VA	CKT BKR	CKT #			CKT #	CKT BKR	LOAD VA	LOAD SERVED		
				A	B						
LTG	286	20/1	1	646		2	20/1	360	RCP		
SPARE		20/1	3			4	40/2	2,520	UH8		
F4	528	15/1	5	3,048		6		2,520			
DU2	498	15/1	7			8	15/2	996	UH9		
P10	1,650	20/2	9	2,646		10		996			
	1,650		11			12			SPACE		
SPACE			13			14			SPACE		
SPD		30/2	15			16			SPACE		
			17			18			SPACE		
NOTE:				6,340		5,664		TOTAL VOLT AMPS			
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.				53		47		CONN. AMPS		100 A. BUS (COPPER)	
2. CONTRACTOR SHALL PROVIDE BREAKER WITH OVERSIZED LUGS FOR MAIN BREAKER.										100 A. MAIN CIRCUIT BREAKER (SEE NOTE 2)	
										22 KAIC MIN.	

PANEL: F											
TYPE: NEMA 3R BOLT-ON		240 MOUNT: FEED:	120 SURFACE BOTTOM	V,	1 PH,	3	WIRE	PROVIDE IF CHECKED:	XX XX	EQUIP. GROUND BUS NEUTRAL BUS GUTTER TAPS SUB-FEED LUGS	
LOAD SERVED	LOAD VA	CKT BKR	CKT #			CKT #	CKT BKR	LOAD VA	LOAD SERVED		
LTG: MEN'S HEAD	638	20/1	1	1,358		2	20/1	720	RCP: MEN'S HEAD		
LTG: FEMALE HEAD	522	20/1	3		1,062	4	20/1	540	RCP: FEMALE HEAD		
SPARE		20/1	5	696		6	15/1	696	F1		
UH1	3,720	50/2	7		4,416	8	15/1	696	F2		
	3,720		9	3,720		10	20/1		SPARE		
UH3	996	15/2	11		996	12	20/1		SPARE		
	996		13	996		14	20/1		SPARE		
UH4	996	15/2	15		2,246	16	15/2	1,250	P9 SINKS		
	996		17	2,246		18		1,250			
P9 MALE HEAD MOP SINK	1,250	15/2	19		4,970	20	50/2	3,720	UH2		
	1,250		21	4,970		22		3,720			
P9 FEMALE HEAD MOP SINK	1,250	15/2	23		2,246	24	15/2	996	UH5		
	1,250		25	2,246		26		996			
LTGS: TUNNEL	532	20/1	27		532	28	20/1		SPACE		
LTGS:TUNNEL	482	20/1	29	1,382		30	20/1	900	RCP:TUNNEL		
SPACE			31			32			SPACE		
SPACE			33			34			SPACE		
SPACE			35			36			SPACE		
SPACE			37			38			SPACE		
SPD		30/2	39			40			SPACE		
			41			42			SPACE		
NOTE:				17,614	16,468	TOTAL VOLT AMPS		200	A. BUS (COPPER)		
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.				147	137	CONN. AMPS		200	A. MAIN CIRCUIT BREAKER		
22 KAIC MIN.											

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES MDM | DRW MDM | CHK WAC

PA/DM EH

BRANCH MANAGER NY

CHEF ENG/ARCH

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND ~ MIDATLANTIC

1FT NORTH CAROLINA

U.S. MARINE CORPS RECRUIT DEPOT

PARRIS ISLAND, SC

RANGE SAFETY IMPROVEMENTS & MODERNIZATION

ELECTRICAL PANEL SCHEDULES

SCALE: AS NOTED

EPROJECT NO.: 1354718

CONSTR. CONTR. NO.

NAVFAC DRAWING NO. 12724074

SHEET 209 OF 213

E-603

DRAWFORM REVISION: 10 MARCH 2009

APPR

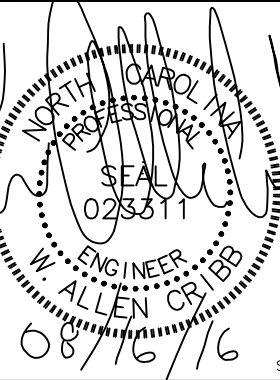
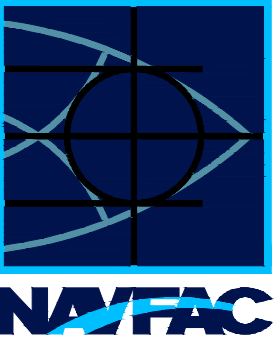
DATE

8/16/16

SYN

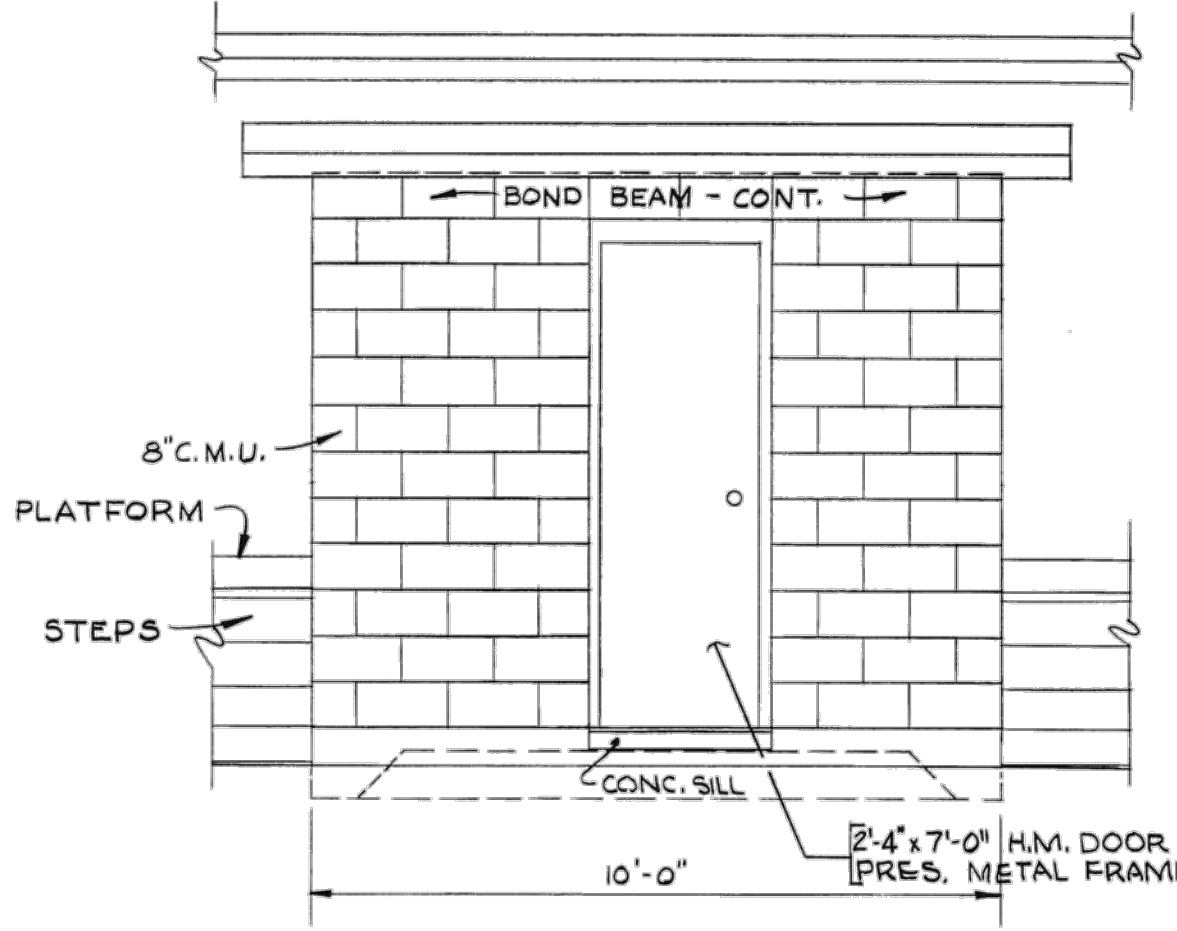
DESCRIPTION

ADDED WATER HEATERS

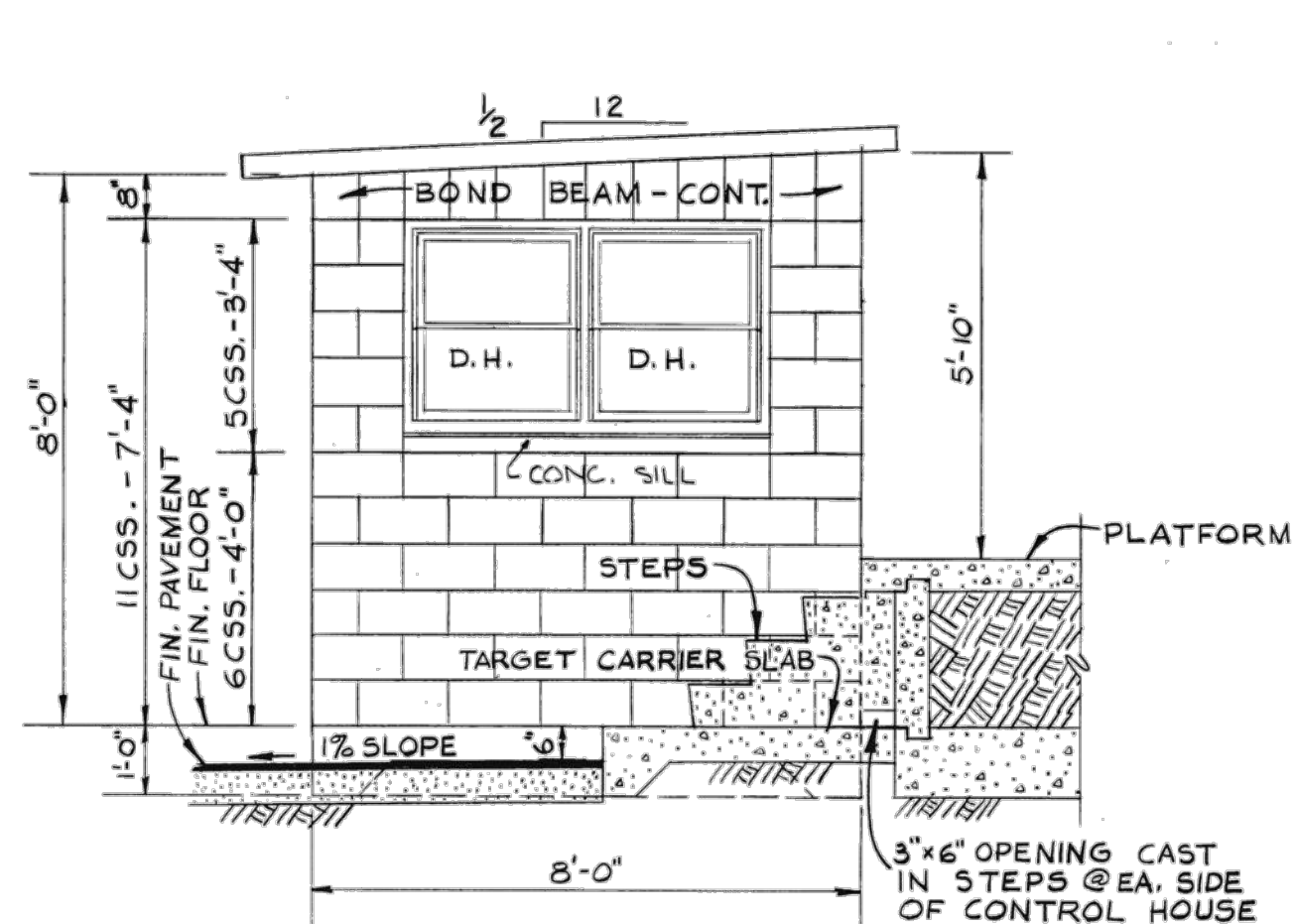


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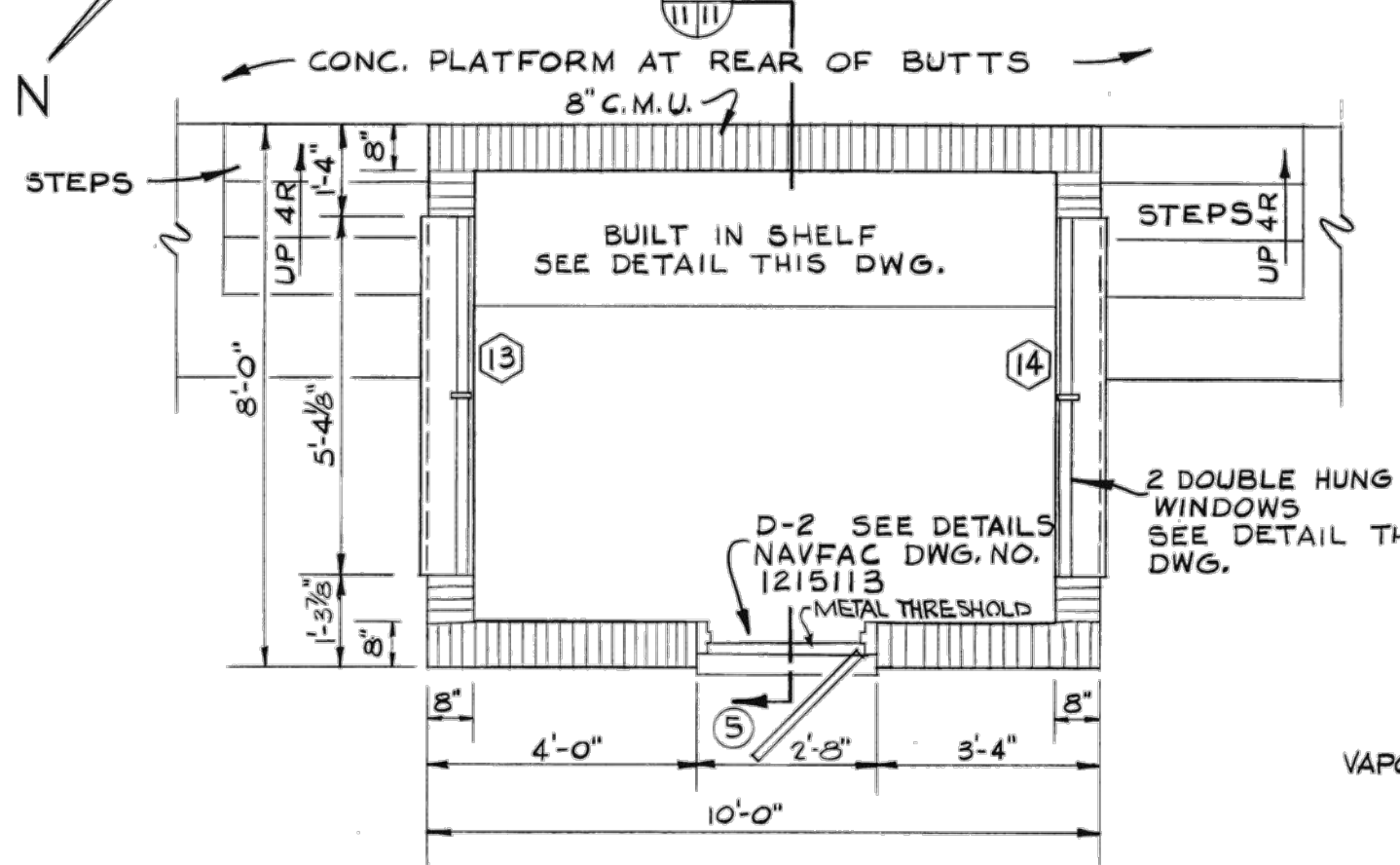
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A/E INFO



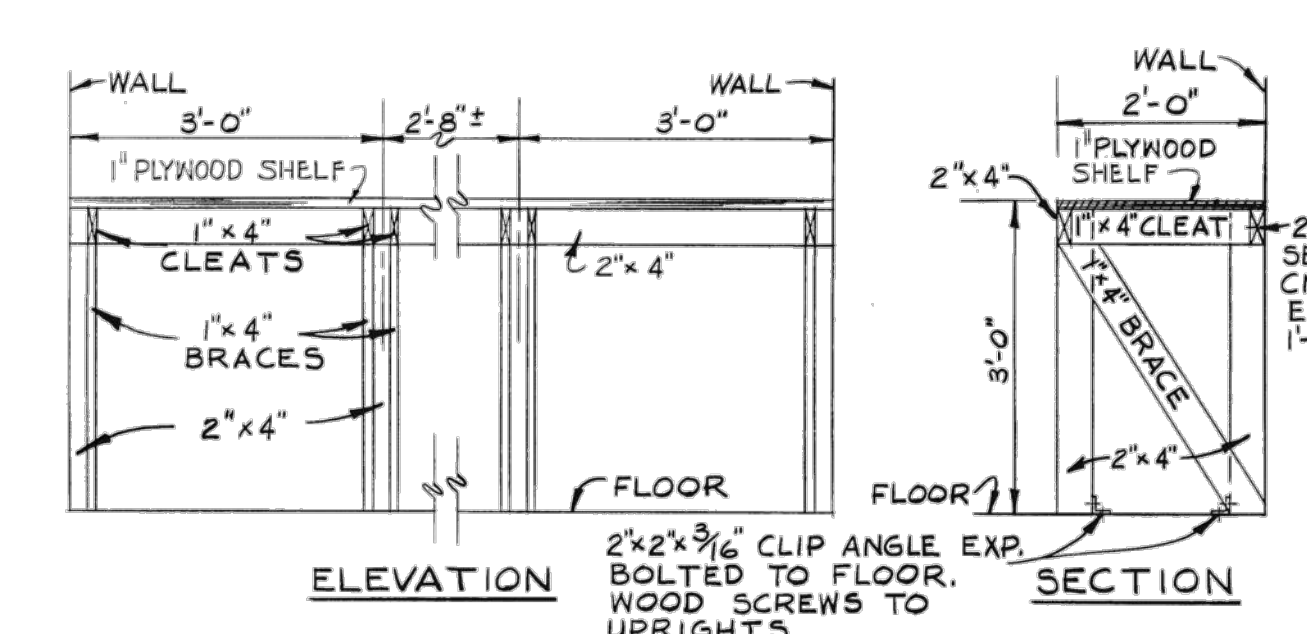
CONTROL HOUSE
FRONT ELEVATION
SCALE 1/2" = 1'-0"



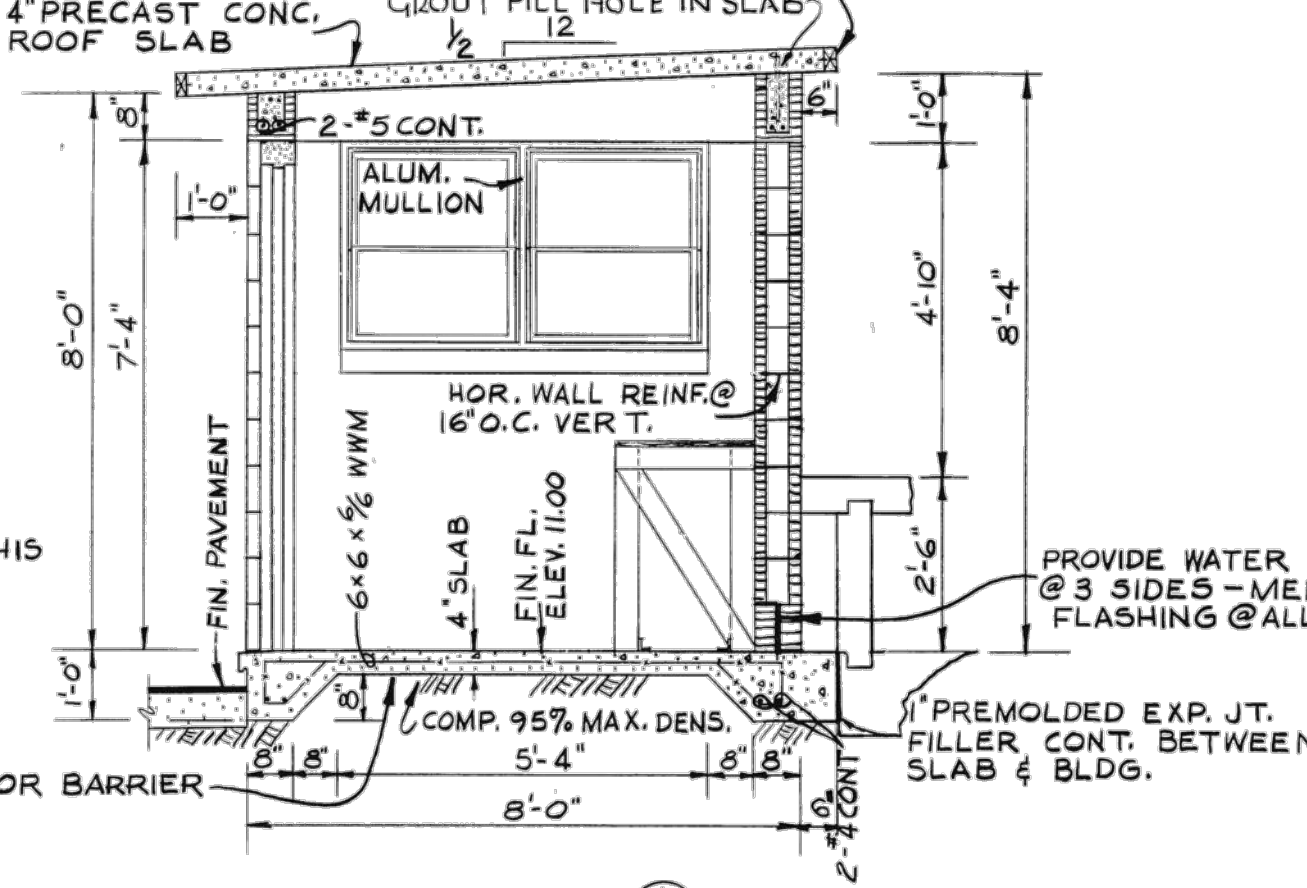
CONTROL HOUSE
RIGHT SIDE ELEVATION
(LEFT SIDE ELEVATION OPPOSITE)
SCALE 1/2" = 1'-0"



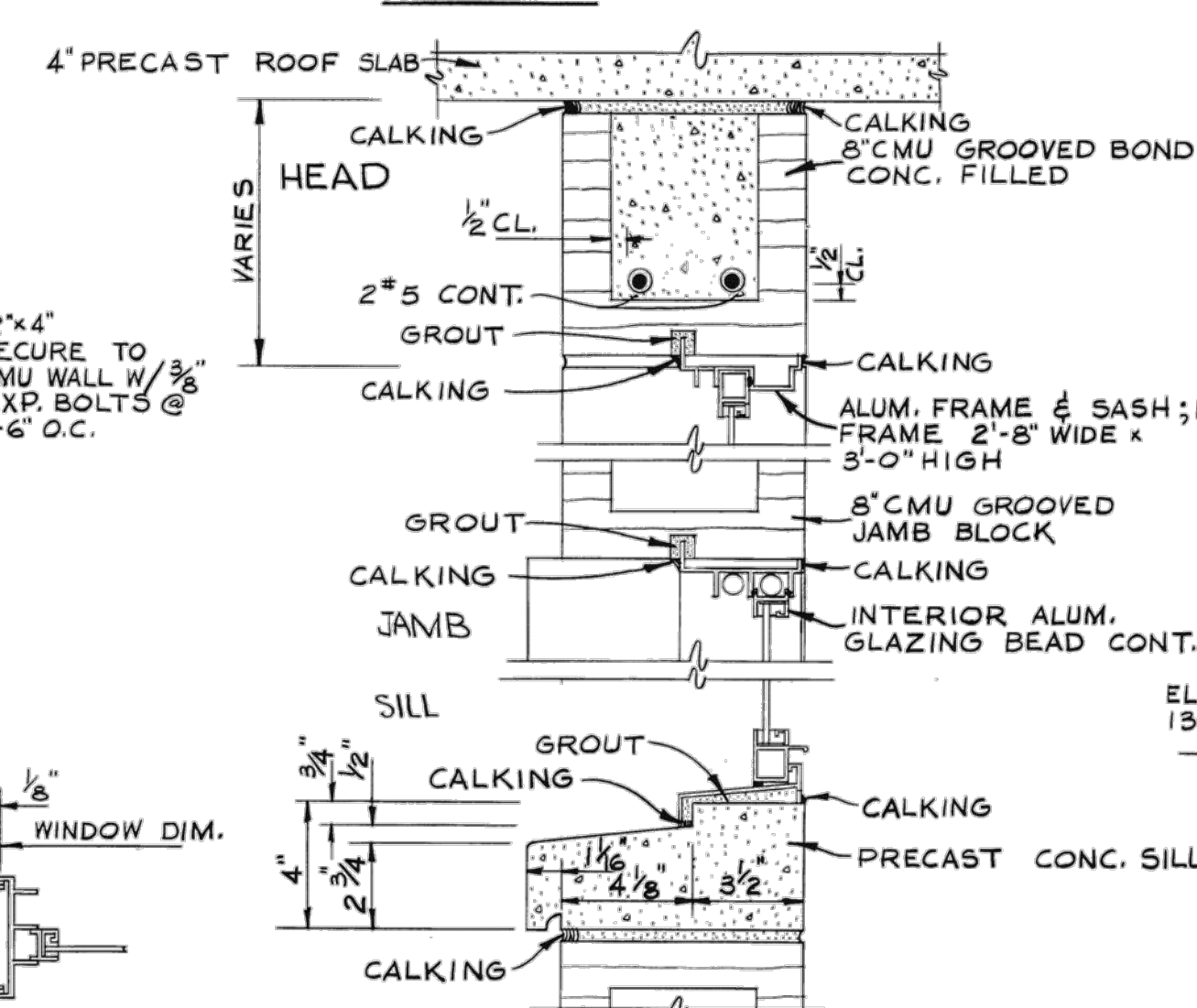
CONTROL HOUSE
PLAN
SCALE 1/2" = 1'-0"



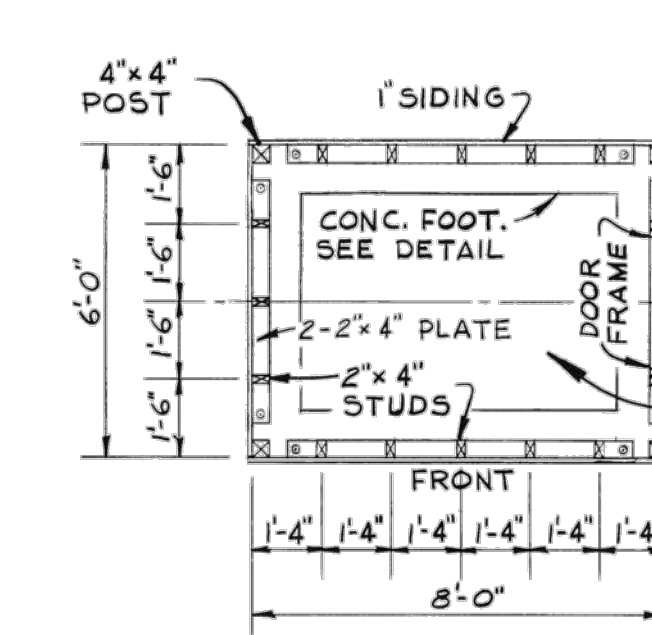
SHELF DETAILS
SCALE 3/4" = 1'-0"



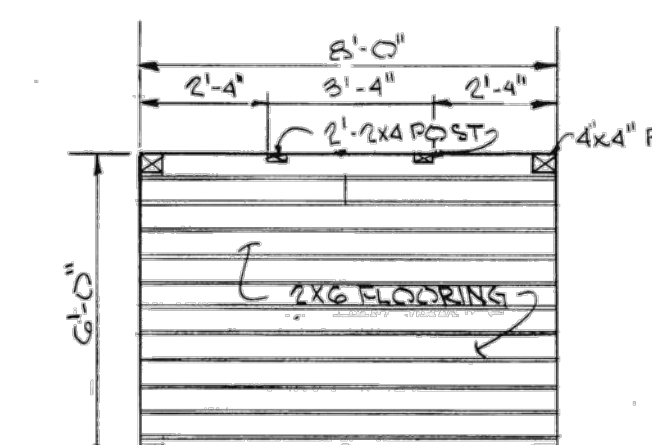
SECTION
SCALE 1/2" = 1'-0"



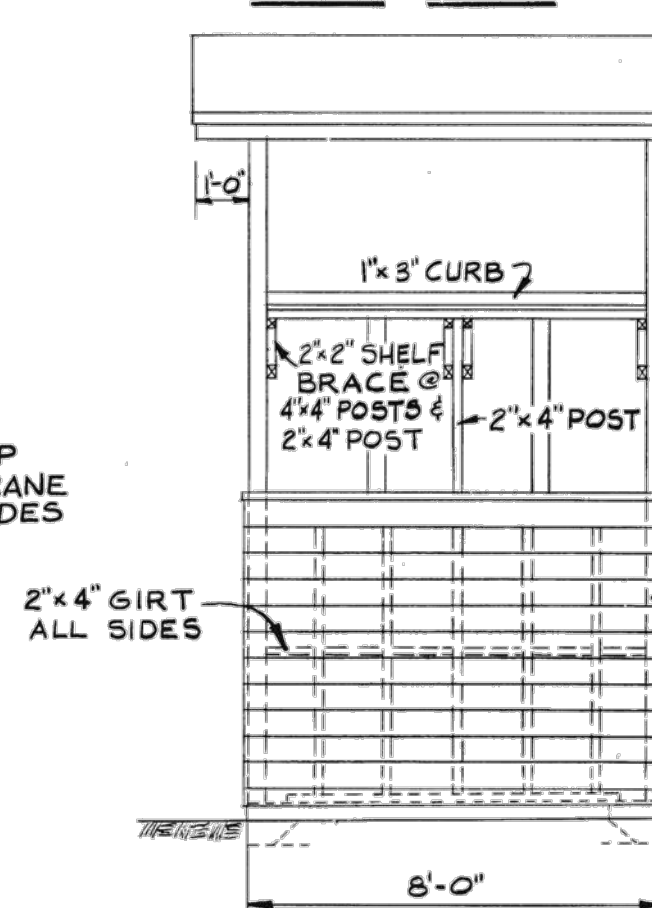
WINDOW DETAILS 13 & 14
SCALE 3" = 1'-0"



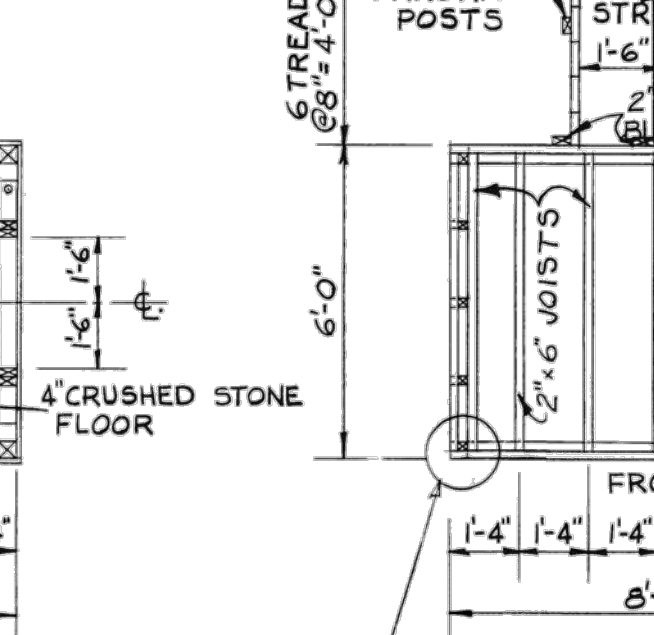
CONTROL TOWER - BOTTOM FLOOR PLAN
SCALE 3/8" = 1'-0"



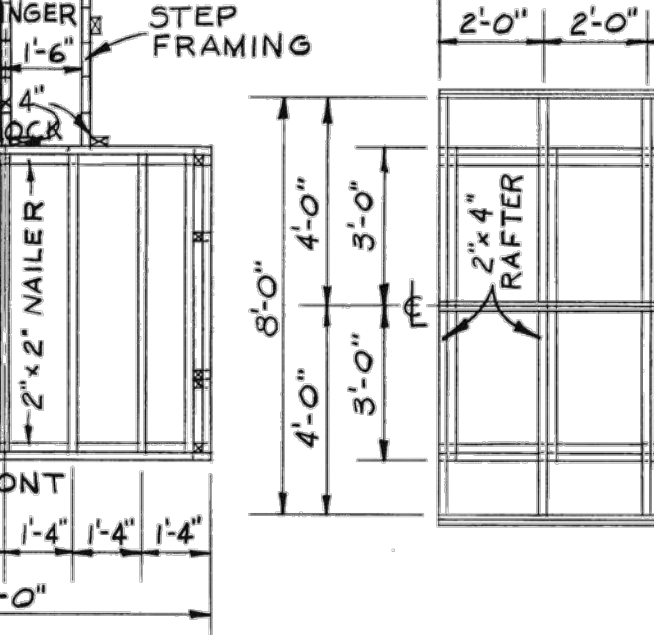
CONTROL TOWER - FLOOR PLAN
SCALE 3/8" = 1'-0"



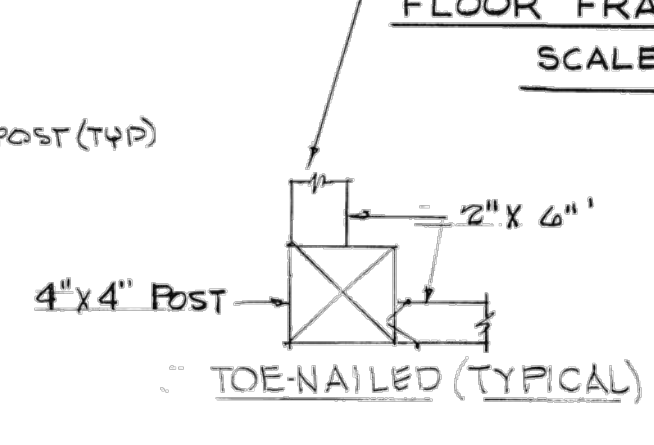
CONTROL TOWER
FRONT ELEVATION
SCALE 3/8" = 1'-0"



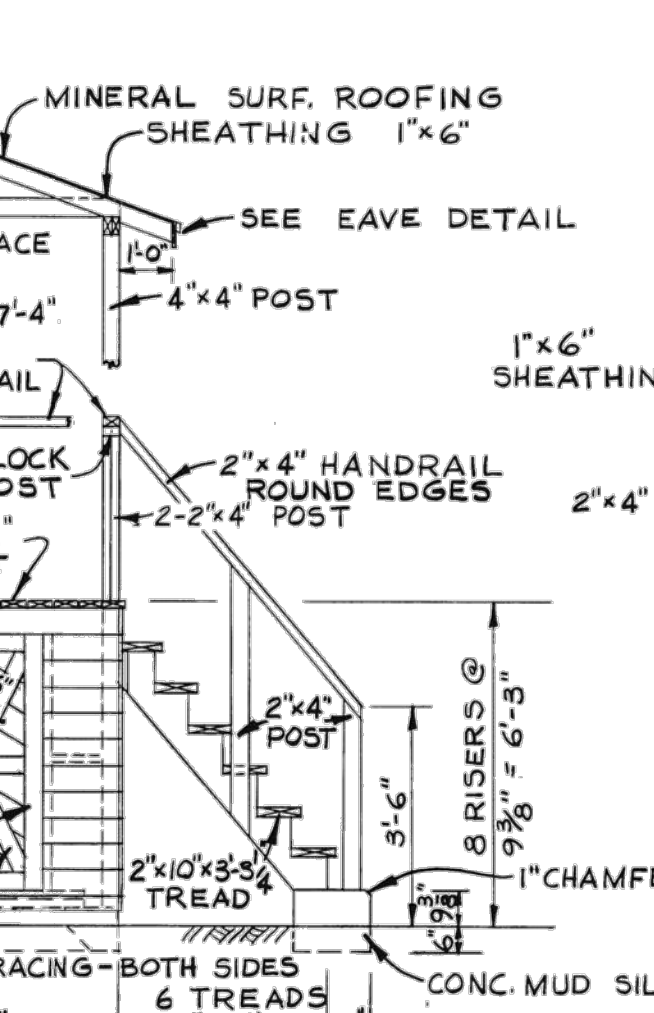
CONTROL TOWER
FLOOR FRAMING PLAN
SCALE 3/8" = 1'-0"



CONTROL TOWER
ROOF FRAMING PLAN
SCALE 3/8" = 1'-0"

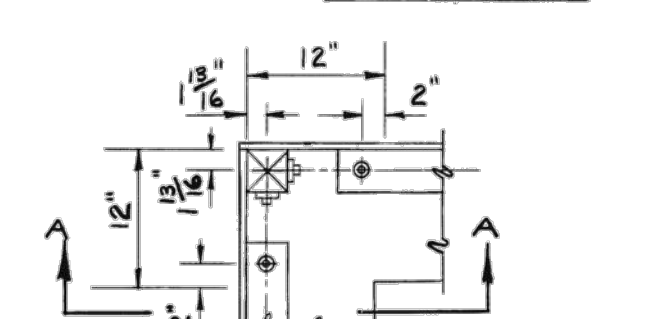


CONTROL TOWER
SIDE ELEVATION
SCALE 3/8" = 1'-0"

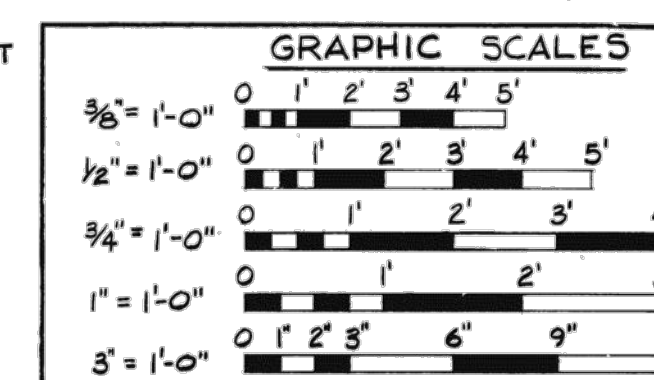


CONTROL TOWER
PLANS & DETAILS

NOTES:
1. ALL MATERIAL IN CONTROL TOWER TO BE TREATED.



CONTROL TOWER
FOOTING DETAIL
SCALE 1" = 1'-0"



NOTE: PAINT COLORS AS DIRECTED BY OFFICER IN CHARGE OF CONSTRUCTION	
DDWG. CORRECTED TO AS-BUILT	
2/10/70	
4M5	
REVISION	
SYMBOL	
DESCRIPTION	
DATE	
APPROVED	
PIEDMONT ENGINEERS & ARCHITECTS	
420 PARK AVE., GREENVILLE, S.C.	
DES. O.P. DR. O.P. CHK. J.E.	
SUPV. J.E. CH. ENGR. J.E.	
DATE 2-16-68	
FOR NORTH CAROLINA	
SOUTHEAST DIV. NPEC-DESIGN DIVISION	
P.O.E. Florence, S.C.	
APPROVED	
OFFICER IN CHARGE	
APPROVED FOR COMMAND	
FOR COMMANDER, NAVFAC	
DEPARTMENT OF THE NAVY	
NAVAL FACILITIES ENGINEERING COMMAND	
SOUTHEAST DIVISION	
CHARLESTON, S.C.	
MARINE CORPS RECRUIT DEPOT	
PARRIS ISLAND, S.C.	
ADDITION & ALTERATIONS TO	
OUTDOOR RIFLE RANGE	
CONTROL HOUSE & CONTROL TOWER	
NAVFAC DRAWING	
F 80091	
1215111	
CONSTR. CONTR. NO. 62467-67-C-0526	
SPEC 71046/65	
SHEET 11 OF 19	



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Wilmington, NC 28405
Corporate License No. for
Engineering Services C-0505

DES.	JAR	DRW	JAR	CHK	GJ
PM/DM					EH
BRANCH MANAGER					NY
CHIEF ENG/ARCH					
FIRE PROTECTION					

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
LAFAYETTE COMPLEX, WAREHOUSES, WAREHOUSES
PARRIS ISLAND, SC
U.S. MARINE CORPS RECRUIT DEPOT
RANGE SAFETY IMPROVEMENTS
& MODERNIZATION
OUTDOOR RIFLE RANGE CONTROL HOUSE & CONTROL TOWER

SCALE:	SEE PLAN
PROJECT NO.:	1354718
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	1215111
SHEET	OF

1

2

3

4

5

D

C

B

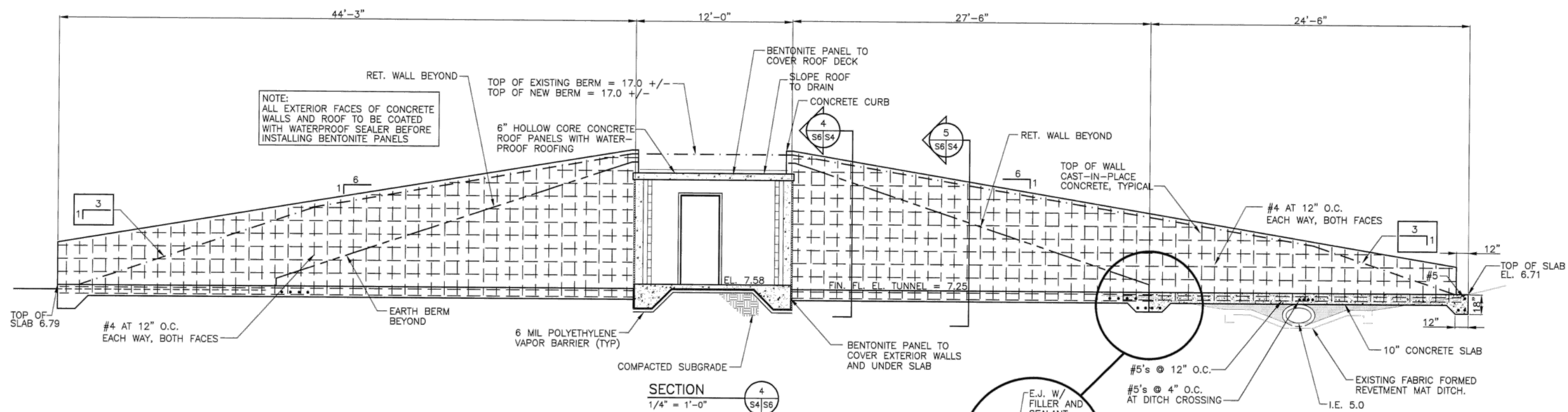
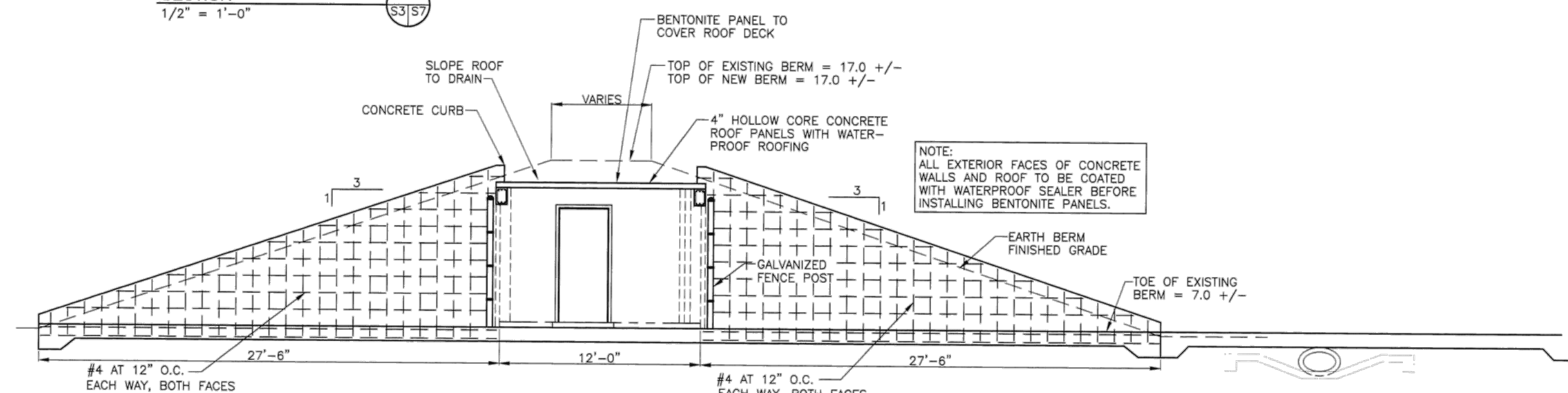
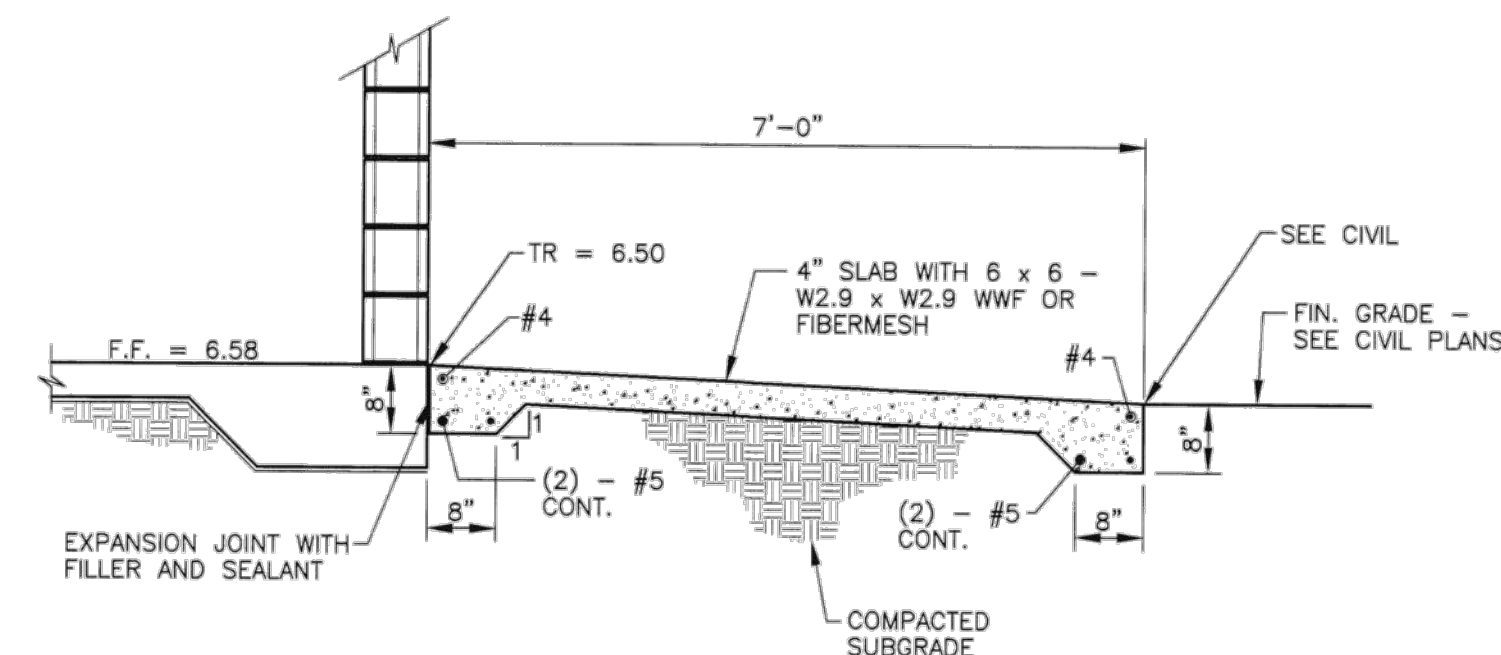
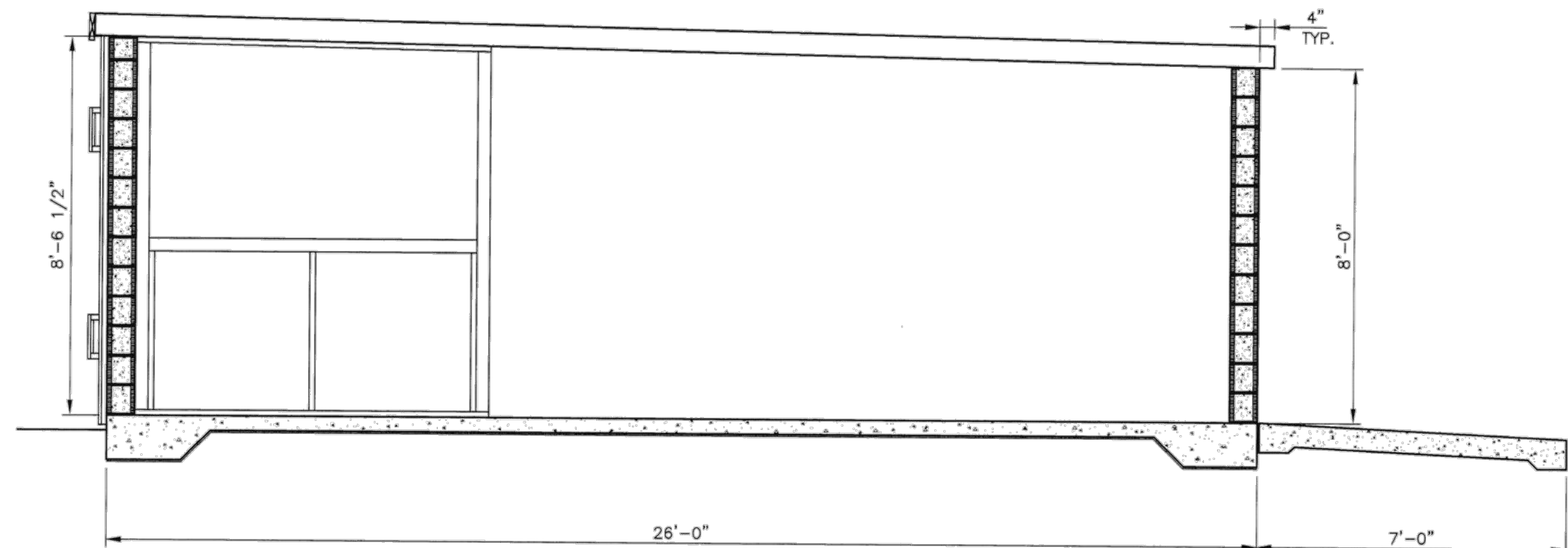
A

D

C

B

A



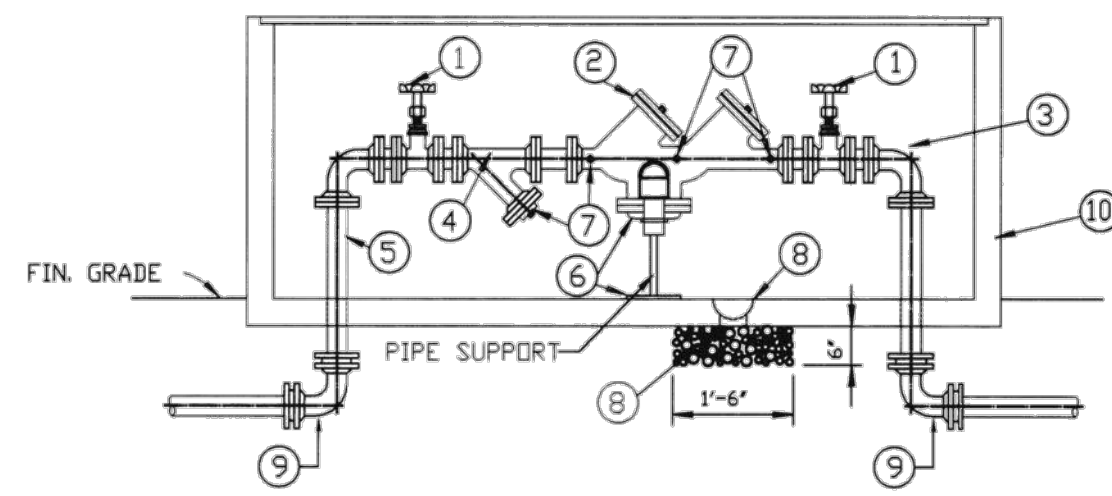
ARCH. & ENGR. FIRM Waters, Gay, Hall & Boswell Civil/Structural Engineers JULY 2008 SHEPARD, GEORGIA STATE		P.W. DWG. NO.	
ARCH. & ENGR. SEAL		DRAWN BY: M. CADMAN	
		CHECKED BY: M. BOSWELL	
		SUPERVISOR: R. HALLMAN	
		APPROVED: DATE: 12/20/01	
S6		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS RECRUIT DEPOT PARRIS ISLAND, S.C.	
		REPAIR STARLITE RANGE MISCELLANEOUS SECTIONS AND DETAILS	
		SIZE: F 80091 CODE IDENT. NO.: 5374265 NAVFAC DRAWING NO.: 5374265 CONSTR. CONTR. NO.: 16467-99-C-5000 SCALE: AS SHOWN SPEC: 06-99-0000 SHEET 39 OF 51	



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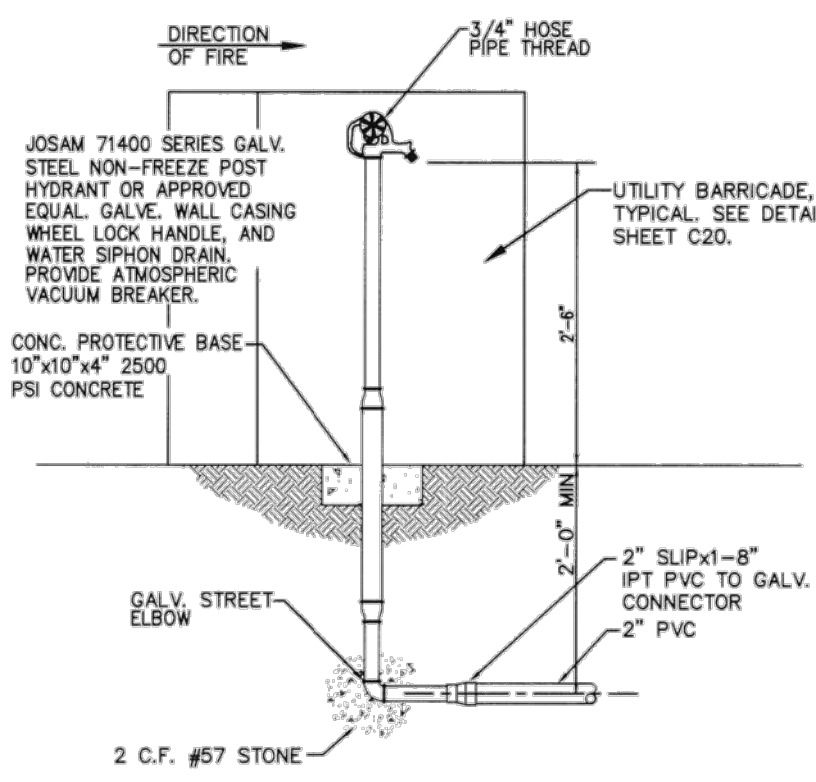
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MIDATLANTIC
LAFAYETTE COMPLEX, WAREHOUSES, WAREHOUSE
PARRIS ISLAND, SC
U.S. MARINE CORPS RECRUIT DEPOT
**RANGE SAFETY IMPROVEMENTS
& MODERNIZATION**
MISCELLANEOUS SECTIONS AND DETAILS

SCALE: SEE PLAN
PROJECT NO.: 1354718
CONSTR. CONTR. NO.:
NAVFAC DRAWING NO.: 5374265
SHEET 39 OF 51
R-106
DRAWING REVISION: 10 MARCH 2009

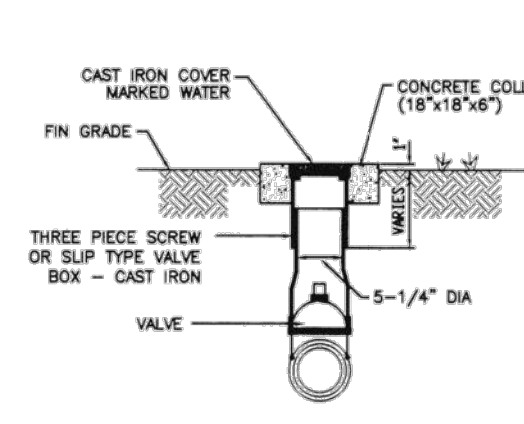


MATERIALS		
ITEM	QTY.	DESCRIPTION
1	2	ISOLATING VALVE: OUTSIDE SCREW AND YOKER SEATED GATE VALVES RATED FOR FIRE PROTECTION SERVICE
2	1	REDUCED PRESSURE ZONE DEVICE
3	2	AWWA C110 FLANGED ENDS
4	1	STRAINER W/ RPZ DEVICE
5	2	DUCTILE IRON PIPE
6		MINIMUM 12" ABOVE BOTTOM OF ENCLOSURE
7	4	BRASS PLUGS INSERTED IN TEST COCKS
8		6" GRAVEL & DRAIN
9	2	AWWA C110 - MECHANICAL JOINT - PRESSURE CLASS 350 WITH TIGHTENING BLOCK
10		ISOLATED ENCLOSURE SIZED TO SUIT EQUIPMENT, SECURE TO PAD WITH STAINLESS STEEL HARDWARE FURNISHED BY THE MANUFACTURER.

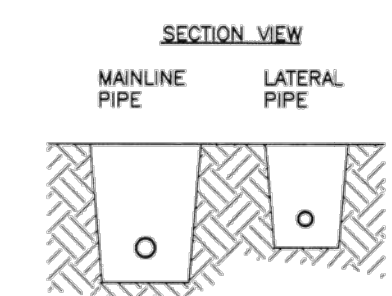
REDUCED PRESSURE BACKFLOW PREVENTER DETAIL
N.T.S.



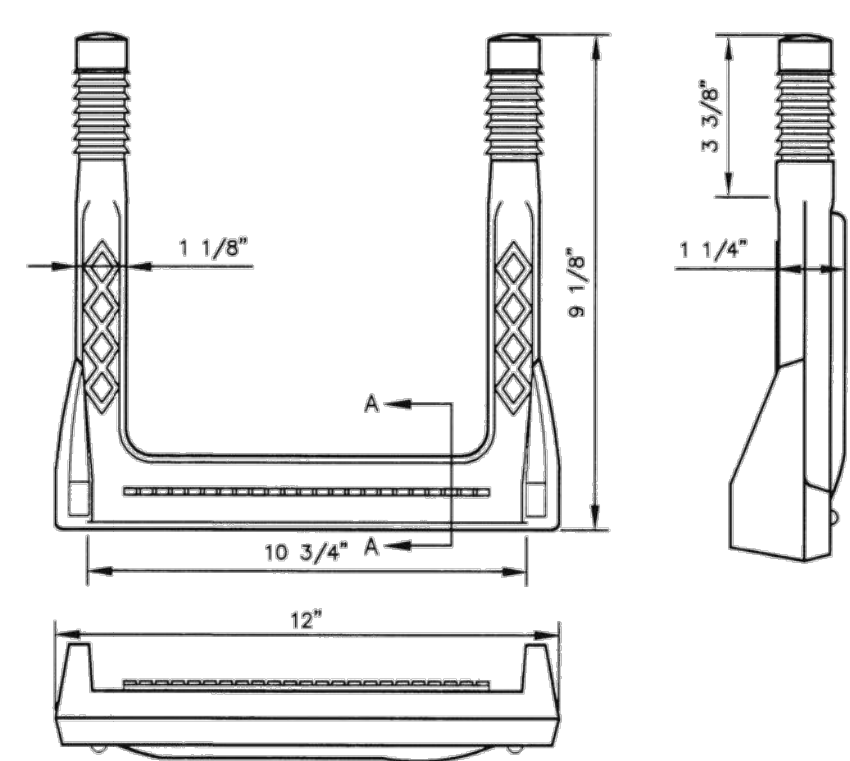
FREEZE-PROOF YARD HYDRANT DETAIL
NOT TO SCALE



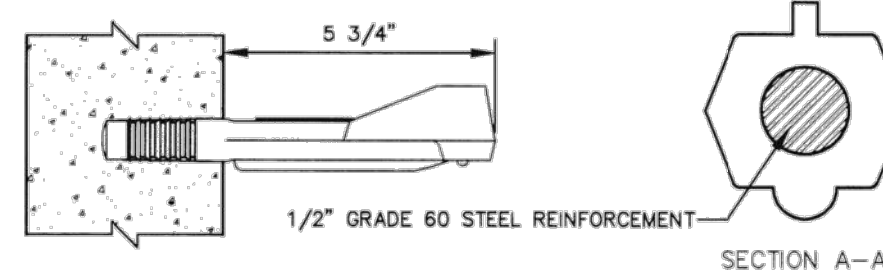
STANDARD VALVE BOX
NOT TO SCALE



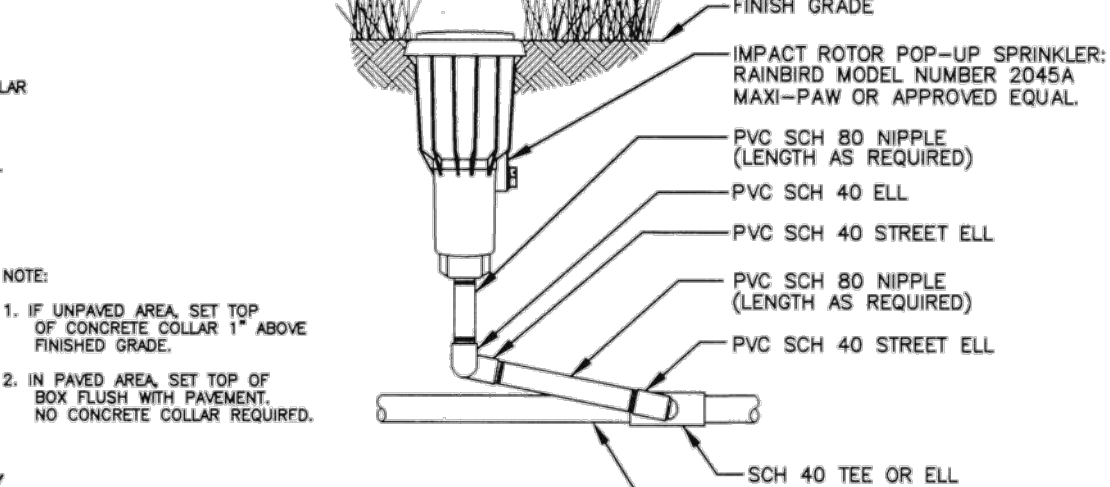
PIPE TRENCHING



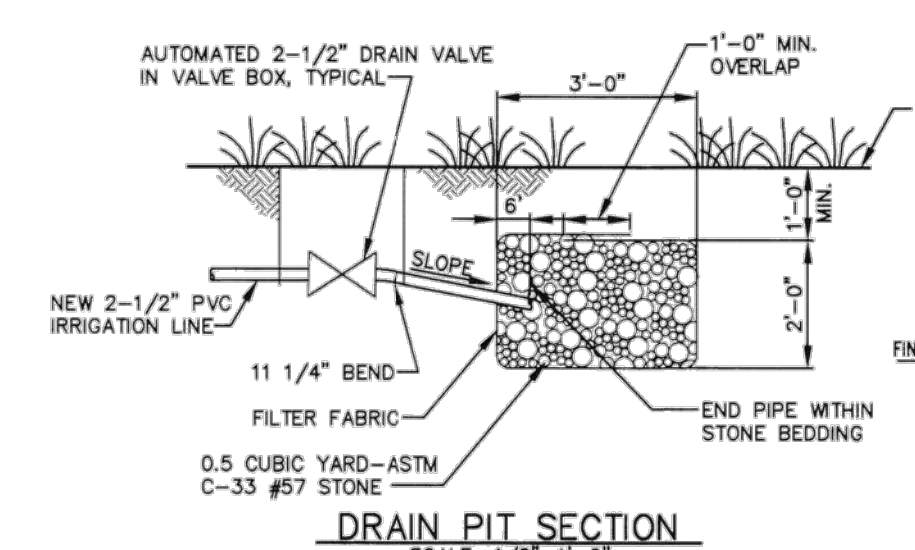
COPOLYMER POLYPROPYLENE PLASTIC



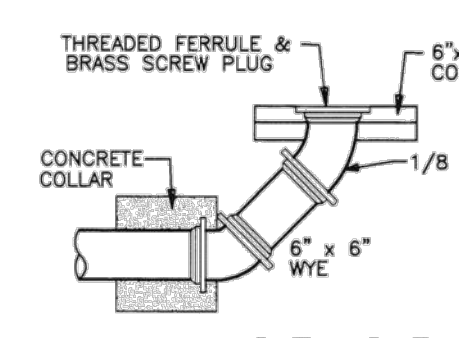
MANHOLE STEP-POLYPROPYLENE



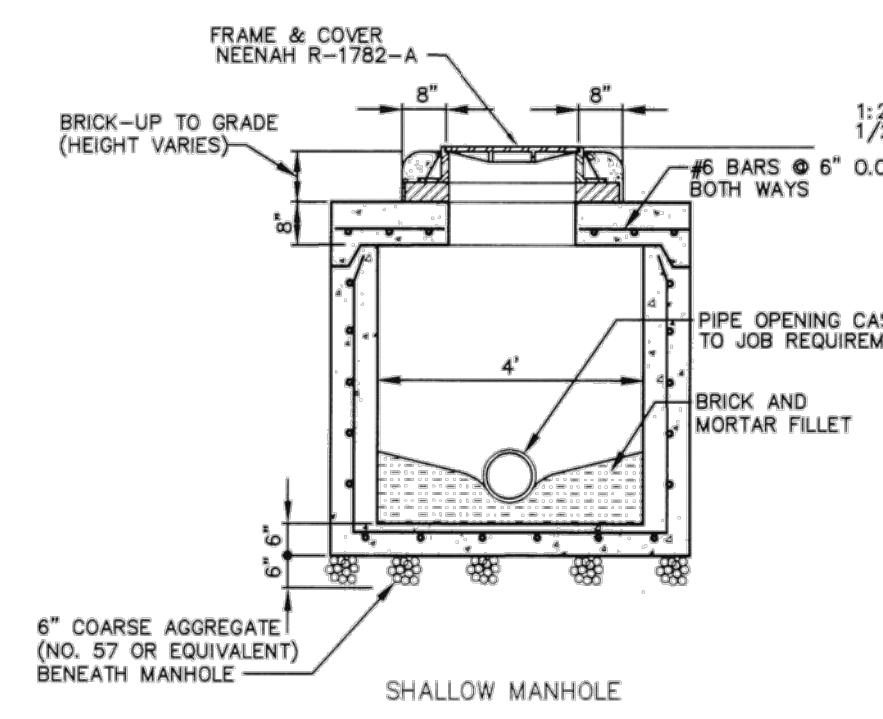
IMPACT ROTOR POP-UP SPRINKLER
NOT TO SCALE



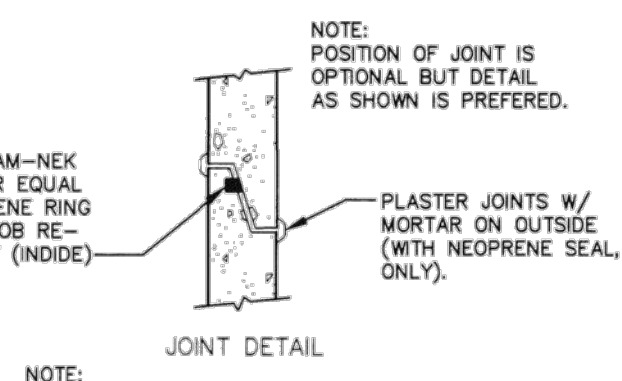
DRAIN PIT SECTION
SCALE: 1/2"=1'-0"



CLEANOUT
NOT TO SCALE



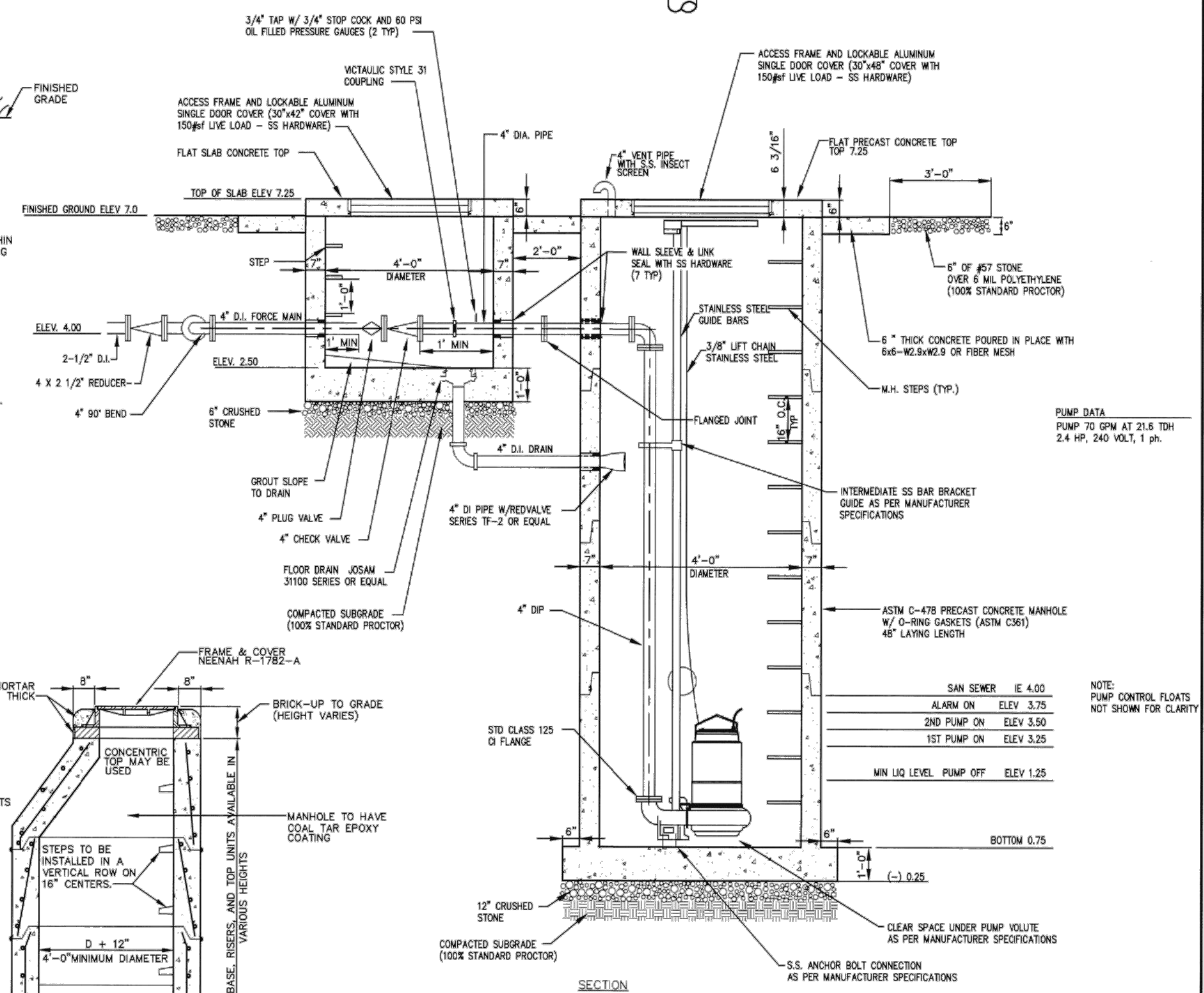
SHALLOW MANHOLE



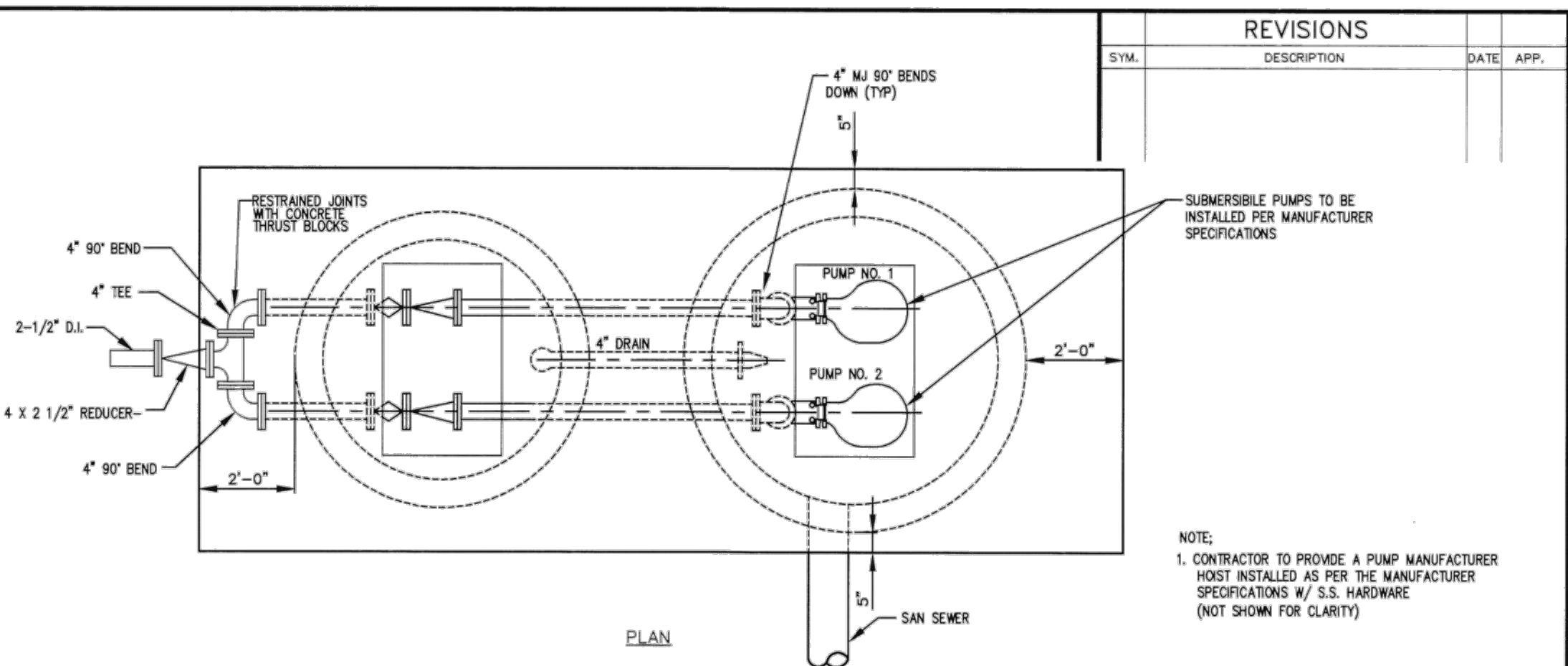
JOINT DETAIL

NOTE: PRECAST REINFORCED CONCRETE MANHOLE TOPS, RISERS, AND BASES SHALL CONFORM TO ASTM C-478-64T.

STANDARD PRECAST CONCRETE MANHOLE (SANITARY)
NOT TO SCALE



SUBMERSIBLE SEWAGE PUMP STATION DETAIL
NOT TO SCALE



PLAN

REVISIONS			
SYM.	DESCRIPTION	DATE	APP.

NOTE: 1. CONTRACTOR TO PROVIDE A PUMP MANUFACTURER HOST INSTALLED AS PER THE MANUFACTURER SPECIFICATIONS W/ S.S. HARDWARE (NOT SHOWN FOR CLARITY)

PUMP DATA
PUMP TO GPM AT 21.6 TDH
2.4 HP, 240 VOLT, 1 ph.

NOTE: PUMP CONTROL FLOATS NOT SHOWN FOR CLARITY

ARCH. & ENGR. FIRM Murray, Day, Bell & Reynolds Civil/Structural Engineers 2350 Peachtree Road, Suite 200 Atlanta, GA 30309		P.W. DWG. NO. 		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS RECRUIT DEPOT PARRIS ISLAND, SC	
ARCH. & ENGR. SEAL 		DRAWN BY M. Cadman CHECKED BY M. Boswell SUPERVISOR R. Hallman		REPAIR STARLITE RANGE WATER UTILITY AND SANITARY SEWER DETAILS	
C-21		APPROVED 		SIZE CODE IDENT. NO. F 80091 NAVFAC DRAWING NO. 5374247	
		DATE 		CONSTR. CONTR. NO. NS4637-99-C-5000 SHEET 21 OF 31	

APPROVED: _____

FOR COMMANDER NAVFAC: _____

ACTIVITY: _____

SATISFACTORY TO: _____ DATE: _____

DES: JAR | DRW: JAR | CHK: GJ

PM/DM: EH

BRANCH MANAGER: NY

CHIEF ENGR/ARCH: _____

FIRE PROTECTION: _____

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MIDATLANTIC
LAWTETTE COMPLEX, WYOMING, VIRGINIA
U.S. MARINE CORPS RECRUIT DEPOT
PARRIS ISLAND, SC

**RANGE SAFETY IMPROVEMENTS
& MODERNIZATION**

WATER UTILITY AND SANITARY SEWER DETAILS

SCALE: SEE PLAN

PROJECT NO.: 1354718

CONSTR. CONTR. NO.: _____

NAVFAC DRAWING NO.: 5374247

SHEET: _____ OF _____

R-107

DRAWING REVISION: 10 MARCH 2009

DATE: _____

APP: _____