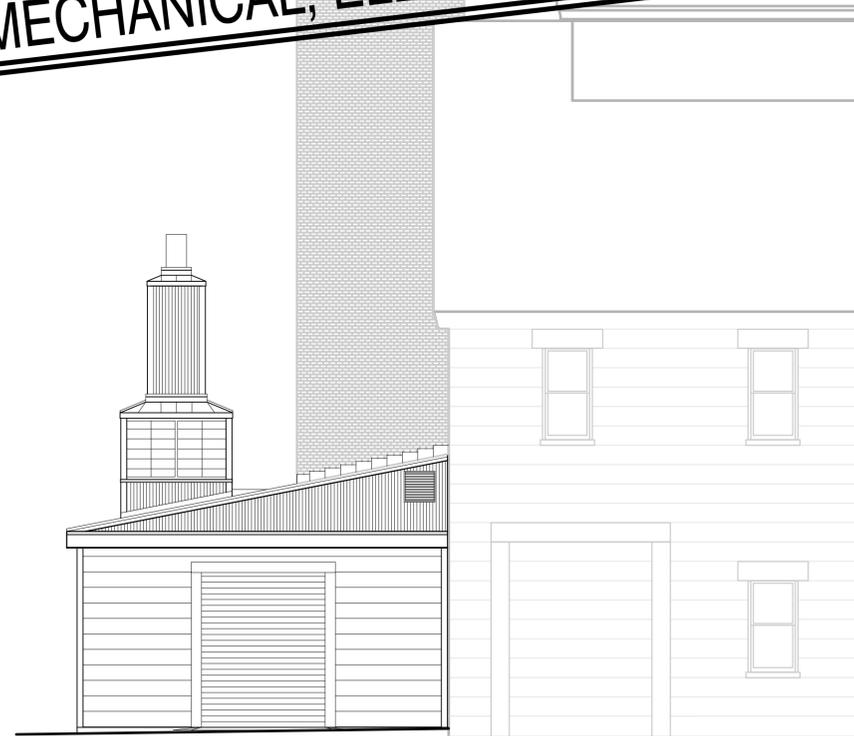


RELOCATE FORGE SHOP

CHARLESTOWN NAVAL SHIPYARD
CHARLESTOWN, MA

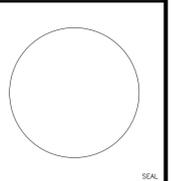
9 MARCH 2012
100% STRUCTURAL, ARCHITECTURAL,
MECHANICAL, ELECTRICAL & PLUMBING



NAVAL FACILITIES ENGINEERING COMMAND MID-ATLANTIC

PUBLIC WORKS DEPARTMENT MAINE
NAVAL SHIPYARD
PORTSMOUTH, NH

SYN	DESCRIPTION	DATE	APPR
2	100% PRE-FINAL DESIGN SUBMISSION	09 MAR 2012	
1	65% DESIGN SUBMISSION	01 DEC 2011	



P&S CONSTRUCTION, INC.
11 SCHOOL STREET
N. CHARLESTOWN, MA 01863
PH: 978-452-3782

APPROVED:
FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO	DATE
DES	DRW
RS	CHK
XXX	XXX

BRANCH MANAGER
CHIEF ENG/ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
CHARLESTOWN NAVAL SHIPYARD
RELOCATION OF FORGE SHOP
COVER SHEET

SCALE: NTS
EPROJECT NO.:
CONSTR. CONTR. NO.
N40085-11-D-0524-0004
NAVFAC DRAWING NO. *
SHEET 1 OF 18
GI-001

LIST OF SHEETS

SHEET NO.	NAVFAC DWG. NO.	SHEET TITLE
GENERAL		
1	GI-001	COVER SHEET
2	GI-101	GENERAL INFO - LIST OF SHEETS AND GENERAL NOTES
STRUCTURAL		
3	S-1	GENERAL NOTES
4	S-2	FOUNDATION & ROOF FRAMING PLANS
5	S-3	FOUNDATION & ROOF FRAMING PLANS
ARCHITECTURAL		
6	AE-101	PLANS
7	AE-401	DOOR SCHEDULE & DETAILS
8	AE-501	ELEVATIONS
9	AE-600	BUILDING SECTIONS
10	AE-601	DETAILED SECTIONS
MECHANICAL		
11	M-101	PLANS & SECTIONS
12	M-102	DETAILS
13	M-103	DETAILS
ELECTRICAL		
14	E-100	SYMBOLS, LEGEND & FIXTURE SCHEDULE
15	E-101	ELECTRICAL PLAN
16	E-600	POWER ONE-LINE & SCHEDULE
PLUMBING		
17	P-101	PLAN & LOCATION
18	P-102	DETAILS

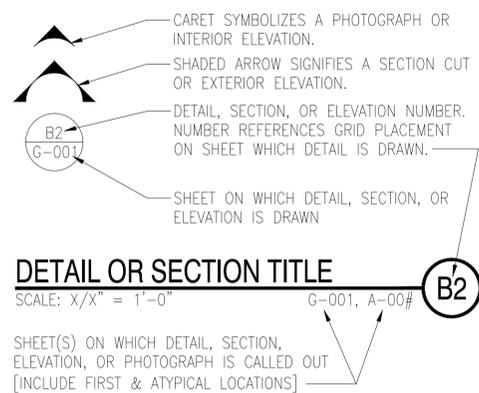
GENERAL NOTES

- REFER TO STRUCTURAL DRAWINGS FOR LOOSE STEEL LINTELS AND CMU LINTELS.
- PROVIDE LINTELS, WHETHER INDICATED OR NOT OVER ALL OPENINGS IN MASONRY WALLS AS REQUIRED BY STRUCTURAL, ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. COMBINE VARIOUS WYTHES OF MASONRY AS REQUIRED TO SUIT PROJECT. ALL CONDITIONS MAY NOT OCCUR. ALL LINTELS ARE TO HAVE 8" MINIMUM BEARING AT EACH END.
- ALL EXTERIOR LINTELS ARE TO BE GALVANIZED.
- ALL EXTERIOR ANGLES TO BE LOCATED 1/2" BACK FROM FACE OF FINISHED WALL.

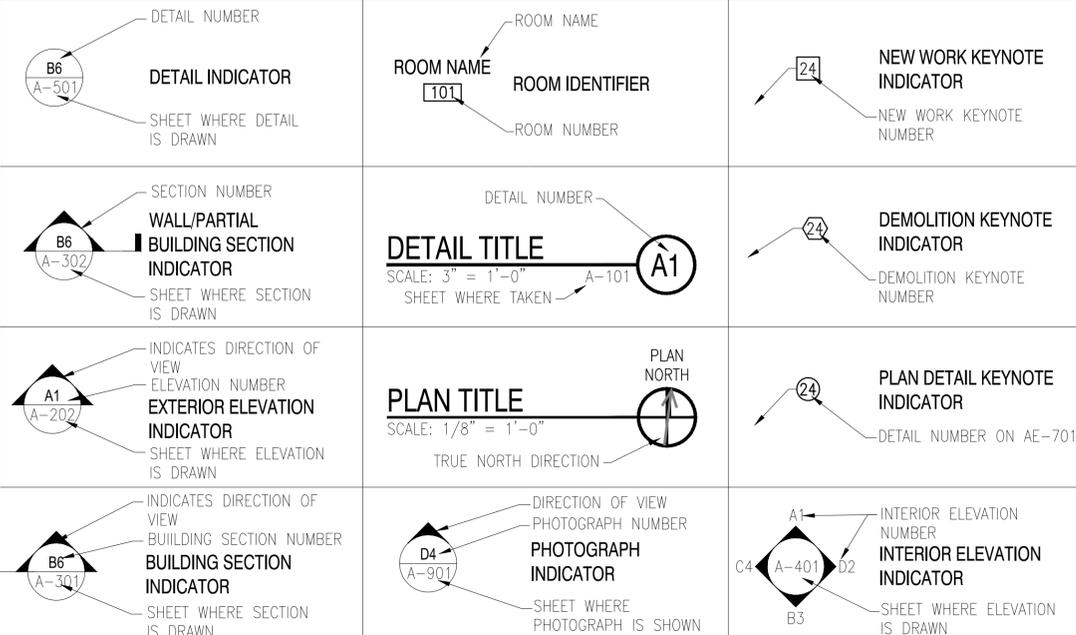
ABBREVIATIONS

AB	ANCHOR BOLT	H	HORIZONTAL	SACT	SUSPENDED ACOUSTIC
AC	AIR CONDITIONING	HC	HANDICAPPED; HOLLOW CORE	SC	SOLID CORE
ACCU	AIR CONDITIONING CONDENSER	HORIZ	HORIZONTAL	SCHED	SCHEDULE
ACPLAS	ACOUSTICAL PLASTER	HM	HOLLOW METAL	SD	SOAP DISH
ACT	ACOUSTIC CEILING TILE	HR	HOUR	SF	SQUARE FOOT
AFF	ABOVE FINISHED FLOOR	HRU	HEAT RECOVERY UNIT	SHT	SHEET
AGG	AGGREGATE	HSS	HOLLOW STRUCTURAL SECTION	SHWR	SHOWER
ALT	ALTERNATE	H&V	HEATING AND VENTILATING	SIM	SIMILAR
ALUM	ALUMINUM	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	SK	SHEAR KEY
AP	ACCESS PANEL	I	INCLUDED ANGLE	SN	SANITARY NAPKIN (DISPENSER)
APROX	APPROXIMATE	ID	INSIDE DIAMETER	SNR	SANITARY NAPKIN RECEPTOR
ARCH	ARCHITECTURAL	IF	INSIDE FACE	SP	SPECIAL
BCX	BOTTOM CHORD EXTENSION	IJ	ISOLATION JOINT	SS	STAINLESS STEEL
BD	BOARD	IMP	IMPACT RESISTANT	STA	STATION
BIT	BITUMINOUS	INS	INSULATED	STL	STEEL
BLDG	BUILDING	INV	INVERT	STO	STORAGE
BLP	BORROWED LIGHT PANEL	JS	JOIST SUBSTITUTE	STRUC	STRUCTURAL
BO	BOTTOM OF	JAN	JANITOR	T	TREAD
BOF	BOTTOM OF FOOTING	K	KIPS	TB	TACKBOARD
BOS	BOTTOM OF STEEL	L	ANGLE	T&B	TOP AND BOTTOM
BOT	BOTTOM	LF	LEFT	TBM	TEMPORARY BENCHMARK
BRDG	BRIDGING	LINO	SHEET LINOLEUM	TCE	TOP CHORD EXTENSION
BRG	BEARING	LL	LIVE LOAD	TJ	TIE JOIST
BS	BOTH SIDES	LLH	LONG LEG HORIZONTAL	TO	TOP OF
BSE	BRICK SHELF ELEVATION	LLV	LONG LEG VERTICAL	TOC	TOP OF CONCRETE
C	CHANNEL	LP	LIGHTING PANEL	TOF	TOP OF FOOTING
CB	CATCH BASIN	MAX	MAXIMUM	TOM	TOP OF MASONRY
CEM BD	CEMENTITIOUS BACKER BOARD	MB	MARKER BOARD	TOS	TOP OF STEEL
CFM	CUBIC FEET PER MINUTE	MDO	MEDIUM DENSITY OVERLAY	TOW	TOP OF WALL
CH	COAT HOOK	MECH	MECHANICAL	TP	TOILET PAPER (DISPENSER)
CIP	CAST IN PLACE	MFR	MANUFACTURER	TS	TUBE STEEL
CJ	CONTROL JOINT	MIN	MINIMUM	TYP	TYPICAL
CL	CENTER LINE	MISC	MISCELLANEOUS	UD	UNIT DIMENSION
CLL	CONTRACT LIMIT LINE	MO	MASONRY OPENING	UH	UNIT HEATER
CLG	CEILING	MR	MOISTURE-RESISTANT	UON	UNLESS OTHERWISE NOTED
CLR	CLEAR	MTL	METAL	UIS	UNDER SIDE
CMU	CONCRETE MASONRY UNIT	MUA	MAKE-UP AIR	V	VENT PIPE
COL	COLUMN	MWF	MIRROR WITH FRAME	VB	VAPOR BARRIER
CONC	CONCRETE	N	NOSING	VCT	VINYL COMPOSITION TILE
CONT	CONTINUOUS	NCB	NEW CATCH BASIN	VERT	VERTICAL
COORD	COORDINATE	NDMH	NEW DRAIN MANHOLE	VP	VISION PANEL
CT	CERAMIC TILE	NFM	NEW FORCE MAINE	VTR	VENT THROUGH THE ROOF
CUH	CABINET UNIT HEATER	NIC	NOT IN CONTRACT	W	WITH
D	DIAMETER	NOM	NOMINAL	WC	WATER CLOSET
DBL	DOUBLE	NS	NEAR SIDE	WF	WIDE FLANGE
DF	DRINKING FOUNTAIN	NSD	NEW STORM DRAIN LINE	WH	WATER HEATER
DIA	DIAMETER	NSS	NEW SANITARY SEWER LINE	WIO	WITHOUT
DL	DEAD LOAD	NTS	NOT TO SCALE	WP	WORKING POINT
DR	DISPLAY RAIL	NW	NEW WATER LINE	WS	WEB STIFFENER
DTL	DETAIL	OA	OVERALL	WWF	WELDED WIRE FABRIC
DW	DISHWASHER	OC	ON CENTER		
DWG	DRAWING	OF	OUTSIDE FACE		
EA	EACH	OH	OVERHEAD		
EF	EXHAUST FAN	PA	PUBLIC ADDRESS		
EJ	EXPANSION JOINT	PAF	POWDER-ACTUATED FASTENER		
ELEV	ELEVATION, ELEVATOR	PDU	POWER DISTRIBUTION UNIT		
ELEC	ELECTRICAL	PL	PLATE		
EMR	ELEVATOR MACHINE ROOM	PLAM	PLASTIC LAMINATE		
EOP	EDGE OF PAVEMENT	PLF	POUNDS PER LINEAR FOOT		
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	PP	POWER PANEL		
EQ	EQUAL	PSF	POUNDS PER SQUARE FOOT		
EQUIP	EQUIPMENT	PSI	POUNDS PER SQUARE INCH		
EW	EACH WAY	PT	PRESSURE-TREATED		
EWC	ELECTRIC WATER COOLER	PVC	POLYVINYL CHLORIDE		
EXIST	EXISTING	PVMT	PAVEMENT		
EXP	EXPANSION	R	RISER		
EXT	EXTERIOR	RB	RESILIENT BASE		
FB	FLAT BAR	RD	ROOF DRAIN		
FBO	FURNISHED BY OTHERS	REINF	REINFORCED		
FCO	FLOOR CLEAN-OUT	REQ'D	REQUIRED		
FD	FLOOR DRAIN	RT	RIGHT		
FEC	FIRE EXTINGUISHER CABINET	RO	ROUGH OPENING		
FF	FINISHED FLOOR	ROW	RIGHT OF WAY		
FFE	FINISHED FLOOR ELEVATION	RR	RUB-RAIL		
FLR	FLOOR	RTU	ROOFTOP UNIT (HVAC)		
FO	FRAMED OPENING				
FRP	FIBERGLASS REINFORCED PLASTIC				
FRT	FIRE RETARDANT TREATED				
FS	FAR SIDE				
FTG	FOOTING				
FOS	FACE OF STUD				
GA	GAUGE				
GALV	GALVANIZED				
GB	GRAB BAR				
GC	GENERAL CONTRACTOR				
GDT	GYPSTUM DROP-IN TILE				
GV	GRAVITY VENT				
GWB	GYPSTUM WALL BOARD				

SYMBOLS LEGEND



GENERAL SYMBOLS



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100% PRE-FINAL DESIGN SUBMISSION 09 MAR 2012

60% DESIGN SUBMISSION 01 DEC 2011

DATE

APPR

P&S CONSTRUCTION, INC.
11 SCHOOL STREET
N. CHILMARK, MA 01963
PH: 978-452-3782

APPROVED:

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES	DRW	RS	CHK	XXX
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BRANCH MANAGER XXX

CHIEF ENGR/ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
CHARLESTOWN NAVAL SHIPYARD
CHARLESTOWN, MA

RELOCATION OF FORGE SHOP

GENERAL INFO - LIST OF SHEETS AND GENERAL NOTES

SCALE: NTS

EPROJECT NO.:

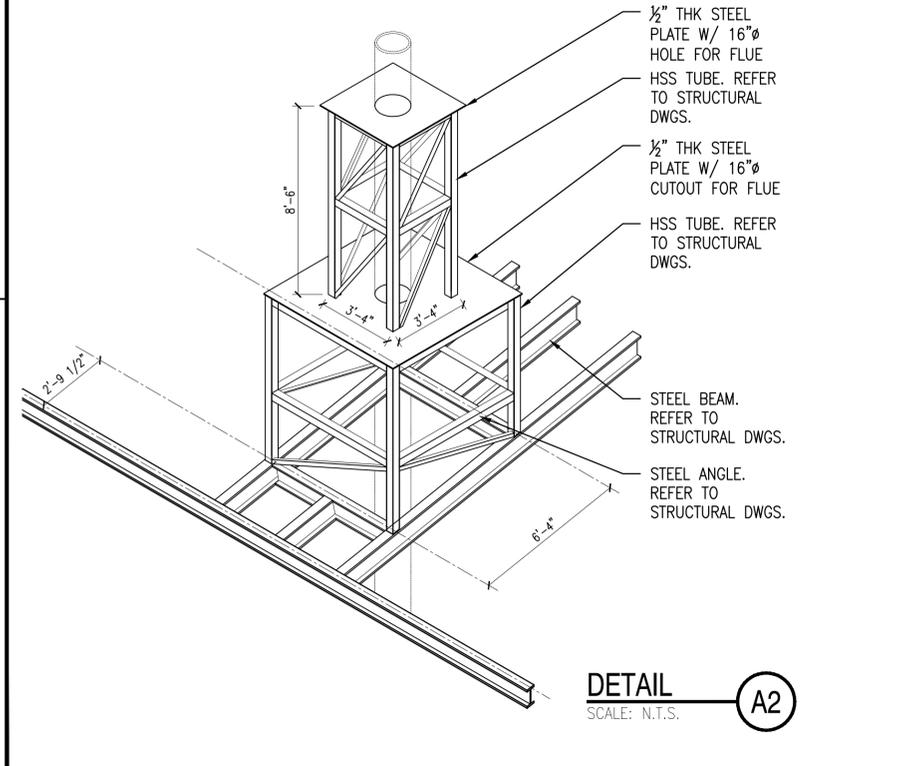
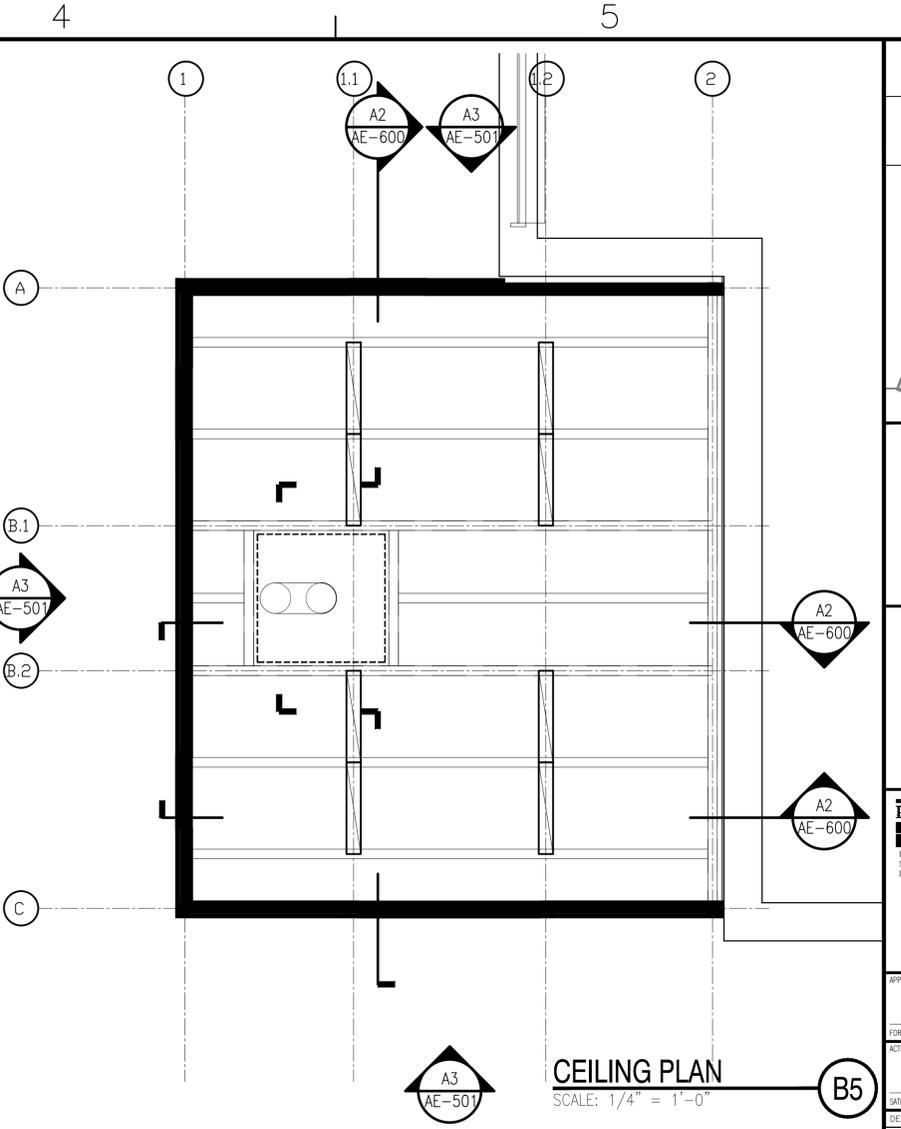
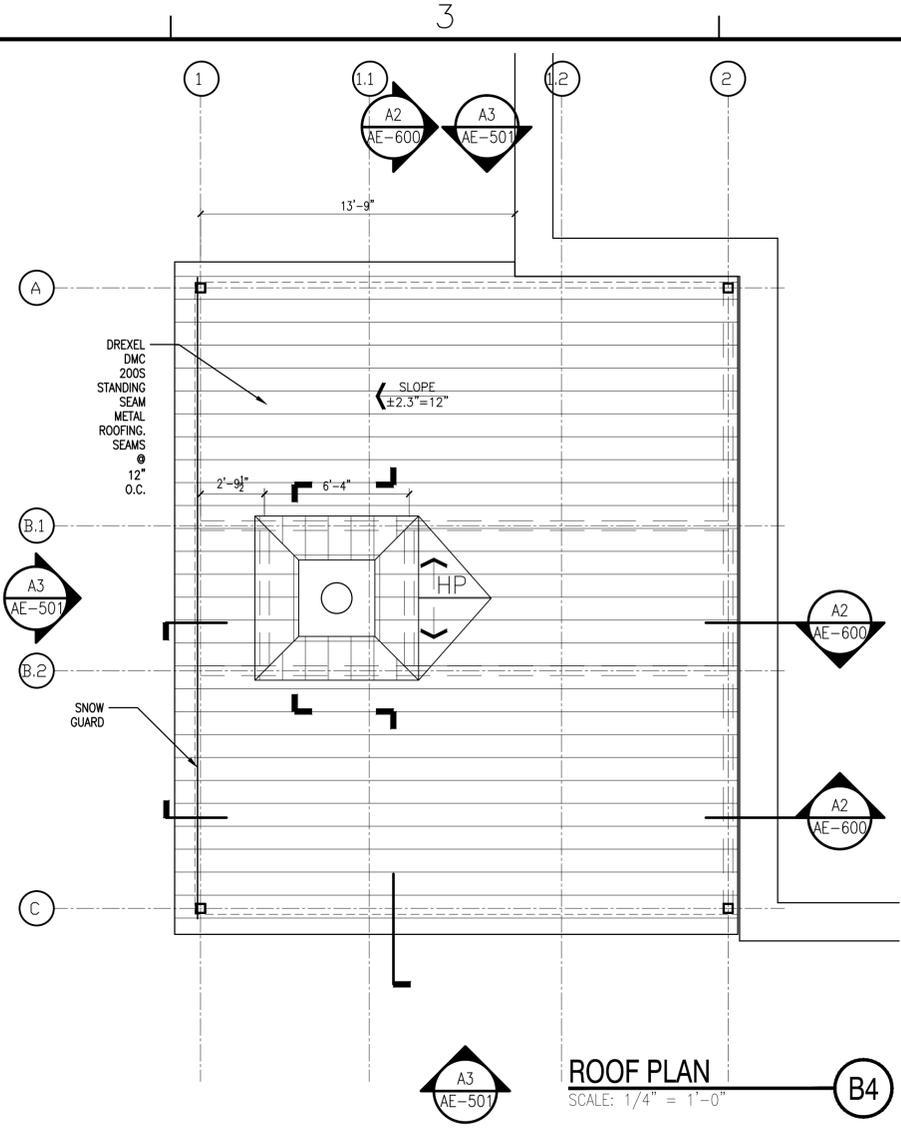
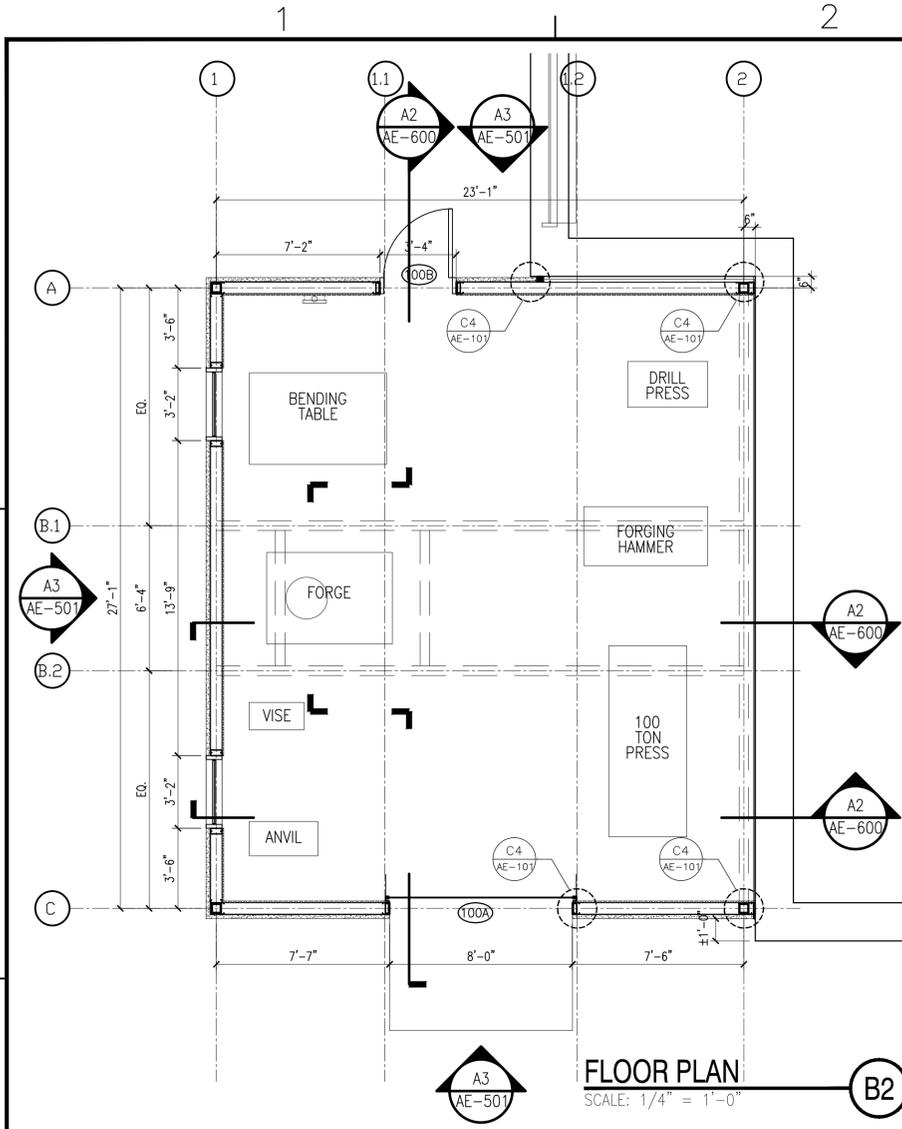
CONSTR. CONTR. NO.
N40085-11-D-0524-0004

NAVFAC DRAWING NO. *

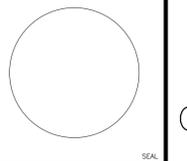
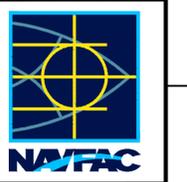
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GI-101

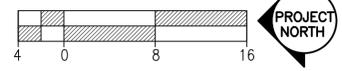
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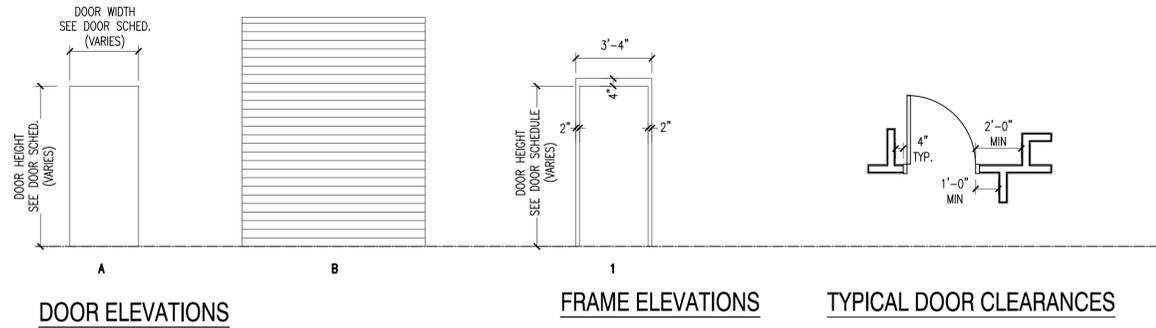


APPROVED	DATE	APPR
FOR COMMANDER NAVFAC	09 MAR 2012	
ACTIVITY	100% PRE-FINAL DESIGN SUBMISSION	
SATISFACTORY TO	DATE	CHK
DES	DRW	RS
PM/DM	XXX	XXX
BRANCH MANAGER	XXX	XXX
CHIEF ENG/ARCH		
FIRE PROTECTION		
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC PUBLIC WORKS DEPARTMENT - MAINE CHARLESTOWN NAVAL SHIPYARD CHARLESTOWN, MA		
RELOCATION OF FORGE SHOP PLANS		
SCALE: 1/8" = 1'-0" EPROJECT NO.: CONSTR. CONTR. NO. N40085-11-D-0524-0004 NAVFAC DRAWING NO.: * SHEET * OF 1018 AE-101 DRAWFORM REVISION: 10 MARCH 2009		



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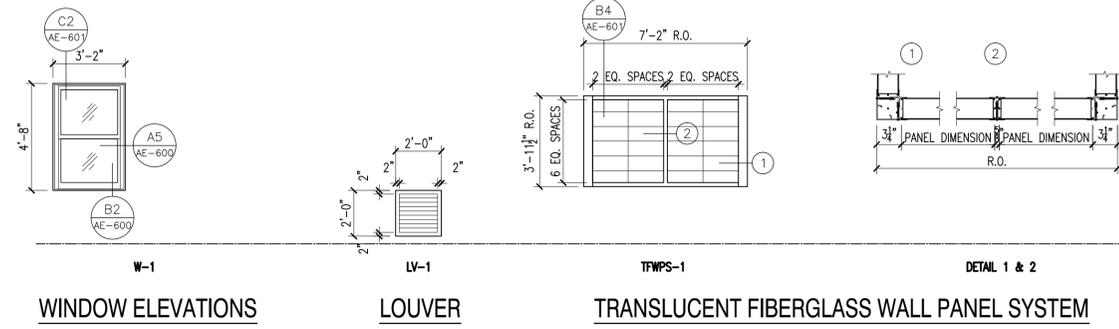




DOOR ELEVATIONS

FRAME ELEVATIONS

TYPICAL DOOR CLEARANCES



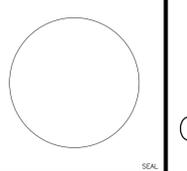
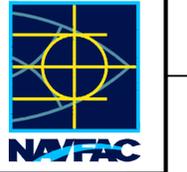
WINDOW ELEVATIONS

LOUVER

TRANSLUCENT FIBERGLASS WALL PANEL SYSTEM

MARK	ROOM NAME	DOORS										FRAME			REMARKS			
		NOMINAL SIZE			TYPE	MAT'L	FIRE RATING	HARDWARE				TYPE	DETAILS					
		WIDTH	HEIGHT	THK				WEATHER STRIPPING	THRESHOLD	LOCK PLATE	CLOSER		PANIC BAR	HEAD		JAMB	SILL	
101A	FORGE SHOP	3'-0"	7'-0"	1 3/4"	A	HM	A	•	•	•	•	•	1	HM	H1	J1	S1	
101B	FORGE SHOP	8'-0"	10'-0"	N/A	A	HM	-	•	•				-	ALUM	H2	J2	S2	OVERHEAD COILING DOOR

SYN	DESCRIPTION	DATE	APPR
2	100% PRE-FINAL DESIGN SUBMISSION	09 MAR 2012	
1	60% DESIGN SUBMISSION	01 DEC 2011	



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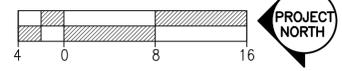
APPROVED:
 FOR COMMANDER NAFAC

DES	RWH	DRW	RS	CHK	XXX

BRANCH MANAGER: XXX
 CHIEF ENG/ARCH: XXX

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 CHARLESTOWN NAVAL SHIPYARD
 CHARLESTOWN, MA
RELOCATION OF FORGE SHOP

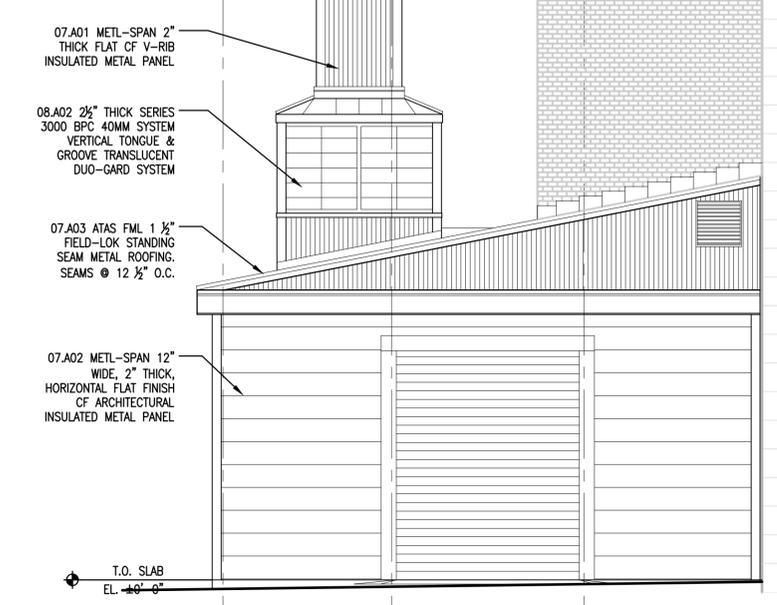
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 EPROJECT NO.:
 CONSTR. CONTR. NO.: **N40085-11-D-0524-0004**
 NAFAC DRAWING NO.: *
 SHEET * OF **18**
AE-401



1 2 3 4 5

1 1.1 1.2 2

2 1.2 1.1 1



07.A01 METL-SPAN 2" THICK FLAT CF V-RIB INSULATED METAL PANEL

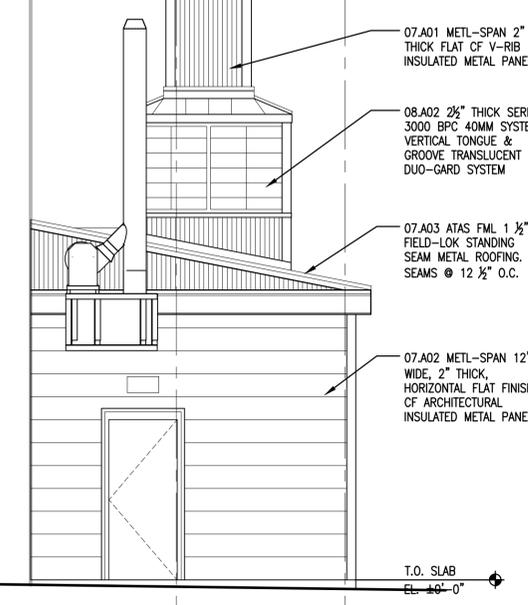
08.A02 2 1/2" THICK SERIES 3000 BPC 40MM SYSTEM VERTICAL TONGUE & GROOVE TRANSLUCENT DUO-GARD SYSTEM

07.A03 ATAS FML 1 1/2" FIELD-LOK STANDING SEAM METAL ROOFING. SEAMS @ 12 1/2" O.C.

07.A02 METL-SPAN 12" WIDE, 2" THICK, HORIZONTAL FLAT FINISH CF ARCHITECTURAL INSULATED METAL PANEL

T.O. SLAB EL. -40'-0"

SOUTH ELEVATION
SCALE: 1/4" = 1'-0"
C3



07.A01 METL-SPAN 2" THICK FLAT CF V-RIB INSULATED METAL PANEL

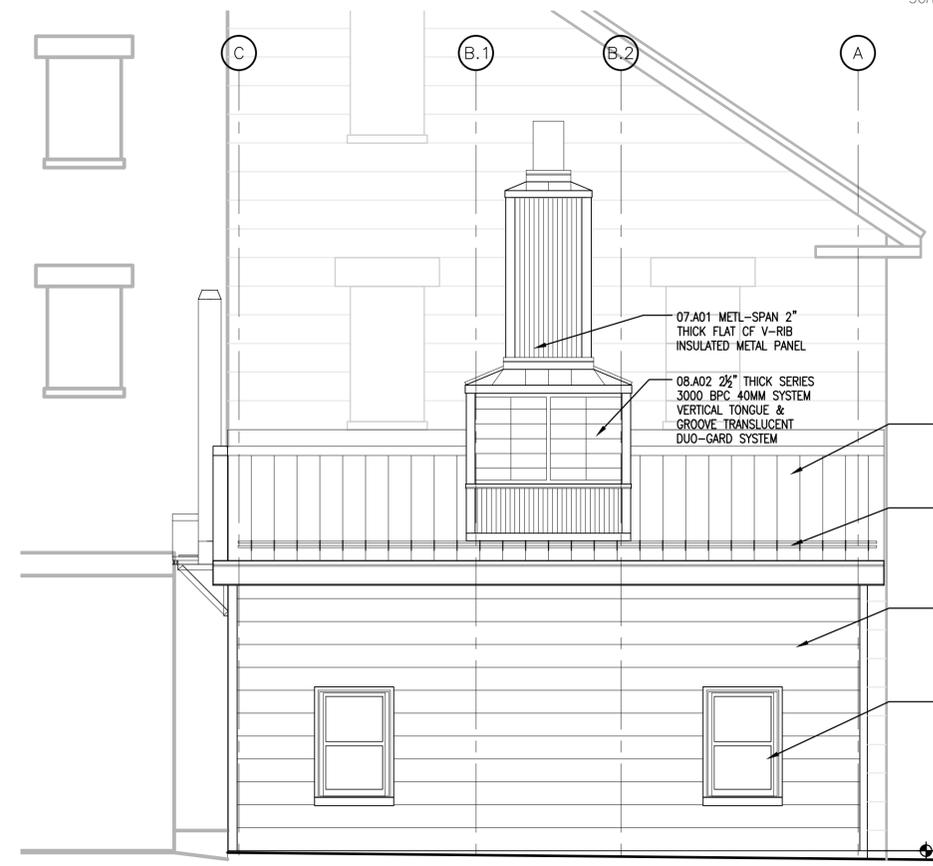
08.A02 2 1/2" THICK SERIES 3000 BPC 40MM SYSTEM VERTICAL TONGUE & GROOVE TRANSLUCENT DUO-GARD SYSTEM

07.A03 ATAS FML 1 1/2" FIELD-LOK STANDING SEAM METAL ROOFING. SEAMS @ 12 1/2" O.C.

07.A02 METL-SPAN 12" WIDE, 2" THICK, HORIZONTAL FLAT FINISH CF ARCHITECTURAL INSULATED METAL PANEL

T.O. SLAB EL. -40'-0"

NORTH ELEVATION
SCALE: 1/4" = 1'-0"
C5



07.A01 METL-SPAN 2" THICK FLAT CF V-RIB INSULATED METAL PANEL

08.A02 2 1/2" THICK SERIES 3000 BPC 40MM SYSTEM VERTICAL TONGUE & GROOVE TRANSLUCENT DUO-GARD SYSTEM

07.A03 ATAS FML 1 1/2" FIELD-LOK STANDING SEAM METAL ROOFING. SEAMS @ 12 1/2" O.C.

07.A04 SNOW GUARD

07.A02 METL-SPAN 12" WIDE, 2" THICK, HORIZONTAL FLAT FINISH CF ARCHITECTURAL INSULATED METAL PANEL

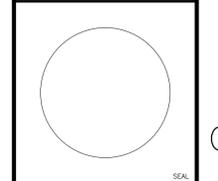
08.A01 WINDOW TYPE W-W/ ALUMINUM SILL, TYP. OF 2

T.O. SLAB EL. -40'-0"

WEST ELEVATION
SCALE: 1/4" = 1'-0"
A3

1 2 3 4 5

APPR					
DATE	01 DEC 2011				
DATE	09 MAR 2012				
DESCRIPTION	60% DESIGN SUBMISSION	1			
SYN	100% PRE-FINAL DESIGN SUBMISSION	2			
	PRELIMINARY NOT FOR CONSTRUCTION				

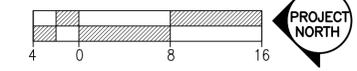


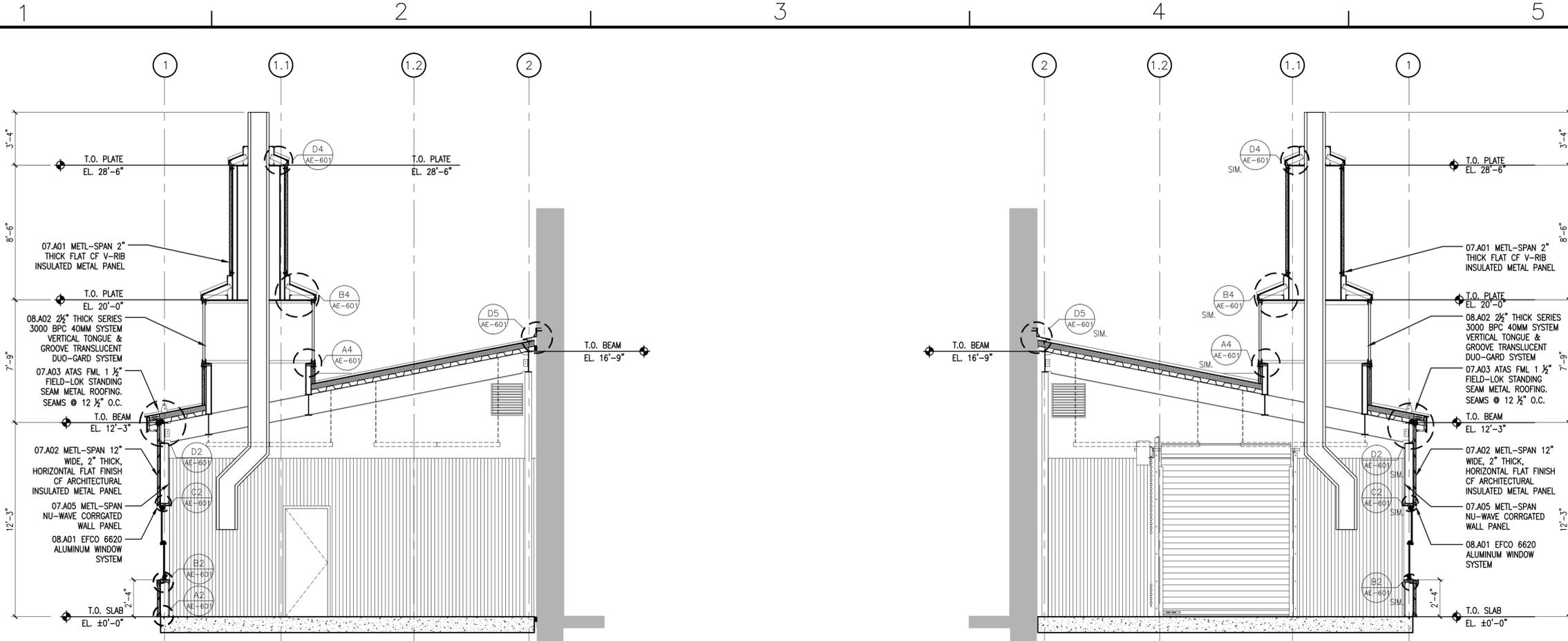
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11 SCHOOL STREET
N. CHILMARK FORD, MA 01963
PH: 978.452.3782

APPROVED				
FOR COMMANDER NAVFAC				
ACTIVITY				
SATISFACTORY TO	DATE			
DES	DRW	RS	CHK	XXX
PM/DM				XXX
BRANCH MANAGER				XXX
CHIEF ENG/ARCH				
FIRE PROTECTION				

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
CHARLESTOWN NAVAL SHIPYARD
RELOCATION OF FORGE SHOP
CHARLESTOWN, MA

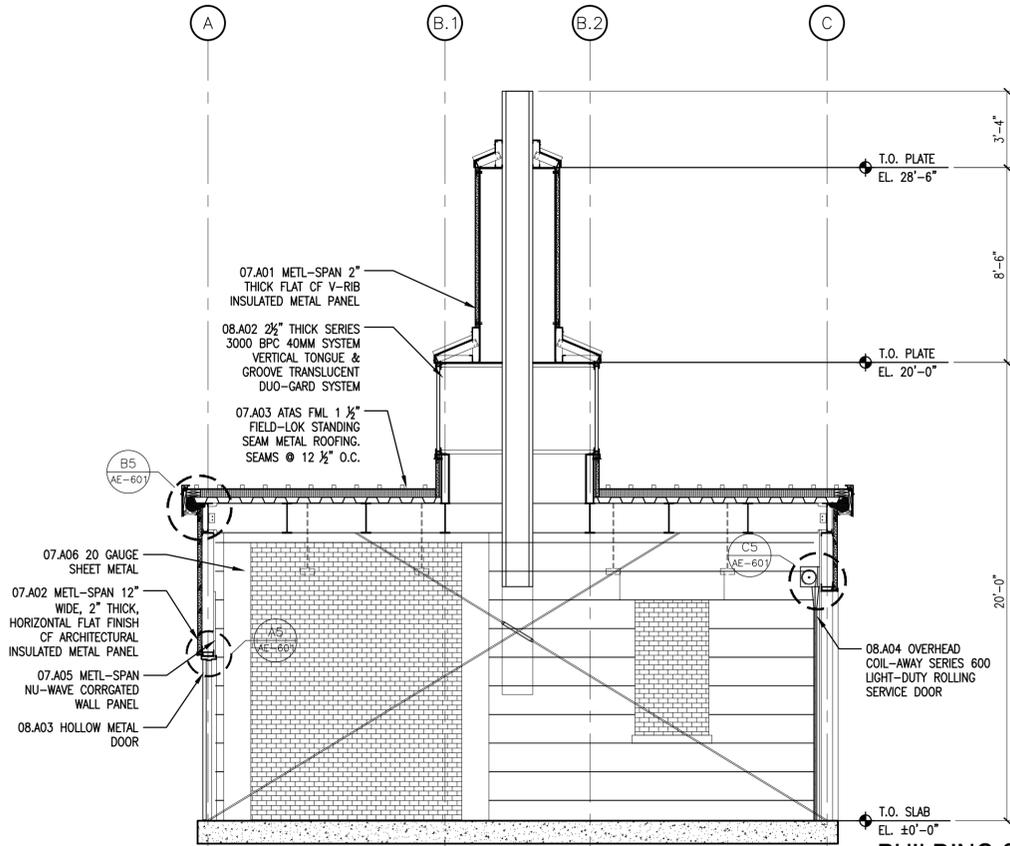
SCALE: 1/4" = 1'-0"
EPROJECT NO.:
CONSTR. CONTR. NO. N40085-11-D-0524-0004
NAVFAC DRAWING NO. *
SHEET * OF 1018
AE-501



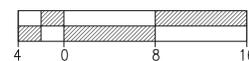


BUILDING SECTION C3
SCALE: 1/4" = 1'-0"

BUILDING SECTION C5
SCALE: 1/4" = 1'-0"



BUILDING SECTION A3
SCALE: 1/4" = 1'-0"

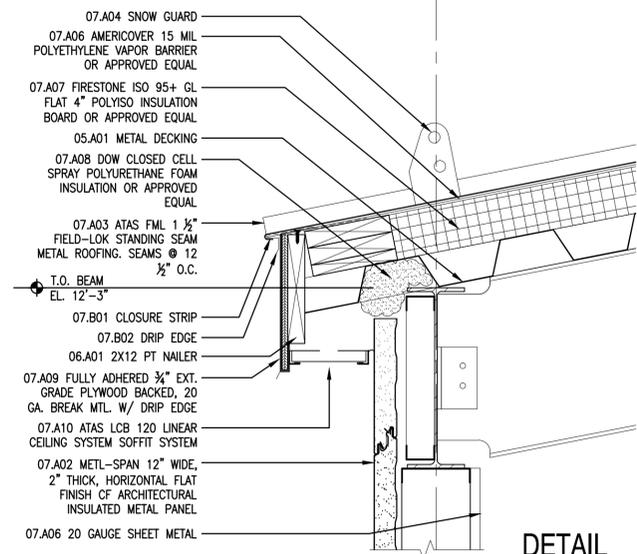


APPROVED:	DATE:
FOR COMMANDER NAVFAC	DATE: 09 MAR 2012
ACTIVITY:	DATE: 01 DEC 2011
SATISFACTORY TO:	DATE:
DES:	DRW: PS
CHK: XXX	
PM/DM:	XXX
BRANCH MANAGER:	XXX
CHIEF ENG/ARCH:	
FIRE PROTECTION:	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC PUBLIC WORKS DEPARTMENT - MAINE CHARLESTOWN NAVAL SHIPYARD CHARLESTOWN, MA	
RELOCATION OF FORGE SHOP SECTIONS	
SCALE:	1/4" = 1'-0"
PROJECT NO.:	
CONSTR. CONTR. NO.:	N40085-11-D-0524-0004
NAVFAC DRAWING NO.:	*
SHEET:	OF 1018
AE-600 <small>DRAWFORM REVISION: 10 MARCH 2009</small>	

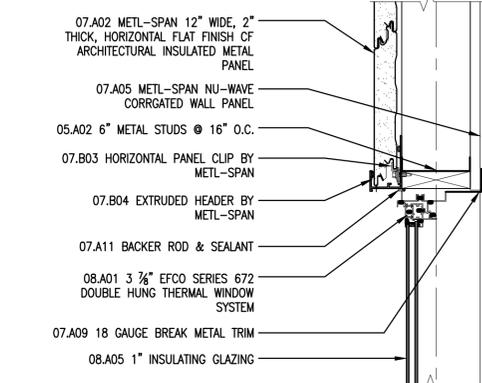
APPROVED:	DATE:
FOR COMMANDER NAVFAC	DATE: 09 MAR 2012
ACTIVITY:	DATE: 01 DEC 2011
SATISFACTORY TO:	DATE:
DES:	DRW: PS
CHK: XXX	
PM/DM:	XXX
BRANCH MANAGER:	XXX
CHIEF ENG/ARCH:	
FIRE PROTECTION:	

PRELIMINARY
NOT FOR CONSTRUCTION

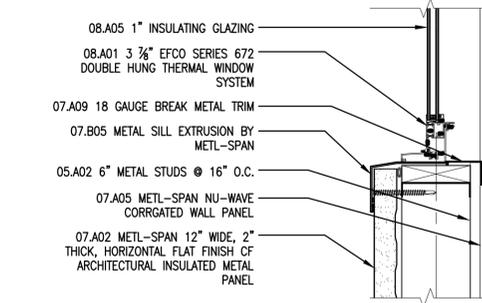
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PH: 978.452.3782



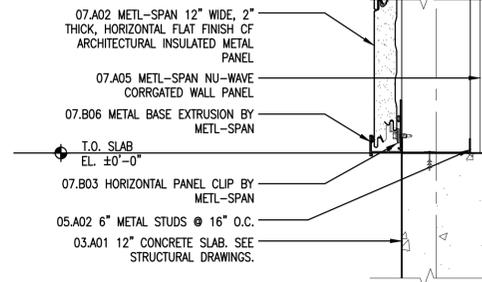
DETAIL
 SCALE: 1-1/2" = 1'-0" **D2**



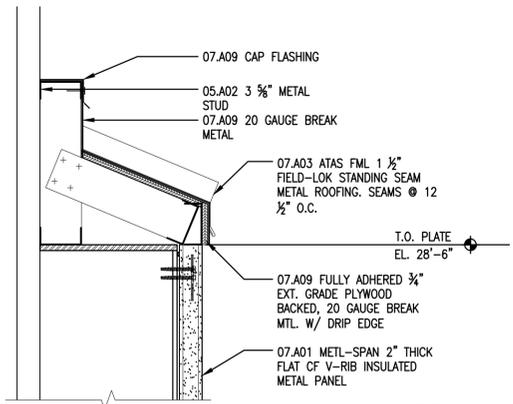
DETAIL
 SCALE: 1-1/2" = 1'-0" **C2**



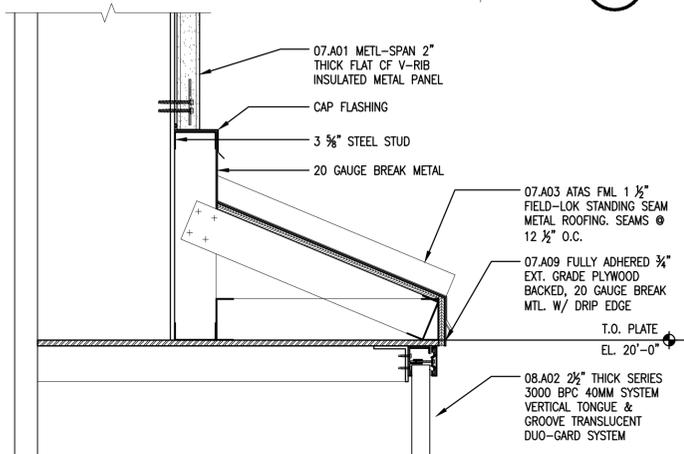
DETAIL
 SCALE: 1-1/2" = 1'-0" **B2**



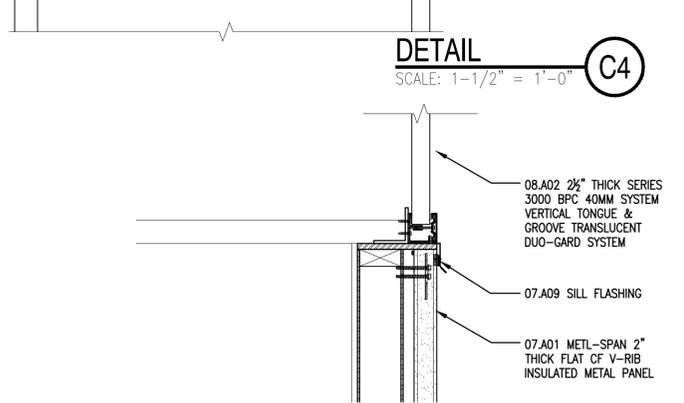
DETAIL
 SCALE: 1-1/2" = 1'-0" **A2**



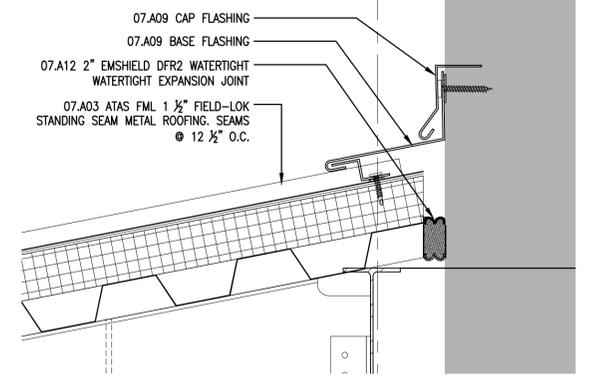
DETAIL
 SCALE: 1-1/2" = 1'-0" **D4**



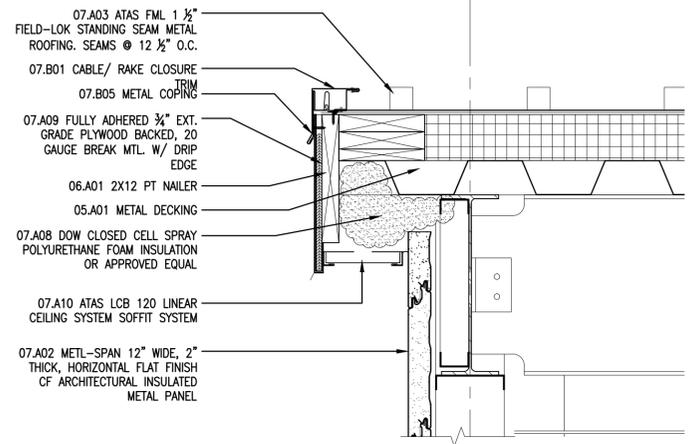
DETAIL
 SCALE: 1-1/2" = 1'-0" **C4**



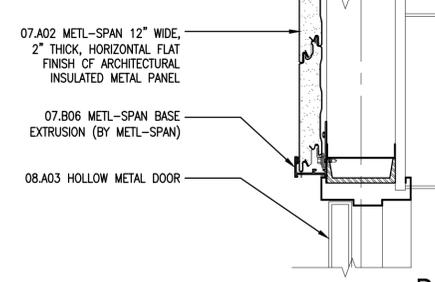
DETAIL
 SCALE: 1-1/2" = 1'-0" **B4**



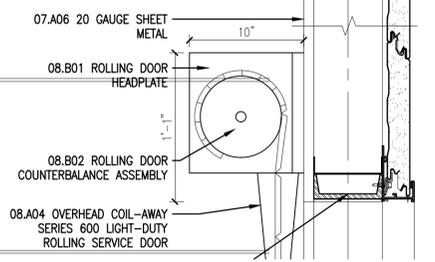
DETAIL
 SCALE: 1-1/2" = 1'-0" **D5**



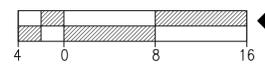
DETAIL
 SCALE: 1-1/2" = 1'-0" **C5**



DETAIL
 SCALE: 1-1/2" = 1'-0" **B5**



DETAIL
 SCALE: 1-1/2" = 1'-0" **A5**



APPROVED	DATE
100% PRE-FINAL DESIGN SUBMISSION	09 MAR 2012
60% DESIGN SUBMISSION	01 DEC 2011
SYN	DESCRIPTION
2	1

PRELIMINARY
 NOT FOR CONSTRUCTION

P&S CONSTRUCTION, INC.
 11 SCHOOL STREET
 N. CHARLESTOWN, MA 01863
 P: 978-452-3782

APPROVED: _____
 FOR COMMANDER NAVFAC

ACTIVITY

SAFACTORY TO DATE

DES	DRW	RES	CHK	XXX

BRANCH MANAGER: _____
 CHIEF ENG/ARCH: _____
 FIRE PROTECTION: _____

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 CHARLESTOWN NAVAL SHIPYARD
 CHARLESTOWN, MA

RELOCATION OF FORGE SHOP

SECTIONS

PROJECT NORTH

SCALE: 1/4" = 1'-0"
 EPROJCT NO.:
 CONSTR. CONTR. NO. N40085-11-D-0524-0004
 NAVFAC DRAWING NO. *
 SHEET * OF 1018
 AE-601
 DRAWFORM REVISION: 10 MARCH 2009

GENERAL NOTES:

DESIGN:

1. BUILDING CODE - 2009 IBC
2. ROOF DEAD AND LIVE LOAD - REFER TO DRAWINGS
3. SNOW LOADS:
 - GROUND SNOW LOAD $P_g = 50 \text{ PSF}$
 - FLAT ROOF SNOW LOAD $P_f = 35 \text{ PSF}$
 - SNOW EXPOSURE FACTOR $C_e = 1.0$
 - SNOW LOAD IMPORTANCE FACTOR $I_s = 1.0$
 - THERMAL FACTOR $C_t = 0.7$
4. WIND LOADS:
 - BASIC WIND SPEED (3 SECOND GUST) $V = 100 \text{ MPH}$
 - WIND IMPORTANCE FACTOR $I_w = 1.0$
 - OVERALL EXPOSURE CATEGORY B
 - WIND DESIGN PRESSURE $P = 12 \text{ PSF}$
5. SEISMIC:
 - SPECTRAL RESPONSE SHORT PERIODS $S_s = 35.91 \%$
 - SPECTRAL RESPONSE 1 & PERIOD $S_1 = 1.50 \%$
 - SEISMIC IMPORTANCE FACTOR $I = 1.0$
 - OCCUPANCY CATEGORY II
 - SEISMIC CATEGORY D
 - SITE CLASS E
 - SEISMIC RESISTING SYSTEM $R = 8$
 - LONGITUDINAL DIRECTION $C_d = 0.1584$
 - LATERAL DIRECTION $C_d = 0.1584$
 - SEISMIC RESPONSE COEFFICIENT $C_s = 0.1584$
 - SPECTRAL RESPONSE PARAMETER SHORT PERIOD $RSD = 0.515$
 - SPECTRAL RESPONSE PARAMETER 1 & PERIOD $RSD1 = 0.184$
 - ANALYSIS PROCEDURE $S1MPLIFIED$
 - BASE SHEAR 1560 LBS

GENERAL:

- A. CONSTRUCTION SHALL FOLLOW I.B.C. 2009.
- B. THE CONTRACTOR SHALL REVIEW ARCHITECTURAL AND MECHANICAL DRAWINGS FOR DIMENSIONS, DETAILS, OPENINGS, AND PENETRATION NOT SHOWN ON STRUCTURAL DRAWINGS.
- C. THE CONTRACTOR SHALL FIELD VERIFY ALL BUILDING DIMENSIONS BEFORE PREPARING SHOP DRAWINGS, ORDERING OR FABRICATING ANY MATERIALS. ALL EXPANSION JOINTS AND CONSTRUCTION SHALL ALIGN WITH AND MATCH EXISTING CONSTRUCTION. CONFIRM WITH ARCHITECTURAL PLANS. REPORT ANY DISCREPANCIES TO ENGINEER PRIOR TO PROCEEDING WITH WORK.
- D. CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE.
- E. CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE BRACING OF STRUCTURAL MEMBERS, WALLS, AND NON-STRUCTURAL ITEMS DURING CONSTRUCTION.
- F. STRUCTURAL COMPONENTS AND SYSTEMS SHALL BE ERECTED AND INSPECTED FROM SHOP DRAWINGS, STAMPED APPROVE BY THE ENGINEER OF RECORD.
- G. PRIOR TO EXCAVATING OR DEMOLISHING, NOTIFY THE STATE ONE CALL SYSTEM TO ASSURE THAT UNDERGROUND FACILITIES ARE IDENTIFIED. STATE LAW REQUIRES NO LESS THAN THREE NOR MORE THAN TEN WORKING DAYS NOTICE BEFORE YOU DIG. THE PHONE NUMBER OF THE STATE ONE CALL SYSTEM IS 811.
- H. ALL REFERENCED STANDARDS REFER TO LATEST EDITION.

CONCRETE:

- A. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH AND DENSITY, IN ACCORDANCE WITH THE FOLLOWING:

	STRENGTH, PSI	DENSITY, PCF
INTERIOR SLABS	4000	145
EXTERIOR SLABS, CURBS, SIDEWALKS	4000	145
ALL OTHER CONCRETE (UNO.)	3500	145
- B. SLUMP OF CONCRETE SHALL NOT EXCEED 4" UNLESS A HIGH RANGE WATER-REDUCING ADMIXTURE IS USED. THE SLUMP OF CONCRETE PRIOR TO ADDITION OF A HIGH RANGE WATER-REDUCING ADMIXTURE SHALL NOT EXCEED 4". THE SLUMP OF CONCRETE CONTAINING A HIGH RANGE WATER-REDUCING ADMIXTURE SHALL NOT EXCEED 6".
- C. CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED. AIR CONTENT SHALL BE BETWEEN 4 AND 6 PERCENT.
- D. THE COARSE AGGREGATE SIZE SHALL BE 3/4" OR LARGER.
- E. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR REVIEW WELL IN ADVANCE OF CONCRETE PLACEMENT. CONCRETE MIX DESIGN SHALL INCLUDE ALL STRENGTH DATA NECESSARY TO SHOW COMPLIANCE WITH THE PROJECT SPECIFICATIONS FOR EITHER THE TRIAL BATCH OR FIELD EXPERIENCE METHOD AND SHALL BE CERTIFIED BY AN ENGINEER REGISTERED IN THE STATE WHERE THE STRUCTURE IS LOCATED.
- F. REINFORCING SHALL CONFORM TO ASTM A615, GR60, UNLESS NOTED OTHERWISE.
- G. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A188.
- H. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI DETAILING MANUAL 1992.
- I. ALL REINFORCING SHALL BE SUPPORTED IN FORMS, SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER, IN ACCORDANCE WITH CRSI "MANUAL OF STANDARD PRACTICE" (1997).

J. MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE:

UNFORMED SURFACE IN CONTACT WITH THE GROUND	3 IN.
FORMED SURFACES EXPOSED TO EARTH OR WEATHER:	
#6 BARS AND LARGER	2 IN.
#5 BARS AND SMALLER	1/2 IN.
FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER:	
BEAMS, GIRDERS AND COLUMNS	1 1/2 IN.
SLABS, WALLS AND JOISTS	
#1 BARS AND SMALLER	3/4 IN.
#4 AND #5 BARS	1 1/2 IN.

- K. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC. BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.
- L. CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED IN ACCORDANCE WITH ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS." ANY ADMIXTURES MUST BE APPROVED BY THE STRUCTURAL ENGINEER.
- M. EXTERIOR CONCRETE FLAT WORK EXPOSED TO FREEZE /THAW (INCLUDING G.C. SLABS) SHALL BE AIR ENTRAINED. TOTAL AIR CONTENT PER SPECIFICATION.
- N. DO NOT CAST CONCRETE IN WATER OR ON FROZEN GROUND.

STRUCTURAL STEEL:

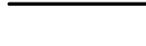
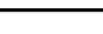
A. STEEL SHALL CONFORM TO THE FOLLOWING GRADES:

WIDE FLANGE SHAPES	A992 OR A572 GR 50 (Fy = 50)
CHANNELS, ANGLES, PLATES, ETC. (UNO)	A36 (Fy = 36)
STRUCTURAL TUBE	A500 (Fy = 46)
STEEL PIPE	A53 (Fy = 35)
ANCHOR RODS	F1554, A36 OR A307
BOLTS	A325
WELDING ELECTRODES	E70XX

- B. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE (1989), EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
- C. THE STEEL STRUCTURE IS A NON-SELF-SUPPORTING STEEL FRAME AND IS DEPENDENT UPON DIAPHRAGM ACTION OF THE METAL ROOF DECK AND ATTACHMENT TO THE MASONRY WALLS FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES. PROVIDE ALL TEMPORARY SUPPORTS REQUIRED FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES UNTIL THESE ELEMENTS ARE COMPLETE AND ARE CAPABLE OF PROVIDING THIS SUPPORT.
- D. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS. CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. CONNECTION DETAILS INDICATED ON THE DRAWINGS SHALL BE INCORPORATED INTO FABRICATOR'S CONNECTION DESIGN. SEE SPECIFICATIONS. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE FABRICATOR'S ENGINEER WITH THE ENGINEER'S SEAL FOR THE STATE WHERE THE STRUCTURE IS LOCATED. ENGINEER'S SEAL MAY BE QUALIFIED "FOR DESIGN OF CONNECTIONS ONLY."
- E. SPICING OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT.
- F. UNLESS NOTED OTHERWISE, BEAMS SHALL BEAR 8" MINIMUM ON CONCRETE OR MASONRY. UNLESS NOTED OTHERWISE, ANCHOR BEAMS TO MASONRY WITH TWO (2) 3/4" DIAMETER ANCHOR BOLTS WITH 4" HOOK AND 1'-4" EMBEDMENT.
- G. STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT OF RUST-INHIBITIVE PAINT.
- H. THE STEEL FABRICATOR SHALL DESIGN ALL STEEL TO STEEL CONNECTIONS NOT SHOWN ON THE DRAWINGS.

ABBREVIATIONS

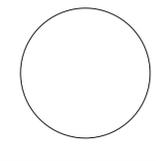
•	AT	INC.	INCHES
AFF.	ABOVE FINISH FLOOR	INT.	INTERIOR
ALT.	ALTERNATE	JST.	JOIST
BOT.	BOTTOM	L.L.V.	LONG LEG VERTICAL
BRG.	BEARING	L.F.	LINEAR FOOT
BM.	BEAM	MAX.	MAXIMUM
¢	CENTERLINE	M.O.	MASONRY OPENING
CLR.	CLEAR	N.T.S.	NOT TO SCALE
C.M.U.	CONCRETE MASONRY UNIT	O.C.	ON CENTER
CONST.	CONSTRUCTION	OF.	OUTSIDE FACE
CONT.	CONTINUOUS	OP'G.	OPENING
C.J.	CONTROL JOINT	PAF8	POWER ACTUATED FASTENERS
C.S.J.	CONSTRUCTION JOINT	FEM	FIRE-ENGINEERED BUILDING MANUFACTURER
CONC.	CONCRETE	E	PLATE
COL.	COLUMN	P16	PIER DESIGNATION PLATE
CRS.	COURSE	REINF.	REINFORCEMENT
DIA. / ¢	DIAMETER	REQ'D.	REQUIRED
DN.	DOWN	SH.	SIMILAR
EA.	EACH	STL.	STEEL
EF.	EACH FACE	STRUCT.	STRUCTURAL
EJM.	EXPANSION JOINT MATERIAL	T/BM.	TOP OF BEAM
EQ.	EQUAL	T.O.S.	TOP OF STEEL
E.W.	EACH WAY	T/COL.	TOP OF COLUMN
EL. OR ELEV.	ELEVATION	T.O.F.	TOP OF FOOTING
EMBED.	EMBEDMENT	T.O.F.D.	TOP OF FLOOR DRAIN
EQUIP.	EQUIPMENT	T.O.P.	TOP OF PIER
EXIST.	EXISTING	THK.	THICK
EXT.	EXTERIOR	THICKNESS	TYPICAL
FTG.	FOOTING	UNO.	UNLESS NOTED OTHERWISE
FT.	FEET	VERT.	VERTICAL
FDN.	FOUNDATION	W.C.J.	WALL CONSTRUCTION JOINT
F.S.	FOOTING STEP	W.	WITH
FIN. FLR / FF.	FINISH FLOOR	W/O	WITHOUT
F.G. / FIN. GR.	FINISH GRADE	(100'-0")	TOP OF FOOTING ELEVATION
F325	FOOTING DESIGNATION	(100'-0")	TOP OF PIER ELEVATION
G.A.	GAGE	(100'-0")	TOP OF STEEL ELEVATION
GALV.	GALVANIZED	(100'-0")	TOP OF SHELF ELEVATION
G.T.	GIRDER TRUSS		
H.B.	HORIZONTAL BRIDGING		
HORIZ.	HORIZONTAL		

CONCRETE MASONRY UNIT		SECTION CUT / MARK	
BRICK UNIT			
CONCRETE		ENLARGED PLAN / DETAIL REFERENCE	
EARTH			
STEEL		PROPOSED CONSTRUCTION	
RECESSED SLAB			
GROUT		EXISTING CONSTRUCTION	
GRAVEL			
WOOD		REVISION CLOUD WITH REVISION DELTA TAG	
METAL STUDS			

Contact Dig Safe®

Phone:
811

Mailing Address:
Dig Safe System, Inc.
331 Montvale Ave
Woburn, MA 01801

	
P&S CONSTRUCTION, INC. <small>11 SCHOOL STREET N. CHELSEA, MA 01861 978-243-0200</small>	
<small>APPROVED</small> FOR COMMANDER NAVFAC	
<small>01-03-12</small> SATISFACTORY TO DATE	
<small>DES NCT DRW NCT CHK NCT</small>	
<small>PMOM</small>	
<small>BRANCH MANAGER</small>	
<small>CHIEF ENGINEER</small>	
<small>FIRE PROTECTION</small>	
<small>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC NAVAL SHIPYARD - PORTSMOUTH, NH</small>	<small>CHARLESTOWN, MA</small>
RELOCATION OF FORGE SHOP	
GENERAL NOTES	
<small>SCALE: NOTED</small>	
<small>EPROJECT NO.</small>	
<small>CONSTR. CONTRACT NO.</small>	
<small>NAVFAC DWG SHEET NO.</small>	
<small>SHEET 1 OF 3</small>	
S-1	

4'-0" SQ. PILE CAP.
1'-0" THICK
REINFORCED WITH #6
BARS @ 12" O.C. E.W.

12" PERIMETER
CONCRETE GRADE
BEAM REINFORCED
WITH #5 BARS @ 12" O.C.
E.W. EACH FACE.

12" CONCRETE STRUCTURAL
SLAB REINFORCED WITH #5
BARS @ 12" O.C. E.W. TOP AND
BOTTOM

HELICAL PILE NUMBER
SPACING AND DEPTH TO BE
DETERMINED BY HELICAL PILE
ENGINEER. FINAL FOUNDATION,
SLAB AND BELOW GRADE
STRUCTURES FINAL DESIGN
BASED ON APPROVED
HELICAL PILE DESIGN CRITERIA

FOUNDATION DESIGN IS
SCHEMATIC AND SHALL BE
COMPLETED UPON
RECEIPT OF DIRECTION
FROM THE NAVY FOR
SUBGRADE REMEDIATION &
FOUNDATION SYSTEM TYPE.

H86 5x5x3/8" COL. w/
B.P. 3/4" x 11" SQUARE w/
(4) 3/4" A307 ANCHOR
BOLTS w/ NUT AND
WASHER 12" EMBED.

15 B 22
PAINTED METAL ROOF DECK

3/4" ROD X-BRACE
w/ CLEVIS AND
TURNBUCKLE

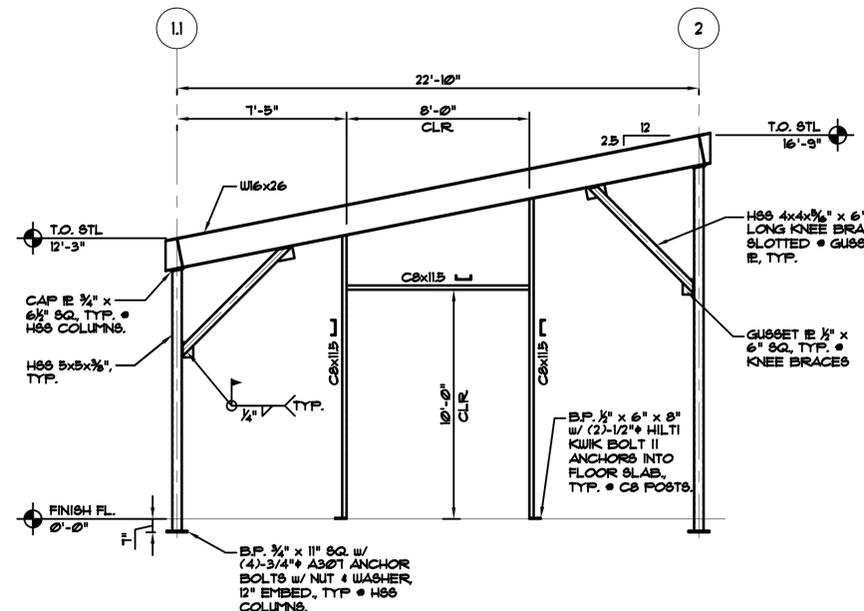
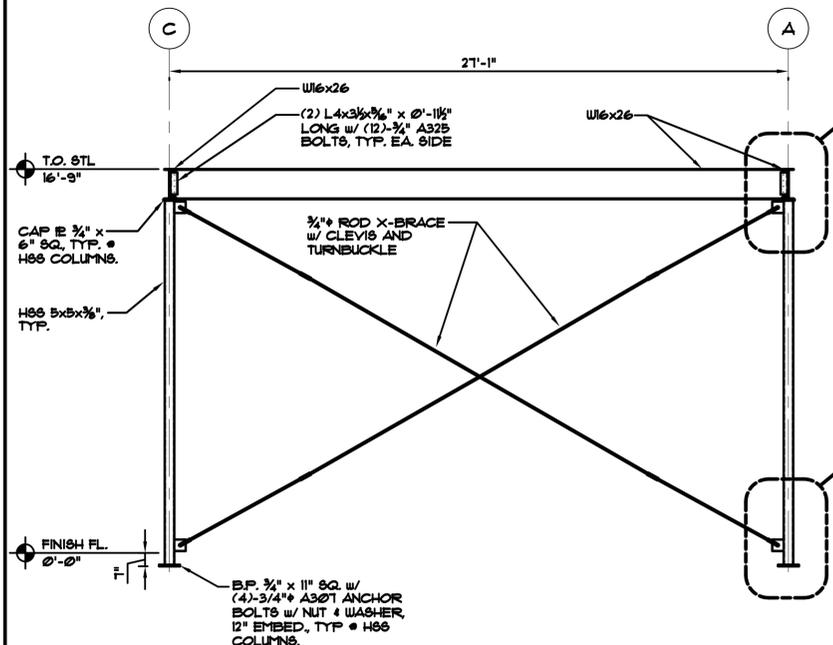
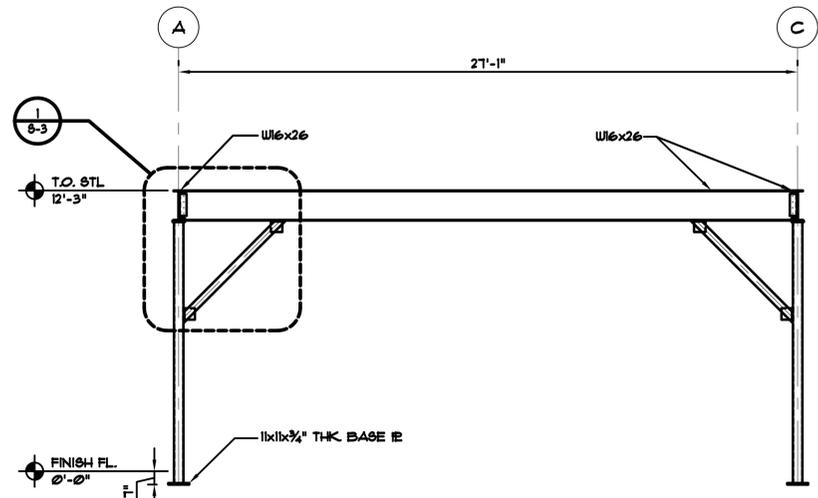
H86 4x4x3/8" KNEE BRACE
x 6'-0" LONG.
TYPICAL (6) LOCATIONS.

FOUNDATION PLAN

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

ROOF FRAMING PLAN

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



A ELEVATION A: WEST ELEVATION

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

B ELEVATION B: EAST ELEVATION

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

C ELEVATION C: SOUTH ELEVATION

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

APPROVED

FOR COMMANDER NAVFAC

91-03-12

SATISFACTORY TO DATE

DES NCT DRW NCT CHK NCT

PMOM

BRANCH MANAGER

CHIEF ENGINEER

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC

NAVAL SHIPYARD - PORTSMOUTH, NH

CHARLESTOWN, MA

RELOCATION OF FORGE SHOP

FOUNDATION & ROOF FRAMING PLANS

SCALE: NOTED

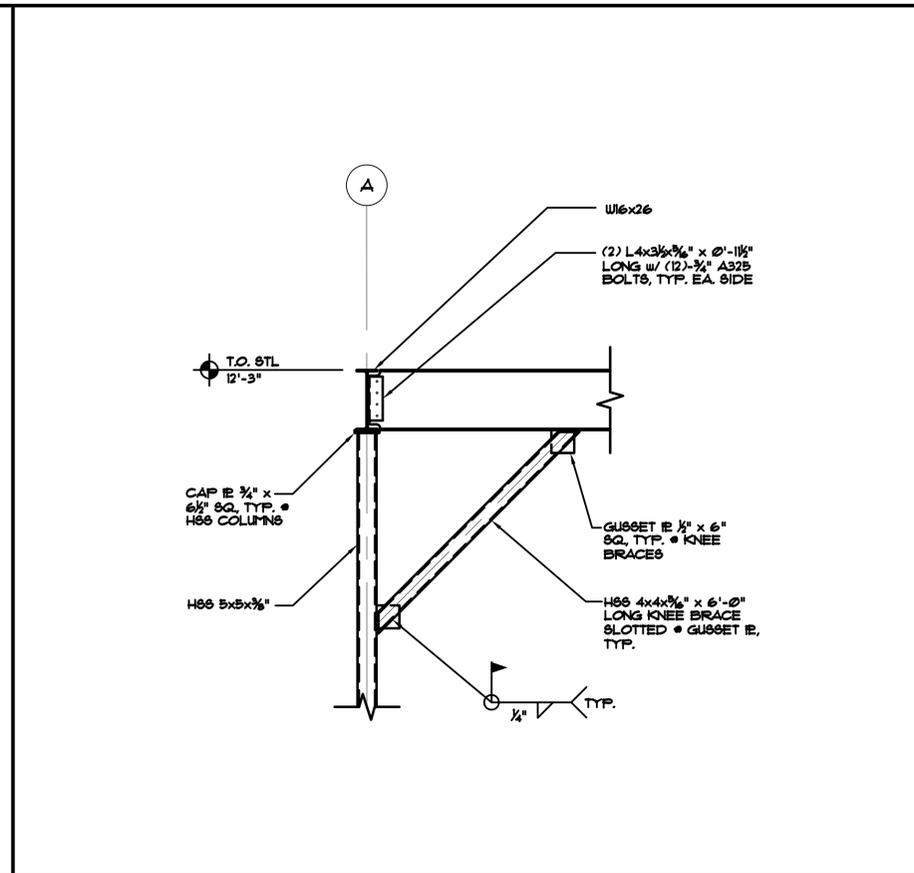
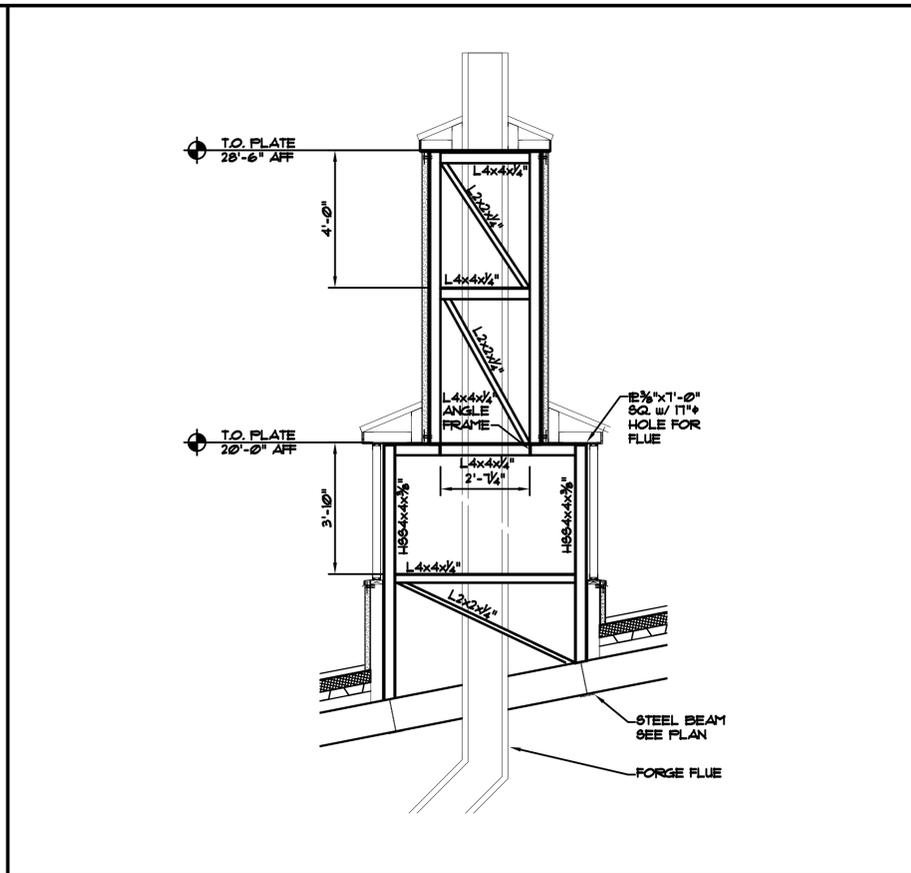
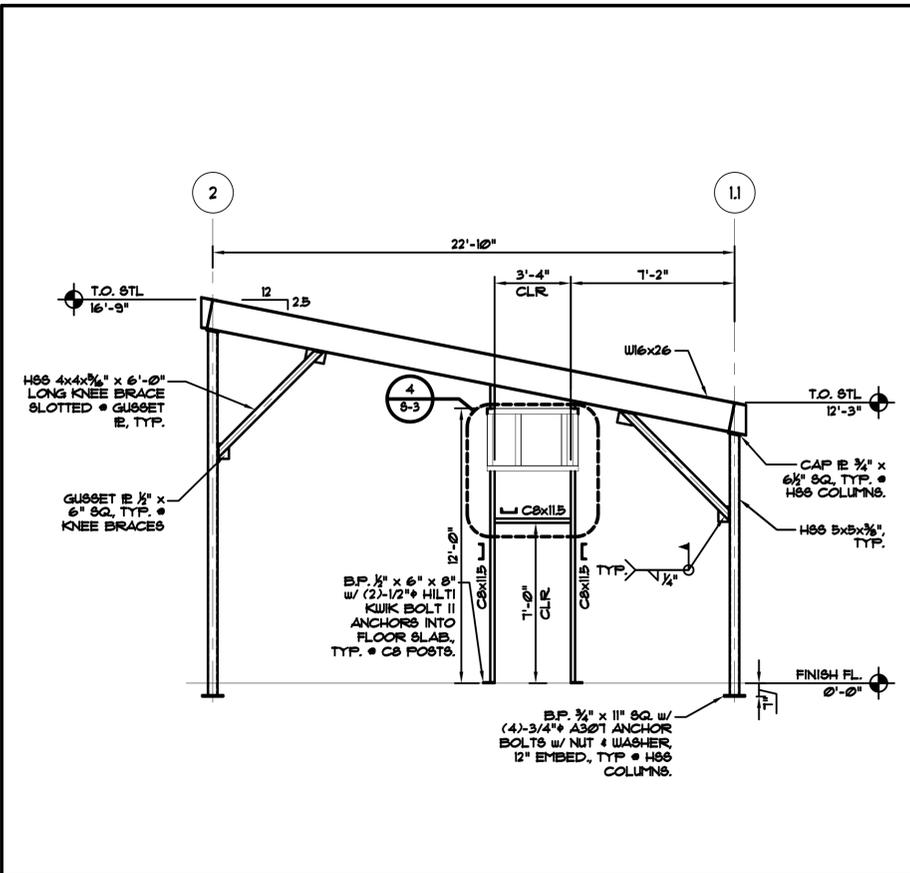
PROJECT NO.

CONSTR. CONTRACT NO.

NAVFAC DWG SHEET NO.

SHEET 2 OF 3

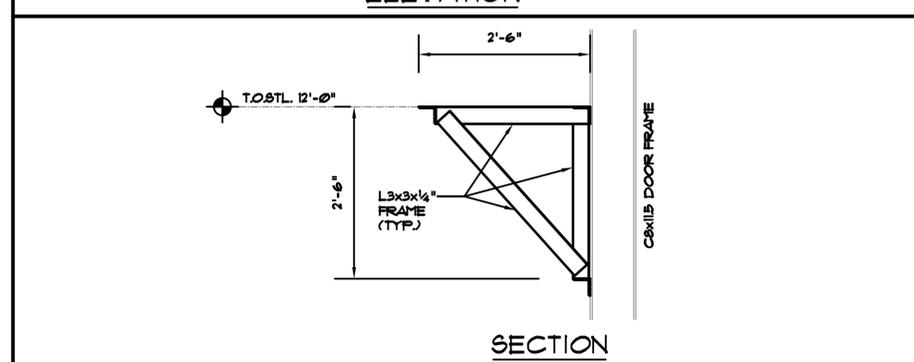
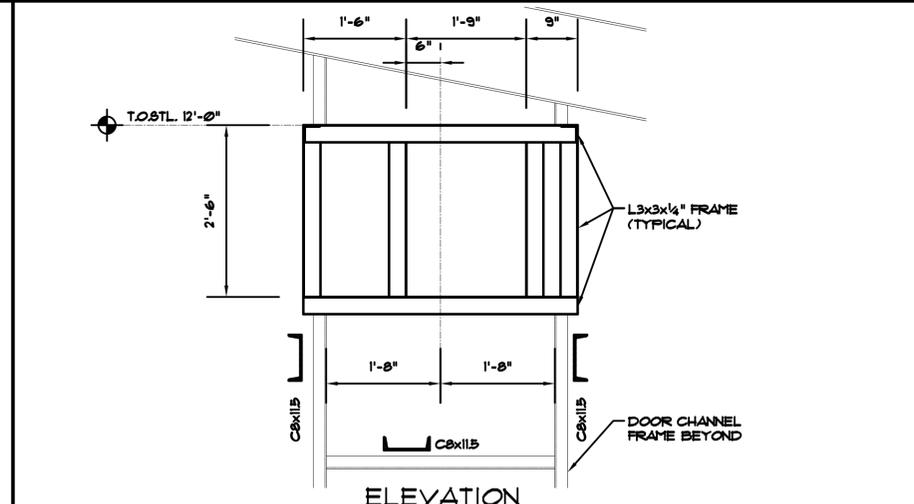
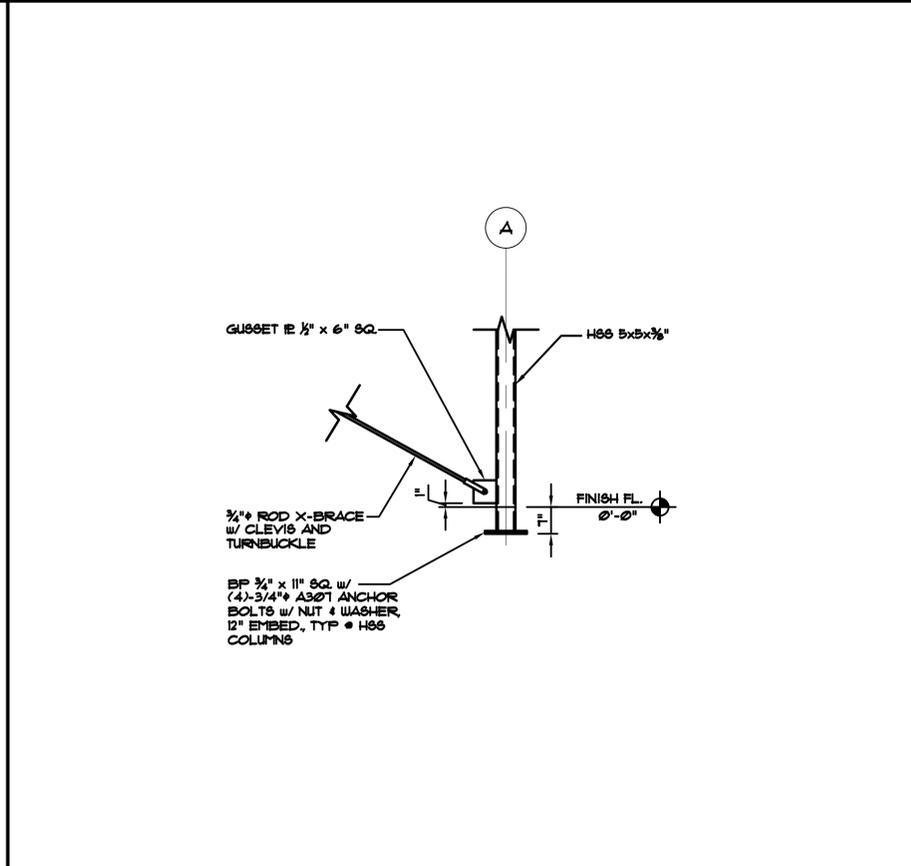
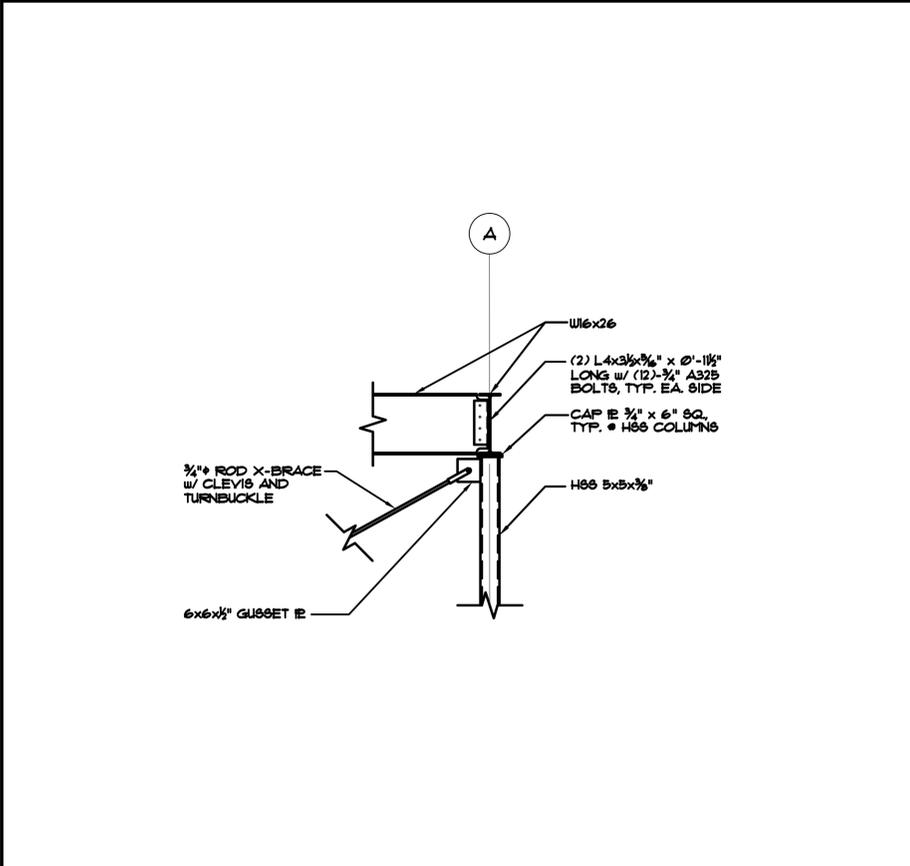
S-2



D ELEVATION D: NORTH ELEVATION
 5-3 SCALE: 1/4" = 1'-0"

E SECTION E: FLUE STRUCTURE
 5-3 SCALE: 3/8" = 1'-0"

1 DETAIL 1: KNEE BRACE
 5-3 SCALE: 1/2" = 1'-0"

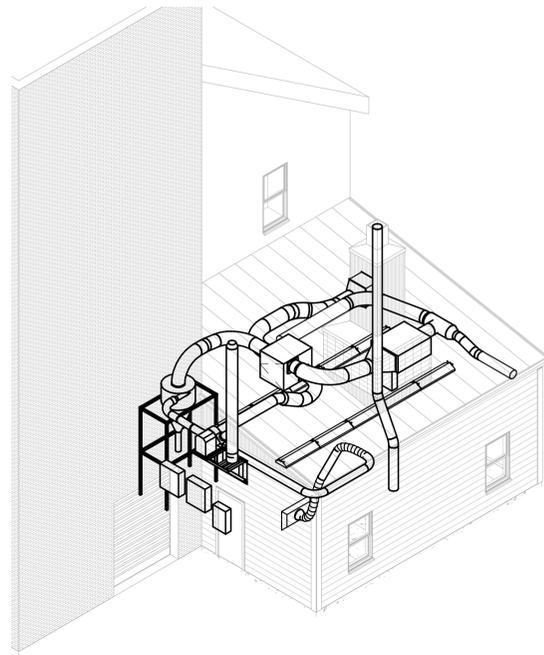


2 DETAIL 2: TOP OF X-BRACE
 5-3 SCALE: 1/2" = 1'-0"

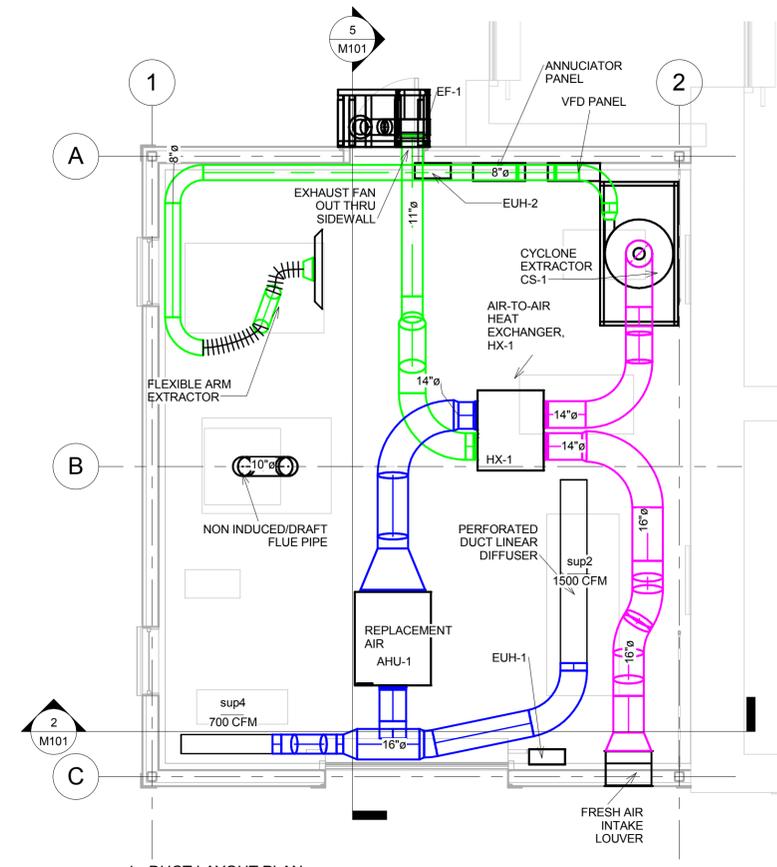
3 DETAIL 3: BOTTOM OF X-BRACE
 5-3 SCALE: 1/2" = 1'-0"

4 DETAIL 4: FORGE FLUE SUPPORT FRAME
 5-3 SCALE: 3/4" = 1'-0"

APPROVED	
FOR COMMANDER NAVFAC	
SATISFACTORY TO DATE	01-03-12
DES. NCT	DRW. NCT
PM/DM	
BRANCH MANAGER	
CHIEF ENGINEER	
FIRE PROTECTION	
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - ANNE	NAVAL SHIPYARD - PORTSMOUTH, NH
	CHARLESTOWN, MA
RELOCATION OF FORGE SHOP	
FOUNDATION & ROOF FRAMING PLANS	
SCALE: NOTED	
PROJECT NO.	
CONSTR. CONTRACT NO.	
NAVFAC DWG SHEET NO.	
SHEET	3 OF 3
S-3	

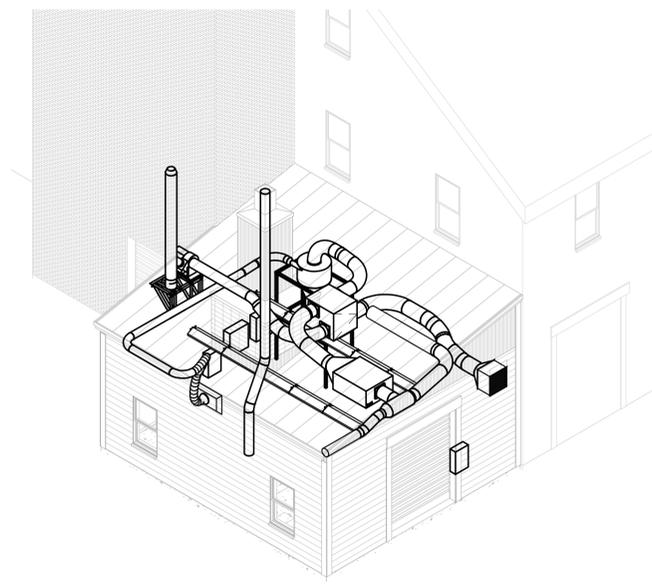


3 3D FROM NORTHWEST

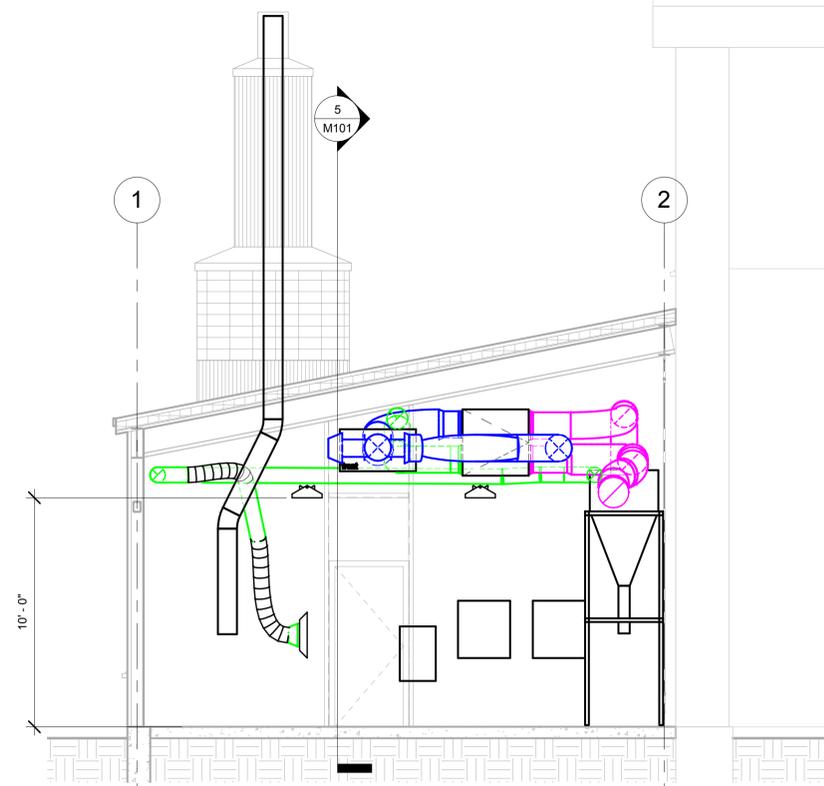


1 1 - DUCT LAYOUT PLAN
1/4" = 1'-0"

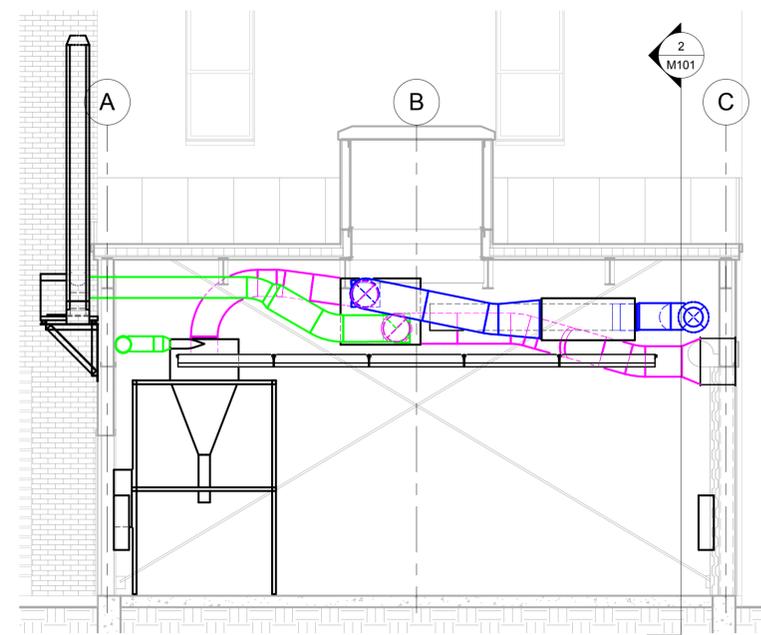
- Controls
- Filter
1. Provide differential pressure sensors, with gauge readouts across the filter.
 2. Gauge to trigger an alarm when the pressure drop/gain across the filter exceed the manufacture recommended value
- Replacement Air Fan Motor
1. Provide an operating light on replacement air system fan motor.
 2. Provide a static pressure sensor at the outlet of the replacement air fan with a gauge readout. Provide an alarm when the pressure is lower than the recommended range (Alarm set point to be determined by baseline testing).
- Exhaust Fan
1. Provide a static pressure sensor at the exhaust fan inlet with gauge readout. Provide an alarm when the pressure is lower than the recommended range (Alarm set point to be determined by baseline testing).
 2. Provide an operating light on replacement exhaust fan motor. Provide an audible and visual alarm in the forge area for the exhaust fan malfunction.
- Annunciator Panel
1. Provide an annunciator panel. Location to be determined by the owner.
 2. Locate gauges on an annunciator panel.
- Room Differential pressure
- Place room differential pressure sensors away from doors, windows and replacement air discharge.
- Annunciator Panel
1. Panel to have all gauges.
 2. Mount fan motor operating lights.
 3. Mount interlock ON/OFF switch on the panel.
- Operational Considerations
1. Provide access to the fan and motor to measure voltage, amperage and fan speed.
 2. Testing to be done in accordance with Chapter 9 Industrial Ventilation.
 3. Provide cleanout doors in the exhaust ductwork. Mount cleanout doors on top half of horizontal runs near elbows, junctions and vertical runs.
 4. Fans inlet and outlet will have vibration isolating couplings.
 5. Fans shall have vibration isolation bases.



4 3D FROM SOUTHWEST

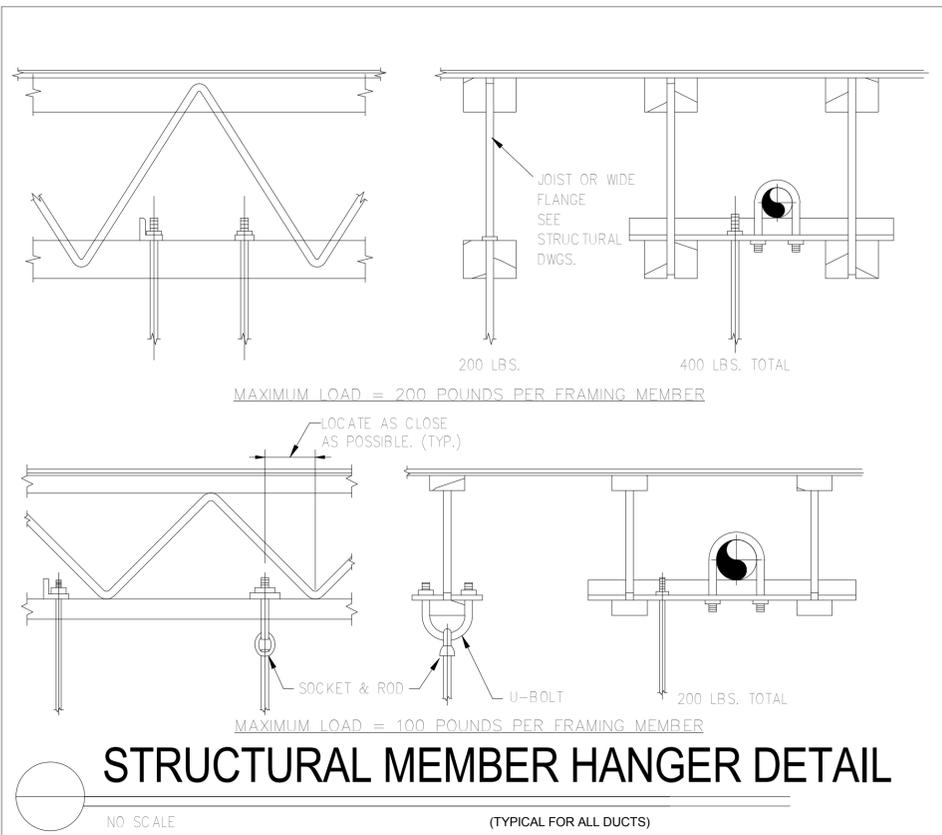


2 Section 1
1/4" = 1'-0"



5 Section 4
1/4" = 1'-0"

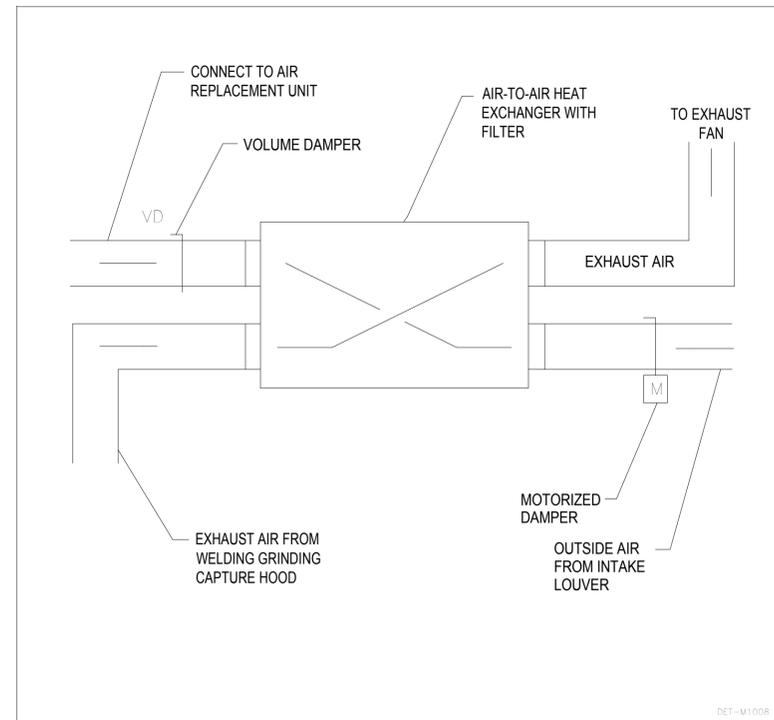
APPROVED	REV#
P&S CONSTRUCTION, INC. <small>11 SCHOOL STREET N. CHARLESTOWN, MA 01863 TEL: 978-452-3782</small>	
APPROVED	
FOR COMMANDER NAVFAC	
SATISFACTORY TO	DATE
DES RWH DRW RS CHK XXX	
PHOTM	XXX
BRANCH/MANAGER	XXX
CHIEF ENGINEER	XXX
FIRE PROTECTION	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC <small>NAVALSHIPYARD - PORTSMOUTH, NH CHARLESTOWN, MA</small>	
RELOCATION OF FORGE SHOP PLAN AND SECTIONS	
SCALE: 1/4" = 1'-0"	
EPROJECT NO.	
CONSTR. CONTRACT NO.	
NAVFAC DWG SHEET NO.	
SHEET	OF
M101	



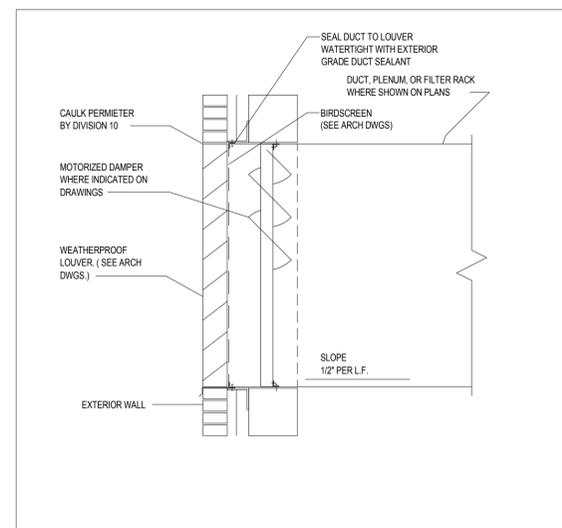
STRUCTURAL MEMBER HANGER DETAIL

NO SCALE

(TYPICAL FOR ALL DUCTS)



2 AIR-TO-AIR HEAT RECOVERY SYSTEM SCHEMATIC



3 WATERPROOF LOUVER DETAIL

MECHANICAL EQUIPMENT SCHEDULE

Unit Heater

TAG	Manufacturer	Model	CFM	kW	Voltage	Remarks
EUH-1	Reznor	Size 5	300	3.75	208/1/60	1,2
EUH-2	Reznor	Size 5	300	3.75	208/1/60	1,2

- Totally enclosed factory lubricated motor
- Built in thermostat

Cyclone Separator

TAG	Manufacturer	Model	CFM	Remarks
CS-1	Sterling Cyclone	7	1069	1

- Provide cyclone with manufacturer standard stand.

Air to Air Heat Exchanger

TAG	Manufacturer	Model	CFM	Filter	Remarks
HX-1	RenewAire	CA2X	1000	MERV 8	1

- 2" nominal pleated, disposable filter

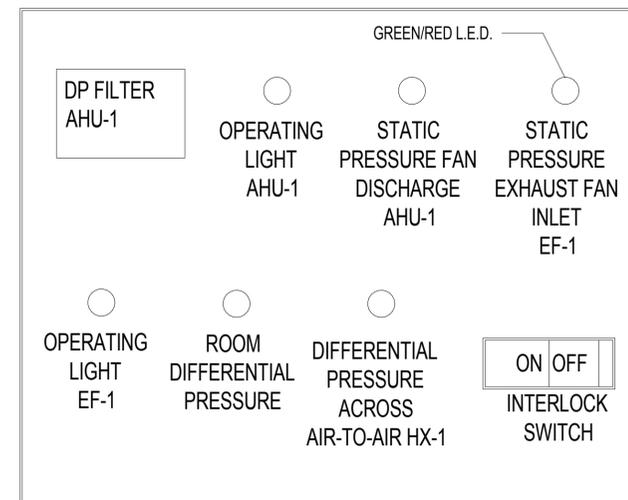
Replacement Air Unit

TAG	Manufacturer	Model	Fan			Electric Heater				
			CFM	BHP	Motor HP	Voltage	Kw	Voltage	Filter	Remarks
AHU-1	Carrier	6	1500	0.3	0.75	460/3/60	29	480/3/60	MERV 8	1, 2

- 2" nominal pleated disposable filter.
- High efficiency motor

Exhaust Fan

TAG	Manufacturer	Model	CFM	Motor HP	Voltage	Remarks
EF-1	Greenheck	SWB-208	1000	1.5	480/3/60	



1 ANNUNCIATOR PANEL SCHEMATIC

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DES	RAW	DRW	RS	CHK	XXX

BRANCH MANAGER

CHIEF ENGINEER

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, NH
 CHARLESTOWN, MA

RELOCATION OF FORGE SHOP

DETAILS

SCALE: As indicated

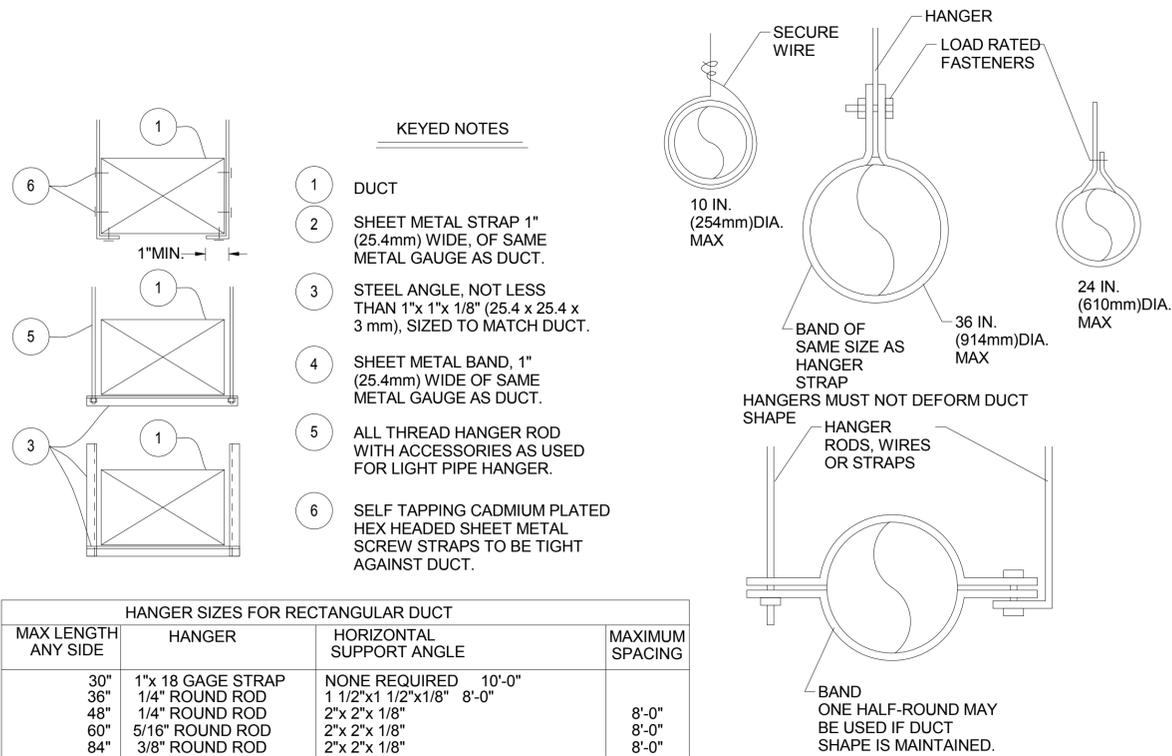
PROJECT NO.

CONSTR. CONTRACT NO.

NAVFAC DWG SHEET NO.

SHEET OF

M102



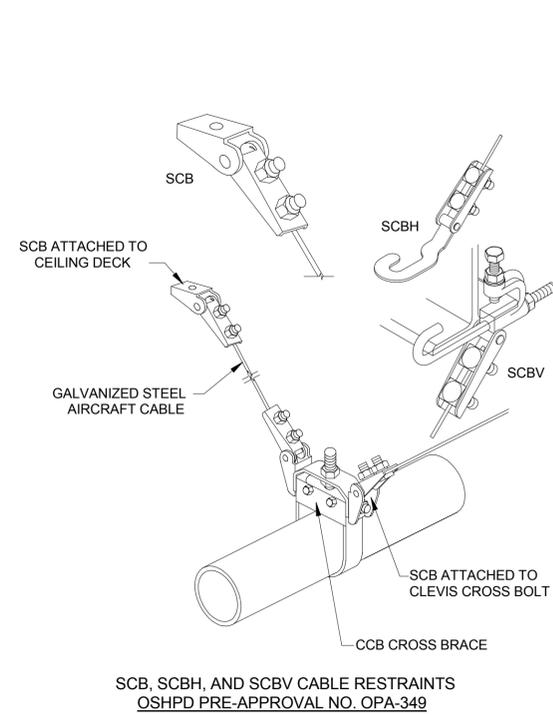
KEYED NOTES

- 1 DUCT
- 2 SHEET METAL STRAP 1" (25.4mm) WIDE, OF SAME METAL GAUGE AS DUCT.
- 3 STEEL ANGLE, NOT LESS THAN 1"x 1"x 1/8" (25.4 x 25.4 x 3 mm), SIZED TO MATCH DUCT.
- 4 SHEET METAL BAND, 1" (25.4mm) WIDE OF SAME METAL GAUGE AS DUCT.
- 5 ALL THREAD HANGER ROD WITH ACCESSORIES AS USED FOR LIGHT PIPE HANGER.
- 6 SELF TAPPING CADMIUM PLATED HEX HEADED SHEET METAL SCREW STRAPS TO BE TIGHT AGAINST DUCT.

HANGER SIZES FOR RECTANGULAR DUCT			
MAX LENGTH ANY SIDE	HANGER	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30"	1"x 18 GAGE STRAP	NONE REQUIRED	10'-0"
36"	1/4" ROUND ROD	1 1/2"x1 1/2"x1/8"	8'-0"
48"	1/4" ROUND ROD	2"x 2"x 1/8"	8'-0"
60"	5/16" ROUND ROD	2"x 2"x 1/8"	8'-0"
84"	3/8" ROUND ROD	2"x 2"x 1/8"	8'-0"

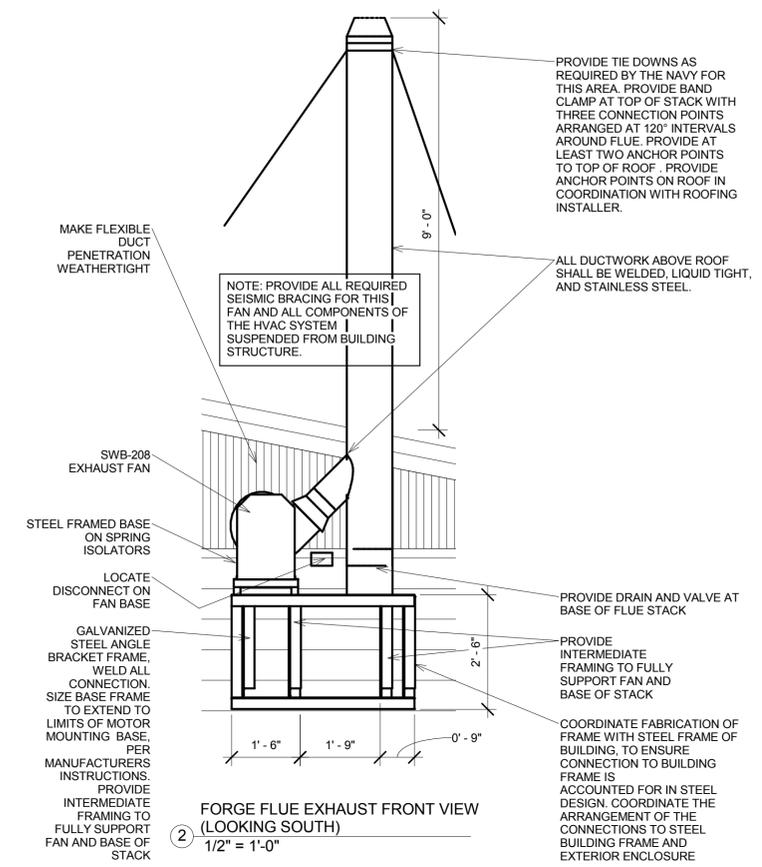
REINFORCEMENT MAY BE USED FOR ATTACHMENT IF IT QUALIFIES FOR BOTH DUTIES.
DO NOT EXCEED ALLOWABLE LOAD LIMITS.

A DUCTWORK HANGING DETAILS
NO SCALE

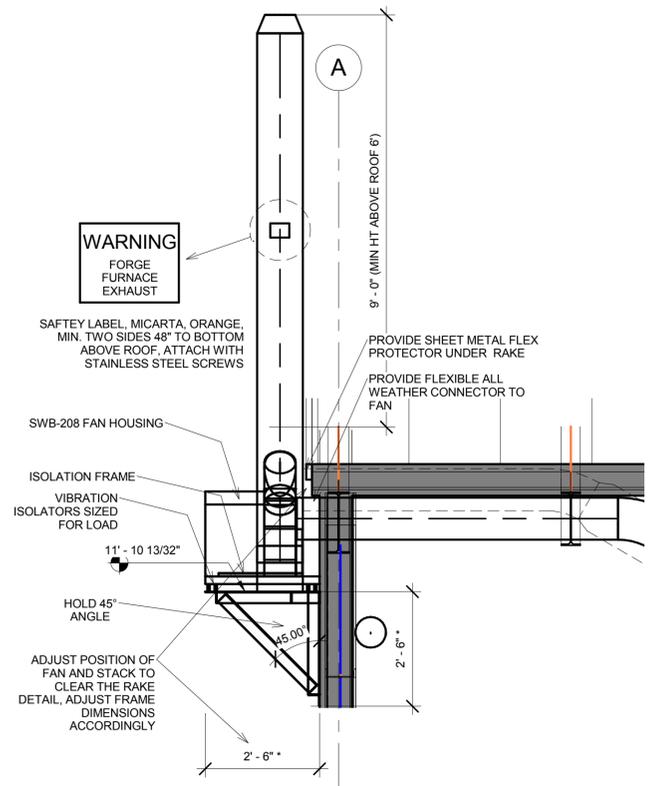


SCB, SCBH, AND SCBV CABLE RESTRAINTS
OSHPD PRE-APPROVAL NO. OPA-349

B CABLE RESTRAINTS
NO SCALE



FORGE FLUE EXHAUST FRONT VIEW (LOOKING SOUTH)
1/2" = 1'-0"



FORGE FLUE EXHAUST SIDE VIEW (LOOKING EAST)
1/2" = 1'-0"

LIST OF EQUIPMENT AND SYSTEM COMPONENTS	ANCHORAGE TO FLOORS, ROOFS, ETC.		SWAY BRACING		LOCATION OF PROFESSIONALLY SEALED ANCHORAGE AND SWAY BRACING DETAILS			COMMENTS
	NOT PROVIDED	PROVIDED	NOT PROVIDED	PROVIDED	ON CONST. DOCUMENTS			
					DRAWING NO. OR SPEC. SECTION	SHOP DRAWINGS	SEPERATE PERMIT & PLANS	
AIR TERMINAL UNITS (VAV'S)	X		X					UNITS ARE LESS THAN 20 LBS AND FLEXIBLE CONNECTIONS ARE TO BE PROVIDED- DETAIL FM003 (TABLE 500)
DUCTWORK (LESS THAN 6 SQ. FT.)	X		X					HVAC HAS CROSS-SECTIONAL AREA OF LESS THAN 6 SQUARE FEET (TABLE 600)
DUCTWORK (6 SQ. FT. OR GREATER)		X		X				TO BE SUBMITTED
PIPING LESS THAN 3"	X		X					PIPING THAN 3" PIPE SIZE (TABLE 600)
PIPING 3" AND LARGER		X		X				TO BE SUBMITTED
PUMPS & BOILERS		X	X					EQUIPMENT IS MOUNTED LESS THAN 4'-9" ABOVE FLOOR WITH FLEXIBLE CONNECTIONS (TABLE 500)
CHILLER	X			X				TO BE SUBMITTED
MAKE-UP AIR UNIT		X		X				TO BE SUBMITTED
FAN POWERED TERMINAL UNITS (FTU'S)		X		X				TO BE SUBMITTED
FAN COIL UNITS (FCU'S)		X		X				TO BE SUBMITTED

SEISMIC USE GROUP I (TABLE 100)
COMPONENT IMPORTANCE FACTOR 1.0 (TABLE 200)
SITE CLASS DEFINITION "B" (TABLE 300)
SEISMIC DESIGN CATEGORY "C" (TABLE 400)

SEISMIC CODE BLOCK MECHANICAL SYSTEM COMPONENTS EARTHQUAKE LOAD RESISTANCE

APPROVED

REVISED

P&S CONSTRUCTION, INC.
11 SCHOOL STREET
N. CHILMARK, MA 01863
TEL: 978.452.3782

FOR COMMANDER NAVFAC

SATISFACTORY TO	DATE
DES	RWH
DRW	RS
CHK	XXX
XXX	

BRANCH MANAGER: XXX

CHIEF ENGINEER: XXX

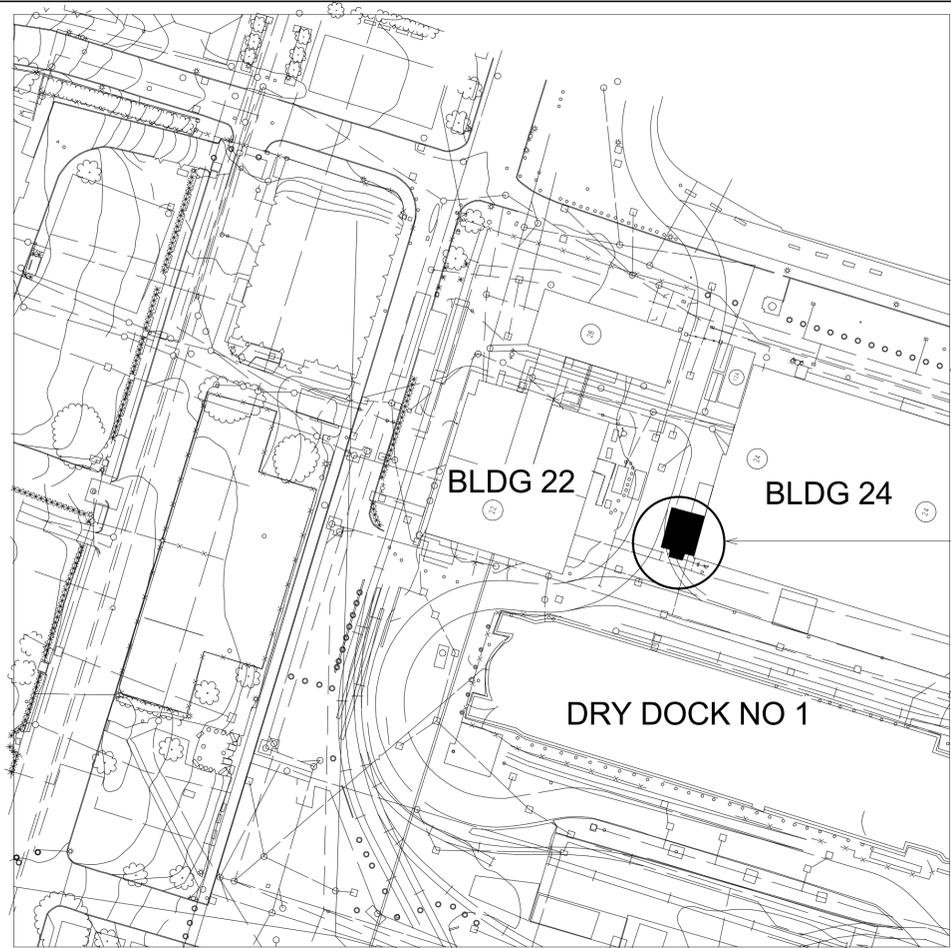
FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
NAVALSHIPYARD - PORTSMOUTH NH
CHARLESTOWN, MA

RELOCATION OF FORGE SHOP

DETAILS

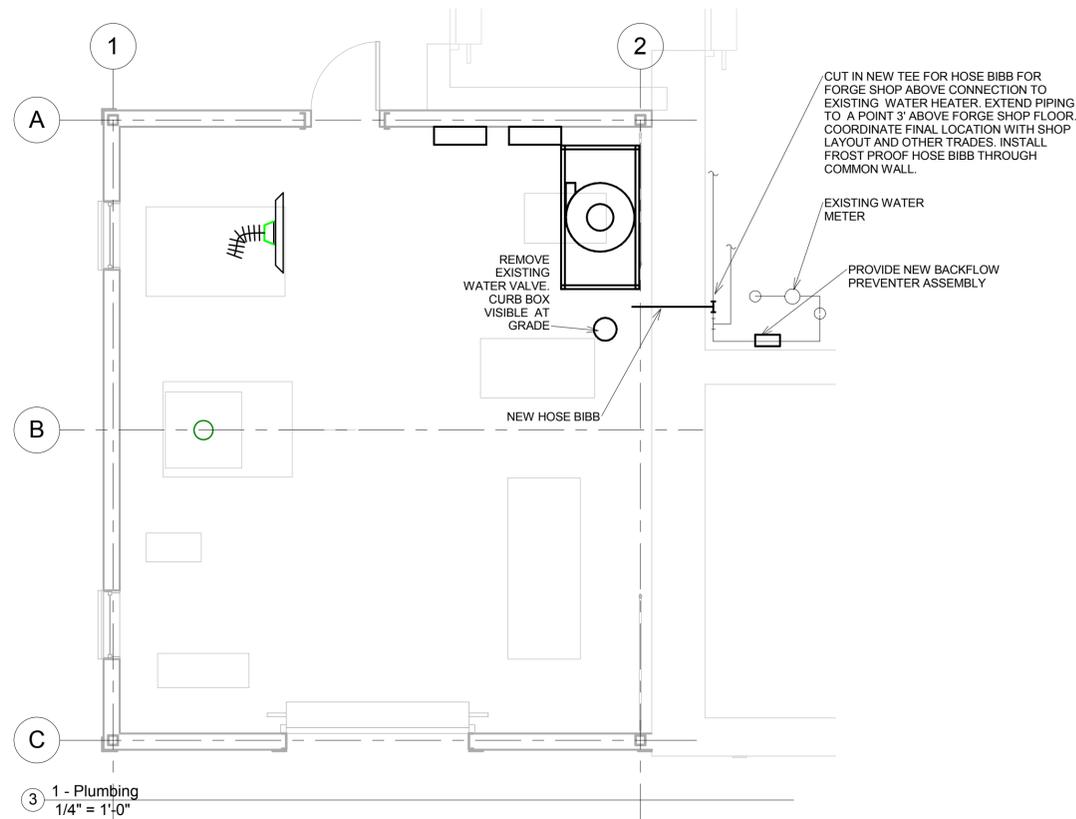
SCALE: 1/2" = 1'-0"
EPROJCT NO.
CONSTR. CONTRACT NO.
NAVFAC DWG SHEET NO.
SHEET OF
M103



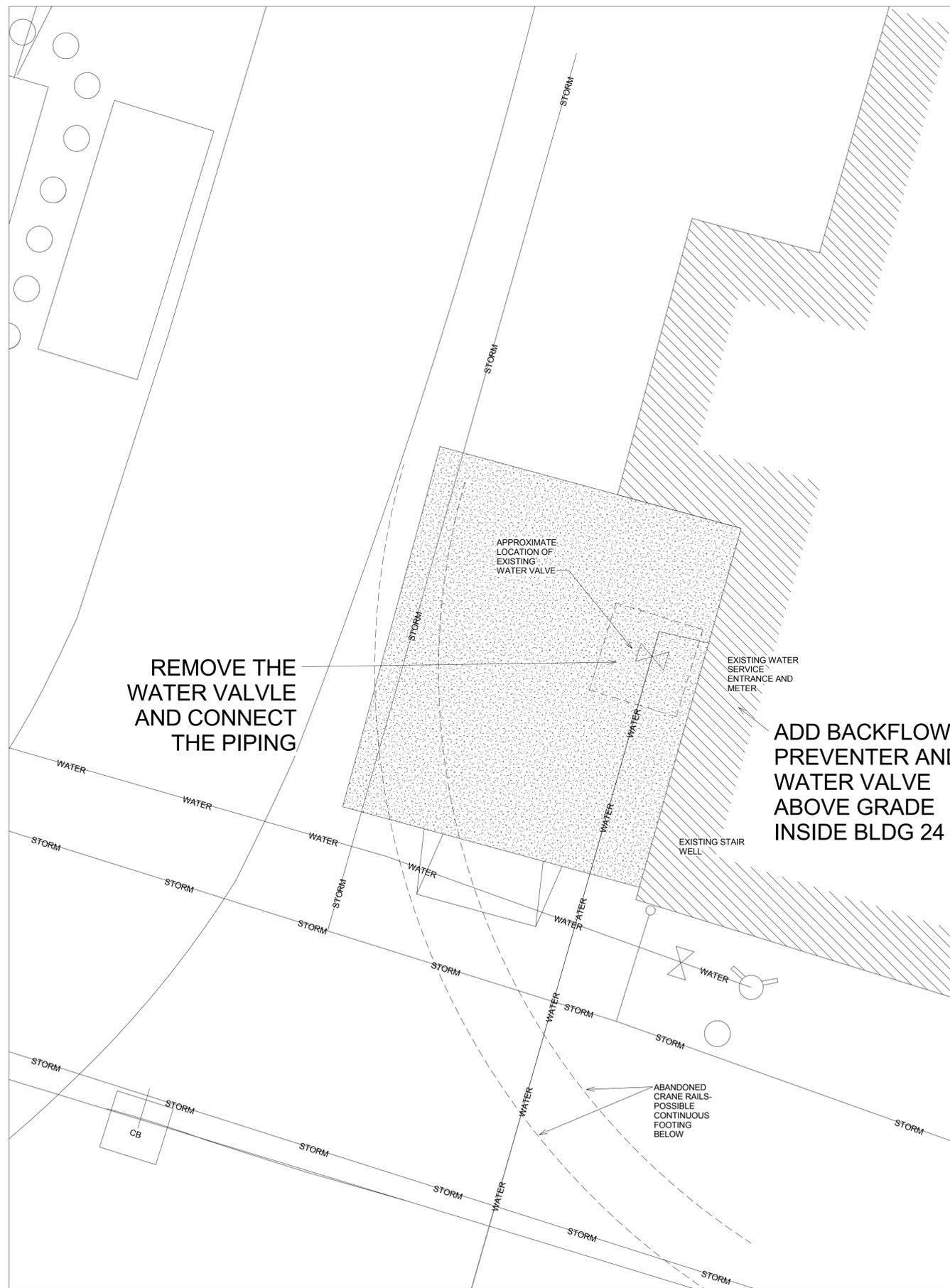
RELOCATED FORGE SHOP

DRY DOCK NO 1

2 LOCATION PLAN
12" = 1'-0"



3 1 - Plumbing
1/4" = 1'-0"

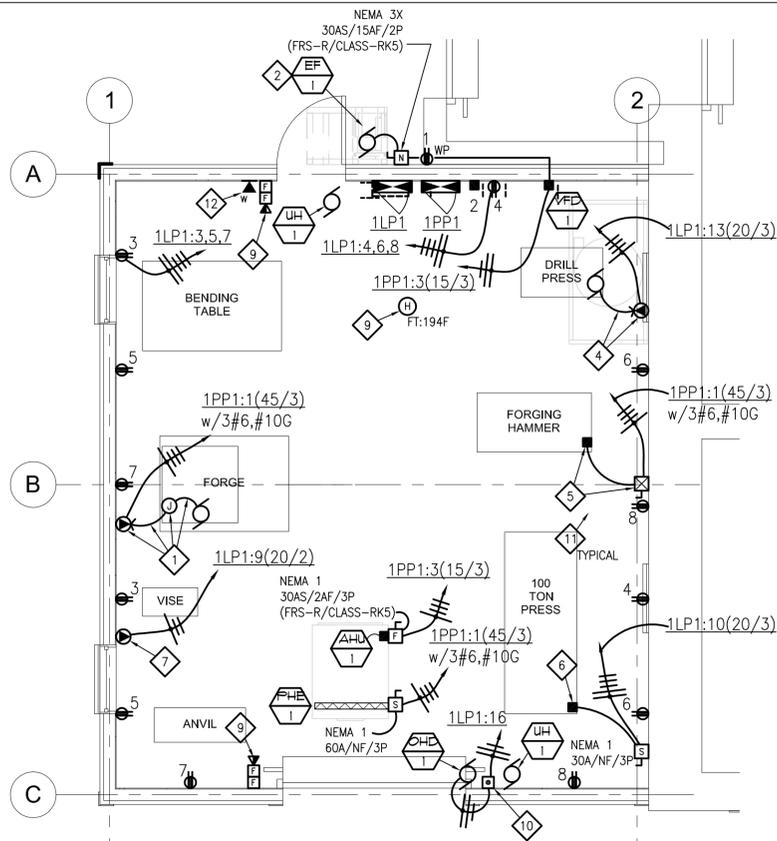


REMOVE THE WATER VALVE AND CONNECT THE PIPING

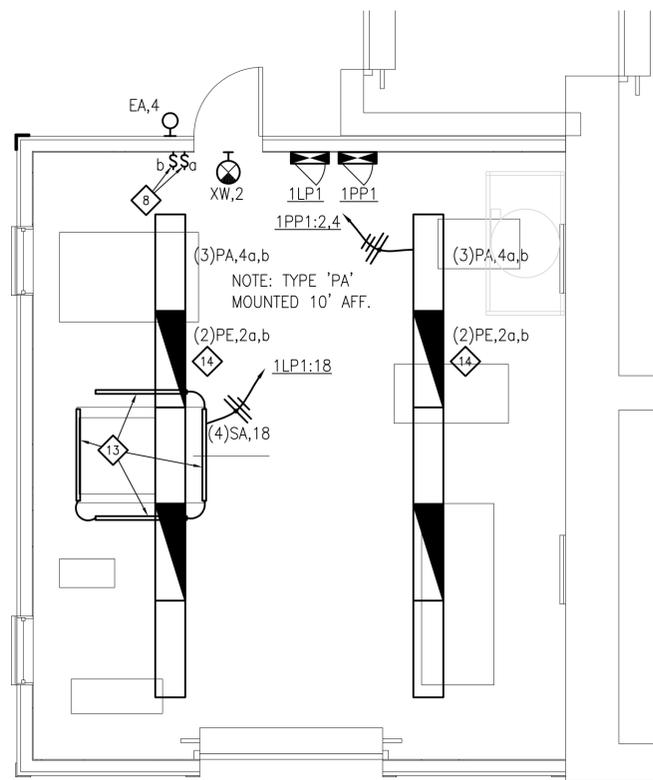
ADD BACKFLOW PREVENTER AND WATER VALVE ABOVE GRADE INSIDE BLDG 24

1 PLUMBING SITE PLAN
1: 60

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APPROVED	
FOR COMMANDER NAVFAC	
SATISFACTORY TO	DATE
DES	RWH
DRW	RS
CHK	XXX
PHM	XXX
BRANCH/MANAGER	XXX
CHIEF ENGINEER	
FIRE PROTECTION	
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC NAVALSHIPYARD - PORTSMOUTH, NH CHARLESTOWN, MA	
RELOCATION OF FORGE SHOP PLAN AND LOCATION	
SCALE: As indicated	
PROJECT NO.	
CONSTR. CONTRACT NO.	
NAVFAC DWG SHEET NO.	
SHEET	OF
P101	



(A) PARTIAL FLOOR PLAN: POWER PLAN
SCALE: 1/4" = 1'-0"



(B) PARTIAL FLOOR PLAN: LIGHTING
SCALE: 1/4" = 1'-0"

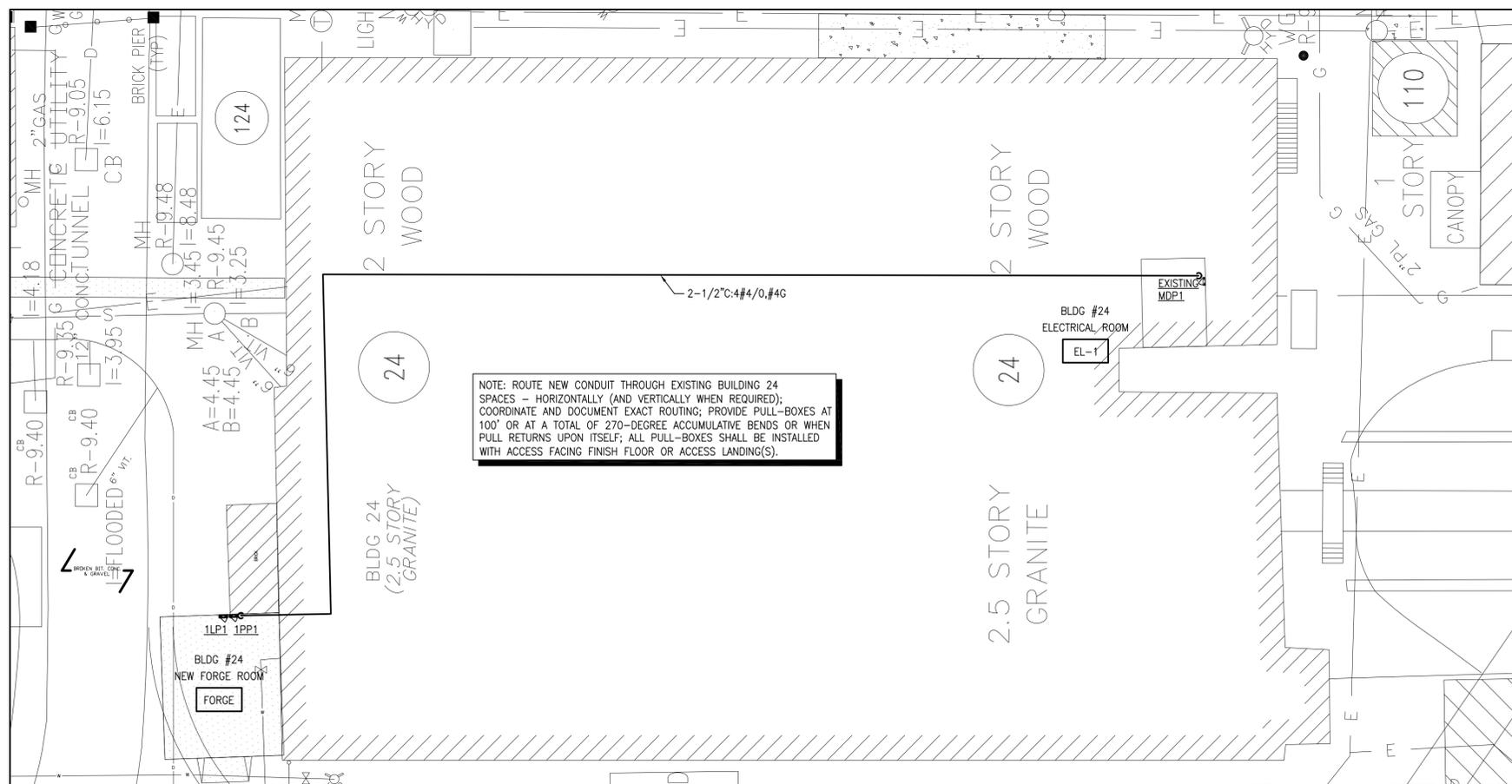
GENERAL NOTES:

1. PROVIDE ALL ITEMS INDICATED OR SPECIFIED UNLESS NOTED OTHERWISE.
2. REFER TO E601 FOR PARTIAL POWER ONE-LINE DIAGRAM AND PANELBOARD SCHEDULES.
3. ALL 120/208VAC CIRCUITRY SHALL DERIVE FROM PANEL 1LP1.
4. ALL 277/480VAC CIRCUITRY SHALL DERIVE FROM PANEL 1PP1.
5. ALL DEVICES SHALL BE NEMA 1 UNLESS NOTED OTHERWISE.
6. ALL DEVICES SHALL BE PROVIDED WITH ANGLED, IN-USE SAFETY SHROUDS UNLESS NOTED OTHERWISE.
7. ALL CONDUCTORS SHALL BE COPPER, XHHW-2, 90-DEGREE C RATED, WET/DRY RATED; PROVIDE 12-GUAGE MINIMUM UNLESS NOTED OTHERWISE
8. ALL CONDUIT SHALL BE INTERMEDIATE CONDUIT (IMC) WITH THREADED CONNECTORS, UNLESS NOTED OTHERWISE NOTED.
9. ALL OUTLET BOXES SHALL BE 4-1/8" SQUARE, SURFACE MOUNTED, CAST-IRON, HOT-DIPPED GALVANIZED, STAINLESS STEEL SCREWS, BLANK COVER AND GASKET; DRILL BOX FOR SPECIFIED CONDUIT SIZE.

KEYED NOTES:

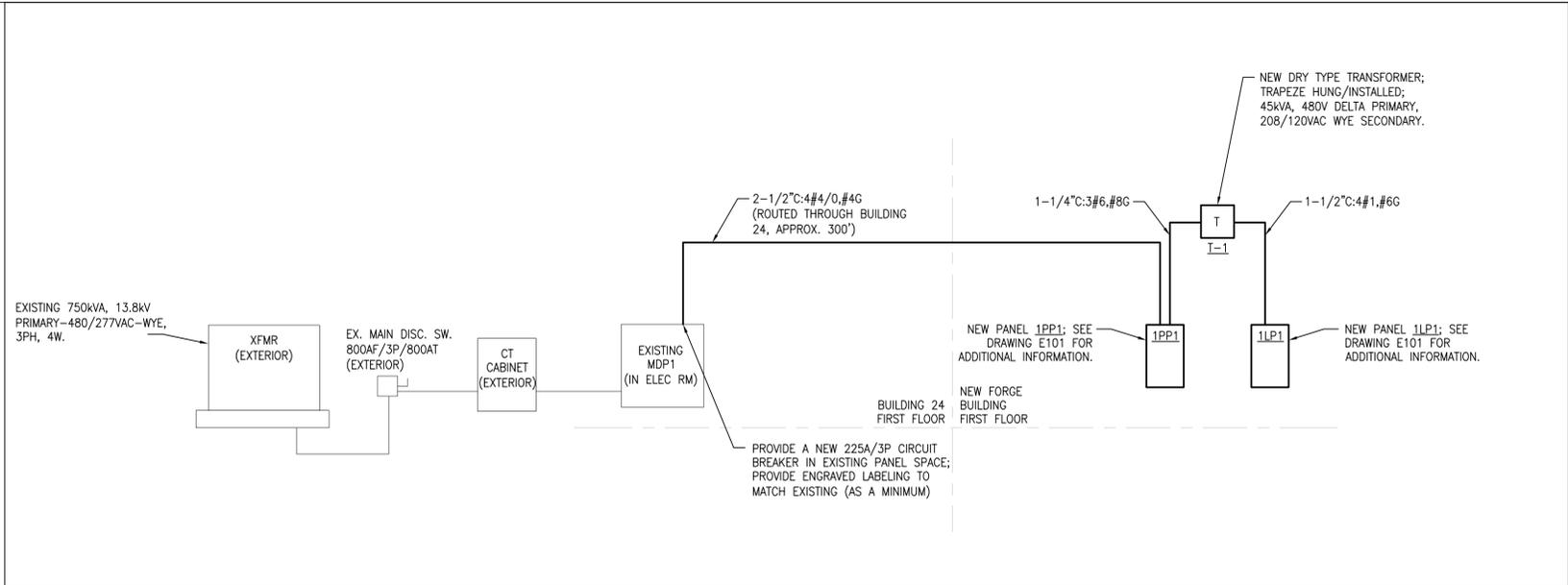
- 1 EXISTING FORGE: HUBBELL #HBL2310AR (NEMA L5-20R, 20A/125VAC) SURFACE MOUNTED IN-USE, ANGLED SAFETY SHROUD HOUSING; PROVIDE HEAVY-DUTY SO CORD AND L5-20P PLUG; MOUNT J-BOX ON FORGE STAND WITH 1/2" FLEXIBLE METAL CONDUIT AND CONNECTION TO BLOWER MOTOR.
- 2 CONNECT TO MECHANICAL EQUIPMENT; COORDINATE CONNECTION REQUIREMENTS; VERIFY CIRCUIT SIZE AND OCP (OVER-CURRENT PROTECTION) REQUIREMENTS WITH EQUIPMENT/MOTOR NAMEPLATE REQUIREMENTS; EXTERIOR TERMINATIONS SHALL UTILIZE LIQUID-TIGHT FLEXIBLE CONDUIT, WATERTIGHT CONNECTORS AND GASKETED CLOSURES.
- 3 CONNECT TO OWNER PROVIDED EQUIPMENT; COORDINATE CONNECTION REQUIREMENTS; VERIFY CIRCUIT SIZE AND OCP REQUIREMENTS WITH NAMEPLATE REQUIREMENTS.
- 4 HUBBELL #HBL2420AR (NEMA L15-20R, 20A/3-PH/250VAC) SURFACE MOUNTED IN-USE, ANGLED SAFETY SHROUD HOUSING; PROVIDE HEAVY-DUTY SO CORD AND L15-20P PLUG AND TERMINATE ONTO THE EXISTING DRILL PRESS POWER CORD.
- 5 EXISTING FORGE HAMMER, STRIKER #STC-88; PROVIDE A NEMA 1/SIZE 1, 208VAC/3PH/4W COMBO-STARTER AND 60A/3P SAFETY-DISCONNECT SWITCH; VERIFY MOTOR CHARACTERISTICS AND SIZE OCP AND MOTOR HEATERS FOR SHORT-INTERMITTENT DUTY LOAD.
- 6 EXISTING 100-TON PRESS: VERIFY MOTOR CHARACTERISTICS AND SIZE OCP AND MOTOR HEATERS FOR SHORT-INTERMITTENT DUTY LOAD.

- 7 EXISTING WELDER: HUBBELL #HBL2320AR (NEMA L6-20R, 20A/250VAC) SURFACE MOUNTED IN-USE, ANGLED SAFETY SHROUD HOUSING; VERIFY AND ADJUST/PROVIDE WELDER PLUG REQUIREMENTS AND BRANCH CIRCUIT REQUIREMENTS.
- 8 PROVIDE DPDT LIGHT CONTROL SWITCHES TO CONTROL NORMAL AND EMERGENCY HI/LO LIGHTING CONTROL (CKTS 2 & 4); CONFIGURE EMERGENCY BALLAST WIRING AS SWITCHED.
- 9 FIRE ALARM SYSTEM: COORDINATE NEW DEVICE TYPES WITH EXISTING FIRE ALARM SYSTEM REQUIREMENTS; PROVIDE A FIXED TEMPERATURE, 194-DEGREE HEAT SENSOR AS INDICATED; PROVIDE ALL REQUIRED ZONE CARDS AND/OR PROGRAMMING.
- 10 UP/STOP/DOWN PUSHBUTTON OPERATOR FOR OVERHEAD DOOR; COORDINATE EXACT LOCATION AND WIRING REQUIREMENTS WITH UNIT INSTALLED.
- 11 LOCATION OF ELECTRICAL EQUIPMENT: MAINTAIN A WORKING CLEARANCE OF 30"WIDE x 36" DEEP MINIMUM.
- 12 WALL MOUNTED TELEPHONE: EXTEND CATEGORY 3 CABLE TO PHONE BOARD/SWITCH; COORDINATE REQUIREMENTS WITH BASE TELEPHONE GROUP; PROVIDE A 4" SQ. x 1-7/8 BOX (+54" AFF) WITH 3/4"C. TO STRUCTURE ABOVE (VERIFY).
- 13 'SA' TYPE FIXTURES SHALL BE MOUNTED INSIDE FLUE STRUCTURE; PROVIDE STRUT OR 18"x12" HEAVY-DUTY WALL ANGLE BRACKET SUPPORTS FOR FIXTURE (SUPPORT AT THREE POINTS ALONG FIXTURE LENGTH MINIMUM); MOUNT FIXTURE WITH REFLECTOR UP AND LAMP TO INSIDE OF FLUE STRUCTURE; MOUNT FIXTURE HOUSING TIGHT TO INSIDE FACE OF FLUE STRUCTURE; TOP OF FIXTURE SHALL BE 6-INCHES BELOW BOTTOM EDGE OF THE SIDE-WINDOW OPENINGS; PROVIDE PHOTOCELL CONTROL NSI/TORK #2101 MOUNTED TO EXTERIOR OF FLUE STRUCTURE, COORDINATE LOCATION WITH DIRECTION OF SUN IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
- 14 FIXTURE PROVIDED WITH EMERGENCY BALLAST/BATTERY PACK; CIRCUIT IN A SWITCHED CONFIGURATION AS INDICATED; BALLAST MAY BE PIGGY-BACK OR REMOTE MOUNTED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



(C) PARTIAL SITE PLAN - BUILDING NO. 24: POWER
SCALE: 1/16" = 1'-0"

APPROVED	
FOR COMMANDER NAVFAC	
SATISFACTORY TO DATE	
DES TOR DRW TOR CHK AS	
PM/DM XXX	
BRANCH MANAGER XXX	
CHIEF ENGINEER	
FIRE PROTECTION	
NAVAL FACILITIES ENGINEERING COMMAND	
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC	
NAVAL SHIPYARD - PORTSMOUTH, NH	
PUBLIC WORKS DEPARTMENT - JAWNE	
CHARLESTOWN, MA	
RELOCATION OF FORGE SHOP	
ELECTRICAL PLANS	
SCALE: AS NOTED	
E/PROJECT NO.	
CONSTR. CONTRACT NO.	
NAVFAC DWG SHEET NO.	
SHEET OF	
E101	



1 ELECTRICAL:PARTIAL ONE-LINE DIAGRAM NO SCALE

GENERAL NOTES:

- DRAWING AND INFORMATION IS DIAGRAMMATIC IN NATURE AND IS NOT TO BE CONSTRUED AS ALL INCLUSIVE; VERIFY ALL DISTANCES AND INSTALLATION REQUIREMENTS WITH EXISTING CONDITIONS AND ADJUST ROUTINGS, SIZES, HARDWARE, ETC. AS REQUIRED.
- PROVIDE ALL ITEMS INDICATED HEAVY-LINE OR SPECIFIED UNLESS NOTED OTHERWISE; FINE LINE-WEIGHT IS EXISTING OR OWNER FURNISHED EQUIPMENT.
- ALL 120/208VAC CIRCUITRY SHALL DERIVE FROM PANEL 1LP1.
- ALL 277/480VAC CIRCUITRY SHALL DERIVE FROM PANEL 1PP1.
- ALL CONDUCTORS SHALL BE COPPER, XHHW-2, 90-DEGREE C RATED, WET/DRY RATED; PROVIDE 12-GUAGE MINIMUM UNLESS NOTED OTHERWISE.
- ALL CONDUIT SHALL BE INTERMEDIATE CONDUIT (IMC) WITH THREADED CONNECTORS, UNLESS NOTED OTHERWISE NOTED.
- ALL PANELBOARDS SHALL BE SURFACE MOUNTED, NEMA 1 ENCLOSURES; VOLTAGE AT INDICATED ON PANELBOARD SCHEDULES; BUS SHALL BE TIN-PLATED COPPER; OVER-CURRENT DEVICES SHALL BE BOLT-ON TYPE; AND SHALL BE PROVIDED WITH GROUND BUS, NEUTRAL BUS, INDEX CARD WITH METAL CARD HOLDER AND PLASTIC COVER (IDENTIFY ALL CIRCUITS BY TYPEWRITTEN INDEX), COVER WITH DOOR AND LATCH, LOCKABLE, GRAY ENAMEL FINISH; PROVIDE ENGRAVED WHITE LETTERS ON BLACK FIELD, PHENOLIC NAMEPLATE - SECURED BY GLUE AND SCREWS (MINIMUM 2).
- TRANSFORMERS SHALL BE NEMA 1, COPPER WINDINGS; FINISH=GRAY ENAMEL, PAINTED; PROVIDE ENGRAVED WHITE LETTERS ON BLACK FIELD, PHENOLIC NAMEPLATE - SECURED BY GLUE AND SCREWS (MINIMUM 2); PROVIDE TRAPEZE OR WALL BRACKET MOUNTING.

NEW PANELBOARD - EX. MDP1		VOLTAGE 480 / 277		AMP BUS 800		SPECIAL FEATURES - EXISTING PANEL							
MOUNTING - SURFACE		PHASE 3		AMP MCB 800									
A.I.C. RATING - 65,000		WIRE 4		AMP MLO -----									
LOAD DESCRIPTION	LOAD (VA)				BREAKER	3 PH	CIRCUIT	LOAD (VA)				LOAD DESCRIPTION	
225KVA TRANS ->600A MCB ENCL	13302	13302	13302	13302	400	3	1		19952	19952	19952	19952	300KVA TRANS -> PANEL DL1
SPARE					100	3	3						SPARE
NEW FORGE SHOP PANEL 1PP1	1064	900	17188	4382	225	3	5						SPACE
SPACE	1596	720	18364	6282	225	3	7						SPACE
SPACE	250	720	17188	6282	225	3	9						SPACE
SPACE					225	3	11						SPACE
SPACE					225	3	13						SPACE

NOTES:
 * VERIFY EXISTING PANELBOARD CONSTRUCTION AND PROVIDE COMPATIBLE DEVICE; DEVICE SHALL MAINTAIN U.L. LISTING.

Connected Loads By Phase (VA)	Total Connected Loads By Type (VA)	Demand Factors	Total Demand Loads By Type (VA)
Total Phase A 156,550	Lighting 102,672	Lighting 1.00	Lighting 102,672
Total Phase B 159,978	Receptacles 102,102	Receptacles 0.50	Receptacles 51,051
Total Phase C 157,456	HVAC 152,501	HVAC 1.00	HVAC 152,501
	Miscellaneous 116,708	Miscellaneous 0.65	Miscellaneous 75,860
	Total 473,983		Subtotal 387,084
		Spare Capacity 20%	Spare 77,417
			Total Demand Load 464,501
			Total Demand Amps 569

*FIRST 10 KVA AT 100%, REMAINDER AT 50%
 Note: Existing loads based on 60% demand.

NEW PANELBOARD - 1PP1		VOLTAGE 480 / 277		AMP BUS 225		SPECIAL FEATURES - BOLT-ON OCP DEVICES							
MOUNTING - SURFACE		PHASE 3		AMP MCB 225									
A.I.C. RATING - 22,000		WIRE 4		AMP MLO -----									
LOAD DESCRIPTION	LOAD (VA)				BREAKER	3 PH	CIRCUIT	LOAD (VA)				LOAD DESCRIPTION	
PHE-1 HEATING COIL					45	3	1		16744				EXT/EMER LIGHTS (LOCK-OUT)
AHU-1					15	3	9		16744				INTERIOR/EXTERIOR LIGHTS
					20	1	13		444				
					20	1	15		444				
					20	1	17		444				
					20	1	19						
					20	1	21						
					20	1	23						
					20	1	25						
					20	1	27						
					20	1	29						
					20	1	31						
					20	1	33						
					20	1	35						
					20	1	37						
					20	1	39						
					20	1	41						
					0	800	0	4382					45KVA XFMR T-1
					0	720	1176	6282					(PANEL 1LP1)
					250	720	0	6282					

NOTES:
 ** PROVIDE SHUNT TRIP CIRCUIT BREAKER WITH 120VAC COIL.

Connected Loads By Phase (VA)	Total Connected Loads By Type (VA)	Demand Factors	Total Demand Loads By Type (VA)
Total Phase A 23,534	Lighting 2,910	Lighting 1.00	Lighting 2,910
Total Phase B 26,962	Receptacles 2,340	Receptacles 0.50	Receptacles 1,170
Total Phase C 24,440	HVAC 52,739	HVAC 1.00	HVAC 52,739
	Miscellaneous 16,946	Miscellaneous 0.65	Miscellaneous 11,015
	Total 74,936		Subtotal 67,834
		Spare Capacity 20%	Spare 13,567
			Total Demand Load 81,401
			Total Demand Amps 98

*FIRST 10 KVA AT 100%, REMAINDER AT 50%

NEW PANELBOARD - 1LP1		VOLTAGE 208 / 120		AMP BUS 225		SPECIAL FEATURES - BOLT-ON OCP DEVICES;							
MOUNTING - SURFACE		PHASE 3		AMP MCB 150		LOCK-ON DEVICE CKT 1							
A.I.C. RATING - 22,000		WIRE 4		AMP MLO -----									
LOAD DESCRIPTION	LOAD (VA)				BREAKER	3 PH	CIRCUIT	LOAD (VA)				LOAD DESCRIPTION	
EXTERIOR RECPT	150				20	2	1		150				ANNUNCIATOR PANEL
West Wall Serv Recpt	360				20	3	3		360				East Wall Serv Recpt
West Wall Serv Recpt	360				20	3	5		360				East Wall Serv Recpt
West Wall Serv Recpt	360				20	3	7		360				East Wall Serv Recpt
West Wall Welder Recpt		2080			20	2	9					2401	East Wall Serv Recpt
		2080			20	2	11					2401	100 Ton Drill Press
		1801			20	3	13					2401	
Ex. Drill Press		1801			20	3	15		1176				Overhead Door OHD-1
					20	1	17						Lantern Feature Lighting
					20	1	19						
					20	1	21						
					20	1	23						
					20	1	25						
					20	1	27						
					20	1	29						

NOTES:
 ** PROVIDE SHUNT TRIP CIRCUIT BREAKER WITH 120VAC COIL.

Connected Loads By Phase (VA)	Total Connected Loads By Type (VA)	Demand Factors	Total Demand Loads By Type (VA)
Total Phase A 5,282	Lighting 250	Lighting 1.00	Lighting 250
Total Phase B 8,178	Receptacles 2,340	Receptacles 0.50	Receptacles 1,170
Total Phase C 7,252	HVAC 1,176	HVAC 1.00	HVAC 1,176
	Miscellaneous 16,946	Miscellaneous 0.65	Miscellaneous 11,015
	Total 20,712		Subtotal 13,611
		Spare Capacity 20%	Spare 2,722
			Total Demand Load 16,333
			Total Demand Amps 45

*FIRST 10 KVA AT 100%, REMAINDER AT 50%

APPROVED

REC'D

RS CONSTRUCTION, INC.
 11 SCHOOL STREET
 N. CHELSEA, MA 01863
 PH: 978.452.3762

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FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES	TDR	DRW	TDR	CHK	AS

PM/DM XXX

BRANCH MANAGER XXX

CHIEF ENGINEER

FIRE PROTECTION

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, NH
 PUBLIC WORKS DEPARTMENT - JAME
 CHARLESTOWN, MA

RELOCATION OF FORGE SHOP

POWER ONE-LINE & SCHEDULES

SCALE: AS NOTED

PROJECT NO.

CONSTR. CONTRACT NO.

NAVFAC DWG SHEET NO.

SHEET OF

E600