CONTAINERIZED LONG WEAPONS STORAGE (CLWS)
NAVY EARTH COVERED MAGAZINE
STANDARD DRAWINGS

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DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD (DDESB) APPROVAL NOTES

DO NOT REMOVE THESE NOTES WHEN PREPARING CONSTRUCTION DRAWINGS FOR SITE ADAPTION.

1. THIS STANDARD IS APPROVED BY THE DEPARTMENT OF DEFENSE EXPLOSIVE SAFETY BOARD (DDESB) AS A 7-BAR EARTH COVERED MAGAZINE AND MAY BE SITED AS AN EXPOSED SITE MAGAZINE FROM OTHER POTENTIAL EXPLOSION SITES STORING UP TO 500,000 LBS HAZARD DIVISION 1.1 EXPLOSIVES.
2. THE DESIGN AND DETAILING OF THIS STANDARD MAGAZINE FOR BLAST LOADING IS THE SOLE RESPONSIBILITY OF THE GOVERNMENT. THE GOVERNMENT IS THE ENGINEER OF RECORD FOR THE BLAST DOOR.
3. ANY DEVIATION FROM THESE STANDARD DRAWINGS, EXCEPT FOR FOUNDATION MODIFICATIONS, WITHOUT THE WRITTEN APPROVAL FROM THE DEPARTMENT OF DEFENSE EXPLOSIVE SAFETY BOARD (DDESB) MAY REQUIRE THE MAGAZINE TO BE CONSIDERED AN UNDEFINED MAGAZINE AND MAY SEVERELY RESTRICT THE ALLOWABLE STORAGE CAPACITY.

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	DRW	CHK
JAF	SFF	TPH

PM/DM --
BRANCH MANAGER --
CHIEF ENG/ARCH --
FIRE PROTECTION --

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE
TITLE SHEET

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877610
SHEET 1 OF 51

G-001

DRAWFORM REVISION: 00 MONTH 2020

GENERAL:

1. THESES CONSTRUCTION DOCUMENTS ARE CONSTRUCTION STANDARDS FOR THE NAVY CLWS STANDARD MAGAZINES AND HAVE BEEN SITE ADAPTED BY THE DOR.
2. ALL MATERIALS AND WORKMANSHIP MUST CONFORM TO THE DRAWINGS AND SPECIFICATIONS.
3. EQUIPMENT PENETRATION OPENINGS AND LOCATIONS WHEN INDICATED ON DRAWINGS ARE FOR INFORMATION ONLY AND MUST BE VERIFIED WITH THE APPROPRIATE DRAWING AND/OR EQUIPMENT SUPPLIER BEFORE CONSTRUCTION.
   A. SEE STRUCTURAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCT WORK, PIPES AND PIPE SLEEVES.
   B. OPENINGS OR POCKETS LARGER THAN 6 INCHES NOT INDICATED IN STRUCTURAL DRAWINGS MUST NOT BE PLACED WITHOUT WRITTEN NOTIFICATION OF THE CONTRACTING OFFICER.
   C. OPENINGS OR PENETRATIONS OF ANY SIZE IN BLAST-RESISTING STRUCTURAL COMPONENTS (BLAST DOOR, HEADER BEAM, HEADWALL, PILASTERS, ROOF PANEL, SIDE WALLS, REAR WALL) THAT ARE UNPLANNED OR NOT SHOWN IN THE DRAWINGS ARE NOT PERMITTED TO BE CONSTRUCTED WITHOUT PRIOR APPROVAL FROM THE CONTRACTING OFFICER.
4. THE STRUCTURAL DRAWINGS SHOW ONLY THE BASIC STRUCTURAL SYSTEM. REFER TO OTHER DRAWINGS FOR ORNAMENTS, GROOVES, CLIPS, GROUNDS, SLAB DEPRESSIONS, CURBS, EQUIPMENT PADS, PENETRATIONS, NON-BEARING WALLS AND OTHER NON-STRUCTURAL ITEMS.
5. GENERAL NOTES AND STANDARD DETAILS MUST BE USED WHERE APPLICABLE, UNLESS NOTED OTHERWISE. NOTES AND DETAILS ON THE DRAWINGS MUST TAKE PRECEDENCE OVER GENERAL NOTES AND STANDARD DETAILS. WHERE CONFLICTS ARISE BETWEEN DRAWINGS AND SPECIFICATIONS, MOST STRINGENT WILL GOVERN. CONTACT THE CONTRACTING OFFICER IN WRITING FOR CLARIFICATION BEFORE PROCEEDING WITH WORK.
6. ALL OMISSIONS AND/OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE CONTRACT DOCUMENTS MUST BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER IN WRITING BEFORE PROCEEDING WITH ANY WORK INVOLVED.
7. DIMENSIONS MUST NOT BE SCALED FROM THE PLANS, SECTIONS AND/OR DETAILS OF THE STRUCTURAL DRAWINGS.
8. COORDINATE WITH THE CONTRACTING OFFICER FOR PROCUREMENT AND INSTALLATION OF INTERNAL LOCKING DEVICE (ILD), BOLTWORKS, AND THE DISTRIBUTION OF KEY SETS FOR EACH MAGAZINE DOOR. THE ILD MUST BE PROCURED WITH TWO UNIQUE KEYS IN ORDER TO OPERATE THE BOLTWORKS.
9. CONTACT THE DoD LOCK PROGRAM FOR DIRECTIONS ON HOW TO PROCURE THE INTERNAL LOCKING DEVICE (ILD), BOLTWORKS, AND A LIST OF RECOMMENDED MANUFACTURERS FOR MAGAZINE DOORS:
   A. DoD LOCK PROGRAM: https://navfac.navy.mil/go/locks
   B. EMAIL: ILD_Field_Support@navy.mil
   C. ILD SUPPORT HOTLINE: 805-982-5625.
   D. DoD LOCK PROGRAM TECHNICAL SUPPORT HOTLINE: 800-290-7607 OR 805-982-1212.
10. COORDINATE WITH THE CONTRACTING OFFICER FOR THE CONNECTION OF THE BALANCED MAGNETIC SWITCH (BMS) ON THE DOOR AND THE ILD, WHICH MUST BE INSTALLED AND CONNECTED TO THE INTRUSION DETECTION SYSTEM (IDS) BY NIWC.

DESIGN CRITERIA:

1. THE STRUCTURAL DESIGN AND CONSTRUCTION MUST COMPLY WITH THE FOLLOWING GOVERNMENT STANDARDS:
   - UFC 1-200-01, "DESIGN: GENERAL BUILDING REQUIREMENTS"
2. DESIGN LOADS:
   THE FOLLOWING LOADS WERE USED AS BASIS OF DESIGN.

A. DEAD LOADS:	ACTUAL WEIGHT	
a. SOIL:	110 PCF	
B. LIVE LOADS:		
a. CANOPY ROOF:	20 PSF	
b. ROOF:	100 PSF	
c. MAGAZINE FLOOR:	32K	(HS 20-44 AXLE)
	70.5K	(SIDELOADER AXLE)
	15K	(FORKLIFT AXLE)
	31K	(CPS CONTAINER)
	2,000 PSF	(UNIFORM)
d. MECHANICAL ROOM FLOOR:	150 PSF	(UNIFORM)

3. WIND DESIGN DATA:

A. DESIGN WIND SPEED:	210 MPH
B. EXPOSURE:	"C"
C. RISK CATEGORY :	III

4. SEISMIC DESIGN DATA.

A. RISK CATEGORY:	III
B. IMPORTANCE FACTOR:	1.25
C. SEISMIC DESIGN CATEGORY:	D
D. SITE SEISMICITY:	S_s = 2.79g
	S_1 = 0.68g
E. SITE CLASS:	D

5. SNOW DESIGN DATA:

A. GROUND SNOW LOAD:	45 PSF
B. EXPOSURE FACTOR:	1.0
C. IMPORTANCE FACTOR:	1.10
D. THERMAL FACTOR:	1.2

6. EXPLOSIVE SAFETY DESIGN LOADS:
   A. EXPLOSIVE SAFETY DESIGN LOADS FOR DOOR AND ROOF OF MAGAZINES ARE PRESCRIBED BY NAVFAC EXWC. DESIGN GUIDANCE IS PROVIDED BY UFC 3-340-02 2008.
   B. TRIANGULAR PULSE LOAD VALUES BASED ON NAVFAC EXWC - DESIGNED CRITERIA: CONTAINERIZED LONG WEAPONS STORAGE EARTH COVERED MAGAZINES, DATED NOVEMBER 2019:

MEMBER	PEAK PRESSURE	IMPULSE	DURATION
HEAD WALL AND DOOR	301 PSI	2,119 PSI-MS	14.08 MS
ROOF	176.3 PSI	1,640 PSI-MS	18.60 MS

   C. APPROVED LOCATION AND STORAGE CAPACITY OF EACH ECM MUST BE DETERMINED BY THE SAFETY OFFICER BASED ON ORIENTATION AND PROXIMITY RELATIVE TO NEARBY FACILITIES/MAGAZINES.
7. ENVIRONMENTAL SEVERITY CLASSIFICATION.

A. ESC	C5

CONSTRUCTION PROCEDURES & SAFETY REQUIREMENTS:

1. THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHOD OF CONSTRUCTION. PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS OR OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES MUST INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, FORMS, SCAFFOLDING, PLANKING, SAFETY NETS, ETC.
2. THE CONTRACTOR MUST ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY PRECAUTIONARY MEASURES MUST BE USED DURING CONSTRUCTION. THE CONTRACTOR MUST ALSO PROVIDE THEIR OWN THIRD-PARTY INSPECTOR TO REVIEW AND VERIFY INSTALLATION OF ALL TEMPORARY PRECAUTIONARY MEASURES
3. THE CONTRACTOR MUST SUPERVISE AND DIRECT THE WORK SO AS TO MAINTAIN RESPONSIBILITY FOR COORDINATING THE WORK OF ALL TRADES AND THE CHECKING OF ALL DIMENSIONS. ALL DISCREPANCIES MUST BE CALLED TO THE ATTENTION OF THE CONTRACTING OFFICER AND MUST BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
4. THE CONTRACTOR MUST COMPLY WITH ALL APPLICABLE CITY, COUNTY, STATE, FEDERAL, AND INTERNATIONAL LAWS, INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) AND REGULATIONS ADOPTED PURSUANT THERETO.
5. CONSTRUCTION LOADS INCLUDING MATERIALS MUST NOT EXCEED THE DESIGN LIVE LOAD. PROVIDE ADEQUATE SHORING, RESHORING AND/OR BRACING WHERE REQUIRED.

FOUNDATIONS:

1. THE FOUNDATIONS HAVE BEEN DESIGNED USING THE FOLLOWING ALLOWABLE BEARING PRESSURES:
   A. DEAD PLUS LIVE LOAD: 4,000 PSF
   B. TOTAL DESIGN LOAD (INCLUDING WIND OR SEISMIC, TRANSIENT LOAD FACTOR = 1.33): 5,300 PSF
   C. BLAST DESIGN LOAD (DYNAMIC INCREASE FACTOR = 2.5): 10,000 PSF
2. EARTH COVER MATERIAL TO BE USED AS MAGAZINE COVER AND WITHIN THE EMBANKMENT IS TO BE NON-EXPANSIVE, FREE OF DELETERIOUS MATERIAL AND MEET THE FOLLOWING CHARACTERISTICS:
   A. ALLOWABLE WET SOIL DENSITY: 110 - 120 PCF.
   B. ASTM D2487 CLASSIFICATION: SM, SM-SC, SC
   C. ASTM D1140 MATERIAL FINER THAN #200 SIEVE (0.075MM) -MIN. 25%: MAX. 50%
   D. MAXIMUM PARTICLE SIZE: 1"
   E. ASTM D4318: MAX LIQUID LIMIT = 35, MAX PLASTICITY INDEX = 12.
   F. REQUIREMENTS FOR EARTH COVER ECMS IN ACCORDANCE WITH DEFENSE EXPLOSIVES SAFETY REGULATION (DESR) 6055.09.
3. RETAINING WALLS HAVE BEEN DESIGNED USING THE FOLLOWING CRITERIA.
   A. PASSIVE EQUIVALENT FLUID PRESSURE: 300 PSF/ FT
   B. AT-REST LATERAL PRESSURE w/ 2:1 BACKFILL (RESTRAINED):
      - WITHOUT SEISMIC: 32 PSF/ FT
      - WITH SEISMIC: 68 PSF/ FT
   C. CANTILEVERED WALL LATERAL PRESSURE (UNRESTRAINED):
      - WITHOUT SEISMIC: 40 PSF/ FT
      - WITH SEISMIC: 102 PSF/ FT
   D. FRICTION FACTOR BETWEEN SOIL AND CONCRETE PLACED AGAINST SOIL: 0.35
   E. FRICTION FACTOR BETWEEN SOIL AND CONCRETE PLACED AGAINST FORMWORK: 0.25
   F. MINIMUM SOIL COHESIVE STRENGTH: 500 PSF
4. SAND MATERIAL USED AS A FREE-DRAINING LAYER AT THE EXTERIOR CONCRETE SURFACES AT THE ROOF PANEL, ENDWALL, AND SIDEWALLS MUST MEET MINIMUM REQUIREMENTS FOR ECMS IN ACCORDANCE WITH DEFENSE EXPLOSIVES SAFETY REGULATION (DESR) 6055.09.
5. FOOTINGS MUST HAVE A MINIMUM WIDTH OF 24 INCHES AND A MINIMUM BOTTOM DEPTH OF 24 INCHES BELOW ADJACENT GRADE.
6. STRUCTURAL DRAWINGS INDICATE GENERAL S.O.G. AND FOUNDATION PREPARATION. SEE PROJECT SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.
7. ALL FILLING, BACKFILLING AND COMPACTING MUST BE PER PROJECT SPECIFICATION. COMPACTION OF SOILS ON TOP OF MAGAZINE MUST BE PERFORMED WITH HAND COMPACTION TOOLS ONLY.
8. EXPANSIVE SOILS MUST NOT BE USED FOR BACKFILL OR FILL. BACKFILL AT RETAINING WALLS MUST CONFORM TO THE PROJECT SPECIFICATIONS.
9. ALL EXCAVATIONS MUST BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE HAS ATTAINED FULL DESIGN STRENGTH. CONTRACTOR MUST BRACE OR PROTECT ALL BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL STRENGTH. CONTRACTOR MUST PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING.
10. CONTRACTOR MUST PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER AND SEEPAGE.
11. CONTRACTOR MUST PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEETING, AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANKS.
12. EXCAVATION FOR FOUNDATIONS MUST BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO PLACING THE REINFORCING AND CONCRETE.
13. SHALLOW FOOTING FOUNDATIONS MUST BE PLACED AND INSTALLED IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS PREPARED FOR THE PROJECT.
14. FOUNDATION BACKFILL AND UTILITY TRENCH BACKFILL WITHIN BUILDING AREA MUST BE MECHANICALLY COMPACTED IN LAYERS PER THE SPECIFICATIONS TO THE APPROVAL OF THE CONTRACTING OFFICER. FLOODING WILL NOT BE PERMITTED.
15. NEW FOUNDATIONS MUST BEAR ON APPROVED, UNDISTURBED, NATURAL SUBGRADE SOILS OR ON PROPERLY COMPACTED AND APPROVED FILL MATERIALS PLACED DIRECTLY ABOVE APPROVED SUBGRADES AS INDICATED IN CONSTRUCTION DRAWINGS AND SPECIFICATIONS.

CAST-IN-PLACE CONCRETE:

1. THE DESIGN AND CONSTRUCTION OF REINFORCED CONCERT MUST CONFORM TO THE ACI BUILDING CODE (ACI 318) AND THE FOLLOWING CODES AND STANDARD SPECIFICATIONS:
   A. CONCRETE MIXING ASTM C94
   B. CONCRETE PLACEMENT ACI 304
2. MATERIAL MUST CONFORM TO ALL OF THE FOLLOWING STANDARD SPECIFICATIONS, LATEST EDITION:
   A. PORTLAND CEMENT ASTM C150, TYPE I OR II
   B. CONCRETE AGGREGATES ASTM C33
   C. REINFORCING STEEL ASTM A615 DEFORMED BARS (GRADE 60)
      ASTM A706 GRADE 60 IS NOT EQUIVALENT AND IS NOT ACCEPTABLE.
   D. WELDED WIRE FABRIC (SHEET TYPE, ROLL TYPE NOT ACCEPTABLE) ASTM A1064
3. CONCRETE MUST ATTAIN THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS, UNLESS OTHERWISE INDICATED;
   A. ALL STRUCTURAL CONCRETE: 5,000 PSI
   B. LEAN CONCRETE: 3,000 PSI
4. CHLORIDES OR CHLORIDE SALTS ARE NOT ALLOWED IN THE CONCRETE MIXES.
5. ALL REINFORCING STEEL DETAILING AND PLACEMENT MUST CONFORM TO THE ACI DETAILING MANUAL PUBLICATION SP-66, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI-318, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI-315. PROVIDE ADEQUATE BOLSTERS, HI-CHAIRS, SUPPORT BARS, ETC., TO MAINTAIN SPECIFIED COVER FOR THE ENTIRE LENGTH OF ALL REINFORCING. SECURE ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS IN POSITION PRIOR TO PLACING CONCRETE.
6. WELDING OF REINFORCING STEEL IS PROHIBITED.
7. MINIMUM CONCRETE PROTECTION (COVER) FOR REINFORCEMENT MUST BE PROVIDED AS FOLLOWS UNLESS SPECIFICALLY CALLED OUT OTHERWISE IN PLANS AND DETAILS:
   A. CONCRETE PLACED AGAINST EARTH. 3 INCH
   B. CONCRETE PLACED AGAINST FORM AND LATER EXPOSED TO EARTH OR WEATHER. 2 INCH
   C. COLUMNS AND BEAMS (FROM TIE OR STIRRUP). 2 INCH
   D. SLAB EXPOSED TO WEATHER OR GROUND. 2 INCH
   E. SLABS AND WALLS (NOT EXPOSED TO WEATHER OR GROUND). 3/4 INCH
8. PROJECTING CORNERS OF BEAMS, WALLS, COLUMNS, ETC., MUST BE FORMED WITH 3/4 INCH CHAMFER, UNLESS OTHERWISE NOTED.
9. PROVIDE SLEEVES FOR ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED EXCEPT AS SHOWN. NOTIFY THE STRUCTURAL ENGINEER AND CONTRACTING OFFICER IN ADVANCE IF THE FIELD CONDITIONS DO NOT REFLECT THE CONDITIONS SHOWN ON THE DRAWINGS.
10. CONDUIT OR PIPE SIZE (O.D.) MUST NOT EXCEED 30 PERCENT OF SLAB THICKNESS AND MUST BE PLACED BETWEEN THE TOP AND BOTTOM REINFORCING UNLESS SPECIFICALLY DETAILED OTHERWISE. CONCENTRATIONS OF CONDUITS OR PIPES MUST BE AVOIDED EXCEPT WHERE DETAILED OPENINGS ARE PROVIDED.
11. ALL ROUGHENED SURFACES IN CONCRETE MUST BE MADE WITH A MINIMUM AMPLITUDE OF 1/4 INCH.
12. SEE SHEET S-002 FOR LIGHTWEIGHT CONCRETE MIX DESIGN FOR HIGH SECURITY MAGAZINE DOOR.

STRUCTURAL STEEL:

1. DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS," LATEST EDITION.
2. CONTRACTOR MUST REVIEW AND APPROVE STRUCTURAL STEEL SHOP DRAWINGS PRIOR TO SUBMITTAL TO THE CONTRACTING OFFICER. DO NOT BEGIN FABRICATION PRIOR TO THE COMPLETION OF THE SHOP DRAWING REVIEW PROCESS.
3. FURNISH STRUCTURAL STEEL THAT IS NEW, CLEAN, STRAIGHT, AND CONFORMING TO THE FOLLOWING STANDARD SPECIFICATION, LATEST EDITION:
   A. STRUCTURAL STEEL WIDE FLANGE: ASTM A992
   B. STRUCTURAL STEEL CHANNELS, ANGLES, S-SHAPES, AND PLATES: ASTM A992 OR ASTM A572, GRADE 50
   C. HOLLOW STRUCTURAL STEEL SECTIONS: ASTM A500, GRADE C
   D. ANCHOR BOLTS: ASTM F1554 (GRADE SPECIFIED AS REQUIRED)
   E. HIGH STRENGTH BOLTS: ASTM F3125 GRADE A325
   F. HEADED STUD ANCHORS: ASTM A29 (TYPE B)
   G. SUBSTITUTIONS OF STEEL SHAPES IS NOT PERMITTED.
4. STRUCTURAL STEEL MUST CONFORM TO THE FOLLOWING PROPERTIES OR COATINGS:
   A. ALL WELDMENT AND EMBEDMENTS FABRICATED FOR THE DOOR JAMB, HEAD, LOCKING PILASTER, AND TRENCH MUST BE MADE OF TYPE 304 STAINLESS STEEL PER ASTM A240.
   B. ALL DOOR STRUCTURAL STEEL MUST BE PRIMED AND PAINTED AFTER FABRICATION. REFER TO DOOR COATINGS NOTES ON S-002.
   C. ALL OTHER STRUCTURAL STEEL INCLUDING CANOPY FRAMING MUST BE HOT DIP GALVANIZED PER ASTM A123 AND COATED A MINIMUM DRY FILM THICKNESS (DFT) OF 12 MILS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
      a. PRIMER COAT: SOLVENT-BASED TWO COMPONENT EPOXY ANTI-CORROSIVE PRIMER (3-5 MILS), MPI (THE MASTER PAINTERS INSTITUTE) #101.
      b. INTERMEDIATE COAT: HIGH SOLIDS EPOXY COATING (3-5 MILS). MPI #108.
      c. TOP COAT: HIGH SOLIDS POLYURETHANE COATING (3-5 MILS). MPI #72.
   D. GALVANIZE STRUCTURAL STEEL AFTER FABRICATION WHERE PRACTICAL. REPAIR DAMAGED GALVANIZED COATING USING ASTM A780 ZINC-RICH PAINT. FIELD CUTTING OF ANY HOT-DIP GALVANIZED HARDWARE IS NOT PERMITTED.
5. REPAIR ABRADED AND RUSTED SHOP PAINT WITH SAME PAINT AS SPECIFIED IN STRUCTURAL STEEL NOTE 4C ON S-001.
6. WELDING MUST COMPLY WITH THE "STRUCTURAL WELDING CODE - STEEL" (AWS D1.1) AND THE "STRUCTURAL WELDING CODE - STAINLESS STEEL" (AWS D1.6). WELD ELECTRODES MUST BE E70XX. PASSIVATION OF STAINLESS STEEL WELDS MUST BE PERFORMED PER ASTM A380. UNLESS OTHERWISE NOTED, MINIMUM WELD SIZE MUST BE 1/4 INCH CONTINUOUS FILLET WELD.

STRUCTURAL STEEL (CONT):

7. UNLESS OTHERWISE NOTED WELD ALL SHOP CONNECTIONS AND BOLT ALL FIELD CONNECTIONS. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS, UNLESS OTHERWISE DETAILED.
8. DO NOT CUT OR BURN HOLES IN STRUCTURAL STEEL WITHOUT THE APPROVAL OF THE CONTRACTING OFFICER.
9. SPLICING OF STRUCTURAL STEEL IS NOT PERMITTED.
10. GROUT BELOW BASE PLATES WITH NON-SHRINK GROUT WITH COMPRESSIVE STRENGTH, f'_c = 5,000 PSI.
11. COAT ALL STRUCTURAL STEEL EXPOSED TO SOIL WITH TWO COATS OF COAL TAR EPOXY. EPOXY MUST MEET THE REQUIREMENTS OF PAINT SPECIFIC SSPC-PAINT 16.
12. BLAST DOOR AND COMPONENTS MUST MEET THE FOLLOWING TOLERANCES.
   A. BLAST DOOR MUST HAVE A TOTAL MAX FLATNESS TOLERANCE OF ±1/4" VERTICALLY AND HORIZONTALLY.
   B. TRENCHES AND DOOR GUIDE RAIL MUST HAVE A ±1/4" MAX DIFFERENTIAL TOLERANCE PER EVERY 37'-0".
   C. POCKET SECURITY PILASTER AND ALL OTHER VERTICAL AND HORIZONTAL DOOR BEARING SURFACES MUST HAVE A ±1/4" MAX TOTAL TOLERANCE.

STRUCTURAL ABBREVIATIONS:

AB	ANCHOR BOLT	INTERM	INTERMEDIATE
ADD'L	ADDITIONAL	JT	JOINT
ALT	ALTERNATE	LLH	LONG LEG HORIZONTAL
APPROX	APPROXIMATE	LLV	LONG LEG VERTICAL
ARCH	ARCHITECTURAL	LONGIT	LONGITUDINAL
BM	BEAM	MAX	MAXIMUM
BOT	BOTTOM	MECH	MECHANICAL
CIP	CAST-IN-PLACE	MANUF, MFR	MANUFACTURER
CJ	CONSTRUCTION JOINT	MIN	MINIMUM
CLJ	CONTROL JOINT	MISC	MISCELLANEOUS
CLR	CLEAR (ANCE)	NIC	NOT IN CONTRACT
COL	COLUMN	NS	NEAR SIDE
CONC	CONCRETE	NTS	NOT TO SCALE
CONN	CONNECTION	OC	ON CENTER
CJP	COMPLETE JOINT PENETRATION	OF	OUTSIDE FACE
CONSTR	CONSTRUCTION	OH	OPPOSITE HAND
CONT	CONTINUOUS	OPNG	OPENING
DBA	DEFORMED BAR ANCHOR	PJ	PANEL JOINT
DBL	DOUBLE	PL	PLATE
DET	DETAIL	PN	PART NUMBER
DIA	DIAMETER	RAD	RADIUS
DIM	DIMENSION	REINF	REINFORCEMENT
DIST	DISTANCE	REQ'D	REQUIRED
DWG	DRAWING	SCHED	SCHEDULE
EA	EACH	SECT	SECTION
EF	EACH FACE	SHT	SHEET
EJ	EXPANSION JOINT	SIM	SIMILAR
EQ	EQUAL	SOG	SLAB-ON-GRADE
ES	EACH SIDE	SPA	SPACE
EXT	EXTERIOR	SPECS	SPECIFICATIONS
FDN	FOUNDATION	SQ	SQUARE
FL	FLOOR	SS	STAINLESS STEEL
FIN	FINISH	STD	STANDARD
FIN FL	FINISH FLOOR	STIFF	STIFFENER
FS	FAR SIDE	STRUCT	STRUCTURAL
FT	FOOT OR FEET	T	TOP
FTG	FOOTING	TBD	TO BE DETERMINED
GA	GAUGE	TEMP	TEMPERATURE STEEL
GI	GALVANIZED IRON	THK	THICK
HAS	HEADED ANCHOR STUD	THRU	THROUGH
HORIZ, (H)	HORIZONTAL	TOS	TOP OF SLAB, TOP OF STEEL
HSS	HOLLOW STRUCTURAL SECTION	TYP	TYPICAL
IF	INSIDE FACE	UNO	UNLESS NOTED OTHERWISE
INFO	INFORMATION	VERT, (V)	VERTICAL
		W/	WITH

NOTES TO DESIGNER - REMOVE THESE NOTES WHEN PREPARING CONSTRUCTION DRAWINGS FOR SITE ADAPTION:

1. EDIT UFGS 01 45 35 "SPECIAL INSPECTIONS" IN ACCORDANCE WITH UFC 3-301-01 "STRUCTURAL ENGINEERING" AND INCORPORATE ADDITIONAL ITEMS IDENTIFIED IN APPENDIX C OF UFC 4-420-01.
2. SITE PARAMETERS FOR WIND AND SEISMIC LOADS INDICATED IN THE DESIGN CRITERIA NOTES SECTION OF THIS SHEET ARE BASED ON A SITE LOCATION OF GUAM. IF THE LOCAL CONDITIONS FOR THE PROJECT SITE REQUIRE MORE STRINGENT WIND AND/OR SEISMIC PARAMETERS, THE DESIGN CRITERIA AND STRUCTURAL DESIGN MUST BE REVISED ACCORDINGLY.
3. THESE DRAWINGS ARE TO BE UTILIZED IN CONJUNCTION WITH ALL DoD REQUIREMENTS FOR SITE ADAPTATIONS. EXAMPLES INCLUDE, BUT ARE NOT LIMITED TO, PHYSICAL SECURITY, CIVIL, FOUNDATIONS, AND SPECIFICATIONS. ANY DEVIATION FROM THE STANDARD DRAWINGS FOR THE MAGAZINE STRUCTURE ITSELF (ROOF, WALLS, EARTH COVER, HEADER BEAM, PILASTER, BLAST DOOR, ETC) WITHOUT THE WRITTEN APPROVAL FROM THE DEPARTMENT OF DEFENSE EXPLOSIVE SAFETY BOARD (DDESB) MAY RESULT IN THE MAGAZINE TO BE CONSIDERED AN UNDEFINED MAGAZINE AND MAY SEVERELY RESTRICT STORAGE CAPACITY.
4. NEW SHEETS MUST BE ADDED AS NECESSARY BY THE SITE ADAPT ENGINEER FOR LANGUAGE TRANSLATIONS.
5. THE MAGAZINE ROOF SLAB, SIDE/REAR WALLS, AND WING WALLS IN THIS STANDARD DESIGN HAVE BEEN DESIGNED FOR THE BACKFILL SOIL PARAMETERS AND SOIL TYPES INDICATED IN THE FOUNDATIONS SECTION OF THE GENERAL NOTES. AVAILABLE SOILS FOR A GIVEN PROJECT SITE MAY VARY. THE SITE-ADAPT ENGINEER MUST SPECIFY BACKFILL SOIL MATERIALS THAT WILL MEET FOUNDATION CRITERIA INDICATED IN THE GENERAL NOTES WHENEVER POSSIBLE. IF LOCAL SOILS MEETING SPECIFIED REQUIREMENTS ARE NOT AVAILABLE, SEE NOTES TO DESIGNER #7.
6. THE SITE ADAPT ENGINEER MUST CONDUCT A SITE-SPECIFIC GEOTECHNICAL INVESTIGATION FOR EACH MAGAZINE INSTALLATION. THE SITE ADAPT ENGINEER MUST COORDINATE THE FOUNDATION SYSTEMS, SELECTION OF FILL, SUBGRADE PREPARATION, AND COMPACTION REQUIREMENTS SHOWN IN THE STANDARD DRAWINGS WITH THE RECOMMENDATIONS FROM THE GEOTECHNICAL REPORT AND IMPLEMENT THEM INTO THE DRAWINGS AND SPECIFICATIONS.
7. SPECIFIED EARTH COVER MATERIALS IN THE FOUNDATION GENERAL NOTES ARE MORE STRINGENT THAN WHAT IS REQUIRED BY DESR 6055.09 AND WHAT HAS BEEN SPECIFIED FOR PREVIOUS MAGAZINE DESIGNS. THE SITE ADAPT ENGINEER MUST EVALUATE THE LOCAL AVAILABILITY OF SPECIFIED EARTH COVER MATERIALS. THE SITE ADAPT ENGINEER MAY SELECT ALTERNATIVE EARTH COVER MATERIALS, BUT THE MATERIAL MUST AT LEAST MEET REQUIREMENTS OF DESR 6055.09 AND THE MAGAZINE STRUCTURE MUST BE EVALUATED AS PART OF THE SITE ADAPT DESIGN FOR SPECIFIC SOIL PROPERTIES. THE ALTERNATIVE EARTH COVER MATERIAL SELECTED BY THE SITE ADAPT ENGINEER MUST STILL FALL IN THE 100-120 PCF DENSITY RANGE.
8. THE CONTRACTOR MUST PERFORM A GEOTECHNICAL INVESTIGATION ON SITE TO CONFIRM THE SOIL CONDITION PRIOR TO COMMENCING FOUNDATION WORK. THE FOUNDATION DESIGN AND CRITERIA MUST BE MODIFIED TO REFLECT SOIL CONDITIONS AND SITE SPECIFIC SOIL CONDITIONS AND ALLOWABLE BEARING PRESSURE AS DETERMINED BY THE SITE ADAPTATION GEOTECHNICAL REPORT.
9. THE MAGAZINE SIDE WALLS AND WING WALLS AND CONNECTIONS HAVE BEEN DESIGNED FOR 2:1 SLOPE. THIS SLOPE CANNOT BE CHANGED UNLESS CALCULATIONS ARE PERFORMED TO ANALYZE ALL AFFECTED ELEMENTS. IF ANY ELEMENT IS MODIFIED, ENDORSEMENTS AND APPROVAL ARE REQUIRED FROM NAVFAC ATLANTIC, NAVFAC EXWC, NOSSA, AND DDESB.

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	DRW	CHK
JAF	SFF	TPH

PM/DM
BRANCH MANAGER
CHIEF ENG/ARCH
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

GENERAL NOTES - 1

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877611
SHEET 2 OF 51

S-001

DRAWFORM REVISION: 00 MONTH 2020

SPECIAL INSPECTION SCHEDULE/ VERIFICATION

ITEM	EXTENT OF INSPECTION[1]	REFERENCE	COMMENT/ SCOPE
CONCRETE CONSTRUCTION			
REINFORCING STEEL PLACEMENT	P	ACI 318: 3.5, 26.6.2	INSPECT SIZE, SPACING, COVER, POSITIONING AND GRADE OF REINFORCING STEEL. VERIFY THAT REINFORCING BARS ARE FREE OF FORM OIL OR OTHER DELETERIOUS MATERIALS. INSPECT BAR LAPS AND MECHANICAL SPLICES. VERIFY THAT BARS ARE ADEQUATELY TIED AND SUPPORTED ON CHAIRS OR BOLSTERS.
CONCRETE PLACEMENT	C	AC1 318: 26.5.2	INSPECT PLACEMENT OF CONCRETE. VERIFY THAT CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION. VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED.
SAMPLING AND TESTING OF CONCRETE	C	ASTM C 172 ASTM C 31 ACI 318: 26.12	TEST CONCRETE COMPRESSIVE STRENGTH, SLUMP, AIR-CONTENT AND TEMPERATURE
CURING AND PROTECTION	P	ACI 318: 26.5.3-26.5.5	INSPECT CURING, COLD WEATHER PROTECTIONS AND HOT WEATHER PROTECTION PROCEDURES.
FORMWORK	P	ACI 318: 26.11	INSPECT FLATWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.
DOOR CONSTRUCTION			
FABRICATOR CERTIFICATION/ QUALITY CONTROL PROCEDURES	S		REVIEW OF FABRICATOR'S QUALITY CONTROL PROCEDURES OR AISC CERTIFICATION.
FABRICATION INSPECTION	P		INSPECT IN-PLACE FABRICATION, OR REVIEW FABRICATOR'S APPROVED INDEPENDENT INSPECTION AGENCY'S REPORTS
SHOP DEMONSTRATION	C		SEE BLAST DOOR NOTES
SPECIAL ITEMS RELATED TO THE OTHER EXPLOSIVES SAFETY RELATED ITEMS			
REBAR FARADAY-SHIELD	P	DWG E-102A; E-501; E-504	INSPECT REINFORCING STEEL TO ENSURE ELECTRICAL CONTINUITY BETWEEN THE CAP, WALLS, SLAB AND FOUNDATION THROUGH CRIMPED CONNECTIONS. DOCUMENT CONNECTIONS WITH PHOTOS AND CONTINUITY TEST. ALL CRIMPED CONNECTIONS MUST BE INSPECTED PRIOR TO CONCRETE PLACEMENT.
ECM GROUNDING	P	DWGS E-102A; E-501; E-504	VISUALLY INSPECT TO ENSURE ECM FOUNDATION IS BONDED TO THE GROUNDING SYSTEM. DOCUMENT WITH PHOTOS.
GROUNDING SYSTEM	P	DWGS E-102A; E-501; E-504, DA PAM 385-64, 17-27.	VISUALLY INSPECT GROUNDING SYSTEM CONDUCTORS TO ENSURE NO DAMAGE, BREAKAGE, OR CORROSION HAS OCCURED TO THE CONDUCTORS DURING INSTALL AND BEFORE EARTH BURIAL DOCUMENT WITH PHOTOS.
INDIVIDUAL BONDS	P	DWGS E-102A; E-501; E-504, NFPA 780, 8.9 DA PAM 385-64, 17.27.	INSPECT ALL BONDS FOR LOOSE CONNECTIONS THAT MIGHT RESULT IN HIGH-RESISTANCE CONNECTIONS.
LPS COMPONENTS	P	NFPA 780, 8.9 DA PAM 385-64, 17-27	INSPECT LPS COMPONENTS FOR SECURE MOUNTING AND PROTECTION AGAINST ACCIDENTAL MECHANICAL DISPLACEMENT.
LPS TESTING	S	NFPA 780, 8.9 DA PAM 385-64, 17-28	PERFORM BONDING TEST ACROSS EACH BOND, AND AN EARTH ELECTRODE TEST OF THE LPS.
EARTH COVER	P	DWGS S-301	INSPECT DEPTH GAUGES ON ROOF PRIOR TO EARTH COVER PLACEMENT FOR SIZE AND STABILITY. INSPECT EARTH COVER DEPTH AND SLOPE TO ENSURE A 2'-0" MINIMUM IS PROVIDED ABOVE STRUCTURE.
DOOR LAPS	C	DWGS S-504	INSPECT DOOR LAPS AT TOP AND BOTTOM OF DOOR FRAME
MISCELLANEOUS EMBEDDED AND ATTACHED ITEMS (DOORS, FRAMES, TRENCHES, ETC)	P		INSPECT EMBEDDED AND ATTACHED ITEMS TO ENSURE THEY ARE BONDED TO THE GROUNDING SYSTEM. DOCUMENT WITH PHOTOS.

SPECIAL INSPECTION NOTES:

1. INSPECTION INTERVALS ARE AS FOLLOWS:
   C - CONTINUOUS: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.
   P - PERIODIC: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.
   S - SUBMITTAL
2. STRUCTURAL TEST AND SPECIAL INSPECTIONS ARE BASED ON CHAPTER 17 OF THE IBC.
3. CONTRACTOR MUST HIRE A QUALIFIED INSPECTIONS AND TESTING AGENCY TO PERFORM SPECIAL INSPECTIONS AND TESTING IN ACCORDANCE WITH THE IBC. SUBMIT INSPECTION REPORTS TO THE CONTRACTING OFFICER FOR EACH DAY SPECIAL INSPECTIONS AND TESTING ARE PERFORMED.
4. THE SPECIAL INSPECTIONS LISTED IN THIS TABLE ARE TO BE USED IN CONJUNCTION WITH ALL SPECIAL INSPECTION REQUIREMENTS PER THE IBC SHOWN BELOW.
5. THE CONTRACTOR MUST EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED UNDER SECTION 1705 OF THE IBC REQUIRING VERIFICATION AND INSPECTION. THE CONTRACTING OFFICER MUST ATTEND ALL OBSERVATIONS. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS DEFINED IN SECTION 110. THE INSPECTING AGENCY MUST PROVIDE REPORTS OF THE SPECIAL INSPECTIONS DIRECTLY TO THE GOVERNMENT.

THE FOLLOWING IS A LIST OF INSPECTIONS THAT MUST BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF THE IBC.

- STEEL CONSTRUCTION: 1705.2
- CONCRETE CONSTRUCTION: 1705.3
- SOILS: 1705.6
- DRIVEN DEEP FOUNDATIONS: 1705.7
- CAST-IN-PLACE DEEP FOUNDATIONS: 1705.8
- HELICAL PILE FOUNDATIONS: 1705.9
- FABRICATED ITEMS: 1705.10
- SPECIAL INSPECTIONS FOR WIND RESISTANCE: 1705.11
- SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE: 1705.12
- TESTING FOR SEISMIC RESISTANCE: 1705.13
- TOLERANCES: SEE SPECS

LIGHTWEIGHT CONCRETE:

1. THE FOLLOWING MIX DESIGN AND CONCRETE MATERIAL PROPERTIES MUST BE USED FOR THE LIGHTWEIGHT CONCRETE LAYER IN THE HIGH SECURITY DOOR:

LIGHTWEIGHT CONCRETE MIX DESIGN				
MATERIAL	AMOUNT	UNIT	SPECIFIC GRAVITY	ASTM
LIGHTWEIGHT AGGREGATE	1530	lb	1.38	C331
CEMENT TYPE II	721	lb	3.15	C150
WATER	315	lb	1	C1602
SILICA FUME	82	lb	2.2	C1240
SUPERPLASTICIZER - TYPE A	8	oz*	1.27	C494
SYNTHETIC FIBERS - TYPE III	0.70	lb	0.855	C1116
TOTAL VOLUME	27	ft^3		
oz*/ 100lb OF CEMENTITIOUS MATERIAL				

LIGHTWEIGHT CONCRETE MATERIAL PROPERTY REQUIREMENTS			
PROPERTY	AMOUNT	UNIT	ASTM
SLUMP	2 + 1/4	in	C143
MINIMUM DENSITY - UNIT WEIGHT	115	lb/ ft^3	C138
STRENGTH (28 DAY MINIMUM)	4000	psi	C78

2. LIGHTWEIGHT AGGREGATES MUST BE DRY.
3. ADJUST WATER AMOUNT TO +/- 0.5 lb SO THAT MIX HOLDS SHAPE WHEN FORMED INTO A BALL IN THE HAND.
4. MIX CAN BE SPLIT FOR VOLUME NEEDED.
5. MIX PROCEDURE:
   A. WEIGH OUT ALL MATERIALS.
   B. IN A SEPARATE CONTAINER, COMBINE AND MIX HALF OF WATER, PLASTICIZER AND ALL FIBERS.
   C. IN ANOTHER SEPARATE CONTAINER, COMBINE AND MIX SILICA FUME AND CEMENT.
   D. POUR WATER WITH PLASTICIZER AND ALL FIBERS INTO MIXER.
   E. POUR LIGHTWEIGHT FINE AGGREGATE INTO MIXER.
   F. SLOWLY ADD SILICA FUME AND CEMENT TO MIXER.
   G. ADD REMAINING WATER ADJUSTING AS NECESSARY (NOTE 3).
   H. ALLOW TO MIX FOR AT LEAST 10 MINUTES.
   I. WHEN MIX IS READY, POUR INTO DOOR CAVITIES OVER REBAR, TO PRESCRIBED DEPTH, ENSURE MIX FILLS ALL AREAS BEHIND REBAR, VIBRATE AS NECESSARY, NO VOIDS ALLOWED.
6. ALLOW CONCRETE TO CURE FOR 14 DAYS BEFORE MOVING DOOR AND 28 DAYS BEFORE WELDING FRONT PANELS ONTO DOOR.
7. QUESTIONS CAN BE REFERRED TO NAVFAC EXWC DOD LOCK PROGRAM, AND SECURITY, ENGINEERING DIV SH22.

STEEL DECK:

1. THE DESIGN, FABRICATION, ERECTION OF METAL DECKING MUST BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE SDI SPECIFICATIONS AND THE SDI DIAPHRAGM MANUAL
2. STEEL ROOF DECK AND SIDING IS 1 1/2" x 18 GAUGE FACTORY-FINISHED DESIGNED FOR THE DEAD AND LIVE LOADS INDICATED.
3. STEEL ROOF DECK AND SIDING MUST BE ATTACHED TO SUPPORTS WITH #14 STAINLESS STEEL SCREWS AND WASHERS AT EA VALLEY (MINIMUM 5 PER PANEL). USE 1/4-INCH BUTYL TAPE TO SEAL LAPS.
4. THE PLANS INDICATE DECK SPAN DIRECTION.
5. SUSPENDED CEILINGS, LIGHT FIXTURES, DUCTS, AND OTHER UTILITIES MUST NOT BE SUPPORTED FROM THE STEEL DECK.
6. STEEL DECK MUST CONFORM TO THE COATINGS FOR STRUCTURAL STEEL PROVIDED ON SHEET S-001.

MECHANICAL MATERIALS

1. LOUVERS MUST BE CONSTRUCTED OF 16 GAUGE GALVANIZED STEEL WITH 4" DEEP FRAME. BLADES MUST BE 16 GAGE GALVANIZED STEEL POSITIONED AT APPROXIMATELY 37.5 DEGREES DOWN FROM THE HORIZONTAL AND SPACED APPROXIMATELY 6" ON CENTER. SCREEN MUST BE 19 GAUGE GALVANIZED 1/4" MESH. APPROXIMATELY 50% FREE AREA.
2. VENTILATORS MUST BE CONSTRUCTED OF MINIMUM 24 GAUGE GALVANIZED STEEL AND MUST BE DESIGNED FOR A SUSTAINED WIND SPEED OF 132 MPH.
3. FIRE DAMPER FUSIBLE LINKS MUST HAVE A MELTING POINT OF 160 TO 165 DEGREES FAHRENHEIT. BREAKING STRENGTH MUST BE SUITABLE FOR LOADS IMPOSED BY COUNTERWEIGHTS.
4. PIPE FLANGE GASKETS MUST BE OF NON-ASBESTOS MATERIAL IN ACCORDANCE WITH ASME B16.21. GASKETS MUST BE FLAT, 1/16 INCH THICK, AND CONTAIN ARAMID FIBERS BONDED WITH STYRENE BUTADIENE RUBBER. FLANGE FASTENERS MUST BE TYPE 316 STAINLESS STEEL.

DOOR COATINGS:

1. ALL COATINGS AND INSTALLATION OF COATINGS MUST COMPLY WITH:
   A. UFGS - 09 97 13.27.
   B. SHOP COATINGS: SSPC (THE SOCIETY OF PROTECTIVE COATINGS) QP3.
   C. FIELD COATINGS: SSPC QP1 + QS1.
   D. COLOR: LIGHT GRAY.
2. SURFACE PREPARATION:
   A. REMOVE SLAG FROM ALL WELDING SURFACES PRIOR TO CLEANING IN ACCORDANCE WITH NACE SP0178.
   B. SOLVENT CLEAN SURFACE TO BE COATED PRIOR TO ABRASIVE BLASTING IN ACCORDANCE WITH SSPC SP1.
   C. DRY ABRASIVE BLAST TO NEAR WHITE FINISH IN ACCORDANCE WITH SSPC SP10. BLAST PROFILE MUST BE 1-3 MILS TOOTH HEIGHT.
3. PAINT SYSTEMS:
   A. TOTAL COATING DRY FILM THICKNESS (DFT): 12 MILS.
   B. PRIMER COAT: ABRASION RESISTANT INORGANIC ZINC SILICATE PRIMER (3-5 MILS). SSPC PAINT 20, TYPE IC, LEVEL 1, WITH AT LEAST 85% ZINC IN DRY FILM.
   C. INTERMEDIATE COAT: HIGH SOLIDS EPOXY COATING (3-5 MILS). MPI #108.
   D. TOP COAT: HIGH SOLIDS POLYURETHANE COATING (3-5 MILS). MPI #72.
4. ALL SURFACES OF ALL DOOR COMPONENTS MUST BE SOLVENT CLEANED, DRY ABRASIVE BLASTED, AND ZINC RICH PRIMER COATED. PRIOR TO FULLY ASSEMBLING OR FABRICATING DOOR, CLEAN AND PRIMER SURFACES THAT WILL BECOME INACCESSIBLE AFTER DOOR IS ASSEMBLED. THE DOOR MUST NOT BE GALVANIZED. EPOXY INTERMEDIATE AND POLYURETHANE TOP COATS MUST BE APPLIED TO ALL EXTERIOR SURFACES OF THE FULLY-ASSEMBLED DOOR.

ELECTRICAL BONDING & GROUNDING

1. ALL STEEL LOUVERS, VENTILATORS, DOORS AND FRAMES MUST BE ELECTRICALLY BONDED TO THE MAGAZINE REINFORCING CAGE.
2. ALL STRUCTURAL AND MISCELLANEOUS ITEMS EMBEDDED IN CONCRETE MUST BE ELECTRICALLY BONDED TO THE REINFORCING CAGE BY WIRE TIES.
3. THE REINFORCING CAGE MUST BE MADE ELECTRICALLY CONTINUOUS BY WIRE TIES AT A MINIMUM OF 48 INCH ON CENTERS IN EVERY DIRECTION, REFER TO DETAIL A1 ON DRAWING E-504.
4. ALL WALLS AND CONSTRUCTION JOINTS MUST BE ELECTRICALLY BONDED. SEE THE ELECTRICAL DRAWINGS FOR DETAILS.
5. ALL STRUCTURAL STEEL AND REINFORCING STEEL MUST BE GROUNDED TO THE SECONDARY GROUND. SEE THE ELECTRICAL DRAWINGS FOR DETAILS.
6. BURIED OR EMBEDDED ITEMS MUST BE DOCUMENTED WITH PHOTOS AT INTERVALS OF 20 FEET.

PLUMBING MATERIALS

1. FLOOR DRAIN FIXTURES MUST CONSIST OF A CAST IRON BODY, NICKEL BRONZE ADJUSTABLE TOP, 6" ROUND STRAINER, FLASHING COLLAR, SURFACE MEMBRANE CLAMP, AND DEEP SEAL TRAP. PROVIDE WITH BARRIER-TYPE TRAP SEAL PROTECTION DEVICE CONFORMING TO ASSE 1072 WHERE CONNECTING TO SANITARY SEWER SYSTEM.
2. UNDERGROUND DRAINAGE PIPING MUST CONSIST ASTM D2665 SCH 40 PVC SOLID CORE PIPING WITH DWV PATTERN FITTINGS. PERFORATED DRAIN PIPING MUST INCLUDE 1/2" HOLES SPACED 5" O.C. IN TWO ROWS 120 DEGREES APART PER ASTM D2729. ALL PERFORATED DRAIN PIPING MUST BE INSTALLED WITH HOLES FACING DOWN.
3. PREFABRICATED TRENCH DRAINS MUST BE 6" WIDE, SHALLOW, PRECAST POLYESTER CONCRETE CHANNEL OF INTERLOCKING DESIGN. 3" OUTLETS. DUCTILE IRON EDGE RAIL AND EXTRA HEAVY DUTY, DIN19580 LOAD CLASS E DUCTILE IRON SLOTTED TOP GRATE FASTENED TO RAIL. GRATE SLOTS MUST BE NO WIDER THAN 1/4" OR PROVIDE STAINLESS STEEL MESH SCREEN FASTENED TO BOTTOM OF GRATES. MESH OPENINGS MUST BE NO LARGER THAN 1/4" TO MITIGATE RODENT ENTRY.

BLAST DOOR NOTES:

1. THE BLAST DOOR MANUFACTURER MUST BE SOLELY RESPONSIBLE FOR INSTALLATION AND ERECTION OF THE BLAST DOOR.
2. THE DOOR MANUFACTURER MUST COMMENCE A SHOP DEMONSTRATION OF EACH DOOR IN THE PRESENCE OF A GOVERNMENT OFFICIAL, CONSISTING OF A SUCCESSFUL CYCLE OF OPENING AND CLOSING THE DOOR BY CONTROLS, OPENING AND CLOSING OF TRENCH PLATES BY DOOR PLOWS AND ALIGNMENT OF DOOR IN SECURITY PILASTER. DEMONSTRATION MUST BE A MINIMUM OF HALF THE LENGTH OF THE DOOR TRAVEL. DEMONSTRATION MUST ALSO INCLUDE MANUAL OPERATION OF BLAST DOOR IN BOTH DIRECTIONS.
3. THE DOOR MANUFACTURER MUST COMMENCE A FIELD DEMONSTRATION OF EACH DOOR IN THE PRESENCE OF A GOVERNMENT OFFICIAL, CONSISTING OF A SUCCESSFUL CYCLE OF OPENING AND CLOSING THE DOOR BY CONTROLS, OPENING AND CLOSING OF TRENCH PLATES BY DOOR PLOWS, LOCKING AND UNLOCKING DOOR, AND ALIGNMENT OF DOOR IN SECURITY PILASTER.
4. THE BLAST DOOR MANUFACTURER MUST HAVE A MINIMUM OF 10 YEARS OF EXPERIENCE IN THE DESIGN, CONSTRUCTION AND INSTALLATION OF DOORS WEIGHING A MINIMUM OF 30 KIPS, CONSISTING OF BOTTOM ROLLING DOORS AND LARGE HEAVY DOORS SUCH AS MAGAZINE BLAST DOORS AND/OR NUCLEAR CONTAINMENT DOORS. THE BLAST DOOR MANUFACTURER MUST SUBMIT PROOF OF EXPERIENCE TO THE CONTRACTING OFFICER FOR APPROVAL BY NAVFAC EXWC AND NAVFAC ATLANTIC. A MINIMUM OF 5 EXAMPLES MUST BE SUBMITTED.
5. PROVIDE STEEL PLATE BOTTOM WHEELS HAVING A MINIMUM TREAD DIAMETER AS REQUIRED FOR THE ACTUAL WHEEL LOADING. CONSTRUCTION WHEEL ASSEMBLES TO PERMIT REMOVAL OF THE WHEEL WITHOUT REMOVING THE DOOR LEAF FOR ITS POSITION ON THE RAIL.
6. THE GENERAL CONTRACTOR MUST SELECT A SINGLE SUPPLIER TO PROVIDE A COMPLETE BLAST DOOR SYSTEM INCLUDING BUT NOT LIMITED TO THE BLAST DOOR AND ALL OF ITS ASSOCIATED COMPONENTS AND HARDWARE, RAIL, TRENCH, TRENCH COVER ASSEMBLY, PLOW AND EMBEDDED PLATES.
7. PROVIDE A HAND RELEASE ON THE DESIGNED BRAKING SYSTEM TO RELEASE THE BRAKE WHEN IT BECOMES NECESSARY TO MANUALLY MOVE THE DOOR. PROVIDE AN AUTOMATIC RESET TYPE HAND RELEASE SO THAT THE BREAK WILL BE OPERABLE DURING SUBSEQUENT ELECTRICAL OPERATIONS OF THE DOOR.
8. BLAST DOOR MANUFACTURER MUST PROVIDE A COMPLETE BLAST DOOR MANUAL THAT INCLUDES MAINTENANCE AND STEP BY STEP INSTRUCTIONS OF WHEEL REMOVAL.
9. THE PLOW/TRENCH COVER ASSEMBLY ALONG WITH THE WHEEL/MOTOR ASSEMBLY ARE NOTIONAL AND SHOWN FOR BIDDING PURPOSES AND MAY VARY BASED ON THE DOOR MANUFACTURER'S APPROVED DESIGN.

APPR	DATE	DESCRIPTION	STM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023
ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

GENERAL NOTES – 2

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877612
SHEET 3 OF 51

S-002

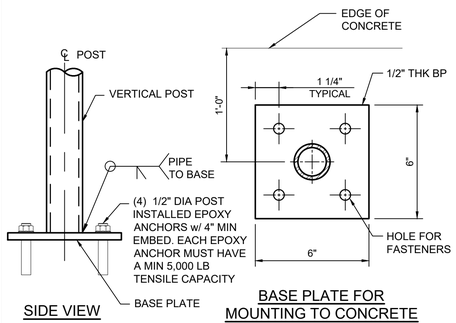
DRAWFORM REVISION: 00 MONTH 2020

MINIMUM TENSION LAP SPLICE LENGTHS ("1.3ℓ_d")			MINIMUM EMBEDMENT LENGTHS FOR STANDARD END HOOKS ("ℓ_{dh}")	
BAR SIZE	f'_c = 5,000 PSI		BAR SIZE	f'_c > 5,000 PSI
	TOP BARS	OTHER BARS		
#3	31.2	31.2	#3	6
#4	36.9	31.2	#4	8
#5	46.1	35.5	#5	10
#6	55.4	42.6	#6	12
#7	80.7	62.1	#7	13
#8	92.3	71.0	#8	15
#9	104.1	80.1	#9	17
#10	117.2	90.1	#10	19
#11	130.1	100.1	#11	22

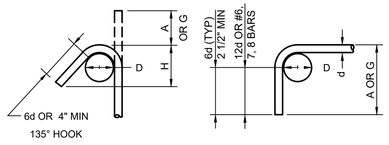
NOTES:

1. IF CONCRETE COVER IS NOT GREATER THAN THE DIAMETER OF THE BAR OR THE CENTER TO CENTER SPACING IS NOT GREATER THAN (3) BAR DIAMETERS, THEN VALUES MUST BE INCREASED BY 50%. ALL LAPS ARE TYPICAL TENSION LAP SPLICES U.N.O. ON PLANS OR DETAILS.
2. "TOP BARS" ARE HORIZONTAL BARS WITH MORE THAN 12 INCH DEPTH OF CONCRETE CAST BELOW THEM.
3. IF CONCRETE COVER IS NOT GREATER THAN 2 1/2 INCH AND THE END COVER OF HOOK IS NOT GREATER THAN 2 INCH, THEN VALUES MUST BE INCREASED BY 43%.
4. LAPS SPLICES AND EMBEDMENT LENGTHS SHOWN IN THIS DETAIL ARE BASED ON A DYNAMIC INCREASE FACTOR = 1.29. LAPS FOR REINFORCEMENT IN STRUCTURAL COMPONENTS NOT RELATED TO BLAST DESIGN (WING WALLS, FOUNDATIONS, SLAB-ON-GRADE) MAY BE REDUCED BY THE DYNAMIC INCREASE FACTOR. LAP SPLICES FOR REINFORCEMENT IN BLAST COMPONENTS (HEADER BEAM, HEADWALL, ROOF SLAB, SIDE/ END WALLS, PILASTERS) MAY NOT BE REDUCED BY THE DYNAMIC INCREASE FACTOR.

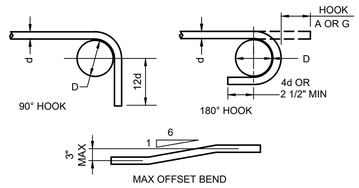
C1 REINFORCEMENT SPLICE SCHEDULE
SCALE: NONE



B1 ALUMINUM GUARDRAIL POST DETAIL
SCALE: NONE



NOTES:
D = FINISHED INSIDE BEND DIAMETER
d = BAR DIAMETER



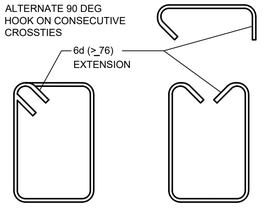
PRINCIPAL REINFORCING

STIRRUP HOOKS

135° SEISMIC HOOK			
BAR SIZE	D	A OR G	APPROX H
#3	1.5	4	2.5
#4	2	4.5	3
#5	2.5	5.5	3.75
#6	4.5	8	4.5
#7	5.25	9	5.25
#8	6	10.5	6

BAR SIZE	DIMENSIONS OF STANDARD 180-DEG HOOKS, ALL GRADE			DIMENSIONS OF STANDARD 90-DEG HOOKS, ALL GRADE	
	A OR G	J	D	A OR G	D
#3	5	3	3	6	3
#4	6	4	3	8	3
#5	7	5	4	10	4
#6	8	6	5	12	5
#7	10	7	6	14	6
#8	11	8	6	16	6
#9	15	12	10	19	10
#10	17	14	11	22	11
#11	19	15	12	24	12

C2 STIRRUP AND TIE HOOK DIMENSIONS
SCALE: NONE



NOTE:

1. THIS IS A GENERAL DETAIL ONLY, UNO, AND THE STIRRUPS FOR THE HEADER BEAM PILASTER, HEADWALL AND ROOF MUST BE BENT AS SHOWN IN THEIR CORRESPONDING DETAILS

B2 SEISMIC HOOP CLOSED TIE DETAIL
SCALE: NONE

REBAR SIZE		REBAR SIZE	
U.S. UNITS	METRIC	U.S. UNITS	METRIC
#3	Ø10	#8	Ø25
#4	Ø14	#9	Ø30
#5	Ø16	#10	Ø32
#6	Ø20	#11	Ø36
#7	Ø22		

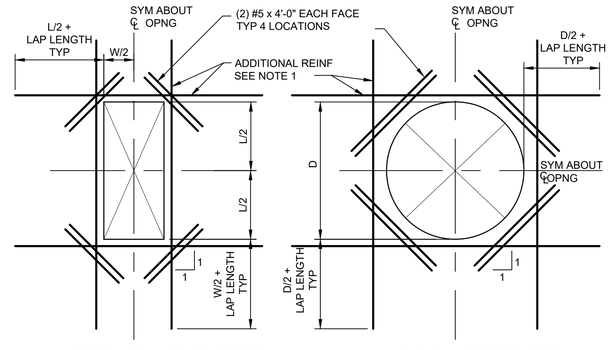
NOTE TO DESIGNER:

1. METRIC BAR SIZES SHOWN ABOVE MUST BE COORDINATED AS PART OF THE SITE ADAPT PROCESS, AND BAR SIZES MUST BE MADE AS CLOSE AS POSSIBLE TO THE U.S. BAR SIZES SHOWN IN THESE DRAWINGS.

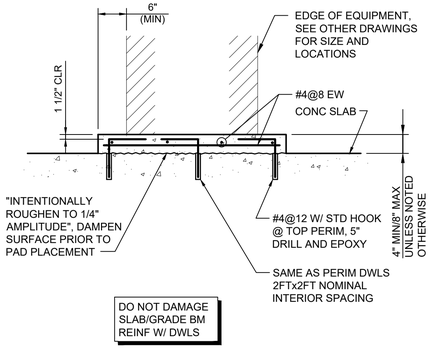
B3 BAR SIZE CONVERSION TABLE
SCALE: NONE

NOTES:

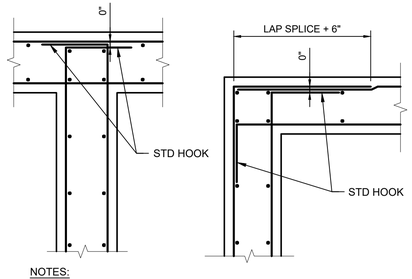
1. PROVIDE ADDITIONAL REINFORCING THE SAME SIZE AS DISCONTINUOUS REINFORCEMENT AT OPENING. QUANTITY OF REINFORCING IN EACH DIRECTION MUST BE EQUAL TO OR ONE GREATER THAN THE NUMBER OF DISCONTINUOUS BARS. PLACE 1/2 OF ADDITIONAL REINFORCING BARS EACH SIDE OF OPENING, PLACE ADDITIONAL REINFORCEMENT AT 3" OC (TYPICAL BOTH DIRECTIONS AND ALL LAYERS OF REINFORCEMENT). START FIRST BAR 2" CLEAR TO OPENING.
2. EXTEND ADDITIONAL REINFORCING BEYOND EDGE OF OPENING AS SHOWN ABOVE. ADDITIONAL BARS MAY TERMINATE AT THE END OF THE WALL WITH A STANDARD HOOK WHERE THE LENGTH OF THE WALL WILL NOT PERMIT BARS TO EXTEND AS SHOWN ABOVE.
3. TYPICAL WALL OR SLAB REINFORCING NOT SHOWN FOR CLARITY. TERMINATE TYPICAL REINFORCING 2" CLEAR TO OPENING.
4. ADDITIONAL REINFORCING AS SHOWN ABOVE IS REQUIRED IN ANY CASE FOR SLABS, WALLS, AND FOUNDATIONS WHERE THE OPENING SIZE IS GREATER THAN THE SPACING OF REINFORCING IN EITHER DIRECTION MINUS 4" OF CONCRETE COVER (2" COVER EACH SIDE OF OPENING).



B4 EXTRA REINFORCING AROUND OPENINGS
SCALE: NONE



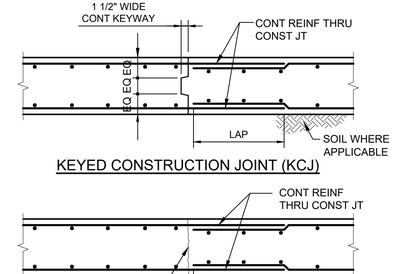
A1 TYPICAL MISCELLANEOUS HOUSEKEEPING PAD (INTERIOR)
SCALE: NONE



NOTES:

1. ALL HOOKS MUST BE STD 90 DEGREE HOOKS UNO.
2. SEE DRAWINGS FOR ADDITIONAL HORIZONTAL BARS. STAGGER BETWEEN TYPICAL REINF SPACING, EXTEND TO 1/5 OF DISTANCE TO NEAREST ADJACENT WALL IN EACH DIRECTION, UNO.

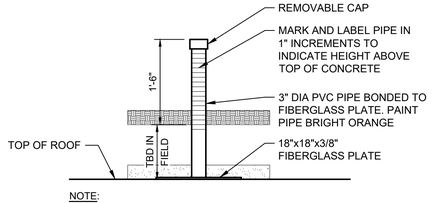
A2 WALL REINFORCEMENT AT CORNERS AND INTERSECTIONS
SCALE: NONE



NOTES:

1. TO BE USED ONLY WHERE CALLED FROM IN THE CONTRACT DOCUMENTS, OR AS PERMITTED BY THE CONTRACTING OFFICER.

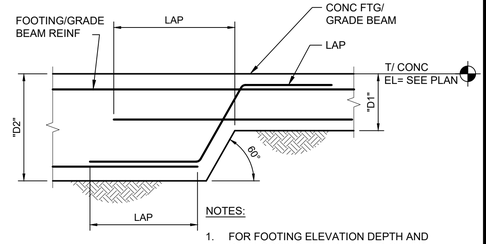
A3 CONSTRUCTION JOINT
SCALE: NONE



NOTE:

1. PLACE DEPTH GAUGE ABOVE WATERPROOFING MEMBRANE SYSTEM.

A4 DEPTH GAUGE DETAIL
SCALE: NONE



NOTES:

1. FOR FOOTING ELEVATION DEPTH AND REINFORCING, SEE PLAN AND OTHER STANDARD AND COMMON DETAILS.
2. MAXIMUM INDIVIDUAL STEP = 2'-0" ("D2" - "D1").

A5 TYPICAL BOTTOM STEP FOOTING/GRADE BEAM
SCALE: NONE

NO.	DESCRIPTION	DATE	APPR

NAVFAC

SEAL

A/E INFO

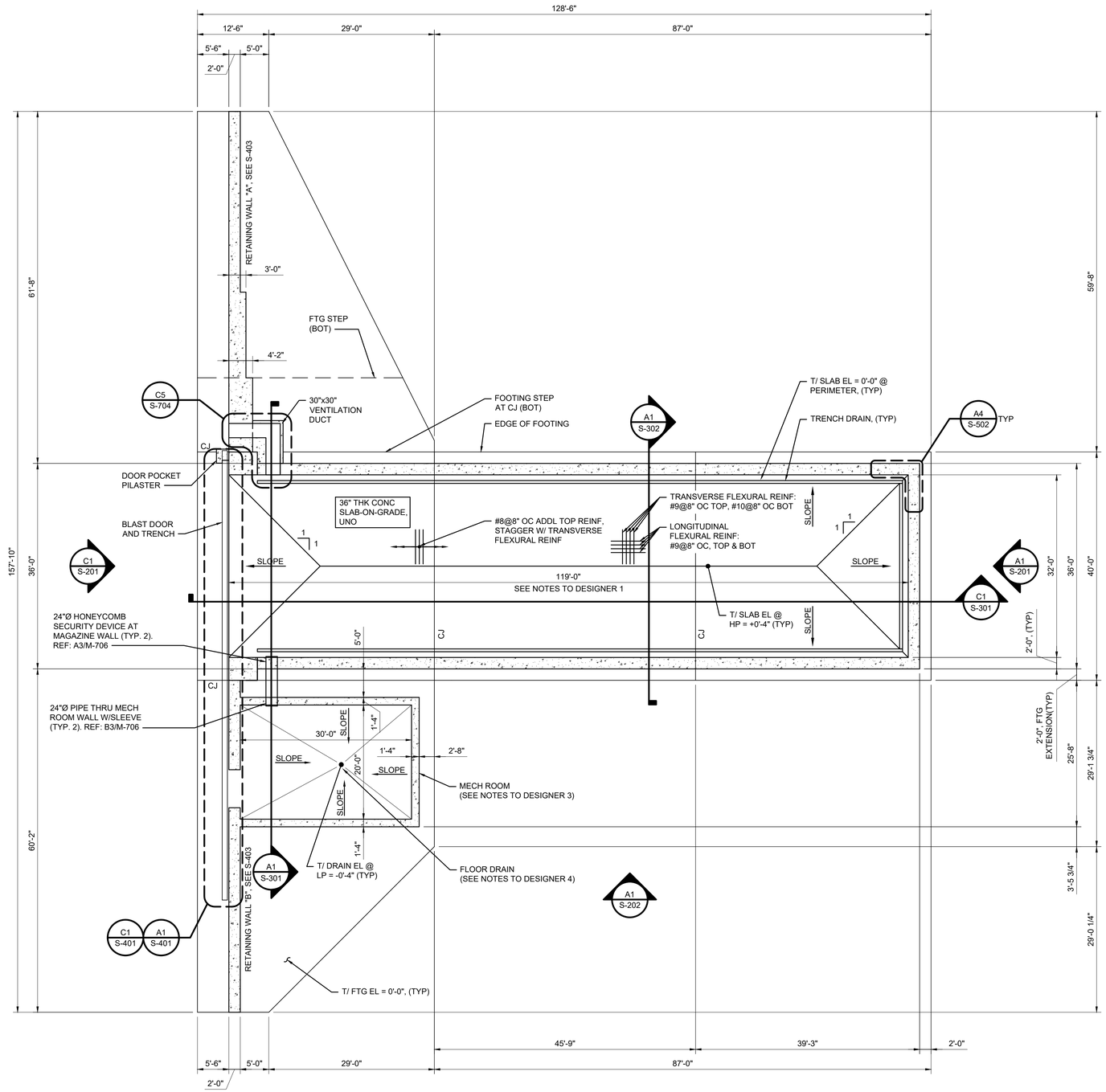
APPROVED
Rick Gilgallon
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY
SATISFACTORY TO DATE
DES JAF | DRW SFF | CHK TPH
PM/DM
BRANCH MANAGER
CHIEF ENG/ARCH
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE
STANDARD DETAILS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877613
SHEET 4 OF 51
S-003
DRAWFORM REVISION: 00 MONTH 2020

FILE NAME: u:\DCSE\Magazines\@CLWSMagazines_Single Bay\Submittals\Redesign\Final\Drawings\S-003.dwg LAYOUT NAME: S-003 PLOTTED: Friday, March 17, 2023 - 4:42pm USER: leslie.corsino



A2 FOUNDATION/ FLOOR PLAN
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. ALL ELEVATIONS ARE IN REFERENCE TO A DATUM ELEVATION OF 0'-0" FOR THE MAGAZINE FINISHED FLOOR ELEVATION. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATIONS.
2. SEE SHEETS S-001 AND S-002 FOR GENERAL NOTES.
3. ALL REINFORCING STEEL MUST BE CONTINUOUSLY BONDED AND GROUNDED PER S-002 AND A1/E-504
4. SLAB-ON-GRADE MUSR BE MOIST CURED FOR A MINIMUM OF 14 DAYS.
5. SLAB-ON-GRADE CONSTRUCTION JOINTS ARE INDICATED AS "CJ" ON PLAN. SEE STANDARD DETAIL ON S-003 FOR CONSTRUCTION JOINT DETAILS.
6. BLAST DOOR IS NOT SHOWN FOR CLARITY.
7. SEE SHEET S-302 FOR ARRANGEMENT OF SLAB REINFORCEMENT AND FOR SIDEWALL REINFORCEMENT SIZE, SPACING, AND ARRANGEMENT.
8. SEE SHEET S-104 FOR FOUNDATION DRAINAGE FLOOR PLAN.

NOTES TO DESIGNER:

1. THE 119'-0" INTERIOR DIMENSION OF THE MAGAZINE SHOWN MAY BE REDUCED TO 95'-6" AT THE SITE-ADAPT DESIGNER'S OPTION AND IF PERMITTED BY PLANNED OPERATION OF THE MAGAZINE. NO OTHER MAGAZINE LENGTHS MAY BE CONSIDERED. THE CHANGE TO A 95'-6" MAGAZINE LENGTH WILL NOT CONSTITUTE A BLAST MODIFICATION TO THE MAGAZINE. IF SELECTED, THE CHANGE IN MAGAZINE LENGTH MUST BE ACHIEVED BY RELOCATING THE REAR WALL.
2. THE CONSTRUCTION JOINT LAYOUT SHOWN ON PLANS IS BASED ON THE 119'-0" CONFIGURATION SHOWN. IF THE ALTERNATE 95'-6" CONFIGURATION IS SELECTED, THE SITE-ADAPT ENGINEER MUST LOCATE CONSTRUCTION JOINTS AS NECESSARY.
3. THE MECHANICAL ROOM LENGTH SHOWN IS A MINIMUM VALUE, AND THE SITE DESIGNER MUST DETERMINE FINAL LENGTH (PLAN LEFT - RIGHT DIMENSION TOWARDS BACK WALL OF MAGAZINE) BASED ON THE SITE REQUIREMENTS. THE LENGTH OF THE MECHANICAL ROOM MUST NOT EXCEED 40'-0", AND THE WIDTH MAY NOT BE MODIFIED.
4. COORDINATE FINAL LOCATION OF FLOOR DRAIN WITH EQUIPMENT LAYOUT. FINAL PIPING CONFIGURATION AND TERMINATION POINT MUST BE DETERMINED BY SITE ADAPT DESIGNER.
5. STANDARD DESIGN FEATURES COMPONENTS TO PROVIDE THE MAGAZINE WITH NATURAL VENTILATION, AND PROVISIONS FOR INSTALLATION OF A MECHANICAL HVAC SYSTEM. IF A MECHANICAL HVAC SYSTEM IS REQUIRED, GRAVITY VENTILATORS AND LOUVERS ASSOCIATED WITH THE NATURAL VENTILATION SYSTEM MAY BE REMOVED OR OMITTED AND THEIR OPENINGS SEALED.
6. FIRE DAMPERS SHOWN IN THE STANDARD DESIGN MAY BE OMITTED FROM THE DESIGN IF NOT REQUIRED BY THE USING AGENCY/AUTHORITY.
7. PROVISIONS FOR ROUTING AND PENETRATIONS OF PIPING, DUCTWORK, FLUES, AND CONDUITS REQUIRED FOR THE INSTALLATION OF OUTDOOR HVAC EQUIPMENT OR OTHER UTILITIES RELATED TO THE ADDITION OF HVAC (PRESENT OR ANTICIPATED FUTURE) MUST BE BY THE SITE-ADAPT ENGINEER.

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023
ACTIVITY
SATISFACTORY TO DATE

DES: JAF	DRW: SFF	CHK: TPH
PM/DM		-.-
BRANCH MANAGER		-.-
CHIEF ENG/ARCH		-.-
FIRE PROTECTION		-.-

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

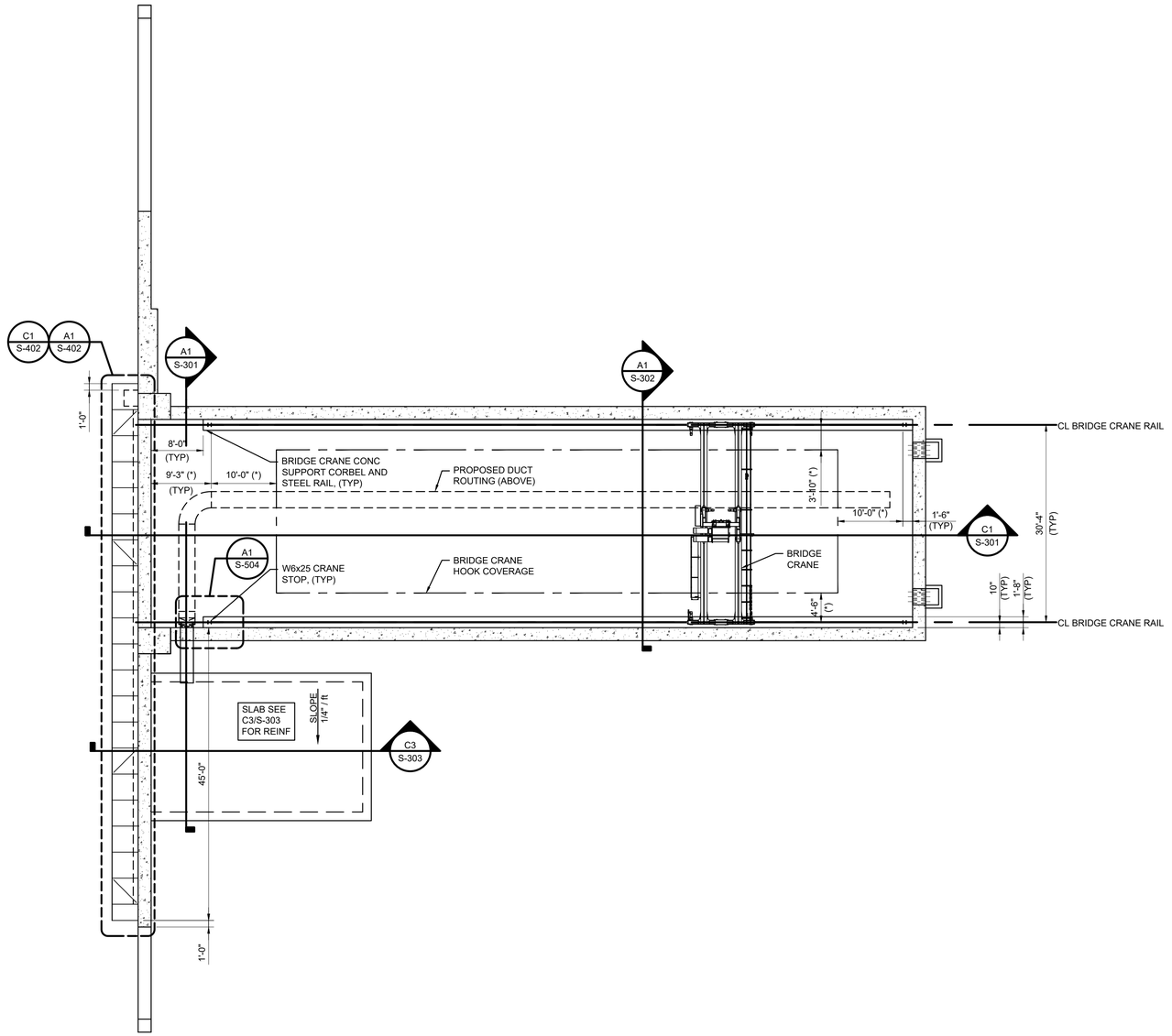
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

FOUNDATION/ FLOOR PLAN

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877614
SHEET 5 OF 51

S-101

DRAWFORM REVISION: 00 MONTH 2020



A2 BRIDGE CRANE AND CANOPY FRAMING PLAN
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. ALL ELEVATIONS ARE IN REFERENCE TO A DATUM ELEVATION OF 0'-0" FOR THE MAGAZINE FINISHED FLOOR ELEVATION. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATIONS.
2. SEE SHEETS S-001 AND S-002 FOR GENERAL NOTES.
3. DIMENSIONS, ELEVATIONS, OR OTHER INFORMATION DESIGNATED WITH AN (*) MUST BE VERIFIED WITH SELECTED EQUIPMENT DIMENSION, REQUIRED CLEARANCES AND HOOK HEIGHTS.
4. BRIDGE CRANE MUST COMPLY WITH UFGS 41 22 13.14 AND MEET THE FOLLOWING REQUIREMENTS.
   - A. 25 TON CAPACITY
   - B. DOUBLE-GIRDER SYSTEM
   - C. MAXIMUM WHEEL LOAD = 37K
   - D. MAXIMUM TOTAL WEIGHT = 40K
   - E. MAXIMUM HOIST AND TROLLEY WEIGHT = 10K
   - F. CMAA 70 CLASS D SERVICE
   - G. HOOK AND CRANE CLEARANCE REQUIREMENTS ON THIS SHEET AND ON A1/ S-302
5. BRIDGE CRANE RAIL MUST BE CONSTRUCTED TO RUNWAY TOLERANCES IN ACCORDANCE WITH CMAA SPECIFICATION #70. SEE DETAIL C5 ON SHEET S-303. RAIL SPLICES AND SPLICE CONNECTIONS TO BE SELECTED AND LOCATED BY BRIDGE CRANE RAIL MANUFACTURER.
6. BRIDGE CRANE HOOK MUST BE SIZED TO APPROPRIATELY INTERFACE WITH CROSBY SHACKLE G213/S213, NOMINAL - SIZE 1 3/4", WORKING LOAD LIMIT 25 TON.

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

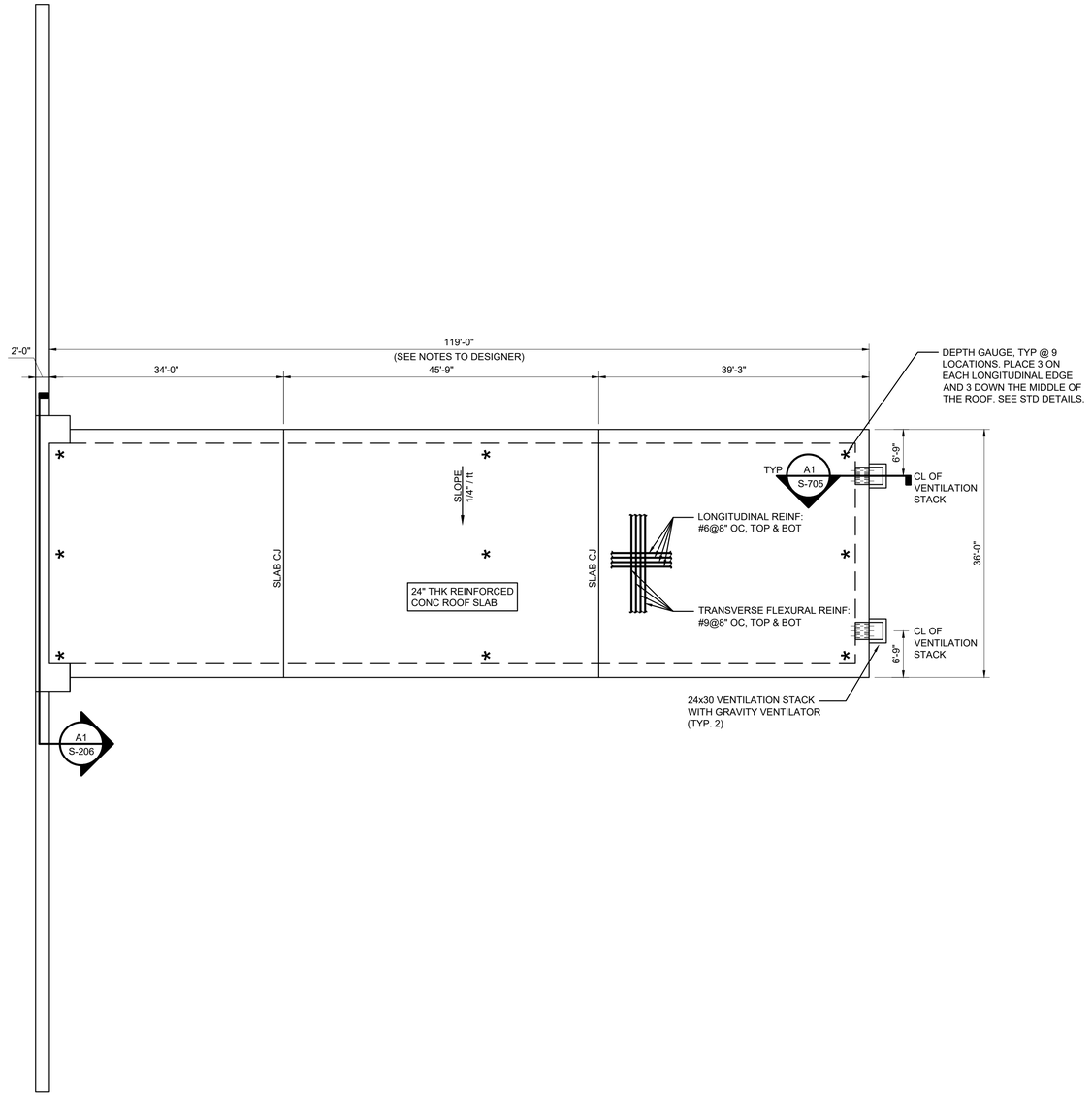
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

BRIDGE CRANE AND CANOPY FRAMING PLAN

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877615
SHEET 6 OF 51

S-102

DRAWFORM REVISION: 00 MONTH 2020



A2 ROOF FRAMING PLAN
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. ALL ELEVATIONS ARE IN REFERENCE TO A DATUM ELEVATION OF 0'-0" FOR THE MAGAZINE FINISHED FLOOR ELEVATION. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATIONS.
2. SEE SHEETS S-001 AND S-002 FOR GENERAL NOTES.
3. ALL REINFORCING STEEL MUST BE CONTINUOUSLY BONDED AND GROUNDED PER S-002 AND A1/E-504.
4. CONCRETE SLAB MUST BE MOIST CURED FOR A MINIMUM OF 14 DAYS.
5. SEE S-003 FOR CONCRETE SLAB CONSTRUCTION JOINT DETAILS.

NO.	DESCRIPTION	DATE	APPR

SEAL

A/E INFO

APPROVED
Rear Adm. Dalgleish
FOR COMMANDER NAVFAC 28 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

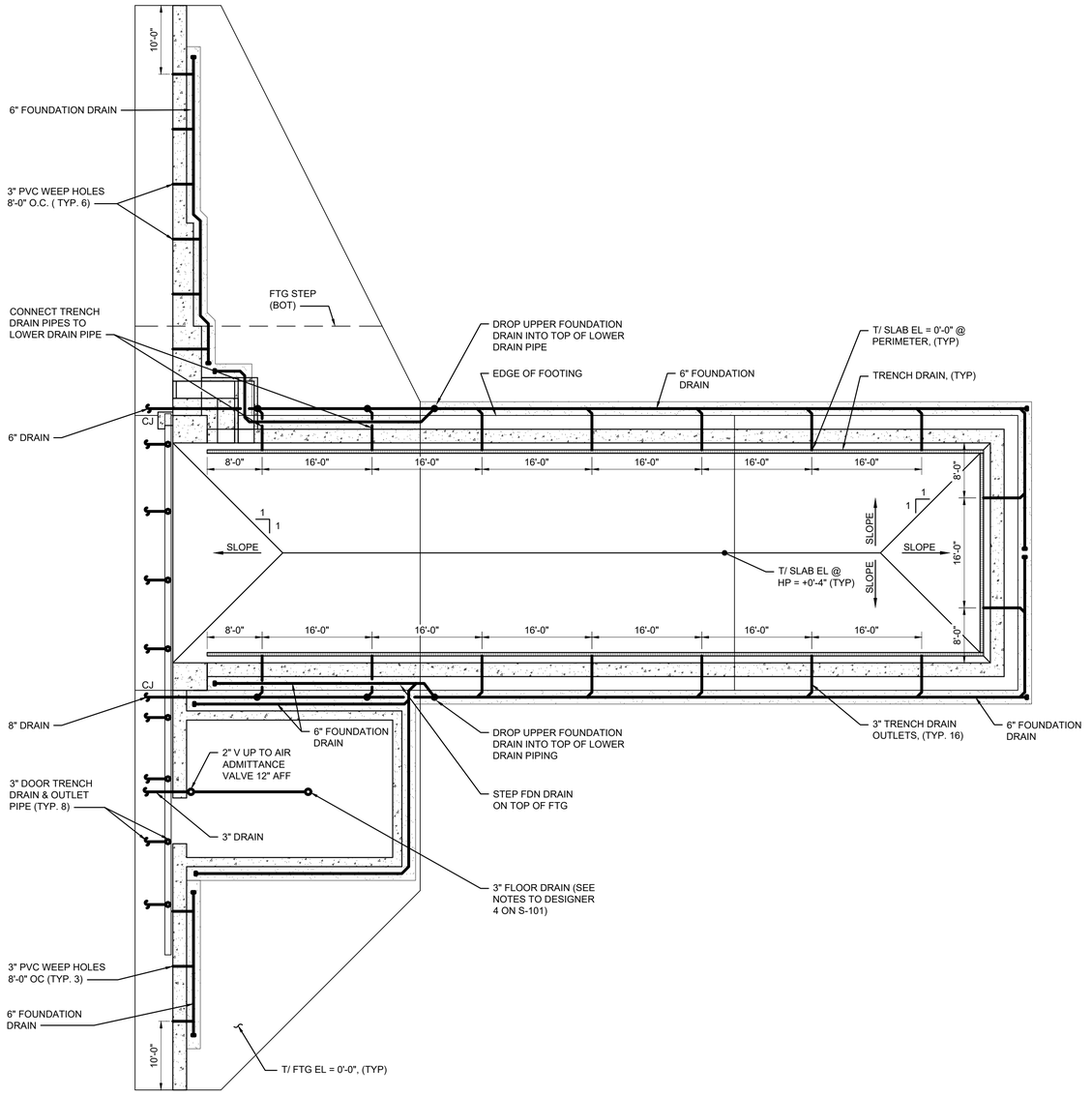
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

ROOF FRAMING PLAN

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877616
SHEET 7 OF 51

S-103

DRAWFORM REVISION: 00 MONTH 2020



A2 FOUNDATION DRAINAGE FLOOR PLAN
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. ALL ELEVATIONS ARE IN REFERENCE TO A DATUM ELEVATION OF 0'-0" FOR THE MAGAZINE FINISHED FLOOR ELEVATION. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATIONS.
2. SEE SHEETS S-001 AND S-002 FOR GENERAL NOTES.
3. ALL REINFORCING STEEL MUST BE CONTINUOUSLY BONDED AND GROUNDED PER S-002 AND A1/E-504
4. SLAB-ON-GRADE MUST BE MOIST CURED FOR A MINIMUM OF 14 DAYS.
5. BLAST DOOR IS NOT SHOWN FOR CLARITY.
6. SEE SHEET S-302 FOR ARRANGEMENT OF SLAB REINFORCEMENT AND FOR SIDEWALL REINFORCEMENT SIZE, SPACING, AND ARRANGEMENT.
7. REFER TO S-706 FOR DRAINAGE ISOMETRIC DIAGRAM
8. FINAL PIPING CONFIGURATION AND TERMINATION POINTS PER SITE-ADAPT ENGINEER.

SYM	DESCRIPTION	DATE	APPR

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	---
BRANCH MANAGER	---
CHIEF ENG/ARCH	---
FIRE PROTECTION	---

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
NAVAL SUPPORT ACTIVITY HAMPTON ROADS, VIRGINIA

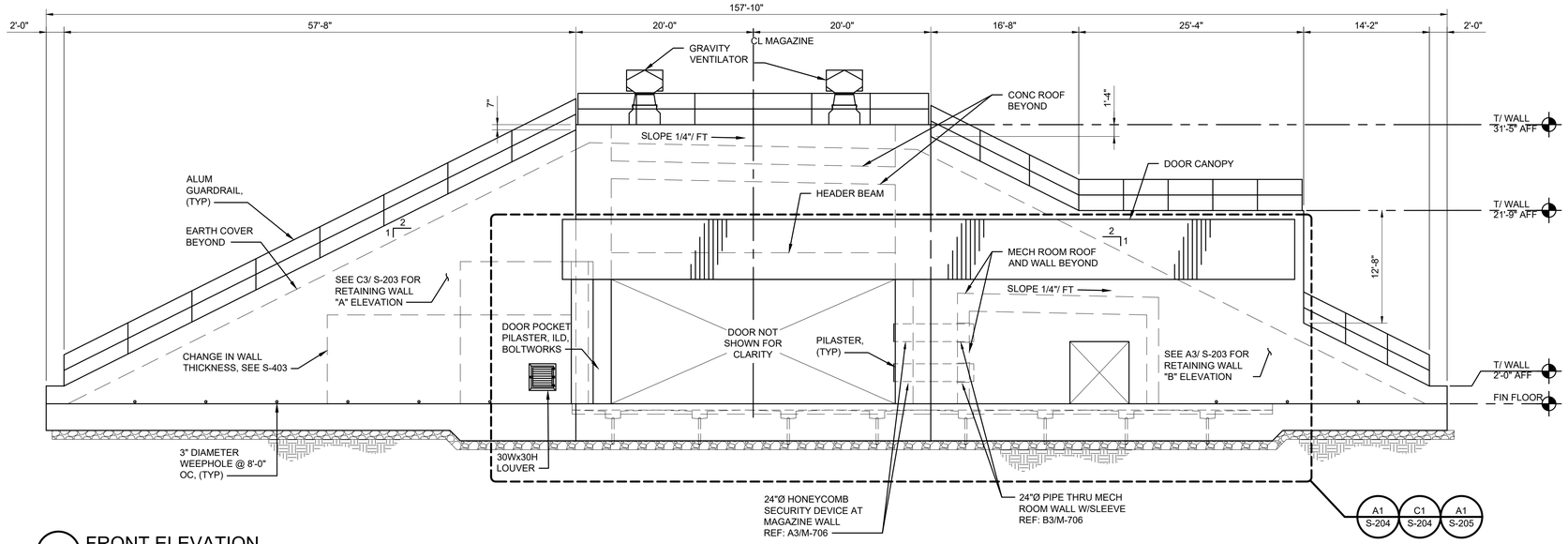
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

FOUNDATION DRAINAGE PLAN

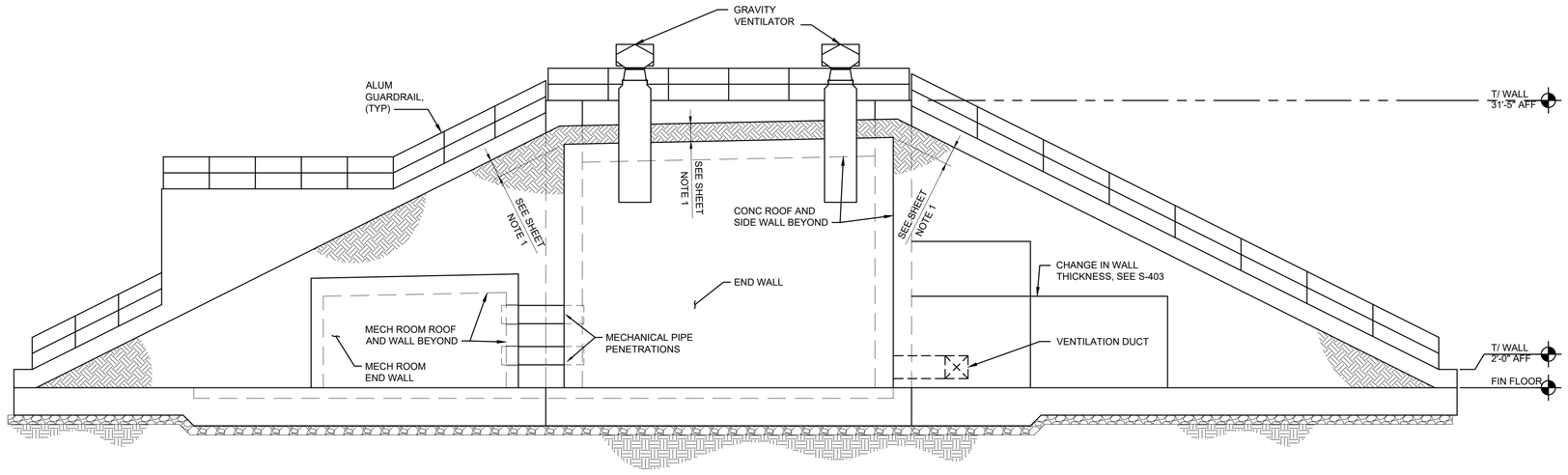
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877617
SHEET 8 OF 51

S-104

DRAWFORM REVISION: 00 MONTH 2020



C1 FRONT ELEVATION
SCALE: 1/8" = 1'-0"



A1 REAR ELEVATION
SCALE: 1/8" = 1'-0"

SHEET NOTES

1. PROVIDE 2'-0" OF FILL (MINIMUM OF 1'-6" OF EARTH COVER MATERIAL PLUS 6" OF SAND MATERIAL AS REQUIRED PER FOUNDATION GENERAL NOTES ON S-001) TO ANY EXTERIOR EDGE OF THE MAGAZINE (ROOF PANEL, SIDE WALL, REAR WALL).

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

BUILDING ELEVATIONS – 1

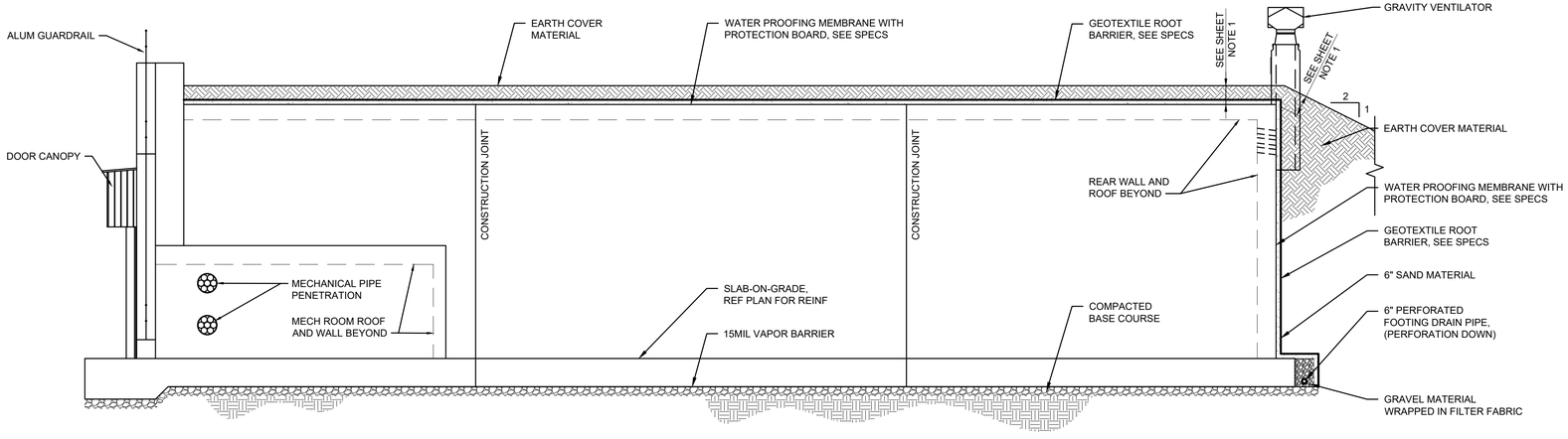
SCALE:	NONE
EPROJECT NO.:	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	12877618
SHEET	9 OF 51

S-201

DRAWFORM REVISION: 00 MONTH 2020

SHEET NOTES

1. PROVIDE 2'-0" OF FILL (MINIMUM OF 1'-6" OF EARTH COVER MATERIAL PLUS 6" OF SAND MATERIAL AS REQUIRED PER FOUNDATION GENERAL NOTES ON S-001) TO ANY EXTERIOR EDGE OF THE MAGAZINE (ROOF PANEL, SIDE WALL, REAR WALL).



A1 SIDE ELEVATION
SCALE: 1/8" = 1'-0"

MK	DESCRIPTION	DATE	APPR

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	
BRANCH MANAGER	
CHIEF ENG/ARCH	
FIRE PROTECTION	

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

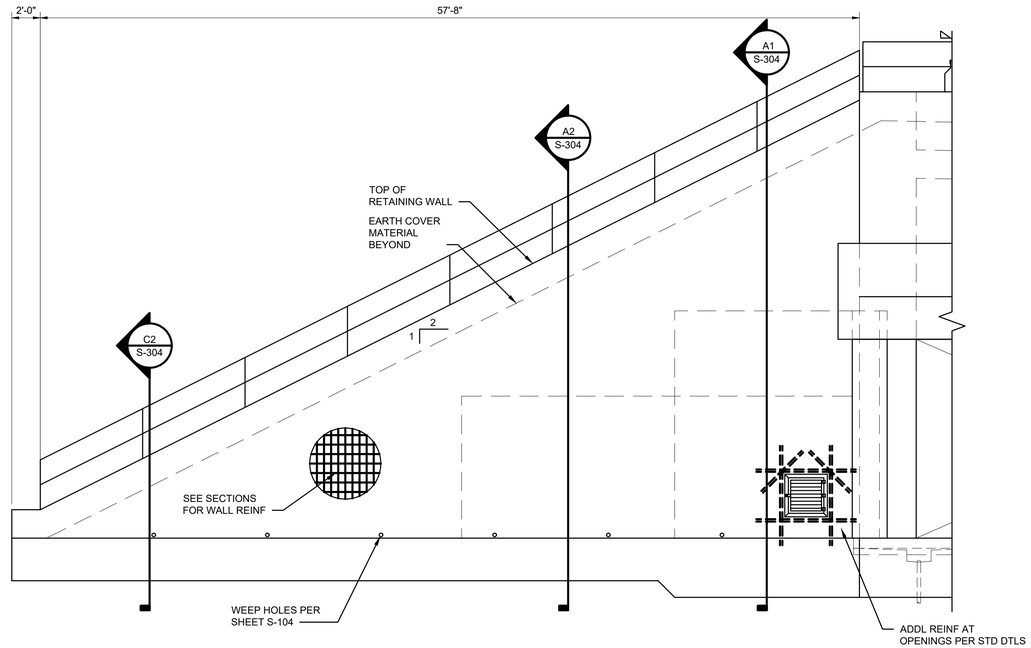
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

BUILDING ELEVATIONS – 2

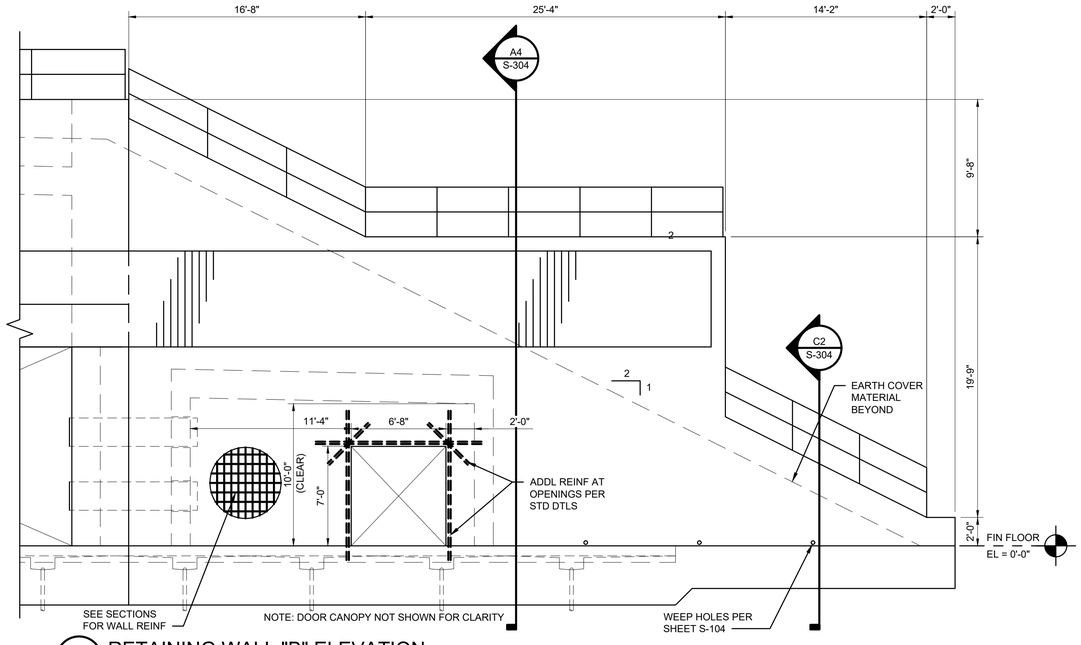
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877619
SHEET 10 OF 51

S-202

DRAWFORM REVISION: 00 MONTH 2020



C3 RETAINING WALL "A" ELEVATION
SCALE: 3/16" = 1'-0"



A3 RETAINING WALL "B" ELEVATION
SCALE: 3/16" = 1'-0"

APPR	DATE	DESCRIPTION	NO.

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

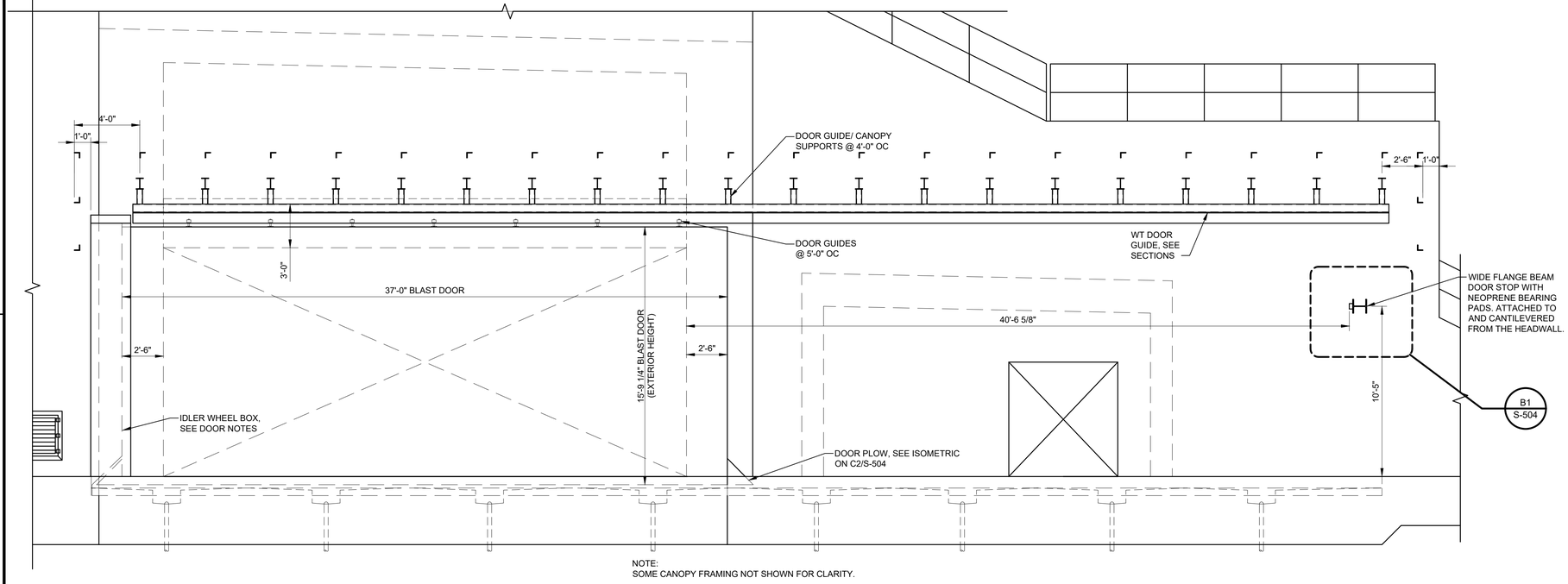
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

RETAINING WALL ELEVATIONS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877620
SHEET 11 OF 51

S-203

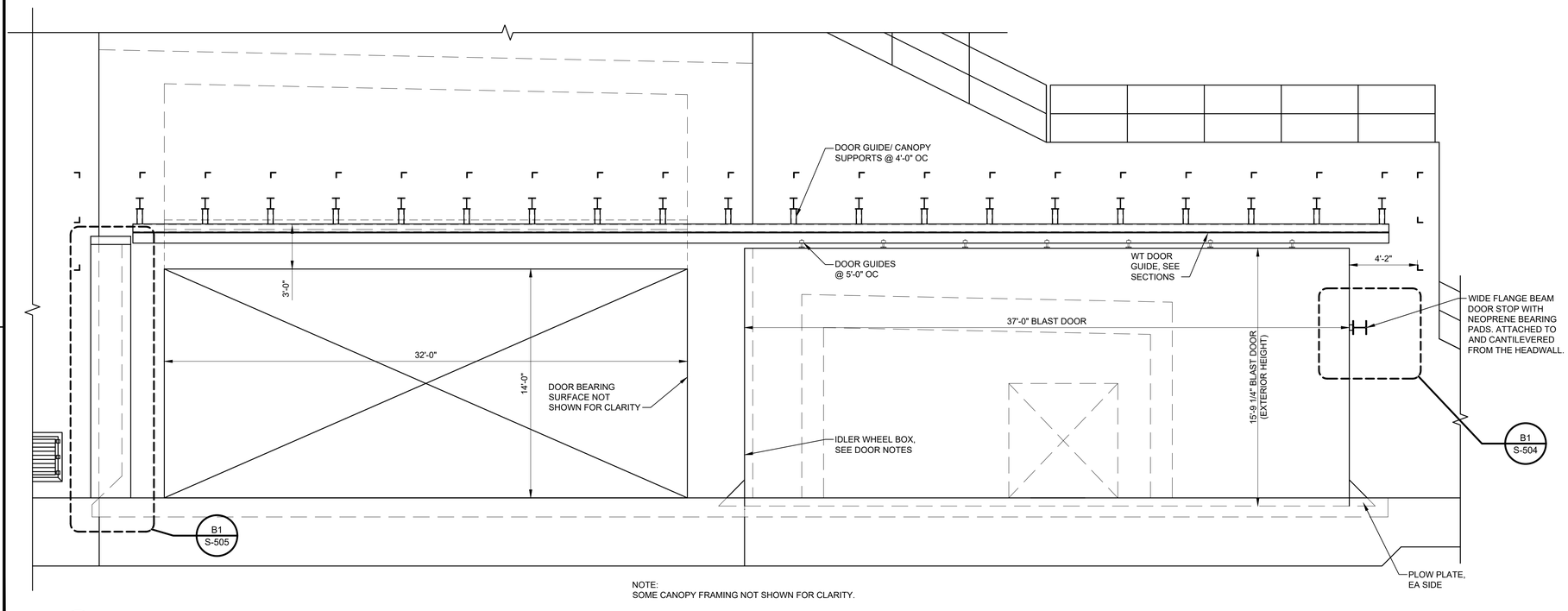
DRAWFORM REVISION: 00 MONTH 2020



NOTE:
SOME CANOPY FRAMING NOT SHOWN FOR CLARITY.

C1 ELEVATION - DOOR IN CLOSED POSITION

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



NOTE:
SOME CANOPY FRAMING NOT SHOWN FOR CLARITY.

A1 ELEVATION - DOOR IN OPEN POSITION

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

SHEET NOTES

1. THE MAGAZINE BLAST DOOR MUST BE A SLIDING STEEL DOOR SUPPORTED FROM THE BOTTOM OF THE DOOR BY WHEELS LOCATED AT EACH END OF THE DOOR.
2. DOOR SYSTEM WILL BE TRACTION DRIVEN. THE LEADING EDGE (DOOR OPENING) WHEEL BOX CONTAINS BOTH A WHEEL AND A CHAIN DRIVEN POWER SYSTEM. THE TRAILING EDGE WHEEL BOX IS NOT POWERED AND ONLY CONTAINS AN IDLER WHEEL.
3. DOOR SYSTEM MUST INCLUDE A HAND-CRANKED MANUAL PULL SYSTEM OVERRIDE INCLUDING CHAIN DISENGAGEMENT THAT IS CAPABLE OF BOTH OPENING AND CLOSING THE DOOR SYSTEM.
4. DOOR MFR MUST SUBMIT A COMPLETE OPERATIONS & MAINTENANCE MANUAL TO THE CONTRACTING OFFICER FOR APPROVAL AND MUST ALSO SUBMIT A FINAL APPROVED OPERATIONS & MAINTENANCE MANUAL FOR RECORD.

SYM	DESCRIPTION	DATE	APPR

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH
PM/DM					
BRANCH MANAGER					
CHIEF ENG/ARCH					
FIRE PROTECTION					

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

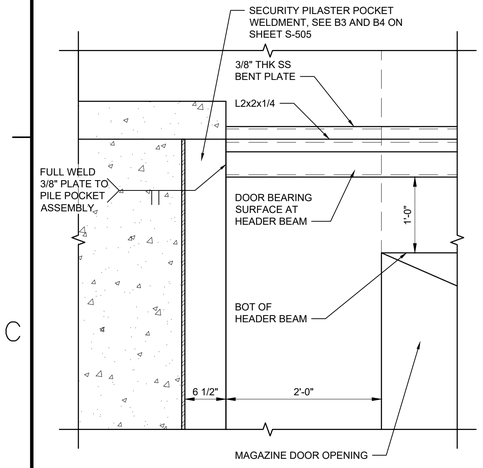
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

FRONT WALL PARTIAL ELEVATIONS

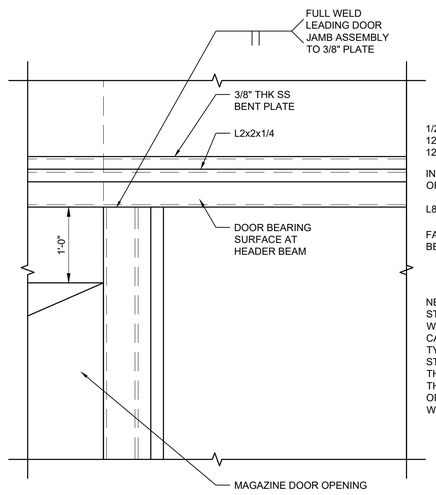
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877621
SHEET 12 OF 51

S-204

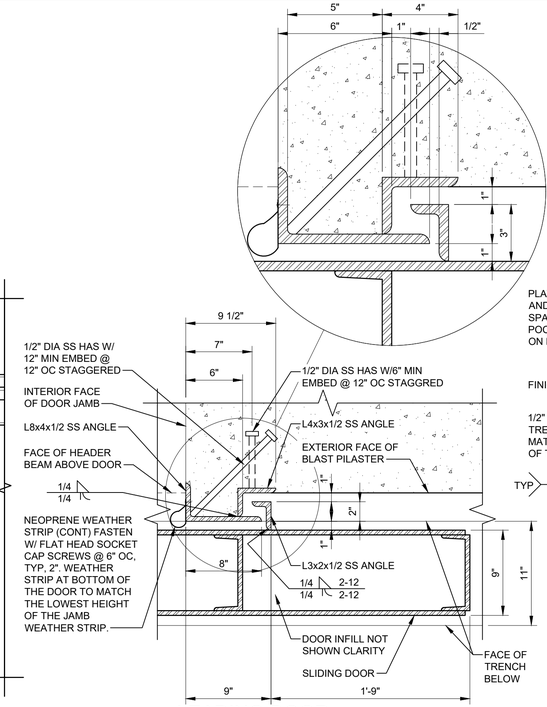
DRAWFORM REVISION: 00 MONTH 2020



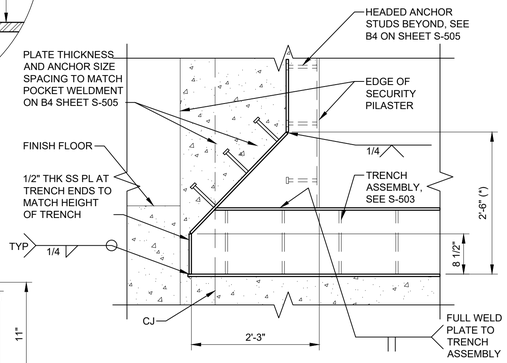
C1 DETAIL
SCALE: 1" = 1'-0"



C2 DETAIL
SCALE: 1" = 1'-0"

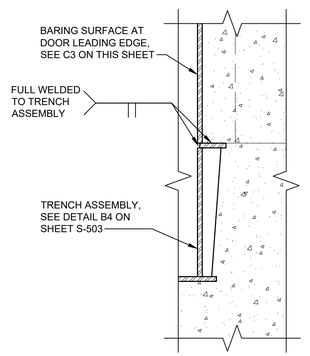


C3 LEADING DOOR EDGE JAMB DETAIL
SCALE: 1 1/2" = 1'-0"

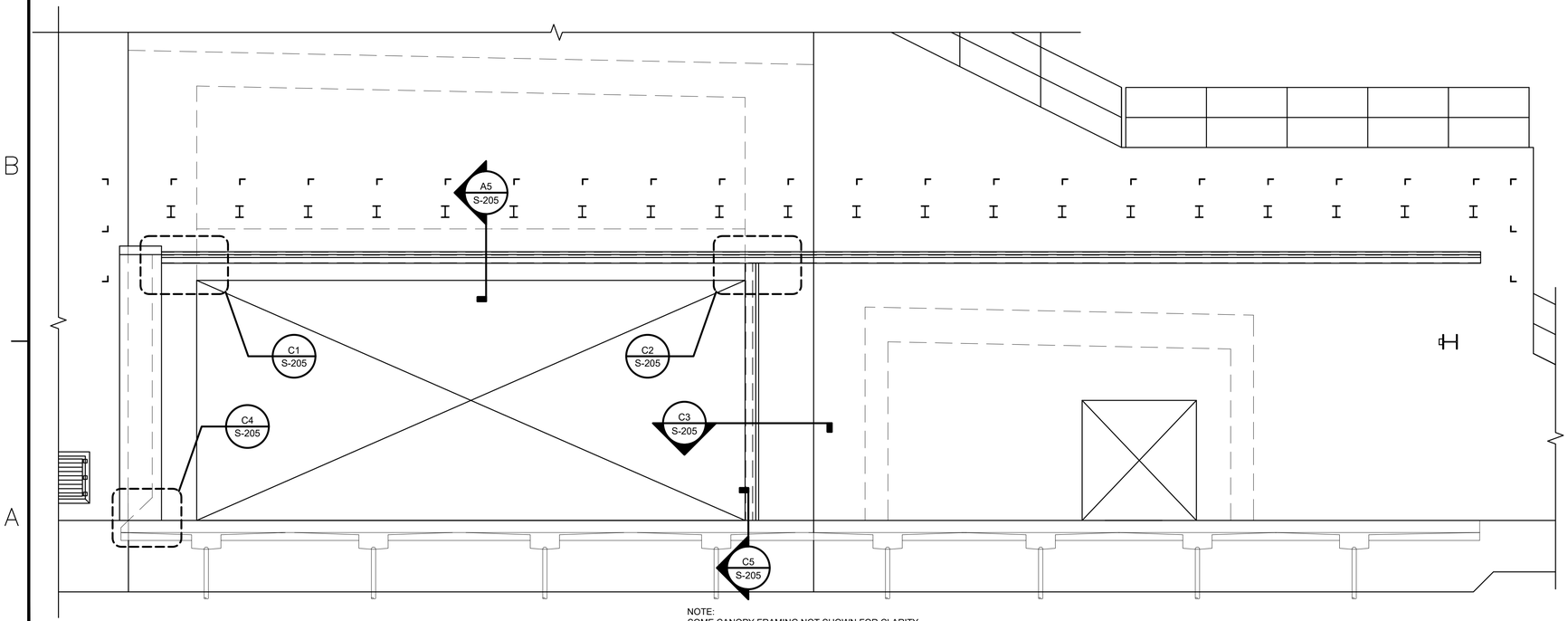


1. DIMENSIONS NOTED WITH AN (*) MUST BE COORDINATED BY THE DOOR MANUFACTURER ENSURING THE DOOR SYSTEM PERFORMS AS INTENDED.
2. SEE SHEETS S-503 AND S-505 FOR INFORMATION NOT SHOWN.

C4 SECURITY PILASTER POCKET AT DOOR PLOW
SCALE: 3/4" = 1'-0"

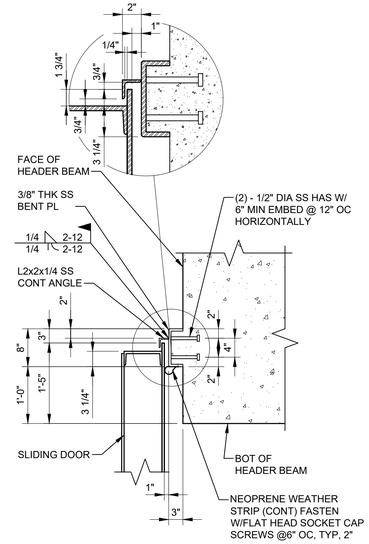


C5 LEADING DOOR JAMB AT TRENCH
SCALE: 1 1/2" = 1'-0"



NOTE:
SOME CANOPY FRAMING NOT SHOWN FOR CLARITY.

A1 ELEVATION - DOOR BEARING SURFACES
SCALE: 1/4" = 1'-0"



A5 DETAIL
SCALE: 3/4" = 1'-0"

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	DRW	CHK
JAF	SFF	TPH

PM/DM --
BRANCH MANAGER --
CHIEF ENG/ARCH --
FIRE PROTECTION --

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

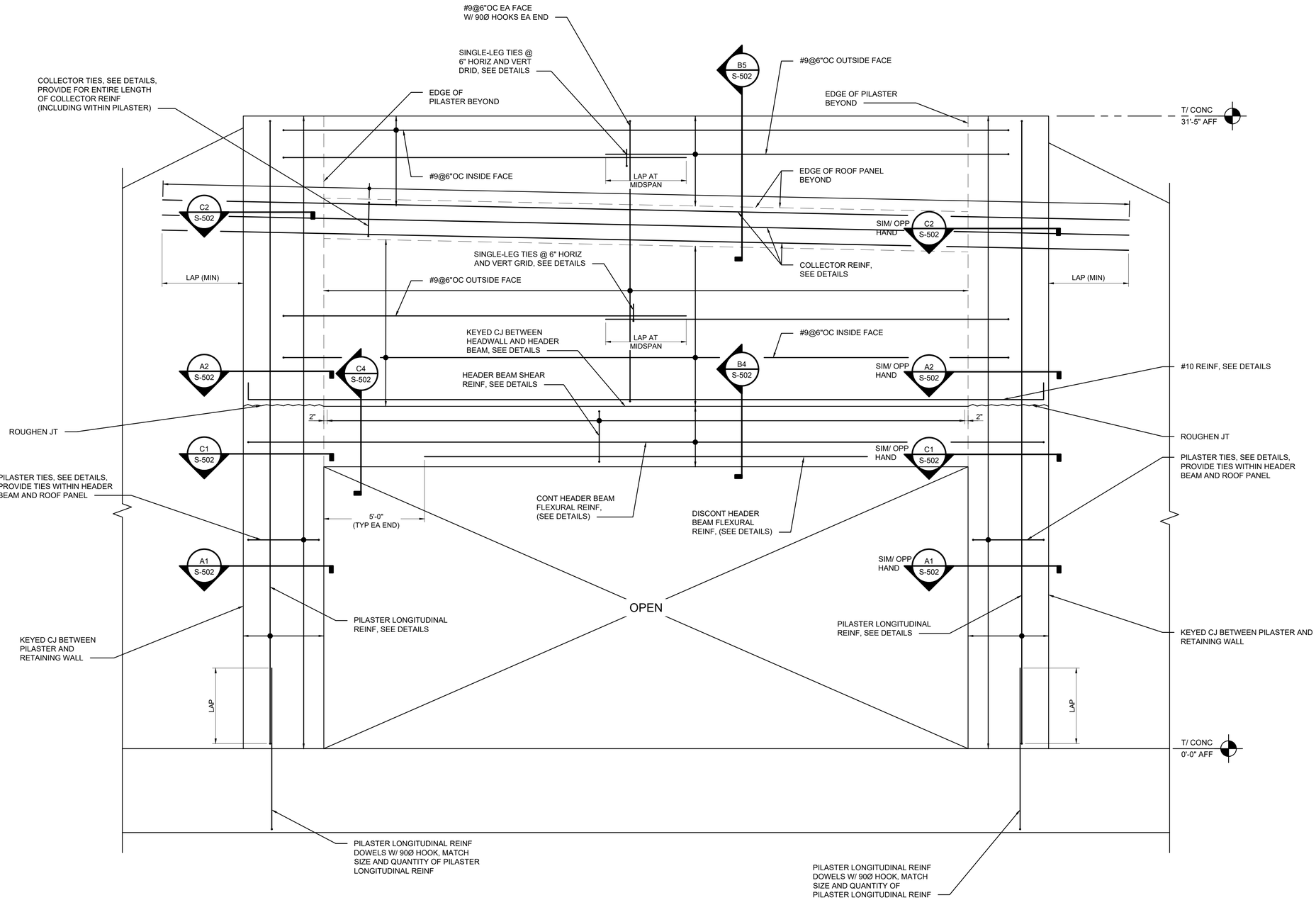
FRONT WALL PARTIAL ELEVATION AND DETAILS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877622
SHEET 13 OF 51

S-205

DRAWFORM REVISION: 00 MONTH 2020

FILE NAME: J:\DCSE\Magazines\BIG\WCMagazines_Single Bay\Submittals\Redesign\Final\Drawings\S-205.dwg LAYOUT NAME: S-204 PLOTTED: Friday, March 17, 2023 - 4:47pm USER: leslie.corsino



A1 HEADWALL REINF ELEVATION
SCALE: 3/8" = 1'-0"

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY
SATISFACTORY TO DATE

DES. JAF	DRW SFF	CHK TPH
PM/DM		-.-
BRANCH MANAGER		-.-
CHIEF ENG/ARCH		-.-
FIRE PROTECTION		-.-

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
NAVAL SUPPORT ACTIVITY HAMPTON ROADS, VIRGINIA

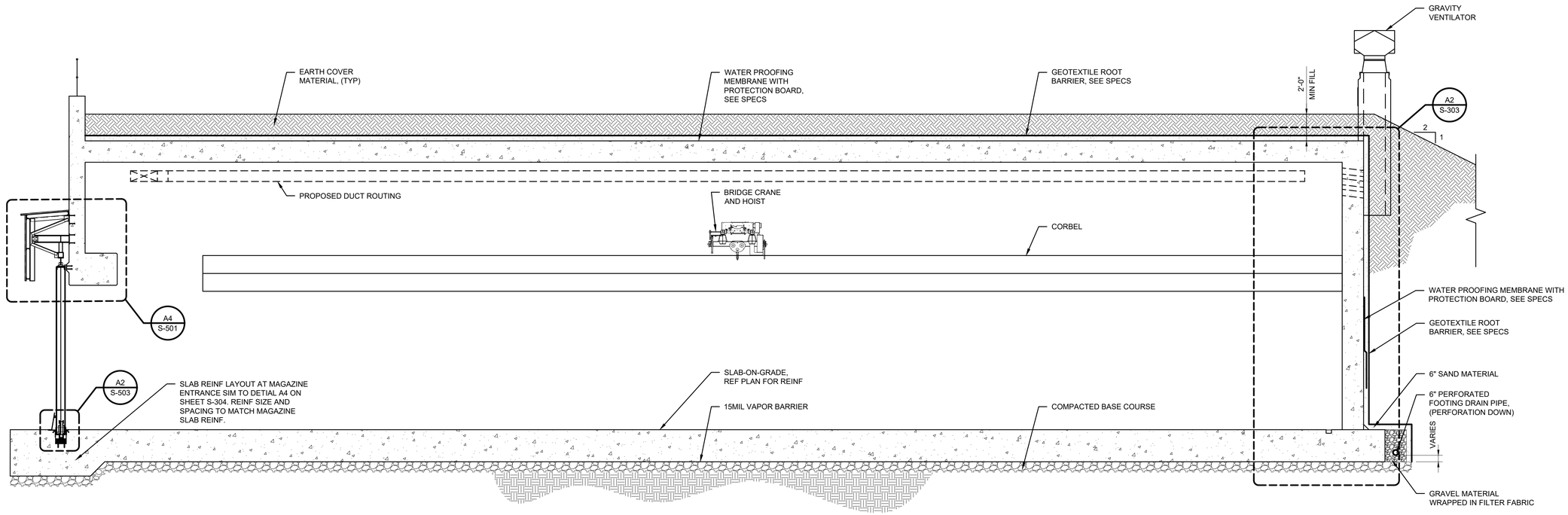
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

BUILDING ELEVATIONS – 3

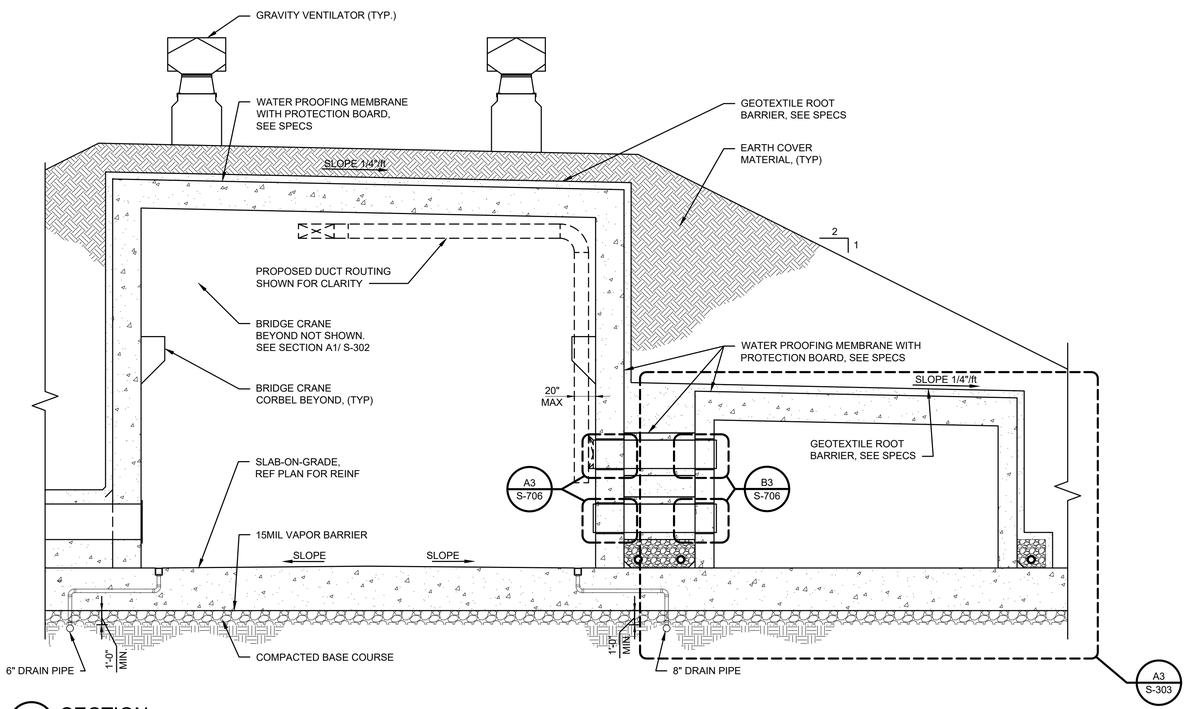
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877623
SHEET 14 OF 51

S-206

DRAWFORM REVISION: 00 MONTH 2020



C1 SECTION
SCALE: 3/16" = 1'-0"



A1 SECTION
SCALE: 3/16" = 1'-0"

APPR	DATE	DESCRIPTION	SYM

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY
SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

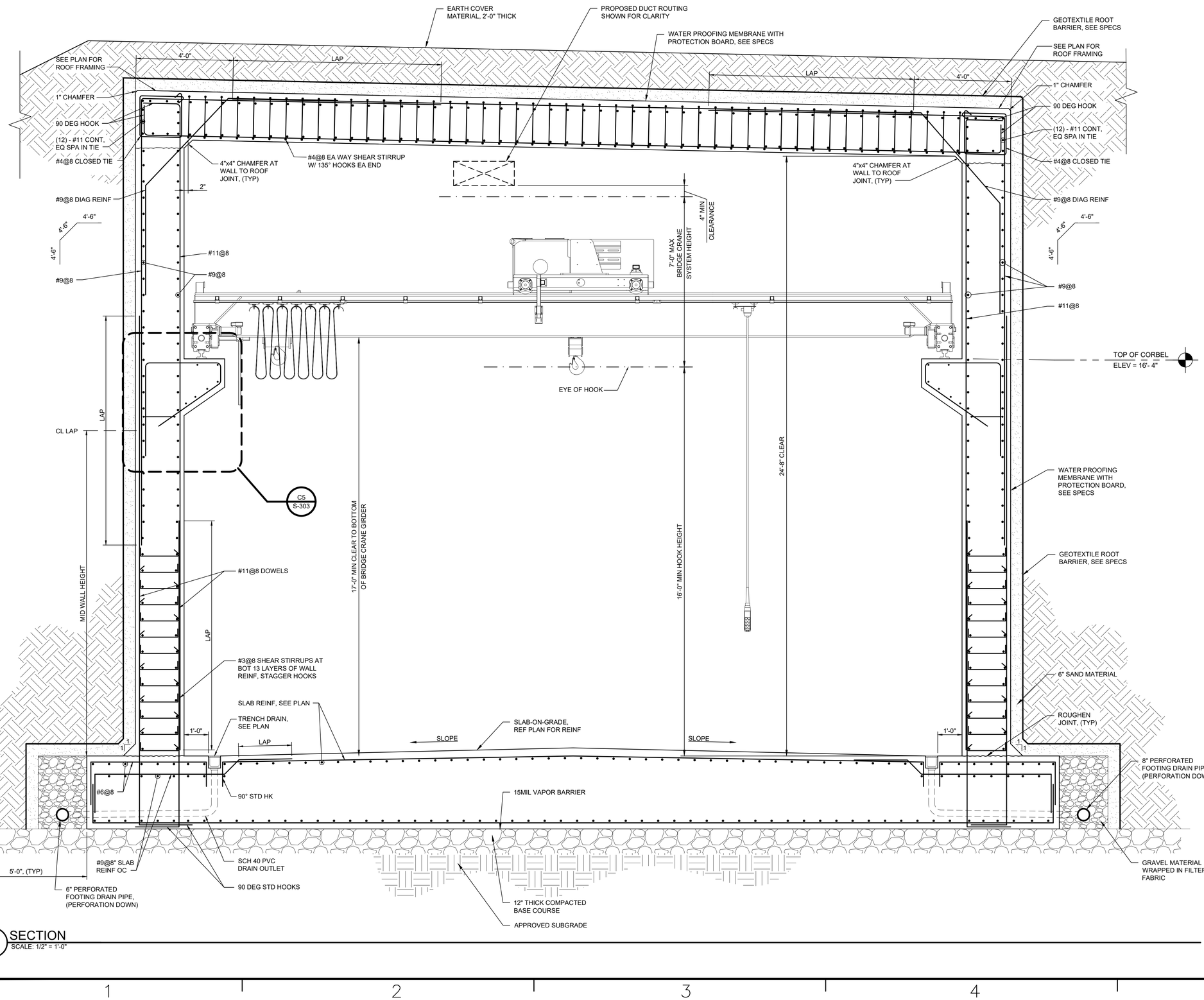
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

BUILDING SECTIONS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877624
SHEET 15 OF 51

S-301

DRAWFORM REVISION: 00 MONTH 2020



A1 SECTION
SCALE: 1/2" = 1'-0"

NOTES TO DESIGNER:

1. SITE ADAPT ENGINEER MUST REVIEW AND COORDINATE THE SUBGRADE PREPARATION SHOWN ON THIS SHEET WITH RECOMMENDATIONS FROM THE PROJECT GEOTECHNICAL REPORT. IF COMPETENT ROCK SUBGRADE IS ENCOUNTERED, THE COMPACTED BASE COURSE IS NOT REQUIRED AND MAY BE REMOVED.

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH
PM/DM					--
BRANCH MANAGER					--
CHIEF ENG/ARCH					--
FIRE PROTECTION					--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

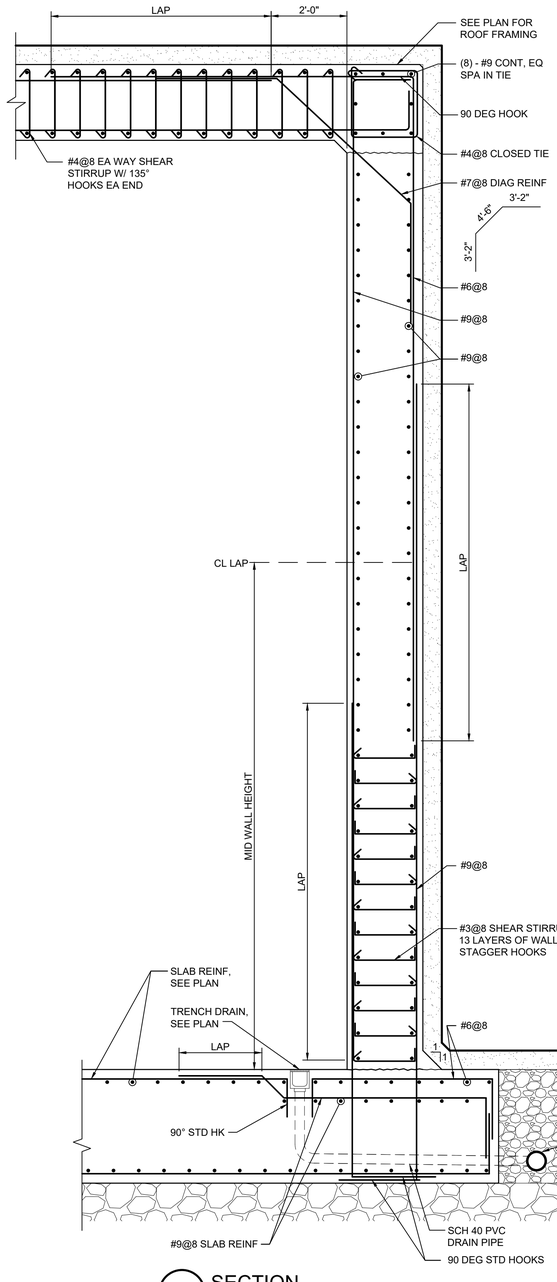
WALL SECTIONS – 1

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12877625
SHEET 16 OF 51

S-302

DRAWFORM REVISION: 00 MONTH 2020

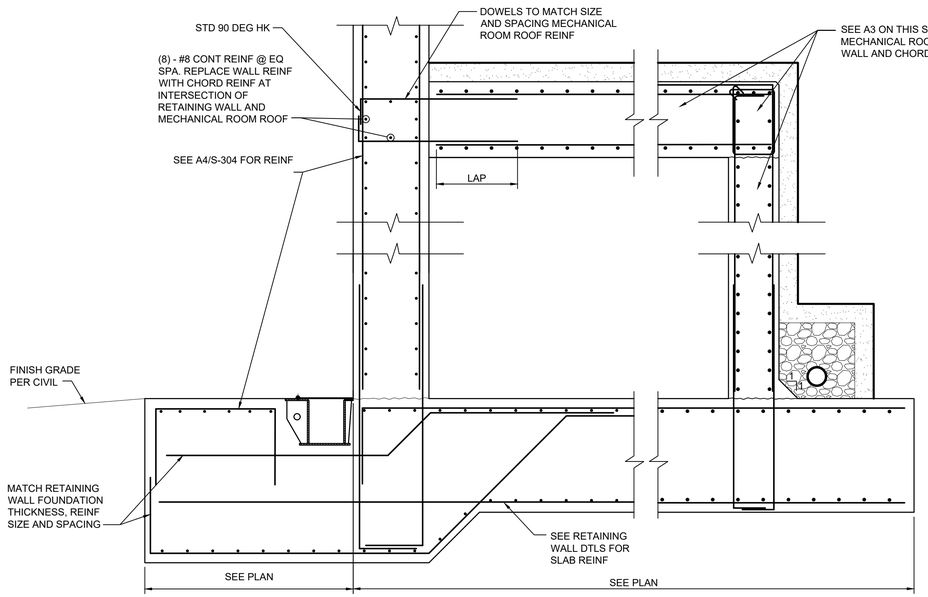
FILE NAME: J:\DCSES\Magazines\BCLWSMagazines_Single Bay\Submittals\Redesign\Final\Drawings\S-302.dwg LAYOUT NAME: S-302 PLOTTED: Friday, March 17, 2023 - 4:48pm USER: leslie.corsino



A2 SECTION
SCAL1/2" = 1'-0'

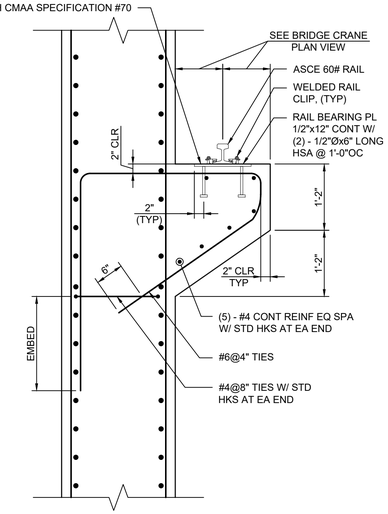
SHEET NOTE:

1. ALL REINFORCING STEEL MUST BE CONTINUOUSLY BONDED AND GROUNDED PER S-002 AND A1/ E-504.



C3 SECTION
SCAL1/2" = 1'-0'

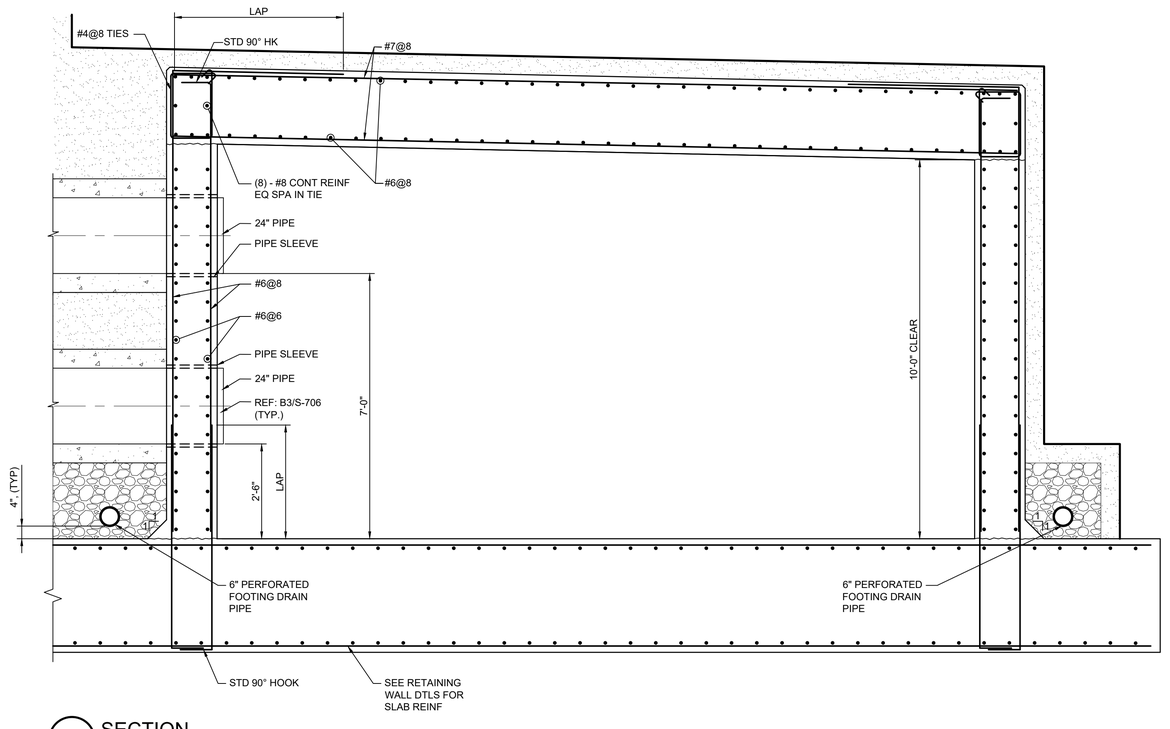
RAIL BEARING PL MUST BE CONSIDERED THE RUNWAY SURFACE FOR THE BRIDGE CRANE AND MUST BE CONSTRUCTED TO RUNWAY TOLERANCES IN ACCORDANCE WITH CMAA SPECIFICATION #70



NOTE:

1. THE BRIDGE CRANE CORBEL MUST BE PLACED MONOLITHICALLY WITH THE CONCRETE SIDEWALLS.

C5 BRIDGE CRANE CONTINUOUS CORBEL DETAIL
SCALE: 3/4" = 1'-0"



A3 SECTION
SCAL1/2" = 1'-0'

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH
PM/DM					
BRANCH MANAGER					
CHIEF ENG/ARCH					
FIRE PROTECTION					

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

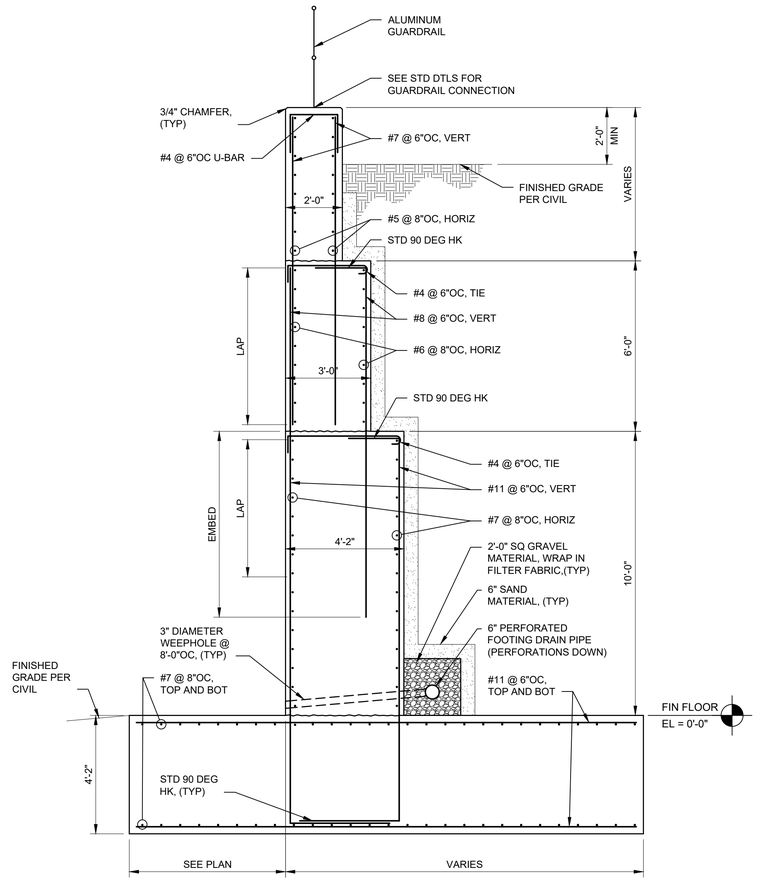
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

WALL SECTIONS – 2

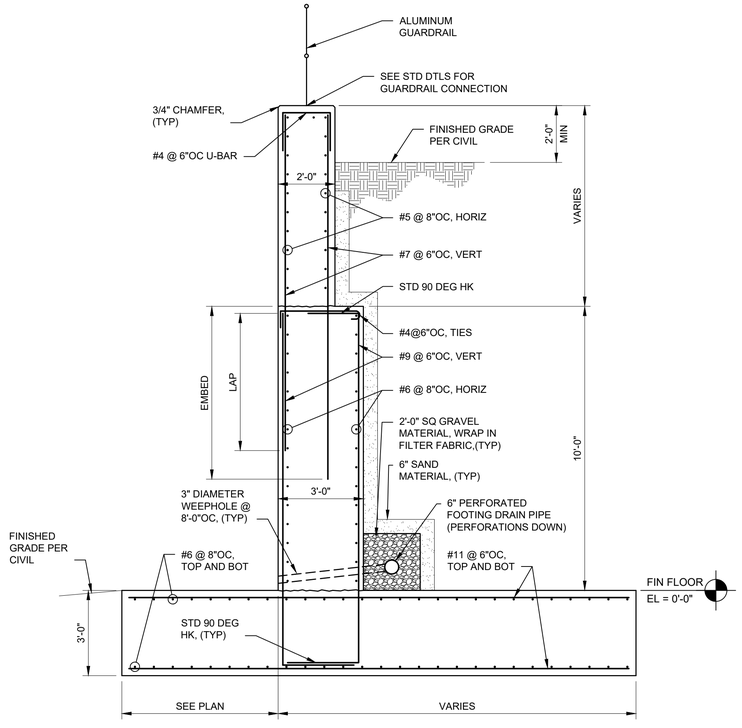
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877626
SHEET 17 OF 51

S-303

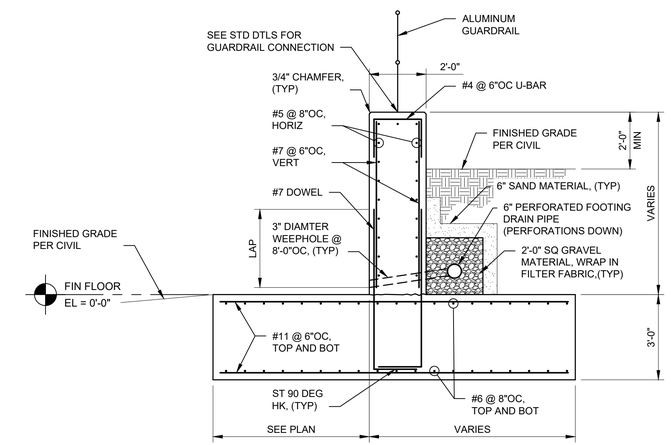
DRAWFORM REVISION: 00 MONTH 2020



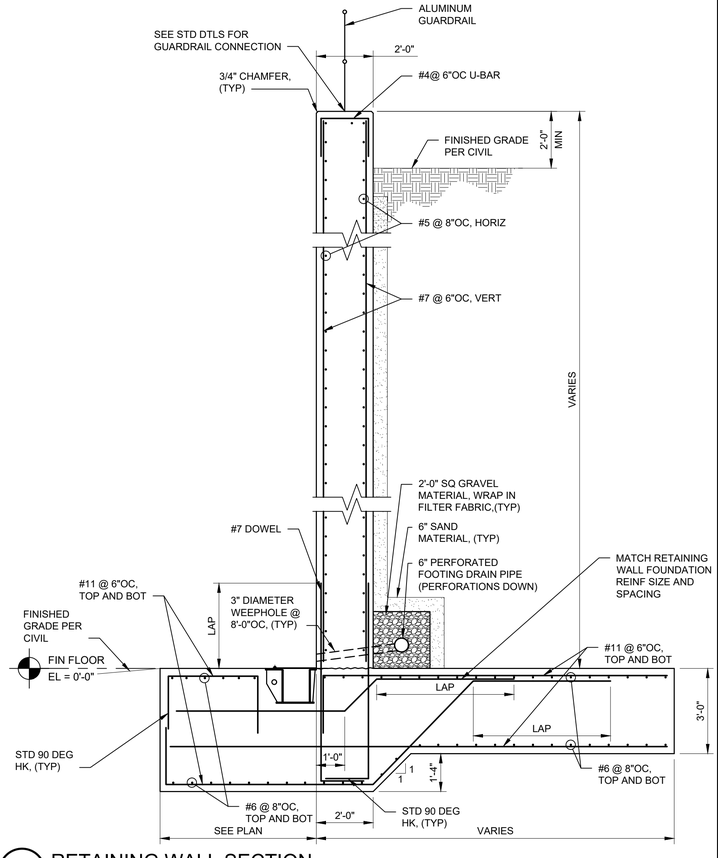
A1 RETAINING WALL SECTION
SCALE: 3/8" = 1'-0"



A2 RETAINING WALL SECTION
SCALE: 3/8" = 1'-0"



C2 RETAINING WALL SECTION
SCALE: 3/8" = 1'-0"



A4 RETAINING WALL SECTION
SCALE: 3/8" = 1'-0"

APPR	DATE	DESCRIPTION	STM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Telschers
FOR COMMANDER NAVFAC 28 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH
PM/DM					--
BRANCH MANAGER					--
CHIEF ENG/ARCH					--
FIRE PROTECTION					--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

WALL SECTIONS – 3

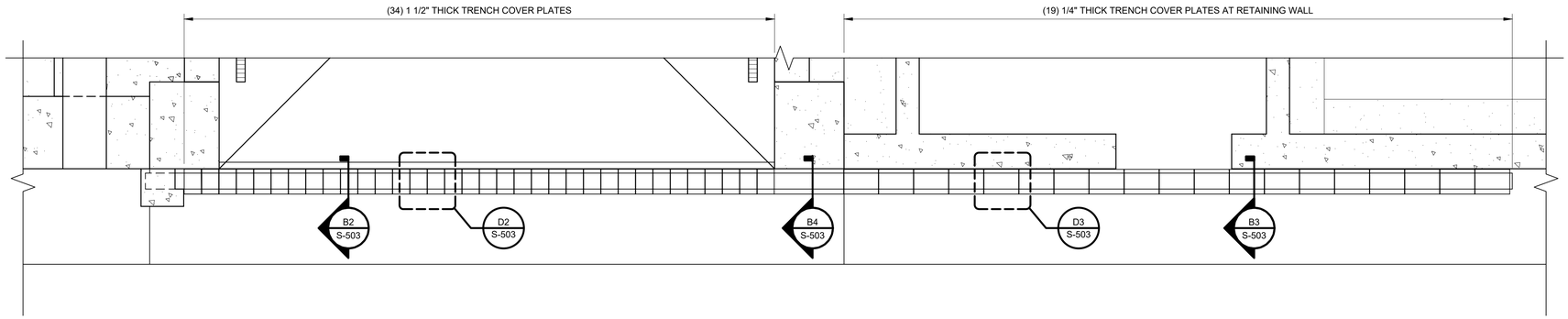
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877627

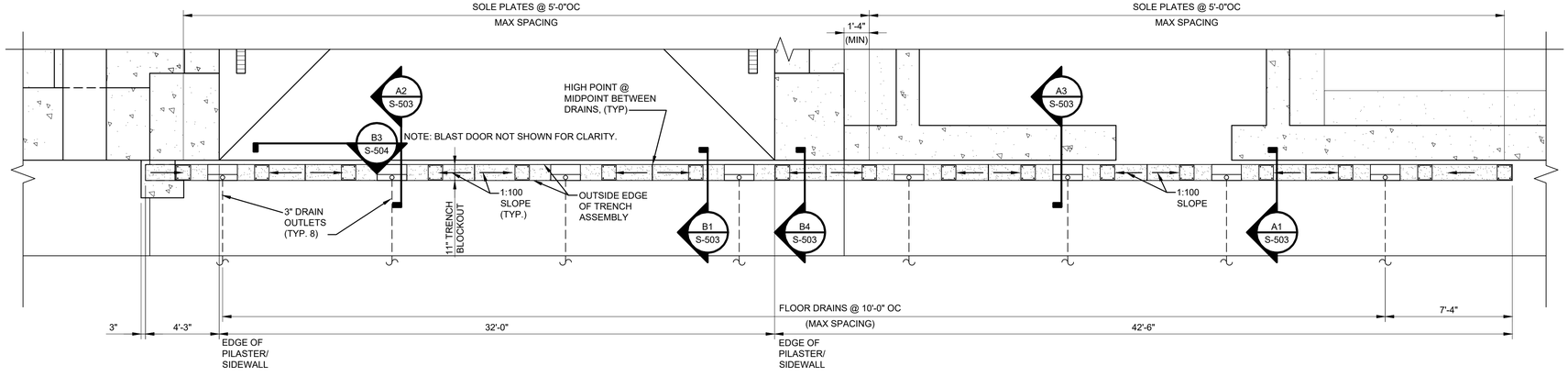
SHEET 18 OF 51

S-304

DRAWFORM REVISION: 00 MONTH 2020



C1 TRENCH COVER LAYOUT PLAN
SCALE: 1/4" = 1'-0"



NOTE:

1. ASCE 60# RAIL MUST EXTEND THE ENTIRE LENGTH OF TRENCH WITH A 2" GAP AT THE ENDS. RAIL SPLICES AND SPLICE CONNECTIONS TO BE SELECTED BY RAIL MFR, AND TO BE LOCATED AT THE CENTER LINE BETWEEN TWO TRENCH BLOCKOUTS. SEE S -503 FOR MORE INFORMATION ABOUT LOCATION/ALIGNMENT OF RAIL.

A1 TRENCH LAYOUT PLAN
SCALE: 1/4" = 1'-0"

SHEET NOTES

1. TRENCH COVER PLATES MUST BE FABRICATED TO BE ABLE TO BE LIFTED AUTOMATICALLY BY A DOOR PLOW LOCATED AT THE TRAILING AND LEADING EDGES OF THE SLIDING BLAST DOOR. TRENCH PLATE FABRICATOR MUST COORDINATE LOCATION AND ORIENTATION OF CAM GUIDES FOR THE TRENCH PLATES WITH THE BLAST DOOR FABRICATOR SUCH THAT THERE IS A SEAMLESS INTERFACE WITH THE DOOR PLOW SYSTEM AND THE TRENCH PLATES.
2. FINAL TERMINATION OF DOOR TRENCH DRAINS MUST BE AS DETERMINED BY THE SITE-ADAPT ENGINEER.

SYM	DESCRIPTION	DATE	APPR

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

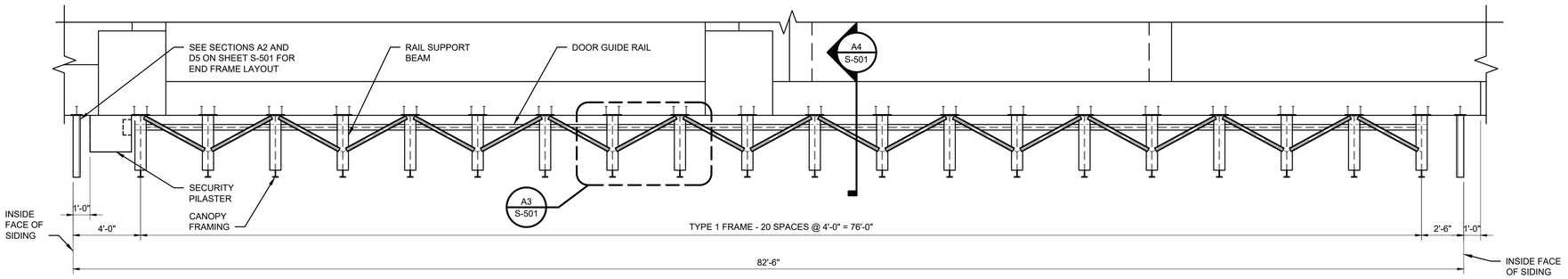
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ENLARGED TRENCH PLAN

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877628
SHEET 19 OF 51

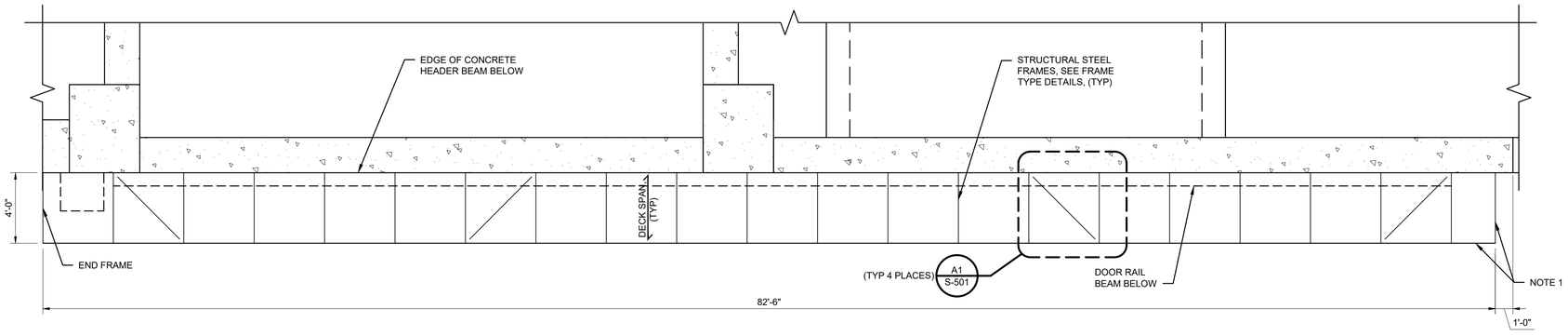
S-401

DRAWFORM REVISION: 00 MONTH 2020



C1 ENLARGED DOOR RAIL SUPPORT FRAMING PLAN

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



A1 ENLARGED CANOPY FRAMING PLAN

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

SHEET NOTES

1. STEEL DECK TO BE USED FOR ROOF AND SIDING OF CANOPY STRUCTURE. REFERENCE S-002 FOR STEEL DECK REQUIREMENTS.

NO.	DESCRIPTION	DATE	APPR

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

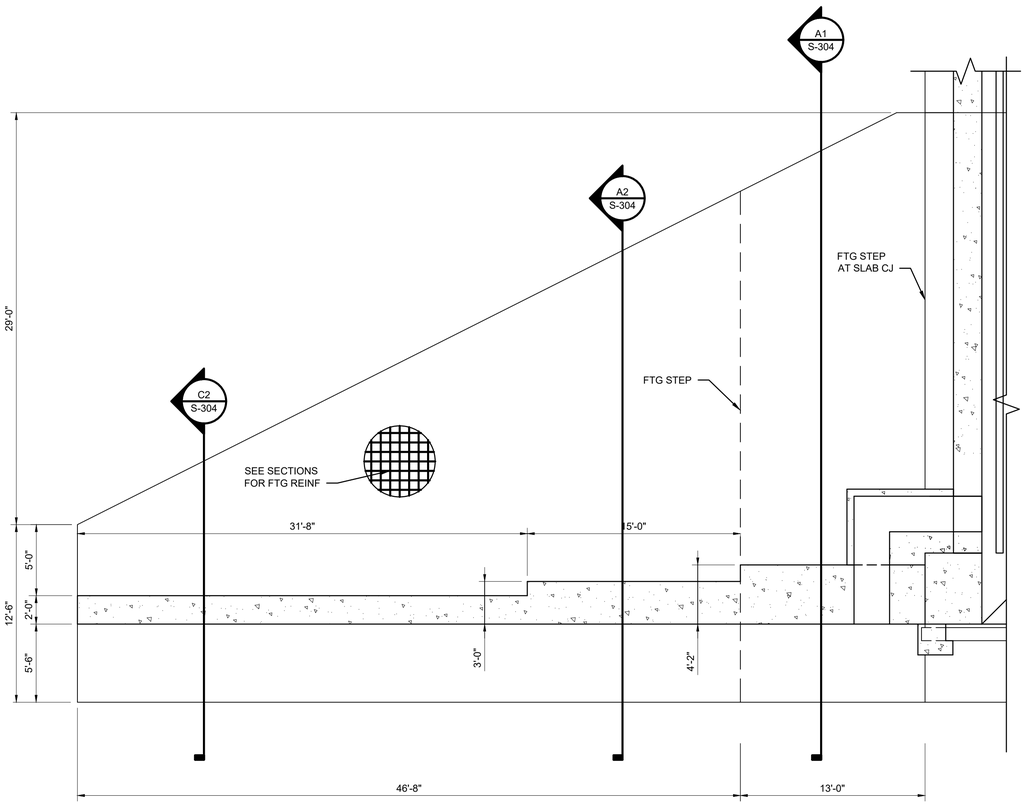
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ENLARGED CANOPY FRAMING PLAN

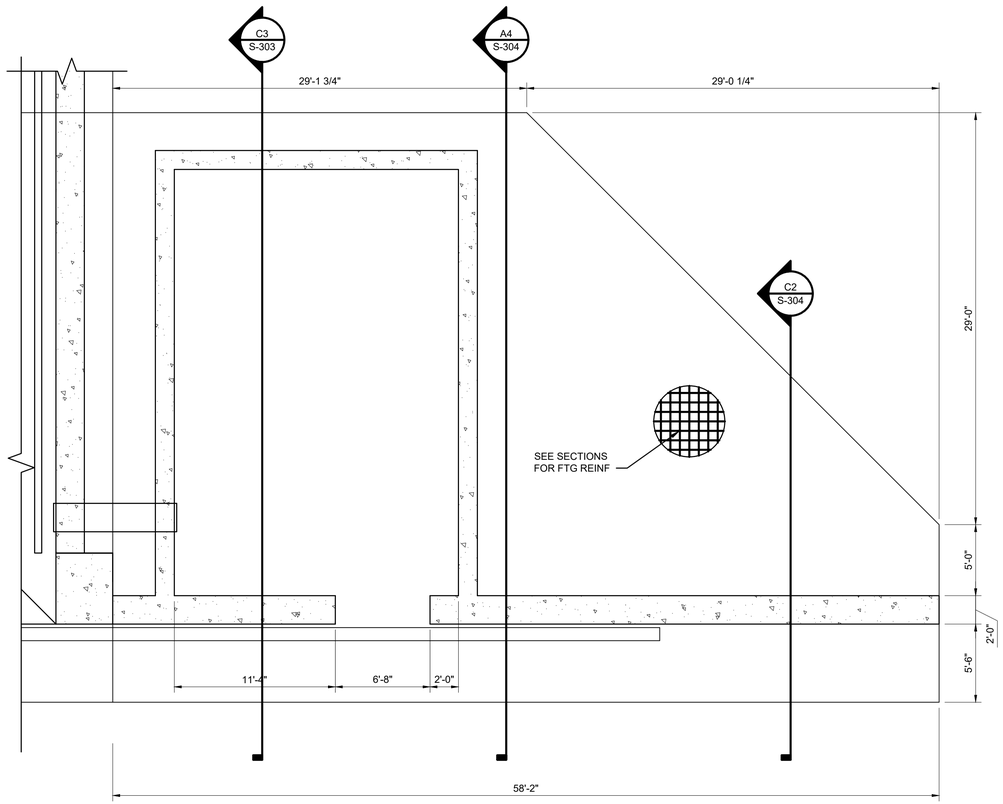
SCALE	NONE
EFPROJECT NO.:	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	12877629
SHEET	20 OF 51

S-402

DRAWFORM REVISION: 00 MONTH 2020



A1 RETAINING WALL "A" FOUNDATION
SCALE: 3/16" = 1'-0"



A3 RETAINING WALL "B" FOUNDATION
SCALE: 3/16" = 1'-0"

SYM	DESCRIPTION	DATE	APPR

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY
SATISFACTORY TO DATE

DES: JAF	DRW: SFF	CHK: TPH
PM/DM		-.-
BRANCH MANAGER		-.-
CHIEF ENG/ARCH		-.-
FIRE PROTECTION		-.-

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
NAVAL SUPPORT ACTIVITY HAMPTON ROADS, VIRGINIA

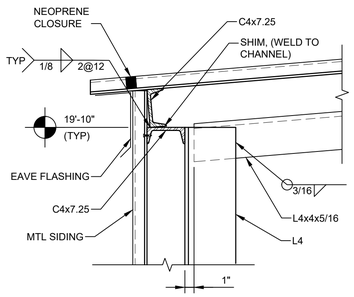
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

ENLARGED PLAN VIEW RETAINING WALL

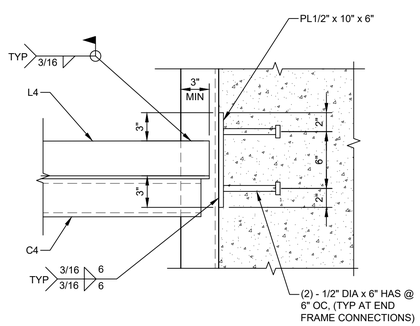
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877630
SHEET 21 OF 51

S-403

DRAWFORM REVISION: 00 MONTH 2020



D1 DETAIL
SCALE: 1 1/2" = 1'-0"



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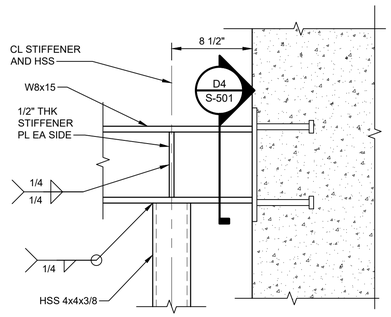
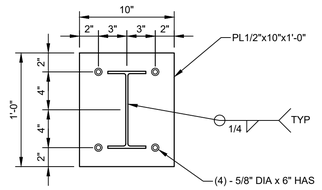
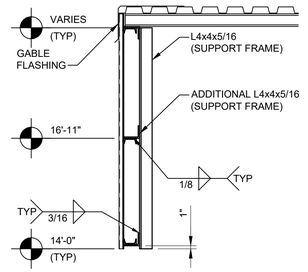
SCALE: 1 1/2" = 1'-0"



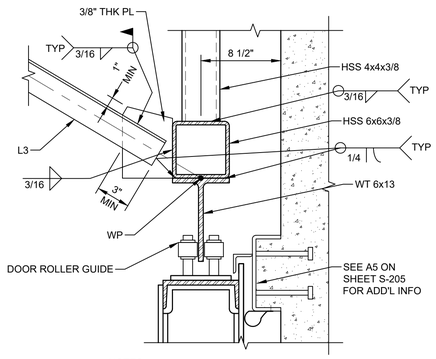
D3 DETAIL
SCALE: 1 1/2" = 1'-0"



D4 SECTION
SCALE: 1 1/2" = 1'-0"

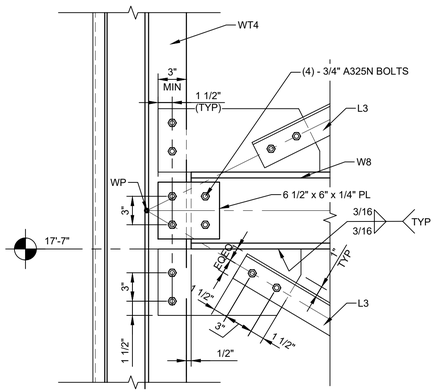


D5 GABLE SECTION
SCALE: 1/2" = 1'-0"

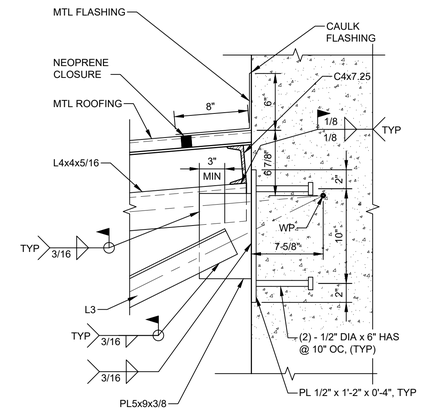


NOTES:
DOOR ROLLER GUIDE MUST HAVE A 9 KIP MINIMUM LATERAL LOAD CAPACITY. WELD DOOR ROLLER GUIDE PER MANUFACTURER'S RECOMMENDATIONS.

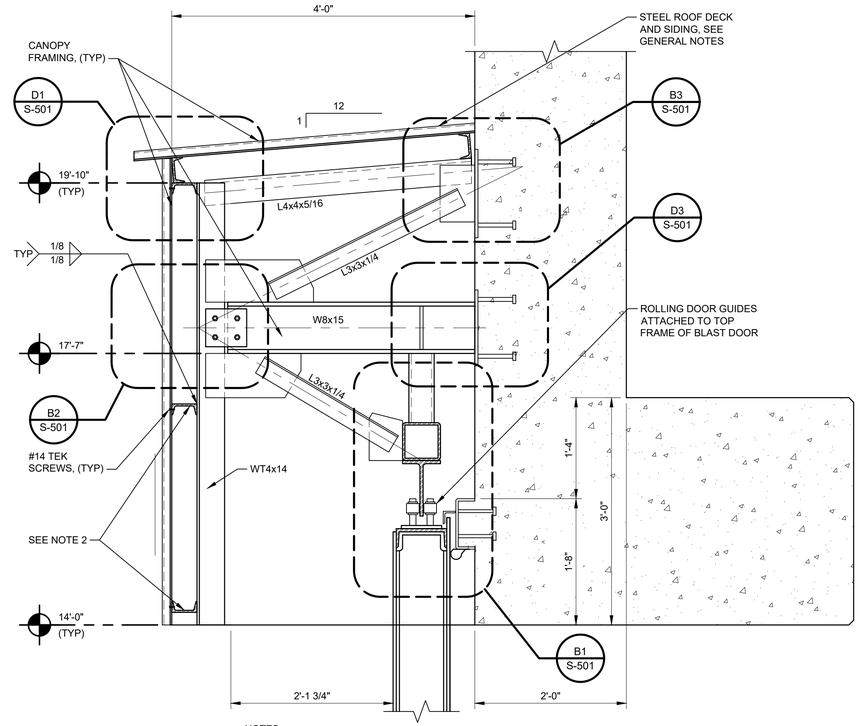
B1 ENLARGE DETAIL
SCALE: 1 1/2" = 1'-0"



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

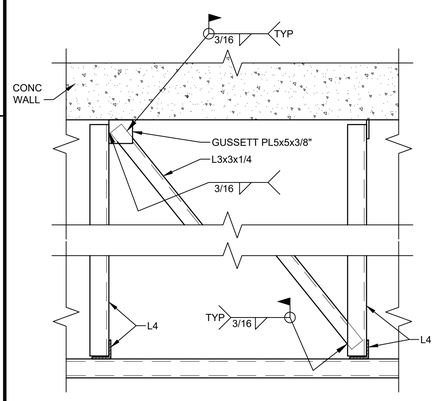


B3 DETAIL
SCALE: 1 1/2" = 1'-0"

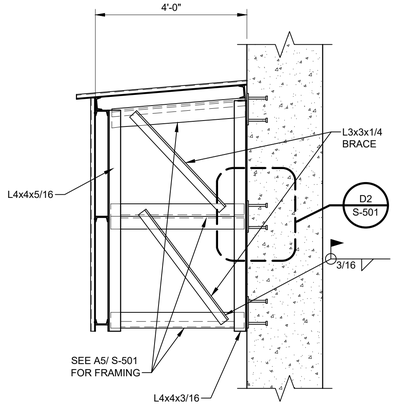


NOTES:
1. ALL ANGLES TO BE L4x4x5/16, UNLESS NOTED OTHERWISE.
2. ALL PURLINS AND GIRTS TO BE C4x7.25.

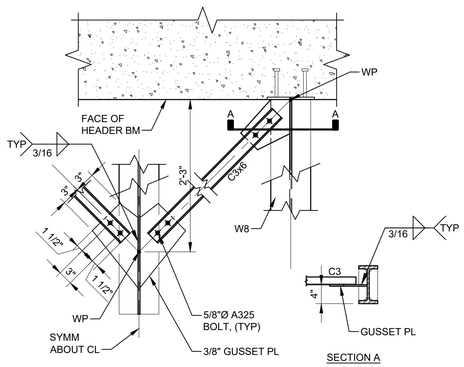
A4 SECTION
SCALE: 1" = 1'-0"



A1 DETAIL
SCALE: 3/4" = 1'-0"



A2 SECTION
SCALE: 1/2" = 1'-0"



A3 DETAIL
SCALE: 3/4" = 1'-0"

FILE NAME: c:\DCSE\Magazines\@CLW\Magazines_Single Bay\Submittals\Redesign\Final\Drawings\S-501.dwg LAYOUT NAME: S-501 PLOTTED: Friday, March 17, 2023 - 4:51pm USER: leslie.corsino

NO.	DESCRIPTION	DATE	APPR

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023
ACTIVITY

SATISFACTORY TO DATE

DES. JAF	DRW SFF	CHK TPH
PM/CM ---		
BRANCH MANAGER ---		
CHIEF ENG/ARCH ---		
FIRE PROTECTION ---		

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

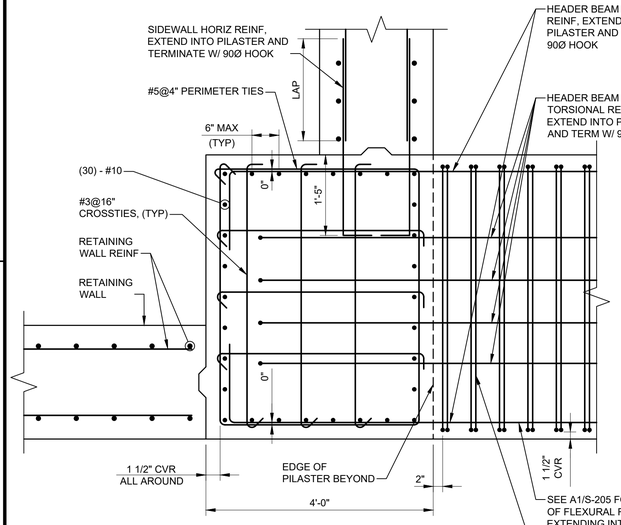
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

DOOR GUIDE AND CANOPY DETAILS

SCALE:	NONE
EPROJECT NO.:	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	12877631
SHEET	22 OF 51

S-501

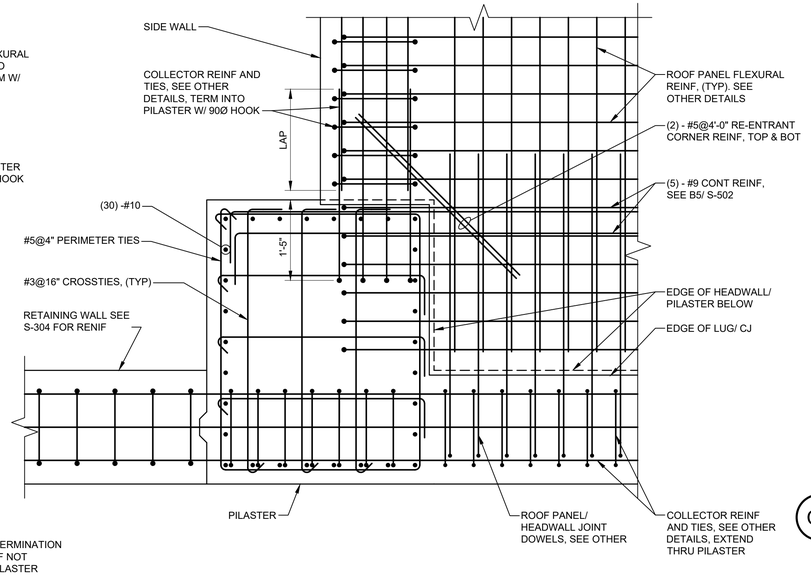
DRAWFORM REVISION: 00 MONTH 2020



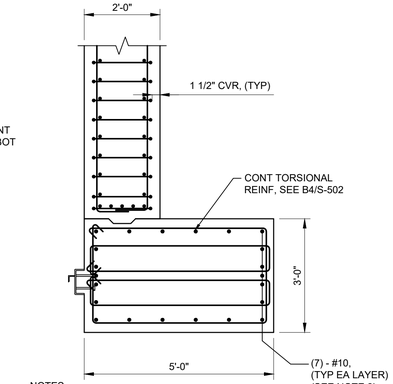
NOTES:

1. THE 0" DIMENSION IMPLIES HEADER BEAM FLEXURAL REINFORCEMENT AND PILASTER PERIMETER TIES OCCUR IN THE SAME VERTICAL PLANE.

C1 PILASTER - THRU HEADER BEAM
SCALE: 3/4" = 1'-0"



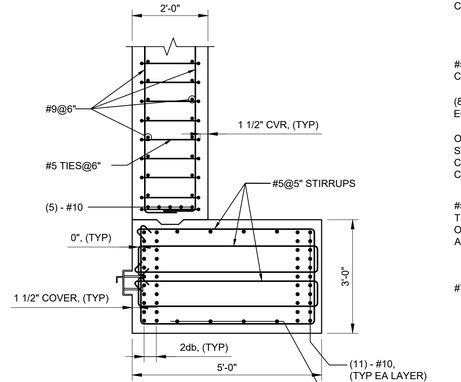
C2 PILASTER - THRU ROOF SLAB
SCALE: 3/4" = 1'-0"



NOTES:

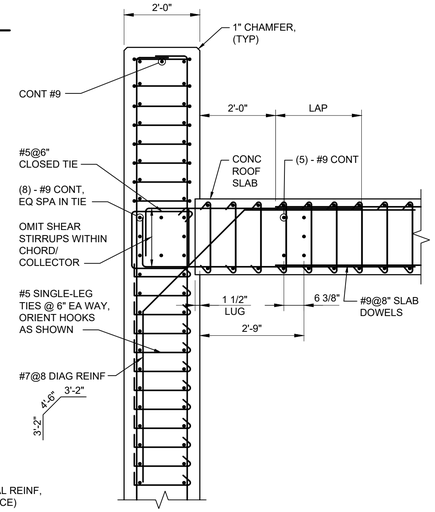
1. DOOR AND DOOR GUIDE NOT SHOWN FOR CLARITY.
2. FLEXURAL REINFORCEMENT SHOWN IS CONTINUOUS FROM MIDSPAN CONDITION (B4/S-502). REMAINING FLEXURAL REINFORCEMENT IS TERMINATED (C1/S-502) AND NOT SHOWN ON THIS DETAIL. SEE DETAIL A1/S-205 FOR TERMINATION OF FLEXURAL REINFORCEMENT.
3. REF B4/S-502 FOR INFORMATION NOT REPEATED.

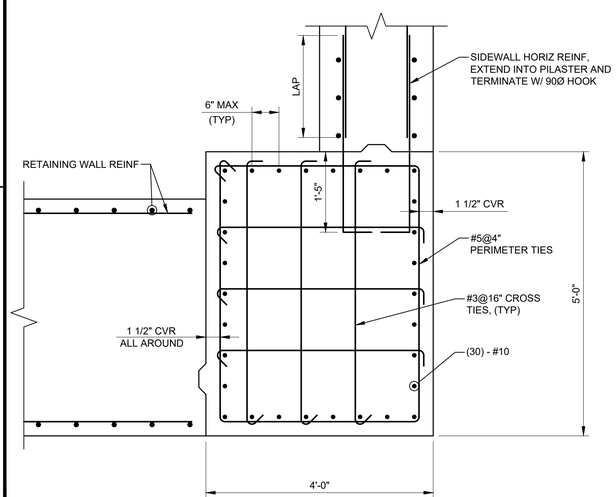
C4 HEADER BEAM END
SCALE: 1/2" = 1'-0"



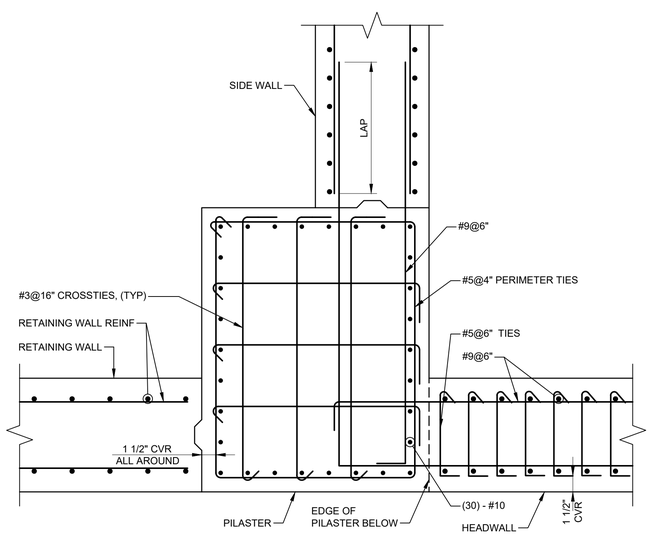
NOTES:

1. DOOR AND DOOR GUIDE NOT SHOWN FOR CLARITY.



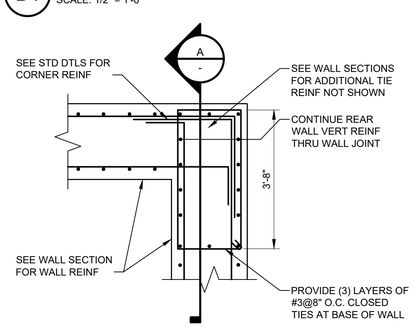


A1 PILASTER - BELOW HEADER BEAM
SCALE: 3/4" = 1'-0"



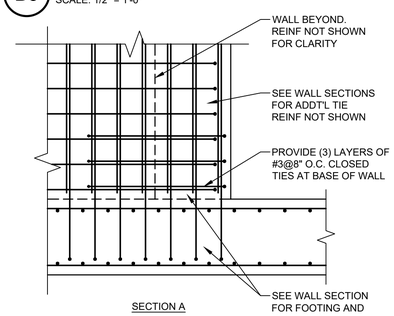
A2 PILASTER - ABOVE HEADER BEAM (@ HEADWALL)
SCALE: 3/4" = 1'-0"

B4 HEADER BEAM MIDSPAN
SCALE: 1/2" = 1'-0"



A4 BOUNDARY ELEMENTS TIE REINF AT CORNERS (SIM)
SCALE: 1/2" = 1'-0"

B5 SECTION
SCALE: 1/2" = 1'-0"



APPR	DATE	DESCRIPTION	SYM

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH
PM/DM					
BRANCH MANAGER					
CHIEF ENG/ARCH					
FIRE PROTECTION					

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND: ATLANTIC
HAMPTON ROADS, VIRGINIA

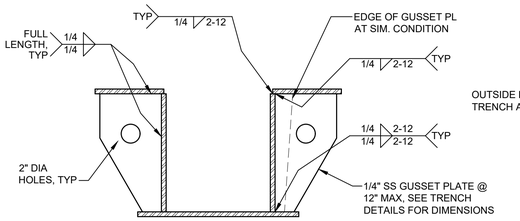
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

PILASTER AND BOUNDARY ELEMENTS REINF DETAILS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877632
SHEET 23 OF 51

S-502

DRAWFORM REVISION: 00 MONTH 2020

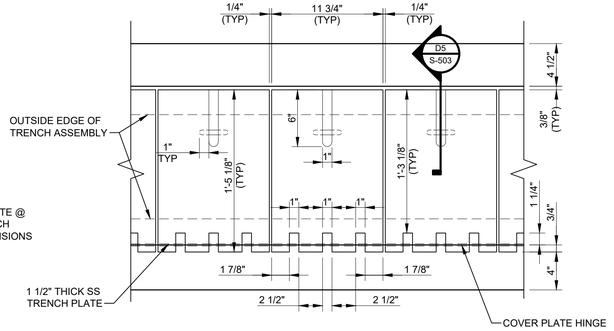


NOTES:

1. ALL TRENCH PLATES ARE 1/2" THK SS, UNO.
2. SEE TRENCH DETAILS FOR OVERALL SIZE OF TRENCH PLATE ASSEMBLY.
3. TRENCH PL MFR TO PROVIDE OVERSIZE BOLT HOLES ON TRENCH BOTTOM PL FOR ACCESS OF SOLE PL ANCHOR BOLTS TO CONC.

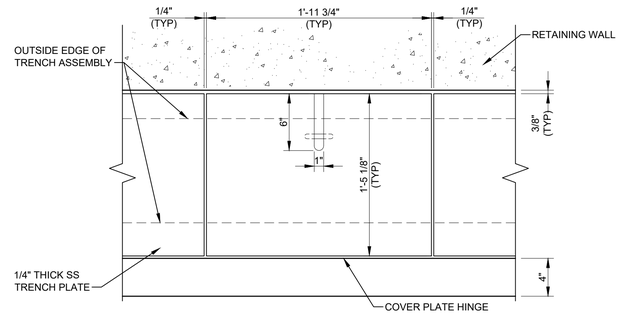
D1 TRENCH ASSEMBLY AND WELDMENT

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



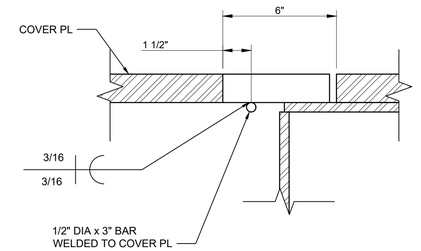
D2 TRENCH COVER PLATE AT MAGAZINE DOOR

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



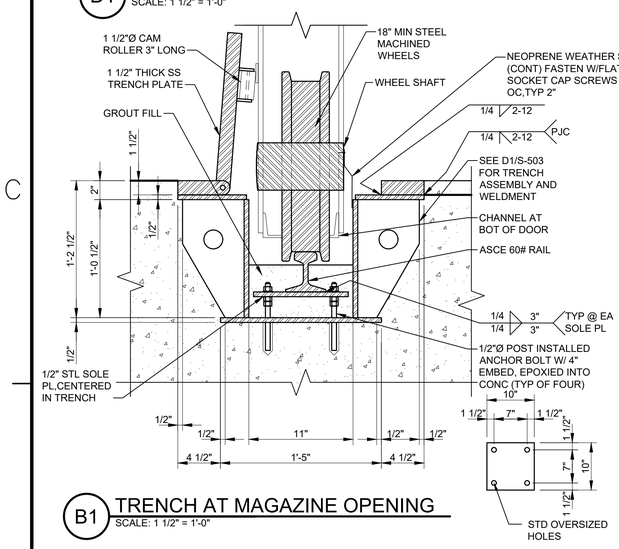
D3 TRENCH COVER PLATE AT RETAINING WALL

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



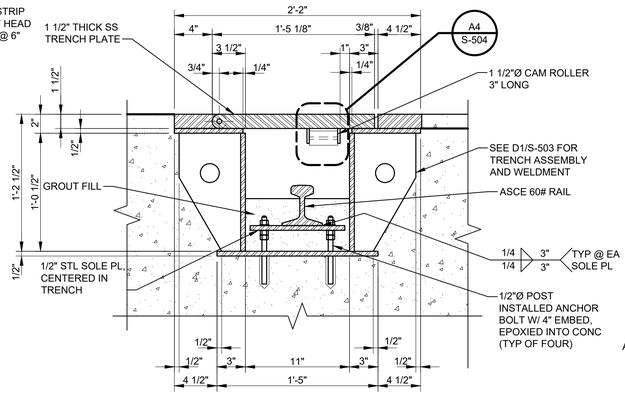
D5 DETAIL - TRENCH PLATE MANUAL LIFT

SCALE: 3" = 1'-0"



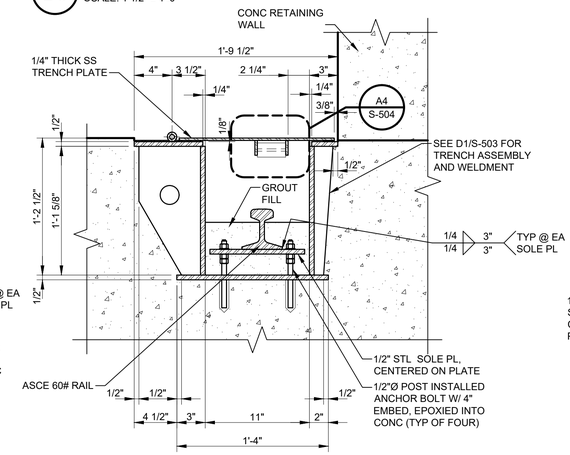
B1 TRENCH AT MAGAZINE OPENING

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



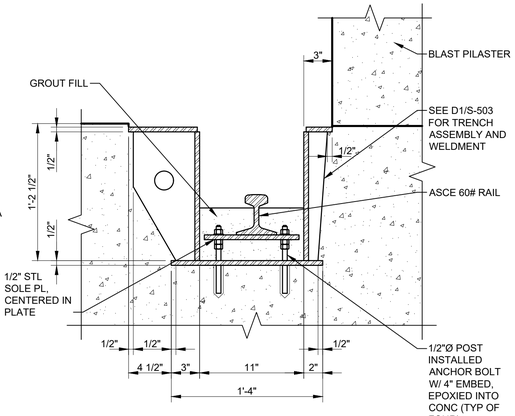
B2 TRENCH AT MAGAZINE WITH CLOSED COVER

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



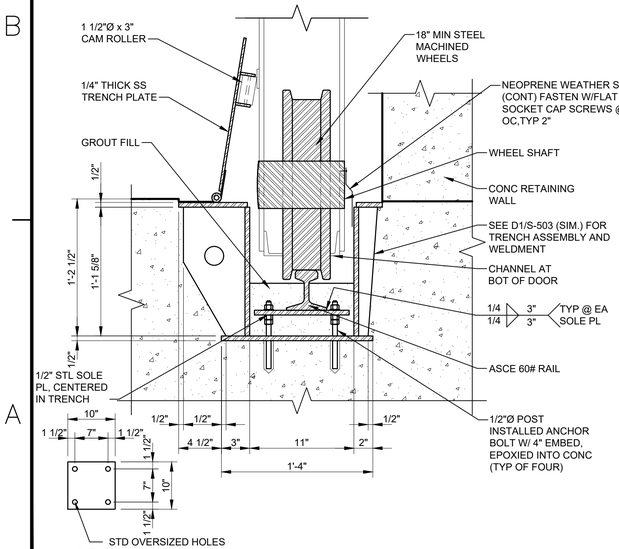
B3 TRENCH AT RETAINING WALL WITH CLOSED COVER

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



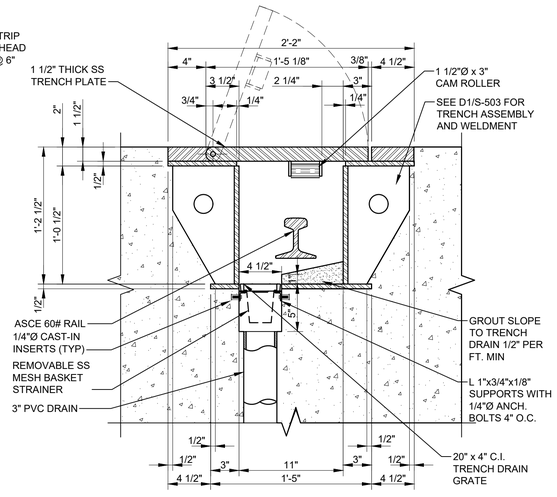
B4 TRENCH AT PILASTER WITH NO COVER

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



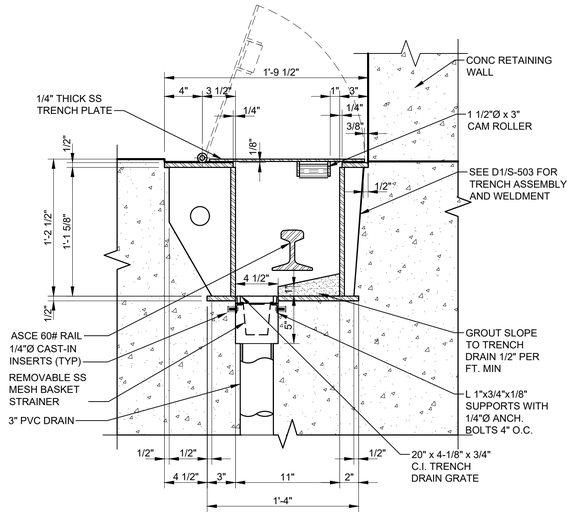
A1 TRENCH AT RETAINING WALL

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



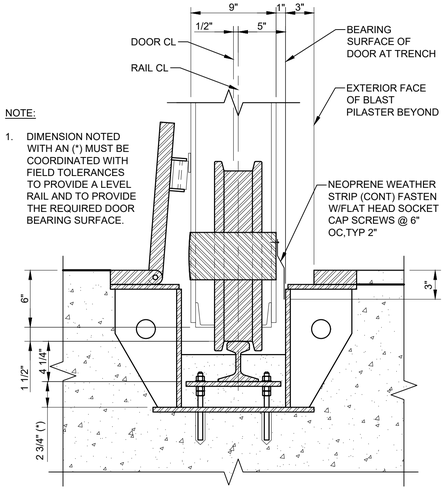
A2 TRENCH AT MAGAZINE AT DRAIN

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



A3 TRENCH AT RETAINING WALL AT DRAIN

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



NOTE:

1. DIMENSION NOTED WITH AN (*) MUST BE COORDINATED WITH FIELD TOLERANCES TO PROVIDE A LEVEL RAIL AND TO PROVIDE THE REQUIRED DOOR BEARING SURFACE.

A5 DOOR ALIGNMENT AT TRENCH

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

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023
ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH
PM/DM					--
BRANCH MANAGER					--
CHIEF ENG/ARCH					--
FIRE PROTECTION					--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

DOOR, TRENCH AND COVER DETAILS

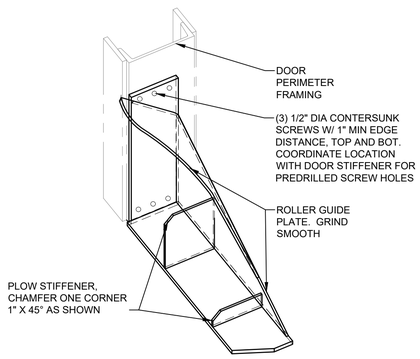
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877633
SHEET 24 OF 51

S-503

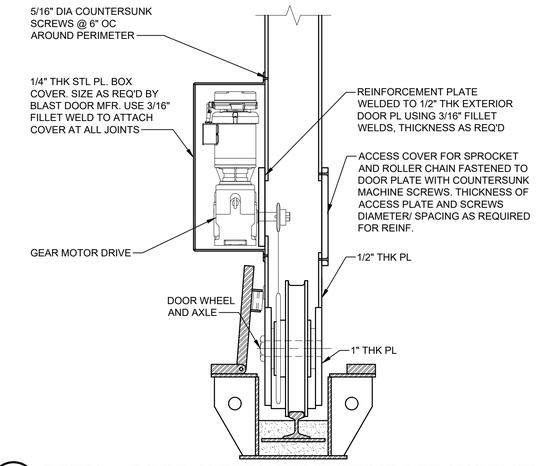
DRAWFORM REVISION: 00 MONTH 2020

GENERAL PLOW NOTES:

1. ALL PLATES ARE 1/4" THICK PLATE UNLESS NOTED OTHERWISE IN DETAILS.
2. WELD ALL JOINTS 3/16" FILLET UNLESS NOTED OTHERWISE.
3. DIMENSIONS NOTED WITH AN (*) MUST BE COORDINATED WITH PLOW MANUFACTURER ENSURING THAT DOOR TRENCH COVER ROLLER HAS A SMOOTH TRANSITION BETWEEN CLOSED AND OPEN POSITIONS.



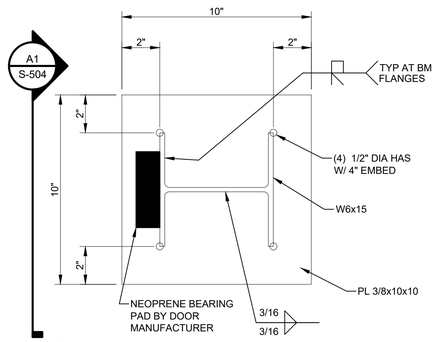
C2 DETAIL - PLATE PLOW ISOMETRIC VIEW
SCALE: 1 1/2" = 1'-0"



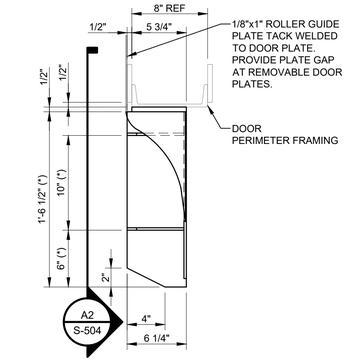
C3 DETAIL - DOOR ALTERNATIVE DRIVE ARRANGEMENT
SCALE: 1" = 1'-0"

DESIGN/MANUFACTURING NOTES:

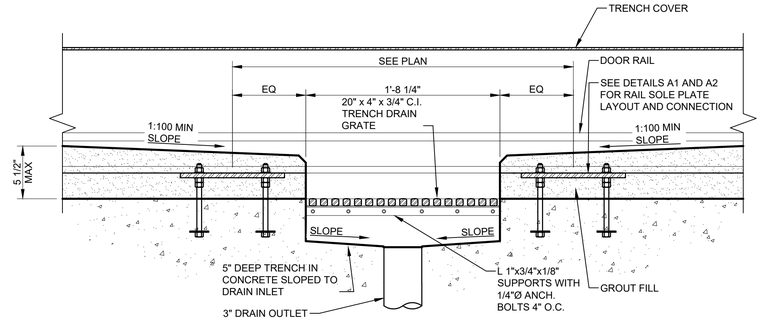
1. MOTOR INSTALLATION SHOWN IS NOTIONAL AND IS FOR BIDDING PURPOSES AND MAY VARY BASED ON DOOR MANUFACTURER'S APPROVED DESIGN.
2. DOOR MANUFACTURER'S DESIGN MUST ALLOW FOR MAINTENANCE OF THE MOTOR ASSEMBLY AND ITS COMPONENTS, INCLUDING REMOVAL OF AND REPLACEMENT OF THE MOTOR ASSEMBLY.
3. USE STANDARD PARTS AS MUCH AS POSSIBLE.
4. ACCESS TO THE MOTOR ASSEMBLY IS NOT NECESSARILY LIMITED TO ONE SIDE OF THE DOOR. IF ACCESS TO BOTH SIDES OF THE DOOR IS USED, IT MUST BE SHOWN THAT THE WHEEL LOAD PATH THROUGH THE SUPPORTING PLATES IS ADEQUATE.
5. A MOTOR ASSEMBLY MOUNTED INTERNAL TO THE DOOR IS PREFERRED; HOWEVER, A MOTOR ASSEMBLY MOUNTED ON THE EXTERIOR OF THE DOOR MAY BE ACCEPTABLE IF APPROVED.



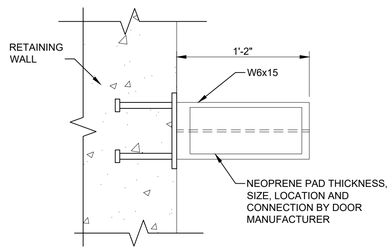
B1 DETAIL - DOOR STOP
SCALE: 3" = 1'-0"



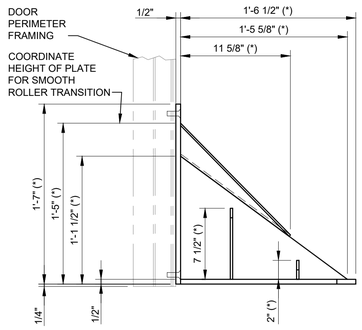
B2 DETAIL - PLATE PLOW PLAN
SCALE: 1 1/2" = 1'-0"



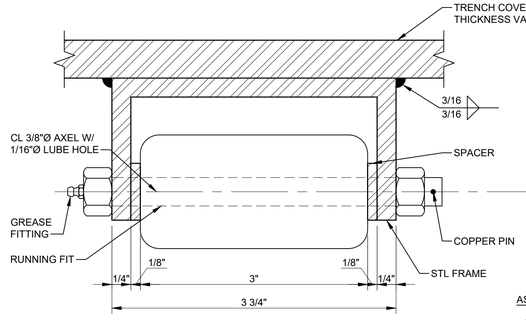
B3 TRENCH DRAIN BLOCKOUT
SCALE: 1 1/2" = 1'-0"



A1 SECTION - DOOR STOP
SCALE: 1 1/2" = 1'-0"



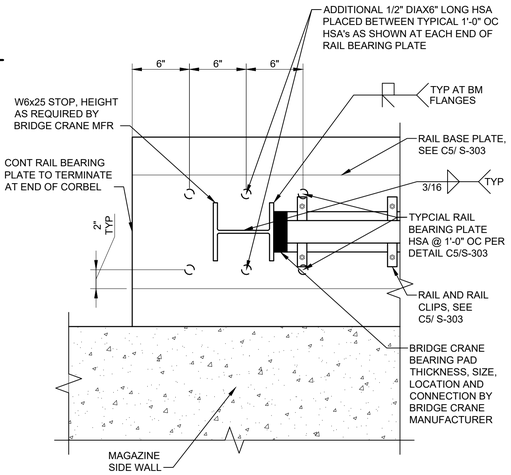
A2 DETAIL - PLATE PLOW SIDE ELEVATION
SCALE: 1 1/2" = 1'-0"



ASSEMBLY DESIGN/MANUFACTURING NOTES:

1. ASSEMBLY SHOWN IS NOTIONAL AND IT IS FOR BIDDING PURPOSES. ASSEMBLY MAY VARY BASED ON DOOR MANUFACTURER'S DESIGN.

A4 TYPICAL TRENCH COVER ROLLER
SCALE: 1:1



A5 BRIDGE CRANE RAIL STOP
SCALE: 1 1/2" = 1'-0"

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES: JAF	DRW: SFF	CHK: TPH

PM/DM	
BRANCH MANAGER	
CHIEF ENG/ARCH	
FIRE PROTECTION	

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

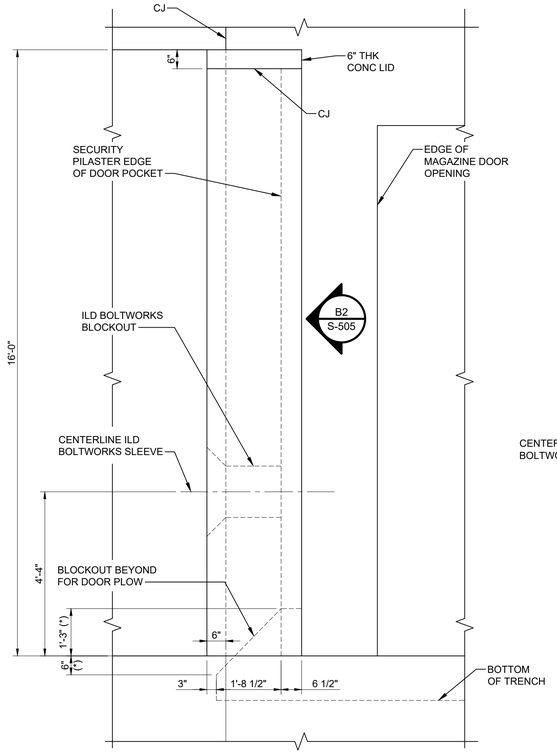
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

DOOR STOP, PLOW AND TRENCH COVER ROLLER DETAILS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877634
SHEET 25 OF 51

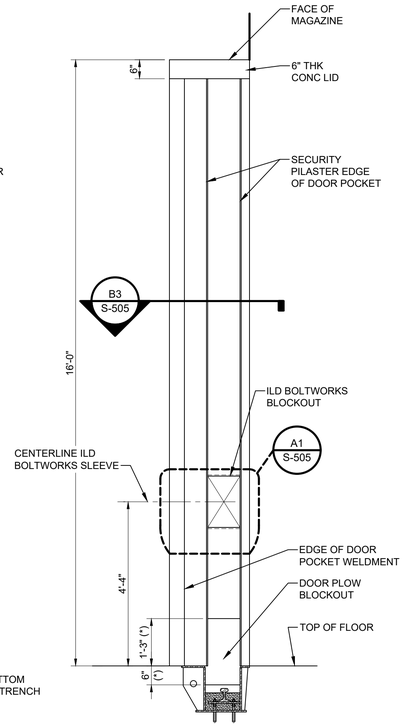
S-504

DRAWFORM REVISION: 00 MONTH 2020



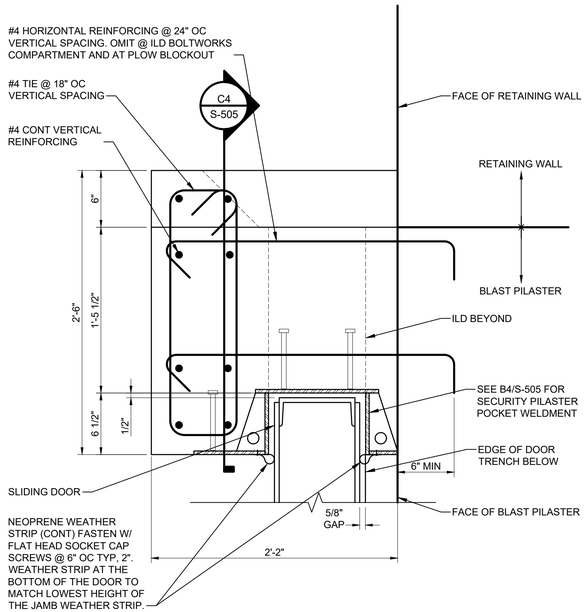
NOTES:
1. DIMENSIONS NOTED WITH AN (*) MUST BE COORDINATED BY THE DOOR MANUFACTURER ENSURING THE DOOR SYSTEM PERFORMS AS INTENDED.

B1 SECURITY PILASTER ELEVATION FROM FRONT OF MAGAZINE
SCALE: 1/2" = 1'-0"

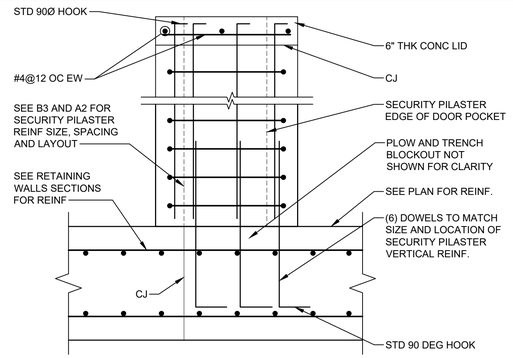


NOTES:
1. DIMENSIONS NOTED WITH AN (*) MUST BE COORDINATED BY THE DOOR MANUFACTURER ENSURING THE DOOR SYSTEM PERFORMS AS INTENDED.

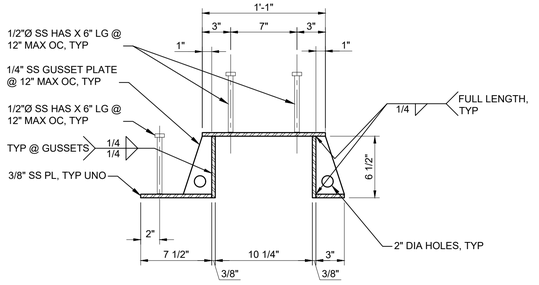
B2 SECURITY PILASTER ELEVATION
SCALE: 1/2" = 1'-0"



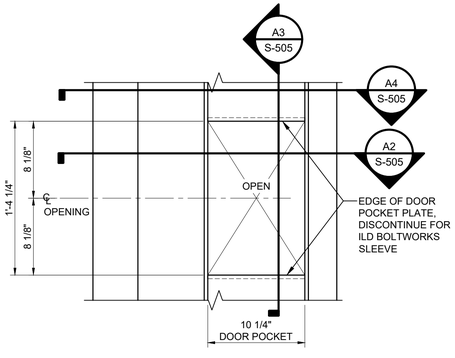
B3 SECTION - TYP SECURITY PILASTER
SCALE: 1 1/2" = 1'-0"



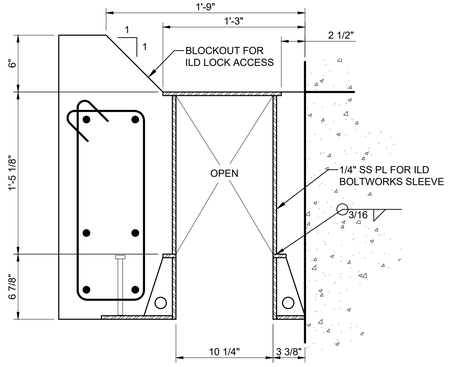
C4 SECURITY PILASTER REINFORCEMENT
SCALE: 3/4" = 1'-0"



B4 DETAIL - TYP SECURITY PILASTER POCKET WELDMENT
SCALE: 3" = 1'-0"

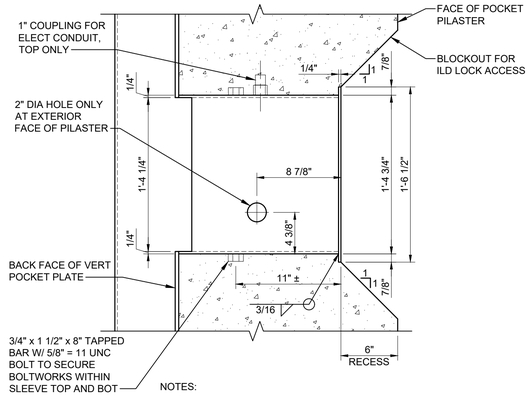


A1 DETAIL - ILD BOLTWORKS
SCALE: 1 1/2" = 1'-0"



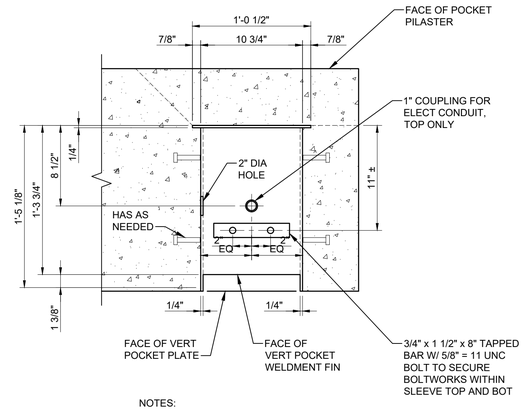
NOTE: SEE DETAIL A3/ THIS SHEET FOR INFORMATION NOT REPEATED

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



NOTES:
1. ALL BOX SLEEVE PLATES TO BE 1/4" THICK STAINLESS STEEL PLATES, UNO.
2. ALL WELDS AT EXTERIOR OF BOX ONLY

A3 DETAIL - ILD BOLTWORKS SLEEVE
SCALE: 1 1/2" = 1'-0"



NOTES:
1. ALL BOX SLEEVE PLATES TO BE 1/4" THICK STAINLESS STEEL PLATES, UNO.
2. ALL WELDS AT EXTERIOR OF BOX ONLY

A4 DETAIL - ILD BOLTWORKS SLEEVE (TOP VIEW)
SCALE: 1 1/2" = 1'-0"

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH
PM/DM					--
BRANCH MANAGER					--
CHIEF ENG/ARCH					--
FIRE PROTECTION					--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

SECURITY PILASTER DETAILS

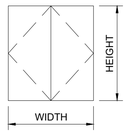
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877635
SHEET 26 OF 51

S-505

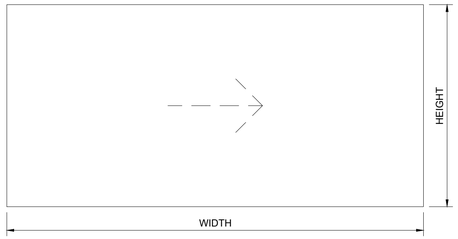
DRAWFORM REVISION: 00 MONTH 2020

DOOR SCHEDULE									
DOOR TYPE	SIZE			MATERIAL	FINISH	SIZE			HARDWARE	U_VALUE
	HEIGHT	WIDTH	THICKNESS			HEAD	JAMB	SILL		
B	15'-11" INT. 15'-9 1/4" EXT.	37'-0"	0'-9"	STEEL	PAINT				2	PER FACILITY DESIGN STANDARD
A	6'-8"	6'-0"	0'-1 3/4"	INSULATED HOLLOW METAL	PAINT				1	

NOTE: TYPE A DOOR SHALL BE A DOUBLE EGRESS DOOR - RHR (RIGHT HAND REVERSE).



TYPE 'A'



TYPE 'B': SLIDING BLAST DOOR FOR OPENING SEE SHEET C1/ S-201

C1 DOOR LEGEND
SCALE: NONE

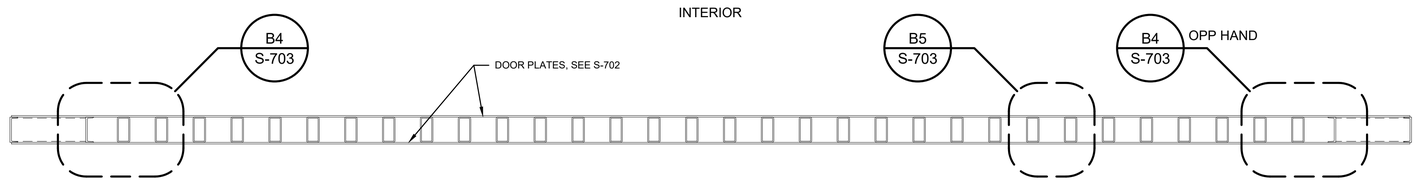
HW SET #1	
DOOR: TYPE A	
QTY	HARDWARE
6	HINGE (A5111) FULL MORTISE W/ MODIFIED NON-REMOVABLE PIN
2	EXIT DEVICE (FF-L-2890B)
1	CYLINDER W/ EXTERNAL LEVER COMPATIBLE W/ EXIT DEVICE
1	ELECTRIC STRIKE (E09391)
1	ELECTRIC STRIKE (E09391)
2	KICK PLATE (J102)
2	OVERHEAD STOP (C01541)
1	REMOVABLE ASTRAGAL
1	THRESHOLD (J35100)
1	HEAD GASKET (R0Y164)
1	JAMB GASKET (R0Y164)
1	RAIN DRIP (R0Y976)
1	SWEEP (R0Y416)
1	BALANCE MAGNETIC SWITCH (UL 634 HSS)
1	INTERNAL LOCKING DEVICE (ILD)
1	INTRUSION DETECTION SYSTEM (IDS)

HW SET #2	
DOOR: TYPE B	
QTY	HARDWARE
1	INTERNAL LOCKING DEVICE (ILD)
1	INTRUSION DETECTION SYSTEM (IDS)
1	SWITCH (UL 634 HSS)
REFER TO DETAILS FOR SPECIFIC GASKETING AND FABRICATED ELEMENTS.	

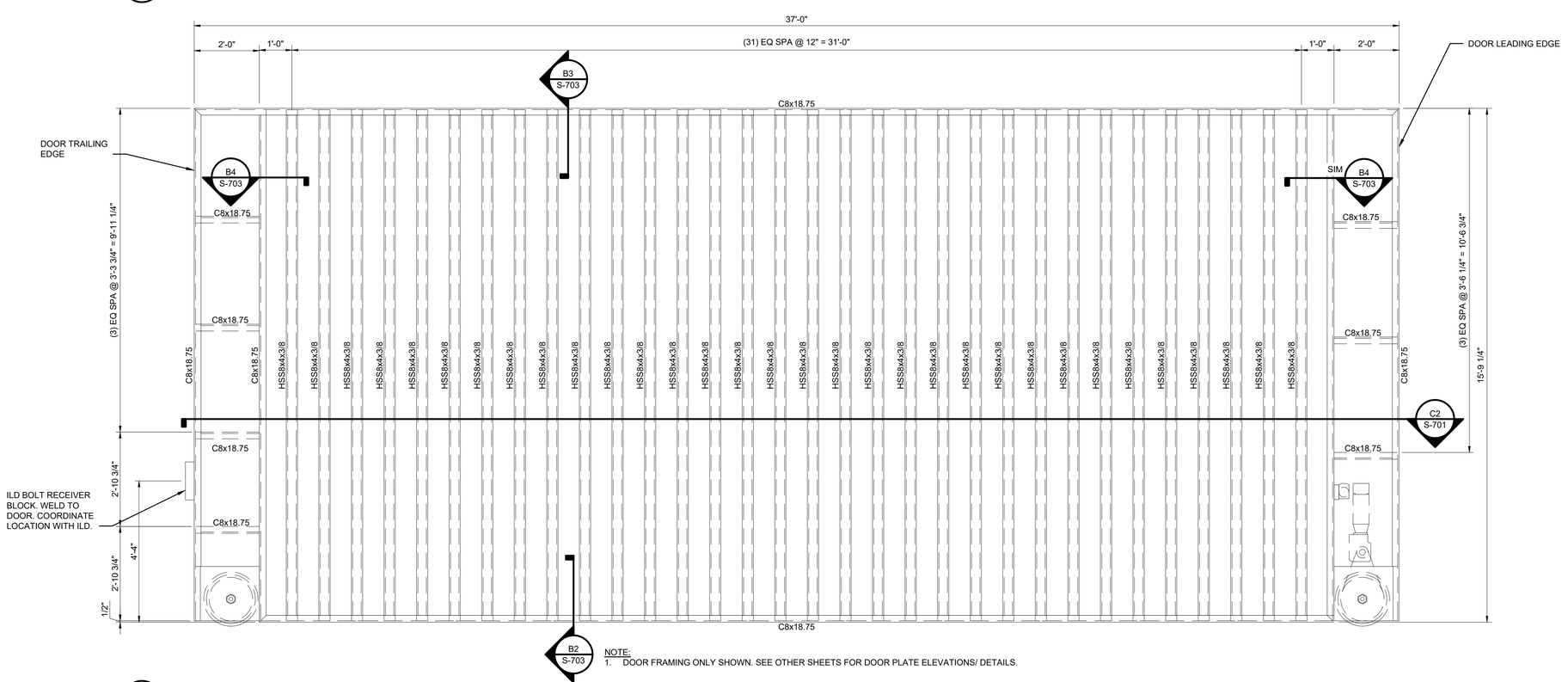
GENERAL NOTES:

1. ALL FINISHES, BHMA 630; 626.
2. LOCKSETS AND LATCHES MUST COMPLY WITH (ANSI/ BHMA A156.13, SERIES 1000, OPERATIONAL GRADE 1, SECURITY GRADE (L) (2) (AND) (ANSI/ BHMA A156.2, SERIES 4000, GRADE L).
3. COORDINATE ALL HARDWARE SECURITY REQUIREMENTS WITH THE SERVICE AND INSTALLATION SECURITY PERSONNEL.
4. ALL HIGH SECURITY PADLOCKS ARE GFCI.

A1 DOOR HARDWARE SCHEDULE
SCALE: 1/2" = 1'-0"



C2 DOOR FRAMING SECTION
SCALE: 1/2" = 1'-0"



NOTE:
1. DOOR FRAMING ONLY SHOWN. SEE OTHER SHEETS FOR DOOR PLATE ELEVATIONS/ DETAILS.

A2 DOOR FRAMING ELEVATION
SCALE: 1/2" = 1'-0"

NO.	DESCRIPTION	DATE	APPR

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA
NAVAL SUPPORT ACTIVITY

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

DOOR ELEVATION, NOTES AND SCHEDULES

SCALE: NONE

EPROJECT NO.:

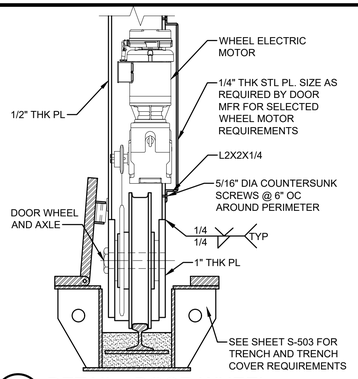
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877636

SHEET 27 OF 51

S-701

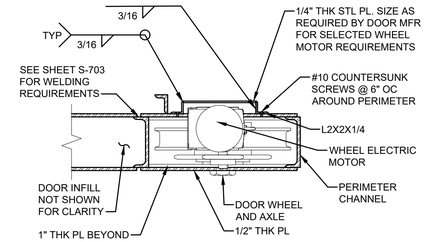
DRAWFORM REVISION: 00 MONTH 2020



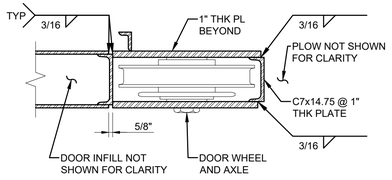
D1 DETAIL - DOOR WHEEL
SCALE: 1" = 1'-0"

DESIGN/MANUFACTURING NOTES:

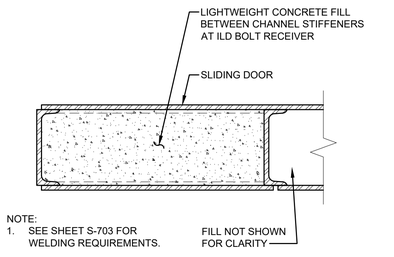
1. MOTOR INSTALLATION SHOWN IS NOTIONAL AND IS FOR BIDDING PURPOSES AND MAY VARY BASED ON DOOR MANUFACTURER'S APPROVED DESIGN.
2. DOOR MANUFACTURER'S DESIGN MUST ALLOW FOR MAINTENANCE OF THE MOTOR ASSEMBLY AND ITS COMPONENTS, INCLUDING REMOVAL OF AND REPLACEMENT OF THE MOTOR ASSEMBLY.
3. USE STANDARD PARTS AS MUCH AS POSSIBLE.
4. ACCESS TO THE MOTOR ASSEMBLY IS NOT NECESSARILY LIMITED TO ONE SIDE OF THE DOOR. IF ACCESS TO BOTH SIDES OF THE DOOR IS USED, IT MUST BE SHOWN THAT THE WHEEL LOAD PATH THROUGH THE SUPPORTING PLATES IS ADEQUATE.
5. A MOTOR ASSEMBLY MOUNTED INTERNAL TO THE DOOR IS PREFERRED; HOWEVER, A MOTOR ASSEMBLY MOUNTED ON THE EXTERIOR OF THE DOOR MAY BE ACCEPTABLE IF APPROVED.
6. SEE DETAIL C3 ON SHEET S-504 FOR ALTERNATIVE DOOR DRIVE ARRANGEMENT



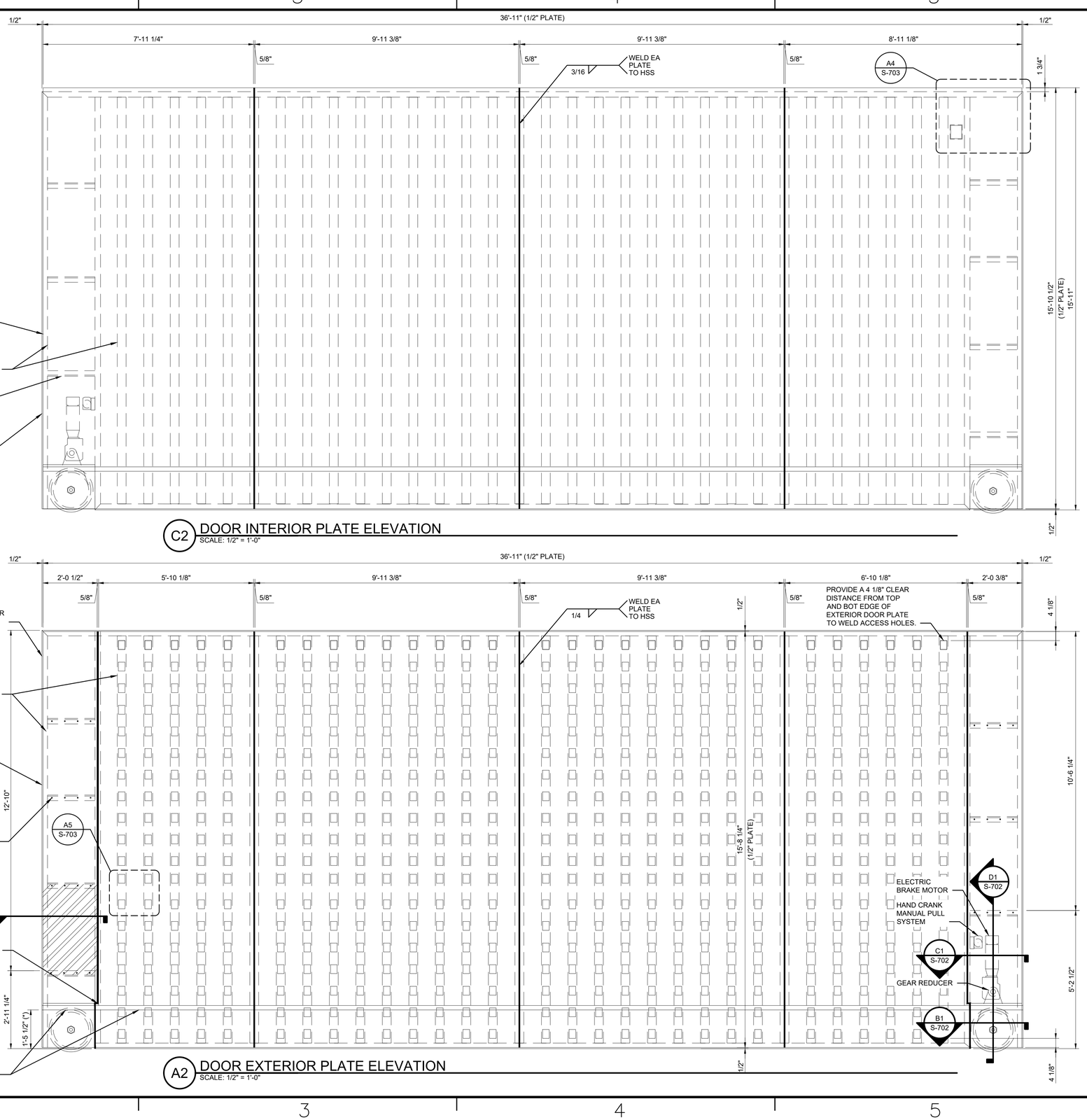
C1 DETAIL - DOOR WHEEL AND WHEEL MOTOR
SCALE: 1" = 1'-0"



B1 DETAIL - DOOR WHEEL
SCALE: 1" = 1'-0"



A1 DETAIL - ILD BOLT RECEIVER DOOR FILL
SCALE: 1 1/2" = 1'-0"



C2 DOOR INTERIOR PLATE ELEVATION
SCALE: 1/2" = 1'-0"

NOTE:

1. DIMENSIONS NOTED WITH AN (*) MUST BE COORDINATED BY THE DOOR MANUFACTURER ENSURING THAT THE DOOR SYSTEMS AND COMPONENTS PERFORM AS INTENDED AND ENSURING ALL MECHANICAL COMPONENTS FIT WITHIN THE DOOR.

A2 DOOR EXTERIOR PLATE ELEVATION
SCALE: 1/2" = 1'-0"

APPR	DATE	DESCRIPTION	SYM

NAVFAC

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
NAVAL SUPPORT ACTIVITY
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

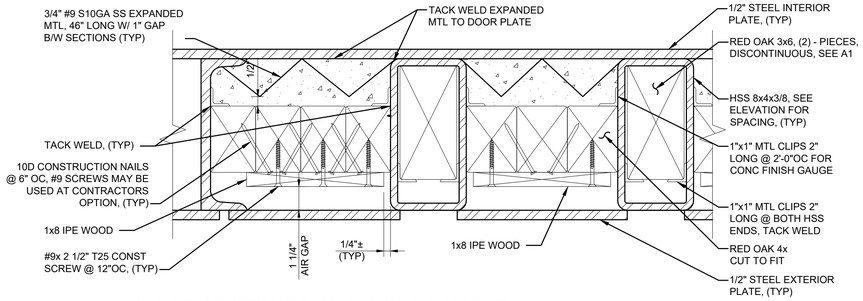
DOOR ELEVATION AND DETAILS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12877637
SHEET 28 OF 51

S-702

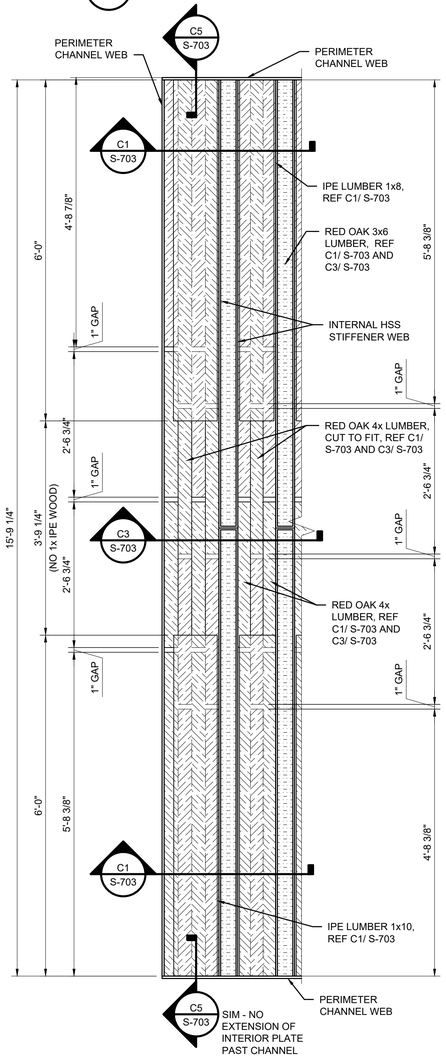
DRAWFORM REVISION: 00 MONTH 2020

SEAL



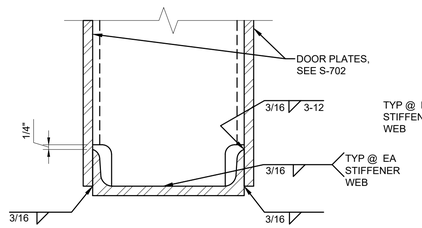
C1 DOOR STIFFENER AND INFILL LAYOUT - TOP/ BOTTOM DOOR SECTIONS

SCALE: 3" = 1'-0"



A1 ELEVATION - TYPICAL CONFIGURATION OF DOOR INFILL

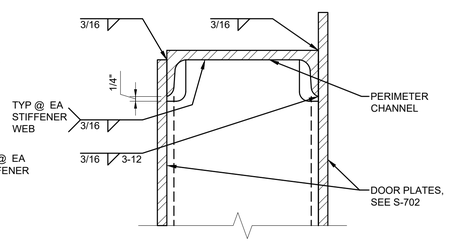
SCALE: 3/4" = 1'-0"



NOTE: DOOR INFILL NOT SHOWN FOR CLARITY.

B2 DETAIL AT BOTTOM OF DOOR

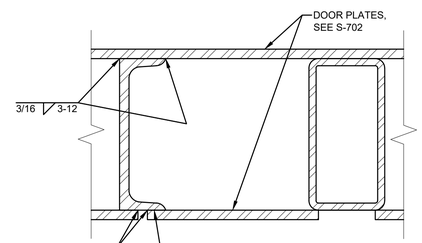
SCALE: 3" = 1'-0"



NOTE: DOOR INFILL NOT SHOWN FOR CLARITY.

B3 DETAIL AT TOP OF DOOR

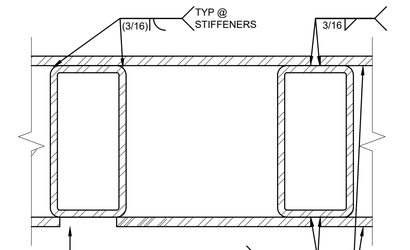
SCALE: 3" = 1'-0"



NOTE: DOOR INFILL NOT SHOWN FOR CLARITY

B4 WELD DETAIL AT DOOR EDGE

SCALE: 3" = 1'-0"



NOTE: DOOR INFILL NOT SHOWN FOR CLARITY

B5 WELD DETAIL AT INTERIOR STIFFENERS

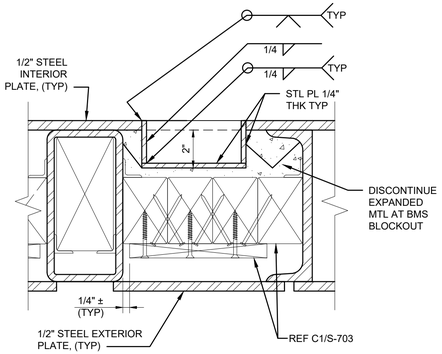
SCALE: 3" = 1'-0"

NOTES TO DESIGNER:

1. WOOD INFILL SHOWN ON THIS SHEET CONSISTS OF RED OAK AND IPE SPECIES. THE WOOD INFILL IS REQUIRED FOR PHYSICAL SECURITY RATING OF THE DOOR, AND RED OAK AND IPE ARE SPECIFIED AS HARDWOODS WITH DESIRABLE TRAITS FOR ENHANCED PHYSICAL SECURITY. THE SITE-ADAPT ENGINEER MAY SELECT ALTERNATIVE HARDWOOD SPECIES IF RED OAK AND/OR IPE ARE NOT READILY AVAILABLE AT THE INSTALLATION SITE. HOWEVER, THE SITE-ADAPT ENGINEER SHOULD CONSIDER HARDWOOD SPECIES WITH SIMILAR MATERIAL PROPERTIES TO RED OAK AND IPE FOR ENHANCED PHYSICAL SECURITY.

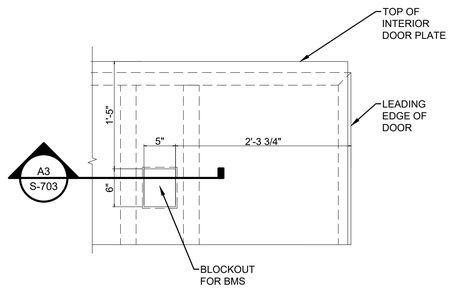
SHEET NOTES:

1. CONCRETE FILLED DOORS REQUIRE WHEELS OFFSET NOMINAL TOWARD THE INTERIOR SIDE OF THE DOOR. DOOR MANUFACTURER MUST VERIFY CENTER OF GRAVITY OF DOOR PRIOR TO FINAL CONSTRUCTION.
2. EXPANDED METAL REINFORCEMENT SHOWN IN THE CONCRETE FILL LAYER INSIDE THE DOOR IN DETAILS C1 AND C3 OF THIS SHEET MUST BE PLACED IN (4) DIFFERENT PIECES OF METAL WITH EQUAL LENGTHS AND PLACED IN THE CONCRETE FILL TO BE DISCONTINUOUS WITHOUT ATTACHING OR LAPPING THE DIFFERENT SEGMENTS TOGETHER. PROVIDE 1" GAP BETWEEN ADJACENT SECTIONS OF EXPANDED METAL REINFORCEMENT, AS INDICATED IN THE DETAILS.



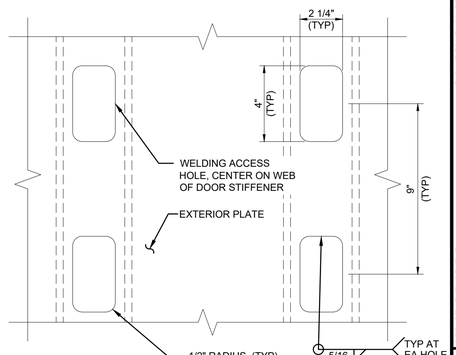
A3 BMS BLOCKOUT DETAIL

SCALE: 3" = 1'-0"



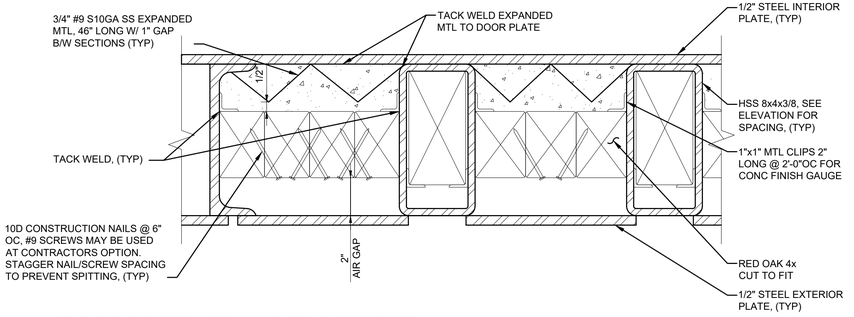
A4 BMS BLOCKOUT LOCATION

SCALE: 1" = 1'-0"



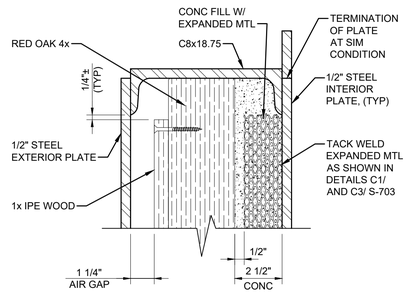
A5 EXTERIOR PLATE TO HSS STIFFENER CONNECTION

SCALE: 3" = 1'-0"



C3 DOOR STIFFENER AND FILL LAYOUT - MIDDLE DOOR SECTION

SCALE: 3" = 1'-0"



C5 DOOR TOP LAYOUT

SCALE: 3" = 1'-0"

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	DRW	CHK
JAF	SFF	TPH

PM/DM
BRANCH MANAGER
CHIEF ENG/ARCH
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

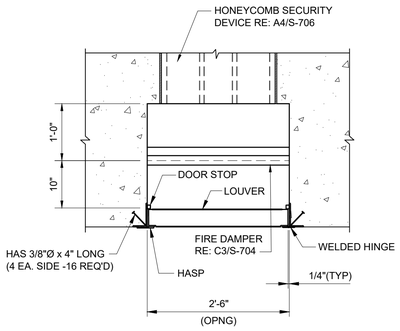
DOOR DETAILS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877638
SHEET 29 OF 51

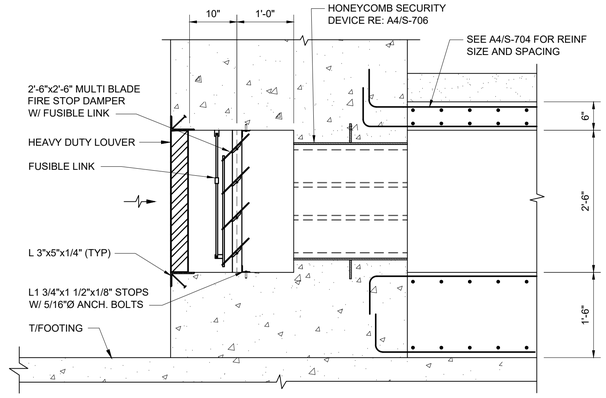
S-703

DRAWFORM REVISION: 00 MONTH 2020

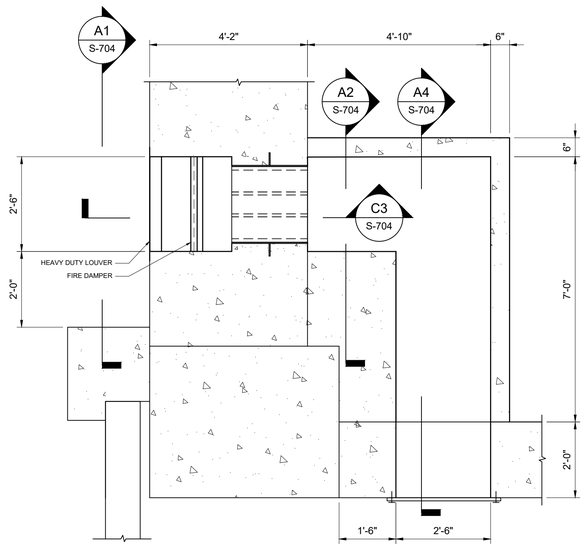
FILE NAME: i:\DCSC\Magazines\@CLWSMagazines_Single Bay\Submittals\Redesign\Final\Drawings\S-703.dwg LAYOUT NAME: S-703 PLOTTED: Friday, March 17, 2023 - 4:54pm USER: leslie.corsino



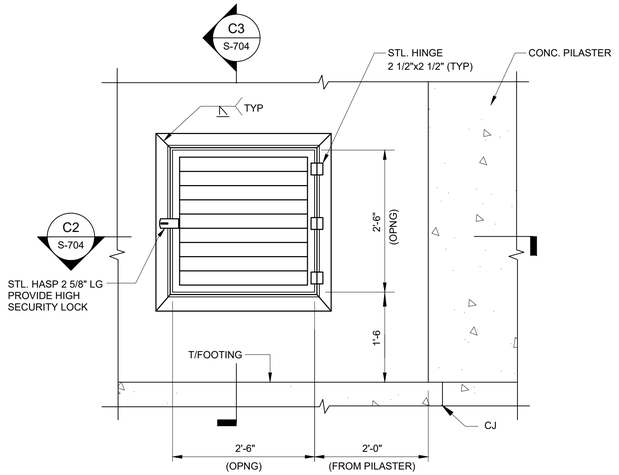
C2 SECTION
SCALE: 3/4" = 1'-0"



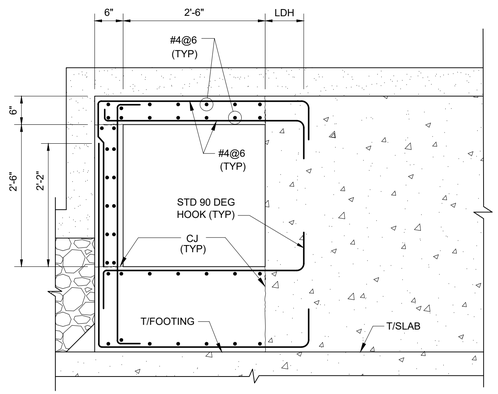
C3 SECTION
SCALE: 3/4" = 1'-0"



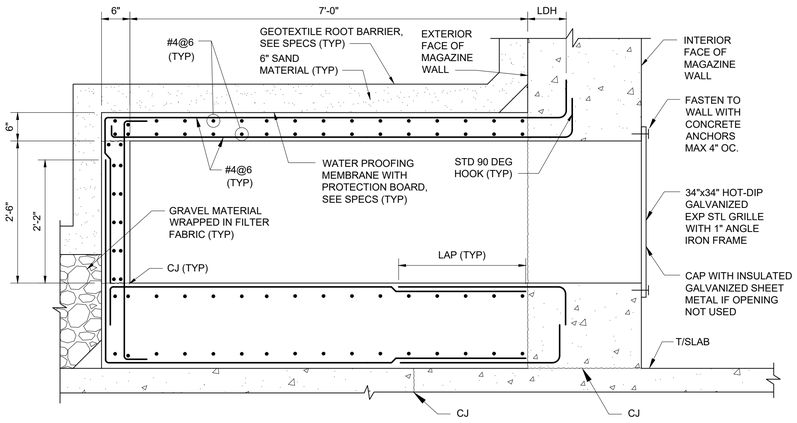
C5 AIR INTAKE DETAIL
SCALE: 1/2" = 1'-0"



A1 SECTION
SCALE: 3/4" = 1'-0"



A2 SECTION
SCALE: 3/4" = 1'-0"



A4 SECTION
SCALE: 3/4" = 1'-0"

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

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DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

AIR INTAKE SECTIONS AND DETAILS

SCALE: NONE

EPROJECT NO.:

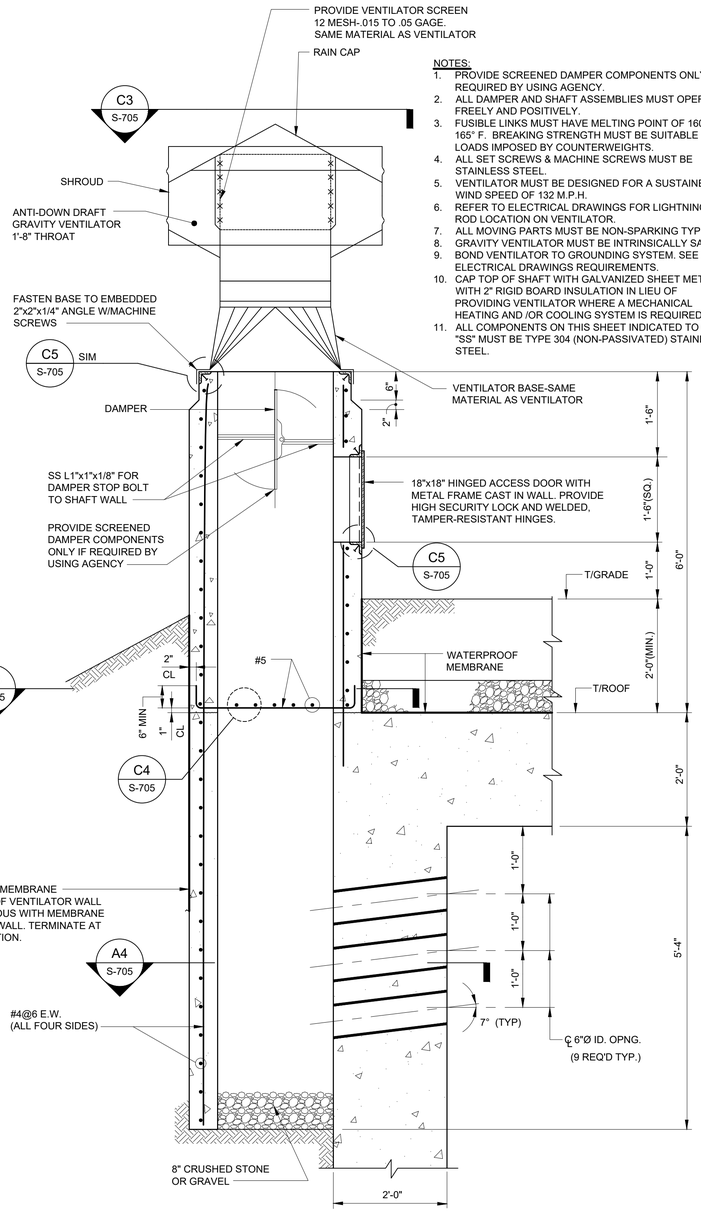
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877639

SHEET 30 OF 51

S-704

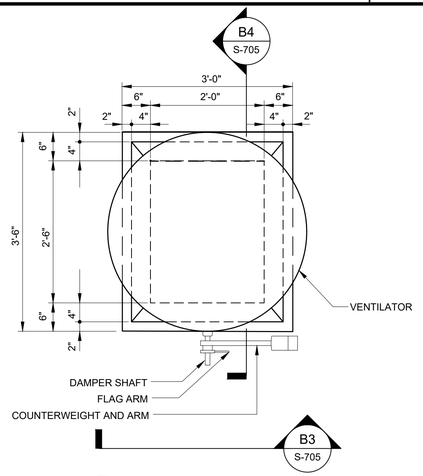
DRAWFORM REVISION: 00 MONTH 2020



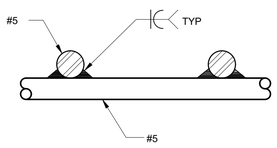
NOTES:

1. PROVIDE SCREENED DAMPER COMPONENTS ONLY IF REQUIRED BY USING AGENCY.
2. ALL DAMPER AND SHAFT ASSEMBLIES MUST OPERATE FREELY AND POSITIVELY.
3. FUSIBLE LINKS MUST HAVE MELTING POINT OF 160° TO 165° F. BREAKING STRENGTH MUST BE SUITABLE FOR LOADS IMPOSED BY COUNTERWEIGHTS.
4. ALL SET SCREWS & MACHINE SCREWS MUST BE STAINLESS STEEL.
5. VENTILATOR MUST BE DESIGNED FOR A SUSTAINED WIND SPEED OF 132 M.P.H.
6. REFER TO ELECTRICAL DRAWINGS FOR LIGHTNING ROD LOCATION ON VENTILATOR.
7. ALL MOVING PARTS MUST BE NON-SPARKING TYPE.
8. GRAVITY VENTILATOR MUST BE INTRINSICALLY SAFE.
9. BOND VENTILATOR TO GROUNDING SYSTEM. SEE ELECTRICAL DRAWINGS REQUIREMENTS.
10. CAP TOP OF SHAFT WITH GALVANIZED SHEET METAL WITH 2" RIGID BOARD INSULATION IN LIEU OF PROVIDING VENTILATOR WHERE A MECHANICAL HEATING AND /OR COOLING SYSTEM IS REQUIRED.
11. ALL COMPONENTS ON THIS SHEET INDICATED TO BE "SS" MUST BE TYPE 304 (NON-PASSIVATED) STAINLESS STEEL.

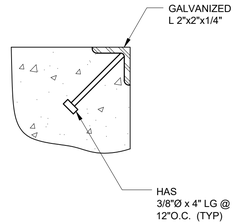
A1 SECTION
SCALE: 3/4" = 1'-0"



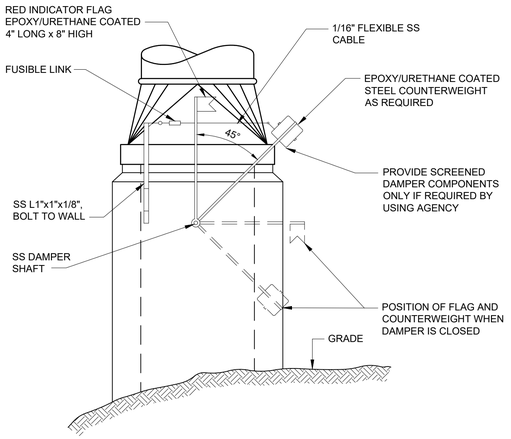
C3 DETAIL
SCALE: 3/4" = 1'-0"



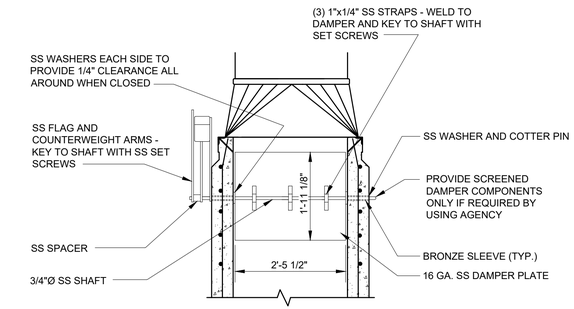
C4 DETAIL
SCALE: 3" = 1'-0"

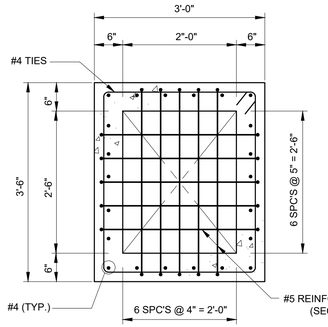


C5 DETAIL
SCALE: 3" = 1'-0"



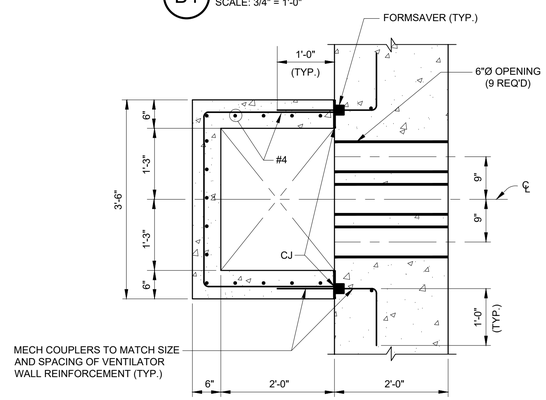
B3 ELEVATION
SCALE: 3/4" = 1'-0"





A3 SECTION
SCALE: 3/4" = 1'-0"

B4 SECTION
SCALE: 3/4" = 1'-0"



A4 SECTION
SCALE: 3/4" = 1'-0"

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

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Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	-.-
BRANCH MANAGER	-.-
CHIEF ENG/ARCH	-.-
FIRE PROTECTION	-.-

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
NAVAL SUPPORT ACTIVITY
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

VENTILATOR DETAILS, SECTIONS AND ELEVATIONS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877640

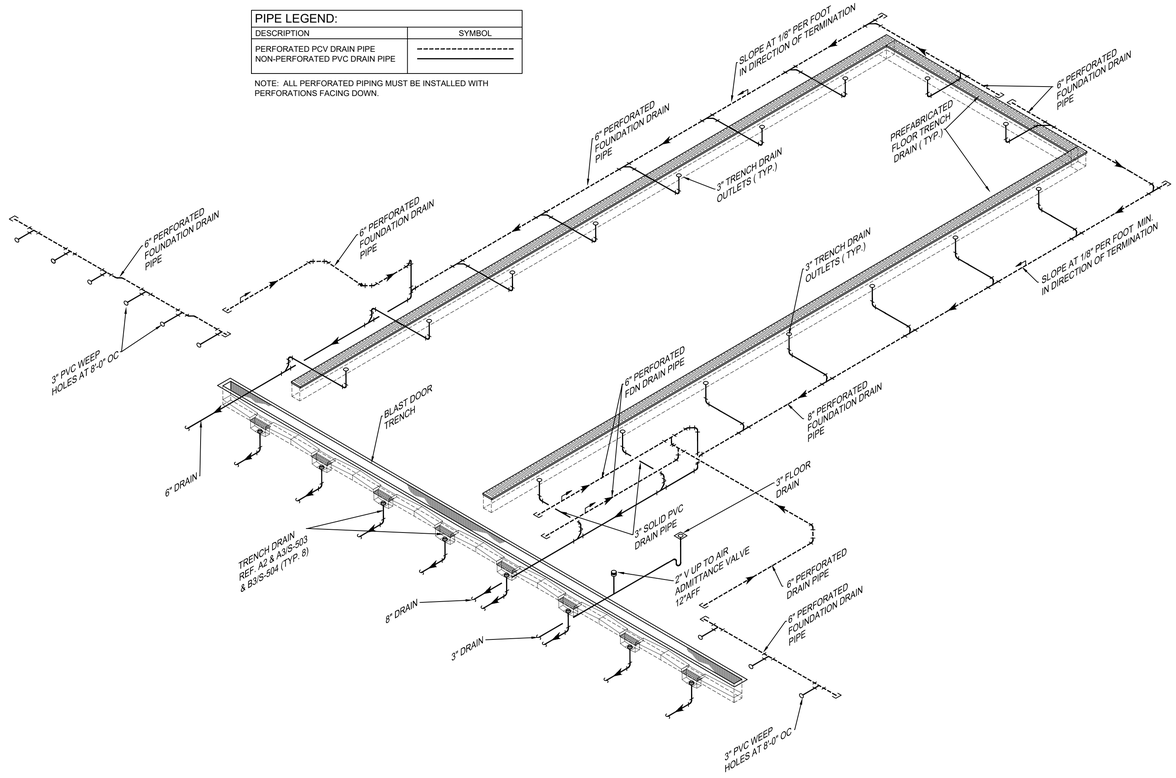
SHEET 31 OF 51

S-705

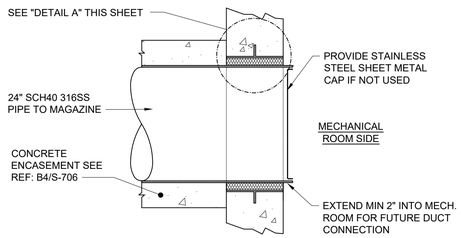
DRAWFORM REVISION: 00 MONTH 2020

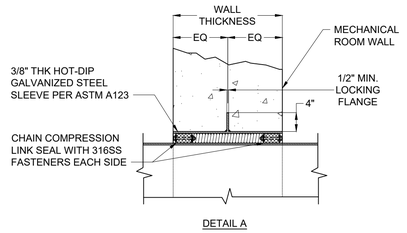
PIPE LEGEND:	
DESCRIPTION	SYMBOL
PERFORATED PCV DRAIN PIPE NON-PERFORATED PVC DRAIN PIPE	---------- ——————

NOTE: ALL PERFORATED PIPING MUST BE INSTALLED WITH PERFORATIONS FACING DOWN.



B1 DRAINAGE ISOMETERIC
SCALE: NO SCALE



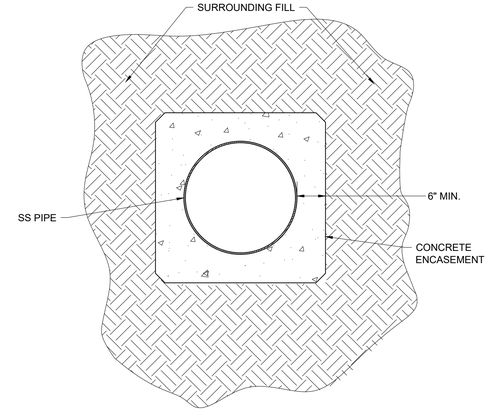


DETAIL A

NOTES:

1. THE NEED FOR A FIRE DAMPER AT MECHANICAL ROOM PENETRATIONS MUST BE DETERMINED BY THE SITE ADAPT ENGINEER.
2. ADJUST DESIGN TO INCORPORATE OUT-OF-WALL FIRE DAMPERS IF REQUIRED.
3. OUTER STEEL SLEEVE SIZE TO BE COORDINATED WITH CHAIN COMPRESSION LINK SEAL REQUIREMENTS.
4. INSTALL CONNECTING DUCTWORK AND FITTINGS IN ACCORDANCE WITH DUCTWORK MANUFACTURER'S RECOMMENDATIONS.
5. FILL VOID BETWEEN LINK SEALS WITH MINERAL WOOL.

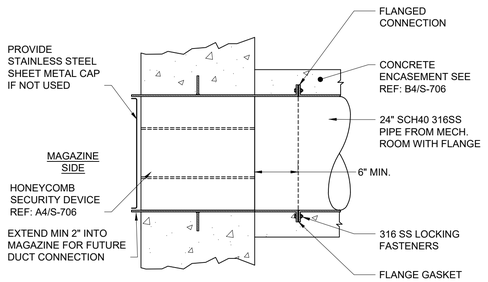
B3 PIPE THRU MECHANICAL ROOM WALL DETAIL
SCALE: NO SCALE



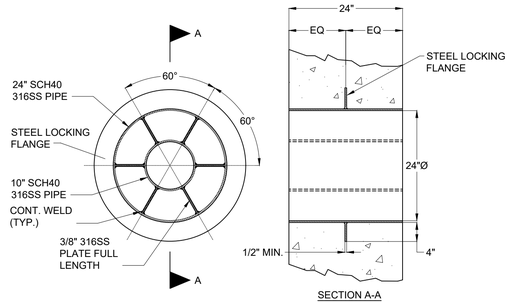
NOTES:

1. DUCTWORK INSTALLED UNDERGROUND MUST BE 24" DIAMETER SCH40 304SS PIPE.
2. TRENCHES MUST BE PITCHED TO PREVENT THE BUILDUP OF WATER AROUND THE PIPE OR WALL PENETRATIONS.
3. PIPE MUST BE TIED DOWN TO AVOID FLOATING DURING POURING OF CONCRETE ENCASEMENT.
4. CONCRETE MUST NOT BE POURED DIRECTLY ONTO THE PIPE. IT MUST BE POURED IN SUCCESSIVE LAYERS AND TAMPED FIRMLY AROUND THE PIPE.
5. FIELD APPLY BITUMEN COATING TO PIPE PRIOR TO CONCRETE ENCASEMENT.
6. CONCRETE ENCASEMENT TO BE MINIMUM OF 6" THICK.
7. WRAP CONCRETE ENCASED DUCTS IN WATERPROOFING MEMBRANE AND SEAL AGAINST ADJACENT MEMBRANE AT STRUCTURAL PENETRATION POINTS.

B4 CONCRETE ENCASED PIPE DETAIL
SCALE: NO SCALE



A3 PIPE THRU MAGAZINE WALL DETAIL
SCALE: 3/4" = 1'-0"



SECTION A-A

NOTES:

1. ASSEMBLY MUST BE FULLY WELDED 316SS.
2. INDIVIDUAL OPENINGS MUST NOT EXCEED 96 SQ. IN. FREE AREA.
3. INNER PIPE MUST BE CENTERED IN OUTER PIPE.
4. FIELD APPLY BITUMEN COATING TO OUTSIDE OF PIPE PRIOR TO CONCRETE ENCASEMENT.

A4 HONEYCOMB SECURITY DEVICE DETAIL
SCALE: 3/4" = 1'-0"

SYM	DESCRIPTION	DATE	APPR

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND: ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

DRAINAGE ISOMETRIC & PENETRATION DETAILS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877641
SHEET 32 OF 51

S-706

DRAWFORM REVISION: 00 MONTH 2020

X 20A 3P OR X 100AF 80AT 3P

LOW - VOLTAGE CIRCUIT BREAKER (CB). RATINGS AND NO. OF POLES AS SHOWN. WHEN SPECIFIC TYPE IS REQUIRED, X INDICATES TYPE.

TYPES:
MCCB - MOLDED CASE
ICCB - INSULATED CASE
LVP - LOW - VOLTAGE POWER
MCP - MOTOR CIRCUIT PROTECTOR (RATING PER CONNECTED LOAD)

CB — SEPARATELY MOUNTED CIRCUIT BREAKER; SEE ELECTRICAL ONE - LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION

GFP — GROUND FAULT PROTECTION

52 — MEDIUM - VOLTAGE CIRCUIT BREAKER

FUSE, SIZE, AND NUMBER OF FUSES AS NOTED

FUSED CUTOUT, CURRENT RATING, FUSE SIZE, AND NUMBER OF POLES AS NOTED

FUSIBLE SWITCH, CURRENT RATING, FUSE SIZE, AND QUANTITY AS NOTED

NON-FUSED SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED

DISCONNECT OR DRAWOUT CONNECTION

A C B & A C B — MAGNETIC MOTOR STARTER AND SEPARATELY MOUNTED COMBINATION MAGNETIC MOTOR STARTER

D C & D C — MOTOR CONTROLLER AND SEPARATELY MOUNTED MOTOR CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT

MOTOR STARTER AND CONTROLLER SUBSCRIPTS:

A - MAGNETIC STARTER NEMA SIZE

B - STARTER TYPE
NONE - FULL VOLTAGE NON-REVERSING (FVNR)
FVR - FULL VOLTAGE REVERSING
2S - TWO SPEED
RVAT - REDUCED VOLTAGE AUTO TRANSFORMER

C - CONTROL DIAGRAM OR CONTROLS SCHEDULE NUMBER (IF REQUIRED)

D - CONTROLLER TYPE
VFD - VARIABLE FREQUENCY DRIVE
SS - SOLID STATE
SSRV - SOLID STATE REDUCED VOLTAGE

SEPARATELY MOUNTED COMBINATION MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE - LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION

THERMAL OVERLOAD ELEMENT

OL — THERMAL OVERLOAD RELAY CONTACT

OR — DISCONNECT OR SAFETY SWITCH, 30A, 3P, NON-FUSED UNLESS OTHERWISE NOTED

DISCONNECT OR SAFETY SWITCH WITH AUXILIARY CONTACTS, 30A, 3P, NON-FUSED UNLESS OTHERWISE NOTED

7 1/2 OR HP — MOTOR WITH DESIGN HORSEPOWER (WHEN INDICATED)

MOTOR

GENERATOR

ATS — TRANSFER SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED

ATS - AUTOMATIC
MTS - MANUAL

TRANSFORMER

3-PHASE, 3-WIRE DELTA CONNECTION

3-PHASE, 4-WIRE GROUNDED WYE CONNECTION

LP100 208/120V 3Ø, 4W — SWITCHBOARD OR PANELBOARD; NAME, VOLTAGE, PHASE, NUMBER OF WIRES WHEN INDICATED

100 KVA — NON-MOTOR LOAD WITH DESIGN KVA, KW, OR AMP

CPT — CONTROL POWER TRANSFORMER (CPT)

VOLTAGE TRANSFORMER (VT OR PT)

CURRENT TRANSFORMER (CT)

WH — UTILITY WATT-HOUR METER PER UTILITY REQUIREMENTS

DMP — DIGITAL METERING PACKAGE

RTM — RUN TIME METER

GROUND

LIGHTNING ARRESTER

SPD — LOW VOLTAGE SURGE PROTECTIVE DEVICE

ELECTRICAL CONNECTION

OR — NO ELECTRICAL CONNECTION

SV OR — SOLENOID VALVE

X Y — CONTROL/RELAY COIL; X INDICATES TYPE, Y INDICATES LOOP NO. WHEN USED

TYPES:
CR - CONTROL RELAY
DP - DEFINITE PURPOSE RELAY
LC - LIGHTING CONTACTOR
M - MOTOR STARTER
PC - PHOTO CELL
TC - TIME CLOCK
TR - TIMING RELAY

NORMALLY OPEN CONTACT (N.O.)

NORMALLY CLOSED CONTACT (N.C.)

OFF HAND AUTO XOO OOX — 3 POSITION SELECTOR SWITCH, MAINTAINED CONTACTS; UNLESS OTHERWISE NOTED, 2-POSITION SIMILAR

NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED

NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED

X — INDICATING LIGHT, X INDICATES LENS COLOR

X — PUSH TO TEST INDICATING LIGHT, X INDICATES LENS COLOR

LENS COLORS:

R - RED	Y - YELLOW
G - GREEN	W- WHITE
B - BLUE	A - AMBER

T — TRANSFORMER

SS — SELECTOR SWITCH

PB — PUSHBUTTON

CS — CONTROL STATION

SPECIAL PURPOSE DEVICE

CONTROL PANEL INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT

CONTROL PANEL WITH DISCONNECT SWITCH INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT

J — JUNCTION OR PULL BOX

EQUIPMENT CONNECTION

ELECTRICAL EQUIPMENT ENCLOSURE: PANELBOARD, SWITCHBOARD, MOTOR CONTROL CENTER, CONTROL PANEL, OR OTHER EQUIPMENT AS INDICATED

480/277V PANELBOARD

208/120V PANELBOARD

PC — PHOTOCELL

OS — OCCUPANCY SENSOR - CEILING MOUNTED

OS — OCCUPANCY SENSOR - WALL MOUNTED

CEILING/PENDANT MOUNTED LUMINAIRE - COMPACT FLUORESCENT OR LED

WALL MOUNTED LUMINAIRE - COMPACT FLUORESCENT OR LED

CEILING/PENDANT MOUNTED LUMINAIRE - FLUORESCENT OR LED

WALL/SURFACE MOUNTED LUMINAIRE - FLUORESCENT OR LED

CEILING/PENDANT MOUNTED LUMINAIRE - COMPACT FLUORESCENT OR LED (NORMAL/EMERGENCY)

WALL MOUNTED LUMINAIRE - COMPACT FLUORESCENT OR LED (NORMAL/EMERGENCY)

CEILING/PENDANT MOUNTED LUMINAIRE - FLUORESCENT OR LED (NORMAL/EMERGENCY)

WALL/SURFACE MOUNTED LUMINAIRE - FLUORESCENT OR LED (NORMAL/EMERGENCY)

EMERGENCY LIGHT FIXTURE, 2 ATTACHED HEADS AS SHOWN

EMERGENCY LIGHT, REMOTE MOUNTED HEAD

DOUBLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS

SINGLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS

LIGHTING FIXTURE SUBSCRIPTS:

X - INDICATES FIXTURE TYPE PER LIGHTING FIXTURE SCHEDULE
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD
z - INDICATES CONTROLLING SWITCH (IF REQUIRED)

TOGGLE SWITCH

SUBSCRIPTS:

X - INDICATES TYPE
NONE - SINGLE POLE
3 - THREE-WAY
4 - FOUR-WAY
M - TOGGLE SWITCH, HORSEPOWER RATED
K - KEY SWITCH
TE - MANUAL MOTOR STARTER WITH THERMAL ELEMENT
P - PILOT LIGHT
L - LIGHTED HANDLE
Y - INDICATES CONTROLLING SWITCH (IF REQUIRED)
WP - WEATHER PROOF
DS - 0-10V DIMMING
OS - DUAL TECH OCCUPANCY SENSOR

SPECIAL-PURPOSE RECEPTACLE AS DEFINED ON PLANS

TELECOMMUNICATIONS SERVICE OUTLET (VOICE/DATA)

TELECOMMUNICATIONS SERVICE OUTLET (DATA ONLY)

TELECOMMUNICATIONS SERVICE OUTLET IN FLOOR BOX

SUBSCRIPTS:
X - INDICATES COMMUNICATIONS SYSTEM
J - JWICS (YELLOW JACKETING)
S - SIPRNet (RED JACKETING)
N - NIPRNet (GREEN JACKETING)

TELECOMMUNICATIONS SERVICE OUTLET (VOICE ONLY - WALL MOUNTED AT 48" A.F.F.)

TV — CATV OUTLET. COORDINATE MOUNTING HEIGHT WITH OWNER. PROVIDE RG6 CABLE TO CATV TERMINAL BOARD IN COMM ROOM.

QUAD-DUPLEX RECEPTACLE, TWO NEMA 5-20R UNDER COMMON COVER PLATE

DUPLEX RECEPTACLE, NEMA 5-20R

SIMPLEX RECEPTACLE, NEMA 5-20R

RECEPTACLE IN FLOOR BOX

SUBSCRIPTS:

X - INDICATES TYPE
GFCI - GROUND FAULT CIRCUIT INTERRUPTER
WP - WEATHER PROOF
C - CONTROLLED RECEPTACLE, MARKING PER NEC 406.3(E), GREEN
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD

SPECIAL DEVICE AND/OR CONNECTION AS NOTED

CONDUIT TURNING UP

CONDUIT TURNING DOWN

HOME RUN TO PANEL, 2 #12, 1 #12G IN 3/4"C UNLESS OTHERWISE NOTED

CIRCUIT RUN BETWEEN DEVICES EXPOSED IN NON-ARCHITECTURALLY FINISHED AREAS; CONCEALED IN ARCHITECTURALLY FINISHED AREAS. CONDUIT AND CONDUCTOR SIZES MUST BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.

CONDUIT RUN BETWEEN DEVICES CONCEALED IN NON-ARCHITECTURALLY FINISHED AREAS OR UNDER FLOOR SLAB. CONDUIT AND CONDUCTOR SIZES MUST BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.

UNDERGROUND CONDUIT

CIRCUIT CONTINUATION

CONDUIT STUBBED OUT AND CAPPED

XX-XXXX — CONDUIT TAG OR CIRCUIT NUMBER - WIRE AND CONDUIT SIZE AS SPECIFIED IN CIRCUIT SCHEDULE ON THE SHEETS

G — GROUNDING CONDUCTOR

E — UNDERGROUND ELECTRICAL DUCT BANK

C — UNDERGROUND COMMUNICATIONS CONCRETE ENCASED DUCT BANK

OHE — OVERHEAD SECONDARY CIRCUIT AND CONDUCTORS

EE — DIRECT BURIED CONDUIT

GROUND ROD

GROUND TEST WELL

XX — HH: HANDHOLE MH: MANHOLE

AIR TERMINAL

GROUND CONNECTION

HIGH SECURITY BMS DOOR CONTACT

K — KEYPAD

M — MOTION DETECTOR, CEILING MOUNTED

M — MOTION DETECTOR, WALL MOUNTED

J — RECESSED JUNCTION BOX

J — SURFACE JUNCTION BOX

IDS — IDS CONTROLLER

IT — IT CABINET

PHONE OUTLET, SEE DETAIL C2/T-501

1. THIS IS A STANDARD ELECTRICAL SYMBOLOGY SHEET. NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT.
2. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.

GENERAL NOTES:

1. PROJECT DESIGN AND EXECUTION MUST CONFORM TO THE LATEST VERSIONS OF:
(A) NFPA 70 (NATIONAL ELECTRICAL CODE)
(B) NESC (NATIONAL ELECTRICAL SAFETY CODE)
(C) NFPA 101 (LIFE SAFETY CODE)
(D) NFPA 780 (STANDARD FOR INSTALLATION OF LIGHTNING PROTECTION SYSTEM)
(E) NAVSEA OP 5, VOL 1 (AMMUNITIONS AND EXPLOSIVES SAFETY ASHORES)
(F) APPLICABLE LOCAL, STATE AND FEDERAL CODES.
2. CONTRACTOR MUST COORDINATE FINAL LOCATION OF ELECTRICAL EQUIPMENT AND COMPONENTS WITH ALL OTHER TRADES PRIOR INSTALLATION. THE CONTRACTOR MUST BE RESPONSIBLE FOR SECURING SPACE REQUIREMENTS FOR ELECTRICAL EQUIPMENT CLEARANCE AND CORRECT ROUGH-IN LOCATIONS OF ELECTRICAL CONNECTIONS.
3. DRAWINGS ARE IN GENERAL DIAGRAMMATIC IN NATURE. FIELD ADJUST CONDUIT AND TRAY ROUTING BASED ON COORDINATION WITH OTHER NEW UTILITIES, STRUCTURES AND EQUIPMENT. NOT ALL COMPONENTS, CONDUITS, AND EQUIPMENT ARE SHOWN IN ALL VIEWS. THE CONTRACTOR MUST MAKE USE OF THE ENTIRE SET OF DRAWINGS, REQUIREMENTS, AND SPECIFICATIONS IN ORDER TO INCLUDE ALL COMPONENTS NECESSARY TO CONSTRUCT A FULLY OPERATIONAL SYSTEM.
6. ALL EQUIPMENT MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S APPROVED, PUBLISHED LITERATURE.
7. ALL UTILITY SERVICES SUCH AS ELECTRIC, TELECOM, SECURITY, INTRUSION DETECTION SYSTEM, FIRE ALARM SYSTEM MUST BE ROUTED UNDERGROUND AT MINIMUM OF 50-FEET AWAY FROM BUILDING FOR SERVICE CONNECTION.
8. ALL CONDUITS MUST BE A RIGID GALVANIZED STEEL CONDUIT (RGS) OR LIQUID-TIGHT, METAL FLEXIBLE CONDUIT. CONDUIT PENETRATIONS THROUGH CONCRETE MUST BE PVC-COATED RIGID GALVANIZED STEEL CONDUIT (PVC-RGS) THROUGH THE LENGTH OF THE PENETRATION, WITH 3" TO 6" AT BOTH PENETRATION ENDS FOR CLEARANCE. CONDUIT ELBOW PLACEMENT MUST CONSIDER THIS CLEARANCE DURING DESIGN AND INSTALLATION.
9. PROVIDE AND INSTALL THW OR THWN INSULATED CONDUCTORS WITH MINIMUM OF #12 AWG, STRANDED COPPER.
10. ALL NEMA ENCLOSURE RATINGS INDICATED ON DOCUMENTS MAY BE REVISED AS REQUIRED BY THE ENVIRONMENTAL CONDITIONS DURING SITE ADAPTATION PROJECTS.

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY
SATISFACTORY TO DATE
DES KL | DRW FO | CHK PKD
PM/DM
BRANCH MANAGER
CHIEF ENG/ARCH
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA
NAVAL SUPPORT ACTIVITY

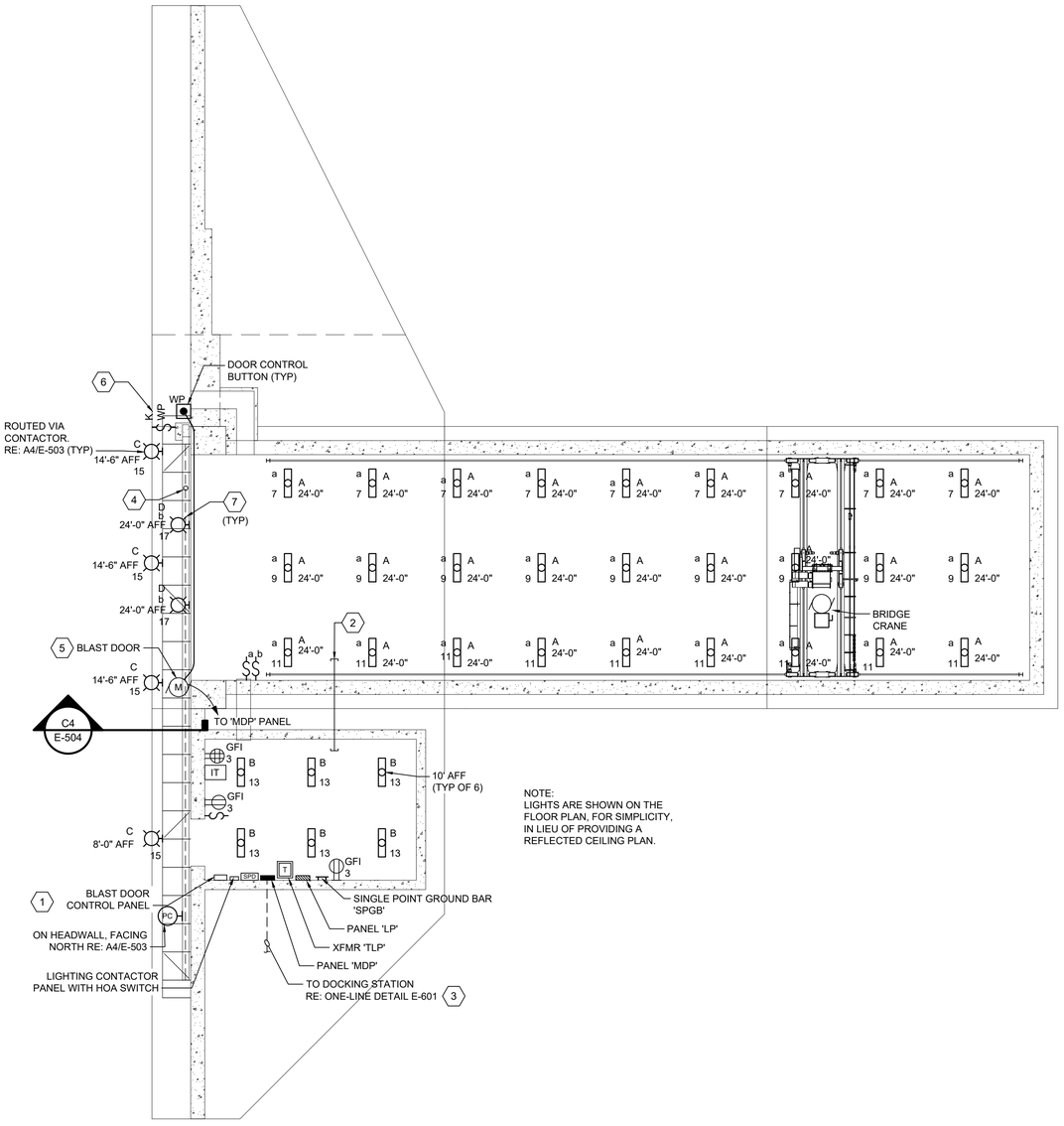
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

ELECTRICAL SYMBOLS & LEGEND

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877642
SHEET 33 OF 51

E-001

DRAWFORM REVISION: 00 MONTH 2020



NOTE:
LIGHTS ARE SHOWN ON THE FLOOR PLAN, FOR SIMPLICITY, IN LIEU OF PROVIDING A REFLECTED CEILING PLAN.

A1 ELECTRICAL FLOOR PLAN - 119'-0" LENGTH
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. COORDINATE FINAL LOCATIONS OF ALL LIGHTING FIXTURES AND ASSOCIATED LIGHTING CONTROLS WITH OTHER TRADES PRIOR TO ROUGH-IN.
2. ALL CONDUIT MUST BE RIGID GALVANIZED STEEL CONDUIT UNLESS INDICATED OTHERWISE.
3. EXPOSED CONDUITS ON EXTERIOR WALLS MUST BE PROHIBITED.
4. ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
5. PROPOSED IDS VENDOR TO PERFORM COVERAGE CALCULATIONS, INCLUDING OBSTRUCTIONS, TO VERIFY QUANTITY AND LOCATION OF MOTION DETECTORS IN THE ECM AND MECHANICAL ROOM. FINAL LOCATIONS AND QUANTITIES OF MOTION DETECTORS TO BE INSTALLED PER IDS VENDOR SHOP DRAWINGS.
6. REFER TO GENERAL NOTES ON E-001 FOR ADDITIONAL INFORMATION.

KEYED NOTES

1. COORDINATE ALL POWER AND CONTROL RACEWAY REQUIREMENTS WITH MANUFACTURER. PROVIDE CONTROL WIRING FOR INTERLOCKS WITH DOOR LIMIT SWITCHES AND MECHANICAL BYPASS FOR DOOR OPERATION.
2. IN ADDITION TO THE CONDUITS REQUIRED FOR RECEPTACLES/LIGHTING/LOW VOLTAGE SYSTEMS/ IDS/CONTROLS/BRIDGE CRANE/BLAST DOOR/EQUIPMENT, PROVIDE ADDITIONAL (1)3/4"C FOR POWER SITE ADAPTATION, (1)1"C FOR FUTURE HVAC CONTROLS AND (3)1-1/2"C SPARES. CONNECT CONDUITS BETWEEN MECHANICAL ROOM AND MAGAZINE AREA AND CAP AT BOTH ENDS.
3. REFER TO ONE-LINE ON SHEET E-601 FOR ADDITIONAL INFORMATION.
4. ROUTE ALL CONDUITS ON SURFACE AS REQUIRED TO AVOID CONDUIT PENETRATIONS ON HEADWALL ABOVE BLAST DOOR.
5. DOOR CONTROLLER MUST BE PROVIDED WITH SAFETY INTERLOCK FEATURE WHEN SENSING MECHANICAL ROOM IN VACANCY MODE. DOOR CONTROL FEATURE MUST INCLUDE A DOOR CONTACT/RELAY INTERLOCKING WITH BLAST DOOR CONTROL SYSTEM AND MECHANICAL DOOR, SO THAT ONCE THE MECHANICAL DOOR IS IN 'OPEN MODE' OR 'UNLOCKED', THE BLAST DOOR CONTROL SYSTEM WILL BE DISABLED FROM MOVING THE BLAST DOOR.
6. PROVIDE A MANUAL OVERRIDE SWITCH TO CONTROL BLAST DOOR. SWITCH MUST BE KEY OPERATED AND LOCATED OUTSIDE THE PILASTER COLUMN WITH WATERPROOF COVER.
7. FIXTURE TYPE 'D' MUST BE CONTROLLED BY SWITCHLEG 'b'.

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

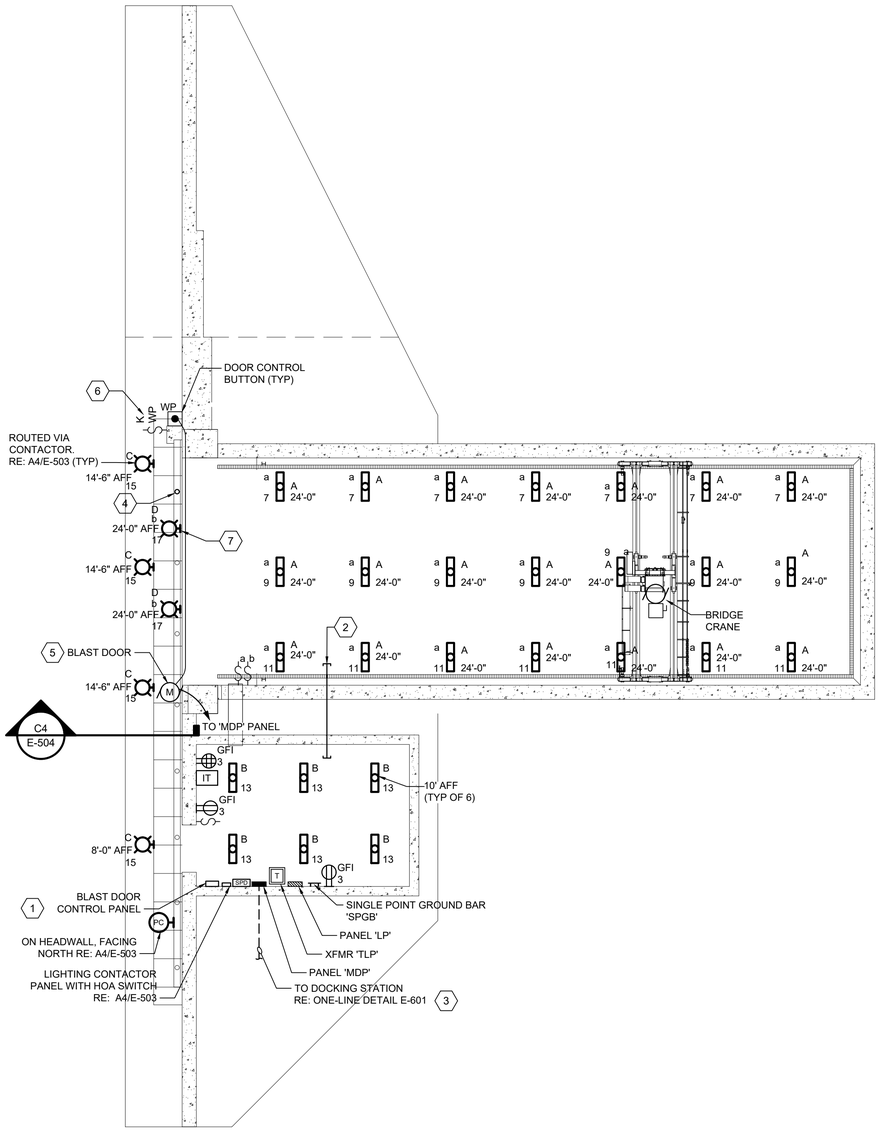
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

ELECTRICAL FLOOR PLAN A

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877643
SHEET 34 OF 51

E101A

DRAWFORM REVISION: 00 MONTH 2020



A1 ELECTRICAL FLOOR PLAN - 95'-6" LENGTH
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. COORDINATE FINAL LOCATIONS OF ALL LIGHTING FIXTURES AND ASSOCIATED LIGHTING CONTROLS WITH OTHER TRADES PRIOR TO ROUGH-IN.
2. ALL CONDUIT MUST BE RIGID GALVANIZED STEEL CONDUIT UNLESS INDICATED OTHERWISE.
3. EXPOSED CONDUITS ON EXTERIOR WALLS MUST BE PROHIBITED.
4. ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
5. PROPOSED IDS VENDOR TO PERFORM COVERAGE CALCULATIONS, INCLUDING OBSTRUCTIONS, TO VERIFY QUANTITY AND LOCATION OF MOTION DETECTORS IN THE ECM AND MECHANICAL ROOM. FINAL LOCATIONS AND QUANTITIES OF MOTION DETECTORS TO BE INSTALLED PER IDS VENDOR SHOP DRAWINGS.
6. REFER TO GENERAL NOTES ON E-001 FOR ADDITIONAL INFORMATION.

KEYED NOTES

1. COORDINATE ALL POWER AND CONTROL RACEWAY REQUIREMENTS WITH MANUFACTURER. PROVIDE CONTROL WIRING FOR INTERLOCKS WITH DOOR LIMIT SWITCHES AND MECHANICAL BYPASS FOR DOOR OPERATION.
2. IN ADDITION TO THE CONDUITS REQUIRED FOR RECEPTACLES/LIGHTING/LOW VOLTAGE SYSTEMS/ IDS/CONTROLS/BRIDGE CRANE/BLAST DOOR/EQUIPMENT, PROVIDE ADDITIONAL (1)3/4"C FOR POWER SITE ADAPTATION, (1)1"C FOR FUTURE HVAC CONTROLS AND (3)1-1/2"C SPARES. CONNECT CONDUITS BETWEEN MECHANICAL ROOM AND MAGAZINE AREA AND CAP AT BOTH ENDS.
3. REFER TO ONE-LINE ON SHEET E-601 FOR ADDITIONAL INFORMATION.
4. ROUTE ALL CONDUITS ON SURFACE AS REQUIRED TO AVOID CONDUIT PENETRATIONS ON HEADWALL ABOVE BLAST DOOR.
5. DOOR CONTROLLER MUST BE PROVIDED WITH SAFETY INTERLOCK FEATURE WHEN SENSING MECHANICAL ROOM IN VACANCY MODE. DOOR CONTROL FEATURE MUST INCLUDE A DOOR CONTACT/RELAY INTERLOCKING WITH BLAST DOOR CONTROL SYSTEM AND MECHANICAL DOOR, SO THAT ONCE THE MECHANICAL DOOR IS IN 'OPEN MODE' OR 'UNLOCKED', THE BLAST DOOR CONTROL SYSTEM WILL BE DISABLED FROM MOVING THE BLAST DOOR.
6. PROVIDE A MANUAL OVERRIDE SWITCH TO CONTROL BLAST DOOR. SWITCH MUST BE KEY OPERATED AND LOCATED OUTSIDE THE PILASTER COLUMN WITH WATERPROOF COVER.
7. FIXTURE TYPE 'D' MUST BE CONTROLLED BY SWITCHLEG 'b'.

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Real Signature
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD
PM/DM					--
BRANCH MANAGER					--
CHIEF ENG/ARCH					--
FIRE PROTECTION					--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

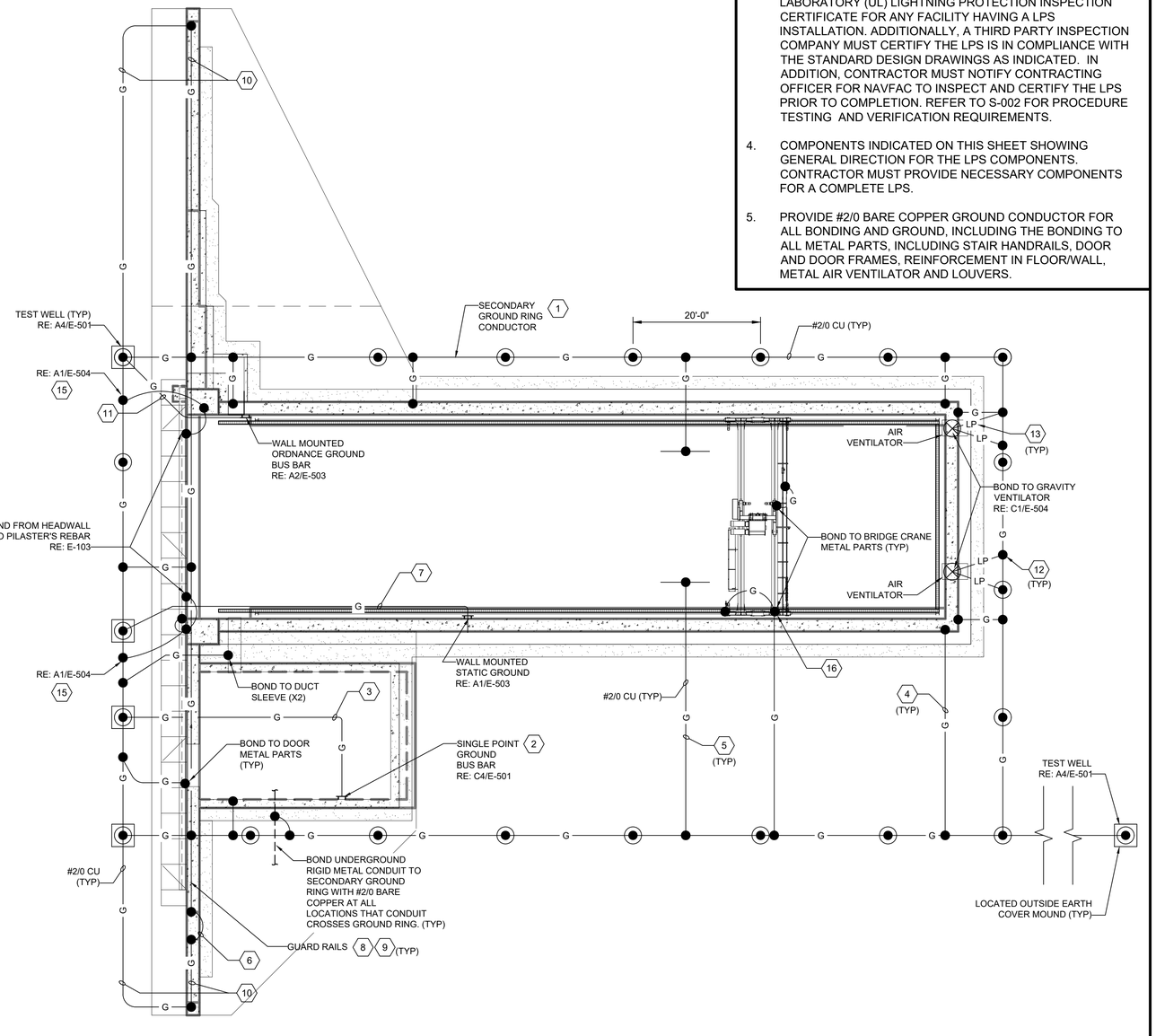
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

ELECTRICAL FLOOR PLAN B

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877644
SHEET 35 OF 51

E101B

DRAWFORM REVISION: 00 MONTH 2020



A1 ELECTRICAL LIGHTNING PROTECTION & GROUNDING PLAN - 119'-0" LENGTH

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

SHEET NOTES

1. THE TERM 'LIGHTNING PROTECTION SYSTEM' MUST BE REFERRED TO AS 'LPS' HENCEFORTH.
2. THE STANDARD DESIGN DRAWINGS FOR LPS INSTALLATION ARE IN COMPLIANCE WITH NFPA 780 AND AFMAN 32-1065 CRITERIA, AND MANUFACTURED IN ACCORDANCE WITH U.L. 96, IN ACCORDING WITH NAVSEA OP 5 OR DESR 6055.09_AFMAN 91-201.
3. CONTRACTOR MUST PROVIDE AN UNDERWRITER'S LABORATORY (UL) LIGHTNING PROTECTION INSPECTION CERTIFICATE FOR ANY FACILITY HAVING A LPS INSTALLATION. ADDITIONALLY, A THIRD PARTY INSPECTION COMPANY MUST CERTIFY THE LPS IS IN COMPLIANCE WITH THE STANDARD DESIGN DRAWINGS AS INDICATED. IN ADDITION, CONTRACTOR MUST NOTIFY CONTRACTING OFFICER FOR NAVFAC TO INSPECT AND CERTIFY THE LPS PRIOR TO COMPLETION. REFER TO S-002 FOR PROCEDURE TESTING AND VERIFICATION REQUIREMENTS.
4. COMPONENTS INDICATED ON THIS SHEET SHOWING GENERAL DIRECTION FOR THE LPS COMPONENTS. CONTRACTOR MUST PROVIDE NECESSARY COMPONENTS FOR A COMPLETE LPS.
5. PROVIDE #2/0 BARE COPPER GROUND CONDUCTOR FOR ALL BONDING AND GROUND, INCLUDING THE BONDING TO ALL METAL PARTS, INCLUDING STAIR HANDRAILS, DOOR AND DOOR FRAMES, REINFORCEMENT IN FLOOR/WALL, METAL AIR VENTILATOR AND LOUVERS.

SHEET NOTES

6. METAL BODIES WITHIN 6' - 0" OF THE LIGHTNING PROTECTION SYSTEM MUST BE BONDED TO THE SYSTEM IN ACCORDANCE WITH NFPA 780.
7. REFER TO LIGHTNING PROTECTION SYSTEM DETAILS ON SHEET E-502 FOR ADDITIONAL INFORMATION.
8. ALL GROUNDING CONDUCTORS MUST BE #2/0 BARE COPPER
9. ORDNANCE AND STATIC GROUND BUS BARS MUST BE COPPER. INSTALL 30" ABOVE FINISHED FLOOR.
10. METAL GUARD RAILS WILL BE CONSTRUCTED AND SERVED AS STRIKE TERMINATION DEVICES AS PER NFPA 780 (LATEST REV). GUARD RAILS MUST NOT EXCEED 45" HIGH AND MUST BE COMPLIANCE WITH OSHA REG. 1926.502 FALL PROTECTION SYSTEM CRITERIA AND PRACTICES PER 1926.502 (B)(1).
11. THE GROUND RING RESISTANCE TO EARTH MUST BE MAINTAINED AT 25 OHM OR LESS. IF THIS REQUIREMENT IS NOT ACHIEVABLE, EVEN THROUGH ADDITIONAL GROUND RODS OR GRID CONDUCTOR LOOP, NOTIFY NOSSA/ GOVERNMENT FOR ADDITIONAL ACTIONS TAKEN TO DECREASE THE RESISTANCE TO EARTH AS LOW AS POSSIBLE.
12. ALL BONDING CONNECTIONS MUST HAVE RESISTANCE MAXIMUM OF 1 OHM, INCLUDING AIR TERMINATION SYSTEM, DOWN CONDUCTORS TO LIGHTNING PROTECTION GROUNDING SYSTEM IAW NAFSEA OP5, SECTION 5-4.1.
13. A CATENARY SYSTEM MAY BE PROVIDED IN ADDITION TO FARADAY CAGE SYSTEM UNDER SITE-ADAPTATION. THE SYSTEM MUST BE BONDED BACK TO THE HEADWALL AS REQUIRED. CONTRACTOR MUST BE REQUIRED TO SUBMIT FARADAY CAGE DETAILS FOR APPROVAL PRIOR TO CONSTRUCTION. REFER TO NAVSEA OP 5 FOR PRIMARY GROUNDING SYSTEM OR AFMAN 10-65.
14. THE GROUND GIRDLE/RING MUST BE INSTALLED IN EARTH UNDISTURBED BY EXCAVATION, NOT IN EARTH FILL OR WHOLLY UNDER PAVED AREAS OR ROADWAYS WHERE RAINFALL CANNOT PENETRATE TO KEEP SOIL MOIST.
15. THE STRUCTURAL COMPONENTS OF THE BUILDING MUST BE BONDED BETWEEN THE FLOOR, WALLS AND ROOF. REBAR MUST BE BONDED TOGETHER OR BY ADDING EXTERNAL BONDING GROUND CONDUCTORS BETWEEN COMPONENTS. THE COMPONENTS MUST BE BONDED AT EVERY 5 FEET MAXIMUM INTERVAL IN ACCORDANCE WITH OP5 6-4.1.1.3. REFER TO DETAIL A1/E-504.
16. DOR MUST MODIFY THE STANDARD DESIGN DRAWINGS PER SITE-ADAPTATION.
17. REFER TO GENERAL NOTES ON E-001 FOR ADDITIONAL INFORMATION.
18. LIGHTNING PROTECTION WILL BE A FARADAY CAGE TYPE SYSTEM WITH THE STRUCTURAL COMPONENTS OF THE MAGAZINES BONDED TOGETHER AS REQUIRED BY THE NAVSEA OP5 REQUIREMENTS. ADDITIONALLY, 3/16-INCH THICK MINIMUM AND 42-INCH HIGH MAXIMUM METAL GUARDRAILS WILL BE UTILIZED AS STRIKE TERMINATION DEVICES ON THE MAGAZINE HEADWALLS WHICH WILL BE BONDED TO THE SECONDARY GROUND RING AT BOTH ENDS PROVIDING A TWO-WAY PATH TO GROUND.

KEYED NOTES

1. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR (BURIED GROUNDING RING) AS INDICATED, AT 30" MIN. BELOW FINISHED GRADE AND MINIMUM 3'-0" FROM FOUNDATION AROUND FACILITY OR AT LEAST 2'-0" FROM THE BUILDING EXTERIOR DRIP LINE. RE: C2/E-501.
2. FURNISH AND INSTALL ELECTRICAL COPPER GROUNDING BUS. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN. RE: A3/E-501 AND RE: C4/E-501.
3. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR FROM SINGLE POINT GROUND BUS BAR IN MECHANICAL ROOM TO SECONDARY GROUNDING RING.
4. ROUTE #2/0 BARE COPPER GROUNDING ELECTRODE FROM REINFORCED STRUCTURAL STEEL TO SECONDARY GROUNDING RING.
5. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR FROM FOUNDATION STEEL REBAR TO SECONDARY GROUND RING.
6. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR BETWEEN UPPER AND LOWER GUARD RAILS AND SECURE TO HEADWALL. RE: C1/E-103
7. PROVIDE #2/0 BARE COPPER GROUNDING CONDUCTOR FROM STATIC GROUND TO GROUND TEST WELL AS INDICATED UTILIZING BOLTED CONNECTIONS FOR EASE IN DISCONNECTING DURING TESTING. PERFORM TESTING PER NAVSEA OP5.
8. ALL HEADWALL GUARD RAILS AND ALL ASSOCIATED POSTS MUST BE DRILLED AND TAPPED WITH THREADED STUDS FOR CONNECTION TO COPPER GROUNDING CONDUCTORS WITH #2/0 COPPER WIRE LUGS. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR EXPOSED ALONG THE ENTIRE LENGTH OF HEADWALL. PROVIDE BIMETALLIC CONNECTORS AS REQUIRED FOR ATTACHING GUARD RAILS TO DOWN GROUNDING CONDUCTORS. ALL CONNECTORS, DEVICES AND COMPONENTS UTILIZED MUST BE EITHER UL LISTED OR LABELED AND LISTED FOR ITS USE.
9. GUARD RAILS MUST BE ALUMINUM PIPE. THICKNESS MUST NOT BE LESS THAN 3/16" AND MAXIMUM HEIGHT OF 42" (+/-3"). REFER TO ARCHITECTURAL SPECIFICATIONS AND ELEVATIONS ON DETAIL C1/E-103 FOR ADDITIONAL INFORMATION.
10. ROUTE #2/0 BARE COPPER GROUNDING DOWN CONDUCTOR IN A 1" CONDUIT TO SECONDARY GROUNDING ELECTRODE. DOWN CONDUCTOR MUST BE CONTINUOUS AND ON EXTERIOR OF BUILDING.
11. PROVIDE #2/0 NOT IN GREEN INSULATED COPPER GROUNDING CONDUCTOR IN 1" PVC BETWEEN ORDNANCE GROUND BUS BAR UNDER SLAB TO GROUND TEST WELL AS INDICATED UTILIZING BOLTED CONNECTIONS FOR EASE IN DISCONNECTING DURING TESTING. INSULATION MUST BE STRIPPED BARE FROM TERMINATION POINT UP TO THE POINT OF CONCEALMENT IN CONDUIT. PERFORM TESTING PER NAVSEA OP5. PROVIDE A 3"X9" BLACK PLASTIC BACKGROUND LABEL WITH 1" WHITE LETTERS INDICATING "ORDNANCE GROUND" AT EXPOSED LOCATIONS.
12. PROVIDE #2/0 BARE COPPER LIGHTNING PROTECTION DOWN CONDUCTORS TO SECONDARY GROUNDING ELECTRODE.
13. PROVIDE TWO (2) LIGHTNING GROUND CONDUCTORS - #2/0 BARE COPPER AND CONNECT TO AIR TERMINALS AS INDICATED.
14. PROVIDE A #2/0 BONDING CONDUCTOR FROM FROM SECONDARY GROUND RING TO BLAST DOOR'S GROUND REEL. EXTEND #6 GROUND CONDUCTOR THROUGH FLEXIBLE CARRIER TRACK. MAKE BONDING AT FEASIBLE LOCATION TO ALLOW A FULL DOOR OPERATION WITHOUT ANY INTERFERENCES WITH CABLE REEL OPERATION.
15. PROVIDE #2/0 BONDING CONDUCTOR FROM DOOR METAL EQUIPMENT/DEVICES/METAL DOOR FRAME TO BOTTOM OF PILASTER'S REBAR AND BOND TO SECONDARY GROUND RING AS INDICATED.
16. PROVIDE #2/0 BONDING CONDUCTOR FROM BRIDGE CRANE WHEEL TO STRUCTURAL REBAR TO ENSURE THE SYSTEM IS GROUNDED AND BONDED TO SECONDARY GROUNDING RING.

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL GROUNDING PLAN A

SCALE: NONE

EPROJECT NO.:

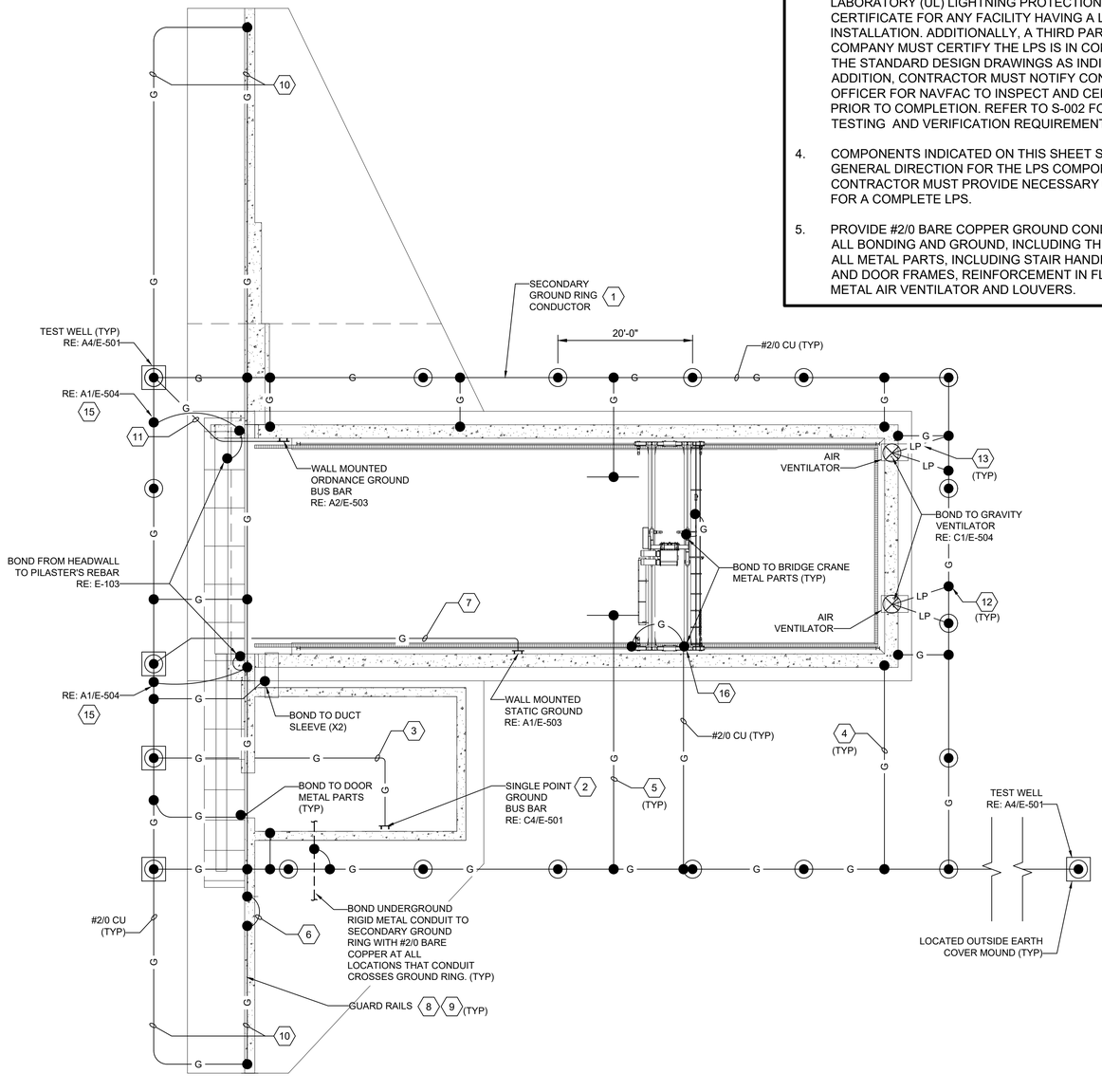
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877645

SHEET 36 OF 51

E102A

DRAWFORM REVISION: 00 MONTH 2020



A1 ELECTRICAL LIGHTNING PROTECTION & GROUNDING PLAN - 95'-6" LENGTH
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. THE TERM 'LIGHTNING PROTECTION SYSTEM' MUST BE REFERRED TO AS 'LPS' HENCEFORTH.
2. THE STANDARD DESIGN DRAWINGS FOR LPS INSTALLATION ARE IN COMPLIANCE WITH NFPA 780 AND AFMAN 32-1065 CRITERIA, AND MANUFACTURED IN ACCORDANCE WITH U.L. 96, IN ACCORDING WITH NAVSEA OP 5 OR DESR 6055.09_AFMAN 91-201.
3. CONTRACTOR MUST PROVIDE AN UNDERWRITER'S LABORATORY (UL) LIGHTNING PROTECTION INSPECTION CERTIFICATE FOR ANY FACILITY HAVING A LPS INSTALLATION. ADDITIONALLY, A THIRD PARTY INSPECTION COMPANY MUST CERTIFY THE LPS IS IN COMPLIANCE WITH THE STANDARD DESIGN DRAWINGS AS INDICATED. IN ADDITION, CONTRACTOR MUST NOTIFY CONTRACTING OFFICER FOR NAVFAC TO INSPECT AND CERTIFY THE LPS PRIOR TO COMPLETION. REFER TO S-002 FOR PROCEDURE TESTING AND VERIFICATION REQUIREMENTS.
4. COMPONENTS INDICATED ON THIS SHEET SHOWING GENERAL DIRECTION FOR THE LPS COMPONENTS. CONTRACTOR MUST PROVIDE NECESSARY COMPONENTS FOR A COMPLETE LPS.
5. PROVIDE #2/0 BARE COPPER GROUND CONDUCTOR FOR ALL BONDING AND GROUND, INCLUDING THE BONDING TO ALL METAL PARTS, INCLUDING STAIR HANDRAILS, DOOR AND DOOR FRAMES, REINFORCEMENT IN FLOOR/WALL, METAL AIR VENTILATOR AND LOUVERS.

SHEET NOTES

6. METAL BODIES WITHIN 6' - 0" OF THE LIGHTNING PROTECTION SYSTEM MUST BE BONDED TO THE SYSTEM IN ACCORDANCE WITH NFPA 780.
7. REFER TO LIGHTNING PROTECTION SYSTEM DETAILS ON SHEET E-502 FOR ADDITIONAL INFORMATION.
8. ALL GROUNDING CONDUCTORS MUST BE #2/0 BARE COPPER
9. ORDNANCE AND STATIC GROUND BUS BARS MUST BE COPPER. INSTALL 30" ABOVE FINISHED FLOOR.
10. METAL GUARD RAILS WILL BE CONSTRUCTED AND SERVED AS STRIKE TERMINATION DEVICES AS PER NFPA 780 (LATEST REV). GUARD RAILS MUST NOT EXCEED 45" HIGH AND MUST BE COMPLIANCE WITH OSHA REG. 1926.502 FALL PROTECTION SYSTEM CRITERIA AND PRACTICES PER 1926.502 (B)(1).
11. THE GROUND RING RESISTANCE TO EARTH MUST BE MAINTAINED AT 25 OHM OR LESS. IF THIS REQUIREMENT IS NOT ACHIEVABLE, EVEN THROUGH ADDITIONAL GROUND RODS OR GRID CONDUCTOR LOOP, NOTIFY NOSSA/ GOVERNMENT FOR ADDITIONAL ACTIONS TAKEN TO DECREASE THE RESISTANCE TO EARTH AS LOW AS POSSIBLE.
12. ALL BONDING CONNECTIONS MUST HAVE RESISTANCE MAXIMUM OF 1 OHM, INCLUDING AIR TERMINATION SYSTEM, DOWN CONDUCTORS TO LIGHTNING PROTECTION GROUNDING SYSTEM IAW NAFSEA OP5, SECTION 5-4.1.
13. A CATENARY SYSTEM MAY BE PROVIDED IN ADDITION TO FARADAY CAGE SYSTEM UNDER SITE-ADAPTATION. THE SYSTEM MUST BE BONDED BACK TO THE HEADWALL AS REQUIRED. CONTRACTOR MUST BE REQUIRED TO SUBMIT FARADAY CAGE DETAILS FOR APPROVAL PRIOR TO CONSTRUCTION. REFER TO NAVSEA OP 5 FOR PRIMARY GROUNDING SYSTEM OR AFMAN 10-65.
14. THE GROUND GIRDLE/RING MUST BE INSTALLED IN EARTH UNDISTURBED BY EXCAVATION, NOT IN EARTH FILL OR WHOLLY UNDER PAVED AREAS OR ROADWAYS WHERE RAINFALL CANNOT PENETRATE TO KEEP SOIL MOIST.
15. THE STRUCTURAL COMPONENTS OF THE BUILDING MUST BE BONDED BETWEEN THE FLOOR, WALLS AND ROOF. REBAR MUST BE BONDED TOGETHER OR BY ADDING EXTERNAL BONDING GROUND CONDUCTORS BETWEEN COMPONENTS. THE COMPONENTS MUST BE BONDED AT EVERY 5 FEET MAXIMUM INTERVAL IN ACCORDANCE WITH OP5 6-4.1.1.3. REFER TO DETAIL A1/E-504.
16. DOR MUST MODIFY THE STANDARD DESIGN DRAWINGS PER SITE-ADAPTATION.
17. REFER TO GENERAL NOTES ON E-001 FOR ADDITIONAL INFORMATION.
18. LIGHTNING PROTECTION WILL BE A FARADAY CAGE TYPE SYSTEM WITH THE STRUCTURAL COMPONENTS OF THE MAGAZINES BONDED TOGETHER AS REQUIRED BY THE NAVSEA OP5 REQUIREMENTS. ADDITIONALLY, 3/16-INCH THICK MINIMUM AND 42-INCH HIGH MAXIMUM METAL GUARDRAILS WILL BE UTILIZED AS STRIKE TERMINATION DEVICES ON THE MAGAZINE HEADWALLS WHICH WILL BE BONDED TO THE SECONDARY GROUND RING AT BOTH ENDS PROVIDING A TWO-WAY PATH TO GROUND.

KEYED NOTES

1. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR (BURIED GROUNDING RING) AS INDICATED, AT 30" MIN. BELOW FINISHED GRADE AND MINIMUM 3'-0" FROM FOUNDATION AROUND FACILITY OR AT LEAST 2'-0" FROM THE BUILDING EXTERIOR DRIP LINE. RE: C2/E-501.
2. FURNISH AND INSTALL ELECTRICAL COPPER GROUNDING BUS. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN. RE: A3/E-501 AND RE: C4/E-501.
3. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR FROM SINGLE POINT GROUND BUS BAR IN MECHANICAL ROOM TO SECONDARY GROUNDING RING.
4. ROUTE #2/0 BARE COPPER GROUNDING ELECTRODE FROM REINFORCED STRUCTURAL STEEL TO SECONDARY GROUNDING RING.
5. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR FROM FOUNDATION STEEL REBAR TO SECONDARY GROUND RING.
6. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR BETWEEN UPPER AND LOWER GUARD RAILS AND SECURE TO HEADWALL. RE: C1/E-103
7. PROVIDE #2/0 BARE COPPER GROUNDING CONDUCTOR FROM STATIC GROUND TO GROUND TEST WELL AS INDICATED UTILIZING BOLTED CONNECTIONS FOR EASE IN DISCONNECTING DURING TESTING. PERFORM TESTING PER NAVSEA OP5.
8. ALL HEADWALL GUARD RAILS AND ALL ASSOCIATED POSTS MUST BE DRILLED AND TAPPED WITH THREADED STUDS FOR CONNECTION TO COPPER GROUNDING CONDUCTORS WITH #2/0 COPPER WIRE LUGS. ROUTE #2/0 BARE COPPER GROUNDING CONDUCTOR EXPOSED ALONG THE ENTIRE LENGTH OF HEADWALL. PROVIDE BIMETALLIC CONNECTORS AS REQUIRED FOR ATTACHING GUARD RAILS TO DOWN GROUNDING CONDUCTORS. ALL CONNECTORS, DEVICES AND COMPONENTS UTILIZED MUST BE EITHER UL LISTED OR LABELED AND LISTED FOR ITS USE.
9. GUARD RAILS MUST BE ALUMINUM PIPE. THICKNESS MUST NOT BE LESS THAN 3/16" AND MAXIMUM HEIGHT OF 42" (+/-3"). REFER TO ARCHITECTURAL SPECIFICATIONS AND ELEVATIONS ON DETAIL C1/E-103 FOR ADDITIONAL INFORMATION.
10. ROUTE #2/0 BARE COPPER GROUNDING DOWN CONDUCTOR IN A 1" CONDUIT TO SECONDARY GROUNDING ELECTRODE. DOWN CONDUCTOR MUST BE CONTINUOUS AND ON EXTERIOR OF BUILDING.
11. PROVIDE #2/0 NOT IN GREEN INSULATED COPPER GROUNDING CONDUCTOR IN 1" PVC BETWEEN ORDNANCE GROUND BUS BAR UNDER SLAB TO GROUND TEST WELL AS INDICATED UTILIZING BOLTED CONNECTIONS FOR EASE IN DISCONNECTING DURING TESTING. INSULATION MUST BE STRIPPED BARE FROM TERMINATION POINT UP TO THE POINT OF CONCEALMENT IN CONDUIT. PERFORM TESTING PER NAVSEA OP5. PROVIDE A 3"X9" BLACK PLASTIC BACKGROUND LABEL WITH 1" WHITE LETTERS INDICATING "ORDNANCE GROUND" AT EXPOSED LOCATIONS.
12. PROVIDE #2/0 BARE COPPER LIGHTNING PROTECTION DOWN CONDUCTORS TO SECONDARY GROUNDING ELECTRODE.
13. PROVIDE TWO (2) LIGHTNING GROUND CONDUCTORS - #2/0 BARE COPPER AND CONNECT TO AIR TERMINALS AS INDICATED.
14. PROVIDE A #2/0 BONDING CONDUCTOR FROM FROM SECONDARY GROUND RING TO BLAST DOOR'S GROUND REEL. EXTEND #6 GROUND CONDUCTOR THROUGH FLEXIBLE CARRIER TRACK. MAKE BONDING AT FEASIBLE LOCATION TO ALLOW A FULL DOOR OPERATION WITHOUT ANY INTERFERENCES WITH CABLE REEL OPERATION.
15. PROVIDE #2/0 BONDING CONDUCTOR FROM DOOR METAL EQUIPMENT/DEVICES/METAL DOOR FRAME TO BOTTOM OF PILASTER'S REBAR AND BOND TO SECONDARY GROUND RING AS INDICATED.
16. PROVIDE #2/0 BONDING CONDUCTOR FROM BRIDGE CRANE WHEEL TO STRUCTURAL REBAR TO ENSURE THE SYSTEM IS GROUNDED AND BONDED TO SECONDARY GROUNDING RING.

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY
SATISFACTORY TO DATE
DES KL DRW FO CHK PKD
PM/DM --
BRANCH MANAGER --
CHIEF ENG/ARCH --
FIRE PROTECTION --

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

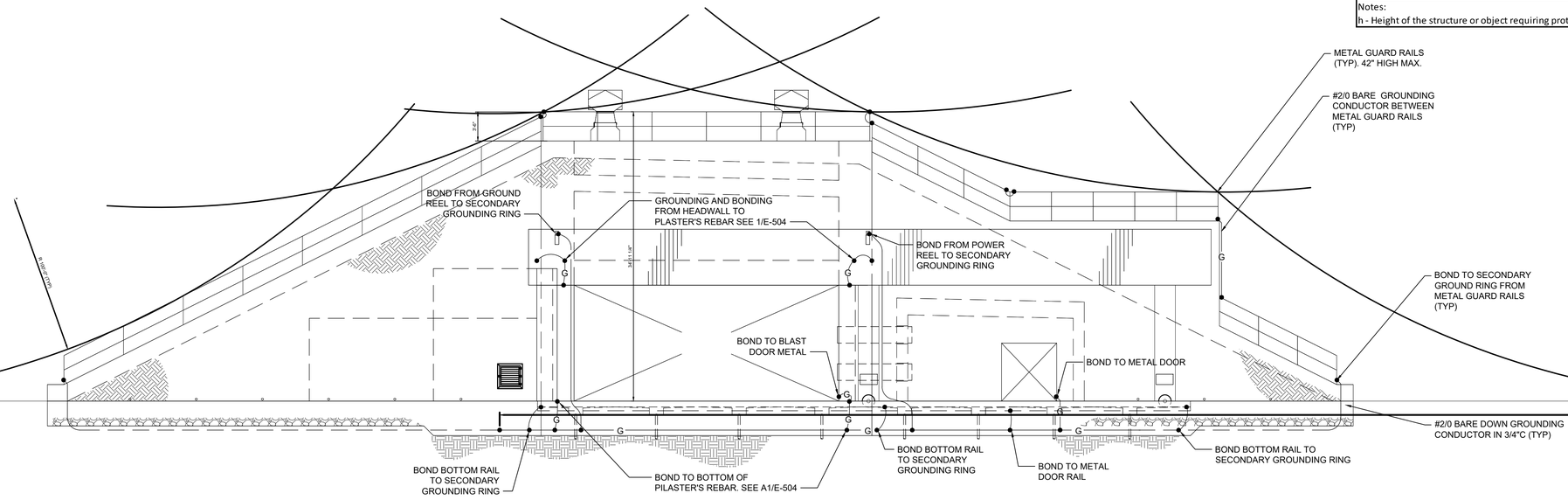
ELECTRICAL GROUNDING PLAN B

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877646
SHEET 37 OF 51

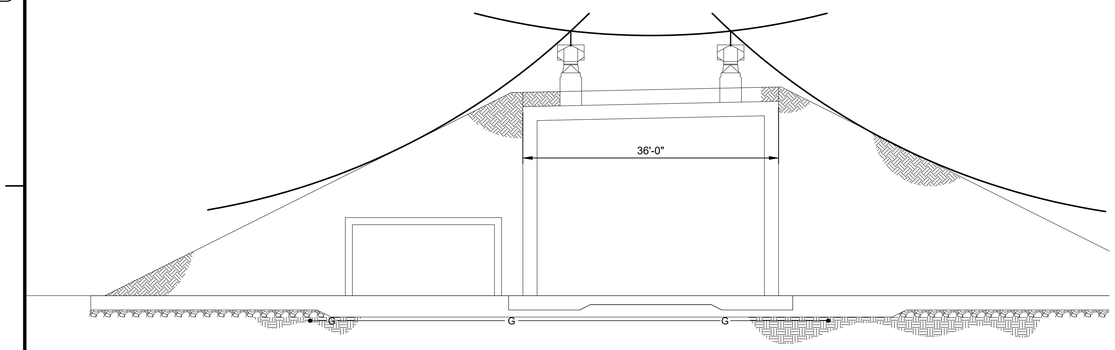
E102B

DRAWFORM REVISION: 00 MONTH 2020

SIDEFLASH - At Highest Point of Buildi	Metal Parts (Guard Rails)
h - Height of Protected Structure (ft):	34.7
D = Sideflash (D=h/6) (ft):	5.8
Notes:	
h - Height of the structure or object requiring protection	



C1 ROLLING SPHERE ANALYSIS - FRONT ELEVATION
SCALE: 1/8" = 1'-0"



A1 ROLLING SPHERE ANALYSIS - REAR ELEVATION
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. REFER TO GENERAL NOTES ON E-001 FOR ADDITIONAL INFORMATION.

APPR | DATE | DESCRIPTION | SYM

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FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY
SATISFACTORY TO DATE

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BRANCH MANAGER
CHIEF ENG/ARCH
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA
NAVAL SUPPORT ACTIVITY

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL LIGHTNING ZONE PROTECTION ELEVATION

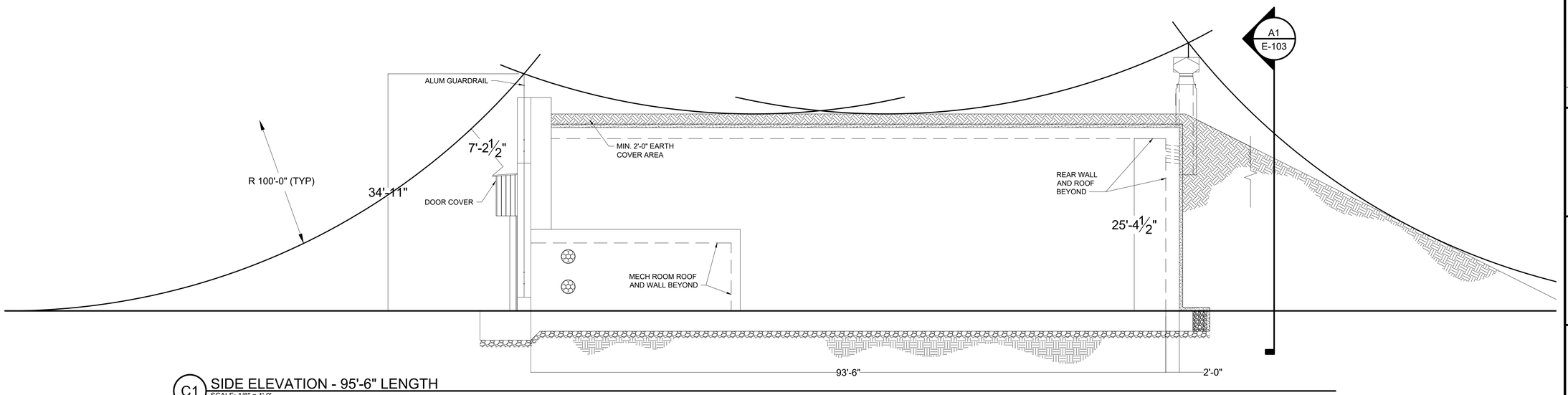
SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877647
SHEET 38 OF 51

E-103

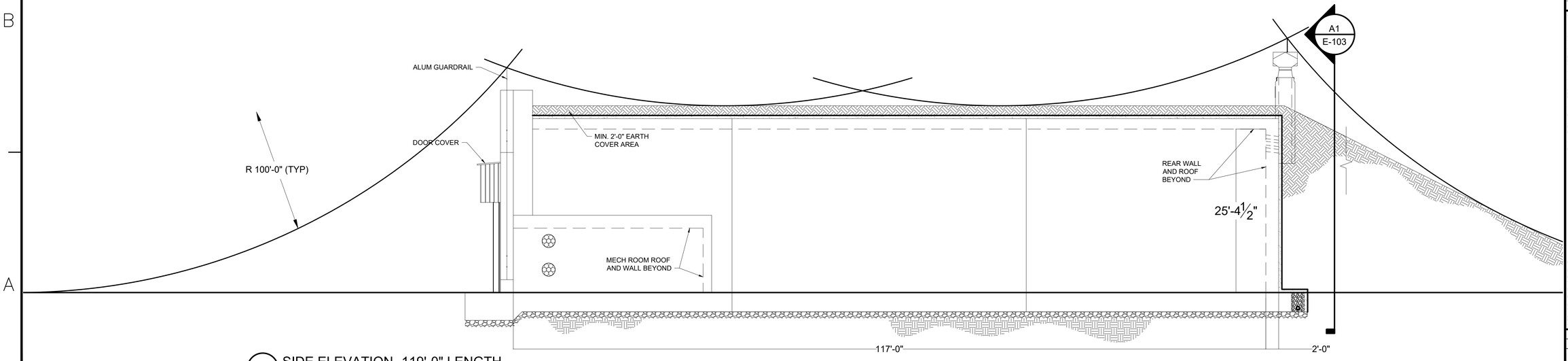
DRAWFORM REVISION: 00 MONTH 2020

SHEET NOTES

1. REFER TO GENERAL NOTES ON E-001 FOR ADDITIONAL INFORMATION.



C1 SIDE ELEVATION - 95'-6" LENGTH
SCALE: 1/8" = 1'-0'



A1 SIDE ELEVATION -119'-0" LENGTH
SCALE: 1/8" = 1'-0'

APPR	DATE	DESCRIPTION	SYM

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A/E INFO

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FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PM/DM
BRANCH MANAGER
CHIEF ENG/ARCH
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE
ELECTRICAL LIGHTNING ZONE PROTECTION ELEVATION

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877648
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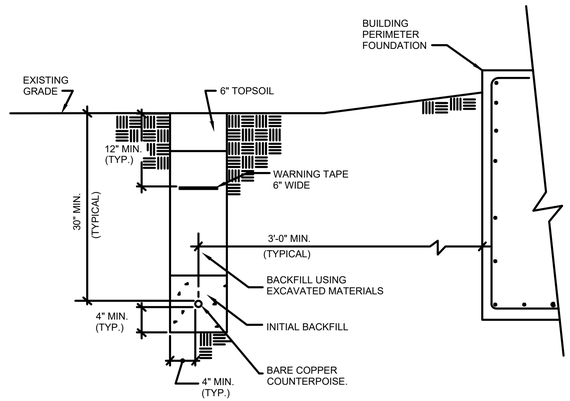
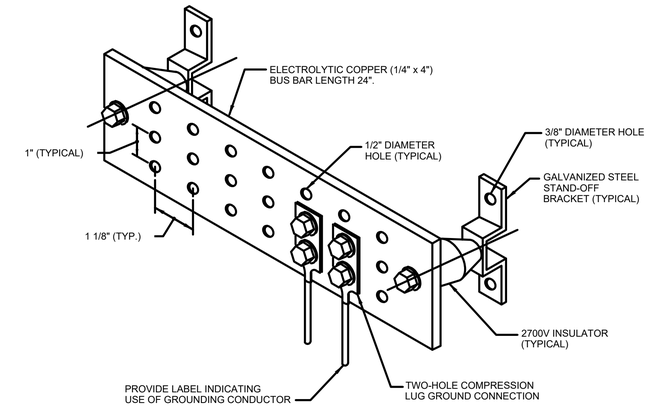
E-104

DRAWFORM REVISION: 00 MONTH 2020



C2 TYPICAL GROUND RING INSTALLATION DETAIL

SCALE: NO SCALE



C4 SINGLE POINT GROUNDING BUS BAR (SPGB) BAR DETAIL

SCALE: NO SCALE

NOTES:

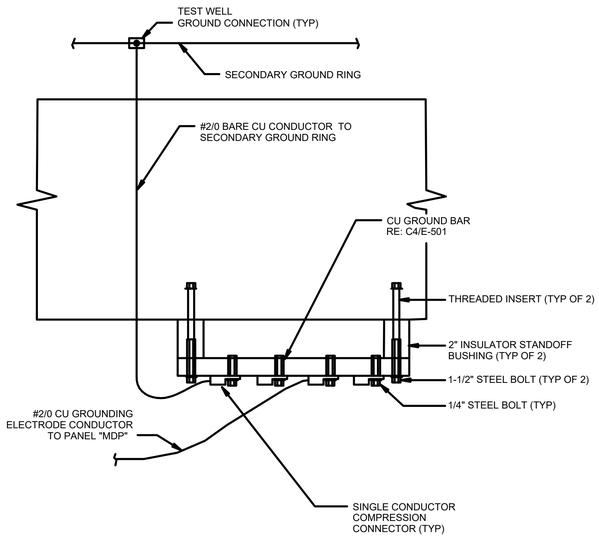
1. PROVIDE SELF-ADHESIVE VINYL LABEL TO AFFIX TO ELECTRICAL EQUIPMENT TO WARN OF ARC FLASH HAZARDS.
2. THE LABEL FORMAT AND TEXT CAN BE MODIFIED PROVIDED THAT THE INFORMATION REQUIRED BY UFC 3-501-01 IS INCLUDED.
3. THE LABEL MUST BE LOCATED ON THE EQUIPMENT TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.
4. THE SIZE OF THE LABEL MUST BE MINIMUM:

EQUIPMENT TYPE	HEIGHT	WIDTH
INDOOR	2"	3"
OUTDOOR	3"	4.5"

5. A DOWNLOADABLE WINDOWS METAFILE IS AVAILABLE ON THE WHOLE BUILDING DESIGN GUIDE WEBSITE (WWW.WBDG.ORG) FOR USE IN A LABEL MAKING MACHINE.
   A. THE FILE IS LOCATED ON THE "UFGS FORMS, GRAPHICS, AND TABLES" PAGE. TO NAVIGATE TO THIS LOCATION, FOLLOW: HOME > FEDERAL FACILITY CRITERIA > DEPARTMENT OF DEFENSE > UNITED FACILITIES GUIDE SPECIFICATIONS (UFGS) > UFGS FORMS, GRAPHICS, AND TABLES > ARCH FLASH WARNING LABELS.
   B. ALTERNATIVELY, TYPE IN THE FOLLOWING ADDRESS IN INTERNET EXPLORER: HTTPS://WWW.WBDG.ORG/FFC/NAVGRAPH/ARC_FLASH_WARNING_LABELS.ZIP

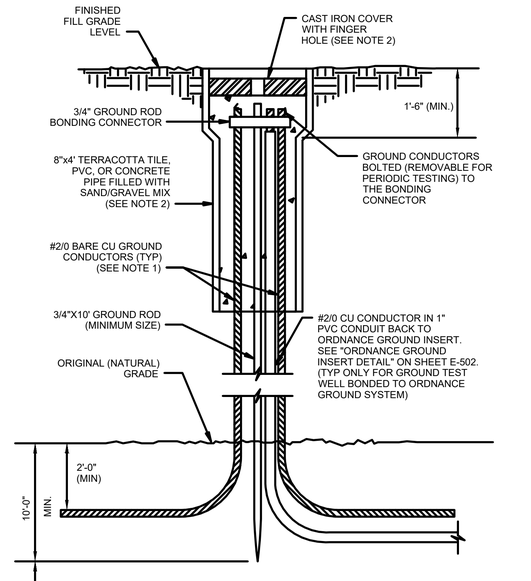
A1 ARC FLASH WARNING LABEL

SCALE: NO SCALE



A3 SINGLE POINT GROUND BAR DETAIL

SCALE: NO SCALE



NOTE 1: MAINTAIN THE GROUND CONDUCTORS ISOLATED FROM THE GROUND ROD UNTIL THE BOND CONNECTION AT THE TOP

NOTE 2: PROVIDE "TRAFFIC RATED" TEST WELL AND COVER FOR PAVED AREAS

A4 GROUND TEST WELL INSTALLATION IN EARTH FILL

SCALE: NO SCALE

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FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PM/DM	– –
BRANCH MANAGER	– –
CHIEF ENG/ARCH	– –
FIRE PROTECTION	– –

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL DETAILS

SCALE: NONE

EPROJECT NO.:

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877649

SHEET 40 OF 51

E-501

DRAWFORM REVISION: 00 MONTH 2020

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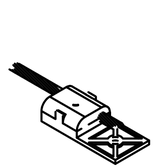
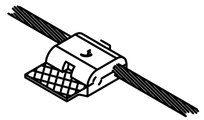
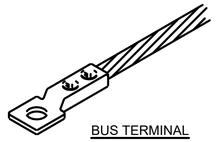


BONDING LUG



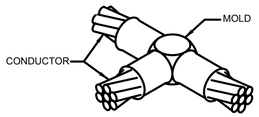
CABLE TO METAL CONNECTION



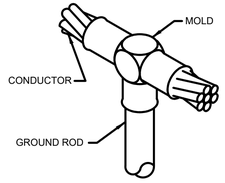
BUS TERMINAL

C2 TYPICAL CABLE TERMINATIONS/CONNECTIONS DETAIL

SCALE: NO SCALE



EXOTHERMIC WELD - INTERSECTION MOLD



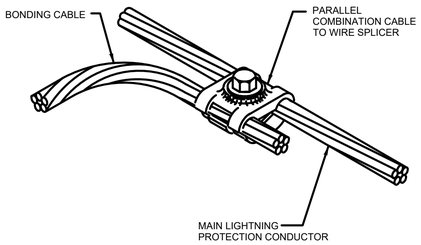
EXOTHERMIC WELD - GROUND ROD/ CONDUCTOR MOLD

C3 TYPICAL CABLE EXOTHERMIC WELD DETAIL

SCALE: NO SCALE

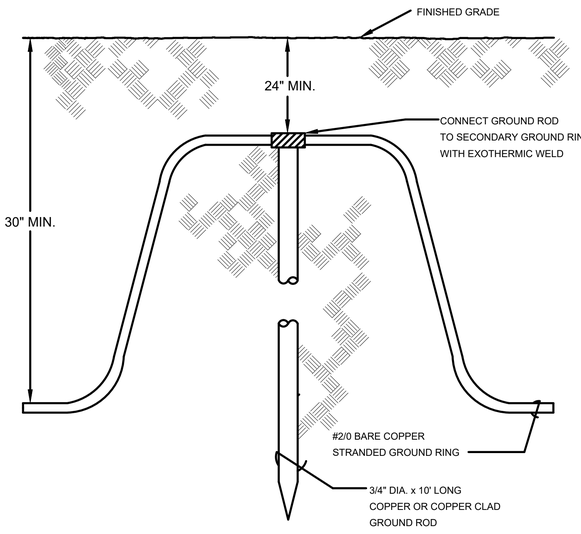
NOTES:

1. PROVIDE EXOTHERMIC WELD OR HIGH COMPRESSION FOR LIGHTNING PROTECTION GROUNDING CONDUCTORS THAT ARE BURIED OR CONCEALED WITHIN STRUCTURE.
2. CABLE SPLICE OR OTHER BONDING CONNECTORS MUST BE INSTALLED PER ITS LABEL REQUIREMENTS AND WITH AN APPROVED UL96 LISTING.



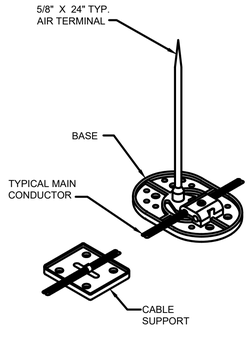
C4 TYPICAL CABLE SPLICE DETAIL

SCALE: NO SCALE

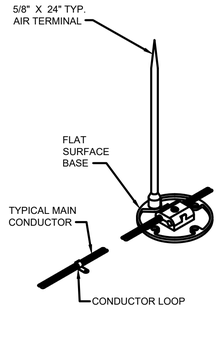


A1 GROUND ROD DETAIL

SCALE: NO SCALE



152 - ADHESIVE BASE



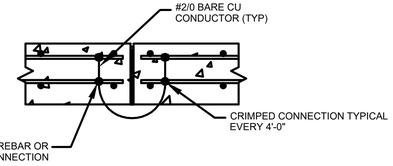
FLAT SURFACE BASE

A2 TYPICAL ROOF MOUNTED AIR TERMINAL DETAIL

SCALE: NO SCALE

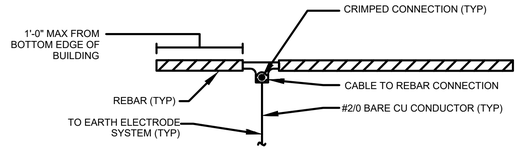
NOTES:

1. ADHESIVE FASTENERS ARE NOT PERMITTED ON DOWN CONDUCTORS AND CROSS CONDUCTORS.
2. BOLTED CONNECTORS ARE NOT PERMITTED ON DOWN CONDUCTOR OR ROOF CONDUCTORS BONDING, EXCEPT AT AIR TERMINAL OR ALUMINUM OR METAL BODIES FOR BONDING PURPOSES. PROVIDE EXOTHERMIC WELDING OR HIGH COMPRESSION ON THE DOWN CONDUCTORS AND ROOF CONDUCTORS.



B4 TYPICAL BOND CONNECTION AT EACH CONSTRUCTION JOINT

SCALE: NO SCALE



A4 GROUNDING REINFORCING STEEL

SCALE: NO SCALE

APPR	DATE	DESCRIPTION	MJS

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

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NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL DETAILS

SCALE: NONE

EPROJECT NO.:

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877650

SHEET 41 OF 51

E-502

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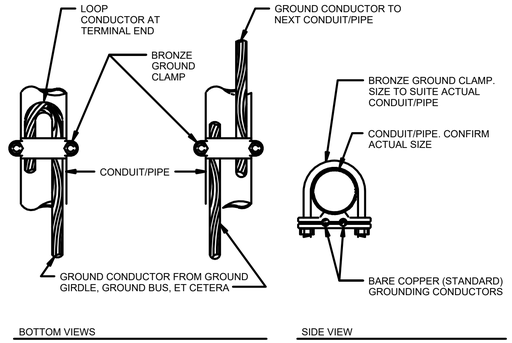
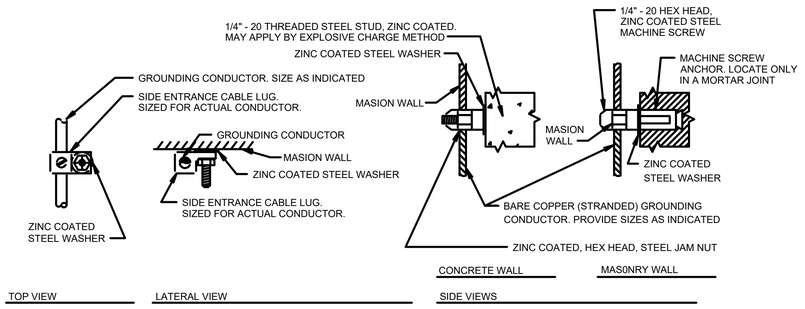


C2 CONDUIT/PIPE GROUND CONNECTION

SCALE: NO SCALE

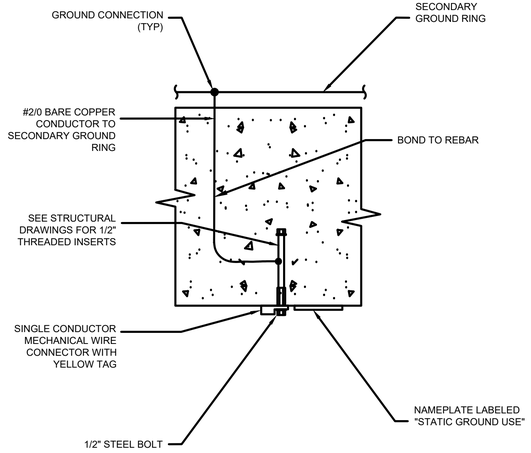
NOTES:

1. CONCEAL GROUNDING CONDUCTORS WHERE POSSIBLE.
2. FOR GROUNDING CONDUCTORS RUN EXPOSED, SUPPORT CONDUCTORS 36" ON CENTERS AND WITHIN 12" OF GROUND CONNECTIONS.
3. PROVIDE WALL FASTENER IN ACCORDANCE WITH THE WALL TYPE SEE "SIDE VIEW DETAILS" FOR REQUIREMENTS.
4. THIS GROUNDING DETAIL IS NOT FOR ORDNANCE GROUNDING SYSTEM.



C4 GROUNDING CONDUCTOR SUPPORT DETAILS (TYPICAL FOR EXPOSED CONDUCTORS)

SCALE: NO SCALE



STATIC GROUND INSERT DETAIL NOTES:

1. PROVIDE A REMOVABLE YELLOW MELAMINE PLASTIC TAG THAT ATTACHES TO THE STATIC GROUND INSERT. THE TAG MUST INCLUDE THE FOLLOWING INFORMATION:

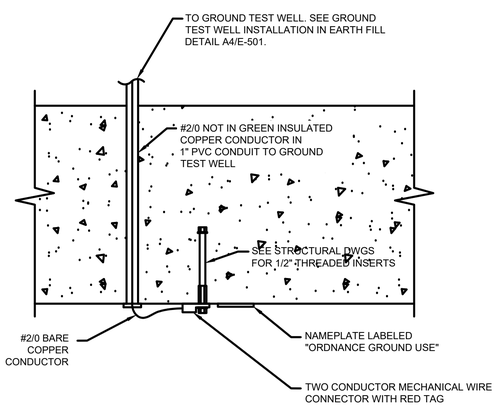
   "NOT IN SERVICE. NO MAINTENANCE REQUIRED.

   INSTALLATION MEETS STATIC/FACILITY GROUND REQUIREMENT PER NAVSEA OP-5. ACTIVITY MUST PERFORM TESTING PER NAVSEA OP-5 AND ENACT MAINTENANCE SCHEDULE WHEN THE STATIC/FACILITY GROUND INSERT IS PLACED IN SERVICE.

   RETAIN THIS TAG TO REATTACH WHEN REMOVED FROM SERVICE."

A1 STATIC GROUND INSERT DETAIL

SCALE: NO SCALE



ORDNANCE GROUND INSERT DETAIL NOTES:

1. PROVIDE A REMOVABLE RED MELAMINE PLASTIC TAG THAT ATTACHES TO THE ORDNANCE GROUND INSERT. THE TAG MUST INCLUDE THE FOLLOWING INFORMATION:

   "NOT IN SERVICE. NO MAINTENANCE REQUIRED.

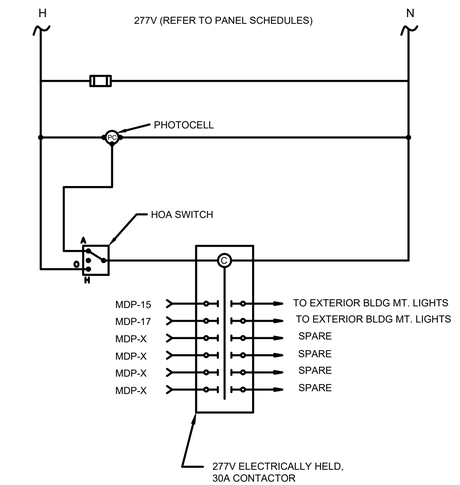
   INSTALLATION MEETS ORDNANCE GROUND REQUIREMENT PER NAVSEA OP-5. ACTIVITY MUST PERFORM TESTING PER NAVSEA OP-5 AND ENACT MAINTENANCE SCHEDULE WHEN THE ORDNANCE GROUND INSERT IS PLACED IN SERVICE.

   RETAIN THIS TAG TO REATTACH WHEN REMOVED FROM SERVICE."

2. MAINTAIN THREADED INSERT ISOLATION. DO NOT ALLOW THE THREADED INSERT TO TOUCH REBAR OR OTHER METALLIC OBJECTS IN THE WALL.

A2 ORDNANCE GROUND INSERT DETAIL

SCALE: NO SCALE



A4 LIGHTING CONTACTOR

SCALE: NO SCALE

APPR	DATE	DESCRIPTION	SYM

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A/E INFO

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Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
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NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA
NAVAL SUPPORT ACTIVITY

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL DETAILS

SCALE: NONE

EPROJECT NO.:

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877651

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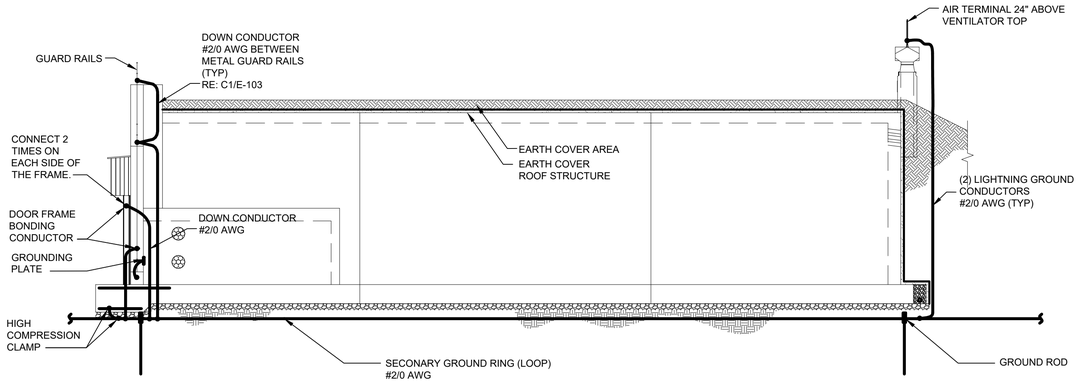
E-503

DRAWFORM REVISION: 00 MONTH 2020

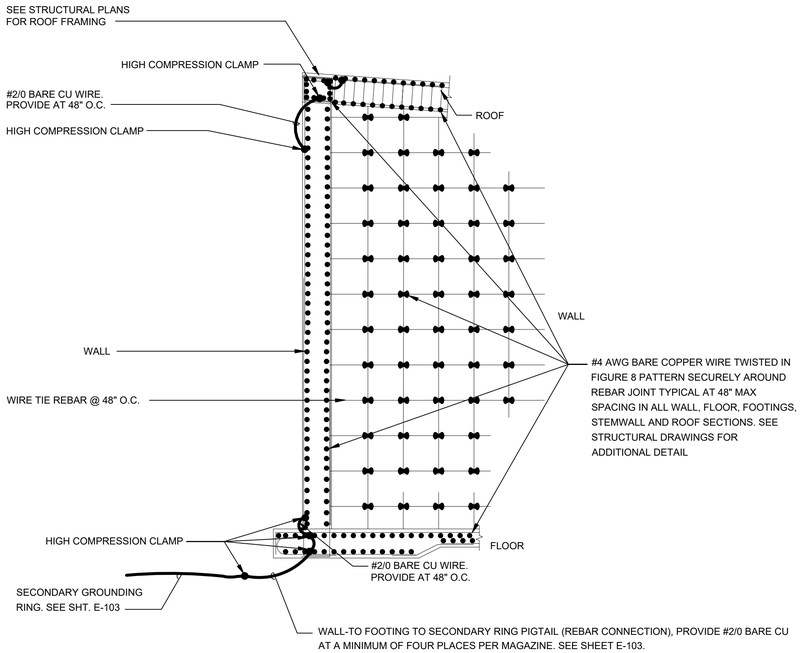


NOTES:

1. FOR MISCELLANEOUS STEEL SHAPES, BOLTED CONNECTOR MAY BE USED.
2. CRIMPED CONNECTORS MAY ALSO BE ANOTHER ALTERNATE CONNECTORS.

C1 ECM GROUND SECTION (TYPICAL)

SCALE: NO SCALE

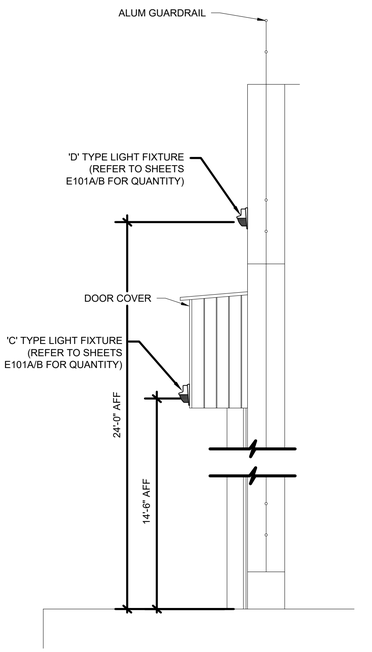


NOTES:

1. BOLTED/CRIMPED CONNECTORS MAY BE USED AS ALTERNATE CONNECTORS.

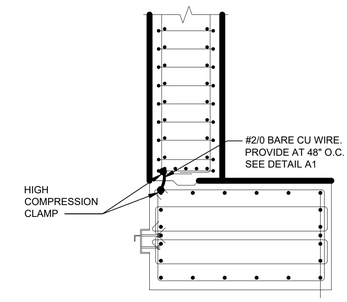
A1 WALL/FLOOR/ROOF BONDING DETAIL (TYPICAL)

SCALE: NO SCALE



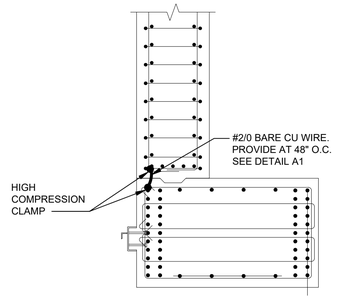
C4 EXTERIOR WALL MOUNTED LIGHTING

SCALE: NO SCALE



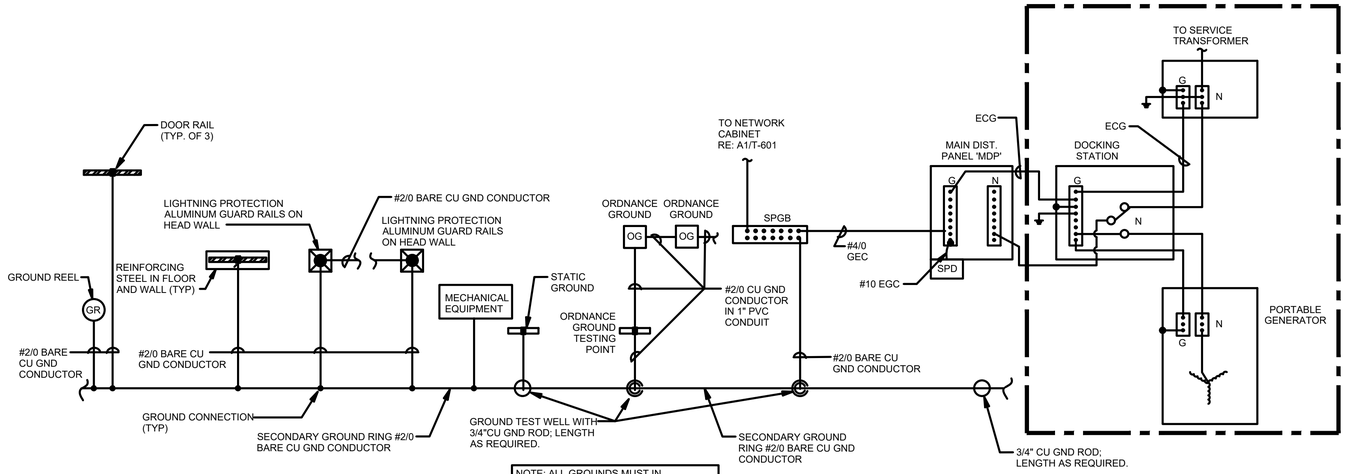
D5 HEADER BEAM END - BONDING DETAIL

SCALE: NO SCALE



C5 HEADER BEAM MIDSPAN - BONDING DETAIL

SCALE: NO SCALE



NOTE: ALL GROUNDS MUST IN COMPLIANCE WITH NEC REQUIREMENTS AND BONDED IN THROUGH SECONDARY GROUND RING.

A3 GROUNDING ELECTRODE SYSTEM (TYPICAL FOR EACH MAGAZINE)

SCALE: NO SCALE

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
NAVAL SUPPORT ACTIVITY HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL DETAILS

SCALE: NONE

EPROJECT NO.:

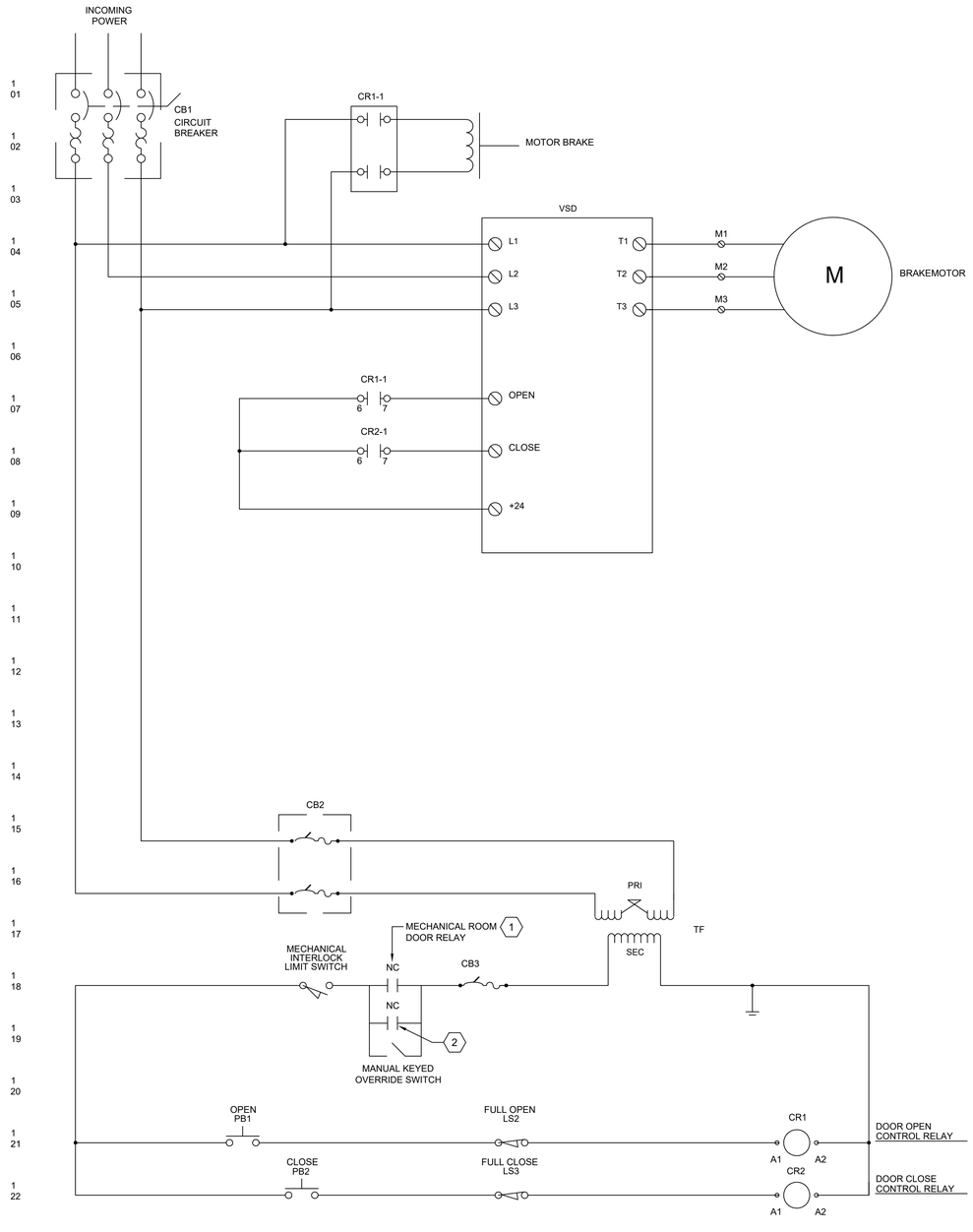
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877652

SHEET 43 OF 51

E-504

DRAWFORM REVISION: 00 MONTH 2020



GENERAL ELECTRICAL NOTES:

1. RIGID METAL CONDUIT TO BE USED.
2. LIQUID TIGHT FLEXIBLE METAL CONDUIT ALLOWED UP TO 3' WHERE NECESSARY.
3. COMPONENTS TO BE NON-HAZARDOUS.

SHEET NOTES

1. THE DOOR CONTROL DIAGRAM IS A TYPICAL DOOR STANDARD DESIGN AND SHOWN AS SCHEMATIC DESIGN ONLY. DOR MUST COORDINATE WITH DOOR MANUFACTURER FOR SPECIFIC DESIGN APPLICABLE TO LOCAL CODES AND ORDINANCES.

KEYED NOTES

1. THE RELAY MUST BE INTERLOCKED TO MECHANICAL DOOR LATCH. RELAY MUST OPEN WHEN MECHANICAL DOOR IS UNLOCKED. DOOR POWER DISCONNECTED AND RELEASE THE DOOR CONTROL SYSTEM. THE KEY OVERRIDE SWITCH MUST CONTROL WHEN DOOR POWER DISCONNECTED.
2. THE RELAY MUST BE INTERLOCKED WITH ILD LOCKING SYSTEM SO THAT DOOR POWER WILL BE DISCONNECTED WHEN ILD IS IN 'CLOSE' POSITION OR IN 'LOCKING' POSITION. DESIGN TEAM MUST COORDINATE WITH LOCAL AHJ FOR ADDITIONAL REQUIREMENT ON ILD SYSTEM CONNECTION. REFER TO KEYED NOTE 2/T101A AND T101B FOR ADDITIONAL INFORMATION.

APPR	DATE	DESCRIPTION	SYM

NAVFAC

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A/E INFO

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Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

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DES	KL	DRW	FO	CHK	PKD
PM/DM	--				
BRANCH MANAGER	--				
CHIEF ENG/ARCH	--				
FIRE PROTECTION	--				

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL DETAILS

SCALE: NONE

EPROJECT NO.:

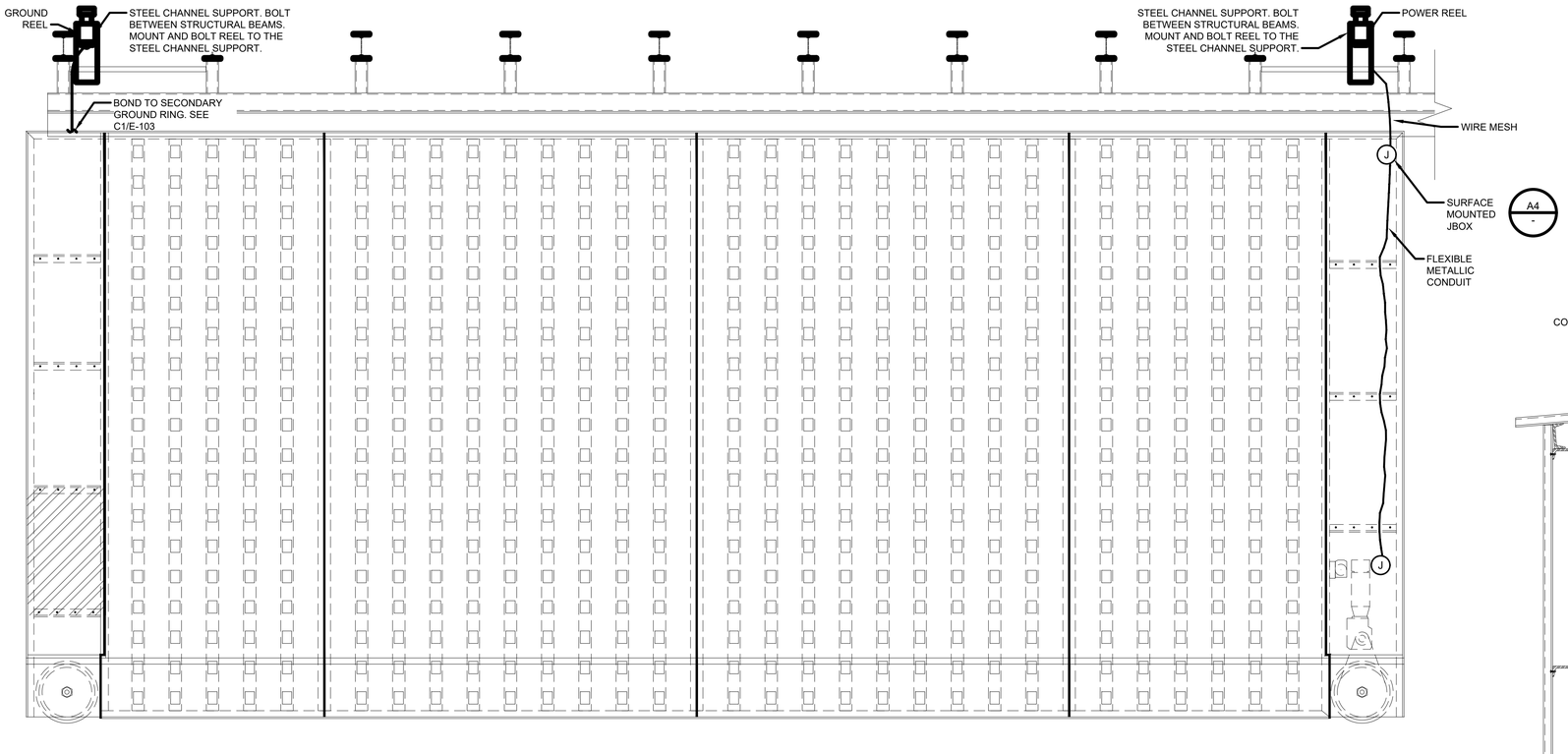
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877653

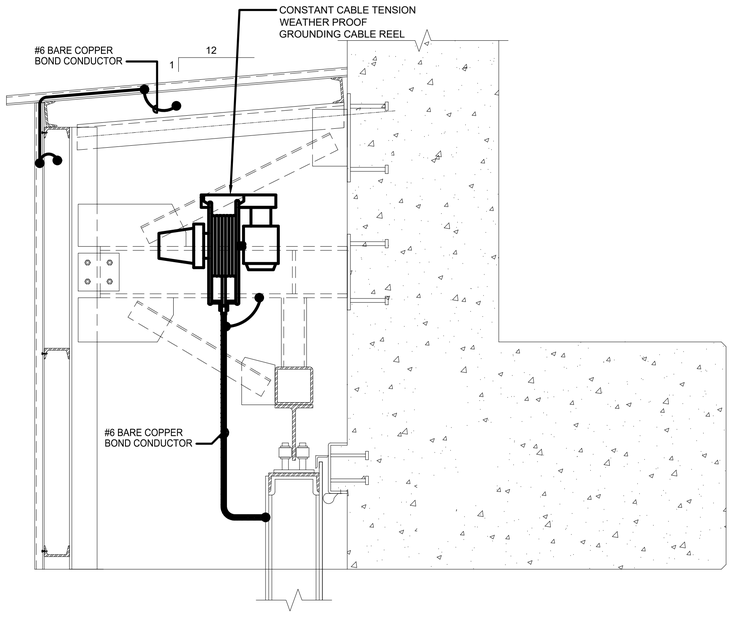
SHEET 44 OF 51

E-505

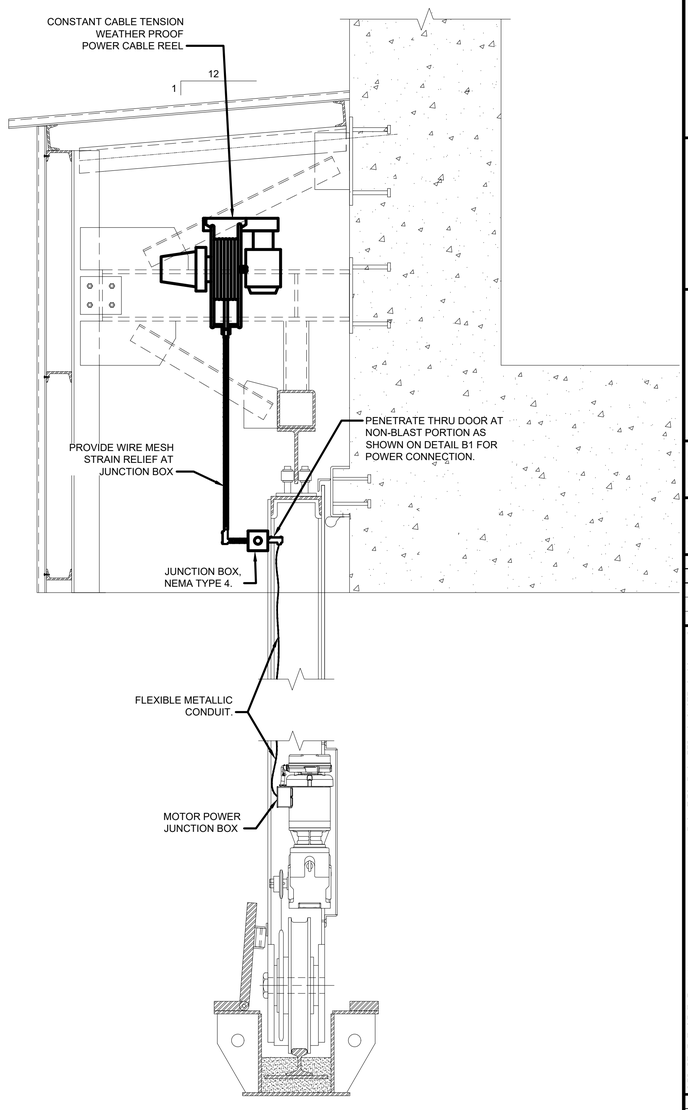
DRAWFORM REVISION: 00 MONTH 2020



B1 DOOR EXTERIOR PLATE ELEVATION
SCALE: 1/2" = 1'-0"



A2 DOOR DETAIL - GROUNDING
SCALE: NOT TO SCALE



A4 DOOR DETAIL - POWER
SCALE: NOT TO SCALE

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

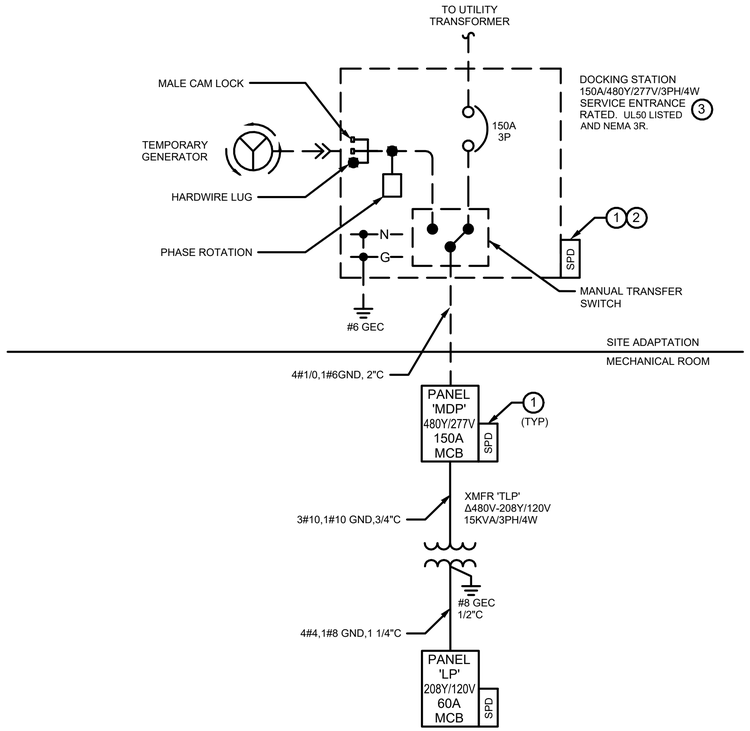
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL DETAILS

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12877654
SHEET 45 OF 51

E-506

DRAWFORM REVISION: 00 MONTH 2020



SERVICE LOAD ANALYSIS

PROJECT:	CLWS - ATLANTIC
	-
SQ FOOTAGE:	3664

MAIN DISTRIBUTION:	MDP	480	VOLT

	NEW CONNECTED		NEW DEMAND	
TYPE	AMPACITY	VA	AMPACITY	VA
EQUIPMENT:	14	11,249	14	11,249
RECEPTACLES:	1	720	1	720
LIGHTING:	5	3,978	5	3,978
A/C OR HEATING	15	12,471	15	12,471
HEATING	0	0	0	0
CONT. MOTORS	48	39,491	48	39,491
25% LRG MOTOR (BRIDGE CRANE)	-	-	11	9,166
15% SPARE CAPACITY	-	-	14	11,561
(UFC 3-501-01)				
TOTAL	82	67,909	107	88,636

SERVICE VOLTAGE:	480	VOLTS
SERVICE LOAD AMPACITY:	107	AMPS
SCHEDULED SERVICE AMPACITY:	150	AMPS

SHEET NOTES

1. THE INDICATED FAULT CURRENT RATING ON PANEL SCHEDULES IS MINIMUM REQUIREMENT. DESIGNER MUST DETERMINE THE FINAL EQUIPMENT FAULT CURRENT RATING BASED ON THE MAXIMUM AVAILABLE FAULT CURRENT FROM UTILITY SERVICE TRANSFORMER. PROVIDE HIGHER RATING AS REQUIRED PER SITE ADAPTATIONS.
2. DOCKING STATION AS SHOWN IS PART OF SITE ADAPTATIONS.
3. THE DESIGN STANDARD INDICATES THE POWER DISTRIBUTION SYSTEM FOR CONUS PROJECTS, BUT DEFERRED FOR OCONUS PROJECTS TO THE PROJECT DELIVERY DESIGN TEAMS FOR SITE ADAPTATION AND FURTHER DEVELOPMENT AS NEEDED.
4. ALL ELECTRICAL POWER DISTRIBUTION EQUIPMENT LOCATED OUTSIDE THE EARTH COVER MAGAZINE, INCLUDING DOCKING STATION, MANUAL TRANSFER SWITCH, PORTABLE GENERATOR POWER CONNECTION MUST BE PART OF SITE ADAPTATION AS SHOWN IN DASH.

KEYED NOTES

1. PROVIDE EXTERNALLY MOUNTED SPD ON LOAD SIDE OF A DEDICATED CIRCUIT BREAKER (BREAKER SIZE AND WIRE SIZE AS RECOMMENDED BY MANUFACTURER). LOCATE AS CLOSE AS PRACTICAL TO THE BREAKER WITH A MAXIMUM LEAD OF 3FT.
2. PROVIDE AN ENCLOSED CIRCUIT BREAKER FOR SPD.
3. PROVIDE MINIMUM ENCLOSURE RATING AS INDICATED. NEMA 4X ENCLOSURE MUST BE PROVIDED PER SITE ADAPTATIONS FOR CORROSION PRONE LOCATION AS LISTED IAW UFC 3-501-01, 2-1.11.

PANEL 'MDP'

LOCATION: MECHANICAL ROOM — VOLTAGE: 480/277 V — KAIC: 14 — BUSSING SHALL BE FULLY RATED
MOUNTING: SURFACE — PHASE: 3 P / 4W — CODES: 0=EQPT, 1=RCPT, 2=LTG, 3=A/C, 4=HEAT
ENCLOSURE: NEMA 1 — SYTLE: NF — BUSSING: 150 A — 5=CONTINUOUS MOTORS, 6=LRGST MOTOR, 7=PANEL
BRKR MTG: BOLT-ON (REF: SQUARE D) — MCB: 150 A — ACCESSORIES: GROUND BUS, 42 SPACE
BREAKERS: 75 DEGREE TERMINALS — MLO: A

CODE	BRKR	CIRCUIT USE	CKT	LOAD	A	B	C	LOAD	CKT	CIRCUIT USE	BRKR	CODE
5			1	942	X			12,221	2			5
5	20/3	PWR - BLAST DOOR (2 HP)	3	942		X		12,221	4	PWR - BRIDGE CRANE (25 TON)	125/3	5
5			5	942			X	12,221	6			5
2	20/1	LTG - MAIN MAGAZINE	7	1,044	X			4,157	8			3
2	20/1	LTG - MAIN MAGAZINE	9	1,044		X		4,157	10	BRIDGE CRANE (LIGHT & HVAC)	20/3	3
2	20/1	LTG - MAIN MAGAZINE	11	1,044			X	4,157	12			3
2	20/1	LTG - MECH ROOM	13	300	X			3,436	14			0
2	20/1	LTG - EXTERIOR (TYPE C)	15	162		X		3,436	16	FOLKLIFT BATTERY CHARGER	20/3	0
2	20/1	LTG - EXTERIOR (TYPE D)	17	204			X	3,436	18			0
2	20/1	LTG - LIGHTING CONTACTOR COIL	19	180	X			-	20	SPARE	20/1	
	20/1	SPARE	21	-		X		-	22	SPARE	20/1	
	20/1	SPARE	23	-			X	-	24	SPARE	20/1	
	20/1	SPARE	25	-	X			-	26	SPARE	20/1	
	20/1	SPARE	27	-		X		-	28	SPARE	20/1	
	20/1	SPARE	29	-			X	-	30	SPARE	20/1	
		SPACE	31	-	X			-	32	SPACE		
		SPACE	33	-		X		-	34	SPACE		
		SPACE	35	-			X	-	36	SPACE		
7			37	-	X			-	38			
7	25/3	PANEL 'LP' VIA XFMR 'TLP'	39	-		X		-	40	SPD	30/3	
7			41	-			X	-	42			

	EQPT VA	RCPT VA	LTG VA	AC/HEAT VA	MOTORS	CONN VA	FTL VA	PANEL VA	PHASE AMP
PHASE A	3976	0	1524	4157	13164	22821		26493	96
PHASE B	3796	360	1206	4157	13164	22683		26275	95
PHASE C	3836	0	1248	4157	13164	22405		26008	94
TOTAL	11609	360	3978	12471	39491	67909		78776	

PANEL DEMAND KVA: 78.78 — PANEL DEMAND AMPACITY: 95 AMPS
RESERVE KVA: 15.76 — RESERVE AMPACITY: 14 AMPS
DESIGN KVA: 94.53 — DESIGN AMPACITY: 109 AMPS

PANEL 'LP'

LOCATION: MECHANICAL ROOM — VOLTAGE: 208/120 V — KAIC: 10 — BUSSING SHALL BE FULLY RATED
MOUNTING: SURFACE — PHASE: 3 P / 4W — CODES: 0=EQPT, 1=RCPT, 2=LTG, 3=A/C, 4=HEAT
ENCLOSURE: NEMA 1 — STYLE: NQOD — BUSSING: 100 A — 5=CONTINUOUS MOTORS, 6=LRGST MOTOR, 7=PANEL
BRKR MTG: BOLT-ON (REF: SQUARE D) — MCB: 60 A — ACCESSORIES: GROUND BUS, 42 SPACE
BREAKERS: 75 DEGREE TERMINALS — MLO: A

CODE	BRKR	CIRCUIT USE	CKT	LOAD	A	B	C	LOAD	CKT	CIRCUIT USE	BRKR	CODE
	20/1	SPARE	1	360	X			180	2	BLAST DOOR CONTROL PANEL	20/1	0
1	20/1	RECEPT - MECH ROOM	3	360		X		360	4	IDS SYSTEM PANEL	20/1	0
0	20/1	EQPT - IT CABINET	5	400			X		6	SPARE	20/1	
	20/1	SPARE	7		X				8	SPARE	20/1	
	20/1	SPARE	9			X			10	SPARE	20/1	
	20/1	SPARE	11				X		12	SPARE	20/1	
	20/1	SPARE	13		X				14	SPARE	20/1	
	20/1	SPARE	15			X			16	SPARE	20/1	
	20/1	SPARE	17				X		18	SPARE	20/1	
	20/1	SPARE	19		X				20	SPARE	20/1	
	20/1	SPARE	21			X			22	SPARE	20/1	
	20/1	SPARE	23				X		24	SPARE	20/1	
	20/1	SPARE	25		X				26	SPARE	20/1	
	20/1	SPARE	27			X			28	SPARE	20/1	
	20/1	SPARE	29				X		30	SPARE	20/1	
		SPACE	31		X				32	SPACE		
		SPACE	33			X			34	SPACE		
		SPACE	35				X		36	SPACE		
		SPACE	37		X				38			
		SPACE	39			X			40	SPD	30/3	
		SPACE	41				X		42			

	EQPT VA	RCPT VA	LTG VA	AC/HEAT VA	MOTORS	CONN VA	FTL VA	PANEL VA	PHASE AMP
PHASE A	540	0	0	0	0	540		540	5
PHASE B	360	360	0	0	0	720		720	6
PHASE C	400	0	0	0	0	400		400	3
TOTAL	1300	360	0	0	0	1660		1660	

PANEL DEMAND KVA: 1.66 — PANEL DEMAND AMPACITY: 5 AMPS
RESERVE KVA: 0.33 — RESERVE AMPACITY: 1 AMPS
DESIGN KVA: 1.99 — DESIGN AMPACITY: 5 AMPS

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES KL | DRW FO | CHK PKD
PM/DM
BRANCH MANAGER
CHIEF ENG/ARCH
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND-ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL ONE-LINE

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877655
SHEET 46 OF 51

E-601

DRAWFORM REVISION: 00 MONTH 2020

LIGHTING FIXTURE SCHEDULE

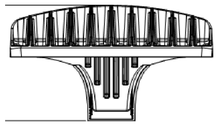
MARK	DESCRIPTION	MOUNTING TYPE/HEIGHT	LAMP TYPE	INPUT VA	COLOR TEMPERATURE	CRI	VOLTAGE	LUMINAIRE PLATE NUMBER
A	LED ARCHWAY PASSAGE FROSTED POLYCARBONATE ENCLOSURE 3500K 80 CRI 15000LM	STEM	LED	115 VA	3500 K	80	277 V	NL-11
B	LED ARCHWAY PASSAGE FROSTED POLYCARBONATE ENCLOSURE 3500K 80 CRI 6000LM	SURFACE	LED	50 VA	3500 K	80	277 V	NL-11
C	LED SINGLE-PIECE DIE-CAST ALUMINUM HOUSING 7000LM	WALL	LED	54 VA	4000 K	70	277 V	XL-17
D	LED DIE-CAST ALUMINUM HOUSING 12000LM	WALL	LED	102 VA	4000 K	70	277 V	XL-21

LUMINAIRE REQUIREMENTS:

1. HOUSING - FIBERGLASS OR FIBERGLASS-REINFORCED POLYESTER OUTER HOUSING, WITH ALUMINUM COMPONENT TRAY AND HEAT SINK. OPTIONAL LENGTHS OF 4FT OR 8FT.
2. LENS - IMPACT-RESISTANT ACRYLIC OR OPTIONAL POLYCARBONATE, WITH CONTINUOUS CLOSED-CELL POLYURETHANE GASKET, SECURED WITH STAINLESS STEEL OR POLYCARBONATE LATCHES.
3. LIGHT SOURCE - SOLID STATE LEDS WITH MINIMUM 50K HOURS RATED LIFE AT L70, 3500K CCT UON, MINIMUM 80 CRI, MAXIMUM 4-STEP MCADAM ELLIPSE BINNING TOLERANCE FOR COLOR CONSISTENCY, AND MINIMUM EFFICACY OF 100 LUMENS/WATT.INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, < 20% TOTAL HARMONIC DISTORTION. ON-OFF CONTROL, STEP-DIMMABLE OR FULLY DIMMABLE AS INDICATED.
5. CERTIFICATION - UL 1598, WET LOCATION (IP65, IP66, IP67), DLC QUALIFIED, AND ROHS COMPLIANT. COMPLIES WITH LM79, LM80 AND TM21 TESTING STANDARDS. UL 924 WHEN EQUIPPED WITH EMERGENCY BATTERY BACK-UP.
6. MOUNTING - SURFACE-MOUNTED OR SUSPENDED FROM CEILING.
7. OPTIONS - EMERGENCY BACK-UP.
8. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LED ENCLOSED AND GASKETED

REVISED: APRIL 2016 | LIGHTING PLATE: NL-11



LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST OR EXTRUDED ALUMINUM WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK MUST BE INCORPORATED DIRECTLY INTO HOUSING OR DRIVER COMPARTMENT TO ENSURE MAXIMUM HEAT TRANSFER AND DISSIPATION.
2. FINISH - MULTI-STAGE PRE-TREATMENT, FINISHED WITH BAKED-ON POLYESTER POWDER COAT. FINISH MUST PASS 2500 HOUR SALT SPRAY TEST PER ASTM B117. STANDARD FINISH IS DARK BRONZE, WITH OTHER CUSTOM COLORS AVAILABLE.
3. POWER SUPPLY/LED DRIVER - CLASS 1 DRIVER MUST OPERATE AT 120/277 VOLTS, 50/60 HZ, WITH OTHER VOLTAGES OPTIONAL; POWER FACTOR GREATER THAN 0.9 AND THD LESS THAN 20% AT FULL LOAD. MINIMUM EFFICACY MUST BE 60 LM/W AT MAXIMUM 600mA OPERATING CURRENT.
4. LED OPTICAL ASSEMBLY - PRECISION MOLDED ACRYLIC LENS PROVIDED FOR MULTIPLE HIGH-POWERED LEDS PRODUCING NEMA TYPE III DISTRIBUTION OR AS OTHERWISE INDICATED. BUG UPLIGHT RATING OF U0, WITH GLARE RATING AS DETERMINED BY LIGHTING ZONE INSTALLED. MINIMUM COLOR RENDERING INDEX (CRI) MUST BE 70 FOR CORRELATED COLOR TEMPERATURE (CCT) OF 4000-4500 DEGREES K.
5. CERTIFICATION - UL AND/OR ETL LISTED FOR DAMP OR WET LOCATIONS AS INDICATED, AND RoHS COMPLIANT.
6. OPTIONS - VARIOUS LUMEN OUTPUT RATING AS INDICATED, AND 0-10 VOLT DIMMING DRIVER.
7. OTHER - THE ABOVE SKETCH IS A NON-PROPRIETY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS AND IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER'S PREFERENCE. ALL DIMENSIONS ARE NOMINAL AND VARY PER MANUFACTURER. MANUFACTURER'S PREFERENCE. ALL DIMENSIONS ARE NOMINAL AND VARY PER MANUFACTURER.

LED WALL PACK

REVISED: MARCH 2013 | LUMINAIRE PLATE: XL-17

LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE CAST ALUMINUM WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK MUST BE INCORPORATED DIRECTLY INTO HOUSING TO ENSURE MAXIMUM HEAT TRANSFER AND DISSIPATION.
2. FINISH - MULTI-STAGE PRE-TREATMENT, FINISHED WITH BAKED-ON POLYESTER POWDER COAT. FINISH MUST PASS 2500 HOUR SALT SPRAY TEST PER ASTM B117. DARK BRONZE FINISH COLOR IS STANDARD.
3. POWER SUPPLY/LED DRIVER - CLASS 1 ELECTRONIC DRIVER MUST OPERATE AT 120/277 VOLTS, 50/60 HZ, WITH OTHER VOLTAGES OPTIONAL. POWER FACTOR MUST BE GREATER THAN 0.9 AND THD LESS THAN 20% AT FULL LOAD. MINIMUM EFFICACY MUST BE 60 LM/W AT MAXIMUM 600mA OPERATING CURRENT.
4. LED OPTICAL ASSEMBLY - MULTI-LED ARRAY OPTIMIZED FOR SPECIFIC DISTRIBUTION PATTERN AS INDICATED. MINIMUM COLOR RENDERING INDEX (CRI) OF 70 FOR CORRELEATED COLOR TEMPERATURE OF 4000-4500 DEGREES K.
5. LENS - TEMPERED GLASS IN DIE-CAST ALUMINUM FRAME WITH SILICONE GASKET.
6. SURGE PROTECTION - 6 KV MINIMUM, COMPLIANT WITH ANSI C62.41.2.
7. CERTIFICATION - UL AND/OR ETL LISTED FOR WET LOCATIONS AND 2G VIBRATION STANDARD PER ANSI C136.32. OPTICAL ASSEMBLY MUST BE MINIMUM IP65 PER ANSI/IEC 60529.
8. OPTIONS - FINISH COLOR, OUTPUT DISTRIBUTION TYPE AND TRUNNION OR SLIPFITTER TYPE MOUNTING.
9. OTHER - THE ABOVE SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS AND IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER'S PREFERENCE. ALL DIMENSIONS ARE NOMINAL AND VARY PER MANUFACTURER.

LED FLOOD LUMINAIRE

REVISED: MARCH 2013 | LUMINAIRE PLATE: XL-21

APPR | DATE | DESCRIPTION | SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PM/DM	--
BRANCH MANAGER	--
CHIEF ENG/ARCH	--
FIRE PROTECTION	--

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

ELECTRICAL SCHEDULES

SCALE: NONE

EPROJECT NO.:

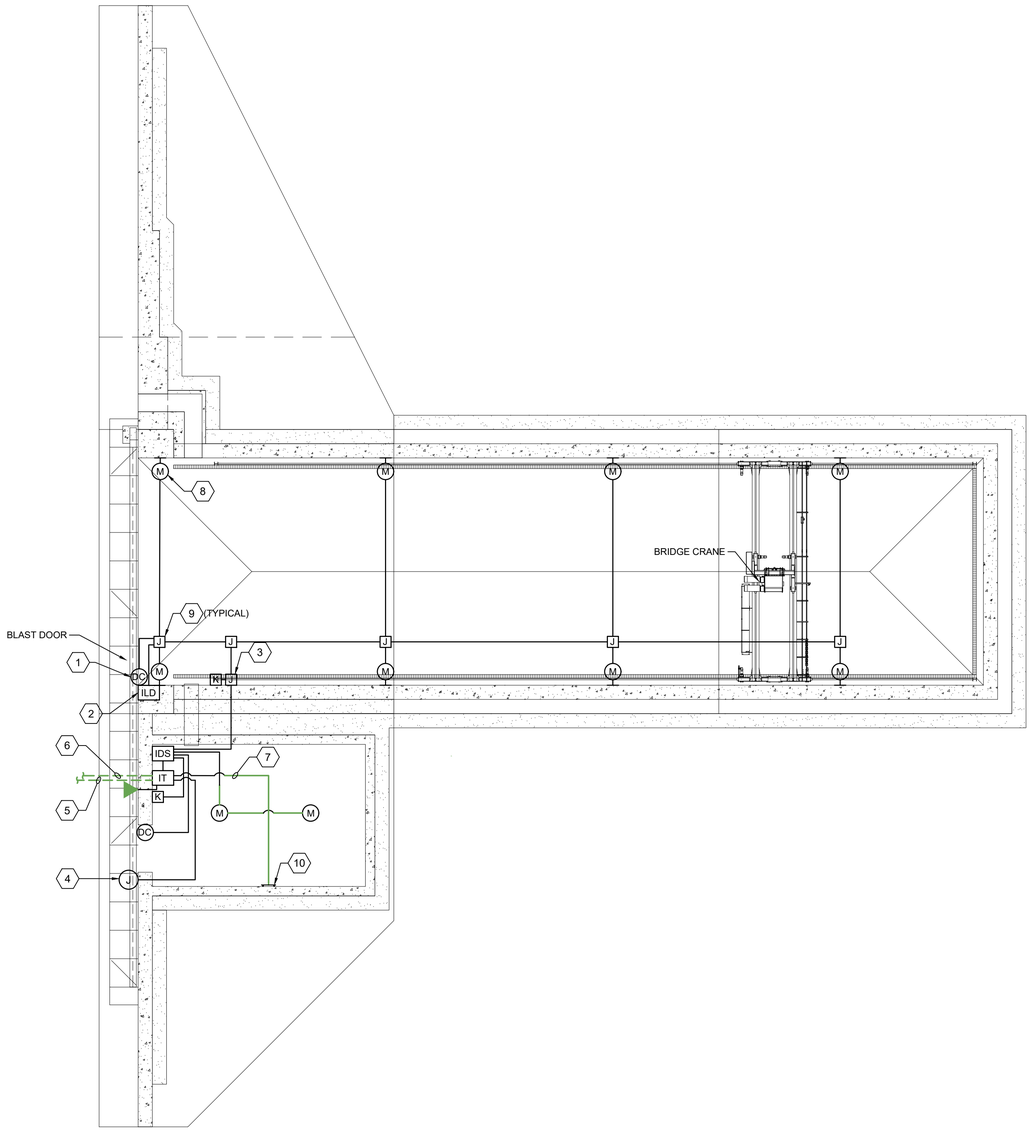
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877656

SHEET 47 OF 51

E-602

DRAWFORM REVISION: 00 MONTH 2020



A1 TELECOMMUNICATION FLOOR PLAN - 119'-0" LENGTH
SCALE: 3/32" = 1'-0"

LEGEND

DC	HIGH SECURITY BMS DOOR CONTACT
K	KEYPAD
M	MOTION DETECTOR, CEILING MOUNTED
M	MOTION DETECTOR, WALL MOUNTED
J	RECESSED JUNCTION BOX
J	SURFACE JUNCTION BOX
IDS	IDS CONTROLLER
IT	IT CABINET
▼	PHONE OUTLET, SEE DETAIL C2/T501

SHEET NOTES

1. ALL CONDUIT MUST BE RIGID GALVANIZED STEEL CONDUIT UNLESS INDICATED OTHERWISE.
2. EXPOSED CONDUITS ON EXTERIOR WALLS MUST BE PROHIBITED.
3. ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
4. ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
5. PROPOSED IDS VENDOR TO PERFORM COVERAGE CALCULATIONS, INCLUDING OBSTRUCTIONS, TO VERIFY QUANTITY AND LOCATION OF MOTION DETECTORS IN THE ECM AND MECHANICAL ROOM. FINAL LOCATIONS AND QUANTITIES OF MOTION DETECTORS TO BE INSTALLED PER IDS VENDOR SHOP DRAWINGS.
6. ALL CONDUITS WILL BE MINIMUM 1"C UNLESS NOTED OTHERWISE. REFER TO T601 FOR CONDUIT SIZES.
7. CONDUITS WILL BE EXPOSED INSIDE THE MAGAZINE AND MECHANICAL ROOM UNLESS INDICATED OTHERWISE. LOCATE CONDUITS AS HIGH AS POSSIBLE AND COORDINATE ROUTING WITH OTHER TRADES AND BRIDGE CRANE.

KEYED NOTES

1. DOOR CONTACT FOR ECM DOOR. COORDINATE WITH DOOR MANUFACTURER FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS. COORDINATE WITH THE CONTRACTING OFFICER FOR THE CONNECTION OF THE BALANCED MAGNETIC SWITCH (BMS) ON THE DOOR.
2. PROVIDE IDS CONNECTION TO THE ECM DOOR INTERNAL LOCKING DEVICE (ILD). COORDINATE WITH THE CONTRACTING OFFICER FOR THE CONNECTION OF THE ILD TO THE IDS SYSTEM BY NIWC.
3. 8"x8"x4" JUNCTION BOX FOR ECM IDS COMPONENTS. PROVIDE 2" PVC-COATED RGC TO MECHANICAL ROOM FOR IDS WIRING.
4. RECESSED ROUGH-IN FOR FUTURE CCTV CAMERA. PROVIDE 1" HOMERUN TO IT CABINET.
5. EXTEND TWO 1-1/2" CONDUITS TO SITE POLE, LOCATION TO BE DETERMINED THROUGH COORDINATION WITH BASE SSO AND COMM SQUADRON, FOR PoE IP CAMERA AND PoE WIRELESS ACCESS POINT. POLE LOCATION AND CONDUIT ROUTE WILL BE LIMITED BY MAXIMUM CABLE LENGTH OF 295' FROM PATCH PANEL TO DEVICE. REFER TO DETAIL C1/T501 AND A1/T603.
6. EXTEND TWO 4" CONDUITS TO NEAREST TELECOMM MANHOLE.
7. HOMERUN TO SERVICE GROUNDING BAR.
8. THE FIRST PAIR OF MOTION DETECTORS WILL BE INSTALLED 3' FROM THE INSIDE FACE OF THE MAGAZINE DOOR. ADDITIONAL PAIRS OF MOTION DETECTORS WILL BE EVENLY SPACED FOR COVERAGE OF THE INTERIOR SPACE, APPROXIMATELY 32' ON CENTER. MOTION DETECTORS WILL BE LOCATED ABOVE THE BRIDGE CRANE RAILS.
9. SURFACE MOUNT ON BOTTOM OF STRUCTURAL CEILING. J-BOX LOCATIONS AND CONDUIT ROUTING TO BE COORDINATED WITH ALL TRADES AND BRIDGE CRANE TRAVEL.
10. GROUND BAR. REFER TO E101A.

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 28 MAR 2023
ACTIVITY

SATISFACTORY TO DATE

DES: KL	DRW: GC	CHK: PKD

PM/DM
BRANCH MANAGER
CHIEF ENG/ARCH
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

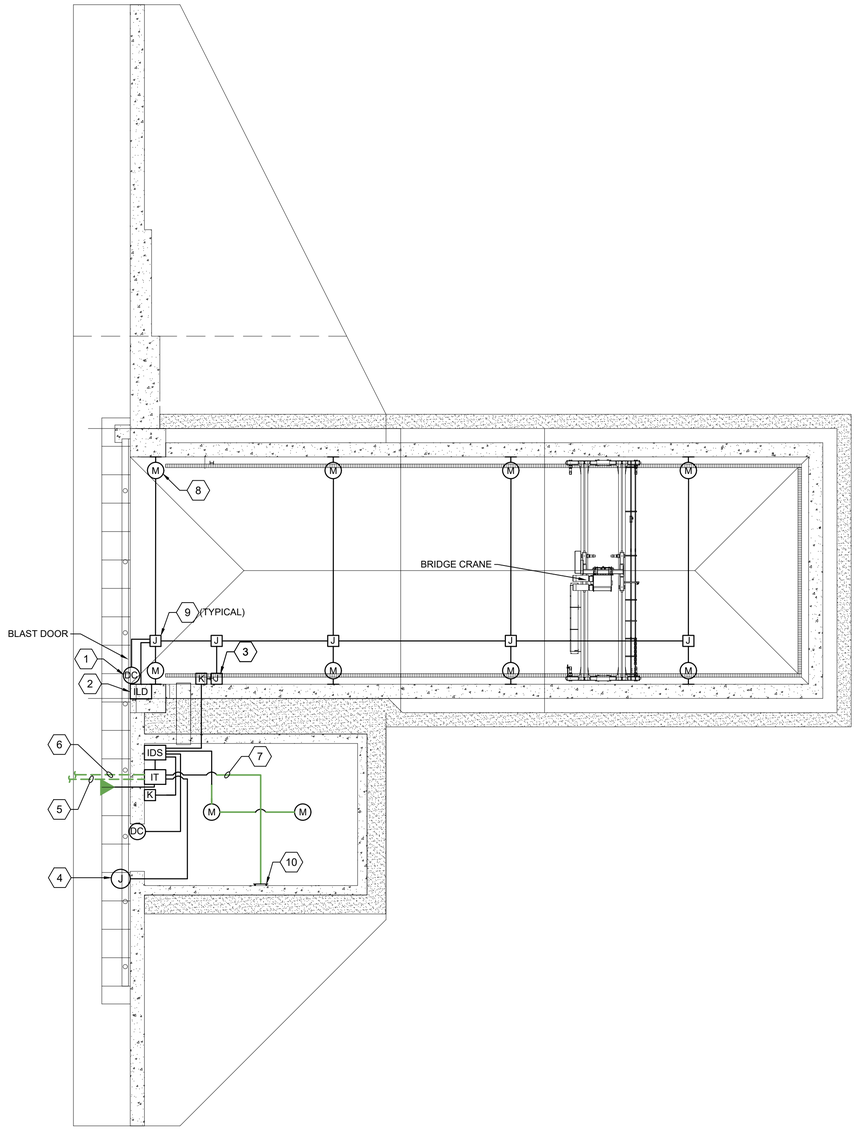
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

TELECOMMUNICATION FLOOR PLAN A

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877657
SHEET 48 OF 51

T101A

DRAWFORM REVISION: 00 MONTH 2020



A1 TELECOMMUNICATION FLOOR PLAN - 95'-6" LENGTH
SCALE: 3/32" = 1'-0"

SHEET NOTES

1. ALL CONDUIT MUST BE RIGID GALVANIZED STEEL CONDUIT UNLESS INDICATED OTHERWISE.
2. EXPOSED CONDUITS ON EXTERIOR WALLS MUST BE PROHIBITED.
3. ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
4. ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
5. PROPOSED IDS VENDOR TO PERFORM COVERAGE CALCULATIONS, INCLUDING OBSTRUCTIONS, TO VERIFY QUANTITY AND LOCATION OF MOTION DETECTORS IN THE ECM AND MECHANICAL ROOM. FINAL LOCATIONS AND QUANTITIES OF MOTION DETECTORS TO BE INSTALLED PER IDS VENDOR SHOP DRAWINGS.
6. ALL CONDUITS WILL BE MINIMUM 1"C UNLESS NOTED OTHERWISE. REFER TO T601 FOR CONDUIT SIZES.
7. CONDUITS WILL BE EXPOSED INSIDE THE MAGAZINE AND MECHANICAL ROOM UNLESS INDICATED OTHERWISE. LOCATE CONDUITS AS HIGH AS POSSIBLE AND COORDINATE ROUTING WITH OTHER TRADES AND BRIDGE CRANE.

KEYED NOTES

1. DOOR CONTACT FOR ECM DOOR. COORDINATE WITH DOOR MANUFACTURER FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS. COORDINATE WITH THE CONTRACTING OFFICER FOR THE CONNECTION OF THE BALANCED MAGNETIC SWITCH (BMS) ON THE DOOR.
2. PROVIDE IDS CONNECTION TO THE ECM DOOR INTERNAL LOCKING DEVICE (ILD). COORDINATE WITH THE CONTRACTING OFFICER FOR THE CONNECTION OF THE ILD TO THE IDS SYSTEM BY NIWC.
3. 8"X8"X4" JUNCTION BOX FOR ECM IDS COMPONENTS. PROVIDE 2" PVC-COATED RGC TO MECHANICAL ROOM FOR IDS WIRING.
4. RECESSED ROUGH-IN FOR FUTURE CCTV CAMERA. PROVIDE 1" HOMERUN TO IT CABINET.
5. EXTEND TWO 1-1/2" CONDUITS TO SITE POLE, LOCATION TO BE DETERMINED THROUGH COORDINATION WITH BASE SSO AND COMM SQUADRON, FOR POE IP CAMERA AND POE WIRELESS ACCESS POINT. POLE LOCATION AND CONDUIT ROUTE WILL BE LIMITED BY MAXIMUM CABLE LENGTH OF 295' FROM PATCH PANEL TO DEVICE. REFER TO DETAIL C1/T501 AND A1/T603.
6. EXTEND TWO 4" CONDUITS TO NEAREST TELECOMM MANHOLE.
7. HOMERUN TO SERVICE GROUNDING BAR.
8. THE FIRST PAIR OF MOTION DETECTORS WILL BE INSTALLED 3' FROM THE INSIDE FACE OF THE MAGAZINE DOOR. ADDITIONAL PAIRS OF MOTION DETECTORS WILL BE EVENLY SPACED FOR COVERAGE OF THE INTERIOR SPACE, APPROXIMATELY 25' ON CENTER. MOTION DETECTORS WILL BE LOCATED ABOVE THE BRIDGE CRANE RAILS.
9. SURFACE MOUNT ON BOTTOM OF STRUCTURAL CEILING. J-BOX LOCATIONS AND CONDUIT ROUTING TO BE COORDINATED WITH ALL TRADES AND BRIDGE CRANE TRAVEL.
10. GROUND BAR. REFER TO E101A.

APPR	DATE	DESCRIPTION	SYM

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023
ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	GC	CHK	PKD

PM/CM	---
BRANCH MANAGER	---
CHIEF ENG/ARCH	---
FIRE PROTECTION	---

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

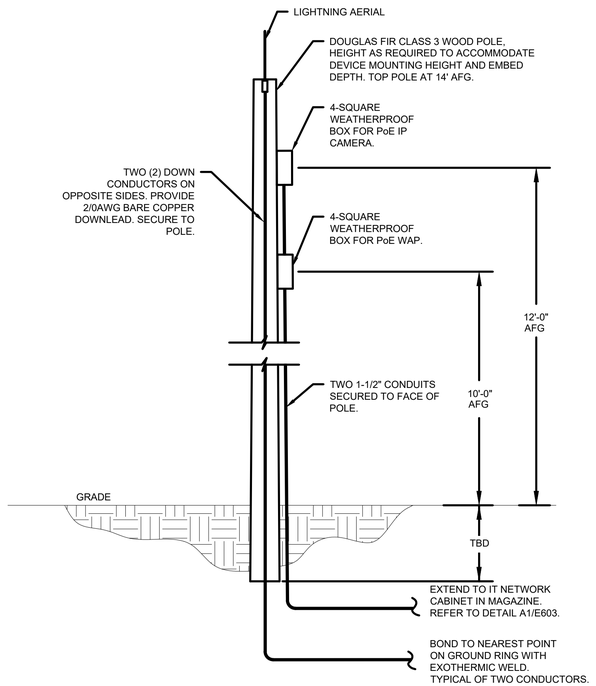
CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

TELECOMMUNICATION FLOOR PLAN B

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877658
SHEET 49 OF 51

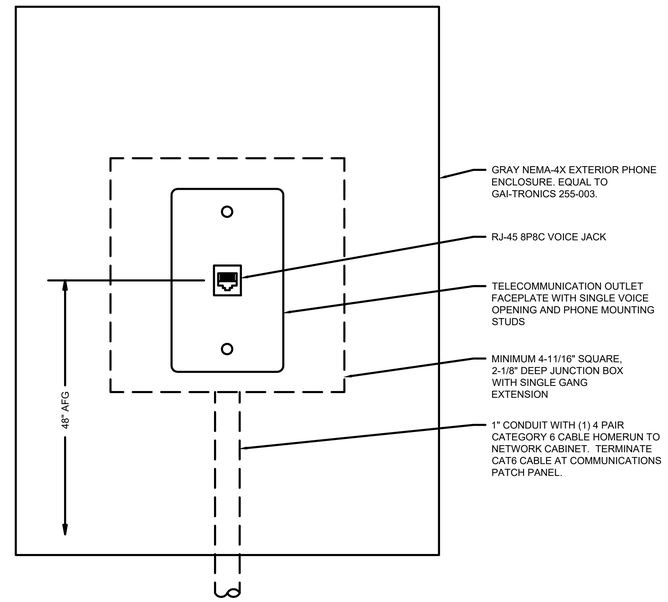
T101B

DRAWFORM REVISION: 00 MONTH 2020



C1 POLE FOR SITE CAMERA AND WAP

SCALE: NO SCALE



SYMBOL: ▼

C2 VOICE WALL OUTLET

SCALE: NO SCALE

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens

FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	GC	CHK	PKD

PM/DM	- -
BRANCH MANAGER	- -
CHIEF ENG/ARCH	- -
FIRE PROTECTION	- -

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

TELECOMMUNICATION DETAILS

SCALE: NONE

EPROJECT NO.:

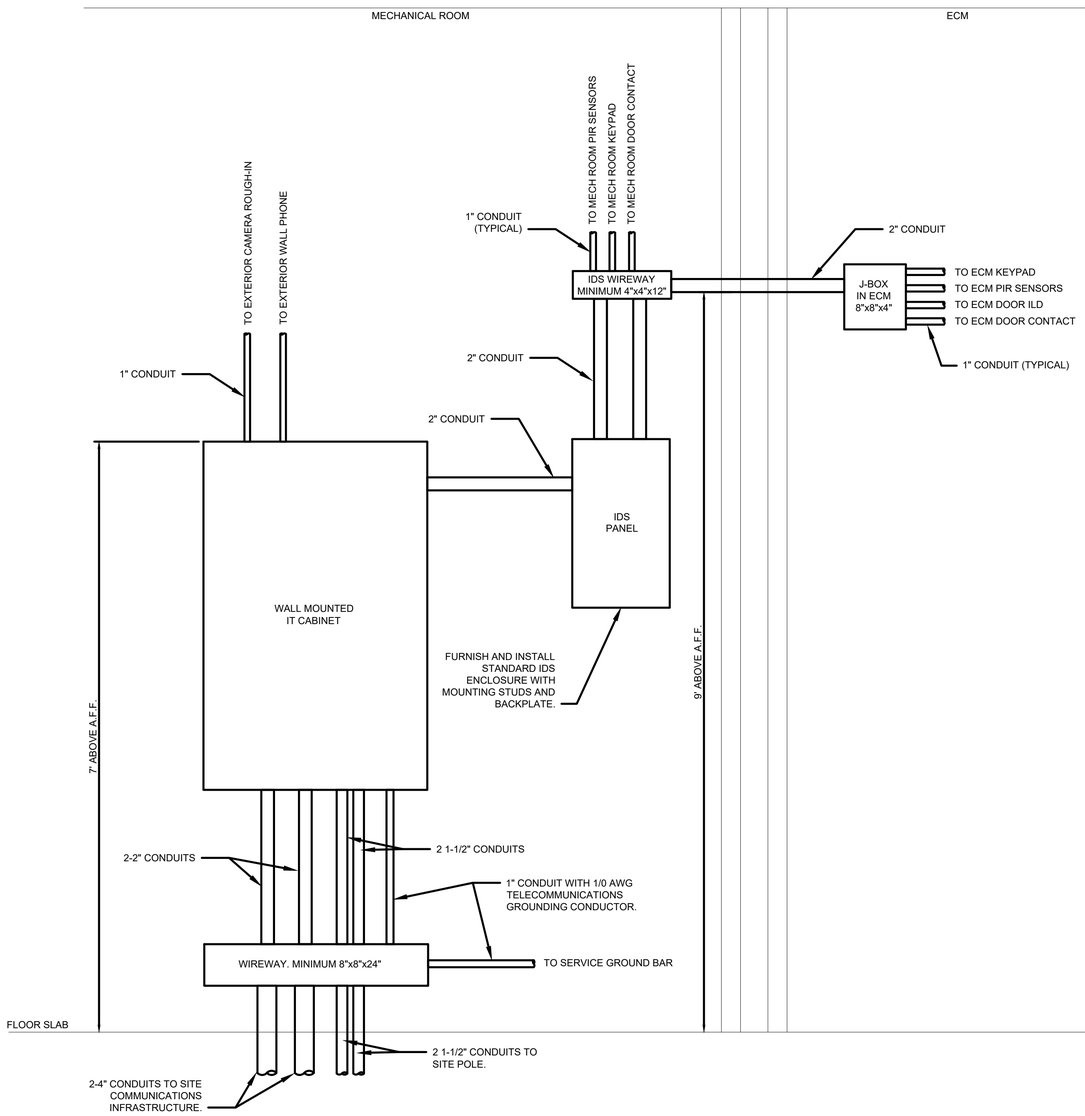
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12877659

SHEET 50 OF 51

T-501

DRAWFORM REVISION: 00 MONTH 2020



A1 TELECOMMUNICATION AND SECURITY RISER
SCALE: NO SCALE

APPR	DATE	DESCRIPTION	SYM

NAVFAC

SEAL

A/E INFO

APPROVED
Rick Stephens
FOR COMMANDER NAVFAC 20 MAR 2023

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	GC	CHK	PKD

PM/DM	
BRANCH MANAGER	
CHIEF ENG/ARCH	
FIRE PROTECTION	

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL SUPPORT ACTIVITY

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND- ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE

TELECOMMUNICATION AND SECURITY RISER DIAGRAM

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
12877660
SHEET 51 OF 51

T-601

DRAWFORM REVISION: 00 MONTH 2020