

GENERAL:

- 1. THESE CONSTRUCTION DOCUMENTS ARE CONSTRUCTION STANDARDS FOR THE NAVY CLWS DOUBLE BAY 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 NAVY INFORMATION WARFARE CENTER.

DESIGN CRITERIA:

- 1. THE STRUCTURAL DESIGN AND CONSTRUCTION MUST COMPLY WITH THE FOLLOWING GOVERNMENT STANDARDS:
• UFC 1-200-01, "DESIGN: GENERAL BUILDING REQUIREMENTS"
• FC 1-300-09N, "NAVY AND MARINE CORPS DESIGN PROCEDURES"
2. DESIGN LOADS:
THE FOLLOWING LOADS WERE USED AS BASIS OF DESIGN:
A. DEAD LOADS: ACTUAL WEIGHT
a. SOIL: 120 PCF
B. LIVE LOADS: 20 PSF
a. CANOPY ROOF: 100 PSF
b. ROOF: 100 PSF
c. MAGAZINE FLOOR: 32K (HS 20-44 AXLE)
70.5K (SIDELOADER AXLE)
15K (FORKLIFT AXLE)
31K (CPS CONTAINER EACH)
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: Ss = 2.79g
S1 = 0.68g
E. SITE CLASS: D
5. SNOW DESIGN DATA:
A. GROUND SNOW LOAD: 45
B. EXPOSURE FACTOR: 1.0 PSF
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:

Table with 4 columns: MEMBER, PEAK PRESSURE, IMPULSE, DURATION. Rows include HEAD WALL AND DOOR with values 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.

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 INCH
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. STRUCTURAL DRAWINGS INDICATE GENERAL SOG AND FOUNDATION PREPARATION. SEE PROJECT SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.
6. 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.
7. EXPANSIVE SOILS MUST NOT BE USED FOR BACKFILL OR FILL. BACKFILL AT RETAINING WALLS MUST CONFORM TO THE PROJECT SPECIFICATIONS.
8. 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.
9. CONTRACTOR MUST PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER AND SEEPAGE.
10. CONTRACTOR MUST PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEETING, AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANKS.
11. EXCAVATION FOR FOUNDATIONS MUST BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO PLACING THE REINFORCING AND CONCRETE.
12. SHALLOW FOOTING FOUNDATIONS MUST BE PLACED AND INSTALLED IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS PREPARED FOR THE PROJECT.
13. 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.
14. 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 CONCRETE MUST CONFORM TO THE ACI BUILDING CODE (ACI 318) AND THE FOLLOWING CODES AND STANDARD SPECIFICATIONS:
A. CONCRETE MIXING: ASTM C94
B. CONCRETE PLACEMENT: ASTM C304
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 YPE 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 TO WEATHER FOR 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-003 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-003.
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.
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 FOR STEEL AND E308L FOR STAINLESS STEEL. 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.
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.

STRUCTURAL STEEL (CONT.):

- 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 UNLESS APPROVED IN WRITING BY THE CONTRACTING OFFICER.
10. GROUT BELOW BASE PLATES WITH NON-SHRINK GROUT WITH MINIMUM COMPRESSIVE STRENGTH: 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. SECURITY PILASTER AND ALL OTHER VERTICAL AND HORIZONTAL DOOR BEARING SURFACES MUST HAVE A ±1/4" MAX TOTAL TOLERANCE.

STRUCTURAL ABBREVIATIONS:

Table with 4 columns: Abbreviation, Description, Abbreviation, Description. Includes terms like AB ADD'L ANCHOR BOLT ADDITIONAL, ALT ALTERNATE, APPROX APPROXIMATE, ARCH ARCHITECTURAL, etc.

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

- 1. EDIT UFGS 01 45 35 "SPECIAL INSPECTIONS" IN ACCORDANCE WITH UFG 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 SPECIFIED IN THE FOUNDATION 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 #8.
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.

Administrative and identification block containing: APPROVED, DATE, DESCRIPTION, SEAL, A/E INFO, FIR COMMANDER NAVFAC, ACTIVITY, Satisfactory to, DATE, DES JAF, DRW SFF, CHK TPH, PMDM, BRANCH MANAGER, CHIEF ENGINEER, FIRE PROTECTION, DEPARTMENT OF THE NAVY, NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC, HAMPTON ROADS, VIRGINIA, CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE, GENERAL NOTES - 1, SCALE: NONE, EPROJCT NO.: 1644867, CONSTR CONTR. NO., NAVFAC DRAWING NO.: 12905821, SHEET 2 OF 51, S-001, DRAWFORM REVISION: 25 AUGUST 2020.

SPECIAL INSPECTION SCHEDULE/ VERIFICATION

Table with 4 columns: ITEM, EXTENT OF INSPECTION, REFERENCE, COMMENT/ SCOPE. Rows include CONCRETE CONSTRUCTION, REINFORCING STEEL PLACEMENT, CONCRETE PLACEMENT, SAMPLING AND TESTING OF CONCRETE, CURING AND PROTECTION, FORMWORK, DOOR CONSTRUCTION, FABRICATOR CERTIFICATION/ QUALITY CONTROL PROCEDURES, FABRICATION INSPECTION, SHOP DEMONSTRATION, SPECIAL ITEMS RELATED TO THE OTHER EXPLOSIVES SAFETY RELATED ITEMS, REBAR FARADAY-SHIELD, ECM GROUNDING, GROUNDING SYSTEM, INDIVIDUAL BONDS, LPS COMPONENTS, LPS TESTING, EARTH COVER, DOOR LAPS, MISCELLANEOUS EMBEDDED AND ATTACHED ITEMS (DOORS, FRAMES, TRENCHES, ETC).

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. 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:

Table: LIGHTWEIGHT CONCRETE MIX DESIGN. Columns: MATERIAL, AMOUNT, UNIT, SPECIFIC GRAVITY, ASTM. Rows: 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 ft³), oz*/ 100lb OF CEMENTITIOUS MATERIAL.

Table: LIGHTWEIGHT CONCRETE MATERIAL PROPERTY REQUIREMENTS. Columns: PROPERTY, AMOUNT, UNIT, ASTM. Rows: SLUMP (2 + 1/4 in, C143), MINIMUM DENSITY - UNIT WEIGHT (115 lb/ ft³, 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) OP3. C. FIELD COATINGS: SSPC OP1 + Q51. 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 SP10. 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.

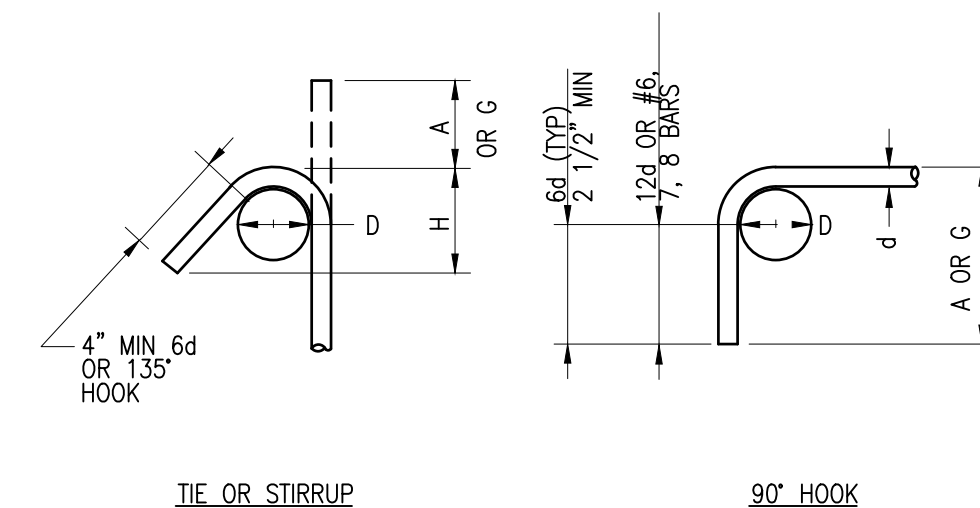
BLAST DOOR NOTES:

- 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 FLOWS 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 FLOWS, 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. 10. MANUFACTURER TO DESIGN AND FURNISH DOOR STOPS AT TRAILING AND LEADING EDGES OF DOOR.

Vertical sidebar containing: NAVFAC logo, SEAL, A/E INFO, APPROVED, FIR COMMANDER NAVFAC, ACTIVITY, SATISFACTORY TO DATE, DES JAF DRW SFF CHK TPH, P/MDM, BRANCH MANAGER, CHIEF ENGINEER, FIRE PROTECTION, DEPARTMENT OF THE NAVY, NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND, NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC, HAMPSON ROUTE, VIRGINIA, CONTAINERIZED LONG WEAPONS STORAGE, NAVY EARTH COVERED MAGAZINE, GENERAL NOTES - 2, SCALE: NONE, EPROJCT NO.: 1644867, CONSTR. CONTR. NO., NAVFAC DRAWING NO.: 12905822, SHEET 3 OF 51, S-002, DRAWING REVISION: 25 AUGUST 2020.

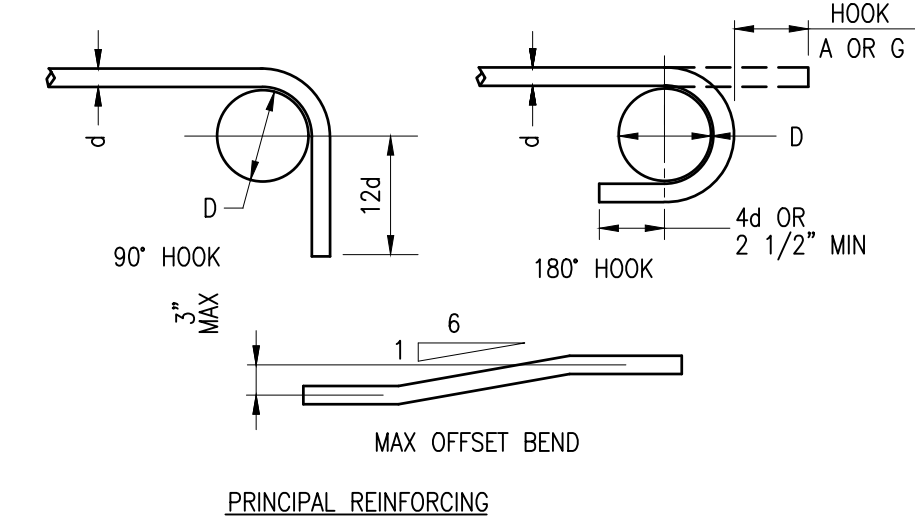
FILE NAME: J:\DCSE\Magazines\@CLM\Magazines_Single_Boy\Submittals\Redesign\01_Final_March_2024\Drawings\S-002.dwg LAYOUT NAME: S-002 - GENERAL NOTES - 2 PLOTTED: Monday, April 22, 2024 - 10:07am USER: phontanenciso

BAR SIZE	MINIMUM TENSION LAP SPlice LENGTHS ("1.3 ") l_d		MINIMUM EMBEDMENT LENGTHS FOR STANDARD END HOOKS (" ") l_{dh}	
	TOP BARS	OTHER BARS	BAR SIZE	$f'_c > 5,000$ PSI
#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



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

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



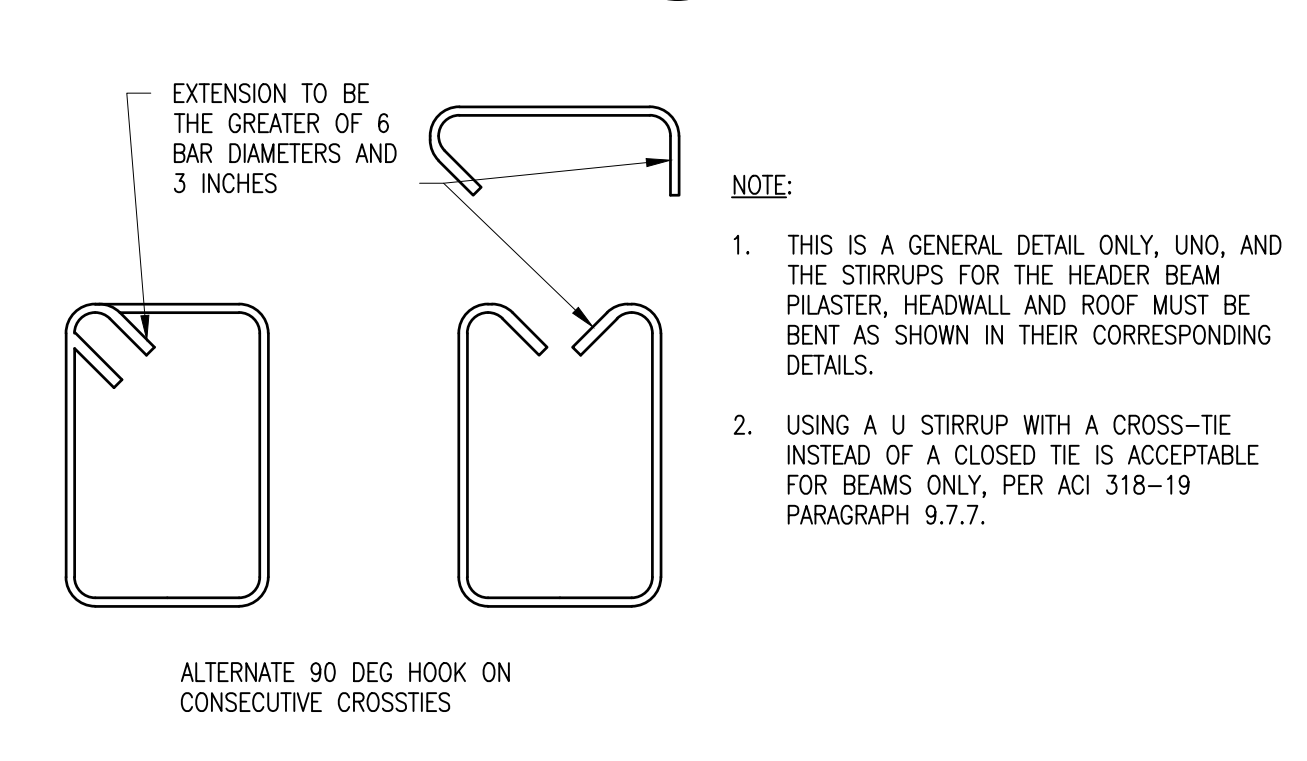
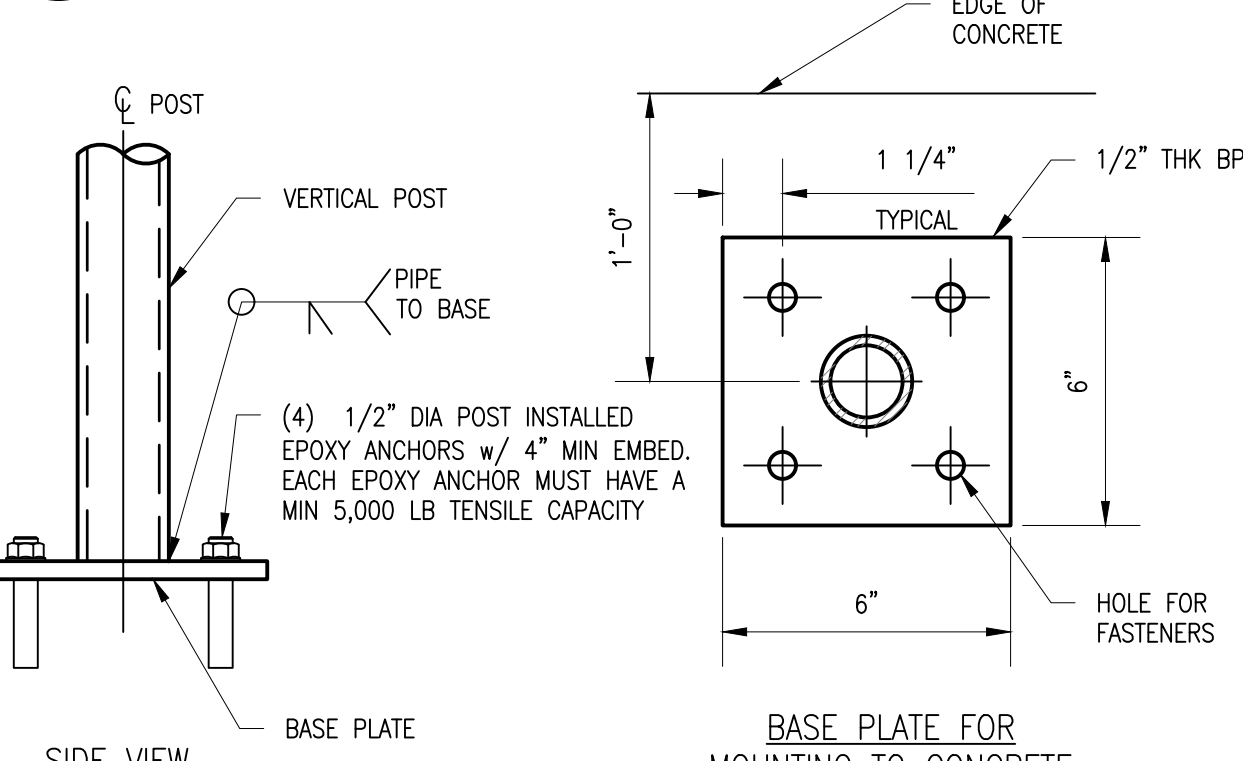
BAR SIZE	DIMENSIONS OF STANDARD 180-DEG HOOKS, ALL GRADE			DIMENSIONS OF STANDARD 90-DEG HOOKS, ALL GRADE	
	A OR G	J	D	A OR G	D
#3	5	3	3	6	3
#4	6	4	3	8	3
#5	7	5	4	10	4
#6	8	6	5	12	5
#7	10	7	6	14	6
#8	11	8	6	16	6
#9	15	12	10	19	10
#10	17	14	11	22	11
#11	19	15	12	24	12

- NOTES:
- 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.
 - "TOP BARS" ARE HORIZONTAL BARS WITH MORE THAN 12 INCH DEPTH OF CONCRETE CAST BELOW THEM.
 - 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%.
 - 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.
 - PER UFC 3-340-02, FOR BLAST COMPONENTS SPLICES OF CONCRETE REINFORCEMENT MUST BE STAGGERED ON OPPOSITE FACES AND SPLICES OF ADJACENT PARALLEL BARS WITHIN THE SAME LAYER MUST BE STAGGERED.

- NOTES:
- 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.
 - EXTEND ADDITIONAL REINFORCING BEYOND EDGE OF OPENING AS SHOWN. ADDITIONAL BARS MAY TERMINATE AT THE END OF THE WALL OR INTO THE SLAB WITH A STANDARD HOOK WHERE THE LENGTH OF THE WALL OR SLAB WILL NOT PERMIT BARS TO EXTEND AS SHOWN.
 - TYPICAL WALL OR SLAB REINFORCING NOT SHOWN FOR CLARITY. TERMINATE TYPICAL REINFORCING 2" CLEAR TO OPENING.
 - ADDITIONAL REINFORCING AS SHOWN 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).

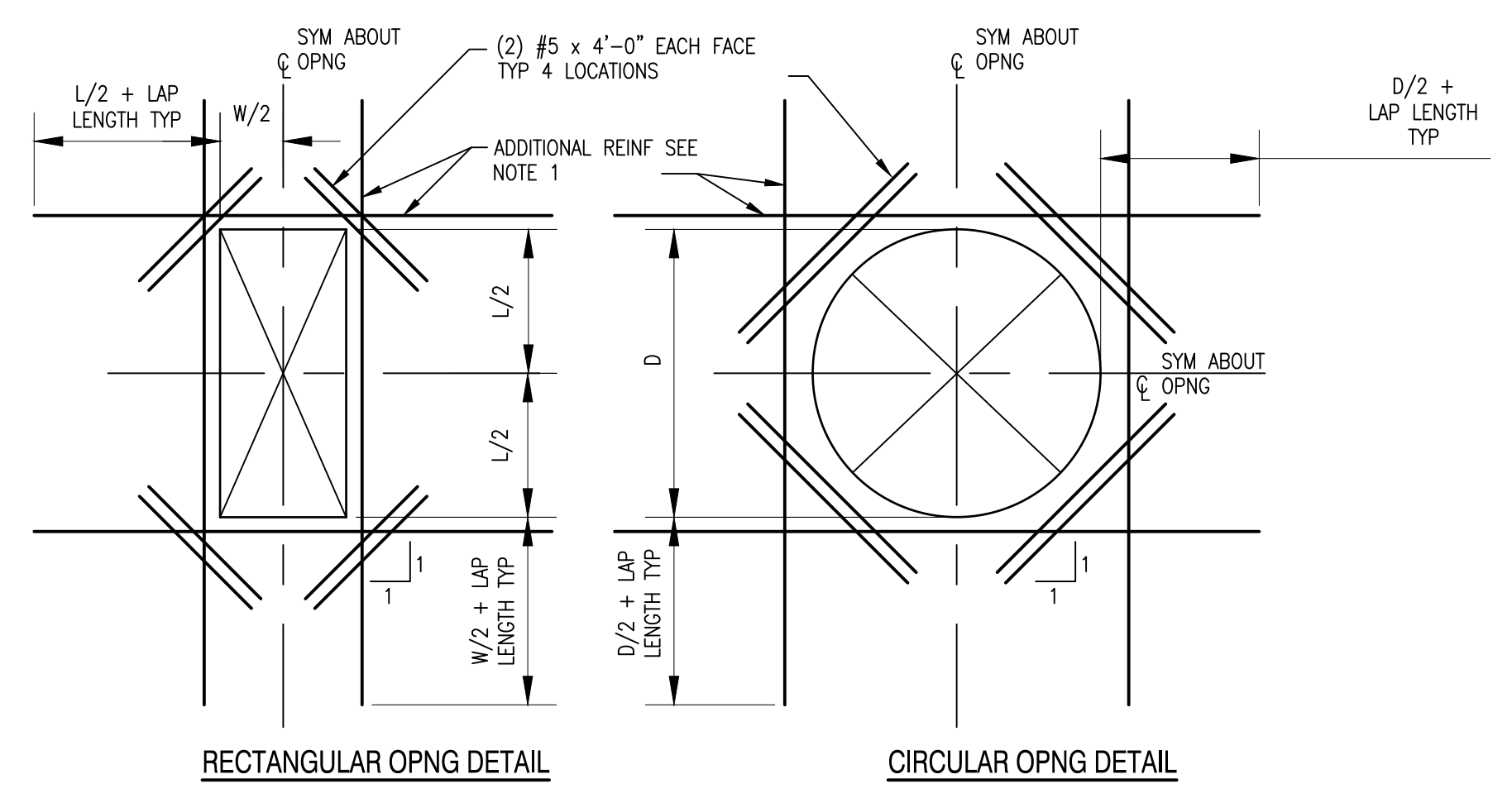
C1 REINFORCEMENT SPLICE SCHEDULE
SCALE: NONE

C2 STIRRUP AND TIE HOOK DIMENSIONS
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.

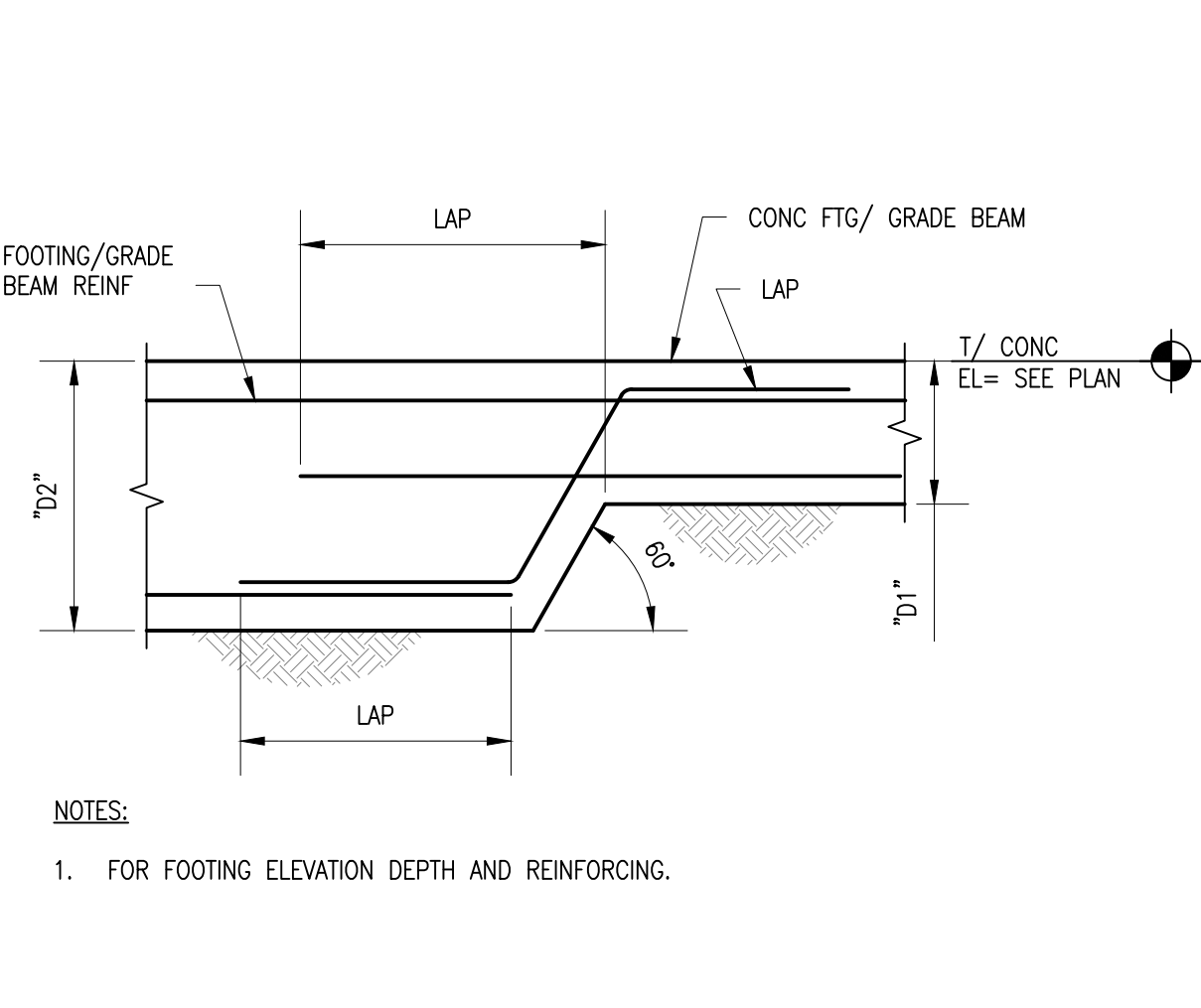
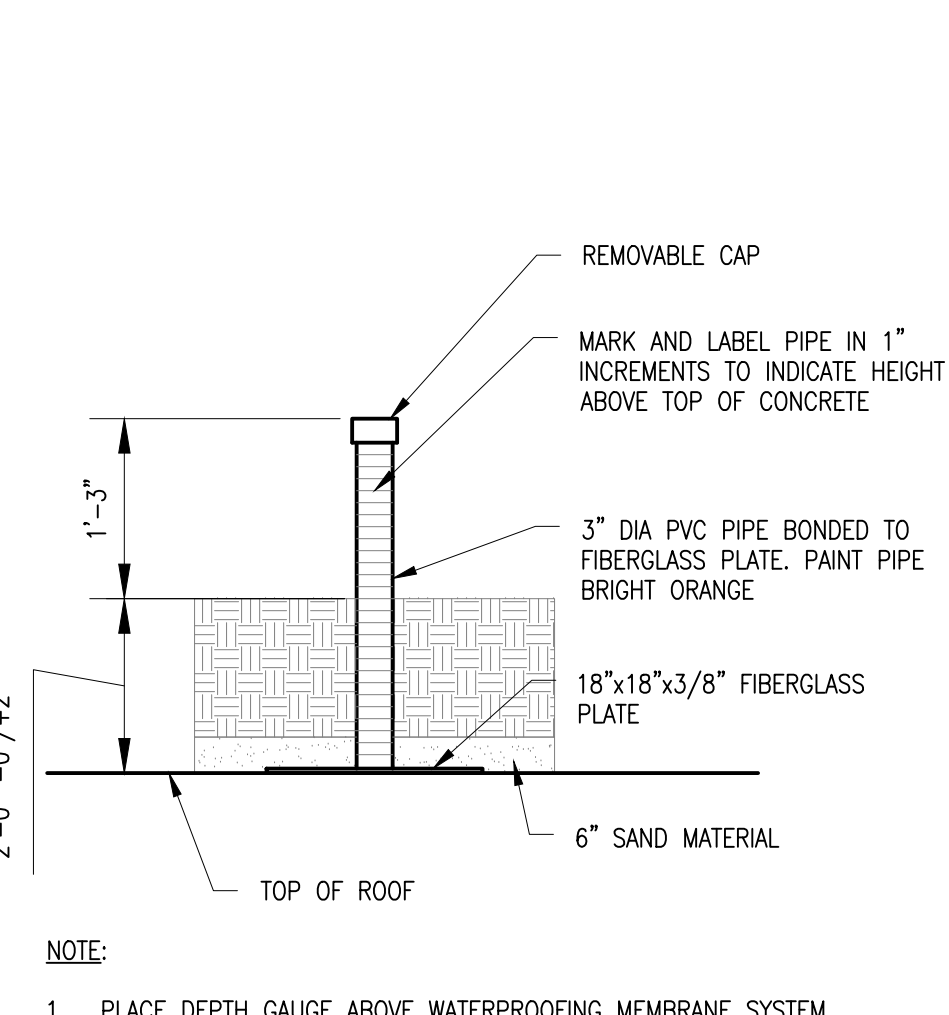
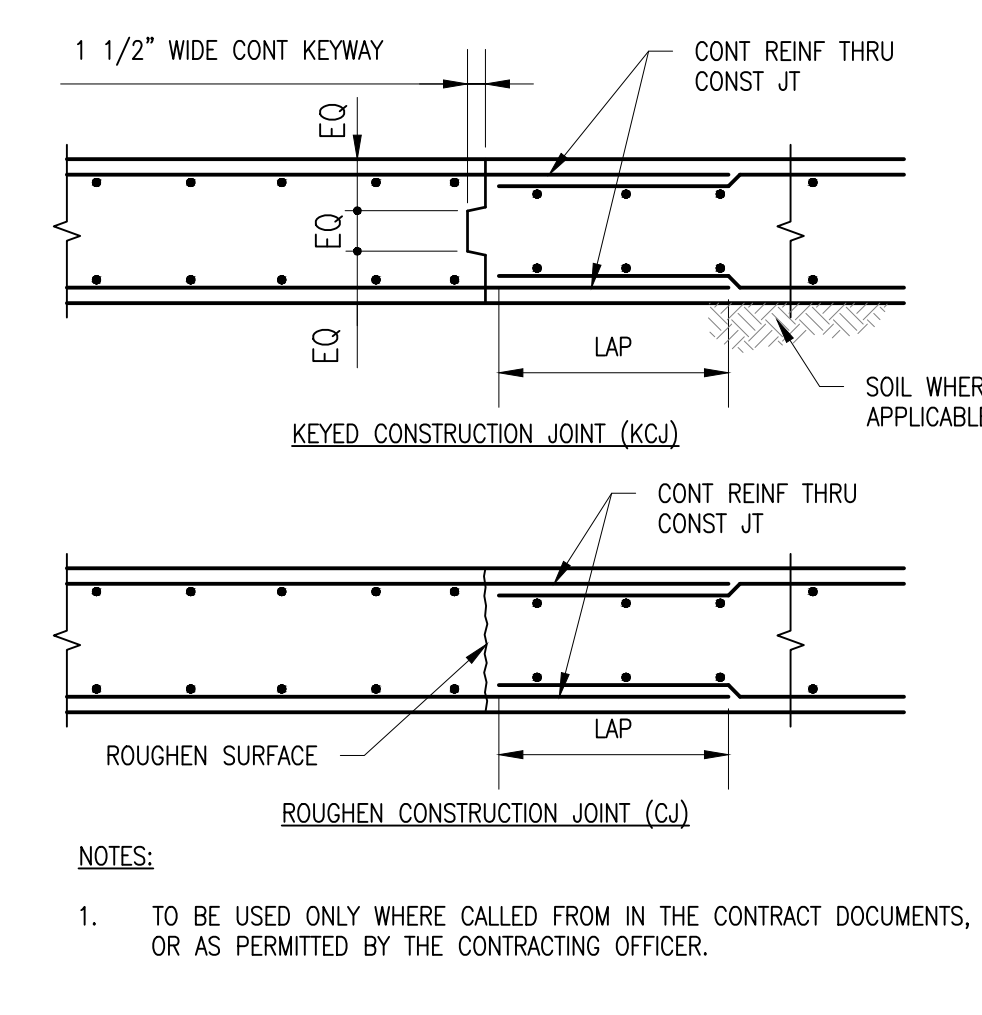
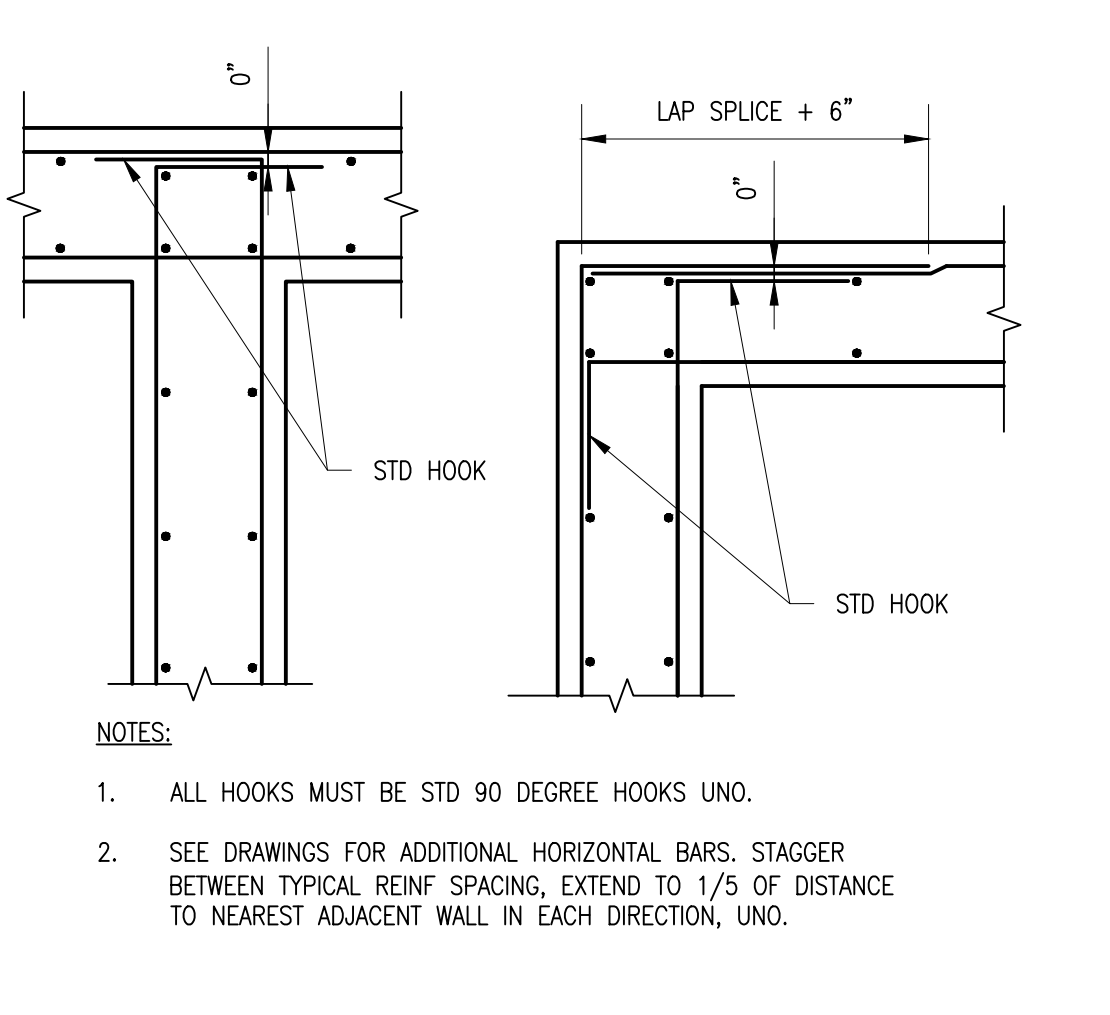
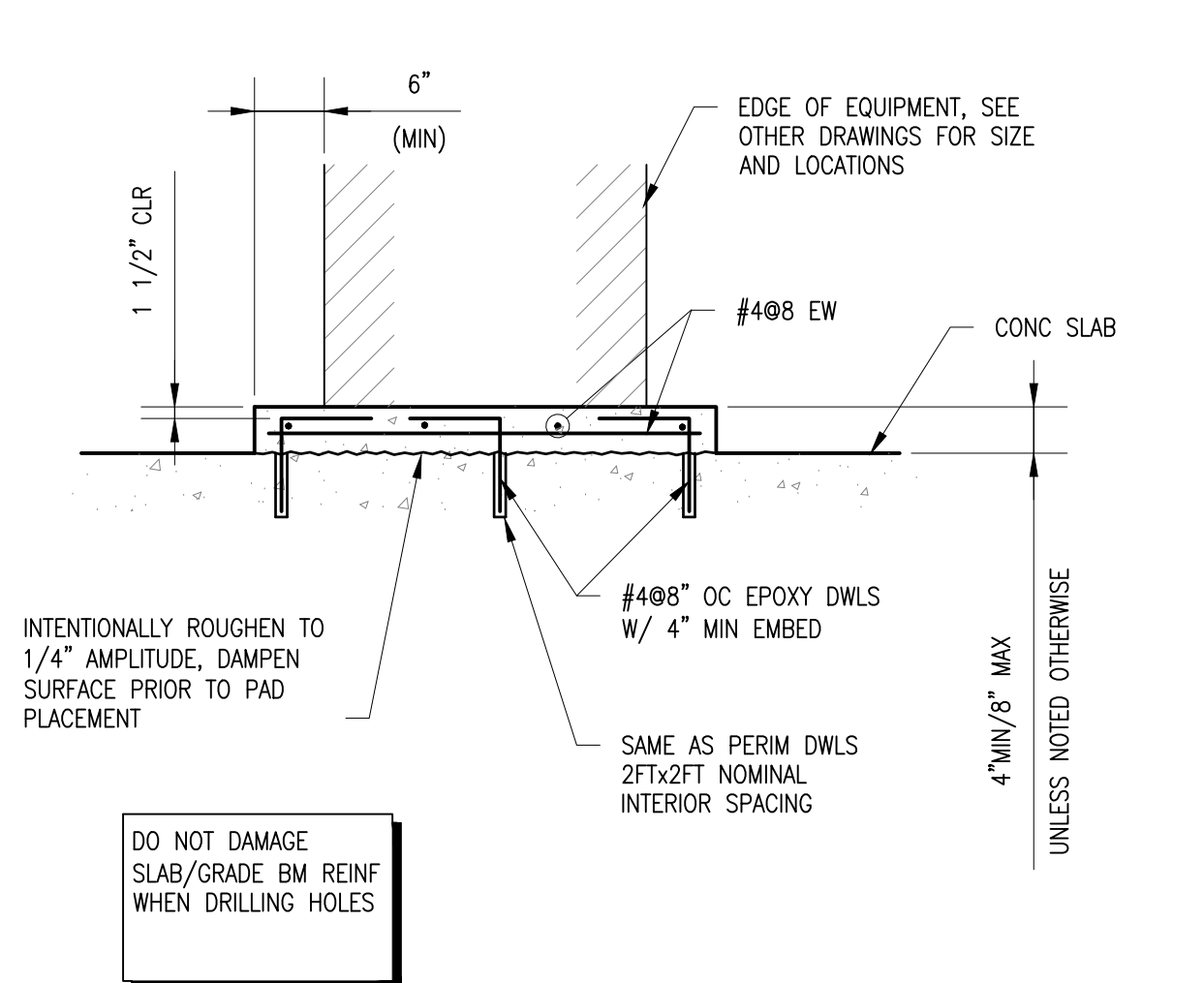


B1 ALUMINUM GUARDRAIL POST DETAIL
SCALE: NONE

B2 SEISMIC HOOP CLOSED TIE DETAIL
SCALE: NONE

B3 BAR SIZE CONVERSION TABLE
SCALE: NONE

B4 EXTRA REINFORCING AROUND OPENINGS
SCALE: NONE



A1 TYPICAL MISCELLANEOUS HOUSEKEEPING PAD (INTERIOR)
SCALE: NONE

A2 WALL REINFORCEMENT AT CORNERS AND INTERSECTIONS
SCALE: NONE

A3 CONSTRUCTION JOINT DETAIL
SCALE: NONE

A4 DEPTH GAUGE DETAIL
SCALE: NONE

A5 TYPICAL BOTTOM STEP FOOTING/GRADE BEAM
SCALE: NONE

APPROVED: [Signature]

DATE: [Date]

DESCRIPTION: [Description]

SCALE: NONE

PROJECT NO.: 1644867

CONSTR. CONTR. NO.:

NAVFAC DRAWING NO. 12905823

SHEET 4 OF 51

S-003

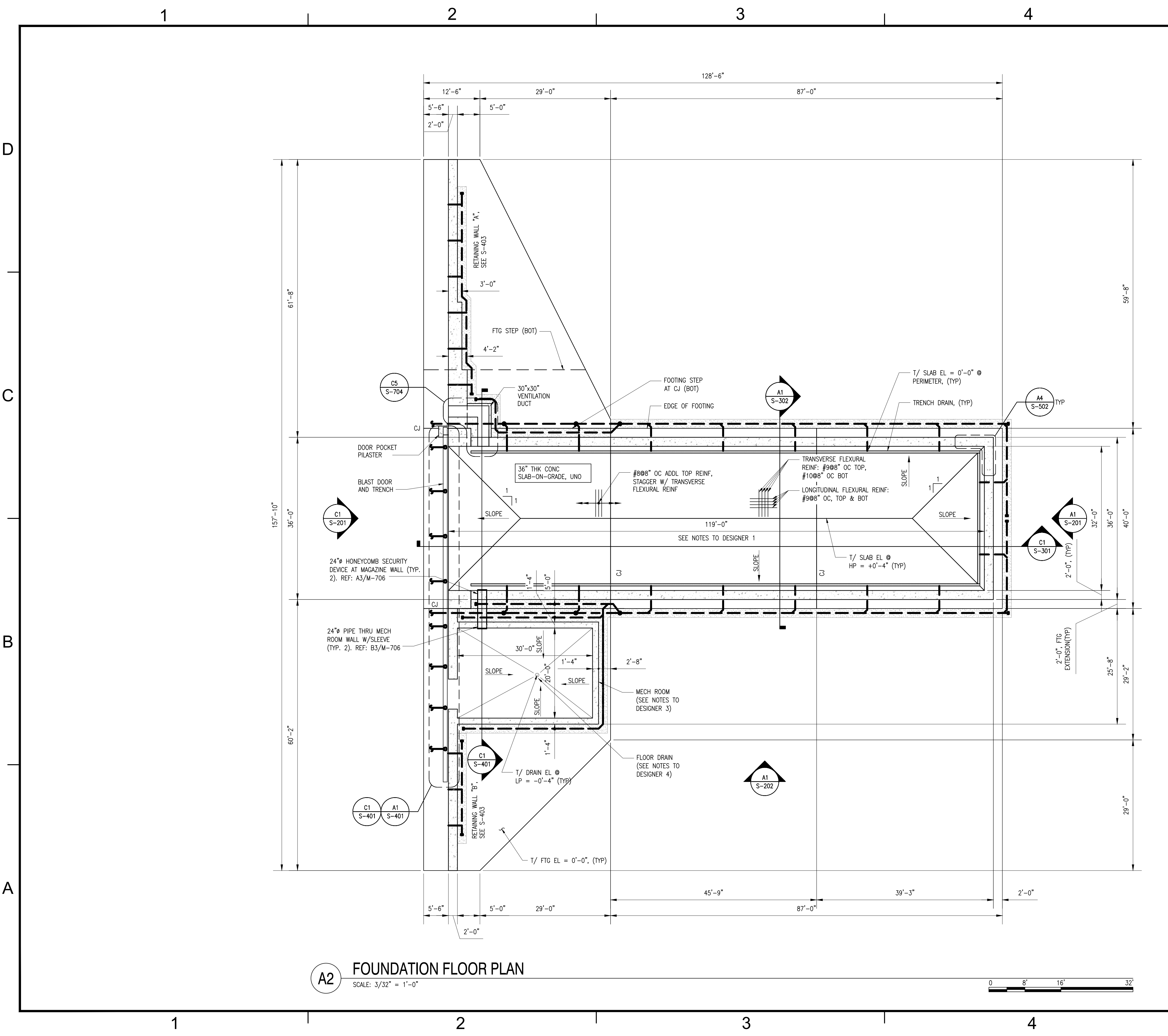
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC
HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

STANDARD DETAILS

FILE NAME: J:\DCS\Magazines_Single_Boj\Submittals\ReDesign\01_Final_March_2024\Drawings\S-003.dwg LAYOUT NAME: S-003 - STANDARD DETAILS PLOTTED: Monday, April 22, 2024 - 10:07am USER: jromaterecno

FILE NAME: J:\DSE\Magazines\Single Bay\Submittals\Redesign\01_Final_March_2024\Drawings\S-101.dwg LAYOUT NAME: S-101 - FOUNDATION FLOOR PLAN PLOTTED: Monday, April 22, 2024 - 10:07am USER: jromano@navfac



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 MUST 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.

APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES JAF	DRW SFF	CHK TPH
BRANCH MANAGER		
CHIEF ENGINEER		
FIRE PROTECTION		
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC	HAMPTON ROADS, VIRGINIA	
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE		
FOUNDATION / FLOOR PLAN		
SCALE:	AS NOTED	
PROJECT NO.:	1644867	
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO.	12905824	
SHEET	5	OF 51
S-101		
<small>DRAWING REVISION: 25 AUGUST 2020</small>		

1

2

3

4

5

D

C

B

A

D

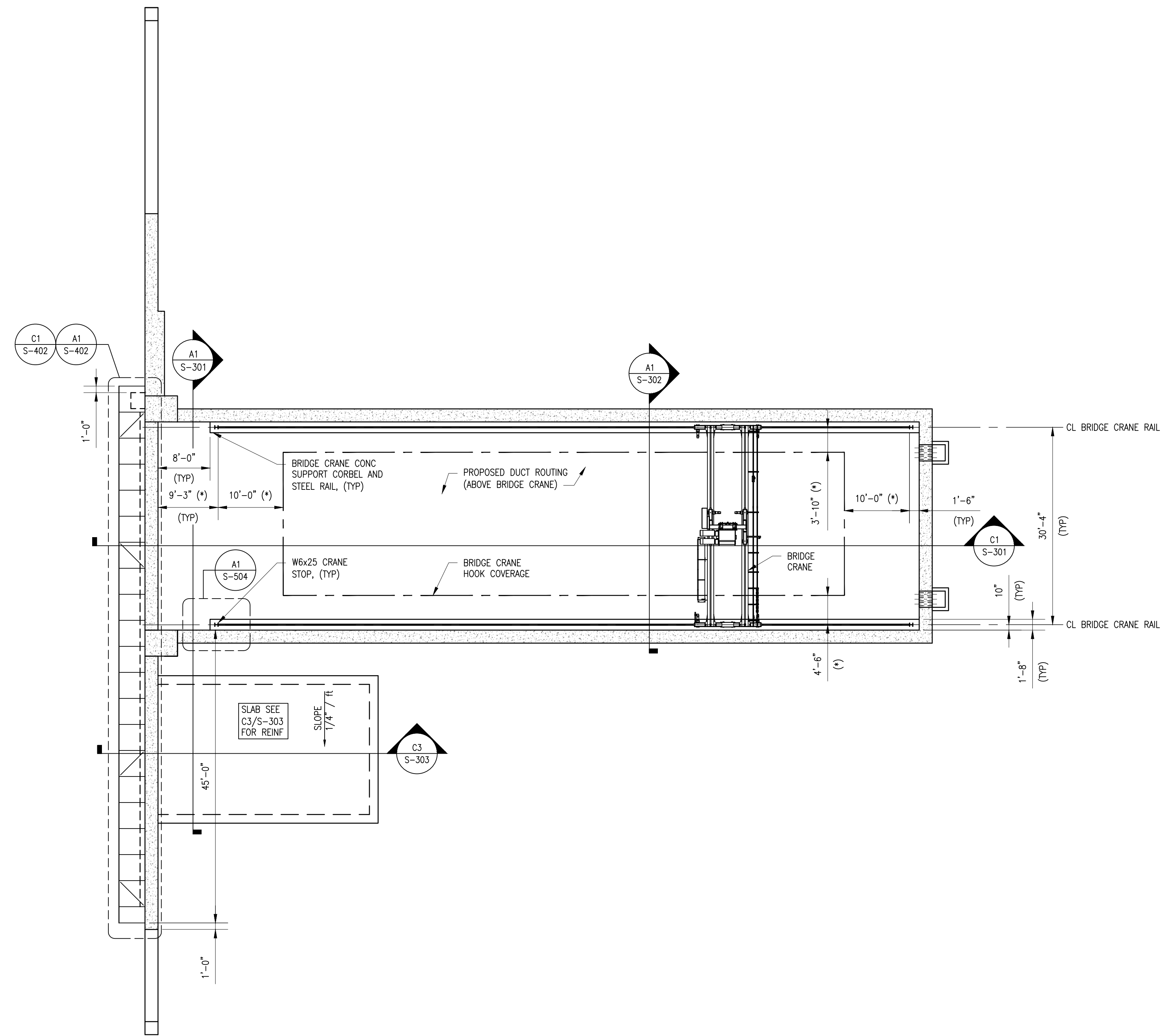
C

B

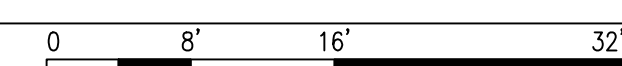
A

SHEET NOTES

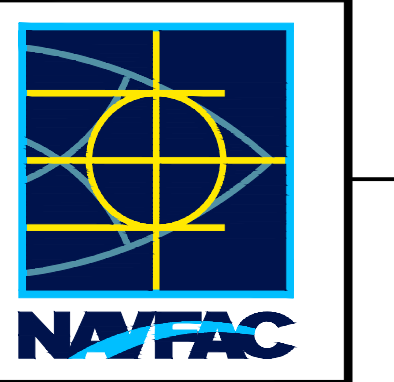
1. ALL ELEVATIONS ARE IN REFERENCE TO A DATUM ELEVATION OF 0'-0" FOR THE MAGAZINE FINISHED FLOOR ELEVATION. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATIONS.
2. SEE SHEETS S-001 AND S-002 FOR GENERAL NOTES.
3. DIMENSIONS, ELEVATIONS, OR OTHER INFORMATION DESIGNATED WITH AN (*) MUST BE VERIFIED WITH SELECTED 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.



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



DATE	DESCRIPTION	BY	CHK



APPROVED	A/E INFO
FOR COMMANDER NAVFAC	
SATISFACTORY TO	DATE
DES JAF	DRW SFF
CHK TPH	
BRANCH MANAGER	
CHIEF ENGINEER	
FIRE PROTECTION	

DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
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
PROJECT NO.:	1644867
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	12905825
SHEET	6 OF 51
S-102	

FILE NAME: J:\DSE\Magazines_Single_Boj\Submittals\Redesign\01_Final_March_2024\Drawings\S-102.dwg LAYOUT NAME: S-102 - BRIDGE CRANE AND CANOPY FRAMING PLAN PLOTTED: Monday, April 22, 2024 - 10:07am USER: jhonatan.ecido

1

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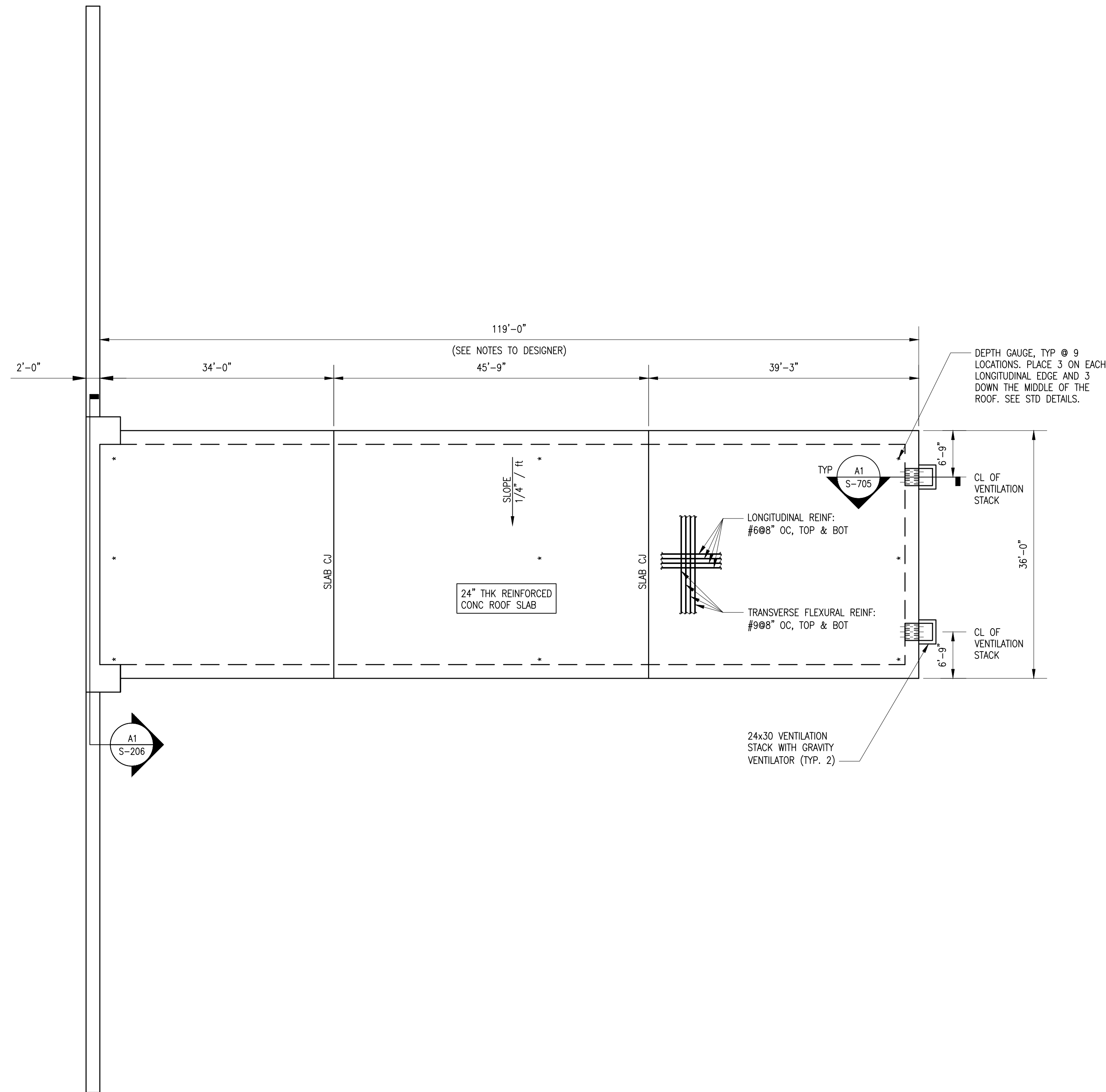
C

B

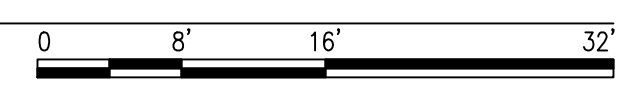
A

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.



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



DATE	DESCRIPTION	BY	APPR



APPROVED
 FOR COMMANDER NAVFAC

ACTIVITY
 SATISFACTORY TO DATE
 DES JAF | DRW SFF | CHK TPH
 PMDM
 BRANCH MANAGER
 CHIEF ENGINEER
 FIRE PROTECTION

DEPARTMENT OF THE NAVY
 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
 PROJECT NO.: 1644867
 CONSTR. CONTR. NO.
 NAVFAC DRAWING NO. 12905826
 SHEET 7 OF 51
S-103

FILE NAME: J:\DSE\Magazines_Single_Bay\Submittals\Redesign\01_Final_March_2024\Drawings\S-103.dwg LAYOUT NAME: S-103 - ROOF FRAMING PLAN PLOTTED: Monday, April 22, 2024 - 10:07am USER: jhoranencas

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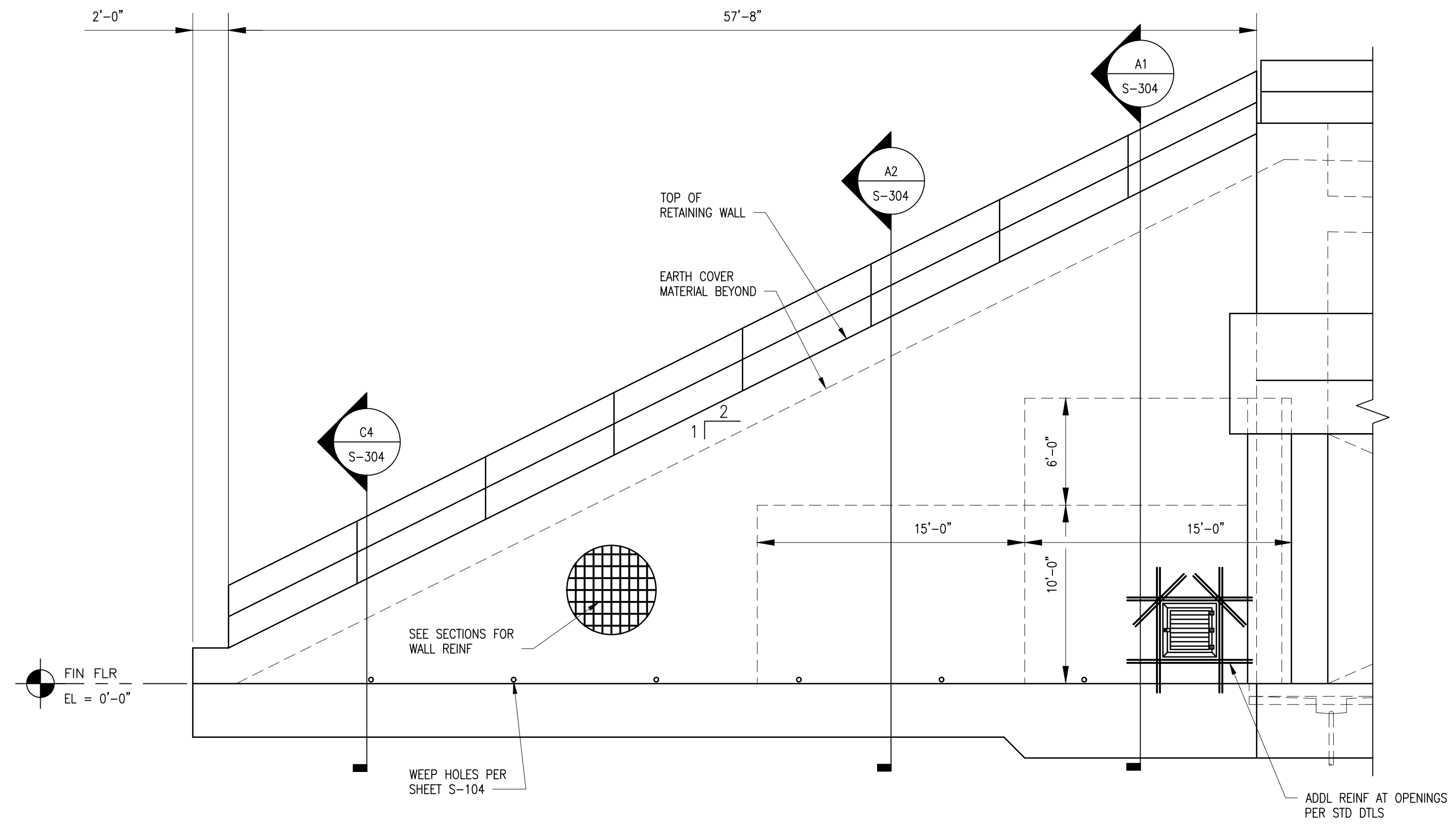
5

D

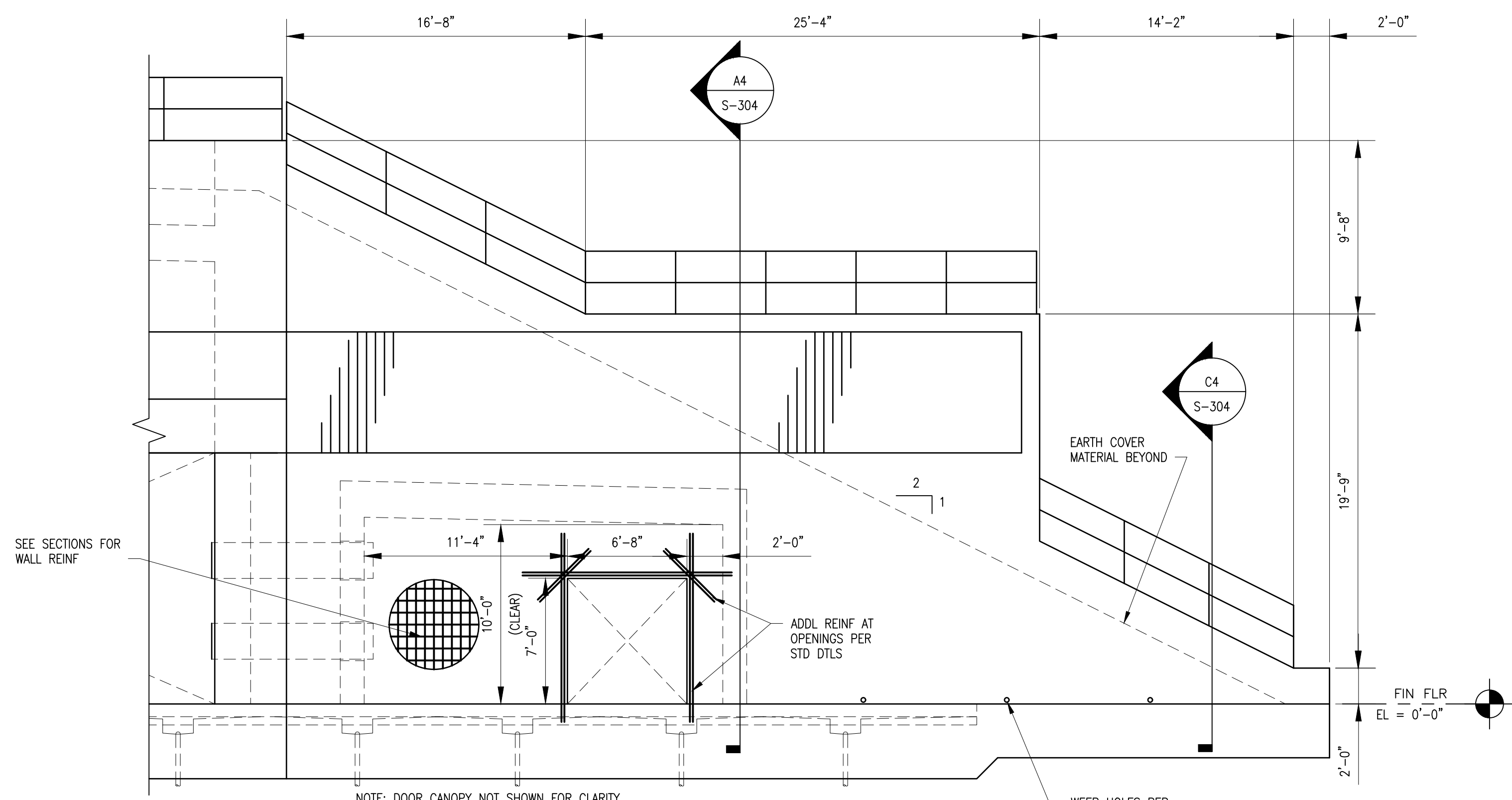
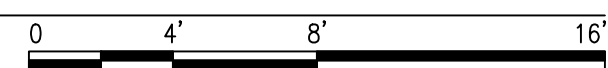
C

B

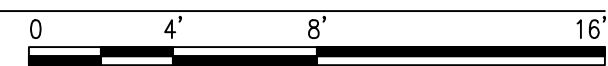
A



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



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



DATE	DESCRIPTION	BY	APPR



SEAL

A/E INFO

APPROVED

PER: COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES JAF | DRW SFF | CHK TPH

PMIDM

BRANCH MANAGER

CHIEF ENGINEER

FIRE PROTECTION

DEPARTMENT OF THE NAVY

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: AS NOTED

PROJECT NO: 1644867

CONSTR. CONTR. NO.

NAVFAC DRAWING NO: 12905830

SHEET 11 OF 51

S-203

DRAWING REVISION: 25 AUGUST 2020

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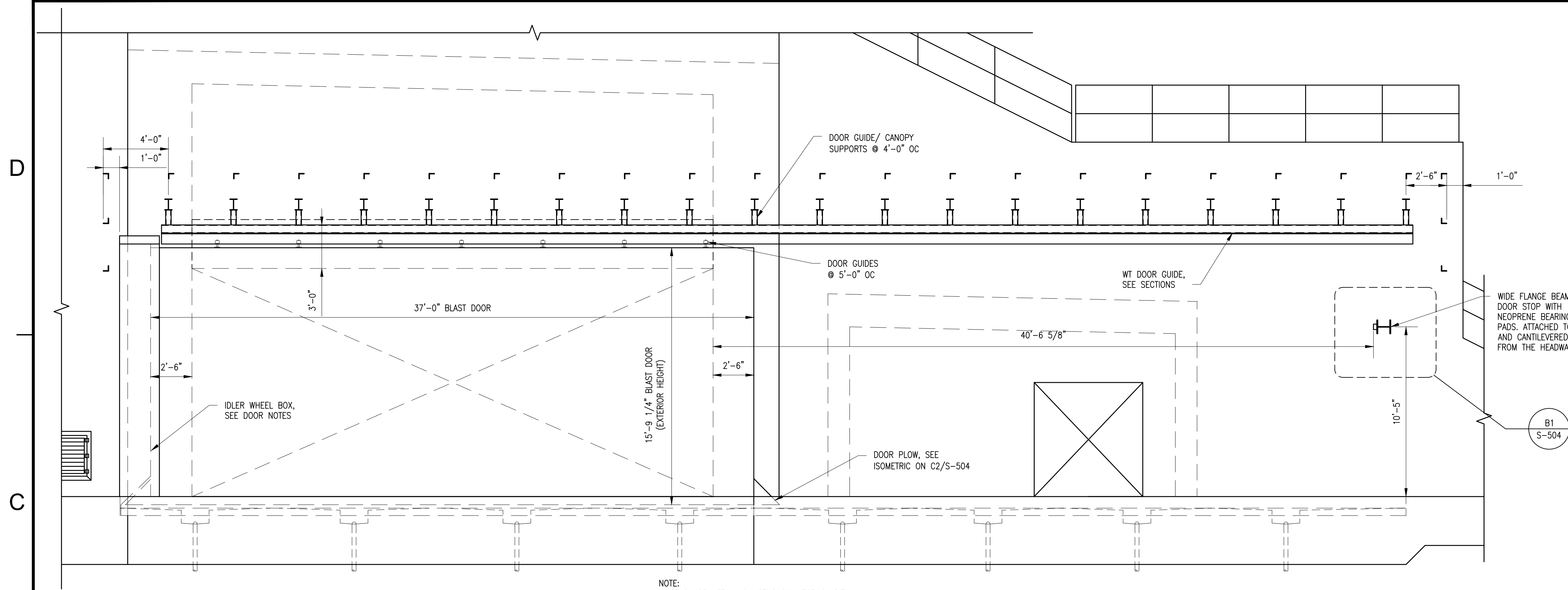
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4

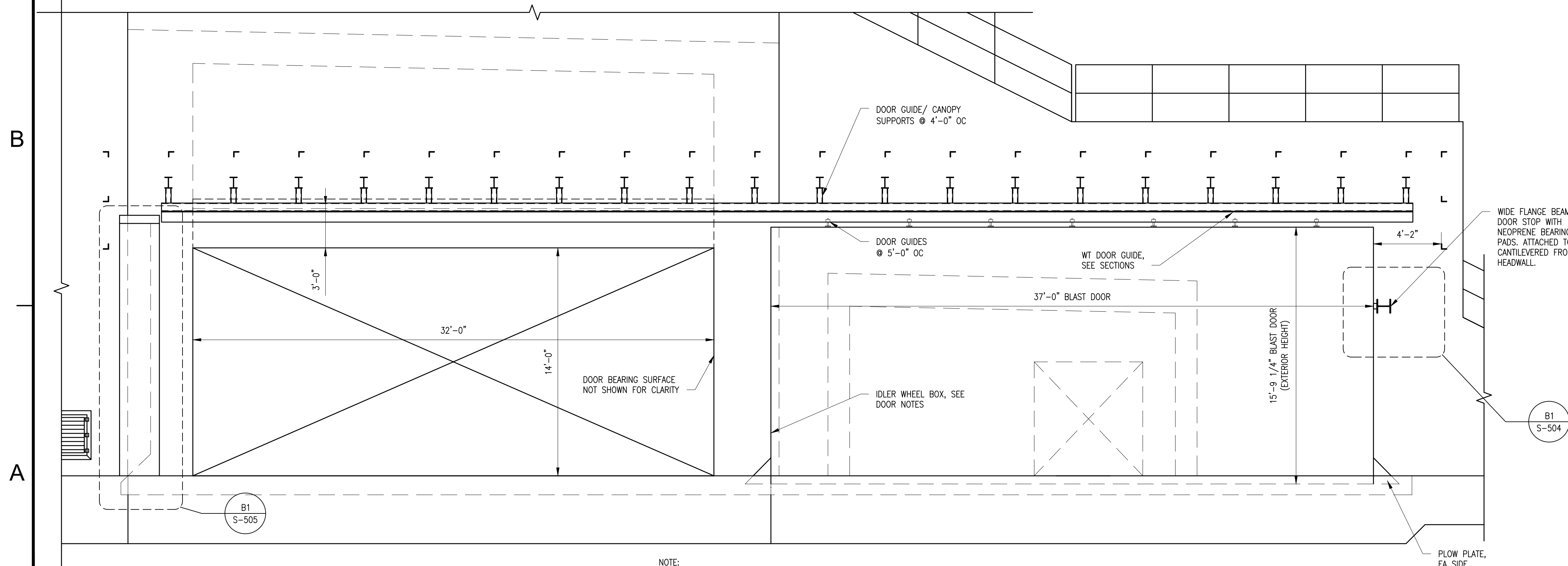
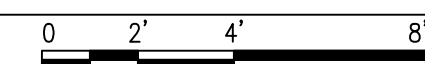
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SHEET NOTES

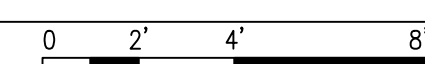
1. THE MAGAZINE BLAST DOOR MUST BE A SLIDING STEEL DOOR SUPPORTED FROM THE BOTTOM OF THE DOOR BY WHEELS LOCATED AT EACH END OF THE DOOR.
2. DOOR SYSTEM WILL BE TRACTION DRIVEN. THE LEADING EDGE (DOOR OPENING) WHEEL BOX CONTAINS BOTH A WHEEL AND A CHAIN DRIVEN POWER SYSTEM. THE TRAILING EDGE WHEEL BOX 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.



C1 ELEVATION - DOOR IN CLOSED POSITION
SCALE: 1/4" = 1'-0"



A1 ELEVATION - DOOR IN OPEN POSITION
SCALE: 1/4" = 1'-0"



APPROVED	DATE		
FOR COMMANDER NAVFAC			
ACTIVITY			
SATISFACTORY TO	DATE		
DES JAF	DRW SFF	CHK	TPH
PM/DM			
BRANCH MANAGER			
CHIEF ENGINEER			
FIRE PROTECTION			
DEPARTMENT OF THE NAVY 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: AS NOTED			
PROJECT NO.: 1644867			
CONSTR. CONTR. NO.			
NAVFAC DRAWING NO. 12905831			
SHEET 12 OF 51			
S-204			
DRAWING REVISION: 25 AUGUST 2020			

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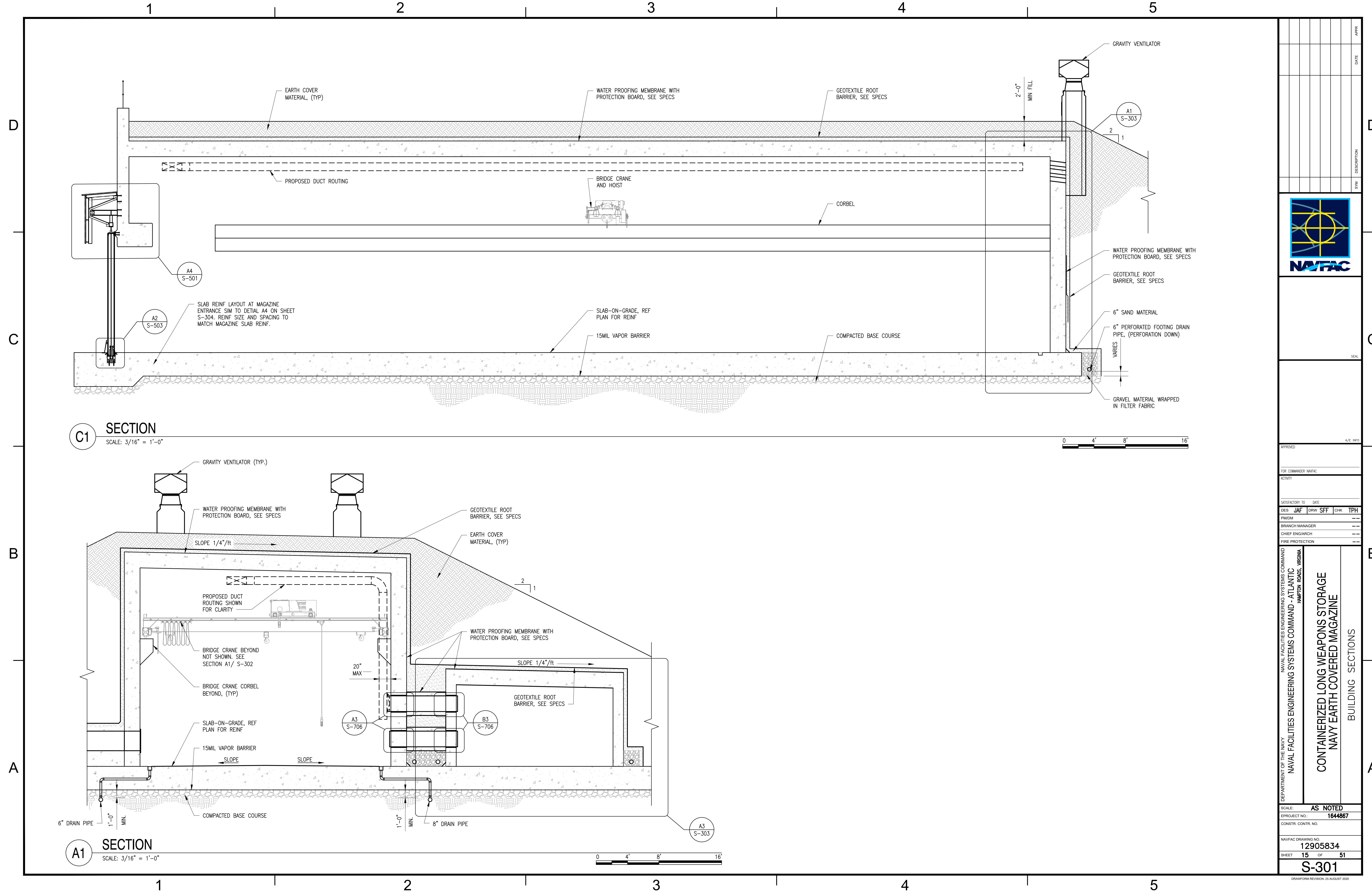
3

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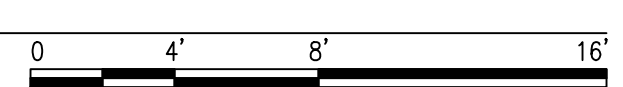
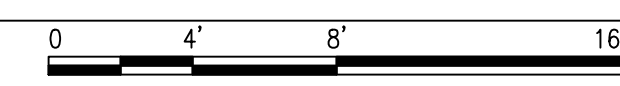
FILE NAME: I:\DCS\Magazines_Single_Box\Submittals\Reesign\01_Final_March_2024\Drawings\S-204.dwg LAYOUT NAME: S-204 - FRONT WALL PARTIAL ELEVATIONS PLOTTED: Monday, April 22, 2024 - 10:07am USER: jeronatan.esido

FILE NAME: J:\DSE\Magazines\Single_Bay\Submittals\Reesign\01_Final_March_2024\Drawings\S-301.dwg LAYOUT NAME: S-301 - BUILDING SECTIONS PLOTTED: Monday, April 22, 2024 - 10:07am USER: jhonatan.enrdo



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

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



DATE	APPR
DESCRIPTION	BY



SEAL

A/E INFO

APPROVED

FIR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES	JAF	DRW	SFF	CHK	TPH
-----	-----	-----	-----	-----	-----

BRANCH MANAGER

CHIEF ENGINEER

FIRE PROTECTION

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

SCALE: AS NOTED
PROJECT NO.: 1644867
CONSTR. CONTR. NO.

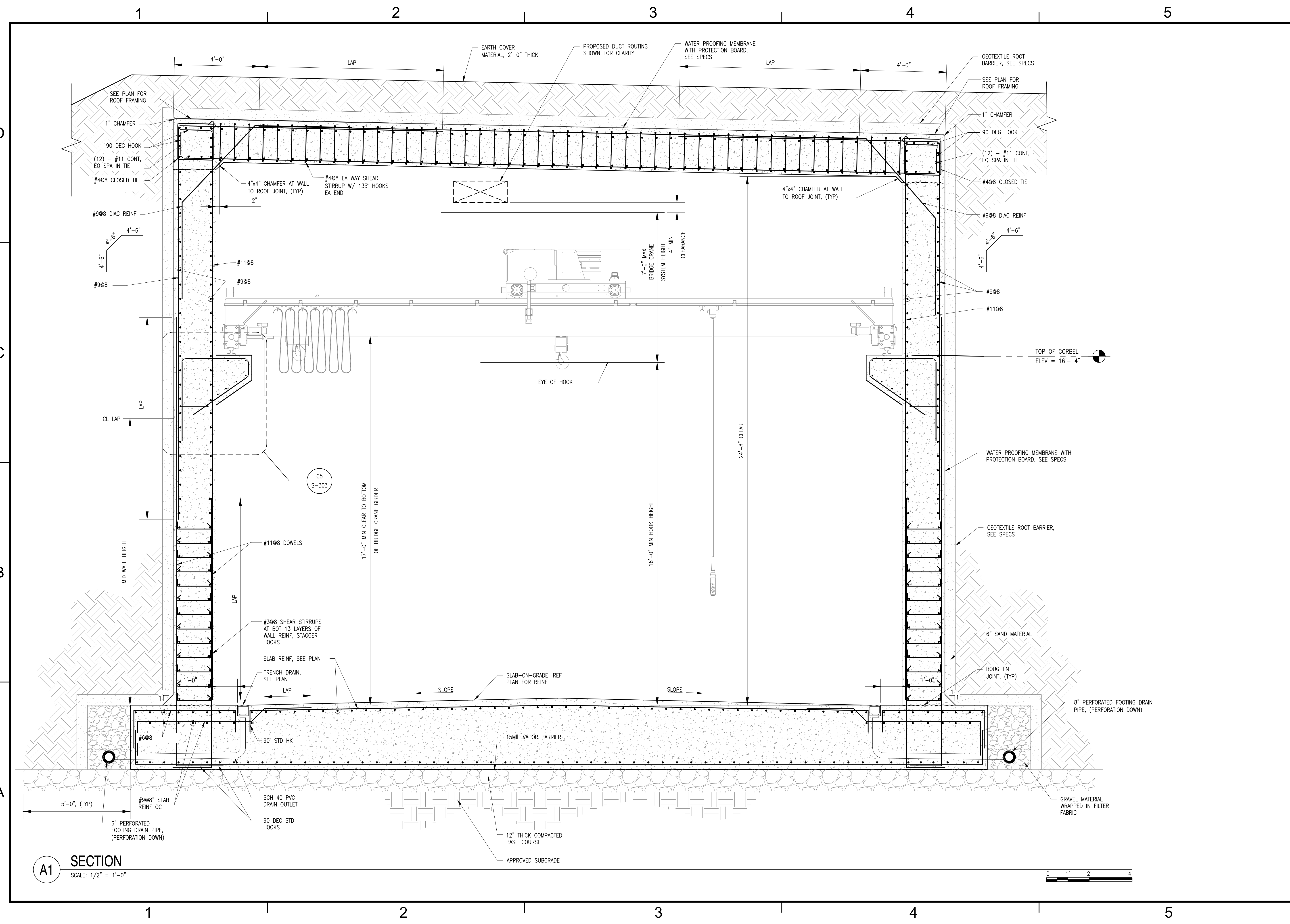
NAVFAC DRAWING NO. 12905834
SHEET 15 OF 51

S-301

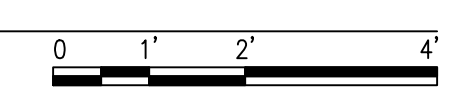
DRAWING REVISION: 25 AUGUST 2020

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE
BUILDING SECTIONS

FILE NAME: J:\DCSE\Magazines\Single_Bay\Submittals\Reesign\01_Final_March_2024\Drawings\S-302.dwg LAYOUT NAME: S-302 - WALL SECTIONS - 1 PLOTTED: Monday, April 22, 2024 - 10:07am USER: phoradon.ecss

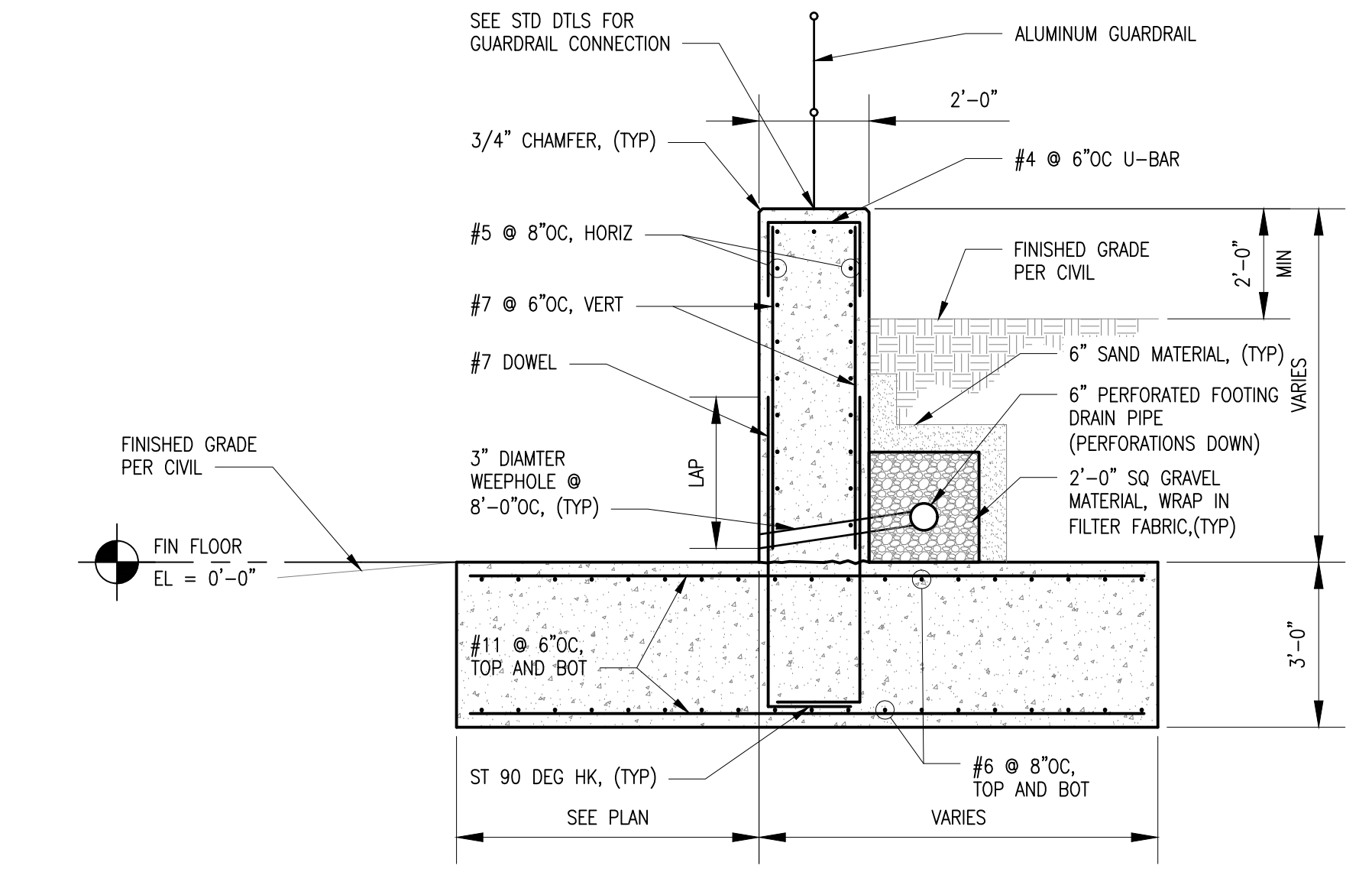
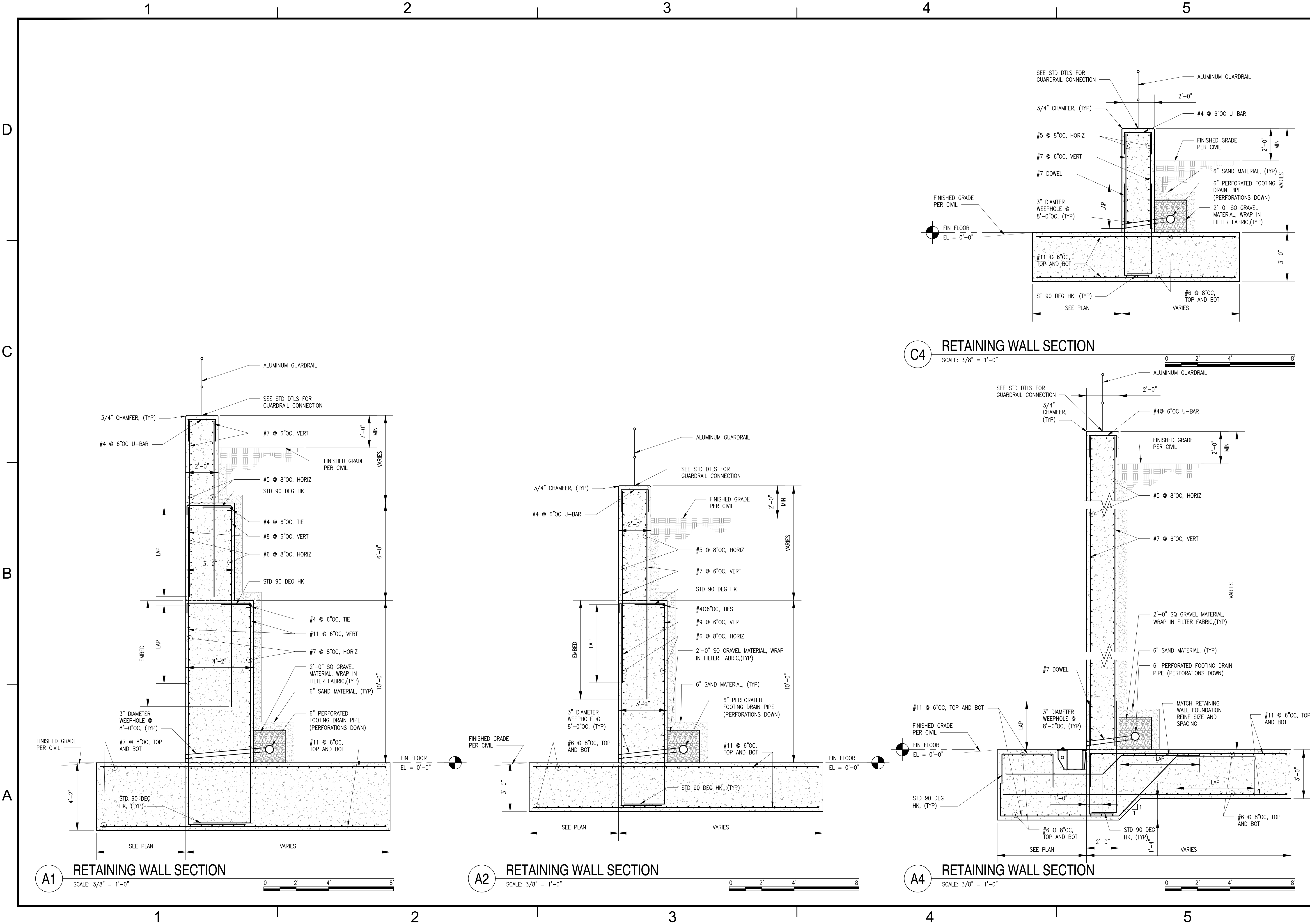


A1 SECTION
SCALE: 1/2" = 1'-0"

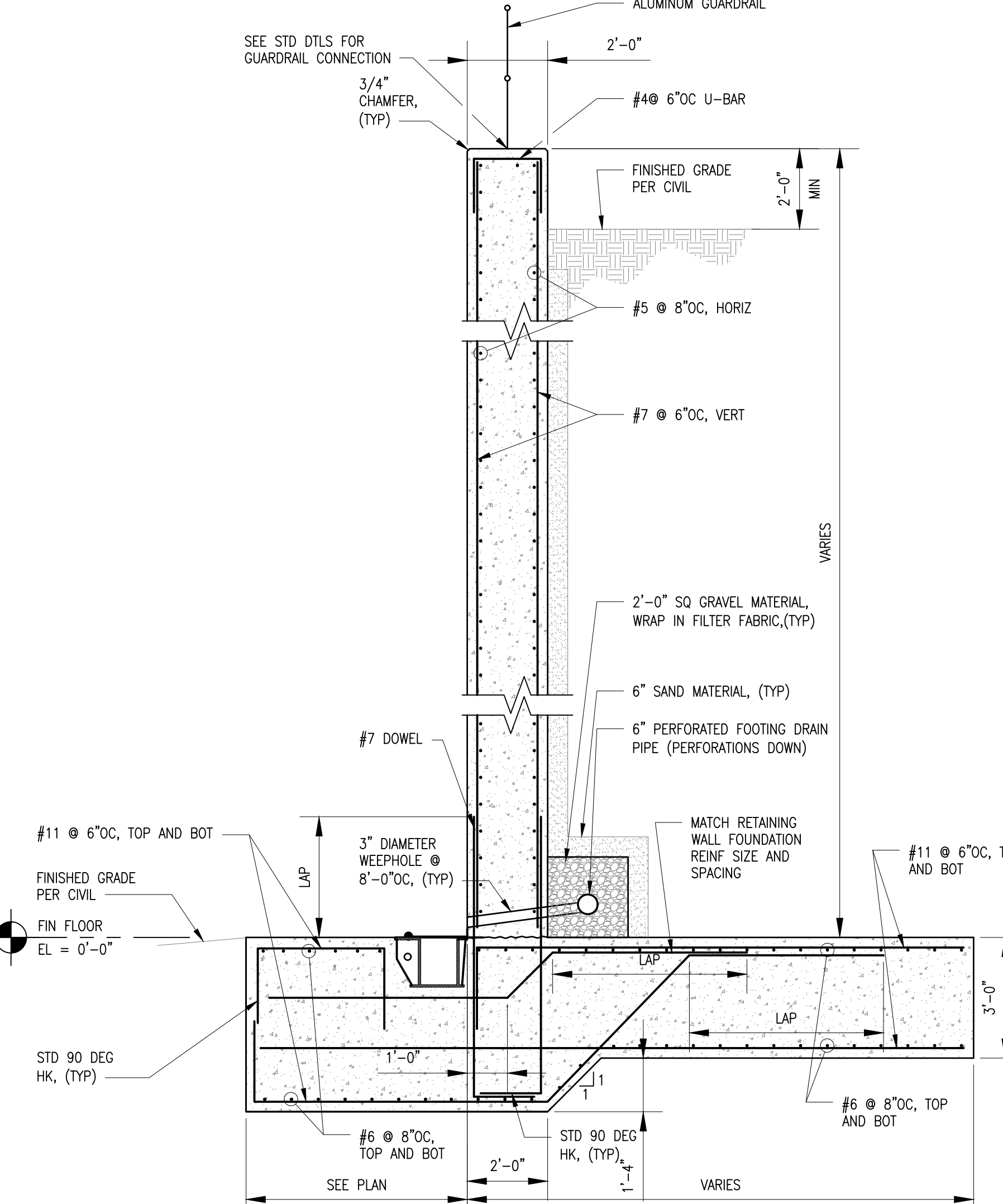


APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES JAF	DRW SFF	CHK TPH
PMIDM		
BRANCH MANAGER		
CHIEF ENGINEER		
FIRE PROTECTION		
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC	
	HAMPTON ROADS, VIRGINIA	
CONTAINERIZED LONG WEAPONS STORAGE		
NAVY EARTH COVERED MAGAZINE		
WALL SECTIONS - 1		
SCALE:	AS NOTED	
PROJECT NO.:	1644867	
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO.	12905835	
SHEET	16	OF 51
S-302		
<small>DRAWING REVISION: 25 AUGUST 2020</small>		

FILE NAME: I:\DCS\Magazines\Single_Bay\Submittals\Revised\01_Fin_March_2024\Drawings\S-304.dwg LAYOUT NAME: S-304 - WALL SECTIONS - 3 PLOTTED: Monday, April 22, 2024 - 10:07am USER: photomarcos



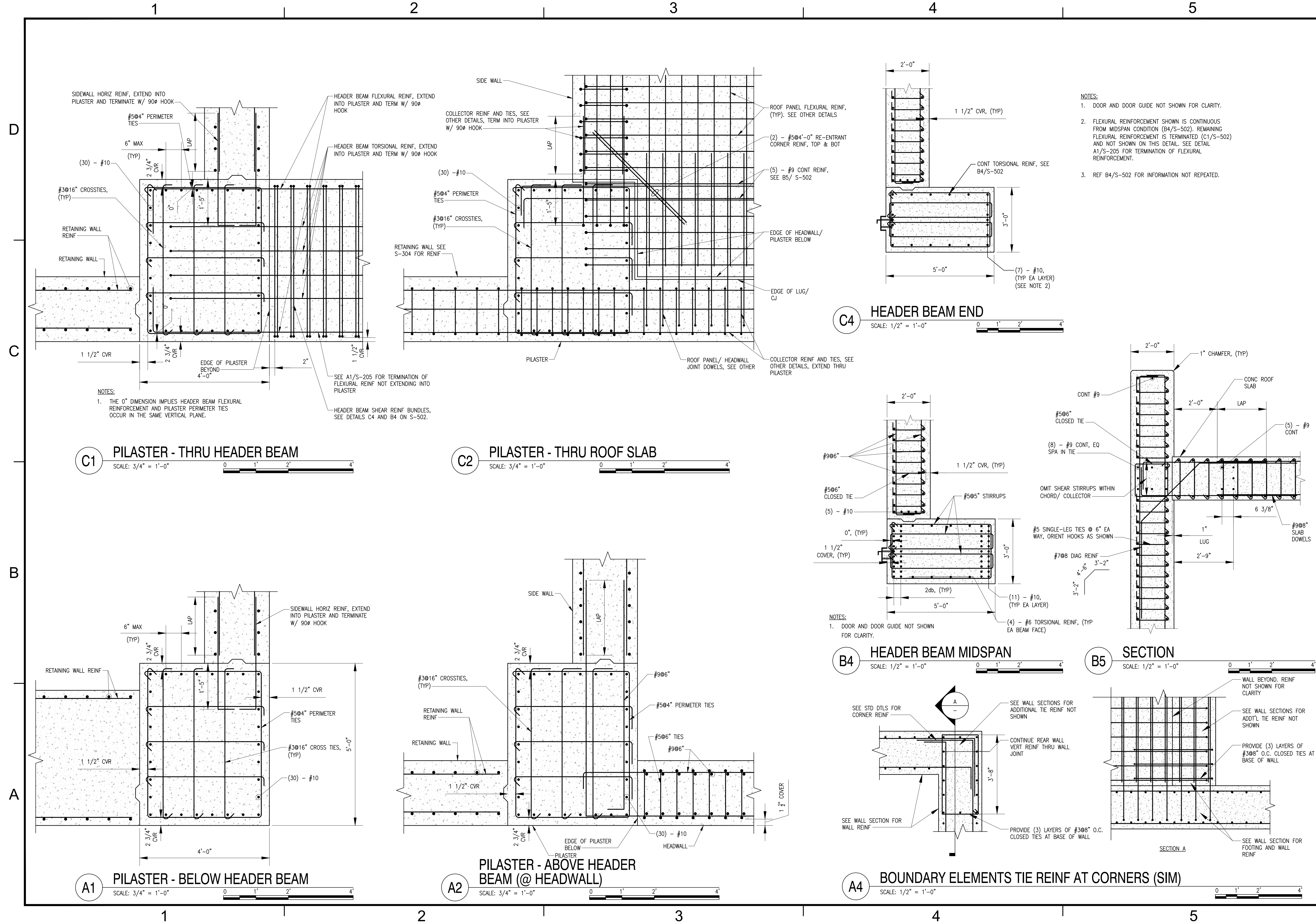
C4 RETAINING WALL SECTION
SCALE: 3/8" = 1'-0"




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

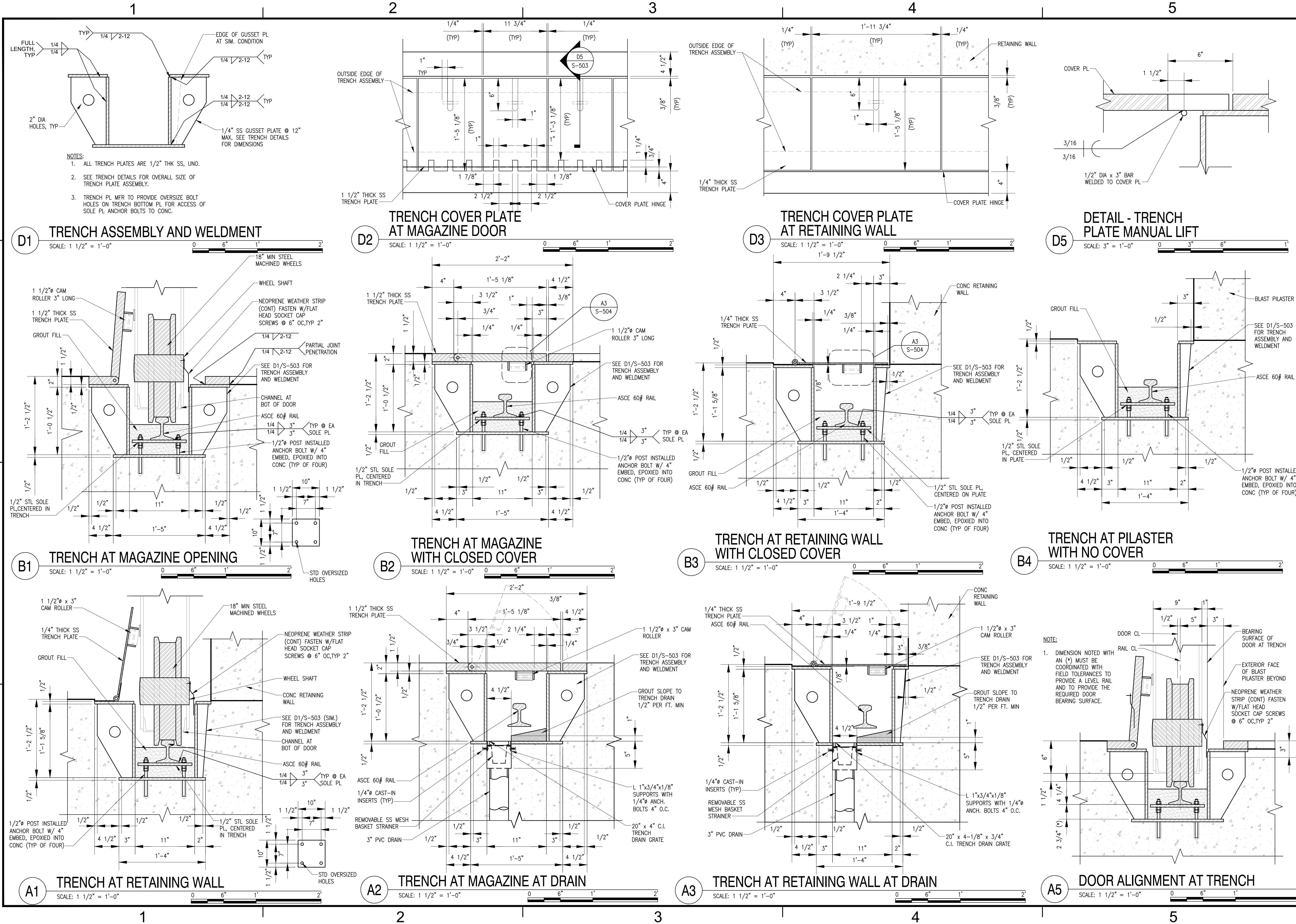
APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES JAF	DRW SFF	CHK TPH
PM/DIM		
BRANCH MANAGER		
CHIEF ENGINEER		
FIRE PROTECTION		
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC HAMPTON ROADS, VIRGINIA		
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE		
WALL SECTIONS - 3		
SCALE:	AS NOTED	
PROJECT NO.:	1644867	
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO.	12905837	
SHEET	18	OF 51
S-304		
<small>DRAWING REVISION: 25 AUGUST 2020</small>		


FILE NAME: I:\DSE\Magazines_Single_Boj\Submittals\ReDesign\01_Final_March_2024\Drawings\S-502.dwg LAYOUT NAME: S-502 - PILASTER AND BOUNDARY ELEMENTS REIN DETAILS PLOTTED: Monday, April 22, 2024 - 10:07am USER: jbonatencasio



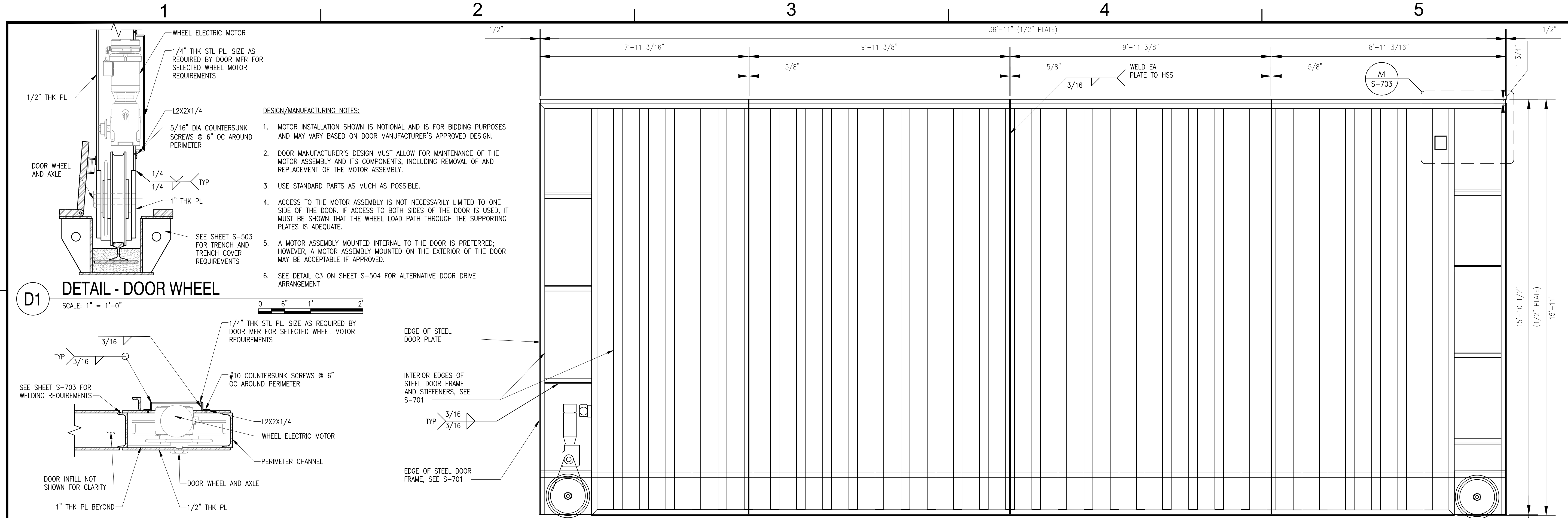
- NOTES:**
1. DOOR AND DOOR GUIDE NOT SHOWN FOR CLARITY.
 2. FLEXURAL REINFORCEMENT SHOWN IS CONTINUOUS FROM MIDSPAN CONDITION (B4/S-502). REMAINING FLEXURAL REINFORCEMENT IS TERMINATED (C1/S-502) AND NOT SHOWN ON THIS DETAIL. SEE DETAIL A1/S-205 FOR TERMINATION OF FLEXURAL REINFORCEMENT.
 3. REF B4/S-502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

DATE	APPROVED
DESCRIPTION	SEAL
	
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE PILASTER AND BOUNDARY ELEMENTS REIN DETAILS	
APPROVED	A/E INFO
FIR COMMANDER NAVFAC ACTIVITY	
SATISFACTORY TO	DATE
DES JAF	DRW SFF
CHK TPH	
PM/DM	
BRANCH MANAGER	
CHIEF ENGINEER	
FIRE PROTECTION	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC HAMPTON ROADS, VIRGINIA	
SCALE:	AS NOTED
PROJECT NO.:	1644867
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	12905842
SHEET	23 OF 51
S-502	
DRAWING REVISION: 25 AUGUST 2020	

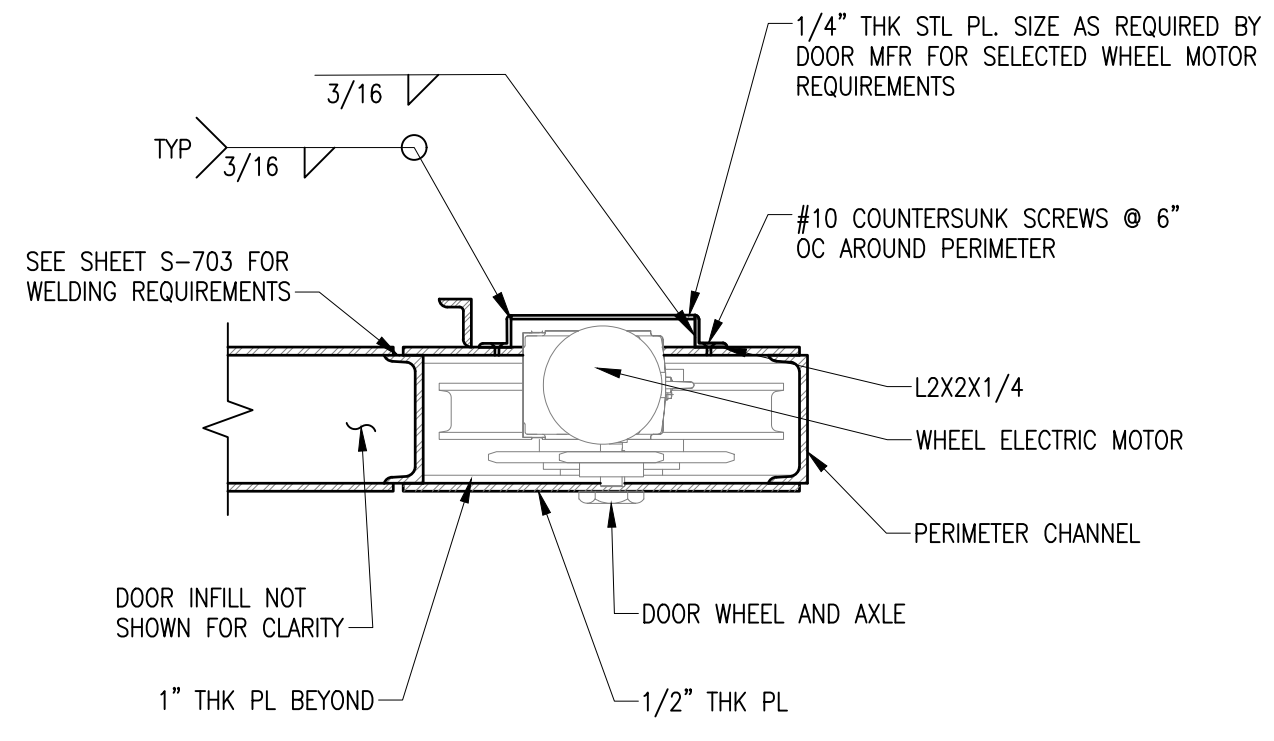


DATE	APPR.
DESCRIPTION	DATE
BY	DATE
	
APPROVED: _____ FOR COMMANDER NAFAC ACTIVITY: _____	
SATISFACTORY TO: _____ DATE: _____ DES: JAF DRAW: SFF CHK: TPH PM/DMM: _____ BRANCH MANAGER: _____ CHIEF ENGINEER: _____ FIRE PROTECTION: _____	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC HAMPTON ROADS, VIRGINIA	
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE DOOR, TRENCH AND COVER DETAILS	
SCALE: AS NOTED PROJECT NO.: 12905843 SHEET 24 OF 51 S-503 <small>DRAWING REVISION: 25 AUGUST 2020</small>	

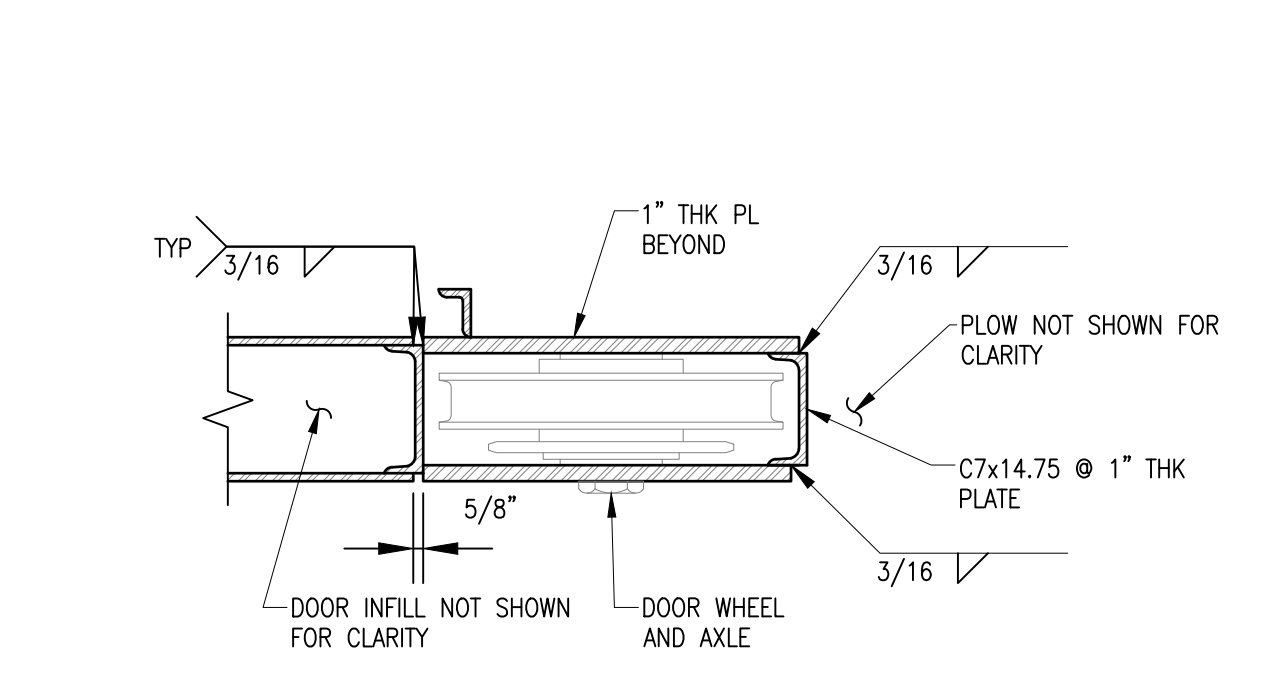
FILE NAME: I:\DSE\Magazines\01_Fin_March_2024\Drawings\S-503.dwg LAYOUT NAME: S-503 - DOOR, TRENCH AND COVER DETAILS PLOTTED: Monday, April 22, 2024 - 10:07am USER: pmonahan-arcis



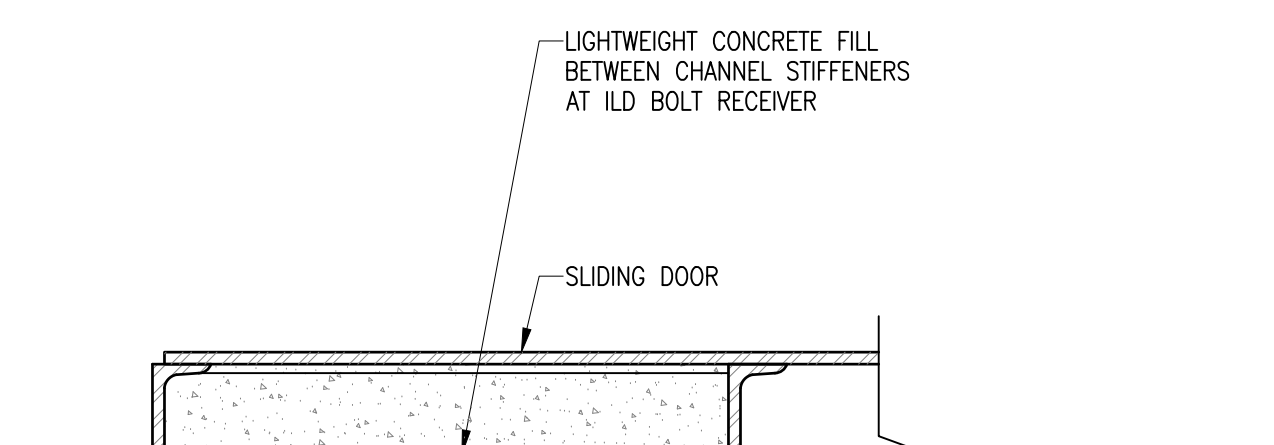
D1 DETAIL - DOOR WHEEL
SCALE: 1" = 1'-0"



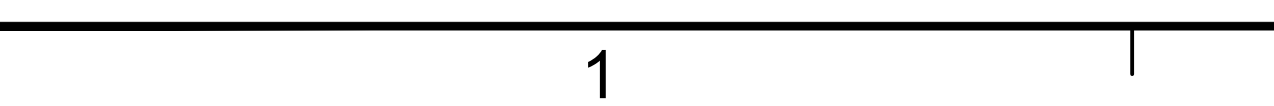
C1 DETAIL - DOOR WHEEL AND WHEEL MOTOR
SCALE: 1" = 1'-0"



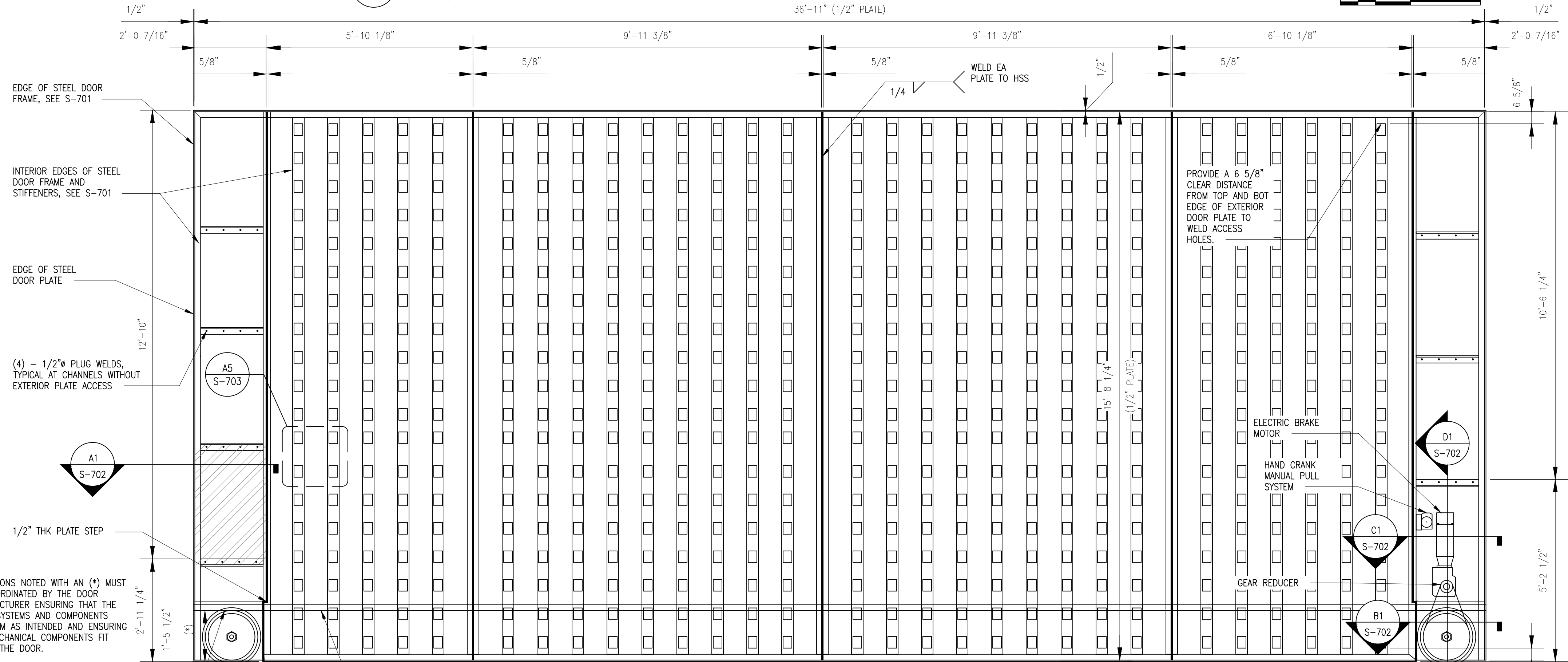
B1 DETAIL - DOOR WHEEL
SCALE: 1" = 1'-0"



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



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



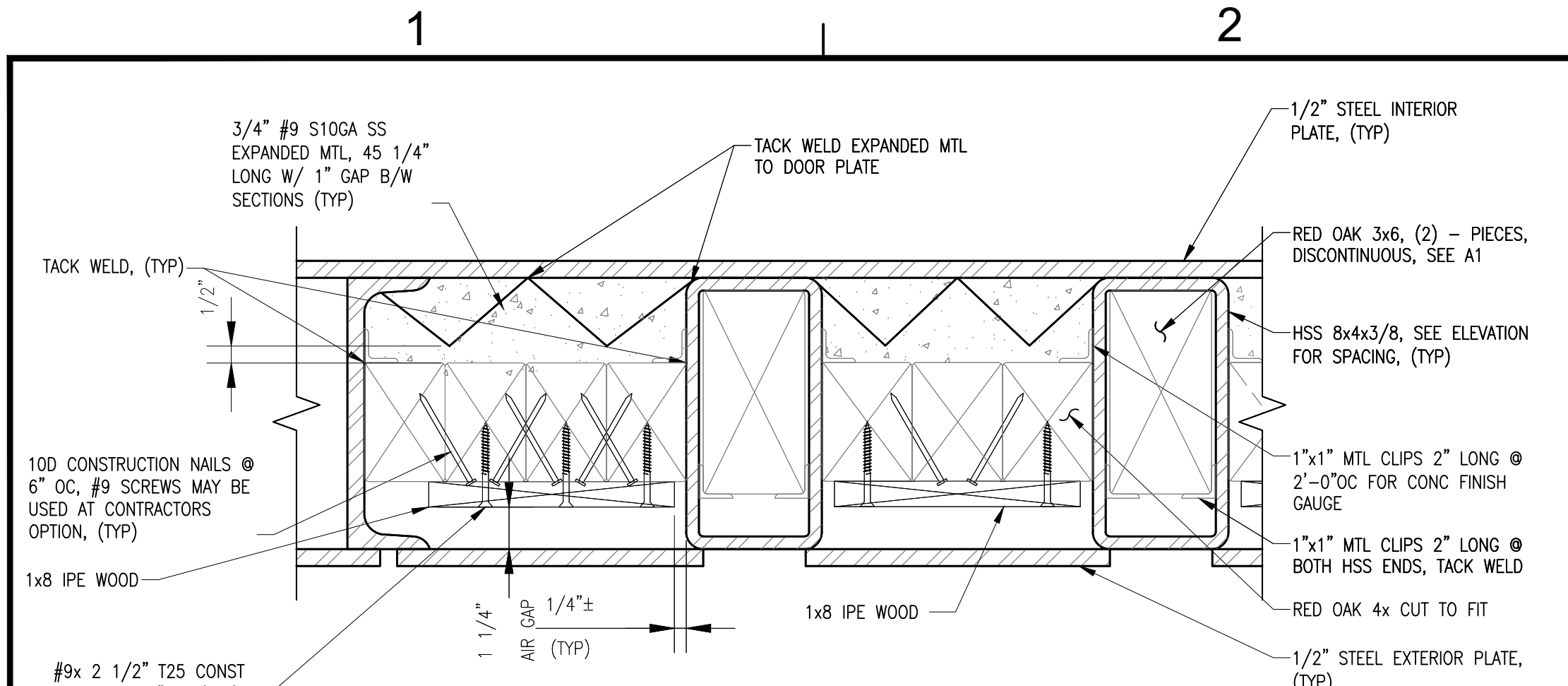
A2 DOOR EXTERIOR PLATE ELEVATION
SCALE: 1/2"=1'-0"

- 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

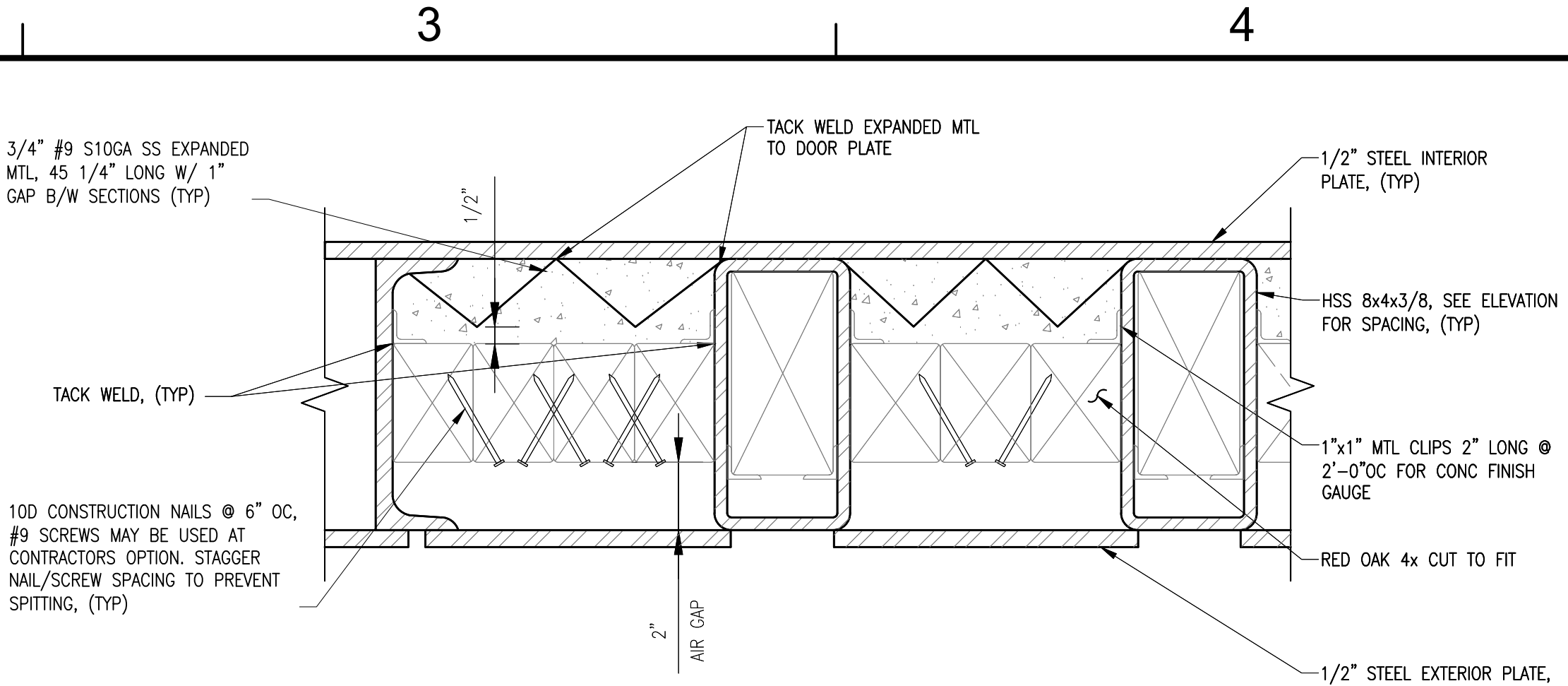
- NOTE:**
1. DIMENSIONS NOTED WITH AN (*) MUST BE COORDINATED BY THE DOOR MANUFACTURER ENSURING THAT THE DOOR SYSTEMS AND COMPONENTS PERFORM AS INTENDED AND ENSURING ALL MECHANICAL COMPONENTS FIT WITHIN THE DOOR.

APPROVED	DATE	APP'R
DESIGN	DESCRIPTION	DATE
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE DOOR ELEVATION AND DETAILS		
APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC ACTIVITY SATISFACTORY TO DATE DES JAF DRW SFF CHK TPH PMDM BRANCH MANAGER CHIEF ENGINEER FIRE PROTECTION NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC HAMPTON ROADS, VIRGINIA		
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC HAMPTON ROADS, VIRGINIA CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE DOOR ELEVATION AND DETAILS		
SCALE:	AS NOTED	
PROJECT NO.:	12905847	
CONSTR. CONTR. NO.:	1644867	
NAVFAC DRAWING NO.:	12905847	
SHEET	28	OF 51
S-702		
<small>DRAWING REVISION: 25 AUGUST 2020</small>		

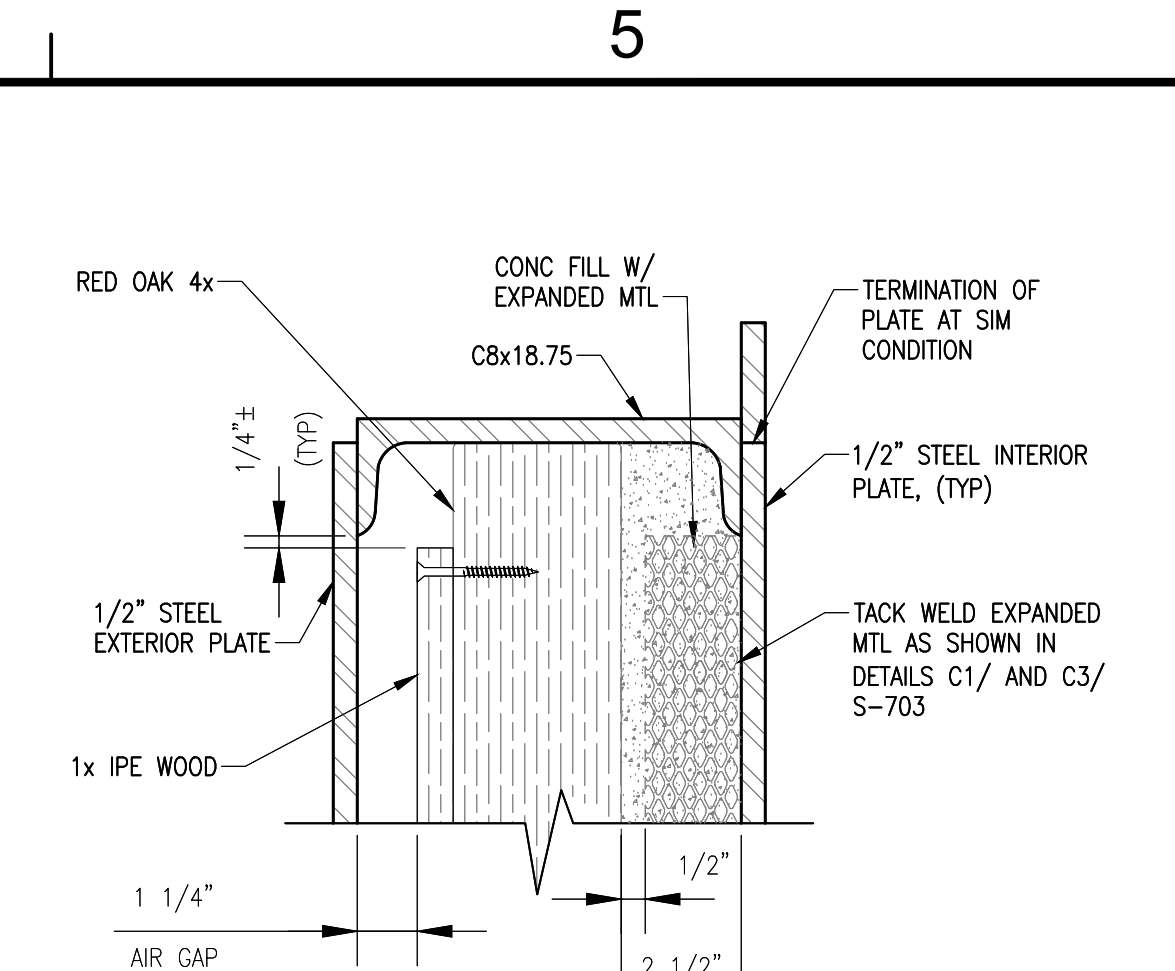
FILE NAME: I:\DCSE\Magazines_Single_Boj\Submittals\Redesign\01_Final_March_2024\Drawings\S-702.dwg LAYOUT NAME: S-702 - DOOR ELEVATION AND DETAILS PLOTTED: Monday, April 22, 2024 - 12:59pm USER: lscumgury



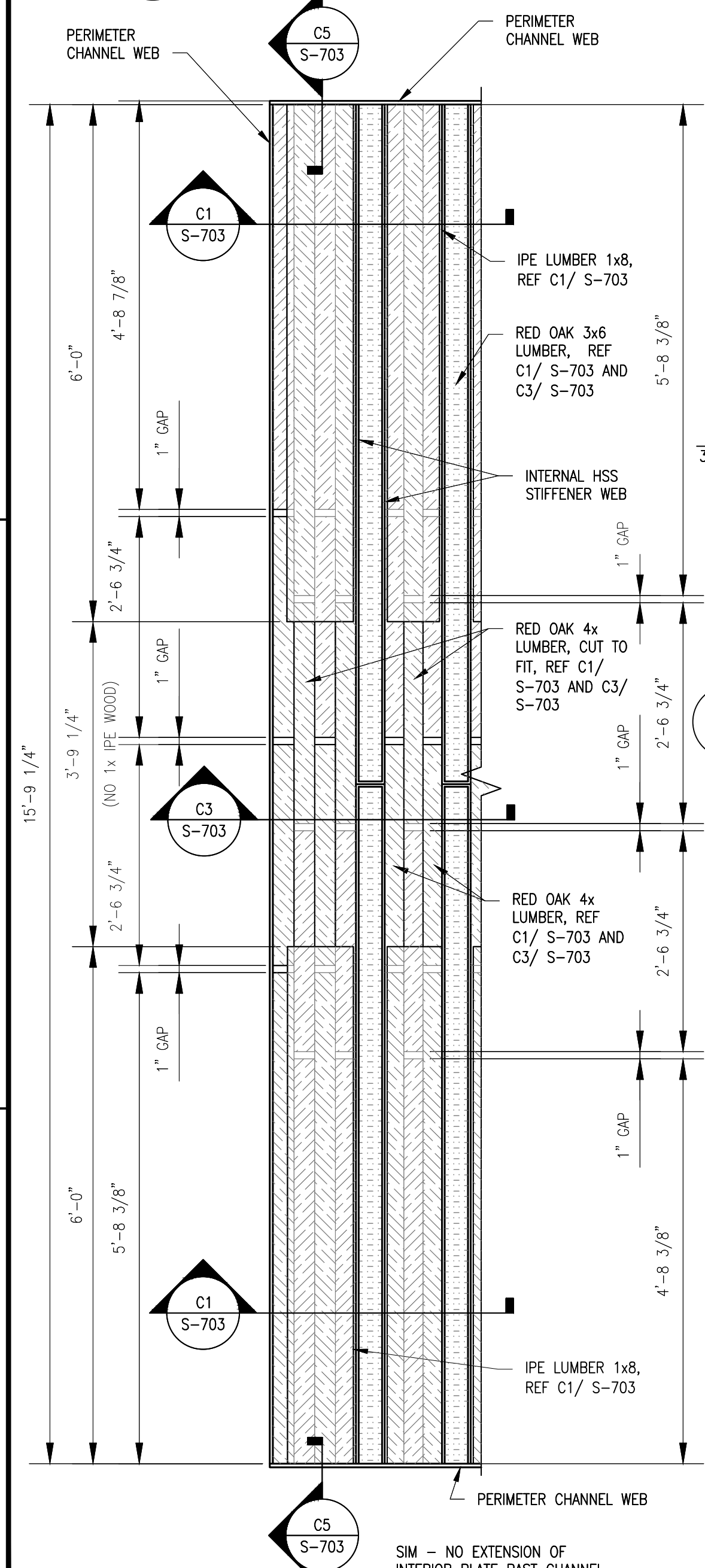
C1 DOOR STIFFENER AND INFILL LAYOUT - TOP/ BOTTOM DOOR SECTIONS
SCALE: 3" = 1'-0"



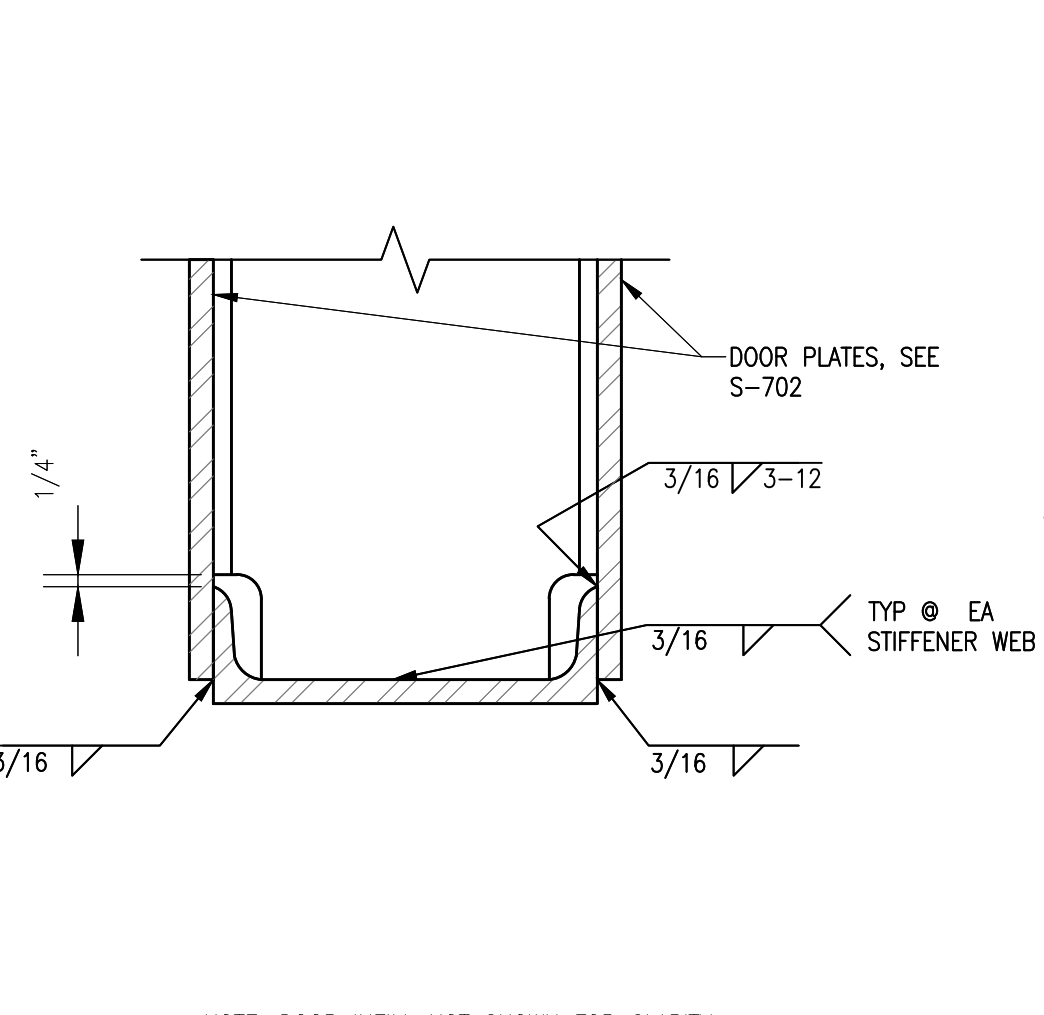
C3 DOOR STIFFENER AND INFILL LAYOUT - MIDDLE DOOR SECTIONS
SCALE: 3" = 1'-0"



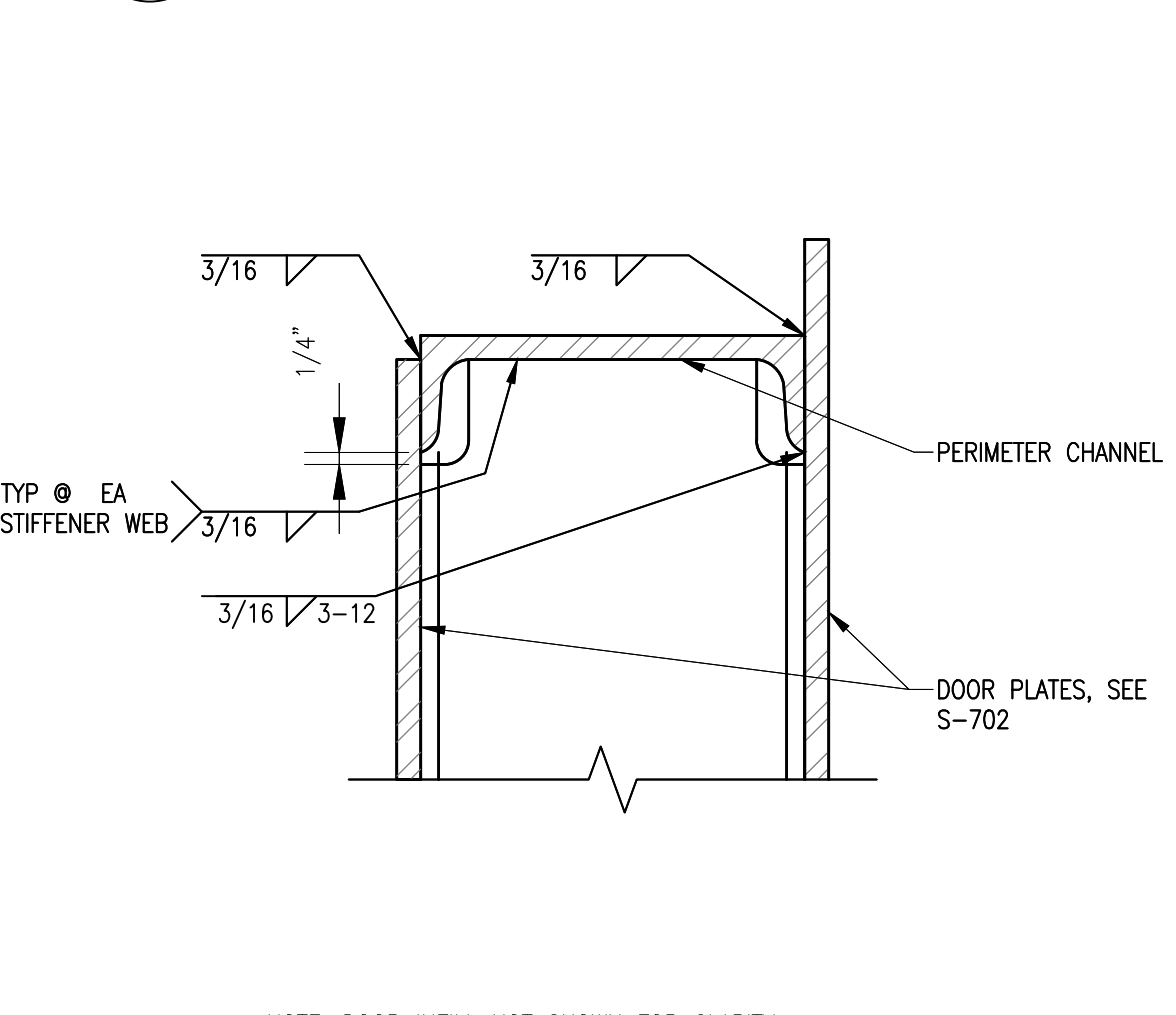
C5 DOOR TOP LAYOUT
SCALE: 3" = 1'-0"



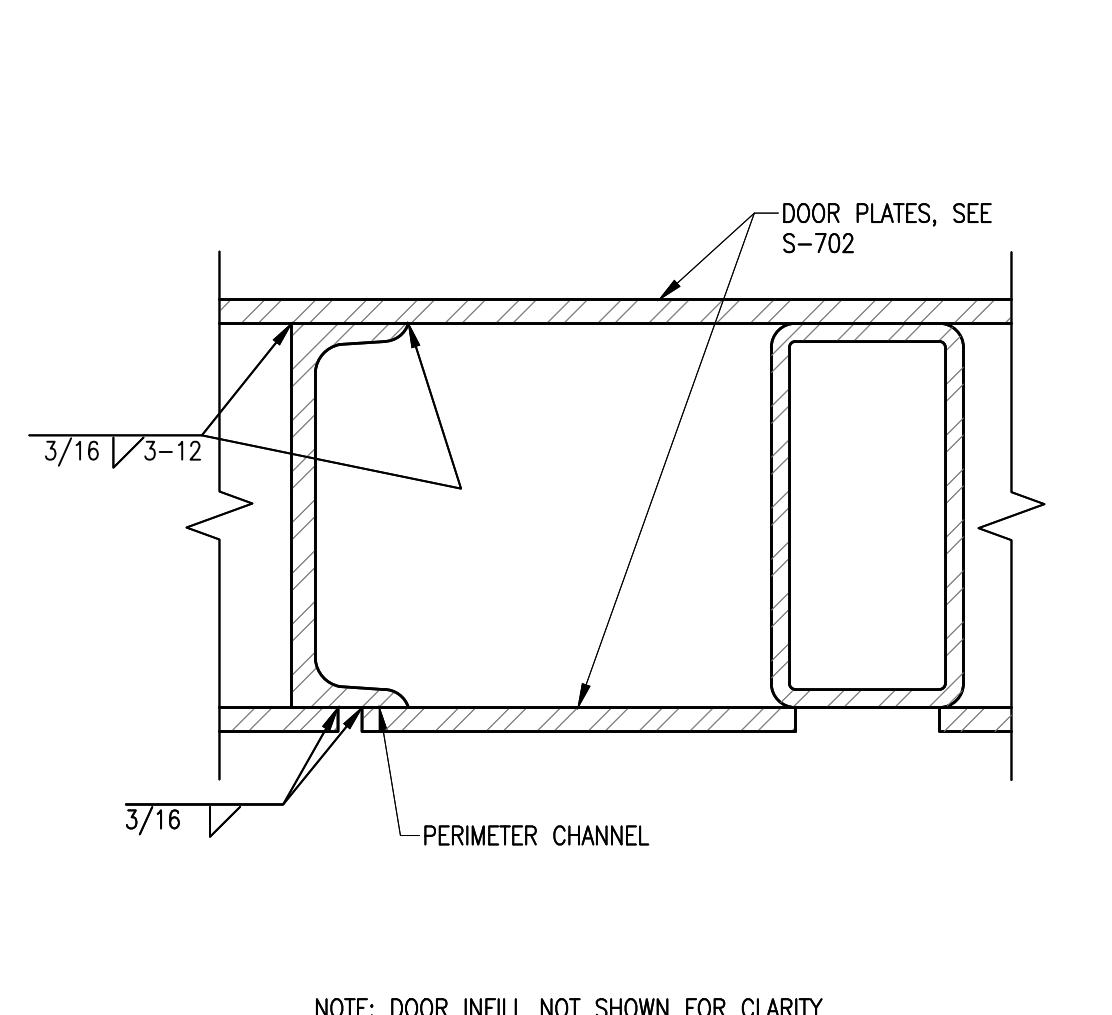
A1 ELEVATION - TYPICAL CONFIGURATION OF DOOR INFILL
SCALE: 3/4" = 1'-0"



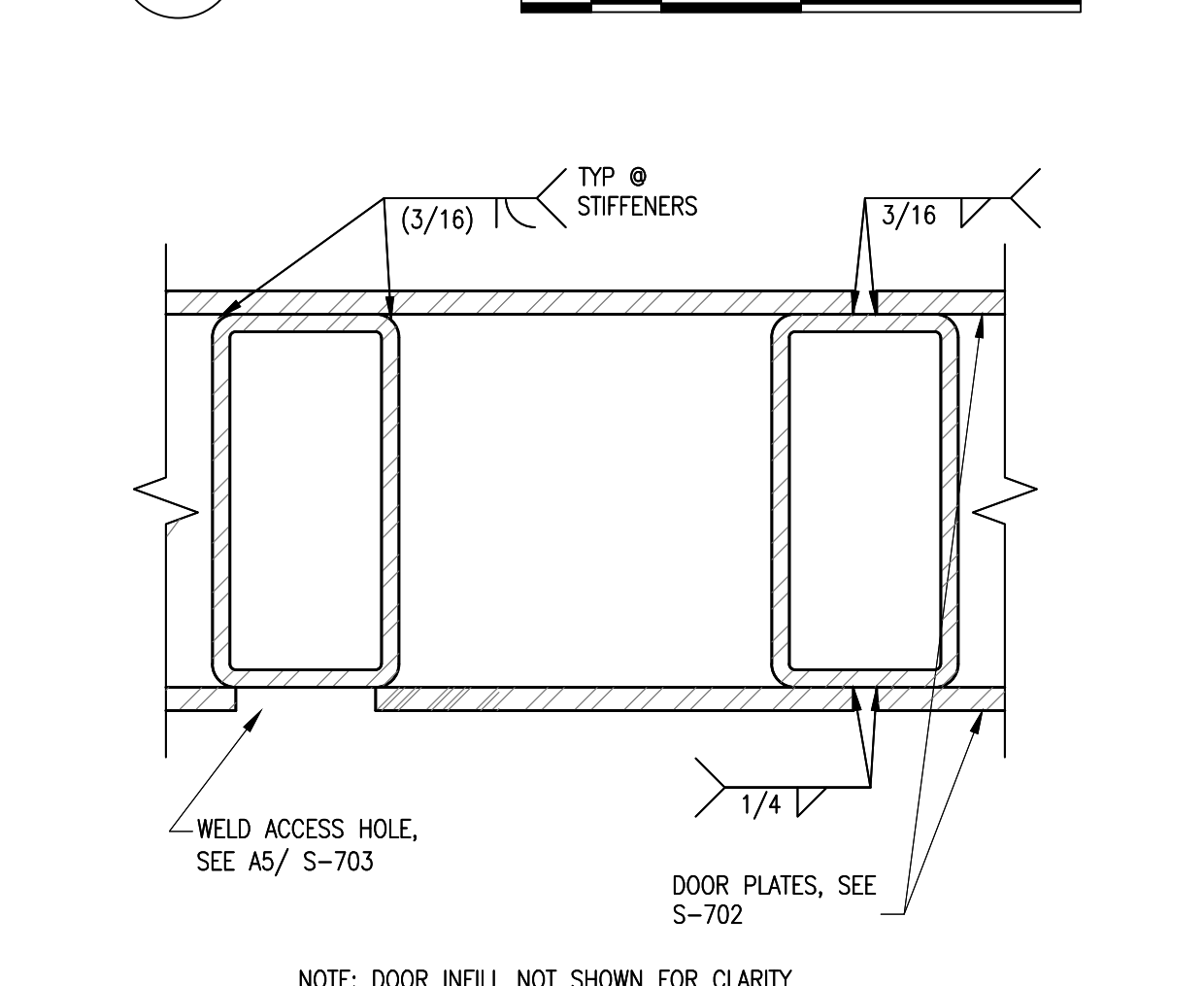
B2 DETAIL AT BOTTOM OF DOOR
SCALE: 3" = 1'-0"



B3 DETAIL AT TOP OF DOOR
SCALE: 3" = 1'-0"



B4 WELD DETAIL AT DOOR EDGE
SCALE: 3" = 1'-0"



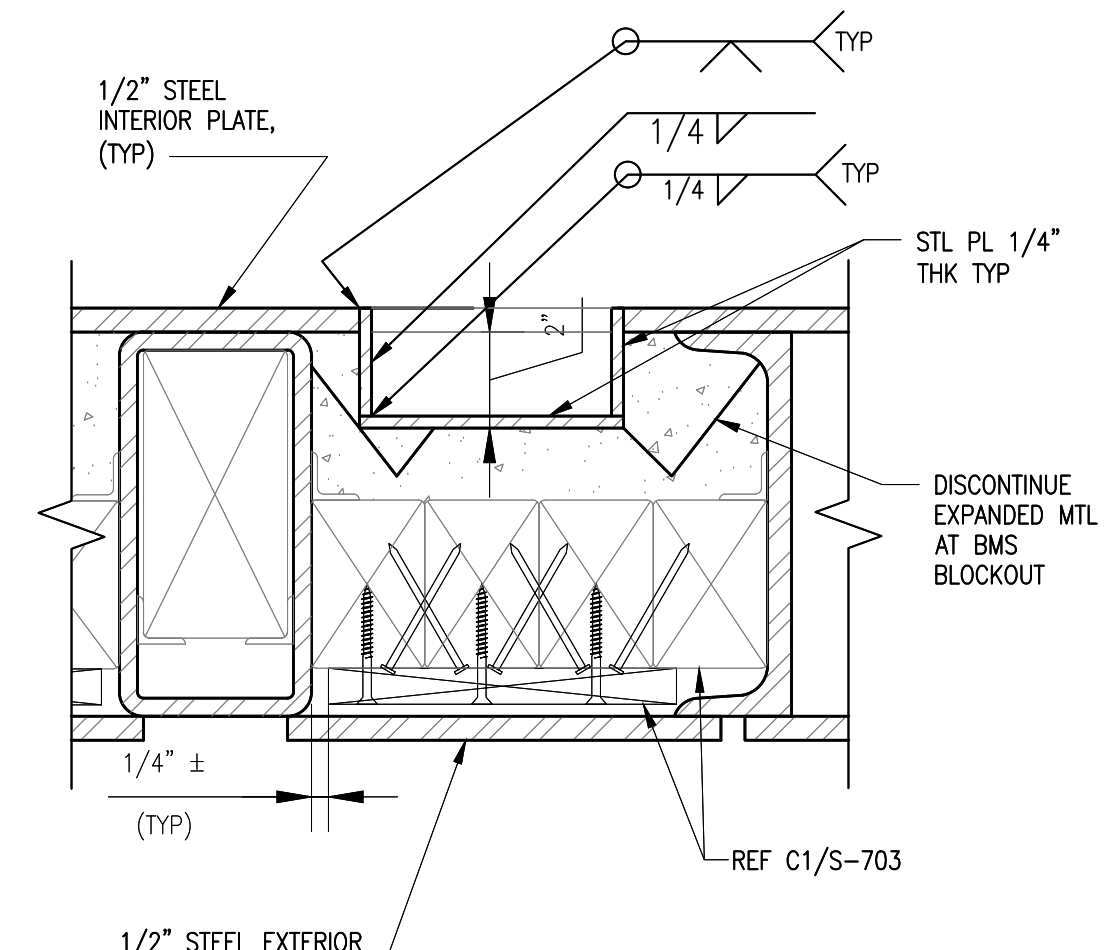
B5 WELD DETAIL AT INTERIOR STIFFENERS
SCALE: 3" = 1'-0"

NOTES TO DESIGNER:

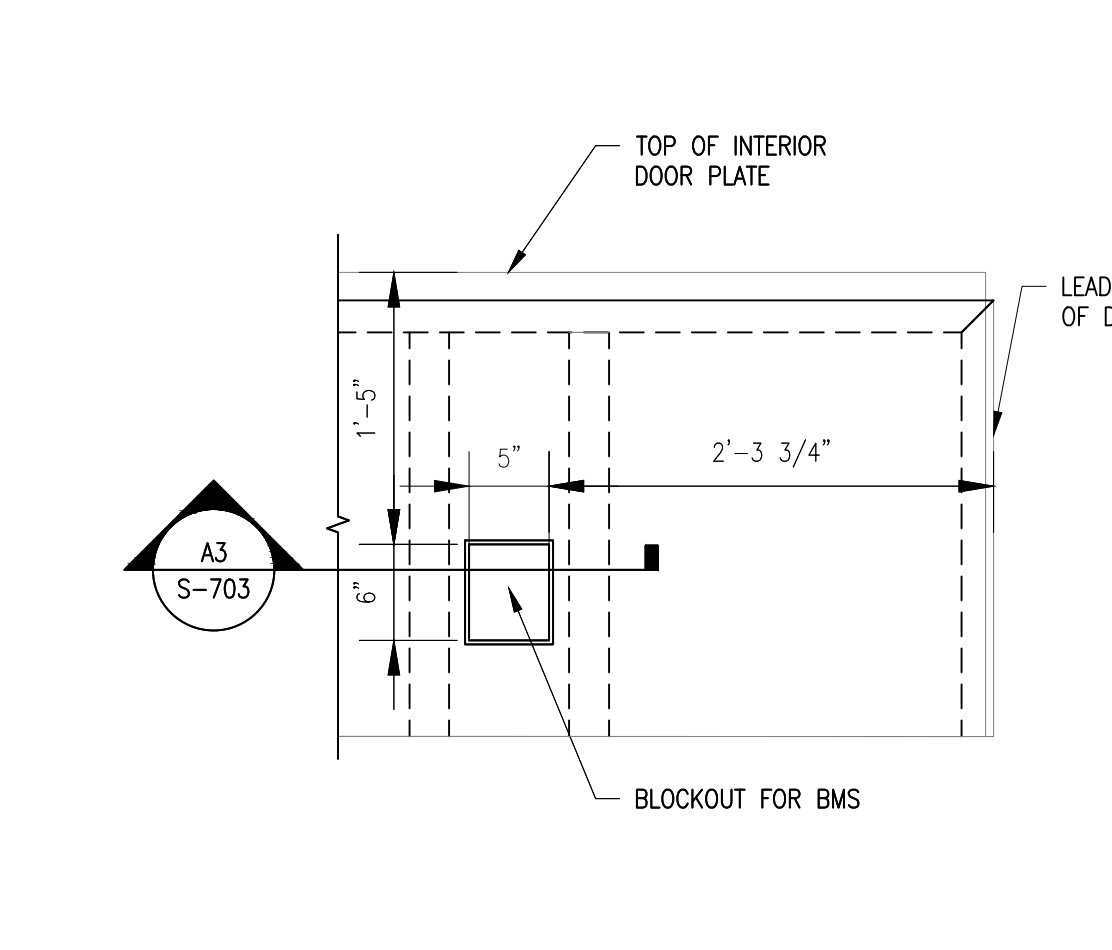
- WOOD INFILL SHOWN ON THIS SHEET CONSISTS OF RED OAK AND IPE SPECIES. THE WOOD INFILL IS REQUIRED FOR PHYSICAL SECURITY RATING OF THE DOOR, AND RED OAK AND IPE ARE SPECIFIED AS HARDWOODS WITH DESIRABLE TRAITS FOR ENHANCED PHYSICAL SECURITY. THE SITE-ADAPT ENGINEER MAY SELECT ALTERNATIVE HARDWOOD SPECIES 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:

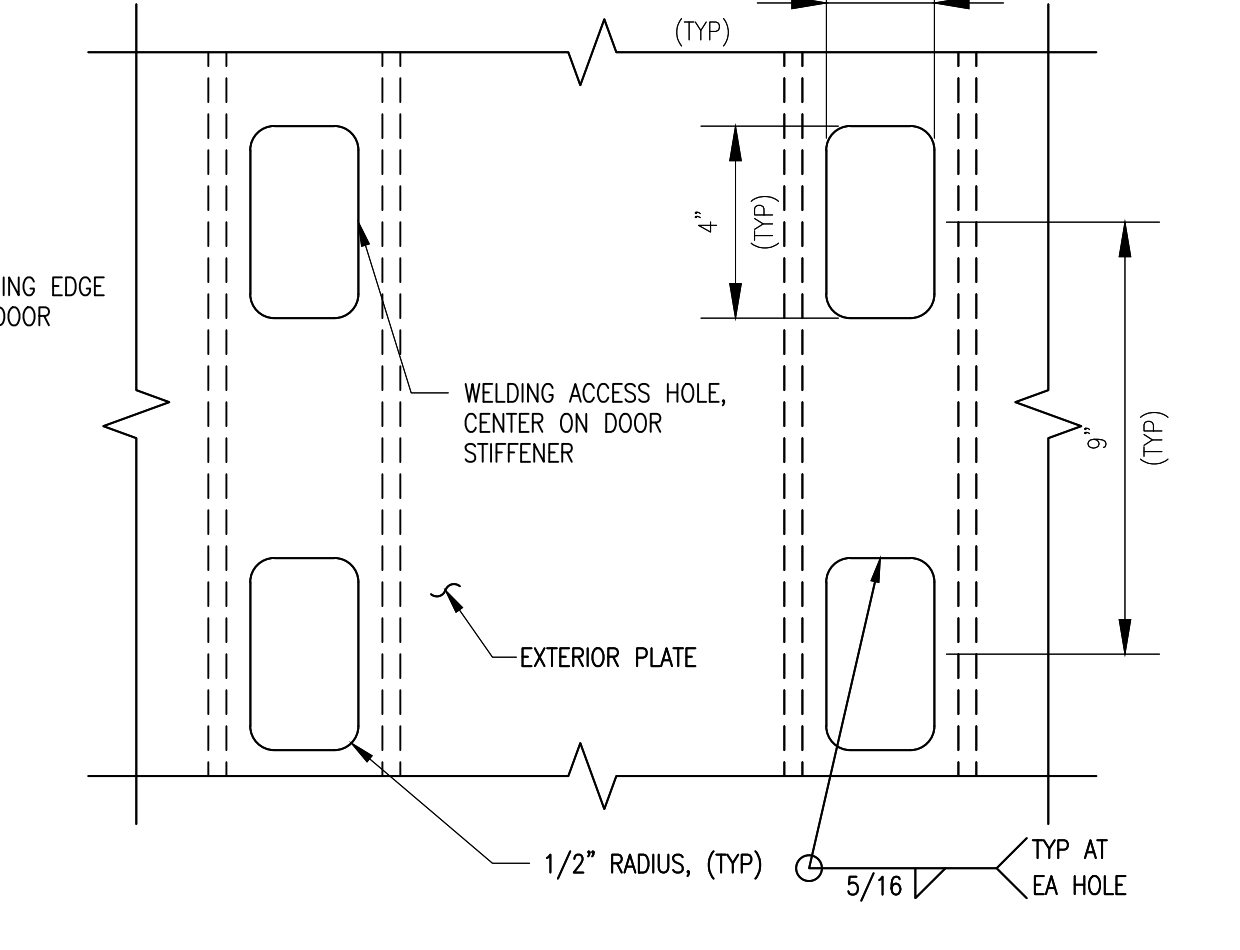
- CONCRETE FILLED DOORS REQUIRE WHEELS OFFSET NOMINAL TOWARD THE INTERIOR SIDE OF THE DOOR. DOOR MANUFACTURER MUST VERIFY CENTER OF GRAVITY OF DOOR PRIOR TO FINAL CONSTRUCTION.
- EXPANDED METAL REINFORCEMENT SHOWN IN THE CONCRETE FILL LAYER INSIDE THE DOOR IN DETAILS C1 AND C3 OF THIS SHEET MUST BE PLACED 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 DETAIL
SCALE: 1" = 1'-0"

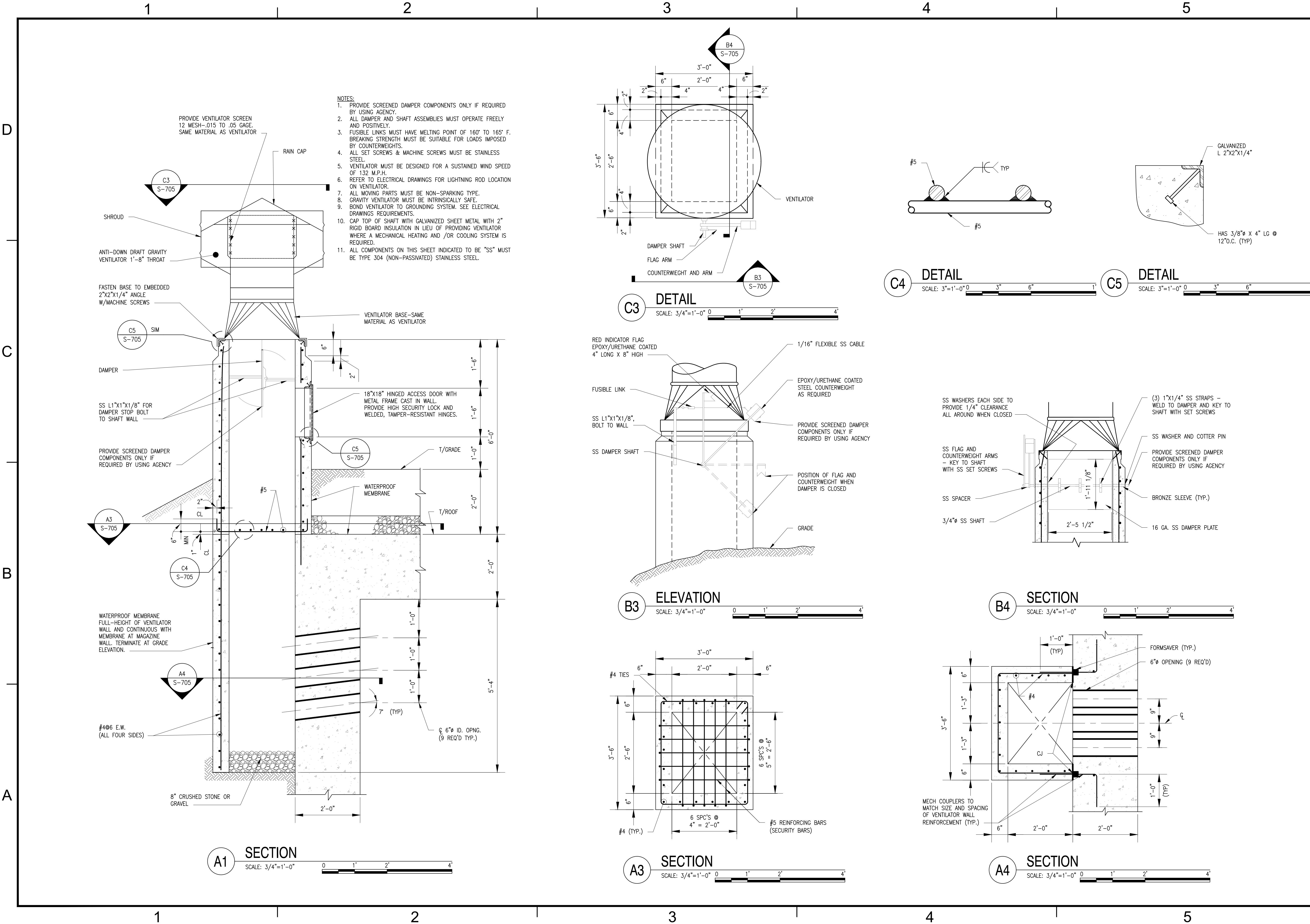


A5 EXTERIOR PLATE TO HSS STIFFENER CONNECTION
SCALE: 3" = 1'-0"


APPROVED	DATE
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES JAF	DRW SFF
CHK	TPH
PHDMM	
BRANCH MANAGER	
CHIEF ENGINEER	
FIRE PROTECTION	
DEPARTMENT OF THE NAVY	
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: AS NOTED	
PROJECT NO.: 1644867	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO. 12905848	
SHEET 29 OF 51	
S-703	
DRAWING REVISION: 25 AUGUST 2020	

FILE NAME: I:\DCSE\Magazines_Single_Boy\Submittals\Redesign\01_Final_March_2024\Drawings\S-703.dwg LAYOUT NAME: S-703 - DOOR DETAILS PLOTTED: Monday, April 22, 2024 - 10:07am USER: jordanenciano

FILE NAME: I:\DSE\Magazines_Single_Bay\Submittals\Revised\01_Final_March_2024\Drawings\S-705.dwg LAYOUT NAME: S-705 - VENTILATOR DETAILS SECTIONS AND ELEVATIONS PLOTTED: Monday, April 22, 2024 - 10:07am USER: jhonatan.enricio

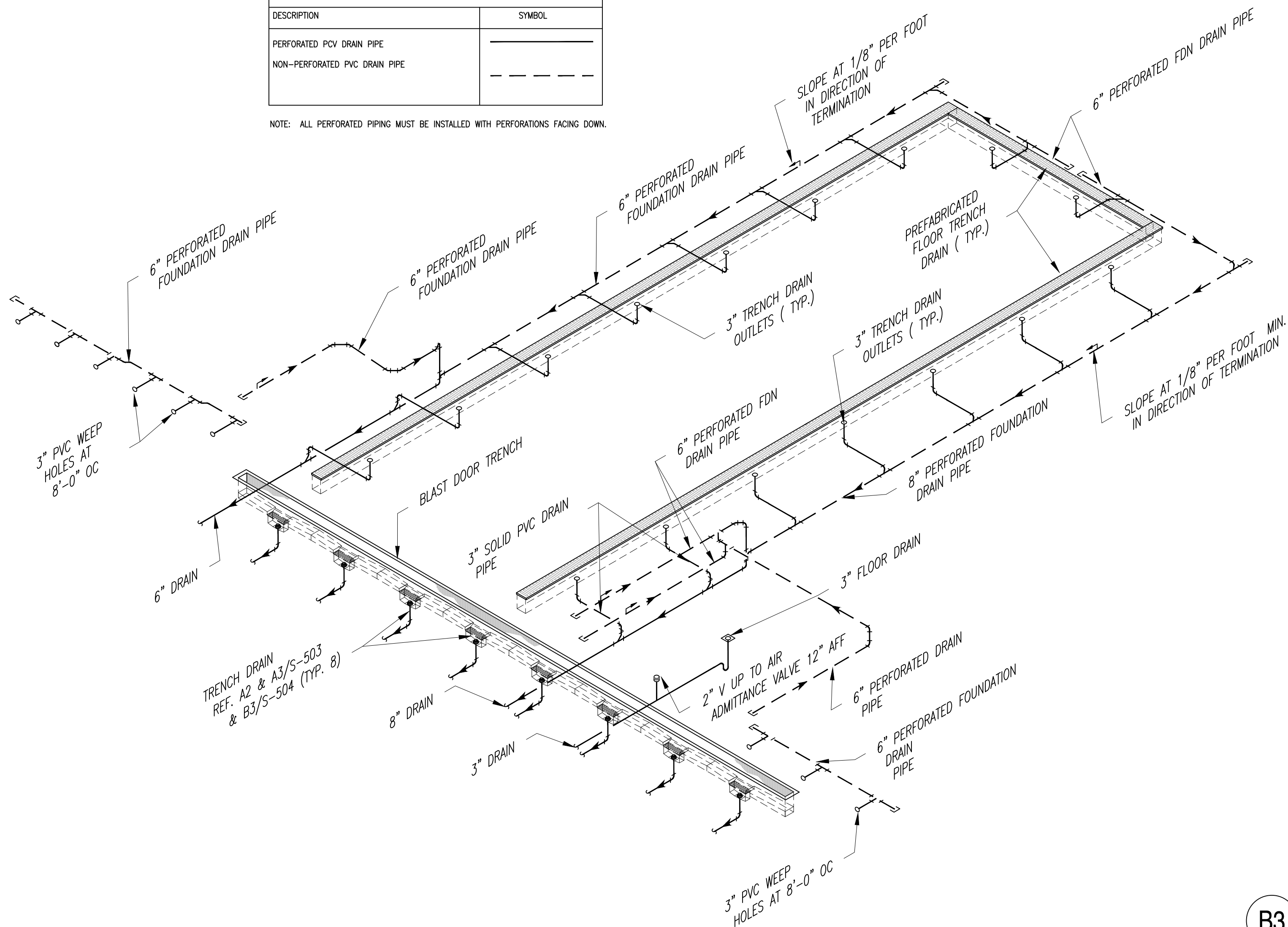


- NOTES:**
1. PROVIDE SCREENED DAMPER COMPONENTS ONLY IF REQUIRED BY USING AGENCY.
 2. ALL DAMPER AND SHAFT ASSEMBLIES MUST OPERATE FREELY AND POSITIVELY.
 3. FUSIBLE LINKS MUST HAVE MELTING POINT OF 160° TO 165° F. BREAKING STRENGTH MUST BE SUITABLE FOR LOADS IMPOSED BY COUNTERWEIGHTS.
 4. ALL SET SCREWS & 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.

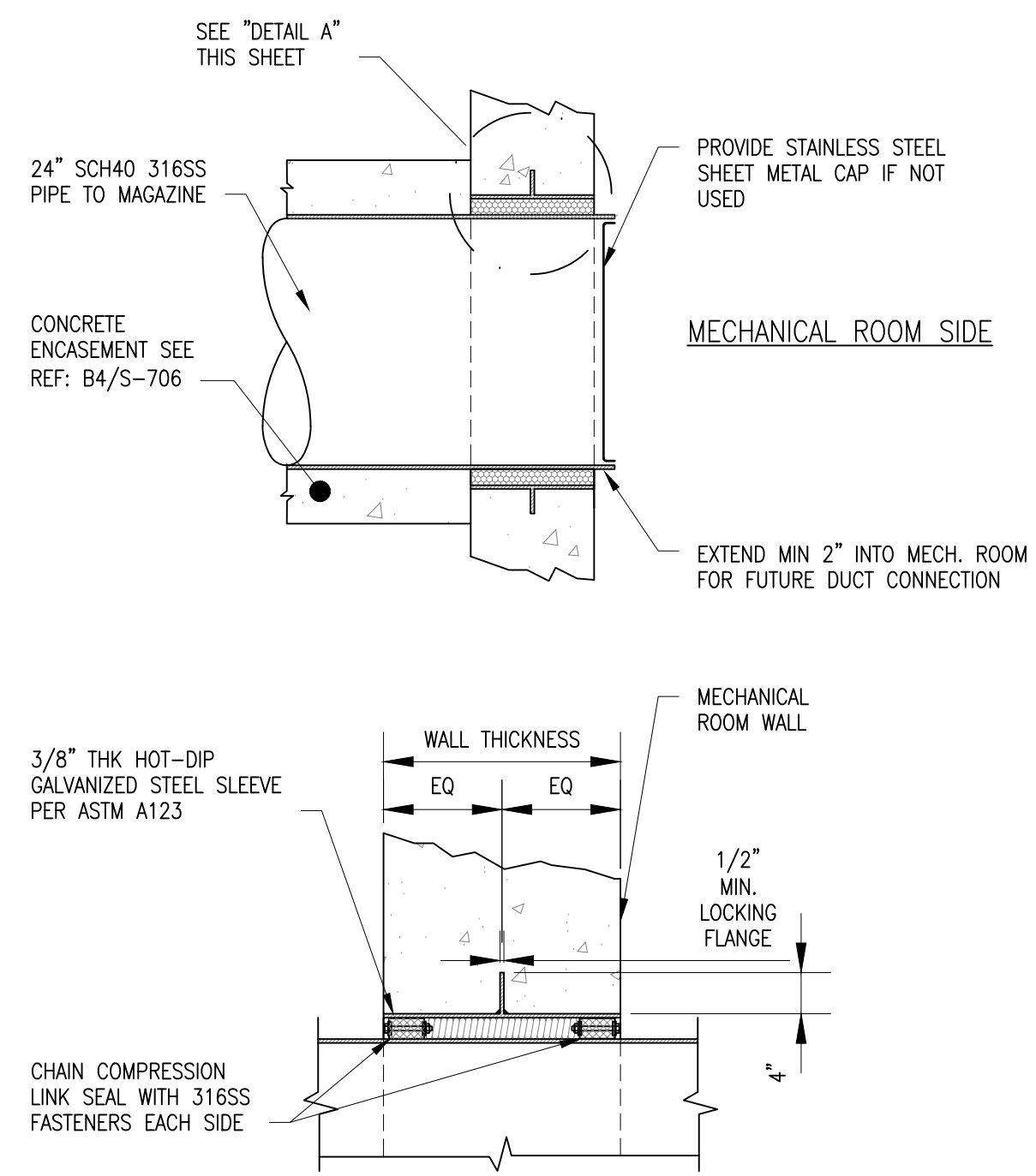
DATE	APPROVED
DESCRIPTION	SEAL
	
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES JAF	DRW SFF
CHK TPH	
BRANCH MANAGER	
CHIEF ENGINEER	
FIRE PROTECTION	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC HAMPTON ROADS, VIRGINIA	
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE	
VENTILATOR DETAILS, SECTIONS AND ELEVATIONS	
SCALE:	AS NOTED
PROJECT NO.:	1644867
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	12905850
SHEET	31 OF 51
S-705	
<small>DRAWING REVISION: 25 AUGUST 2020</small>	

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

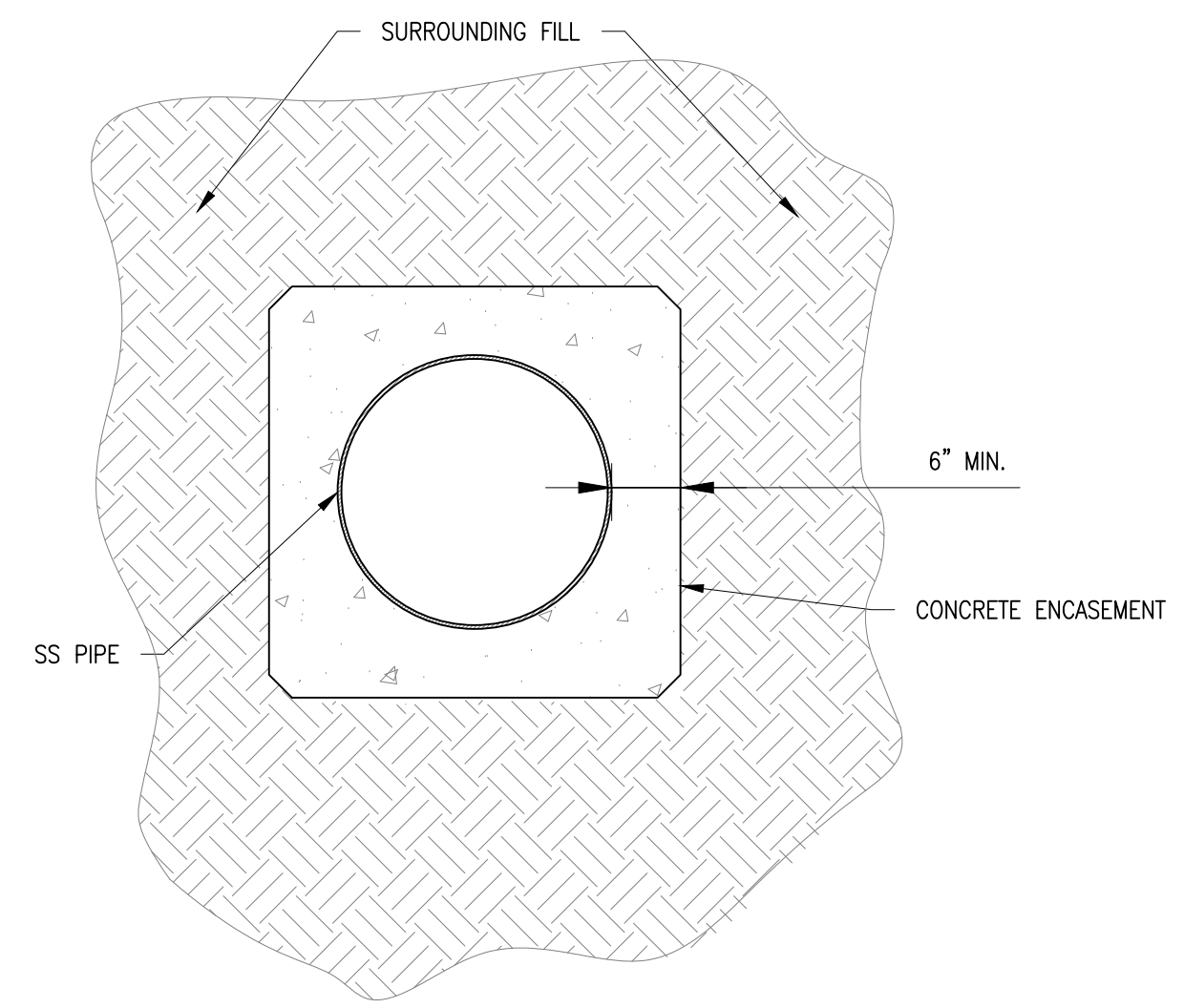
NOTE: ALL PERFORATED PIPING MUST BE INSTALLED WITH PERFORATIONS FACING DOWN.



B1 DRAINAGE ISOMETRIC
SCALE: NO SCALE



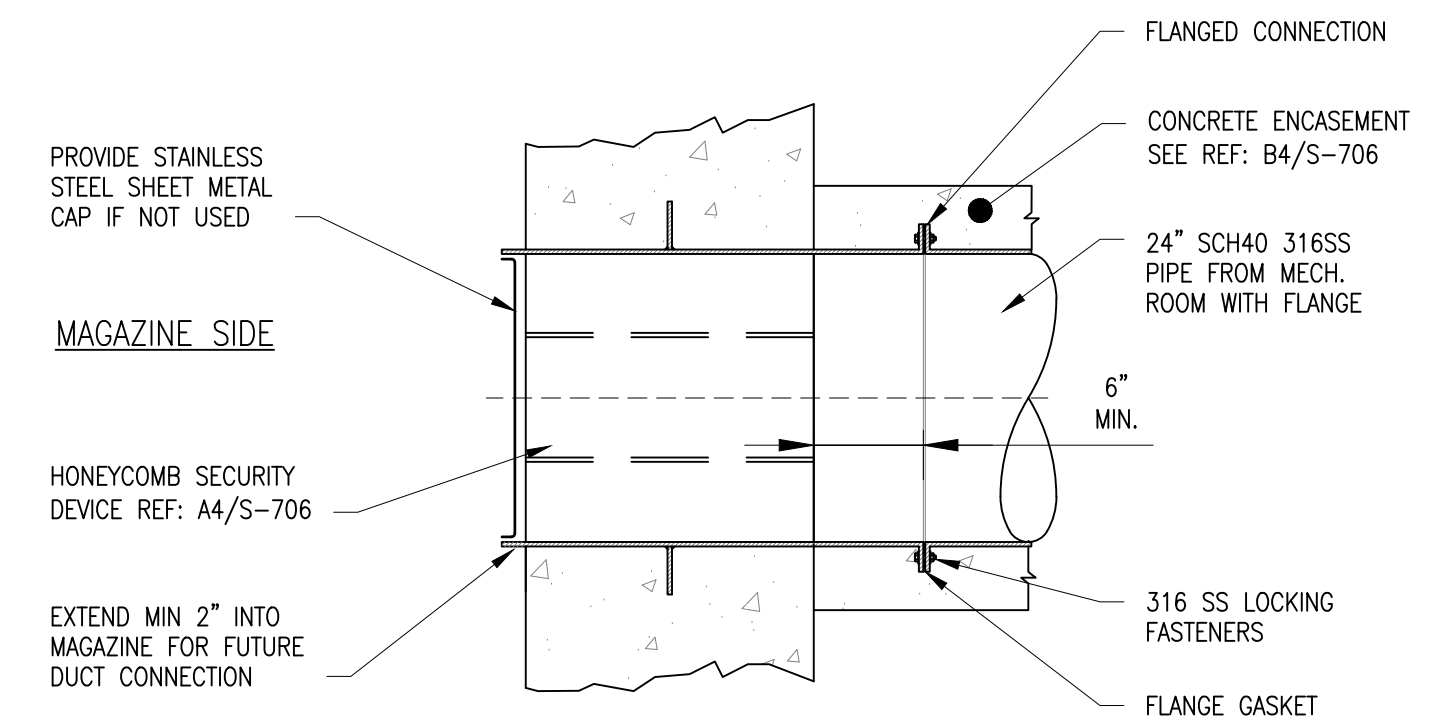
- NOTES:**
- THE NEED FOR A FIRE DAMPER AT MECHANICAL ROOM PENETRATIONS MUST BE DETERMINED BY THE SITE ADAPT ENGINEER.
 - ADJUST DESIGN TO INCORPORATE OUT-OF-WALL FIRE DAMPERS IF REQUIRED.
 - OUTER STEEL SLEEVE SIZE TO BE COORDINATED WITH CHAIN COMPRESSION LINK SEAL REQUIREMENTS.
 - INSTALL CONNECTING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



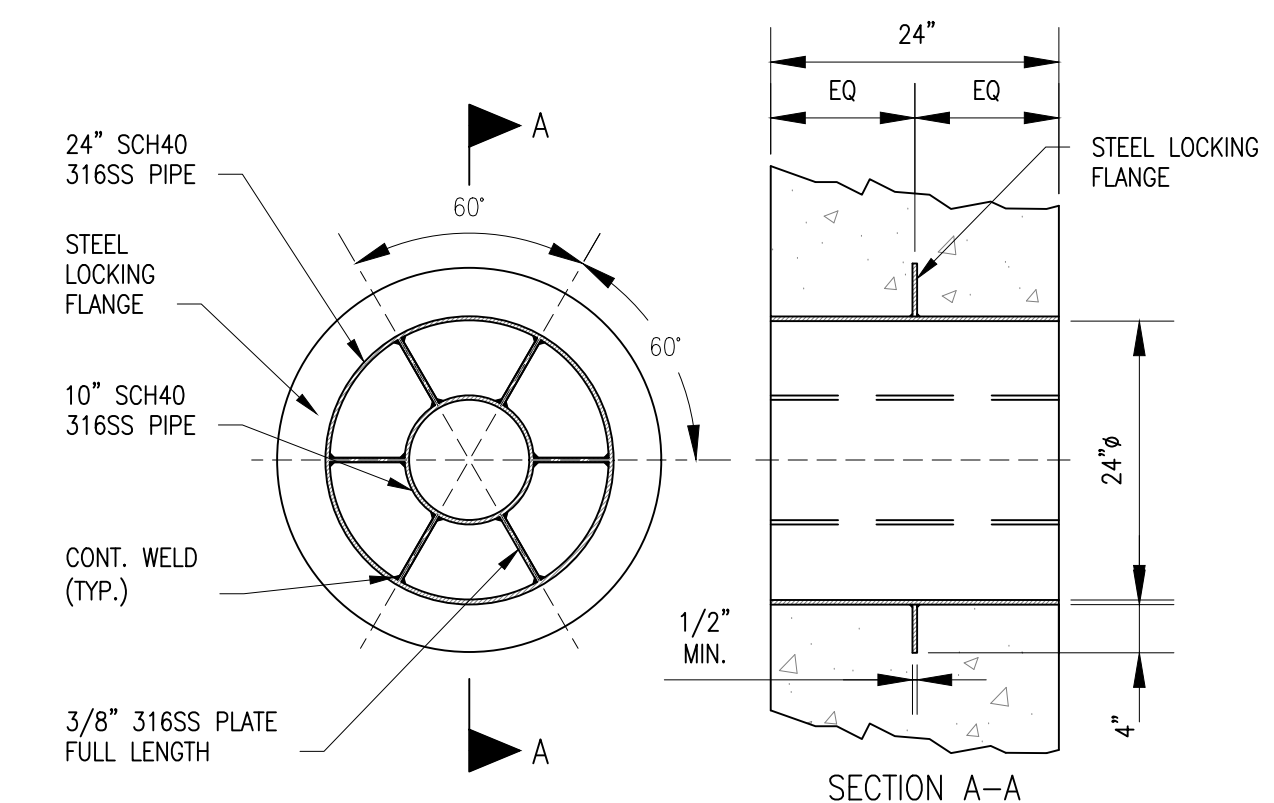
- NOTES:**
- DUCTWORK INSTALLED UNDERGROUND MUST BE 24" DIAMETER SCH40 304SS PIPE.
 - TRENCHES MUST BE PITCHED TO PREVENT THE BUILDUP OF WATER AROUND THE PIPE OR WALL PENETRATIONS.
 - PIPE MUST BE TIED DOWN TO AVOID FLOATING DURING POURING OF CONCRETE ENCASUREMENT.
 - CONCRETE MUST NOT BE POURED DIRECTLY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

B3 PIPE THRU MECHANICAL WALL DETAIL
SCALE: NO SCALE

B4 CONCRETE ENCASED PIPE DETAIL
SCALE: NO SCALE



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

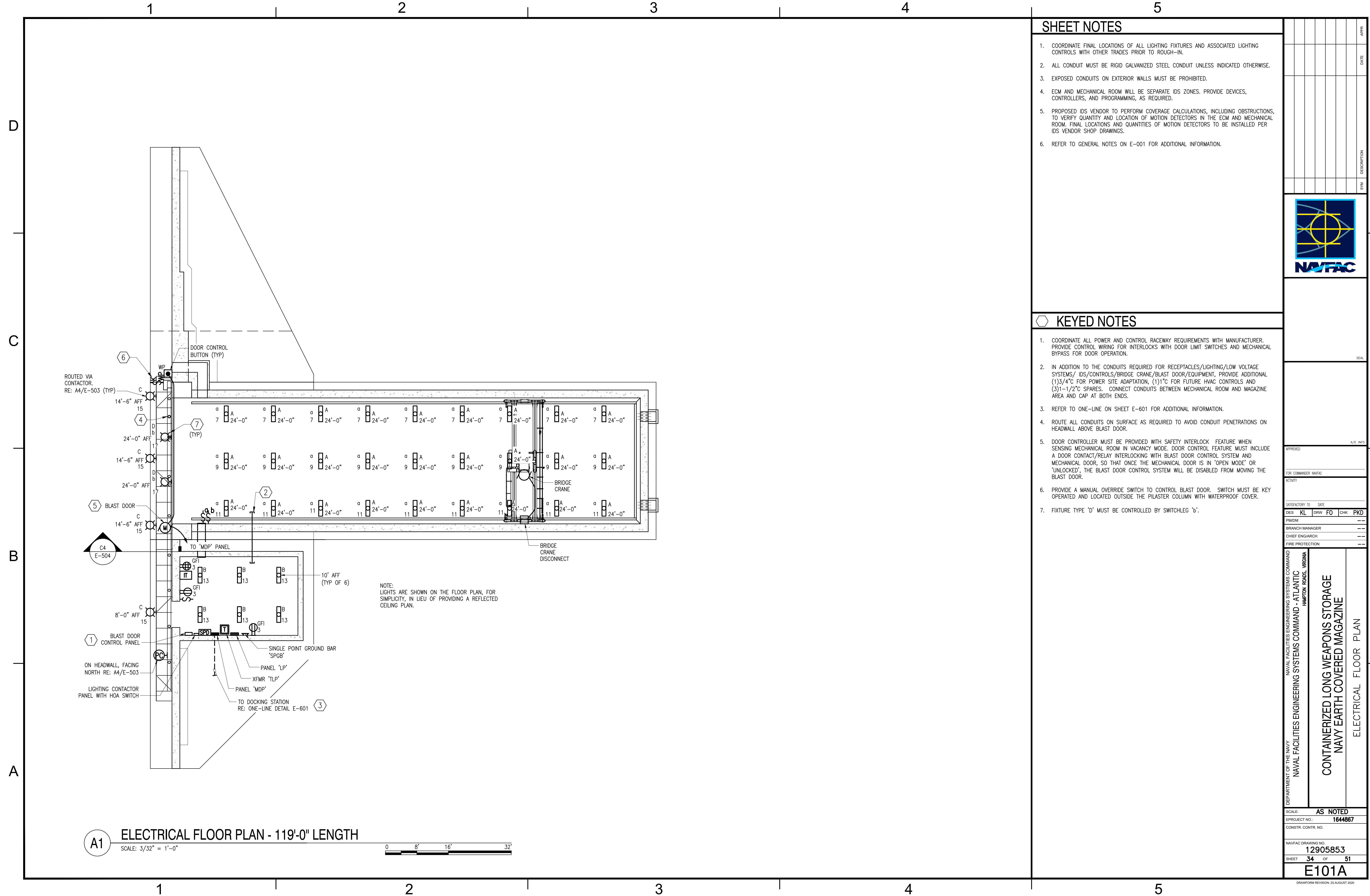


A4 HONEYCOMB SECURITY DEVICE DETAIL
SCALE: 3/4"=1'-0"

APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO DATE		
DES: JAF	DRW: SFF	CHK: TPH
PM/DM		
BRANCH MANAGER		
CHIEF ENGINEER		
FIRE PROTECTION		
DEPARTMENT OF THE NAVY 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:	AS NOTED	
PROJECT NO.:	1644867	
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO.	12905851	
SHEET	32	OF 51
S-706		
DRAWING REVISION: 25 AUGUST 2020		

FILE NAME: I:\DCS\Magazines\Design\01_Final_March_2024\Drawings\S-706.dwg LAYOUT NAME: S-706 - DRAINAGE ISOMETRIC & PENETRATION DETAILS PLOTTED: Monday, April 22, 2024 1:00:07pm USER: jhontanencas

FILE NAME: J:\DCSE\Magazines\Redesign\01_Final_March_2024\Drawings\E101A.dwg LAYOUT NAME: E101A - ELECTRICAL FLOOR PLAN PLOTTED: Monday, April 22, 2024 - 10:07am USER: jhennings



SHEET NOTES

- COORDINATE FINAL LOCATIONS OF ALL LIGHTING FIXTURES AND ASSOCIATED LIGHTING CONTROLS WITH OTHER TRADES PRIOR TO ROUGH-IN.
- ALL CONDUIT MUST BE RIGID GALVANIZED STEEL CONDUIT UNLESS INDICATED OTHERWISE.
- EXPOSED CONDUITS ON EXTERIOR WALLS MUST BE PROHIBITED.
- ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
- 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.
- REFER TO GENERAL NOTES ON E-001 FOR ADDITIONAL INFORMATION.

KEYED NOTES

- COORDINATE ALL POWER AND CONTROL RACEWAY REQUIREMENTS WITH MANUFACTURER. PROVIDE CONTROL WIRING FOR INTERLOCKS WITH DOOR LIMIT SWITCHES AND MECHANICAL BYPASS FOR DOOR OPERATION.
- IN ADDITION TO THE CONDUITS REQUIRED FOR RECEPTACLES/LIGHTING/LOW VOLTAGE SYSTEMS/ IDS/CONTROLS/BRIDGE CRANE/BLAST DOOR/EQUIPMENT, PROVIDE ADDITIONAL (1)3/4" FOR POWER SITE ADAPTATION, (1)1" FOR FUTURE HVAC CONTROLS AND (3)1-1/2" SPARES. CONNECT CONDUITS BETWEEN MECHANICAL ROOM AND MAGAZINE AREA AND CAP AT BOTH ENDS.
- REFER TO ONE-LINE ON SHEET E-601 FOR ADDITIONAL INFORMATION.
- ROUTE ALL CONDUITS ON SURFACE AS REQUIRED TO AVOID CONDUIT PENETRATIONS ON HEADWALL ABOVE BLAST DOOR.
- 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.
- PROVIDE A MANUAL OVERRIDE SWITCH TO CONTROL BLAST DOOR. SWITCH MUST BE KEY OPERATED AND LOCATED OUTSIDE THE PILASTER COLUMN WITH WATERPROOF COVER.
- FIXTURE TYPE 'D' MUST BE CONTROLLED BY SWITCHLEG 'b'.

DATE	DESCRIPTION	BY	CHKD



APPROVED: _____
FOR COMMANDER NAVFAC

ACTIVITY: _____
SATISFACTORY TO: _____ DATE: _____
DES: KL DRW: FO CHK: PKD

BRANCH MANAGER: _____
CHIEF ENGINEER: _____
FIRE PROTECTION: _____

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

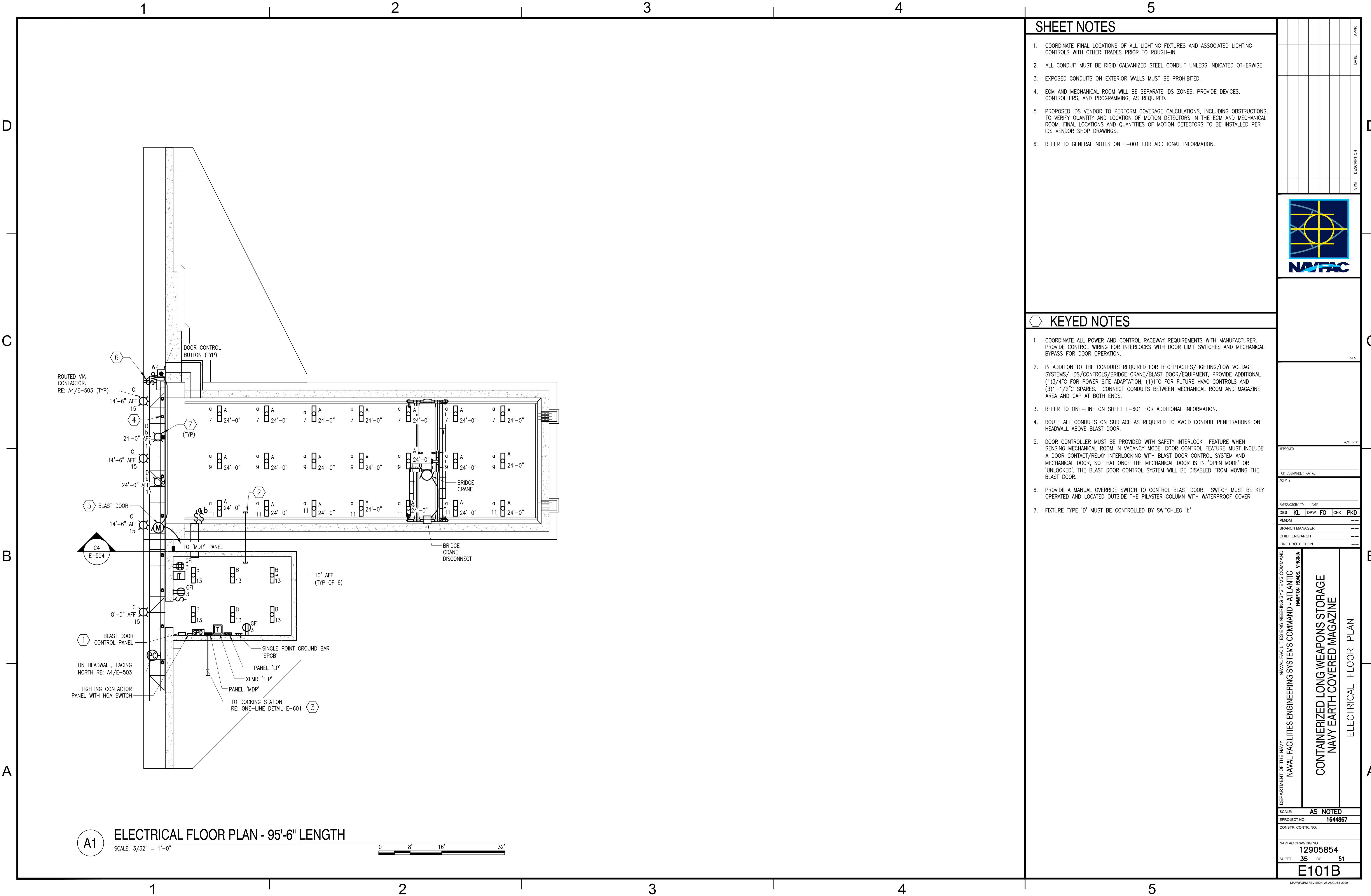
**CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE**

ELECTRICAL FLOOR PLAN

SCALE: AS NOTED
PROJECT NO.: 1644867
CONSTR. CONTR. NO.: _____
NAVFAC DRAWING NO.: 12905853
SHEET 34 OF 51
E101A
DRAWING REVISION: 25 AUGUST 2020

A1 ELECTRICAL FLOOR PLAN - 119'-0" LENGTH
SCALE: 3/32" = 1'-0"
0 8' 16' 32'

FILE NAME: J:\DCS\Magazines\Single_Bay\Submittals\Revised\01_Final_March_2024\Drawings\E101B.dwg LAYOUT NAME: E101B - ELECTRICAL FLOOR PLAN PLOT DATE: Monday, April 22, 2024 - 1:00:00pm USER: jhonatan.franco



SHEET NOTES

- COORDINATE FINAL LOCATIONS OF ALL LIGHTING FIXTURES AND ASSOCIATED LIGHTING CONTROLS WITH OTHER TRADES PRIOR TO ROUGH-IN.
- ALL CONDUIT MUST BE RIGID GALVANIZED STEEL CONDUIT UNLESS INDICATED OTHERWISE.
- EXPOSED CONDUITS ON EXTERIOR WALLS MUST BE PROHIBITED.
- ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
- 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.
- REFER TO GENERAL NOTES ON E-001 FOR ADDITIONAL INFORMATION.

KEYED NOTES

- COORDINATE ALL POWER AND CONTROL RACEWAY REQUIREMENTS WITH MANUFACTURER. PROVIDE CONTROL WIRING FOR INTERLOCKS WITH DOOR LIMIT SWITCHES AND MECHANICAL BYPASS FOR DOOR OPERATION.
- IN ADDITION TO THE CONDUITS REQUIRED FOR RECEPTACLES/LIGHTING/LOW VOLTAGE SYSTEMS/ IDS/CONTROLS/BRIDGE CRANE/BLAST DOOR/EQUIPMENT, PROVIDE ADDITIONAL (1)3/4\"/>

DATE	DESCRIPTION



APPROVED: _____
FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____
DES: KL DRW: FO CHK: PKD
PM/DM: _____
BRANCH MANAGER: _____
CHIEF ENGINEER: _____
FIRE PROTECTION: _____

DEPARTMENT OF THE NAVY
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

SCALE: AS NOTED
PROJECT NO.: 1644867
CONSTR. CONTR. NO.: _____
NAVFAC DRAWING NO.: 12905854
SHEET 35 OF 51
E101B
DRAWING REVISION: 25 AUGUST 2020

A1 ELECTRICAL FLOOR PLAN - 95'-6" LENGTH
SCALE: 3/32" = 1'-0"
0 8' 16' 32'

1

2

3

4

5

SHEET NOTES

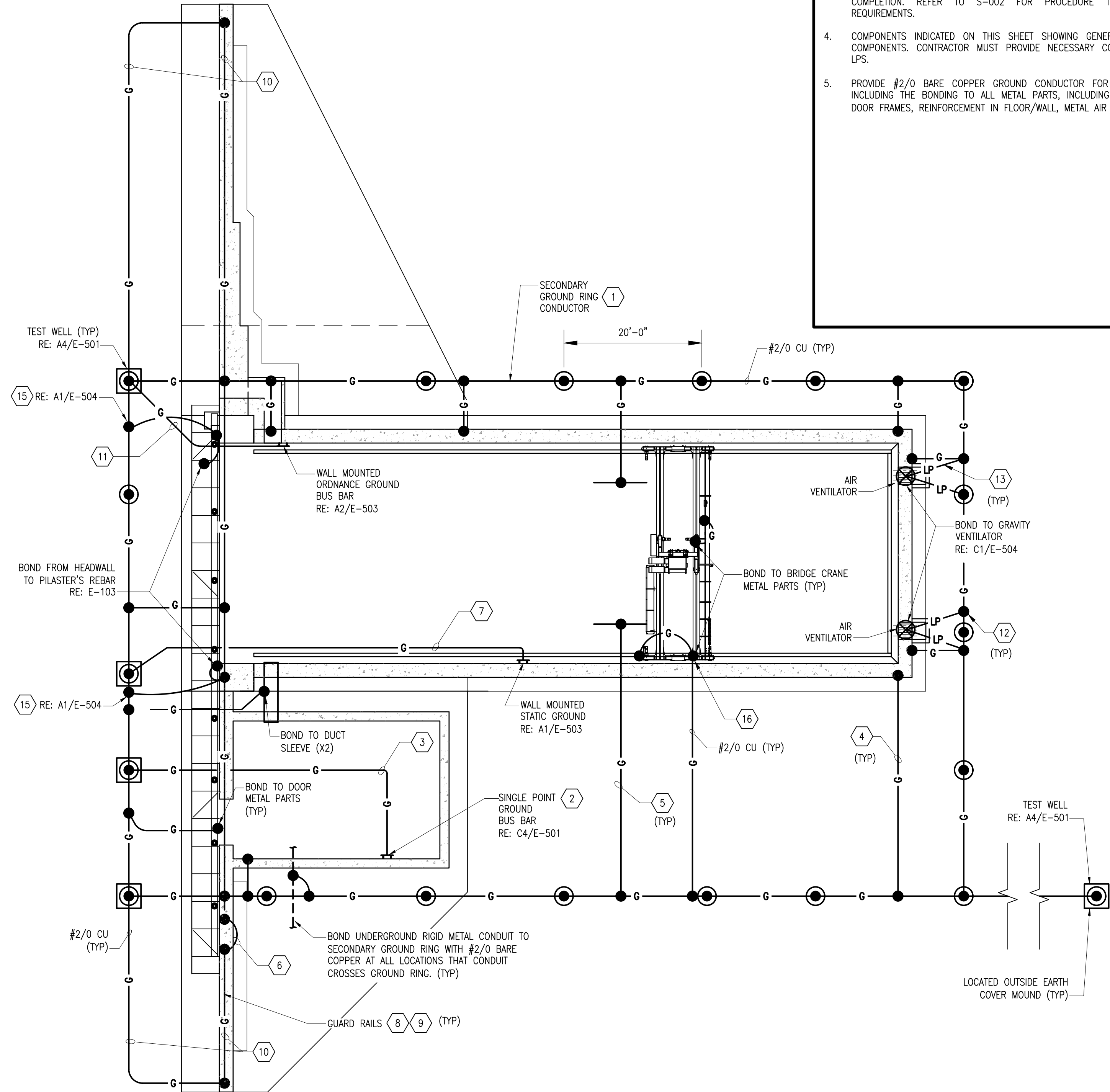
1. THE TERM 'LIGHTNING PROTECTION SYSTEM' MUST BE REFERRED TO AS 'LPS' HENCEFORTH.
2. THE STANDARD DESIGN DRAWINGS FOR LPS INSTALLATION ARE IN COMPLIANCE WITH NFPA 780 AND AFMAN 32-1065 CRITERIA, AND MANUFACTURED IN ACCORDANCE WITH U.L. 96, IN ACCORDING WITH NAVSEA OP 5 OR DESR 6055.09_AFMAN 91-201.
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 NAVSEA OPS, 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 OPS 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 OPS 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 OPS.
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 OPS. 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 CRANE RAILSDD TO ENSURE THE SYSTEM IS GROUNDED.



A1 ELECTRICAL LIGHTNING PROTECTION & GROUNDING PLAN - 95'-6" LENGTH
 SCALE: 3/32" = 1'-0"
 0 8' 16' 32'

APPROVED	DATE
FOR COMMANDER NAVFAC	DESCRIPTION
SATISFACTORY TO DATE	BY
DES KL	DRW FO
CHK PKD	
BRANCH MANAGER	
CHIEF ENGINEER	
FIRE PROTECTION	
DEPARTMENT OF THE NAVY 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	
SCALE: AS NOTED	
PROJECT NO.: 1644867	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO. 12905856	
SHEET 37 OF 51	
EG101B	
DRAWING REVISION: 25 AUGUST 2020	

FILE NAME: J:\DSE\Magazines\Single Bay\Submittals\Redesign\01_Final_March_2024\Drawings\EG101B.dwg LAYOUT NAME: EG101B - ELECTRICAL GROUNDING PLAN PLOTTED: Monday, April 22, 2024 - 10:07am USER: jhonatanencio

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SHEET NOTES

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

D

C

B

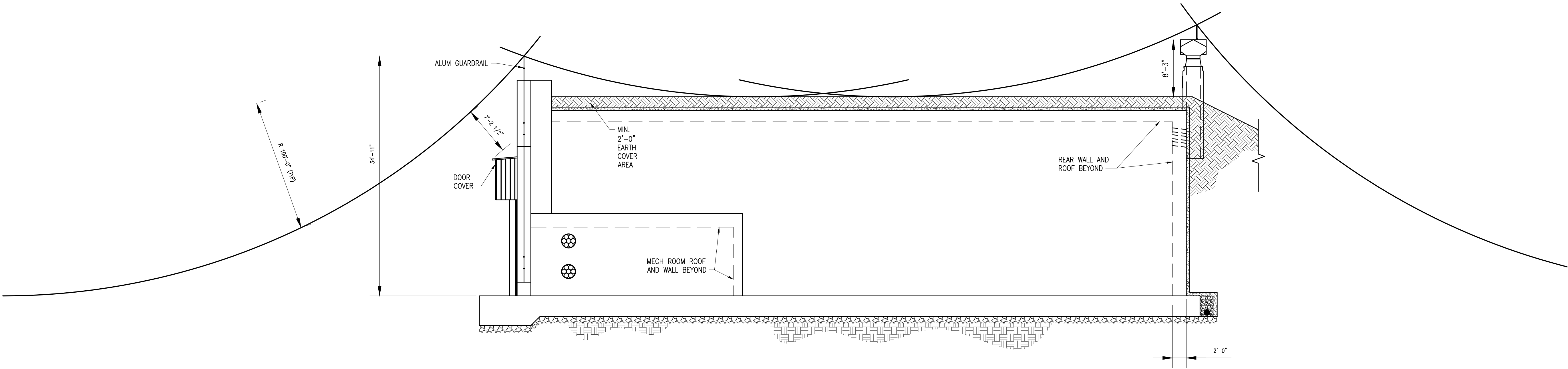
A

D

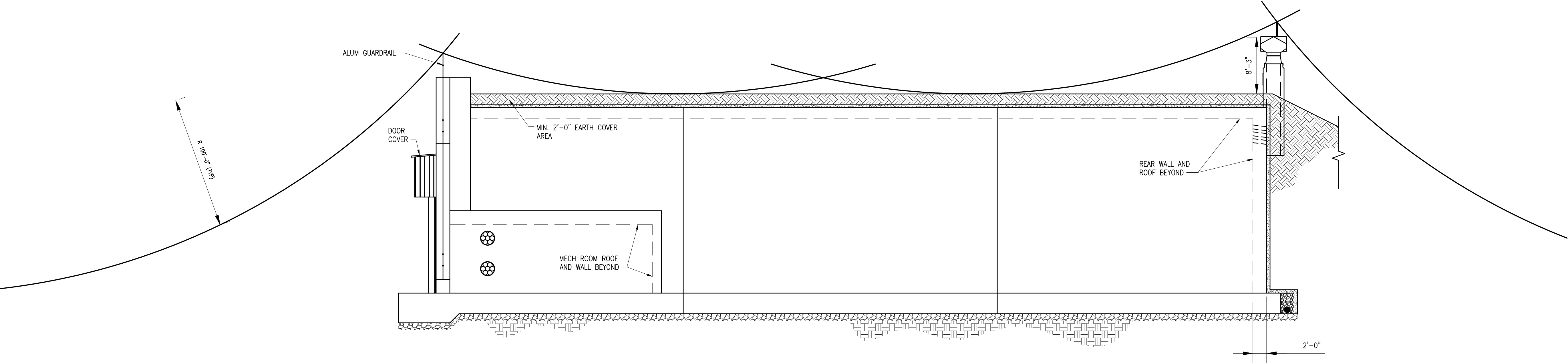
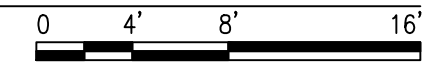
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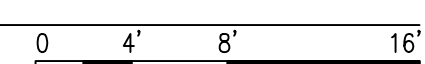
A



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



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



APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES	KL	DRW
FO	CHK	PKD
PMIDM		
BRANCH MANAGER		
CHIEF ENGINEER		
FIRE PROTECTION		
DEPARTMENT OF THE NAVY	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:	AS NOTED	
PROJECT NO.:	1644867	
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO.	12905858	
SHEET	39	OF 51
EG202		
DRAWING REVISION: 25 AUGUST 2020		

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FILE NAME: J:\DSEA\Magazines_Single_Boj\Submittals\Redesign\01_Final_March_2024\Drawings\EG202.dwg LAYOUT NAME: EG202 - ELECTRICAL LIGHTNING ZONE PROTECTION ELEVATION PLOTTED: Monday, April 22, 2024 - 10:07am USER: jhonatanenciso

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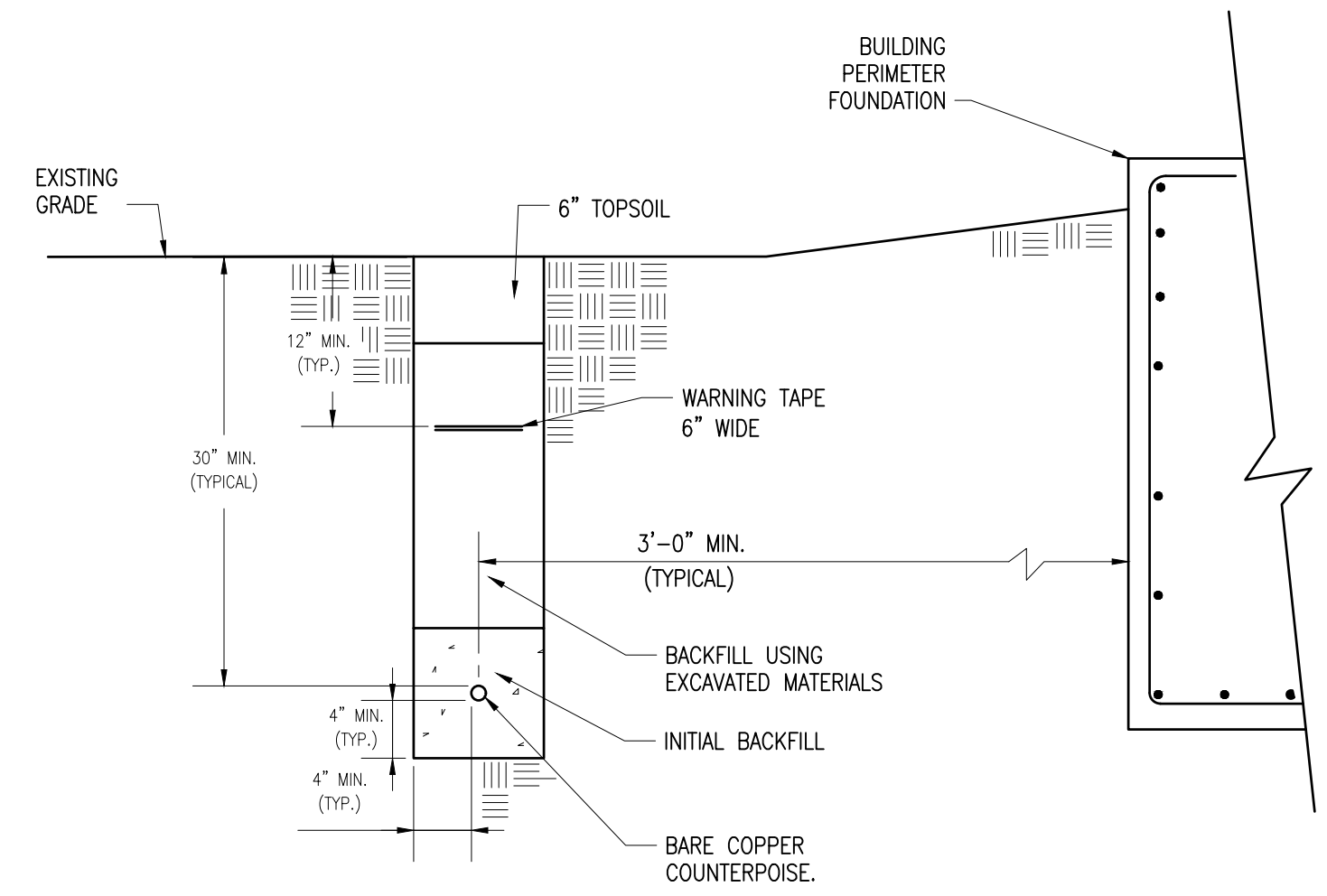
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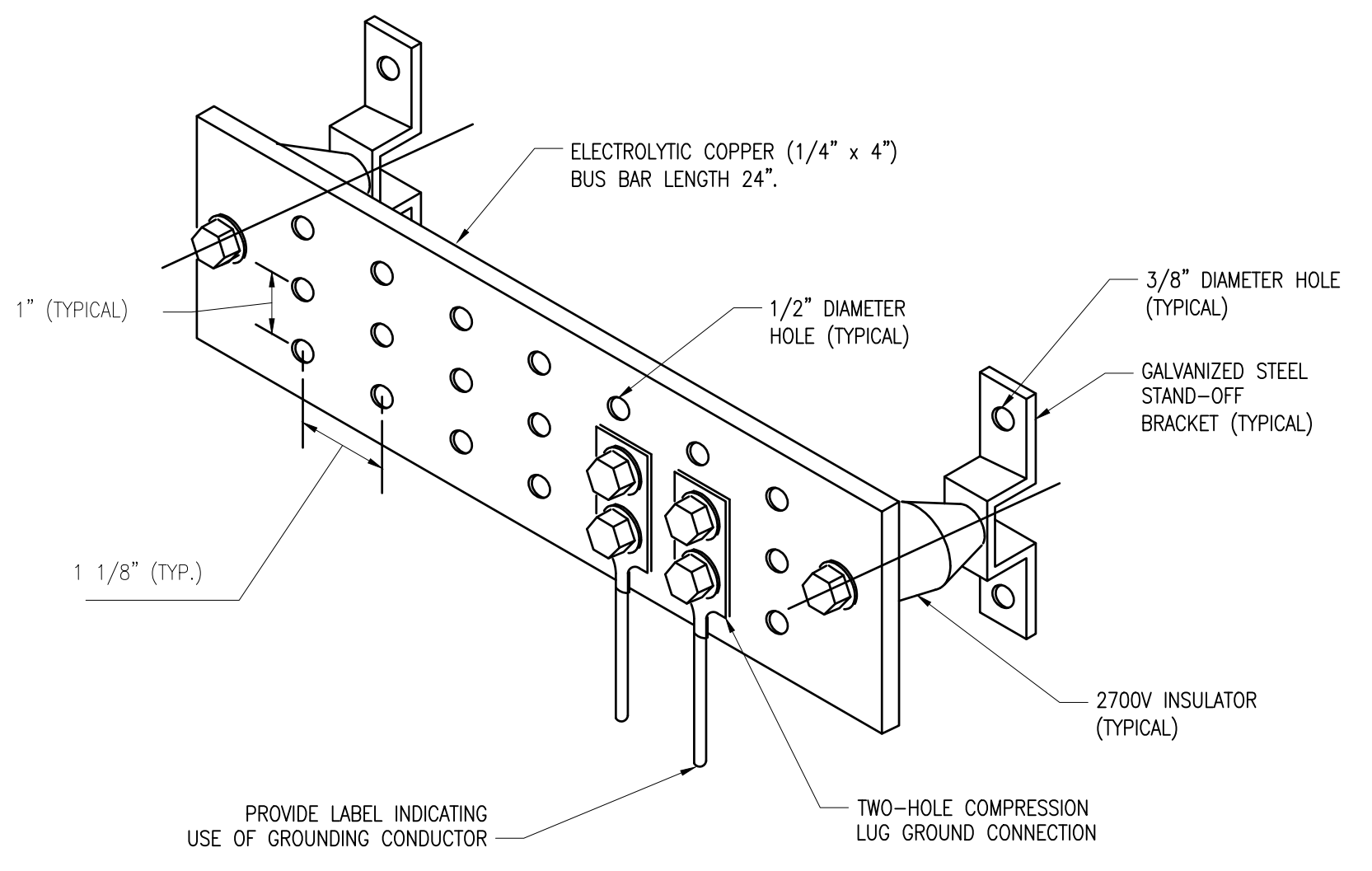
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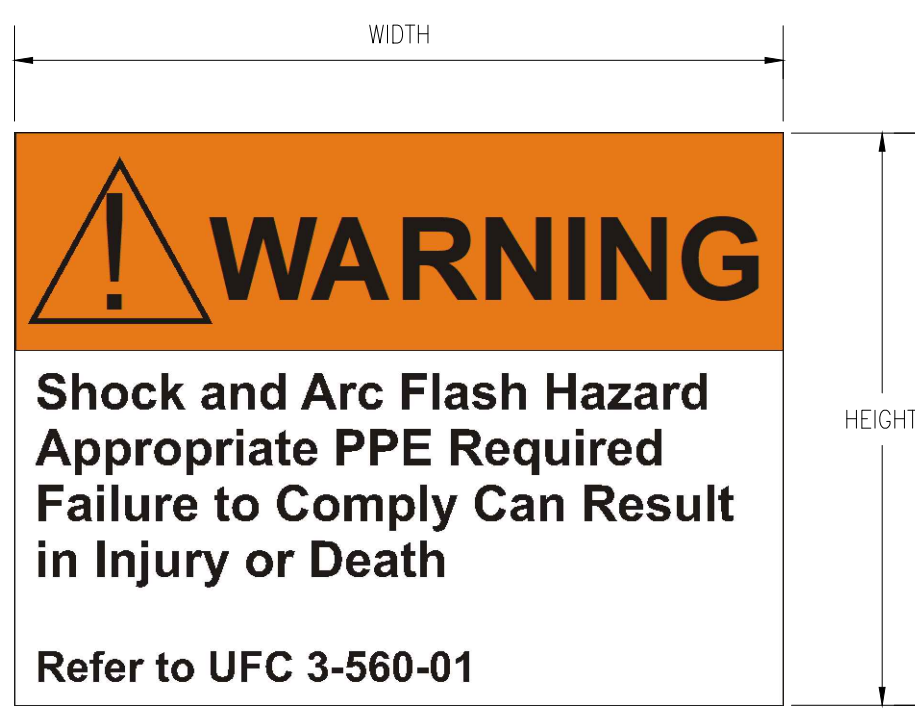
A



C2 TYPICAL GROUND RING INSTALLATION DETAIL
SCALE: NO SCALE



C4 SINGLE POINT GROUNDING BUS BAR (SPGB) BAR DETAIL - TYPICAL
SCALE: NO SCALE



NOTES:

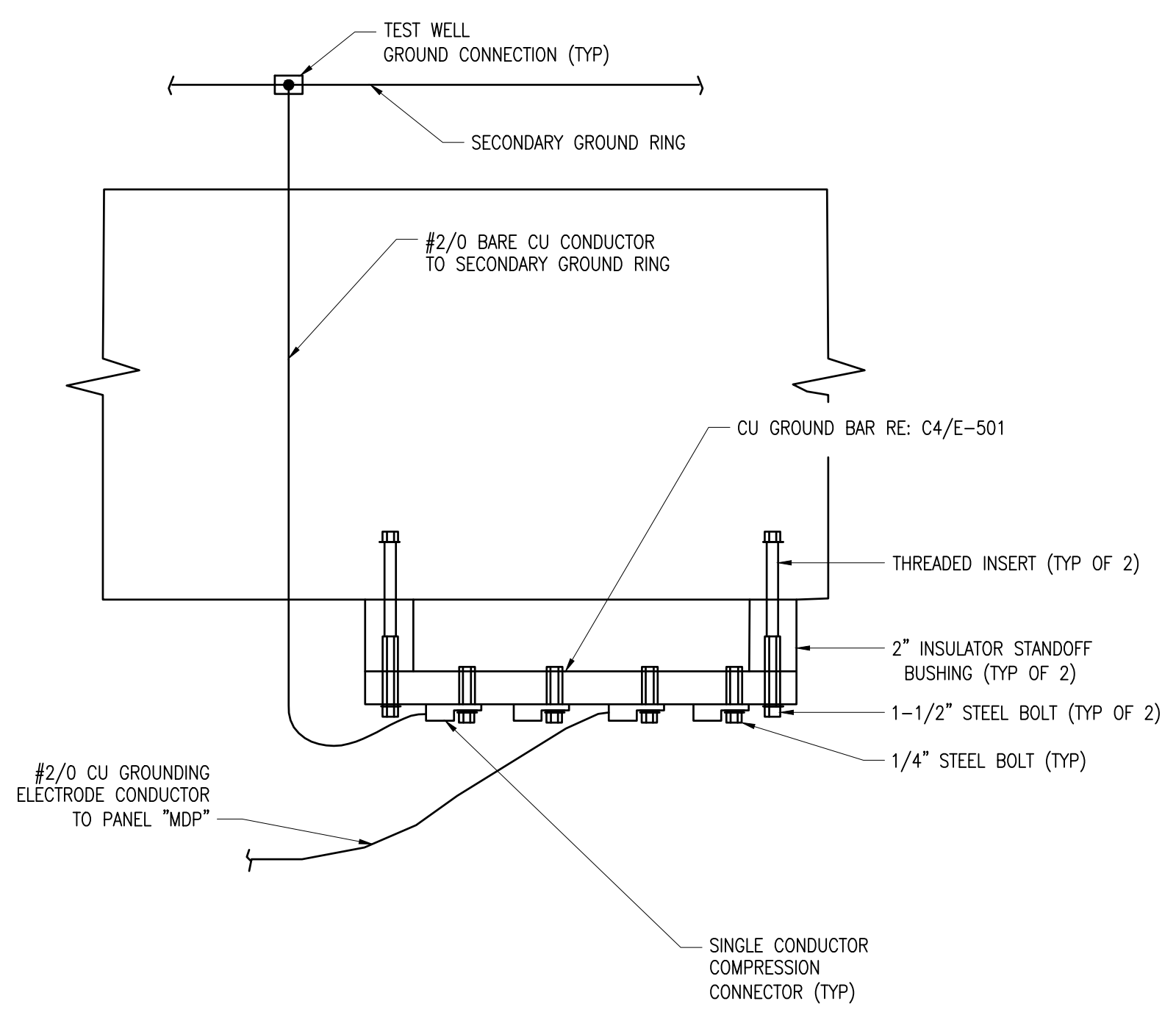
- PROVIDE SELF-ADHESIVE VINYL LABEL TO AFFIX TO ELECTRICAL EQUIPMENT TO WARN OF ARC FLASH HAZARDS.
- THE LABEL FORMAT AND TEXT CAN BE MODIFIED PROVIDED THAT THE INFORMATION REQUIRED BY UFC 3-501-01 IS INCLUDED.
- THE LABEL MUST BE LOCATED ON THE EQUIPMENT TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE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

EQUIPMENT TYPE	HEIGHT	WIDTH
INDOOR	2"	3"
OUTDOOR	3"	4.5"
- A DOWNLOADABLE WINDOWS METAFILE IS AVAILABLE ON THE WHOLE BUILDING DESIGN GUIDE WEBSITE (WWW.WBDG.ORG) FOR USE IN A LABEL MAKING MACHINE.

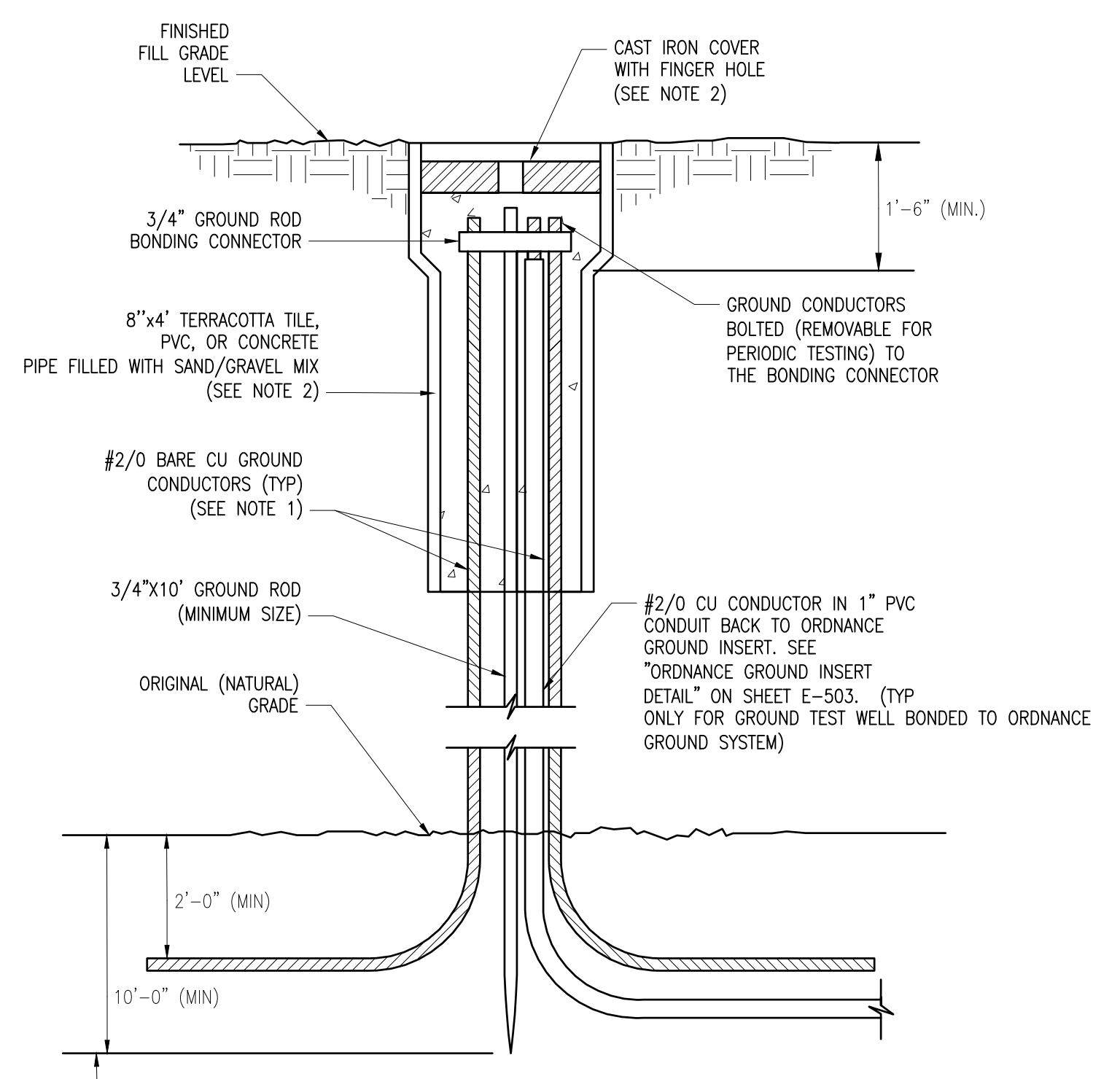
A. THE FILE IS LOCATED ON THE "UFGS FORMS, GRAPHICS, AND TABLES" PAGE. TO NAVIGATE TO THIS LOCATION, FOLLOW: HOME > FEDERAL FACILITY CRITERIA > DEPARTMENT OF DEFENSE > UNITED FACILITIES GUIDE SPECIFICATIONS (UFGS) > UFGS FORMS, GRAPHICS, AND TABLES > ARCH FLASH WARNING LABELS.

B. ALTERNATIVELY, TYPE IN THE FOLLOWING ADDRESS IN INTERNET EXPLORER: [HTTPS://WWW.WBDG.ORG/FFC/NAVGRAPH/ARC_FLASH_WARNING_LABELS.ZIP](https://www.wbdg.org/ffcc/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

DATE	APPROVED
DESCRIPTION	BY



APPROVED	A/E INFO				
FIR COMMANDER NAVFAC					
ACTIVITY					
SATISFACTORY TO	DATE				
DES	KL	DRW	FO	CHK	PKD
PM/DM					
BRANCH MANAGER					
CHIEF ENGINEER					
FIRE PROTECTION					

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

CONTAINERIZED LONG WEAPONS STORAGE
NAVY EARTH COVERED MAGAZINE

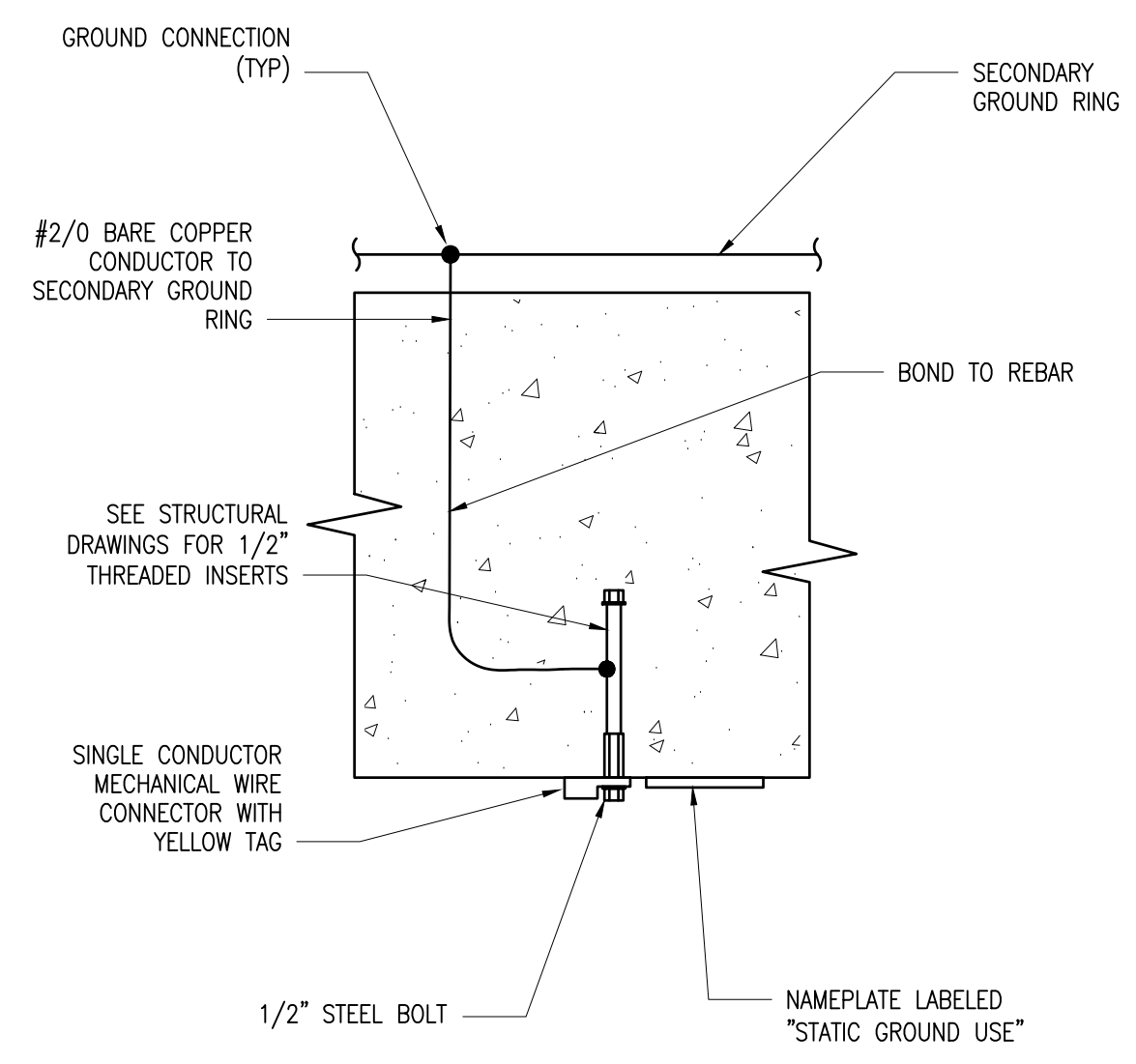
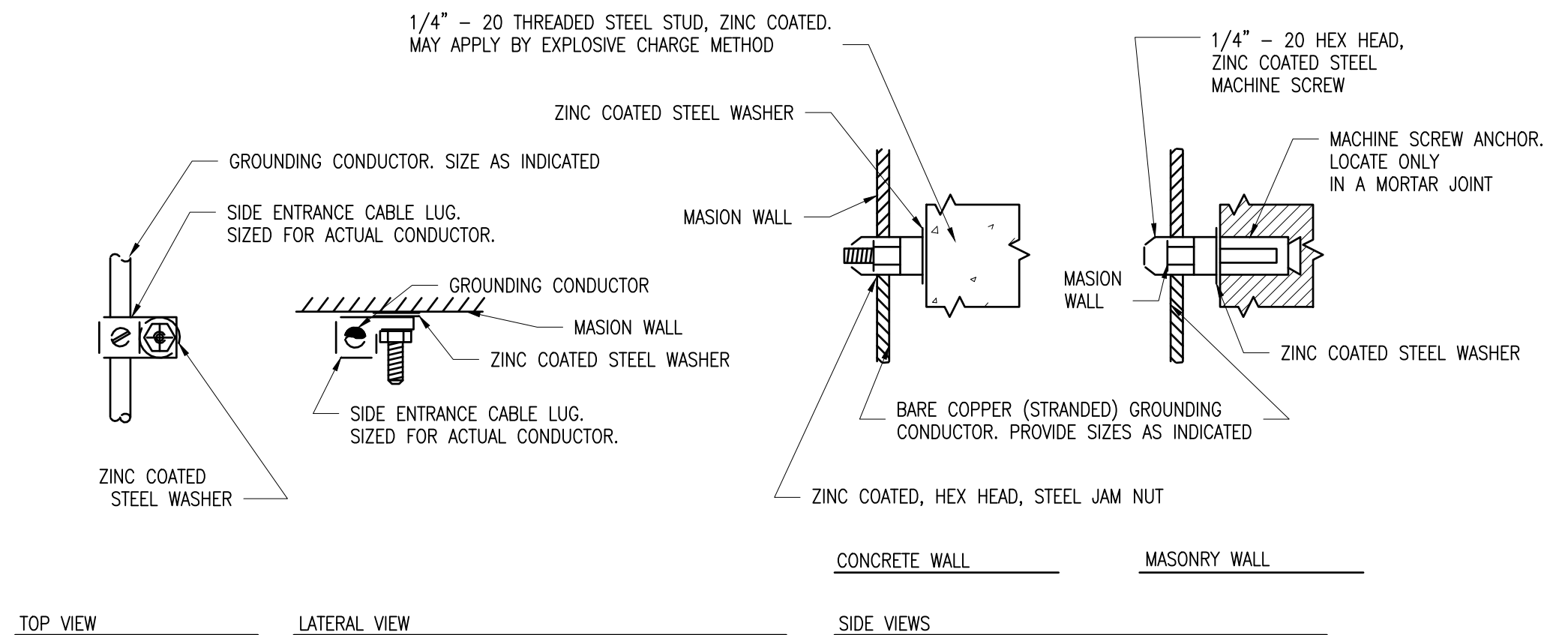
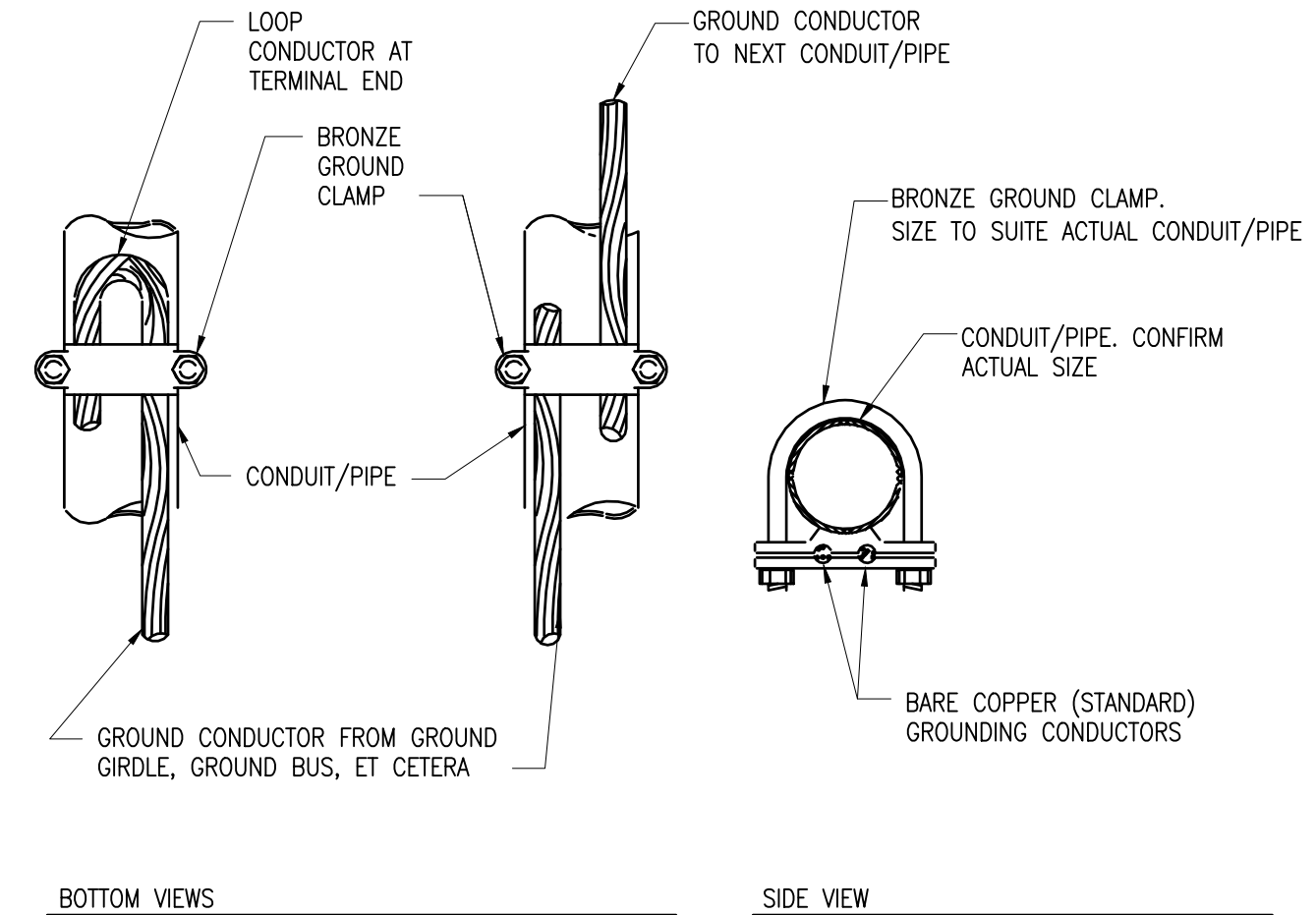
ELECTRICAL DETAILS

SCALE:	AS NOTED
PROJECT NO.:	1644867
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	12905859
SHEET	40 OF 51
E-501	

FILE NAME: J:\DCSE\Magazines_Single_Boy\Submittals\ReDesign\01_Final_March_2024\Drawings\E-501.dwg LAYOUT NAME: E-501 - ELECTRICAL DETAILS PLOTTED: Monday, April 22, 2024 - 10:07am USER: jbonatencas

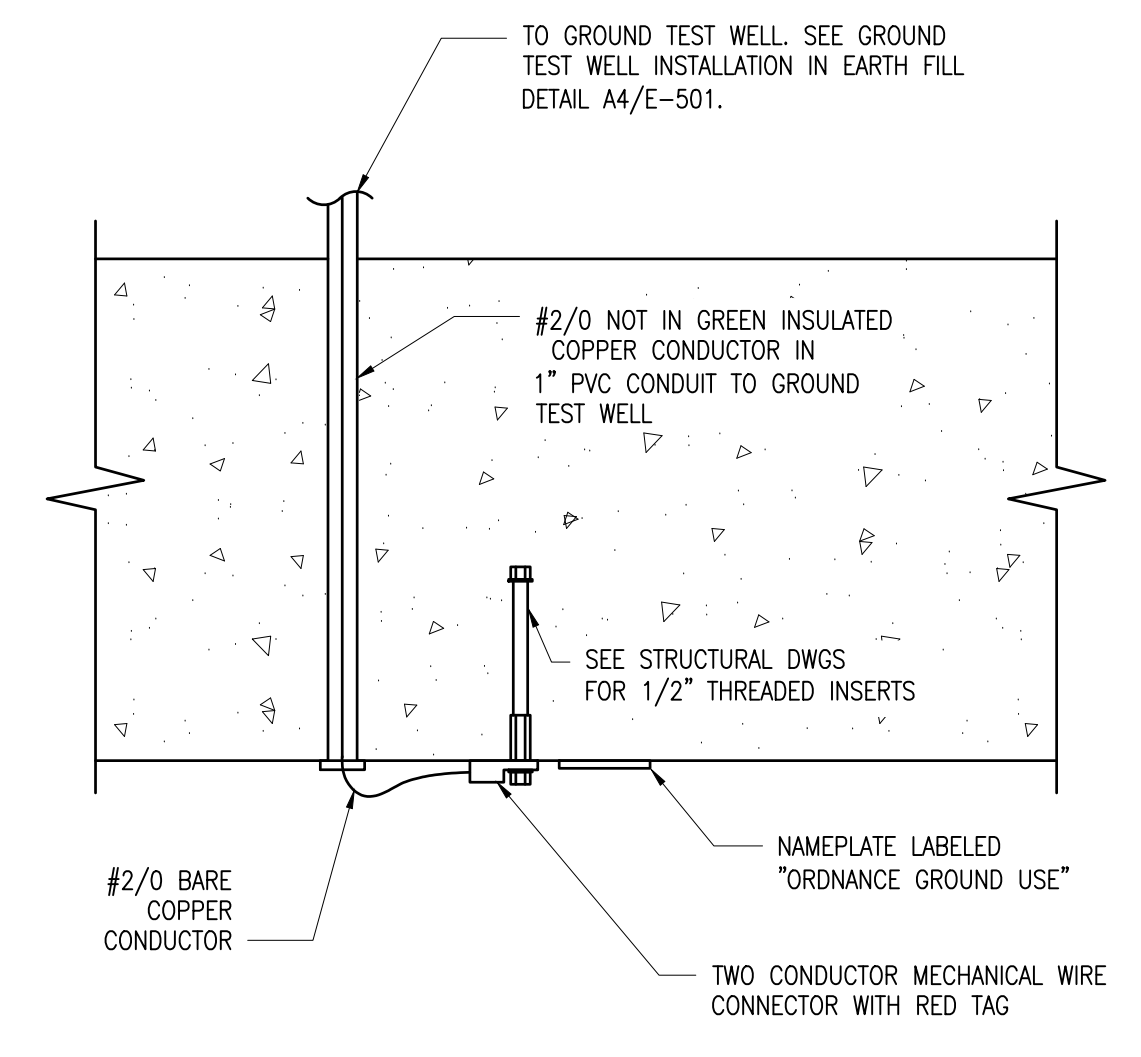
NOTES:

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.



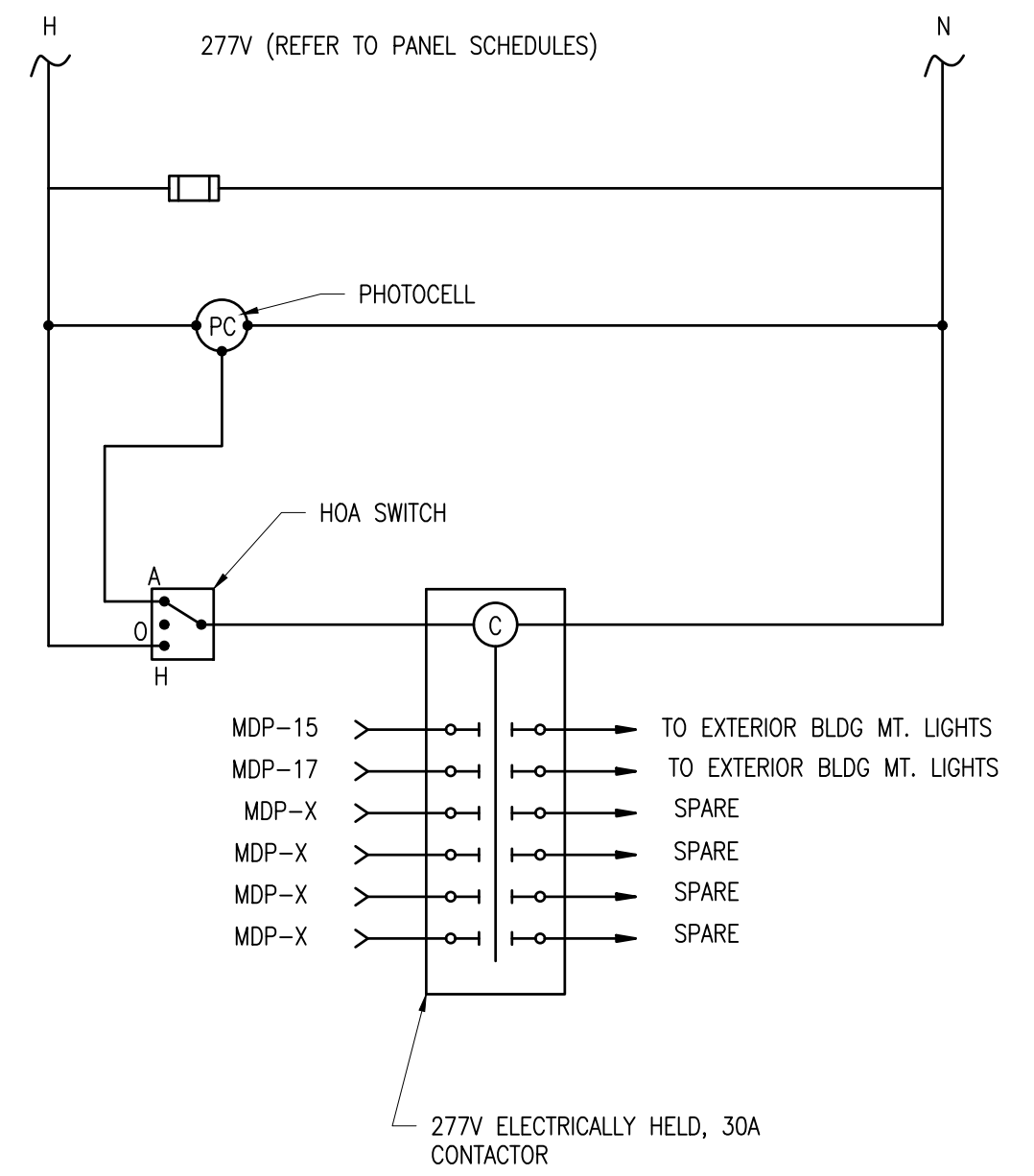
STATIC GROUND INSERT DETAIL NOTES:

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."

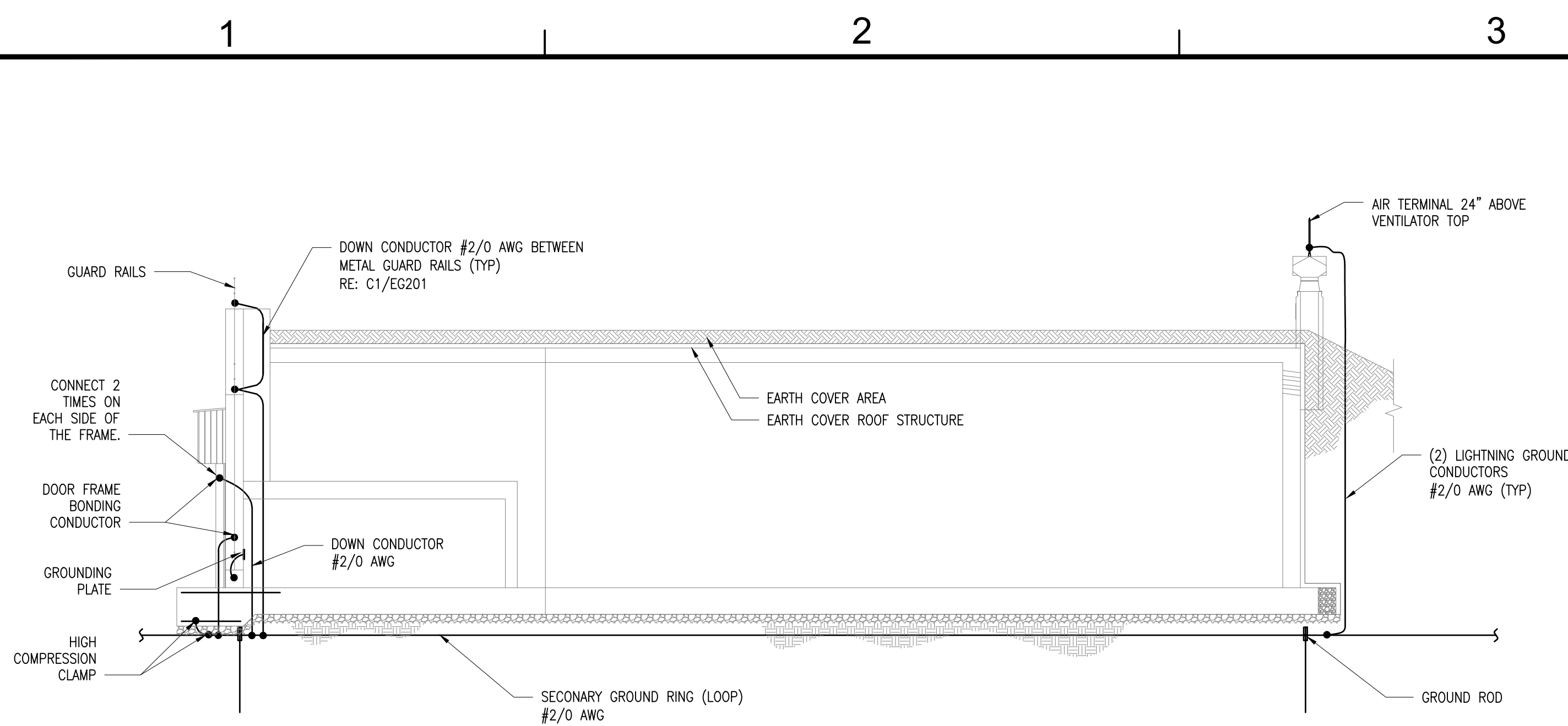


ORDNANCE GROUND INSERT DETAIL NOTES:

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.



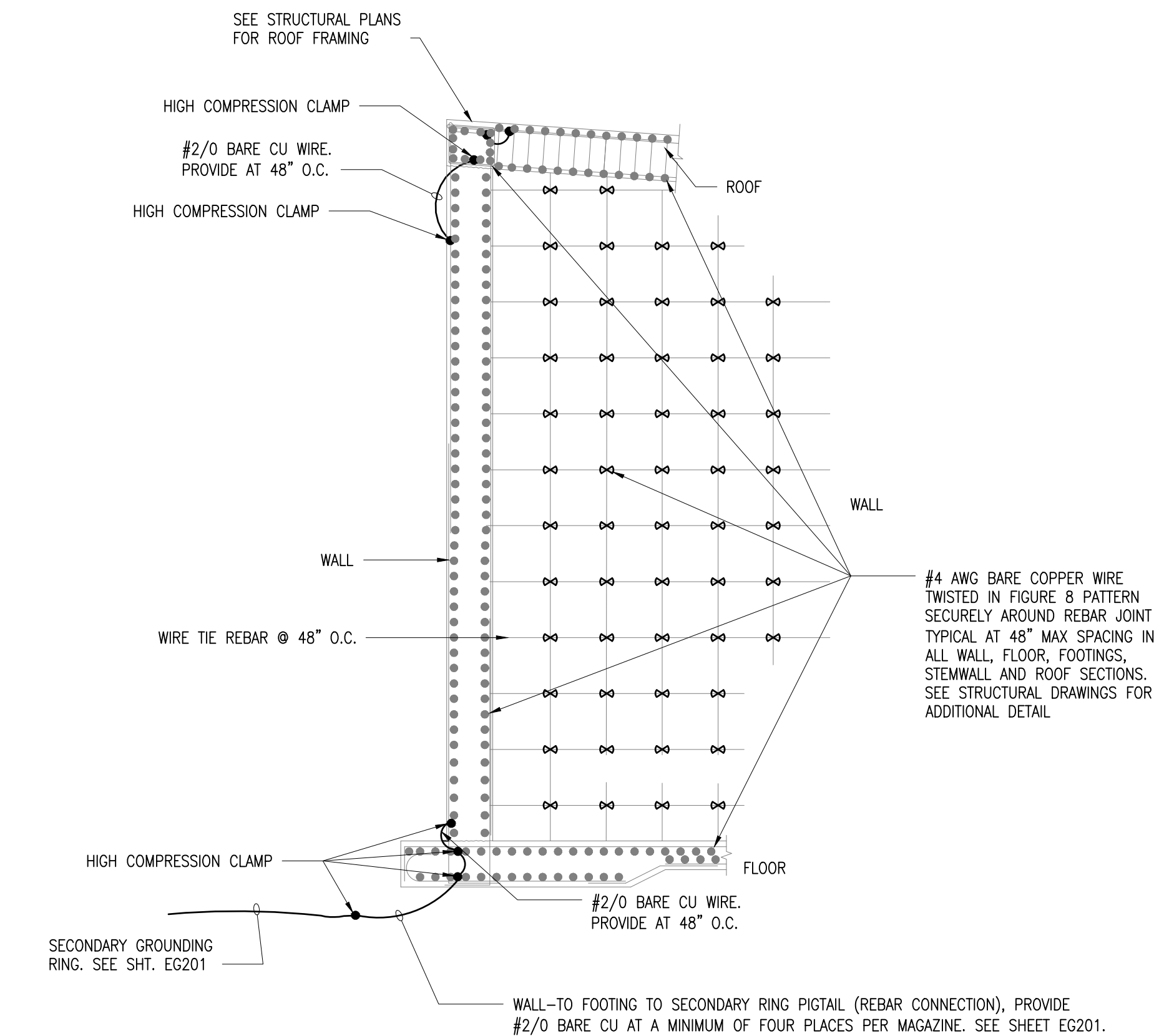
APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES	KL	DRW
FO	CHK	PKD
PMIDM		
BRANCH MANAGER		
CHIEF ENGINEER		
FIRE PROTECTION		
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC HAMPTON ROADS, VIRGINIA CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE ELECTRICAL DETAILS		
SCALE:	AS NOTED	
PROJECT NO.:	1644867	
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO.	12905861	
SHEET	42	OF 51
E-503		
DRAWING REVISION: 25 AUGUST 2020		



- NOTES:
- FOR MISCELLANEOUS STEEL SHAPES, BOLTED CONNECTOR MAY BE USED.
 - CRIMPED CONNECTORS MAY ALSO BE ANOTHER ALTERNATE CONNECTORS.

C1 ECM GROUND SECTION (TYPICAL)

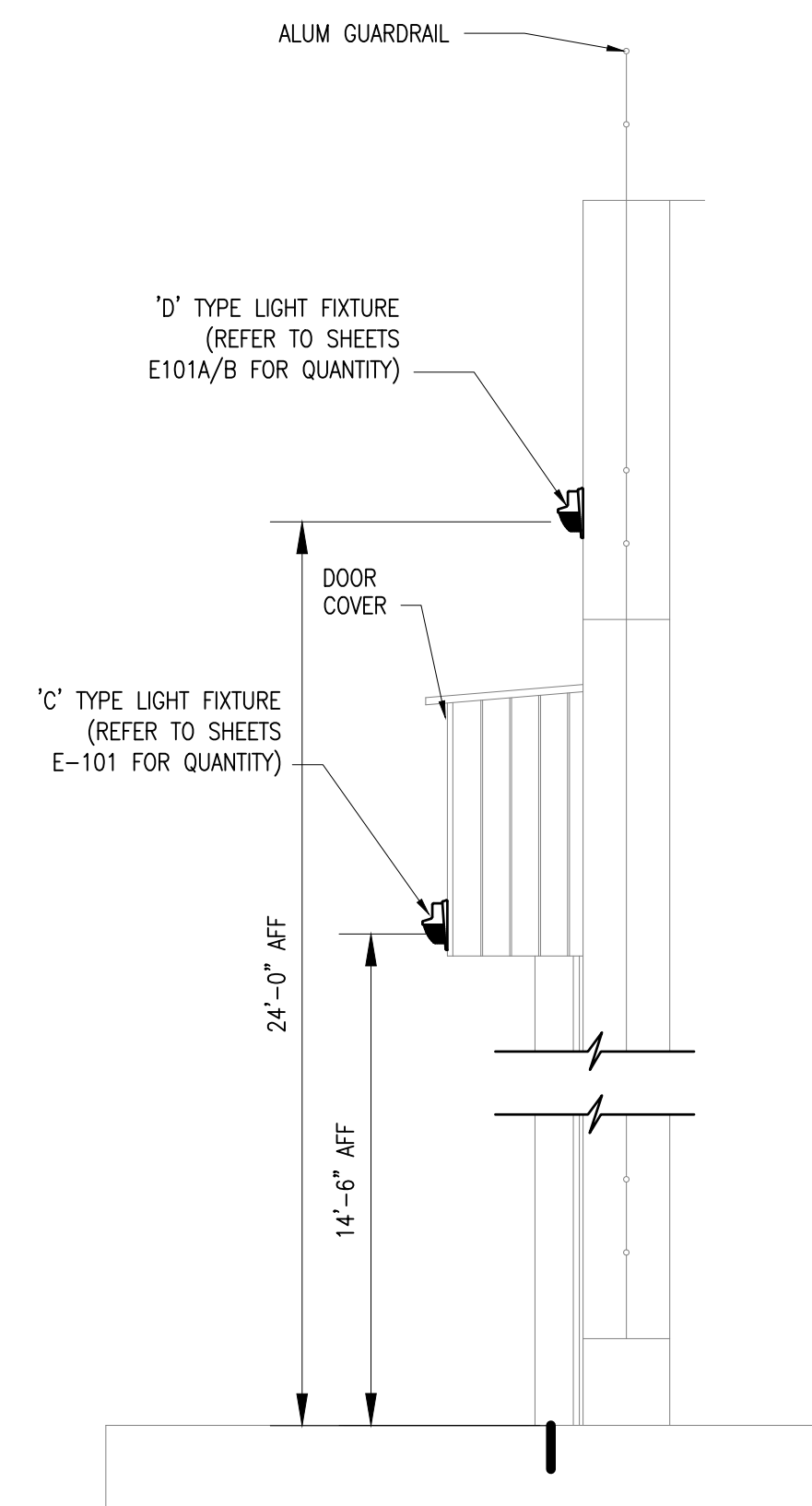
SCALE: NO SCALE



- NOTES:
- BOLTED/CRIMPED CONNECTORS MAY BE USED AS ALTERNATE CONNECTORS.

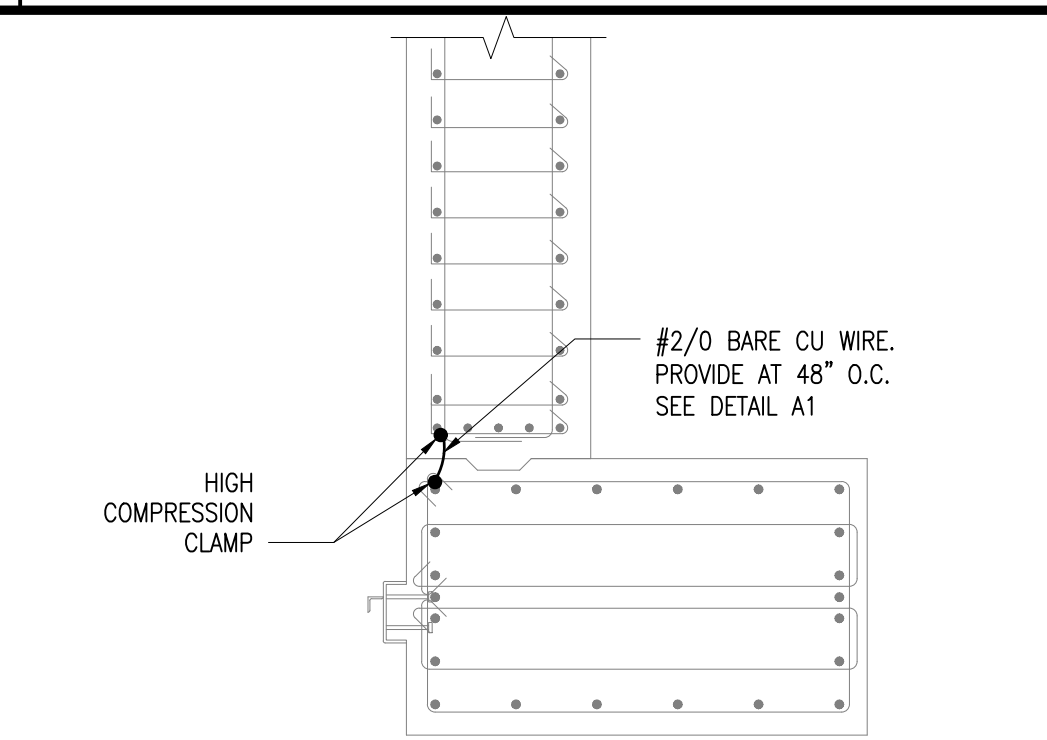
A1 WALL/FLOOR/ROOF BONDING DETAIL (TYPICAL)

SCALE: NO SCALE



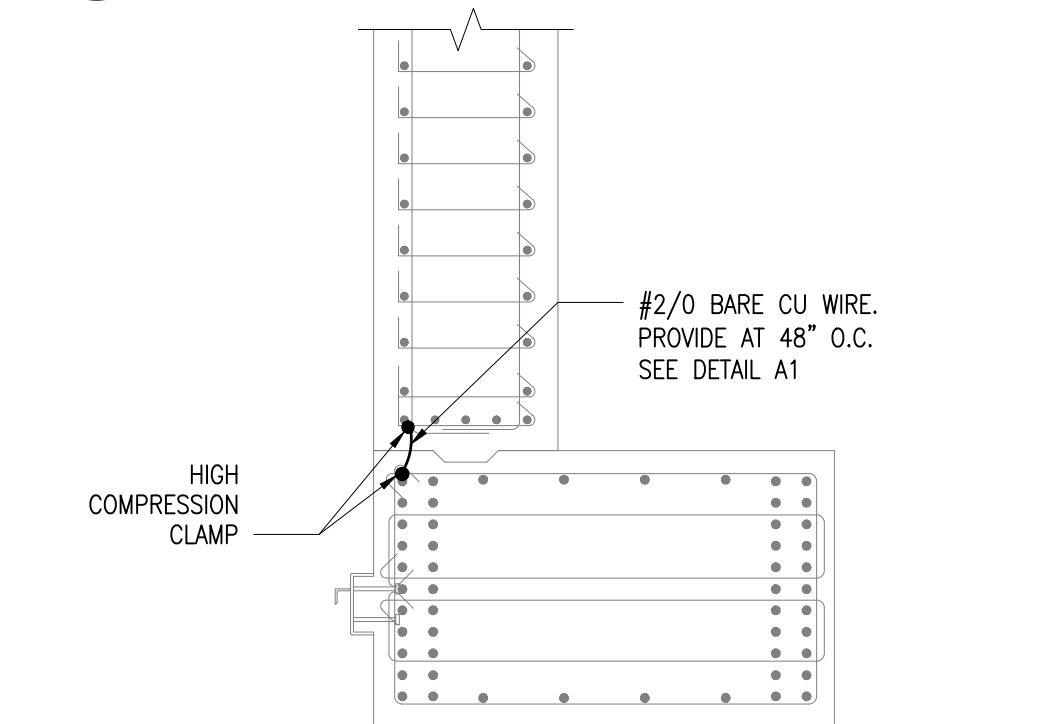
C4 EXTERIOR WALL MOUNTED LIGHTING

SCALE: NO SCALE



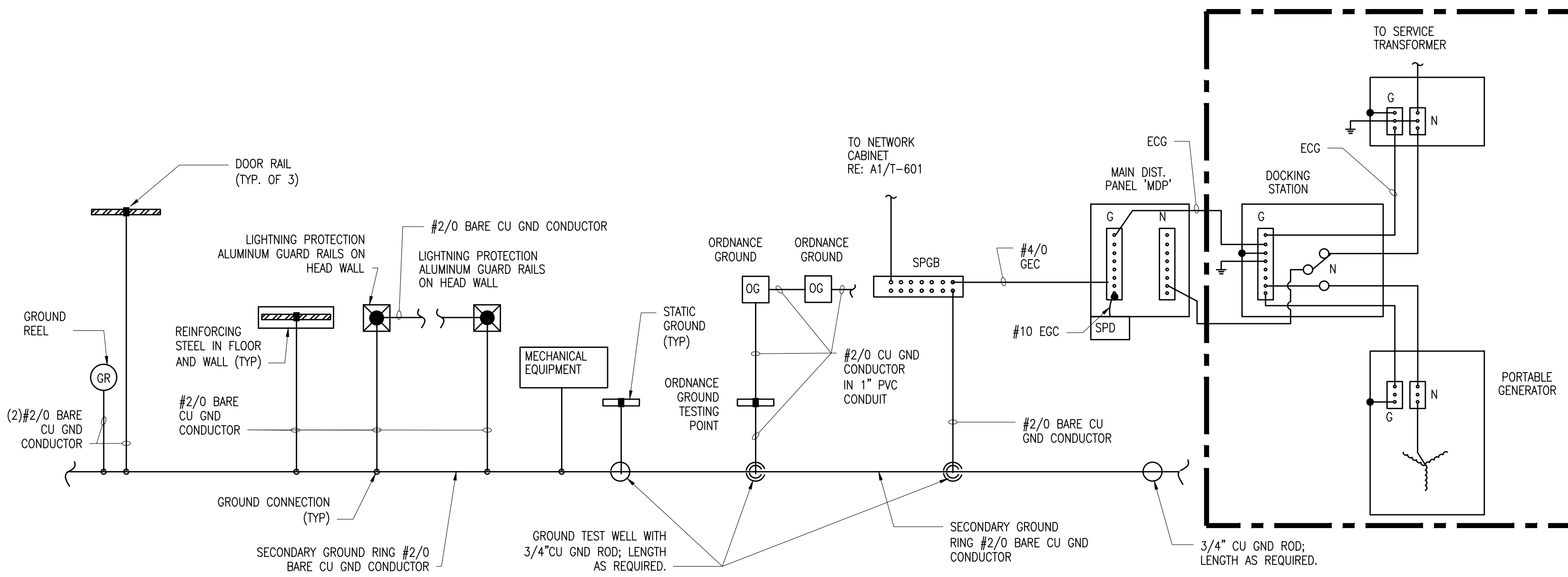
D5 HEADER BEAM END - BONDING DETAIL

SCALE: NO SCALE



C5 HEADER BEAM MIDSPAN - BONDING DETAIL

SCALE: NO SCALE



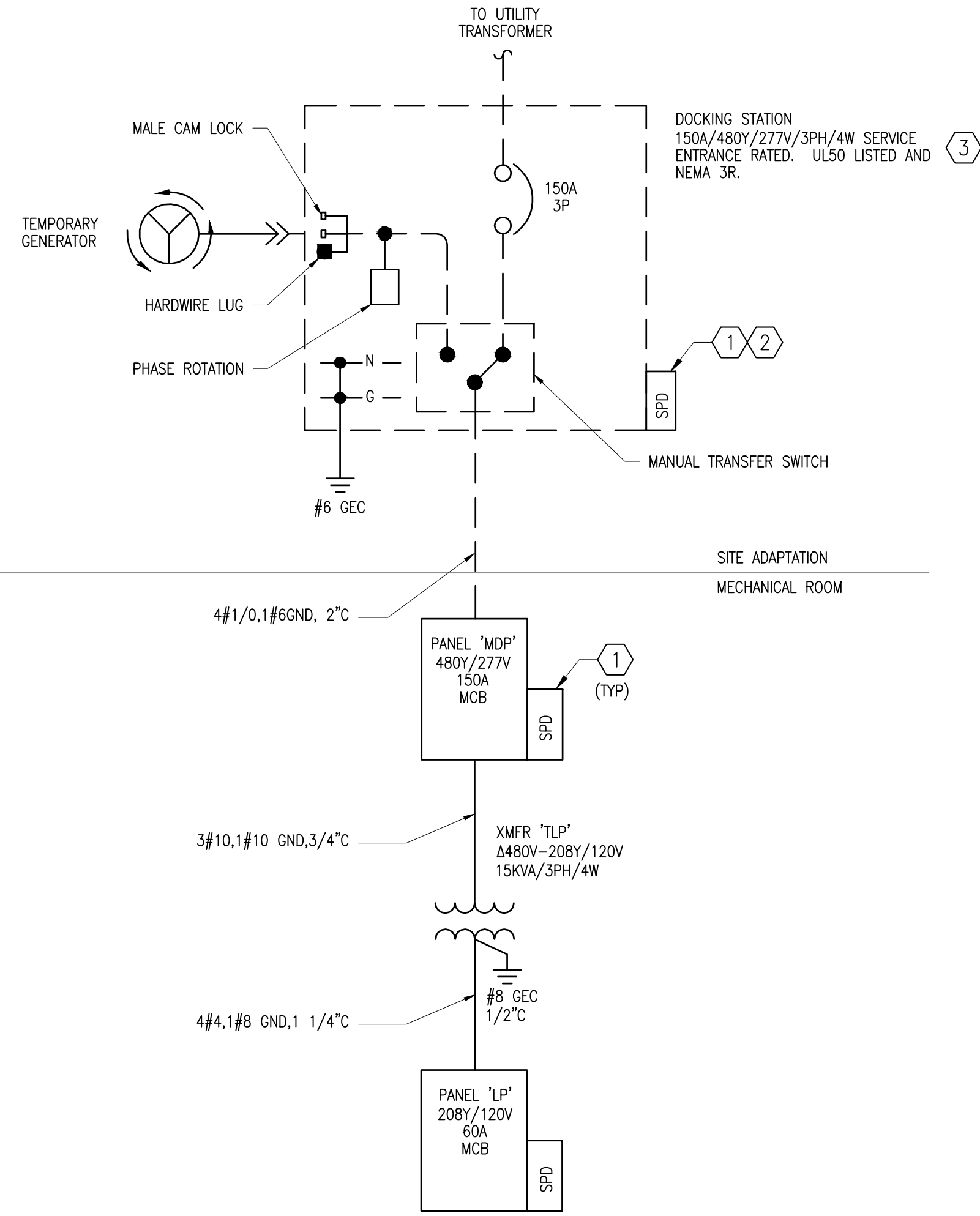
A3 GROUNDING ELECTRODE SYSTEM (TYPICAL FOR EACH MAGAZINE)

SCALE: NO SCALE

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

APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES	KL	DRW
FO	CHK	PKD
PM/DM		
BRANCH MANAGER		
CHIEF ENGINEER		
FIRE PROTECTION		
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND		
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC		
HAMPSON ROAD, VIRGINIA		
CONTAINERIZED LONG WEAPONS STORAGE		
NAVY EARTH COVERED MAGAZINE		
ELECTRICAL DETAILS		
SCALE: AS NOTED		
EPROJCT NO: 1644867		
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO. 12905862		
SHEET 43 OF 51		
E-504		
DRAWING REVISION: 25 AUGUST 2020		

FILE NAME: J:\DCSE\Magazines\Single Bay\Submittals\ReDesign\01_Final_March_2024\Drawings\E-504.dwg LAYOUT NAME: E-504 - ELECTRICAL DETAILS PLOTTED: Monday, April 22, 2024 - 10:07am USER: jbonatone



SERVICE LOAD ANALYSIS

PROJECT:	CLWS - ATLANTIC
SQ FOOTAGE:	3664
MAIN DISTRIBUTION:	MDP 480 VOLT

TYPE	NEW CONNECTED		NEW DEMAND	
	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 (UFC 3-501-01)	-	-	14	11,561
TOTAL	82	67,909	107	88,636

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

SHEET NOTES

- 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.
- DOCKING STATION AS SHOWN IS PART OF SITE ADAPTATIONS.
- 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.
- 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

- 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.
- PROVIDE AN ENCLOSED CIRCUIT BREAKER FOR SPD.
- 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.

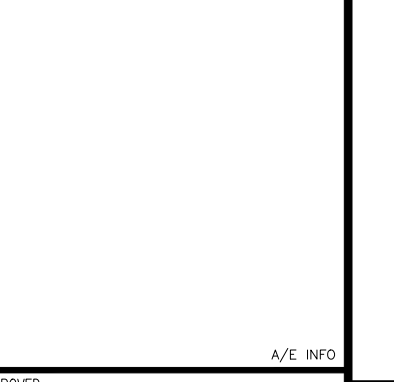
APPROVED	DATE				
FOR COMMANDER NAVFAC					
ACTIVITY					
SATISFACTORY TO	DATE				
DES	KL	DRW	FO	CHK	PKD
PMIDM					
BRANCH MANAGER					
CHIEF ENGINEER					
FIRE PROTECTION					



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		ACCESSORIES:		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		ACCESSORIES:		GROUND BUS, 42 SPACE				
CODE	BRKR	CIRCUIT USE	CKT	LOAD	A	B	C	LOAD	CKT	CIRCUIT USE	BRKR	CODE			
5	20/3	PWR - BLAST DOOR (2 HP)	1	942	X			12,221	2	PWR - BRIDGE CRANE (25 TON)	125/3	5			
5			3	942	X			12,221	4			5			
5			5	942	X			12,221	6			5			
2	20/1	LTG - MAIN MAGAZINE	7	1,044	X				8	SPARE	20/1				
2	20/1	LTG - MAIN MAGAZINE	9	1,044	X				10	SPARE	20/1				
2	20/1	LTG - MAIN MAGAZINE	11	1,044	X				12	SPARE	20/1				
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						
PHASE A		EQPT VA	RCPT VA	LTG VA	AC/HEAT VA	MOTORS		CONN VA	FTL VA	PANEL VA	PHASE AMP				
PHASE B		3976	0	1524	0	13164		18664		22336	81				
PHASE C		3796	360	1206	0	13164		18526		22118	80				
TOTAL		3636	0	1248	0	13164		18248		21851	79				
TOTAL		11609	360	3978	0	39491		55438		66305					
PANEL DEMAND KVA:		66.31		PANEL DEMAND AMPACITY:		80		AMPS							
RESERVE KVA:		13.26		RESERVE AMPACITY:		12		AMPS							
DESIGN KVA:		79.57		DESIGN AMPACITY:		92		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		ACCESSORIES:		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		ACCESSORIES:		GROUND BUS, 42 SPACE				
CODE	BRKR	CIRCUIT USE	CKT	LOAD	A	B	C	LOAD	CKT	CIRCUIT USE	BRKR	CODE			
		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				
		SPARE	7		X				8	SPARE	20/1				
		SPARE	9		X				10	SPARE	20/1				
		SPARE	11		X				12	SPARE	20/1				
		SPARE	13		X				14	SPARE	20/1				
		SPARE	15		X				16	SPARE	20/1				
		SPARE	17		X				18	SPARE	20/1				
		SPARE	19		X				20	SPARE	20/1				
		SPARE	21		X				22	SPARE	20/1				
		SPARE	23		X				24	SPARE	20/1				
		SPARE	25		X				26	SPARE	20/1				
		SPARE	27		X				28	SPARE	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						
		SPACE	41		X				42	SPD	30/3				
PHASE A		EQPT VA	RCPT VA	LTG VA	AC/HEAT VA	MOTORS		CONN VA	FTL VA	PANEL VA	PHASE AMP				
PHASE B		540	0	0	0	0		540		540	5				
PHASE C		360	360	0	0	0		720		720	6				
TOTAL		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							

APPROVED	A/E INFO				
FOR COMMANDER NAVFAC					
ACTIVITY					
SATISFACTORY TO	DATE				
DES	KL	DRW	FO	CHK	PKD
PMIDM					
BRANCH MANAGER					
CHIEF ENGINEER					
FIRE PROTECTION					



DEPARTMENT OF THE NAVY					
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND					
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC					
HAMPTON ROADS, VIRGINIA					
CONTAINERIZED LONG WEAPONS STORAGE					
NAVY EARTH COVERED MAGAZINE					
ELECTRICAL ONE-LINE					

SCALE:	NONE
EPROJECT NO.:	1644867
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	12905865
SHEET	46 OF 51
E-601	

FILE NAME: J:\DCSE\Magazines_Single_Boy\Submittals\Redesign\01_Final_March_2024\Drawings\E-601.dwg LAYOUT NAME: E-601 - ELECTRICAL ONE-LINE PLOTTED: Monday, April 22, 2024 - 10:07am USER: jromanos@navfac.navy.mil

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LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MOUNTING TYPE/HEIGHT (RE: E-101)	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

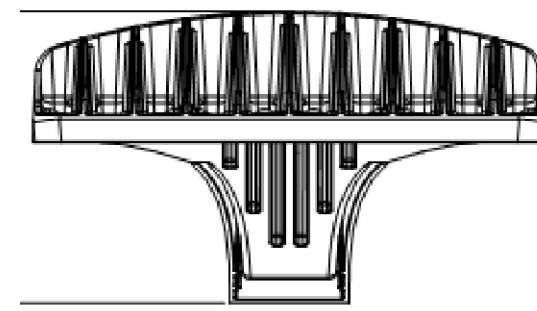


LUMINAIRE REQUIREMENTS:

- HOUSING - FIBERGLASS OR FIBERGLASS-REINFORCED POLYESTER OUTER HOUSING, WITH ALUMINUM COMPONENT TRAY AND HEAT SINK. OPTIONAL LENGTHS OF 4FT OR 8FT.
- LENS - IMPACT-RESISTANT ACRYLIC OR OPTIONAL POLYCARBONATE, WITH CONTINUOUS CLOSED-CELL POLYURETHANE GASKET, SECURED WITH STAINLESS STEEL OR POLYCARBONATE LATCHES.
- 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.
- 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.
- 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.
- MOUNTING - SURFACE-MOUNTED OR SUSPENDED FROM CEILING.
- OPTIONS - EMERGENCY BACK-UP.
- 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:

- 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.
- 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.
- 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.
- 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.
- CERTIFICATION - UL AND/OR ETL LISTED FOR DAMP OR WET LOCATIONS AS INDICATED, AND ROHS COMPLIANT.
- OPTIONS - VARIOUS LUMEN OUTPUT RATING AS INDICATED, AND 0-10 VOLT DIMMING DRIVER.
- 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. MANUFACTURER'S PREFERENCE. ALL DIMENSIONS ARE NOMINAL AND VARY PER MANUFACTURER.

LED WALL PACK

REVISED: MARCH 2013 LUMINAIRE PLATE: **XL-17**



LUMINAIRE REQUIREMENTS:

- HOUSING - DIE CAST ALUMINUM WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK MUST BE INCORPORATED DIRECTLY INTO HOUSING TO ENSURE MAXIMUM HEAT TRANSFER AND DISSIPATION.
- 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.
- 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.
- LED OPTICAL ASSEMBLY - MULTI-LED ARRAY OPTIMIZED FOR SPECIFIC DISTRIBUTION PATTERN AS INDICATED. MINIMUM COLOR RENDERING INDEX (CRI) OF 70 FOR CORRELATED COLOR TEMPERATURE OF 4000-4500 DEGREES K.
- LENS - TEMPERED GLASS IN DIE-CAST ALUMINUM FRAME WITH SILICONE GASKET.
- SURGE PROTECTION - 6 KV MINIMUM, COMPLIANT WITH ANSI C62.41.2.
- 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.
- OPTIONS - FINISH COLOR, OUTPUT DISTRIBUTION TYPE AND TRUNNION OR SUPPITTER TYPE MOUNTING.
- 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**



APPROVED

FOR COMMANDER NAFAC

ACTIVITY

SATISFACTORY TO DATE

DES	KL	DRW	FO	CHK	PKD

PMIDM

BRANCH MANAGER

CHIEF ENGINEER

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC

HAMPTON ROADS, VIRGINIA

CONTAINERIZED LONG WEAPONS STORAGE

NAVY EARTH COVERED MAGAZINE

ELECTRICAL SCHEDULES

SCALE: NONE

PROJECT NO.: 1644867

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.

12905866

SHEET 47 OF 51

E-602

DRAWING REVISION: 25 AUGUST 2020

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FILE NAME: J:\DCSE\Magazines_Single_Boy\Submittals\Redesign\01_Final_March_2024\Drawings\E-602.dwg LAYOUT NAME: E-602 - ELECTRICAL SCHEDULES PLOTTED: Monday, April 22, 2024 - 10:07am USER: jhenon@navfac.navy.mil

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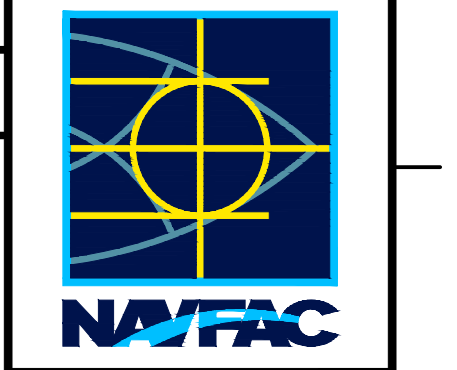
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LEGEND	
Ⓞ	HIGH SECURITY BMS DOOR CONTACT
Ⓚ	KEYPAD
Ⓜ	MOTION DETECTOR, CEILING MOUNTED
Ⓜ	MOTION DETECTOR, WALL MOUNTED
Ⓝ	RECESSED JUNCTION BOX
Ⓝ	SURFACE JUNCTION BOX
IDS	IDS CONTROLLER
IT	IT CABINET
▼	PHONE OUTLET, SEE DETAIL C2/T501

- ### SHEET NOTES
- ALL CONDUIT MUST BE RIGID GALVANIZED STEEL CONDUIT UNLESS INDICATED OTHERWISE.
 - EXPOSED CONDUITS ON EXTERIOR WALLS MUST BE PROHIBITED.
 - ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
 - ECM AND MECHANICAL ROOM WILL BE SEPARATE IDS ZONES. PROVIDE DEVICES, CONTROLLERS, AND PROGRAMMING, AS REQUIRED.
 - 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.
 - ALL CONDUITS WILL BE MINIMUM 1" UNLESS NOTED OTHERWISE. REFER TO T601 FOR CONDUIT SIZES.
 - 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
- 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.
 - 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.
 - 8"x8"x4" JUNCTION BOX FOR ECM IDS COMPONENTS. PROVIDE 2" PVC-COATED RGC TO MECHANICAL ROOM FOR IDS WIRING.
 - RECESSED ROUGH-IN FOR FUTURE CCTV CAMERA. PROVIDE 1" HOMERUN TO IT CABINET.
 - 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 B2/T501.
 - EXTEND TWO 4" CONDUITS TO NEAREST TELECOMM MANHOLE.
 - HOMERUN TO SERVICE GROUNDING BAR.
 - 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.
 - SURFACE MOUNT ON BOTTOM OF STRUCTURAL CEILING. J-BOX LOCATIONS AND CONDUIT ROUTING TO BE COORDINATED WITH ALL TRADES AND BRIDGE CRANE TRAVEL.
 - GROUND BAR. REFER TO E101A.

DATE	DESCRIPTION	BY	APPR.



SEAL

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES KL DRW GC CHK PKD

BRANCH MANAGER

CHIEF ENGINEER

FIRE PROTECTION

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

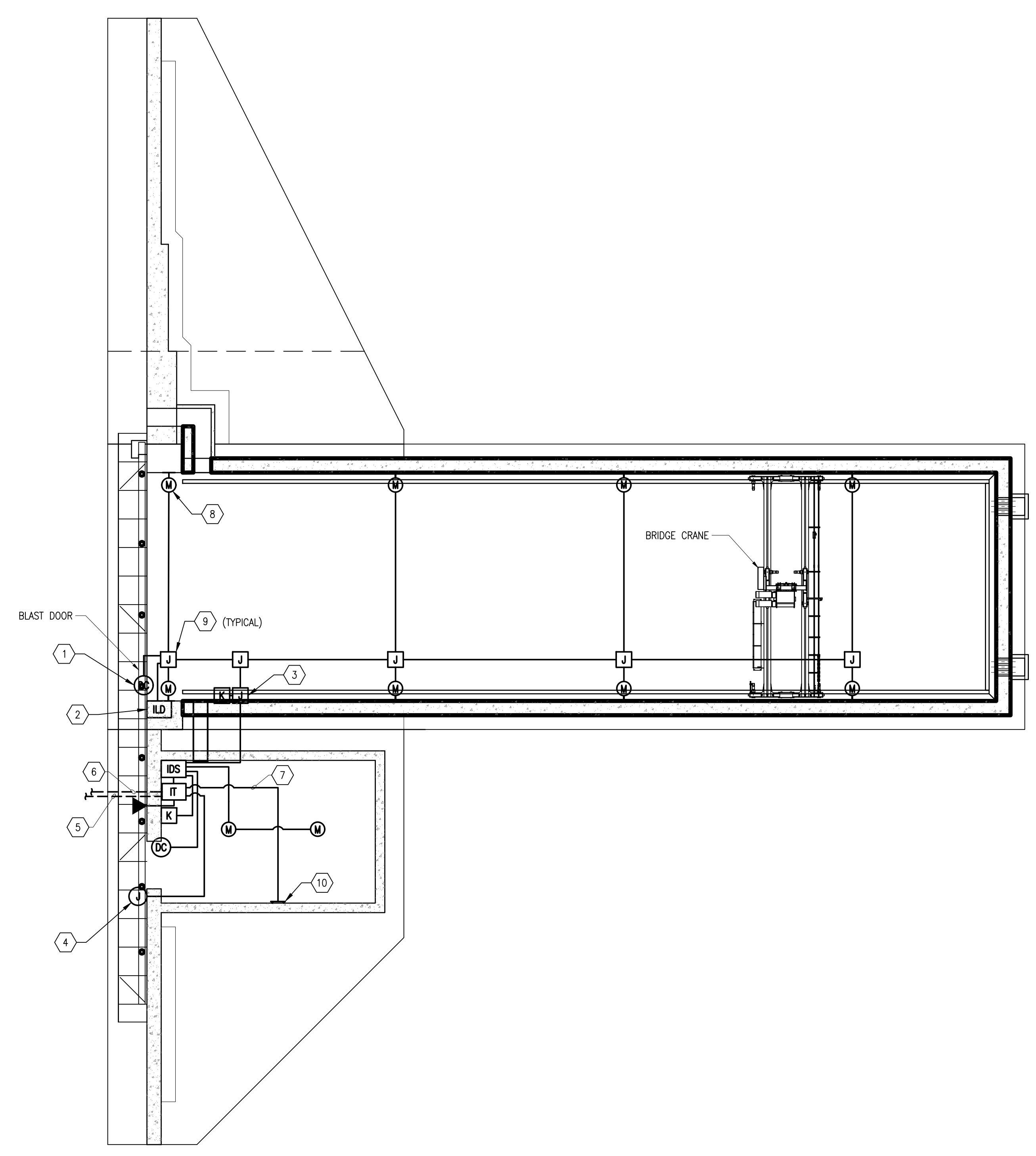
CONTAINERIZED LONG WEAPONS STORAGE
 NAVY EARTH COVERED MAGAZINE
 TELECOMMUNICATION FLOOR PLAN A

SCALE: AS NOTED

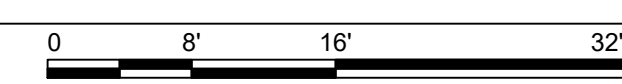
PROJECT NO: 1644867

CONSTR. CONTR. NO.

NAVFAC DRAWING NO. 12905867
 SHEET 48 OF 51
 T101A



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



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FILE NAME: J:\DCSE\Magazines_Single_Boy\Submittals\Redesign\01_Final_March_2024\Drawings\T101A.dwg LAYOUT NAME: T101A - TELECOMMUNICATION FLOOR PLAN A PLOTTED: Monday, April 22, 2024 - 10:09am USER: jhoran@navfac.navy.mil

DRAWING REVISION: 25 AUGUST 2020

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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" 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 B2/T501.
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.

DATE	DESCRIPTION	BY	CHK



APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES KL DRW GC CHK PKD

BRANCH MANAGER

CHIEF ENGINEER

FIRE PROTECTION

DEPARTMENT OF THE NAVY

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 B

SCALE: AS NOTED

PROJECT NO: 1644867

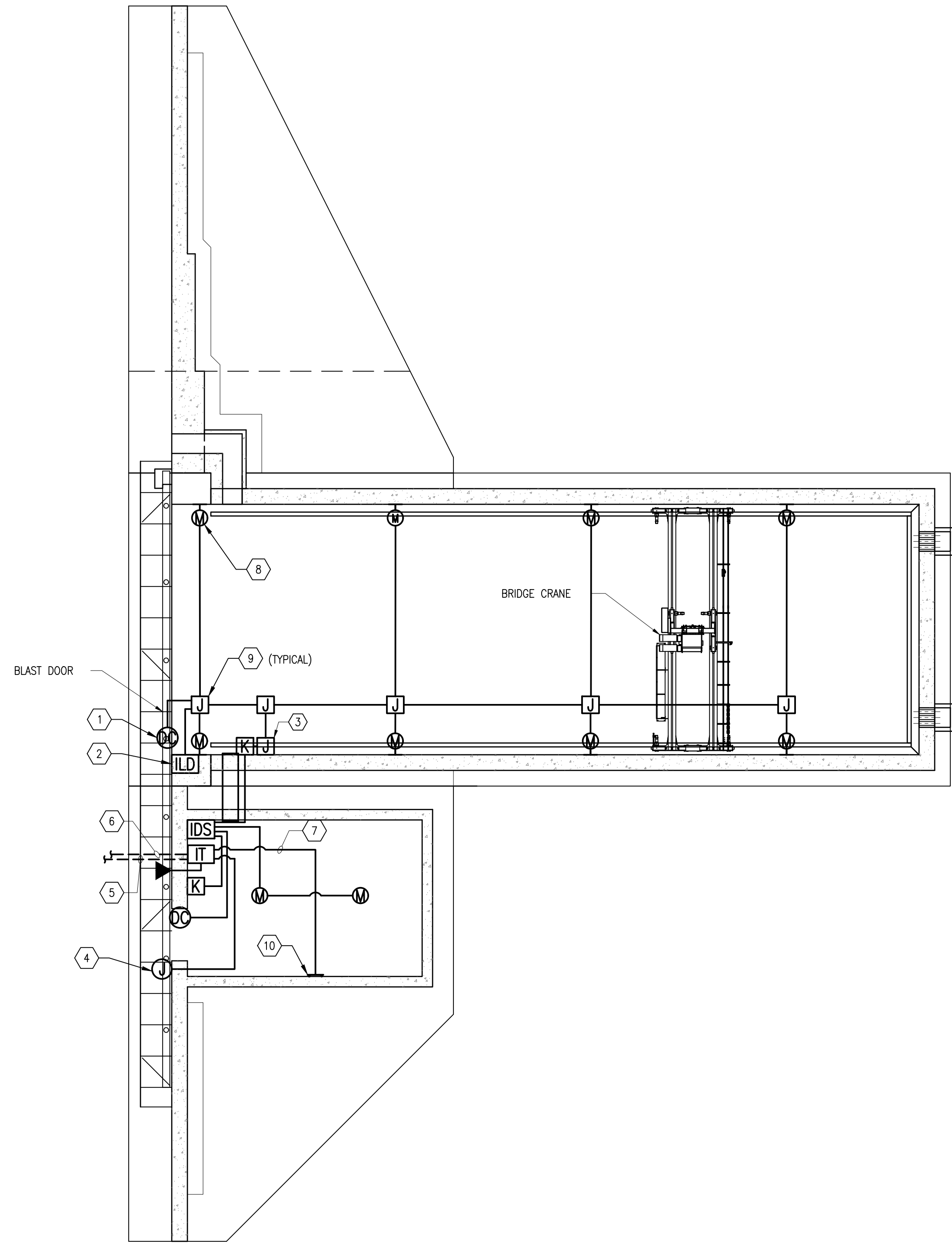
CONSTR. CONTR. NO.

NAVFAC DRAWING NO: 12905868

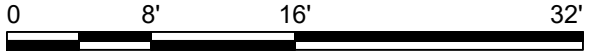
SHEET 49 OF 51

T101B

DRAWING REVISION: 25 AUGUST 2020

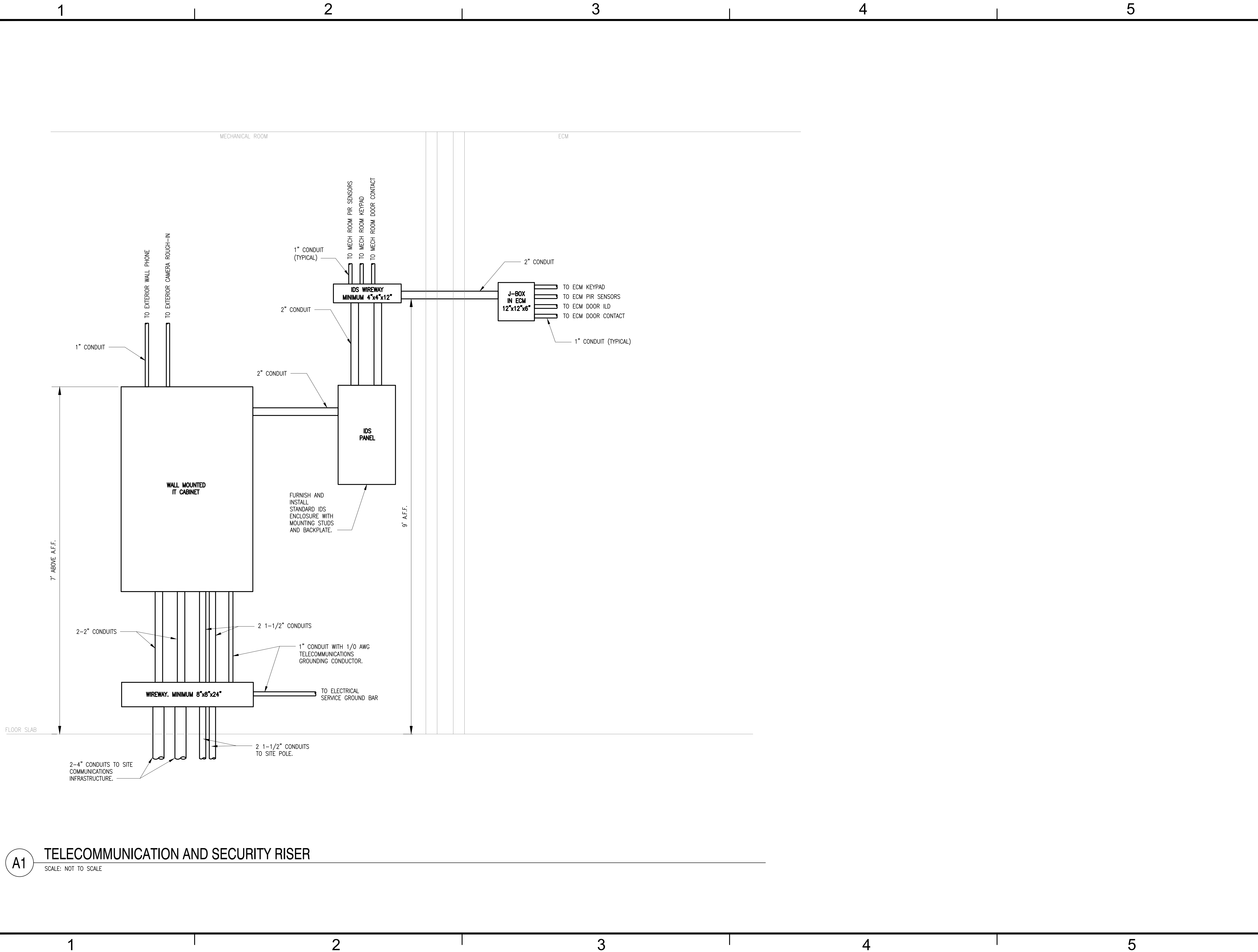


A1 TELECOMMUNICATION FLOOR PLAN - 95'-6" LENGTH



FILE NAME: J:\DSEA\Magazines_Single_Boy\Submittals\Redesign\01_Final_March_2024\Drawings\T101B.dwg LAYOUT NAME: T101B - TELECOMMUNICATION FLOOR PLAN B PLOTTED: Monday, April 22, 2024 - 10:08am USER: jhomonencio

FILE NAME: J:\DSE\Magazines_Single_Boj\Submittals\Redesign\01_Final_March_2024\Drawings\T-601.dwg LAYOUT NAME: T-601 - TELECOMMUNICATION AND SECURITY RISER DIAGRAM PLOTTED: Monday, April 22, 2024 - 10:08am USER: jbonatoni.esd



A1 TELECOMMUNICATION AND SECURITY RISER
SCALE: NOT TO SCALE

APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES	KL	DRW
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PM/DM		
BRANCH MANAGER		
CHIEF ENGINEER		
FIRE PROTECTION		
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - ATLANTIC HAMPTON ROADS, VIRGINIA		
CONTAINERIZED LONG WEAPONS STORAGE NAVY EARTH COVERED MAGAZINE		
TELECOMMUNICATION AND SECURITY RISER DIAGRAM		
SCALE:	NONE	
PROJECT NO.:	1644867	
CONSTR. CONTR. NO.		
NAVFAC DRAWING NO.	12905870	
SHEET	51	OF 51
T-601		
DRAWING REVISION: 25 AUGUST 2020		