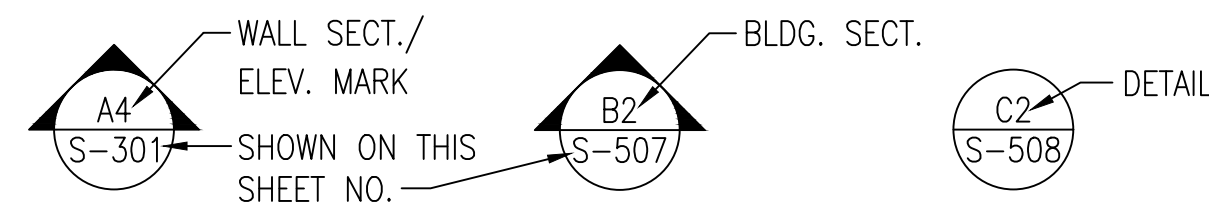


GENERAL NOTES

MATERIALS AND CONSTRUCTION

- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF $f'c = 4,000$ psi AT 28 DAYS AND SHALL HAVE A MINIMUM DENSITY OF 145 PCF.
- ALL REINFORCING BARS SHALL CONFORM TO THE SPECIFICATION FOR DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT, ASTM A615, GRADE 60
- CONCRETE AGGREGATE SHALL HAVE A MAXIMUM SIZE OF 1 INCH.
- ALL REINFORCING BARS SHALL BE CONTINUOUS IN ANY ONE DIRECTION EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS. PROVIDE CLEAR COVER IF NOT SHOWN PER ACI 318 RECOMMENDATIONS.
- EXCEPT AS NOTED, ALL CONCRETE CONSTRUCTION AND DETAILING SHALL CONFORM TO THE LATEST STANDARDS OF THE ACI DETAILING MANUAL (SP-66), AND BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318).
- EXCEPT FOR WELDED WIRE FABRIC, NO WELDING OF REINFORCING BARS SHALL BE PERMITTED UNLESS INDICATED ON DRAWINGS.
- STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO THE STANDARD SPECIFICATION FOR STRUCTURAL STEEL SHAPES, ASTM A-992 GRADE 50.
- STRUCTURAL RETANGULAR HSS SHALL CONFORM TO THE STANDARD SPECIFICATION ASTM A500 GRADE C.
- STRUCTURAL STEEL CHANNELS, ANGLES, PLATES AND BARS SHALL CONFORM TO THE STANDARD SPECIFICATION FOR CARBON STRUCTURAL STEEL ASTM A572 GRADE 50.
- METAL ROOFING AND SIDING SHALL CONFORM TO THE NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI), LATEST EDITION.
- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), LATEST EDITION.
- WELDING FOR STRUCTURAL STEEL SHALL CONFORM TO THE STRUCTURAL WELDING CODE, AWS D1.1, LATEST EDITION.
- ANCHOR BOLTS AND ALL-THREADED ANCHOR RODS MUST CONFORM TO ASTM F1554, GRADE 36, UNLESS OTHERWISE NOTED. NUTS MUST CONFORM TO ASTM A563. HIGH STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS MUST CONFORM TO ASTM A325. ALL BOLTS SHALL HAVE THREADS EXCLUDED FROM THE SHEAR PLANE.
- ALL STRUCTURAL STEEL SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH THE COATING AND PAINTING SPECIFICATIONS.
- TOP 12 INCHES OF SUBGRADE SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM STANDARD D1557
- UNLESS NOTED ON DRAWINGS, SPLICE AND DEVELOPMENT LENGTH OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF TABLE S-104A.
- FOR FILLET WELD SIZES NOT SHOWN ON DRAWINGS, PROVIDE MINIMUM SIZE FILLET WELDS IN ACCORDANCE WITH WELDING CODE AWS D1.1, LATEST EDITION.
- UNLESS SHOWN OTHERWISE, ALL REINFORCING BAR HOOKS SHALL BE STANDARD HOOKS IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE ACI 318, LATEST EDITION.



ELECTRICAL BONDING

- ALL STEEL DOORS AND FRAMES SHALL BE ELECTRICALLY BONDED TO THE MAGAZINE REINFORCING CAGE.
- ALL STRUCTURAL AND MISCELLANEOUS ITEMS EMBEDDED IN CONCRETE SHALL BE ELECTRICALLY BONDED TO THE REINFORCING CAGE BY WIRE TIES.
- THE REINFORCING CAGE SHALL BE MADE ELECTRICALLY CONTINUOUS BY WIRE TIES AT A MINIMUM OF 4'-0" ON CENTERS IN ANY DIRECTION.
- ALL WALL AND CONSTRUCTION JOINTS SHALL BE ELECTRICALLY BONDED. SEE THE ELECTRICAL DRAWINGS FOR DETAILS.

DESIGN LOADS

1. STATIC LOADS:

- A. ROOF DEAD LOAD (1 1/2 FT. EARTH FILL +6" GRAVEL) = 200 PSF
- B. FLOOR LOADS
 - a) UNIFORM STORAGE LIVE LOAD = 2000 PSF
 - b) FORKLIFT WHEEL LOAD:
 - BASED ON DREXEL MODEL NO. SL-88-ESS = 8000 LB MAX LOAD
 - MAXIMUM WHEEL LOAD = 26,000 LBS
 - WHEEL CONTACT AREA = 65 SQ. IN.
- C. ROOF LIVE LOAD = 100 PSF

2. SEISMIC DESIGN DATA:

- A. OCCUPANCY CATEGORY ----- III
- B. IMPORTANCE FACTOR ----- 1.25
- C. SEISMIC DESIGN CATEGORY ----- "D"
- D. SITE SEISMICITY ----- $S_s = 1.95g$
- $S_1 = 0.75g$
- E. SITE CLASS ----- "D"

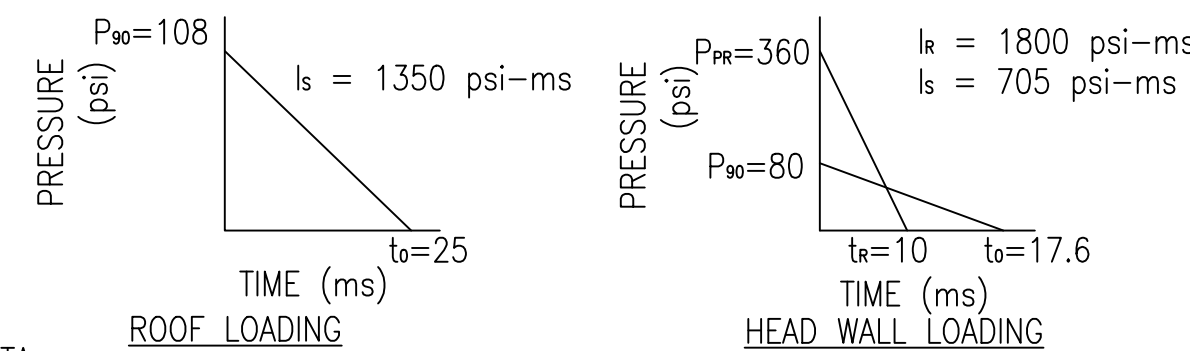
3. WIND DESIGN DATA:

- A. DESIGN WIND SPEED ----- 132 MPH
- B. EXPOSURE ----- "C"
- C. OCCUPANCY CATEGORY ----- III
- D. IMPORTANCE FACTOR ----- 1.15

4. BLAST LOADS:

ORIGINAL BLAST DESIGN BASED ON INTERMAGAZINE SEPARATION DISTANCES FOR NET EQUIVALENT WEIGHT EXPLOSIVE EQUAL TO 350,000 LBS (W) AS FOLLOWS:

- A. ROOF DESIGN: DONOR MAGAZINE AT 141' ($2 \times W^{1/3}$) TO THE REAR OF THE ACCEPTOR MAGAZINE
- B. HEADWALL DESIGN: DONOR MAGAZINE AT 141' ($2 \times W^{1/3}$) TO THE FRONT OF THE ACCEPTOR MAGAZINE.



DESIGN SOIL DATA

- A. DESIGN SOIL BEARING PRESSURE ----- 4,000 PSF
- B. DESIGN DYNAMIC RESPONSE FACTOR (SOIL BEARING) ----- 2.5
- C. DESIGN LATERAL SOIL PRESSURE COEF. :
 - 1. MAGAZINE WALLS ----- 0.5
 - 2. WING WALLS ----- 0.3
- D. DESIGN COEF. OF FRICTION (CONC. ON SOIL) ----- 0.50
- e. MODULUS OF SUBGRADE REACTION ----- 150 PCI TO 250 PCI

DEFLECTION CRITERIA

MAXIMUM SUPPORT ROTATIONS OR DUCTILITY RATIO:

- A. ROOF SLAB = 8°
- B. HEAD WALL = 6°
- C. HEADER BEAM = 2°
- D. PILASTERS $X_M/X_E = 3.0$
- E. BLAST DOORS = 12°

NOTES TO DESIGNER - REMOVE THESE NOTES WHEN PREPARING CONSTRUCTION DRAWINGS FOR SITE ADAPTATION OF THIS DESIGN

- FOUNDATIONS SHALL BE REVISED TO REFLECT SPECIFIC SITE SOIL CONDITIONS.
 - A. IF THE DEPTH OF FOOTINGS (SIDEWALLS, BACKWALL, COLUMNS, PILASTERS AND GRADE BEAMS) HAVE TO BE INCREASED EITHER BECAUSE OF THE DEPTH OF FROST OR TO OBTAIN SUITABLE SOIL BEARING CAPACITY AS SPECIFIED, THE VOLUME OF SOIL BETWEEN THE DEPTH OF THE FOOTING SHOWN ON THE DRAWING AND THE DEPTH REQUIRED SHALL BE REPLACED WITH CONCRETE.
 - B. RETAINING WALLS WHOSE FOOTING DEPTHS MUST BE INCREASED FOR FROST SHALL BE REDESIGNED. IF THE SOIL BEARING CAPACITY IS LESS THAN THAT SPECIFIED THEN THE RETAINING WALL FOOTINGS MUST BE REDESIGNED
- THE FLOOR SLAB AND TRENCH COVER MUST BE REDESIGNED IF WHEEL LOADING WILL BE SIGNIFICANTLY HIGHER THAN THE DESIGN LOADING. MUST BE VERIFIED AT LOCATIONS UTILIZING A SIDE LOADING LIFT TRUCK.
- DESIGN CONSIDERATIONS (TO BE COORDINATED WITH CONTRACTING OFFICER):
 - A.) HIGH SECURITY LOCKING DEVICE - STANDARD OR ILD (INTERNAL LOCKING DEVICE).
 - B.) LOADING PLATFORM OR CONCRETE PAD.
 - C.) HEAT TRACING REQUIREMENT (SEE NOTES TO DESIGNER ON SHEET E-001 & E-801).
 - D.) HAZARDOUS ELECTRICAL EQUIPMENT REQUIREMENT (SEE NOTES TO DESIGNER ON SHEET E-001).
 - E.) TEST WELL LOCATIONS (SEE NOTES TO DESIGNER ON SHEET E-103.)
- SHEETS S-513 & S-513(ALT) IDENTIFY DIFFERENT LOCKING SYSTEMS. THE EOR SHALL VERIFY THE CORRECT LOCKING SYSTEM REQUIRED AND REMOVE THE REDUNDANT SHEET FROM THE CONSTRUCTION CONTRACT DOCUMENTS FOR THE SYSTEM NOT USED (COORDINATE WITH CONTRACTING OFFICER). IF ALT SHEET IS USED, RENAME TO ORIGINAL SHEET.
- SHEETS S-305 & S-305(ALT) AND S-514 & S-514(ALT) IDENTIFY DIFFERENT TRENCH PLUG SYSTEM. THE EOR WILL VERIFY THE CORRECT TRENCH PLATE/PLUG SYSTEM AND REMOVE THE REDUNDANT SHEET FROM THE CONSTRUCTION CONTRACT DOCUMENTS FOR THE SYSTEM NOT USED (COORDINATE WITH CONTRACTING OFFICER). IF ALT SHEETS ARE USED, RENAME TO ORIGINAL SHEETS.
- WHEN TRENCH PLUGS ARE BEING USED, SITE PLAN SUBMITTALS MUST INCLUDE ENDORSEMENT LETTERS FROM BOTH NAVFAC ATLANTIC AND NAVFAC EXWC THAT ARE SPECIFIC TO THE TYPE OF MAGAZINE BEING CONSTRUCTED (TYPE C OR TYPE D). THESE LETTERS ARE NOT REQUIRED TO BE SITE SPECIFIC. CONTACT IAN REED (NAVFAC ATLANTIC STRUCTURAL BRANCH DC42) AT IAN.W.REED2.CIV@US.NAVY.MIL TO REQUEST A COPY OF THE APPROPRIATE ENDORSEMENT LETTER.
- PROVIDE COATING AND PAINTING SPECIFICATIONS AS PART OF THE CONSTRUCTION CONTRACT DOCUMENTS THAT REQUIRES THE FOLLOWING FOR THE STEEL SLIDING DOORS:
 - A. ALL DUST, DIRT, OIL, GREASE, WELD FLUX RESIDUE, LOOSE DIRT & OTHER FOREIGN MATTER THAT MAY INHIBIT COATING BOND TO STRUCTURAL STEEL SHALL BE REMOVED IN THE SHOP IN ACCORDANCE WITH THE STEEL STRUCTURES PAINTING COUNCIL (SSPC), SPG.
 - B. EXCEPT FOR CONTACT SURFACES OF MOVING PARTS, ALL EXPOSED SURFACES OF STRUCTURAL STEEL SHALL RECEIVE 1.5 MIL (DRY) COAT OF ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645. UNEXPOSED SURFACES SHALL RECEIVE 1.0 MIL (DRY) COAT OF ASPHALT VARNISH CONFORMING TO FEDERAL SPECIFICATION TT-V-51. ALL PRIMER COATING SHALL BE PERFORMED IN THE SHOP.
 - C. ALL EXPOSED SURFACES OF STRUCTURAL STEEL SHALL RECEIVE TWO FIELD COATS OF COATING WITH A MINIMUM THICKNESS OF 4.0 MIL (DRY) CONFORMING TO FEDERAL SPECIFICATION TT-P-102 OR TT-P-37.
- THE STANDARD MAGAZINE DOOR DESIGN INDICATED ON THESE PLANS HAS BEEN UPDATED DUE TO SUPPLY CONSTRAINTS WITH MATERIALS USED PREVIOUSLY. FOR ALL PROJECTS UTILIZING THESE PLANS, NAVFAC EXWC MUST CONDUCT A SITE SPECIFIC TECHNICAL REVIEW OF THE DRAWINGS TO ENSURE CONSISTENCY WITH DESIGN ASSUMPTIONS MADE WHEN THE DOORS WERE REDESIGNED. UPON SATISFACTORY REVIEW, NAVFAC EXWC WILL PROVIDE A TECHNICAL REPORT AND SITE SPECIFIC ENDORSEMENT LETTER FOR THE DOOR MODIFICATION TO BE PROVIDED WITH THE SITE PLAN SUBMITTAL TO NOSSA. CONTACT BRAD DURANT (NAVFAC EXWC EXPLOSION EFFECTS AND CONSEQUENCES DIVISION) AT BRADLEY.J.DURANT2.CIV@US.NAVY.MIL TO REQUEST TECHNICAL REVIEW AND APPROPRIATE DOCUMENTATION.
- LOADING PLATFORM CAN BE ADDED AS SITE ADAPT WHEN REQUIRED AS A MODIFICATION TO THE CURRENT DESIGN DRAWINGS. WHEN A LOADING PLATFORM IS USED, SITE PLAN SUBMITTALS MUST INCLUDE ENDORSEMENT LETTER FROM NAVFAC EXWC. THESE LETTERS ARE NOT REQUIRED TO BE SITE-SPECIFIC. CONTACT BRAD DURANT (NAVFAC EXWC EXPLOSION EFFECTS AND CONSEQUENCES DIVISION) AT BRADLEY.J.DURANT2.CIV@US.NAVY.MIL TO REQUEST A COPY OF THE APPROPRIATE ENDORSEMENT LETTER.
- THE HIGH SECURITY HASP INDICATED ON SHEET S-513 IS NO LONGER IN PRODUCTION. THE ILD ON S-513ALT MUST BE USED.

DEPARTMENT OF DEFENSE EXPLOSIVE SAFETY BOARD (DDESB) APPROVAL NOTES

- THIS STANDARD WAS APPROVED ORIGINALLY BY THE DDESB FOR CONSTRUCTION AS A 7-BAR STRUCTURE FOR EXPLOSIVE WEIGHTS UP TO 350,000 POUNDS OF (NEW) HAZARD DIVISION (HD) 1.1 MATERIAL. SUBSEQUENTLY THE STANDARD WAS APPROVED FOR EXPLOSIVE WEIGHTS UP TO 500,000 POUNDS (NEW).
- ANY DEVIATION FROM THE STANDARD APPROVED DRAWINGS, EXCEPT FOR FOUNDATION MODIFICATIONS, WITHOUT THE WRITTEN APPROVAL FROM THE DEPARTMENT OF DEFENSE EXPLOSIVE SAFETY BOARD (DDESB) MAY REQUIRE THE MAGAZINE TO BE CONSIDERED AN UNDEFINED MAGAZINE AND MAY SEVERELY RESTRICT THE ALLOWABLE STORAGE CAPACITY.

THESE STANDARD DRAWINGS ARE BASED ON THE FOLLOWING ORIGINAL STANDARD DRAWINGS:
 DESIGN BY: AMMANN & WHITNEY, CONSULTING ENGINEERS
 PROJECT TITLE: BOX MAGAZINE TYPE C
 DRAWING NUMBER: 1404430 - 1404444
 DATE: 5 NOVEMBER, 1985
 NUMBER OF SHEETS: 15

THE STRUCTURAL DESIGN IN THESE UPDATED STANDARD DRAWINGS DOES NOT SUBSTANTIALLY DEVIATE FROM THE ORIGINAL STANDARD. SOME ASPECTS OF THE ELECTRICAL DESIGN HAVE BEEN MODIFIED FROM THE ORIGINAL STANDARD.

THESE STANDARD DRAWINGS SUPERSEDE NAVFAC STANDARD DRAWINGS 14004689 TO 14004720

DATE: 09/14/22

TYPE C STANDARD

APPROVED: FOR COMMANDER NAVFAC

ACTIVITY: NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND

SATISFACTORY TO: DATE: MM/DD/YYYY

DES: [] DRW: IWR CHK: LMM

PM/DM: []

BRANCH MANAGER: JTW

CHIEF ENGINEER: RICHARD L. STEPHENS, P.E.

FIRE PROTECTION: DPS

NAVFAC DRAWING NO: 14115934

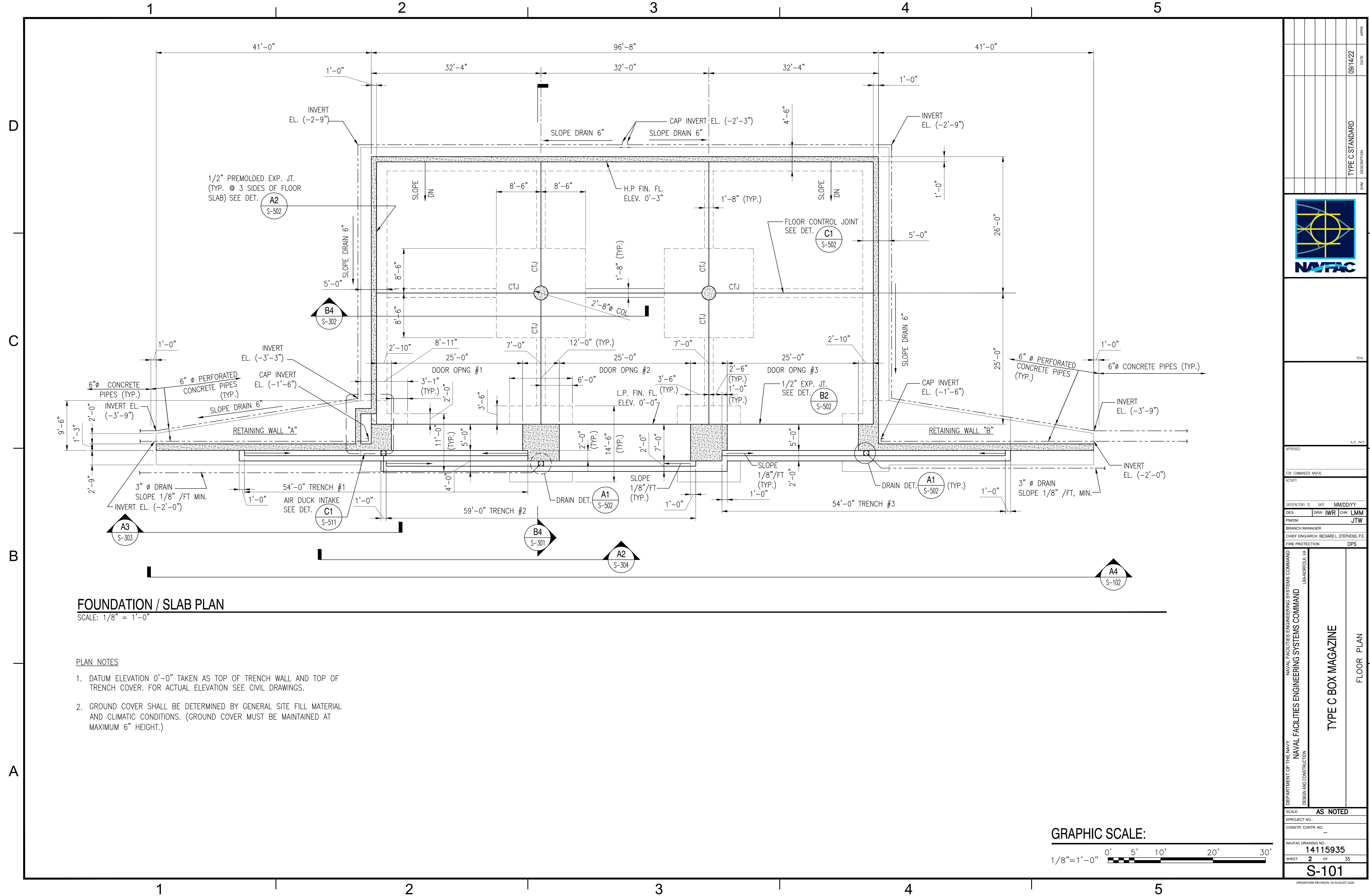
SHEET 1 OF 35

S-001

DRAWING REVISION: 25 AUGUST 2020

FILE NAME: J:\DSE\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C\AutoCAD\BOX_C_2022.9.27.dwg PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: helle.casiano

FILE NAME: J:\DSE\Magazines\Box_Magazines Modified 2021\Types C\Final Drawings Type C_VelocCAD\BOX_C_2022.9.27.dwg PLOTTED: Thursday, November 03, 2022 - 11:09am USER: helle.casino



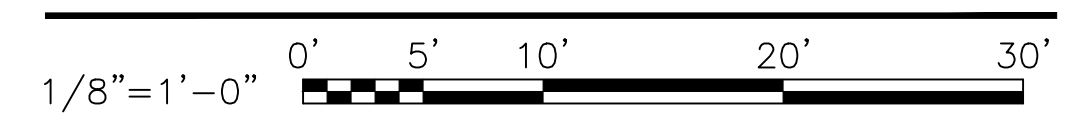
FOUNDATION / SLAB PLAN


SCALE: 1/8" = 1'-0"

PLAN NOTES

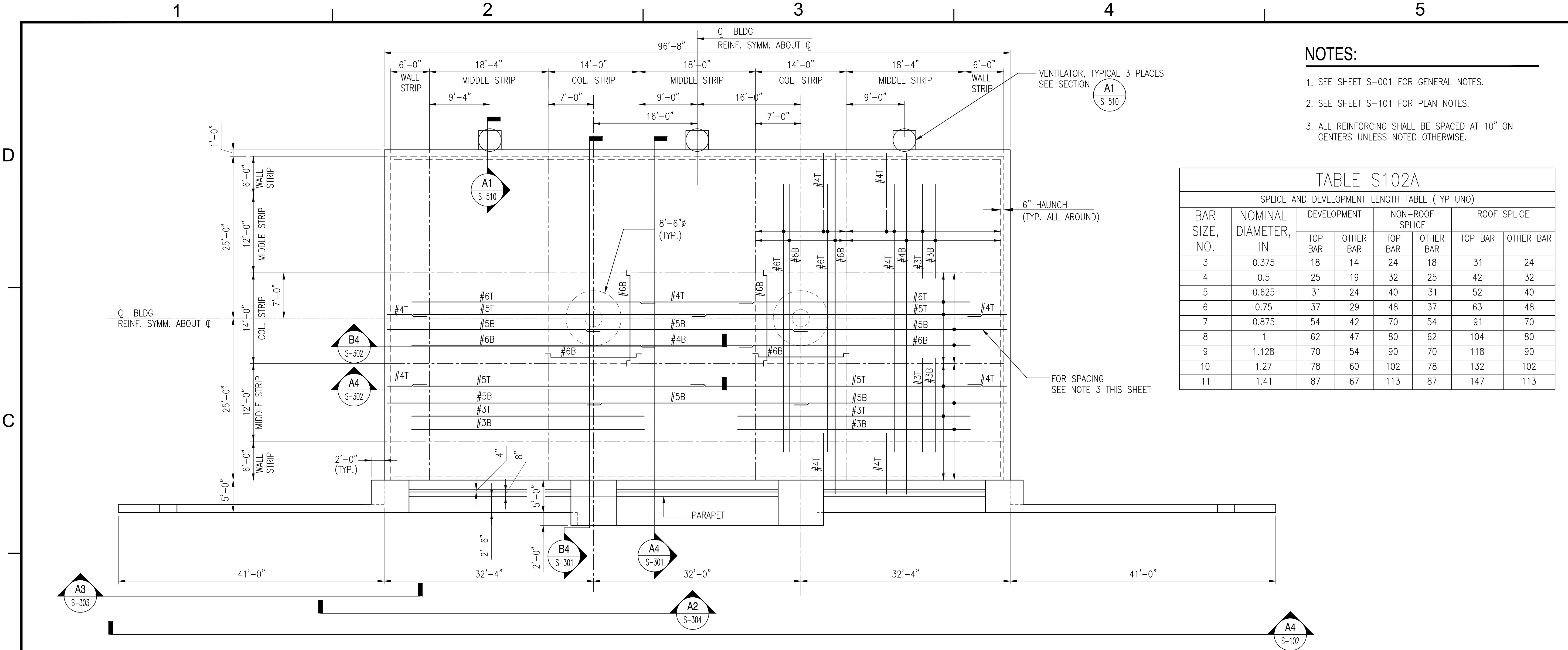
1. DATUM ELEVATION 0'-0" TAKEN AS TOP OF TRENCH WALL AND TOP OF TRENCH COVER. FOR ACTUAL ELEVATION SEE CIVIL DRAWINGS.
2. GROUND COVER SHALL BE DETERMINED BY GENERAL SITE FILL MATERIAL AND CLIMATIC CONDITIONS. (GROUND COVER MUST BE MAINTAINED AT MAXIMUM 6" HEIGHT.)

GRAPHIC SCALE:



APPROVED	DATE	09/14/22
TYPE C STANDARD	DESCRIPTION	
		
SEAL		
A/E INFO		
APPROVED		
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO DATE	DATE	MM/DD/YYYY
DES	DRW	IWR
CHK	CHK	LMM
PM/DM		JTW
BRANCH MANAGER		
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.	
FIRE PROTECTION	DPS	
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	BRAND/SCALE/VA	
<p>TYPE C BOX MAGAZINE</p> <p>FLOOR PLAN</p>		
SCALE:	AS NOTED	
PROJECT NO.:		
CONSTR. CONTR. NO.:		
NAVFAC DRAWING NO.:	14115935	
SHEET	2	OF 35
<p>S-101</p> <p><small>DRAWING REVISION: 25 AUGUST 2020</small></p>		

FILE NAME: I:\DSE\Magazines\Box Magazines Modified 2021\Types C\Final Drawings Type C\AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: S-102 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: helia.casiano

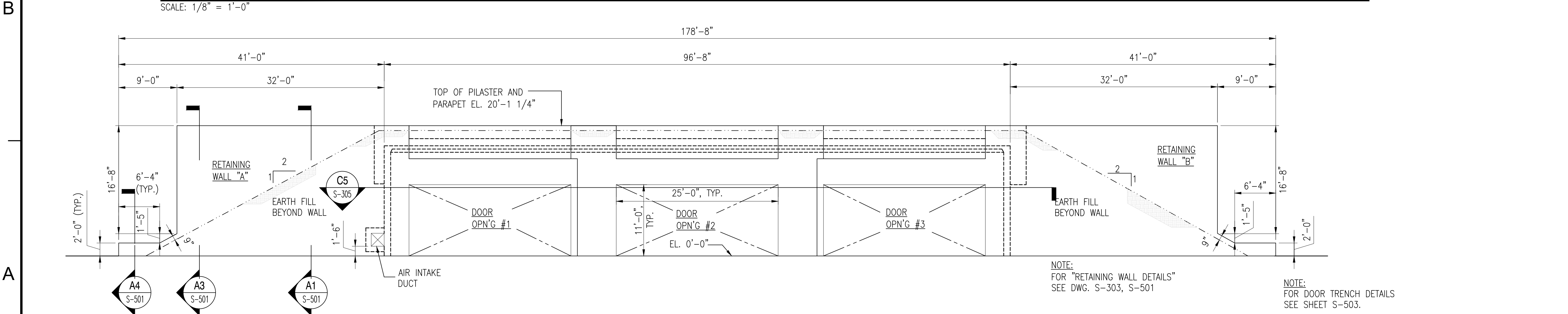


- NOTES:**
- SEE SHEET S-001 FOR GENERAL NOTES.
 - SEE SHEET S-101 FOR PLAN NOTES.
 - ALL REINFORCING SHALL BE SPACED AT 10" ON CENTERS UNLESS NOTED OTHERWISE.

TABLE S102A
SPLICE AND DEVELOPMENT LENGTH TABLE (TYP UNO)

BAR SIZE, NO.	NOMINAL DIAMETER, IN	DEVELOPMENT		NON-ROOF SPLICE		ROOF SPLICE	
		TOP BAR	OTHER BAR	TOP BAR	OTHER BAR	TOP BAR	OTHER BAR
3	0.375	18	14	24	18	31	24
4	0.5	25	19	32	25	42	32
5	0.625	31	24	40	31	52	40
6	0.75	37	29	48	37	63	48
7	0.875	54	42	70	54	91	70
8	1	62	47	80	62	104	80
9	1.128	70	54	90	70	118	90
10	1.27	78	60	102	78	132	102
11	1.41	87	67	113	87	147	113

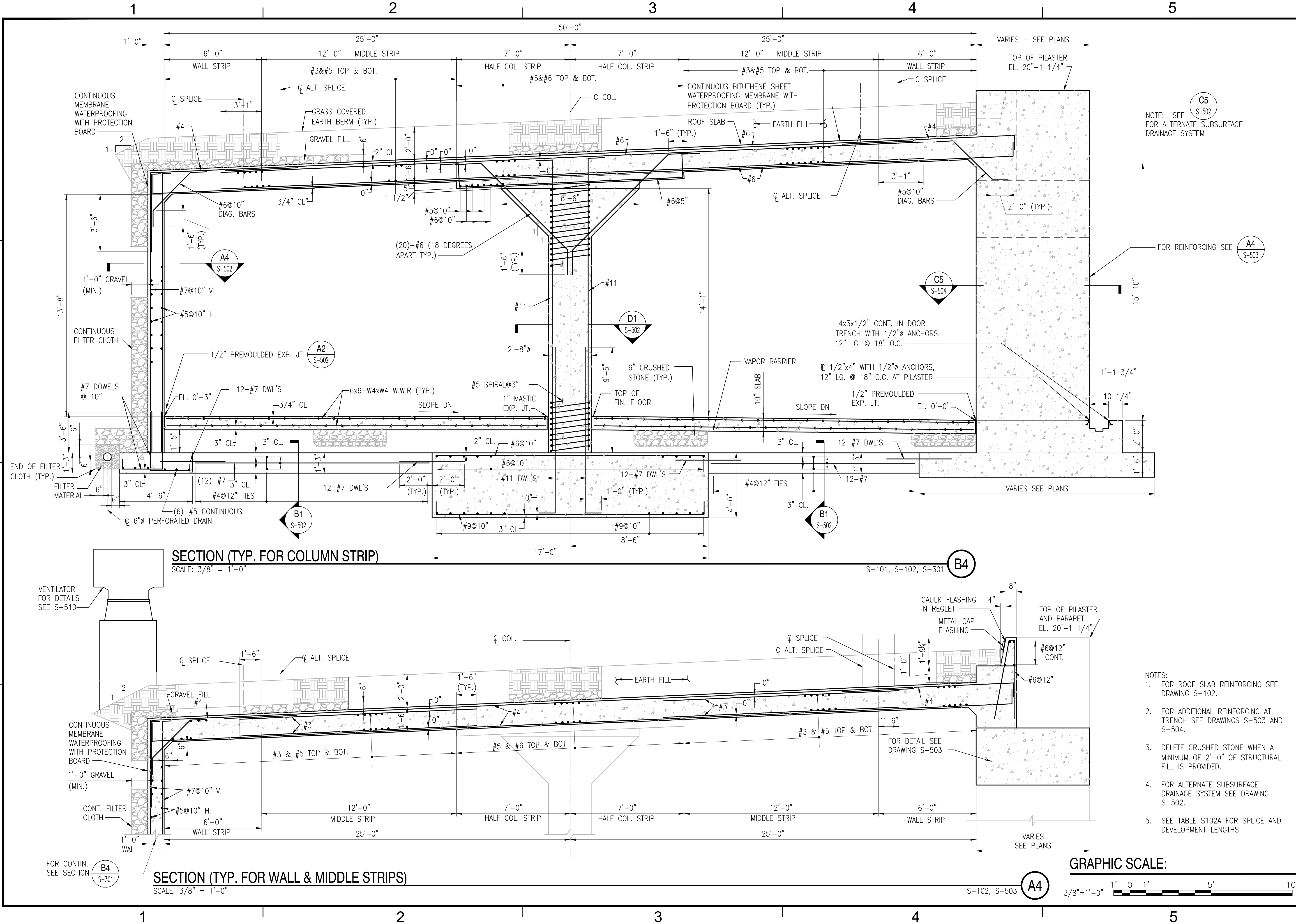
ROOF PLAN
SCALE: 1/8" = 1'-0"



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

GRAPHIC SCALE:
1/8" = 1'-0" 0' 5' 10' 20' 30'

APPROVED	DATE	09/14/22
FOR COMMANDER NAVFAC	TYPE C STANDARD	
ACTIVITY	DESCRIPTION	
SATISFACTORY TO	DATE	MM/DD/YY
DES	DRW	IWR
CHK	LMM	
PM/DM		
BRANCH MANAGER	JTW	
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.	
FIRE PROTECTION	DPS	
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	LEBANON, CALIF.	
	TYPE C BOX MAGAZINE	
	ROOF PLAN AND FRONT ELEVATION	
SCALE:	AS NOTED	
PROJECT NO.:		
CONSTR. CONTR. NO.:		
NAVFAC DRAWING NO.:	14115936	
SHEET	3	OF 35
	S-102	
	DRAWING REVISION: 25 AUGUST 2020	



DATE	09/14/22
APP'R	
DESCRIPTION	TYPE C STANDARD
SYMBOL	

APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	MM/DD/YY
CHK	LMM
PRJ MGR	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
DESIGN AND CONSTRUCTION

TYPE C BOX MAGAZINE

SECTIONS AND DETAILS

SCALE: AS NOTED

PROJECT NO: 14115937

CONSTR. CONTR. NO: --

NAVFAC DRAWING NO: 14115937

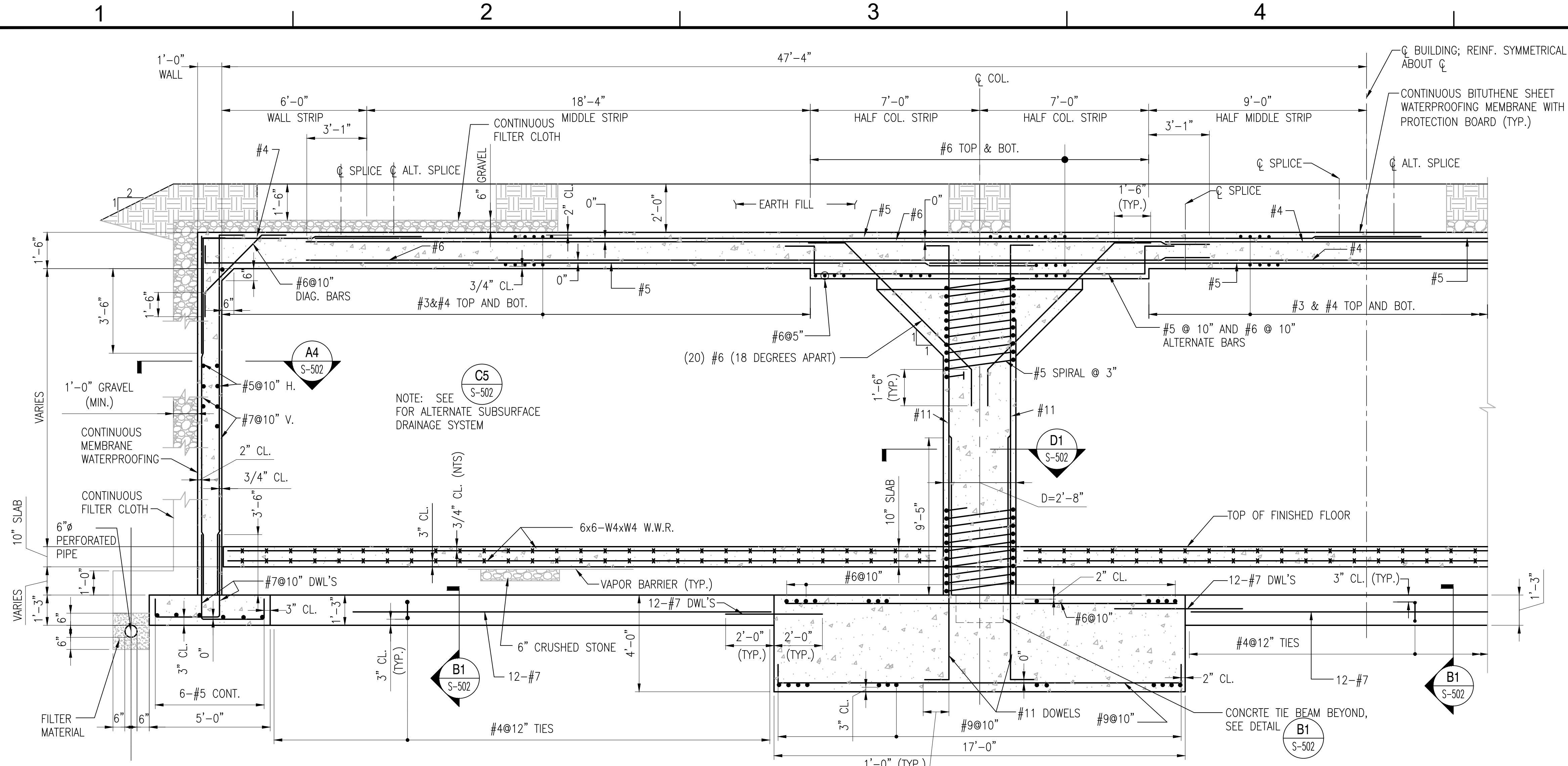
SHEET 4 OF 35

S-301

DRAWING REVISION: 25 AUGUST 2020

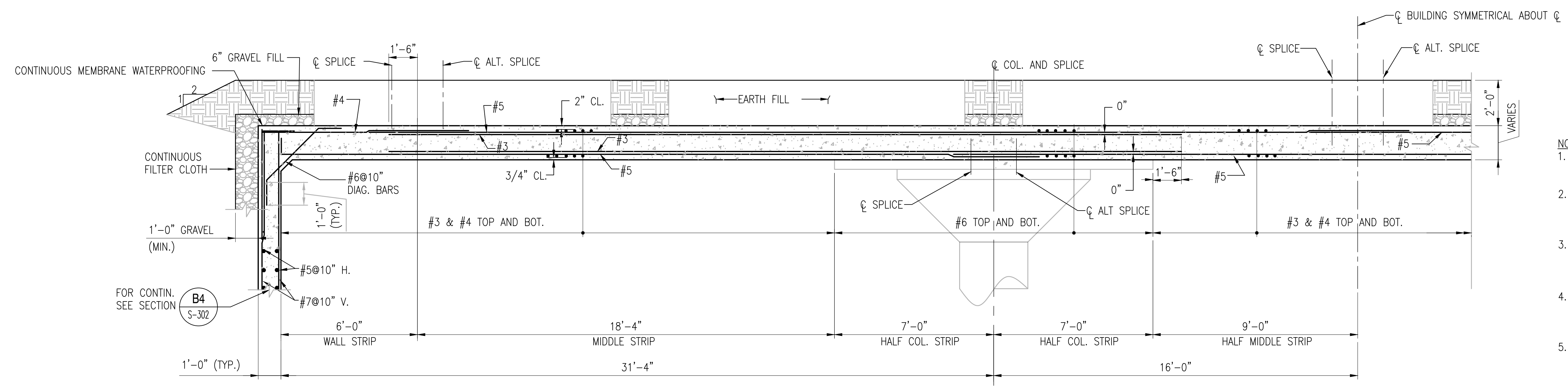
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FILE NAME: J:\DSE\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C\AutoCAD\BOX_C_2022.9.27.dwg PLOTTED: Thursday, November 03, 2022 - 11:09am USER: hells.cornio



SECTION (TYP. FOR COLUMN STRIP)
SCALE: 3/8" = 1'-0"

S-101, S-102, S-302 **B4**

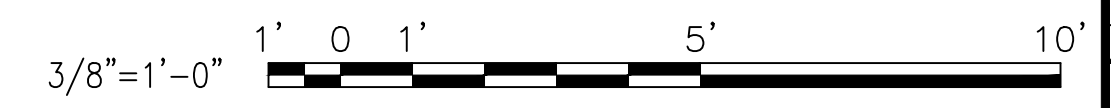



SECTION (TYP. FOR WALL & MIDDLE STRIPS)
SCALE: 3/8" = 1'-0"

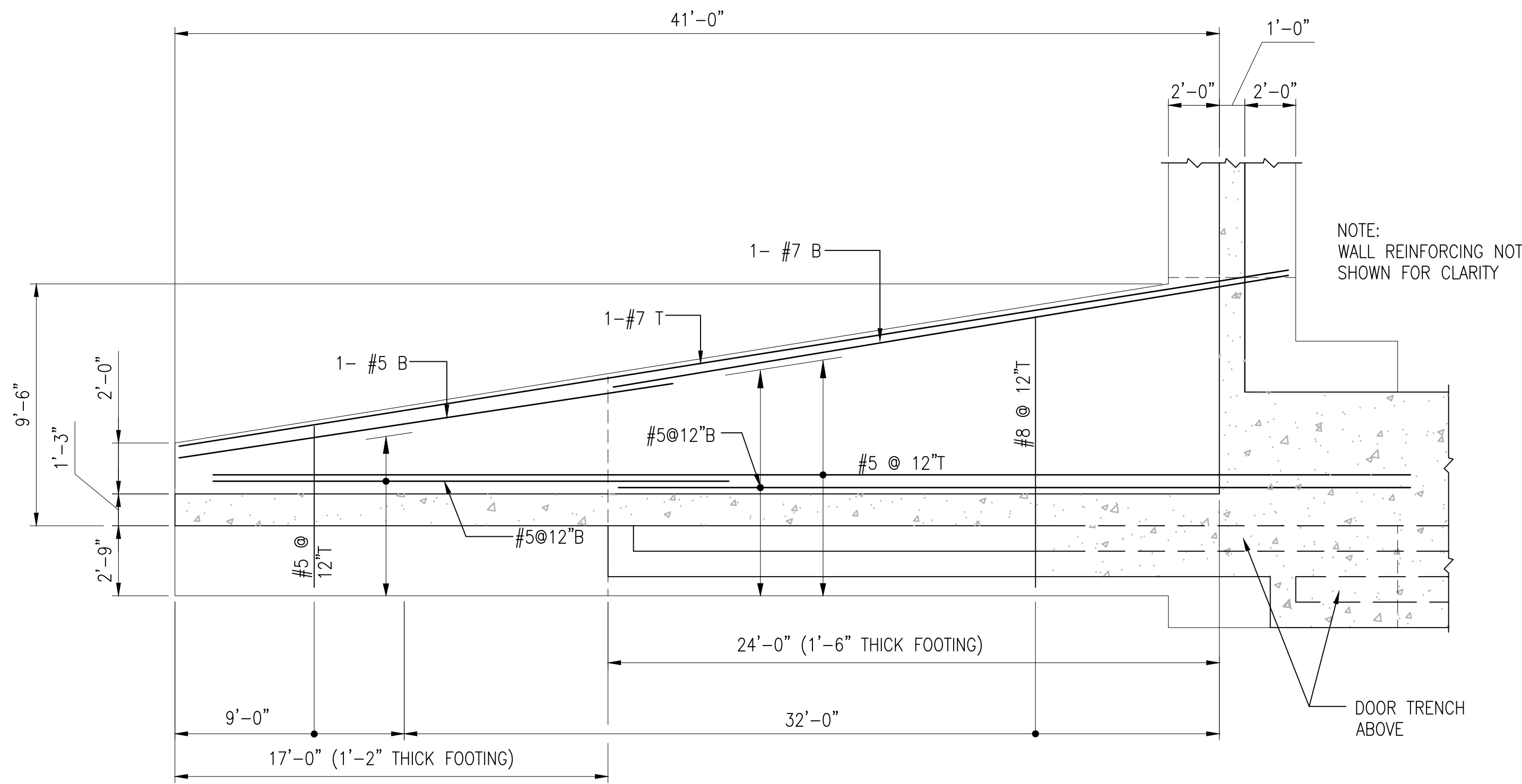
S-102 **A4**

- NOTES:**
1. FOR ROOF SLAB REINFORCING SEE DRAWING S-102.
 2. FOR ADDITIONAL REINFORCING AT TRENCH SEE DRAWINGS S-503 AND S-504.
 3. DELETE CRUSHED STONE WHEN A MINIMUM OF 2'-0" OF STRUCTURAL FILL IS PROVIDED.
 4. FOR ALTERNATE SUBSURFACE DRAINAGE SYSTEM SEE DRAWING S-502.
 5. SEE TABLE S102A FOR SPLICE AND DEVELOPMENT LENGTHS.

GRAPHIC SCALE:



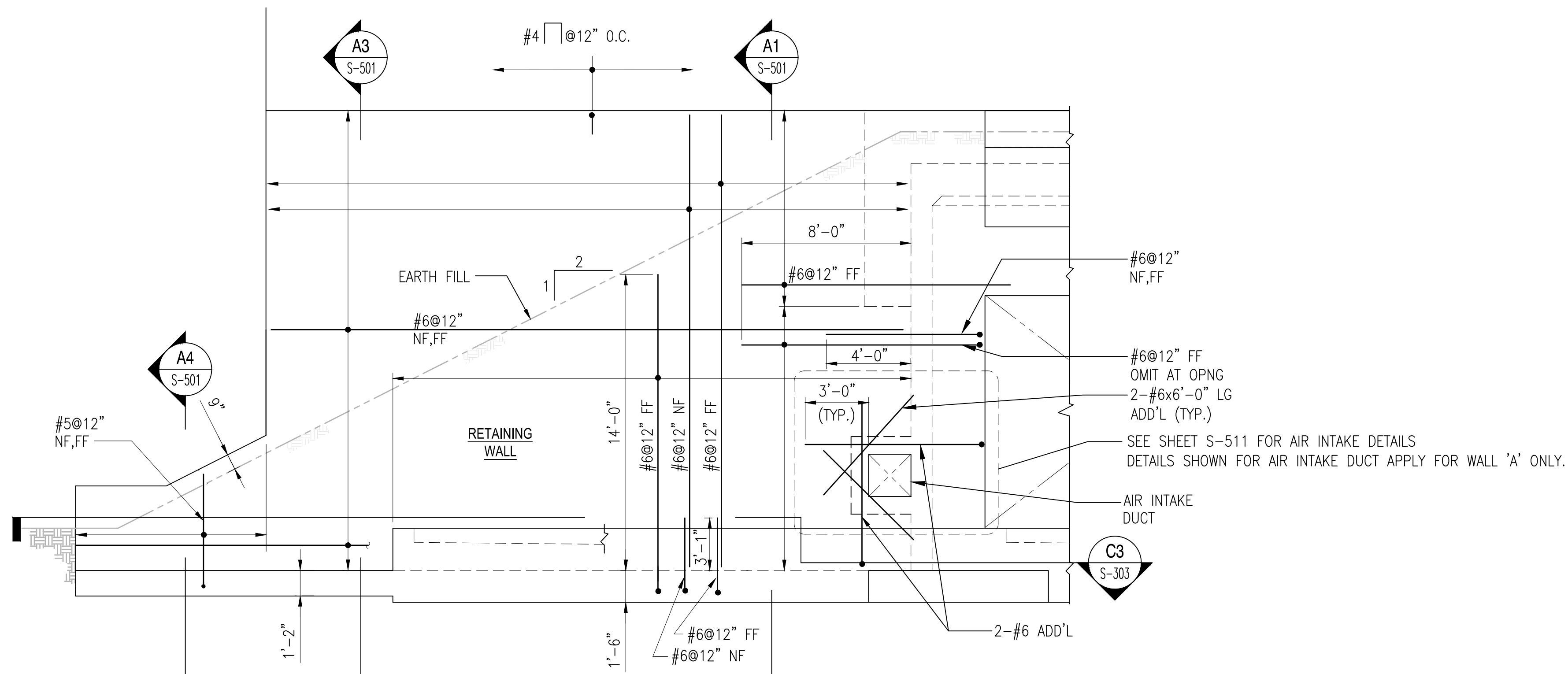
APPROVED	DATE	09/14/22
TYPE C STANDARD	DESCRIPTION	
		
TYPE C BOX MAGAZINE SECTIONS AND DETAILS		
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND DESIGN AND CONSTRUCTION		
PROJECT NO.: CONSTR. CONTR. NO.: NAVFAC DRAWING NO.: 14115938 SHEET 5 OF 35 S-302 <small>DRAWING REVISION: 25 AUGUST 2020</small>		



FOUNDATION PLAN

RETAINING WALL "A" AS SHOWN
 RETAINING WALL "B" OPPOSITE HAND
 SCALE: 1/4" = 1'-0"

S-303 (C3)

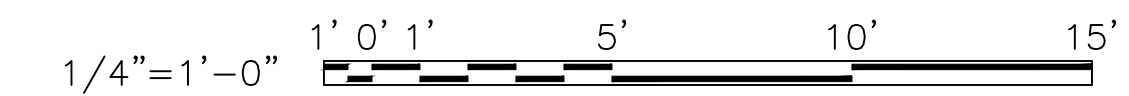


ELEVATION

RETAINING WALL "A" AS SHOWN
 RETAINING WALL "B" OPPOSITE HAND, SIMILAR
 SCALE: 1/4" = 1'-0"

S-101, S-102 (A3)

GRAPHIC SCALE:



DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
BY	
APPR	



SEAL	
A/E INFO	

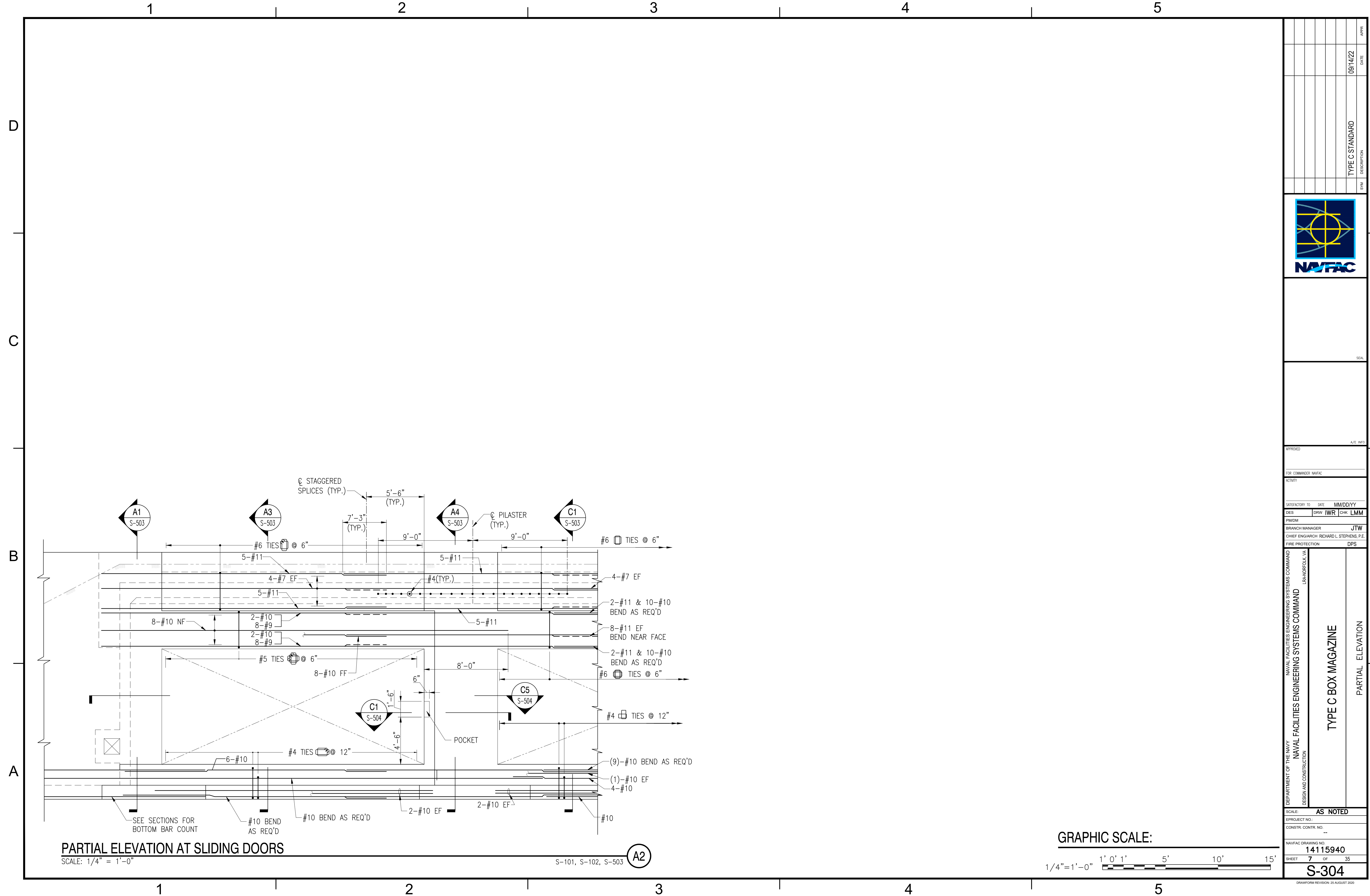
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	

SATISFACTORY TO	DATE	MM/DD/YY
DES	DRW	IWR
CHK	LMM	
PM/DM		
BRANCH MANAGER	JTW	
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.	
FIRE PROTECTION	DPS	

DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
	BRANFORD, VA
	TYPE C BOX MAGAZINE
	RETAINING WALL DETAILS

SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115939
SHEET	6 OF 35
	S-303

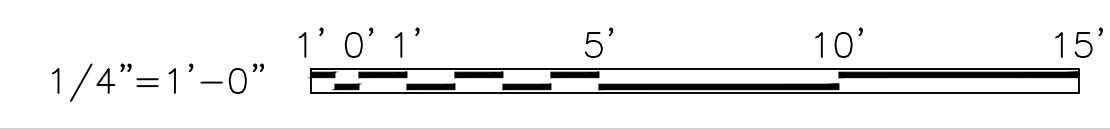
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PARTIAL ELEVATION AT SLIDING DOORS

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

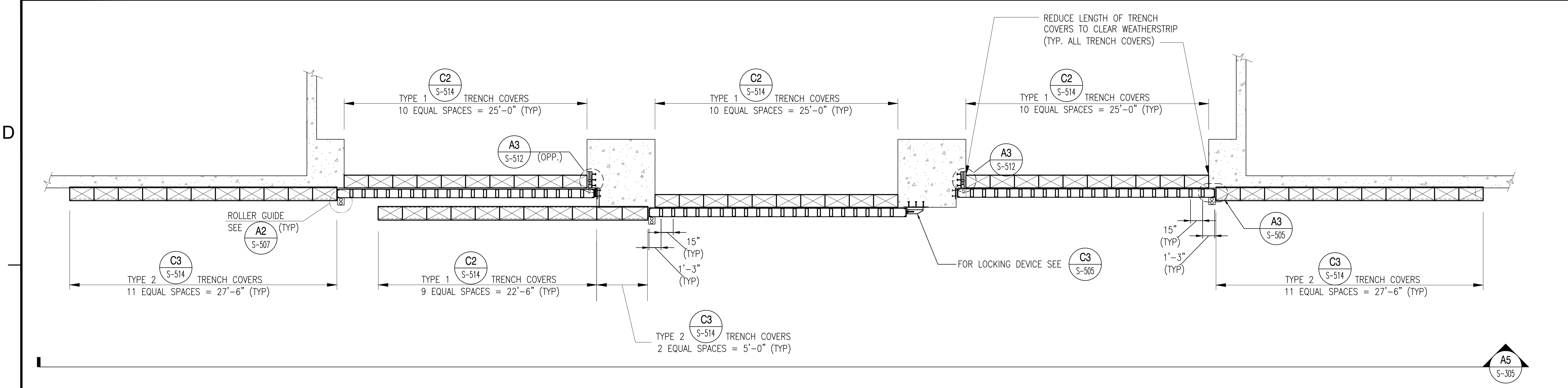
GRAPHIC SCALE:



S-101, S-102, S-503

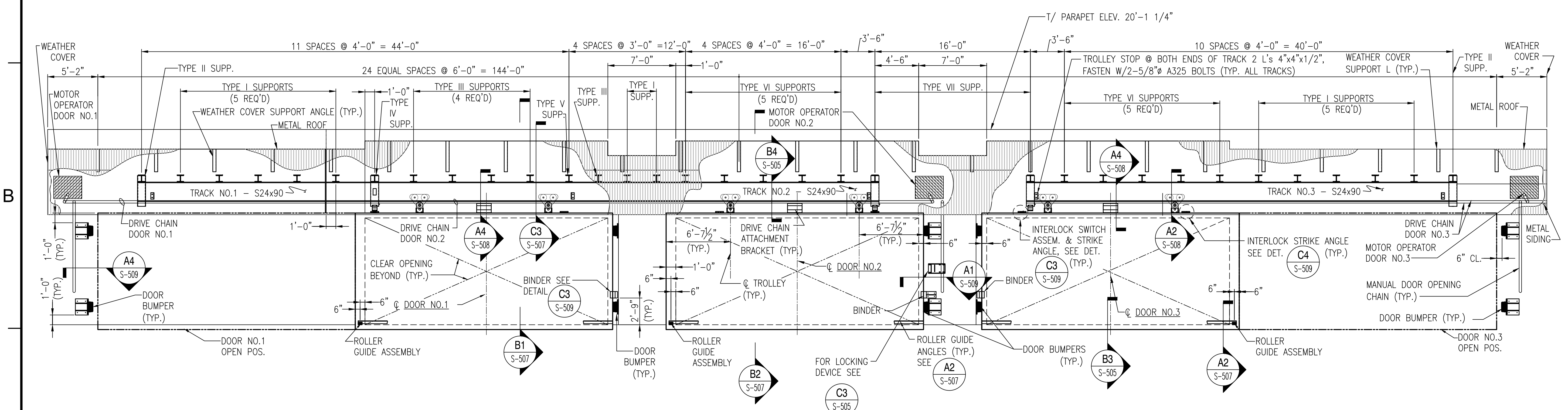
APPROVED	DATE	09/14/22
FOR COMMANDER NAVFAC	DESCRIPTION	TYPE C STANDARD
ACTIVITY	DATE	09/14/22
SATISFACTORY TO	DATE	MM/DD/YY
DES	DRW	IWR
CHK	CHK	LMM
PMIDM		
BRANCH MANAGER	JTW	
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.	
FIRE PROTECTION	DPS	
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	LEBANON/DCAA	
TYPE C BOX MAGAZINE		
PARTIAL ELEVATION		
SCALE:	AS NOTED	
PROJECT NO.:	14115940	
CONSTR. CONTR. NO.:		
NAVFAC DRAWING NO.:	14115940	
SHEET	7	OF 35
S-304		
DRAWING REVISION: 25 AUGUST 2020		

1 2 3 4 5



PARTIAL PLAN AT SLIDING DOORS

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

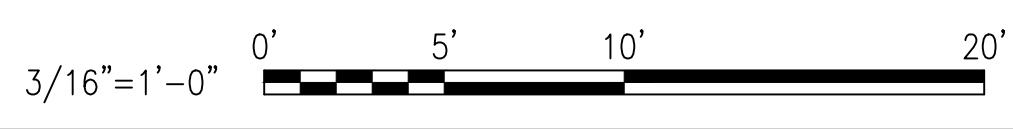


PARTIAL ELEVATION AT SLIDING DOORS

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

- NOTES:
1. EMBEDDED PLATES AND ANGLES TO SUPPORT DOOR MOTOR OPERATORS SHALL BE PROVIDED BY THE MOTOR SUPPLIER.
 2. SEE COATING SPECIFICATIONS FOR PAINTING REQUIREMENTS.
 3. SEE S-506 FOR TYPES I THROUGH VII DOOR MONORAIL SUPPORT BRACKET DETAILS.
 4. DOORS 1 AND 3 CONTAIN INTERIOR LOCK MECHANISM SEE S-512 FOR INTERIOR LOCK MECHANISM DETAILS.

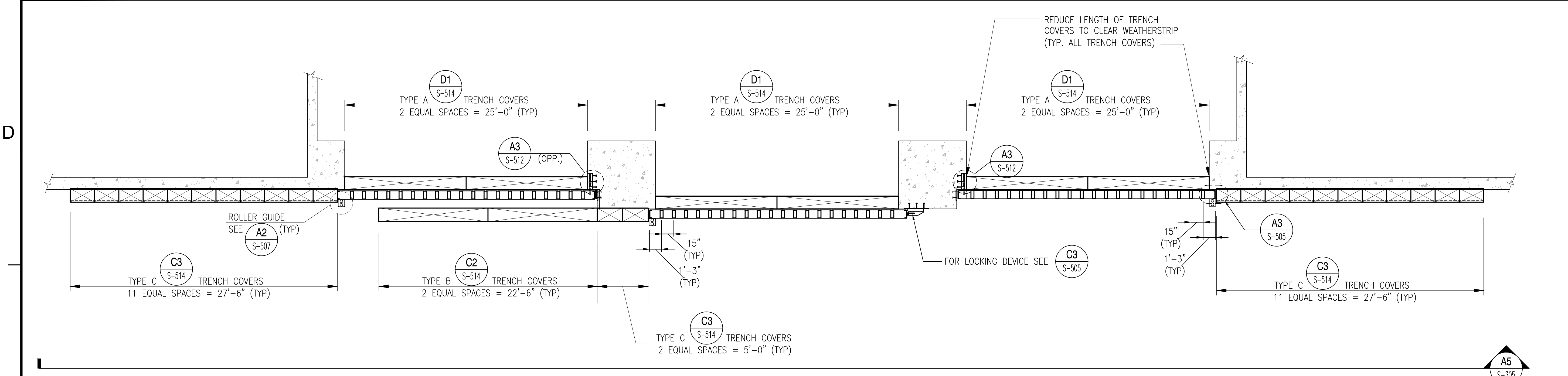
GRAPHIC SCALE:



DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE	MM/DD/YY
DES	DRW IWR CHK LMM
PM/DM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DESIGNED BY	LEANDRO CALVA
NAVFACILITIES ENGINEERING SYSTEMS COMMAND	
DEPARTMENT OF THE NAVY	
NAVFACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115941
SHEET	8 OF 35
S-305	
<small>DRAWING REVISION: 25 AUGUST 2020</small>	

1 2 3 4 5

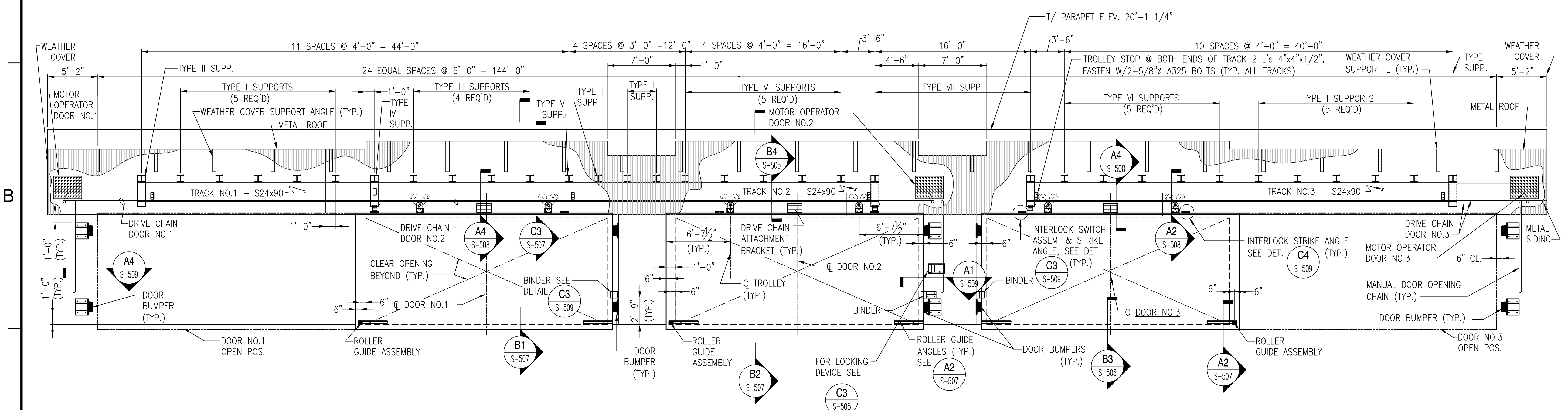
1 2 3 4 5



PARTIAL PLAN AT SLIDING DOORS

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

S-102 C5



PARTIAL ELEVATION AT SLIDING DOORS

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

S-305 A5

- NOTES:
1. EMBEDDED PLATES AND ANGLES TO SUPPORT DOOR MOTOR OPERATORS SHALL BE PROVIDED BY THE MOTOR SUPPLIER.
 2. SEE COATING SPECIFICATIONS FOR PAINTING REQUIREMENTS.
 3. SEE S-506 FOR TYPES I THROUGH VII DOOR MONORAIL SUPPORT BRACKET DETAILS.
 4. DOORS 1 AND 3 CONTAIN INTERIOR LOCK MECHANISM SEE S-512 FOR INTERIOR LOCK MECHANISM DETAILS.

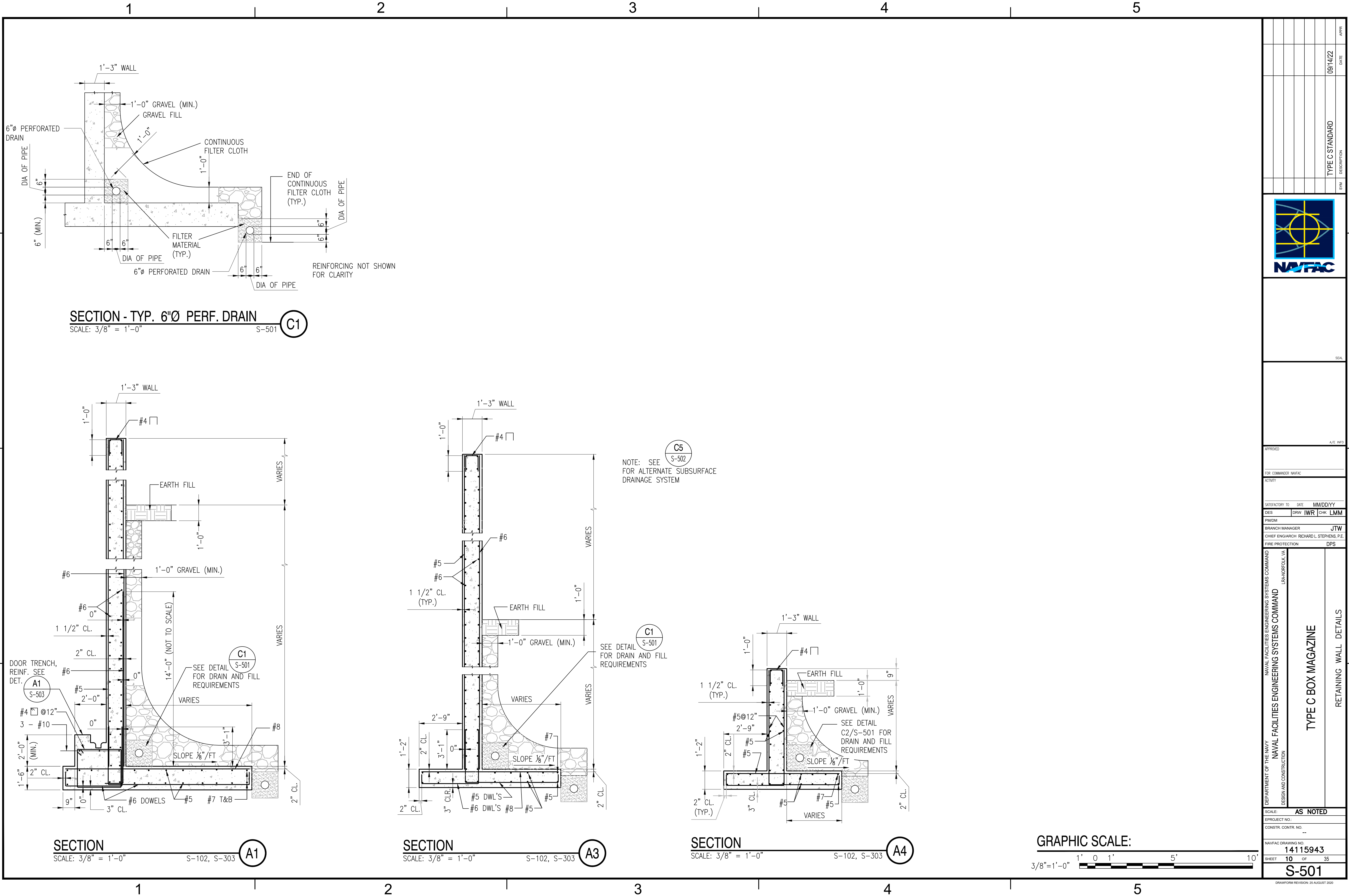
GRAPHIC SCALE:



DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE	MM/DD/YYYY
DES	DRW IWR CHK LMM
PM/DM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DESIGNED BY	LEANDRO CALVA
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DEPARTMENT OF THE NAVY	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	
PROJECT NO.	14115942
CONSTR. CONTR. NO.	--
NAVFAC DRAWING NO.	14115942
SHEET	9 OF 35
S-305ALT	
<small>DRAWING REVISION: 25 AUGUST 2020</small>	

FILE NAME: I:\DSE\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C AutoCAD\BOX_C_2022.9.27.dwg PLOTTED: Thursday, November 03, 2022 1:19pm USER: keila.corsino

FILE NAME: I:\DSE\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C\AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: S-501 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: hells.cossino

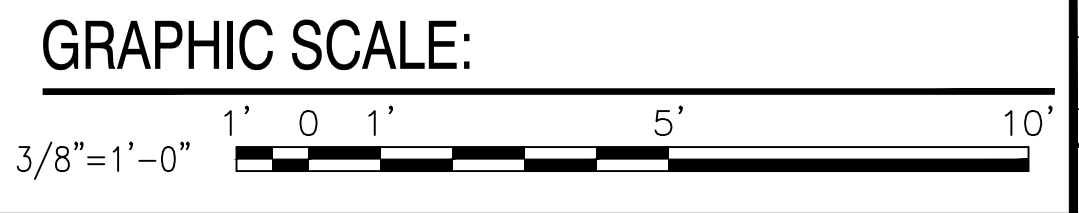


SECTION - TYP. 6"Ø PERF. DRAIN
 SCALE: 3/8" = 1'-0" S-501 **C1**

SECTION
 SCALE: 3/8" = 1'-0" S-102, S-303 **A1**

SECTION
 SCALE: 3/8" = 1'-0" S-102, S-303 **A3**

SECTION
 SCALE: 3/8" = 1'-0" S-102, S-303 **A4**



C5
 S-502
 NOTE: SEE FOR ALTERNATE SUBSURFACE DRAINAGE SYSTEM

C1
 S-501
 SEE DETAIL FOR DRAIN AND FILL REQUIREMENTS

APPROVED	DATE	APP'R
	09/14/22	
TYPE C STANDARD		
DESCRIPTION		
SEAL		
AVE INFO		
APPROVED FOR COMMANDER NAFAC ACTIVITY SATISFACTORY TO DATE MM/DD/YY DES IWR CHK LMM PMDM BRANCH MANAGER JTW CHIEF ENGINEER RICHARD L. STEPHENS, P.E. FIRE PROTECTION DPS		
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND BRANFORD, VA		
TYPE C BOX MAGAZINE RETAINING WALL DETAILS		
SCALE: AS NOTED PROJECT NO: CONSTR. CONTR. NO: NAFAC DRAWING NO: 14115943 SHEET 10 OF 35 S-501 <small>DRAWING REVISION: 25 AUGUST 2020</small>		

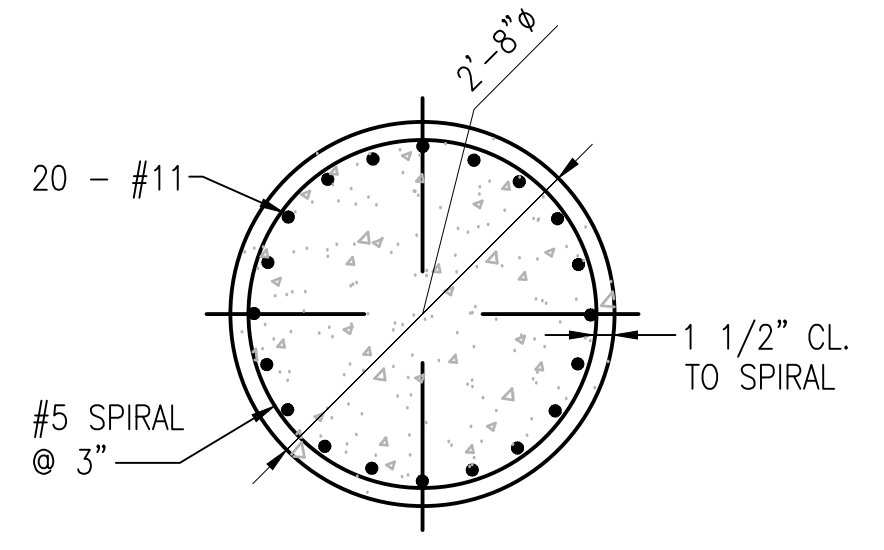
1

2

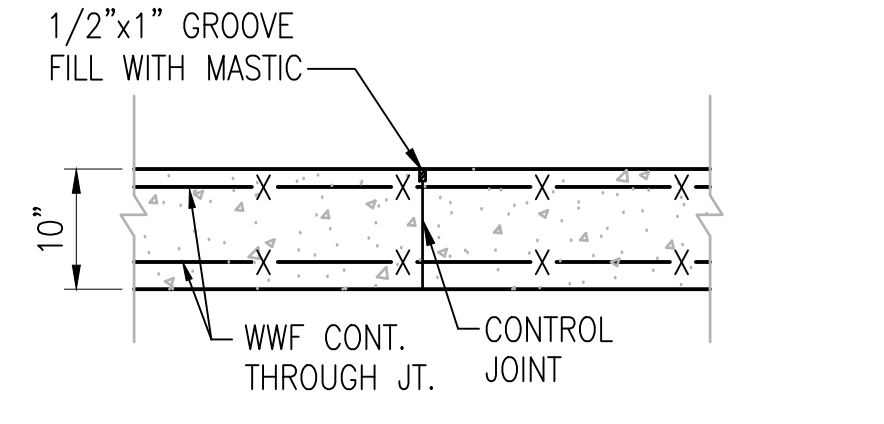
3

4

5



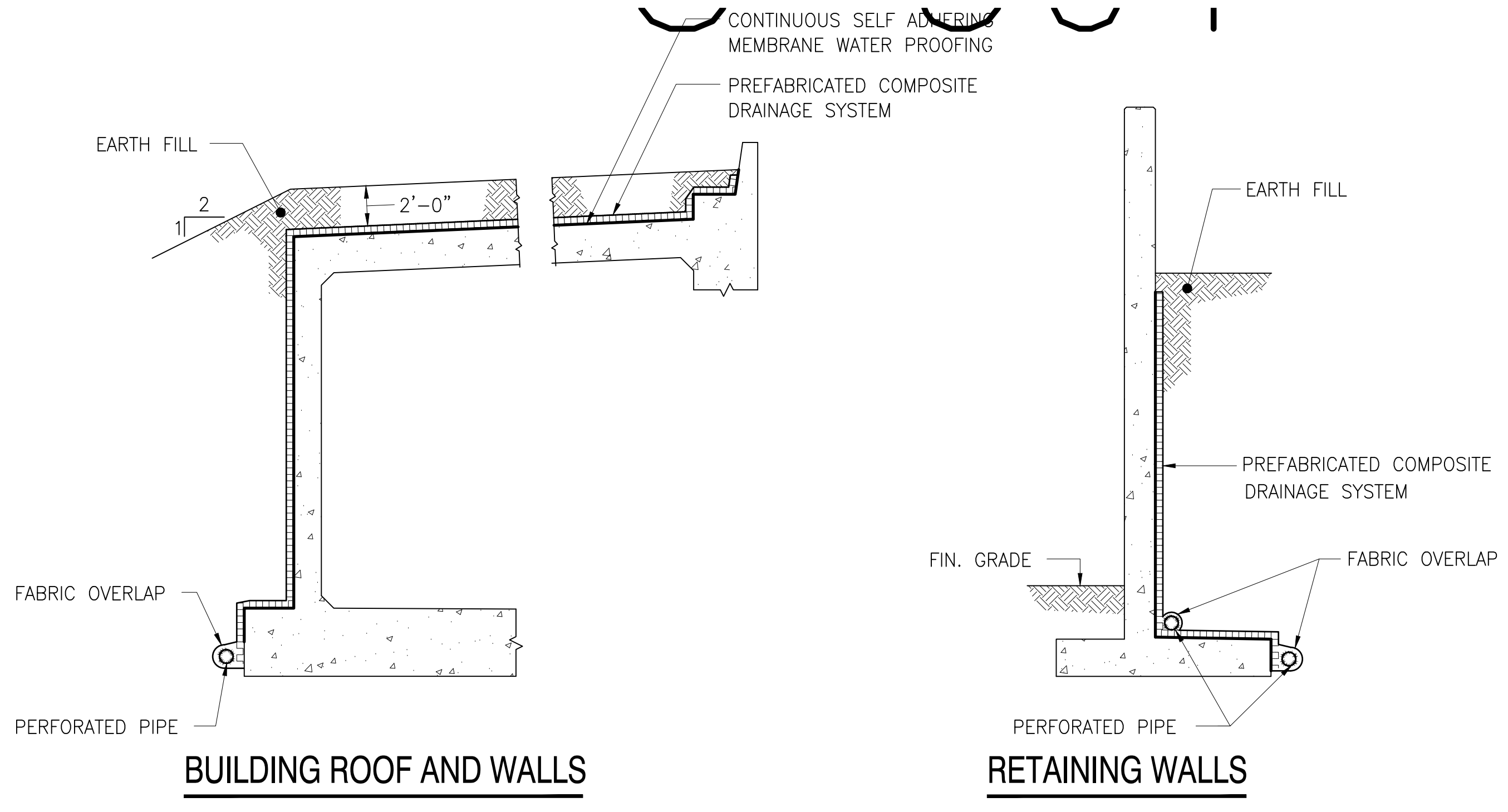
SECTION
SCALE: 3/4" = 1'-0" S-301, S-302 **D1**



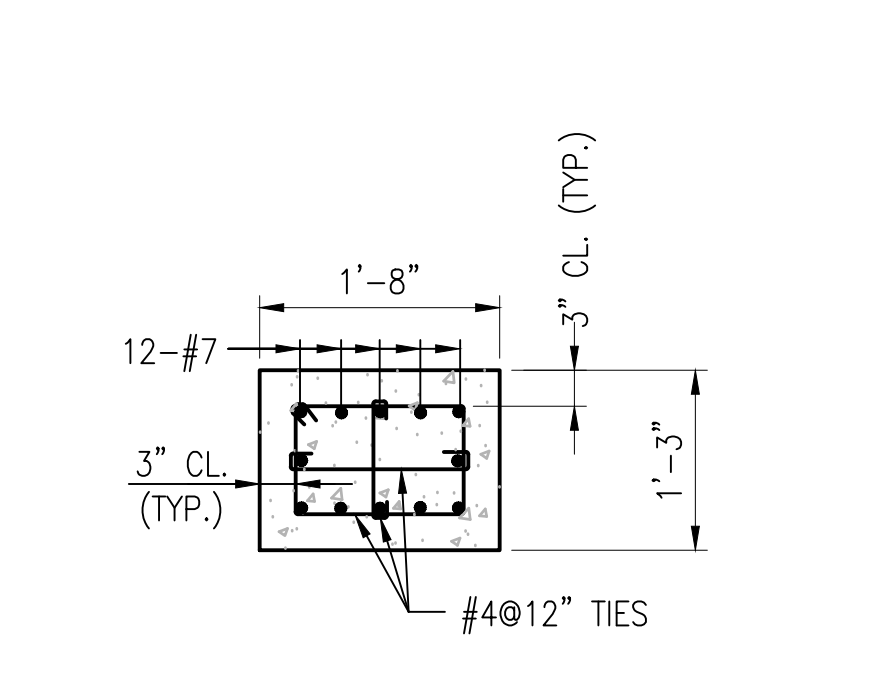
DETAIL
SCALE: 3/4" = 1'-0" S-101 **C1**

SUBSURFACE DRAINAGE SYSTEM NOTES
IN LIEU OF SUBSURFACE DRAINAGE SYSTEM (GRANULAR FILL, FILTER FABRIC, PERFORATED DRAIN) AND THE PROTECTION BOARD FOR THE CONTINUOUS MEMBRANE WATERPROOFING INDICATED, THE CONTRACTOR MAY PROVIDE THE OPTIONAL SUBDRAINAGE SYSTEM CONSISTING OF PERFORATED DRAIN AND GRANULAR FILL, WATERPROOFING MEMBRANE, PREFABRICATED DRAINAGE BOARD OR MAT, AND FILTER FABRIC. PROTECTION BOARD IS ACCEPTABLE OVER THE WATERPROOFING MEMBRANE IF REQUIRED BY THE MEMBRANE MANUFACTURER AT THE MAGAZINE WALLS AND TOP OR/AND AT THE RETAINING WALLS FOR THE MAGAZINE AS DETAILED BELOW. THE LOCATION, GRADES, AND MATERIALS SHOWN FOR DOWNSLOPE PIPING (DRAINAGE AND FILTER FABRIC/FILL MATERIAL) INTO WHICH THE PREFABRICATED DRAINAGE SYSTEM CONNECTS SHALL NOT VARY FROM THAT INDICATED. THE OPTIONAL PREFABRICATED DRAINAGE SYSTEMS LISTED BELOW ARE ACCEPTABLE FOR USE. A COMPLETE SET OF SHOP DRAWINGS, ALONG WITH THE MANUFACTURER'S PRODUCT LITERATURE, THICKNESS CALCULATIONS, AND INSTALLATION INSTRUCTIONS SHALL BE SUBMITTED TO THE CONTRACTING OFFICER FOR APPROVAL:

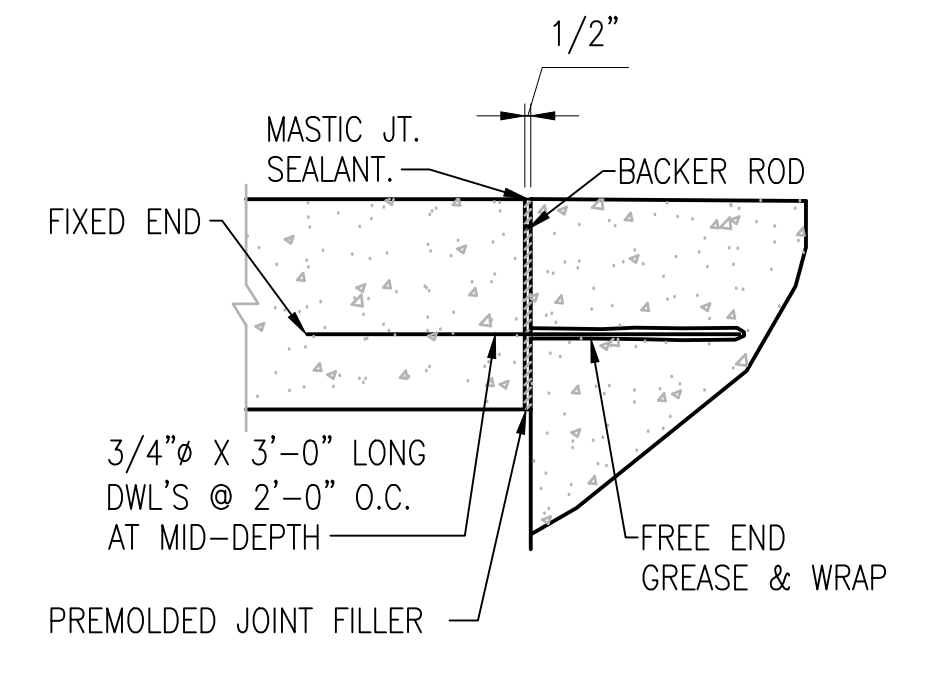
- GEOFAB BY MERCANTILE DEVELOPMENT INC.
- ENKADRAIN BY AMERICAN ENKA CO.
- STRIPDRAIN BY ARMCO CONSTRUCTION PRODUCTS
- MIRADRAIN BY MIRAFI INC.
- GEOTECH BY GEOTECH SYSTEM CORP.



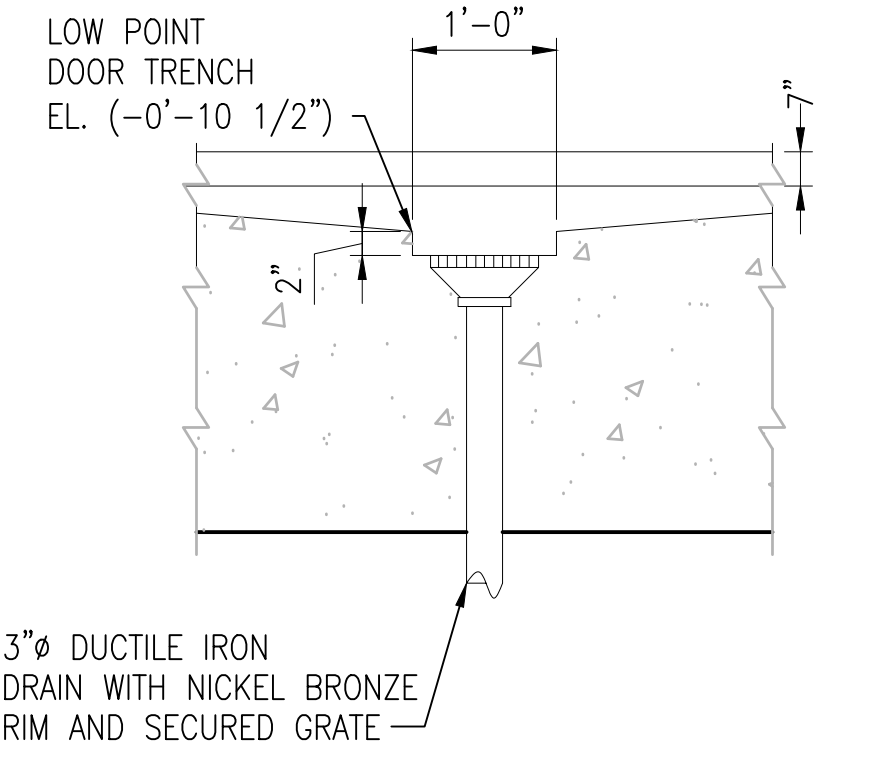
ALTERNATE SUBSURFACE DRAINAGE SYSTEM
N.T.S. S-301, S-302, S-501 **C5**



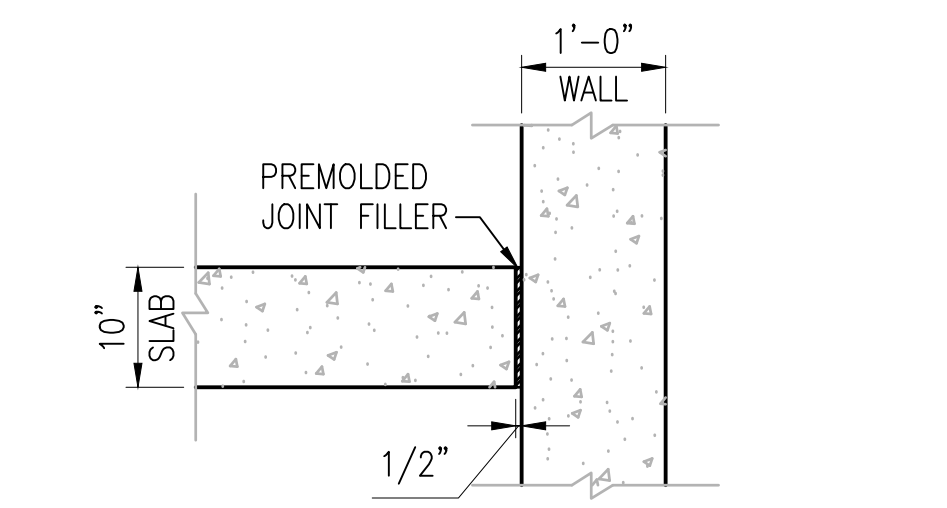
SECTION - CONCRETE TIE BEAM
SCALE: 3/4" = 1'-0" S-301, S-302 **B1**



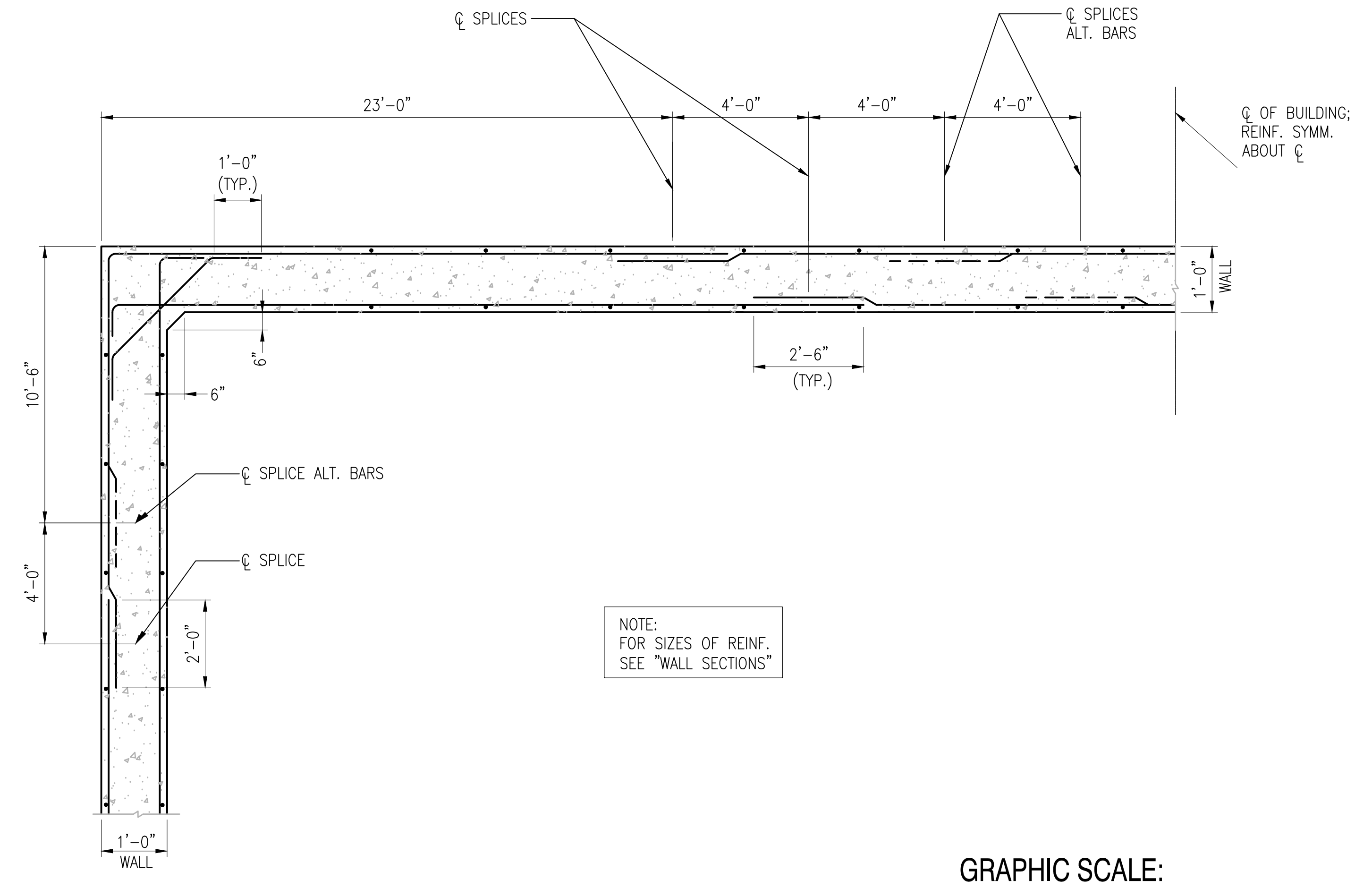
DETAIL
SCALE: 3/4" = 1'-0" S-101 **B2**



DETAIL
SCALE: 3/4" = 1'-0" S-101 **A1**



DETAIL
SCALE: 3/4" = 1'-0" S-101, S-301 **A2**



WALL SECTION
SCALE: 3/8" = 1'-0" (REQUIRED SPLICES OF HORIZONTAL REINFORCEMENT) S-301, S-302 **A4**

NOTE:
FOR SIZES OF REINF.
SEE "WALL SECTIONS"



APPROVED	DATE	09/14/22
FOR COMMANDER NAFAF	DATE	
ACTIVITY	DATE	
SATISFACTORY TO	DATE	MM/DD/YY
DES	DRW	IWR
CHK	CHK	LMM
PM/DM		
BRANCH MANAGER		JTW
CHIEF ENGINEER		RICHARD L. STEPHENS, P.E.
FIRE PROTECTION		DPS
DESIGN AND CONSTRUCTION		
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND		
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND		
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND		
TYPE C BOX MAGAZINE		
SECTIONS AND DETAILS		
SCALE:	AS NOTED	
PROJECT NO.:		
CONSTR. CONTR. NO.:		
NAFAF DRAWING NO.:		14115944
SHEET	11	OF 35
S-502		

FILE NAME: J:\DSE\Magazines\Box Magazines Modified 2021\Types C\Final Drawings Type C\AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: S-502 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: hells.ccs@n

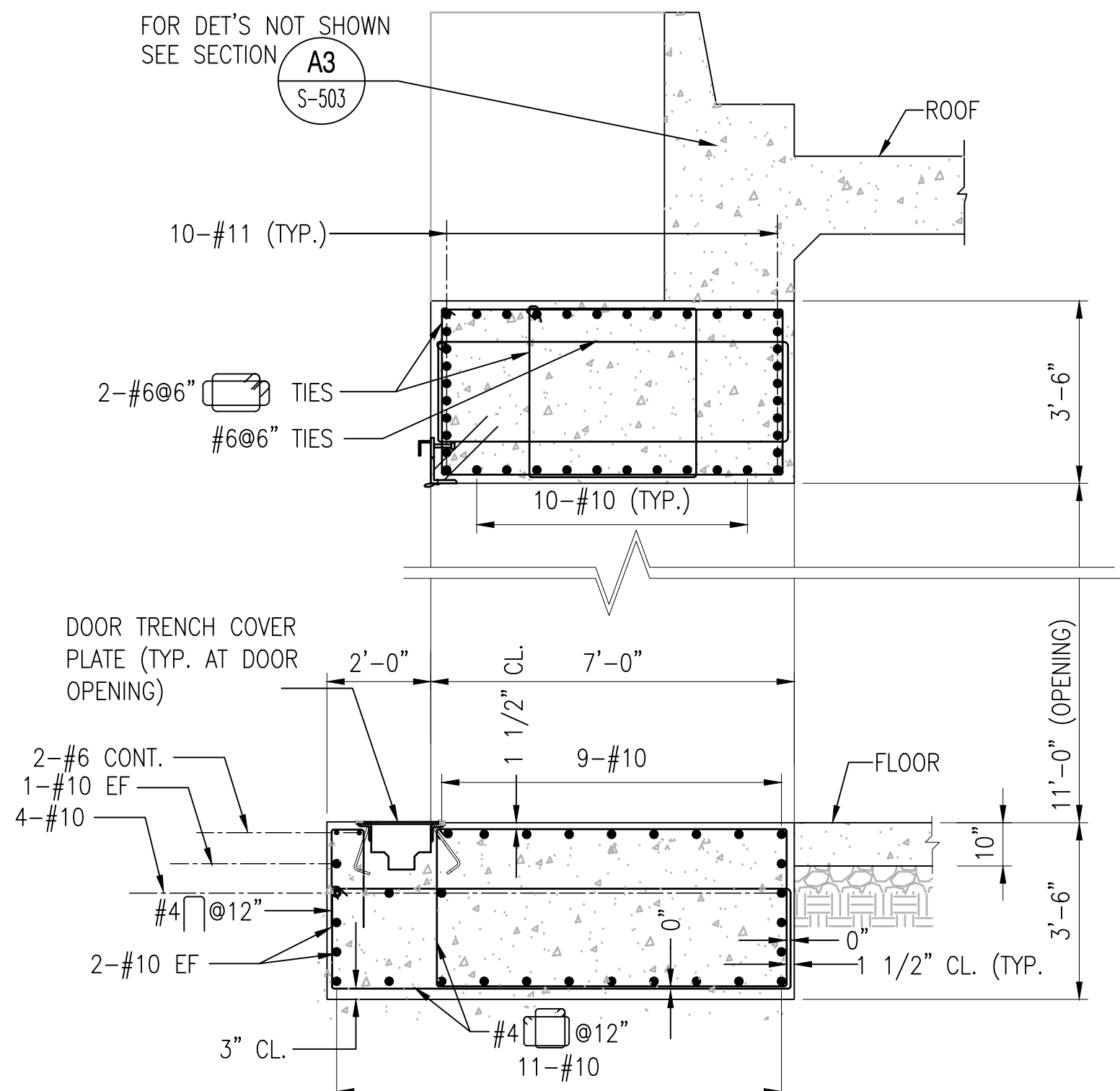
1

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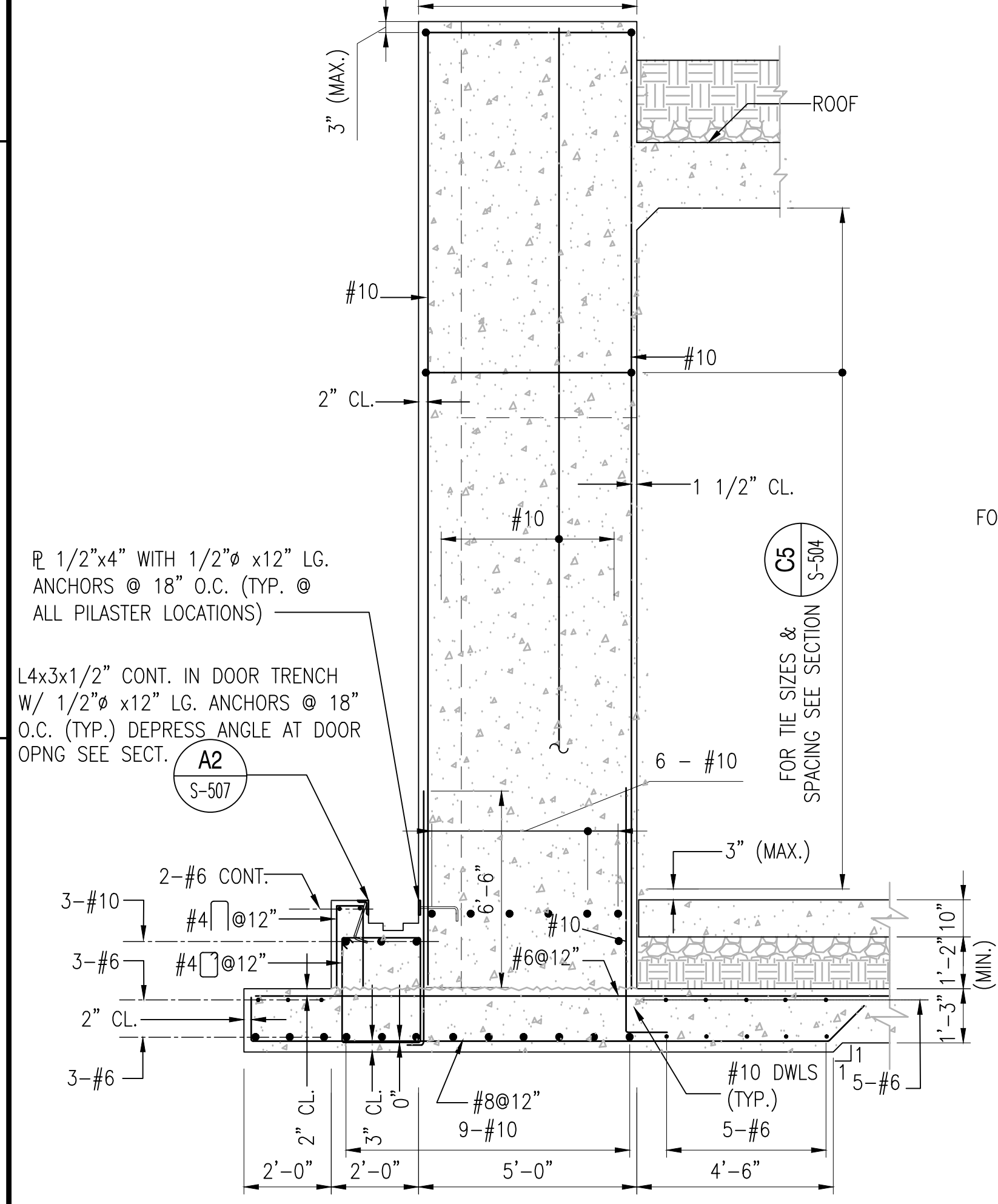
4

5



SECTION S-304 C1

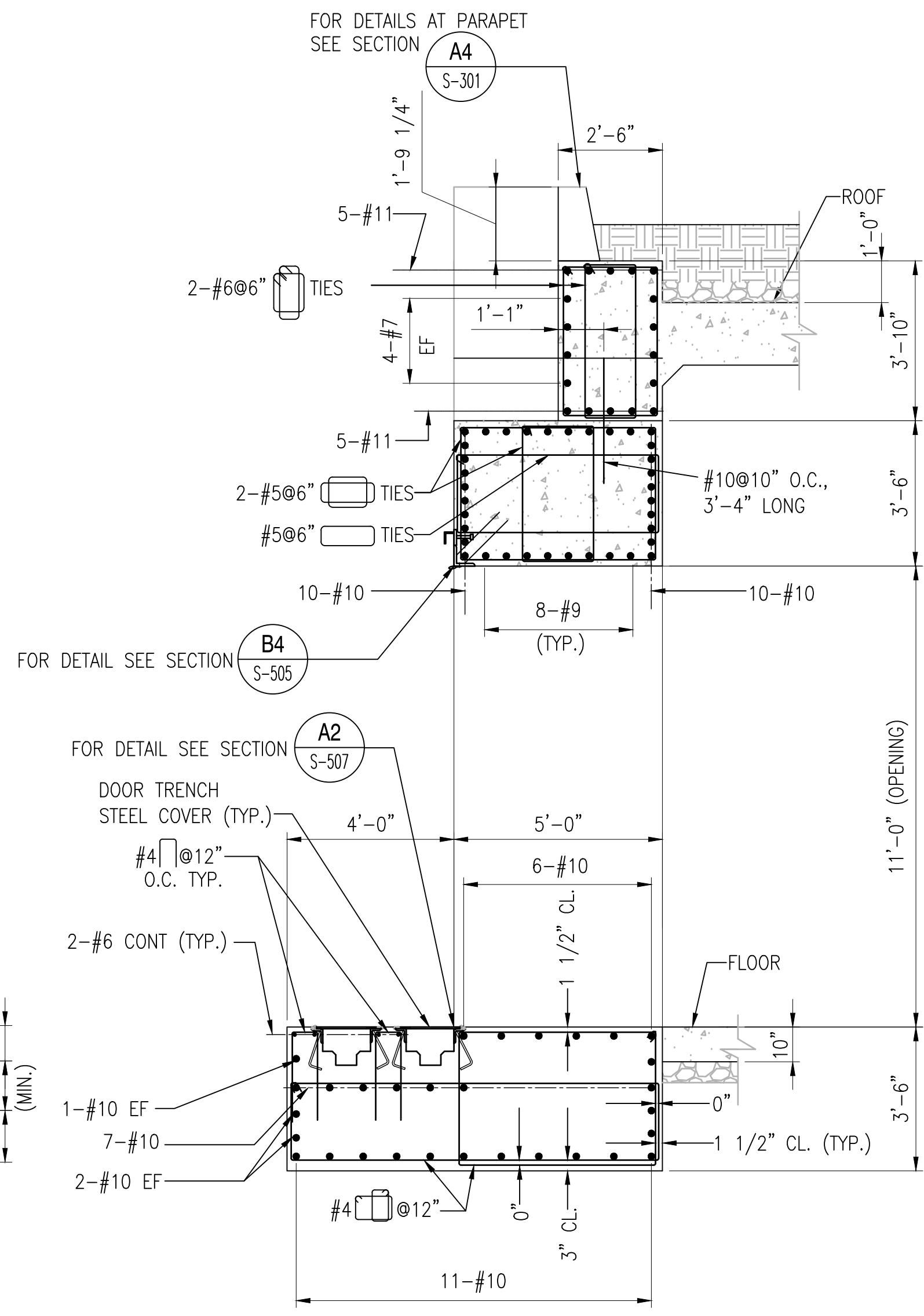
SCALE: 3/8" = 1'-0"



SECTION S-304 A1

SCALE: 3/8" = 1'-0"

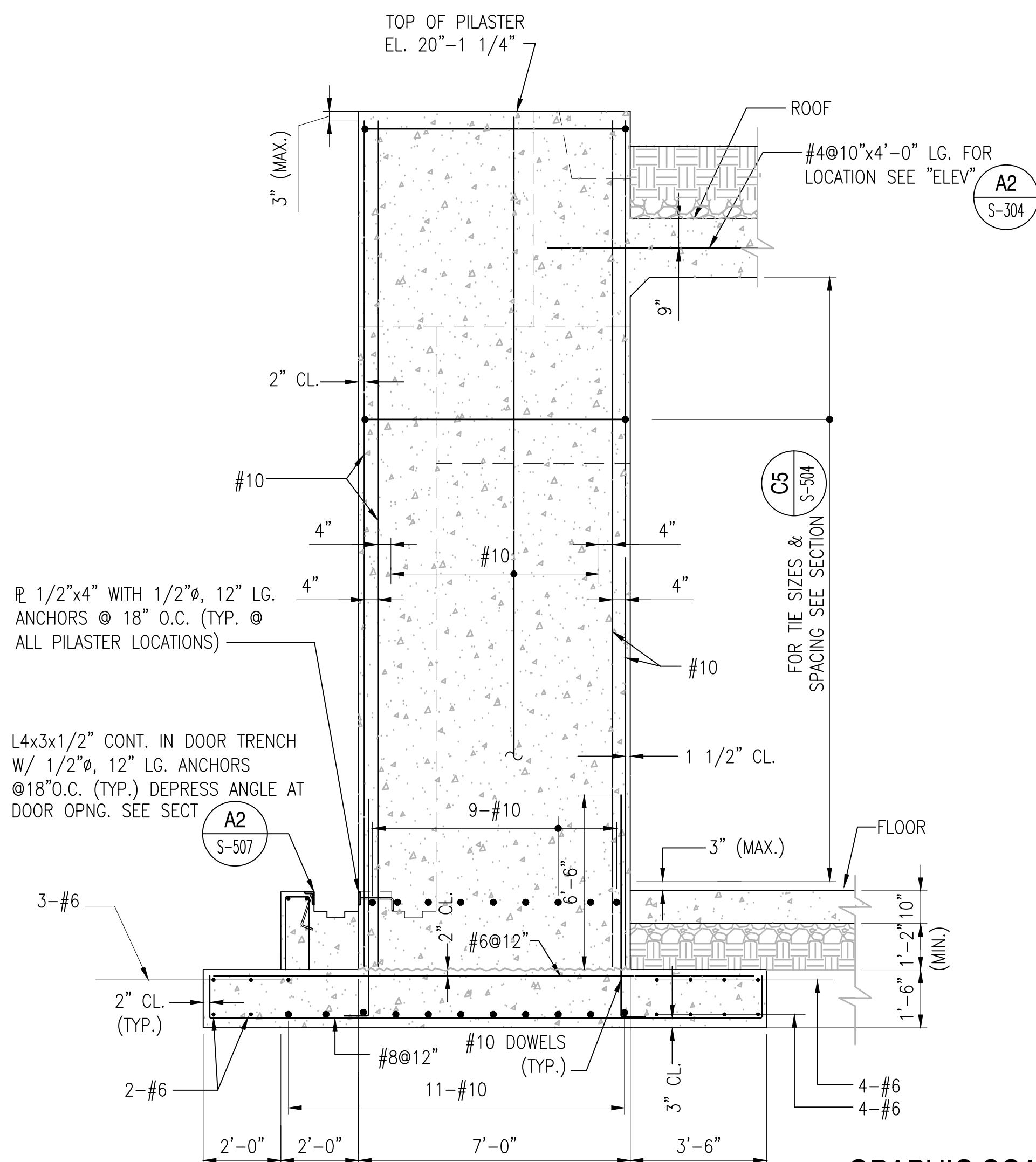
S-304, S-501



SECTION S-304 A3

SCALE: 3/8" = 1'-0"

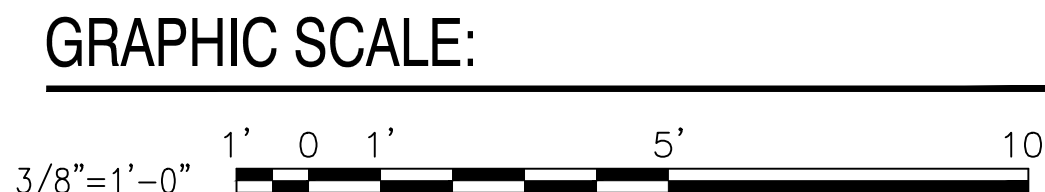
S-304, S-503



SECTION S-304 A4

SCALE: 3/8" = 1'-0"

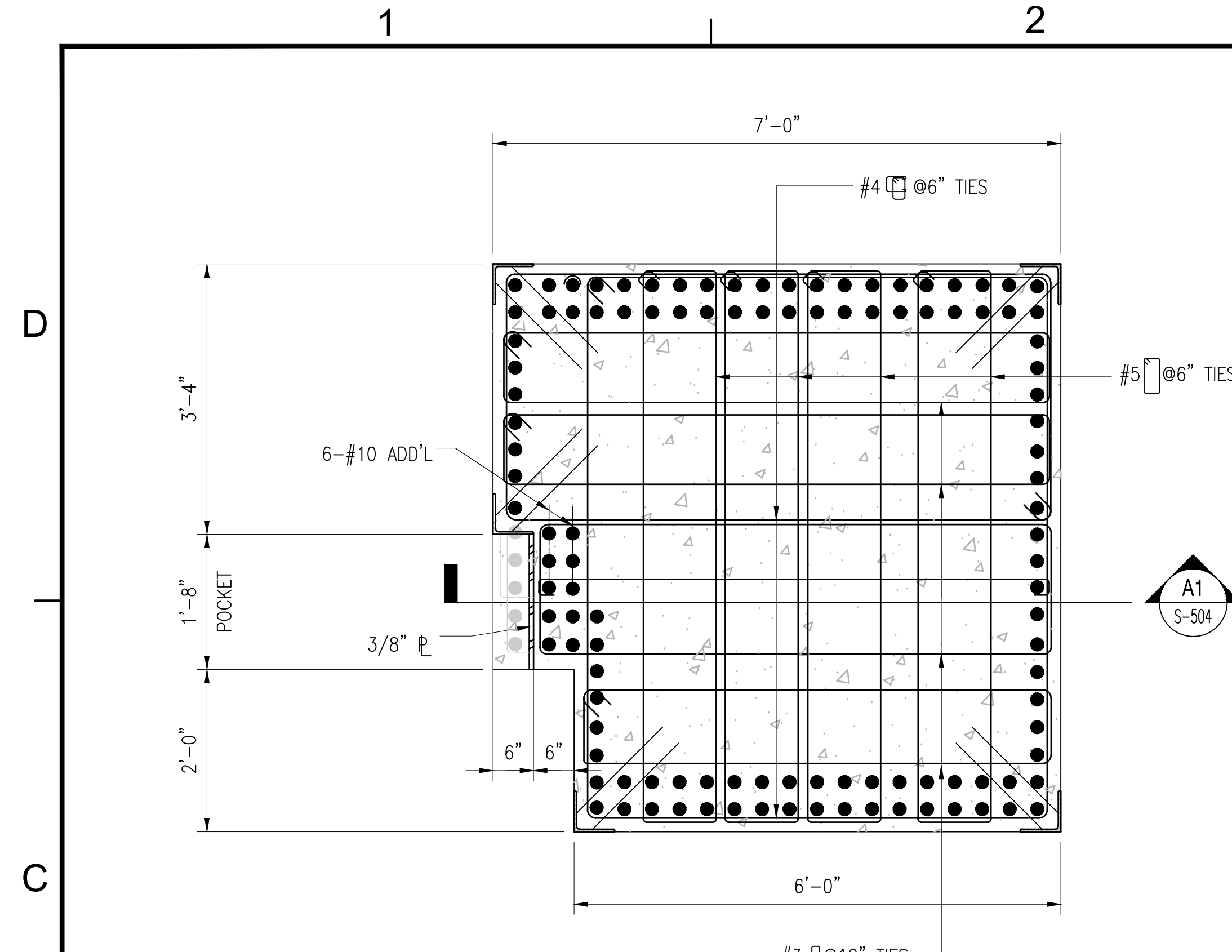
S-301, S-304



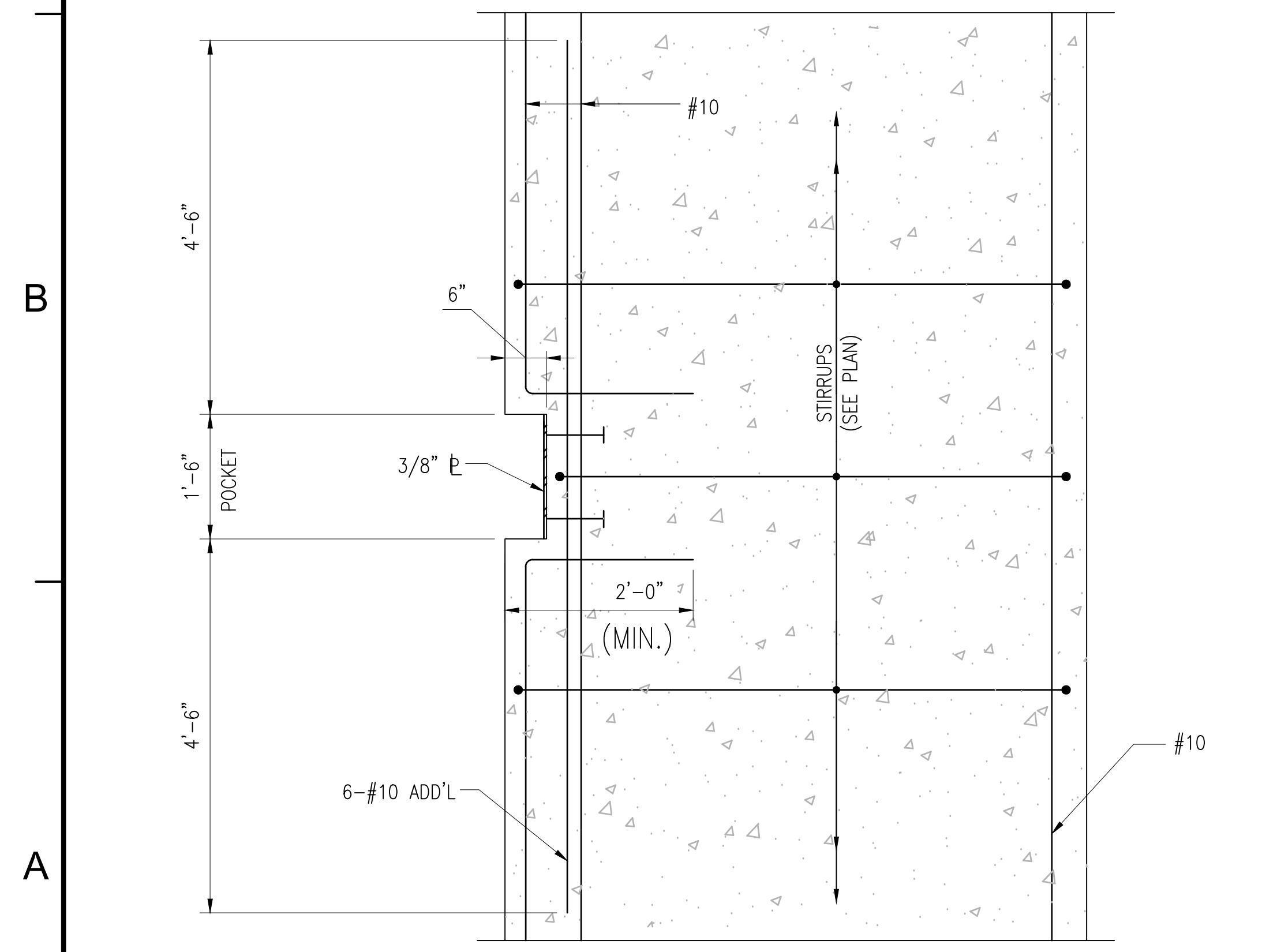
APPROVED		DATE	09/14/22
FOR COMMANDER NAVFAC		DESCRIPTION	TYPE C STANDARD
ACTIVITY		DATE	09/14/22
SATISFACTORY TO		DATE	MM/DD/YY
DES	DRW	CHK	LMM
PM/DMM			
BRANCH MANAGER		JTW	
CHIEF ENGINEER		RICHARD L. STEPHENS, P.E.	
FIRE PROTECTION		DPS	
DEPARTMENT OF THE NAVY			
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND			
DESIGN AND CONSTRUCTION			
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND			
BRANDFORD, VA			
TYPE C BOX MAGAZINE			
SECTIONS AND DETAILS			
SCALE: AS NOTED			
PROJECT NO.: 14115945			
CONSTR. CONTR. NO. --			
NAVFAC DRAWING NO. 14115945			
SHEET 12 OF 35			
S-503			
DRAWING REVISION: 25 AUGUST 2020			

FILE NAME: \\D:\SEI\Magazines\Box Magazines Modified 2021\Typ C\Final Drawings Type C\AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: S-503 PLOTTED: Thursday, November 03, 2022 - 11:09am USER: hells.ccs@no

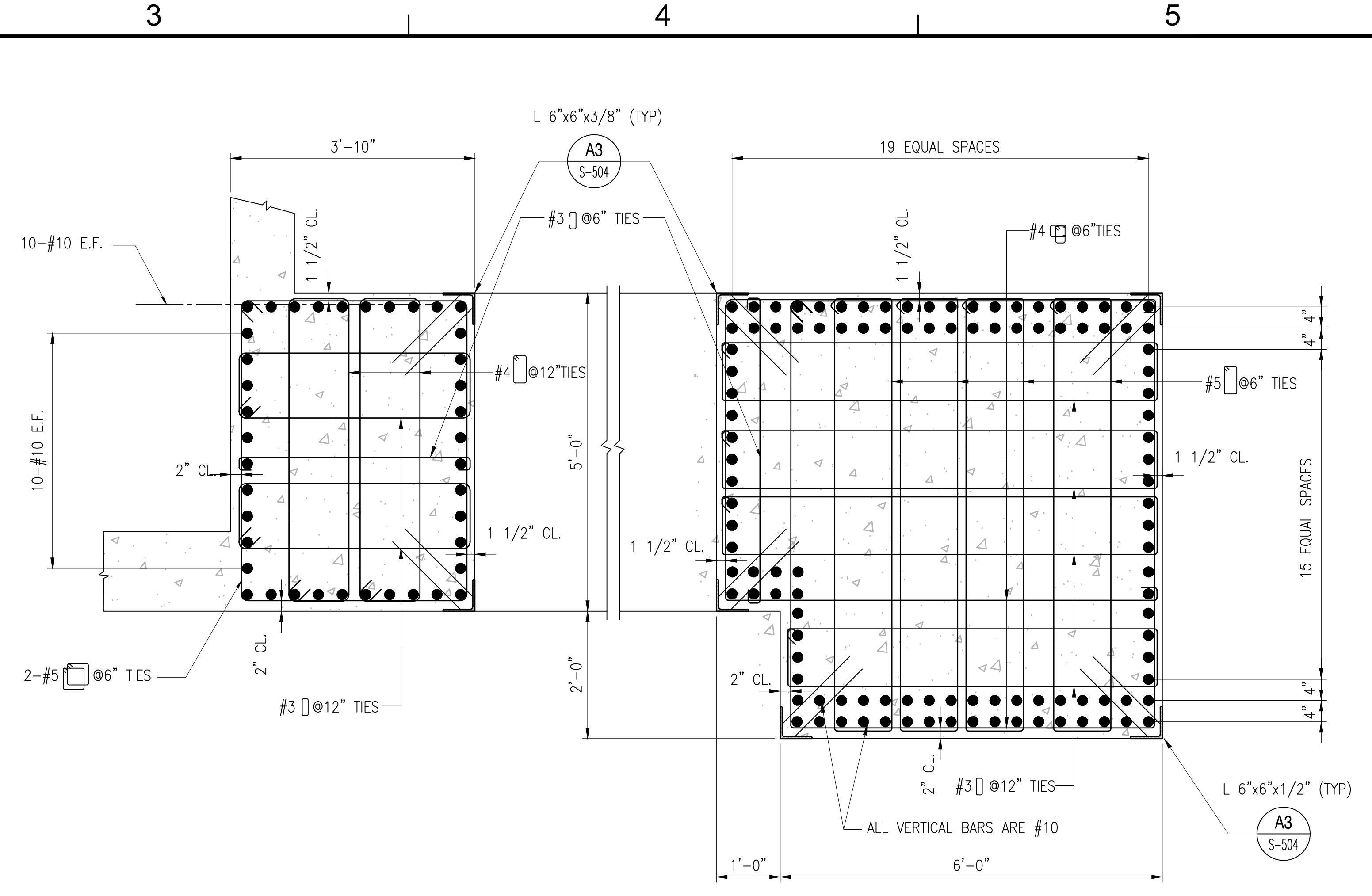
FILE NAME: J:\DSE\Magazines\Box_Magazines Modified 2021\Type C\Final Drawings Type C_2022.9.27.dwg LAYOUT NAME: S-504 PLOTTED: Thursday, November 03, 2022 - 11:09am USER: helia.casino



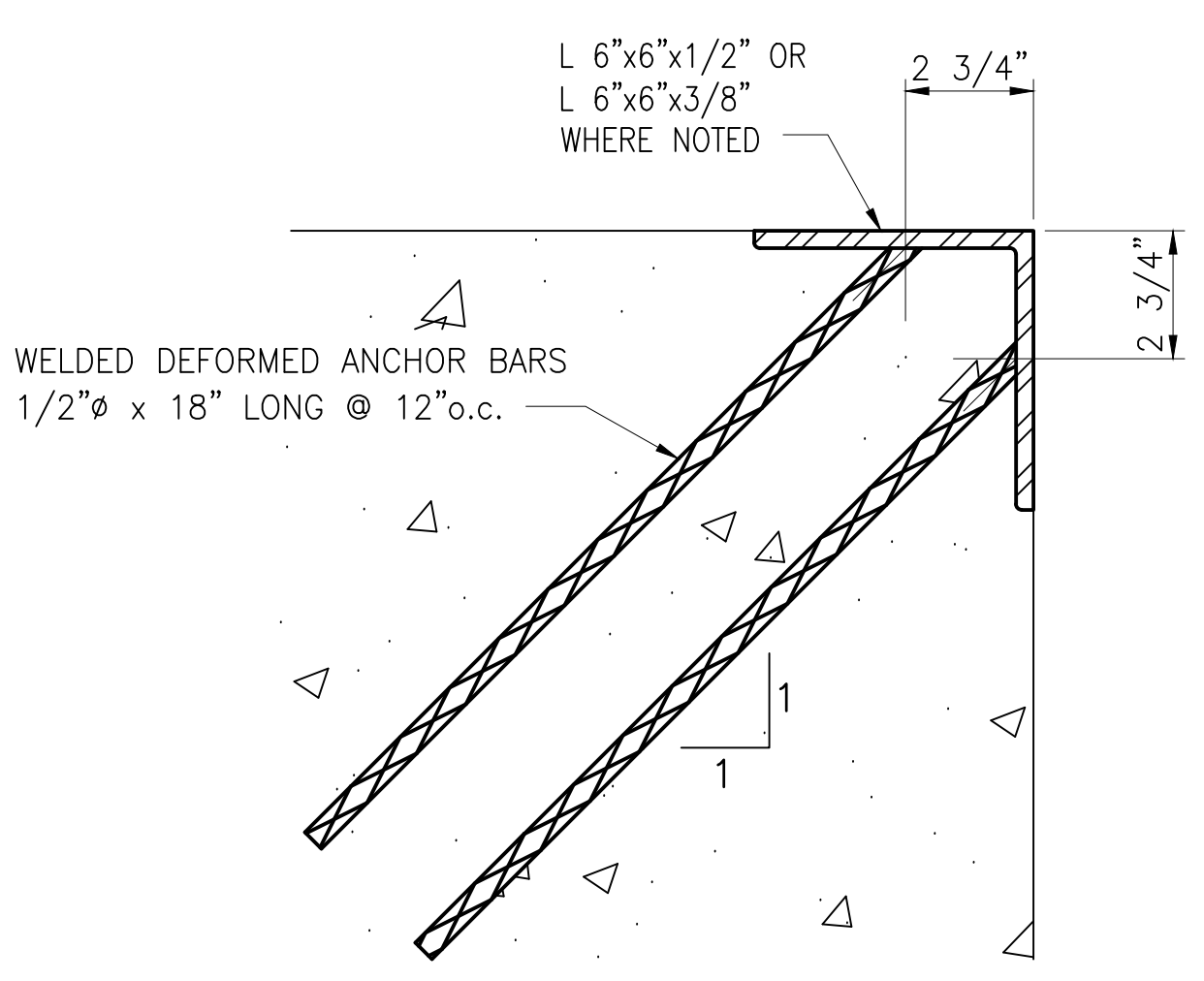
SECTION
SCALE: 3/4" = 1'-0"
S-304 **C1**



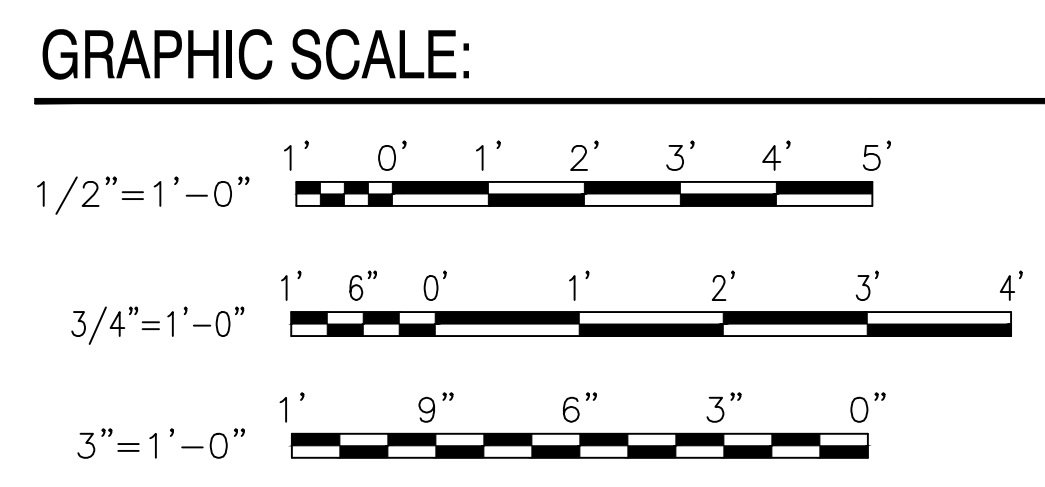
SECTION
SCALE: 3/4" = 1'-0"
S-504 **A1**



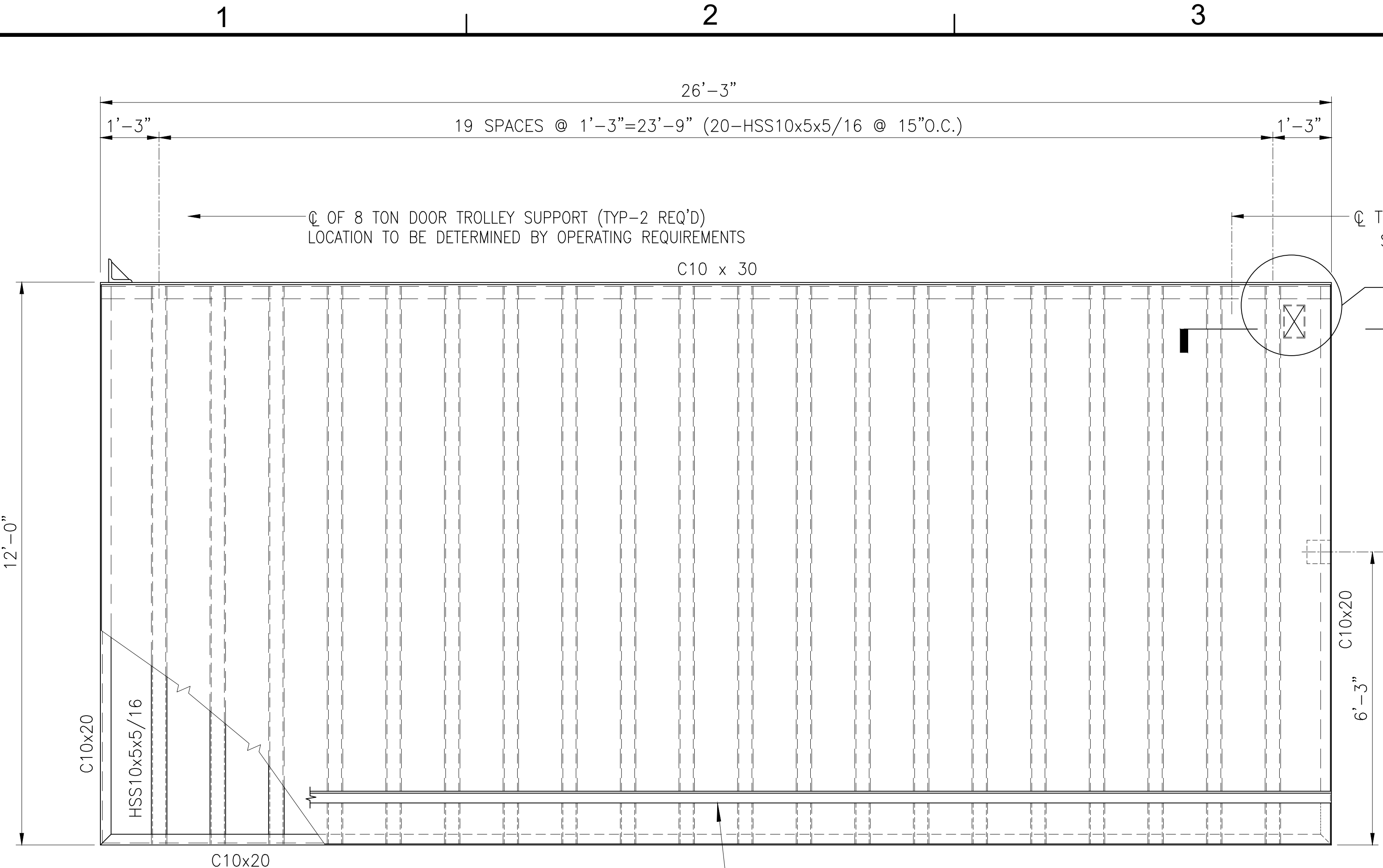
SECTION
SCALE: 3/4" = 1'-0"
S-301, S-304, S-503 **C5**



DETAIL
SCALE: 3" = 1'-0"
S-504 **A3**



APPROVED	DATE	09/14/22
FOR COMMANDER NAVFAC	DESCRIPTION	TYPE C STANDARD
ACTIVITY	BY	
SATISFACTORY TO	DATE	MM/DD/YY
DES	DRW	IWR
CHK	CHK	LMM
PM/DM		
BRANCH MANAGER		JTW
CHIEF ENGINEER		RICHARD L. STEPHENS, P.E.
FIRE PROTECTION		DPS
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	BRANF0046.0A
DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
	TYPE C BOX MAGAZINE	
	SECTIONS AND DETAILS	
SCALE:	AS NOTED	
PROJECT NO.:		
CONSTR. CONTR. NO.:		
NAVFAC DRAWING NO.:	14115946	
SHEET	13	OF 35
	S-504	
	DRAWING REVISION: 25 AUGUST 2020	

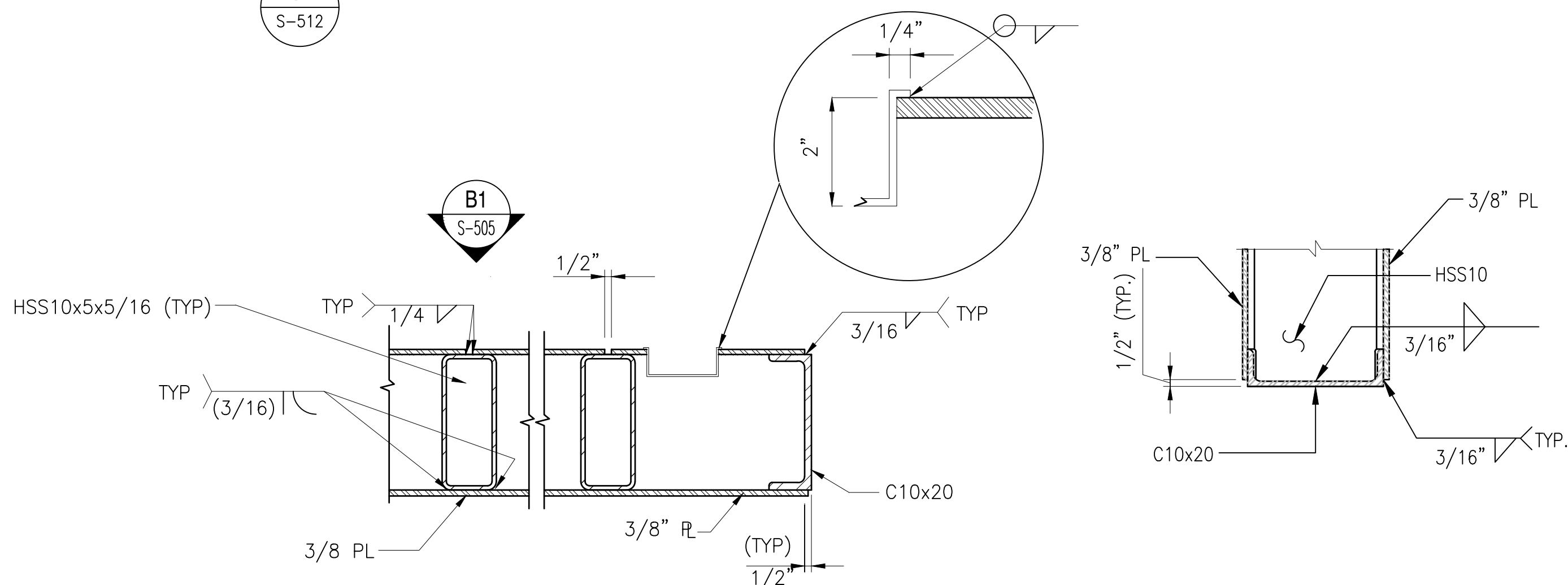


SLIDING DOOR ELEVATION

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

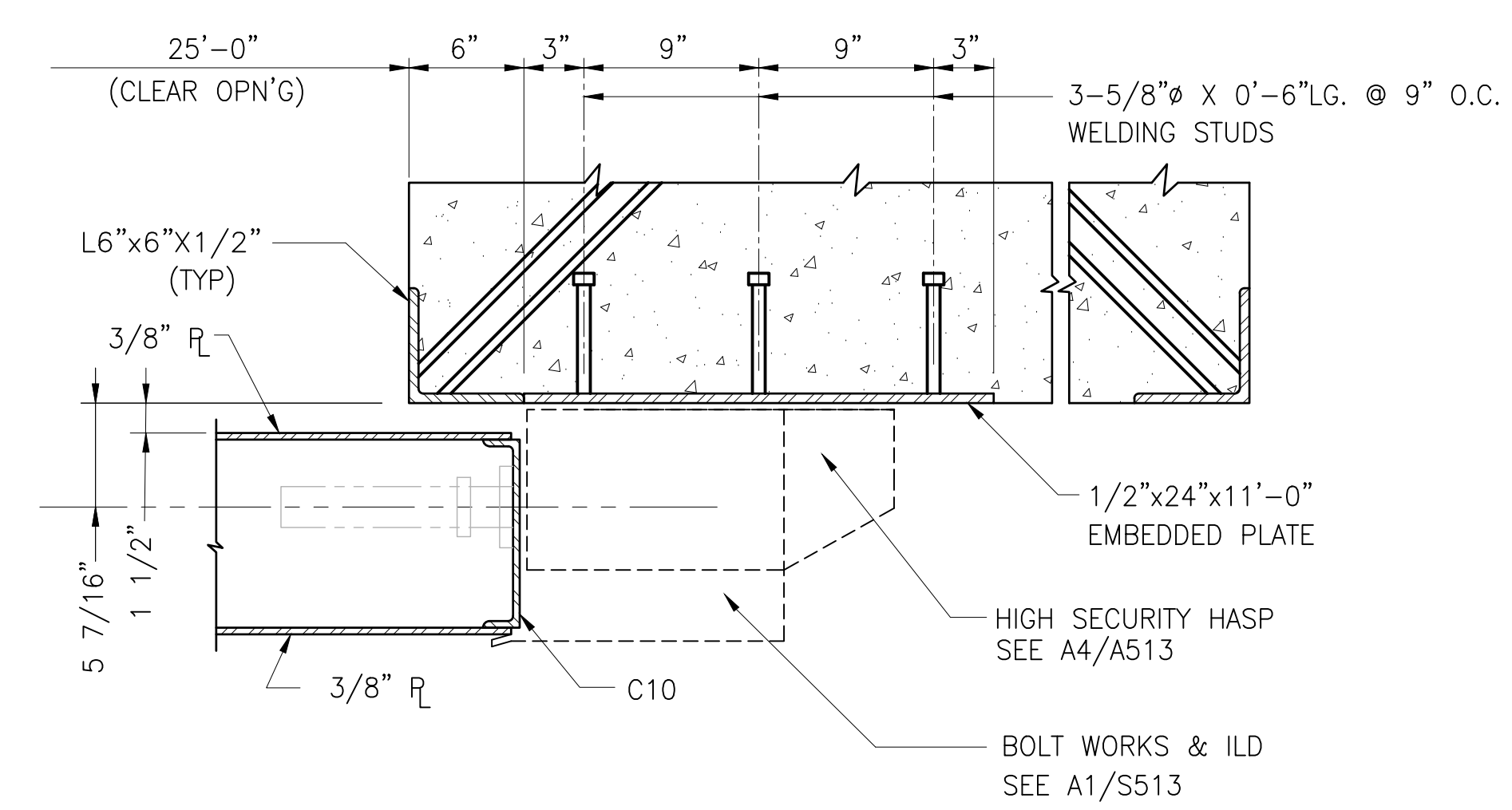
NOTES:

1. PROVIDE 6"x6"x10" STEEL BLOCK AT LEADING EDGE OF DOOR NO'S 1, AND 3 FOR INTERNAL LOCK ASSEMBLY. SEE DETAIL C1 S-512



TYP. DOOR DETAIL
1 1/2"=1'-0" S-305 A3

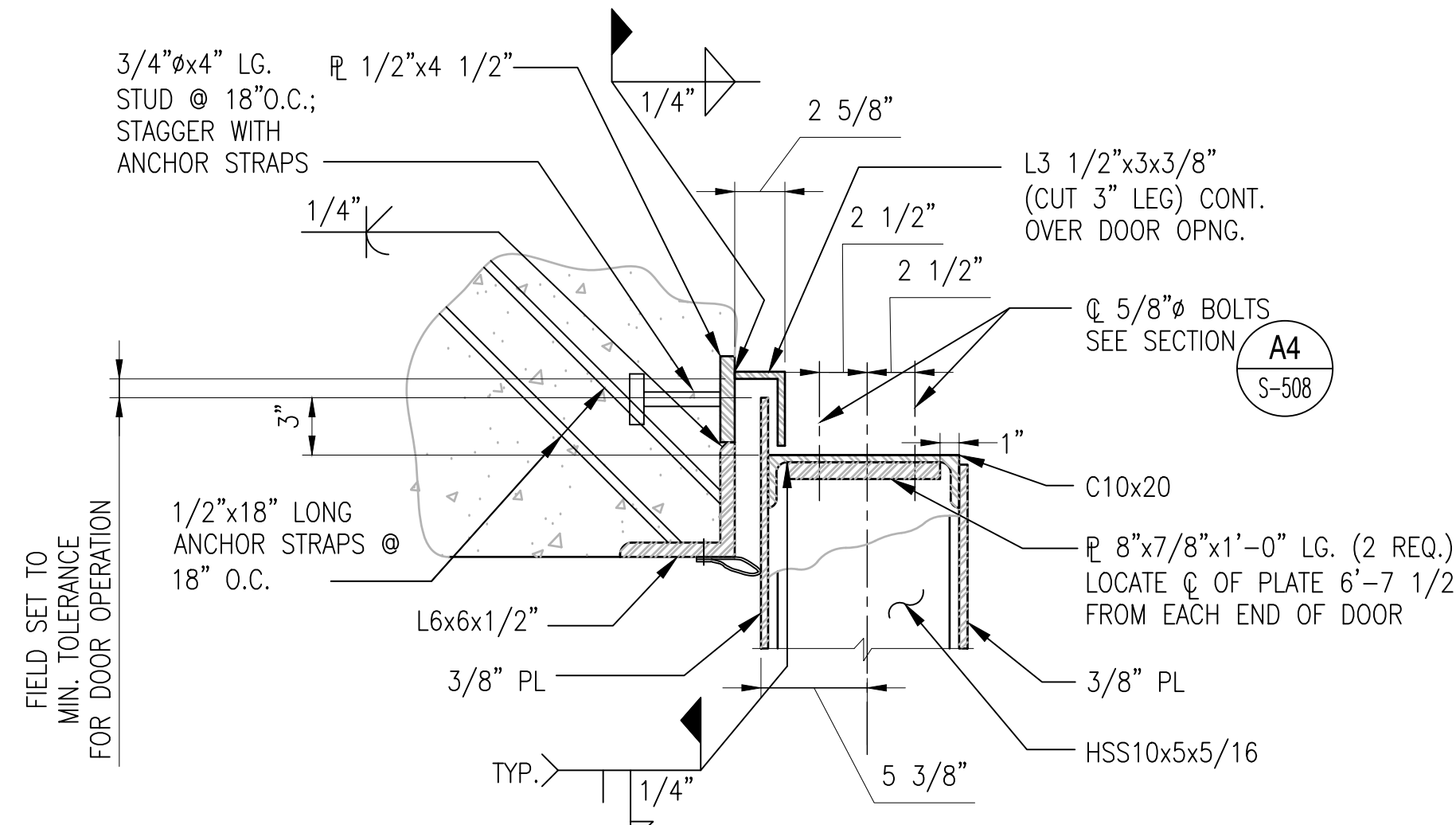
TYP. DOOR SECTION
1 1/2"=1'-0" S-305 B3



MAGAZINE LOCK DETAIL

1 1/2"=1'-0"

S-305 C3



TYP. DOOR SECTION

1 1/2"=1'-0"

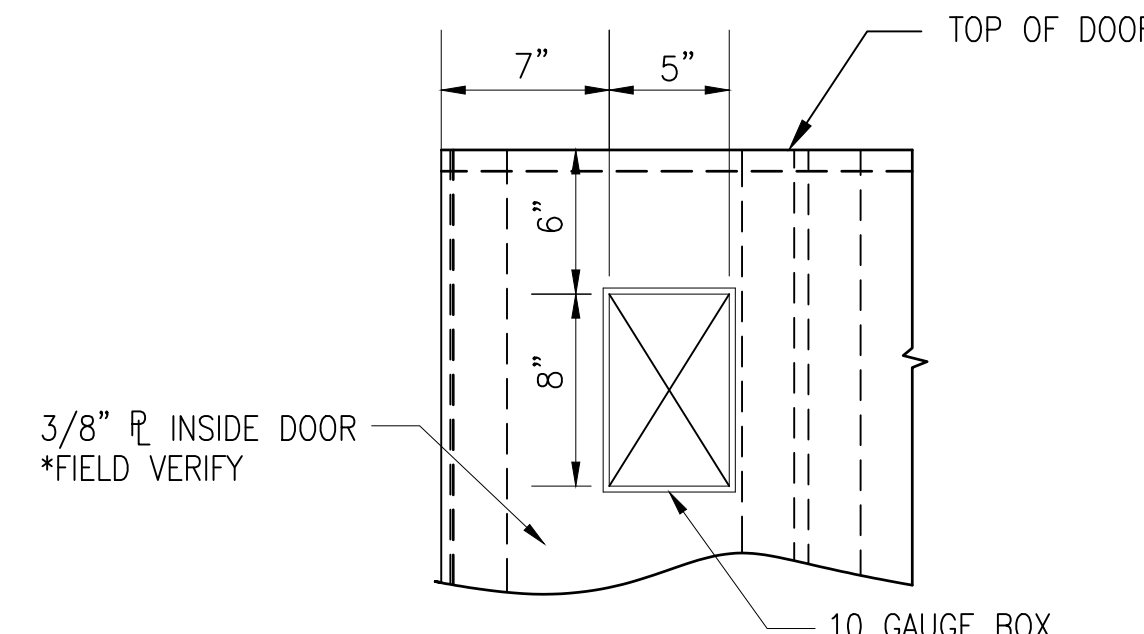
S-305, S-503, S-507

B4

NOTES TO DESIGNER, EDIT DETAIL & NOTES BASED ON LOCK SELECTION FOR PROJECT

NOTES TO DESIGNER - REMOVE THESE NOTES WHEN PREPARING CONSTRUCTION DRAWINGS FOR SITE ADAPTATION OF THIS DESIGN

1. DETAIL C3 IDENTIFIES DIFFERENT LOCKING SYSTEMS. THE EOR SHALL VERIFY THE CORRECT LOCKING SYSTEM REQUIRED AND MODIFY THIS DETAIL ACCORDINGLY



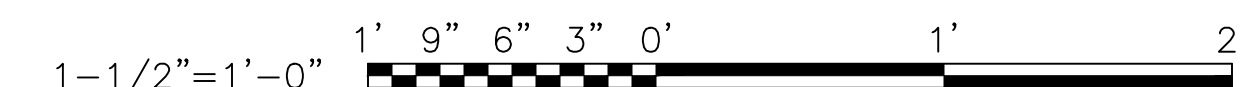
ELEVATION (DOOR INTERIOR VIEW)

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

NOTE: TYPICAL EACH DOOR

S-305 A5

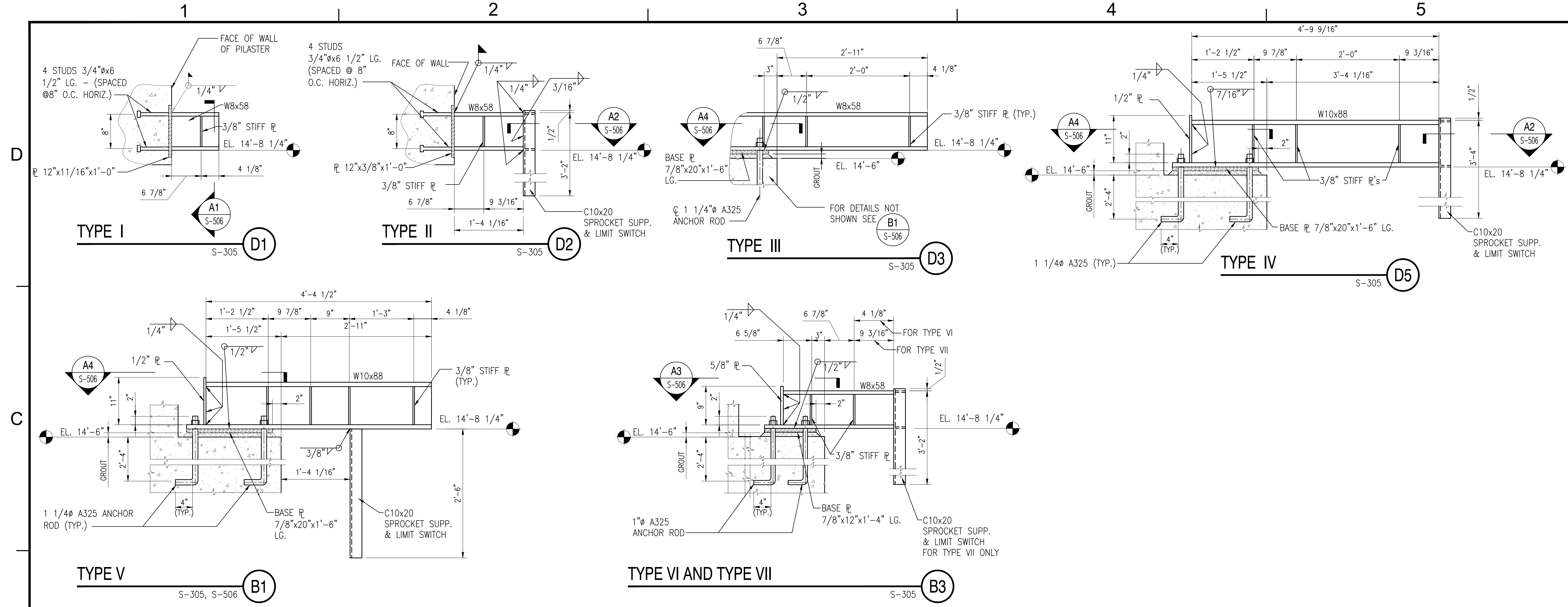
GRAPHIC SCALE:



DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	MM/DD/YYYY
CHK	IWR
CHK	LMM
PM/DM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
BRANCH/CDL/IA	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	
DEPARTMENT OF THE NAVY	
TYPE C BOX MAGAZINE	
DOOR SECTIONS AND DETAILS	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115947
SHEET	14 OF 35
S-505	
DRAWING REVISION: 25 AUGUST 2020	

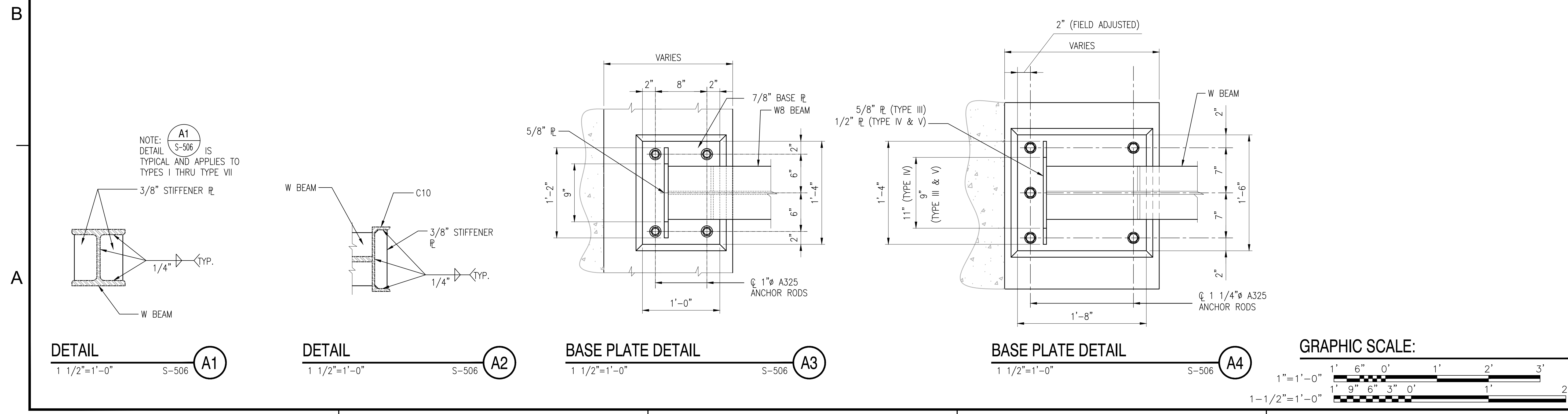
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FILE NAME: J:\DCS\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C\AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: S-506 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: hells.casano



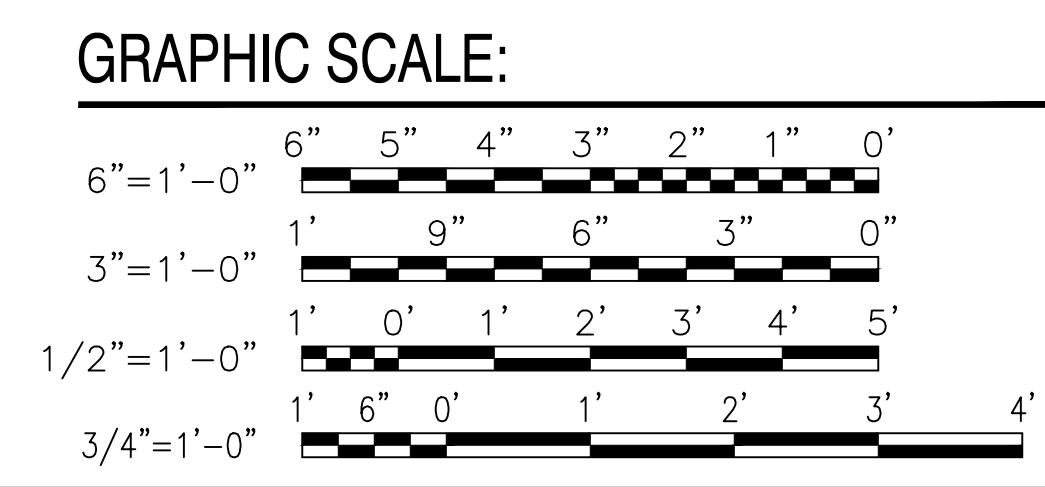
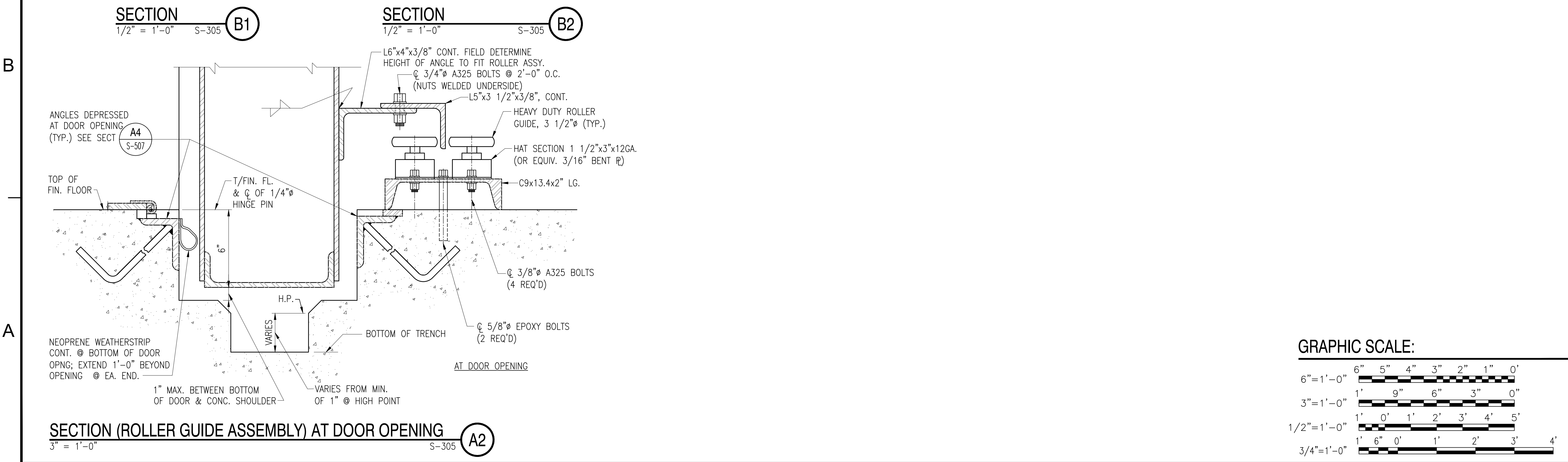
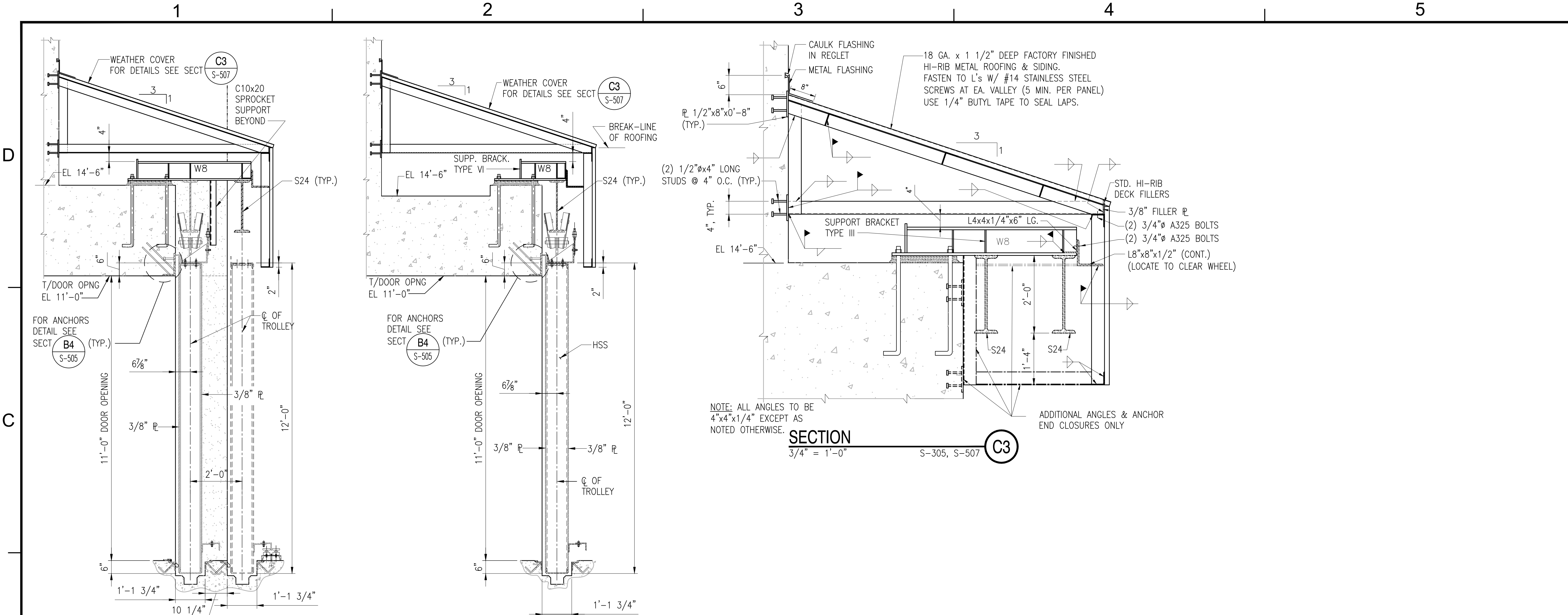
DOOR MONORAIL SUPPORT BRACKET DETAILS

SCALE: 1" = 1'-0"



DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
	
APPROVED	
FIR COMMANDER NAFAC	
ACTIVITY	
SATISFACTORY TO	DATE MM/DD/YY
DES	DRW IWR CHK LMM
PM/DM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
TYPE C BOX MAGAZINE DOOR MONORAIL SUPPORT BRACKETS AND DETAILS	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAFAC DRAWING NO.:	14115948
SHEET	15 OF 35
S-506	
DRAWING REVISION: 25 AUGUST 2020	

FILE NAME: J:\DSE\Magazines\Box_Magazines Modified 2021\Type C\Final Drawings Type C_2022.9.27.dwg LAYOUT NAME: S-507 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: helia.casiano



APPROVED	DATE	09/14/22
FOR COMMANDER NAVFAC	DESCRIPTION	TYPE C STANDARD
ACTIVITY	SYN	
SATISFACTORY TO	DATE	MM/DD/YY
DES	DRW	IWR
CHK	CHK	LMM
PM/DM		
BRANCH MANAGER	JTW	
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.	
FIRE PROTECTION	DPS	
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	LEBANON, VA	
TYPE C BOX MAGAZINE		
TRENCH SECTIONS AND DETAILS		
SCALE:	AS NOTED	
PROJECT NO.:	14115949	
CONSTR. CONTR. NO.:	-	
NAVFAC DRAWING NO.:	S-507	
SHEET	16	OF 35
DRAWING REVISION: 25 AUGUST 2020		

1

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3

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D

C

B

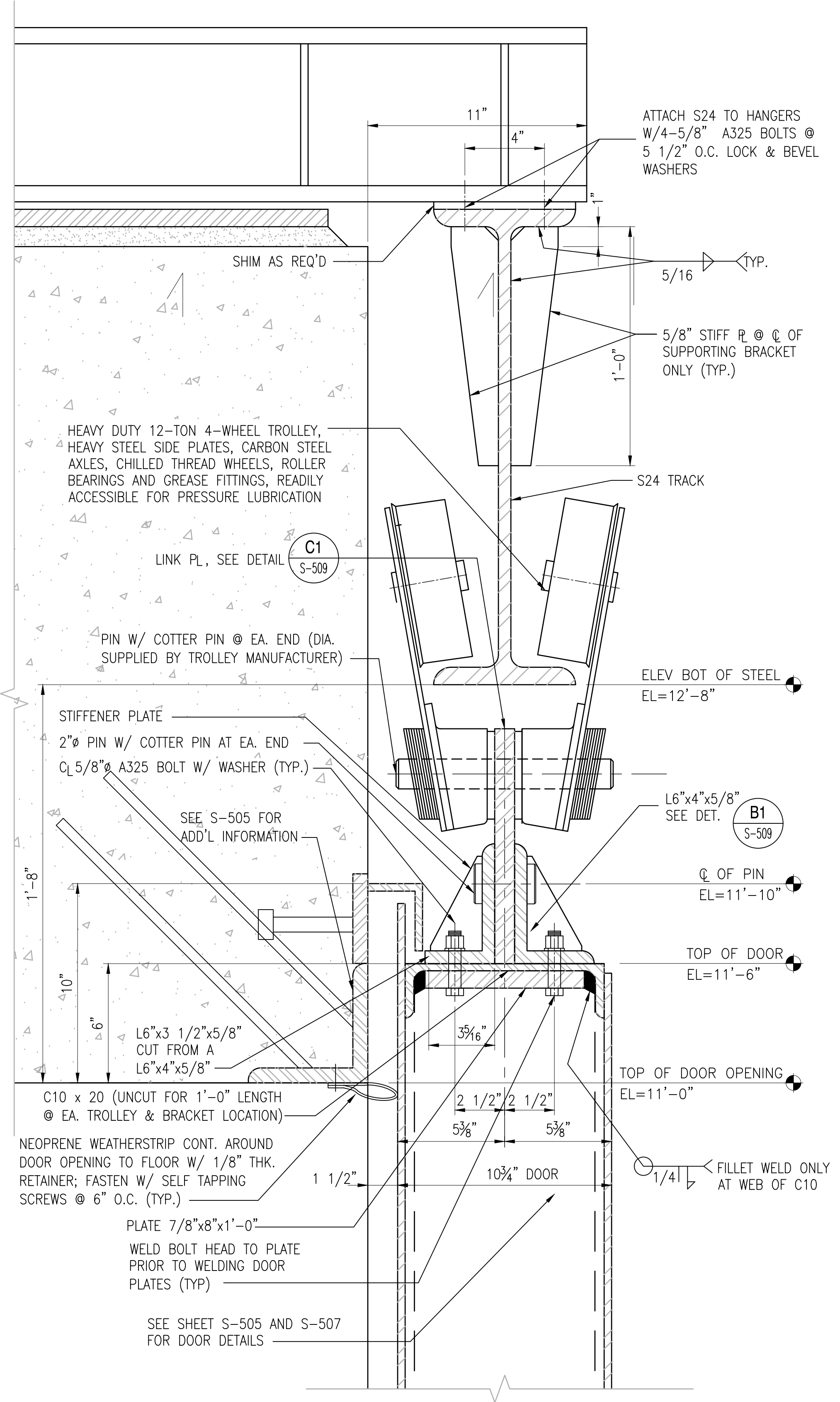
A

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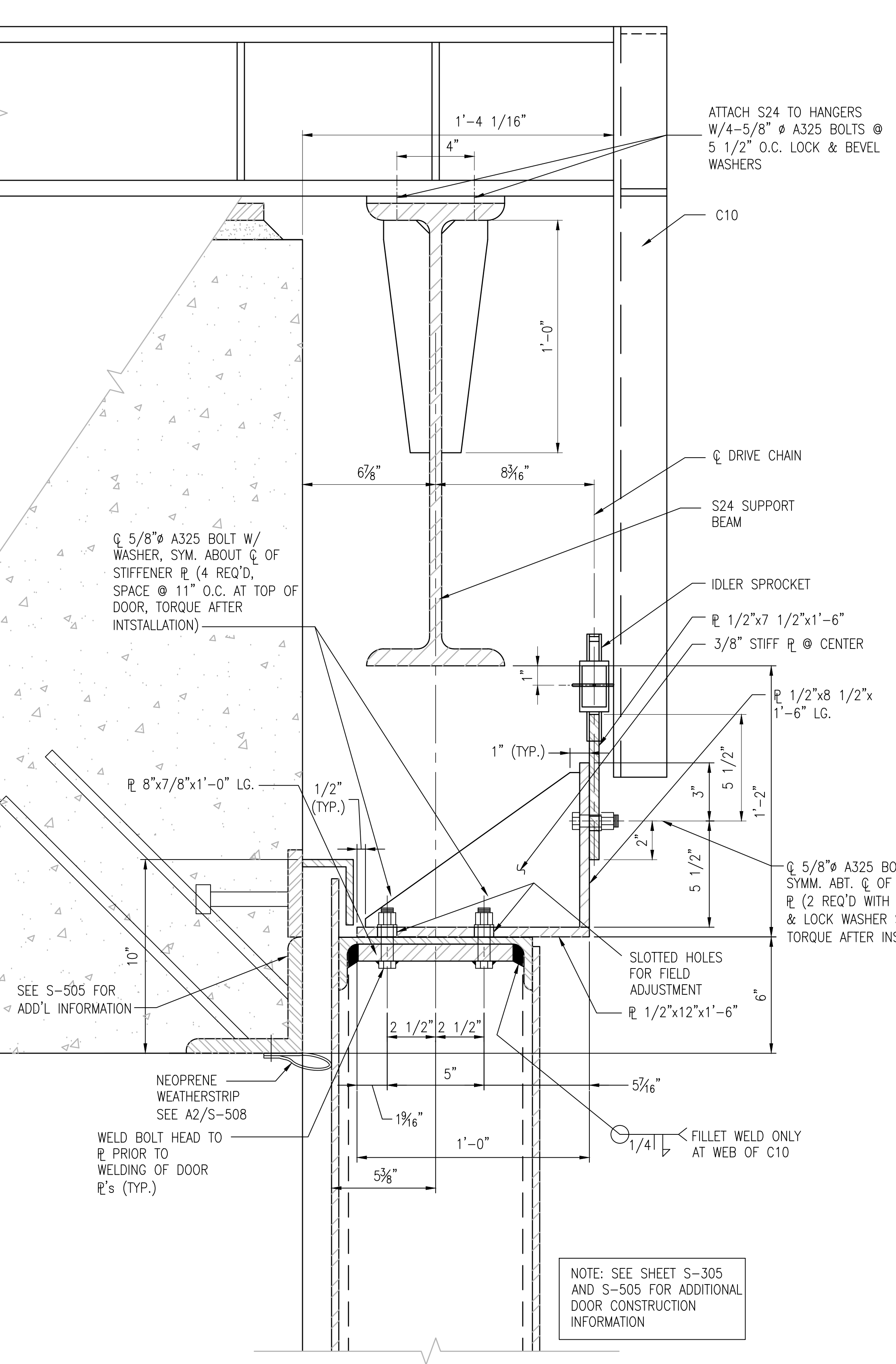
C

B

A



A2



A4

NOTES:

DOOR REQUIREMENTS

1. DOOR & HARDWARE SHALL BE SHOP ASSEMBLED TO INSURE PROPER CONTACT, CLEARANCES, ALIGNMENT & ENGAGEMENT OF THE DOORS & SMOOTH OPERATION OF LOCKING & DRIVE MECHANISMS. THIS ASSEMBLY WILL BE AT NO ADDITIONAL COST TO THE GOVERNMENT.
2. ALL WEATHER STRIPPING SHALL BE CLOTH INSERTED NEOPRENE, ONE-EIGHTH INCH (1/8") THICK & CONFORMING TO THE FEDERAL SPECIFICATION HH-P-151.
3. ALL PINS, BEARINGS, GEARS, SPROCKETS, SHAFTS & SHEAVES SHALL BE DESIGNED FOR A DOOR LIFE OF 5,000 HOURS OF OPERATION.

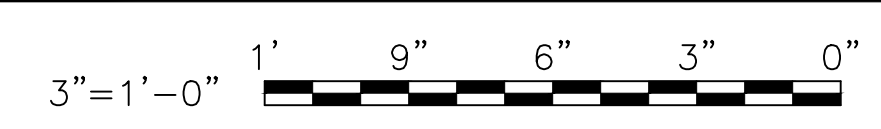
ELECTRICAL REQUIREMENTS

1. SEE ELECTRICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS

DOOR OPERATOR REQUIREMENTS

1. DESIGN REQUIREMENTS - (A) OUTDOOR OPERATION, (B) 80PSF WIND LOAD, (C) 15 FPM VELOCITY FOR OPENING AND CLOSING DOORS.
2. GEARS, SHAFTS AND SPROCKETS - ALL GEARS IN SPEED REDUCTION UNIT SHALL BE MACHINED TYPE. GEARS AND SHAFTS SHALL BE MOUNTED WITH LONG-LIFE BEARINGS, ENCLOSED IN OIL TIGHT HOUSING AND OPERATED AT ALL TIMES IN AN OIL BATH. ALL SPROCKETS SHALL BE STEEL PLATES.
3. CASTINGS - SHEAVES & OTHER CASTINGS SHALL BE CLOSE GRAINED ALLOYED GRAY CAST IRON.
4. ROLLER CHAINS - ALL ROLLER CHAINS SHALL BE HEAVY DUTY, HIGH STRENGTH, PRECISION ASSEMBLED AND DESIGNED FOR A SAFETY FACTOR OF 5.
5. MOTOR - THE MOTOR SHALL OPERATE NORMALLY AT NO MORE THAN 75 PERCENT OF RATED CAPACITY.
6. LIMIT SWITCHES - TYPE: MECHANICALLY ACTUATED. LIMIT SWITCH SHALL STOP THE DOOR AT END OF TRAVEL (OPEN AND CLOSED POSITIONS)
7. PUSH BUTTON STATION - PUSH BUTTON UNIT SHALL BE A CONSTANT PRESSURE, HEAVY DUTY WEATHER PROOF CONTROL STATION.
8. EMERGENCY OPERATION - PROVIDE A CHAIN-GEAR MECHANISM FOR MANUAL OPERATION OF THE DOOR IN THE EVENT OF ELECTRICAL FAILURE, A MOTOR DISCONNECT, USING A MECHANICAL DEVICE, SHALL BE PROVIDED FOR EMERGENCY OPERATION.

GRAPHIC SCALE:



DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	MM/DD/YYYY
DES	DRW IWR CHK LMM
PMDM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
DESIGN AND CONSTRUCTION	LEBANON, OHIO
TYPE C BOX MAGAZINE	
DOOR DETAILS AND SECTIONS	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115950
SHEET	17 OF 35
S-508	
<small>DRAWING REVISION: 25 AUGUST 2020</small>	

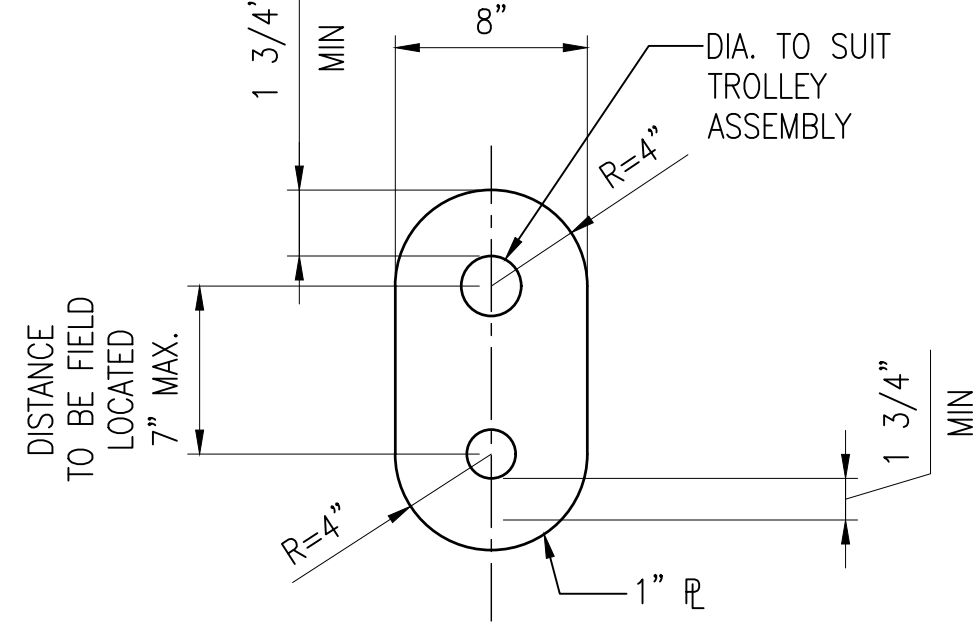
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2

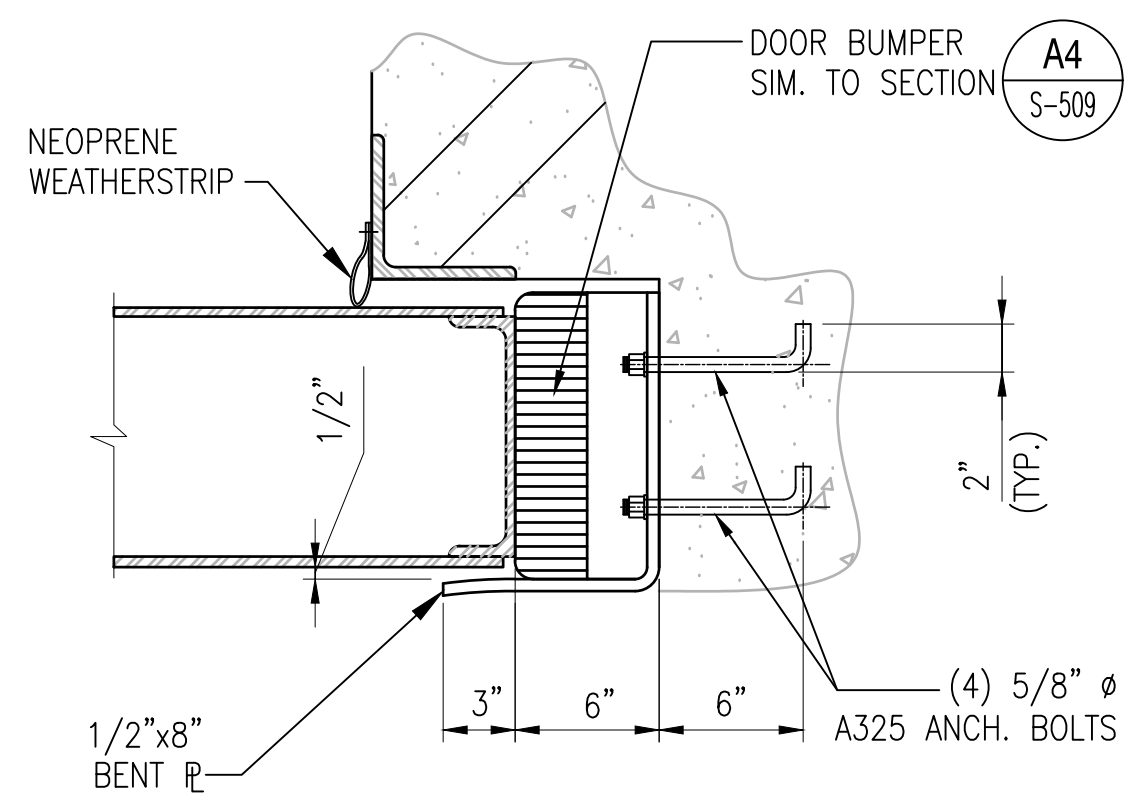
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4

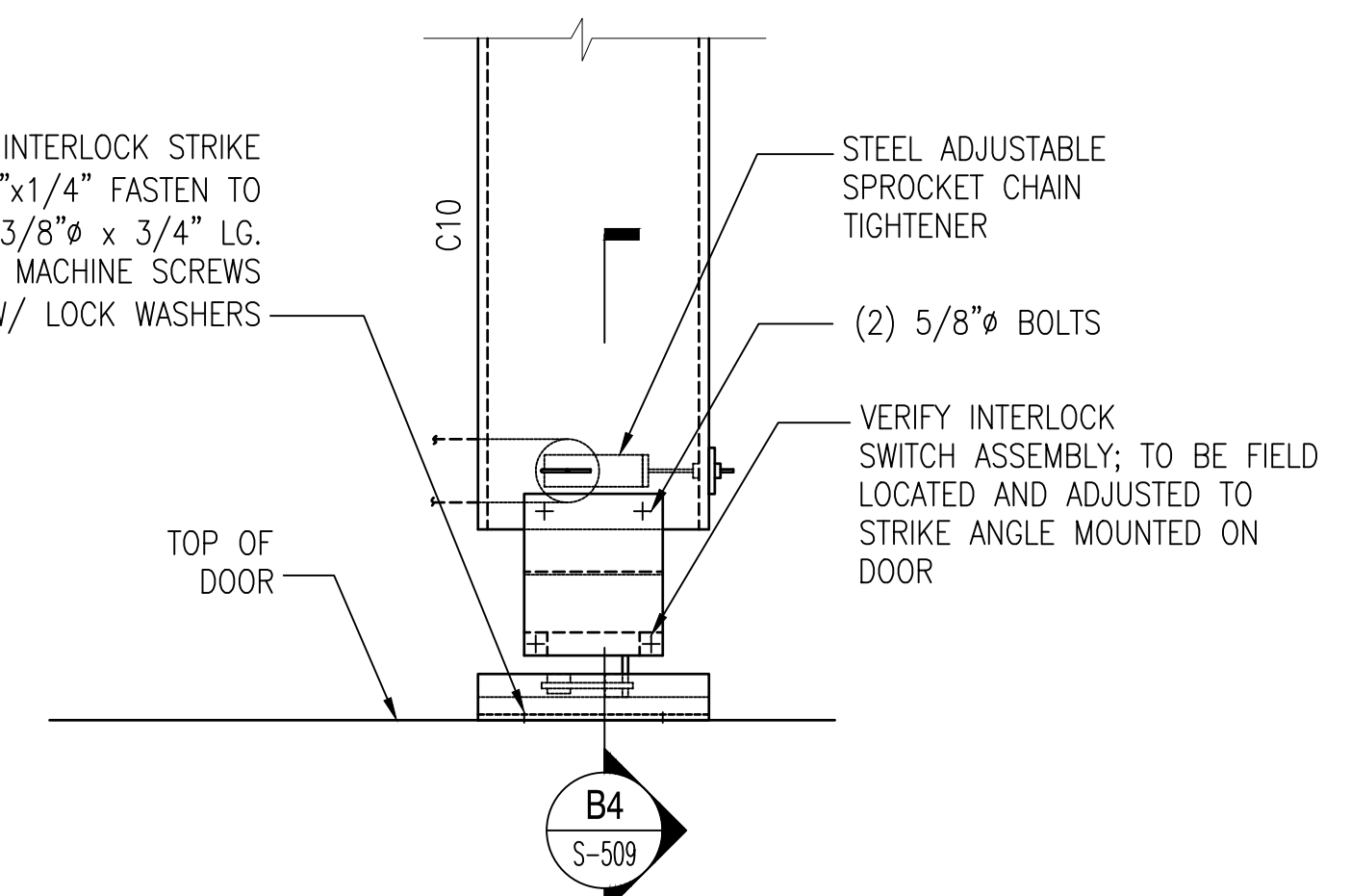
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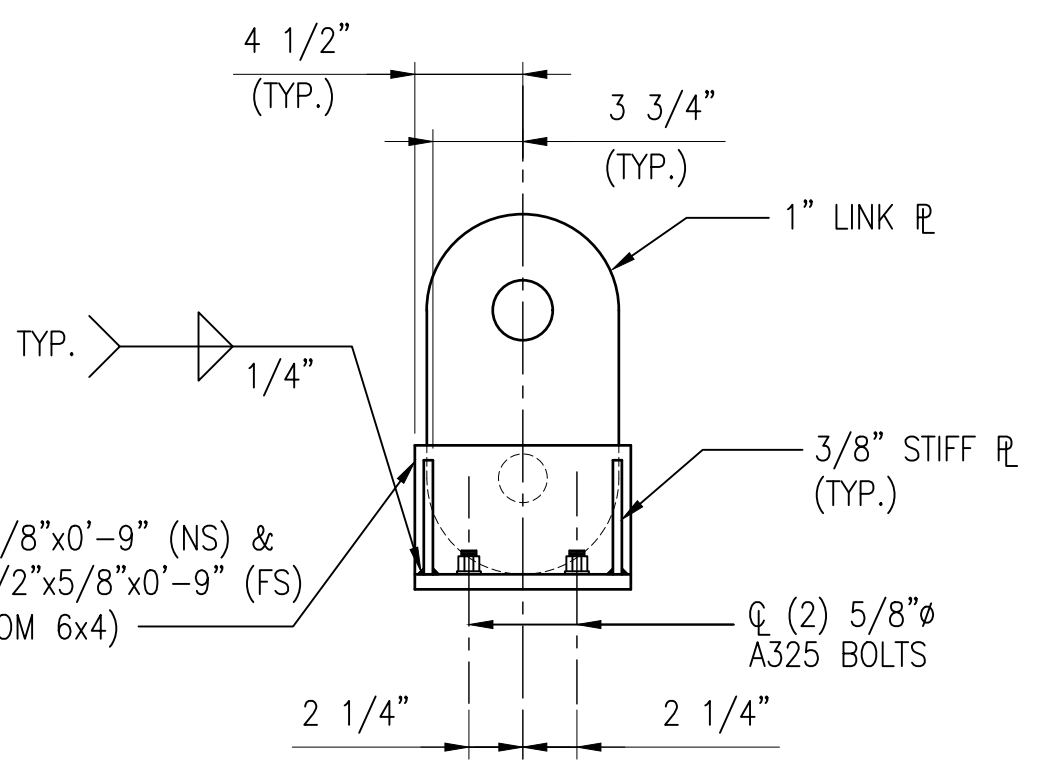
LINK PLATE DETAIL
SCALE: 1 1/2" = 1'-0" S-508 C1



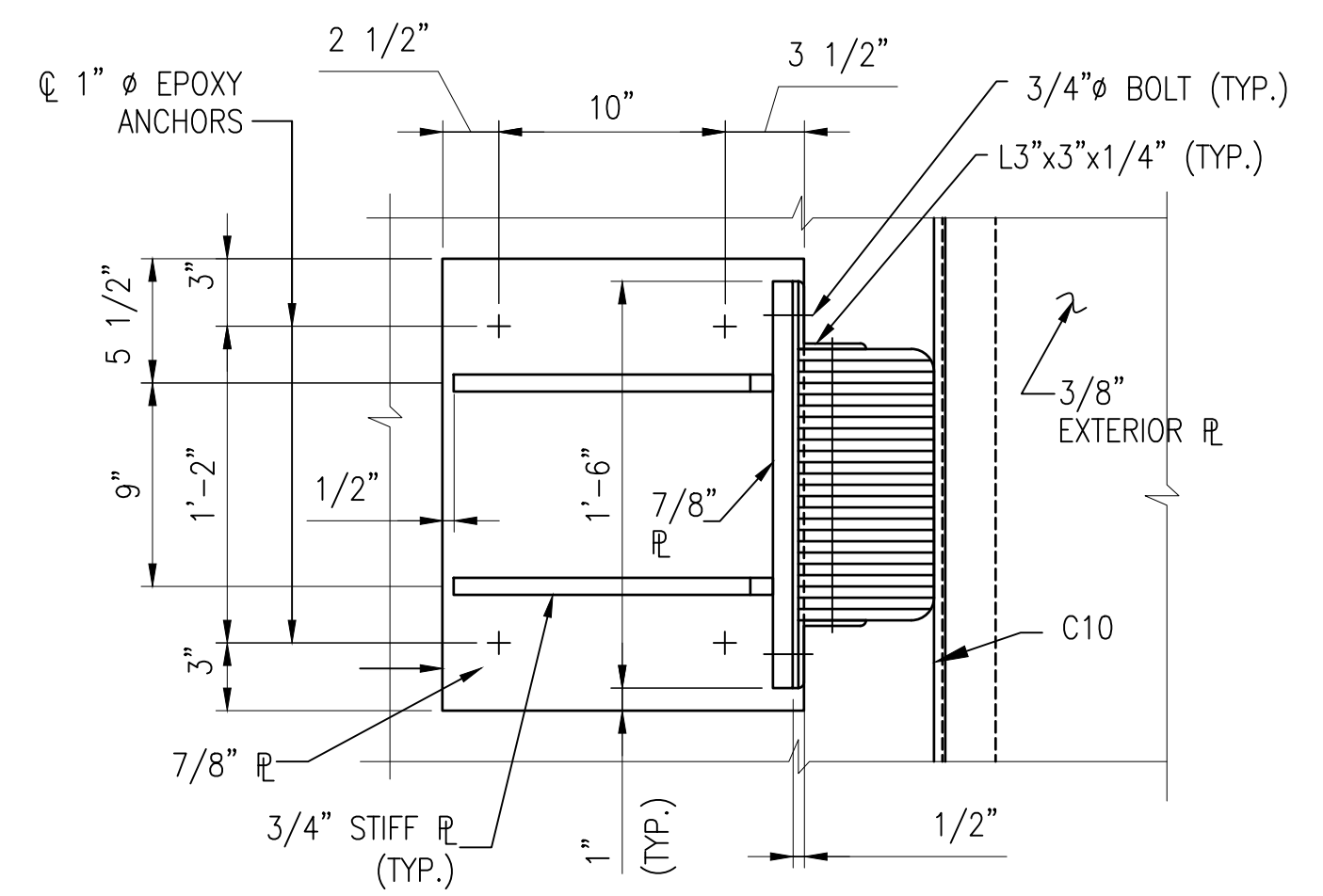
DOOR BINDER DETAIL
SCALE: 1 1/2" = 1'-0" S-305 C3



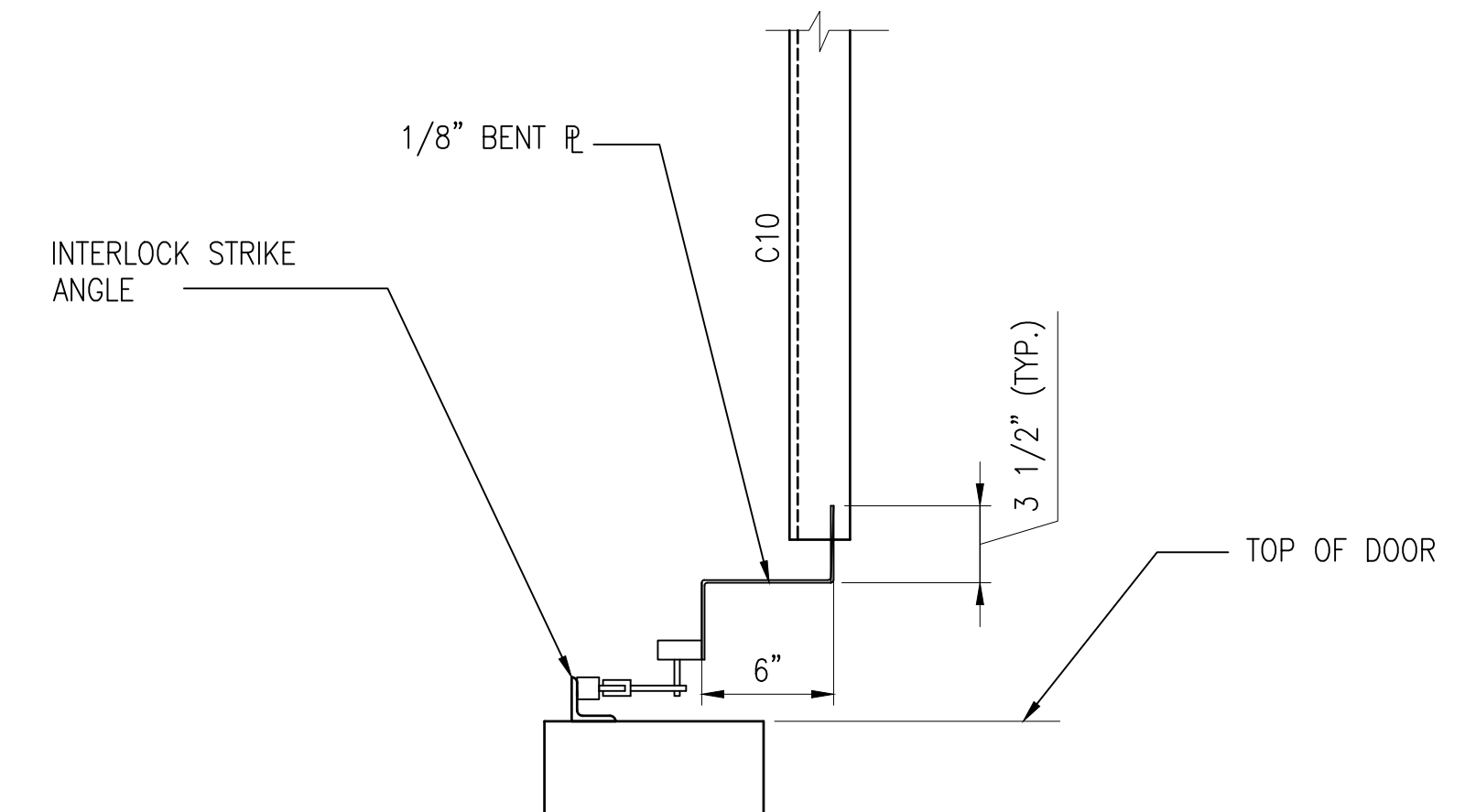
DOOR INTERLOCK DETAIL
SCALE: 1 1/2" = 1'-0" S-305 C4



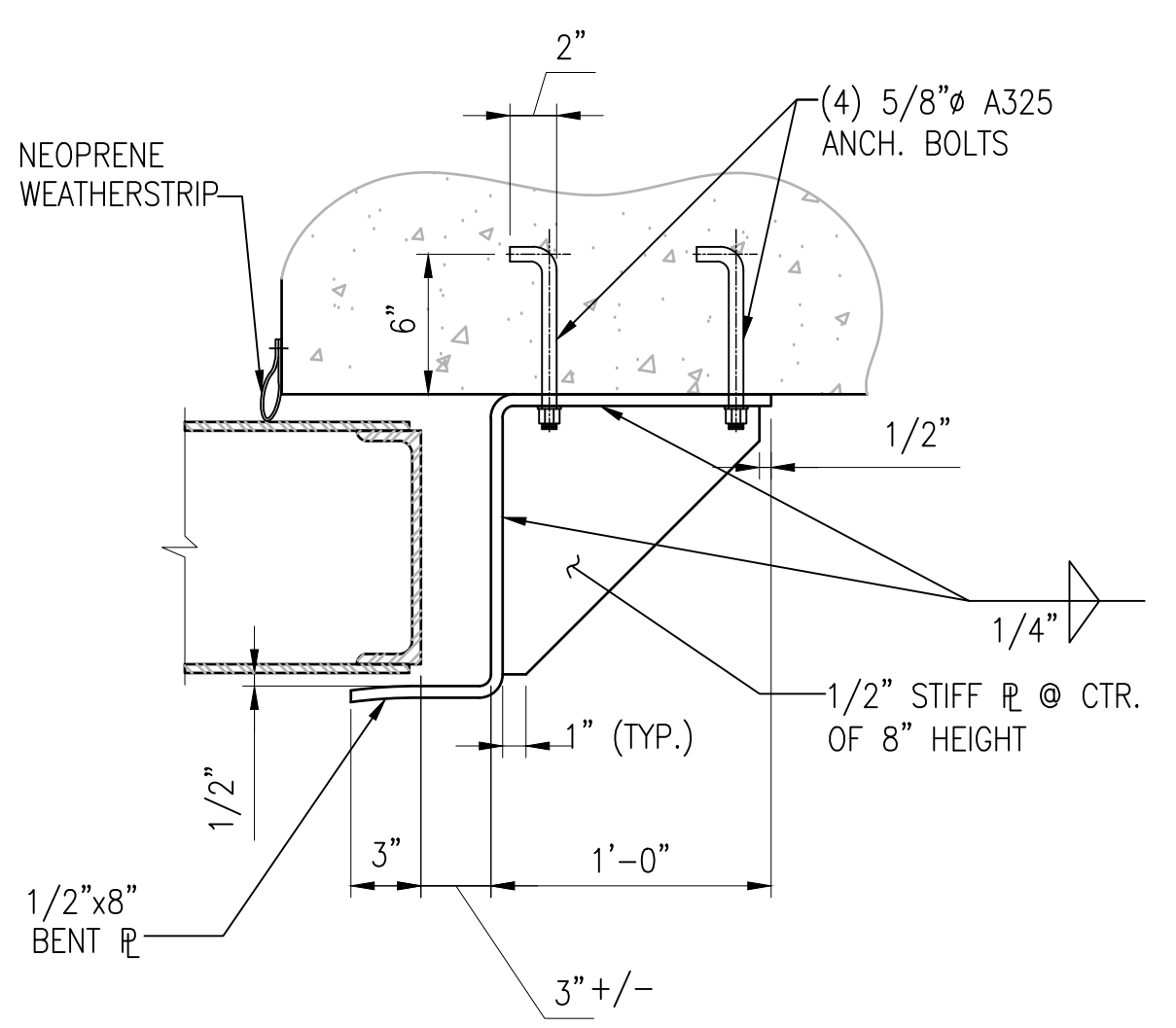
DETAIL
SCALE: 1 1/2" = 1'-0" S-508 B1



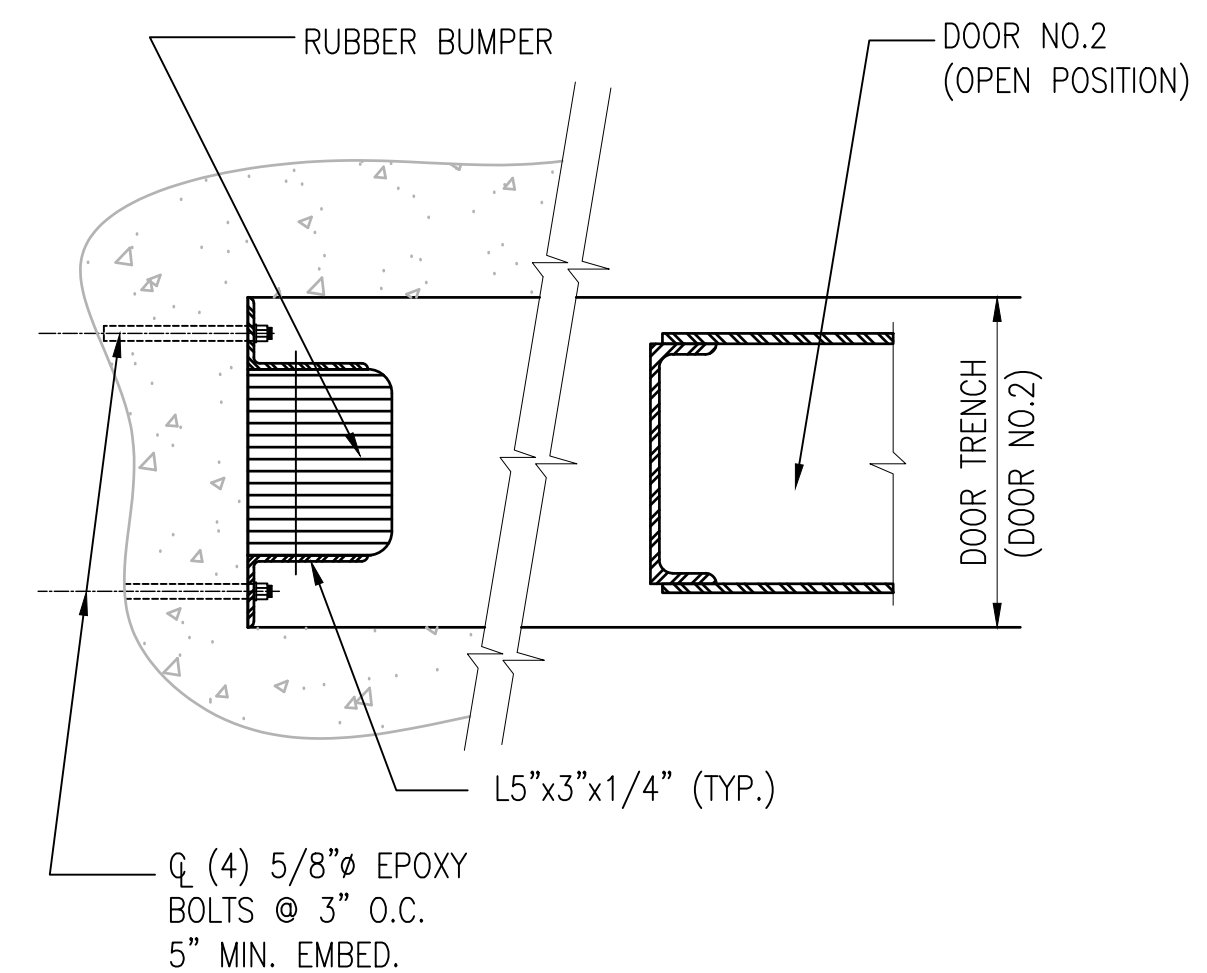
DOOR BUMPER SECTION
SCALE: 1 1/2" = 1'-0" S-509 B3



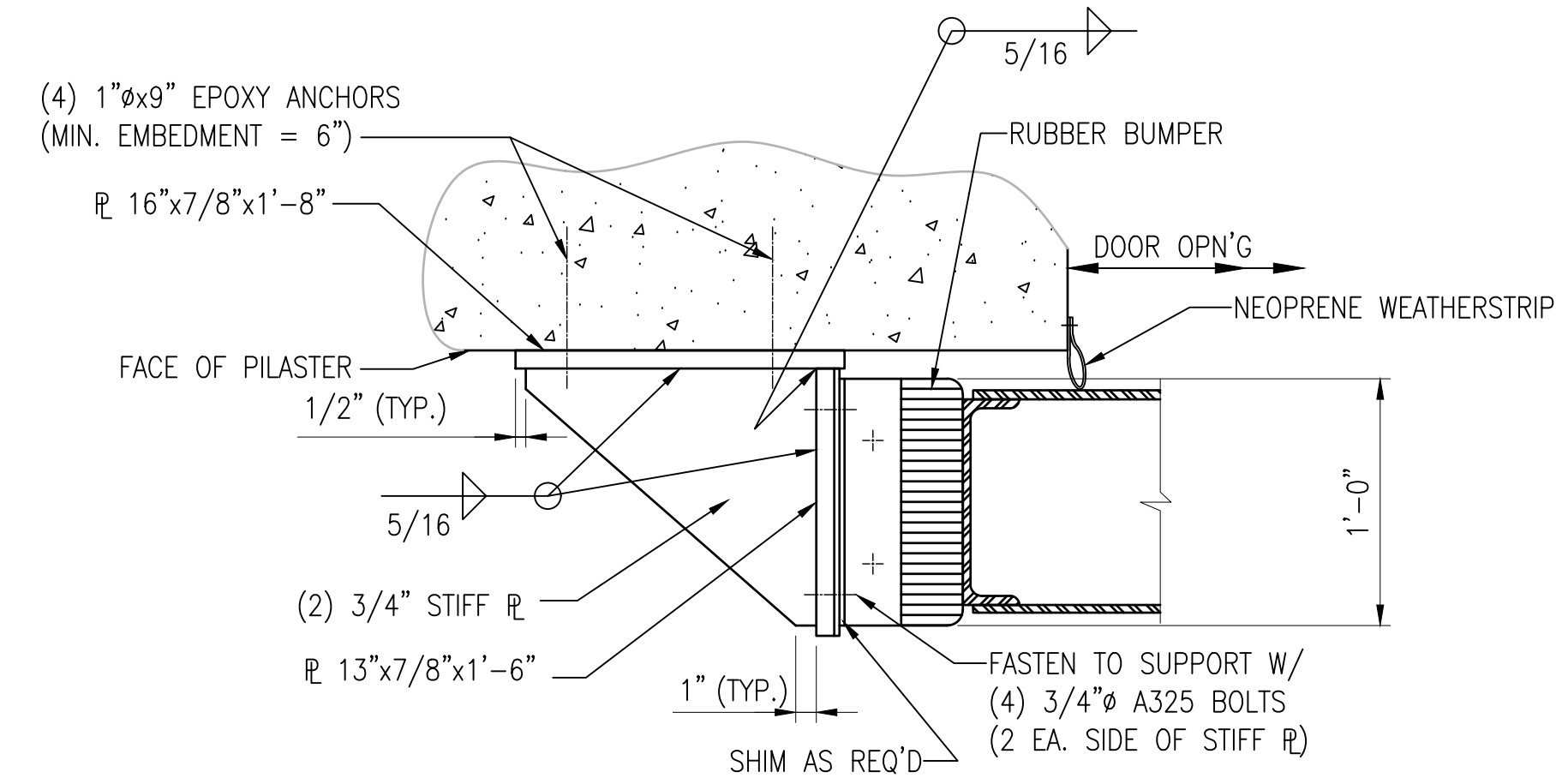
SECTION
SCALE: 1 1/2" = 1'-0" S-509 B4



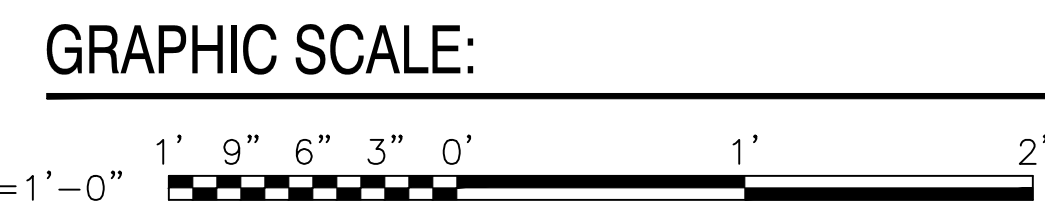
DOOR BINDER DETAIL
SCALE: 1 1/2" = 1'-0" S-305 A1



DOOR BUMPER IN TRENCH DETAIL
SCALE: 1 1/2" = 1'-0" S-305 A3



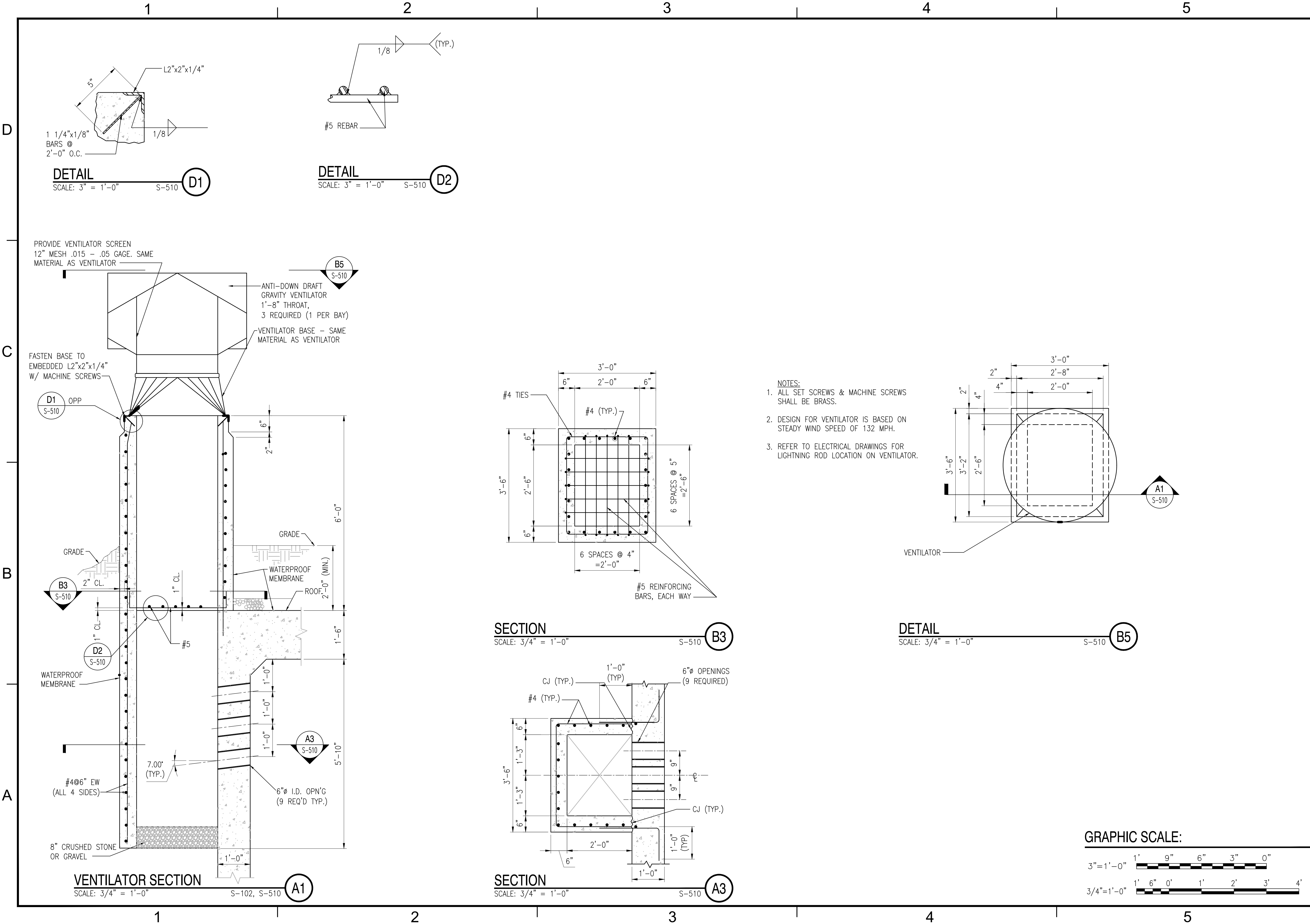
DOOR BUMPER SECTION
SCALE: 1 1/2" = 1'-0" S-305, S-509 A4



DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	MM/DD/YY
DRW	IWR
CHK	LMM
PM/DM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	
BRANCH OFFICE	
TYPE C BOX MAGAZINE	
DOOR DETAILS AND SECTIONS	
SCALE:	AS NOTED
PROJECT NO.:	14115951
CONSTR. CONTR. NO.:	
NAVAC DRAWING NO.:	14115951
SHEET	18 OF 35
S-509	
<small>DRAWING REVISION: 25 AUGUST 2020</small>	

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 LAYOUT NAME: S-509 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: hells.casino

FILE NAME: I:\DSE\Magazines\Box_Magazines Modified 2021\Types C\Final Drawings Type C_Ventilator\DWG C_2022.9.27.dwg LAYOUT NAME: S-510 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: helle.cossino



DETAIL
SCALE: 3" = 1'-0"
S-510 **D1**

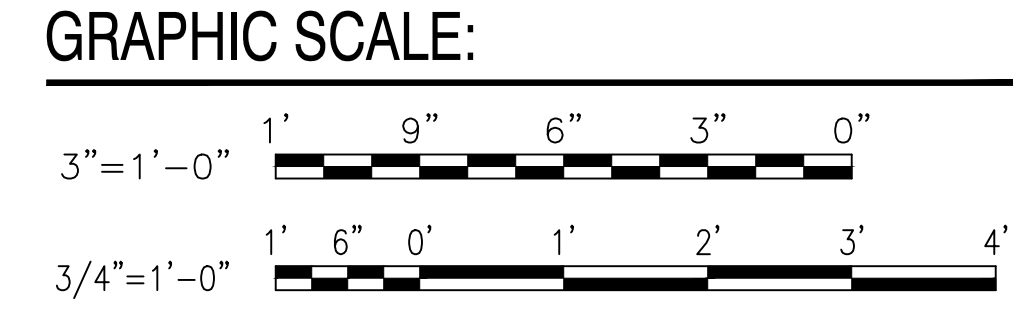
DETAIL
SCALE: 3" = 1'-0"
S-510 **D2**

SECTION
SCALE: 3/4" = 1'-0"
S-510 **B3**

SECTION
SCALE: 3/4" = 1'-0"
S-510 **A3**

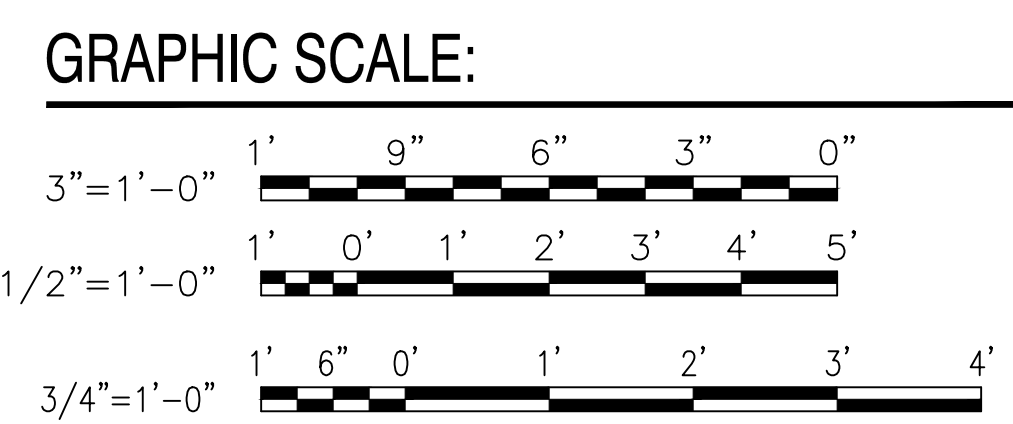
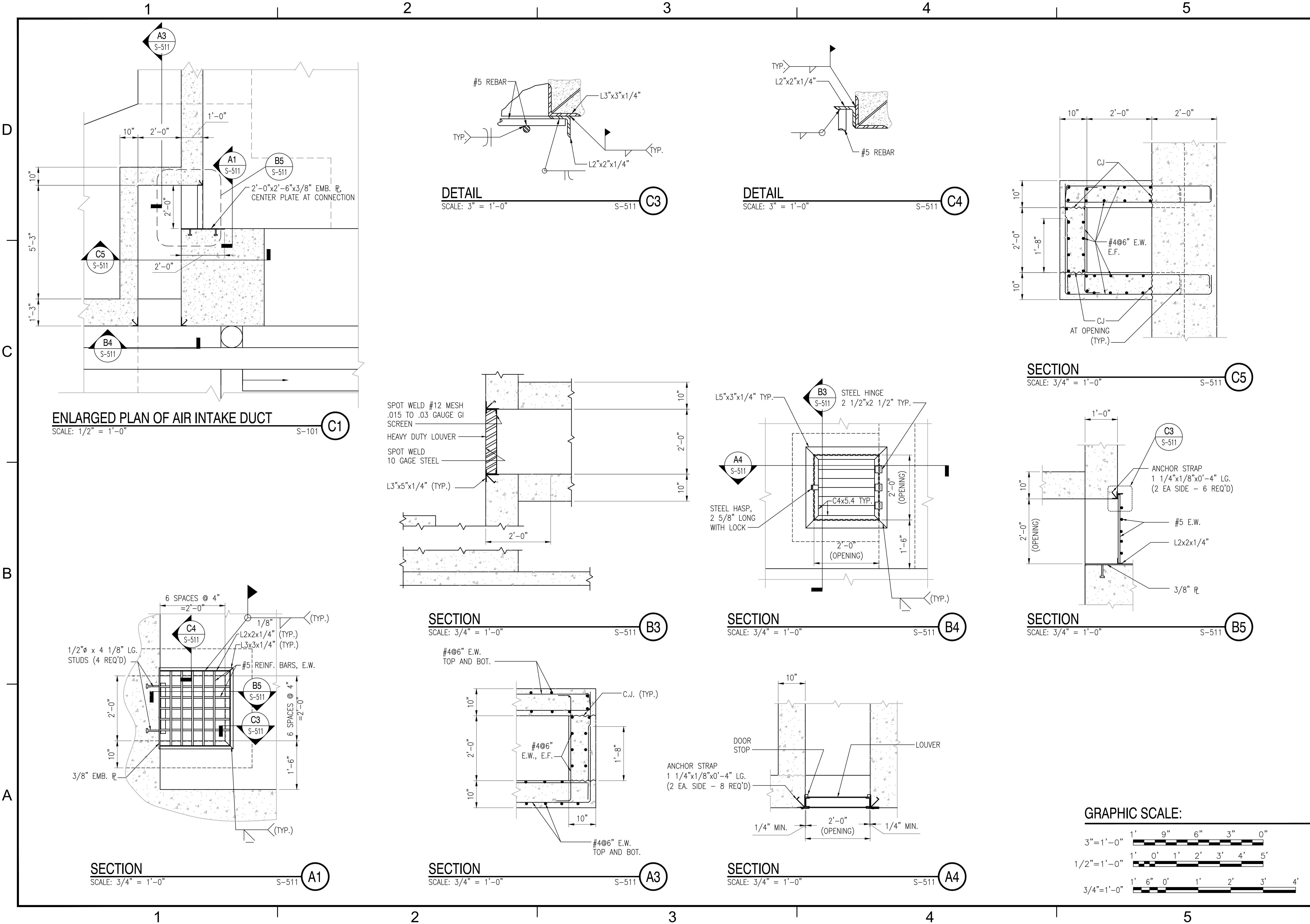
DETAIL
SCALE: 3/4" = 1'-0"
S-510 **B5**

- NOTES:**
1. ALL SET SCREWS & MACHINE SCREWS SHALL BE BRASS.
 2. DESIGN FOR VENTILATOR IS BASED ON STEADY WIND SPEED OF 132 MPH.
 3. REFER TO ELECTRICAL DRAWINGS FOR LIGHTNING ROD LOCATION ON VENTILATOR.



DATE	09/14/22
APPR.	
DESCRIPTION	TYPE C STANDARD
SYMBOL	
SEAL	
A/E INFO	
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	MM/DD/YY
DRW	IWR
CHK	LMM
PMIDM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
DESIGN AND CONSTRUCTION	LEBANON/DCAL, VA
TYPE C BOX MAGAZINE	
VENTILATOR DETAILS	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115952
SHEET	19 OF 35
S-510	
<small>DRAWING REVISION: 25 AUGUST 2020</small>	

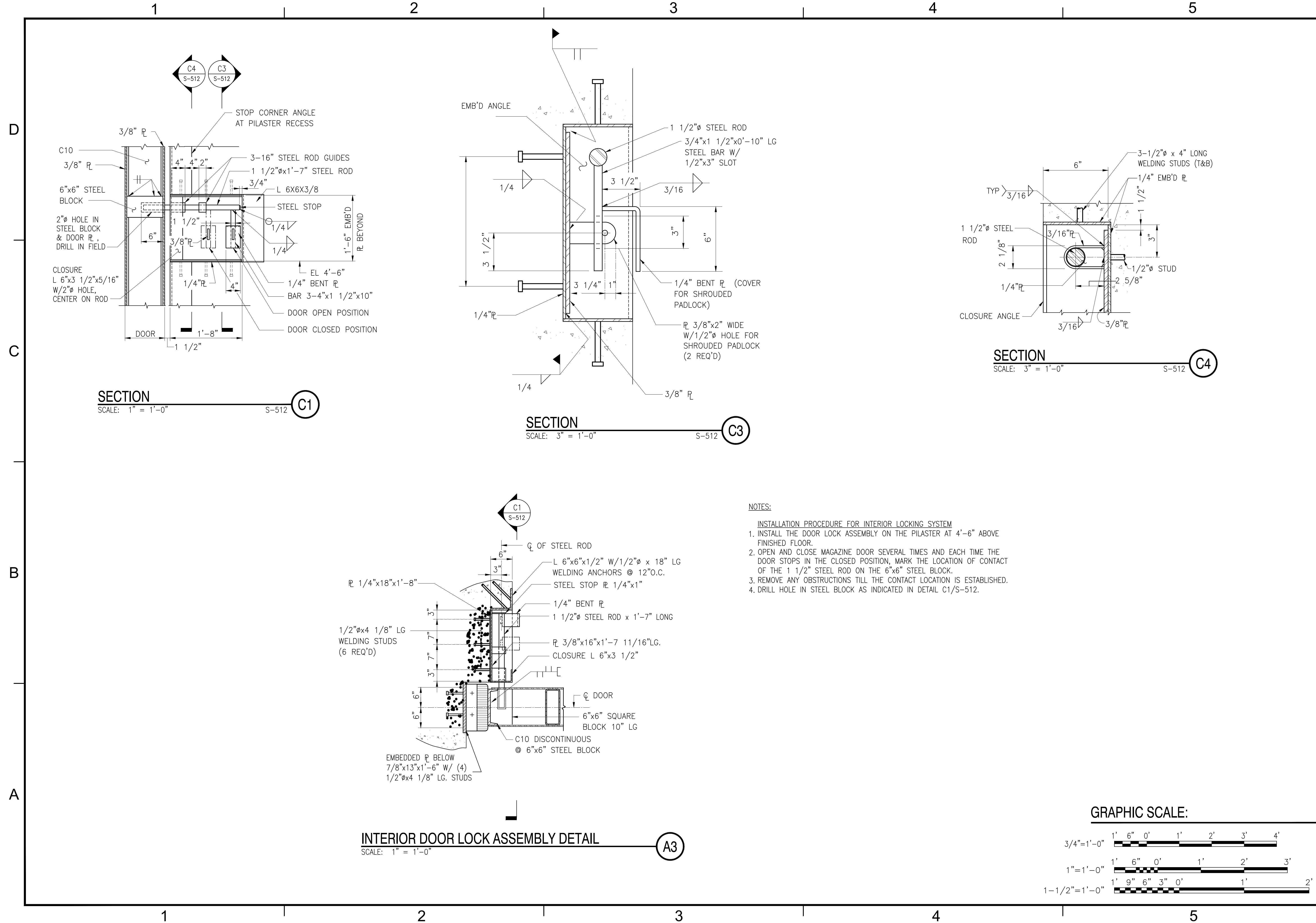
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DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
BY	
SEAL	
A/E INFO	
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE	MM/DD/YY
DES	DRW IWR CHK LMM
PM/DM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	
BRANCH OFFICE	
PROJECT NO.	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO.	14115953
SHEET	20 OF 35
S-511	
INTAKE VENTILATOR DETAILS	
TYPE C BOX MAGAZINE	



FILE NAME: J:\DSE\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C\Final Drawings Type C_2022.9.27.dwg LAYOUT NAME: S-512 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: hells.casino



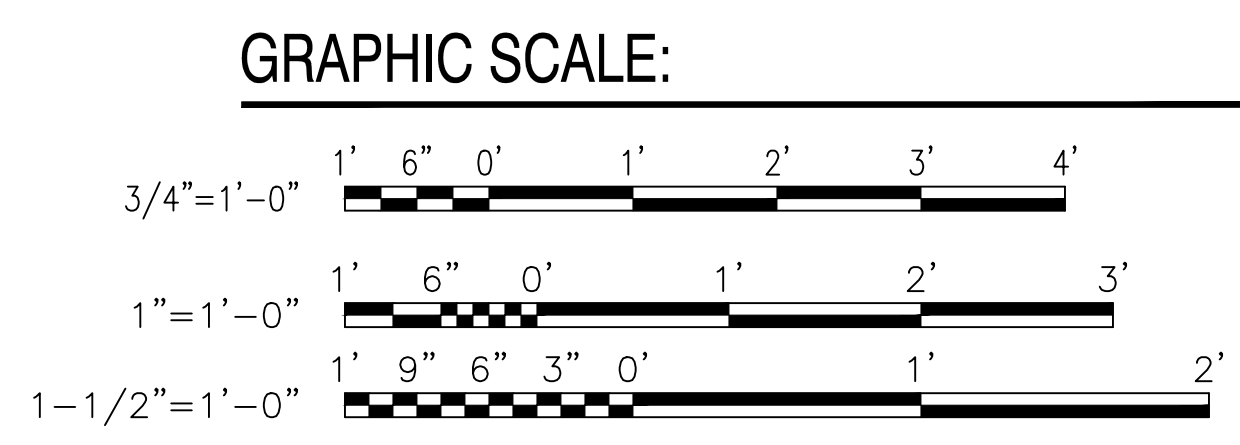
SECTION
SCALE: 1" = 1'-0"
S-512 (C1)

SECTION
SCALE: 3" = 1'-0"
S-512 (C3)

SECTION
SCALE: 3" = 1'-0"
S-512 (C4)

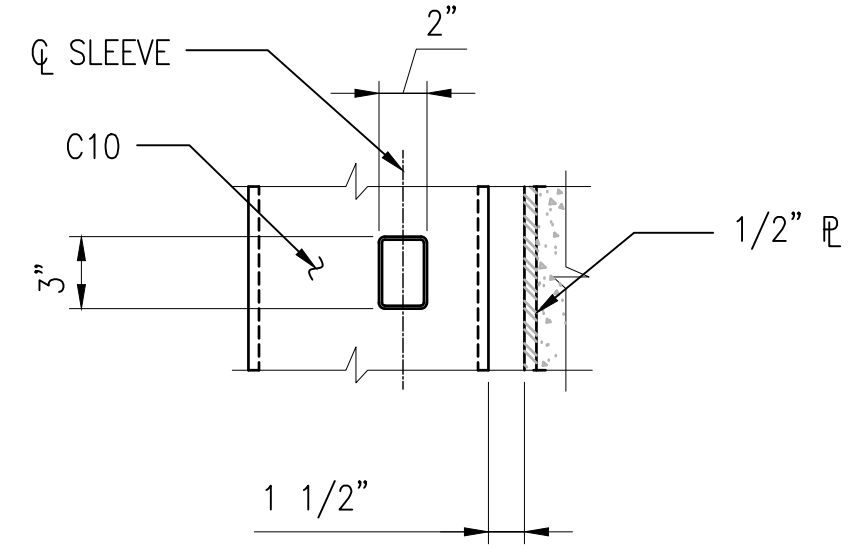
INTERIOR DOOR LOCK ASSEMBLY DETAIL
SCALE: 1" = 1'-0"
A3

- NOTES:**
- INSTALLATION PROCEDURE FOR INTERIOR LOCKING SYSTEM**
1. INSTALL THE DOOR LOCK ASSEMBLY ON THE PILASTER AT 4'-6" ABOVE FINISHED FLOOR.
 2. OPEN AND CLOSE MAGAZINE DOOR SEVERAL TIMES AND EACH TIME THE DOOR STOPS IN THE CLOSED POSITION, MARK THE LOCATION OF CONTACT OF THE 1 1/2" STEEL ROD ON THE 6"x6" STEEL BLOCK.
 3. REMOVE ANY OBSTRUCTIONS TILL THE CONTACT LOCATION IS ESTABLISHED.
 4. DRILL HOLE IN STEEL BLOCK AS INDICATED IN DETAIL C1/S-512.

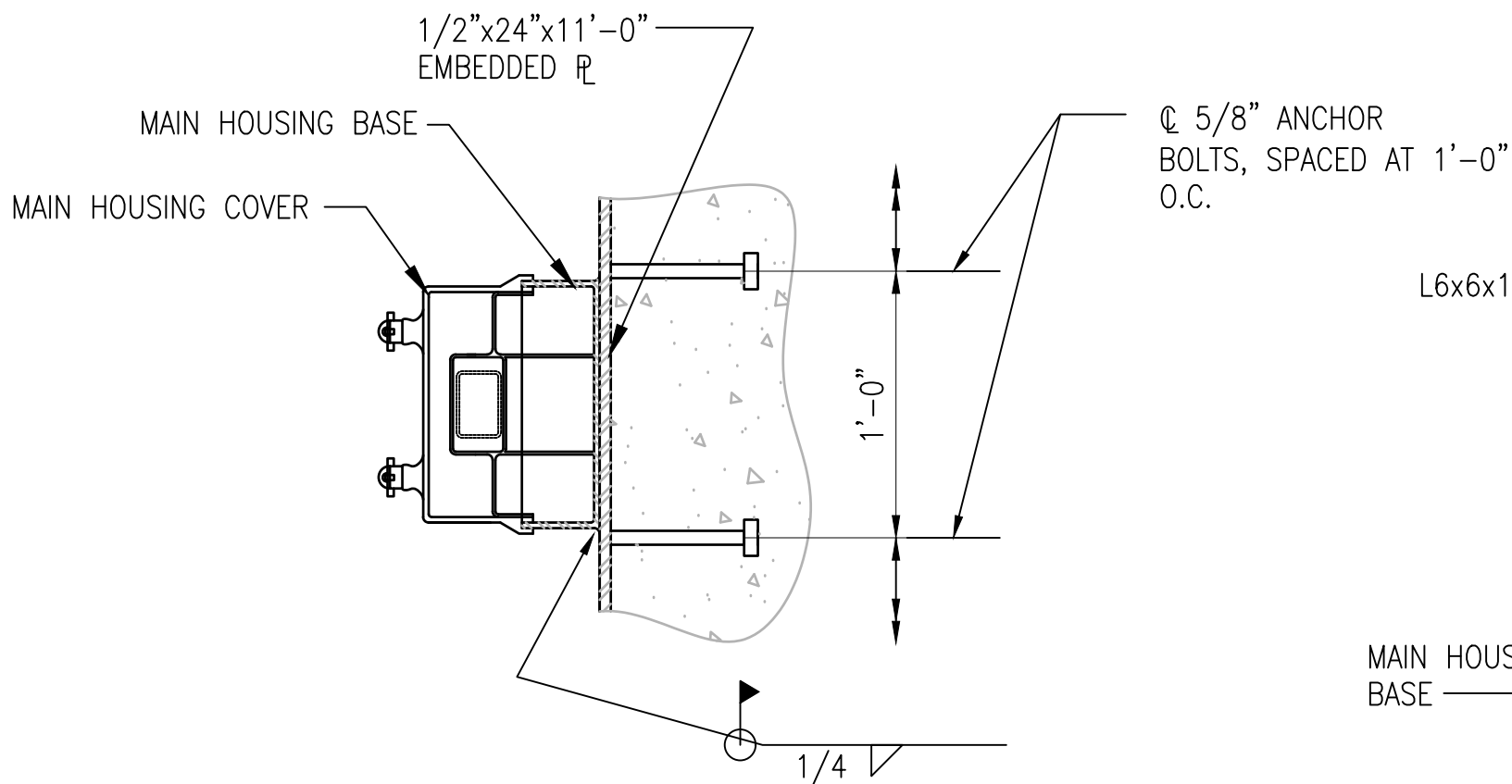


APPROVED	DATE	09/14/22	APP'R
FIR COMMANDER NAVFAC	DESCRIPTION	TYPE C STANDARD	
ACTIVITY			
SATISFACTORY TO	DATE	MM/DD/YY	
DES	DRW	IWR	CHK LMM
PM/DM			
BRANCH MANAGER	JTW		
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.		
FIRE PROTECTION	DPS		
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	BRANFAC/EA	
DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND		
	TYPE C BOX MAGAZINE		
	DOOR INTERIOR LOCK MECHANISM DETAILS		
SCALE:	AS NOTED		
PROJECT NO.:			
CONSTR. CONTR. NO.:			
NAVFAC DRAWING NO.:	14115954		
SHEET	21	OF	35
	S-512		
DRAWING REVISION: 25 AUGUST 2020			

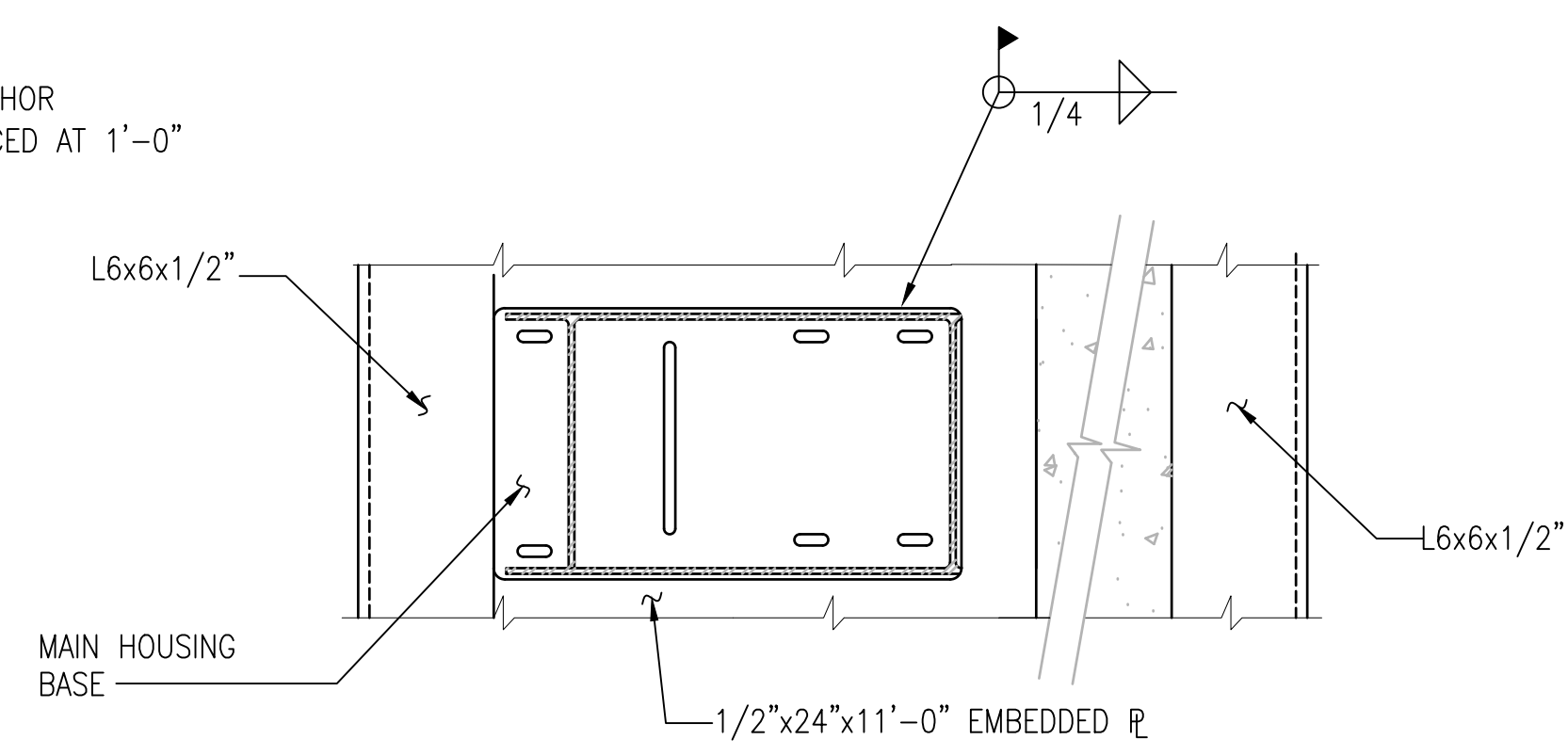
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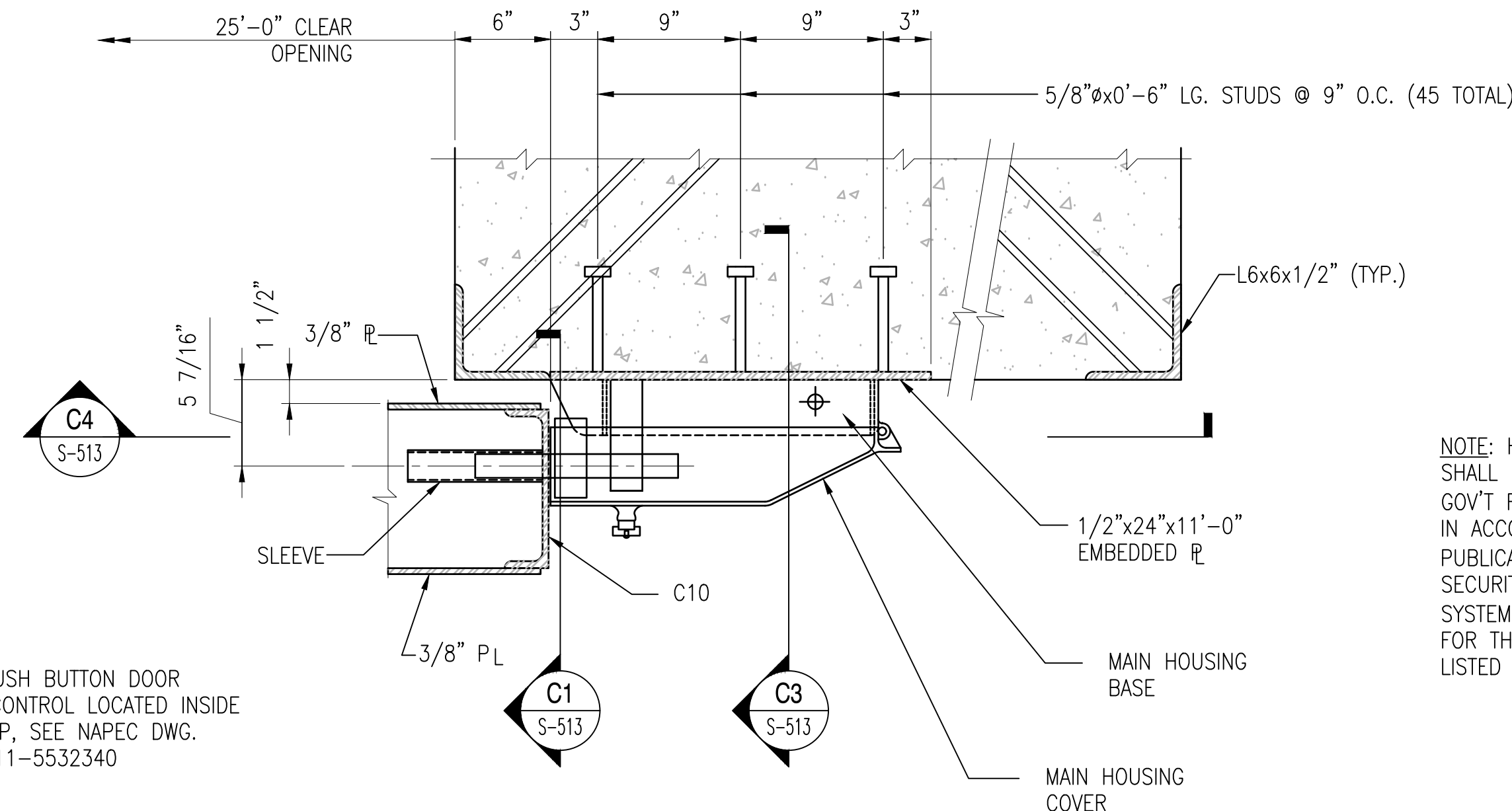
SECTION C1
1 1/2"=1'-0" S-513



SECTION C3
1 1/2"=1'-0" S-513



SECTION C4
1 1/2"=1'-0" S-513



NOTE: HIGH SECURITY HASP ON DOOR NO.2 SHALL BE NAPEC 1332 UNIVERSAL HASP, GOV'T FURNISHED AND SHALL BE INSTALLED IN ACCORDANCE WITH NAVAMPROENGGEN PUBLICATION "STANDARD PLANS FOR HIGH SECURITY HASPS AND INTRUDER DETECTION SYSTEMS ASHORE" INSTALLATION PROCEDURE FOR THE HASP SHALL FOLLOW STEPS 1 THRU 8 LISTED ON NAPEC STANDARD DWG. 1446.

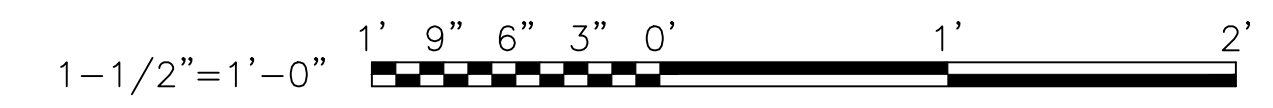
NOTE: PUSH BUTTON DOOR MOTOR CONTROL LOCATED INSIDE THE HASP, SEE NAPEC DWG. No. 53711-5532340

DETAIL - HIGH SECURITY HASP (NAPEC 1332)
1 1/2"=1'-0" S-505 **A4**

NOTES TO DESIGNER - REMOVE THESE NOTES WHEN PREPARING CONSTRUCTION DRAWINGS FOR SITE ADAPTATION OF THIS DESIGN

1. SHEETS S-513 & S-513(ALT) IDENTIFY DIFFERENT LOCKING SYSTEMS. THE EOR SHALL VERIFY THE CORRECT LOCKING SYSTEM REQUIRED AND REMOVE THE REDUNDANT SHEET FROM THE CONSTRUCTION CONTRACT DOCUMENTS FOR THE SYSTEM NOT USED (COORDINATE WITH CONTRACTING OFFICER). IF ALT SHEET IS USED, RENAME TO ORIGINAL SHEET.

GRAPHIC SCALE:

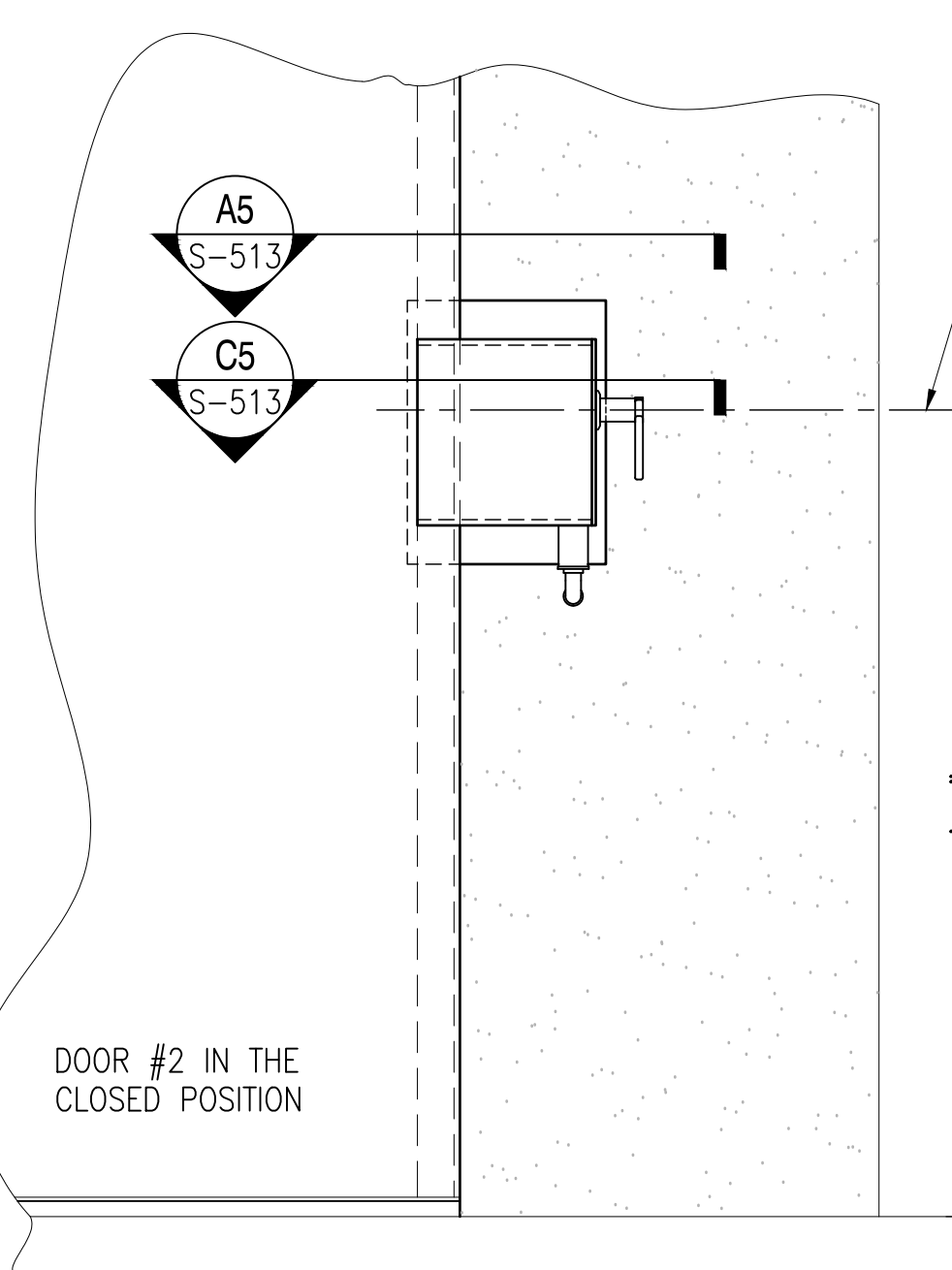


APPROVED	DATE	09/14/22
FOR COMMANDER NAVFAC	DESCRIPTION	TYPE C STANDARD
ACTIVITY	SYN	
SATISFACTORY TO	DATE	MM/DD/YY
DES	DRW	IWR
CHK	CHK	LMM
PM/DM		
BRANCH MANAGER		JTW
CHIEF ENGINEER		RICHARD L. STEPHENS, P.E.
FIRE PROTECTION		DPS
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	LEANOR/CAL/VA
DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
	TYPE C BOX MAGAZINE	
	STANDARD HIGH SECURITY HASP DETAILS	
SCALE:	AS NOTED	
PROJECT NO.:		
CONSTR. CONTR. NO.:		
NAVFAC DRAWING NO.:	14115955	
SHEET	22	OF 35
	S-513	
	DRAWING REVISION: 25 AUGUST 2020	

FILE NAME: \D:\DSE\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C\AutoCAD\BOX_C_2021.9.27.dwg LAYOUT NAME: S-513ALT PLOTTED: Thursday, November 03, 2022 1:19pm USER: helix.casino

1 2 3 4 5

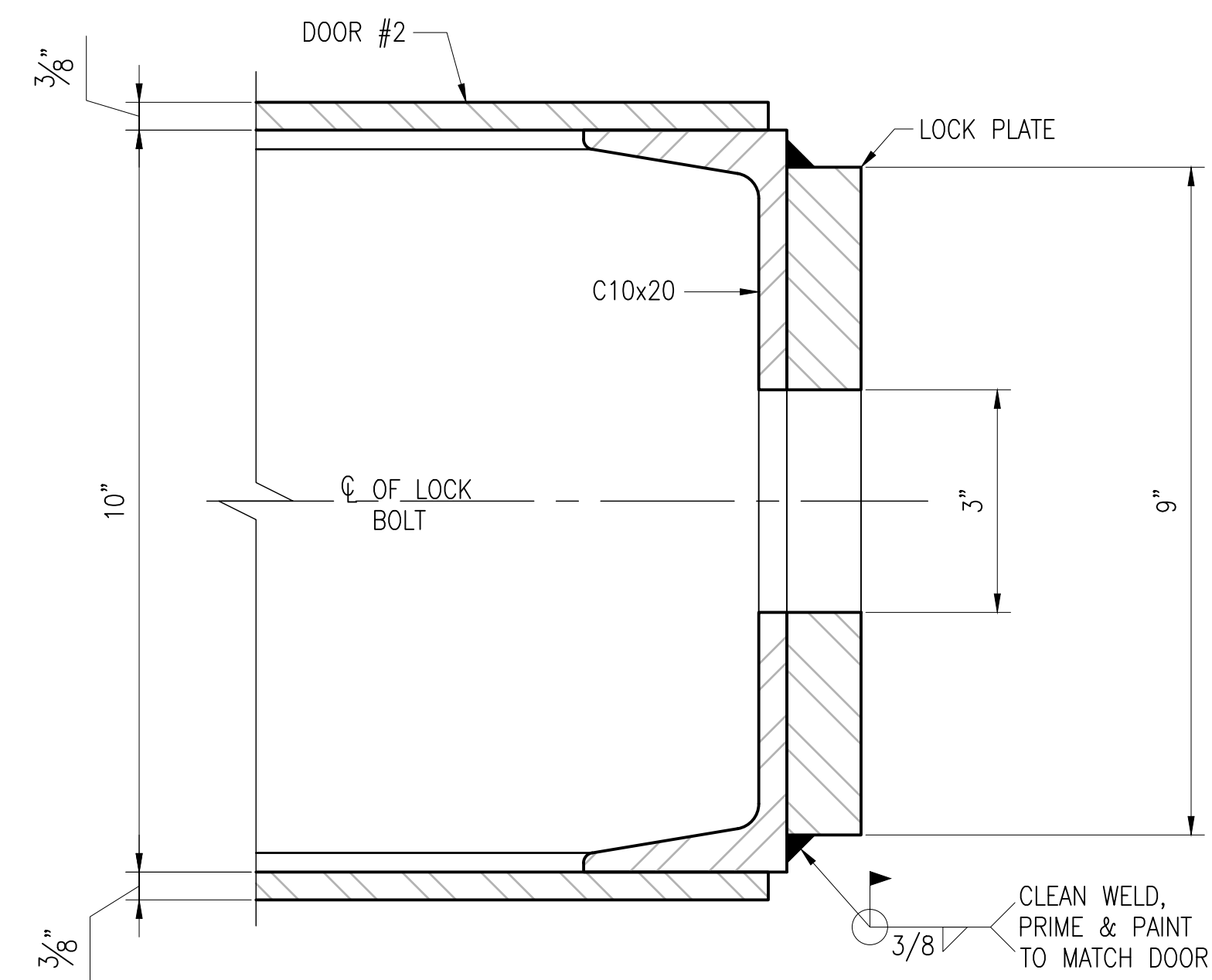
D
C
B
A



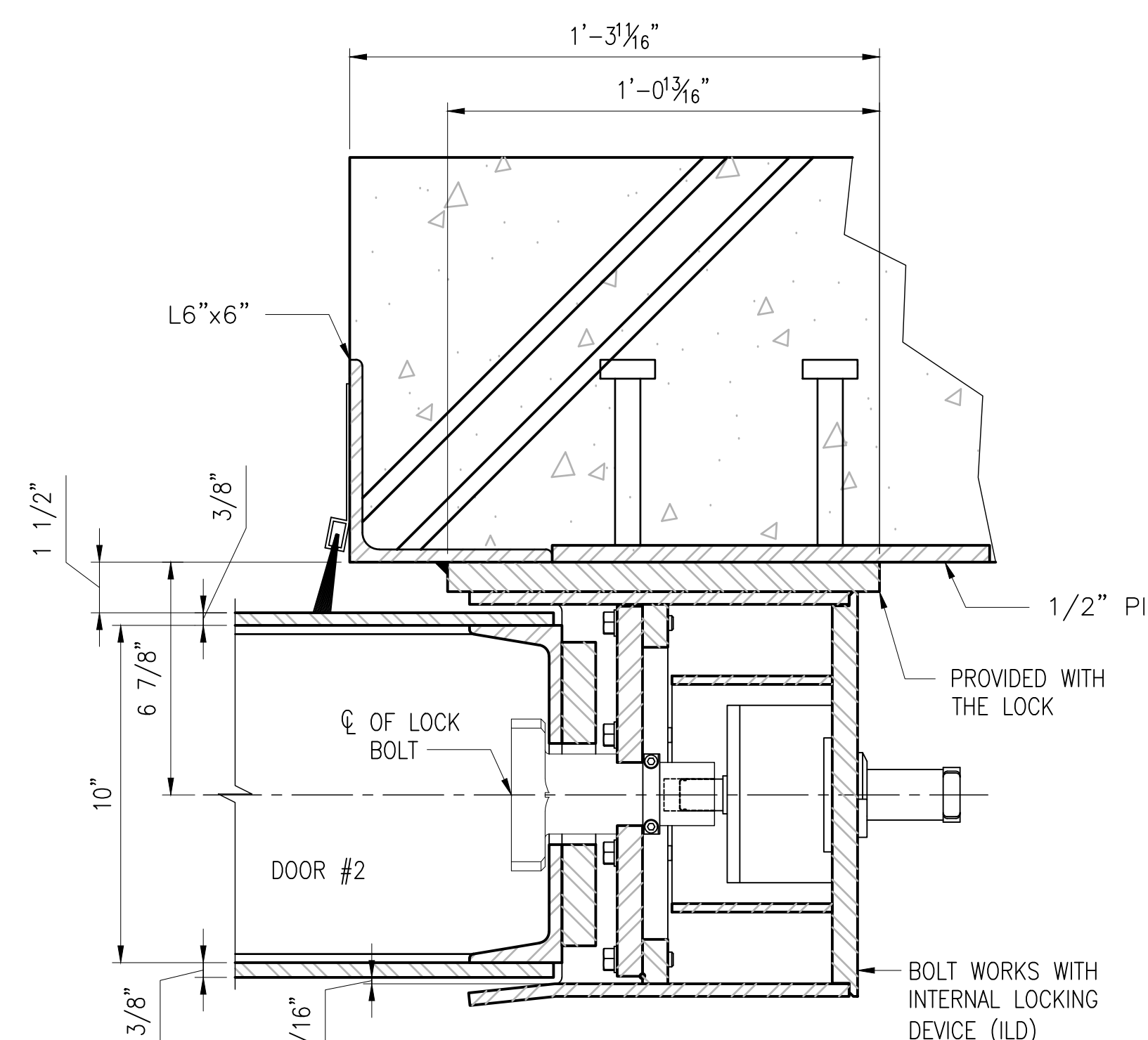
NOTE: SEE MANUFACTURERS INSTALLATION DATA FOR ADDITIONAL INFORMATION

DOOR IN THE CLOSED POSITION

INTERNAL LOCKING DEVICE (ILD) IS A U.S. GOVERNMENT DESIGNED AND PATENTED LOCKING SYSTEM. THE ILD-10" SLIDING DOOR UNIT AND KEYS SHALL BE PURCHASED BY A GOVERNMENT APPROVED ILD MANUFACTURER WITH COORDINATION OF NAVAL FACILITIES ENGINEERING SERVICE CENTER (NAVFAC ESC) INTERNAL LOCKING DEVICE (ILD) IS A U.S. GOVERNMENT DESIGNED AND PATENTED LOCKING SYSTEM. THE CONTRACTOR SHALL CONTACT THE NAVAL FACILITIES ENGINEERING AND EXHIBITIONARY WARFARE CENTER (NFEXWC), DOD LOCK PROGRAM, ILD SUPPORT HOTLINE AT 1-805-982-LOCK (DSN 551-LOCK) OR E-MAIL TO ILD_Field_Support@navy.mil FOR ALL ILD AND BOLTWORK DRAWINGS AND INSTALLATION INFORMATION AND INTRUSION DETECTION SWITCH (IDS) INFORMATION. THE CONTRACTOR SHALL FOLLOW ALL ILD AND BOLTWORK INSTALLATION INSTRUCTIONS PROVIDED BY NFEXWC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PURCHASING THE ILD, IDS, BMS, AND THE BOLTWORKS AND THE INSTALLATION THERE OF.
SECURITY ENGINEERING DIVISION. CONTACT CAN BE MADE BY CALLING 1-800-290-7607 OR VISITING [HTTPS://PORTAL.NAVFAC.NAVY.MIL/GO/LOCKS](https://portal.navy.mil/go/locks).
INTERNAL LOCKING DEVICE (ILD) CONTACT THE DOD LOCK PROGRAM (805) 982-1212



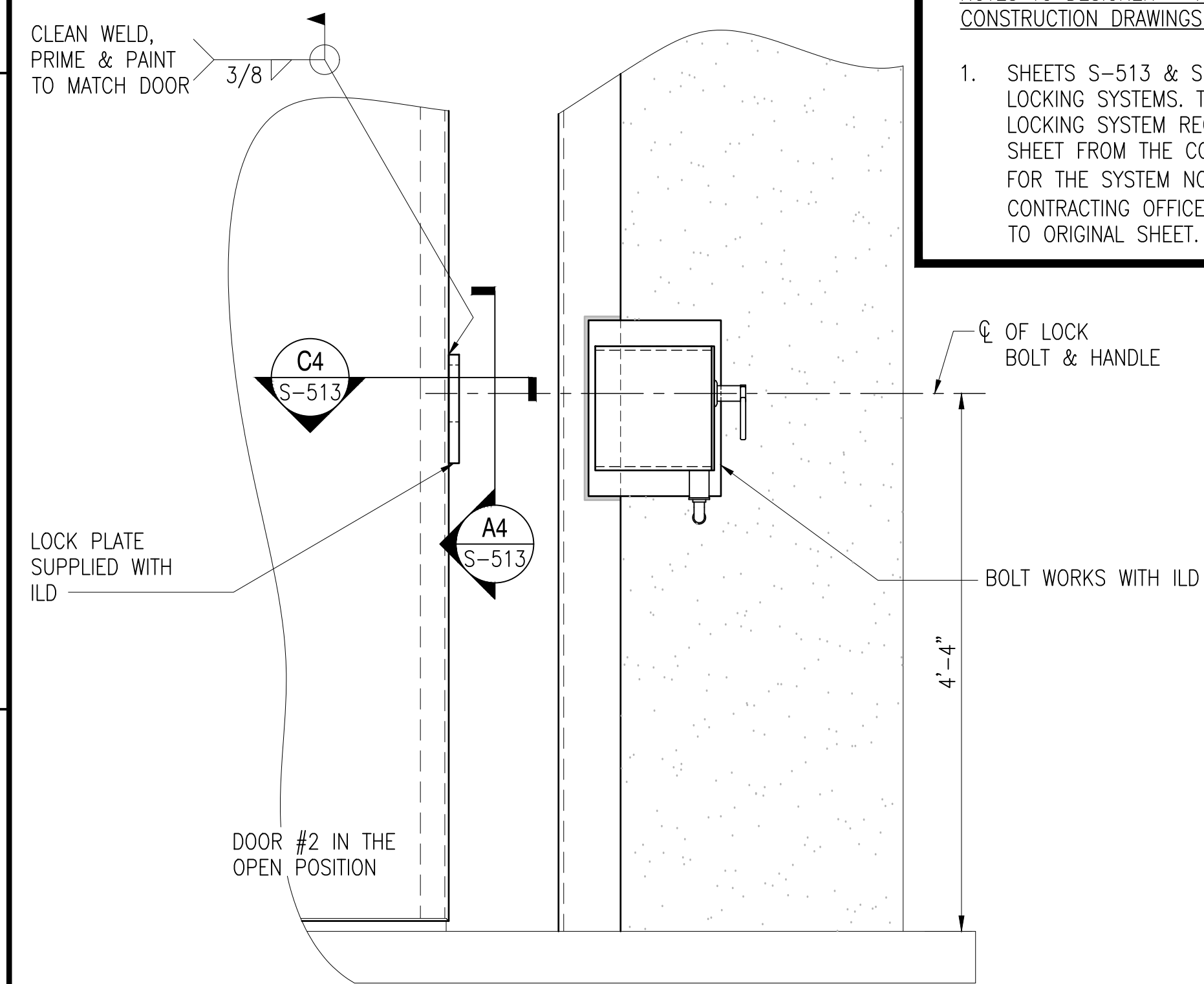
SECTION SCALE: 6" = 1'-0" S-513 C4



SECTION AT LOCKING ASSEMBLY CLOSED SCALE: 3" = 1'-0" S-513 C5

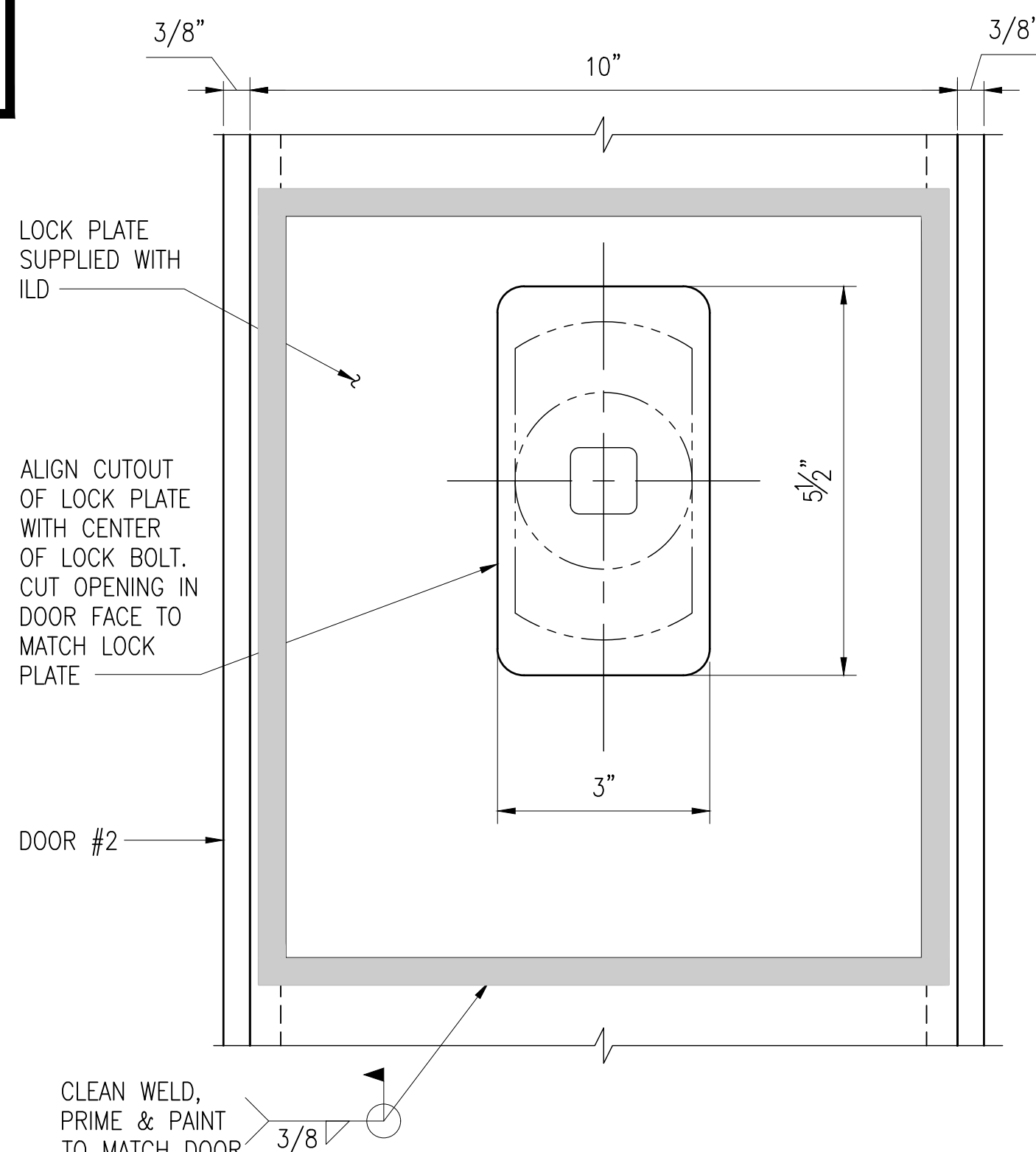
NOTES TO DESIGNER - REMOVE THESE NOTES WHEN PREPARING CONSTRUCTION DRAWINGS FOR SITE ADAPTATION OF THIS DESIGN

1. SHEETS S-513 & S-513(ALT) IDENTIFY DIFFERENT LOCKING SYSTEMS. THE EOR SHALL VERIFY THE CORRECT LOCKING SYSTEM REQUIRED AND REMOVE THE REDUNDANT SHEET FROM THE CONSTRUCTION CONTRACT DOCUMENTS FOR THE SYSTEM NOT USED (COORDINATE WITH CONTRACTING OFFICER). IF ALT SHEET IS USED, RENAME TO ORIGINAL SHEET.

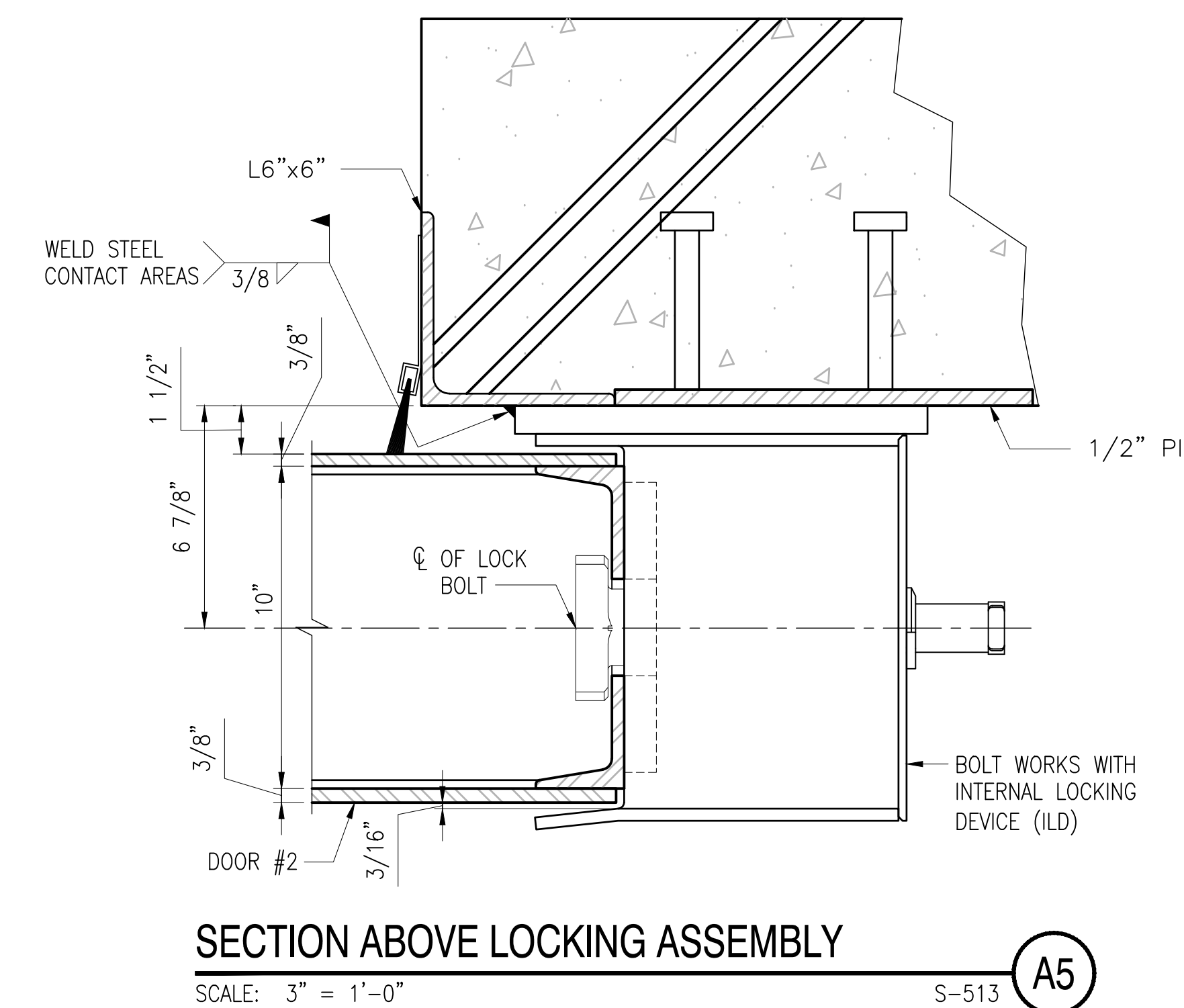


NOTE: SEE MANUFACTURERS INSTALLATION DATA FOR ADDITIONAL INFORMATION

DOOR IN THE OPEN POSITION

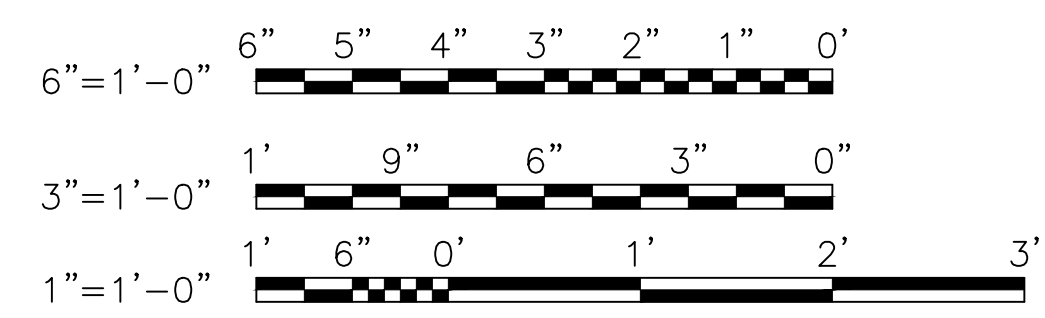


SECTION SCALE: 6" = 1'-0" S-513 A4



SECTION ABOVE LOCKING ASSEMBLY SCALE: 3" = 1'-0" S-513 A5

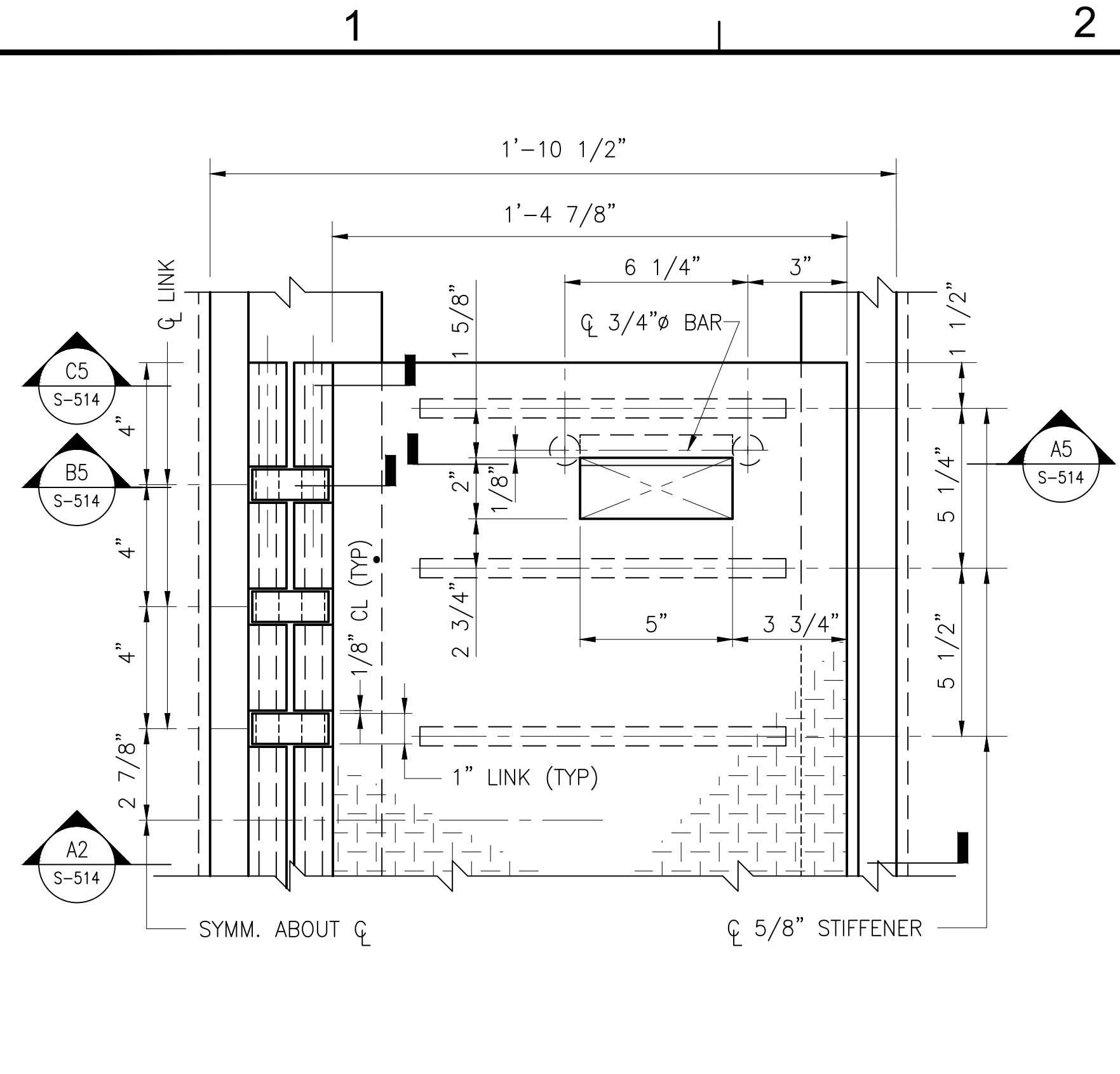
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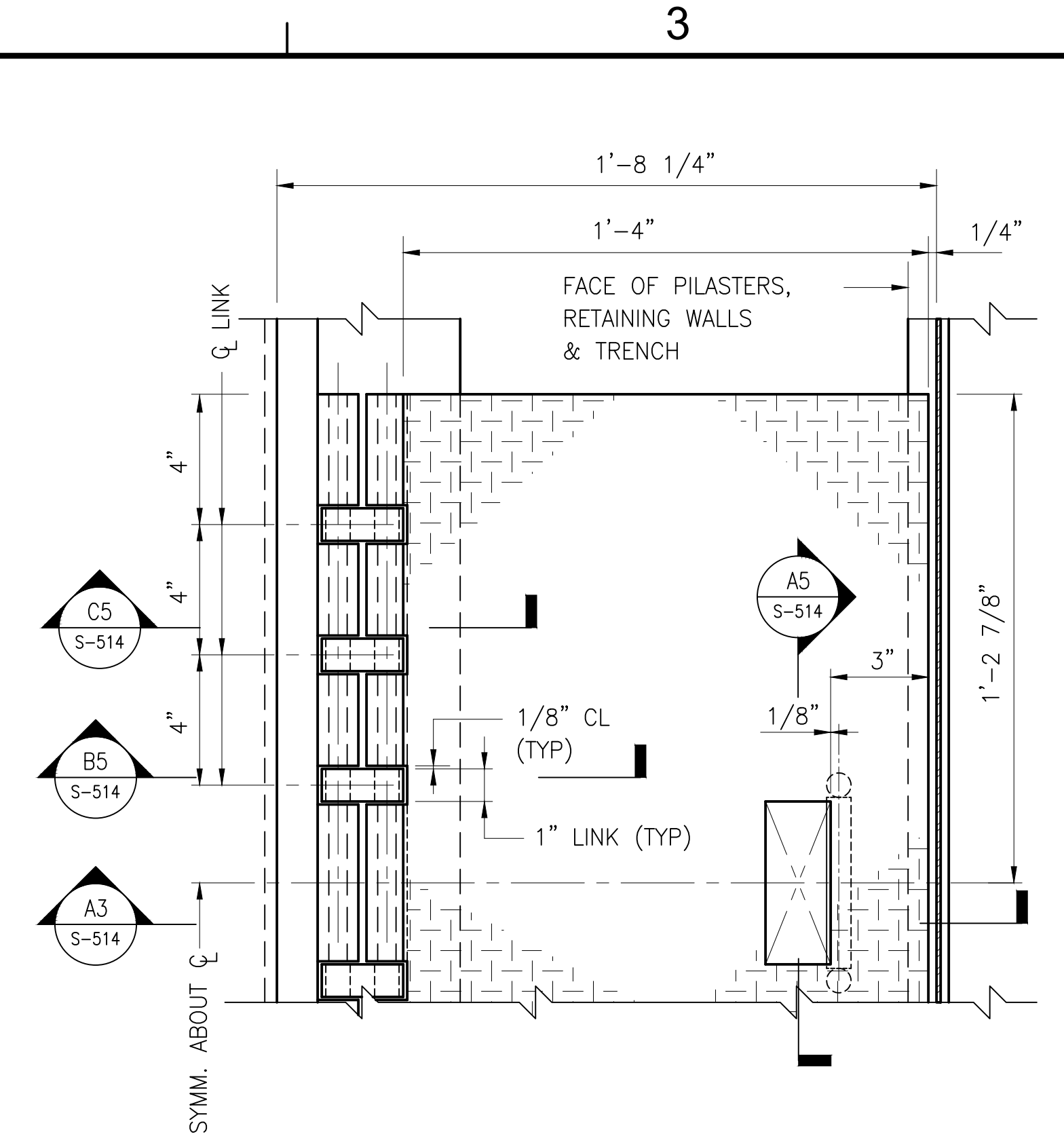
ELEVATION - ILD SURFACE MOUNTED BOLTWORKS - DOOR #2 SCALE: 1" = 1'-0" S-505 A1

DATE	09/14/22
APPROVED	
TYPE C STANDARD	
SYMBOL DESCRIPTION	
<p>FOR COMMANDER NAVFAC</p> <p>ACTIVITY</p> <p>SATISFACTORY TO DATE MM/DD/YYYY</p> <p>DESIGNER: IWR CHECKER: LMM</p> <p>BRANCH MANAGER: JTW</p> <p>CHIEF ENGINEER: RICHARD L. STEPHENS, P.E.</p> <p>FIRE PROTECTION: DPS</p>	
<p>DEPARTMENT OF THE NAVY</p> <p>NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND</p> <p>DESIGN AND CONSTRUCTION</p>	
<p>TYPE C BOX MAGAZINE</p> <p>OPTIONAL HIGH SECURITY HASP - ILD DETAILS</p>	
<p>SCALE: AS NOTED</p> <p>PROJECT NO.:</p> <p>CONSTR. CONTR. NO.:</p> <p>NAVFAC DRAWING NO. 14115956</p> <p>SHEET 23 OF 35</p> <p>S-513ALT</p> <p><small>DRAWING REVISION: 25 AUGUST 2020</small></p>	

FILE NAME: J:\DSE\Magazines\Box_Magazines Modified 2021\Type C\Final Drawings Type C\Final Drawings Type C AutoCAD\BOX_C_2022.02.dwg PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: helle.casino

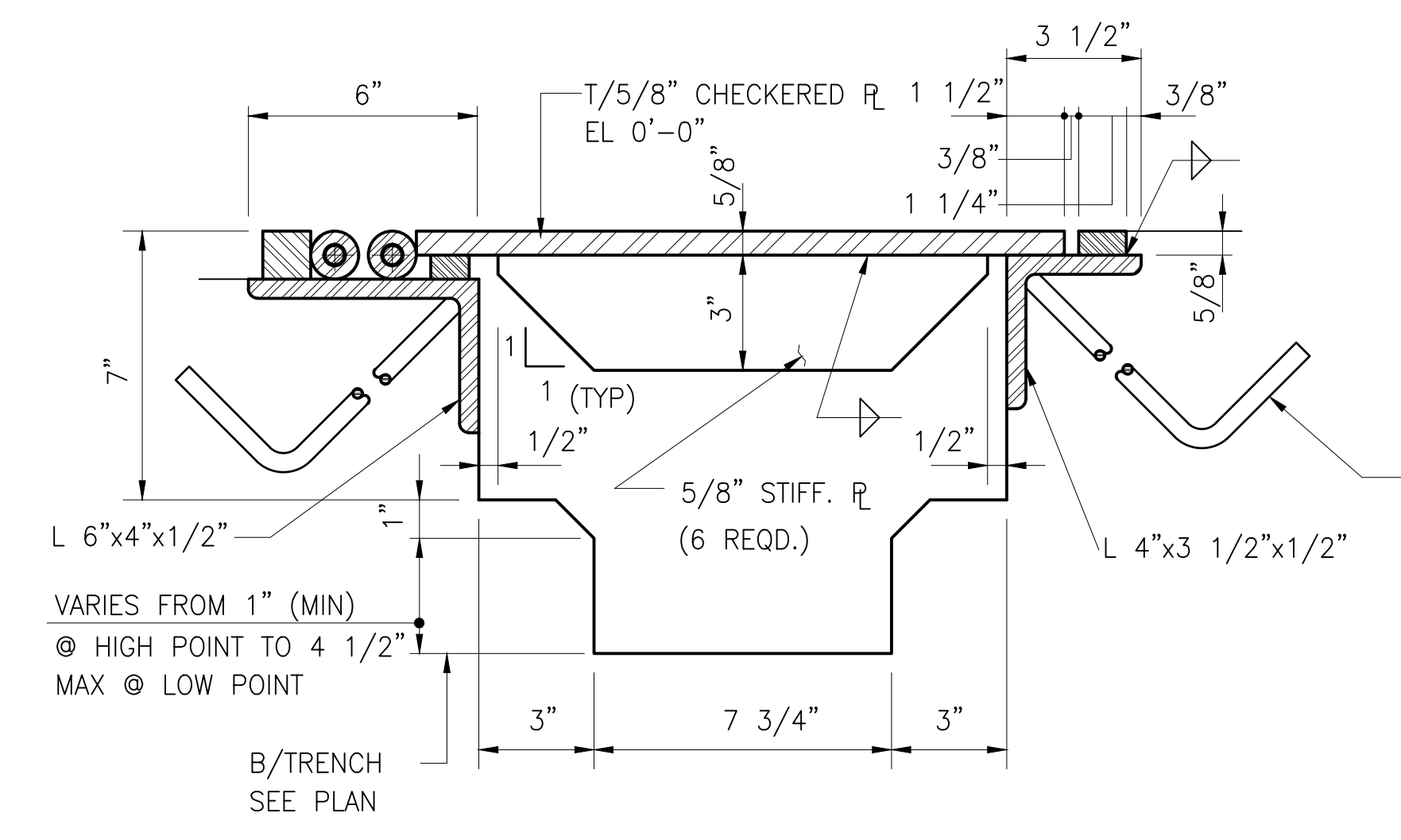


TYPE 1 TRENCH COVER
SCALE: 3" = 1'-0" S-305 **C2**

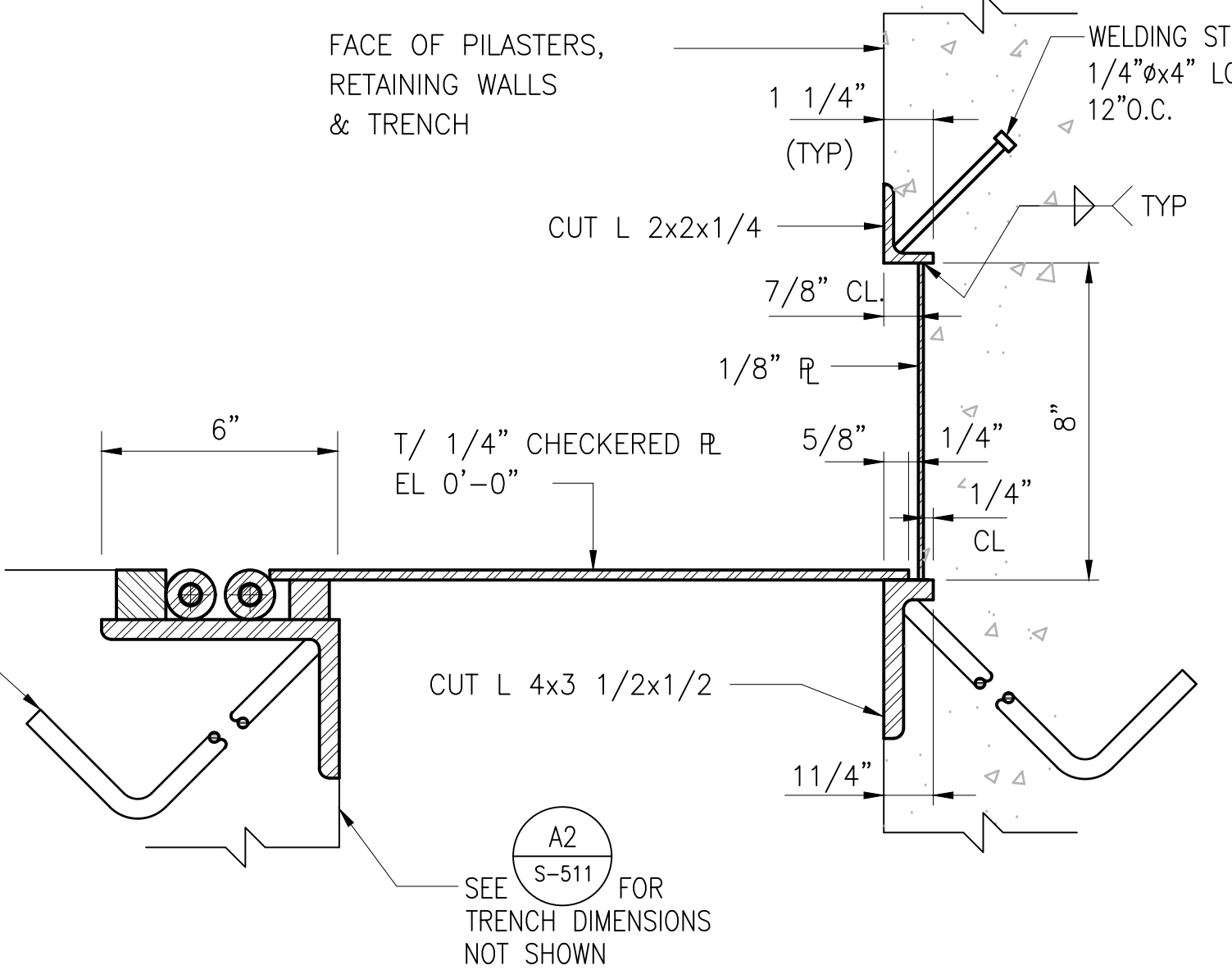


TYPE 2 TRENCH COVER
SCALE: 3" = 1'-0" S-305 **C3**

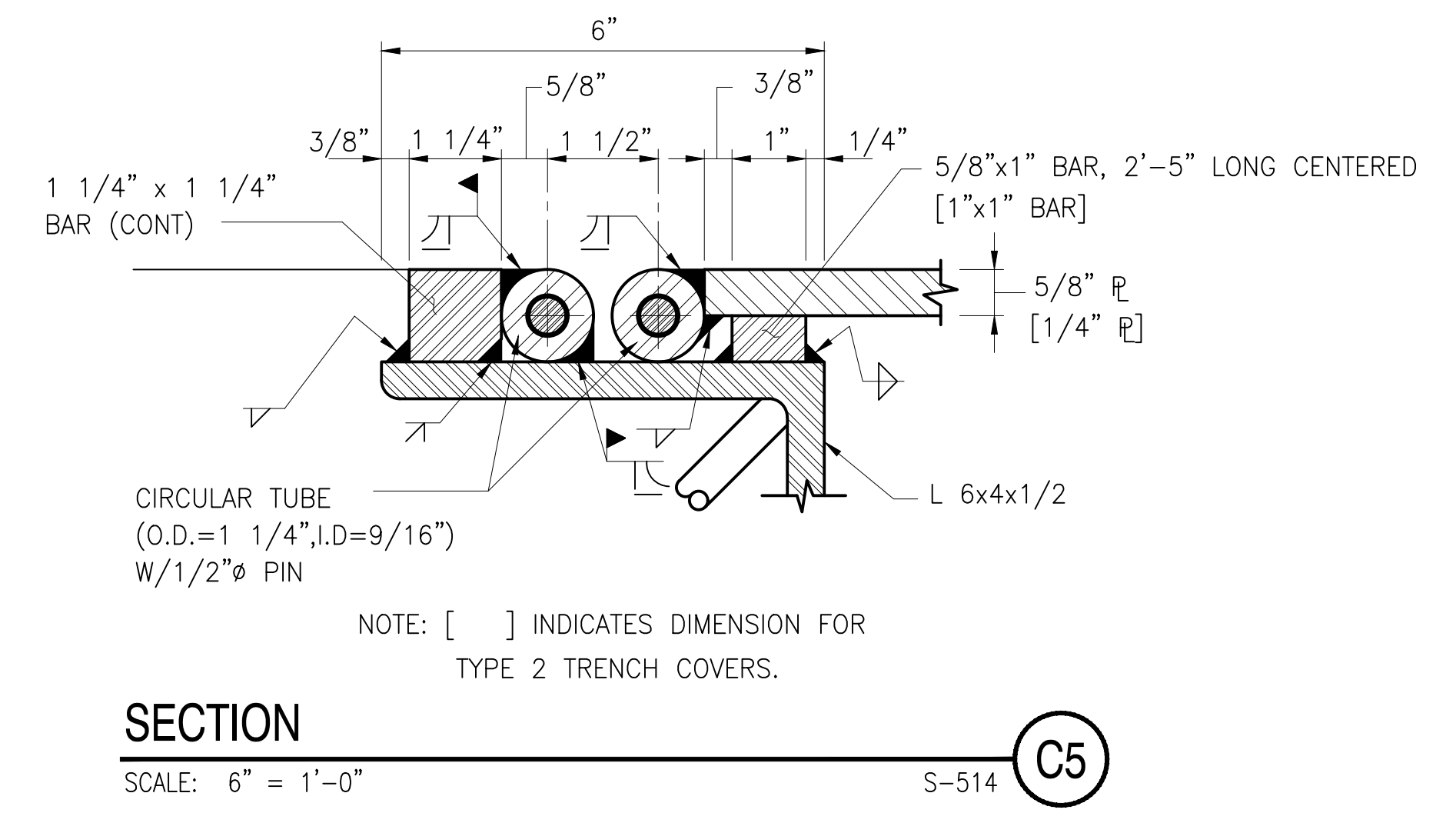
- NOTES:
1. TRENCH COVER PLATES SHALL HAVE A MINIMUM $f_y = 50$ KSI.
2. TRENCH COVER PLATES AND ATTACHMENTS INCLUDING HINGES AND PINS SHALL BE GALVANIZED.



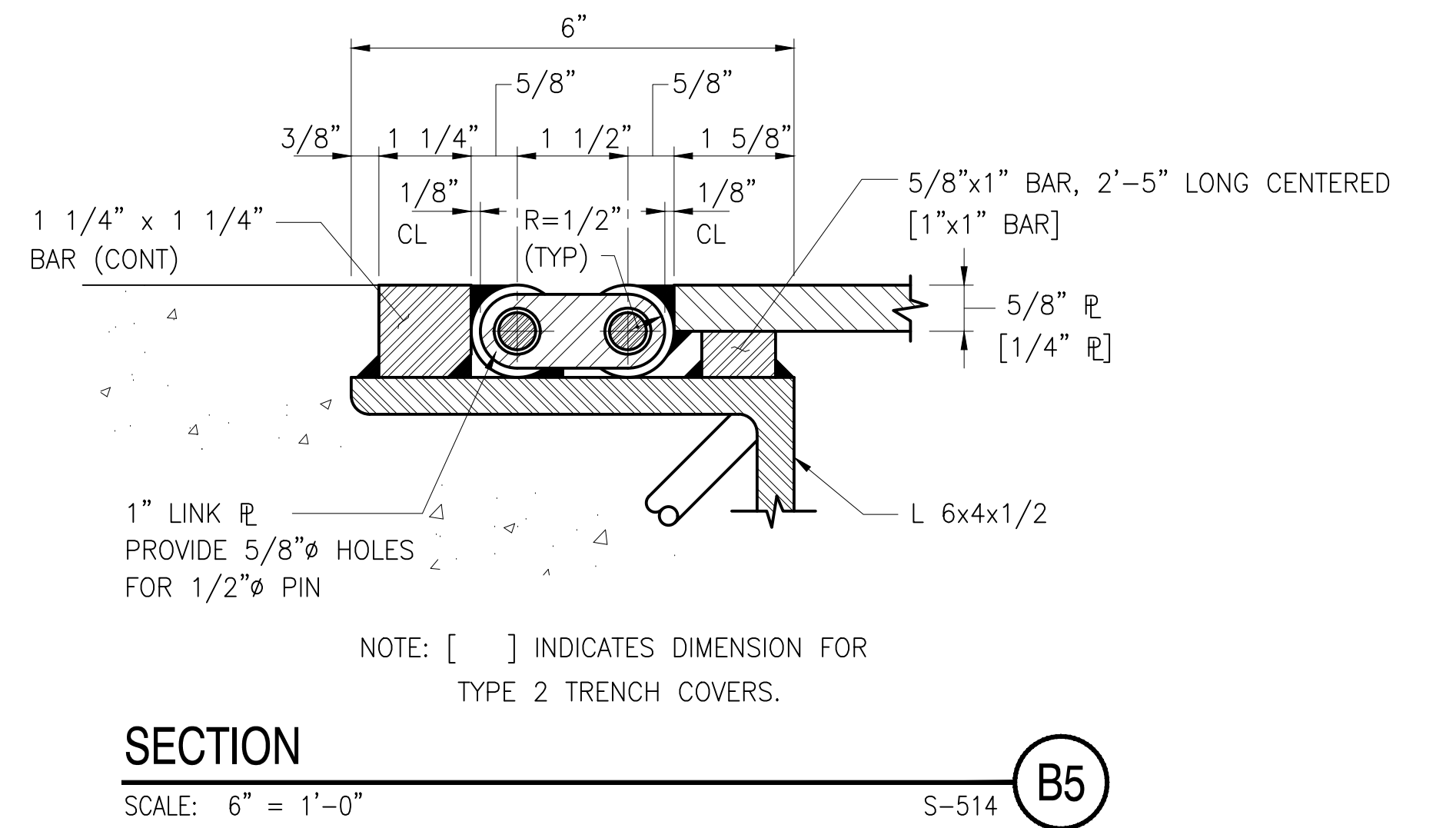
TYPE 1 TRENCH COVER
SCALE: 3" = 1'-0" S-101, S-305, S-503, S-504, S-514 **A2**



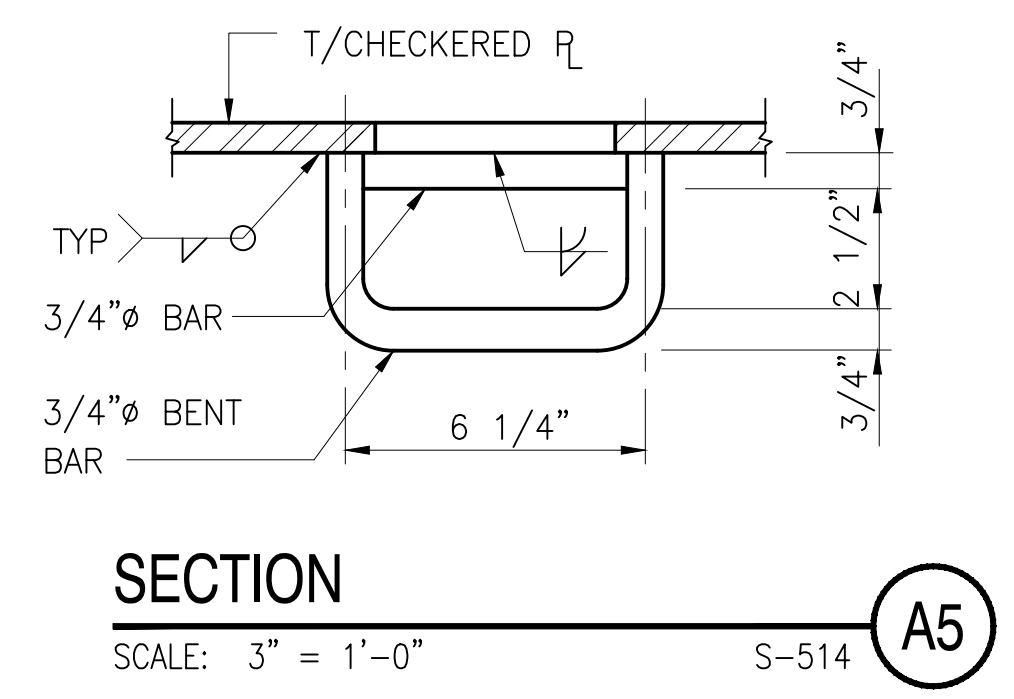
TYPE 2 TRENCH COVER
SCALE: 3" = 1'-0" S-101, S-305, S-514 **A3**



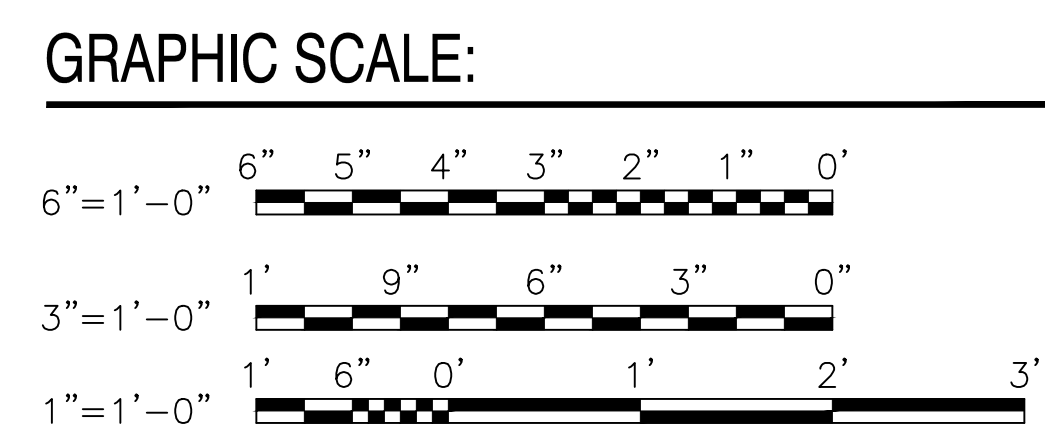
SECTION
SCALE: 6" = 1'-0" S-514 **C5**



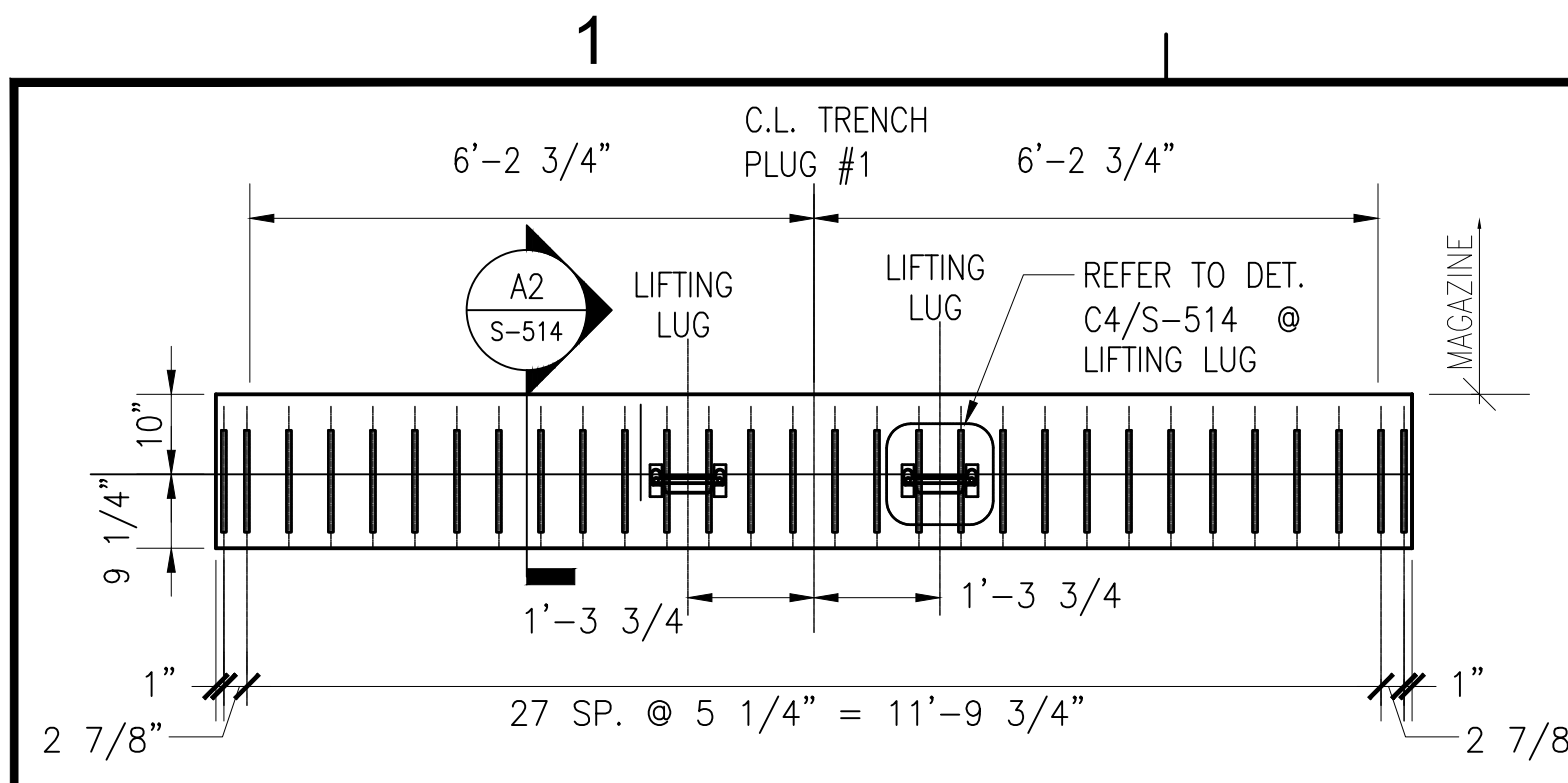
SECTION
SCALE: 6" = 1'-0" S-514 **B5**



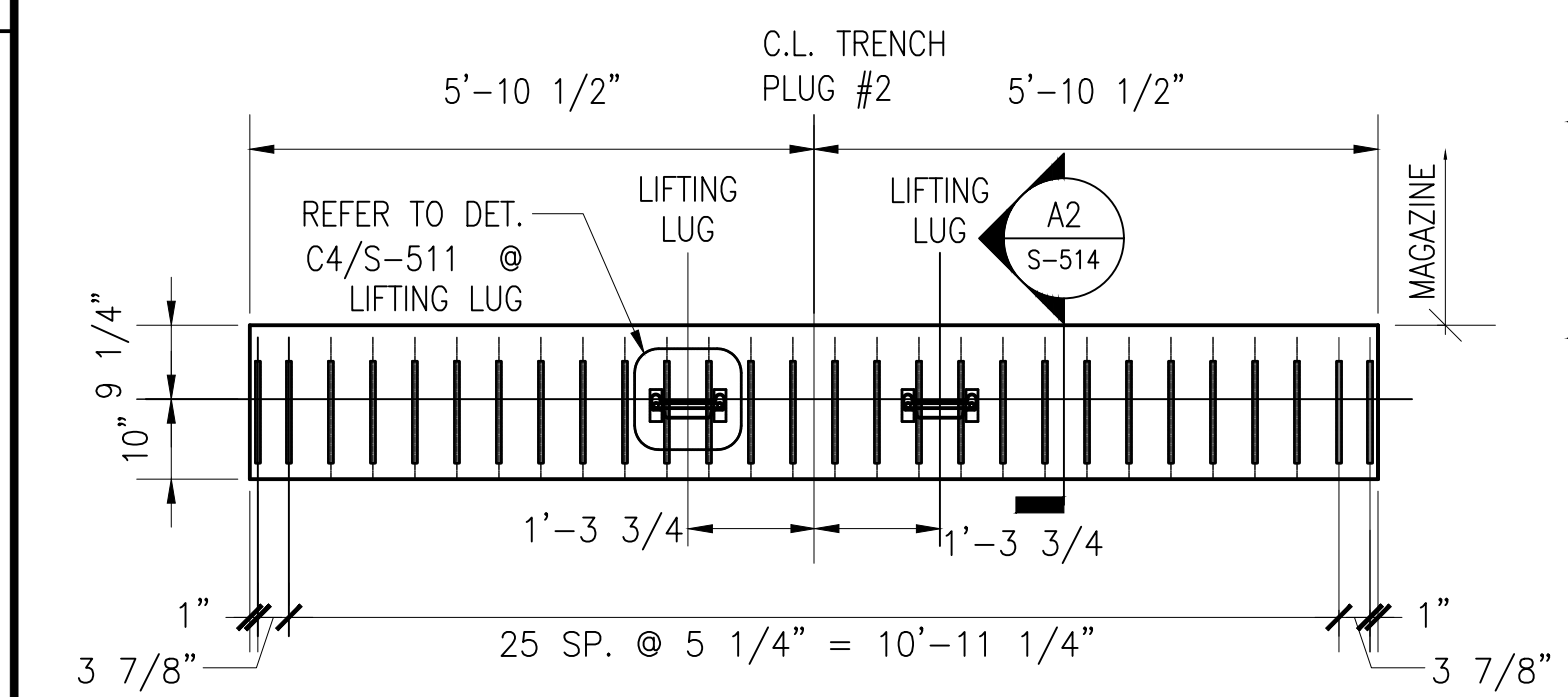
SECTION
SCALE: 3" = 1'-0" S-514 **A5**



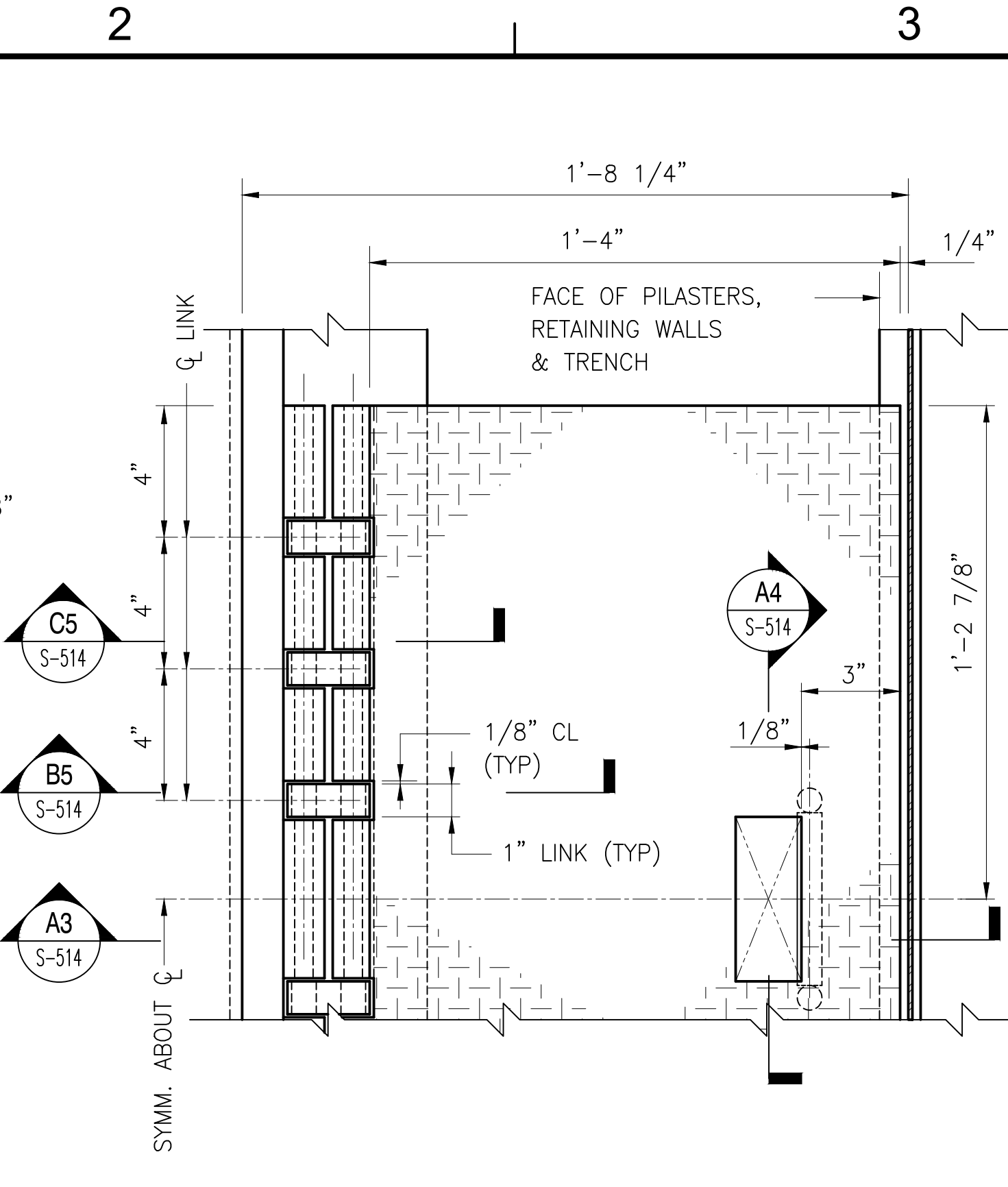
APPROVED	DATE	09/14/22
FOR COMMANDER NAVFAC	TYPE C STANDARD	
ACTIVITY	DESCRIPTION	
SATISFACTORY TO	DATE	MM/DD/YYYY
DES	DRW	IWR
CHK	LMM	
PM/DM		
BRANCH MANAGER	JTW	
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.	
FIRE PROTECTION	DPS	
BRANCH OFFICER	LEANNORCA/VA	
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
	TYPE C BOX MAGAZINE	
	TRENCH COVER DETAILS	
SCALE:	AS NOTED	
PROJECT NO.:		
CONSTR. CONTR. NO.:		
NAVFAC DRAWING NO.:	14115957	
SHEET	24	OF 35
	S-514	
	DRAWN BY	REVISION: 25 AUGUST 2020



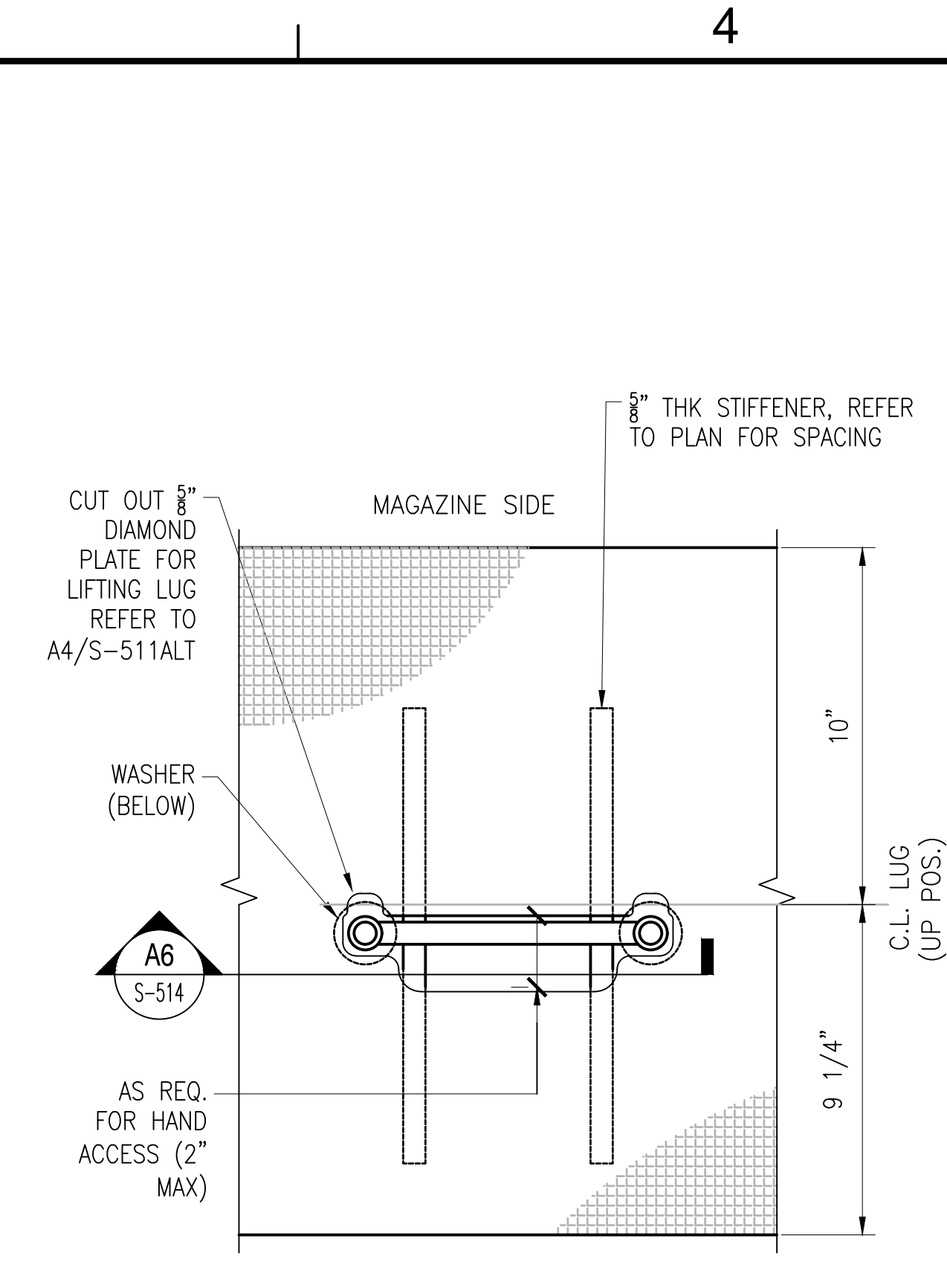
TRENCH PLUG A PLAN
 SCALE: 1/2" = 1'-0"
 NOTES: - VERIFY OVERALL LENGTH OF PLUG AND REDUCE AS NEEDED TO CLEAR WEATHERSTRIP



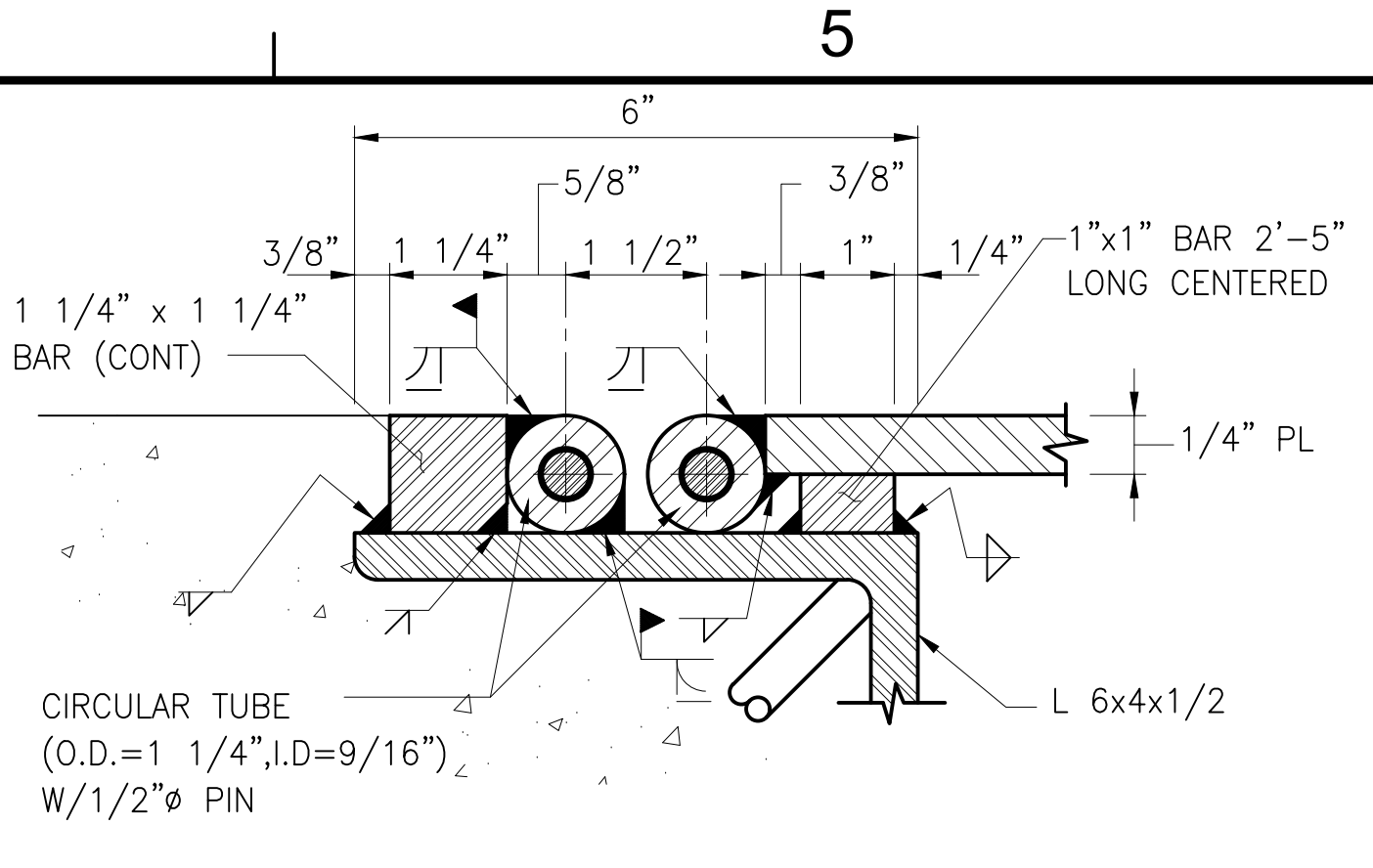
TRENCH PLUG B PLAN
 SCALE: 1/2" = 1'-0"



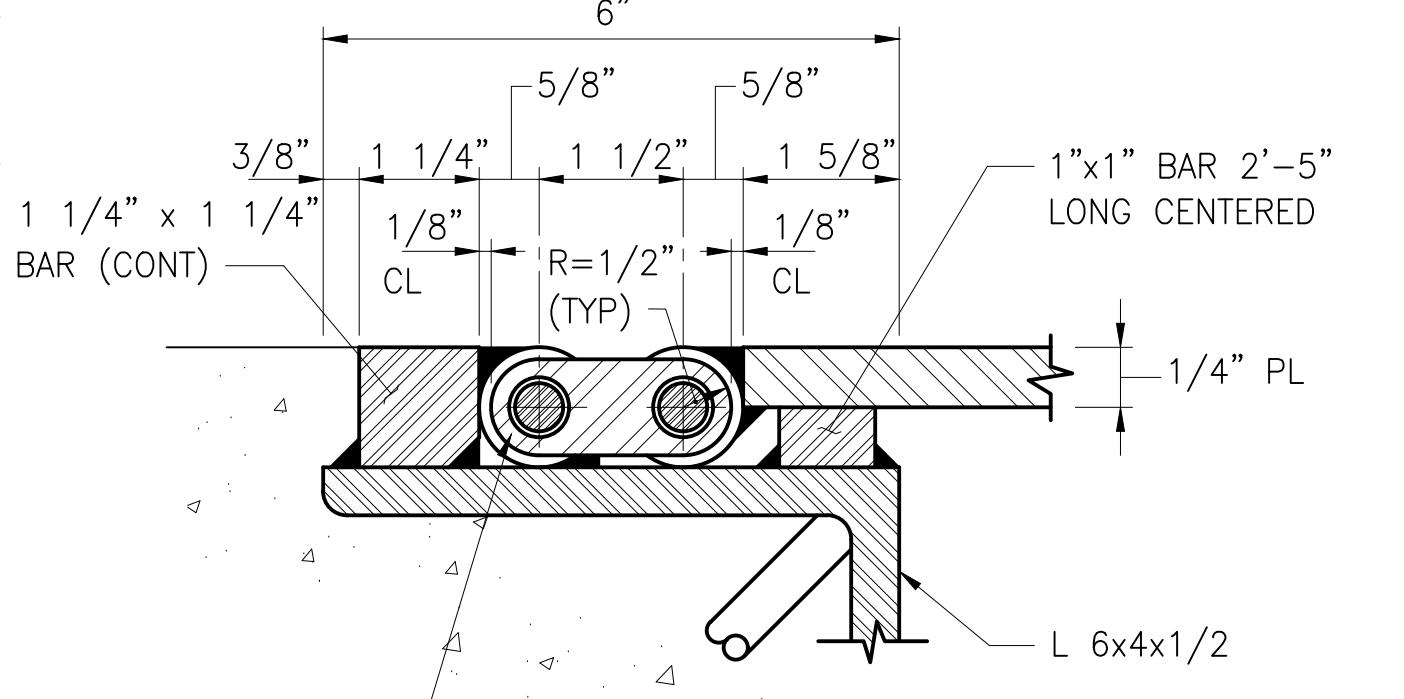
TYPE C TRENCH COVER
 SCALE: 3" = 1'-0"



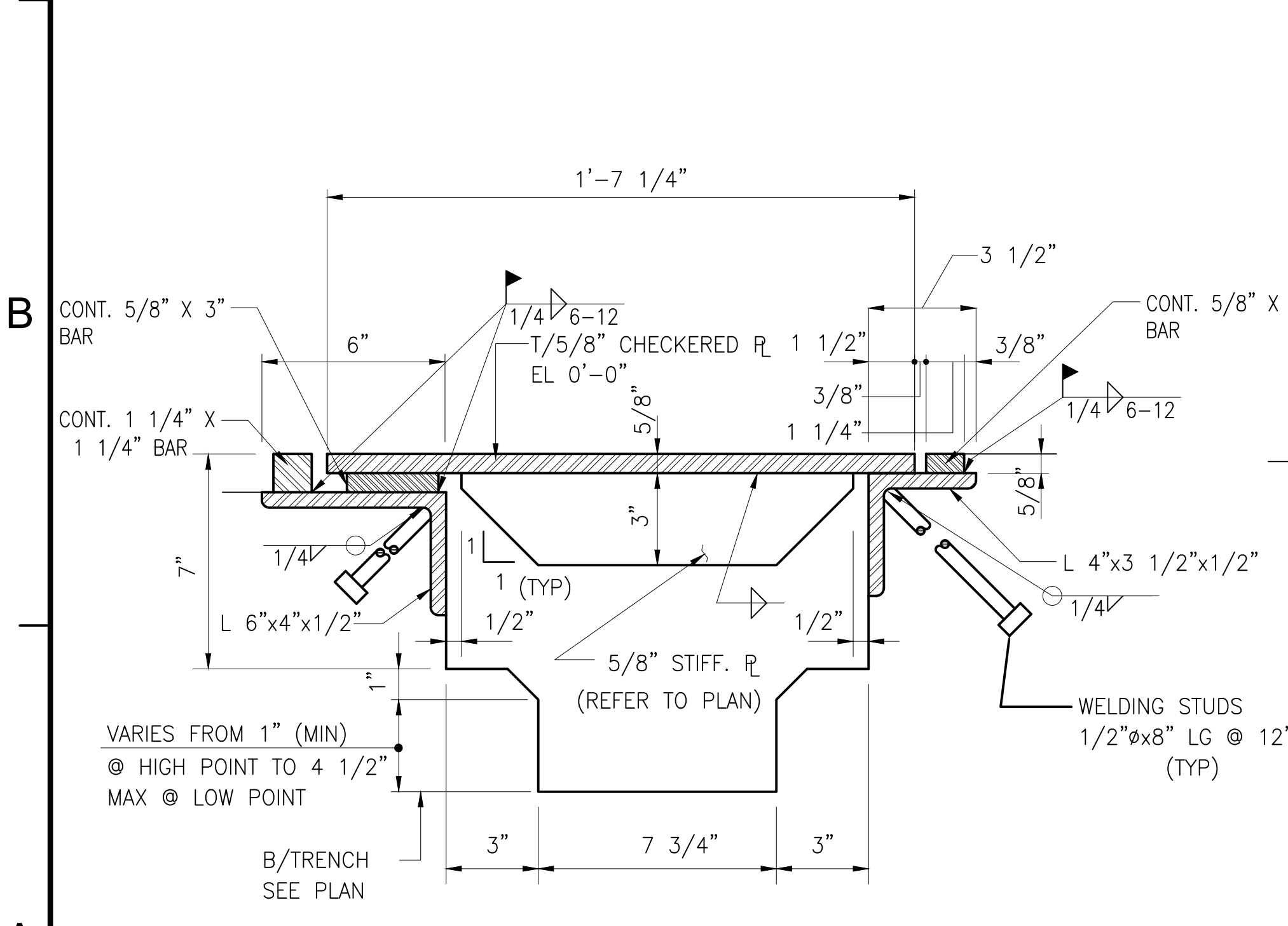
DETAIL: LIFTING LUG CUT OUT
 SCALE: 3" = 1'-0"



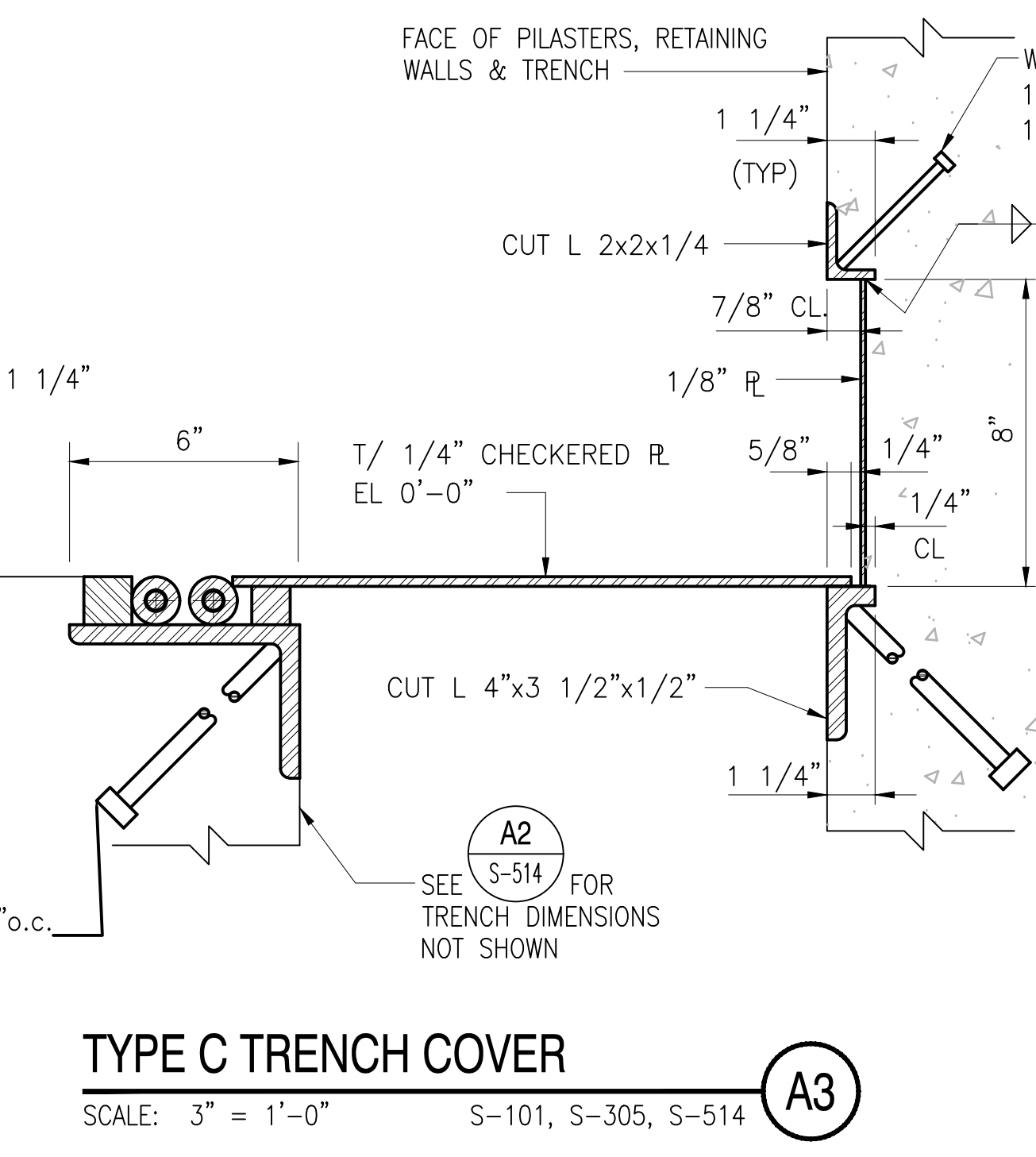
SECTION
 SCALE: 6" = 1'-0"



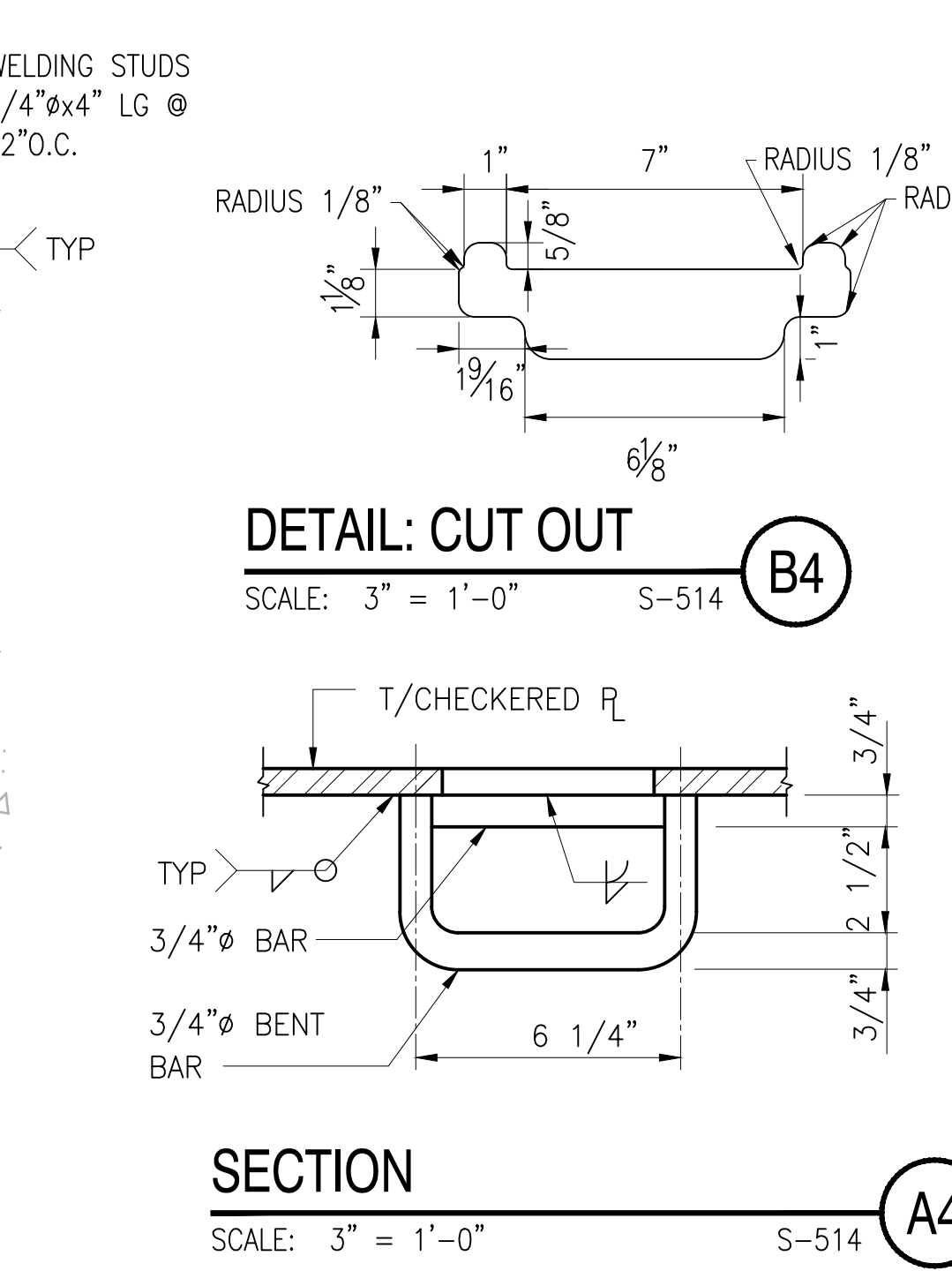
SECTION
 SCALE: 6" = 1'-0"



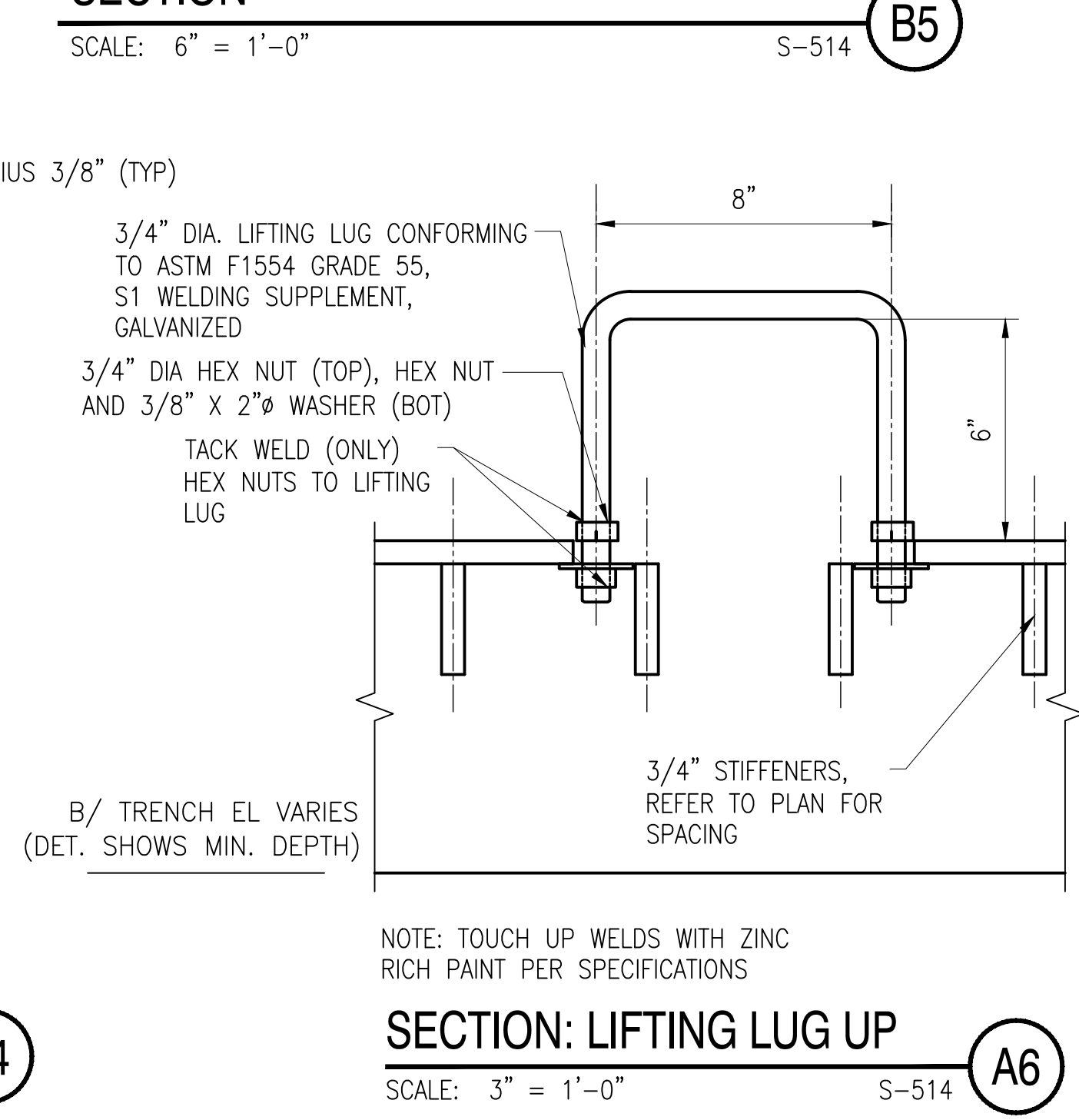
TYPE A & B TRENCH PLUG COVER
 SCALE: 3" = 1'-0"



TYPE C TRENCH COVER
 SCALE: 3" = 1'-0"



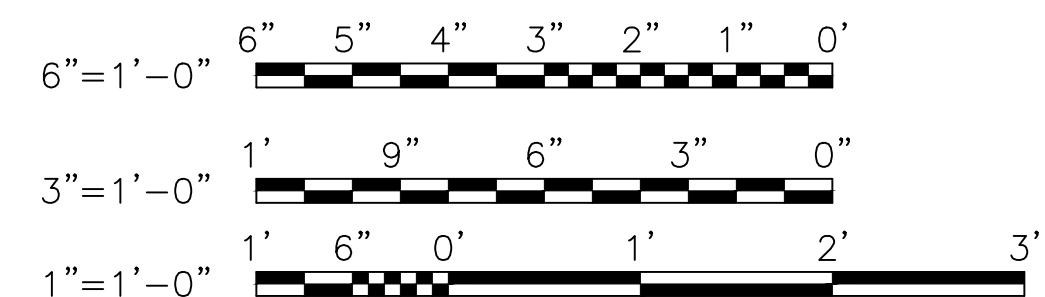
DETAIL: CUT OUT
 SCALE: 3" = 1'-0"



SECTION: LIFTING LUG UP
 SCALE: 3" = 1'-0"

- NOTES:
- TRENCH COVER PLATES SHALL HAVE A MINIMUM $f_y = 50$ KSI.
 - TRENCH COVER PLATES AND ATTACHMENTS INCLUDING HINGES AND PINS SHALL BE GALVANIZED.

GRAPHIC SCALE:



DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	DRW IWR CHK LMM
PMDM	
BRANCH MANAGER	JTW
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DESIGN AND CONSTRUCTION	
DEPARTMENT OF THE NAVY	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
TYPE C BOX MAGAZINE	
TRENCH PLUG DETAILS	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115958
SHEET	25 OF 35
S-514ALT	
<small>DRAWING REVISION: 25 AUGUST 2020</small>	

INTERIOR ELECTRICAL LEGEND

	LED LIGHTING FIXTURE.
	LED LIGHTING FIXTURE
	LIGHTING FIXTURE TYPE. SEE LIGHTING FIXTURE SCHEDULE ON SHEET E-101.
	SINGLE POLE SWITCH. 20A., 120/277V. LOWER CASE LETTER, WHEN USED, INDICATES FIXTURES CONTROLLED.
	DUPLEX CONVENIENCE RECEPTACLE. 20 A., 125 VAC.
	WEATHERPROOF DUPLEX CONVENIENCE RECEPTACLE WITH INTERNAL GROUND FAULT PROTECTION AND COVER THAT MAINTAINS WEATHERPROOF RATING WITH PLUG ATTACHED, 20 A., 125 VAC.
	JUNCTION BOX.
	IDS PROCESSING CONTROL UNIT PANEL.
	COMBINATION REVERSING STARTER.
	ELECTRICAL PANELBOARD (120/240 VOLT).
	SINGLE POINT GROUND BAR (SPGB). SEE DETAIL "D4" ON SHEET E-501.
	SURGE PROTECTIVE DEVICE
	WATT-HOUR DEMAND METER.
	INDICATES 1/2" GALVANIZED RMC CONDUIT UON. NO TICK MARKS INDICATE 2 #12 CONDUCTORS & 1 #12 GND. TICK MARKS, WHEN SHOWN, INDICATE NUMBER OF #12 CONDUCTORS IF OTHER THAN THREE; () INDICATES GROUND.
	HOMERUNS TO PANEL. PANEL & CIRCUIT DESIGNATIONS AS INDICATED.
	LIGHTNING PROTECTION AIR TERMINAL.
	DOOR PUSHBUTTON CONTROL. WP, WHEN USED, INDICATES WEATHERPROOF.
	DOOR MOTOR OPERATOR, 3/4 HORSEPOWER, 240 VOLT, 1 PHASE.
	LIMIT SWITCH.
	POWER CABLE REEL.
	BYPASS SWITCH.
	CONTACTOR.
	HEAT SENSOR EMBEDDED IN PAVEMENT.
	COLD SENSOR EMBEDDED IN PAVEMENT.
	HEAT TRACING POWER BOX.
	AUTOMATIC SNOW DETECTOR CONTROL PANEL.
	TEMPERATURE CONTROL PANEL.
	DRAIN PIPE HEAT TRACING CABLE.
	DOOR TRENCH HEAT TRACING CABLE.
	GROUND ELECTRODE CONDUCTOR.
	WORK NOTE SYMBOL.
	POWER PACK RATED AT 20A, 120V.
	WALL MOUNT PIR OCCUPANCY/VACANCY SENSOR.
	BALANCED MAGNETIC SWITCH.
	CARD READER.
	PASSIVE INFRARED SENSOR.

EXTERIOR ELECTRICAL LEGEND

	GROUND ROD - 3/4" X 10' COPPER GROUND ROD. GROUND ROD SHALL BE INSTALLED AT A MINIMUM OF 10' IN NATURAL GRADE.
	GROUND TEST WELL. SEE DETAIL "C1" ON SHEET E-501.
	GROUND CONDUCTOR, #2/0 BARE CU WITH EXOTHERMIC WELD OR APPROVED COMPRESSION CONNECTOR.

ABBREVIATIONS

A	AMPERES
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
COND	CONDUIT
CL	CENTERLINE
CU	COPPER
DWG	DRAWING
FA	FIRE ALARM
FT	FOOT
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HID	HIGH INTENSITY DISCHARGE
HT	HEIGHT
IDS	INTRUSION DETECTION SYSTEM
J	JUNCTION BOX
LS	LIMIT SWITCH
MIN	MINIMUM
MOS	MULTI-OCCUPANCY SENSOR
MTG	MOUNTING
NOSSA	NAVAL ORDNANCE SAFETY AND SECURITY ACTIVITY
NTS	NOT TO SCALE
PNL	PANEL
PVC	POLYVINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL
SPD	SURGE PROTECTION DEVICE
SPGB	SINGLE POINT GROUND BAR
TEL	TELEPHONE
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
UON	UNLESS OTHERWISE NOTED
W	WIRE
WP	WEATHERPROOF EQUIPMENT

GENERAL NOTES

- UNLESS OTHERWISE INDICATED, ALL ELECTRICAL WORK AND MATERIAL IS NEW AND SHALL BE PROVIDED BY THE CONTRACTOR.
- IF HEAT TRACING IS INSTALLED, REFER TO SHEET E-801 FOR THE ADDITIONAL POWER CIRCUITS.
- PROVIDE SURGE PROTECTION FOR ALL CONDUCTORS (ENTERING AND EXITING THE MAGAZINE) IN ACCORDANCE WITH NFPA 780. CONNECT ALL SURGE PROTECTION GROUNDING CONDUCTORS TO THE SECONDARY GROUND RING.
- IF THE MAGAZINE SPACE IS DETERMINED TO BE A HAZARDOUS (CLASSIFIED) LOCATION, THEN EXTENSIVE REDESIGN IS REQUIRED TO MEET NFPA 70, ARTICLE 500.
- ALL CONDUIT ENTERING AND INSIDE OF THE MAGAZINE SHALL BE RGS CONDUIT.

NOTES TO DESIGNER

- A SIGNIFICANT CHANGE MADE TO THE STANDARD DRAWINGS DURING THIS UPDATE IS THAT "THE REQUIREMENT TO CONSIDER ORDNANCE STORAGE MAGAZINES AS HAZARDOUS ELECTRICAL SPACES HAS BEEN DETERMINED BY NOSSA TO NOT BE REQUIRED FOR GENERAL PURPOSE ORDNANCE FACILITIES". THE ONLY PLACE WHERE HAZARDOUS ELECTRICAL EQUIPMENT IS REQUIRED IS IN LOCATIONS WHERE AN EXPLOSIVE ATMOSPHERE (DUST, GASES, VAPORS, ETC PER NFPA 70, ARTICLE 500) MIGHT BE PRESENT, SUCH AS AT AN EXPLOSIVE PRODUCTION FACILITY. THE ORIGINAL OLDER STANDARD DESIGNS FOR THE BOX MAGAZINES INCLUDED THE REQUIREMENT FOR HAZARDOUS ELECTRICAL FIXTURES UNNECESSARILY.
- THREE FEET WORKING CLEARANCE MUST BE MAINTAINED FOR THE PANELBOARD PER NFPA 70. WHERE MAXIMUM STORAGE SPACE IN THE MAGAZINE IS CRITICAL, PANELBOARD AND SURGE PROTECTIVE DEVICES/TRANSIENT VOLTAGE SURGE SUPPRESSORS (SPD/TVSS) MAY BE LOCATED EXTERIOR OF MAGAZINE. COORDINATE WITH ACTIVITY, AND MODIFY DRAWINGS AND PANELBOARD ENCLOSURE ACCORDINGLY.
- SINGLE PHASE SYSTEMS IDENTIFIED WILL BE APPROPRIATE FOR MOST MAGAZINES. IF LARGER DOOR MOTORS ARE USED, DESIGNER SHOULD DETERMINE IF MORE EXPENSIVE, THREE PHASE SYSTEM WOULD BE MORE APPROPRIATE AND MODIFY RISER AND DRAWINGS ACCORDINGLY.
- IF HEAT TRACING IS INSTALLED, REFER TO SHEET E-801 FOR THE ADDITIONAL POWER CIRCUITS. IF HEAT TRACING IS NOT PROVIDED, REMOVE SYMBOLS RELATED TO HEAT TRACING FROM THE INTERIOR ELECTRICAL LEGEND ON THIS SHEET.



APPROVED

FIR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE MM/DD/YY

DES | DRW | RUL | CHK | SEK

PMIDM

BRANCH MANAGER SEK

CHIEF ENGINEER RICHARD L. STEPHENS, P.E.

FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND

DESIGN AND CONSTRUCTION

LEBANON, OHIO

TYPE C BOX MAGAZINE

LEGENDS, ABBREVIATIONS, AND GENERAL NOTES

SCALE: AS NOTED

PROJECT NO.:

CONSTR. CONTR. NO.:

NAVFAC DRAWING NO. 14115959

SHEET 26 OF 35

E-001

DRAWING REVISION: 25 AUGUST 2020

DATE 09/14/22

DESCRIPTION TYPE C STANDARD

DATE 09/14/22

DATE 09/14/22

DATE 09/14/22

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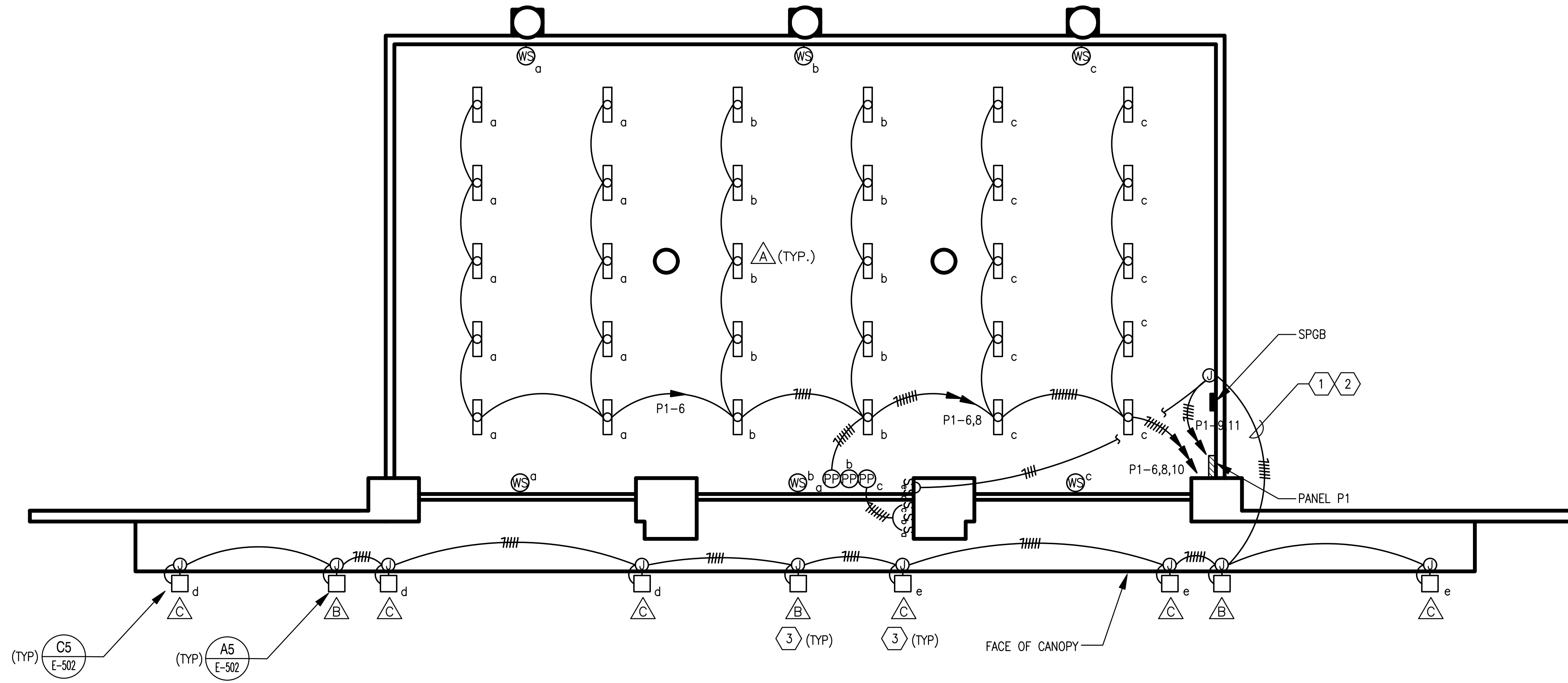
5

D

C

B

A



LIGHTING PLAN
SCALE : 1/8" = 1'-0"

LIGHTING FIXTURE SCHEDULE						
FIXTURE SYMBOL	SKETCH NO. & TYPE	NUMBER AND TYPE OF LAMPS	VOLTAGE	MOUNTING	NOTES	LUMEN OUTPUT
△	NL-11 SEE SHEET E-701	LED	120	SURFACE CEILING MOUNT		12000
△	XL-17 SEE SHEET E-701	LED	120	WALL MOUNTED 14' AFG	2, 3	1750
△	XL-21 SEE SHEET E-701	LED	120	WALL MOUNTED 14' AFG	1	7000

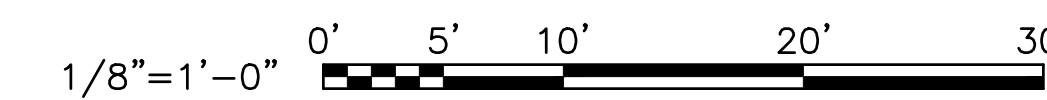
LIGHTING FIXTURE SCHEDULE NOTES

1. LOAD/UNLOAD LIGHTING.
2. PROVIDE WITH INTEGRAL PHOTOCELL CONTROL.
3. SECURITY LIGHTING.

NOTES

1. CONDUIT MUST ENTER VIA WALL NEAR SINGLE POINT GROUND BAR. AT POINT OF ENTRY INTO THE MAGAZINE, BOND CONDUIT TO SINGLE POINT GROUND BAR WITH #2/0 BARE CU.
2. LIGHTING TYPE "B" FIXTURES SHALL BE FED FROM CIRCUIT P1-9. LIGHTING FIXTURE TYPE "C" FIXTURES SHALL BE FED FROM CIRCUIT P1-11 AND CONTROLLED BY LIGHT SWITCHES "d" AND "e" AS INDICATED.
3. LIGHTING TYPE "B" AND "C" FIXTURES SHALL BE MOUNTED TO THE STRUCTURAL SUPPORT ANGLES LOCATED ON THE FRONT OF THE CANOPY. COORDINATE EXACT LOCATION OF STRUCTURAL SUPPORT ANGLES WITH THE STRUCTURAL DRAWINGS.

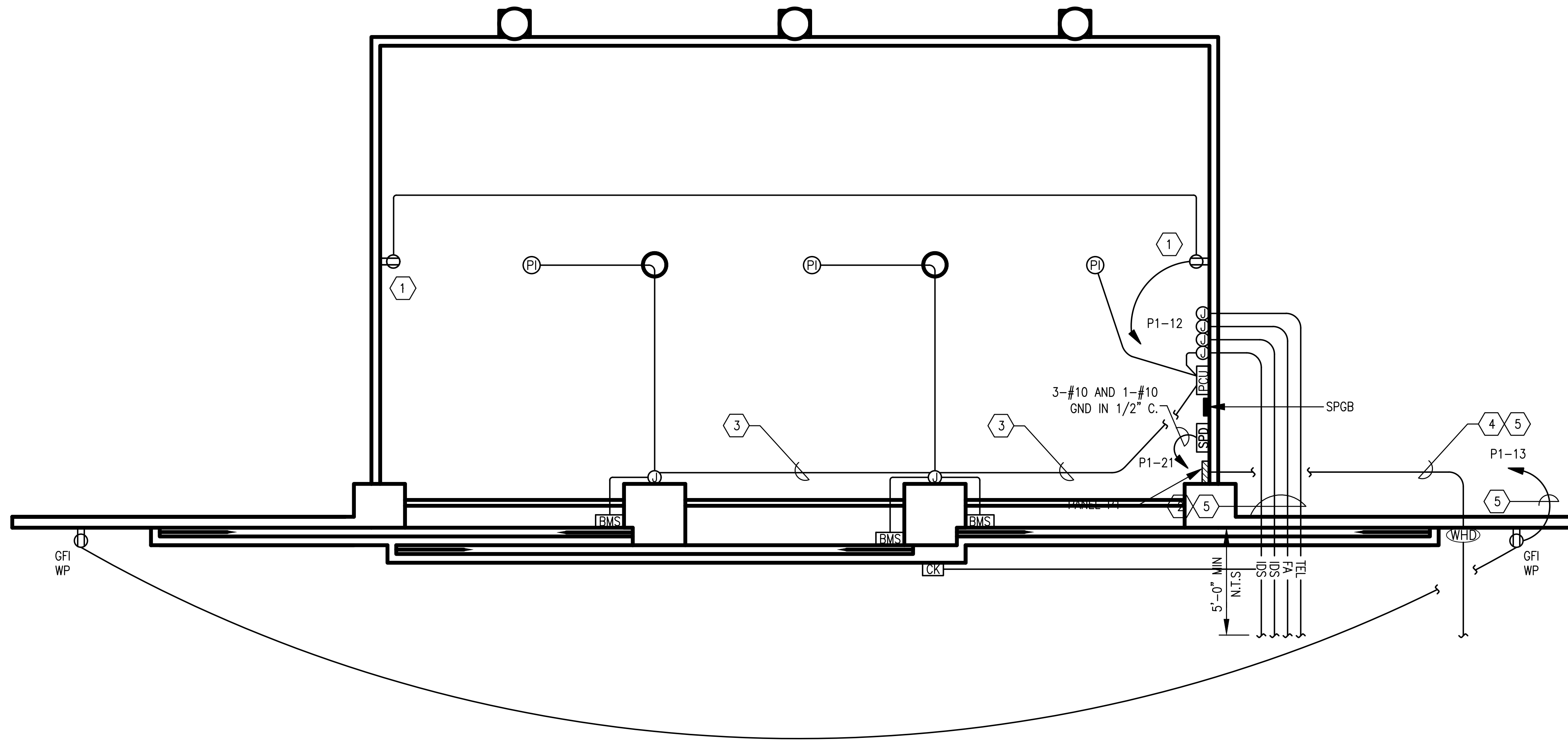
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DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	MM/DD/YY
BRANCH MANAGER	SEK
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
DESIGN AND CONSTRUCTION	BRANDERDALL VA
TYPE C BOX MAGAZINE	
LIGHTING PLAN	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	--
NAVFAC DRAWING NO.:	14115960
SHEET	27 OF 35
E-101	
DRAWING REVISION: 25 AUGUST 2020	

FILE NAME: J:\DSE\Magazines\ E-101 - PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: leah.casano

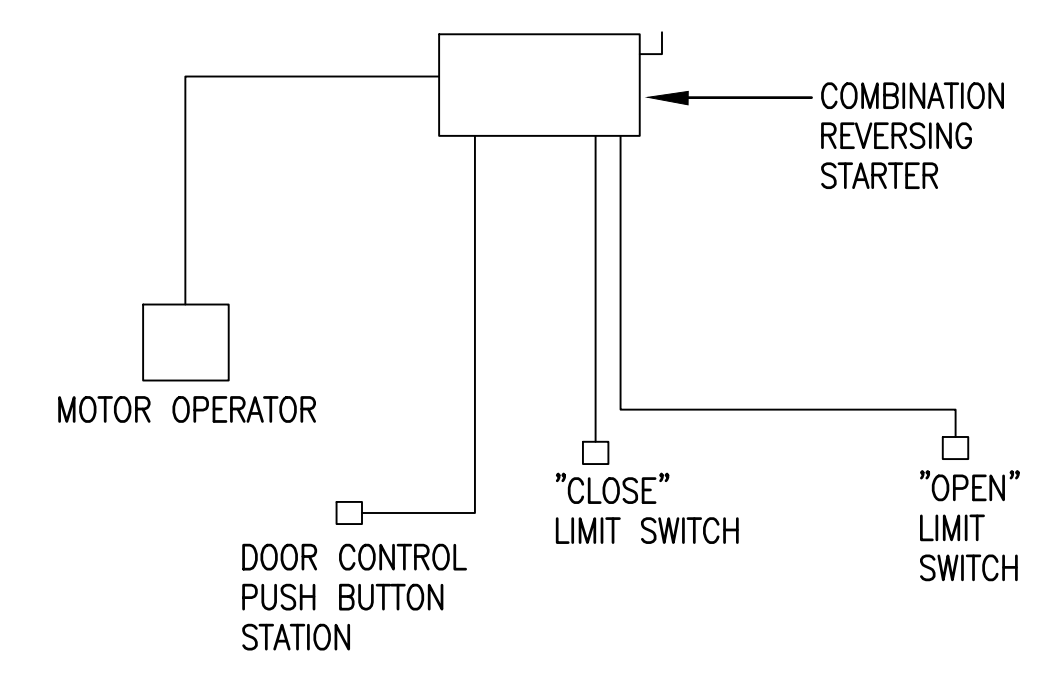
FILE NAME: J:\DSE\Magazines\2021\Typo C\Final Drawings Type C\Final Drawings Type C_2022.9.27.dwg PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: lella.coano



POWER PLAN
SCALE : 1/8" = 1'-0"

NOTES

- ① MOUNT RECEPTACLES AT 48" AFF OR AFG.
- ② 2" EMPTY CONDUITS FOR INTRUSION DETECTION SYSTEM (IDS), FIRE ALARM (FA) AND TELEPHONE (TEL).
- ③ 2" EMPTY CONDUIT FOR INTRUSION DETECTION SYSTEM (IDS).
- ④ 4" CONDUIT FOR POWER FEEDER TO PANELBOARD "P1".
- ⑤ CONDUITS MUST ENTER VIA WALL NEAR SINGLE POINT GROUND BAR. AT POINT OF ENTRY INTO THE MAGAZINE, BOND EACH CONDUIT TO SINGLE POINT GROUND BAR WITH #2/0 BARE CU.

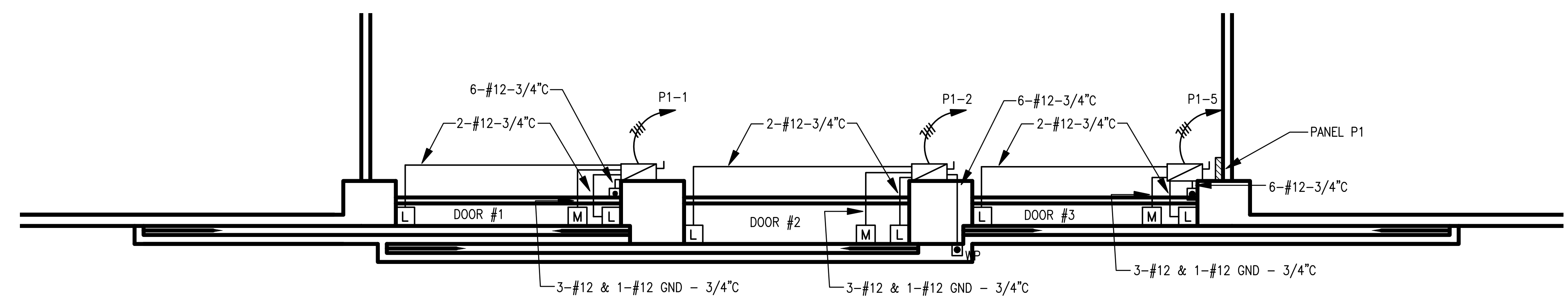
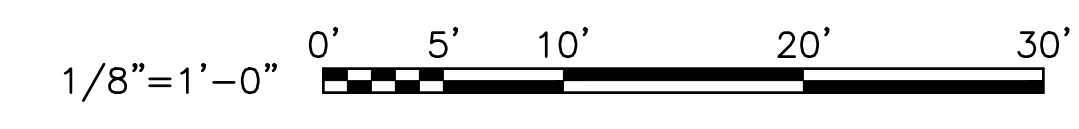


SLIDING DOOR WIRING INSTALLATION DIAGRAM
TYPICAL FOR DOOR #1, DOOR #2, AND DOOR #3

SLIDING DOOR WIRING INSTALLATION DIAGRAM NOTES

1. DESIGN USES 240V SINGLE PHASE POWER FOR THE MOTOR.
2. INCLUDE OPEN AND CLOSE LIMIT SWITCHES TO TURN OFF MOTOR IN THE MOTOR CONTROL CIRCUIT.
3. DOOR CONTROL PUSHBUTTON STATION SHALL BE MOUNTED 48" ABOVE PLATFORM. ROUTE CIRCUIT CONCEALED OUTSIDE OF THE MAGAZINE BACK TO THE COMBINATION REVERSING STARTER VIA THE SERVICE ENTRANCE PENETRATIONS.
4. THE EXACT LOCATION OF DOOR OPERATOR AND LIMIT SWITCHES SHALL BE IN ACCORDANCE WITH DOOR MANUFACTURER'S REQUIREMENTS.

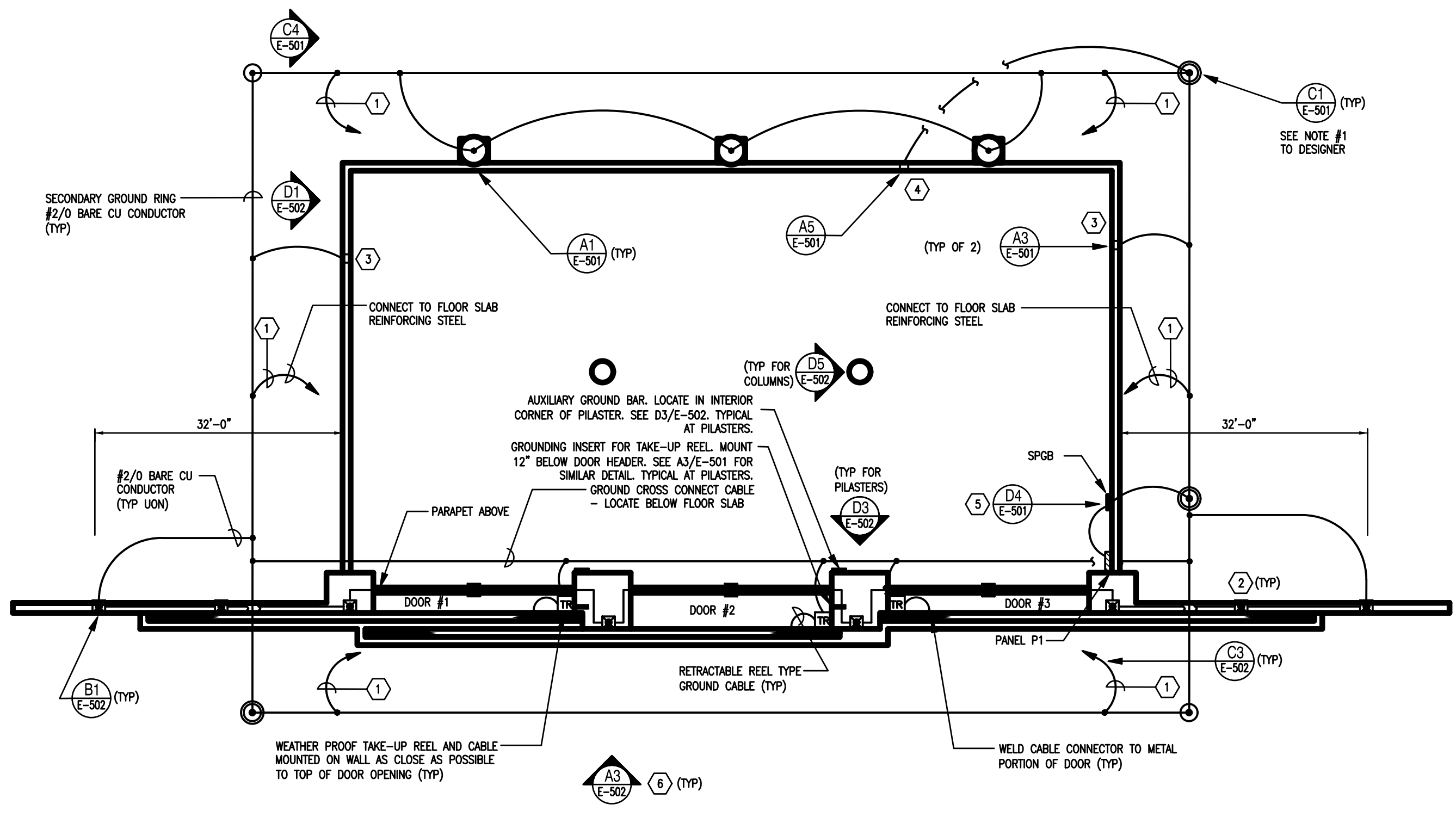
GRAPHIC SCALE



PARTIAL POWER PLAN - DOOR CONTROLS
SCALE : 1/8" = 1'-0"

DATE: 09/14/22	APP'R:
DESCRIPTION: TYPE C STANDARD	DRAWN:
<p>SEAL</p> <p>A/E INFO</p>	
<p>APPROVED:</p> <p>FIR COMMANDER NAVFAC</p> <p>ACTIVITY:</p> <p>SATISFACTORY TO: DATE: MM/DD/YY</p> <p>DES: [] DRW: R.J.L. CHK: S.E.K.</p> <p>PM/DM:</p> <p>BRANCH MANAGER: S.E.K.</p> <p>CHIEF ENGINEER: RICHARD L. STEPHENS, P.E.</p> <p>FIRE PROTECTION: DPS</p>	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND BRANFORD, VA
<p>TYPE C BOX MAGAZINE</p> <p>POWER PLANS</p>	
<p>SCALE: AS NOTED</p> <p>PROJECT NO.:</p> <p>CONSTR. CONTR. NO.:</p> <p>NAVFAC DRAWING NO. 14115961</p> <p>SHEET 28 OF 35</p> <p>E-102</p> <p style="font-size: small;">DRAWING REVISION: 25 AUGUST 2020</p>	

FILE NAME: J:\DSEA\Magazines\Box_Magazines Modified 2021\Type C\Final Drawings Type C_2022.9.27.dwg C:\AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: E-103 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: leahh.casano



GROUNDING PLAN
SCALE : 1/8" = 1'-0"

1/8" SCALE
E-103

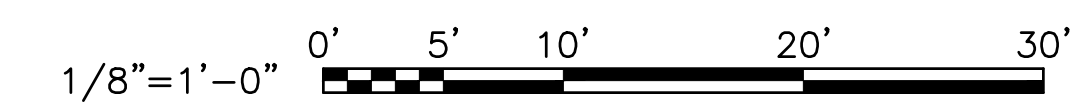
NOTES

- ① ALL REINFORCING STEEL IN BUILDING SHALL BE BONDED WITH #2/0 BARE COPPER CONDUCTORS TO EARTH ELECTRODE SYSTEM (SECONDARY GROUND RING). SEE DETAILS ON SHEET E-502.
- ② LIGHTNING PROTECTION POINTS SHALL BE LOCATED AS SHOWN ON THE PLAN. THE MAXIMUM SPACING SHALL BE 16'-0".
- ③ PROVIDE STATIC GROUND INSERT, NAMPLATE AND REMOVABLE TAG ON EACH SIDE OF THE MAGAZINE AS INDICATED.
- ④ PROVIDE ORDNANCE GROUND INSERT WITH #2/0 BARE CU CONDUCTOR IN 3/4" PVC CONDUIT TO GROUND TEST WELL AS INDICATED. PROVIDE A NAMEPLATE AND REMOVABLE TAG.
- ⑤ PROVIDE A GROUND BAR NEXT TO THE SERVICE ENTRANCE PENETRATIONS AND USE AS THE SINGLE POINT GROUND LOCATION FOR INCOMING SERVICES.
- ⑥ PROVIDE BONDING CONNECTIONS ACROSS CONSTRUCTION JOINTS WHEN THEY ARE USED.

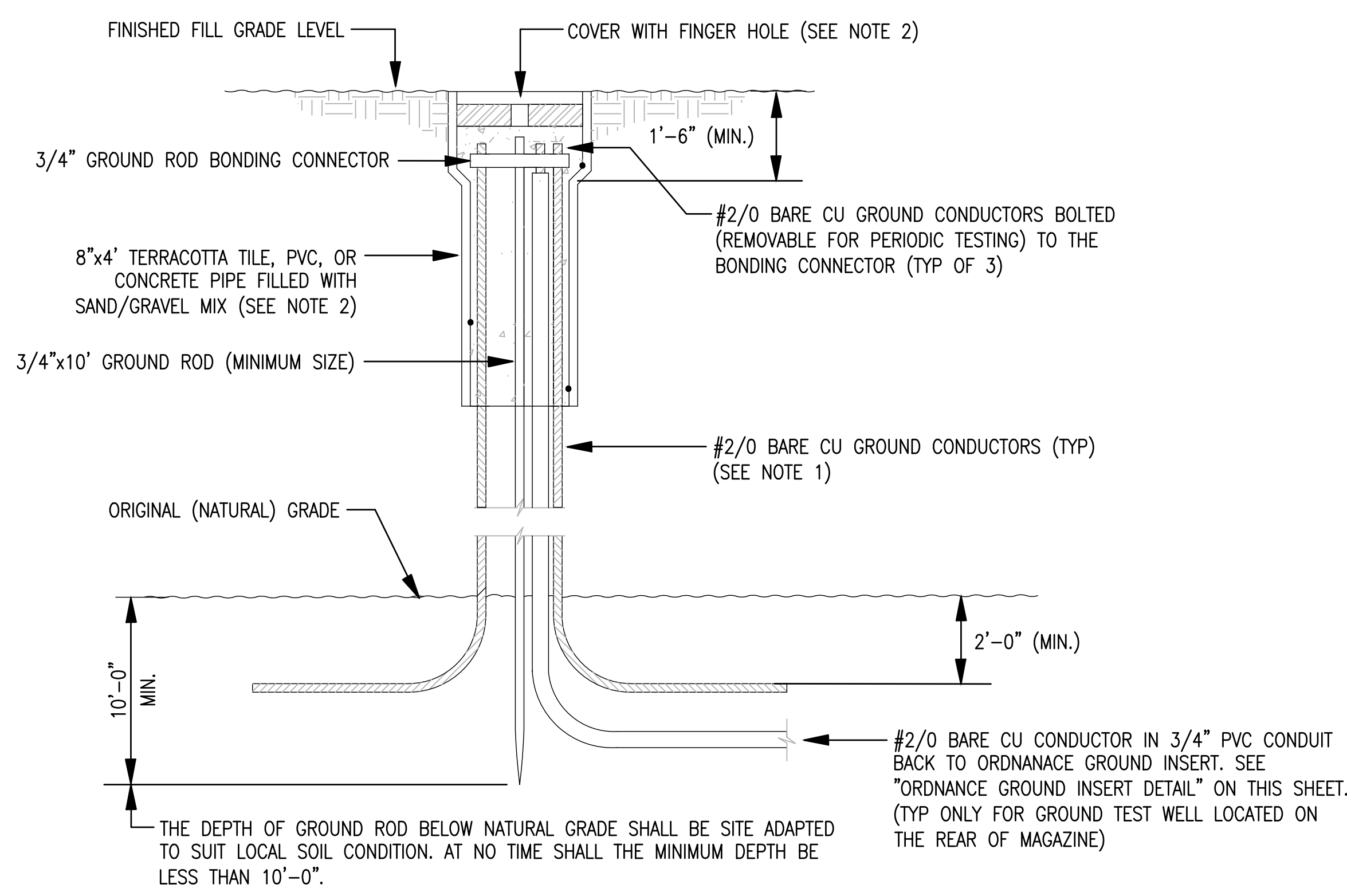
NOTES TO DESIGNER

- 1. DETERMINE THE PRECISE TEST WELL LOCATIONS DURING THE PROJECT DESIGN AND CONSIDER PERIODIC ACCESS TO THE TEST WELLS GIVEN THE INSTALLATION LOCATION.
- 2. ENSURE TRENCH DRAIN IS BONDED EITHER TO THE GROUND GIRDLE OR TO STRUCTURAL STEEL VIA APPROVED COMPRESSION CRIMP.

GRAPHIC SCALE

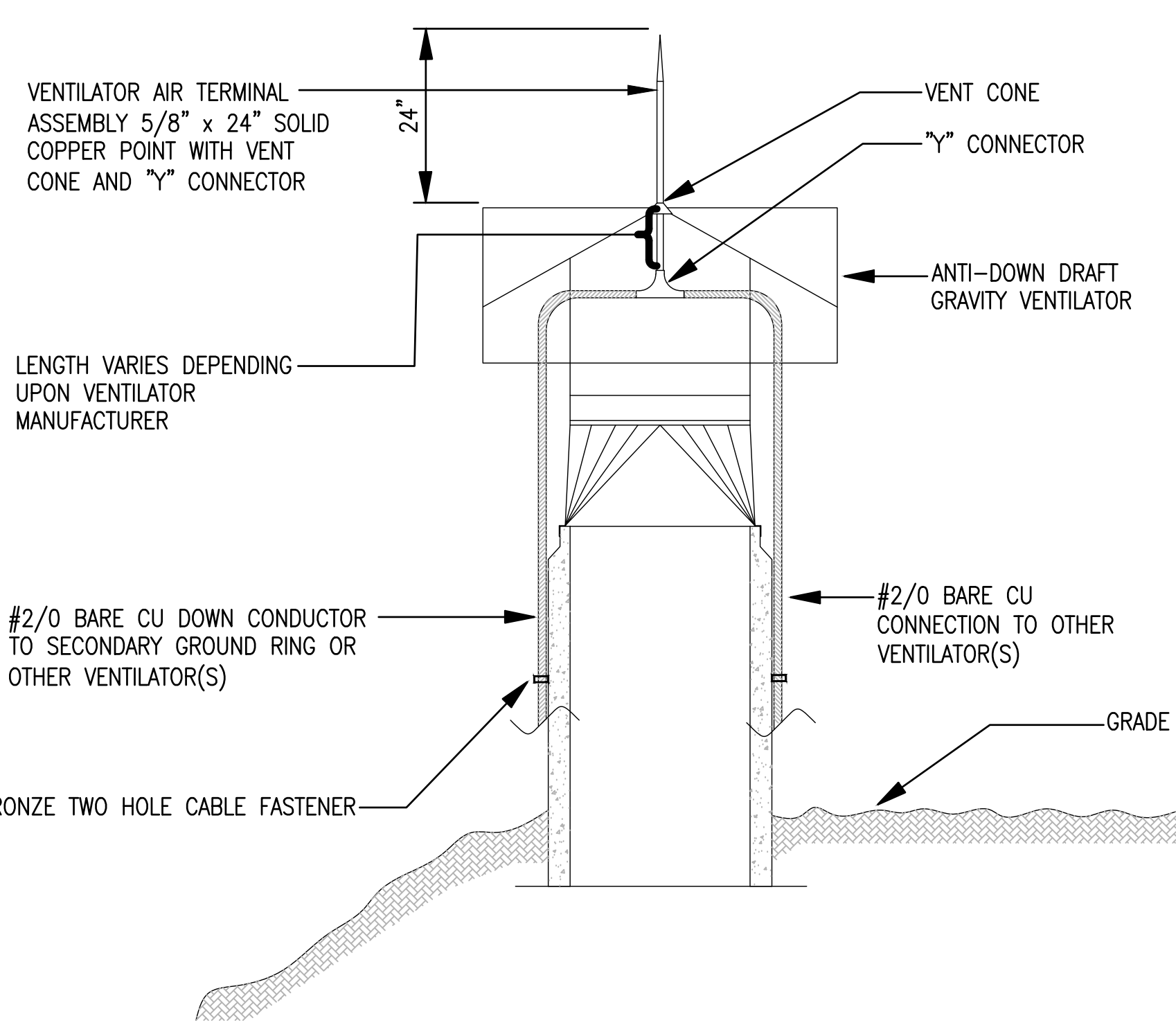


DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
BY	
SEAL	
A/E INFO	
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE	MM/DD/YYYY
DES	DRW RUL CHK SEK
PM/DM	
BRANCH MANAGER	SEK
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	
TYPE C BOX MAGAZINE	
GROUNDING PLAN	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115962
SHEET	29 OF 35
E-103	
DRAWING REVISION: 25 AUGUST 2020	

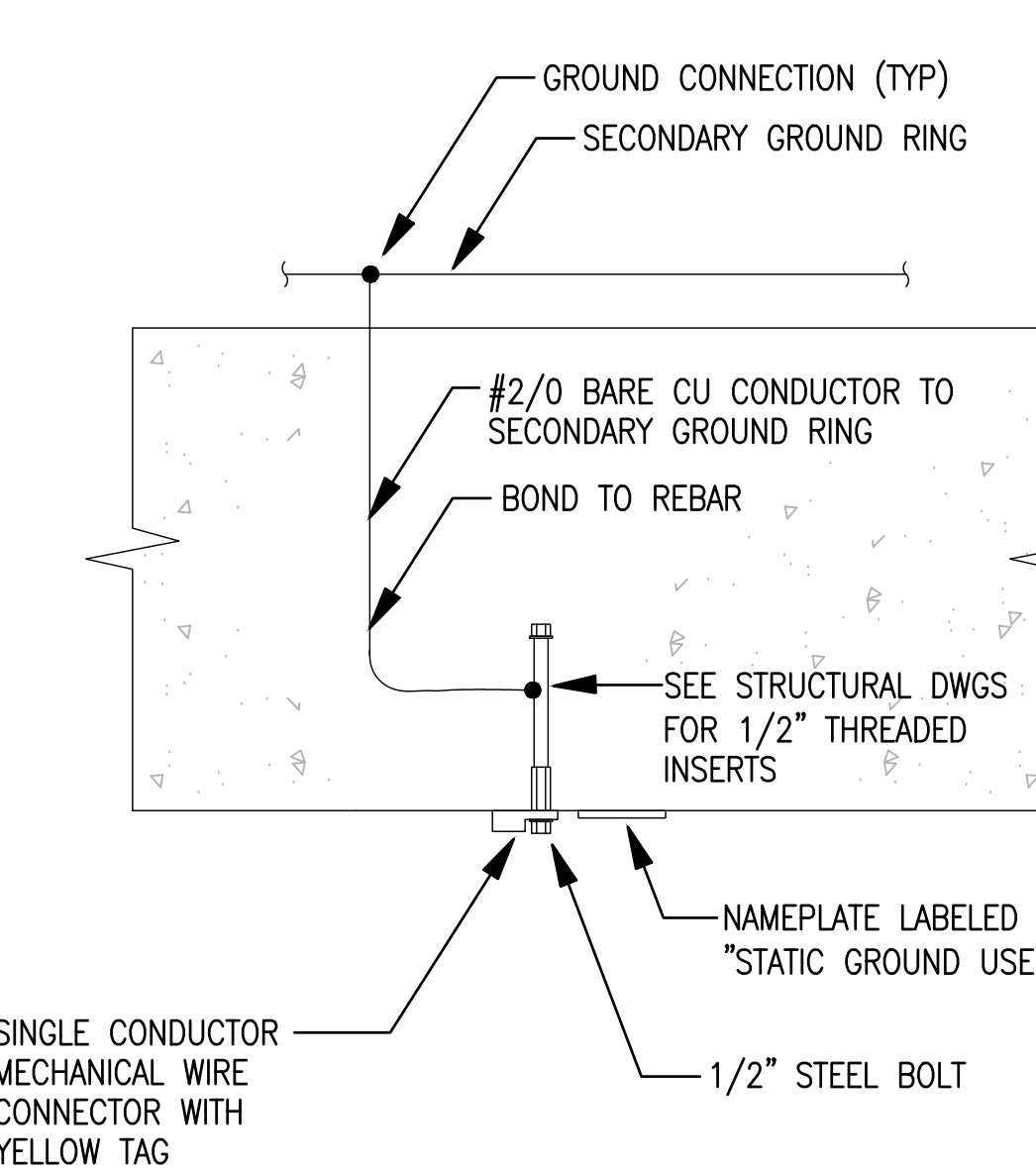


**GROUND TEST WELL
INSTALLATION IN EARTH FILL** (C1)
N.T.S E-103

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.



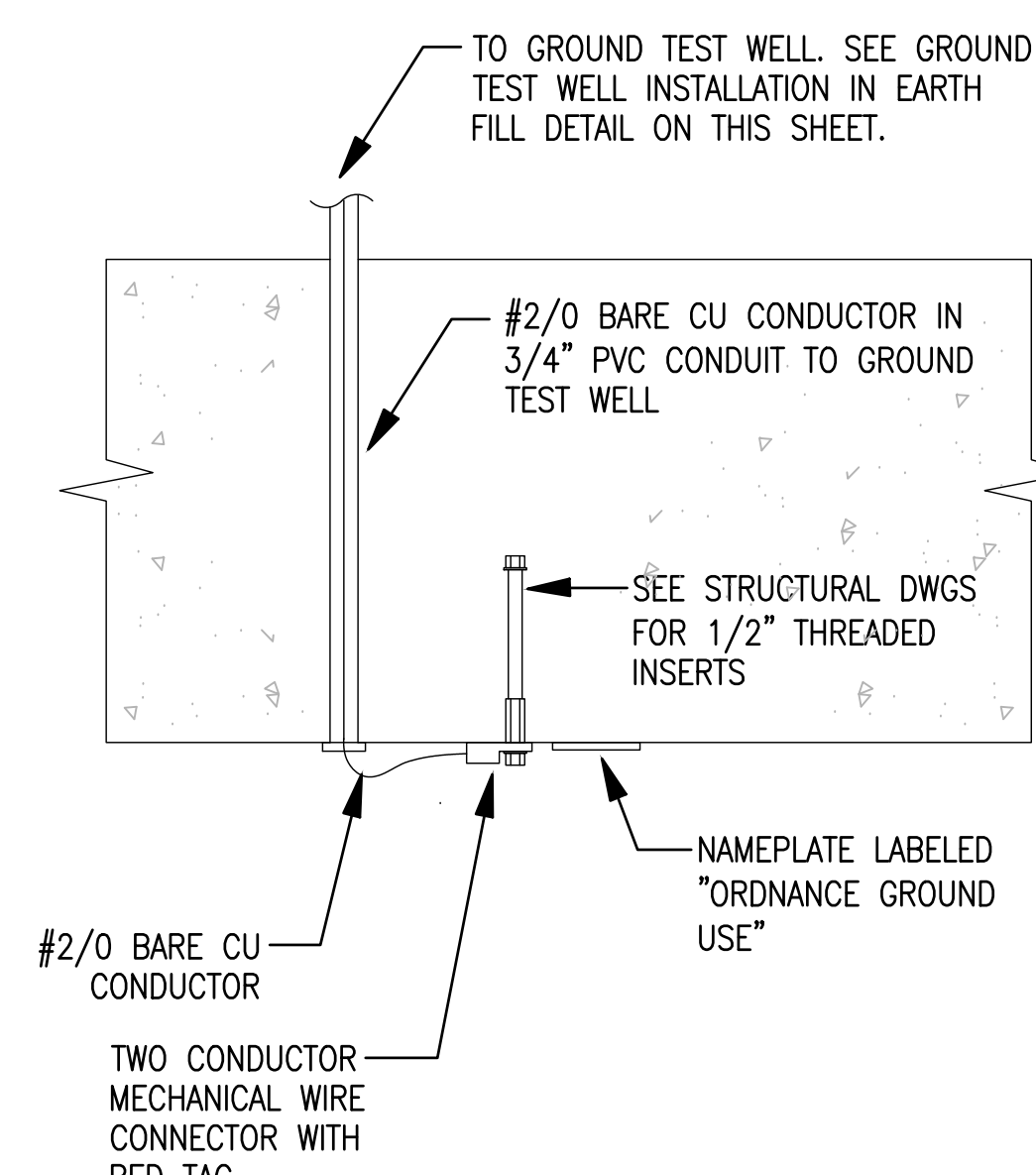
TYPICAL VENTILATOR DETAIL (A1)
N.T.S E-103



STATIC GROUND INSERT DETAIL (A3)
N.T.S E-103

STATIC GROUND INSERT DETAIL NOTES:

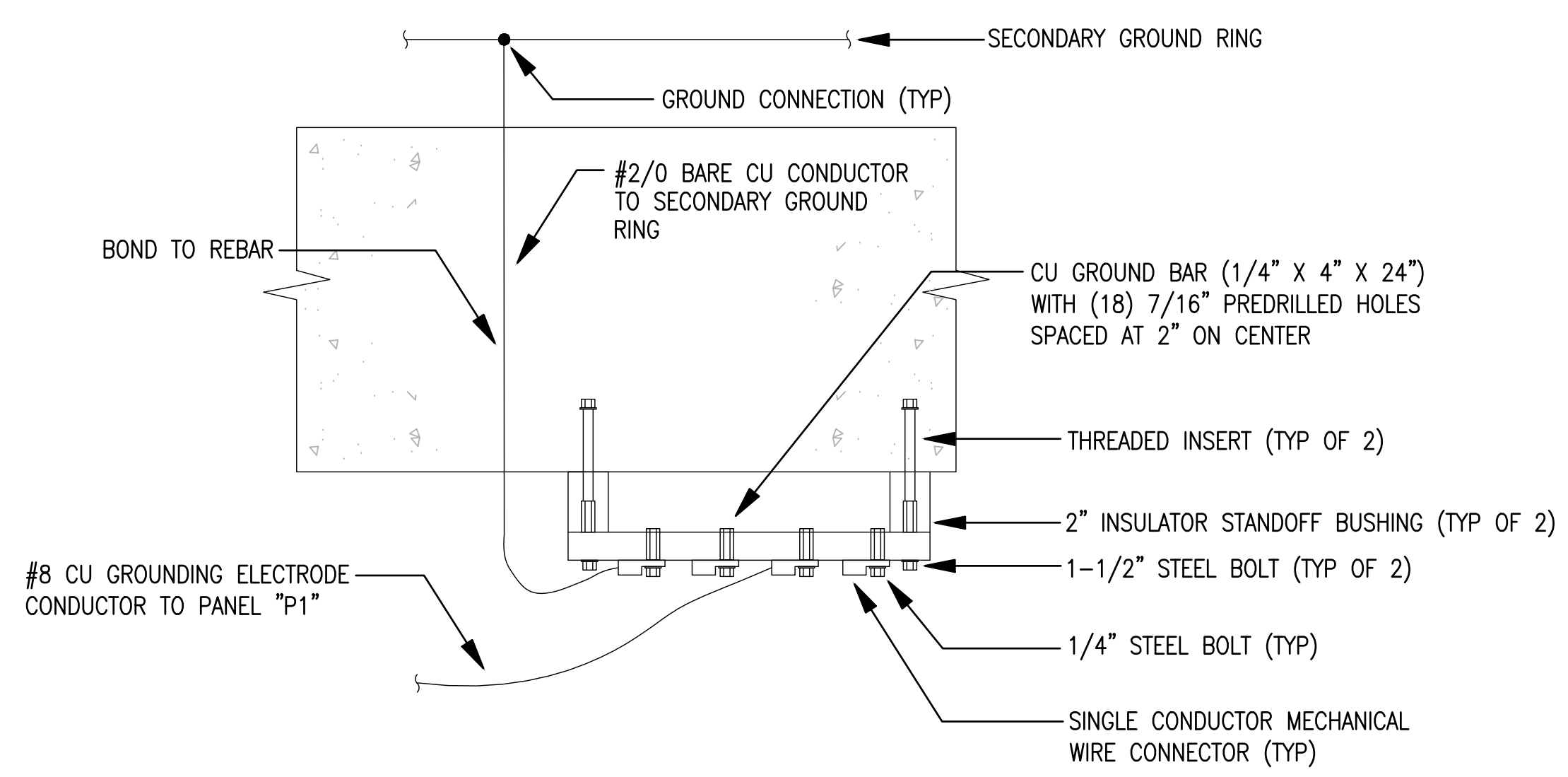
1. PROVIDE A REMOVABLE YELLOW MELAMINE PLASTIC TAG THAT ATTACHES TO THE STATIC GROUND INSERT. THE TAG SHALL INCLUDE THE FOLLOWING INFORMATION:
"NOT IN SERVICE. NO MAINTENANCE REQUIRED."
INSTALLATION MEETS STATIC/FACILITY GROUND REQUIREMENT PER NAVSEA OP-5. ACTIVITY SHALL PERFORM TESTING PER NAVSEA OP-5 AND ENACT MAINTENANCE SCHEDULE WHEN THE STATIC/FACILITY GROUND INSERT IS PLACED IN SERVICE.
RETAIN THIS TAG TO REATTACH WHEN REMOVED FROM SERVICE."
2. MOUNT GROUND INSERT AT 36" AFF



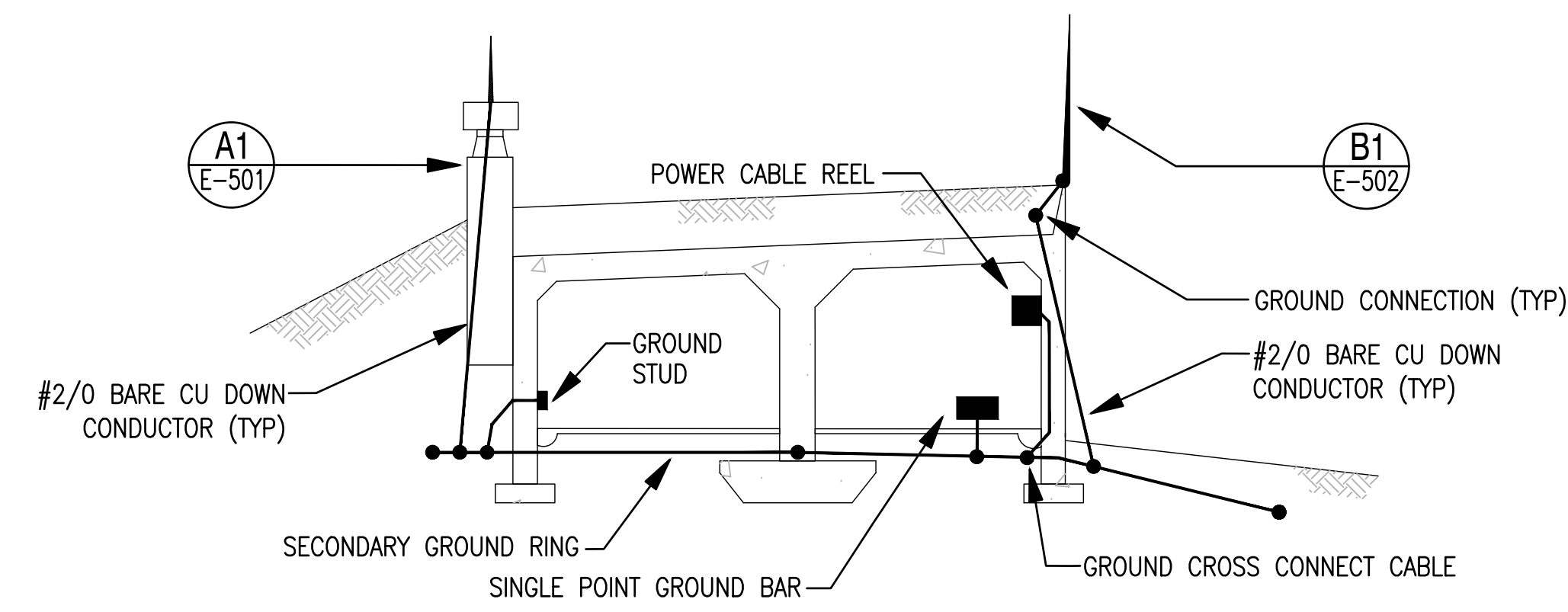
ORDNANCE GROUND INSERT DETAIL (A5)
N.T.S E-103

ORDNANCE GROUND INSERT DETAIL NOTES:

1. PROVIDE A REMOVABLE RED MELAMINE PLASTIC TAG THAT ATTACHES TO THE ORDNANCE GROUND INSERT. THE TAG SHALL INCLUDE THE FOLLOWING INFORMATION:
"NOT IN SERVICE. NO MAINTENANCE REQUIRED."
INSTALLATION MEETS ORDNANCE GROUND REQUIREMENT PER NAVSEA OP-5. ACTIVITY SHALL 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.
3. MOUNT GROUND INSERT AT 36" AFF.



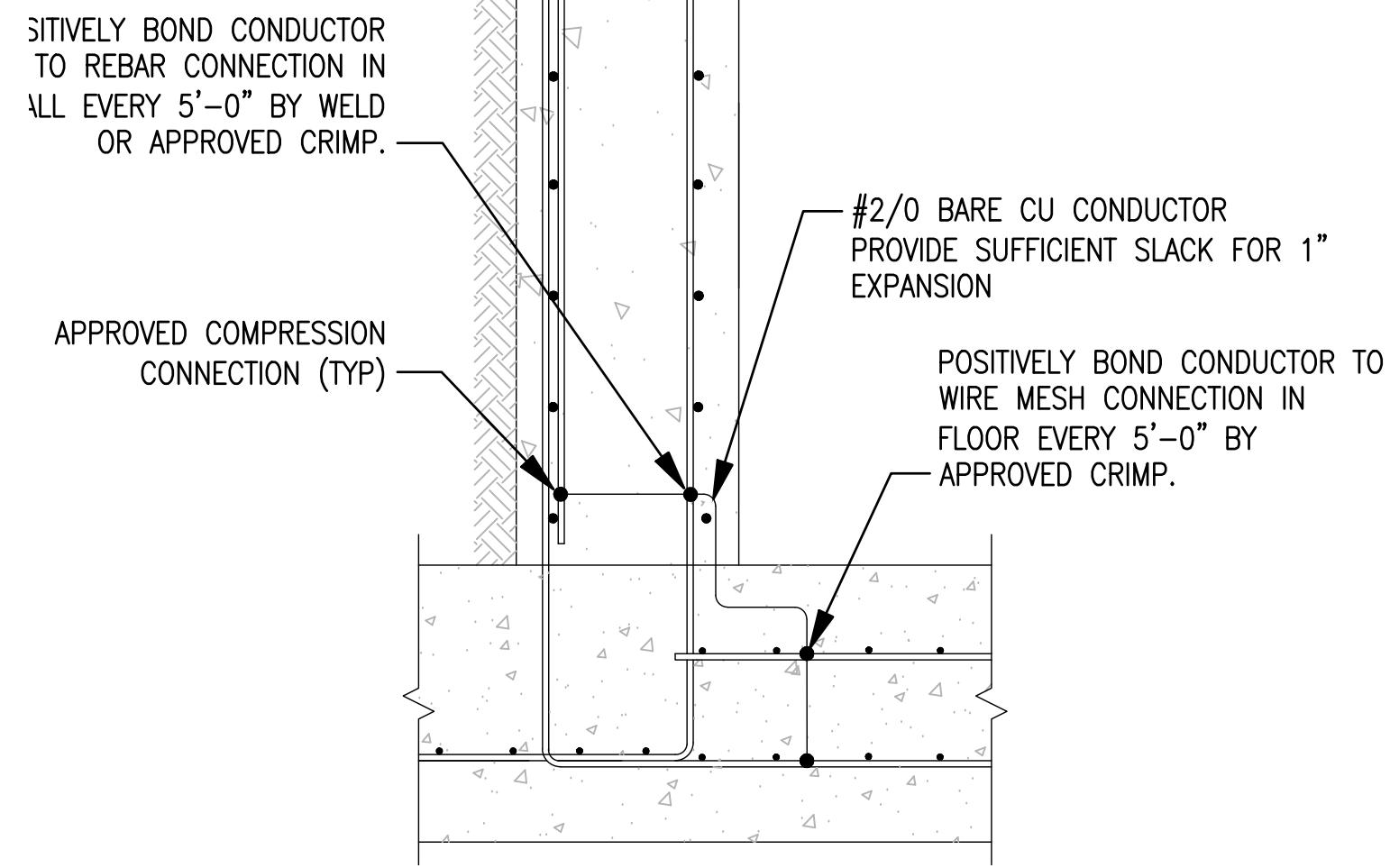
SINGLE POINT GROUND BAR DETAIL (D4)
N.T.S E-103



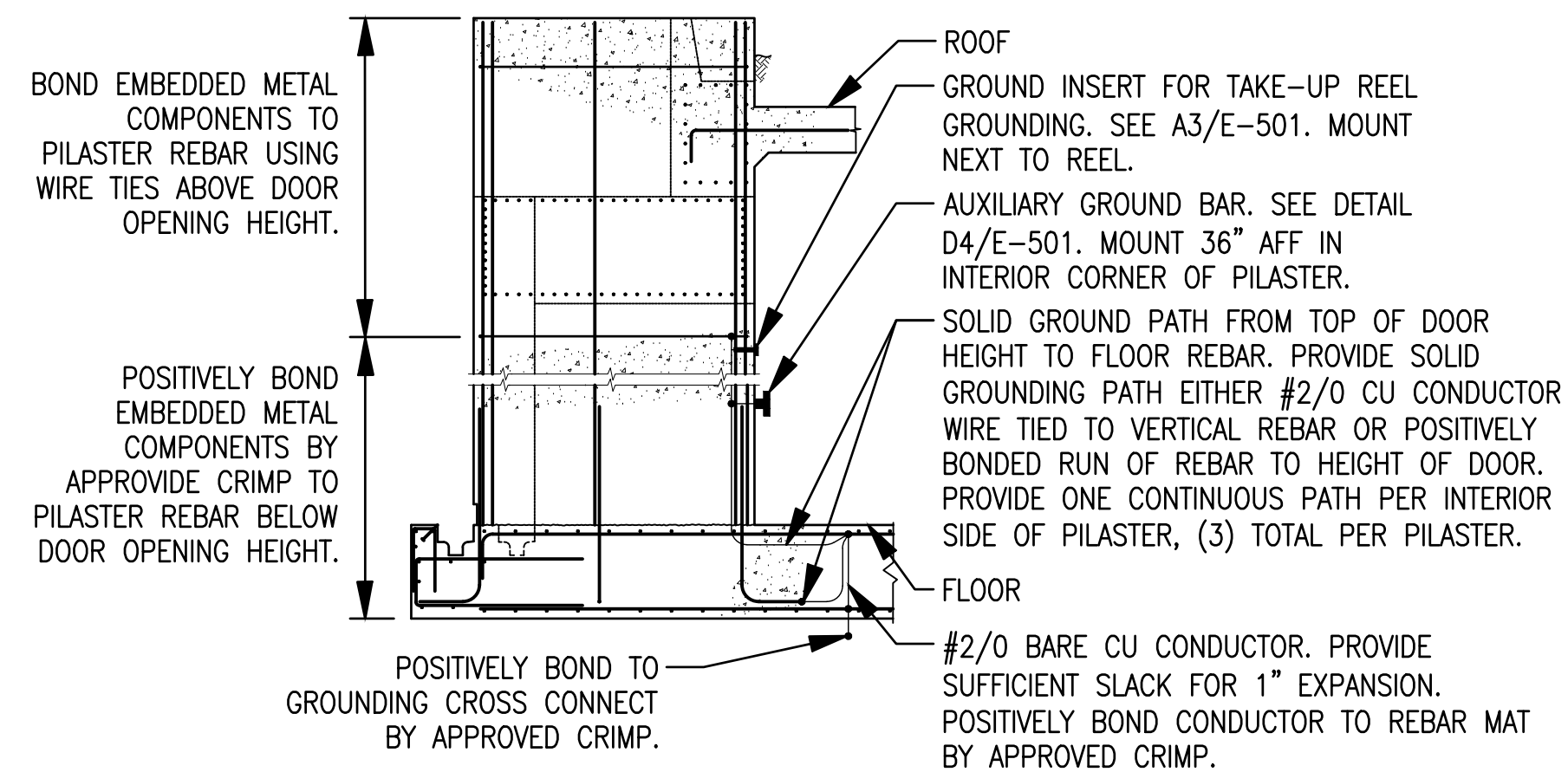
GROUNDING SECTION DETAIL (C4)
N.T.S E-103

DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	MM/DD/YY
DRW	RJL
CHK	SEK
PMIDM	
BRANCH MANAGER	SEK
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION	
TYPE C BOX MAGAZINE	
DETAILS	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115963
SHEET	30 OF 35
E-501	
DRAWING REVISION: 25 AUGUST 2020	

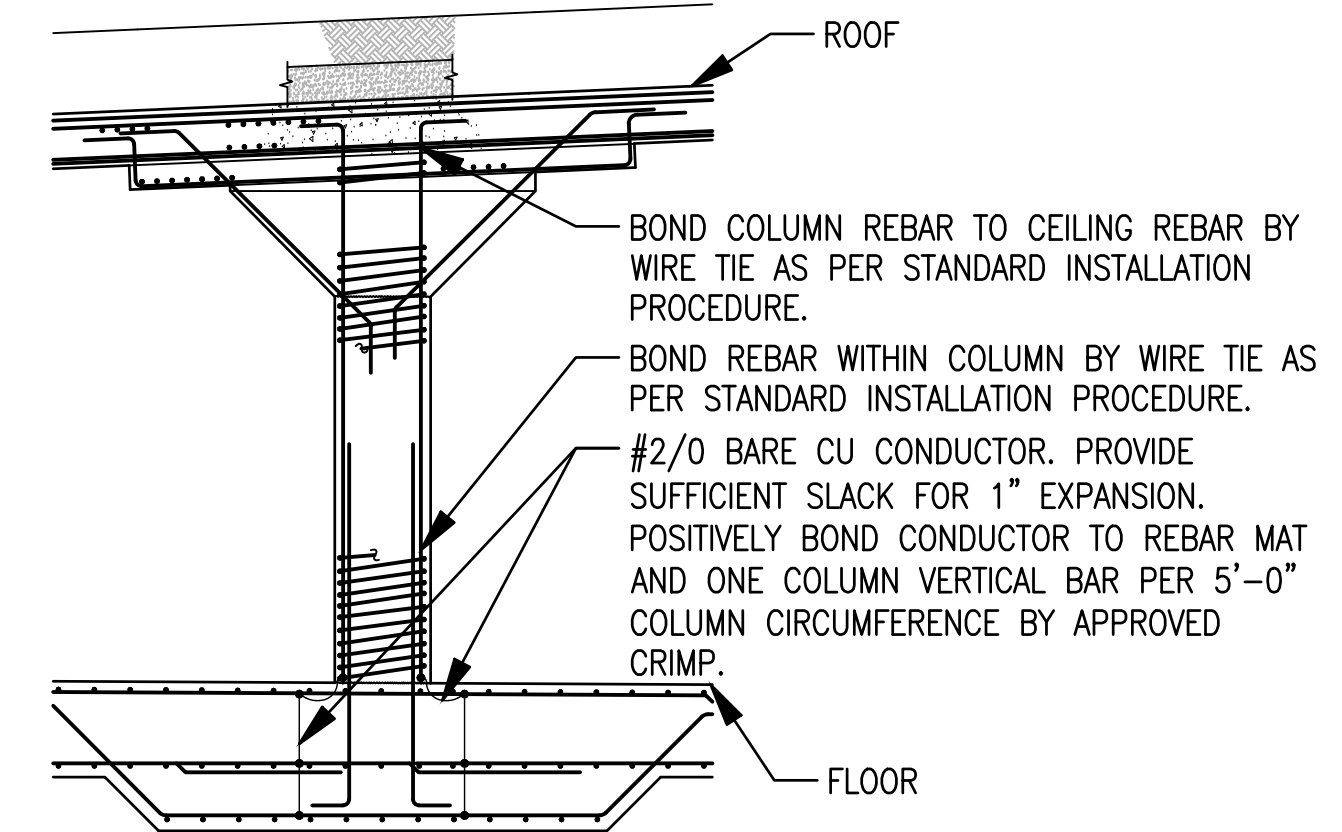
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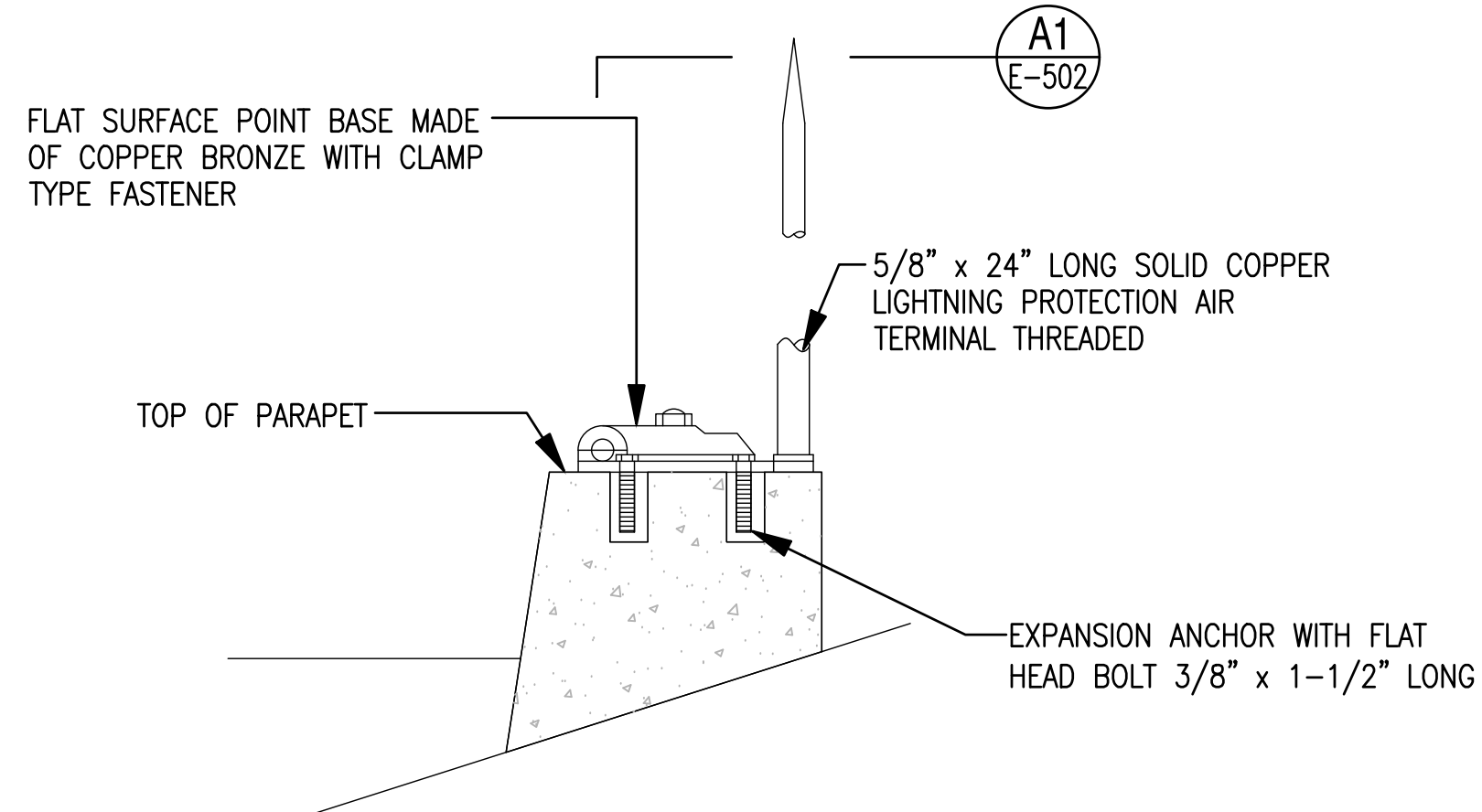
FLOOR TO WALL CONNECTION (D1)
N.T.S. E-103



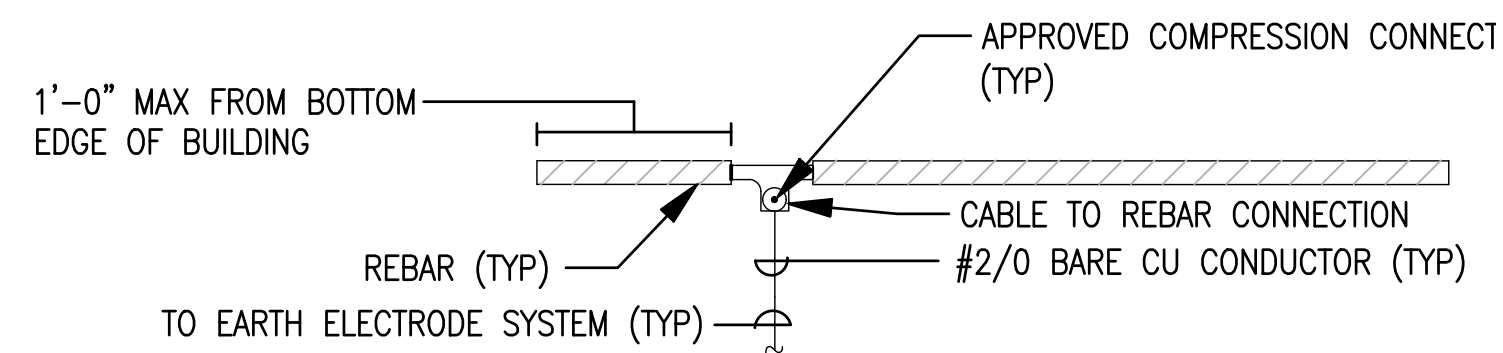
PILASTER GROUNDING AND BONDING DETAIL (D3)
N.T.S. E-103, E-501



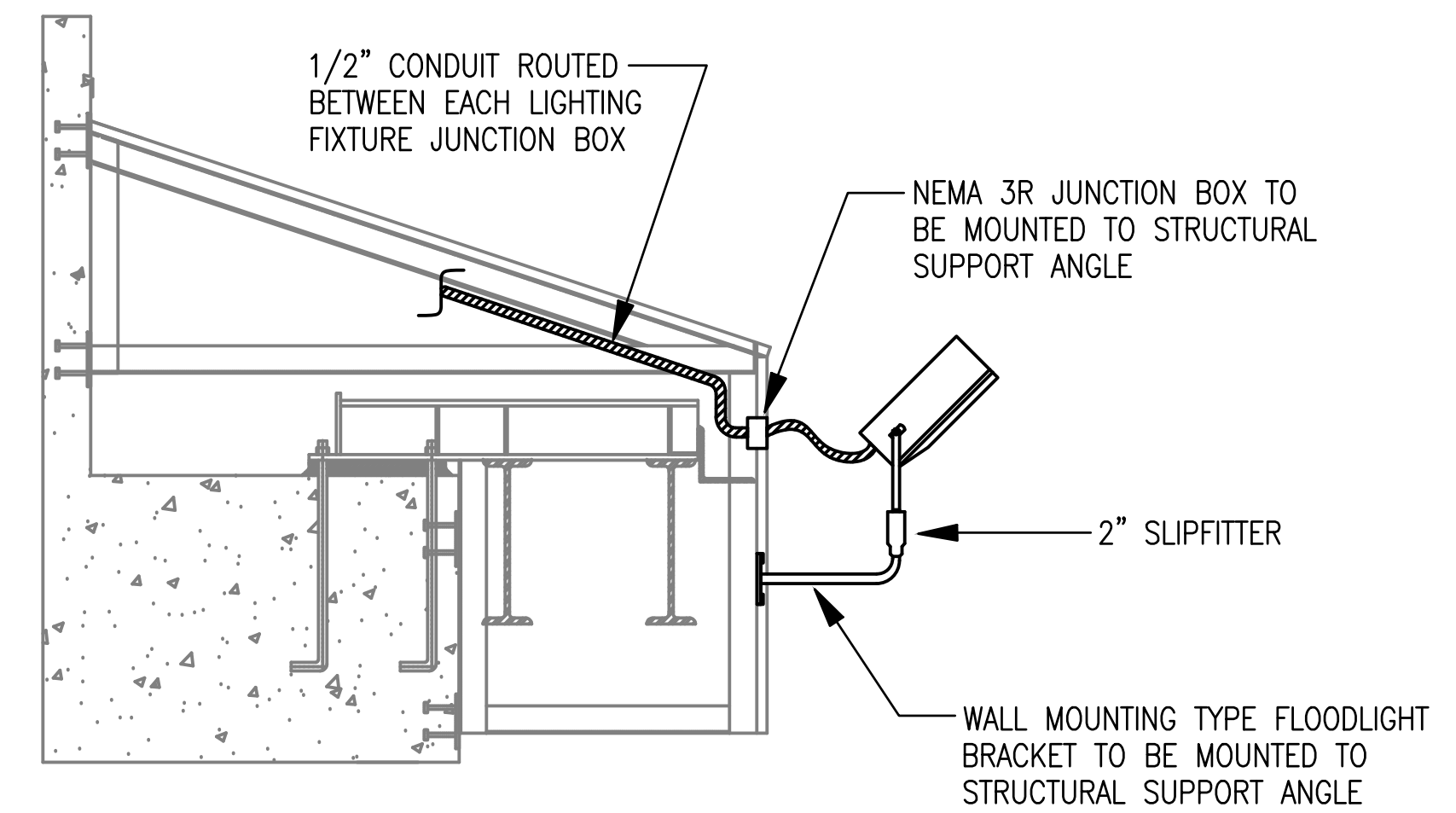
COLUMN GROUNDING AND BONDING DETAIL (D5)
N.T.S. E-103



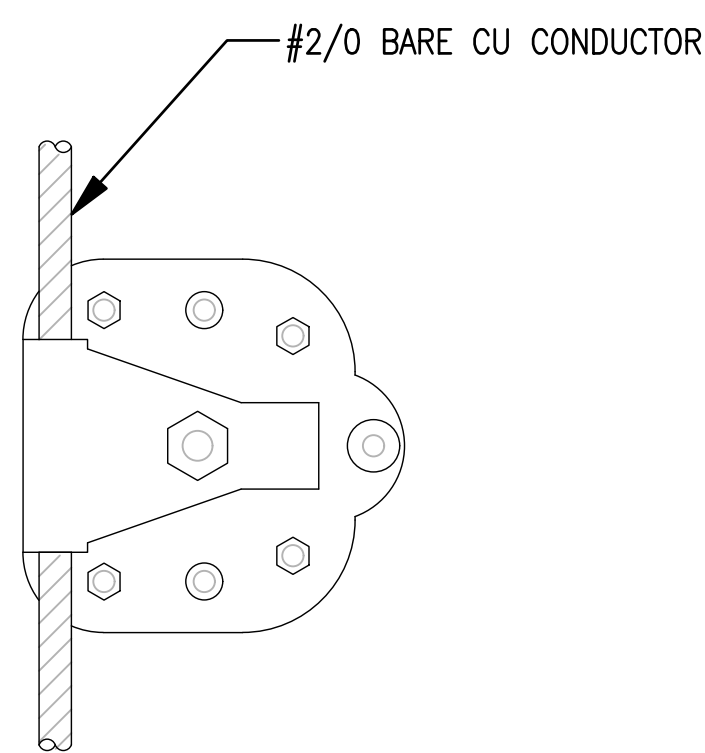
MOUNTING DETAIL (B1)
N.T.S. E-103



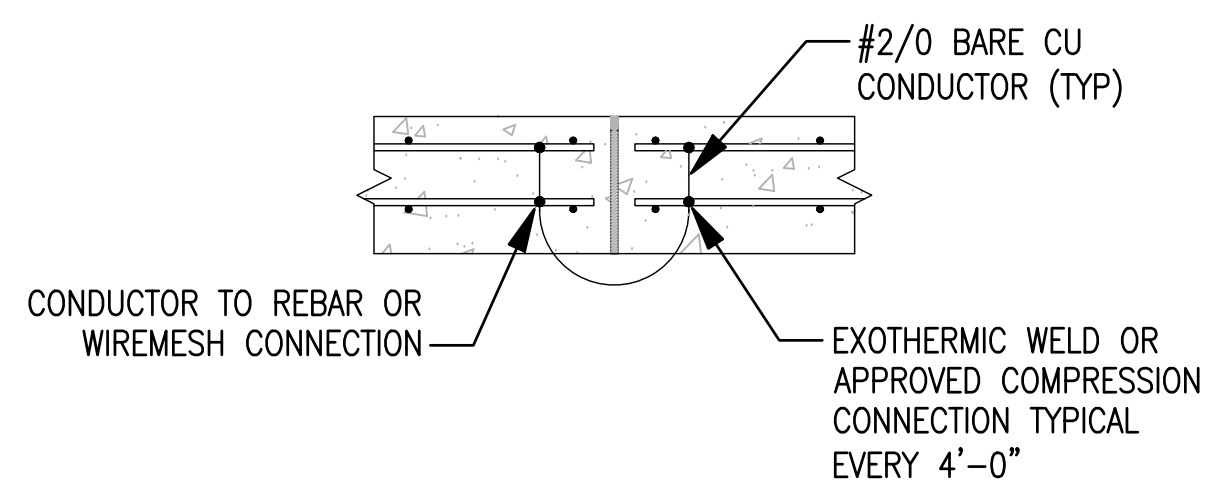
GROUNDING REINFORCING STEEL (C3)
N.T.S. E-103



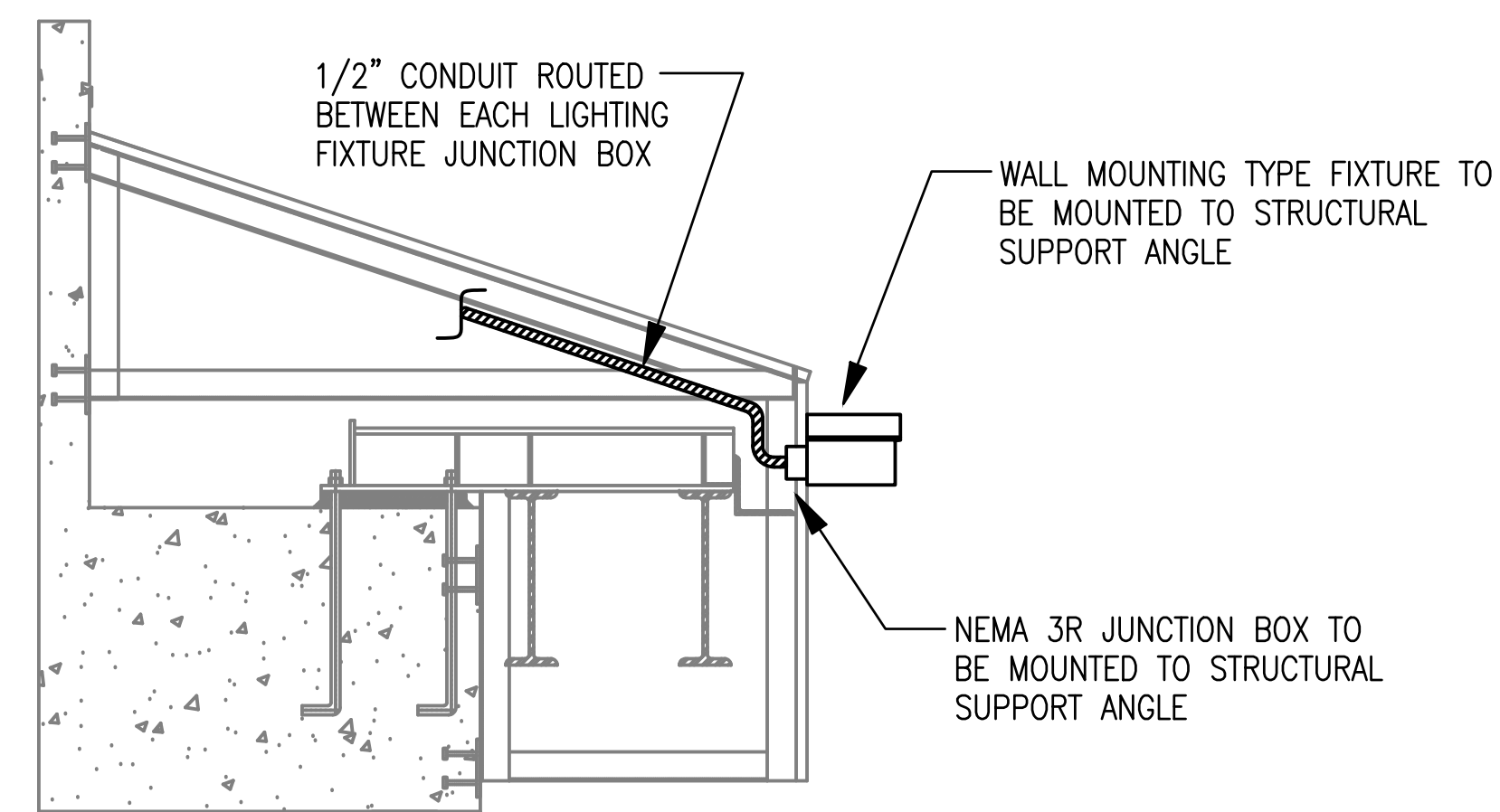
FLOOD LIGHTING MOUNTING DETAIL (C5)
N.T.S. E-101



CABLE CONNECTION DETAIL (A1)
N.T.S. E-502



TYPICAL BOND CONNECTION AT EACH CONSTRUCTION JOINT (A3)
N.T.S. E-103

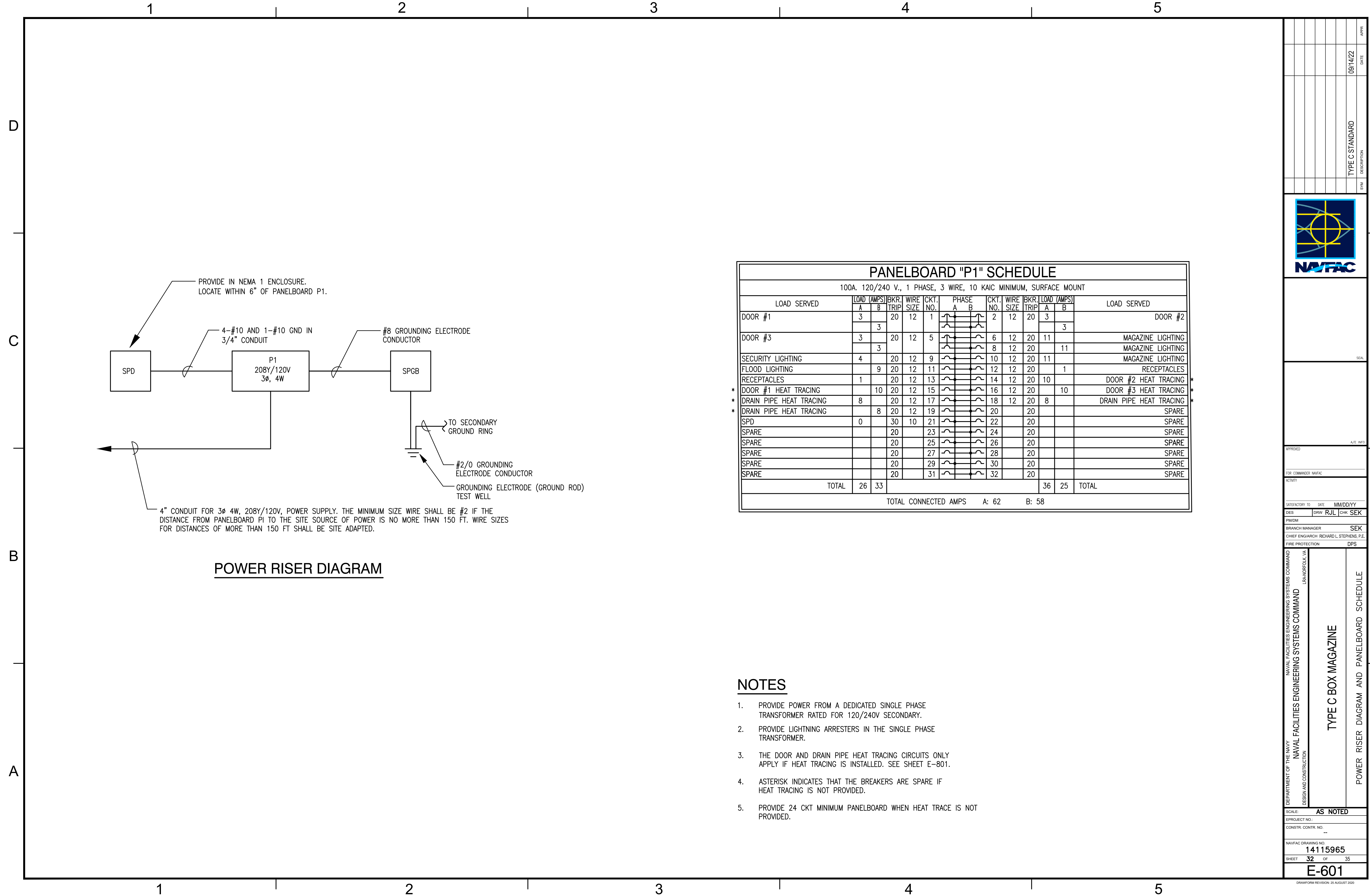


SECURITY LIGHTING MOUNTING DETAIL (A5)
E-101

DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
APPROVED	
FOR COMMANDER NAFAC	
ACTIVITY	
SATISFACTORY TO DATE	MM/DD/YYYY
DES	DRW R/JL CHK SEK
PM/DM	
BRANCH MANAGER	SEK
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
BRANDBOULDER, VA	
TYPE C BOX MAGAZINE DETAILS	
SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115964
SHEET	31 OF 35
E-502	
<small>DRAWING REVISION: 25 AUGUST 2020</small>	

FILE NAME: J:\DSE\Magazines\Box_Magazines Modified: 2021\Type C\Final Drawings Type C AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: E-502 PLOTTED: Thursday, November 03, 2022 - 11:09am USER: hellecosano

FILE NAME: J:\DSE\Magazines\@ Box Magazines Modified 2021\Type C\Final Drawings Type C_2022.9.27.dwg LAYOUT NAME: E-601 PLOTTED: Thursday, November 03, 2022 - 1:19pm USER: kellecossino



POWER RISER DIAGRAM

PANELBOARD "P1" SCHEDULE
100A, 120/240 V., 1 PHASE, 3 WIRE, 10 KAIC MINIMUM, SURFACE MOUNT

LOAD SERVED	LOAD (AMPS)		BK.R. TRIP	WIRE SIZE	CKT. NO.	PHASE		CKT. NO.	WIRE SIZE	BK.R. TRIP	LOAD (AMPS)		LOAD SERVED
	A	B				A	B				A	B	
DOOR #1	3	3	20	12	1	A	B	2	12	20	3	3	DOOR #2
DOOR #3	3	3	20	12	5	A	B	6	12	20	11	11	MAGAZINE LIGHTING
SECURITY LIGHTING	4		20	12	9	A	B	10	12	20	11		MAGAZINE LIGHTING
FLOOD LIGHTING	9		20	12	11	A	B	12	12	20	1		RECEPTACLES
RECEPTACLES	1		20	12	13	A	B	14	12	20	10		DOOR #2 HEAT TRACING *
* DOOR #1 HEAT TRACING	10		20	12	15	A	B	16	12	20	10		DOOR #3 HEAT TRACING *
* DRAIN PIPE HEAT TRACING	8		20	12	17	A	B	18	12	20	8		DRAIN PIPE HEAT TRACING *
* DRAIN PIPE HEAT TRACING	8		20	12	19	A	B	20		20			SPARE
SPD	0		30	10	21	A	B	22		20			SPARE
SPARE			20		23	A	B	24		20			SPARE
SPARE			20		25	A	B	26		20			SPARE
SPARE			20		27	A	B	28		20			SPARE
SPARE			20		29	A	B	30		20			SPARE
SPARE			20		31	A	B	32		20			SPARE
TOTAL	26	33									36	25	TOTAL
TOTAL CONNECTED AMPS A: 62 B: 58													

NOTES

1. PROVIDE POWER FROM A DEDICATED SINGLE PHASE TRANSFORMER RATED FOR 120/240V SECONDARY.
2. PROVIDE LIGHTNING ARRESTERS IN THE SINGLE PHASE TRANSFORMER.
3. THE DOOR AND DRAIN PIPE HEAT TRACING CIRCUITS ONLY APPLY IF HEAT TRACING IS INSTALLED. SEE SHEET E-801.
4. ASTERISK INDICATES THAT THE BREAKERS ARE SPARE IF HEAT TRACING IS NOT PROVIDED.
5. PROVIDE 24 CKT MINIMUM PANELBOARD WHEN HEAT TRACE IS NOT PROVIDED.

DATE: 09/14/22
 TYPE C STANDARD
 NAVFAC

SEAL

A/E INFO

APPROVED: _____
 FOR COMMANDER NAVFAC

ACTIVITY: _____

SATISFACTORY TO: _____ DATE: MM/DD/YY

DES: _____ DRAW: R/JL CHK: SEK

PM/DM: _____

BRANCH MANAGER: SEK

CHIEF ENGINEER: RICHARD L. STEPHENS, P.E.

FIRE PROTECTION: DPS

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
 DESIGN AND CONSTRUCTION

TYPE C BOX MAGAZINE
 POWER RISER DIAGRAM AND PANELBOARD SCHEDULE

SCALE: **AS NOTED**

PROJECT NO.: _____

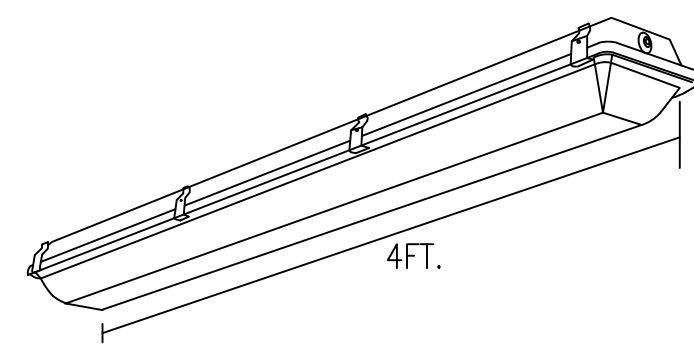
CONSTR. CONTR. NO.: _____

NAVFAC DRAWING NO.: **14115965**

SHEET **32** OF **35**

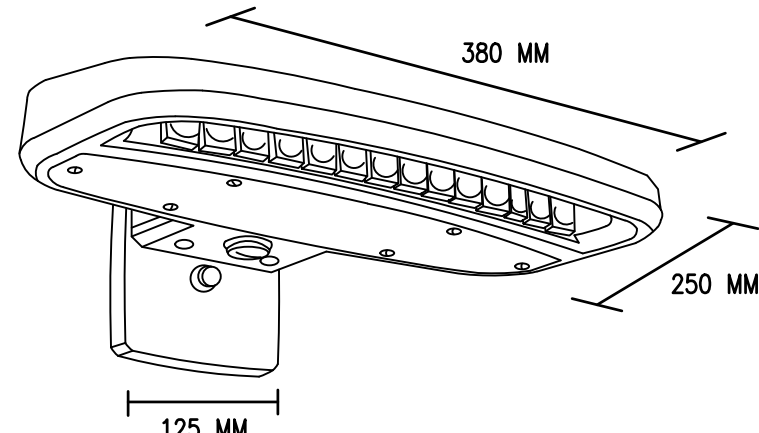
E-601

DRAWING REVISION: 25 AUGUST 2020



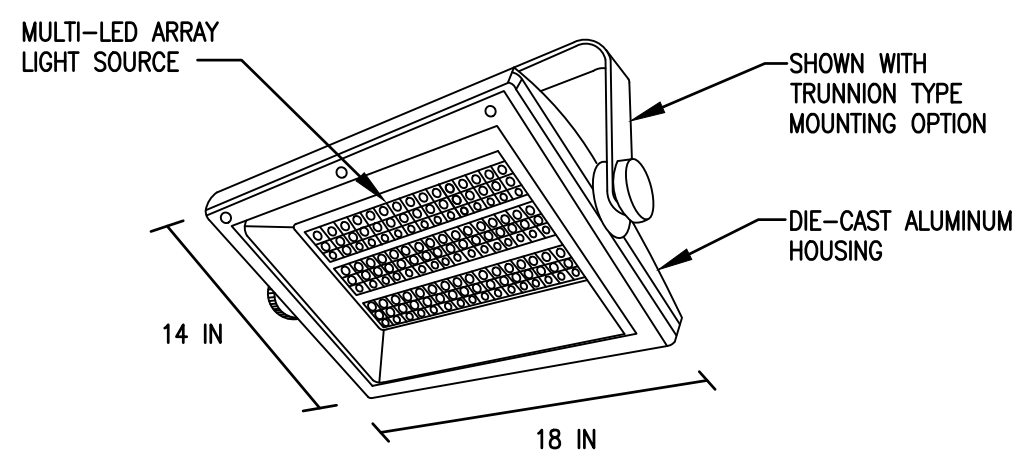
LUMINAIRE REQUIREMENTS:

- 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 - POWER CORD, INTEGRAL MOTION SENSOR, 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.



LUMINAIRE REQUIREMENTS:

- HOUSING - DIE-CAST OR EXTRUDED ALUMINUM WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK SHALL 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 SHALL 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 SHALL 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 SHALL 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) SHALL 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, PHOTOCELL, 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.

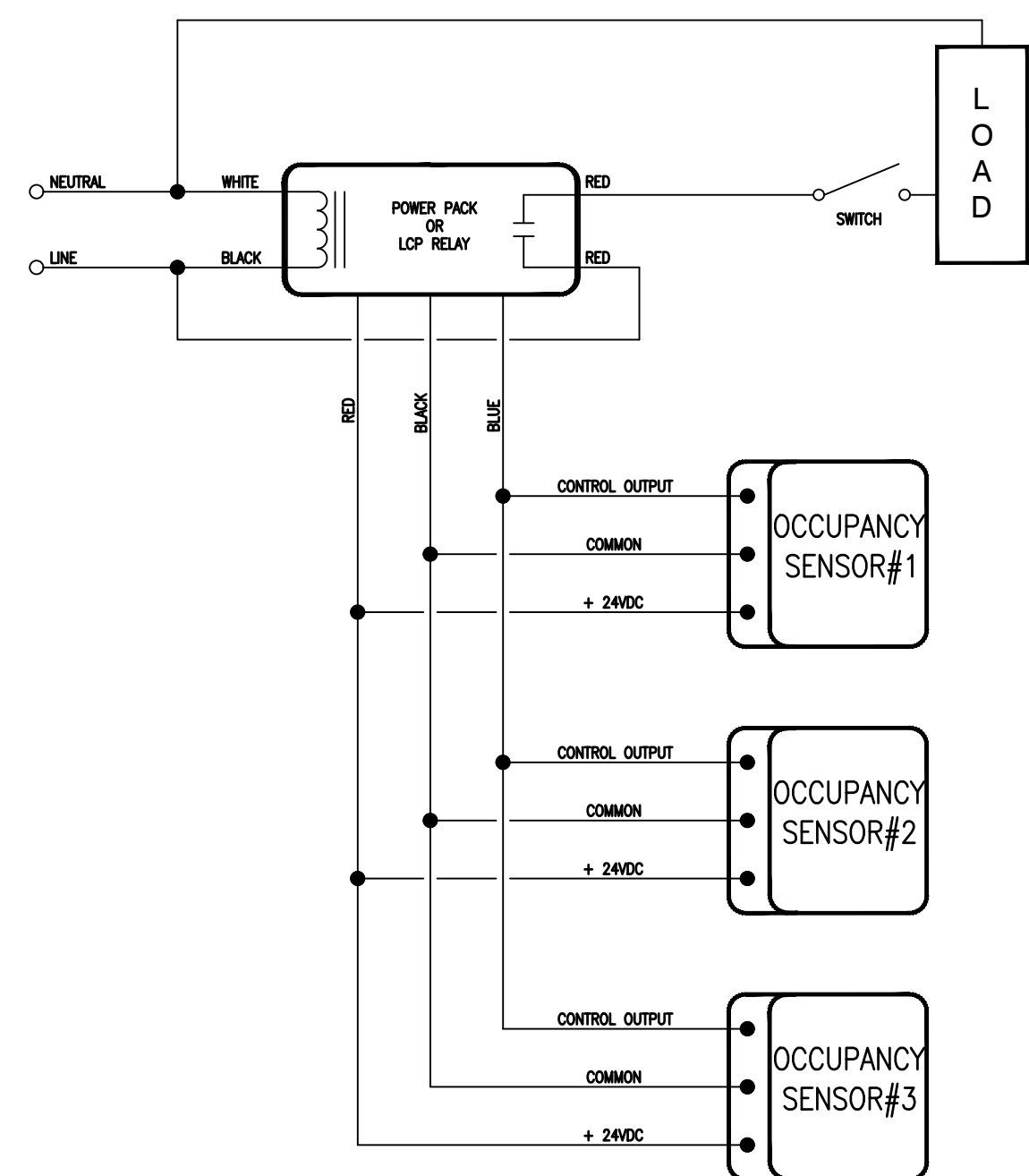


LUMINAIRE REQUIREMENTS:

- HOUSING - DIE CAST ALUMINUM WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK SHALL 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 SHALL PASS 2500 HOUR SALT SPRAY TEST PER ASTM B117. DARK BRONZE FINISH COLOR IS STANDARD.
- POWER SUPPLY/LED DRIVER - CLASS 1 ELECTRONIC DRIVER SHALL OPERATE AT 120/277 VOLTS, 50/60 HZ, WITH OTHER VOLTAGES OPTIONAL. POWER FACTOR SHALL BE GREATER THAN 0.9 AND THD LESS THAN 20% AT FULL LOAD. MINIMUM EFFICACY SHALL 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 SHALL BE MINIMUM IP65 PER ANSI/IEC 60529.
- OPTIONS - PHOTOCELL, FINISH COLOR, OUTPUT DISTRIBUTION TYPE AND TRUNNION OR SLIPFITTER 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 ENCLOSED AND GASKETED

REVISED: APRIL 2016 LIGHTING PLATE: NL-11

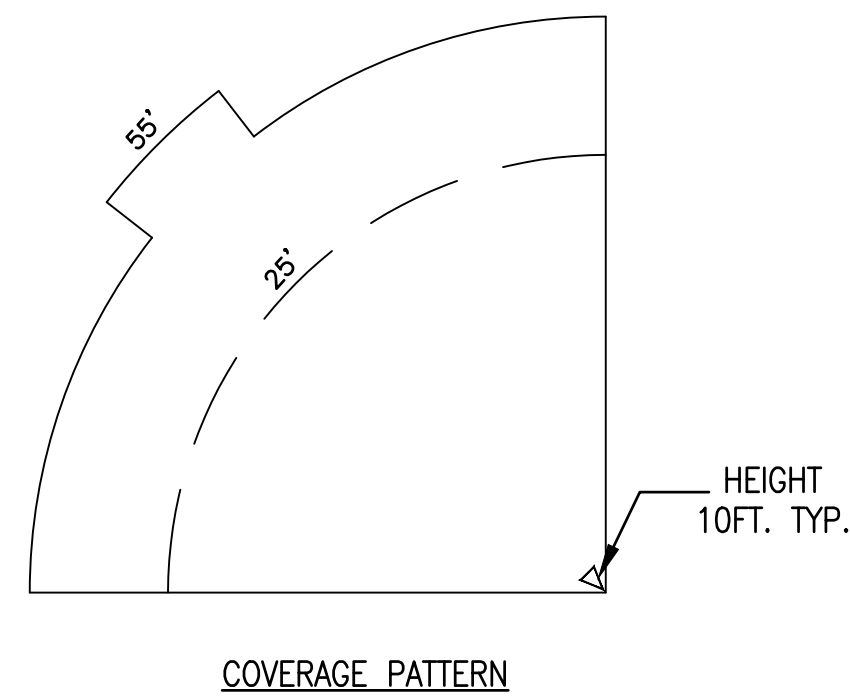
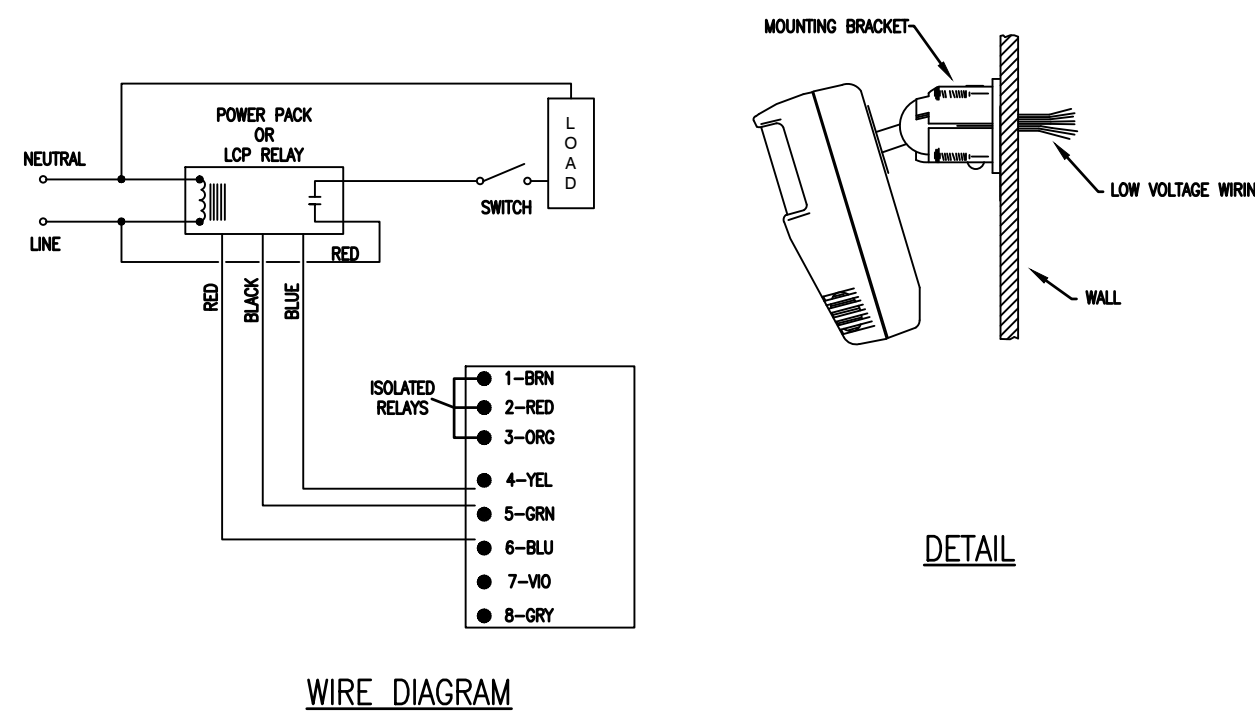


MULTIPLE OCCUPANCY SENSOR

SKETCH DATE: APRIL 2013 | STYLE: MOS

LED WALL PACK

REVISED: MARCH 2013 LUMINAIRE PLATE: XL-17



NOTES:

- SEE DETAIL PN-1 FOR SENSOR REQUIREMENTS.

PIR WALL MOUNT SENSOR

SKETCH DATE: APRIL 2013 | STYLE: WS

LED FLOOD LUMINAIRE

REVISED: MARCH 2013 LUMINAIRE PLATE: XL-21

REQUIREMENTS:

- PIR TECHNOLOGY SHALL UTILIZE A TEMPERATURE COMPENSATED, DUAL ELEMENT SENSOR AND A MULTI-ELEMENT FRENSEL LENS (POLY IR4 MATERIAL).
- SENSOR SHALL UTILIZE TECHNOLOGY TO OPTIMIZE AUTOMATIC TIME DELAY TO FIT OCCUPANT USAGE PATTERNS BY DIP SWITCH.
- LINE VOLTAGE SENSORS SHALL HAVE NO MINIMUM LOAD REQUIREMENT AND BE CAPABLE OF SWITCHING 0 TO 800W AT 120VAC, 50/60 HZ AND 0 TO 1200W AT 277VAC, 50/60 HZ. CONTROL VOLTAGE SENSORS SHALL NOT EXCEED A MAXIMUM LOAD REQUIREMENT OF 20mA AT 24VDC.
- SENSOR SHALL HAVE AUTOMATIC-ON OR MANUAL OPERATION ADJUSTABLE WITH DIP SWITCH.
- SENSOR SHALL HAVE TIME DELAY OF 5 TO 30 MINUTES, IN INCREMENTS OF 5 MINUTES, WITH WALK THROUGH AND TEST MODE SET BY DIP SWITCH.
- SENSOR SHALL BE CAPABLE OF DETECTION OF OCCUPANCY AT DESKTOP LEVEL UP TO 300 SQ. FT. AND GROSS MOTION UP TO 1000 SQ. FT. WITH A FIELD VIEW OF 180 DEGREES.
- SENSOR SHALL PROVIDE HIGH IMMUNITY TO FALSE TRIGGERING FROM RFI AND EMI.
- SENSOR SHALL HAVE A LED INDICATOR THAT REMAINS ACTIVE DURING OCCUPANCY.
- SENSOR SHALL HAVE A BUILT-IN LIGHT LEVEL SENSOR THAT IS OPERATIONAL FROM 8 TO 180 FOOT-CANDLES.
- SENSOR COVERAGE SHALL BE TESTED TO CURRENT NEMA WD 7 STANDARDS.
- SENSOR SHALL HAVE A STANDARD FIVE YEAR WARRANTY AND SHALL BE UL LISTED.
- SENSOR SHALL HAVE NO LEAKAGE CURRENT TO LOAD WHEN IN THE OFF MODE.

PIR SENSOR NOTES

SKETCH DATE: APRIL 2013 | STYLE: PN-1

APPROVED	DATE	09/14/22
TYPE C STANDARD	DESCRIPTION	
<p>TYPE C BOX MAGAZINE</p> <p>LIGHTING DETAILS</p>		
<p>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND DESIGN AND CONSTRUCTION</p>		
<p>BRANCH MANAGER: SEK CHIEF ENGINEER: RICHARD L. STEPHENS, P.E. FIRE PROTECTION: DPS</p>		
<p>SCALE: AS NOTED</p> <p>PROJECT NO.: --</p> <p>CONSTR. CONTR. NO.: --</p> <p>NAVFAC DRAWING NO.: 14115966</p> <p>SHEET 33 OF 35</p> <p>E-701</p> <p>DRAWING REVISION: 25 AUGUST 2020</p>		

FILE NAME: J:\DSE\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C\AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: E-701 PLOTTED: Thursday, November 03, 2022 - 11:09am USER: helia.casano

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D

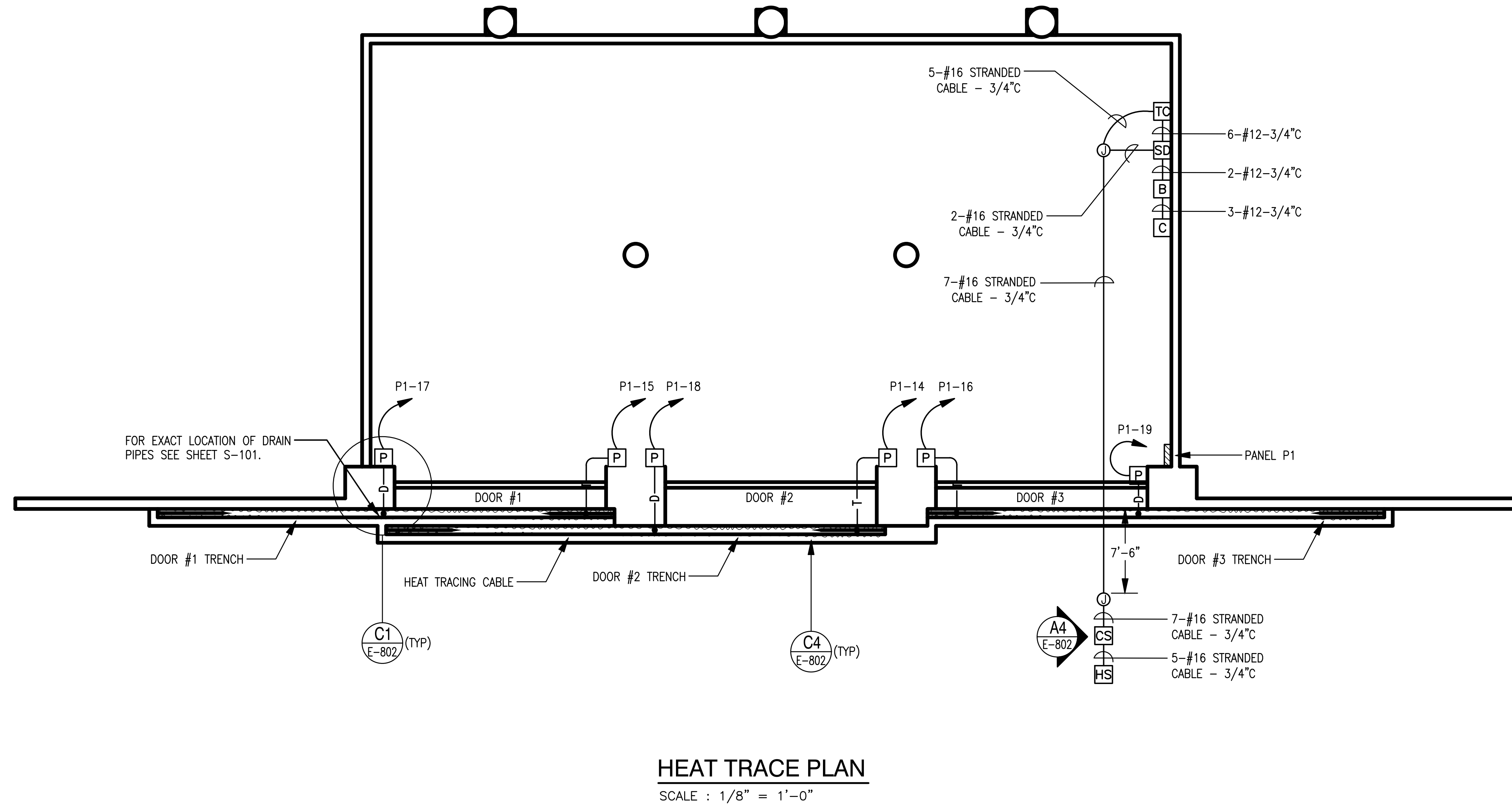
C

B

A

NOTES TO DESIGNER

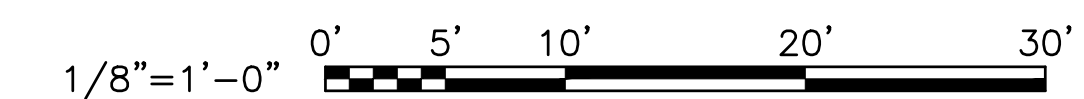
1. THE BASIS FOR DESIGN FOR THE SNOW MELTING SYSTEM ON THIS DRAWING IS A HEAT DENSITY OF 60W/FT² AS PER ASHRAE. ALL A/E'S SITE ADAPTING EACH BUILDING WHERE SNOW MELTING IS TO BE INSTALLED SHALL USE THE PROPER HEAT DENSITY FOR THAT PARTICULAR GEOGRAPHIC AREA AS PER THE ASHRAE SYSTEMS HANDBOOK CHAPTER "SNOW MELTING", CLASS III.
2. HEAT TRACE CIRCUITS (ALL UNDERGROUND OUTSIDE OF FACILITY) DO NOT NEED TO BE BONDED TO THE SINGLE POINT GROUND BAR (SPGB).



HEAT TRACE PLAN

SCALE : 1/8" = 1'-0"

GRAPHIC SCALE



APPROVED	DATE	09/14/22
FOR COMMANDER NAVFAC	DESCRIPTION	TYPE C STANDARD
ACTIVITY	SYMBOL	
SATISFACTORY TO DATE	MM/DD/YY	
DES	DRW	RJL
CHK	CHK	SEK
PM/DM		
BRANCH MANAGER		SEK
CHIEF ENGINEER		RICHARD L. STEPHENS, P.E.
FIRE PROTECTION		DPS
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
DESIGN AND CONSTRUCTION		
TYPE C BOX MAGAZINE		
HEAT TRACE PLAN		
SCALE:	AS NOTED	
PROJECT NO.:		
CONSTR. CONTR. NO.:		
NAVFAC DRAWING NO.:	14115967	
SHEET	34	OF 35
E-801		
DRAWING REVISION: 25 AUGUST 2020		

1

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FILE NAME: J:\DSEA\Magazines\Box_Magazines Modified 2021\Type C\Final Drawings Type C\Final Drawings Type C_2022.9.27.dwg LAYOUT NAME: E-801 PLOTTED: Thursday, November 03, 2022 - 11:09am USER: jellis.casano

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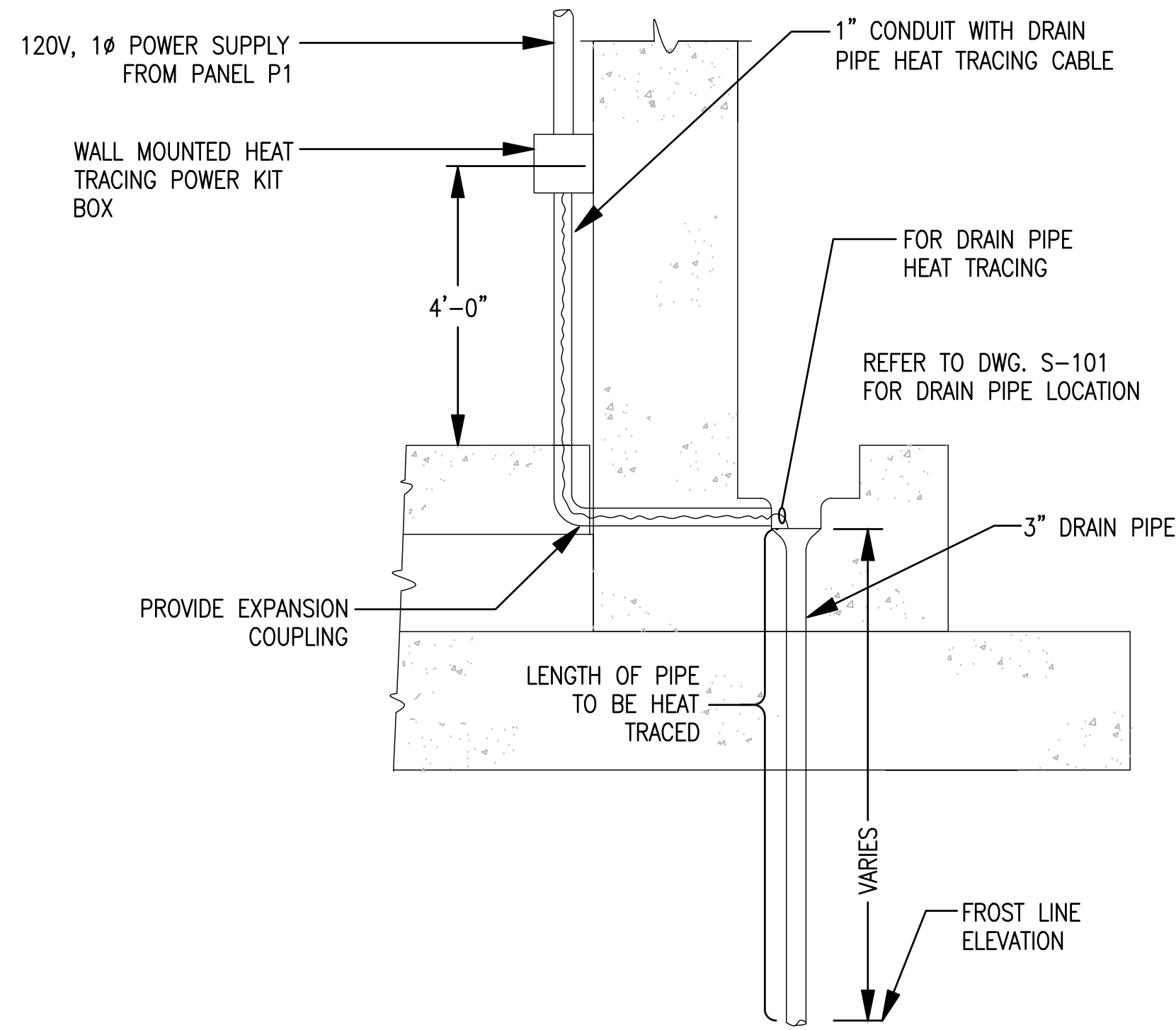
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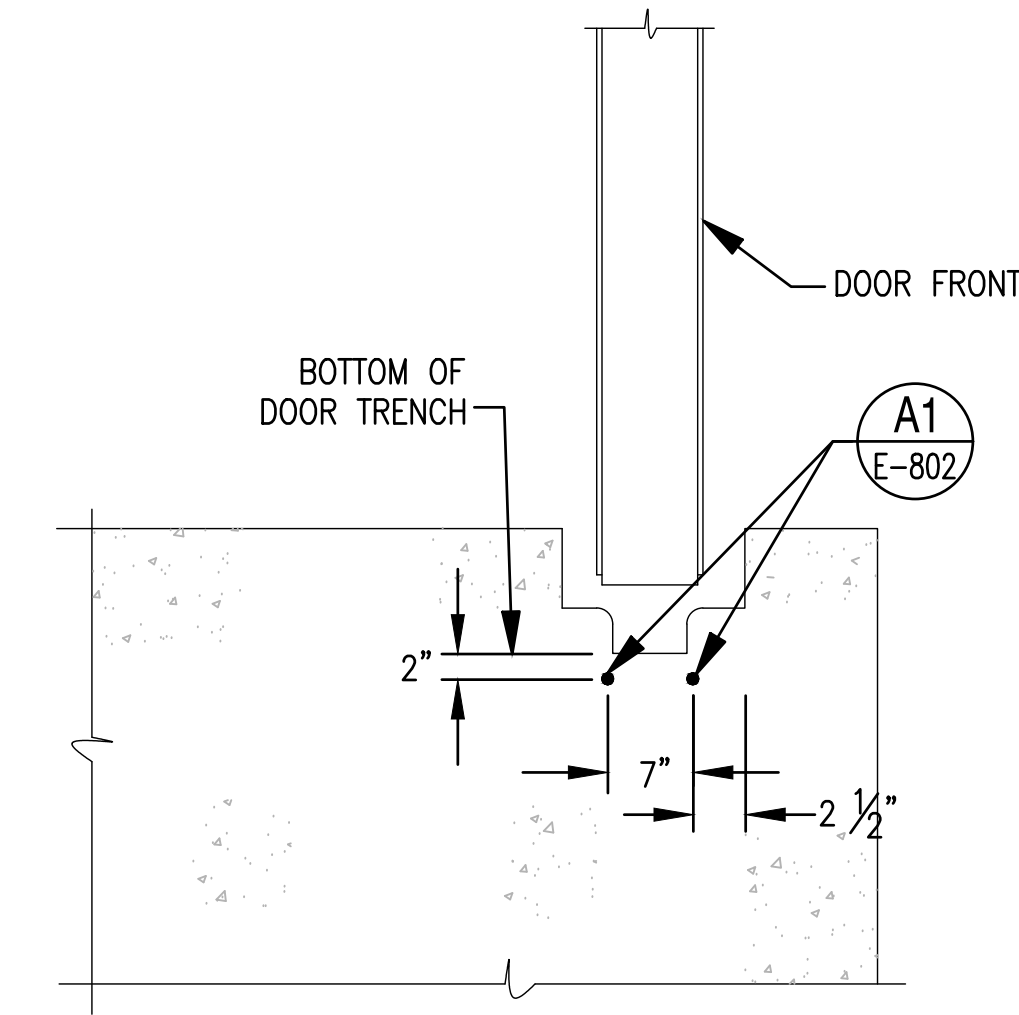
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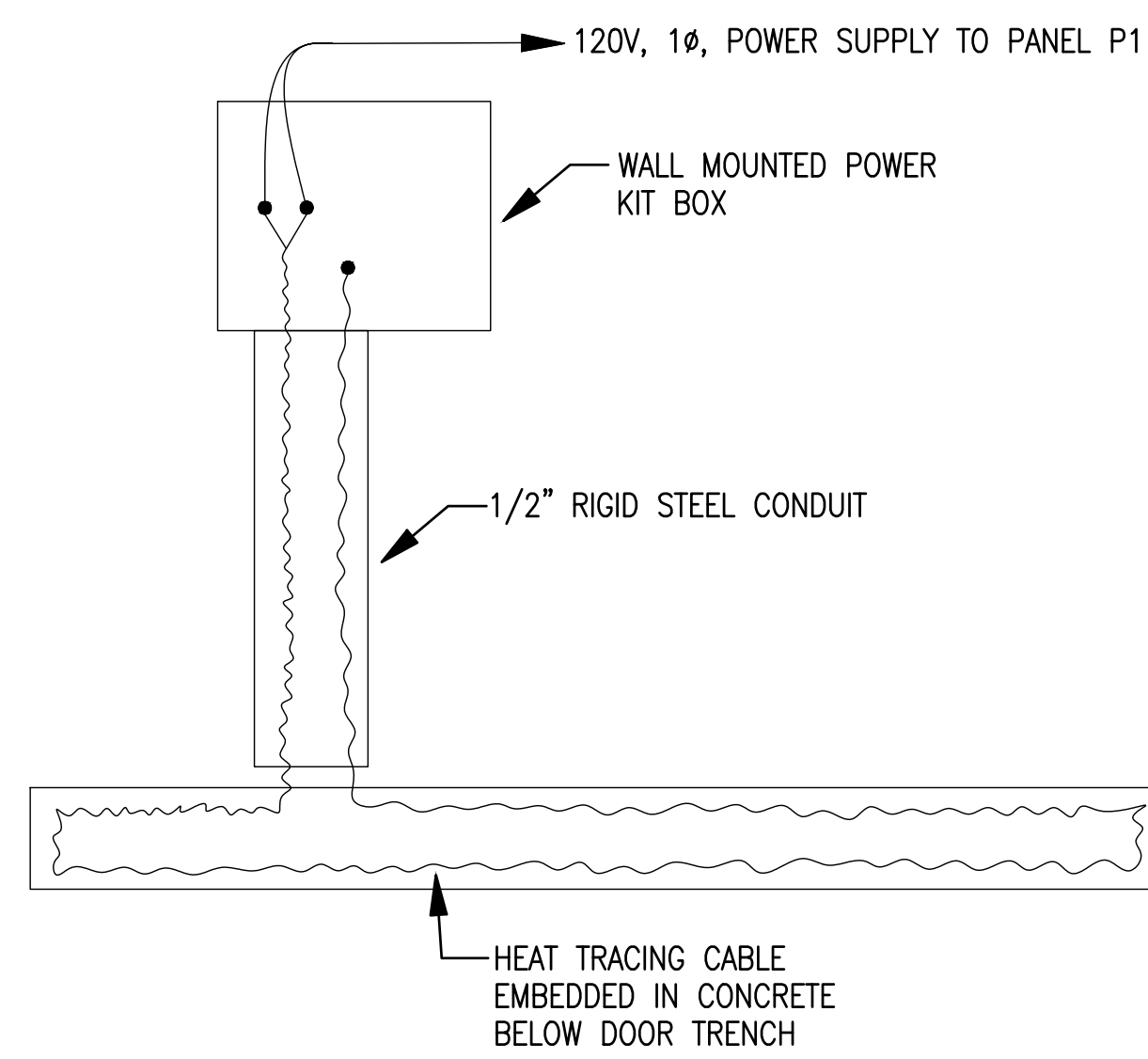
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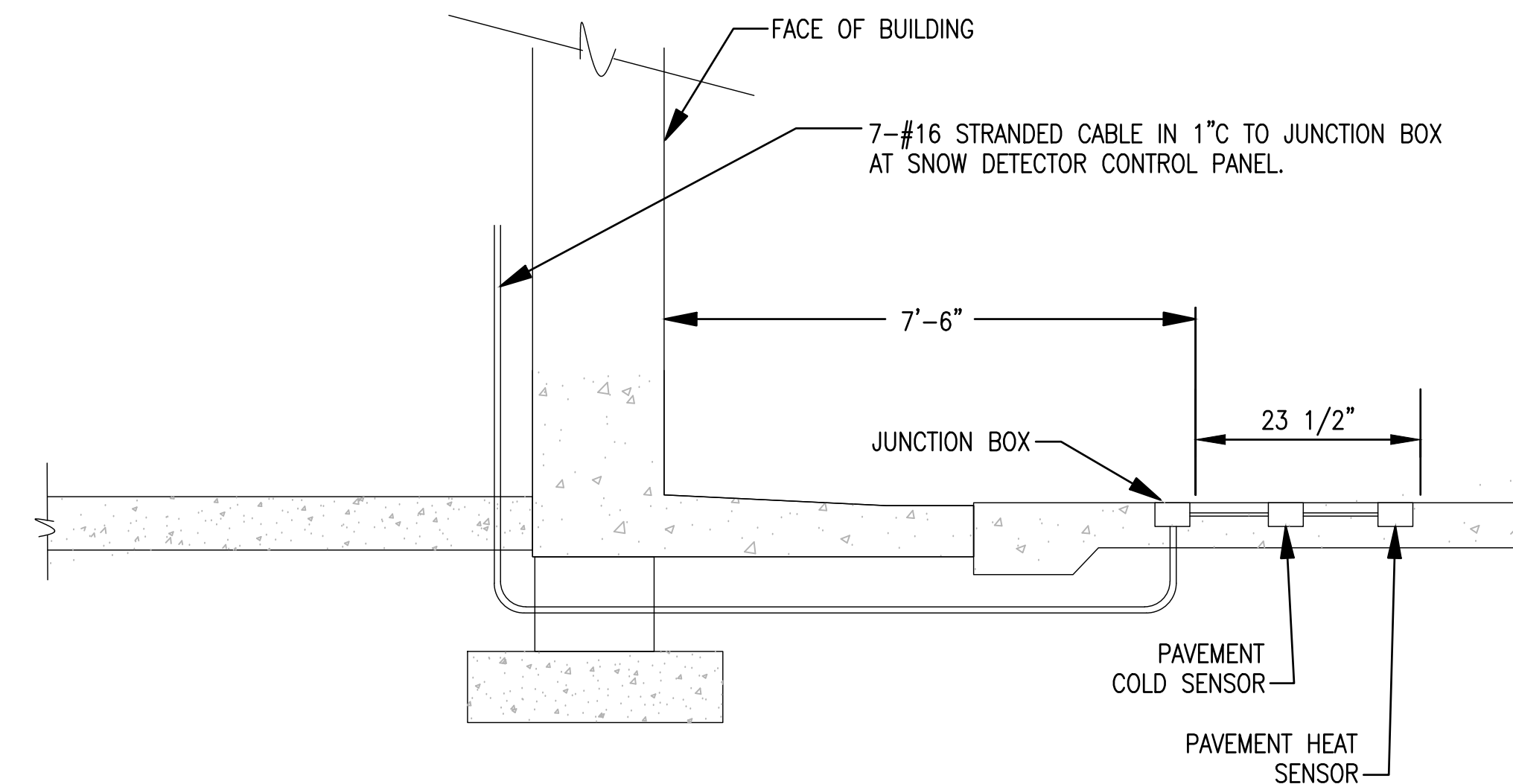
DRAIN PIPE HEAT TRACING DETAIL (C1)
N.T.S. E-801



HEAT TRACING CABLE DETAIL (C4)
N.T.S. E-801



TYPICAL DOOR TRENCH HEAT TRACING WIRING DIAGRAM (A1)
N.T.S. E-802



SNOW DETECTOR LOCATION DETAIL (A4)
N.T.S. E-801

DATE	09/14/22
DESCRIPTION	TYPE C STANDARD
SYMBOL	



APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO	DATE
DES	MM/DD/YY
DRW	RJL
CHK	SEK
PMIDM	
BRANCH MANAGER	SEK
CHIEF ENGINEER	RICHARD L. STEPHENS, P.E.
FIRE PROTECTION	DPS

DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	BRANDFORD, VA
DESIGN AND CONSTRUCTION	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND	
	TYPE C BOX MAGAZINE	
	HEAT TRACE DETAILS	

SCALE:	AS NOTED
PROJECT NO.:	
CONSTR. CONTR. NO.:	
NAVFAC DRAWING NO.:	14115968
SHEET	35 OF 35
E-802	

DRAWING REVISION: 25 AUGUST 2020

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A

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C

D

FILE NAME: J:\DSE\Magazines\Box Magazines Modified 2021\Type C\Final Drawings Type C AutoCAD\BOX_C_2022.9.27.dwg LAYOUT NAME: E-802 PLOTTED: Thursday, November 03, 2022 - 11:09am USER: helia.casano