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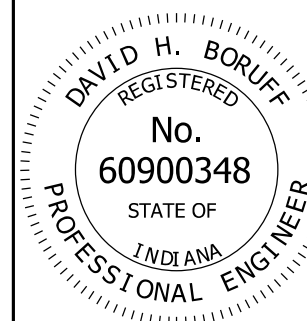
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3	Double Arm Panel Dimensions and Member Sizes
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INDIANA DEPARTMENT OF TRANSPORTATION

SIGN CANTILEVER STRUCTURE
INDEX

SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-01

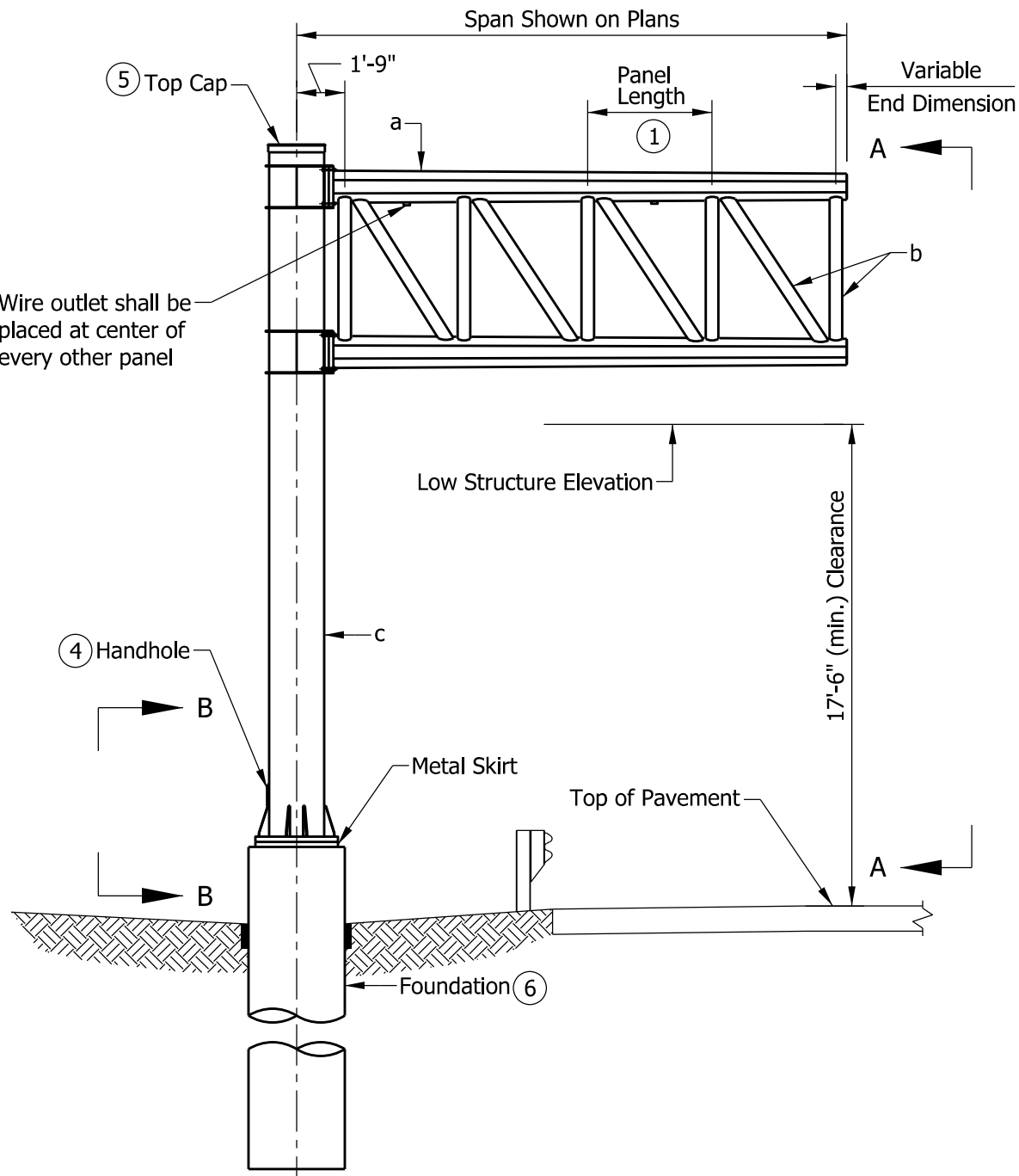


David H. Boruff 05/17/22
DESIGN STANDARDS ENGINEER DATE

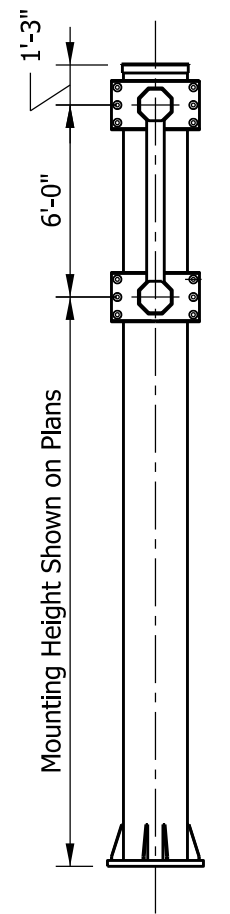
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CHIEF ENGINEER DATE



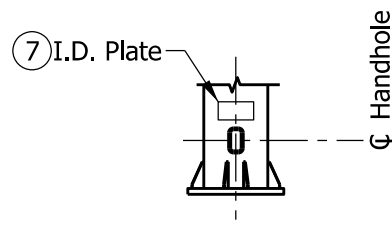
PLAN



FRONT ELEVATION



ELEVATION A-A



ELEVATION B-B

NOTES:

- ① See Standard Drawing E 802-SCLS-03 for panel dimensions and member sizes.
2. Maximum deviation of a chord from a straight line shall be $\frac{1}{8}$ in.
- ③ See Standard Drawing E 802-SCLS-05 for connection to column details.
- ④ See Standard Drawing E 802-SCLS-13 for handhole detail.
- ⑤ See Standard Drawing E 802-SCLS-06 for top cap and cable J-hook detail.
- ⑥ See Standard Drawings E 802-SCLS-14, 17, and 20 for foundation details.
- ⑦ See Standard Drawing E 802-SCLS-13 for I.D. Plate detail.
- ⑧ See Standard Drawing E 802-SCLS-10 for wire outlet detail.

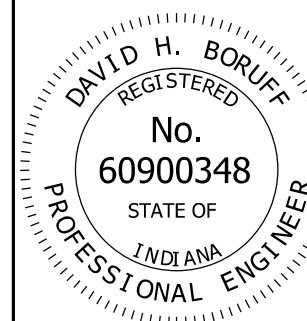
LEGEND:

- a - Chord
- b - Vertical and Vertical Diagonal
- c - Column

INDIANA DEPARTMENT OF TRANSPORTATION

SIGN CANTILEVER STRUCTURE
DOUBLE ARM
PLAN AND ELEVATION
SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-02

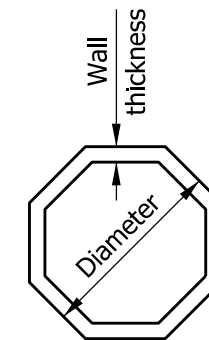


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<i>[Signature]</i>	07/07/2022
CHIEF ENGINEER	DATE

DOUBLE ARM PANEL DIMENSIONS			
SPAN	NO. OF PANELS	PANEL LENGTH	VARIABLE END DIMENSION
10'	2	4'-0"	0'-3"
11'	3	3'-0"	0'-3"
12'	3	3'-3"	0'-6"
13'	3	3'-6"	0'-9"
14'	3	4'-0"	0'-3"
15'	3	4'-3"	0'-6"
16'	4	3'-6"	0'-3"
17'	4	3'-9"	0'-3"
18'	4	4'-0"	0'-3"
19'	4	4'-3"	0'-3"
20'	4	4'-6"	0'-3"

NOTES:

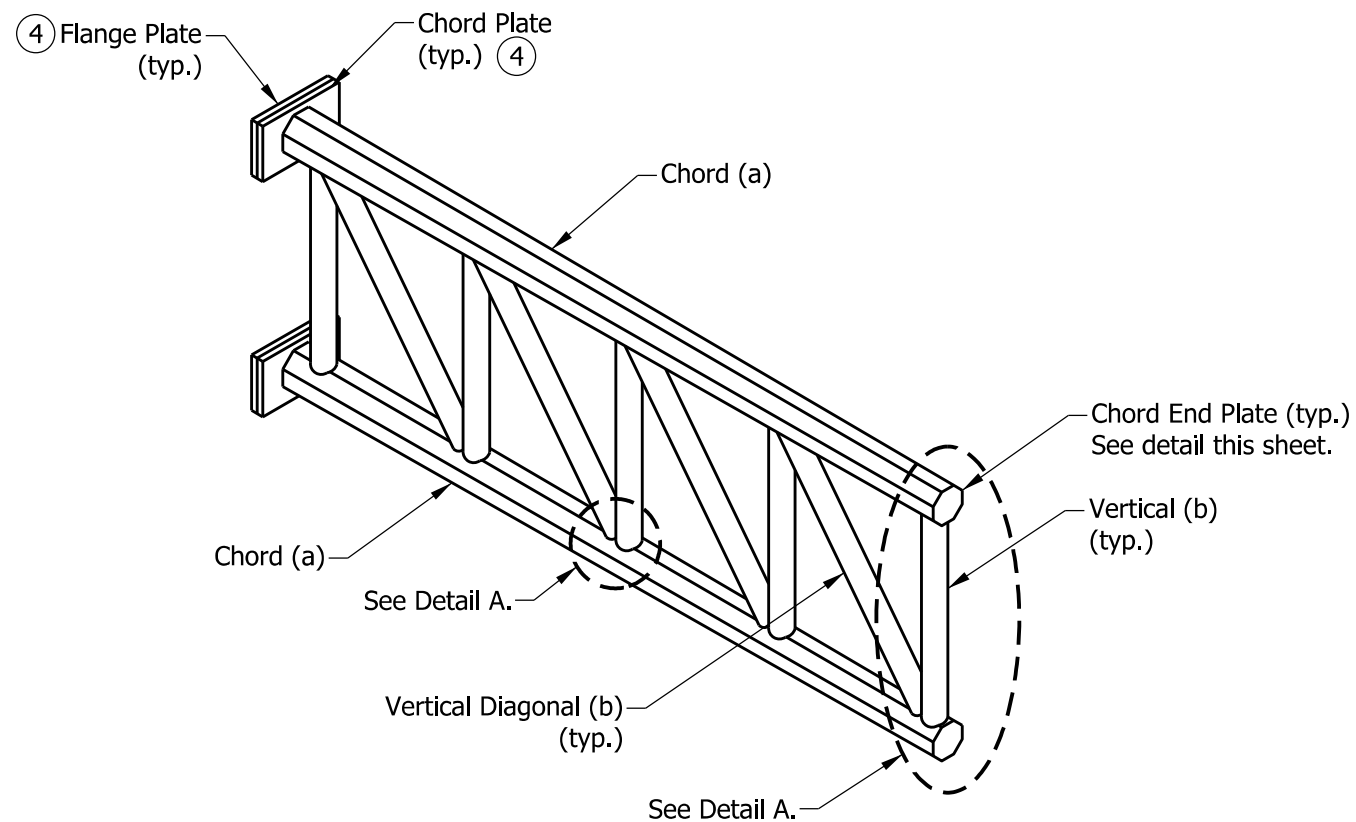
1. All panels on the double arm shall be the same length. The minimum panel length is 3 ft - 0 in. and the maximum is 4 ft - 6 in.
2. See Standard Drawing E 802-SCLS-04 for connections, weld details, and required camber.
3. For base plate and anchor bolt details see Standard Drawing E 802-SCLS-12.
4. See Standard Drawings E 802-SCLS-14, 17, and 20 for foundation details.
5. All member diameters shown are outside diameters.
- ⑥ Double arm chord shape shall be octagonal tubular with 0.14 in./ft taper, maximum diameter shown in table.



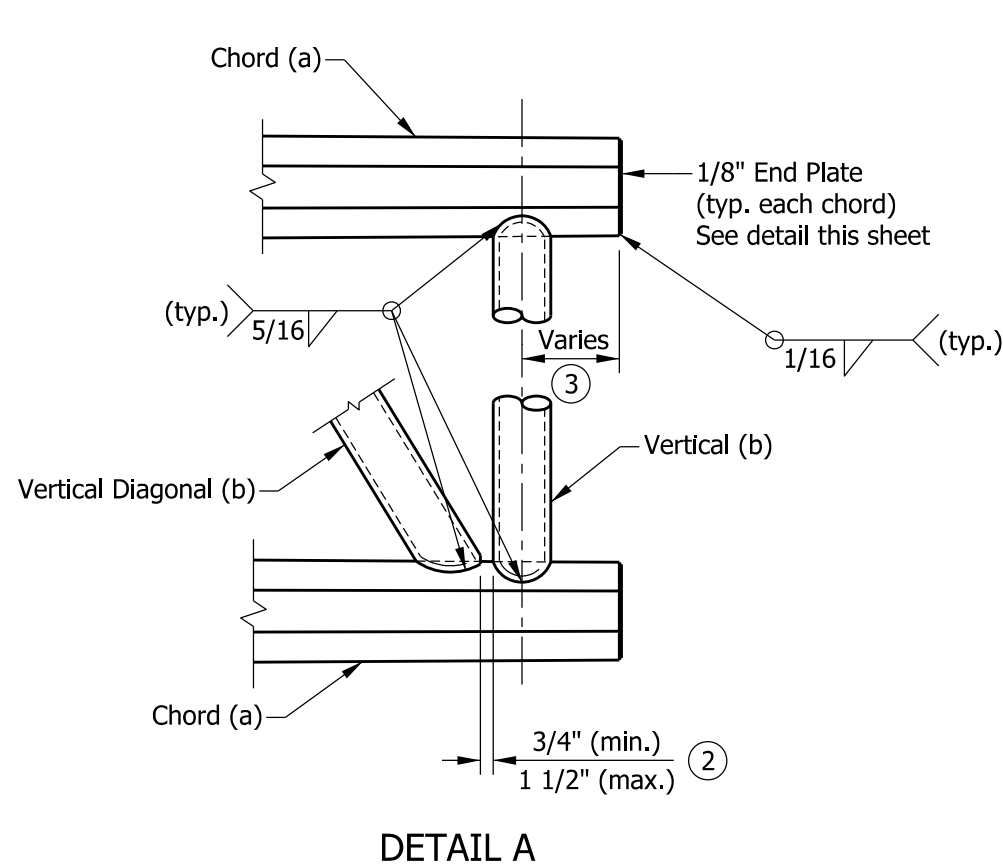
OCTAGON TUBULAR SHAPE

DOUBLE ARM MEMBER SIZES									
STR. TYPE	MAX SPAN (FT.)	MAX SIGN AREA (FT.)	MAX MOUNTING HEIGHT (FT.)	⑥ CHORD a		VERTICAL/VERTICAL DIAGONAL b		COLUMN c	
				DIAMETER (IN.)	WALL THICK. (IN.)	DIAMETER (IN.)	WALL THICK. (IN.)	DIAMETER (IN.)	WALL THICK. (IN.)
A	10	180	24	7 5/8	0.500	5 9/16	0.375	18	0.750
B	15	280	24	10 3/4	0.593	5 9/16	0.500	20	0.812
C	20	380	24	14	0.593	6 5/8	0.719	24	0.968

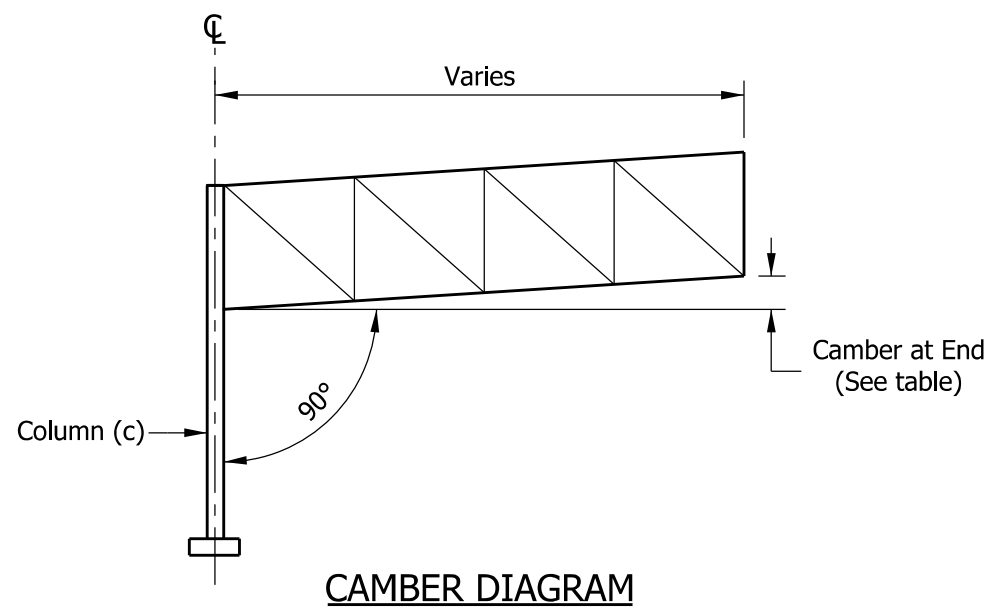
INDIANA DEPARTMENT OF TRANSPORTATION	
SIGN CANTILEVER STRUCTURE DOUBLE ARM PANEL DIMENSIONS AND MEMBER SIZES SEPTEMBER 2022	
STANDARD DRAWING NO. E 802-SCLS-03	
	<p style="text-align: right;"><i>David H. Boruff</i> 05/17/22 DESIGN STANDARDS ENGINEER DATE</p> <p style="text-align: right;"><i>[Signature]</i> 07/07/2022 CHIEF ENGINEER DATE</p>



DOUBLE ARM



DETAIL A

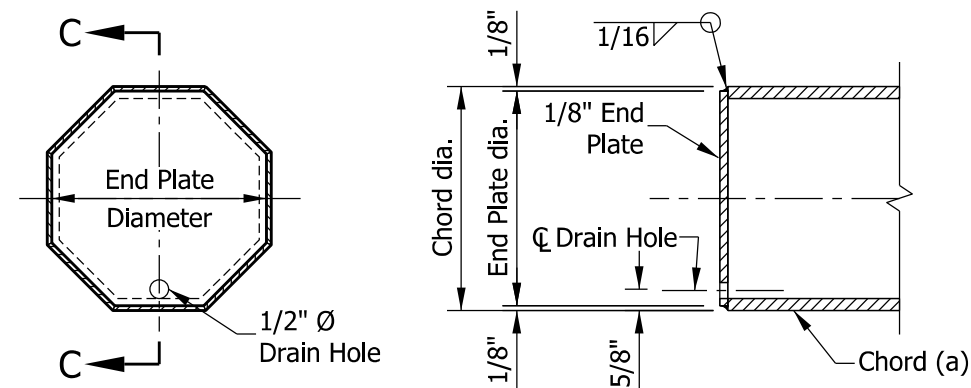


CAMBER DIAGRAM

DOUBLE ARM		
STR. TYPE	LENGTH	CAMBER AT END (IN.)
A	10'-0"	0.375
B	15'-0"	0.750
C	20'-0"	1.000

NOTES:

1. See Standard Drawing E 802-SCLS-03 for panel dimensions and member sizes.
2. Vertical diagonals shall be placed for minimum offset from the panel point such that the offset shall provide a 3/4 in. minimum to 1 1/2 in. maximum clearance between each diagonal and vertical member, and to provide clearance for U-bolt connections to signs.
3. For variable end dimension, see table of panel dimensions on Standard Drawing E 802-SCLS-03.
4. See Standard Drawing E 802-SCLS-05 for flange plate and chord plate details.



END VIEW

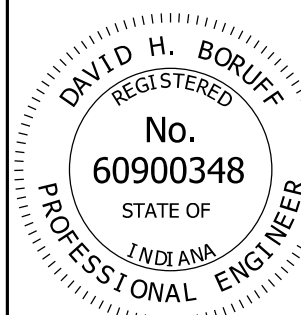
SECTION C-C

CHORD END PLATE DETAILS

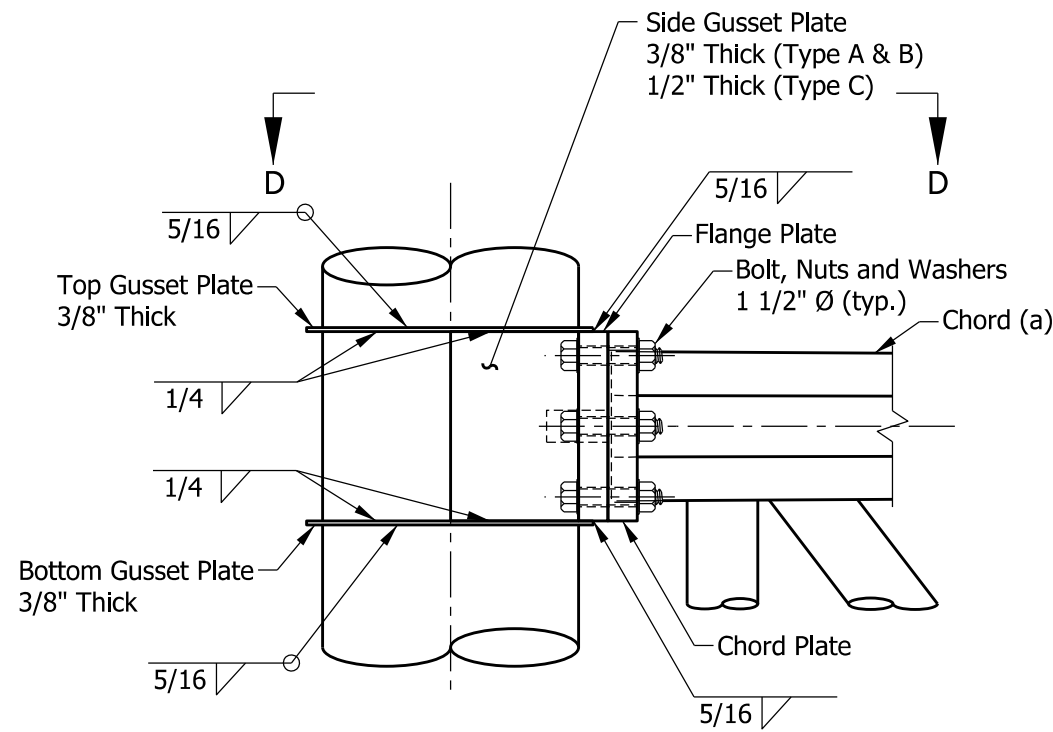
INDIANA DEPARTMENT OF TRANSPORTATION

SIGN CANTILEVER STRUCTURE
DOUBLE ARM CONNECTIONS, WELD DETAILS,
CHORD END PLATE DETAILS, AND CAMBER
SEPTEMBER 2022

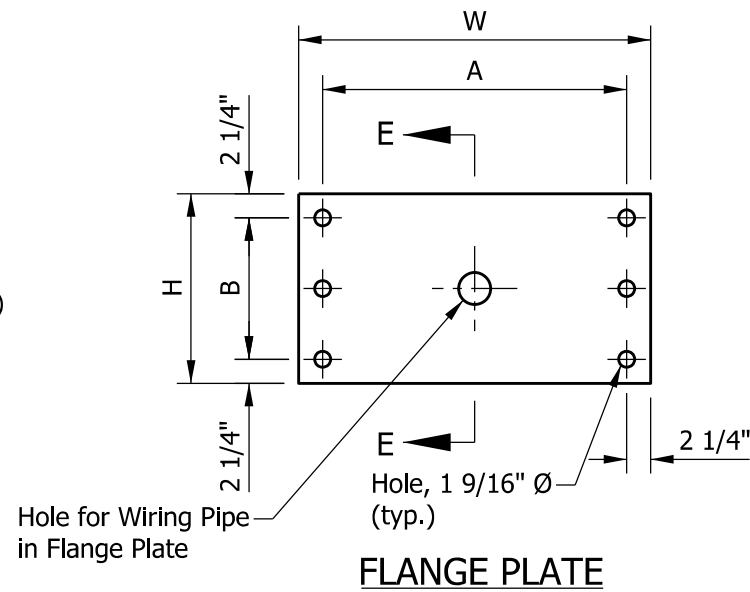
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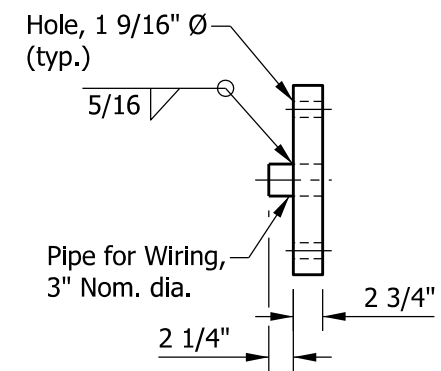
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CHIEF ENGINEER DATE



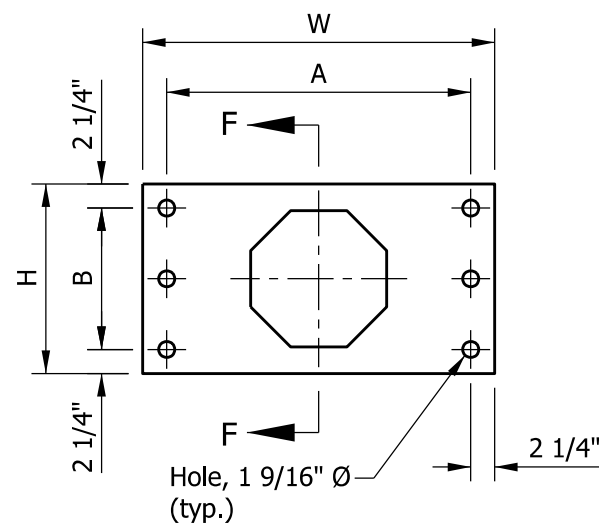
**DOUBLE ARM TRUSS CONNECTION
ELEVATION**



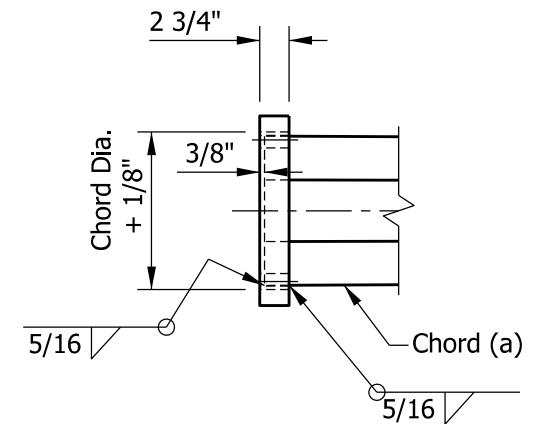
FLANGE PLATE



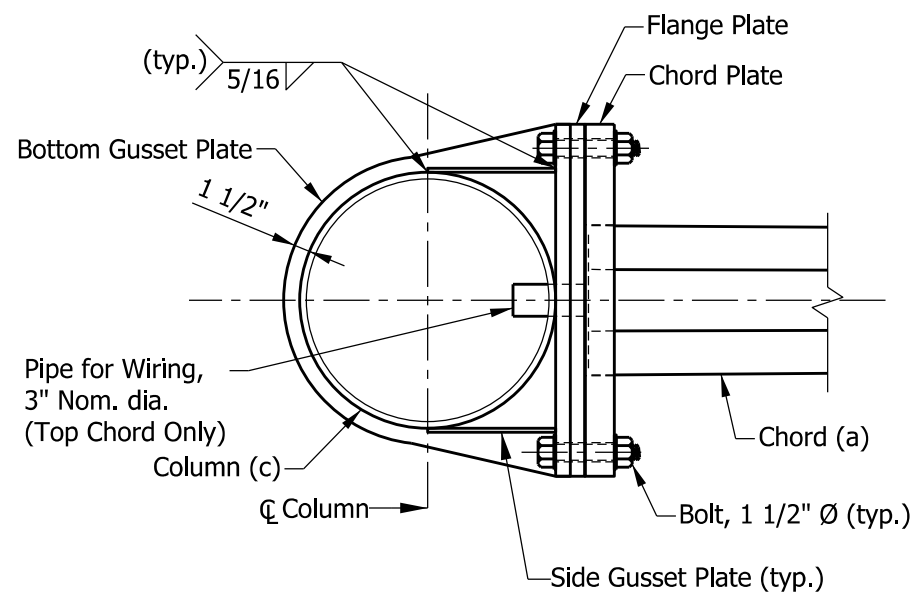
SECTION E-E



CHORD PLATE



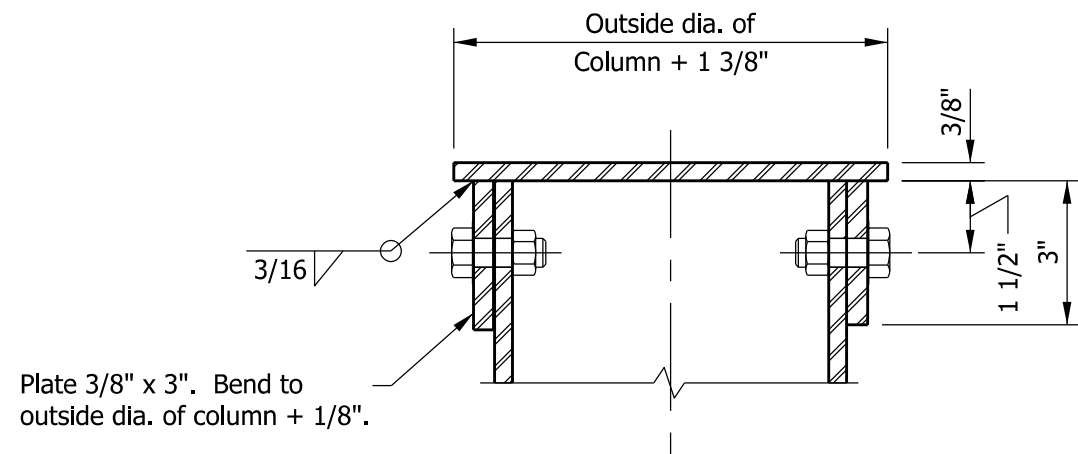
SECTION F-F



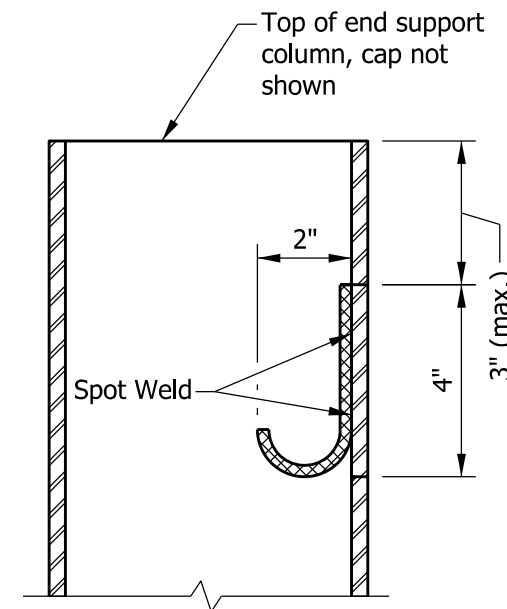
SECTION D-D

PLATE DIMENSIONS					
COLUMN DIAMETER	CHORD DIAMETER	W	H	A	B
18"	7 5/8"	2'-3"	1'-2"	1'-10 1/2"	9 1/2"
20"	10 3/4"	2'-5"	1'-5"	2'-0 1/2"	1'-0 1/2"
24"	14"	2'-9"	1'-6"	2'-4 1/2"	1'-1 1/2"

INDIANA DEPARTMENT OF TRANSPORTATION	
SIGN CANTILEVER STRUCTURE DOUBLE ARM CONNECTION TO COLUMN DETAILS SEPTEMBER 2022	
STANDARD DRAWING NO.	E 802-SCLS-05
	 DESIGN STANDARDS ENGINEER 05/17/22 DATE
	 CHIEF ENGINEER 07/07/2022 DATE



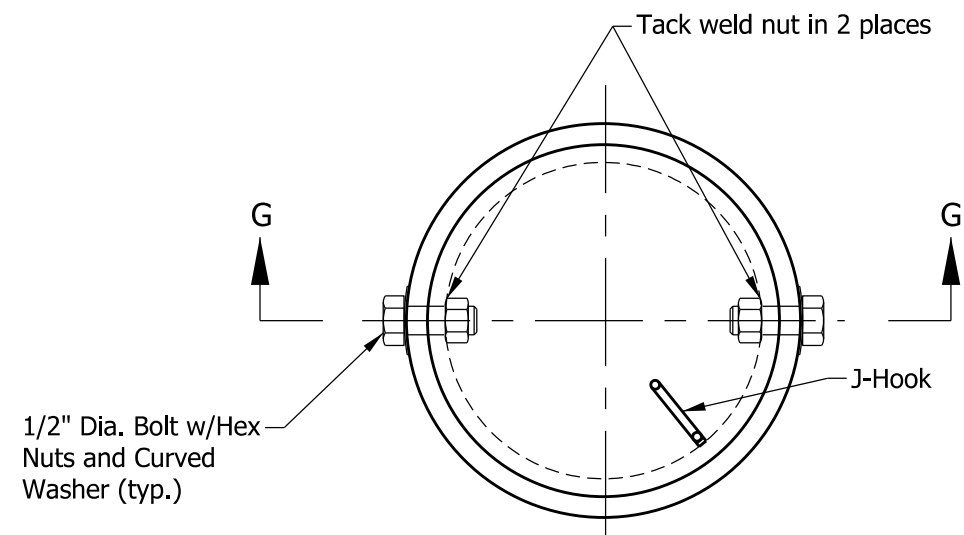
SECTION G-G



CABLE J-HOOK

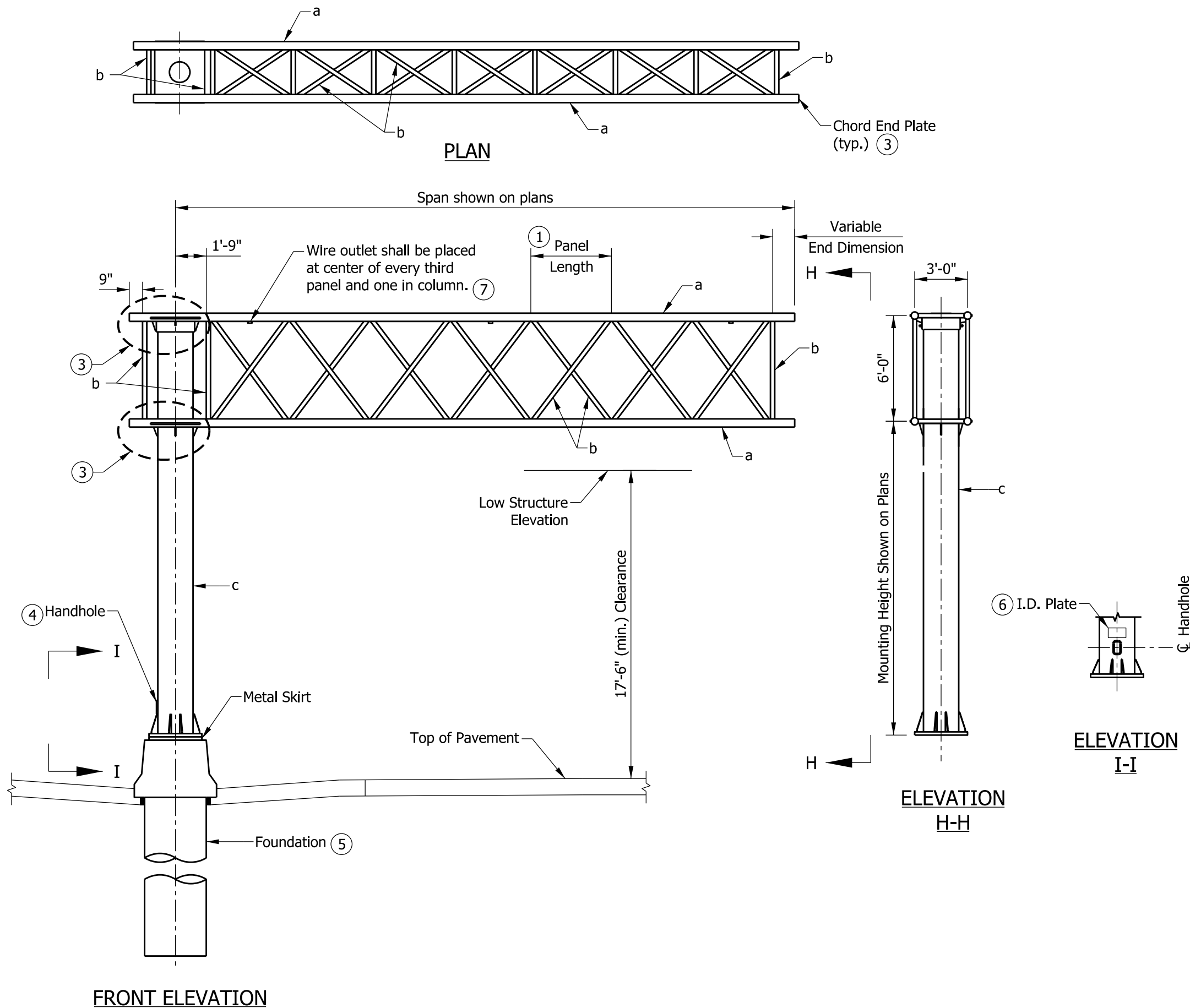
NOTES:

1. J-hook shall consist of $\frac{3}{8}$ in. dia. bars constructed as shown, and spot-welded to inside of the columns.
2. Cap bolts used to attach top cap of columns shall be located to miss J-hook.



PLAN
TOP CAP - STEEL COLUMN

INDIANA DEPARTMENT OF TRANSPORTATION	
SIGN CANTILEVER STRUCTURE DOUBLE ARM COLUMN TOP CAP AND CABLE J-HOOK SEPTEMBER 2022	
STANDARD DRAWING NO. E 802-SCLS-06	
	 DESIGN STANDARDS ENGINEER 05/17/22 DATE
	 CHIEF ENGINEER 07/07/2022 DATE

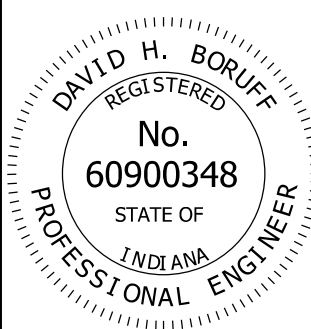
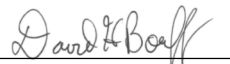



NOTES:

- ① See Standard Drawing E 802-SCLS-08 for panel dimensions and member sizes.
- 2. Maximum deviation of a chord from a straight line shall be $\frac{1}{8}$ in.
- ③ See Standard Drawings E 802-SCLS-09 through 11 for quadri-chord arm connection, weld details, chord end plate details, and camber.
- ④ See Standard Drawing E 802-SCLS-13 for handhole detail.
- ⑤ See Standard Drawings E 802-SCLS-15, 16, 18, 19, 21, and 22 for foundation details.
- ⑥ See Standard Drawing E 802-SCLS-13 for I.D. Plate detail.
- ⑦ See Standard Drawing E 802-SCLS-10 for wire outlet detail.

LEGEND:

- a - Chord
- b - Interior members:
Verticals and vertical diagonals in front and back faces, and
horizontals and horizontal diagonals in top and bottom faces of arm.
- c - Column

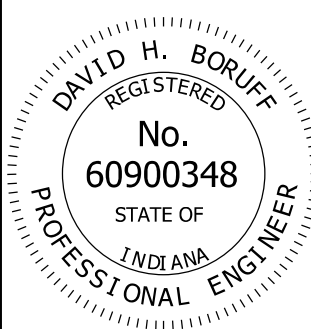
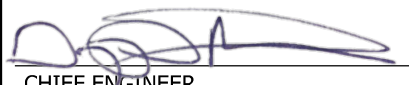
INDIANA DEPARTMENT OF TRANSPORTATION	
SIGN CANTILEVER STRUCTURE QUADRI-CHORD PLAN AND ELEVATION SEPTEMBER 2022	
STANDARD DRAWING NO. E 802-SCLS-07	
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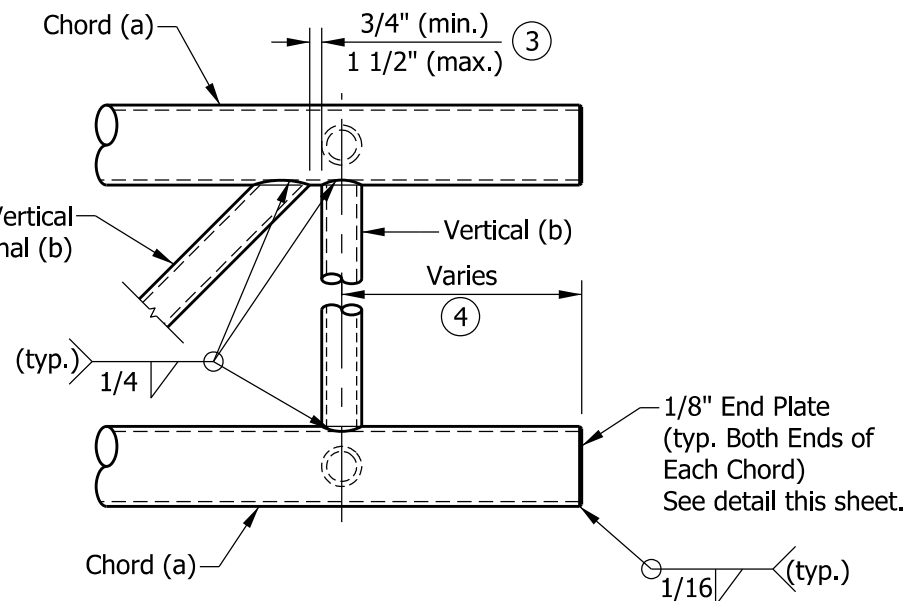
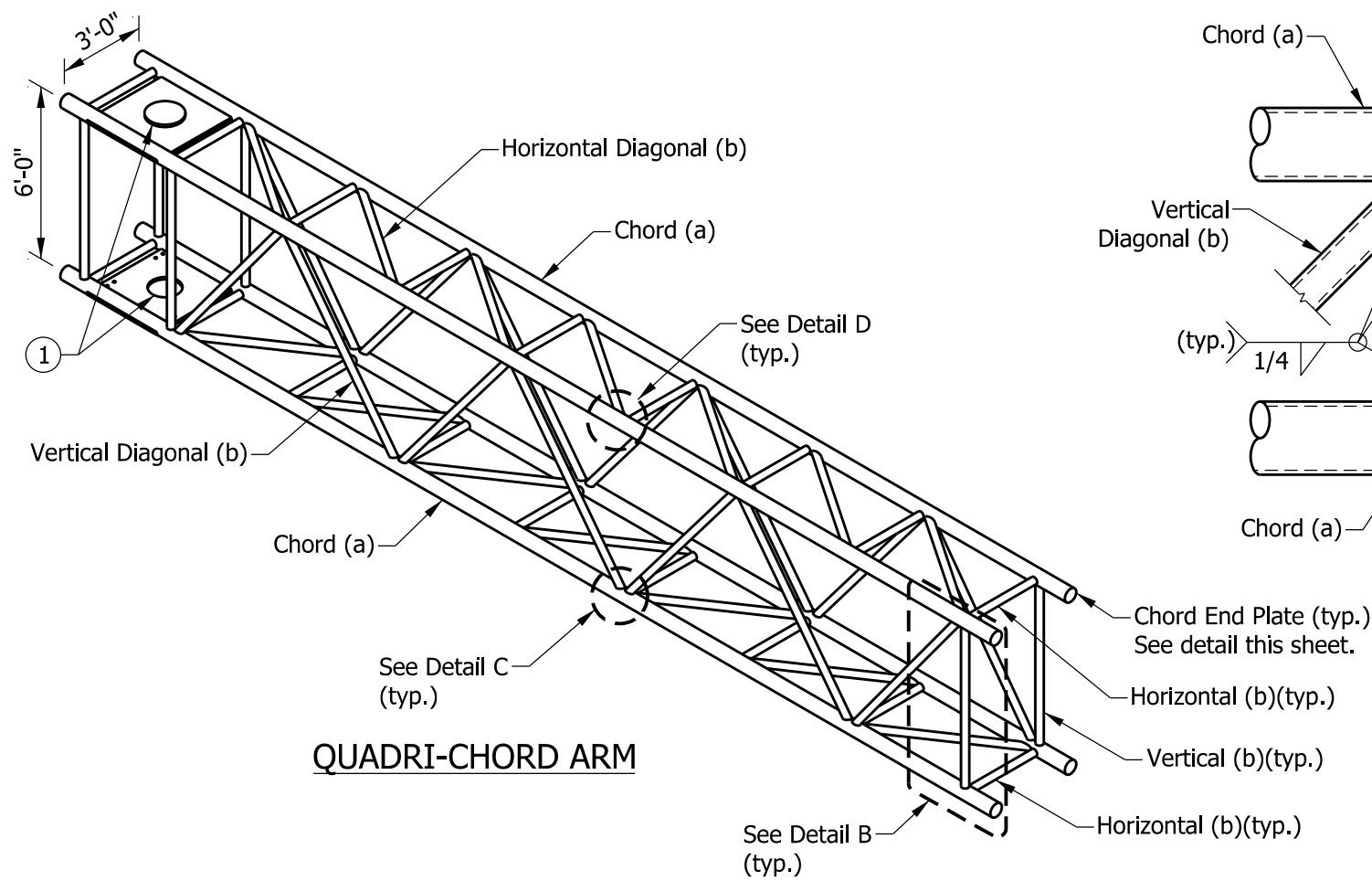
PANEL DIMENSIONS			
SPAN	NO. OF PANELS	PANEL LENGTH	VARIABLE END DIMENSION
21'	5	3'-9"	0'-6"
22'	5	3'-9"	1'-6"
23'	5	4'-0"	1'-3"
24'	5	4'-3"	1'-0"
25'	5	4'-6"	0'-9"
26'	6	3'-9"	1'-9"
27'	6	4'-0"	1'-3"
28'	6	4'-3"	0'-9"
29'	6	4'-3"	1'-9"
30'	6	4'-6"	1'-3"
31'	7	4'-0"	1'-3"
32'	7	4'-3"	0'-6"
33'	7	4'-3"	1'-6"
34'	7	4'-6"	0'-9"
35'	7	4'-6"	1'-9"

NOTES:

1. All panels in a structure shall be the same length. The minimum panel length is 3 ft - 9 in. and the maximum is 4 ft - 6 in.
2. See Standard Drawing E 802-SCLS-09 for connections, weld details, and required camber.
3. For base plate, anchor bolt, and metal skirt details see Standard Drawing E 802-SCLS-12.
4. All member diameters shown are outside diameters.
5. Quadri-chord arm chord shape shall be circular with constant diameter.

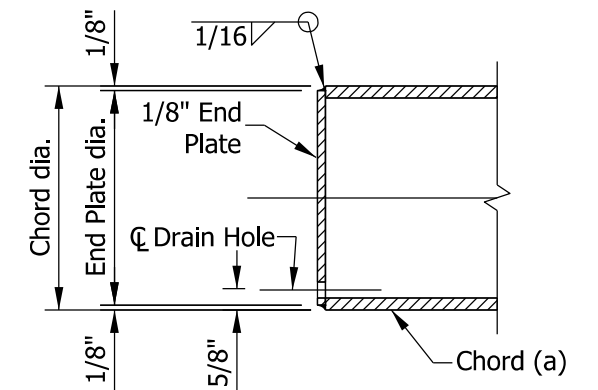
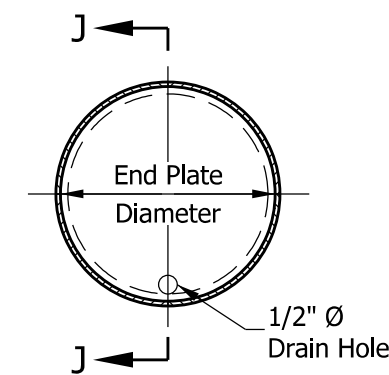
QUADRI-CHORD MEMBER SIZES									
STR. TYPE	MAX SPAN (FT.)	MAX SIGN AREA (FT.)	MAX MOUNTING HEIGHT (FT.)	⑤ CHORD a		VERT./HORIZ./DIAG. b		COLUMN c	
				DIAMETER (IN.)	WALL THICK. (IN.)	DIAMETER (IN.)	WALL THICK. (IN.)	DIAMETER (IN.)	WALL THICK. (IN.)
D	25	300	24	5 9/16	0.258	2 7/8	0.276	24	0.562
E	30	300	24	5 9/16	0.258	3 1/2	0.300	24	0.562
F	35	300	24	5 9/16	0.375	3 1/2	0.300	24	0.688
G	25	400	24	5 9/16	0.375	3 1/2	0.300	24	0.968
H	30	400	24	5 9/16	0.375	3 1/2	0.300	24	0.968
I	35	400	24	5 9/16	0.375	4	0.318	24	0.968

INDIANA DEPARTMENT OF TRANSPORTATION		
SIGN CANTILEVER STRUCTURE QUADRI-CHORD PANEL DIMENSIONS AND MEMBER SIZES SEPTEMBER 2022		
STANDARD DRAWING NO. E 802-SCLS-08		
		05/17/22
	DESIGN STANDARDS ENGINEER	DATE
		07/07/2022
	CHIEF ENGINEER	DATE



NOTES:

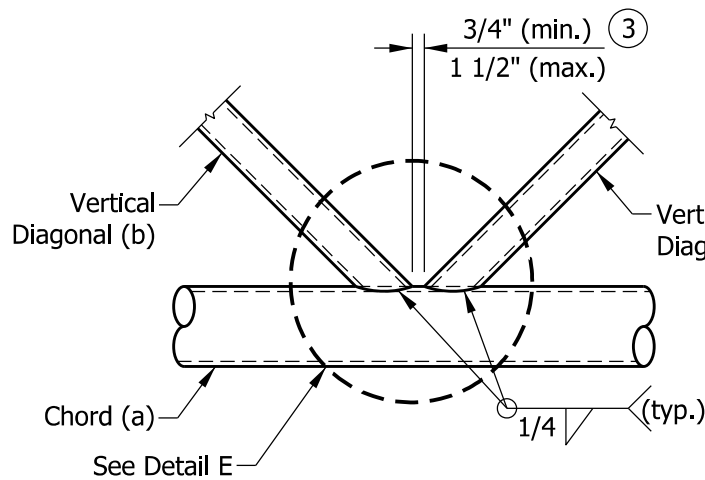
- ① See Standard Drawing E 802-SCLS-10 and 11 for quadri-chord arm connection to column details.
- 2. See Standard Drawing E 802-SCLS-08 for panel dimensions and member sizes.
- ③ Vertical diagonals shall be placed for minimum offset from the panel point such that the offset shall provide a 3/4 in. minimum to 1 1/2 in. maximum clearance between each diagonal and vertical member, and to provide clearance for U-bolt connections to signs.
- ④ For variable end dimension, see table on Standard Drawing E 802-SCLS-08.



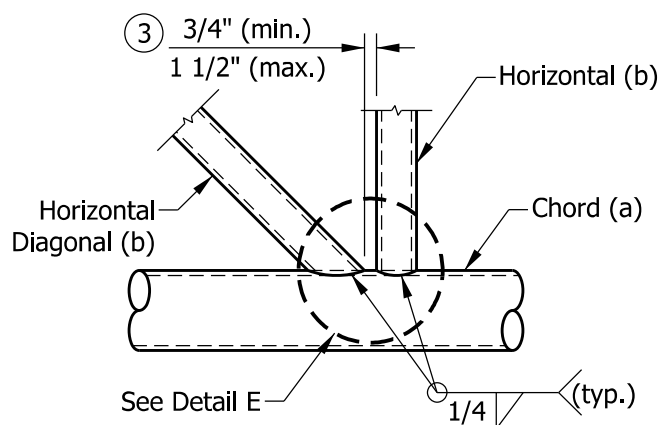
END VIEW

SECTION J-J

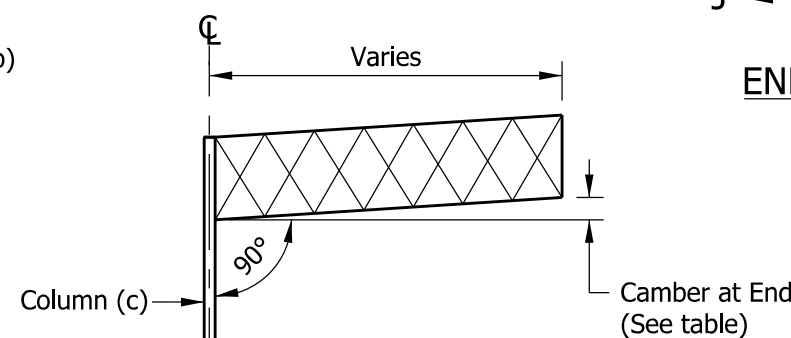
CHORD END PLATE DETAILS



DETAIL C
TYPICAL PANEL CONNECTION

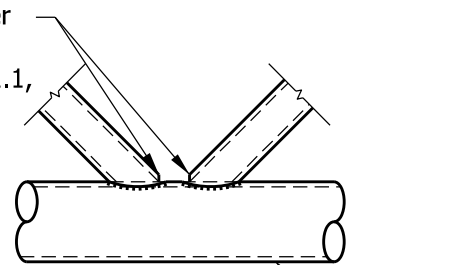


DETAIL D
TYPICAL PANEL CONNECTION



CAMBER DIAGRAM

Top edge of diagonal member shall be cut back to facilitate throat thickness per AWS D 1.1, Figure 10.5



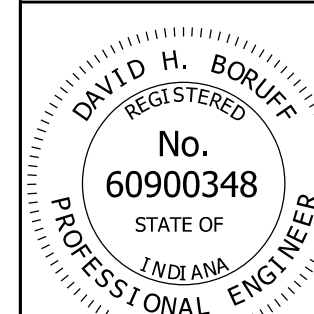
DETAIL E

QUADRI-CHORD ARM		
STR. TYPE	LENGTH	CAMBER AT END (IN.)
D	25'-0"	1.750
E	30'-0"	2.625
F	35'-0"	3.500
G	25'-0"	1.250
H	30'-0"	2.000
I	35'-0"	3.000

INDIANA DEPARTMENT OF TRANSPORTATION

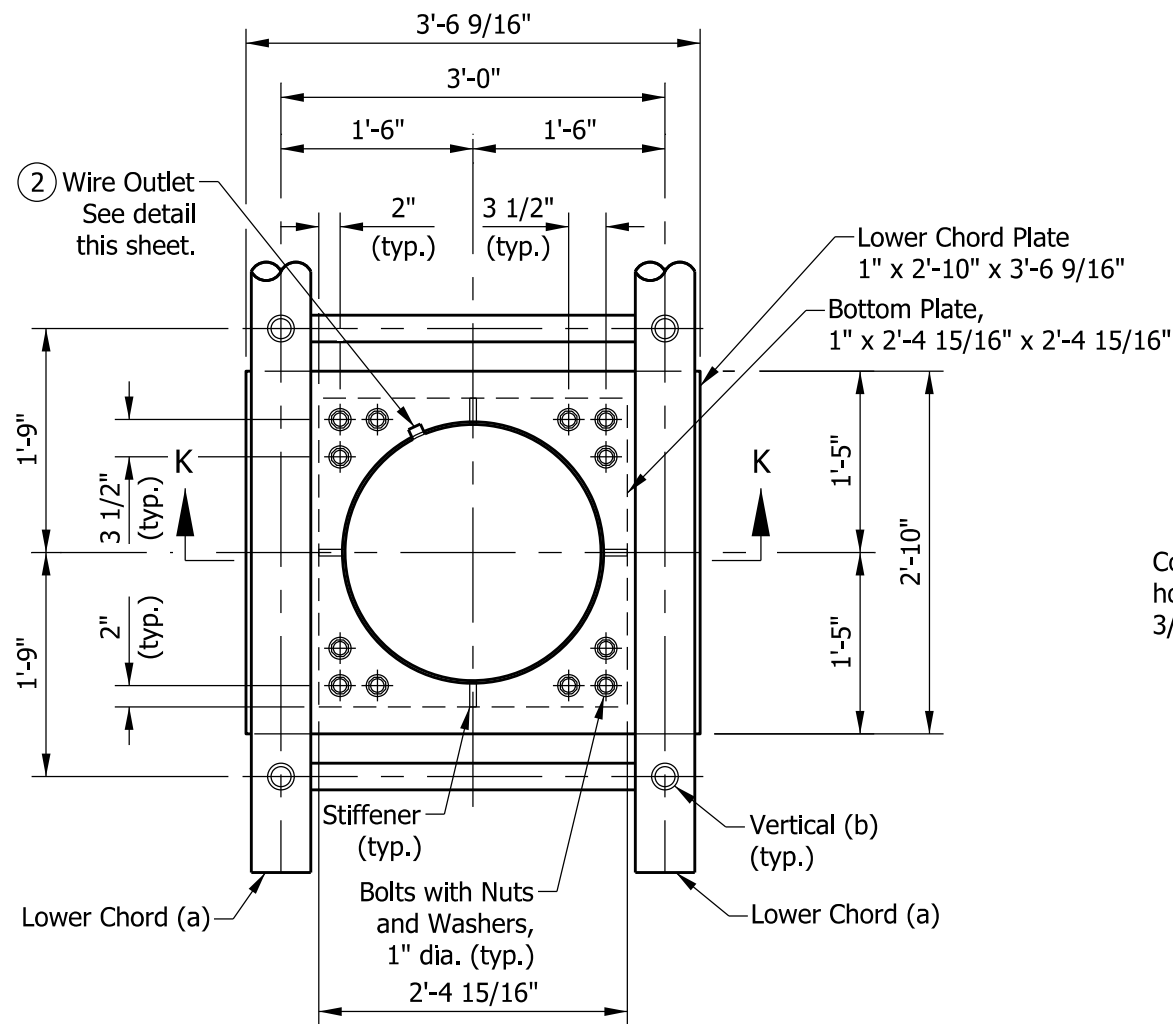
SIGN CANTILEVER STRUCTURE
QUADRI-CHORD CONNECTIONS, WELD DETAILS,
CHORD END PLATE DETAILS, AND CAMBER
SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-09

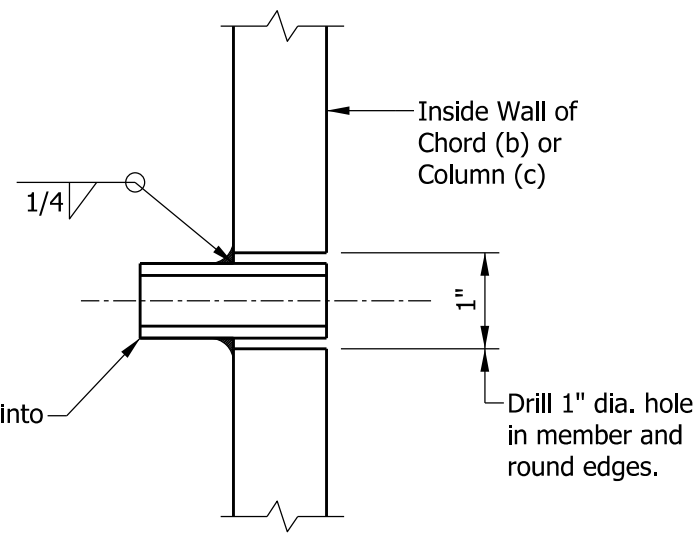


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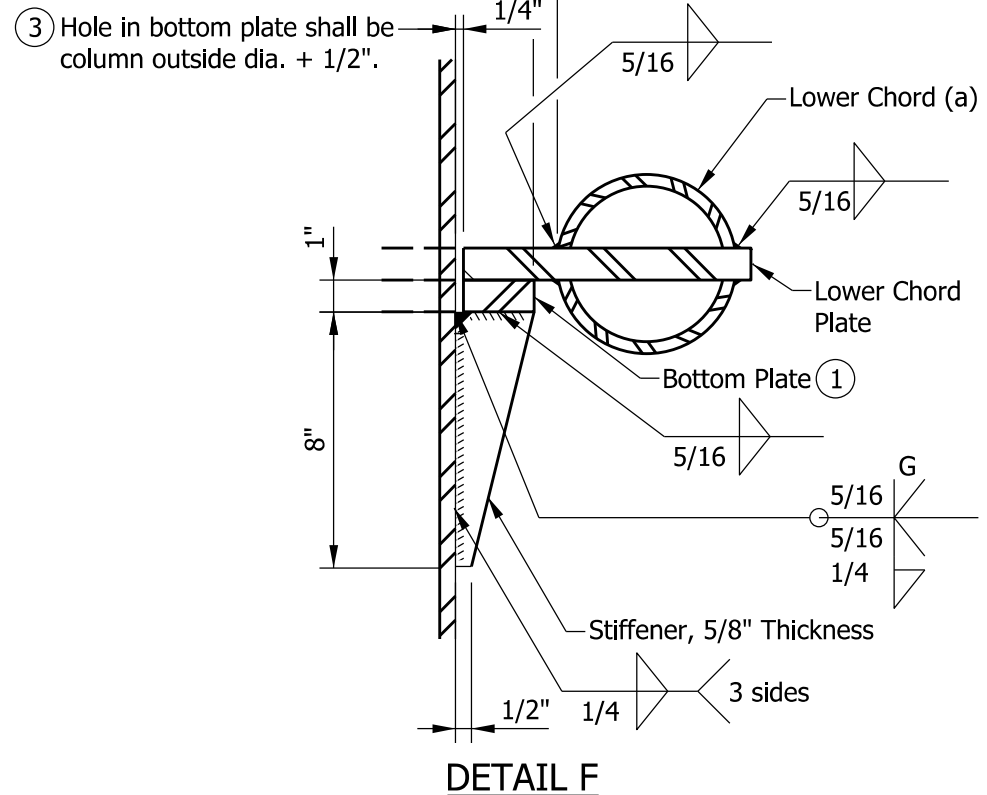
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CHIEF ENGINEER DATE



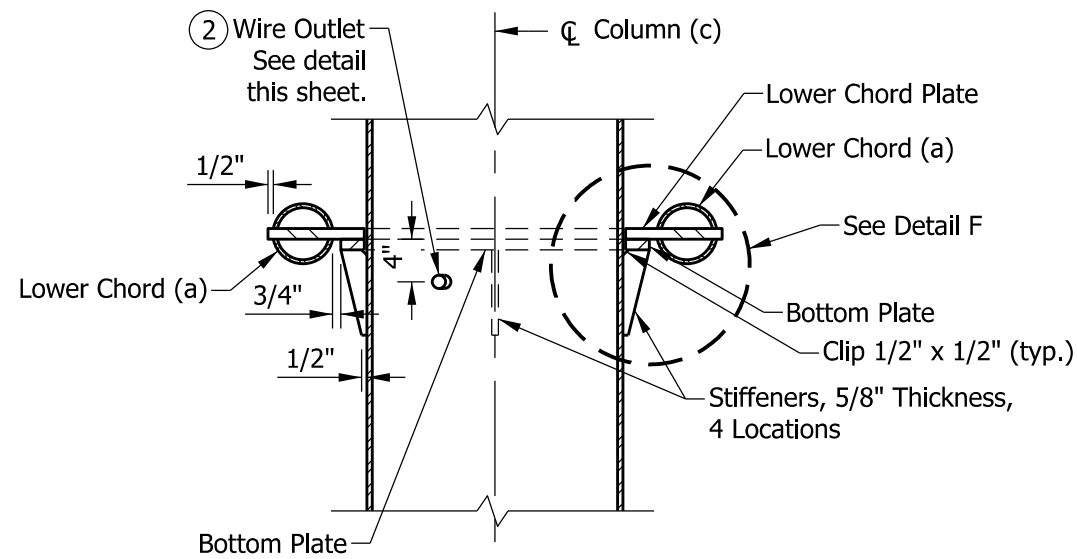
PLAN VIEW THROUGH COLUMN ABOVE LOWER CHORDS



TYPICAL WIRE OUTLET



DETAIL F



SECTION K-K

NOTES:

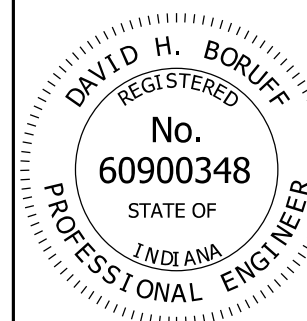
- ① If necessary, the top bottom plate shall be ground to fully seat lower chord plate. Any damages galvanizing shall be repaired before assembly.
- ② Pipe shall be oriented towards sign. Hole diameter in column shall equal outside pipe diameter + 1/8 in.
- ③ After tightening lower connection bolts, gap shall be filled with non-hardening silicone caulk suitable for exterior exposure.

INDIANA DEPARTMENT OF TRANSPORTATION

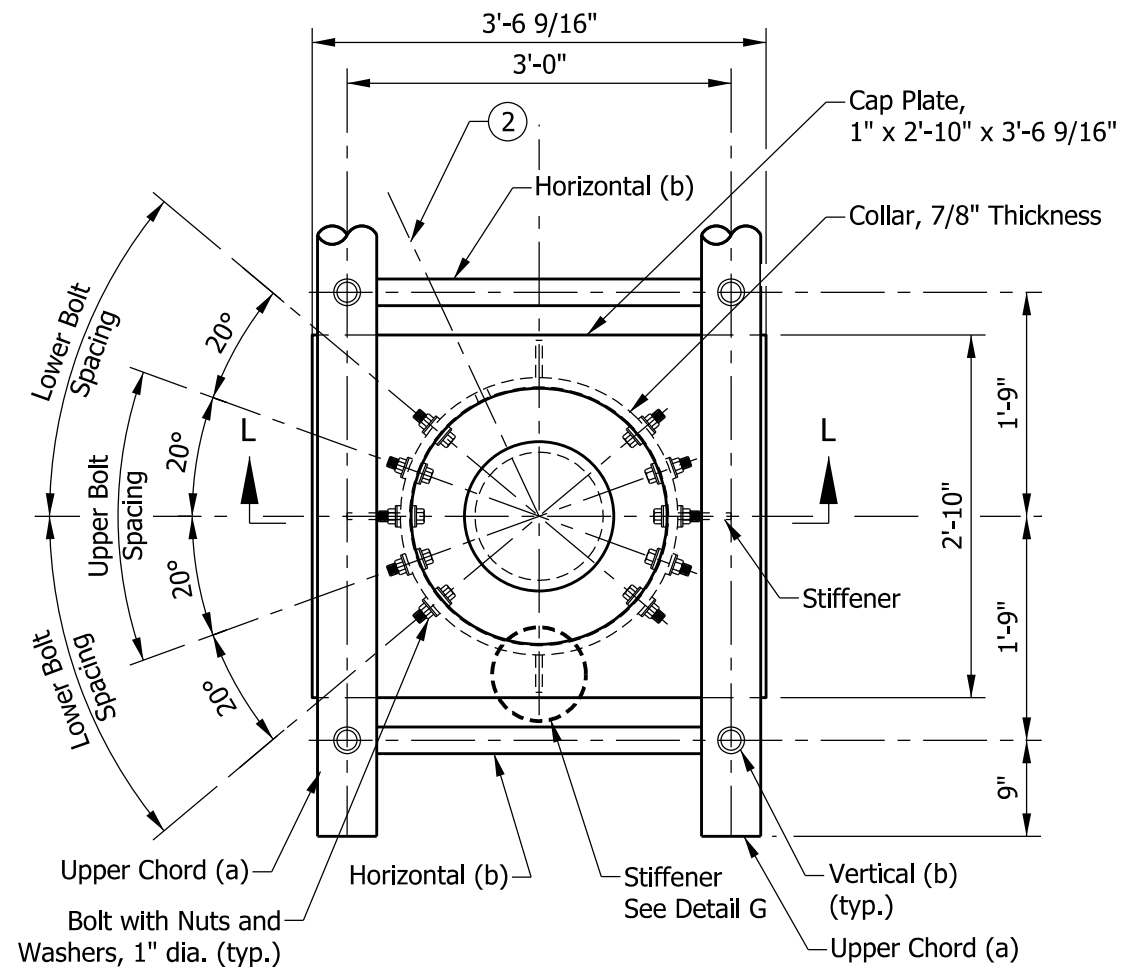
SIGN CANTILEVER STRUCTURE
QUADRI-CHORD LOWER ARM CONNECTION
TO COLUMN AND WIRE OUTLET DETAIL

SEPTEMBER 2022

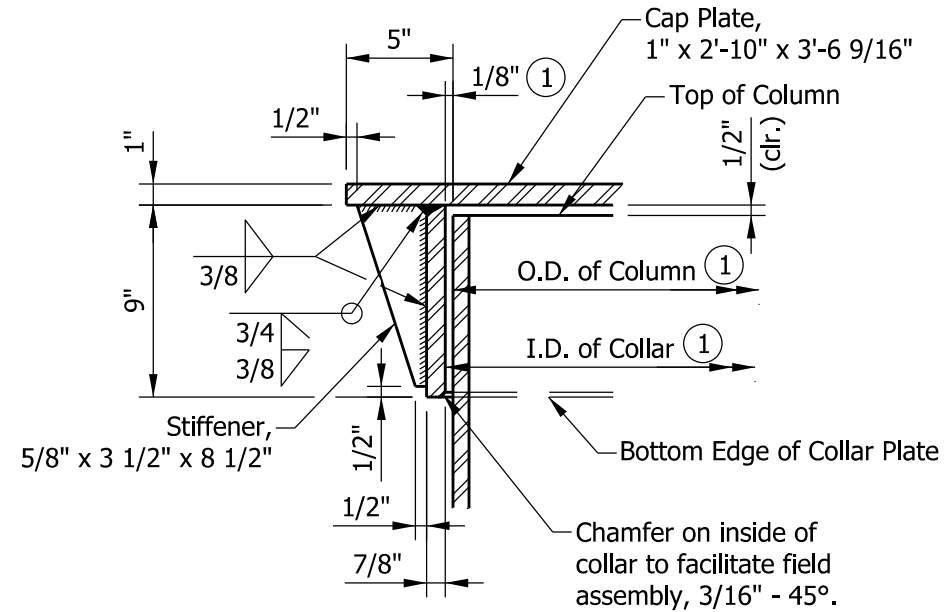
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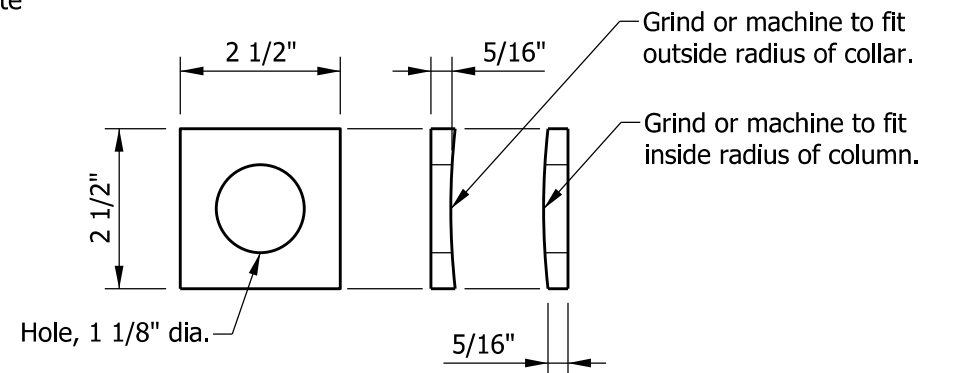
David H. Boruff 05/17/22
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**PLAN VIEW - TOP OF COLUMN
ABOVE UPPER CHORDS**



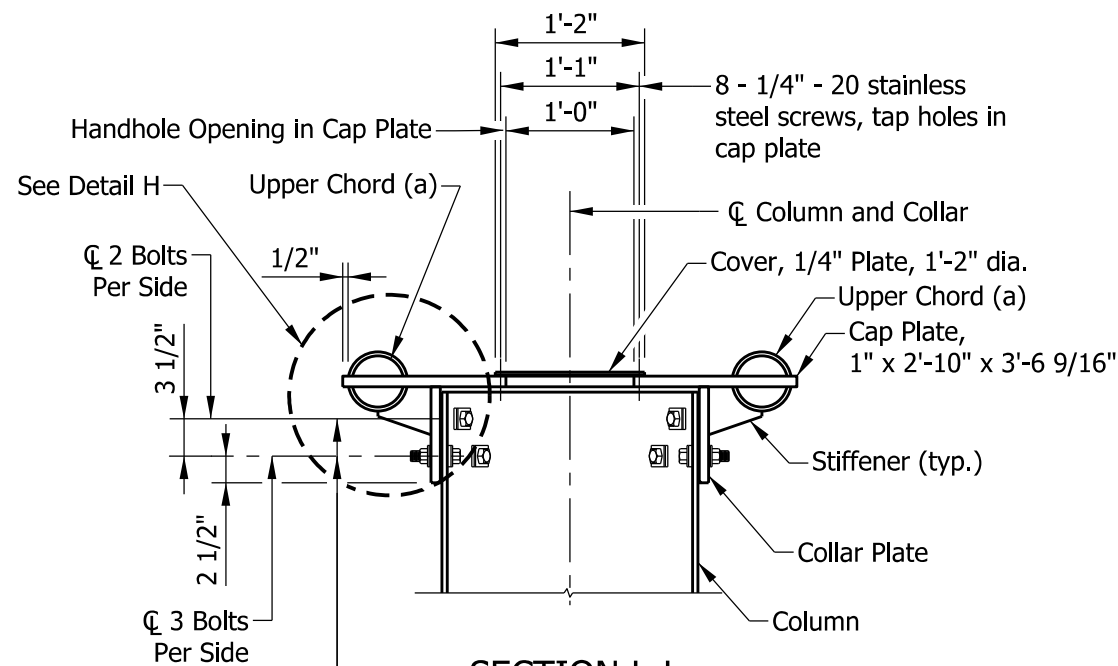
DETAIL G



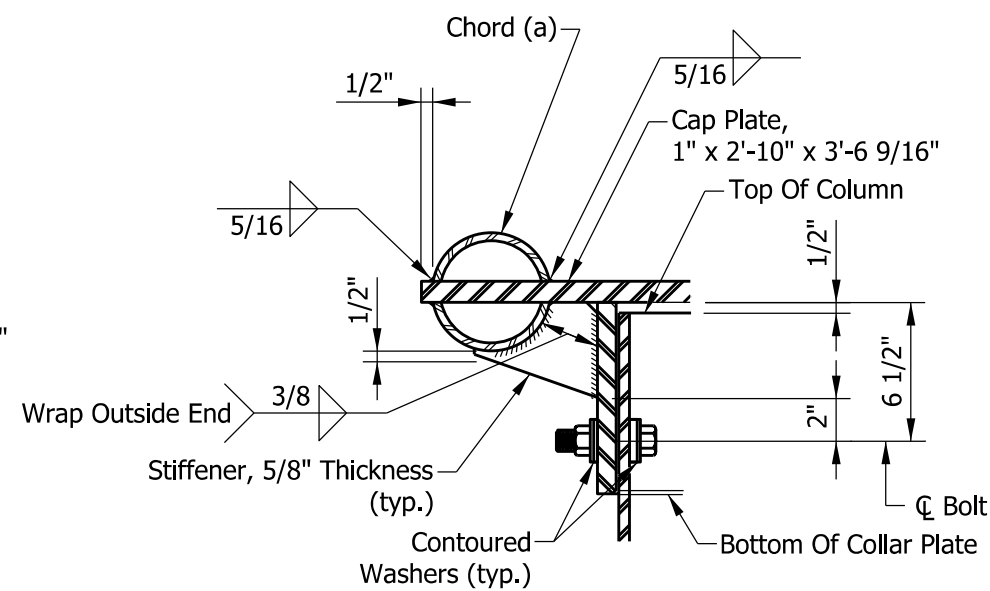
CONTOURED WASHER

NOTES:

- ① After galvanizing, collar inside diameter shall equal outside diameter of galvanized column plus $\frac{1}{8}$ in. $\pm \frac{1}{16}$ in. Maximum gap between column and collar shall be $\frac{1}{8}$ in. before tightening bolts.
- ② Optional full penetration weld in collar may be made at two locations, 180° apart. X-ray or ultrasonic test (UT) 100%.
3. See Standard Drawing E 802-SCLS-08 for dimensions and member sizes.



SECTION L-L



DETAIL H

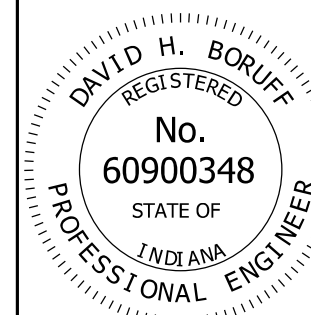
Hole dia. in column and collar plate shall equal bolt dia. plus $\frac{1}{16}$ \".

INDIANA DEPARTMENT OF TRANSPORTATION

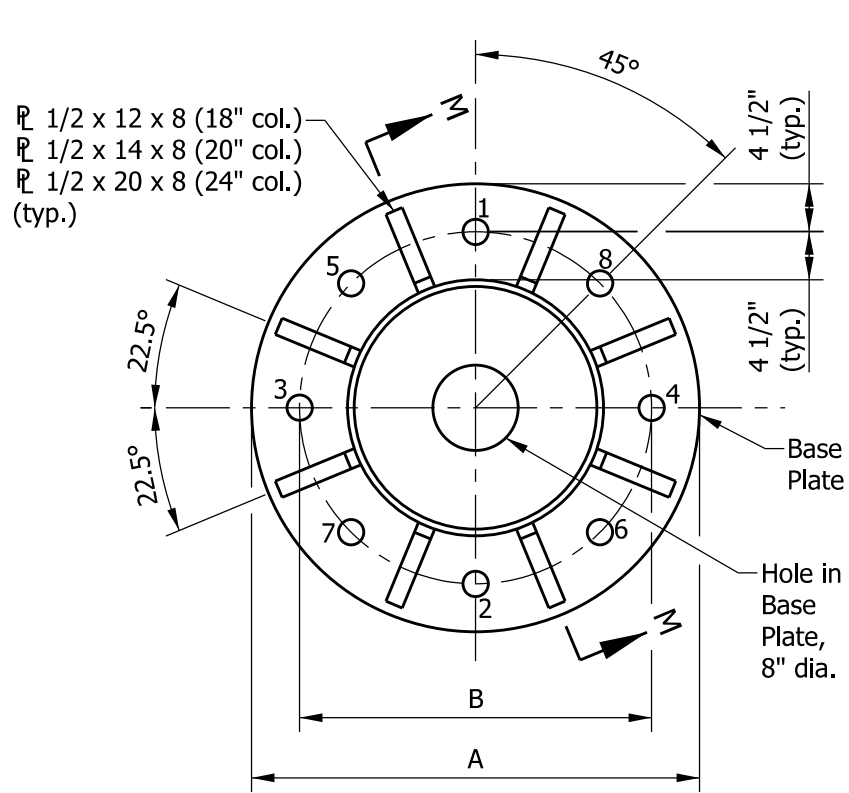
SIGN CANTILEVER STRUCTURE
QUADRI-CHORD UPPER ARM CONNECTION
TO COLUMN

SEPTEMBER 2022

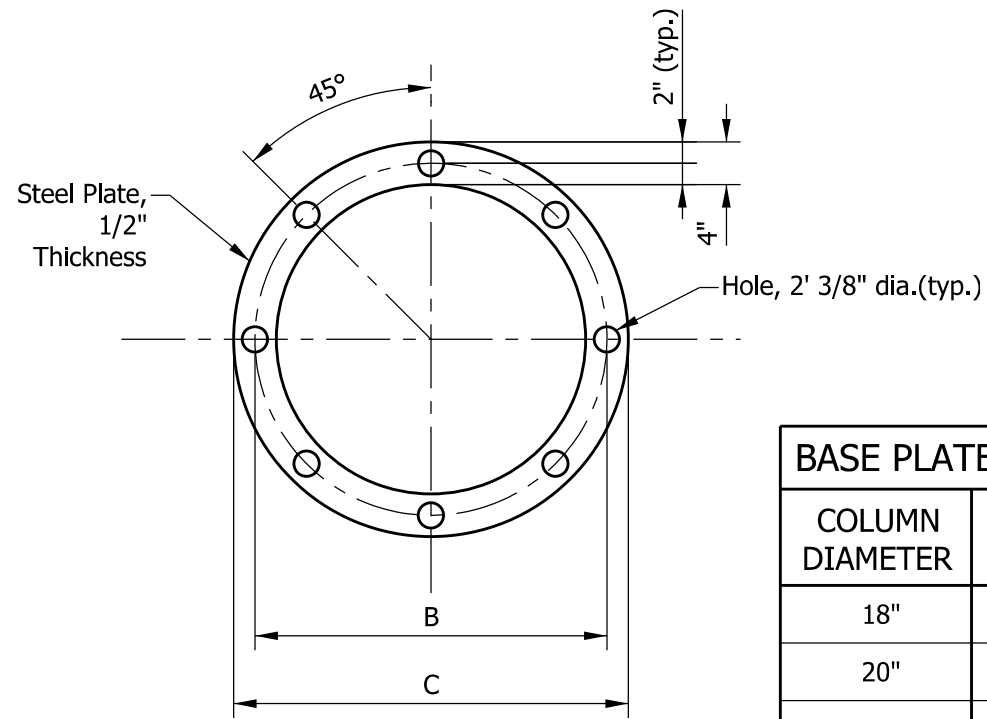
STANDARD DRAWING NO. E 802-SCLS-11



<i>David H. Boruff</i>	05/17/22
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<i>[Signature]</i>	07/07/2022
CHIEF ENGINEER	DATE



PLAN (4)

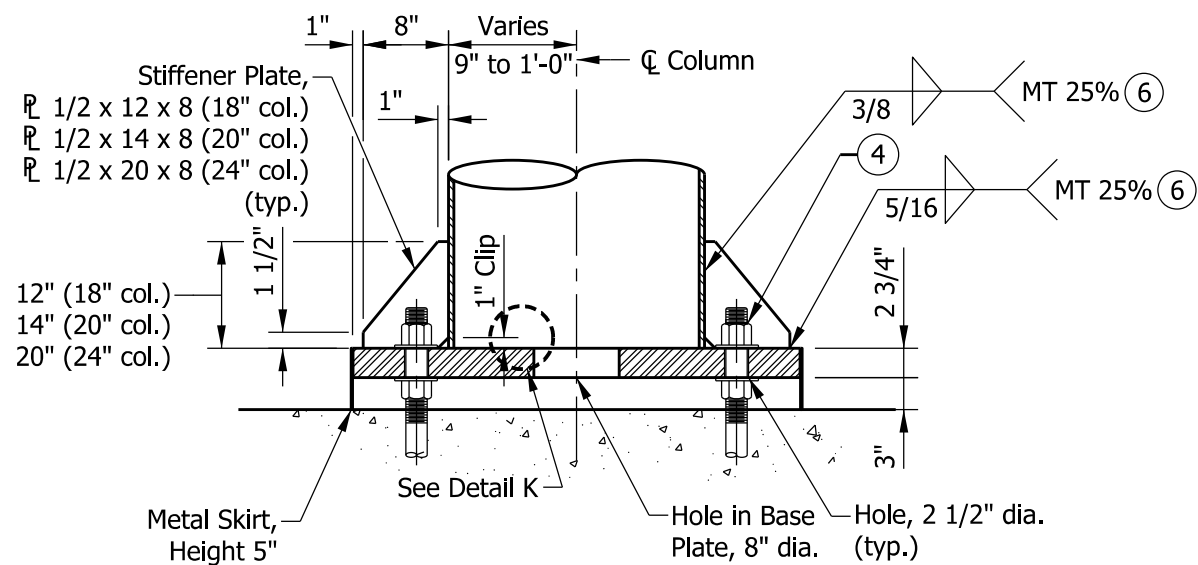


ANCHOR AND POSITIONING PLATE

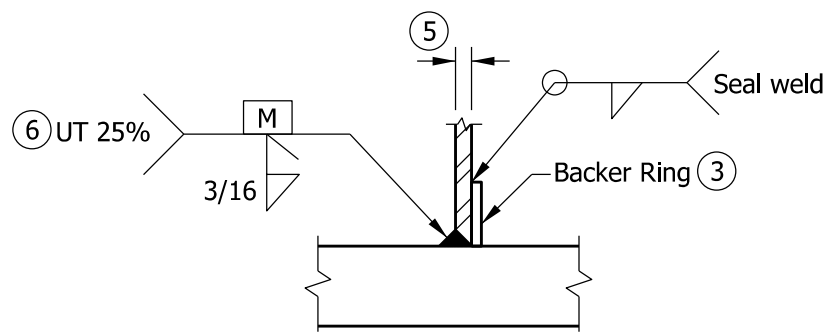
BASE PLATE DIMENSIONS			
COLUMN DIAMETER	A	B	C
18"	3'-0"	2'-3"	2'-7"
20"	3'-2"	2'-5"	2'-9"
24"	3'-6"	2'-9"	3'-1"

NOTES:

- Minimum length which shall be galvanized. Entire bolt may be galvanized at contractor's option.
- Uncoated nut shall be provided at bottom of anchor plate. Thread shall be deformed or a chemical thread locked used to secure.
- A 1/4 in. x H minimum continuous backer ring shall be used. Tack weld shall be done in the root area of the final weld. See Backer Ring Table for dimension H.
- Anchor bolt nuts shall be tightened in the order 1-8 against the base plate by turning the nut a minimum of 1/6 turn from snug tight condition shown in plan view. Lubricant shall be from INDOT's Qualified Products List.
- See Standard Drawings E 802-SCLS-03 and 08 for column wall thickness.
- UT - Ultrasonic Testing, 25% of entire column to base plate weld.
MT - Magnetic Particle Testing, 25% or 1 side of 4 stiffeners.

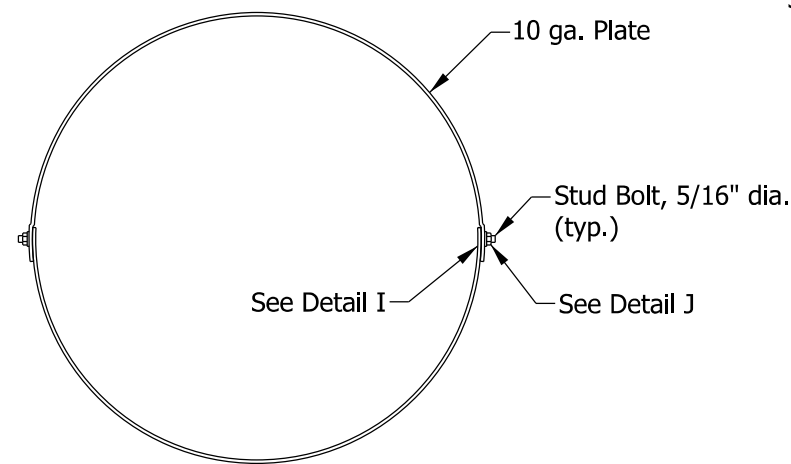


SECTION M-M

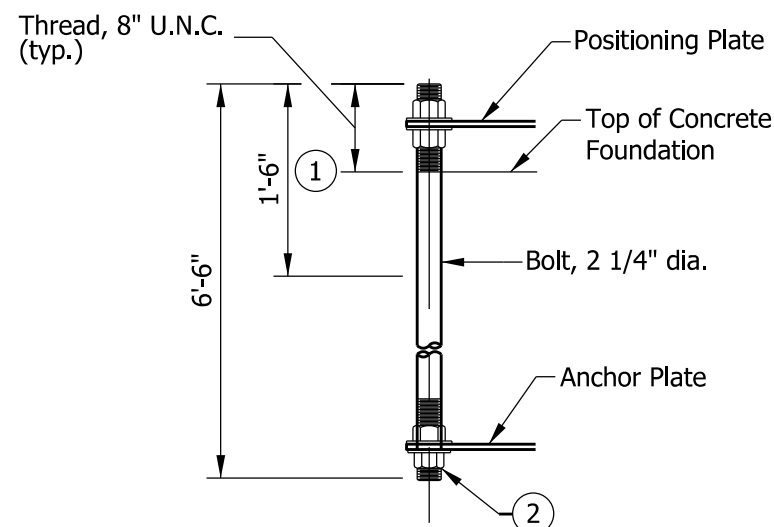


DETAIL K
BASE PLATE WELD

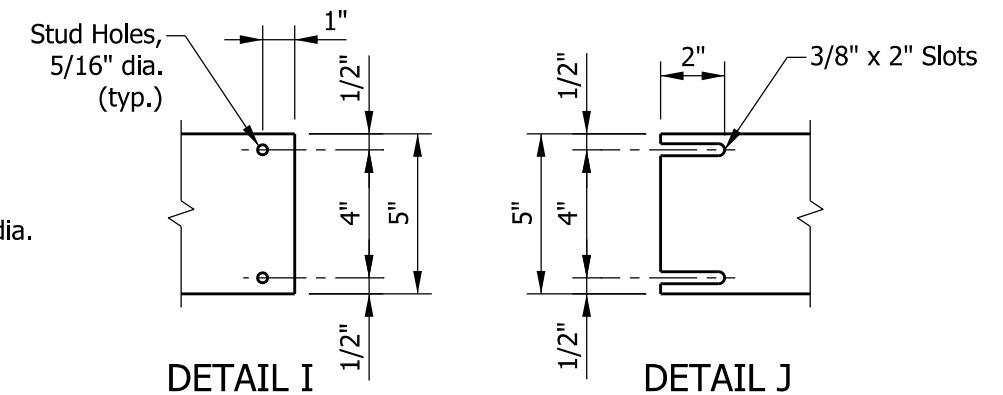
BACKER RING TABLE	
COLUMN WALL THICKNESS (in.)	H (in.)
0.5 < t ≤ 0.6875	4
0.6875 < t ≤ 0.875	5
0.875 < t	6



SKIRT DETAIL



ANCHOR BOLT DETAIL

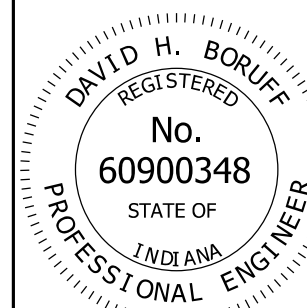


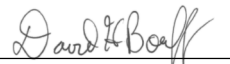
INDIANA DEPARTMENT OF TRANSPORTATION


SIGN CANTILEVER STRUCTURE
DOUBLE ARM AND QUADRI-CHORD BASE PLATE,
ANCHOR BOLT, AND METAL SKIRT DETAILS

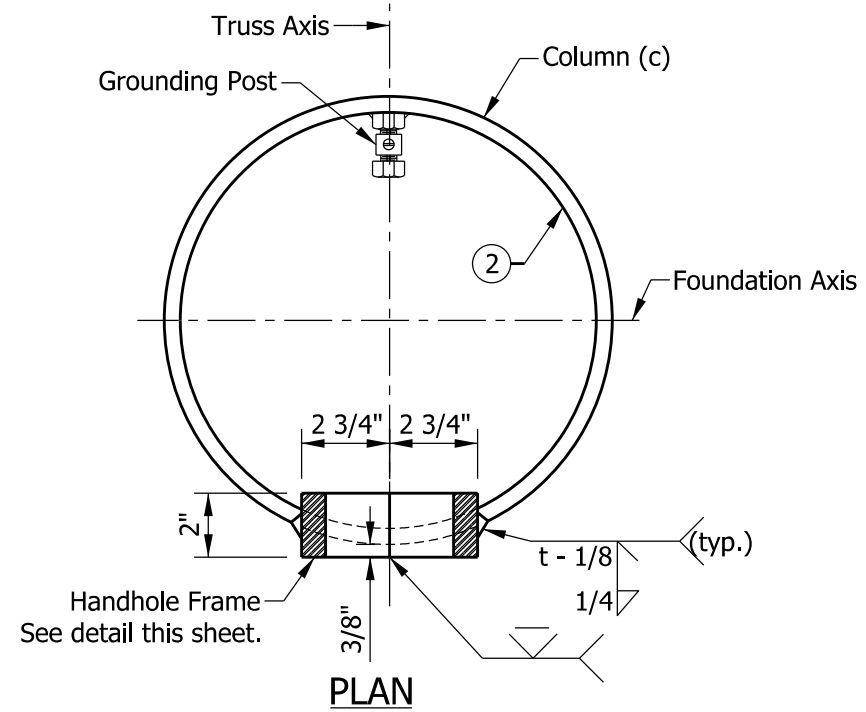
SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-12

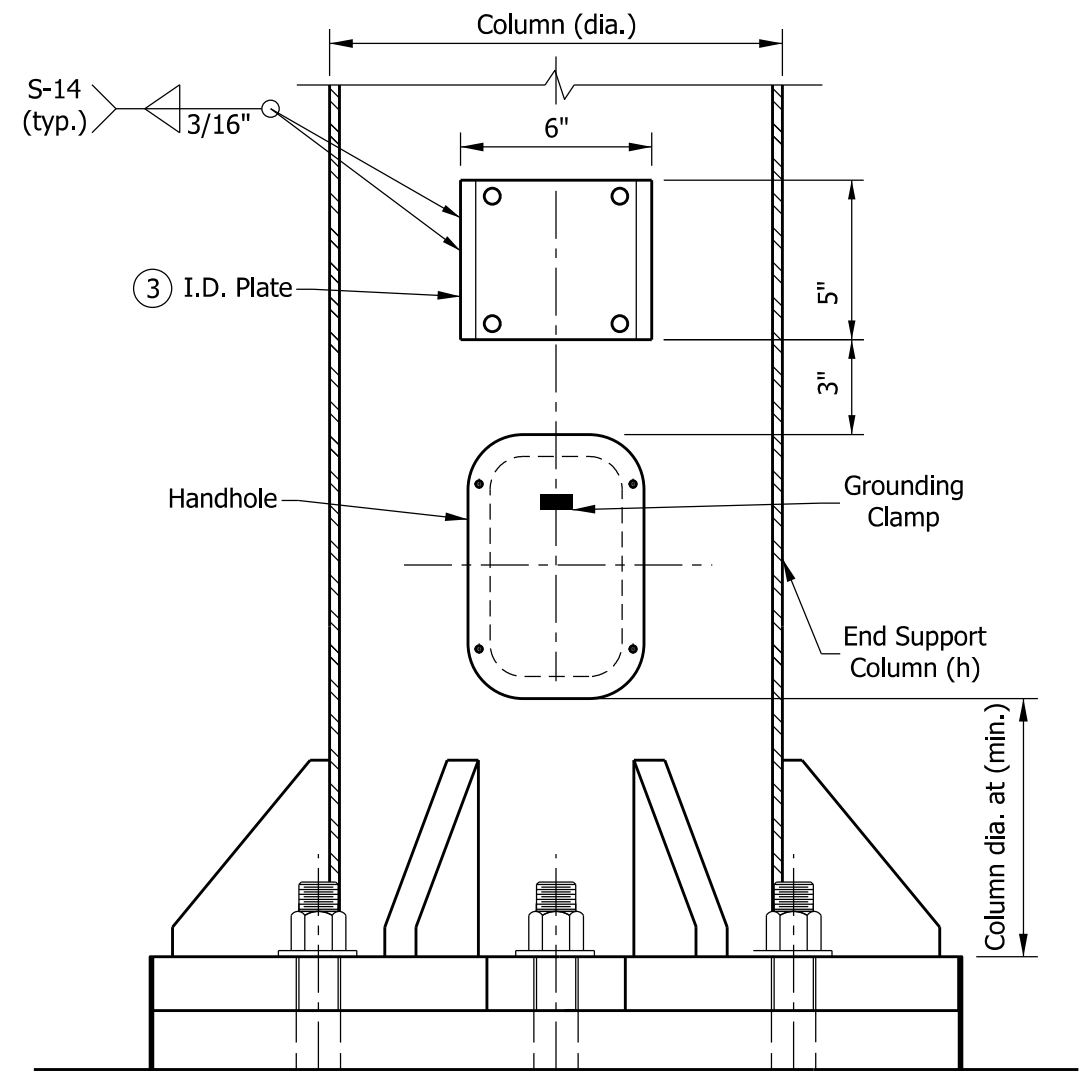



 DESIGN STANDARDS ENGINEER 05/17/22
 DATE

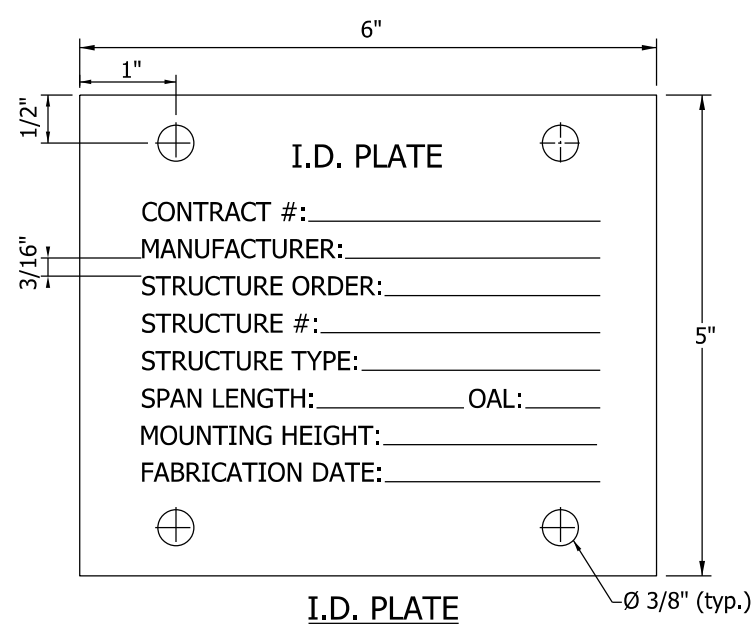

 CHIEF ENGINEER 07/07/2022
 DATE



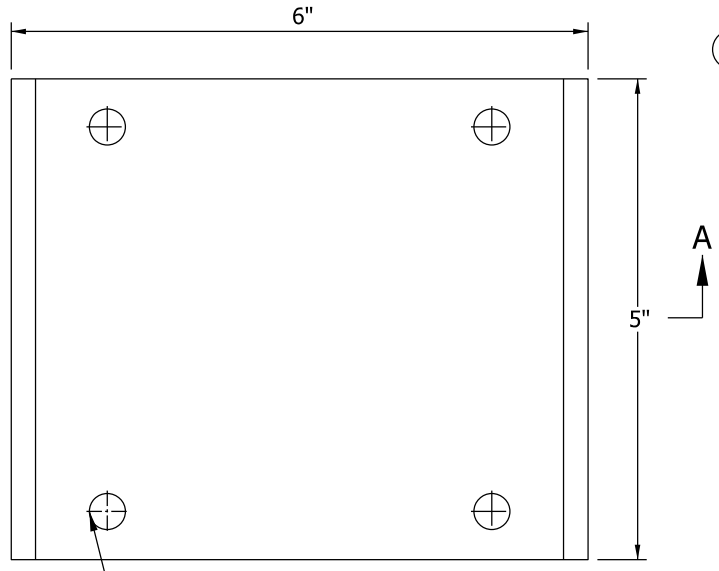
PLAN



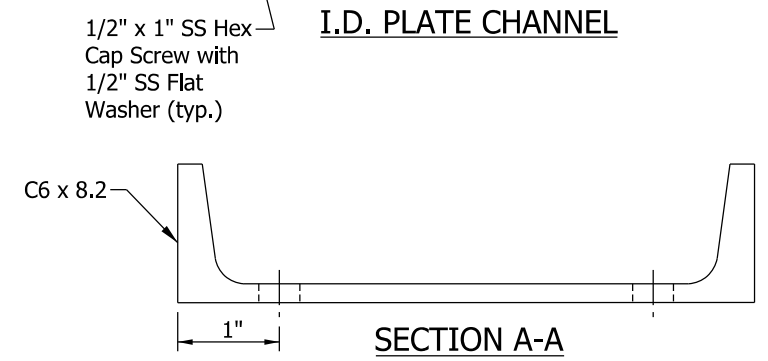
**ELEVATION
VIEW FROM HANDHOLE SIDE**



I.D. PLATE



I.D. PLATE CHANNEL

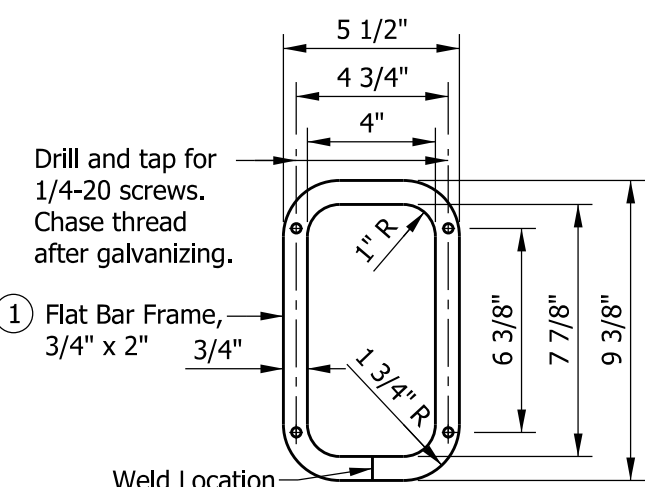


SECTION A-A

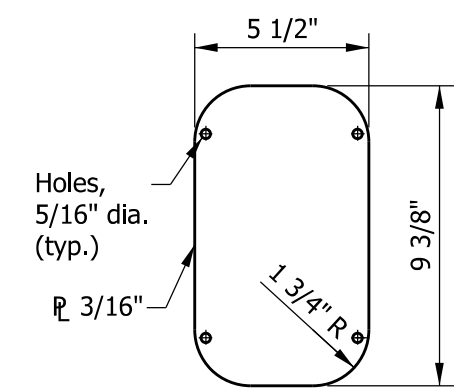
NOTES:

- ① In lieu of fabricated handhole frame as shown, frame may be cut from 2 in. plate with rolling direction vertical.
- ② See Standard Drawing E 802-SNWR-03 for grounding post details. Grounding post shall be placed on far side of support directly opposite center of handhole.
- ③ I.D. plate shall be a 1/8 in. stainless steel plate with the information stamped in 3/16 in. black letters:

CONTRACT #: _____
 MANUFACTURER: _____
 STRUCTURE ORDER: _____
 STRUCTURE #: _____
 SPAN LENGTH: _____ OAL: _____
 MOUNTING HEIGHT: _____
 FABRICATION DATE: _____



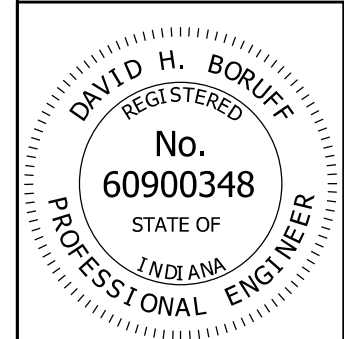
HANDHOLE FRAME



HANDHOLE COVER

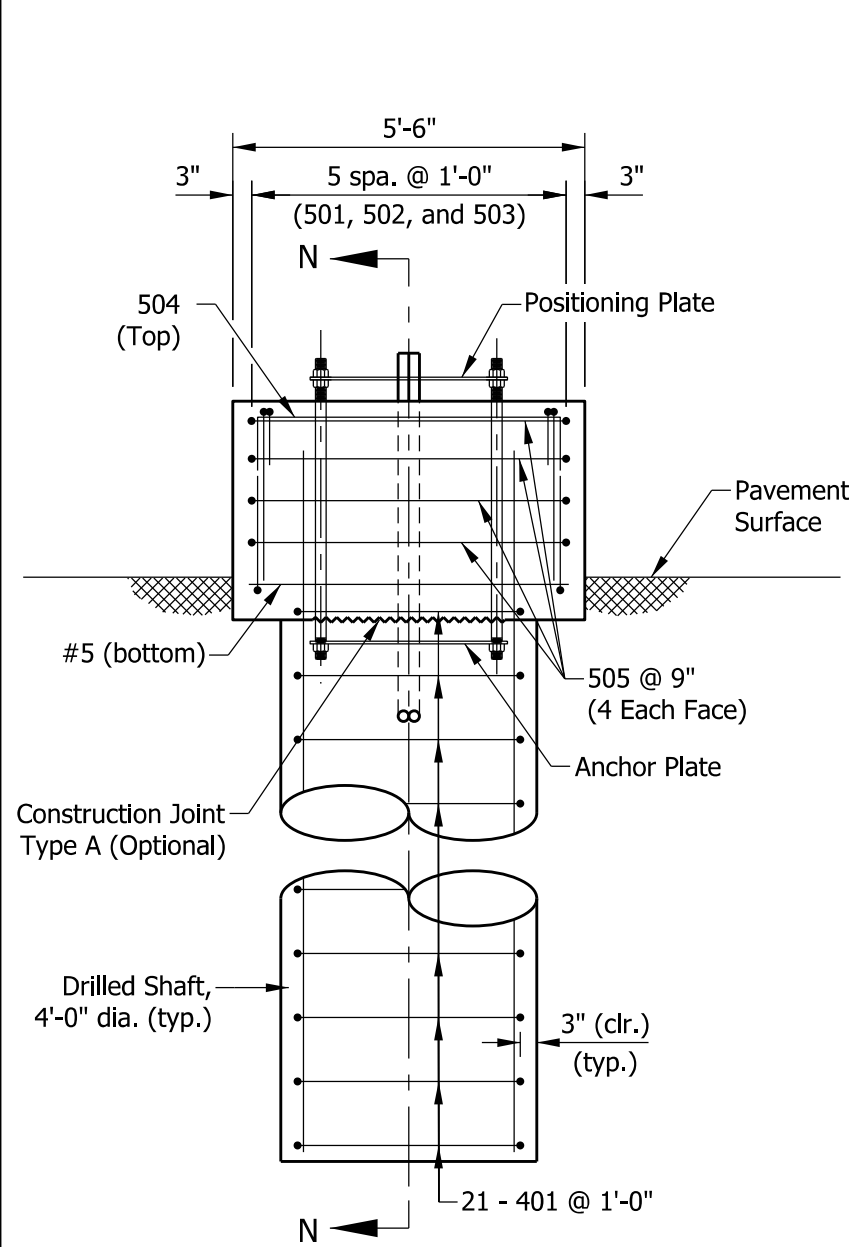
INDIANA DEPARTMENT OF TRANSPORTATION
 SIGN CANTILEVER STRUCTURE
 DOUBLE ARM AND QUADRI-CHORD
 COLUMN HANDHOLE AND I.D. PLATE DETAILS
 SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-13

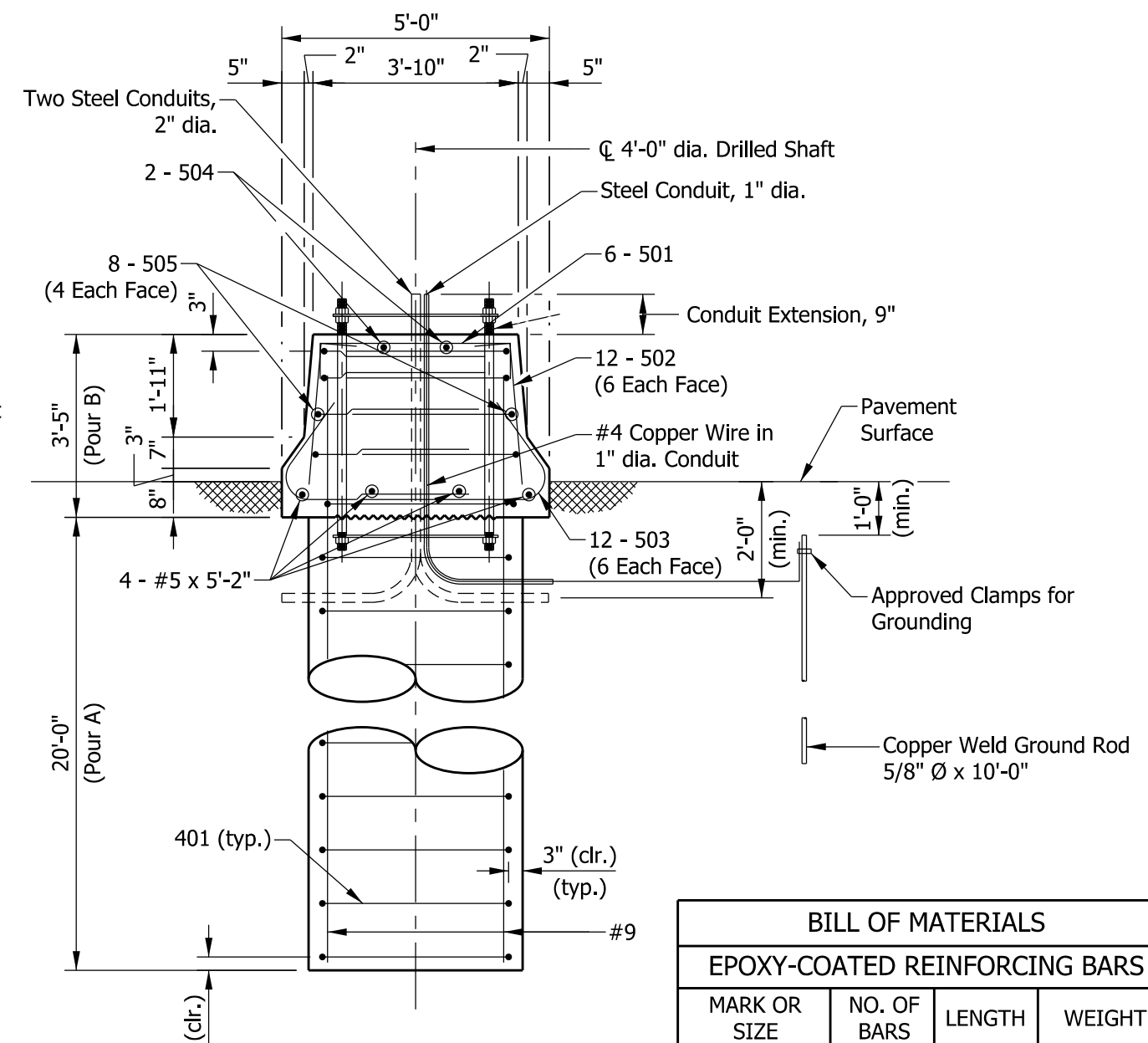


David H. Boruff 05/17/22
 DESIGN STANDARDS ENGINEER DATE

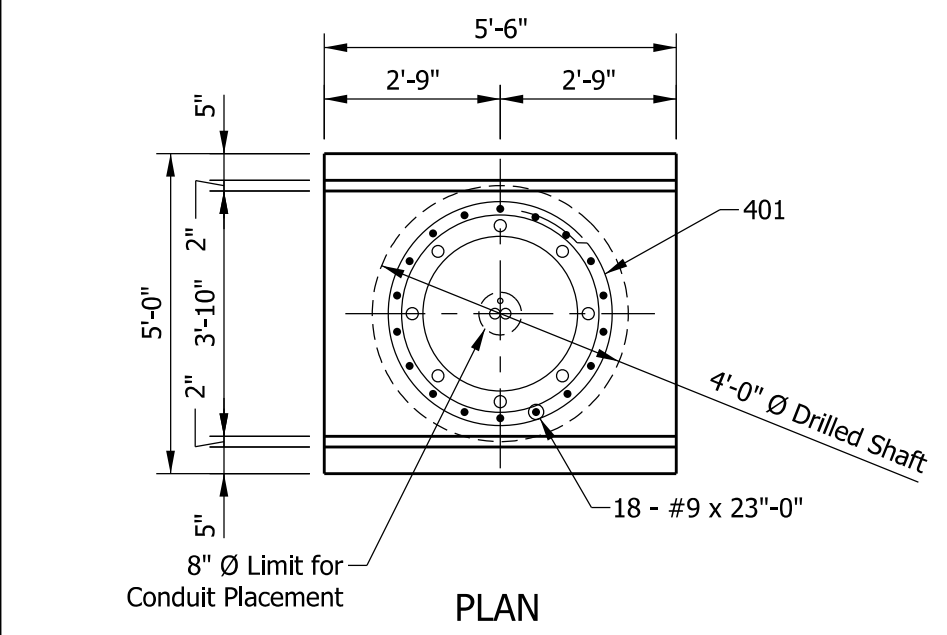
[Signature] 07/07/2022
 CHIEF ENGINEER DATE



ELEVATION



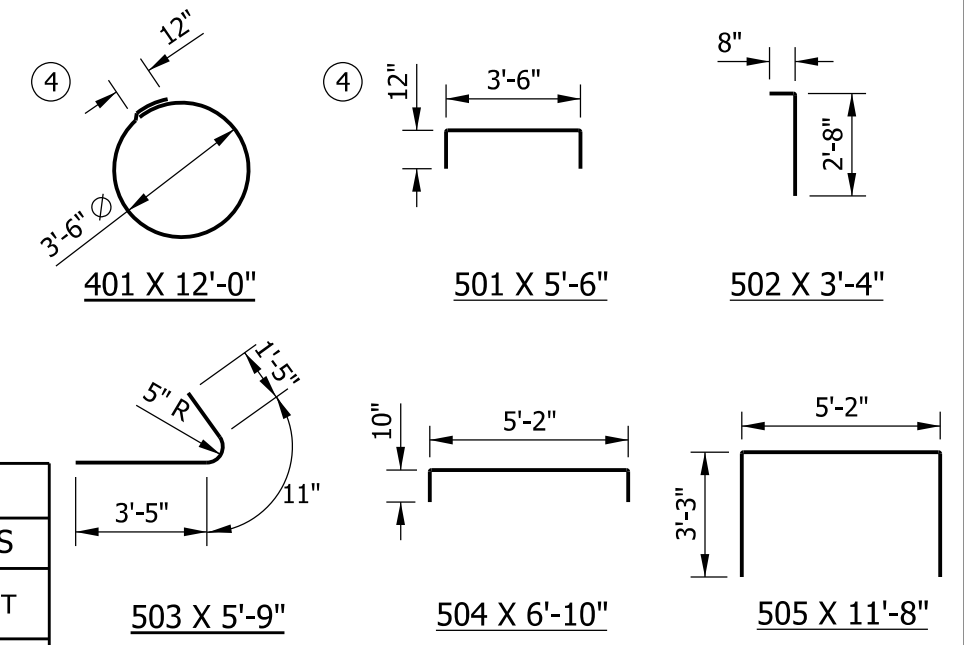
SECTION N-N



PLAN

NOTES:

1. See Standard Drawing E 602-CCMB-03 for barrier wall width transition.
2. See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
3. Both ends of steel conduit shall be threaded and capped.
4. Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
5. Top and sides of barrier railing shall be surface sealed to the pavement surface.
6. Minimum concrete Strength $f'_c=3500$ psi.



BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	23'-0"	
Total #9			1408 LBS
501	6	5'-6"	
502	12	3'-4"	
503	12	5'-9"	
504	2	6'-10"	
505	8	11'-8"	
#5	4	5'-2"	
Total #5			281 LBS
401	21	12'-0"	
Total #4			169 LBS
Total Epoxy-Coated Reinforcing Bars			1858 LBS
CONCRETE, CLASS A			
Pour A			9.3 CYS
Pour B			3.0 CYS
Total Concrete, Class A			12.3 CYS
MISCELLANEOUS			
Surface Seal			5.9 SYS

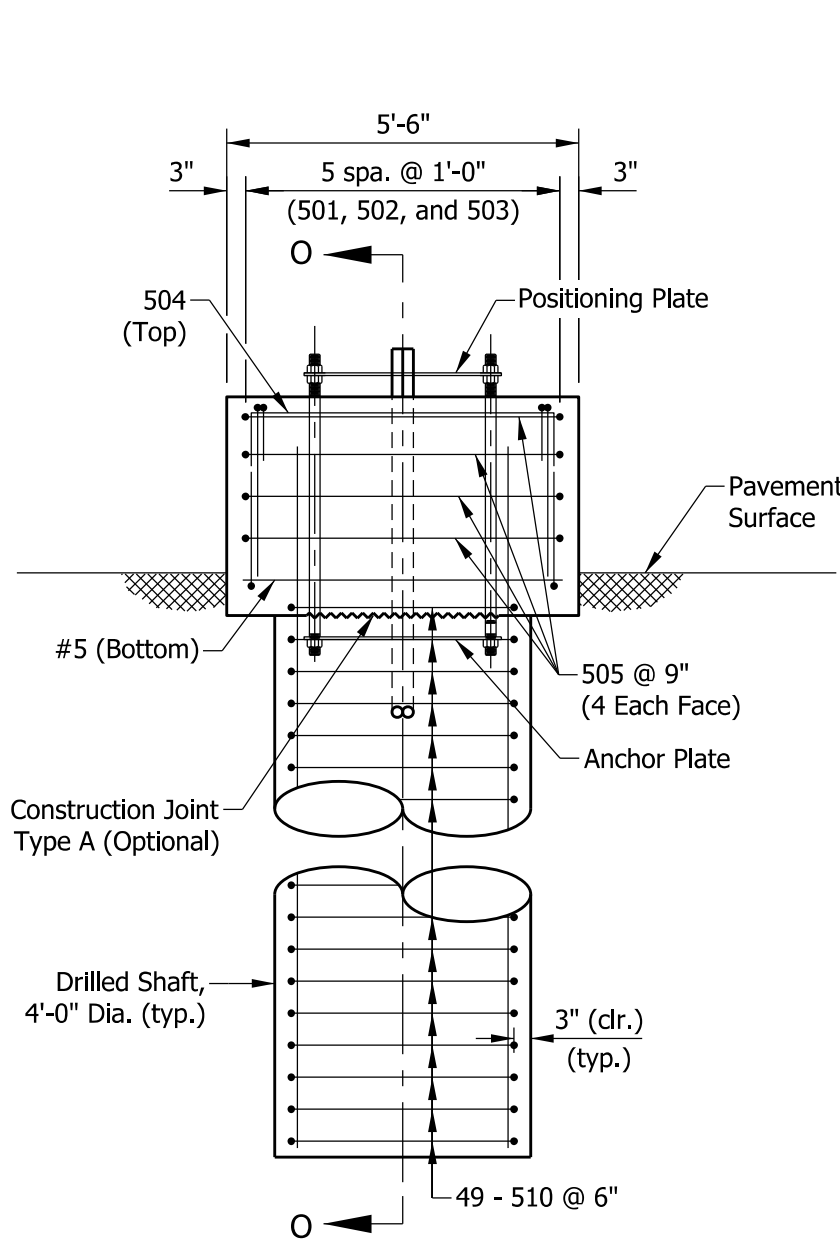
INDIANA DEPARTMENT OF TRANSPORTATION

**SIGN CANTILEVER STRUCTURE TYPE A & B
FOUNDATION AT 33" CONCRETE BARRIER**

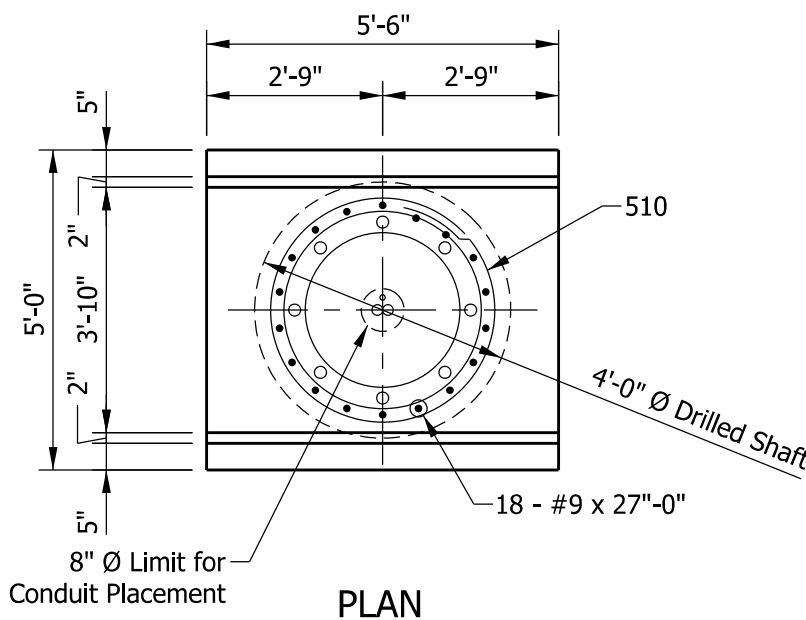
SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-14

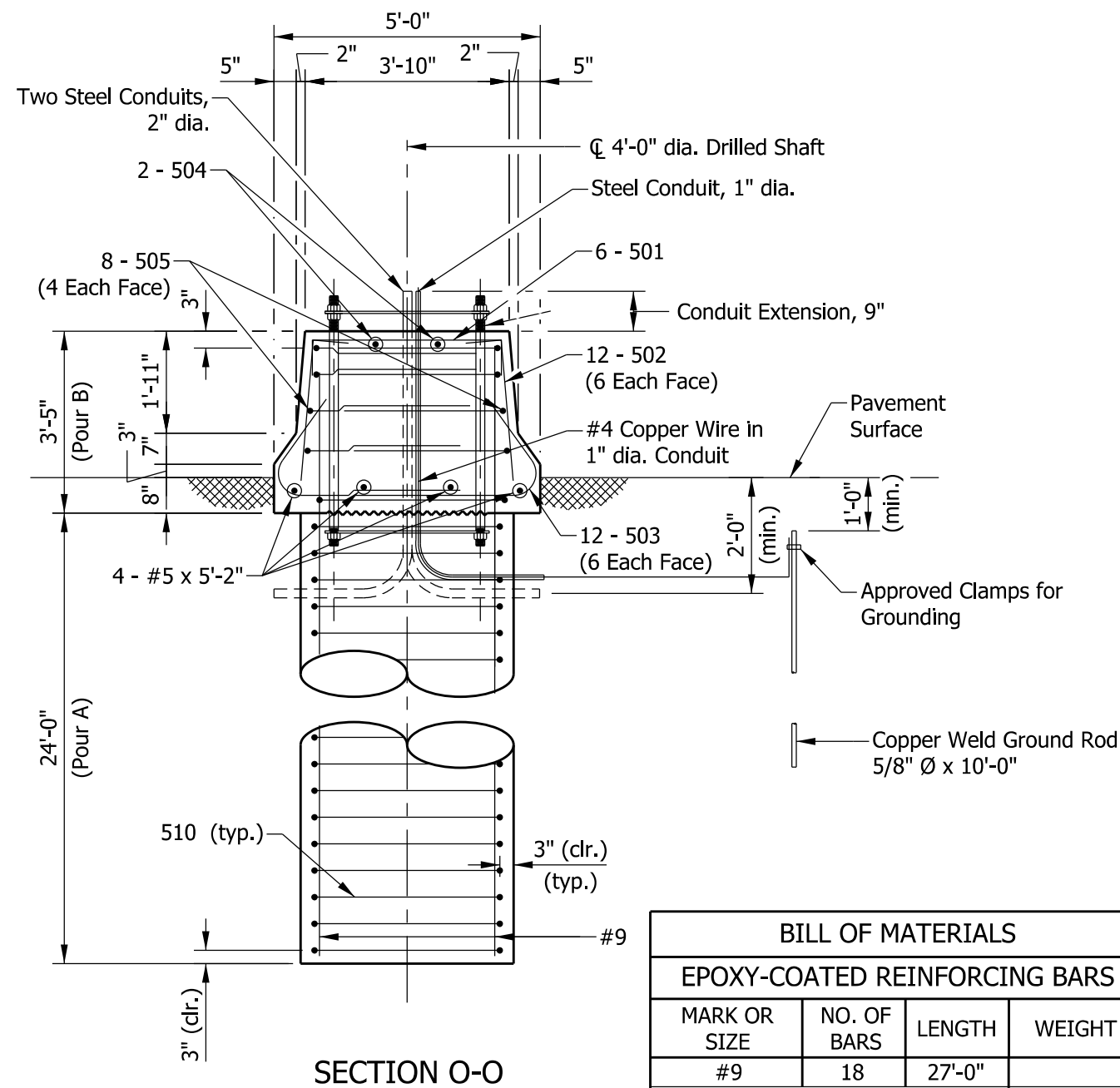
	<p style="text-align: right;"><i>David H. Boruff</i> 05/17/22 DESIGN STANDARDS ENGINEER DATE</p> <p style="text-align: right;"><i>[Signature]</i> 07/07/2022 CHIEF ENGINEER DATE</p>
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ELEVATION



PLAN

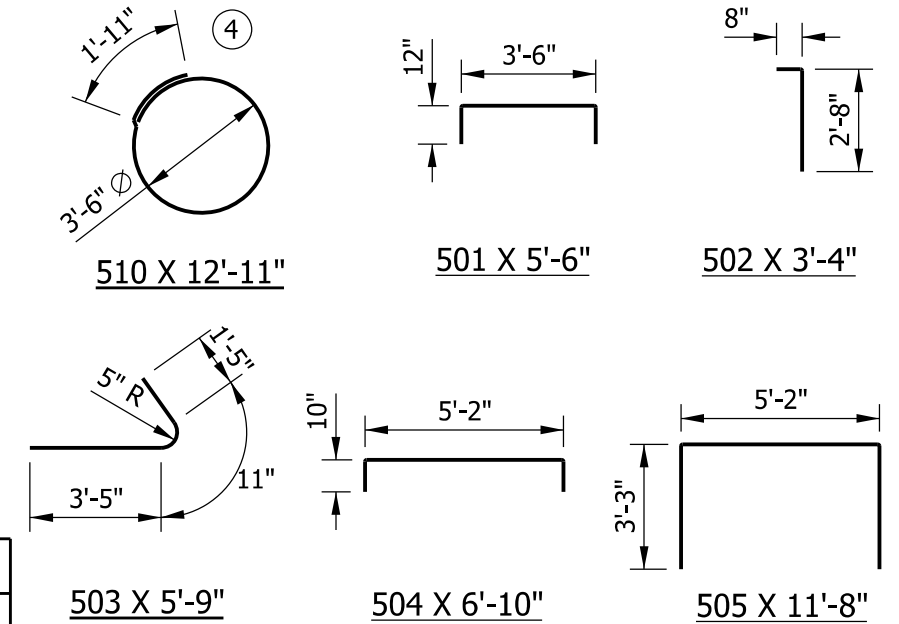


SECTION O-O

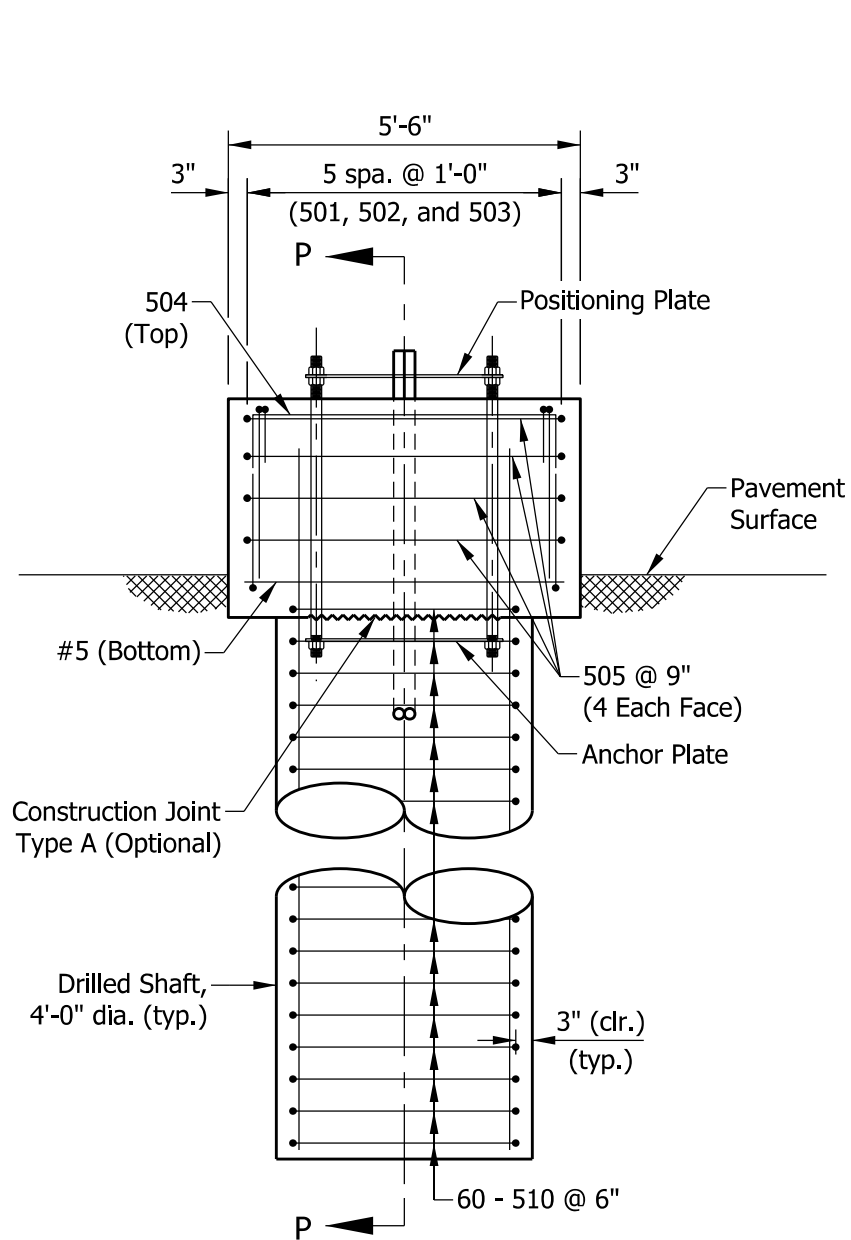
BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	27'-0"	
Total #9			1652 LBS
501	6	5'-6"	
502	12	3'-4"	
503	12	5'-9"	
504	2	6'-10"	
505	8	11'-8"	
510	49	12'-11"	
#5	4	5'-2"	
Total #5			939 LBS
Total Epoxy-Coated Reinforcing Bars			2591 LBS
CONCRETE, CLASS A			
Pour A			11.2 CYS
Pour B			3.0 CYS
Total Concrete, Class A			14.2 CYS
MISCELLANEOUS			
Surface Seal			5.9 SYS

NOTES:

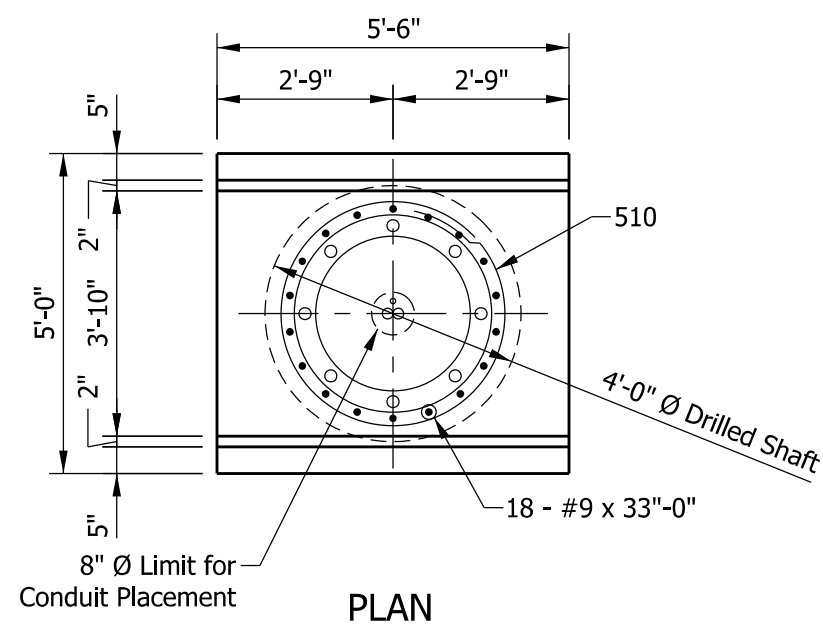
1. See Standard Drawing E 602-CCMB-03 for barrier wall width transition.
2. See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
3. Both ends of steel conduit shall be threaded and capped.
4. Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
5. Top and sides of barrier railing to the pavement surface shall be sealed.
6. Minimum concrete Strength $f'_c=3500$ psi.



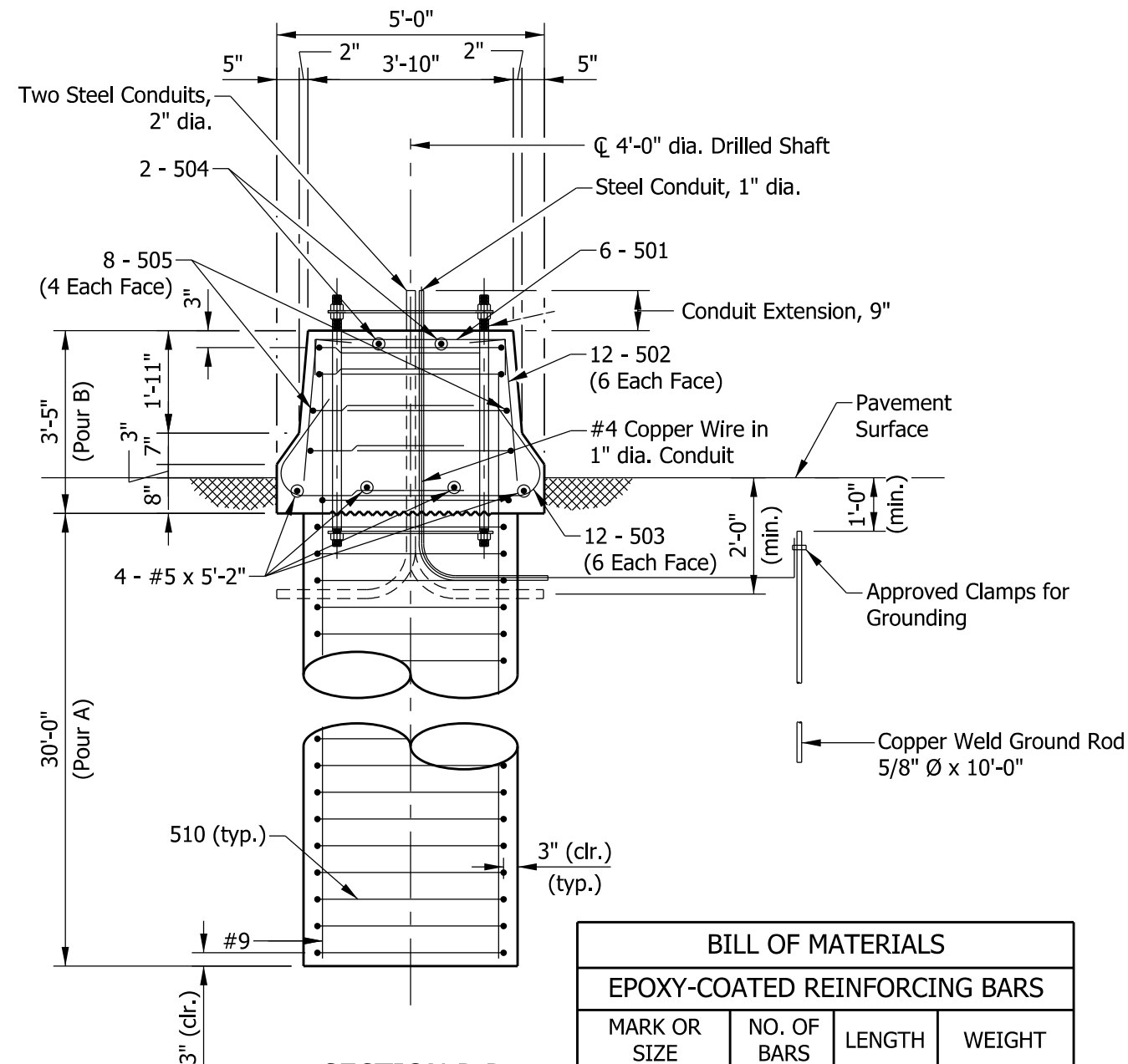
INDIANA DEPARTMENT OF TRANSPORTATION	
SIGN CANTILEVER STRUCTURE TYPE C, D, & E FOUNDATION AT 33" CONCRETE BARRIER	
SEPTEMBER 2022	
STANDARD DRAWING NO.	E 802-SCLS-15
	 DESIGN STANDARDS ENGINEER 05/17/22 DATE
	 CHIEF ENGINEER 07/07/2022 DATE



ELEVATION



PLAN

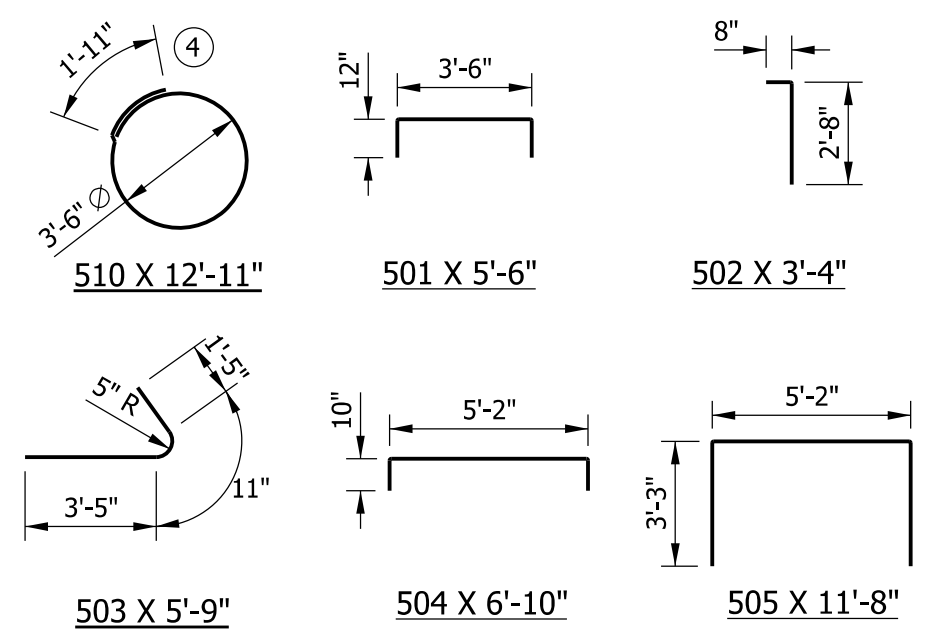


SECTION P-P

BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	33'-0"	
Total #9			2020 LBS
501	6	5'-6"	
502	12	3'-4"	
503	12	5'-9"	
504	2	6'-10"	
505	8	11'-8"	
510	60	12'-11"	
#5	4	5'-2"	
Total #5			1086 LBS
Total Epoxy-Coated Reinforcing Bars			3106 LBS
CONCRETE, CLASS A			
Pour A		14.0 CYS	
Pour B		3.0 CYS	
Total Concrete, Class A		17.0 CYS	
MISCELLANEOUS			
Surface Seal		5.9 SYS	

NOTES:

1. See Standard Drawing E 602-CCMB-03 for barrier wall width transition.
2. See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
3. Both ends of steel conduit shall be capped.
4. Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
5. Top and sides of barrier railing to the pavement surface shall be sealed.
6. Minimum concrete strength $f'_c=3500$ psi.



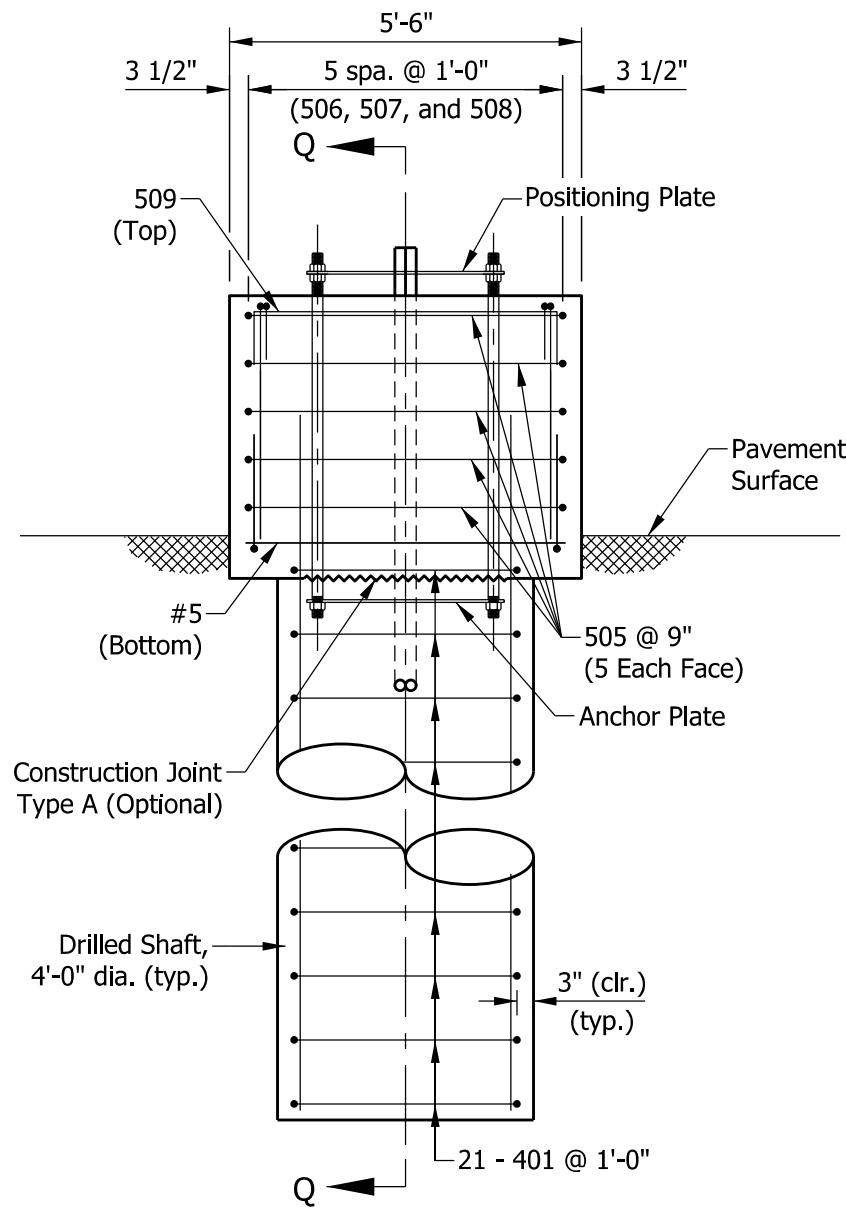
INDIANA DEPARTMENT OF TRANSPORTATION

**SIGN CANTILEVER STRUCTURE TYPE F, G, H, & I
FOUNDATION AT 33" CONCRETE BARRIER**

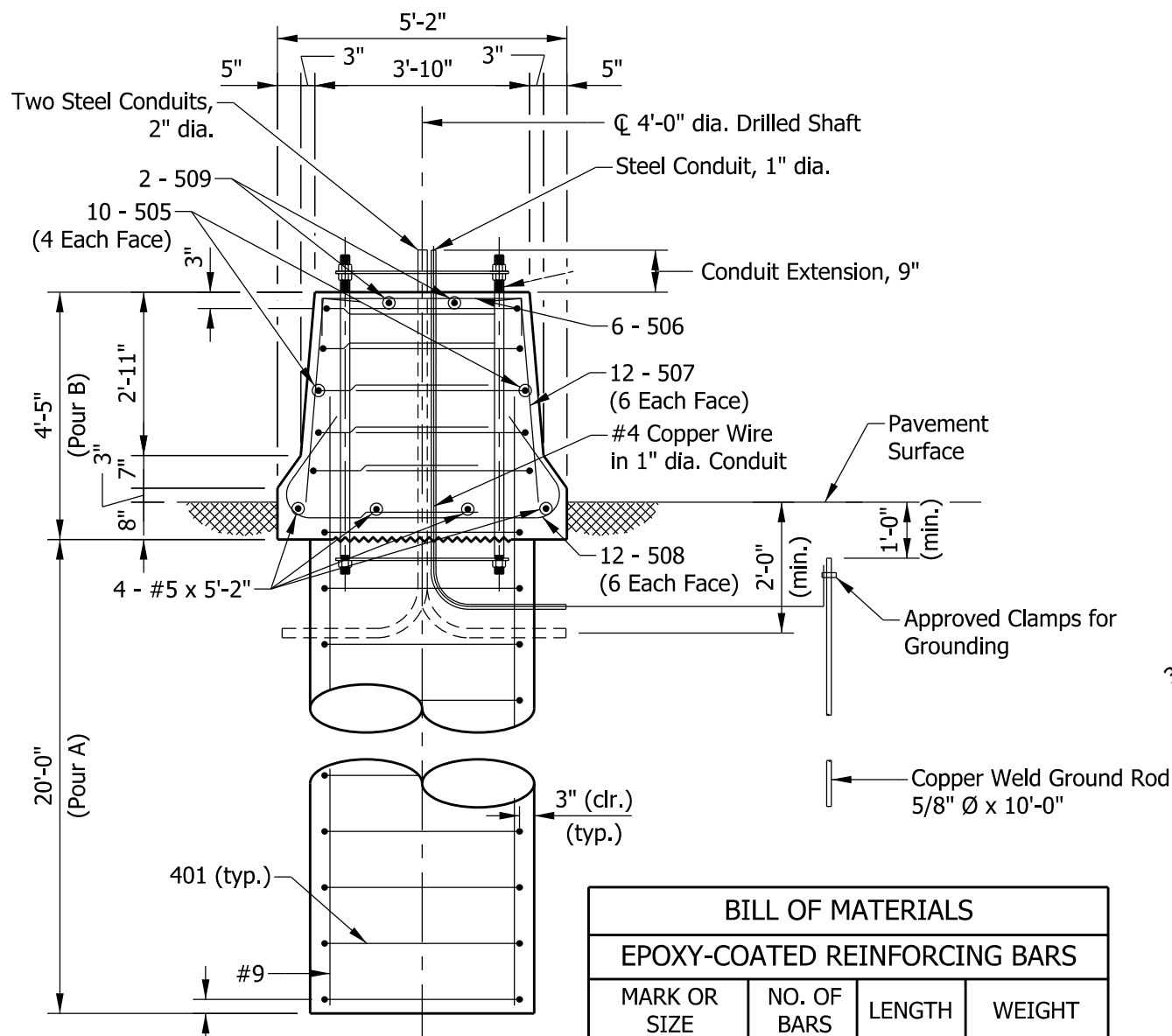
SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-16

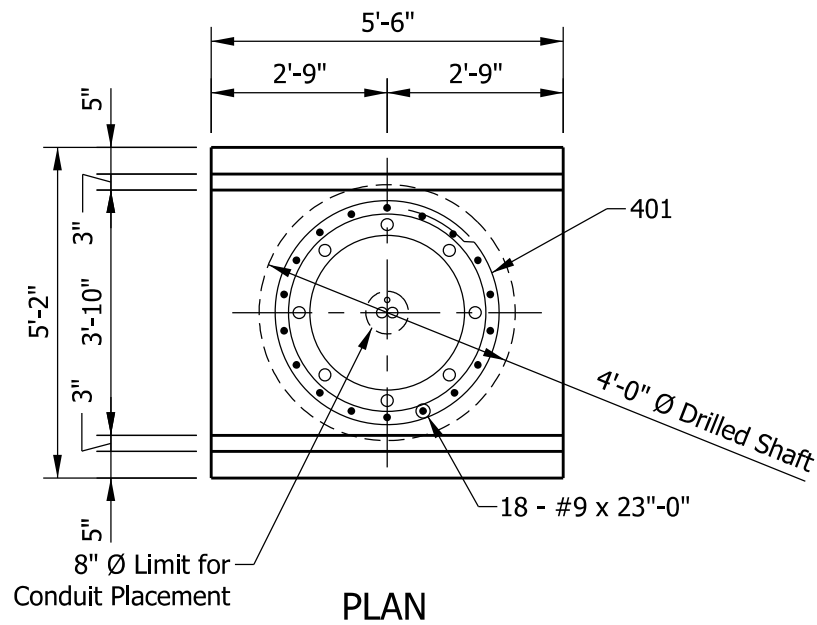
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ELEVATION



SECTION Q-Q

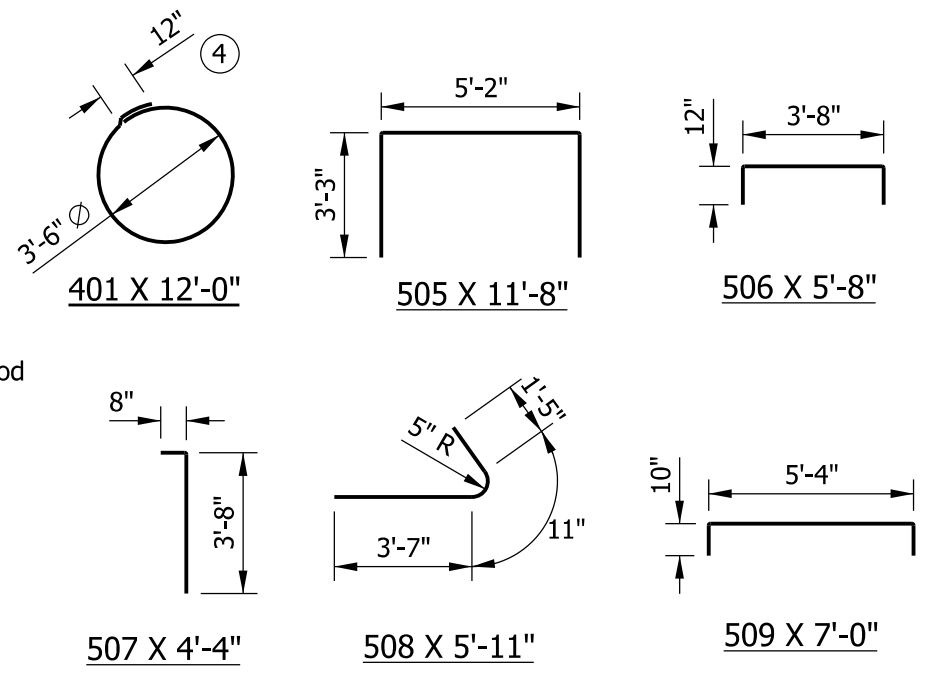


PLAN

BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	23'-0"	
Total #9			1408 LBS
505	10	11'-8"	
506	6	5'-8"	
507	12	4'-4"	
508	12	5'-11"	
509	2	7'-0"	
#5	4	5'-2"	
Total #5			321 LBS
401	21	12'-0"	
Total #4			169 LBS
Total Epoxy-Coated Reinforcing Bars			1898 LBS
CONCRETE, CLASS A			
Pour A			9.3 CYS
Pour B			4.0 CYS
Total Concrete, Class A			13.3 CYS
MISCELLANEOUS			
Surface Seal			7.1 SYS

NOTES:

1. See Standard Drawing E 602-CCMB-03 for barrier wall width transition.
2. See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
3. Both ends of steel conduit shall be threaded and capped.
4. Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
5. Top and sides of barrier railing to the pavement surface shall be sealed.
6. Minimum concrete Strength $f'c=3500$ psi.



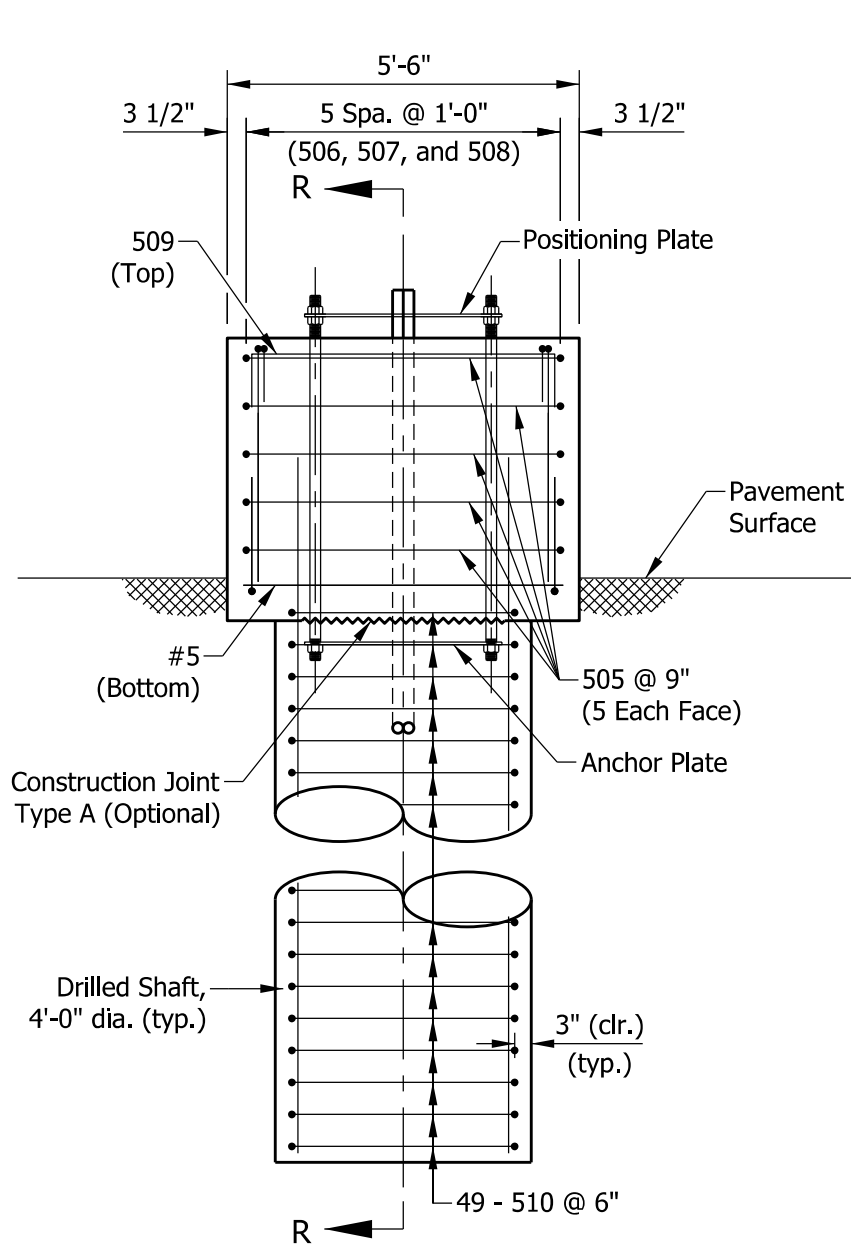
INDIANA DEPARTMENT OF TRANSPORTATION

**SIGN CANTILEVER STRUCTURE TYPE A & B
FOUNDATION AT 45" CONCRETE BARRIER**

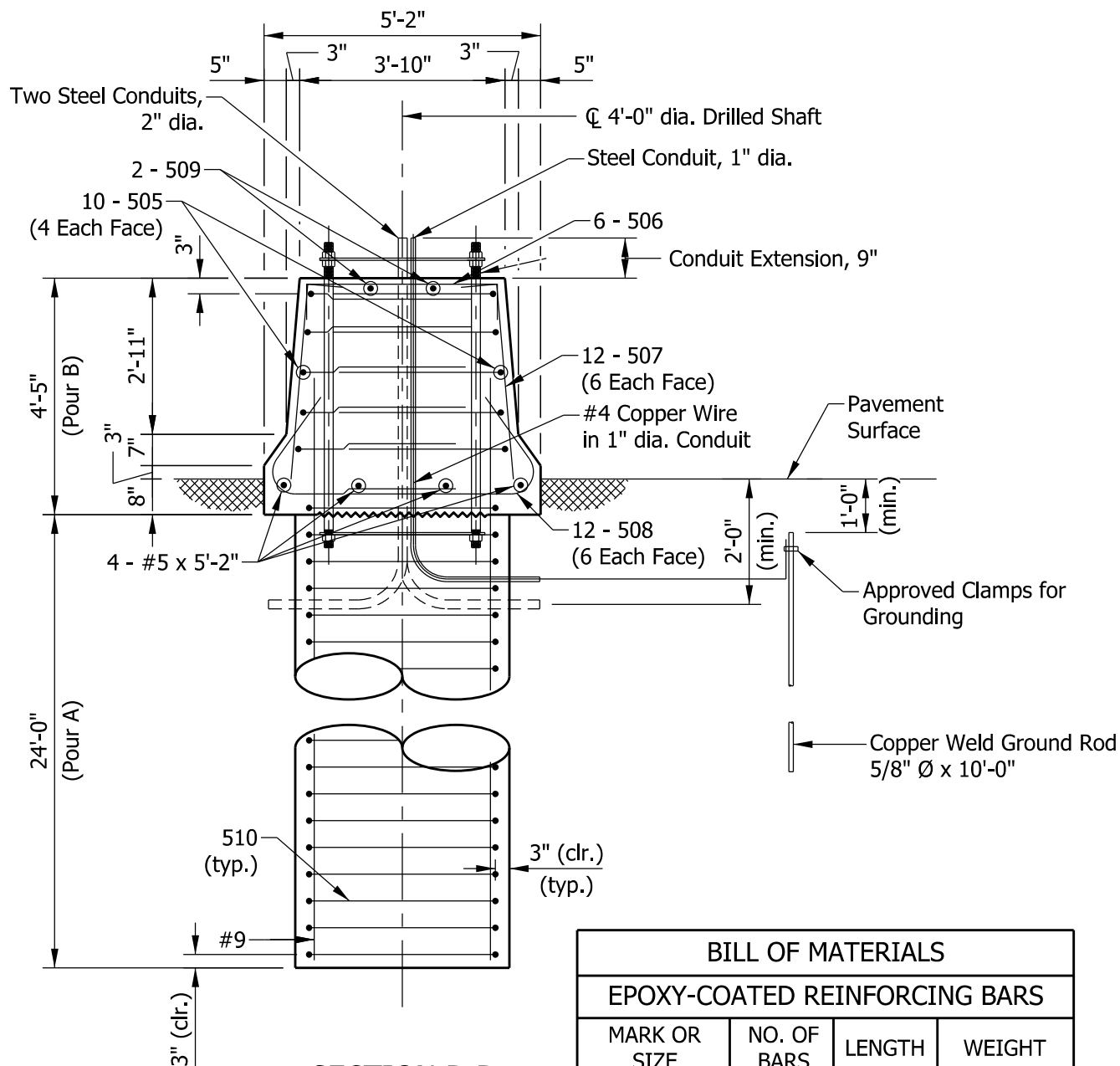
SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-17

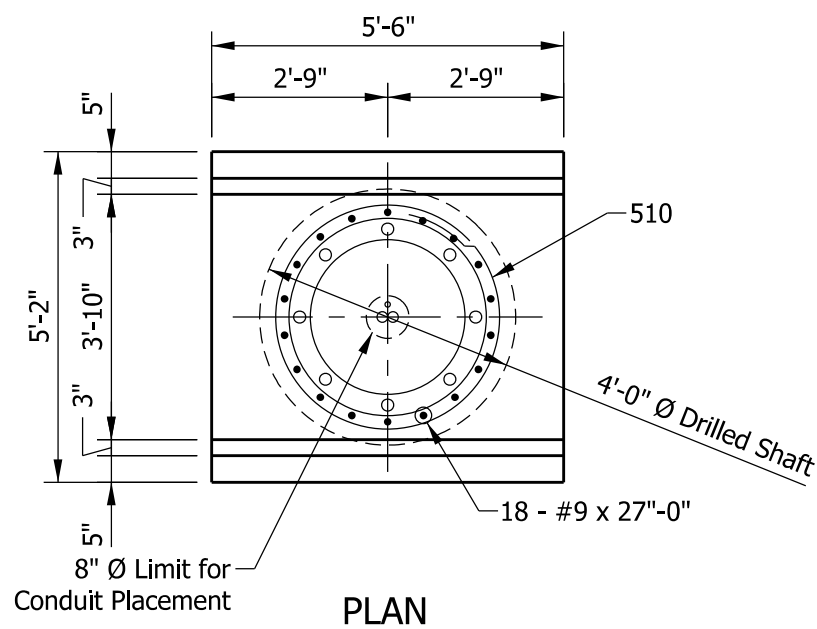
	 DESIGN STANDARDS ENGINEER	05/17/22 DATE
	 CHIEF ENGINEER	07/07/2022 DATE



ELEVATION



SECTION R-R

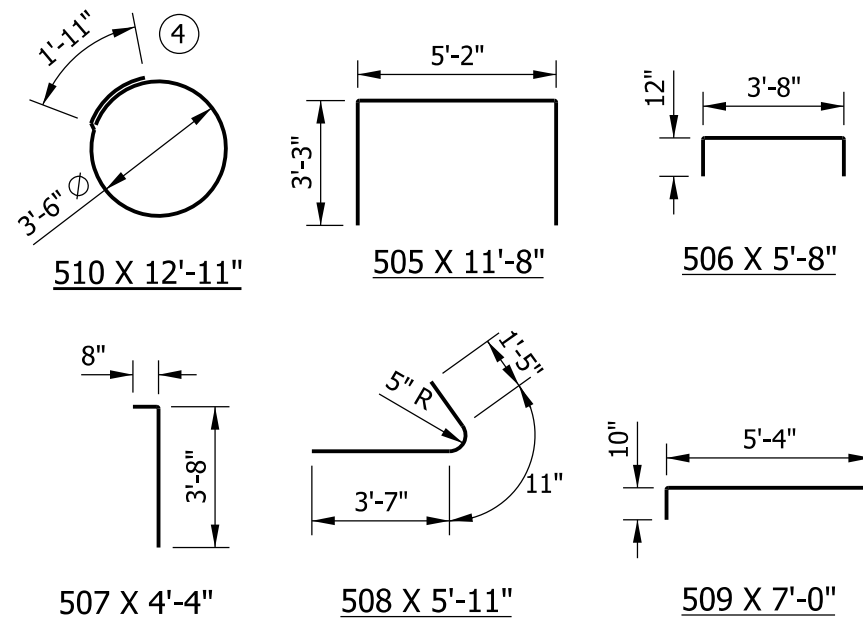


PLAN

BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	27'-0"	
Total #9			1652 LBS
505	10	11'-8"	
506	6	5'-8"	
507	12	4'-4"	
508	12	5'-11"	
509	2	7'-0"	
510	49	12'-11"	
#5	4	5'-2"	
Total #5			979 LBS
Total Epoxy-Coated Reinforcing Bars			2631 LBS
CONCRETE, CLASS A			
Pour A		11.2 CYS	
Pour B		4.0 CYS	
Total Concrete, Class A		15.2 CYS	
MISCELLANEOUS			
Surface Seal		7.1 SYS	

NOTES:

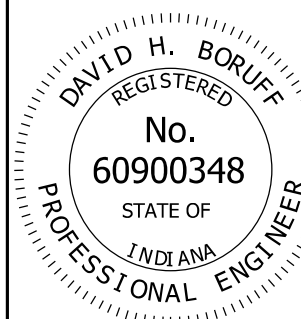
1. See Standard Drawing E 602-CCMB-03 for barrier wall width transition.
2. See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
3. Both ends of steel conduit shall be threaded and capped.
4. Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
5. Top and sides of barrier railing to the pavement surface shall be sealed.
6. Minimum concrete Strength $f'_c=3500$ psi.



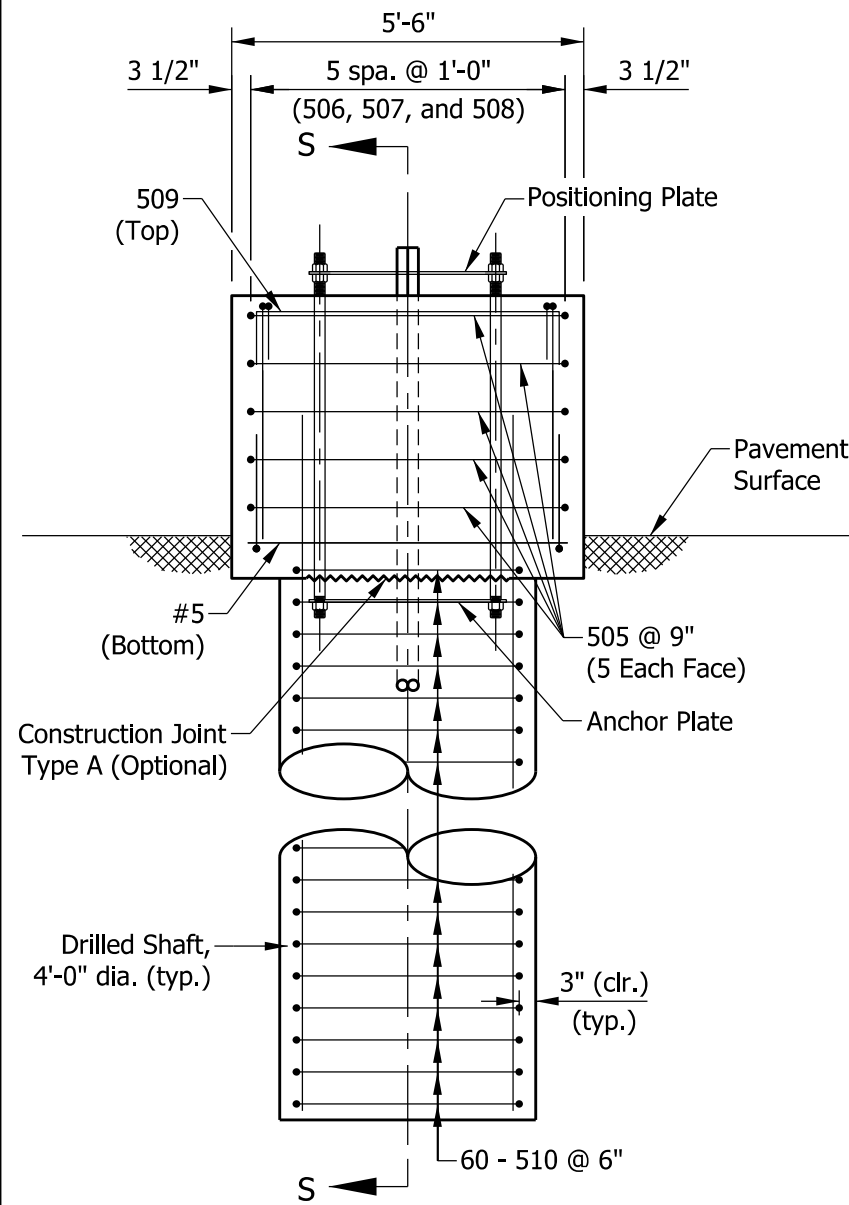
INDIANA DEPARTMENT OF TRANSPORTATION
SIGN CANTILEVER STRUCTURE TYPE C, D, & E
FOUNDATION AT 45" CONCRETE BARRIER

SEPTEMBER 2022

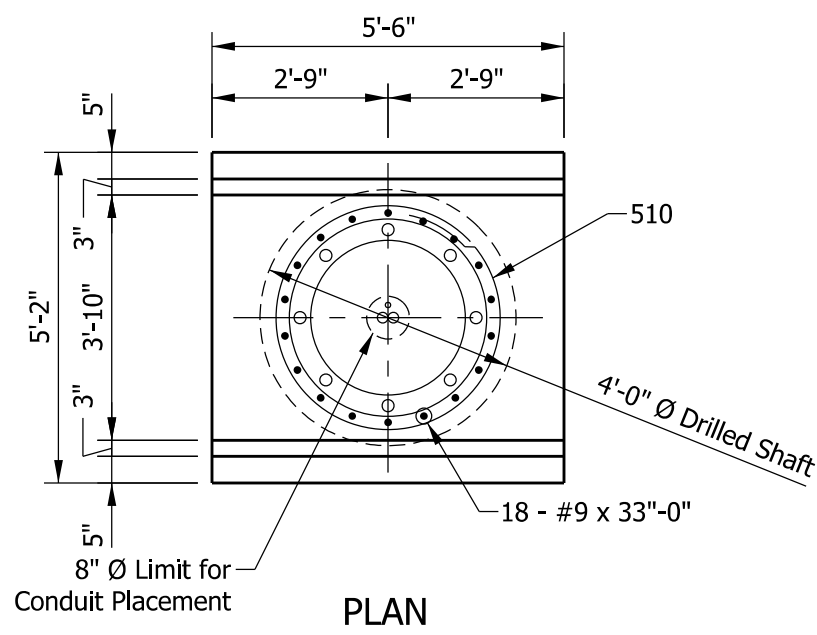
STANDARD DRAWING NO. E 802-SCLS-18



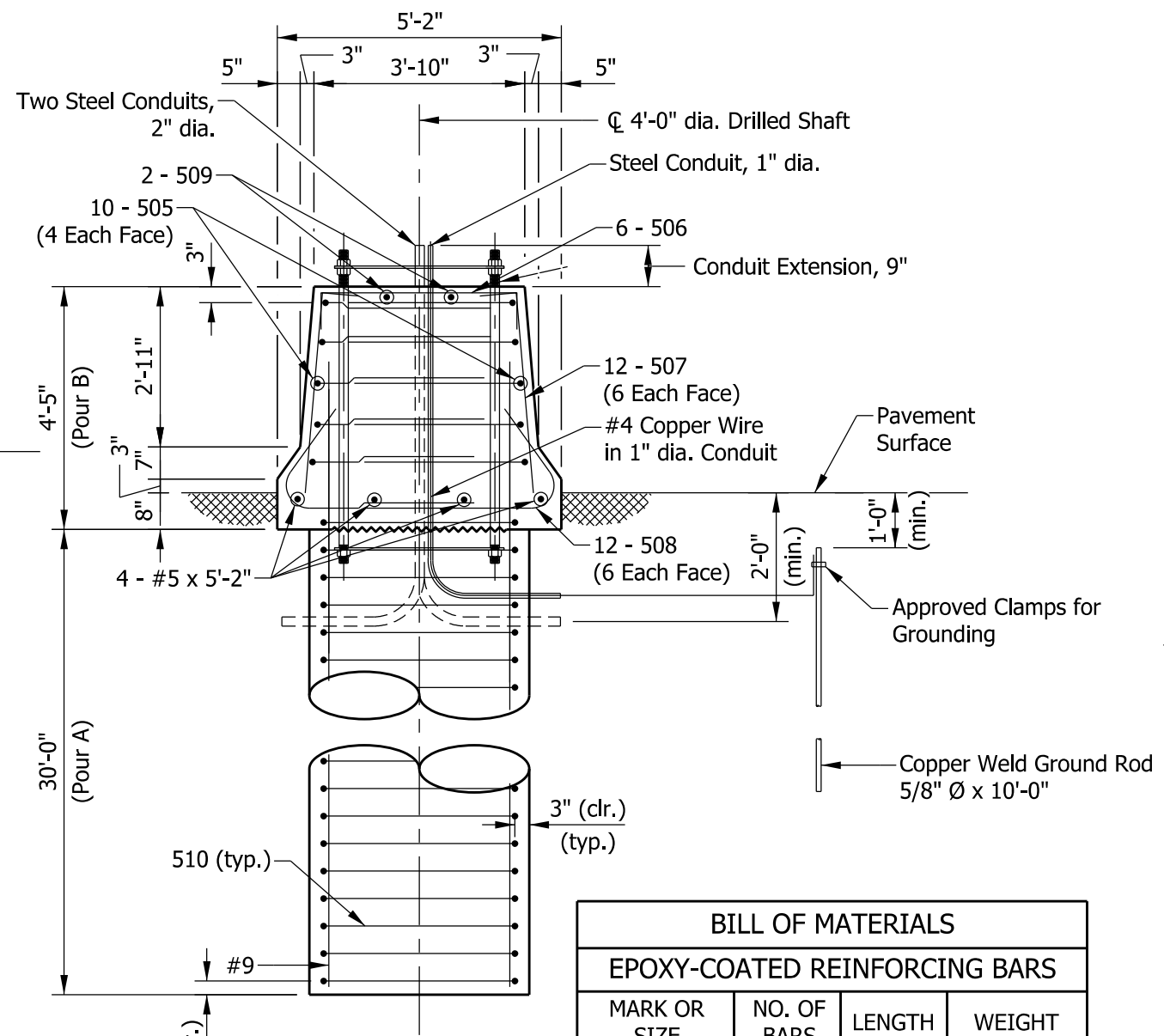
David H. Boruff 05/17/22
DESIGN STANDARDS ENGINEER DATE
[Signature] 07/07/2022
CHIEF ENGINEER DATE



ELEVATION



PLAN

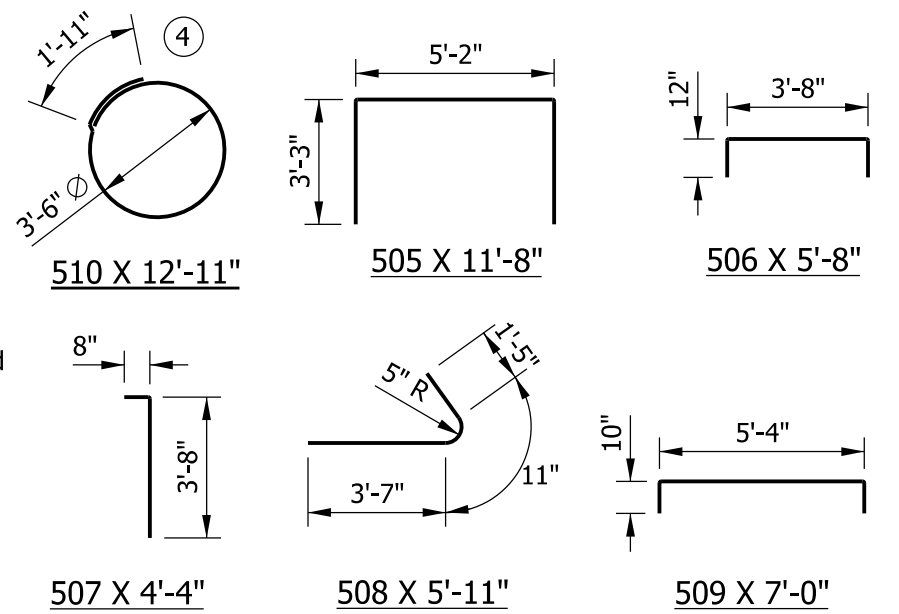


SECTION S-S

BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	33'-0"	
Total #9			2020 LBS
505	10	11'-8"	
506	6	5'-8"	
507	12	4'-4"	
508	12	5'-11"	
509	2	7'-0"	
510	60	12'-11"	
#5	4	5'-2"	
Total #5			1127 LBS
Total Epoxy-Coated Reinforcing Bars			3147 LBS
CONCRETE, CLASS A			
Pour A		13.9 CYS	
Pour B		4.0 CYS	
Total Concrete, Class A		17.9 CYS	
MISCELLANEOUS			
Surface Seal		7.1 SYS	

NOTES:

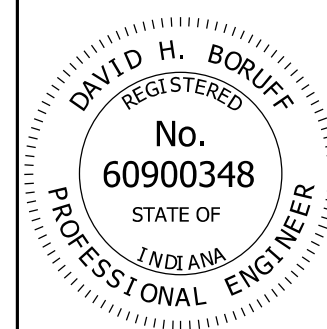
1. See Standard Drawing E 602-CCMB-03 for barrier wall width transition.
2. See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
3. Both ends of steel conduit shall be threaded and capped.
4. Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
5. Top and sides of barrier railing to the pavement surface shall be sealed.
6. Minimum concrete Strength $f'_c=3500$ psi.



INDIANA DEPARTMENT OF TRANSPORTATION
SIGN CANTILEVER STRUCTURE TYPE F, G, H, & I
FOUNDATION AT 45" CONCRETE BARRIER

SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-19

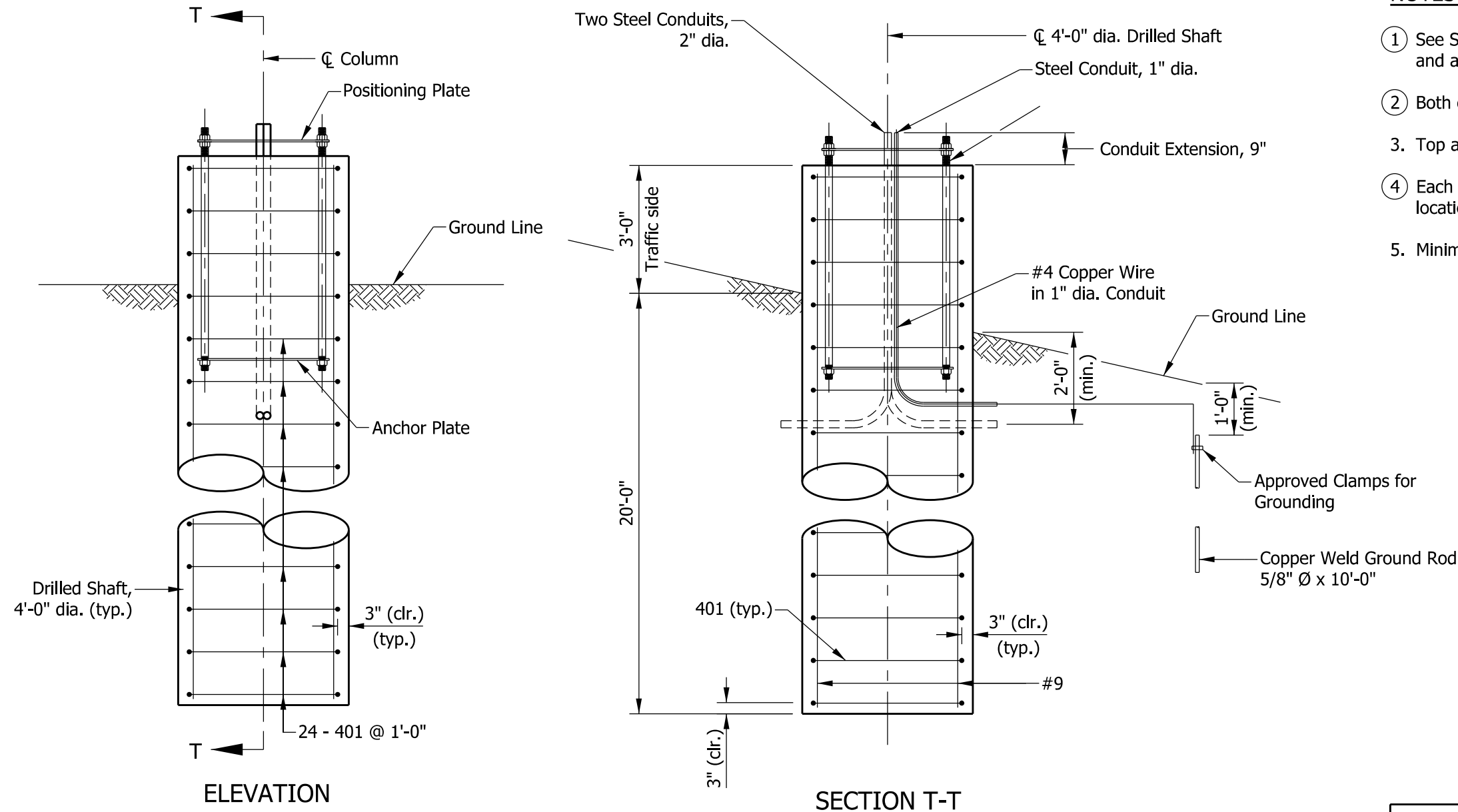


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DESIGN STANDARDS ENGINEER DATE
[Signature] 07/07/2022
CHIEF ENGINEER DATE

NOTES:

- ① See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
- ② Both ends of steel conduit shall be threaded and capped.
- ③ Top and sides of foundation to the ground surface shall be sealed.
- ④ Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
- ⑤ Minimum concrete strength $f'c=3500$ psi.

BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	22'-9"	
Total #9			1392 LBS
401	24	12'-0"	
Total #4			193 LBS
Total Epoxy-Coated Reinforcing Bars			1585 LBS
MISCELLANEOUS			
Concrete, Class A			10.7 CYS
Surface Seal			4.3 SYS



ELEVATION

SECTION T-T

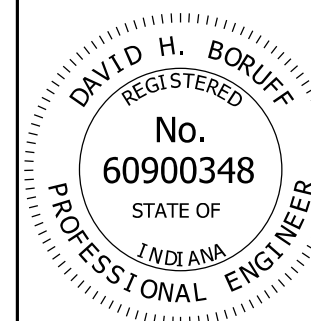
PLAN

INDIANA DEPARTMENT OF TRANSPORTATION

SIGN CANTILEVER STRUCTURE TYPE A & B
FOUNDATION, 36" HEIGHT

SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-20

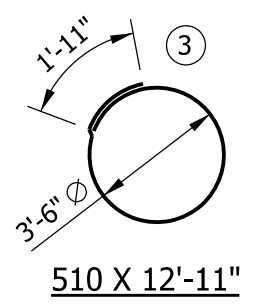
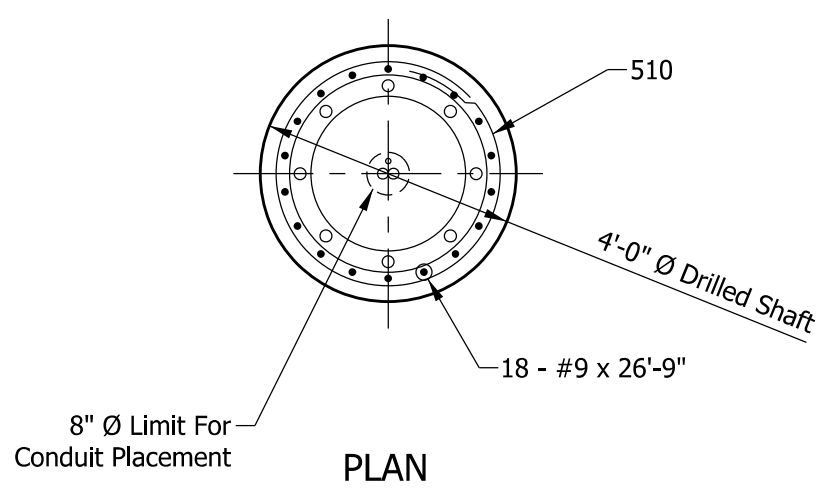
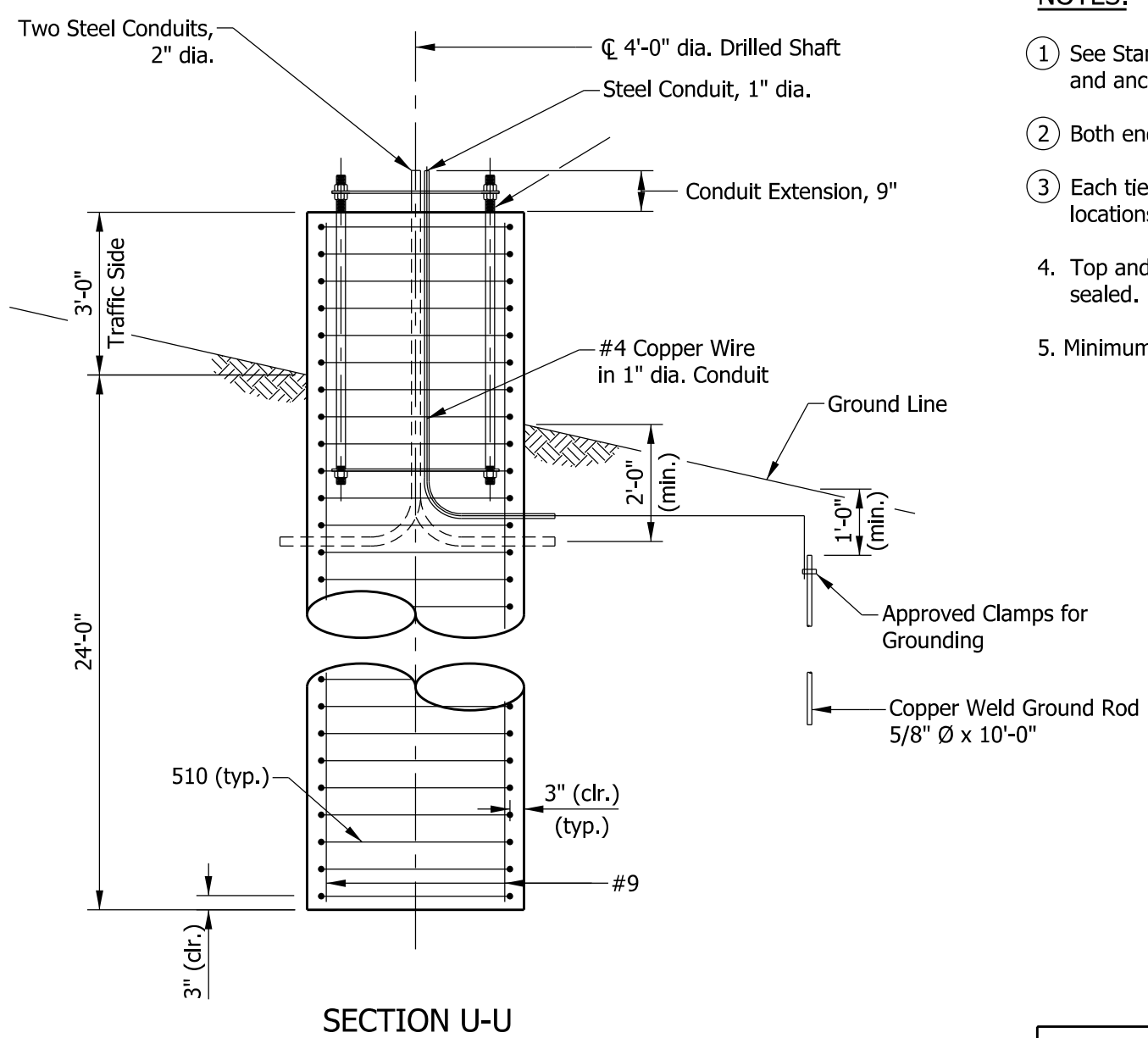
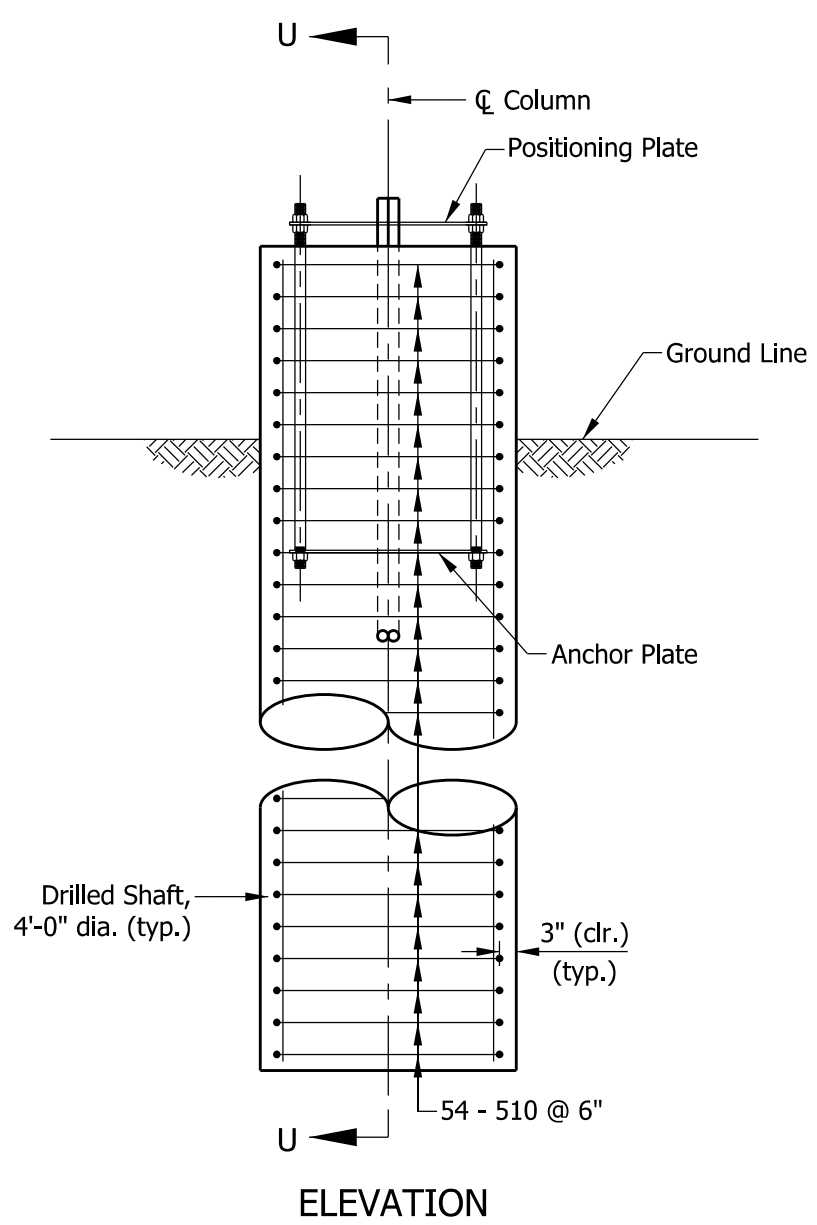


David H. Boruff 05/17/22
DESIGN STANDARDS ENGINEER DATE

[Signature] 07/07/2022
CHIEF ENGINEER DATE

NOTES:

- ① See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
- ② Both ends of steel conduit shall be threaded and capped.
- ③ Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
4. Top and sides of barrier railing to the pavement surface shall be sealed.
5. Minimum concrete Strength $f'c=3500$ psi.



BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	26'-9"	
Total #9			1637 LBS
510	54	12'-11"	
Total #5			725 LBS
Total Epoxy-Coated Reinforcing Bars			2362 LBS
MISCELLANEOUS			
Concrete, Class A			12.6 CYS
Surface Seal			4.3 SYS

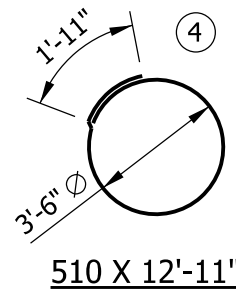
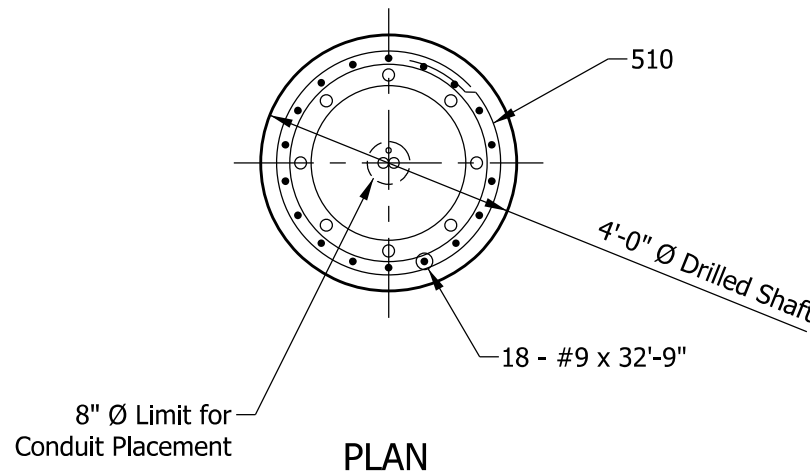
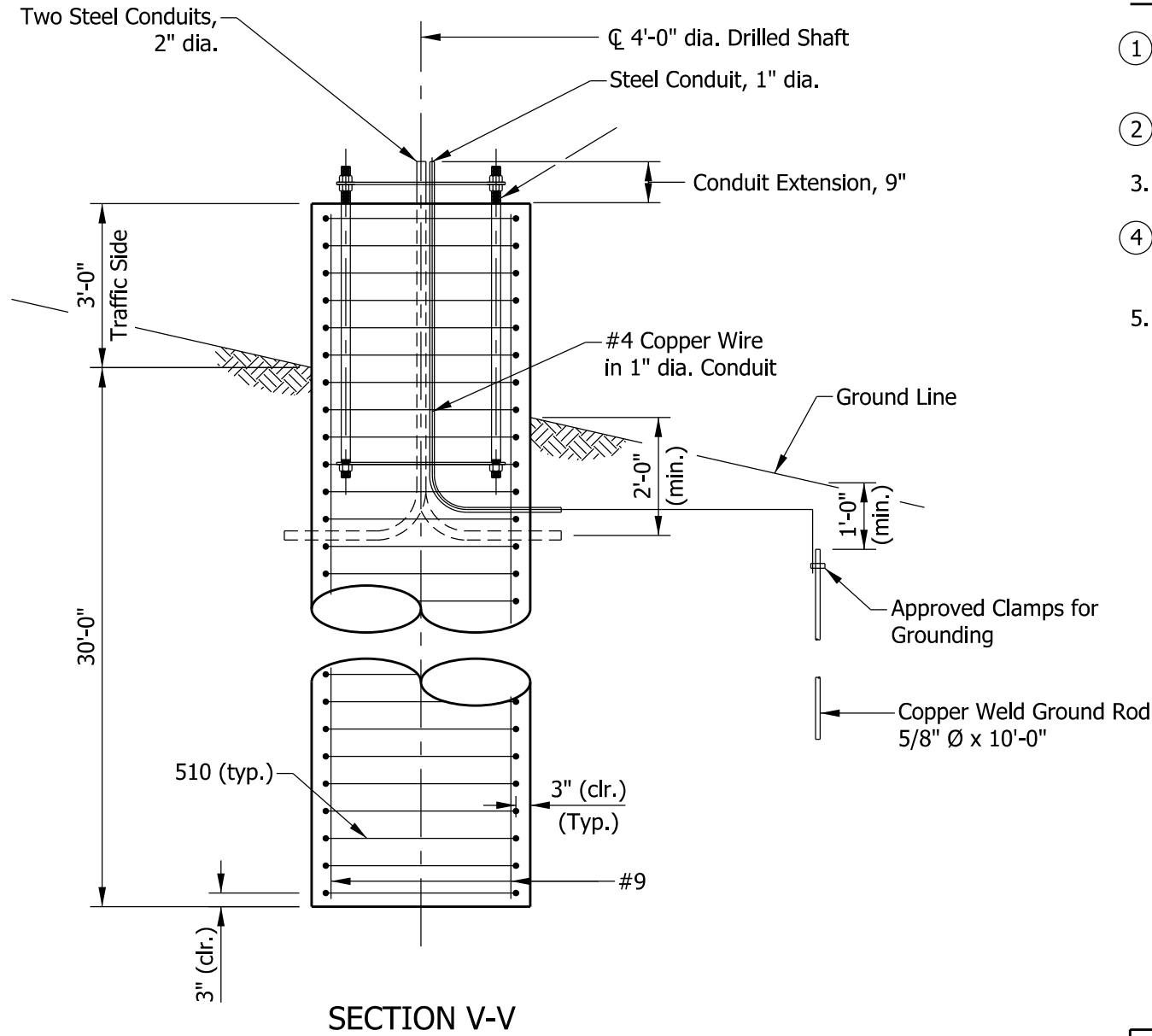
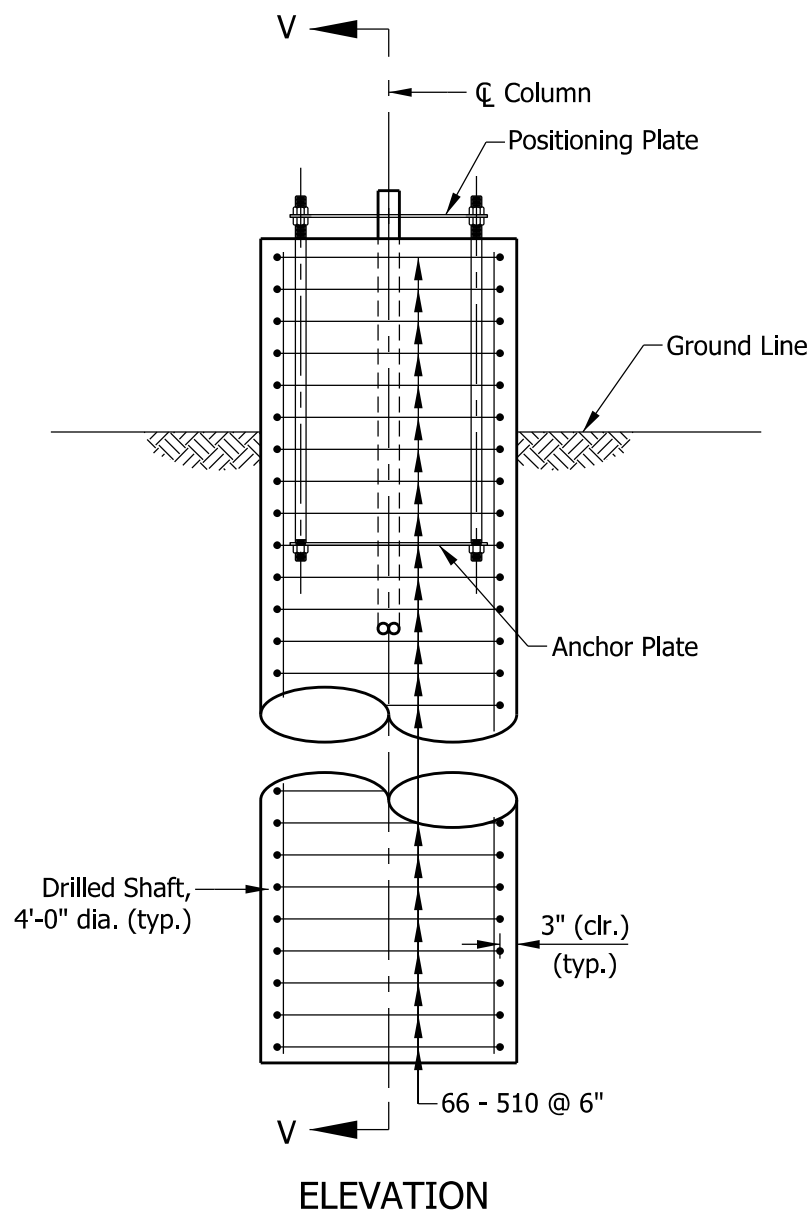
INDIANA DEPARTMENT OF TRANSPORTATION

**SIGN CANTILEVER STRUCTURE TYPE C, D, & E
FOUNDATION, 36" HEIGHT**

SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-21

<p>DAVID H. BORUFF REGISTERED No. 60900348 STATE OF INDIANA PROFESSIONAL ENGINEER</p>	<p style="text-align: right;"><i>David H. Boruff</i> 05/17/22</p> <p style="text-align: right;">DESIGN STANDARDS ENGINEER DATE</p> <p style="text-align: right;"><i>[Signature]</i> 07/07/2022</p> <p style="text-align: right;">CHIEF ENGINEER DATE</p>
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NOTES:

- ① See Standard Drawing E 802-SCLS-12 for anchor and positioning plate and anchor bolt details.
- ② Both ends of steel conduit shall be threaded and capped.
3. Top and sides of foundation to the ground surface shall be sealed.
- ④ Each tie shall be rotated 90 degrees from previous tie to stagger lap locations.
5. Minimum concrete Strength $f'c=3500$ psi.

BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
#9	18	32'-9"	
Total #9			2004 LBS
510	66	12'-11"	
Total #5			887 LBS
Total Epoxy-Coated Reinforcing Bars			2891 LBS
MISCELLANEOUS			
Concrete, Class A			15.4 CYS
Surface Seal			4.3 SYS

INDIANA DEPARTMENT OF TRANSPORTATION

**SIGN CANTILEVER STRUCTURE TYPE F, G, H, & I
FOUNDATION, 36" HEIGHT**

SEPTEMBER 2022

STANDARD DRAWING NO. E 802-SCLS-22

	<p style="text-align: right;"><i>David H. Boruff</i> 05/17/22 DESIGN STANDARDS ENGINEER DATE</p> <p style="text-align: right;"><i>[Signature]</i> 07/07/2022 CHIEF ENGINEER DATE</p>
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