

GRE
PROJECT ID:
WITH: N/A

1009-30-19

COUNTY:

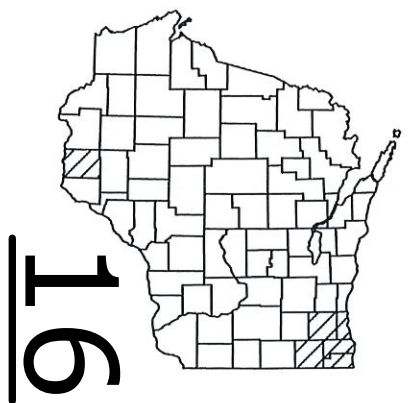
STATEWIDE

MARCH 2020

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 112



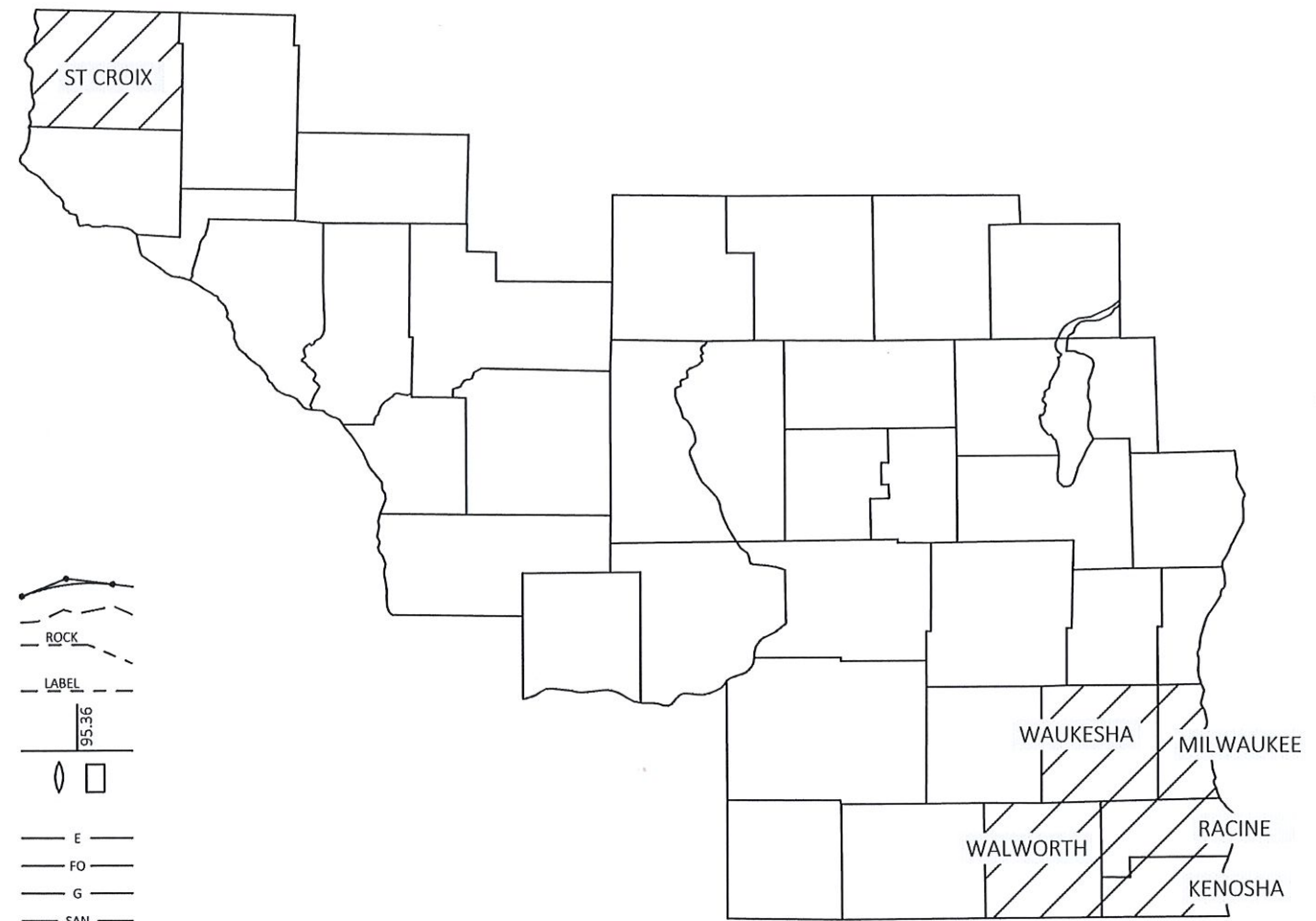
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

SIGN BRIDGE REPAIR REGIONWIDE VARIOUS ROUTES VAR HWY STATEWIDE

STATE PROJECT NUMBER
1009-30-19

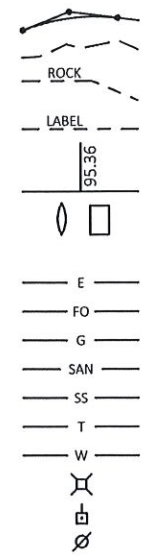
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1009-30-19		



CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	



LAYOUT
SCALE 0 0.1 MI
TOTAL NET LENGTH OF CENTERLINE = 0.0

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NER
Designer	P. NELSON
Project Manager	K. TREML
Regional Examiner	REGIONAL EXAMINER
Regional Supervisor	R. WAGNER

APPROVED FOR THE DEPARTMENT

DATE: 1/7/2020

(Signature)

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GENERAL NOTES

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION WORK WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITY FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

STRUCTURE ASBUILTS AND INSPECTION REPORTS CAN BE FOUND ON THE WISDOT HIGHWAYS STRUCTURES INFORMATION (HSI) WEBSITE OR BY REQUEST THROUGH THE PROJECT ENGINEER.



DNR LIASIONS

DNR WEST CENTRAL REGION HEADQUARTERS
1300 W. CLAIREMONT AVE.
EAU CLAIRE, WI 54701
AMY LESIK (ST. CROIX CO.)
(715) 836-6571
amyl.lesik@wisconsin.gov

DNR SOUTHEAST REGION HEADQUARTERS
2300 N. DR. MARTIN LUTHER KING JR DR.
MILWAUKEE, WI 53212
KRISTINA BETZOLD (MILWAUKEE CO.)
(414) 507-4946
kristina.betzold@wisconsin.gov

DNR SERVICE CENTER
141 NW BARSTOW ST., ROOM 180
WAUKESHA, WI 53188
CRAIG WEBSTER (KENOSHA CO., RACINE CO.,
WALWORTH CO. & WAUKESHA CO.)
(262) 574-2141
craig.webster@wisconsin.gov

DOT TRAFFIC CONTACTS

WISDOT DTSD SOUTHEAST REGION
141 NW BARSTOW ST.
WAUKESHA, WI 53188
TOM HEYDEL
TRAFFIC ENGINEER
(262) 548-6763
tom.heydel@dot.wi.gov

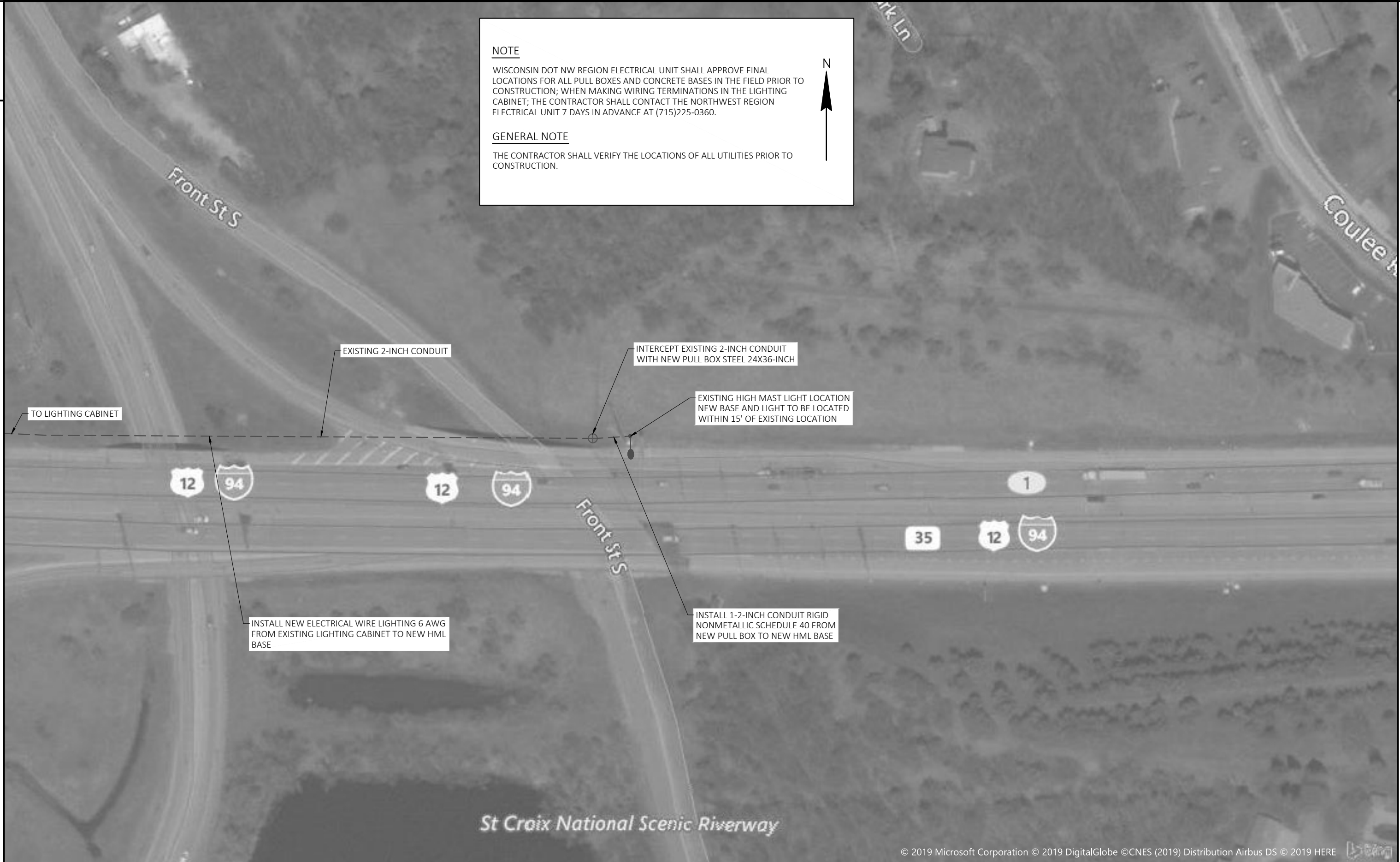
WISDOT DTSD NORTHWEST REGION
718 W. CLAIREMONT AVE.
EAU CLAIRE, WI 54701
CHAD HINES
TRAFFIC ENGINEER
(715) 836-7276
chad.hines@dot.wi.gov

DOT STRUCTURAL MAINTENANCE CONTACT

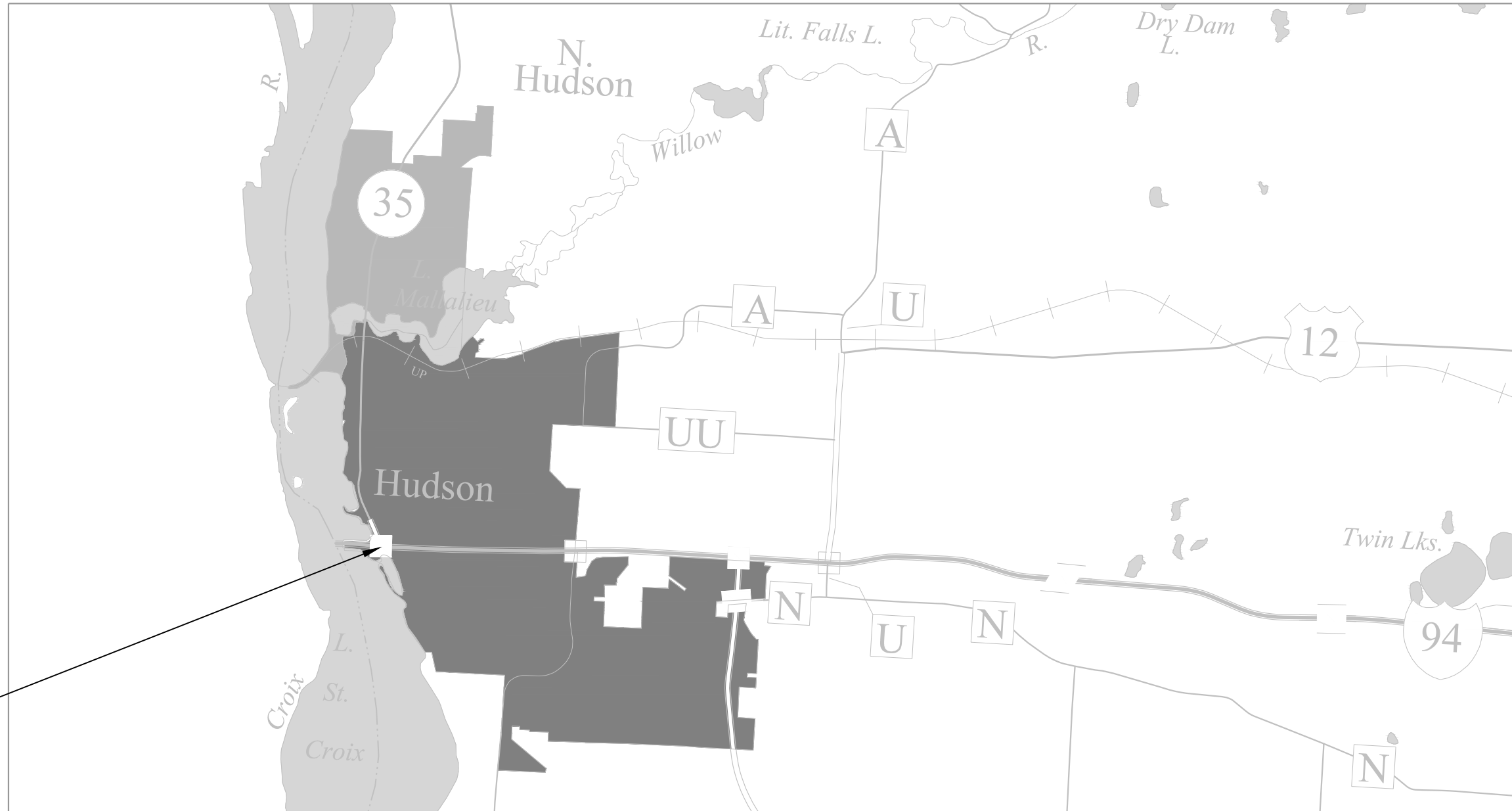
WISDOT DTSD BUREAU OF STRUCTURES
4822 MADISON YARDS WAY
MADISON, WI 53707
STEVE DOOCY
ANCILLARY STRUCTURES PROJECT MANAGER
(262) 261-6063
steve.doocy@dot.wi.gov

NOTE
 WISCONSIN DOT NW REGION ELECTRICAL UNIT SHALL APPROVE FINAL LOCATIONS FOR ALL PULL BOXES AND CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION; WHEN MAKING WIRING TERMINATIONS IN THE LIGHTING CABINET; THE CONTRACTOR SHALL CONTACT THE NORTHWEST REGION ELECTRICAL UNIT 7 DAYS IN ADVANCE AT (715)225-0360.

GENERAL NOTE
 THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

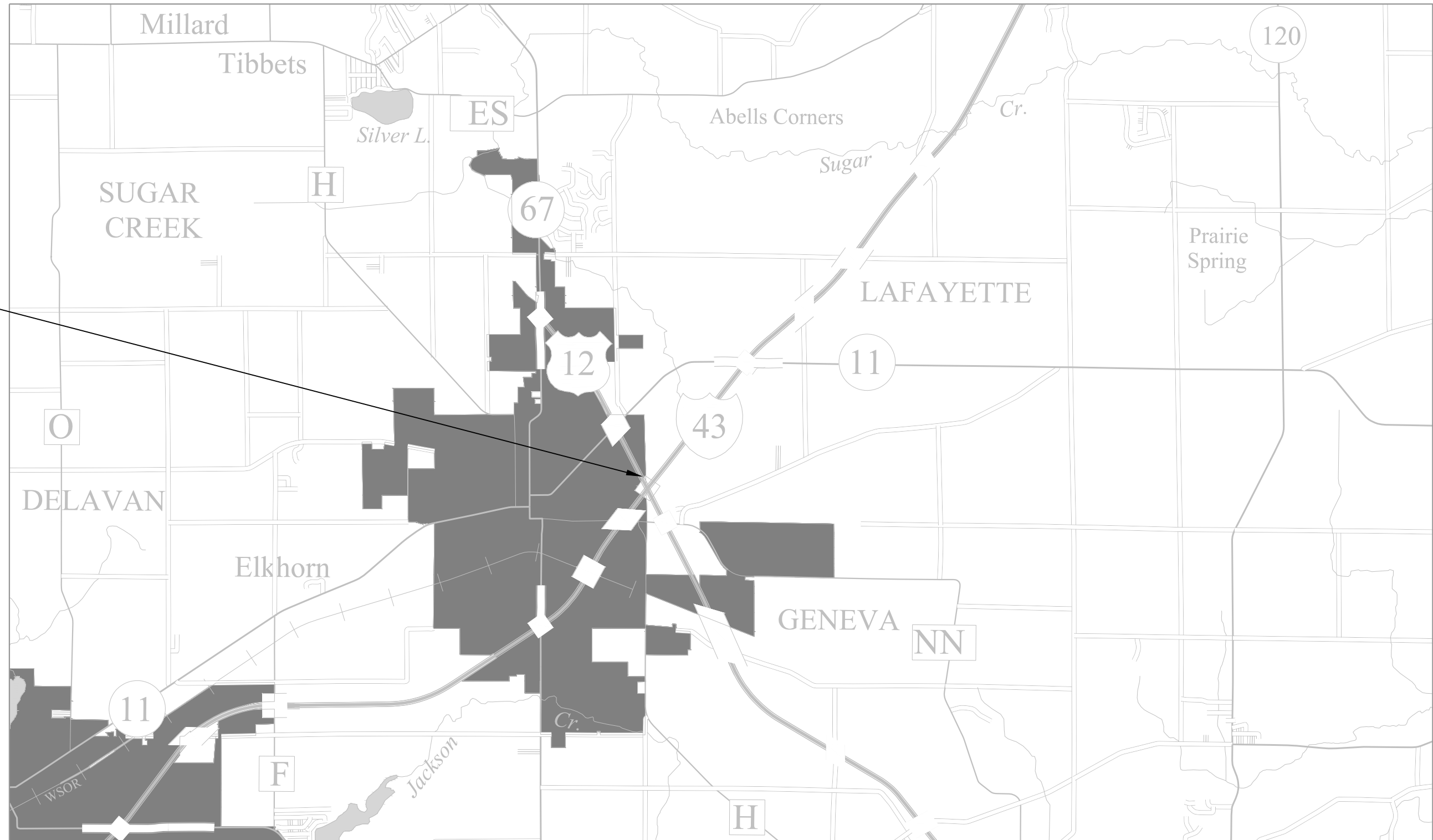


PROJECT NO: 1009-30-19	HWY: IH 94	COUNTY: ST. CROIX	CONSTRUCTION DETAILS	SHEET	E
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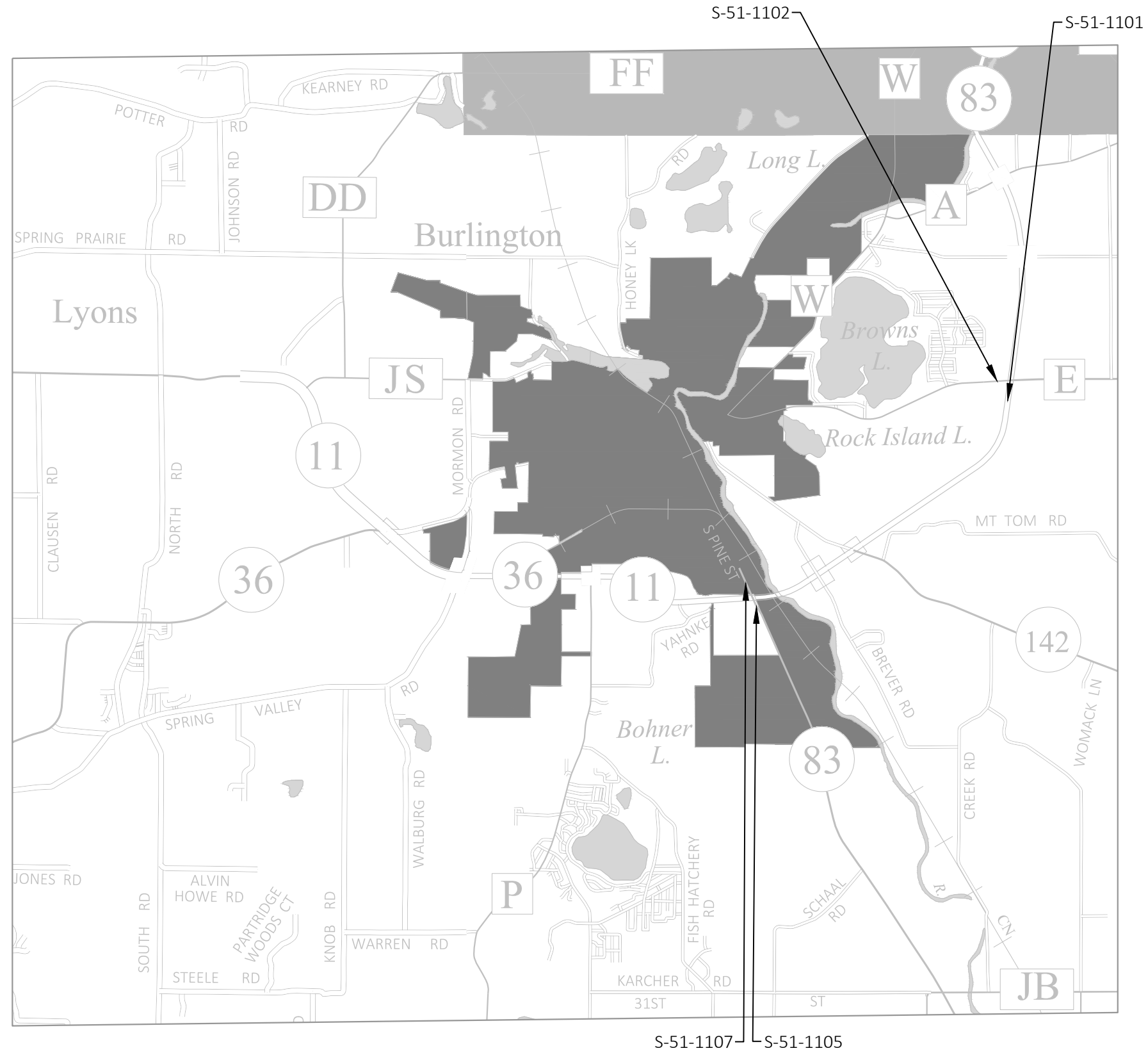
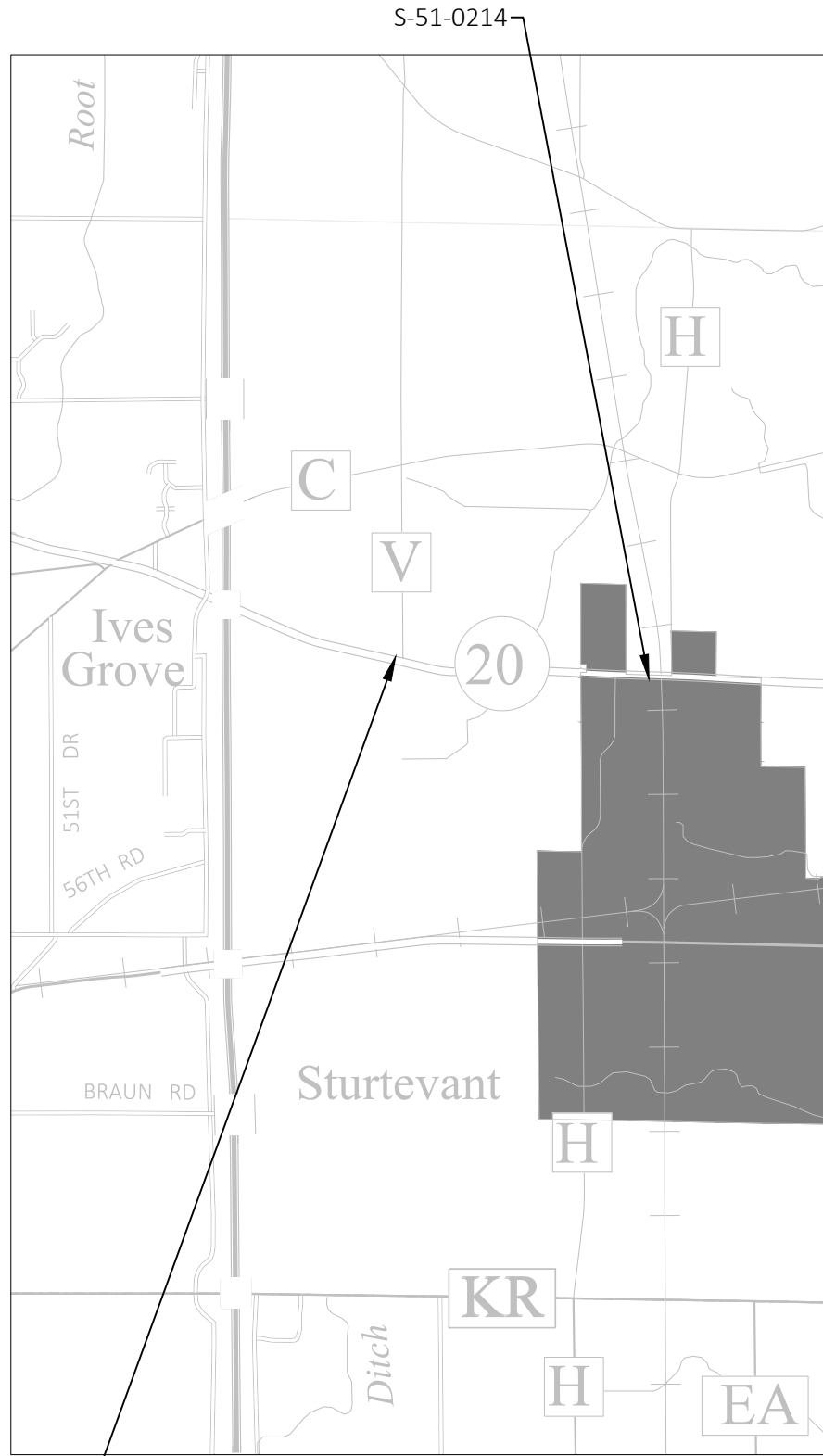


L-55-0010

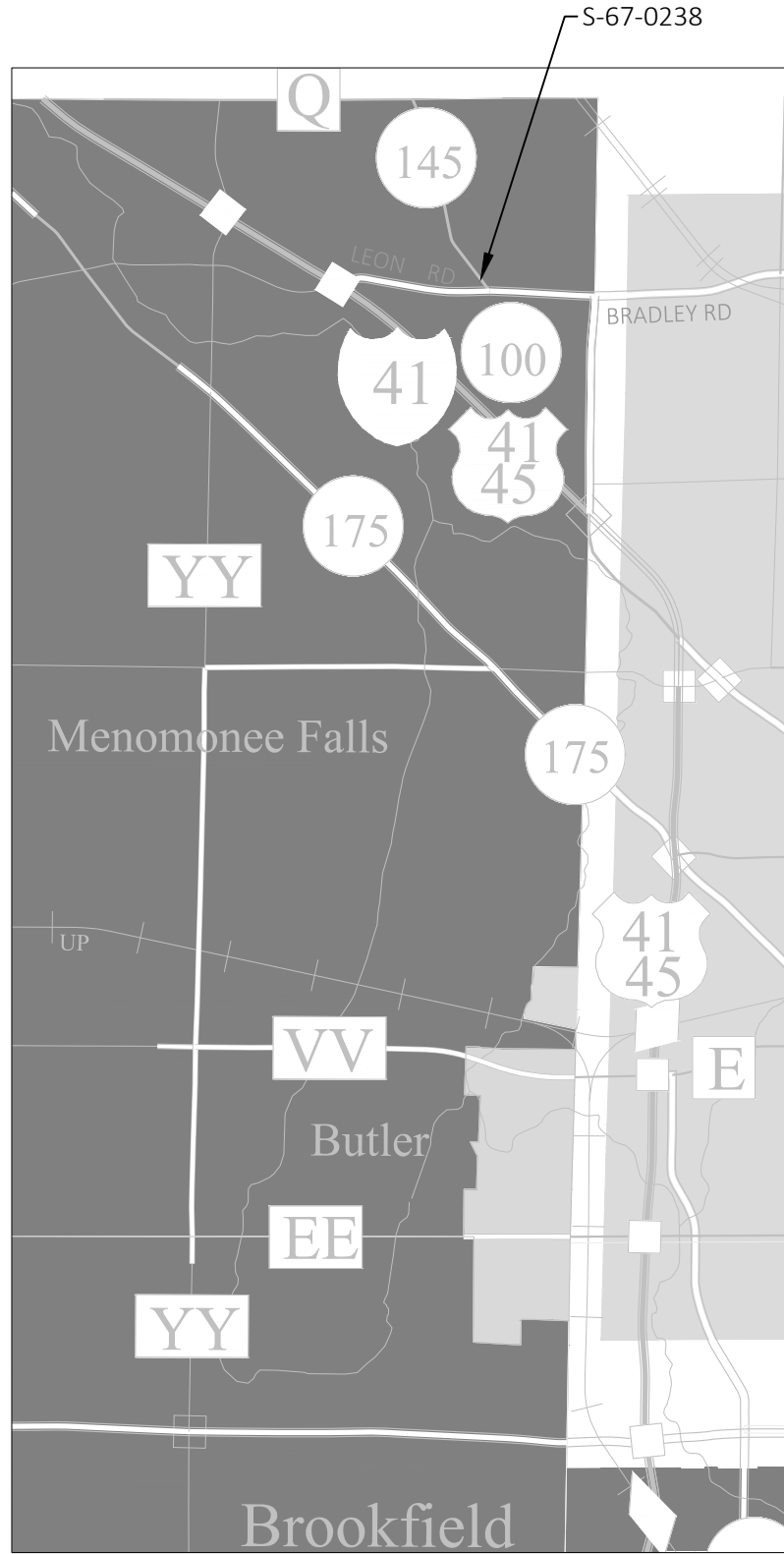
ST CROIX COUNTY SIGN BRIDGE REPAIR MAP



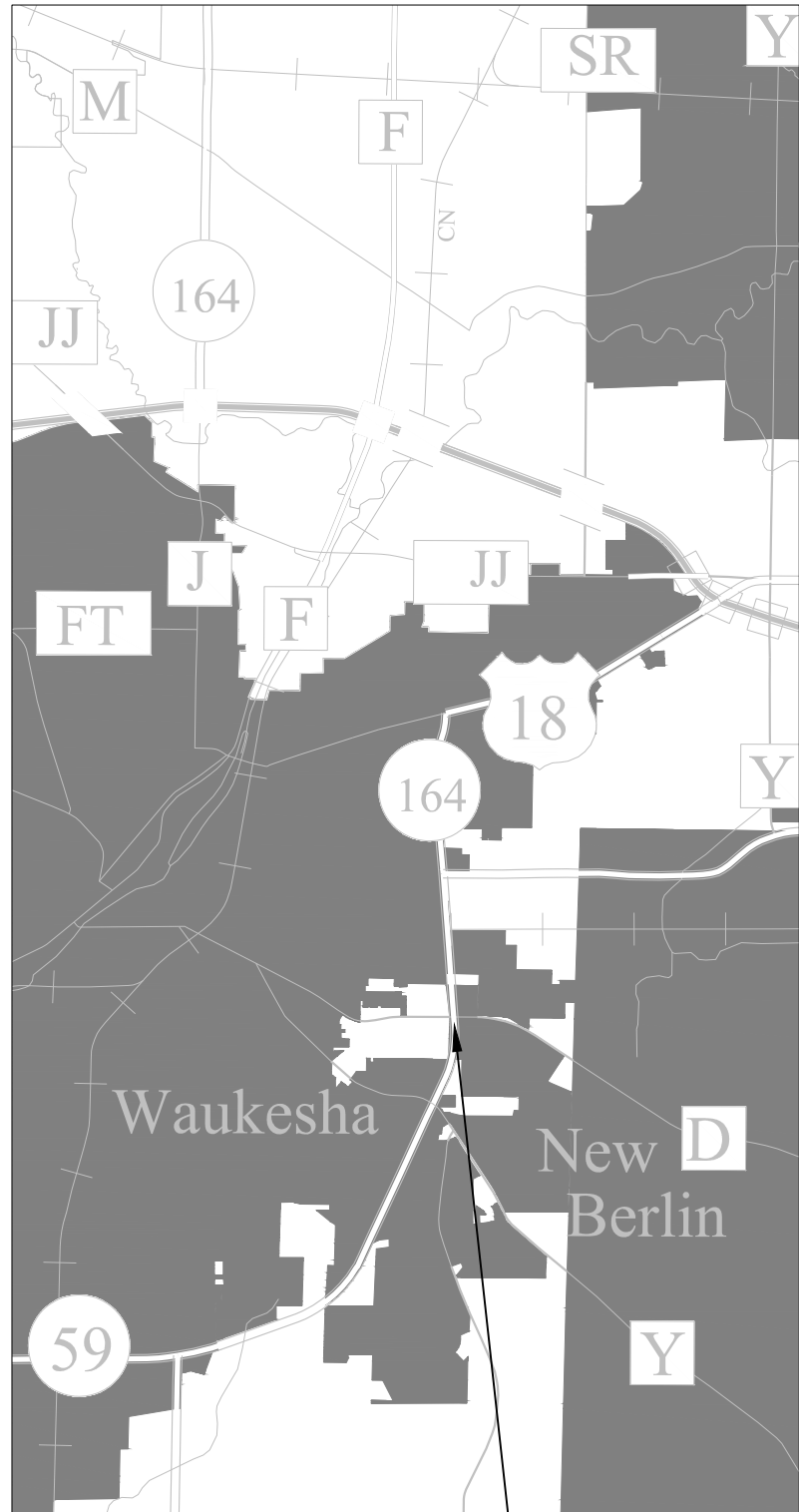
WALWORTH COUNTY SIGN BRIDGE REPAIR MAP



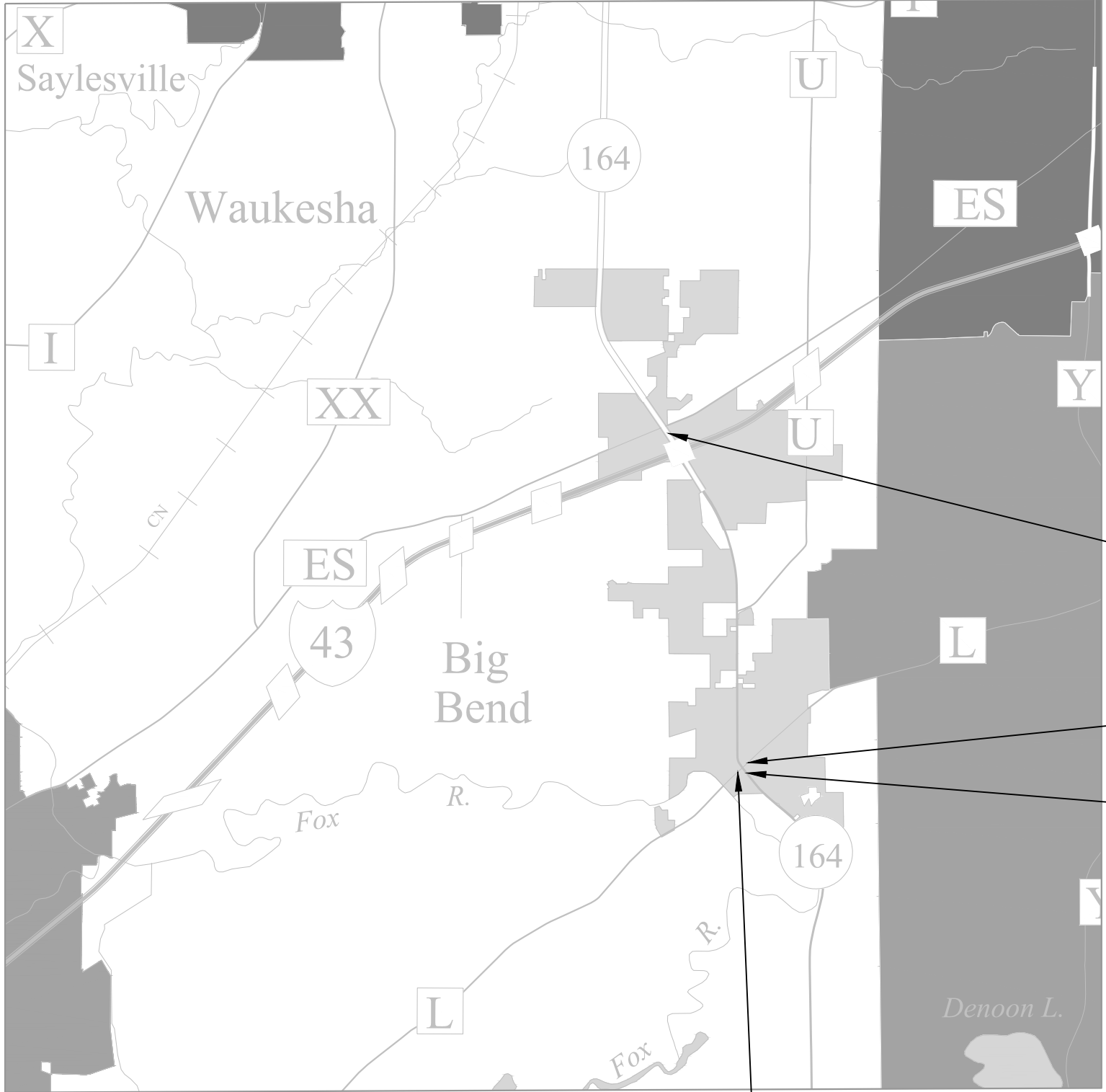
RACINE COUNTY SIGN BRIDGE AND SIGNAL REPAIR MAPS



WAUKESHA COUNTY SIGN BRIDGE AND SIGNAL REPAIR MAPS



S-67-1329



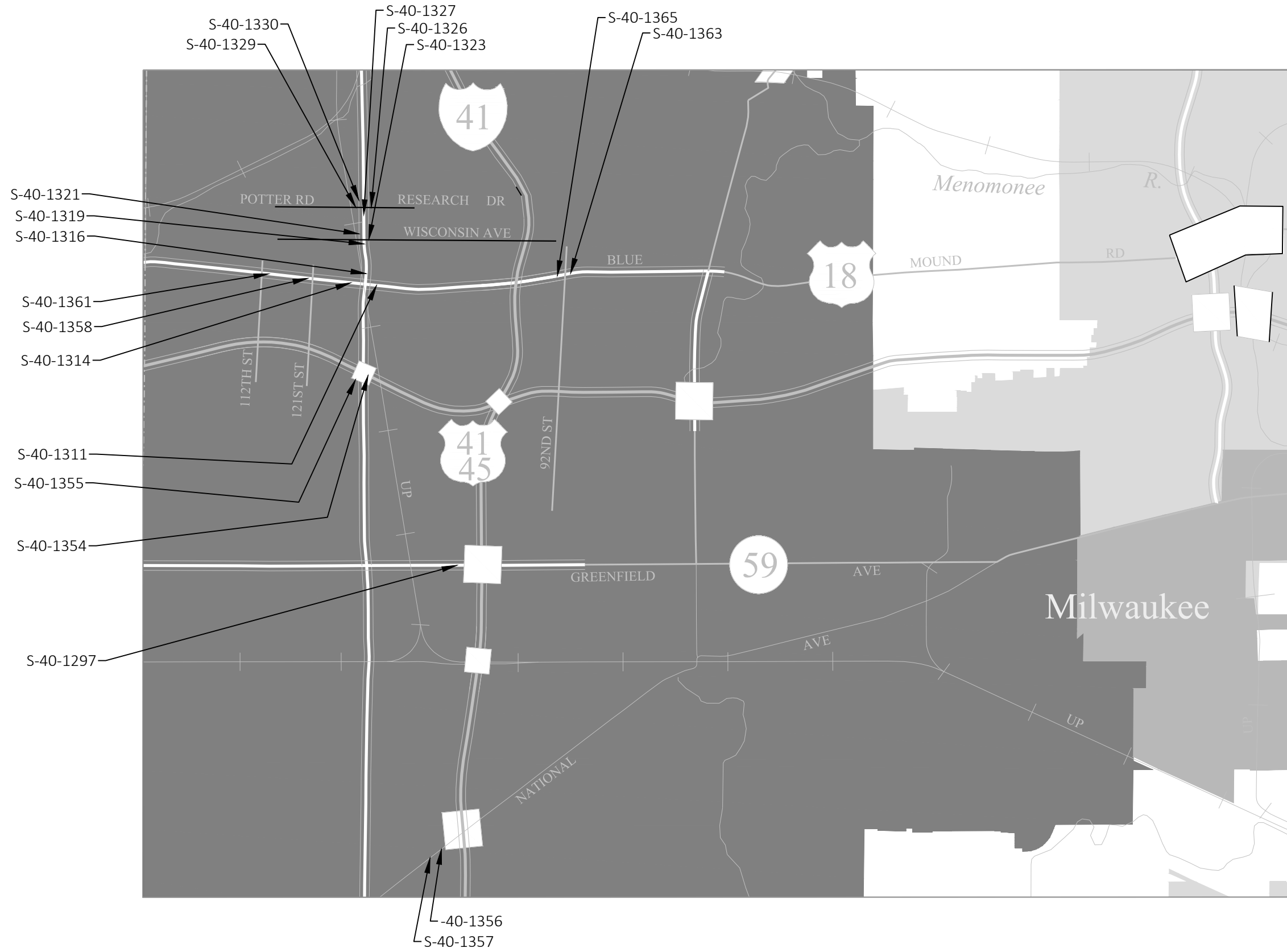
S-67-0230

S-67-1270

S-67-1269

S-67-1271

WAUKESHA COUNTY SIGN BRIDGE AND SIGNAL REPAIR MAPS



MILWAUKEE COUNTY SIGNAL REPAIR MAPS

PROJECT NO: 1009-30-19

HWY: VARIOUS

COUNTY: MILWAUKEE

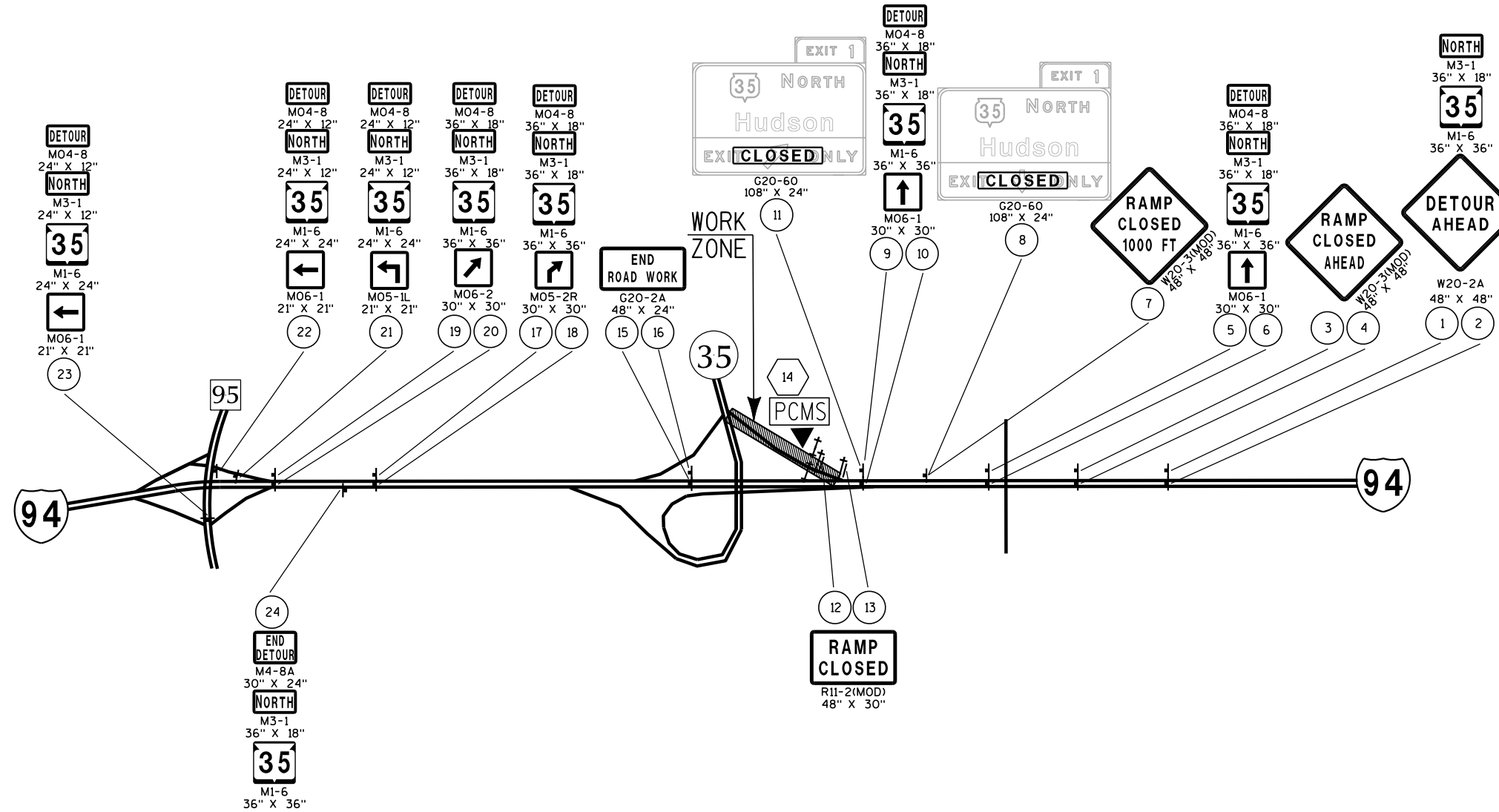
PLAN

SHEET

E

LEGEND

- (X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- (X) PORTABLE CHANGEABLE MESSAGE SIGN
- PCMS SIGN MOUNTED ON TYPE III BARRICADE
- POST MOUNTED SIGN



PLAN SHEET PRODUCED BY WisDOT-NE REGION

Estimate Of Quantities

1009-30-19

Line	Item	Item Description	Unit	Total	Qty
0002	204.9060.S	Removing (item description) 01. High Mast Lighting Tower	EACH	1.000	1.000
0004	619.1000	Mobilization	EACH	1.000	1.000
0006	637.2220	Signs Type II Reflective SH	SF	25.000	25.000
0008	637.2225	Signs Type II Reflective SH Folding	SF	9.000	9.000
0010	638.2602	Removing Signs Type II	EACH	2.000	2.000
0012	643.0300	Traffic Control Drums	DAY	45.000	45.000
0014	643.0420	Traffic Control Barricades Type III	DAY	12.000	12.000
0016	643.0705	Traffic Control Warning Lights Type A	DAY	12.000	12.000
0018	643.0900	Traffic Control Signs	DAY	189.000	189.000
0020	643.1050	Traffic Control Signs PCMS	DAY	26.000	26.000
0022	643.5000	Traffic Control	EACH	1.000	1.000
0024	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	50.000	50.000
0026	653.0135	Pull Boxes Steel 24x36-Inch	EACH	1.000	1.000
0028	655.0625	Electrical Wire Lighting 6 AWG	LF	2,175.000	2,175.000
0030	659.0400	Luminaires High Mast Lighting LED	EACH	1.000	1.000
0032	660.0100	High Mast Foundation (location) 01. L-55-0010	LS	1.000	1.000
0034	660.0200	High Mast Lighting Tower (location) 01. L-55-0010	LS	1.000	1.000
0036	SPV.0060	Special 01. Tension Anchor Rods	EACH	94.000	94.000
0038	SPV.0060	Special 02. Abandon High Mast Foundation	EACH	1.000	1.000
0040	SPV.0060	Special 03. Anchor Rod Standoff Repair	EACH	72.000	72.000
0042	SPV.0060	Special 04. Replace Pole	EACH	3.000	3.000
0044	SPV.0060	Special 05. Fill Erosion	EACH	1.000	1.000
0046	SPV.0060	Special 06. Remove Fill and Regrade	EACH	3.000	3.000
0048	SPV.0060	Special 07. Replace Rodent Screen	EACH	4.000	4.000
0050	SPV.0060	Special 08. Replace Luminaire Arm Connection Bolts	EACH	8.000	8.000
0052	SPV.0060	Special 09. Tension Structural Bolt (Friction)	EACH	42.000	42.000
0054	SPV.0060	Special 10. U-Bolt Repair	EACH	5.000	5.000
0056	SPV.0060	Special 11. Replace Sign Connection Assembly (W/ I-Beam and U-Bolts)	EACH	9.000	9.000
0058	SPV.0060	Special 12. Replace Signal Connection Assembly	EACH	7.000	7.000
0060	SPV.0060	Special 13. Replace Dished Washer	EACH	28.000	28.000
0062	SPV.0060	Special 14. Replace Vertical to Horizontal Signal Connection Bracket	EACH	3.000	3.000
0064	SPV.0060	Special 15. Replace Post-Mounted Signal Connection Assembly	EACH	2.000	2.000
0066	SPV.0060	Special 16. Secure Camera Connection	EACH	1.000	1.000
0068	SPV.0060	Special 17. Secure Signal Connection Assembly	EACH	5.000	5.000
0070	SPV.0060	Special 18. Secure Type II Sign	EACH	3.000	3.000
0072	SPV.0060	Special 19. Secure Handhole Cover	EACH	1.000	1.000
0074	SPV.0060	Special 20. Install ID Plaque	EACH	6.000	6.000

Estimate Of Quantities

1009-30-19

Line	Item	Item Description	Unit	Total	Qty
0076	SPV.0060	Special 21. Traffic Control Single-Lane Closure	EACH	39.000	39.000
0078	SPV.0060	Special 22. Traffic Control Double-Lane Closure	EACH	2.000	2.000
0080	SPV.0060	Special 23. Traffic Control Ramp Closure	EACH	2.000	2.000
0082	SPV.0165	Special 01. Repair Galvanized Coating	SF	4.000	4.000

SIGNS

STRUCTURE NUMBER	COUNTY	W X H	638.2602 REMOVING SIGNS TYPE II EACH
S-67-0238	WAUKESHA	5.0 X 5.0	1
S-67-1329	WAUKESHA	3.0 X 3.0	1
TOTALS			2

TRAFFIC CONTROL

STRUCTURE NUMBER	COUNTY	APPROX. SERVICE PERIOD 3 DAYS	643.0300	643.0420	643.0705	643.0900	REMARKS
			DRUMS DAY	BARRICADES TYPE III * DAY	WARNING LIGHTS TYPE A * DAY	SIGNS * (RAMP CLOSED) DAY	
L-55-0010	ST. CROIX	3	45	3	6	3	AUXILIARY LANE
TOTALS			45	3	6	3	

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

ELECTRICAL

EXISTING STRUCTURE NUMBER	NEW STRUCTURE NUMBER	COUNTY	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	653.0135 PULL BOXES STEEL 24X36-INCH EACH	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG EACH	659.0400 LUMINAIRES HIGH MAST LIGHTING LED EACH
L-55-0004	L-55-0010	ST. CROIX	50	1	2175	1
TOTALS			50	1	2175	1

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 3 DAYS	643.0900 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	REMARKS
1	I-94, E. OF 11ST OVERPASS, PLACE 3000' E. OF STH 35 OFF-RAMP IN MEDIAN	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	W 20-2A	48"X48"	1	3	3				
2	I-94, E. OF 11ST OVERPASS, PLACE 3000' E. OF STH 35 OFF-RAMP ON RIGHT SHOULDER	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	W 20-2A	48"X48"	1	3	3				
3	I-94, E. OF 11ST OVERPASS, PLACE 2500' E. OF STH 35 OFF-RAMP IN MEDIAN	W 20-3 (MOD)	48"X48"	1	3	3				
4	I-94, E. OF 11ST OVERPASS, PLACE 2500' E. OF STH 35 OFF-RAMP ON RIGHT SHOULDER	W 20-3 (MOD)	48"X48"	1	3	3				
5	I-94, W. OF 11ST OVERPASS, PLACE 1700' E. OF STH 35 OFF-RAMP IN MEDIAN	MO 4-8	36"X18"	1	3	3				
	"	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	MO 6-1	30"X30"	1	3	3				AHEAD
6	I-94, W. OF 11ST OVERPASS, PLACE 1700' E. OF STH 35 OFF-RAMP ON RIGHT SHOULDER	MO 4-8	36"X18"	1	3	3				
	"	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	MO 6-1	30"X30"	1	3	3				AHEAD
7	I-94, W. OF 11ST OVERPASS, PLACE IN FRONT OF SIGN CANTILEVER S-55-57 COLUMN	W 20-3 (MOD)	48"X48"	1	3	3				
8	I-94, W. OF 11ST OVERPASS, PLACE ON TYPE I SIGN ON S-55-57 AS SHOWN	G 20-60	108"X24"	1	3	3				
9	I-94, AT STH 35 EXIT RAMP, PLACE ACROSS FROM SIGN #10 IN MEDIAN	MO 4-8	36"X18"	1	3	3				
	"	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	MO 6-1	30"X30"	1	3	3				AHEAD
10	I-94, AT STH 35 EXIT RAMP, PLACE IN FRONT OF SIGN CANTILEVER S-55-71 COLUMN	MO 4-8	36"X18"	1	3	3				
	"	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	MO 6-1	30"X30"	1	3	3				AHEAD
11	I-94, AT STH 35 EXIT RAMP, PLACE ON TYPE I SIGN ON S-55-71 AS SHOWN	G 20-60	108"X24"	1	3	3				
12	I-94 OFF-RAMP TO STH 35, PLACE IN ROADWAY ON OFF-RAMP TO STH 35	R 11-2 (MOD)	48"X30"	1	3	3	3	6		
	"			2	3		6			
13	I-94 OFF-RAMP TO STH 35, PLACE IN ROADWAY ON OFF-RAMP TO STH 35	R 11-2 (MOD)	48"X30"	1	3	3				
14	I-94 OFF-RAMP TO STH 35, PLACE ON RIGHT SHOULDER, FIELD DETERMINE LOCATION								7	PLACE IN ADVANCE OF FULL CLOSURE
15	I-94, W. OF STH 35, PLACE 500' W. OF STH 35 OVERPASS IN MEDIAN	G 20-2A	48"X24"	1	3	3				
16	I-94, W. OF STH 35, PLACE 500' W. OF STH 35 OVERPASS ON RIGHT SHOULDER	G 20-2A	48"X24"	1	3	3				
17	I-94, E. OF MINNESOTA 95, PLACE 1500' E. OF MINNESOTA 95 ON RIGHT SHOULDER	MO 4-8	36"X18"	1	3	3				
	"	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	MO 5-2R	30"X30"	1	3	3				
18	I-94, E. OF MINNESOTA 95, PLACE 1500' E. OF MINNESOTA 95 IN MEDIAN	MO 4-8	36"X18"	1	3	3				
	"	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	MO 5-2R	30"X30"	1	3	3				
19	I-94, AT MINNESOTA 95 EXIT, PLACE IN FRONT OF SIGN BRIDGE STRUCTURE ON RIGHT SHOULDER	MO 4-8	36"X18"	1	3	3				
	"	M 3-1	36"X18"	1	3	3				
	"	M 1-6	36"X36"	1	3	3				35
	"	MO 6-2	30"X30"	1	3	3				TILT RIGHT

PAGE SUBTOTALS

45

129

9

6

7

PLAN SHEET PRODUCED

BY WisDOT - NE REGION

PROJECT NUMBER: 1009-30-19

HWY: STH 35

COUNTY: ST CROIX

MISCELLANEOUS QUANTITIES

SHEET

E

3

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 3 DAYS	643.0900 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	REMARKS
20	I-94, AT MINNESOTA 95 EXIT, PLACE IN FRONT OF SIGN BRIDGE STRUCTURE IN MEDIAN	MO 4-8	36"x18"	1	3	3				
	"	M 3-1	36"x18"	1	3	3				
	"	M 1-6	36"x36"	1	3	3				35
	"	MO 6-2	30"x30"	1	3	3				TILT RIGHT
21	I-94 OFF-RAMP TO MINNESOTA 95, PLACE 500' PRIOR TO RAMP INTERESCTION ON LEFT SHOULDER	MO 4-8	24"x12"	1	3	3				
	"	M 3-1	24"x12"	1	3	3				
	"	M 1-6	24"x24"	1	3	3				35
	"	MO 5-1L	21"x21"	1	3	3				
22	I-94 OFF-RAMP TO MINNESOTA 95, PLACE 100' PRIOR TO RAMP INTERESCTION ON LEFT SHOULDER	MO 4-8	24"x12"	1	3	3				
	"	M 3-1	24"x12"	1	3	3				
	"	M 1-6	24"x24"	1	3	3				35
	"	MO 6-1	21"x21"	1	3	3				LEFT
23	MINNESOTA 95, BETWEEN I-94 RAMP INTERSECTIONS, PLACE 100' N. OF I-94 EB RAMP INTERSECTION	MO 4-8	24"x12"	1	3	3				
	"	M 3-1	24"x12"	1	3	3				
	"	M 1-6	24"x24"	1	3	3				35
	"	MO 6-1	21"x21"	1	3	3				LEFT
24	I-94, E. OF MINNESOTA 95, PLACE ON RIGHT SHOULDER IN FRONT OF SIGN BRIDGE S-55-14	M 4-8A	30"x24"	1	3	3				
	"	M 3-1	36"x18"	1	3	3				
	"	M 1-6	36"x36"	1	3	3				35
PAGE SUBTOTALS				19		57	0	0	0	
PROJECT TOTALS				64		186	9	6	7	

Standard Detail Drawing List

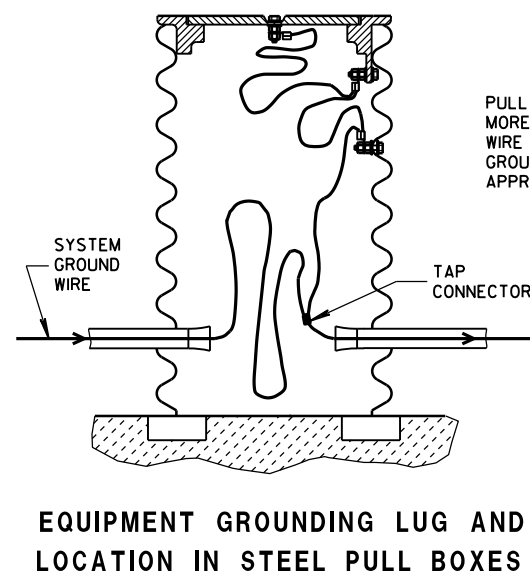
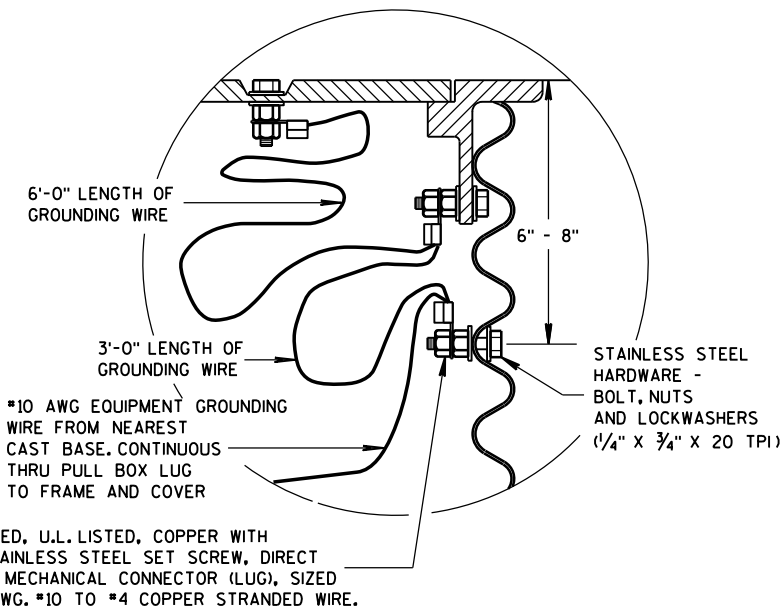
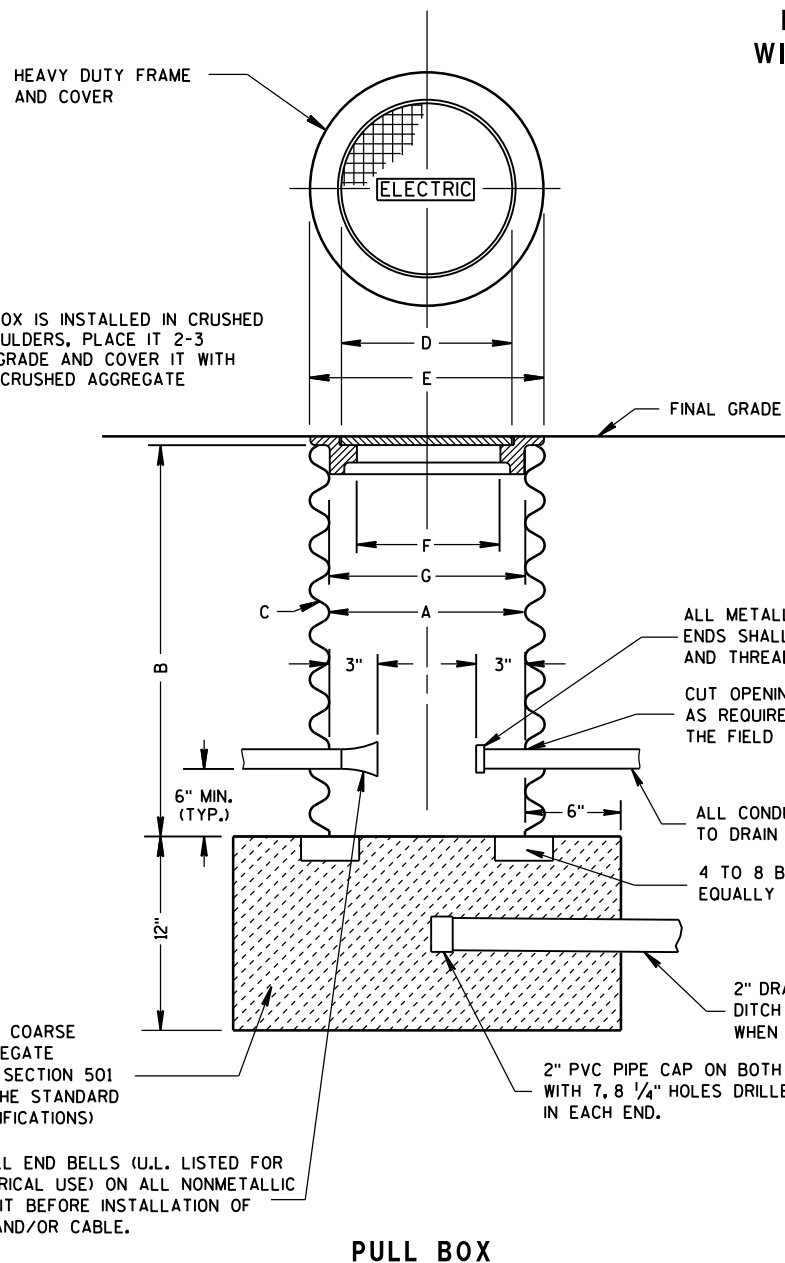
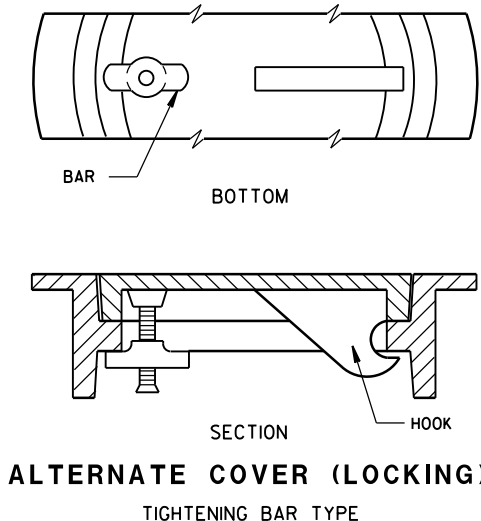
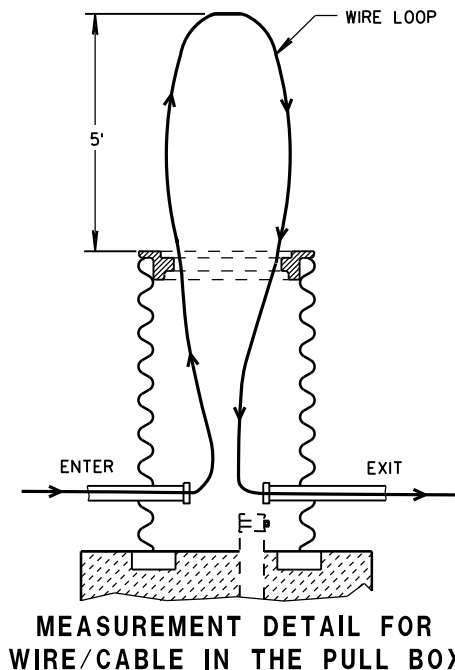
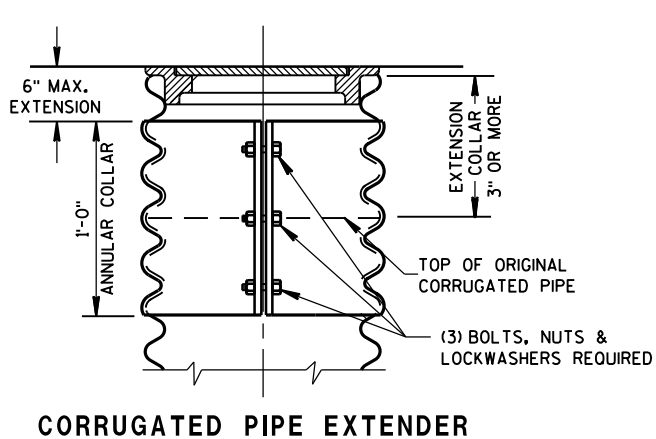
09B04-11	PULL BOX
10A04-03	IDENTIFICATION PLAQUES UNDERDECK AND HIGH MAST LIGHTING
10A14-03A	ELECTRICAL DETAILS HIGH MAST LIGHTING
10A14-03B	ELECTRICAL DETAILS HIGH MAST LIGHTING
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D12-07A	TRAFFIC CONTROL, LANE CLOSURE
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

NO. 2 COARSE AGGREGATE (SEE SECTION 501 OF THE STANDARD SPECIFICATIONS)

INSTALL END BELLS (U.L. LISTED FOR ELECTRICAL USE) ON ALL NONMETALLIC CONDUIT BEFORE INSTALLATION OF WIRE AND/OR CABLE.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED

CUT OPENINGS AS REQUIRED IN THE FIELD

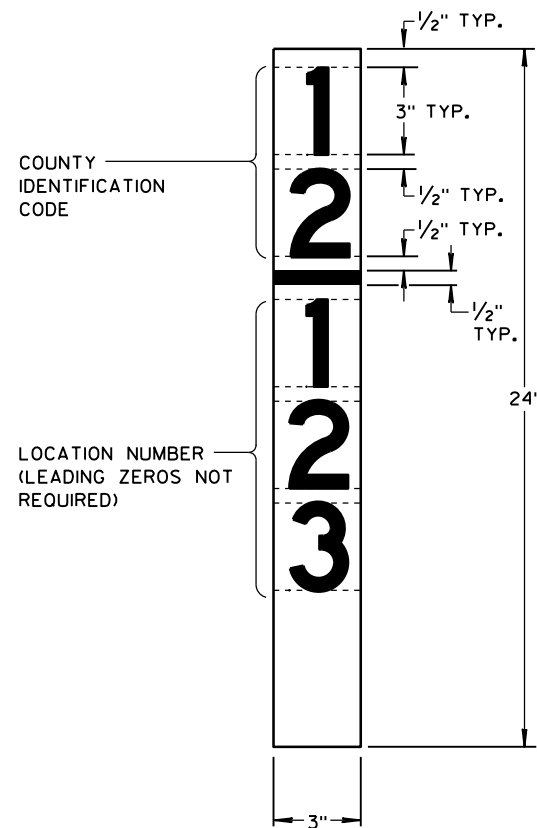
ALL CONDUIT PITCHED TO DRAIN TO PULL BOXES

4 TO 8 BRICKS EQUALLY SPACED

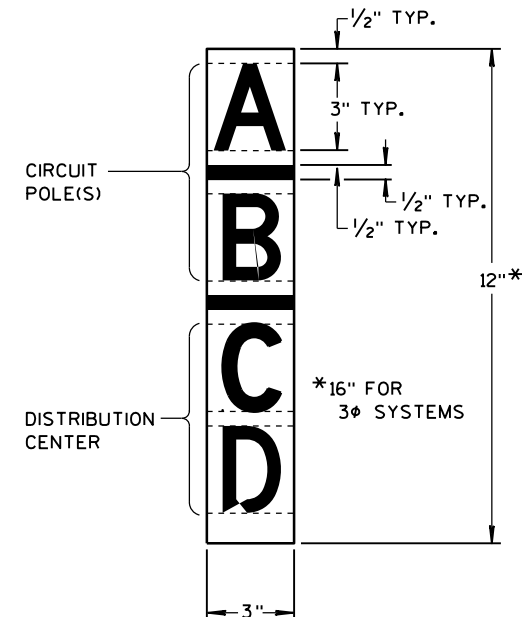
2" DRAIN DUCT TO DITCH OR SEWER WHEN SPECIFIED

PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

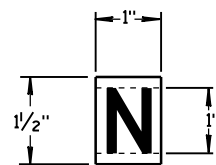
PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Ahmet Demirelek STATE ELECTRICAL ENGINEER
FHWA	



**HIGH MAST LIGHT TOWER
STRUCTURE PLAQUE**

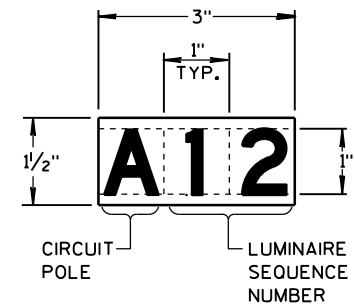


**UNDERDECK LIGHTING OR
HIGH MAST LIGHT
TOWER CIRCUIT PLAQUE**



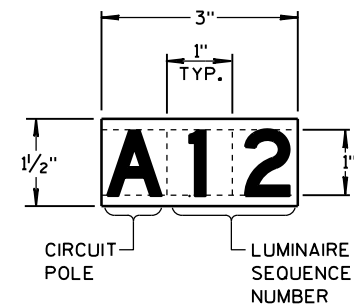
**HIGH MAST LIGHT TOWER
NORTH PLAQUE**

(MOUNT ON LOWERING RING - INDICATING NORTH
HEADING 2 ± 10^3 WHEN RING IS RAISED AND LATCHED)



**HIGH MAST LIGHT
TOWER LUMINAIRE
SEQUENCE PLAQUE**

(MOUNT ON LUMINAIRE RING)



**UNDER DECK LUMINAIRE
SEQUENCE DECAL**

(MOUNT ON LUMINAIRE)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN IN THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

CONCRETE SURFACE - MASONRY ANCHORS

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS;
FASTEN WITH STAINLESS SELF-TAPPING SCREWS

PLAQUE MATERIALS:

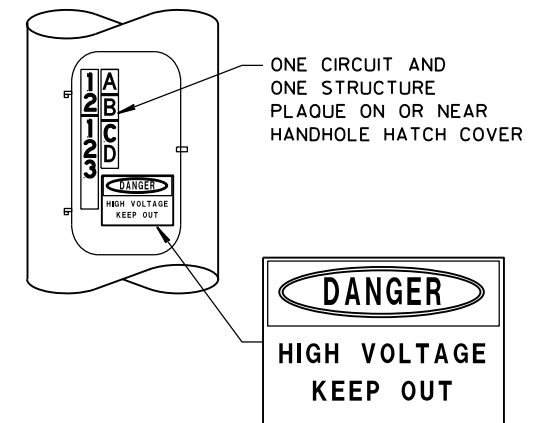
BASE - SHEET ALUMINUM, 0.060" THICK.

FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINE - BLACK, 1/2" WIDE, SELF-ADHESIVE

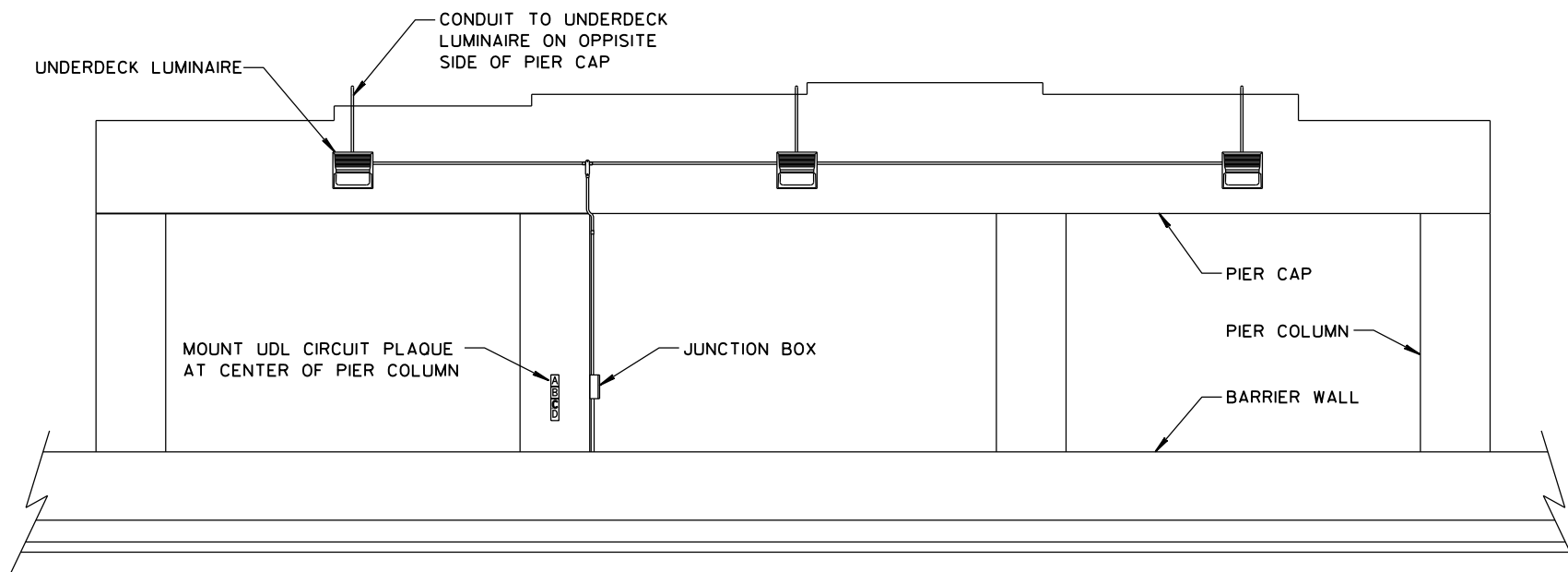
CHARACTERS - BLACK, SELF-ADHESIVE, SERIES "D", SIZE AS SHOWN

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.



NOTE: NEMA PLAQUE SHOWN ABOVE IS REQUIRED ONLY IN PARK AND RIDE LOTS OR IN OTHER PEDESTRIAN ACCESSIBLE AREAS.

**LOCATION OF HIGH MAST LIGHT TOWER
STRUCTURE PLAQUE AND CIRCUIT PLAQUE**

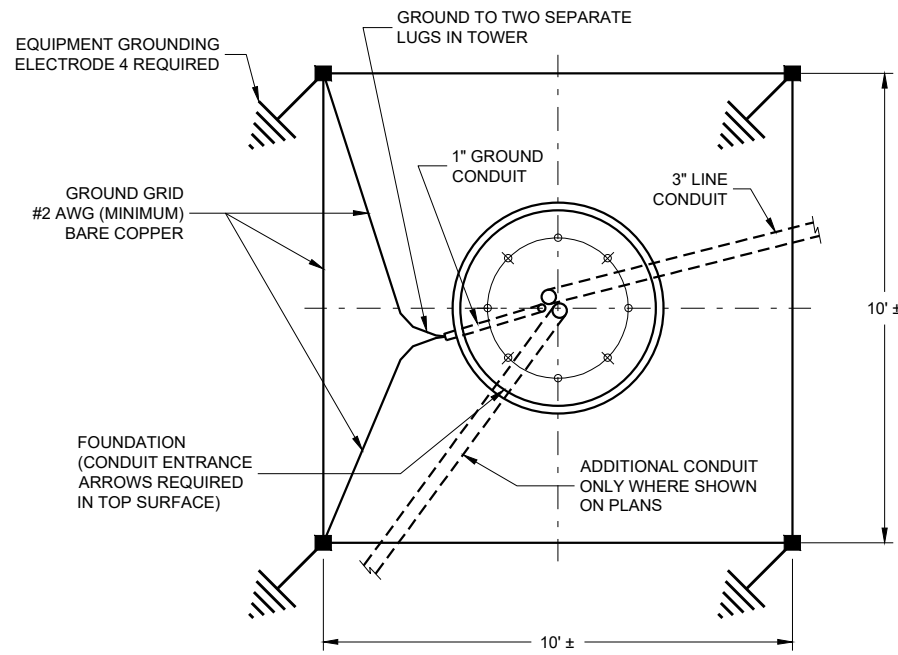


**LOCATION OF UNDERDECK LIGHTING
CIRCUIT PLAQUE**

**IDENTIFICATION PLAQUES
UNDERDECK AND HIGH
MAST LIGHTING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Ahmet Demrilek
DATE STATE ELECTRICAL ENGINEER
FHWA



EQUIPMENT GROUNDING GRID AND FOUNDATION ELECTRICAL DETAILS

OVER CURRENT AND POWER CORD SCHEDULE

LINE VOLTAGE	HAND HOLE BREAKERS	INDIVIDUAL LUMINAIRE FUSES	POWER CORD	PRONGS ON LOAD BREAK DISCONNECT	
1 - ϕ 120 / 240VAC:	3 WIRE	2 - 30A, 1P, 277VAC	20A	10 - 3 + GND "SO"	A, B, N, GND
1 - ϕ 240 / 480VAC:	3 WIRE	2 - 30A, 1P, 277VAC	10A	10 - 3 + GND "SO"	A, B, N, GND
3 - ϕ 480Y / 277VAC:	4 WIRE	3 - 30A, 1P, 277VAC	10A	10 - 4 + GND "SO"	X, Y, Z, N, GND
3 - ϕ 208Y / 120VAC:	4 WIRE	3 - 30A, 1P, 277VAC	20A	10 - 4 + GND "SO"	X, Y, Z, N, GND
1 - ϕ 480VAC:	2 WIRE	1 - 20A, 2P, 600VAC	5A	10 - 3 + GND "SO"	A, B, N, GND

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN IN THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

IN CASES WHERE THE PLANS SHOW LINE IN/LINE OUT DISTRIBUTION SYSTEMS, FURNISH FEED-THROUGH LUGS IN THE CIRCUIT BREAKER ENCLOSURE.

THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

FIELD RECODING OF UNGROUNDED CONDUCTORS IN TYPE "SO" CABLE MAY BE REQUIRED TO CONFORM TO SYSTEM COLOR CODING AS SHOWN IN THE PLANS.

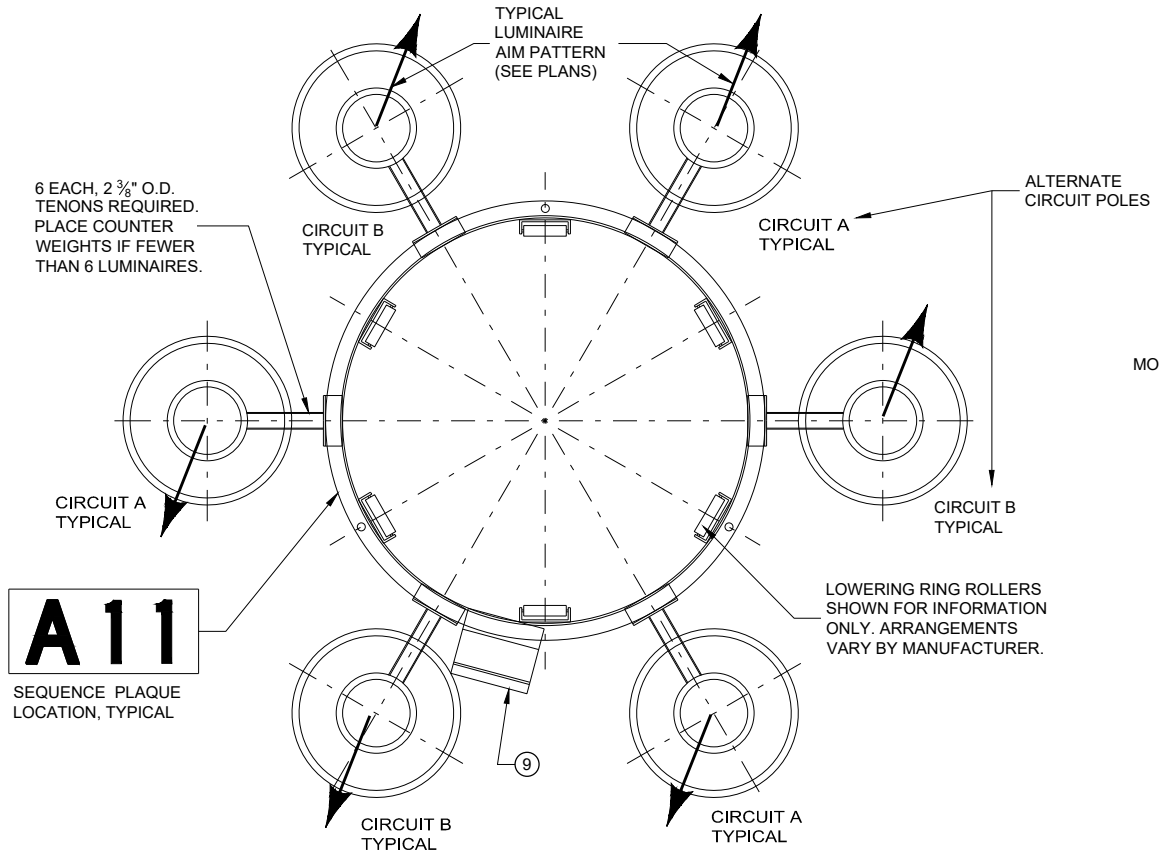
USE TIME DELAY FUSE PER LUMINAIRE MANUFACTURER RECOMMENDATION.

CIRCUIT BREAKERS SHALL BE MINIMUM 14 KAIC AT THE VOLTAGE SHOWN.

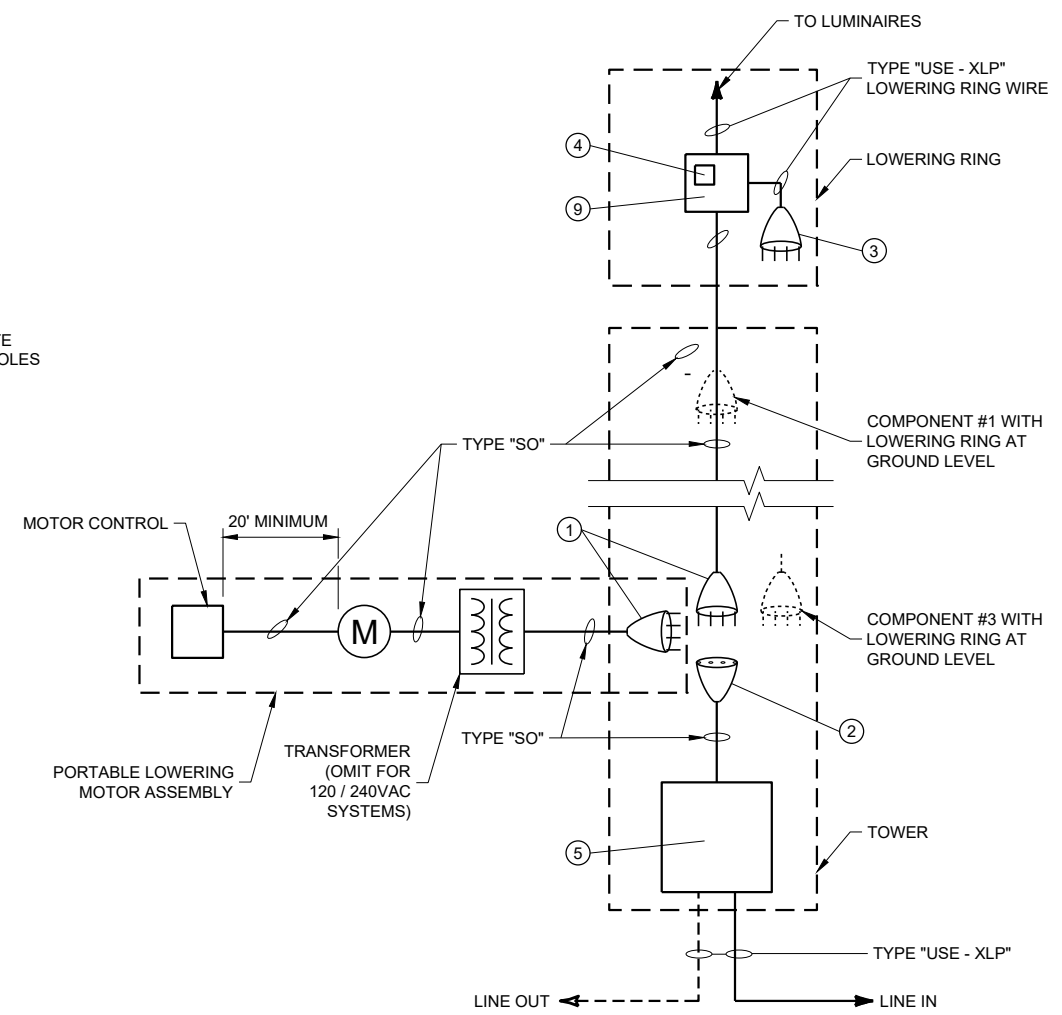
LOADBREAK DISCONNECTS SHALL BE MELTRIC TYPE "DR", 30 AMP, 600 VOLT. DO NOT SUBSTITUTE. FURNISH "FDP" FINGER/PALM DRAW PLATES (APPLIES TO THE PLUG AND RECEPTACLE ONLY, NOT TO THE APPLIANCE INLET). FURNISH "LP" MOISTURE PROTECTION (APPLIES TO THE PLUG ONLY, NOT TO THE RECEPTACLE OR THE APPLIANCE INLET).

SURGE ARRESTORS SHALL BE 650 VAC, 2P OR 3P AS REQUIRED.

CIRCUIT BREAKER ENCLOSURES SHALL BE NEMA 1, 100 AMP, 600 VOLT, 2P OR 3P AS REQUIRED, SURFACE MOUNT. IN ALL SYSTEMS, FURNISH A MINIMUM 4 - TERMINAL GROUND BUS. IN ISOLATED NEUTRAL SYSTEMS, ADDITIONALLY FURNISH A MINIMUM 1-TERMINAL NEUTRAL BUS. BUSES SHALL BE RATED FOR NO. 10 AWG THROUGH NO. 2 AWG CU.



LOWERING RING OPTICS PLAN
1 - ϕ CASE SHOWN; 3 - ϕ CASE SIMILAR



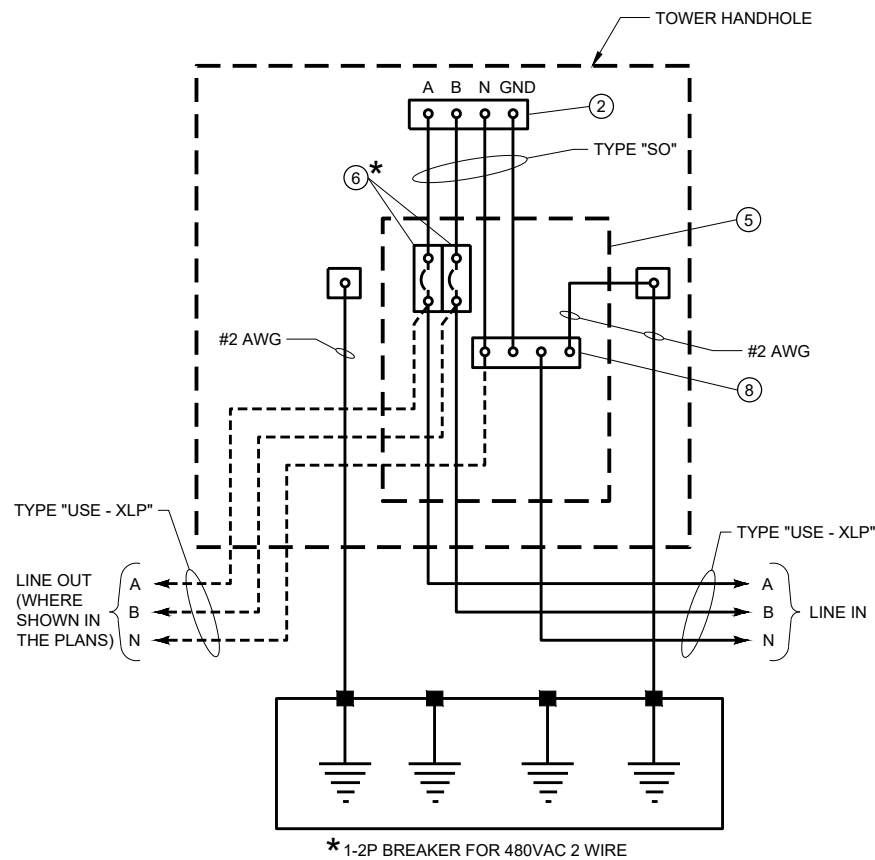
ONE LINE DIAGRAM
ANY LINE VOLTAGE PER OVER CURRENT AND POWER CORD SCHEDULE

LEGEND

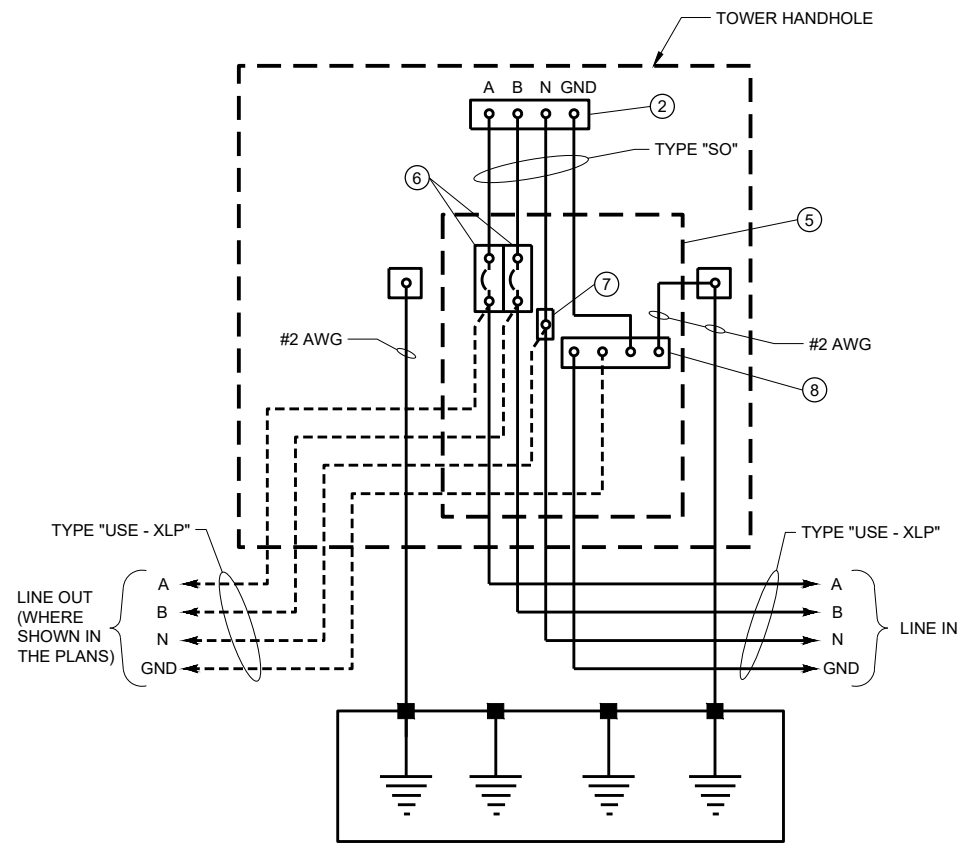
- P POLE (ELECTRICAL CIRCUIT)
- ϕ PHASE (ELECTRICAL CURRENT)
- EQUIPMENT GROUNDING ELECTRODE
- EXOTHERMIC WELD
- ① LOADBREAK DISCONNECT - MALE PLUG
- ② LOADBREAK DISCONNECT - FEMALE RECEPTACLE
- ③ LOADBREAK DISCONNECT - MALE APPLIANCE INLET
- ④ SURGE ARRESTOR - 2P OR 3P AS REQUIRED
- ⑤ CIRCUIT BREAKER ENCLOSURE
- ⑥ CIRCUIT BREAKER
- ⑦ CIRCUIT BREAKER ENCLOSURE NEUTRAL BUS
- ⑧ CIRCUIT BREAKER ENCLOSURE EQUIPMENT GROUNDING BUS
- ⑨ LOWERING RING JUNCTION BOX (WEEP HOLE REQUIRED)
- ⑩ TERMINAL STRIP

**ELECTRICAL DETAILS
HIGH MAST LIGHTING**

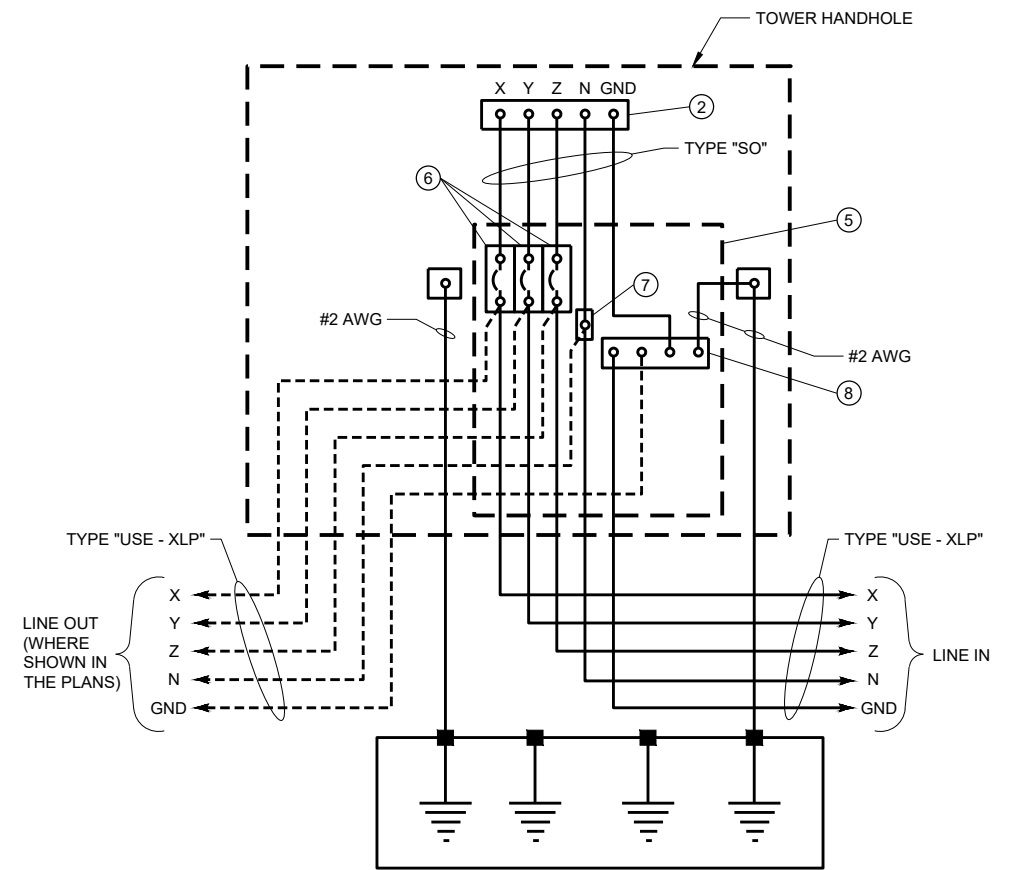
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TYPICAL WIRING DIAGRAM-HANDHOLE
 GROUNDED NEUTRAL SYSTEM
 1 - ϕ 240 / 480VAC 3 WIRE OR 480VAC 2 WIRE



TYPICAL WIRING DIAGRAM-HANDHOLE
 ISOLATED NEUTRAL SYSTEM
 1 - ϕ 120 / 240VAC OR 240 / 480VAC 3 WIRE

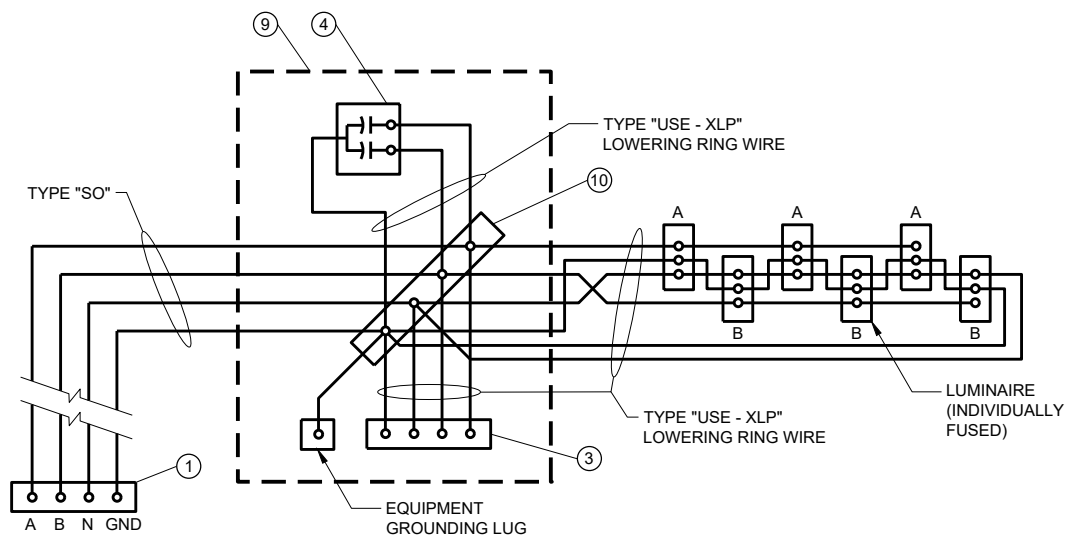


TYPICAL WIRING DIAGRAM-HANDHOLE
 ISOLATED NEUTRAL SYSTEM
 3 - ϕ 480 / 277VAC 4 WIRE OR 3 - ϕ 208Y / 120VAC 4 WIRE

LEGEND

- A, B, X, Y, Z, UNGROUNDED CIRCUIT CONDUCTORS
- N GROUNDED CIRCUIT CONDUCTORS
- GND EQUIPMENT GROUNDING CONDUCTOR
- P POLE (ELECTRICAL CIRCUIT)
- ϕ PHASE (ELECTRICAL CURRENT)
- AIC AMPERE INTERRUPTING CAPACITY
- HANDHOLE GROUND LUG
- CIRCUIT BREAKER 1P
- SURGE ARRESTOR
- FUSED LUMINAIRE
- EQUIPMENT GROUNDING ELECTRODE
- TERMINAL
- SPLICE
- CONDUCTOR
- EXOTHERMIC WELD

- ① LOADBREAK DISCONNECT - MALE PLUG
- ② LOADBREAK DISCONNECT - FEMALE RECEPTACLE
- ③ LOADBREAK DISCONNECT - MALE APPLIANCE INLET
- ④ SURGE ARRESTOR - 2P OR 3P AS REQUIRED
- ⑤ CIRCUIT BREAKER ENCLOSURE
- ⑥ CIRCUIT BREAKER
- ⑦ CIRCUIT BREAKER ENCLOSURE NEUTRAL BUS
- ⑧ CIRCUIT BREAKER ENCLOSURE EQUIPMENT GROUNDING BUS
- ⑨ LOWERING RING JUNCTION BOX (WEEP HOLE REQUIRED)
- ⑩ TERMINAL STRIP



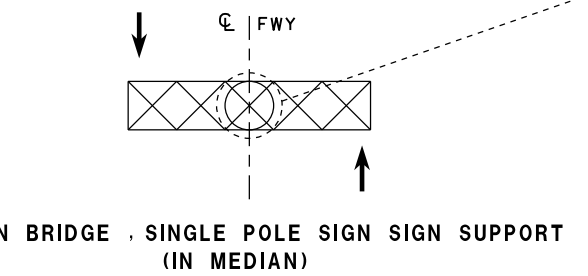
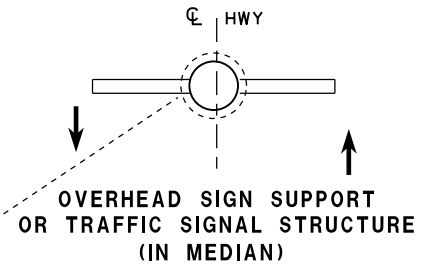
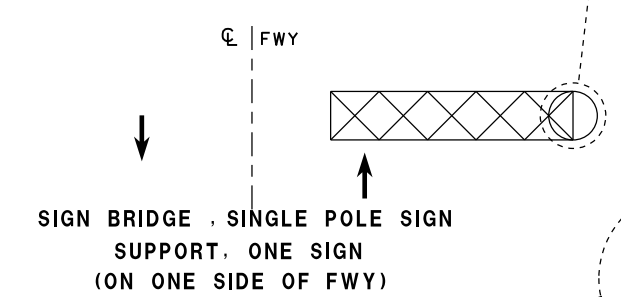
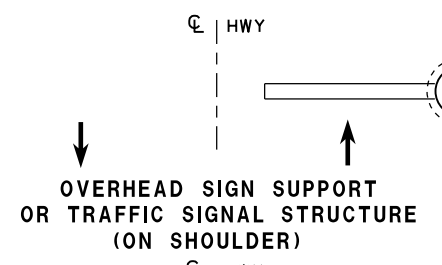
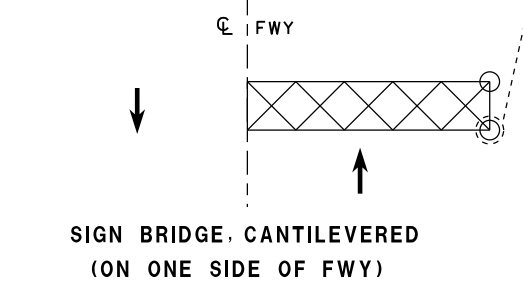
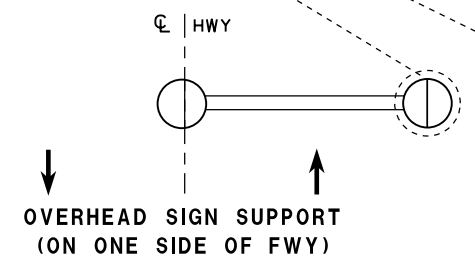
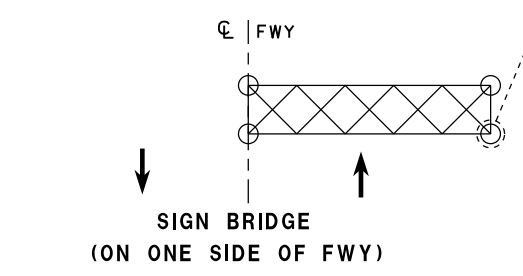
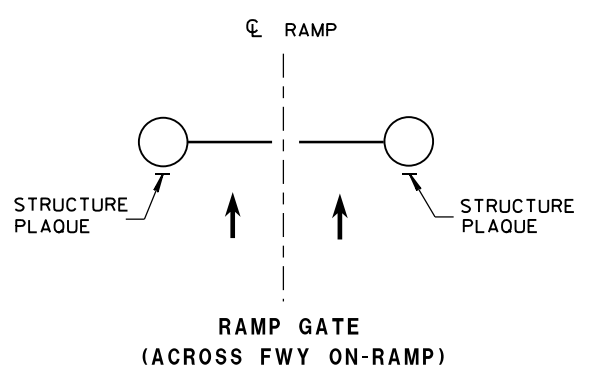
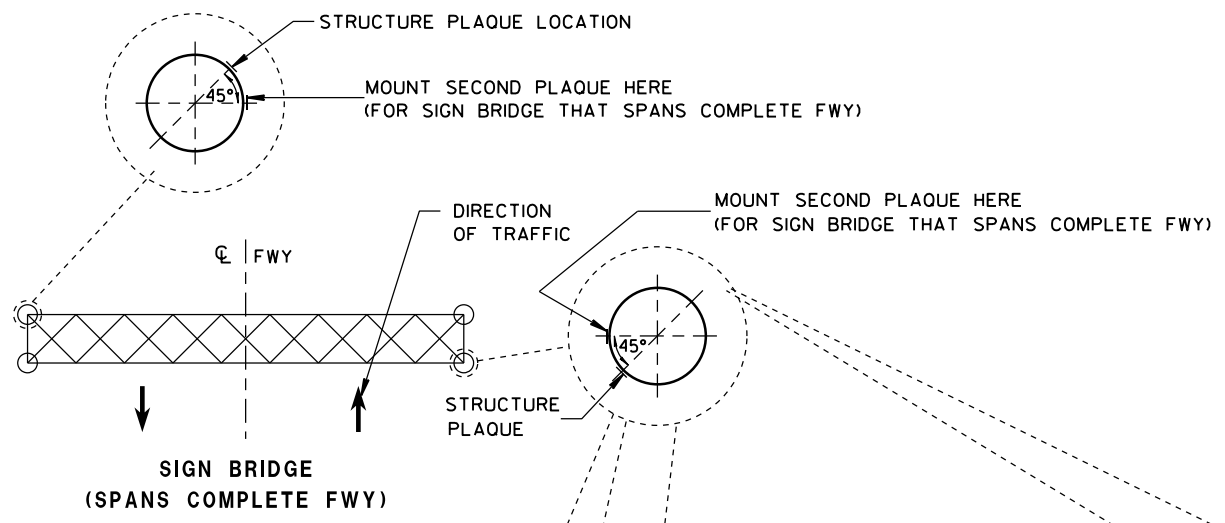
LOWERING RING JUNCTION BOX
WIRING DIAGRAM
 TYPICAL 1 - ϕ CASE SHOWN; 3 - ϕ CASE SIMILAR

ELECTRICAL DETAILS
HIGH MAST LIGHTING

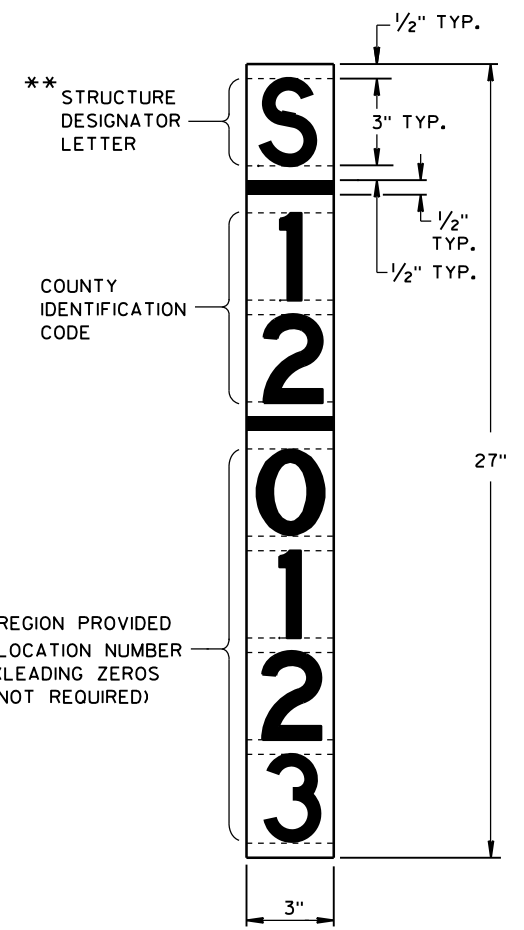
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 November 2018 /S/ Ahmet Demirbilek
 DATE STATE ELECTRICAL ENGINEER

FHWA



* WHEN SIGNS OR GATES FACE TRAFFIC IN ONE DIRECTION, THE PLAQUE SHALL FACE TRAFFIC IN THE SAME DIRECTION. WHEN SIGNS OR GATES ARE FACING TRAFFIC IN BOTH DIRECTIONS, THE PLAQUE SHALL FACE TRAFFIC IN THE CARDINAL DIRECTION.



GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN IN THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

IF THE PROPOSED SIGN BRIDGE OR OVERHEAD SIGN SUPPORT IS REPLACING AN EXISTING SIGN BRIDGE OR OVERHEAD SIGN SUPPORT, A NEW IDENTIFICATION PLAQUE WILL BE REQUIRED.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

- GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS
- A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS
- ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

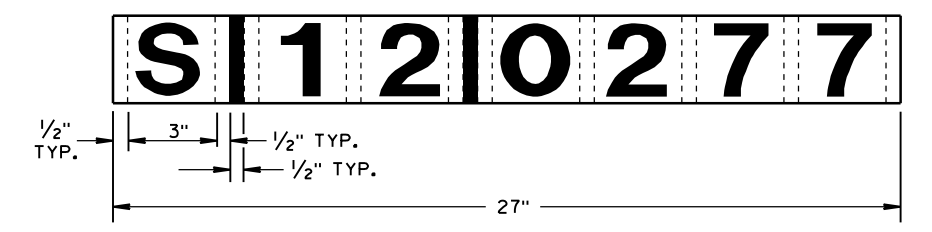
MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

- BASE - SHEET ALUMINUM, 0.060" THICK.
- FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE
- LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE
- CHARACTERS:- BLACK, SELF ADHESIVE, SERIES "D", SIZE AS SHOWN.

FOR SIGN BRIDGES, STRUCTURE MOUNTED, THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY AS SHOWN ON THE DRAWING. THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY TO THE BACK OF THE SIGN, BETWEEN THE ALUMINUM EXTRUSIONS, NEAR THE TOP LEFT HAND CORNER OF THE SIGN. THE BASE MATERIAL SHALL BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE ALUMINUM SURFACE. PRIOR TO ADHERING THE MATERIAL, THE ALUMINUM SURFACE SHALL BE SMOOTH, CLEAN AND DRY.

WHERE SIGN BRIDGE ILLUMINATION IS PROVIDED, THE STRUCTURE MUST ALSO HAVE A SIGN BRIDGE CIRCUIT PLAQUE AS SHOWN IN THE ELECTRICAL DETAILS.



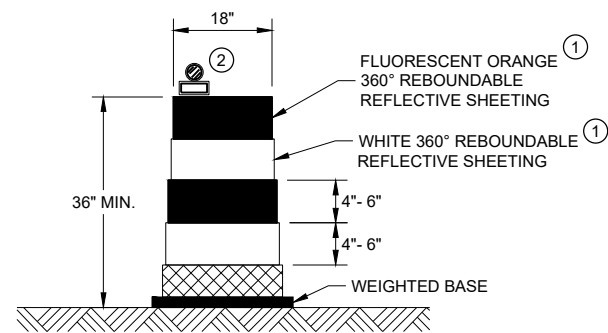
IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

** LETTER "G" UTILIZED FOR RAMP GATES. LETTER "S" UTILIZED FOR SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, AND TRAFFIC SIGNALS.

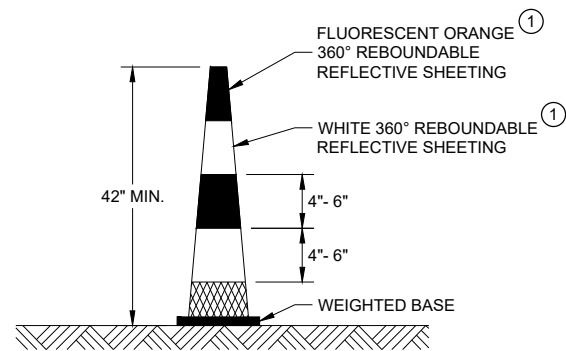
LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES

RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT AND TRAFFIC SIGNAL STRUCTURE PLAQUE FOR SIGN BRIDGES AND OVERHEAD SIGN SUPPORT WHICH ARE NOT STRUCTURE MOUNTED

STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, & TRAFFIC SIGNALS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/4/2012 DATE	/s/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

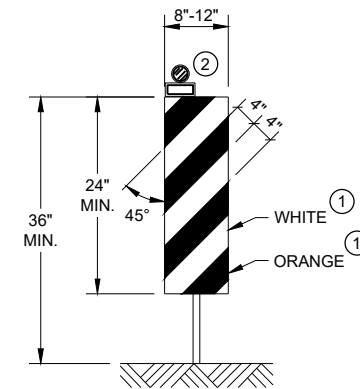


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

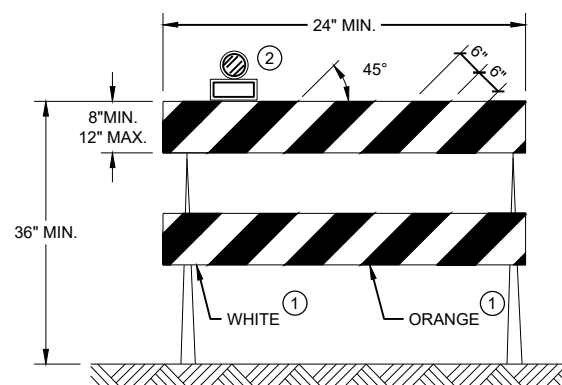


VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
 THE TRAFFIC SIDE FOR CHANNELIZATION.

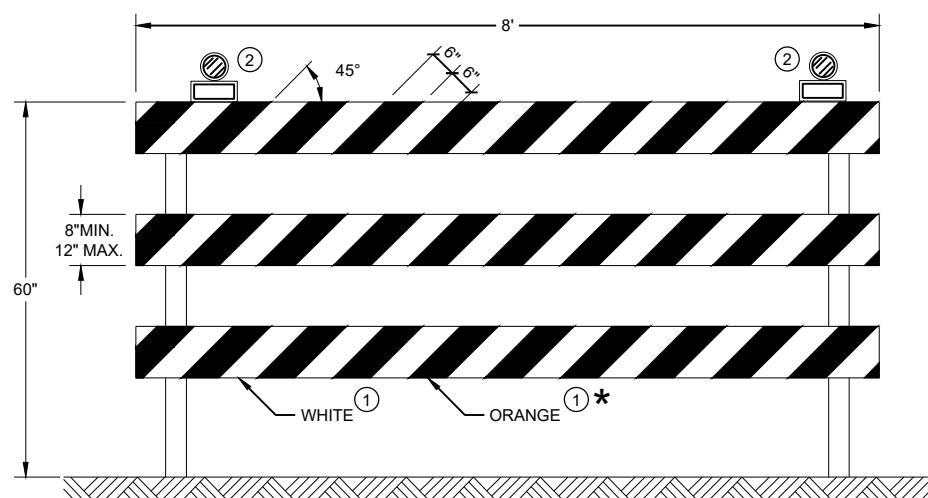
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
 MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
 TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
 TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.










WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

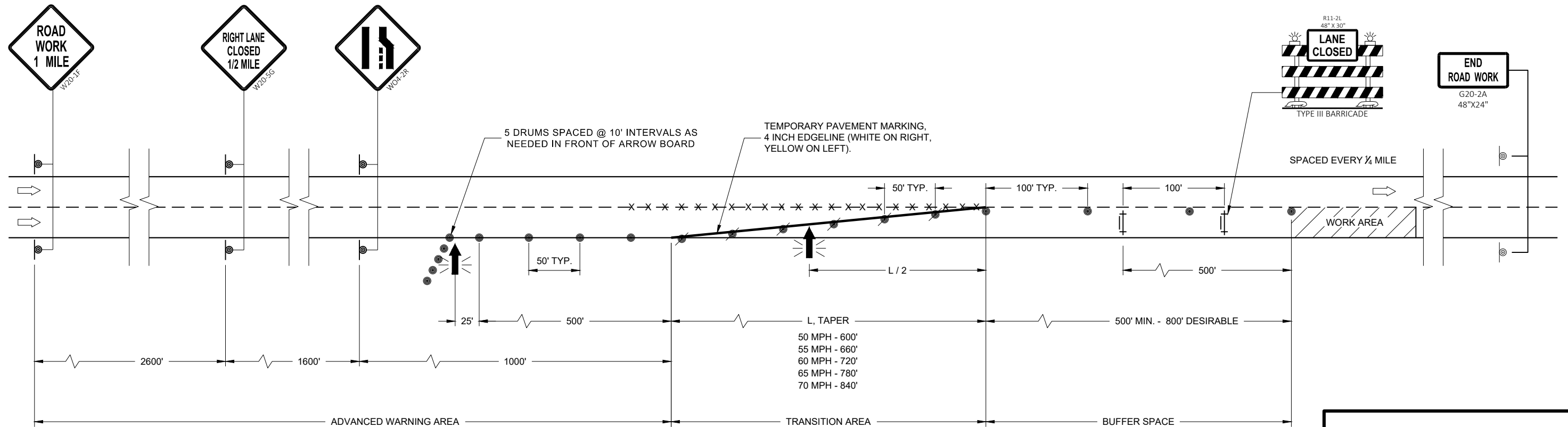
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS

NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TRAFFIC CONTROL DRUM
-  TYPE "A" WARNING LIGHT (FLASHING)
-  REMOVING PAVEMENT MARKING
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLASHING ARROW BOARD

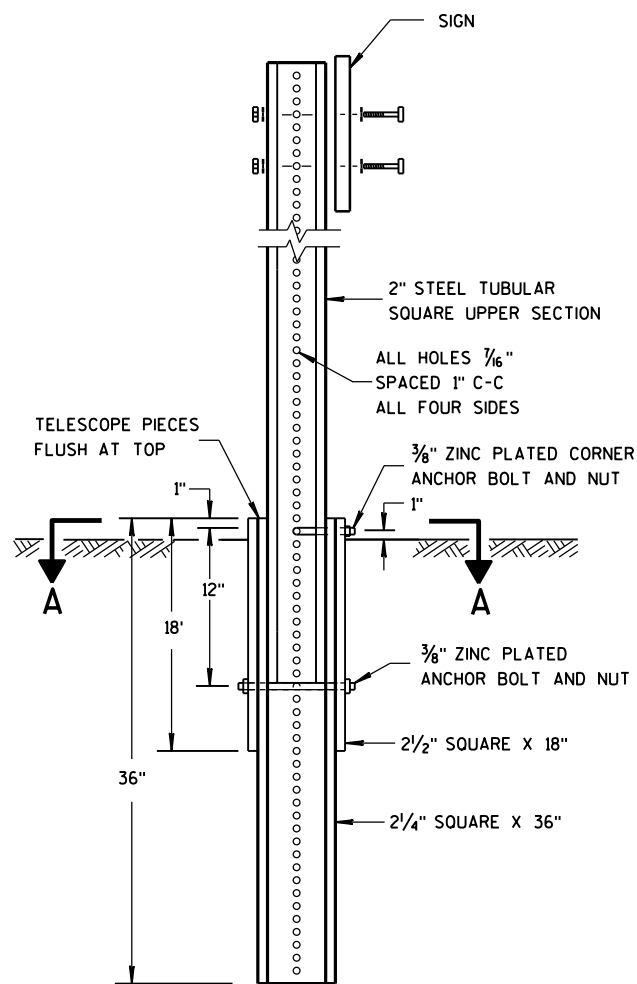


TRAFFIC CONTROL LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



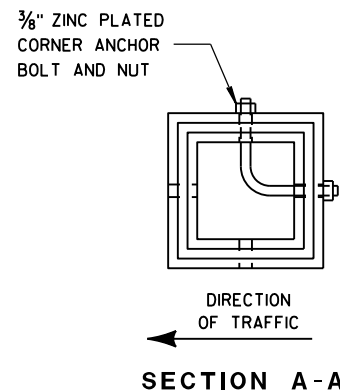
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

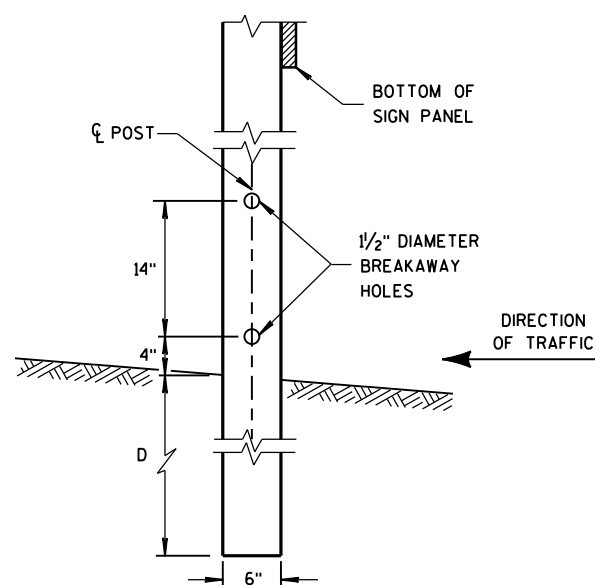
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

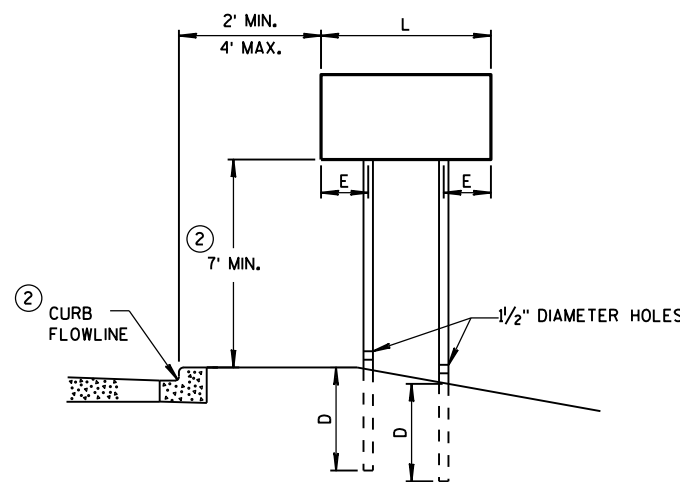
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



SECTION A-A

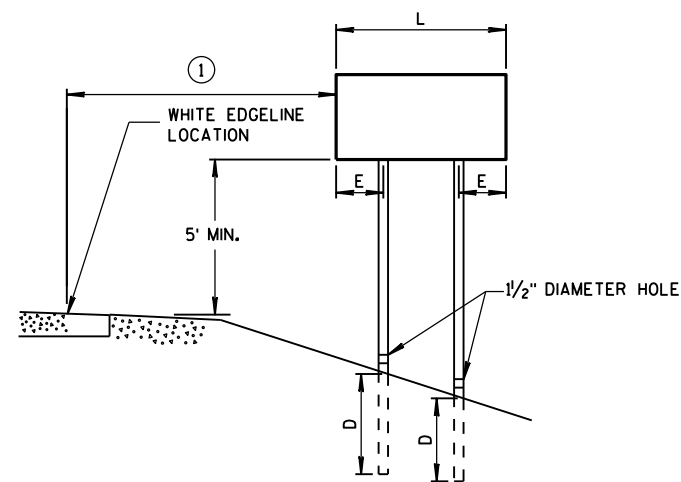


4" X 6" WOOD POST MODIFICATION



URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS



RURAL AREA

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

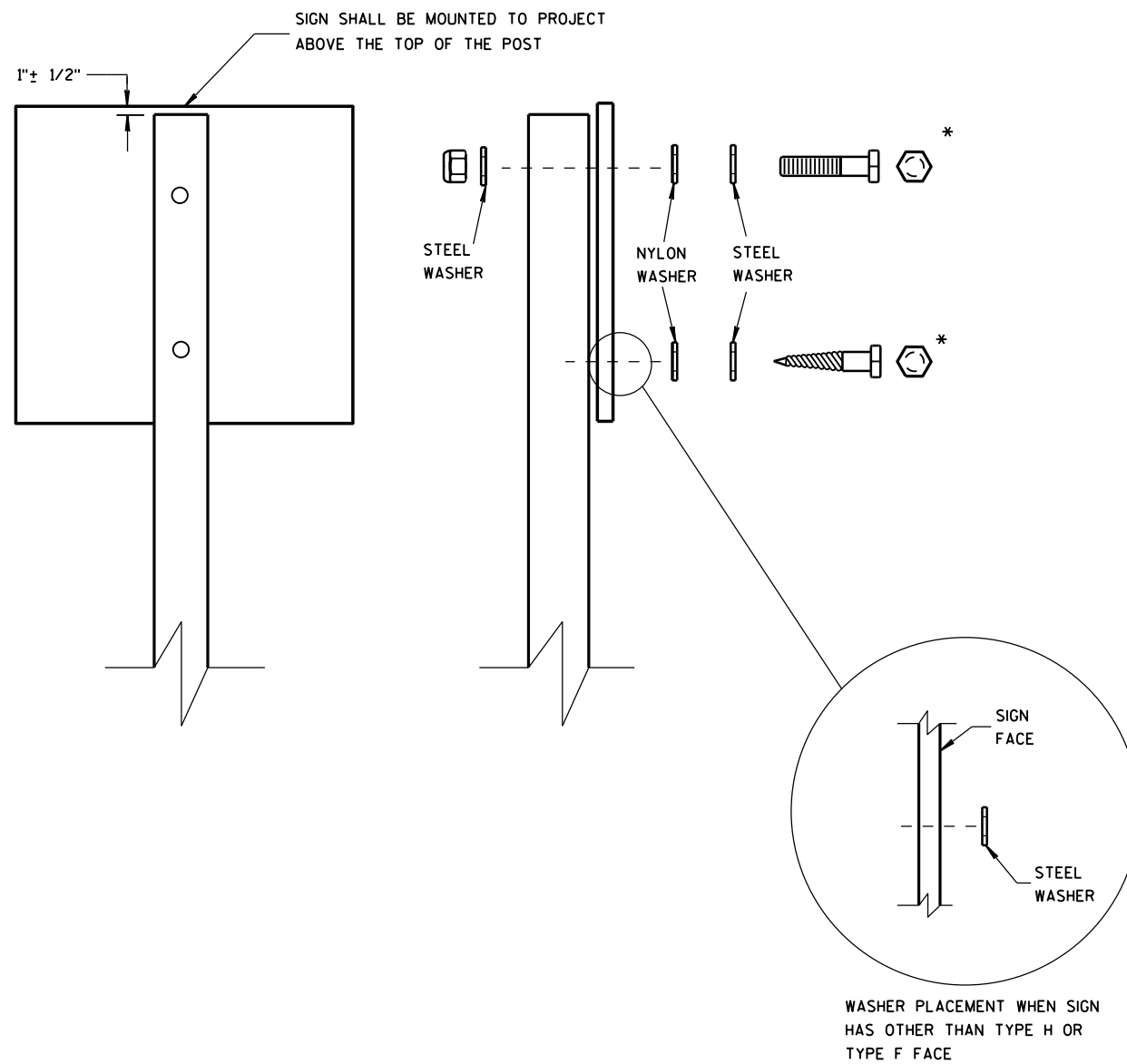
SEE NOTE (3)

GENERAL NOTES

- (1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- (2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- (3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" x 3"

MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS

RIVETS - 5/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL

1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

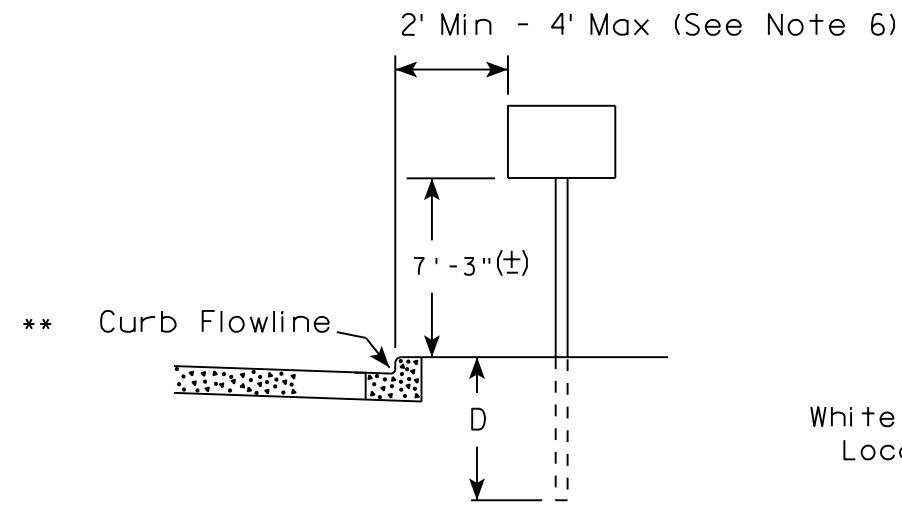
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS

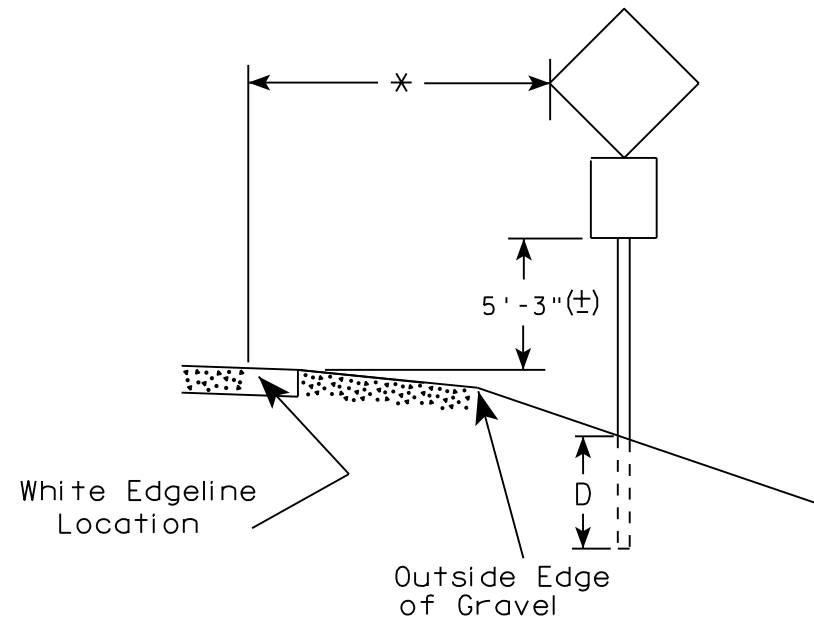
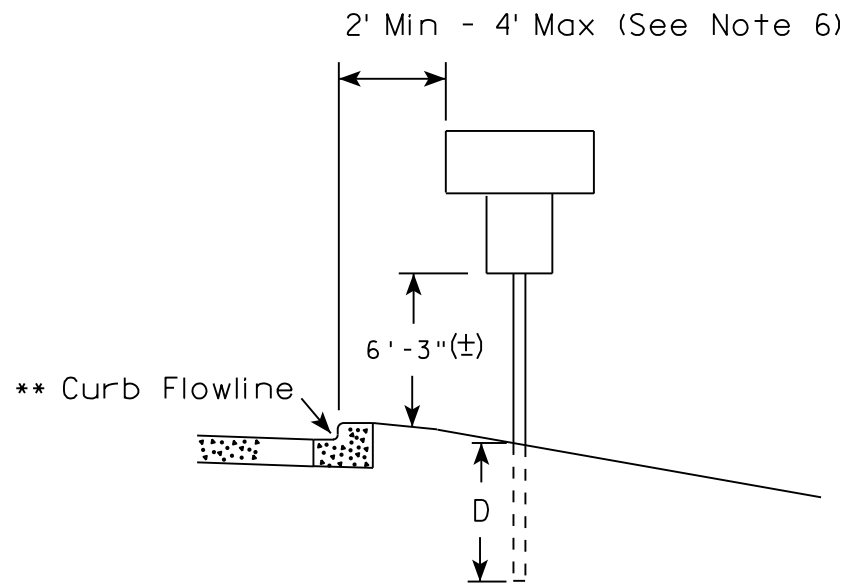
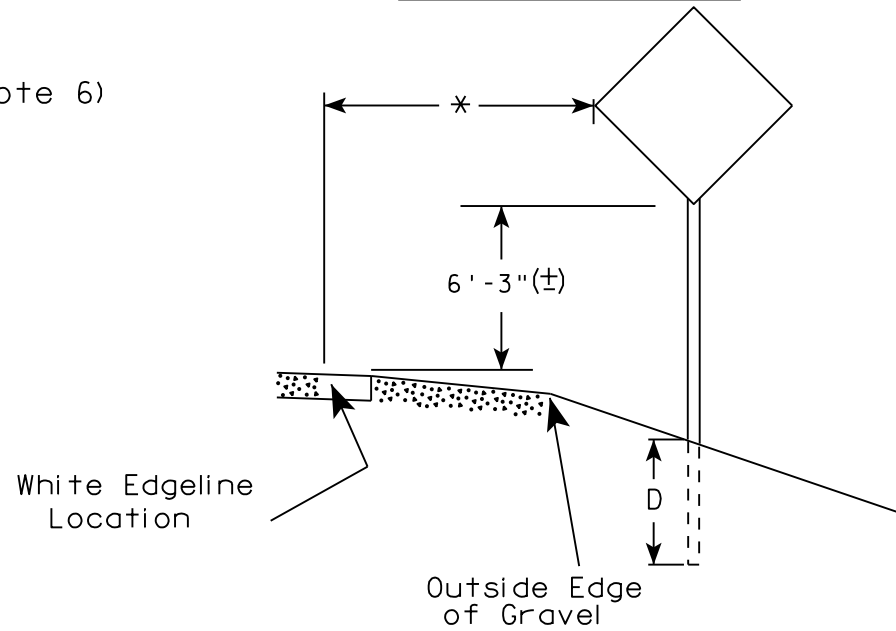
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

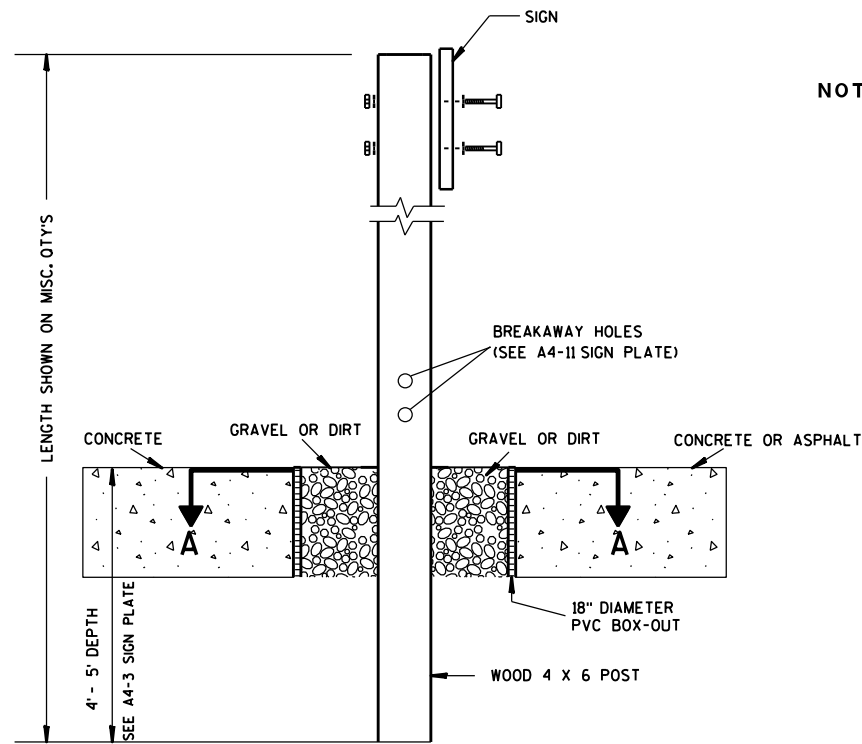
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

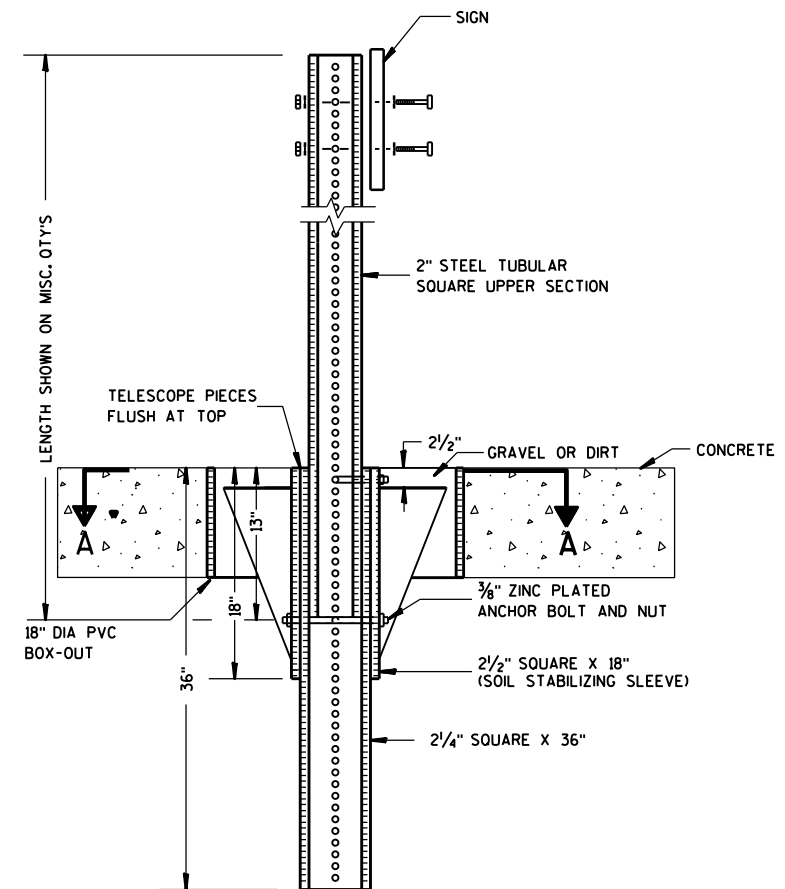
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

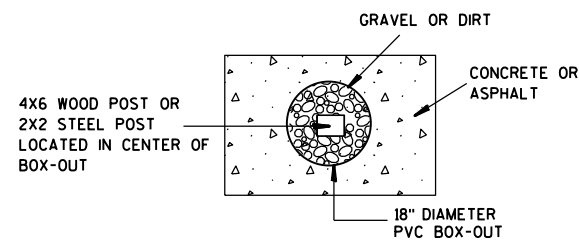
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

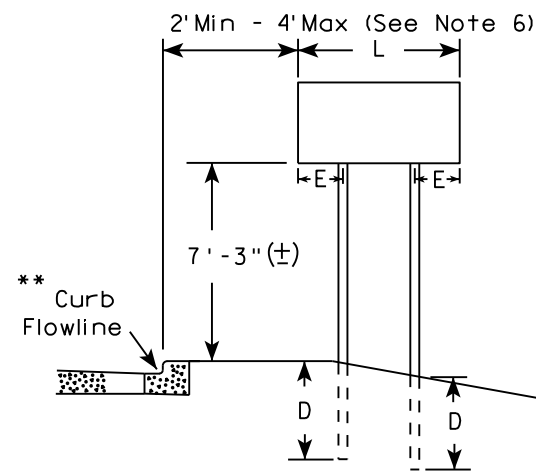
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

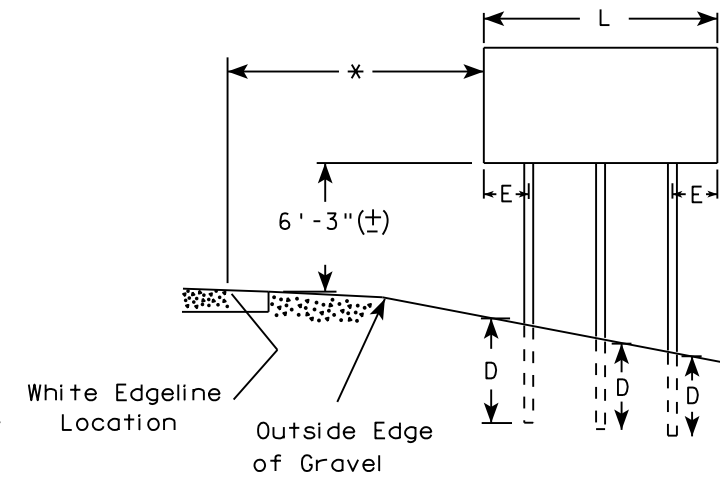
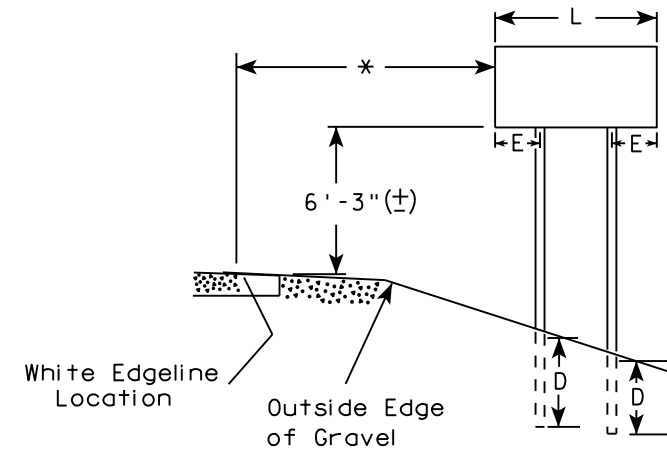
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

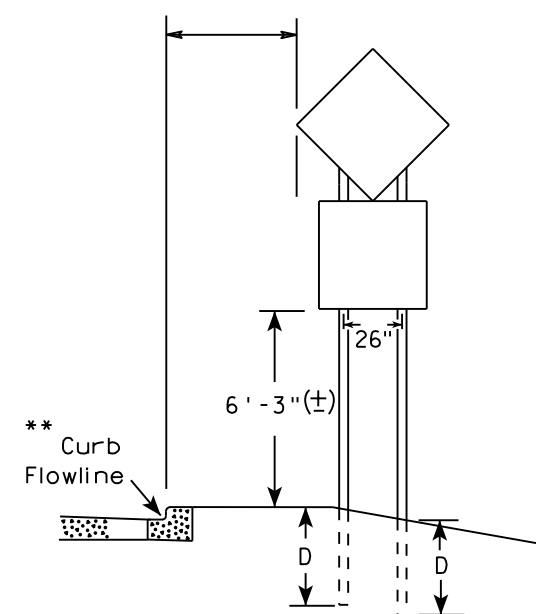
URBAN AREA



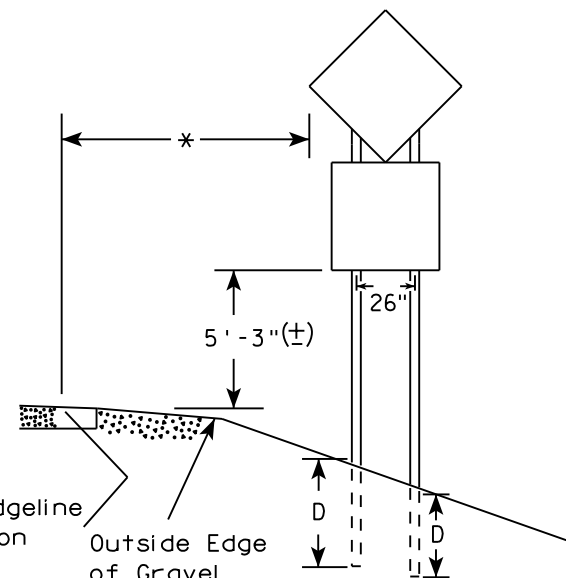
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

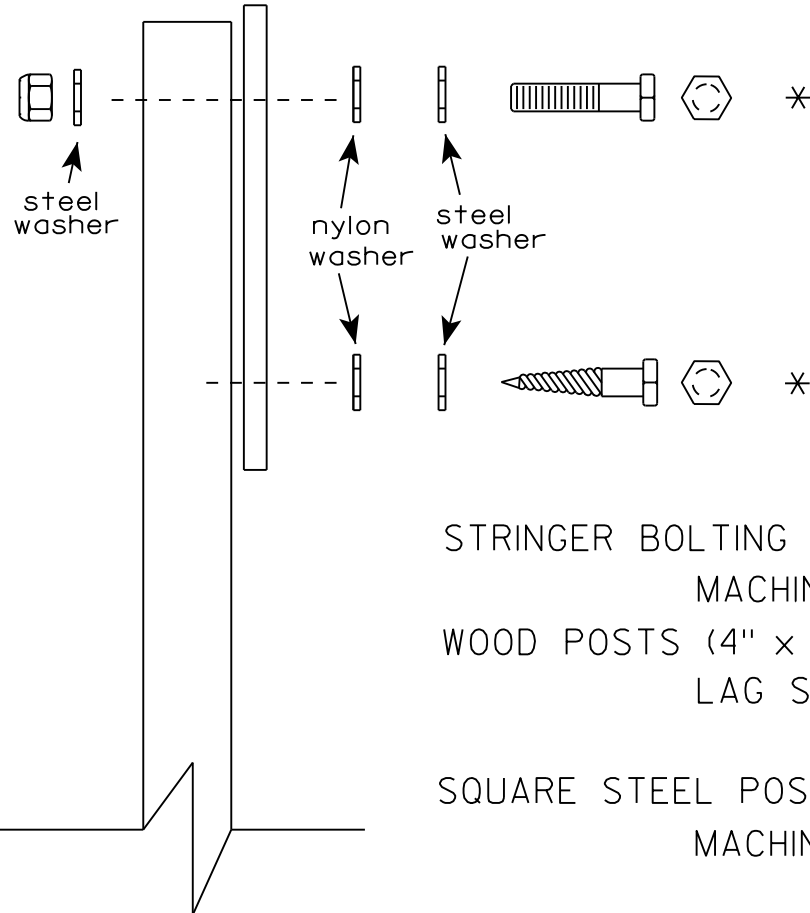
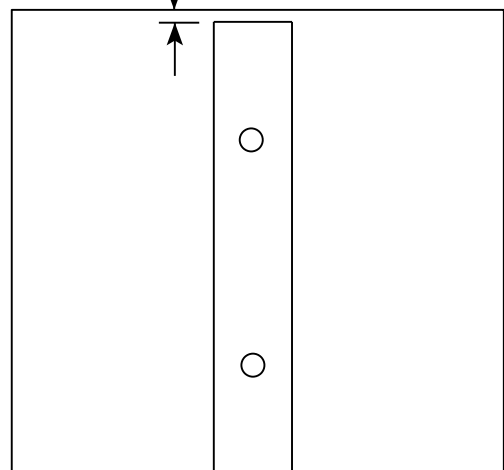
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Matthew R. Rauch*
 For State Traffic Engineer
 DATE 8/21/17 PLATE NO. A4-4.15

1"± 1/2"

SIGN SHALL BE MOUNTED TO PROJECT ABOVE THE TOP OF THE POST



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

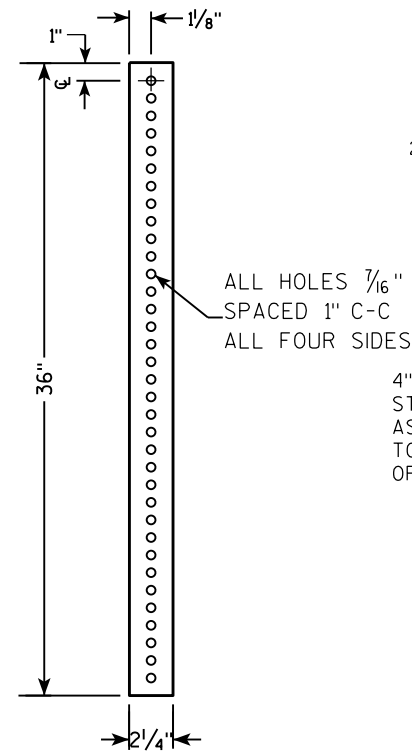
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

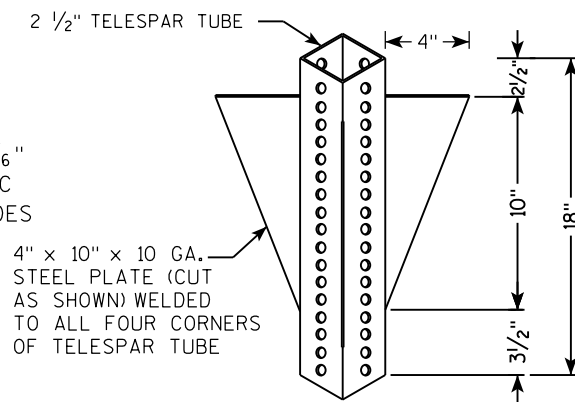
7

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

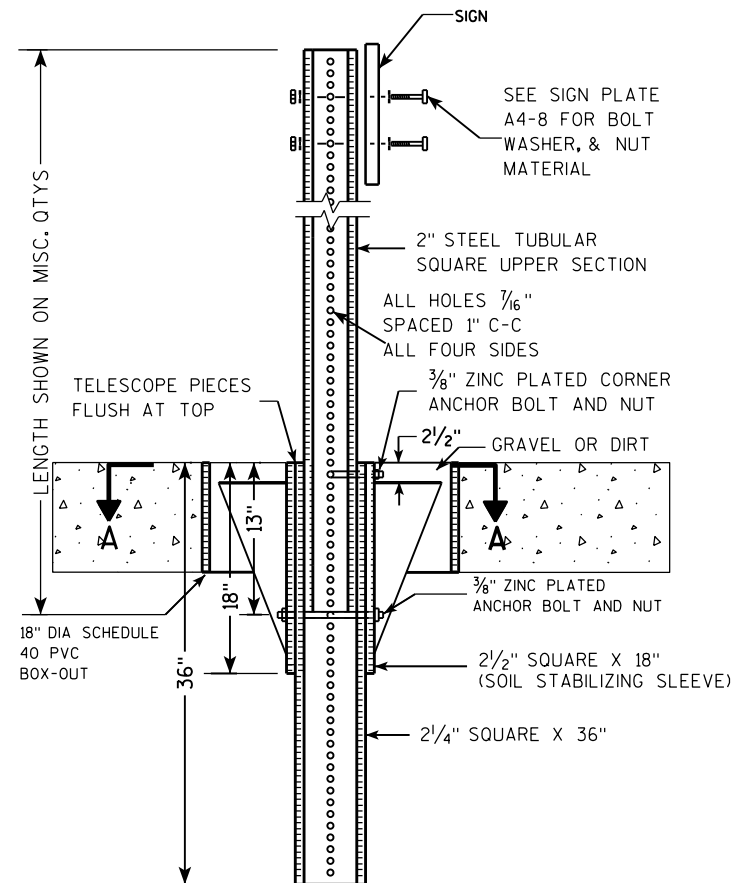
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



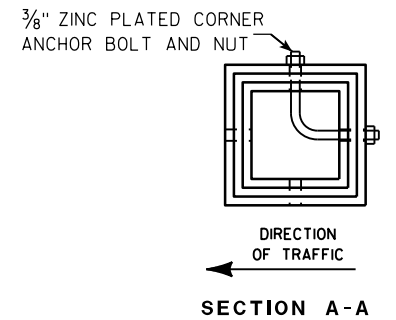
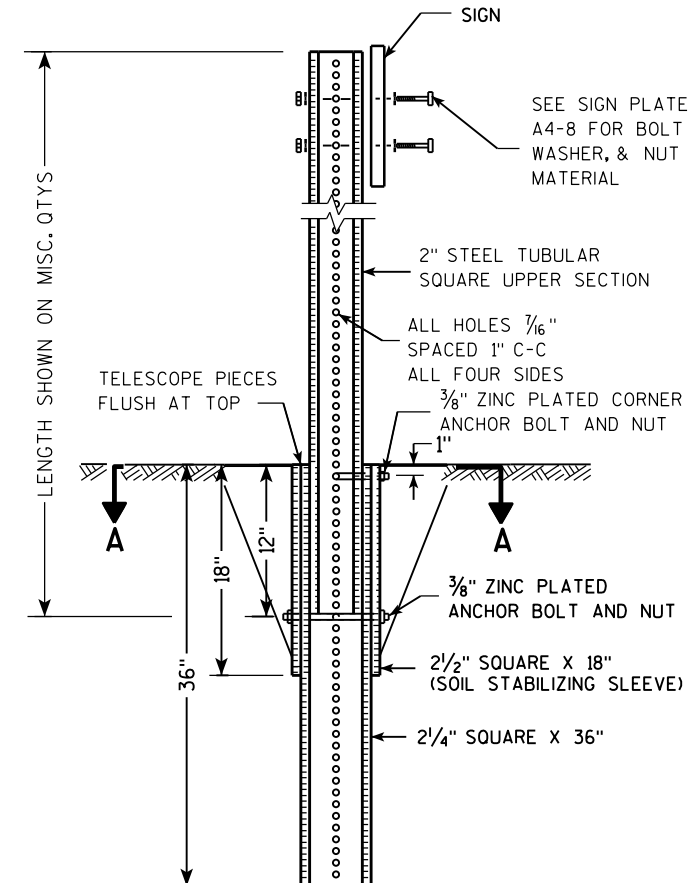
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

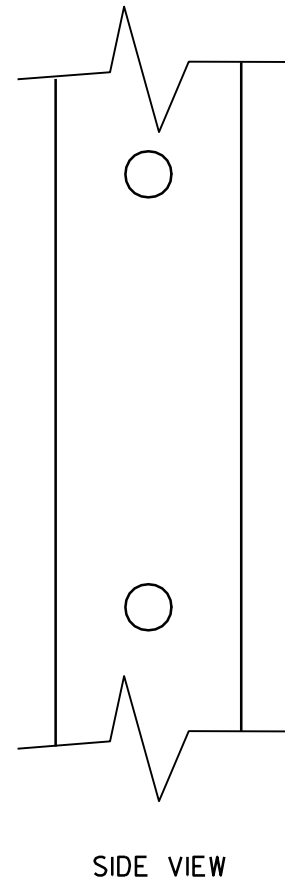
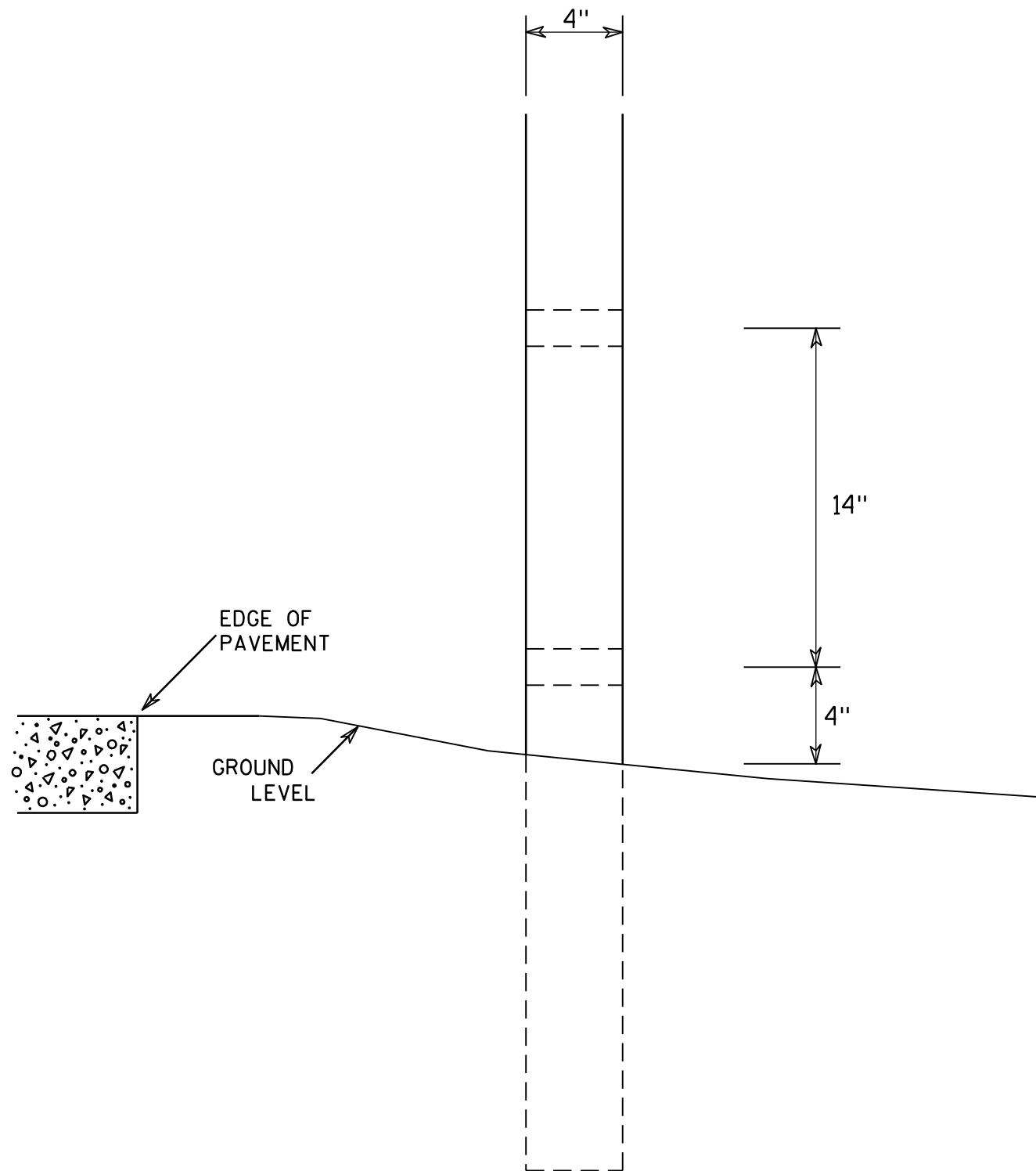
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

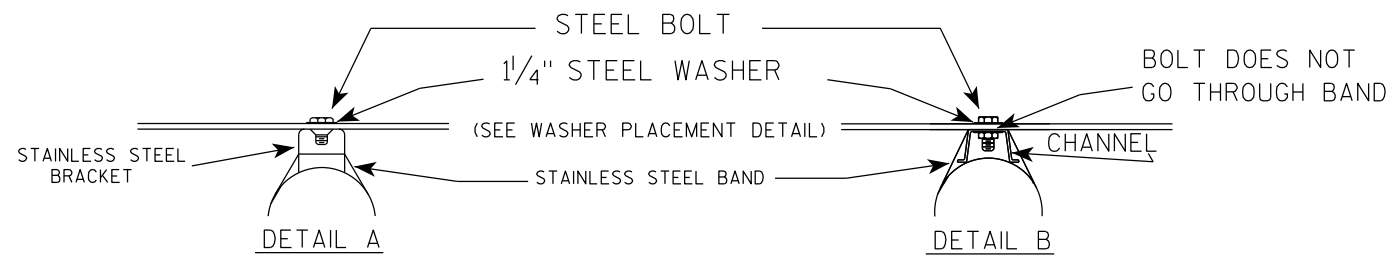
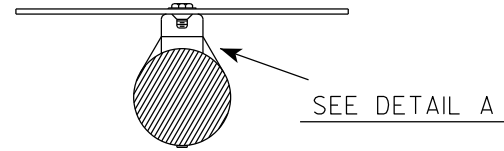
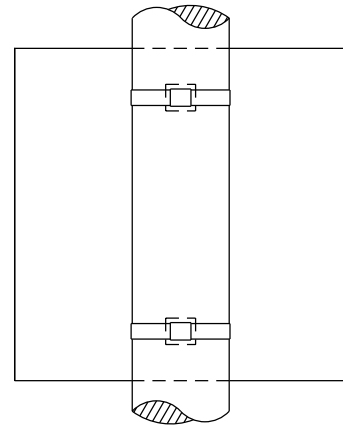
7

7

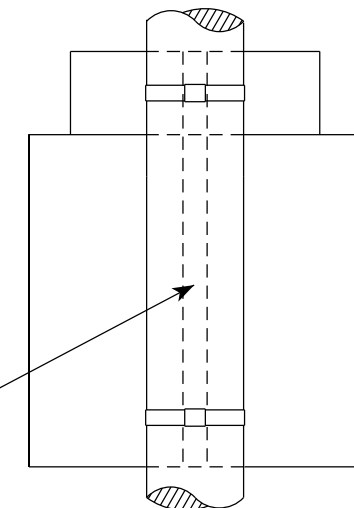
4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

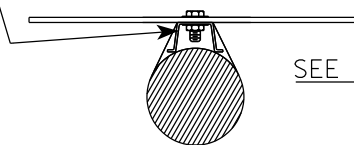
SINGLE SIGN



"J" ASSEMBLY

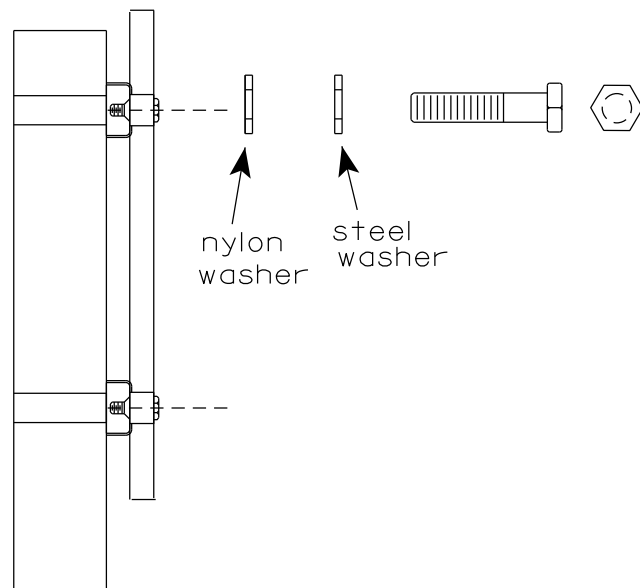


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



- GENERAL NOTES**
1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
 2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
 3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.
 4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

WASHER PLACEMENT



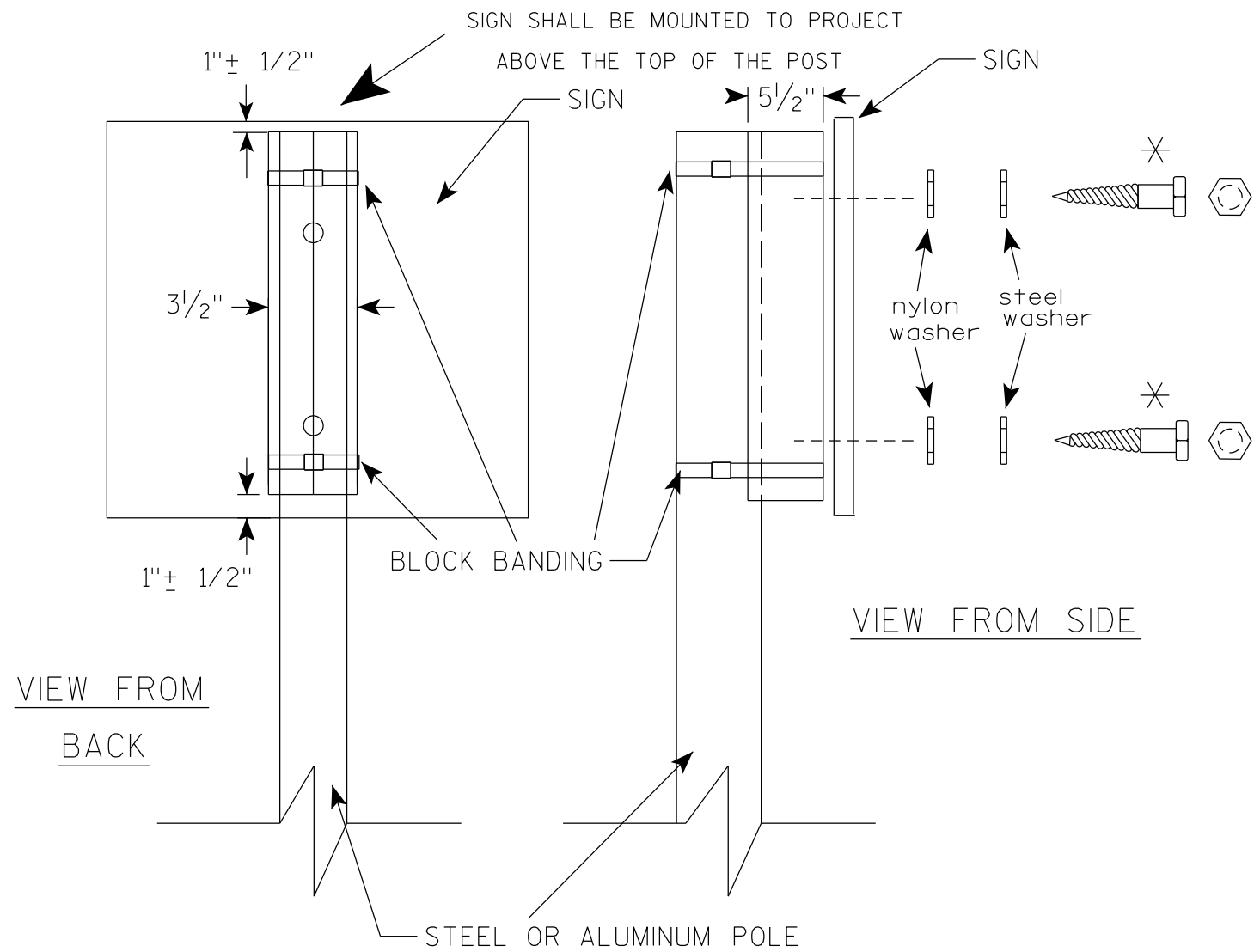
WASHERS (ALL POSTS) -
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON
 FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

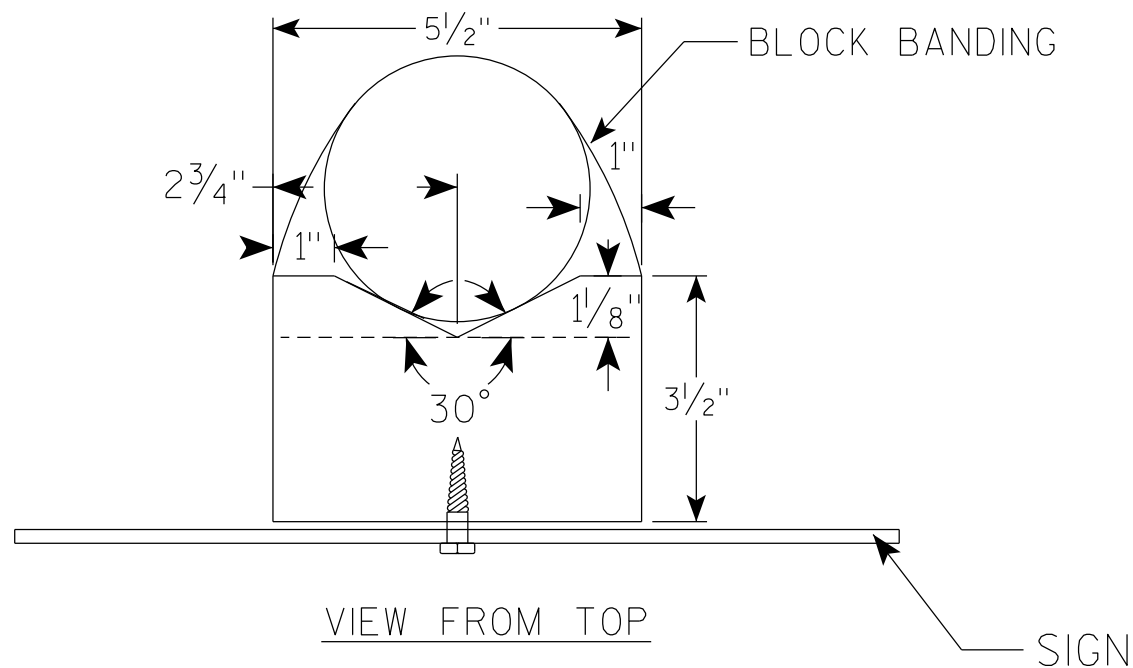
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

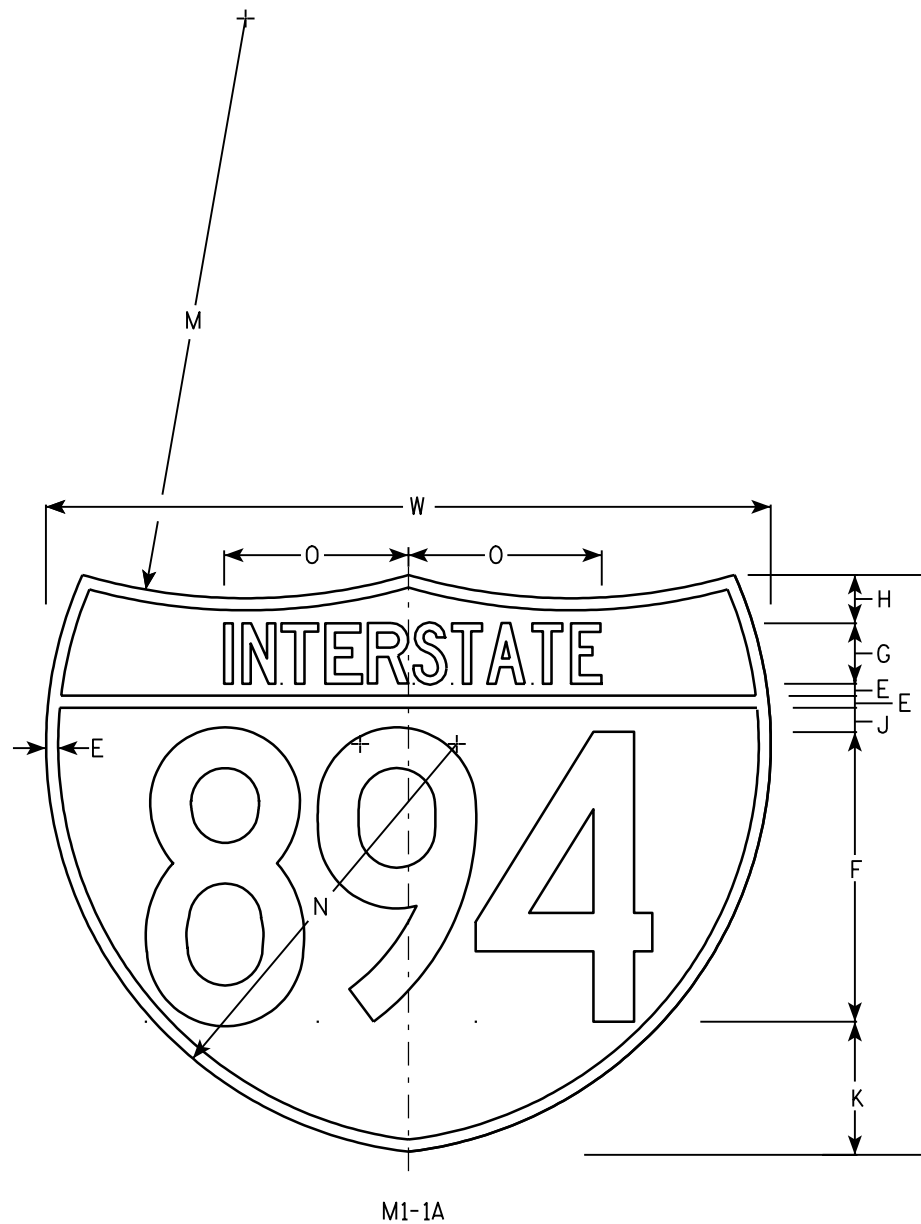
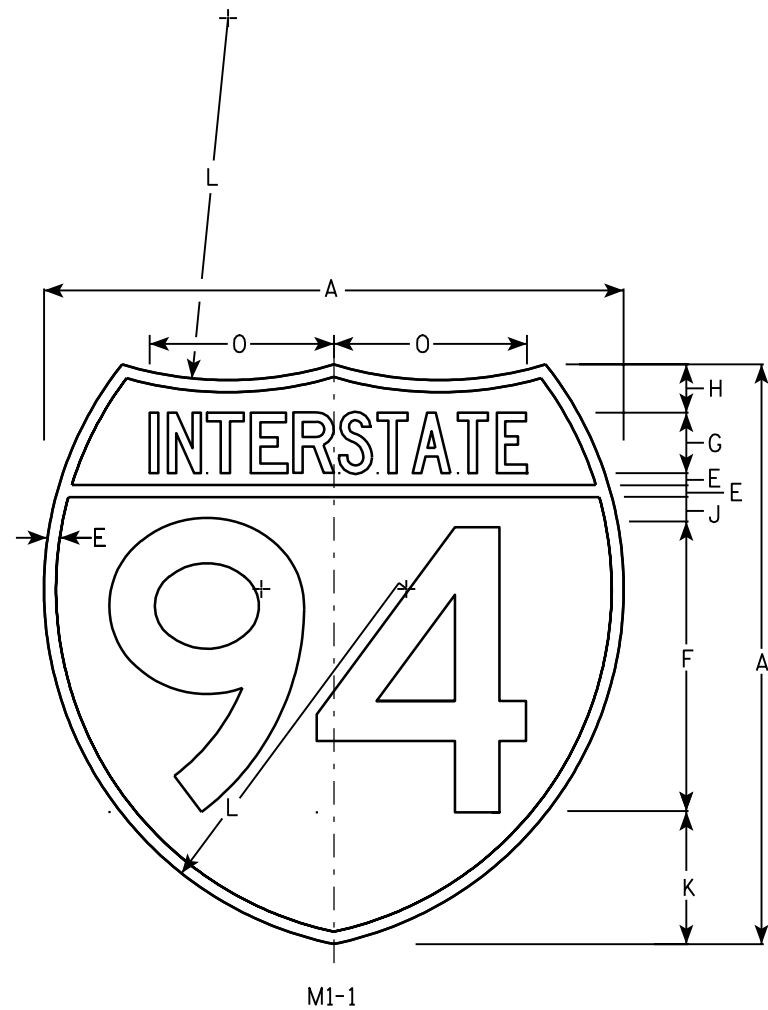
* LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-10.2

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Top Red - Bottom Blue (See Note 6)
Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C
6. Permanent Signs
Message - Type H Reflective
Detour or other temporary signs
Background - Reflective
Message - Reflective



Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m ²	M1-1A Area m ²	
1																														
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8									30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4									45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4									45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4									45			7.03	8.79	.81	1.05

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

PROJECT NO:

HWY:

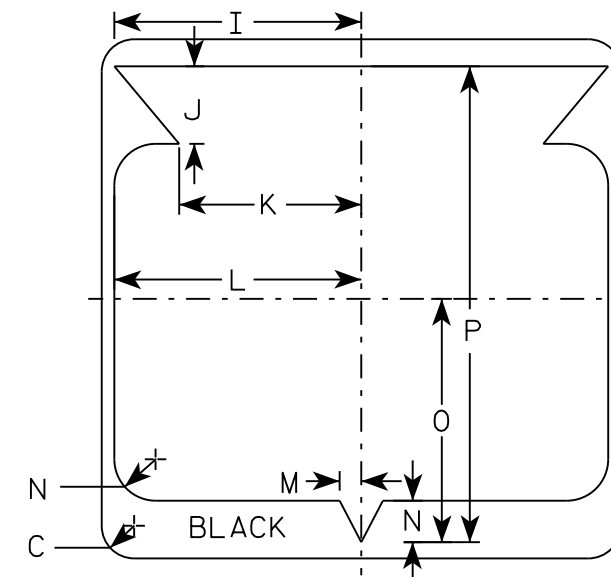
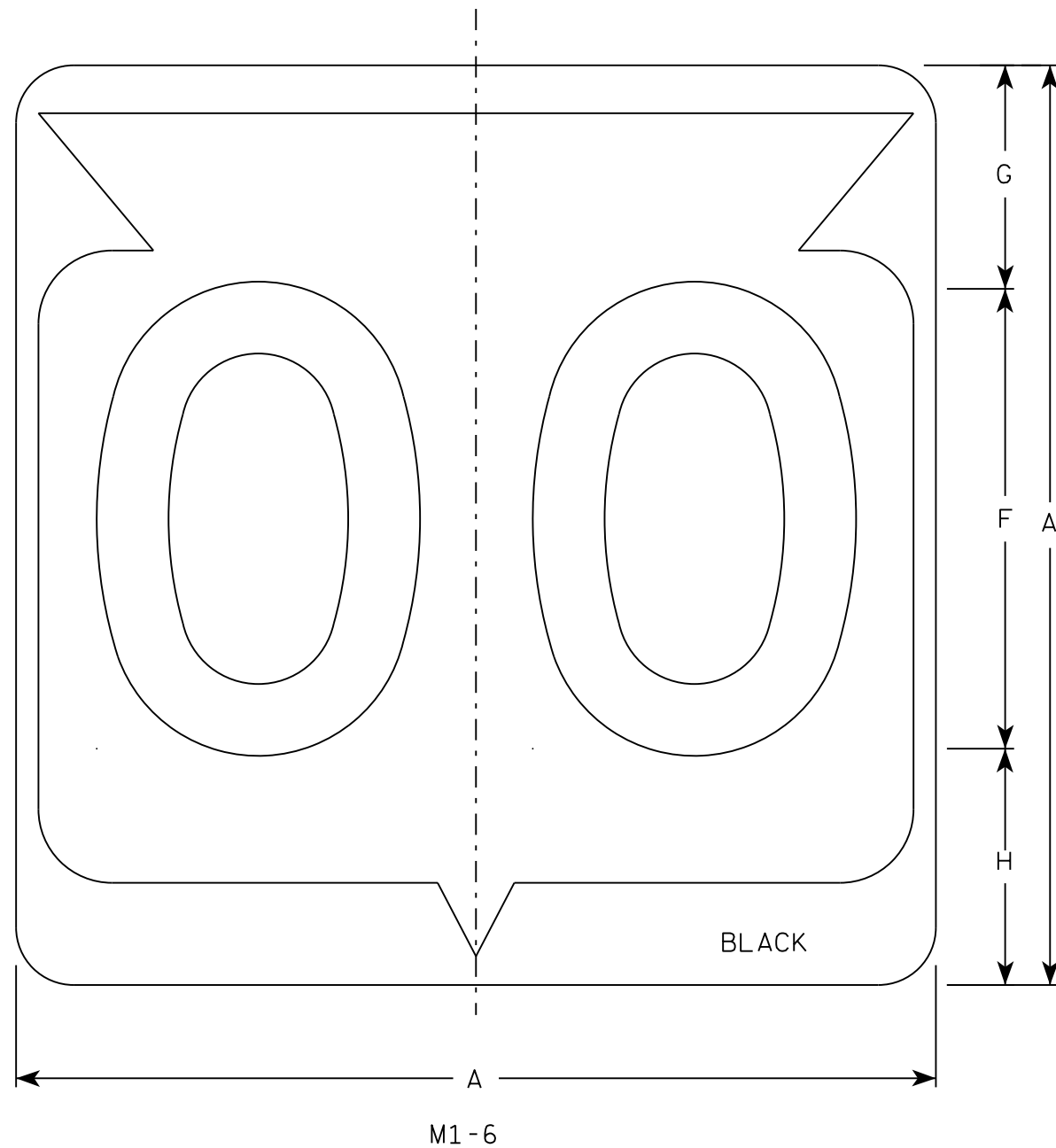
COUNTY:

SHEET NO:

E

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs Series C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

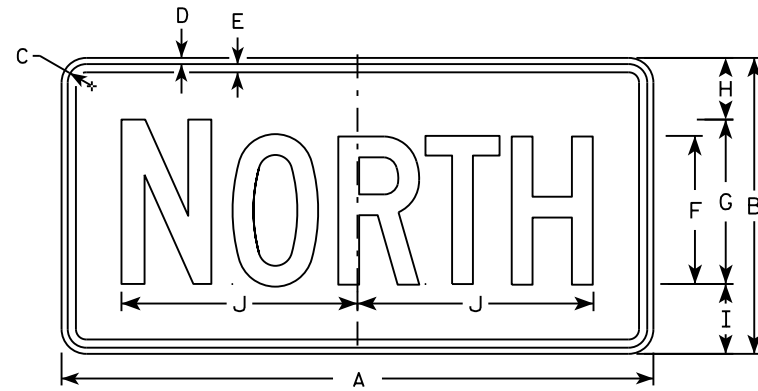
DATE 3/16/18 PLATE NO. M1-6.10

7

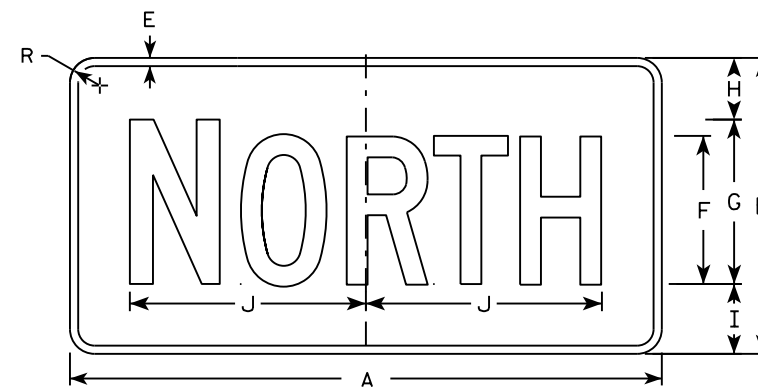
7

NOTES

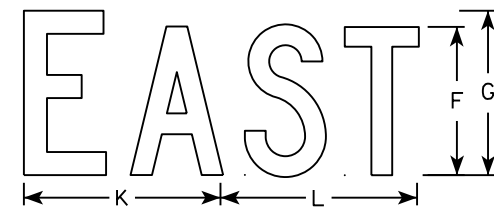
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White
 Message - Black
 MB3-1 thru MB3-4 Background - Blue
 Message - White
 MK3-1 thru MK3-4 Background - Green
 Message - White
 MM3-1 thru MM3-4 Background - White
 Message - Green
 MN3-1 thru MN3-4 Background - Brown
 Message - White
 MP3-1 thru MP3-4 Background - White
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



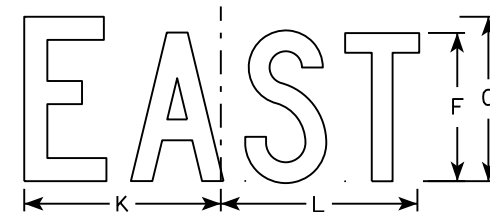
M3-1
MM3-1
MP3-1



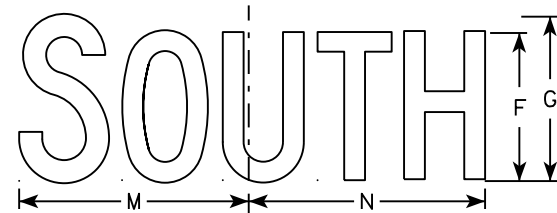
MB3-1
MK3-1
MN3-1



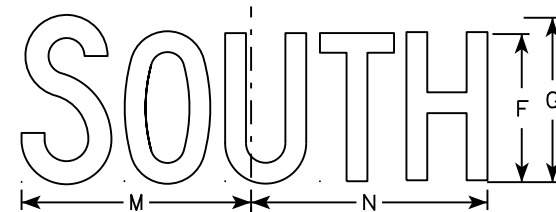
M3-2
MM3-2
MP3-2



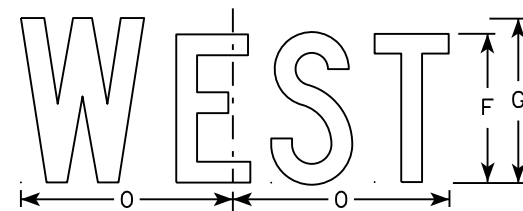
MB3-2
MK3-2
MN3-2



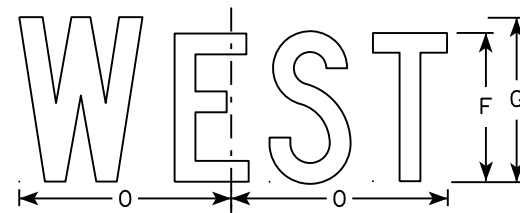
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

7

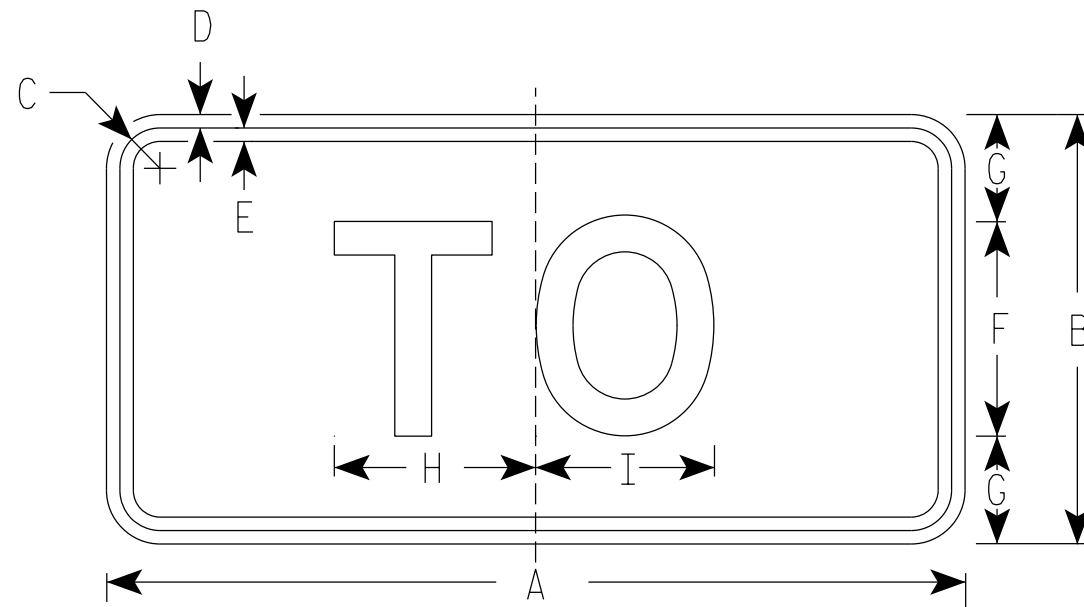
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

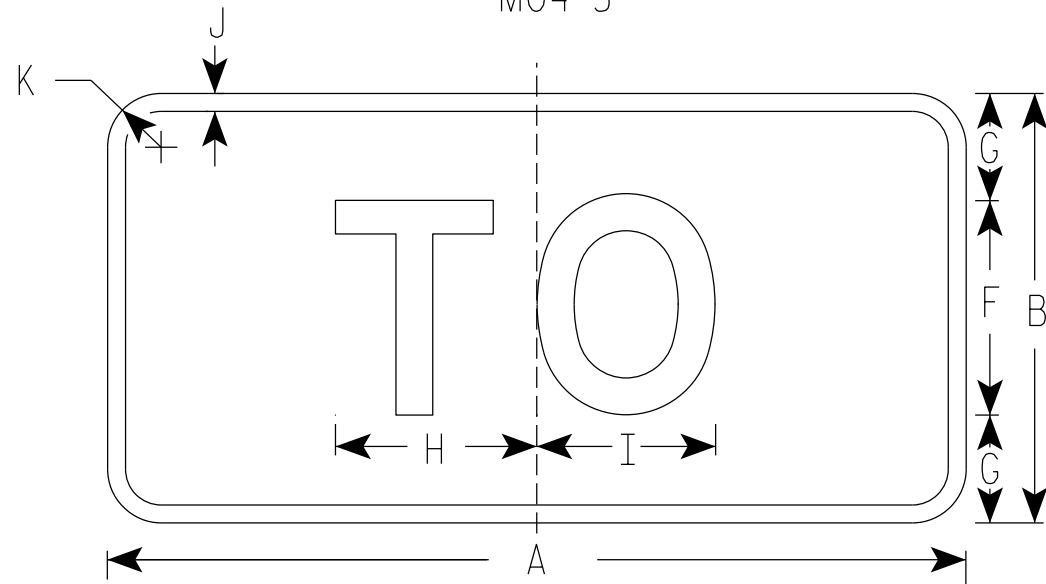
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14



M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
Message - Black
MB4-5 Background - Blue
Message - White
MK4-5 Background - Green
Message - White
MM4-5 Background - White
Message - Green
MN4-5 Background - Brown
Message - White
MP4-5 Background - White
Message - Blue
M04-5 Background - Orange Type F Reflective
Message - Black

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

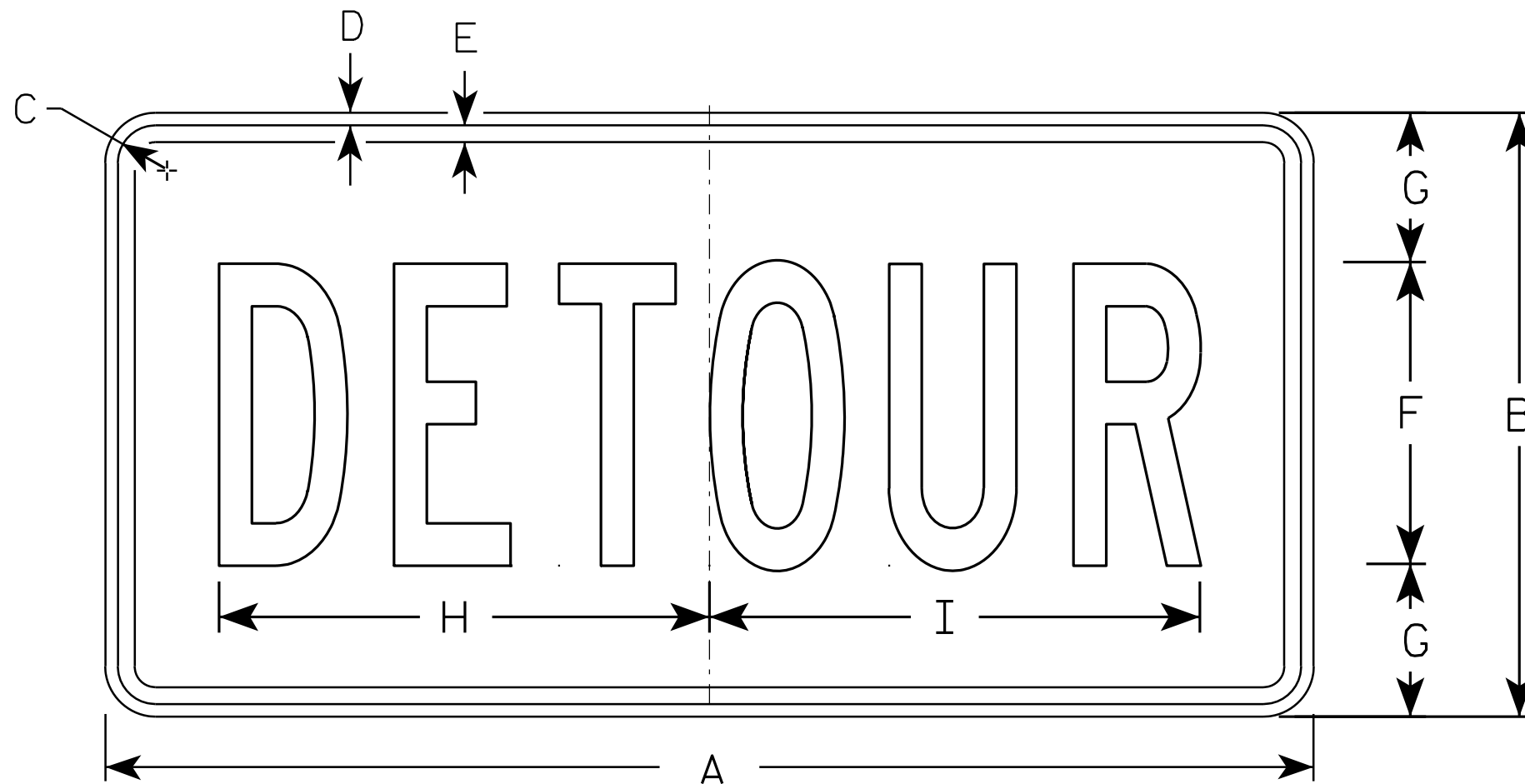
APPROVED *Matthew R. Rauch*
State Traffic Engineer

DATE 03/7/19 PLATE NO. M4-5.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



M4-8

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

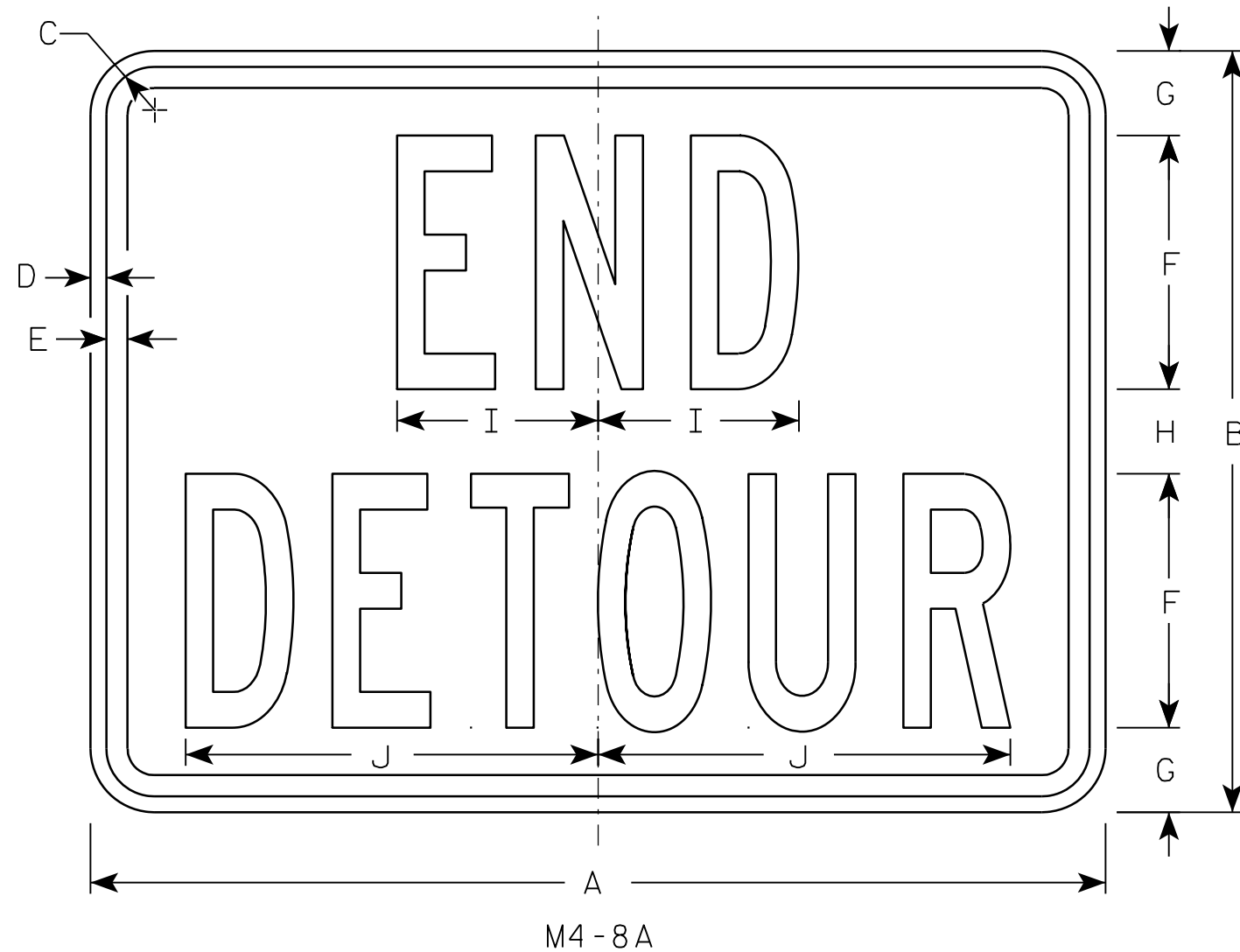
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

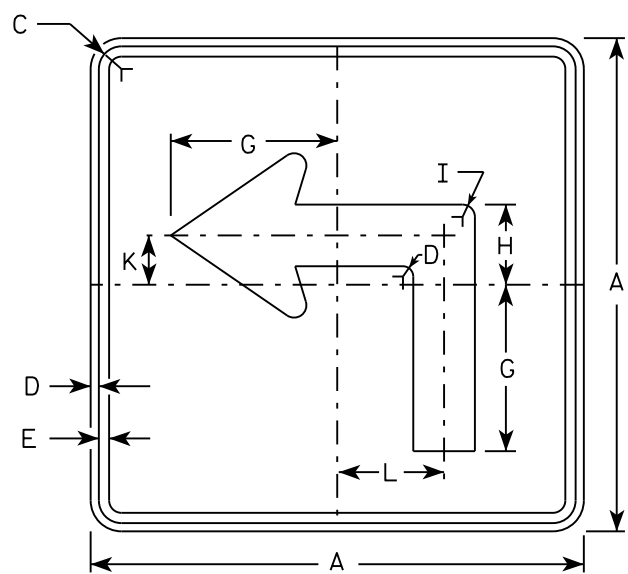
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

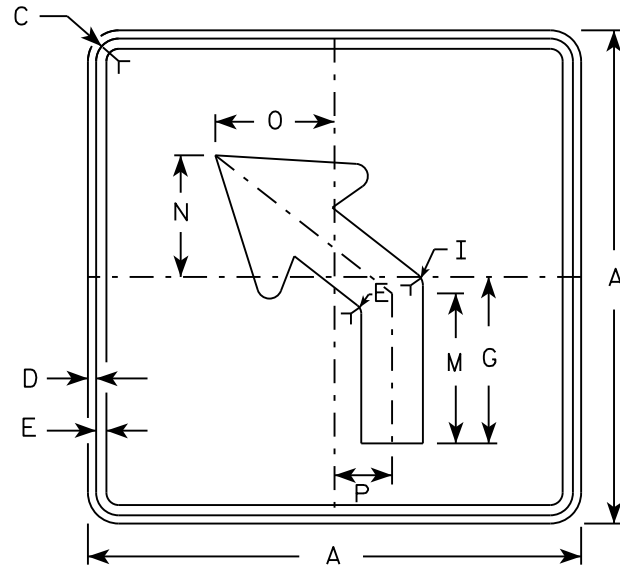
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

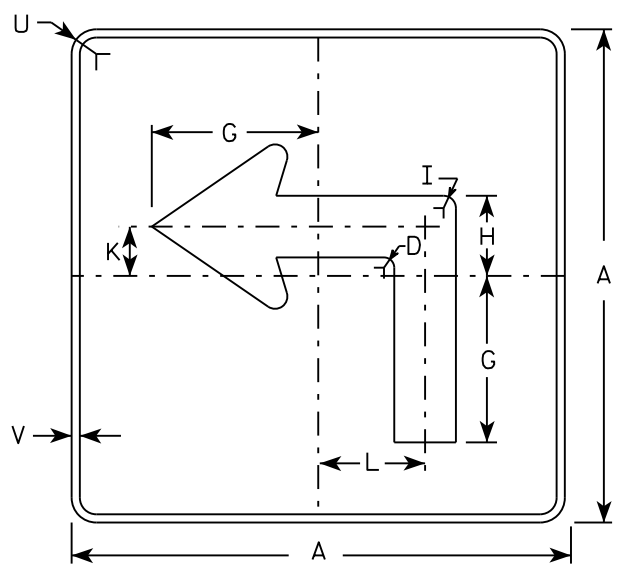
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



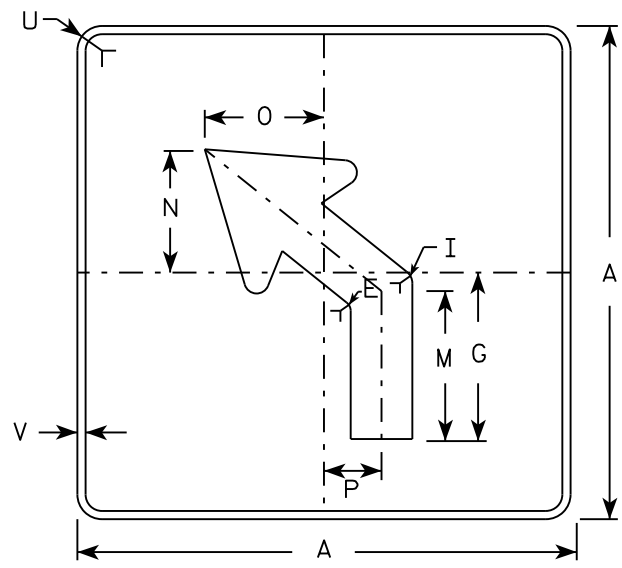
M5-1L
MM5-1L
M05-1L
MP5-1L



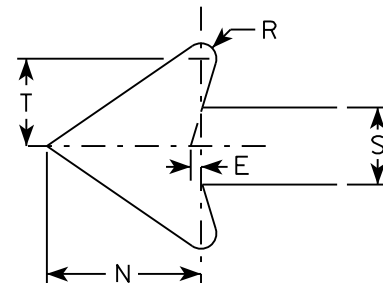
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | |
|-----------------|-----------------------------------------|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

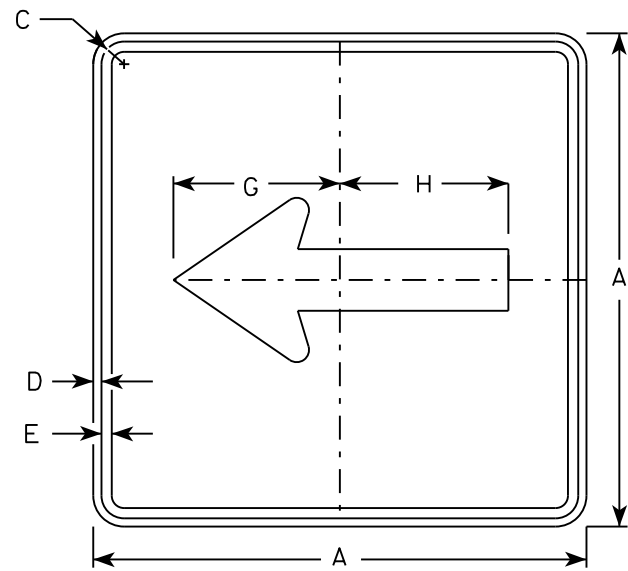
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

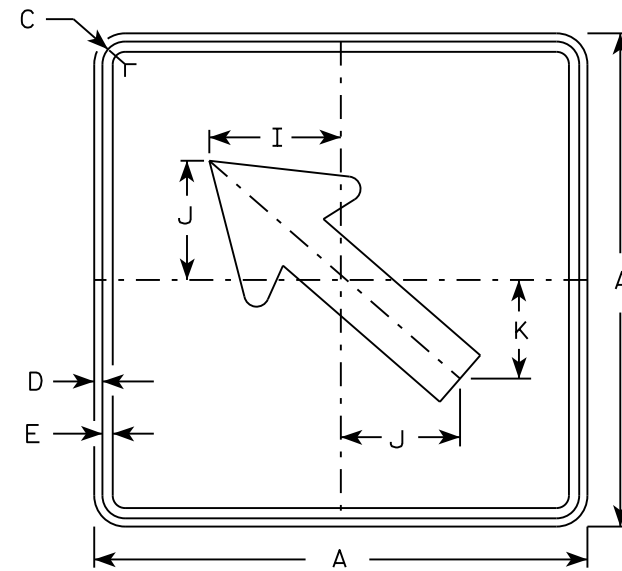
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

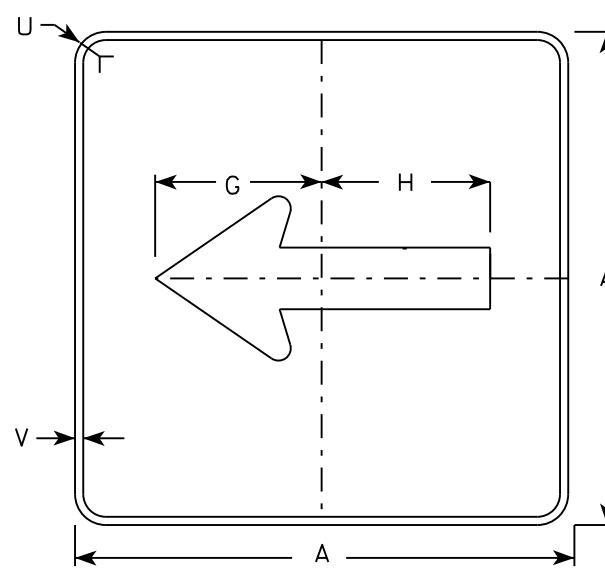
DATE 10/15/15 PLATE NO. M5-1.13



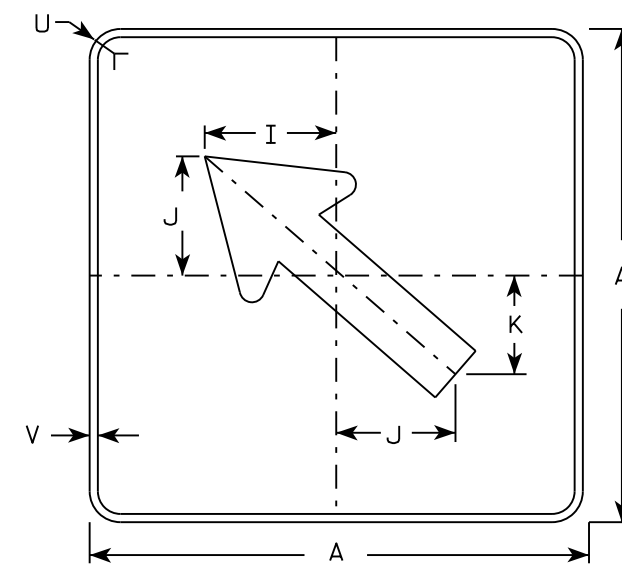
M6-1
MM6-1
M06-1
MP6-1



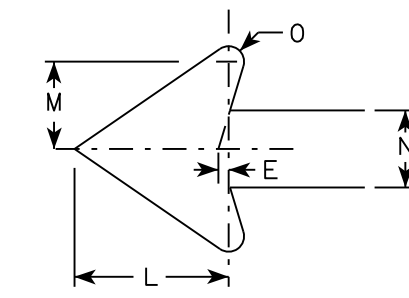
M6-2
MM6-2
M06-2
MP6-2



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

7

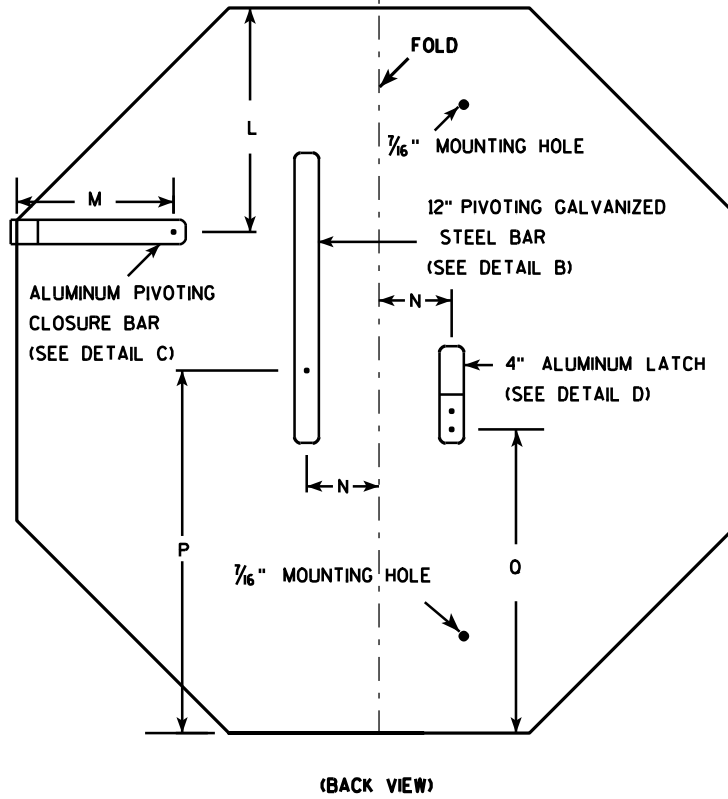
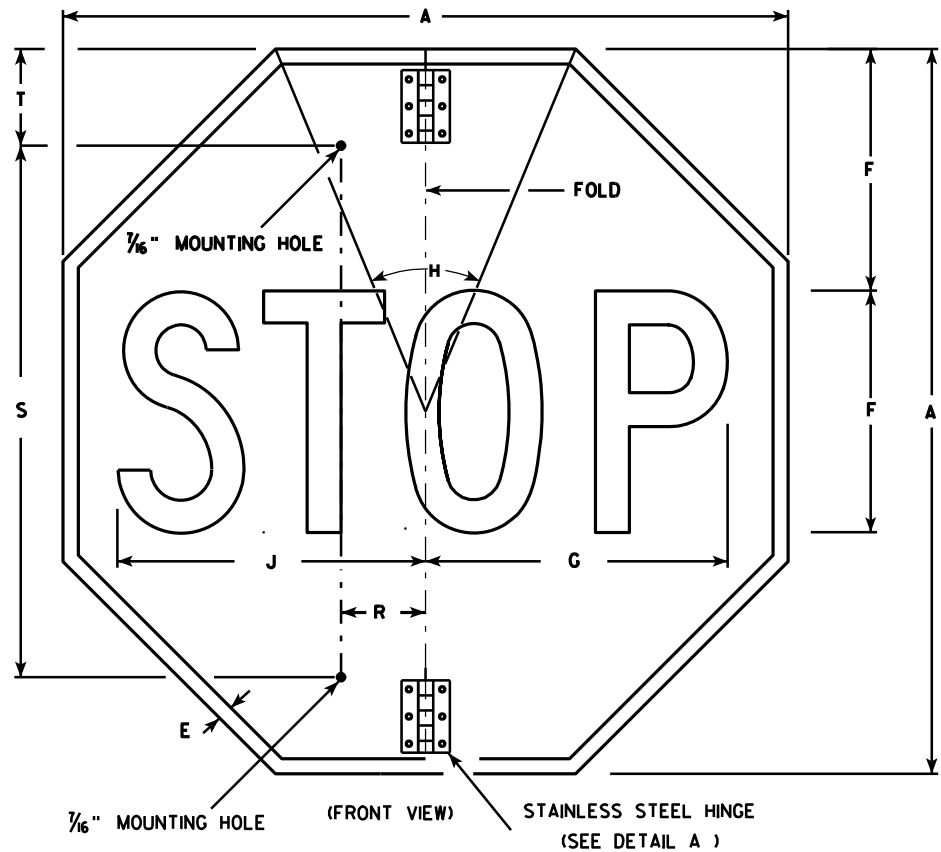
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

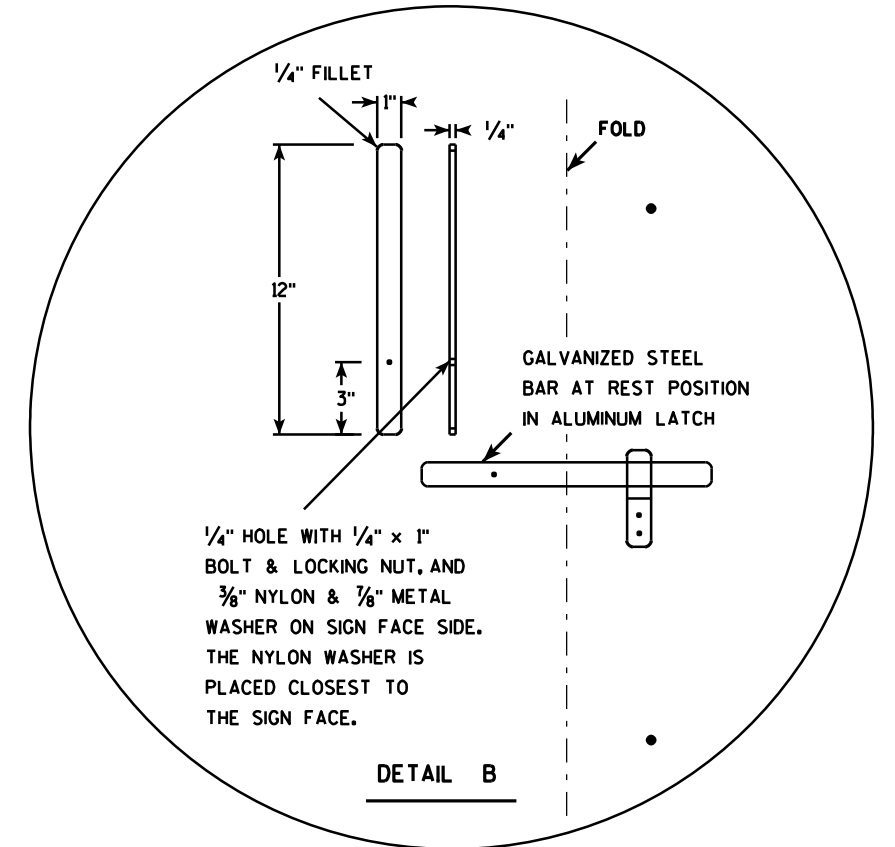
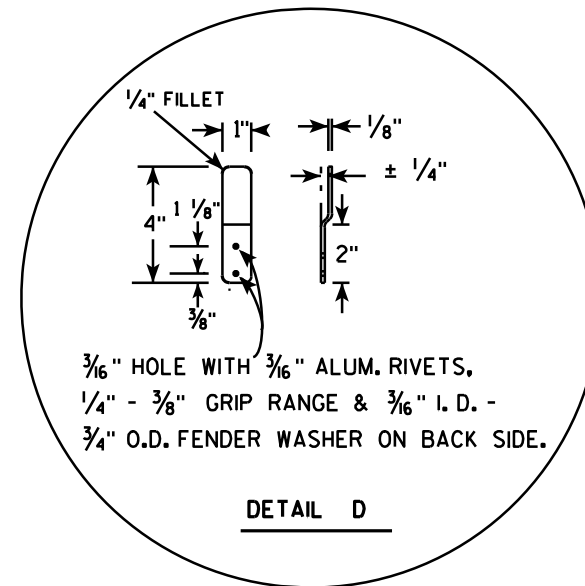
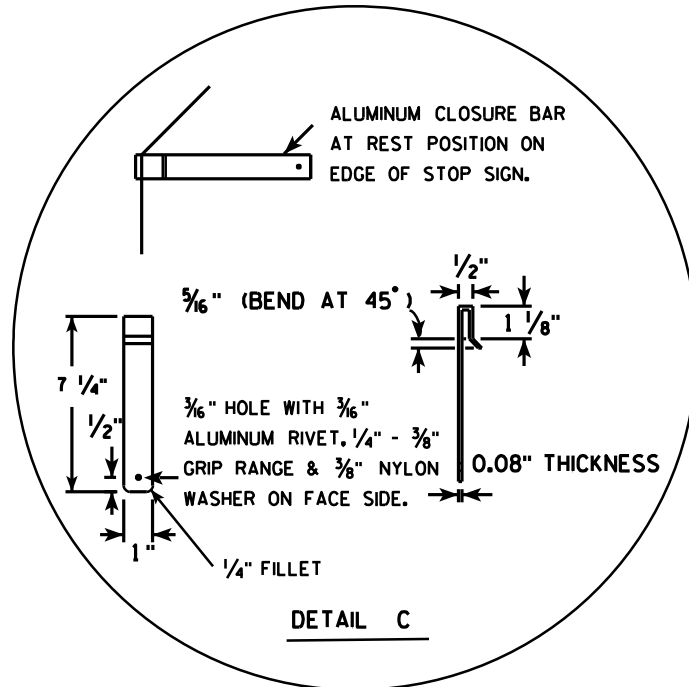
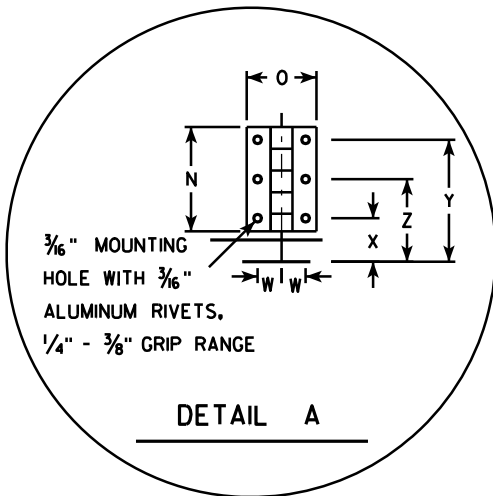
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Red
Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



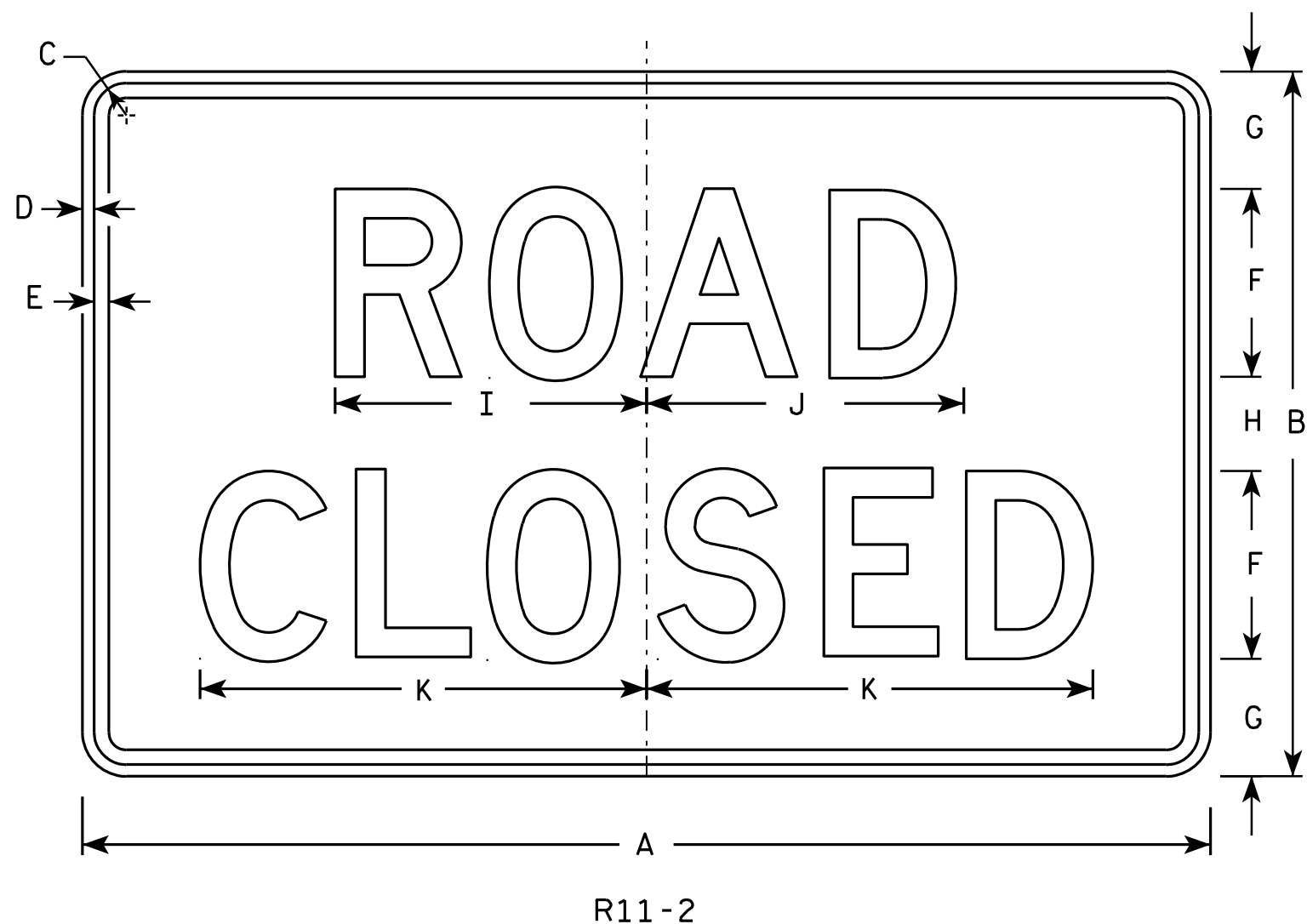
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			1 1/8	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

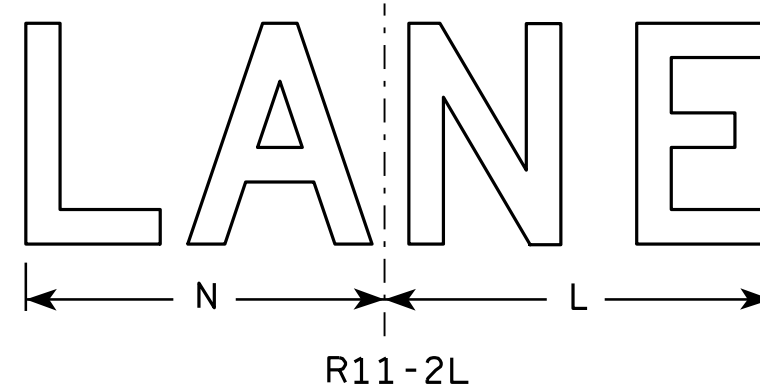
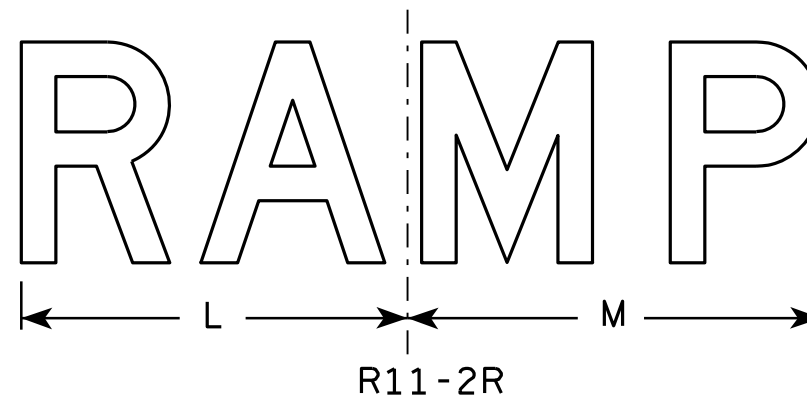
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

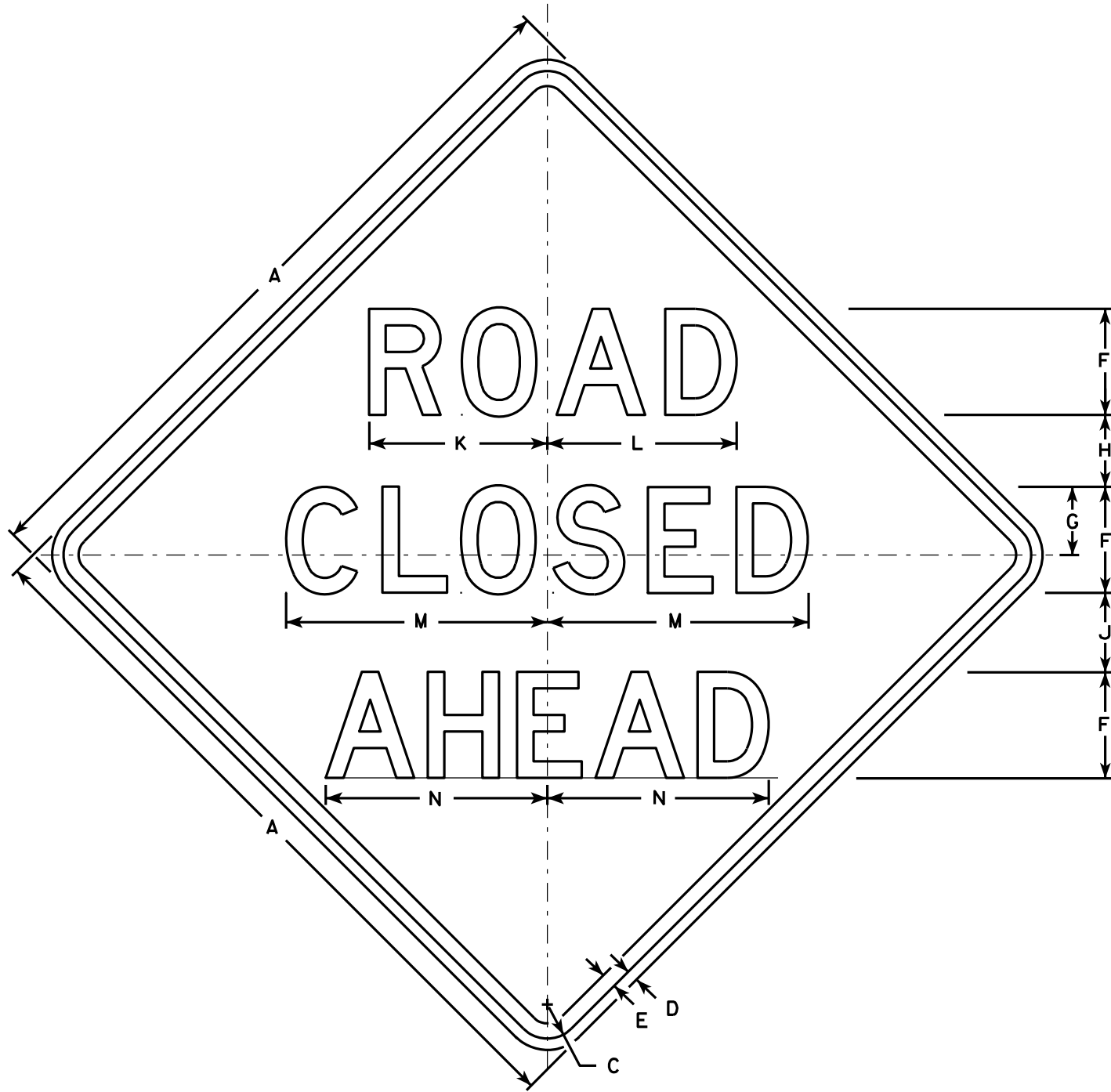
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

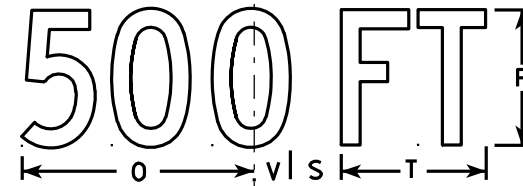
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

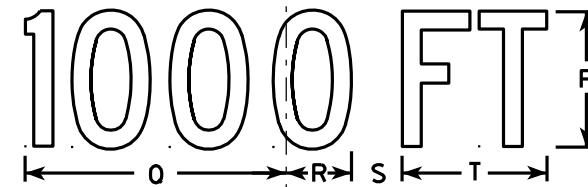
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



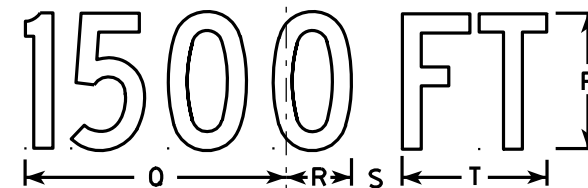
W20-3A



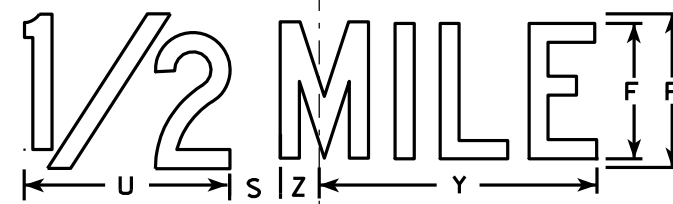
W20-3D



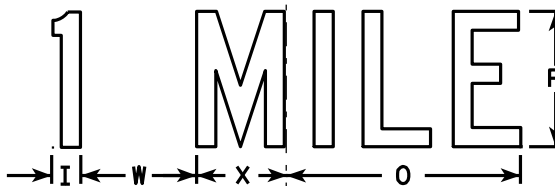
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

SIGN AND SIGNAL REPAIR LOCATIONS - KENOSHA COUNTY

STRUCTURE NUMBER	HIGHWAY	DIRECTION OF TRAVEL	LOCATION
S300234	STH 165 E	E	JUST W OF CTH EZ
S300235	STH 165 W	W	JUST E OF CTH-EZ
S300236	STH 165 W	W	JUST W OF CTH ML
S300610	CTH EZ N	N	JUST S OF STH 165
S300611	CTH EZ S	S	JUST N OF STH 165
S301133	71ST ST E	E	AT I41S EXIT RAMP

SIGNAL REPAIR LOCATIONS - MILWAUKEE COUNTY

STRUCTURE NUMBER	HIGHWAY	DIRECTION OF TRAVEL	LOCATION
S401111	STH 241 S	S	JUST N OF BRIDGE OVER IH 43
S401116	CTH ZZ W	W	JUST E OF IH 94
S401124	STH 100 W	W	AT KILDEER CT
S401141	STH 24 N	N	JUST N OF COLDSRING RD
S401222	STH 100 W	W	JUST W OF 91ST ST
S401248	DREXEL AVE E	E	JUST E OF IH 94 E RAMPS
S401288	IH 43 S ENTRANCE RAMP	S	JUST S OF SILVER SPRING DR
S401291	CTH BB E	E	AT IH 41S RAMPS
S401296	CTH BB E	E	AT IH 41N RAMP
S401297	STH 59 E	E	JUST E OF 101ST ST
S401311	USH 18 E	E	JUST E OF STH 100
S401314	USH 18 W	W	JUST W OF STH 100
S401316	STH 100 N	N	JUST N OF USH 18
S401319	STH 100 S	S	JUST S OF W. WISCONSIN AVE.
S401321	WISCONSIN AVE W	W	JUST W OF STH 100
S401323	STH 100 N	N	JUST N OF WISCONSIN AVE.
S401326	RESEARCH DR E	E	JUST E OF STH 100
S401327	STH 100 S	S	JUST S OF RESEARCH DR
S401329	POTTER RD W	W	JUST W OF STH 100
S401330	STH 100 N	N	JUST N OF RESEARCH DR
S401354	STH 100 N	N	JUST E OF INTERSECTION WITH IH 94 W RAMPS
S401355	STH 100 S	S	JUST S OF IH 94 EXIT RAMP
S401356	NATIONAL AVE E	E	JUST W OF IH 41 SB
S401357	NATIONAL AVE W	W	JUST W OF 1894 SB
S401358	USH 18 W	W	JUST W OF 121ST ST
S401361	USH 18 E	E	JUST E OF 112TH ST
S401363	USH 18 E	E	JUST E OF N 92 ST
S401365	USH 18 W	W	JUST W OF N 92 ST
S401431	STH 38 S	S	AT COLLEGE AVE

SIGN AND SIGNAL REPAIR LOCATIONS - RACINE COUNTY

STRUCTURE NUMBER	HIGHWAY	DIRECTION OF TRAVEL	LOCATION
S510214	STH 20 W	W	JUST E OF CTH H
S511101	STH 36 S	S	JUST S OF STH 11E
S511102	CTH E W	W	JUST W OF STH 83
S511105	STH 83 S	S	JUST S OF STH 11
S511107	PINE ST N	N	JUST N OF STH 11
S511153	STH 20 W	W	JUST W OF CTH V

SIGN REPAIR LOCATIONS - WALWORTH COUNTY

STRUCTURE NUMBER	HIGHWAY	DIRECTION OF TRAVEL	LOCATION
S640017	USH 12 E	E	JUST W OF IH 43

SIGN AND SIGNAL REPAIR LOCATIONS - WAUKESHA COUNTY

STRUCTURE NUMBER	HIGHWAY	DIRECTION OF TRAVEL	LOCATION
S670230	STH 164 N	N	JUST S OF CTH ES
S670238	STH 145 S	S	1/8M N OF US 41/45
S670915	CTH Y	S	CTH Y (RACINE AVE) SB AT IH-43
S671107	MORAIN END DR W	W	JUST W OF STH 83
S671112	HERITAGE DR E	E	JUST E OF STH 83
S671116	GOLF RD E	E	JUST E OF STH 83
S671118	GOLF RD W	W	JUST W OF STH 83
S671128	HILLSIDE DR W	W	JUST W OF STH 83
S671269	STH 164 S	S	JUST S OF CTH L
S671270	CTH L E	E	JUST E OF STH 164
S671271	CTH L W	W	JUST W OF STH 164
S671329	STH 164 S	S	JUST S OF BROADWAY ST

HML REPLACEMENT LOCATION - ST. CROIX COUNTY

STRUCTURE NUMBER	HIGHWAY	DIRECTION OF TRAVEL	LOCATION
L55010	I-94 WB	WB	I-94 WB, 0.35 MIW OF 11TH ST OVER, NE QUADRANT STH 35-N / IH-94

LIST OF DRAWINGS

- | | |
|-------------------------------|-------------------------------------|
| 1. 2020 SE REGION SIGN REPAIR | 36. S-40-1361 |
| 2. FOUNDATION DETAILS | 37. S-40-1363 |
| 3. STRUCTURAL DETAILS | 38. S-40-1365 |
| 4. ATTACHMENT DETAILS | 39. S-40-1431 |
| 5. S-30-0234 | 40. S-40-1431 ORIGINAL SHOP DRAWING |
| 6. S-30-0235 | 41. S-51-0214 |
| 7. S-30-0236 | 42. S-51-214 ORIGINAL SHOP DRAWING |
| 8. S-30-0610 | 43. S-51-1101 |
| 9. S-30-0611 | 44. S-51-1102 |
| 10. S-30-1133 | 45. S-51-1105 |
| 11. S-40-1111 | 46. S-51-1107 |
| 12. S-40-1116 | 47. S-51-1153 |
| 13. S-40-1124 | 48. S-64-0017 |
| 14. S-40-1141 | 49. S-67-0230 |
| 15. S-40-1222 | 50. S-67-0238 |
| 16. S-40-1248 | 51. S-67-0915 |
| 17. S-40-1288 | 52. S-67-0915 SHOP 1 |
| 18. S-40-1291 | 53. S-67-0915 SHOP 2 |
| 19. S-40-1296 | 54. S-67-1107 |
| 20. S-40-1297 | 55. S-67-1112 |
| 21. S-40-1311 | 56. S-67-1116 |
| 22. S-40-1314 | 57. S-67-1118 |
| 23. S-40-1316 | 58. S-67-1128 |
| 24. S-40-1319 | 59. S-67-1269 |
| 25. S-40-1321 | 60. S-67-1270 |
| 26. S-40-1323 | 61. S-67-1271 |
| 27. S-40-1326 | 62. S-67-1329 |
| 28. S-40-1327 | 63. HML FOUNDATION |
| 29. S-40-1329 | 64. SUBSURFACE EXPLORATION |
| 30. S-40-1330 | |
| 31. S-40-1354 | |
| 32. S-40-1355 | |
| 33. S-40-1356 | |
| 34. S-40-1357 | |
| 35. S-40-1358 | |

STRUCTURE DESIGN CONTACTS:

STEVEN DOOCY (608) 261-6063
AARON BONK (608) 261-0261

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.


THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND AS-BUILT CONDITIONS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS FOR PROPOSED REPAIRS.

ALL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER A325 HIGH-TENSILE STRENGTH BOLTS UNLESS OTHERWISE SHOWN OR NOTED.

NO.	DATE	REVISION	BY



BUREAU OF STRUCTURES

ACCEPTED *William C. Debevoise* 10/23/19
CHIEF STRUCTURES DESIGN ENGINEER DATE

REPAIR PLANS 2020

SIGN, SIGNAL & HML REPAIR & REPLACEMENTS

COUNTY VARIES CITY VARIES

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY: SAD	DESIGNED CK'D: MJK	DRAWN BY: DDS	PLANS CK'D: SAD
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2020 SIGN AND SIGNAL REPAIR

SHEET 1 OF 61

8

8

TABLE OF ESTIMATED QUANTITIES FOR FOUNDATIONS **

**QUANTITIES LISTED IN THIS TABLE ARE FOR INFORMATION ONLY, AND ARE NOT TO BE COUNTED AS ADDITIONAL QUANTITIES TO THOSE LISTED ON THE STRUCTURE ELEVATION SHEETS.

STRUCTURE NUMBER	REMOVE HIGH MAST LIGHTING TOWER	HIGH MAST FOUNDATION L-55-0010	HIGH MAST LIGHTING TOWER L-55-0010	TENSION ANCHOR RODS	ABANDON HIGH MAST FOUNDATION	ANCHOR ROD STANDOFF REPAIR	REPLACE POLE	FILL EROSION	REMOVE FILL AND REGRADE	REPLACE RODENT SCREEN	REPAIR GALVANIZED COATING
	EA	LS	LS	EA	EA	EA	EA	EA	EA	EA	SF
L550010	1	1	1		1						
S300234				12		10					
S300235						10					
S300236						5					
S300610						11			2		
S300611				12		11					
S401124				6							
S401248											4
S401288				4							
S401355									1		
S401358				6							
S401361				6							
S401365				6				1			
S401431							1				
S510214							1				
S511101										1	
S511102				6						1	
S511105										1	
S511107										1	
S640017				16		15					
S670230						3					
S670238				8		7					
S670915							1				
S671270				6							
S671271				6							
TOTAL	1	1	1	94	1	72	3	1	3	4	4

FOUNDATION NOTES

THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL REPAIRS.

THE CONTRACTOR SHALL FIELD VERIFY DIMENSION OF THE ITEM REQUIRED. DISCREPANCIES SHALL BE SUBMITTED TO THE ENGINEER FOR CLARIFICATION PRIOR TO BEGINNING WORK.

STEEL ANCHOR ROD NUTS AND WASHERS ASTM A563A HEAVY HEX NUTS AND ASTM F436 WASHERS.

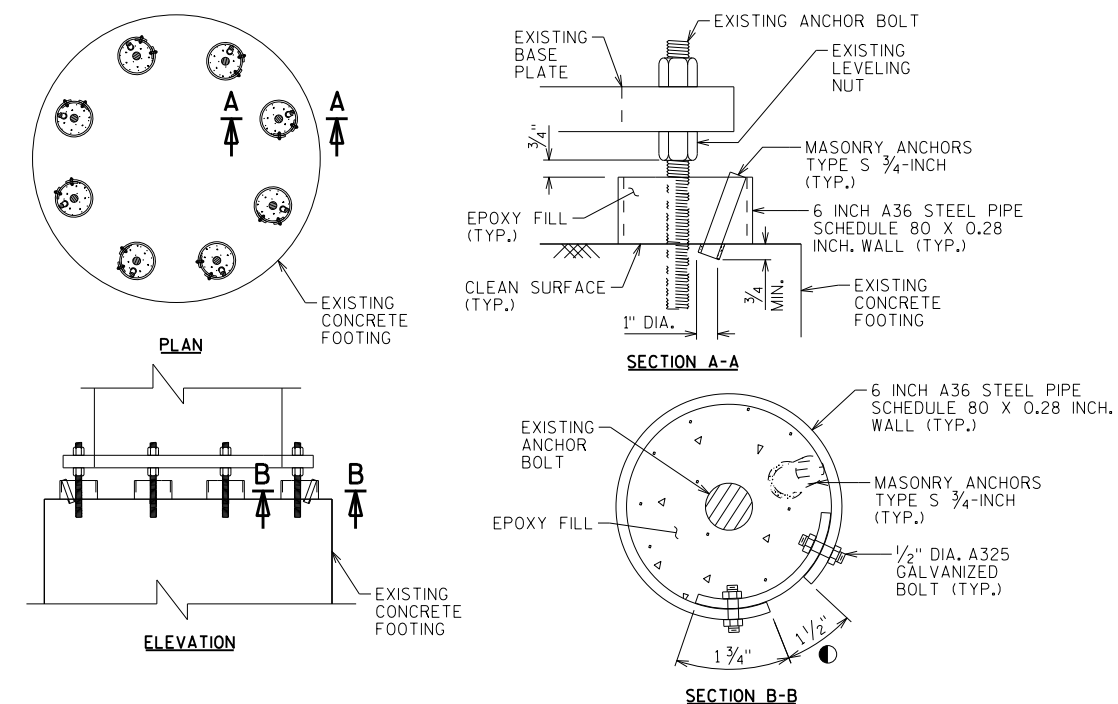
EXISTING GEOMETRY BASED OFF FIELD OBSERVATIONS AND INSPECTIONS. CONTRACTOR TO FIELD VERIFY PRIOR TO FABRICATION AND/OR ORDERING MATERIALS FOR ANCHOR BOLT REPAIR.

THE 6 INCH STEEL PIPE SHALL BE EITHER HOT-DIPPED GALVANIZED OR COLD GALVANIZED IN ACCORDANCE WITH THE A.A.S.H.T.O. SPECIFICATION AS STATED IN SECTION 641 OF THE WISDOT STANDARD SPECIFICATION.

THE ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE COLD GALVANIZED WITH ZINC RICH PAINT IN ACCORDANCE TO THE SPECIFICATIONS.

CLEAN ALL SURFACES AS SPECIFIED IN THE PLANS AND PER THE SPECIAL PROVISIONS. ALL CLEANING OF THE ITEMS ARE INCIDENTAL SIGN STRUCTURE ANCHOR ROD REPAIR.

REFER TO THE SPECIAL PROVISIONS FOR POLYMER FILL MATERIAL.

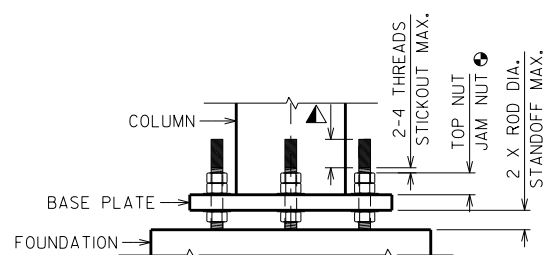


SIGN STRUCTURE ANCHOR ROD REPAIR DETAIL

* THE NUMBER OF ANCHOR BOLTS SHOWN ARE FOR INFORMATION PURPOSES ONLY. ALL ANCHORS ON BASE TO RECEIVE REPAIR, NUMBER OF ANCHOR BOLTS VARY PER STRUCTURE.

CONTRACTOR TO FIELD VERIFY NUMBER AND SIZE OF ANCHORS PER STRUCTURE NEEDED PRIOR TO ANY FABRICATION.

ALL ITEMS SHOWN ARE INCIDENTAL TO "ANCHOR ROD STANDOFF REPAIR".

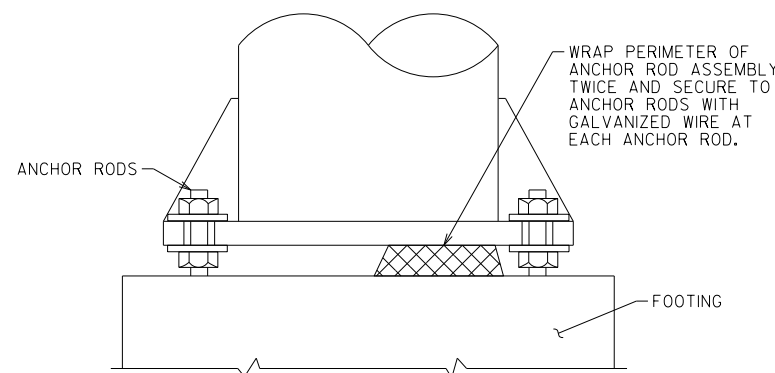


ANCHOR ROD TENSIONING DETAIL

JAM NUT REQUIRED UNLESS EXISTING STICKOUT IS INADEQUATE TO MEET REQUIREMENTS SHOWN.

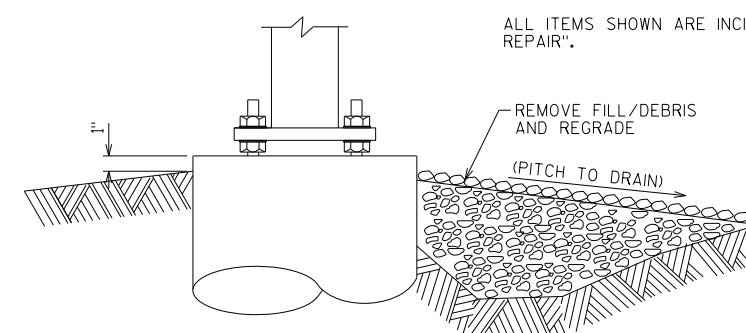
REMOVE AND DISPOSE OF EXISTING LOCK WASHERS (IF PRESENT) BEFORE RE-TENSIONING ANCHORS.

USE A CUT OFF WHEEL TO REMOVE EXCESS ROD STICKOUT TO THE DIMENSION SHOWN. CUT ANCHOR SHOULD BE FLAT AND SMOOTH, THREADS SHOULD BE DEBURRED SO THE NUT CAN RUN SMOOTHLY ON AND OFF THE END OF THE ROD. APPLY GALVANIZING TO CUT ENDS OF RODS PER SPECIAL PROVISIONS.



REPLACE RODENT SCREEN

REQUIRED ON ALL STRUCTURES WITH ELECTRICAL EQUIPMENT.



REMOVE FILL AND REGRADE

ENSURE TOP OF CONCRETE IS FREE OF DEBRIS AND WATER WILL NOT COLLECT ON OR NEAR FOUNDATION.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
FOUNDATION DETAILS		SHEET 2	

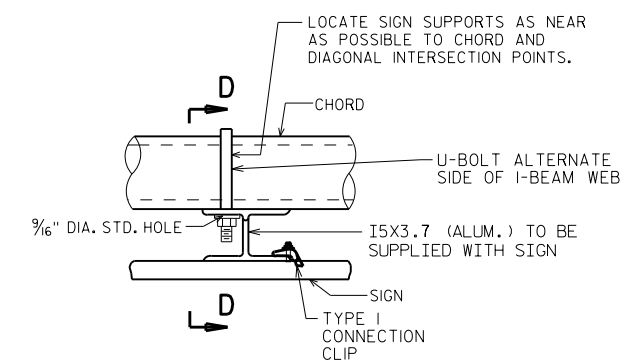
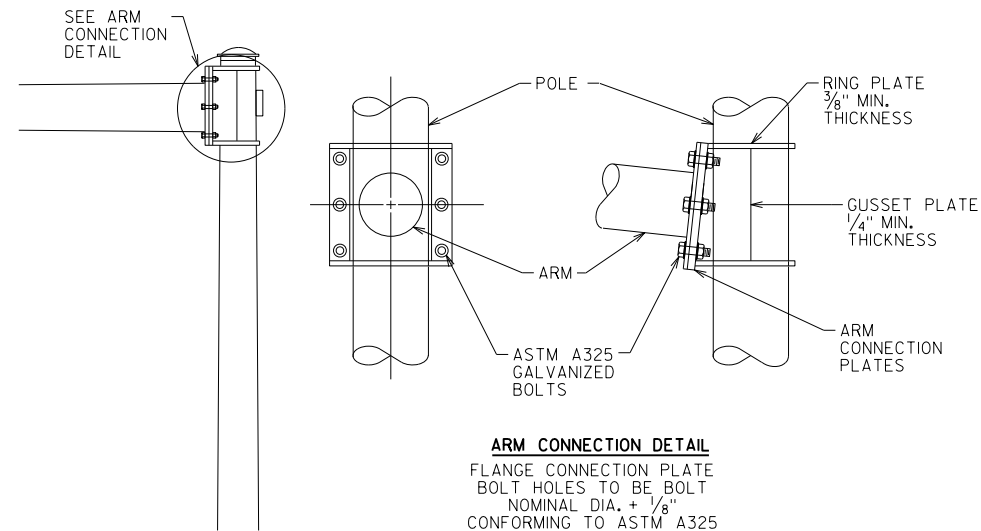
**QUANTITIES LISTED IN THIS TABLE ARE FOR INFORMATION ONLY, AND ARE NOT TO BE COUNTED AS ADDITIONAL QUANTITIES TO THOSE LISTED ON THE STRUCTURE ELEVATION SHEETS.

TABLE OF ESTIMATED QUANTITIES FOR STRUCTURAL CONNECTIONS **

STRUCTURE NUMBER	REPLACE LUMINAIRE ARM CONNECTION BOLTS	TENSION STRUCTURAL BOLT (FRICTION)	U-BOLT REPAIR	REPLACE SIGN CONNECTION ASSEMBLY (W/ I-BEAM AND U-BOLTS)
	SPV.0060.08	SPV.0060.09	SPV.0060.10	SPV.0060.11
	EA	EA	EA	EA
S401291	8			
S401326		6		
S401356		6		
S401357		6		
S510214				2
S511101		6		
S511102		6		
S511105		6		
S511107		6		
S640017			5	
S670230				4
S670238				3
TOTAL	8	42	5	9

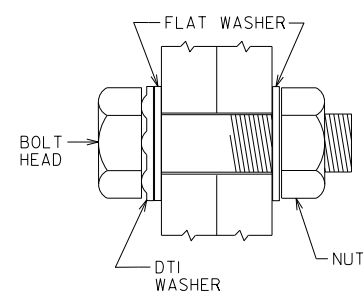
STRUCTURE NOTES

1. THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL REPAIRS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS OF THE ITEM REQUIRED. DISCREPANCIES SHALL BE SUBMITTED TO THE ENGINEER FOR CLARIFICATION PRIOR TO BEGINNING WORK.
3. ALL STAINLESS STEEL BOLTS, LOCK WASHERS, AND NUTS SHALL CONFORM TO:
 - ANCHOR BOLTS/HEX BOLTS ASTM F593 ANY ALLOY GROUP 1, 2, OR 3
 - HEX NUTS ASTM F594
 - WASHERS ASTM A240
 ANY OF THE 300 SERIES WHICH HAVE A MINIMUM YIELD OF 40,000 PSI AND ELONGATION OF 15% FOR OVER 3/4" DIA. AND 12% FOR 3/4" DIA. AND SMALLER.
4. REPLACE MISSING BOLTS ON TOWER CAPS WITH A STAINLESS STEEL BOLT.

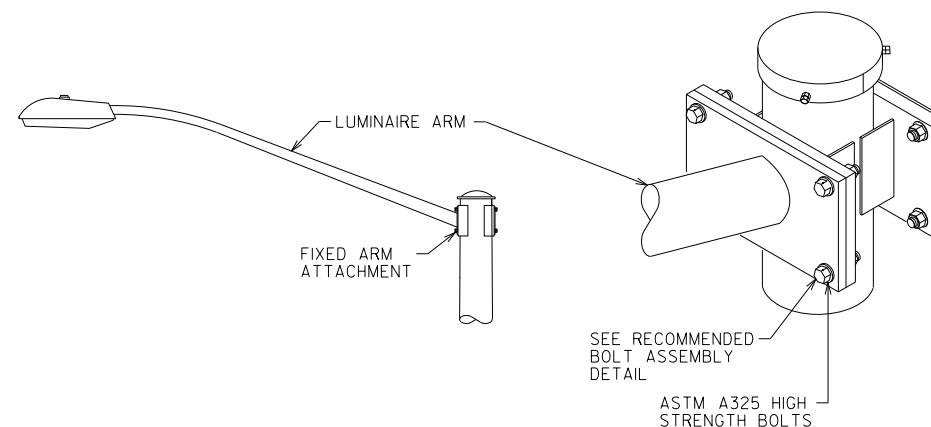


POST TO MAST ARM CONNECTION

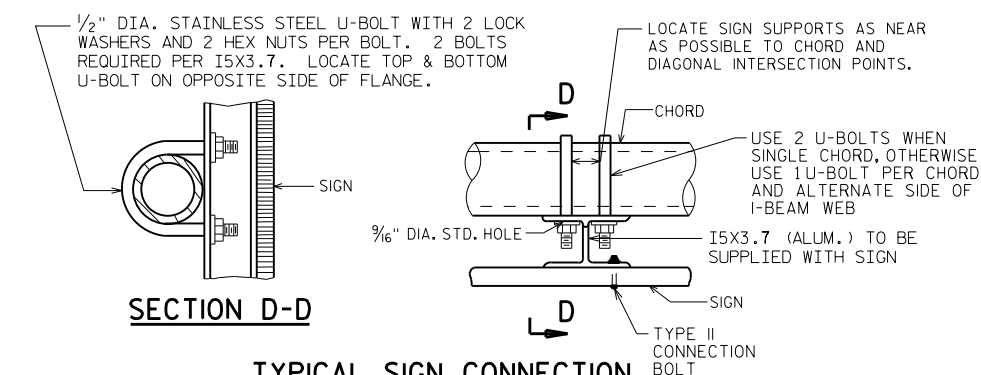
6 BOLT ARRANGEMENT SHOWN
OTHER BOLT ARRANGEMENTS SIMILAR



RECOMMENDED BOLT ASSEMBLY DETAIL



POST TO LUMINAIRE ARM CONNECTION

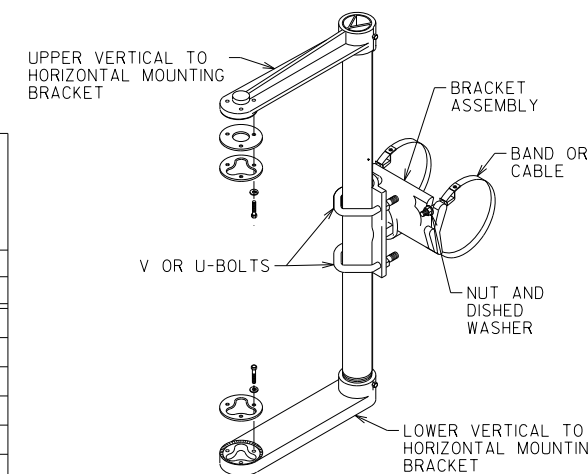


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
STRUCTURAL DETAILS		SHEET 3	

**QUANTITIES LISTED IN THIS TABLE ARE FOR INFORMATION ONLY, AND ARE NOT TO BE COUNTED AS ADDITIONAL QUANTITIES TO THOSE LISTED ON THE STRUCTURE ELEVATION SHEETS.

TABLE OF ESTIMATED QUANTITIES FOR SIGNS **

STRUCTURE NUMBER	SIGNS TYPE II REFLECTIVE SH	SIGNS TYPE II REFLECTIVE SH FOLDING	REPLACE SIGNAL CONNECTION ASSEMBLY	REPLACE DISHED WASHER	REPLACE VERTICAL TO HORIZONTAL SIGNAL CONNECTION BRACKET	REPLACE POST MOUNTED SIGNAL CONNECTION ASSEMBLY	SECURE CAMERA CONNECTION	SECURE SIGNAL CONNECTION ASSEMBLY	SECURE TYPE II SIGN	SECURE HANDHOLE COVER	INSTALL ID PLAQUE
	637.2220 SF	637.2225 SF	SPV.0060.12 EA	SPV.0060.13 EA	SPV.0060.14 EA	SPV.0060.15 EA	SPV.0060.16 EA	SPV.0060.17 EA	SPV.0060.18 EA	SPV.0060.19 EA	SPV.0060.20 EA
S301133								1			
S401111				1							
S401116				1	1						1
S401124				1							
S401141				1							
S401222				1							1
S401248											1
S401288				2	1						1
S401296								1			
S401297						1					
S401311			1								
S401314				2							
S401316				1							
S401319				1							
S401321				1							
S401323				1							
S401326				1							
S401327				2							
S401329				1							
S401330				1							
S401354			2								
S401356							1				
S401358				1							1
S401361			1								
S401363			1								
S401365			1					1			
S511101				1						1	1
S511102			1								
S511105					1						
S511107								1			
S511153								1			
S670238	25										
S671107				2							
S671112				1							
S671116				1							
S671118				1							
S671128				1							
S671269									1		
S671270				1							
S671271				1		1			2		
S671329		9									
TOTAL	25	9	7	28	3	2	1	5	3	1	6

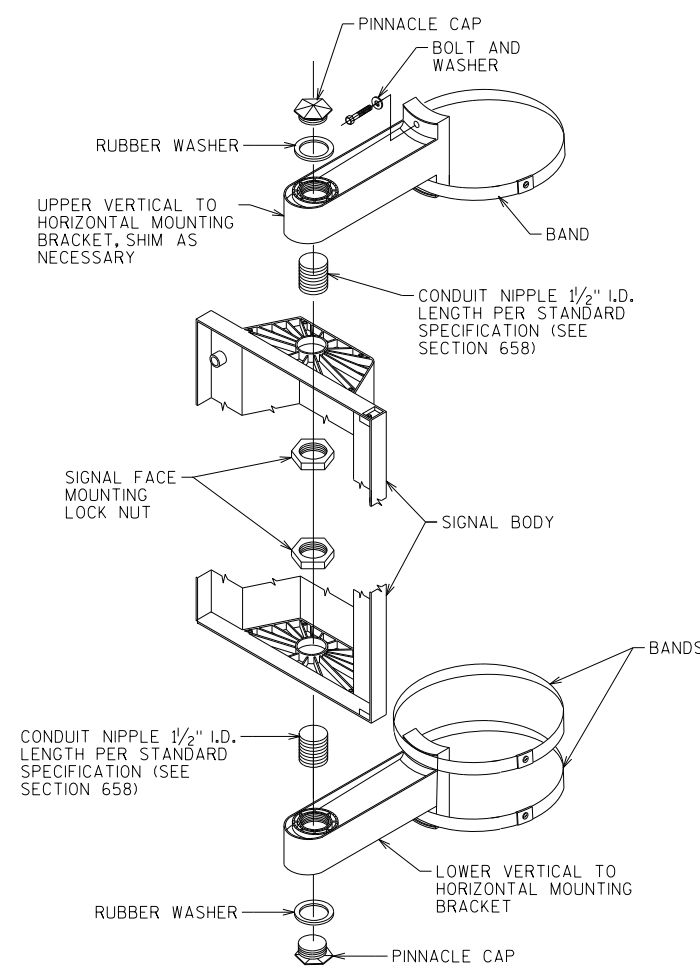


**SIGNAL FACE MOUNTING BRACKET
DETAIL FOR MONOTUBE ARM**

BRACKET ASSEMBLY SHOWN TYPICAL, ACTUAL BRACKET TYPE MAY VARY. CONTRACTOR TO VERIFY TYPE AND INSTALL PER MANUFACTURER'S SPECIFICATIONS.

SIGN PANEL NOTES:

1. THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL REPAIRS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS OF THE ITEM REQUIRED. DISCREPANCIES SHALL BE SUBMITTED TO THE ENGINEER FOR CLARIFICATION PRIOR TO BEGINNING WORK.
3. ALL STAINLESS STEEL BOLTS, LOCK WASHERS, AND NUTS SHALL CONFORM TO:
-ANCHOR BOLTS/HEX BOLTS ASTM F593 ANY ALLOY GROUP 1, 2, OR 3
-HEX NUTS ASTM 594
-WASHERS ASTM A240
ANY OF THE 300 SERIES WHICH HAVE A MINIMUM YIELD OF 40,000 PSI AND ELONGATION OF 15% FOR OVER 3/4" DIA. AND 12% FOR 3/4" φ AND SMALLER.



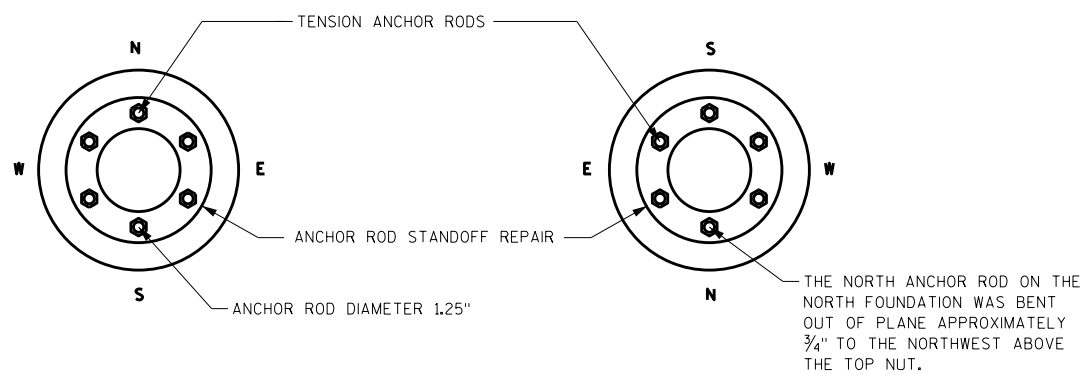
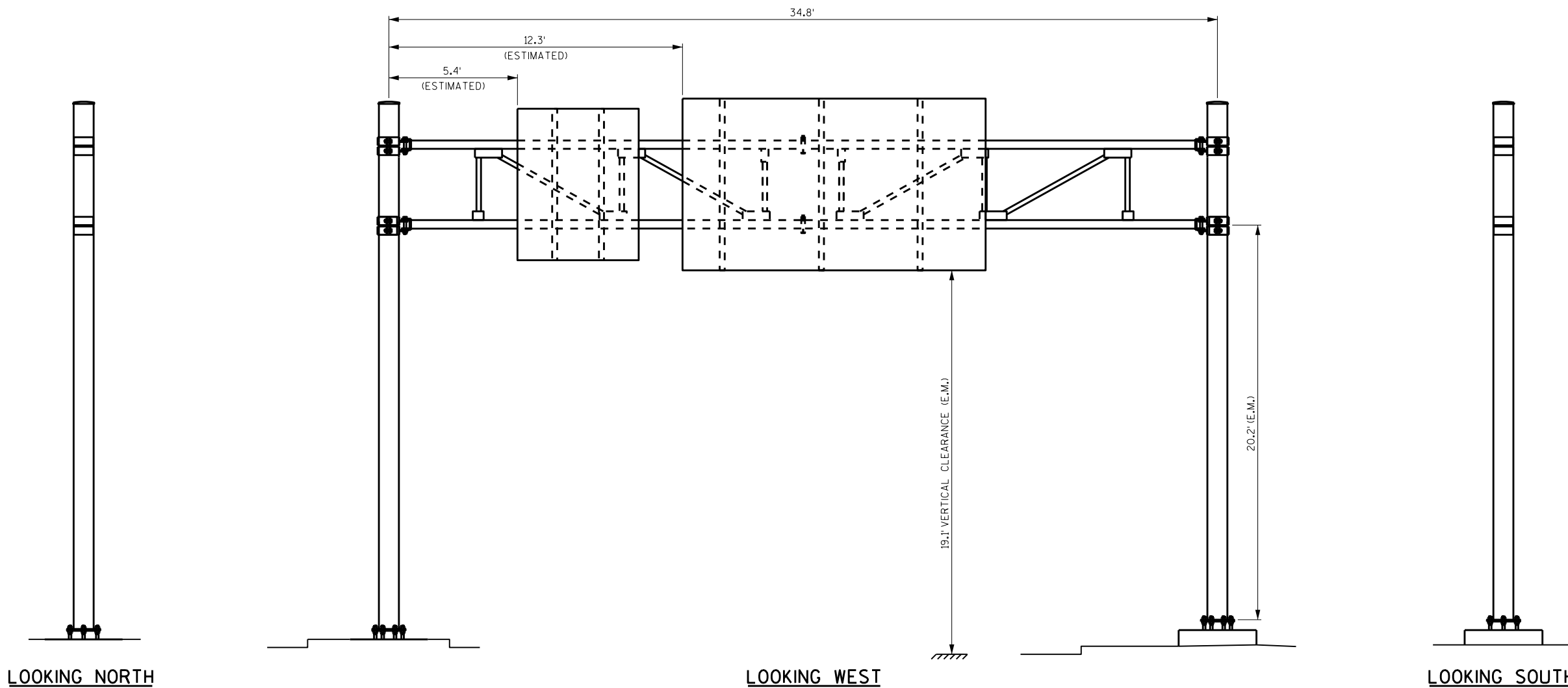
**SIGNAL FACE VERTICAL
MOUNTING DETAIL FOR POST**

BRACKET ASSEMBLY SHOWN TYPICAL, ACTUAL BRACKET TYPE MAY VARY. CONTRACTOR TO VERIFY TYPE AND INSTALL PER MANUFACTURER'S SPECIFICATIONS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
ATTACHMENT DETAILS		SHEET 4	

8

8



NOTE:
 REMOVE EXCESS ANCHOR ROD BEFORE TENSIONING, LEAVE 2-3 THREADS ABOVE TOP NUT, USE COLD GALVANIZING ON CUT END OF ROD. SEE TENSIONING DETAIL ON SHEET 2.

ITEM NUMBER	BID ITEMS	QTY.	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	12	EACH	2
SPV.0060.03	ANCHOR ROD STANDOFF REPAIR	10	EACH	2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
 STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D: SAD

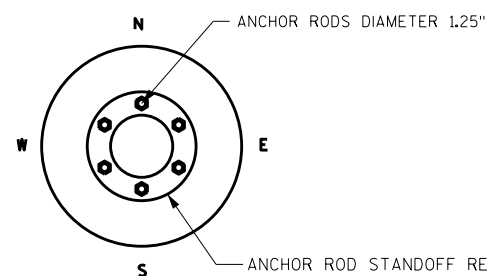
SIGN STRUCTURE S-30-0234

SHEET 5

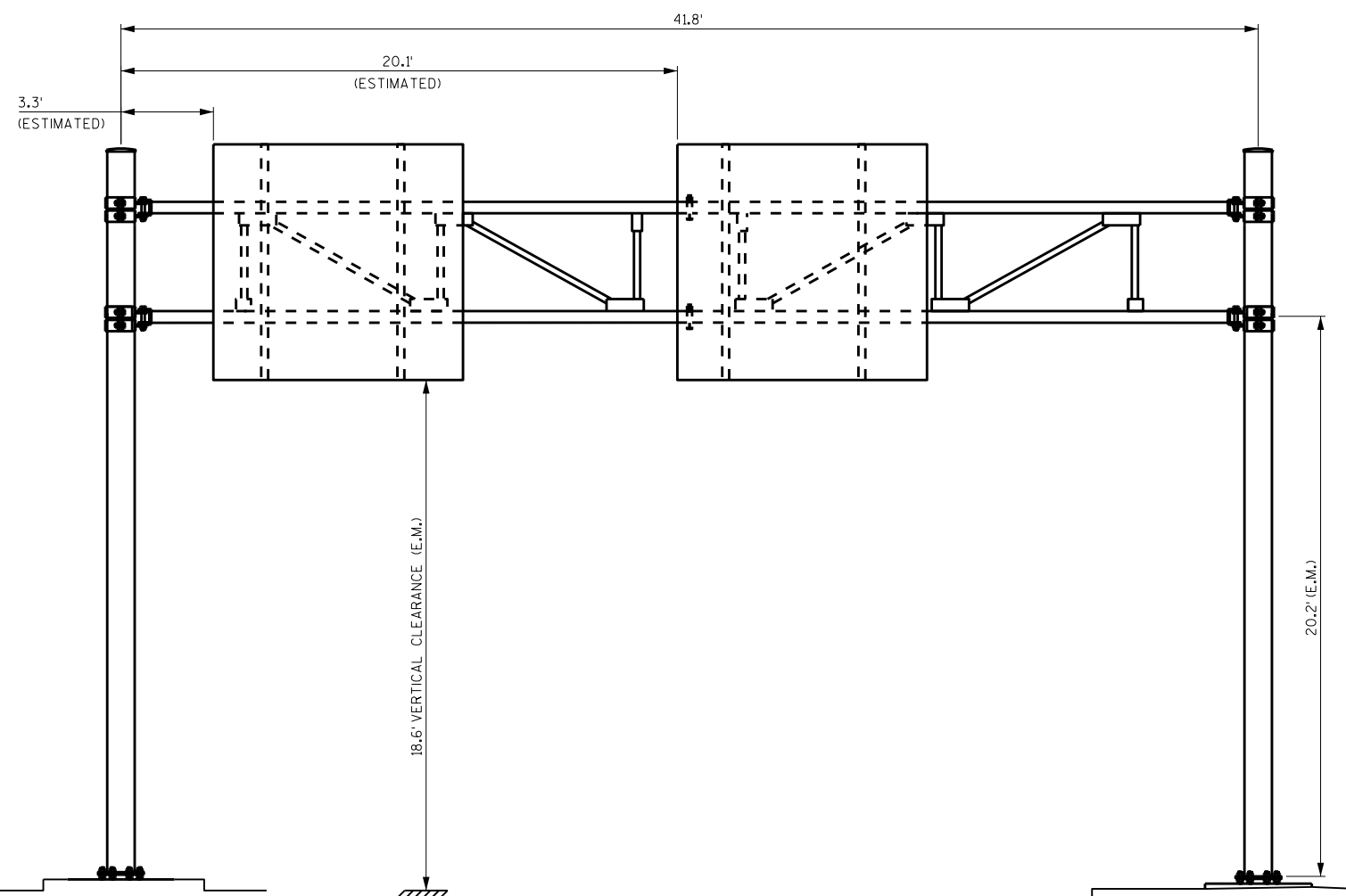
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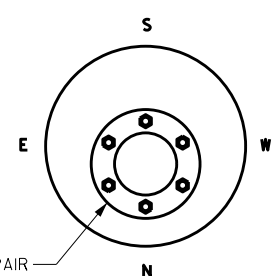
LOOKING NORTH



LOOKING WEST



LOOKING SOUTH



ITEM NUMBER	BID ITEMS	QTY.	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.03	ANCHOR ROD STANDOFF REPAIR	10	EACH	2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

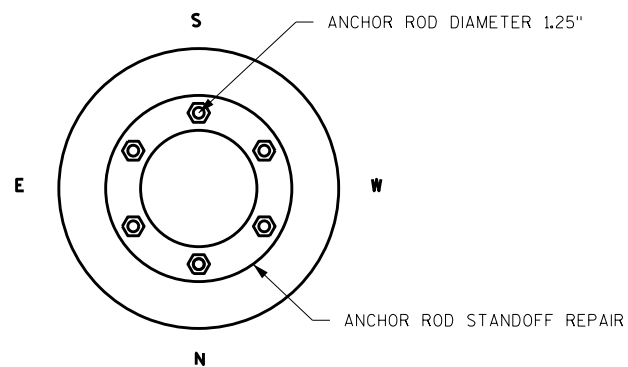
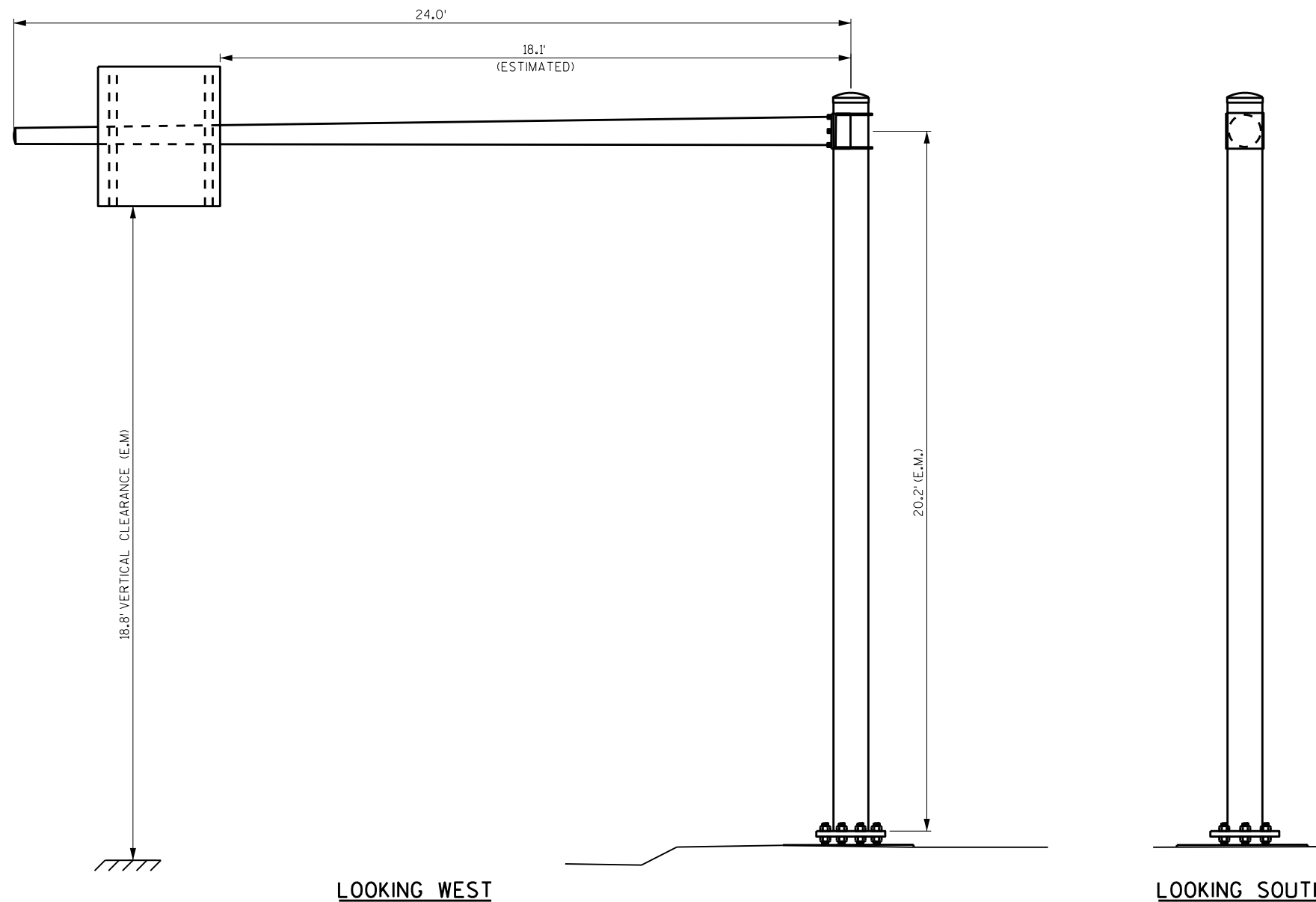
DRAWN BY: DDS PLANS CK'D. **SAD**

SIGN STRUCTURE S-30-0235

SHEET 6

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ITEM NUMBER	BID ITEMS	QTY.	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.03	ANCHOR ROD STANDOFF REPAIR	5	EACH	2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

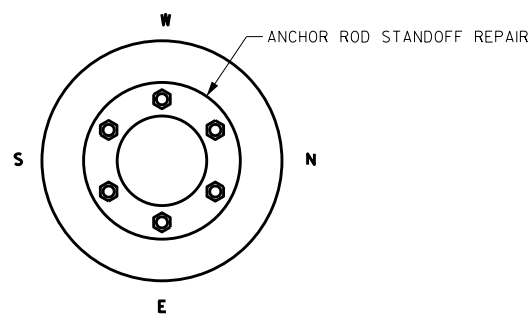
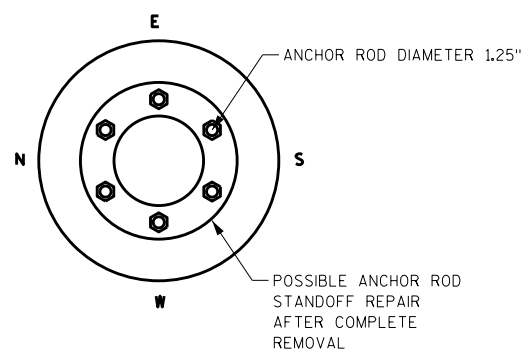
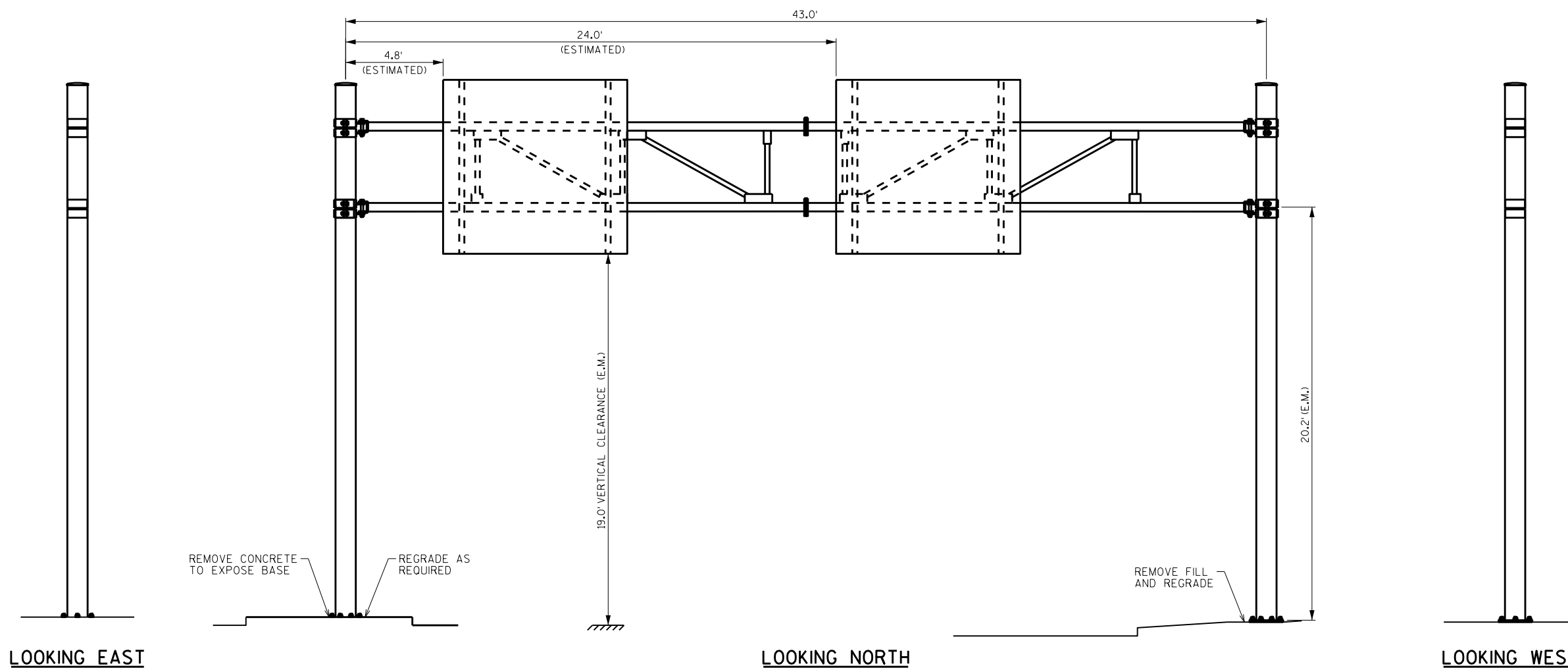
DRAWN BY: DDS PLANS CK'D. SAD

SIGN STRUCTURE S-30-0236

SHEET 7

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ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.03	ANCHOR ROD STANDOFF REPAIR	11	EACH	2
SPV.0060.06	REMOVE FILL AND REGRADE	2	EACH	2

NO.	DATE	REVISION	BY

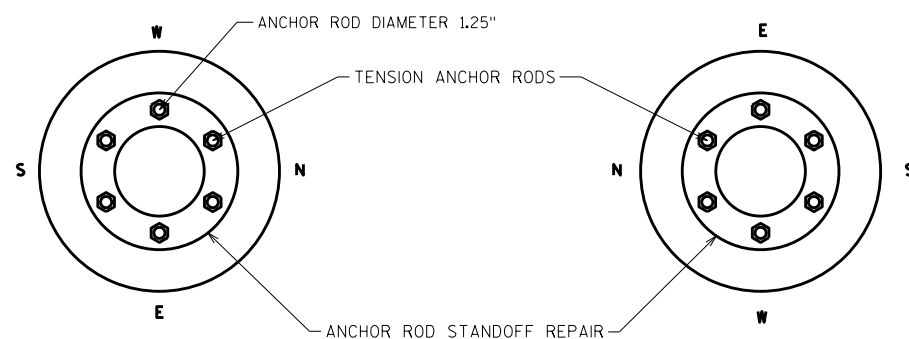
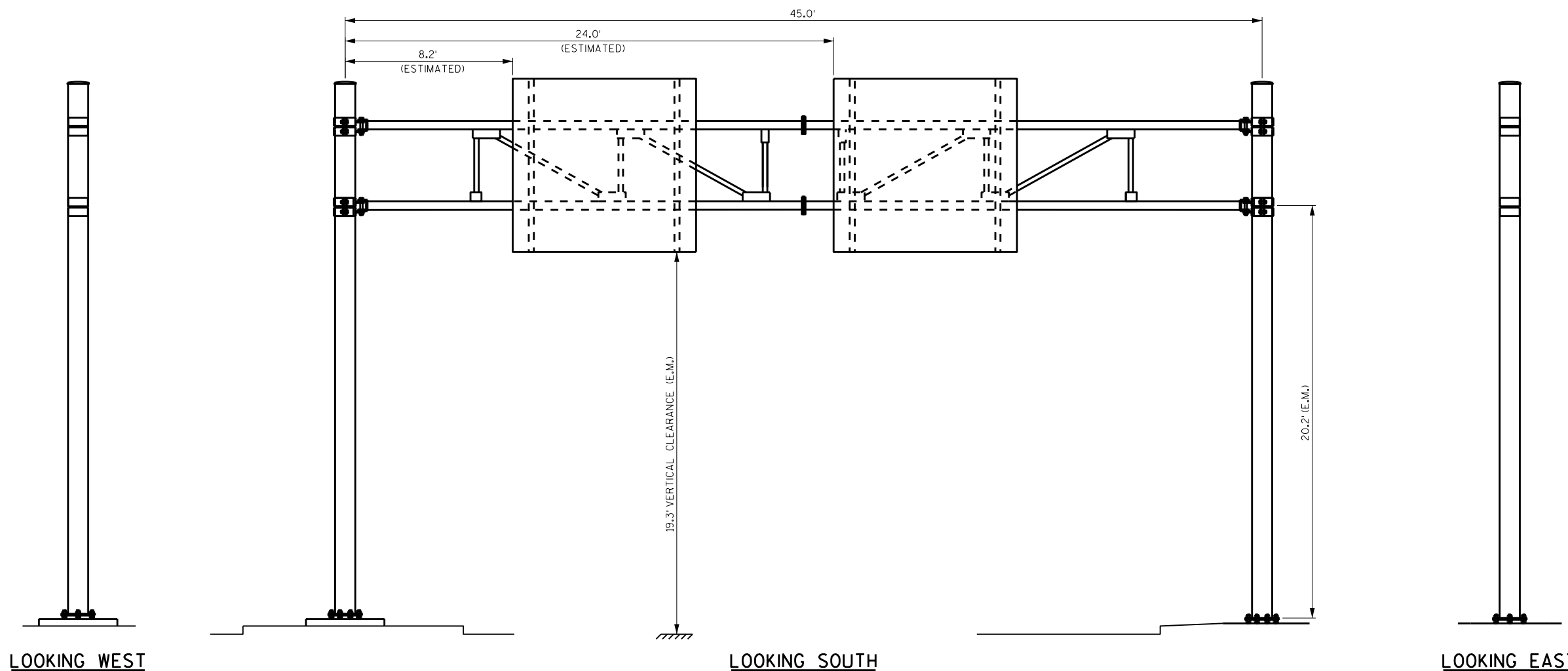
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. SAD

SIGN STRUCTURE S-30-0610

SHEET 8



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	12	EACH	2
SPV.0060.03	ANCHOR ROD STANDOFF REPAIR	11	EACH	2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

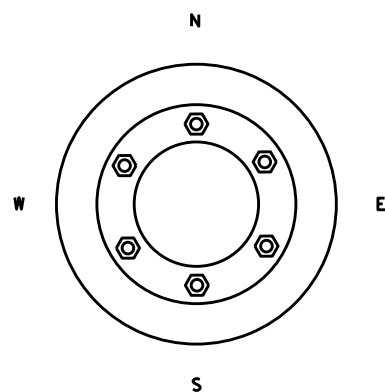
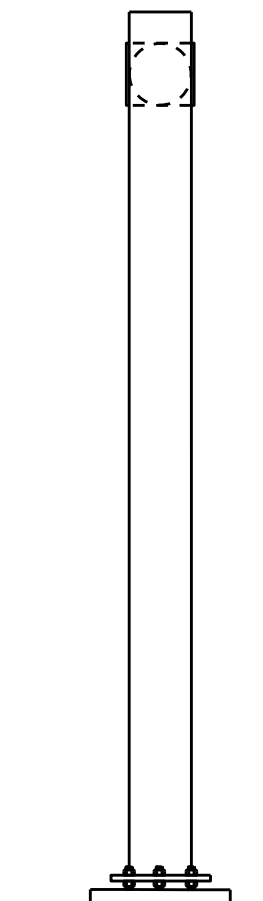
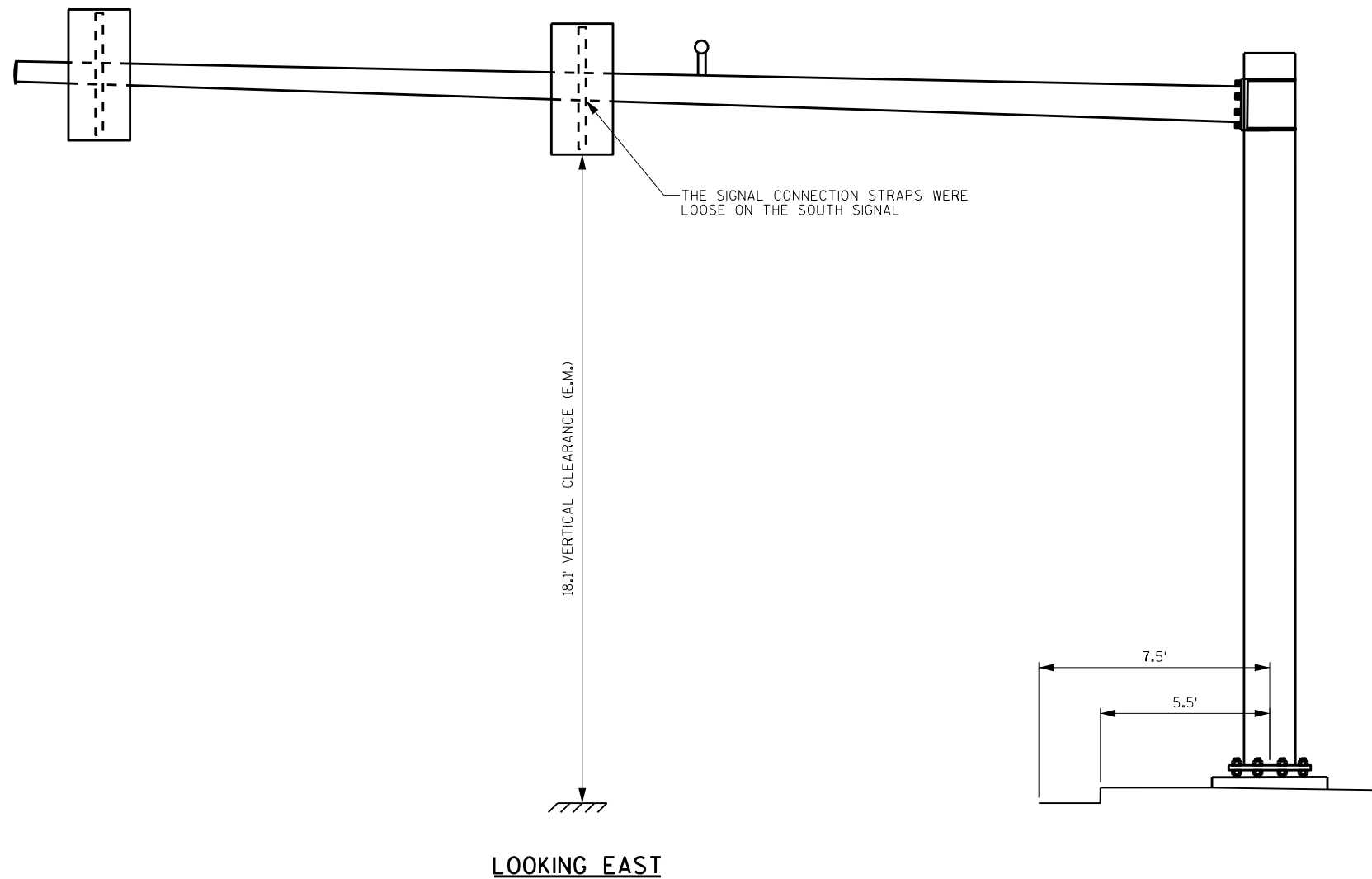
DRAWN BY: DDS PLANS CK'D. SAD

SIGN STRUCTURE S-30-0611

SHEET 9

8

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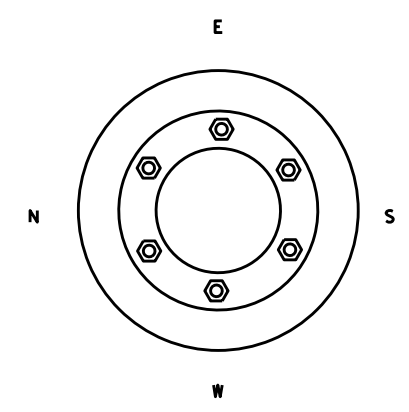
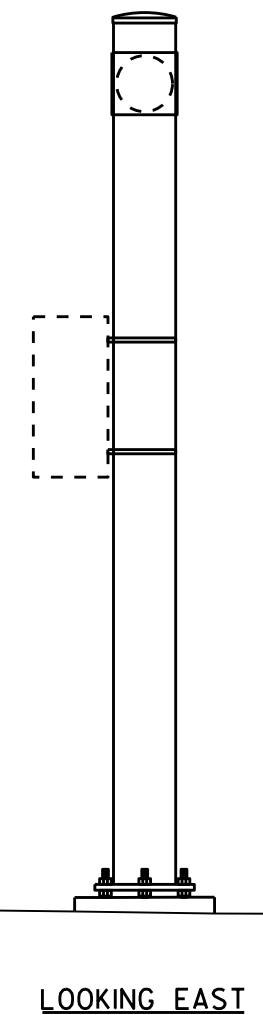
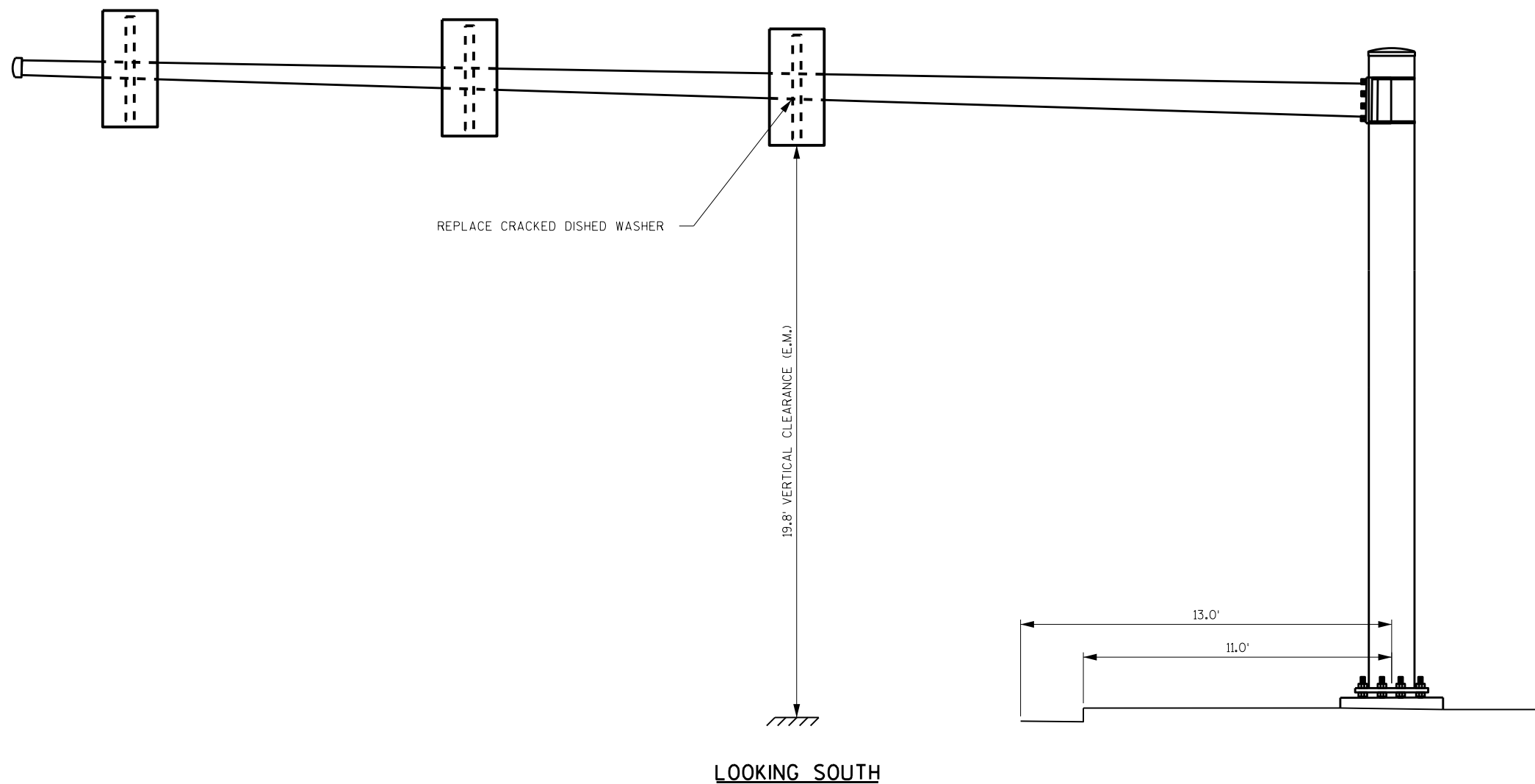


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ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.17	SECURE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-30-1133		SHEET 10	



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

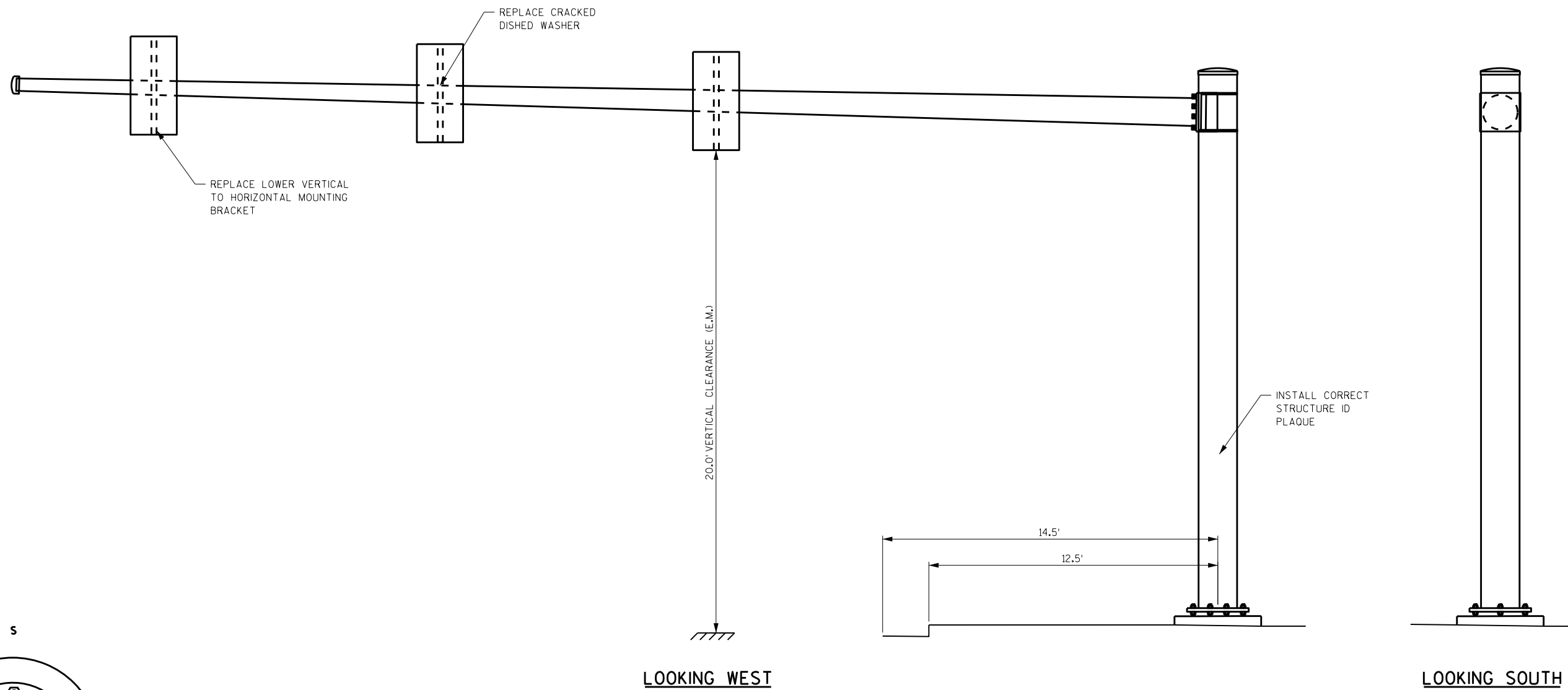
DRAWN BY: DDS PLANS CK'D. SAD

SIGNAL STRUCTURE S-40-1111

SHEET 11

8

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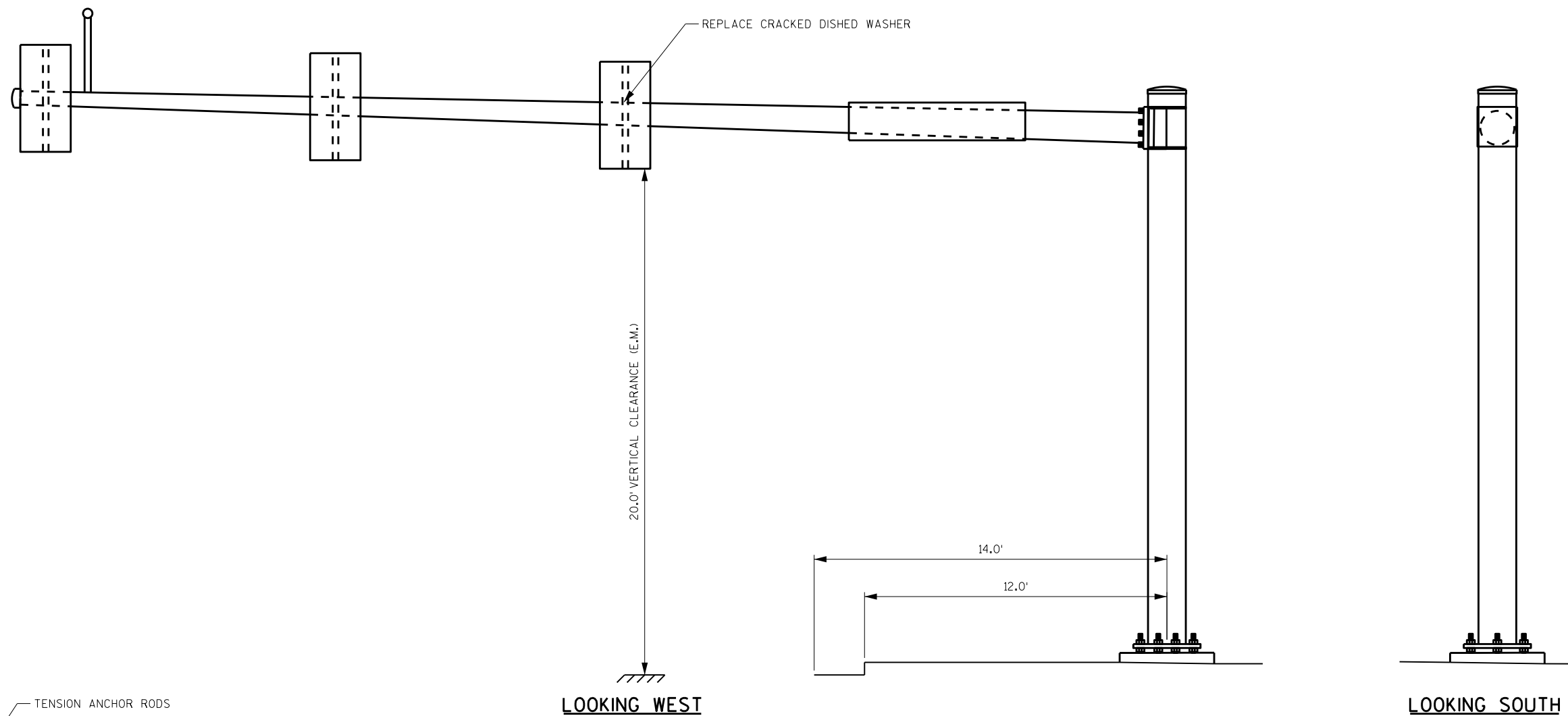


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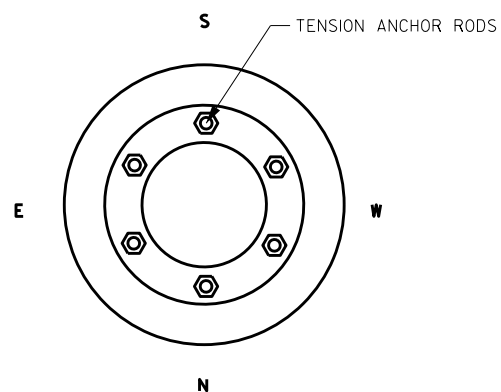
ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4
SPV.0060.14	REPLACE VERTICAL TO HORIZONTAL SIGNAL CONNECTION BRACKET	1	EACH	4
SPV.0060.20	INSTALL ID PLAQUE	1	EACH	—

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1116			SHEET 12



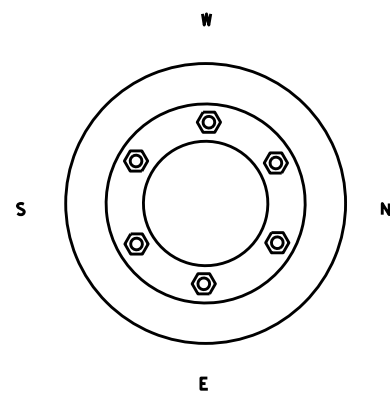
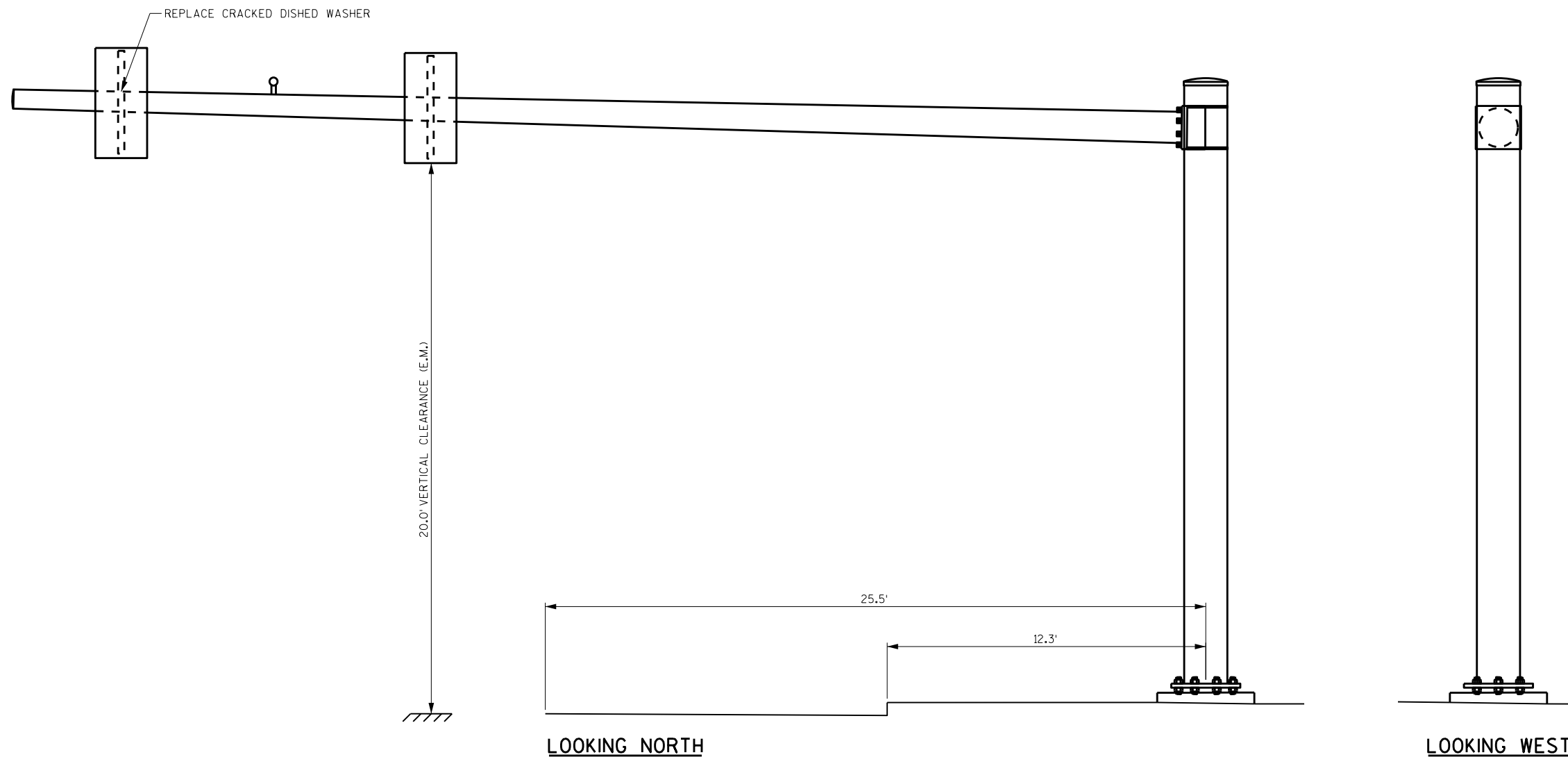
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ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	6	EACH	2
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1124			SHEET 13



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

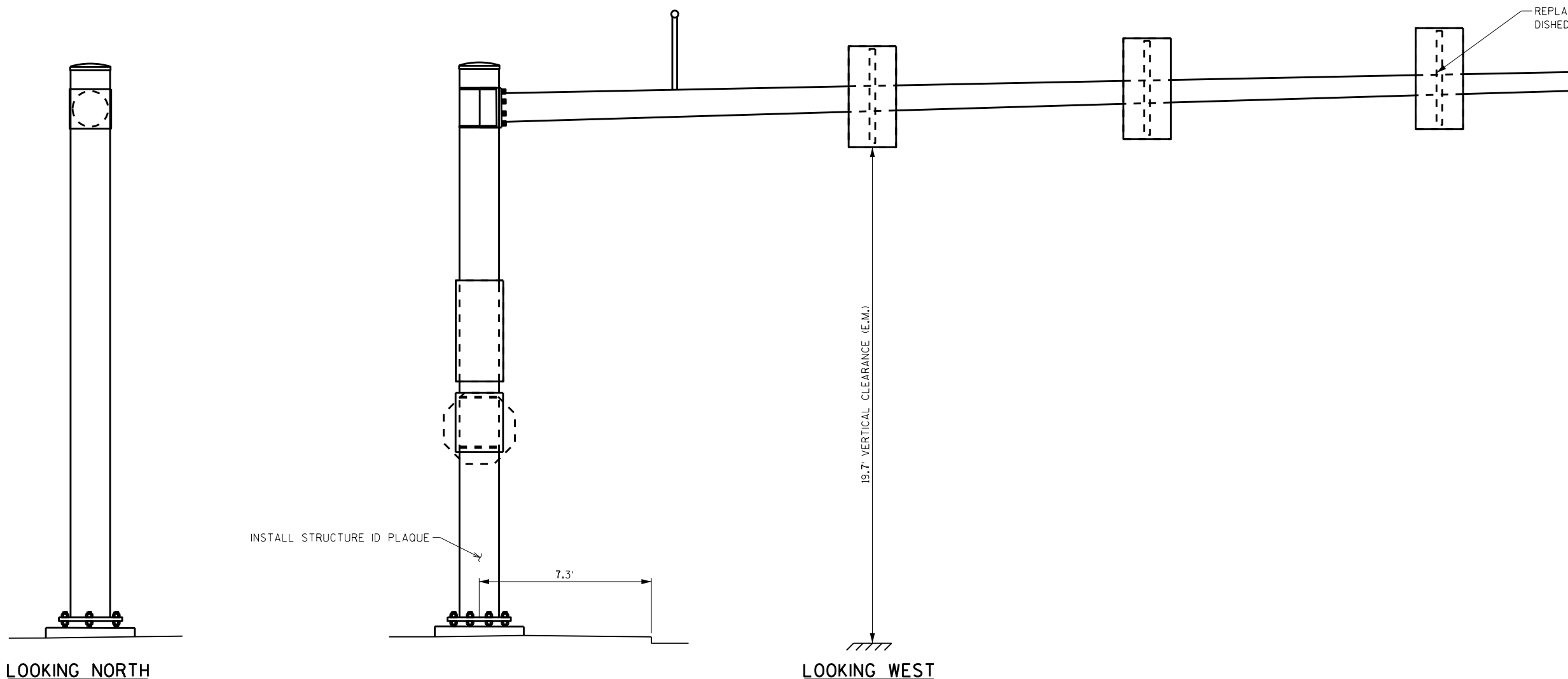
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SIGNAL STRUCTURE S-40-1141

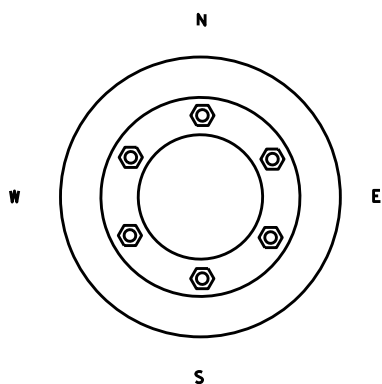
SHEET 14

8

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LOOKING NORTH



LOOKING WEST

INSTALL STRUCTURE ID PLAQUE

7.3'

19.7' VERTICAL CLEARANCE (E.M.)

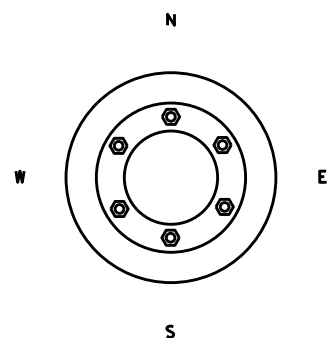
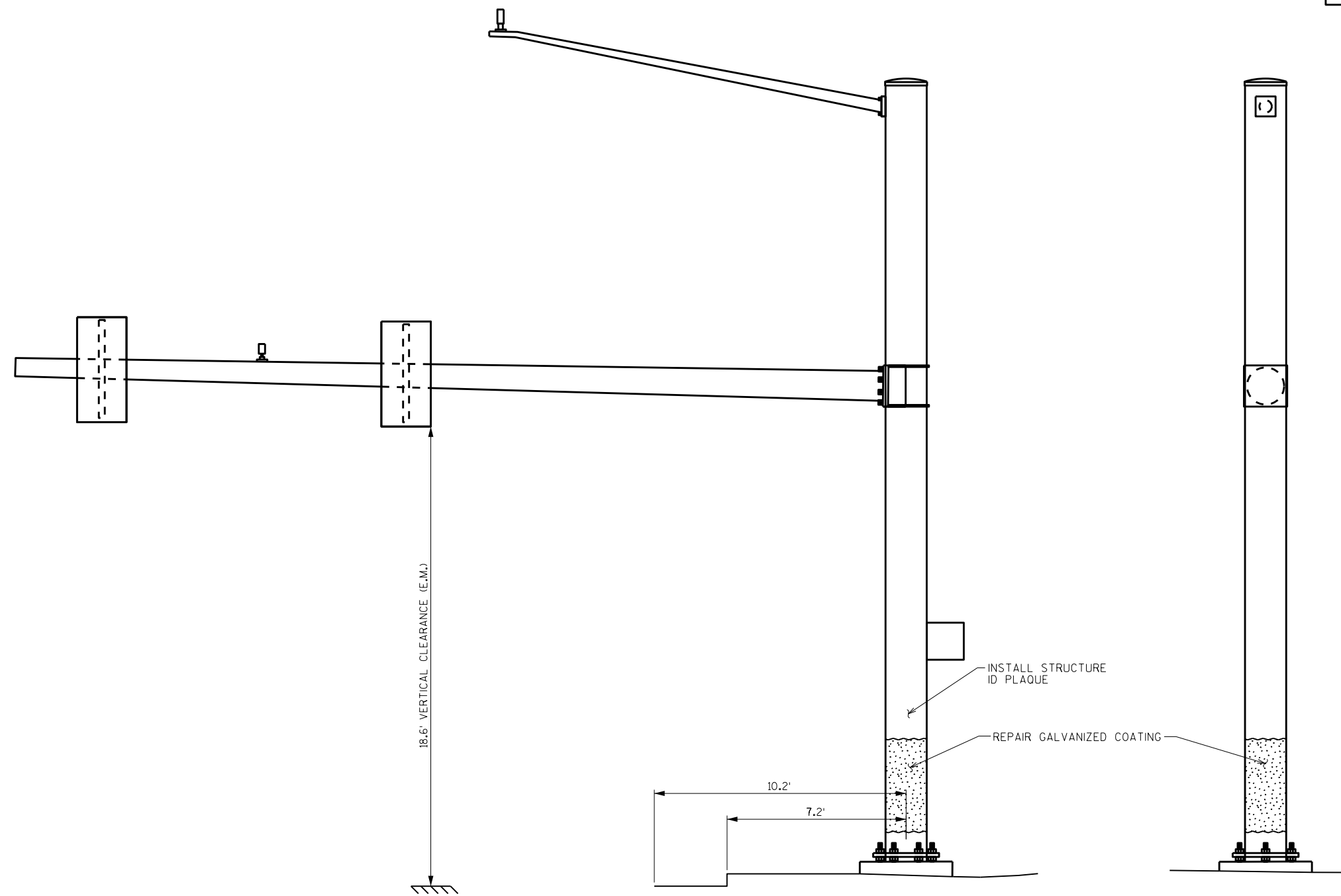
REPLACE CRACKED DISHED WASHERS

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY: DDS			PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1222			SHEET 15

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4
SPV.0060.20	INSTALL ID PLAQUE	1	EACH	—



LOOKING EAST

LOOKING NORTH

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0165.01	REPAIR GALVANIZED COATING	4	SF	---
SPV.0060.20	INSTALL ID PLAQUE	1	EACH	---

NO.	DATE	REVISION	BY

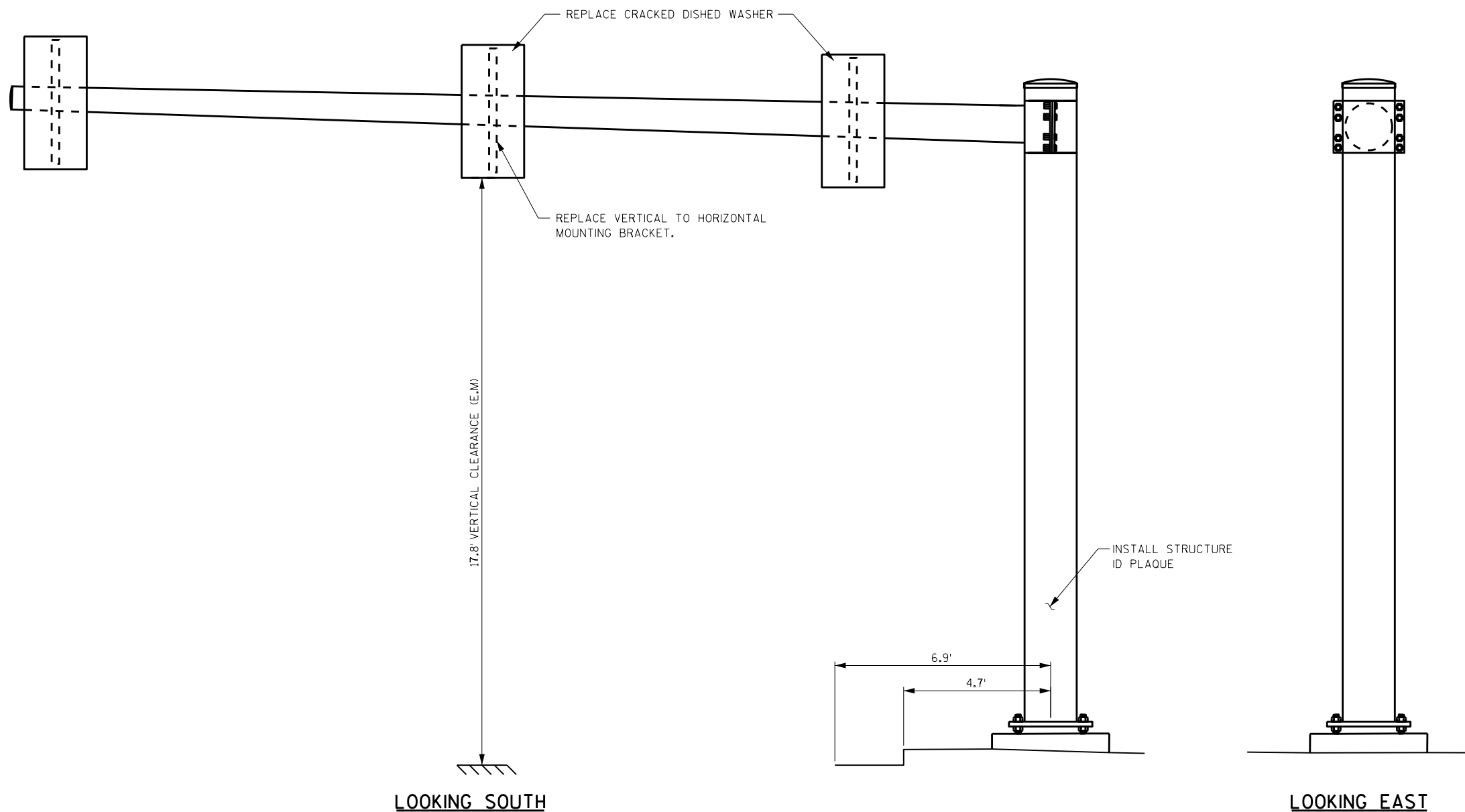
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY	DDS	PLANS CK'D.	SAD
SIGNAL STRUCTURE S-40-1248			SHEET 16

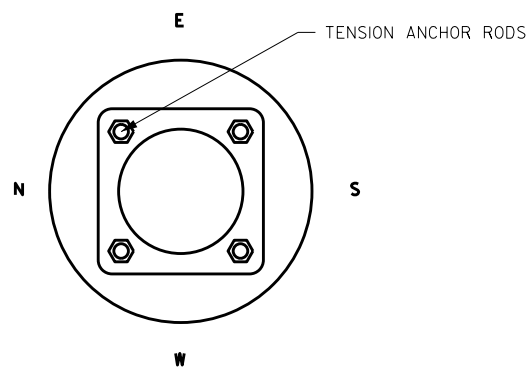
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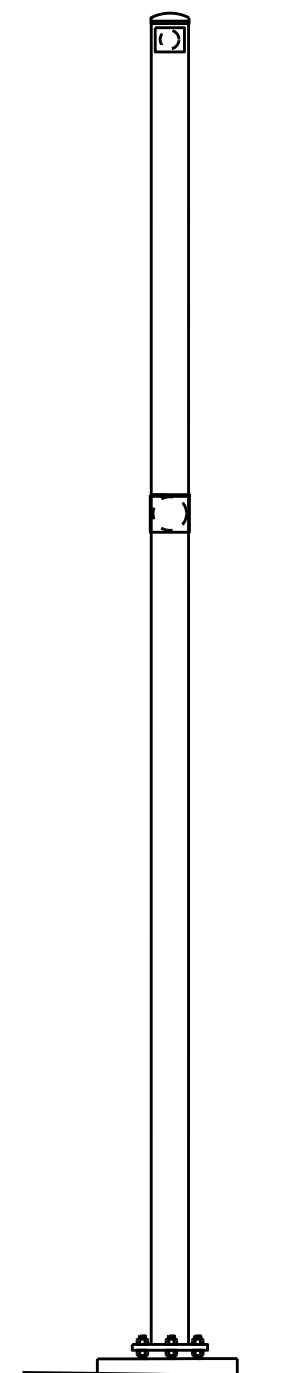
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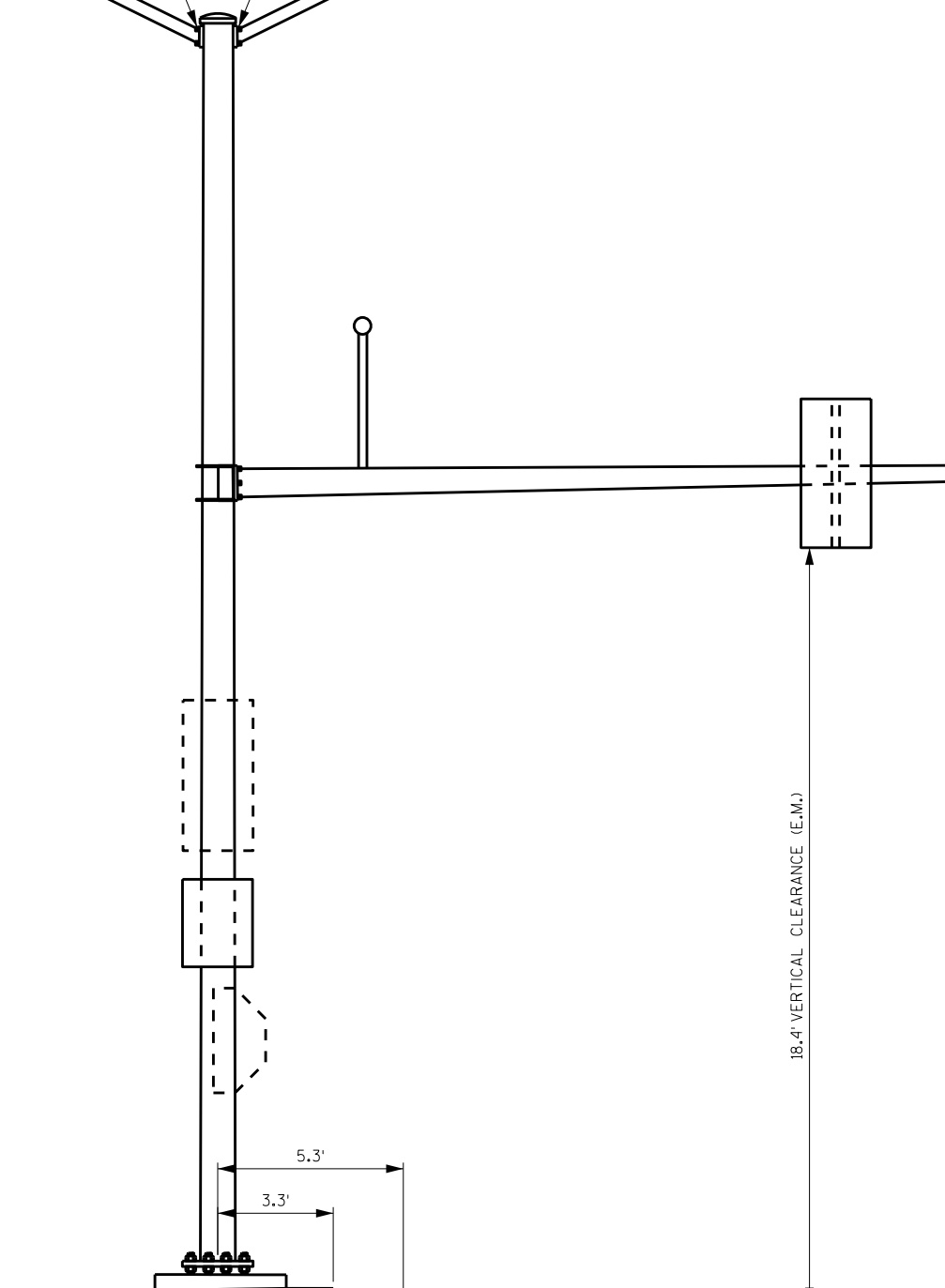
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SPV.0060.01	TENSION ANCHOR RODS	4	EACH	2
SPV.0060.13	REPLACE DISHED WASHER	2	EACH	4
SPV.0060.14	REPLACE VERTICAL TO HORIZONTAL SIGNAL CONNECTION BRACKET	1	EACH	4
SPV.0060.20	INSTALL ID PLAQUE	1	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1288		SHEET 17	

REPLACE LUMINAIRE
ARM CONNECTION
BOLTS



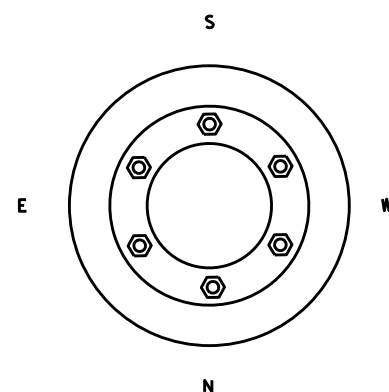
LOOKING SOUTH



LOOKING EAST

18.4' VERTICAL CLEARANCE (E.M.)

8



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ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.08	REPLACE LUMINAIRE ARM CONNECTION BOLTS	8	EACH	3

NO.	DATE	REVISION	BY

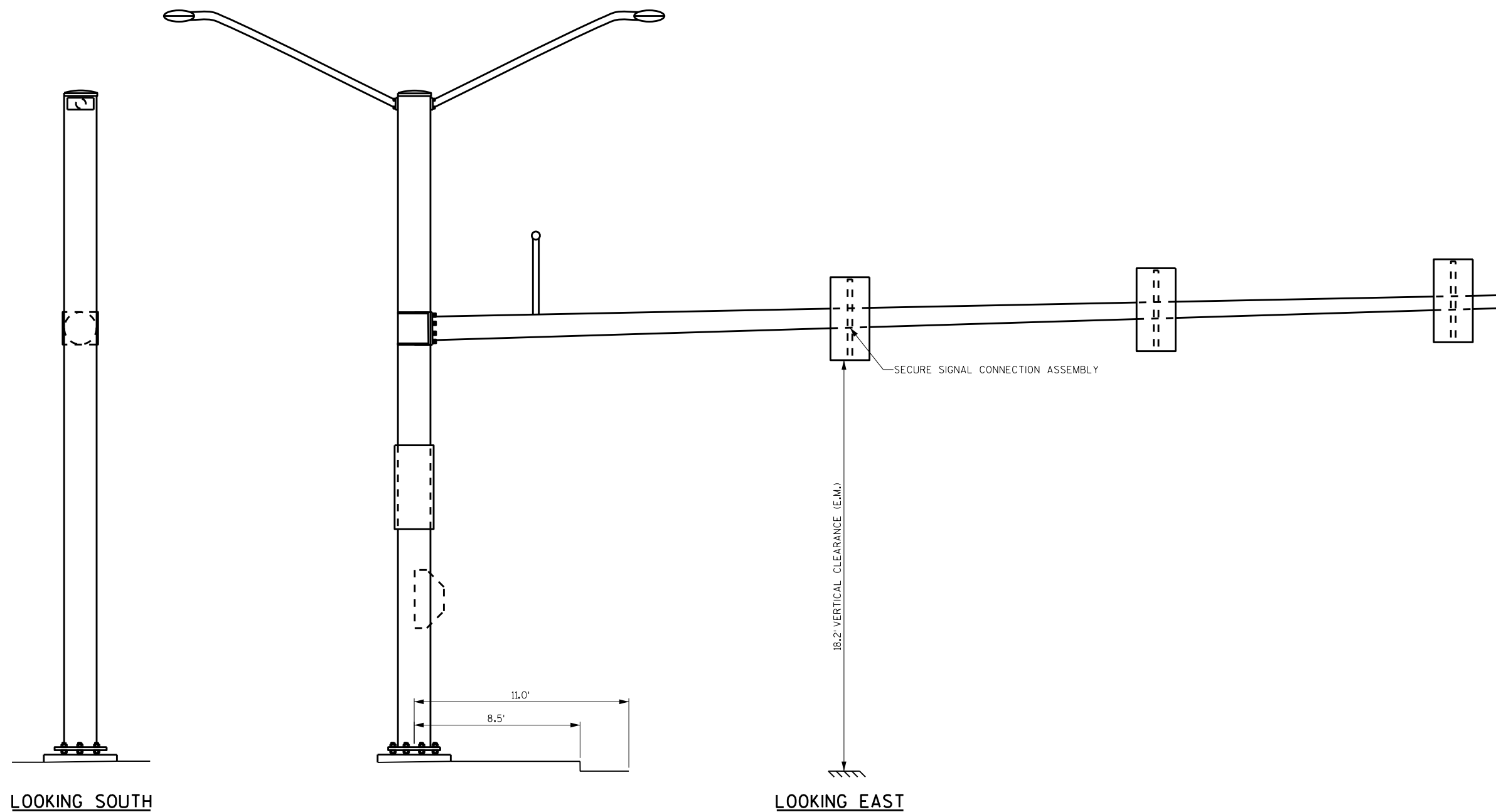
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY	DDS	PLANS CK'D.	SAD
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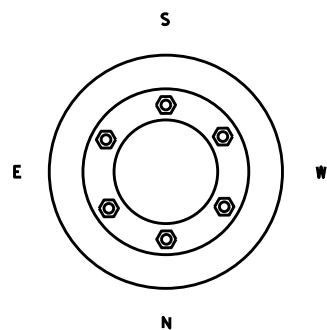
SIGNAL STRUCTURE S-40-1291

SHEET 18



LOOKING SOUTH

LOOKING EAST



8

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ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.17	SECURE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

NO.	DATE	REVISION	BY

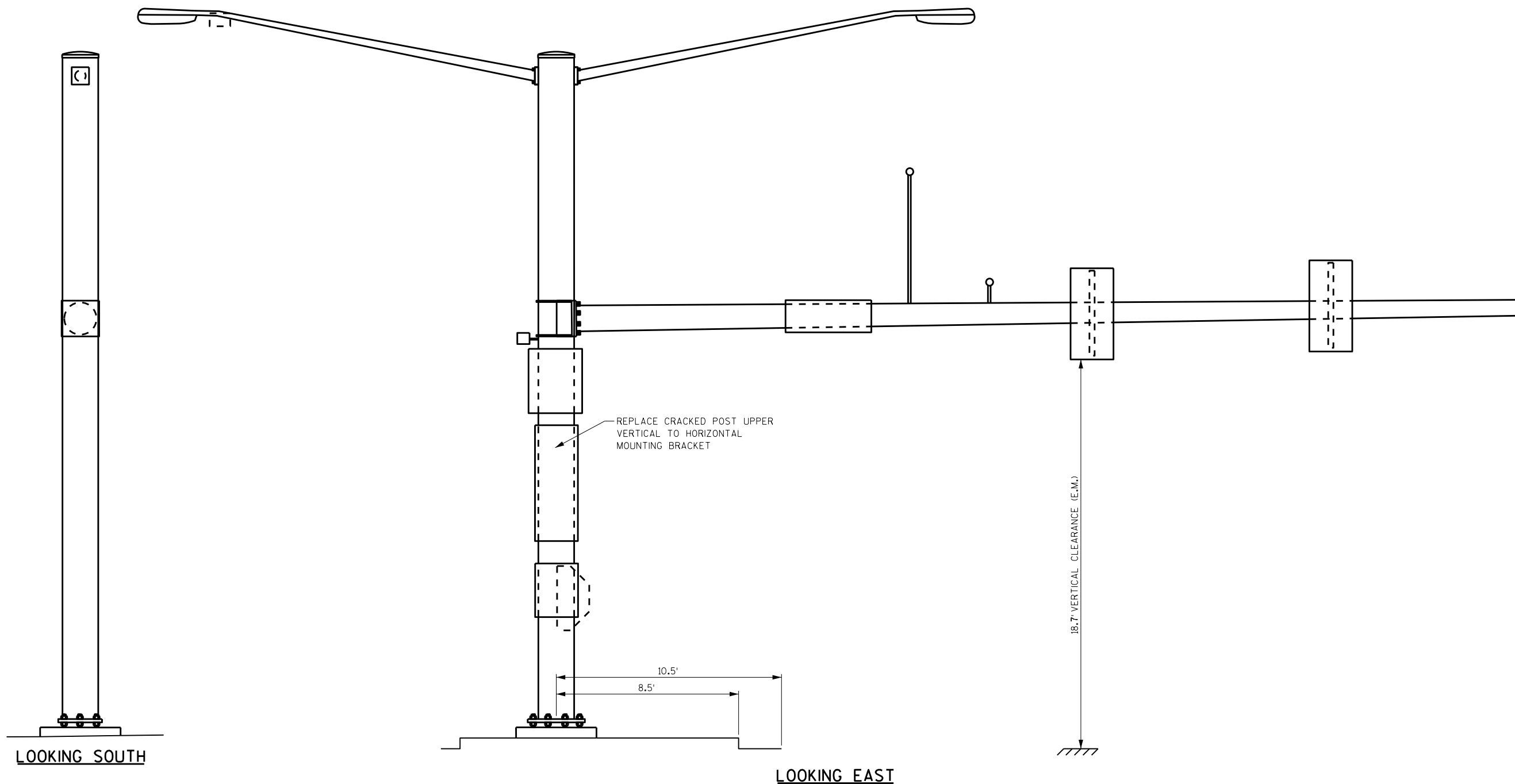
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. SAD

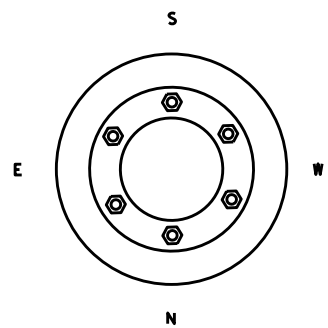
SIGNAL STRUCTURE S-40-1296

SHEET 19



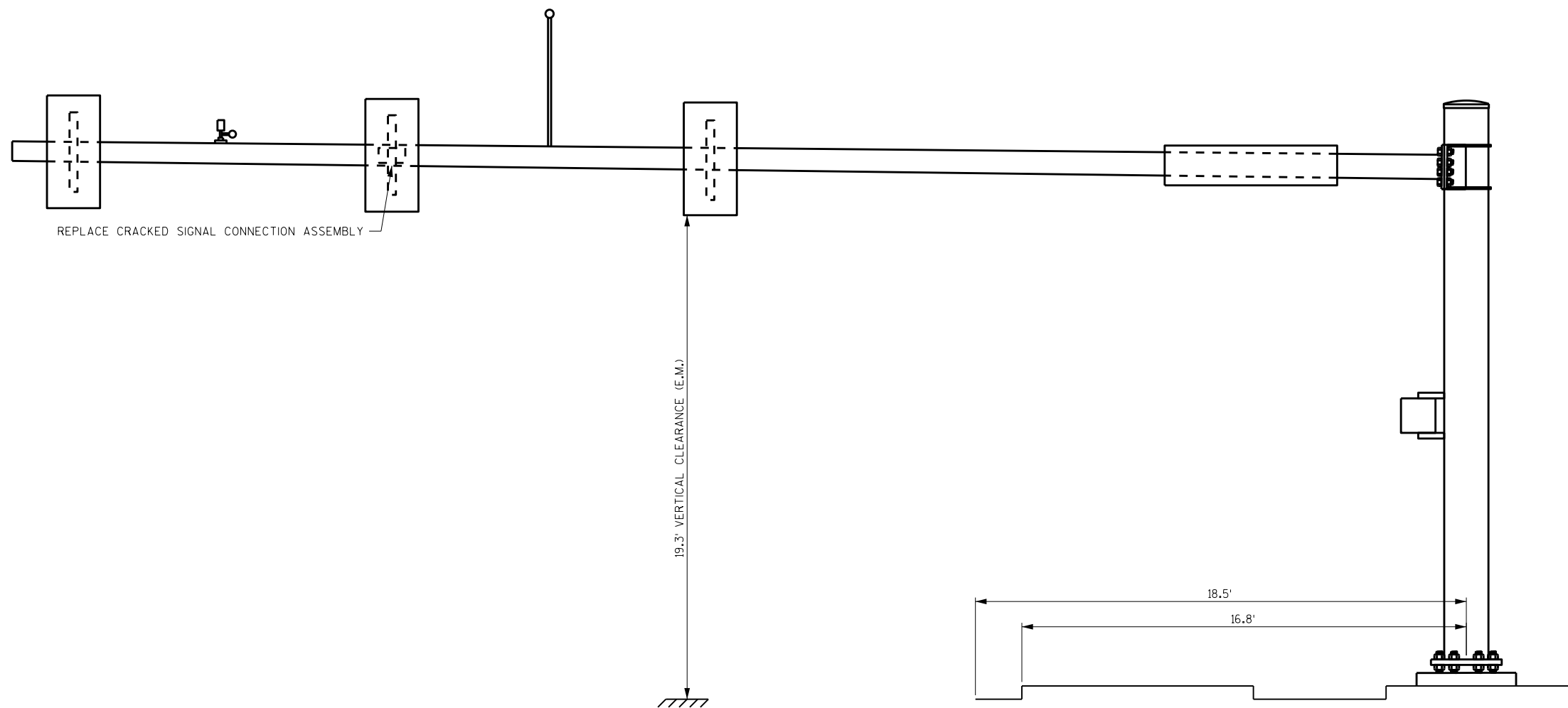
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1297			SHEET 20

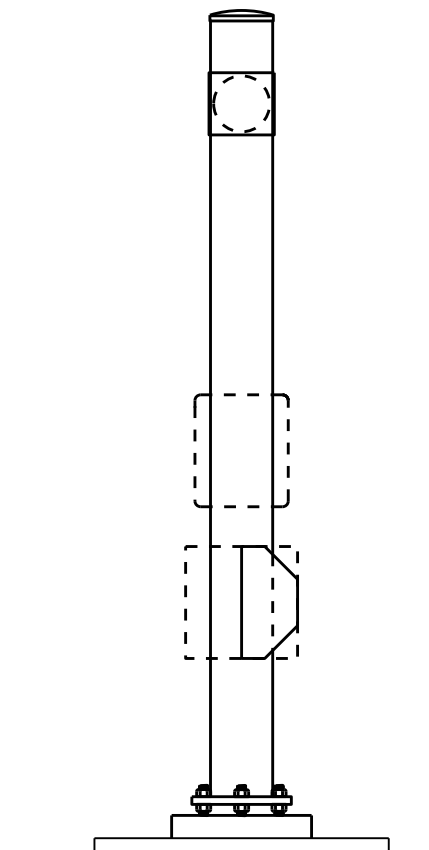
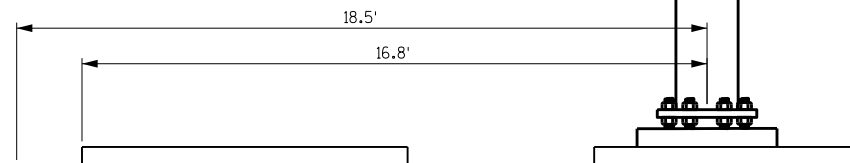
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SPV.0060.15	REPLACE POST MOUNTED SIGNAL CONNECTION ASSEMBLY	1	EACH	4



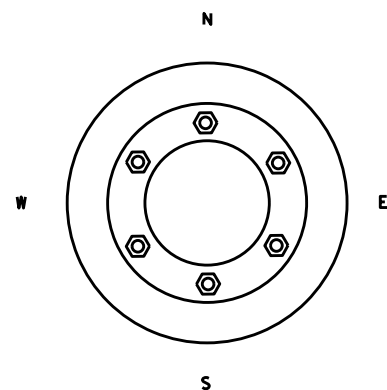
REPLACE CRACKED SIGNAL CONNECTION ASSEMBLY

19.3' VERTICAL CLEARANCE (E.M.)

LOOKING EAST



LOOKING NORTH



8

8

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.12	REPLACE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

NO.	DATE	REVISION	BY

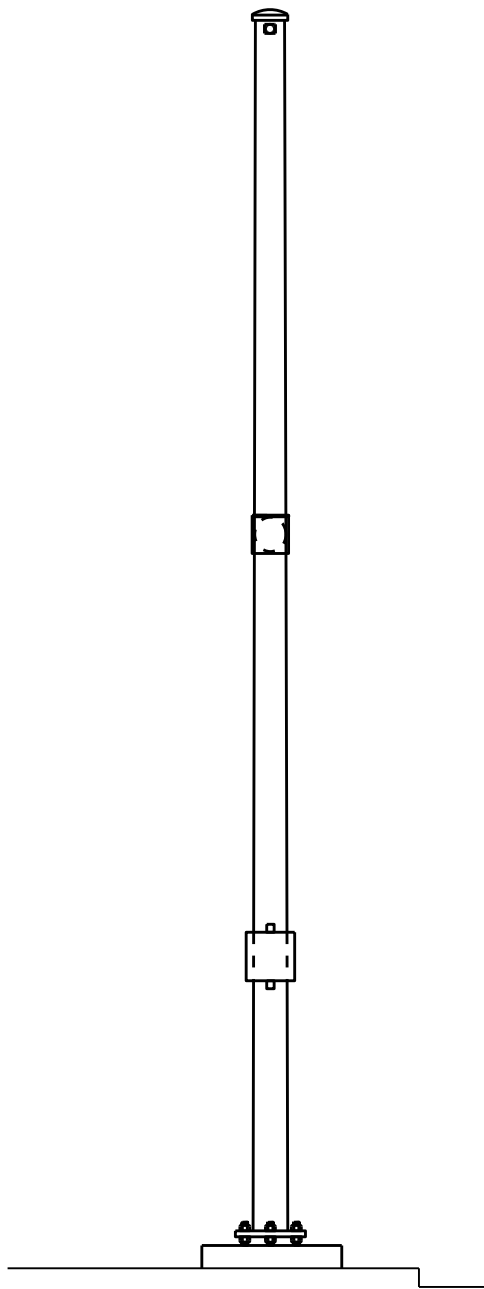
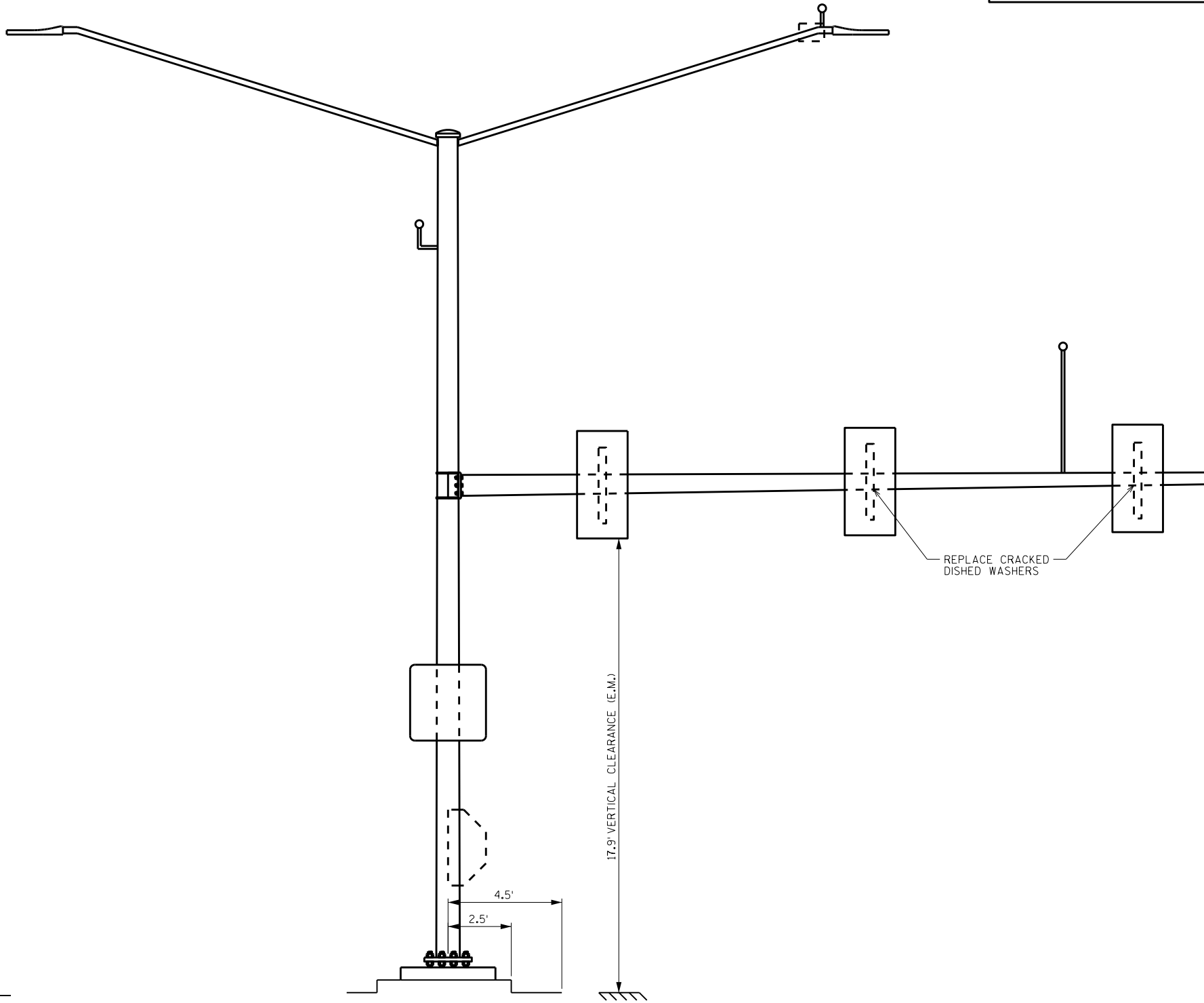
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

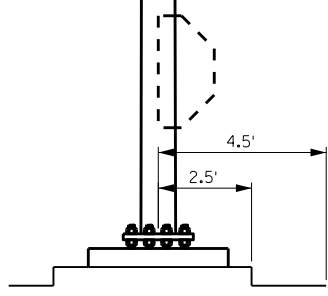
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SIGNAL STRUCTURE S-40-1311

SHEET 21

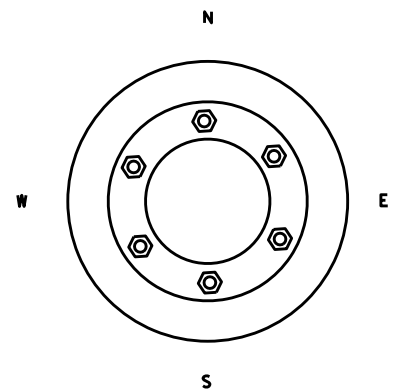


LOOKING NORTH



LOOKING WEST

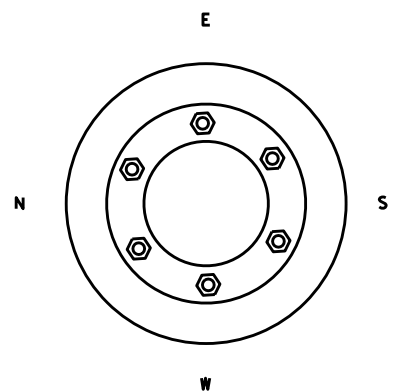
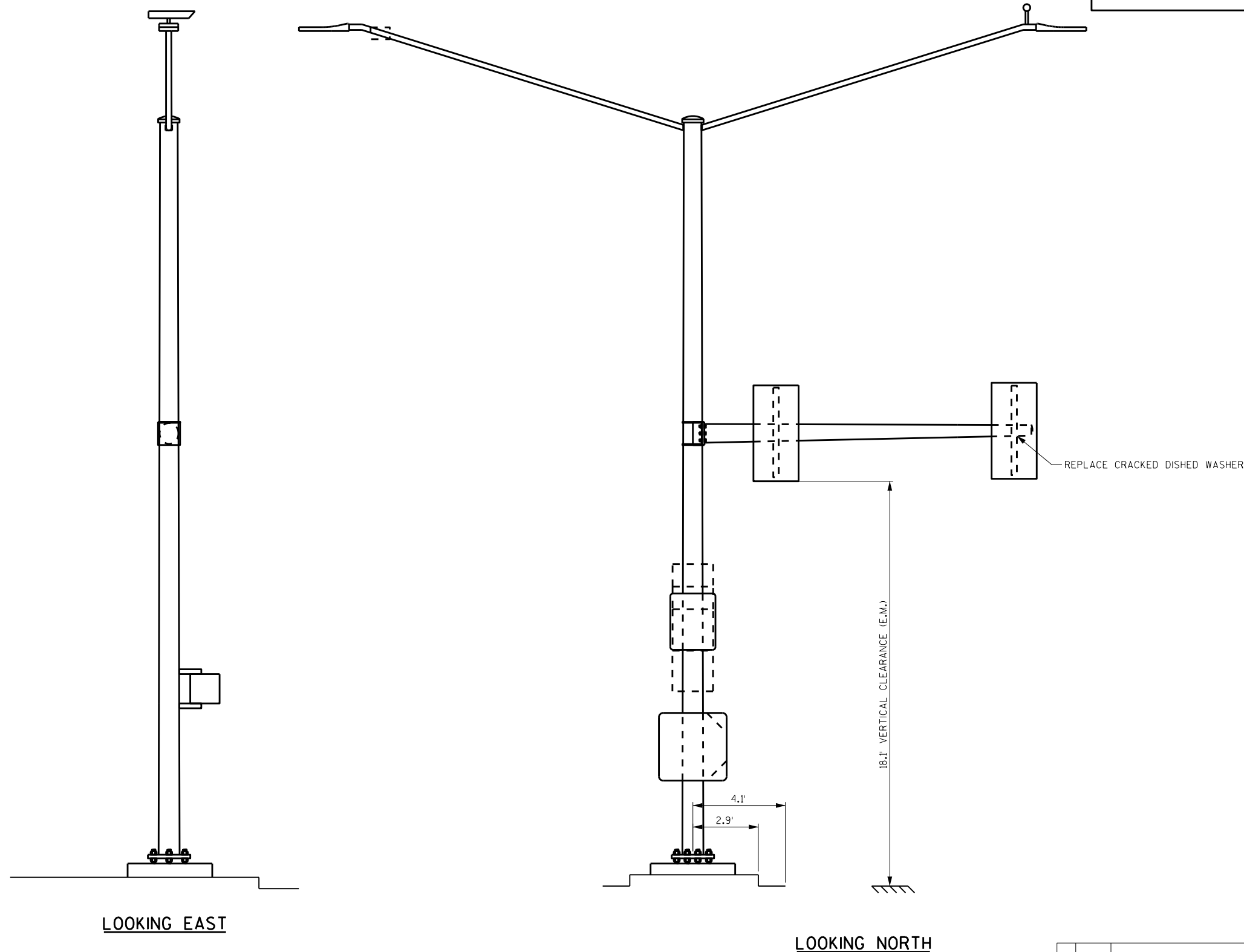
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ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	2	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
		DRAWN BY DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1314			SHEET 22



LOOKING EAST

LOOKING NORTH

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

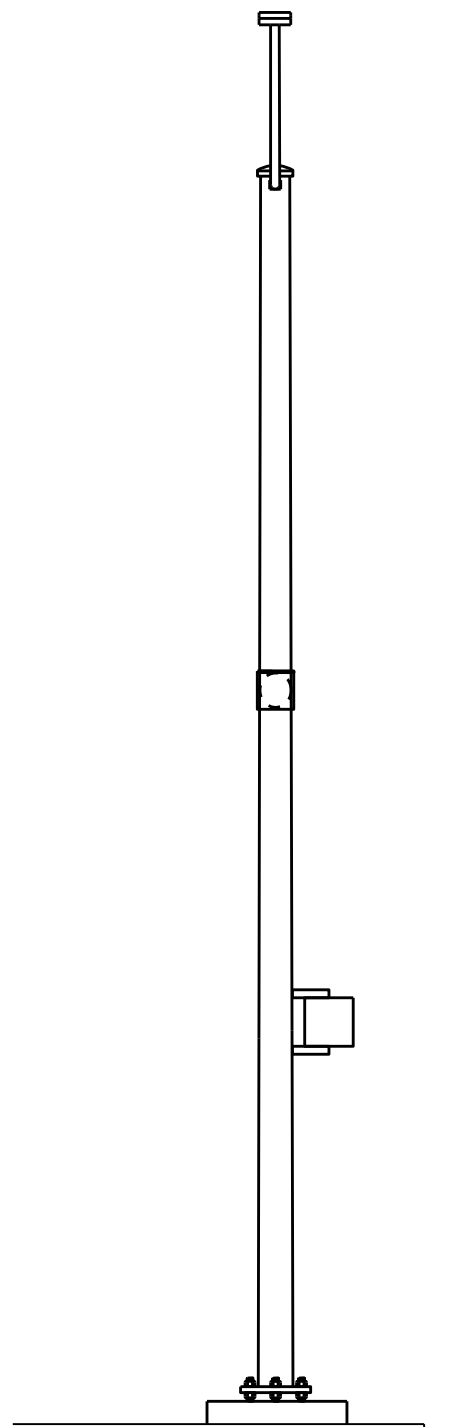
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SIGNAL STRUCTURE S-40-1316

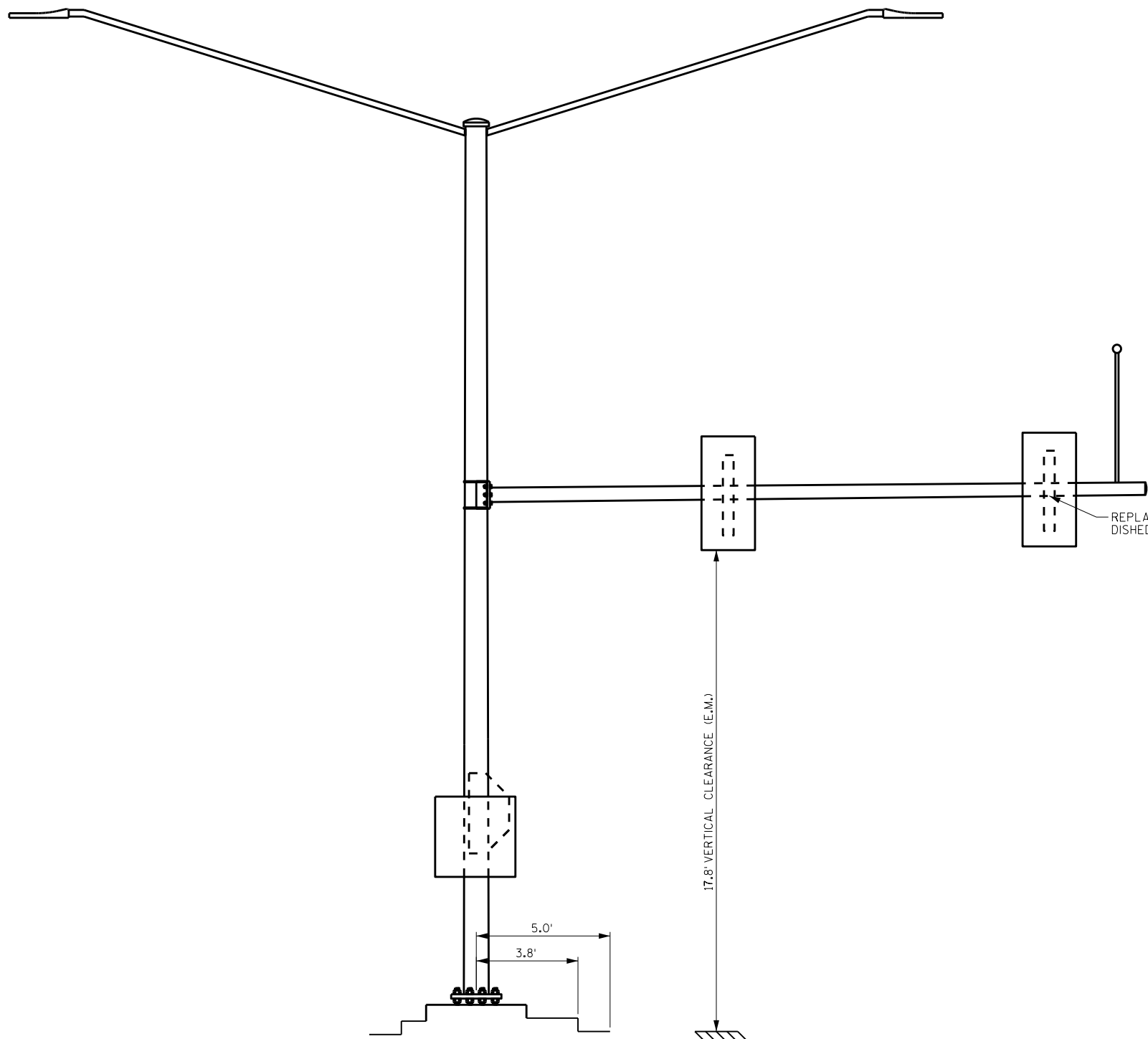
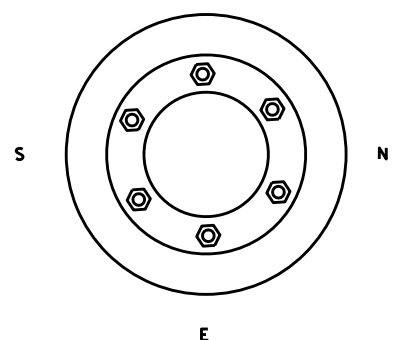
SHEET 23

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W LOOKING WEST



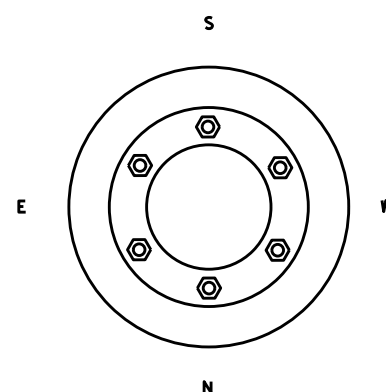
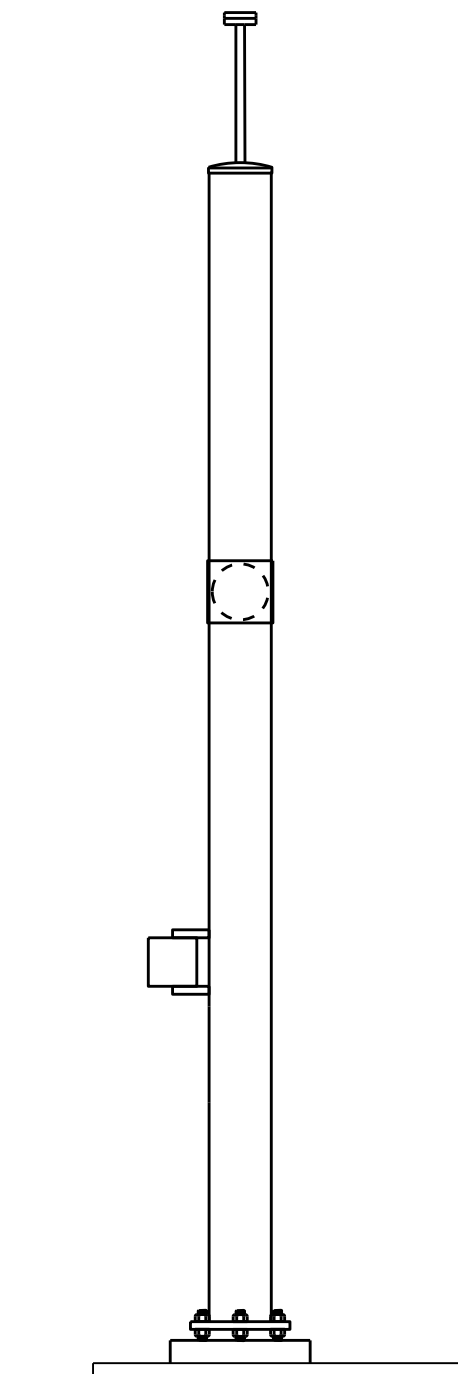
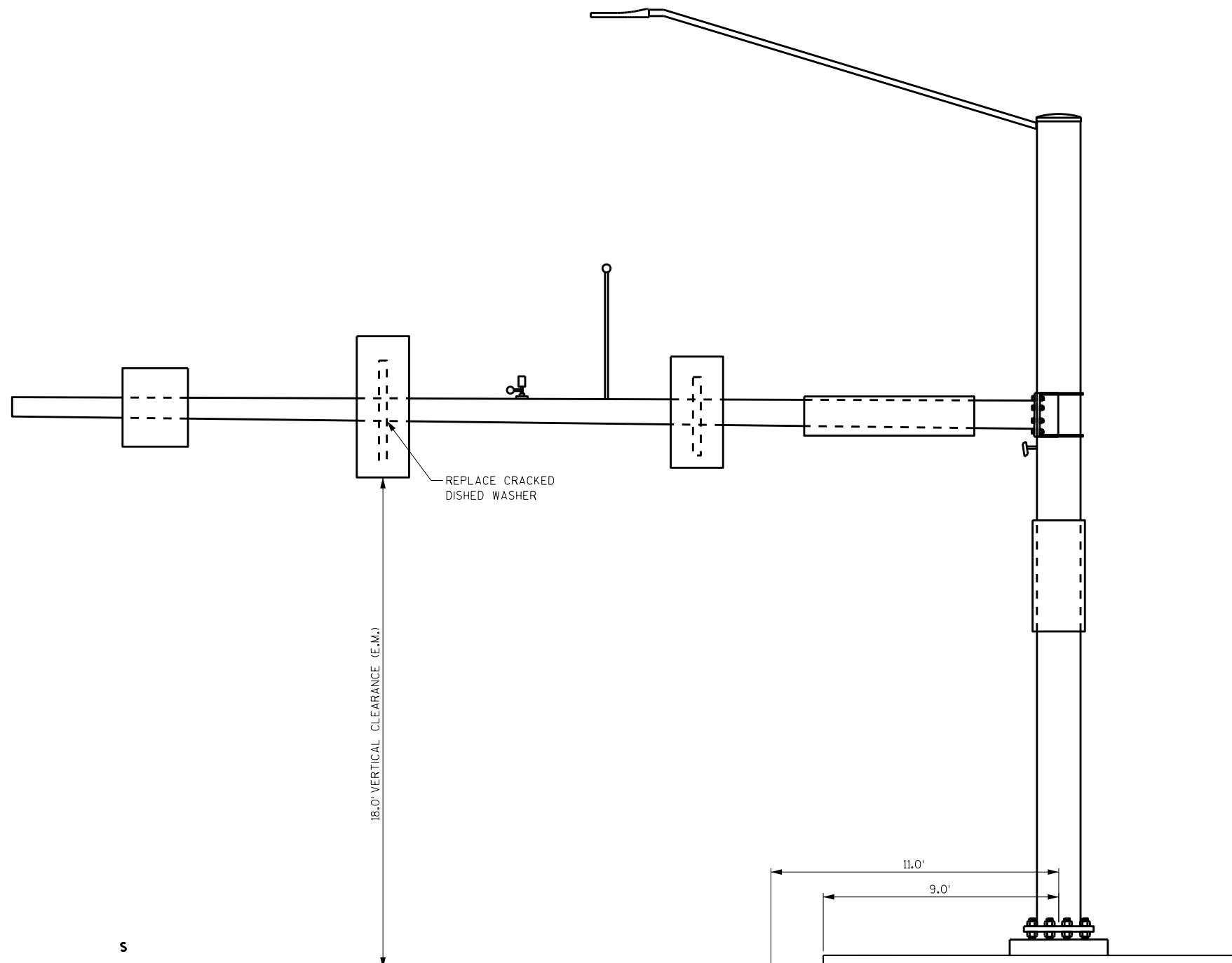
LOOKING SOUTH

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
		DRAWN BY	PLANS CK'D.
		DDS	SAD
SIGNAL STRUCTURE S-40-1319			SHEET 24

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4



LOOKING WEST

LOOKING SOUTH

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

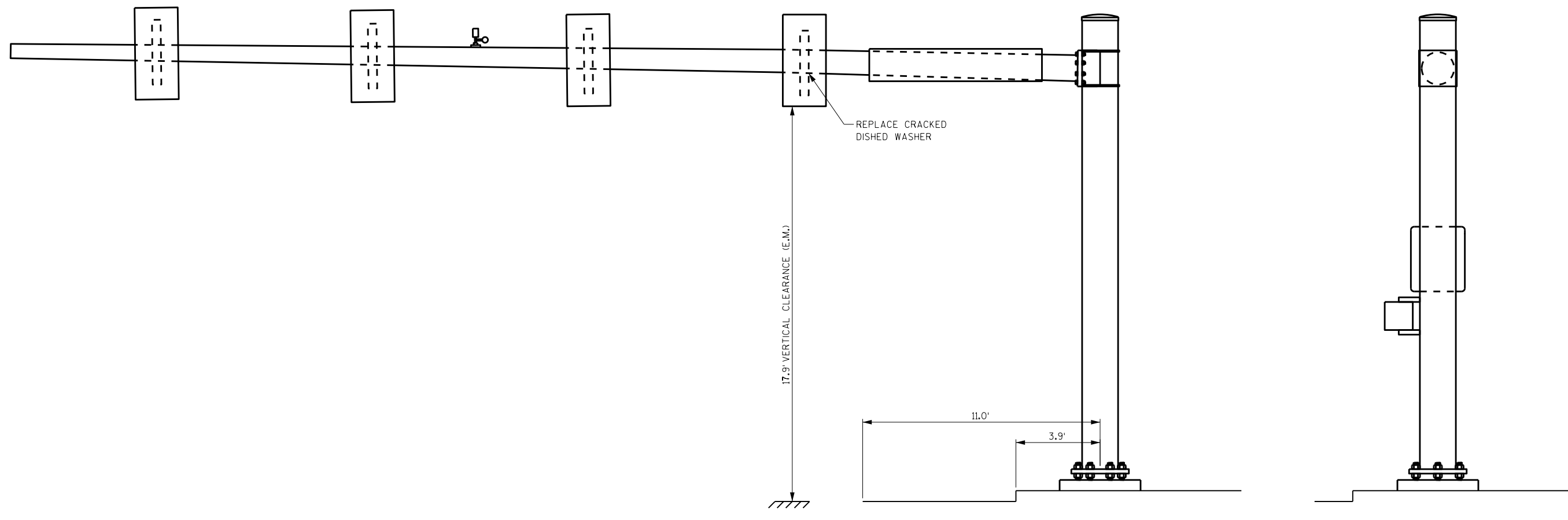
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SIGNAL STRUCTURE S-40-1321

SHEET 25

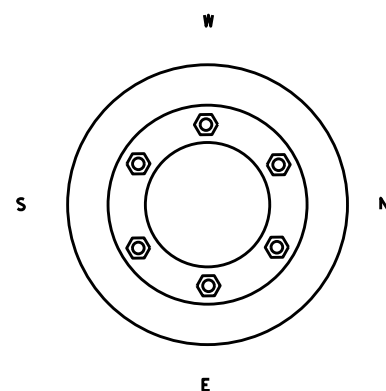
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8



LOOKING NORTH

LOOKING WEST



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

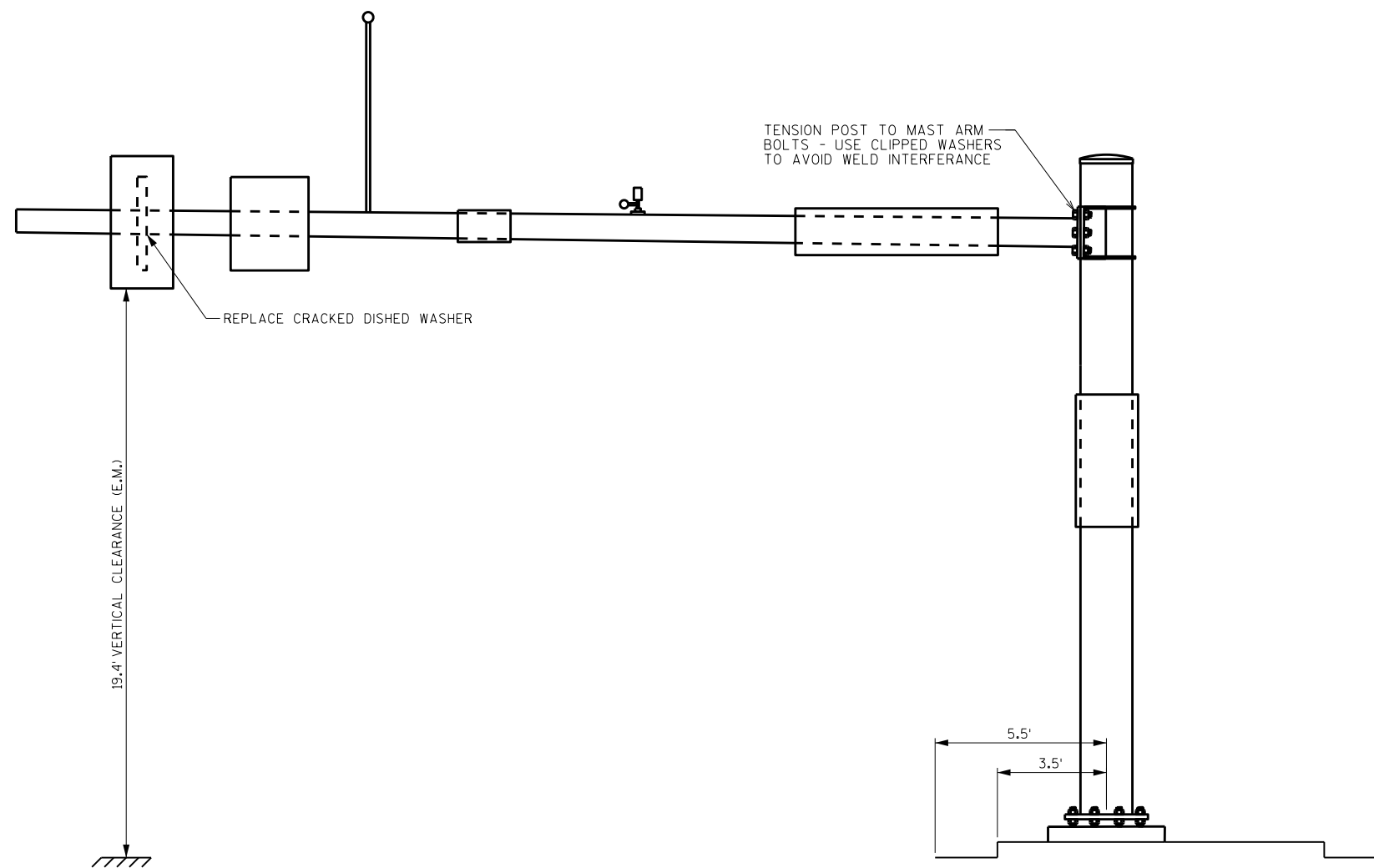
DRAWN BY: DDS PLANS CK'D. **SAD**

SIGNAL STRUCTURE S-40-1323

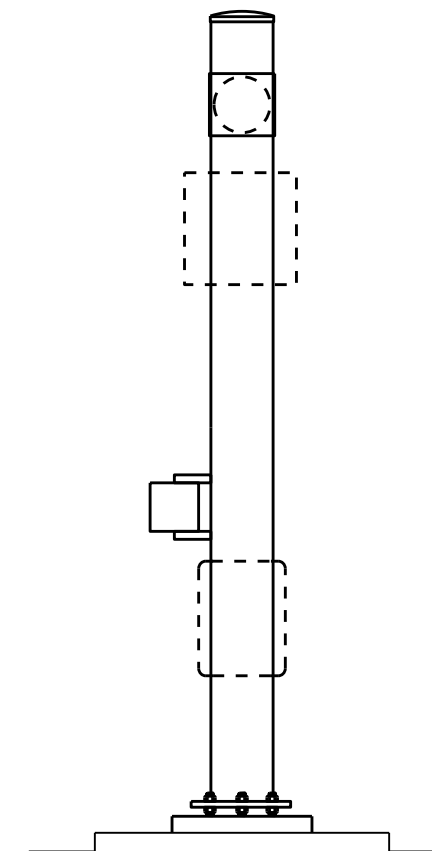
SHEET 26

8

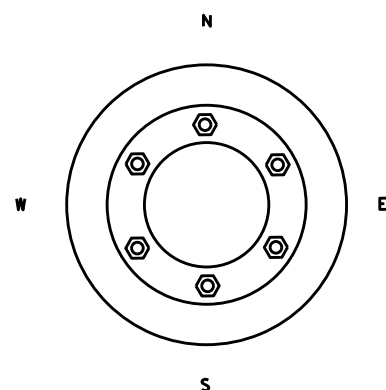
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LOOKING EAST



LOOKING NORTH



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.09	TENSION STRUCTURAL BOLT (FRICTION)	6	EACH	3
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

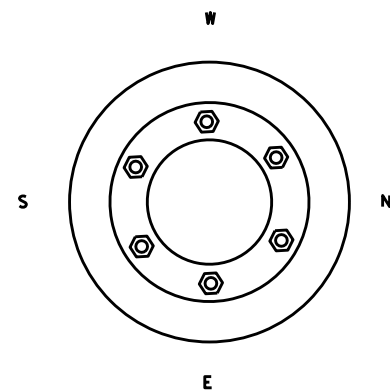
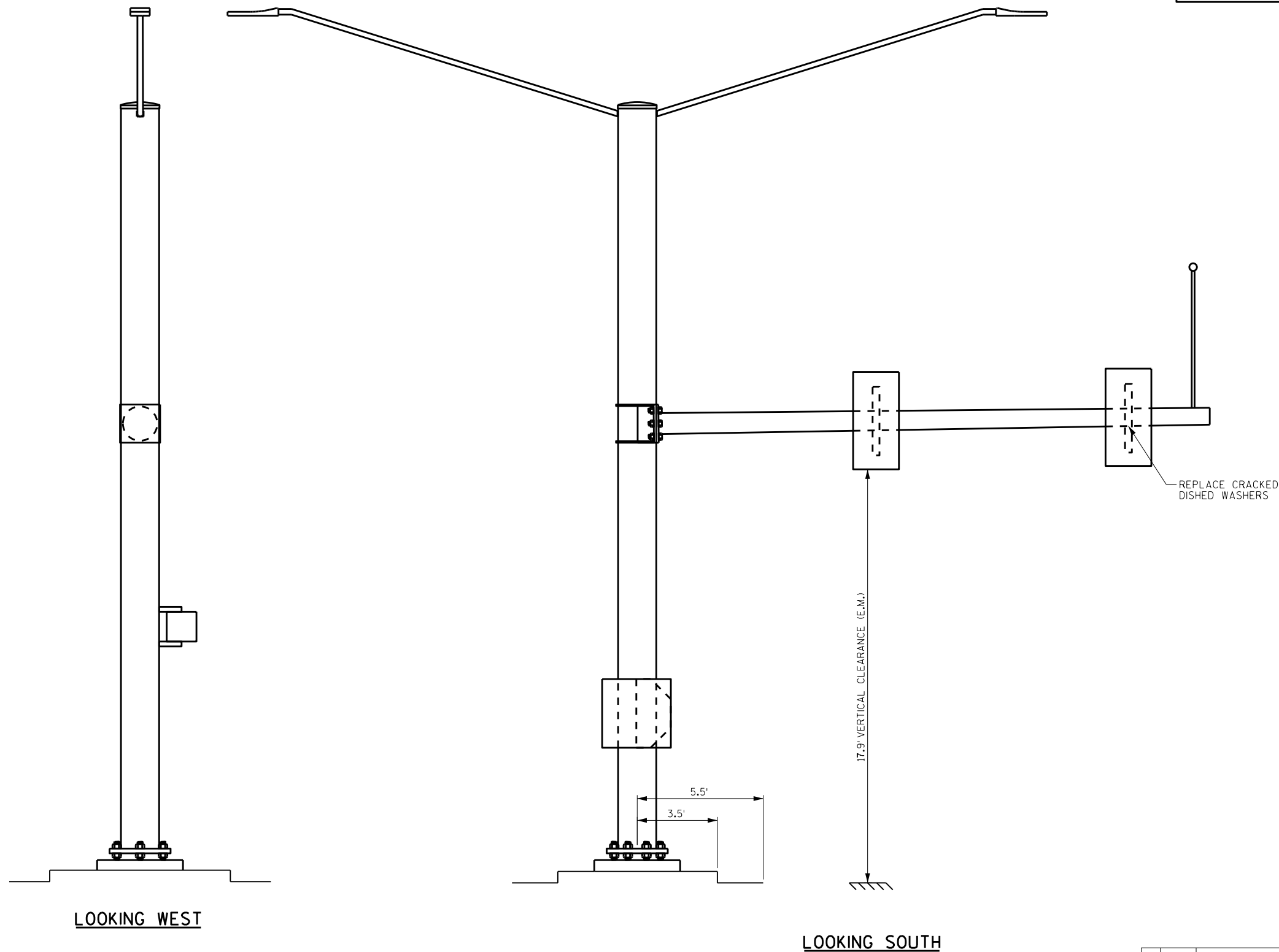
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. **SAD**

SIGNAL STRUCTURE S-40-1326

SHEET 27



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	2	EACH	4

NO.	DATE	REVISION	BY

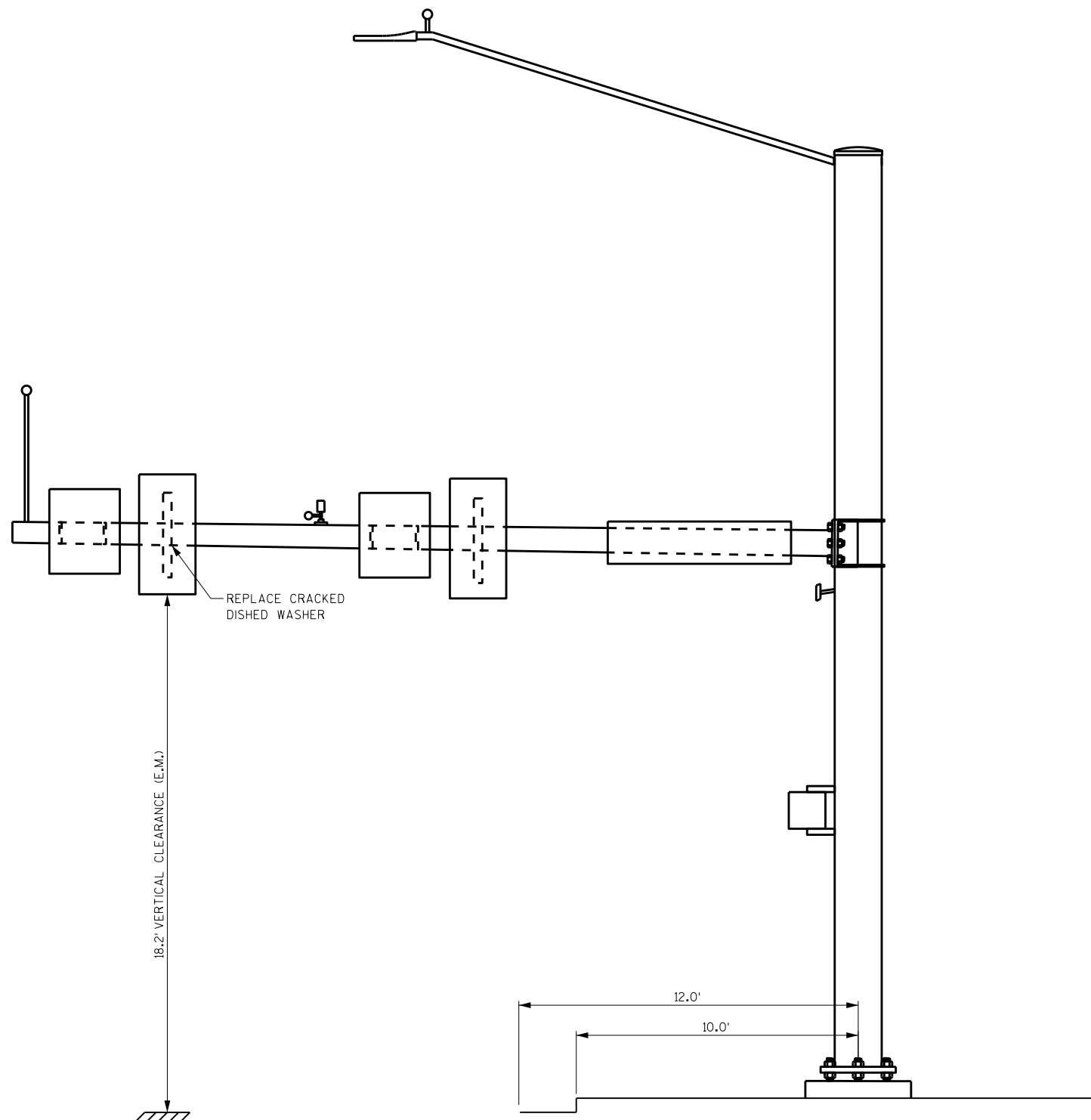
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

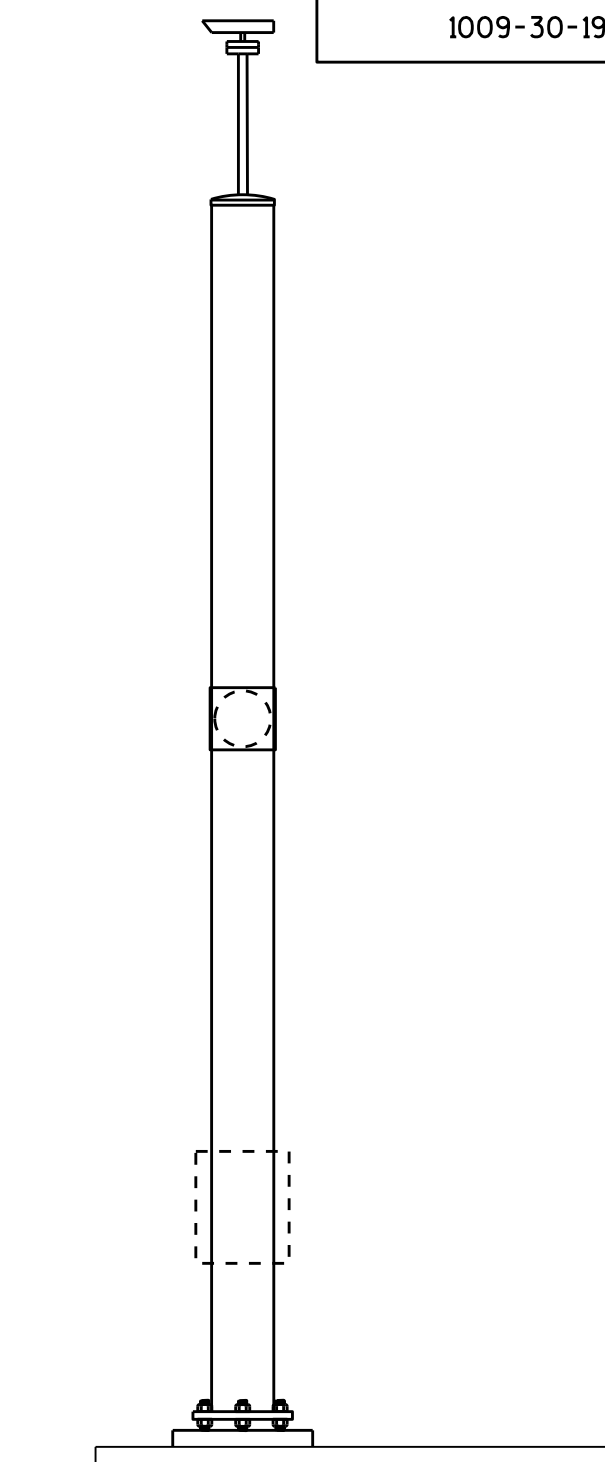
DRAWN BY: DDS PLANS CK'D. **SAD**

SIGNAL STRUCTURE S-40-1327

SHEET 28

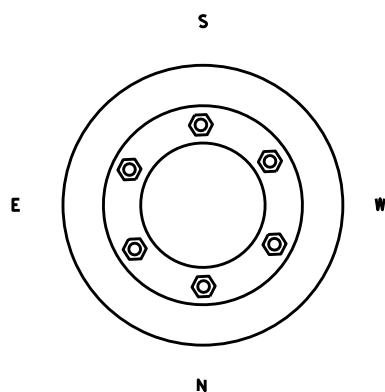


LOOKING WEST



LOOKING SOUTH

8



8

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

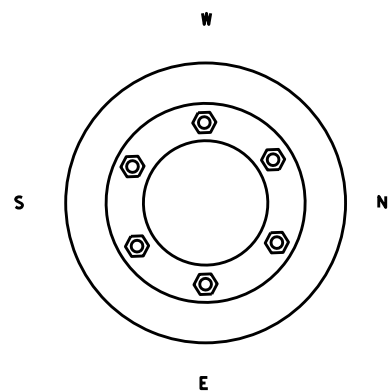
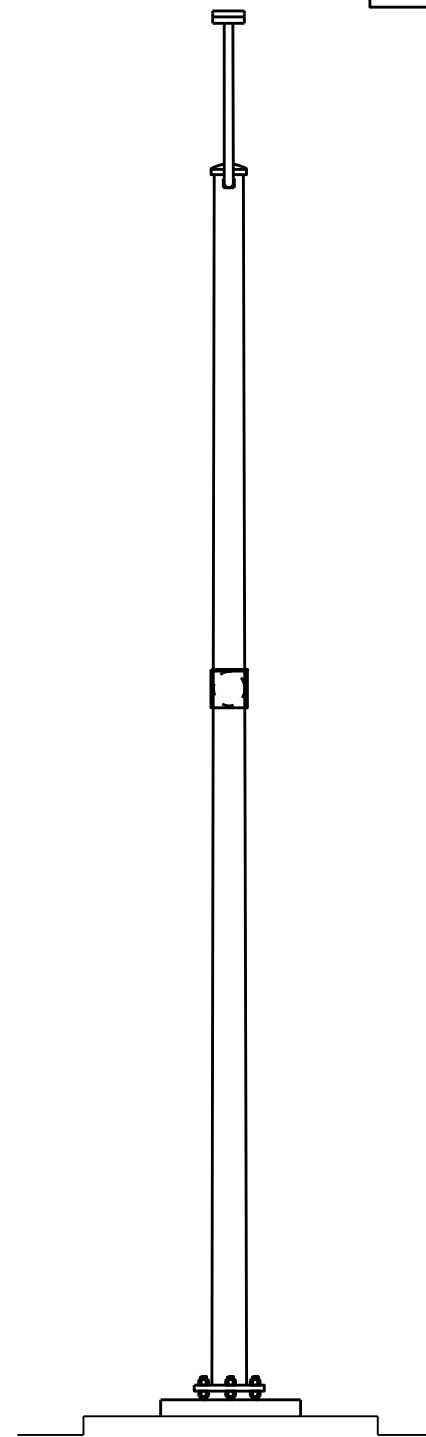
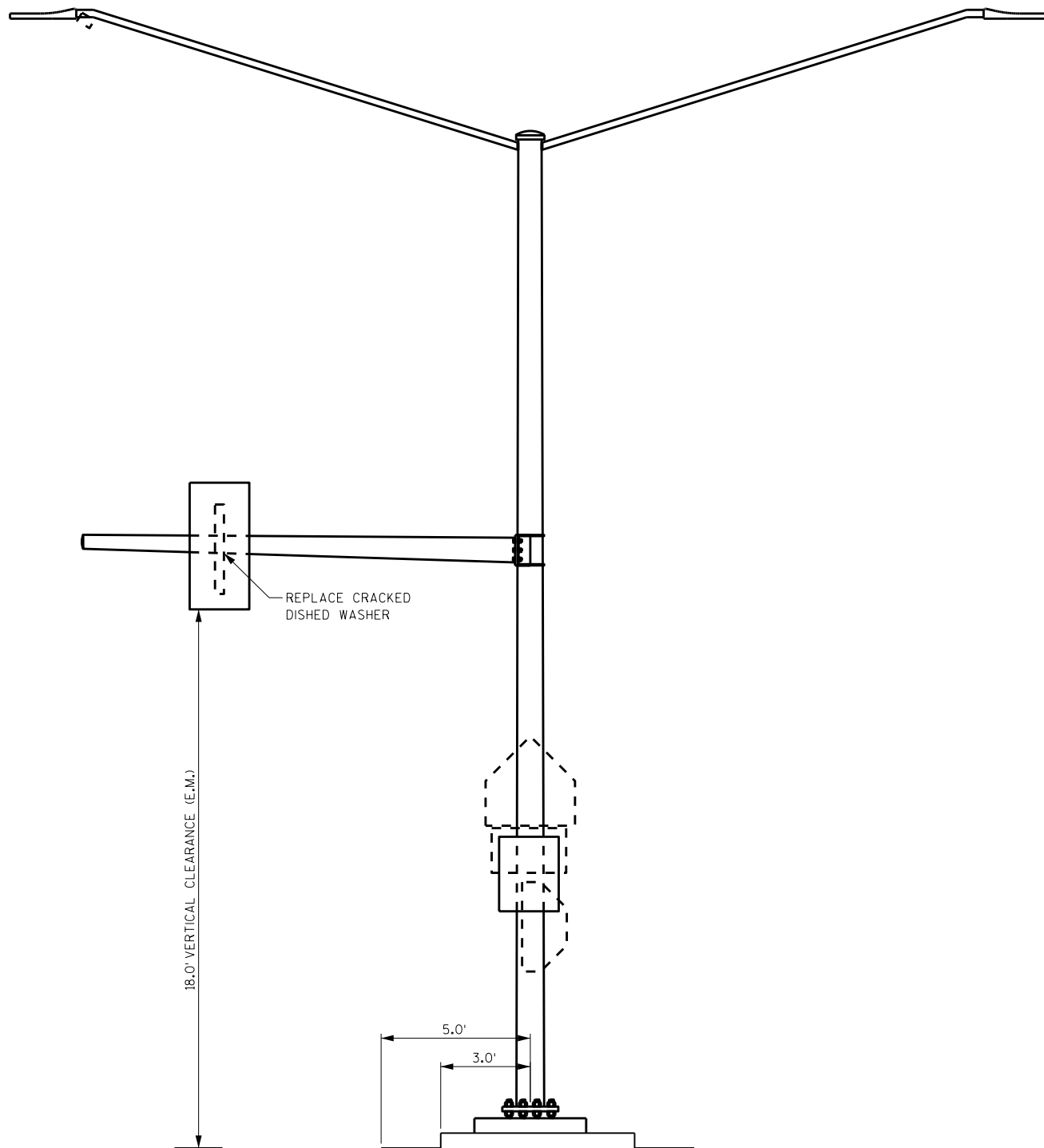
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CKD. **SAD**

SIGNAL STRUCTURE S-40-1329

SHEET 29



LOOKING NORTH

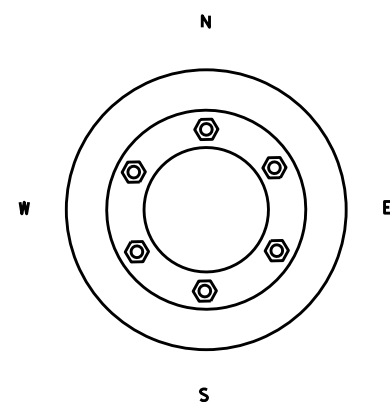
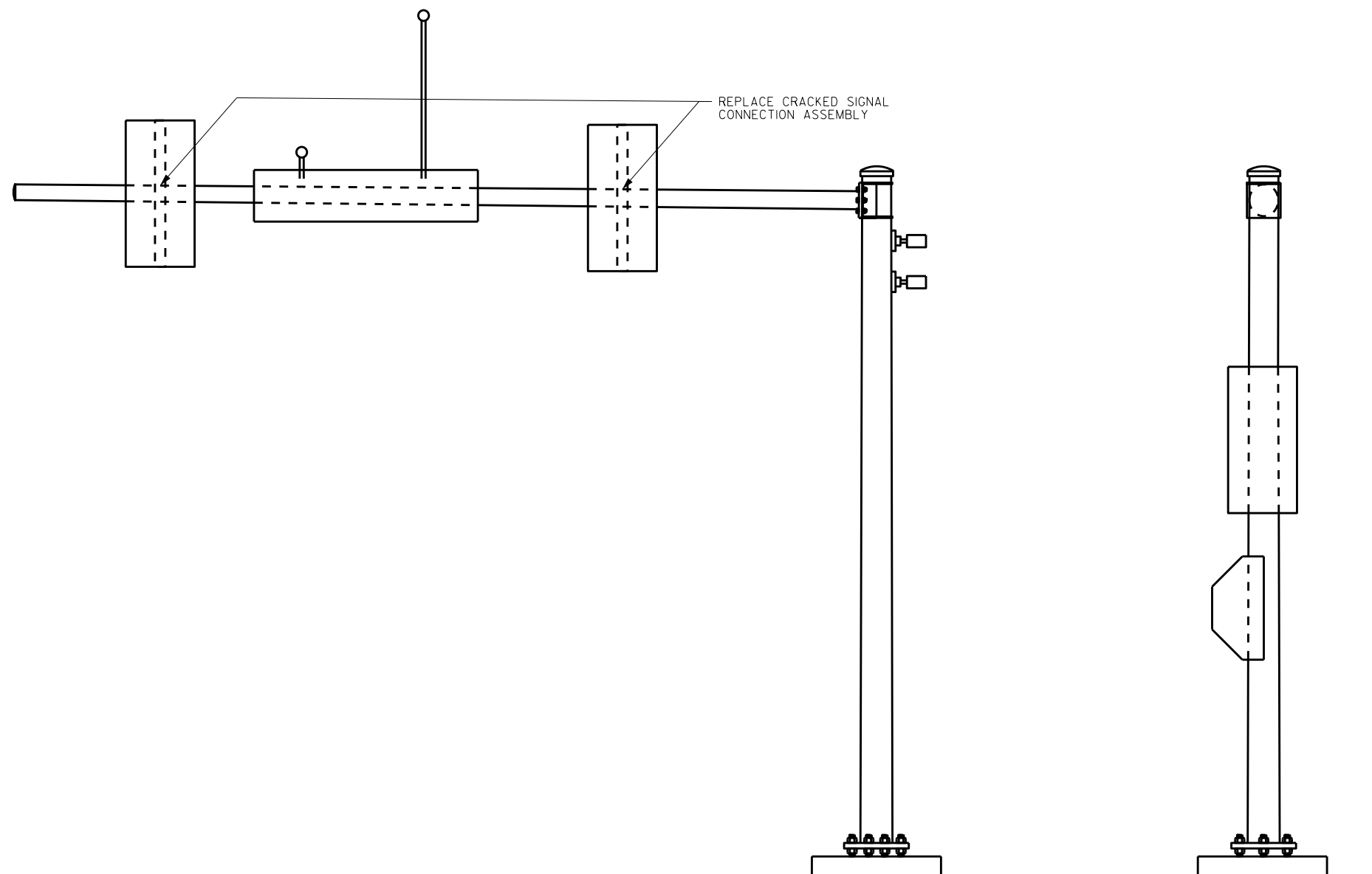
LOOKING WEST

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1330			SHEET 30

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4



LOOKING EAST

LOOKING NORTH

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.12	REPLACE SIGNAL CONNECTION ASSEMBLY	2	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

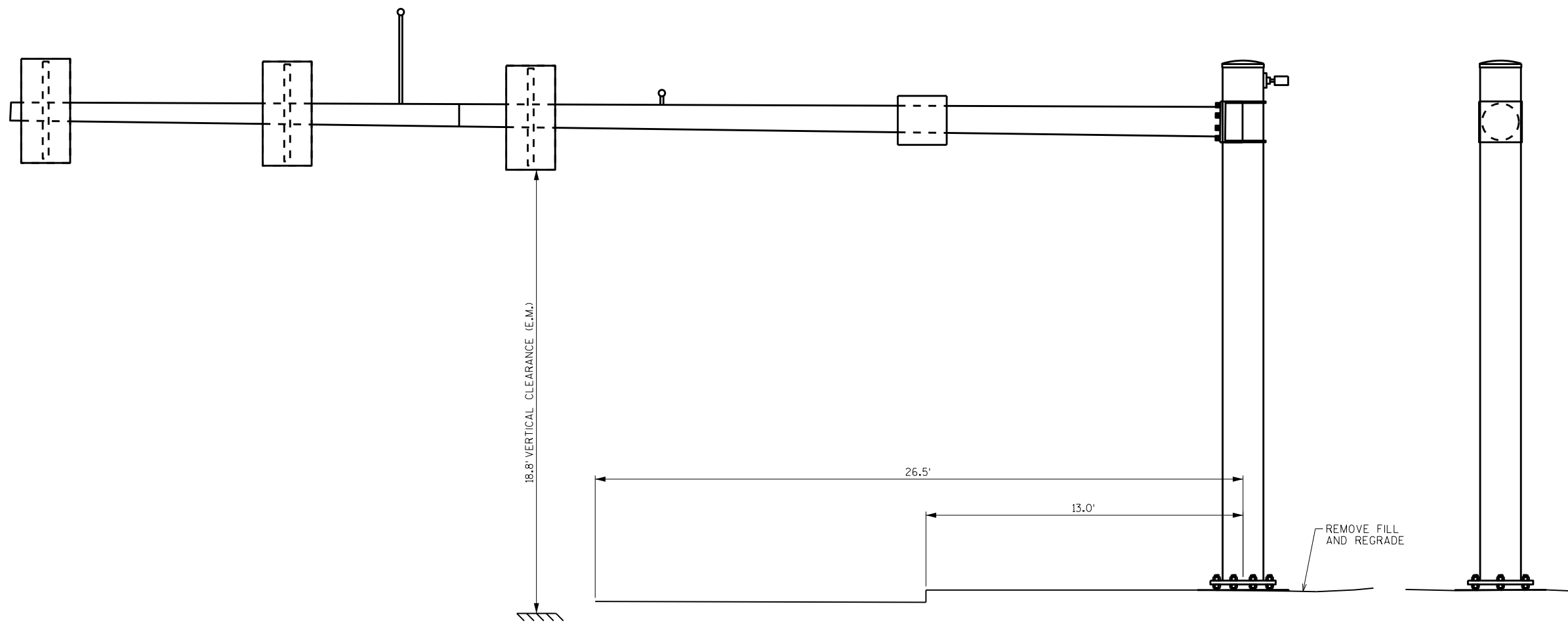
DRAWN BY	DDS	PLANS CK'D.	SAD
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SIGNAL STRUCTURE S-40-1354

SHEET 31

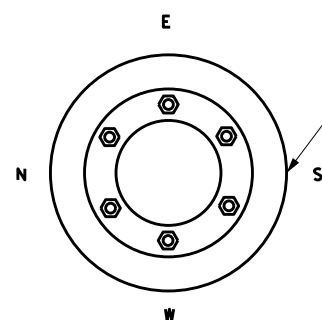
8

8



LOOKING SOUTH

LOOKING EAST



THE TOP OF FOUNDATION WAS LOWER THAN THE SIDEWALK AND WAS PARTIALLY COVERED WITH 1" OF FILL

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.06	REMOVE FILL AND REGRADE	1	EACH	2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY	DDS	PLANS CK'D.	SAD
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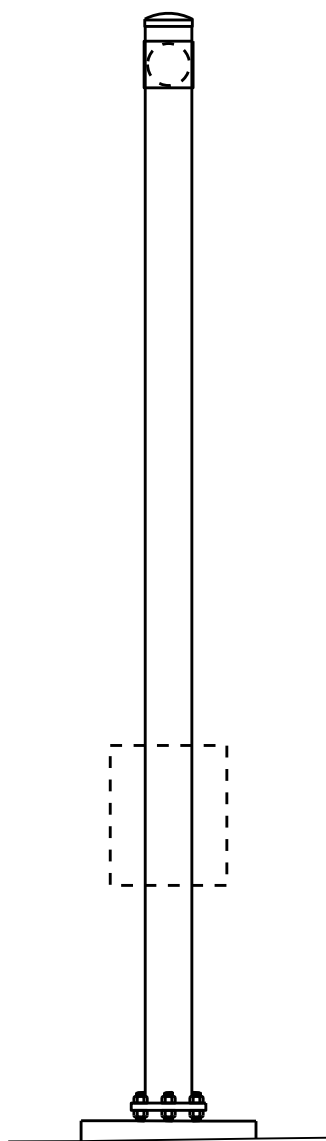
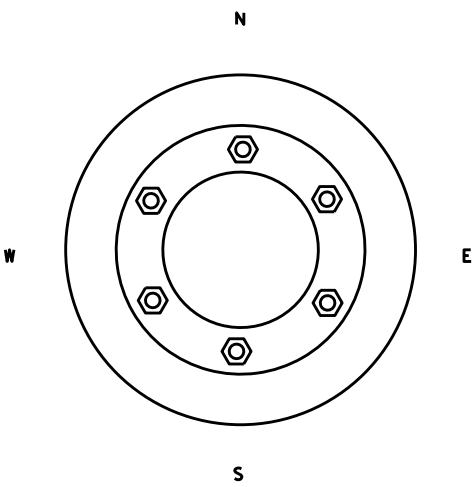
SIGNAL STRUCTURE S-40-1354

SHEET 32

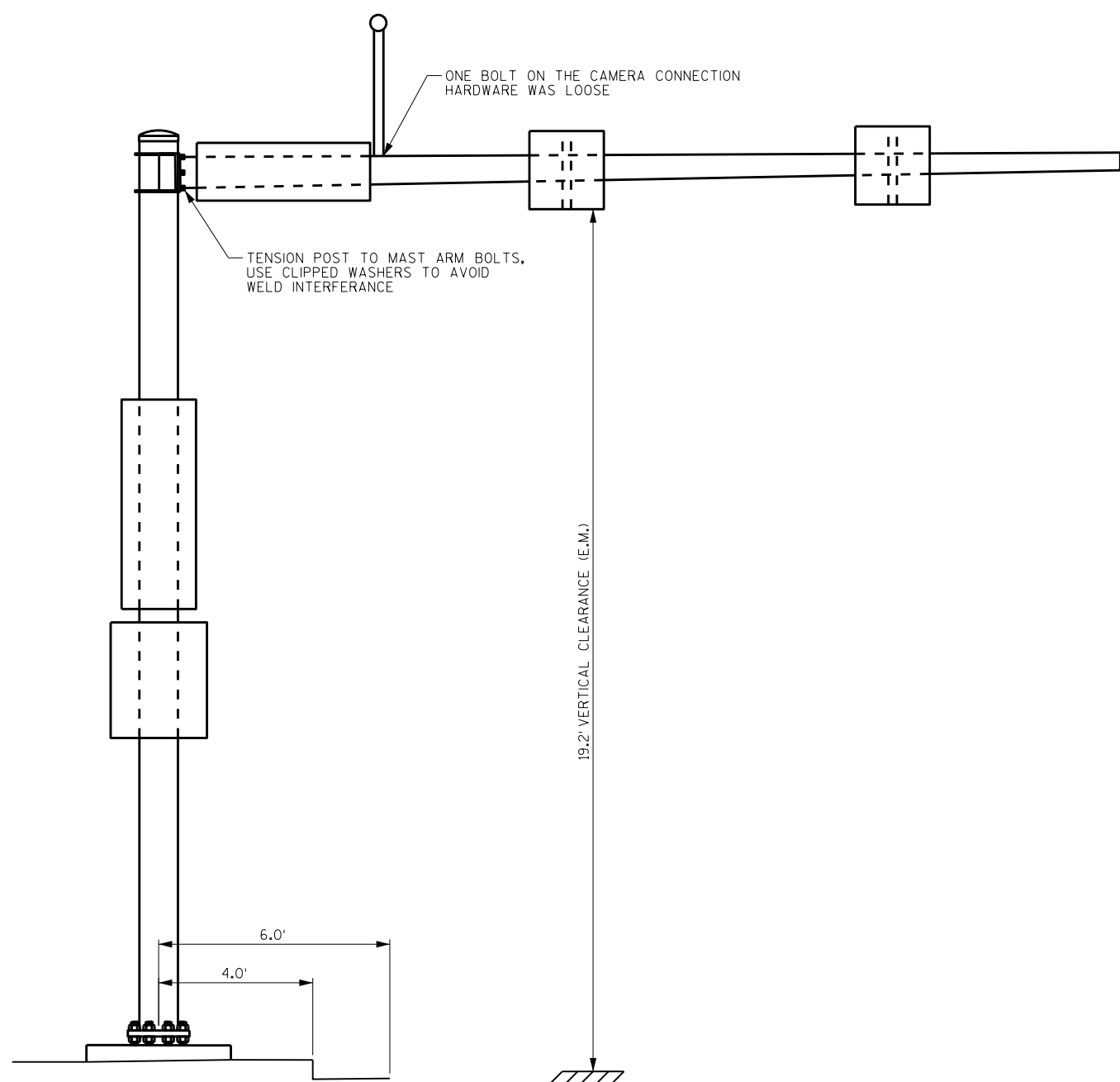
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8

8



LOOKING NORTH



LOOKING EAST

8

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.09	TENSION STRUCTURAL BOLT (FRICTION)	6	EACH	3
SPV.0060.16	SECURE CAMERA CONNECTION	1	EACH	4

NO.	DATE	REVISION	BY

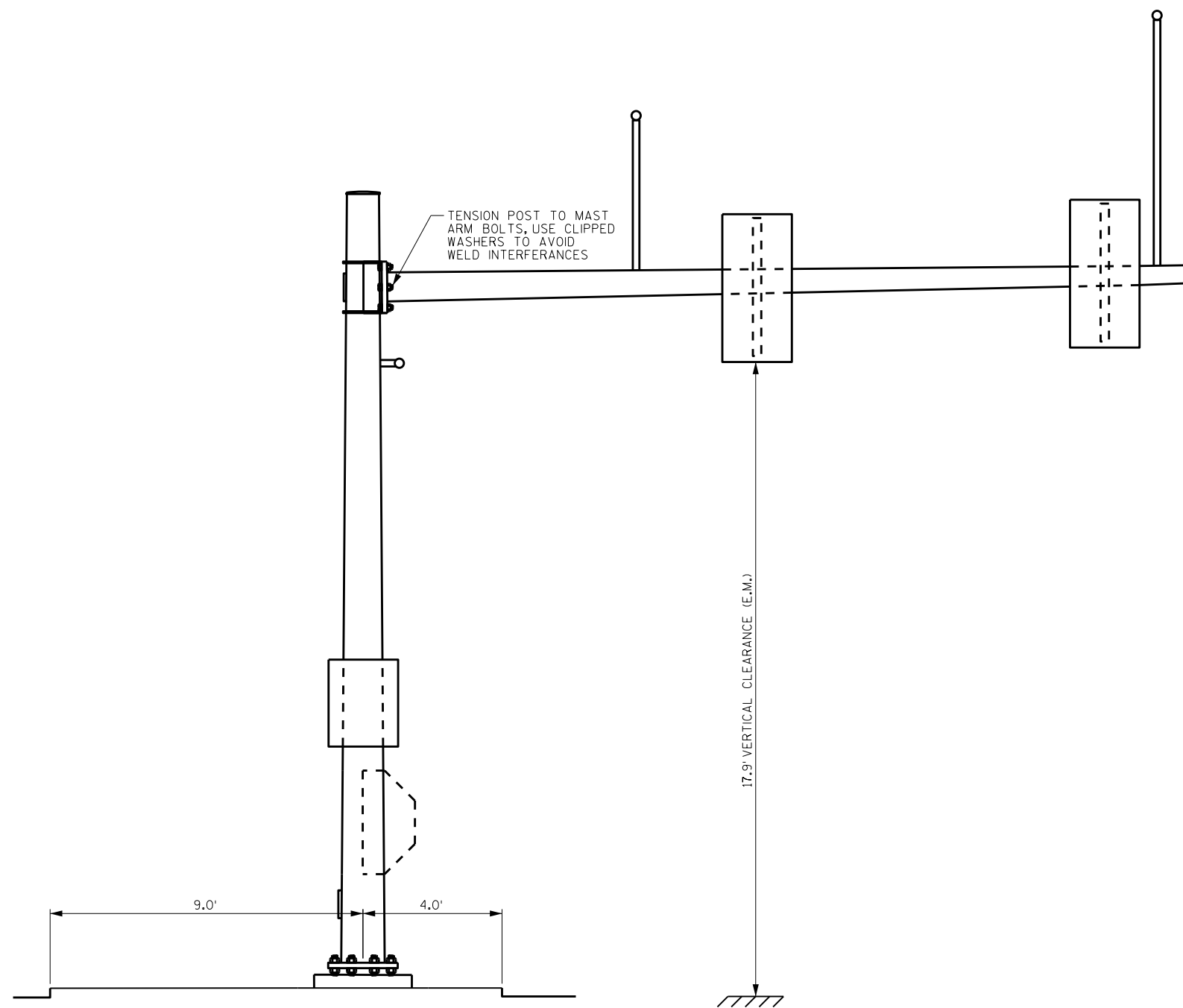
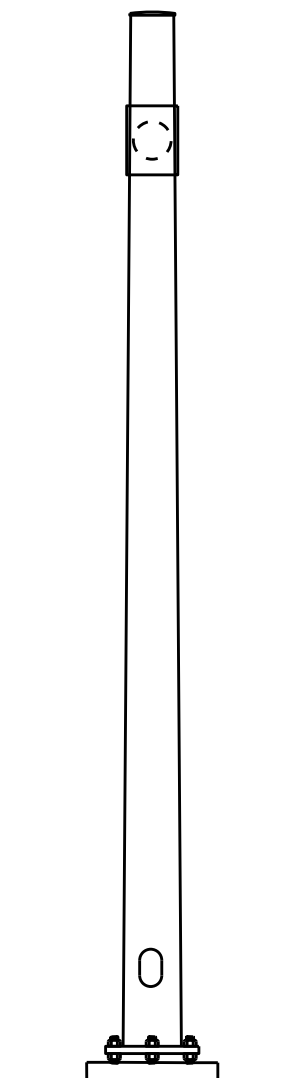
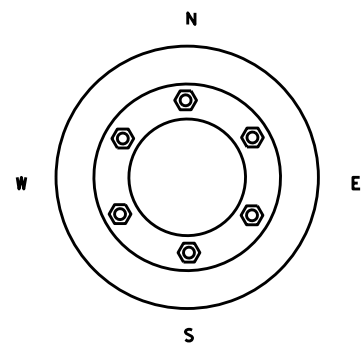
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. SAD

SIGNAL STRUCTURE S-40-1356

SHEET 33



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.09	TENSION STRUCTURAL BOLT (FRICTION)	6	EACH	3

NO.	DATE	REVISION	BY

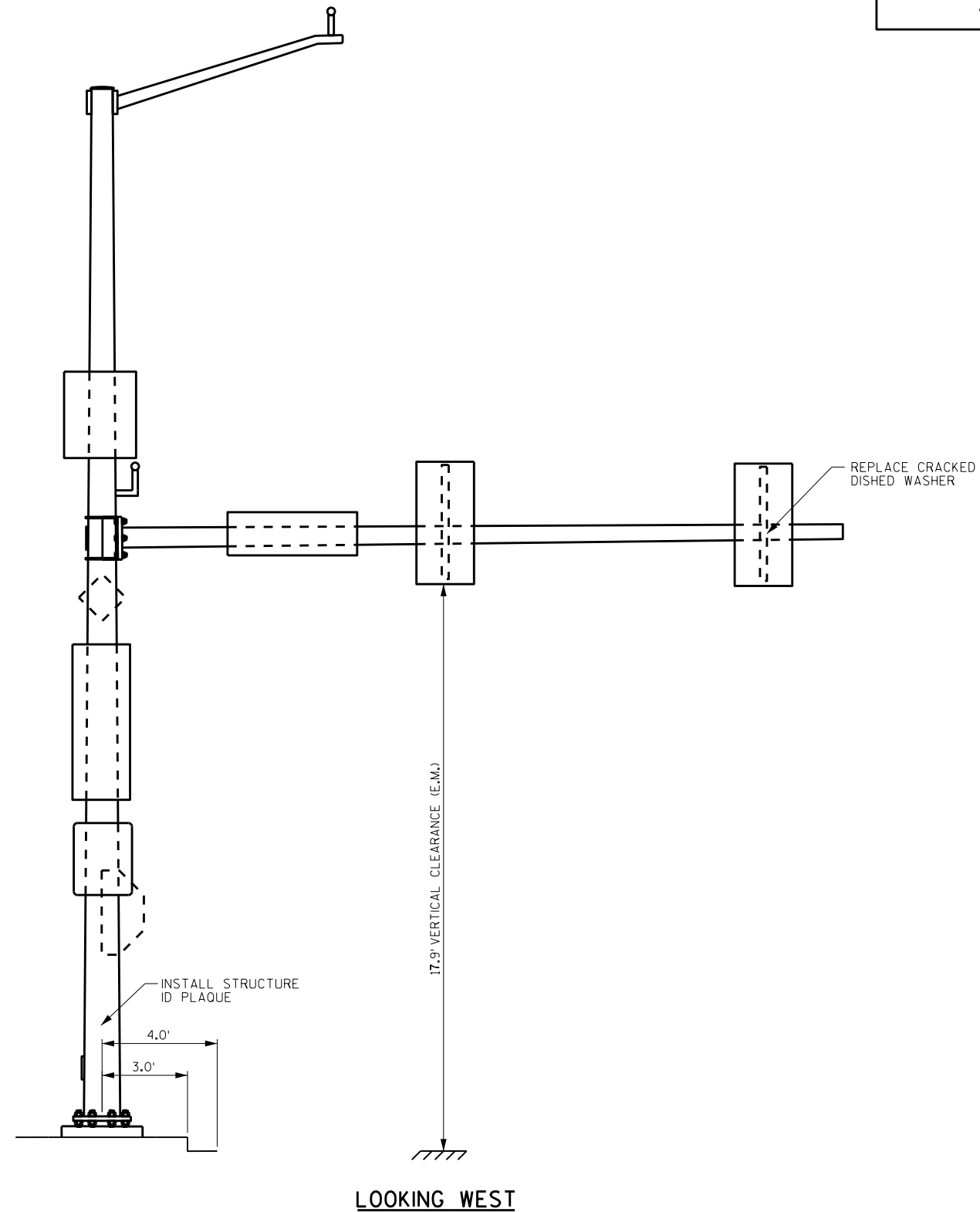
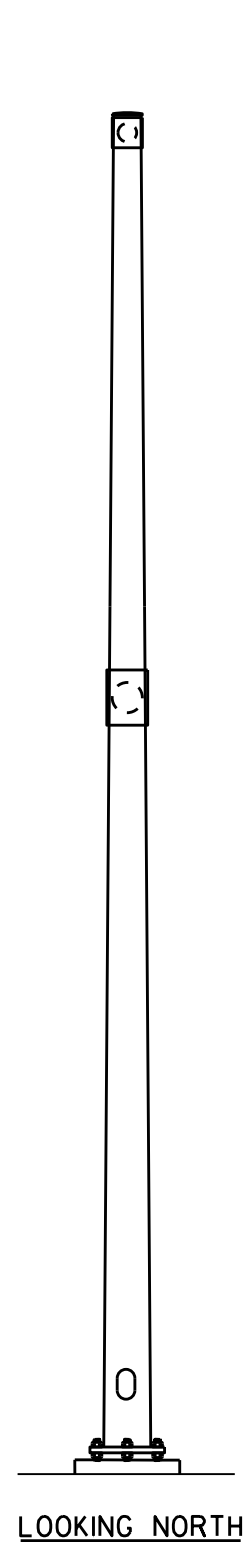
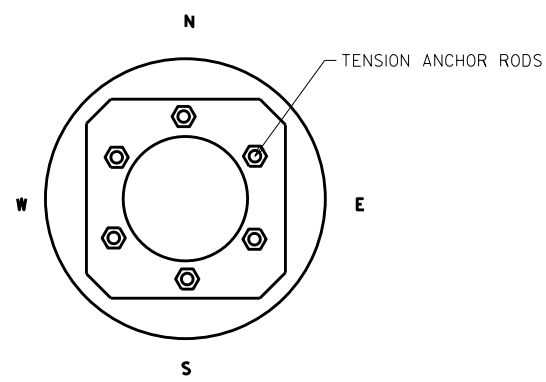
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. **SAD**

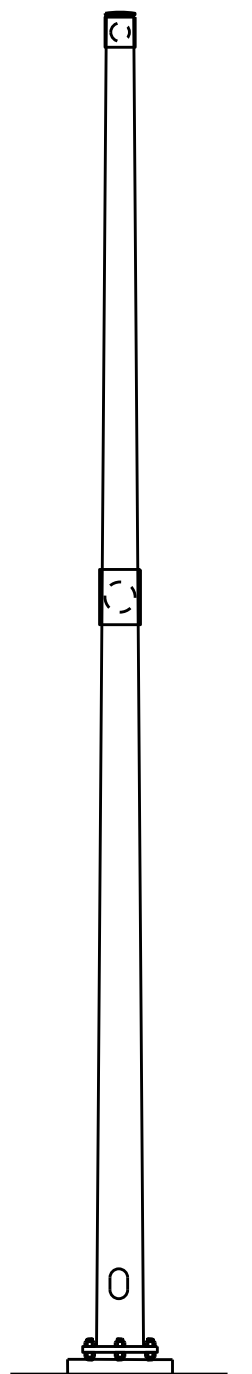
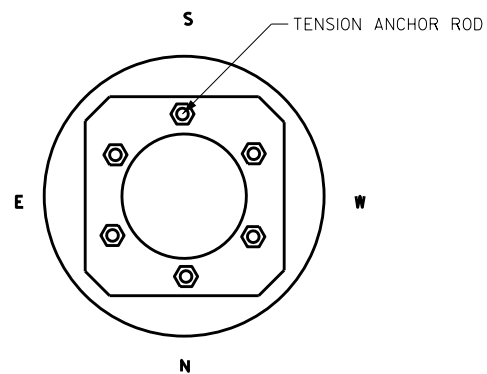
SIGNAL STRUCTURE S-40-1357

SHEET 34

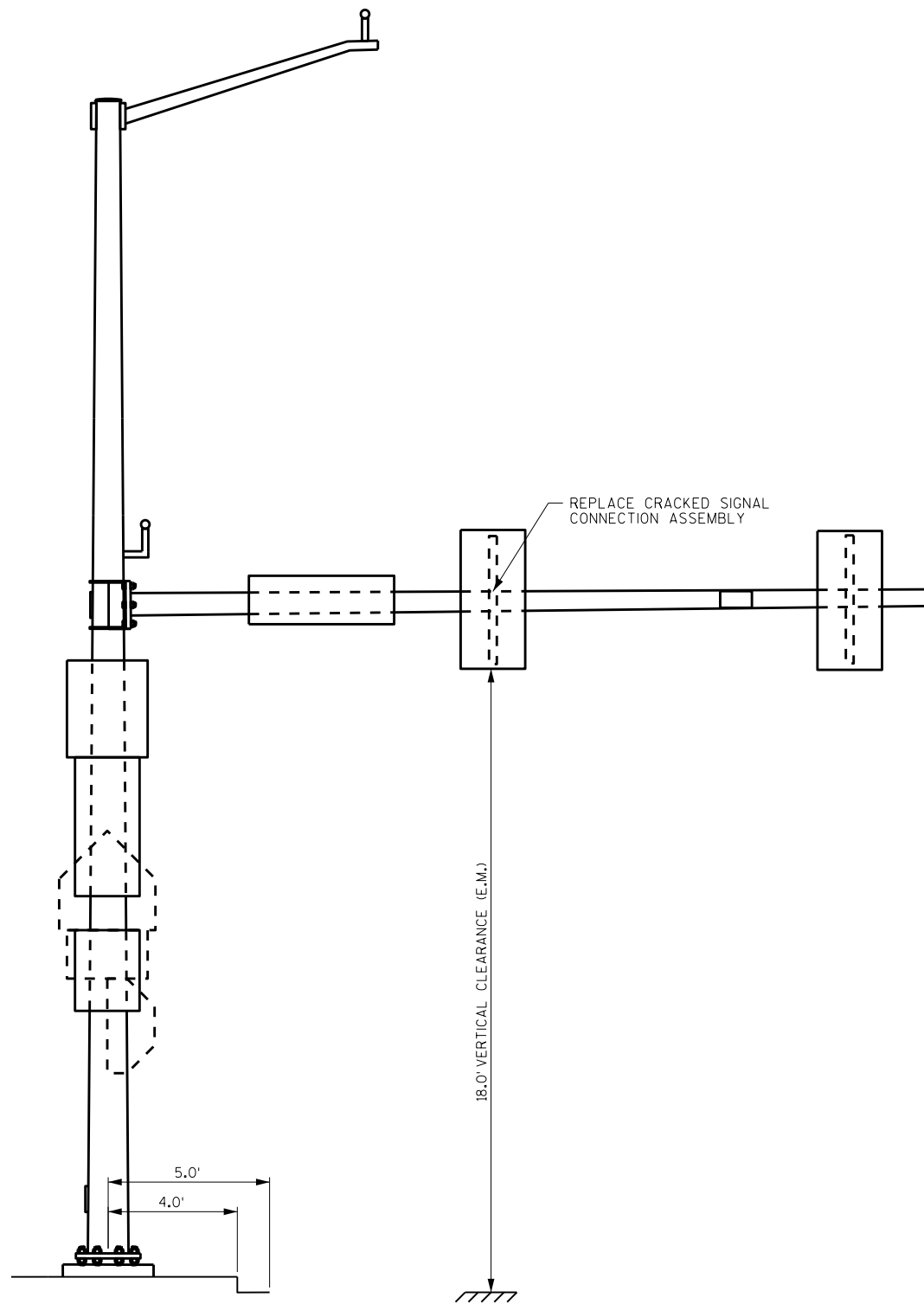


ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	6	EACH	2
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4
SPV.0060.20	INSTALL ID PLAQUE	1	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
		DRAWN BY	PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1358		SHEET 35	



LOOKING SOUTH



LOOKING EAST

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	6	EACH	2
SPV.0060.12	REPLACE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

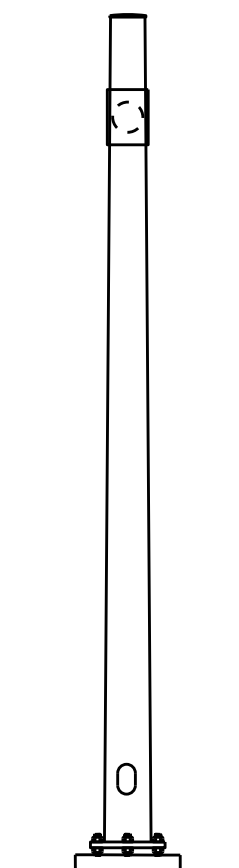
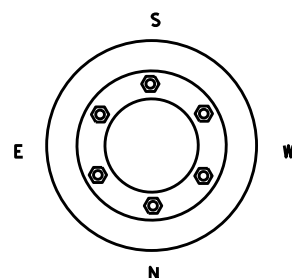
REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. SAD

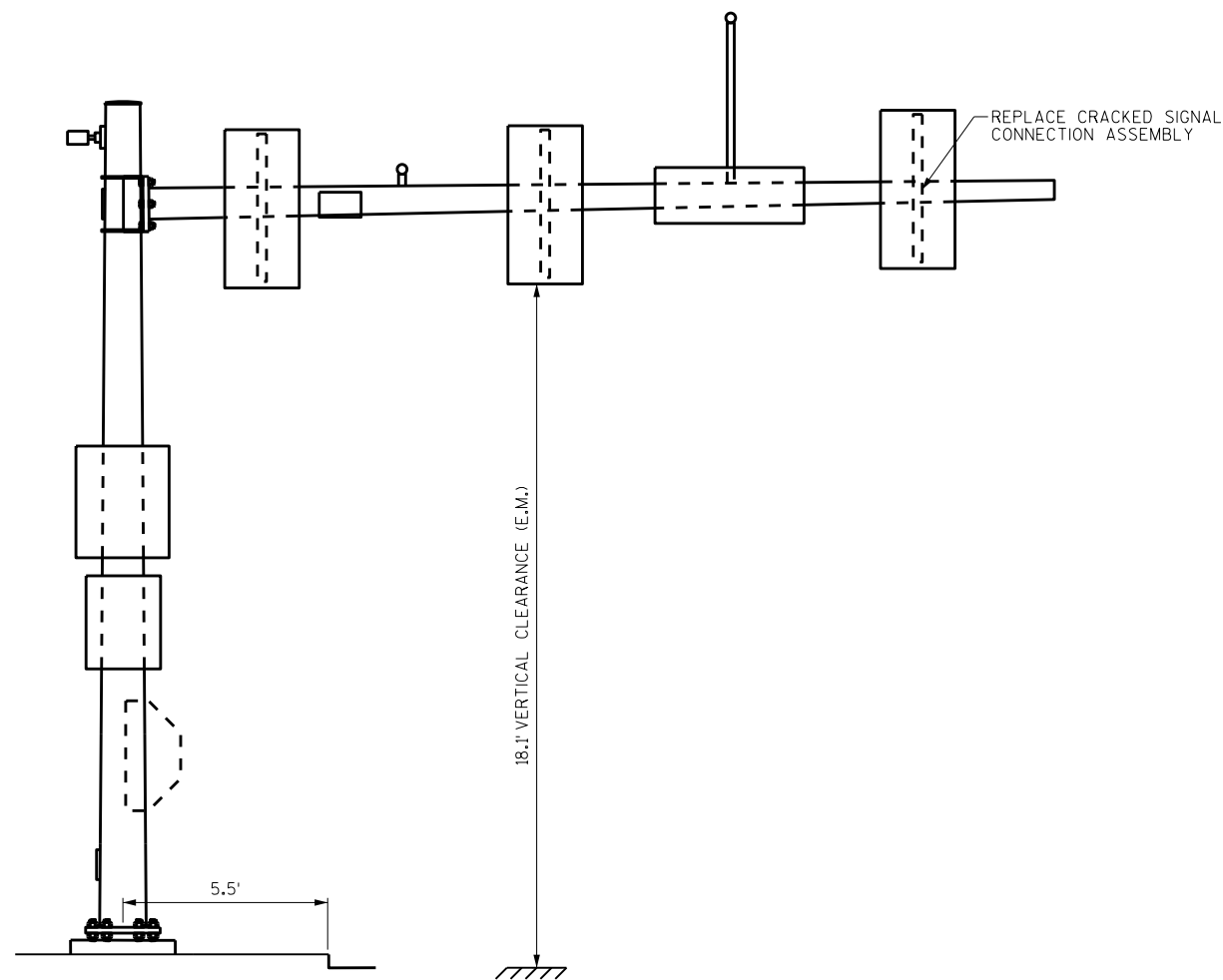
SIGNAL STRUCTURE S-40-1361

SHEET 36

8



LOOKING SOUTH



LOOKING EAST

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. SAD

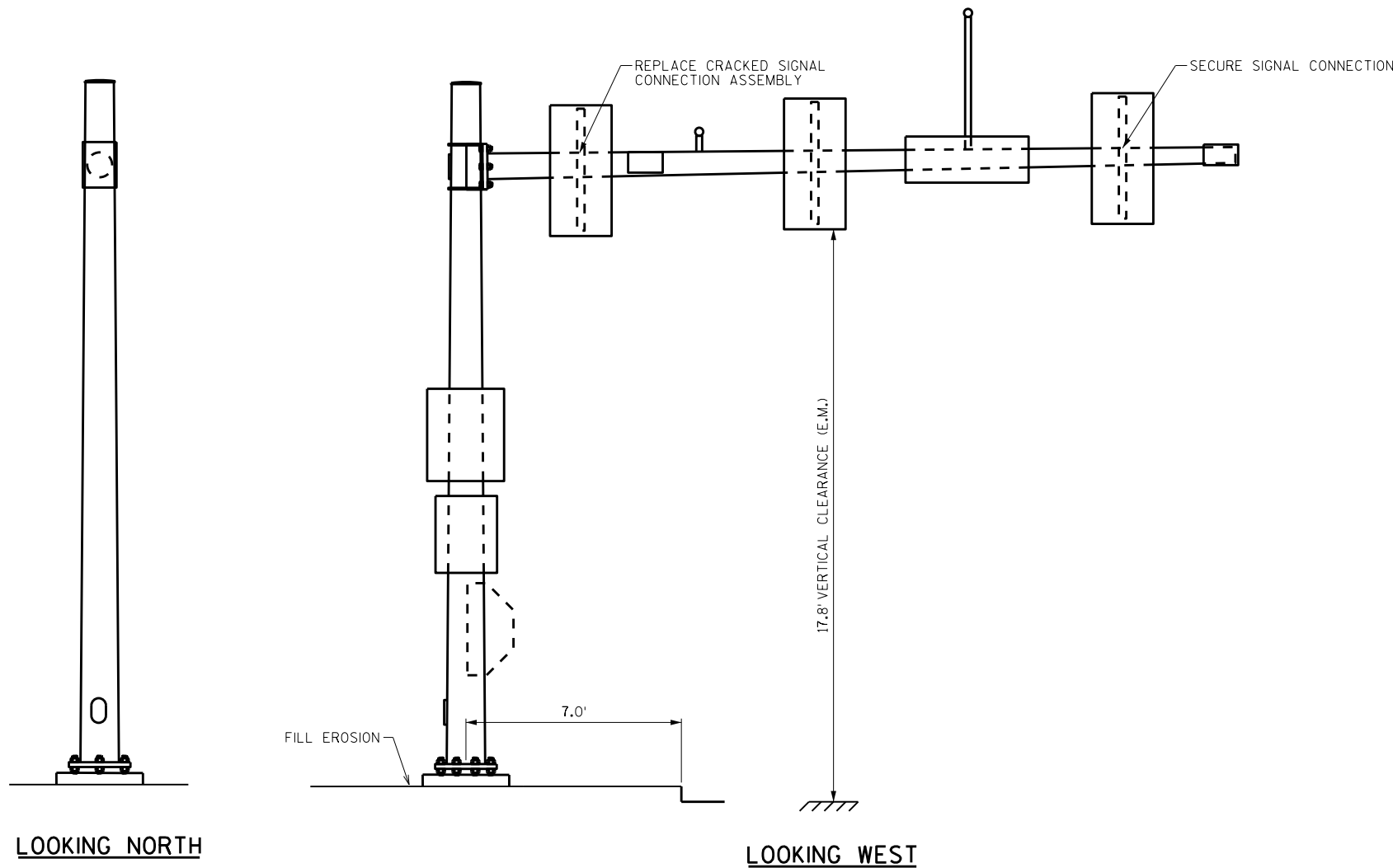
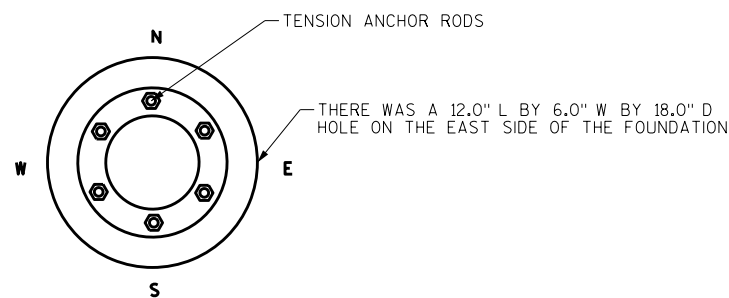
SIGNAL
STRUCTURE
S-40-1363

SHEET 37

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.12	REPLACE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

8

SCALE = 2.50



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	6	EACH	2
SPV.0060.05	FILL EROSION	1	EACH	2
SPV.0060.12	REPLACE SIGNAL CONNECTION ASSEMBLY	1	EACH	4
SPV.0060.17	SECURE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-40-1365			SHEET 38

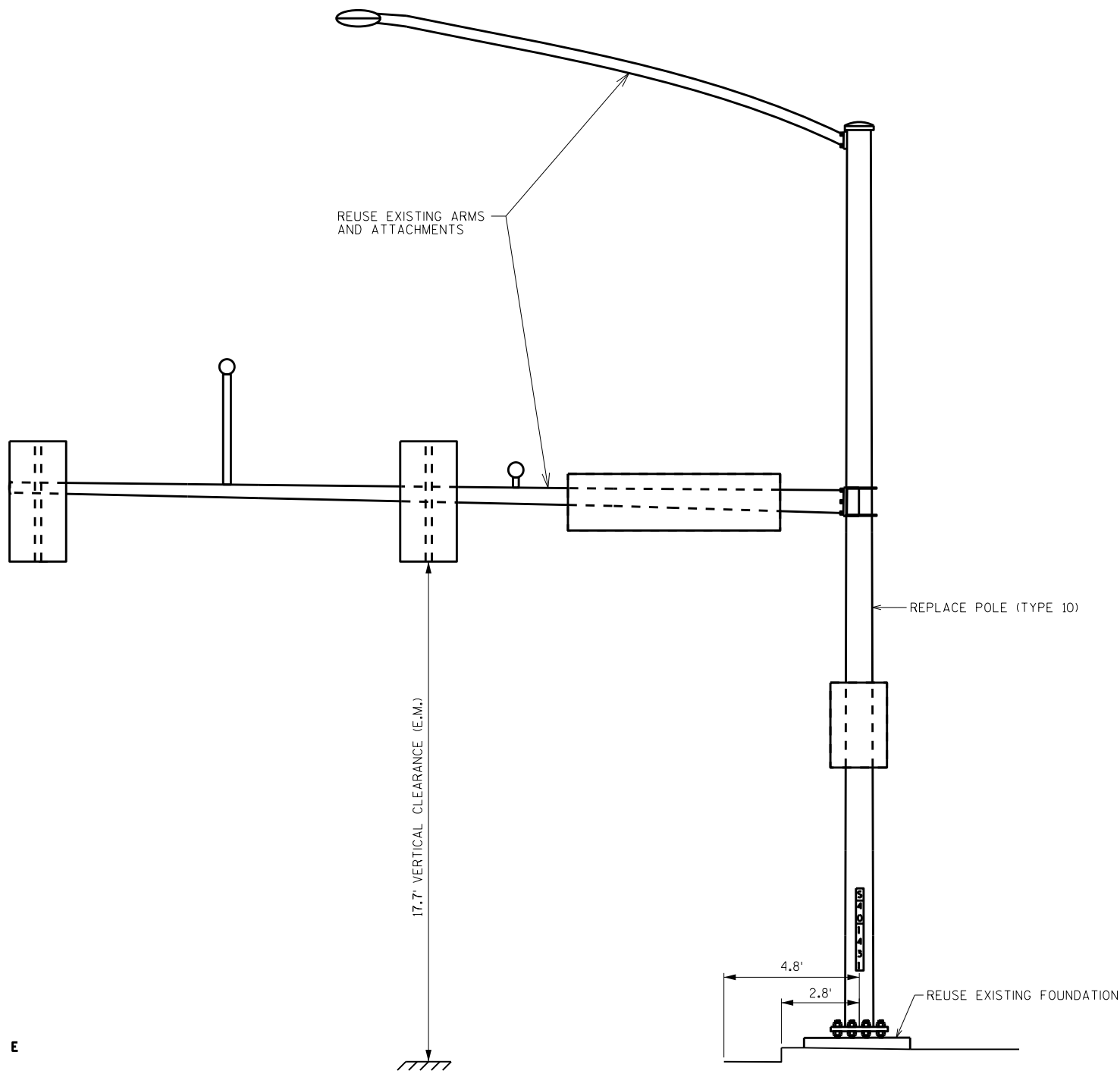
NOTE:

EXISTING MAST ARM, LUMINAIRE ARM, SIGNS AND SIGNALS TO BE REUSED AND ATTACHED AS SHOWN TO NEW POLE.

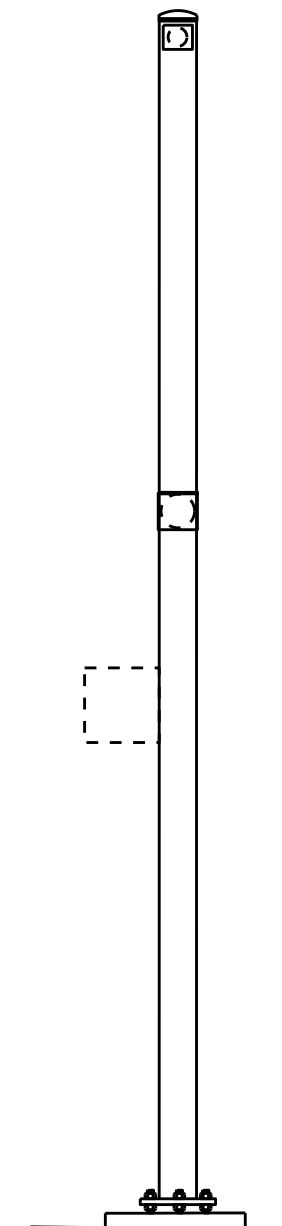
CONTRACTOR SHALL VERIFY ANCHOR PATTERN, POST TO ARM CONNECTION, AND LUMINAIRE CONNECTION, AND DIMENSIONS, AND ORIENTATION TO REPLACE EXISTING POLE.

USE NEW BOLTS, NUTS AND WASHERS CONFORMING TO 657 OF THE STANDARD SPEC.

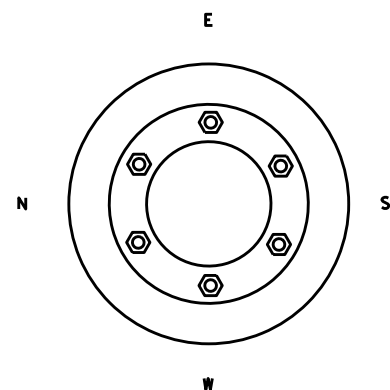
ORIGINAL POLE SHOP DRAWING INCLUDED FOR REFERENCE ON SHEET 40.



LOOKING SOUTH



LOOKING EAST



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.04	REPLACE POLE	1	EACH	---

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

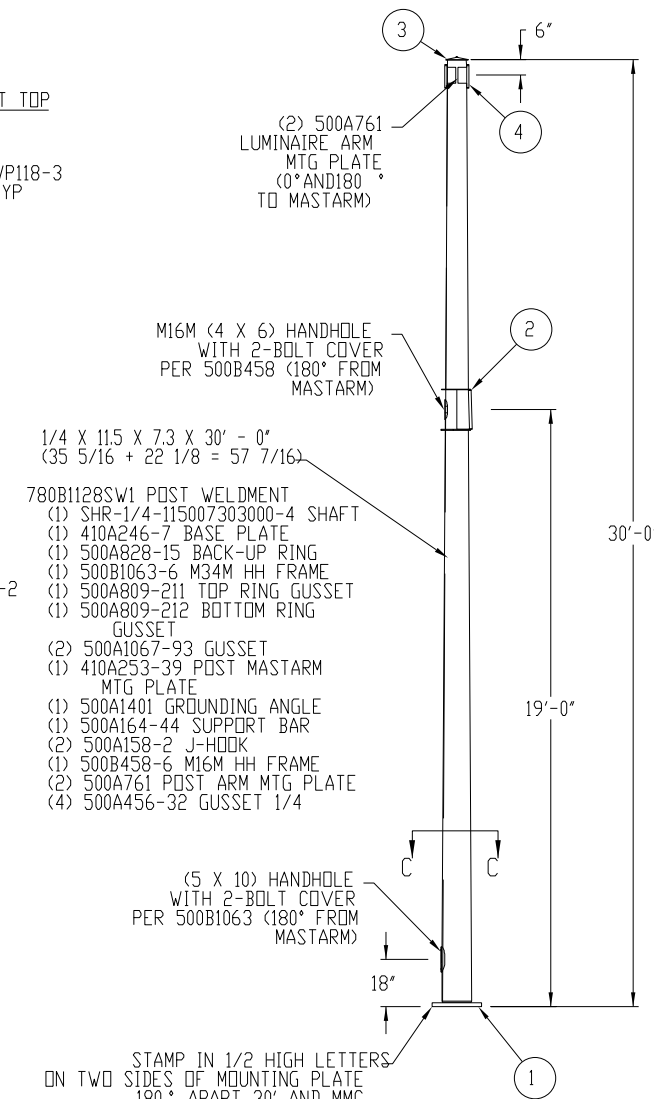
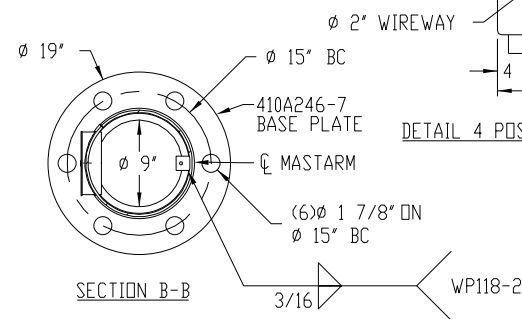
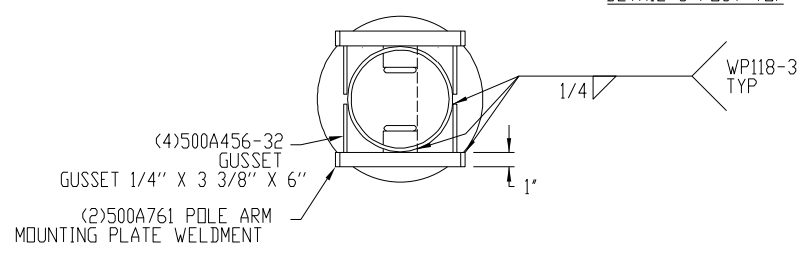
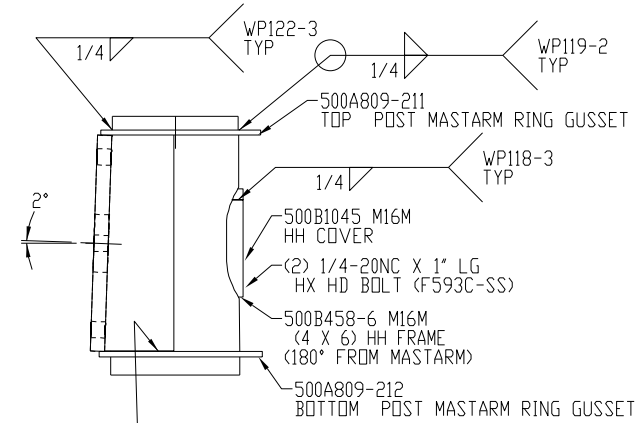
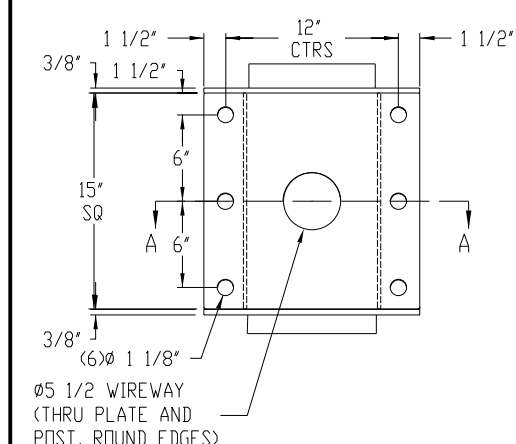
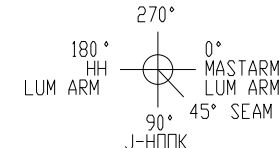
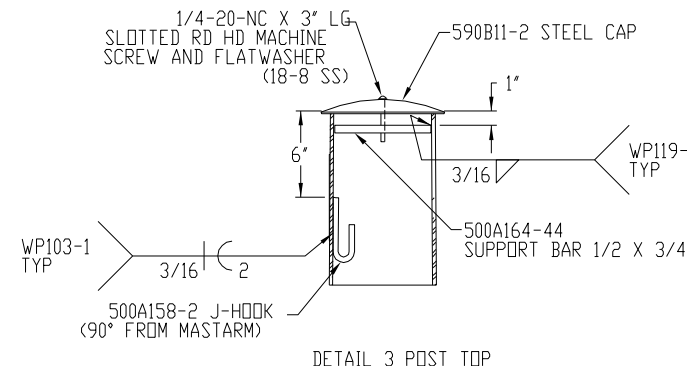
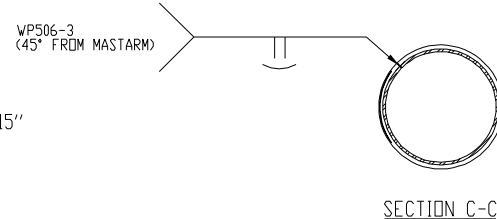
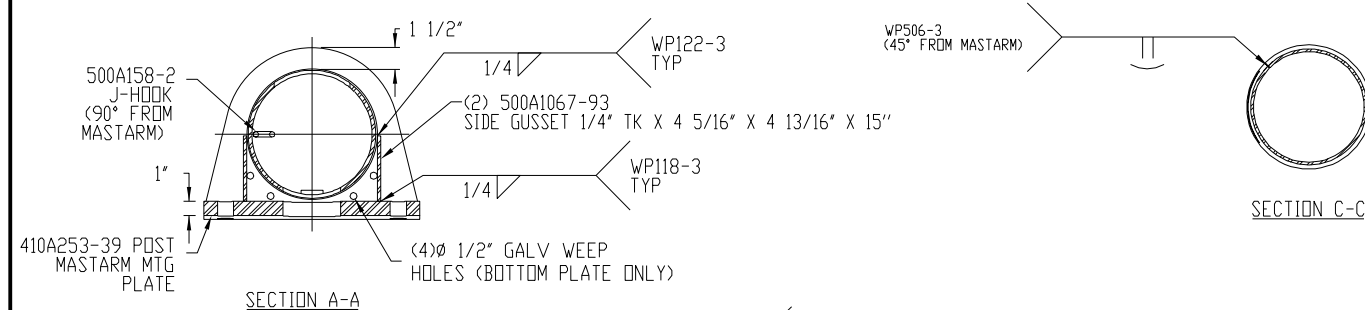
DRAWN BY: DDS PLANS CK'D. SAD

SIGNAL STRUCTURE S-40-1431

SHEET 39

8

8



- M16M (4 X 6) HANDHOLE WITH 2-BOLT COVER PER 500B458 (180° FROM MASTARM)
- 1/4 X 11.5 X 7.3 X 30' - 0' (35 5/16 + 22 1/8 = 57 7/16)
- 780B1128SW1 POST WELDMENT
- (1) SHR-1/4-115007303000-4 SHAFT
 - (1) 410A246-7 BASE PLATE
 - (1) 500A828-15 BACK-UP RING
 - (1) 500B1063-6 M34M HH FRAME
 - (1) 500A809-211 TOP RING GUSSET
 - (1) 500A809-212 BOTTOM RING GUSSET
 - (2) 500A1067-93 GUSSET
 - (1) 410A253-39 POST MASTARM MTG PLATE
 - (1) 500A1401 GROUNDING ANGLE
 - (1) 500A164-44 SUPPORT BAR
 - (2) 500A158-2 J-HOOK
 - (1) 500B458-6 M16M HH FRAME
 - (2) 500A761 POST ARM MTG PLATE
 - (4) 500A456-32 GUSSET 1/4

NOTE:

- MATERIAL - HIGH STRENGTH LOW ALLOY STEEL 50,000 PSI MIN YIELD PER ASTM A572. POST AND MASTARM MOUNTING PLATE MATERIAL PER ASTM A36
- FINISH - HOT DIP GALVANIZED PER ASTM A123
- WELD PENETRATION - SHAFT TO BE ROUND TAPERED TUBE FABRICATED WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% COMPLETE JOINT PENETRATION (CJP) WELD 6" FROM CIRCUMFERENTIAL WELD AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS TO BE USED FOR REMAINDER OF WELDED FABRICATION WITH 100% COMPLETE JOINT PENETRATION (CJP) CIRCUMFERENTIAL WELD FOR SHAFT TO BASE PLATE.
- WELD TESTING - 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT), A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT)
- ENSURE MAST ARM MOUNTING PLATE FLATNESS IS WITHIN 1/16". GRIND SURFACE AS REQUIRED TO ACHIEVE FLATNESS REQUIREMENT. TOUCH UP GROUND SURFACES WITH COLD GALVANIZING.
- THE POST AND THE FOLLOWING ITEMS WILL BE SHIPPED UNASSEMBLED IN 500B2014-1 HARDWARE ACCESSORY BAG:
 - (1) 500B1063-7 (5x10) HH COVER
 - (4) 1/4-20NC X 1 LG HX HD BOLT (F593C-SS)
 - (1) 590B11-2 POLE CAP
 - (1) 1/4-20NC X 3 LG SLOTTED RD HD MACHINE SCREW (18-8 SS)
 - (1) 1/4 FLATWASHER (18-8 SS)
 - (1) 500B1045 M16M HH COVER
 - (1) 500A1581 GASKETED COVER
 - (3) 3/4-10NC X 1 1/2 LG HVY HX HD BOLT (A325-GV)
 - (3) 3/4 FLATWASHER (GV)
 - (3) 3/4 LOCKWASHER (GV)
 - (1) 500A2015 PARTS LIST

PART NO	QTY	DESCRIPTION
780B1128		ROUND SIGNAL POST 1/4 X 11.5 X 7.3 X 30'-0"

DWN: REBEKAH	RB15HA-M-200/333-J-2-W113
DATE: 1-11-13	ROUND SIGNAL POST 1/4 X 11.5 X 7.3 X 30'-0" W1/DOT (2013) TYPE 10
CHK: DAVE V.	
SCALE: NTS	622 6TH ST. S. WINSTED, MN 55395 780B1128

- LUMINAIRE ARM BOLTS**
- (3) 3/4-10NC X 2 LG HVY HX HD BOLT (A325-GV)
 - (6) 1-8NC HVY HX NUT (A563 GV)
 - (3) 3/4 LOCKWASHER (GV)
- MAST ARM BOLTS**
- (6) 1-8NC X 3 1/2 LG HVY HX HD BOLT (A325 GV)
 - (12) 1" FLATWASHER (F436 GV)
 - (6) 1" DTI WASHER (F959 GV)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
S-40-1431		SHEET 40	
ORIGINAL SHOP DRAWING			

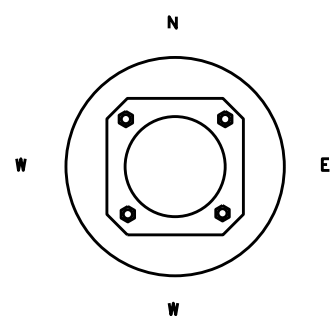
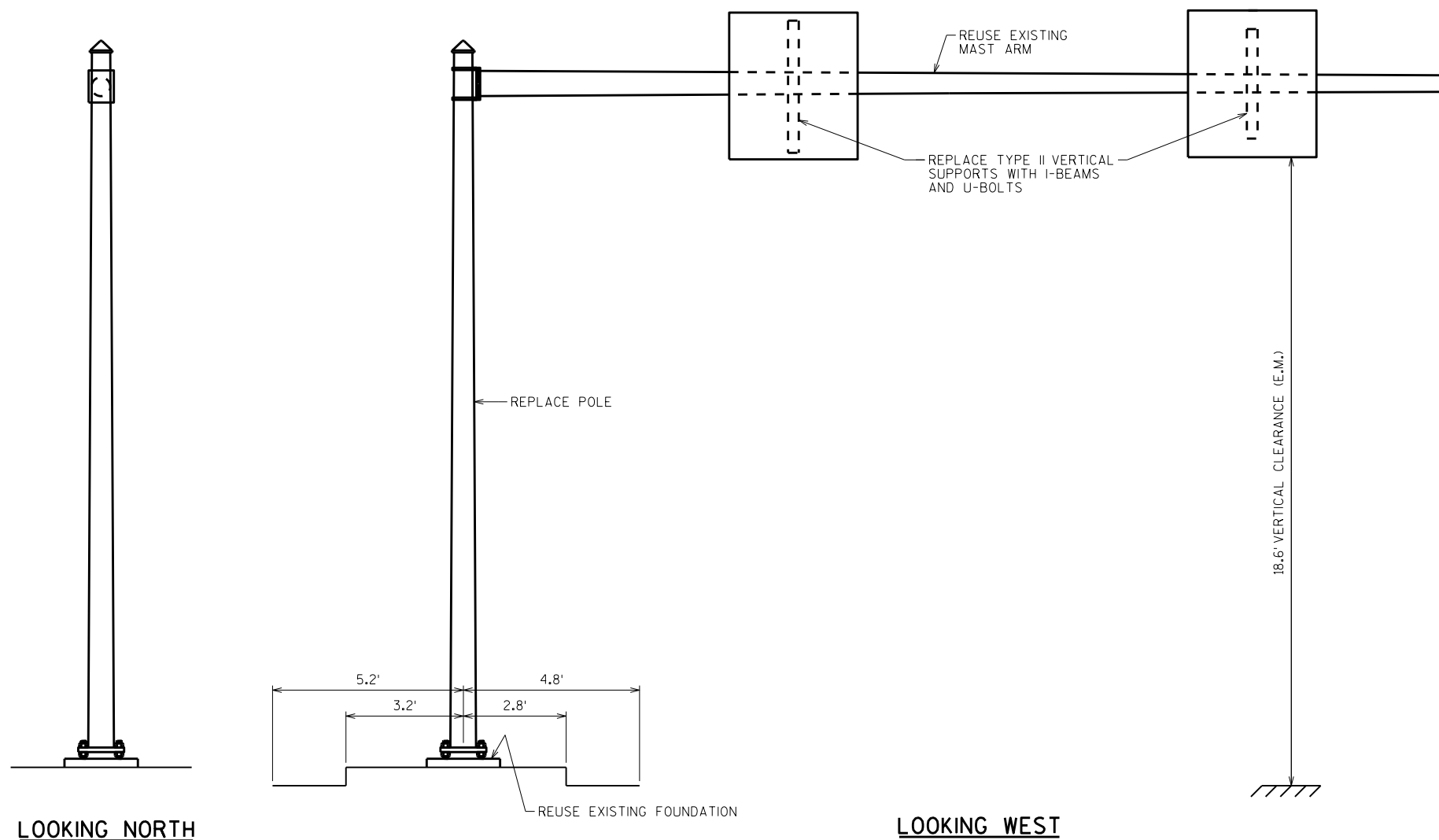
NOTE:

EXISTING MAST ARM, LUMINAIRE ARM, SIGNS AND SIGNALS TO BE REUSED AND ATTACHED AS SHOWN TO NEW POLE.

CONTRACTOR SHALL VERIFY ANCHOR PATTERN, POST TO ARM CONNECTION, AND LUMINAIRE CONNECTION, AND DIMENSIONS, AND ORIENTATION TO REPLACE EXISTING POLE.

USE NEW BOLTS, NUTS AND WASHERS CONFORMING TO 657 OF THE STANDARD SPEC.

ORIGINAL POLE SHOP DRAWING INCLUDED FOR REFERENCE ON SHEET S-51-214 ORIGINAL SHOP DRAWING.



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.04	REPLACE POLE	1	EACH	—
SPV.0060.11	REPLACE SIGN CONNECTION ASSEMBLY (W/I-BEAM AND U-BOLTS)	2	EACH	3

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

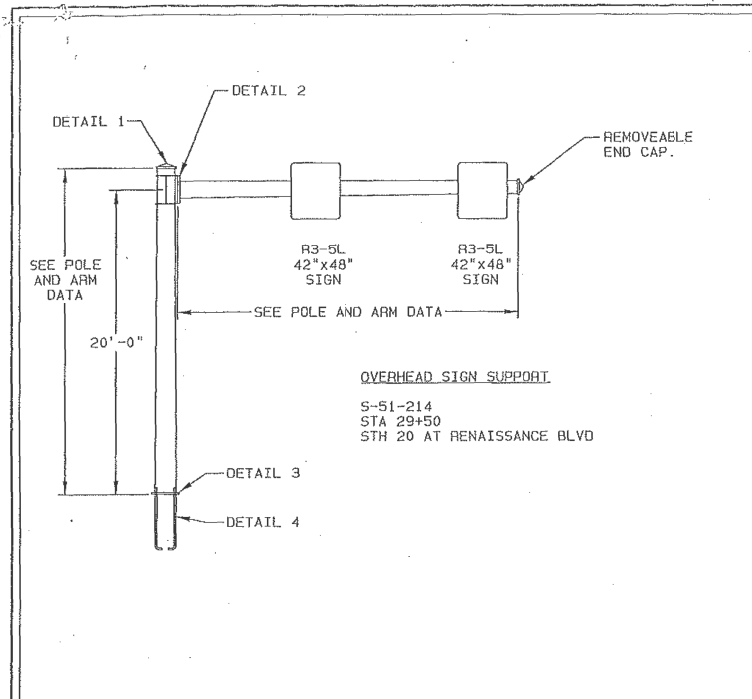
DRAWN BY: DDS PLANS CK'D: SAD

SIGN STRUCTURE S-51-0214

SHEET 41

8

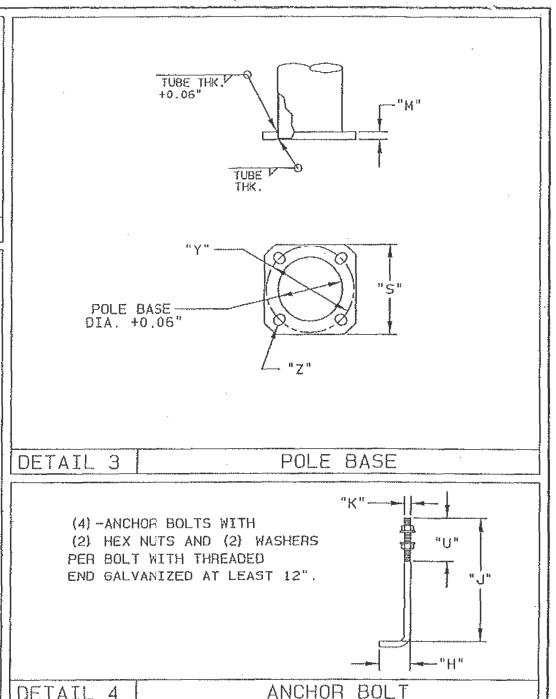
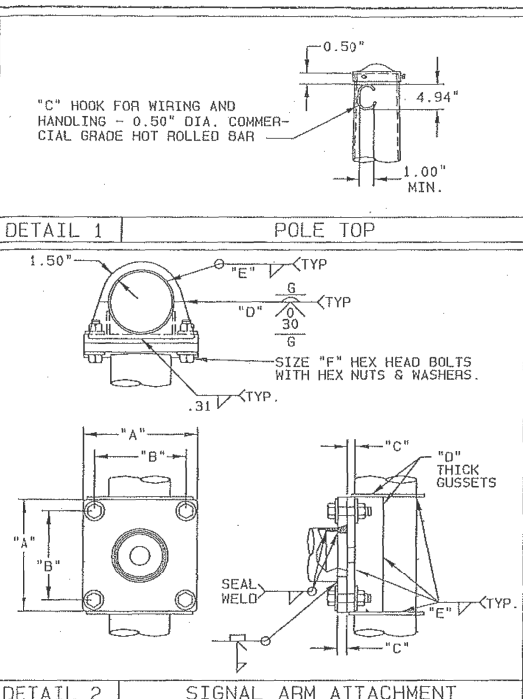
8



1. TRAFFIC SIGNAL SUPPORT STRUCTURES ON THIS DRAWING HAVE BEEN DESIGNED IN ACCORDANCE WITH LOADING AND ALLOWABLE STRESS REQUIREMENTS OF 2001 ASSHTO "STANDARD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", FOURTH EDITION. WIND LOADS ARE BASED ON A BASIC WIND SPEED OF 90 MPH WITH A RECURRENCE INTERVAL OF 50 YEARS, AND A FATIGUE CATEGORY OF 3. FATIGUE LOADS ARE BASED ON THE REQUIREMENTS OF SECTION 11.7 AND THE FOLLOWING DESIGN LOADS:

- VORTEX SHEDDING: NOT APPLICABLE FOR STRUCTURES WITH A TAPER OF AT LEAST 0.14 IN/FT, PER AASHTO.
- NATURAL WIND GUSTS: THE YEARLY MEAN WIND SPEED FOR NATURAL WIND GUSTS WILL BE ASSUMED TO BE 11.2 MPH.
- GALLOPING: STRUCTURES ARE DESIGNED TO RESIST PERIODIC GALLOPING FORCES.
- TRUCK-INDUCED GUST: STRUCTURES ARE DESIGNED TO INCLUDE TRUCK-INDUCED GUSTS (THE SPECIFIED AVERAGE TRUCK SPEED IS 65 MPH)

2. ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.



GENERAL NOTES

SIGNAL ARM ATTACHMENT

ANCHOR BOLT

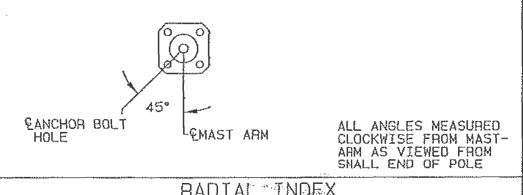
MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE TUBE	A595 GR. A	55	ARM ATTACHMENT	A36	36
ARM TUBE	A595 GR. A	55	SIGN ARM CONNECT BOLTS	A325 *	
POLE BASE	A36	36	ANCHOR BOLTS	F1554 GR.55	55
			GALVANIZING	A123 & A153	

* LUBRICATE IN THE FIELD IF NECESSARY
HARDWARE LESS THAN 0.63" DIAMETER TO BE STAINLESS STEEL

SIGN ARM ATTACHMENT DATA

POLE BASE DIA.	"A"	"B"	"C"	"D"	"E"	"F"
11.00"	14.50"	12.00"	1.25"	0.25"	0.18"	1.00" X 4.25"



POLE AND SIGN ARM DATA

STR. NO.	QTY.	POLE TUBE			POLE BASE				ANCHOR BOLT			SIGN ARM TUBE					
		BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (IN)	GAUGE OR THICK (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	HOOK "H" (IN)	THREAD LENGTH "U" (IN)	FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE OR THICK (IN)	SPAN (FT)
S-51-214	1	11.00	8.06	21.00	7	16.00	15.00	1.25	1.50	1.25	42.00	6.00	6.00	8.00	4.36	3	26.00

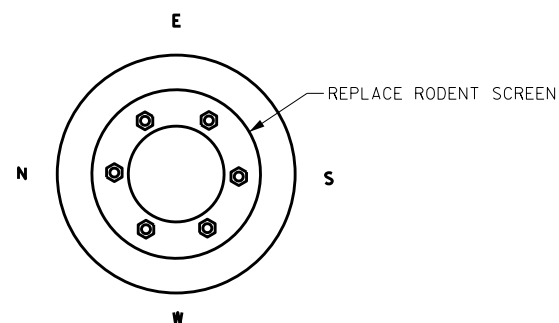
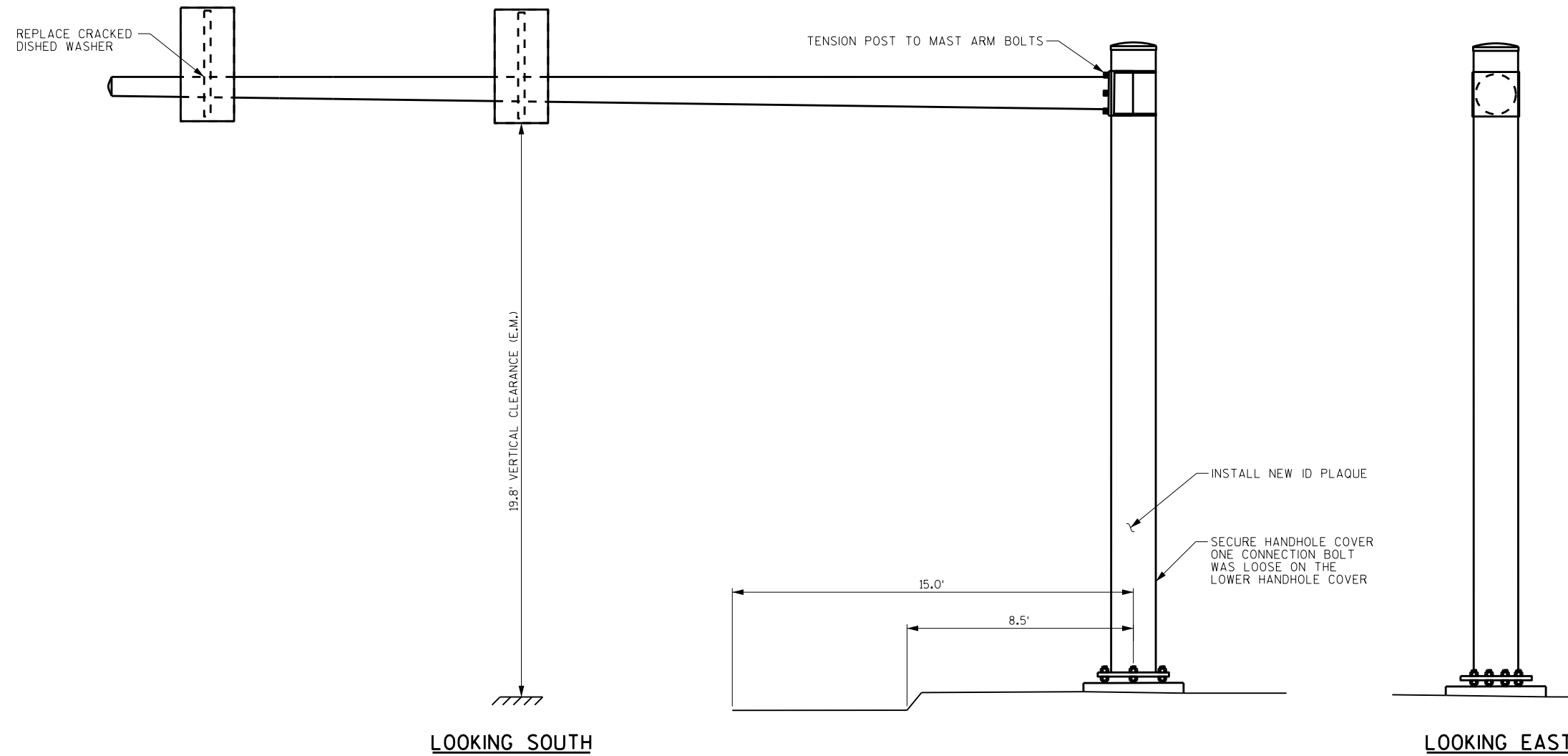
REV	09/13/05	09/13/05			SOLD TO:	VILLAGE OF STURTEVANT	VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.	ORDER NUMBER:	
					SHIP TO:	RACINE COUNTY, WI		PAGE NUMBER:	1 OF 1
					P.O. #:			DRAWING NUMBER	REV
					AGENT:				
					TITLE:	OVERHEAD SIGN SUPPORT			



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
S-51-214 ORIGINAL SHOP DRAWING		SHEET 42	

8

8

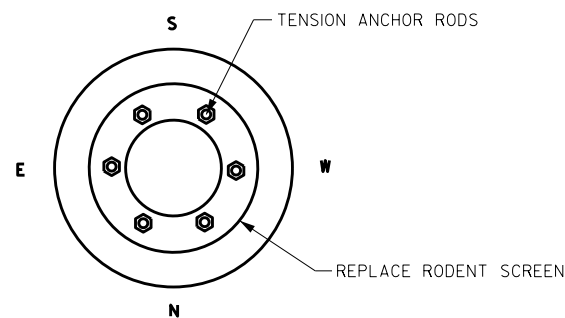
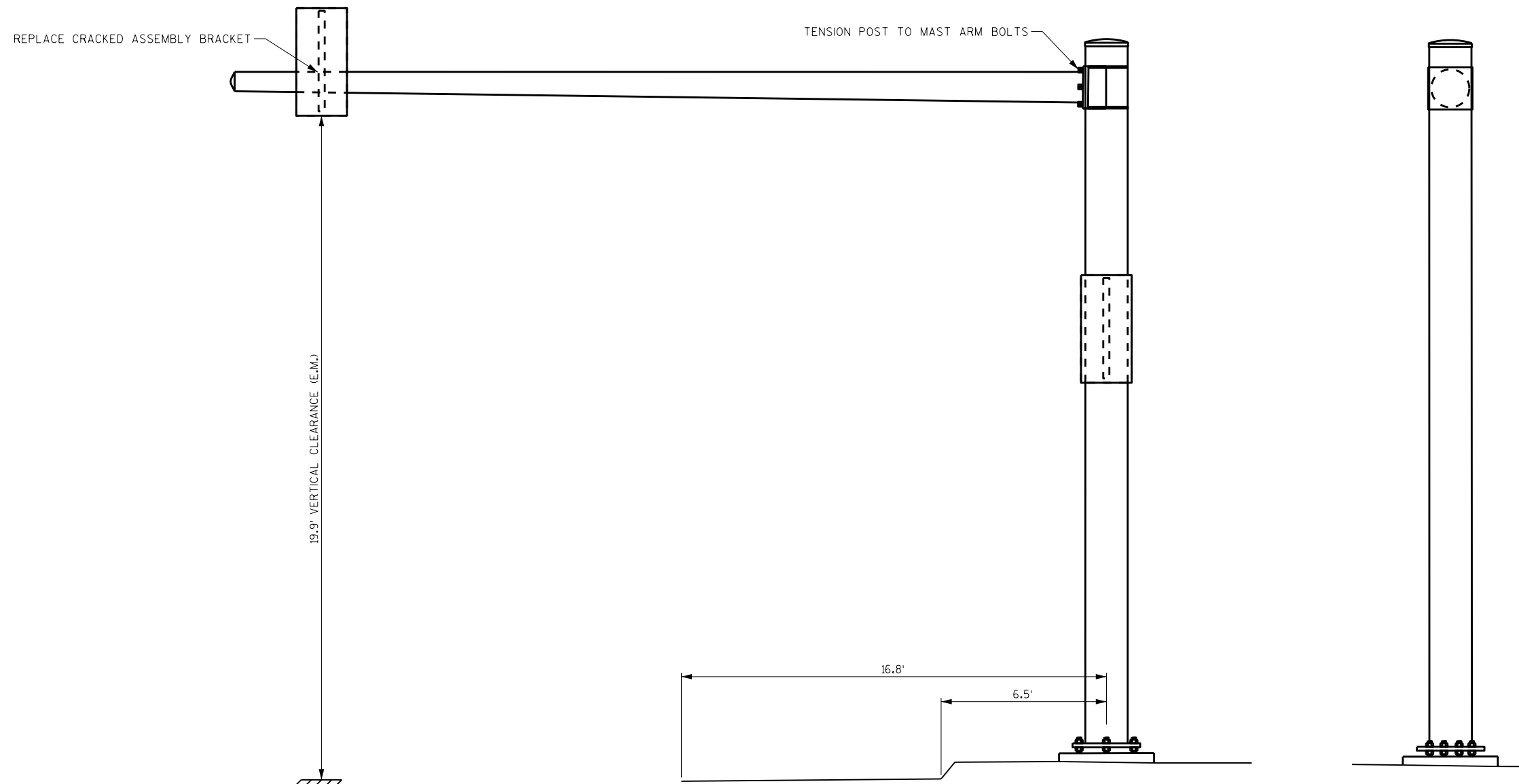


ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.07	REPLACE RODENT SCREEN	1	EACH	2
SPV.0060.09	TENSION STRUCTURAL BOLT (FRICTION)	6	EACH	3
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4
SPV.0060.19	SECURE HANDHOLE COVER	1	EACH	4
SPV.0060.20	INSTALL ID PLAQUE	1	EACH	—

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CKD. SAD
SIGNAL STRUCTURE S-51-1101			SHEET 43

8

8



LOOKING WEST

LOOKING SOUTH

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	6	EACH	2
SPV.0060.07	REPLACE RODENT SCREEN	1	EACH	2
SPV.0060.09	TENSION STRUCTURAL BOLT (FRICTION)	6	EACH	3
SPV.0060.12	REPLACE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

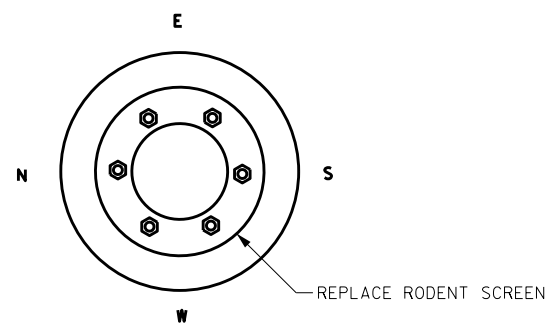
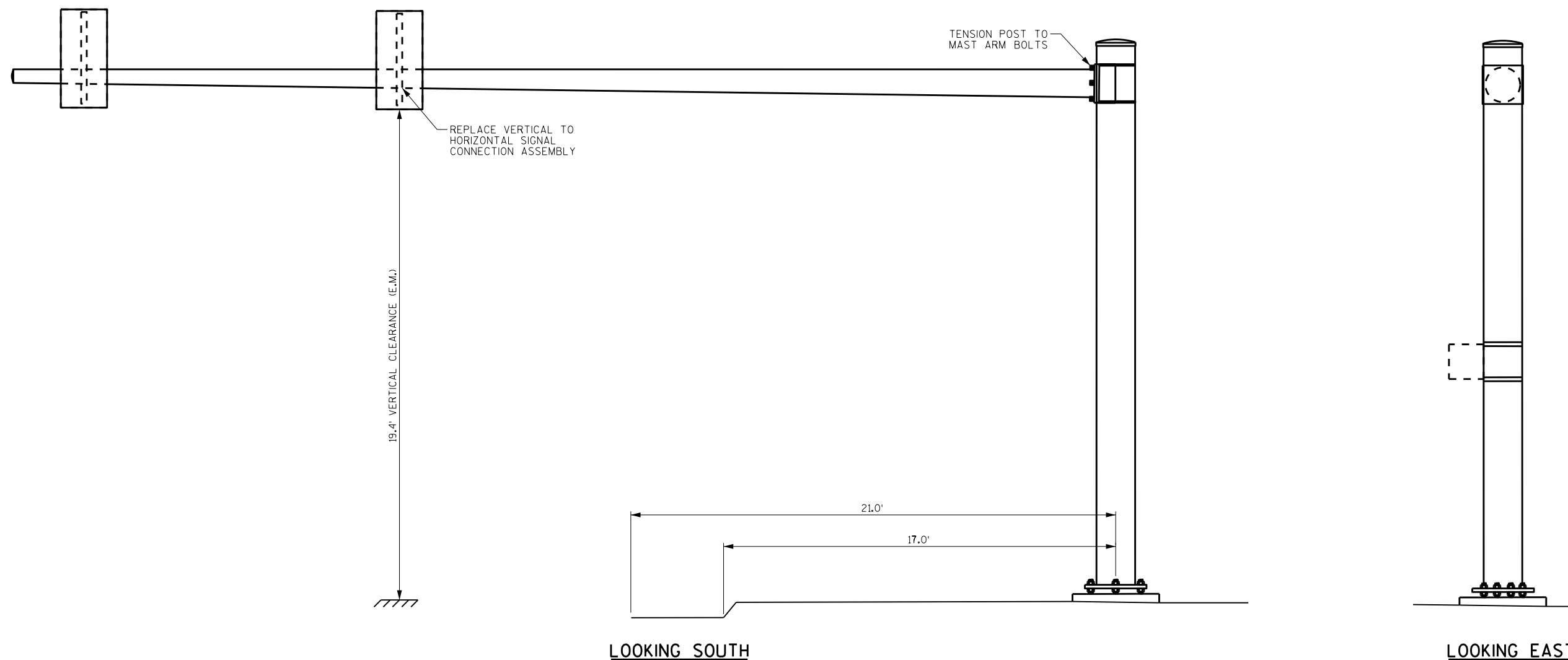
DRAWN BY: DDS PLANS CK'D: SAD

SIGNAL STRUCTURE S-51-1102

SHEET 44

8

8

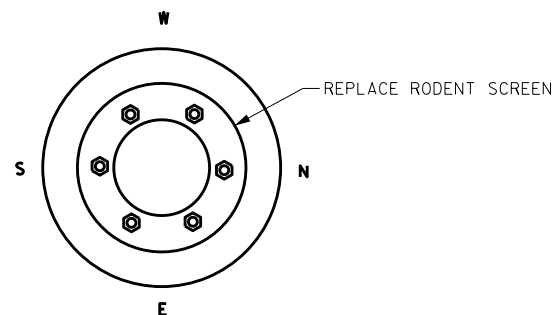
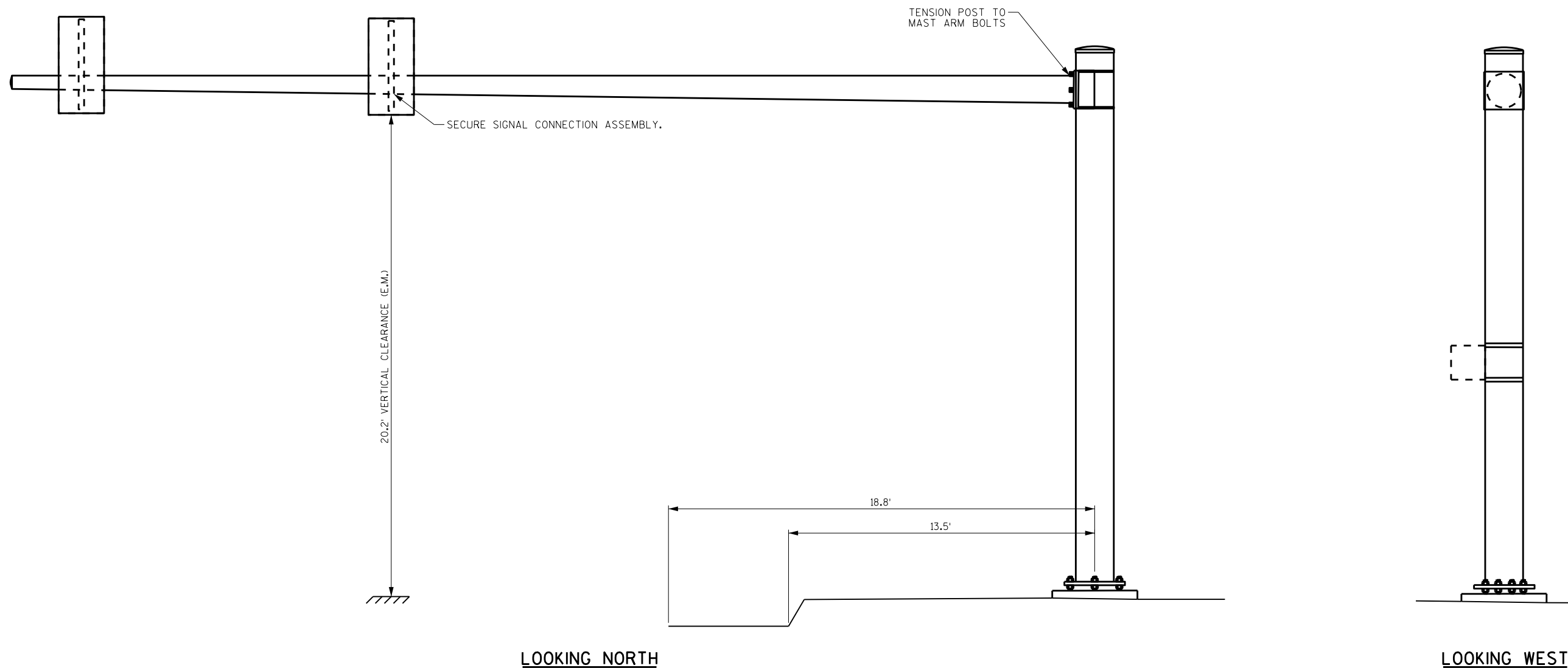


ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.07	REPLACE RODENT SCREEN	1	EACH	2
SPV.0060.09	TENSION STRUCTURAL BOLT (FRICTION)	6	EACH	3
SPV.0060.14	REPLACE VERTICAL TO HORIZONTAL SIGNAL CONNECTION BRACKET	1	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-51-1105			SHEET 45

8

8

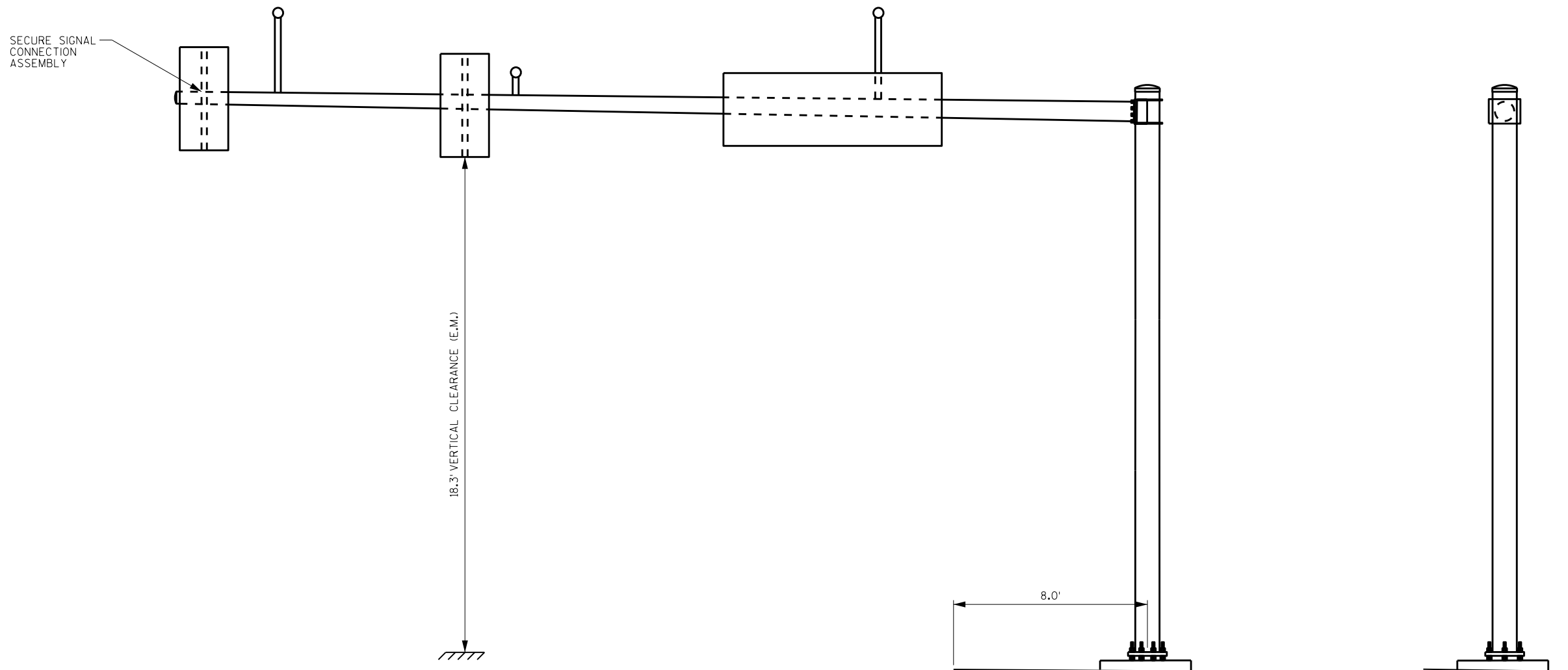


ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.07	REPLACE RODENT SCREEN	1	EACH	2
SPV.0060.09	TENSION STRUCTURAL BOLT (FRICTION)	6	EACH	3
SPV.0060.17	SECURE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGNAL STRUCTURE S-51-1107			SHEET 46

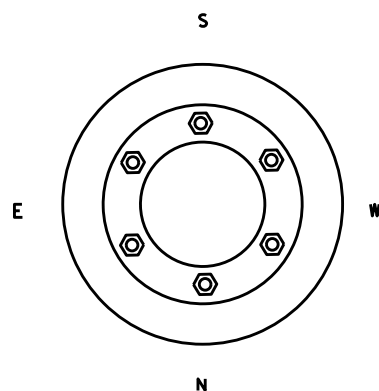
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LOOKING WEST

LOOKING SOUTH



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.17	SECURE SIGNAL CONNECTION ASSEMBLY	1	EACH	4

NO.	DATE	REVISION	BY

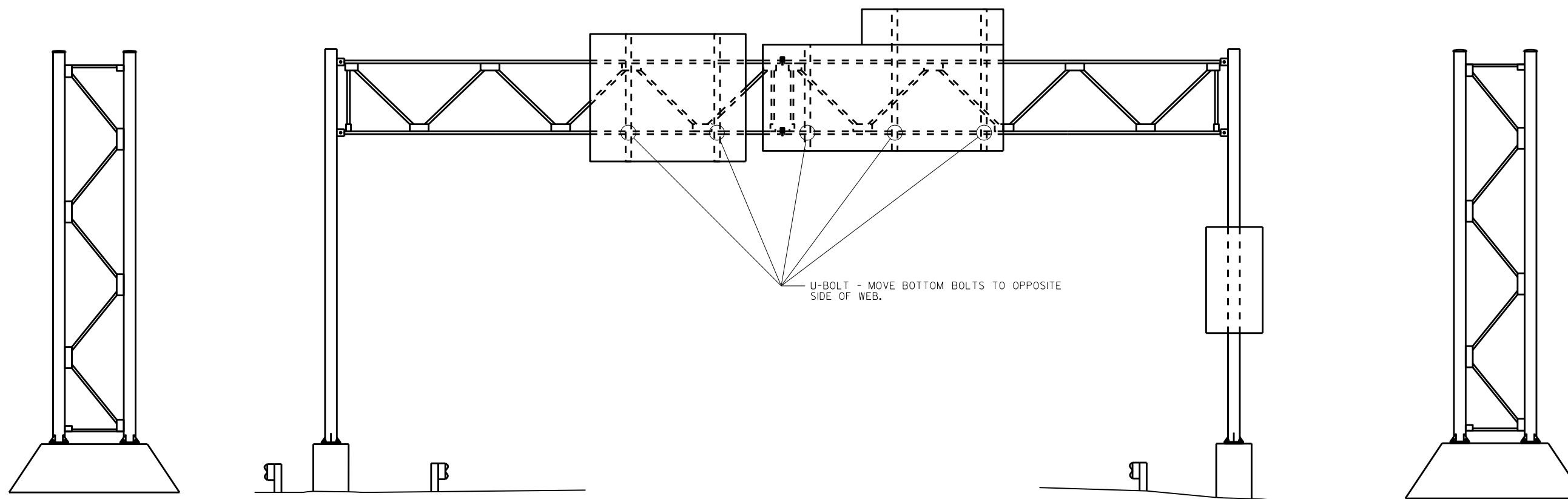
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. **SAD**

SIGNAL STRUCTURE S-51-1153

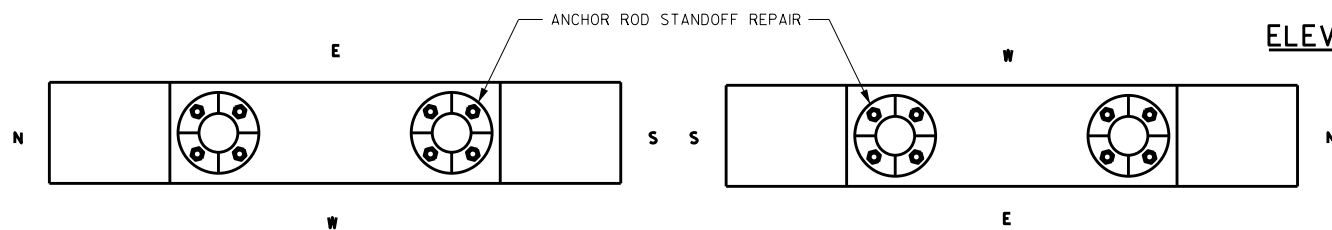
SHEET 47



LOOKING WEST

LOOKING SOUTH
ELEVATION

LOOKING EAST



EAST FOUNDATION DETAIL

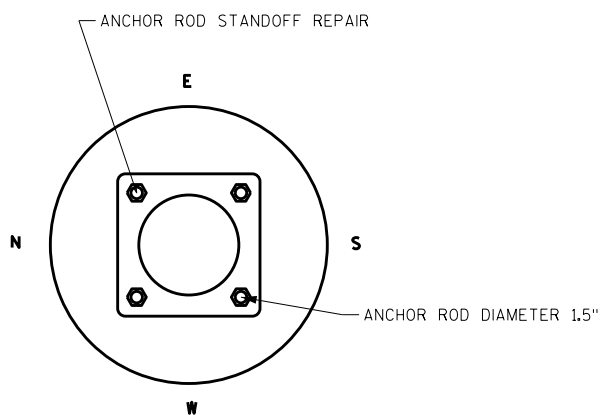
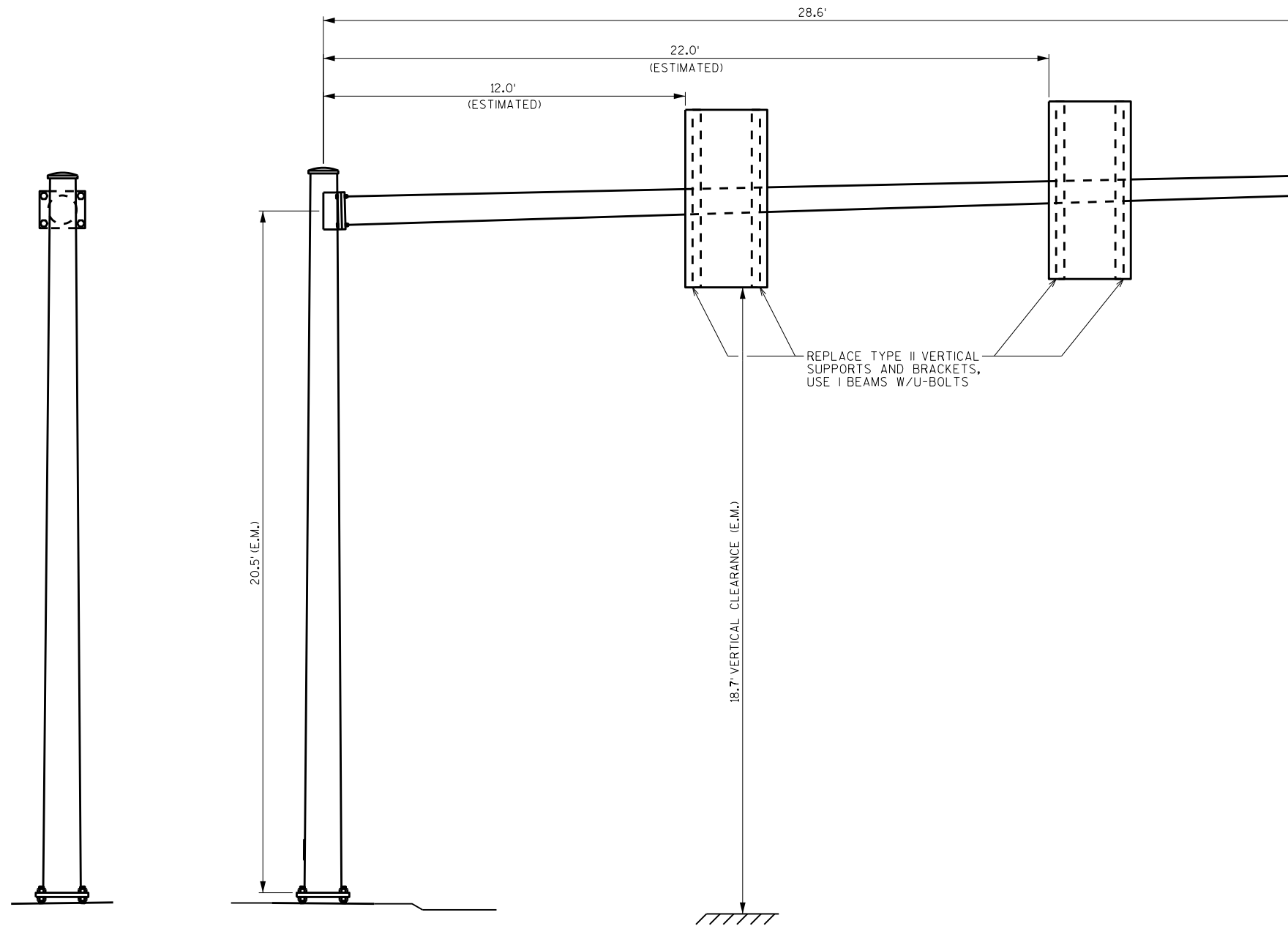
WEST FOUNDATION DETAIL

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	16	EACH	2
SPV.0060.03	ANCHOR ROD STANDOFF REPAIR	15	EACH	2
SPV.0060.10	U-BOLT REPAIR	5	EACH	3

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGN STRUCTURE S-64-0017			SHEET 48

8

8



LOOKING EAST

LOOKING NORTH

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.03	ANCHOR ROD STANDOFF REPAIR	3	EACH	2
SPV.0060.11	REPLACE SIGN CONNECTION ASSEMBLY (W/I-BEAM AND U-BOLTS)	4	EACH	3

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

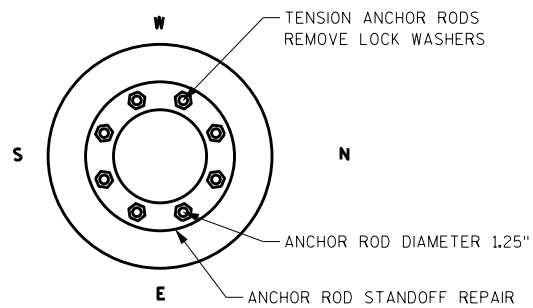
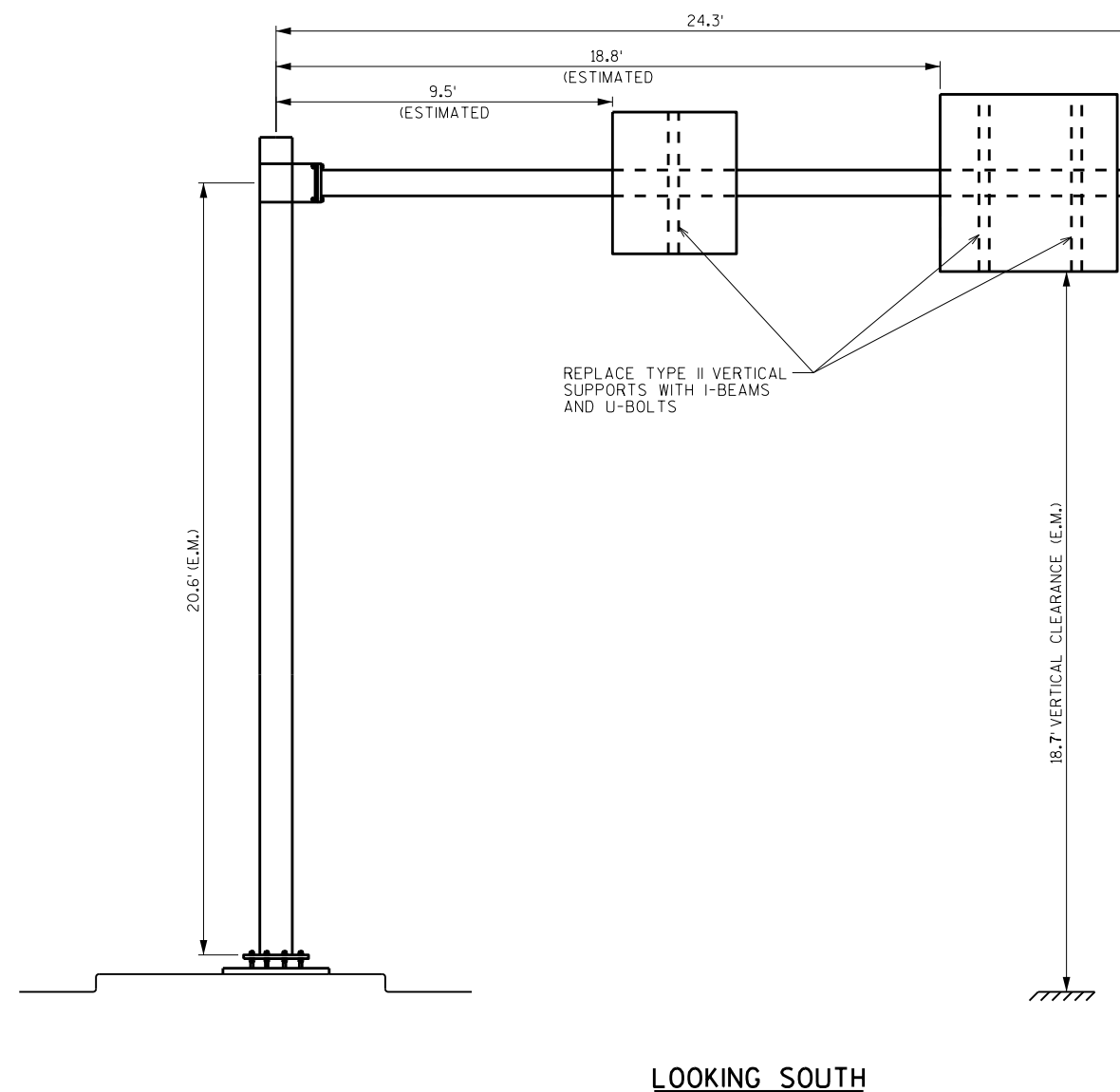
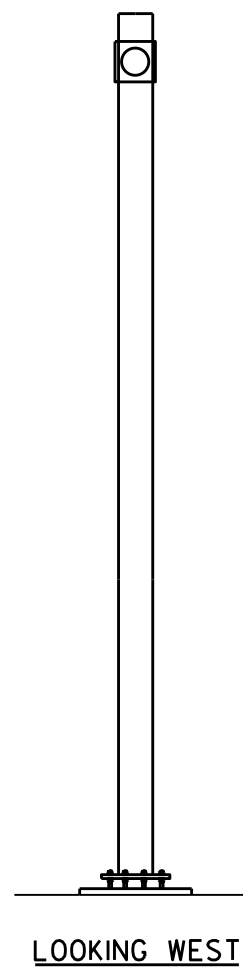
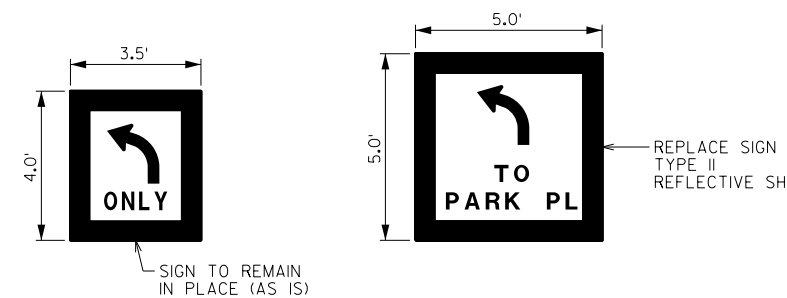
DRAWN BY: DDS PLANS CK'D: SAD

SIGN STRUCTURE S-67-0230

SHEET 49

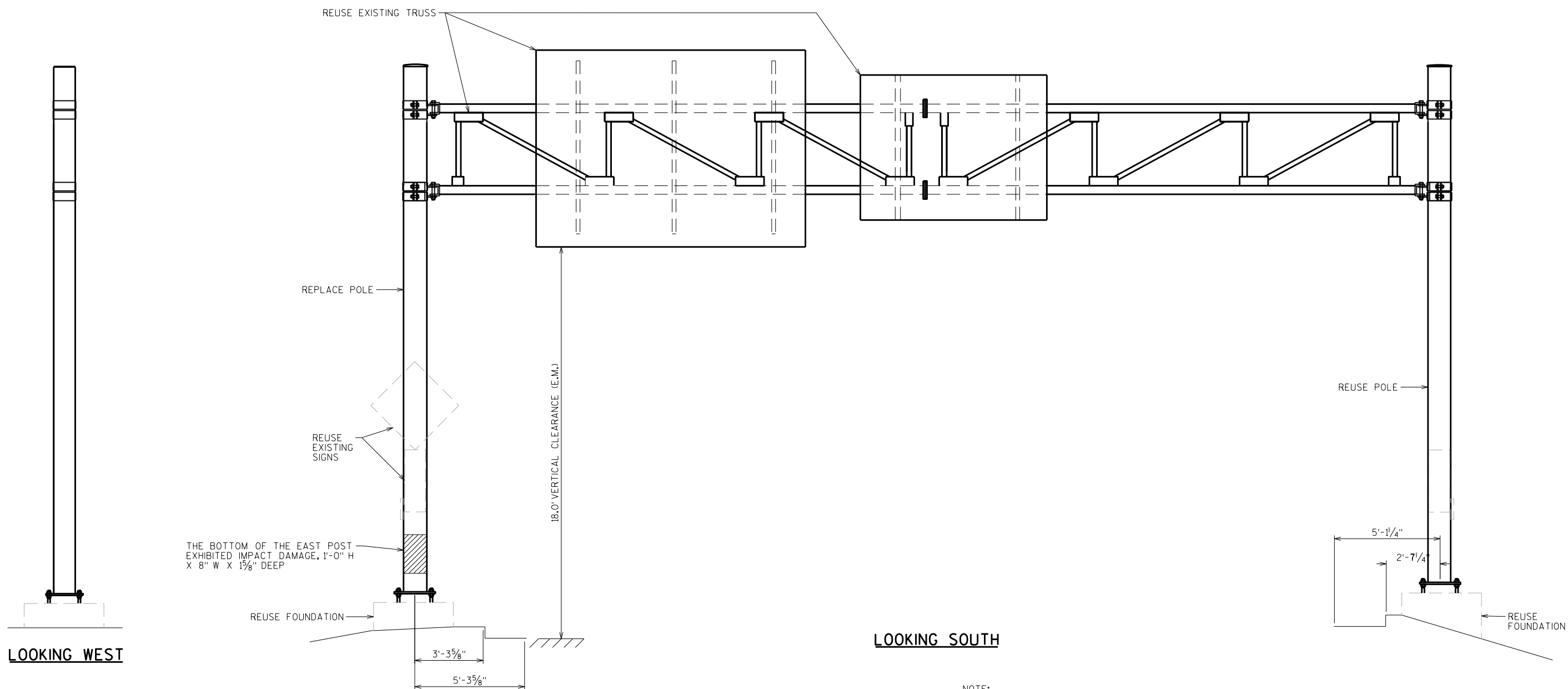
8

8



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
637.2220	SIGN - TYPE II REFLECTIVE SH	25	SF	—
SPV.0060.01	TENSION ANCHOR RODS	8	EACH	2
SPV.0060.03	ANCHOR ROD STANDOFF REPAIR	7	EACH	2
SPV.0060.11	REPLACE SIGN CONNECTION ASSEMBLY (W/I-BEAM AND U-BOLTS)	3	EACH	3

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY		DDS	PLANS CK'D. SAD
SIGN STRUCTURE S-67-0238			SHEET 50



LOOKING SOUTH

NOTE:

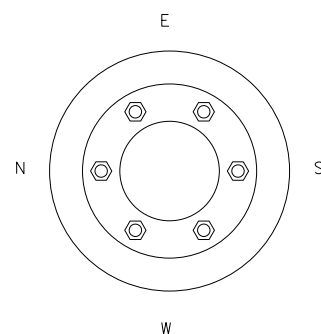
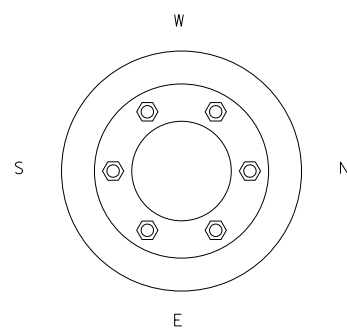
EXISTING TRUSS AND SIGNS TO BE REUSED WITH NEW POST.

CONTRACTOR SHALL VERIFY ANCHOR PATTERN, POST TO TRUSS CONNECTION AND POST SIGN CONNECTION DIMENSIONS AND ORIENTATIONS FOR NEW POST.

USE NEW BOLTS, NUTS WASHERS CONFORMING TO 641 OF THE STANDARD SPEC. NEW HARDWARE FOR THE POST TO TRUSS CONNECTION IS ALSO REQUIRED.

ORIGINAL POST AND CONNECTION SHOP DRAWING DETAILS INCLUDED FOR REFERENCE ON SHEETS S-67-915 ORIGINAL SHOP DRAWINGS 1 AND 2.

LOOKING WEST



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.04	REPLACE POLE	1	EACH	---

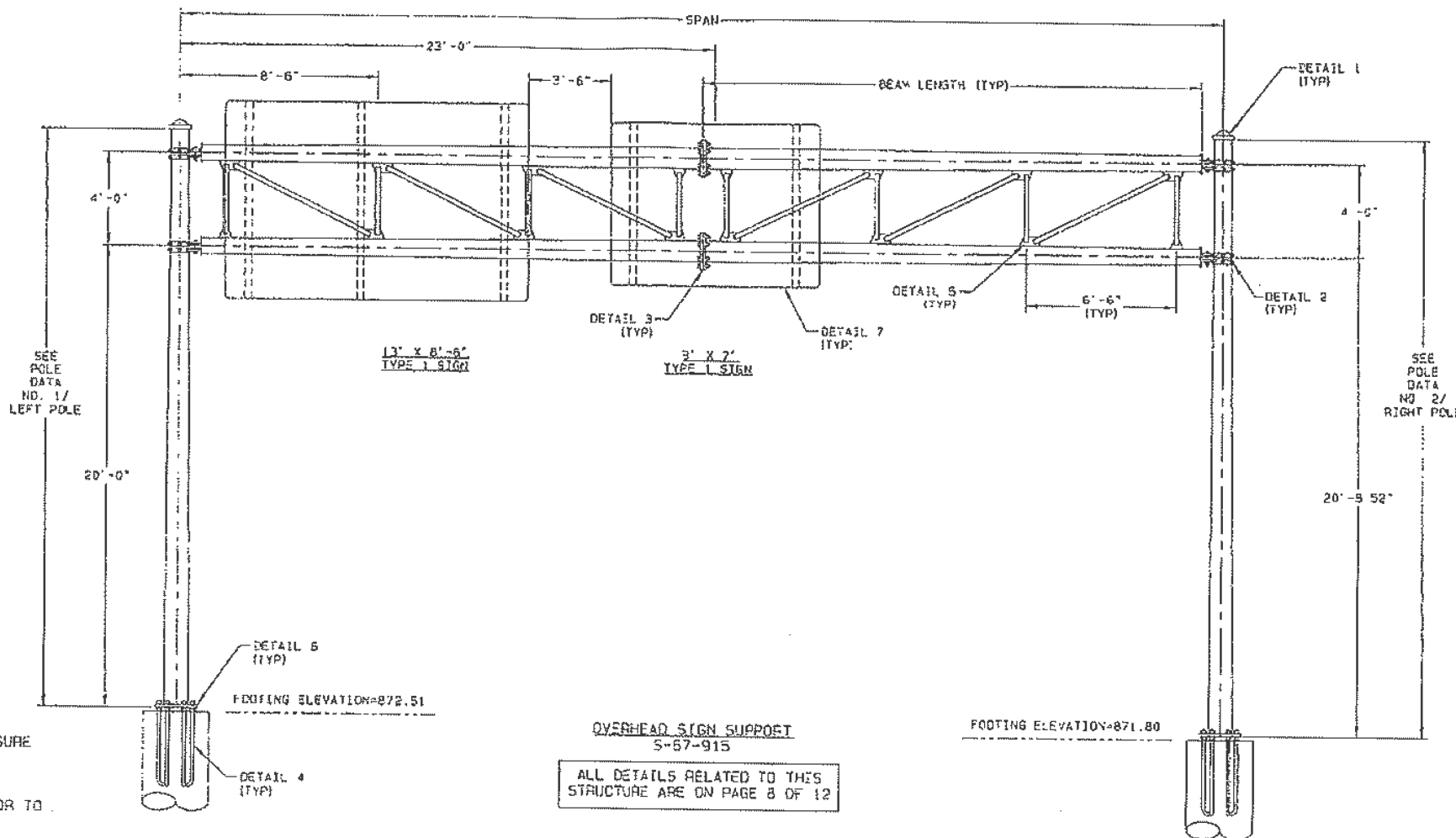
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
		DRAWN BY DDS	PLANS CK'D. SAD
SIGN STRUCTURE S-67-0915			SHEET 51

8

8

STRUCTURE SCHEDULE

QTY.	STRUCTURE NO.	SPAN	POLE NO. 1/LEFT POLE DATA				POLE NO. 2/RIGHT POLE DATA				BEAM DATA				BASE PLATE DATA				ANCHOR BOLT DATA				
			BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	BASE DIA. (IN)	END DIA. (IN)	LENGTH (M/PLANGES)	GAUGE OR THK. (IN)	DIAMETER "D" (IN)	BOLT CIRCLE "Y" (IN)	THK "N" (IN)	BOLT HOLE "Z" (IN)	QTY	DIA. "K" (IN)	LENGTH "L" (IN)	HOOK "H" (IN)	THREAD LENGTH "U" (IN)
1	S-67-915	45'-0"	12.50	9.00	25.00	3	12.50	8.90	25.75	3	11.00	7.99	21'-5.94"	7	21.50	17.00	1.50	1.75	6	1.50	54.00	6.00	8.00

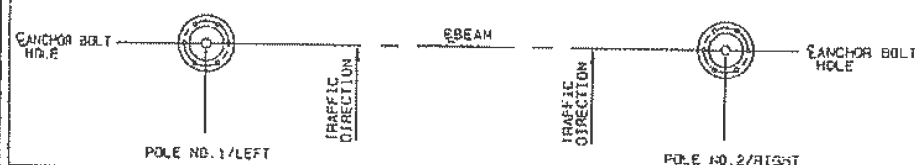


NOTES:

- * 1. POLE LENGTHS MUST BE VERIFIED TO ASSURE PROPER ROADWAY CLEARANCES PRIOR TO RELEASE FOR MANUFACTURE.
- 2. SIGN LOCATIONS MUST BE VERIFIED PRIOR TO RELEASE FOR MANUFACTURE.

OVERHEAD SIGN SUPPORT
S-67-915
ALL DETAILS RELATED TO THIS STRUCTURE ARE ON PAGE 8 OF 12

RADIAL INDEX



MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
ALL TAPERED SHAFTS	A595 GR. A OR A572	55	WEB MEMBER-2" SCHED. 40	A513 OR EQUIV.	36
POLE BASE PLATE	A36	36	ANCHOR BOLTS	F1554 GR. 5B	55
ARM FLANGE PLATE	A36	36	CONNECTING BOLTS	A325	
ARM END PLATE & WINGS	A572 GR. 55	55	GALVANIZING	A123 & A153	
WEB GUSSETS	A36	36			

*LUBRICATE IN THE FIELD IF NECESSARY.

8

TITLE OVERHEAD SIGN SUPPORT

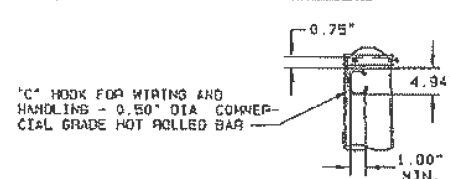
VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS



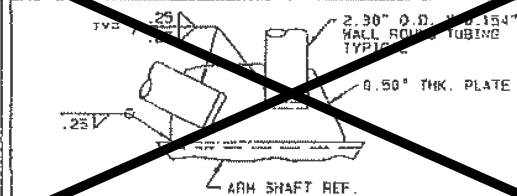
ORDER NUMBER:
PAGE NUMBER: 7 OF 12
DRAWING NUMBER: REV

8

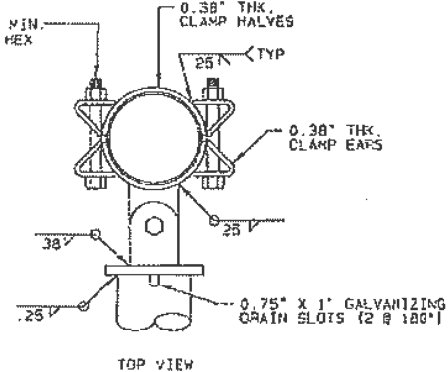
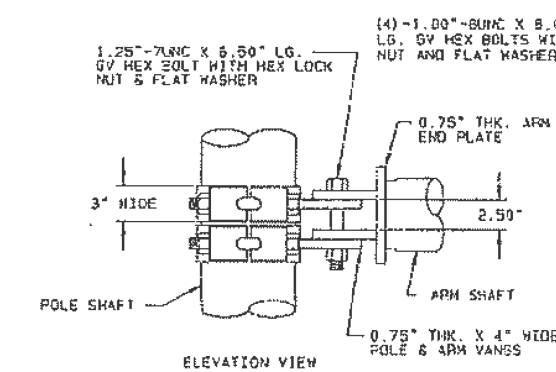
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY: DDS/SAD		PLANS CKD. SAD	
S-67-915 ORIGINAL SHOP DRAWINGS 1		SHEET 52	



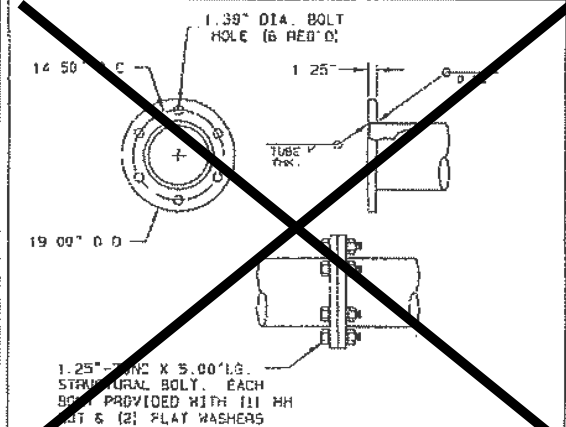
DETAIL 1 POLE TOP



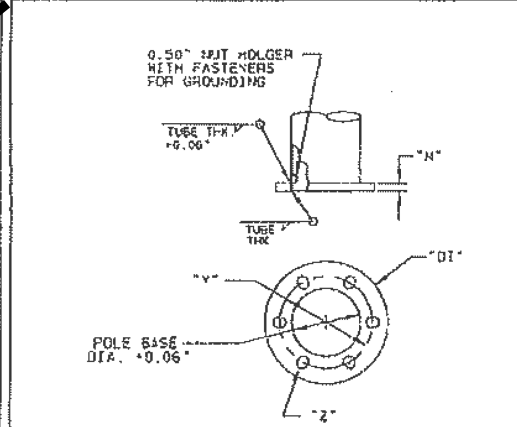
DETAIL 5 WEB GUSSET



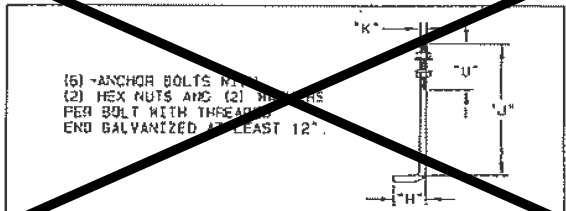
DETAIL 2 TRUSS ARM CONNECTION



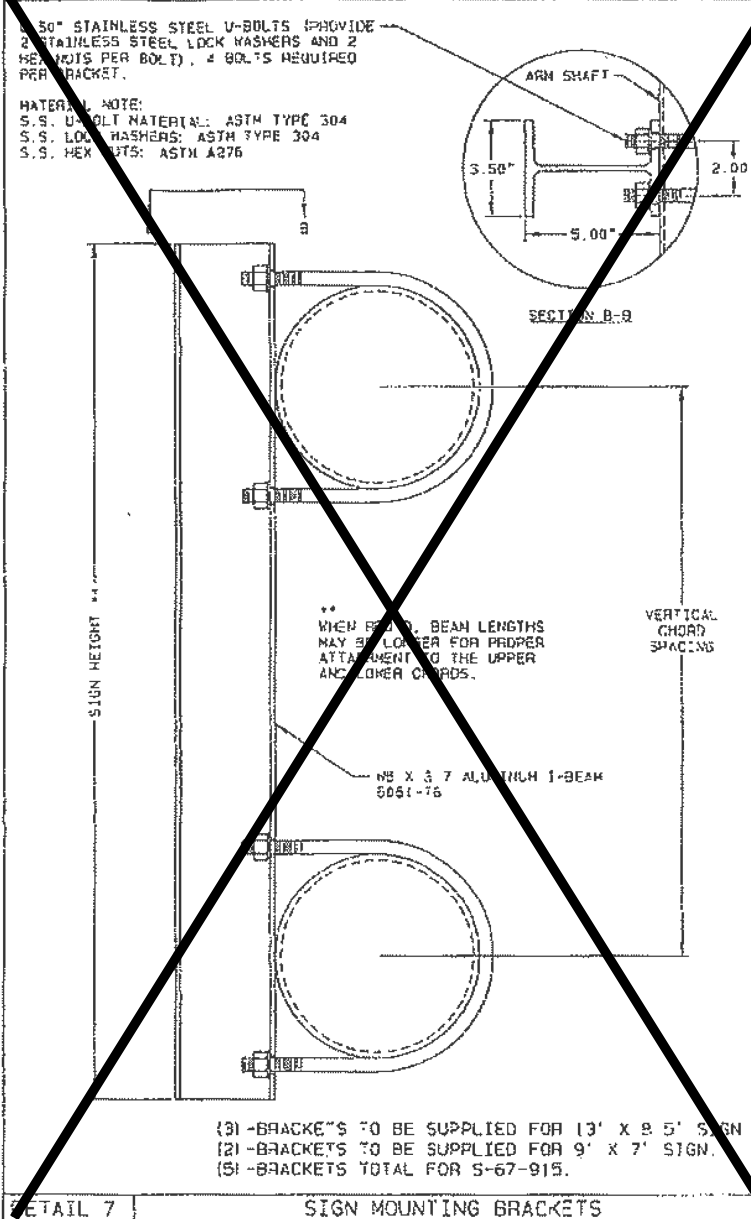
DETAIL 3 FLANGE PLATE



DETAIL 6 POLE BASE



DETAIL 4 ANCHOR BOLT



DETAIL 7 SIGN MOUNTING BRACKETS

J98
 TITLE OVERHEAD SIGN SUPPORT

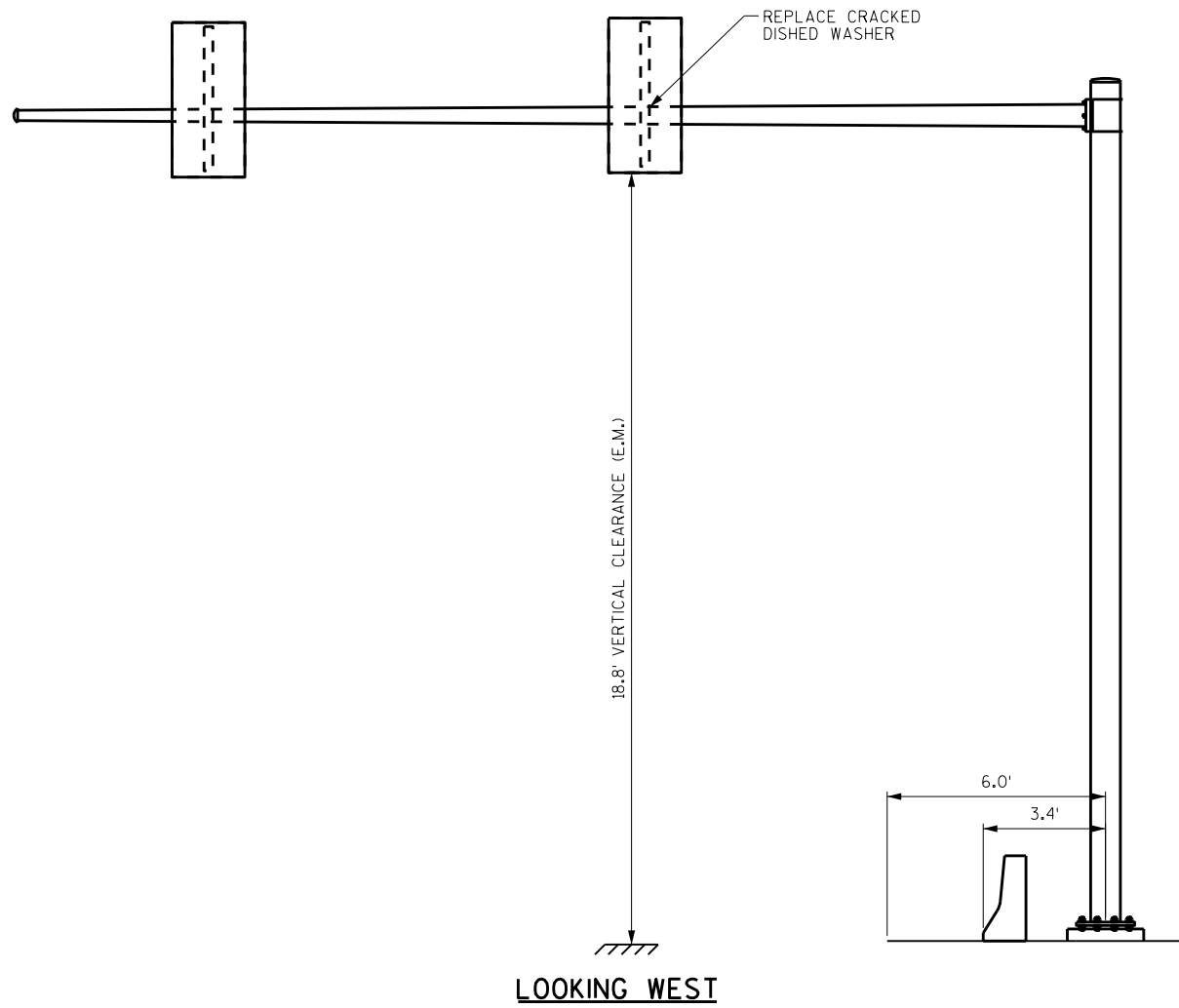
VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS ENGINEER APPROVED MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.



ORDER NUMBER:
 PAGE NUMBER: 8 OF 12
 DRAWING NUMBER: REV

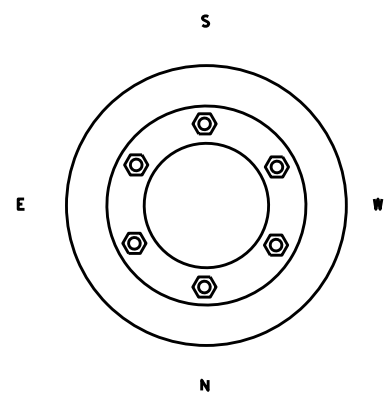
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
DRAWN BY DDS/SAD		PLANS CKD. SAD	
S-67-915 ORIGINAL SHOP DRAWINGS 2		SHEET 53	

8
 SCALE = 0.05



LOOKING WEST

LOOKING SOUTH



8

8

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	2	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

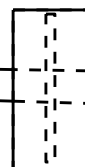
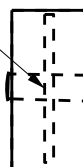
REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. **SAD**

SIGNAL STRUCTURE S-67-1107

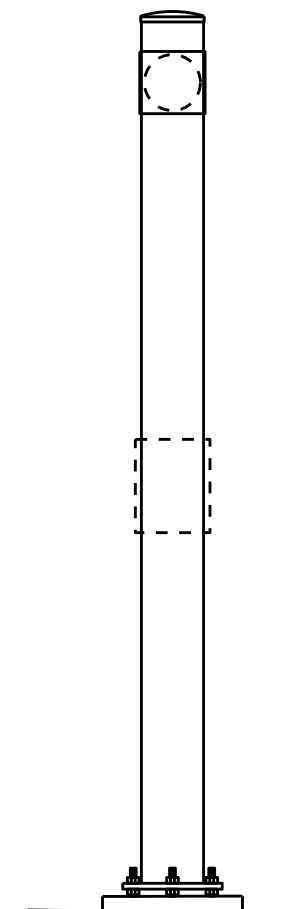
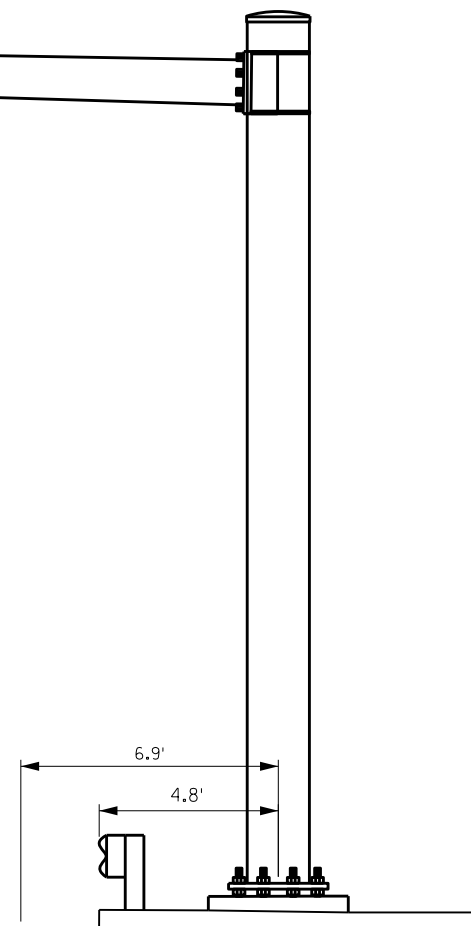
SHEET 54

REPLACE CRACKED
DISHED WASHER

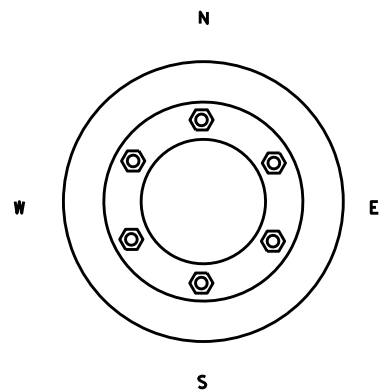


20.5' VERTICAL CLEARANCE (E.M.)

LOOKING EAST



LOOKING NORTH



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

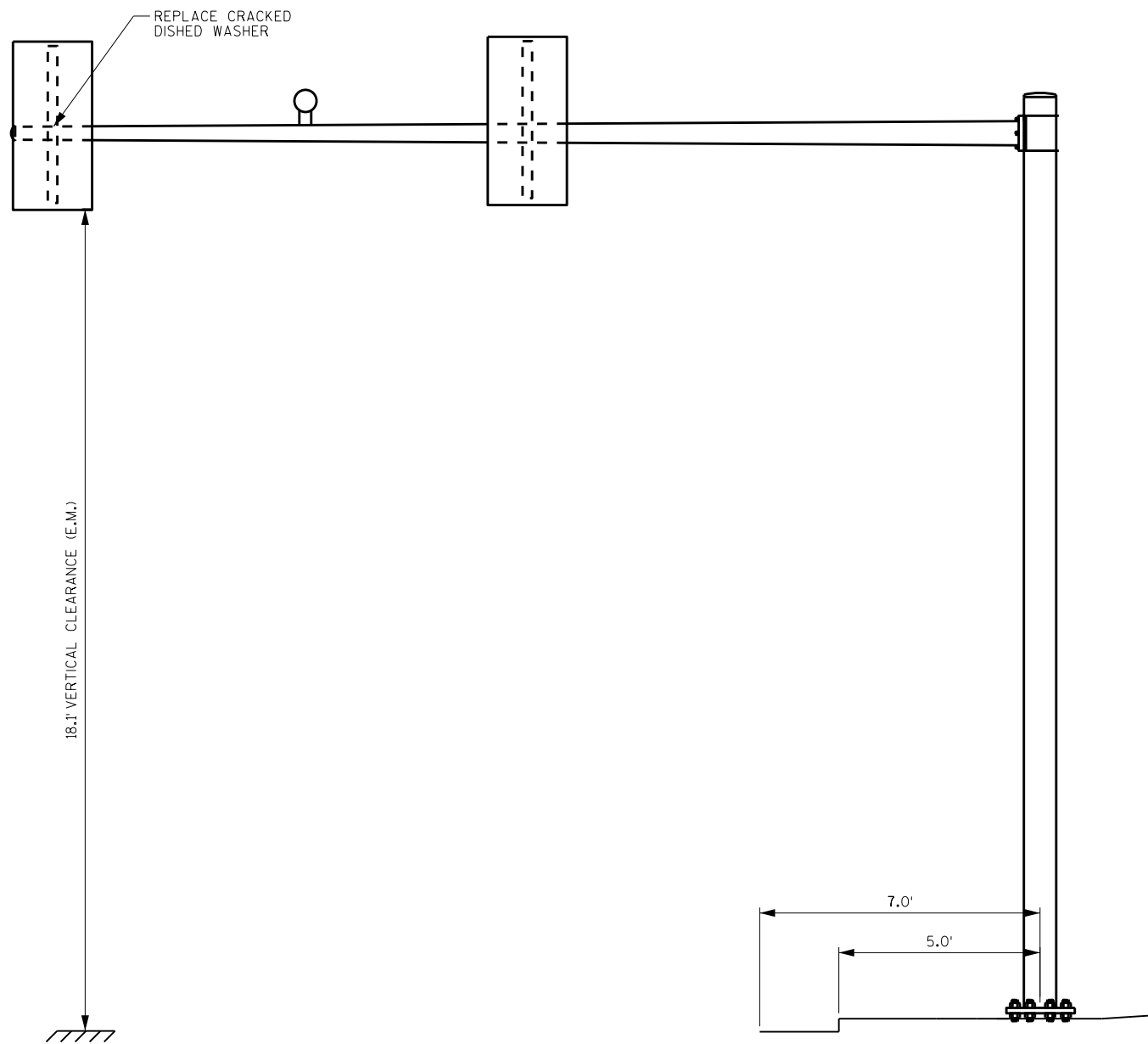
DRAWN BY: DDS PLANS CK'D. **SAD**

SIGNAL STRUCTURE S-67-1112

SHEET 55

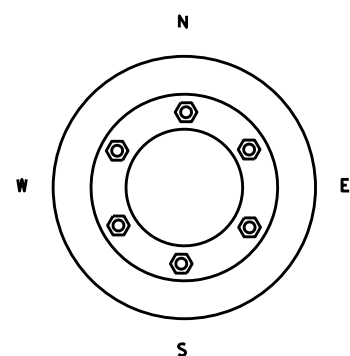
8

8



LOOKING EAST

LOOKING NORTH



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

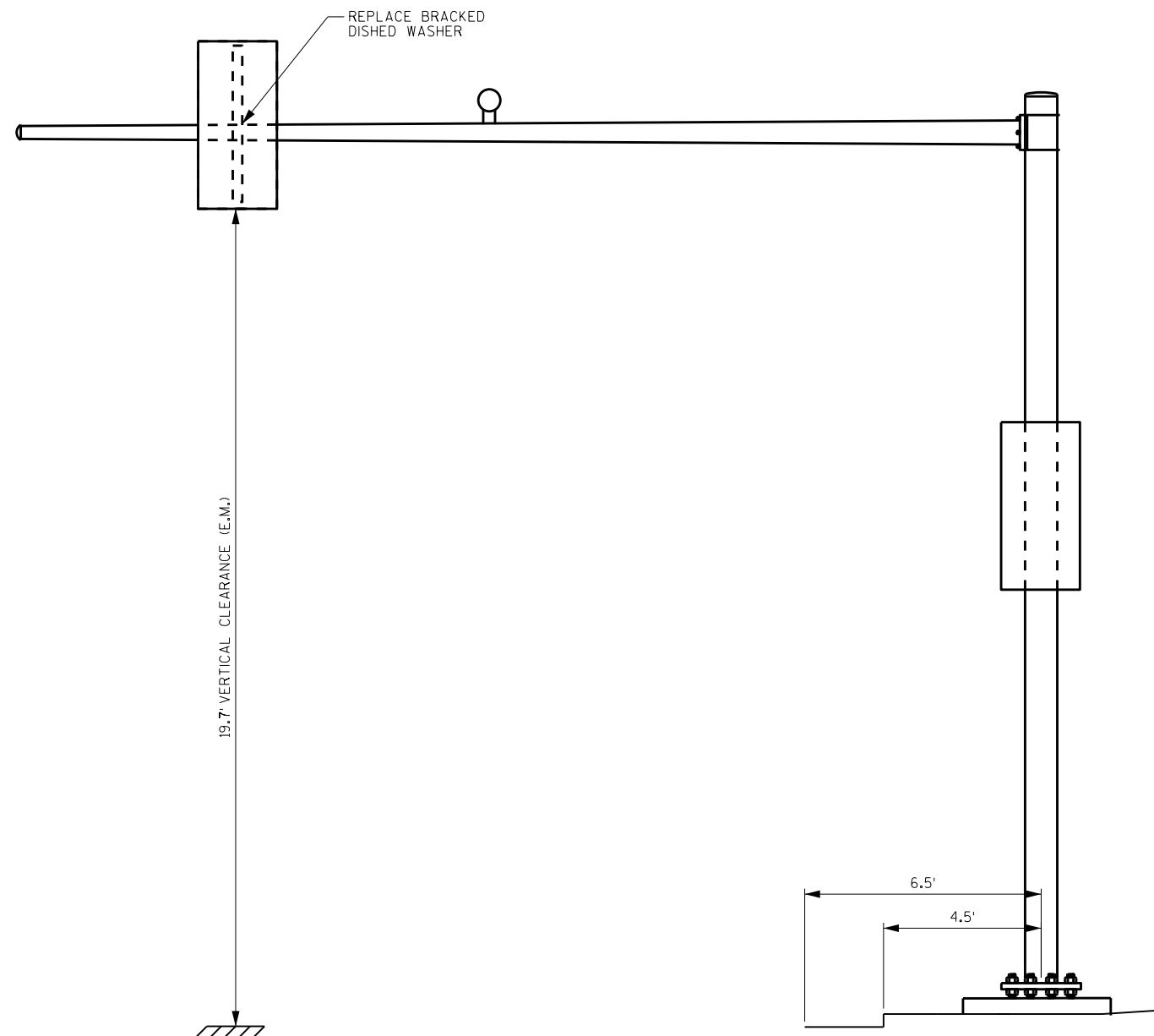
DRAWN BY: DDS PLANS CK'D. SAD

SIGNAL STRUCTURE S-67-1116

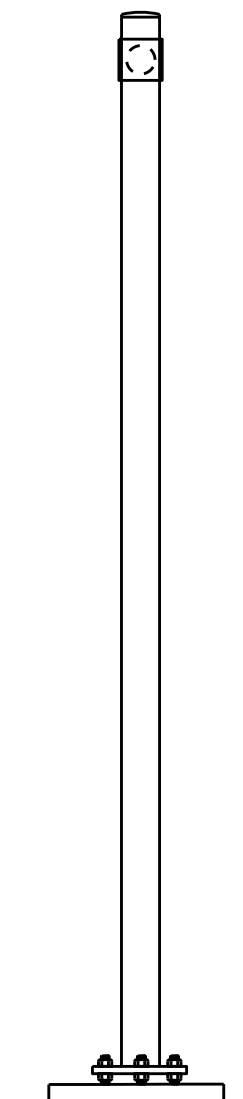
SHEET 56

8

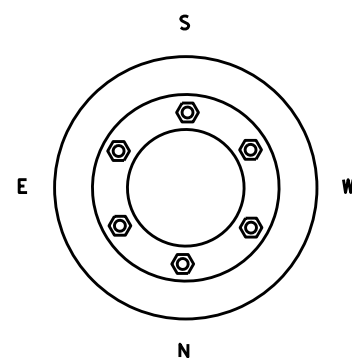
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LOOKING WEST



LOOKING SOUTH



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CK'D. **SAD**

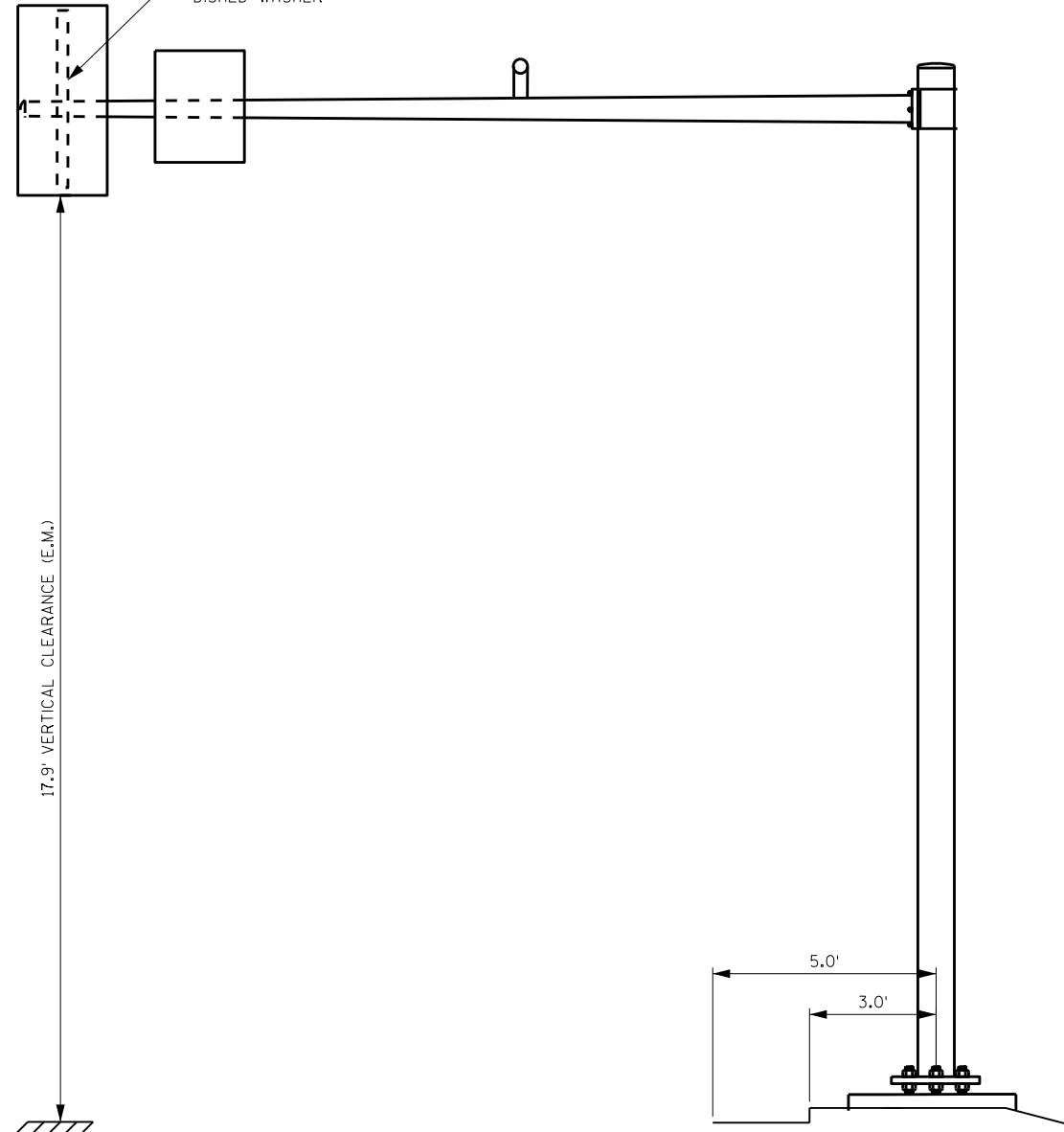
SIGNAL STRUCTURE S-67-1118

SHEET 57

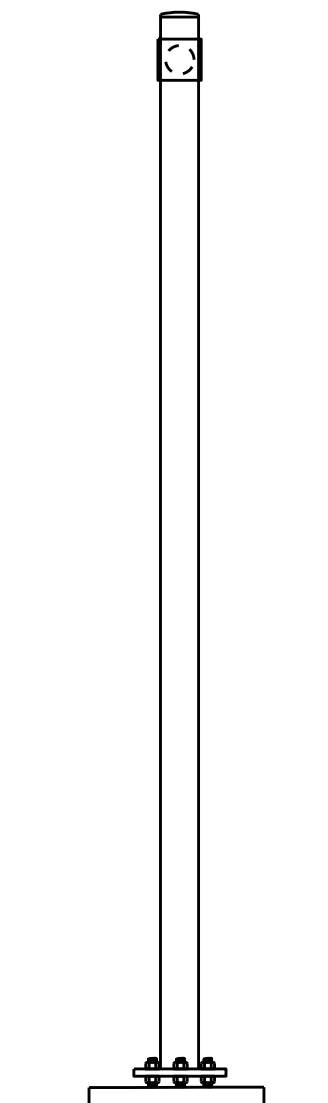
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8

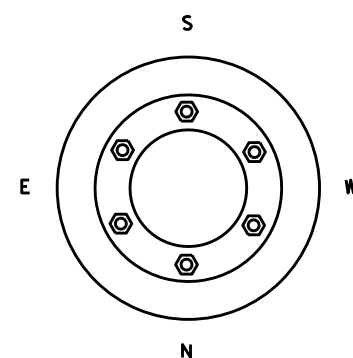
REPLACE CRACKED
DISHED WASHER



LOOKING WEST



LOOKING SOUTH

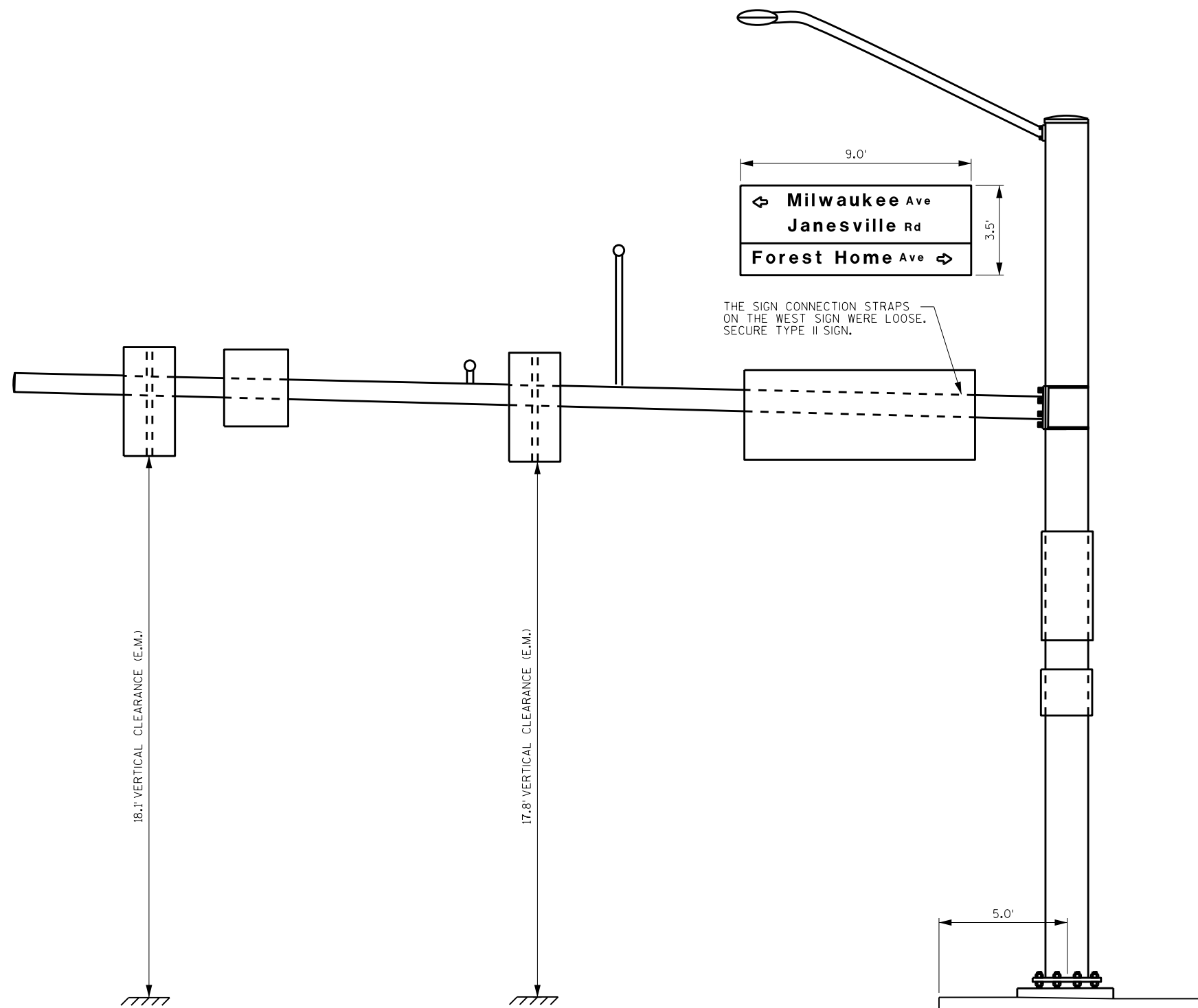


ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
REPAIR PLANS 2020			
		DRAWN BY	PLANS CKD. SAD
SIGNAL STRUCTURE S-67-1128		SHEET 58	

8

8



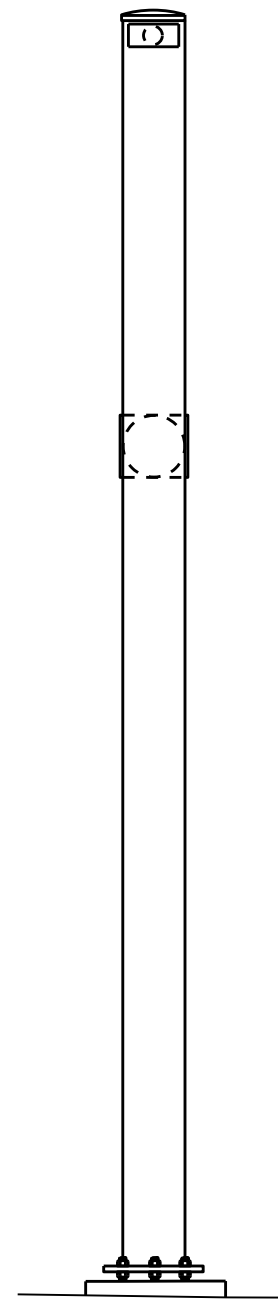
THE SIGN CONNECTION STRAPS ON THE WEST SIGN WERE LOOSE. SECURE TYPE II SIGN.

18.1' VERTICAL CLEARANCE (E.M.)

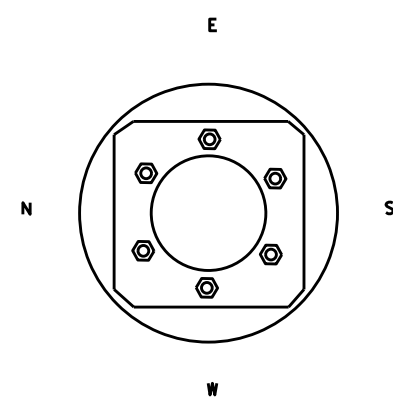
17.8' VERTICAL CLEARANCE (E.M.)

5.0'

LOOKING SOUTH



LOOKING EAST



8

8

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.18	SECURE TYPE II SIGN	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

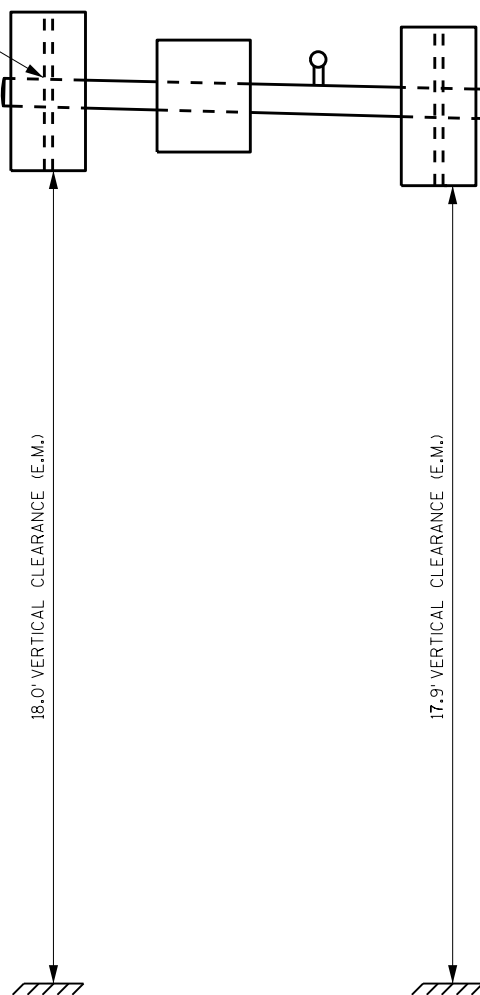
REPAIR PLANS 2020

DRAWN BY: DDS PLANS CKD. **SAD**

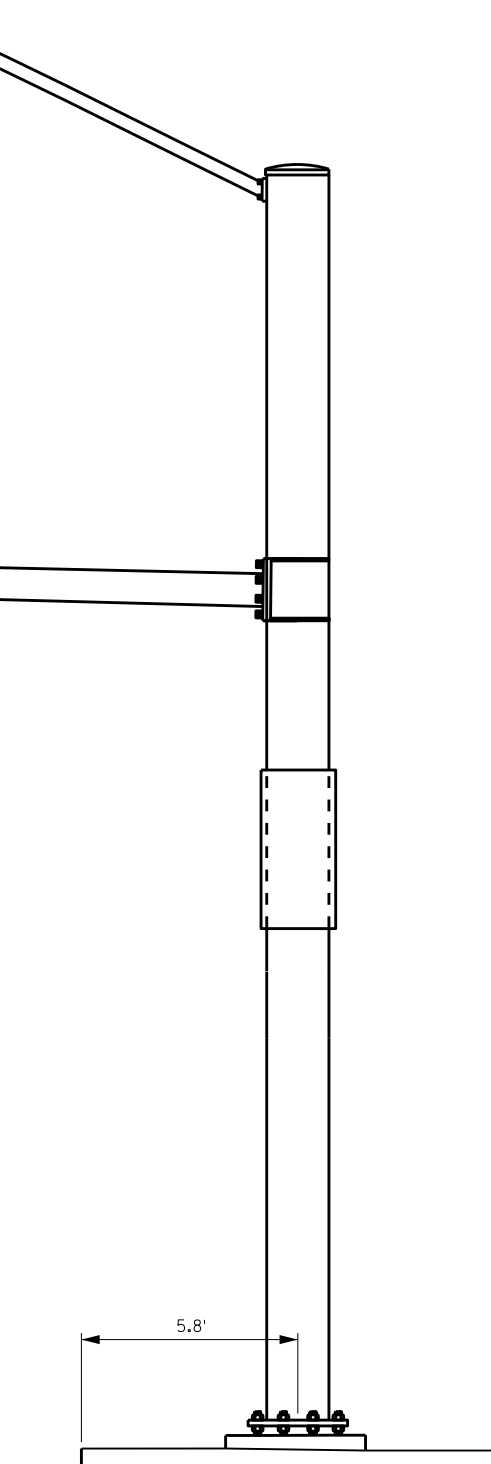
SIGNAL STRUCTURE S-67-1269

SHEET 59

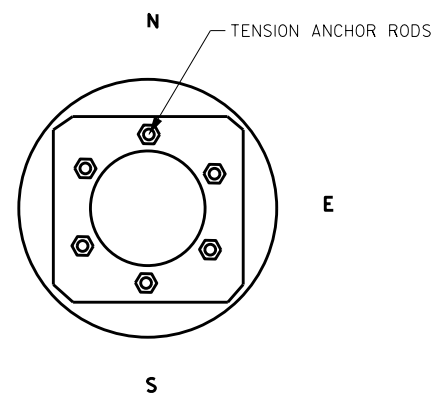
REPLACE CRACKED
DISHED WASHER



LOOKING EAST



LOOKING NORTH



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	6	EACH	2
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CKD. SAD

SIGNAL STRUCTURE S-67-1270

SHEET 60

REPLACE CRACKED DISHED WASHER

SECURE AND RESET TYPE II SIGNS

REPLACE VERTICAL TO HORIZONTAL SIGNAL CONNECTION BRACKET

17.9' VERTICAL CLEARANCE (E.M.)

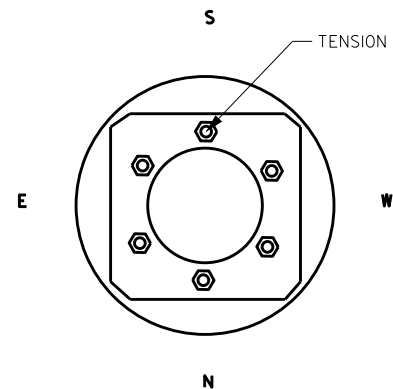
17.9' VERTICAL CLEARANCE (E.M.)

5.0'

LOOKING WEST

LOOKING SOUTH

TENSION ANCHOR RODS



ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
SPV.0060.01	TENSION ANCHOR RODS	6	EACH	2
SPV.0060.13	REPLACE DISHED WASHER	1	EACH	4
SPV.0060.15	REPLACE POST MOUNTED SIGNAL CONNECTION ASSEMBLY	1	EACH	4
SPV.0060.18	SECURE TYPE II SIGN	2	EACH	—

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

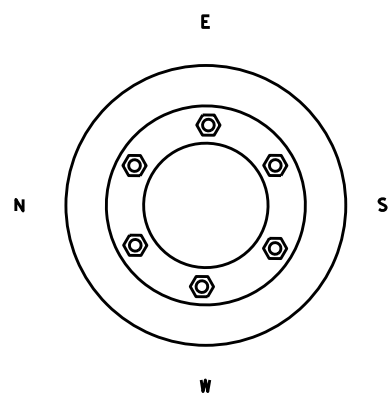
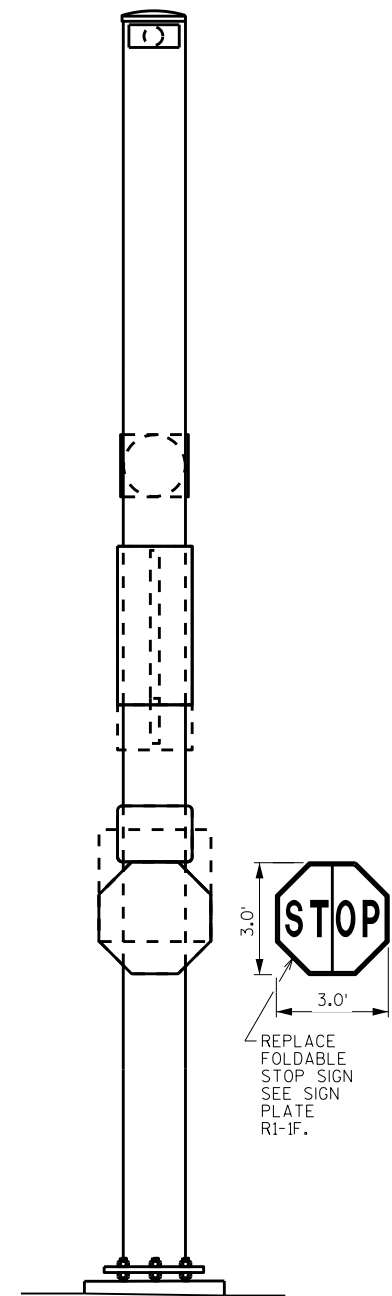
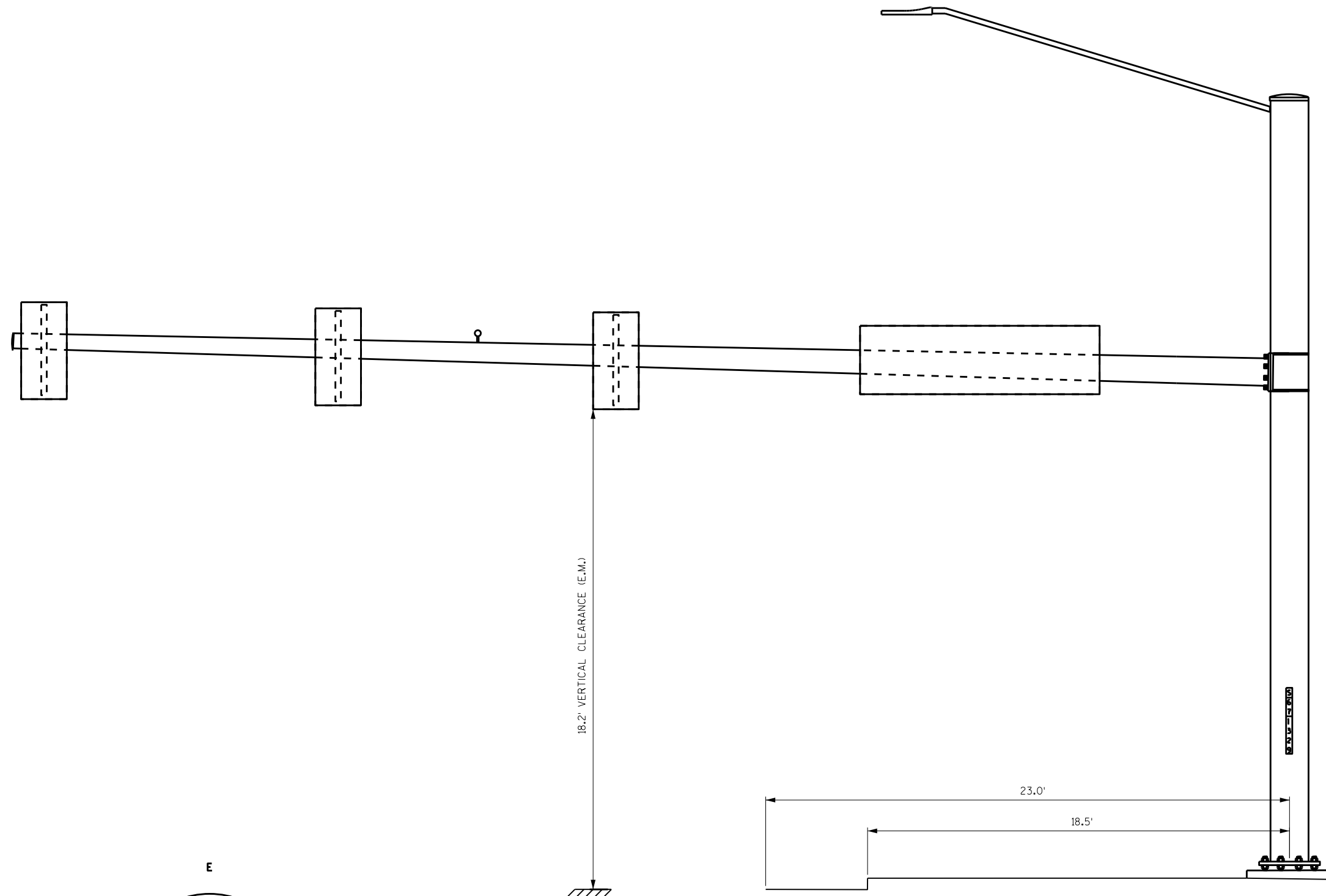
DRAWN BY: DDS PLANS CKD. **SAD**

SIGNAL STRUCTURE S-67-1271

SHEET 61

8

8



LOOKING SOUTH

LOOKING EAST

ITEM NUMBER	BID ITEMS	QTY	UNITS	REPAIR DETAIL SHEET NO.
637.2225	SIGN TYPE II REFLECTIVE SH FOLDING	9	SF	---

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

REPAIR PLANS 2020

DRAWN BY: DDS PLANS CKD. SAD

SIGNAL STRUCTURE S-67-1329

SHEET 62

8

8

GENERAL NOTES



- DRAWINGS SHALL NOT BE SCALED.
 - ALTERNATE FOUNDATION DESIGNS ARE NOT ALLOWED.
 - ALL STRUCTURAL STEEL MEMBERS, PLATES, ANCHOR RODS, H.S. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER SECTION 660 OF THE WISDOT STANDARD SPECIFICATIONS.
 - CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO FABRICATION OF STRUCTURE.
 - EXACT LOCATION OF HIGH MAST LIGHT BASE SHALL BE DETERMINED BY THE REGION LIGHTING ENGINEER.
 - CONTRACTOR SHALL VERIFY UTILITY CONFLICTS PRIOR TO CONSTRUCTION OF FOOTINGS.
 - POLE AND ANCHOR RODS TO BE DESIGNED TO AASHTO STANDARD SPECS. FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 6TH ED WITH 2015 INTERIMS.
 - POLE FABRICATOR TO DESIGN AND SUPPLY POLE, ANCHOR RODS AND TEMPLATES IN ACCORDANCE WITH THE PLANS AND STANDARD SPECIFICATIONS.
 - OUTSIDE DIA. OF DRILLED SHAFT AT TOP IS DEPENDENT ON ANCHOR BOLT CIRCLE REQUIRED FOR POLE. MAINTAIN 4" MIN. COVER OF REINFORCEMENT.
 - INSTALL STRUCTURE ID PLAQUE PER S.D.D. 10 A 4-3
 - SEE HIGH MAST LIGHT ELECTRICAL SHEETS FOR LUMINAIRE AND HARDWARE INFORMATION.
 - EXISTING FOUNDATIONS TO BE ABANDONDED, SEE SPECIAL PROVISIONS FOR DETAILS.
 - REMOVAL OF EXISTING HIGH MAST LIGHT TOWER SHALL START AS SOON AS THE TEMPORARY LIGHTING OR PERMANENT LIGHTING, AS APPLICABLE, IS PLACED IN APPROVED OPERATION. STRUCTURAL AND ELECTRICAL INSPECTIONS WILL TAKE PLACE BEFORE ANY PROPOSED PERMANENT OR TEMPORARY LIGHTING IS APPROVED FOR OPERATION.
- * QUANTITY GIVEN FOR INFORMATION ONLY.

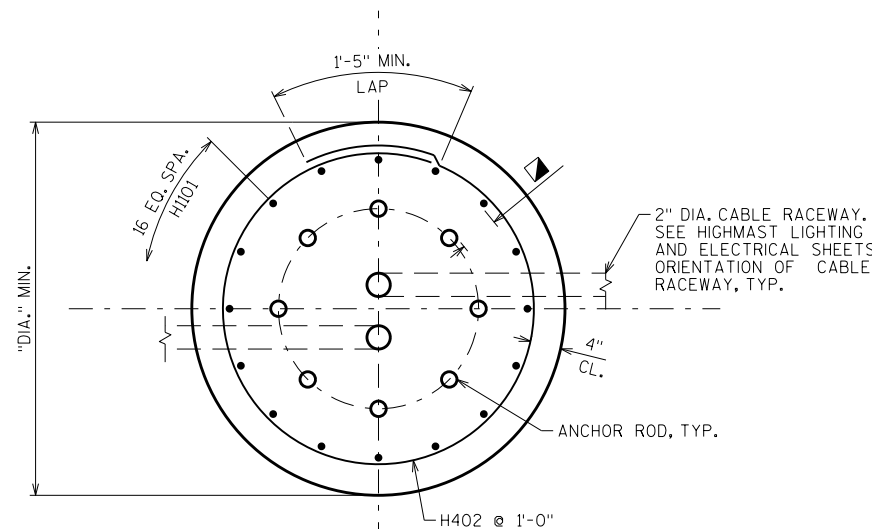
MATERIAL PROPERTIES:

- CONCRETE MASONRY _____ f'c = 3,500 P.S.I.
- BAR STEEL REINFORCEMENT: GRADE 60 _____ fy = 60,000 P.S.I.
- STRUCTURAL CARBON STEEL: ASTM A709, GRADE 36 _____ fy = 36,000 P.S.I.
- ANCHOR RODS, ASTM F1554, GRADE 55 - _____ fy = 55,000 P.S.I.
- ASTM A563A HEAVY HEX NUTS, AND ASTM F436 WASHERS.

STRUCTURE DESIGN CONTACTS:

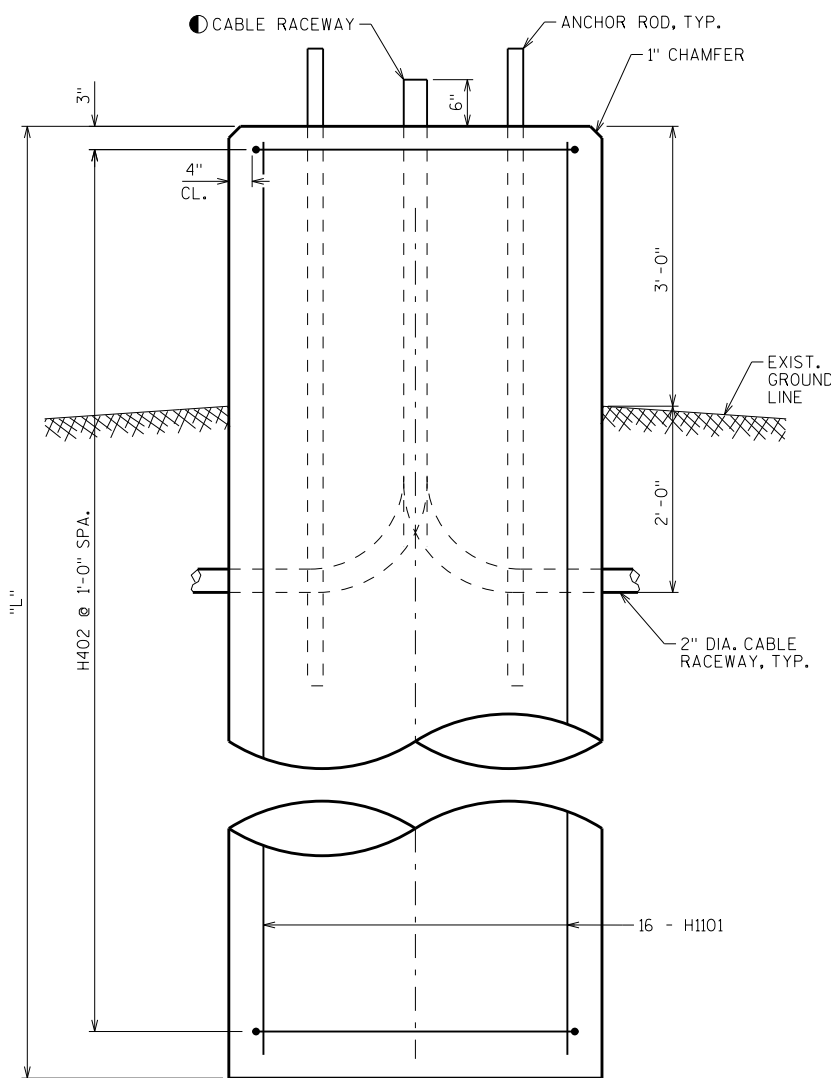
STEVEN DOOCY (608) 261-6063
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY
			
ACCEPTED		 CHIEF STRUCTURES DESIGN ENGINEER DATE 10/23/19	
STRUCTURE L-55-0010			
HML REPLACEMENT			
COUNTY	ST. CROIX	CITY	HUDSON
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	SAD	DESIGNED CK'D.	MJK
DRAWN BY	DDS	PLANS CK'D.	SAD
HML FOUNDATION			SHEET 63



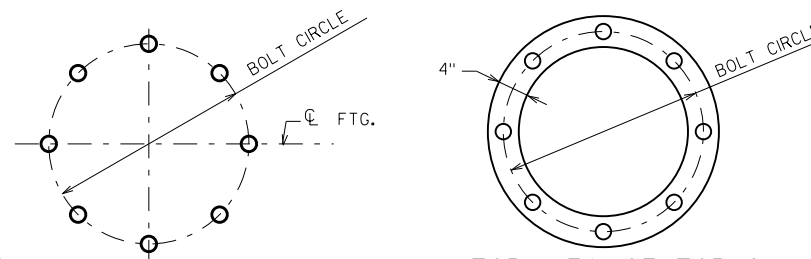
DRILLED SHAFT PLAN

REINFORCEMENT TO CLEAR ANCHOR BOLTS BY 1/2" MIN.

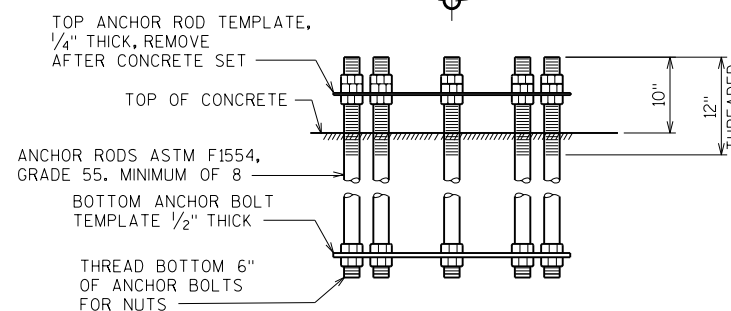


DRILLED SHAFT ELEVATION

SHAFT CASINGS, IF USED, SHALL BE REMOVED CONCURRENTLY WITH PLACING OF CONCRETE.
SEE HIGHMAST LIGHTING AND ELECTRICAL SHEETS FOR ORIENTATION OF CABLE RACEWAY.



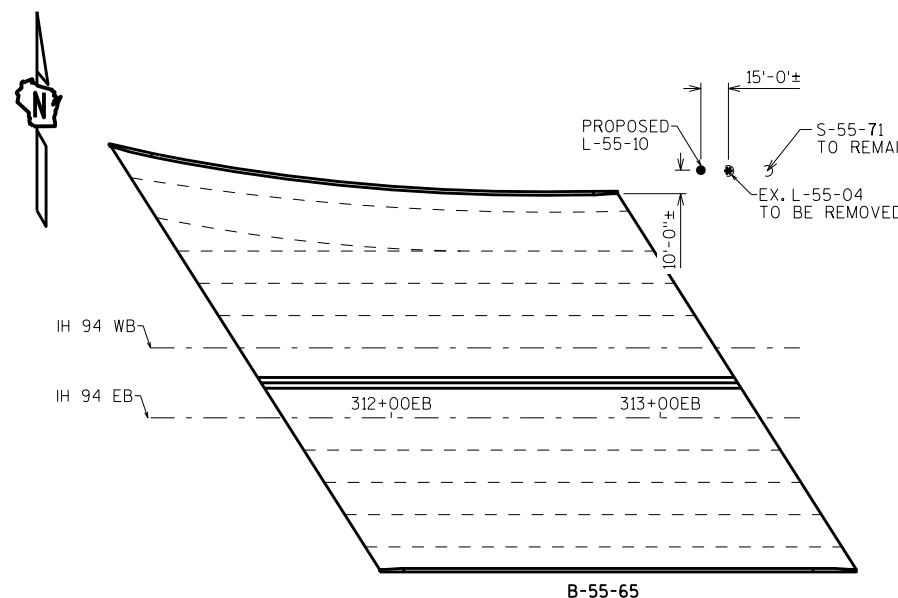
TOP VIEW OF TOP & BOTTOM TEMPLATES



ANCHOR ROD DETAILS

FOUNDATION QUANTITIES

TOWER NUMBER	POLE HEIGHT (FT)	"L" FEET	"DIA." FEET	H1101	H402	CONCRETE MASONRY C.Y. *	HIGH STRENGTH BAR STEEL REINFORCEMENT LB. *
L-55-010	100'-0"	18'-0"	4'-0"	17'-6"	11'-11"	9	1630
TOTAL						9	1630

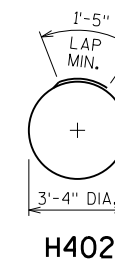


PLAN

NEW FOUNDATION IS TO BE 15 FEET FROM EXISTING HML AND SIGN BRIDGE SHAFT LOCATIONS. ACTUAL LOCATION TO BE DETERMINED BY ENGINEER.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	QTY.
204.9060.S	REMOVE HIGH MAST LIGHTING TOWER	EACH	1
660.0100	HIGH MAST FOUNDATION L-55-0010	LS	1
660.0200	HIGH MAST LIGHTING TOWER L-55-0010	LS	1
SPV.0060.02	ABANDON HIGH MAST FOUNDATION	EACH	1

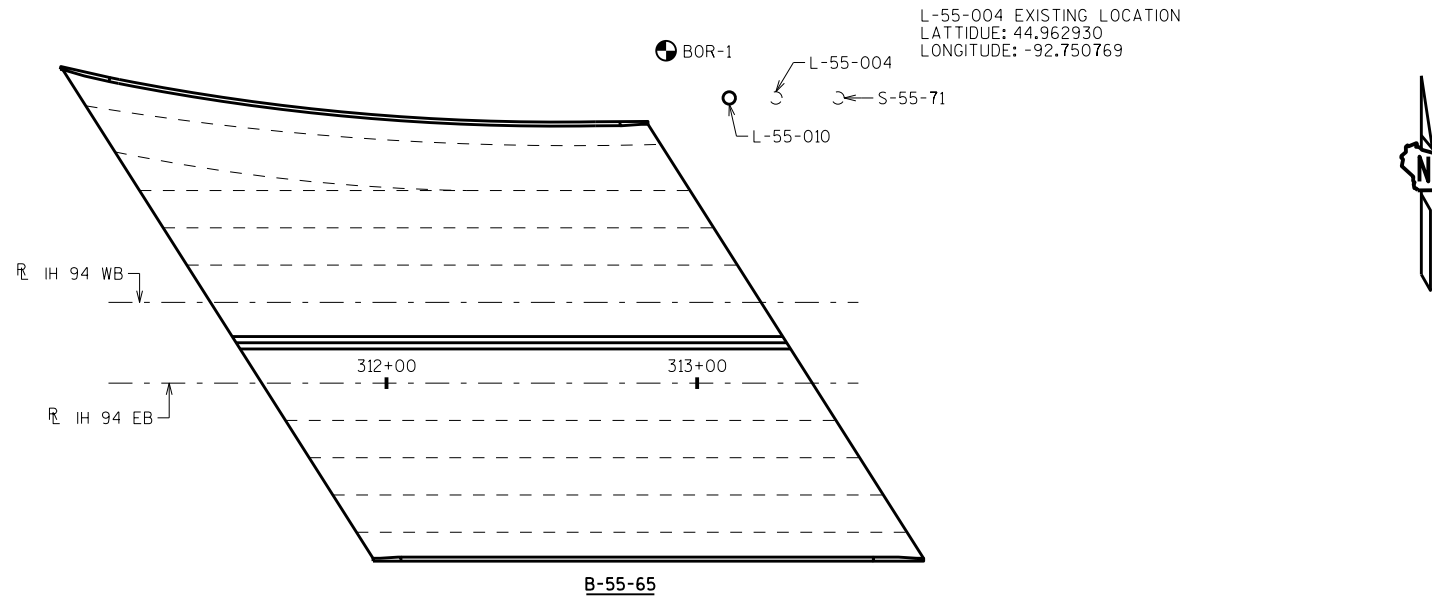


H402

8

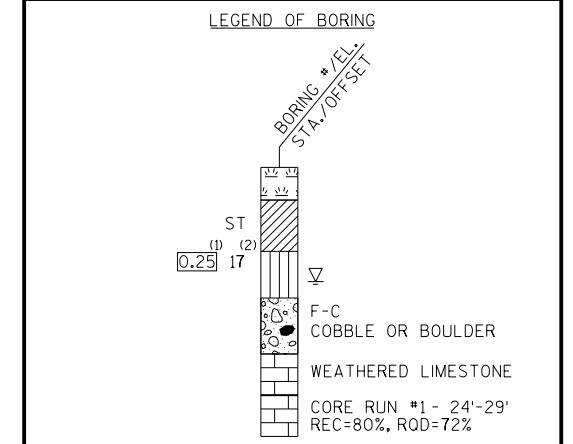
8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	12/11/1969	-----	-----
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(9) DUNN COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



L-55-004 EXISTING LOCATION
 LATITUDE: 44.962930
 LONGITUDE: -92.750769

STATE PROJECT NUMBER		
1009-30-19		
MATERIAL SYMBOLS		
	ASPHALT	
	CONCRETE	
	SAND	
	BOULDERS OR COBBLES	
	SHALE	
	PEAT	
	FILL	
	SILT	



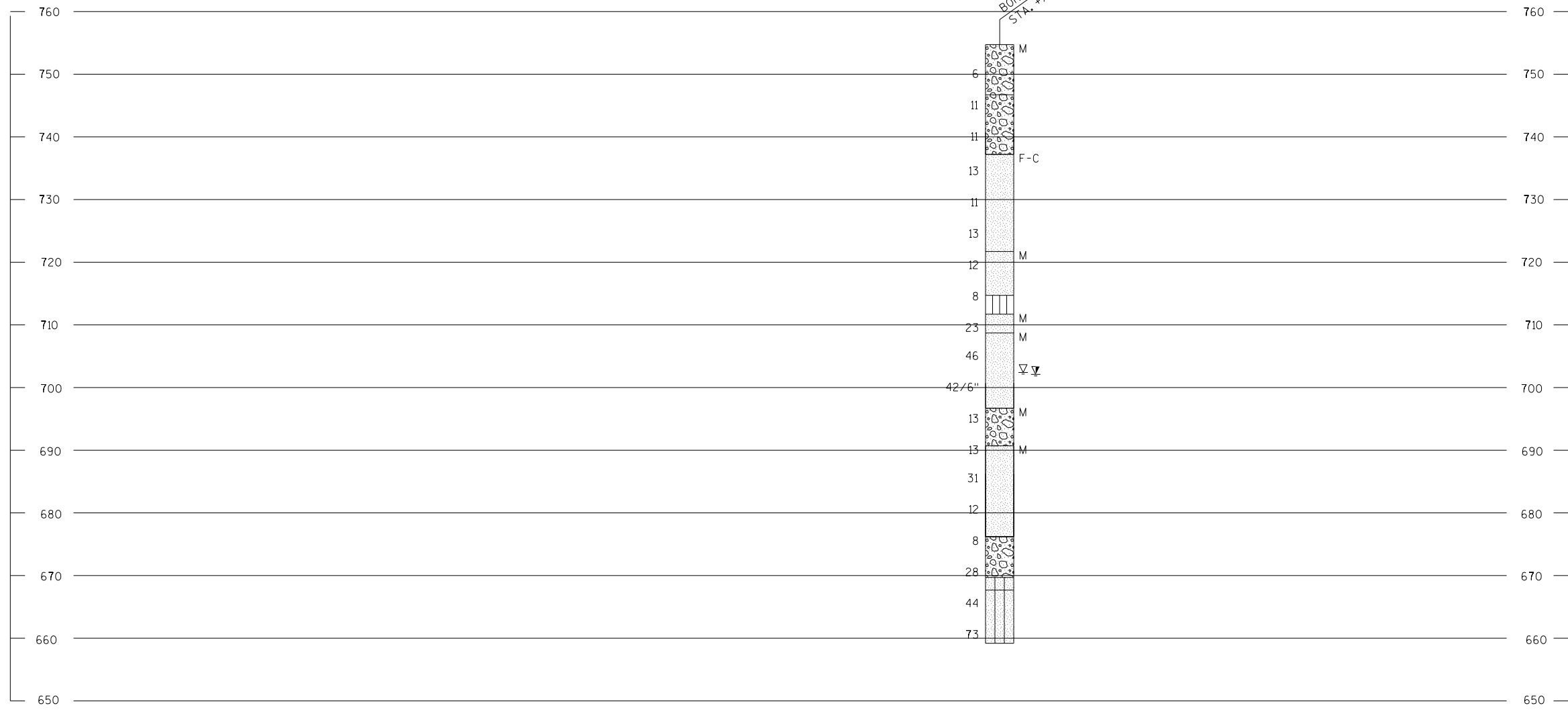
(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
 (2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION
 AT TIME OF DRILLING
 END OF DRILLING
 AFTER DRILLING

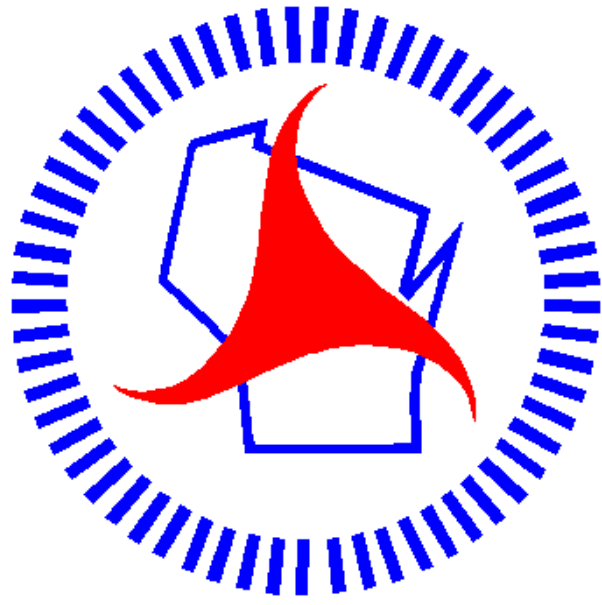
ABBREVIATIONS
 F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE L-55-0010			
DRAWN BY TLP/DDS		PLANS CK'D. SAD	
SUBSURFACE EXPLORATION			SHEET 64



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>