



Signs shall be mounted level, with an equal area of signage above & below the crossbeam.
Signs shall NOT follow camber in the crossbeam.

GENERAL NOTES

DESIGN: Current (at time of letting) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (Fatigue Category II - natural wind gust only).

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions. ("Standard Specifications") All references to "Mast Arm Assembly and Pole" are applicable, unless otherwise noted.

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code and the Standard Specifications.

ANCHOR RODS: Shall conform to ASTM F1554 Grade 105. No welding shall be permitted on rods.

FASTENERS: All connection bolts shall be High Strength Bolts M164, Galvanize M232 (A153), Type 3, or stainless steel heavy hex conforming to ASTM A193, Grade B8 or B8M, Class 1. U-bolts shall be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished, or an equivalent material acceptable to the Engineer. Nuts for stainless steel bolts shall be stainless steel conforming to ASTM A194, Grade 8 (AISI Type 304) or Grade 8F (AISI Type 303). All nuts shall be "locknuts" with nylon or steel inserts and semifinished hexagonal heads equivalent to the finished heavy hex series of the American National Standard. Washers for stainless steel bolts shall be stainless steel conforming to ASTM A240, Type 302 or 304.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

CAMBER: Minimum AASHTO camber = L / 1000 + dead load camber.

FOUNDATIONS: The contract unit price for Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE MONOTUBE SINGLE	Foot	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	

ELEVATION

Looking at face of signs.
Looking upstation for structures with signs both sides.

SIGN STRUCTURE DESIGN PARAMETERS

Location No.	Monotube No.	Station	Span Length Center to Center Poles	Design Sign Area (sqft)	Left Column / Foundation	Right Column / Foundation	Proposed End Column Diameter Left & Right (inches)	Proposed End Support Height H Left Pole	Proposed End Support Height H Right Pole	Proposed Cross Beam Dia. (inches)	Proposed End Support & Cross Beam Wall Thickness*
5-21	227	1411+20	59' - 11" (59.92')	200	South	North	10	21' - 5"	21' - 0"	10.5	TBD*
5-22	228	8+20	43' - 0 3/4" (43.06')	200	West	East	10	21' - 4"	21' - 4"	10.5	TBD*
5-23	230	1407+75	51' - 11" (51.92')	220	North	South	12	21' - 2"	20' - 10"	10.5 - 12.5	TBD*
5-24	231	11+95	43' - 10 3/4" (43.90')	200	East	West	10	21' - 5"	21' - 5"	10.5	TBD*
5-25	232	1403+80	54' - 0" (54.00')	200	North	South	10	21' - 3"	21' - 3"	10.5	TBD*

* Wall thicknesses to be determined by the manufacturer. Wall thickness for both the end columns and cross beams must be a minimum of 3 gage.

SIGN STRUCTURE DESIGN ELEVATION

Location No.	Monotube No.	Station	Actual Sign Area incl. Ty I & Ty II (sqft)	Elevation A	Left Column / Foundation	Right Column / Foundation	Existing / Proposed Elevation Left Fdn.	Existing / Proposed Elevation Right Fdn.	Leveling Nut / Gap Height Left	Leveling Nut / Gap Height Right	Existing Elevation Bottom of Base Plate Left	Existing Elevation Bottom of Base Plate Right	Required Vertical Clearance	Fudge Factor use 3"	1/2 Height of Tallest Sign	Additional Fudge Factor use 12" **	Distance from Center of cross beam to top of Column - typ.	Proposed End Support Height H Left Pole	Proposed End Support Height H Right Pole	Proposed Elevation Top of End Support Left Pole	Proposed Elevation Top of End Support Right Pole
5-21	227	1411+20	182.75	99.30	South	North	99.57	100.00	4"	4"	99.903	100.333	17' - 3"	3"	3' - 6"	0"	12" ***	21' - 5"	21' - 0"	121.32	121.33
5-22	228	8+20	164.25	99.84	West	East	99.98	100.00	3 3/4"	3 3/4"	100.292	100.312	17' - 3"	3"	2' - 3"	12" **	12" ***	21' - 4"	21' - 4"	121.63	121.64
5-23	230	1407+75	195.75	99.41	North	South	99.68	100.00	4"	3 3/4"	100.013	100.312	17' - 3"	3"	2' - 3"	12" **	12" ***	21' - 2"	20' - 10"	121.18	121.15
5-24	231	11+95	139.5	99.94	East	West	99.98	100.00	4"	3 3/4"	100.313	100.312	17' - 3"	3"	2' - 3"	12" **	12" ***	21' - 5"	21' - 5"	121.73	121.73
5-25	232	1403+80	133	99.81	North	South	100.00	99.98	3 1/2"	3 1/2"	100.292	100.272	17' - 3"	3"	2' - 3"	12" **	12" ***	21' - 3"	21' - 3"	121.54	121.52

** Proposed signage at #228, 230, 231, and 232 is very short. The addition fudge factor is to ensure adequate vertical clearance in the event of any required signage changes in the future. (While future increases in total signage area may not be allowed, overall signage dimensions could change.)

*** May be field adjusted during erection if necessary to avoid utilities while still maintaining minimum 17'-3" vertical clearance.

MONOTUBE - 1 9-15-11

*VARIOUS COUNTIES
**D-5 OVD SIN STR REPL 2012-06

FILE NAME =	USER NAME = ceer-lock_jd	DESIGNED - JAL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MONOTUBE SIGN STRUCTURE	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ct:\pwwork\pwwork\ceer-lock_jd\046179-shs-details.dgn	PLLOT SCALE = 48.0000' / 1" =	CHECKED -	REVISED -			*	**	Various	178	177	
PLLOT DATE = 9/21/2011	DATE = 04/26/11	REVISED -	REVISED -			CONTRACT NO. 46179					
						ILLINOIS FED. AID PROJECT					