REVISIONS		
REV. NO.	DESCRIPTION	DATE
	Various	09/05/2018

TABLE 1: Round Signal Pole Data

Nom. Mast Arm Span Lengths (ft)	Pole Shaft						Base Plate					Anchor Bolt							
	Bot. O.D. (in)	Top O.D. 21'-6" Pole Ht. (in)	Top O.D. 30'-0" Pole Ht. (in)	Wall Thk. (in)	Nom. Arm. Mtg.Ht. (ft)	Nom. Lum.Mtg. Ht. (ft)	Base Sq. (in)	Base I.D. (in)	Bolt Circle Dia. (in)	Bolt Hole Dia. (in)	Base Thk. (in)	Bolt Dia. (in)	No. of Bolts	Length of Bolt Min. (in)	Top Thread Length Min. (in)	Bottom Thread Length Min. (in)	Template I.D. (in)	Template O.D. (in)	Template Thick (in)
"S1"	"P1"	"P2"	"P3"	"P4"	"P5"	"P6"	"B1"	"B2"	"B3"	"B4"	"B5"	"A1"	"A2"	"A3"	"A4"	"A5"	"A6"	"A7"	"A8"
Single Mast Arm Pole Data																			
20 to 40	15.25	12.24	11.05	0.2500	20	32	20.25	10.25	20.25	1.75	2.25	1.50	4	60	7	4	16.75	23.75	0.375
45 to 55	22.00	18.99	17.80	0.2500	20	32	27.00	17.00	27.00	2.25	2.50	2.00	4	70	8	5	22.50	31.50	0.500
Dual Mast Arm Pole Data																			
20 to 40	17.00	13.99	12.80	0.3125	20	32	22.00	11.88	22.00	2.00	3.00	1.75	4	60	8	4	18.00	26.00	0.438
45 to 55	22.00	18.99	17.80	0.3750	20	32	27.00	16.75	27.00	2.50	3.25	2.25	4	70	9	5	22.25	31.75	0.563

TABLE 2: Round Mast Arm Data

Nom. Mast Arm Span Length (ft)	Mast Arm Data					Mast Arm Flange Plate/Gusset Connection Data										
	Fixed End Base O.D. (in)	* Free End Top O.D. (in)	Wall Thk. (in)	Angle (Deg) (in)	* Arm Length (ft)	Plate Width Min. (in)	Plate Height Min. (in)	Conn. Bolt Width Min. (in)	Conn. Bolt Height Min. (in)	Arm Plate Thk. (in)	Pole Plate Thk. (in)	Gusset Thk. (in)	Flange Bolt Qty	Flange Bolt Dia. (in)	Flange Bolt Length Min. (in)	Flange I.D. (in)
"S1"	"M1"	"M2"	"M3"	"M4"	"M5"	"F1"	"F2"	"F3"	"F4"	"F5"	"F6"	"F7"	"F8"	"F9"	"F10"	"F11"
20	9.00	6.32	0.1875	2 Deg.	19.14	18.00	18.00	14.00	14.00	2.00	2.00	0.375	4.00	1.50	4.00	4.00
25	10.00	6.62	0.1875	2 Deg.	24.15	18.00	18.00	14.00	14.00	2.00	2.00	0.375	4.00	1.50	4.00	4.00
30	10.50	6.42	0.2500	2 Deg.	29.15	18.00	18.00	14.00	14.00	2.00	2.00	0.375	4.00	1.50	4.00	4.00
35	11.50	6.72	0.2500	2 Deg.	34.15	18.00	18.00	14.00	14.00	2.00	2.00	0.375	4.00	1.50	4.00	4.00
40	12.50	7.02	0.2500	2 Deg.	39.15	18.00	18.00	14.00	14.00	2.00	2.00	0.375	4.00	1.50	4.00	4.00
45	16.25	10.11	0.3125	2 Deg.	43.87	24.00	24.00	18.00	18.00	2.00	2.00	0.375	4.00	2.00	4.00	5.75
50	17.50	10.66	0.3125	2 Deg.	48.87	24.00	24.00	18.00	18.00	2.00	2.00	0.375	4.00	2.00	4.00	5.75
55	19.00	11.46	0.3125	2 Deg.	53.87	24.00	24.00	18.00	18.00	2.00	2.00	0.375	4.00	2.00	4.00	5.75

* Round values to the nearest 1/16". actual mast arm length might be slightly different different for dual mast arm poles.

General Notes

1. Designs conform to 2013 AASHTO Standard Specifications For Structural Supports For Highway Signs, Luminaires, and Traffic Signals and Interim Specifications. Designed for 3-second wind gust speed equal to 90 MPH with a 1.14 gust factor. A wind importance factor of 0.87 is applied to adjust the wind speed to a 50 year recurrence interval. Design moments listed in tables assume base of pole is less than 33' above natural ground level.

2. Fatigue importance Category II is used for fatigue design. Fatigue design loads applied include galloping, natural wind gust pressure range based on a yearly mean wind velocity of 11.2 MPH, and truck-gust pressure range based on a truck speed of 65 MPH.

3. Fabrication shall be in accordance with the specifications and with the details, dimensions, and weld procedures shown herein. Submit shop drawings for signal pole assemblies fabricated in accordance with the details, dimensions, and weld procedures shown herein for project records. Weld references call for pre-approved weld procedures which the fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of these sheets and the specifications. In the absence of specified fabrication tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.

4. Unless otherwise noted, all steel parts shall be galvanized in accordance with Section 724.06, "Galvanizing."

5. Steel poles shall be fabricated in accordance with Section 724, "Structural Steel." Longitudinal seam welds for pole sections shall have 60% minimum penetration. All welding shall be in accordance with the ANSI/AWS Structural Welding Code D1.1.

6. Two-section signal poles will not be permitted. Mast arms may be fabricated in two sections for lengths greater than 40 LF and field-assembled by the lap-joint method. The two sections shall telescope together with a lap length of not less than 1-1/2 times the shaft diameter at the lap joint. Ensure longitudinal seam welds that will be in contact at a slip joint splice are ground smooth for the length of splice plus a minimum of six inches.

7. Alternate material equal to or better than material specified may be substituted with the approval of the Engineer.

8. Lubricate and tighten anchor bolts, when erecting signal poles, in accordance with manufacturer's recommendations.

Approved By Bridge Engineer: _____ Date: 9-14-18

Approved By Traffic Engineer: _____ Date: 9/28/18

DOT

Traffic Standard

Traffic Signal Round Pole and Mast Arm Data

2009 Specifications

RPMAD1-1	01
T-214	