

MAST ARM DATA						FLANGE CONNECTION DATA				
POLE TYPE	α ° ANGLE	f ANGLE ST. (FT)	r RADIUS (FT)	g CURVE (FT)	h STRAIGHT (FT)	i PLATE SQ. (IN)	j ARM PL TK (IN)	k POLE PL TK (IN)	m BOLT CIRCLE (IN)	n BOLT SIZE (IN x IN)
MAP-20	13	5.1	56	9.8	0.9 - 5.4	12	1.25	1.25	12	1.25 x 3.5
MAP-25	13	7.6	74	12.9	0.3 - 4.8	13	1.50	1.25	13	1.25 x 3.5
MAP-30	13	9.2	80	14.0	2.7 - 7.2	13	1.50	1.25	13	1.25 x 3.5
MAP-35	13	7.1	120	20.9	2.9 - 7.4	15	1.75	1.25	15	1.25 x 3.5
MAP-40L *	10	13.8	135	16.5	5.5 - 10.0	15	1.75	1.25	15	1.25 x 3.5
MAP-40H	10	13.8	135	16.5	5.5 - 10.0	16	2.00	1.50	16	1.50 x 4.0
MAP-45	10	16.9	150	18.3	5.7 - 10.2	16	2.00	1.50	16/17 **	1.50 x 4.0
MAP-50	10	18.1	165	20.2	7.7 - 12.2	17	2.00	1.50	17/18 **	1.50 x 4.0
MAP-55	10	19.9	165	22.6	8.5 - 13.0	17	2.25	1.75	17/19 **	1.75 x 4.5

POLE TYPE	POLE DESIGN LOADING							
	HORIZONTAL DISTANCE FROM RISER TO APPURTENANCE (FT)							
	30" x 36" SIGN	5-SECTION HEAD	30" x 36" SIGN	3-SECTION HEAD	30" x 36" SIGN	3-SECTION HEAD	3-SECTION HEAD	16" x 84" SIGN
MAP-20		19.5	16.5	11.5				10
MAP-25	24.5	21.5	16.5	13.5		5.5		10
MAP-30	29.5	26.5	21.5	18.5		10.5		10
MAP-35	34.5	31.5	26.5	23.5		15.5		10
MAP-40H	39.5	36.5	31.5	28.5		20.5		10
MAP-45	44.5	41.5	36.5	33.5	28.5	25.5	17.5	10
MAP-50	49.5	46.5	41.5	38.5	33.5	30.5	22.5	10
MAP-55	54.5	51.5	46.5	43.5	38.5	35.5	27.5	10

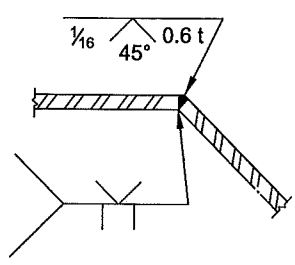
POLE DATA				
NOMINAL POLE TYPE	SPECIFIC POLE TYPE	MAX ALLOWABLE RISER (FT)	MAST ARM RANGE (FT)	BASE PLATE TYPE
1	MAP-20	25.5	5 - 20	200
1	MAP-25	24.5	20.5 - 25	200
1	MAP-30	24.0	25.5 - 30	200
1	MAP-35	23.5	30.5 - 35	200
1	MAP-40L *	22.0	35.5 - 40	200
2	MAP-40H	23.5	35.5 - 40	201 A
2	MAP-45	20.0	40.5 - 45	201 A
3	MAP-50	20.0	45.5 - 50	201 B
3	MAP-55	20.0	50.5 - 55	201 B

* LIGHTLY LOADED MAST ARMS: 4 SIGNS OR SIGNALS MAX.
 ** LARGER BOLT CIRCLE APPLIES ONLY TO ROUND CROSS-SECTIONS

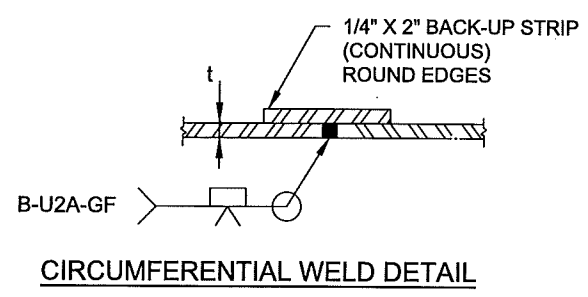
- NOTES:
- FABRICATION SHALL CONFORM TO AASHTO'S 2001 "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", 4TH EDITION WITH 2002, 2003, AND 2006 INTERIM REVISIONS, 100 MPH, 3.0 SEC GUST, GUST FACTOR = 1.14, IR = 1.0 I.E. 50 YEAR RECUR. INT. FATIGUE CATEGORY 2, NO GALLOPING, TRUCK SPEED = 55 MPH.
 - POLES AND ARMS SHALL BE OCTAGONAL OR ROUND IN CROSS-SECTION AND HAVE A TAPER OF 0.14 INCHES PER FOOT.
 - POLE END CAP SHALL BE RAIN TIGHT AND MATCH THE SHAPE OF THE POLE WITH AN INCH OF OVERLAP ON ALL SIDES.
 - STEEL USED IN BASE PLATES, FLANGE PLATES & GUSSET PLATE SHALL CONFORM TO ASTM A572 GR 50. SILICON CONTENT OF THE BASE METAL SHALL BE 0.0% TO 0.04% OR 0.15% TO 0.25%.
 - ANCHOR BOLTS : ASTM F1554 GR 55, NUTS : ASTM A563 GR DH HEAVY HEX.
 - HEX CONNECTION BOLTS: ASTM A325. (1.25-1.50 INCH DIAMETER)
ASTM A354BC. (1.75 INCH DIAMETER)
 - ANCHOR BOLT AND CONNECTION WASHERS: ASTM F436 TYPE 1.
 - PIPE TENONS AND WIRE GUIDES : ASTM A53 GR B.
 - HANDHOLE COVERS : ASTM A1011 GR 50.
 - GALVANIZING : ASTM A123 & A153.
 - STRAIGHT SECTION (h) SHALL BE A MINIMUM 1 DEGREE ABOVE HORIZONTAL WHEN FULLY LOADED AND A MAXIMUM OF 4 DEGREES ABOVE HORIZONTAL WHEN UNLOADED.
 - STEEL IN TUBES SHALL CONFORM TO A572 GR 50 OR A595 GR A.

SINGLE MAST ARM POLE

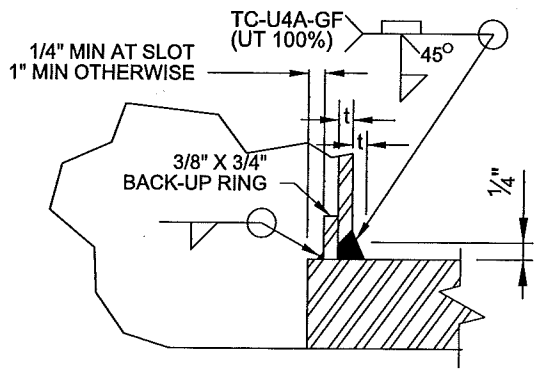
SINGLE MAST ARM TABLE OF VARIABLES



LONGITUDINAL WELD DETAIL
TWO PER TUBE AT 180 DEG.



CIRCUMFERENTIAL WELD DETAIL
MAST ARM POLE WELD DETAILS



BASE WELD DETAIL

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

BUREAU OF TRANSPORTATION
CITY OF PORTLAND, OREGON
Steve Tomlin
Chief Engineer

Standard Drawing Title

SINGLE MAST ARM POLE & WELD DETAILS

Note:
All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

Effective Date: 12-05-2015

Calc. Book No.:

Baseline Report Date:

Standard Drawing No.

P-601