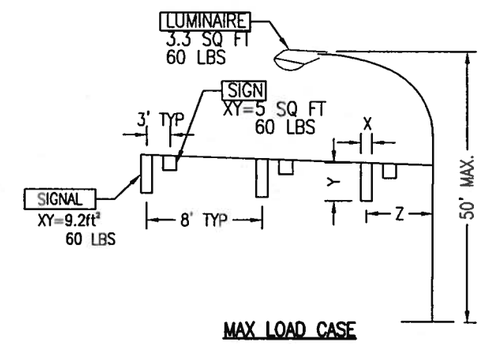
UMC DESIGN NUMBER	MAST ARM DATA				MAST ARM FLANGE CONNECTION DATA (in)								POLE TUBE SIZE	POLE BASE CONNECTION DATA (in)							MAX. ALLOWABLE XYZ VALUE (CU. FT.)
	MAX SPAN	TUBE SIZE	MIN JOINT	NOM JOINT	BOLT ø	X	Y	W	H	APL	PPL	G		B.C.	S	F	P	T	BASE WELD	ANCHOR BOLT SIZE	
71026-B87-Y1	15'-0"	7E-6.00x3.90x15'-0"	–	–	1 1/4	6 1/2	14	13	18	1 1/4	1 1/4	1/4	7E-14.00x10.92x22'-0"	18	18	12 3/4	6 1/4	1 1/2	SOCKET	1 1/2 x 60	251
71026-B87-Y2	20'-0"	7E-6.00x3.20x20'-0"	–	–	1 1/4	6 1/2	14	13	18	1 1/4	1 1/4	1/4	7E-14.00x10.92x22'-0"	18	18	12 3/4	6 1/4	1 1/2	SOCKET	1 1/2 x 60	409
71026-B87-Y3	25'-0"	7E-7.50x4.00x25'-0"	–	–	1 1/4	6 1/2	14	13	18	1 1/4	1 1/4	1/4	3E-14.00x10.92x22'-0"	18	18	12 3/4	6 1/4	1 1/2	SOCKET	1 1/2 x 60	655
71026-B87-Y4	30'-0"	7E-8.50x4.30x30'-0"	–	–	1 1/4	6 1/2	14	13	18	1 1/4	1 1/4	1/4	3E-14.00x10.92x22'-0"	18	18	12 3/4	6 1/4	1 1/2	SOCKET	1 1/2 x 60	865
71026-B87-Y5	35'-0"	7E-10.00x5.10x35'-0"	–	–	1 1/4	6 1/2	14	13	18	1 1/4	1 1/4	1/4	3E-14.00x10.92x22'-0"	18	18	12 3/4	6 1/4	1 1/2	SOCKET	1 1/2 x 60	1075
71026-B87-Y6	40'-0"	7E-11.00x5.40x40'-0"	–	–	1 1/4	6 1/2	14	13	18	1 1/4	1 1/4	1/4	0E-14.00x10.92x22'-0"	18	18	12 3/4	6 1/4	1 1/2	SOCKET	1 1/2 x 60	1285
71026-B87-Y7	45'-0"	7E-11.00x6.80x30'-0" 11E-7.29x4.98x16'-6"	10.6"	18"	1 1/4	6 1/2	14	13	18	1 1/4	1 1/4	1/4	0E-14.00x10.92x22'-0"	18	18	12 3/4	6 1/4	1 1/2	SOCKET	1 1/2 x 60	1495
71026-B87-Y8	50'-0"	7E-12.00x7.80x30'-0" 11E-8.29x5.28x21'-6"	12.1"	18"	1 1/2	9	15	16	20	1 1/2	1 1/2	1/4	3E-16.25x13.17x22'-0"	22	22	15 9/16	8 1/4	2	FULL PEN	2 x 60	1705
71026-B87-Y9	55'-0"	7E-12.50x8.30x30'-0" 11E-8.83x5.09x26'-9"	12.9"	21"	1 1/2	9	15	16	20	1 1/2	1 1/2	1/4	3E-16.25x13.17x22'-0"	22	22	15 9/16	8 1/4	2	FULL PEN	2 x 60	1915
71026-B87-Y10	60'-0"	3E-12.50x7.60x35'-0" 11E-8.09x4.38x26'-6"	11.8"	18"	1 1/2	9	15	16	20	1 1/2	1 1/2	1/4	0.375E-16.25x13.17x22'-0"-J	22	22	15 9/16	8 1/4	2	FULL PEN	2 x 60	2609
71026-B87-Y11	65'-0"	3E-13.00x7.68x38'-0" 7E-8.29x4.30x28'-6"	11.9"	18"	1 1/2	10	15	16	20	1 3/4	1 1/2	1/4	0.375E-16.25x13.17x22'-0"-J	22	22	15 9/16	8 1/4	2	FULL PEN	2 x 60	2889

POLE LENGTH TO BE SHORTENED FOR 30' LUM MTG HT. SEE NOTE BELOW LUM ARM TABLE.



MAX LOAD CASE

FORMULA: MAX ALLOW = ∑(P.A.)x(MOM ARM)

11 GA = 0.120" WALL THICKNESS
7 GA = 0.179" WALL THICKNESS
3 GA = 0.250" WALL THICKNESS
0 GA = 0.313" WALL THICKNESS
0.375 = 0.375" WALL THICKNESS
E = ROUND TAPERED STEEL TUBE @ 0.14 in/ft TAPER

PROJECT TRAFFIC DESIGNS															
QTY	STD. NO.	STATION	UMC DESIGN NUMBER	MAST ARM			LUMINAIRE ARM			SIGNAL LOCATIONS						ACTUAL XYZ VALUE (CU. FT.)
				ARM SPAN	MTG HT	ORIENT	ARM SPAN	MTG HT	OREINT	SIGNAL (E or S)	K1	K2	K3	K4	K5	

REQUIRED ARM LENGTH: SHORTEN LENGTH FROM TIP OF ARM IF LESS THAN MAX.

MOUNTING HEIGHT PER PLANS (20'-0" MAX)

NOTE: ALL SIGNALS ON NEAR SIDE OF ARM UNLESS NOTED OTHERWISE

TYPE 1 LUMINAIRE ARM DATA					
SPAN	B	ARM TUBE A	PIPE TUBE C	MTG HGT	EXTENSION SHAFT "EX"
6'-0"	5'-10"	7E-5.64x3.93x12'-2 5/16"	–	30'-0"	NONE, **SEE NOTE
				35'-0"	11E-5.73x5.03x5'-0"
				40'-0"	11E-6.43x5.03x10'-0"
				50'-0"	11E-7.83x5.03x20'-0"
8'-0"	6'-0"	7E-5.64x3.65x14'-2 5/16"	–	30'-0"	NONE, **SEE NOTE
				35'-0"	11E-5.73x5.03x5'-0"
				40'-0"	11E-6.43x5.03x10'-0"
				50'-0"	11E-7.83x5.03x20'-0"
10'-0"	6'-2"	7E-5.64x3.37x16'-2 5/16"	–	30'-0"	NONE, **SEE NOTE
				35'-0"	11E-5.73x5.03x5'-0"
				40'-0"	11E-6.43x5.03x10'-0"
				50'-0"	11E-7.83x5.03x20'-0"
12'-0"	6'-4"	7E-5.64x3.54x15'-0"	.188W-3.50x3'-9 5/16"	30'-0"	NONE, **SEE NOTE
				35'-0"	11E-5.73x5.03x5'-0"
				40'-0"	11E-6.43x5.03x10'-0"
				50'-0"	11E-7.83x5.03x20'-0"
14'-0"	6'-6"	7E-5.64x3.54x15'-0"	.188W-3.50x5'-9 5/16"	30'-0"	NONE, **SEE NOTE
				35'-0"	11E-5.73x5.03x5'-0"
				40'-0"	11E-6.43x5.03x10'-0"
				50'-0"	11E-7.83x5.03x20'-0"
16'-0"	6'-8"	7E-5.64x3.54x15'-0"	.188W-3.50x7'-9 5/16"	30'-0"	NONE, **SEE NOTE
				35'-0"	11E-5.73x5.03x5'-0"
				40'-0"	11E-6.43x5.03x10'-0"
				50'-0"	M11E-7.83x5.03x20'-0"

** **NOTE**
NO EXTENSION SHAFT, USE BOLT ON LUMINAIRE ARM CONNECTION, SHORTEN POLE TUBE SIZE TO 21'-0", SHORTEN VERTICAL STRAIGHT ON LUM ARM TO 30"

RATING NOTE:
DESIGNED PER 2009 AASHTO
BASIC WIND SPEED: 90 MPH
DESIGN LIFE: 50 YEARS
FATIGUE CATEGORY: III
GALLOPING LOADS: YES (If=0.3)
TRUCK GUSTS: YES (If=0.70)
NATURAL WIND: YES (If=0.55)
CAFL AT CRITICAL CONNECTIONS:
POLE TO BASE PLATE CONNECTION
A. SOCKET DETAIL W/ FILLET WELD = E'
B. FULL PENETRATION WELD = D
ARM TO PLATE CONNECTION
A. SOCKET DETAIL W/ FILLET WELD = E'
B. FULL PENETRATION WELD = D
FLANGE GUSSETS = E'
POLE WALL AT FLANGE GUSSETS = E'
POLE JUST BELOW FLANGE BOX = E
POLE SHAFT = B'
TELESCOPIC JOINT = B

DESIGNED FOR MAX. ALLOW. XYZ VALUE AS CHARTED

WELDING NOTE:
- "WELDING PER THE LATEST EDITION OF AWS D1.1 STRUCTURAL WELDING CODE AND SECTION 1.4.2 OF THE SPECIFICATIONS FOR STRUCTURAL SUPPORTS OF HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, AASHTO 2009."
- LONGITUDINAL SEAM WELD IS 60% MINIMUM PENETRATION EXCEPT FOR 6 INCHES FROM END OF SECTION AT FLANGE, BASE PLATE AND SLIP JOINT ARE 100% PENETRATIONS

MATERIAL SPECIFICATIONS	
TAPERED TUBE	ASTM A595 GR A
–J "COLLY" TUBE	ASTM–A572 GR 50 MIN
PLATE	ASTM A36
BAR, HANDHOLE FRAME	ASTM A529 GR 50 or ASTM A572 GR 50 or ASTM A709 GR 50
HANDHOLE COVER	ASTM A36 or A1011
ANCHOR BOLTS	ASTM F1554 GR 105
ANCHOR BOLT NUTS	ASTM A563 GR DH
FLAT WASHERS	ASTM F436
ARM CONNECTION BOLTS	ASTM A325 TYPE 1
ARM JOINT STUD	ASTM A36
"ANCO" LOCK NUTS	ASTM A563 GR DH
ARM END CAP	ASTM A1011
PIPE OR TUBING	ASTM A53 GR B, A500 GR B or C, or A513 S5.1 DOM (MIN)
S.S. HARDWARE	AISI–300 SERIES (18–8)
STRUCTURE FINISH	HD GALV TO ASTM A123
HARDWARE FINISH	HD GALV TO ASTM F2329

THOMAS S. LASH
STATE OF WASHINGTON
42082
REGISTERED PROFESSIONAL ENGINEER
1/22/2014
Expires 11/17/2014

APPROVED
Manufacturer's Pole Plan
Approved For Listing As A
Pre-Approved Drawing
WSDOT Bridge & Structures Office
By GB Date 1-27-2014

PROJECT INFORMATION	
PROJECT:	
COUNTY:	
CITY:	
REQ:	
STATE: WASHINGTON	REQ# / SO# : 0873–07–1
PROJECT NAME: WASHINGTON DOT STANDARDS	

REV	DESCRIPTION	DATE	REV BY	CHK BY
R13	MATERIAL SPEC UPDATES: REMOVED "PREFERRED" NOTE FROM HHF A529 GR 50, REMOVED A501 FROM PIPE SPECS, ADDED A500 GR C & A513 S5.1 DOM (MIN) TO PIPE/TUBE SPECS, ADDED TYPE 1 FOR CONNECTION BOLTS; REVISED CHARTS ON SHEET 1; ADDED PROJECT SPECIFIC CHARTS; ADDED SIGNAL TENONS K4 & K5. SIGNAL XY VALUE WAS 9.0 SQ FT, ANCHOR BOLT HOLE DIA. IS 1/4" LARGER THAN BOLT DIA.	1/20/14	FJP	SAD

REVISIONS

TYPE III STEEL COMBINATION TRAFFIC & STREET LIGHTING POLES, TYPE 1 LUM. ARM
STATE OF WASHINGTON DOT

Union Metal Corporation

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DESIGNED BY	CHECKED BY	DATE	SCALE	ENG REF
LCV	RSV	3/4/03	NTS	71026–B35
71026–B87			REVISION R13	SHEET 1 OF 3

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