

APPROVED
 Manufacturer's Pole Plan
 Approved For Listing As A
 Pre-Approved Drawing
 WSDOT Bridge & Structures Office
 By GB Date 10-22-2018

PLEASE PROVIDE ID TAG
 STAMPING INFORMATION
 (SEE DETAIL 2)

FOR THIS INFORMATION	SEE TABLE
MATERIAL DATA	1
ANCHOR BOLTS & BASE PLATE	2
POLE & SIGNAL ARM TUBES	2
DAVIT LUMINAIRE ARM DATA	3

WASHINGTON STRAIN POLE

DESIGN CRITERIA:

THE STRAIN POLE STRUCTURES SHOWN ON THIS DRAWING HAVE BEEN DESIGNED IN ACCORDANCE WITH THE LOADING AND NOMINAL STRENGTH REQUIREMENTS OF THE 2015 AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, FIRST EDITION" SLTS-1 INCLUDING LATEST INTERIMS. THE WIND LOADS WERE CALCULATED FROM AN ULTIMATE WIND VELOCITY OF 115 MPH WITH A MEAN RECURRENCE INTERVAL OF 1700 YEARS.

LONGITUDINAL WELD SEAM:

WELDING PROCESS:
 HYBRID LBW/GMAW. (POLE SHAFT (0.2500, 3 GA. & 0.3125)
 HIGH FREQUENCY ELECTRIC RESISTANCE WELD. (POLE SHAFT (11 GA.)

WELD INSPECTION:

1. WELDING INSPECTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF WASHINGTON STATE DEPARTMENT STANDARD SPECIFICATION 6-03.3(25) AND 2015 AASHTO WELD INSPECTION SECTION 14.5.3.
2. ALL LONGITUDINAL SEAM WELDS SHALL BE INSPECTED BY MAGNETIC PARTICLE METHOD FOR 30% OF LENGTH EXCEPT FOR SHAFT THICKNESSES 0.3125" AND GREATER SHALL BE ULTRASONIC METHOD. MAGNETIC PARTICLE TESTING SHALL BE PERFORMED ON BOTH SIDES OF 100% PENETRATION SEAM WELD WHEN BACKING IS NOT USED EXCEPT FOR TUBES LESS THAN 10.5 INCHES. FOR TUBES 6 TO 10.5 INCHES, 2" SHALL BE INSPECTED BY THE TEST METHOD BASED ON THICKNESS. FOR TUBES LESS THAN 6", VT ONLY PRIOR TO GALV.

WELDING:

WELDING OF STRUCTURES SHALL BE IN ACCORDANCE WITH 2015 EDITION OF THE AWS STRUCTURAL WELDING CODE D1.1-STEEL. 60% PENETRATION REQUIRED FOR ALL SEAM WELDS EXCEPT FOR THE FOLLOWING LOCATIONS REQUIRE 100% PENETRATION:

1. 6 INCHES ADJACENT TO BASEPLATE, FLANGE AND BUTT WELDED SHAFTS; EXCEPT FOR TUBES LESS THAN 5 INCH DIAMETER
2. FOR FEMALE SECTION OF SLIP JOINTED TUBES 10" AND GREATER: 1.5 X FEMALE SECTION INSIDE DIAMETER + 6 INCHES
3. FOR FEMALE SECTION OF SLIP JOINTED TUBES LESS THAN 10": FEMALE SECTION NOMINAL DIAMETER

GENERAL NOTES:

1. FINAL ASSEMBLIES TO HAVE 0.06" RADIUS ON ALL EXPOSED EDGES.

DESIGN INFORMATION

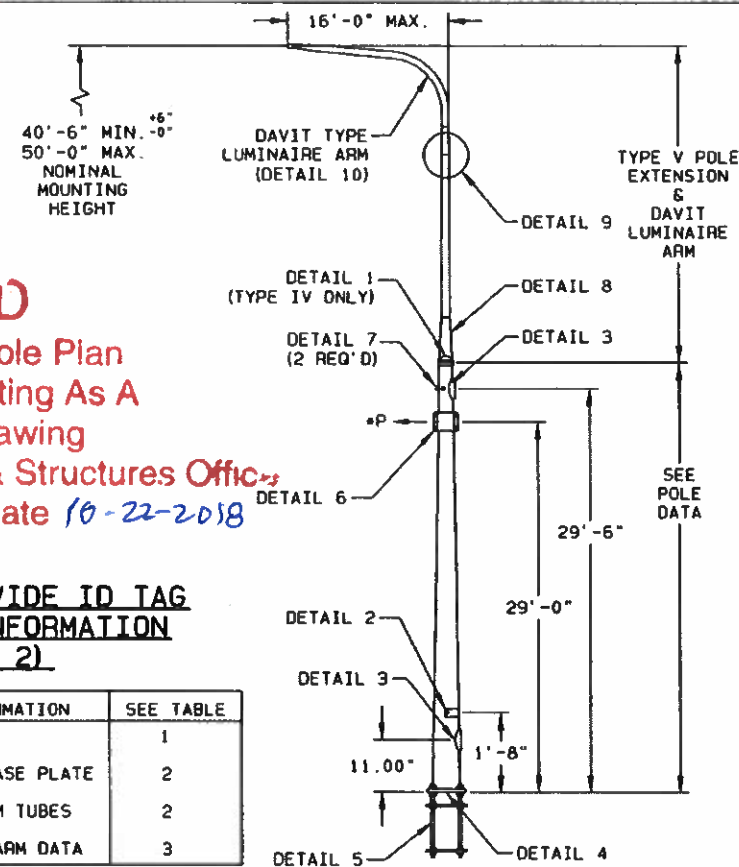


TABLE 2: POLE DATA

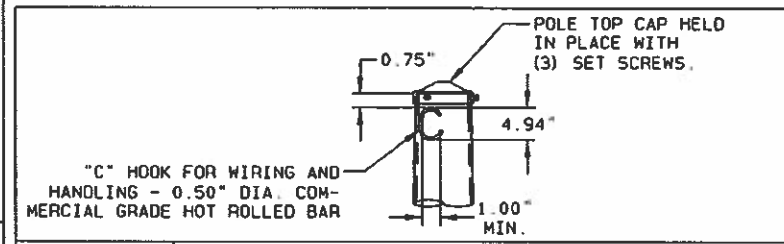
QTY.	POLE TYPE	POLE CLASS	POLE TUBE				POLE BASE				ANCHOR BOLT			LUMINAIRE ARM LENGTH (FT)	
			BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	THREAD LENGTH "U" (IN)		ANCHOR PLATE O.D. (IN)
	TYPE IV	1900#	11.00	6.80	30.00	0.239	15.00	15.00	1.500	1.50	1.25	60.00	18.00	19.00	N/A
	TYPE IV	2700#	12.50	8.30	30.00	0.239	17.00	17.00	1.500	1.75	1.50	60.00	18.00	21.00	N/A
	TYPE IV	3700#	14.00	9.80	30.00	0.250	19.00	19.00	1.500	1.75	1.50	60.00	18.00	23.00	N/A
	TYPE IV	4800#	14.00	9.80	30.00	0.313	20.00	20.00	1.750	2.00	1.75	60.00	18.00	24.00	N/A
	TYPE IV	5600#	15.00	10.80	30.00	0.313	20.00	20.00	1.750	2.00	1.75	60.00	18.00	24.00	N/A
	TYPE IV	6300#	16.00	11.80	30.00	0.313	22.00	22.00	1.750	2.00	1.75	60.00	18.00	26.00	N/A
	TYPE IV	7200#	17.00	12.80	30.00	0.313	22.00	22.00	1.750	2.00	1.75	60.00	18.00	26.00	N/A
	TYPE V	1900#	11.00	6.80	30.00	0.239	15.00	15.00	1.500	1.50	1.25	60.00	18.00	19.00	6' - 16' SPAN
	TYPE V	2700#	12.50	8.30	30.00	0.239	17.00	17.00	1.500	1.75	1.50	60.00	18.00	21.00	6' - 16' SPAN
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TABLE 1: MATERIAL DATA

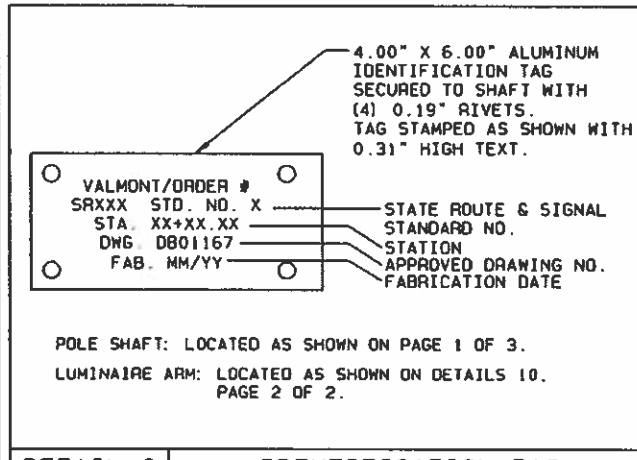
COMPONENT	DESIGNATION	MIN. YIELD (KSI)
TAPERED TUBES	A595 GR. A OR A572	55
REDUCING CONE	A1011-50 HSLAS	55
BASE PLATE	A572 GR. 50	50
HANDHOLE RIM	A500 GR. B OR C A513 GR. 1035 OR 1040 *WITH FURTHER RESTRICTION ON MINIMUM YIELD STRENGTH HELD TO 50 KSI.	50* 50
PIPE / TUBING	A53 GR. B A501 A513 GR. 1015 A618 A500 GR. B	35 36 35 50 42
ANCHOR BOLTS NUTS WASHERS	F1554 ASTM A563 GR. DH ASTM F436	105 -- --
GALVANIZING - STRUCTURE	A123	--
GALVANIZING - HARDWARE	F2329	--

THE FOLLOWING 2015 AASHTO REQUIREMENT IS BEING FOLLOWED:
 1. SECTION 5.6.6 FOR HANDHOLE CLEAR DISTANCE AND 40% OF POLE WIDTH REQUIREMENT. STRESSES ARE REVIEWED AT EACH HANDHOLE FOR STRUCTURAL ADEQUACY IN THE CALCULATIONS.

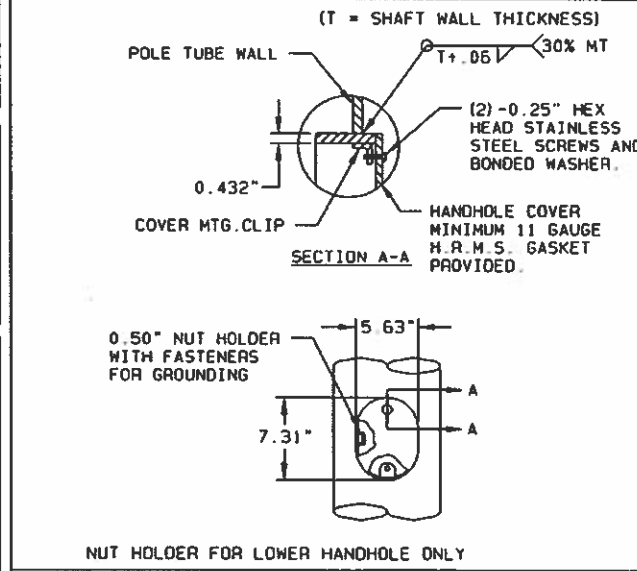
2015 AASHTO NOTES



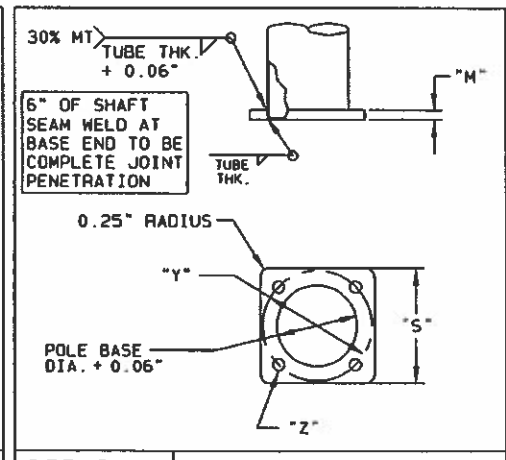
DETAIL 1 POLE TOP CAP - TYPE IV ONLY



DETAIL 2 IDENTIFICATION TAG



DETAIL 3 HANDHOLE



DETAIL 4 POLE BASE

BARRY N. SLADEK
 STATE OF WASHINGTON
 REGISTERED PROFESSIONAL ENGINEER
 42225
 10/5/18
 EXPIRES 8/21/20

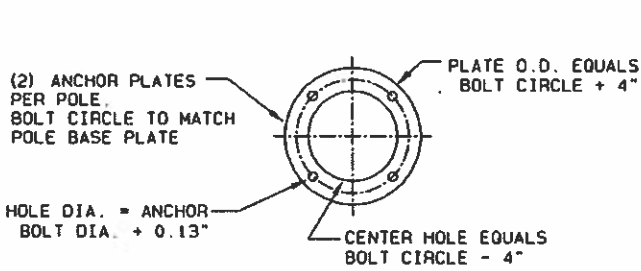
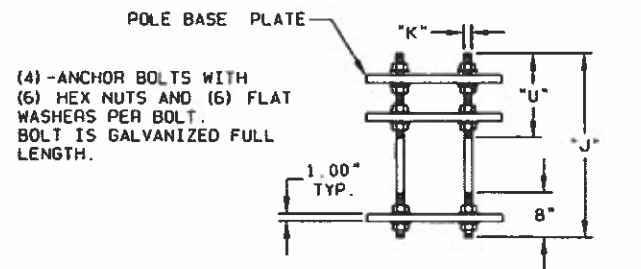
REV	DATE	BY	CHECK BY	DESCRIPTION
B	GC7 10/02/18	RBC2 10/03/18		WELD INSPECTION, WELDING & 2015 AASHTO NOTE
A	B0B3 02/07/17	B0B3 05/12/17		REVISED WELD INSPECTION NOTE
	B0B3 08/18/16	B0B3 08/29/16		

STATE OF WASHINGTON
 STRAIN POLE STRUCTURES
 2015 AASHTO

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

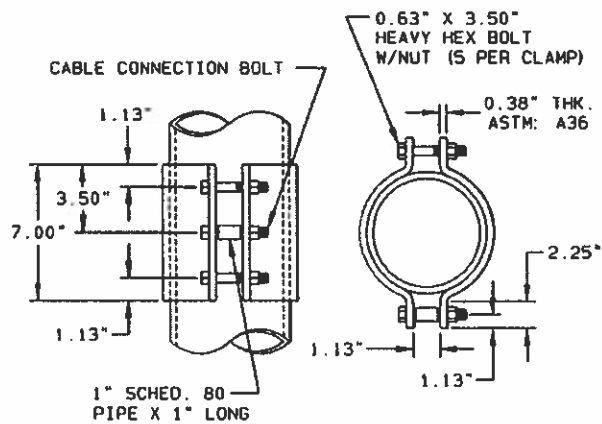
valmont
 Valley, NE 68064
 (402) 359-2201

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DRAWING NUMBER: DB01167
REV: B



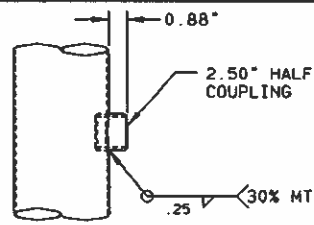
ANCHOR PLATES PROVIDED WITH HOT DIP GALVANIZED FINISH.

DETAIL 5 ANCHOR BOLTS W/ANCHOR PLATES



(1) CLAMP ASSEMBLIES FURNISHED PER POLE

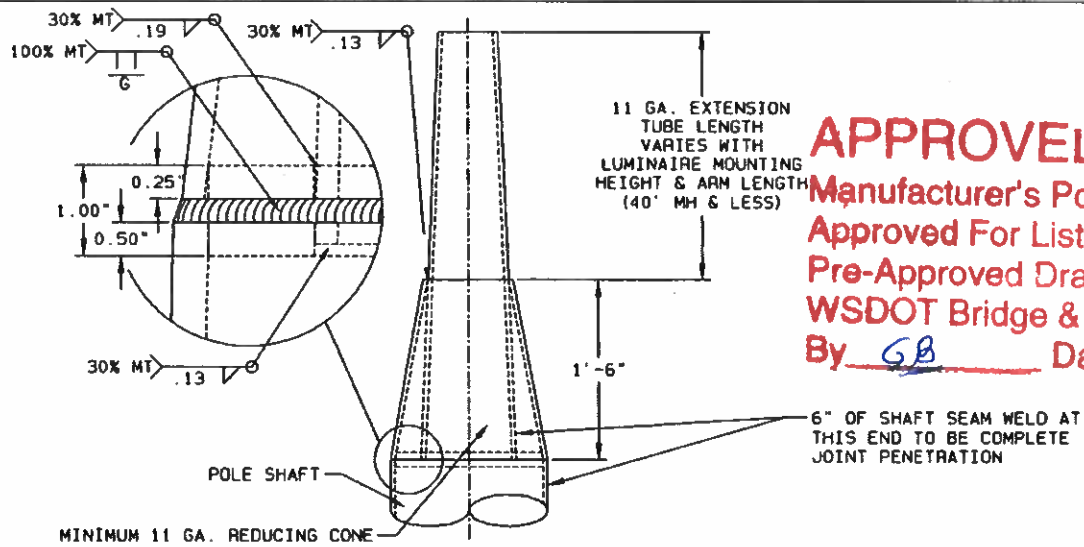
DETAIL 6 SPAN WIRE CLAMP



DETAIL 7 WIREWAY

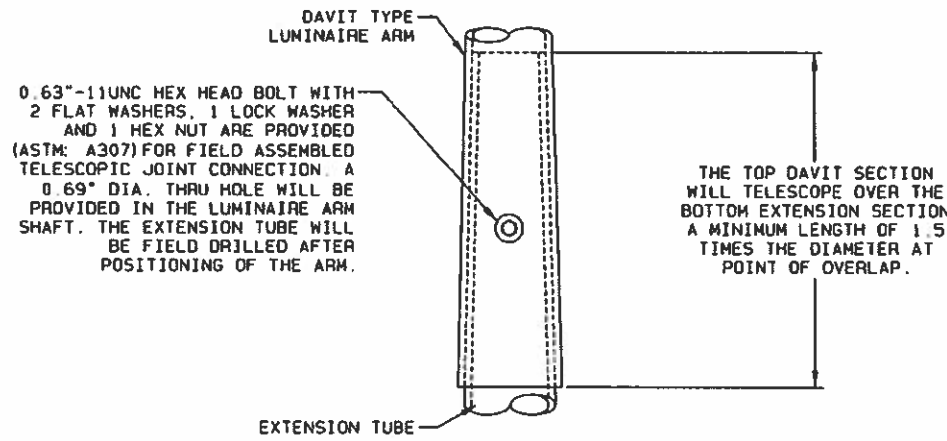
TABLE 3: DAVIT LUMINAIRE ARM DATA

SPAN (FT)	BASE O. D. (IN)	FREE END (IN)	LONG (FT)	GAUGE
6	5.41	3.77	11.66	11
8	5.41	3.52	13.50	11
10	5.41	3.26	15.33	11
12	5.41	3.00	17.16	11
14	5.41	2.75	19.00	11
16	5.41	2.40	21.50	11

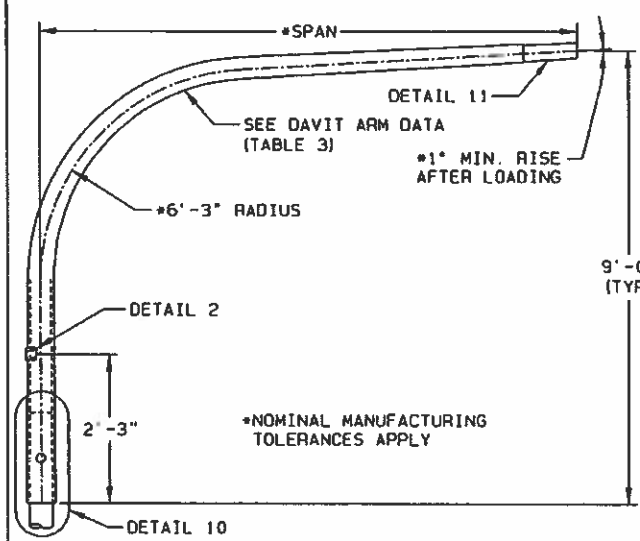


DETAIL 8 LUMINAIRE CONE EXTENSION

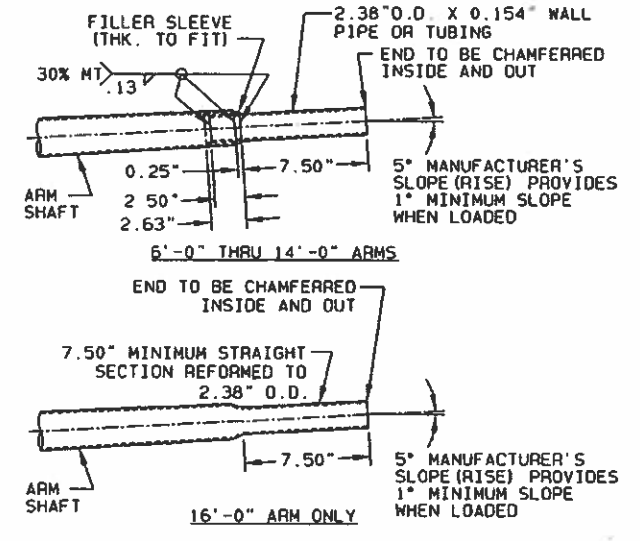
NOTE: MATING SURFACES SHALL BE SMOOTH AND FREE OF BURRS, DENTS & LUMPS OF ZINC.



DETAIL 9 DAVIT TYPE TELESCOPIC JOINT

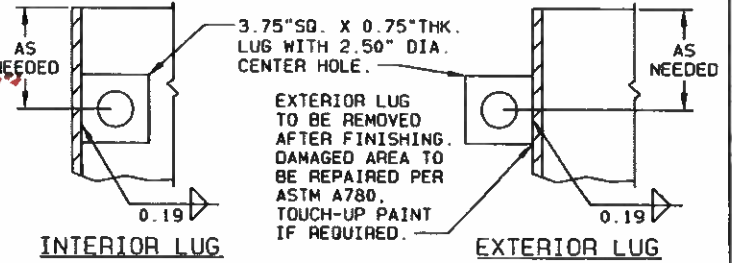
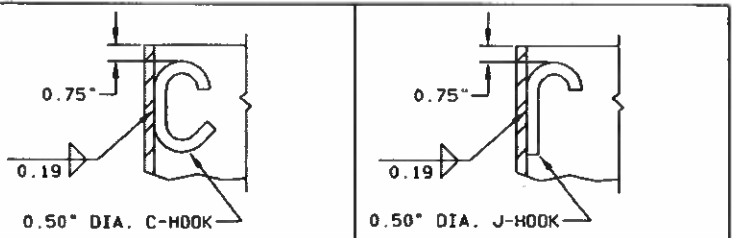


DETAIL 10 DAVIT TYPE LUMINAIRE ARM



DETAIL 11 SLIPFITTER

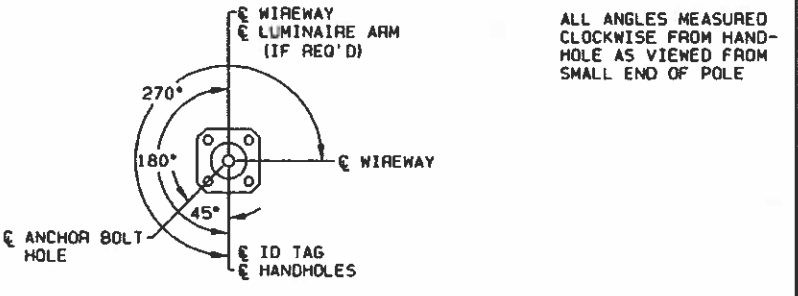
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LUMINAIRE ARM - 0.75" DIA. HOLE, VISUALLY LOCATED AT END OF ARM
 POLE - 1,000 LBS. OR LESS - (1) C-HOOK OR J-HOOK
 1,001 LBS. THRU 2,000 LBS. - (2) C-HOOKS OR J-HOOKS
 OVER 2,000 LBS. - (1) LUG

MATERIAL NOTE:
 J-HOOK OR C-HOOK = HOT ROLLED MILD STEEL
 LUG = ASTM: A36, 36 KSI
 OR
 A572 GR. 50 OR 55, 50 KSI MIN.

STANDARD MATERIAL HANGING ACCOMMODATIONS TO FACILITATE MANUFACTURING PROCESS



RADIAL INDEX

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