

S = SINGLE ARM (D) = DOUBLE ARM POLE AND ARM DATA										
QTY.	CATALOG DESCRIPTION	H1 NOMINAL MOUNTING HEIGHT (±0'-6") "A"	ARM LENGTH "B"	ARM DESCRIPTION			POLE DESCRIPTION			
				ARM SHAFT			BASE O.D. "E"	TOP O.D. "F"	SHAFT LENGTH "H"	WALL GAUGE "G"
				BASE O.D. "C"	TOP O.D. "D"	LENGTH "E"				
	DS90-WA-6S (D) -30	30'-0"	6'-0"	5.41"	3.77"	11'-8"	8.05"	4.94"	22'-3"	11
	DS90-WA-8S (D) -30	30'-0"	8'-0"	5.41"	3.52"	13'-6"	8.05"	4.94"	22'-3"	11
	DS90-WA-10S (D) -30	30'-0"	10'-0"	5.41"	3.26"	15'-4"	8.05"	4.94"	22'-3"	11
	DS90-WA-12S (D) -30	30'-0"	12'-0"	5.41"	3.00"	17'-2"	8.05"	4.94"	22'-3"	11
	DS90-WA-14S (D) -30	30'-0"	14'-0"	5.41"	2.75"	19'-0"	8.05"	4.94"	22'-3"	11
	DS90-WA-16S (D) -30	30'-0"	16'-0"	5.41"	2.40"	21'-6"	8.05"	4.94"	22'-3"	11
	DS90-WA-6S (D) -35	35'-0"	6'-0"	5.41"	3.77"	11'-8"	8.75"	4.94"	27'-3"	11
	DS90-WA-8S (D) -35	35'-0"	8'-0"	5.41"	3.52"	13'-6"	8.75"	4.94"	27'-3"	11
	DS90-WA-10S (D) -35	35'-0"	10'-0"	5.41"	3.26"	15'-4"	8.75"	4.94"	27'-3"	11
	DS90-WA-12S (D) -35	35'-0"	12'-0"	5.41"	3.00"	17'-2"	8.75"	4.94"	27'-3"	11
	DS90-WA-14S (D) -35	35'-0"	14'-0"	5.41"	2.75"	19'-0"	8.75"	4.94"	27'-3"	11
	DS90-WA-16S (D) -35	35'-0"	16'-0"	5.41"	2.40"	21'-6"	8.75"	4.94"	27'-3"	11
	DS90-WA-6S (D) -40	40'-0"	6'-0"	5.41"	3.77"	11'-8"	9.45"	4.94"	32'-3"	11
	DS90-WA-8S (D) -40	40'-0"	8'-0"	5.41"	3.52"	13'-6"	9.45"	4.94"	32'-3"	11
	DS90-WA-10S (D) -40	40'-0"	10'-0"	5.41"	3.26"	15'-4"	9.45"	4.94"	32'-3"	11
	DS90-WA-12S (D) -40	40'-0"	12'-0"	5.41"	3.00"	17'-2"	9.45"	4.94"	32'-3"	11
	DS90-WA-14S (D) -40	40'-0"	14'-0"	5.41"	2.75"	19'-0"	9.45"	4.94"	32'-3"	11
	DS90-WA-16S (D) -40	40'-0"	16'-0"	5.41"	2.40"	21'-6"	9.45"	4.94"	32'-3"	11
	DS90-WA-6S (D) -50	50'-0"	6'-0"	5.41"	3.77"	11'-8"	10.85"	4.94"	42'-3"	10
	DS90-WA-8S (D) -50	50'-0"	8'-0"	5.41"	3.52"	13'-6"	10.85"	4.94"	42'-3"	10
	DS90-WA-10S (D) -50	50'-0"	10'-0"	5.41"	3.26"	15'-4"	10.85"	4.94"	42'-3"	10
	DS90-WA-12S (D) -50	50'-0"	12'-0"	5.41"	3.00"	17'-2"	10.85"	4.94"	42'-3"	10
	DS90-WA-14S (D) -50	50'-0"	14'-0"	5.41"	2.75"	19'-0"	10.85"	4.94"	42'-3"	10
	DS90-WA-16S (D) -50	50'-0"	16'-0"	5.41"	2.40"	21'-6"	10.85"	4.94"	42'-3"	10

MATERIAL DATA		
COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE & ARM SHAFTS	A595 GR. A	55
BASE PLATE	A572 GR. 50	50
BOTTOM SLIP PLATE	A572 GR. 50	50
ANCHOR PLATE	A572 GR. 50	50
PLATE WASHERS	A36 OR A572 GR. 50 OR 55	36
KEEPER PLT-G90 COATING	A653 GR. 33	
HANDHOLE RIM	A500 GR. B	42
STRUCTURAL CONN. HDWE	F3125, A325 TYPE 1	
ANCHOR BOLTS NUTS WASHERS	F1554 A563 GR. DH F436	105
BRNG PLT & STRAPS	A36 OR A572 GR. 50 OR 55	36
MISC. HARDWARE-SERIES 300 STAINLESS		
OTHER PLATES	A36 OR A572 GR. 50 OR 55	36
	A501	36
PIPE / TUBING	A513 GR. 1015	35
	A618	50
	A500 GR. B	42
	A53 GR. B	35
GALVANIZING - STRUCTURE	A123	
GALVANIZING - HARDWARE	F2329	
ARM ELBOW	A513 TYPE 5 GR. 1026	45

**DESIGN CRITERIA:**  
 THE LIGHTING 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:  
 HIGH FREQUENCY ELECTRIC RESISTANCE WELD.

**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 NOTE:**

1. 3.3 SQ. FT./50 LBS. - DESIGN LUMINAIRE PA/WT
2. IN THE POLE AND ARM DATA, WALL GAUGE "G" WILL CHANGE WHEN THE MOUNTING HEIGHT REQUIRED ADJUSTS THE BASE O.D. "E" TO THE FOLLOWING:
  - A. 10.00" OR LESS - WALL GAUGE WILL BE 11 GA.
  - B. 10.01" THRU 11.00" - WALL GAUGE WILL BE 10 GA.
 THE WALL GAUGE "G" WILL REMAIN THE SAME FOR BOTH THE SINGLE AND DOUBLE ARM CONDITIONS.
3. THE ALLOWABLE MAXIMUM SIGN AREA LOCATED 7'-0" ABOVE THE POLE BASE WILL BE 20 SQ. FT. FOR ALL ARMS AND ALL MOUNTING HEIGHTS REQUIRED EXCEPT THE FOLLOWING:
  - A. IF DOUBLE 16'-0" ARMS ARE REQUIRED FOR 40'-0" MOUNTING HEIGHT WHICH WOULD ADJUST THE BASE O.D. "E" TO 10.00" OR LESS WITH 11 GAUGE WALL.
4. THE H1 DIMENSION SHALL NOT EXCEED 50'-0".
5. SLIP BASES SHALL NOT BE INSTALLED ON POLES WEIGHING MORE THAN 1000 LBS.
6. FINAL ASSEMBLIES TO HAVE 0.06" RADIUS ON ALL EXPOSED EDGES.

**DESIGN INFORMATION**

REV	DRAWN BY-DATE	CHECK BY-DATE	DESCRIPTION
B	GC7 10/01/18	RBC2 10/03/18	WELD INSPECTION, WELDING & 2015 AASHTO NOTE
A	BBB3 02/07/17	BOB3 05/12/17	REVISED WELD INSPECTION NOTE
	BBB3 08/22/16	BOB3 08/29/16	

TITLE  
 STATE OF WASHINGTON  
 TYPE 1 LIGHTING 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: DB01164  
 REV: B

THE FOLLOWING 2015 AASHTO REQUIREMENT IS BEING FOLLOWED:

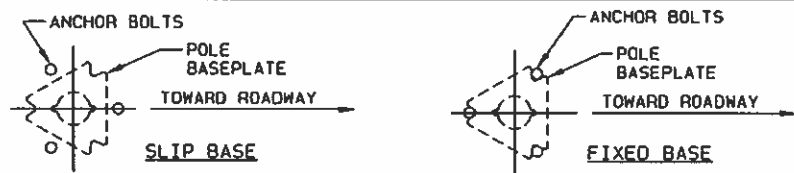
1. SECTION 5.6.6 FOR HANDHOLE CLEAR DISTANCE AND 40% OF POLE WIDTH REQUIREMENT. STRESSES ARE REVIEWED AT EACH HANDHOLE FOR STRUCTURAL ADEQUACY IN THE CALCULATIONS.

**2015 AASHTO NOTES**

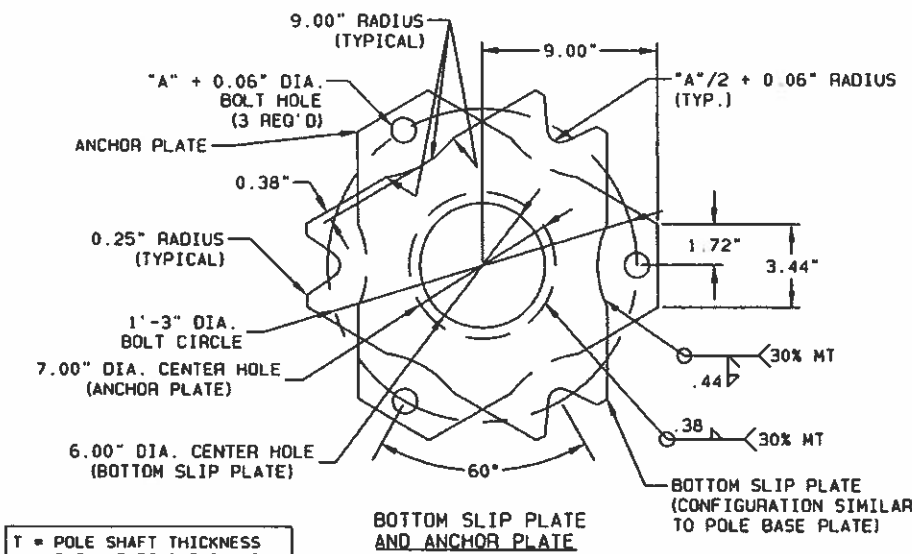
**APPROVED**  
 Manufacturer's Pole Plan  
 Approved For Listing As A  
 Pre-Approved Drawing  
 WSDOT Bridge & Structures Office  
 By GB Date 10-22-2018







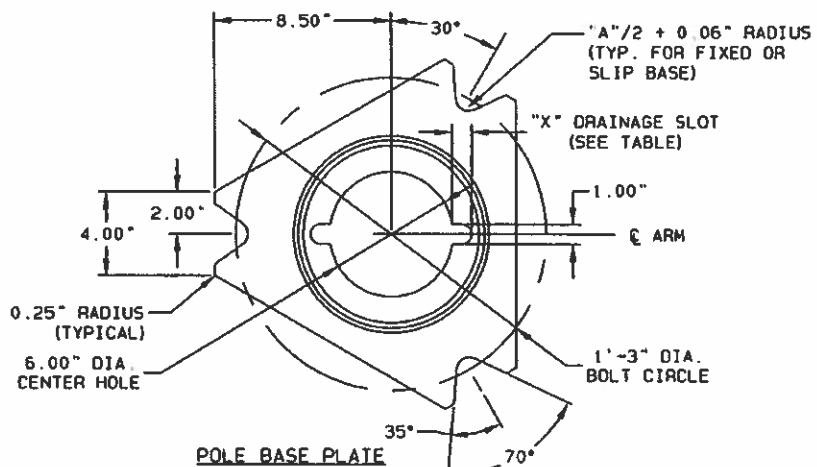
ANCHOR BOLT LAYOUT



BOTTOM SLIP PLATE AND ANCHOR PLATE

T = POLE SHAFT THICKNESS  
L = BACK UP RING THICKNESS

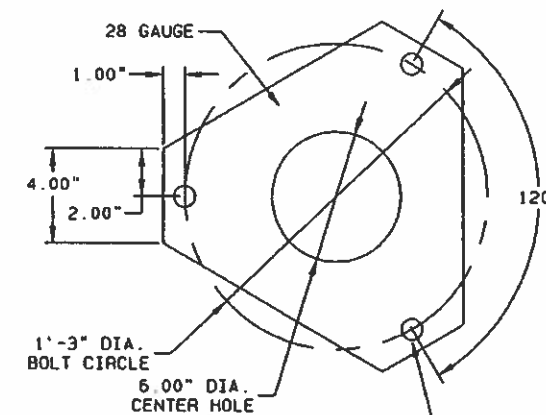
NOTE:  
1. BASEPLATE WITHOUT THE BOTTOM SLIP PLATE AND ANCHOR PLATE IS A FIXED BASE. WHERE A FIXED BASE IS REQUIRED BY PLANS OR SPECIAL PROVISIONS, ROTATE THE ANCHOR BOLT PATTERN 180° AND BOLT THE BASEPLATE DIRECTLY TO THE FOUNDATION.



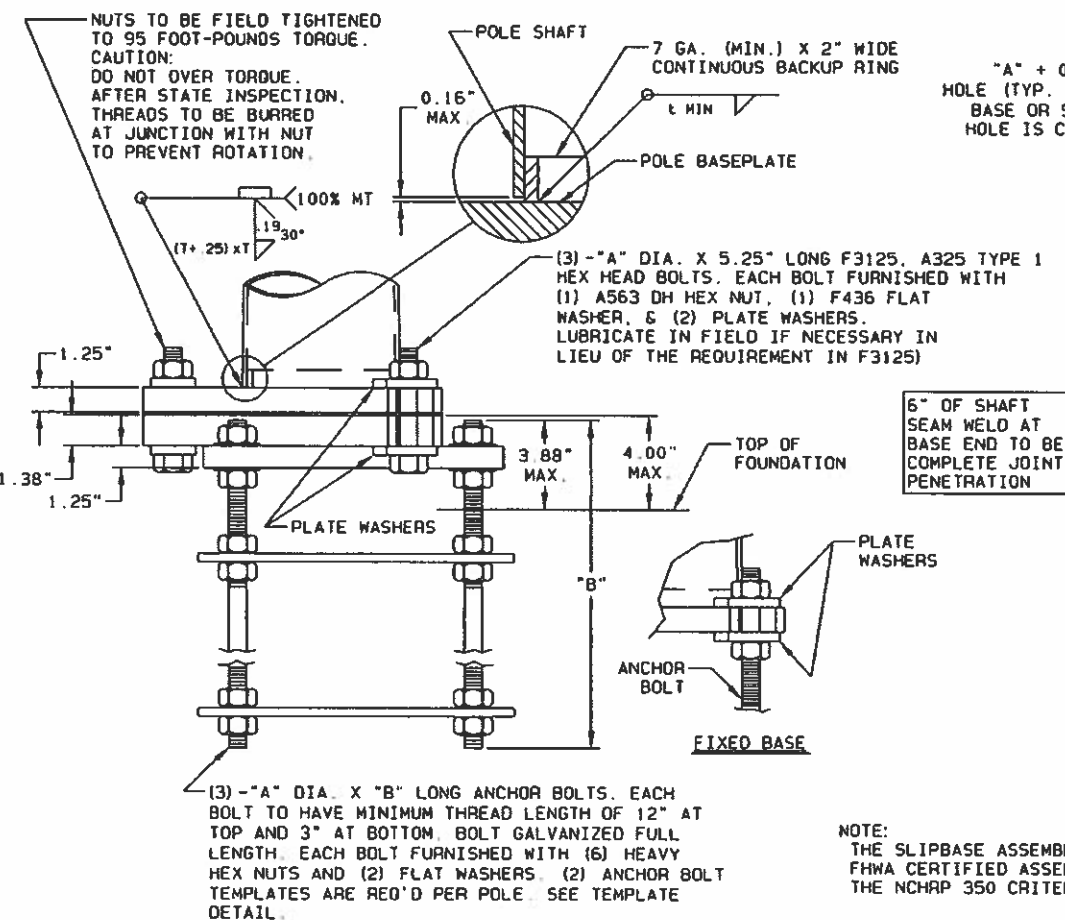
POLE BASE PLATE

DRAINAGE SLOT TABLE

POLE I.D.	"X"
LESS THAN 8.00"	NO SLOT REQUIRED
8.00"-8.99"	0.50"
9.00"-9.99"	1.00"
10.00" +	1.50"



KEEPER PLATE  
PLACE BETWEEN POLE BASE PLATE AND BOTTOM SLIP PLATE ON TOP OF MIDDLE WASHERS.



SLIP BASE ELEVATION

SLIP BASE/FIXED BASE DETAIL

"A" + 0.06" DIA. HOLE (TYP. FOR FIXED BASE OR SLIP BASE) HOLE IS CHAMFERED

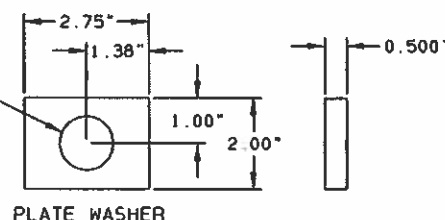
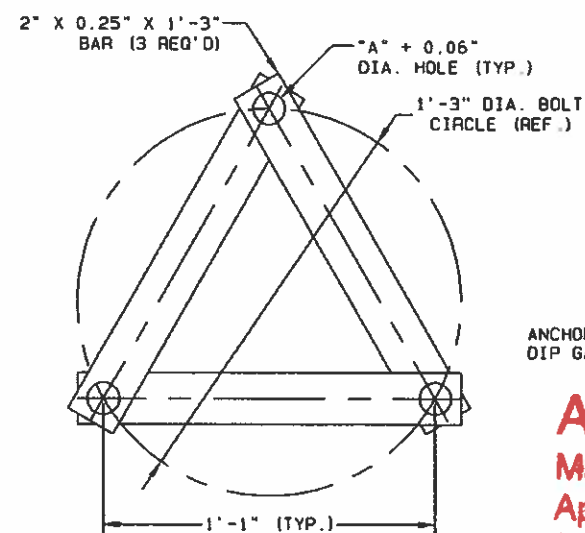


PLATE WASHER



ANCHOR BOLT TEMPLATE  
(2) TEMPLATES REQ'D PER POLE-STRAPS ARE SHIPPED LOOSE

NOTE:  
THE SLIPBASE ASSEMBLY SHOWN CONFORMS TO THE FHWA CERTIFIED ASSEMBLY THAT WAS TESTED TO THE NCHRP 350 CRITERIA.

SLIP BASE TABLE

LUMINAIRE HEIGHT (H1)	ARM TYPE	ARM LENGTH
20'-0" THRU 50'-0"	SINGLE	6'-0" THRU 16'-0"
20'-0" THRU 45'-0"	DOUBLE	6'-0" THRU 8'-0"

POLES THAT EXCEED THE ABOVE SHALL NOT BE INSTALLED ON A SLIP BASE.

ANCHOR BOLT TABLE

LUMINAIRE HEIGHT (H1)	ARM TYPE	ARM LENGTH	ANCHOR BOLT "A" DIA. X "B" LENGTH
20'-0" THRU 50'-0"	SINGLE	6'-0" THRU 16'-0"	1.00" X 4'-6"
20'-0" THRU 50'-0"	DOUBLE	6'-0" THRU 8'-0"	1.00" X 4'-6"
20'-0" THRU 45'-0"	DOUBLE	10'-0" THRU 16'-0"	1.00" X 4'-6"
46'-0" THRU 50'-0"	DOUBLE	10'-0" THRU 16'-0"	1.13" X 5'-6"

ANCHOR PLATES PROVIDED WITH HOT DIP GALVANIZED FINISH.

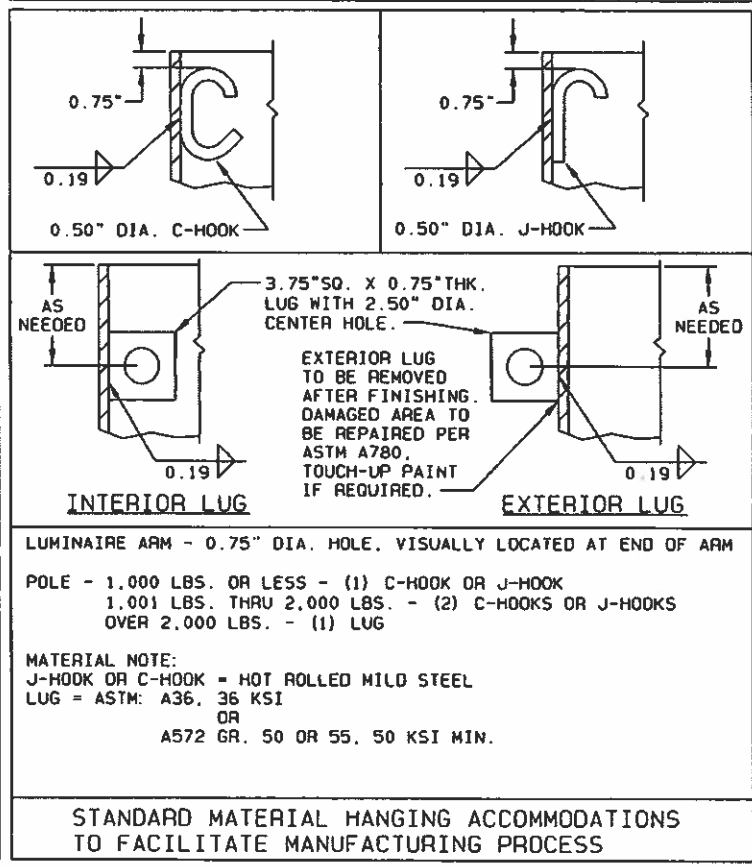
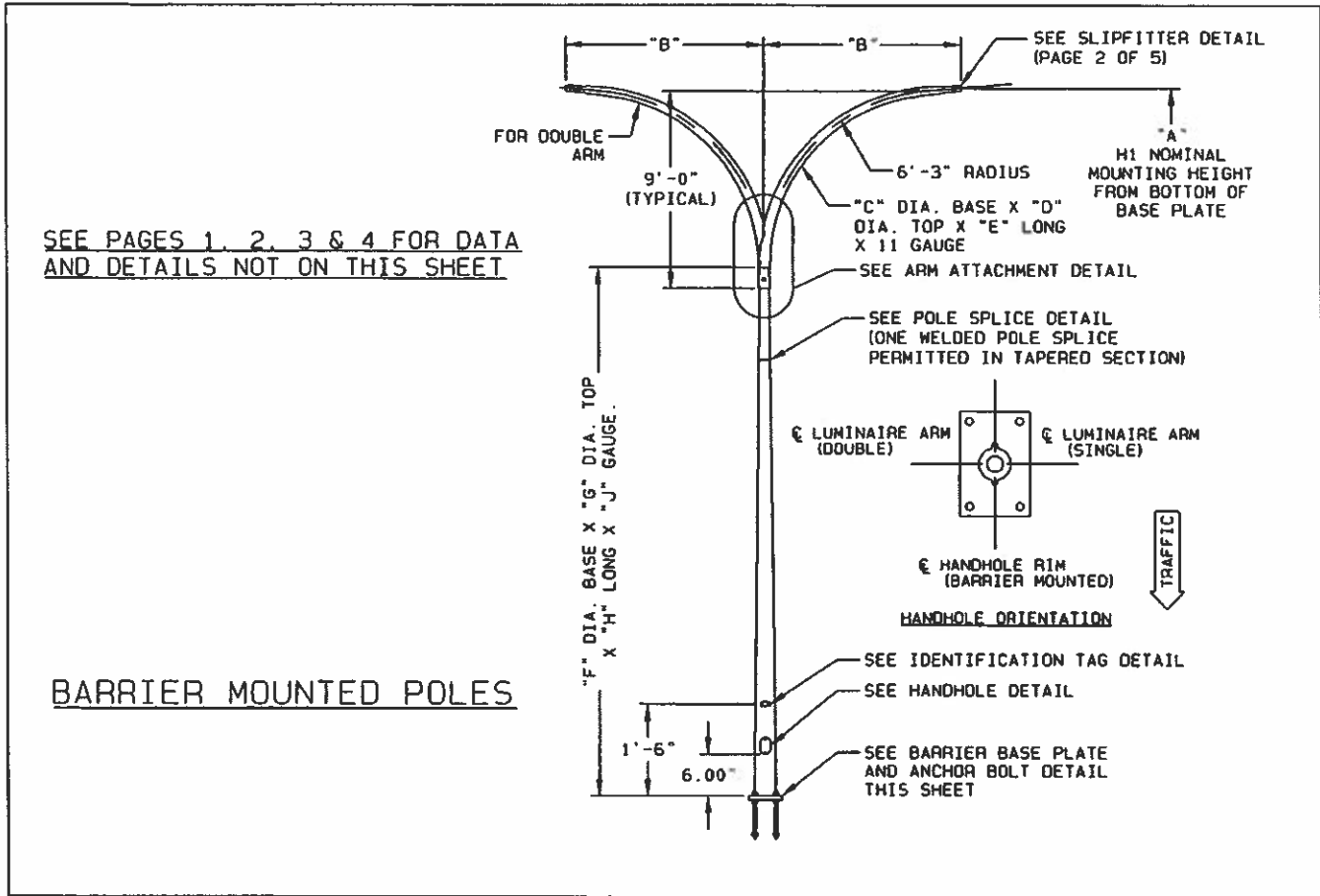
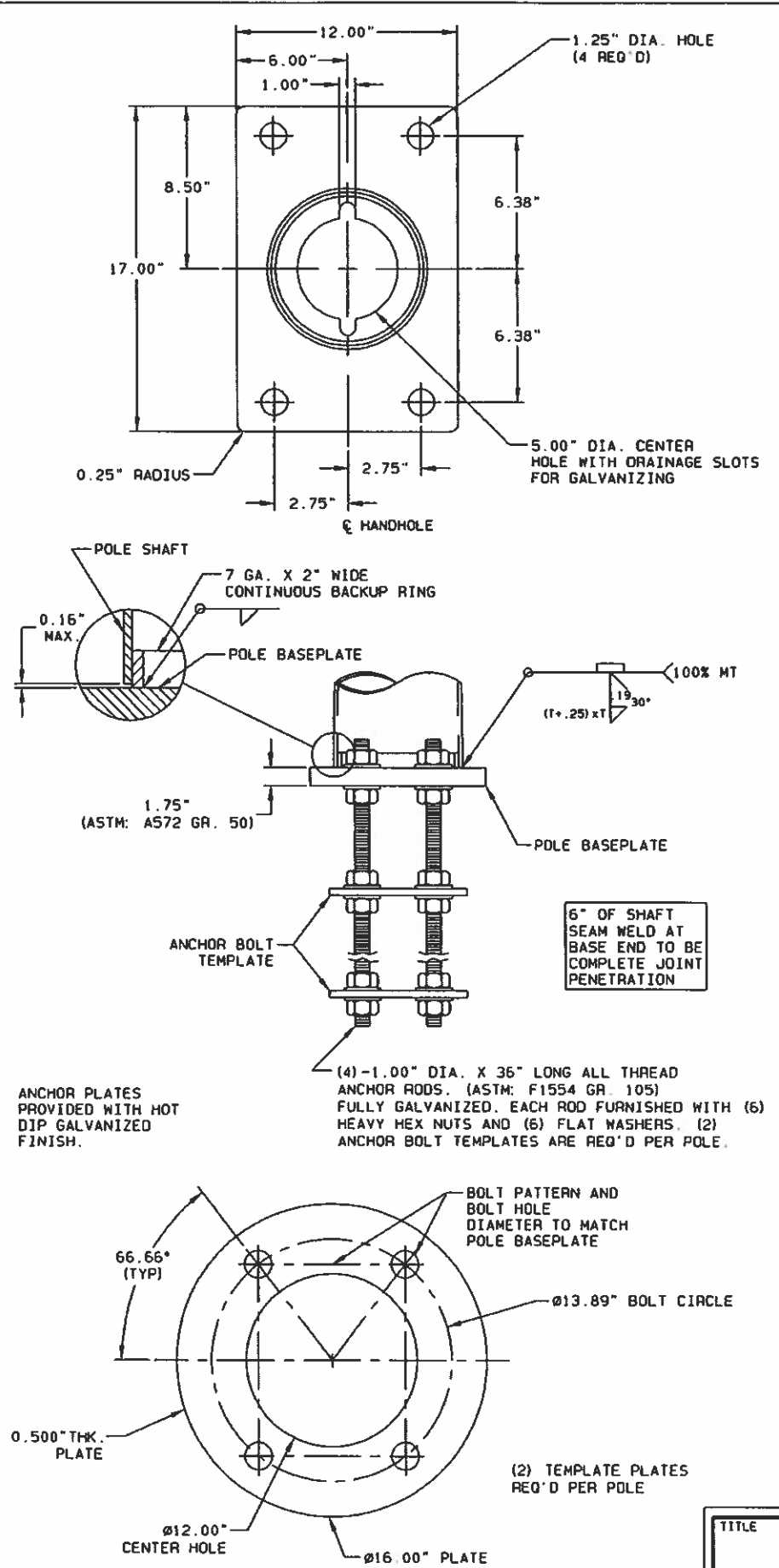
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EXPIRES 8/2/20







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

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

TITLE  
 STATE OF WASHINGTON  
 TYPE 1 LIGHTING STRUCTURES  
 2015 AASHTO

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DETAIL 8 BARRIER BASEPLATE & ANCHOR BOLTS