

DESIGN CRITERIA:
 THE CAMERA 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 LBN/GMAW. (POLE SHAFT (0.188, 0.2500, 3 GA. & 0.3125)
 HIGH FREQUENCY ELECTRIC RESISTANCE WELD. (POLE SHAFT (7 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

DEFLECTION NOTE:
 MAXIMUM POLE DEFLECTION SHALL NOT EXCEED 0.7" IN 30 MPH WIND, 0.8" IN 35 MPH WIND OR 1.4" IN 70 MPH WIND.

- LOADING NOTE:**
1. LOAD CASE #1: (1) CAMERA-4.0 SQ.FT. @ 24" ABOVE POLE TOP.
 (1) DISH-12" DIAMETER @ POLE TOP.
 (1) NEMA CABINET-1.33 SQ.FT. @ 44" FROM POLE TOP.
 2. LOAD CASE #2: (1) CAMERA-4.0 SQ.FT. @ 24" ABOVE POLE TOP.
 (2) CAMERA-0.54 SQ.FT. @ 12" & 24" FROM POLE TOP.
 (2) NEMA CABINETS INSTALLED BACK TO BACK-1.33 SQ.FT. @ 44" FROM POLE TOP.
 (2) RADIO EQUIPMENT-2.25 SQ.FT. @ 24" & 108" FROM POLE TOP.

- GENERAL NOTES:**
1. ALL BOLT HOLES IN PLATES TO BE DRILLED.
 2. FINAL ASSEMBLIES TO HAVE 0.06" RADIUS ON ALL EXPOSED EDGES.

DESIGN INFORMATION

MATERIAL DATA			COMPONENT	ASTM DESIGNATION	YIELD MIN. (KSI)	MIN. YIELD (KSI)
POLE SHAFT	A595 GR. A OR A572 GR. 55	55	PIPE/TUBING	A53 GR. B A501 A513 GR. 1015 A618 A500 GR. B DR C	35 36 35 50 42	
BASE PLATE POLE TOP PLATES BEARING PLATE MISC. PLATE	A36 OR A572 GR. 50	36 50	HANDHOLE RIM	A500 GR. B DR C #50 A513 GR. 1035 OR 1040 50		*WITH FURTHER RESTRICTION ON MINIMUM YIELD STRENGTH HELD TO 50 KSI.
CAMERA CONNECTING BOLTS	F593	65				
ANCHOR BOLTS	F1554	105				
ANCHOR BOLT NUTS	A563 GR. DH	--				
ANCHOR BOLT WASHERS	ASTM F436	--				
GALVANIZING - STRUCTURE A123 / HARDWARE: F2329						

POLE DATA - LOAD CASE #1 - BRIDGE ELBOW MOUNT										
POLE HEIGHT (FT)	QTY.	POLE TUBE				POLE BASE				CONNECTING BOLT DIA. (IN)
		BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THICK (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE / SLOT "Z" (IN)	
15		11.00	8.90	15.00	7	25.00	25.50	1.25	1.38	1.25
20		11.80	9.00	20.00	7	25.00	25.50	1.25	1.38	1.25
30		13.20	9.00	30.00	0.188	25.00	25.50	1.25	1.38	1.25
40		14.60	9.00	40.00	0.250	25.00	25.50	1.25	1.38	1.25
50		17.20	10.20	50.00	0.313	25.00	25.50	1.25	1.38	1.25

POLE DATA - LOAD CASE #1 - GROUND MOUNT											
POLE HEIGHT (FT)	QTY.	POLE TUBE				POLE BASE				ANCHOR BOLT	
		BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THICK (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE / SLOT "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)
15		11.00	8.90	15.00	7	25.00	25.50	1.25	1.38	1.25	52.00
20		11.80	9.00	20.00	7	25.00	25.50	1.25	1.38	1.25	52.00
30		13.20	9.00	30.00	0.188	25.00	25.50	1.25	1.38	1.25	52.00
40		14.60	9.00	40.00	0.250	25.00	25.50	1.25	1.38	1.25	52.00
50		17.00	10.00	50.00	0.313	25.00	25.50	1.25	1.38	1.25	52.00

POLE DATA - LOAD CASE #2 - GROUND MOUNT ONLY											
POLE HEIGHT (FT)	QTY.	POLE TUBE				POLE BASE				ANCHOR BOLT	
		BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THICK (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE / SLOT "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)
15		11.00	8.90	15.00	7	25.00	25.50	1.25	1.38	1.25	52.00
20		11.80	9.00	20.00	7	25.00	25.50	1.25	1.38	1.25	52.00
30		13.20	9.00	30.00	0.188	25.00	25.50	1.25	1.38	1.25	52.00
40		15.50	9.90	40.00	0.250	25.00	25.50	1.25	1.38	1.25	52.00
50		18.50	11.50	50.00	0.313	25.00	25.50	1.25	1.38	1.25	52.00

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

REV	DATE	DESCRIPTION
C	06/10/18	WELD INSPECTION, WELDING & 2015 AASHTO NOTE
B	11/15/17	ADDED A595 SHAFT MATERIAL TO MATERIAL DATA
A	02/07/17	REVISED WELD INSPECTION NOTE
	08/19/16	

TITLE
 STATE OF WASHINGTON
 CAMERA POLES
 2015 AASHTO

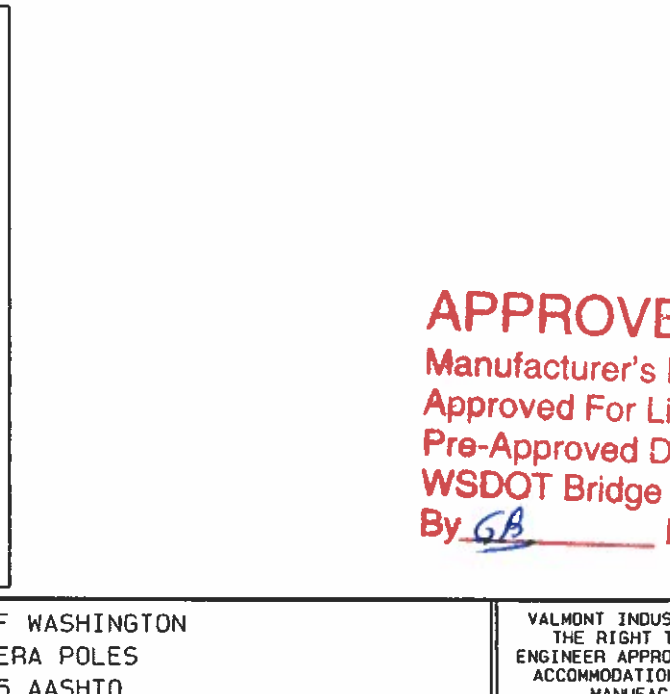
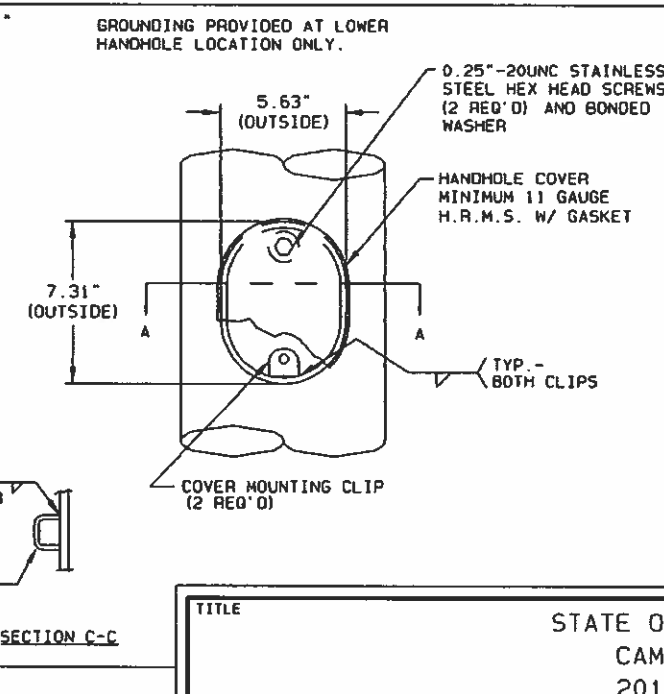
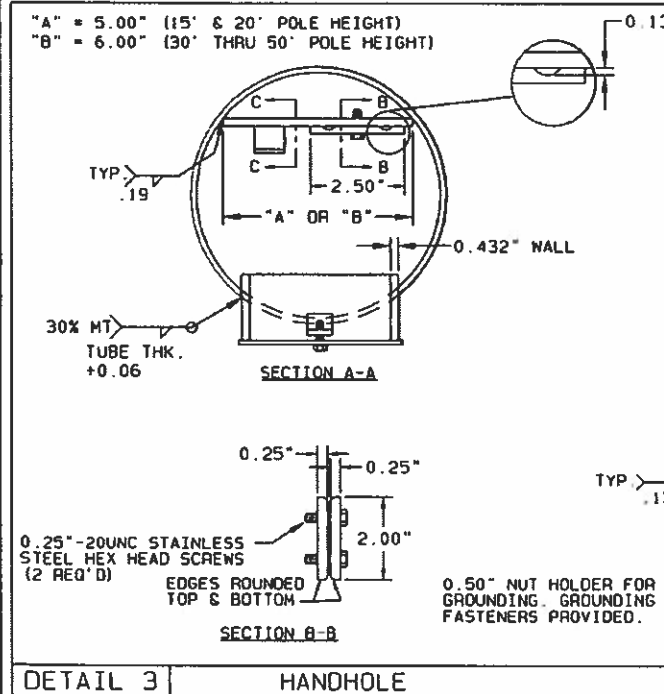
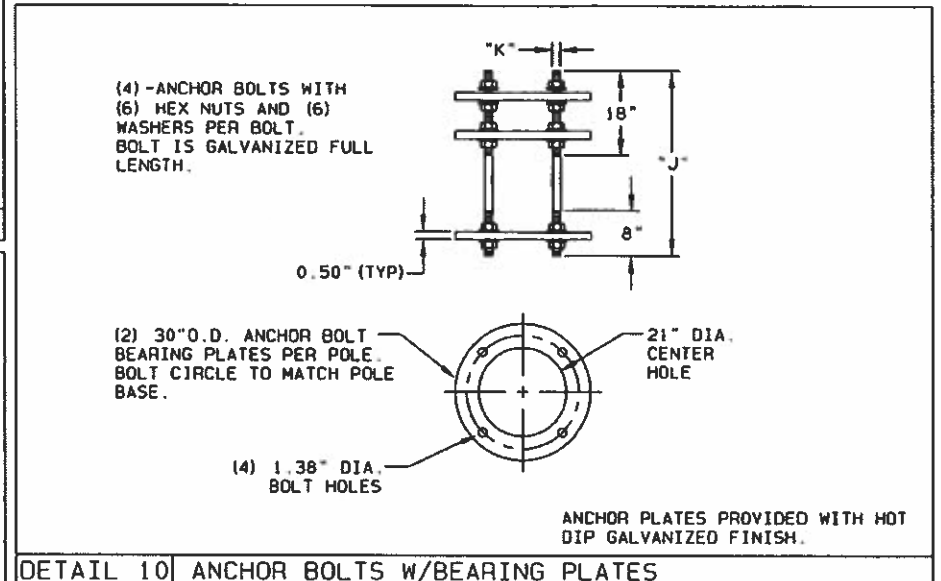
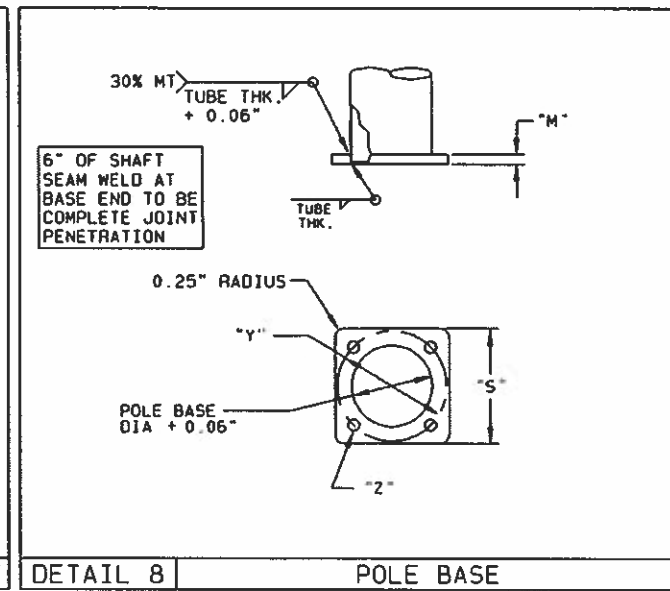
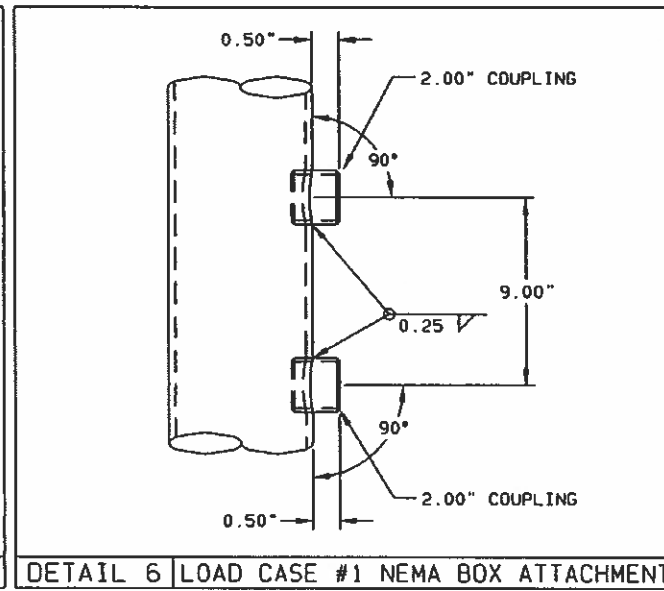
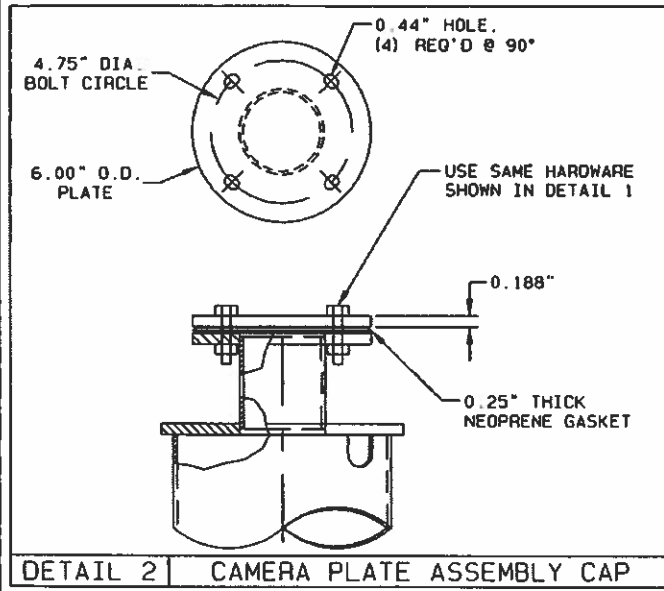
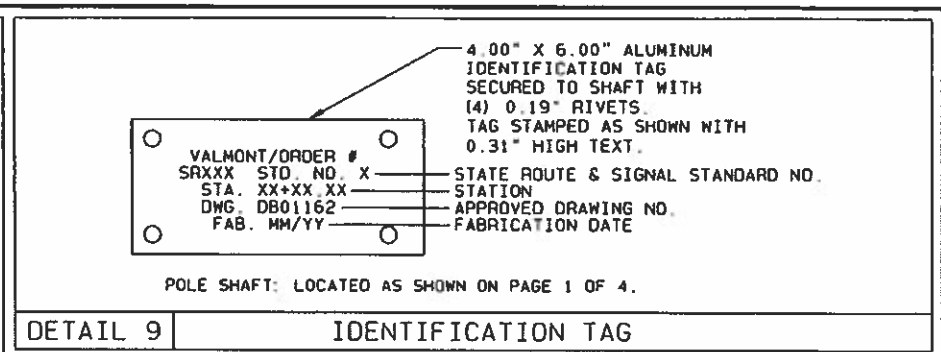
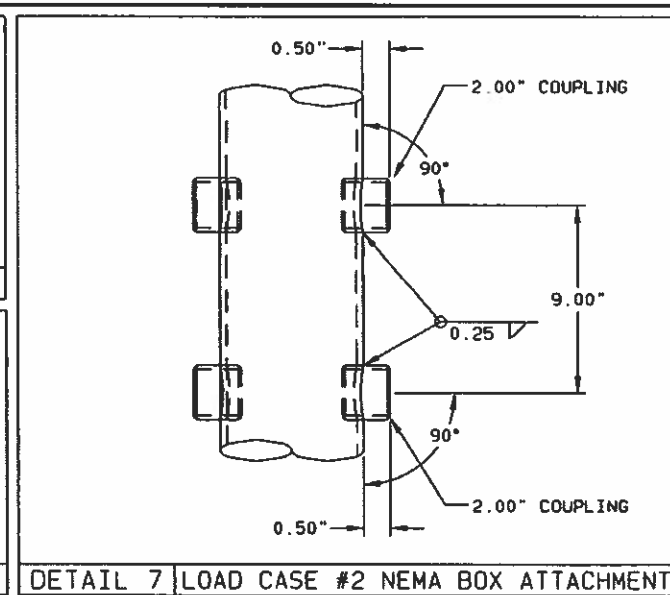
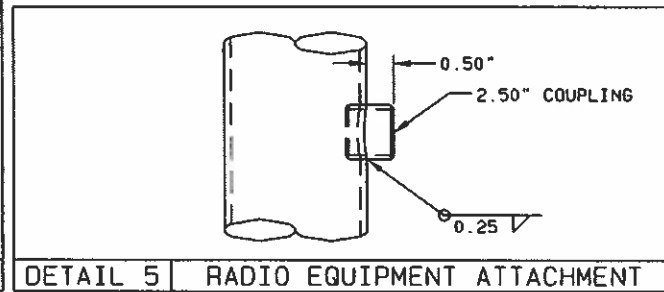
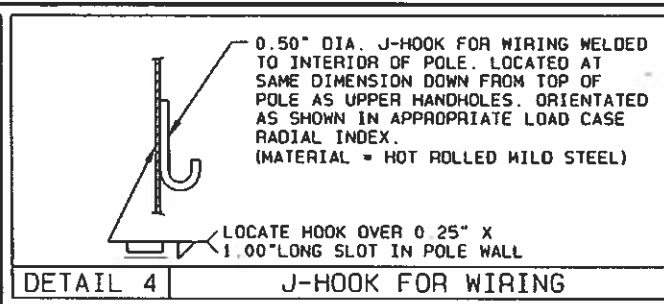
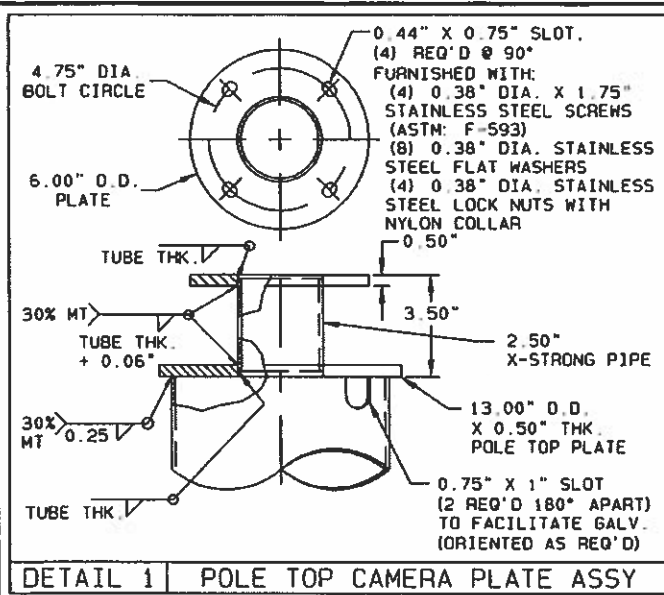
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PAGE NUMBER: 1 OF 4
 DRAWING NUMBER: DB01166
 REV: C

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
 STATE OF WASHINGTON
 REGISTERED PROFESSIONAL ENGINEER
 42225
 10/5/18
 EXPIRES 8/21/20

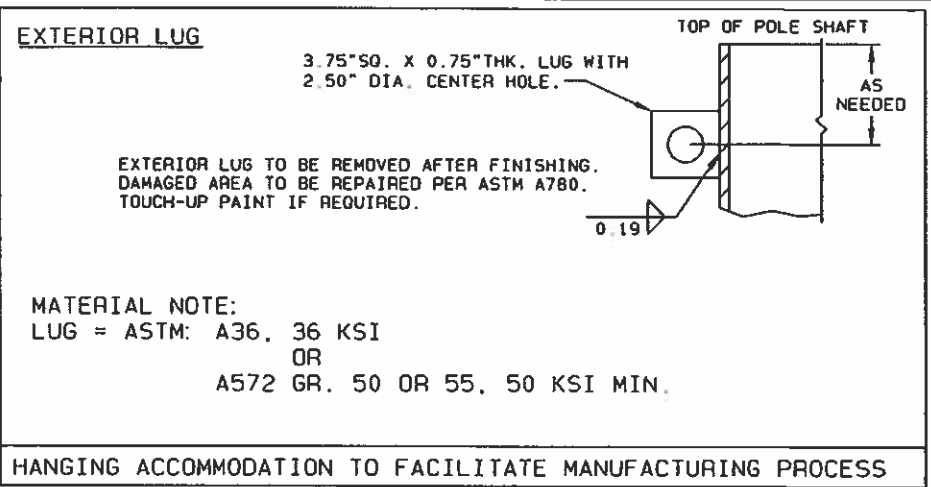
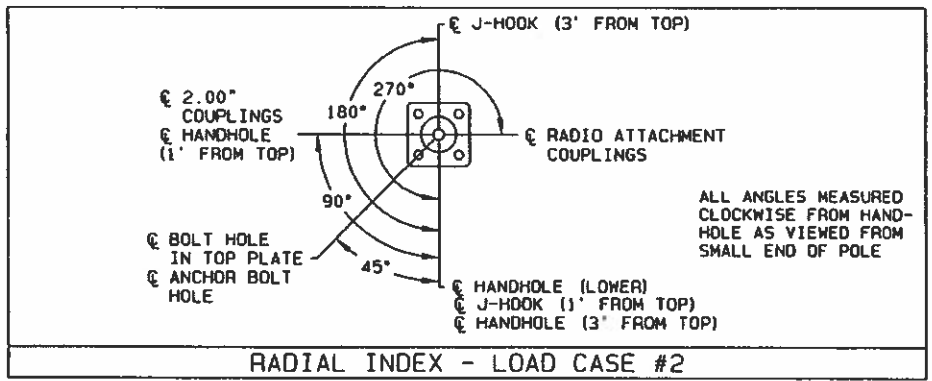
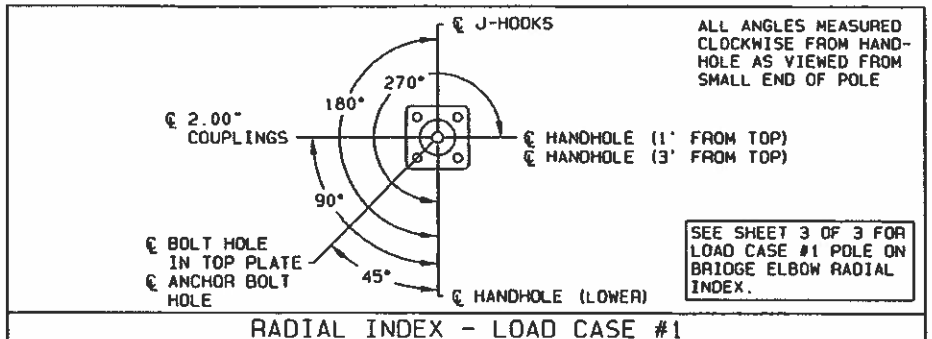
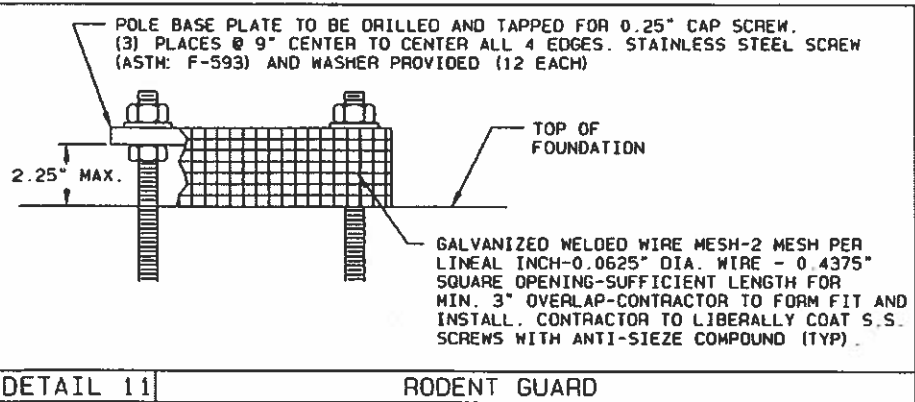


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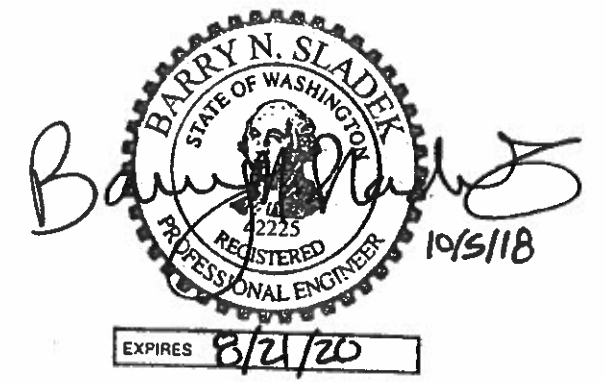
1. POLE SHAFTS ARE ROUND WITH 0.14" TAPER.
2. PLEASE VERIFY POLE TOP CAMERA PLATE, DETAIL 1, TO ASSURE THE DIMENSIONS OF THE PLATE, BOLT CIRCLE, AND HARDWARE ARE ADEQUATE FOR THE REQUIRED CAMERA PRIOR TO RELEASING POLES FOR MANUFACTURING.
3. PLEASE VERIFY POLE DESIGN (LOAD CASE NUMBER) PRIOR TO RELEASING POLES FOR MANUFACTURING. STRUCTURES NOT CONFORMING TO APPROPRIATE LOAD CASE NUMBER SHALL BE CONSIDERED "SD" SPECIAL DESIGN STRUCTURES.
4. PLEASE VERIFY IF LOAD CASE #1 REQUIRES NEMA BOX COUPLINGS (DETAIL 6) PRIOR TO RELEASE FOR MANUFACTURE.
5. PLEASE NOTE: WHEN LOAD CASE #1 POLES ARE MOUNTED ON A BRIDGE ELBOW THE POLE RADIAL INDEX SHALL BE ROTATED TO HAVE LOWER HANDHOLE FACING ROADWAY. LOWER HANDHOLE MOUNTING HEIGHT TO BE ADJUSTED TO CLEAR TOP OF BARRIER OR RAILING (SEE SHEET 3).

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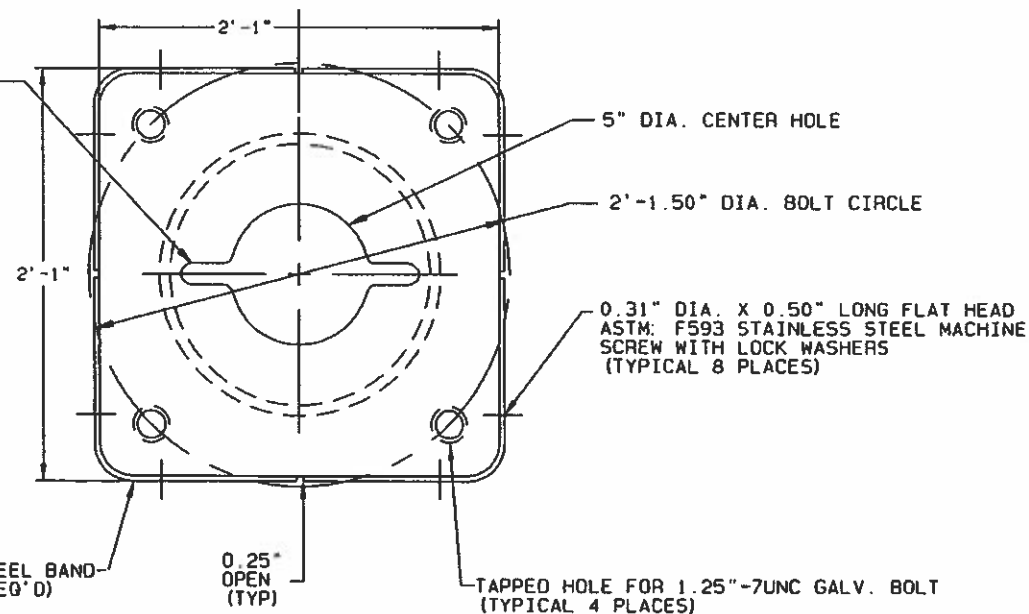


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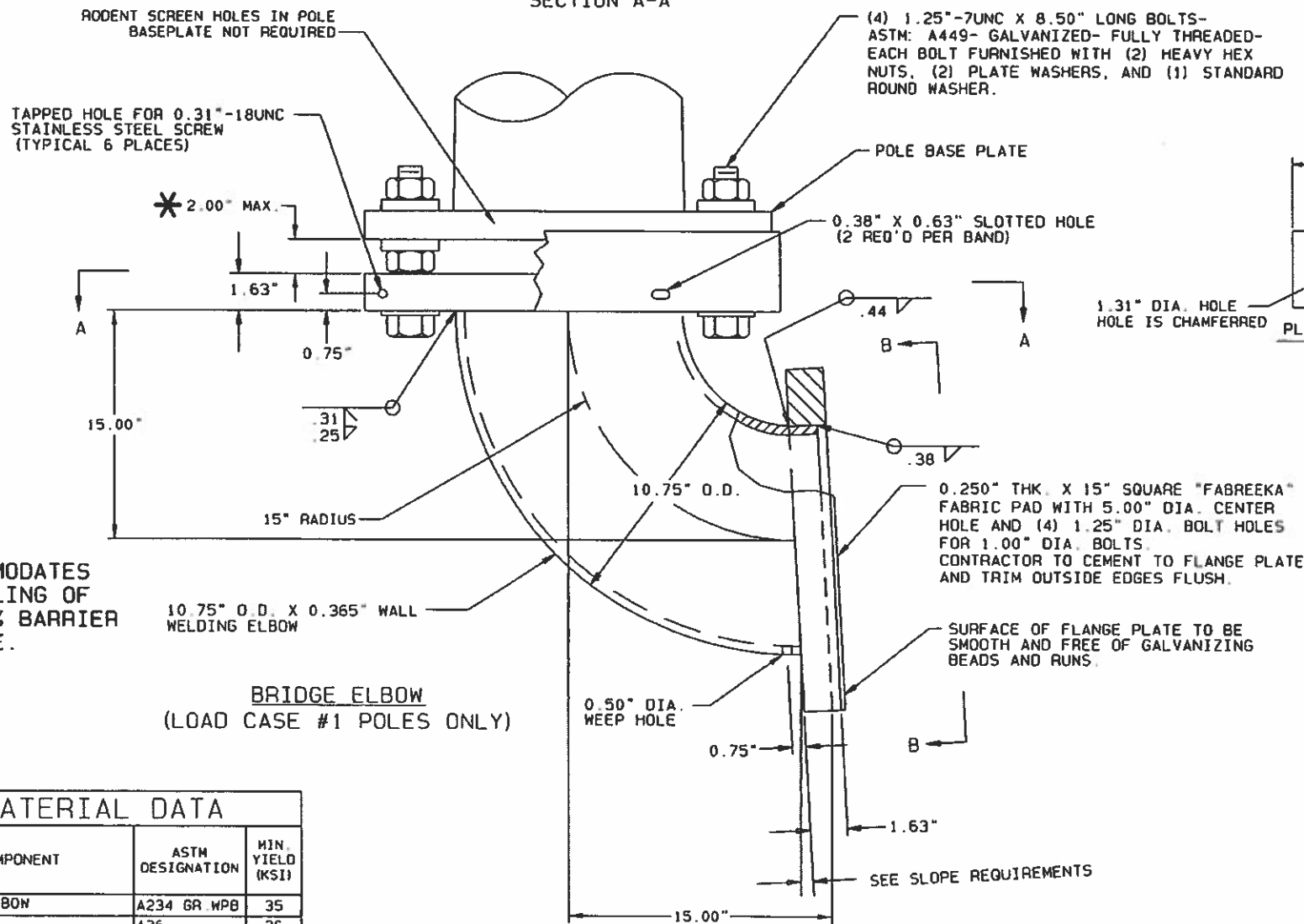


TITLE STATE OF WASHINGTON CAMERA POLES 2015 AASHTO	VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS ENGINEER APPROVED MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.	Valley, NE 68064 (402) 359-2201	PAGE NUMBER: 3 OF 4 DRAWING NUMBER: DB01166 REV: C
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0.75" WIDE GALVANIZING DRAINAGE SLOT (2 REQ'D-180° APART)

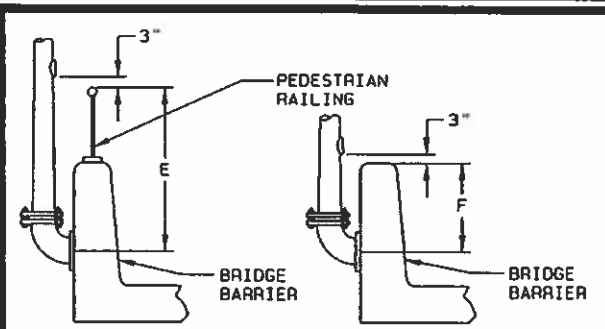


SECTION A-A



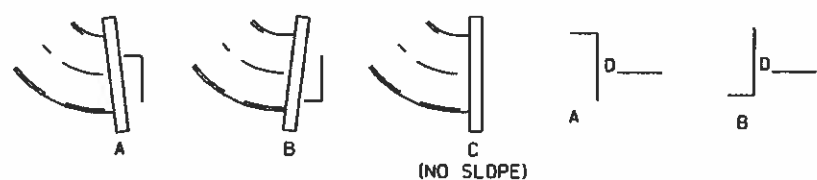
* ACCOMMODATES LEVELING OF 0%-4% BARRIER SLOPE.

BRIDGE ELBOW (LOAD CASE #1 POLES ONLY)



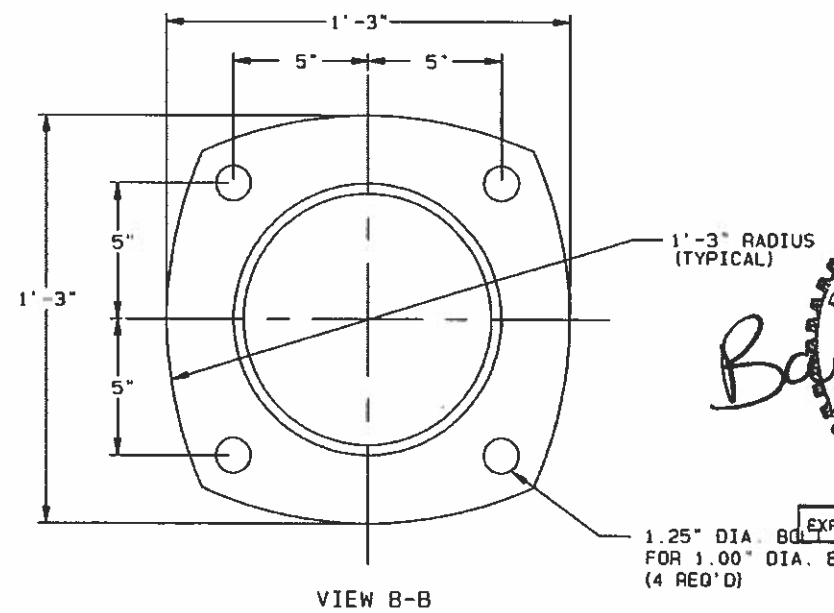
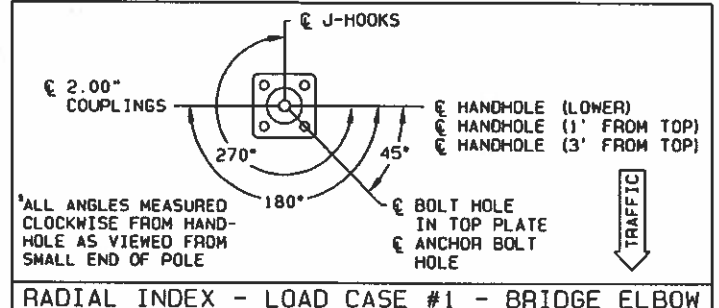
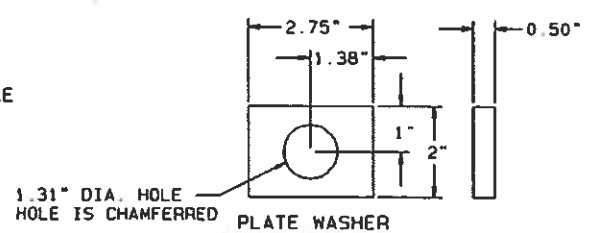
HANDHOLE ELEVATIONS PLEASE PROVIDE AS REQUIRED:
E _____
F _____

SLOPE REQUIREMENTS PLEASE PROVIDE DATA AS REQUIRED:
1. DIRECTION OF SLOPE: A, B, OR C _____
2. DEGREE (RATIO) OF SLOPE: D _____

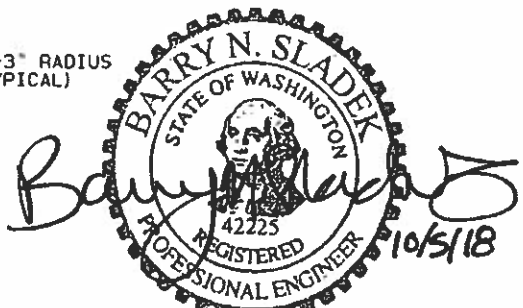


INFORMATION REQUIRED PRIOR TO RELEASE FOR MANUFACTURE

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VIEW B-B



EXPIRES 8/2/20

MATERIAL DATA		
COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
WELDING ELBOW	A234 GR WPB	35
PLATES	A36 OR A572 GR 50	36 OR 50
STEEL BAND	HRMS	

SEE PAGE 1 OF 3 FOR ADDITIONAL MATERIAL DATA

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