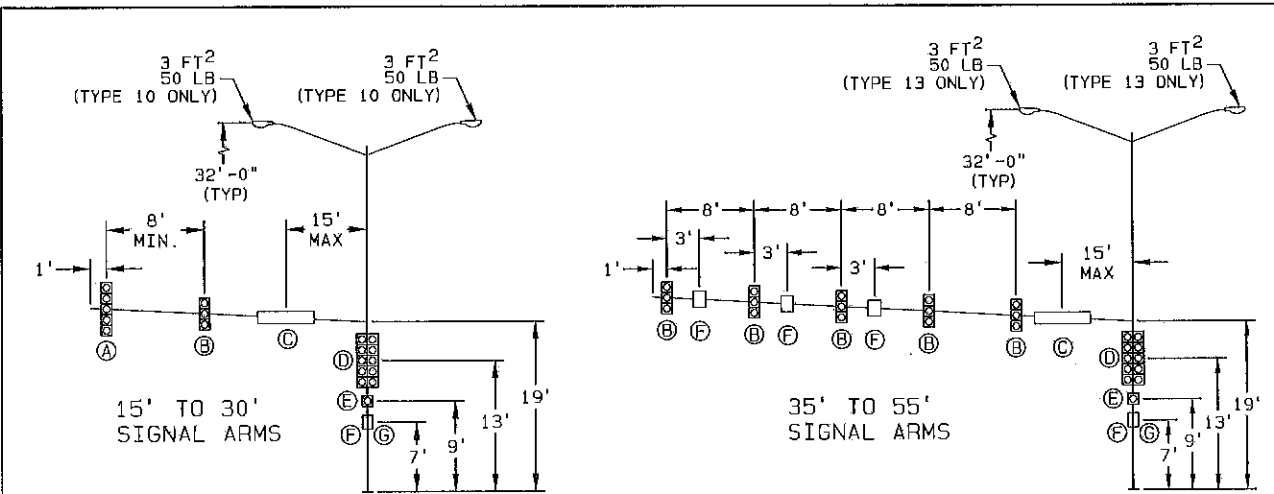
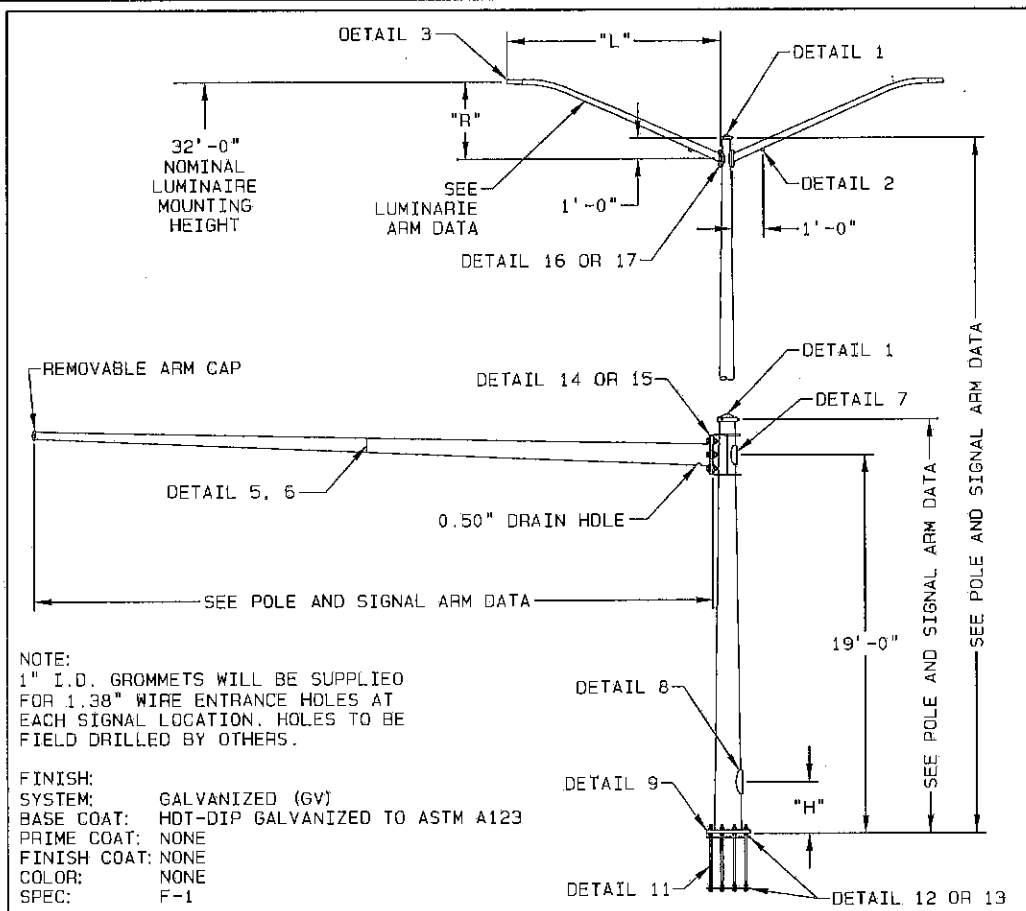




DEVICE	DESCRIPTION	PROJ. AREA (FT²)	WEIGHT (LBS)
(A)	12"-5 SEC. SIGNAL WITH BACKPLATES	13.33	105
(B)	12"-3 SEC. SIGNAL WITH BACKPLATES	8.67	60
(C)	18" X 108" STREET NAME SIGN	13.50	42
(D)	DUAL 12"-5 SEC. SIGNAL WITH BACKPLATES	26.66	210
(E)	POLE MOUNTED PED SIGNAL	3.23	28
(F)	24" X 30" SIGN	5	15
(G)	30" X 30" FOLDING STOP SIGN	6.25	19

THESE TRAFFIC SIGNAL SUPPORT STRUCTURES ARE DESIGNED IN ACCORDANCE WITH LOADING AND ALLOWABLE STRESS REQUIREMENTS OF 2013 AASHTO "STANDARDS SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", SIXTH EDITION. WIND LOADS ARE BASED ON A BASIC WIND SPEED OF 90 MPH WITH A RECURRENCE INTERVAL OF 50 YEARS. FATIGUE CATEGORY 3 USED FOR STRUCTURE TYPES 9 & 10. FATIGUE CATEGORY 2 USED FOR STRUCTURE TYPES 12 & 13. FATIGUE LOADS ARE BASED ON THE REQUIREMENTS OF SECTION 11.7 AND THE FOLLOWING DESIGN LOADS:

- NATURAL WIND GUSTS: THE YEARLY MEAN WIND SPEED FOR NATURAL WIND GUSTS WILL BE ASSUMED TO BE 11.2 MPH.
- GALLOPING: STRUCTURES ARE DESIGNED TO RESIST PERIODIC GALLOPING FORCES.
- TRUCK-INDUCED GUST: STRUCTURES ARE DESIGNED TO INCLUDE TRUCK-INDUCED GUSTS. (THE SPECIFIED AVERAGE TRUCK SPEED IS 45 MPH)

AASHTO 2013 SPECIFICATIONS

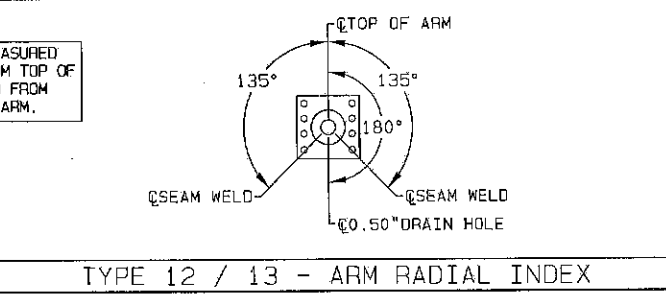
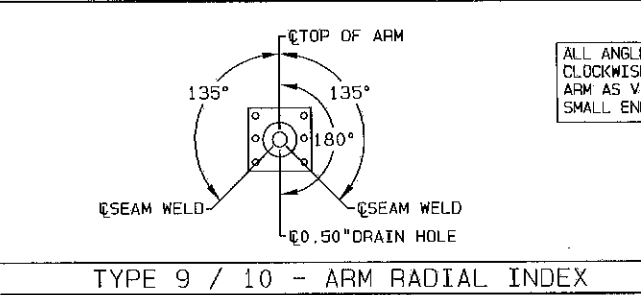
ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.

VIBRATION DISCLAIMER

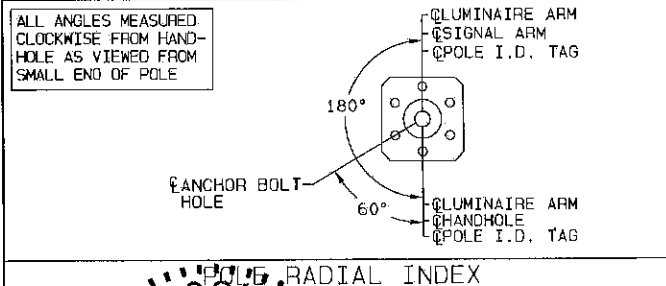
MATERIAL DATA					
COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
TAPERED TUBES	A595 GR. A OR A572	55	LUMINAIRE ARM ATTACH.	A36	36
POLE BASE	A572 GR.50	50	LUM. ARM CONN. BOLTS	A325*	36
SIGNAL ARM ATTACHMENT	A36	36	ANCHOR BOLTS W/ SUPPLEMENTARY SPEC S4	F1554 GR.55	55
SIGNAL ARM CONN. BOLTS	A325*		ANCHOR BOLT TEMPLATE	A36	36
GALVANIZING STRUCTURE	A123				
GALVANIZING HARDWARE	HOT DIP ZINC				

* LUBRICATE IN THE FIELD IF NECESSARY

LUMINAIRE ARM DATA				
ARM SPAN "L" (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE	RISE "R" (FT)
6.00	3.39	2.40	11	3.00
8.00	3.63	2.40	11	3.00
10.00	3.88	2.40	11	3.00
12.00	4.16	2.40	11	3.00
15.00	4.56	2.40	11	3.00



POLE AND SIGNAL ARM DATA																		
STRUCTURE TYPE	POLE TUBE				POLE BASE					ANCHOR BOLT DATA					SIGNAL ARM TUBE			
	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	CENTER HOLE "P" (IN)	BOLT HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	THREAD LENGTH "U1" (IN)	THREAD LENGTH "U2" (IN)	ANCHOR BOLT QTY.	FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE OR THICK (IN)	SPAN (FT)
TYPE 9	11.50	8.56	21.00	7	19.00	15.00	2.00	10.14	1.75	1.50	52.00	10.00	5.50	6	8.00	5.90	7	15.00
															8.00	5.20	7	20.00
															9.00	5.50	7	25.00
															9.00	4.80	7	30.00
TYPE 10	11.50	7.30	30.00	7	19.00	15.00	2.00	10.14	1.75	1.50	52.00	10.00	5.50	6	8.00	5.90	7	15.00
															8.00	5.20	7	20.00
															9.00	5.50	7	25.00
															9.00	4.80	7	30.00
TYPE 12	19.20	16.26	21.00	0.313	29.00	24.00	2.00	12.00	2.00	1.75	86.00	11.00	5.50	6	14.50	9.60	0.250	35.00
															15.50	9.90	0.250	40.00
															17.00	10.70	0.250	45.00
															16.00	9.38	DET.5	50.00
															16.25	8.93	DET.5	55.00
															14.50	9.60	0.250	35.00
TYPE 13	19.20	15.00	30.00	0.313	29.00	24.00	2.00	12.00	2.00	1.75	86.00	11.00	5.50	6	15.50	9.90	0.250	40.00
															17.00	10.70	0.250	45.00
															16.00	9.38	DET.5	50.00
															16.25	8.93	DET.5	55.00
															14.50	9.60	0.250	35.00
															15.50	9.90	0.250	40.00
E	NKL 10/12/16	NKL 10/12/16	REVISED LUMINAIRE/MAST ARM DATA												16.00	9.38	DET.5	50.00
															16.25	8.93	DET.5	55.00



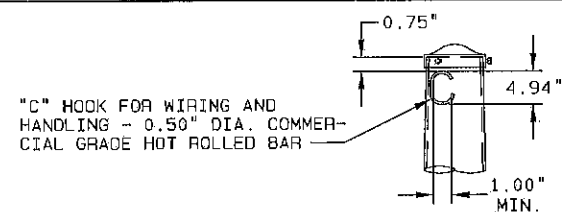
E	NKL 10/12/16	NKL 10/12/16	REVISED LUMINAIRE/MAST ARM DATA
D	NKL 12/16/15	NKL 12/16/15	REVISED ANCHOR BOLT DATA
C	NKL 01/21/15	NKL 01/21/15	ADDED THREAD LENGTH TO BOLT
B	NKL 12/17/14	NKL 12/17/14	POLE SIZES TYPE 12/13 / ADD PAGE 3 DETAIL
A	NKL 03/11/14	NKL 03/11/14	REVISED TYPE 12/13 SIZES
---	AC19 11/27/13	NKL 12/03/13	---
REV	DRAWN BY-DATE	CHECK BY-DATE	DESCRIPTION

WISCONSIN DEPARTMENT OF TRANSPORTATION
TYPES 9, 10, 12, & 13 TRAFFIC SIGNAL STRUCTURES
AASHTO 2013

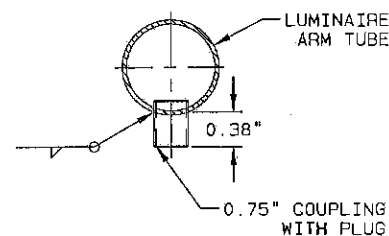
VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.



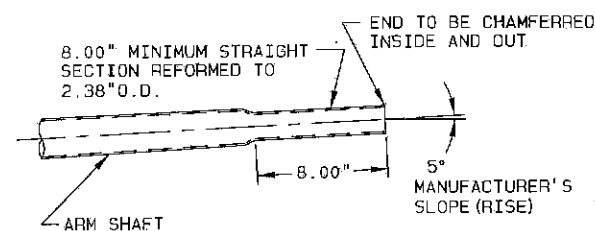
PAGE NUMBER: 1 OF 3	REV
DRAWING NUMBER	DB01072



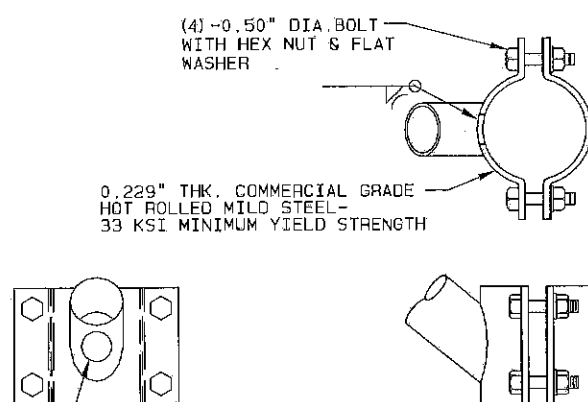
DETAIL 1 POLE TOP



DETAIL 2 LUMINAIRE ARM COUPLING



DETAIL 3 LUMINAIRE ARM END REFORMED



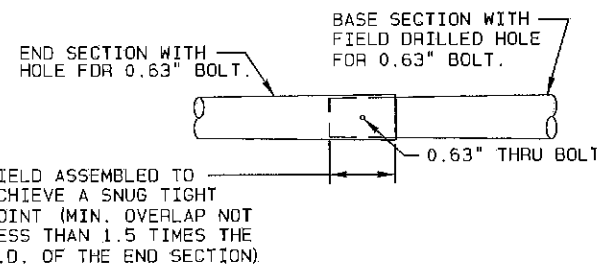
1.25" DIA. WIRING ACCESS HOLE - ARM CLAMP ONLY

WIRE ACCESS HOLE IN POLE SHAFT TO BE FIELD DRILLED.

CLAMP ARM ATTACHMENT OPTION FOR VIDEO DETECTION UNIT IF NEEDED

SUPPLY ATTACHMENT LOCATION AS REQUIRED

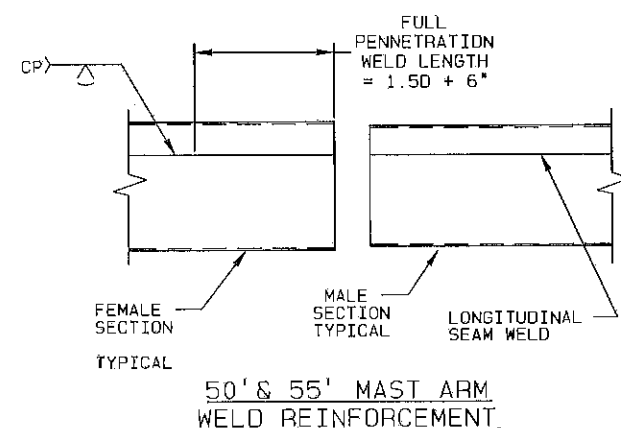
DETAIL 4 LUMINAIRE ARM ATTACHMENT (OPTIONAL)



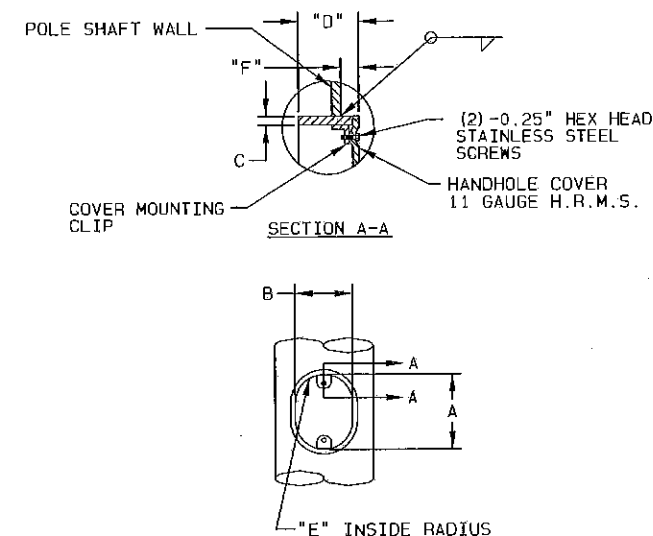
SPAN	BASE SECTION		END SECTION		
	LENGTH	WALL	BASE OD	LENGTH	WALL
50.00'	15.00'	0.500"	14.68"	37.90'	0.188"
55.00'	15.00'	0.500"	14.94"	42.93'	0.188"

DETAIL 5 SIGNAL ARM SLIP JOINT

("D" = INSIDE DIAMETER OF OUTER TUBE)

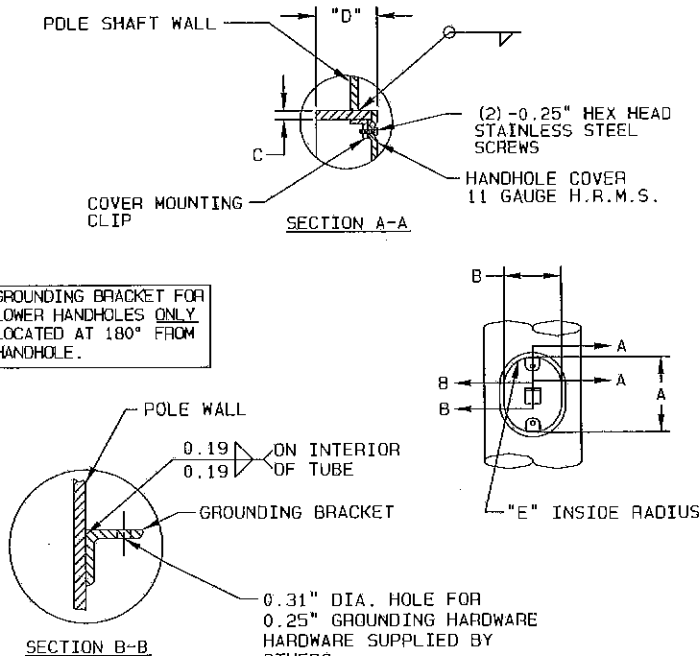


DETAIL 6 MAST ARM WELD REINFORCEMENT



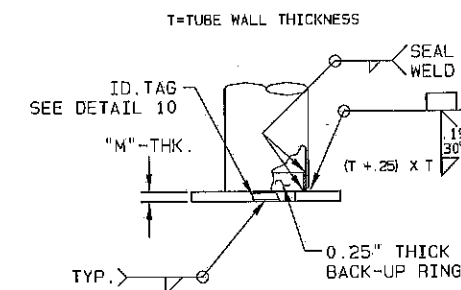
POLE TYPE	"A" I.D. (IN)	"B" I.D. (IN)	"C" THK (IN)	"D" DEPTH (IN)	"E" RADIUS (IN)	"F" PROJ. (FT)
9	5.50	3.50	0.375	2.00	1.50	0.50
10	5.50	3.50	0.375	2.00	1.50	0.50
12	6.56	4.50	0.500	2.00	2.00	0.50
13	6.56	4.50	0.500	2.00	2.00	0.50

DETAIL 7 UPPER HANDHOLE

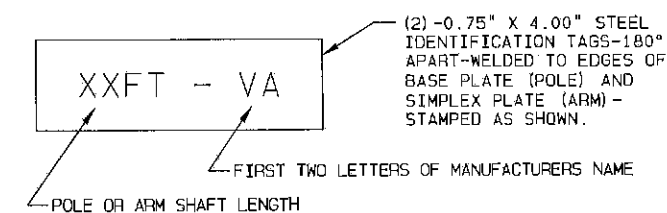


POLE TYPE	"A" I.D. (IN)	"B" I.D. (IN)	"C" THK (IN)	"D" DEPTH (IN)	"E" RADIUS (IN)	"F" PROJ. (IN)	"H" MTG. HEIGHT (FT)
9	12.00	4.50	0.500	3.00	2.00	0.50	1.50
10	12.00	4.50	0.500	3.00	2.00	0.50	1.50
12	14.00	7.50	0.875	3.25	3.00	0.50	2.23
13	14.00	7.50	0.875	3.25	3.00	0.50	2.23

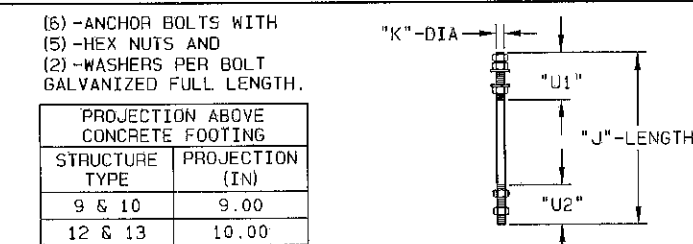
DETAIL 8 LOWER HANDHOLE



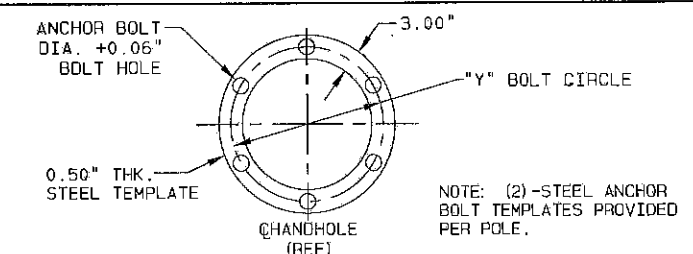
DETAIL 9 POLE BASE



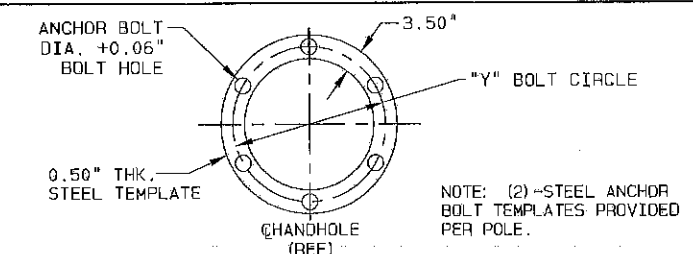
DETAIL 10 IDENTIFICATION TAG



DETAIL 11 ANCHOR BOLT



DETAIL 12 TYPE 9/10 - ANCHOR BOLT TEMPLATE



DETAIL 13 TYPE 12/13 - ANCHOR BOLT TEMPLATE

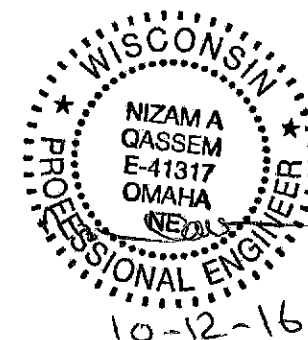
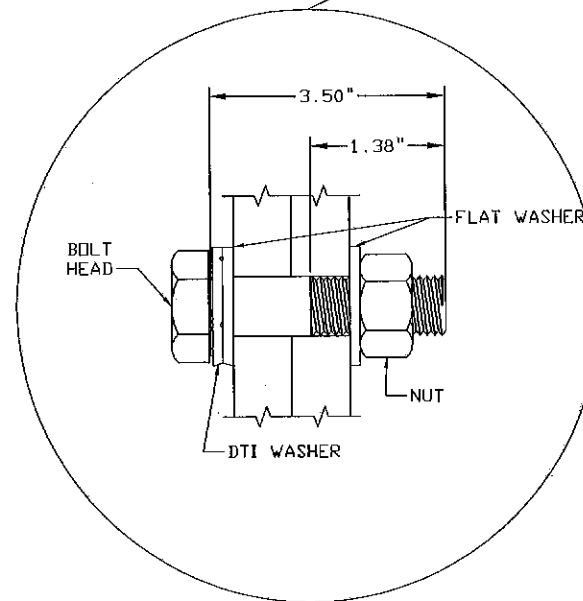
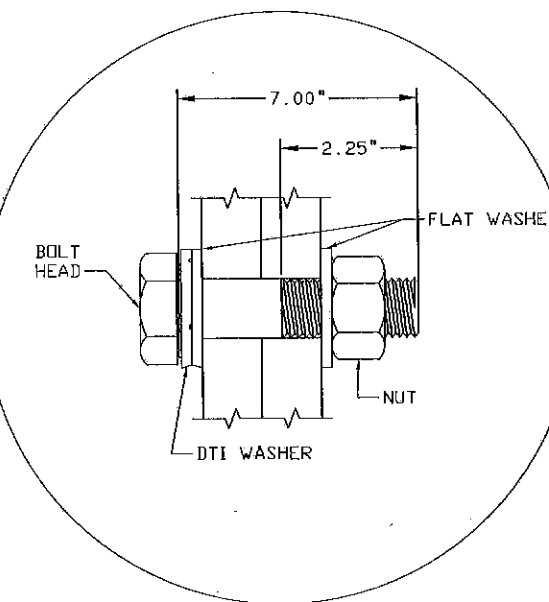
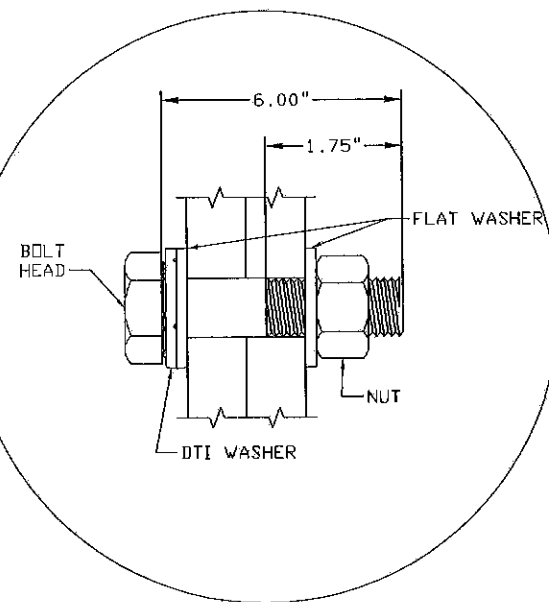
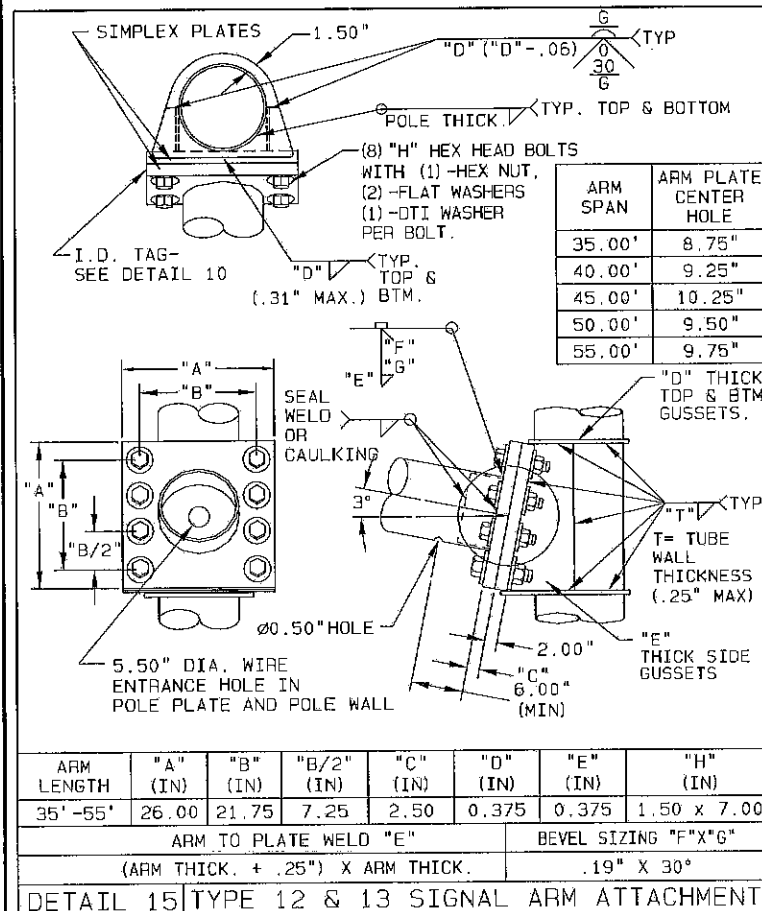
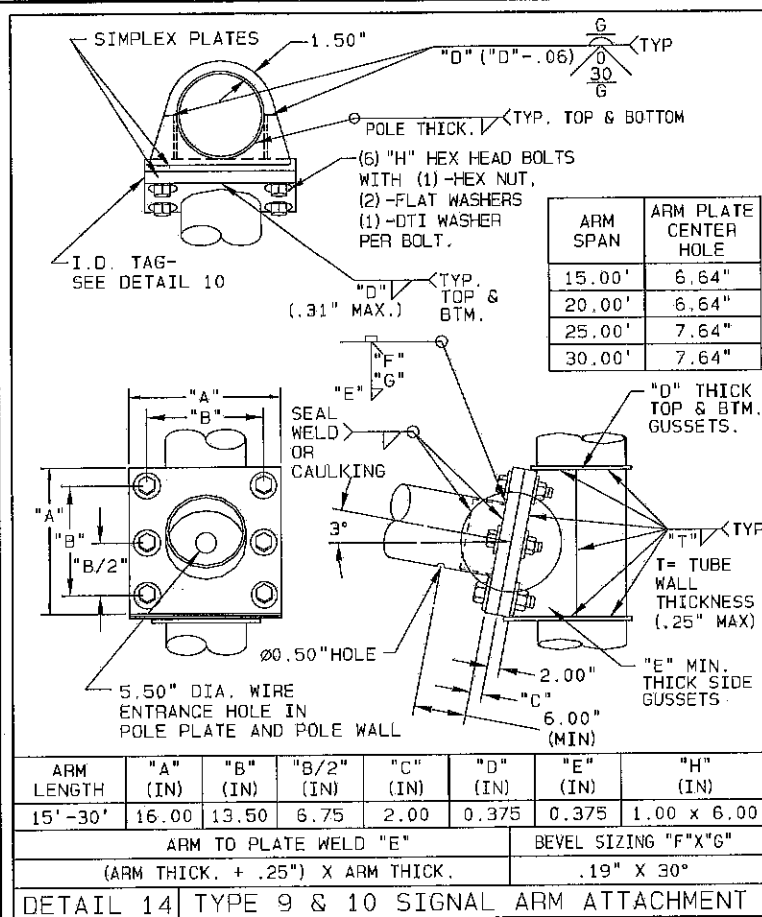


TITLE
WISCONSIN DEPARTMENT OF TRANSPORTATION
TYPE 9, 10, 12, & 13 TRAFFIC SIGNAL STRUCTURES
AASHTO 2013

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

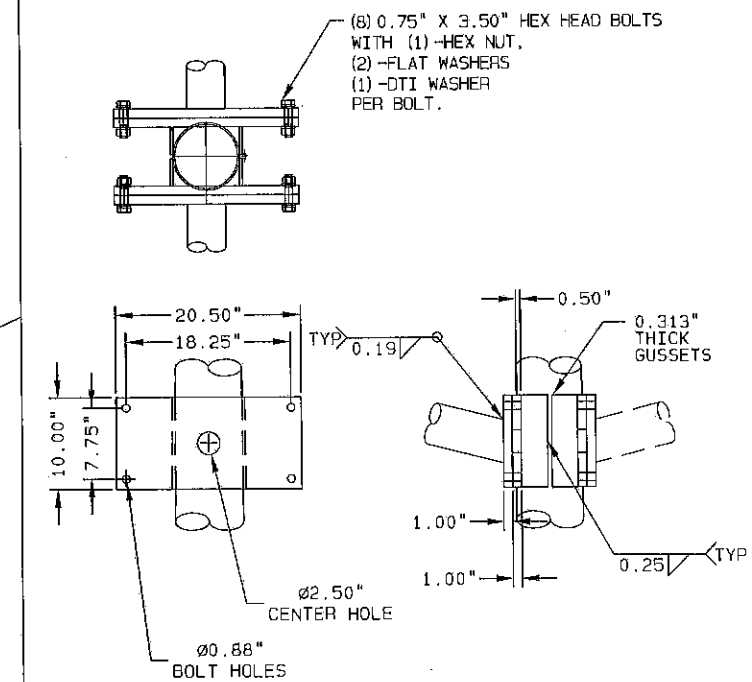
valmont
Valley, NE 68064
(402) 359-2201

PAGE NUMBER: 2 OF 3
DRAWING NUMBER
DB01072
REV
E



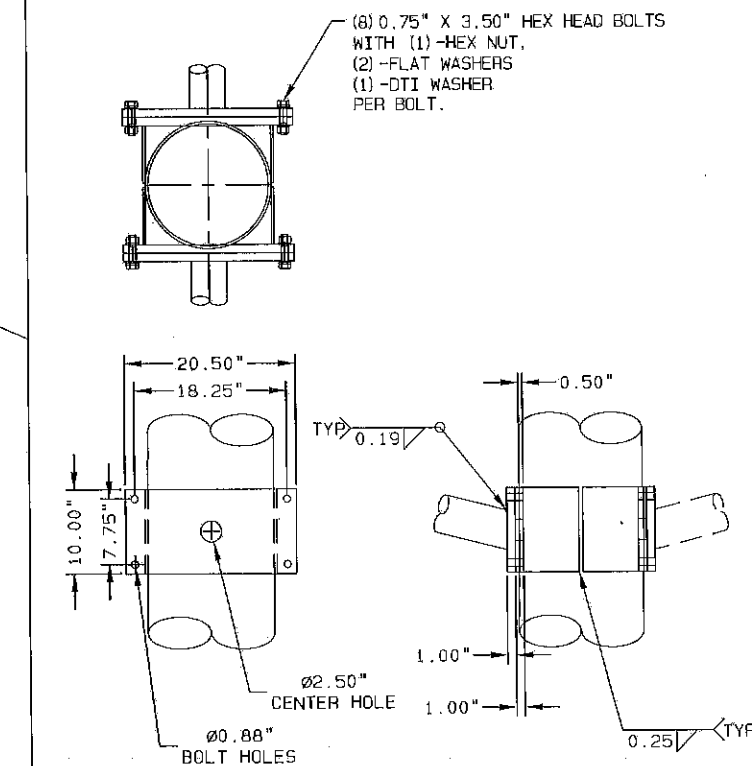
RECOMMENDED BOLT ASSEMBLY

TYPE 10 POLES
COVER PLATES WILL BE PROVIDED FOR
UNUSED LUMINAIRE ARM CONNECTIONS



DETAIL 16 TYPE 10 - LUMINAIRE ARM ATTACHMENT

TYPE 13 POLES
COVER PLATES WILL BE PROVIDED FOR
UNUSED LUMINAIRE ARM CONNECTIONS



DETAIL 17 TYPE 13 - LUMINAIRE ARM ATTACHMENT