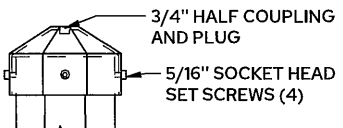
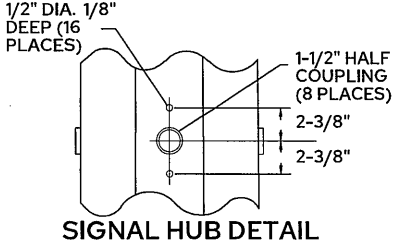
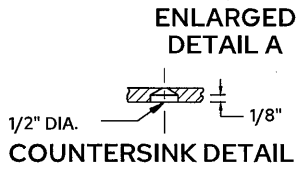


TYPICAL DESIGNATION

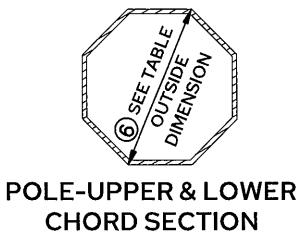
① ② ③ ④ ⑤
 TYPE PA90 - A - 30 - D40 - 9

① POLE TYPE (PA85, PA90, OR PA100).
 ② SIGNAL MAST ARM POSITION WITH RESPECT TO THE ϵ OF ROADWAY SECTION D-D (TYPE A OR B).
 ③ SIGNAL MAST ARM LENGTH.
 ④ THE LETTER INDICATES THE LUMINAIRE POLE/MAST ARM TYPE (D=DAVIT, T=TRUSS, X=STRAIGHT). THE NUMBER INDICATES THE NOMINAL LUMINAIRE MOUNTING HEIGHT FROM THE BASELINE.
 ⑤ LUMINAIRE MAST ARM LENGTH.



SIGNAL HUB COUPLINGS AT RIGHT ANGLE TO THE ϵ OF ROADWAY. PLUGS SHALL BE PROVIDED FOR ALL COUPLINGS FOUR (4) 1-1/2\"/>

TYPE "A" MAST ARM AT RIGHT ANGLE TO ϵ OF ROADWAY, 0°, 90°, 180°, 270°



**SECTION D-D
 POLE MOUNTED SIGNAL HUB ②**

TAPERED OCTAGONAL MAST ARM TRUSS AND POLE DIMENSIONS

POLE TYPE	MAST ARM LENGTH ③	VERTICAL POLE ⑥			UPPER CHORD ⑥			LOWER CHORD ⑥		
		LARGE END	SMALL END	WALL THICK	LARGE END	SMALL END	WALL THICK	LARGE END	SMALL END	WALL THICK
PA85	15'-30'	13.0"	11.8"	0.179"	9.6"	4.0"	0.120"	5.6"	2.8"	0.120"
PA90	30'-40'	14.0"	11.8"	0.250"	10.9"	5.0"	0.179"	5.6"	2.8"	0.120"
PA100	40'-55'	14.0"	11.8"	0.312"	11.6"	5.0"	0.250"	5.6"	2.8"	0.120"

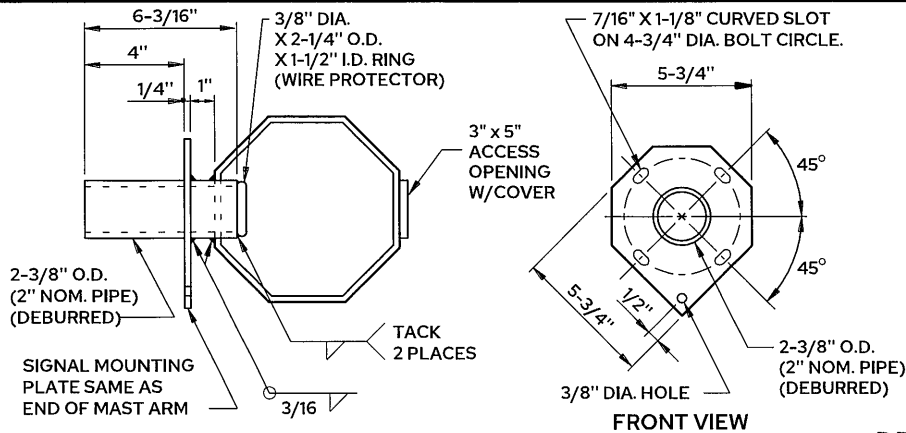
- NOTES:**
- MATERIAL: HIGH STRENGTH LOW ALLOY STEEL SPEC. 3310 50,000 PSI MINIMUM YIELD.
 - GALVANIZED STRUCTURAL STEEL AS PER SPEC. 3394 AFTER FABRICATION. GALVANIZE ALL HARDWARE AS PER SPEC. 3392. PROVIDE VENT HOLES FOR GALVANIZING.
 - VERTICAL POST AND MAST ARM ELEMENTS SHALL BE OCTAGONAL TUBE, FABRICATED BY LONGITUDINAL SEAM WELDING WITH 60% PENETRATION.
 - EACH MAST ARM POLE STANDARD CONSTRUCTED IN ACCORDANCE WITH THIS SPECIFICATION SHALL BE IDENTIFIED BY THE MARKING "PA85, PA90 OR PA100" IMPRINTED INTO THE VERTICAL POST SHAFT APPROXIMATELY 6 FEET ABOVE THE BOTTOM OF THE TRANSFORMER BASE ON THE ZERO DEGREE FACE WITH RESPECT TO THE TRAFFIC SIGNAL TRUSS-TYPE MAST ARM. THE IMPRINTED "PA85, PA90 OR PA100" SHALL BE CLEARLY LEGIBLE AFTER GALVANIZATION.
 - THE BASE LINE OR TOP OF FOUNDATION IS ESTABLISHED AT TOP OF THE FINISHED PAVEMENT BENEATH THE OUTER END OF THE MAST ARM.
 SEE SPEC. 1605 FOR SUBSTITUTION OF MATERIALS
 SEE SPEC. 2471 FOR FABRICATION REQUIREMENTS.
 THE MOUNTING HEIGHTS OF LUMINAIRES ARE MEASURED FROM THE BASELINE, WHICH PROVIDE MOUNTING HEIGHTS OF 30' TO 50'.
 DIMENSION MEASURED OUTSIDE POINT TO OUTSIDE POINT THROUGH OCTAGON CENTER. ADJUST POLE WITH LEVELING NUTS SO THAT THE POLE IS VERTICAL.
 - VERTICAL BRACES SHALL BE SPACED AT 5' INTERVALS. MINIMUM SECTION FOR VERTICAL BRACE SHALL BE 1" SCHEDULE 40 PIPE WITH ALLOWABLE STRESS OF 42000 PSI. PIPE ENDS SHALL BE FLATTENED TO A MAXIMUM THICKNESS OF 1" PERPENDICULAR TO THE MAST ARM AXIS.
 - ALL ARMS SHALL BE SUPPLIED IN FIVE-FOOT INCREMENTS OF LENGTH.
 - ONE MID MAST ARM MOUNT SHALL BE PLACED AT 1' FROM THE END FOR 30', 35' AND 40' LENGTH MAST ARMS. TWO MID MAST ARM MOUNTS SHALL BE PLACED AT 1' AND 23' FROM THE END FOR 45', 50' AND 55' LENGTH MAST ARMS. ALL MID MAST ARMS SHALL BE CAPPED AND GALVANIZED. KEEP UNUSED MID MAST ARM MOUNTS CAPPED AND GALVANIZED.



APPROVED _____
B. H. [Signature]
 SIGNAL ENGINEER
N. [Signature]
 CITY ENGINEER

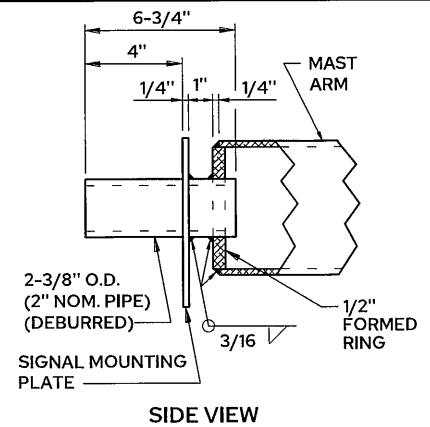
CITY OF ST. PAUL
DEPARTMENT OF PUBLIC WORKS
POLE AND MAST ARM
 LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY
 (FOR ALL POLE TYPES)

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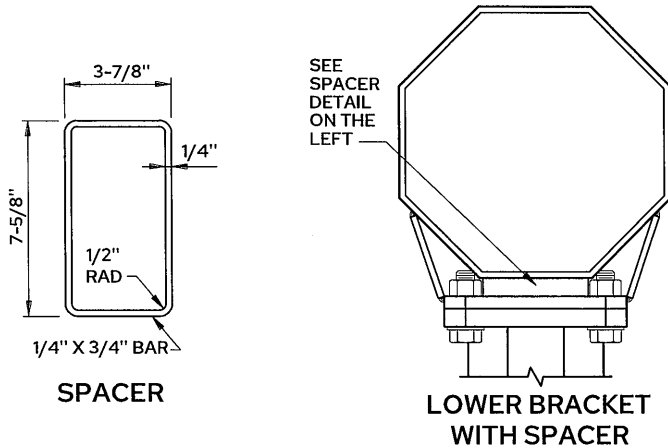


DETAIL C
MID MAST ARM

DETAIL B
SIGNAL MOUNTING PLATE

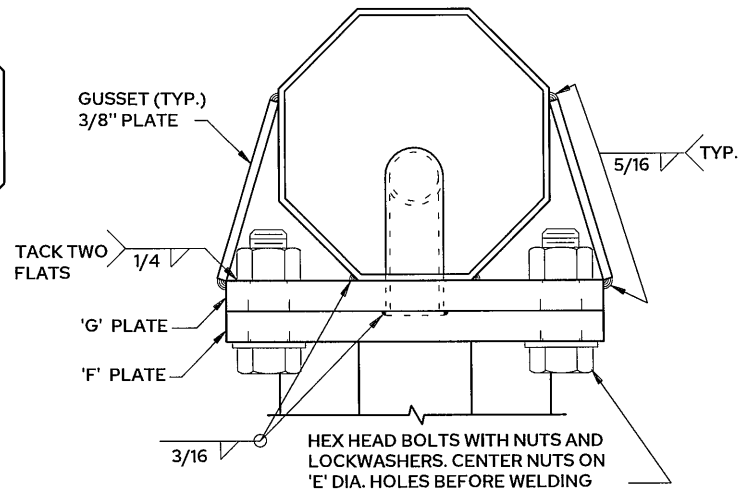


SIDE VIEW

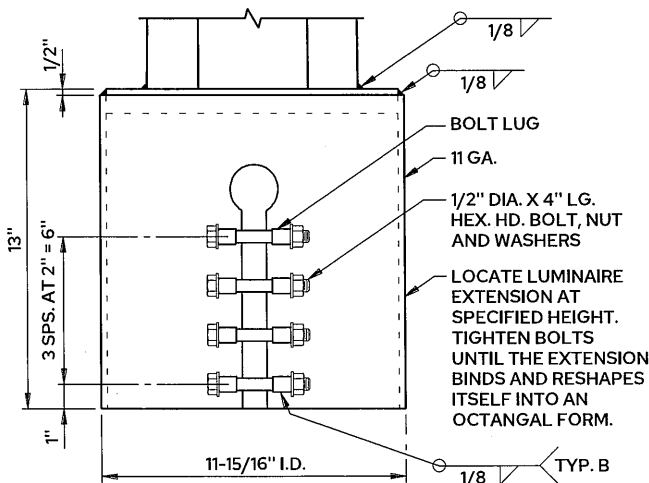


SPACER

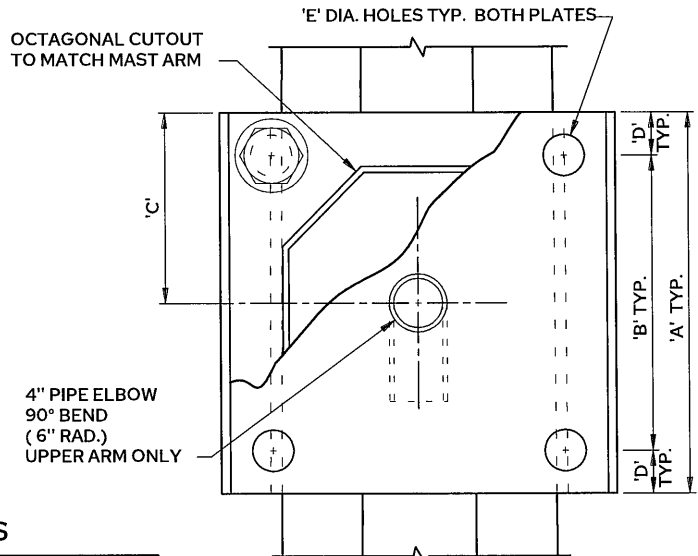
LOWER BRACKET WITH SPACER



TOP VIEW



DETAIL F
LUMINAIRE EXTENSION BASE



ELEVATION
UPPER & LOWER
MAST ARM BRACKET

ARM AND POLE MOUNTING BRACKETS

ARM MEMBER	FOUR HEX HEAD BOLTS & NUTS EACH BRACKET	TABULATED BRACKET DIMENSIONS						
		'A'	'B'	'C'	'D'	'E'	'F'	'G'
UPPER	1-1/2"-6UNC X 4-1/2" LG.	15.50"	12.00"	7.75"	1.75"	1.688"	1.25"	1.25"
LOWER	3/4"-10UNC X 2-1/4" LG. SEE NOTE NO.1	(V) 8.50"	6.25"	4.25"	1.125"	0.875"	3/4"	1/2"
		(H) 7.75"	5.75"	3.87"	1.0"	0.875"	3/4"	1/2"

NOTE:
1. THE (V) DIMENSIONS ARE MEASURED VERTICALLY AND THE (H) DIMENSIONS ARE MEASURED HORIZONTALLY, WHILE UNSPECIFIED ARE MEASURED BOTH VERTICALLY AND HORIZONTALLY



APPROVED

B. Hill

SIGNAL ENGINEER

N. Ketchum
CITY ENGINEER

CITY OF ST. PAUL
DEPARTMENT OF PUBLIC WORKS

POLE AND MAST ARM

(DETAILS)

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Revision

MAY
2024

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No.

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