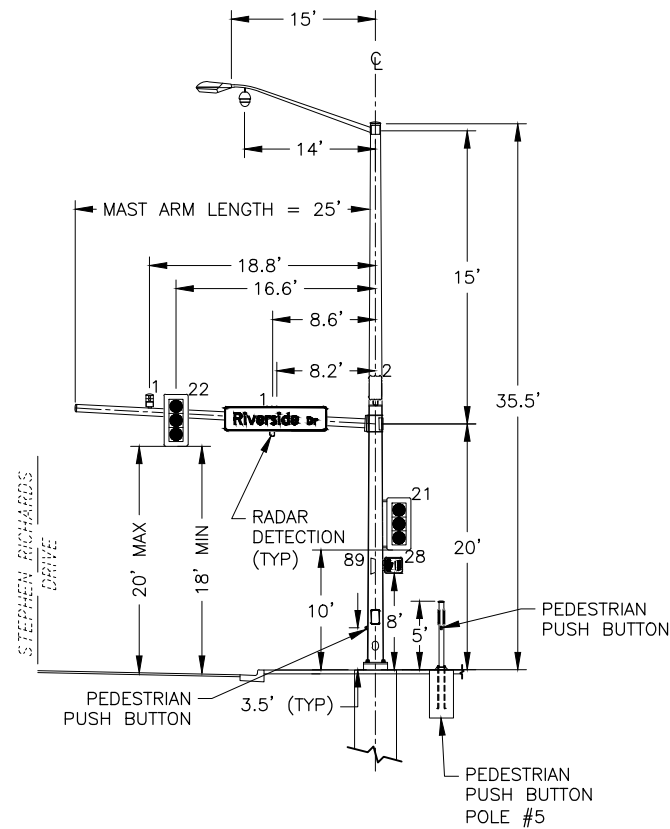


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003207/SFHWY00081	2019	H7	29

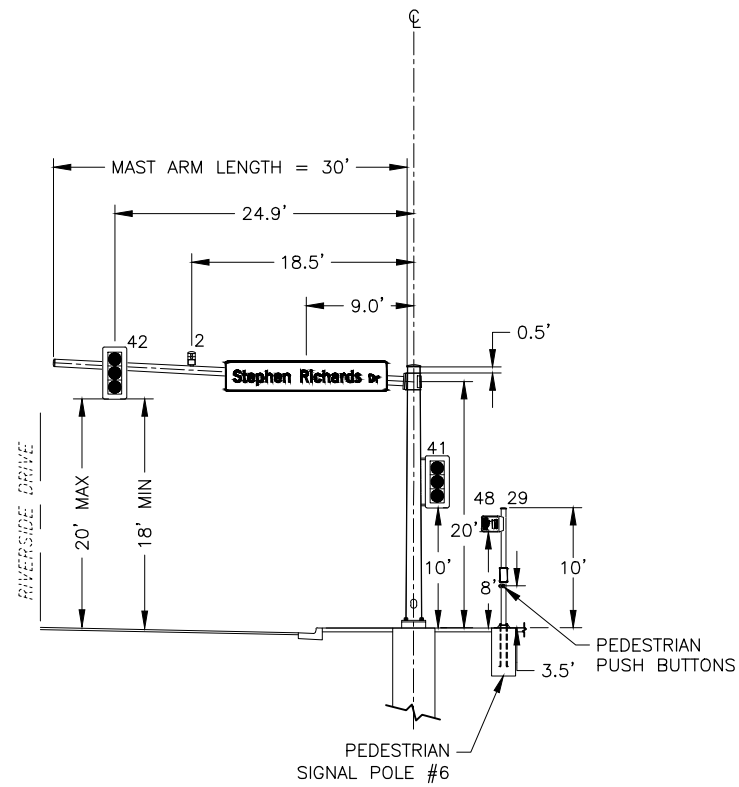
NOTES:

1. SIGNAL POLES AND FOUNDATIONS SHALL BE FABRICATED IN ACCORDANCE WITH THE DETAILS IN THE PLANS, ALASKA STANDARD PLANS AND THE SPECIAL PROVISIONS.
2. STEEL PILE BASE CAP SHALL MATCH THE PROVIDED SIGNAL POLE BASE PLATE PATTERN BASE CIRCLE.
3. REFER TO THE SIGN SUMMARY SHEETS FOR MORE INFORMATION ABOUT SIGN SIZING AND INSTALLATION.
4. ROADWAY FEATURES ARE SHOWN FOR REFERENCE.

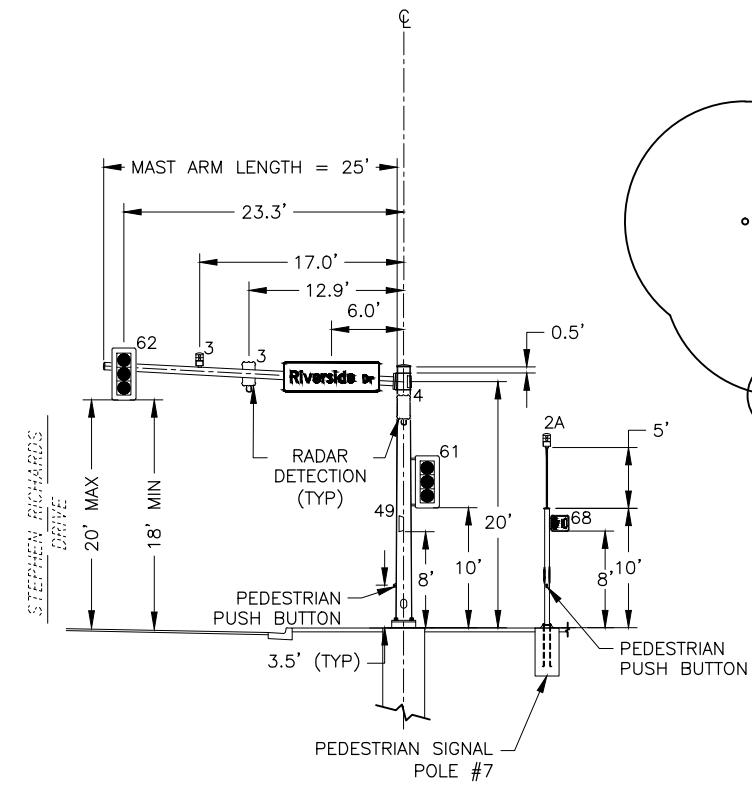
## Attachment B



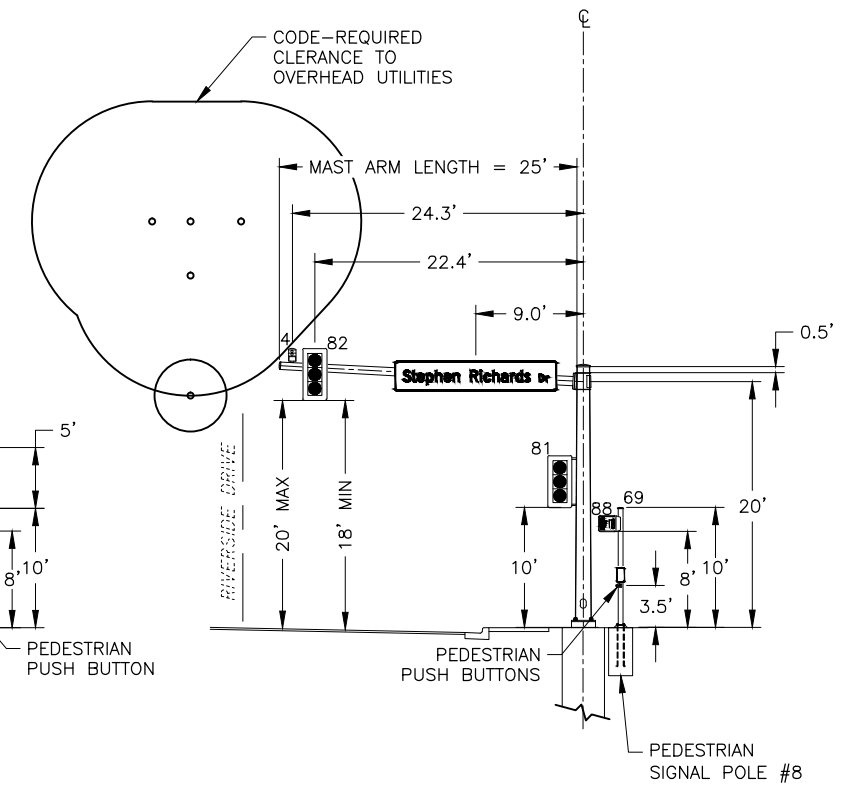
SIGNAL POLE #1  
RIVERSIDE DRIVE /  
STEPHEN RICHARDS DRIVE  
LOOKING WEST



SIGNAL POLE #2  
RIVERSIDE DRIVE /  
STEPHEN RICHARDS DRIVE  
LOOKING NORTH



SIGNAL POLE #3  
RIVERSIDE DRIVE /  
STEPHEN RICHARDS DRIVE  
LOOKING EAST



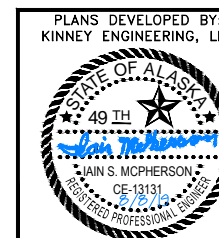
SIGNAL POLE #4

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RIVERSIDE DRIVE /  
STEPHEN RICHARDS DRIVE  
LOOKING SOUTH

PEDESTRIAN SIGNAL POLE #7 NOTE:

MOUNT OPTICOM 2A ON POLE 7 USING A SIDE-MOUNT  
TERMINAL COMPARTMENT AND PIPE



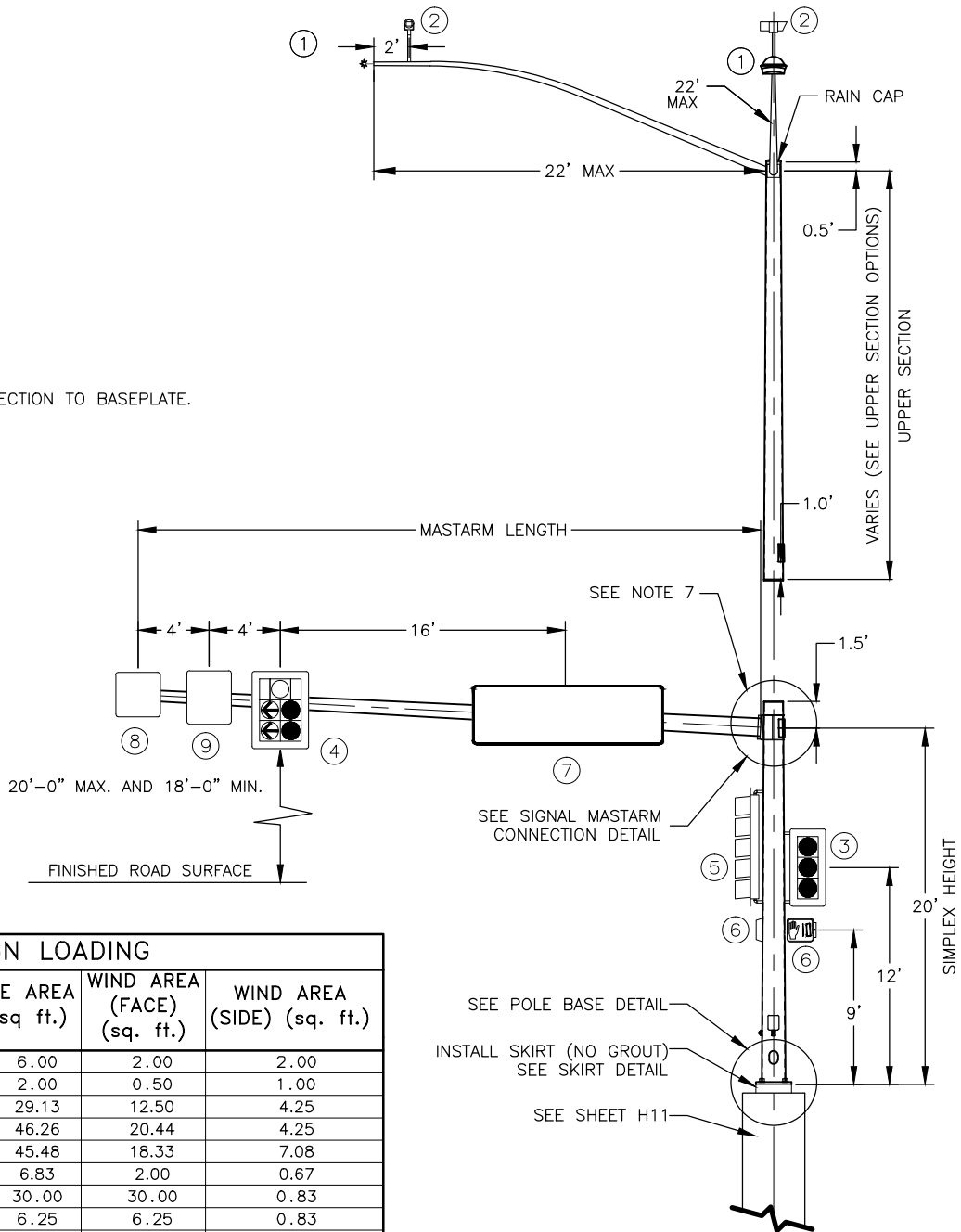
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(907) 465-1763

JUNEAU-RIVERSIDE AND STEPHEN  
RICHARDS CONGESTION MITIGATION

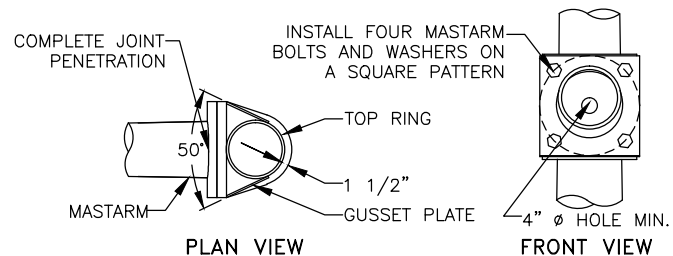
## SIGNAL PROFILES

MASTARM DATA			
MASTARM			
LENGTH (FT.)	ALLOWED DEFLECTION DUE TO GALLOPING (FT.)	FIXED END O.D. (IN.)*	THICK (IN.)
15	0.670	9.35	0.239
20	0.670	10.05	0.239
25	0.670	10.75	0.239
30	0.670	11.45	0.239
35	0.670	12.15	0.239

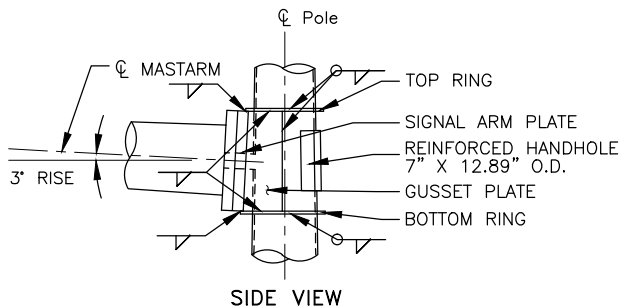
\*FIXED END DIAMETER MEASURED AT CONNECTION TO BASEPLATE.



ELEVATION VIEW  
SCALE: NOT TO SCALE



SIGNAL MASTARM CONNECTION DETAIL  
SCALE: NOT TO SCALE  
(ELEVATION VIEW OF A RING STIFFENED BUILT-UP BOX)

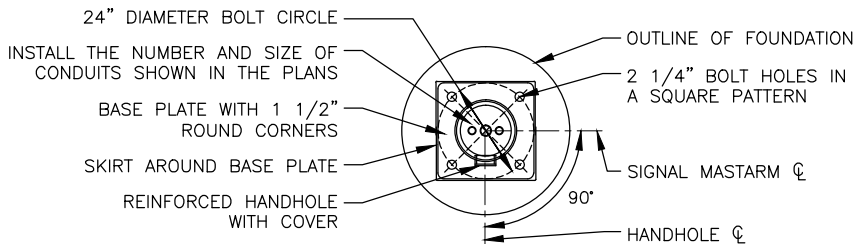


SIDE VIEW

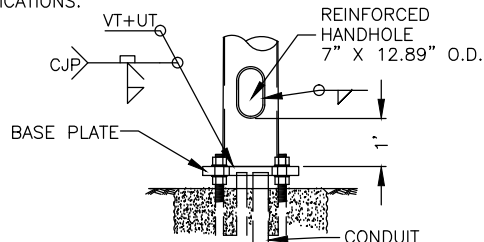
MATERIAL REQUIREMENTS	
ALL ASSEMBLIES	
STEEL THROUGH 1/2" THICK	ASTM A572 OR A595
STEEL OVER 1/2" THICK	AASHTO M270 F3 (50KSI)
FINISH	AASHTO M111 & M232
MASTARM BOLTS	AASHTO M164
ANCHOR RODS	SEE FOUNDATION DETAIL
POLE (LOWER SECTION)	
DESIGN LENGTH	21.5'
SECTION SHAPE	ROUND
SIMPLEX HEIGHT	20'
FIXED END DIAMETER	15.0" O.D.
TAPER	0.14"/FT
TUBE THICKNESS	0.375"
BASE PLATE	24" X 24" X 2.25"
BOLT CIRCLE	24"
SIGNAL ARM PLATE	20" X 20" X 2.25"
TOP RING THICKNESS	0.375"
BOTTOM RING THICKNESS	0.375"
GUSSET PLATE THICKNESS	0.375"
HANDHOLE COVER THICKNESS	10 GA
POLE SKIRT THICKNESS	10 GA
MASTARM	
DESIGN LENGTH	35'
SECTION SHAPE	ROUND
TAPER	0.14"/FT
TUBE THICKNESS	MASTARM DATA
MASTARM RISE	3.0 DEGREES
BASE PLATE	20" X 20" X 2.25"
BOLT CIRCLE	20"
MASTARM BOLTS	1.5" X 4.5"

NOTES:

- PROVIDE POLE ASSEMBLIES MEETING THE FOLLOWING DESIGN CRITERIA; 2013 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS WITH 2015 INTERIM REVISIONS, THE LATEST EDITION OF THE ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION INCLUDING STANDARD MODIFICATIONS AND, SPECIAL PROVISIONS. DESIGN FOR A BASIC WIND SPEED OF 100 MPH, FATIGUE CATEGORY III, WITH GALLOPING. MEASURE ALLOWED DEFLECTION DUE TO GALLOPING AT THE FREE END OF MASTARM.
- PROVIDE POLES TO ACCOMMODATE THE MAXIMUM LENGTH SHOWN IN THE MASTARM DATA WITH THE GIVEN LOADS, DIMENSIONS AND MATERIAL REQUIREMENTS.
- THIS DRAWING SHOWS LOADS (SIGNS AND SIGNALS) TO BE USED BY MANUFACTURERS WHEN DESIGNING POLES. IT DOES NOT SHOW ACTUAL LOADING OF POLES/MASTARMS ON INDIVIDUAL PROJECTS. THIS POLE/MASTARM DESIGN MAY BE USED WITHOUT FURTHER ANALYSIS IF THE FOLLOWING CONDITIONS ARE MET:
  - THE GUIDE SIGN (LOAD #7) IS ATTACHED TO THE MASTARM BASE SECTION AND,
  - NOT MORE THAN 4 TRAFFIC SIGNALS AND/OR SIGNS ARE ATTACHED TO THE MASTARM.IF THESE CONDITIONS ARE NOT MET, THIS STANDARD POLE/MASTARM DESIGN MAY ONLY BE USED IF DESIGN COMPUTATIONS ARE SUBMITTED THAT DEMONSTRATE CONFORMANCE TO DESIGN CRITERIA (NOTE 1) USING ACTUAL LOADS. NOTE: DEVICES WITH LESS THAN 1 SQUARE FOOT OF PROJECTED AREA MAY BE ADDED TO THE MASTARM WITHOUT CAUSING A NEED FOR ADDITIONAL DESIGN COMPUTATIONS.
- THE MANUFACTURER IS TO DETERMINE WELD SIZES. ALL WELDS AND TESTING SHALL CONFORM TO THE LATEST EDITION OF THE STRUCTURAL WELDING CODE AWS D1.1. PROVIDE VISUAL TEST (VT) OF 100% OF ALL WELDS. PROVIDE MAGNETIC PARTICLE TEST (MT) OF 100% OF ALL FILLET WELDS. PROVIDE RADIOGRAPHIC (RT) OR ULTRASONIC TEST (UT) OF 100% OF ALL COMPLETE JOINT PENETRATION WELDS AND A RANDOM 25% OF ALL PARTIAL JOINT PENETRATION LONGITUDINAL SEAM WELDS.
- FABRICATE POLE TUBES FROM NO MORE THAN 2 PIECES OF STEEL. WHEN USING 2 PIECES, PLACE THE LONGITUDINAL WELDED SEAMS DIRECTLY OPPOSITE ONE ANOTHER.
- FABRICATE LUMINAIRE ARMS AND CONNECTIONS ACCORDING TO STANDARD PLAN L-03.10.
- PROVIDE PERMANENT TAGS ON ALL POLE SECTIONS PER SECTION 740 TABLE 740-1 OF THE SPECIFICATIONS. PROVIDE A RAIN CAP WHEN NO UPPER SECTION IS SPECIFIED.
- THE DEPARTMENT WILL REJECT DAMAGED OR DEFECTIVE POLES FOR ANY OF THE FOLLOWING; VARIANCES FROM APPROVED SHOP DRAWINGS, VARIANCES FROM MATERIAL REQUIREMENTS, SECTIONS MORE THAN 2-PERCENT OUT OF ROUND, SECTIONS BOWED MORE THAN 1-INCH THROUGHOUT THE LENGTH OF THE POLE, MASTARM, OR SEGMENT AND, DAMAGED OR DENTED FINISHES.
- DRILL A 1" MAXIMUM DIAMETER HOLE AT EACH TRAFFIC SIGNAL LOCATION. ORIENT THE HOLE ON THE HORIZONTAL AXIS OF MASTARMS.
- INSTALL POLE PLUMB BY ENSURING THE SIDE OPPOSITE THE MASTARM IS VERTICAL IN ITS FINAL DEFLECTED POSITION.
- CLEAN AND REMOVE DIRT, BURRS, MILL SCALE, AND EXCESS GALVANIZATION ON ALL FAYING SURFACES AND THREADED PARTS BEFORE ASSEMBLY. LUBRICATE THE THREADS OF ALL BOLTS AND NUTS WITH LUBRICANT CONTAINING A VISIBLE DYE. TIGHTEN ALL BOLTS ACCORDING TO SECTION 504 OF THE SPECIFICATIONS.

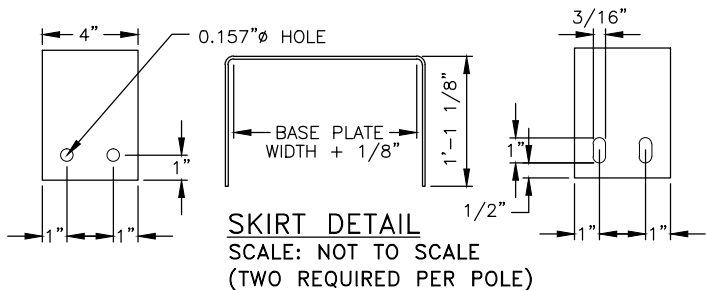


PLAN VIEW  
(SHOWN WITHOUT ANCHOR BOLTS AND NUTS FOR CLARITY)



FRONT VIEW  
(SKIRT OMITTED FOR CLARITY)

POLE BASE DETAIL  
SCALE: NOT TO SCALE



SKIRT DETAIL  
SCALE: NOT TO SCALE  
(TWO REQUIRED PER POLE)



PLANS DEVELOPED BY:  
KINNEY ENGINEERING, LLC

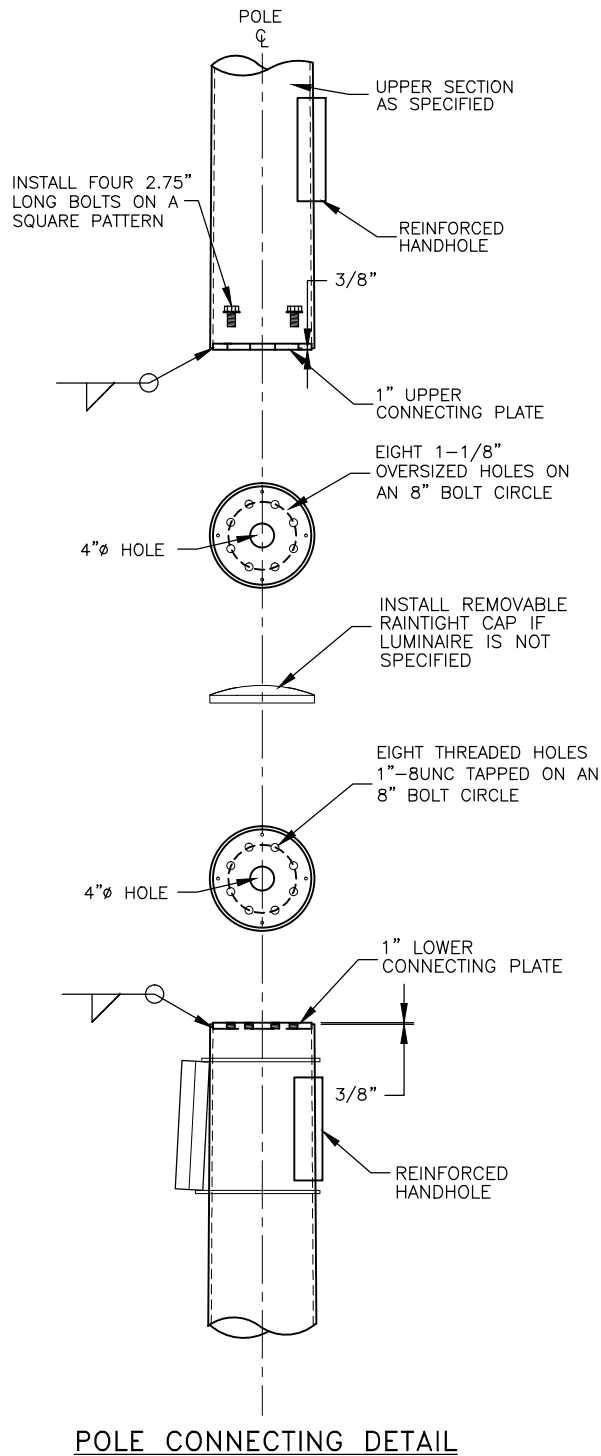
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(907) 465-1763

JUNEAU-RIVERSIDE AND STEPHEN  
RICHARDS CONGESTION MITIGATION

SIGNAL POLE WITH 15' TO 35'  
MASTARM, LOWER SECTION

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102  
FILE 00081\_H11-12\_DETAILS.dwg DATE 8/8/2019 3:01 PM LAYOUT H12 DESIGNED GMD CHECKED ISM DRAFTED WJP

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003207/SFHWY00081	2019	H12	29



POLE CONNECTING DETAIL

MATERIAL REQUIREMENTS	
MATERIALS	
TUBE MATERIAL	A572, A595 GR A OR A1011 50 KSI MIN
SINGLE LUMINAIRE TUBE	7 GA
DOUBLE LUMINAIRE TUBE	7 GA
DAVIT LUMINAIRE TUBE	7 GA
LOWER CONNECTING PLATE	AASHTO M270 F3
UPPER CONNECTING PLATE	AASHTO M270 F3
CONCENTRIC REDUCER	A572 OR A595 GR A
CONNECTION TUBE	A572 OR A595 GR A
LUMINAIRE ARM MATERIALS	SEE L-03.10
UPPER SECTION ATTACHMENT BOLTS	1"-8UNC / AASHTO M164
LUMINAIRE ATTACHMENT BOLTS	3/4"-10 / AASHTO M164
SLIP-FIT THROUGH BOLT	5/8" / AASHTO M164
FINISH	AASHTO M111 & M232
HANDHOLE	7" X 12.89" O.D.
SINGLE LUMINAIRE	
DESIGN LENGTH	22.5'
SECTION SHAPE	ROUND
FIXED END DIAMETER	11.99" O.D.
TAPER	0.14"/ft
LUMINAIRE ARM DETAILS	SEE L-03.10

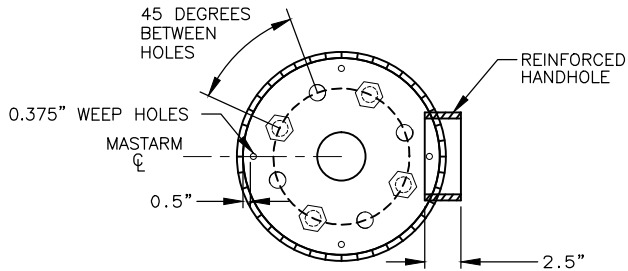
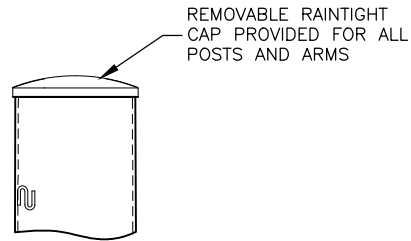
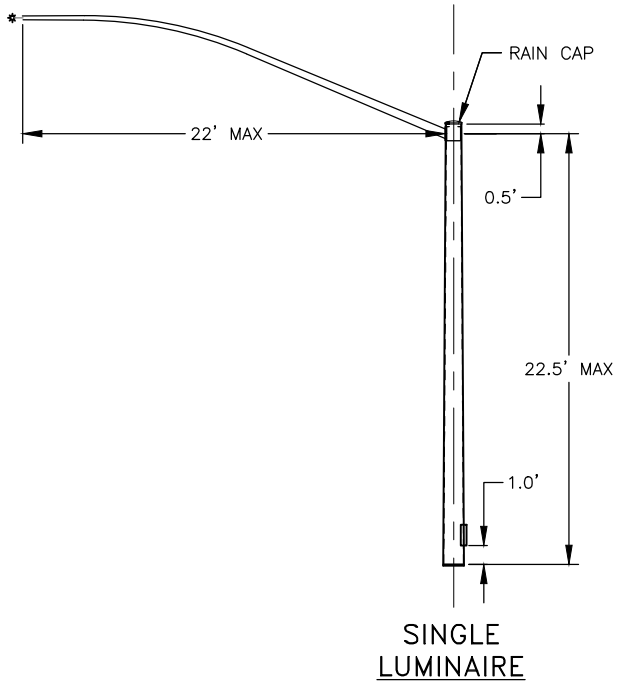
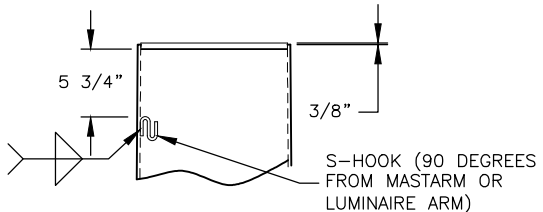


PLATE DETAILS



RAIN CAP DETAIL



LOWER SECTION POST TOP  
SCALE: NOT TO SCALE



PLANS DEVELOPED BY:  
KINNEY ENGINEERING, LLC

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JUNEAU-RIVERSIDE AND STEPHEN  
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SIGNAL POLE WITH 15' TO 35'  
MASTARM, UPPER SECTION