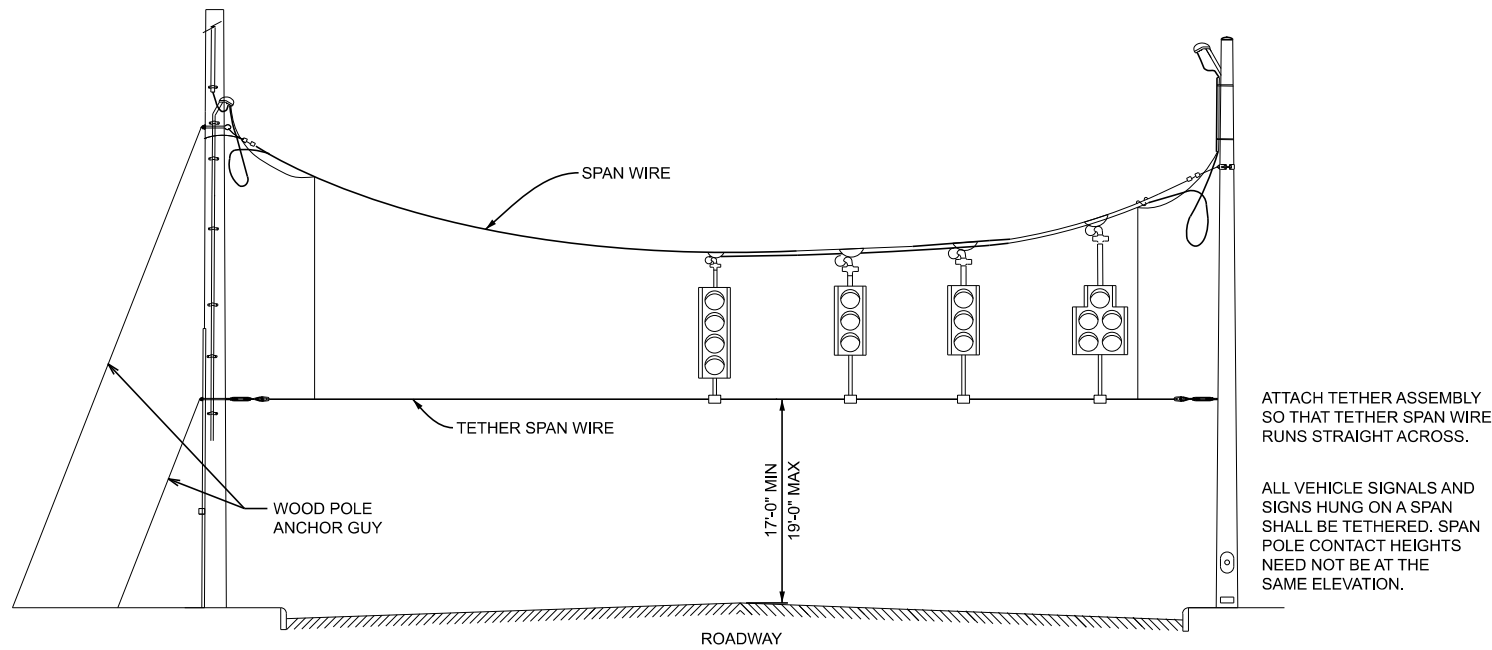
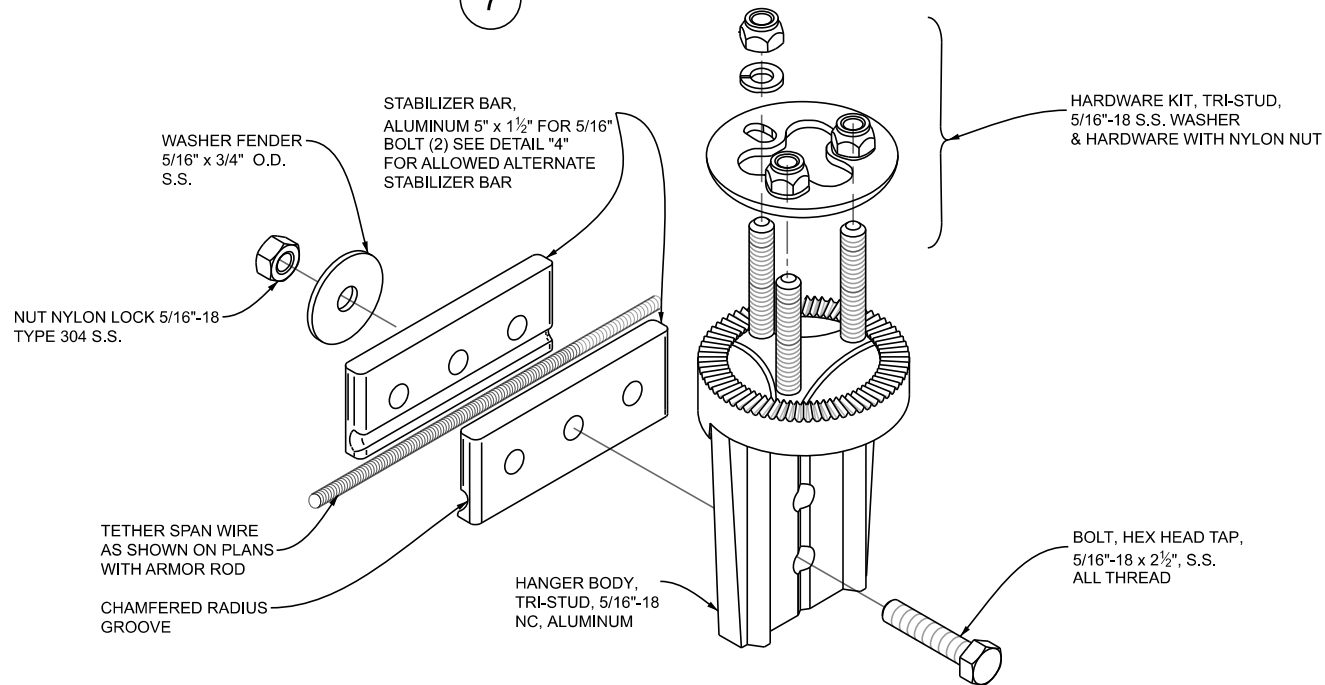
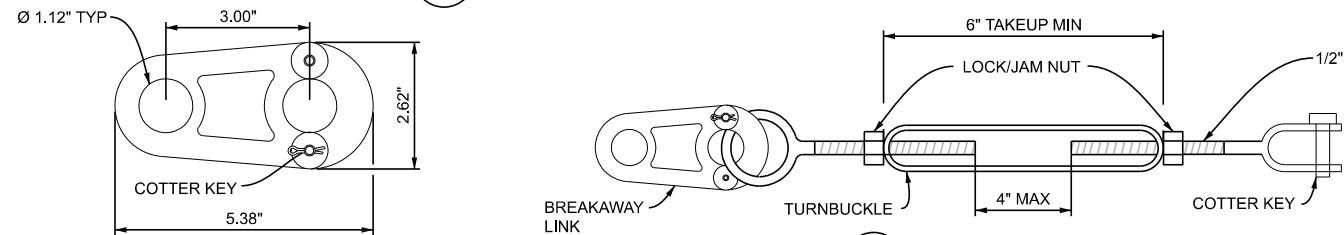




7 BOTTOM TETHER INSTALLATION



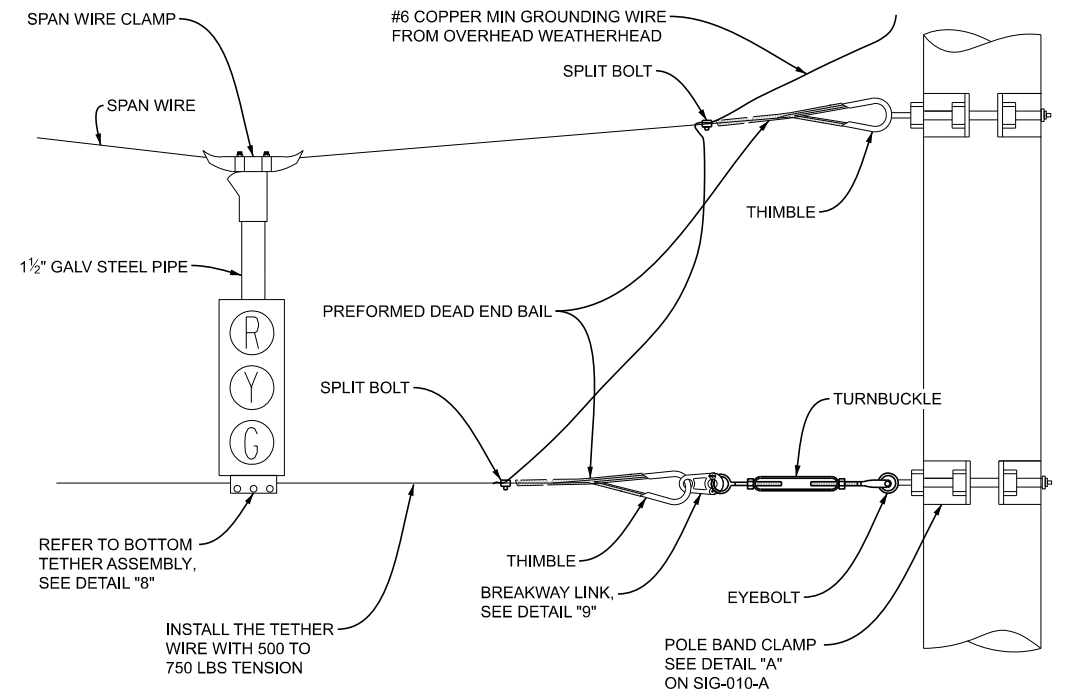
8 DETAIL - TETHER ASSEMBLY TRI-STUD BREAKAWAY



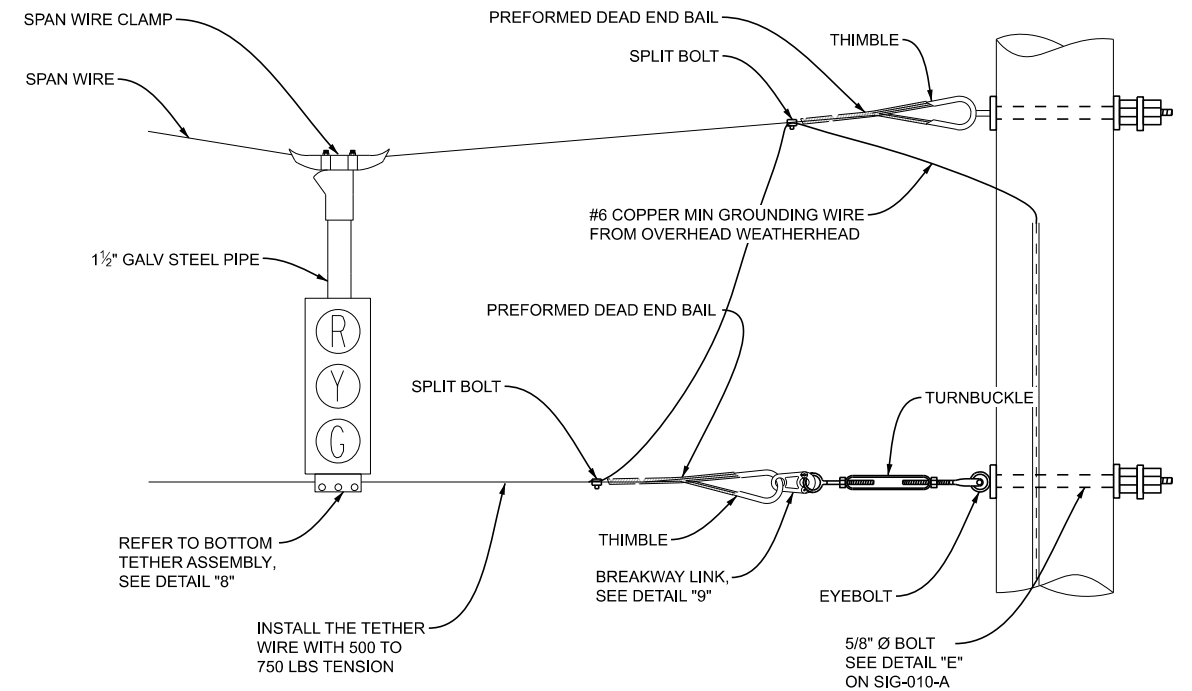
9 DETAIL - BREAKAWAY TETHER ASSEMBLY FOR BOTTOM OF SIGNAL HEAD

10 DETAIL - TURNBUCKLE

STANDARD PLAN FOR SPAN WIRE BOTTOM TETHER DETAILS				
 Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL)	11/04/25	SIG-305-F	SHEET 3 OF 6
	FHWA APPROVAL	PLAN DATE		



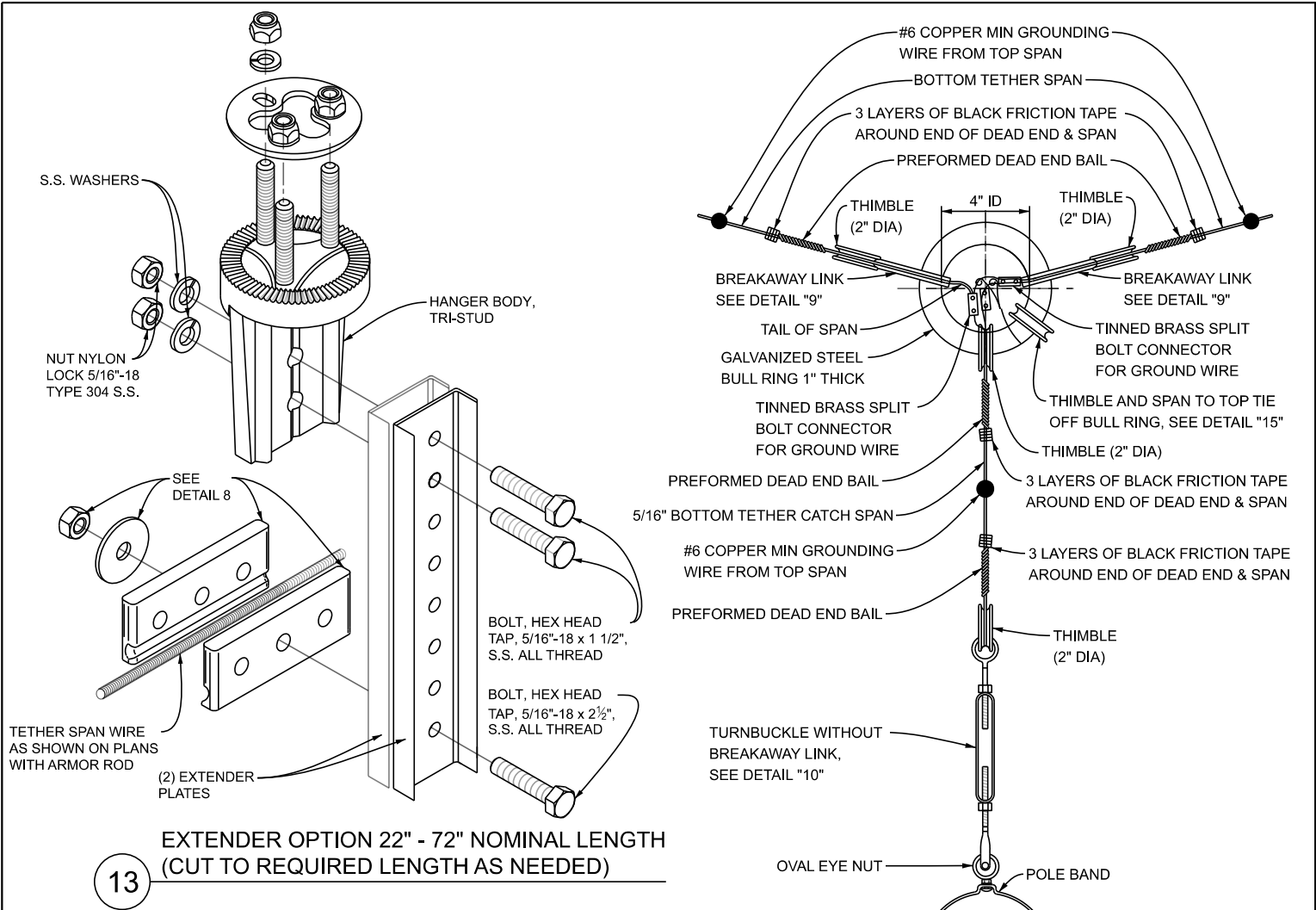
11 BOTTOM TETHER SPAN WIRE STEEL POLE CONNECTION



12 BOTTOM TETHER SPAN WIRE WOOD POLE CONNECTION

STANDARD PLAN FOR BOTTOM TETHER CONNECTION DETAILS				
 Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL)	11/04/25	SIG-305-F	SHEET 4 OF 6
	FHWA APPROVAL	PLAN DATE		

SECT



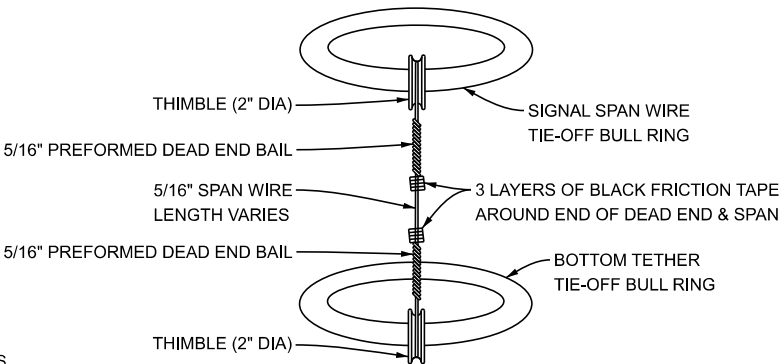
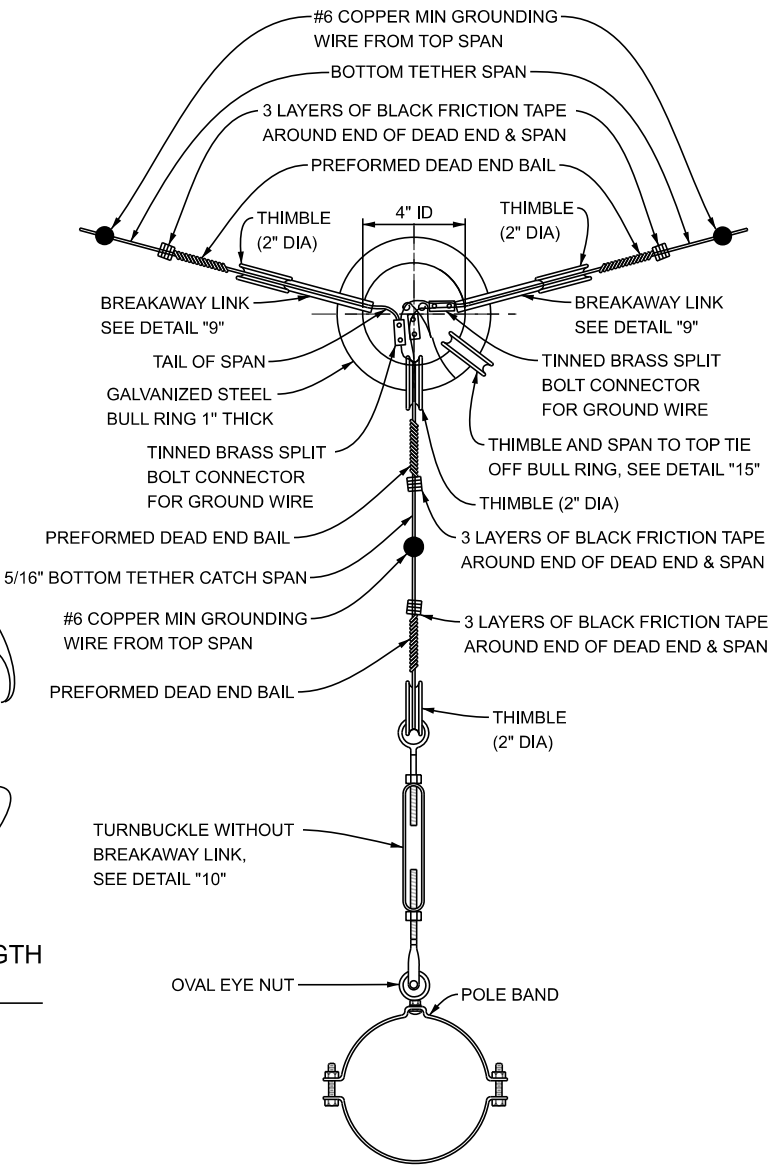
NOTES:

- BREAKAWAY LINK AND TURNBUCKLE ARE REQUIRED AT BOTH ENDS OF ALL BOTTOM TETHER SPANS. IF BREAKAWAY LINK BEGINS TO YIELD DURING INSTALLATION, IT SHALL BE REMOVED AND REPLACED. THE WIRE TENSION SHALL BE ADJUSTED TO MINIMIZE MOVEMENT OF SIGNAL HEADS IN HIGH WINDS. TYPICAL TENSION IS 500 TO 750 LBS.
- INSTALL GROUND WIRE AT BOTH ENDS OF TOP AND BOTTOM TETHERING.
- IF SIGNAL ORIENTATION IS NOT PERPENDICULAR TO SPAN AND TETHER WIRE, THEN USE AN ANCHOR EXTENSION. CLAMP ASSEMBLY MUST BE ATTACHED TO THE FLAT SIDE OF THE EXTENDER BAR.
- GROUNDING WIRE ANCHOR HEIGHT TO THE SPAN WIRE IS ADJUSTED IN THE FIELD BEFORE BREAKAWAY LINK IS INSTALLED. GROUNDING WIRE LENGTH SHALL BE ADJUSTED SO THAT THE MINIMUM VERTICAL CLEARANCE OF THE SAGGING TETHER WIRE ABOVE THE PAVEMENT WITHOUT THE BREAKAWAY LINK INSTALLED IS AT LEAST 14'. GROUNDING WIRE SHALL CONTAIN ENOUGH SLACK FOR HEAD TO SWAY IN HIGH WINDS. GROUNDING WIRE SHALL BE ATTACHED TO THE SPAN WIRE USING A TINNED COPPER SPLIT BOLT.
- TRAFFIC SIGNAL HOUSING REINFORCEMENT PLATES ARE REQUIRED WHEN TETHERING.
 - TOP TETHERING REQUIRES REINFORCEMENT PLATES AT THE TOP OF THE POLYCARBONATE HOUSING. (2 PLATES TOTAL)
 - BOTTOM TETHERING REQUIRES REINFORCEMENT PLATES AT THE TOP AND BOTTOM OF POLYCARBONATE HOUSING. (4 PLATES TOTAL)
 - BOTTOM TETHERING 5-SECTION HEADS REQUIRES REINFORCEMENT PLATES ON THE TOP AND BOTTOM OF THE POLYCARBONATE HOUSING (12 TOTAL) AND AN ALUMINUM TRI-STUD UPPER ARM ASSEMBLY IN PLACE OF THE BOTTOM BRACKET.
 - IF POLYCARBONATE HOUSING CONNECTS TO AN ALUMINUM CASE SIGN, REINFORCEMENT PLATES MUST BE USED AT THE CONNECTION.
- THE LENGTH OF THE SPAN WIRE CONNECTING THE SIGNAL SPAN WIRE BULL RING TO THE BOTTOM TETHER BULL RING FOR 3-WAY TIE-OFF CONNECTION TO BE DETERMINED AFTER THE DESIGN TENSION HAS BEEN APPLIED TO BOTH THE SIGNAL AND BOTTOM TETHER SPAN WIRES. TENSION IS NOT TO BE APPLIED TO THE CONNECTING SPAN WIRE BETWEEN SIGNAL SPAN BULL RING AND BOTTOM TETHER BULL RING.



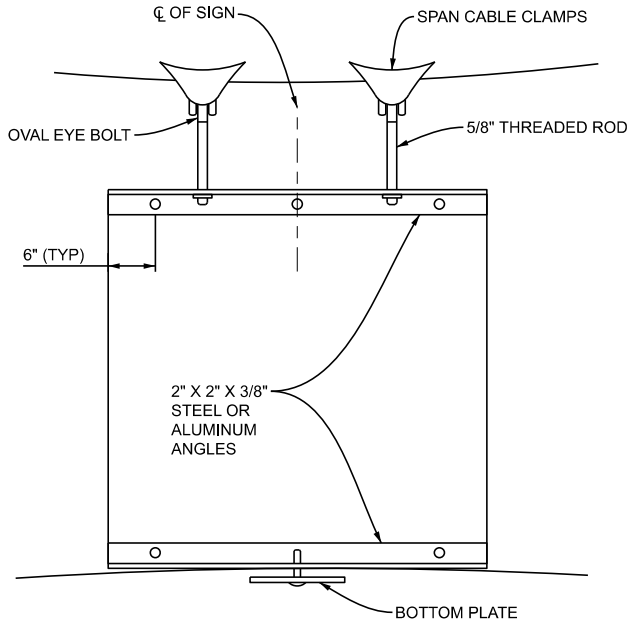
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR EXTENDER OPTION AND BOTTOM TETHER TIE OFF DETAILS			
(SPECIAL DETAIL)	11/04/25	SIG-305-F	SHEET 5 OF 6
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DETAIL - BOTTOM TETHER 3-WAY TIE OFF -
SIGNAL SPAN TO BOTTOM TETHER
BULL RING CONNECTION



DETAIL - OVERHEAD LANE
ASSIGNMENT SIGN CONNECTION

NOTES:

- ALUMINUM ANGLES SHALL BE USED FOR ALUMINUM SIGNS (TYPE III).
- STEEL OR ALUMINUM ANGLES MAY BE USED ON PLYWOOD SIGNS (TYPE II).



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR OVERHEAD LANE ASSIGNMENT SIGN CONNECTION DETAILS			
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