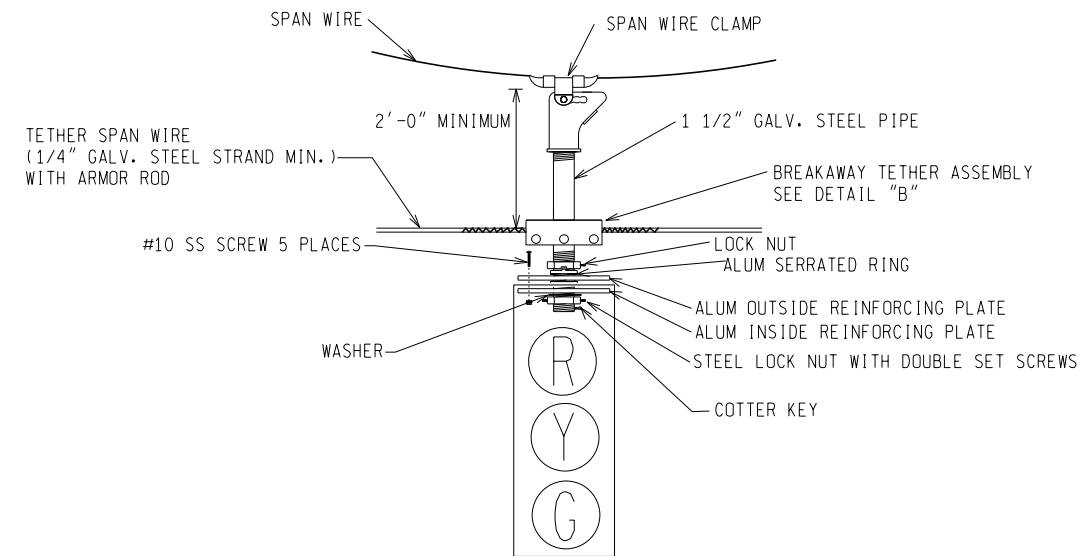
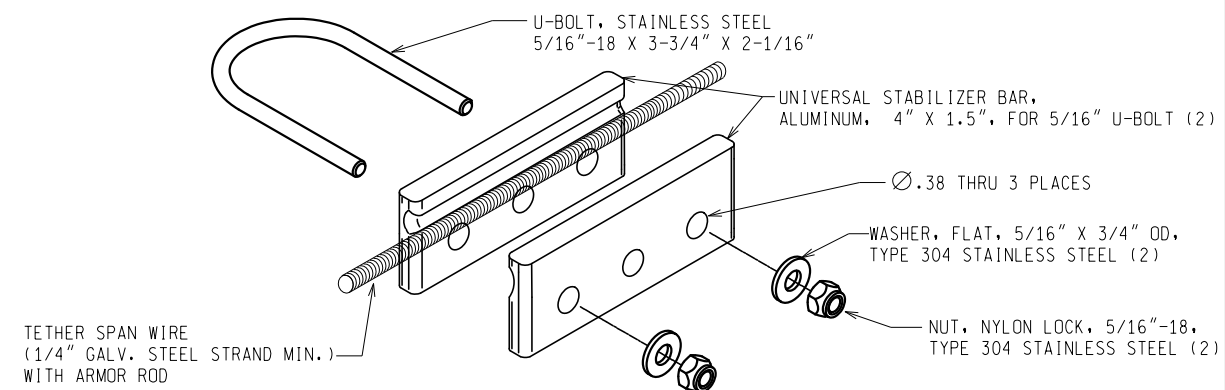


ELEVATION VIEW: TOP TETHER INSTALLATION



DETAIL "A": SPAN WIRE INSTALLATION WITH TOP TETHER SPAN WIRE

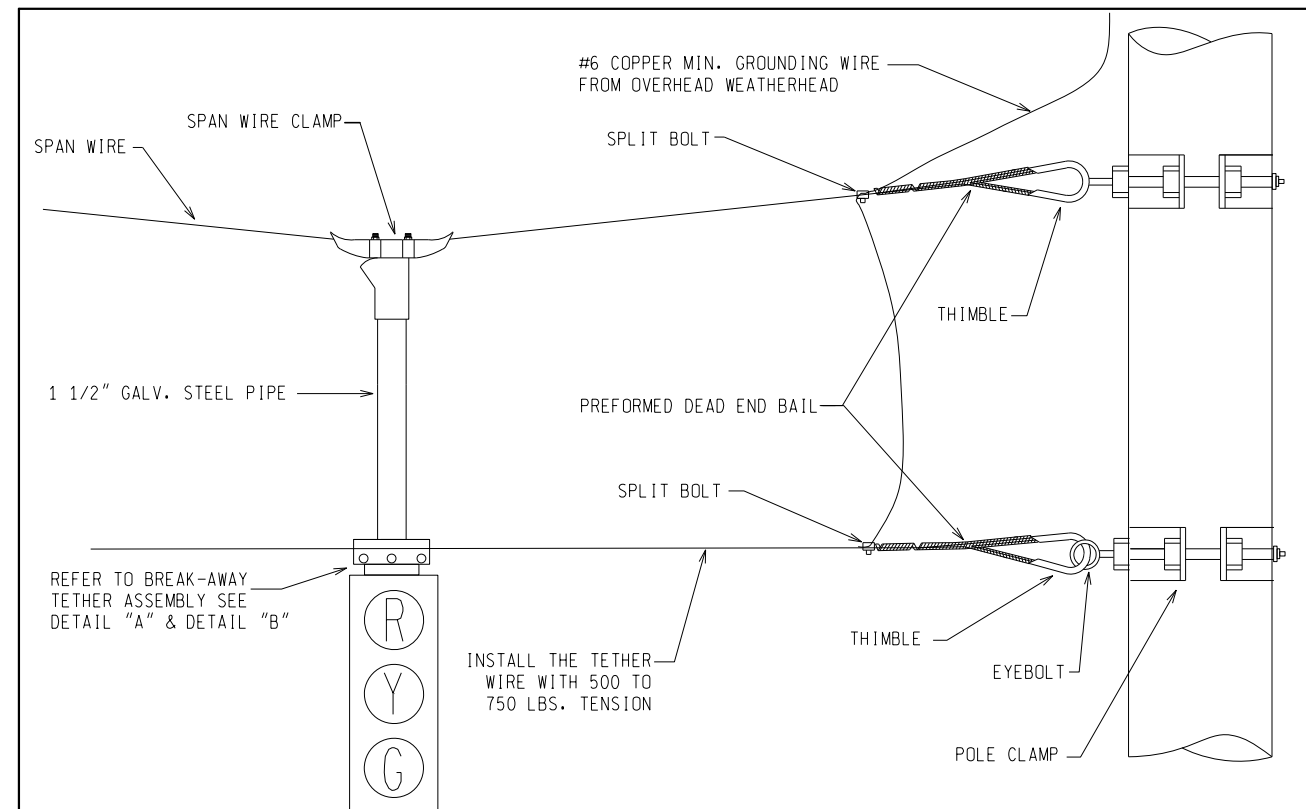


DETAIL "B": BREAK-AWAY TETHER ASSEMBLY FOR TOP OF SIGNAL HEAD

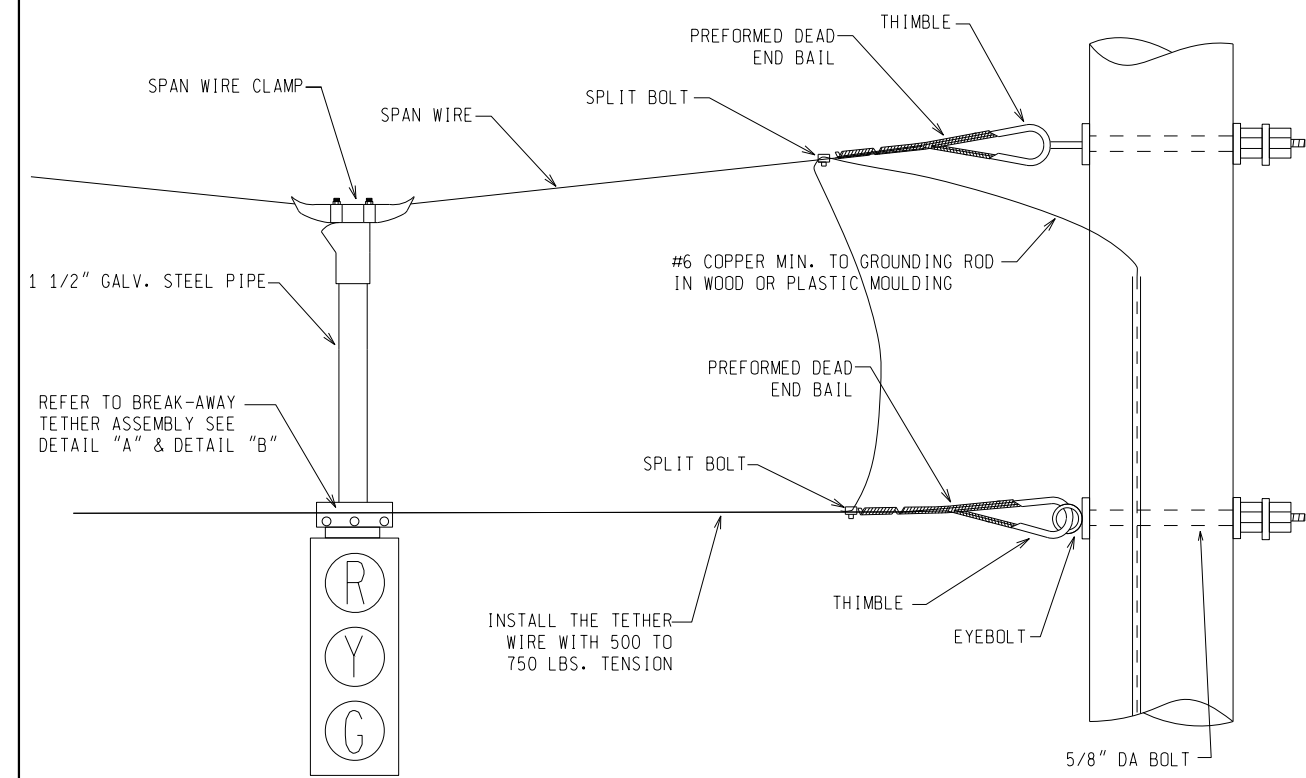
NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG305C.dgn Rev. 04/08/19

<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR</p>	ENGINEER OF DELIVERY	<p>SPAN WIRE TETHER DETAILS</p>	<p>SIG-305-C</p>	<p>SHEET 1 of 5</p>
	ENGINEER OF DEVELOPMENT (SPECIAL DETAIL) FHWA APPROVAL DATE			
<p>PREPARED BY TRAFFIC AND SAFETY</p>	PLAN DATE			
<p>DRAWN BY: DSP</p>				
<p>CHECKED BY:</p>				



TOP TETHER SPAN WIRE STEEL POLE CONNECTION DETAIL



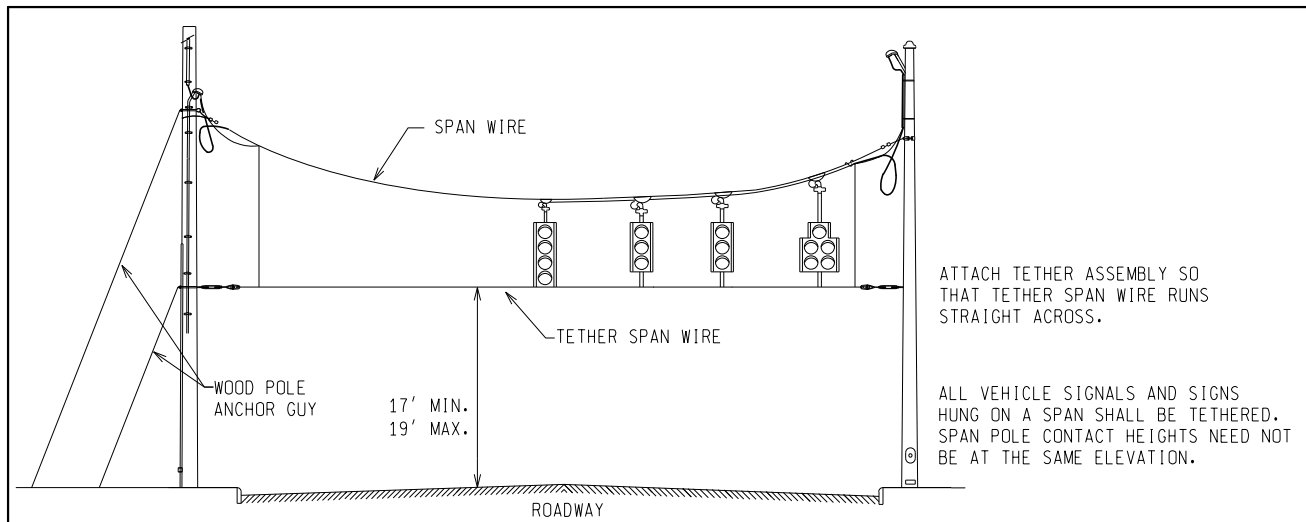
TOP TETHER SPAN WIRE WOOD POLE CONNECTION DETAIL

NOT TO SCALE

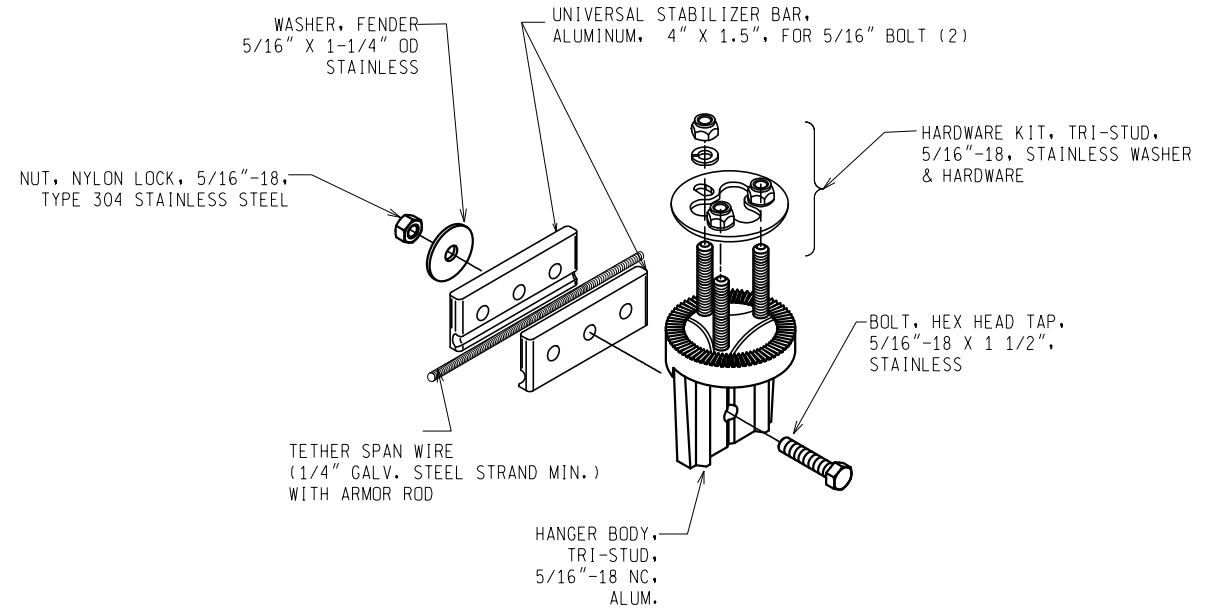
File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG305C.dgn Rev. 04/08/19

<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN</p>	FHWA APPROVAL DATE	<p>SIG-305-C</p>	<p>SHEET 2 of 5</p>
	PLAN DATE		
<p>PREPARED BY TRAFFIC AND SAFETY</p>	DATE:	CS:	
<p>DRAWN BY: DSP</p>	DESIGN UNIT:	JN:	
<p>CHECKED BY:</p>	TSC:		

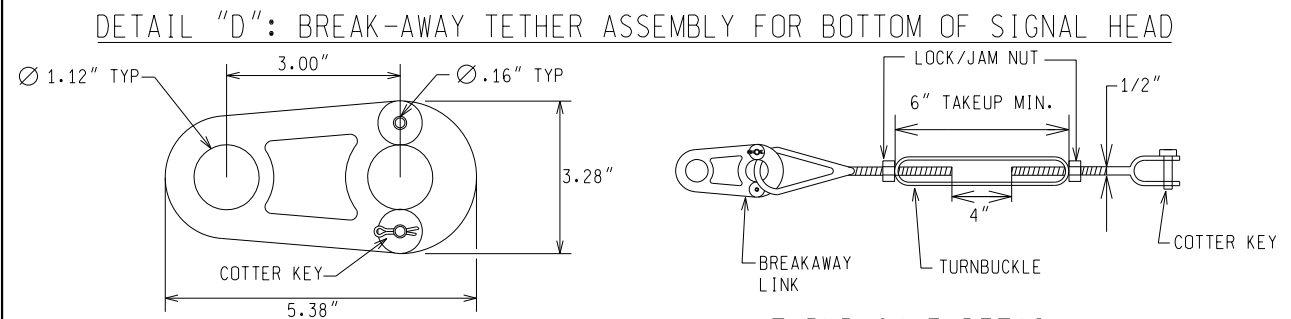
AS-LET PLAN REVISIONS									<p>DATE:</p>	<p>CS:</p>	<p>DRAWING</p>	<p>SHEET</p>
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION					
								FILE:	TSC:			



ELEVATION VIEW: BOTTOM TETHER INSTALLATION



DETAIL "C": TETHER ASSEMBLY TRI-STUD BREAK-A-WAY

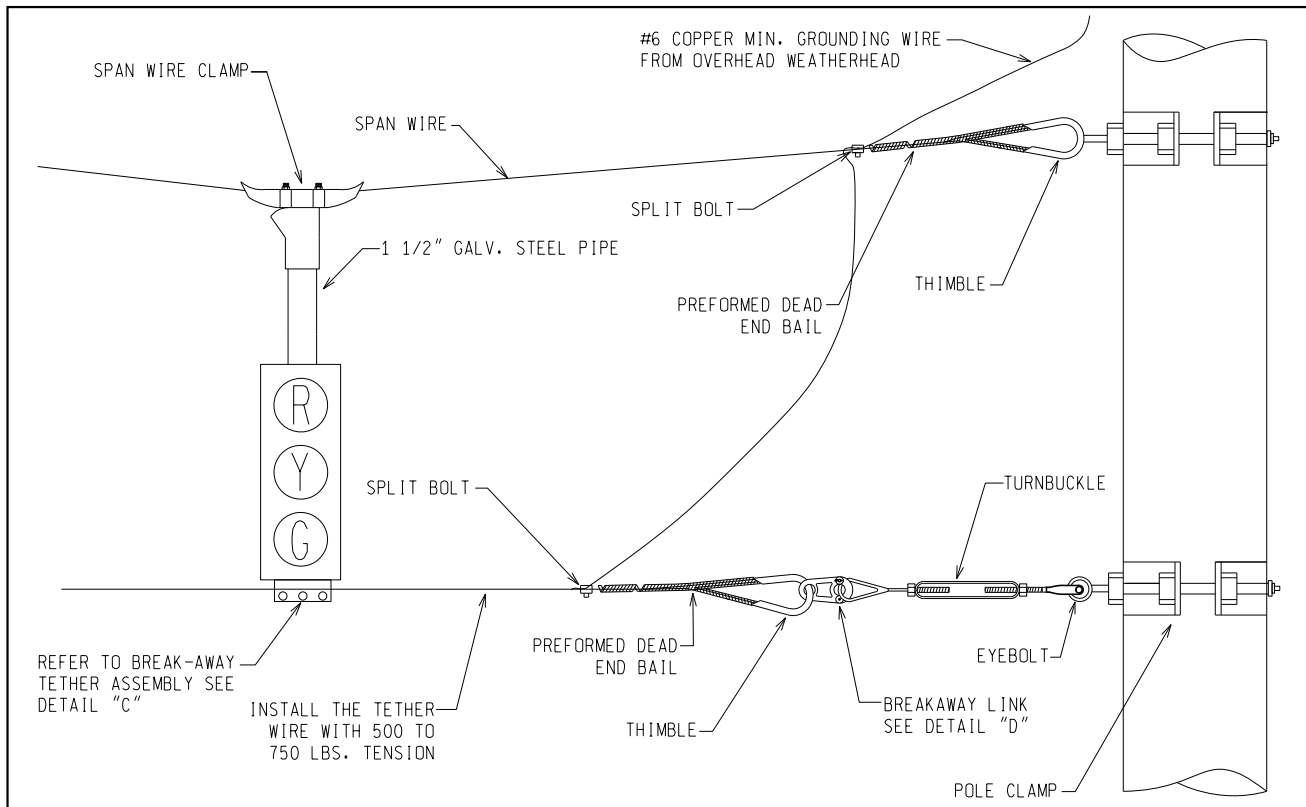


BOTTOM TETHER BREAKAWAY LINK

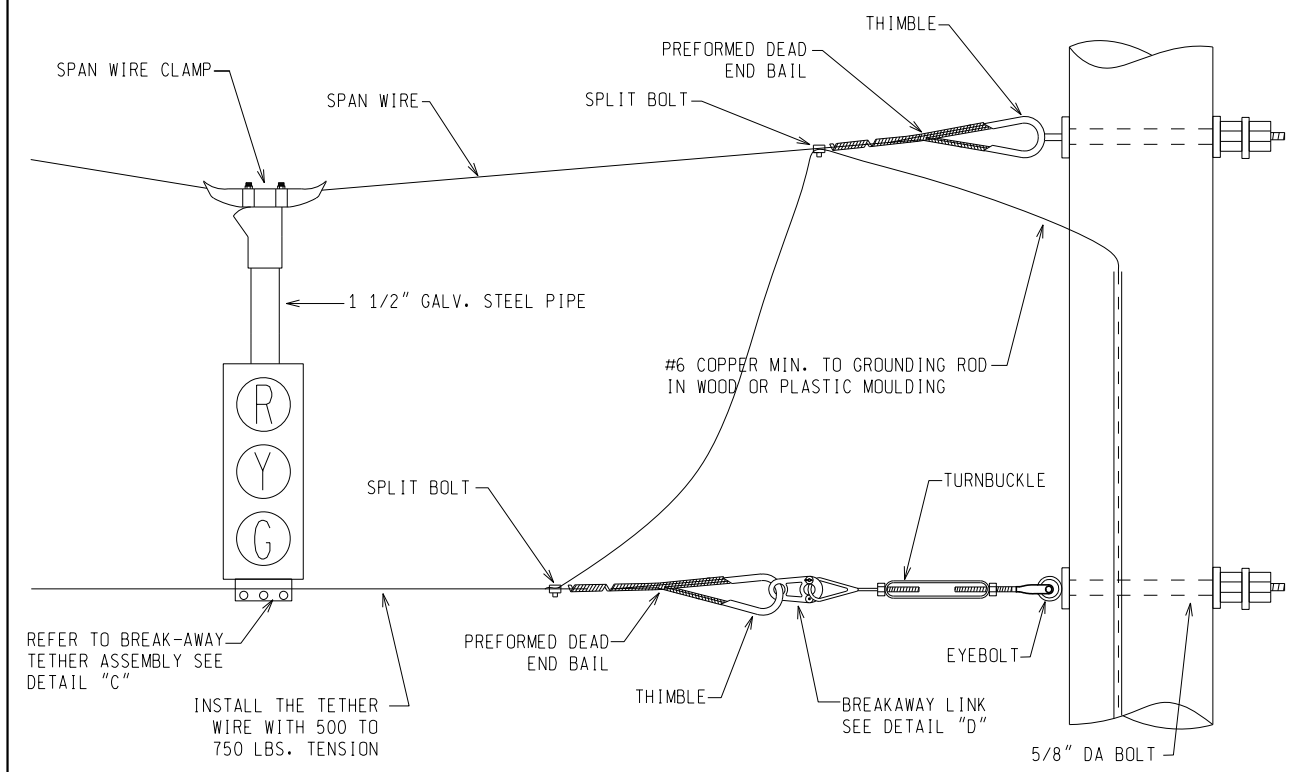
TURNBUCKLE DETAIL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN		FHWA APPROVAL DATE		PLAN DATE		SIG-305-C		SHEET 3 of 5	
File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG305C.dgn		Rev. 04/08/19							



BOTTOM TETHER SPAN WIRE STEEL POLE CONNECTION



BOTTOM TETHER SPAN WIRE WOOD POLE CONNECTION

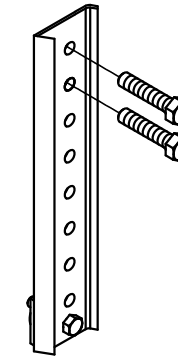
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN		FHWA APPROVAL DATE		PLAN DATE		SIG-305-C		SHEET 4 of 5	
File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG305C.dgn		Rev. 04/08/19							

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE:	CS:	DRAWING	SHEET
DESIGN UNIT:	JN:		
TSC:			
FILE:			



EXTENDER OPTION 8", 11", 19", 24", & 72"
(CUT TO LENGTH)

NOTES

1. 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.
2. INSTALL GROUND WIRE AT BOTH ENDS OF TOP AND BOTTOM TETHERING.
3. 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.
4. BREAKAWAY LINK SHALL YIELD AT 3325 LBS OF TENSION.
5. TETHER WIRE SHALL BE 7-STRAND ASTM A475 HS 1/4 INCH. ON ALL SPANS. INSTALL TETHER HORIZONTALLY. MAINTAIN CLEARANCE OF 17' OVER ROADWAY.
6. 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.
7. TRAFFIC SIGNAL HOUSING REINFORCEMENT PLATES ARE REQUIRED WHEN TETHERING.
 - A. TOP TETHERING REQUIRES REINFORCEMENT PLATES AT THE TOP OF THE POLYCARBONATE HOUSING. (2 PLATES TOTAL)
 - B. BOTTOM TETHERING REQUIRES REINFORCEMENT PLATES AT THE TOP AND BOTTOM OF POLYCARBONATE HOUSING. (4 PLATES TOTAL)
 - C. BOTTOM TETHERING 5-SECTION HEADS REQUIRES REINFORCEMENT PLATES ON THE TOP AND BOTTOM OF THE POLYCARBONATE HOUSING (8 TOTAL) AND AN ALUMINUM TRI-STUD UPPER ARM ASSEMBLY IN PLACE OF THE BOTTOM BRACKET.
 - D. IF POLYCARBONATE HOUSING CONNECTS TO AN ALUMINUM CASE SIGN, REINFORCEMENT PLATES MUST BE USED AT THE CONNECTION.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	FHWA APPROVAL DATE	PLAN DATE	SIG-305-C	SHEET 5 of 5
File: RefDoc/TR/Signals/Web/Sp_Def/FIn/SIG305C.dgn Rev. 04/08/19				

AS-LET PLAN REVISIONS									DATE:	CS:	DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION					

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DESIGN UNIT:

TSC:

JN: