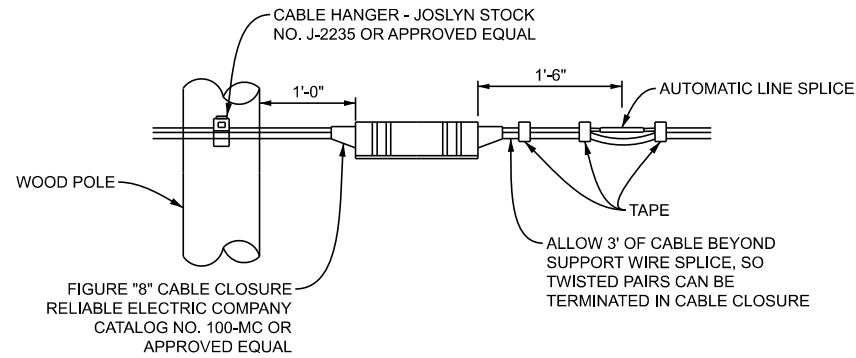
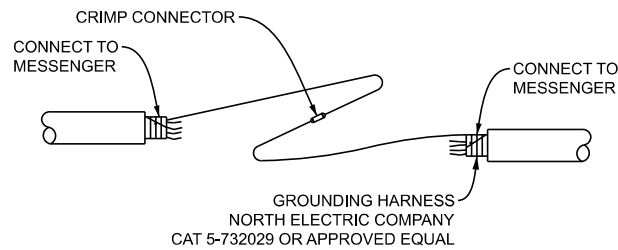


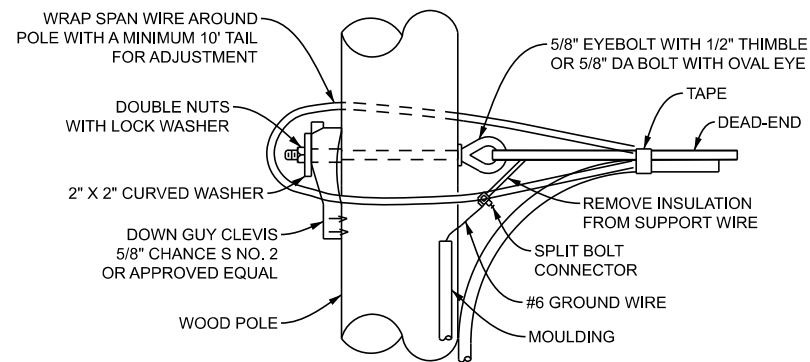
A DETAIL - INTEGRAL MESSENGER (I.M.) CABLE
N.T.S.



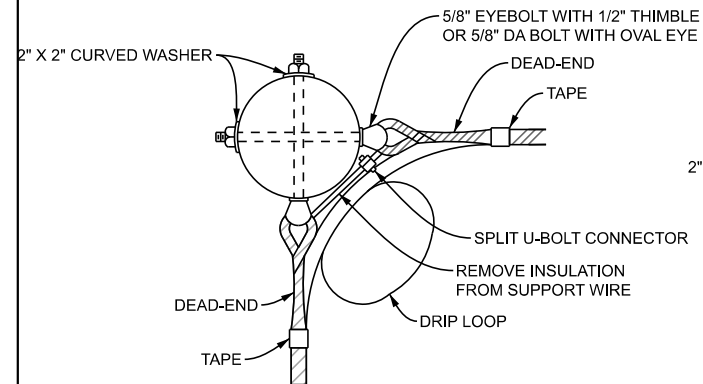
B DETAIL - AERIAL SPLICE
N.T.S.



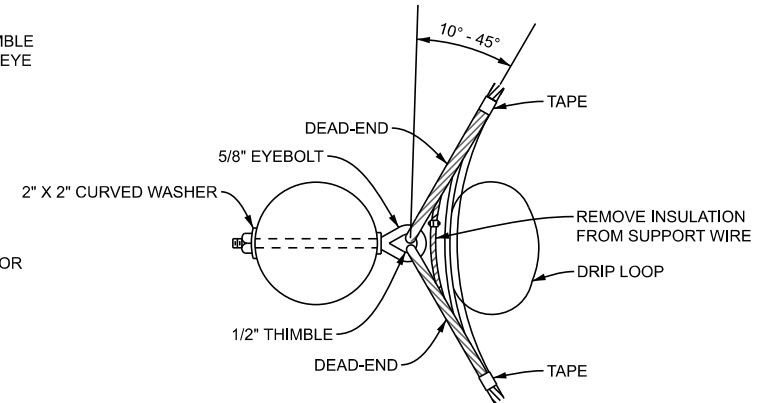
C DETAIL - CABLE CLOSURE
N.T.S.



D DETAIL - DEAD-END POLE
N.T.S.

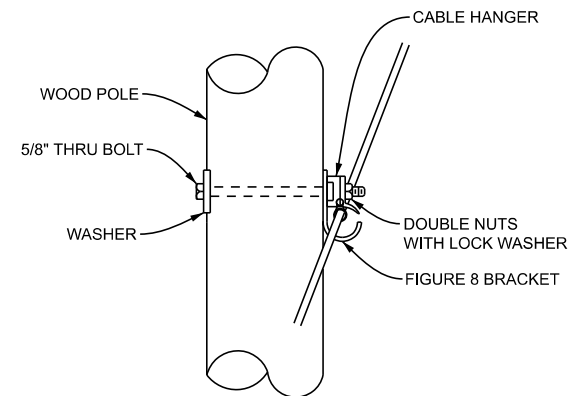


E DETAIL - 90° CORNER POLE
N.T.S.

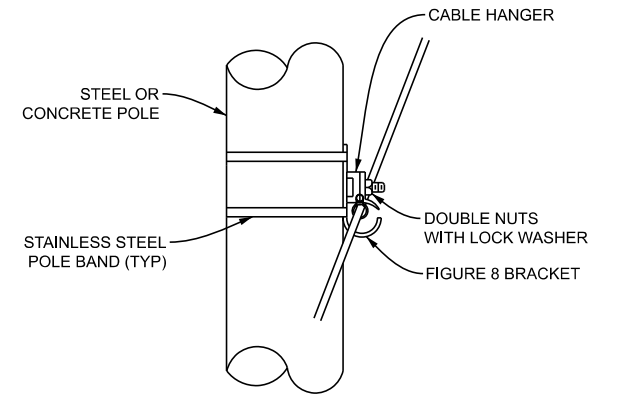


NOTE:
FOR DETAILS 4, 5, AND 6, INDIVIDUAL CONNECTORS
TO BE TAPED WITH THREE LAYERS OF APPROVED
PLASTIC TAPE & OVERALL ONE LAYER OF HALF LAP
APPROVED PLASTIC TAPE

F DETAIL - 10° - 45° ANGLE POLE
N.T.S.



H (WOOD POLE)
DETAIL - TANGENT POLE
N.T.S.



I (STEEL OR CONCRETE POLE)
DETAIL - TANGENT POLE
N.T.S.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES



APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
INSTALLATION OF INTEGRAL
MESSENGER CABLE

(SPECIAL DETAIL)
FHWA APPROVAL

05/20/22
PLAN DATE

SIG-011-A

SHEET
1 OF 3



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
INSTALLATION OF INTEGRAL
MESSENGER CABLE

(SPECIAL DETAIL)
FHWA APPROVAL

05/20/22
PLAN DATE

SIG-011-A

SHEET
2 OF 3

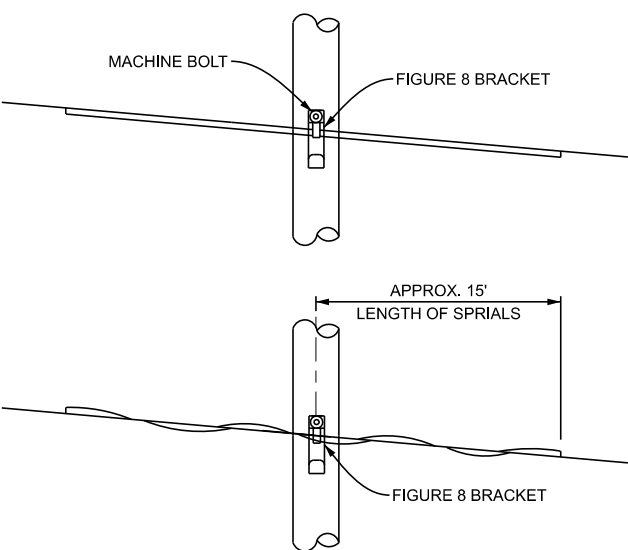
SECT

DESCRIPTION:
INTEGRAL MESSENGER WIRE CONSISTS OF A SUPPORT WIRE AND A CONDUCTOR CORE LAID PARALLEL AND COVERED WITH A SINGLE EXTRUSION OF BLACK LOW DENSITY POLYETHYLENE. THE SINGLE EXTRUSION PROVIDES A JACKET OVER THE SUPPORT WIRE AND CORE, AND FORMS A WEB BETWEEN THE TWO. SEE DETAIL "1". THE SUPPORT WIRE IS 0.134 INCHES IN DIAMETER, GRADE 190 STEEL, CLASS A GALVANIZED, EXTRA HIGH STRENGTH STEEL HAVING A RATED BREAKING STRENGTH OF 2680 POUNDS.

INSTALLATION:
EVERY EFFORT SHALL BE MADE TO LIMIT THE LENGTH OF SPANS TO A MAXIMUM OF 250 FEET. INTEGRAL MESSENGER WIRE IS PRONE TO LOW FREQUENCY WIND VIBRATION COMMONLY REFERRED TO AS "DANCING". PROLONGED LOW AMPLITUDE VIBRATION WILL EVENTUALLY CAUSE OPEN CIRCUITAND/OR SUPPORT WIRE FAILURE. THEREFORE, REA RECOMMENDS THAT ALL INTEGRAL MESSENGER DISTRIBUTION WIRE BE SPIRALED APPROXIMATELY ONE SPIRAL FOR EACH 15 FEET OF SPAN.

SPIRALING OF THE WIRE SHOULD BE DONE FROM EVERY OTHER POLE BY APPLYING THE SPIRALING TORQUE TO THE SUPPORT CLAMP AFTER THE TWO OUTSIDE BOLTS HAVE BEEN PROPERLY TIGHTENED, THUS KEEPING THE SPIRALING TORQUE ON THE SUPPORT WIRE AND NOT ON THE CORE. AS SPIRALING OPERATIONS PROCEED ALONG A LEAD, SPIRALING AT ALTERNATE POLES SHOULD BE IN OPPOSITE DIRECTIONS, THEREBY REDUCING THE TORSION OTHERWISE IMPOSED ON THOSE CLAMPS WHICH ARE AT THE INTERMEDIATE POLES. THE PROCEDURE TO BE FOLLOWED IN SPIRALING DISTRIBUTION WIRE IS SHOWN IN DETAIL "B".

WHEN PULLING THE WIRE UP TO CORRECT SAG, A SUITABLE WIRE GRIP SHOULD BE USED DIRECTLY ON THE SUPPORT WIRE. THE GRIP SHOULD BE OF SUCH A DESIGN AS TO GIVE PROPER HOLDING POWER AND YET NOT DAMAGE THE SUPPORT WIRE JACKET.THE CRESCENT TOOL COMPANY #800 OR AN EQUIVALENT GRIP IS SUGGESTED. A STANDARD LINE WIRE GRIP SHOULD NOT BE USED BECAUSE IT WILL DAMAGE THE INSULATION. IF THE INSULATION IS DAMAGED IN ANY WAY, IT MUST BE REPAIRED WITH SEALING COMPOUND OR BY CUTTING OUT THE DAMAGED PORTION. AT DEAD-ENDS, IT IS NECESSARY TO REMOVE THE SUPPORT WIRE COVERING BEFORE APPLYING THE DEAD-END GRIPS. IT MUST BE DONE CAREFULLLY TO AVOID DAAMAGING THE SUPPORT WIRE OR CORE, THE ELECTRICAL CONTINUITY OF THE SUPPORTWIRE MUST BE MAINTAINED THROUGHT THE LEAD.



- NOTES:
1. SUPPORT AND POSITION INTEGRAL MESSENGER WIRE WITH CABLE BRACKETS.
 2. FASTEN AND SUPPORT CLAMP TO THE SUPPORT MESSENGER AT THE POLE. TIGHTEN THE CARRIAGE BOLTS TO THE MANUFACTURER'S SPECIFICATIONS.
 3. SPIRAL WIRE IN THE OPPOSITE DIRECTION FROM WHICH THE PREVIOUS ADJACENT SPIRALING OPERATION WAS PERFORMED. IF THE ADJACENT SPANS ARE UNEQUAL USE THE SHORTER SPAN FOR DETERMINING THE NUMBER OF SPIRALS.
 4. PLACE THE CLAMP ON THE MACHINE BOLT AND TIGHTEN NUTS TO THE MANUFACTURER'S SPECIFICATIONS.

J DETAIL - I.M. CABLE SPIRALS
N.T.S.

 Michigan Department of Transportation	STANDARD PLAN FOR INSTALLATION OF INTEGRAL MESSENGER CABLE			SHEET 3 OF 3
	(SPECIAL DETAIL) FHWA APPROVAL	05/20/22 PLAN DATE	SIG-011-A	