INSULATOR TIES

DRAWING NUMBER	SHT.	DRAWING TITLE	DWG REV.	BOM REV.
A-34-00	**1 – 1**	**GENERAL INFORMATION**	**C**	**-**
A-34-01	**1 – 2**	**SUPER TOP-TIE ON SINGLE INSULATOR**	**A**	**A**
A-34-02	**1 – 1**	**SUPER TOP-TIE ON DOUBLE INSULATOR**	**A**	**-**
A-34-03	**1 – 1**	**URBAN UNI-TIE FOR ALL TYPES OF BARE OR COVERED CONDUCTOR**	**B**	**-**
A-34-04	**1 – 1**	**SPOOL & UNI-MOUNT WIRE TIES**	**A**	**-**
A-34-05	**1 – 1**	**SECONDARY TIE ON SPREADER BRACKET**	**C**	**-**
A-34-06	**1 – 1**	**DEADEND TIES FOR SPOOL INSULATOR**	**0**	**-**
A-34-07	**1 – 3**	**DISTRIBUTION TIE AND DOUBLE SUPPORT TIE**	**A/0/0**	**-**
A-34-08	**1 – 1**	**RURAL HAND TIE**	**A**	**-**

*Sask**Power*** - DISTRIBUTION STANDARDS

APPROVAL	DESIGN CHK	DRN. **DCD**	**INDEX**
L. MOEN	**D. DONAIS**	CHKD.	
		2018-12-14	

DATE OF ISSUE: 2019-01-02 | DRAWING NO: **A-34-INDEX** | **SHEET 1 of 1** | REV. **J**

SPC/AUTODRAFT

INSULATOR TIES

1. STEEL ARMOUR ROD & TIE WIRE IS THE STANDARD FOR TIEING AND RE–TIEING CONDUCTORS ON RURAL CIRCUITS.

2. UNI–TIE (SYNTHETIC TIE) IS THE STANDARD FOR TIEING AND RE–TIEING CONDUCTORS ON URBAN CIRCUITS:

   A. UNI–TIES CAN BE INSTALLED OVER ARMOURED OR JACKETED CONDUCTOR.

   B. INSULATORS THAT ARE NOT 'F' NECK, ARE TO BE CHANGED OUT WHEN RE–TIEING. UNI–TIES ARE ONLY FOR 'F' NECK INSULATORS.

   C. UNI–TIES ARE USED IN MISCELLANOUS URBAN AND RURAL APPLICATIONS. AN EXAMPLE IS ON A PIN INSULATER TO SUPPORT A LONG RISER.

3. SUPER TOP TIES ARE PERMITTED ON:

   A. URBAN CIRCUITS (INCLUDING ARMOURED CONDUCTORS)

   B. RURAL CIRCUITS OF #6 HICON, #6 HERRING AND #2 SPARROW

   C. SPOOL SIDE TIES UP TO AND INCLUDING I/O RAVEN

4. DISTRIBUTION TIES AND DOUBLE SUPPORT TIES ARE PERMITTED ON URBAN CIRCUITS.

SaskPower – DISTRIBUTION STANDARDS

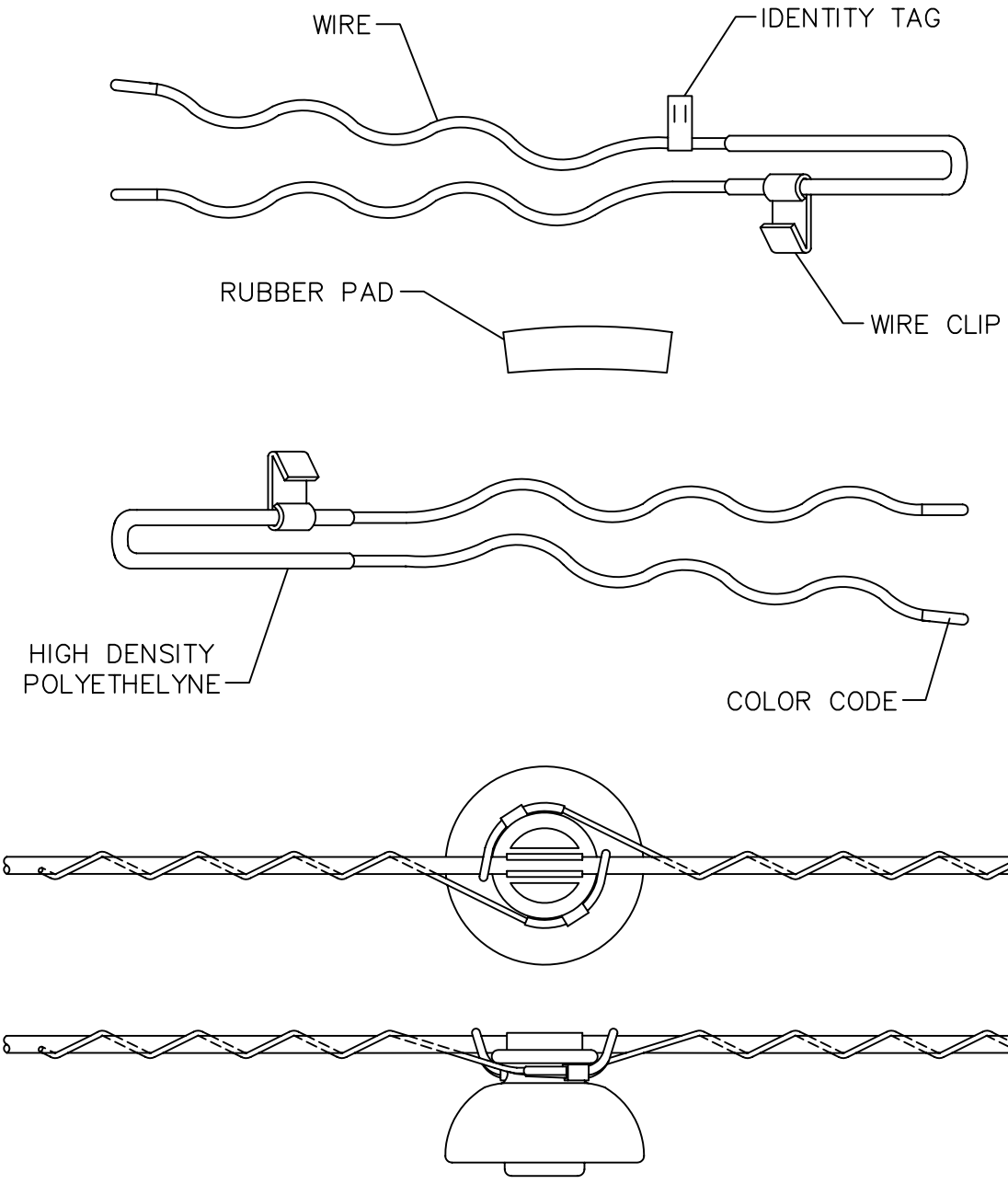
DRN. B	DESIGN CHK.	SAFETY APP.	APPROVAL	GENERAL INFORMATION
CHKD. FTK				
DATE 91-03-05	DATE	DATE	DATE	
DATE OF ISSUE		DRAWING NO. A–34–00	SHEET 1 OF 1	REV. C

TIE CODE NO.	TIE COLOR CODE	CONDUCTOR [1]	CONDUCTOR WITH ARMOUR ROD [2]
2-97-58	NONE	#6 ACSR SB HERRING	–
2-97-60	ORANGE	#6 HICON	–
2-97-62	RED	#2 ACSR SPARROW	–
2-97-66	YELLOW	1/0 ACSR RAVEN	–
2-97-68	BLACK	3/0 ACSR PIGEON	#2 ACSR SPARROW
2-97-69	PINK	4/0 ACSR PENGUIN	–
2-97-72	GREEN	266.8 ACSR PARTRIDGE	1/0 ACSR RAVEN

NOTE:

1. USE SUPER TOP-TIE ON THESE CONDUCTORS WITHOUT ARMOUR ROD.

2. USE SUPER TOP-TIE ON THESE CONDUCTORS WITH ARMOUR ROD. THESE CAN BE USED OVER STEEL ARMOUR ONLY.

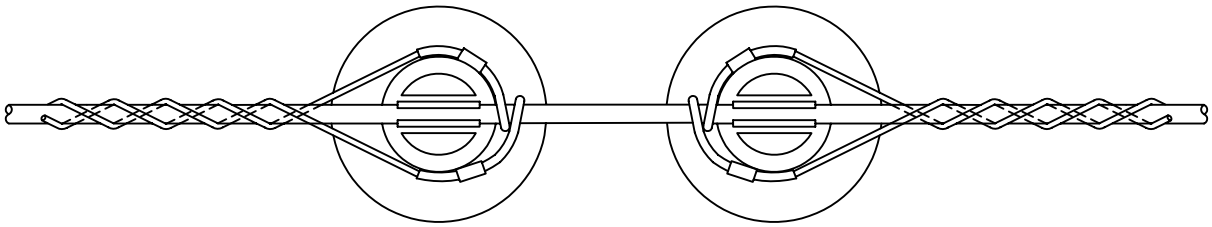


NOTE:

1. WIRE CLIPS MUST BE SNAPPED IN PLACE TO PREVENT THE TIE FROM SLIPPING OVER THE LIP OF THE INSULATOR.
2. NOT TO BE USED AS A SIDE TIE.
3. DO NOT USE TIES ON BARE COPPER CONDUCTOR.
4. FOR USE ON DEFLECTIONS UP TO 10^{0} (CONDUCTOR IN TOP INSULATOR GROOVE).

SASKATCHEWAN POWER CORP. – DISTRIBUTION ENGINEERING STANDARDS				
DRN. B	DESIGN CHK.	SAFETY APP.	APPROVAL	SUPER TOP–TIE ON SINGLE INSULATOR
CHKD. FTK				
DATE 89-01-04	DATE	DATE	DATE	
DATE OF ISSUE		DRAWING NO. A–34–01	SHEET 2 OF 2	REV. A

SPC/AUTODRAFT



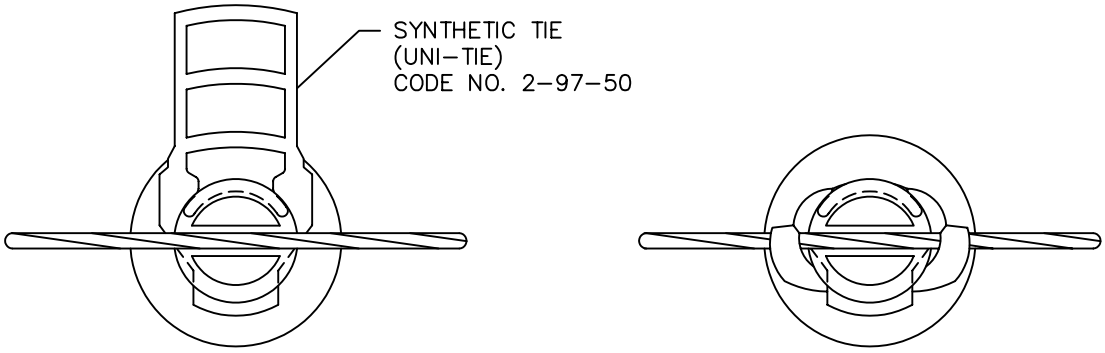
TIE PLACEMENT ON DOUBLE ARM STRAIGHT & ANGLE PINS

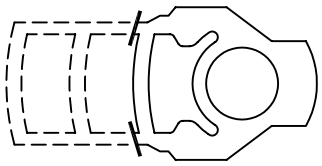
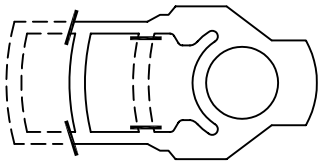
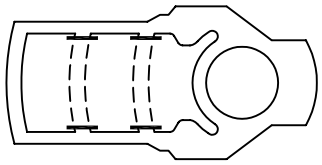
NOTE:

1. RUBBER PAD MUST BE USED WITH BOTH INSULATORS.
2. THE WIRE CLIP MUST BE REMOVED ON ONE HALF OF EACH SET AND PLACED ON THE OTHER LEG. THIS IS NECESSARY TO ENSURE THAT THE CLIPS ARE INSTALLED AS PER THE INSTRUCTIONS.
3. SEE DWG. A–34–01 SHEET 1 FOR SIZES AND STOCK CODES.

SASKATCHEWAN POWER CORP. – DISTRIBUTION ENGINEERING STANDARDS				
DRN. B	DESIGN CHK.	SAFETY APP.	APPROVAL	SUPER TOP–TIE ON DOUBLE INSULATOR
CHKD. FTK				
DATE 89-01-04	DATE	DATE	DATE	
DATE OF ISSUE		DRAWING NO. A–34–02	SHEET 1 OF 1	REV. A

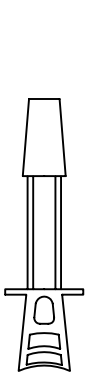
AUTO ✱ DRAFT

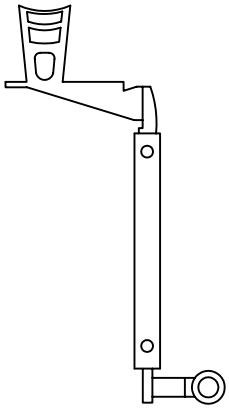


CUT TIE AS SHOWN	OUTSIDE DIAMETER RANGE	TYPE OF INSTALLATION
A 	NO. 4 TO NO. 336.4 kcmil RANGE EQUAL TO 5mm TO 30.4mm.	CABLE IN TOP POSITION
B 	NO. 4 TO NO. 336.4 kcmil RANGE EQUAL TO 5mm TO 17mm.	CABLE IN SIDE POSITION
	NO. 336.4 TO 1033 kcmil EQUAL TO 17mm TO 45.7mm.	CABLE IN TOP POSITION
C 	NO. 336.4 kcmil TO 1033 kcmil RANGE EQUAL TO 17mm TO 45.7mm.	CABLE IN SIDE POSITION
BEFORE TYING IN CONDUCTOR IN TOP OR SIDE, CUT THE TIE LOOPS WITH PLIERS AS SHOWN ABOVE.		

NOTE:

1. CAN BE USED OVER ARMOUR ROD.
2. USE "F" NECK INSULATORS ONLY.
3. MAXIMUM WIRE SIZE 1033 kcmil.
4. ON PIN INSULATOR CONDUCTOR TO BE TOP TIED FOR UP TO 4° DEFLECTION AND SIDE TIED FOR 5° TO 10° DEFLECTION. INSTALL CONDUCTOR IN TOP GROOVE ON ANGLE PINS.
5. STRIP JACKETED CONDUCTOR AT THE INSULATOR BEFORE INSTALLING UNI–TIE TO PREVENT RADIO INTERFERENCE.





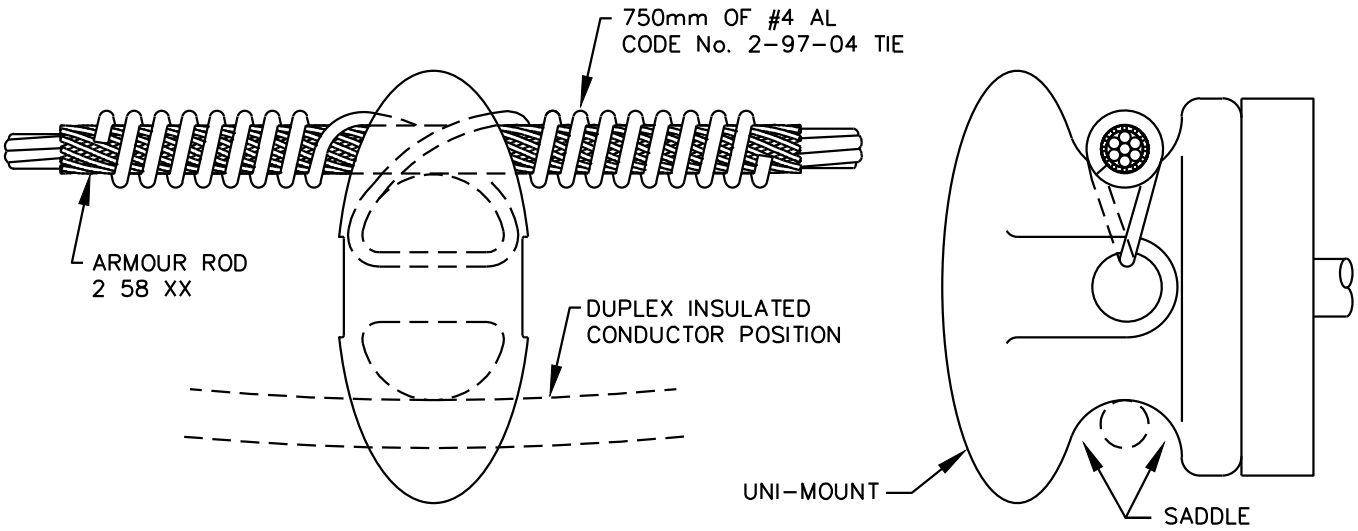
SCALE: N.T.S. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED

SaskPower – DISTRIBUTION STANDARDS

DRN. *DK*	DESIGN CHK.	APPROVAL	URBAN UNI–TIE FOR ALL TYPES OF BARE OR COVERED CONDUCTOR
CHKD.			
DATE	DATE	DATE	

DATE OF ISSUE	DRAWING NO. A–34–03 SHEET 1 of 1	REV. B

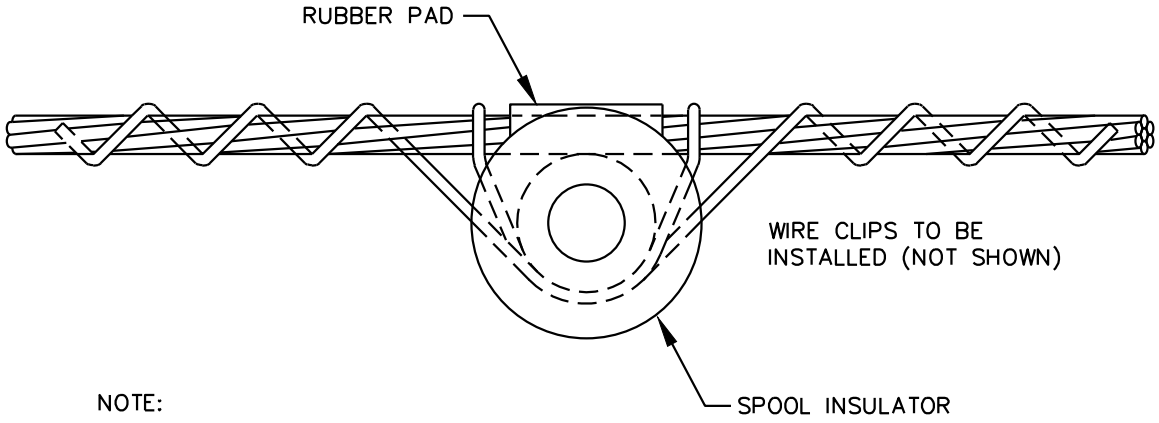
A



NOTE:

1. THERE SHALL BE AT LEAST FIVE TURNS EITHER SIDE OF THE INSULATOR.
2. DO NOT USE SUPER TOP-TIE ON UNI-MOUNT.

B

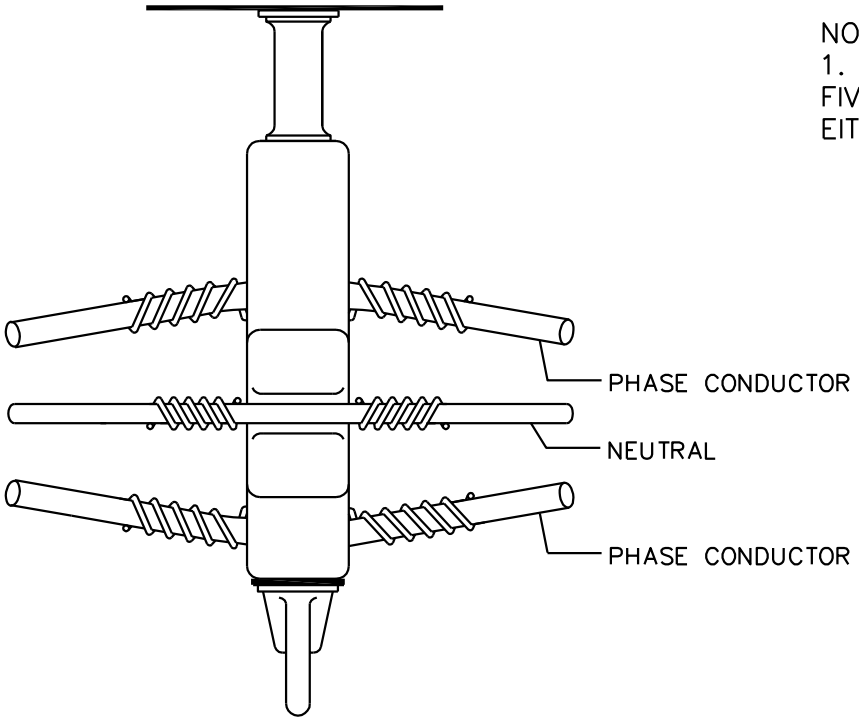


NOTE:

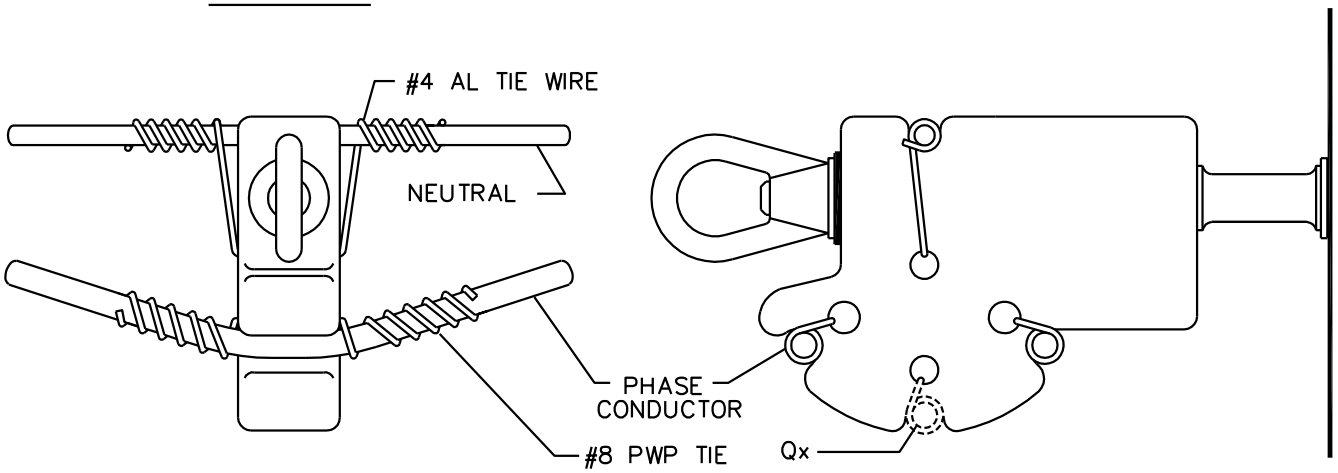
1. REFER TO DWG. A-34-01 SHT. 1 SUPER TOP-TIE CODE No. 2-97-XX.

SaskPower – DISTRIBUTION STANDARDS			
APPROVAL L.MOEN	DESIGN CHK. L.BAILEY	DRN. A.GATZKE CHKD.	UNI-MOUNT & SPOOL WIRE TIES
		2014-08-27	
DATE OF ISSUE 2016/02/05	DRAWING NO. A-34-04	SHEET 1 of 1	REV. A

NOTE:
1. THERE SHALL BE AT LEAST FIVE TURNS OF TIE WIRE ON EITHER SIDE OF THE BRACKET.



TOP VIEW



FRONT VIEW

SIDE VIEW

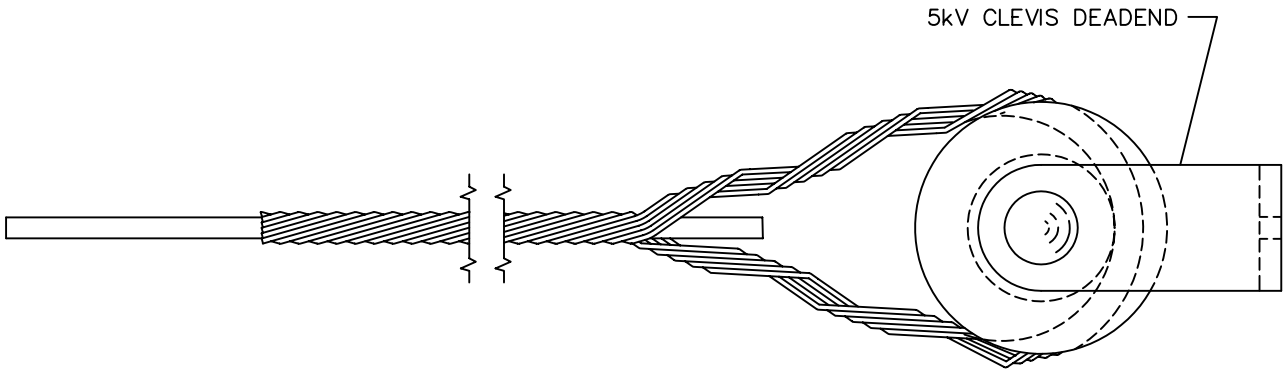
CODE NO.	CONDUCTOR	MESSENGER WIRE		PHASE WIRE	
		TIE WIRE 2-97-04	LENGTH mm	TIE WIRE 2-84-08	LENGTH mm
5 38 03	2 x #4 – 1 x #6 Tx	#4 AL	500	#8 PWP	300
5 38 17	2 x 1/0 – 1 x #2 Tx	#4 AL	500	#8 PWP	450
5 40 17	3 x 1/0 – 1 x #2 Qx				
5 38 20	2 x 3/0 – 1 x 1/0 Tx	#4 AL	500	#8 PWP	450
5 40 19	3 x 3/0 x 1 x 1/0 Qx				

SaskPower – DISTRIBUTION STANDARDS

APPROVAL	DESIGN CHK.	DRN. D.REDEKOPP	SECONDARY TIE ON SPREADER BRACKET
L.MOEN	A.UHREN	CHKD.	
		2016-06-08	
DATE OF ISSUE 2016/07/26		DRAWING NO. A-34-05	SHEET 1 of 1 REV. C

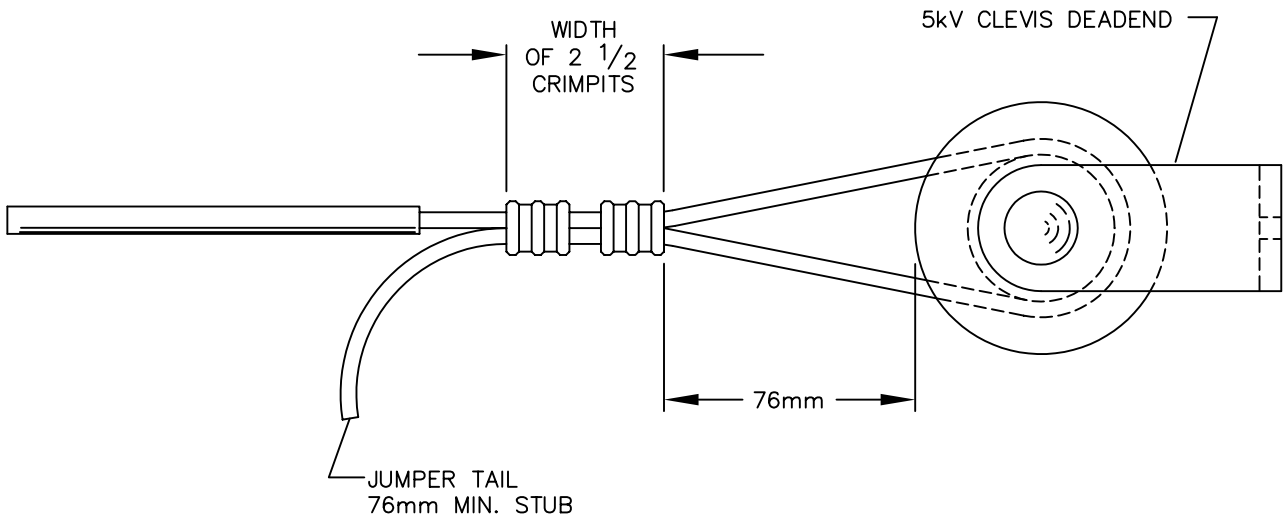
SPC/AUTODRAFT

A



PREFORM FOR #2 ACSR AND LARGER

B



LOOP AND DOUBLE CRIMPIT DEADEND TIE FOR STRANDED COPPER

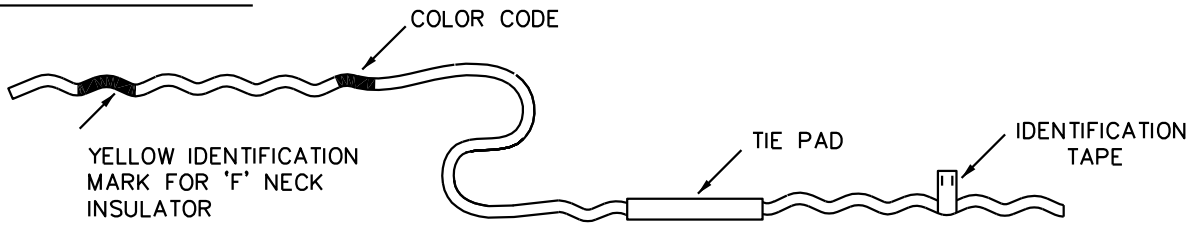
NOTE:
1. WHEN USING PWP, STRIP INSULATION TO PERMIT INSTALLATION OF CRIMPITS.
2. BOTH TIES ARE FOR MAINTENANCE ONLY, NOT FOR NEW CONSTRUCTION.

SCALE: N.T.S. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED

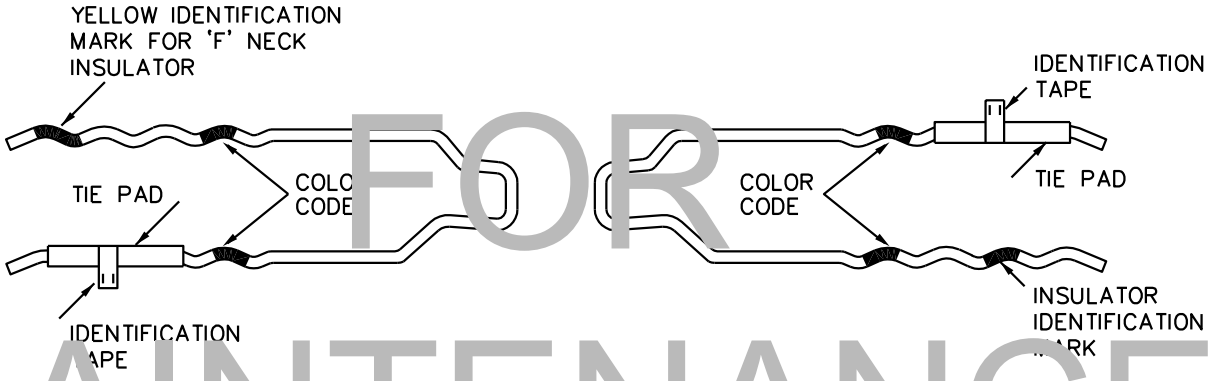
SASKATCHEWAN POWER CORP. – DISTRIBUTION ENGINEERING STANDARDS					
DRN. DC	DESIGN CHK.	SAFETY APP.	APPROVAL	DEADEND TIES FOR SPOOL INSULATORS	
CHKD. FTK					
DATE 86-11-03	DATE	DATE	DATE		
DATE OF ISSUE 87-02-01			DRAWING NO. A-34-06	SHEET 1 of 1	REV. 0

SPC/AUTODRAFT

DISTRIBUTION TIE



DOUBLE SUPPORT TIE (THESE COMPONENTS MAKE ONE UNIT)



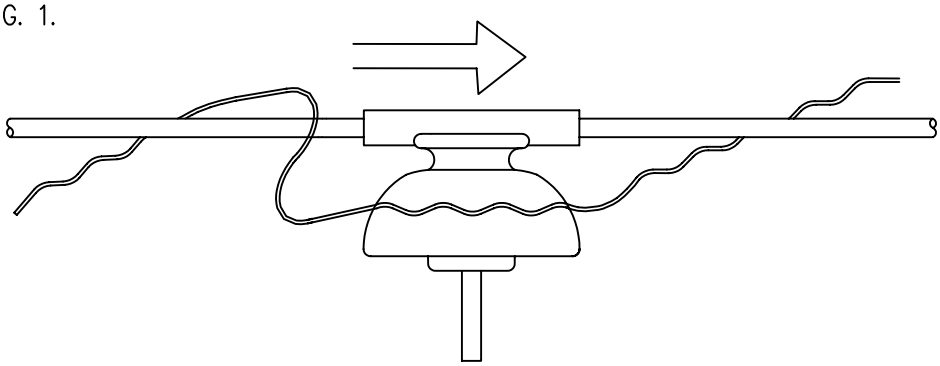
COLOR CODE	CONDUCTOR
RED	#2 ACSR
YELLOW	1/0 ACSR
ORANGE	3/0 ACSR
RED	4/0 ACSR
PURPLE	266.8

SaskPower – DISTRIBUTION STANDARDS			
APPROVAL	DESIGN CHK.	DRN. HEM CHKD.	DISTRIBUTION TIE AND DOUBLE SUPPORT TIE
		DATE 89-01-16	
DATE OF ISSUE: 2011-04-01	DRAWING NO. A-34-07	SHEET 1 of 3	REV. A

SPC/AUTODRAFT

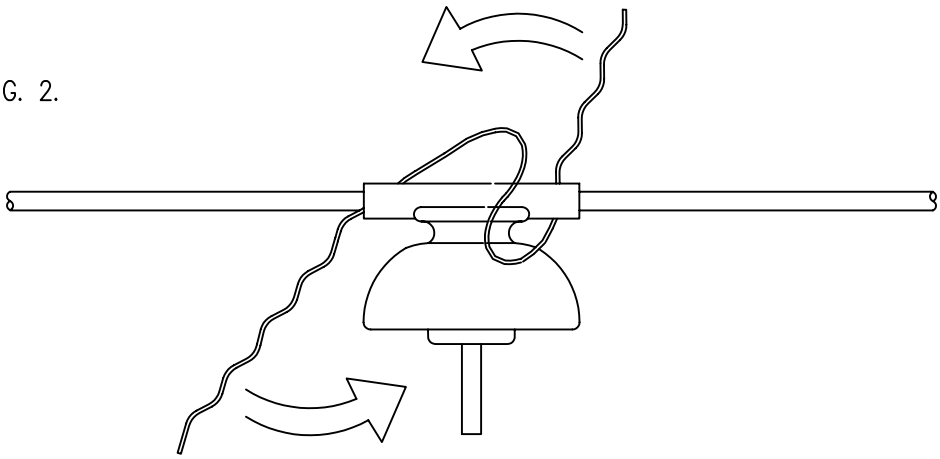
DISTRIBUTION TIE INSTALLATION

FIG. 1.



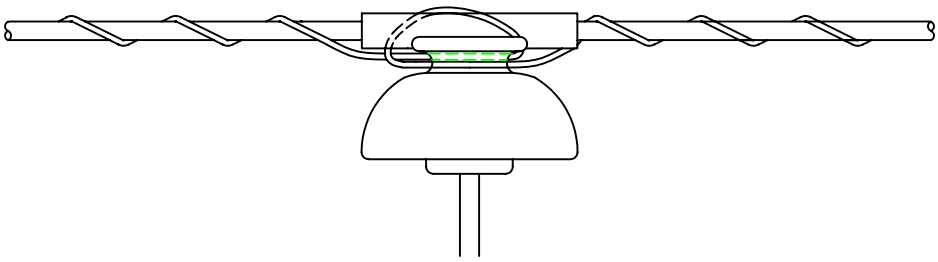
APPLY THE TIE PAD TO PREVENT CONTACT BETWEEN THE CONDUCTOR AND INSULATOR

FIG. 2.



ROTATE IN A COUNTER-CLOCKWISE DIRECTION, MAKING CERTAIN THAT BOTH LEGS GO UNDER THE CONDUCTOR

FIG. 3.



WRAP LEGS OF THE TIE AROUND THE CONDUCTOR AND SNAP THE ENDS INTO PLACE

SASKATCHEWAN POWER CORP. – DISTRIBUTION ENGINEERING STANDARDS					
DRN. TmR	DESIGN CHK.	SAFETY APP.	APPROVAL	DISTRIBUTION TIE AND DOUBLE SUPPORT TIE	
CHKD.					
DATE 89-01-13	DATE	DATE	DATE		
DATE OF ISSUE			DRAWING NO. A-34-07	SHEET 2 of 3	REV. 0

SPC/AUTODRAFT

DOUBLE SUPPORT INSTALLATION

FIG. 1.

APPLY THE TIE PADS SO THAT THE SPLIT OF THE PAD IS ON THE SIDE OF THE CONDUCTOR AND EXTEND THE PAD INWARD FROM THE INSULATOR.

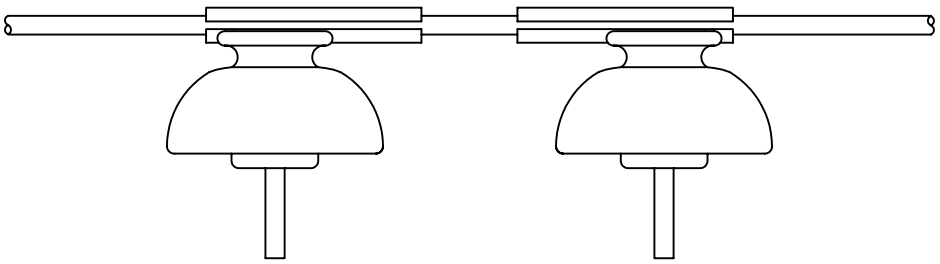


FIG. 2.

PLACE THE TIE OVER THE PAD ON THE INWARD SIDE WITH THE LEGS AROUND THE OUTSIDE OF THE INSULATOR NECK.

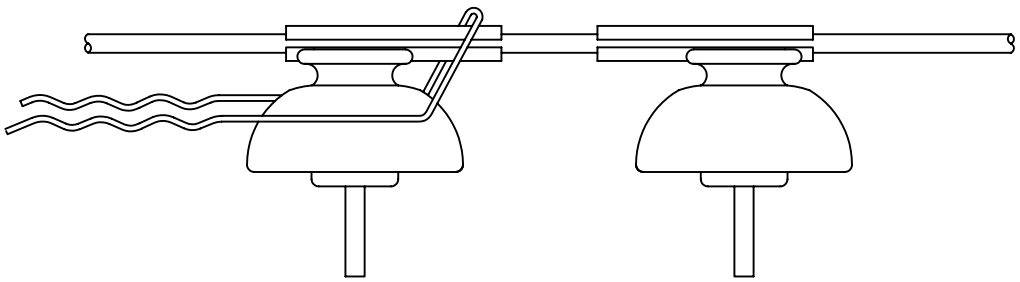
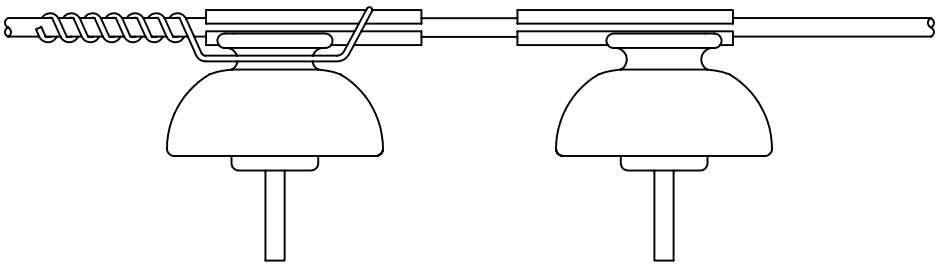
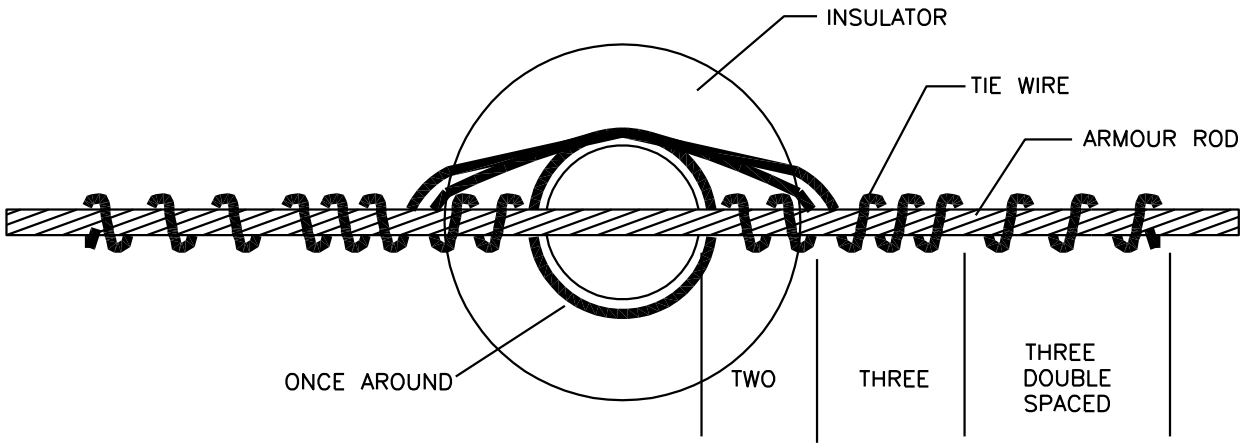


FIG. 3.

LIFT ONE LEG UP AND HOOK OVER THE CONDUCTOR WITH THE CROSSOVER MARK ON TOP. POSITION THE OTHER LEG OVER THE CONDUCTOR AT THE CROSSOVER MARK. WRAP BOTH LEGS AROUND THE CONDUCTOR AT THE SAME TIME AND SNAP THE ENDS IN PLACE. REPEAT FOR THE OTHER INSULATOR.



SASKATCHEWAN POWER CORP. – DISTRIBUTION ENGINEERING STANDARDS					
DRN. TmR	DESIGN CHK.	SAFETY APP.	APPROVAL	DISTRIBUTION TIE AND DOUBLE SUPPORT TIE	
CHKD.					
DATE 89-01-16	DATE	DATE	DATE		
DATE OF ISSUE			DRAWING NO. A-34-07	SHEET 3 of 3	REV. 0



TIE WIRE TURNS ARE TIGHTLY WRAPPED TO THE INSULATOR, EXCEPT FOR THE DOUBLE SPACED TURNS INDICATED.

FOR DOUBLE INSULATORS, ALL THE TURNS BETWEEN THE INSULATORS ARE TIGHTLY WRAPPED.

STEEL TIE WIRE AND ARMOUR ROD			
CONDUCTOR	ARMOUR ROD (SINGLE INSULATOR)	ARMOUR ROD (DOUBLE INSULATOR)	TIE WIRE (PER INSULATOR)
1/0 ACSR RAVEN 2 78 10	47" STEEL 2-58-10 (BLUE)	59" STEEL 2-58-11 (BLUE)	1.5m #8 STEEL 2-97-28
3/0 ACSR PIGEON 2 78 30	56" STEEL 2-58-30 (GREY)	68" STEEL 2-58-31 (GREY)	1.7m #8 STEEL 2-97-28
4/0 ACSR PENGUIN 2 78 40	60" STEEL 2-58-40 (BLACK)	72" STEEL 2-58-41 (BLACK)	1.7m #8 STEEL 2-97-28
266.8KCMIL ACSR-PARTRIDGE 2 78 50	64" STEEL 2-58-50 (GREEN)	64" STEEL 2-58-50 (GREEN)	1.8m #8 STEEL 2-97-28

ALUMINUM TIE WIRE AND ARMOUR ROD			
CONDUCTOR	ARMOUR ROD (SINGLE INSULATOR)	ARMOUR ROD (DOUBLE INSULATOR)	TIE WIRE (PER INSULATOR)
1/0 ACSR RAVEN 2 78 10	TBD	TBD	1.5m #4 ALUMINUM 2-97-04
3/0 ACSR PIGEON 2 78 30	56" ALUMINUM 2-59-29 (GREY)	68" ALUMINUM 2-59-30 (GREY)	1.7m #4 ALUMINUM 2-97-04
4/0 ACSR PENGUIN 2 78 40	60" ALUMINUM 2-59-39 (BLACK)	72" ALUMINUM 2-59-40 (BLACK)	1.7m #4 ALUMINUM 2-97-04
266.8KCMIL ACSR-PARTRIDGE 2 78 50	64" ALUMINUM 2-59-52 (GREEN)	64" ALUMINUM 2-59-52 (GREEN)	1.8m #4 ALUMINUM 2-97-04

NOTES:
1. TIE WIRE SHALL ONLY BE USED WITH ARMOUR RODS OF THE SAME MATERIAL TO AVOID DAMAGE AND/OR PREMATURE FAILURE.
2. COLOUR DENOTES THE COLOUR CODE FOUND ON THE ARMOUR ROD FOR IDENTIFICATION PURPOSES.

APPROVED FOR CONSTRUCTION

SaskPower – DISTRIBUTION STANDARDS			
APPROVAL L.MOEN	DESIGN CHK. D.DONAIS	DRN. D.REDEKOPP CHKD.	HAND TIE
		2018-11-22	
DATE OF ISSUE 2019-01-02		DRAWING NO. A-34-08 SHEET 1 of 1	REV. A