SERVICES 09

This standard covers standard conductor sizes, respective stock codes, and ampacities.

Table 1 - Triplex Cable						
Insul. Cond.	Messenger	Stock #	Dia. (in.)	Wt. (#/ft)	Summer	Winter
#2 AA - 7 Str.	#2 AA - 7 Str.	18 05 040	0.77	.241	150	195
1/0 AA - Str.	1/0 AA - 19 Str.	18 05 044	1.00	.381	205	265
4/0 AA - 19 Str.	4/0 AA - 19 Str.	18 05 064	1.31	.719	315	410

Table 2 - Quadruplex Cable						
Insul. Cond.	Messenger	Stock #	Dia. (in.)	Wt. (#/ft)	Summer	Winter
1/0 A.A. - 19 Str.	1/0 A.A. - 7 Str.	18 05 104	1.09	0.644	180	235
4/0 A.A. - 19 Str.	4/0 A.A. - 19 Str.	18 05 105	1.47	1.099	275	360

CONSTRUCTION NOTE(s):

1. Triplex cable shall be used for all new 3 wire service drop installations where its current rating is adequate and the voltage is less than 300 volts. Quadruplex cable should only be used on 4-wire services. Where the ratings of triplex and quadruplex cables are exceeded, open wire services shall be installed using covered conductors tabulated in DCS **08 00 01 00.** These conductors may also be used for repair and maintenance of existing open wire services.

2. #2 Triplex shall be used for most 200 Amp services. #1/0 and larger triplex and quadruplex are primarily for commercial or industrial customer where larger capacity is needed.

3. Triplex cable should not be used on 480 volt service. It is rated 600 volts phase to phase, not phase to ground. Quardruplex cable can be used for 277/480 volt service, but not for 480 volt, 3 wire service since the bare messenger must be grounded by NESC.

4. All connections of services to customer's service wires shall be adequately arranged to prevent moisture entrance at the weatherhead. Preferable construction is for the weatherhead to be above the service wire connections with a drip loop in the latter. For services larger than residential and small commercial, see DCS **09 01 12 00**.

5. Tree guards should be used on original installations of triplex service cables where the cables go through trees or where trees have become a problem since the original installation. These 2 piece plastic tree guards are stocked for #4 (Stock #25 54 047), #2 (Stock #25 54 048) and #1/0 (Stock #25 54 049) triplex cable. The tree guard for #4 triplex (Stock #25 54 047) may be used for #6 duplex cable if the ends of the guard are securely taped to the cable.

REV	DATE	ENG	DESCRIPTION
13	07/01/21	WYW	Revised note 1 for the reference to DCS 08 00 01 00
12	01/01/21	WYW	Moved Expansion Shields data to new standard 09 00 01 02

Table 1 - Standard Expansion Shields Stock Codes and Working Loads		
Expansion Shield		Safe Working Load (Tension) In Lbs
Size	Stock #	
1/4"	21 51 009	175 (with lag screw)
1/4"	21 51 010	300 (with machine bolt)
5/16"	21 51 181	350 (with lag screw)
3/8"	21 51 055	350 (with lag screw)
3/8"	21 51 016	865 (with machine bolt)
1/2"	21 51 017	920 (with lag screw)
1/2"	21 51 018	1370 (with machine bolt)
5/8"	21 51 019	2430 (with machine bolt)

Table 2 - Expansion Shields Used for House Knob					
Expansion Shield		Drill Size	Exp. Shield Used With Wood Screw Type Wireholder		Application
Size	Stock #		Screw Size	Wireholder Stock #	
3/8"	21 51 055	5/8"	#22 x 2-1/4" Woodscrew	23 06 077	Used to attach wireholder insulators to masonry walls.

2 Table 3 - Expansion Shields for Wood or Lag Screws						
Expansion Shield		Drill Size	Exp. Shield Used With			
Size	Stock #		Brass Screw		Lag	
			Size	Stock #	Size	Stock #
1/4"	21 51 009	1/2"	#14 x 2"	21 71 022	1/4" x 2" 1/4" x 2-1/2" 1/4" x 4"	21 65 017 21 65 018 23 60 002

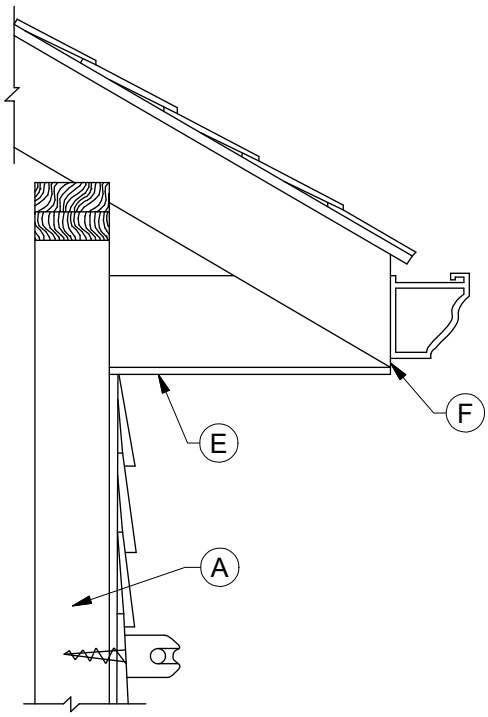
Table 4 - Expansion Shields for Machine Bolts					
Expansion Shield		Drill Size	Expansion Shield Used With		Application
Size	Stock #		Bolt Size	Bolt Stock #	
3/8"	21 51 016	5/8"	3/8" x 3"	23 52 194	Fastening clevises deadending up to #4 AWG services inclusive. Up to 750 kcmil on brackets along masonry walls.
1/2"	21 51 018	7/8"	1/2" x 4"	23 52 034	Fastening clevises deadending up to #2 to 4/0 AWG services inclusive
5/8"	21 51 019	1"	5/8" x 4"	23 52 200	Fastening clevises, deadending 500 kcmil and 750 kcmil services and network cable brackets on masonry walls.

REV	DATE	ENG	DESCRIPTION
1	01/01/21	WYW	Data moved from DCS 09 00 01 01
	xx/xx/xx	xxx	

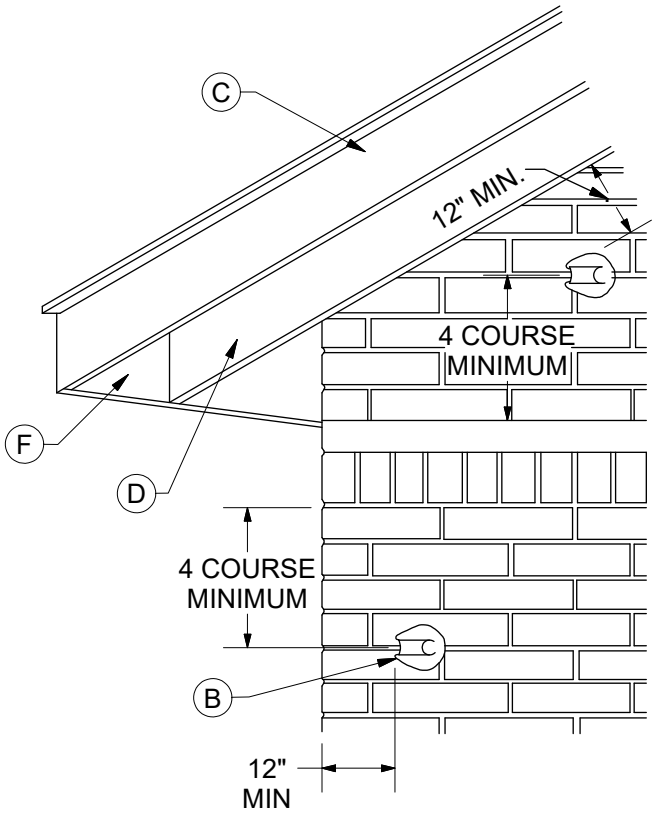
CONSTRUCTION NOTE(s):

1. Safe working loads given are for a good installation in a good grade of masonry. For expansion shields used with machine bolts (normally used for the heavier loads) this means placing the shield in brick or concrete or if a brick seam is used, it shall be narrow and preferably filled with a cement mortar.

2. The expansion shield shown in Table 3 is for use with wood screws and lag screws. This assembly is normally used to attach service entrance cable, corner brackets and service entrance boxes to masonry walls. The length of the lag screw used will depend on the condition of the masonry and how deep the shield is set in the wall. The #14 x 2" screw shown is also used to fasten meter, meter enclosures, service entrance cable, etc. to wood frame building. In masonry this screw with shield is convenient to use and provides good holding power in sound masonry walls for light loads.



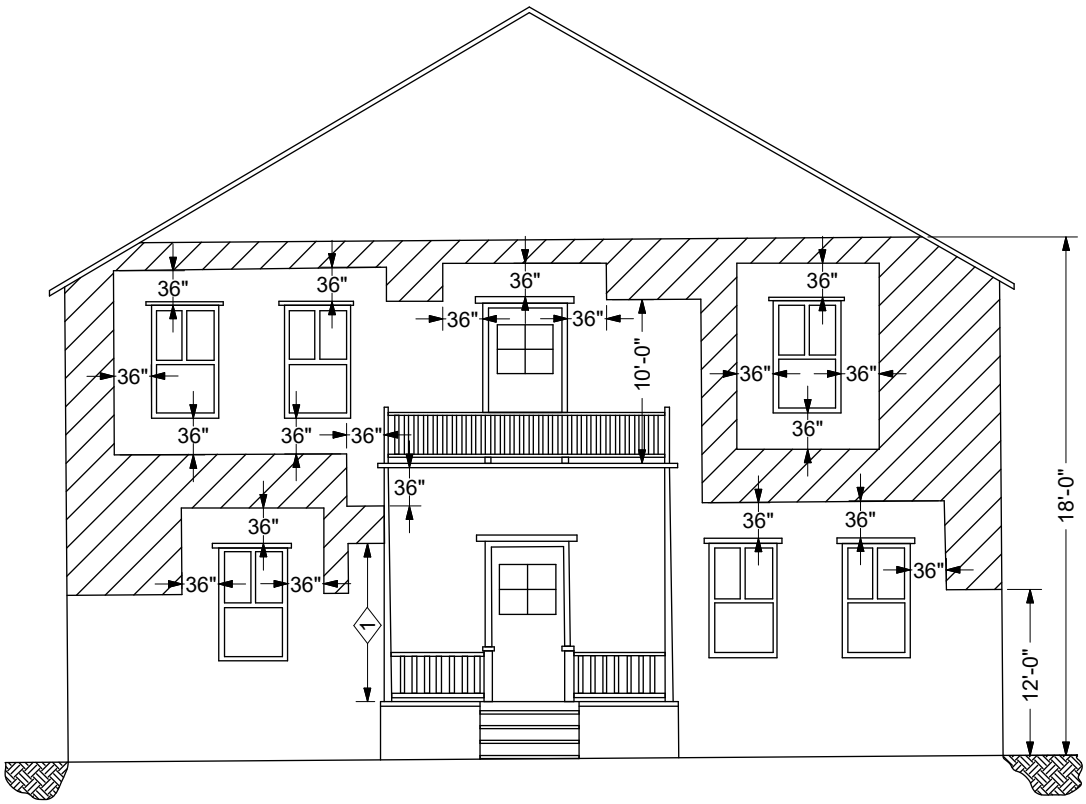
Frame-Composition Shingle or
Brick Veneer Construction



Brick or Solid Masonry Construction

ITEM	DESCRIPTION	Acceptable/Un-acceptable Point of Attachment
A	Building Studs	Acceptable
B	Mortar Joints	Acceptable
C	Outside Trim Board	Attachment allowed only if adequately reinforced
D	Inside Trim Board (Brick Building)	Attachment allowed only if adequately reinforced
E	Soffit Board	Attachment allowed only if adequately reinforced
F	Fascia Board	Un-Acceptable
G	Fire Walls, Parapet Walls or Chimneys	Un-Acceptable

REV	DATE	ENG	DESCRIPTION
1	01/01/21	WYW	Updated drawing and created description table
0	09/26/11	DCG	



CONSTRUCTION NOTE(s):

1. The first point of attachment for new electric service shall be in shaded spaces not less than 12' nor more than 18' above ground. It maybe necessary to attach services higher in order to meet minimum ground clearances on DCS **09 00 03 01**. Existing services may be reconductored to the original clearance or a minimum of 10' above ground. A service mast may be used if necessary to obtain the minimum clearances.

2. The customer's service outlet not be located above 18', but it may be necessary to attach services higher than 18' to meet the minimum ground clearances on DCS **09 00 03 01.**

3. Triplex cable or separate open wire service busses on buildings shall be placed in the spaces shown shaded.

4. Service conductors passing by doors, porches, fire escapes or similar locations, shall have a clearance of not less than 36 inches. Service conductors passing by windows shall have a clearance of not less than 36 inches.

5. Where the form of the building will not permit triplex cable or open wire service busses from the point of attachment to the service outlets, service entrance cable may be used for runs up to 15’. For runs in excess of 15’, the information must be submitted to Ameren project contact and must be approved by the appropriate Supervising Engineer before the project. Service entrance cable is only rated for 300 volts.

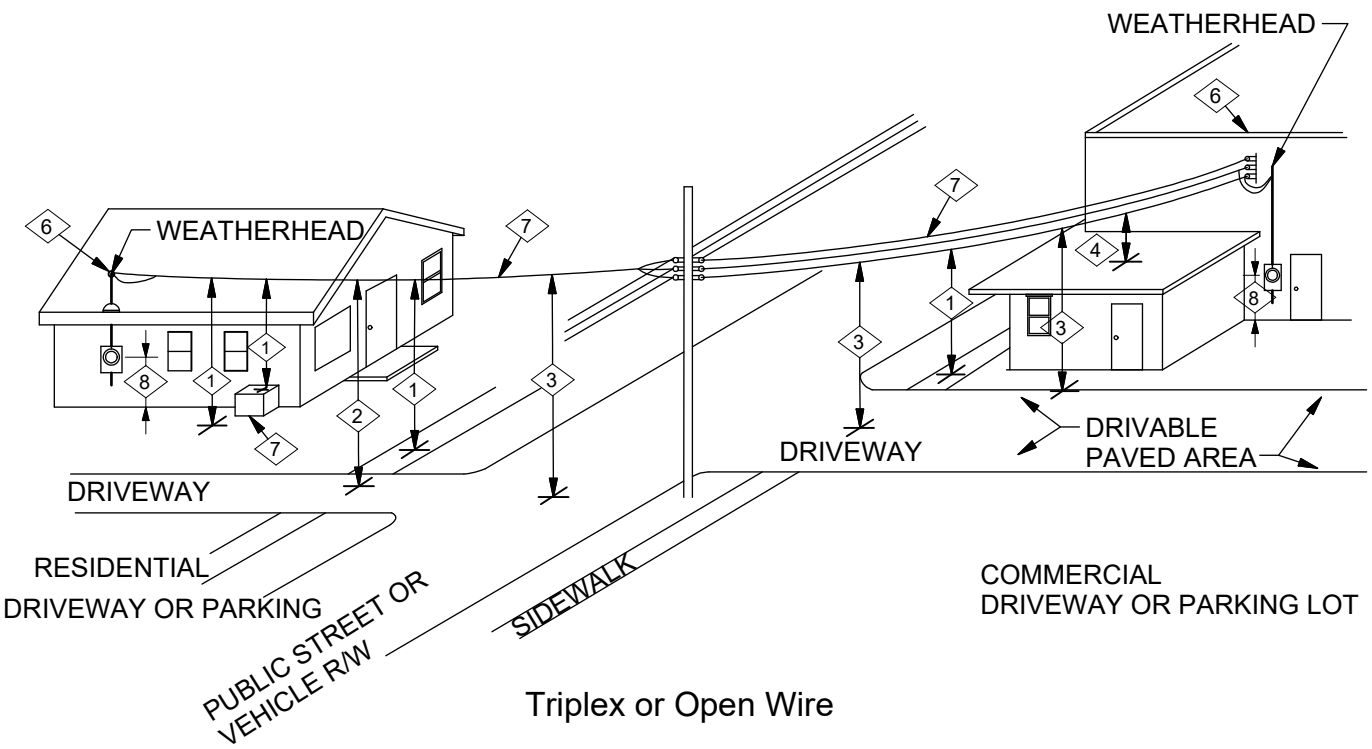
6. When service entrance cable is used, clearances between windows, openings, fire escapes, etc, and the service attachment or the service busses on the building may be reduced to 6 inches. This is a preferred minimum which may however be reduced if necessary.

7. Service conductors shall not be installed beneath openings through which materials may be moved, such as openings in farm and commercial buildings. Overhead wires shall not be run such that they obstruct entrance to these building openings.

8. In some instances the first set of wire attachments cannot be located in an acceptable space which will permit either direct connection or extension of a triplex cable or open wire bus to the service outlet. Examples of this are inadequate ground clearances in the service span, building materials that preclude fastenings being placed on them, load center being so placed that the service entrance location is confined to a specific part of the building, etc.

   In these cases, the use of Service Entrance Cable is permitted from the first point of attachment to the service entrance. Service Entrance Cable is only rated for 300 volt services

9. On existing services when the customer has not changed the original service entrance facilities, the service wires maybe replaced at the original clearances. If the customer has installed a new service entrance, then the new facilities and service wires must comply with the current requirements.



Triplex or Open Wire

DESIGN NOTE(s):

Over Ground (per 2017 NESC 232)

1. 12 ft. (triplex) or 12.5 ft. (open wire) over spaces and ways subject to pedestrian or restricted traffic only (no vehicles over 8 ft. high).

   EXCEPTION: Where height of a residential building does not allow these clearances, clearance may be reduced to 10 ft. at the drip loop or service drop for triplex cable limited to 150 volts to ground or 10.5 ft. for open wire limited to 300 volts to ground.

2. 16 ft. (triplex) or 16.5 ft. (open wire) over driveways, parking lots and alleys.

   EXCEPTION: Where height of a residential building does not allow these clearances, clearance may be reduced to 12 ft. for triplex service limited to 150 volts to ground or 12.5 ft. for open wire limited to 300 volts to ground.

3. 16 ft. (triplex) or 16.5 ft. (open wire) over roads, streets, alleys, non-residential driveways, parking lots and other areas subject to truck traffic.

   EXCEPTION: Services over state and federal commercial highways shall be no less than 18 ft. Services over Illinois limited access highways shall be no less than 20 ft.

Over Roofs (includes Parking Garages) (per 2017 NESC 234C)

4. Clearances from highest point in roof shall not be less than:

   A. 3.5 ft. (triplex) or 10.5 ft. (open wire) over roofs not accessible to pedestrians (see note 9).
   B. 11 ft. (triplex) or 11.5 ft. (open wire) over roofs accessible to pedestrians.
   C. 11 ft. (triplex) or 11.5 ft. (open wire) over roofs accessible to vehicles but not truck traffic.
   D. 16 ft. (triplex) or 16.5 ft. (open wire) over roofs accessible to truck traffic.

REV	DATE	ENG	DESCRIPTION
8	07/01/21	WYW	Revised design notes 6,7 & 8
7	01/01/21	WYW	Removed Fig 1, renumbered drawing and re-formatted notes

EXCEPTIONS:

A. For services attached to a building (including drip loops) and where voltage between conductors does not exceed 300 volts on a non-accessible roof, a reduction in clearance over the roof is permitted as follows:

   I. 3 ft.
   II. 18 in. within 6 ft. of and terminated at a through the roof raceway or approved support located not more than 4 ft. from the edge of roof.

5. Any equipment housing including air conditioning, platform or projection which a person might stand on.

6. Service mast, wire holder insulator, bracket attachment, and service attachment must be of adequate size and height to support services required.

7. Normally triplex service conductors, but may also be separate service conductors as shown for commercial services.

8. Center of meter glass shall be at a height of 3 ft. to 5.5 ft. except for 6.5 ft. over walkways less than 3 ft. wide.

9. A roof is considered accessible to pedestrians if there is a means of access through a doorway, ramp, stairway, or permanently mounted ladder.

REV	DATE	ENG	DESCRIPTION
8	07/01/21	WYW	Revised design notes 6,7 & 8
7	01/01/21	WYW	Removed Fig 1, renumbered drawing and re-formatted notes

The table below provides wire sag conditions that will result in 600 lbs. or less tension under NESC heavy loaded conditions. Sag values may be increased to reduce tension provided the minimum L-G clearance specified in DCS **09 00 03 01** is maintained. Sag values are based on an attachment height of 12 feet at the user's facility and 22 feet at the pole (or secondary if service is a flying loop) except where noted. In case of uneven terrain adjustments in the attachments heights may be necessary.

Conductor				Span (ft.) / Sag (in.)				
Stock #	Description	Rated Strength (Lbs)	Temperature Deg. F Initial	25	50	75	100	125
18 05 048	#6 Duplex (w/ #6 ACSR neutral) (Shepherd)	1,190	0 - 32	32	65	65	63	60
			33 - 50	32	65	66	64	62
			51 - 68	32	65	66	66	64
			69 - 85	32	65	66	66	65
			86 -100	32	65	67	66	65
18 05 040	#2 Triplex (w/ #2 AAC neutral) (Clam)	1,350	0 - 32	27	62	65	57	45
			33 - 50	27	62	66	59	48
			51 - 68	27	62	66	60	49
			69 - 85	27	63	67	61	51
			86 -100	28	63	67	62	53
18 05 044	1/0 Triplex (w/ 1/0 AAC neutral) (Purpura)	1,990	0 - 32	36	56	66	61	66 ◇4
			33 - 50	36	57	67	63	68 ◇4
			51 - 68	36	57	67	64	69 ◇4
			69 - 85	36	57	68	65	71 ◇4
			86 -100	37	58	68	66	72 ◇4
18 05 064	4/0 Triplex (w/ 4/0 AAC neutral) (Portunus)	4,020	0 - 32	29	69	56	62	91 ◇3
			33 - 50	29	70	57	64	92 ◇3
			51 - 68	29	70	57	65	93 ◇3
			69 - 85	30	70	58	66	94 ◇3
			86 -100	30	70	58	66	95 ◇3
18 05 104	1/0 Quadruplex (w/ 1/0 AAC neutral) (Criollo)	1,990	0 - 32	8	55	49	47	75 ◇5
			33 - 50	9	55	50	49	77 ◇5
			51 - 68	9	56	51	50	78 ◇5
			69 - 85	10	56	51	51	79 ◇5
			86 -100	10	56	52	52	80 ◇5
18 05 105	4/0 Quadruplex (w/ 4/0 AAC neutral) (Oldenburg)	4,020	0 - 32	28	54	49	67 ◇5	◇6
			33 - 50	29	54	50	68 ◇5	◇6
			51 - 68	29	55	51	69 ◇5	◇6
			69 - 85	29	55	51	70 ◇5	◇6
			86 -100	29	55	52	71 ◇5	◇6

CONSTRUCTION NOTE(s):

1. Maximum tension may be less than 600 lbs. when limited by conductor strength or minimum sags.
2. Maximum final sag may occur at either NESC heavy loaded conditions or at maximum conductor operating temperature of 90°C (194°F) at which all of these conductors are rated.

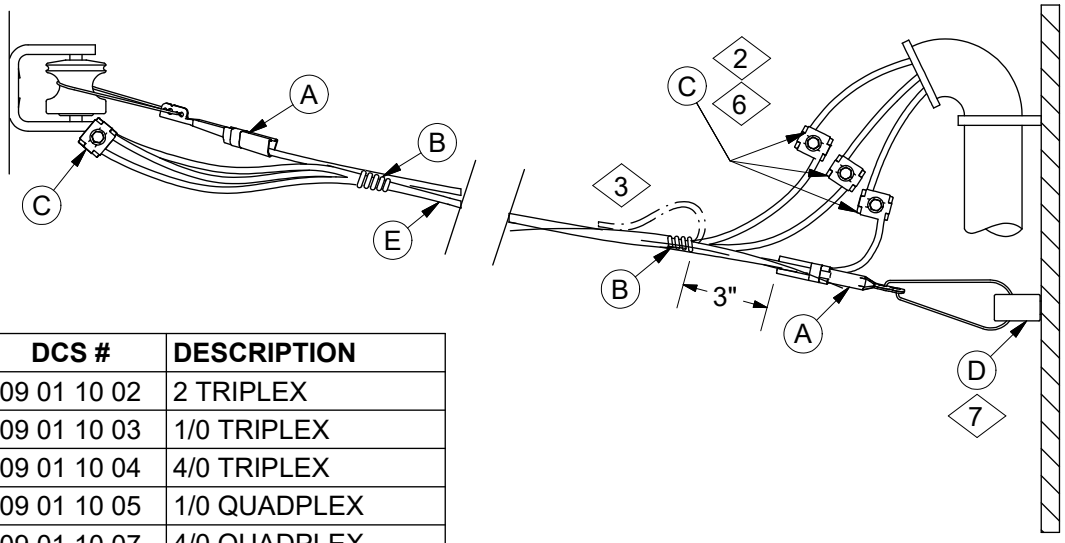
◇3 Minimum attachment height at pole (or secondary for flying loops): 30 feet.

◇4 Minimum attachment height at pole (or secondary for flying loops): 25 feet.

◇5 Minimum attachment height at pole (or secondary for flying loops): 26 feet.

◇6 For spans exceeding those in the table please contact Standards.

REV	DATE	ENG	DESCRIPTION
7	07/01/25	WYW	Revised Table
6	07/01/21	WYW	Added stk # and rated strength to each conductor



DCS #	DESCRIPTION
09 01 10 02	2 TRIPLEX
09 01 10 03	1/0 TRIPLEX
09 01 10 04	4/0 TRIPLEX
09 01 10 05	1/0 QUADPLEX
09 01 10 07	4/0 QUADPLEX

CONSTRUCTION NOTE(s):

1. Max service drop lengths: #2 Triplex - 140 ft.; 1/0 Triplex and quadplex - 75 ft.

2. Use parallel groove clamps on 1/0 and larger services. Do not use insulated sleeves on bare messenger. Use bare sleeves or parallel groove clamps.

3. For 2 wire service, tape house end of the unused lead. Fold back triplex cable and tape securely thereto.

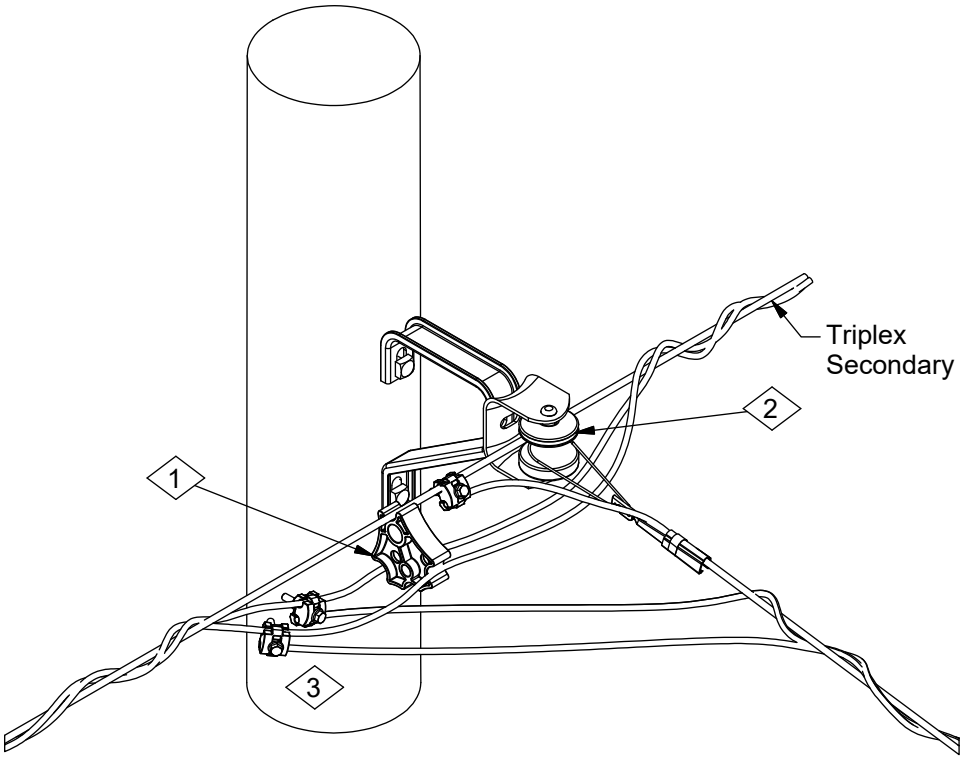
4. See DCS **09 00 04 01** for service sag table and **09 00 03 01** for service clearance chart.

5. Use compression sleeve for smaller than 1/0 conductor. The available compression sleeves are shown as below:
   a. Stock #17 60 403 for #2 str to #2 str insulated (red/red)
   b. Stock #17 60 406 for #2 str to #4 str insulated (red/orange)
   c. Stock #17 60 404 for #2 solid to #4 str, non-insulated (orange/orange)

6. Wire holder insulator is provided by Ameren and installed by customer in MO, and provided and installed by customer in IL.

	ITEM	STK / DCS #	DESCRIPTION 09 01 10 **	02	03	04	05	07
	A	17 51 123	Clamp, DE, #2 Triplex	2	-	-	-	-
		17 51 125	Clamp, DE, 1/0 Triplex & Quad.	-	2	-	2	-
		17 51 144	Clamp, DE, 4/0 Triplex & Quad.	-	-	2	-	2
	B	25 53 077	Tape, Electrical, Black, 1-1/2"	1	1	1	1	1
2,5 @	C	**07 00 25 ** **	Clamp, Parallel Groove	6	6	6	6	6
6 @	D	**09 01 51 ** **	Service Attachment	1	1	1	1	1
	E	18 05 040	Cable, Triplex, #2	#	-	-	-	-
		18 05 044	Cable, Triplex, 1/0	-	#	-	-	-
@		18 05 064	Cable, Triplex, 4/0	-	-	#	-	-
		18 05 104	Cable, Quadplx., 1/0	-	-	-	#	-
		18 05 105	Cable, Quadplx., 4/0	-	-	-	-	#

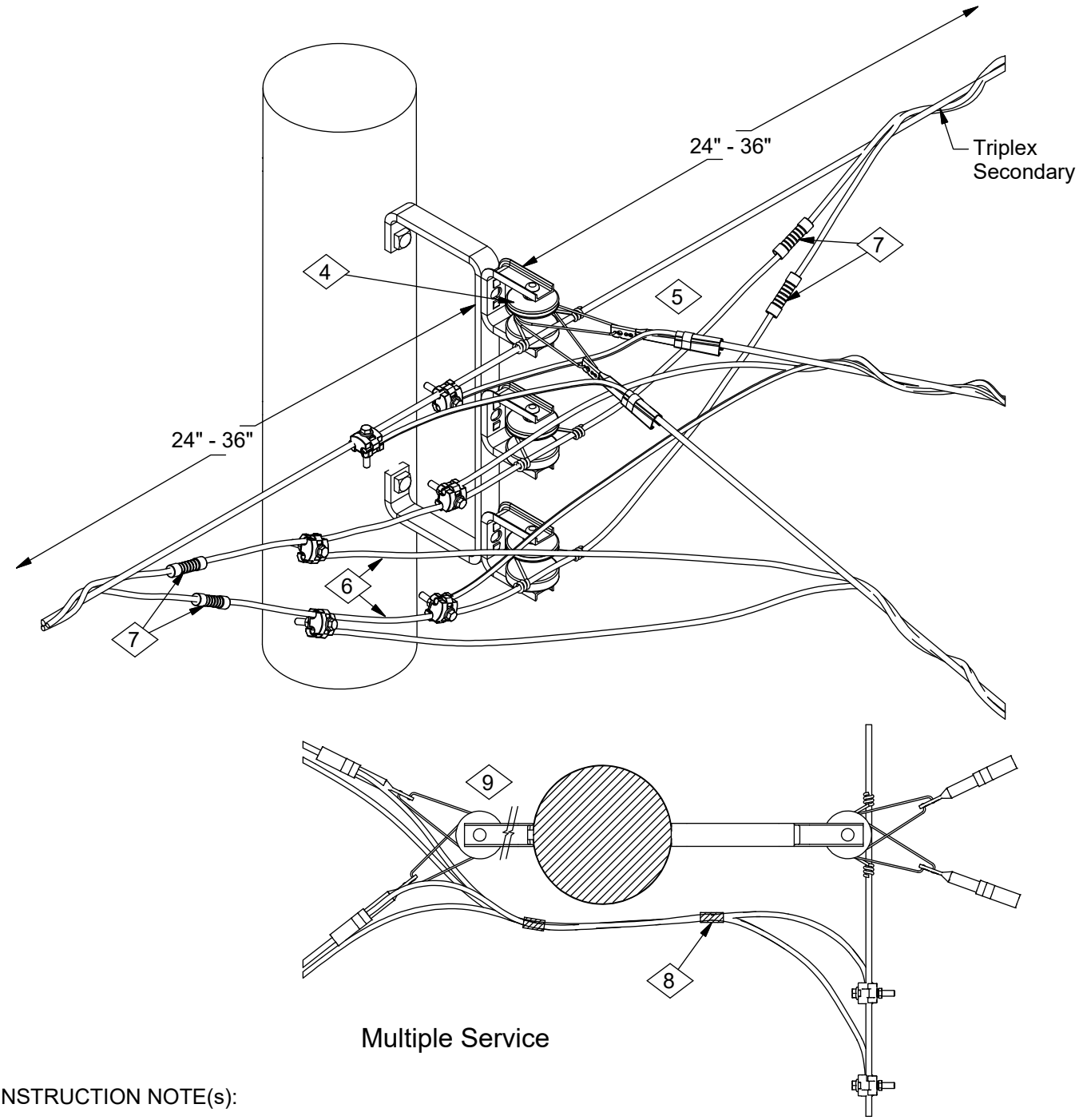
REV	DATE	ENG	DESCRIPTION
10	07/01/25	WYW	Revised Notes and Item B
9	07/01/21	WYW	Added note 7



Single Service

CONSTRUCTION NOTE(s):

1. Insert triplex spacer Stock #23 17 227 between conductors.
2. Attach wedge clamp to the secondary insulator or triplex spacer.
3. Stagger the location of the connections to not allow the connections to contact one another.

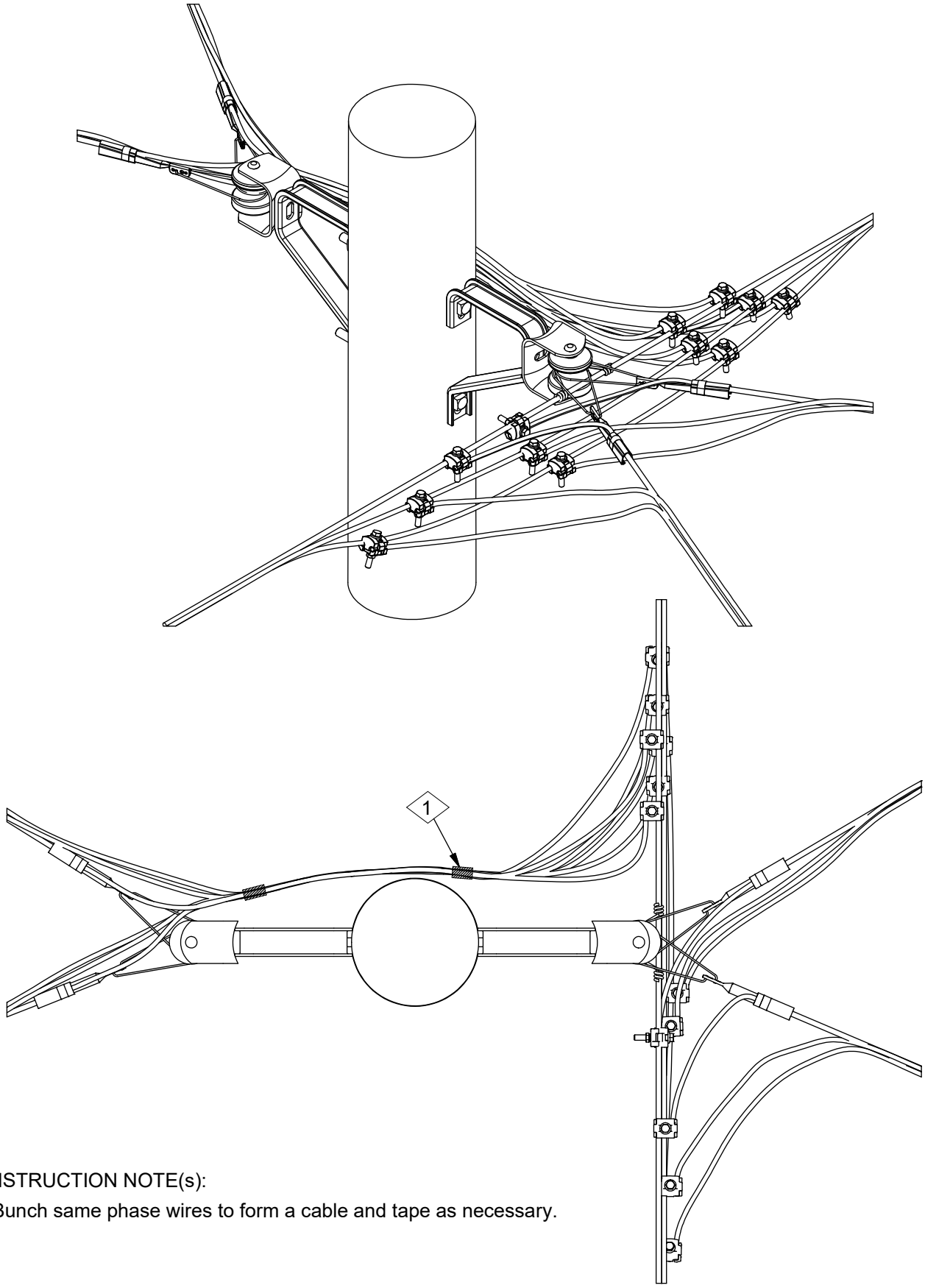


Multiple Service

CONSTRUCTION NOTE(s):

4. Neutral position on rack should be consistent with operating company practice.
5. Attach wedge clamp for service to the neutral conductor insulator.
6. Use 8 to 10 feet of new 600V wire (obtained from new triplex of same size) for extension to lower phase position or rack.
7. Use non-tension sleeves to splice the new insulated conductors into the triplex secondary (Stock #17 60 418) for 4/0 to 4/0Al.).
8. Bunch same phase wires to form a cable and tape as necessary.
9. When required, use extension bracket on both sides, DCS **06 01 03 ****.

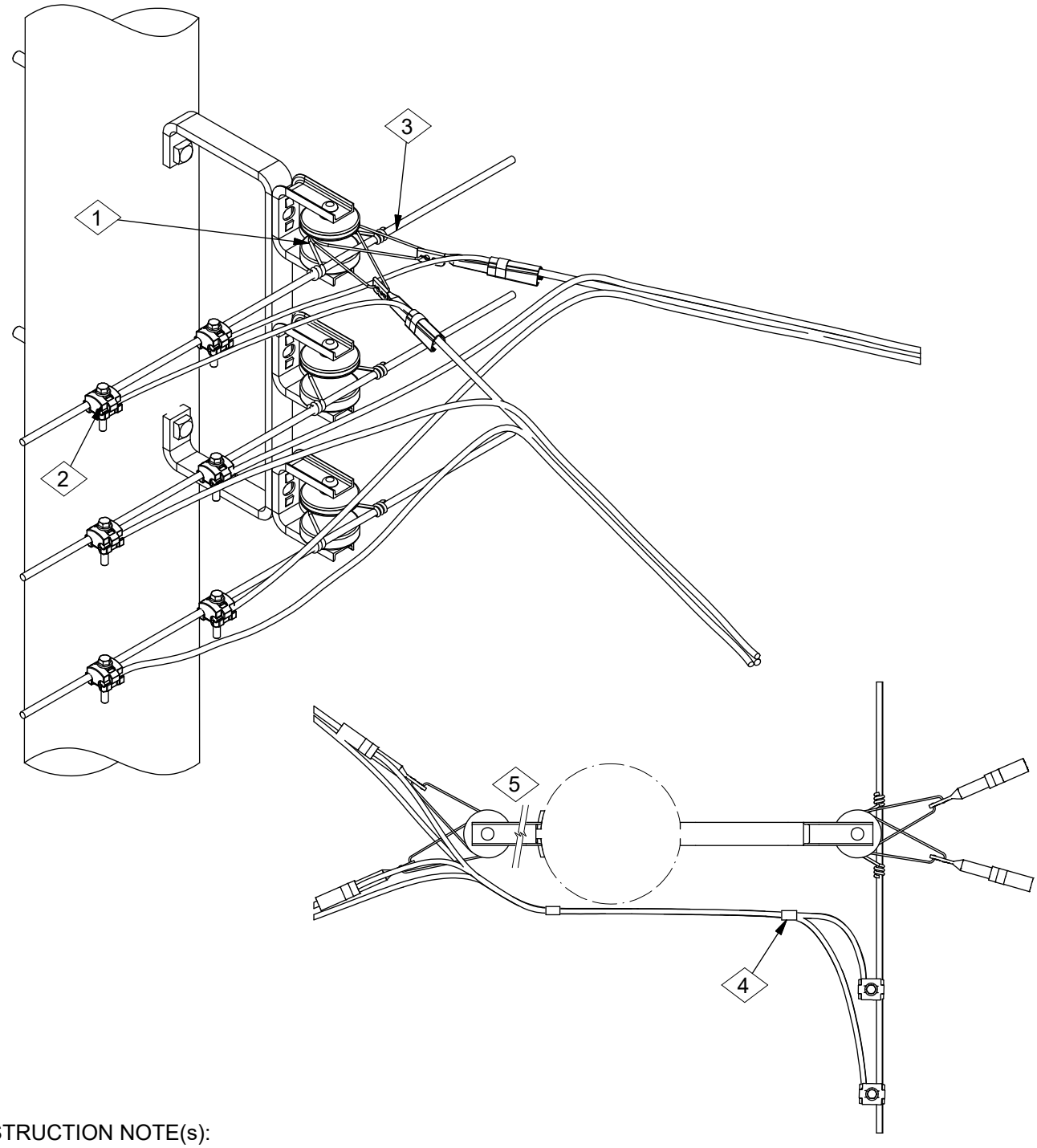
REV	DATE	ENG	DESCRIPTION
2	07/01/21	WYW	Revised note 3 to not allow; Revised note numbers on page 2
1	01/01/21	WYW	Converted to new format



CONSTRUCTION NOTE(s):

1. Bunch same phase wires to form a cable and tape as necessary.

REV	DATE	ENG	DESCRIPTION
2	01/01/21	WYW	Converted to new format
1	09/18/06	JMW	



CONSTRUCTION NOTE(s):

1. Attach wedge clamp to neutral conductor insulator (shown in the drawing). Neutral may be on top or middle position of the rack based on the operating company.

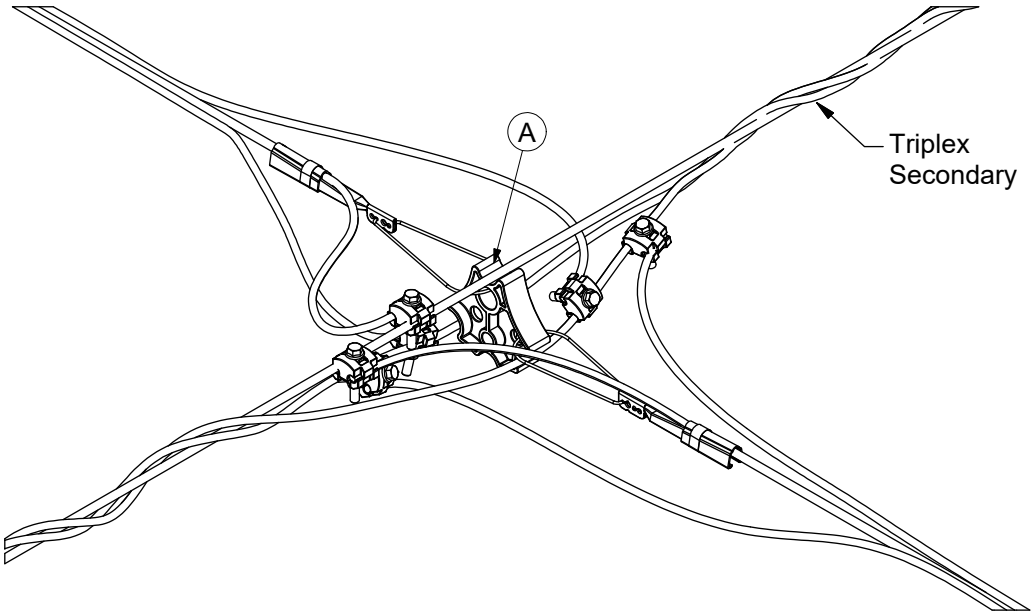
2. To prevent corrosion, apply lubricant before and after installing clamp, on voltage below 5kV tape connector.

3. Secondary conductor may be tied to either inside or outside of clevis.

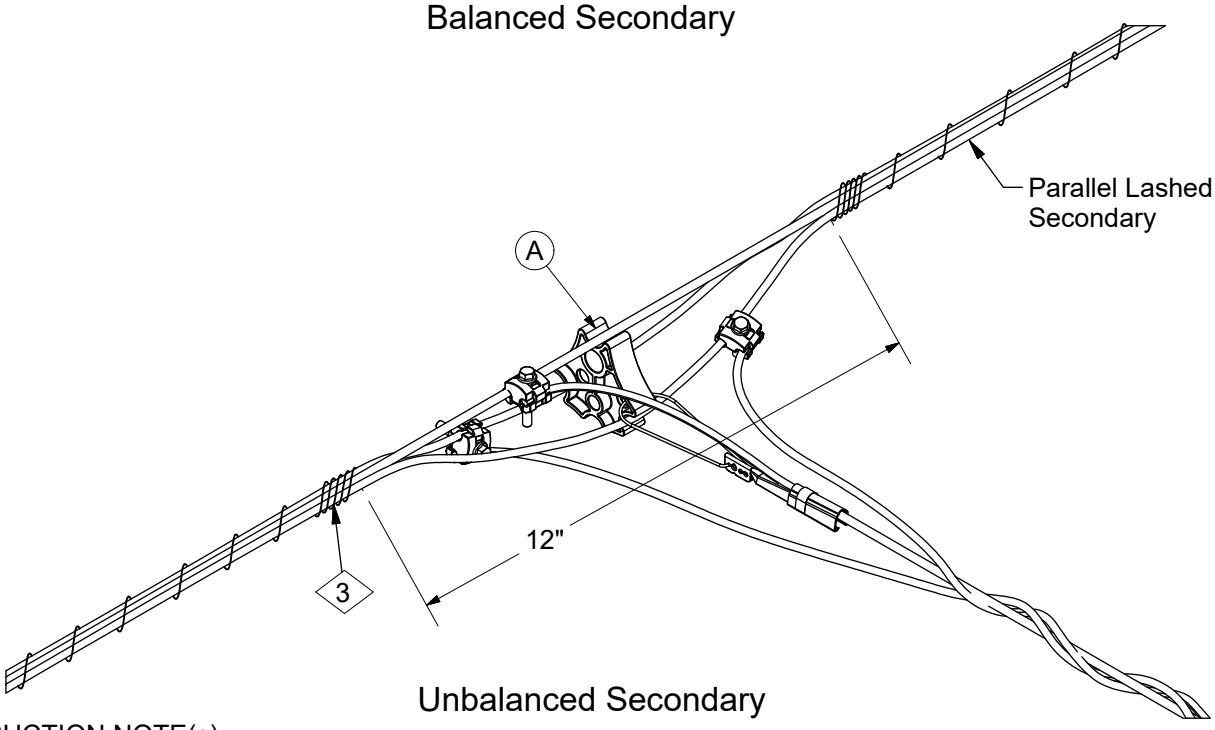
4. Bunch same phase wires to forma cable and tape as necessary.

5. When required, use extension bracket on both sides, DCS **06 01 03 **.**

REV	DATE	ENG	DESCRIPTION
5	07/01/21	WYW	Revised note 1 to add neutral installation
4	01/01/21	WYW	Converted to new format



Balanced Secondary



Unbalanced Secondary

CONSTRUCTION NOTE(s):

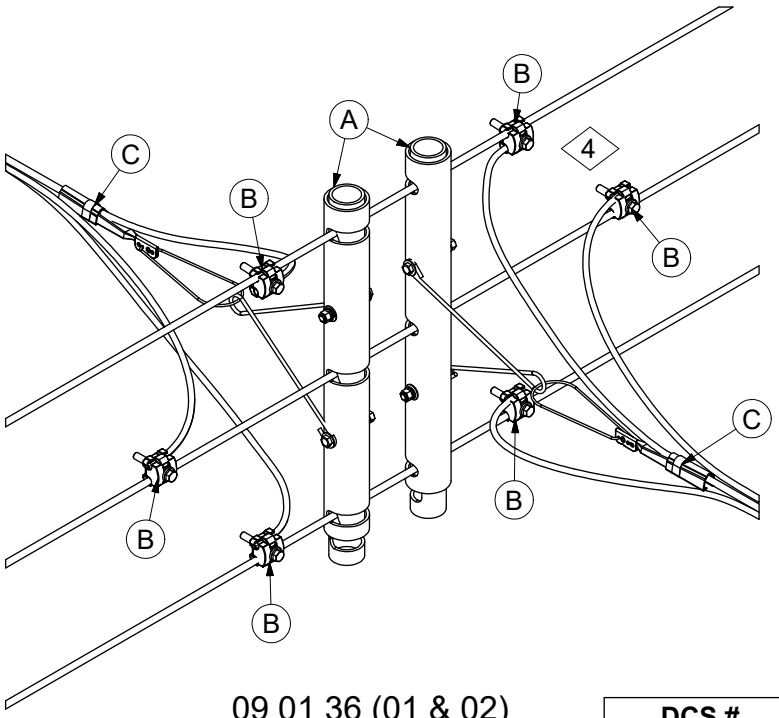
1. Pole separations in excess of 125 feet may require the installation of pole to pole or pole to anchor guying. For this condition or with 1/0 or larger services, use DCS **09 01 38 ****.

2. See DCS **09 01 10 ** ** for installation of service.

3. Terminate lashing ribbon with 5 close turns around entire cable and end on messenger with 2 turns and a half hitch. Train neatly and eliminate excess slack.

ITEM	STK / DCS #	DESCRIPTION 09 01 34 **	00
A	23 17 227	Spacer, Electrical Cable, 600v	1

REV	DATE	ENG	DESCRIPTION
3	07/01/21	WYW	Revised top drawing to balanced and bottom drawing to unbalanced
2	01/01/21	WYW	Converted to new format



09 01 36 (01 & 02)

DCS #	DESCRIPTION
09 01 36 01	Balanced
09 01 36 02	Unbalanced

CONSTRUCTION NOTES:

1. This type of flying service is preferred for open wire secondary. See DCS **09 01 38 02** for alternate method. Neutral position shown in the drawing may be on top or middle position of rack based on the operating company.

2. Installation of unbalanced flying services in spaces where the construction is light and pole separation is in excess of 125 feet may require the installation of pole to pole or pole to anchor guying. Refer to DCS **09 01 38 02**.

3. See DCS **09 01 10 **** for termination of cable at house.

4. To prevent corrosion, apply lubricant (Stock #31 59 058) before and after installing clamp. On voltages below 5 kV, tape connector.

5. #2 triplex can be used for spans up to 140 feet, providing clearances required between low point of triplex service cable and finished ground grade is maintained. Refer to DCS **09 00 03 01**.

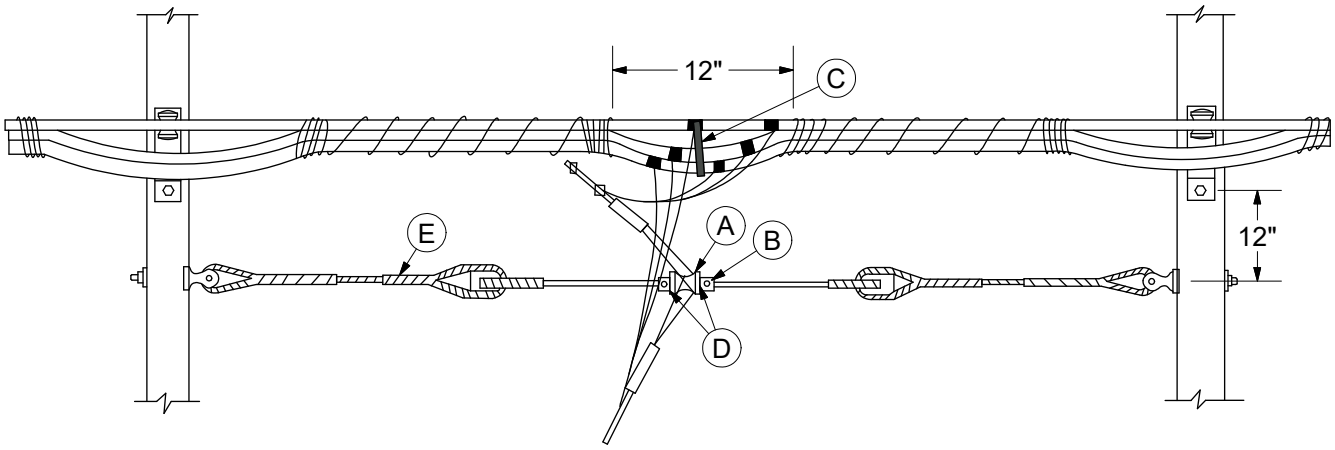
6. This type of flying service shall not be used for 1/0 or larger triplex. Use alternate construction, DCS **09 01 38 02**.

7. Secondary spreader includes telescoping tubes and one bridle to be used for unbalanced services. If a spare or salvaged bridle is available this can be added for balanced services (back-to-back). Otherwise, install a second unbalanced spreader facing the opposite direction.

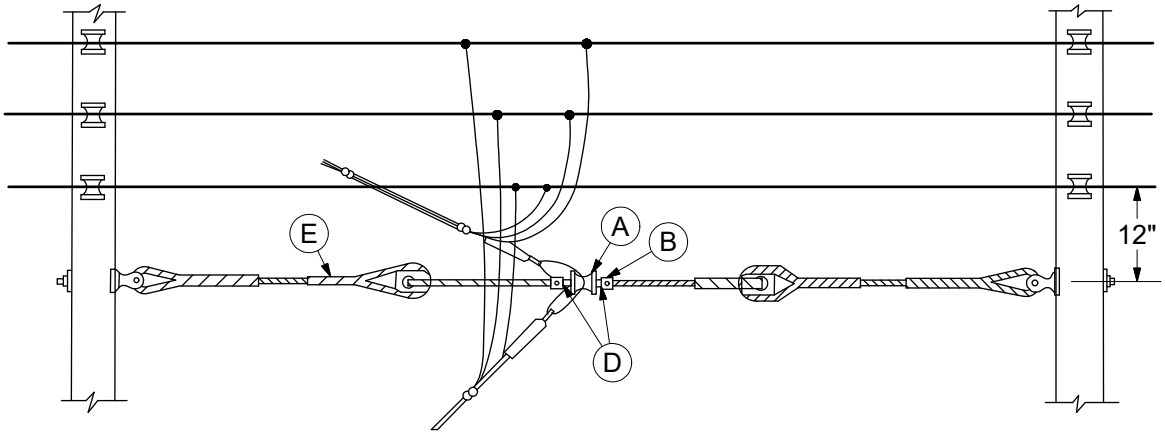
8. Aluminum duplex cable, Stock #18 05 048, used for multiple street lighting circuits, may be attached to secondary as shown above. Use Stock #17 51 123 for wedge clamp.

ITEM	STK / DCS #	DESCRIPTION 09 01 36 **	01	02
A	23 17 219	Spreader Sec. 2 Cu & 4/0 AA	2	1
B	17 51 032	Clamp, Parallel Groove	6	3
C	17 51 123	Clamp, DE, #2 Triplex	2	1

REV	DATE	ENG	DESCRIPTION
5	07/01/21	WYW	Revised note 1 to add neutral installation
4	01/01/21	WYW	Converted to new format



09 01 38 01
Parallel Lashed or Triplex Secondary

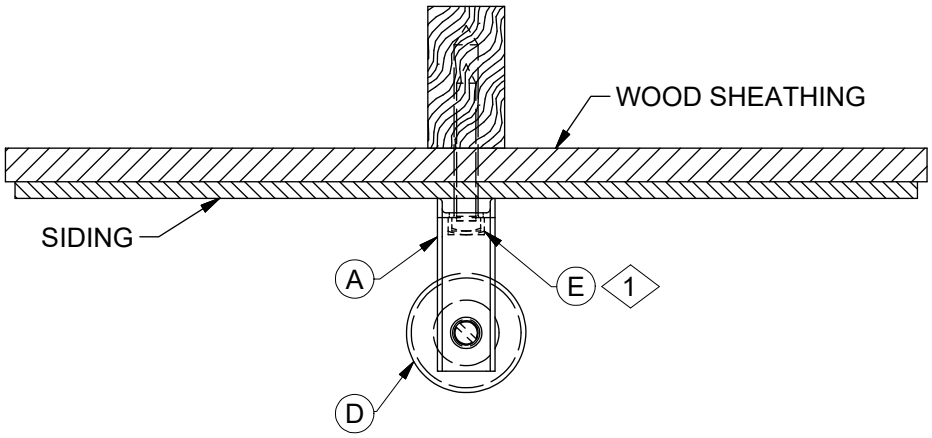


09 01 38 02
Open Wire Secondary

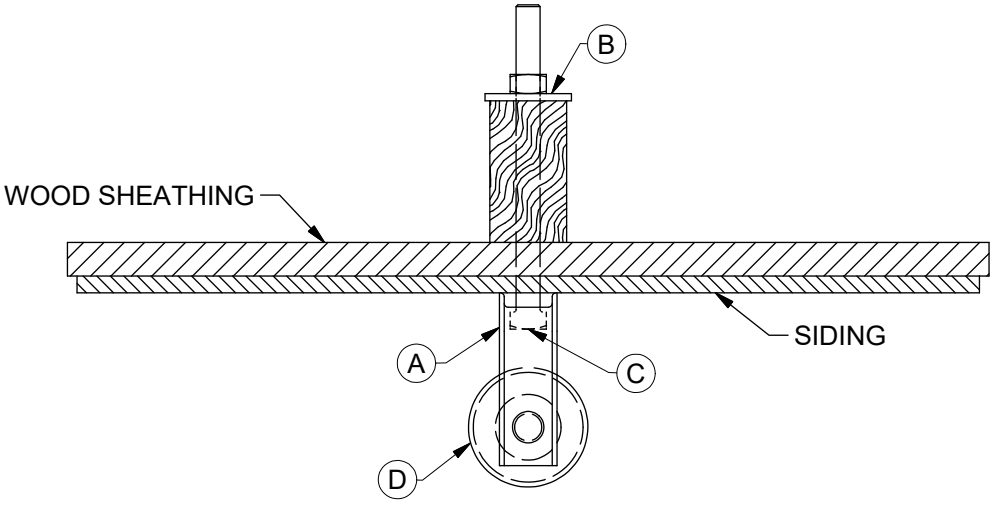
CONSTRUCTION NOTE(s):

1. Installation of unbalanced flying services in spaces where the construction is light and pole separation is in excess of 125 feet may require the use of these standards.

	ITEM	STK / DCS #	DESCRIPTION 09 01 38 **	01	02
	A	25 59 044	Insulator, Spool	1	1
	B	17 51 032	Clamp, Parallel Groove	2	2
	C	23 17 227	Spacer, Electrical Cable, 600v	1	-
	D	23 66 017	Washer - Round 1/2"	2	2
@	E	**11 00 46 03**	Insulated, Guy Unit	1	1



09 01 49 01 <3>



09 01 49 02 <2> <3>

CONSTRUCTION NOTE(s):

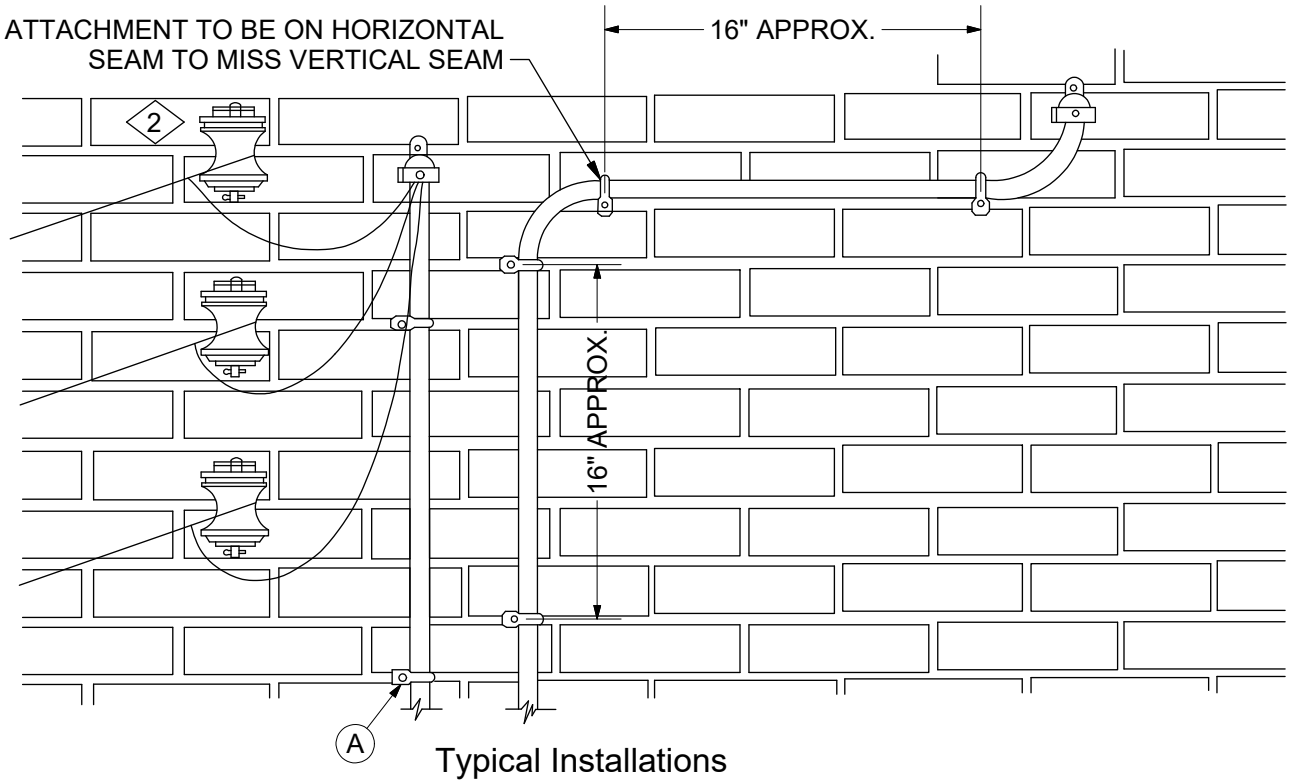
<1> Item E depends on thickness of sheathing:
a) Drill 3/8" lead hole for 1/2" x 4" lag screw
b) Drill 1/2" lead hole for 5/8" x 5" lag screw

<2> Normally used where stud is accessible from the inside.

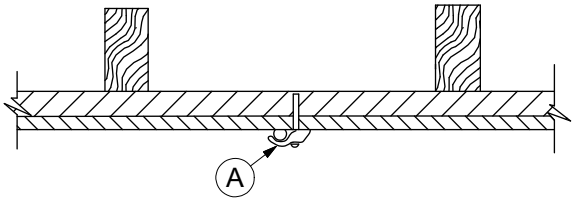
<3> Secondary clevis and spool insulator are provided by Ameren and installed by customer in MO, and provided and installed by customer in IL.

	ITEM	STOCK #	DESCRIPTION 09 01 49 **	01	02
3	A	23 06 040	Clevis - Secondary	1	1
	B	23 66 027	Washer, Flat, Square 5/8"	-	1
	C	23 52 061	Bolt, Mach., 5/8" x 8" w/ square nut	-	1
3	D	25 59 044	Insulator, Spool	1	1
1,@	E	23 60 011	Lag Screw - 5/8" x 5"	1	-
		23 60 007	Lag Screw - 1/2" x 4"	1	-

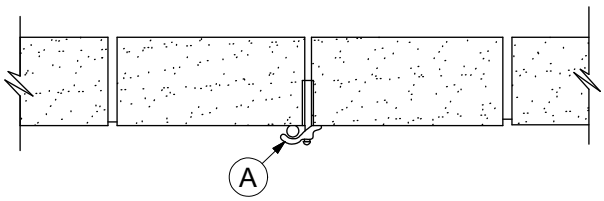
REV	DATE	ENG	DESCRIPTION
2	07/01/21	WYW	Added note 3; Revised bottom drawing description
1	01/01/21	WYW	Moved from DCS 06 01 56 & Moved text from drawing to const. notes



Typical Installations



09 01 50 01
Wood Siding Composition Shingles



09 01 50 02
Solid Masonry Brick - Brick Veneer or Cement

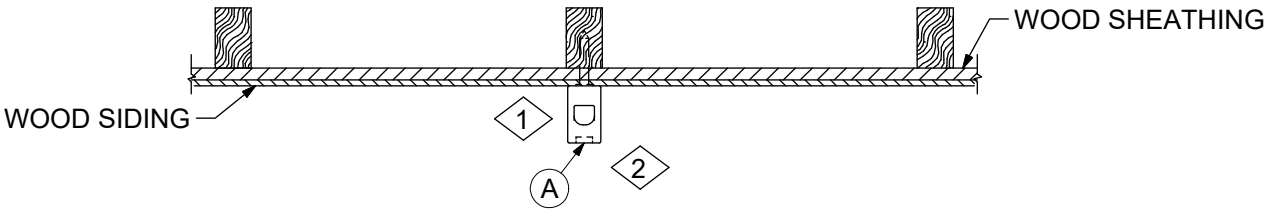
CONSTRUCTION NOTE(s):

1. Cable straps shall be installed in horizontal seams within 2 ft. of corner of building or side of window and shall be installed in vertical seams within 1 ft. of top of wall or upper or lower edge of window.

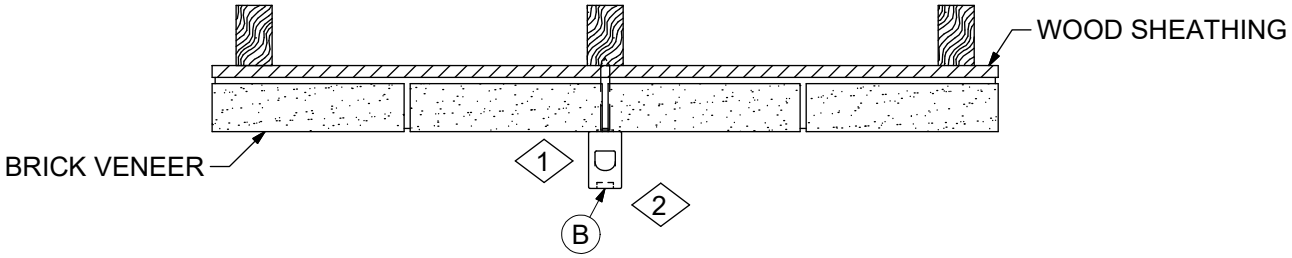
◇2. Secondary clevis and spool insulators are provided by Ameren and installed by customer in MO, and provided and installed by customer in IL.

	ITEM	STK / DCS #	DESCRIPTION 09 01 50 **	01 or 02
	A	21 71 022	Screw	#
		40 59 107	Cable Strap for #8-2	
		40 59 014	Cable Strap for #4 - 3 & #2-3	
		21 51 009	Shield Expansion	

REV	DATE	ENG	DESCRIPTION
4	07/01/21	WYW	Added note 2
3	01/01/21	WYW	Converted to new format



09 01 51 01
Wood Siding



09 01 51 02
Brick Veneer or Composition Shingles

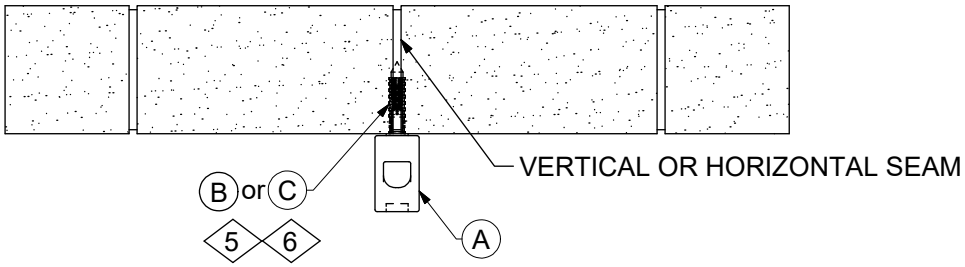
CONSTRUCTION NOTE(s):

1. Drill a lead hole 1/4" in diameter into stud or plate.

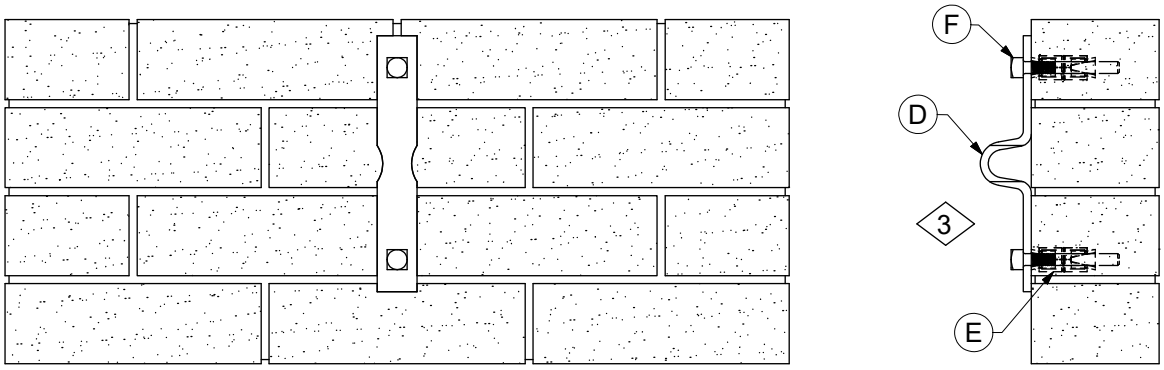
2. Wire holder insulator may be installed between studs where wall materials are sound. Wire holder insulator is provided by Ameren, and installed by customer in MO, and provided and installed by customer in IL.

	ITEM	STK / DCS #	DESCRIPTION 09 01 51 **	01	02
2	A	23 06 077	Insulator, Wire Holder - 2-1/4"	1	-
2	B	23 17 241	Insulator, Wire Holder - 3-1/2"	-	1

REV	DATE	ENG	DESCRIPTION
2	07/01/21	WYW	Revised note 2; Added note 7
1	01/01/21	WYW	Moved from DCS 06 01 50 **



09 01 51 (03 & 04) ◇7◇



09 01 51 (05 & 06) ◇4◇

DCS #	DESCRIPTION
09 01 51 03 09 01 51 04	#4 to #2 Triplex or Open Wire
09 01 51 05	1/0 Al Messenger
09 01 51 06	4/0 Al Messenger

CONSTRUCTION NOTE(s):

◇3.◇ Mount bracket vertically on seams so that it spans one brick.

◇4.◇ Also use for smaller services where due to nature of masonry porcelain knobs are unsatisfactory.

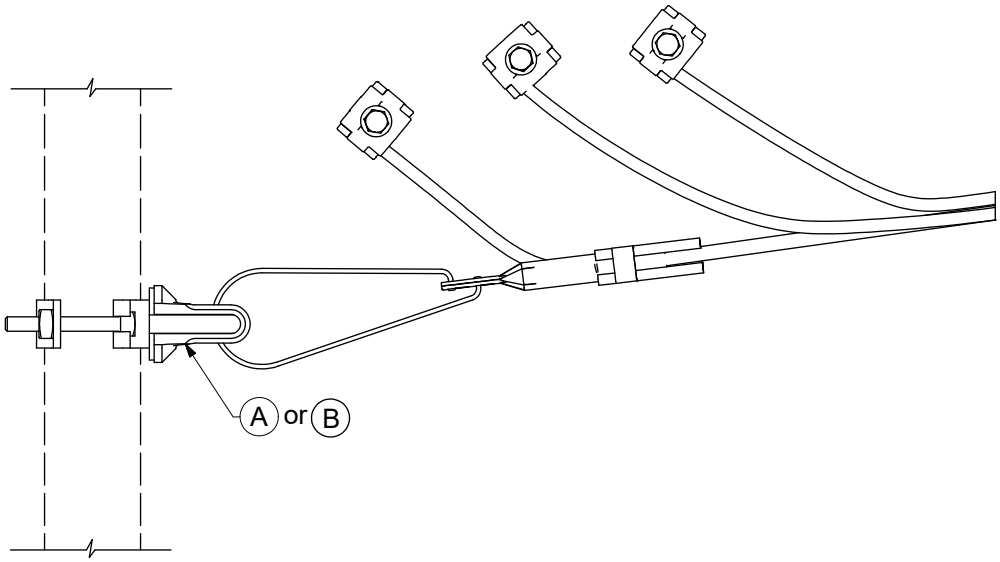
◇5.◇ To be used with porcelain body wire holder item A.

◇6.◇ To be used with nylon wire holder item A.

◇7.◇ Wire holder insulator is provided by Ameren and installed by customer in MO, and provided and installed by customer in IL.

	ITEM	STK / DCS #	DESCRIPTION 09 01 51 **	03	04	05	06
7	A	23 06 077	Insulator, Wire Holder - 2-1/4"	1	1	-	-
5	B	21 51 055	Shield, Exp,. #22 Screw	-	1	-	-
6	C	21 51 181	5/16" EXPANSION SHIELD	1	-	-	-
3	D	23 06 057	Bracket, Wall Triplex	-	-	1	1
	E	21 51 018	Shield, Exp., 1/2"	-	-	-	2
		21 51 016	Shield, Exp., 3/8"	-	-	2	-
	F	23 52 034	Bolt, Mach., 1/2" x 4" w/ square nut	-	-	-	2
		23 52 194	Bolt, Mach., 3/8" x 3" w/ square nut	-	-	2	-

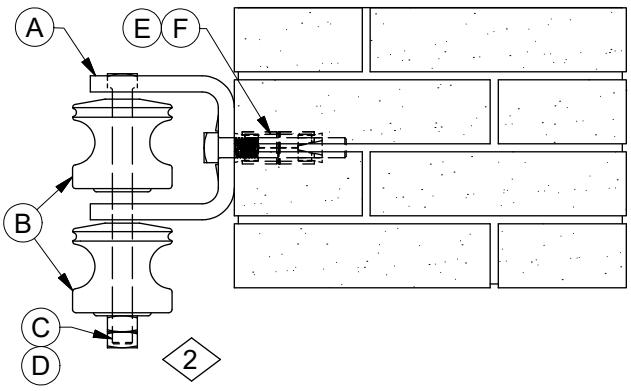
REV	DATE	ENG	DESCRIPTION
2	07/01/21	WYW	Revised note 2; Added note 7
1	01/01/21	WYW	Moved from DCS 06 01 50 **

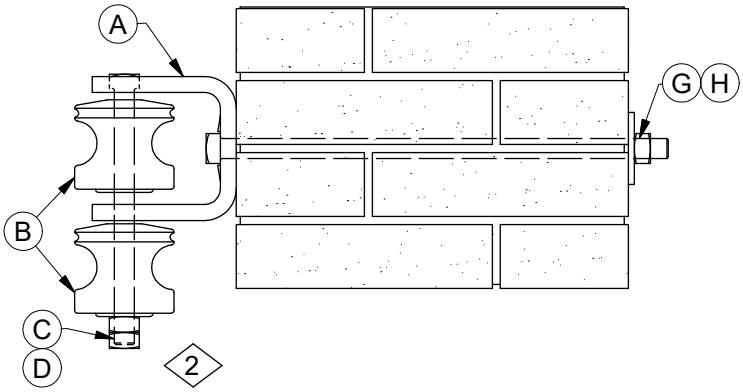


09 01 51 (07 & 08)

	ITEM	STK / DCS #	DESCRIPTION 09 01 51 **	07	08
7	A	23 06 075	Insulator, Wire Holder, 1-1/4" to 2-1/2" Mast	1	-
7	B	23 06 082	Insulator, Wire Holder, 3" to 4" Mast	-	1

REV	DATE	ENG	DESCRIPTION
2	07/01/21	WYW	Revised note 2; Added note 7
1	01/01/21	WYW	Moved from DCS 06 01 50 **





Solid Masonry - Brick Or Cement		
DCS #	Description	Conductor Range
09 01 53 01	1 Spool	Up to #4
09 01 53 02	1 Spool	#2 to #4/0
09 01 53 03	1 Spool	500 to 750 MCM
09 01 53 04	2 Spools ◇1	Up to #4
09 01 53 05	2 Spools ◇1	#2 to #4/0
09 01 53 06	2 Spools ◇1	500 to 750 MCM

Solid Masonry - Brick Or Cement		
DCS #	Description	Application
09 01 53 07	1 Spool	To be used when the stud is accesible from inside.
09 01 53 08	2 Spools ◇1	

CONSTRUCTION NOTE(s):

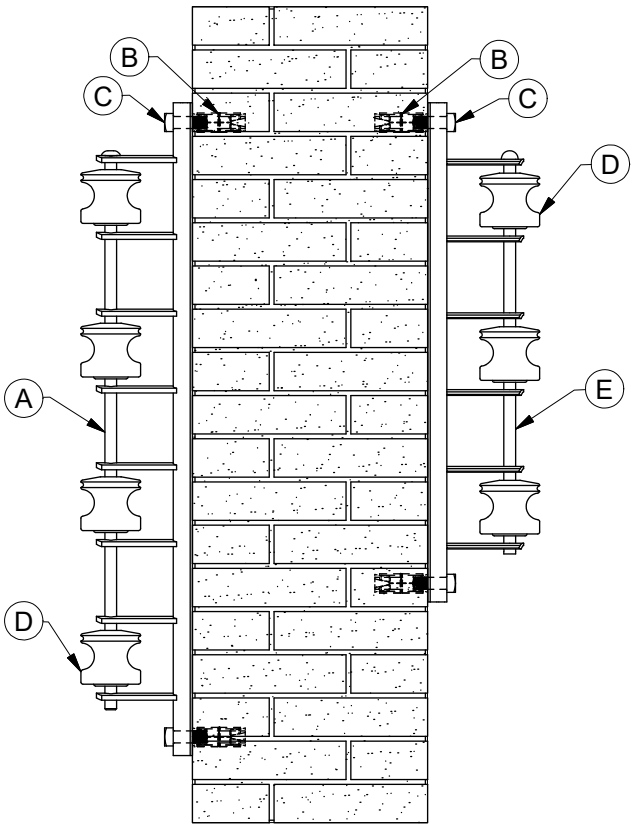
◇1. The double spool insulator is to be used only for attaching network cable to buildings excluding deadend constructions.

◇2. The 2 square nuts are jammed together.

◇3. Secondary clevis and spool insulator are provided by Ameren and installed by customer in MO, and provided and installed by customer in IL.

	ITEM	STOCK #	DESCRIPTION 09 01 53 **	01	02	03	04	05	06	07	08
3	A	23 06 040	Clevis - Secondary Insulator	1	1	1	1	1	1	1	1
3	B	25 59 044	Insulator, Spool	1	1	1	2	2	2	1	2
	C	23 52 061	Bolt, Mach., 5/8" x 8" w/ square nut	-	-	-	1	1	1	-	1
	D	23 65 011	Nut, Square, 5/8"	-	-	-	1	1	1	-	1
	E	21 51 016	Shield, Exp., 3/8"	1	-	-	1	-	-	-	-
		21 51 018	Shield, Exp., 1/2"	-	1	-	-	1	-	-	-
		21 51 019	Shield, Exp., 5/8"	-	-	1	-	-	1	-	-
	F	23 52 194	Bolt, Mach., 3/8" x 3" w/ square nut	1	-	-	1	-	-	-	-
		23 52 034	Bolt, Mach., 1/2" x 4" w/ square nut	-	1	-	-	1	-	-	-
		23 52 200	Bolt, Mach., 5/8" x 4" w/ square nut	-	-	1	-	-	1	-	-
	G	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut	-	-	-	-	-	-	1	1
	H	23 66 027	Washer, Flat, Square 5/8"	-	-	-	-	-	-	1	1

REV	DATE	ENG	DESCRIPTION
2	07/01/21	WYW	Added note 3
1	01/01/21	WYW	Moved from DCS 06 01 58 ** & created table for clarification



DCS #	DESCRIPTION
09 01 54 01	4-Wire
09 01 54 02	3-Wire

CONSTRUCTION NOTE(s):

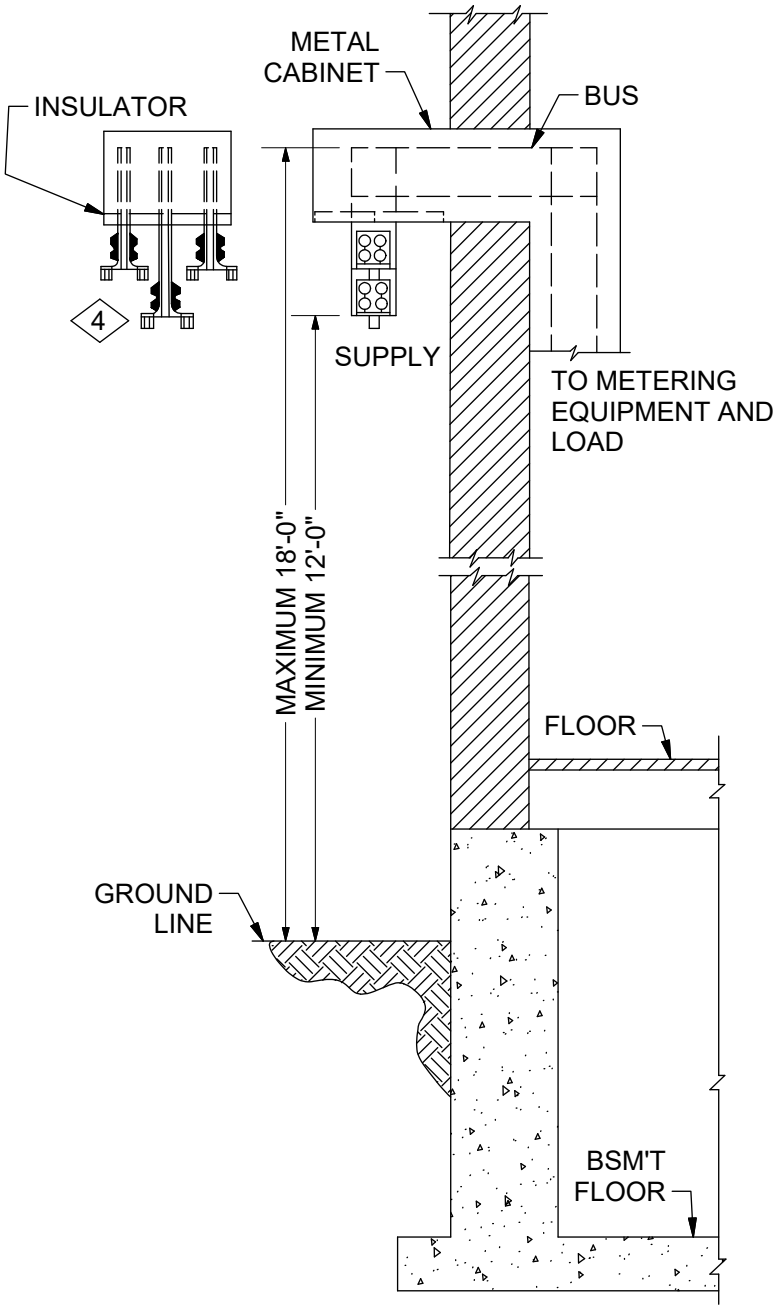
1. The square nut provided with machine bolt, is not used for this application.

2. Secondary wire rack and spool insulators are provided by Ameren and installed by customer in MO, and provided and installed by customer in IL.

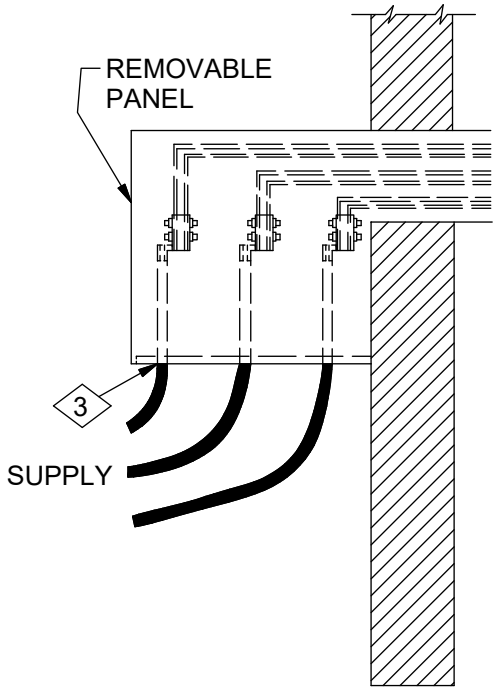
	ITEM	STOCK #	DESCRIPTION 09 01 54 **	01	02
2	A	23 11 004	Rack, Secondary, 4-Wire	1	-
	B	21 51 019	Shield, Exp., 5/8"	2	2
1	C	23 52 438	Bolt, Mach., 5/8" x 3" w/ square nut	2	2
2	D	25 59 044	Insulator, Spool	4	3
2	E	23 11 001	Rack, Secondary, 3-Wire	-	1

REV	DATE	ENG	DESCRIPTION
2	07/01/21	WYW	Added note 2
1	01/01/21	WYW	Moved from DCS 06 01 60 **

Method 1



Method 2
(Drawing shall be submitted for approval)



Metal Cabinet - Bolts & Lugs		
Service Size - Amps	NO.	Lug Size
0 - 1000	1	500 / 750
1001 - 2000	2	500 / 750
2001 - 3000	3	500 / 750
3001 - 4000	4	500 / 750

Equipment to be Furnished by Customer

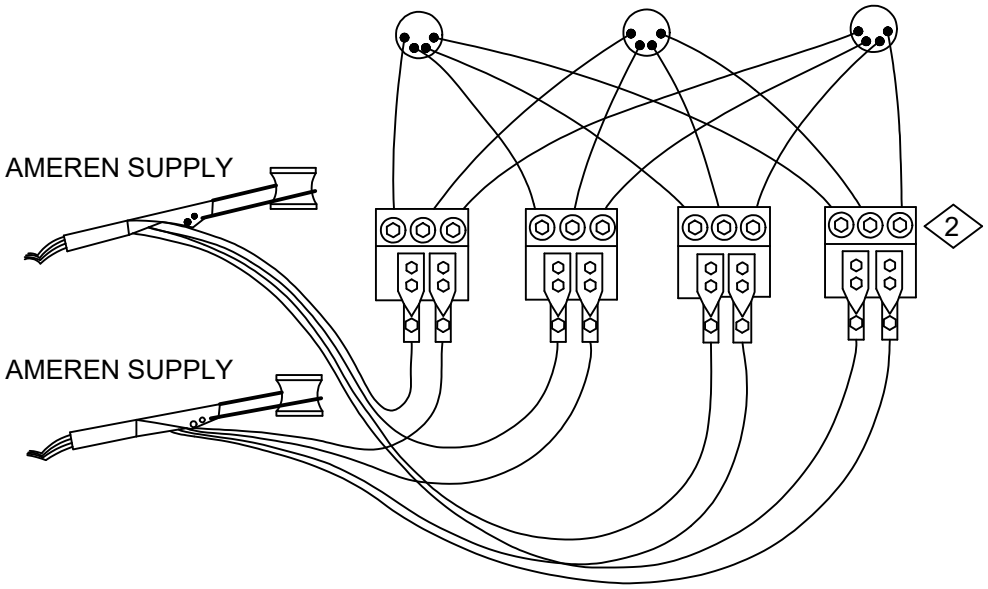
CONSTRUCTION NOTE(s):

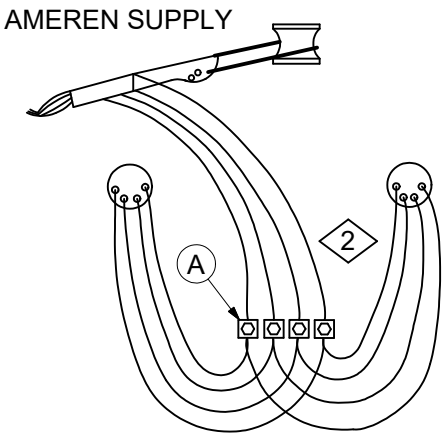
1. All equipment, including connector lugs and everdur bolts, shall be furnished and installed by customer. Ameren to make connection to service wires.
2. Any deviation from this standard shall be approved by Ameren Engineer prior to installation.

3. Insulator board to be drilled for conductors. Size to be determined by Ameren.

4. 3-Wire shown. For 4-Wire add 4th Bus.

REV	DATE	ENG	DESCRIPTION
2	01/01/21	WYW	Converted to new format
1	10/27/11	DCG	





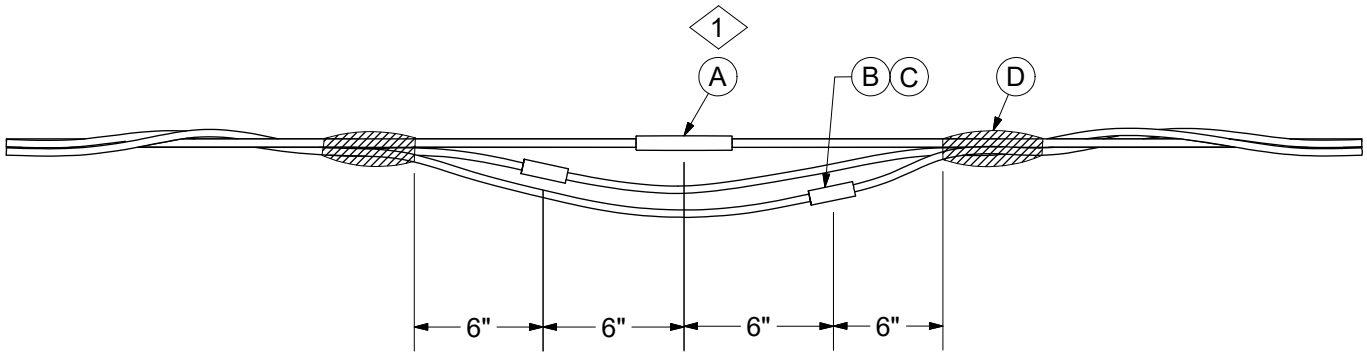
CONSTRUCTION NOTE(s):

1. This type of connection is undesirable and to be used only when a bus-bar outlet cannot be used. Each job shall be specifically approved and configuration agreed upon by Ameren Engineer prior to construction.

◇2◇ Customer:
- Gather service entrance conductors
- Provide 2 and 3 barrel NEMA 4-hole lugs and bolt together

Company:
- Make final connection and tape
- Tape conductors together for mechanical support

	ITEM	STK / DCS #	DESCRIPTION 09 01 58 **	00
@	A	17 64 244	Connector Insulated Set Screw, 6 Holes, #4 AWG to 600kcmil, Al or Cu	#
		17 64 245	Connector Insulated Set Screw, 6 Holes, 250kcmil to 750kcmil, Al or Cu	#



CONSTRUCTION NOTE(s):

1. Bare Messenager shall be spliced with partial tension sleeve.

ITEM	STK / DCS #	DESCRIPTION 09 01 60 **	01	02	03
A	17 60 188	Sleeve, Compression, Partial Tension, #4 Str to #2 Sol, AL, Orange	1	-	-
	17 60 187	Sleeve, Compression, Partial Tension, #2 Str, AL, Yellow	-	1	-
	17 60 671	Sleeve, Compression, Full Tension, 1/0 Str, AL, Yellow	-	-	1
B	17 60 180	Sleeve, Compression, No Tension #4 Str & #4 Str, Orange - Orange	2	-	-
	17 60 182	Sleeve, Compression, No Tension #2 Str & #2 Str, Red - Red	-	2	-
	17 60 319	Sleeve, Compression, No Tension 1/0 Str & 1/0 Str, Yellow - Yellow	-	-	2
C	25 54 054	Cover, Splice, Snap-on 1/0	2	2	2
	40 89 485	Cover, Splice, Snap-on #4 to #2	2	2	2
D	25 53 077	Tape, Electrical, Black, 1-1/2"	#	#	#

REV	DATE	ENG	DESCRIPTION
5	07/01/25	WYW	Revised Detail and BOM
4	07/01/21	WYW	Removed reference chart from note 1