SYMBOL LEGEND

A	ANGLE
AB	ANGLE BRACE
CL	CURRENT LIMITING
D	DOUBLE
DE	DEADEND
F	FLAT (HORIZONTAL)
FB	FLAT BRACE
HD	HEAVY DUTY
I	INSULATED
PP	PHASE TO PHASE
N	NEUTRAL
R	RIDGE OR POLE TOP PIN
S	SECONDARY, OPEN WIRE
ST	SECONDARY, TRIPLEX
SQ	SECONDARY, QUADRUPLEX
T	TRANSFORMER
TERM	TERMINAL
UG	UNDERGROUND
V	VERTICAL
X	CROSSARM, 2.4m
X10	CROSSARM, 3m

GENERAL NOTES

1. SYMBOLS COMPRISING THE OVERHEAD SKETCHES ARE NOT INTENDED TO BE "ALL INCLUSIVE" FOR USE ON EVERY DISTRIBUTION POLE LINE CONFIGURATION. ONLY SKETCHES WHICH REFLECT TYPICAL ARRANGEMENTS ARE INCLUDED. FOR OTHER DESIRED ARRANGEMENTS, PROVIDE SEPARATE DETAILS DRAWN TO REFLECT THE SPECIFIC CONDITIONS.

2. THE METHOD OF SHOWING INFORMATION ON SITE PLAN IS OPTIONAL; HOWEVER, IT SHALL BE CONSISTENT WITH INFORMATION CONTAINED IN THE GUIDE LEGEND (APPENDIX C) INCLUDED IN "TECHNICAL GUIDELINES AND CRITERIA FOR ELECTRICAL DESIGN". THE CHARACTERISTICS AND IDENTIFICATION OF ALL CIRCUITS SHALL BE INCLUDED ON THE SITE PLAN.

3. EACH SKETCH CONTAINS MATERIAL ITEMS WHICH COMPRISE A PART OF EACH INDIVIDUAL SYMBOL REFERENCED BY THAT SKETCH. THESE ITEMS ARE INDICATED BY CIRCLED NUMERALS WHICH ARE IDENTIFIED BY SKETCHES OH–1.5 AND OH–1.5A.

4. SPACING REQUIREMENTS RELATED TO INDIVIDUAL COMPONENTS OF A SYMBOL ARE INDICATED ON THE APPROPRIATE SKETCH. VERTICAL SPACING REQUIREMENTS BETWEEN CIRCUITS AND/OR SYSTEMS ARE INDICATED ON SKETCH OH–1.4. ALL OTHER SEPARATIONS BETWEEN CIRCUITS, EQUIPMENT, ETC., SHALL CONFORM TO THE NATIONAL ELECTRICAL SAFETY CODE, IEEE C2.

5. FOR NEW CONSTRUCTION OR OPERATING VOLTAGES GREATER THAN 5KV, LIMIT THE NUMBER OF CONDUCTORS ON ANY CROSSARM TO A MAXIMUM OF 3.

6. USE 3m CROSSARMS FOR ALL UNDERBUILD CIRCUITS WITH OPERATING VOLTAGES GREATER THAN 15KV.

THIS INFORMATION IS FOR DESIGNER USE AND SHALL NOT BE INCLUDED ON CONSTRUCTION DRAWINGS.

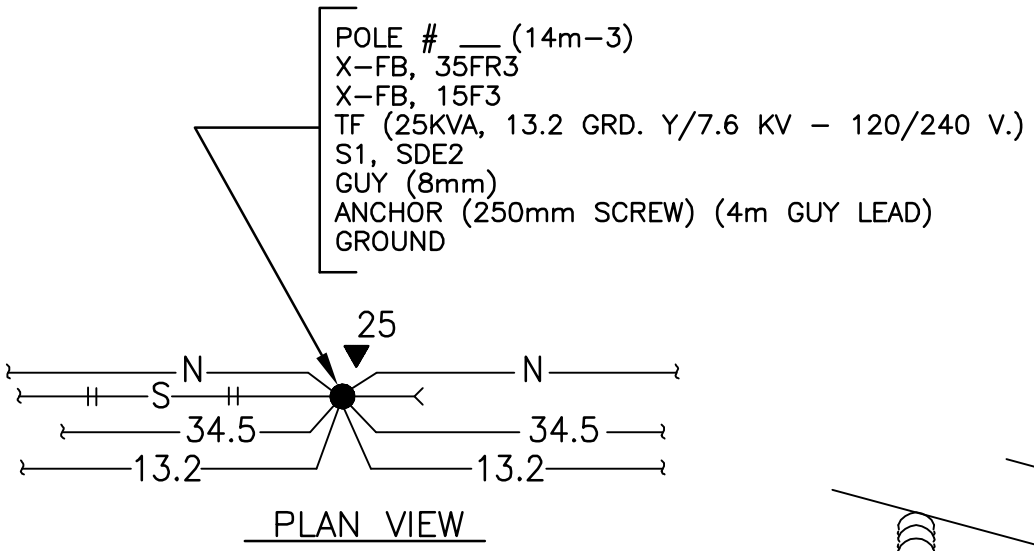
SYMBOL LEGEND & GENERAL NOTES

SKETCH DATE	JUNE 2002	STYLE	OH–1.1

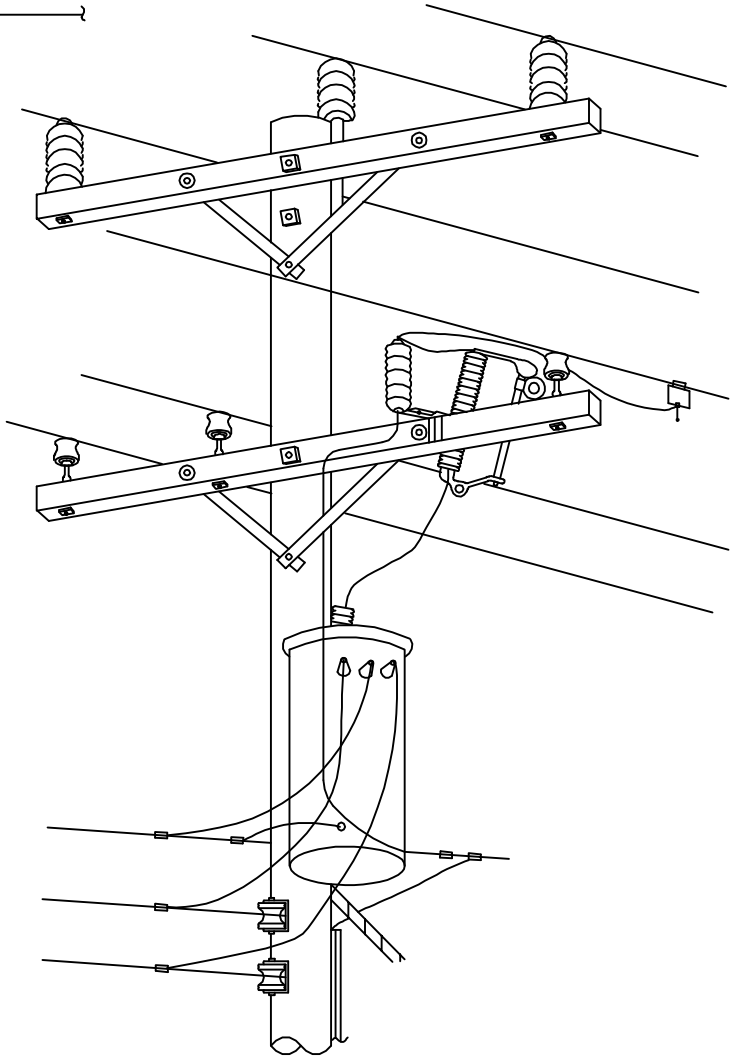
LIST OF SYMBOLS

SKETCH NUMBER			CATEGORY
OH–2	THRU	OH–10	CROSSARM SYMBOLS
OH–11	THRU	OH–14	HORIZONTAL (TANGENT OR ANGLE) CONSTRUCTION SYMBOLS
OH–15	THRU	OH–20	HORIZONTAL DEADEND CONSTRUCTION SYMBOLS
OH–21	THRU	OH–25	VERTICAL CONSTRUCTION SYMBOLS
OH–26	THRU	OH–29	TRANSFORMER SYMBOLS
OH–30	THRU	OH–31	UNDERGROUND TERMINAL SYMBOLS
OH–32	THRU	OH–33	GUY SYMBOLS
OH–34	THRU	OH–35	CONDUIT RISER SYMBOLS
OH–36	THRU	OH–40	SECONDARY SYMBOLS
OH–41			GROUND SYMBOL

THIS INFORMATION IS FOR DESIGNER USE AND SHALL NOT BE INCLUDED ON CONSTRUCTION DRAWINGS.



PLAN VIEW



NOTES

1. THE SYMBOLS LISTED ABOVE INCLUDE MATERIALS (DESCRIBED BY OVERHEAD SKETCHES) WHICH ARE GRAPHICALLY ILLUSTRATED BY THIS PICTURE. SEE SKETCH OH-1.3A FOR EXPLANATORY NOTES.

2. EACH SKETCH CONTAINS MATERIAL ITEMS WHICH COMPRISE A PART OF EACH INDIVIDUAL SYMBOL REFERENCED BY THAT SKETCH, THESE ITEMS ARE INDICATED BY CIRCLED NUMERALS WHICH ARE IDENTIFIED BY SKETCHES OH-1.5 AND OH-1.5A.

3. SPACING REQUIREMENTS RELATED TO INDIVIDUAL COMPONENTS OF A SYMBOL ARE INDICATED ON THE APPROPRIATE SKETCH. VERTICAL SPACING REQUIREMENTS BETWEEN CIRCUITS AND/OR SYSTEMS ARE INDICATED ON SKETCH OH-1.4. ALL OTHER SEPARATIONS BETWEEN CIRCUITS, EQUIPMENT, ETC., SHALL CONFORM TO THE NATIONAL ELECTRICAL SAFETY CODE, IEEE C2.

METHOD OF SHOWING SYMBOLS

SKETCH DATE	JUNE 2002	STYLE	OH-1.3

EXPLANATORY NOTES – METHOD OF SHOWING SYMBOLS

1. SYMBOLS ARE SHOWN IN THE BASIC ORDER AS THEY APPEAR ON THE POLE, BY STARTING AT THE TOP AND WORKING DOWN.
2. NUMERALS PRECEDING THE SYMBOL INDICATE THE MINIMUM REQUIRED VOLTAGE (KV) RATING (5,15,35) OF THE ASSEMBLY, IF APPLICABLE.
3. NUMERAL FOLLOWING THE SYMBOL INDICATES THE NUMBER OF CONDUCTORS ASSOCIATED WITH THE ASSEMBLY, IF APPLICABLE.
4. NUMERAL IN PARENTHESIS FOLLOWING THE SYMBOL DENOTES THE NUMBER OF ASSEMBLIES REQUIRED, IF MORE THAN ONE.
5. DATA IN PARENTHESIS FOLLOWING THE SYMBOL PROVIDES INFORMATION RELATIVE TO THE SYMBOL.

EXPLANATION OF SYMBOLS LISTED FOR POLE ON SKETCH OH–1.3

PROVIDE 14m LONG, CLASS 3 POLE CONTAINING:

X–FB – 2.4m CROSSARM WITH FLAT BRACE

35FR3 – 35KV INSULATORS, FLAT (MOUNTED HORIZONTAL ON CROSSARM), RIDGE PIN (CENTER PHASE ON POLE TOP PIN), THREE CONDUCTORS

X–FB – 2.4m CROSSARM WITH FLAT BRACE

15F3 – 15KV INSULATORS, FLAT (MOUNTED HORIZONTAL ON CROSSARM), THREE CONDUCTORS. NOTE: THIS SYMBOL CALLS FOR THREE CROSSARM MOUNTED PINS IN LIEU OF RIDGE PIN ON CENTER PHASE.

TF – TRANSFORMER ON FLAT (HORIZONTAL) CONSTRUCTION. DATA IN PARENTHESIS DESCRIBES THE TRANSFORMER CHARACTERISTICS.

S1 – SECONDARY, ONE CONDUCTOR, TANGENT CONSTRUCTION (COMMON NEUTRAL).

SDE2 – SECONDARY DEADEND, TWO CONDUCTORS, OPEN WIRE

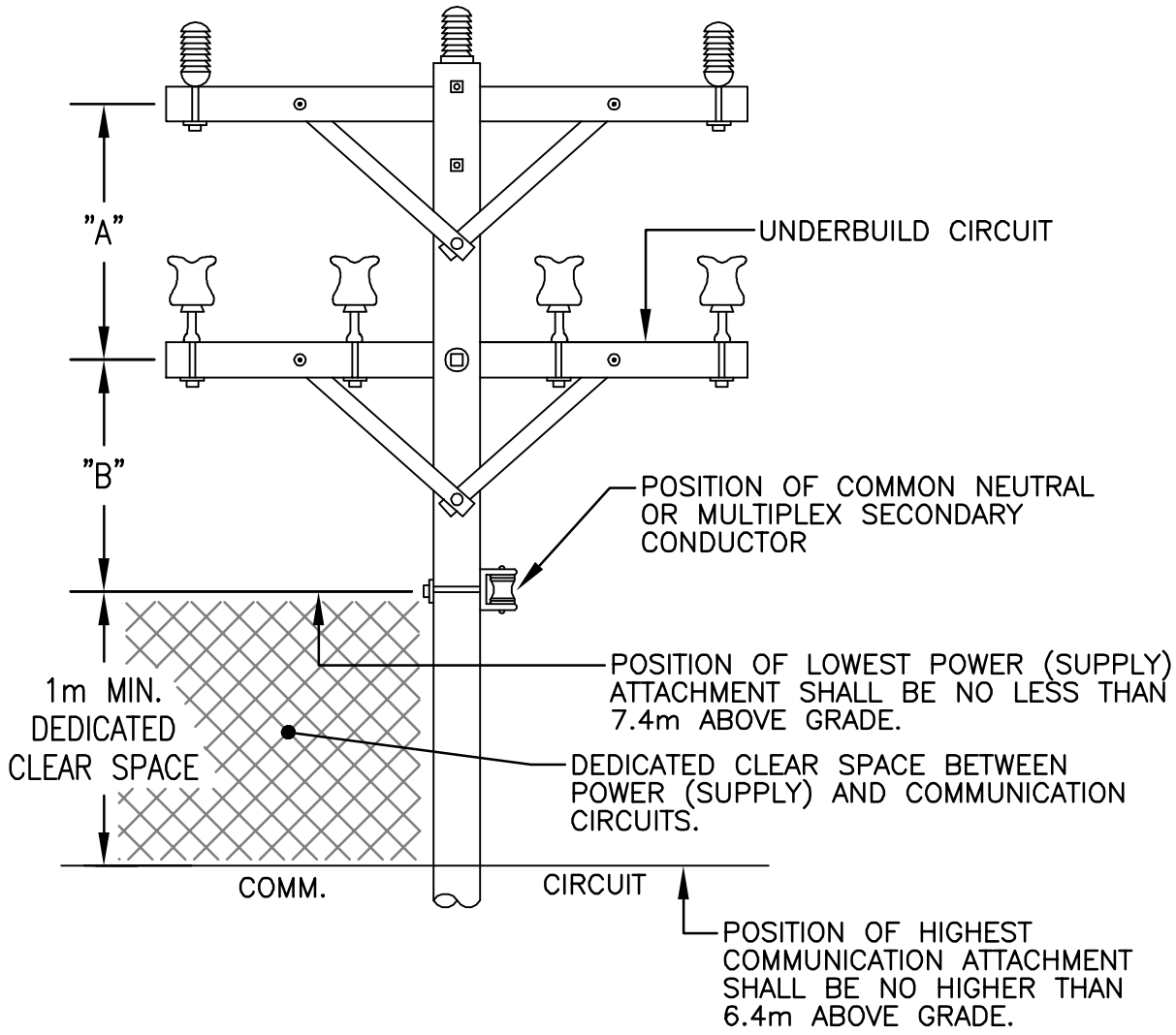
GUY (8mm) – DOWN GUY – WIRE SIZE 8mm

ANCHOR (250mm SCREW) – 250mm SCREW TYPE ANCHOR WITH 4m GUY LEAD. NOTE: NO PLATE IS INCLUDED FOR THE ANCHOR SYMBOL.

GROUND – NO EXPLANATION NECESSARY

EXPLANATION OF NOTES/SYMBOLS

SKETCH DATE	JUNE 2002	STYLE	OH–1.3A



NOTE

1. FOR HORIZONTAL SPACING REQUIREMENTS FOR CONDUCTORS ON SAME SUPPORT, REFER TO THE NATIONAL ELECTRICAL SAFETY CODE, IEEE C2.

ø–ø VOLTAGE	0–15KV	15–50KV
SPACING "A"	1m	1.2m *
SPACING "B"	1m	1m

* PROVIDE 1.5m CLEARANCE WHEN OPERATING VOLTAGE OF UNDERBUILD CIRCUIT IS GREATER THAN 15KV.

BASIC VERTICAL SPACING REQUIREMENTS

SKETCH DATE	JUNE 2002	STYLE	OH–1.4

POLE LINE MATERIAL LIST

1. FLAT STEEL BRACE (TWO PIECES)
2. MACHINE BOLT, 10mm X LENGTH NEEDED WITH WASHER, NUT AND LOCKWASHER
3. 2.4m WOOD CROSSARM WITH CROSS SECTION DIMENSIONS OF 90mm X 115mm
4. MACHINE BOLT, 16mm X LENGTH NEEDED WITH WASHER, NUT AND LOCKWASHER
5. TIMBER CONNECTOR
6. LAGSCREW, 12mm X 100mm
7. ANGLE STEEL BRACE (TWO PIECES)
8. MACHINE BOLT, 12mm X LENGTH NEEDED, WITH WASHER, NUT & LOCKWASHER
9. DEADEND BOX
10. STEEL PIN
11. PIN INSULATOR
12. GRID GAIN, USED ONLY WHEN THERE IS NO POLE GAIN
13. ANGLE STEEL BRACE (ONE PIECE)
14. 3m WOOD CROSSARM WITH CROSS SECTION DIMENSIONS OF 90mm X 115mm
15. 16mm EYE NUT
16. 16mm EYE BOLT, LENGTH AS NEEDED, WITH WASHER, NUT & LOCKWASHER
17. EXTENSION LINK
18. BELL TYPE SUSPENSION INSULATOR WITH CONNECTING HARDWARE
19. STRAIN CLAMP
20. STEEL ANGLE PIN
21. CLUSTER MOUNTING BRACKET, STEEL
22. TRANSFORMER GROUNDING CONNECTION
23. STIRRUP
24. SECONDARY LEAD SUPPORT BRACKET
25. ADAPTER PLATE FOR CLUSTER MOUNTING
26. CLEVIS BRACKET FOR SPOOL INSULATOR
27. SPOOL INSULATOR
28. U BOLT CLAMP
29. PREFORMED GUY GRIP
30. GUY HOOK
31. GUY STRAIN INSULATOR
32. GUY WIRE, SIZE AS SPECIFIED
33. #4 WP CU. SOFT DRAWN GROUND WIRE
34. GROUND CLAMP
35. CONDUIT COUPLING
36. CONDUIT BEND
37. INSULATED BUSHING
38. PERFORATED STRAPPING, 40mm WIDE
39. HOT LINE CLAMP
40. FUSED CUTOUT, AS SPECIFIED
41. SURGE ARRESTER, AS SPECIFIED
42. POLE TOP PIN (RIDGE PIN) – 610mm LONG
43. CROSSARM ANGLE PIN
44. ANGLE POLE TOP PIN
45. WEATHERPROOF SOFT DRAWN WIRE–SIZE
    (a) TO MATCH OR EXCEED AMPACITY OF CONNECTING CABLE, OR
    (b) AT 125% OF TRANSFORMER FULL LOAD CURRENT, BUT NOT LESS THAN NO. 4 AWG

POLE LINE MATERIAL LIST

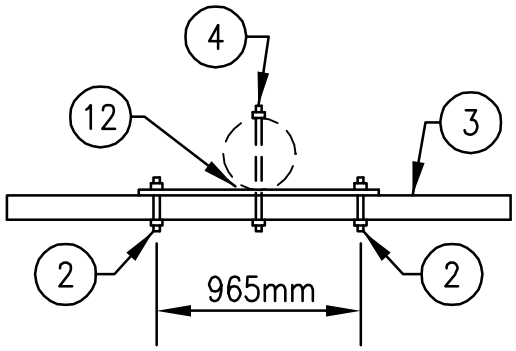
SKETCH DATE	JUNE 2002	STYLE	OH–1.5

POLE LINE MATERIAL LIST

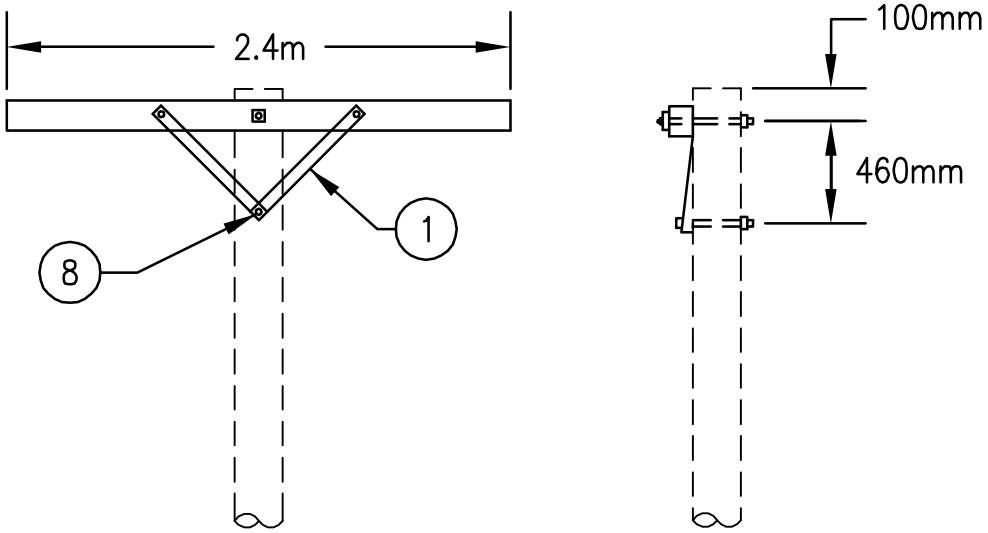
46 TRI-MOUNT BRACKET
47 TERMINATOR
48 MOUNTING BRACKET
49 CABLE GRIP HANGER
50 HOSE CLAMP
51 STUD, 20mm X 45mm
52 LINE POST INSULATOR
53 TRIPLE INSULATOR BRACKET
54 ANGLE CLAMP
55 INSULATOR, LINE POST CLAMP
56 1.2m CROSSARM
57 CROSSARM GAIN BRACKET
58 PULLEY BRACKET
59 WEDGE CLAMP
60 MIDSPAN SERVICE CLAMP
61 STUD, 175mm
62 SADDLE, ANGLE
63 SADDLE CROSSARM
64 FITTING, POLE TOP
65 CONNECTOR
66 SUSPENSION CLAMP
67 TIE, SERVICE CABLE
68 1370mm FIBERGLASS STRAIN INSULATOR
69 PVC RISER SHIELD
70 PVC EXTENSION SHIELD
71 PVC BACK PLATE
72 2.4m WOOD CROSSARM WITH CROSS SECTION DIMENSIONS OF 120mm X 145mm
73 3m WOOD CROSSARM WITH CROSS SECTION DIMENSIONS OF 120mm X 145mm
74 BACK-UP CURRENT LIMITING FUSE

POLE LINE MATERIAL LIST

SKETCH DATE	JUNE 2002	STYLE	OH-1.5A



PLAN VIEW



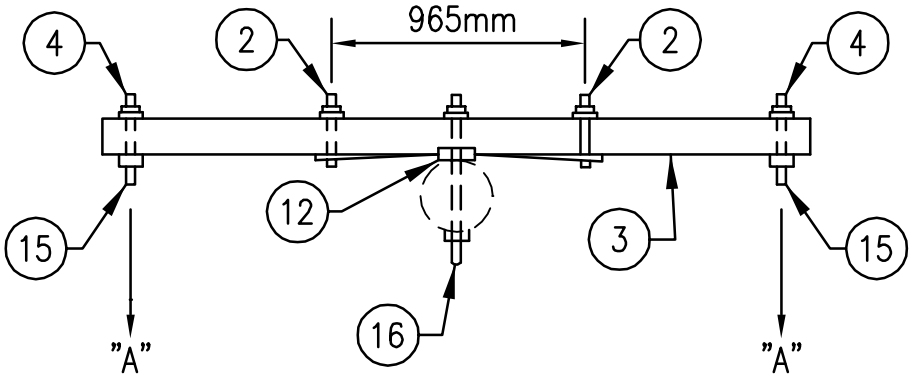
ELEVATIONS

NOTE

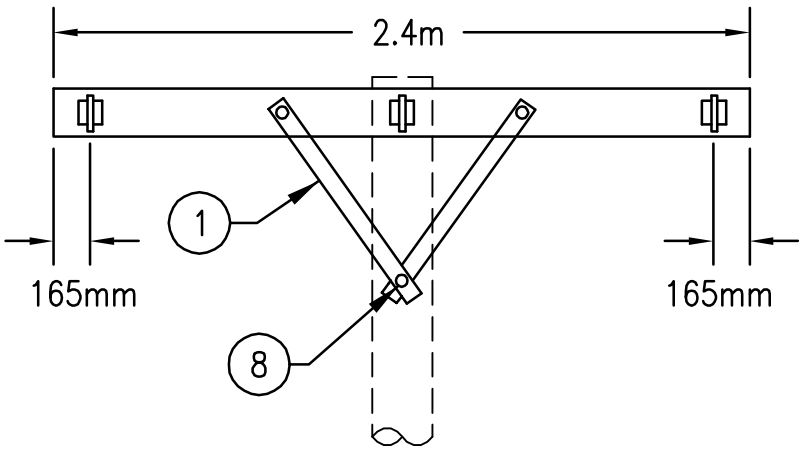
DRAWING INDICATES SYMBOL X–FB.
SUBSTITUTE ⑦ FOR ① ON SYMBOL X–AB.

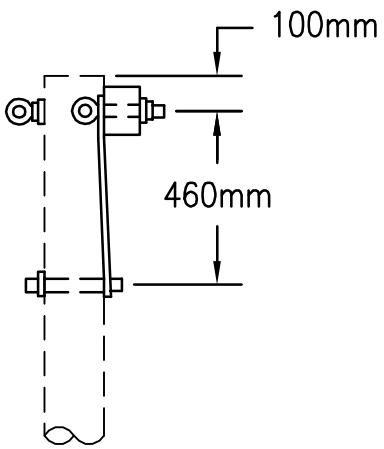
X–FB
X–AB

SKETCH DATE	JUNE 2002	STYLE	OH–2



PLAN VIEW





ELEVATIONS

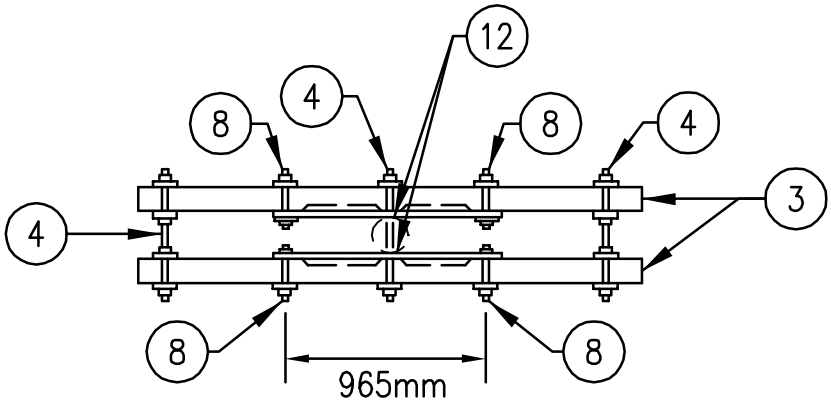
MAXIMUM ALLOWABLE CONDUCTOR TENSION AT "A" – 5338N

NOTE

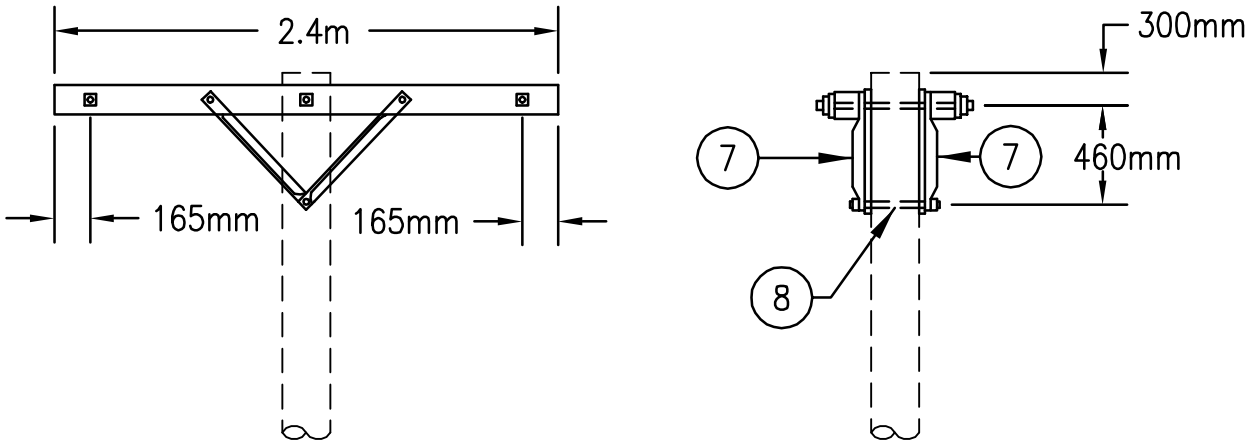
DRAWING INDICATES SYMBOL X–DE–FB. SUBSTITUTE (7) FOR (1) ON SYMBOL X–DE–AB.

X–DE–FB
X–DE–AB

SKETCH DATE	JUNE 2002	STYLE	OH–3



PLAN VIEW



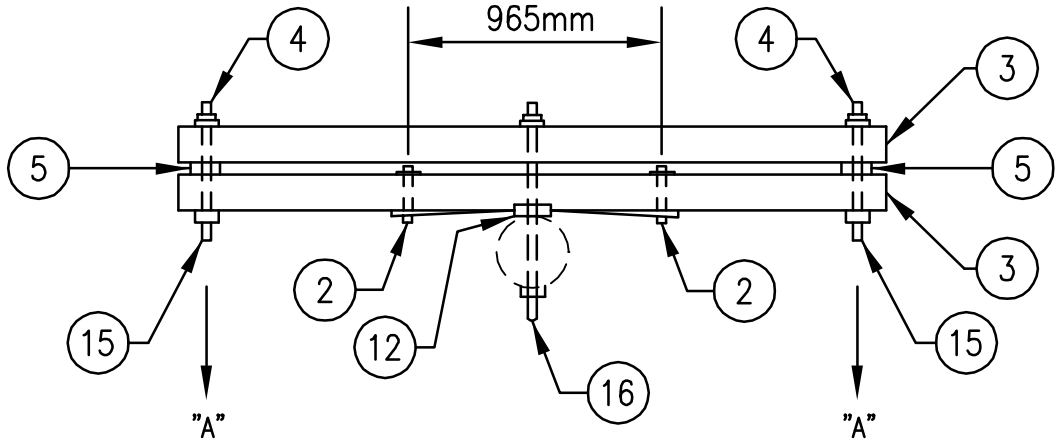
ELEVATIONS

NOTE

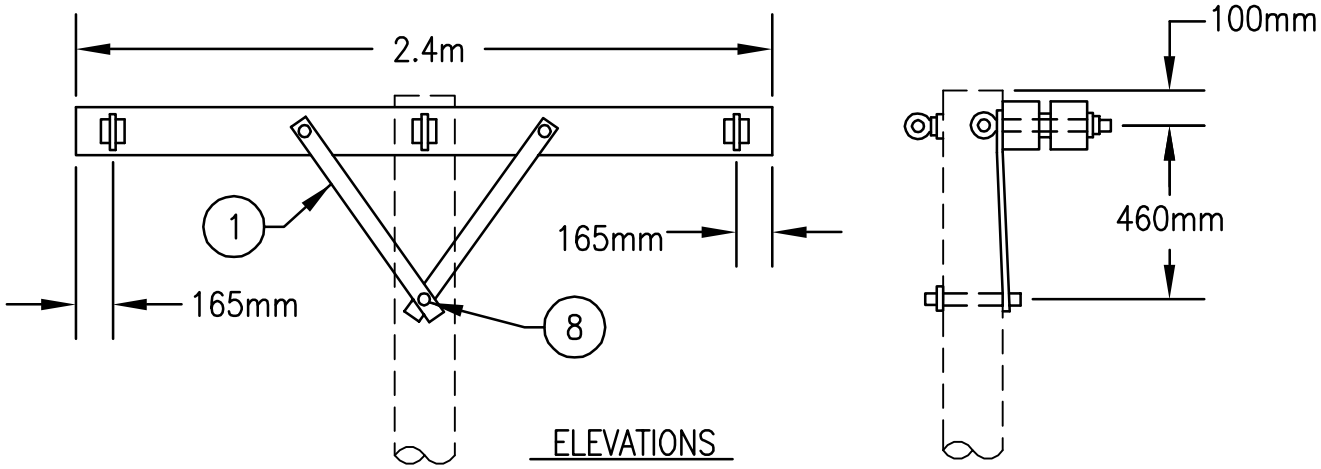
DRAWING INDICATES SYMBOL DX–AB. SUBSTITUTE (1) FOR (7) ON SYMBOL DX–FB.

DX–AB
DX–FB

SKETCH DATE	JUNE 2002	STYLE	OH–4



PLAN VIEW



ELEVATIONS

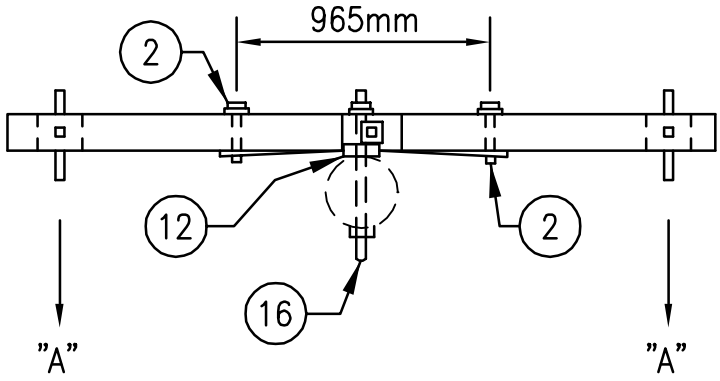
MAXIMUM ALLOWABLE CONDUCTOR TENSION AT "A" – 10,676N

NOTE

DRAWING INDICATES SYMBOL DX–DE–FB. SUBSTITUTE (7) FOR (1) AND (8) FOR (2) ON SYMBOL DX–DE–AB.

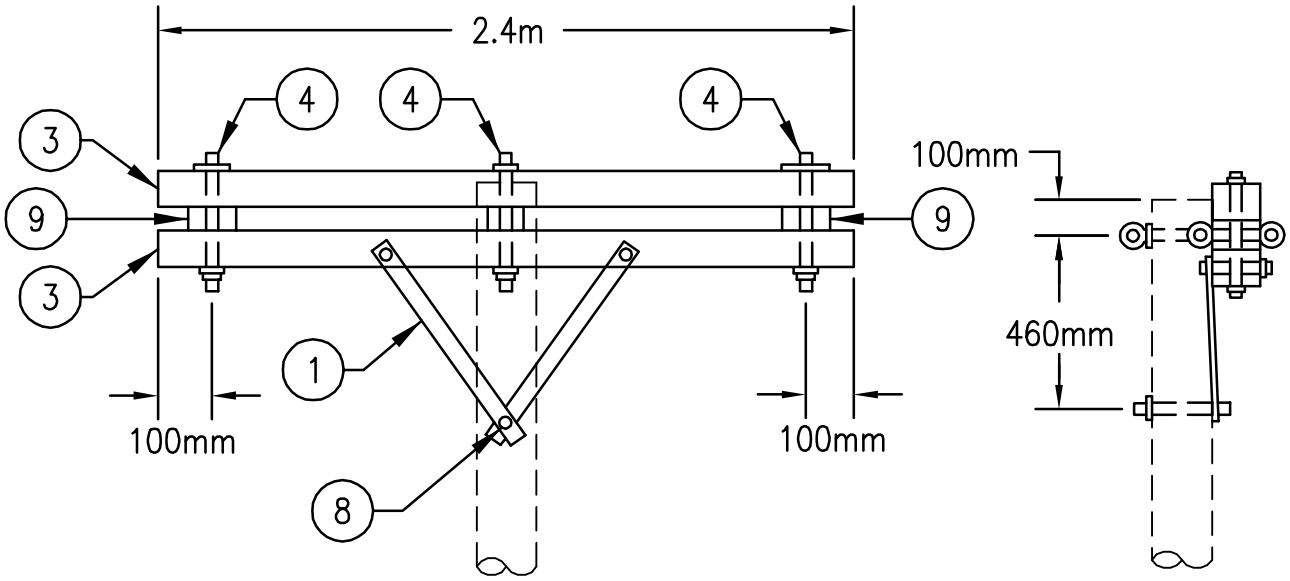
DX–DE–FB
DX–DE–AB

SKETCH DATE	JUNE 2002	STYLE	OH–5



PLAN VIEW

MAXIMUM ALLOWABLE CONDUCTOR TENSIONS AT "A" – 15,569N EXCEPT 21,129N FOR NOTE 2 SYMBOL.



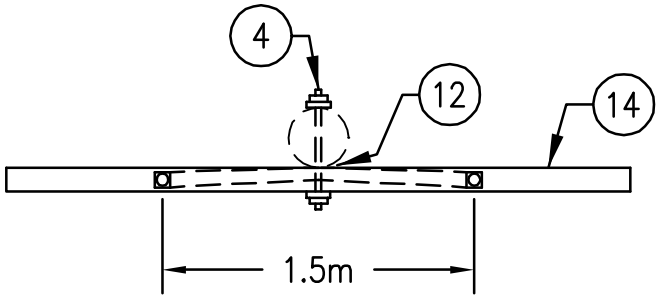
ELEVATIONS

NOTES

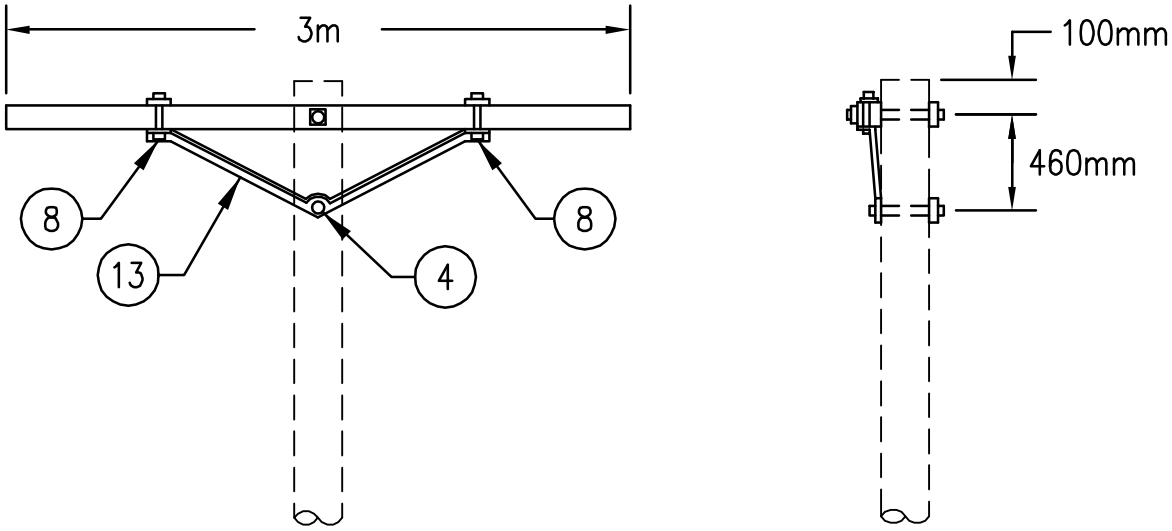
1. DRAWING INDICATES SYMBOL DX–DE–FB–BOX. SUBSTITUTE (7) FOR (1) AND (8) FOR (2) ON SYMBOL DX–DE–AB–BOX.
2. SUBSTITUTE (72) FOR (3) , (7) FOR (1) , AND (8) FOR (2) ON SYMBOL DX–DE–AB–BOX–HD.

DX–DE–FB–BOX, DX–DE–AB–BOX
DX–DE–AB–BOX–HD

SKETCH DATE	JUNE 2002	STYLE	OH–6



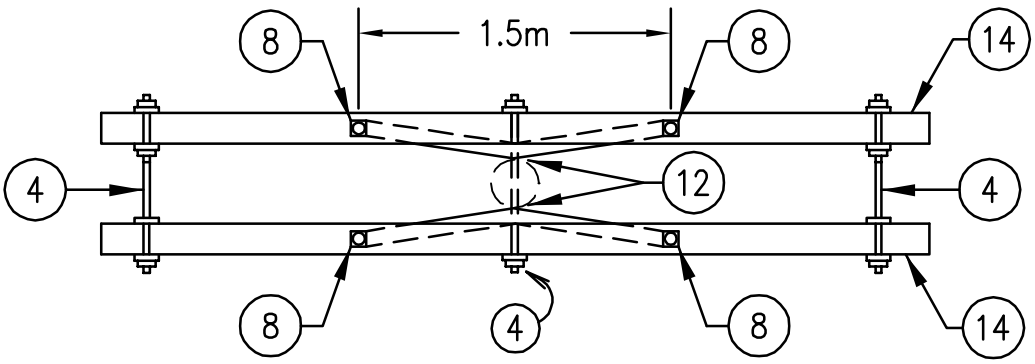
PLAN VIEW



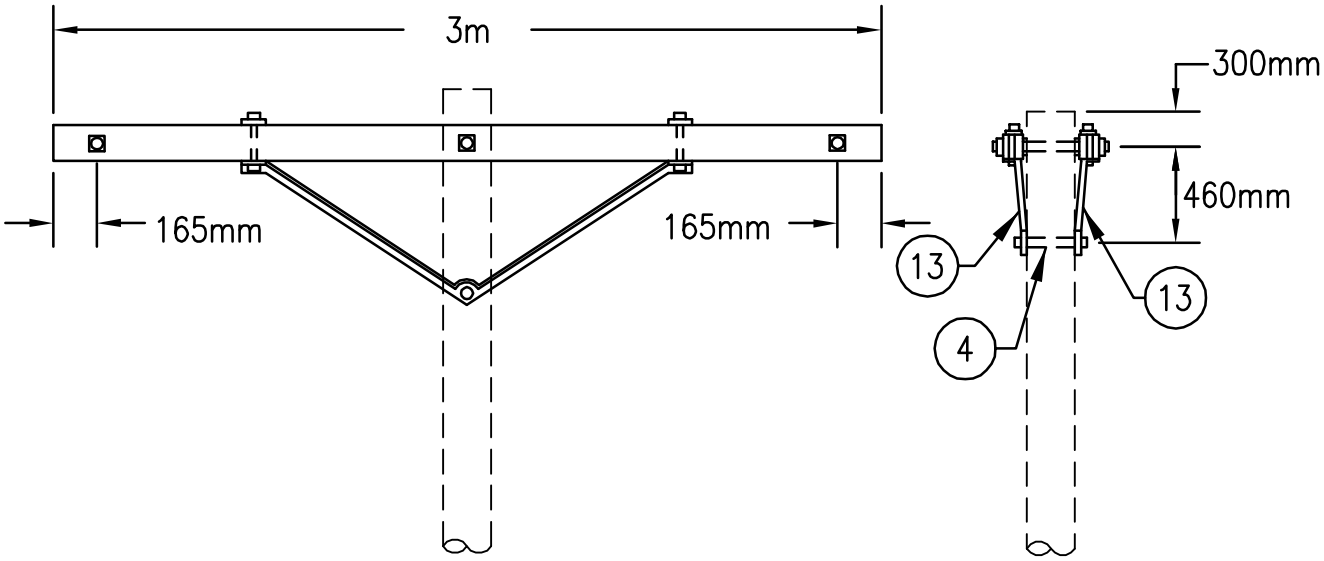
ELEVATIONS

X10–AB

SKETCH DATE	JUNE 2002	STYLE	OH–7



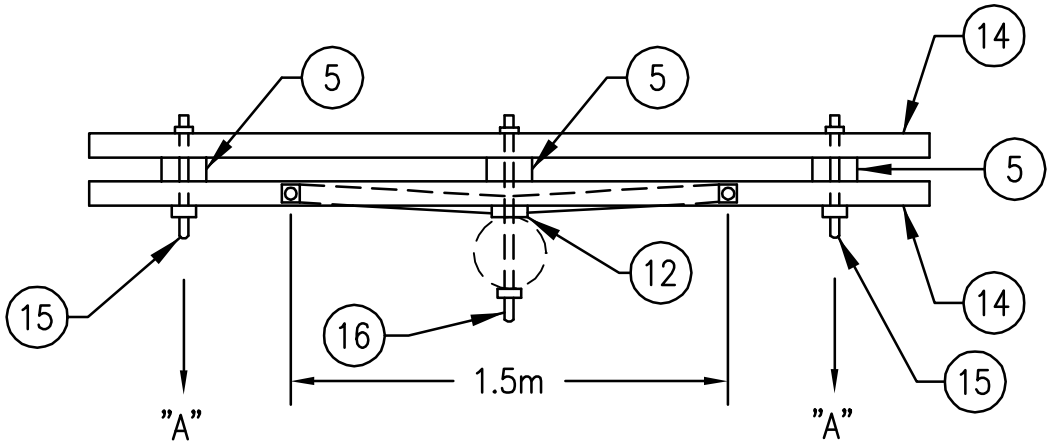
PLAN VIEW



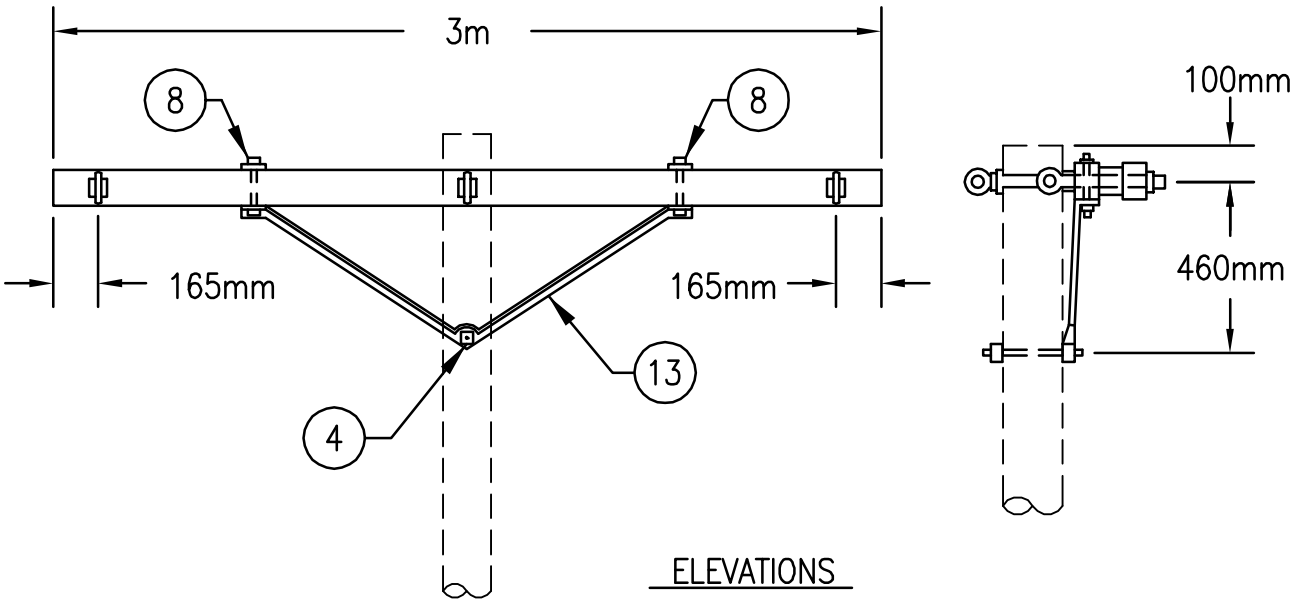
ELEVATIONS

DX10–AB

SKETCH DATE	JUNE 2002	STYLE	OH–8



PLAN VIEW

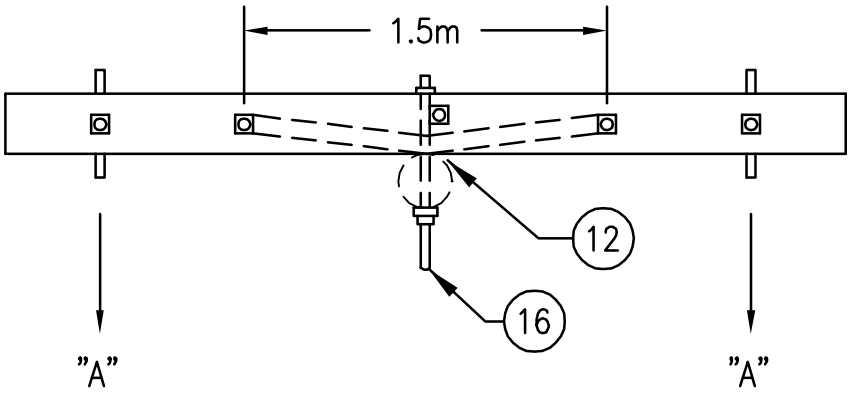


ELEVATIONS

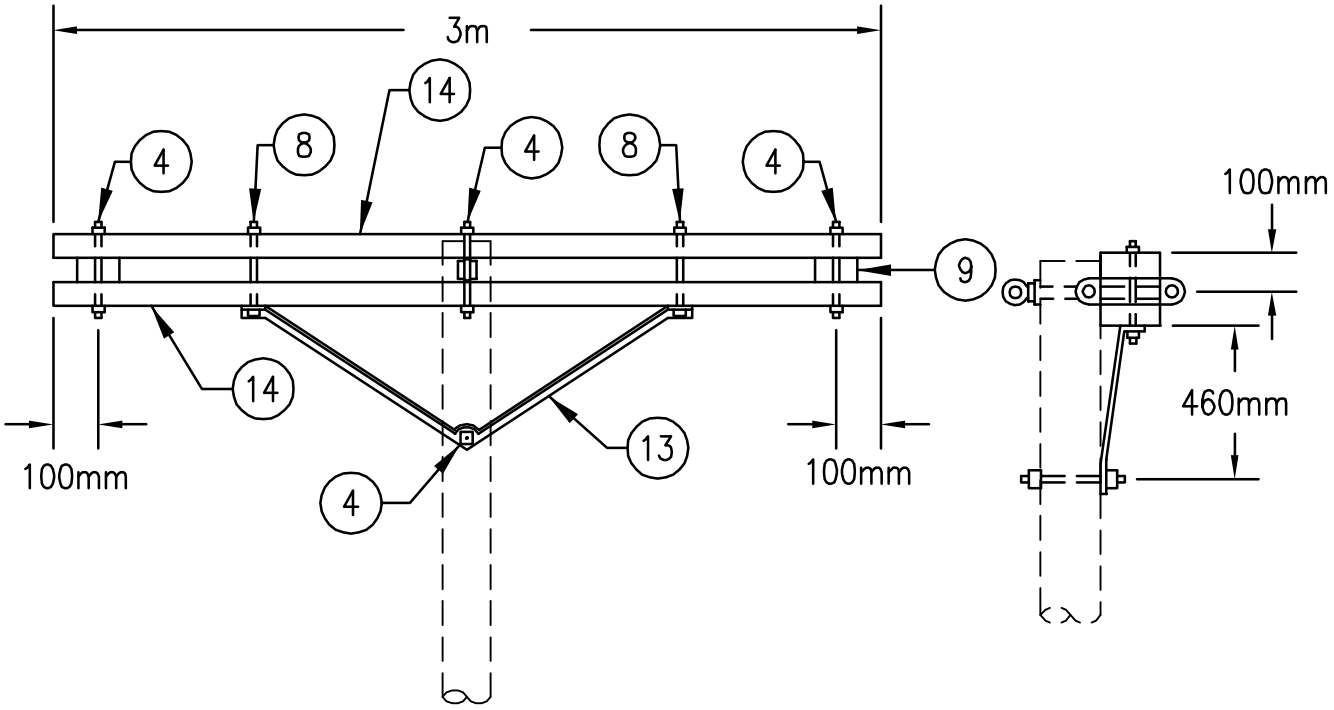
MAXIMUM ALLOWABLE CONDUCTOR TENSION AT "A" – 8007N

DX10–DE–AB

SKETCH DATE	JUNE 2002	STYLE	OH–9



PLAN VIEW



ELEVATIONS

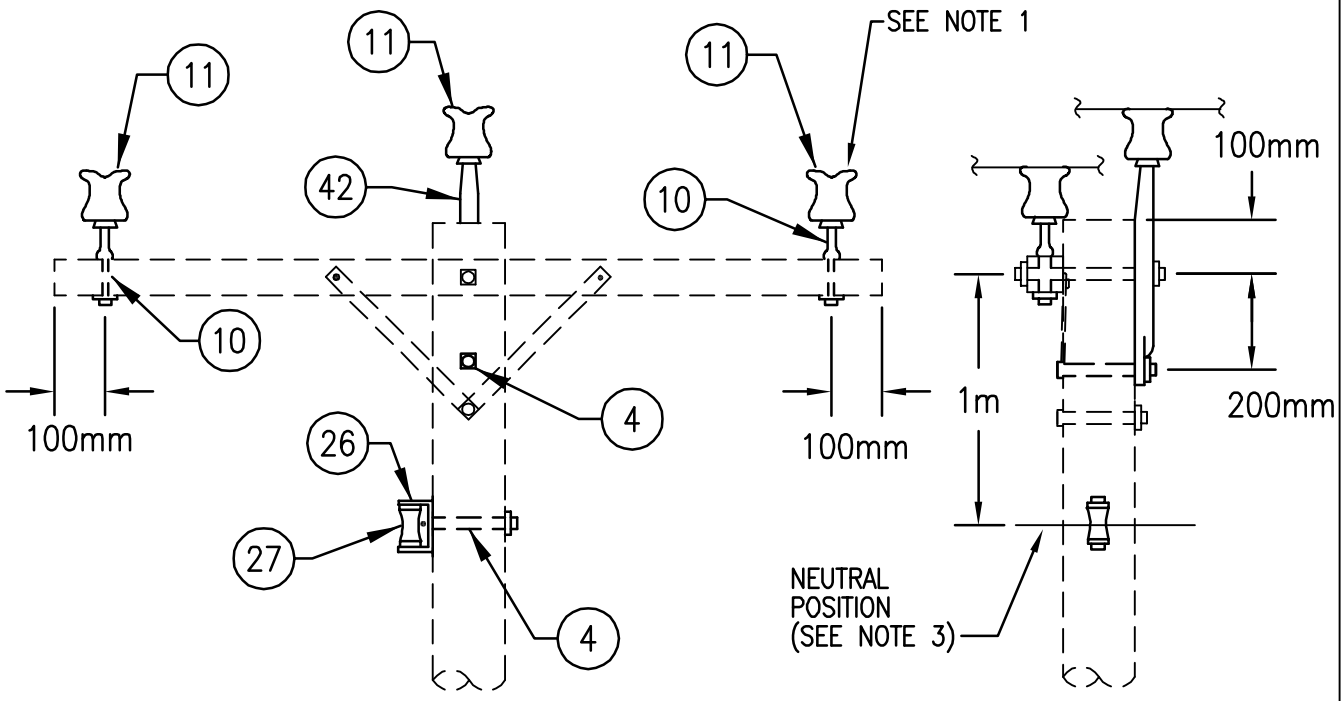
MAXIMUM ALLOWABLE CONDUCTOR
TENSION AT "A" – 12,010N
EXCEPT 16,458N FOR NOTE 1 SYMBOL.

NOTE

1. DRAWING INDICATES SYMBOL DX10–DE–AB–BOX. SUBSTITUTE (73) FOR (14) ON SYMBOL DX10–DE–AB–BOX–HD.

DX10–DE–AB–BOX
DX10–DE–AB–BOX–HD

SKETCH DATE	JUNE 2002	STYLE	OH–10



FRONT VIEW

SIDE VIEW

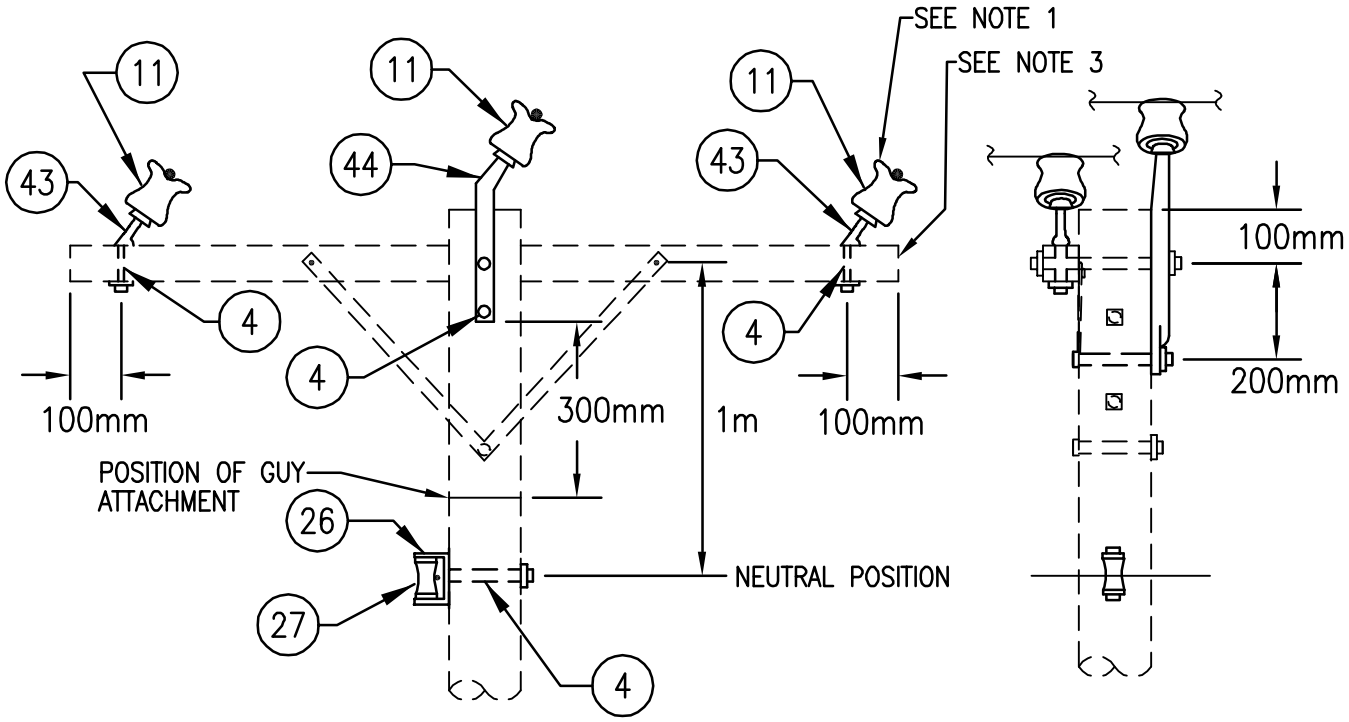
SEE SPECIFICATION SECTION 16301
FOR THE REQUIRED A.N.S.I.
INSULATOR CLASS.

NOTES

1. DRAWING REPRESENTS SYMBOL FR3–N FOR VOLTAGES UP TO 15KV. ON CIRCUIT VOLTAGE OPERATING LEVELS GREATER THAN 15 KV, SUBSTITUTE (52) FOR (11), (64) FOR (42) AND (61) FOR (10).
2. ELIMINATE (4), (26) AND (27) FOR NEUTRAL POSITION ON SYMBOL FR3.
3. MODIFY THE 1m NEUTRAL SPACING AS INDICATED ON OTHER SKETCHES FOR TRANSFORMER AND U.G. TERMINAL INSTALLATIONS.

FR3–N, FR3
(0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–11



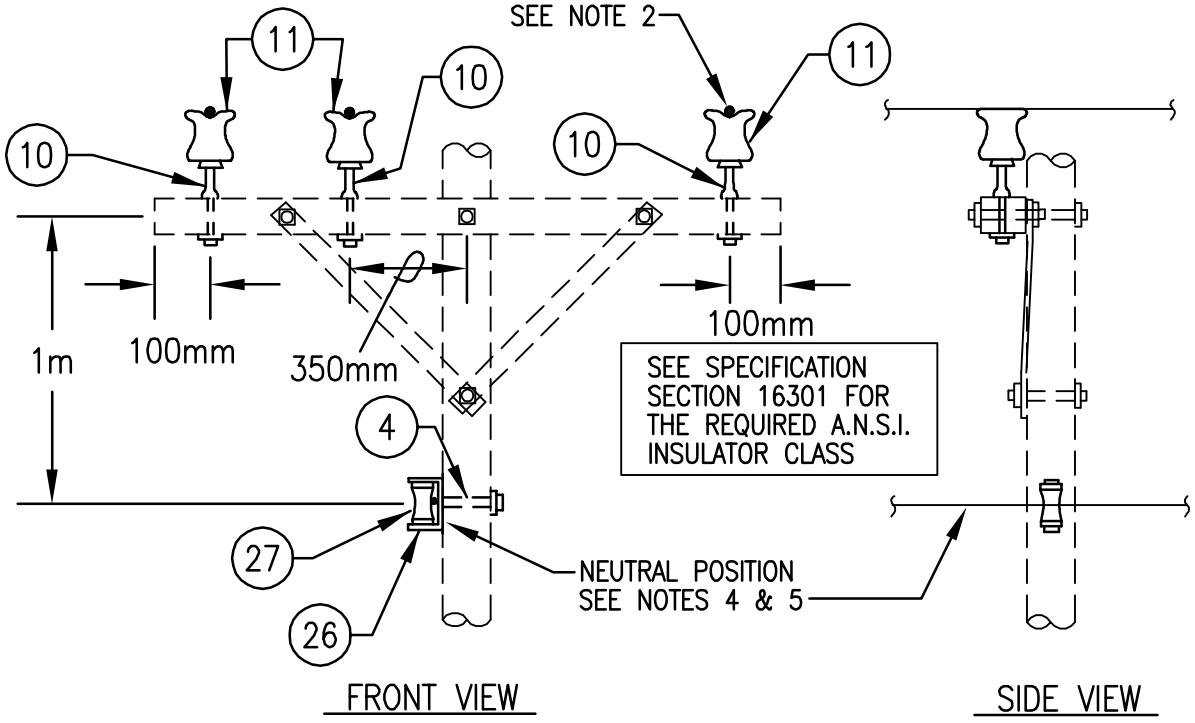
SEE SPECIFICATION SECTION 16301 FOR THE REQUIRED A.N.S.I. INSULATOR CLASS.

NOTES

1. DRAWING REPRESENTS SYMBOL FRA3–N FOR VOLTAGES UP TO 15KV. ON CIRCUIT VOLTAGE OPERATING LEVELS GREATER THAN 15 KV, SUBSTITUTE (52) FOR (11), (61), (62), AND (63) FOR (43) AND (64) FOR (44).
2. ELIMINATE (4), (26) & (27) FOR NEUTRAL POSITION ON SYMBOL FRA3.
3. CROSSARM SPACING FROM TOP OF POLE INCREASES FROM 100mm TO 300mm WHEN DOUBLE CROSSARMS (AND INSULATORS) ARE USED.

FRA3–N, FRA3
(0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–12



NOTES

1. DRAWING REPRESENTS SYMBOL F3–N FOR VOLTAGES UP TO 15KV (3–PHASE CONDUCTORS). MODIFY INSULATOR ASSEMBLIES AS REQUIRED TO COINCIDE WITH THE NUMBER OF PHASE CONDUCTORS.

2. FOR CIRCUIT VOLTAGE OPERATING LEVELS GREATER THAN 15KV, SUBSTITUTE (52) FOR (11) AND (61) FOR (10).

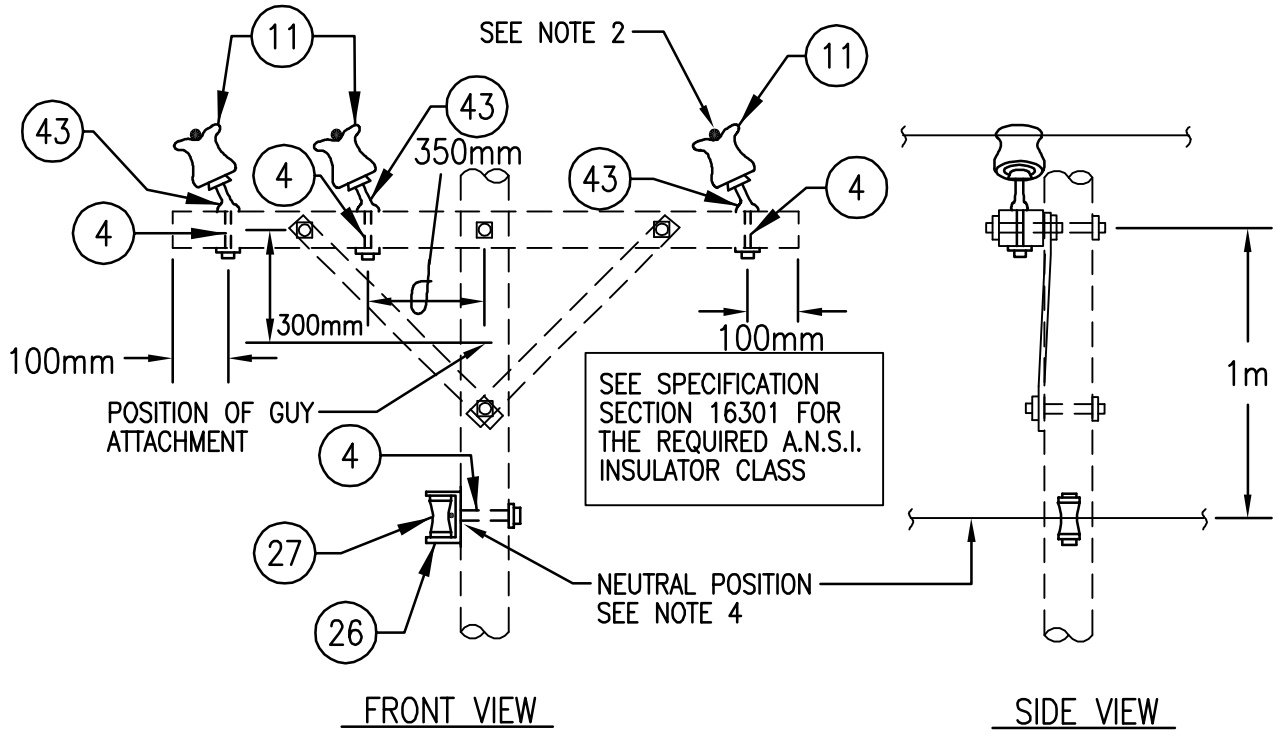
3. OMIT ITEMS (4), (26) AND (27) FOR NEUTRAL ON ALL SYMBOLS WHICH DO NOT CONTAIN "N".

4. IT SHALL BE PERMISSIBLE TO UTILIZE THE F4 SYMBOL & MOUNT THE NEUTRAL (AS THE FOURTH CONDUCTOR) ON THE CROSSARM WHEN MAINTAINING EXISTING FACILITIES FOR VOLTAGES UP TO 15KV ON WHICH THE NEUTRAL IS LOCATED ON THE CROSSARM. THIS NON–STANDARD ARRANGEMENT SHALL NOT BE USED FOR NEW LINE EXTENSIONS.

5. MODIFY THE 1m NEUTRAL SPACING AS INDICATED ON OTHER SKETCHES FOR TRANSFORMER AND U.G. TERMINAL INSTALLATIONS.

F3–N, F3, F2–N, F2, F1, F4
(0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–13



NOTES

1. DRAWING REPRESENTS SYMBOL FA3–N FOR VOLTAGES UP TO 15KV (3–PHASE CONDUCTORS). MODIFY INSULATOR ASSEMBLIES AS REQUIRED TO COINCIDE WITH THE NUMBER OF PHASE CONDUCTORS.

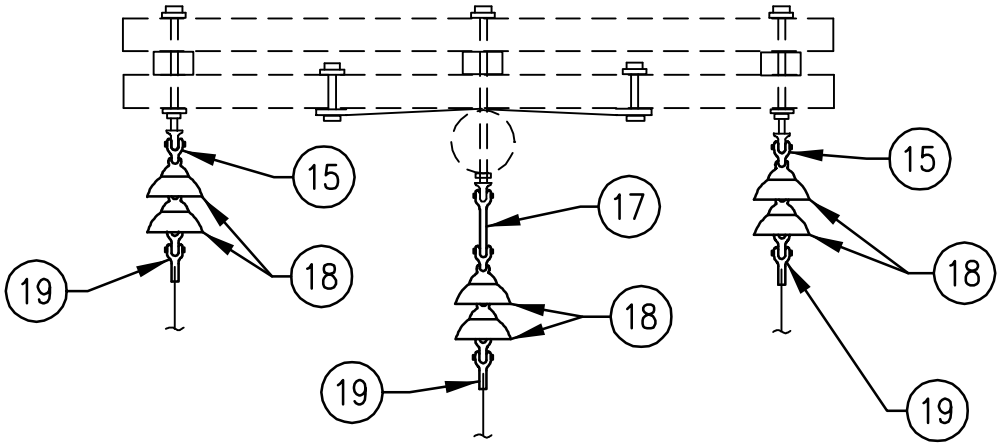
2. FOR CIRCUIT VOLTAGE OPERATING LEVELS GREATER THAN 15KV, SUBSTITUTE (52) FOR (11) AND (61), (62), (63) FOR (43).

3. OMIT ITEMS (4), (26) AND (27) FOR NEUTRAL ON ALL SYMBOLS WHICH DO NOT CONTAIN "N".

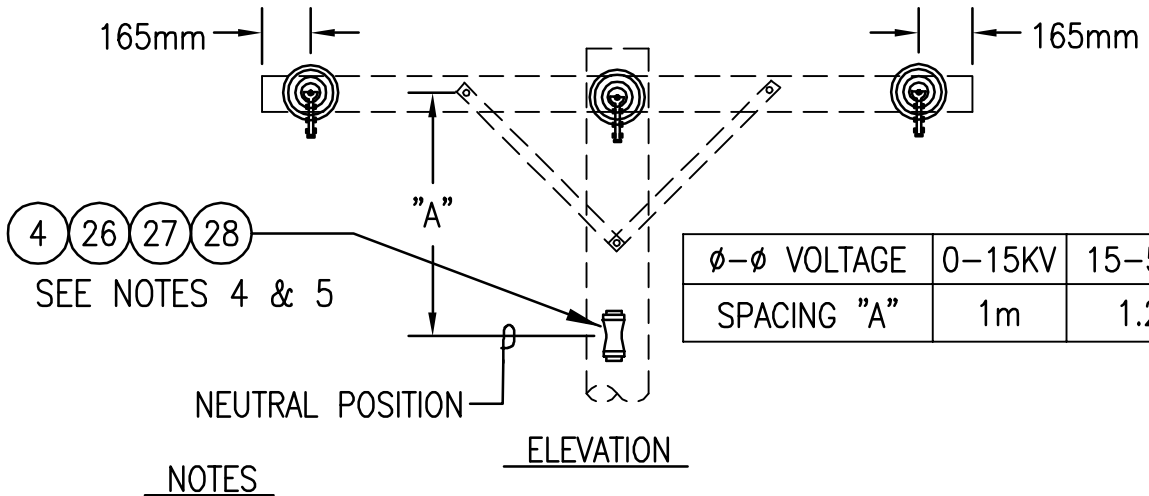
4. IT SHALL BE PERMISSIBLE TO UTILIZE THE F4 SYMBOL & MOUNT THE NEUTRAL (AS THE FOURTH CONDUCTOR) ON THE CROSSARM WHEN MAINTAINING EXIST. FACILITIES FOR VOLTAGES UP TO 15KV ON WHICH THE NEUTRAL IS LOCATED ON THE CROSSARM. THIS NON–STANDARD ARRANGEMENT SHALL NOT BE USED FOR NEW LINE EXTENSIONS.

FA3–N, FA3, FA2–N, FA2, FA4
(0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–14



PLAN VIEW



ø–ø VOLTAGE	0–15KV	15–50KV
SPACING "A"	1m	1.2m

ELEVATION

NOTES

1. DRAWING REPRESENTS SYMBOL FDE3–N. ELIMINATE INSULATOR ASSEMBLY FOR MIDDLE PHASE ON SYMBOLS FDE2 AND FDE2–N.

2. DRAWING REPRESENTS DEADEND ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATIONS SECTION 16301 FOR NUMBER AND CLASS OF INSULATORS REQUIRED FOR EACH VOLTAGE LEVEL.

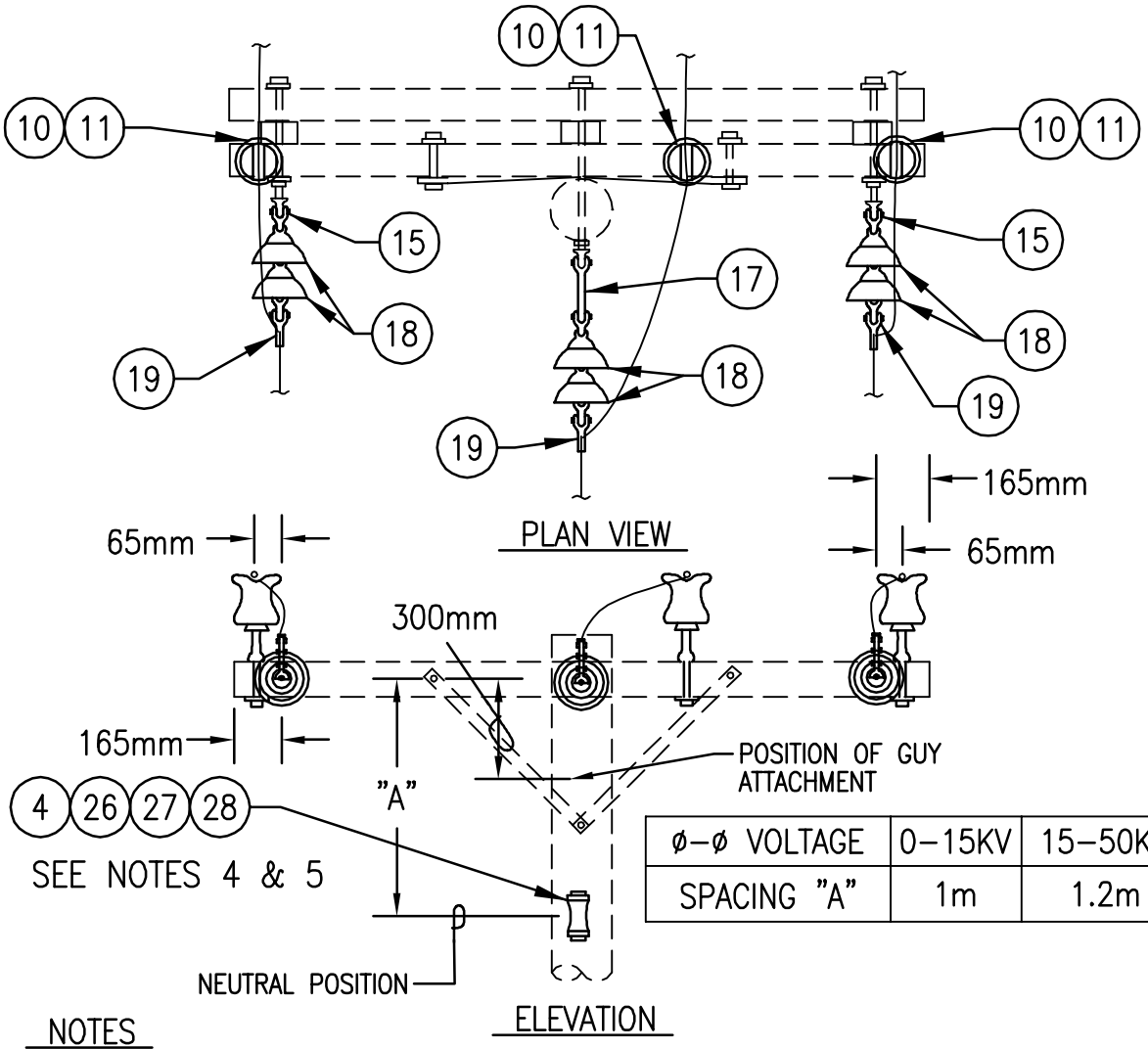
3. OMIT ITEMS (4), (26) (27) AND (28) FOR NEUTRAL ON FDE2 AND FDE3.

4. FOR NEUTRAL CONDUCTOR LARGER THAN #2 AWG, SUBSTITUTE (19) FOR (26), (27) AND (28).

5. MODIFY THE NEUTRAL SPACING "A" AS INDICATED ON OTHER SKETCHES FOR TRANSFORMER AND U.G. TERMINAL INSTALLATIONS.

FDE3–N, FDE3, FDE2–N, FDE2
(0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–15



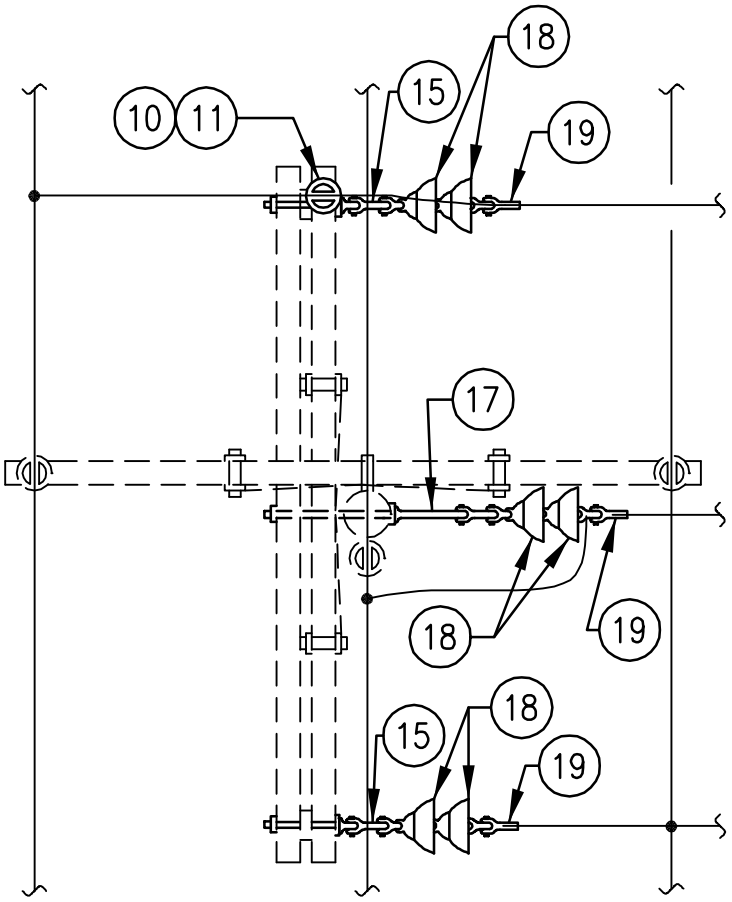
ø–ø VOLTAGE	0–15KV	15–50KV
SPACING "A"	1m	1.2m

NOTES

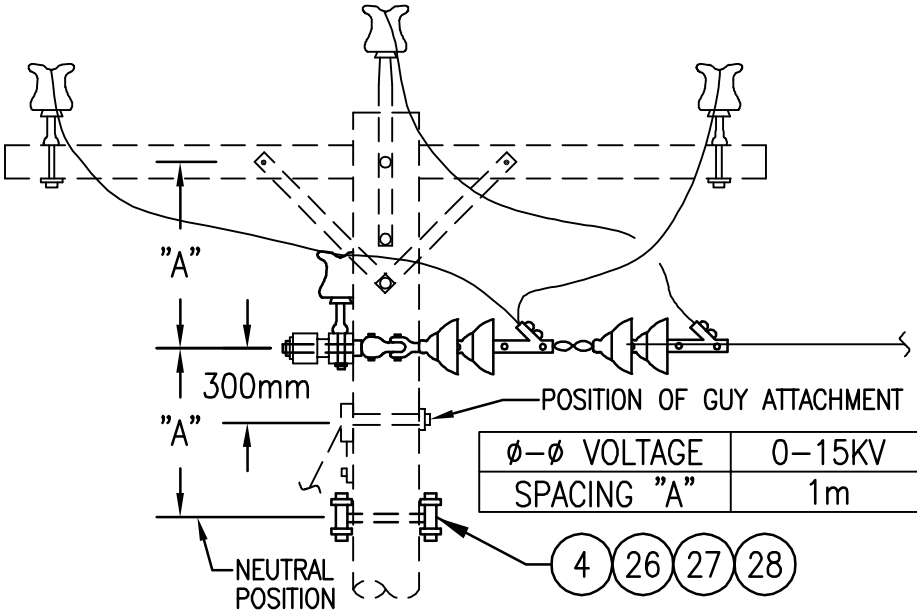
1. DRAWING REPRESENTS FDE3–N–SLACK FOR VOLTAGES UP TO 15KV. ELIMINATE INSULATOR ASSEMBLIES FOR MIDDLE PHASE ON FDE2–SLACK AND FDE2–N–SLACK.
2. DRAWING REPRESENTS DEADEND ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR NUMBER AND CLASS OF INSULATORS REQUIRED FOR EACH VOLTAGE LEVEL.
3. OMIT ITEMS (4), (26) (27) AND (28) ON FDE2–SLACK AND FDE3–SLACK.
4. FOR NEUTRAL CONDUCTOR LARGER THAN #2 AWG, SUBSTITUTE (19) FOR (26), (27) AND (28).
5. TWO INSULATOR ASSEMBLIES (ITEMS (26) (27) (28) (4)) REQUIRED FOR THE NEUTRAL CONDUCTOR.
6. SLACK SPAN CONSTRUCTION LIMITED TO MAXIMUM SPAN LENGTH OF 24m.

FDE3–N–SLACK, FDE3–SLACK, FDE2–N–SLACK, FDE2–SLACK (0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–16



PLAN VIEW



ø–ø VOLTAGE	0–15KV	15–50KV
SPACING "A"	1m	1.2m

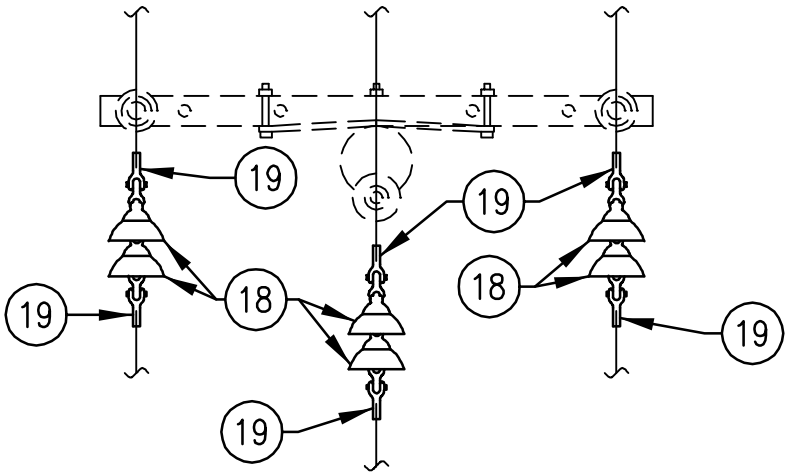
ELEVATION

NOTES

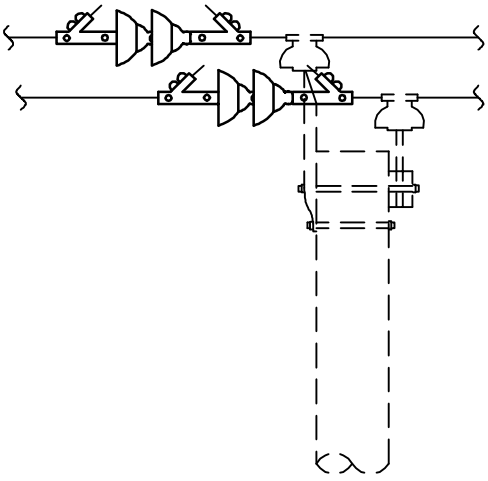
1. DRAWING REPRESENTS FDE3–N–TAP. ELIMINATE INSULATOR FOR MIDDLE PHASE CONDUCTOR ON FDE2–N–TAP.
2. DRAWING REPRESENTS DEADEND ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR NUMBER AND CLASS OF INSULATORS REQUIRED FOR EACH VOLTAGE LEVEL.
3. OMIT ITEMS (4), (26), (27) AND (28) FOR NEUTRAL ON FDE3–TAP AND FDE2–TAP.

FDE3–N–TAP, FDE3–TAP, FDE2–N–TAP, FDE2–TAP (0–50KV)

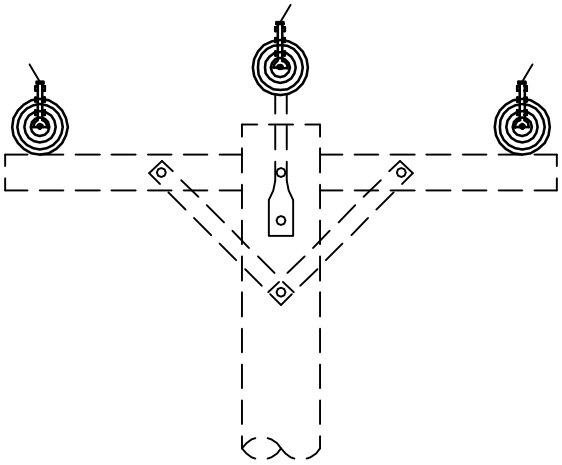
SKETCH DATE	JUNE 2002	STYLE	OH–17



PLAN VIEW



SIDE VIEW



FRONT VIEW

NOTES

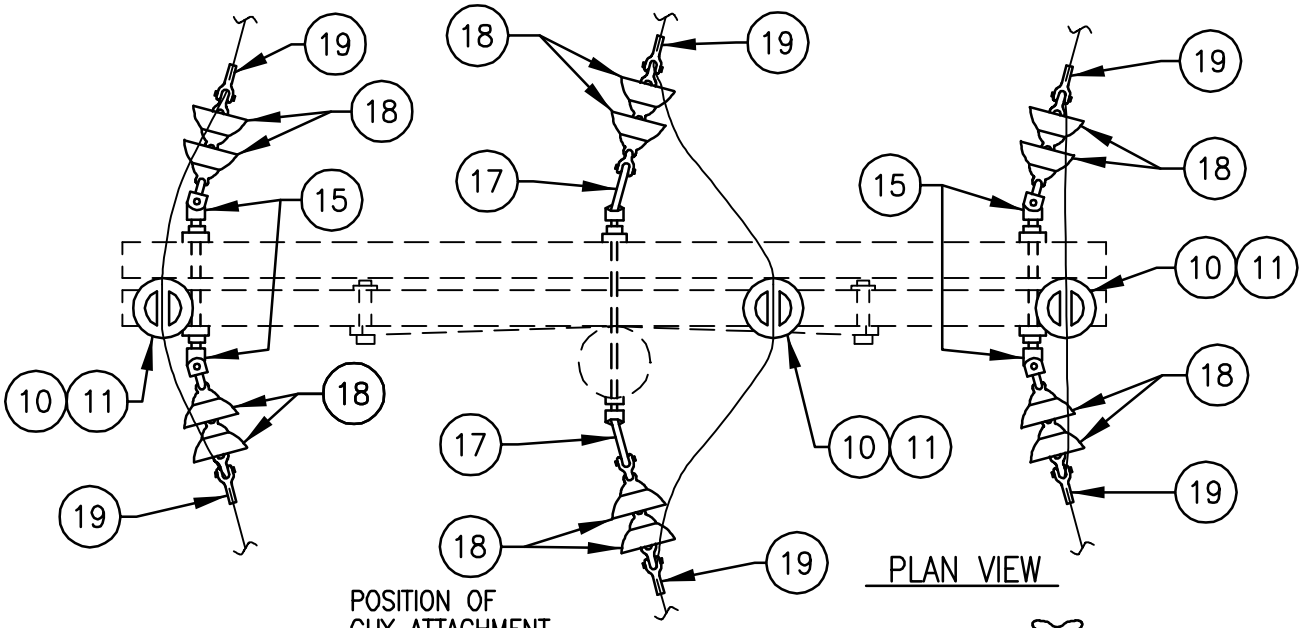
1. DRAWING REPRESENTS FDE3–FLOATING. ELIMINATE INSULATOR ASSEMBLIES FOR MIDDLE PHASE ON FDE2–FLOATING.

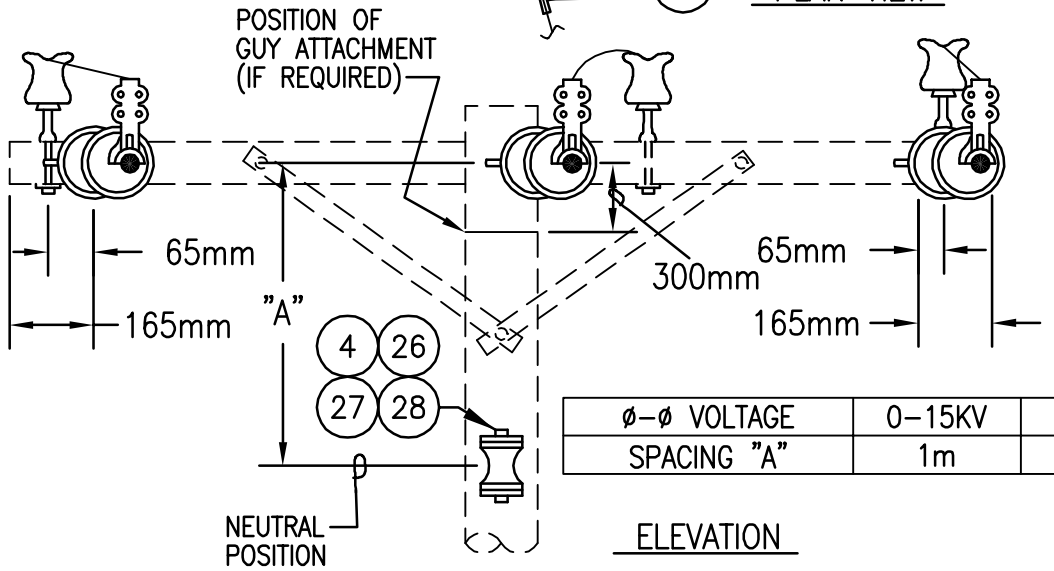
2. DRAWING REPRESENTS FLOATING DEADEND ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR NUMBER AND CLASS OF INSULATORS REQUIRED FOR EACH VOLTAGE LEVEL.

3. THIS CONSTRUCTION IS TO BE USED FOR INSTALLING A DELIBERATE BREAK IN A CIRCUIT FOR SECTIONALIZING PURPOSES.

FDE3–FLOATING, FDE2–FLOATING (0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–18





ø–ø VOLTAGE	0–15KV	15–50KV
SPACING "A"	1m	1.2m

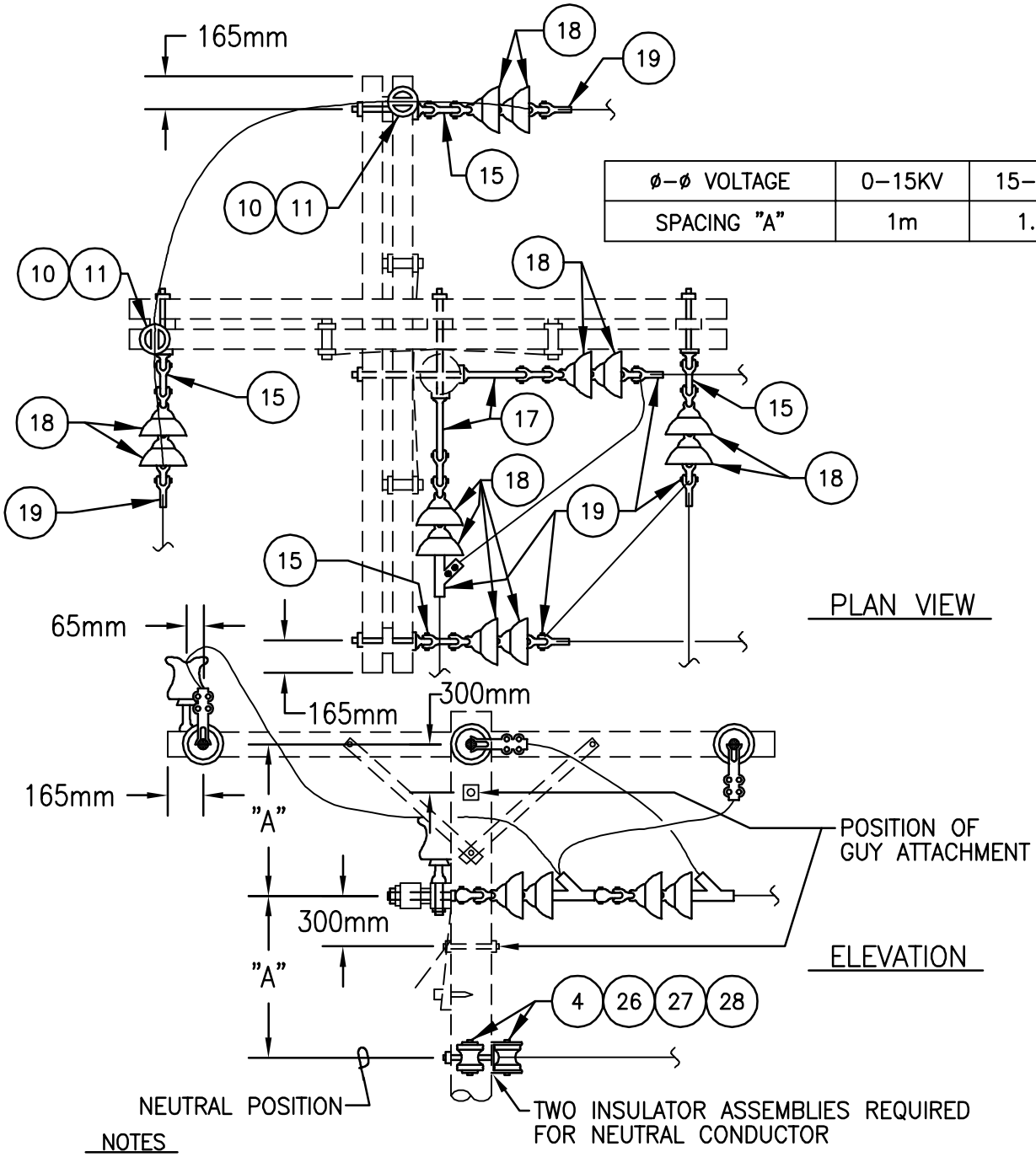
ELEVATION

NOTES

1. DRAWING REPRESENTS FDDE3–N. ELIMINATE INSULATOR ASSEMBLIES FOR MIDDLE PHASE ON FDDE2 AND FDDE2–N.
2. DRAWING REPRESENTS DEADEND ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR NUMBER AND CLASS OF INSULATORS REQUIRED FOR EACH VOLTAGE LEVEL.
3. OMIT ITEMS (4), (26), (27) AND (28) FOR NEUTRAL ON FDDE2 AND FDDE3.
4. FOR NEUTRAL CONDUCTOR LARGER THAN #2 AWG, SUBSTITUTE (19) FOR (26), (27) AND (28).
5. TWO INSULATOR ASSEMBLIES ((26), (27) AND (28)) REQUIRED FOR NEUTRAL CONDUCTOR.

FDDE3–N, FDDE3, FDDE2–N, FDDE2 (0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–19



ø–ø VOLTAGE	0–15KV	15–50KV
SPACING "A"	1m	1.2m

PLAN VIEW

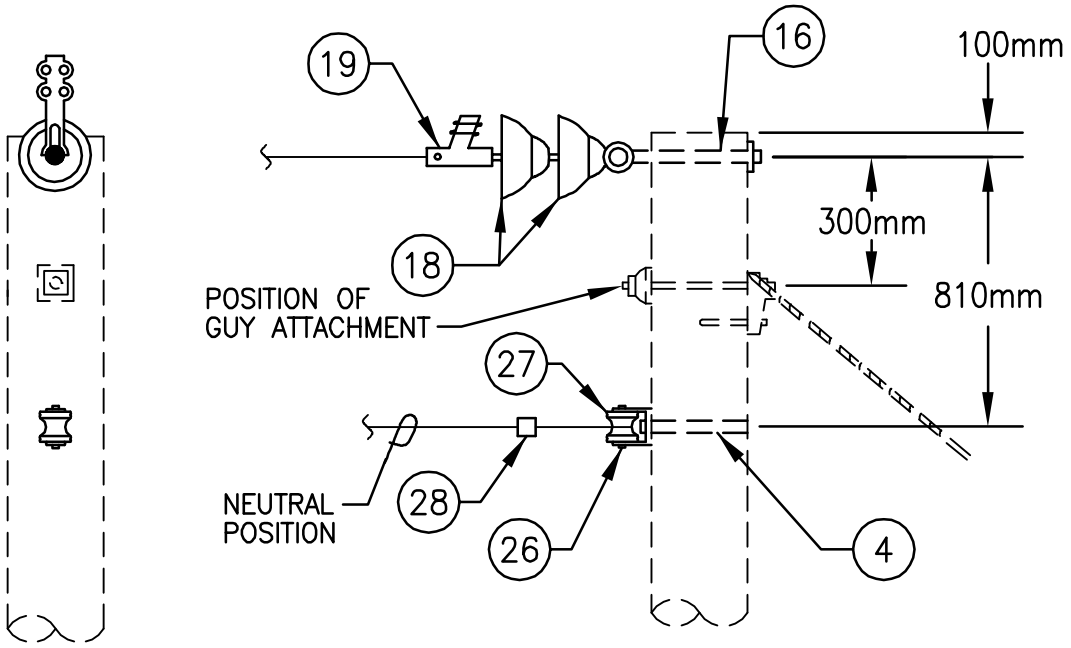
ELEVATION

NOTES

1. DRAWING REPRESENTS FDDE3–N–BUCK. ELIMINATE INSULATOR ASSEMBLIES FOR MIDDLE PHASE ON FDDE2–BUCK AND FDDE2–N–BUCK.
2. DRAWING REPRESENTS DEADEND ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR NUMBER AND CLASS OF INSULATORS REQUIRED FOR EACH VOLTAGE LEVEL.
3. OMIT ITEMS (4), (26), (27) AND (28) FOR NEUTRAL ON FDDE2–BUCK AND FDDE3–BUCK.
4. FOR NEUTRAL CONDUCTOR LARGER THAN #2 AWG, SUBSTITUTE (19) FOR (26), (27) AND (28).

FDDE3–N–BUCK, FDDE3–BUCK, FDDE2–N–BUCK, FDDE2–BUCK (0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–20



FRONT VIEW

SIDE VIEW

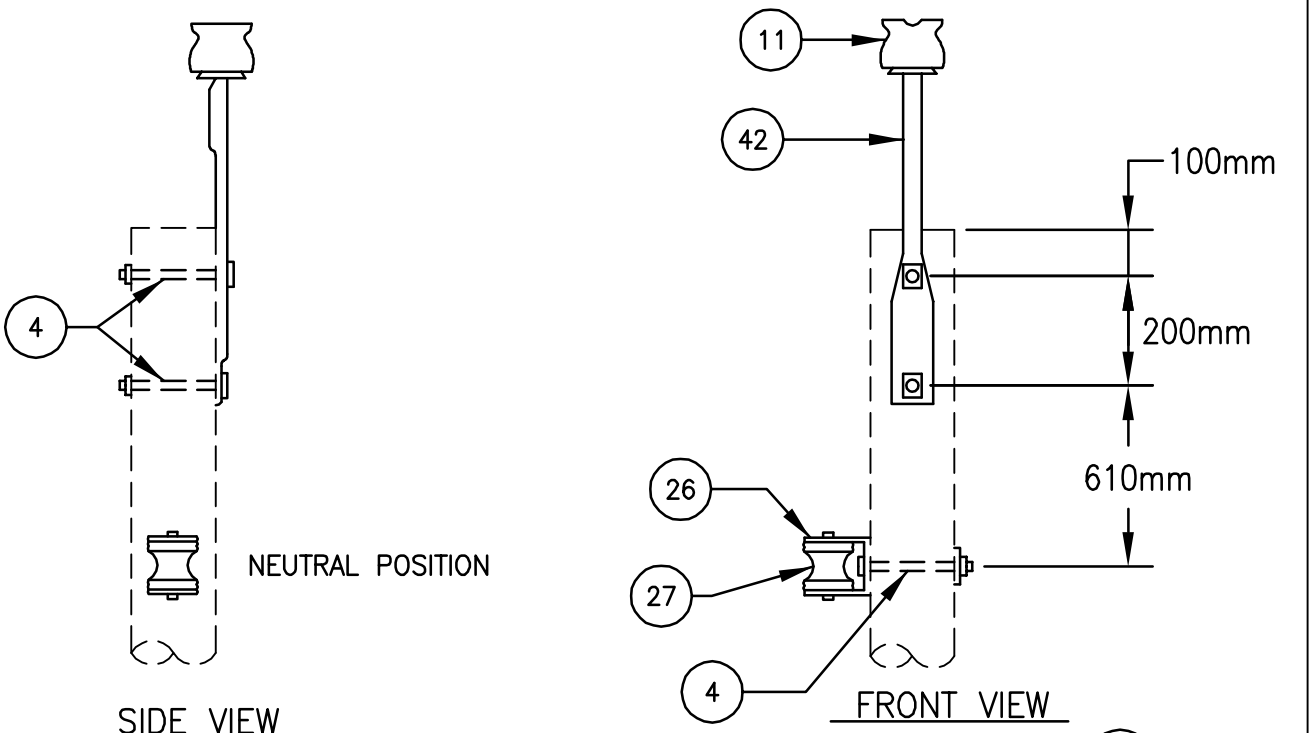
NOTES

1. DRAWING REPRESENTS DEADEND ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR NUMBER AND CLASS OF INSULATORS REQUIRED FOR EACH VOLTAGE LEVEL.

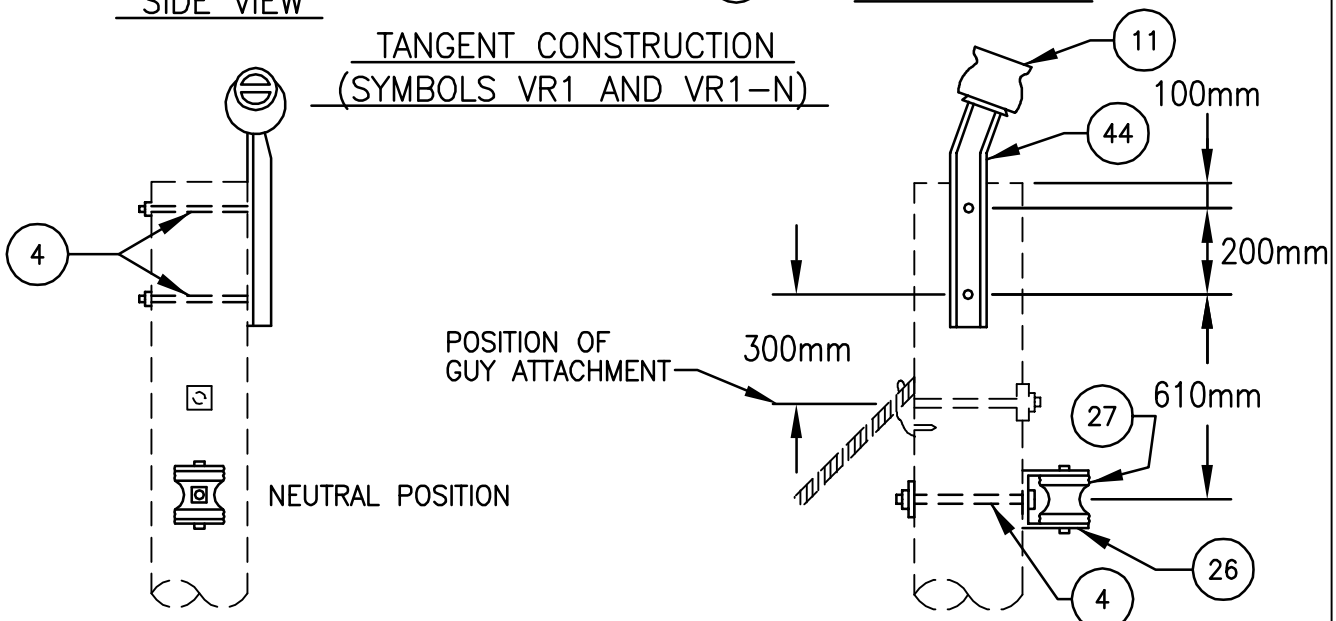
2. OMIT ITEMS (4), (26), (27) AND (28) FOR NEUTRAL ON SYMBOL VDE1.

VDE1–N, VDE1
(0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–21



TANGENT CONSTRUCTION
(SYMBOLS VR1 AND VR1–N)



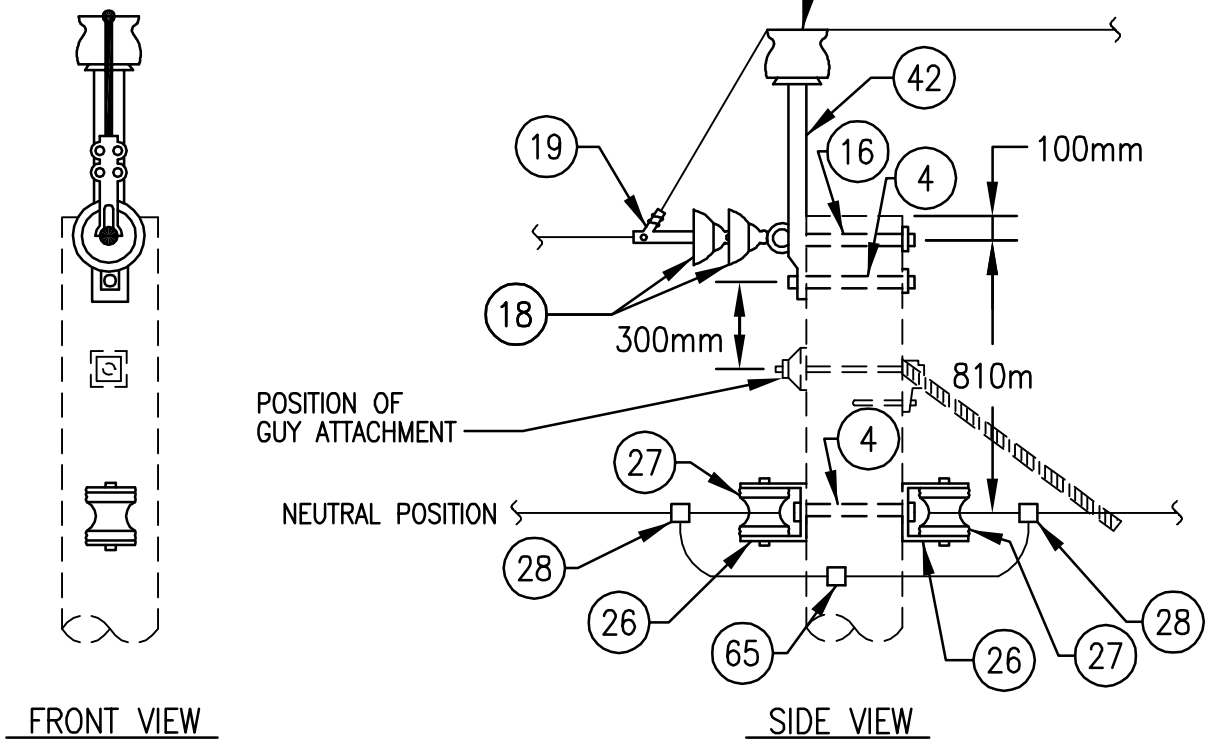
ANGLE CONSTRUCTION
(SYMBOLS VRA1 AND VRA1–N)

NOTES

1. DRAWING REPRESENTS ASSEMBLIES FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR THE REQUIRED CLASS OF INSULATORS.
2. OMIT (4), (26), AND (27) FOR NEUTRAL ON SYMBOLS VR1 AND VRA1.

VR1, VR1–N, VRA1, VRA1–N
(0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–22



FRONT VIEW

SIDE VIEW

NOTES

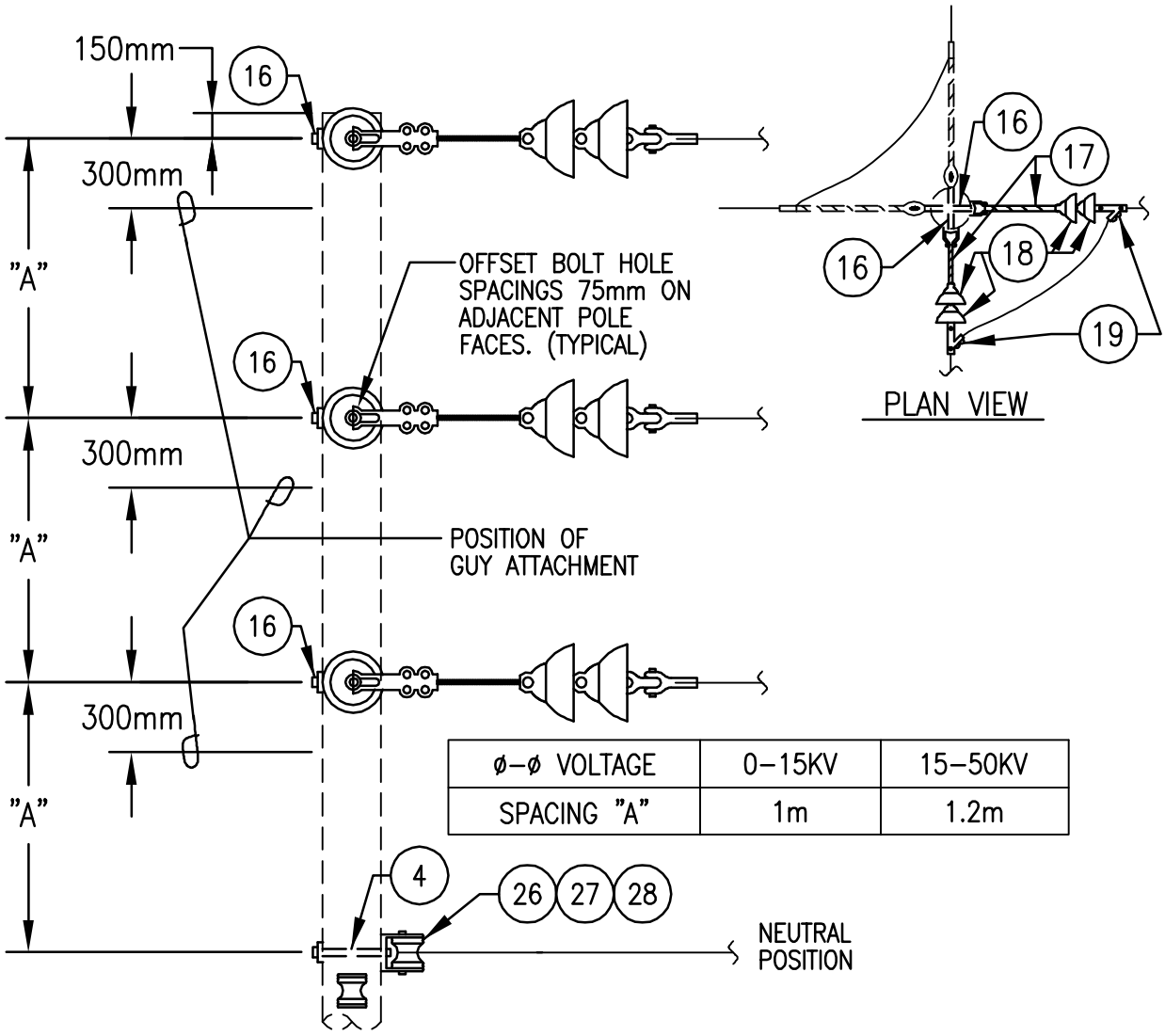
1. DRAWING REPRESENTS ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR THE REQUIRED NUMBER AND CLASS OF INSULATORS.

2. OMIT ITEMS (4), (26), (27) AND (28) FOR NEUTRAL ON SYMBOL VDE1-SLACK.

3. SINGLE PHASE SLACK SPAN CONSTRUCTION LIMITED TO MAXIMUM SPAN LENGTH OF 24m.

VDE1-N-SLACK, VDE1-SLACK
(0-50KV)

SKETCH DATE	JUNE 2002	STYLE	OH-23



ø–ø VOLTAGE	0–15KV	15–50KV
SPACING "A"	1m	1.2m

NOTES

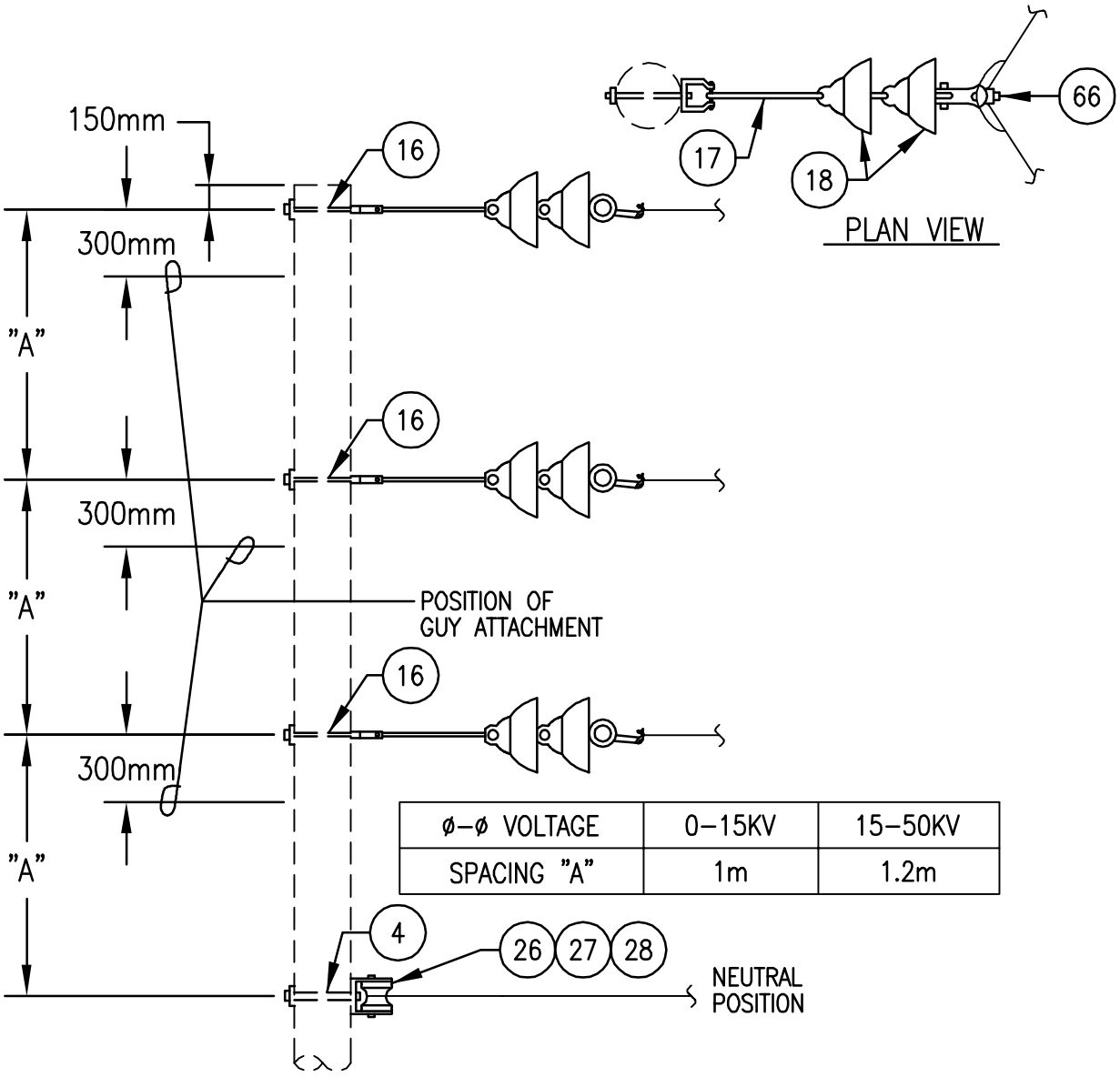
1. DRAWING REPRESENTS VDDE3–N FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. MODIFY INSULATOR ASSEMBLIES AS REQUIRED TO COINCIDE WITH THE NUMBER OF PHASE CONDUCTORS. REFER TO SPECIFICATION SECTION 16301 FOR THE REQUIRED NUMBER AND CLASS OF INSULATORS.

2. OMIT ITEMS (4) (26) (27) AND (28) FOR NEUTRAL ON ALL SYMBOLS WHICH DO NOT CONTAIN "N".

3. FOR NEUTRAL CONDUCTORS LARGER THAN #1/0 AWG, PROVIDE (15) AND (19) IN LIEU OF (26) (27) AND (28). TWO INSULATOR ASSEMBLIES REQUIRED FOR NEUTRAL.

VDDE3–N, VDDE3, VDDE2–N, VDDE2, VDDE1–N, VDDE1 (0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–24



ø–ø VOLTAGE	0–15KV	15–50KV
SPACING "A"	1m	1.2m

NOTES

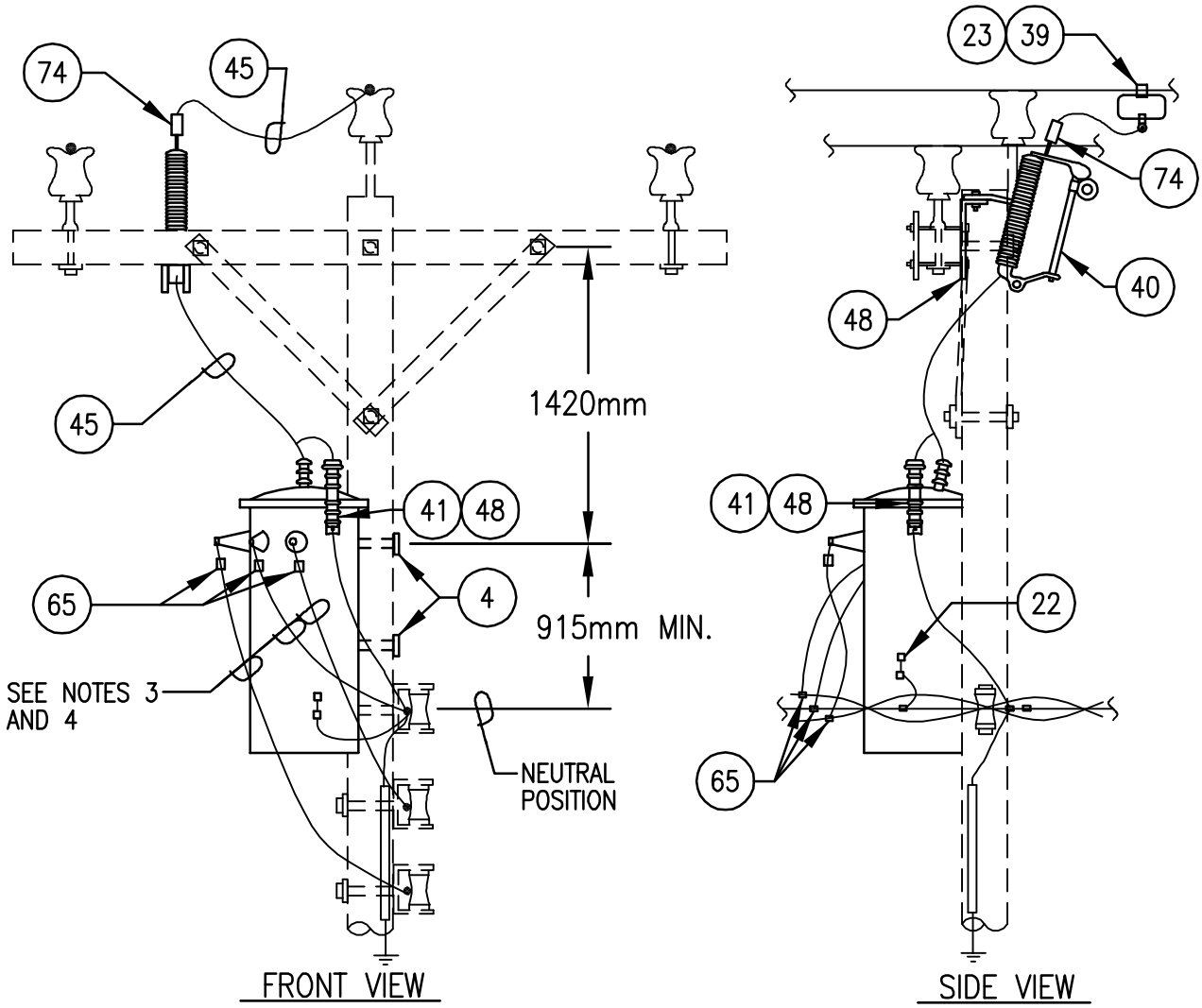
1. DRAWING REPRESENTS VA3–N. MODIFY INSULATOR ASSEMBLIES AS REQUIRED TO COINCIDE WITH THE NUMBER OF PHASE CONDUCTORS.

2. OMIT ITEMS (4) (26) (27) AND (28) FOR NEUTRAL ON ALL SYMBOLS WHICH DO NOT CONTAIN "N".

3. DRAWING REPRESENTS ASSEMBLY FOR CIRCUIT VOLTAGES >5KV AND ≤15KV. REFER TO SPECIFICATION SECTION 16301 FOR THE REQUIRED NUMBER AND CLASS OF INSULATORS.

VA3–N, VA3, VA2–N, VA2, VA1–N, VA1 (0–50KV)

SKETCH DATE	JUNE 2002	STYLE	OH–25

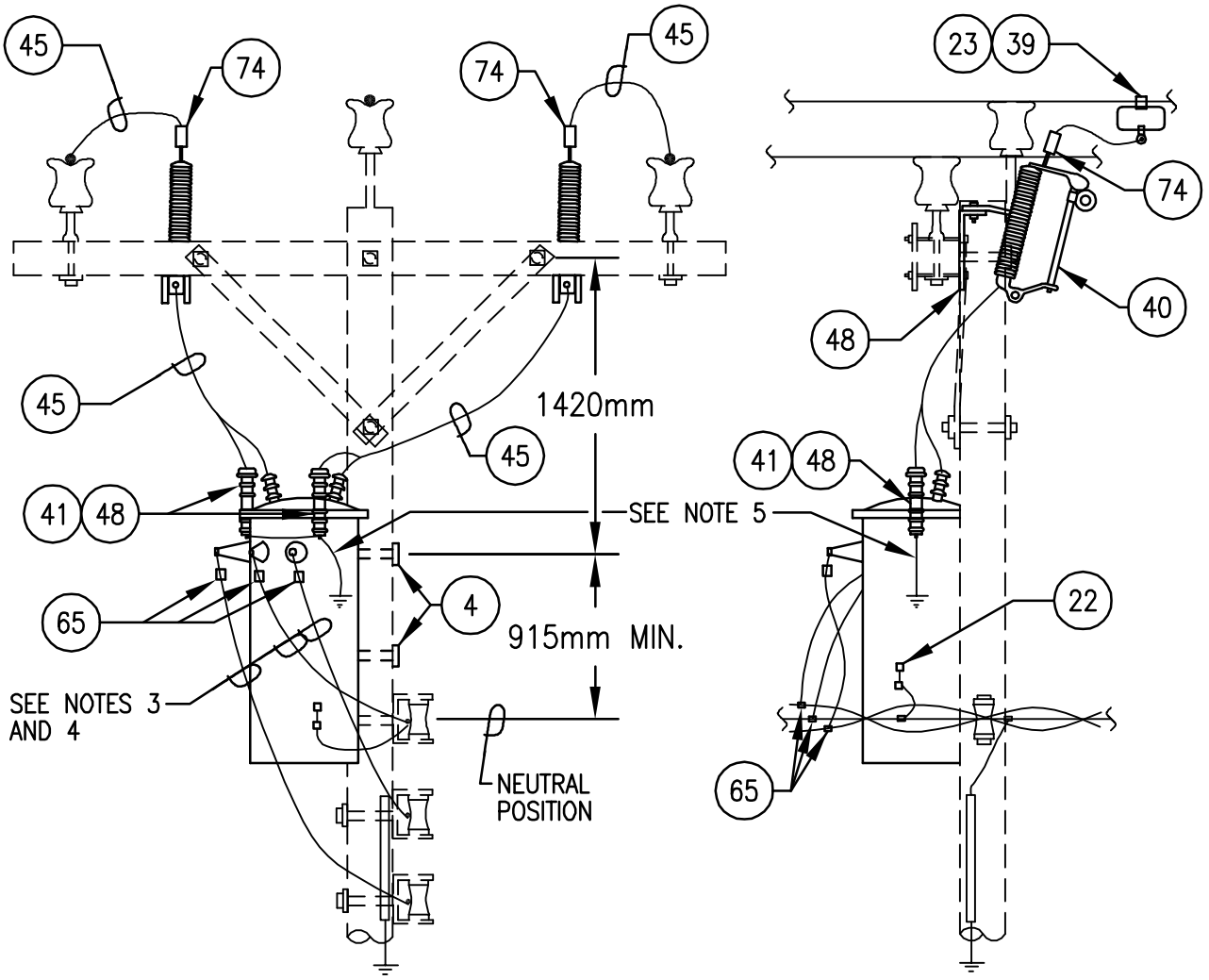


NOTES

1. DRAWING REPRESENTS TF-CL. OMIT ITEM (74) FOR SYMBOL TF.
2. MODIFY CONNECTIONS AS REQUIRED TO ACCOMODATE TRANSFORMERS WITH PRIMARY BUSHING ARRANGEMENTS OTHER THAN SHOWN.
3. WHEN TRANSFORMER PROVIDES UNDERGROUND SERVICE, SIZE SECONDARY OR SERVICE CONDUCTORS AS INDICATED.
4. WHEN TRANSFORMER SECONDARY LEADS CONNECT TO OPEN WIRE OR TRIPLEX SECONDARY, CONDUCTOR SHALL HAVE 600 VOLT INSULATION RATING AND MINIMUM AMPACITY OF 125% OF TRANSFORMER FULL LOAD SECONDARY CURRENT.

TF-CL, TF (0-15KV)

SKETCH DATE	JUNE 2002	STYLE	OH-26



FRONT VIEW

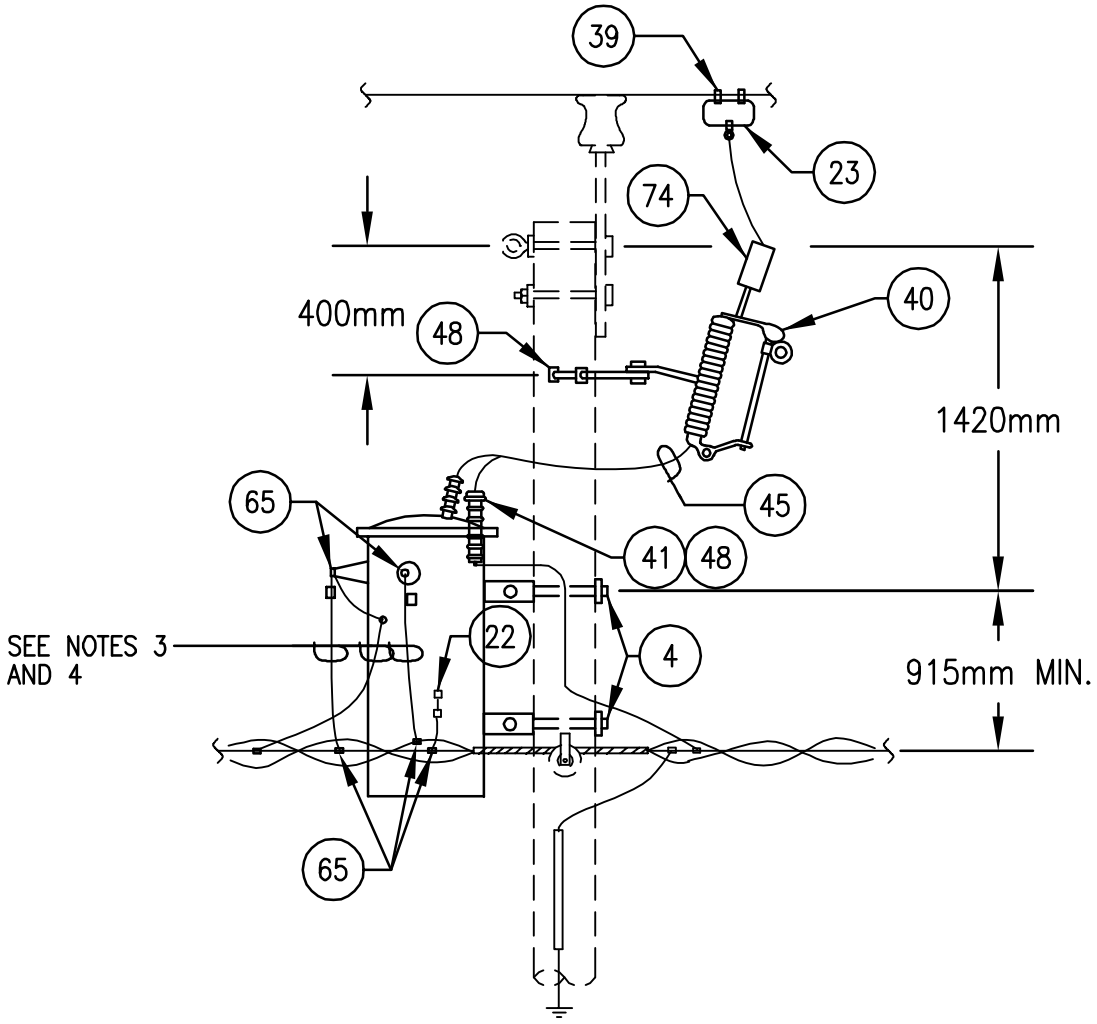
SIDE VIEW

NOTES

1. DRAWING REPRESENTS TFPP–CL. OMIT ITEM (74) FOR SYMBOL TFPP.
2. MODIFY CONNECTIONS AS REQUIRED TO ACCOMODATE TRANSFORMERS WITH PRIMARY BUSHING ARRANGEMENTS OTHER THAN SHOWN.
3. WHEN TRANSFORMER SECONDARY LEADS CONNECT TO OPEN WIRE OR TRIPLEX SECONDARY, CONDUCTOR SHALL HAVE 600 VOLT INSULATION RATING AND MINIMUM AMPACITY OF 125% OF TRANSFORMER FULL LOAD SECONDARY CURRENT.
4. WHEN TRANSFORMER PROVIDES UNDERGROUND SERVICE, SIZE SECONDARY OR SERVICE CONDUCTORS AS INDICATED.
5. CONNECT SURGE ARRESTERS TO A PRIMARY GROUNDING ELECTRODE SEPARATE FROM THE SECONDARY NEUTRAL GROUNDING ELECTRODE. SEE GROUNDING NOTES ON SKETCH OH–41.

TFPP–CL, TFPP (0–15KV)

SKETCH DATE	JUNE 2002	STYLE	OH–27



SIDE ELEVATION

NOTES

1. DRAWING REPRESENTS TV–CL. OMIT ITEM (74) FOR SYMBOL TV.

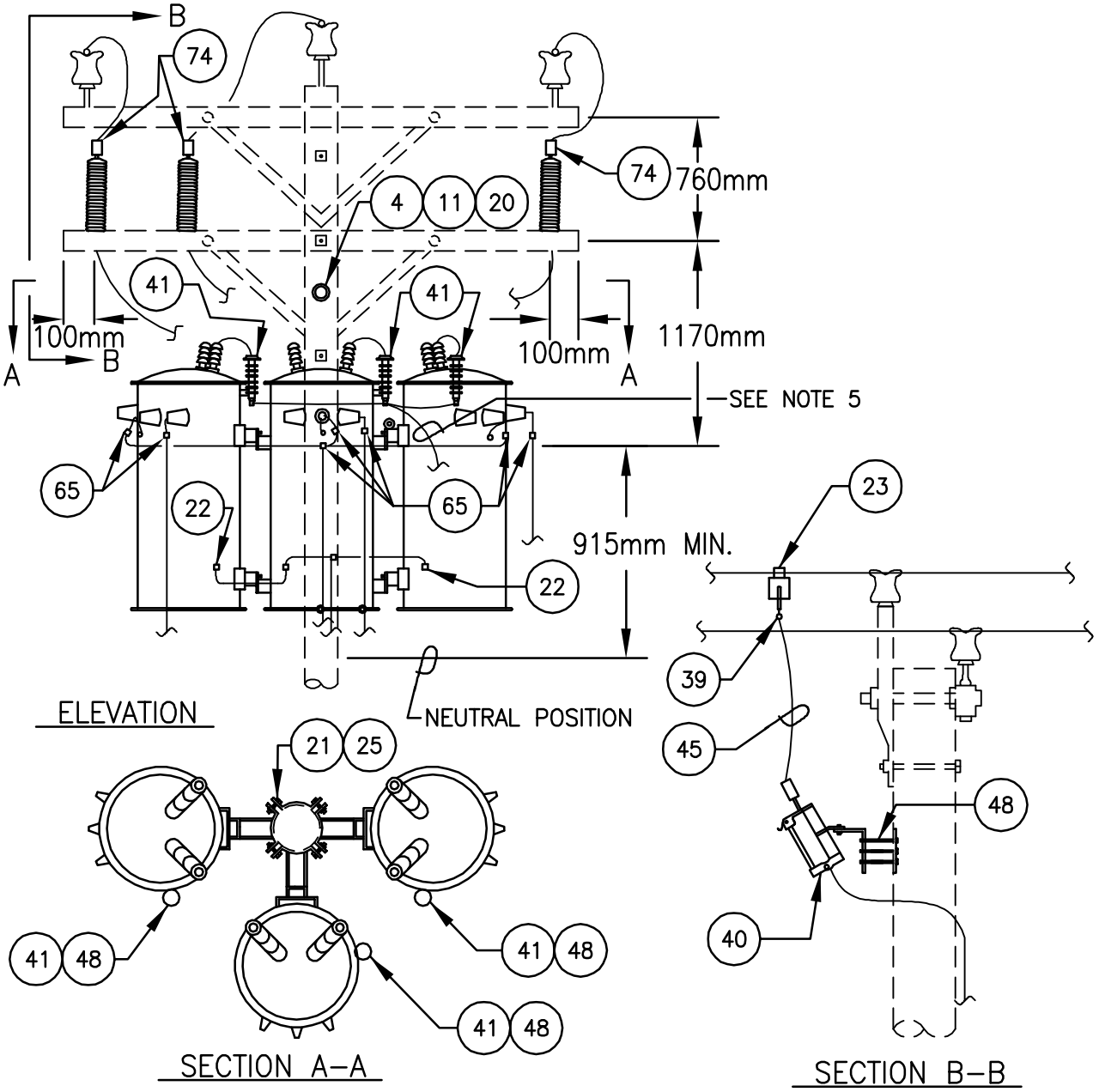
2. MODIFY CONNECTIONS AS REQUIRED TO ACCOMODATE TRANSFORMERS WITH PRIMARY BUSHING ARRANGEMENTS OTHER THAN SHOWN.

3. WHEN TRANSFORMER SECONDARY LEADS CONNECT TO OPEN WIRE OR TRIPLEX SECONDARY, CONDUCTOR SHALL HAVE 600 VOLT INSULATION RATING AND MINIMUM AMPACITY OF 125% OF TRANSFORMER FULL LOAD SECONDARY CURRENT.

4. WHEN TRANSFORMER PROVIDES UNDERGROUND SERVICE, SIZE SECONDARY OR SERVICE CONDUCTORS AS INDICATED.

TV–CL, TV (0–15KV)

SKETCH DATE	JUNE 2002	STYLE	OH–28

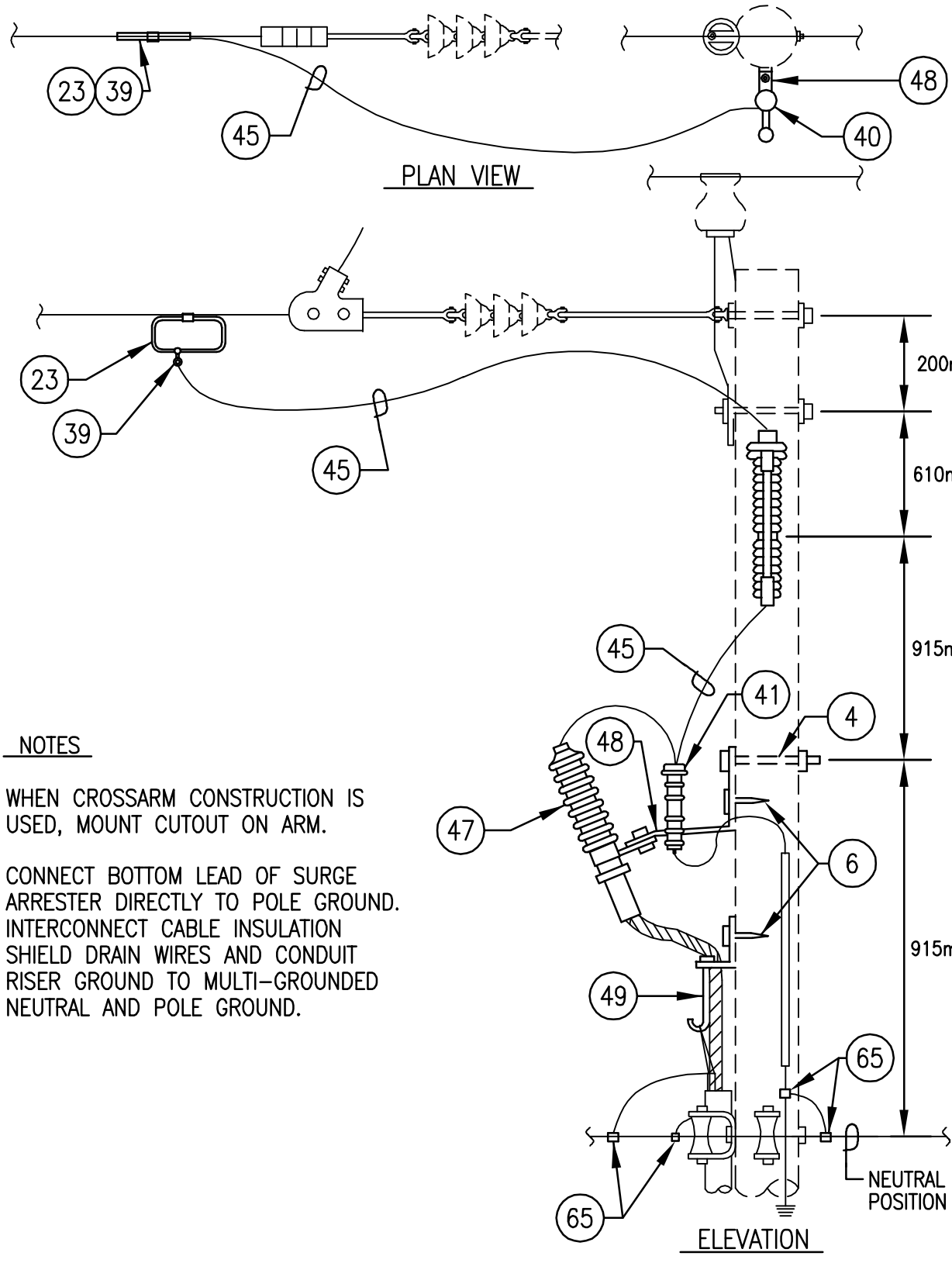


NOTES

1. DRAWING REPRESENTS TTT–CL. OMIT ITEM (74) FOR SYMBOL TTT.
2. MODIFY CONNECTIONS AS REQUIRED TO ACCOMODATE TRANSFORMERS WITH PRIMARY BUSHING ARRANGEMENTS OTHER THAN SHOWN.
3. WHEN TRANSFORMER SECONDARY LEADS CONNECT TO OPEN WIRE OR QUADRUPLEX SECONDARY, CONDUCTOR SHALL HAVE 600 VOLT INSULATION RATING AND MINIMUM AMPACITY OF 125% OF TRANSFORMER FULL LOAD SECONDARY CURRENT.
4. WHEN TRANSFORMER PROVIDES UNDERGROUND SERVICE, SIZE SECONDARY OR SERVICE CONDUCTORS AS INDICATED.
5. CONNECT TO SYSTEM NEUTRAL IF THE PRIMARY CIRCUIT IS A 4 WIRE MULTI–GROUNDED SYSTEM. CONNECT TO A PRIMARY GROUNDING ELECTRODE SEPARATE FROM THE SECONDARY NEUTRAL IF THE PRIMARY CIRCUIT IS A 3 WIRE SYSTEM. SEE GROUNDING NOTES ON SKETCH OH–41.

TTT–CL, TTT (0–15KV)

SKETCH DATE	JUNE 2002	STYLE	OH–29



NOTES

1. WHEN CROSSARM CONSTRUCTION IS USED, MOUNT CUTOUT ON ARM.

2. CONNECT BOTTOM LEAD OF SURGE ARRESTER DIRECTLY TO POLE GROUND. INTERCONNECT CABLE INSULATION SHIELD DRAIN WIRES AND CONDUIT RISER GROUND TO MULTI-GROUNDED NEUTRAL AND POLE GROUND.

U.G. TERMINAL (SINGLE-PHASE) (0-25KV)

SKETCH DATE	JUNE 2002	STYLE	OH-30

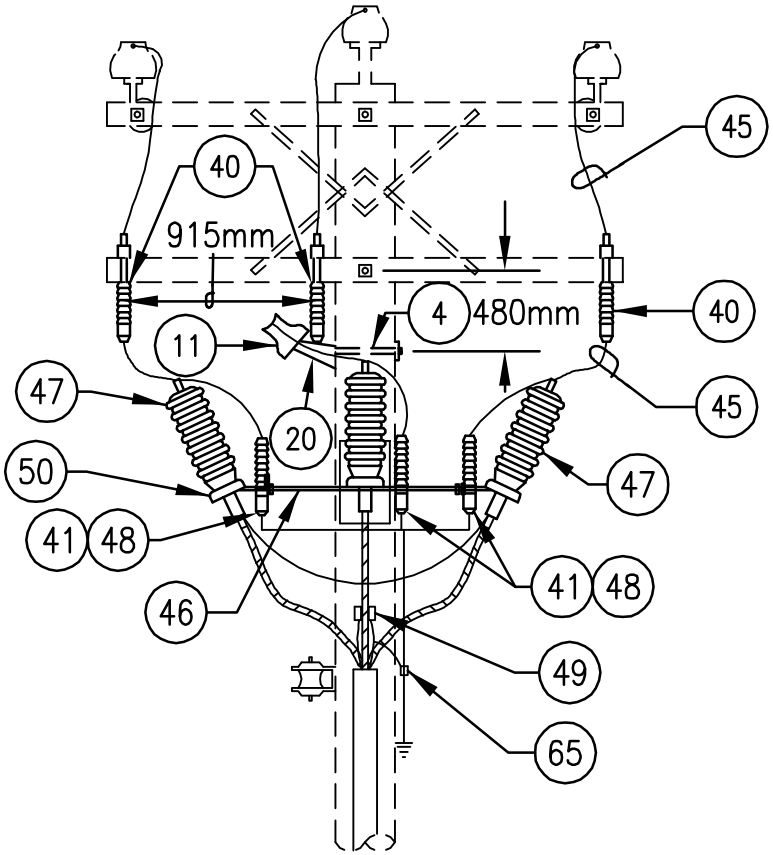
SKETCH DATE

JUNE 2002

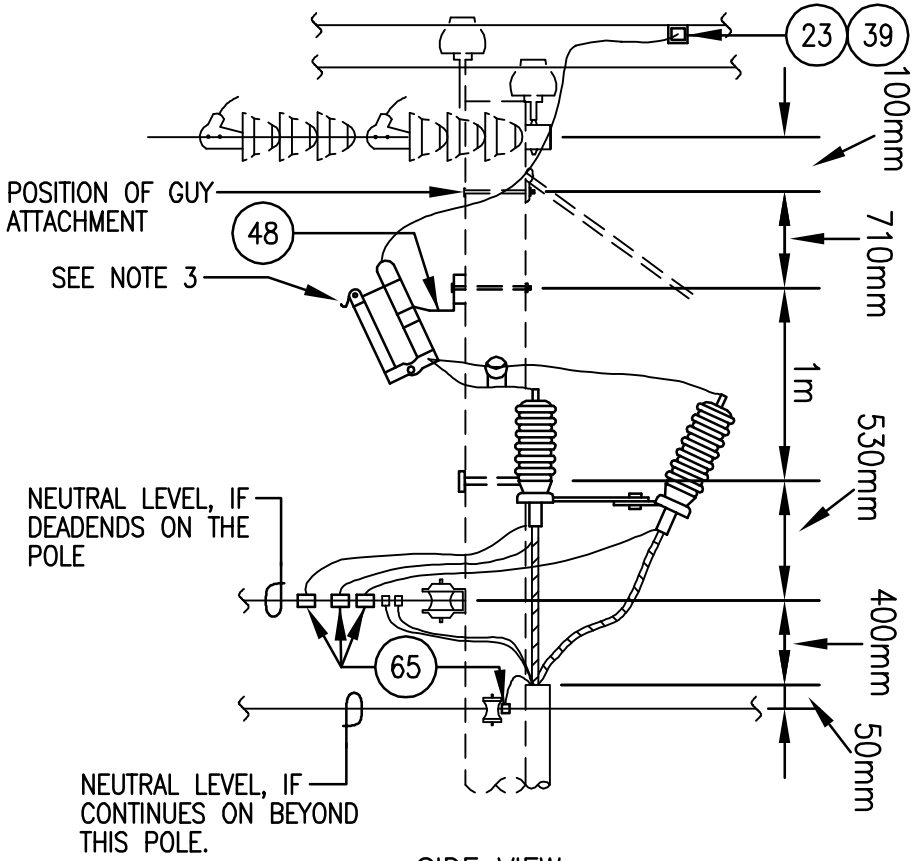
STYLE

OH-31

U.G. TERMINAL (0-25KV)



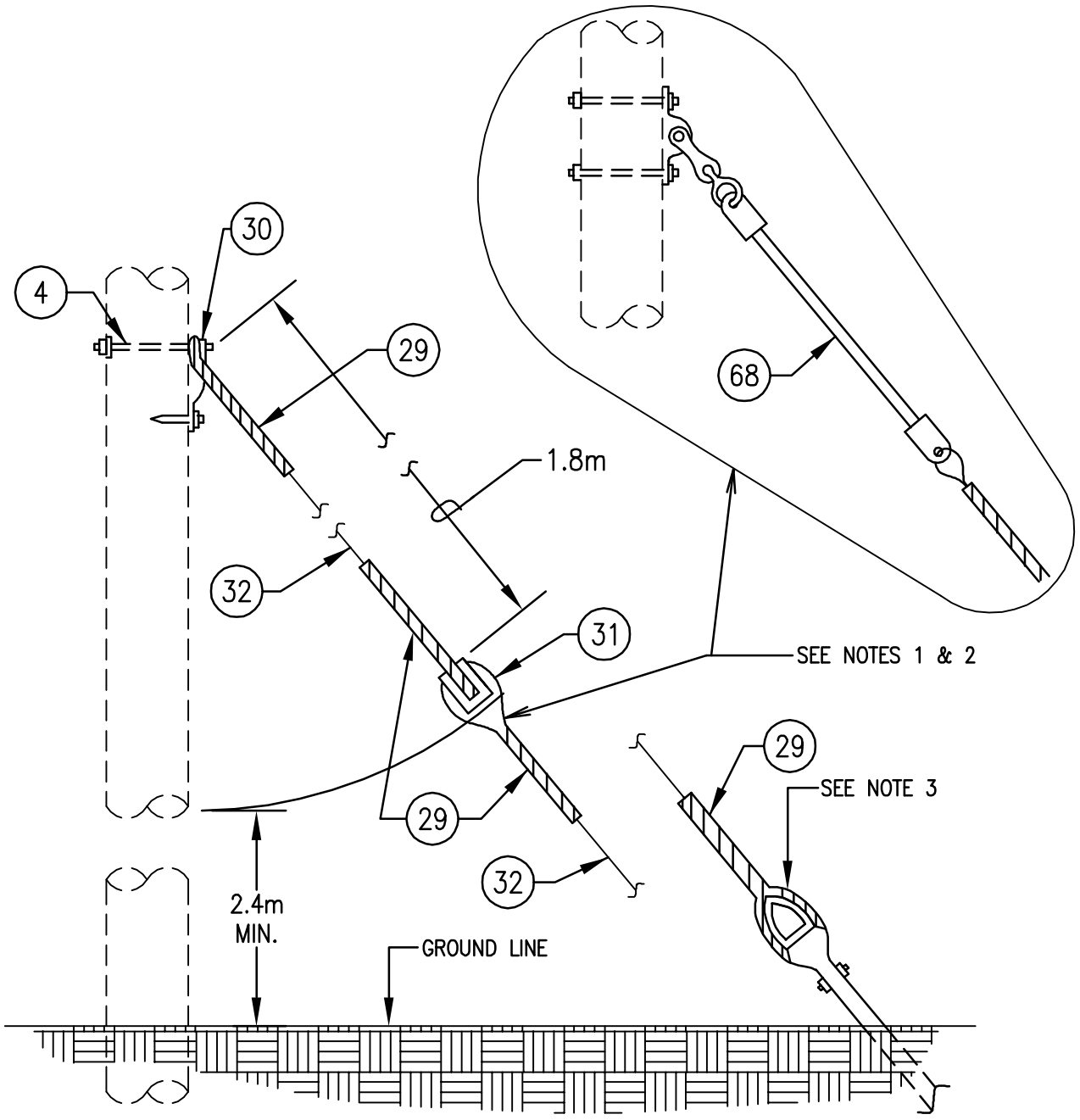
FRONT VIEW



SIDE VIEW

NOTES

1. MODIFY POSITION OF TERMINAL ON DEADENDS TO BE UNDER THE CONDUCTORS AND THE CUTOUTS ON THE BACKSIDE OF CROSSARM. POLE RISER MUST BE OFFSET TO CLEAR NEUTRAL CLEVIS BRACKET.
2. CONNECT BOTTOM LEAD OF ARRESTER DIRECTLY TO POLE GROUND. INTERCONNECT CABLE INSULATION SHIELD DRAIN WIRES AND CONDUIT RISER GROUND TO MULTI-GROUNDED NEUTRAL (IF EXISTING) AND POLE GROUND.
3. CUTOUT PROVIDES A FUSE OR A SOLID BLADE (NON-FUSED) OPTION. COORDINATE WITH SPECIFIC DESIGN REQUIREMENTS PROVIDED.

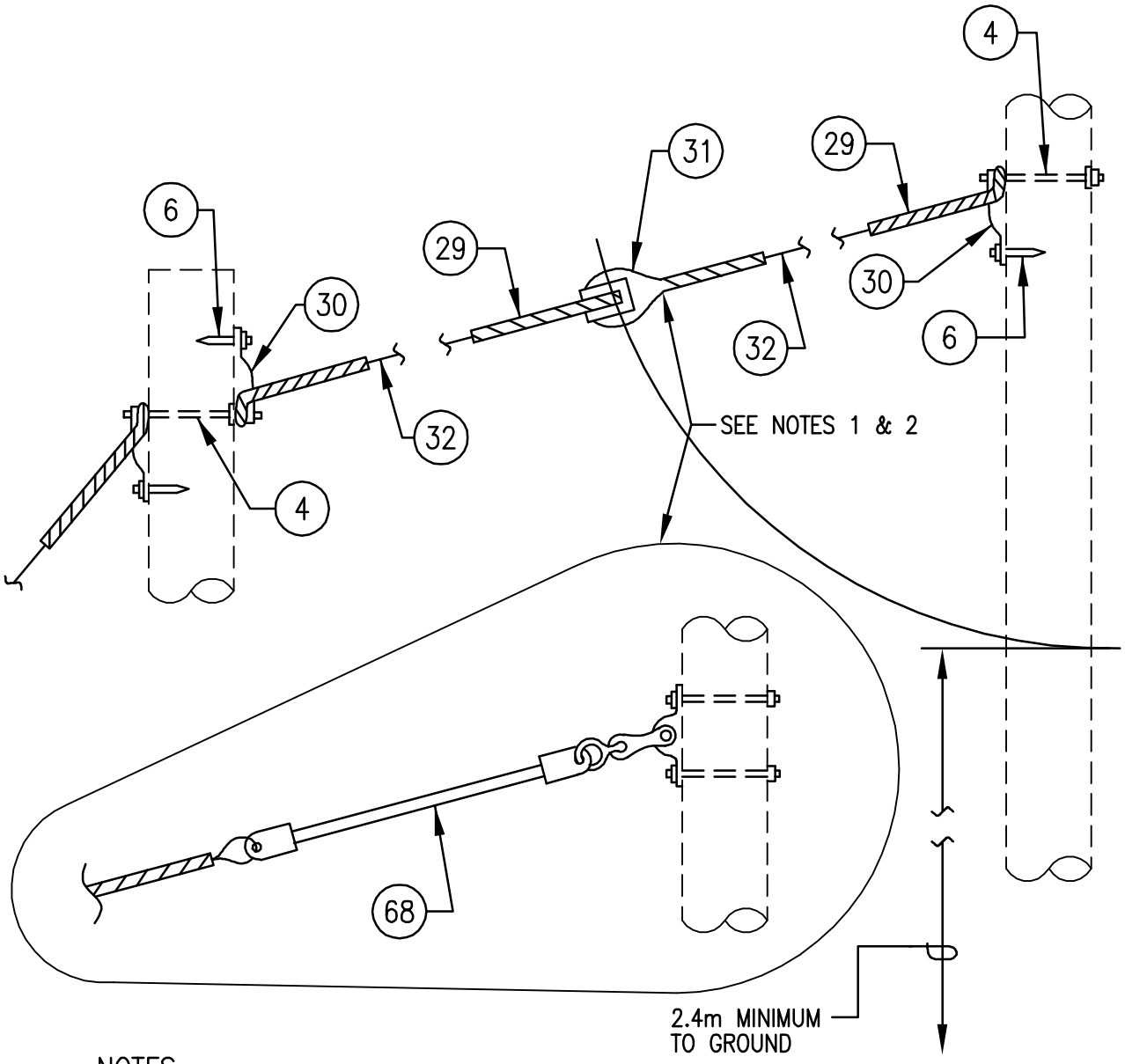


NOTES

1. DRAWING REPRESENTS SYMBOL FOR "GUY-I". OMIT ITEM (31) FOR THE "GUY" SYMBOL.
2. ON CIRCUIT OPERATING VOLTAGES GREATER THAN 15KV, SUBSTITUTE (68) FOR (31).
3. COORDINATE INSTALLATION WITH ANCHOR AS SPECIFIED.
4. UTILIZE ITEM (68) WHEN GUYING ATTACHMENT IS LOCATED IN THE PRIMARY AREA OF THE POLE AS INDICATED BY SPECIFIC DESIGN REQUIREMENTS PROVIDED.
5. BOND ALL GUYS (SUPPLY & COMMUNICATION) AND CONNECT TO POLE GROUND AND SYSTEM NEUTRAL (IF EXISTING).

GUY-I
GUY

SKETCH DATE	JUNE 2002	STYLE	OH-32

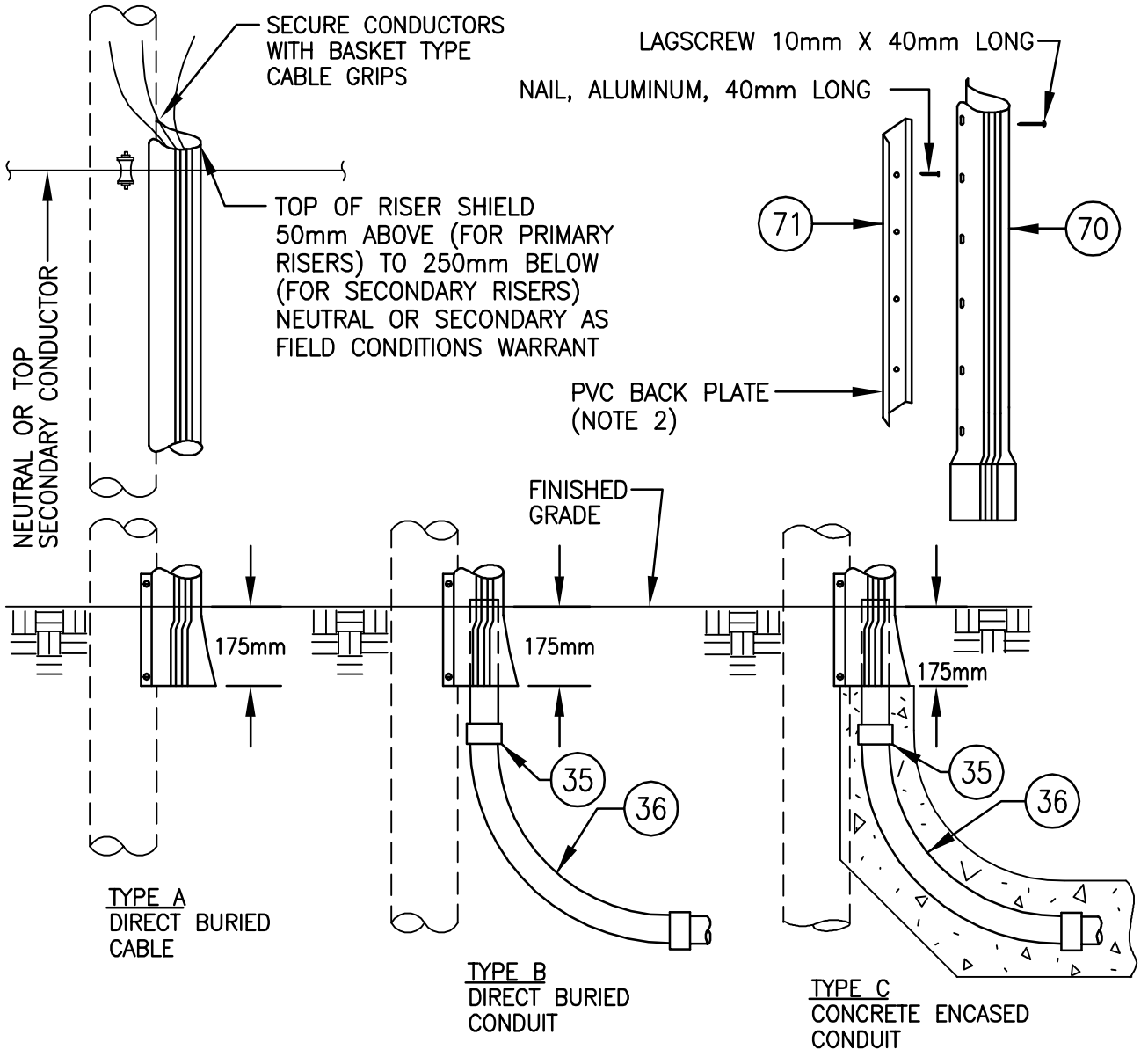


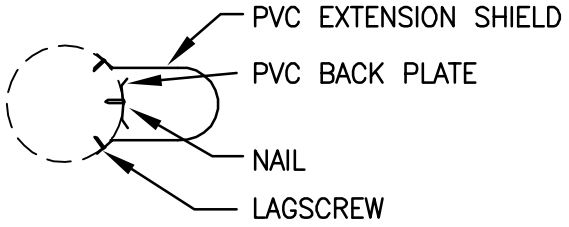
NOTES

1. DRAWING REPRESENTS SYMBOL FOR "SPAN-GUY-I". OMIT ITEM (31) FOR THE "SPAN GUY" SYMBOL.
2. ON CIRCUIT OPERATING VOLTAGES GREATER THAN 15KV, SUBSTITUTE (68) FOR (31).
3. UTILIZE ITEM (68) WHEN GUYING ATTACHMENT IS LOCATED IN THE PRIMARY AREA OF THE POLE AS INDICATED BY SPECIFIC DESIGN REQUIREMENTS PROVIDED.

SPAN GUY-I
SPAN GUY

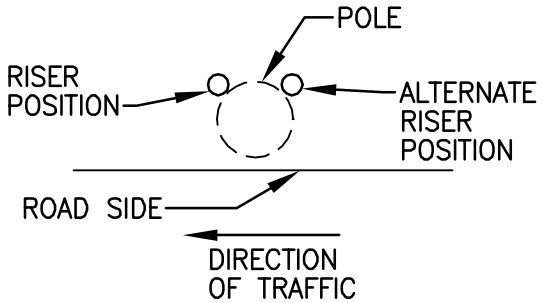
SKETCH DATE	JUNE 2002	STYLE	OH-33





NOTES

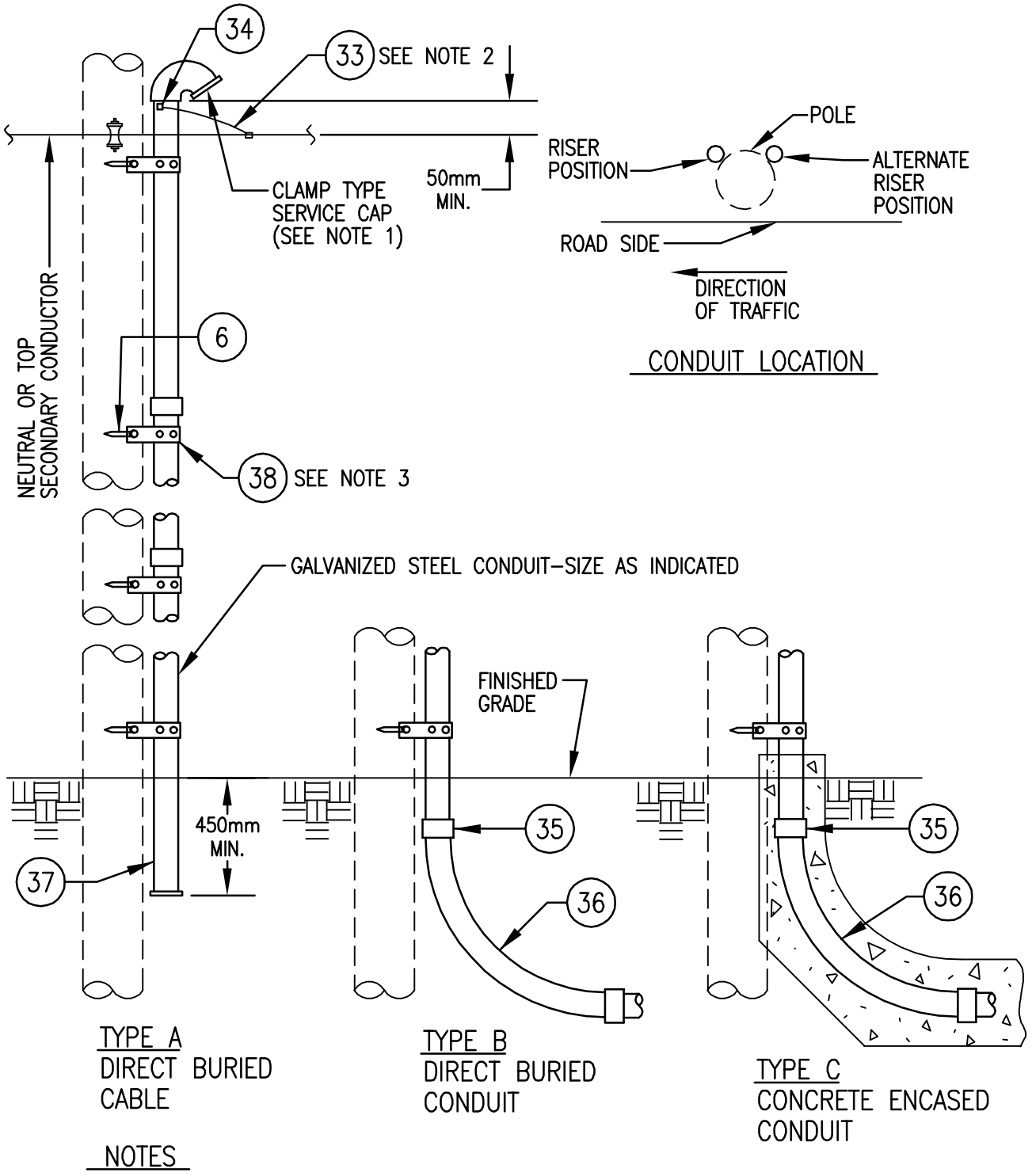
1. INSTALL RISER ON SIDE OR QUARTER OF POLE AWAY FROM CLIMBING SURFACE.
2. INSTALL BACK PLATE WITH THE RISER SHIELD FROM THE BOTTOM OF THE POLE.



CONDUIT LOCATION

PVC RISER SHIELD (SIZE & TYPE AS INDICATED)

SKETCH DATE	JUNE 2002	STYLE	OH-34

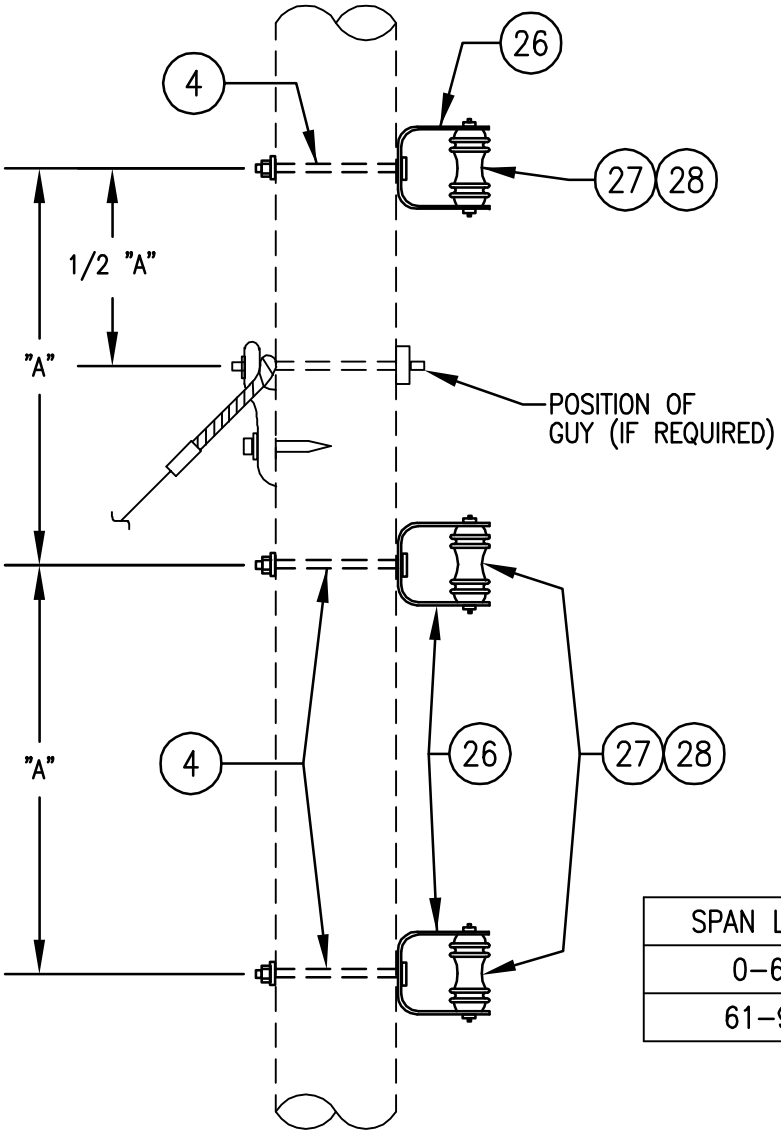


NOTES

1. ON CONDUIT RISER FOR PRIMARY CIRCUITS, ELIMINATE SERVICE CAP AND PROVIDE GROUNDING TYPE INSULATING BUSHING.
2. BOND CONDUIT TO POLE GROUND AND SYSTEM NEUTRAL (IF EXISTING). SEE GROUNDING NOTES ON SKETCH OH–41.
3. SPACE STRAPS AT MAXIMUM OF 1.2m INTERVALS.

CONDUIT RISER
(SIZE & TYPE AS INDICATED)

SKETCH DATE	JUNE 2002	STYLE	OH–35



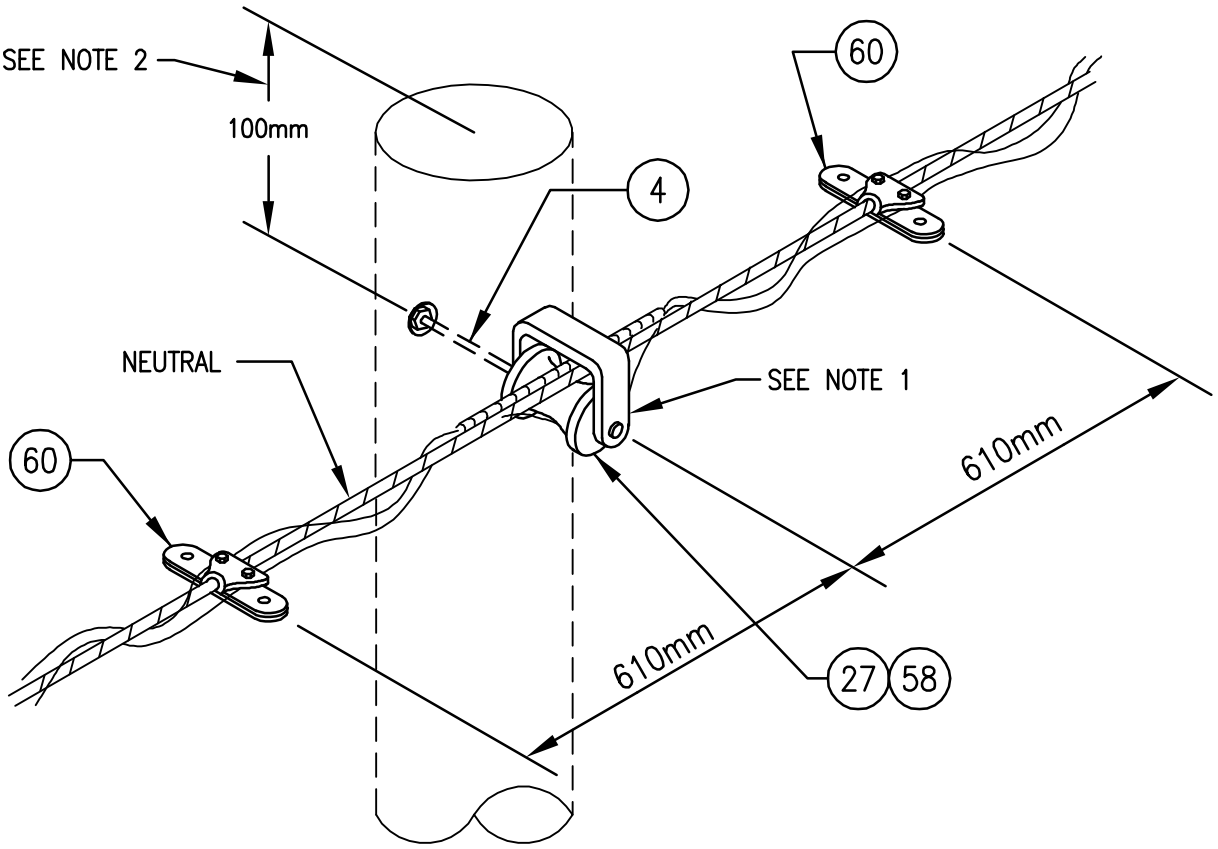
SPAN LENGTH	SPACING "A"
0–60m	300mm
61–91m	350mm

NOTES

1. DRAWING REPRESENTS SYMBOLS S3 OR SDE3. OMIT INSULATOR ASSEMBLIES AS REQUIRED TO COINCIDE WITH NUMBER OF CONDUCTORS.
2. OMIT ITEM (28) FOR SYMBOLS S3, S2 AND S1.

S3, S2, S1, SDE3, SDE2, SDE1 (0–600V)

SKETCH DATE	JUNE 2002	STYLE	OH–36

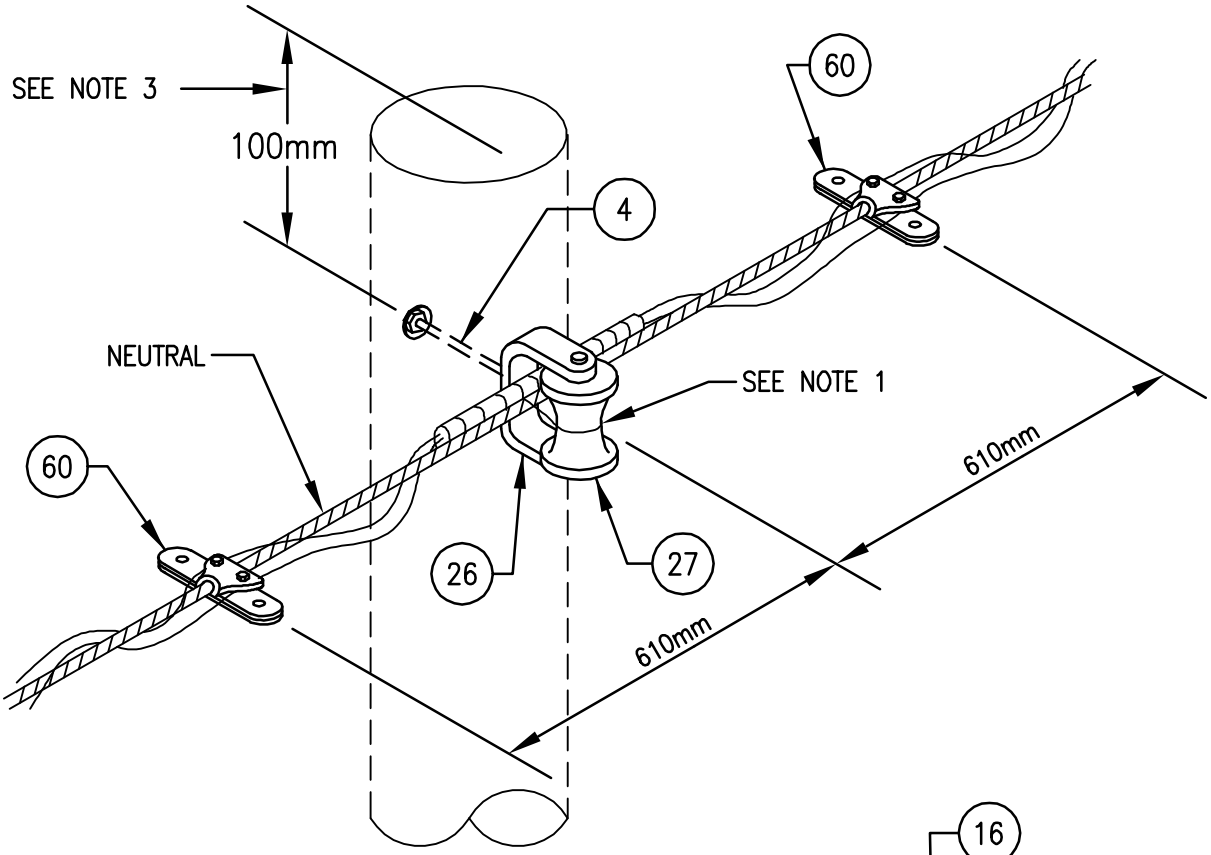


NOTES

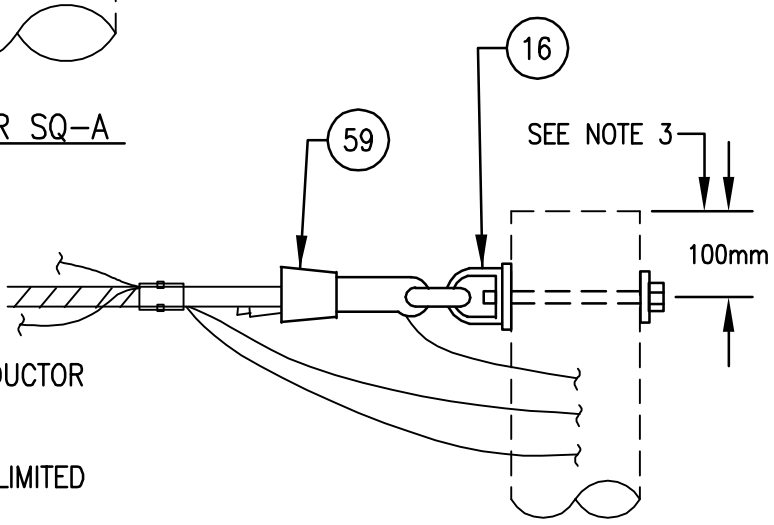
1. TIE ONLY THE NEUTRAL CONDUCTOR TO THE SPOOL INSULATOR
2. WHEN USED AT TOP OF POLE, INSTALL MACHINE BOLT 100mm DOWN FROM TOP OF POLE.

ST OR SQ
(0–600V)

SKETCH DATE	JUNE 2002	STYLE	OH–37



ST–A OR SQ–A



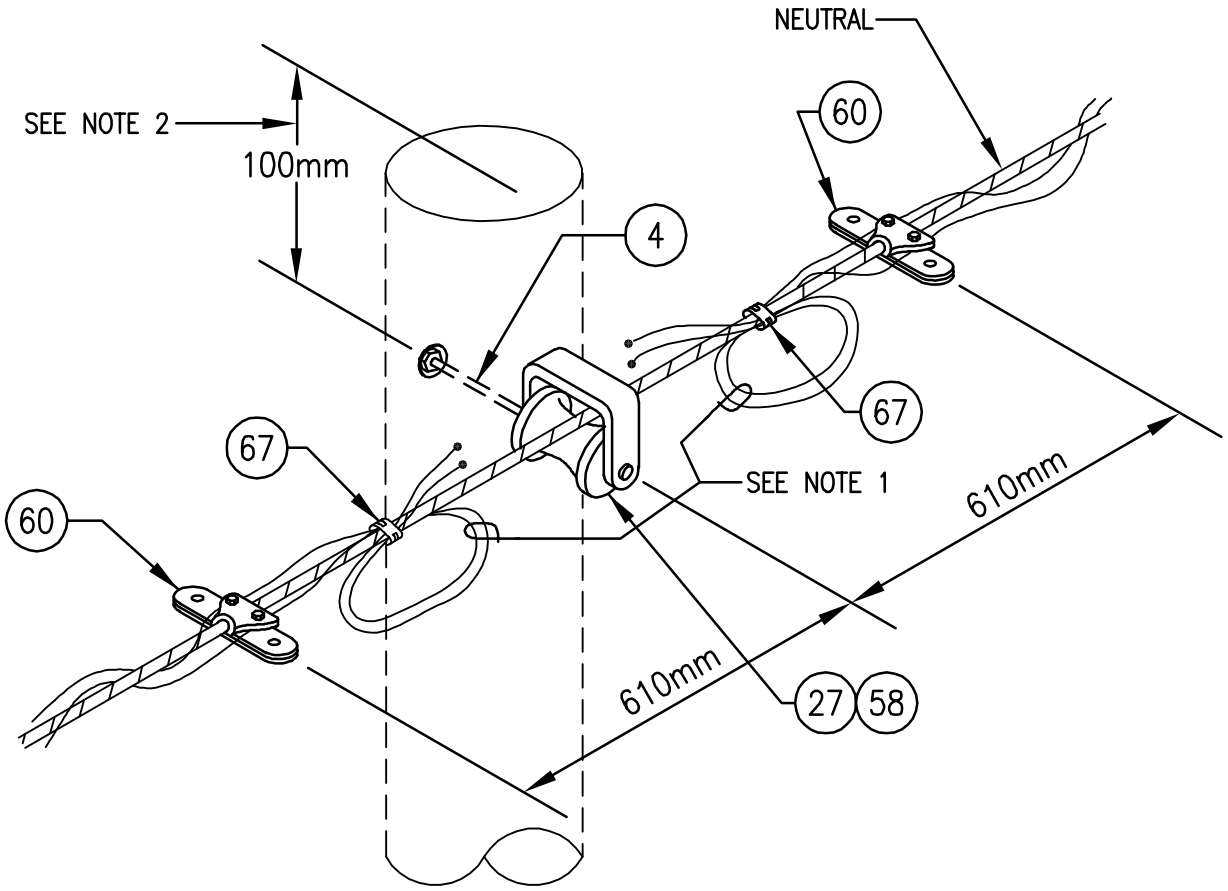
ST–SLACK, SQ–SLACK
(SEE NOTE 2)

NOTES

1. TIE ONLY THE NEUTRAL CONDUCTOR TO THE SPOOL INSULATOR.
2. SLACK SPAN CONSTRUCTION LIMITED TO MAXIMUM OF 30m SPAN.
3. WHEN USED AT TOP OF POLE, INSTALL MACHINE BOLT 100mm DOWN FROM TOP OF POLE

ST–SLACK, SQ–SLACK, ST–A, SQ–A (0–600V)

SKETCH DATE	JUNE 2002	STYLE	OH–38



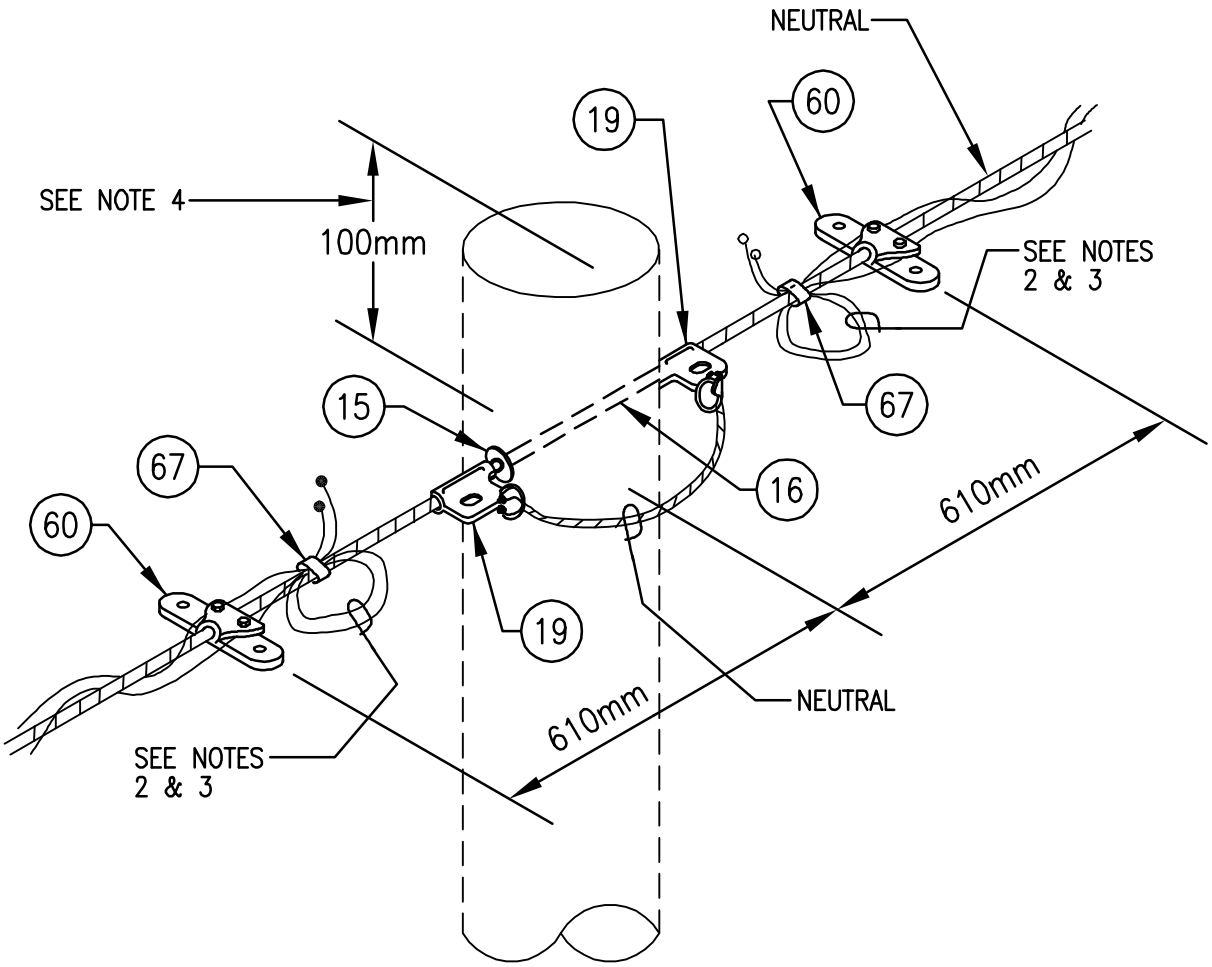
NOTES

1. COIL CONDUCTORS SO THEY WILL BE LONG ENOUGH TO BE JOINED AND SPLICED TOGETHER.

2. WHEN USED AT TOP OF POLE, INSTALL MACHINE BOLT 100mm DOWN FROM TOP OF POLE.

STDDE (TANGENT), SQDDE (TANGENT) (0–600V)

SKETCH DATE	JUNE 2002	STYLE	OH–39



NOTES

1. DRAWING REPRESENTS A STDDE OR SQDDE. OMIT ONE EACH OF ITEMS (19) (60) AND (67) FOR USE WITH STDE OR SQDE.

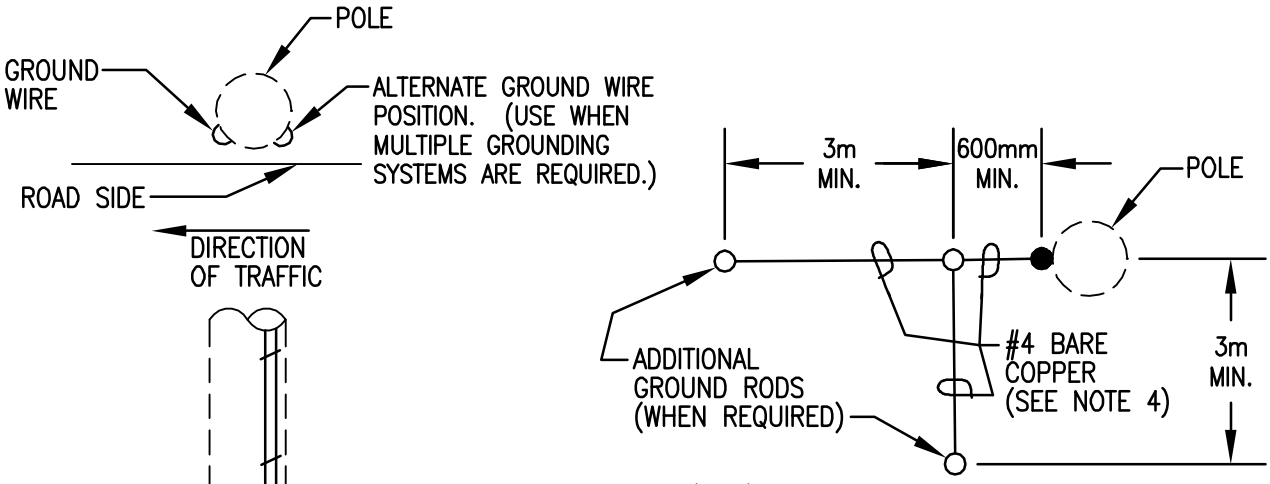
2. CABLE MAY EXTEND ON THROUGH WITHOUT BEING CUT, WHEN REQUIRED.

3. COIL CONDUCTORS SO THEY WILL BE LONG ENOUGH TO BE JOINED AND SPLICED TOGETHER.

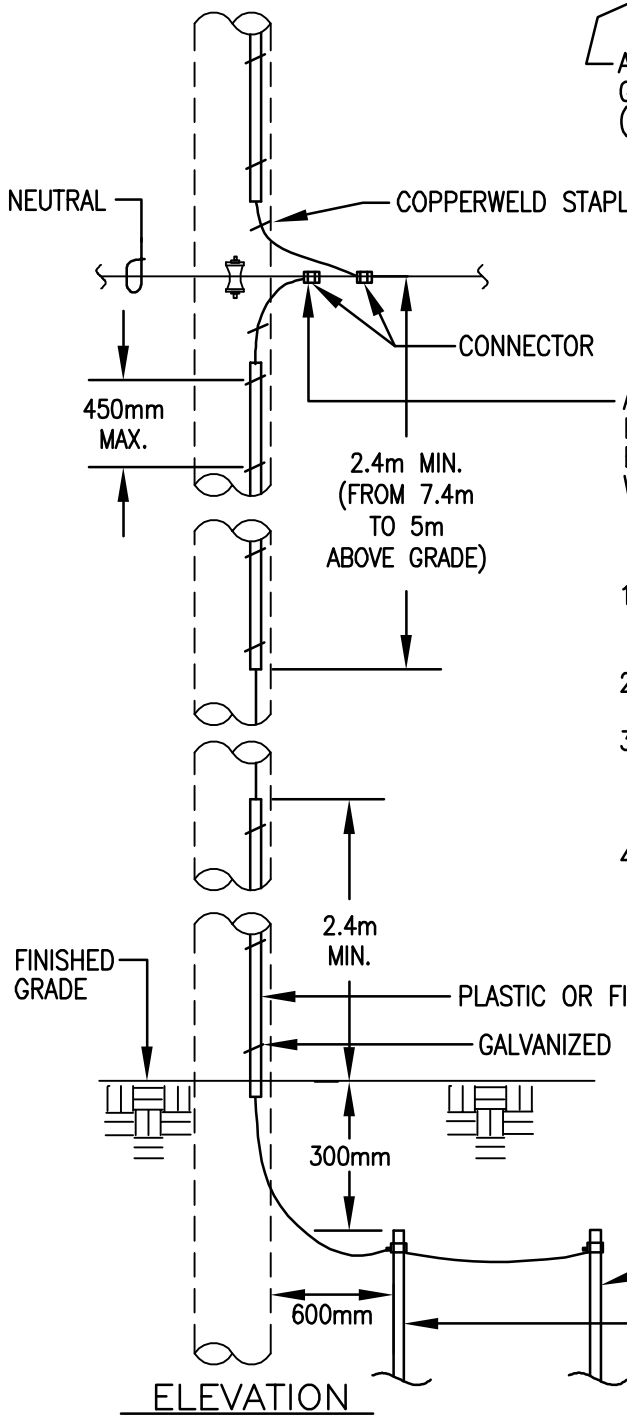
4. WHEN USED AT TOP OF POLE, INSTALL MACHINE BOLT 100mm DOWN FROM TOP OF POLE.

STDDE, SQDDE, STDE, SQDE
(0–600V)

SKETCH DATE	JUNE 2002	STYLE	OH–40



PLAN



ELEVATION

ALWAYS CONNECT THE POLE GROUND LEAD(S) DIRECTLY TO THE NEUTRAL– ENSURE THAT THE COPPER CONDUCTOR WILL ALWAYS BE BELOW THE ALUMINUM.

NOTES

1. USE ADDITIONAL GROUND RODS, WHEN REQUIRED, TO OBTAIN RESISTANCE VALUE, AS REQUIRED BY IEEE C2.
2. MAKE GROUNDING CONNECTIONS TO ALL EQUIPMENT ON POLE AS REQUIRED BY IEEE C2.
3. FOR SYSTEMS OTHER THAN 4 WIRE, MULTI–GROUNDED, USE SEPARATE GROUNDING CONDUCTORS AND ELECTRODES FOR PRIMARY AND SECONDARY SYSTEM DEVICE CONNECTIONS.
4. #4 600V INSULATED COPPER GROUNDING CONDUCTOR REQUIRED ON PRIMARY SYSTEM WHEN SEPARATE SYSTEMS ARE REQUIRED.

GROUND

SKETCH DATE	JUNE 2002	STYLE	OH–41