### SYMBOL LEGEND

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ANGLE</td>
</tr>
<tr>
<td>AB</td>
<td>ANGLE BRACE</td>
</tr>
<tr>
<td>CL</td>
<td>CURRENT LIMITING</td>
</tr>
<tr>
<td>D</td>
<td>DOUBLE</td>
</tr>
<tr>
<td>DE</td>
<td>DEADEND</td>
</tr>
<tr>
<td>F</td>
<td>FLAT (HORIZONTAL)</td>
</tr>
<tr>
<td>FB</td>
<td>FLAT BRACE</td>
</tr>
<tr>
<td>HD</td>
<td>HEAVY DUTY</td>
</tr>
<tr>
<td>I</td>
<td>INSULATED</td>
</tr>
<tr>
<td>PP</td>
<td>PHASE TO PHASE</td>
</tr>
<tr>
<td>N</td>
<td>NEUTRAL</td>
</tr>
<tr>
<td>R</td>
<td>RIDGE OR POLE TOP PIN</td>
</tr>
<tr>
<td>S</td>
<td>SECONDARY, OPEN WIRE</td>
</tr>
<tr>
<td>ST</td>
<td>SECONDARY, TRIPLEX</td>
</tr>
<tr>
<td>SQ</td>
<td>SECONDARY, QUADRUPLEX</td>
</tr>
<tr>
<td>T</td>
<td>TRANSFORMER</td>
</tr>
<tr>
<td>TERM</td>
<td>TERMINAL</td>
</tr>
<tr>
<td>UG</td>
<td>UNDERGROUND</td>
</tr>
<tr>
<td>V</td>
<td>VERTICAL</td>
</tr>
<tr>
<td>X</td>
<td>CROSSARM, 8’</td>
</tr>
<tr>
<td>X10</td>
<td>CROSSARM, 10’</td>
</tr>
</tbody>
</table>

### 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 10’ 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.**

<table>
<thead>
<tr>
<th>SYMBOL LEGEND &amp; GENERAL NOTES</th>
<th>Sketch Date</th>
<th>Style</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JUNE 2002</td>
<td>OH–1.1</td>
</tr>
<tr>
<td>SKETCH NUMBER</td>
<td>THRU</td>
<td>CATEGORY</td>
</tr>
<tr>
<td>---------------</td>
<td>------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>OH–2</td>
<td>THRU</td>
<td>OH–10 CROSSARM SYMBOLS</td>
</tr>
<tr>
<td>OH–11</td>
<td>THRU</td>
<td>OH–14 HORIZONTAL (TANGENT OR ANGLE) CONSTRUCTION SYMBOLS</td>
</tr>
<tr>
<td>OH–15</td>
<td>THRU</td>
<td>OH–20 HORIZONTAL DEADEND CONSTRUCTION SYMBOLS</td>
</tr>
<tr>
<td>OH–21</td>
<td>THRU</td>
<td>OH–25 VERTICAL CONSTRUCTION SYMBOLS</td>
</tr>
<tr>
<td>OH–26</td>
<td>THRU</td>
<td>OH–29 TRANSFORMER SYMBOLS</td>
</tr>
<tr>
<td>OH–30</td>
<td>THRU</td>
<td>OH–31 UNDERGROUND TERMINAL SYMBOLS</td>
</tr>
<tr>
<td>OH–32</td>
<td>THRU</td>
<td>OH–33 GUY SYMBOLS</td>
</tr>
<tr>
<td>OH–34</td>
<td>THRU</td>
<td>OH–35 CONDUIT RISER SYMBOLS</td>
</tr>
<tr>
<td>OH–36</td>
<td>THRU</td>
<td>OH–40 SECONDARY SYMBOLS</td>
</tr>
<tr>
<td>OH–41</td>
<td></td>
<td>GROUND SYMBOL</td>
</tr>
</tbody>
</table>

THIS INFORMATION IS FOR DESIGNER USE AND SHALL NOT BE INCLUDED ON CONSTRUCTION DRAWINGS.
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 45 FOOT LONG, CLASS 3 POLE CONTAINING:

X–FB – 8’ CROSSARM WITH FLAT BRACE

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

X–FB – 8’ 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 (5/16”) – DOWN GUY – WIRE SIZE 5/16”

ANCHOR – 10” SCREW TYPE ANCHOR WITH 12 FT. GUY LEAD.
(10” SCREW) 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.

<table>
<thead>
<tr>
<th>⌀-⌀ VOLTAGE</th>
<th>0–15KV</th>
<th>15–50KV</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPACING &quot;A&quot;</td>
<td>40&quot;</td>
<td>48&quot;*</td>
</tr>
<tr>
<td>SPACING &quot;B&quot;</td>
<td>40&quot;</td>
<td>40&quot;</td>
</tr>
</tbody>
</table>

* PROVIDE 60" CLEARANCE WHEN OPERATING VOLTAGE OF UNDERBUILD CIRCUIT IS GREATER THAN 15KV.
<table>
<thead>
<tr>
<th></th>
<th>POLE LINE MATERIAL LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FLAT STEEL BRACE (TWO PIECES)</td>
</tr>
<tr>
<td>2</td>
<td>MACHINE BOLT, 3/8&quot; X LENGTH NEEDED WITH WASHER, NUT AND LOCK WASHER</td>
</tr>
<tr>
<td>3</td>
<td>8&quot; WOOD CROSSARM WITH CROSS SECTION DIMENSIONS OF 3 1/2&quot; X 4 1/2&quot;</td>
</tr>
<tr>
<td>4</td>
<td>MACHINE BOLT, 5/8&quot; X LENGTH NEEDED WITH WASHER, NUT AND LOCK WASHER</td>
</tr>
<tr>
<td>5</td>
<td>TIMBER CONNECTOR</td>
</tr>
<tr>
<td>6</td>
<td>LAGSCREW, 1/2&quot; X 4&quot;</td>
</tr>
<tr>
<td>7</td>
<td>ANGLE STEEL BRACE (TWO PIECES)</td>
</tr>
<tr>
<td>8</td>
<td>MACHINE BOLT, 1/2&quot; X LENGTH NEEDED, WITH WASHER, NUT &amp; LOCK WASHER</td>
</tr>
<tr>
<td>9</td>
<td>DEADEND BOX</td>
</tr>
<tr>
<td>10</td>
<td>STEEL PIN</td>
</tr>
<tr>
<td>11</td>
<td>PIN INSULATOR</td>
</tr>
<tr>
<td>12</td>
<td>GRID GAIN, USED ONLY WHEN THERE IS NO POLE GAIN</td>
</tr>
<tr>
<td>13</td>
<td>ANGLE STEEL BRACE (ONE PIECE)</td>
</tr>
<tr>
<td>14</td>
<td>10&quot; WOOD CROSSARM WITH CROSS SECTION DIMENSIONS OF 3 1/2&quot; X 4 1/2&quot;</td>
</tr>
<tr>
<td>15</td>
<td>5/8&quot; EYE NUT</td>
</tr>
<tr>
<td>16</td>
<td>5/8&quot; EYE BOLT, LENGTH AS NEEDED, WITH WASHER, NUT &amp; LOCK WASHER</td>
</tr>
<tr>
<td>17</td>
<td>EXTENSION LINK</td>
</tr>
<tr>
<td>18</td>
<td>BELL TYPE SUSPENSION INSULATOR WITH CONNECTING HARDWARE</td>
</tr>
<tr>
<td>19</td>
<td>STRAIN CLAMP</td>
</tr>
<tr>
<td>20</td>
<td>STEEL ANGLE PIN</td>
</tr>
<tr>
<td>21</td>
<td>CLUSTER MOUNTING BRACKET, STEEL</td>
</tr>
<tr>
<td>22</td>
<td>TRANSFORMER GROUNDING CONNECTION</td>
</tr>
<tr>
<td>23</td>
<td>STIRRUP</td>
</tr>
<tr>
<td>24</td>
<td>SECONDARY LEAD SUPPORT BRACKET</td>
</tr>
<tr>
<td>25</td>
<td>ADAPTER PLATE FOR CLUSTER MOUNTING</td>
</tr>
<tr>
<td>26</td>
<td>CLEVIS BRACKET FOR SPOOL INSULATOR</td>
</tr>
<tr>
<td>27</td>
<td>SPOOL INSULATOR</td>
</tr>
<tr>
<td>28</td>
<td>U BOLT CLAMP</td>
</tr>
<tr>
<td>29</td>
<td>PREFORMED GUY GRIP</td>
</tr>
<tr>
<td>30</td>
<td>GUY HOOK</td>
</tr>
<tr>
<td>31</td>
<td>GUY STRAIN INSULATOR</td>
</tr>
<tr>
<td>32</td>
<td>GUY WIRE, SIZE AS SPECIFIED</td>
</tr>
<tr>
<td>33</td>
<td>#4 WP CU. SOFT DRAWN GROUND WIRE</td>
</tr>
<tr>
<td>34</td>
<td>GROUND CLAMP</td>
</tr>
<tr>
<td>35</td>
<td>CONDUIT COUPLING</td>
</tr>
<tr>
<td>36</td>
<td>CONDUIT BEND</td>
</tr>
<tr>
<td>37</td>
<td>INSULATED BUSHING</td>
</tr>
<tr>
<td>38</td>
<td>PERFORATED STRAPPING, 1-1/2&quot; WIDE</td>
</tr>
<tr>
<td>39</td>
<td>HOT LINE CLAMP</td>
</tr>
<tr>
<td>40</td>
<td>FUSED CUTOUT, AS SPECIFIED</td>
</tr>
<tr>
<td>41</td>
<td>SURGE ARRESTER, AS SPECIFIED</td>
</tr>
<tr>
<td>42</td>
<td>POLE TOP PIN (RIDGE PIN) - 24 INCHES LONG</td>
</tr>
<tr>
<td>43</td>
<td>CROSSARM ANGLE PIN</td>
</tr>
<tr>
<td>44</td>
<td>ANGLE POLE TOP PIN</td>
</tr>
<tr>
<td>45</td>
<td>WEATHERPROOF SOFT DRAWN WIRE-SIZE</td>
</tr>
<tr>
<td></td>
<td>(a) TO MATCH OR EXCEED AMPACITY OF CONNECTING CABLE, OR</td>
</tr>
<tr>
<td></td>
<td>(b) AT 125% OF TRANSFORMER FULL LOAD CURRENT, BUT NOT LESS THAN NO. 4 AWG</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POLE LINE MATERIAL LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKETCH DATE</td>
</tr>
<tr>
<td>STYLE</td>
</tr>
</tbody>
</table>
POLE LINE MATERIAL LIST

46. TRI-MOUNT BRACKET
47. TERMINATOR
48. MOUNTING BRACKET
49. CABLE GRIP HANGER
50. HOSE CLAMP
51. STUD, 3/4" X 1-3/4"
52. LINE POST INSULATOR
53. TRIPLE INSULATOR BRACKET
54. ANGLE CLAMP
55. INSULATOR, LINE POST CLAMP
56. 4' CROSSARM
57. CROSSARM GAIN BRACKET
58. PULLEY BRACKET
59. WEDGE CLAMP
60. MIDSPAN SERVICE CLAMP
61. STUD, 7"
62. SADDLE, ANGLE
63. SADDLE CROSSARM
64. FITTING, POLE TOP
65. CONNECTOR
66. SUSPENSION CLAMP
67. TIE, SERVICE CABLE
68. 54" FIBERGLASS STRAIN INSULATOR
69. PVC RISER SHIELD
70. PVC EXTENSION SHIELD
71. PVC BACK PLATE
72. 8' WOOD CROSSARM WITH CROSS SECTION DIMENSIONS OF 4 3/4" X 5 3/4"
73. 10' WOOD CROSSARM WITH CROSS SECTION DIMENSIONS OF 4 3/4" X 5 3/4"
74. BACK-UP CURRENT LIMITING FUSE
NOTE

DRAWING INDICATES SYMBOL X-FB. SUBSTITUTE 7 FOR 1 ON SYMBOL X-AB.
PLAN VIEW

ELEVATIONS

MAXIMUM ALLOWABLE CONDUCTOR TENSION AT "A" - 1200 LBS

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
NOTE

DRAWING INDICATES SYMBOL DX–AB. SUBSTITUTE 1 FOR 7 ON SYMBOL DX–FB.
PLAN VIEW

ELEVATIONS

MAXIMUM ALLOWABLE CONDUCTOR TENSION AT "A" - 2400 LBS

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
MAXIMUM ALLOWABLE CONDUCTOR TENSIONS AT "A" - 3500 LBS
EXCEPT 4750 LBS
FOR NOTE 2 SYMBOL.

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

MAXIMUM ALLOWABLE CONDUCTOR TENSION AT "A" – 1800 LBS

DX10–DE–AB

SKETCH DATE JUNE 2002 STYLE OH–9
ELEVATIONS

MAXIMUM ALLOWABLE CONDUCTOR
TENSION AT "A" - 2700 LBS
EXCEPT 3700 LBS FOR NOTE 1 SYMBOL.

NOTE

1. DRAWING INDICATES SYMBOL DX10-DE-AB-BOX. SUBSTITUTE
   73 FOR 14 ON SYMBOL DX10-DE-AB-BOX-HD.
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 40 INCH NEUTRAL SPACING AS INDICATED ON OTHER SKETCHES FOR TRANSFORMER AND U.G. TERMINAL INSTALLATIONS.
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 4” TO 12” WHEN DOUBLE CROSSARMS (AND INSULATORS) ARE USED.
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 40” 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
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.
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 80’.
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.

---

PLAN VIEW

ELEVATION

FDE3–N–TAP, FDE3–TAP, FDE2–N–TAP, FDE2–TAP

0–50kV

<table>
<thead>
<tr>
<th>Ø–Ø VOLTAGE</th>
<th>0–15kV</th>
<th>15–50kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPACING &quot;A&quot;</td>
<td>40&quot;</td>
<td>48&quot;</td>
</tr>
</tbody>
</table>

SKETCH DATE JUNE 2002 STYLE OH–17
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
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
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
1. **NOTES**

   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** 0H-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
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 80'.
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)
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.
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
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
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 QUADRUPLE 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 0H–30
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-1". 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 GUING 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).
NOTES

1. DRAWING REPRESENTS SYMBOL FOR "SPAN-GUY-1". 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-1
SPAN GUY

SKETCH DATE JUNE 2002 | STYLE OH-33
TOP OF RISER SHIELD
2" ABOVE (FOR PRIMARY
RISERS) TO 10" BELOW
(FOR SECONDARY RISERS)
NEUTRAL OR SECONDARY AS
FIELD CONDITIONS WARRANT

TYPE A
DIRECT BURIED
CABLE

TYPE B
DIRECT BURIED
CONDUIT

TYPE C
CONCRETE ENCASED
CONDUIT

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.

PVC RISER SHIELD
(SIZE & TYPE AS INDICATED)

SKETCH DATE JUNE 2002 STYLE OH-34
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 4’ INTERVALS.

NOTES

CONDUIT RISER
(SIZE & TYPE AS INDICATED)

SKETCH DATE JUNE 2002 | STYLE OH–35
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.

<table>
<thead>
<tr>
<th>SPAN LENGTH</th>
<th>SPACING &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–200'</td>
<td>12&quot;</td>
</tr>
<tr>
<td>201–300'</td>
<td>14&quot;</td>
</tr>
</tbody>
</table>
NOTES

1. TIE ONLY THE NEUTRAL CONDUCTOR TO THE SPOOL INSULATOR

2. WHEN USED AT TOP OF POLE, INSTALL MACHINE BOLT 4” DOWN FROM TOP OF POLE.
1. TIE ONLY THE NEUTRAL CONDUCTOR TO THE SPOOL INSULATOR.

2. SLACK SPAN CONSTRUCTION LIMITED TO MAXIMUM OF 100' SPAN.

3. WHEN USED AT TOP OF POLE, INSTALL MACHINE BOLT 4" DOWN FROM TOP OF POLE.

ST-SLACK, SQ-SLACK
(SEE NOTE 2)
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 4" DOWN FROM TOP OF POLE.
NOTES

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

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

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

4. WHEN USED AT TOP OF POLE, INSTALL MACHINE BOLT 4" DOWN FROM TOP OF POLE.
GROUND

SKETCH DATE  JUNE 2002  STYLE  OH-41