

| POLE LENGTH | POLE CLASS | CIRCUMFERENCE (IN.) |              | MIN. DIAMETER (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID        | CU                |
|-------------|------------|---------------------|--------------|---------------------|--------------|---------------|-----------------------|------------|-------------------|
|             |            | TOP                 | 6' FROM BUTT | TOP                 | 6' FROM BUTT |               |                       |            |                   |
| 35'         | 2          | 25                  | 36.5         | 8                   | 11.6         | 1004          | 6'                    | 2742203502 | C*PT-TD-WPF035-C2 |
| 40'         | 2          | 25                  | 38.5         | 8                   | 12.3         | 1256          | 6'                    | 2742204002 | C*PT-TD-WPF040-C2 |
|             | 1          | 27                  | 41           | 8.6                 | 13.1         | 1340          | 6'                    | 2742204001 | C*PT-TD-WPF040-C1 |
|             | H1         | 29                  | 43.5         | 9.2                 | 13.8         | 1681          | 6'                    | 2742204011 | C*PT-TD-WPF040-H1 |
|             | H2         | 31                  | 46           | 9.9                 | 14.6         | 1800          | 6'                    | 2742204012 | C*PT-TD-WPF040-H2 |
|             | H3         | 33                  | 48.5         | 10.5                | 15.4         | 2230          | 6'                    | 2742204013 | C*PT-TD-WPF040-H3 |
|             | H4         | 35                  | 51           | 11.1                | 16.2         | 2325          | 6'                    | 2742204014 | C*PT-TD-WPF040-H4 |
| 45'         | 2          | 25                  | 40.5         | 8                   | 12.9         | 1524          | 6'-6"                 | 2742204502 | C*PT-TD-WPF045-C2 |
|             | 1          | 27                  | 43           | 8.6                 | 13.7         | 1680          | 6'-6"                 | 2742204501 | C*PT-TD-WPF045-C1 |
|             | H1         | 29                  | 45.5         | 9.2                 | 14.5         | 1907          | 6'-6"                 | 2742204511 | C*PT-TD-WPF045-H1 |
|             | H2         | 31                  | 48.5         | 9.9                 | 15.4         | 2190          | 6'-6"                 | 2742204512 | C*PT-TD-WPF045-H2 |
|             | H3         | 33                  | 51           | 10.5                | 16.2         | 2528          | 6'-6"                 | 2742204513 | C*PT-TD-WPF045-H3 |
|             | H4         | 35                  | 53.5         | 11.1                | 17           | 2774          | 6'-6"                 | 2742204514 | C*PT-TD-WPF045-H4 |
|             | H5         | 37                  | 56           | 11.8                | 17.8         | 2700          | 6'-6"                 | 2742204515 | C*PT-TD-WPF045-H5 |
|             | H6         | 39                  | 58.5         | 12.4                | 18.6         | 3050          | 6'-6"                 | 2742204516 | C*PT-TD-WPF045-H6 |
| 50'         | 2          | 25                  | 42           | 8                   | 13.4         | 1780          | 7'                    | 2742205002 | C*PT-TD-WPF050-C2 |
|             | 1          | 27                  | 45           | 8.6                 | 14.3         | 1936          | 7'                    | 2742205001 | C*PT-TD-WPF050-C1 |
|             | H1         | 29                  | 47.5         | 9.2                 | 15.1         | 2147          | 7'                    | 2742205011 | C*PT-TD-WPF050-H1 |
|             | H2         | 31                  | 50.5         | 9.9                 | 16.1         | 2500          | 7'                    | 2742205012 | C*PT-TD-WPF050-H2 |
|             | H3         | 33                  | 53           | 10.5                | 16.9         | 2910          | 7'                    | 2742205013 | C*PT-TD-WPF050-H3 |
|             | H4         | 35                  | 55.5         | 11.1                | 17.7         | 3192          | 7'                    | 2742205014 | C*PT-TD-WPF050-H4 |
|             | H5         | 37                  | 58.5         | 11.8                | 18.6         | 3334          | 7'                    | 2742205015 | C*PT-TD-WPF050-H5 |
|             | H6         | 39                  | 61           | 12.4                | 19.4         | 3659          | 7'                    | 2742205016 | C*PT-TD-WPF050-H6 |
| 55'         | 2          | 25                  | 43.5         | 8                   | 13.8         | 2036          | 7'-6"                 | 2742205502 | C*PT-TD-WPF055-C2 |
|             | 1          | 27                  | 46.5         | 8.6                 | 14.8         | 2160          | 7'-6"                 | 2742205501 | C*PT-TD-WPF055-C1 |
|             | H1         | 29                  | 49.5         | 9.2                 | 15.8         | 2500          | 7'-6"                 | 2742205511 | C*PT-TD-WPF055-H1 |
|             | H2         | 31                  | 52           | 9.9                 | 16.6         | 2924          | 7'-6"                 | 2742205512 | C*PT-TD-WPF055-H2 |
|             | H3         | 33                  | 55           | 10.5                | 17.5         | 3334          | 7'-6"                 | 2742205513 | C*PT-TD-WPF055-H3 |
|             | H4         | 35                  | 58           | 11.1                | 18.5         | 3630          | 7'-6"                 | 2742205514 | C*PT-TD-WPF055-H4 |
|             | H5         | 37                  | 60.5         | 11.8                | 19.3         | 4054          | 7'-6"                 | 2742205515 | C*PT-TD-WPF055-H5 |
|             | H6         | 39                  | 63.5         | 12.4                | 20.2         | 4393          | 7'-6"                 | 2742205516 | C*PT-TD-WPF055-H6 |

NOTE A: ALL NEW CONSTRUCTION FOR LINES 115KV AND HIGHER SHALL BE STEEL. ONLY MAINTENANCE REPLACEMENTS SHALL USE WOOD POLES.

NOTE B: NEW STRUCTURES SHALL USE THE FOLLOWING MINIMUM CLASS OF POLE:  
 35kV/46kV/69kV: CLASS 2 FOR TANGENTS, CLASS 1 FOR ANGLES AND DEADENDS  
 115kV/230kV SINGLE POLE: CLASS H1  
 115kV/230kV/345kV H-FRAME: CLASS 1

NOTE C: IF MORE THAN 50% OF EXCAVATION IS LEDGE OR SOLID ROCK THE POLE CAN BE SET 1' SHALLOWER WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR ENGINEER.

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Drawing Scale: N/A



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TRANSMISSION STANDARDS - WOOD POLE INFORMATION  
DOUGLAS FIR

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| Drwn. By:   | Date Dr.: | Checked By: | Date Ck.: | Approved By:  | Date App.: |
| B. Franklin | 4/16/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

TM2.23.TD-01-001

Sheet 1

| POLE LENGTH | POLE CLASS | CIRCUMFERENCE (IN.) |              | MIN. DIAMETER (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID         | CU                 |
|-------------|------------|---------------------|--------------|---------------------|--------------|---------------|-----------------------|-------------|--------------------|
|             |            | TOP                 | 6' FROM BUTT | TOP                 | 6' FROM BUTT |               |                       |             |                    |
| 35'         | 2          | 25                  | 36.5         | 8                   | 11.6         | 1148          | 6'                    | 2741203502  | C*PT-TD-WPP035-C2  |
| 40'         | 2          | 25                  | 38.5         | 8                   | 12.3         | 1430          | 6'                    | 2741204002  | C*PT-TD-WPP040-C2  |
|             | 1          | 27                  | 41           | 8.6                 | 13.1         | 1642          | 6'                    | 2741204001  | C*PT-TD-WPP040-C1  |
| 45'         | 2          | 25                  | 40.5         | 8                   | 12.9         | 1713          | 6'-6"                 | 2741204502  | C*PT-TD-WPP045-C2  |
|             | 1          | 27                  | 43           | 8.6                 | 13.7         | 1977          | 6'-6"                 | 2741204501  | C*PT-TD-WPP045-C1  |
| 50'         | 2          | 25                  | 42           | 8                   | 13.4         | 2030          | 7'                    | 2741205002  | C*PT-TD-WPP050-C2  |
|             | 1          | 27                  | 45           | 8.6                 | 14.3         | 2348          | 7'                    | 2741205001  | C*PT-TD-WPP050-C1  |
| 55'         | 2          | 25                  | 43.5         | 8                   | 13.8         | 2384          | 7'-6"                 | 2741205502  | C*PT-TD-WPP055-C2  |
|             | 1          | 27                  | 46.5         | 8.6                 | 14.8         | 2737          | 7'-6"                 | 2741205501  | C*PT-TD-WPP055-C1  |
| 60'         | 2          | 25                  | 45           | 8                   | 14.3         | 2720          | 8'                    | 2741206002  | C*PT-TD-WPP060-C2  |
|             | 1          | 27                  | 48           | 8.6                 | 15.3         | 3160          | 8'                    | 2741206001  | C*PT-TD-WPP060-C1  |
| 65'         | 2          | 25                  | 46.5         | 8                   | 14.8         | 3108          | 8'-6"                 | 2741206502  | C*PT-TD-WPP065-C2  |
|             | 1          | 27                  | 49.5         | 8.6                 | 15.8         | 3584          | 8'-6"                 | 2741206501  | C*PT-TD-WPP065-C1  |
| 70'         | 2          | 25                  | 48           | 8                   | 15.3         | 3514          | 9'                    | 2741207002  | C*PT-TD-WPP070-C2  |
|             | 1          | 27                  | 51           | 8.6                 | 16.2         | 4044          | 9'                    | 2741207001  | C*PT-TD-WPP070-C1  |
| 75'         | 2          | 25                  | 49           | 8                   | 15.6         | 3920          | 9'-6"                 | 2741207502  | C*PT-TD-WPP075-C2  |
|             | 1          | 27                  | 52.5         | 8.6                 | 16.7         | 4520          | 9'-6"                 | 2741207501  | C*PT-TD-WPP075-C1  |
| 80'         | 2          | 25                  | 50.5         | 8                   | 16.1         | 4344          | 10'                   | 2741208002  | C*PT-TD-WPP080-C2  |
|             | 1          | 27                  | 54           | 8.6                 | 17.2         | 5014          | 10'                   | 2741208001  | C*PT-TD-WPP080-C1  |
| 85'         | 2*         | 25                  | 51.5         | 8                   | 16.4         | 4785          | 10'-6"                | 2741208502* | *                  |
|             | 1          | 27                  | 55           | 8.6                 | 17.5         | 5527          | 10'-6"                | 2741208501  | C*PT-TD-WPP0850-C1 |
| 90'         | 2*         | 25                  | 53           | 8                   | 16.9         | 5244          | 11'                   | 2741209002* | *                  |
|             | 1          | 27                  | 56           | 8.6                 | 17.8         | 6056          | 11'                   | 2741209001  | C*PT-TD-WPP090-C1  |
| 95'         | 2*         | 25                  | 54           | 8                   | 17.2         | 5675          | 11'-6"                | 2741209502* | *                  |
|             | 1          | 27                  | 57           | 8.6                 | 18.1         | 6550          | 11'-6"                | 2741209501  | C*PT-TD-WPP095-C1  |
| 100'        | 2*         | 25                  | 55           | 8                   | 17.5         | 6255          | 12'                   | 2741210002* | *                  |
|             | 1          | 27                  | 58.5         | 8.6                 | 18.6         | 7140          | 12'                   | 2741210001  | C*PT-TD-WPP100-C1  |

\* IF THIS CLASS OF POLE IS SPECIFIED USE NEXT CLASS HIGHER.

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 35kV/46kV/69kV: CLASS 2 FOR TANGENTS, CLASS 1 FOR ANGLES AND DEADENDS  
 115kV/230kV SINGLE POLE: CLASS H1  
 115kV/230kV/345kV H-FRAME: CLASS 1

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Drawing Scale: N/A



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TRANSMISSION STANDARDS - WOOD POLE INFORMATION  
SOUTHERN YELLOW PINE

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| B. Franklin | 4/16/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

TM2.23.TD-01-002

Sheet 1

| POLE LENGTH | POLE CLASS | CIRCUMFERENCE (IN.) |              | MIN. DIAMETER (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID        | CU                |
|-------------|------------|---------------------|--------------|---------------------|--------------|---------------|-----------------------|------------|-------------------|
|             |            | TOP                 | 6' FROM BUTT | TOP                 | 6' FROM BUTT |               |                       |            |                   |
| 35'         | 2          | 25                  | 40           | 8                   | 12.7         | 728           | 6'                    | 2743203502 | C*PT-TD-WPC035-C2 |
| 40'         | 2          | 25                  | 42.5         | 8                   | 13.5         | 899           | 6'                    | 2743204002 | C*PT-TD-WPC040-C2 |
|             | 1          | 27                  | 45           | 8.6                 | 14.3         | 1022          | 6'                    | 2743204001 | C*PT-TD-WPC040-C1 |
|             | H1         | 29                  | 48           | 9.2                 | 15.3         | 1300          | 6'                    | 2743204011 | C*PT-TD-WPC040-H1 |
|             | H2         | 31                  | 51           | 9.9                 | 16.2         | 1450          | 6'                    | 2743204012 | C*PT-TD-WPC040-H2 |
|             | H3         | 33                  | 53.5         | 10.5                | 17           | 1500          | 6'                    | 2743204013 | C*PT-TD-WPC040-H3 |
|             | H4         | 35                  | 56.5         | 11.1                | 18           | 1700          | 6'                    | 2743204014 | C*PT-TD-WPC040-H4 |
| 45'         | 2          | 25                  | 44.5         | 8                   | 14.2         | 1070          | 6'-6"                 | 2743204502 | C*PT-TD-WPC045-C2 |
|             | 1          | 27                  | 47.5         | 8.6                 | 15.1         | 1224          | 6'-6"                 | 2743204501 | C*PT-TD-WPC045-C1 |
|             | H1         | 29                  | 50           | 9.2                 | 15.9         | 1450          | 6'-6"                 | 2743204511 | C*PT-TD-WPC045-H1 |
|             | H2         | 31                  | 53.5         | 9.9                 | 17           | 1600          | 6'-6"                 | 2743204512 | C*PT-TD-WPC045-H2 |
|             | H3         | 33                  | 56           | 10.5                | 17.8         | 1750          | 6'-6"                 | 2743204513 | C*PT-TD-WPC045-H3 |
|             | H4         | 35                  | 59           | 11.1                | 18.8         | 1950          | 6'-6"                 | 2743204514 | C*PT-TD-WPC045-H4 |
|             | H5         | 37                  | 62           | 11.8                | 19.7         | 2100          | 6'-6"                 | 2743204515 | C*PT-TD-WPC045-H5 |
|             | H6         | 39                  | 64.5         | 12.4                | 20.5         | 2300          | 6'-6"                 | 2743204516 | C*PT-TD-WPC045-H6 |
| 50'         | 2          | 25                  | 46.5         | 8                   | 14.8         | 1271          | 7'                    | 2743205002 | C*PT-TD-WPC050-C2 |
|             | 1          | 27                  | 49.5         | 8.6                 | 15.8         | 1448          | 7'                    | 2743205001 | C*PT-TD-WPC050-C1 |
|             | H1         | 29                  | 52.5         | 9.2                 | 16.7         | 1624          | 7'                    | 2743205011 | C*PT-TD-WPC050-H1 |
|             | H2         | 31                  | 55.5         | 9.9                 | 17.7         | 1800          | 7'                    | 2743205012 | C*PT-TD-WPC050-H2 |
|             | H3         | 33                  | 58.5         | 10.5                | 18.6         | 1977          | 7'                    | 2743205013 | C*PT-TD-WPC050-H3 |
|             | H4         | 35                  | 61.5         | 11.1                | 19.6         | 2153          | 7'                    | 2743205014 | C*PT-TD-WPC050-H4 |
|             | H5         | 37                  | 64.5         | 11.8                | 20.5         | 2330          | 7'                    | 2743205015 | C*PT-TD-WPC050-H5 |
|             | H6         | 39                  | 67           | 12.4                | 21.3         | 2506          | 7'                    | 2743205016 | C*PT-TD-WPC050-H6 |
| 55'         | 2          | 25                  | 48.5         | 8                   | 15.4         | 1464          | 7'-6"                 | 2743205502 | C*PT-TD-WPC055-C2 |
|             | 1          | 27                  | 51.5         | 8.6                 | 16.4         | 1674          | 7'-6"                 | 2743205501 | C*PT-TD-WPC055-C1 |
|             | H1         | 29                  | 54.5         | 9.2                 | 17.3         | 1884          | 7'-6"                 | 2743205511 | C*PT-TD-WPC055-H1 |
|             | H2         | 31                  | 57.5         | 9.9                 | 18.3         | 2094          | 7'-6"                 | 2743205512 | C*PT-TD-WPC055-H2 |
|             | H3         | 33                  | 61           | 10.5                | 19.4         | 2304          | 7'-6"                 | 2743205513 | C*PT-TD-WPC055-H3 |
|             | H4         | 35                  | 64           | 11.1                | 20.4         | 2514          | 7'-6"                 | 2743205514 | C*PT-TD-WPC055-H4 |
|             | H5         | 37                  | 67           | 11.8                | 21.3         | 2724          | 7'-6"                 | 2743205515 | C*PT-TD-WPC055-H5 |
|             | H6         | 39                  | 70           | 12.4                | 22.3         | 2934          | 7'-6"                 | 2743205516 | C*PT-TD-WPC055-H6 |

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 115kV/230kV SINGLE POLE: CLASS H1  
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Drawing Scale: N/A



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TRANSMISSION STANDARDS - WOOD POLE INFORMATION  
WESTERN RED CEDAR

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| Drwn. By:   | Date Dr.: | Checked By: | Date Ck.: | Approved By:  | Date App.: |
| B. Franklin | 4/16/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

TM2.23.TD-01-003

Sheet 1

| POLE LENGTH | POLE CLASS | MIN. CIRC. (IN.) |              | MIN. DIAM. (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID               | CU                |
|-------------|------------|------------------|--------------|------------------|--------------|---------------|-----------------------|-------------------|-------------------|
|             |            | TOP              | 6' FROM BUTT | TOP              | 6' FROM BUTT |               |                       |                   |                   |
| 60'         | 2          | 25               | 50           | 8                | 15.9         | 1669          | 8'                    | 2743206002        | C*PT-TD-WPC060-C2 |
|             | 1          | 27               | 53.5         | 8.6              | 17           | 1912          | 8'                    | 2743206001        | C*PT-TD-WPC060-C1 |
|             | H1         | 29               | 56.5         | 9.2              | 18           | 2156          | 8'                    | 2743206011        | C*PT-TD-WPC060-H1 |
|             | H2         | 31               | 59.5         | 9.9              | 18.9         | 2400          | 8'                    | 2743206012        | C*PT-TD-WPC060-H2 |
|             | H3         | 33               | 63           | 10.5             | 20.1         | 2643          | 8'                    | 2743206013        | C*PT-TD-WPC060-H3 |
|             | H4         | 35               | 66           | 11.1             | 21           | 2887          | 8'                    | 2743206014        | C*PT-TD-WPC060-H4 |
|             | H5         | 37               | 69           | 11.8             | 22           | 3130          | 8'                    | 2743206015        | C*PT-TD-WPC060-H5 |
| H6          | 39         | 72               | 12.4         | 22.9             | 3374         | 8'            | 2743206016            | C*PT-TD-WPC060-H6 |                   |

|     |    |      |      |      |      |       |            |                   |                   |
|-----|----|------|------|------|------|-------|------------|-------------------|-------------------|
| 65' | 2  | 25   | 51.5 | 8    | 16.4 | 1882  | 8'-6"      | 2743206502        | C*PT-TD-WPC065-C2 |
|     | 1  | 27   | 55   | 8.6  | 17.5 | 2156  | 8'-6"      | 2743206501        | C*PT-TD-WPC065-C1 |
|     | H1 | 29   | 58.5 | 9.2  | 18.6 | 2430  | 8'-6"      | 2743206511        | C*PT-TD-WPC065-H1 |
|     | H2 | 31   | 61.5 | 9.9  | 19.6 | 2705  | 8'-6"      | 2743206512        | C*PT-TD-WPC065-H2 |
|     | H3 | 33   | 65   | 10.5 | 20.7 | 2979  | 8'-6"      | 2743206513        | C*PT-TD-WPC065-H3 |
|     | H4 | 35   | 68   | 11.1 | 21.6 | 3254  | 8'-6"      | 2743206514        | C*PT-TD-WPC065-H4 |
|     | H5 | 37   | 71.5 | 11.8 | 22.8 | 3528  | 8'-6"      | 2743206515        | C*PT-TD-WPC065-H5 |
| H6  | 39 | 74.5 | 12.4 | 23.7 | 3802 | 8'-6" | 2743206516 | C*PT-TD-WPC065-H6 |                   |

|     |    |      |      |      |      |      |            |                   |                   |
|-----|----|------|------|------|------|------|------------|-------------------|-------------------|
| 70' | 2  | 25   | 53   | 8    | 16.9 | 2108 | 9'         | 2743207002        | C*PT-TD-WPC070-C2 |
|     | 1  | 27   | 56.5 | 8.6  | 18   | 2422 | 9'         | 2743207001        | C*PT-TD-WPC070-C1 |
|     | H1 | 29   | 60   | 9.2  | 19.1 | 2736 | 9'         | 2743207011        | C*PT-TD-WPC070-H1 |
|     | H2 | 31   | 63.5 | 9.9  | 20.2 | 3049 | 9'         | 2743207012        | C*PT-TD-WPC070-H2 |
|     | H3 | 33   | 67   | 10.5 | 21.3 | 3363 | 9'         | 2743207013        | C*PT-TD-WPC070-H3 |
|     | H4 | 35   | 70   | 11.1 | 22.3 | 3676 | 9'         | 2743207014        | C*PT-TD-WPC070-H4 |
|     | H5 | 37   | 73.5 | 11.8 | 23.4 | 3990 | 9'         | 2743207015        | C*PT-TD-WPC070-H5 |
| H6  | 39 | 76.5 | 12.4 | 24.4 | 4304 | 9'   | 2743207016 | C*PT-TD-WPC070-H6 |                   |

|     |    |      |      |      |      |       |            |                   |                   |
|-----|----|------|------|------|------|-------|------------|-------------------|-------------------|
| 75' | 2  | 25   | 54.5 | 8    | 17.3 | 2352  | 9'-6"      | 2743207502        | C*PT-TD-WPC075-C2 |
|     | 1  | 27   | 58   | 8.6  | 18.5 | 2674  | 9'-6"      | 2743207501        | C*PT-TD-WPC075-C1 |
|     | H1 | 29   | 61.5 | 9.2  | 19.6 | 2996  | 9'-6"      | 2743207511        | C*PT-TD-WPC075-H1 |
|     | H2 | 31   | 65   | 9.9  | 20.7 | 3318  | 9'-6"      | 2743207512        | C*PT-TD-WPC075-H2 |
|     | H3 | 33   | 68.5 | 10.5 | 21.8 | 3640  | 9'-6"      | 2743207513        | C*PT-TD-WPC075-H3 |
|     | H4 | 35   | 72   | 11.1 | 22.9 | 3962  | 9'-6"      | 2743207514        | C*PT-TD-WPC075-H4 |
|     | H5 | 37   | 75.5 | 11.8 | 24   | 4284  | 9'-6"      | 2743207515        | C*PT-TD-WPC075-H5 |
| H6  | 39 | 78.5 | 12.4 | 25   | 4606 | 9'-6" | 2743207516 | C*PT-TD-WPC075-H6 |                   |

NOTE A: ALL NEW CONSTRUCTION FOR LINES 115KV AND HIGHER SHALL BE STEEL. ONLY MAINTENANCE REPLACEMENTS SHALL USE WOOD POLES.

NOTE B: NEW STRUCTURES SHALL USE THE FOLLOWING MINIMUM CLASS OF POLE:  
 35kV/46kV/69kV: CLASS 2 FOR TANGENTS, CLASS 1 FOR ANGLES AND DEADENDS  
 115kV/230kV SINGLE POLE: CLASS H1  
 115kV/230kV/345kV H-FRAME: CLASS 1

NOTE C: IF MORE THAN 50% OF EXCAVATION IS LEDGE OR SOLID ROCK THE POLE CAN BE SET 1' SHALLOWER WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR ENGINEER.

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Drawing Scale: N/A



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TRANSMISSION STANDARDS - WOOD POLE INFORMATION  
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| B. Franklin | 4/16/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

TM2.23.TD-01-003

Sheet 2

| POLE LENGTH | POLE CLASS | MIN. CIRC. (IN.) |              | MIN. DIAM. (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID         | CU                |
|-------------|------------|------------------|--------------|------------------|--------------|---------------|-----------------------|-------------|-------------------|
|             |            | TOP              | 6' FROM BUTT | TOP              | 6' FROM BUTT |               |                       |             |                   |
| 80'         | 2          | 25               | 56           | 8                | 17.8         | 2604          | 10'                   | 2743208002  | C*PT-TD-WPC080-C2 |
|             | 1          | 27               | 59.5         | 8.6              | 18.9         | 2979          | 10'                   | 2743208001  | C*PT-TD-WPC080-C1 |
|             | H1         | 29               | 63           | 9.2              | 20.1         | 3354          | 10'                   | 2743208011  | C*PT-TD-WPC080-H1 |
|             | H2         | 31               | 67           | 9.9              | 21.3         | 3730          | 10'                   | 2743208012  | C*PT-TD-WPC080-H2 |
|             | H3         | 33               | 70.5         | 10.5             | 22.4         | 4105          | 10'                   | 2743208013  | C*PT-TD-WPC080-H3 |
|             | H4         | 35               | 74           | 11.1             | 23.5         | 4480          | 10'                   | 2743208014  | C*PT-TD-WPC080-H4 |
|             | H5         | 37               | 77           | 11.8             | 24.5         | 4855          | 10'                   | 2743208015  | C*PT-TD-WPC080-H5 |
|             | H6         | 39               | 80.5         | 12.4             | 25.6         | 5230          | 10'                   | 2743208016  | C*PT-TD-WPC080-H6 |
| 85'         | 2*         | 25               | 57           | 8                | 18.1         | 2873          | 10'-6"                | 2743208502* | *                 |
|             | 1          | 27               | 61           | 8.6              | 19.4         | 3282          | 10'-6"                | 2743208501  | C*PT-TD-WPC085-C1 |
|             | H1         | 29               | 64.5         | 9.2              | 20.6         | 3690          | 10'-6"                | 2743208511  | C*PT-TD-WPC085-H1 |
|             | H2         | 31               | 68.5         | 9.9              | 21.8         | 4099          | 10'-6"                | 2743208512  | C*PT-TD-WPC085-H2 |
|             | H3         | 33               | 72           | 10.5             | 22.9         | 4508          | 10'-6"                | 2743208513  | C*PT-TD-WPC085-H3 |
|             | H4         | 35               | 75.5         | 11.1             | 24           | 4917          | 10'-6"                | 2743208514  | C*PT-TD-WPC085-H4 |
|             | H5         | 37               | 79           | 11.8             | 25.1         | 5326          | 10'-6"                | 2743208515  | C*PT-TD-WPC085-H5 |
|             | H6         | 39               | 82.5         | 12.4             | 26.3         | 5734          | 10'-6"                | 2743208516  | C*PT-TD-WPC085-H6 |
| 90'         | 2*         | 25               | 58.5         | 8                | 18.6         | 3158          | 11'                   | 2743209002* | *                 |
|             | 1          | 27               | 62.5         | 8.6              | 19.9         | 3550          | 11'                   | 2743209001  | C*PT-TD-WPC090-C1 |
|             | H1         | 29               | 66           | 9.2              | 21           | 3942          | 11'                   | 2743209011  | C*PT-TD-WPC090-H1 |
|             | H2         | 31               | 70           | 9.9              | 22.3         | 4334          | 11'                   | 2743209012  | C*PT-TD-WPC090-H2 |
|             | H3         | 33               | 73.5         | 10.5             | 23.4         | 4726          | 11'                   | 2743209013  | C*PT-TD-WPC090-H3 |
|             | H4         | 35               | 77           | 11.1             | 24.5         | 5118          | 11'                   | 2743209014  | C*PT-TD-WPC090-H4 |
|             | H5         | 37               | 81           | 11.8             | 25.8         | 5510          | 11'                   | 2743209015  | C*PT-TD-WPC090-H5 |
|             | H6         | 39               | 84.5         | 12.4             | 26.9         | 5902          | 11'                   | 2743209016  | C*PT-TD-WPC090-H6 |
| 95'         | 2*         | 25               | 59.5         | 8                | 18.9         | 3452          | 11'-6"                | 2743209502* | *                 |
|             | 1          | 27               | 63.5         | 8.6              | 20.2         | 3881          | 11'-6"                | 2743209501  | C*PT-TD-WPC095-C1 |
|             | H1         | 29               | 67.5         | 9.2              | 21.5         | 4309          | 11'-6"                | 2743209511  | C*PT-TD-WPC095-H1 |
|             | H2         | 31               | 71.5         | 9.9              | 22.8         | 4738          | 11'-6"                | 2743209512  | C*PT-TD-WPC095-H2 |
|             | H3         | 33               | 75           | 10.5             | 23.9         | 5166          | 11'-6"                | 2743209513  | C*PT-TD-WPC095-H3 |
|             | H4         | 35               | 79           | 11.1             | 25.1         | 5594          | 11'-6"                | 2743209514  | C*PT-TD-WPC095-H4 |
|             | H5         | 37               | 82.5         | 11.8             | 26.3         | 6023          | 11'-6"                | 2743209515  | C*PT-TD-WPC095-H5 |
|             | H6         | 39               | 86           | 12.4             | 27.4         | 6451          | 11'-6"                | 2743209516  | C*PT-TD-WPC095-H6 |
| 100'        | 2*         | 25               | 61           | 8                | 19.4         | 3847          | 12'                   | 2743210002* | *                 |
|             | 1          | 27               | 65           | 8.6              | 20.7         | 4323          | 12'                   | 2743210001  | C*PT-TD-WPC100-C1 |
|             | H1         | 29               | 69           | 9.2              | 22           | 4836          | 12'                   | 2743210011  | C*PT-TD-WPC100-H1 |
|             | H2         | 31               | 72.5         | 9.9              | 23.1         | 5359          | 12'                   | 2743210012  | C*PT-TD-WPC100-H2 |
|             | H3         | 33               | 76.5         | 10.5             | 24.4         | 5860          | 12'                   | 2743210013  | C*PT-TD-WPC100-H3 |
|             | H4         | 35               | 80.5         | 11.1             | 25.6         | 6373          | 12'                   | 2743210014  | C*PT-TD-WPC100-H4 |
|             | H5         | 37               | 84           | 11.8             | 26.7         | 6885          | 12'                   | 2743210015  | C*PT-TD-WPC100-H5 |
|             | H6         | 39               | 87.5         | 12.4             | 27.9         | 7398          | 12'                   | 2743210016  | C*PT-TD-WPC100-H6 |

\* IF THIS CLASS OF POLE IS SPECIFIED USE NEXT CLASS HIGHER.

NOTE A: ALL NEW CONSTRUCTION FOR LINES 115KV AND HIGHER SHALL BE STEEL. ONLY MAINTENANCE REPLACEMENTS SHALL USE WOOD POLES.

NOTE B: NEW STRUCTURES SHALL USE THE FOLLOWING MINIMUM CLASS OF POLE:  
 35kv/46kv/69kv: CLASS 2 FOR TANGENTS, CLASS 1 FOR ANGLES AND DEADENDS  
 115kv/230kv SINGLE POLE: CLASS H1  
 115kv/230kv/345kv H-FRAME: CLASS 1

NOTE C: IF MORE THAN 50% OF EXCAVATION IS LEDGE OR SOLID ROCK THE POLE CAN BE SET 1' SHALLOWER WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR ENGINEER.

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Drawing Scale: N/A



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| B. Franklin | 4/16/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

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Sheet 3

| POLE LENGTH | POLE CLASS | MIN. CIRC. (IN.) |              | MIN. DIAM. (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID               | CU                |
|-------------|------------|------------------|--------------|------------------|--------------|---------------|-----------------------|-------------------|-------------------|
|             |            | TOP              | 6' FROM BUTT | TOP              | 6' FROM BUTT |               |                       |                   |                   |
| 105'        | 2*         | 25               | 62           | 8                | 19.7         | 4217          | 12'-6"                | 2743210502*       | *                 |
|             | 1*         | 27               | 66           | 8.6              | 21           | 4637          | 12'-6"                | 2743210501*       | *                 |
|             | H1         | 29               | 70           | 9.2              | 22.3         | 5130          | 12'-6"                | 2743210511        | C*PT-TD-WPC105-H1 |
|             | H2         | 31               | 74           | 9.9              | 23.6         | 5622          | 12'-6"                | 2743210512        | C*PT-TD-WPC105-H2 |
|             | H3         | 33               | 78           | 10.5             | 24.8         | 6115          | 12'-6"                | 2743210513        | C*PT-TD-WPC105-H3 |
|             | H4         | 35               | 82           | 11.1             | 26.1         | 6608          | 12'-6"                | 2743210514        | C*PT-TD-WPC105-H4 |
|             | H5         | 37               | 85.5         | 11.8             | 27.2         | 7101          | 12'-6"                | 2743210515        | C*PT-TD-WPC105-H5 |
| H6          | 39         | 83.5             | 12.4         | 28.5             | 7594         | 12'-6"        | 2743210516            | C*PT-TD-WPC105-H6 |                   |
| 110'        | 2*         | 25               | 63           | 8                | 20.1         | 4488          | 13'                   | 2743211002*       | *                 |
|             | 1*         | 27               | 67.5         | 8.6              | 21.5         | 5012          | 13'                   | 2743211001*       | *                 |
|             | H1         | 29               | 71.5         | 9.2              | 22.8         | 5536          | 13'                   | 2743211011        | C*PT-TD-WPC110-H1 |
|             | H2         | 31               | 75.5         | 9.9              | 24           | 6059          | 13'                   | 2743211012        | C*PT-TD-WPC110-H2 |
|             | H3         | 33               | 79.5         | 10.5             | 25.3         | 6583          | 13'                   | 2743211013        | C*PT-TD-WPC110-H3 |
|             | H4         | 35               | 83.5         | 11.1             | 26.6         | 7106          | 13'                   | 2743211014        | C*PT-TD-WPC110-H4 |
|             | H5         | 37               | 87           | 11.8             | 27.7         | 7630          | 13'                   | 2743211015        | C*PT-TD-WPC110-H5 |
| H6          | 39         | 91               | 12.4         | 29               | 8154         | 13'           | 2743211016            | C*PT-TD-WPC110-H6 |                   |
| 115'        | 2*         | 25               | 64           | 8                | 20.4         | 5012          | 13'-6"                | 2743211502*       | *                 |
|             | 1*         | 27               | 68.5         | 8.6              | 21.8         | 5387          | 13'-6"                | 2743211501*       | *                 |
|             | H1         | 29               | 72.5         | 9.2              | 23.1         | 5911          | 13'-6"                | 2743211511        | C*PT-TD-WPC115-H1 |
|             | H2         | 31               | 76.5         | 9.9              | 24.4         | 6434          | 13'-6"                | 2743211512        | C*PT-TD-WPC115-H2 |
|             | H3         | 33               | 80.5         | 10.5             | 25.6         | 6958          | 13'-6"                | 2743211513        | C*PT-TD-WPC115-H3 |
|             | H4         | 35               | 84.5         | 11.1             | 26.9         | 7482          | 13'-6"                | 2743211514        | C*PT-TD-WPC115-H4 |
|             | H5         | 37               | 88.5         | 11.8             | 28.2         | 8005          | 13'-6"                | 2743211515        | C*PT-TD-WPC115-H5 |
| H6          | 39         | 92.5             | 12.4         | 29.4             | 8529         | 13'-6"        | 2743211516            | C*PT-TD-WPC115-H6 |                   |
| 120'        | 2*         | 25               | 65           | 8                | 20.7         | 5387          | 14'                   | 2743212002*       | *                 |
|             | 1*         | 27               | 69.5         | 8.6              | 22.1         | 5762          | 14'                   | 2743212001*       | *                 |
|             | H1         | 29               | 74           | 9.2              | 23.6         | 6286          | 14'                   | 2743212011        | C*PT-TD-WPC120-H1 |
|             | H2         | 31               | 78           | 9.9              | 24.8         | 6810          | 14'                   | 2743212012        | C*PT-TD-WPC120-H2 |
|             | H3         | 33               | 82           | 10.5             | 26.1         | 7333          | 14'                   | 2743212013        | C*PT-TD-WPC120-H3 |
|             | H4         | 35               | 86           | 11.1             | 26.4         | 7857          | 14'                   | 2743212014        | C*PT-TD-WPC120-H4 |
|             | H5         | 37               | 90           | 11.8             | 28.6         | 8380          | 14'                   | 2743212015        | C*PT-TD-WPC120-H5 |
| H6          | 39         | 94               | 12.4         | 29.9             | 8904         | 14'           | 2743212016            | C*PT-TD-WPC120-H6 |                   |
| 125'        | 2*         | 25               | 66           | 8                | 21           | 5800          | 14'-6"                | 2743212502*       | *                 |
|             | 1*         | 27               | 70.5         | 8.6              | 22.4         | 6200          | 14'-6"                | 2743212501*       | *                 |
|             | H1         | 29               | 75           | 9.2              | 23.9         | 6700          | 14'-6"                | 2743212511        | C*PT-TD-WPC125-H1 |
|             | H2         | 31               | 79           | 9.9              | 25.1         | 7200          | 14'-6"                | 2743212512        | C*PT-TD-WPC125-H2 |
|             | H3         | 33               | 83           | 10.5             | 26.4         | 7700          | 14'-6"                | 2743212513        | C*PT-TD-WPC125-H3 |
|             | H4         | 35               | 87.5         | 11.1             | 27.9         | 8250          | 14'-6"                | 2743212514        | C*PT-TD-WPC125-H4 |
|             | H5         | 37               | 91.5         | 11.8             | 29.1         | 8800          | 14'-6"                | 2743212515        | C*PT-TD-WPC125-H5 |
| H6          | 39         | 95.5             | 12.4         | 30.4             | 9260         | 14'-6"        | 2743212516            | C*PT-TD-WPC125-H6 |                   |

\* IF THIS CLASS OF POLE IS SPECIFIED USE NEXT CLASS HIGHER.

NOTE A: ALL NEW CONSTRUCTION FOR LINES 115KV AND HIGHER SHALL BE STEEL. ONLY MAINTENANCE REPLACEMENTS SHALL USE WOOD POLES.

NOTE B: NEW STRUCTURES SHALL USE THE FOLLOWING MINIMUM CLASS OF POLE:  
 35kV/46kV/69kV: CLASS 2 FOR TANGENTS, CLASS 1 FOR ANGLES AND DEADENDS  
 115kV/230kV SINGLE POLE: CLASS H1  
 115kV/230kV/345kV H-FRAME: CLASS 1

NOTE C: IF MORE THAN 50% OF EXCAVATION IS LEDGE OR SOLID ROCK THE POLE CAN BE SET 1' SHALLOWER WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR ENGINEER.

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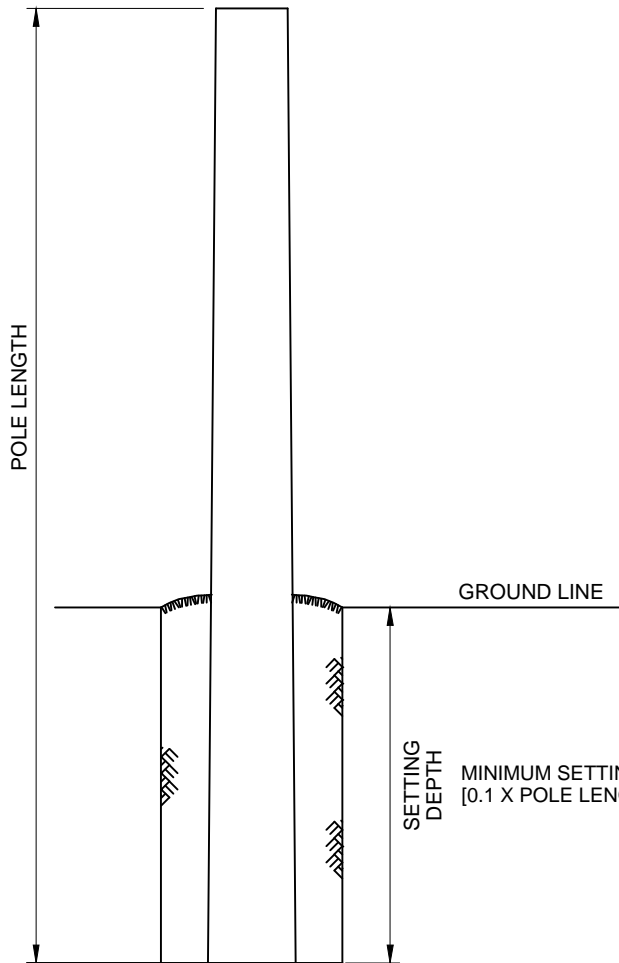
TRANSMISSION STANDARDS - WOOD POLE INFORMATION  
WESTERN RED CEDAR

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| B. Franklin | 4/16/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

TM2.23.TD-01-003

Sheet 4



| POLE LENGTH | MINIMUM SETTING DEPTH (NOTE A) | MINIMUM SETTING DEPTH IN ROCK (NOTE B) |
|-------------|--------------------------------|--|
| 40'         | 6'                             | 5'                                     |
| 45'         | 6'-6"                          | 5'-6"                                  |
| 50'         | 7'                             | 6'                                     |
| 55'         | 7'-6"                          | 6'-6"                                  |
| 60'         | 8'                             | 7'                                     |
| 65'         | 8'-6"                          | 7'-6"                                  |
| 70'         | 9'                             | 8'                                     |
| 75'         | 9'-6"                          | 8'-6"                                  |
| 80'         | 10'                            | 9'                                     |
| 85'         | 10'-6"                         | 9'-6"                                  |
| 90'         | 11'                            | 10'                                    |
| 95'         | 11'-6"                         | 10'-6"                                 |
| 100'        | 12'                            | 11'                                    |
| 105'        | 12'-6"                         | 11'-6"                                 |
| 110'        | 13'                            | 12'                                    |
| 115'        | 13'-6"                         | 12'-6"                                 |
| 120'        | 14'                            | 13'                                    |
| 125'        | 14'-6"                         | 13'-6"                                 |

UNLESS OTHERWISE STATED ON DESIGN DRAWINGS

MINIMUM SETTING DEPTH =  
 $[0.1 \times \text{POLE LENGTH (FT)}] + 2 \text{ FEET}$

NOTE A: POLE SETTING HOLES SHALL BE EXCAVATED USING ROTARY AUGER DRILLING EQUIPMENT OR VERTICAL LIFT EXCAVATORS (CLAMSHELLS) IF POSSIBLE.

NOTE B: WHEN MORE THAN 50% OF THE POLE SETTING DEPTH IS LEDGE OR SOLID ROCK THE POLE IS CONSIDERED SET IN ROCK. WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR THE ENGINEER THE CONTRACTOR MAY SET THE POLE 12 INCHES SHALLOWER THAN THE STANDARD SETTING DEPTH PER THE ABOVE TABLE.

NOTE C: POLE SETTING HOLE DIAMETER SHALL BE GREATER THAN OR EQUAL TO THE DIAMETER OF THE POLE BUTT PLUS TWELVE (12) INCHES.

NOTE D: REFER TO TD-03-001 AND TD-03-002 FOR MORE INFORMATION ON POLE SETTING AND FOUNDATIONS.

NOTE E: REFER TO TD-04-001 AND TD-04-002 FOR POLE SETTING INFORMATION WITH SEVERE SIDE SLOPES.

NOTE F: 10% OF THE POLE LENGTH PLUS 2 FEET IS THE MINIMUM SETTING DEPTH REQUIRED. DO NOT OVER EMBED POLE BY MORE THAN 9 INCHES UNLESS NOTED ON PLAN AND PROFILE DRAWING. IF MINIMUM EMBEDMENT CANNOT BE OBTAINED CONTACT TRANSMISSION ENGINEERING BEFORE SETTING THE POLE.

NOTE G: POLE SHALL NOT BE OUT OF PLUMB BY MORE THAN ONE POLE TOP DIAMETER AFTER ALL GUYS AND WIRES ARE INSTALLED.

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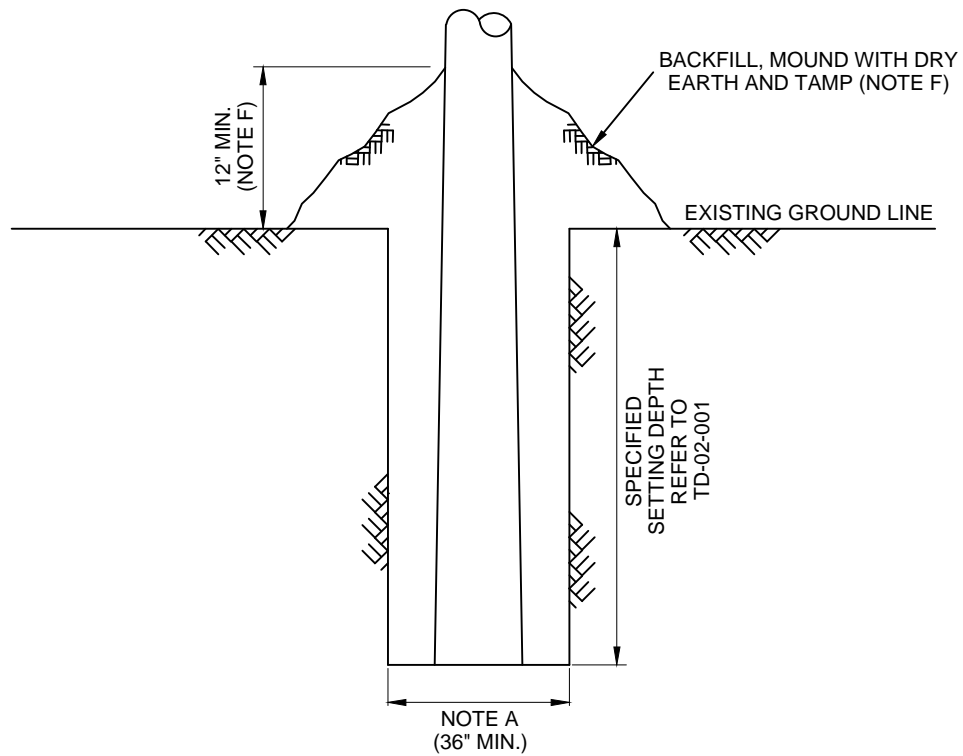
TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
STANDARD SETTING DEPTH

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| B. Franklin | 1/21/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

TM2.23.TD-02-001

Sheet 1



NOTE A: POLE SETTING HOLES SHALL BE EXCAVATED USING ROTARY AUGER DRILLING EQUIPMENT OR VERTICAL LIFT EXCAVATORS (CLAMSHELLS). BACK HOES, STANDARD EXCAVATORS AND TRENCHING EQUIPMENT ARE UNACCEPTABLE FOR POLE SETTING HOLE EXCAVATION.

NOTE B: POLE SETTING HOLE DIAMETER SHALL BE GREATER THAN OR EQUAL TO THE DIAMETER OF THE POLE BUTT PLUS TWELVE (12) INCHES.

NOTE C: DEWATER ALL HOLES PRIOR TO INSTALLATION OF POLE OR FOUNDATION.

NOTE D: PLACE BACKFILL IN SIX (6) INCH LAYERS AND TAMP TO MAXIMUM COMPACTION. DO NOT USE ROCK LARGER THAN 4" IN BACKFILL.

NOTE E: SELECT BACKFILL SHALL BE USED WHEN NATIVE BACKFILL CANNOT BE USED OR COMPACTED BY TAMPING. REFER TO TD-03-003 FOR PROPER BACKFILL SELECTION.

NOTE F: BACKFILL SHALL BE MOUNDED 1' ABOVE GRADE AND SLOPED AWAY FROM THE POLE.

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Drawing Scale: 3/4" = 1'



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TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
WOOD POLES CLASS 1 AND SMALLER

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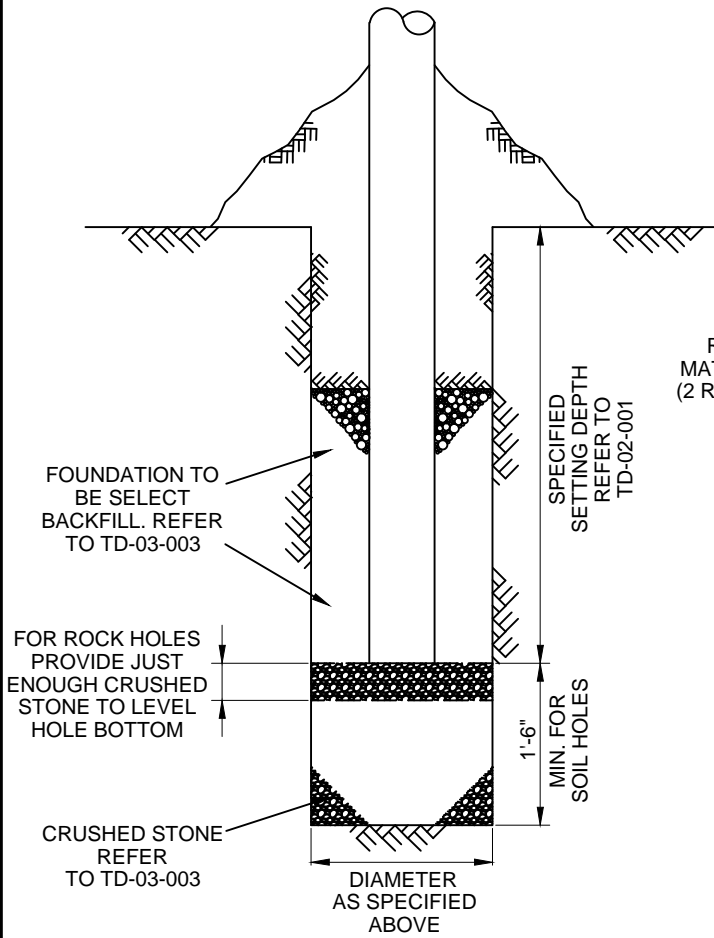
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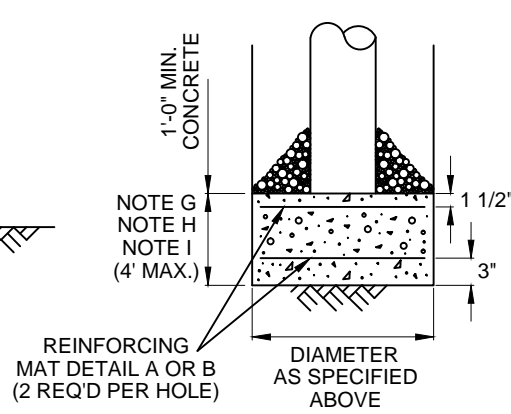
Sheet 1



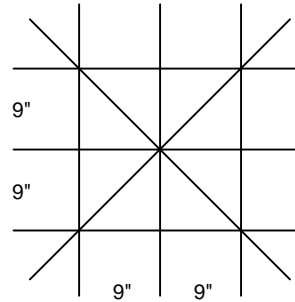
| POLE CLASS | MIN. FOUNDATION DIAMETER (NOTE A) |
|------------|-----------------------------------|
| H1         | 42"                               |
| H2         | 42"                               |
| H3         | 48"                               |
| H4         | 48"                               |
| H5         | 48"                               |
| H6         | 48"                               |



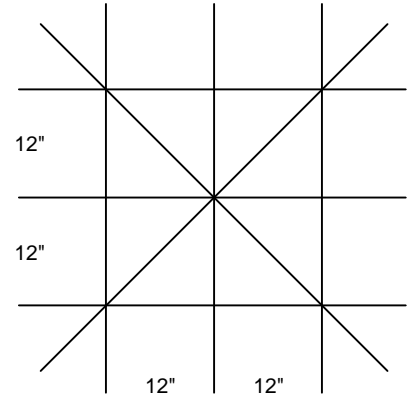
**TYPE A FOUNDATION**  
(FOR AVERAGE OR BETTER SOIL)



**TYPE B FOUNDATION**  
(NOTE C)



6 - #3 X 2'-6" BARS  
2 - #3 X 3'-0" BARS  
**DETAIL A**  
MAT FOR 42" DIA HOLE



6 - #3 X 3'-0" BARS  
2 - #3 X 3'-6" BARS  
**DETAIL B**  
MAT FOR 48" DIA HOLE

NOTE A: POLE SETTING HOLES SHALL BE EXCAVATED USING ROTARY AUGER DRILLING EQUIPMENT OR VERTICAL LIFT EXCAVATORS (CLAMSHELLS). BACK HOES, STANDARD EXCAVATORS AND TRENCHING EQUIPMENT ARE UNACCEPTABLE FOR POLE SETTING HOLE EXCAVATION.

NOTE B: POLE SETTING HOLE DIAMETER SHALL BE GREATER THAN OR EQUAL TO THE DIAMETER OF THE POLE BUTT PLUS TWELVE (12) INCHES.

NOTE C: IF SWAMPY SOIL, LOOSE FINE SANDS OR WET SILTS ARE ENCOUNTERED INSTALL TYPE B FOUNDATION. MAXIMUM DEPTH OF FOUNDATION BELOW LEVEL OF POLE SHALL BE FOUR (4) FEET. IF NO BETTER SOIL IS ENCOUNTERED CONTACT TRANSMISSION ENGINEER FOR ALTERNATIVE.

NOTE D: DEWATER ALL HOLES PRIOR TO INSTALLATION OF POLE OR FOUNDATION.

NOTE E: PLACE SELECT BACKFILL IN SIX (6) INCH LAYERS AND TAMP TO MAXIMUM COMPACTION. REFER TO TD-03-003 FOR BACKFILL SELECTION. NATIVE BACKFILL SHALL NOT BE USED.

NOTE F: ALL REINFORCING BARS SHALL BE TIED AT CROSSPOINTS. ALL REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO THE CURRENT ACI 318 BUILDING CODE.

NOTE G: ROD ALL CONCRETE TO ELIMINATE VOIDS. CONCRETE PLACED AT TEMPERATURES BELOW 40°F SHALL HAVE STRAW COVERING THE HOLE.

NOTE H: CONCRETE SHALL BE 4000 PSI CONCRETE.

NOTE I: DO NOT SET POLES ON CONCRETE FOR THREE (3) DAYS OR INSTALL CONDUCTORS OR GUY WIRES FOR SEVEN (7) DAYS. IF TEMPERATURE IS BELOW 40°F DO NOT SET POLE FOR FIVE (5) DAYS OR INSTALL CONDUCTORS AND GUYS FOR TEN (10) DAYS.

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Drawing Scale: 3/4" = 1'



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CONSTRUCTION  
STANDARDS  
MANUAL

TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
WOOD POLES CLASS H1 AND LARGER  
AND DIRECT EMBEDDED STEEL POLES

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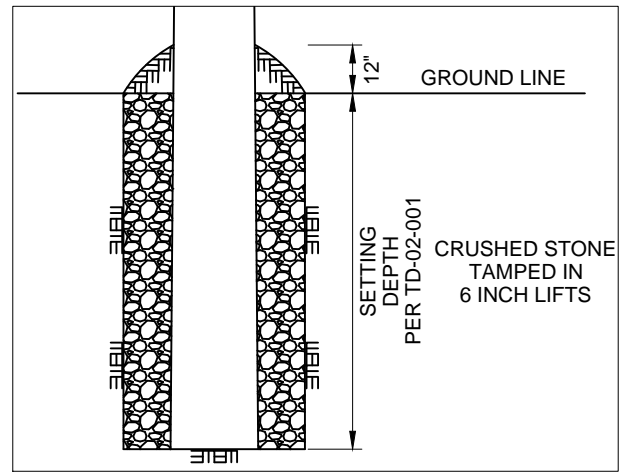
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| Drwn. By:   | Date Dr.: | Checked By: | Date Ck.: | Approved By:  | Date App.: |
| B. Franklin | 1/18/2013 | Becken/Hart | 1/16/2015 | Barry R. Hart | 1/16/2015  |

TM2.23.TD-03-002

Sheet 1

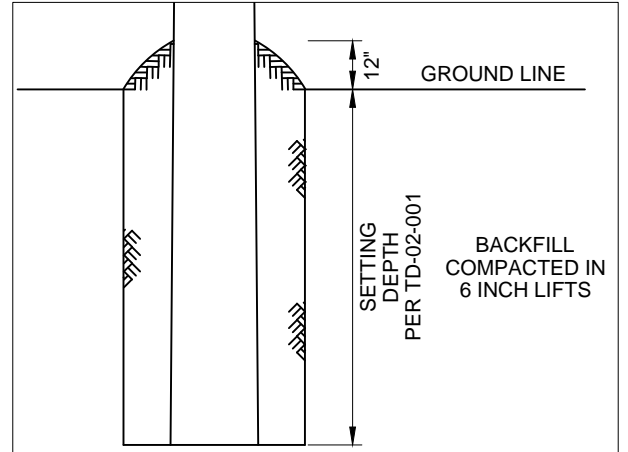
**ROCK EXCAVATION:**

- IN AREAS WHERE LEDGE OR SOLID ROCK IS EXCAVATED THE CONTRACTOR SHALL BLAST OR USE A ROCK HAMMER
- IN EXCAVATIONS WHERE MORE THAN 50% OF THE EXCAVATED DEPTH IS LEDGE OR SOLID ROCK EXCAVATION THE STANDARD SETTING DEPTH MAY BE REDUCED BY 1 FOOT. REFER TO STANDARD TD-02-001.



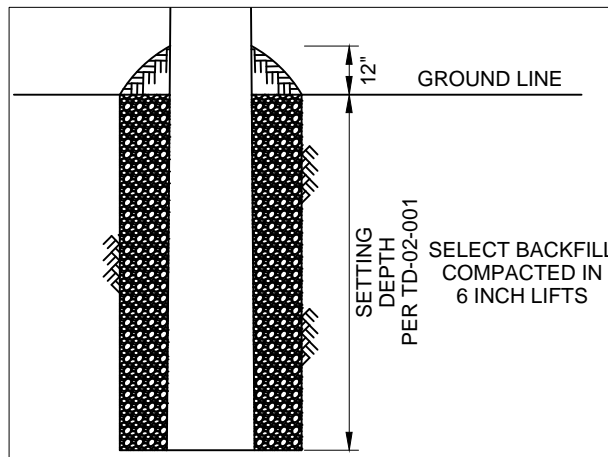
**STABLE COMPETENT SOILS:** CLEAN GRANULAR SOIL FREE OF ORGANIC AND OTHER DELETERIOUS MATERIALS AND CAPABLE OF SUPPORTING EXCAVATION SIDE SLOPES WITHOUT CAVING.

- BACKFILL POLE SETTING HOLES FOR CLASS 1 AND LOWER POLES WITH NATIVE BACKFILL AND CLASS H1 AND HIGHER POLES WITH SELECT BACKFILL IN SIX (6) INCH LIFTS AND TAMP TO MAXIMUM COMPACTION.
- MOUND BACKFILL UP A MINIMUM OF TWELVE (12) INCHES ABOVE FINAL GRADE AND SLOPE AWAY FROM POLE.
- REMAINING NATIVE SOIL SHALL BE SPREAD IN THE VICINITY OF THE POLE, COMPACTED AND SMOOTHED TO MEET EXISTING GRADE CONTOURS.



**POOR STABLE SOIL:** SOIL WHICH CONTAINS QUANTITIES OF ORGANICS OR FINE PARTICLES AT LEVELS WHICH MAKE IT UNACCEPTABLE AS BACKFILL BUT ARE CAPABLE OF SUPPORTING EXCAVATION SIDE SLOPES WITHOUT CAVING.

- BACKFILL POLE SETTING HOLES WITH SELECT BACKFILL IN SIX (6) INCH LIFTS AND TAMP TO MAXIMUM COMPACTION
- MOUND BACKFILL UP A MINIMUM OF TWELVE (12) INCHES ABOVE FINAL GRADE AND SLOPE AWAY FROM POLE.
- NATIVE SOIL SHALL BE SPREAD IN THE VICINITY OF THE POLE, COMPACTED AND SMOOTHED TO MEET EXISTING GRADE CONTOURS OR REMOVED BY THE CONTRACTOR.



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Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: 1" = 3'



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CONSTRUCTION  
STANDARDS  
MANUAL

TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
BACKFILL MATERIALS

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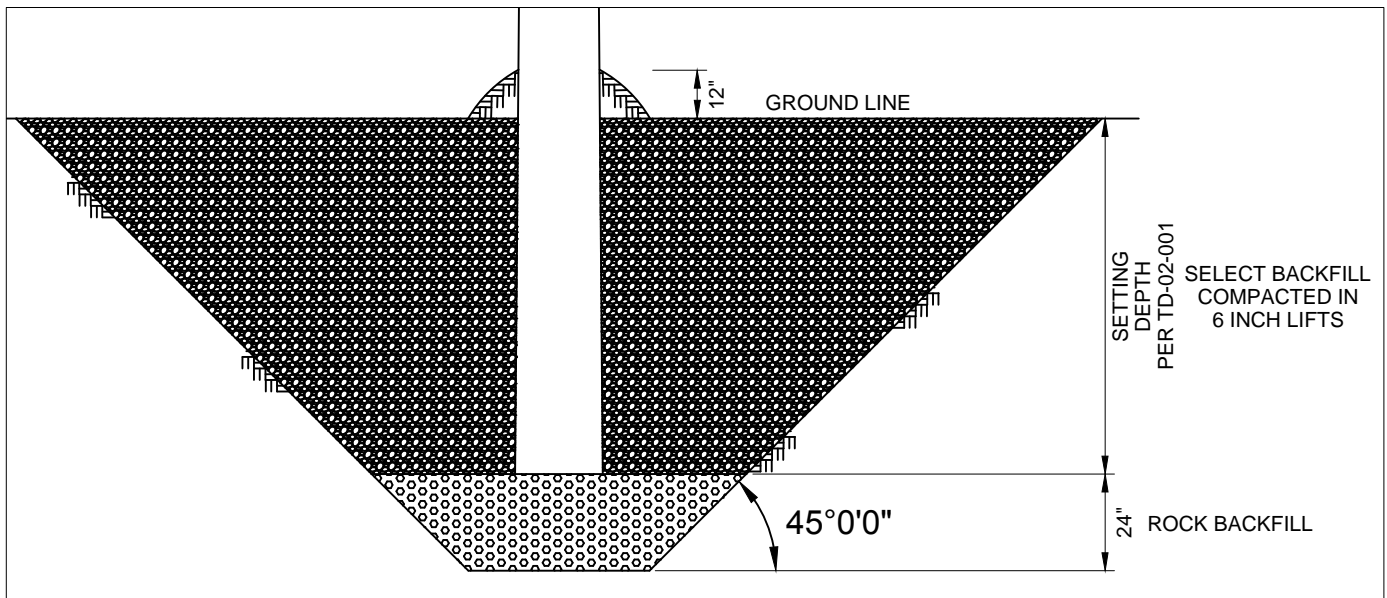
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| Drwn. By:   | Date Dr.: | Checked By: | Date Ck.: | Approved By:  | Date App.: |
| B. Franklin | 2/8/2013  | Becken/Hart | 1/16/2015 | Barry R. Hart | 1/16/2015  |

TM2.23.TD-03-003

Sheet 1

**POOR UNSTABLE SOIL: (SOFT OR SOUPY SOILS):** SOIL WHICH CONTAINS QUANTITIES OF ORGANICS, FINE PARTICLES OR COHESIVE MATERIAL AT LEVELS WHICH MAKE IT UNACCEPTABLE AS BACKFILL AND ARE INCAPABLE OF SUPPORTING EXCAVATION SIDE SLOPES WITHOUT CAVING

- EXCAVATE AN AREA NO LESS THAN TWELVE (12) FEET WIDE AND TWELVE (12) FEET LONG AT THE GROUND SURFACE WITH A MAXIMUM SIDESLOPE OF FORTY-FIVE (45) DEGREES.
- OVER EXCAVATE THE DEPTH OF THE HOLE TO A MINIMUM OF TWO (2) FEET BELOW THE REQUIRED SET DEPTH OF THE POLE.
- FILL THE OVEREXCAVATED DEPTH WITH ROCK FILL.
- BACKFILL THE HOLE WITH SELECT BACKFILL OR CRUSHED ROCK.
- CONTRACTOR HAS THE OPTION OF USING A CORRUGATED METAL PIPE FOUNDATION (TD-07-001) FOR EXCAVATIONS THAT EXPERIENCE CAVING OR SOILS IN WHICH THE CONSTRUCTION MANAGER DETERMINES MAY HAVE DIFFICULTY IN PROPERLY SUPPORTING STRUCTURE.
- IN AREAS WHERE THE POOR UNSTABLE SOIL IS VERY DEEP (SUCH AS A BOG OR SWAMPY AREA) THE CONTRACTOR HAS THE OPTION OF USING A PILE FOUNDATION (TD-05-001).
- MOUND BACKFILL UP A MINIMUM OF TWELVE (12) INCHES ABOVE FINAL GRADE AND SLOPE AWAY FROM POLE.
- NATIVE SOIL SHALL BE SPREAD IN THE VICINITY OF THE POLE, COMPACTED AND SMOOTHED TO MEET EXISTING GRADE CONTOURS OR REMOVED BY THE CONTRACTOR.



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Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: 1" = 3'



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CONSTRUCTION  
STANDARDS  
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TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
BACKFILL MATERIALS

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| B. Franklin | 2/8/2013  | Becken/Hart | 1/16/2015 | Barry R. Hart | 1/16/2015  |

TM2.23.TD-03-003

Sheet 2

**GENERAL BACKFILL NOTES:**

- IN WETLANDS THE CONTRACTOR SHALL REMOVE ALL EXCESS EXCAVATED SOIL.
- IF STANDING WATER EXISTS IN THE POLE EXCAVATION IT SHALL BE REMOVED PRIOR TO BACKFILLING.
- NO FROZEN MATERIAL SHALL BE USED AS BACKFILL.
- CEMENT OR CONCRETE SHALL NOT BE MIXED WITH ANY OTHER TYPES OF BACKFILL.
- NO ROCKS OF MORE THAN NINE (9) INCHES SHALL BE USED FOR BACKFILL.
- SOIL COMPETENCY AND STABILITY SHALL BE DETERMINED BY THE OWNER'S FIELD REPRESENTATIVE, CONSTRUCTION MANAGER OR CONSTRUCTION INSPECTOR.

**IMPORTED BACKFILL REQUIREMENTS**

ROCK FILL SHALL BE A WELL GRADED MIX OF ANGULAR STONE MEASURING NO MORE THAN SIX (6) INCHES IN DIAMETER. NO ROCKS LARGER THAN NINE (9) INCHES ARE PERMITTED TO BE USED AS BACKFILL. ROCK FILL SHALL BE FREE OF ORGANICS AND DELETERIOUS MATERIALS.

CRUSHED STONE SHALL BE GRANULAR IN NATURE AND COMPOSED OF CRUSHED ANGULAR STONES OF A UNIFORM GRADATION MEASURING THREE-FOURTHS (3/4) OF AN INCH IN DIAMETER. CRUSHED STONE SHALL BE FREE OF ORGANICS AND DELETERIOUS MATERIALS.

SELECT BACKFILL SHALL BE GRANULAR IN NATURE. SELECT BACKFILL SHALL BE FREE OF ORGANICS AND DELETERIOUS MATERIALS. SELECT BACKFILL SHALL MEET OR EXCEED THE FOLLOWING SOIL PROFILE:

| MIN. SELECT BACKFILL PROFILE |           |
|------------------------------|-----------|
| SIEVE SIZE                   | % PASSING |
| 2"                           | 100       |
| 1/2"                         | 60 - 90   |
| #4                           | 40 - 60   |
| #8                           | 25 - 50   |
| #16                          | 20 - 40   |
| #40                          | 15 - 30   |



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Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: 1" = 3'



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CONSTRUCTION  
STANDARDS  
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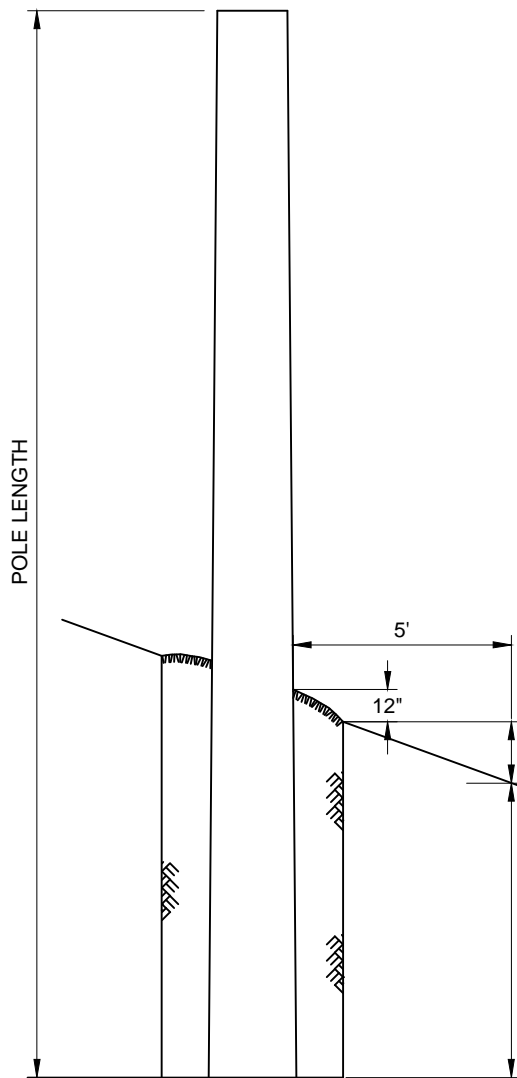
TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
BACKFILL MATERIALS

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| B. Franklin | 2/8/2013  | Becken/Hart | 1/16/2015 | Barry R. Hart | 1/16/2015  |

**TM2.23.TD-03-003**

Sheet 3



| POLE LENGTH | MINIMUM SETTING DEPTH (NOTE A) | MINIMUM SETTING DEPTH IN ROCK (NOTE B) |
|-------------|--------------------------------|--|
| 40'         | 6'                             | 5'                                     |
| 45'         | 6'-6"                          | 5'-6"                                  |
| 50'         | 7'                             | 6'                                     |
| 55'         | 7'-6"                          | 6'-6"                                  |
| 60'         | 8'                             | 7'                                     |
| 65'         | 8'-6"                          | 7'-6"                                  |
| 70'         | 9'                             | 8'                                     |
| 75'         | 9'-6"                          | 8'-6"                                  |
| 80'         | 10'                            | 9'                                     |
| 85'         | 10'-6"                         | 9'-6"                                  |
| 90'         | 11'                            | 10'                                    |
| 95'         | 11'-6"                         | 10'-6"                                 |
| 100'        | 12'                            | 11'                                    |
| 105'        | 12'-6"                         | 11'-6"                                 |
| 110'        | 13'                            | 12'                                    |
| 115'        | 13'-6"                         | 12'-6"                                 |
| 120'        | 14'                            | 13'                                    |
| 125'        | 14'-6"                         | 13'-6"                                 |

ADDITIONAL SETTING DEPTH ACCOUNTING FOR SIDESLOPE

GROUND LINE

MINIMUM SETTING DEPTH =  
[0.1 X POLE LENGTH (FT)] + 2 FEET

NOTE A: POLE SETTING HOLES SHALL BE EXCAVATED USING ROTARY AUGER DRILLING EQUIPMENT OR VERTICAL LIFT EXCAVATORS (CLAMSHELLS) IF POSSIBLE.

NOTE B: WHEN MORE THAN 50% OF THE POLE SETTING DEPTH IS LEDGE OR SOLID ROCK THE POLE IS CONSIDERED SET IN ROCK. WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR THE ENGINEER THE CONTRACTOR MAY SET THE POLE 12 INCHES SHALLOWER THAN THE STANDARD SETTING DEPTH PER THE ABOVE TABLE.

NOTE C: X SHALL BE MEASURED PRIOR TO EXCAVATION AND MEASURED DOWN THE STEEPEST SLOPE.

NOTE D: REFER TO TD-03-001 AND TD-03-002 FOR MORE INFORMATION ON POLE SETTING AND FOUNDATIONS. REFER TO TD-03-003 FOR PROPER BACKFILL SELECTION.

NOTE E: TOTAL SETTING DEPTH EQUALS X PLUS Y AND IS THE MINIMUM SETTING DEPTH REQUIRED. DO NOT OVER EMBED POLE BY MORE THAN 9 INCHES UNLESS NOTED ON PLAN AND PROFILE DRAWING. IF MINIMUM EMBEDMENT CANNOT BE OBTAINED CONTACT TRANSMISSION ENGINEERING BEFORE SETTING THE POLE.

NOTE F: POLE SHALL NOT BE OUT OF PLUMB BY MORE THAN ONE POLE TOP DIAMETER AFTER ALL GUYS AND WIRES ARE INSTALLED.

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Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: N/A



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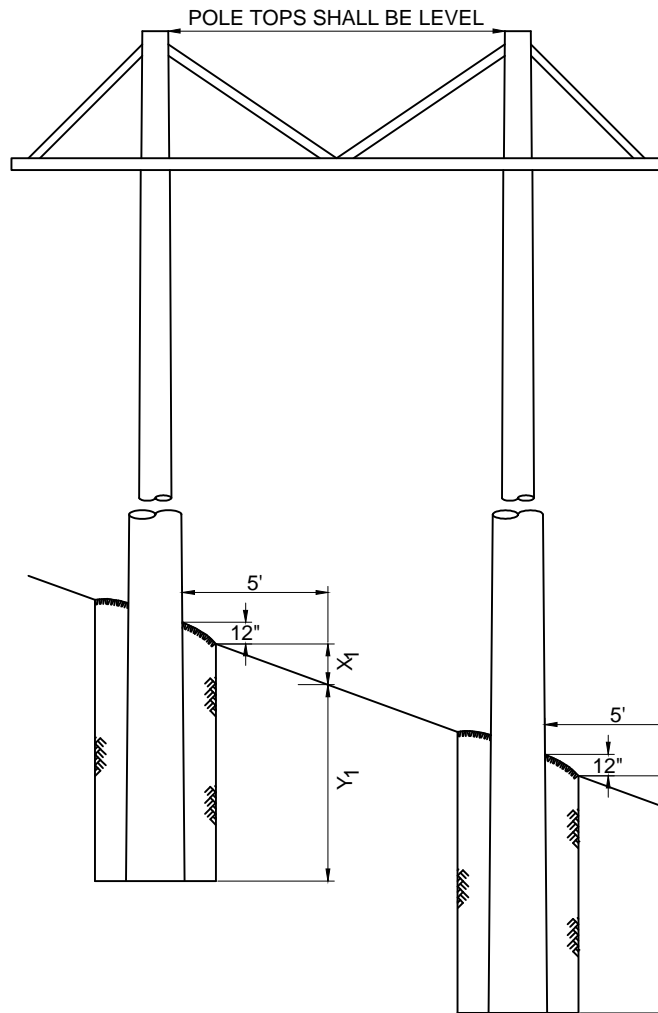
TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
SINGLE POLE SETTING DEPTH WITH SEVERE SIDE SLOPE

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| B. Franklin | 11/26/2012 | Becken/Hart | 1/15/2015 | Barry R. Hart | 1/15/2015  |

TM2.23.TD-04-001

Sheet 1



| POLE LENGTH | MINIMUM SETTING DEPTH (NOTE A) | MINIMUM SETTING DEPTH IN ROCK (NOTE B) |
|-------------|--------------------------------|--|
| 40'         | 6'                             | 5'                                     |
| 45'         | 6'-6"                          | 5'-6"                                  |
| 50'         | 7'                             | 6'                                     |
| 55'         | 7'-6"                          | 6'-6"                                  |
| 60'         | 8'                             | 7'                                     |
| 65'         | 8'-6"                          | 7'-6"                                  |
| 70'         | 9'                             | 8'                                     |
| 75'         | 9'-6"                          | 8'-6"                                  |
| 80'         | 10'                            | 9'                                     |
| 85'         | 10'-6"                         | 9'-6"                                  |
| 90'         | 11'                            | 10'                                    |
| 95'         | 11'-6"                         | 10'-6"                                 |
| 100'        | 12'                            | 11'                                    |
| 105'        | 12'-6"                         | 11'-6"                                 |
| 110'        | 13'                            | 12'                                    |
| 115'        | 13'-6"                         | 12'-6"                                 |
| 120'        | 14'                            | 13'                                    |
| 125'        | 14'-6"                         | 13'-6"                                 |

ADDITIONAL SETTING DEPTH ACCOUNTING FOR SIDESLOPE  
GROUND LINE  
 $X_2$  MINIMUM SETTING DEPTH =  $[0.1 \times \text{POLE LENGTH (FT)}] + 2 \text{ FEET}$

NOTE A: POLE SETTING HOLES SHALL BE EXCAVATED USING ROTARY AUGER DRILLING EQUIPMENT OR VERTICAL LIFT EXCAVATORS (CLAMSHELLS) IF POSSIBLE.

NOTE B: WHEN MORE THAN 50% OF THE POLE SETTING DEPTH IS LEDGE OR SOLID ROCK THE POLE IS CONSIDERED SET IN ROCK. WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR THE ENGINEER THE CONTRACTOR MAY SET THE POLE 12 INCHES SHALLOWER THAN THE STANDARD SETTING DEPTH PER THE ABOVE TABLE.

NOTE C: X1 AND X2 SHALL BE MEASURED PRIOR TO EXCAVATION AND MEASURED DOWN THE STEEPEST SLOPE.

NOTE D: THE CONTROLLING SETTING DEPTH IS THE LARGER OF X1 + Y1 AND X2 + Y2.

NOTE E: REFER TO TD-03-001 AND TD-03-002 FOR MORE INFORMATION ON POLE SETTING AND FOUNDATIONS. REFER TO TD-03-003 FOR PROPER BACKFILL SELECTION.

NOTE F: TOTAL SETTING DEPTHS EQUAL X PLUS Y AND ARE THE MINIMUM SETTING DEPTHS REQUIRED. DO NOT OVER EMBED POLE(S) BY MORE THAN 9 INCHES UNLESS NOTED ON PLAN AND PROFILE DRAWING. IF MINIMUM EMBEDMENT CANNOT BE OBTAINED CONTACT TRANSMISSION ENGINEERING BEFORE SETTING THE POLE(S).

NOTE G: POLE SHALL NOT BE OUT OF PLUMB BY MORE THAN ONE POLE TOP DIAMETER AFTER ALL GUYS AND WIRES ARE INSTALLED.

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Drawing Scale: N/A



TRANSMISSION  
CONSTRUCTION  
STANDARDS  
MANUAL

TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
H-FRAME POLE SETTING DEPTH WITH SEVERE SIDE SLOPE

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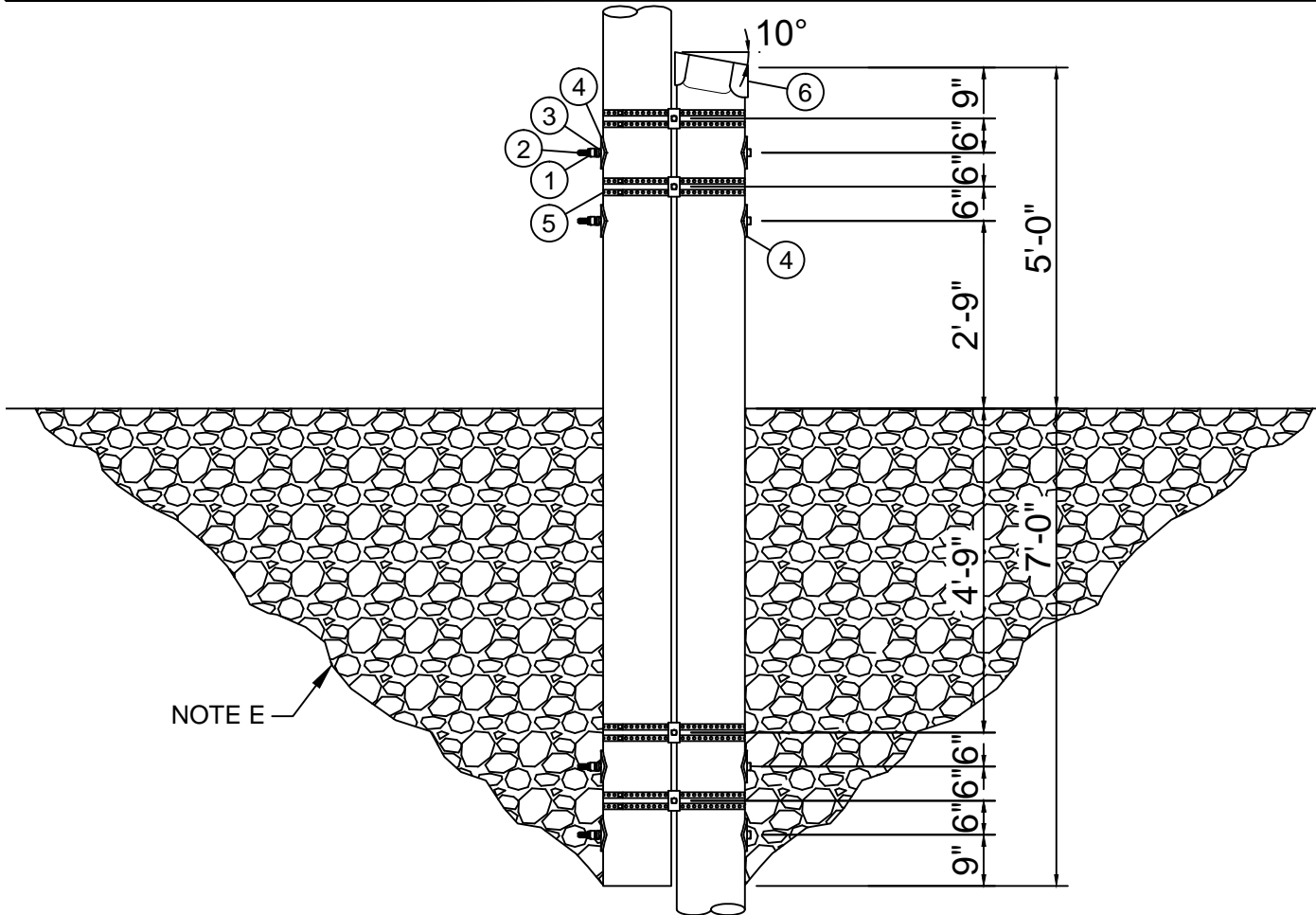
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| B. Franklin | 12/3/2012 | Becken/Hart | 1/15/2015 | Barry R. Hart | 1/15/2015  |

TM2.23.TD-04-002

Sheet 1

**BILL OF MATERIAL (Type of CU: POLE)**

| ITEM NO. | QTY. | UOM | IUSA MID   | CU: C*PT-TD-05-001                        |
|----------|------|-----|------------|---|
| 1        | 4    | EA  | 1000910900 | NUT LCK MF SQ 1" BOLT GALV                |
| 2        | 4    | EA  | 6000252735 | BOLT SQ HD 1 X 40 W/SN (NOTE F)           |
| 3        | 4    | EA  | 6000274614 | WASHER HELICAL (1")                       |
| 4        | 8    | EA  | 6000274860 | WASHER 4" SQ CURVED (1")                  |
| 5        | 4    | EA  | 6000270190 | BAND, STUBBING, DOUBLE POLE INC. HARDWARE |
| 6        | 1    | EA  | 6000820052 | POLE TOPPER 19"                           |



NOTE E

NOTE A: POLE USED FOR PILE SHALL BE A CLASS 1 POLE DRIVEN TO REFUSAL. POLE SHALL BE DRIVEN TIP FIRST WITH THE BUTT IN THE AIR. THIS WILL ALLOW FOR EASIER DRIVING AND BETTER CONTACT WITH OTHER POLE FOR CONNECTION PURPOSES.

NOTE B: POLE DRILLING: ALL HOLES - 1-1/16" DIAMETER HOLES

NOTE C: PILE SHALL BE IN A POSITION PERPENDICULAR TO THE TRANSMISSION CENTERLINE.

NOTE D: CUT TOP OF PILE TO SLOPE AWAY FROM STRUCTURE. TREAT CUT SURFACE WITH APPROVED PRESERVATIVE PER MANUFACTURER'S INSTRUCTIONS PRIOR TO INSTALLATION OF POLE CAP.

NOTE E: DO NOT BACKFILL WITH NATIVE SOIL. BACKFILL WITH ROCK BACKFILL PER SECTION TD-03-003.

NOTE F: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT SYSTEM ENGINEERING-TRANSMISSION SECTION IF YOU NEED ASSISTANCE.

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**TRANSMISSION  
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STANDARDS  
MANUAL**

**TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
PILE FOUNDATION ASSEMBLY**

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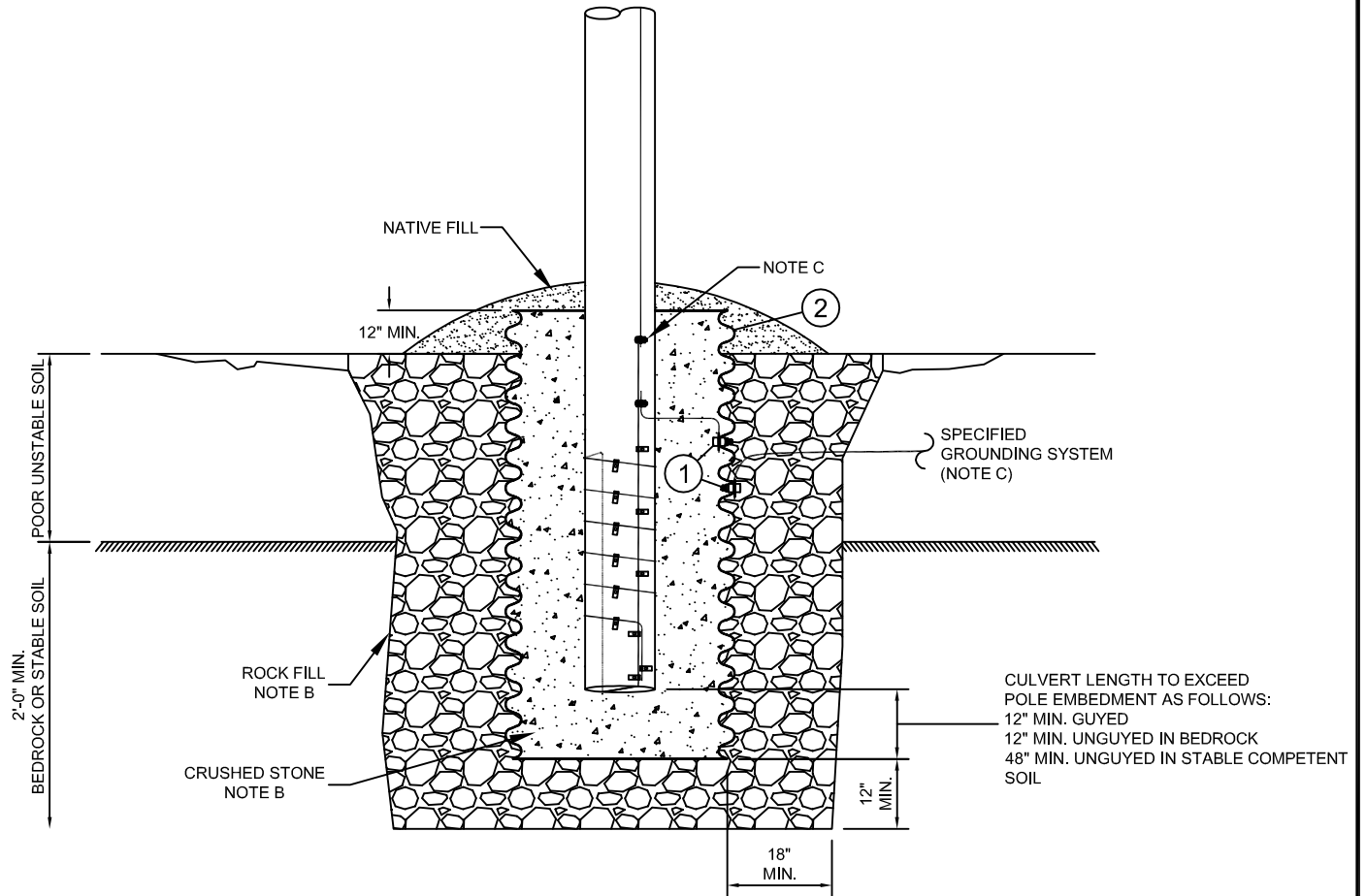
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| B. Franklin | 2/8/2013  | Becken/Hart | 1/22/2015 | Barry R. Hart | 1/22/2015  |

**TM2.23.TD-05-001**

Sheet 1

**BILL OF MATERIAL (Type of CU: POLE)**

|          |      |     |           |   |
|----------|------|-----|-----------|---|
| ITEM NO. | QTY. | UOM | IUSA MID  | <b>CU: U*PT-TD-07-001</b>                           |
| 1        | 2    | EA  | 30925256  | BOLT GRND BRZ CAPTIVE 1/2" DIA 0.162 - 0.419        |
| 2        | 1    | EA  | NON-STOCK | PIPE, GALV., CORRUGATED, 12 GA., LENGTH AS REQUIRED |



NOTE A: CORRUGATED METAL PIPE SIZED AS REQUIRED IN INTEGER FOOT INCREMENTS AND SHALL BE A MINIMUM OF 10" GREATER THAN THE DIAMETER OF THE POLE BUTT.

NOTE B: SEE SECTION TD-03-003 FOR ROCK AND CRUSHED STONE BACKFILL SPECIFICATIONS AND PLACEMENT REQUIREMENTS.

NOTE C: INSTALL POLE GROUNDING PER TG STANDARD SPECIFIED ON THE PLAN AND PROFILE DRAWING FOR THE STRUCTURE IN QUESTION.

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Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: 1" = 3'



**TRANSMISSION  
CONSTRUCTION  
STANDARDS  
MANUAL**

**TRANSMISSION STANDARDS - FOUNDATION AND BACKFILL  
CORRUGATED METAL PIPE FOUNDATION**

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| B. Franklin | 2/8/2013  | Becken/Hart | 1/22/2015 | Barry R. Hart | 4/09/2015  |

**TM2.23.TD-07-001**

Sheet 1



CU Type: UC\_POLE

CUs limited to 17 characters

Transmission Pole 'TD' CU Coding Format and Naming Convention

|     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | 11th | 12th | 13th | 14th | 15th | 16th | 17th |
| U   | X1  | P   | T   | -   | T   | D   | -   | X2  | P    | X3   | X4   |      |      | X5   | X6   |      |

|    |       |
|----|-------|
| X1 | OpCo  |
| 2  | NYSEG |
| 3  | CMP   |
| 4  | RG&E  |

|    |            |
|----|------------|
| X2 | Material   |
| W  | Round Wood |
| L  | Laminated  |
| F  | Fiberglass |
| C  | Concrete   |
|    |            |
|    |            |

|     |             |
|-----|-------------|
| X4  | Pole Height |
| 030 | 30'         |
| 035 | 35'         |
| 040 | 40'         |
| 045 | 45'         |
| 050 | 50'         |
| 055 | 55'         |
| 060 | 60'         |
| 065 | 65'         |
| 070 | 70'         |
| 075 | 75'         |
| 080 | 80'         |
| 085 | 85'         |
| 090 | 90'         |
| 095 | 95'         |
| 100 | 100'        |
| 105 | 105'        |
| 110 | 110'        |
| 115 | 115'        |
| 120 | 120'        |
| 125 | 125'        |
| 130 | 130'        |
| 135 | 135'        |
|     |             |
|     |             |
|     |             |
|     |             |

|    |  |
|----|--|
| X5 | additional dimension for L, F or C poles |
| -  | n/a                                      |
| X  | 3"                                       |
| Y  | 6"                                       |
| Z  | 9"                                       |
|    |  |

Steel structures are covered in TM2.23 Section TE

|    |                      |
|----|----------------------|
| X3 | Species              |
| F  | Douglas Fir          |
| P  | Southern Yellow Pine |
| C  | Western Red Cedar    |
|    |                      |
|    |                      |
| Z  | not applicable       |

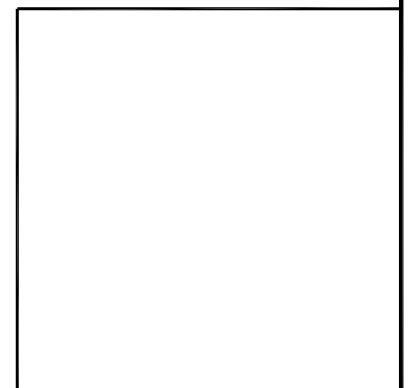
|    |       |
|----|-------|
| X6 | Class |
| C2 | 2     |
| C1 | 1     |
| H1 | H1    |
| H2 | H2    |
| H3 | H3    |
| H4 | H4    |
| H5 | H5    |
| H6 | H6    |

TRANSMISSION DESIGN POLE CLASSES:

- UP TO AND INCLUDING 80' HEIGHTS
  - CLASS 2 MINIMUM
- 85', 90' AND 95' HEIGHTS
  - CLASS 1 MINIMUM
- 100' AND TALLER
  - CLASS H1 MINIMUM

IN DIVISIONS THAT REQUIRE HARDENING (LIBERTY AND BREWSTER IN PARTICULAR) ADD ONE POLE CLASS TO THE TRANSMISSION DESIGN POLE CLASSES.

ROUND WOOD POLES AND LAMINATED POLES WILL BE PENTA TREATED.




CU Function: U\_TL69 for 35kV & 46kV, U\_TG69 for 69kV through 344kV, U\_T345 for 345kV & greater.

For correct CU: substitute 2 for NYSEG, 3 for CMP or 4 for RG&E in place of asterisk (U\*\_).

Contact Engineering Standards - Transmission for the creation of new standards and CUs.

Drawing Scale: N/A

|   |  |                            |  |                                 |  |                   |          |
|---|--|----------------------------|--|---------------------------------|--|-------------------|----------|
|  | IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL |                            | TRANSMISSION POLES STANDARD CU FORMAT AND NAMING CONVENTION ALL POLES (EXCLUDING STEEL STRUCTURES) |                                 |  |                   | Revision |
|   |  |                            |  |                                 |  |                   | 00       |
| Drwn. By: L.A. Best   |  | Date Dr.: 9/30/2011        |  | Checked By: Shepard/Becken/Hart |  | Date Ck.: / /2014 |          |
| Date App.: / /2014  |  | Approved By: Barry R. Hart |  | Date App.: / /2014              |  | DATE / /2014      |          |
| TM2.23.TD-CU-POLES  |  |                            |  |                                 |  |                   | Sheet 1  |

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

ANSIA 8-1/2" X 11"

CU Type: UC\_PHRSR

CUs limited to 17 characters

Transmission Phase Raiser 'TD' CU Coding Format and Naming Convention

|     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | 11th | 12th | 13th | 14th | 15th | 16th | 17th |
| U   | X1  | P   | T   | -   | T   | D   | -   | P   | R    | H    | X2   | -    | X3   | L    |      |      |

|    |       |
|----|-------|
| X1 | OpCo  |
| 2  | NYSEG |
| 3  | CMP   |
| 4  | RG&E  |

| X2     | LWS PART NUMBER (width of steel) |      |      |    |    |   |  |
|--------|----------------------------------|------|------|----|----|---|--|
|        | EXISTING POLE CLASS              |      |      |    |    |   |  |
| Height | ≥H3                              | H2   | H1   | 1  | 2  | 3 |  |
| 50'    | 16 *                             | 9    | 9    | 7  | 7  | 7 |  |
| 55'    | 16 *                             | 10   | 9    | 8  | 7  | 7 |  |
| 60'    | 16 *                             | 11   | 10   | 9  | 7  | 7 |  |
| 65'    | 16 *                             | 11   | 10   | 9  | 8  | 7 |  |
| 70'    | 16 *                             | 12   | 11   | 10 | 8  | 7 |  |
| 75'    | 16 *                             | 13   | 12   | 10 | 9  | 8 |  |
| 80'    | 16 *                             | 13   | 12   | 11 | 9  | 8 |  |
| 85'    | 16 *                             | 14   | 13   | 11 | 9  | 8 |  |
| 90'    | 16 *                             | 14   | 13   | 12 | 10 | 9 |  |
| 95'    | 16 *                             | 15 * | 14   | 12 | 10 | - |  |
| 100'   | 16 *                             | 15 * | 14   | 13 | 11 | - |  |
| 105'   | 16 *                             | 15 * | 14   | 13 | 11 | - |  |
| 110'   | 16 *                             | 15 * | 15 * | 13 | 12 | - |  |

| LWS PART NUMBER (length of steel) |   |
|-----------------------------------|---|
| X3                                | X3 = raise distance + 12' for lifts of 5 to 15 feet.  |
| 17                                | lift of 5' + 12'                                      |
| 22                                | lift of 10' + 12'                                     |
| 27                                | lift of 15' + 12'                                     |
| X3                                | X3 = raise distance + 13' for lifts of 16 to 20 feet. |
| 33                                | lift of 20' + 13'                                     |

Contact LWS for sizes not shown.

\* LWS part number includes suffix -80

| LWS PART # | Global MID |
|------------|------------|
| PRH7-17LB  | 30923604   |
| PRH7-22LB  | 30923605   |
| PRH8-17L   | 30923606   |
| PRH8-22L   | 30923607   |
| PRH8-27L   | 30923608   |
| PRH9-17L   | 30923609   |
| PRH9-22L   | 30923610   |
| PRH9-27L   | 30923611   |
| PRH10-17L  | 30923581   |
| PRH10-22L  | 30923582   |
| PRH10-27L  | TBD        |
| PRH11-17L  | 30923583   |
| PRH11-22L  | 30923584   |
| PRH11-27L  | 30923585   |
| PRH12-17L  | 30923586   |
| PRH12-22L  | 30923587   |
| PRH12-22LB | 30923588   |
| PRH12-27LB | 30923589   |
| PRH13-17LB | 30923590   |
| PRH13-22LB | 30923591   |
| PRH13-27L  | 30923592   |

| LWS PART #    | Global MID |
|---------------|------------|
| PRH14-17L     | 30923593   |
| PRH14-17LB    | 30923594   |
| PRH14-22LB    | 30923595   |
| PRH14-27L     | 30923596   |
| PRH15-17LB-80 | 30923597   |
| PRH15-22LB-80 | 30923598   |
| PRH15-27L-80  | 30923599   |
| PRH16-17L-80  | 30923600   |
| PRH16-22L-80  | 30923601   |
| PRH16-27L-80  | 30923602   |
| PRH16-33L-80  | 30923603   |

CU Function:  
 U\_TL69 for 35kV & 46kV,  
 U\_TG69 for 69kV thru 344kV,  
 U\_T345 for 345kV & greater.


For correct CU:  
 substitute 2 for NYSEG,  
 3 for CMP or 4 for RG&E  
 in place of asterisk (U\*\_).

More Information at Laminated Wood Systems website -

[http://www.lwsinc.com/sites/default/files/documents/PhaseRaiser%20Brochure\\_0.pdf](http://www.lwsinc.com/sites/default/files/documents/PhaseRaiser%20Brochure_0.pdf)

Contact Engineering Standards - Transmission for the creation of new standards and CUs.

Drawing Scale: N/A

|   |  |   |           |
|---|--|---|-----------|
|  | IBERDROLA USA<br>TRANSMISSION<br>CONSTRUCTION<br>STANDARDS<br>MANUAL | TRANSMISSION PHASE RAISERS<br>STANDARD CU FORMAT AND NAMING CONVENTION<br>FOR USE ON RAISING THE PHASES ON EXISTING<br>WOOD H-FRAMES OR OTHER MULTI-POLE STRUCTURES | Revision  |
|   |  |   | 00        |
|   |  |   | DATE      |
|   |  |   | / /2015   |
| Drwn. By:   | Date Dr.:  | Checked By:   | Date Ck.: |
| L.A. Best   | 2/27/2015  | Shepard/Becken/Hart   | / /2015   |
| Approved By:  | Date App.:   | TM2.23.TD-CU-PR   |           |
| Barry R. Hart   | / /2015  | Sheet 1   |           |

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

ANSIA 8-1/2" X 11"

| POLE LENGTH | POLE CLASS | MIN. CIRC. (IN.) |              | MIN. DIAM. (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID               | CU                |
|-------------|------------|------------------|--------------|------------------|--------------|---------------|-----------------------|-------------------|-------------------|
|             |            | TOP              | 6' FROM BUTT | TOP              | 6' FROM BUTT |               |                       |                   |                   |
| 60'         | 2          | 25               | 45           | 8                | 14.3         | 2304          | 8'                    | 2742206002        | C*PT-TD-WPF060-C2 |
|             | 1          | 27               | 48           | 8.6              | 15.3         | 2372          | 8'                    | 2742206001        | C*PT-TD-WPF060-C1 |
|             | H1         | 29               | 51           | 9.2              | 16.2         | 3008          | 8'                    | 2742206011        | C*PT-TD-WPF060-H1 |
|             | H2         | 31               | 54           | 9.9              | 17.2         | 3420          | 8'                    | 2742206012        | C*PT-TD-WPF060-H2 |
|             | H3         | 33               | 57           | 10.5             | 18.1         | 3812          | 8'                    | 2742206013        | C*PT-TD-WPF060-H3 |
|             | H4         | 35               | 59.5         | 11.1             | 18.9         | 4180          | 8'                    | 2742206014        | C*PT-TD-WPF060-H4 |
|             | H5         | 37               | 62.5         | 11.8             | 19.9         | 4648          | 8'                    | 2742206015        | C*PT-TD-WPF060-H5 |
| H6          | 39         | 65.5             | 12.4         | 20.8             | 5112         | 8'            | 2742206016            | C*PT-TD-WPF060-H6 |                   |

|     |    |      |      |      |      |       |            |                   |                   |
|-----|----|------|------|------|------|-------|------------|-------------------|-------------------|
| 65' | 2  | 25   | 46.5 | 8    | 14.8 | 2584  | 8'-6"      | 2742206502        | C*PT-TD-WPF065-C2 |
|     | 1  | 27   | 49.5 | 8.6  | 15.8 | 2668  | 8'-6"      | 2742206501        | C*PT-TD-WPF065-C1 |
|     | H1 | 29   | 52.5 | 9.2  | 16.7 | 3392  | 8'-6"      | 2742206511        | C*PT-TD-WPF065-H1 |
|     | H2 | 31   | 55.5 | 9.9  | 17.7 | 3844  | 8'-6"      | 2742206512        | C*PT-TD-WPF065-H2 |
|     | H3 | 33   | 58.5 | 10.5 | 18.6 | 4280  | 8'-6"      | 2742206513        | C*PT-TD-WPF065-H3 |
|     | H4 | 35   | 61.5 | 11.1 | 19.6 | 4716  | 8'-6"      | 2742206514        | C*PT-TD-WPF065-H4 |
|     | H5 | 37   | 64.5 | 11.8 | 20.5 | 5228  | 8'-6"      | 2742206515        | C*PT-TD-WPF065-H5 |
| H6  | 39 | 67.5 | 12.4 | 21.5 | 5736 | 8'-6" | 2742206516 | C*PT-TD-WPF065-H6 |                   |

|     |    |    |      |      |      |      |            |                   |                   |
|-----|----|----|------|------|------|------|------------|-------------------|-------------------|
| 70' | 2  | 25 | 48   | 8    | 15.3 | 2880 | 9'         | 2742207002        | C*PT-TD-WPF070-C2 |
|     | 1  | 27 | 51   | 8.6  | 16.2 | 3024 | 9'         | 2742207001        | C*PT-TD-WPF070-C1 |
|     | H1 | 29 | 54   | 9.2  | 17.2 | 3812 | 9'         | 2742207011        | C*PT-TD-WPF070-H1 |
|     | H2 | 31 | 57   | 9.9  | 18.1 | 4280 | 9'         | 2742207012        | C*PT-TD-WPF070-H2 |
|     | H3 | 33 | 60.5 | 10.5 | 19.3 | 4804 | 9'         | 2742207013        | C*PT-TD-WPF070-H3 |
|     | H4 | 35 | 63.5 | 11.1 | 20.2 | 5312 | 9'         | 2742207014        | C*PT-TD-WPF070-H4 |
|     | H5 | 37 | 66.5 | 11.8 | 21.2 | 5876 | 9'         | 2742207015        | C*PT-TD-WPF070-H5 |
| H6  | 39 | 69 | 12.4 | 22   | 6440 | 9'   | 2742207016 | C*PT-TD-WPF070-H6 |                   |

|     |    |    |      |      |      |       |            |                   |                   |
|-----|----|----|------|------|------|-------|------------|-------------------|-------------------|
| 75' | 2  | 25 | 49   | 8    | 15.6 | 3092  | 9'-6"      | 2742207502        | C*PT-TD-WPF075-C2 |
|     | 1  | 27 | 52.5 | 8.6  | 16.7 | 3392  | 9'-6"      | 2742207501        | C*PT-TD-WPF075-C1 |
|     | H1 | 29 | 55.5 | 9.2  | 17.7 | 4168  | 9'-6"      | 2742207511        | C*PT-TD-WPF075-H1 |
|     | H2 | 31 | 59   | 9.9  | 18.8 | 4704  | 9'-6"      | 2742207512        | C*PT-TD-WPF075-H2 |
|     | H3 | 33 | 62   | 10.5 | 19.7 | 5268  | 9'-6"      | 2742207513        | C*PT-TD-WPF075-H3 |
|     | H4 | 35 | 65   | 11.1 | 20.7 | 5876  | 9'-6"      | 2742207514        | C*PT-TD-WPF075-H4 |
|     | H5 | 37 | 68   | 11.8 | 21.6 | 6584  | 9'-6"      | 2742207515        | C*PT-TD-WPF075-H5 |
| H6  | 39 | 71 | 12.4 | 22.6 | 7148 | 9'-6" | 2742207516 | C*PT-TD-WPF075-H6 |                   |

NOTE A: ALL NEW CONSTRUCTION FOR LINES 115KV AND HIGHER SHALL BE STEEL. ONLY MAINTENANCE REPLACEMENTS SHALL USE WOOD POLES.

NOTE B: NEW STRUCTURES SHALL USE THE FOLLOWING MINIMUM CLASS OF POLE:  
 35kV/46kV/69kV: CLASS 2 FOR TANGENTS, CLASS 1 FOR ANGLES AND DEADENDS  
 115kV/230kV SINGLE POLE: CLASS H1  
 115kV/230kV/345kV H-FRAME: CLASS 1

NOTE C: IF MORE THAN 50% OF EXCAVATION IS LEDGE OR SOLID ROCK THE POLE CAN BE SET 1' SHALLOWER WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR ENGINEER.

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: N/A



TRANSMISSION  
CONSTRUCTION  
STANDARDS  
MANUAL

TRANSMISSION STANDARDS - WOOD POLE INFORMATION  
DOUGLAS FIR

REVISION

00

DATE

5/21/2015

Drwn. By: B. Franklin  
Date Dr.: 4/16/2013

Checked By: Becken/Hart

Date Ck.: 3/05/2015

Approved By: Barry R. Hart

Date App.: 4/09/2015

TM2.23.TD-01-001

Sheet 2

| POLE LENGTH | POLE CLASS | MIN. CIRC. (IN.) |              | MIN. DIAM. (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID         | CU                |
|-------------|------------|------------------|--------------|------------------|--------------|---------------|-----------------------|-------------|-------------------|
|             |            | TOP              | 6' FROM BUTT | TOP              | 6' FROM BUTT |               |                       |             |                   |
| 80'         | 2          | 25               | 50.5         | 8                | 16.1         | 3420          | 10'                   | 2742208002  | C*PT-TD-WPF080-C2 |
|             | 1          | 27               | 54           | 8.6              | 17.2         | 3828          | 10'                   | 2742208001  | C*PT-TD-WPF080-C1 |
|             | H1         | 29               | 57           | 9.2              | 18.1         | 4604          | 10'                   | 2742208011  | C*PT-TD-WPF080-H1 |
|             | H2         | 31               | 60           | 9.9              | 19.1         | 5200          | 10'                   | 2742208012  | C*PT-TD-WPF080-H2 |
|             | H3         | 33               | 63.5         | 10.5             | 20.2         | 5792          | 10'                   | 2742208013  | C*PT-TD-WPF080-H3 |
|             | H4         | 35               | 66.5         | 11.1             | 21.2         | 6484          | 10'                   | 2742208014  | C*PT-TD-WPF080-H4 |
|             | H5         | 37               | 69.5         | 11.8             | 22.1         | 7220          | 10'                   | 2742208015  | C*PT-TD-WPF080-H5 |
|             | H6         | 39               | 72.5         | 12.4             | 23.1         | 7840          | 10'                   | 2742208016  | C*PT-TD-WPF080-H6 |
| 85'         | 2*         | 25               | 51.5         | 8                | 16.4         | 3900          | 10'-6"                | 2742208502* | *                 |
|             | 1          | 27               | 55           | 8.6              | 17.5         | 4140          | 10'-6"                | 2742208501  | C*PT-TD-WPF085-C1 |
|             | H1         | 29               | 58.5         | 9.2              | 18.6         | 5072          | 10'-6"                | 2742208511  | C*PT-TD-WPF085-H1 |
|             | H2         | 31               | 61.5         | 9.9              | 19.6         | 5708          | 10'-6"                | 2742208512  | C*PT-TD-WPF085-H2 |
|             | H3         | 33               | 65           | 10.5             | 20.7         | 6356          | 10'-6"                | 2742208513  | C*PT-TD-WPF085-H3 |
|             | H4         | 35               | 68           | 11.1             | 21.6         | 7104          | 10'-6"                | 2742208514  | C*PT-TD-WPF085-H4 |
|             | H5         | 37               | 71.5         | 11.8             | 22.8         | 7884          | 10'-6"                | 2742208515  | C*PT-TD-WPF085-H5 |
|             | H6         | 39               | 74.5         | 12.4             | 23.7         | 8604          | 10'-6"                | 2742208516  | C*PT-TD-WPF085-H6 |
| 90'         | 2*         | 25               | 53           | 8                | 16.9         | 4264          | 11'                   | 2742209002* | *                 |
|             | 1          | 27               | 56           | 8.6              | 17.8         | 4464          | 11'                   | 2742209001  | C*PT-TD-WPF090-C1 |
|             | H1         | 29               | 59.5         | 9.2              | 18.9         | 5552          | 11'                   | 2742209011  | C*PT-TD-WPF090-H1 |
|             | H2         | 31               | 63           | 9.9              | 20.1         | 6228          | 11'                   | 2742209012  | C*PT-TD-WPF090-H2 |
|             | H3         | 33               | 66.5         | 10.5             | 21.2         | 7076          | 11'                   | 2742209013  | C*PT-TD-WPF090-H3 |
|             | H4         | 35               | 69.5         | 11.1             | 22.1         | 7824          | 11'                   | 2742209014  | C*PT-TD-WPF090-H4 |
|             | H5         | 37               | 73           | 11.8             | 23.2         | 8744          | 11'                   | 2742209015  | C*PT-TD-WPF090-H5 |
|             | H6         | 39               | 76           | 12.4             | 24.2         | 9492          | 11'                   | 2742209016  | C*PT-TD-WPF090-H6 |
| 95'         | 2*         | 25               | 54           | 8                | 17.2         | 4508          | 11'-6"                | 2742209502* | *                 |
|             | 1          | 27               | 57           | 8.6              | 18.1         | 4888          | 11'-6"                | 2742209501  | C*PT-TD-WPF095-C1 |
|             | H1         | 29               | 61           | 9.2              | 19.4         | 6060          | 11'-6"                | 2742209511  | C*PT-TD-WPF095-H1 |
|             | H2         | 31               | 64.5         | 9.9              | 20.5         | 6780          | 11'-6"                | 2742209512  | C*PT-TD-WPF095-H2 |
|             | H3         | 33               | 67.5         | 10.5             | 21.5         | 7600          | 11'-6"                | 2742209513  | C*PT-TD-WPF095-H3 |
|             | H4         | 35               | 71           | 11.1             | 22.6         | 8516          | 11'-6"                | 2742209514  | C*PT-TD-WPF095-H4 |
|             | H5         | 37               | 74.5         | 11.8             | 23.7         | 9464          | 11'-6"                | 2742209515  | C*PT-TD-WPF095-H5 |
|             | H6         | 39               | 77.5         | 12.4             | 24.7         | 10284         | 11'-6"                | 2742209516  | C*PT-TD-WPF095-H6 |
| 100'        | 2*         | 25               | 55           | 8                | 17.5         | 4944          | 12'                   | 2742210002* | *                 |
|             | 1          | 27               | 58.5         | 8.6              | 18.6         | 5340          | 12'                   | 2742210001  | C*PT-TD-WPF100-C1 |
|             | H1         | 29               | 62           | 9.2              | 19.7         | 6540          | 12'                   | 2742210011  | C*PT-TD-WPF100-H1 |
|             | H2         | 31               | 65.5         | 9.9              | 20.8         | 7332          | 12'                   | 2742210012  | C*PT-TD-WPF100-H2 |
|             | H3         | 33               | 69           | 10.5             | 22           | 8180          | 12'                   | 2742210013  | C*PT-TD-WPF100-H3 |
|             | H4         | 35               | 72.5         | 11.1             | 23.1         | 9224          | 12'                   | 2742210014  | C*PT-TD-WPF100-H4 |
|             | H5         | 37               | 76           | 11.8             | 24.2         | 10212         | 12'                   | 2742210015  | C*PT-TD-WPF100-H5 |
|             | H6         | 39               | 79           | 12.4             | 25.1         | 11104         | 12'                   | 2742210016  | C*PT-TD-WPF100-H6 |

\* IF THIS CLASS OF POLE IS SPECIFIED USE NEXT CLASS HIGHER.

NOTE A: ALL NEW CONSTRUCTION FOR LINES 115KV AND HIGHER SHALL BE STEEL. ONLY MAINTENANCE REPLACEMENTS SHALL USE WOOD POLES.

NOTE B: NEW STRUCTURES SHALL USE THE FOLLOWING MINIMUM CLASS OF POLE:  
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 115kV/230kV SINGLE POLE: CLASS H1  
 115kV/230kV/345kV H-FRAME: CLASS 1

NOTE C: IF MORE THAN 50% OF EXCAVATION IS LEDGE OR SOLID ROCK THE POLE CAN BE SET 1' SHALLOWER WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR ENGINEER.

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Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: N/A



TRANSMISSION  
CONSTRUCTION  
STANDARDS  
MANUAL

TRANSMISSION STANDARDS - WOOD POLE INFORMATION  
DOUGLAS FIR

|           |
|-----------|
| REVISION  |
| 00        |
| DATE      |
| 5/21/2015 |

|             |           |             |           |               |            |
|-------------|-----------|-------------|-----------|---------------|------------|
| Drwn. By:   | Date Dr.: | Checked By: | Date Ck.: | Approved By:  | Date App.: |
| B. Franklin | 4/16/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

TM2.23.TD-01-001

Sheet 3

| POLE LENGTH | POLE CLASS | MIN. CIRC. (IN.) |              | MIN. DIAM. (IN.) |              | WEIGHT (LBS.) | MINIMUM SETTING DEPTH | MID               | CU                |
|-------------|------------|------------------|--------------|------------------|--------------|---------------|-----------------------|-------------------|-------------------|
|             |            | TOP              | 6' FROM BUTT | TOP              | 6' FROM BUTT |               |                       |                   |                   |
| 105'        | 2*         | 25               | 56           | 8                | 17.8         | 5340          | 12'-6"                | 2742210502*       | *                 |
|             | 1*         | 27               | 59.5         | 8.6              | 19           | 5848          | 12'-6"                | 2742210501*       | *                 |
|             | H1         | 29               | 63           | 9.2              | 20.1         | 7104          | 12'-6"                | 2742210511        | C*PT-TD-WPF105-H1 |
|             | H2         | 31               | 67           | 9.9              | 21.3         | 7940          | 12'-6"                | 2742210512        | C*PT-TD-WPF105-H2 |
|             | H3         | 33               | 70.5         | 10.5             | 22.4         | 8900          | 12'-6"                | 2742210513        | C*PT-TD-WPF105-H3 |
|             | H4         | 35               | 74           | 11.1             | 23.6         | 9904          | 12'-6"                | 2742210514        | C*PT-TD-WPF105-H4 |
|             | H5         | 37               | 77           | 11.8             | 24.5         | 11016         | 12'-6"                | 2742210515        | C*PT-TD-WPF105-H5 |
| H6          | 39         | 80.5             | 12.4         | 25.6             | 11964        | 12'-6"        | 2742210516            | C*PT-TD-WPF105-H6 |                   |
| 110'        | 2*         | 25               | 57           | 8                | 18.1         | 5792          | 13'                   | 2742211002*       | *                 |
|             | 1*         | 27               | 60.5         | 8.6              | 19.3         | 6344          | 13'                   | 2742211001*       | *                 |
|             | H1         | 29               | 64.5         | 9.2              | 20.5         | 7640          | 13'                   | 2742211011        | C*PT-TD-WPF110-H1 |
|             | H2         | 31               | 68           | 9.9              | 21.6         | 8604          | 13'                   | 2742211012        | C*PT-TD-WPF110-H2 |
|             | H3         | 33               | 71.5         | 10.5             | 22.8         | 9720          | 13'                   | 2742211013        | C*PT-TD-WPF110-H3 |
|             | H4         | 35               | 75           | 11.1             | 23.9         | 10808         | 13'                   | 2742211014        | C*PT-TD-WPF110-H4 |
|             | H5         | 37               | 78.5         | 11.8             | 25           | 12036         | 13'                   | 2742211015        | C*PT-TD-WPF110-H5 |
| H6          | 39         | 82               | 12.4         | 26.1             | 12586        | 13'           | 2742211016            | C*PT-TD-WPF110-H6 |                   |
| 115'        | 2*         | 25               | 58           | 8                | 18.5         | 6371          | 13'-6"                | 2742211502*       | *                 |
|             | 1*         | 27               | 61.5         | 8.6              | 19.6         | 6808          | 13'-6"                | 2742211501*       | *                 |
|             | H1         | 29               | 65.5         | 9.2              | 20.8         | 8180          | 13'-6"                | 2742211511        | C*PT-TD-WPF115-H1 |
|             | H2         | 31               | 69           | 9.9              | 22           | 9224          | 13'-6"                | 2742211512        | C*PT-TD-WPF115-H2 |
|             | H3         | 33               | 72.5         | 10.5             | 23.1         | 10284         | 13'-6"                | 2742211513        | C*PT-TD-WPF115-H3 |
|             | H4         | 35               | 76.5         | 11.1             | 24.4         | 11328         | 13'-6"                | 2742211514        | C*PT-TD-WPF115-H4 |
|             | H5         | 37               | 80           | 11.8             | 25.5         | 12628         | 13'-6"                | 2742211515        | C*PT-TD-WPF115-H5 |
| H6          | 39         | 83.5             | 12.4         | 26.6             | 13772        | 13'-6"        | 2742211516            | C*PT-TD-WPF115-H6 |                   |
| 120'        | 2*         | 25               | 59           | 8                | 18.8         | 6823          | 14'                   | 2742212002*       | *                 |
|             | 1*         | 27               | 62.5         | 8.6              | 19.9         | 7400          | 14'                   | 2742212001*       | *                 |
|             | H1         | 29               | 66.5         | 9.2              | 21.2         | 8744          | 14'                   | 2742212011        | C*PT-TD-WPF120-H1 |
|             | H2         | 31               | 70           | 9.9              | 22.3         | 9776          | 14'                   | 2742212012        | C*PT-TD-WPF120-H2 |
|             | H3         | 33               | 74           | 10.5             | 23.6         | 10960         | 14'                   | 2742212013        | C*PT-TD-WPF120-H3 |
|             | H4         | 35               | 77.5         | 11.1             | 24.7         | 12148         | 14'                   | 2742212014        | C*PT-TD-WPF120-H4 |
|             | H5         | 37               | 81           | 11.8             | 25.8         | 13420         | 14'                   | 2742212015        | C*PT-TD-WPF120-H5 |
| H6          | 39         | 85               | 12.4         | 27.1             | 14636        | 14'           | 2742212016            | C*PT-TD-WPF120-H6 |                   |
| 125'        | 2*         | 25               | 59.5         | 8                | 18.9         | 7300          | 14'-6"                | 2742212502*       | *                 |
|             | 1*         | 27               | 63.5         | 8.6              | 20.2         | 7968          | 14'-6"                | 2742212501*       | *                 |
|             | H1         | 29               | 67.5         | 9.2              | 21.5         | 9352          | 14'-6"                | 2742212511        | C*PT-TD-WPF125-H1 |
|             | H2         | 31               | 71           | 9.9              | 22.6         | 10932         | 14'-6"                | 2742212512        | C*PT-TD-WPF125-H2 |
|             | H3         | 33               | 75           | 10.5             | 23.9         | 11596         | 14'-6"                | 2742212513        | C*PT-TD-WPF125-H3 |
|             | H4         | 35               | 78.5         | 11.1             | 25           | 12924         | 14'-6"                | 2742212514        | C*PT-TD-WPF125-H4 |
|             | H5         | 37               | 82.5         | 11.8             | 26.3         | 14212         | 14'-6"                | 2742212515        | C*PT-TD-WPF125-H5 |
| H6          | 39         | 86               | 12.4         | 27.4             | 15480        | 14'-6"        | 2742212516            | C*PT-TD-WPF125-H6 |                   |

\* IF THIS CLASS OF POLE IS SPECIFIED USE NEXT CLASS HIGHER.

NOTE A: ALL NEW CONSTRUCTION FOR LINES 115KV AND HIGHER SHALL BE STEEL. ONLY MAINTENANCE REPLACEMENTS SHALL USE WOOD POLES.

NOTE B: NEW STRUCTURES SHALL USE THE FOLLOWING MINIMUM CLASS OF POLE:  
 35kv/46kv/69kv: CLASS 2 FOR TANGENTS, CLASS 1 FOR ANGLES AND DEADENDS  
 115kv/230kv SINGLE POLE: CLASS H1  
 115kv/230kv/345kv H-FRAME: CLASS 1

NOTE C: IF MORE THAN 50% OF EXCAVATION IS LEDGE OR SOLID ROCK THE POLE CAN BE SET 1' SHALLOWER WITH THE PERMISSION OF THE CONSTRUCTION MANAGER OR ENGINEER.

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: N/A



TRANSMISSION  
CONSTRUCTION  
STANDARDS  
MANUAL

TRANSMISSION STANDARDS - WOOD POLE INFORMATION  
DOUGLAS FIR

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| REVISION  |
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|-------------|-----------|-------------|-----------|---------------|------------|
| Drwn. By:   | Date Dr.: | Checked By: | Date Ck.: | Approved By:  | Date App.: |
| B. Franklin | 4/16/2013 | Becken/Hart | 3/05/2015 | Barry R. Hart | 4/09/2015  |

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Sheet 4