Appendix B

Right-of-Way Tower Configuration Tables and Figures

Table B-1 West Alternative Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
2	6.0	2/1-2/18	0	Lexington-Delameter No. 1 SC 115-kV line Longview-Chehalis No. 1 SC 230-kV line	Remove about 28 wood H-Frame structures of the Lexington-Delameter No. 1 SC 115-kV line to accommodate new 500-kV line.	New 500-kV line Longview-Chehalis No. 1 SC 230-kV line	B-2
		2/18-2/27	0	Lexington-Longview No. 2 SC 230-kV line Lexington-Delameter No. 1 SC 115-kV line Lexington-Longview No. 1 SC 115-kV line	Remove about 15 wood pole structures of the Lexington-Delameter No. 1 SC 115-kV line to accommodate new 500-kV line.	New 500-kV line Lexington-Longview No. 2 SC 230-kV line Lexington-Longview No. 1 SC 115-kV line	
		2/27-2/28	150	Lexington-Delameter No. 1 SC 115-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	Remove about 2 wood pole structures of the Lexington-Delameter No. 1 SC 115-kV line 150 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	
4	0.8	4/1-4/2	Varies	Lexington-Delameter No. 1 SC 115-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	Remove about 2 wood pole structures of Lexington-Delameter No. 1 SC 115-kV line 150 feet new right-of-way needed 250 feet east of Tower 4/1 to accommodate new 500-kV line	New 500-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	B-3
		4/2-4/3	0	BPA Lexington Substation		New 500-kV line around Lexington Substation	B-1
		4/3-4/5	0	Ross-Lexington No. 1 230-kV line		New 500-kV line Ross-Lexington No. 1 230-kV line	B-3
9	18.7	9/1-9/11	0	Cowlitz PUD SC 115-kV line Ross-Lexington No. 1 SC 230-kV line	Remove about 11 wood pole structures of the Cowlitz PUD SC 115-kV line to accommodate new 500-kV line	New 500-kV line Ross-Lexington No. 1 SC 230-kV line	B-4
		9/11-9/20	0	Ross-Lexington No. 1 SC230-kV line		New 500-kV line Ross-Lexington No. 1 SC 230-kV line	
		9/20-9/21	22.5	Ross-Lexington No. 1 SC 230-kV line	22.5 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line Ross-Lexington No. 1 SC 230-kV line	
		9/21-9/82	0	Ross-Lexington No. 1 SC 230-kV line		New 500-kV line Ross-Lexington No. 1 SC 230-kV line	
25	29.8	25/1-25/18	0	Ross-Lexington No. 1 SC 230-kV line		New 500-kV line Ross-Lexington No. 1 SC 230-kV line	B-6
		25/18-25/19	12.5	Ross-Lexington No. 1 SC 230-kV line	12.5 feet new right-of-way needed on east side of existing right-of-way to accommodate new 500-kV line	New 500-kV line Ross-Lexington No. 1 SC 230-kV line	
		25/19-25/106	0	Ross-Lexington No. 1 SC 230-kV line		New 500-kV line Ross-Lexington No. 1 SC 230-kV line	
		25/106-25/110	0	Sifton-Ross No. 1/Bonneville PH1-Alcoa No. 2 DC 115-kV line		New 500-kV line Sifton-Ross No. 1/Bonneville PH1-Alcoa No. 2 DC 115-kV line	
		25/110-25/141	0	McNary-Ross No. 1 SC 345-kV line Sifton-Ross No. 1/Bonneville PH1-Alcoa No. 2 DC 115-kV line	Rebuild about 32 towers on the McNary-Ross No. 1 345-kV line to narrower 345-kV line configuration to accommodate new 500-kV line	New 500-kV line McNary-Ross No. 1 SC 345-kV line Sifton-Ross No. 1/Bonneville PH1-Alcoa No. 2 DC 115-kV line	
		25/141-25/151	30	McNary-Ross No. 1 SC 345-kV line Sifton-Ross No. 1/Bonneville PH1-Alcoa No. 2 DC 115-kV line	30 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line McNary-Ross No. 1 SC 345-kV line Sifton-Ross No. 1/Bonneville PH1-Alcoa No. 2 DC 115-kV line	
		25/151-25/152	30	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	30 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	

Table B-1 West Alternative Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
36B	1.4	36B/1-36B/7	155	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	New 500-kV line crosses from North to South side of right-of-way. 155 feet new right-of-way needed on south side of existing right-of-way to accommodate new 500-kV line	McNary Ross 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line New 500-kV line	B-9
		36B/7-36B/8	155	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	New 500-kV line parallels existing DC 115-kV line at 36B/7, then replaces DC 115-kV line at 36B/8 with TC 500-kV line	McNary Ross 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1/ New 500-kV TC line	
41	1.3	41/1-41/8	50	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	Remove about 8 towers of DC 115-kV line. 25 feet new right-of-way needed on each side of existing right-of-way to accommodate new TC 500-kV line.	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 / New 500-kV TC line	B-14
45	0.7	45/1-45/3	50	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	Remove about 3 towers of DC 115-kV line. 25 feet new right-of-way needed on each side of existing right-of-way to accommodate new TC 500-kV line.	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1/ New 500-kV TC line	B-16
		45/3-45/6	150			New 500-kV line	B-1
50	4.1	50/1-50/5	150			New 500-kV line	B-1
		50/5-50/13	130	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	130 feet new right-of-way needed on south side of existing right-of-way to accommodate new 500-kV line	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line New 500-kV line	B-21
		50/13-50/21	50	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	Remove about 8 towers of existing DC 115-kV line. 25 feet new right-of-way needed on each side of existing right-of-way to accommodate new TC 500-kV line.	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1/ New 500-kV TC line	
		50/21-50/26	130	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	130 feet new right-of-way needed on south side of existing right-of-way to accommodate new 500-kV line	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line New 500-kV line	
52	4.8	52/1-52/2	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 4 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-23
		52/2-52/9	0	North Camas-Oak Park SC 115-kV line North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 14 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Camas-Oak Park SC 115-kV line North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	
		52/9-52/17		North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 16 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	
		52/17-52/24	150		Towers 52/20-52/22 are special tall river crossing towers (Figure B-23)	New 500-kV line	B-1 B-23

SC - Single Circuit
DC - Double Circuit
TC - Triple Circuit

Table B-2 West Option 1 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
36	0.2	36/1-36/2	30	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	30 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	B-7
40	2.7	40/1-40/11	150			New 500-kV line	B-1
		40/11-40/14	0	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1 SC 230-kV line	Remove about 3 existing North Bonneville-Ross No. 1 230-kV towers and replace with 3 new DC 500-kV towers. Some new right-of-way needed at south end of existing right-of-way to accommodate tower 40/11.	North Bonneville-Ross No. 2 SC 230-kV North Bonneville-Ross No. 1 /New 500-kV DC line	B-13
46	0.5	46/1-46/3	0	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1 SC 230-kV line	Remove about 2 existing North Bonneville-Ross No. 1 230-kV towers and replace with 3 new DC 500-kV towers	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1 /New 500-kV DC line	B-17

Table B-3 West Option 2 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
36	0.2	36/1-36/2	30	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	30 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	B-7
36A	1.0	36A/1-36A/4	30	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	30 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	B-8
		36A/4-36A/6	0-30	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	Rebuild about 3 towers on McNary-Ross No. 1 345-kV line to narrower 345-kV line configuration to accommodate new 500-kV line.	New 500-kV line McNary-Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	
37	0.7	37/1-37/2	0	McNary-Ross No. 1 SC 345-kV line Sifton-Ross No. 1/Bonneville PH1-Alcoa No. 2 DC 115-kV line	Rebuild about 2 towers on the McNary-Ross No. 1 SC 345-kV line to narrower 345-kV line configuration to accommodate new 500-kV line.	New 500-kV line McNary Ross No. 1 SC 345-kV line	B-10
		37/2-37/4	0	McNary-Ross No. 1 SC 345-kV line	New 500-kV line constructed on north side of existing right-of-way	New 500-kV line McNary-Ross No. 1 SC 345-kV line	
38	0.7	38/1-38/5	0	McNary-Ross No. 1 SC 345-kV line	New 500-kV line constructed on north side of existing right-of-way	New 500-kV line McNary-Ross No. 1 SC 345-kV line	B-11
43	1.9	43/1-43/9	150			New 500-kV line	B-1
		43/9-43/10	Varies	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1 SC 230-kV line	Remove and replace 1 tower on existing North Bonneville-Ross No. 1 SC 230-kV line with new DC 500-kV line	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1 /New 500-kV DC line	B-15
48	2.5	48/1-48/14	0	North Bonneville-Ross No. 1 SC 230-kV line North Bonneville-Ross No. 2 SC 230-kV line	Remove about 14 towers of North Bonneville-Ross No. 1 line and replace with new DC 500-kV towers. About 100 feet new right-of-way needed between towers 48/13 and 48/14.	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1/New 500-kV DC 500-kV line	B-19

Table B-3 West Option 2 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
51	2.1	51/1-51/11	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 22 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-22

Table B-4 West Option 3 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Final Right-of-Way Configuration	Figure
36	0.2	36/1-36/2	30	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	30 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	B-7
36A	1.0	36A/1-36A/4	30	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	30 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	B-8
		36A/4-36A/6	0-30	McNary Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	Rebuild about 3 towers on McNary-Ross No. 1 345-kV line to narrower 345-kV line configuration to accommodate new 500-kV line.	New 500-kV line McNary-Ross No. 1 SC 345-kV line Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	
37	0.7	37/1-37/2	0	McNary-Ross No. 1 SC 345-kV line Sifton-Ross No. 1/Bonneville PH1-Alcoa No. 2 DC 115-kV line	Rebuild about 2 towers on the McNary-Ross No. 1 SC 345-kV line to narrow 345-kV line configuration to accommodate new 500-kV line.	New 500-kV line McNary Ross No. 1 SC 345-kV line	B-10
		37/2-37/4	0	McNary-Ross No. 1 SC 345-kV line	New 500-kV line constructed on north side of existing right-of-way	New 500-kV line McNary-Ross No. 1 SC 345-kV line	
38	0.7	38/1-38/5	0	McNary-Ross No. 1 SC 345-kV line	New 500-kV line constructed on north side of existing right-of-way	New 500-kV line McNary-Ross No. 1 SC 345-kV line	B-11
39	5.3	39/1-39/20	0	McNary-Ross No. 1 SC 345-kV line	New 500-kV line constructed on north side of existing right-of-way	New 500-kV line McNary-Ross No. 1 SC 345-kV line	B-12
		39/20-39/23	105	McNary-Ross No. 1 SC 345-kV line	105 feet new right-of-way needed on south side of existing right-of-way to accommodate new 500-kV line.	McNary-Ross No. 1 SC 345-kV line New 500-kV line	
		39/23-39/27	105	McNary-Ross No. 1 SC 345-kV line North Bonneville-Ross No. 1/North Bonneville Ross No. 2 DC 115-kV line	105 feet new right-of-way needed on south side of existing right-of-way to accommodate new 500-kV line	McNary-Ross No. 1 SC 345-kV line North Bonneville-Ross No. 1/North Bonneville Ross No. 2 DC 115-kV line New 500-kV line	
T	0.3	T/1-T/3	150			New 500-kV line	B-1
49	2.7	49/1-49/7	150			New 500-kV line	B-1
		49/7-49/10	105	North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	105 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	B-20
		49/10-49/15	0	North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	About 4 towers on North Bonneville-Troutdale No. 2 SC 230-kV line removed and replaced with DC 500-kV line.	North Bonneville-Troutdale No. 2/New 500-kV DC line North Bonneville-Troutdale No. 1 SC 230-kV line	
51	2.1	51/1-51/11	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 22 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-22

Table B-5 Central Alternative Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
B	0.8	B/1-B/5	150			New 500-kV line	B-1
F	15.8	F/1-F/75	150			New 500-kV line	B-1
G	1.4	G/1-G/8	150			New 500-kV line	B-1
H	1.5	H/1-H/8	150			New 500-kV line	B-1
10	7.9	10/1-10/34	150			New 500-kV line	B-1
12	5.0	12/1-12/20	150			New 500-kV line	B-1
15	1.9	15/1-15/9	150			New 500-kV line	B-1
23	1.3	23/1-23/7	150			New 500-kV line	B-1
L	1.7	L/1-L/5	150			New 500-kV line	B-1
		L/5-L/9	150		150 feet new right-of-way on south side of existing Pacificorp right-of-way to accommodate new 500-kV line.	Pacificorp SC 115-kV line on Pacificorp right-of-way New 500-kV line	B-28
18	7.2	18/1-18/22	150		150 feet new right-of-way on south side of existing Pacificorp right-of-way to accommodate new 500-kV line.	PacifiCorp SC 115-kV line on PacifiCorp right-of-way New 500-kV line	B-5
		18/22-18/32	150			New 500-kV line	B-1
28	5.9	28/1-28/27	150			New 500-kV line	B-1
V	6.0	V/1-V/27	150			New 500-kV line	B-1
P	8.6	P/1-P/39	150			New 500-kV line	B-1
35	2.5	35/1-35/15	150			New 500-kV line	B-1
T	0.3	T/1-T/3	150			New 500-kV line	B-1
49	2.7	49/1-49/7	150			New 500-kV line	B-1
		49/7-49/10	105	North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	105 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	B-20
		49/10-49/15	0	North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	About 4 towers on North Bonneville-Troutdale No. 2 SC 230-kV line removed and replaced with DC 500-kV line.	North Bonneville-Troutdale No. 2/New 500-kV DC line North Bonneville-Troutdale No. 1 SC 230-kV line	
51	2.1	51/1-51/11	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 22 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-22
52	4.8	52/1-52/2	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 4 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-23
		52/2-52/9	0	North Camas-Oak Park SC 115-kV line North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 14 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Camas-Oak Park SC 115-kV line North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	
		52/9-52/17		North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 16 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	
		52/17-52/24	150		Towers 52/20-52/22 are special tall river crossing towers (Figure B-23)	New 500-kV line	B-1 B-23

SC - Single Circuit
DC - Double Circuit
TC - Triple Circuit

Table B-6 Central Option 1 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
A	2.5	A/1-A/9	125	Longview-Chehalis No. 1 SC. 230-kV line Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	125 new right-of-way needed on east side of existing right-of-way to accommodate new 500-kV line	New 500-kV line Longview-Chehalis SC. 230-kV line Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	B-24
		A/9-A/12	150	Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis No. 1 SC. 230-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	150 feet new right-of-way needed on east side of existing right-of-way to accommodate new 500-kV line and adequate separation distance between existing and proposed 500-kV lines.	New 500-kV line Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis SC. 230-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	

Table B-7 Central Option 2 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
1	6.4	1/1-1/28	150			New 500-kV line	B-1
4	0.8	4/1-4/2	Varies	Lexington-Delameter No. 1 SC 115-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	Remove about 2 wood pole structures of Lexington-Delameter No. 1 SC 115-kV line 150 feet new right-of-way needed 250 feet east of Tower 4/1 to accommodate new 500-kV line	New 500-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	B-3
		4/2-4/3	0	BPA Lexington Substation		New 500-kV line around Lexington Substation	B-1
		4/3-4/5	0	Ross-Lexington No. 1 230-kV line		New 500-kV line Ross-Lexington No. 1 230-kV line	B-3
5	1.9	5/1-5/10	150		Line is on existing BPA right-of-way 850 feet east of Tower 5/1 before requiring 150 feet of new right-of-way. Line crosses I-5 and heads east.	New 500-kV line	B-1
8	1.6	8/1-8/9	150			New 500-kV line	B-1
11	5.0	11/1-11/21	150			New 500-kV line	B-1

Table B-8 Central Option 3 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
M	2.4	M/1-M/11	150			New 500-kV line	B-1
26	6.5	26/1-26/35	150			New 500-kV line	B-1
30	6.0	30/1-30/31	150			New 500-kV line	B-1

Table B-9 East Alternative Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
B	0.8	B/1-B/5	150			New 500-kV line	B-1
F	15.8	F/1-F/75	150			New 500-kV line	B-1
I	2.8	I/1-1/13	150			New 500-kV line	B-1
K	22.8	K/1-K/94	150			New 500-kV line	B-1
W	1.3	W/1-W/6	150			New 500-kV line	B-1
O	19.4	O/1-O/83	150			New 500-kV line	B-1
Q	2.6	Q/1-Q/13	150			New 500-kV line	B-1
S	0.4	S/1-S/3	150			New 500-kV line	B-1
49	2.7	49/1-49/7	150			New 500-kV line	B-1
		49/7-49/10	105	North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	105 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	B-20
		49/10-49/15	0	North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	About 4 towers on North Bonneville-Troutdale No. 2 SC 230-kV line removed and replaced with DC 500-kV line.	North Bonneville-Troutdale No. 2/New 500-kV DC line North Bonneville-Troutdale No. 1 SC 230-kV line	
51	2.1	51/1-51/11	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 22 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-22
52	4.8	52/1-52/2	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 4 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-23
		52/2-52/9	0	North Camas-Oak Park SC 115-kV line North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 14 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Camas-Oak Park SC 115-kV line North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	
		52/9-52/17		North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 16 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	
		52/17-52/24	150		Towers 52/20-52/22 are special tall river crossing towers (Figure B-23)	New 500-kV line	B-1 B-23

SC - Single Circuit
DC - Double Circuit
TC - Triple Circuit

Table B-10 East Option 1 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
3	7.8	3/1-3/38	150			New 500-kV line	B-1
7	2.1	7/1-7/10	150			New 500-kV line	B-1
11	5.0	11/1-11/21	150			New 500-kV line	B-1
J	2.7	J/1-J/13	150			New 500-kV line	B-1

Table B-11 East Option 2 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
35	2.5	35/1-35/15	150			New 500-kV line	B-1
P	8.6	P/1-P/39	150			New 500-kV line	B-1
T	0.3	T/1-T/3	150			New 500-kV line	B-1
U	6.1	U/1-U/26	150			New 500-kV line	B-1
V	6.0	V/1-V/27	150			New 500-kV line	B-1

Table B-12 East Option 3 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Final Right-of-Way Configuration	Figure
R	3.7	R/1-R/10	150			New 500-kV line	B-1
		R/10-R/19	105	McNary-Ross No. 1 SC 345-kV line North Bonneville-Ross No. 1&2 DC 230-kV line	105 feet of new right-of-way needed on north side of existing BPA right-of-way to accommodate new 500-kV line	New 500-kV line McNary-Ross No. 1 SC 345-kV line North Bonneville-Ross No. 1 and 2 DC 230-kV line	B-29

Table B-13 Crossover Alternative Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
2	6.0	2/1-2/18	0	Lexington-Delameter No. 1 SC 115-kV line Longview-Chehalis No. 1 SC 230-kV line	Remove about 28 wood H-Frame structures of the Lexington-Delameter No. 1 SC 115-kV line to accommodate new 500-kV line.	New 500-kV line Longview-Chehalis No. 1 SC 230-kV line	B-2
		2/18-2/27	0	Lexington-Longview No. 2 SC 230-kV line Lexington-Delameter No. 1 SC 115-kV line Lexington-Longview No. 1 SC 115-kV line	Remove about 15 wood pole structures of the Lexington-Delameter No. 1 SC 115-kV line to accommodate new 500-kV line.	New 500-kV line Lexington-Longview No. 2 SC 230-kV line Lexington-Longview No. 1 SC 115-kV line	
		2/27-2/28	150	Lexington-Delameter No. 1 SC 115-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	Remove about 2 wood pole structures of the Lexington-Delameter No. 1 SC 115-kV line 150 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	
4	0.8	4/1-4/2	Varies	Lexington-Delameter No. 1 SC 115-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	Remove about 2 wood pole structures of Lexington-Delameter No. 1 SC 115-kV line 150 feet new right-of-way needed 250 feet east of Tower 4/1 to to accommodate new 500-kV line	New 500-kV line Lexington-Longview No. 1 SC 115-kV line Lexington-Longview No. 2 SC 230-kV line	B-3
		4/2-4/3	0	BPA Lexington Substation		New 500-kV line around Lexington Substation	B-1
		4/3-4/5	0	Ross-Lexington No. 1 230-kV line		New 500-kV line Ross-Lexington No. 1 230-kV line	B-3
9	18.7	9/1-9/11	0	Cowlitz PUD SC 115-kV line Ross-Lexington No. 1 SC 230-kV line	Remove about 11 wood pole structures of the Cowlitz PUD SC 115-kV line to accommodate new 500-kV line	New 500-kV line Ross-Lexington No. 1 SC 230-kV line	B-4
		9/11-9/20	0	Ross-Lexington No. 1 SC230-kV line		New 500-kV line Ross-Lexington No. 1 SC 230-kV line	
		9/20-9/21	22.5	Ross-Lexington No. 1 SC 230-kV line	22.5 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line Ross-Lexington No. 1 SC 230-kV line	
		9/21-9/82	0	Ross-Lexington No. 1 SC 230-kV line		New 500-kV line Ross-Lexington No. 1 SC 230-kV line	
14	1.5	14/1-14/7	150			New 500-kV line	B-1
15	1.9	15/1-15/9	150			New 500-kV line	B-1
23	1.3	23/1-23/7	150			New 500-kV line	B-1
L	1.7	L/1-L/5	150			New 500-kV line	B-1
		L/5-L/9	150		150 feet new right-of-way on south side of existing Pacificorp right-of-way to accommodate new 500-kV line.	Pacificorp SC 115-kV line on Pacificorp right-of-way New 500-kV line	B-28
18	7.2	18/1-18/22	150		150 feet new right-of-way on south side of existing Pacificorp right-of-way to accommodate new 500-kV line.	PacifiCorp SC 115-kV line on PacifiCorp right-of-way New 500-kV line	B-5
		18/22-18/32	150			New 500-kV line	B-1
N	1.6	N/1-N/9	150			New 500-kV line	B-1
W	1.3	W/1-W/6	150			New 500-kV line	B-1
O	19.4	O/1-O/83	150			New 500-kV line	B-1
Q	2.6	Q/1-Q/13	150			New 500-kV line	B-1
S	0.4	S/1-S/3	150			New 500-kV line	B-1

Table B-13 Crossover Alternative Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
49	2.7	49/1-49/7	150			New 500-kV line	B-1
		49/7-49/10	105	North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	105 feet new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line	New 500-kV line North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	B-20
		49/10-49/15	0	North Bonneville-Troutdale No. 2 SC 230-kV line North Bonneville-Troutdale No. 1 SC 230-kV line	About 4 towers on North Bonneville-Troutdale No. 2 SC 230-kV line removed and replaced with DC 500-kV line.	North Bonneville-Troutdale No. 2/New 500-kV DC line North Bonneville-Troutdale No. 1 SC 230-kV line	
51	2.1	51/1-51/11	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 22 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-22
52	4.8	52/1-52/2	0	North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 4 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	B-23
		52/2-52/9	0	North Camas-Oak Park SC 115-kV line North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 14 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Camas-Oak Park SC 115-kV line North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	
		52/9-52/17		North Bonneville-Troutdale No. 1 SC 230-kV line North Bonneville-Troutdale No. 2 SC 230-kV line	Remove about 16 existing 230-kV towers and replace with DC 230-kV line parallel to new 500-kV line	North Bonneville-Troutdale No. 1&2 DC 230-kV line New 500-kV line	
		52/17-52/24	150		Towers 52/20-52/22 are special tall river crossing towers (Figure B-23)	New 500-kV line	B-1 B-23

SC - Single Circuit
DC - Double Circuit
TC - Triple Circuit

Table B-14 Crossover Option 1 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
47	0.7	47/1-47/4	0	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1 SC 230-kV line	Remove about 4 towers on North Bonneville-Ross No. 1 SC 230-kV line and replace with a DC 500-kV line	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1/New 500-kV DC line	B-18
48	2.5	48/1-48/14	0	North Bonneville-Ross No. 1 SC 230-kV line North Bonneville-Ross No. 2 SC 230-kV line	Remove about 14 towers of North Bonneville-Ross No. 1 line and replace with new DC 500-kV towers. About 100 feet new right-of-way needed between towers 48/13 and 48/14.	North Bonneville-Ross No. 2 SC 230-kV line North Bonneville-Ross No. 1/New 500-kV DC 500-kV line	B-19
50	4.1	50/1-50/5	150			New 500-kV line	B-1
		50/5-50/13	130	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	130 feet new right-of-way needed on south side of existing right-of-way to accommodate new 500-kV line	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line New 500-kV line	B-21
		50/13-50/21	50	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	Remove about 8 towers of existing DC 115-kV line. 25 feet new right-of-way needed on each side of existing right-of-way to accommodate new TC 500-kV line.	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1/New 500-kV TC line	
		50/21-50/26	130	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line	130 feet new right-of-way needed on south side of existing right-of-way to accommodate new 500-kV line	Bonneville PH1-Alcoa No. 2/North Camas-Sifton No. 1 DC 115-kV line New 500-kV line	

Table B-15 Crossover Option 2 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Proposed Right-of-Way Configuration	Figure
C	3.0	C/1-C/17	0	Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis No. 1 SC. 230-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	About 26 existing 230-kV towers removed and rebuilt with DC 230-kV line. Build new 500-kV line at location of Longview-Chehalis No. 1 SC 230-kV line. New 500-kV line will operate as Napavine-Allston No. 1 SC 500-kV line. Old Napavine-Allston No. 1 SC 500-kV line will operate as new proposed 500-kV line .	Napavine-Allston No. 1 500-kV line (operate as new 500-kV line) New 500-kV line (operate as Napavine-Allston No. 1 SC 500-kV line) Longview-Chehalis No. 1&3 DC 230-kV line Paul-Allston No. 2 SC 500-kV line	B-25
E	1.3	E/1-E/6	0	Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis No. 1 SC. 230-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	About 10 existing 230-kV towers removed and rebuilt with DC 230-kV line. Build new 500-kV line at location of Longview-Chehalis No. 1 SC 230-kV line. New 500-kV line will operate as Napavine-Allston No. 1 SC 500-kV line. Old Napavine-Allston No. 1 SC 500-kV line will operate as new proposed 500-kV line.	Napavine-Allston No. 1 500-kV line (operate as new 500-kV line) New 500-kV line (operate as Napavine-Allston No. 1 SC 500-kV line) Longview-Chehalis No. 1&3 DC 230-kV line Paul-Allston No. 2 SC 500-kV line	B-27
		E/6-E/7	0	Longview-Chehalis No. 1 SC. 230-kV line		New 500-kV line Longview-Chehalis No. 1 SC. 230-kV line	

Table B-16 Crossover Option 3 Tower Configurations

Segment	Segment Length (miles)	Section (Tower to Tower)	Additional Right-of-Way Required (Feet)	Existing BPA Right-of-Way Configuration	Proposed Action	Final Right-of-Way Configuration	Figure
D	2.9	D/1-D/17	125	Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis No. 1 SC. 230-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	125 new right-of-way needed on east side of existing right-of-way to accommodate new 500-kV line. New 500-kV line crosses Napavine-Allston No. 1 SC 500-kV line between towers D/16 and D/17 on existing BPA right-of-way.	New 500-kV line Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis No. 1SC. 230-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	B-26
E	1.3	E/1-E/6	0	Napavine-Allston No. 1 SC 500-kV line Longview-Chehalis No. 1 SC. 230-kV line Longview-Chehalis No. 3 SC 230-kV line Paul-Allston No. 2 SC 500-kV line	About 10 existing 230-kV towers removed and rebuilt with DC 230-kV line. Build new 500-kV line at location of Longview-Chehalis No. 1 SC 230-kV line. New 500-kV line will operate as Napavine-Allston No. 1 SC 500-kV line. Old Napavine-Allston No. 1 SC 500-kV line will operate as new proposed 500-kV line.	Napavine-Allston No. 1 500-kV line (operate as new 500-kV line) New 500-kV line (operate as Napavine-Allston No. 1 SC 500-kV line) Longview-Chehalis No. 1&3 DC 230-kV line Paul-Allston No. 2 SC 500-kV line	B-27
		E/6-E/7	0	Longview-Chehalis No. 1 SC. 230-kV line		New 500-kV line Longview-Chehalis No. 1 SC. 230-kV line	

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Figure B-1 Route Segments Requiring New Right-of-Way 1, 3, 5, 7, 8, 10, 11, 12, 14, 15, 23, 26, 28, 30, 35, B, F, G, H, I, J, K, M, N, O, P, Q, S, T, U, V, W

Proposed. New Single-Circuit Tower on New Right-of-Way

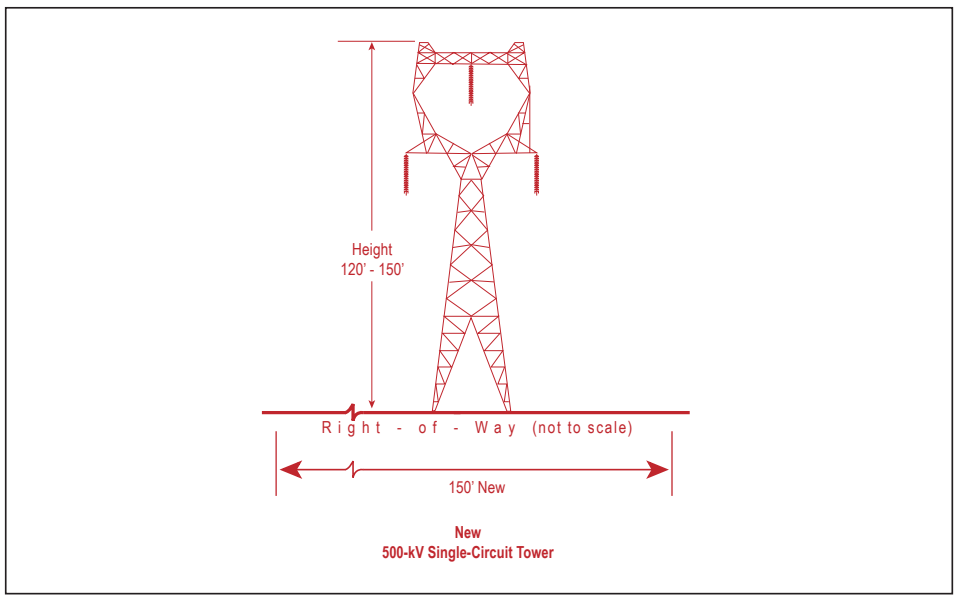
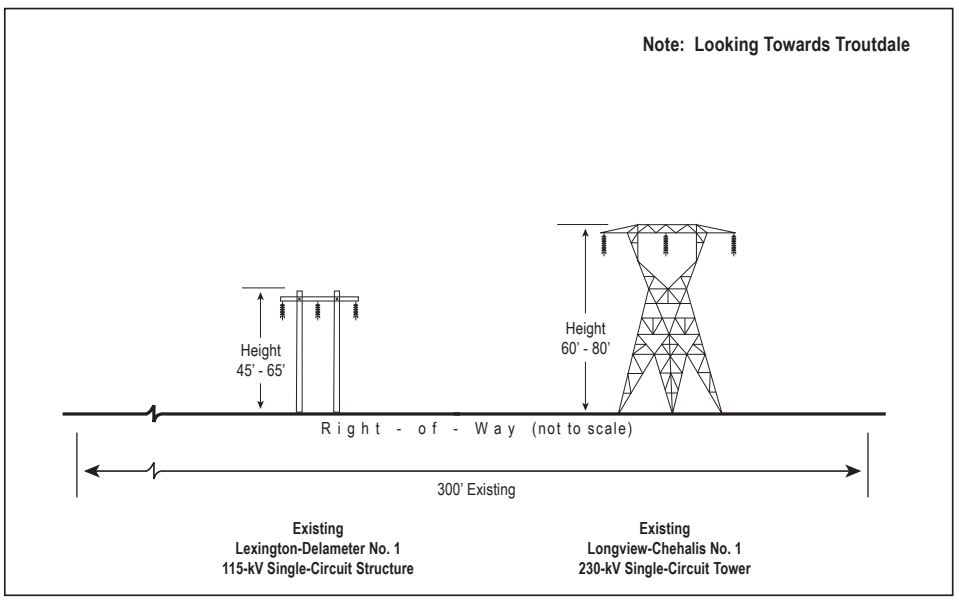


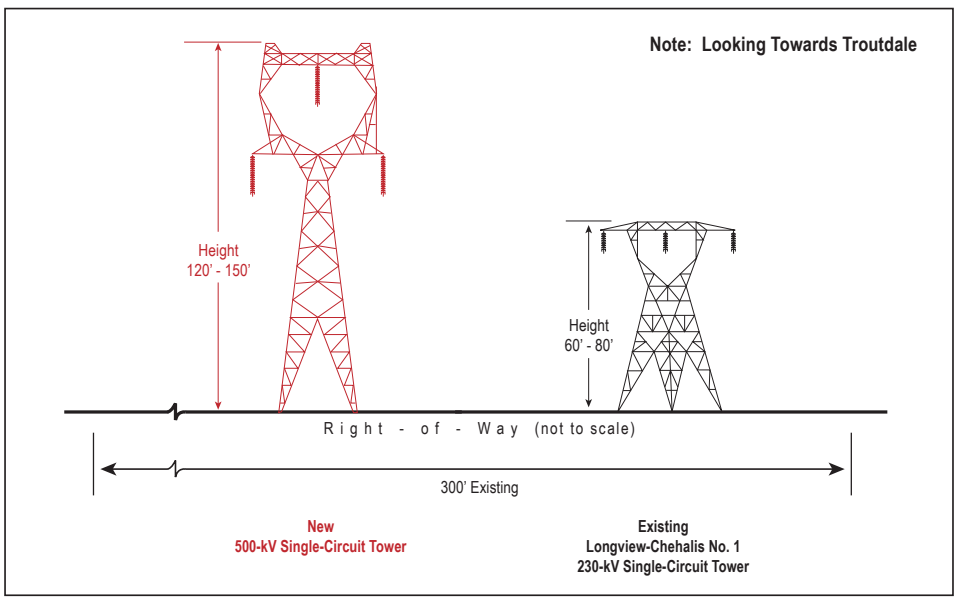
Figure B-2 Route Segment 2

Towers 2/1-2/18

Existing. Single-Circuit Structure Lexington-Delameter No. 1 Line Parallel to the Longview-Chehalis No. 1 Line

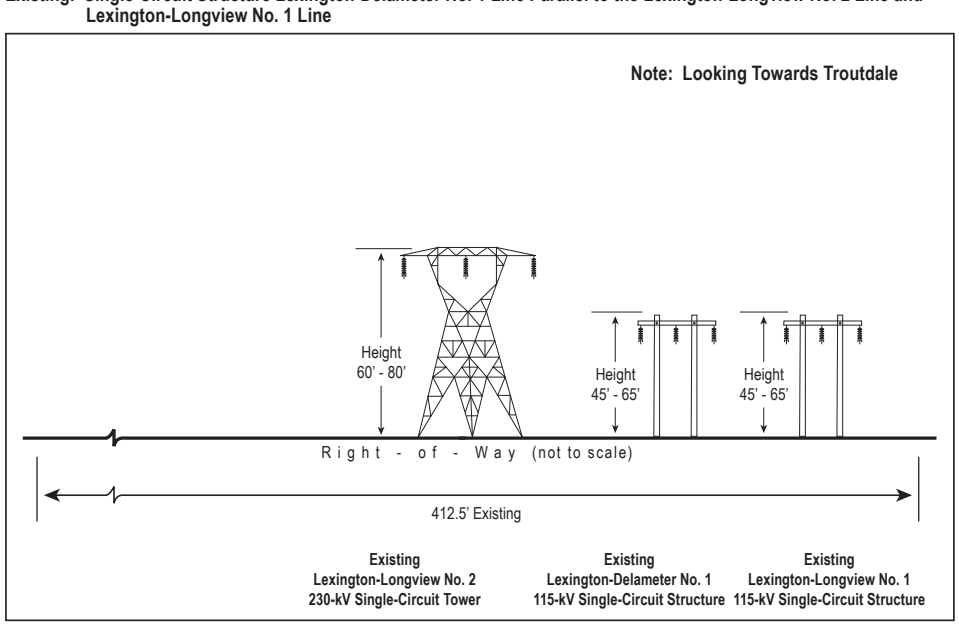


Proposed. New Single-Circuit Tower Replacing Lexington-Delameter No. 1 Line Parallel to the Longview-Chehalis No. 1 Line

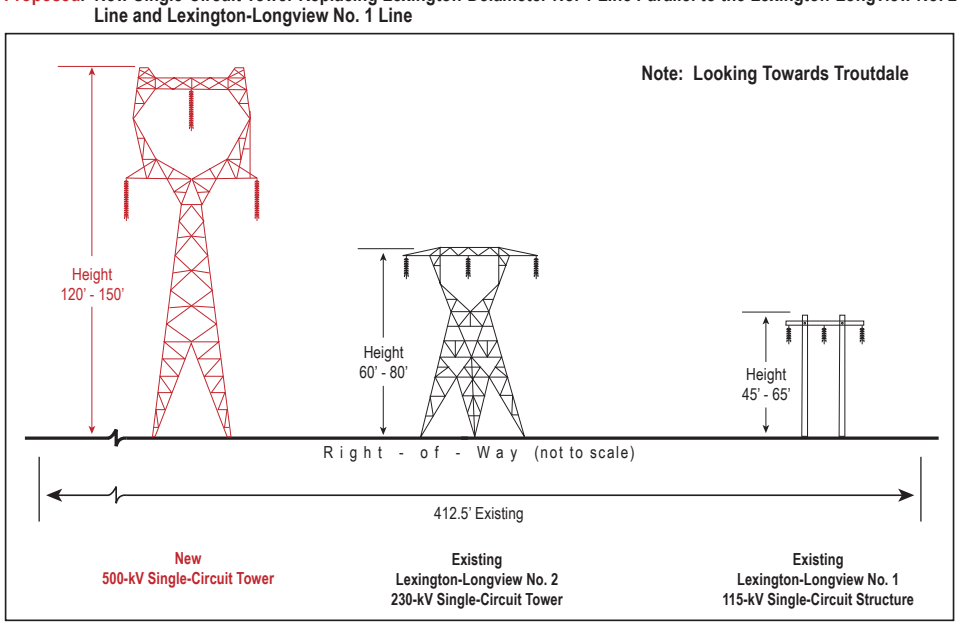


Towers 2/18-2/27

Existing. Single-Circuit Structure Lexington-Delameter No. 1 Line Parallel to the Lexington-Longview No. 2 Line and Lexington-Longview No. 1 Line

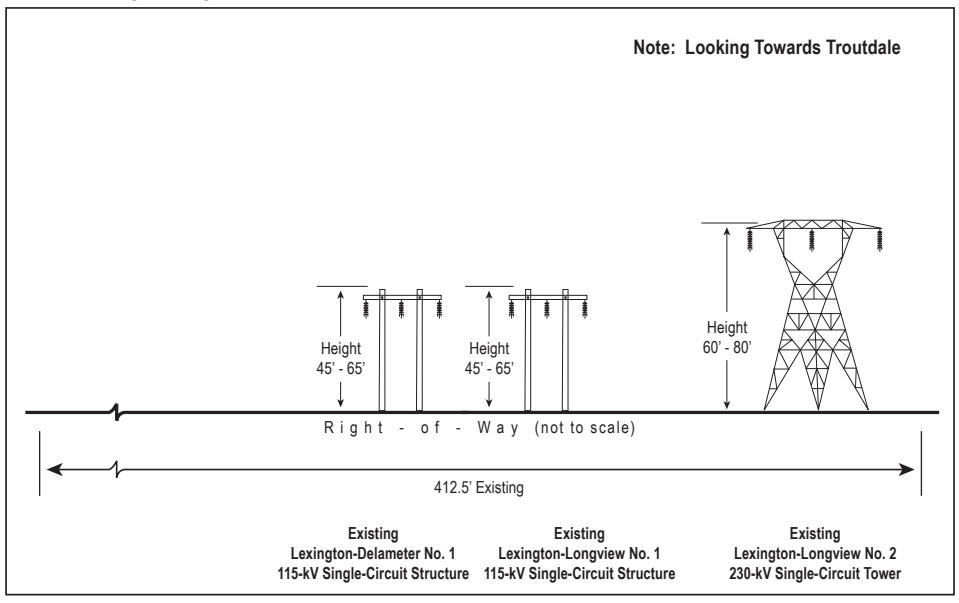


Proposed. New Single-Circuit Tower Replacing Lexington-Delameter No. 1 Line Parallel to the Lexington-Longview No. 2 Line and Lexington-Longview No. 1 Line



Towers 2/27-2/28

Existing. Single-Circuit Structure Lexington-Delameter No. 1 Line Parallel to the Lexington-Longview No. 2 Line and Lexington-Longview No. 1 Line



Proposed. New Single-Circuit Tower Replacing Lexington-Delameter No. 1 Line Parallel to the Lexington-Longview No. 2 Line and Lexington-Longview No. 1 Line

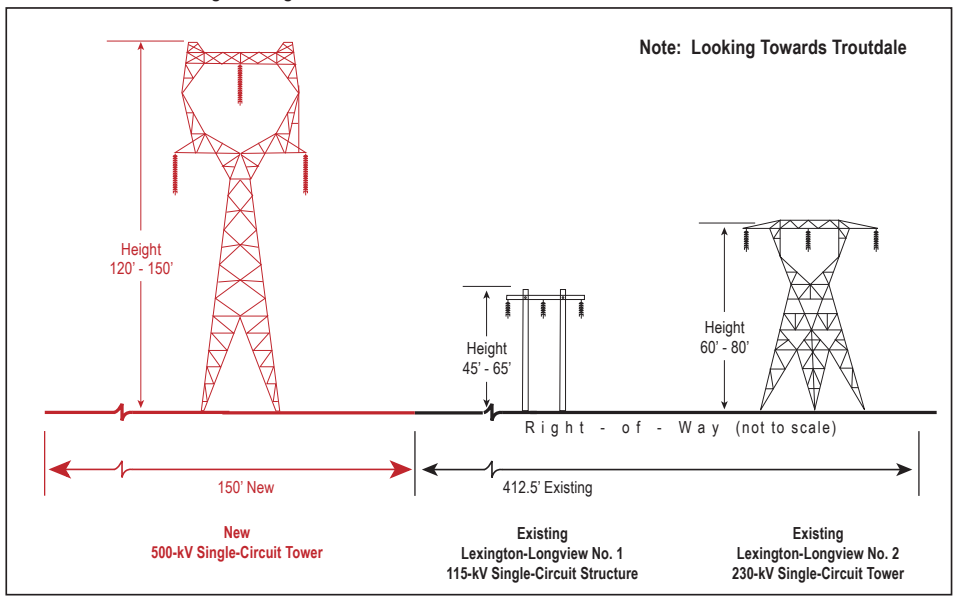
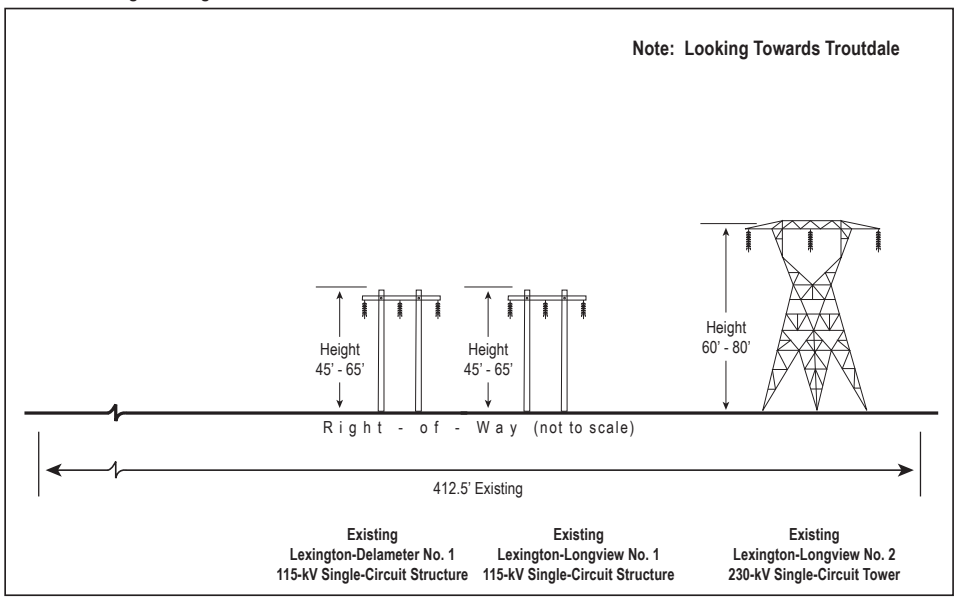


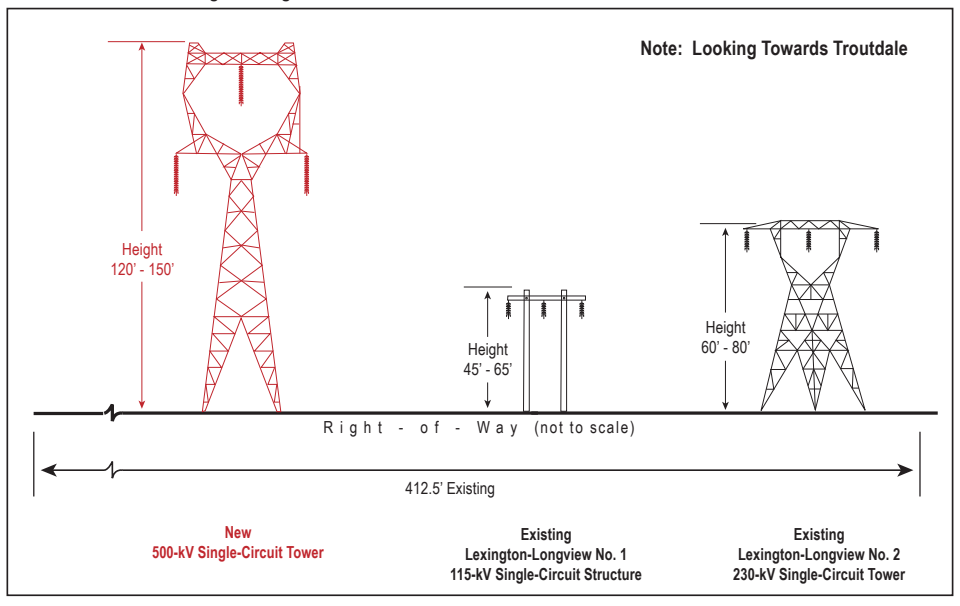
Figure B-3 Route Segment 4

Towers 4/1-4/2*

Existing. Single-Circuit Structure Lexington-Delameter No. 1 Line Parallel to the Lexington-Longview No. 2 Line and Lexington-Longview No. 1 Line



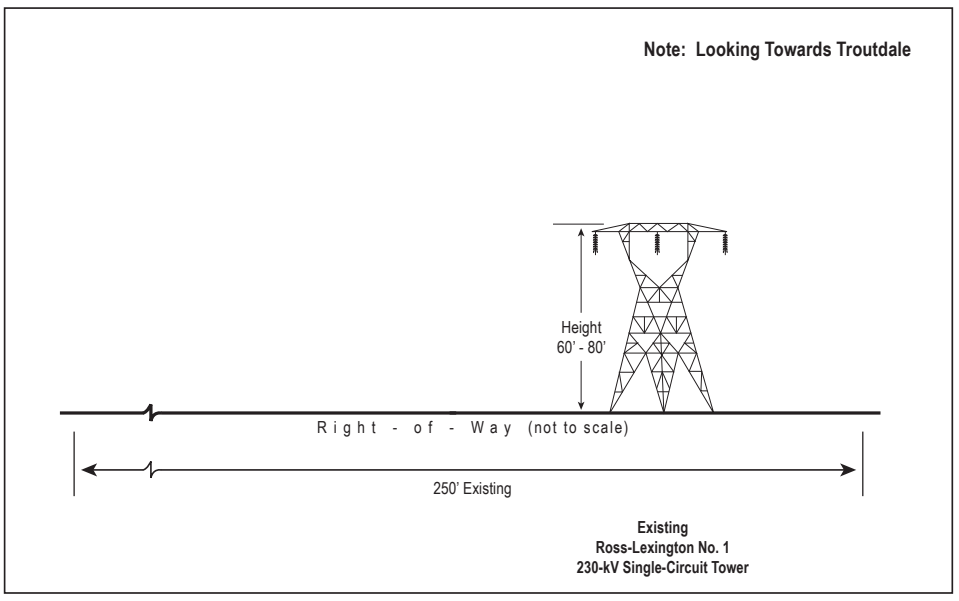
Proposed. New Single-Circuit Tower Replacing Lexington-Delameter No. 1 Line Parallel to the Lexington-Longview No. 2 Line and Lexington-Longview No. 1 Line



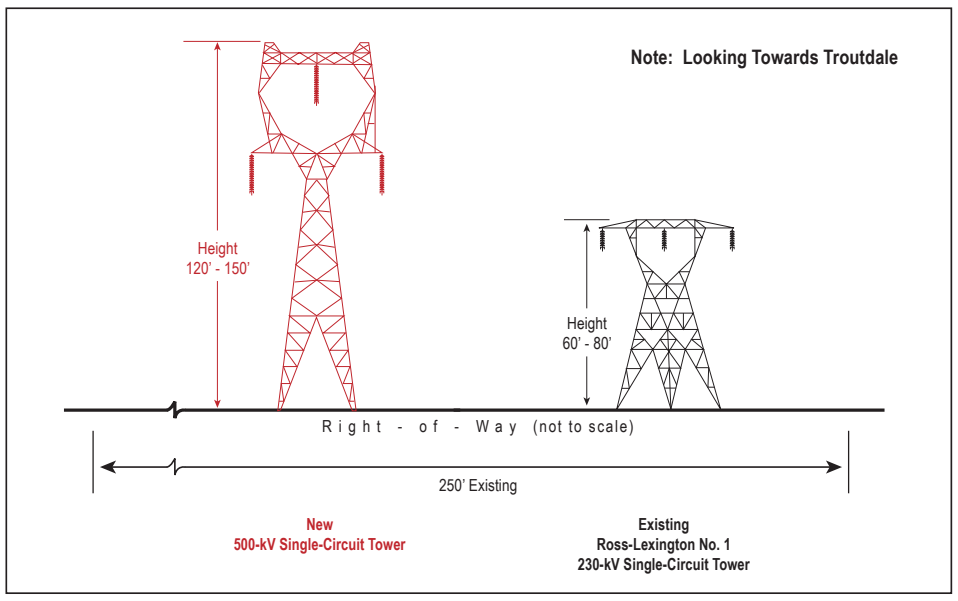
* Note: 150 feet of additional right-of-way is needed from tower 4/1 to approximately 250 feet east where existing right-of-way is not currently available. See Table B-1 for more information.

Towers 4/2-4/5*

Existing. Single-Circuit Tower Ross-Lexington No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the Ross-Lexington No. 1 Line

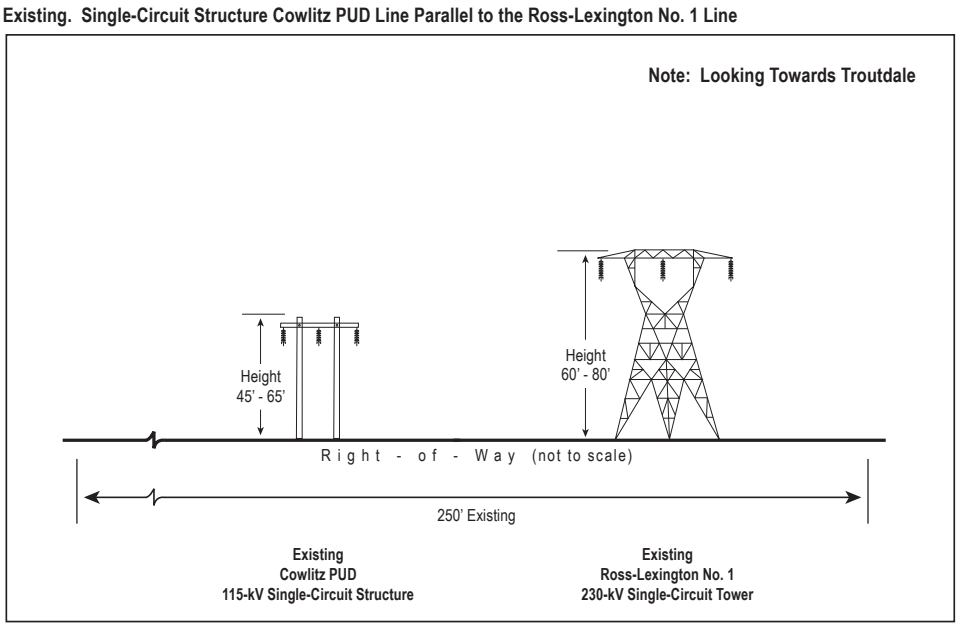


* Note: From towers 4/2-4/3 the proposed 500-kV line will cross over BPA fee-owned land near the existing Lexington Substation before it parallels the Ross-Lexington No. 1 230-kV line. See Table B-1 for more information.

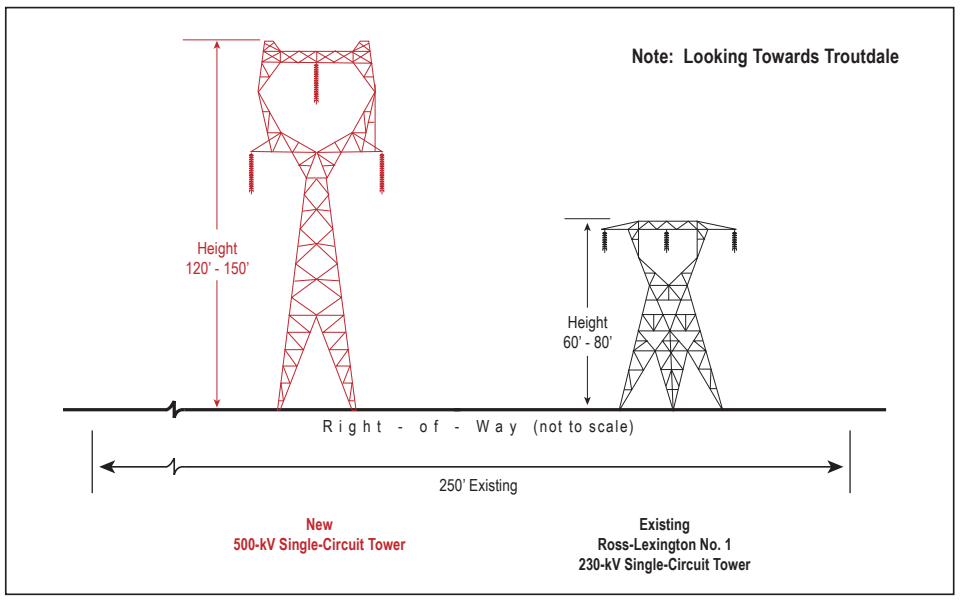
Figure B-4 Route Segment 9

Towers 9/1-9/11

Existing. Single-Circuit Structure Cowlitz PUD Line Parallel to the Ross-Lexington No. 1 Line

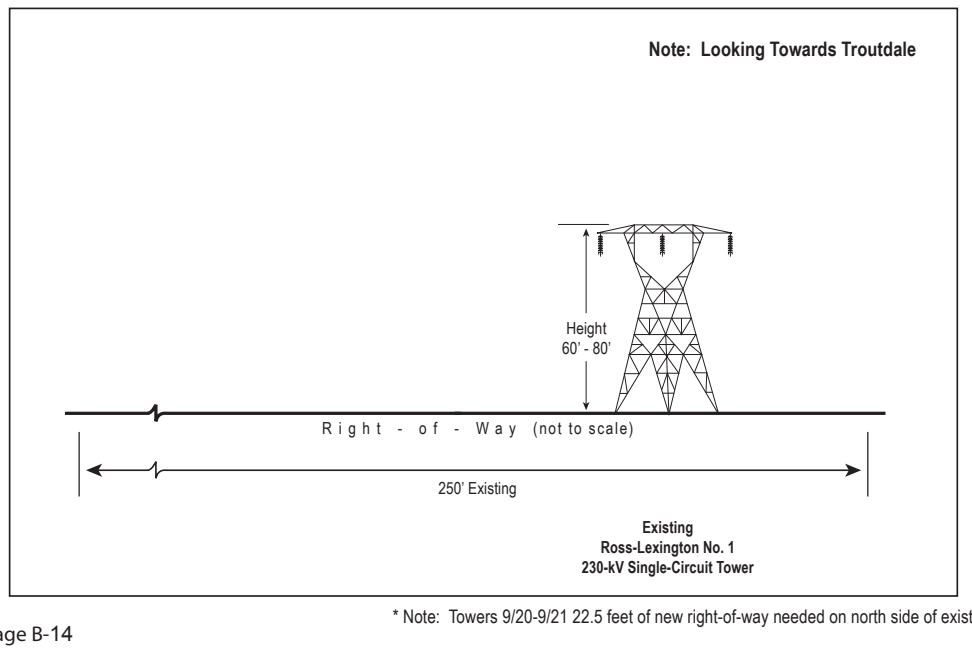


Proposed. New Single-Circuit Tower Replacing Cowlitz PUD Line Parallel to the Ross-Lexington No. 1 Line

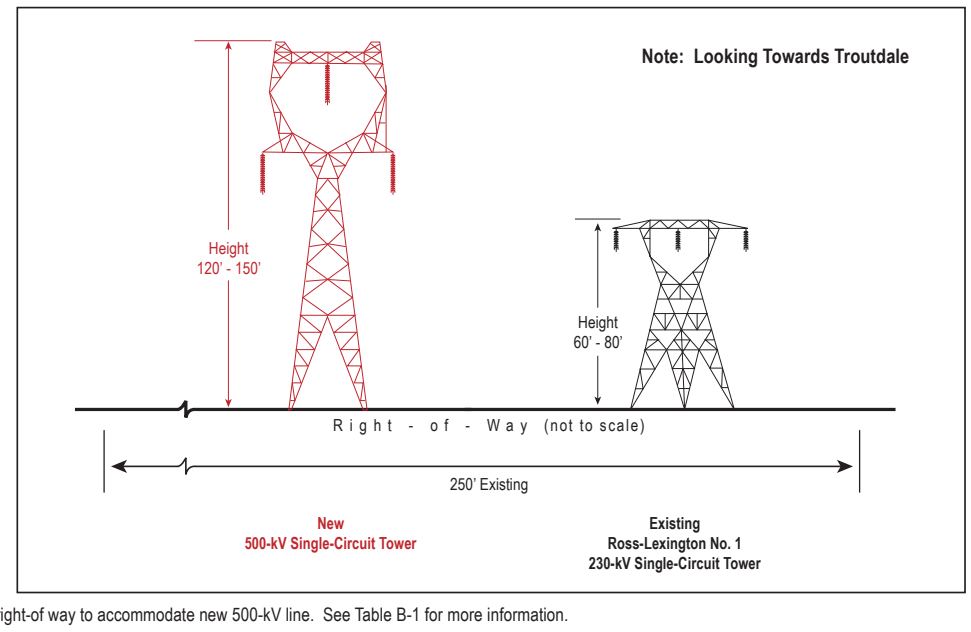


Towers 9/11-9/82*

Existing. Single-Circuit Tower Ross-Lexington No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the Ross-Lexington No. 1 Line

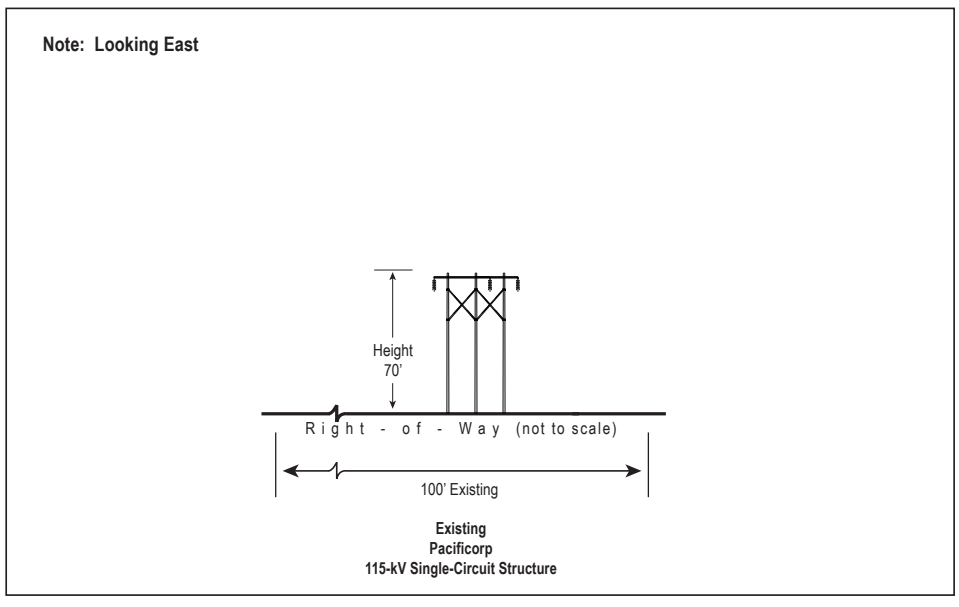


* Note: Towers 9/20-9/21 22.5 feet of new right-of-way needed on north side of existing right-of way to accommodate new 500-kV line. See Table B-1 for more information.

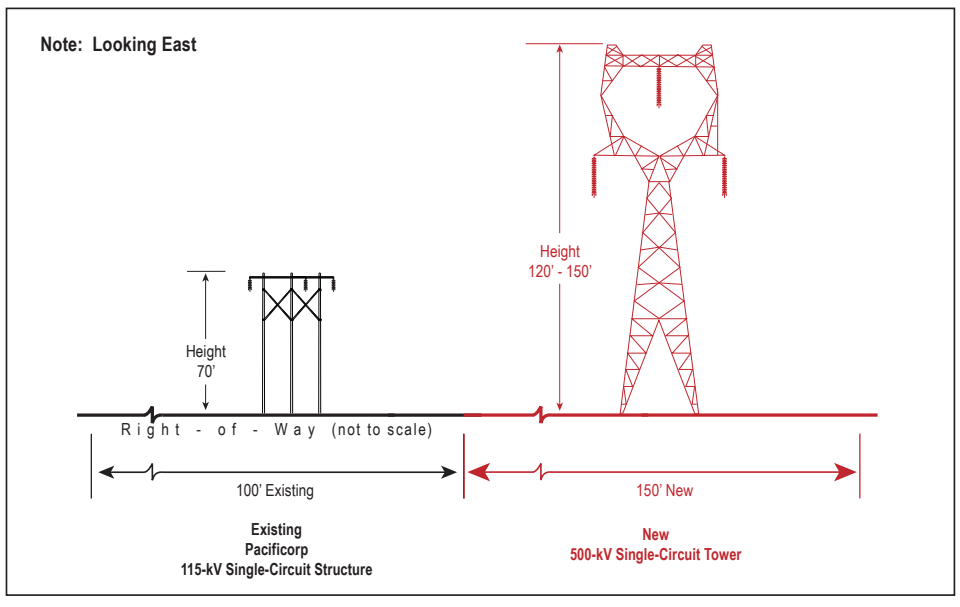
Figure B-5 Route Segment 18

Towers 18/1-18/22*

Existing. Single-Circuit Structure Pacificorp 115-kV Line



Proposed. New Single-Circuit Tower Parallel to the Pacificorp 115-kV Line

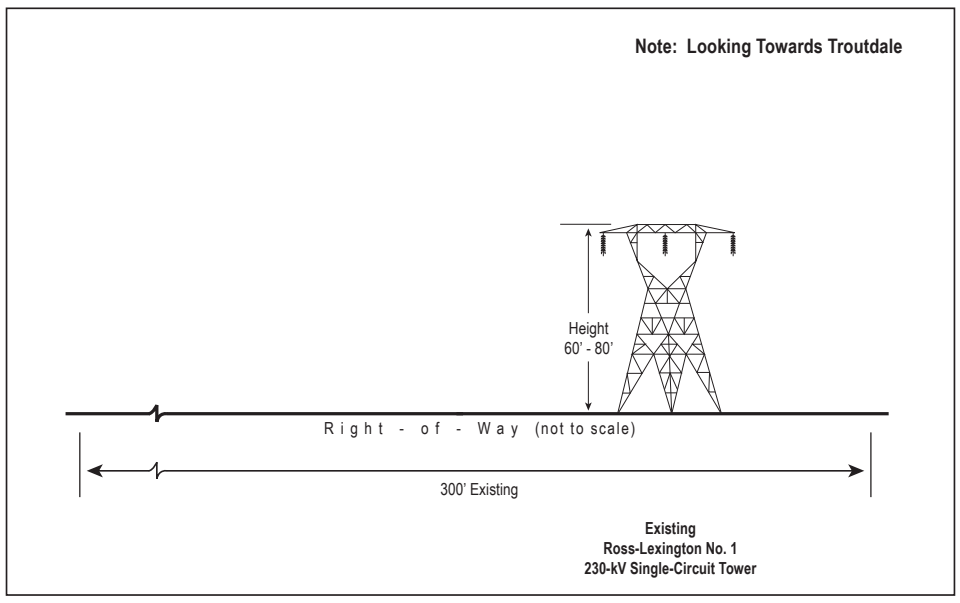


* Note: Towers 18/22-18/32 will require 150 feet of new right-of-way. See Figure B-1 for more information.

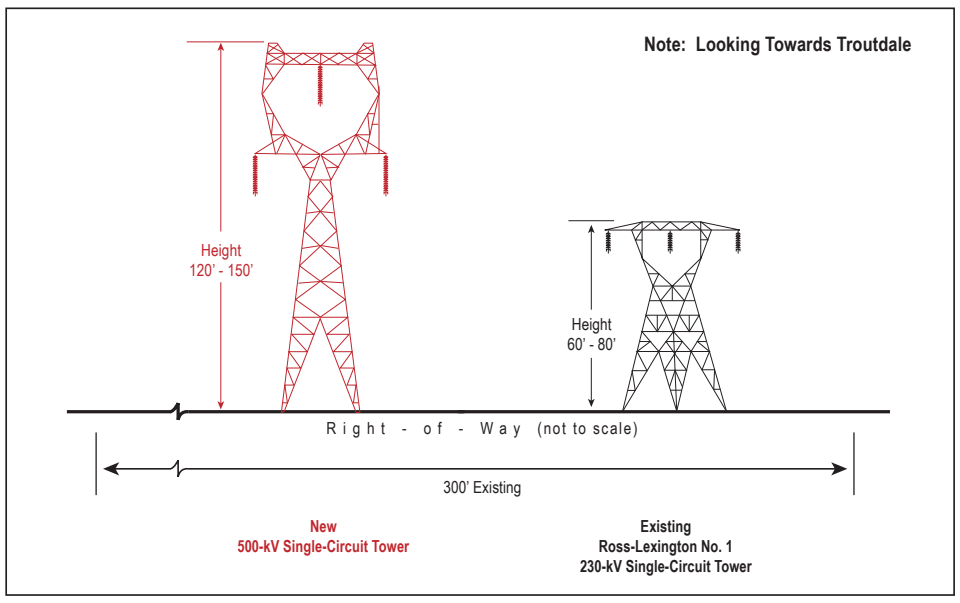
Figure B-6 Route Segment 25

Towers 25/1-25/106*

Existing. Single-Circuit Tower Ross-Lexington No. 1 Line



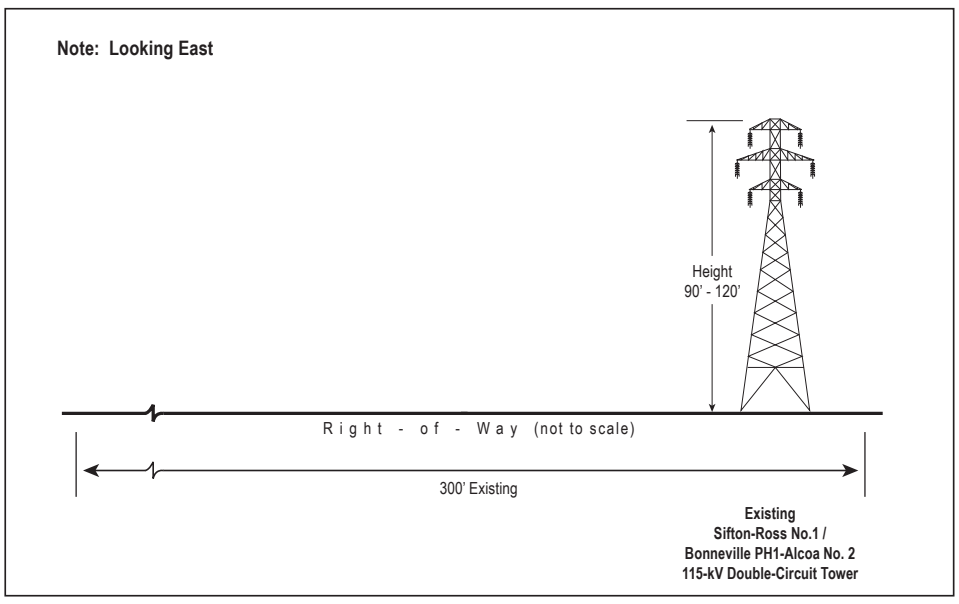
Proposed. New Single-Circuit Tower Parallel to the Ross-Lexington No. 1 Line



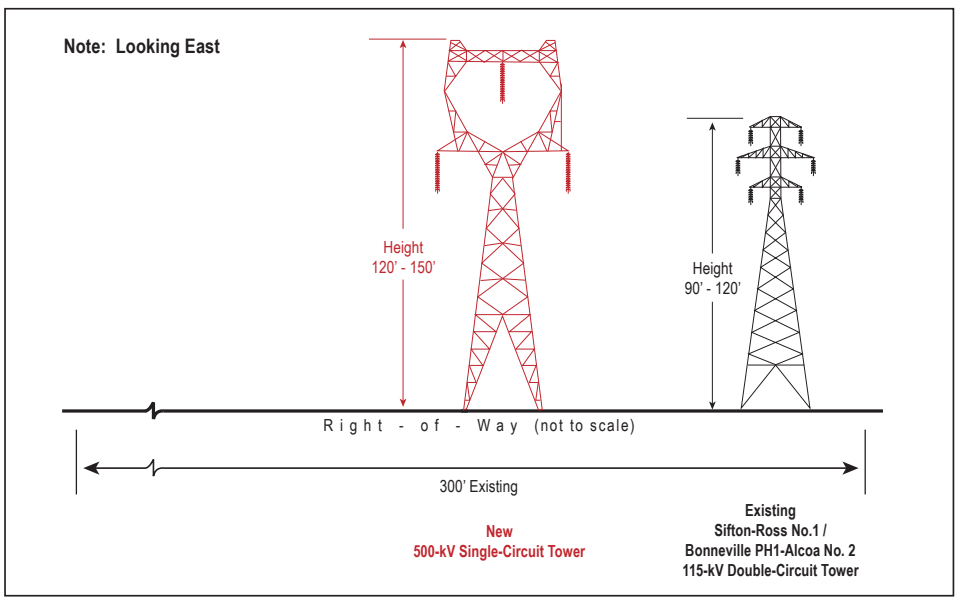
* Note: Towers 25/18-25/19 12.5 feet of new right-of-way needed on east side of existing right-of way to accommodate new 500-kV line. See Table B-1 for more information.

Towers 25/106-25/110

Existing. Double-Circuit Tower Sifton-Ross No. 1 Line / Bonneville PH1-Alcoa No. 2 Line

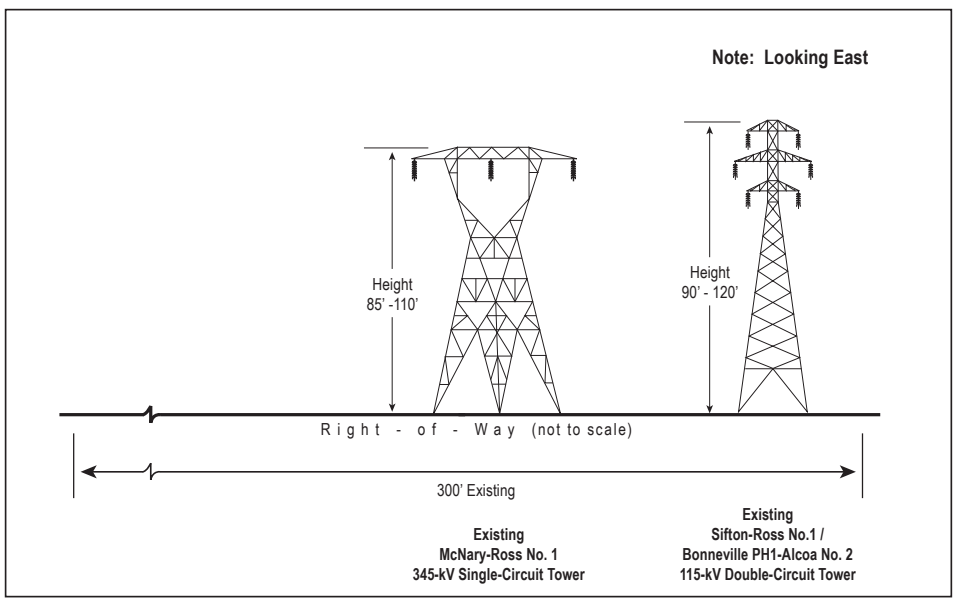


Proposed. New Single-Circuit Tower Parallel to the Sifton-Ross No. 1 Line / Bonneville PH1-Alcoa No. 2 Line

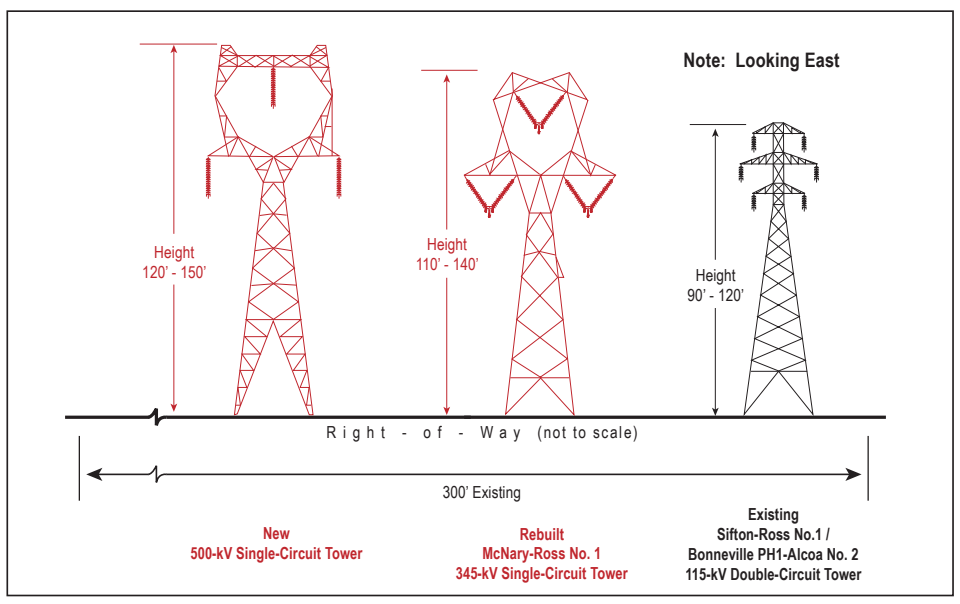


Towers 25/110-25/151*

Existing. Single-Circuit McNary-Ross No. 1 Line Parallel to the Sifton-Ross No. 1 Line / Bonneville PH1-Alcoa No. 2 Line



Proposed. New Single-Circuit Tower Parallel to Rebuilt McNary-Ross No. 1 Line

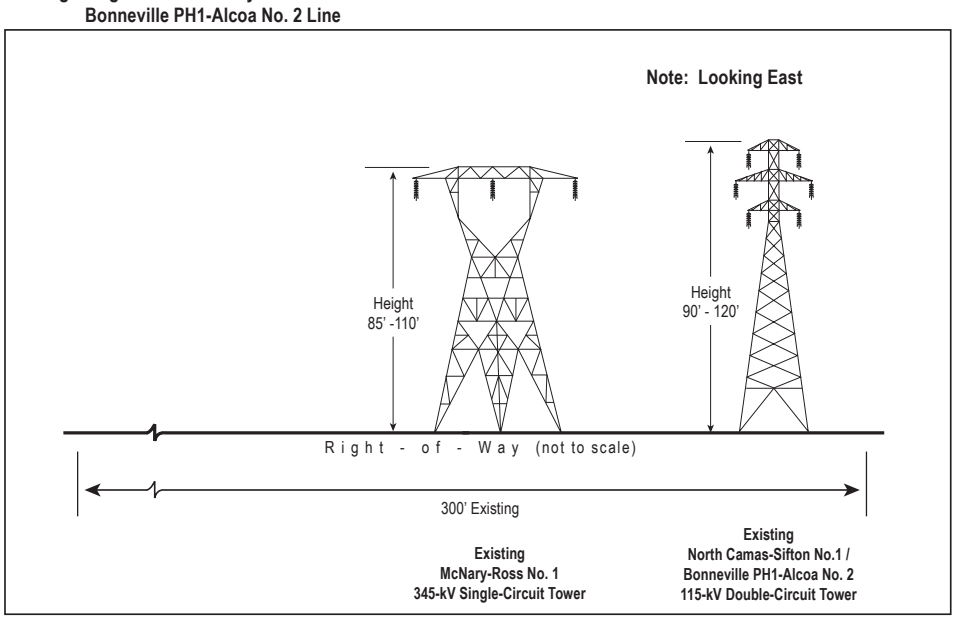


* Note: Towers 25/141-25/151 the existing McNary-Ross No. 1 345-kV Line will remain as-is; 30 feet of new right-of-way needed on north side of existing right-of-way to accommodate new 500-kV line. See Table B-1 for more information.

Figure B-6 Route Segment 25 (cont.)

Towers 25/151-25/152

Existing. Single-Circuit McNary-Ross No. 1 Line Parallel to the North Camas-Sifton No. 1 Line / Bonneville PH1-Alcoa No. 2 Line



Proposed. New Single-Circuit Tower Parallel to the McNary-Ross No. 1 Line

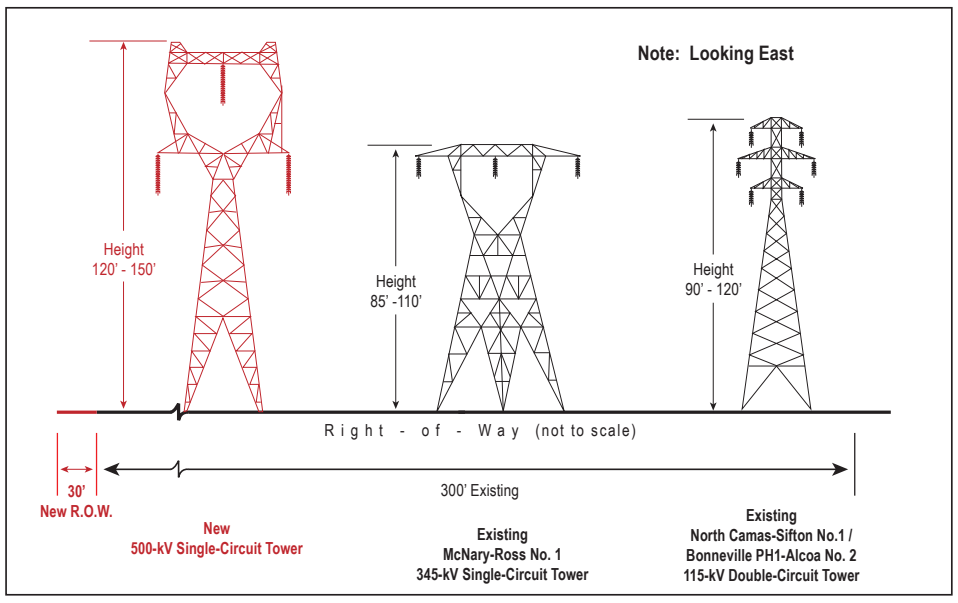
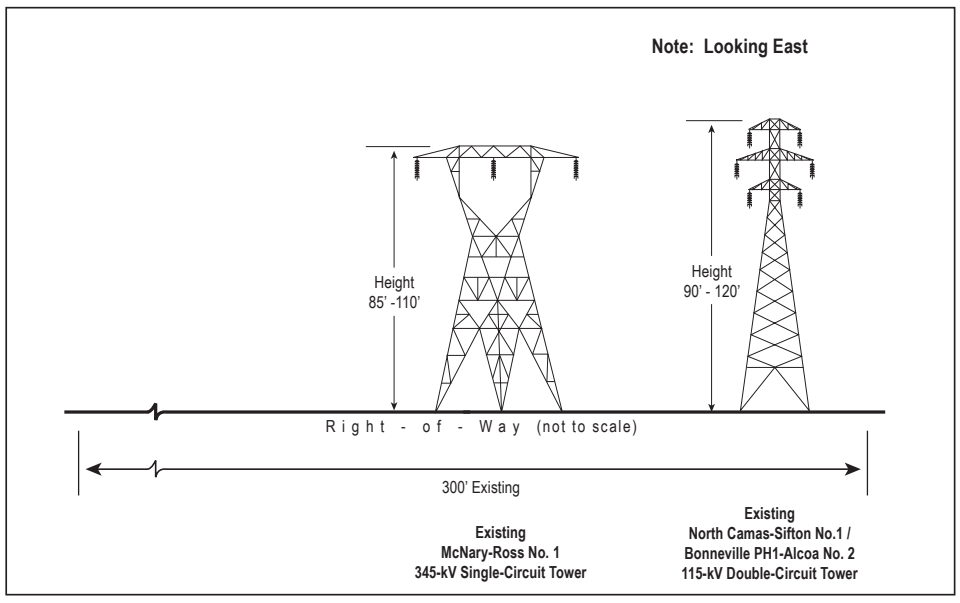


Figure B-7 Route Segment 36

Towers 36/1-36/2

Existing. Single-Circuit McNary-Ross No. 1 Line Parallel to the North Camas-Sifton No. 1 Line / Bonneville PH1-Alcoa No. 2 Line



Proposed. New Single-Circuit Tower Parallel to the McNary-Ross No. 1 Line

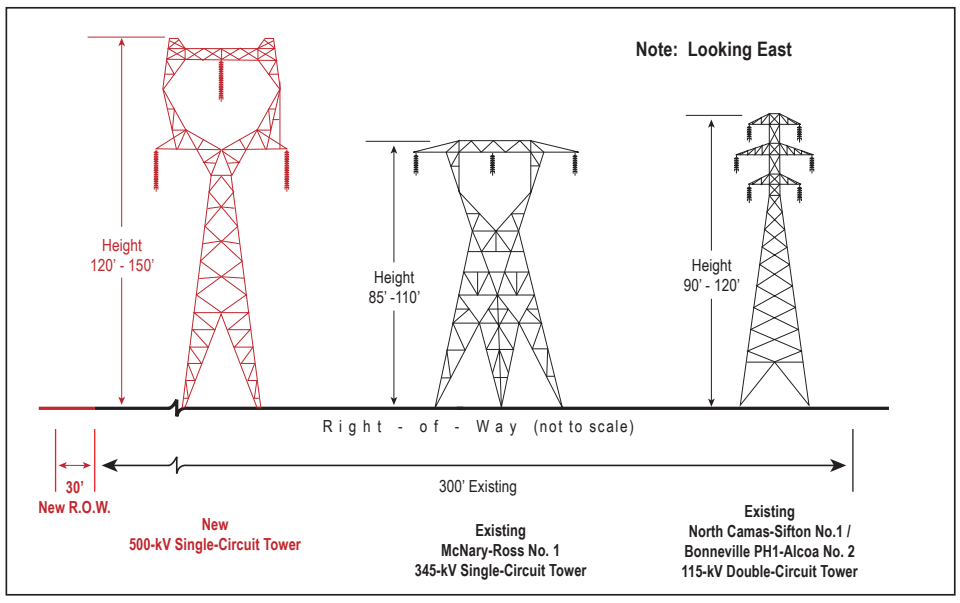
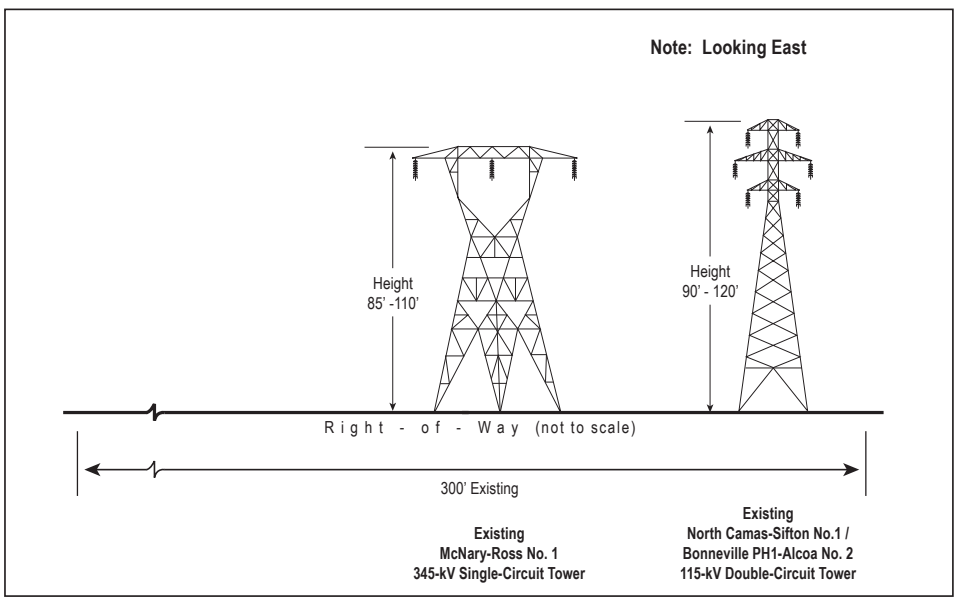


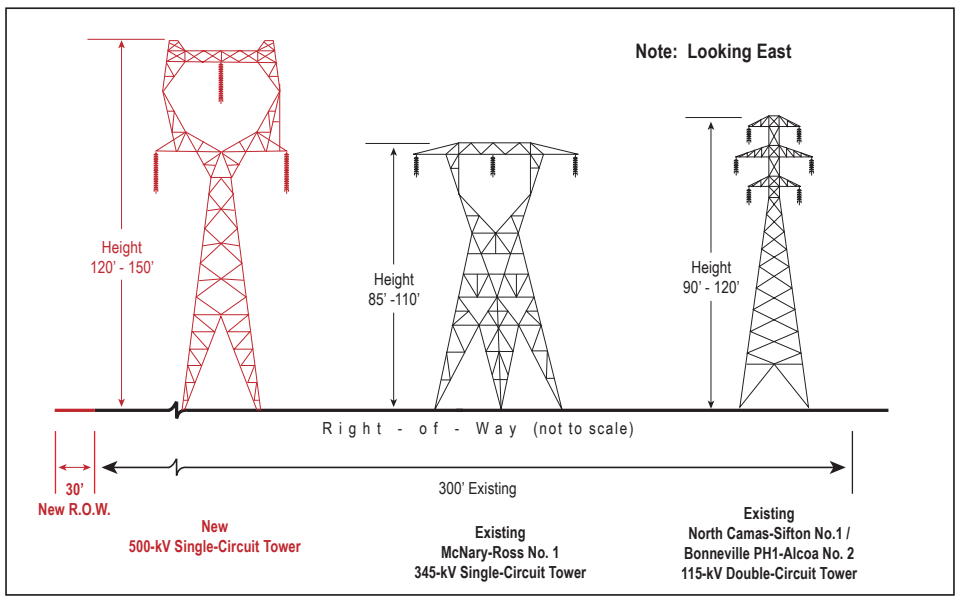
Figure B-8 Route Segment 36A

Towers 36A/1-36A/6*

Existing. Single-Circuit McNary-Ross No. 1 Line Parallel to the North Camas-Sifton No. 1 Line / Bonneville PH1-Alcoa No. 2 Line



Proposed. New Single-Circuit Tower Parallel to the McNary-Ross No. 1 Line

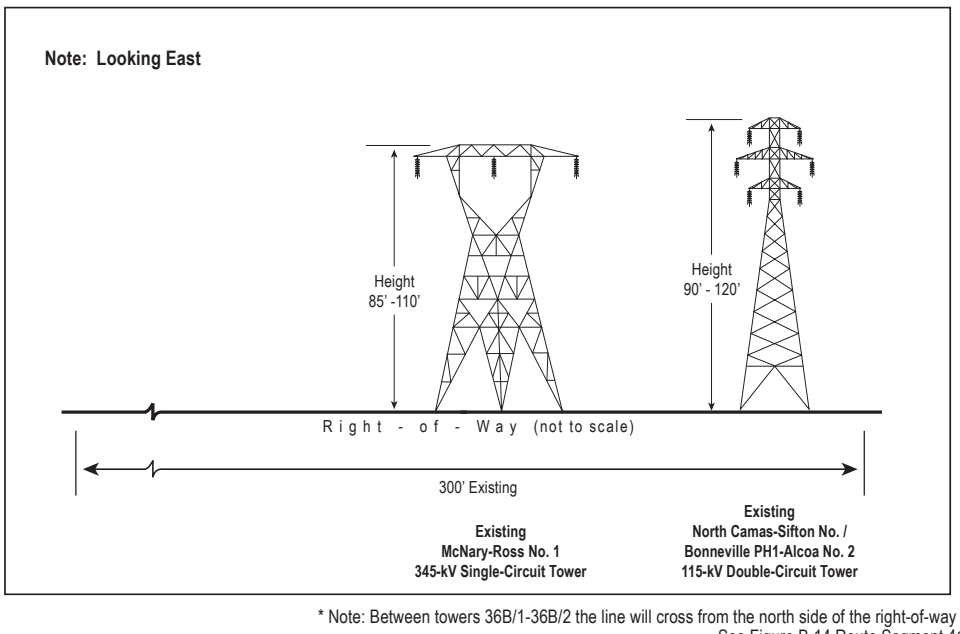


* Note: No new right-of-way needed between towers 36A/5-36A/6. Between towers 36A/4-36A/6 rebuild about 3 towers of McNary-Ross No. 1 345-kV line to narrow 345-kV line configuration to accommodate new 500-kV line.
See Figure B-6 Route Segment 25, Towers 25/110-25/151 for more information.

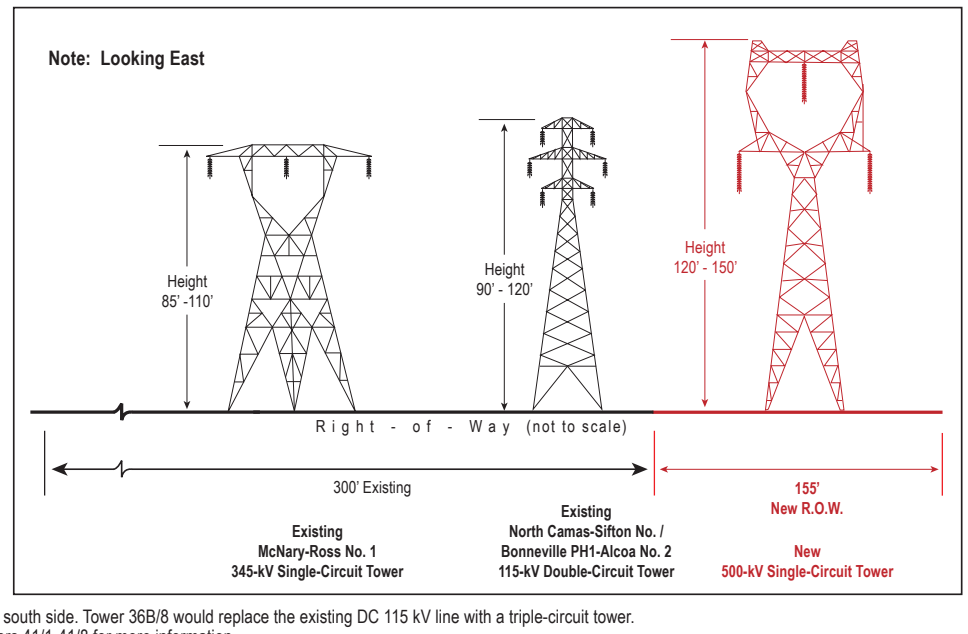
Figure B-9 Route Segment 36B

Towers 36B/1-36B/8*

Existing. Single-Circuit McNary-Ross No. 1 Line Parallel to the North Camas-Sifton No. 1 Line / Bonneville PH1-Alcoa No. 2 Line



Proposed. New Single-Circuit Tower Parallel to North Camas-Sifton No. 1 Line / Bonneville PH1-Alcoa No. 2 Line

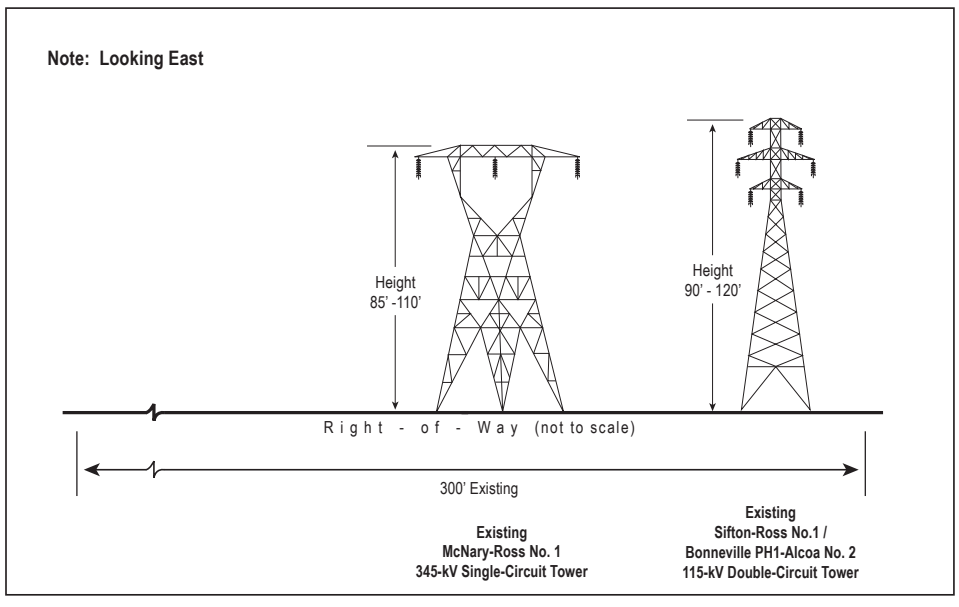


* Note: Between towers 36B/1-36B/2 the line will cross from the north side of the right-of-way to the south side. Tower 36B/8 would replace the existing DC 115 kV line with a triple-circuit tower.
See Figure B-14 Route Segment 41, towers 41/1-41/8 for more information.

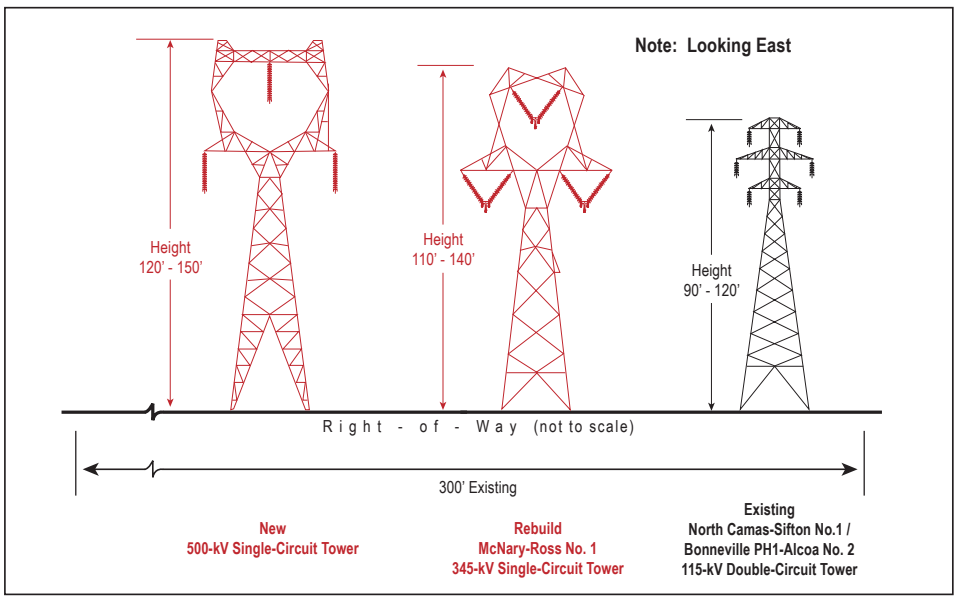
Figure B-10 Route Segment 37

Towers 37/1-37/2

Existing. Single-Circuit McNary-Ross No. 1 Line Parallel to the North Camas-Sifton No. 1 Line / Bonneville PH1-Alcoa No. 2 Line

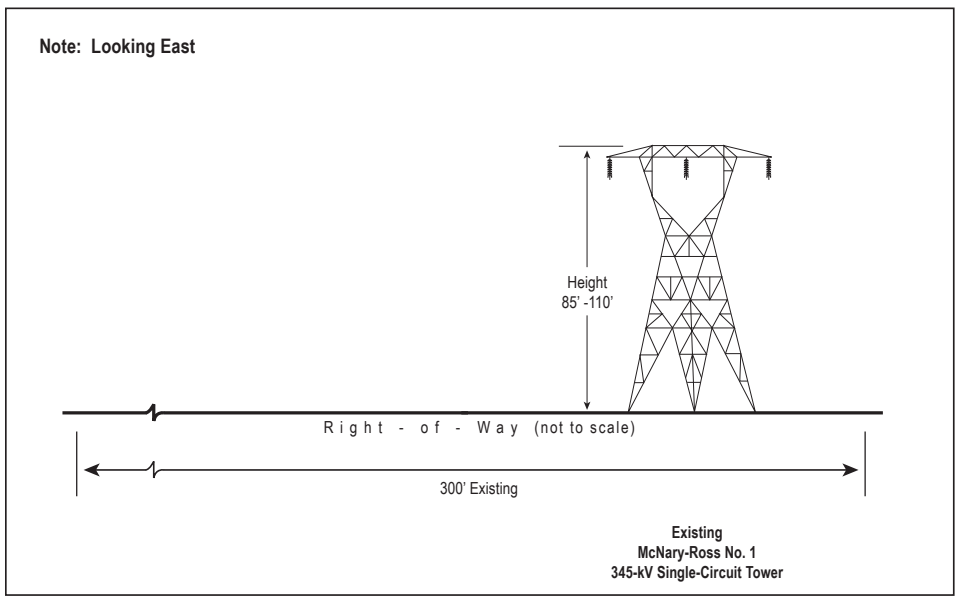


Proposed. New Single-Circuit Tower Parallel to Rebuilt McNary-Ross No. 1 Line



Towers 37/2-37/4

Existing. Single-Circuit McNary-Ross No. 1 Line



Proposed. New Single-Circuit Tower Parallel to McNary-Ross No. 1 Line

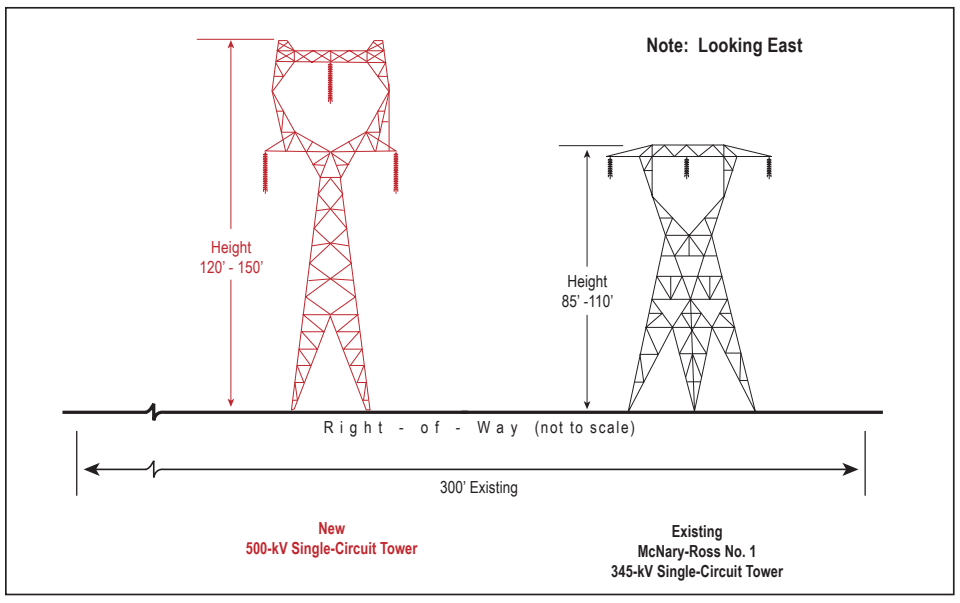
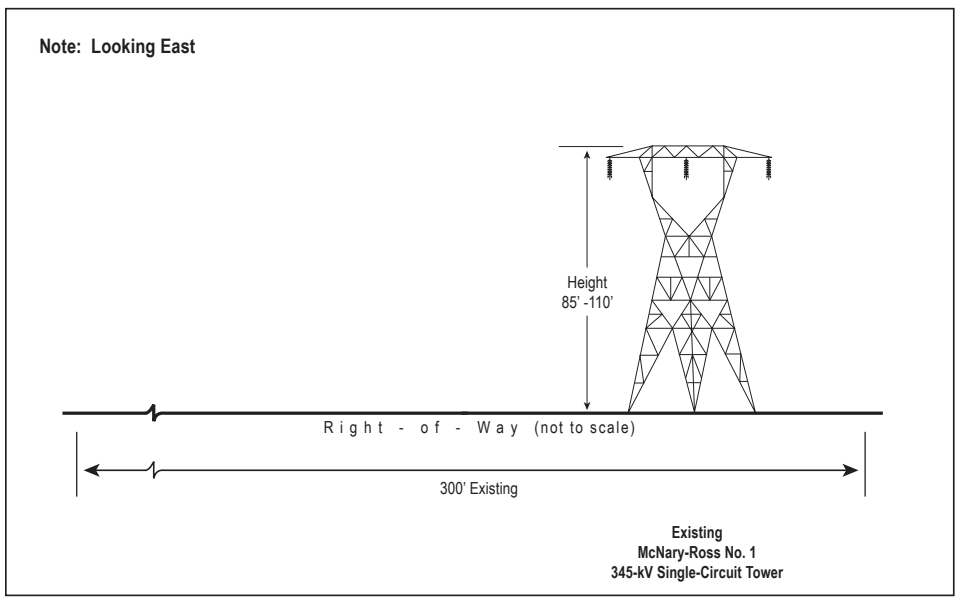


Figure B-11 Route Segment 38

Towers 38/1-38/5

Existing. Single-Circuit McNary-Ross No. 1 Line



Proposed. New Single-Circuit Tower Parallel to McNary-Ross No. 1 Line

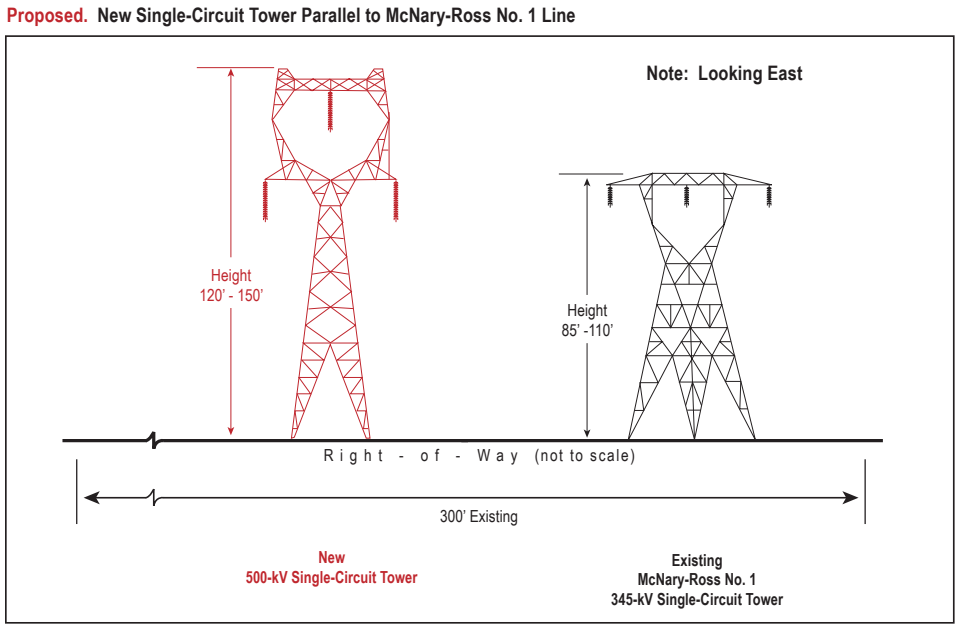
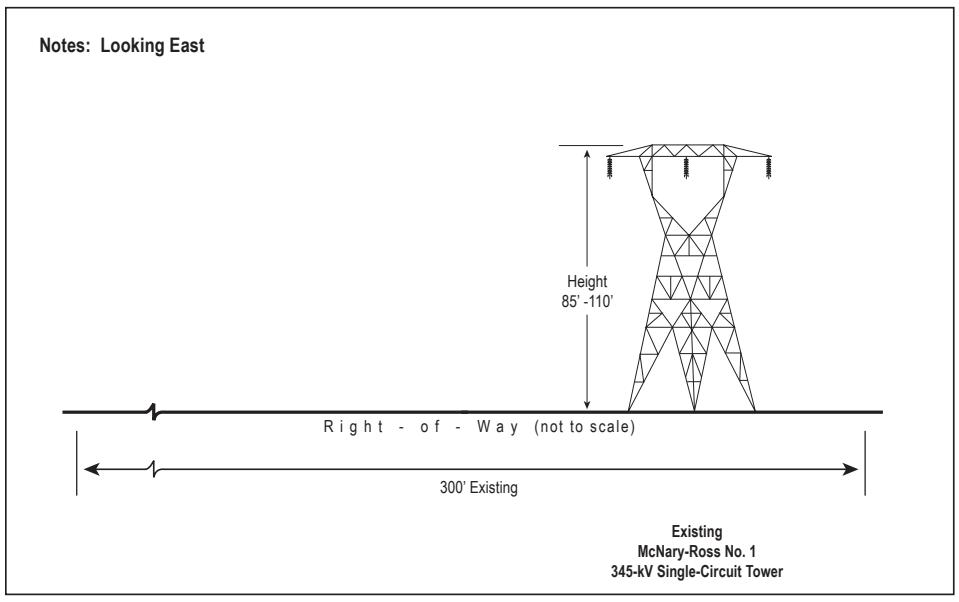


Figure B-12 Route Segment 39

Towers 39/1-39/20

Existing. Single-Circuit McNary-Ross No. 1 Line



Proposed. New Single-Circuit Tower Parallel to McNary-Ross No. 1 Line

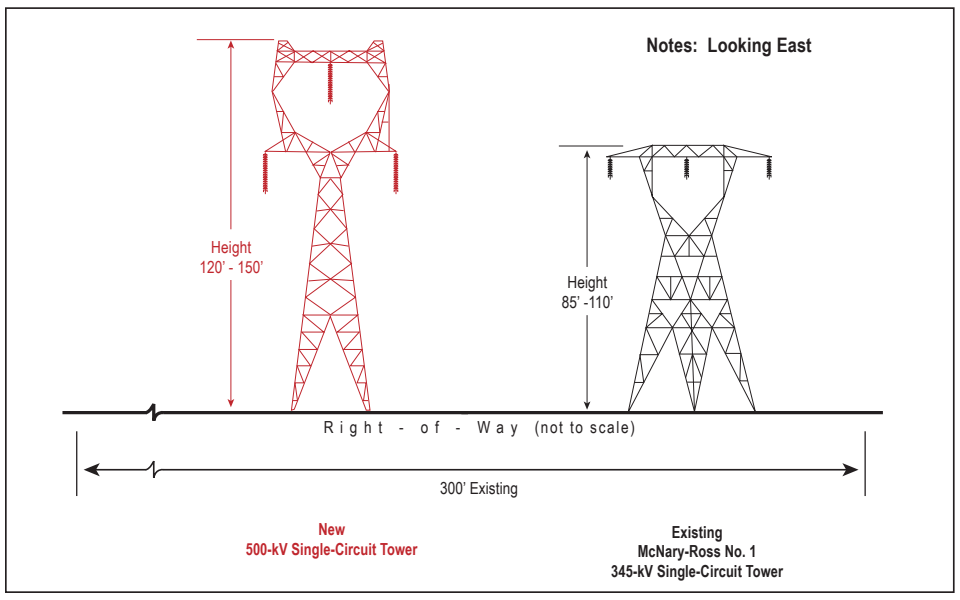
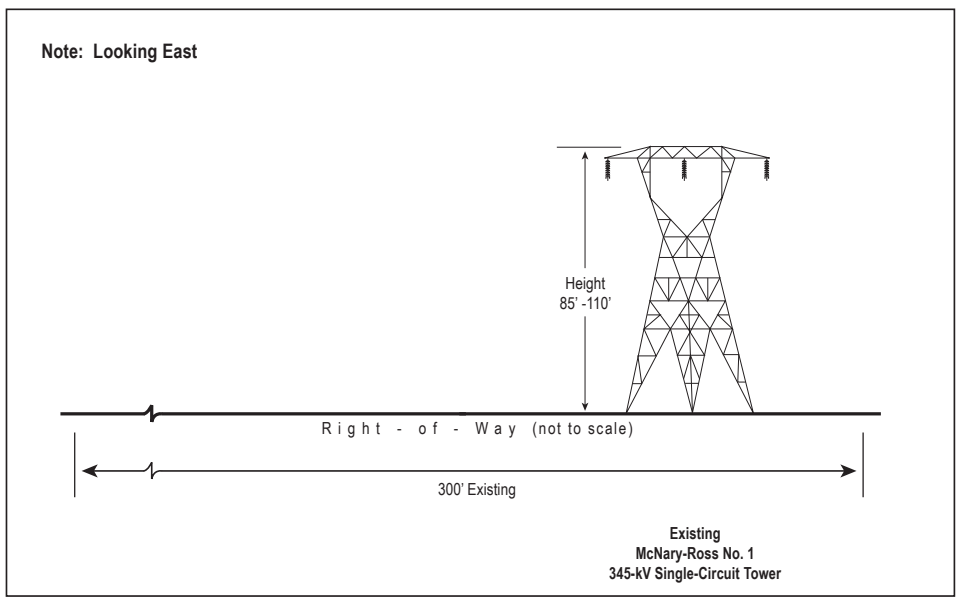


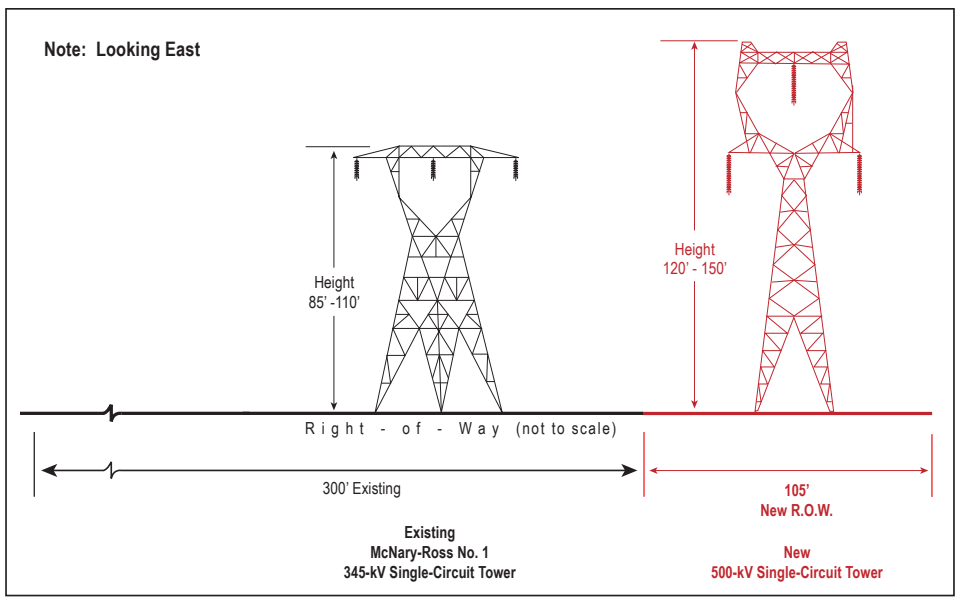
Figure B-12 Route Segment 39 (cont.)

Towers 39/20-39/23

Existing. Single-Circuit McNary-Ross No. 1 Line

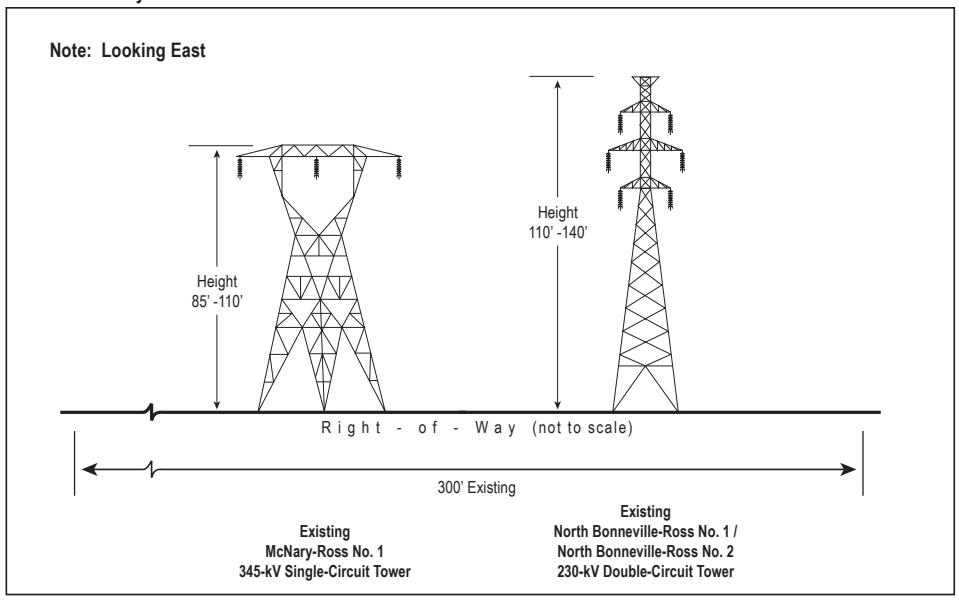


Proposed. New Single-Circuit Tower Parallel to McNary-Ross No. 1 Line



Towers 39/23-39/27

Existing. Double-Circuit North Bonneville-Ross No. 1 Line / North Bonneville-Ross No. 2 Line Parallel to the McNary-Ross No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the North Bonneville-Ross No. 1 Line / North Bonneville-Ross No. 2 Line

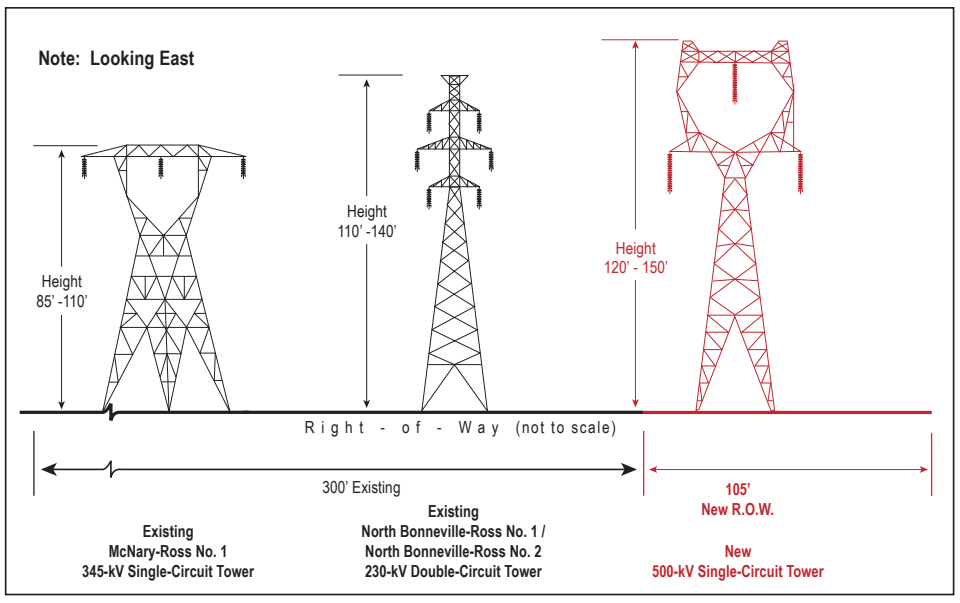
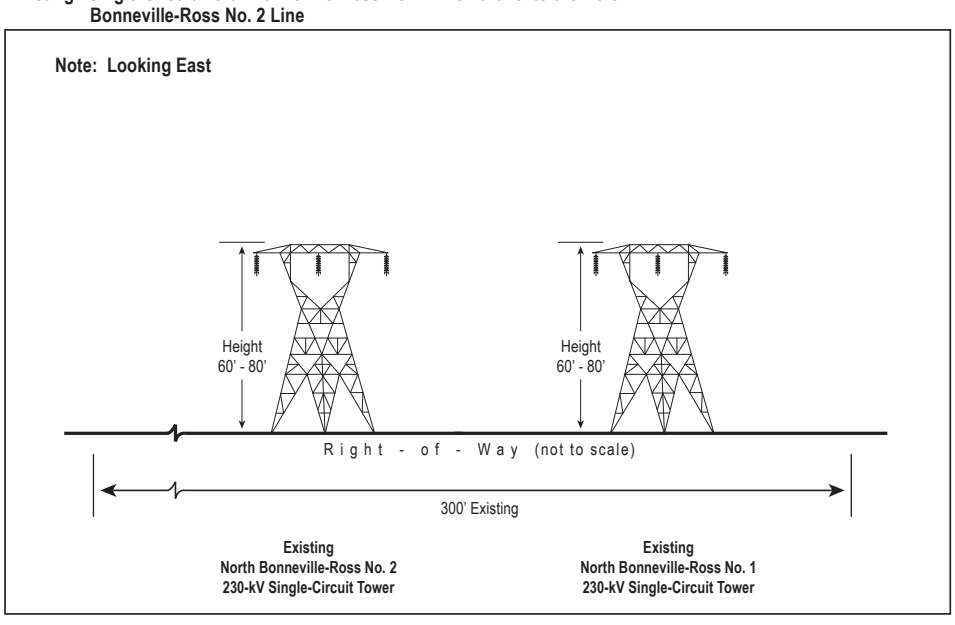


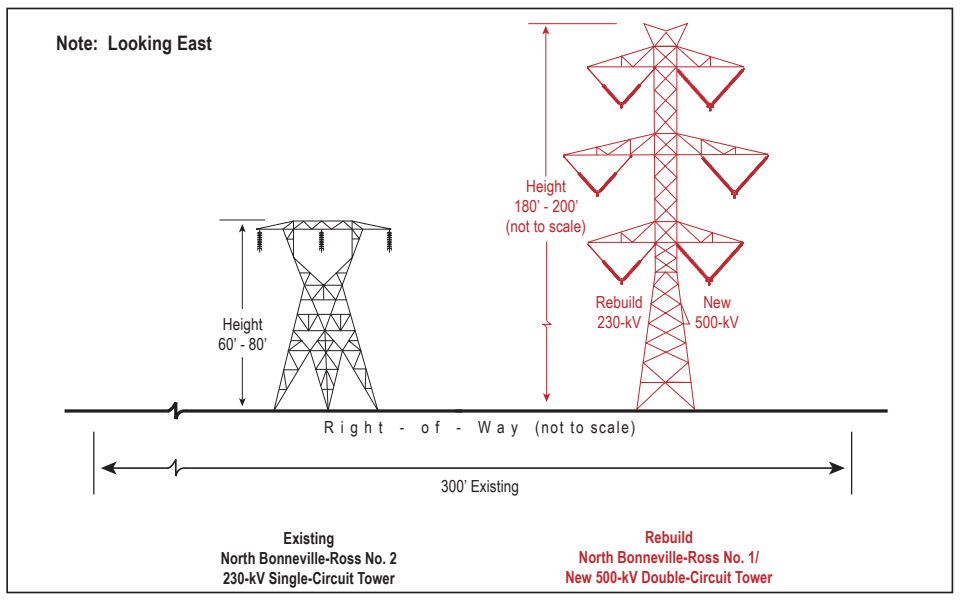
Figure B-13 Route Segment 40

Towers 40/11-40/14*

Existing. Single-Circuit North Bonneville-Ross No. 1 Line Parallel to the North Bonneville-Ross No. 2 Line



Proposed. Rebuild New Double-Circuit Tower Parallel to the North Bonneville-Ross No. 2 Line

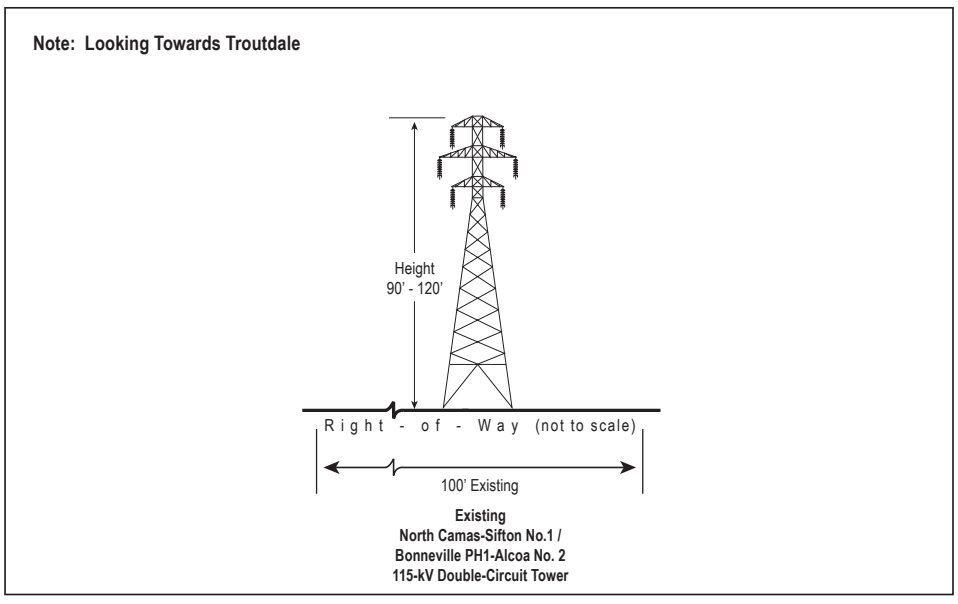


* Note: Towers 40/1-40/11 will require 150 feet of new right-of-way. See Figure B-1 for more information.

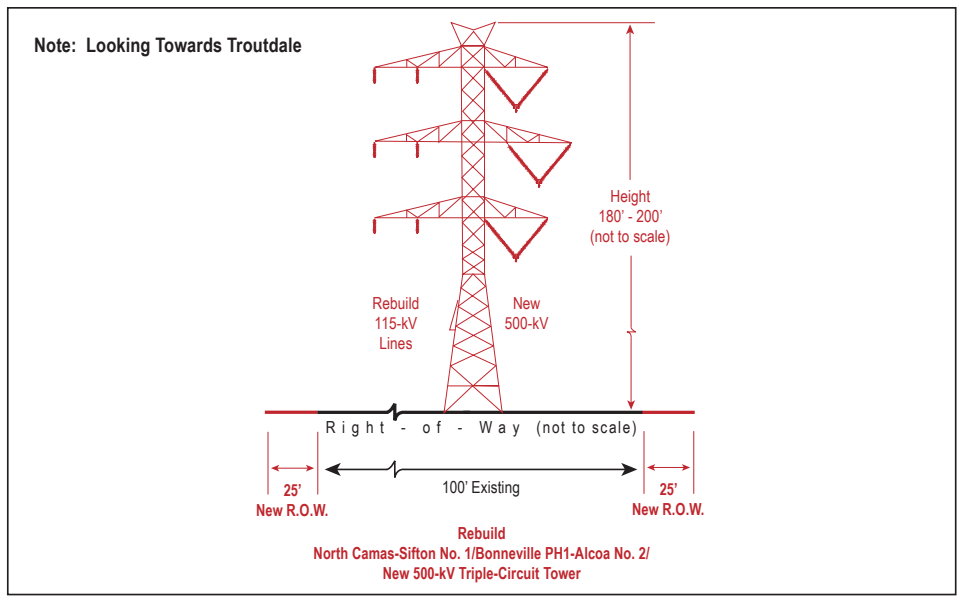
Figure B-14 Route Segment 41

Towers 41/1-41/8*

Existing. Double-Circuit North Camas-Sifton No.1 Line / Bonneville PH1-Alcoa No. 2 Line



Proposed. New Triple-Circuit Tower Replacing Double-Circuit 115-kV Tower

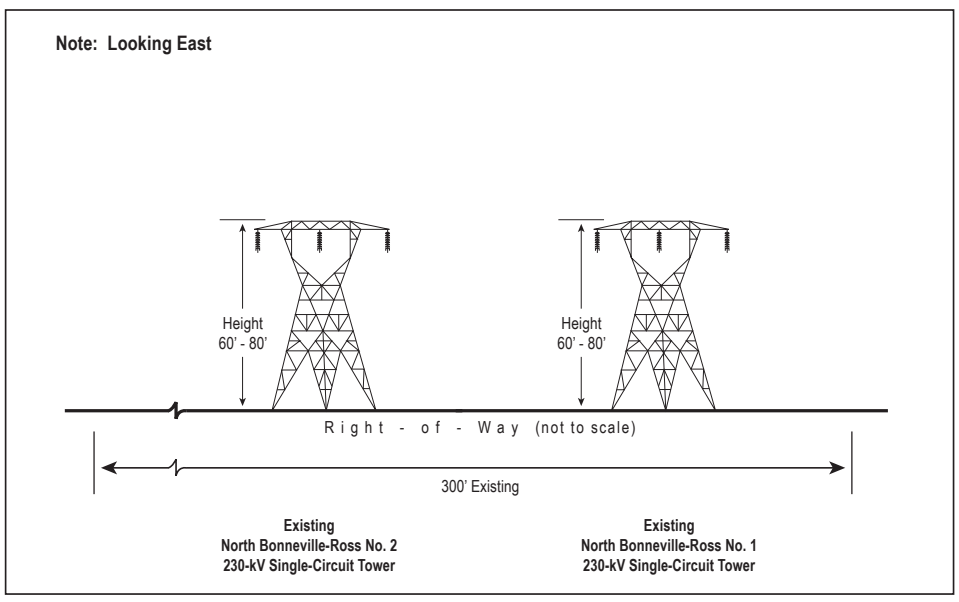


* Note: New 500-kV line replaces double-circuit 115-kV line at 41/1 (36B/8) with triple-circuit 500-kV line. See Table B-1 for more information.

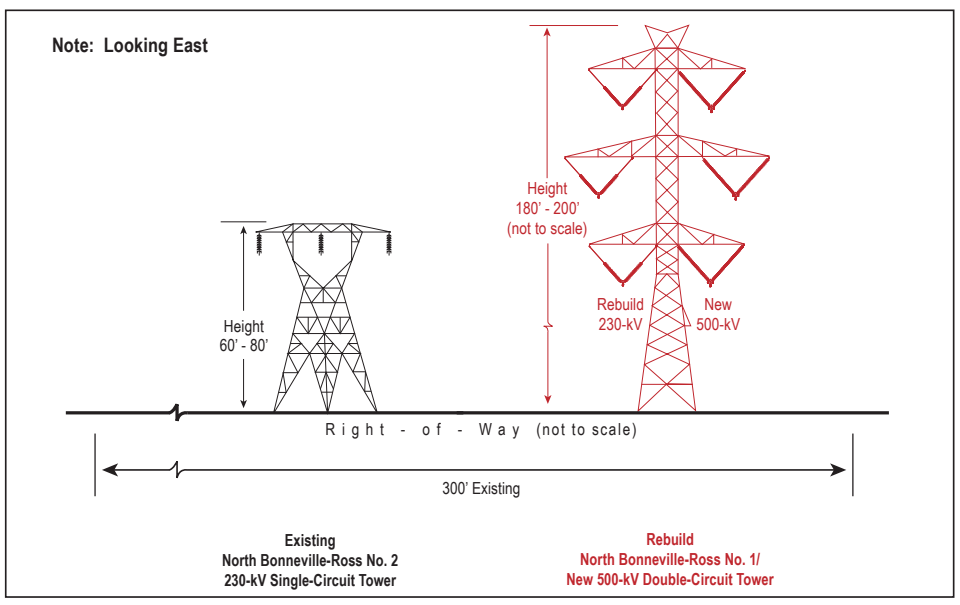
Figure B-15 Route Segment 43

Towers 43/9-43/10*

Existing. Single-Circuit North Bonneville-Ross No. 1 Line Parallel to the North Bonneville-Ross No. 2 Line



Proposed. Rebuild New Double-Circuit Tower Parallel to the North Bonneville-Ross No. 2 Line

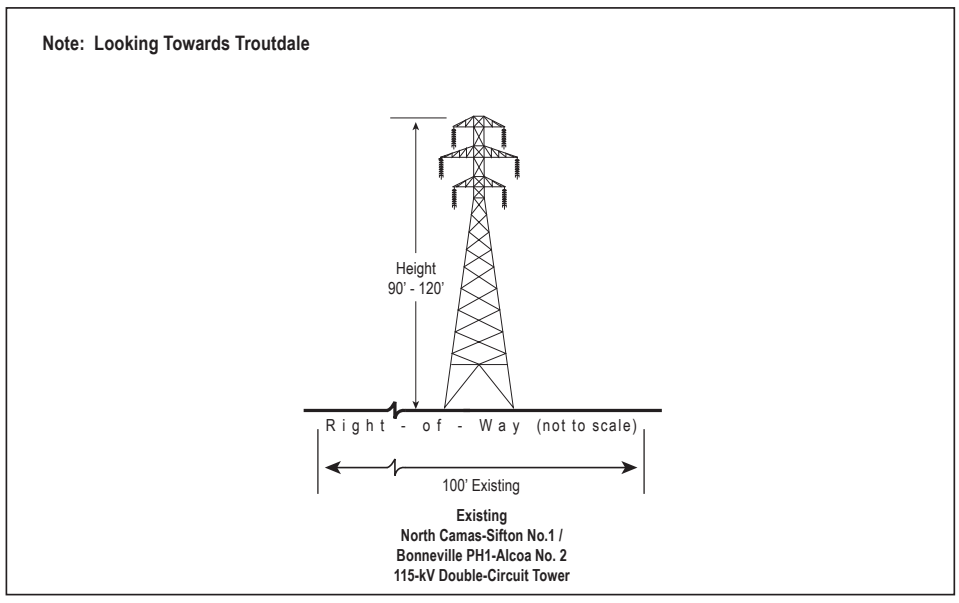


* Note: Towers 43/1-43/9 will require 150 feet of new right-of-way. See Figure B-1 for more information.

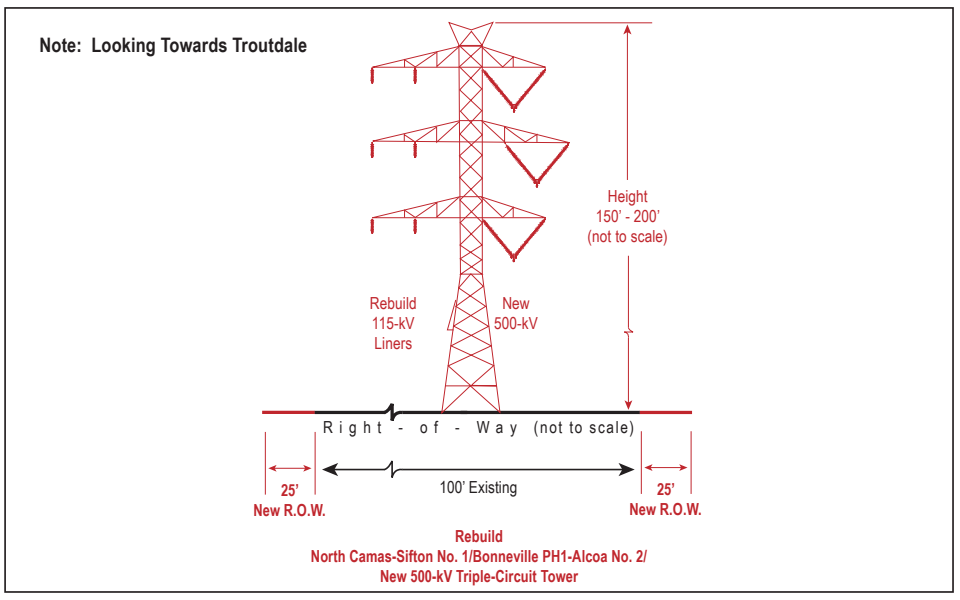
Figure B-16 Route Segment 45

Towers 45/1-45/3*

Existing. Double-Circuit North Camas-Sifton No.1 Line / Bonneville PH1-Alcoa No. 2 Line



Proposed. New Triple-Circuit Tower Replacing Double-Circuit 115-kV Tower

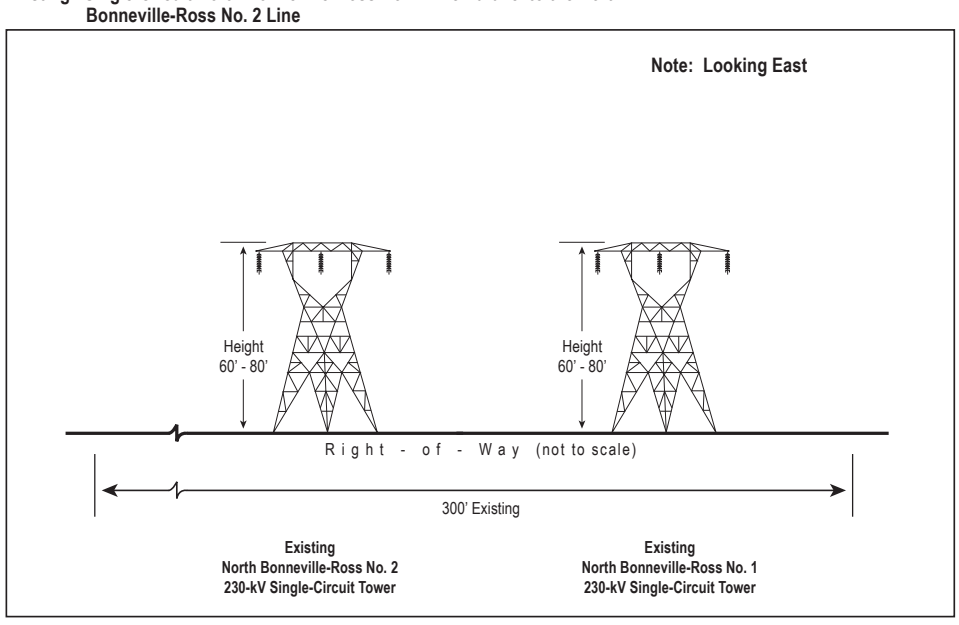


* Note: Towers 45/3-45/6 will require 150 feet of new right-of-way. See Figure B-1 for more information.

Figure B-17 Route Segment 46

Towers 46/1-46/3

Existing. Single-Circuit North Bonneville-Ross No. 1 Line Parallel to the North Bonneville-Ross No. 2 Line



Proposed. Rebuild New Double-Circuit Tower Parallel to the North Bonneville-Ross No. 2 Line

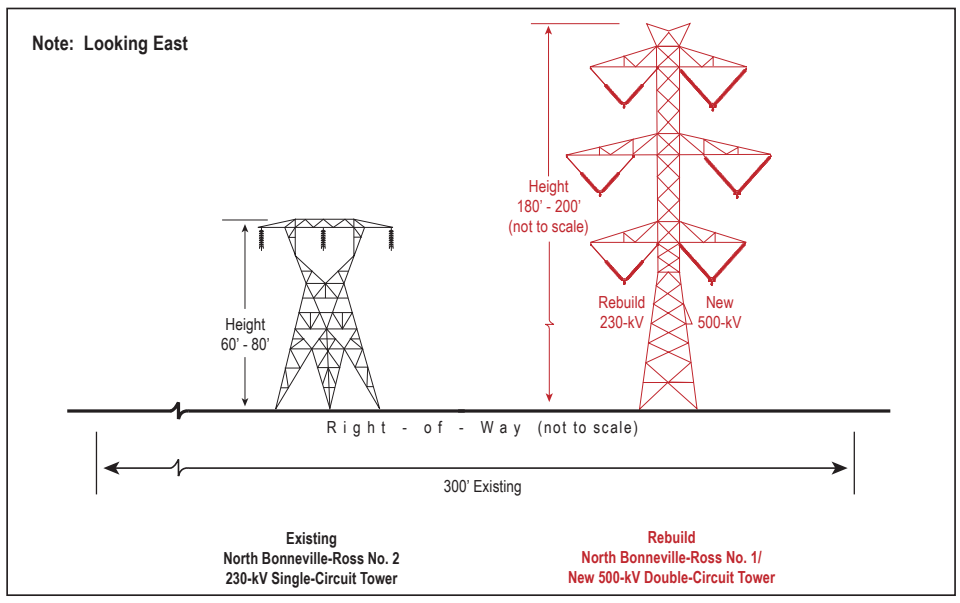
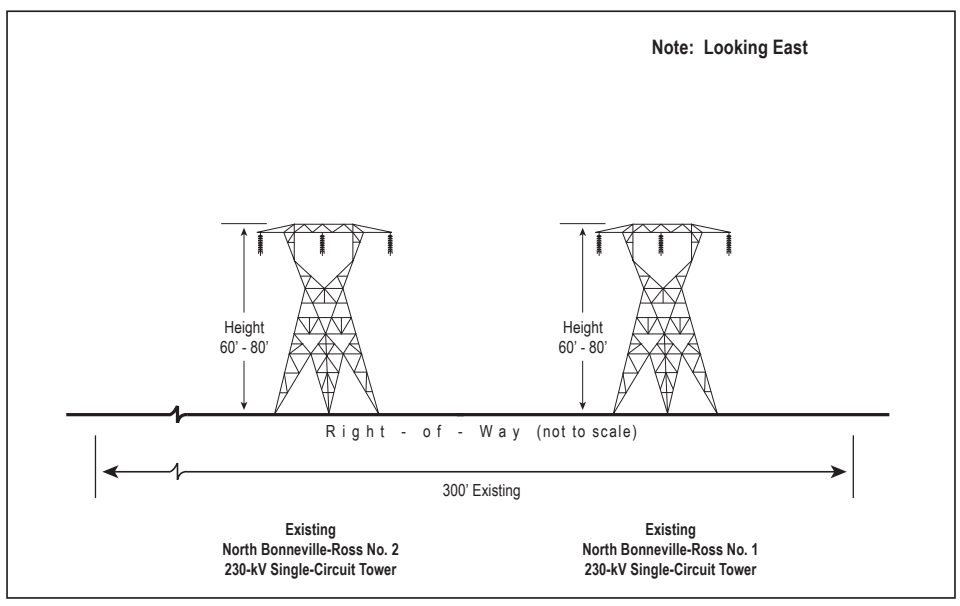


Figure B-18 Route Segment 47

Towers 47/1-47/4

Existing. Single-Circuit North Bonneville-Ross No. 1 Line Parallel to the North Bonneville-Ross No. 2 Line



Proposed. Rebuild New Double-Circuit Tower Parallel to the North Bonneville-Ross No. 2 Line

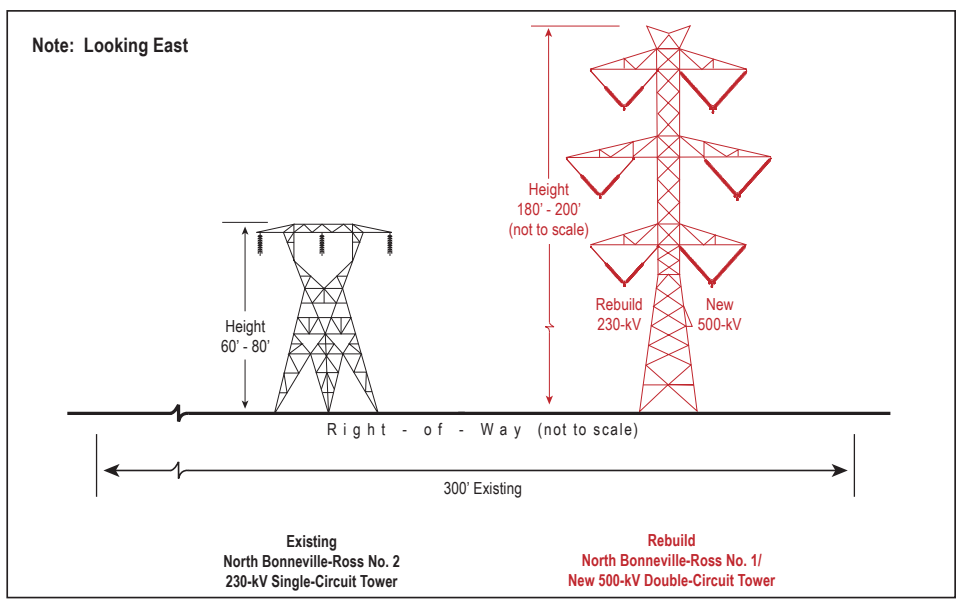
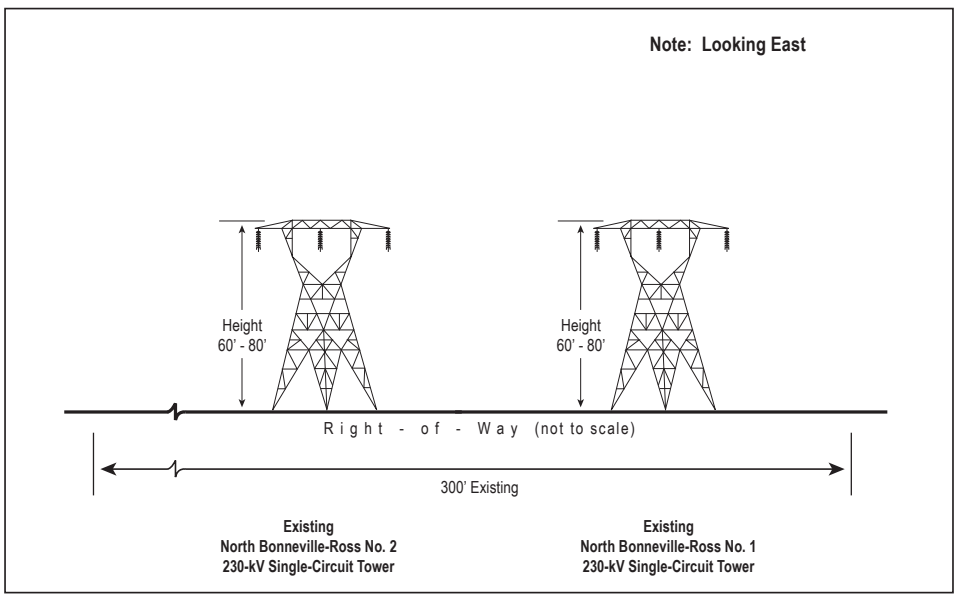


Figure B-19 Route Segment 48

Towers 48/1-48/14

Existing. Single-Circuit North Bonneville-Ross No. 1 Line Parallel to the North Bonneville-Ross No. 2 Line



Proposed. Rebuild New Double-Circuit Tower Parallel to the North Bonneville-Ross No. 2 Line

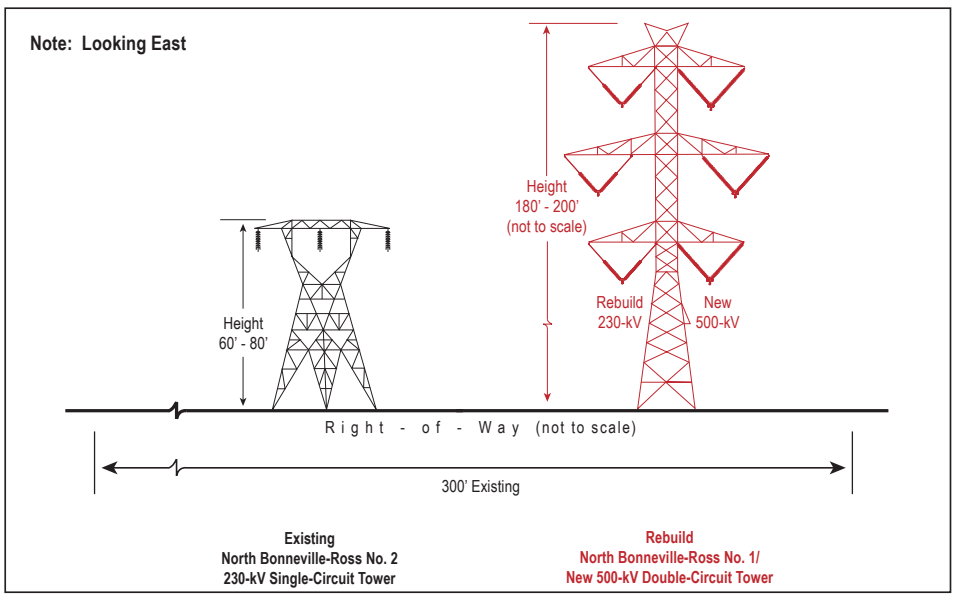
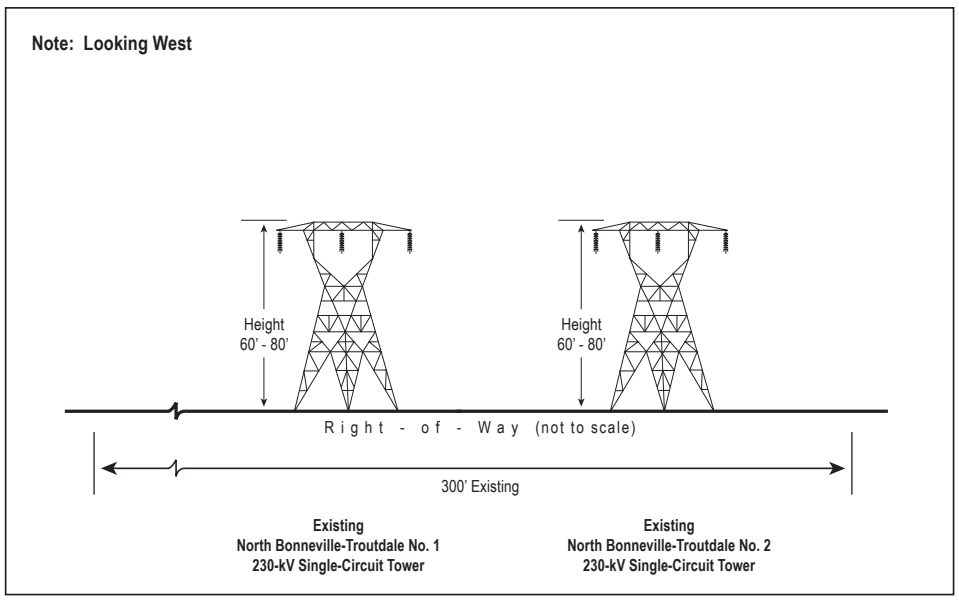


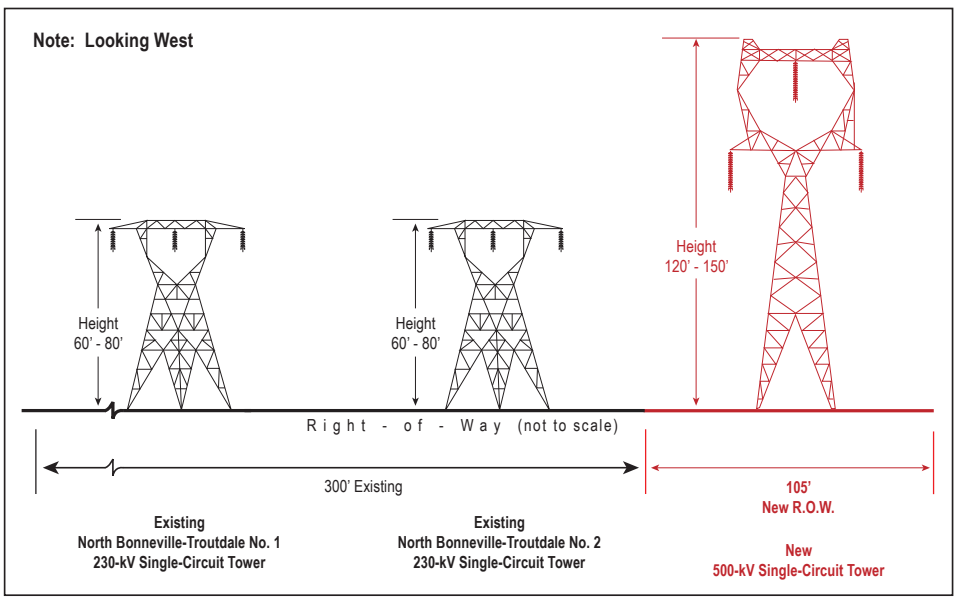
Figure B-20 Route Segment 49

Towers 49/7-49/10*

Existing. Single-Circuit North Bonneville-Troutdale No. 1 Line Parallel to the North Bonneville-Troutdale No. 2 Line



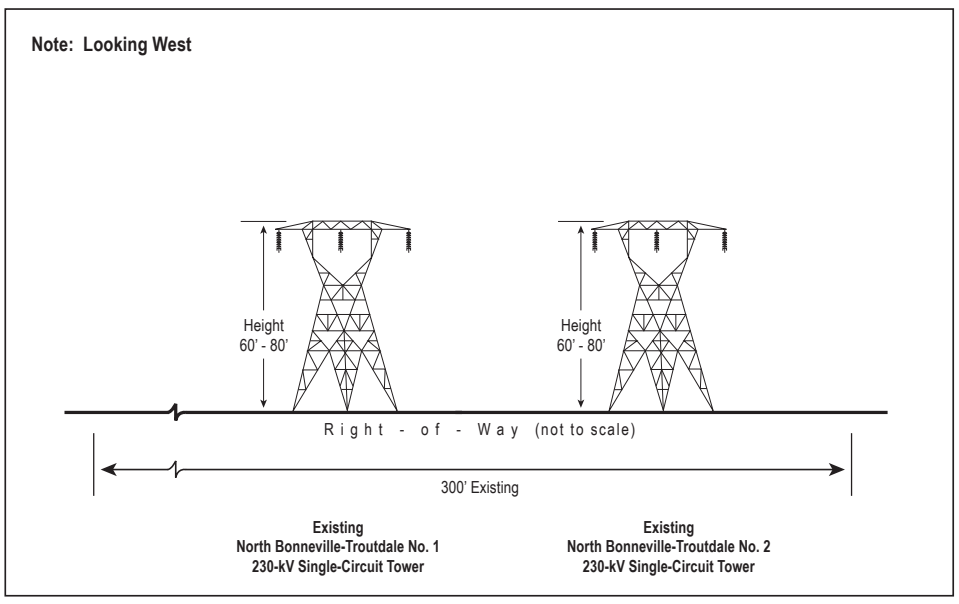
Proposed. New Single-Circuit Tower Parallel to the North Bonneville-Troutdale No. 2 Line



* Note: Towers 49/1-49/7 will require 150 feet of new right-of-way. See Figure B-1 for more information.

Towers 49/10-49/15

Existing. Single-Circuit North Bonneville-Troutdale No. 1 Line Parallel to the North Bonneville-Troutdale No. 2 Line



Proposed. Rebuild New Double-Circuit Tower Parallel to the North Bonneville-Troutdale No. 1 Line

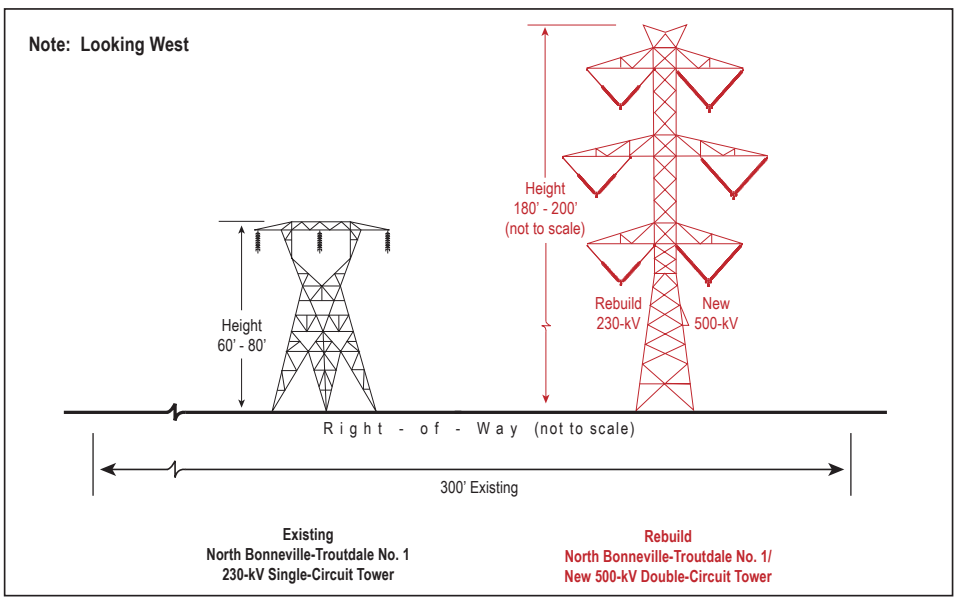
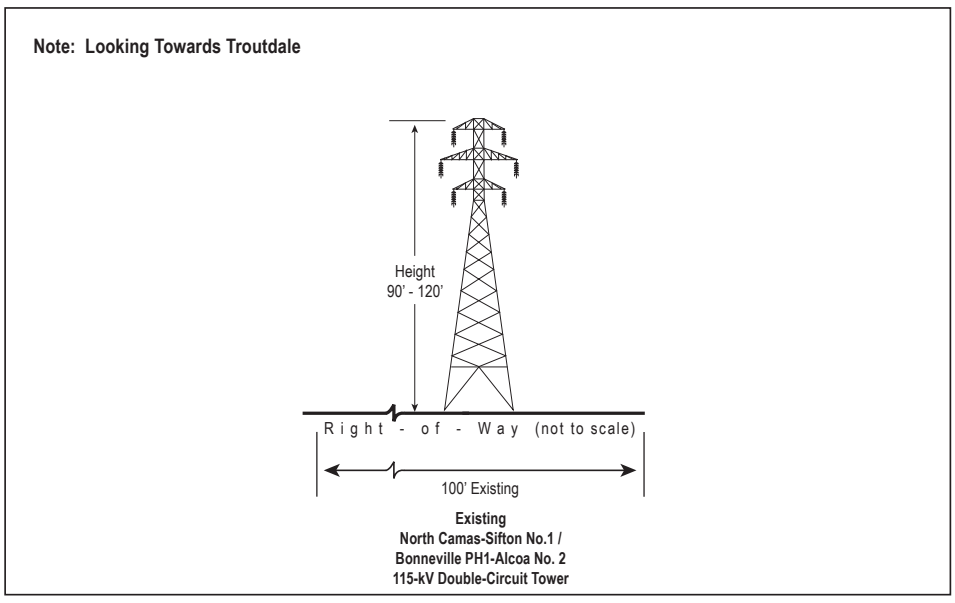


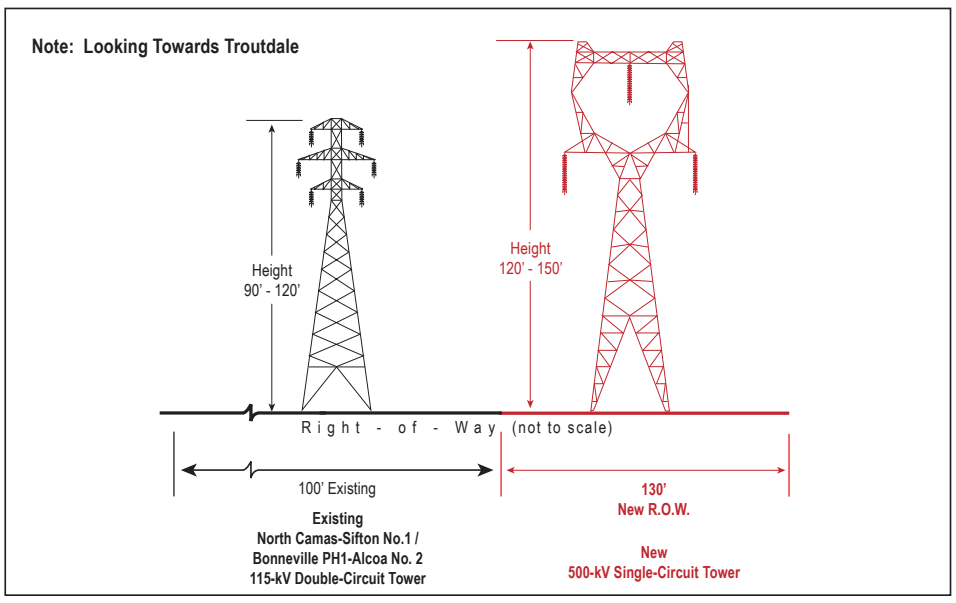
Figure B-21 Route Segment 50

Towers 50/5-50/13*, Towers 50/21-50/26

Existing. Double-Circuit North Camas-Sifton No.1 Line / Bonneville PH1-Alcoa No. 2 Line



Proposed. New Single-Circuit Tower Parallel to the North Camas-Sifton No.1 Line / Bonneville PH1-Alcoa No. 2 Line



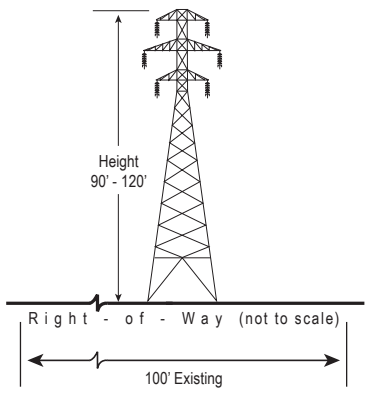
* Note: Towers 50/1-50/5 will require 150 feet of new right-of-way. See Figure B-1 for more information.

Figure B-21 Route Segment 50 (cont.)

Towers 50/13-50/21

Existing. Double-Circuit North Camas-Sifton No.1 Line / Bonneville PH1-Alcoa No. 2 Line

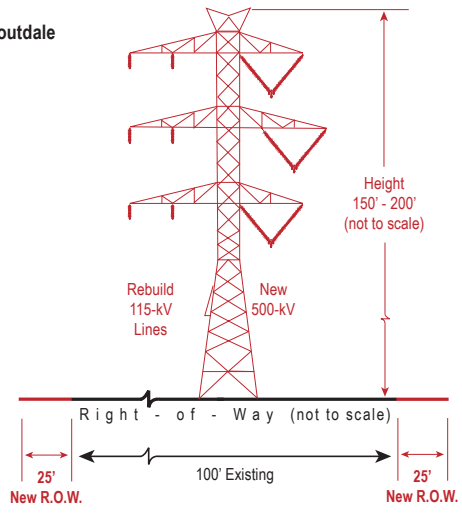
Note: Looking Towards Troutdale



Existing
North Camas-Sifton No.1 /
Bonneville PH1-Alcoa No. 2
115-kV Double-Circuit Tower

Proposed. New Triple-Circuit Tower Replacing Double-Circuit 115-kV Tower

Note: Looking Towards Troutdale



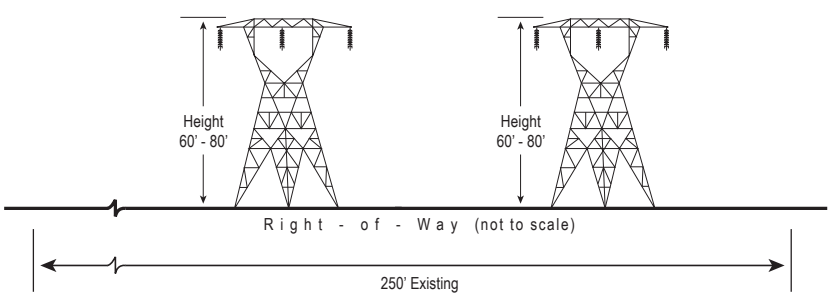
Rebuild
North Camas-Sifton No. 1/Bonneville PH1-Alcoa No. 2/
New 500-kV Triple-Circuit Tower

Figure B-22 Route Segment 51

Towers 51/1-51/11

Existing. Single-Circuit North Bonneville-Troutdale No. 1 Line Parallel to the North Bonneville-Troutdale No. 2 Line

Note: Looking Towards Troutdale

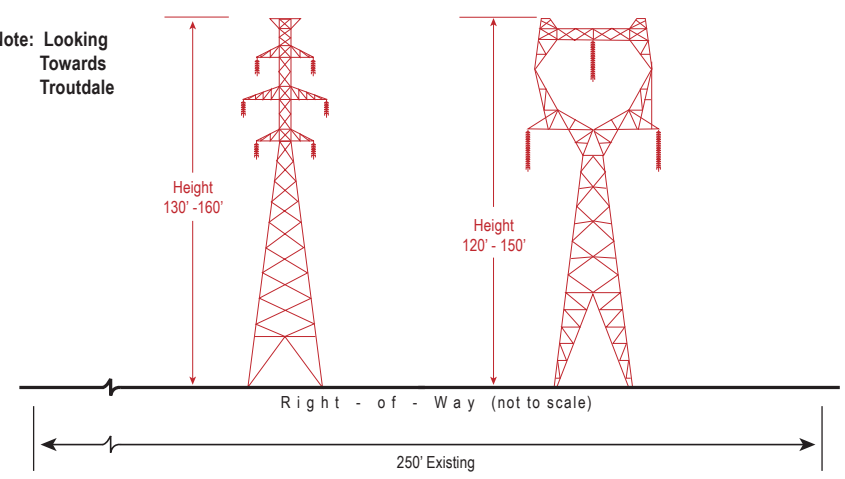


Existing
North Bonneville-Troutdale No. 1
230-kV Single-Circuit Tower

Existing
North Bonneville-Troutdale No. 2
230-kV Single-Circuit Tower

Proposed. New Single-Circuit Tower Parallel to the Rebuilt North Bonneville-Troutdale No. 1 Line / North Bonneville-Troutdale No. 2 Line

Note: Looking Towards Troutdale



Rebuild
North Bonneville-Troutdale No. 1 /
North Bonneville-Troutdale No. 2
230-kV Double-Circuit Tower

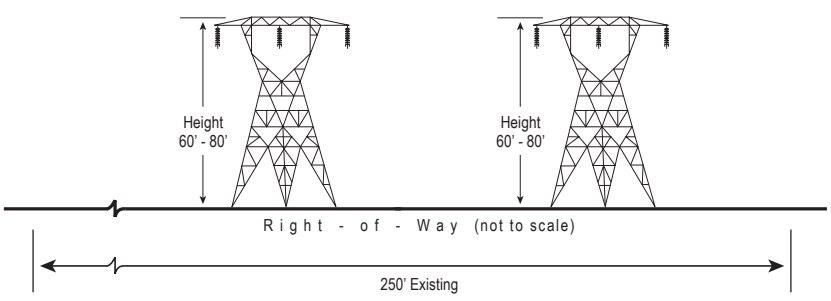
New
500-kV Single-Circuit Tower

Figure B-23 Route Segment 52

Towers 52/1-52/2, Towers 52/9-52/17*

Existing. Single-Circuit North Bonneville-Troutdale No. 1 Line Parallel to the North Bonneville-Troutdale No. 2 Line

Note: Looking Towards Troutdale

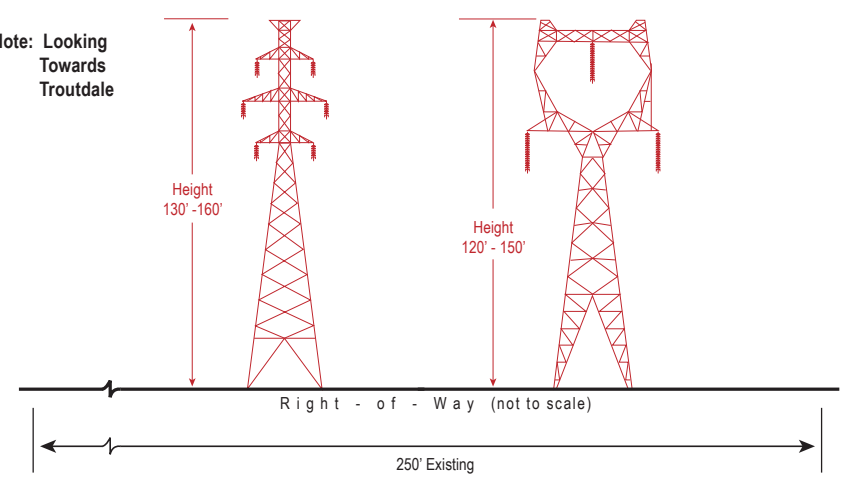


Existing
North Bonneville-Troutdale No. 1
230-kV Single-Circuit Tower

Existing
North Bonneville-Troutdale No. 2
230-kV Single-Circuit Tower

Proposed. New Single-Circuit Tower Parallel to the Rebuilt North Bonneville-Troutdale No. 1 Line / North Bonneville-Troutdale No. 2 Line

Note: Looking Towards Troutdale



Rebuild
North Bonneville-Troutdale No. 1 /
North Bonneville-Troutdale No. 2
230-kV Double-Circuit Tower

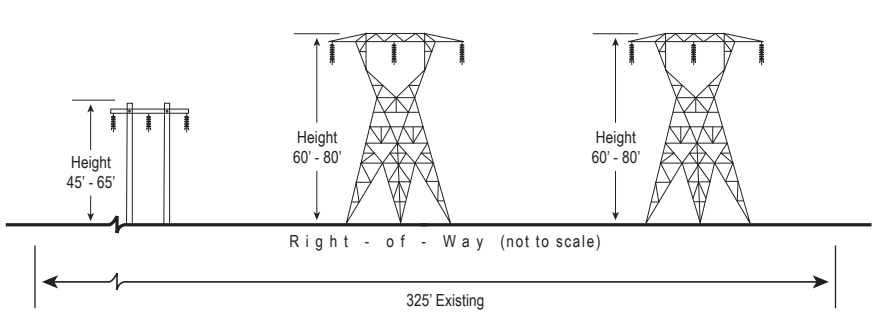
New
500-kV Single-Circuit Tower

* Note: Towers 52/17-52/20 and 52/22-52/24 will require 150 feet of new right-of-way. See figure B-1 for more information.

Towers 52/2-52/9

Existing. Single-Circuit North Bonneville-Troutdale No. 1 Line Parallel to the North Bonneville-Troutdale No. 2 Line

Note: Looking Towards Troutdale



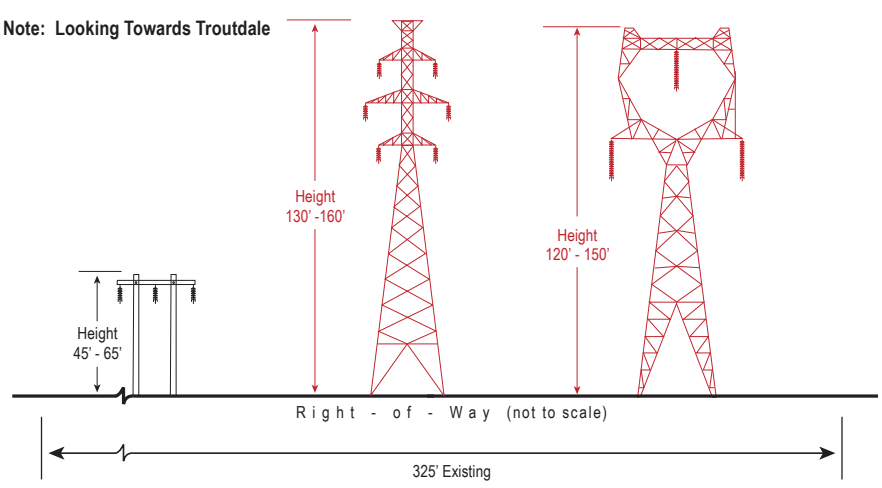
Existing
North Camas-Oak Park
115-kV Single-Circuit Structure

Existing
North Bonneville-Troutdale No. 1
230-kV Single-Circuit Tower

Existing
North Bonneville-Troutdale No. 2
230-kV Single-Circuit Tower

Proposed. New Single-Circuit Tower Parallel to the Rebuilt North Bonneville-Troutdale Nos. 1 and 2 Line

Note: Looking Towards Troutdale



Existing
North Camas-Oak Park
115-kV Single-Circuit Structure

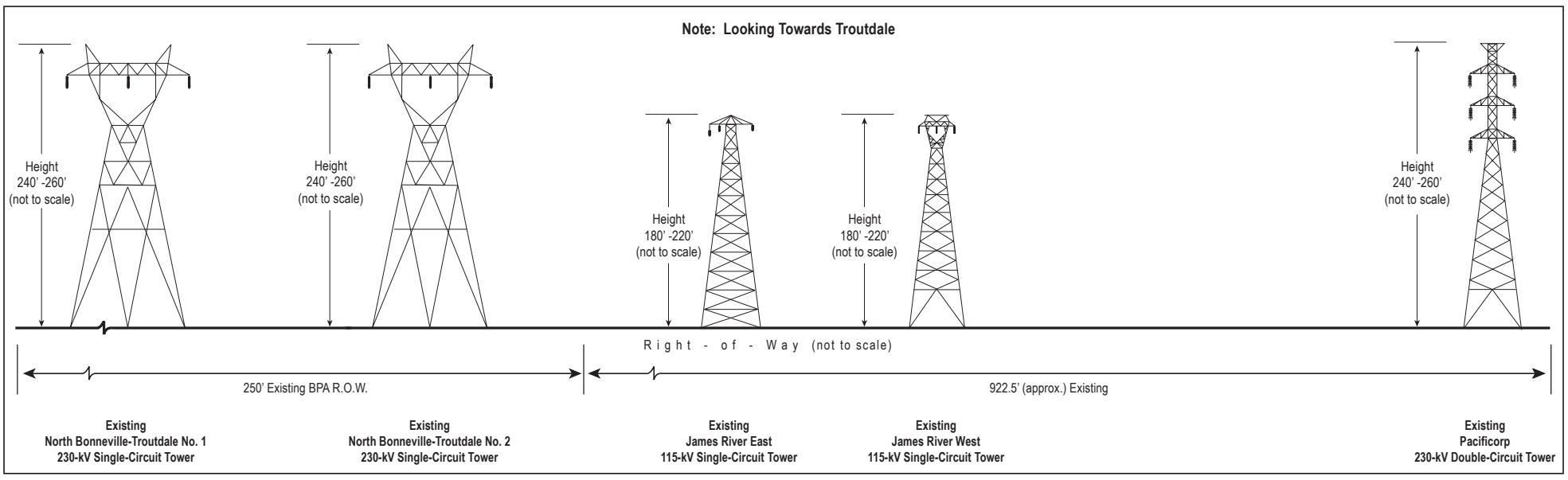
Rebuild
North Bonneville-Troutdale No. 1 /
North Bonneville-Troutdale No. 2
230-kV Double-Circuit Tower

New
500-kV Single-Circuit Tower

Figure B-23 Route Segment 52 (cont.)

Towers 52/20-52/22

Existing. Single-Circuit North Bonneville-Troutdale No. 1 Line Parallel to the North Bonneville-Troutdale No. 2 Line



Proposed. New Single-Circuit Tower Parallel Between Two Non-BPA Lines Across the Columbia River

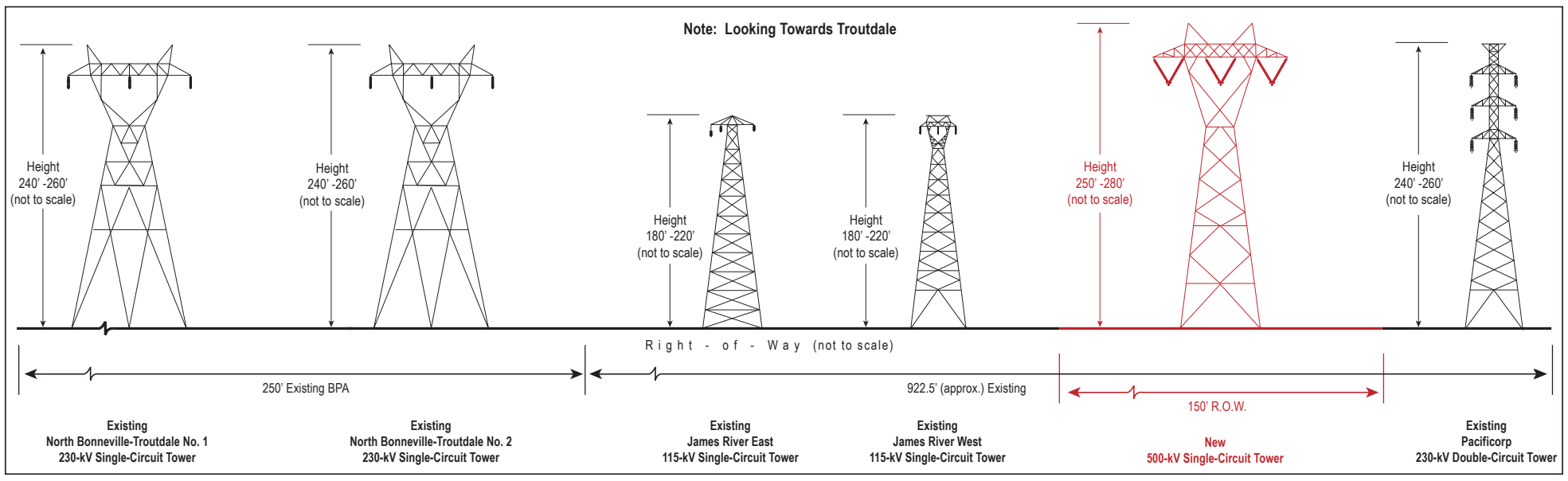
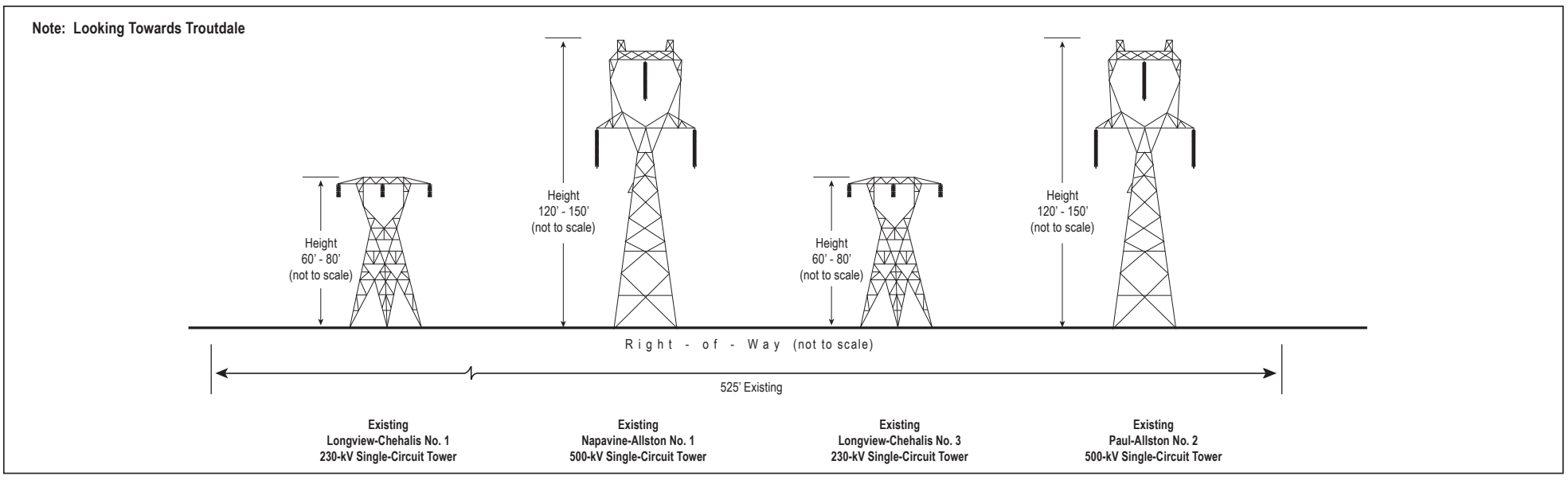


Figure B-24 Route Segment A

Towers A/1-A/9

Existing. Single-Circuit Longview-Chehalis No. 1 Line Parallel to the Napavine-Allston No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the Longview-Chehalis No. 1 Line

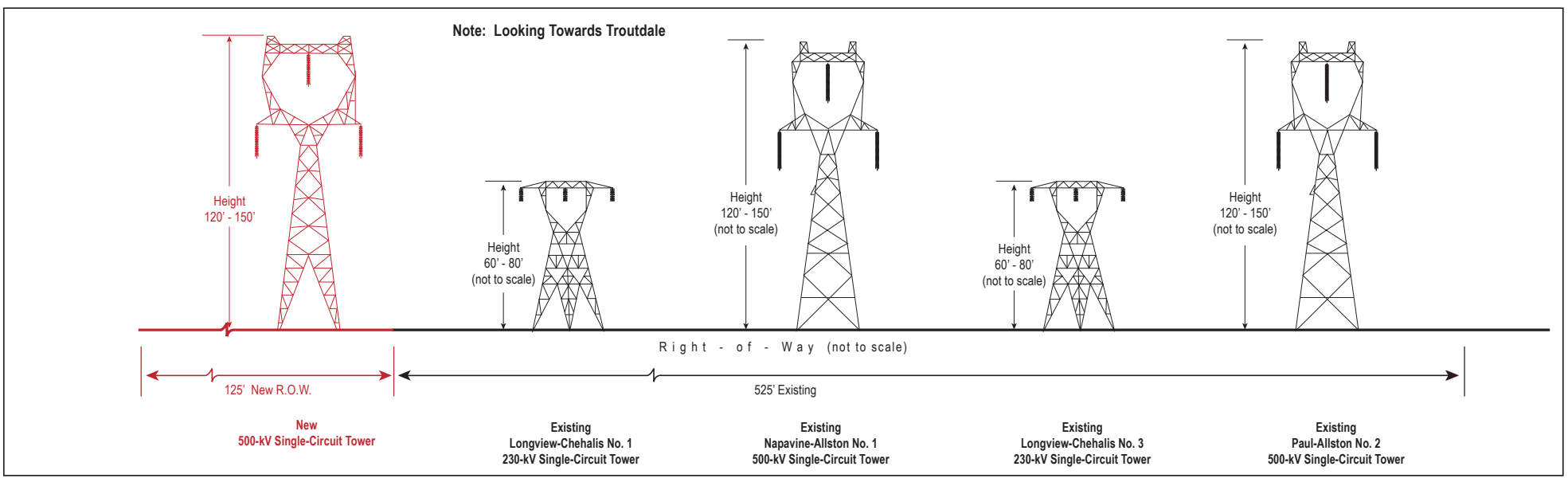
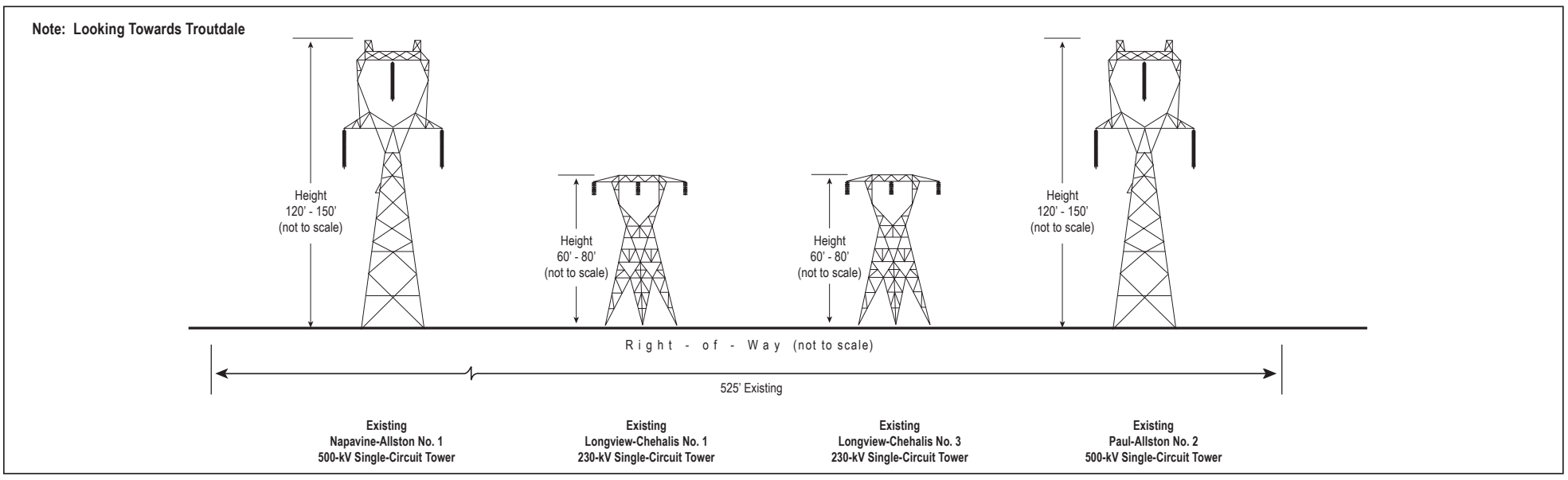


Figure B-24 Route Segment A (cont.)

Towers A/9-A/12

Existing. Single-Circuit Napavine-Allston No. 1 Line Parallel to the Longview-Chehalis No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the Napavine-Allston No. 1 Line

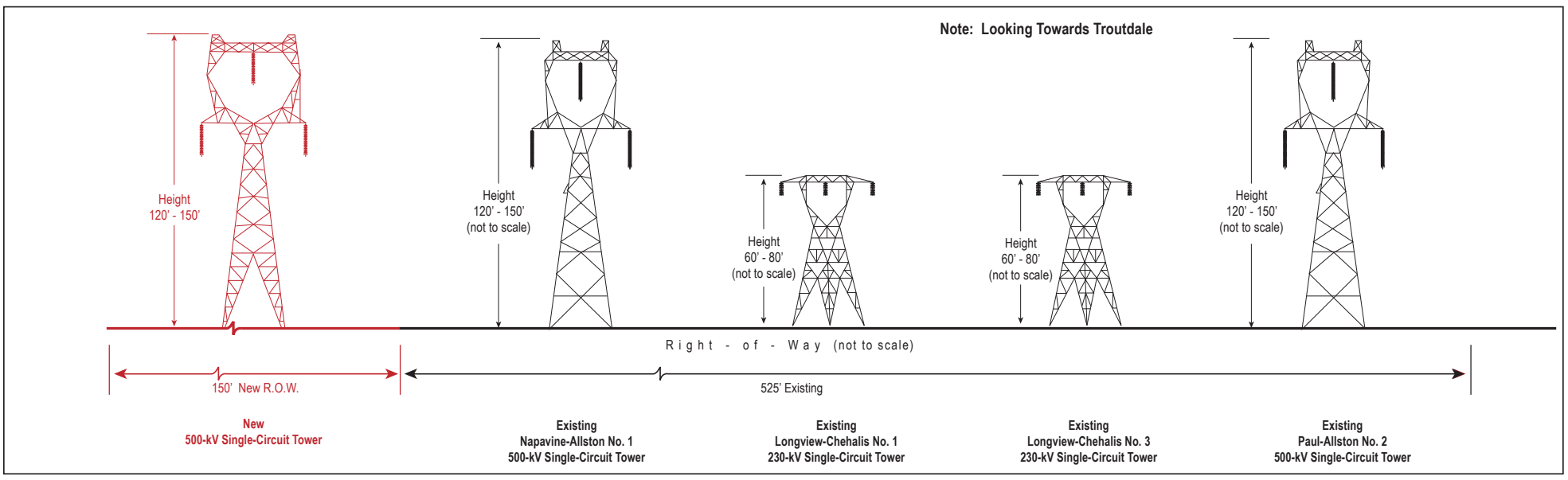
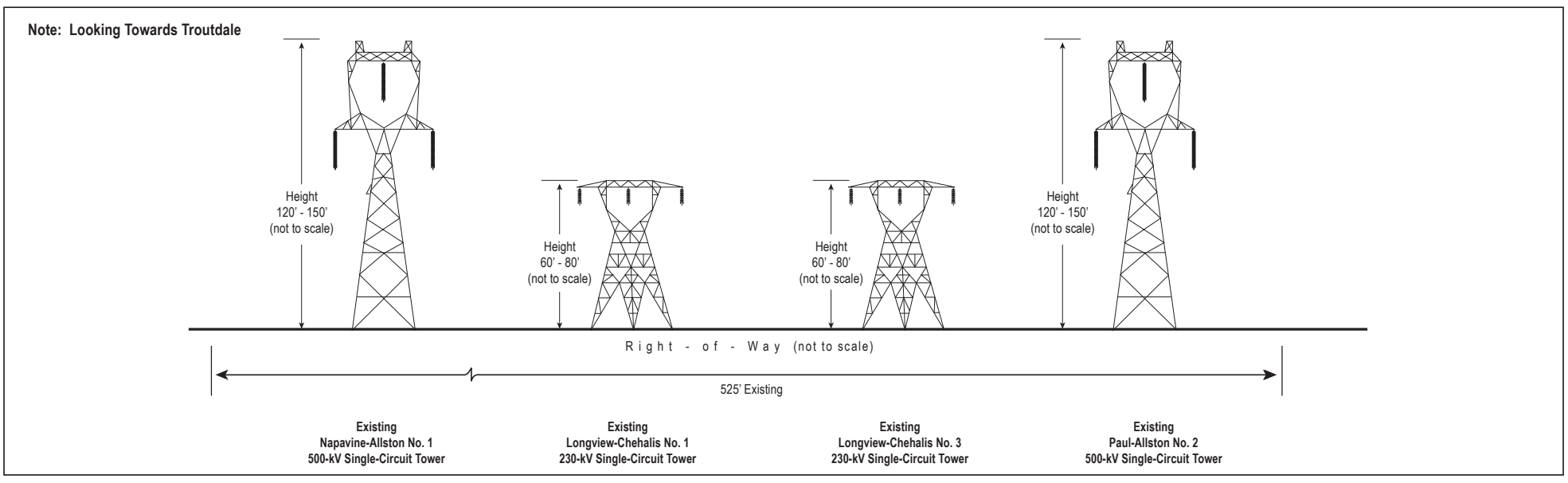


Figure B-25 Route Segment C

Towers C/1-C/17

Existing. Single-Circuit Napavine-Allston No. 1 Line Parallel to the Longview-Chehalis No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the Rebuilt Longview-Chehalis Nos. 1 and 3 Lines

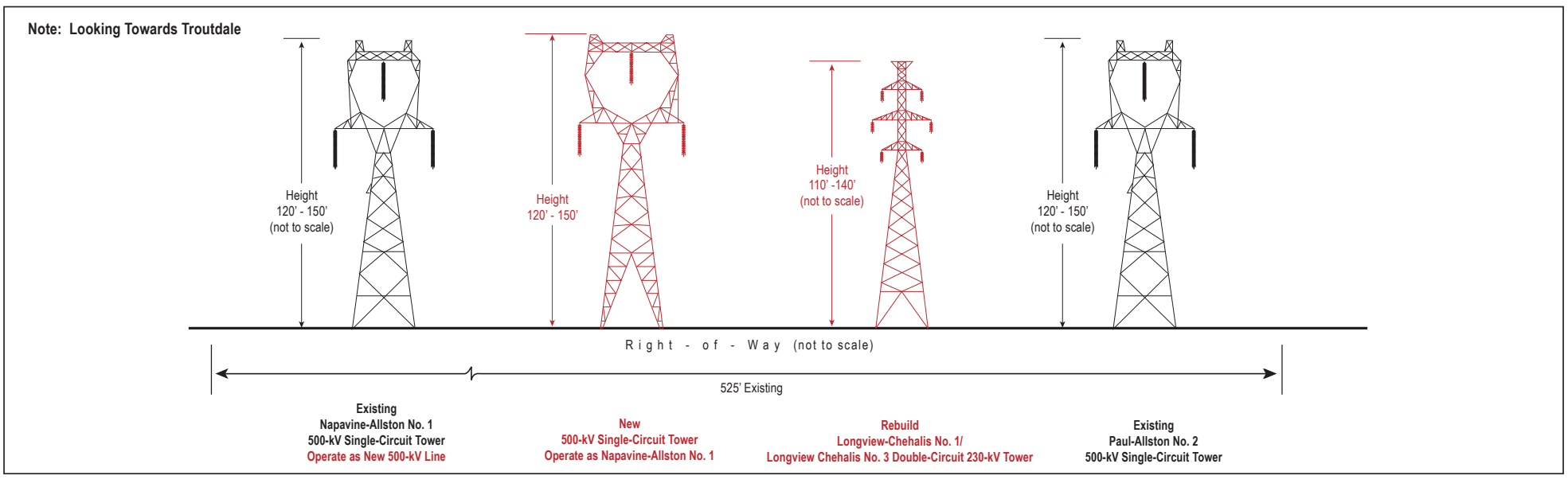
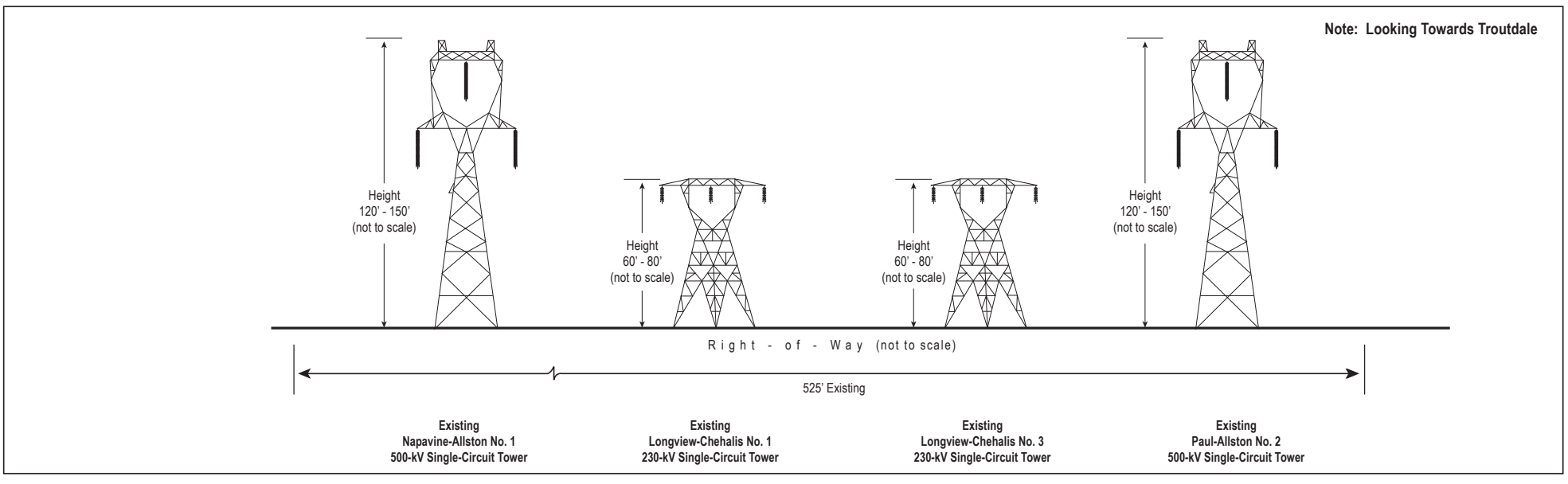


Figure B-26 Route Segment D

Towers D/1-D/17

Existing. Single-Circuit Napavine-Allston No. 1 Line Parallel to the Longview-Chehalis No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the Napavine-Allston No. 1 Line

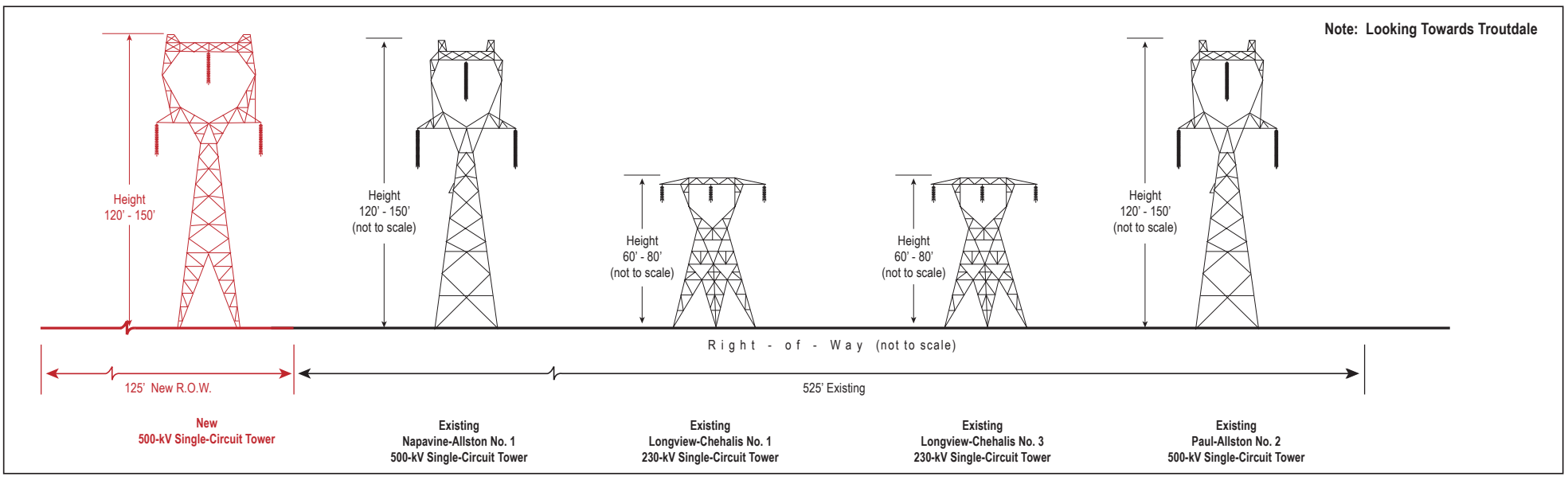
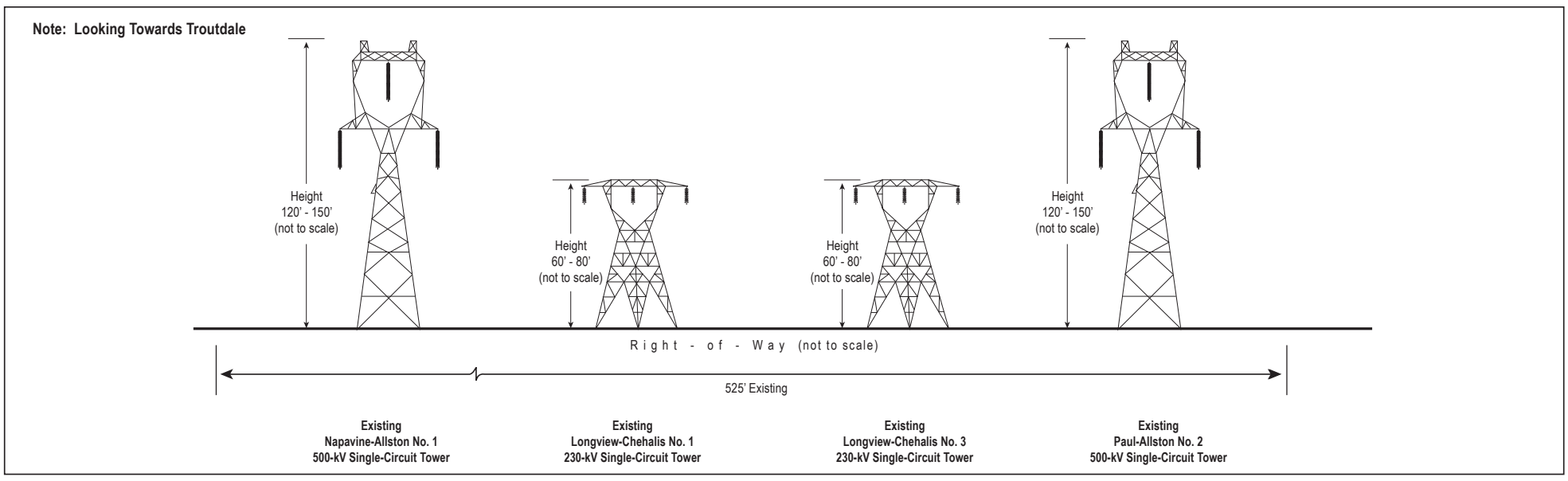


Figure B-27 Route Segment E

Towers E/1-E/6

Existing. Single-Circuit Napavine-Allston No. 1 Line Parallel to the Longview-Chehalis No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the Rebuilt Longview-Chehalis Nos. 1 and 3 Lines

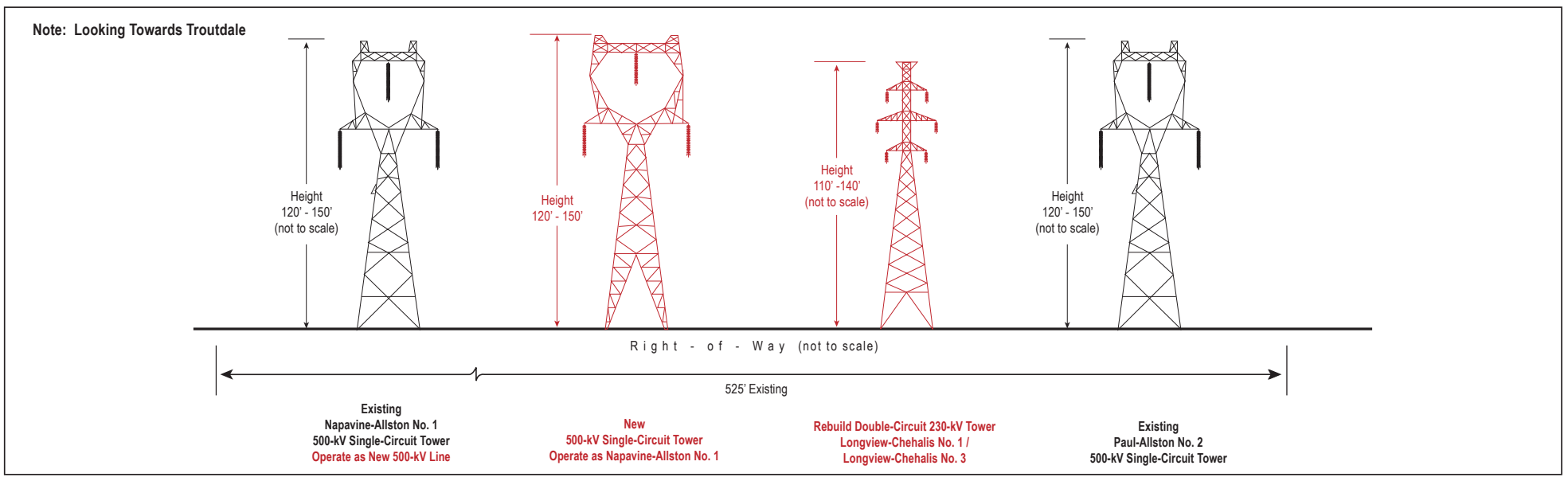
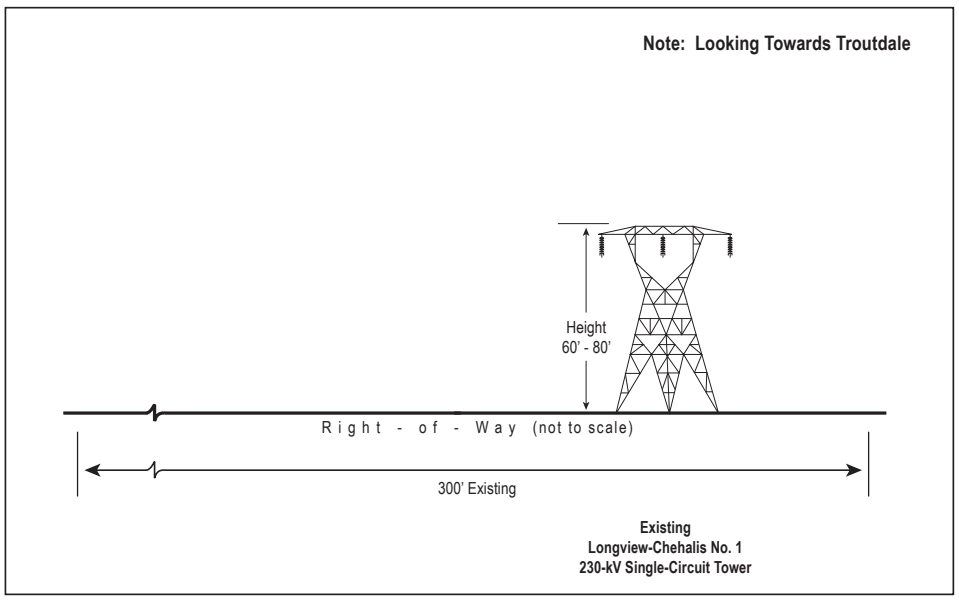


Figure B-27 Route Segment E (cont.)

Towers E/6-E/7

Existing. Single-Circuit Structure Lexington-Delameter No. 1 Line Parallel to the Longview-Chehalis No. 1 Line



Proposed. New Single-Circuit Tower Replacing Lexington-Delameter No. 1 Line Parallel to the Longview-Chehalis No. 1 Line

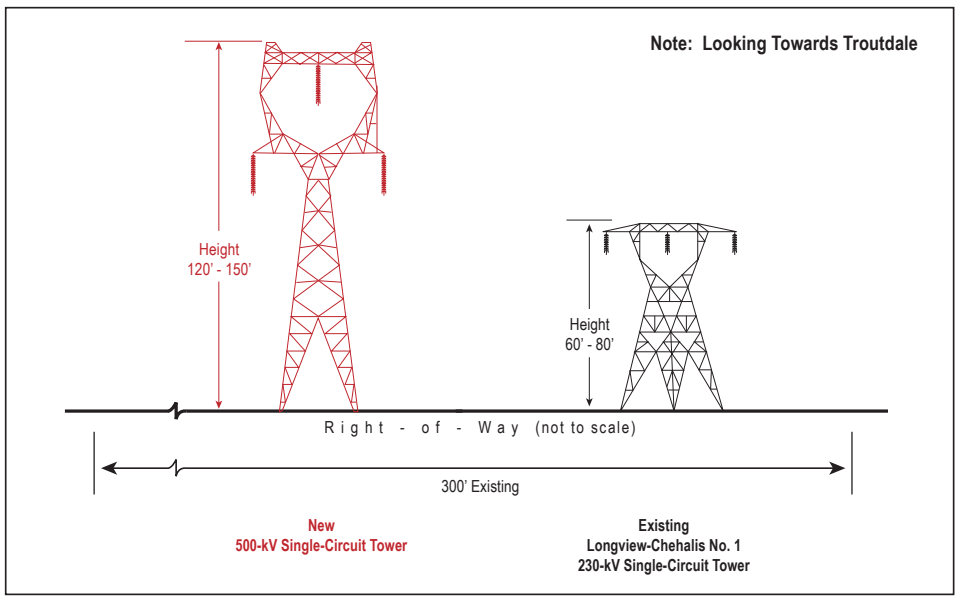
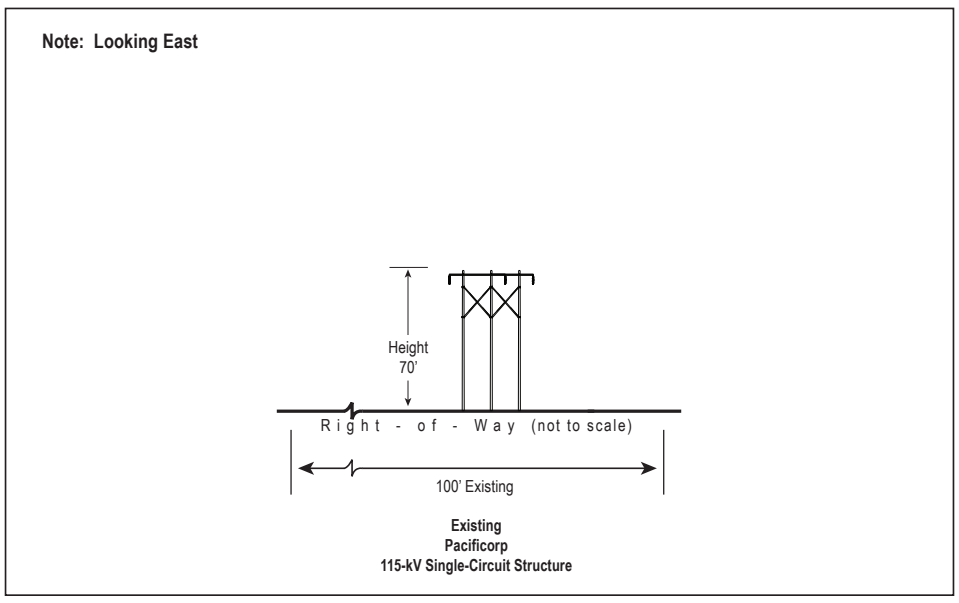


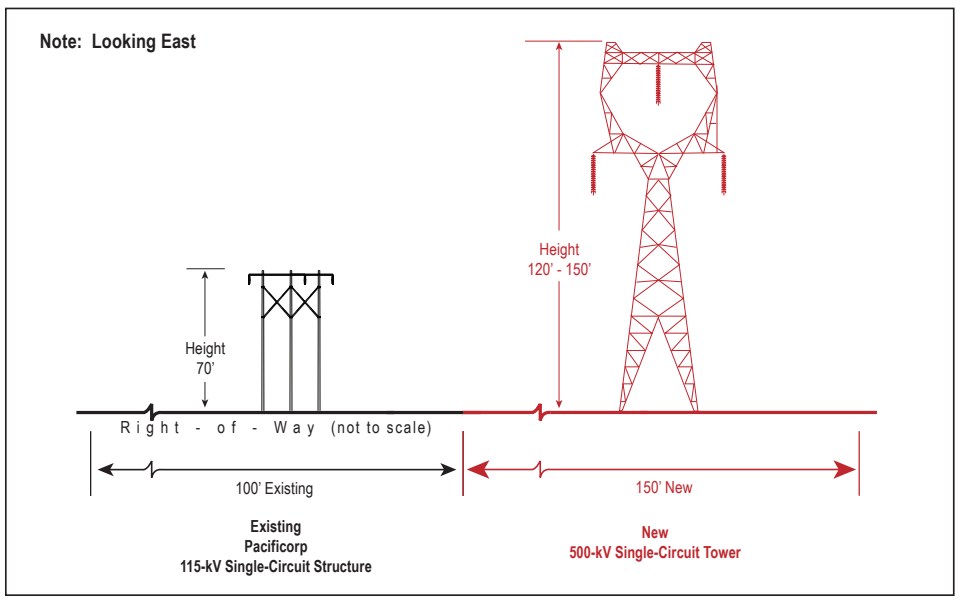
Figure B-28 Route Segment L

Towers L/5-L/9*

Existing. Single-Circuit Structure Pacificorp 115-kV Line



Proposed. New Single-Circuit Tower Parallel to the Pacificorp 115-kV Line

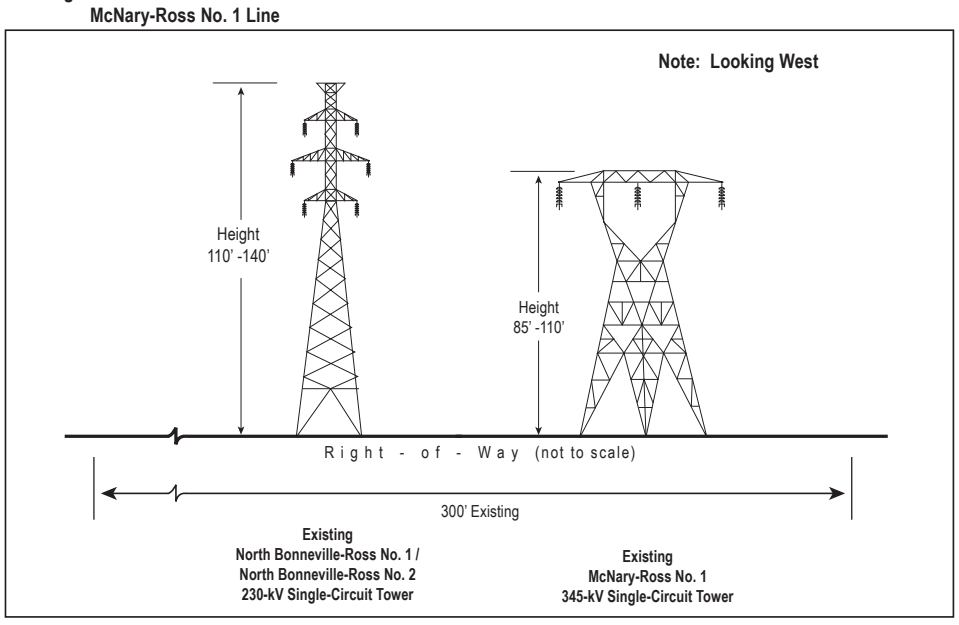


* Note: Towers L/1-L/5 will require 150 feet of new right-of-way. See Figure B-1 for more information.

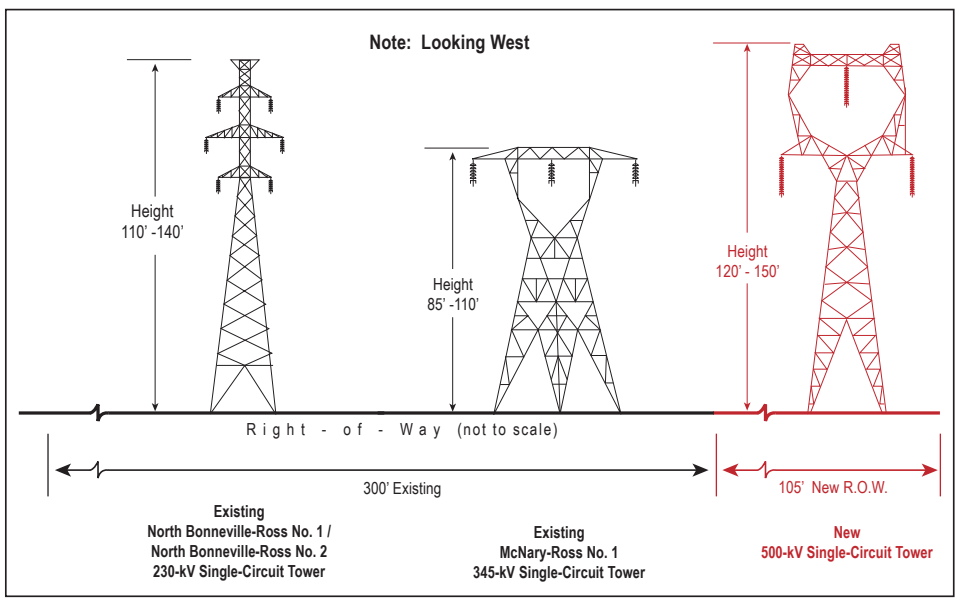
Figure B-29 Route Segment R

Towers R/10-R/19*

Existing. Double-Circuit North Bonneville-Ross No. 1 / North Bonneville-Ross No. 2 Line Parallel to the McNary-Ross No. 1 Line



Proposed. New Single-Circuit Tower Parallel to the McNary-Ross No. 1 Line



* Note: Towers R/1-R/10 will require 150 feet of new right-of-way. See Figure B-1 for more information.