

Table 1: Physical and electrical characteristics of Schultz-Hanford Area Project configurations (4 pages).

Segment-Configuration	New Configurations			
	A-1	A-2	A-3	
Line Description	Schultz-Hanford 500-kV Only	Sickler-Schultz 500-kV Only	Sickler-Schultz 500-kV	Rocky Reach- Maple Valley 345-kV
Voltage, kV Maximum/Average¹	550/540	550/540	550/540	362/358
Peak current, A Existing/Proposed²	— /1436	— /-1478	— /-1478	-459/-470
Electric phasing	BAC	BAC	BAC	ABC
Clearance, ft. minimum/Average¹	33/47	33/47	33/47	31/45
Centerline distance-direction from Schultz – Hanford 500-kV Line, ft.	—	N/A	N/A	150-S ³
Centerline distance to edge of ROW, ft.	75	75	75	75
Tower configuration	Delta	Delta	Delta	Flat
Phase spacing, ft.	40 H, 28.7 V	40H, 27.5V	40H, 27.5V	36H
Conductor: #/diameter, in.; spacing, in.	3/1.302; 17.04	2/1.602; 18	2/1.602; 18	1/1.602

1 Average voltage and average clearance used for corona calculations.

2 Minus sign indicates current flow in opposite direction to flow in parallel proposed Schultz – Hanford line.

3 Distance from centerline of realigned Sickler-Schultz 500-kV line.

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Table 1, continued

		Existing Configurations					
Segment-Configuration		A-4					
Line Description	Grand Coulee-Schultz 500-kV DC (DC)		Columbia-Ellensburg 115-kV	Covington-Columbia #3 & Olympia-Grand Coulee DC		Sickler-Schultz 500-kV ⁴	Vantage-Schultz 500-kV ³
	#2	#1		230-kV	287-kV		
Voltage, kV Maximum/Average ¹	550/540	550/540	121/117	242/235	301/292	550/540	550/540
Peak current, A Existing/Proposed ²	-1470/-1653	-1470/-1653	-477/-453	-316/-341	-494/-486	-1338/—	1355/738
Electric phasing	BAC	BCA	CBA	BCA	BAC	BAC	ABC
Clearance, ft. minimum/Average ¹	33/47	33/47	25/35	30/42	30/42	33/47	33/47
Centerline distance-direction from Schultz-Hanford 500-kV line, ft.	500-N		375-N	250-N		125-N	0 ³
Centerline distance to edge of ROW, ft.	62.5	—	—	—	—	—	75
Tower configuration	Vertical	Vertical	Flat	Vertical	Vertical	Delta	Flat
Phase spacing, ft.	36.5, 56.5, 36.5H; 36V	36.5, 56.5, 36.5H; 36V	12H	31, 47, 31H; 21V	31, 47, 31H; 21V	40H, 27.5V	49H
Conductor: #/Diameter, in. ; spacing, in.	3/1.602; 17.04	3/1.602; 17.04	1/1.108	1/1.382	1/1.382	2/1.602; 18	1/2.50

1 Average voltage and average clearance used for corona calculations.

2 Minus sign indicates current flow in opposite direction to flow in parallel proposed Schultz – Hanford line.

4 Proposed Schultz-Hanford/Wautoma 500-kV line will replace existing Vantage-Schultz 500-kV and existing Vantage-Schultz 500-kV will replace Sickler-Schultz 500-kV. Sickler-Schultz 500-kV will be realigned north of Schultz substation (Configurations A-2 and A-3).

Table 1, continued

Segment-Configuration	Existing Configurations				
	D-1	D-2			
Line Description	Vantage-Midway 230-kV	N. Bonneville- Midway 230-kV	Midway-Moxee 115-kV	Midway- Grandview 115-kV	Big Eddy- Midway 230-kV
Voltage, kV	242/235	242/235	121/117	121/117	242/235
Maximum/Average¹					
Peak current, A	609/593	537/518	153/154	308/293	779/730
Existing/Proposed²					
Electric phasing	ABC	ABC	ABC	ABC	ABC
Clearance, ft.	30/42	30/42	25/35	25/35	30/42
minimum/Average¹					
Centerline distance-direction from Schultz-Wautoma 500-kV line, ft.	125-E	375-E	287.5-E	237.5-E	137.5-E
Centerline distance to edge of ROW, ft.	50	187.5	—	—	62.5
Tower configuration	Flat	Flat	Flat	Flat	Flat
Phase spacing, ft.	27H	27H	12H	12H	27H
Conductor: #/Diameter, in.; spacing, in.	1/1.0	1/1.108	1/0.655	1/0.563	1/1.382

1 Average voltage and average clearance used for corona calculations.

2 Minus sign indicates current flow in opposite direction to flow in parallel proposed Schultz – Hanford line.

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Table 1, continued:

		Existing Configurations			
Segment-Configuration		D-3			D-4
Line Description		N. Bonneville-Midway 230-kV	Midway-Grandview 115-kV	Big Eddy-Midway 230-kV	Big Eddy-Midway 230-kV
Voltage, kV		242/235	121/117	242/235	242/235
Maximum/Average¹					
Peak current, A		537/518	308/293	779/730	779/730
Existing/Proposed²					
Electric Phasing		ABC	ABC	ABC	ABC
Clearance, ft.		30/42	25/35	30/42	30/42
minimum/Average¹					
Centerline distance-direction from Schultz–Wautoma 500-kV line, ft.		325-E	237.5-E	137.5-E	137.5-E
Centerline distance to edge of ROW, ft.		187.5	—	62.5	62.5
Tower configuration		Flat	Flat	Flat	Flat
Phase spacing, ft.		27H	12H	27H	27H
Conductor: #/diameter, in. ; spacing, in.		1/1.108	1/0.563	1/1.382	1/1.382

1 Average voltage and average clearance used for corona calculations.

2 Minus sign indicates current flow in opposite direction to flow in parallel proposed Schultz – Hanford line.

Table 2: Possible segment configurations for Schultz - Hanford Area Project

Segment-Configuration	Description of other lines in corridor with Schultz-Hanford/Wautoma 500-kV line	Possible segments with same configuration	Miles
A-1	Schultz-Hanford/Wautoma 500-kV line only	A, B, C, E, F	22.4, 10.3, 30.6, 23.8, 31.9
A-2	Realigned Sickler-Schultz 500-kV only. (No Schultz-Hanford/Wautoma 500-kV)	A	1.0
A-3	Realigned Sickler-Schultz 500-kV Rocky Reach-Maple Valley 345-kV (No Schultz-Hanford/Wautoma 500-kV)	A	1.15
A-4	Grand Coulee-Schultz #2 and #1 DC 500-kV Columbia-Ellensburg 115-kV Covington-Columbia #3 230-kV/ Olympia-Grand Coulee 287-kV DC Vantage-Schultz 500-kV	A	1.88
D-1	Vantage-Midway 230-kV	D	19.4
D-2	N. Bonneville-Midway 230-kV Midway-Moxee 115-kV Midway-Grandview 115-kV Big Eddy-Midway 230-kV	D	4.51
D-3	N. Bonneville-Midway 230-kV Midway-Grandview 115-kV Big Eddy-Midway 230-kV	D	1.19
D-4	Big Eddy-Midway 230-kV	D	2.2

Table 3: Calculated electric fields for configurations of the proposed Schultz–Hanford/Wautoma 500-kV line operated at maximum voltage.
 Configurations are described in Tables 1 and 2. (6 pages)

a) Configuration A-1: Schultz – Hanford 500-kV line only

Configuration	Proposed A-1		Existing	
ROW width, ft.	150			—
Line	Schultz–Hanford/Wautoma 500-kV			—
Clearance	min.	avg.	—	—
Peak field, kV/m	8.9	4.9	—	—
Edge of ROW, kV/m	2.0	2.0	—	—

b) Configuration A-2: Realigned Sickler-Schultz - 500-kV line only

Configuration	Proposed A-2		Existing	
ROW width, ft. (m)	150 (46)			—
Line	Sickler-Schultz 500-kV			—
Clearance	min.	avg.	—	—
Peak field, kV/m	8.4	4.6	—	—
Edge of ROW, kV/m	1.8	1.8	—	—

c) Configuration A-3: Realigned Sickler-Schultz 500-kV and Rocky Reach-Maple Valley 345-kV lines

Configuration	Proposed A-3				Existing A-3	
ROW width, ft.	300				150	
Line	Sickler-Schultz 500-kV		Rocky Reach-Maple Valley 345-kV		Rocky Reach-Maple Valley 345-kV	
Clearance	min.	avg.	min.	avg.	min.	avg.
Peak field, kV/m	8.5	4.7	5.4	3.1	5.2	2.9
Edge of ROW, kV/m	1.9	1.9	2.1	1.9	2.0	1.8

Table 3, continued

d) Configuration A-4: Schultz-Hanford/Wautoma 500-kV line and six existing lines east of Schultz Substation

Configuration		Proposed A-4								
ROW width, ft.		637.5								
Line		Grand Coulee-Schultz DC 500-kV	Columbia-Ellensburg 115-kV	Covington-Columbia #3/Olympia-Grand Coulee 230-/287-kV DC		Vantage-Schultz 500-kV	Schultz-Hanford/Wautoma 500-kV			
Clearance	min	avg.	min	Avg.	min.	avg.	min	avg.	min	avg.
Peak field, kV/m	9.7	5.9	1.7	1.0	2.9/3.2	1.8/1.8	8.6	4.6	8.8	4.9
Edge of Row, kV/m	2.1	2.1	—	—	—	—	—	—	2.0	2.0

Configuration		Existing A-4								
ROW width, ft.		637.5								
Line		Grand Coulee-Schultz 500-kV DC	Columbia-Ellensburg 115-kV	Covington-Columbia #3/Olympia-Grand Coulee 230-/287-kV DC		Sickler-Schultz 500-kV	Vantage-Schultz 500-kV			
Clearance	min	avg.	min	avg.	min	avg.	min.	Avg.	min	avg.
Peak field, kV/m	9.7	5.9	1.7	1.0	2.9/3.2	1.8/1.8	8.5	4.5	8.4	5.1
Edge of Row, kV/m	2.1	2.1	—	—	—	—	—	—	5.2	4.0

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e) Configuration D-1: Schultz-Wautoma 500-kV and Vantage-Midway 230-kV lines

Configuration	Proposed D-1				Existing D-1	
ROW width, ft.	250				100	
Line	Vantage-Midway 230-kV		Schultz-Wautoma 500- kV		Vantage-Midway 230-kV	
Clearance	min.	avg.	min.	avg.	min.	avg.
Peak field, kV/m	3.3	2.0	8.9	5.0	3.1	1.8
Edge of ROW, kV/m	2.2	1.7	2.0	2.0	2.0	1.5

Table 3, continued

f) Configuration D-2: Schultz-Wautoma 500-kV and four existing parallel lines south of Midway Substation

Segment-Configuration		Proposed D-2									
ROW width, ft.		575									
Line		N. Bonneville-Midway 230-kV	Midway-Moxee 115-kV		Midway-Grandview 115-kV		Big Eddy-Midway 230-kV		Schultz-Wautoma 500-kV		
Clearance	min.	avg.	min.	avg.	min.	avg.	min.	avg.	min.	avg.	
Peak field, kV/m	3.2	1.9	0.9	0.4	0.9	0.4	3.2	1.9	8.9	5.0	
Edge of ROW, kV/m	0.1	0.1	—	—	—	—	—	—	2.0	2.0	

Segment-Configuration		Existing D-2							
ROW width, ft.		487.5							
Line		N. Bonneville-Midway 230-kV	Midway-Moxee 115-kV		Midway-Grandview 115-kV		Big Eddy-Midway 230-kV		
Clearance	min.	avg.	min.	avg.	Min.	avg.	min.	avg.	
Peak field, kV/m	3.2	1.9	0.8	0.4	1.0	0.4	3.3	1.9	
Edge of ROW, kV/m	0.1	0.1	—	—	—	—	1.4	1.2	

Table 3, continued

g) Configuration D-3: Schultz-Wautoma 500-kV and three existing parallel lines south of Midway Substation

Segment-Configuration	Proposed D-3							
ROW width, ft.	525							
Line Description	N. Bonneville-Midway 230-kV		Midway-Grandview 115-kV		Big Eddy-Midway 230-kV		Schultz-Wautoma 500-kV	
Clearance	min.	avg.	Min.	avg.	min.	avg.	min.	Avg.
Peak field, kV/m	3.2	1.9	0.9	0.4	3.2	1.8	8.9	5.0
Edge of ROW, kV/m	0.1	0.1	—	—	—	—	2.0	2.0

Segment-Configuration	Existing D-3					
ROW width, ft.	437.5					
Line Description	N. Bonneville-Midway 230-kV		Midway-Grandview 115-kV		Big Eddy-Midway 230-kV	
Clearance	min.	avg.	min.	avg.	min.	avg.
Peak field, kV/m	3.2	1.9	1.0	0.4	3.3	1.9
Edge of ROW, kV/m	0.1	0.1	—	—	1.4	1.2

Table 3, continued

h) Configuration D-4: Schultz-Wautoma 500-kV and Midway-Big Eddy 230-kV lines.

Segment-Configuration	Proposed D-4				Existing D-4	
ROW width, ft.	275				125	
Line	Midway-Big Eddy 230-kV		Schultz-Wautoma 500-kV		Midway-Big Eddy 230-kV	
Clearance	min.	avg.	min.	avg.	min.	avg.
Peak field, kV/m	3.4	2.0	8.9	4.9	3.2	1.9
Edge of ROW, kV/m	1.5	1.3	2.0	2.0	1.3	1.2

Table 4: Calculated magnetic fields for configurations of the proposed Schultz-Hanford/Wautoma 500-kV line operated at maximum current.
 Configurations are described in Tables 1 and 2. (4 pages)

a) Configuration A-1: Schultz–Hanford 500-kV line only

Configuration	Proposed A-1		Existing	
ROW width, ft.	150		—	
Line	Schultz–Hanford/Wautoma 500-kV		—	
Clearance	Min.	avg.	—	—
Peak field, mG	244	137	—	—
Edge of ROW, mG	55	46	—	—

b) Configuration A-2: Realigned Sickler-Schultz - 500-kV line only

Configuration	Proposed A-2		Existing	
ROW width, ft.	150		—	
Line	Sickler-Schultz 500-kV		—	
Clearance	min.	avg.	—	—
Peak field, mG	262	145	—	—
Edge of ROW, mG	57	48	—	—

c) Configuration A-3: Realigned Sickler-Schultz 500-kV and Rocky Reach-Maple Valley 345-kV lines

Configuration	Proposed A-3				Existing A-3	
ROW width, ft.	300				150	
Line	Sickler-Schultz 500-kV		Rocky Reach-Maple Valley 345-kV		Rocky Reach-Maple Valley 345-kV	
Clearance	min.	avg.	min.	avg.	min.	avg.
Peak field, mG	257	141	111	69	101	62
Edge of ROW, mG	60	50	40	33	35	28

Table 4, continued

d) Configuration A-4: Schultz-Hanford/Wautoma 500-kV line and six existing lines east of Schultz Substation

Configuration	Proposed A-4									
ROW width, ft.	637.5									
Line	Grand Coulee-Schultz DC 500-kV	Columbia-Ellensburg 115-kV	Covington-Columbia #3/Olympia-Grand Coulee 230-/287-kV DC		Vantage-Schultz 500-kV	Schultz-Hanford/Wautoma 500-kV				
Clearance	min	avg.	min	avg.	min.	avg.	min	Avg.	min	avg.
Peak field, mG	233	150	112	87	68	42	122	69	239	134
Edge of Row, mG	138	109	—	—	—	—	—	—	60	51

Configuration	Existing A-4									
ROW width, ft.	637.5									
Line	Grand Coulee-Schultz 500-kV DC	Columbia-Ellensburg 115-kV	Covington-Columbia #3/Olympia-Grand Coulee 230-/287-kV DC		Sickler-Schultz 500-kV	Vantage-Schultz 500-kV				
Clearance	min.	avg.	min	avg.	min	avg.	min.	avg.	Min.	avg.
Peak field, mG	206	132	108	85	90	69	253	190	302	203
Edge of Row, mG	121	94	—	—	—	—	—	—	158	119

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e) Configuration D-1: Schultz-Wautoma 500-kV and Vantage-Midway 230-kV lines

Configuration	Proposed D-1				Existing D-1	
ROW width, ft.	250				100	
Line	Vantage-Midway 230-kV		Schultz-Wautoma 500-kV		Vantage-Midway 230-kV	
Clearance	min.	avg.	min.	avg.	min.	avg.
Peak field, mG	139	89	239	132	133	84
Edge of ROW, mG	72	55	59	49	67	49

Table 4, continued

f) Configuration D-2: Schultz-Wautoma 500-kV and four existing parallel lines south of Midway Substation

Segment-Configuration		Proposed D-2									
ROW width, ft.		637.5									
Line		N. Bonneville-Midway 230-kV		Midway-Moxee 115-kV		Midway-Grandview 115-kV		Big Eddy-Midway 230-kV		Schultz-Wautoma 500-kV	
Clearance		min.	avg.	min.	avg.	min.	avg.	min.	avg.	min.	avg.
Peak field, mG		109	66	37	20	40	20	158	98	237	130
Edge of ROW, mG		7	7	—	—	—	—	—	—	60	50

Segment-Configuration		Existing D-2							
ROW width, ft.		487.5							
Line		N. Bonneville-Midway 230-kV		Midway-Moxee 115-kV		Midway-Grandview 115-kV		Big Eddy-Midway 230-kV	
Clearance		min.	avg.	min.	Avg.	min.	avg.	Min.	avg.
Peak field, mG		112	68	38	21	40	18	165	101
Edge of ROW, mG		7	7	—	—	—	—	62	50

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Table 4, continued

g) Configuration D-3: Schultz-Wautoma 500-kV and three existing parallel lines south of Midway Substation

Segment-Configuration	Proposed D-3							
ROW width, ft.	587.5							
Line Description	N. Bonneville-Midway 230-kV		Midway-Grandview 115-kV		Big Eddy-Midway 230-kV		Schultz-Wautoma 500-kV	
Clearance	min.	avg.	min.	avg.	min.	avg.	Min.	avg.
Peak field, mG	108	66	58	35	157	97	237	130
Edge of ROW, mG	7	7	—	—	—	—	60	50

Segment-Configuration	Existing D-3					
ROW width, ft.	437.5					
Line Description	N. Bonneville-Midway 230-kV		Midway-Grandview 115-kV		Big Eddy-Midway 230-kV	
Clearance	min.	avg.	Min.	avg.	min.	avg.
Peak field, mG	111	67	58	33	165	101
Edge of ROW, mG	7	7	—	—	62	50

Table 4, continued

h) Configuration D-4: Schultz-Wautoma 500-kV and Midway-Big Eddy 230-kV lines.

Segment-Configuration	Proposed D-4				Existing D-4	
ROW width, ft.	275				125	
Line	Midway-Big Eddy 230-kV		Schultz-Wautoma 500-kV		Midway-Big Eddy 230-kV	
Clearance	min.	avg.	min.	avg.	min.	avg.
Peak field, mG	167	106	238	131	170	107
Edge of ROW, mG	60	50	59	49	59	47

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Table 5: States with transmission-line field limits

STATE AGENCY	WITHIN RIGHT-OF- WAY	AT EDGE OF RIGHT-OF- WAY	COMMENTS
a. 60-Hz ELECTRIC FIELD LIMIT, kV/m			
Florida Department of Environmental Regulation	8 (230 kV) 10 (500 kV)	2	Codified regulation, adopted after a public rulemaking hearing in 1989.
Minnesota Environmental Quality Board	8	—	12-kV/m limit on the HVDC nominal electric field.
Montana Board of Natural Resources and Conservation	7 ¹	1 ²	Codified regulation, adopted after a public rulemaking hearing in 1984.
New Jersey Department of Environmental Protection	—	3	Used only as a guideline for evaluating complaints.
New York State Public Service Commission	11.8 (7,11) ¹	1.6	Explicitly implemented in terms of a specified right-of-way width.
Oregon Facility Siting Council	9	—	Codified regulation, adopted after a public rulemaking hearing in 1980.
b. 60-Hz MAGNETIC FIELD LIMIT, mG			
Florida Department of Environmental Regulation	—	150 (230 kV) 200 (500 kV)	Codified regulations, adopted after a public rulemaking hearing in 1989.
New York State Public Service Commission	—	200	Adopted August 29, 1990.

1 At road crossings

2 Landowner may waive limit

Sources: TDHS Report, 1989;TDHS Report, 1990

Table 6: Common noise levels

Sound Level, dBA	Noise Source or Effect
128	Threshold of pain
108	Rock-and-roll band
80	Truck at 50 ft.
70	Gas lawnmower at 100 ft.
60	Normal conversation indoors
50	Moderate rainfall on foliage
50	Edge of proposed 500-kV right-of-way during rain
40	Refrigerator
25	Bedroom at night
0	Hearing threshold

Adapted from: USDOE, 1996.

Table 7: Typical sound attenuation (in decibels) provided by buildings

	Windows opened	Windows closed
Warm climate	12	24
Cold climate	17	24

Source: EPA, 1978.

Table 8: **Predicted foul-weather audible noise (AN) levels at edge of right-of-way (ROW) for proposed Schultz–Hanford/Wautoma 500-kV line.** AN levels expressed in decibels on the A-weighted scale (dBA). L₅₀ and L₅ denote the levels exceeded 50 and 5 percent of the time, respectively. For the parallel-line configurations¹, the AN level at the edge of the proposed Schultz-Hanford Area Project ROW is given first.

Configuration ¹	Foul-weather AN					
	Proposed			Existing		
	ROW ft. (m)	L ₅₀ , dBA	L ₅ , dBA	ROW ft. (m)	L ₅₀ , dBA	L ₅ , dBA
A-1	150 (46)	50	54	—	—	—
A-2	150 (46)	59	63	—	—	—
A-3	300 (91)	59, 57	63, 61	150 (46)	54	57
A-4	637.5 (194)	57, 54	60, 57	637.5 (194)	65, 57	69, 61
D-1	250 (76)	50, 48	53, 52	100 (30)	44	47
D-2	637.5 (194)	50, 42	53, 46	487.5 (149)	39, 37	42, 41
D-3	587.5 (179)	50, 42	53, 46	437.5 (133)	39, 37	43, 41
D-4	275 (84)	50, 46	53, 49	125 (38)	37	40

1 Configurations are described in Tables 1 and 2.

Table 9: Predicted fair-weather radio interference (RI) levels at 100 feet (30.5 m) from the outside conductor of the proposed Schultz–Hanford/Wautoma 500-kV line. RI levels given in decibels above 1 microvolt/meter ($\text{dB}\mu\text{V}/\text{m}$) at 1.0 MHz. L_{50} denotes level exceeded 50 percent of the time. For the parallel-line configurations the RI level on the side of the proposed Schultz-Hanford Area ROW is given first.

Configuration ¹	Fair-weather RI	
	Proposed	Existing
	L_{50} , dBmV/m	L_{50} , dBmV/m
A-1	40	—
A-2	47	—
A-3	47, 39	39
A-4	40, 38	47, 38
D-1	39, 31	31
D-2	39, 28	22, 28
D-3	39, 28	22, 28
D-4	39, 30	22

1 Configurations are described in Tables 1 and 2.

Table 10: Predicted maximum foul-weather television interference (TVI) levels predicted at 100 feet (30.5 m) from the outside conductor of the proposed Schultz–Hanford/Wautoma 500-kV line. TVI levels given in decibels above 1 microvolt/meter ($\text{dB}\mu\text{V}/\text{m}$) at 75 MHz. For the parallel-line configurations, the TVI level on the side of the proposed Schultz-Hanford Area ROW is given first.

Configuration ¹	Foul-weather TVI	
	Proposed	Existing
	Maximum (foul), dBmV/m	Maximum (foul), dBmV/m
A-1	26	-
A-2	33	-
A-3	33, 26	26
A-4	26, 19	33, 19
D-1	25, 17	18
D-2	25, 15	9, 15
D-3	25, 15	9, 15
D-4	25, 11	9

1 Configurations are described in detail in Tables 1 and 2.

Figure 1: Configurations for proposed Schultz-Hanford Area Project 500-kV line: a) Proposed line with no parallel lines (Configuration A-1); b) Realigned Sickler-Schultz 500-kV with no parallel lines (Configuration A-2); c) Realigned Sickler-Schultz 500-kV line with parallel 345-kV line (Configuration A-3); d) Schultz-Hanford/Wautoma 500-kV line with six parallel lines east of Schultz Substation (Configuration A-4); e) Proposed Schultz – Wautoma 500-kV line with parallel Vantage – Midway 230-kV line (Configuration D-1); f) Proposed Schultz-Wautoma 500-kV line with four parallel existing lines south of Midway Substation (Configuration D-2); g) Proposed Schultz-Wautoma 500-kV line with three parallel existing lines south of Midway Substation (Configuration D-3); and h) Proposed Schultz-Wautoma 500-kV line with parallel Midway-Big Eddy 230-kV line (Configuration D-4). (8 pages)

a) Proposed line with no parallel lines (Configuration A-1) (not to scale)

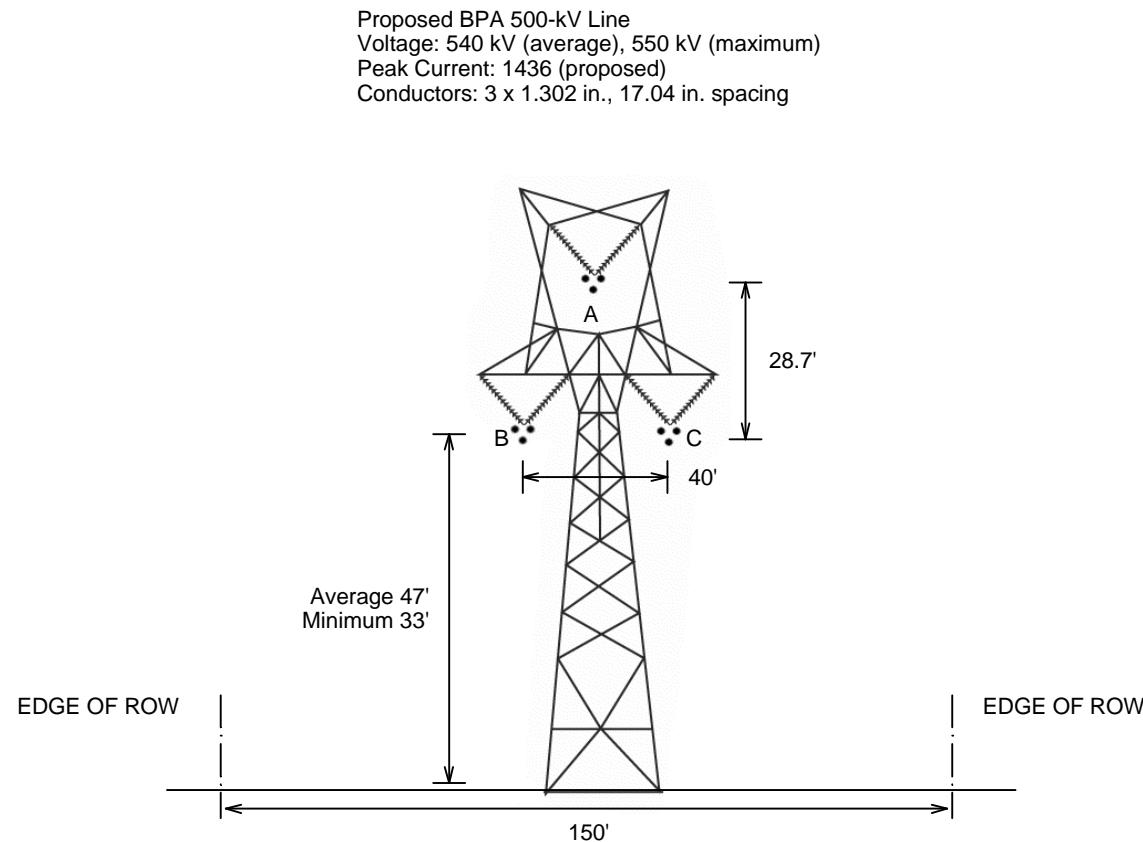


Figure 1, continued

- b) Realigned Sickler-Schultz 500-kV line with no parallel lines (Configuration A-2) (not to scale)

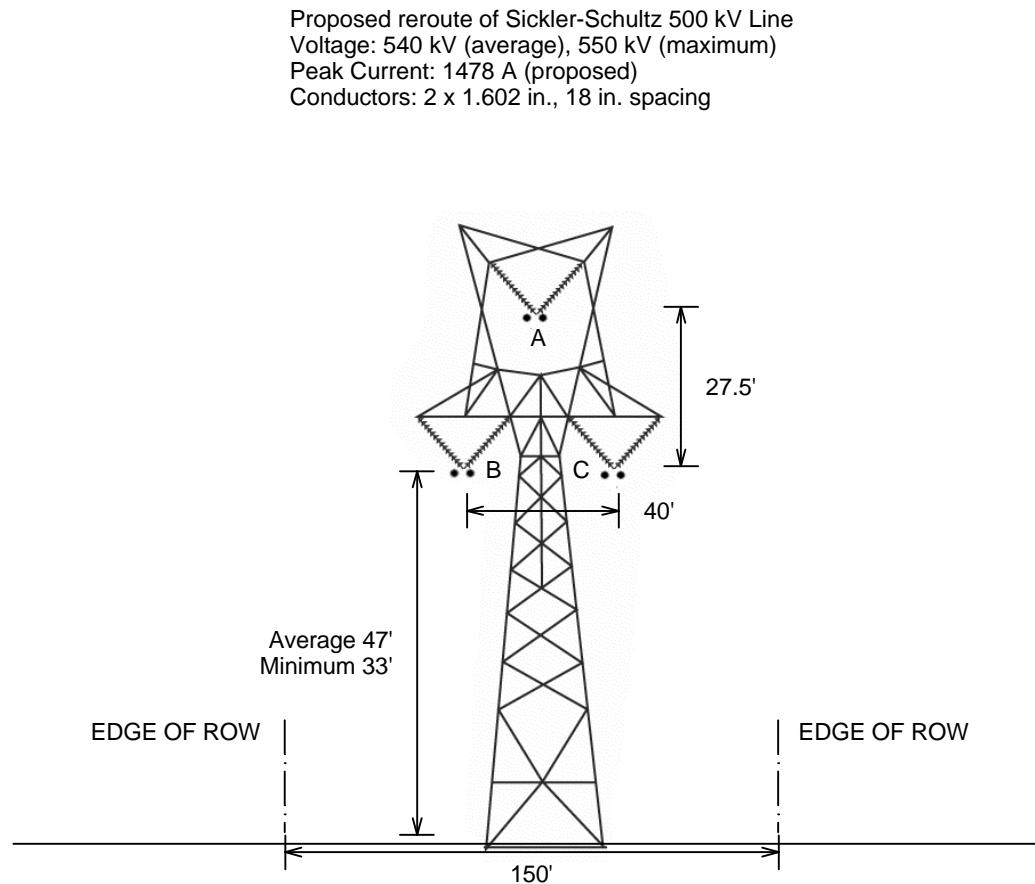
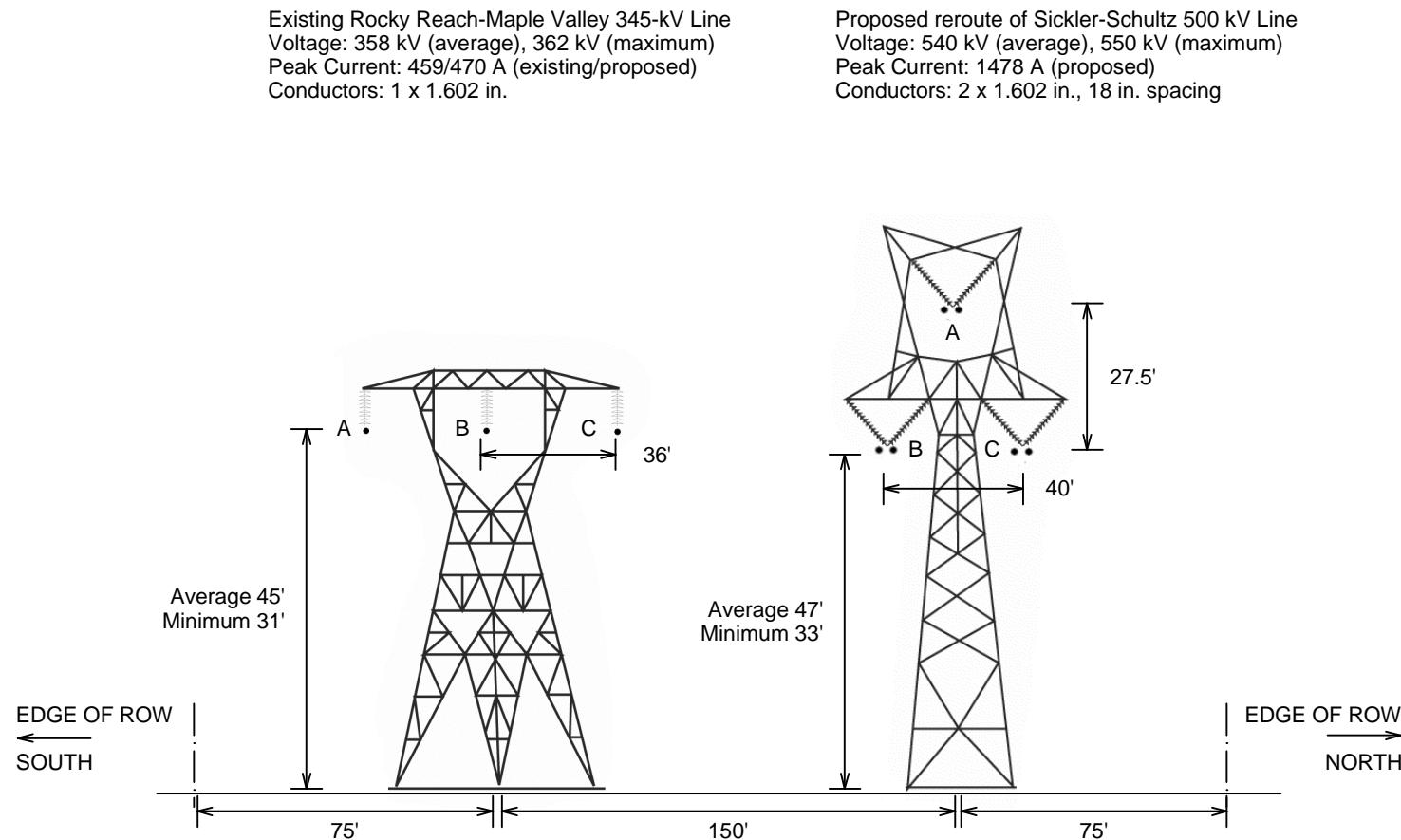


Figure 1, continued

- c) Realigned Sickler-Schultz 500-kV line with parallel Rocky Reach-Maple Valley 345-kV line (Configuration A-3) (not to scale)



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Figure 1, continued

d) Schultz-Hanford/Wautoma 500-kV line with six parallel lines east of Schultz Substation(Configuration A-4) (not to scale)

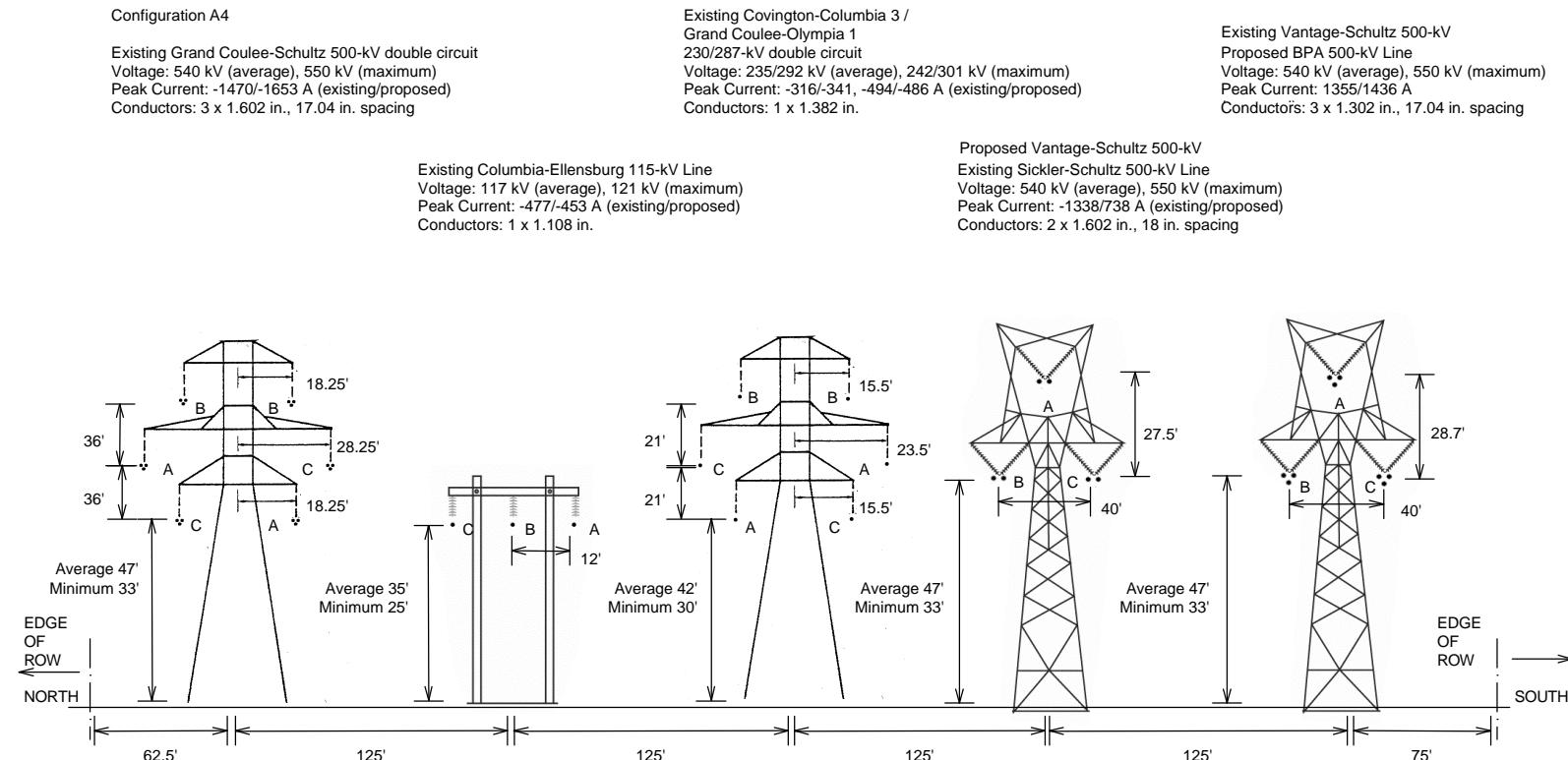
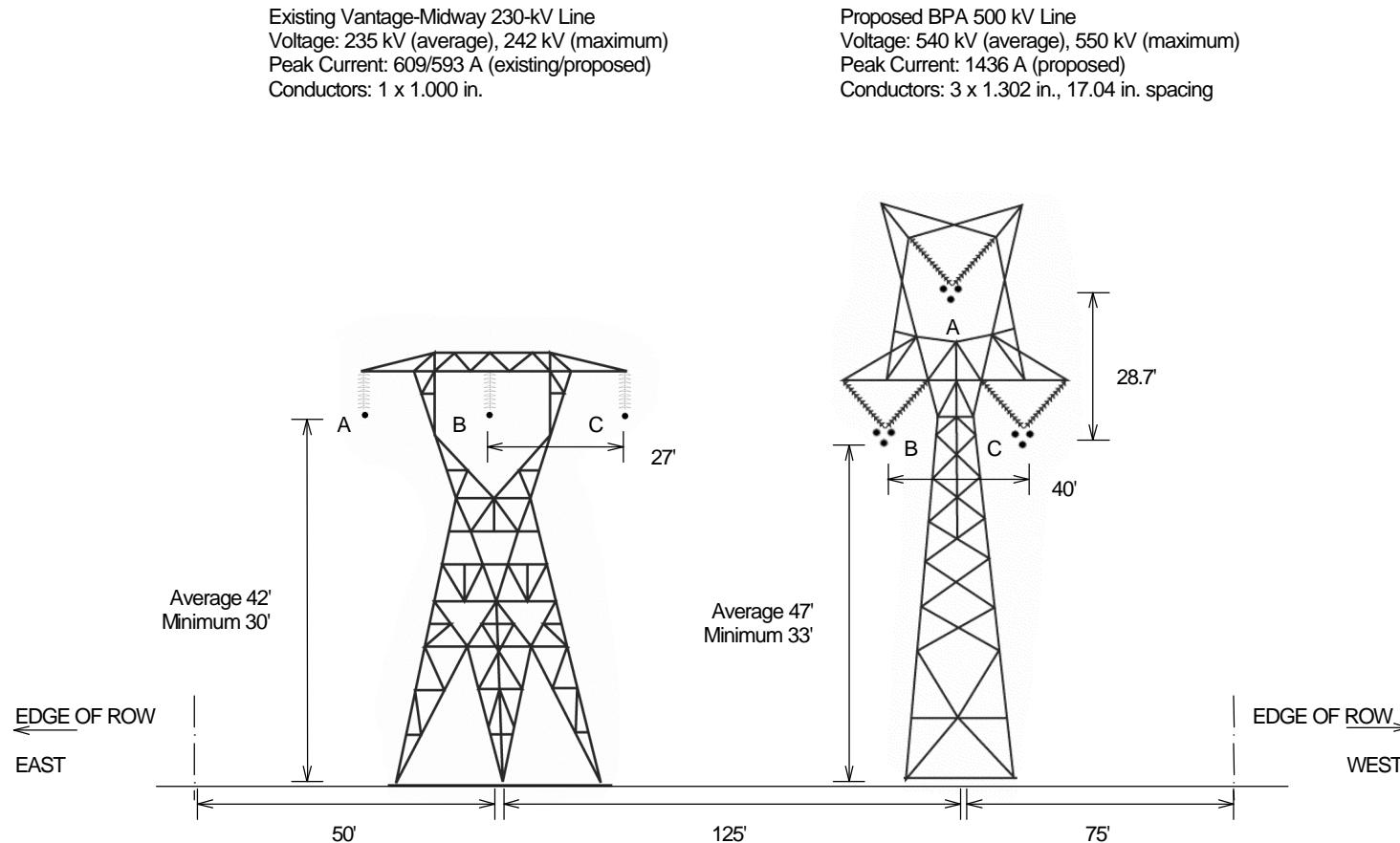


Figure 1, continued

e) Proposed Schultz – Wautoma 500-kV line with parallel Vantage – Midway 230-kV line (Configuration D-1). (Not to scale)



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Figure 1, continued

f) Proposed Schultz-Wautoma 500-kV line with four parallel existing lines south of Midway Substation (Configuration D-2) (not to scale)

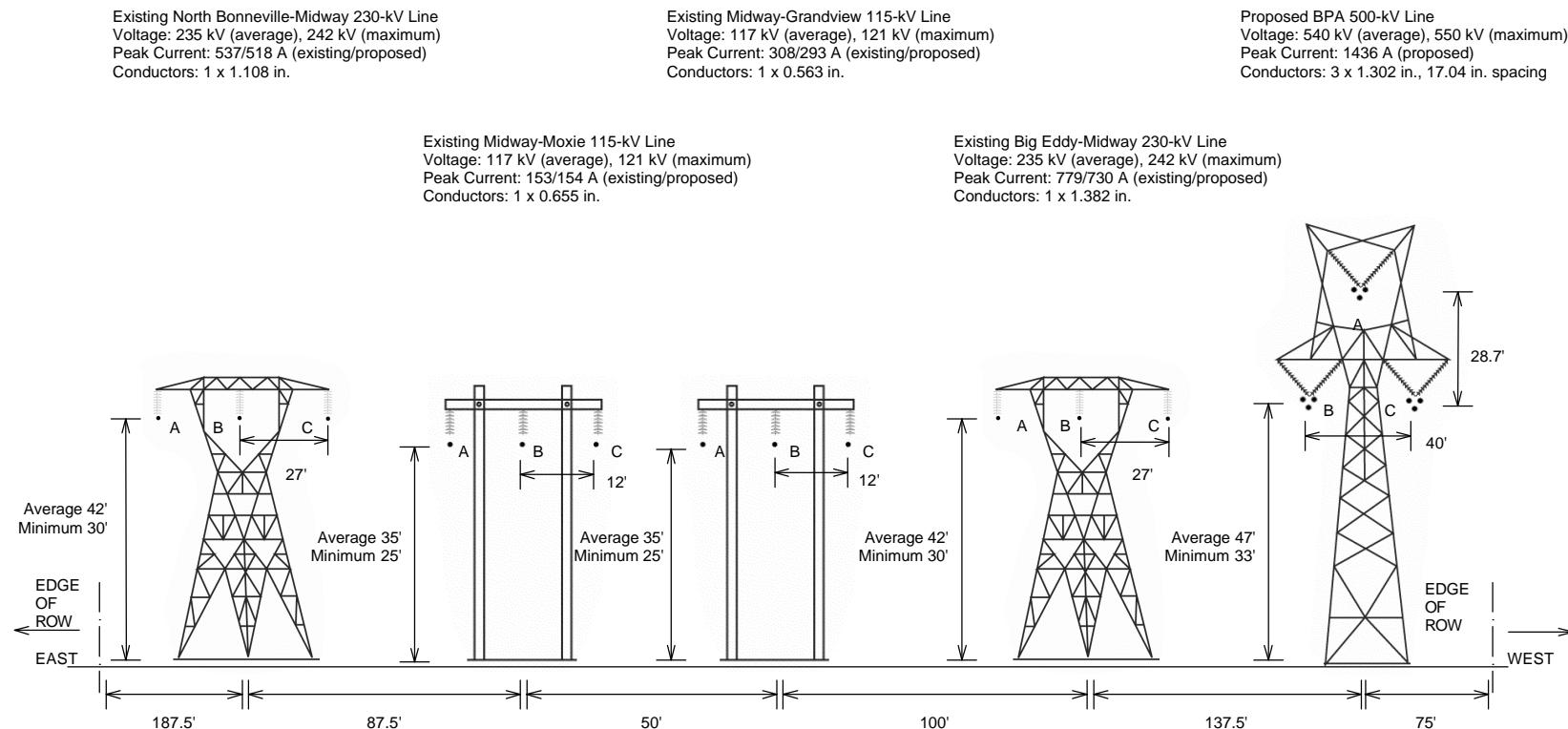


Figure 1, continued

g) Proposed Schultz-Wautoma 500-kV line with three parallel existing lines south of Midway Substation (Configuration D-3) (not to scale)

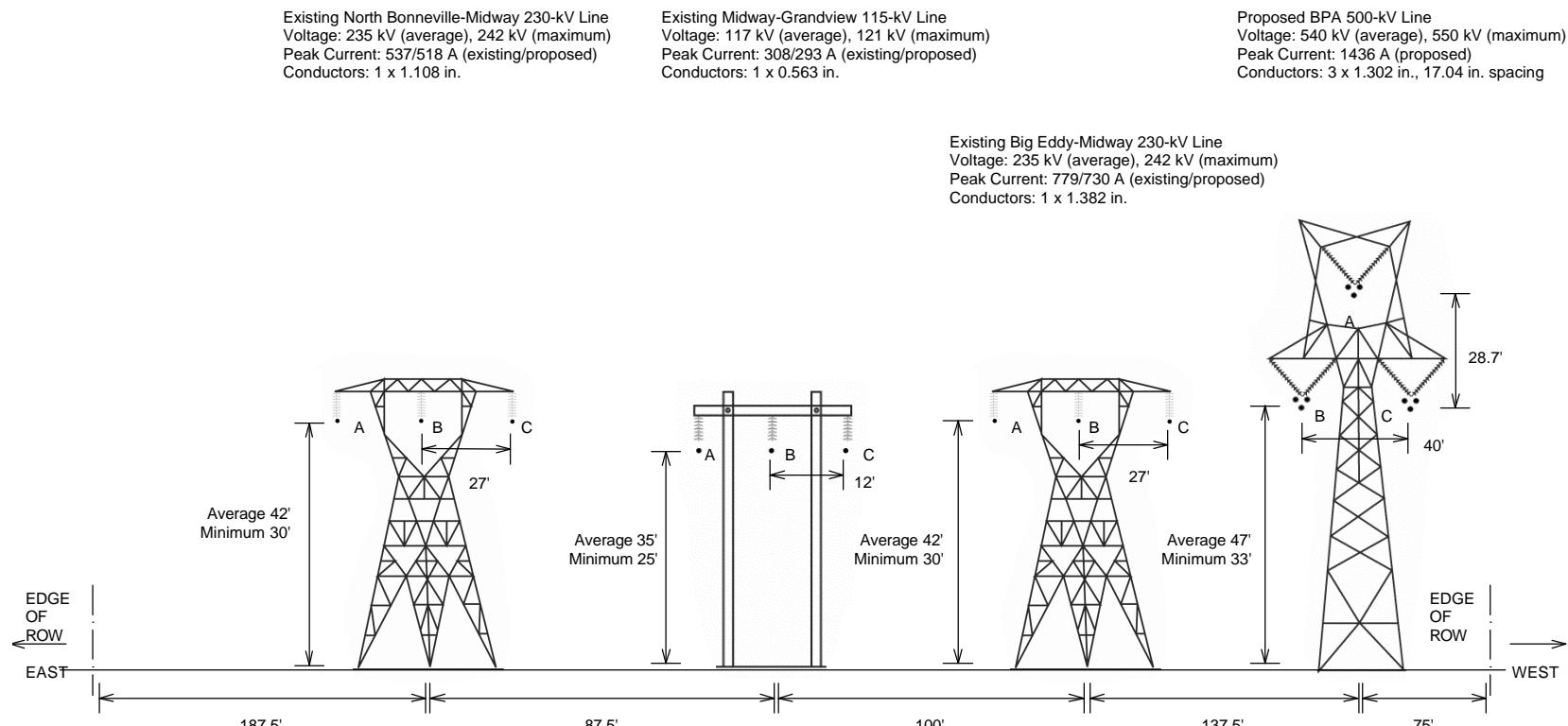


Figure 1, continued

h) Proposed Schultz-Wautoma 500-kV line with parallel Midway-Big Eddy 230-kV line (Configuration D-4) (not to scale)

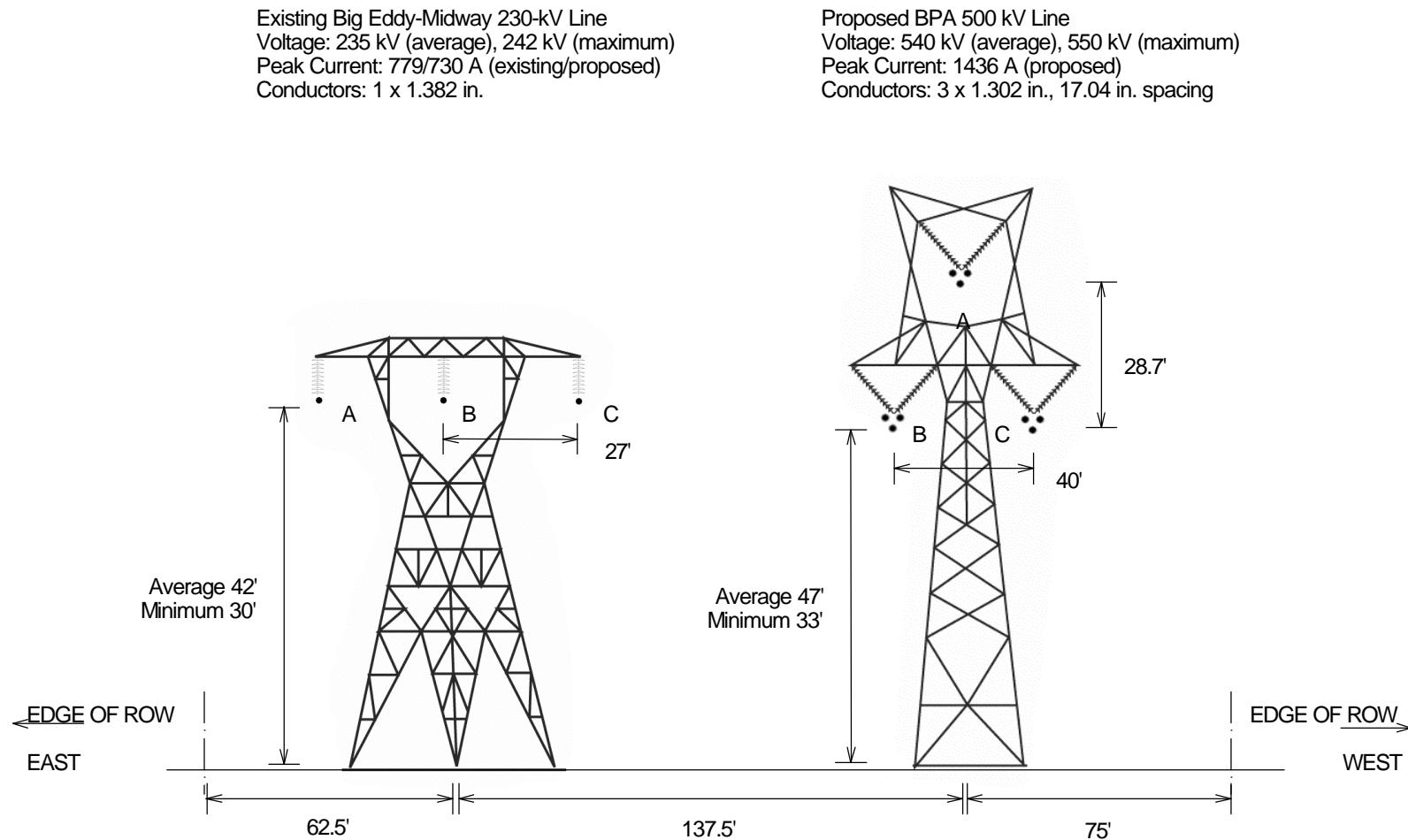


Figure 2: Electric-field profiles for selected configurations of proposed Schultz-Hanford/Wautoma 500-kV line: a) Proposed line with no parallel line (Configuration A-1); b) proposed line with parallel 230-kV line (Configuration D-1); c) proposed line with parallel 115-kV and 230-kV lines (Configuration D-3). Fields for maximum voltage and minimum clearances are shown. (2 pages)

a) Proposed line with no parallel line (Configuration A-1).

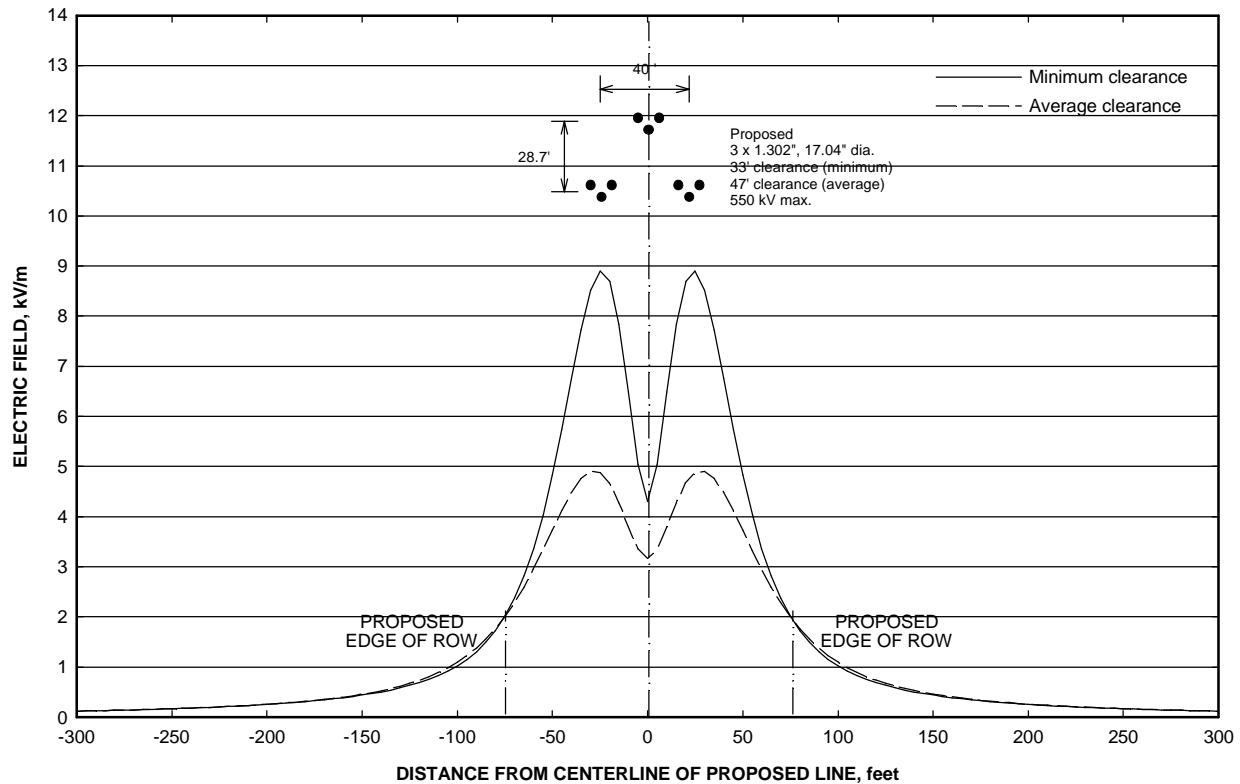
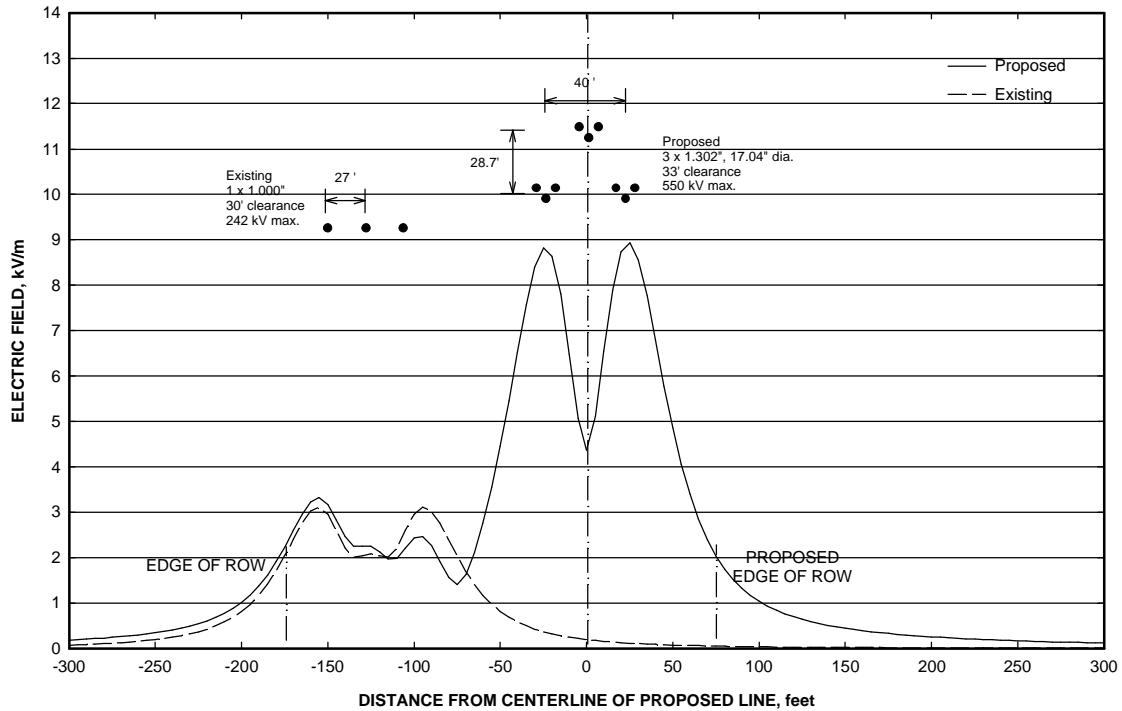


Figure 2, continued

b) Proposed line with parallel 230-kV line (Configuration D-1)



c) Proposed line with parallel 115-kV and 230-kV lines (Configuration D-3)

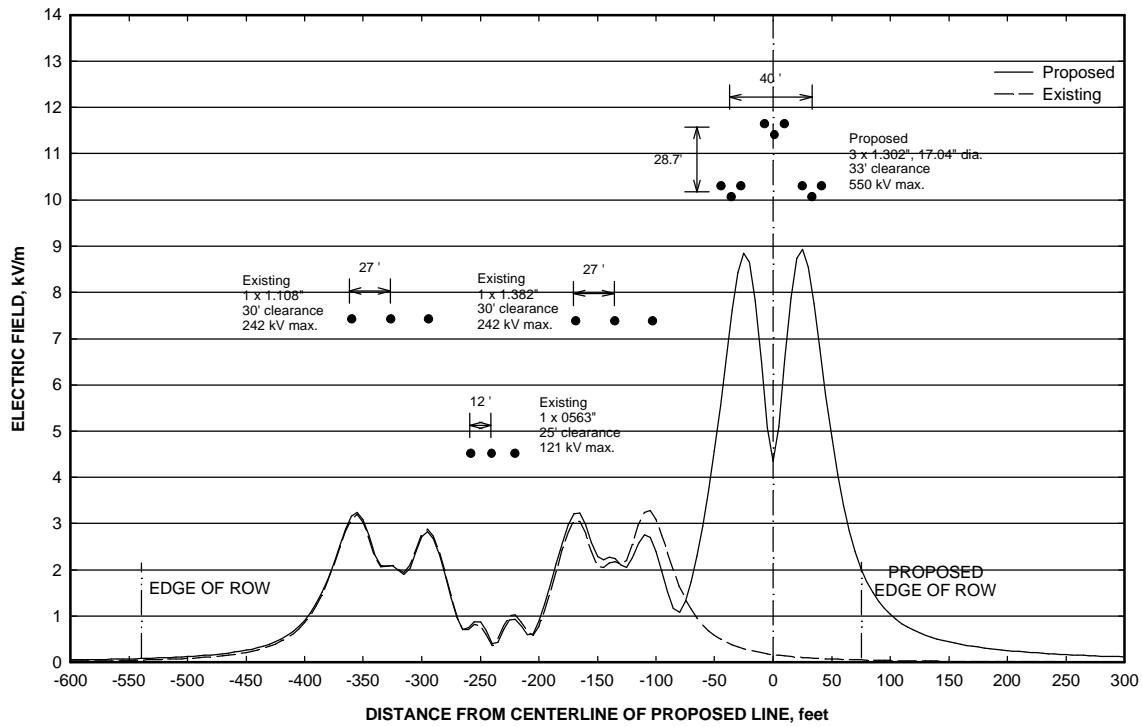


Figure 3: Magnetic-field profiles for selected configurations of the proposed Schultz–Hanford/Wautoma 500-kV line under maximum current conditions: a) proposed line with no parallel line (Configuration A-1); b) proposed line with parallel 230-kV line (Configuration D-1); and c) proposed line with parallel 115-kV and 230-kV lines (Configuration D-3). (2 pages)

a) Proposed line with no parallel line (Configuration A-1)

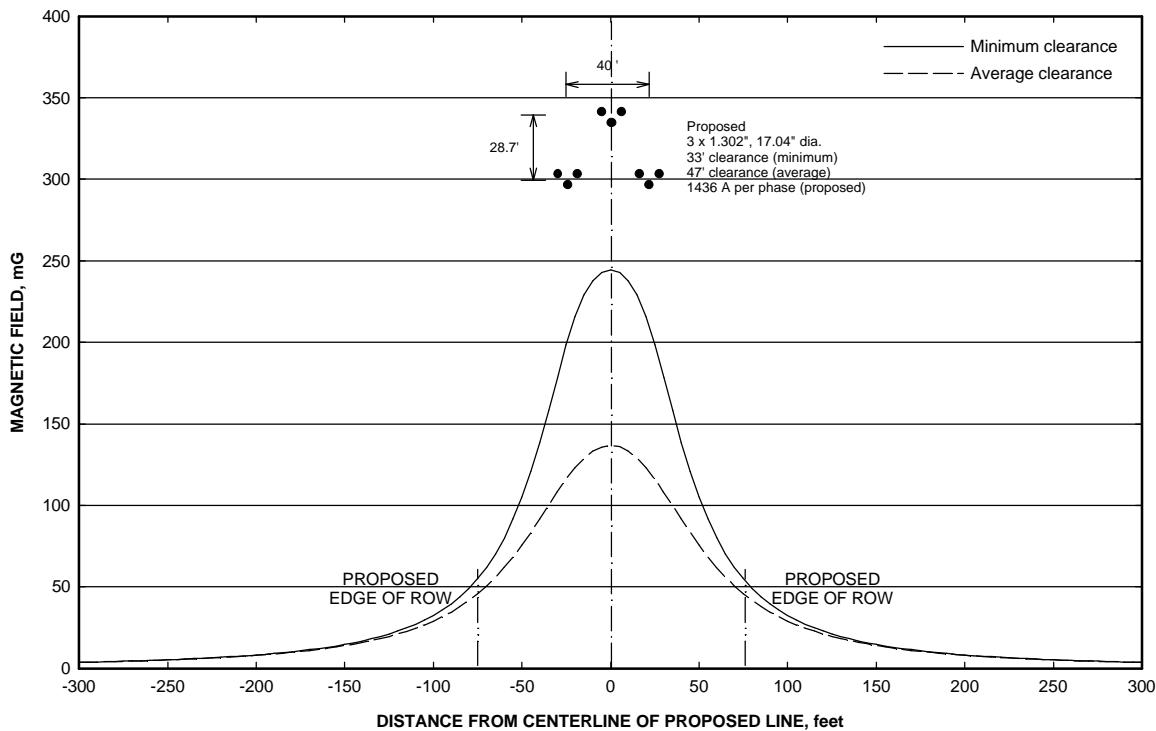
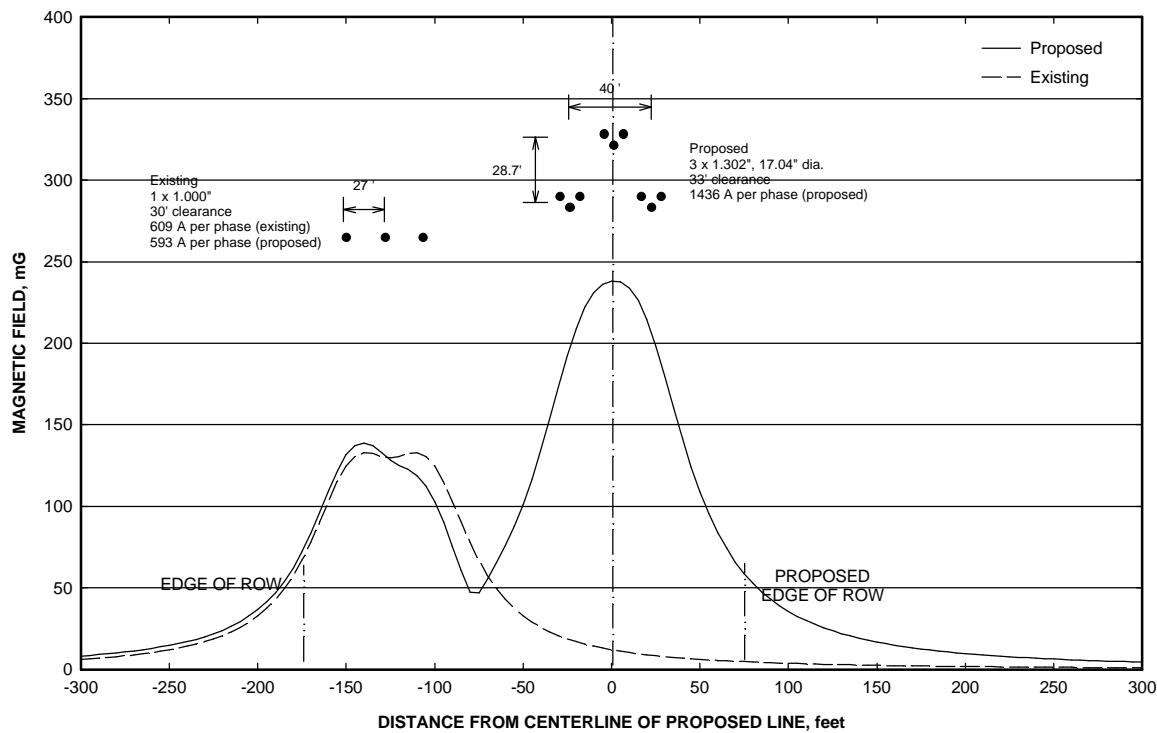


Figure 3, continued

- b) Proposed line with parallel 230-kV line (Configuration D-1).



- c) Proposed line with parallel 115-kV and 230 kV lines (Configuration D-3)

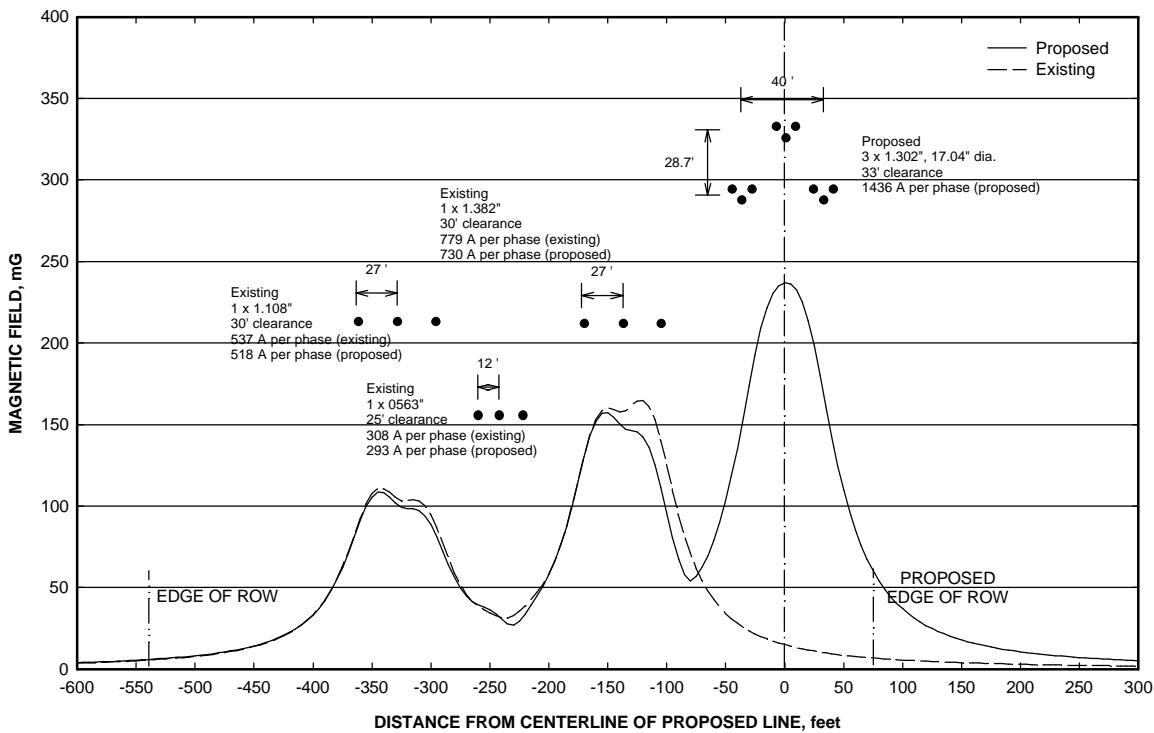
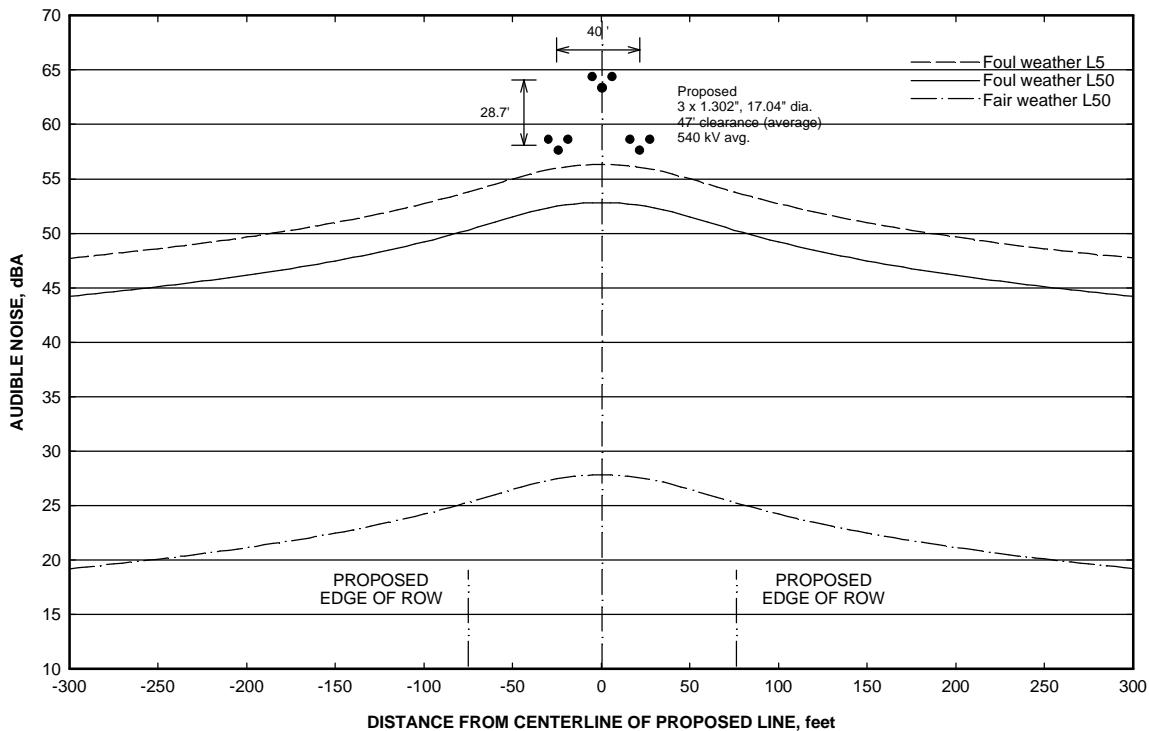


Figure 4: Predicted foul-weather L₅₀ audible noise levels from selected configurations of proposed Schultz–Hanford/Wautoma 500-kV line a) proposed line with no parallel line (Configuration A-1); b) proposed line with parallel 230-kV line (Configuration D-1); and c) proposed line with parallel 115-kV and 230-kV lines (Configuration D-3). (2 pages)

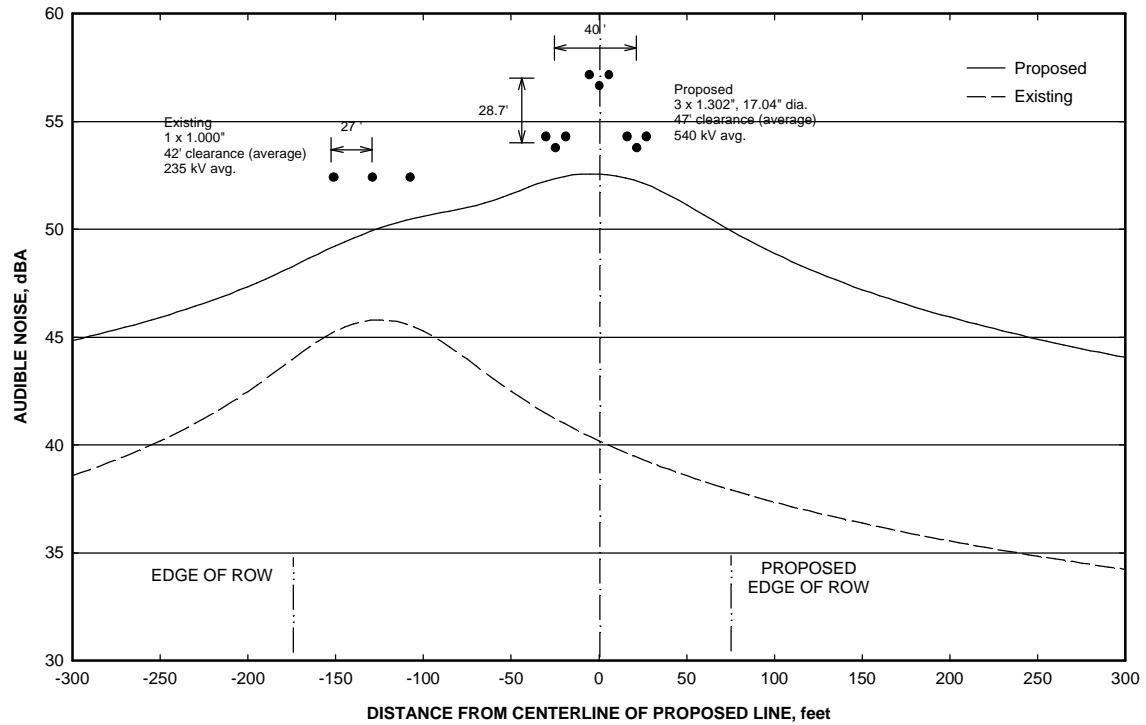
a) Proposed line with no parallel line (Configuration A-1).



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Figure 4, continued

b) Proposed line with parallel 230-kV line (Configuration D-1).



c) Proposed line with parallel 115-kV and 230-kV lines (Configuration D-3).

