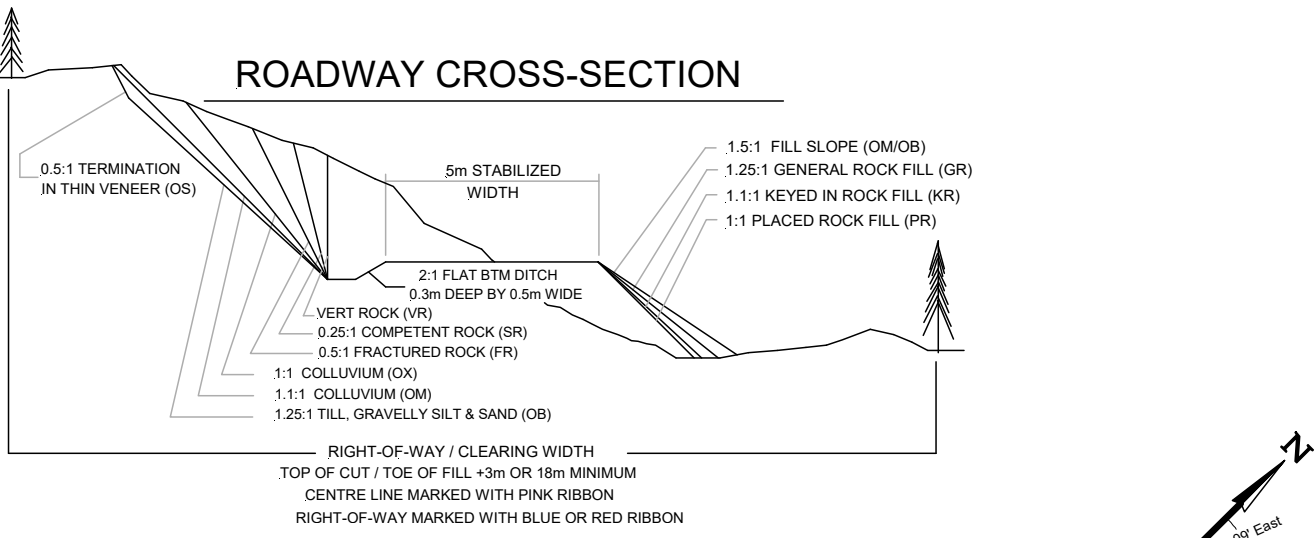
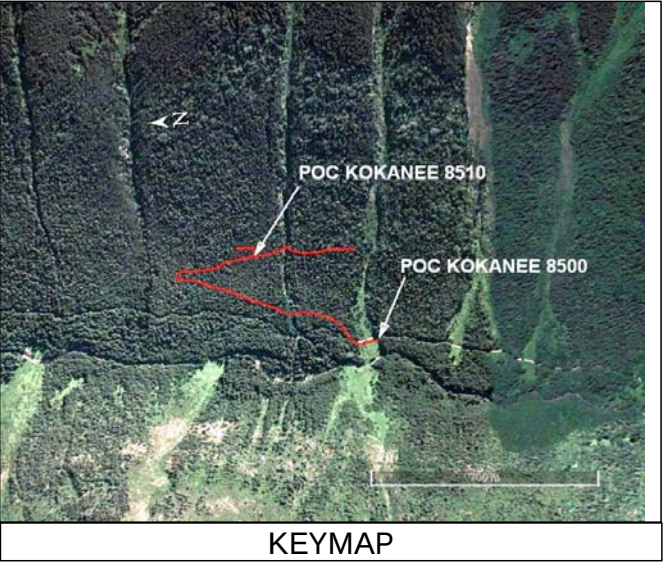


GEOMETRIC ROAD DESIGN

KOKANEE 8510 FSR

0+000 to 0+110.4

Exhibit A	Plan Profile Drawings
Section 1	Cross section drawings
Section 2	Mass haul graph
Section 3	Hub to station and culvert report
Section 4	Volume report
Section 5	Staking report
Section 6	Clearing report
Section 7	Construction Summary



Legend	
	PLAN
	P-LINE HUBS
	CLEARING LIMIT (R/W)
	L-LINE DESIGN
	ROAD EDGES
	CULVERTS
	ROCK
	SWAMP
	BOULDER
	STREAM
	SWALE or GULLY
	WASTE AREA
	REFERENCE SHOTS
	PROFILE
	EXISTING GRADE
	DESIGN GRADE
	P-LINE GROUND PROFILE
	SECTION
	ROAD PRISM
	TOPO
	LAYER 1
	LAYER 2
	STRIPPING

TEMPLATE DESCRIPTIONS	
TEMPLATE	DESCRIPTION
EX 4IN TOL / TOR TP	EXISTING ROAD 4 METRE INSLOPED ROAD 8m LEFT OR RIGHT TURN OUT TAPER TEMPLATE

SOIL DESCRIPTIONS			
SOIL	CUT	FILL	DESCRIPTION
OB	80% (1.25:1)	67% (1.5:1)	GRAVELLY SILTY SAND
OM	91% (1.1:1)	67% (1.5:1)	COLLUVIUM, TALUS
OX	100% (1:1)	67% (1.5:1)	COLLUVIUM, TALUS
OS	200% (0.5:1)	67% (1.5:1)	SHALLOW STEEPENED TERMINATION
SR	400% (25:1)	80% (1.25:1)	SOLID ROCK CUT - ANGULAR ROCK FILL
FR	200% (0.5:1)	80% (1.25:1)	FRACTURED ROCK - ANGULAR ROCK FILL
AR	400% (25:1)	80% (1.25:1)	SOLID ROCK CUT - ANGULAR ROCK FILL
KR	400% (25:1)	90% (1.1:1)	SOLID ROCK CUT - KEYED ROCK FILL
PR	400% (25:1)	100% (1:1)	SOLID ROCK CUT - PLACED ROCK FILL
VR	VERT.	80% (1.25:1)	VERT. ROCK CUT - ANGULAR ROCK FILL

TEMPLATE ASSIGNMENTS			
ID	P-Stn From	P-Stn To	Description
LEFT Templates			
EX5	...	0+016.0	Existing 5m Mainline
5MV	0+016.0	...	5 Meter Rd V Ditch
RIGHT Templates			
BR	...	0+025.4	Bridge (no cut/fill)
5MV	0+025.4	...	5 Meter Rd V Ditch

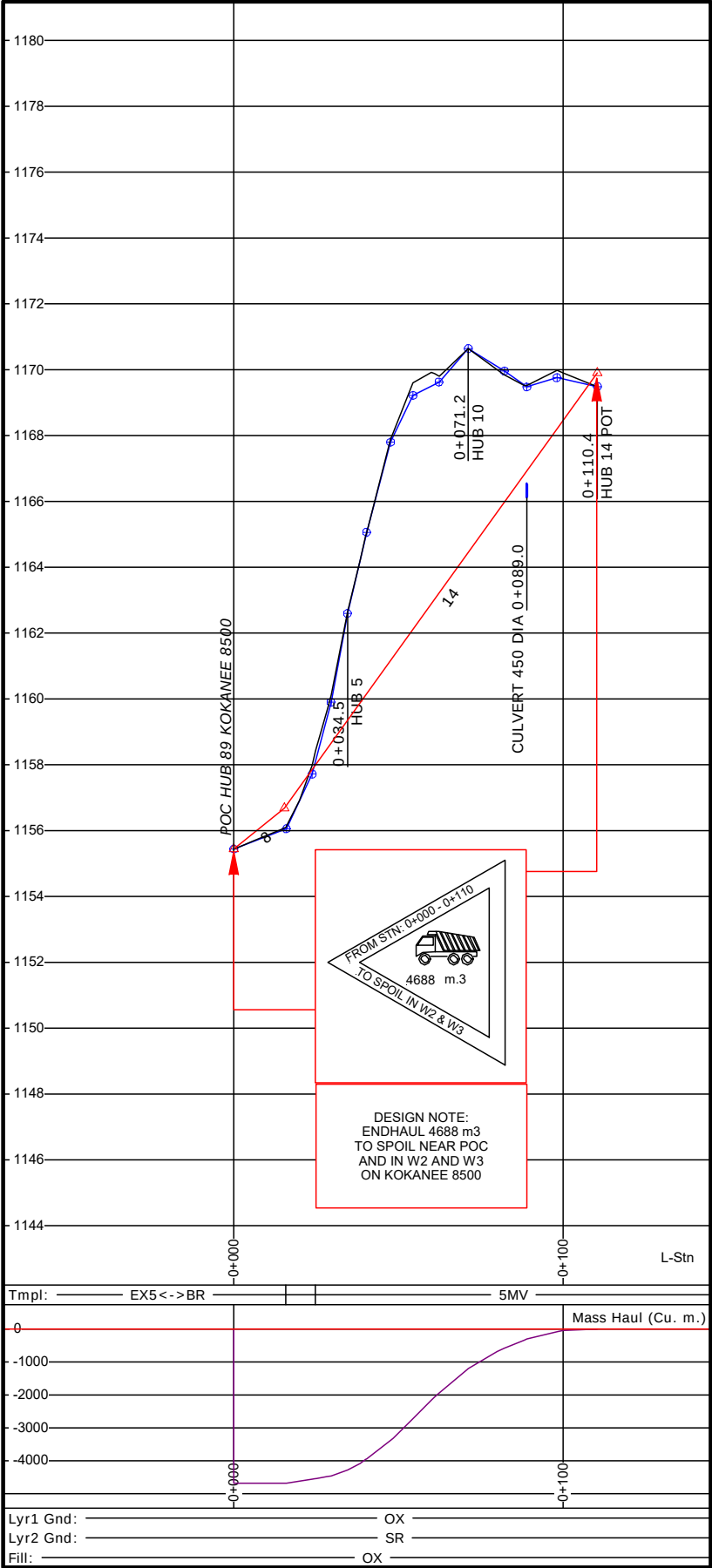
CULVERT TABLE					
P-Stn m	L-Stn m	Index	Cul Len m	Cul Skew deg	Cul DIA mm
0+089.6	0+089.0	12	9.0	57	450

CURVE & WIDENING TABLE					
L-Stn m	H.Rad m	HD m	Delta Az deg	Rd. Wd. L m	Rd. Wd. R m
B 0+015.7	-15.0	22.6	-86	6.6	0.0
0+038.3	-15.0	0.0	-86	6.6	2.5
0+038.3	-15.0	22.6	-86	6.6	2.5
0+061.0	-15.0	22.6	-86	6.6	2.5

VOLUME TABLE		
200m	Cut OM	4309
	Fill OM	51
	Cut SR	431
	Fill SR	0
	Mass ordinate	4689
Accum	Cut OM	4309
	Fill OM	51
	Cut SR	431
	Fill SR	0
	Masshaul	4689

Vertical Curves		
K	Len. (L)	

HUB TO STATION TABLE	
Index	L-Stn m
1	B 0+000.0
2	B 0+016.0
3	0+023.9
4	0+029.5
5	0+034.5
6	0+040.3
7	0+047.6
8	0+054.4
9	0+062.3
10	0+071.2
11	0+082.2
12	0+089.0
13	0+098.1
14	0+110.4

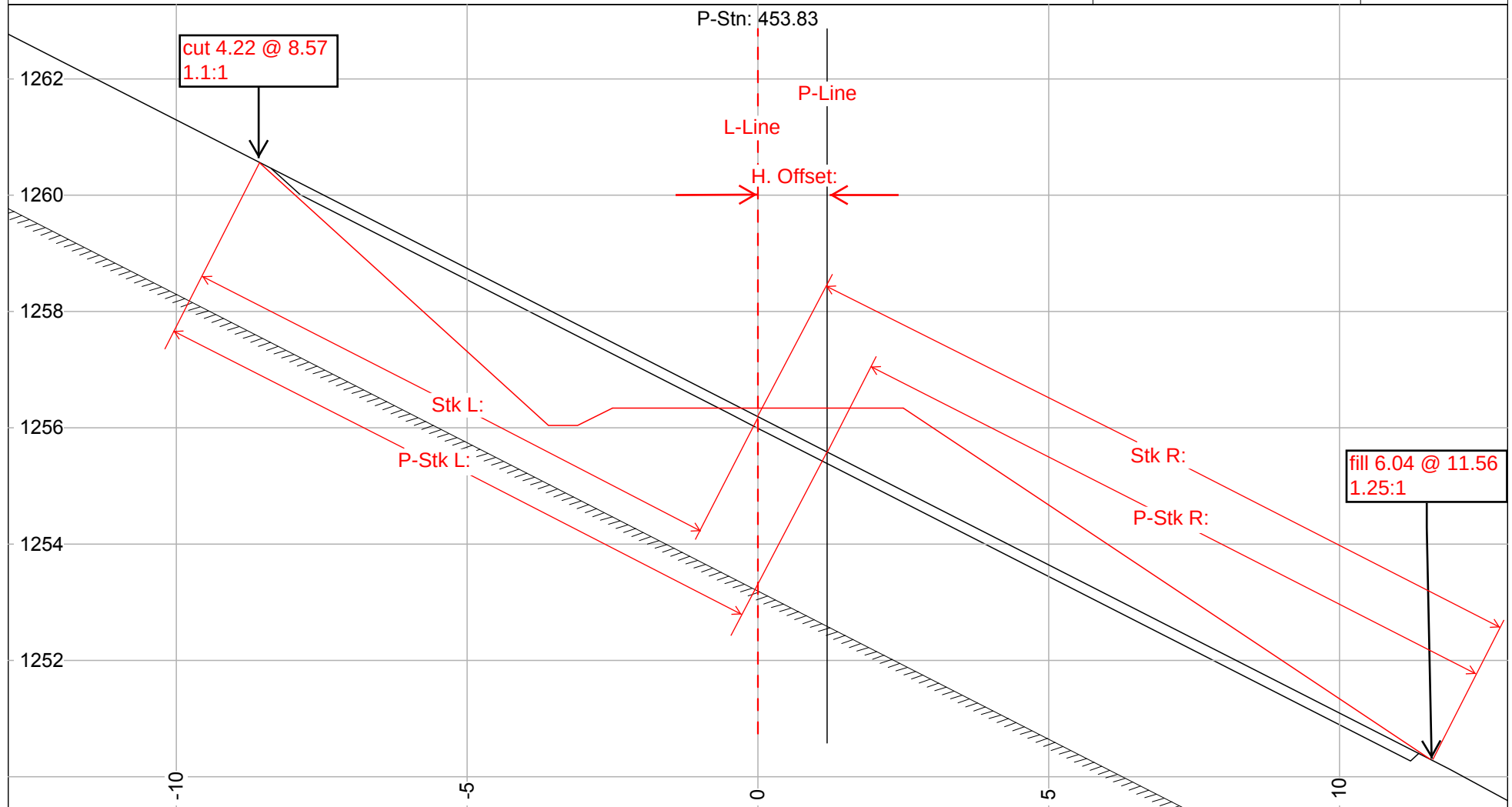


SECTION 1

ROAD SPECIFICATIONS

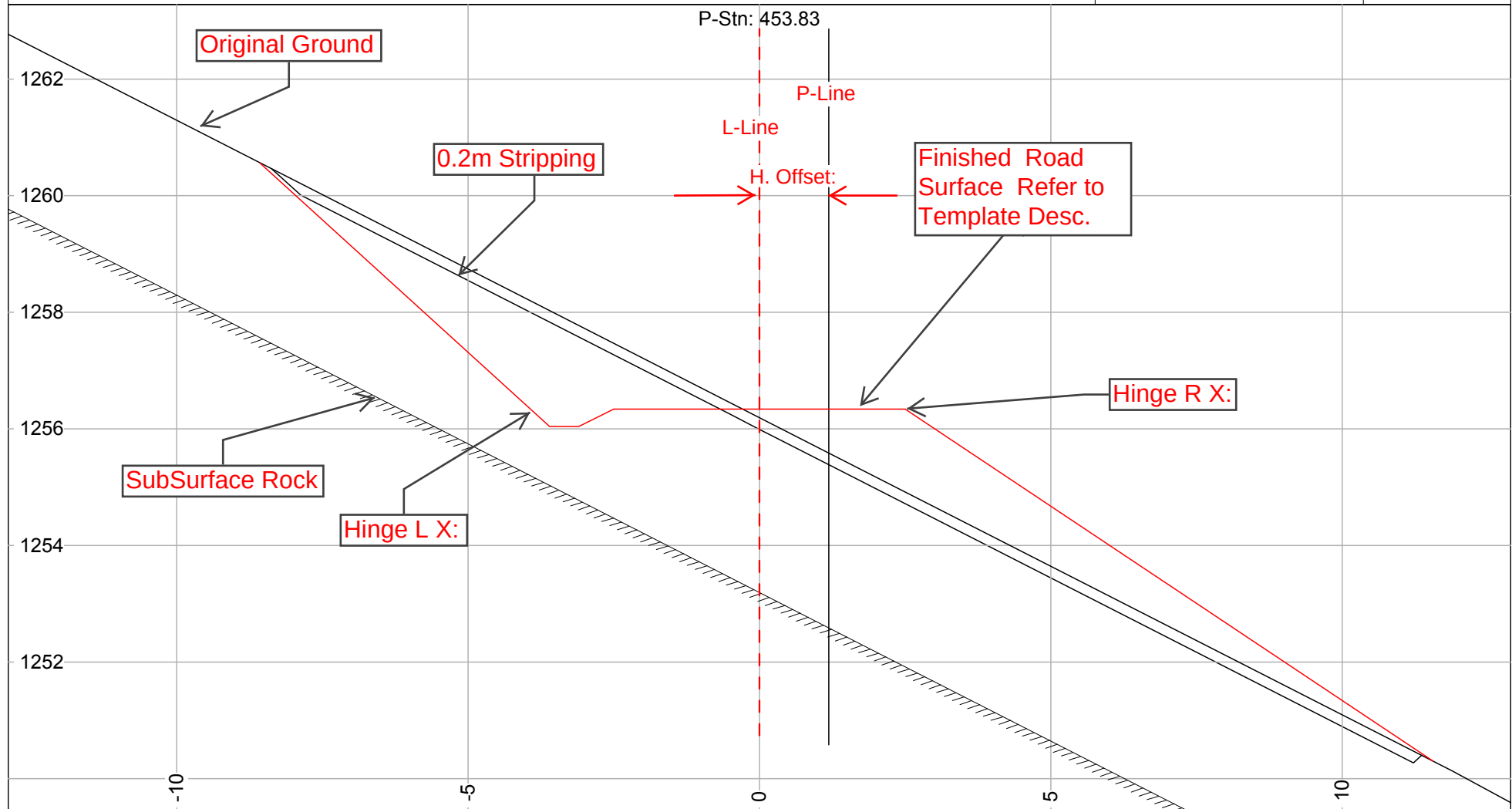
CROSS SECTIONS

S:\Projects\2011 Projects\BCTS Assignments\

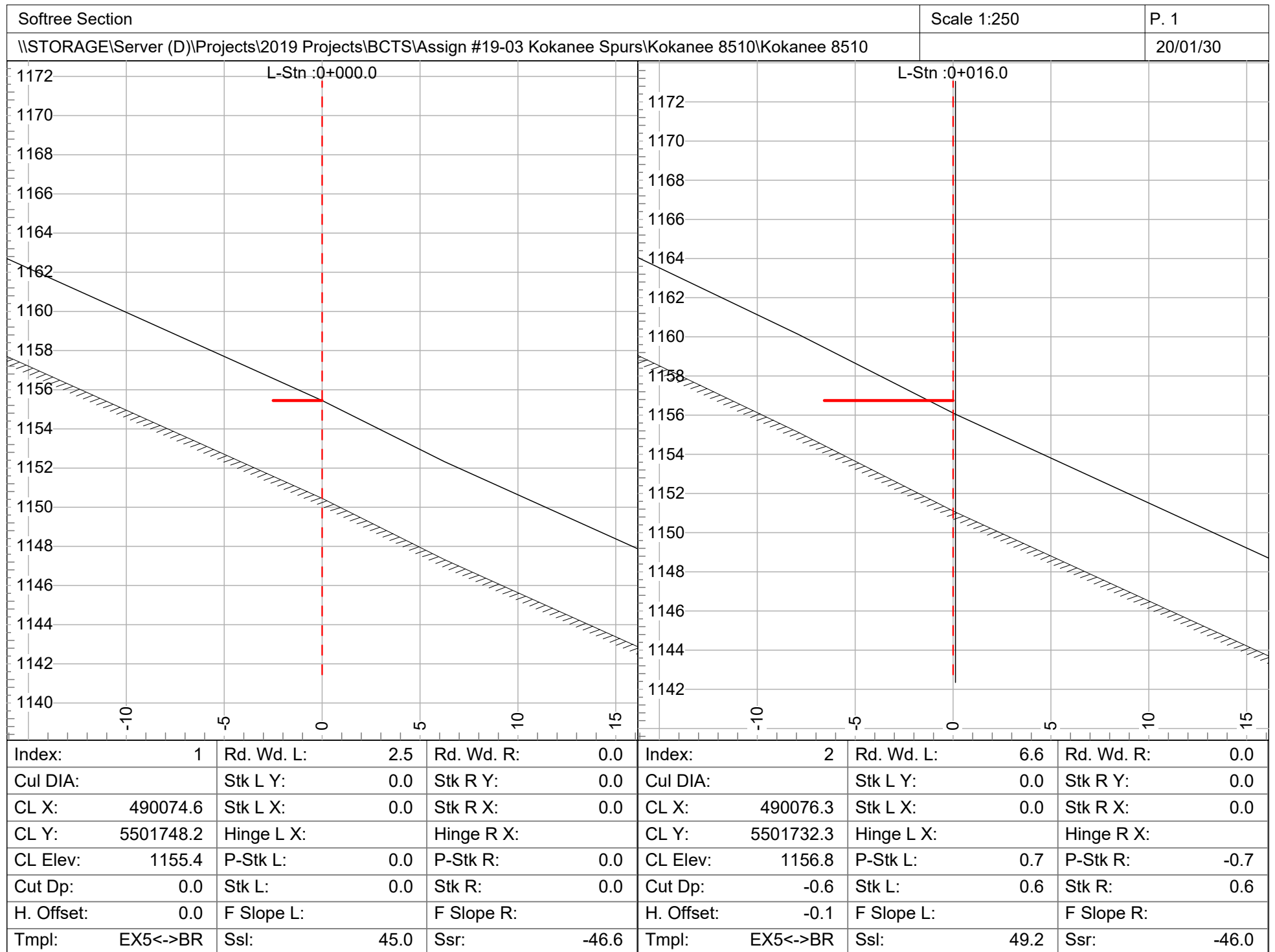


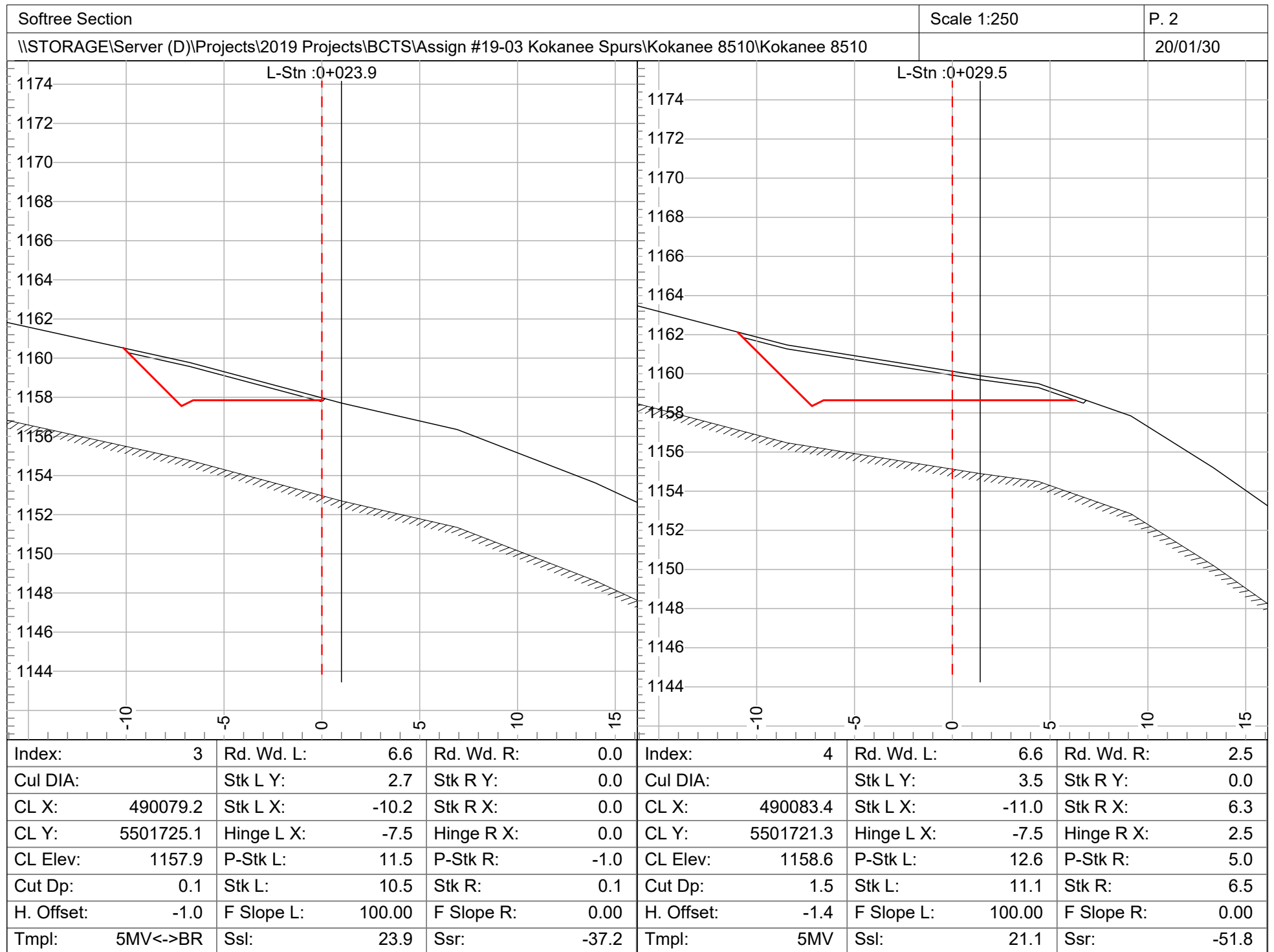
Index:	HUB Number	44	Rd. Wd. L:	from L-Line	2.50	Rd. Wd. R:	from L-Line	2.50
L-Stn:		451.45	Stk L Y:	cut or fill to grade	4.22	Stk R Y:	cut or fill to grade	-6.04
CL X:	UTM co-ordinates	522202.62	Stk L X:	horizontal distance	-8.57	Stk R X:	horizontal distance	11.56
CL Y:	UTM co-ordinates	5504638.06	Hinge L X:	from L-Line	-3.60	Hinge R X:	from L-Line	2.50
CL Elev:		1256.34	P-Stk L:	Slope distance from P-Line	10.96	P-Stk R:	Slope distance from P-Line	11.64
Cut Dp:	at L-Line	-0.15	Stk L:	Slope distance from L-Line	9.62	Stk R:	Slope distance from L-Line	12.98
H. Offset:		-1.20	F Slope L:	cut slope (1.1:1)	91	F Slope R:	fill slope (1.5:1)	-67
Tmpl:		5M	Ssl: (Av)	original ground slope	51	Ssr: (Av)	original ground slope	-51

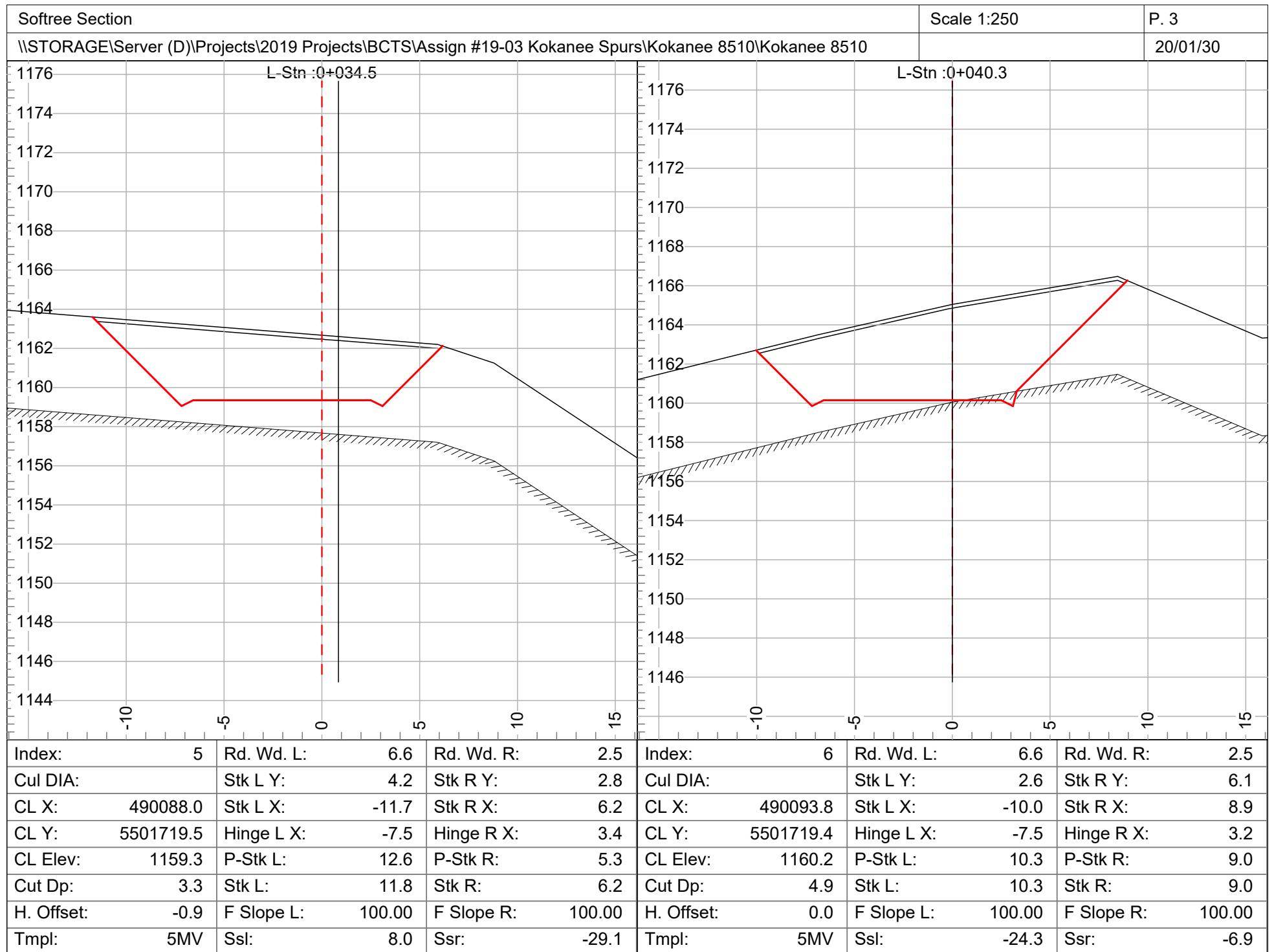
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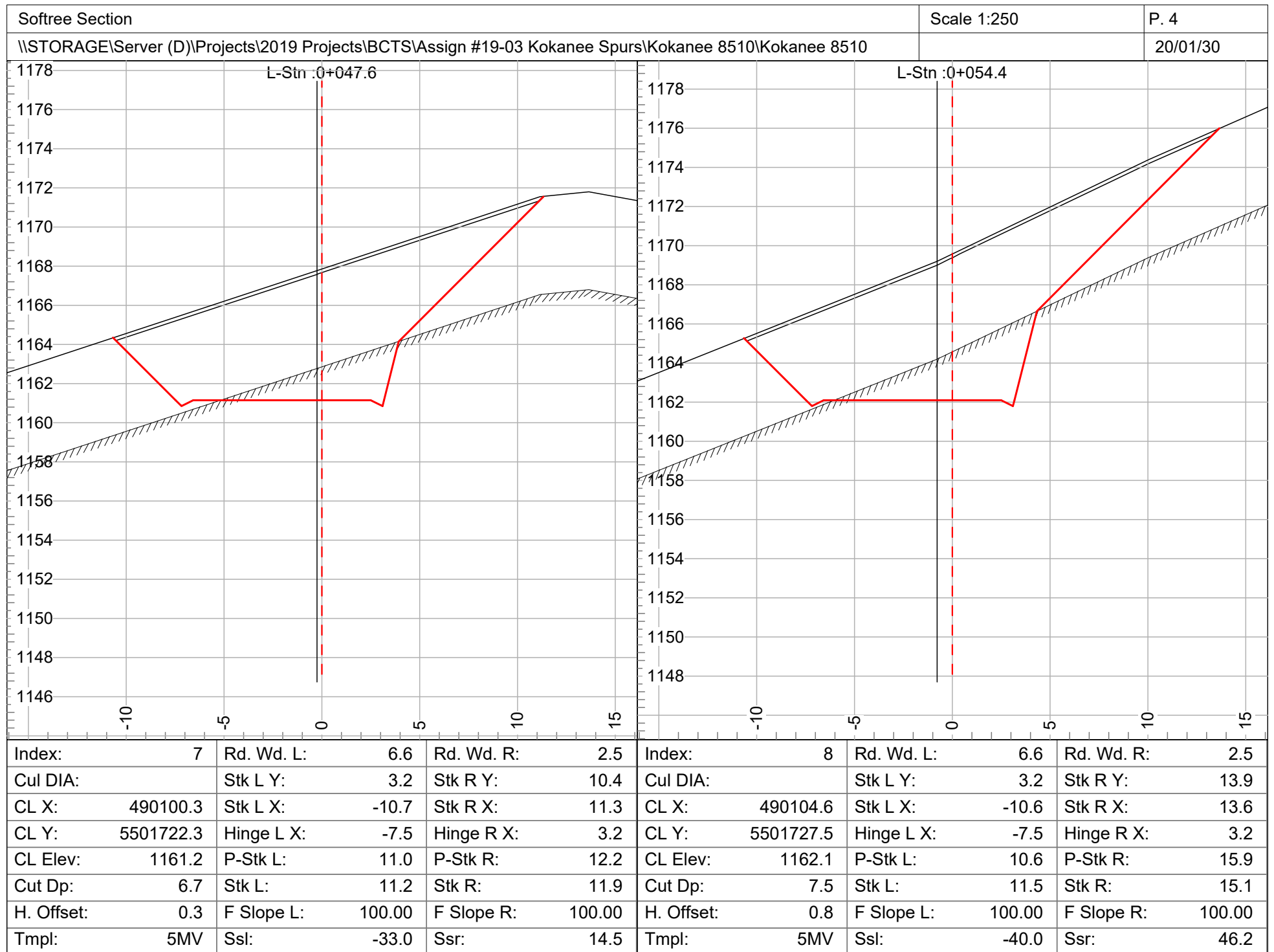


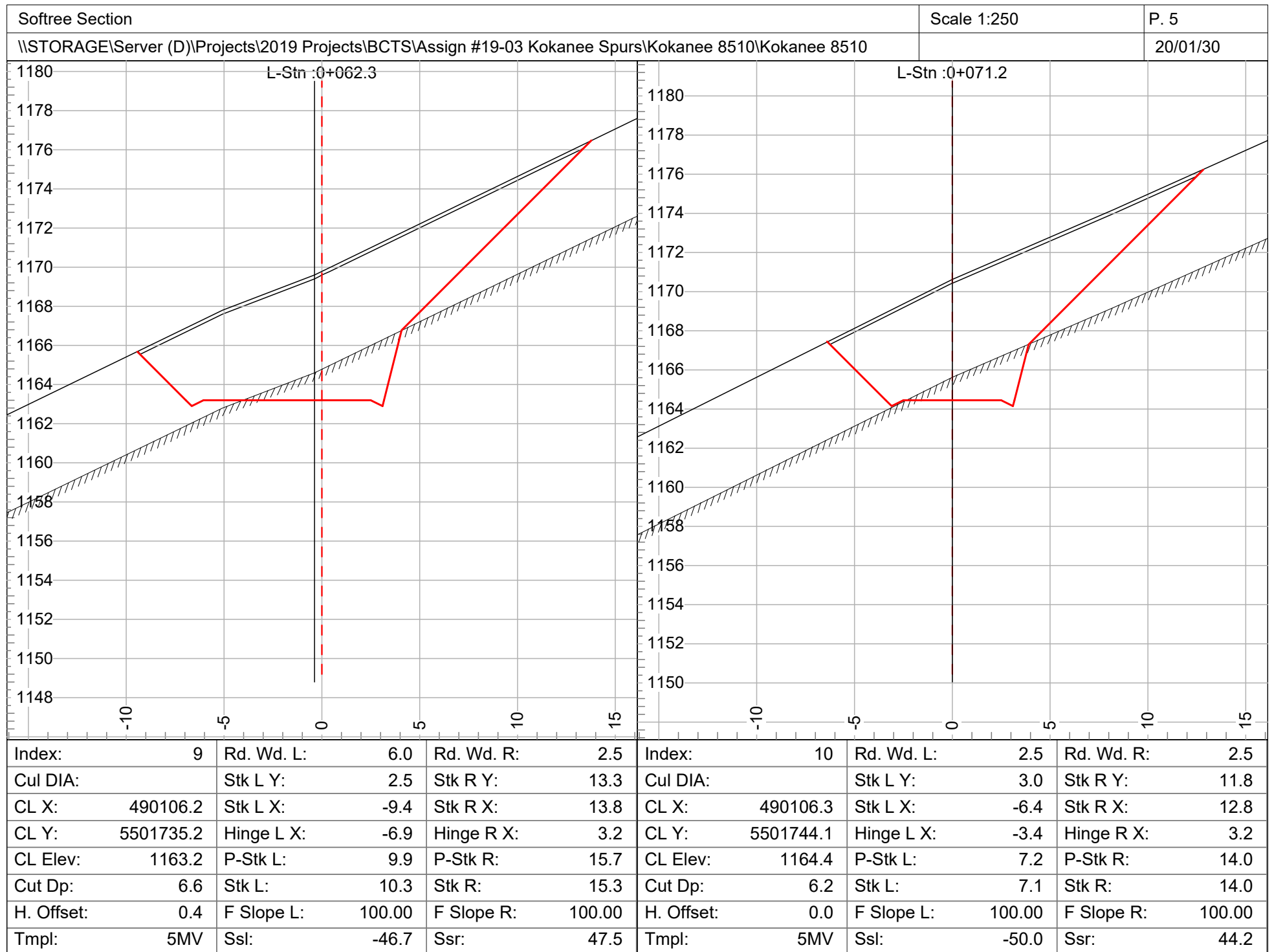
Index:	HUB Number	44	Rd. Wd. L:	from L-Line	2.50	Rd. Wd. R:	from L-Line	2.50
L-Stn:		451.45	Stk L Y:	cut or fill to grade	4.22	Stk R Y:	cut or fill to grade	-6.04
CL X:	UTM co-ordinates	522202.62	Stk L X:	horizontal distance	-8.57	Stk R X:	horizontal distance	11.56
CL Y:	UTM co-ordinates	5504638.06	Hinge L X:	from L-Line	-3.60	Hinge R X:	from L-Line	2.50
CL Elev:		1256.34	P-Stk L:	Slope distance from P-Line	10.96	P-Stk R:	Slope distance from P-Line	11.64
Cut Dp:	at L-Line	-0.15	Stk L:	Slope distance from L-Line	9.62	Stk R:	Slope distance from L-Line	12.98
H. Offset:		-1.20	F Slope L:	cut slope (1.1:1)	91	F Slope R:	fill slope (1.5:1)	-67
Tmpl:		5M	Ssl: (Av)	original ground slope	51	Ssr: (Av)	original ground slope	-51

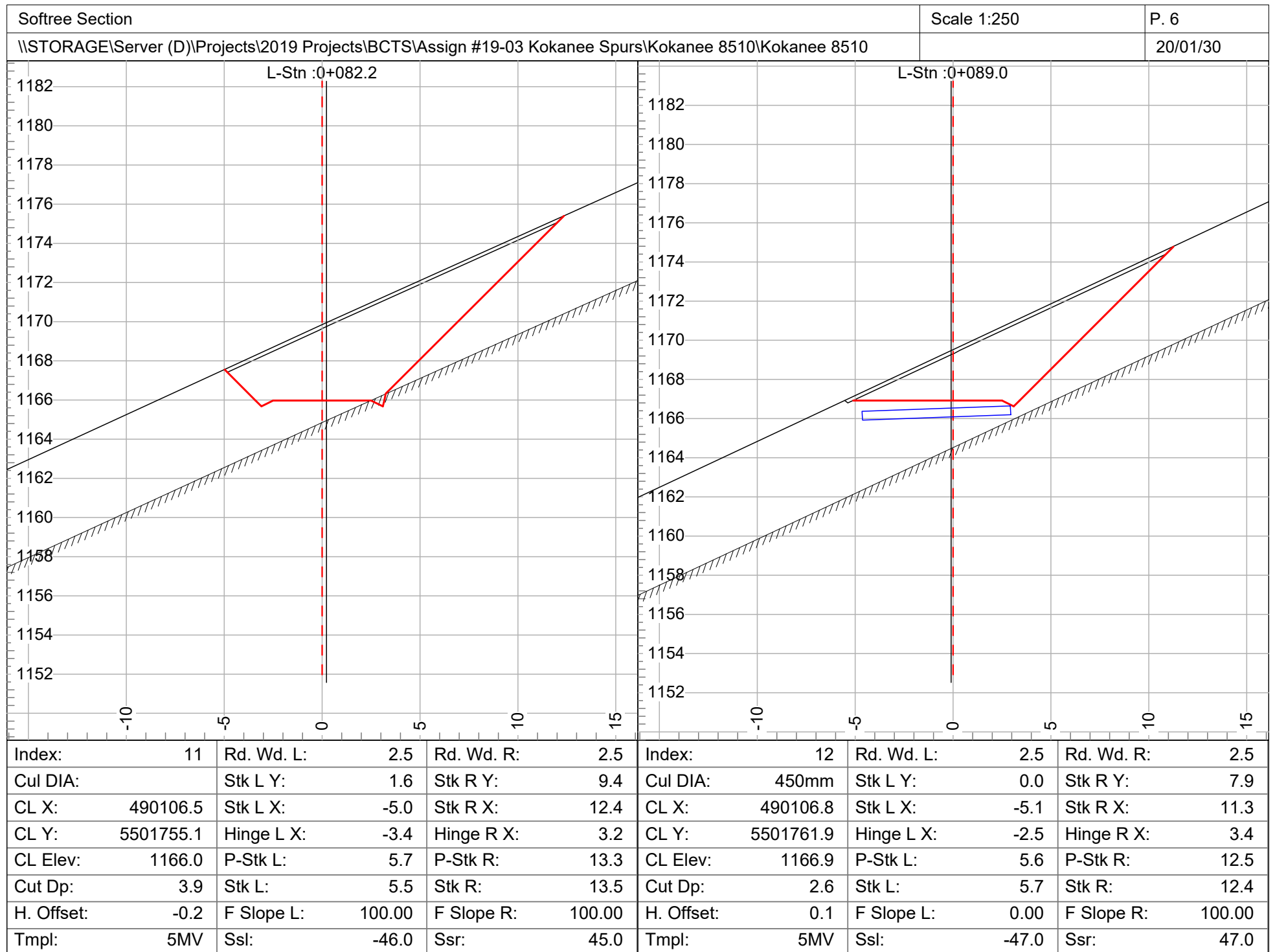


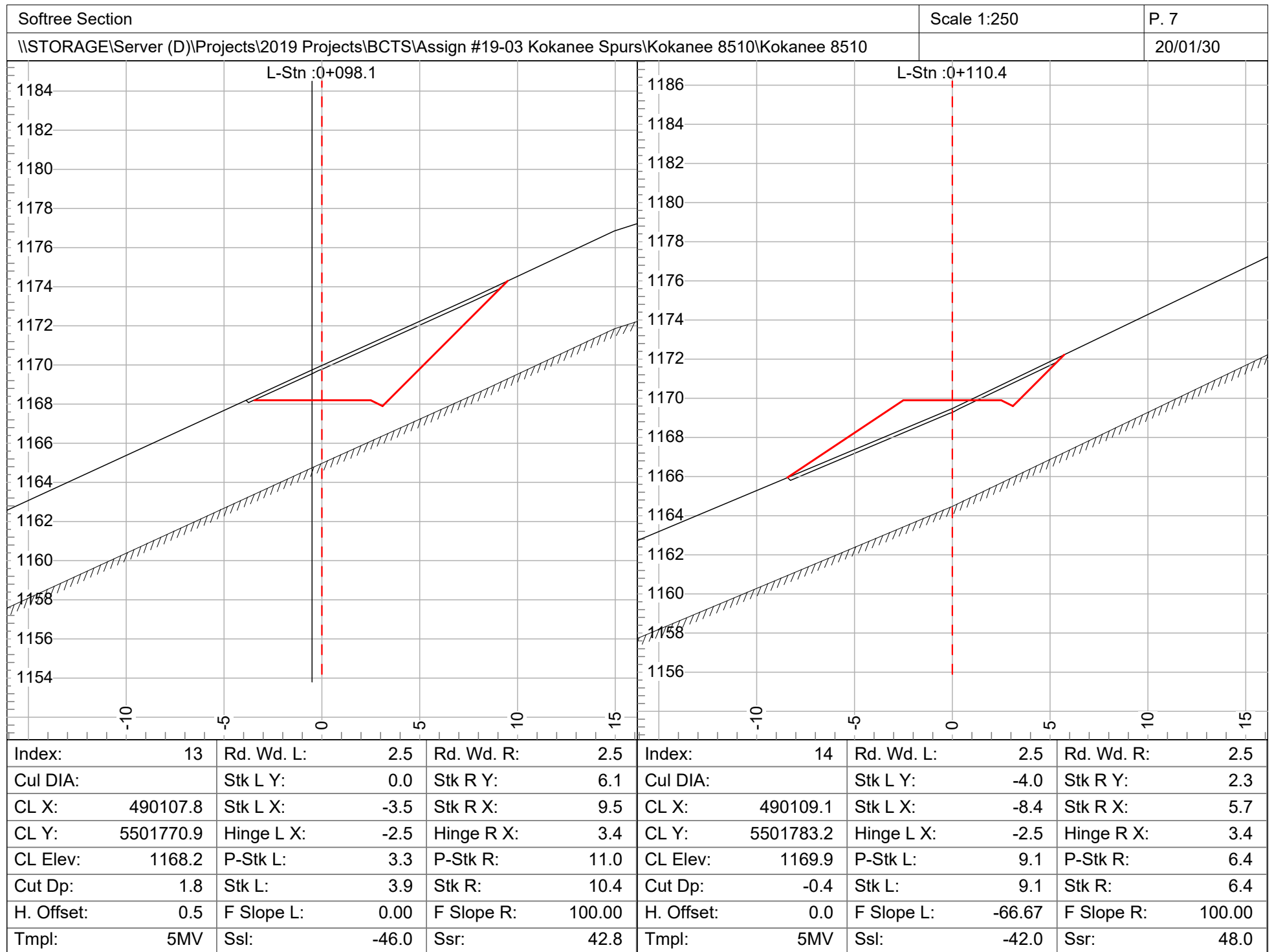


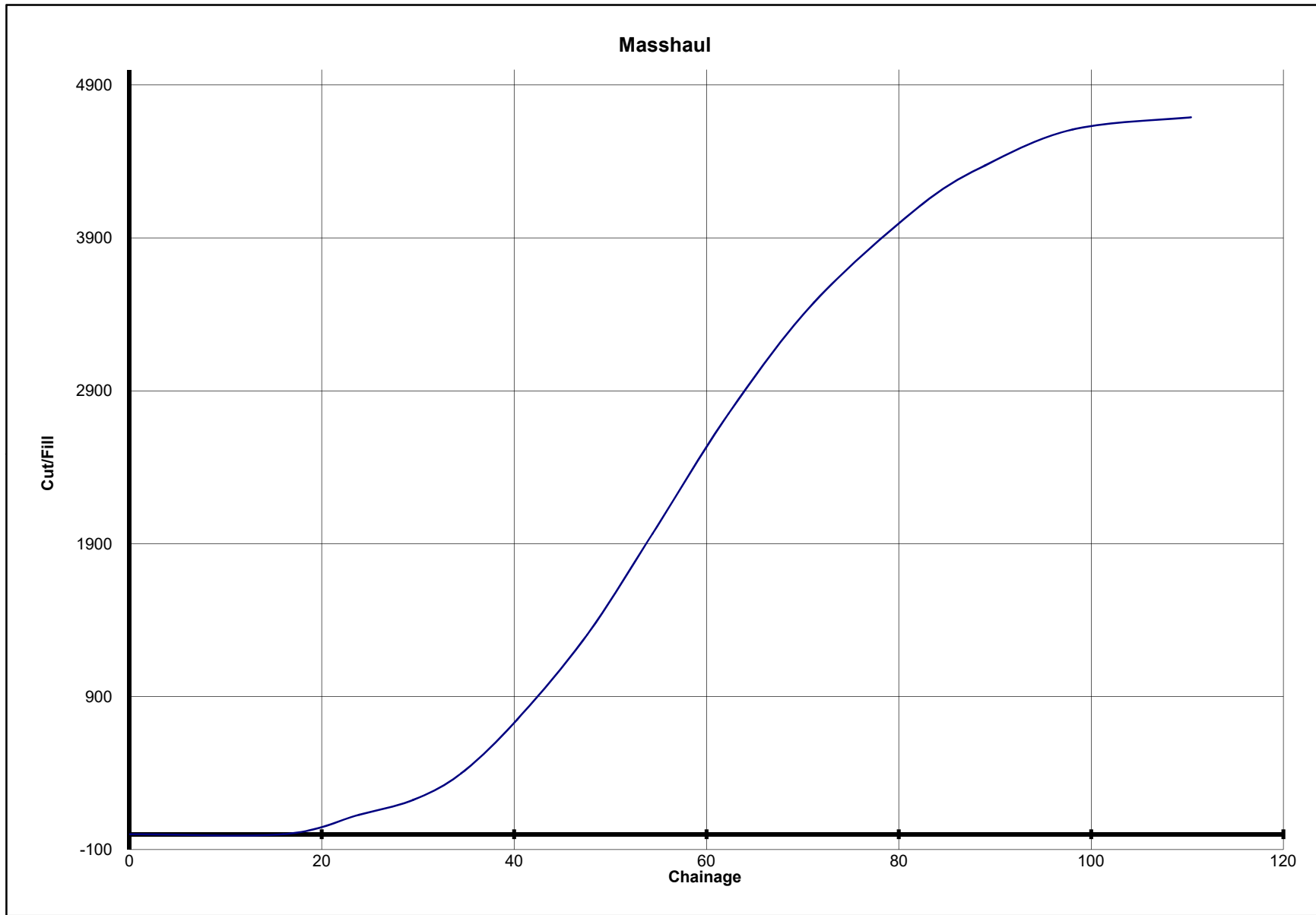












KOKANEE 8510 FSR

SECTION 3

ROAD SPECIFICATIONS
CULVERT TABLE

	KOKANEE 8510 FSR				
	<i>HUB to STATION & CULVERT REPORT</i>				
Hub	L-Stn m.	Dia mm		Skew	Length
1	0.0				
2	16.0				
3	23.9				
4	29.5				
5	34.5				
6	40.3				
7	47.6				
8	54.4				
9	62.3				
10	71.2				
11	82.2				
12	89.0	450		33	9.0
13	98.1				
14	110.4				

KOKANEE 8510 FSR										
VOLUME REPORT										
L-Stn					Accumulated				Mass H.	Index
m.	Cut V.	Fill	Cut V.	Fill	Cut V.	Fill	Cut V.	Fill		
	OM	OM	SR	SR	OM	OM	SR		m3	(Hub)
0	0		0		0	0	0	0	0	1
16	0	0	0	0	0	0	0	0	0	2
23.9	129	3	0	0	129	3	0	0	126	3
29.5	98	1	0	0	227	4	0	0	223	4
34.5	174	0	0	0	401	4	0	0	397	5
40.3	350	0	1	0	751	4	1	0	749	6
47.6	507	0	49	0	1258	4	50	0	1304	7
54.4	550	0	112	0	1808	4	162	0	1966	8
62.3	652	0	132	0	2459	4	294	0	2750	9
71.2	633	0	95	0	3093	4	390	0	3479	10
82.2	589	0	41	0	3681	4	430	0	4108	11
89	266	0	1	0	3947	4	431	0	4374	12
98.1	235	0	0	0	4182	4	431	0	4610	13
110.4	126	47	0	0	4309	51	431	0	4689	14

KOKANEE 8510 FSR										
STAKING REPORT										
Index Station	L-Stn m.	Hor Off P to L-line L(-) R(+)	Left				Right			
			Cut (C) Fill (F)		Stake Offset		Cut (C) Fill (F)		Stake Offset	
1	0	0	F	0	@	0	F	0	@	0
2	16	-0.1	F	0	@	0	F	0	@	0
3	23.9	-1	C	2.7	@	-10.2	F	0	@	0
4	29.5	-1.4	C	3.5	@	-11	F	0	@	6.3
5	34.5	-0.9	C	4.2	@	-11.7	C	2.8	@	6.2
6	40.3	0	C	2.6	@	-10	C	6.1	@	8.9
7	47.6	0.3	C	3.2	@	-10.7	C	10.4	@	11.3
8	54.4	0.8	C	3.2	@	-10.6	C	13.9	@	13.6
9	62.3	0.4	C	2.5	@	-9.4	C	13.3	@	13.8
10	71.2	0	C	3	@	-6.4	C	11.8	@	12.8
11	82.2	-0.2	C	1.6	@	-5	C	9.4	@	12.4
12	89	0.1	F	0	@	-5.1	C	7.9	@	11.3
13	98.1	0.5	F	0	@	-3.5	C	6.1	@	9.5
14	110.4	0	F	4	@	-8.4	C	2.3	@	5.7

	KOKANEE 8510 FSR					
	<i>CLEARING REPORT</i>					
Index Station	L-Stn	Hor Off	Hor Off		Clearing	Clr Total
	m.	P to L-line m.	Clr stake to L-line Left	Right	Area sqr.m.	ha.
1	0.0	0	0.0	0.0	0	0.00
2	16.0	-0.1	-9.0	0.0	0	0.00
3	23.9	-1	-13.2	0.0	120	0.01
4	29.5	-1.4	-14.0	9.3	117	0.02
5	34.5	-0.9	-14.7	9.2	145	0.04
6	40.3	0	-13.0	11.9	192	0.06
7	47.6	0.3	-13.7	14.3	197	0.08
8	54.4	0.8	-13.6	16.6	237	0.10
9	62.3	0.4	-12.4	16.8	247	0.13
10	71.2	0	-9.4	15.8	270	0.15
11	82.2	-0.2	-9.0	15.4	162	0.17
12	89.0	0.1	-9.0	14.3	204	0.19
13	98.1	0.5	-9.0	12.5	254	0.21
14	110.4	0	-11.4	9.0	0	0.21

CONSTRUCTION SUMMARY						
		FREE HAUL - MATERIAL AVAILABLE FOR ROAD CONSTRUCTION WITHIN 75m				
		END HAUL MATERIAL TRUCKED 75m - 500m				
		END HAUL MATERIAL TRUCKED FARTHER THAN 500m				
TYPE	VOL. (cu. m.)	DIRECTION	CUT RANGE (FROM)		FILL RANGE (TO)	
Borrow/Waste	4688	Pull	0+000	0+110	0+000	0+000

