

Appendix 13.15-A-Da TAC Plans and Sections



TELKWA COAL LIMITED

TENAS HAUL ROAD

Lat. 54° 38' 11.65" Long. 127° 5' 3.99"

Sheet Number	Sheet Title	
18364-204-01	Typical Sections, General Notes & Specifications	
18364-204-02	Horizonatal Curve Table & Section	
18364-204-S1	Traffic Signs - Sheet 1	
18364-204-S2	Traffic Signs - Sheet 2	
18364-204-S3	Traffic Signs - Sheet 3	
18364-204-S4	Traffic Signs - Sheet 4	
18364-204-S5	Traffic Signs - Sheet 5	
18364-204-S6	Traffic Signs - Sheet 6	
18364-204-P1	Plan & Profile 1	STA. 0+000 TO 1+000
18364-204-P1	Plan & Profile 2	STA. 1+000 TO 2+000
18364-204-P3	Plan & Profile 3	STA. 2+000 TO 3+000
18364-204-P4	Plan & Profile 4	STA. 3+000 TO 4+000
18364-204-P5	Plan & Profile 5	STA. 4+000 TO 5+000
18364-204-P6	Plan & Profile 6	STA. 5+000 TO 6+000
18364-204-P7	Plan & Profile 7	STA. 6+000 TO 7+000
18364-204-P8	Plan & Profile 8	STA. 7+000 TO 8+000
18364-204-P9	Plan & Profile 9	STA. 8+000 TO 9+000
18364-204-P10	Plan & Profile 10	STA. 9+000 TO 10+000
18364-204-P11	Plan & Profile 11	STA. 10+000 TO 11+000
18364-204-P12	Plan & Profile 12	STA. 11+000 TO 12+000
18364-204-P13	Plan & Profile 13	STA. 12+000 TO 13+000
18364-204-P14	Plan & Profile 14	STA. 13+000 TO 14+000
18364-204-P15	Plan & Profile 15	STA. 14+000 TO 15+000
18364-204-P16	Plan & Profile 16	STA. 15+000 TO 15+919.8
18364-204-M1	Mass Haul 1	STA. 0+000 TO 1+000
18364-204-M2	Mass Haul 2	STA. 1+000 TO 2+000
18364-204-M3	Mass Haul 3	STA. 2+000 TO 3+000
18364-204-M4	Mass Haul 4	STA. 3+000 TO 4+000
18364-204-M5	Mass Haul 5	STA. 4+000 TO 5+000
18364-204-M6	Mass Haul 6	STA. 5+000 TO 6+000
18364-204-M7	Mass Haul 7	STA. 6+000 TO 7+000
18364-204-M8	Mass Haul 8	STA. 7+000 TO 8+000
18364-204-M9	Mass Haul 9	STA. 8+000 TO 9+000
18364-204-M10	Mass Haul 10	STA. 9+000 TO 10+000
18364-204-M11	Mass Haul 11	STA. 10+000 TO 11+000

Sheet Number	Sheet Title	
18364-204-M12	Mass Haul 12	STA. 11+000 TO 12+000
18364-204-M13	Mass Haul 13	STA. 12+000 TO 13+000
18364-204-M14	Mass Haul 14	STA. 13+000 TO 14+000
18364-204-M15	Mass Haul 15	STA. 14+000 TO 15+000
18364-204-M16	Mass Haul 16	STA. 15+000 TO 16+000
18364-204-X1	Cross Sections 1	STA. 0+000 TO 0+150
18364-204-X2	Cross Sections 2	STA. 0+160 TO 0+350
18364-204-X3	Cross Sections 3	STA. 0+355 TO 0+490
18364-204-X4	Cross Sections 4	STA. 0+500 TO 0+690
18364-204-X5	Cross Sections 5	STA. 0+700 TO 0+870
18364-204-X6	Cross Sections 6	STA. 0+875 TO 1+010
18364-204-X7	Cross Sections 7	STA. 1+020 TO 1+210
18364-204-X8	Cross Sections 8	STA. 1+220 TO 1+410
18364-204-X9	Cross Sections 9	STA. 1+420 TO 1+610
18364-204-X10	Cross Sections 10	STA. 1+620 TO 1+810
18364-204-X11	Cross Sections 11	STA. 1+820 TO 2+010
18364-204-X12	Cross Sections 12	STA. 2+020 TO 2+210
18364-204-X13	Cross Sections 13	STA. 2+210 TO 2+410
18364-204-X14	Cross Sections 14	STA. 2+420 TO 2+610
18364-204-X15	Cross Sections 15	STA. 2+620 TO 2+800
18364-204-X16	Cross Sections 16	STA. 2+810 TO 3+000
18364-204-X17	Cross Sections 17	STA. 3+010 TO 3+200
18364-204-X18	Cross Sections 18	STA. 3+210 TO 3+390
18364-204-X19	Cross Sections 19	STA. 3+400 TO 3+560
18364-204-X20	Cross Sections 20	STA. 3+567 TO 3+720
18364-204-X21	Cross Sections 21	STA. 3+730 TO 3+895
18364-204-X22	Cross Sections 22	STA. 3+900 TO 4+034
18364-204-X23	Cross Sections 23	STA. 4+040 TO 4+170
18364-204-X24	Cross Sections 24	STA. 4+175 TO 4+320
18364-204-X25	Cross Sections 25	STA. 4+330 TO 4+465
18364-204-X26	Cross Sections 26	STA. 4+470 TO 4+600
18364-204-X27	Cross Sections 27	STA. 4+605 TO 4+770
18364-204-X28	Cross Sections 28	STA. 4+775 TO 4+905
18364-204-X29	Cross Sections 29	STA. 4+910 TO 5+060
18364-204-X30	Cross Sections 30	STA. 5+070 TO 5+200

Sheet Number	Sheet Title	
18364-204-X31	Cross Sections 31	STA. 5+210 TO 5+365
18364-204-X32	Cross Sections 32	STA. 5+370 TO 5+520
18364-204-X33	Cross Sections 33	STA. 5+530 TO 5+630
18364-204-X34	Cross Sections 34	STA. 5+634 TO 5+780
18364-204-X35	Cross Sections 35	STA. 5+790 TO 5+930
18364-204-X36	Cross Sections 36	STA. 5+940 TO 6+100
18364-204-X37	Cross Sections 37	STA. 6+110 TO 6+255
18364-204-X38	Cross Sections 38	STA. 6+260 TO 6+340
18364-204-X39	Cross Sections 39	STA. 6+341.5 TO 6+490
18364-204-X40	Cross Sections 40	STA. 6+494 TO 6+610
18364-204-X41	Cross Sections 41	STA. 6+619.5 TO 6+720
18364-204-X42	Cross Sections 42	STA. 6+730 TO 6+870
18364-204-X43	Cross Sections 43	STA. 6+880 TO 7+018
18364-204-X44	Cross Sections 44	STA. 7+020 TO 7+160
18364-204-X45	Cross Sections 45	STA. 7+161.9 TO 7+260
18364-204-X46	Cross Sections 46	STA. 7+265.9 TO 7+390
18364-204-X47	Cross Sections 47	STA. 7+400 TO 7+530
18364-204-X48	Cross Sections 48	STA. 7+540 TO 7+690
18364-204-X49	Cross Sections 49	STA. 7+695.5 TO 7+850
18364-204-X50	Cross Sections 50	STA. 7+860 TO 8+000
18364-204-X51	Cross Sections 51	STA. 8+002.7 TO 8+130
18364-204-X52	Cross Sections 52	STA. 8+140 TO 8+300
18364-204-X53	Cross Sections 53	STA. 8+310 TO 8+490
18364-204-X54	Cross Sections 54	STA. 8+499.6 TO 8+620
18364-204-X55	Cross Sections 55	STA. 8+630 TO 8+820
18364-204-X56	Cross Sections 56	STA. 8+830 TO 9+020
18364-204-X57	Cross Sections 57	STA. 9+030 TO 9+220
18364-204-X58	Cross Sections 58	STA. 9+230 TO 9+420
18364-204-X59	Cross Sections 59	STA. 9+430 TO 9+620
18364-204-X60	Cross Sections 60	STA. 9+625 TO 9+805.4
18364-204-X61	Cross Sections 61	STA. 9+810 TO 10+000
18364-204-X62	Cross Sections 62	STA. 10+010 TO 10+190
18364-204-X63	Cross Sections 63	STA. 10+200 TO 10+390
18364-204-X64	Cross Sections 64	STA. 10+400 TO 10+580
18364-204-X65	Cross Sections 65	STA. 10+590 TO 10+751.7

Sheet Number	Sheet Title	
18364-204-X66	Cross Sections 66	STA. 10+754.4 TO 10+930
18364-204-X67	Cross Sections 67	STA. 10+940 TO 11+120
18364-204-X68	Cross Sections 68	STA. 11+130 TO 11+320
18364-204-X69	Cross Sections 69	STA. 11+330 TO 11+480
18364-204-X70	Cross Sections 70	STA. 11+490 TO 11+670
18364-204-X71	Cross Sections 71	STA. 11+680 TO 11+840
18364-204-X72	Cross Sections 72	STA. 11+845 TO 12+010
18364-204-X73	Cross Sections 73	STA. 12+020 TO 12+190
18364-204-X74	Cross Sections 74	STA. 12+200 TO 12+370
18364-204-X75	Cross Sections 75	STA. 12+380 TO 12+560
18364-204-X76	Cross Sections 76	STA. 12+570 TO 12+740
18364-204-X77	Cross Sections 77	STA. 12+750 TO 12+930
18364-204-X78	Cross Sections 78	STA. 12+935 TO 13+080
18364-204-X79	Cross Sections 79	STA. 13+090 TO 13+220.9
18364-204-X80	Cross Sections 80	STA. 13+228.4 TO 13+400
18364-204-X81	Cross Sections 81	STA. 13+410 TO 13+560
18364-204-X82	Cross Sections 82	STA. 13+570 TO 13+710
18364-204-X83	Cross Sections 83	STA. 13+715 TO 13+880
18364-204-X84	Cross Sections 84	STA. 13+888.2 TO 14+060
18364-204-X85	Cross Sections 85	STA. 14+070 TO 14+250
18364-204-X86	Cross Sections 86	STA. 14+260 TO 14+440
18364-204-X87	Cross Sections 87	STA. 14+450 TO 14+640
18364-204-X88	Cross Sections 88	STA. 14+650 TO 14+830
18364-204-X89	Cross Sections 89	STA. 14+840 TO 15+030
18364-204-X90	Cross Sections 90	STA. 15+040 TO 15+230
18364-204-X91	Cross Sections 91	STA. 15+240 TO 15+430
18364-204-X92	Cross Sections 92	STA. 15+440 TO 15+630
18364-204-X93	Cross Sections 93	STA. 15+640 TO 15+830
18364-204-X94	Cross Sections 94	STA. 15+840 TO 15+919.8

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CLIENT PROJECT CODE

DATE

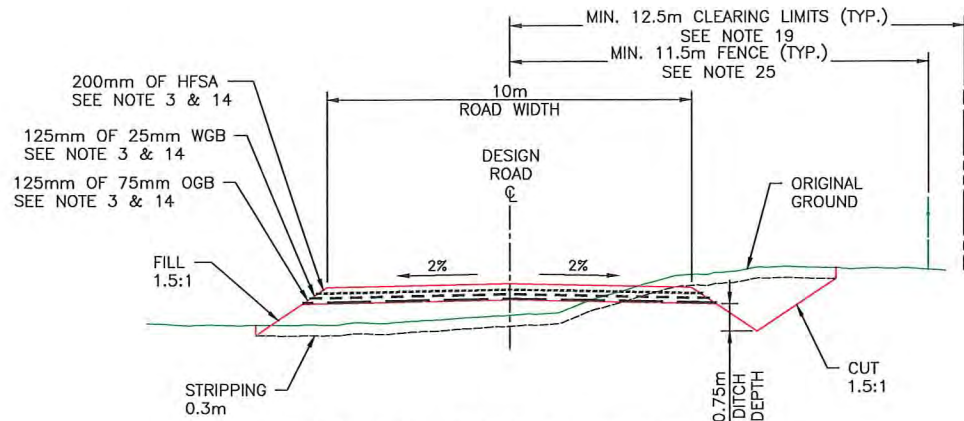
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DRAWING NUMBER

18364-204-00

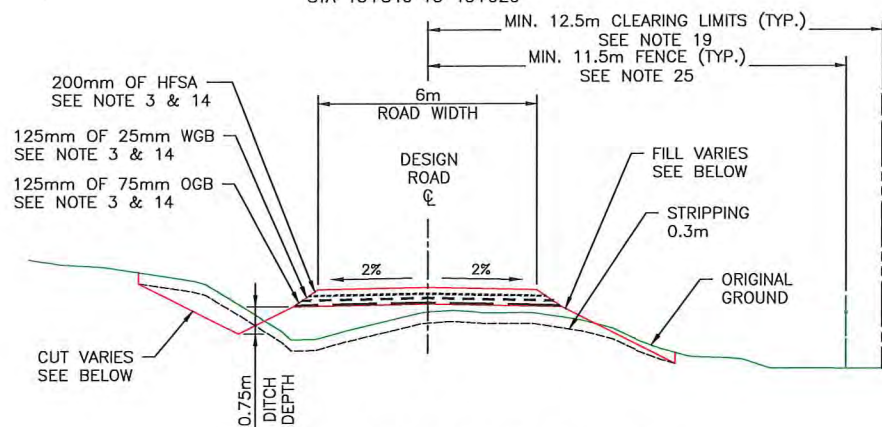
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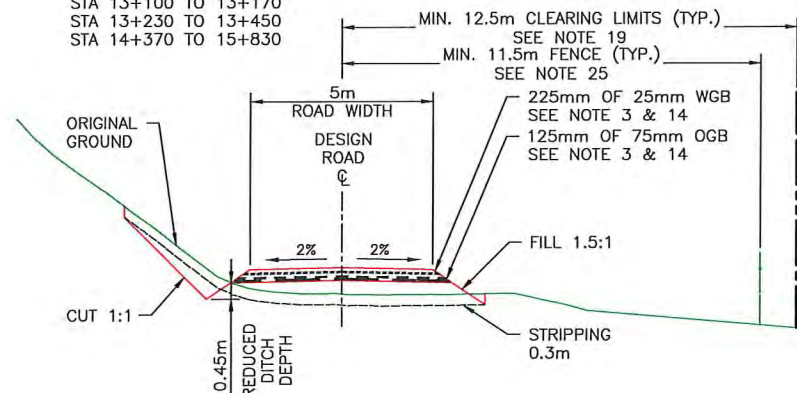
TYPICAL ROAD SECTION 10m WITH V-DITCH

STA 0+000 TO 0+220
STA 15+840 TO 15+920



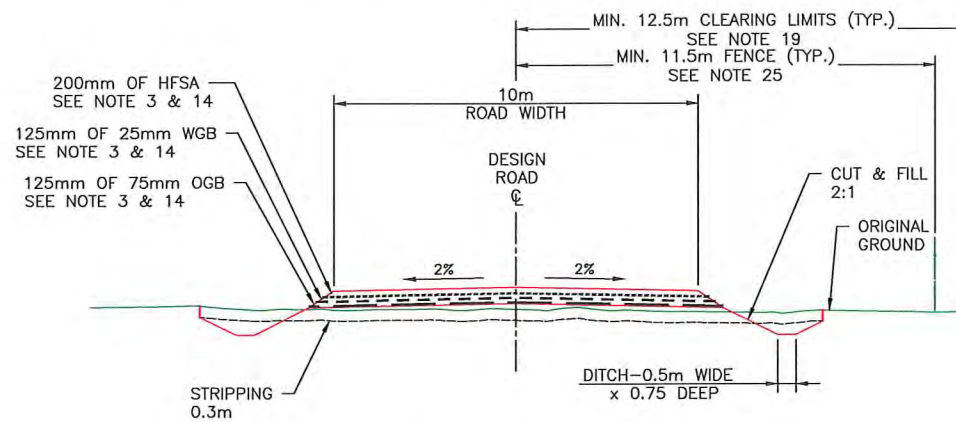
TYPICAL ROAD SECTION 6m WITH V-DITCH

CUT/FILL 1.5:1
STA 0+220 TO 0+470
STA 11+220 TO 11+440
STA 12+030 TO 13+000
STA 13+100 TO 13+170
STA 13+230 TO 13+450
STA 14+370 TO 15+830



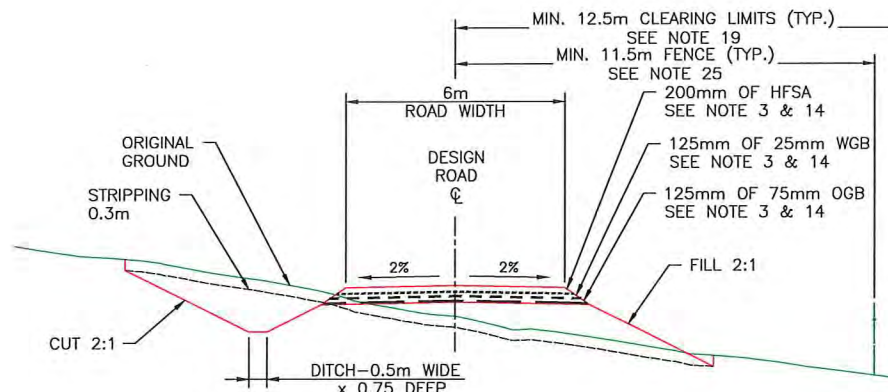
TYPICAL ROAD SECTION 5m WITH V-DITCH

STA 11+450 TO 12+020
STA 13+010 TO 13+090
STA 13+460 TO 14+360



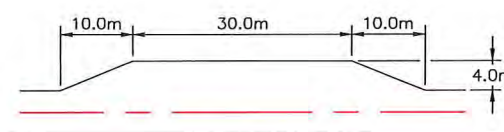
TYPICAL ROAD SECTION 10m WITH FLAT DITCH

STA 0+850 TO 1+080



TYPICAL ROAD SECTION 6m WITH FLAT DITCH

STA 0+480 TO 0+850
STA 1+080 TO 6+659.492
STA 10+890 TO 11+210



ROAD TURNOUT DETAIL

LEGEND:

- EXISTING GROUND
- STRIPPING
- PROPOSED ROAD
- TENSAR TX130S GEOGRID SEE NOTE 17
- TENSAR TX7 GEOGRID SEE NOTE 17
- NON-WOVEN GEOTEXTILE SEE NOTE 16

GENERAL NOTES:

1. ORIGINAL GROUND INFORMATION OBTAINED FROM LIDAR(2017) PROVIDED BY CLIENT, EXISTING GROUND PROFILE, STRIPPING AND SOIL DEPTHS MAY VARY. CONSTRUCTION SURVEY EQUIPMENT IS RECOMMENDED TO CONFIRM ACTUAL CROSS SECTIONS TO BE CONSTRUCTED.
2. NO GEOTECHNICAL INFORMATION AVAILABLE AT TIME OF DESIGN. ROAD CROSS SECTION DESIGN BASED ON TYPICAL SOIL PROPERTIES FROM AASHTO 1993 GUIDE FOR DESIGN OF PAVEMENT STRUCTURES, VAN TILL et al., NCHRP 128, AND MAY CHANGE BASED ON FURTHER TESTING.
3. LOCAL CUT MATERIAL IS ASSUMED SUITABLE FOR SUBGRADE FILLS UNLESS NOTED OTHERWISE.
 - SUBGRADE CONSTRUCTION SHALL BE COMPACTED TO 95% SPD.
 - HFSA SHALL BE COMPACTED TO 98% SPD.
 - WGB & OGB SHALL BE COMPACTED TO 98% SPD.
4. CULVERT LENGTHS ARE ASSUMED MINIMUMS ONLY, ADJUST AS REQUIRED FOR CONSTRUCTED CROSS SECTIONS.
5. EXCAVATION OF BELL HOLES AND CUT SLOPE ARMOURING MAY BE REQUIRED AT PROPOSED CULVERT LOCATIONS.
6. CULVERTS ON EXISTING DRAINAGE TO MATCH DRAINAGE PATH. IF DRAINAGE PATH IS GREATER THAN 5%, ARMOUR OUTLET POOL.
7. AT A MINIMUM, CONSTRUCTION PRACTICES SHALL COMPLY WITH THE MFLNRO ENGINEERING MANUAL, DECEMBER 13, 2018.
8. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL BENCHMARKS & ANY UTILITIES.
10. PROPERTY & RIGHT-OF-WAY BOUNDARIES SHOWN ON PLAN & PROFILE PAGES ARE APPROXIMATE ONLY.

ROAD SPECIFICATION NOTES:

11. DESIGN SPEED 50km/h.
12. FINISHED ROAD SURFACE VARIES, SEE TYPICAL SECTIONS AND STATION RANGES.
13. RIGHT OF WAY TO MAINTAIN MINIMUM OF 3m FROM CUT/FILL SLOPES, OR 12.5m OFFSET, WHICHEVER IS GREATER.
14. SPECIFICATIONS FOR HFSA, WGB & OGB TO BE AS PER MoTI SS202 TABLE 202-C.
15. TOTAL AGGREGATE DEPTH TO BE 450mm, EXCEPT THROUGH THE GOATHORN VALLEY WHERE WIDTH RESTRICTIONS EXIST, TOTAL DEPTH TO BE 350mm.
16. NON-WOVEN GEOTEXTILE TO BE ARMETEC 250 OR APPROVED EQUIVALENT.
17. GEOGRID TO BE TENSAR TX130S & TENSAR TX7, OR APPROVED EQUIVALENTS. INSTALL ACCORDING TO MANUFACTURERS REQUIREMENTS & CONFIRM UPON FURTHER TESTING.
18. TYPICAL SECTIONS MAY CHANGE BASED ON FINAL ROAD DESIGN REQUIREMENTS.
19. CLEARING LIMITS TO BE A MINIMUM OF 12.5m FROM ROAD CENTERLINE OR 3.0m BEYOND CUT/FILL LIMITS.

RANGE FENCE SPECIFICATION NOTES

20. POSTS
 - LINE POSTS SHALL BE 2.1m IN LENGTH, 75-100mm IN DIAMETER, PRESSURE TREATED, POINTED AND DOMED, AND DRIVEN TO A MINIMUM DEPTH OF 750mm.
 - BRACE POSTS SHALL BE 2.4m IN LENGTH, 100-125mm IN DIAMETER, PRESSURE TREATED, AND DOMED, AND BE DRIVEN TO A MINIMUM DEPTH OF 1050mm.
21. BARBED WIRE SHALL BE 121/2 GAUGE TWISTED DOUBLE STRAND BARBED WIRE THAT HAS CLASS 1 GALVANIZING. BARBED WIRE SHALL HAVE A BREAKING STRENGTH OF 340kg(950lbs) AND SHALL BE PRETENSIONED TO 275kg(600lbs) AND STAPLED AT 115-135kg(250-300lbs). SMOOTH WIRE SHALL BE 121/2 GAUGE WITH A MINIMUM BREAKING STRENGTH 340kg(950lbs).
22. DROPPERS SHALL BE 35mm DIAMETER WOOD OR EQUIVALENT AND SHALL BE WIRE TIED TO THE FENCE WIRES WITH LOW TENSILE STEEL WIRE.
23. STAPLES SHALL BE 13/4"(35mm) AT A MINIMUM, SLASH POINT, AND HOT TIP GALVANIZED.
24. ALL SPECIFICATIONS BASED ON THE B.C. AGRICULTURAL FENCING HANDBOOK-COMplete GUIDE (DECEMBER 2015).
25. FENCE LOCATION TO BE MINIMUM OF 11.5m FROM ROAD CENTERLINE OR 2.0m BEYOND CUT/FILL LIMITS.



TELKWA COAL
LIMITED
TENAS HAUL ROAD

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DESIGNED: BM DATE: 2019-01-14
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: DATE:
DRAWN: KAK DATE: 2019-02-20

TYPICAL SECTIONS, GENERAL NOTES & SPECIFICATIONS

LATITUDE: 54° 38' 11.65" NAD83 NORTHING: 6056036 DRAWING NUMBER: 18364-204-01 REV: B
LONGITUDE: 127° 5' 3.99" 9U EASTING: 623633

SCALE AS NOTED		CAD FILENAME: 18364-204-EASTHALE		
		DATE: 2019-05-24		
REV	DATE	DESCRIPTION	DRW	CHK
A	APR.19	ISSUED FOR REVIEW	KAK	KD
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD

SENIOR DESIGNER
DATE: 2019-05-24

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U:\2019\Coal Sense (364)\204 - Phase 2 - Road Design\DesignModel\03_Corridors\18364-204_RoadPlanProduction-Easthaul.dwg

HORIZONTAL CURVE INFORMATION					
Curve #	Radius	Length	Ic	B.C.	E.C.
1	48.00	145.08	173.1812 °	0+057.07	0+202.15
2	100.00	38.88	22.2777 °	0+231.98	0+270.87
3	300.00	28.21	5.3881 °	0+762.71	0+790.93
4	30.00	58.19	111.1296 °	0+865.04	0+923.23
5	75.00	115.92	88.5585 °	0+958.04	1+073.96
6	250.00	238.05	54.5572 °	1+209.32	1+447.37
7	300.00	34.95	6.6751 °	1+563.92	1+598.88
8	300.00	86.18	16.4587 °	1+677.29	1+763.47
9	300.00	85.09	16.2507 °	1+867.35	1+952.44
10	300.00	14.09	2.6904 °	2+267.36	2+281.45
11	300.00	108.43	20.7082 °	3+286.62	3+395.05
12	300.00	96.10	18.3545 °	3+781.82	3+877.92
13	300.00	24.49	4.6766 °	4+270.46	4+294.95
14	300.00	53.28	10.1757 °	4+586.71	4+639.99
15	300.00	50.15	9.5787 °	4+768.47	4+818.63
16	300.00	22.69	4.3344 °	5+099.52	5+122.22
17	300.00	40.50	7.7345 °	5+679.60	5+720.09
18	200.00	61.75	17.6907 °	5+950.81	6+012.57
19	280.00	191.27	39.1398 °	6+238.13	6+429.40
20	300.00	7.50	1.4331 °	7+161.23	7+168.73
21	300.00	9.35	1.7865 °	7+345.47	7+354.82
22	00.00	00.00	0.3809 °	7+760.25	7+760.25
23	300.00	61.65	11.7737 °	8+323.80	8+385.44
24	4000.00	416.75	5.9696 °	8+672.36	9+089.12
25	375.00	297.67	45.4799 °	10+398.86	10+696.52
26	160.00	106.83	38.2540 °	11+243.06	11+349.88
27	65.00	70.66	62.2841 °	11+436.13	11+506.79
28	110.00	73.37	38.2181 °	11+529.68	11+603.05
29	30.00	39.75	75.9172 °	11+636.04	11+675.79
30	65.00	38.37	33.8249 °	11+693.72	11+732.10
31	50.00	53.09	60.8373 °	11+763.55	11+816.64
32	100.00	51.40	29.4475 °	11+857.57	11+908.97
33	80.00	18.54	13.2757 °	11+915.04	11+933.58
34	100.00	24.19	13.8607 °	12+009.72	12+033.91
35	500.00	58.06	6.6535 °	12+205.45	12+263.52
36	100.00	25.60	14.6683 °	12+513.63	12+539.23
37	160.00	52.17	18.6805 °	12+743.33	12+795.50
38	100.00	46.07	26.3959 °	12+955.76	13+001.83
39	100.00	32.17	18.4305 °	13+045.17	13+077.33
40	35.00	4.90	8.0260 °	13+090.90	13+095.81
41	35.00	41.01	67.1341 °	13+139.04	13+180.05
42	35.00	53.45	87.5008 °	13+235.76	13+289.21
43	100.00	9.92	5.6816 °	13+368.57	13+378.49
44	160.00	90.00	32.2299 °	13+417.72	13+507.73
45	75.00	30.90	23.6058 °	13+508.68	13+539.58
46	75.00	57.32	43.7917 °	13+566.79	13+624.11
47	40.00	69.31	99.2732 °	13+643.98	13+713.28
48	65.00	42.60	37.5492 °	13+729.88	13+772.48
49	90.00	60.77	38.6869 °	13+780.55	13+841.31

SPEED REDUCTION
20km/h
SPEED REDUCTION
40km/h

SPEED REDUCTION
40km/h

SPEED REDUCTION
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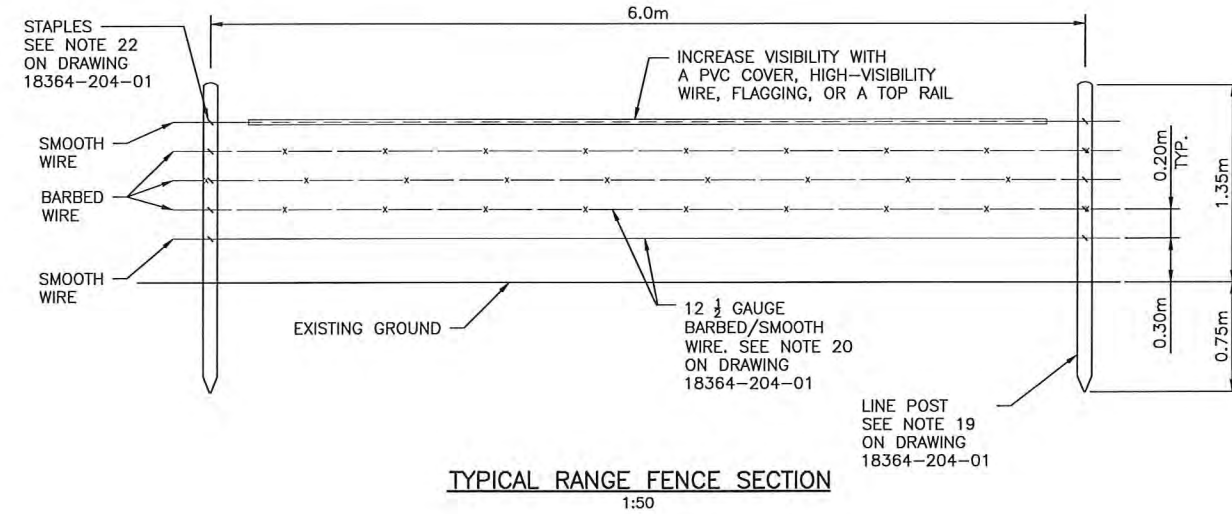
Curve #	Radius	Length	Ic	B.C.	E.C.
50	100.00	38.44	22.0266 °	13+893.03	13+931.47
51	100.00	36.27	20.7810 °	13+960.30	13+996.57
52	100.00	67.46	38.6507 °	14+023.54	14+091.00
53	35.00	36.64	59.9836 °	14+155.22	14+191.86
54	35.00	18.48	30.2545 °	14+235.17	14+253.65
55	37.00	85.79	132.8540 °	14+280.29	14+366.08
56	100.00	62.16	35.6165 °	14+398.98	14+461.14
57	130.00	61.44	27.0796 °	14+479.70	14+541.14
58	100.00	36.76	21.0636 °	14+585.26	14+622.02
59	120.00	48.09	22.9625 °	14+666.91	14+715.00
60	500.00	38.72	4.4368 °	14+970.15	15+008.87
61	100.00	83.68	47.9428 °	15+162.64	15+246.31
62	400.00	214.51	30.7269 °	15+293.27	15+507.78
63	100.00	62.92	36.0508 °	15+560.94	15+623.86
64	100.00	86.38	49.4943 °	15+719.06	15+805.45
65	20.00	25.88	74.1323 °	15+852.42	15+878.30

SPEED REDUCTION
30km/h
SPEED REDUCTION
30km/h
SPEED REDUCTION
30km/h

SPEED REDUCTION
20km/h

NOTES:

1. FOR GENERAL NOTES, SPECIFICATIONS, & TYPICAL SECTIONS SEE DRAWING 18364-204-01.
- 2 FOR PLAN & PROFILE SEE DRAWINGS 18364-204-P1 TO 18364-204-P16.
3. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
4. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.



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1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561

DESIGNED BY DATE 2019-01-14
QUALITY CONTROL TW DATE 2019-03-29
QUALITY ASSURANCE DATE
DRAWN KAK DATE 2019-02-19



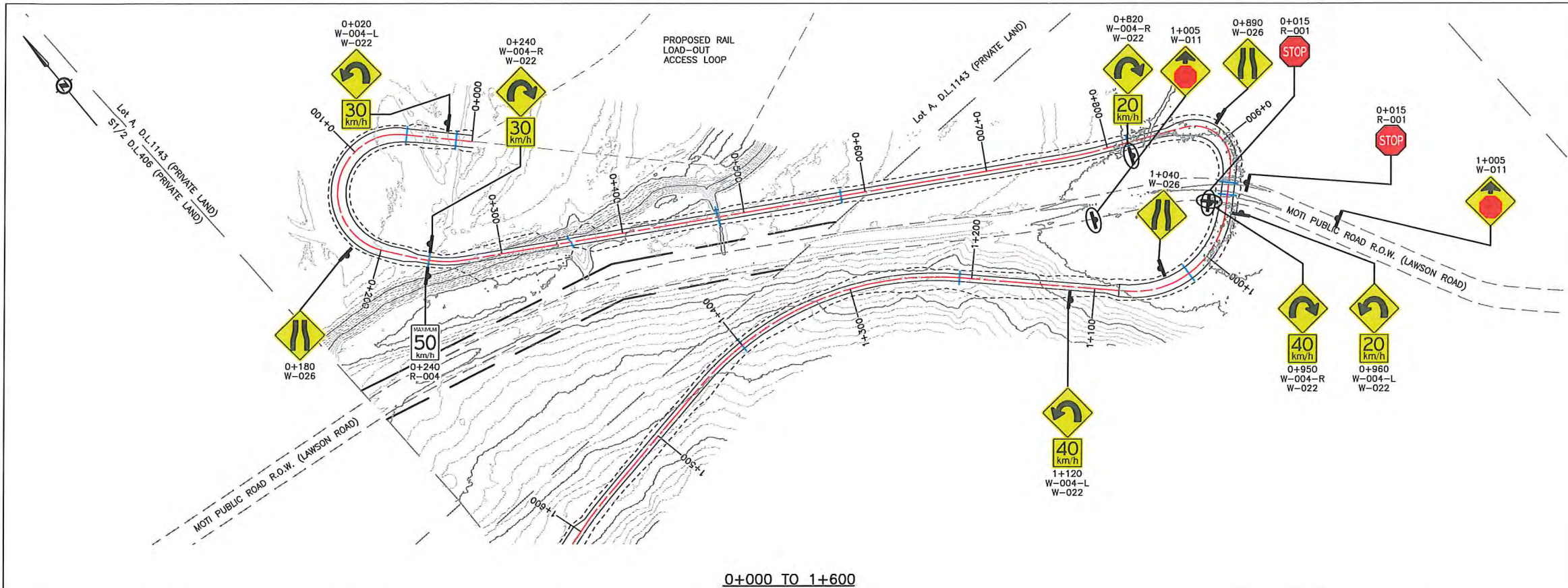
TENAS HAUL ROAD

HORIZONTAL CURVE TABLE & SECTION

LATITUDE: 54° 38' 11.65" NAD83 NORTHING: 6056036 DRAWING NUMBER REV
LONGITUDE: 127° 5' 3.99" 9J EASTING: 623633 18364-204-02 B

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- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. ALL SIGNS SHALL MEET MINIMUM REQUIREMENTS OF THE "Manual of Standard Traffic Signs & Pavement Markings", BC MoTI, SEPT. 2000.

- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - NEW CULVERT
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT



1+600 TO 2+800

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		DATE 2019-05-24			
REV	DATE	DESCRIPTION	DRW	CHK	ENG
A	MAY.19	ISSUED FOR REVIEW	WG	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



SENIOR DESIGNER
DATE 2019-05-24

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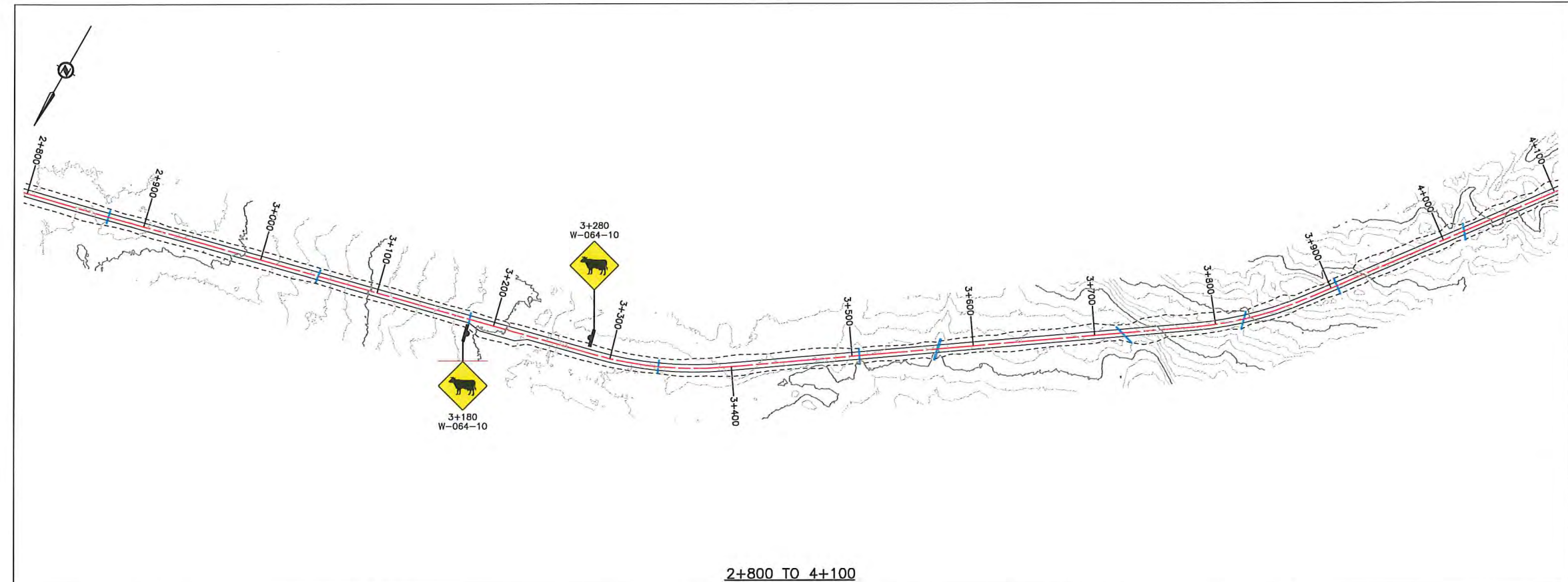
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QUALITY CONTROL _____ TW DATE 2019-03-29
QUALITY ASSURANCE _____ DATE _____
DRAWN _____ WG DATE 2019-04-24



TENAS HAUL ROAD
STA. 0+000 to 2+800

Traffic Signs - Sheet 1

LATITUDE: 54° 38' 11.65"	NAD83	NORTHING: 6056036	DRAWING NUMBER	REV
LONGITUDE: 127° 5' 3.99"	SU	EASTING: 623633	18364-204-S1	B



- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. ALL SIGNS SHALL MEET MINIMUM REQUIREMENTS OF THE "Manual of Standard Traffic Signs & Pavement Markings", BC MoTI, SEPT. 2000.

- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - NEW CULVERT
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT

2+800 TO 4+100



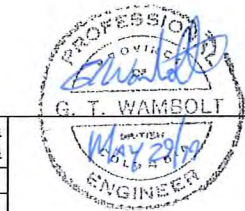
4+100 TO 5+300

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SCALE 1:4000			CAD FILENAME 18364-204-ESIGNS		
			DATE 2019-05-24		
REV	DATE	DESCRIPTION	DRW	CHK	ENG
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B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



SENIOR DESIGNER
DATE 2019-05-24

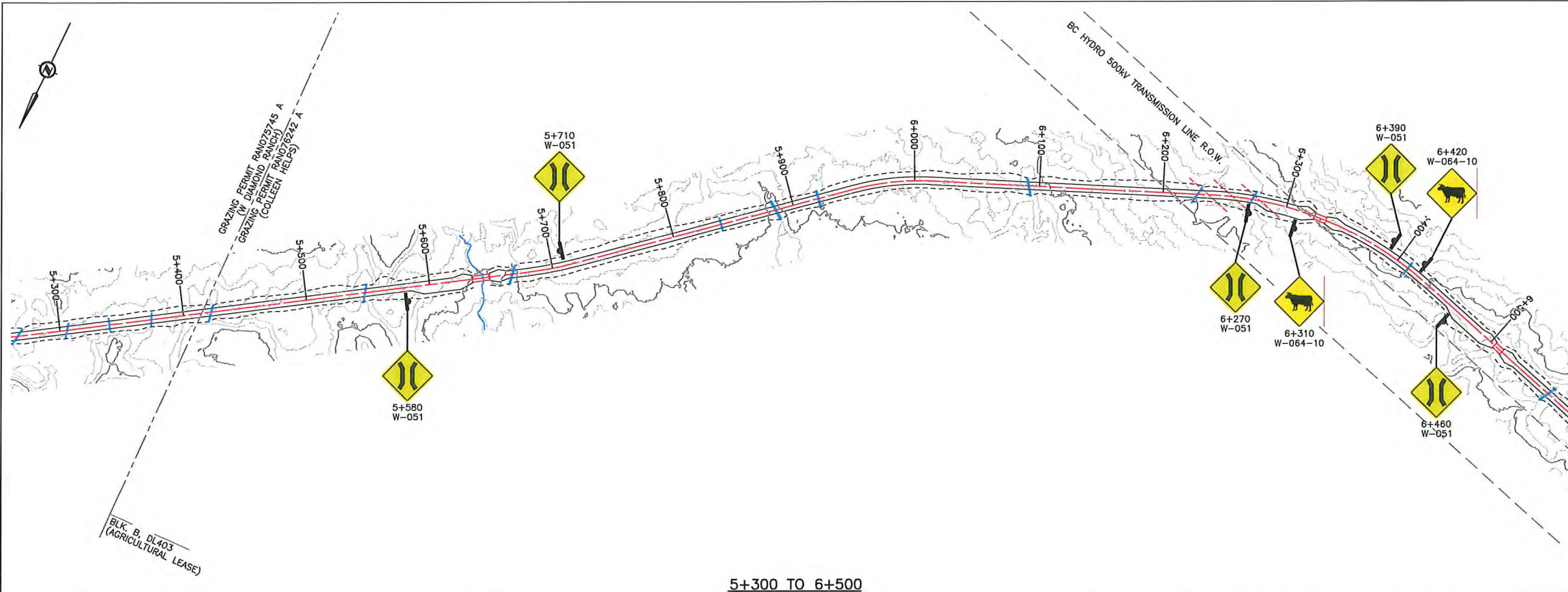
DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561

DESIGNED _____ BM DATE 2019-01-14
QUALITY CONTROL _____ TW DATE 2019-03-29
QUALITY ASSURANCE _____ DATE _____
DRAWN _____ WG DATE 2019-04-24

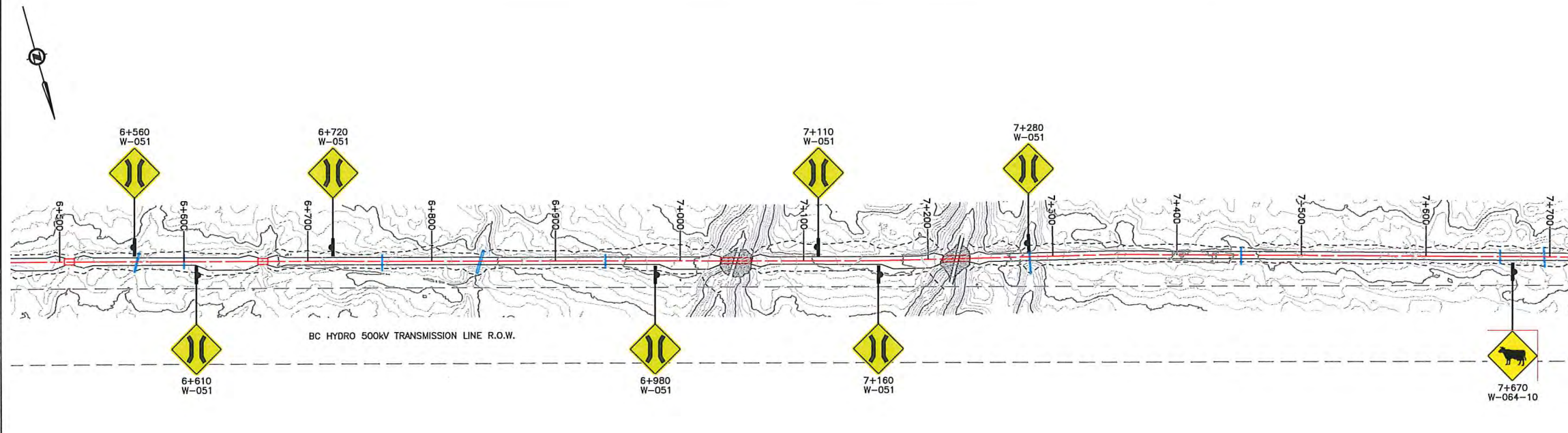


TENAS HAUL ROAD
STA. 2+800 to 5+300

Traffic Signs - Sheet 2					
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	18364-204-S2
					REV
					B



5+300 TO 6+500



6+500 TO 7+700

- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. ALL SIGNS SHALL MEET MINIMUM REQUIREMENTS OF THE "Manual of Standard Traffic Signs & Pavement Markings", BC MoTI, SEPT. 2000.

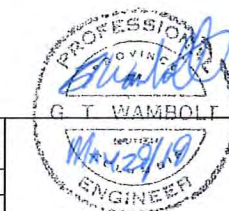
- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - NEW CULVERT
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT

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ISSUED FOR CONSTRUCTION

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REV	DATE	DESCRIPTION	DRW	CHK	ENG
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B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



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DATE 2019-05-24

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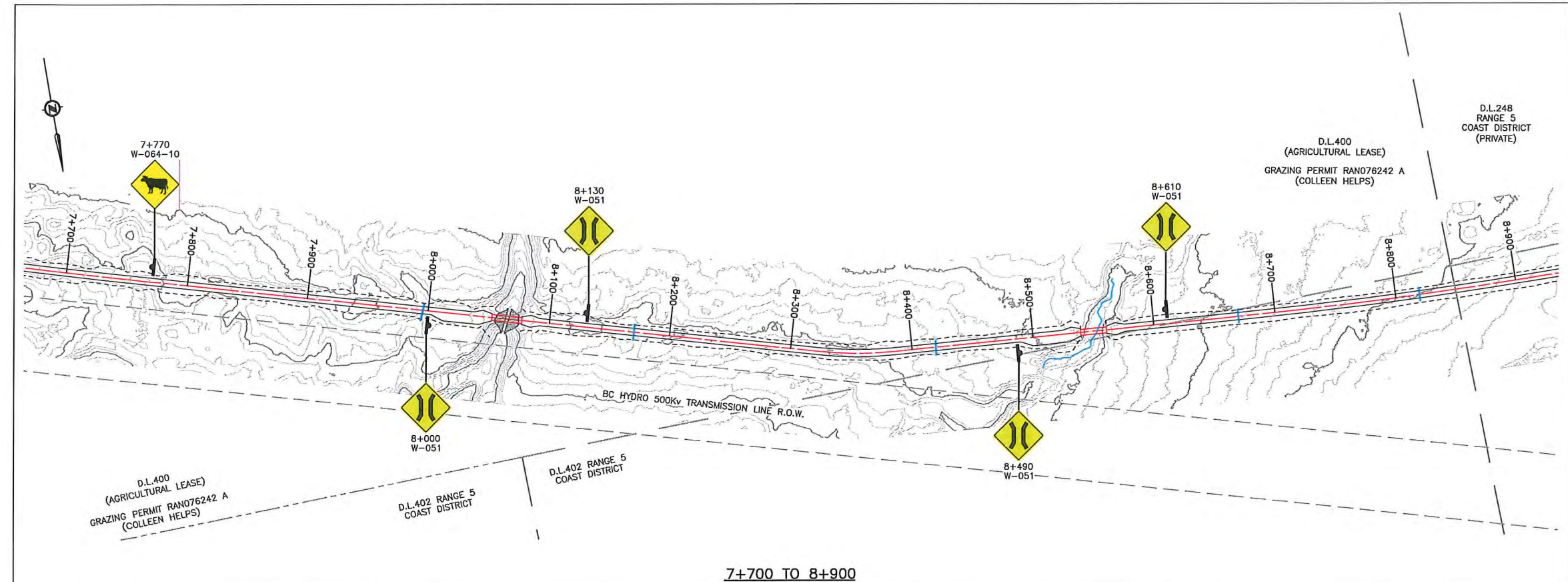
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QUALITY CONTROL: TW DATE 2019-03-28
QUALITY ASSURANCE: DATE
DRAWN: WG DATE 2019-04-24



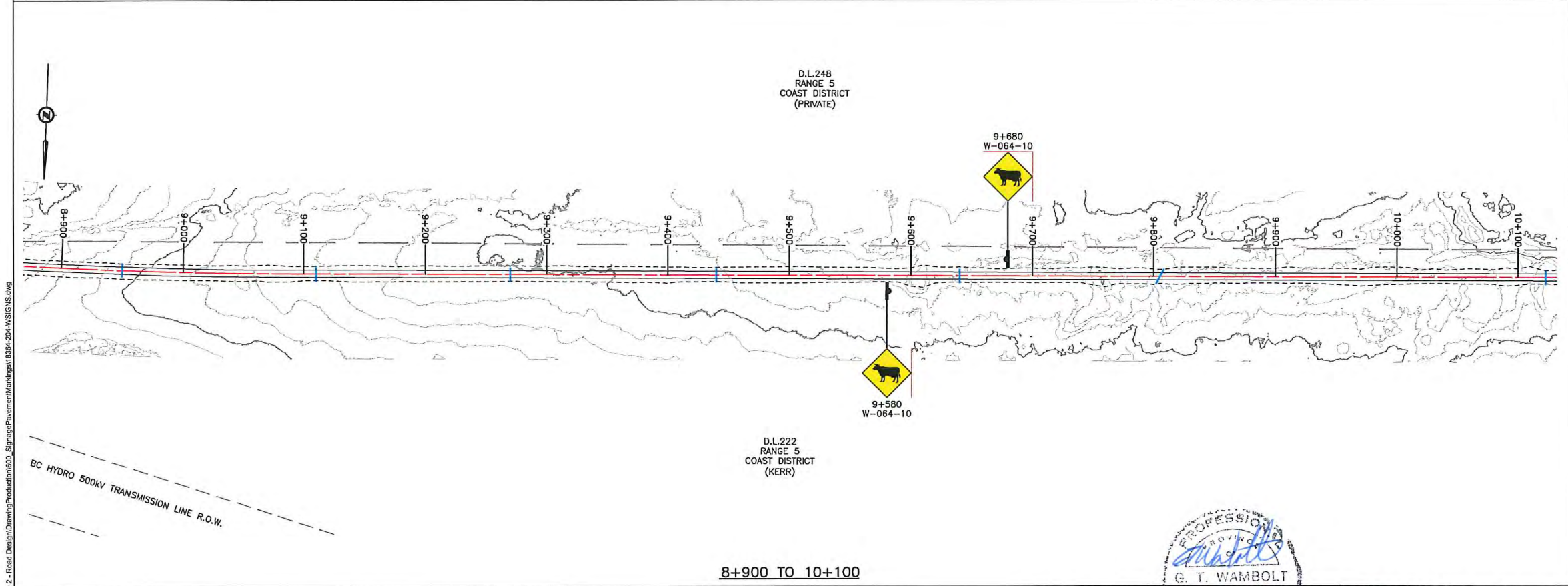
TENAS HAUL ROAD
STA. 5+300 to 7+700

Traffic Signs - Sheet 3

LATITUDE: 54° 38' 11.65"	NAD83	NORTHING: 6056036	DRAWING NUMBER	REV
LONGITUDE: 127° 5' 3.99"	8U	EASTING: 623633	18364-204-S3	A



7+700 TO 8+900



8+900 TO 10+100

- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. ALL SIGNS SHALL MEET MINIMUM REQUIREMENTS OF THE "Manual of Standard Traffic Signs & Pavement Markings", BC MoTI, SEPT. 2000.

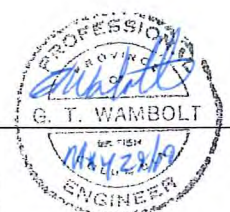
- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - NEW CULVERT
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT

L:\2018\Coal Series (384)\204 - Phase 2 - Road Design\Drawings\Production\204_Signage\PavementMarkings\18364-204-WSIGNS.dwg

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SCALE 1:4000			CAD FILENAME 18364-204-WSIGNS		
			DATE 2019-05-24		
REV	DATE	DESCRIPTION	DRW	CHK	ENG
A	MAY.19	ISSUED FOR REVIEW	WG	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



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DATE 2019-05-24

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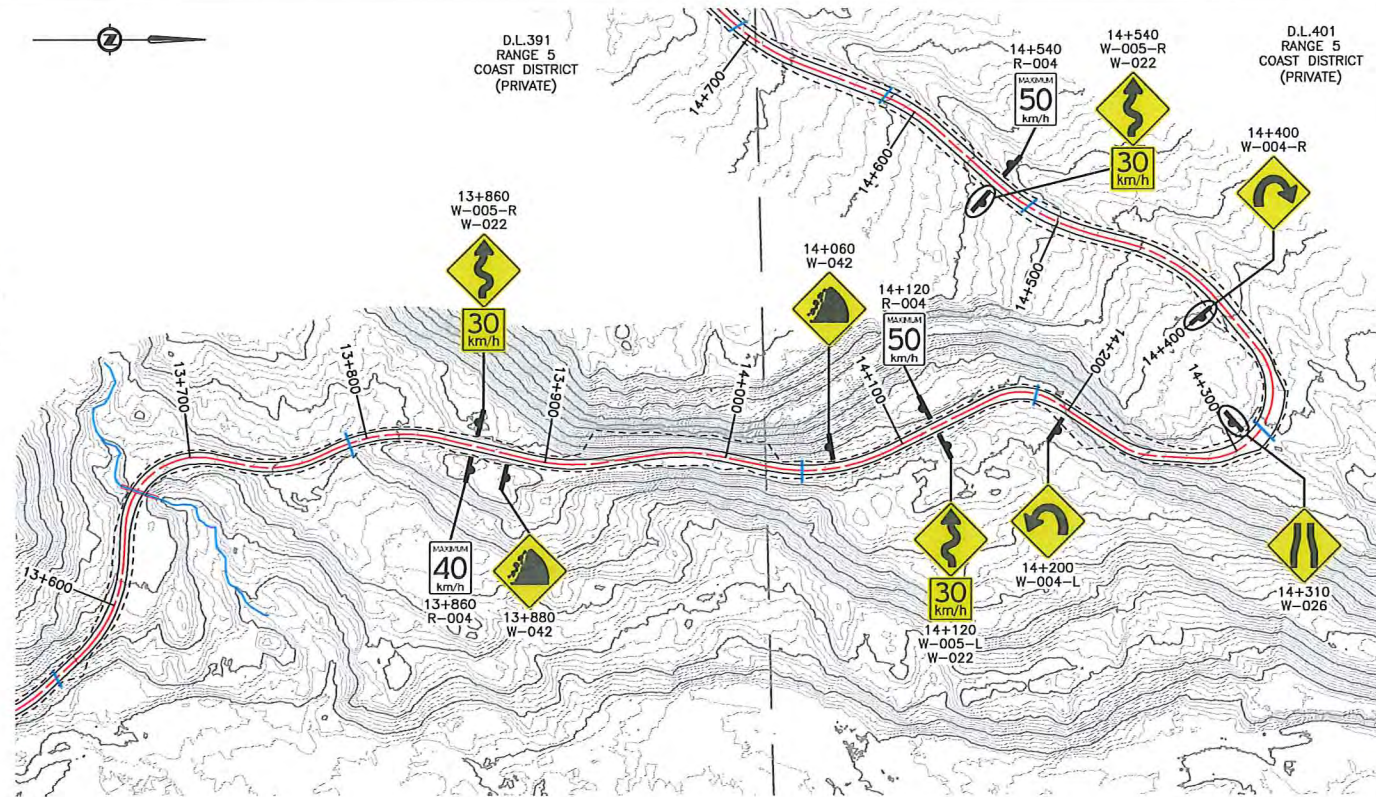
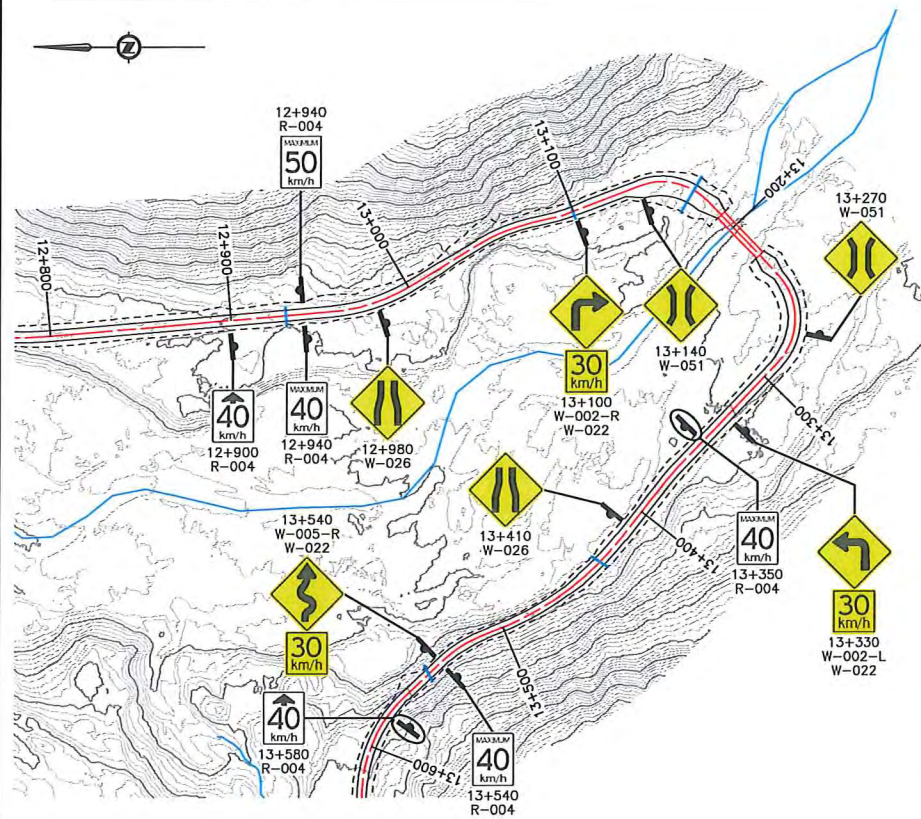
DESIGNED BM DATE 2019-03-04
QUALITY CONTROL TW DATE 2019-03-29
QUALITY ASSURANCE --- DATE ---
DRAWN WG DATE 2019-04-24



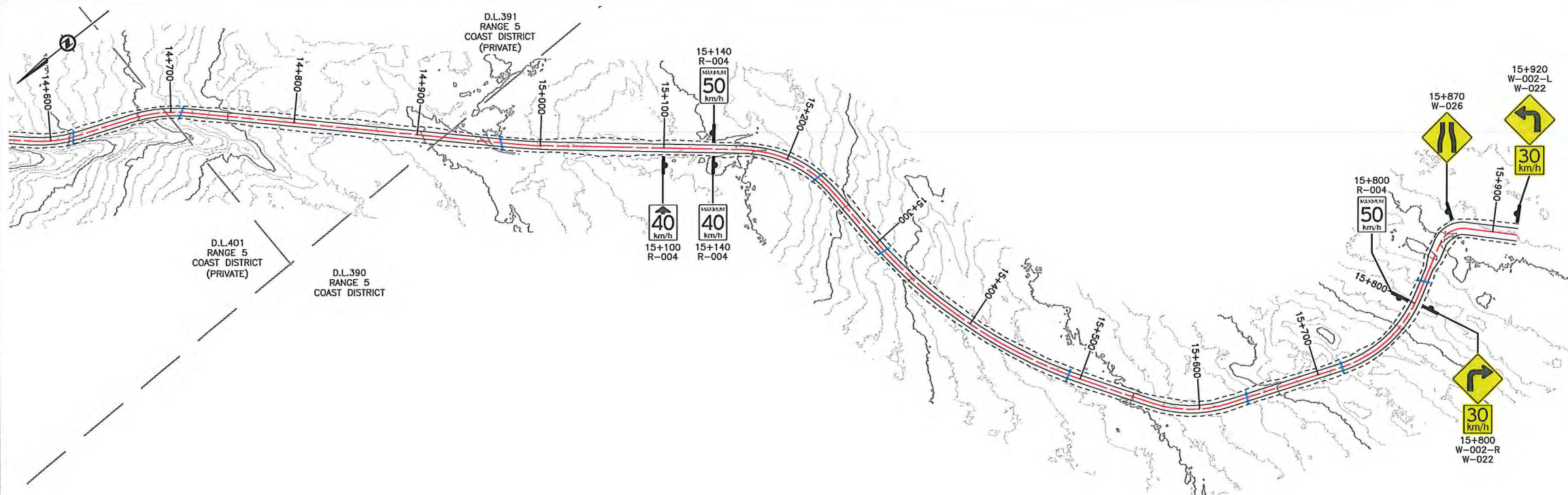
TENAS HAUL ROAD
STA. 7+700 to 10+100

Traffic Signs - Sheet 4

LATITUDE	54° 38' 11.65"	NAD83	NORTHING	6056036	DRAWING NUMBER	REV
LONGITUDE	127° 5' 3.99"	9U	EASTING	623633	18364-204-S4	B



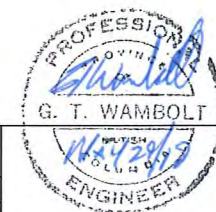
12+800 TO 14+700



14+600 TO 15+920

- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. ALL SIGNS SHALL MEET MINIMUM REQUIREMENTS OF THE "Manual of Standard Traffic Signs & Pavement Markings", BC MoTI, SEPT. 2000.

- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - NEW CULVERT
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT



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DESIGNED: BM DATE: 2019-03-04
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: DATE:
DRAWN: WG DATE: 2019-04-24



TENAS HAUL ROAD
STA. 12+800 to 15+920

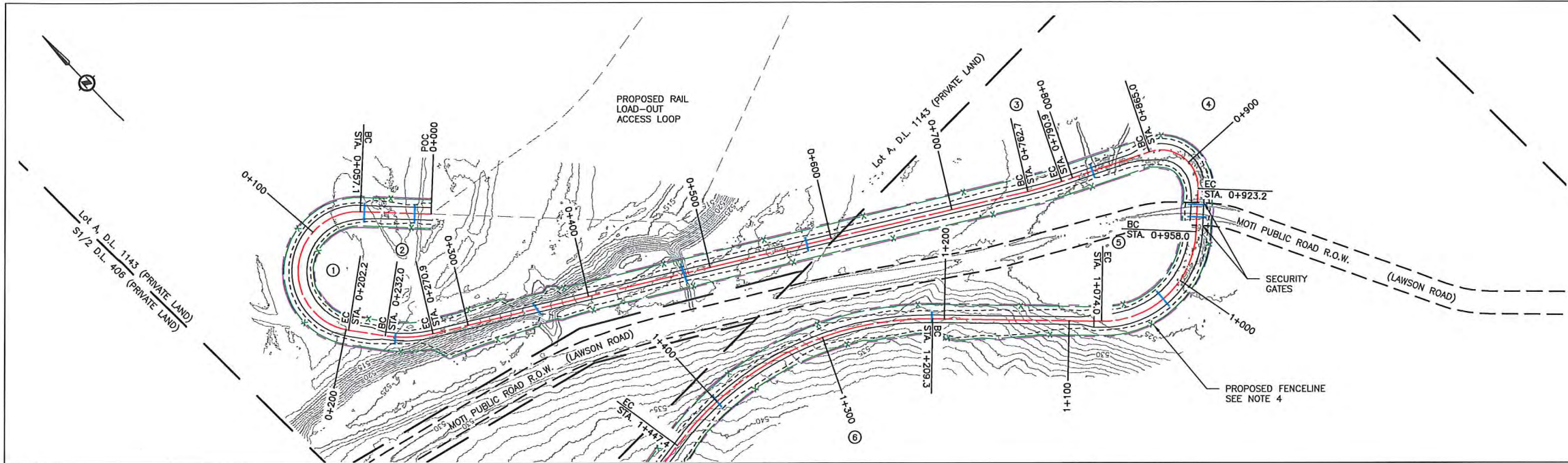
Traffic Signs - Sheet 6

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	SU	EASTING:	623633	18364-204-S6	B

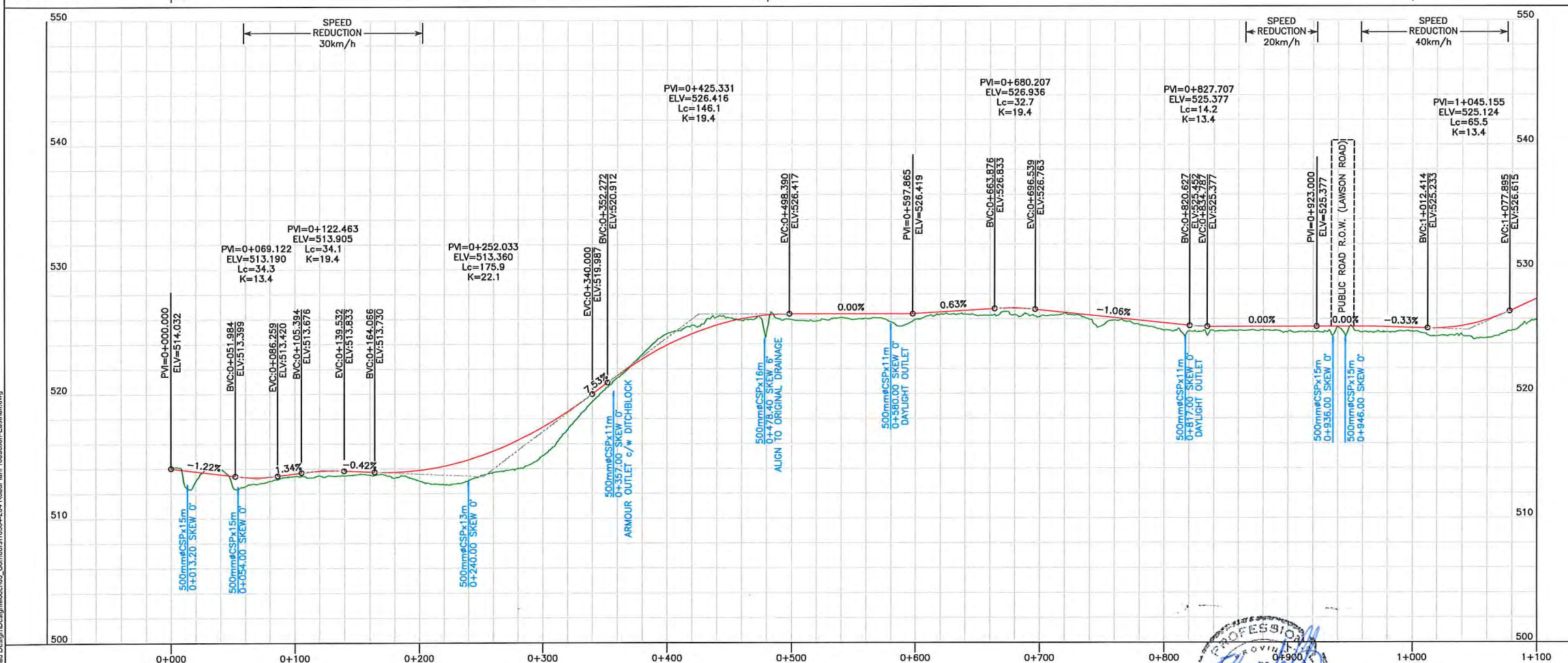
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A	MAY.19	ISSUED FOR REVIEW	WG	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW
SENIOR DESIGNER			DATE 2019-05-24		

INTENDED TO BE PLOTTED ON 11"x17"
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ISSUED FOR CONSTRUCTION



SOILS	GRAVELS	SILTS
ROAD WIDTH/WIDENINGS (m)	10m	6m
CUT/FILL SLOPE	CUT 1.5:1.0/ FILL 1.5:1.0	CUT 2.0:1.0/ FILL 2.0:1.0



- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - HORIZONTAL CURVE #
 - NEW CULVERT
 - PROPOSED R.O.W.
 - PROPOSED FENCELINE
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT

18364-204-01.dwg - Road Design/Design/Model/03_Corridor/18364-204-RoadPlan/Production-EastHalf.dwg

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ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHALF	
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B		MAY. 19		ISSUED FOR CONSTRUCTION			
DRW		CHK		ENG			
KAK		KD		TW			
JMP		KD		TW			
SENIOR DESIGNER		DATE		2019-05-24			



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V2L 3R8
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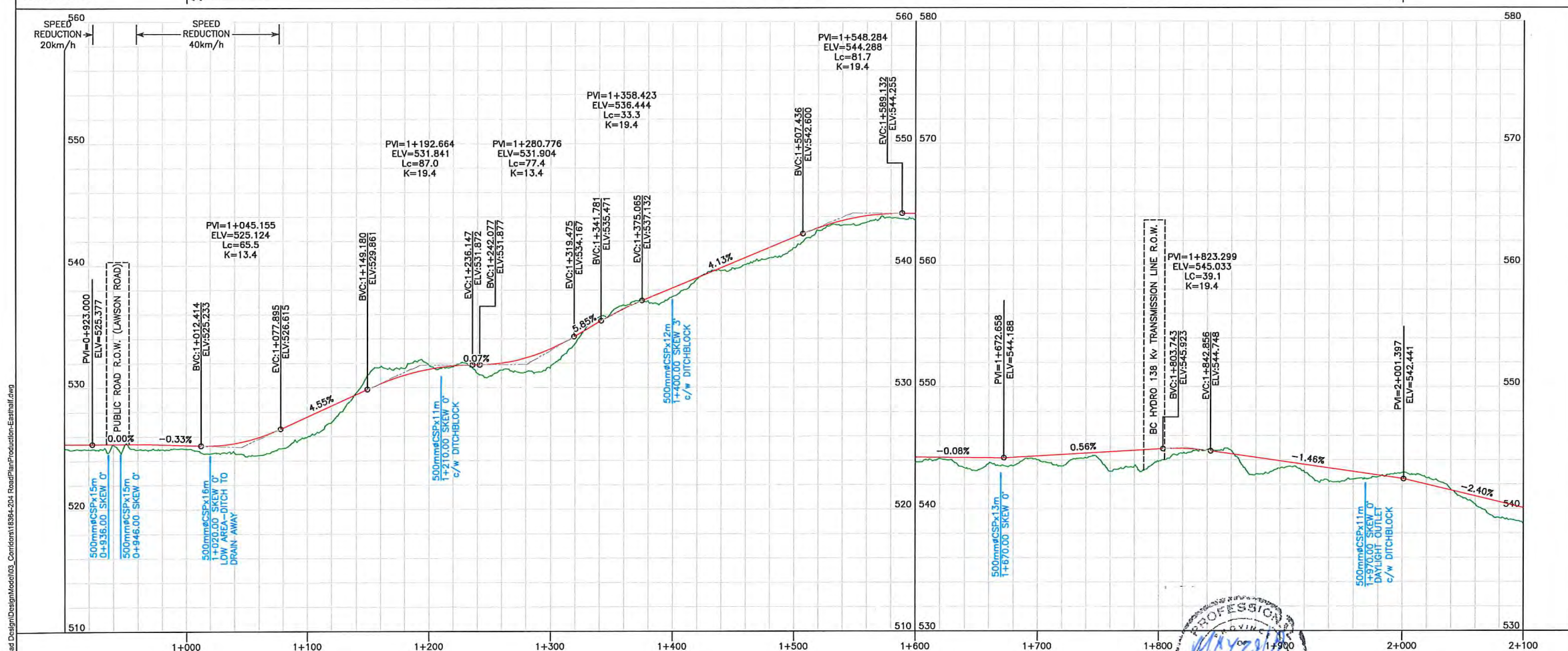
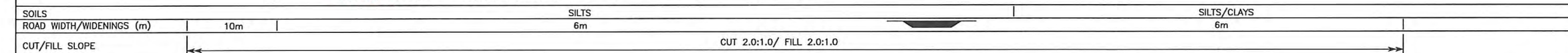
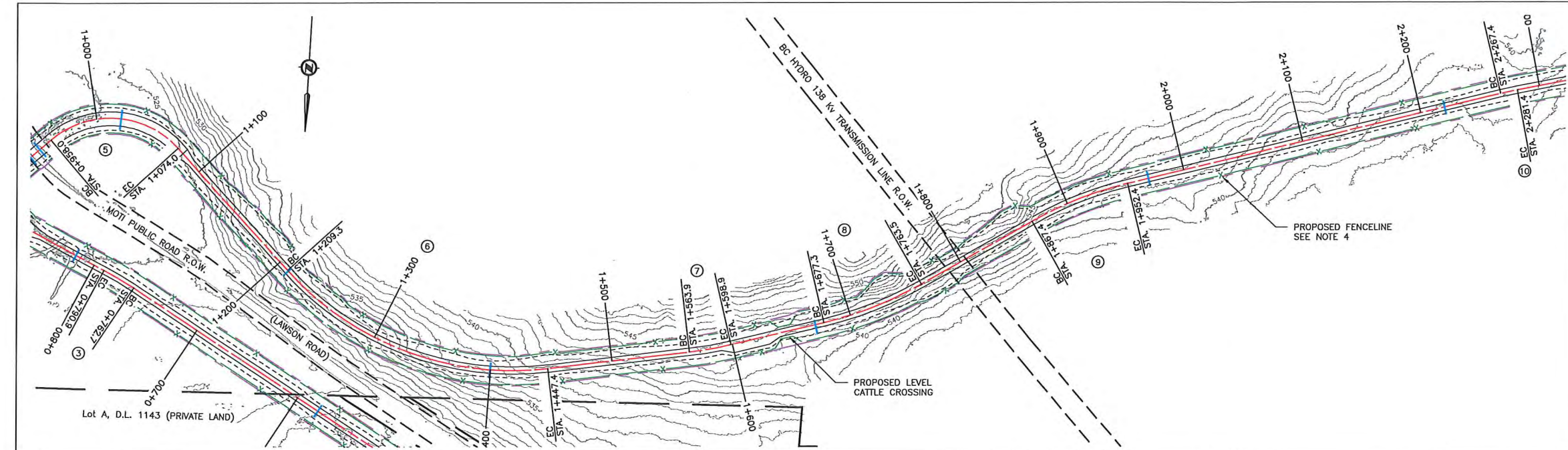
DESIGNED: BM DATE: 2019-01-14
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: --- DATE: ---
DRAWN: KAK DATE: 2019-02-08

TELKWA COAL LIMITED
TENAS HAUL ROAD
STA. 0+000 to 1+000

PLAN & PROFILE 1

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	18364-204-P1	B

U:\2019\Coal Snares (364)\204 - Phase 2 - Road Design\DesignModel\03_Corridors\18364-204_RoadPlanProduction-Easthalf.dwg



NOTES:

1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
2. DESIGN SPEED 50km/h.
3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

LEGEND:

- PROPOSED ROAD
- CUT/FILL LIMITS
- HORIZONTAL CURVE #
- NEW CULVERT
- PROPOSED R.O.W.
- PROPOSED FENCELINE
- PRIVATE LAND
- ROAD/UTILITY R.O.W.
- GRAZING PERMIT

TELKWA COAL
LIMITED

TENAS HAUL ROAD
STA. 1+000 to 2+000

PLAN & PROFILE 2

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	18364-204-P2	B

SCALE HORIZ. 1:4000 VERT. 1:400

CAD FILENAME 18364-204-EASTHALE

DATE 2019-05-24

REV	DATE	DESCRIPTION	DRW	CHK	ENG
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B	MAY. 19	ISSUED FOR CONSTRUCTION	JMP	KD	TW

SENIOR DESIGNER

DATE 2019-05-24

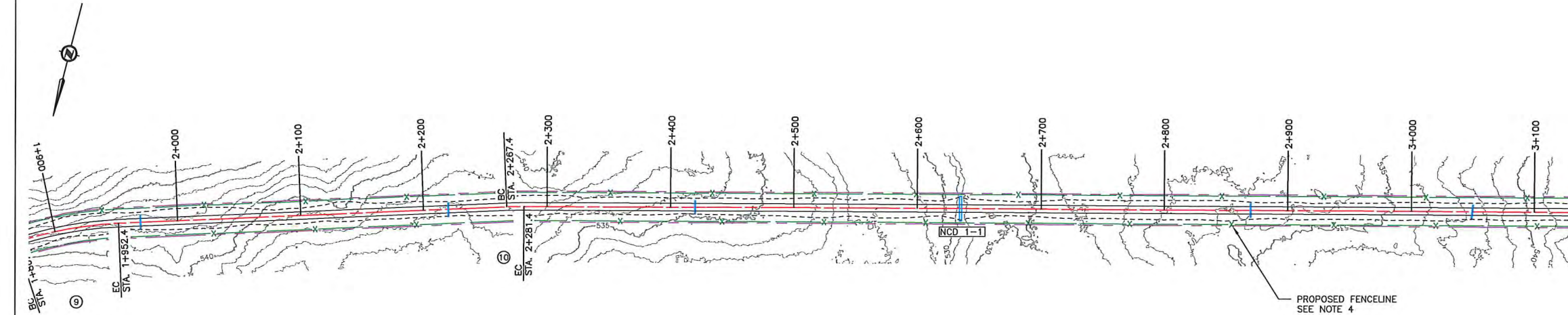


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DESIGNED	BM	DATE	2019-01-14
QUALITY CONTROL	TW	DATE	2019-03-28
QUALITY ASSURANCE	DATE		
DRAWN	KAK	DATE	2019-02-11

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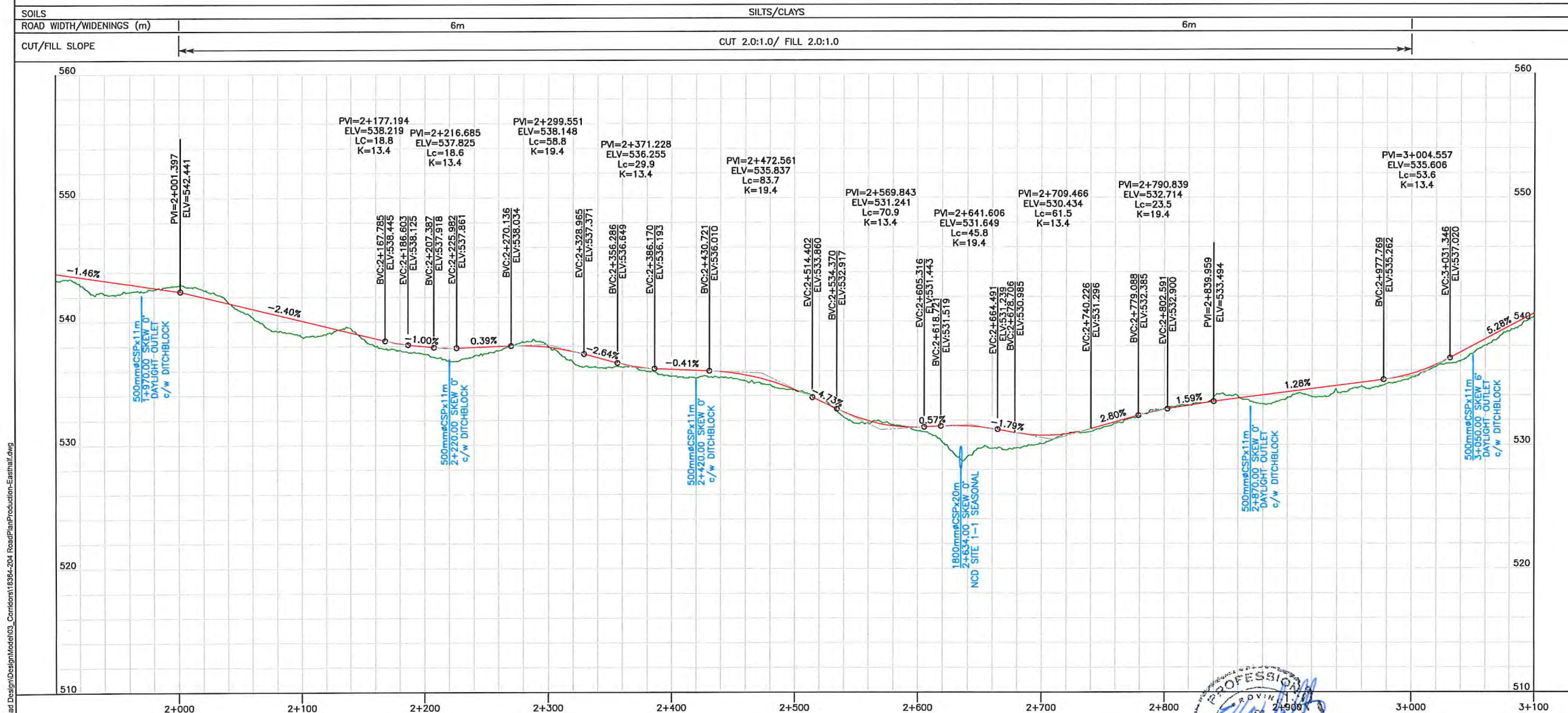


NOTES:

1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
2. DESIGN SPEED 50km/h.
3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

LEGEND:

- PROPOSED ROAD
- CUT/FILL LIMITS
- HORIZONTAL CURVE #
- NEW CULVERT
- PROPOSED R.O.W.
- PROPOSED FENCELINE
- PRIVATE LAND
- ROAD/UTILITY R.O.W.
- GRAZING PERMIT

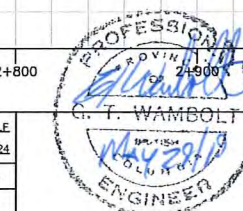


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B		MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



SENIOR DESIGNER
DATE 2019-05-24

DESIGNED		DATE		2019-01-14	
QUALITY CONTROL		DATE		2019-03-29	
QUALITY ASSURANCE		DATE			
DRAWN		DATE		2019-02-11	

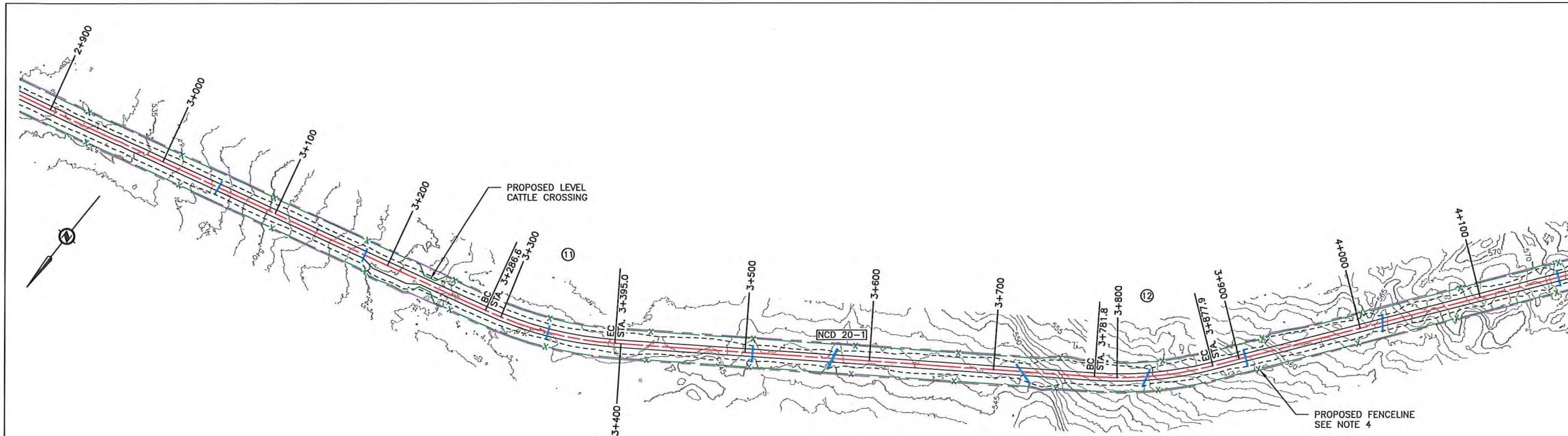
DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561



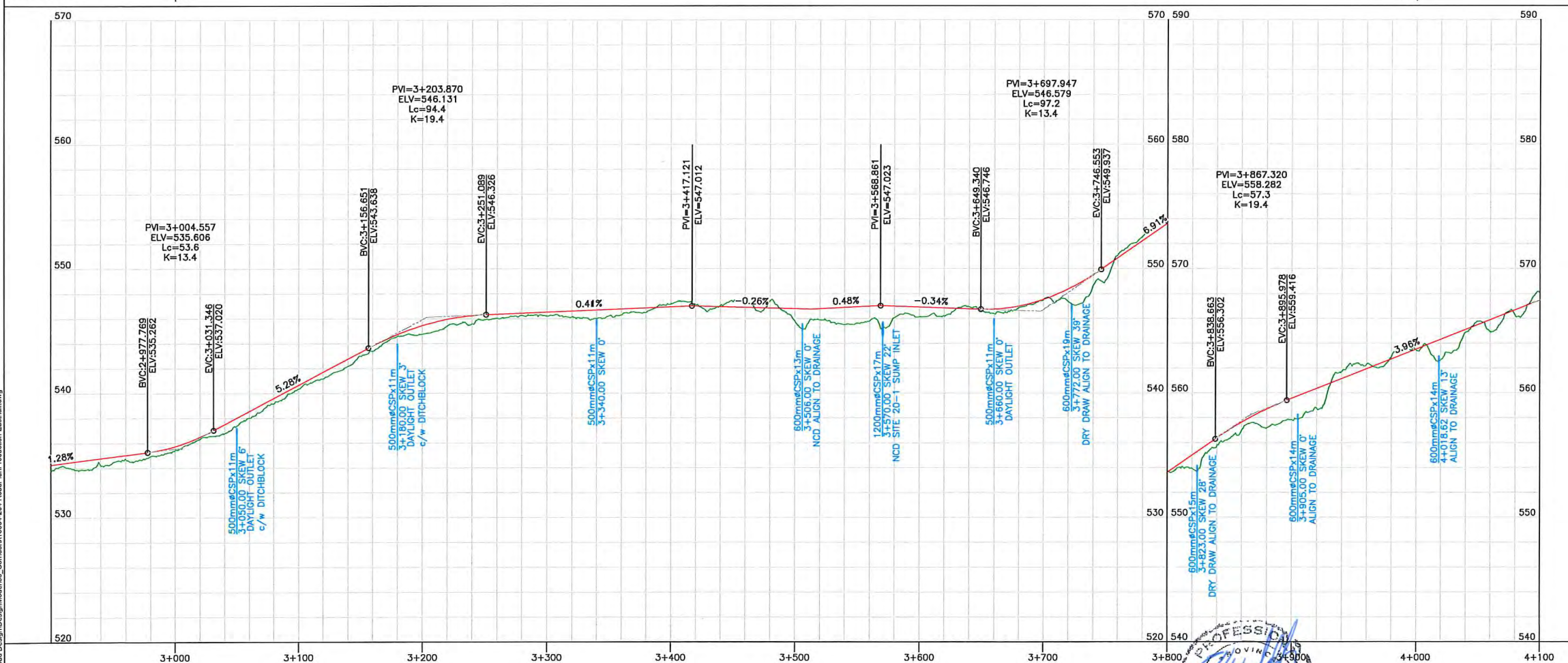
TENAS HAUL ROAD
STA. 2+000 to 3+000

PLAN & PROFILE 3

LATITUDE:		54° 38' 11.65"		NAD83		NORTHING:		6056036		DRAWING NUMBER		REV	
LONGITUDE:		127° 5' 3.99"		SU		EASTING:		623633		18364-204-P3		B	



SOILS		SILTS/CLAYS	
ROAD WIDTH/WIDENINGS (m)	6m	CUT 2.0:1.0/ FILL 2.0:1.0	6m
CUT/FILL SLOPE			



- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

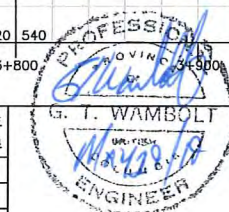
- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - HORIZONTAL CURVE #
 - NEW CULVERT
 - PROPOSED R.O.W.
 - PROPOSED FENCELINE
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT

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ISSUED FOR CONSTRUCTION

SCALE HORIZ. 1:4000 VERT. 1:400			CAD FILENAME 18364-204-EASTHALE		
			DATE 2019-05-24		
REV	DATE	DESCRIPTION	DRW	CHK	ENG
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B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



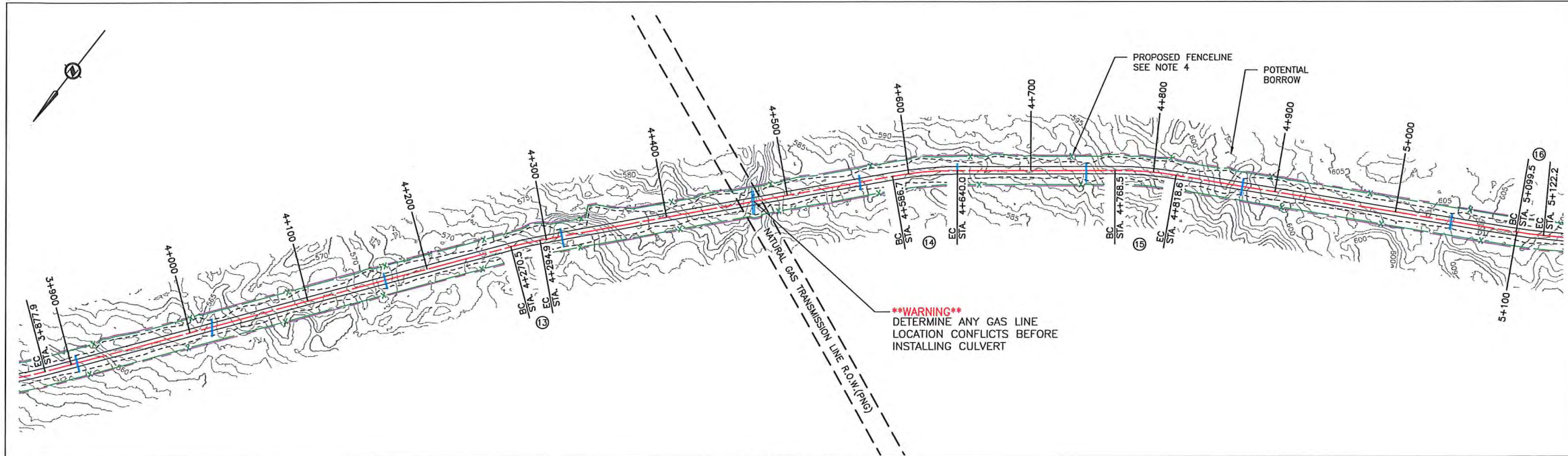
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1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561

DESIGNED: BM DATE: 2019-01-14
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: --- DATE: ---
DRAWN: KAK DATE: 2019-02-11

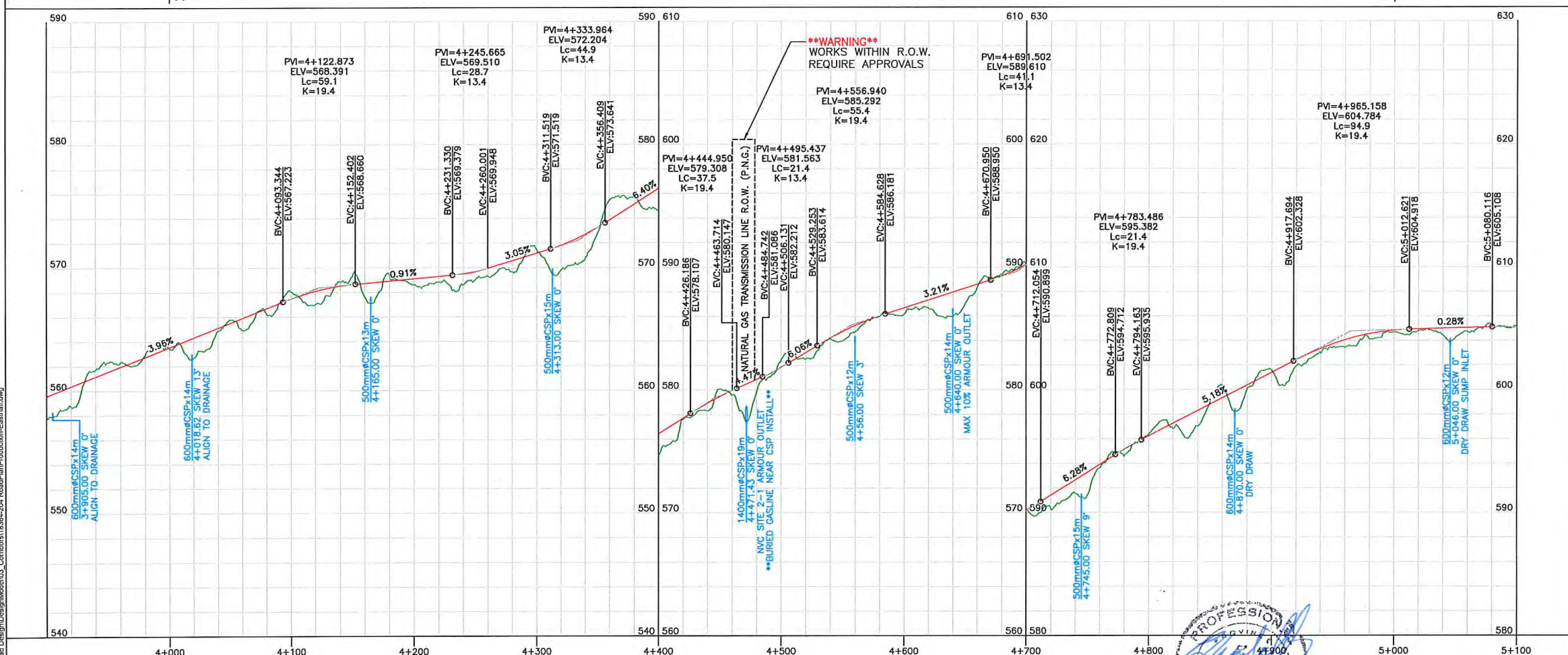
TELKWA COAL LIMITED
TENAS HAUL ROAD
STA. 3+000 to 4+000

PLAN & PROFILE 4

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	18364-204-P4	B



SOILS	SILTS/CLAYS	
ROAD WIDTH/WIDENINGS (m)	6m	6m
CUT/FILL SLOPE	CUT 2.0:1.0/ FILL 2.0:1.0	



NOTES:

1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
2. DESIGN SPEED 50km/h.
3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

LEGEND:

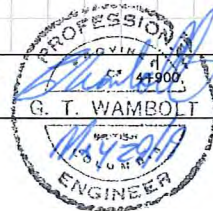
- PROPOSED ROAD
- CUT/FILL LIMITS
- HORIZONTAL CURVE #
- NEW CULVERT
- PROPOSED R.O.W.
- PROPOSED FENCELINE
- PRIVATE LAND
- ROAD/UTILITY R.O.W.
- GRAZING PERMIT

U:\2018\Coal Series (GBA)\204 - Phase 2 - Road Design\DesignModel\03_Corridor\18364-204_RoadPlanProduction-EastHalf.dwg

INTENDED TO BE PLOTTED ON 11"x17"
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ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHALE	
REV		DATE		DESCRIPTION		DATE	
A		APR.19		ISSUED FOR REVIEW		2019-05-24	
B		MAY.19		ISSUED FOR CONSTRUCTION			
DRW		CHK		ENG			
KAK		KD		TW			
JMP		KD		TW			
SENIOR DESIGNER		DATE		2019-05-24			



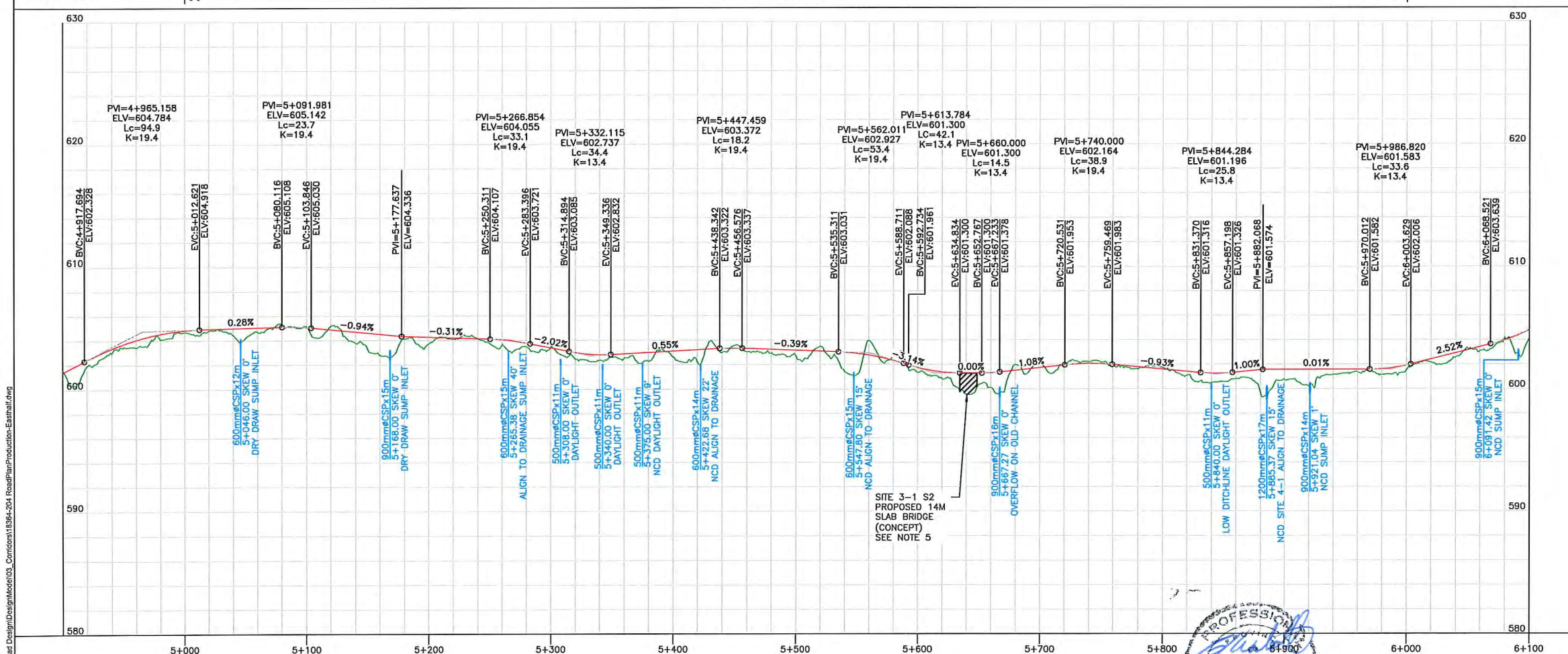
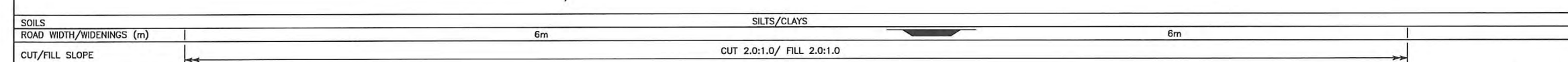
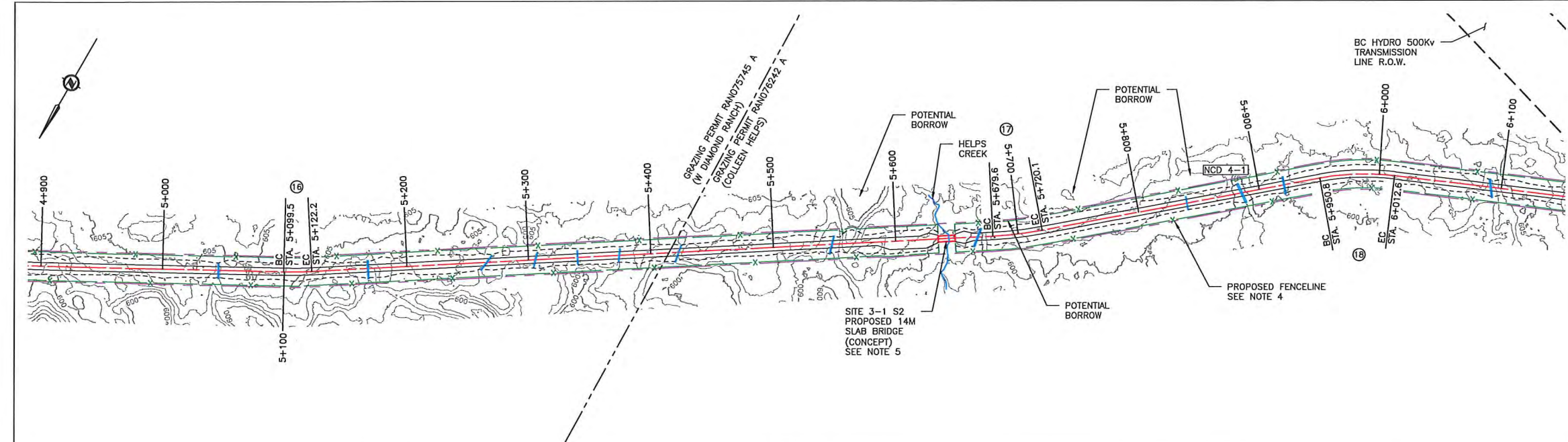
DESIGNED		BM DATE		2019-01-14	
QUALITY CONTROL		TW DATE		2019-03-29	
QUALITY ASSURANCE		DATE			
DRAWN		KAK DATE		2019-02-11	



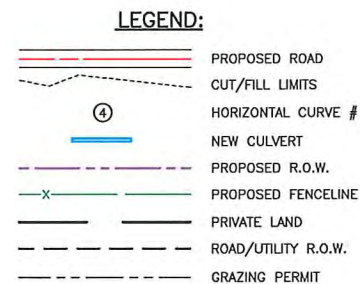
TENAS HAUL ROAD
STA. 4+000 to 5+000

PLAN & PROFILE 5

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	SU	EASTING:	623633	18364-204-P5	B



- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

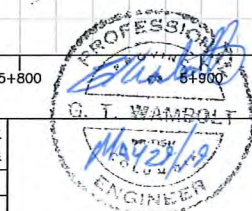


\\0218\Coal\Series (06)\204 - Phase 2 - Road Design\DesignModel\03_Corridors\18364-204_RoadPlan\Production-EastHalf.dwg

INTENDED TO BE PLOTTED ON 11"x17"
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ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHALE	
REV		DATE		DESCRIPTION		DATE	
A		APR.19		ISSUED FOR REVIEW		2019-05-24	
B		MAY.19		ISSUED FOR CONSTRUCTION			
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A		APR.19		ISSUED FOR REVIEW		2019-05-24	
B		MAY.19		ISSUED FOR CONSTRUCTION			

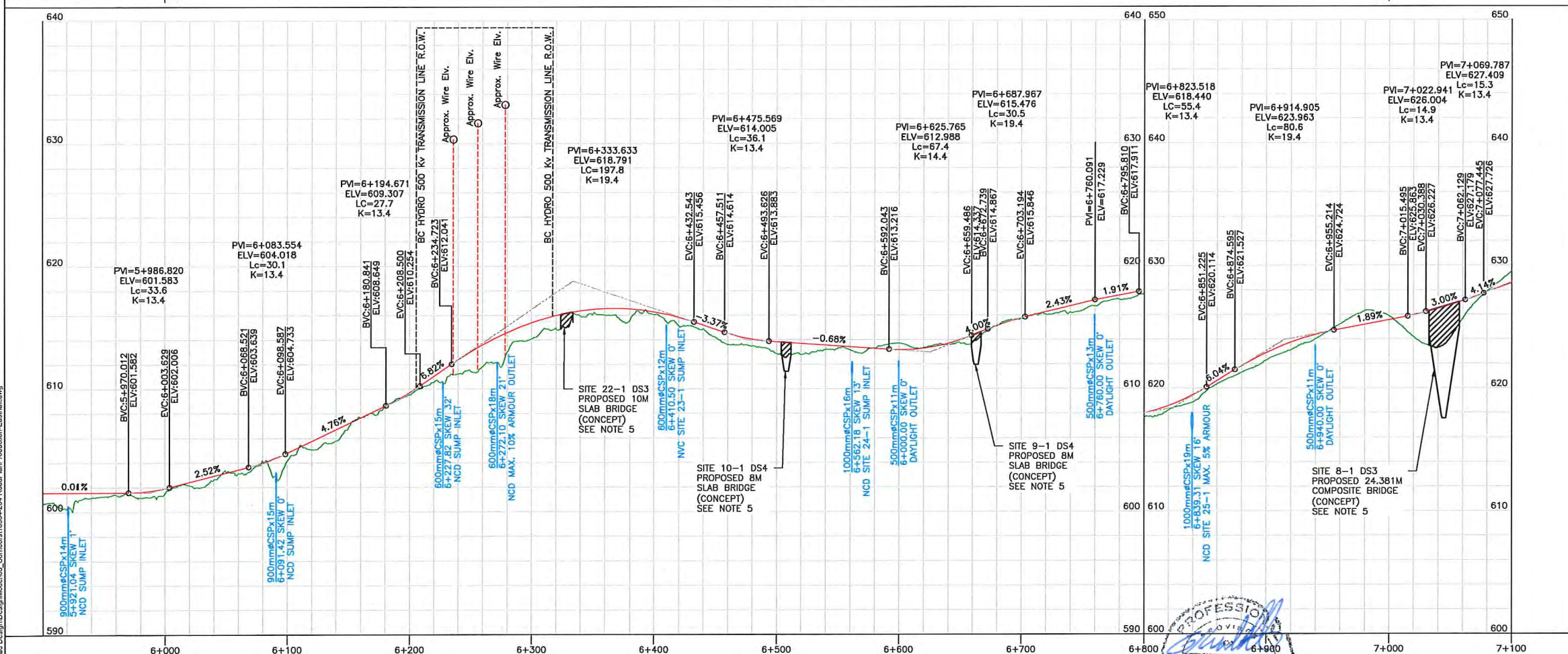
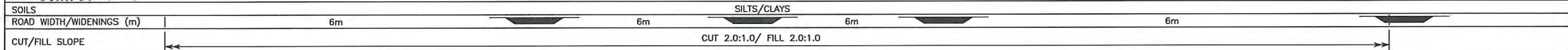
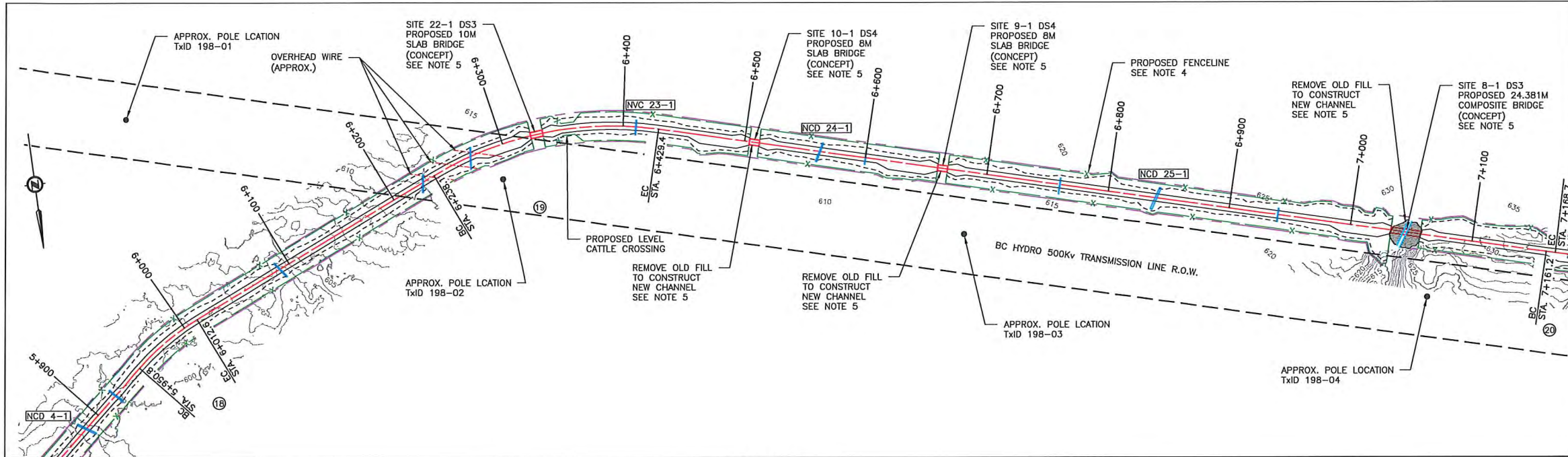


DESIGNED		BM DATE		2019-01-14	
QUALITY CONTROL		TW DATE		2019-03-29	
QUALITY ASSURANCE		DATE			
DRAWN		KAK DATE		2019-02-11	

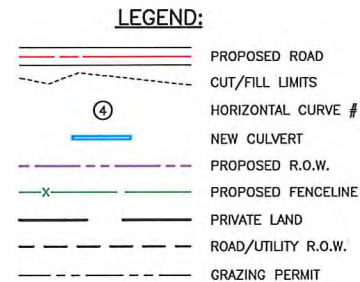


TENAS HAUL ROAD
STA. 5+000 to 6+000

PLAN & PROFILE 6		LATITUDE:		54° 38' 11.65"		NAD83		NORTHING:		6056036		DRAWING NUMBER		REV	
LONGITUDE:		127° 5' 3.99"		9U		EASTING:		623633		18364-204-P6		B			



- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.



L:\2018\Coal Sone (1864\204 - Phase 2 - Road Design\DesignModel\03_Corridors\18364-204_RoadPlan\Production-EastHalf.dwg

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ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHALE	
REV		DATE		DESCRIPTION		DATE	
A		APR.19		ISSUED FOR REVIEW		2019-05-24	
B		MAY.19		ISSUED FOR CONSTRUCTION			
DRW		CHK		ENG			
KAK		KD		TW			
JMP		KD		TW			

PROFESSIONAL
ENGINEER
G. T. WAMBOLT
MAY 28 2019

SENIOR DESIGNER
DATE 2019-05-24

DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561

DESIGNED: BM DATE: 2019-01-14
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: DATE:
DRAWN: KAK DATE: 2019-02-11

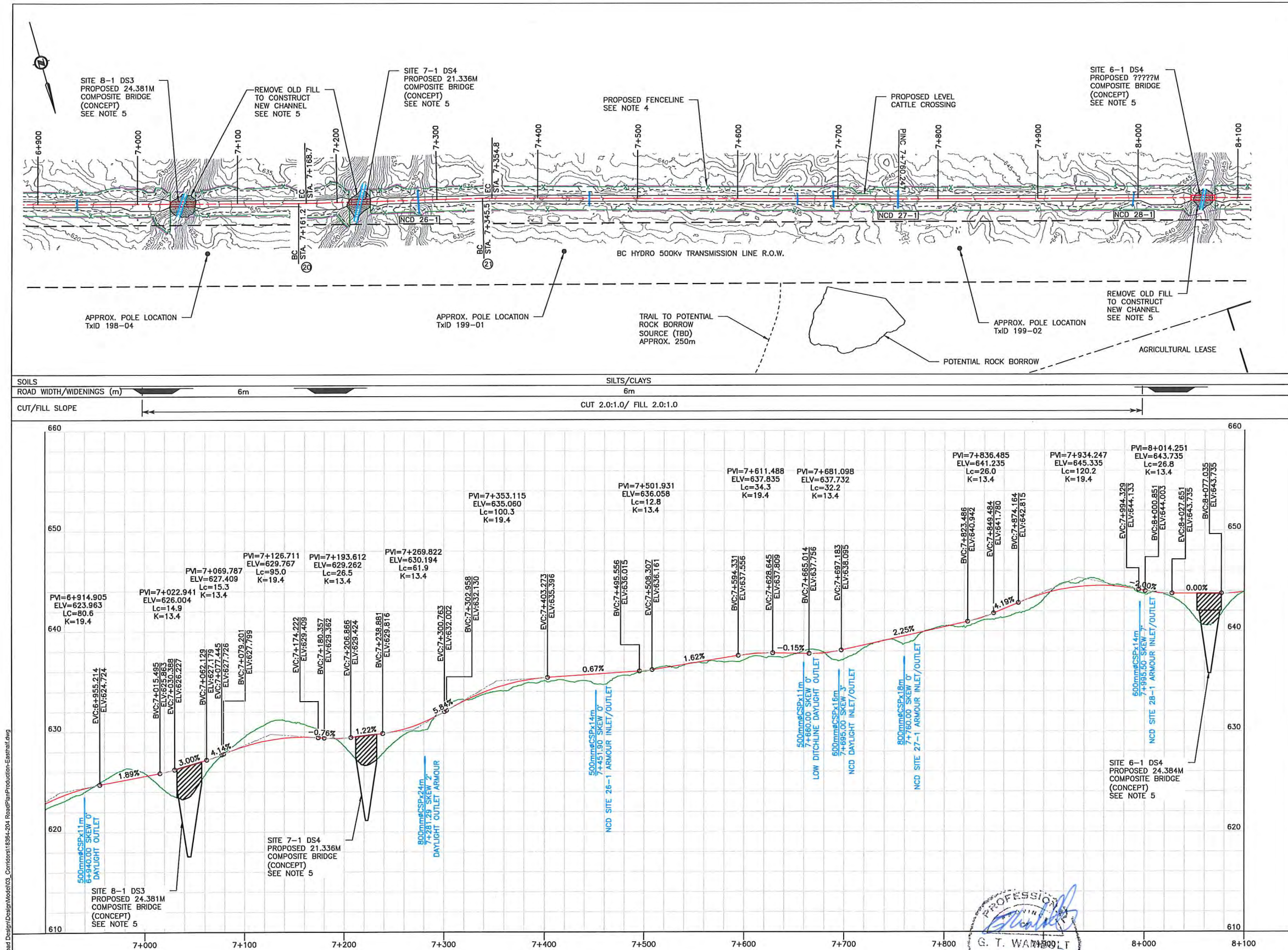
TELKWA COAL
LIMITED

TENAS HAUL ROAD
STA. 6+000 TO 7+000

PLAN & PROFILE 7

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	SU	EASTING:	623633	18364-204-P7	B

U:\2019\Coal Series (664\204 - Phase 2 - Road Design\DesignModel\03_Corridor\18364-204_RoadPlanProduction-EastHalf.dwg



NOTES:

1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
2. DESIGN SPEED 50km/h.
3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

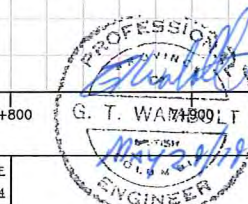
LEGEND:

- PROPOSED ROAD
- CUT/FILL LIMITS
- HORIZONTAL CURVE #
- NEW CULVERT
- PROPOSED R.O.W.
- PROPOSED FENCELINE
- PRIVATE LAND
- ROAD/UTILITY R.O.W.
- GRAZING PERMIT
- TRAIL

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ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME 18364-204-EASTHALE		
REV		DATE	DESCRIPTION	DRW	CHK	ENG
A		APR.19	ISSUED FOR REVIEW	KAK	KD	TW
B		MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



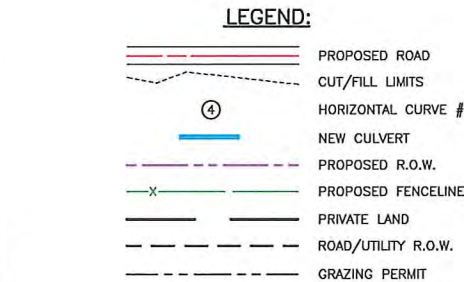
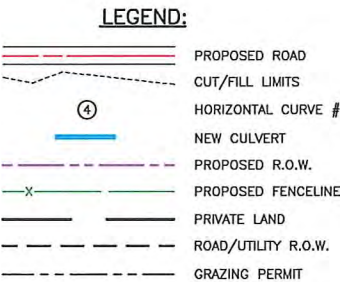
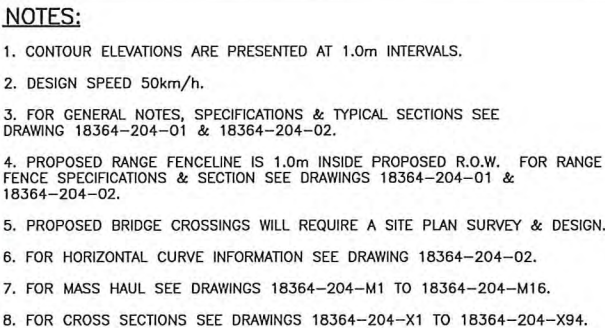
DESIGNED		DATE		2019-01-14	
QUALITY CONTROL		DATE		2019-03-29	
QUALITY ASSURANCE		DATE		---	
DRAWN		DATE		2019-02-11	



TELKWA COAL
LIMITED
TENAS HAUL ROAD
STA. 7+000 TO 8+000

PLAN & PROFILE 8

LATITUDE:		54° 38' 11.65"	NAD83	NORTHING:		6056036	DRAWING NUMBER		REV
LONGITUDE:		127° 5' 3.99"	9U	EASTING:		623633	18364-204-P8		B



SENIOR DESIGNER

DATE 2019-05-24

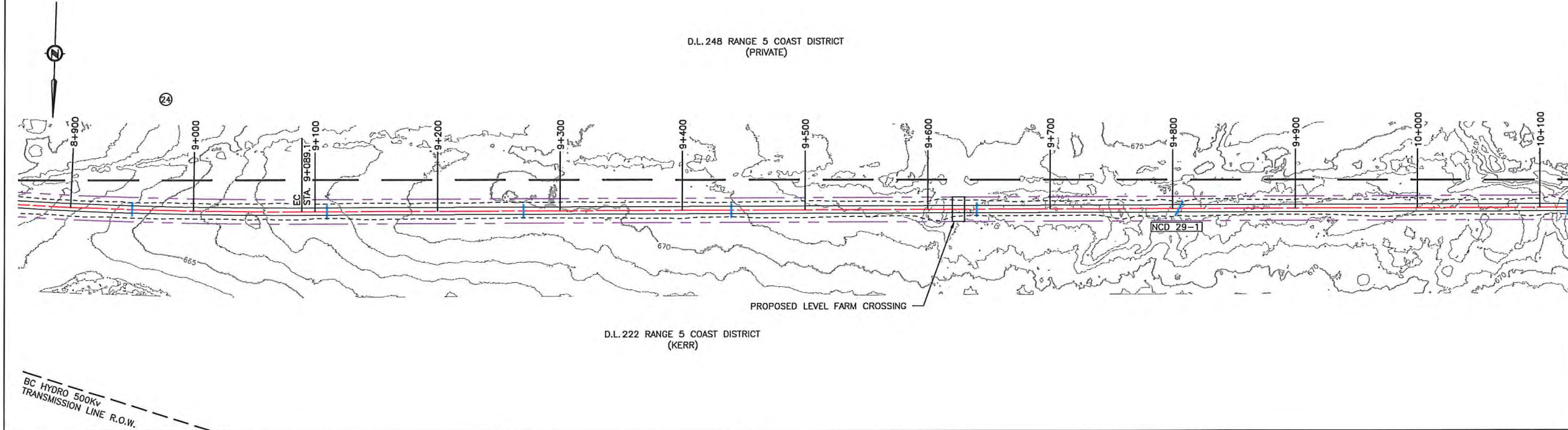
TENAS HAUL ROAD				
STA. 8+000 to 9+000				
PLAN & PROFILE 9				
ATTITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633
DRAWING NUMBER				REV
18364-204-P9				B

ISSUED FOR CONSTRUCTION

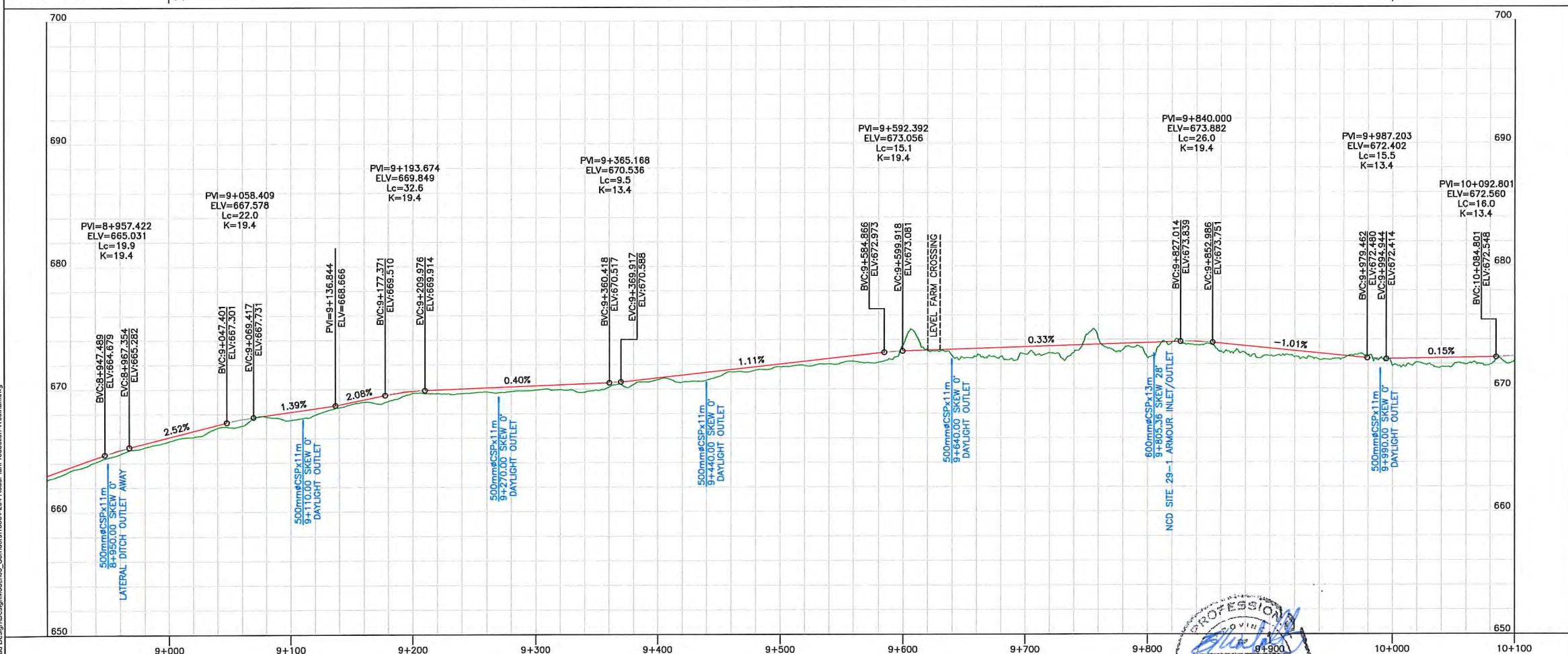

TELKWA COAL
LIMITED
ENAS HAUL ROAD
STA. 8+000 to 9+000

PLAN & PROFILE 9

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER 18364-204-P9	REV B
LONGITUDE:	127° 5' 3.99"		9U	EASTING:		



SOILS	SILTS
ROAD WIDTH/WIDENINGS (m)	6m
CUT/FILL SLOPE	CUT 2.0:1.0/FILL 2.0:1.0



INTENDED TO BE PLOTTED ON 11"x17"
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ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400			
CAD FILENAME		18364-204-WESTHALE			
DATE		2019-05-24			
REV	DATE	DESCRIPTION	DRW	CHK	ENG
A	APR.19	ISSUED FOR REVIEW	KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW

SENIOR DESIGNER
DATE 2019-05-24

PROFESSIONAL
ENGINEER
G. T. WAMBOLT

DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R6
Phone: (250) 562-5541 Fax: (250) 562-5561

DESIGNED: BM DATE: 2019-03-04
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: DATE:
DRAWN: KAK DATE: 2019-03-15

TELKWA COAL
LIMITED
TENAS HAUL ROAD
STA. 9+000 TO 10+000

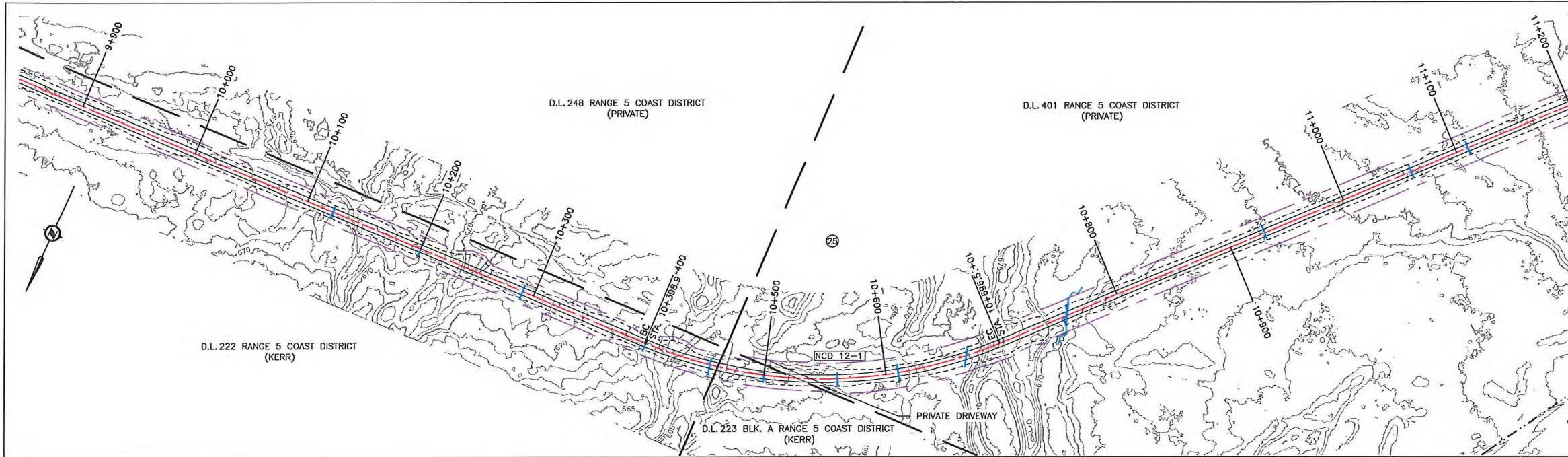
PLAN & PROFILE 10

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	18364-204-P10	B

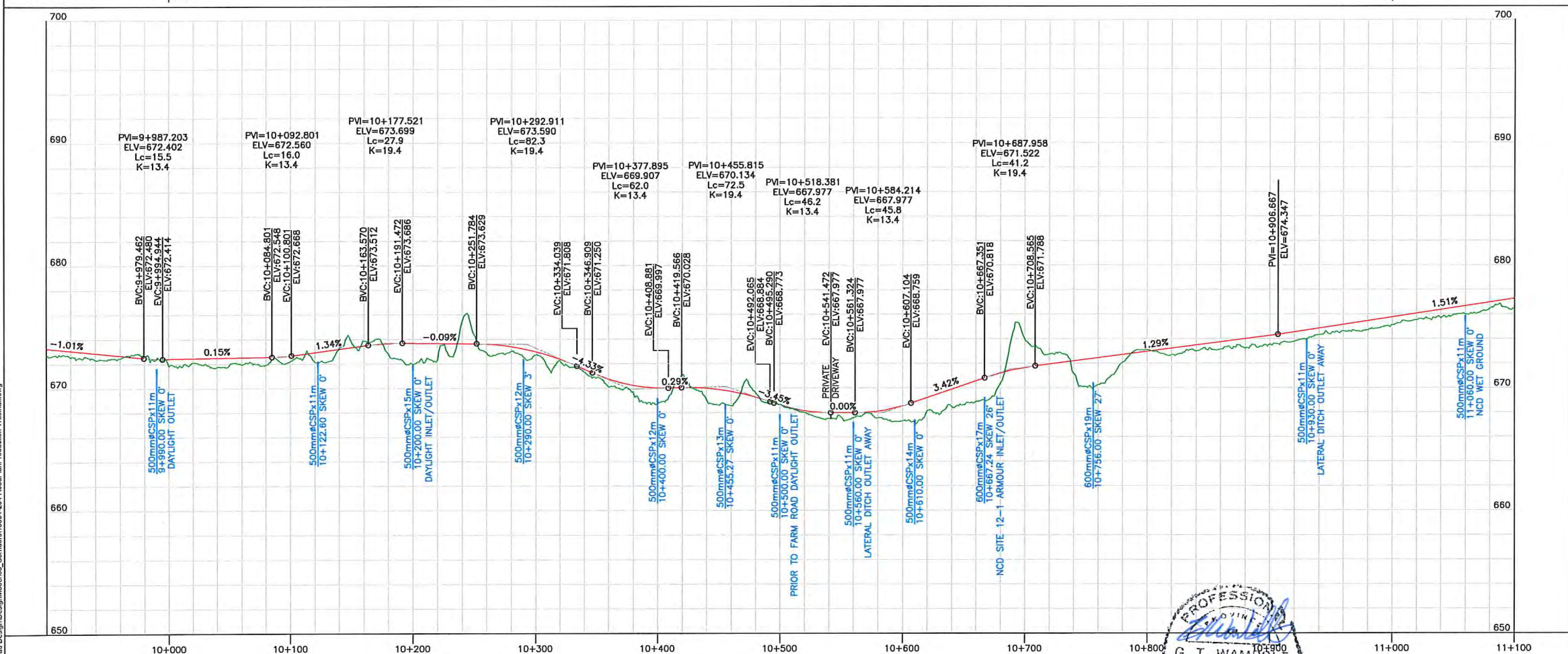
- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

LEGEND:

- PROPOSED ROAD
- CUT/FILL LIMITS
- HORIZONTAL CURVE #
- NEW CULVERT
- PROPOSED R.O.W.
- PROPOSED FENCELINE
- PRIVATE LAND
- ROAD/UTILITY R.O.W.
- GRAZING PERMIT



SOILS		SILTS	
ROAD WIDTH/WIDENINGS (m)		6m	
CUT/FILL SLOPE		CUT 2.0:1.0/FILL 2.0:1.0	



- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

LEGEND:

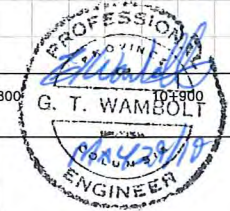
- PROPOSED ROAD
- CUT/FILL LIMITS
- HORIZONTAL CURVE #
- NEW CULVERT
- PROPOSED R.O.W.
- PROPOSED FENCELINE
- PRIVATE LAND
- ROAD/UTILITY R.O.W.
- GRAZING PERMIT

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SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-WESTHALE	
REV		DATE		DESCRIPTION		DATE	
A		APR.19		ISSUED FOR REVIEW		2019-05-24	
B		MAY.19		ISSUED FOR CONSTRUCTION			
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KAK		KD		TW			
JMP		KD		TW			
SENIOR DESIGNER		DATE		2019-05-24			

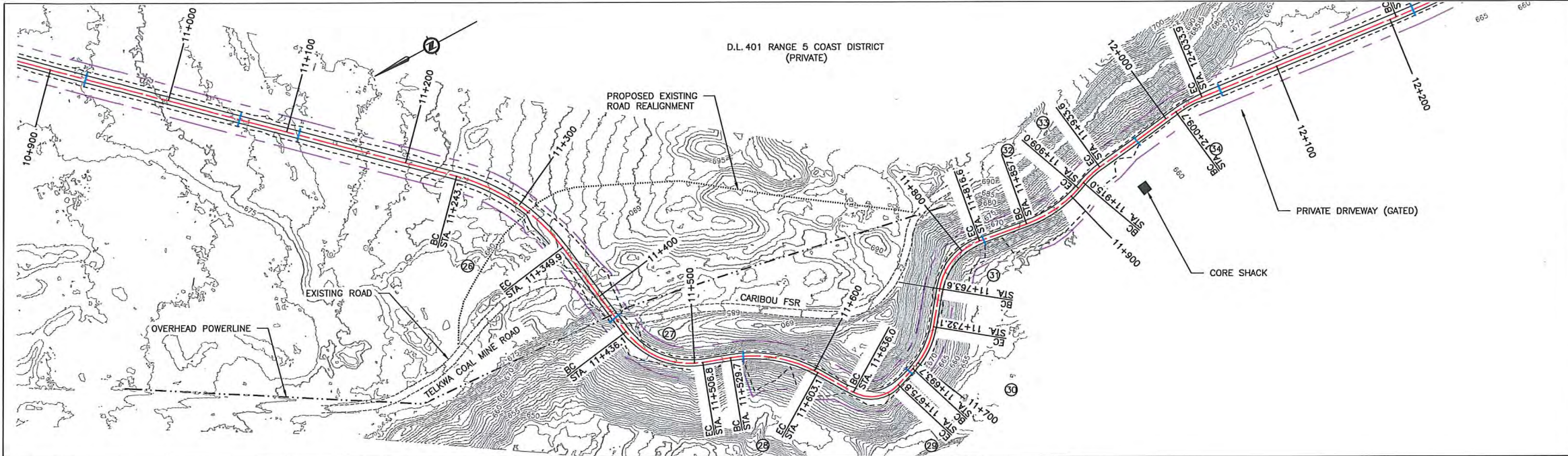


DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561

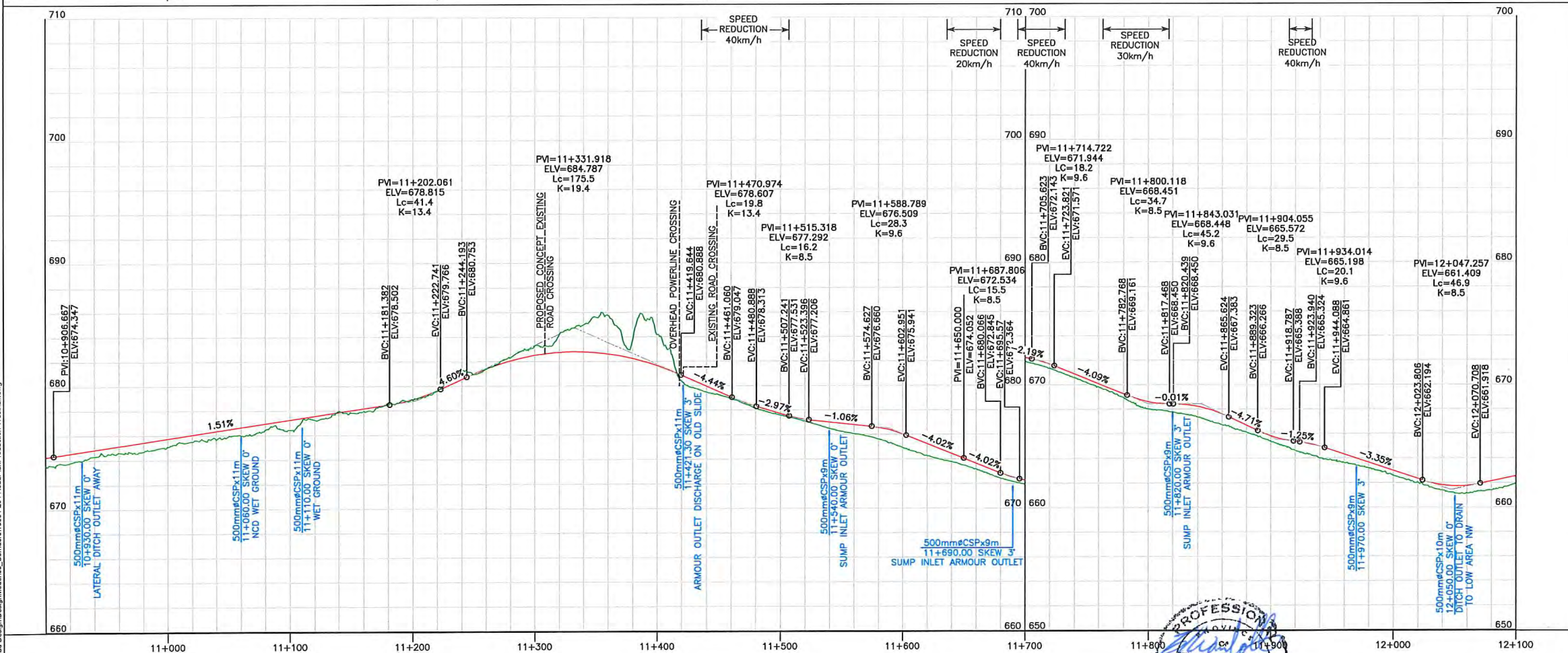
DESIGNED: BM DATE: 2019-03-04
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: DATE:
DRAWN: KAK DATE: 2019-03-15

TELKWA COAL LIMITED
TENAS HAUL ROAD
STA. 10+000 TO 11+000

PLAN & PROFILE 11				DRAWING NUMBER		REV	
LATITUDE:		54° 38' 11.65"		NAD83		NORTHING: 6056036	
LONGITUDE:		127° 5' 3.99"		SU		EASTING: 623633	
				18364-204-P11		B	



SOILS	SILTS	SANDS	SILTS
ROAD WIDTH/WIDENINGS (m)	6m	5m	6m
CUT/FILL SLOPE	CUT 2.0:1.0/FILL 2.0:1.0	CUT 1.5:1.0/FILL 1.5:1.0	CUT 1.0:1.0/FILL 1.5:1.0



INTENDED TO BE PLOTTED ON 11"x17"
ANY COPIES or PDFs MAY NOT BE TO SCALE

ISSUED FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DRW	CHK	ENG
A	APR.19	ISSUED FOR REVIEW	KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW

CAD FILENAME: 18364-204-WESTHALE
DATE: 2019-05-24

SCALE: HORIZ. 1:4000 VERT. 1:400

PROFESSIONAL ENGINEER
G. T. WAMBOLT
1942
B.C. REG. NO. 12345

DESIGNED: BM DATE: 2019-03-04
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: DATE:
DRAWN: KAK DATE: 2019-03-15

SENIOR DESIGNER
DATE: 2019-05-24

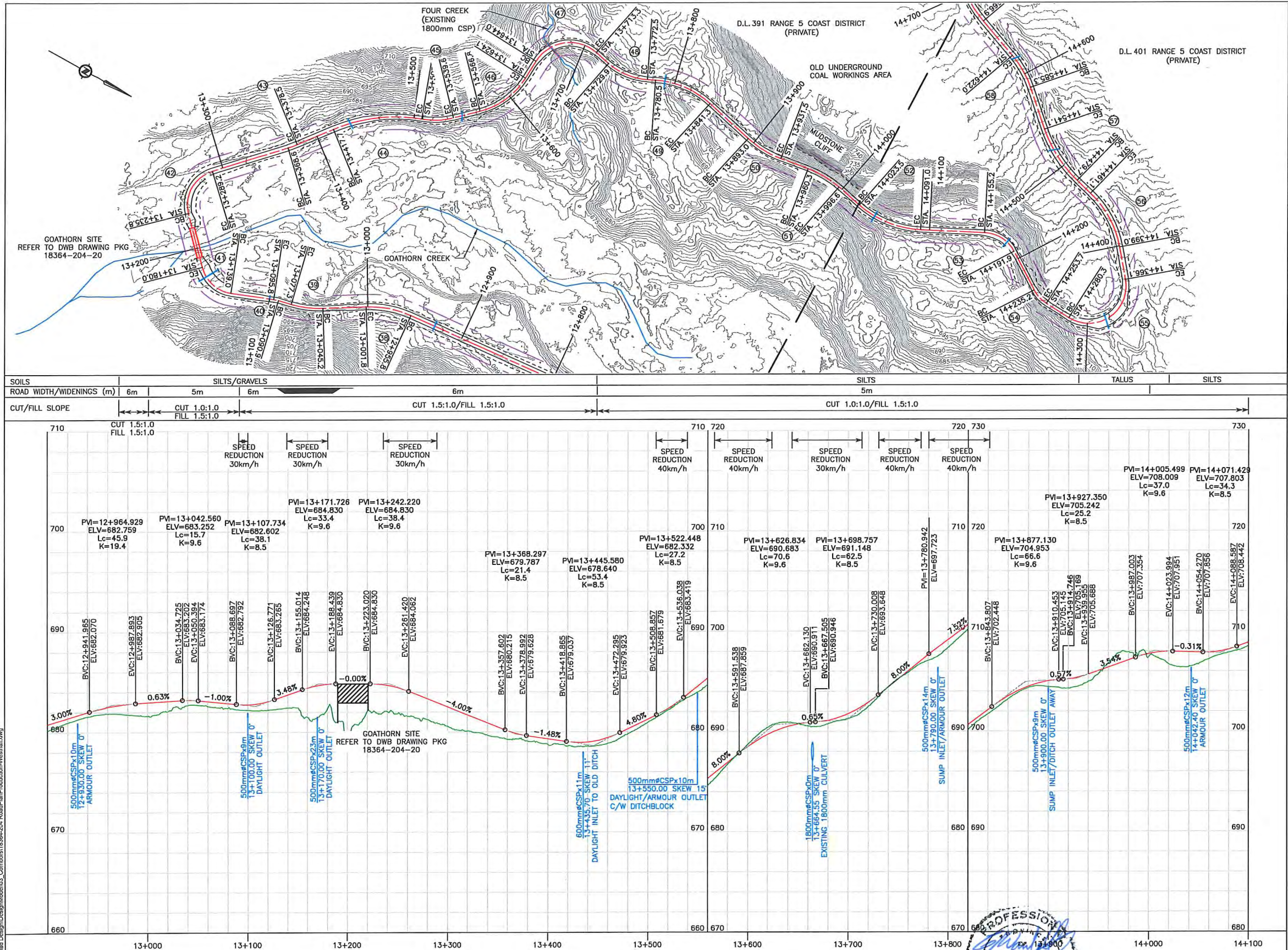
TELKWA COAL LIMITED
TENAS HAUL ROAD
STA. 11+000 TO 12+000

PLAN & PROFILE 12

LATITUDE: 54° 38' 11.65"	NAD83	NORTHING: 6056036	DRAWING NUMBER: 18364-204-P12	REV: B
LONGITUDE: 127° 5' 3.99"	9U	EASTING: 623633		

- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - HORIZONTAL CURVE #
 - NEW CULVERT
 - PROPOSED R.O.W.
 - PROPOSED FENCELINE
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT



NOTES:

1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
2. DESIGN SPEED 50km/h.
3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

LEGEND:

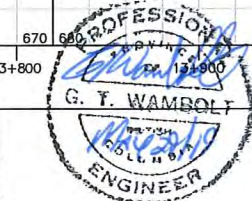
- PROPOSED ROAD
- CUT/FILL LIMITS
- HORIZONTAL CURVE #
- NEW CULVERT
- PROPOSED R.O.W.
- PROPOSED FENCELINE
- PRIVATE LAND
- ROAD/UTILITY R.O.W.
- GRAZING PERMIT

\\3018\Coal\Series\964\204 - Phase 2 - Road Design\DesignModel\03_Corridor\18364-204_RoadPlanProduction-WestHaul.dwg

INTENDED TO BE PLOTTED ON 11"x17"
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SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME 18364-204-WESTHALE		
REV		DATE	DESCRIPTION	DRW	CHK	ENG
A	APR.19	ISSUED FOR REVIEW		KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION		JMP	KD	TW



SENIOR DESIGNER
DATE 2019-05-24

DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R3
Phone: (250) 562-5541 Fax: (250) 562-5561

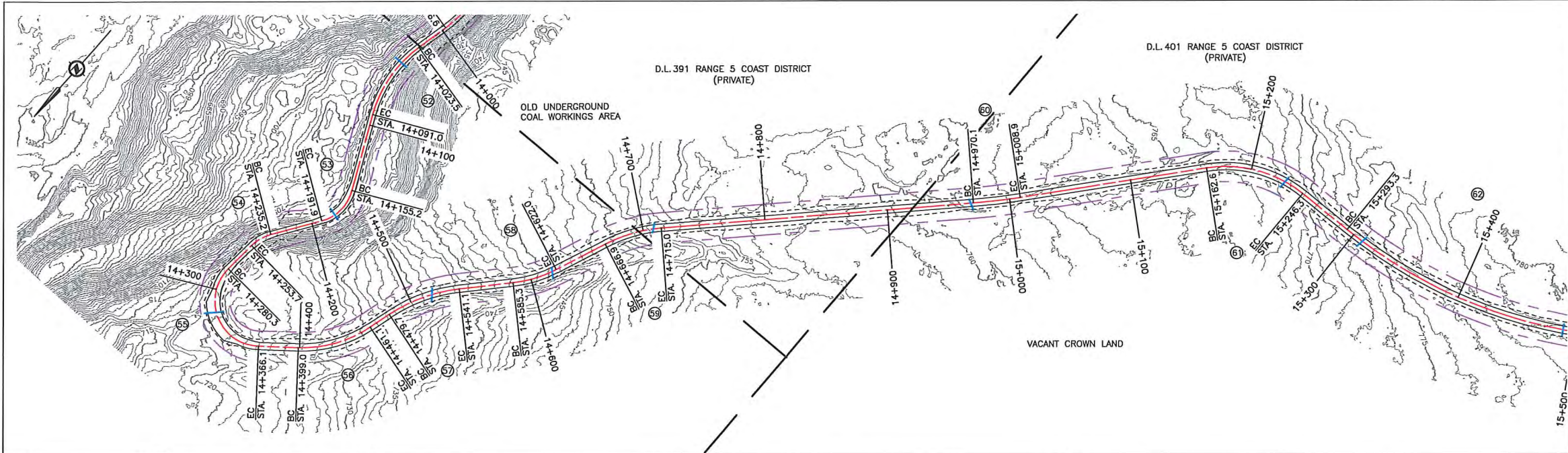
DESIGNED: BM DATE: 2019-03-04
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: DATE:
DRAWN: KAK DATE: 2019-03-15



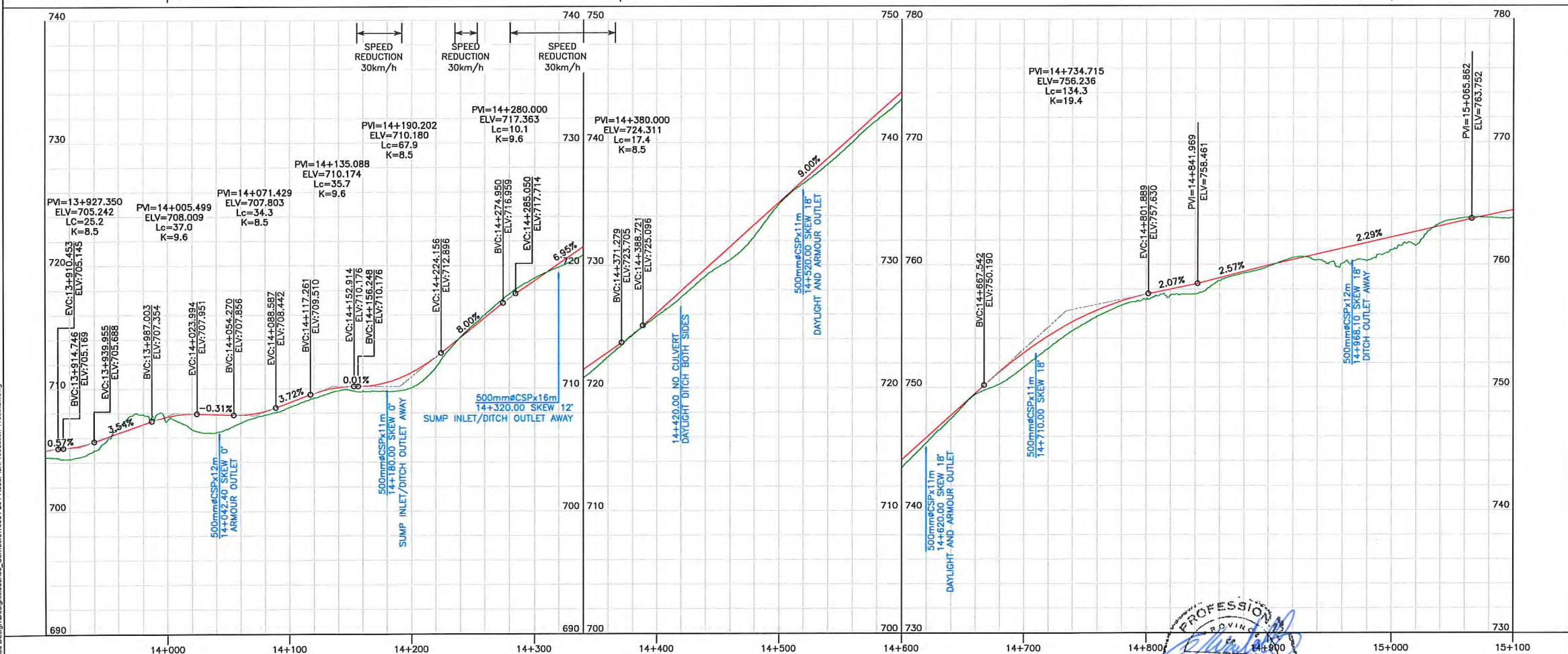
TENAS HAUL ROAD
STA. 13+000 to 14+000

PLAN & PROFILE 14

LATITUDE:		54° 38' 11.65"	NAD83	NORTHING:		6056036	DRAWING NUMBER		REV
LONGITUDE:		127° 5' 3.99"	8U	EASTING:		623633	18364-204-P14		B



SOILS	TALUS	SILTS	SILTS
ROAD WIDTH/WIDENINGS (m)		5m	6m
CUT/FILL SLOPE		CUT 1.0:1.0/FILL 1.5:1.0	CUT 1.5:1.0/FILL 1.5:1.0



- NOTES:**
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

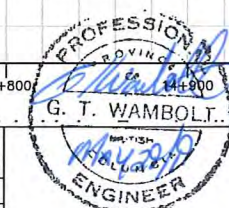
- LEGEND:**
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - HORIZONTAL CURVE #
 - NEW CULVERT
 - PROPOSED R.O.W.
 - PROPOSED FENCELINE
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT

L:\2018\Coal Series (364)\204 - Phase 2 - Road Design\DesignModel\03_Corridors\18364-204-RoadPlan\Production-Westhale.dwg

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SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-WESTHALE	
REV		DATE	DESCRIPTION	DRW	CHK	ENG	DATE
A		APR.19	ISSUED FOR REVIEW	KAK	KD	TW	2019-05-24
B		MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW	



DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561

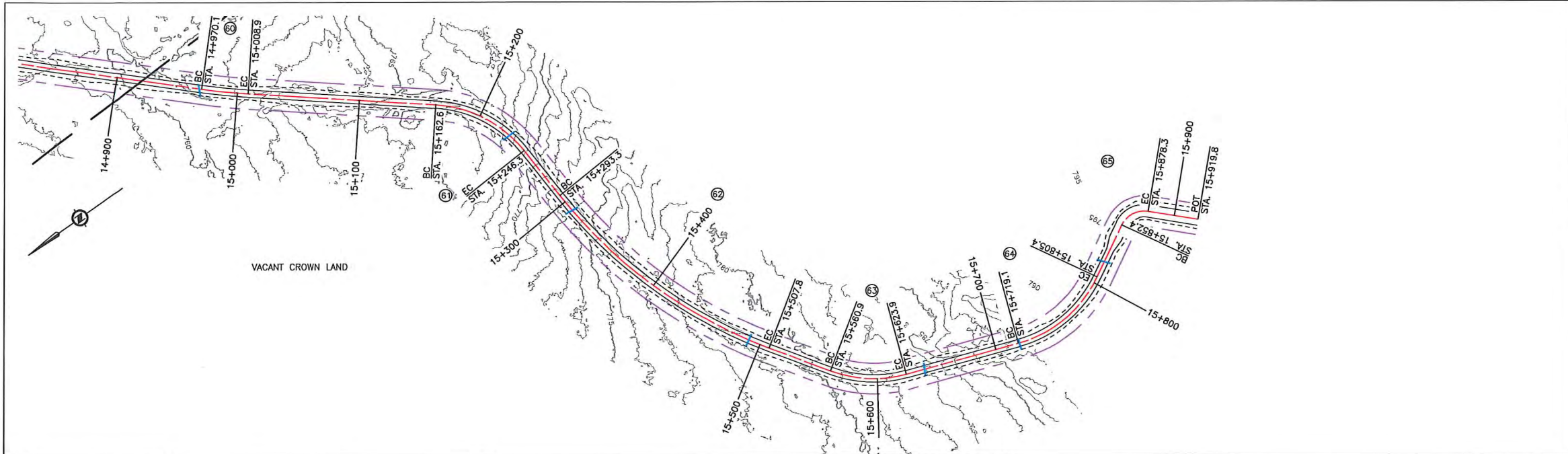
DESIGNED: BM DATE: 2019-03-04
QUALITY CONTROL: TW DATE: 2019-03-29
QUALITY ASSURANCE: DATE:
DRAWN: KAK DATE: 2019-03-15



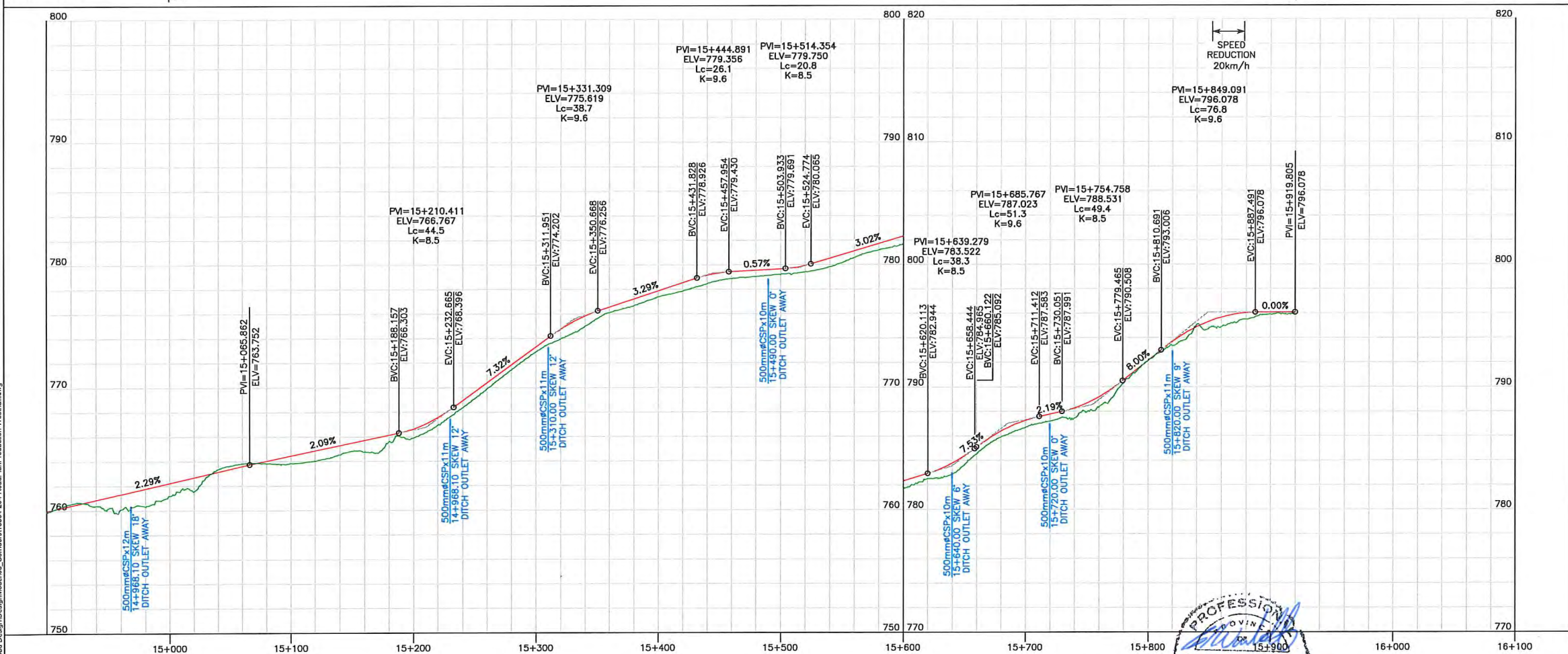
TENAS HAUL ROAD
STA. 14+000 to 15+000

PLAN & PROFILE 15

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056038	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	9J	EASTING:	623633	18364-204-P15	B



SOILS	SILTS	SILTS	
ROAD WIDTH/WIDENINGS (m)	6m	6m	10m
CUT/FILL SLOPE	CUT 1.5:1.0/FILL 1.5:1.0	CUT 1.5:1.0/FILL 1.5:1.0	



INTENDED TO BE PLOTTED ON 11"x17"
ANY COPIES or PDFS MAY NOT BE TO SCALE

ISSUED FOR CONSTRUCTION

SCALE HORIZ. 1:4000 VERT. 1:400

CAD FILENAME 18364-204-WESTHALE

DATE 2019-05-24

REV	DATE	DESCRIPTION	DRW	CHK	ENG
A	APR.19	ISSUED FOR REVIEW	KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW

SENIOR DESIGNER

DATE 2019-05-24

PROFESSIONAL ENGINEER

G. T. WAMBOLT

DWB Consulting Services Ltd.

1579 9th Avenue

Prince George, B.C.

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Phone: (250) 562-5541 Fax: (250) 562-5561

DESIGNED BM DATE 2019-03-04

QUALITY CONTROL TW DATE 2019-03-28

QUALITY ASSURANCE DATE

DRAWN KAK DATE 2019-03-15

TELKWA COAL LIMITED

TENAS HAUL ROAD

STA. 15+000 to 15+919.805

PLAN & PROFILE 16

LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99" <td>SU</td> <td>EASTING:</td> <td>623633</td> <td>18364-204-P16</td> <td>B</td>	SU	EASTING:	623633	18364-204-P16	B

- NOTES:
1. CONTOUR ELEVATIONS ARE PRESENTED AT 1.0m INTERVALS.
 2. DESIGN SPEED 50km/h.
 3. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.
 4. PROPOSED RANGE FENCELINE IS 1.0m INSIDE PROPOSED R.O.W. FOR RANGE FENCE SPECIFICATIONS & SECTION SEE DRAWINGS 18364-204-01 & 18364-204-02.
 5. PROPOSED BRIDGE CROSSINGS WILL REQUIRE A SITE PLAN SURVEY & DESIGN.
 6. FOR HORIZONTAL CURVE INFORMATION SEE DRAWING 18364-204-02.
 7. FOR MASS HAUL SEE DRAWINGS 18364-204-M1 TO 18364-204-M16.
 8. FOR CROSS SECTIONS SEE DRAWINGS 18364-204-X1 TO 18364-204-X94.

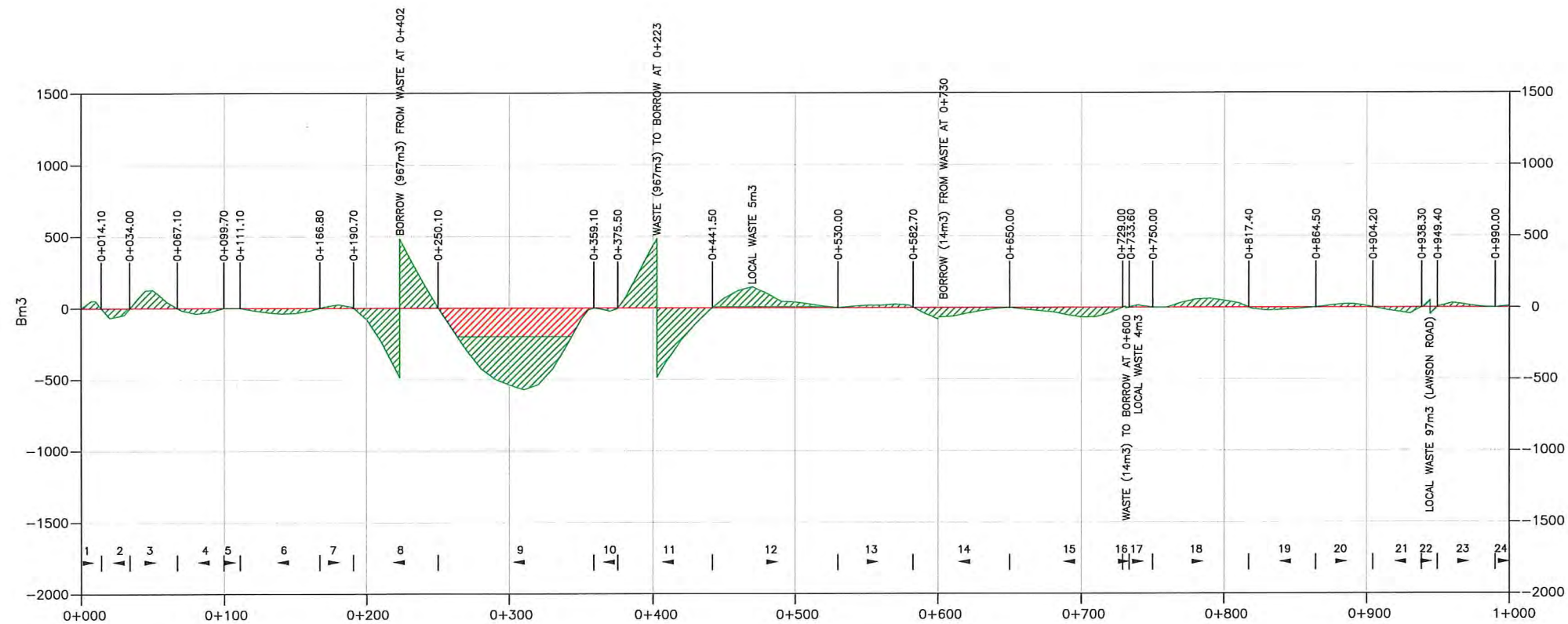
- LEGEND:
- PROPOSED ROAD
 - CUT/FILL LIMITS
 - HORIZONTAL CURVE #
 - NEW CULVERT
 - PROPOSED R.O.W.
 - PROPOSED FENCELINE
 - PRIVATE LAND
 - ROAD/UTILITY R.O.W.
 - GRAZING PERMIT

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
1	0.0	14.1	68.6	63.3	63.3	0.0	0.0	67.7	>	
2	14.1	34.0	96.0	105.3	105.3	0.0	0.0	96.5	<	
3	34.0	67.1	165.2	163.1	163.1	0.0	0.0	171.8	>	
4	67.1	99.7	173.2	64.7	64.7	0.0	0.0	184.8	<	
5	99.7	111.1	60.7	20.9	20.9	0.0	0.0	64.6	>	
6	111.1	166.8	296.1	98.9	98.9	0.0	0.0	316.2	<	
7	166.8	190.7	125.0	46.5	46.5	0.0	0.0	133.1	>	
8	190.7	250.1	251.4	2.0	969.4	967.4	0.0	246.7	<	Borrow supplied by Waste at 0+402
9	250.1	359.1	714.7	1822.5	1822.5	0.0	0.0	327.3	<	
10	359.1	375.5	88.4	83.6	83.6	0.0	0.0	49.3	<	
11	375.5	441.5	295.1	977.4	10.0	0.0	967.4	198.2	<	Waste To Borrow at 0+223
12	441.5	530.0	343.6	235.6	230.9	0.0	4.7	265.9	>	Local Waste
13	530.0	582.7	217.1	109.1	109.1	0.0	0.0	158.4	>	
14	582.7	650.0	272.7	135.3	148.7	13.5	0.0	202.1	<	Borrow supplied by Waste at 0+731
15	650.0	729.0	319.9	159.1	159.1	0.0	0.0	237.4	<	
16	729.0	733.6	19.1	18.2	4.7	0.0	13.5	13.8	>	Waste To Borrow at 0+600
17	733.6	750.0	66.2	46.2	42.7	0.0	3.6	49.1	>	Local Waste
18	750.0	817.4	277.1	148.4	148.4	0.0	0.0	202.4	>	
19	817.4	864.5	205.9	92.5	92.5	0.0	0.0	164.1	<	
20	864.5	904.2	249.3	95.7	95.7	0.0	0.0	244.3	>	
21	904.2	938.3	173.4	109.0	109.0	0.0	0.0	185.6	<	
22	938.3	949.4	31.1	100.1	2.9	0.0	97.2	54.6	>	Paper Waste Only (Lawson Road Crossing vols)
23	949.4	990.0	229.2	111.0	111.0	0.0	0.0	213.7	>	
24	990.0	1012.4	127.5	50.6	50.6	0.0	0.0	119.5	>	

NOTES:

1. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.



LEGEND:

- BALANCE LINE
NET MASS LINE
MOVEMENT DIRECTION
FREE HAUL (<80m)
OVERHAUL (>80m)

INTENDED TO BE PLOTTED ON 11"x17"
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ISSUED FOR CONSTRUCTION

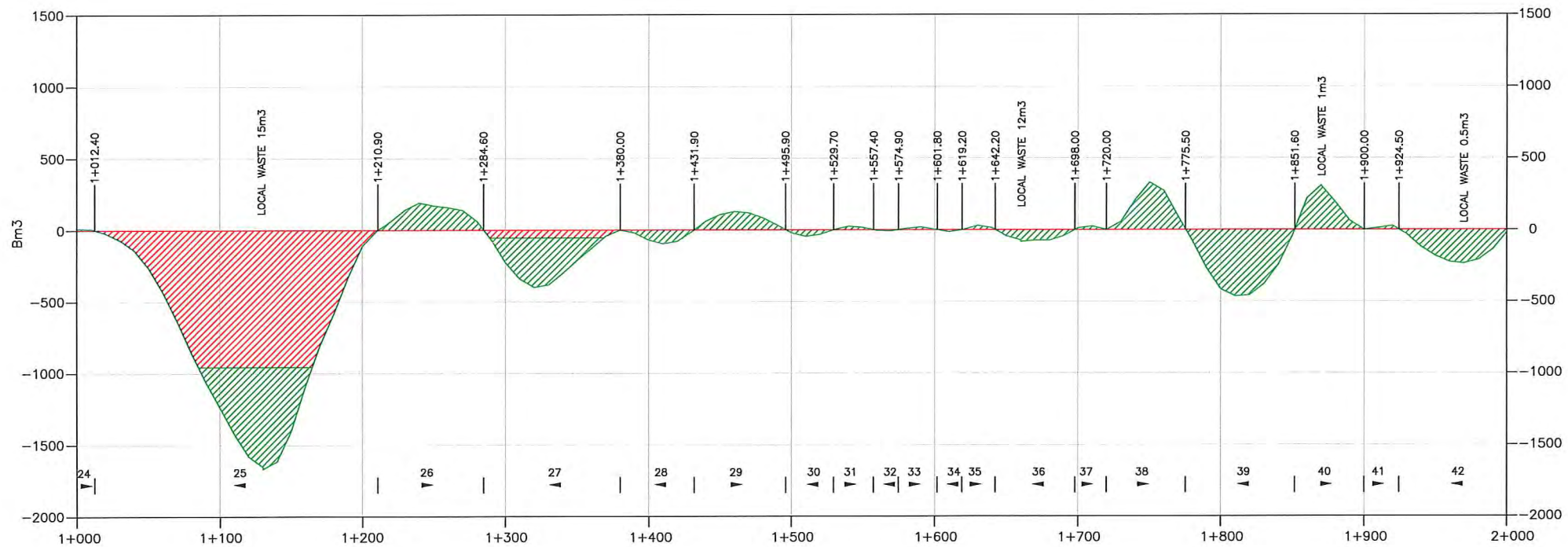
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								DATE				2019-05-24			
REV		DATE		DESCRIPTION						DRW		CHK		ENG	
A		FEB.19		ISSUED FOR REVIEW						KAK		KD		TW	
B		MAY.19		ISSUED FOR CONSTRUCTION						JMP		KD		TW	

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
24	990.0	1012.4	127.5	50.6	50.6	0.0	0.0	119.5	>	
25	1012.4	1210.9	1073.5	1810.9	1795.7	0.0	15.2	754.3	<	Local Waste
26	1210.9	1284.6	380.5	456.3	456.3	0.0	0.0	221.2	>	
27	1284.6	1380.0	416.2	464.2	464.2	0.0	0.0	286.6	<	
28	1380.0	1431.9	217.4	176.4	176.4	0.0	0.0	155.9	<	
29	1431.9	1495.9	305.0	328.7	328.7	0.0	0.0	192.3	>	
30	1495.9	1529.7	160.3	143.1	143.1	0.0	0.0	101.6	<	
31	1529.7	1557.4	113.6	65.9	65.9	0.0	0.0	83.1	>	
32	1557.4	1574.9	71.8	38.6	38.6	0.0	0.0	52.6	>	
33	1574.9	1601.8	119.7	67.1	67.1	0.0	0.0	93.2	>	
34	1601.8	1619.2	95.2	74.6	74.6	0.0	0.0	83.4	<	
35	1619.2	1642.2	120.3	90.4	90.4	0.0	0.0	97.5	>	
36	1642.2	1698.0	298.0	366.8	355.0	0.0	11.7	167.7	<	Local Waste
37	1698.0	1720.0	123.7	132.6	132.6	0.0	0.0	66.0	>	
38	1720.0	1775.5	402.6	639.7	639.7	0.0	0.0	166.8	>	
39	1775.5	1851.6	453.9	692.4	692.4	0.0	0.0	228.4	<	
40	1851.6	1900.0	271.8	439.6	439.0	0.0	0.6	145.5	>	Local Waste
41	1900.0	1924.5	120.9	128.8	128.8	0.0	0.0	73.5	>	
42	1924.5	2001.4	367.2	402.1	402.5	0.5	0.0	231.0	<	Local Borrow

NOTES:

1. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.



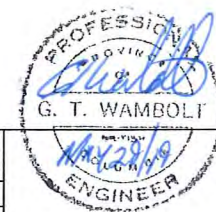
LEGEND:

- BALANCE LINE
- NET MASS LINE
- MOVEMENT DIRECTION
- FREE HAUL (<80m)
- OVERHAUL (>80m)

INTENDED TO BE PLOTTED ON 11"x17"
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ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHAUL	
REV		DATE	DESCRIPTION	DRW	CHK	ENG	DATE
A		FEB.19	ISSUED FOR REVIEW	KAK	KD	TW	2019-05-24
B		MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW	



SENIOR DESIGNER
DATE 2019-05-24

DESIGNED		BM DATE		2019-01-14	
QUALITY CONTROL		TW DATE		2019-02-08	
QUALITY ASSURANCE		DATE			
DRAWN		KAK DATE		2019-02-13	

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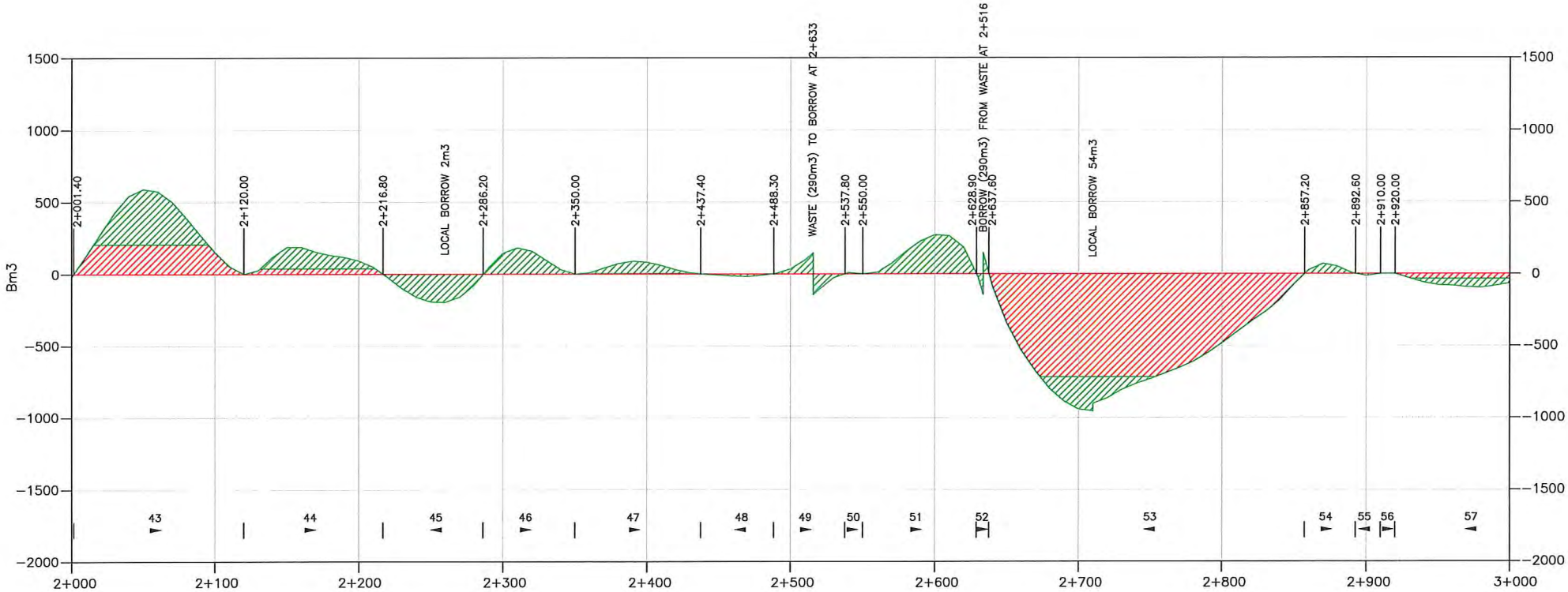
TENAS HAUL ROAD
STA. 1+000 to 2+000

MASS HAUL 2		LATITUDE:		54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	18364-204-M2	REV	B
		LONGITUDE:		127° 5' 3.99"	9U	EASTING:		623633			

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
43	2001.4	2120.0	508.2	645.1	645.1	0.0	0.0	356.4	>	
44	2120.0	2216.8	397.9	306.3	306.3	0.0	0.0	290.7	>	
45	2216.8	2286.2	284.8	235.5	237.9	2.4	0.0	208.6	<	Local Borrow
46	2286.2	2350.0	277.3	272.3	272.3	0.0	0.0	191.6	>	
47	2350.0	2437.4	358.8	209.7	209.7	0.0	0.0	262.5	>	
48	2437.4	2488.3	206.8	100.6	100.6	0.0	0.0	152.8	<	
49	2488.3	2537.8	225.5	302.9	12.9	0.0	290.0	148.7	>	Waste To Borrow at 2+633
50	2537.8	2550.0	50.4	26.4	26.4	0.0	0.0	36.8	>	
51	2550.0	2628.9	340.3	310.4	310.4	0.0	0.0	237.0	>	
52	2628.9	2637.6	44.4	0.0	290.0	290.0	0.0	26.1	>	Borrow supplied by Waste at 2+516
53	2637.6	2857.2	960.0	932.5	986.3	53.7	0.0	659.8	<	Local Borrow
54	2857.2	2892.6	146.0	102.3	102.3	0.0	0.0	106.3	>	
55	2892.6	2910.0	71.6	37.4	37.4	0.0	0.0	52.1	<	
56	2910.0	2920.0	41.1	23.2	23.2	0.0	0.0	30.2	>	
57	2920.0	3021.1	418.7	222.2	222.2	0.0	0.0	303.5	<	

NOTES:
1. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.



LEGEND:
— BALANCE LINE
— NET MASS LINE
1 2 MOVEMENT DIRECTION
FREE HAUL (<80m)
OVERHAUL (>80m)

INTENDED TO BE PLOTTED ON 11"x17"
ANY COPIES or PDFS MAY NOT BE TO SCALE

ISSUED FOR CONSTRUCTION

SCALE HORIZ. 1:4000 VERT. 1:400		CAD FILENAME 18364-204-EASTHALE		DATE 2019-05-24	
REV	DATE	DESCRIPTION	DRW	CHK	ENG
A	FEB.19	ISSUED FOR REVIEW	KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



DWB Consulting Services Ltd. 1579 9th Avenue Prince George, B.C. V2L 3R8 Phone: (250) 562-5541 Fax: (250) 562-5561	
DESIGNED	BM DATE 2019-01-14
QUALITY CONTROL	TW DATE 2019-02-08
QUALITY ASSURANCE	DATE
DRAWN	KAK DATE 2019-02-13

TELKWA COAL
LIMITED
TENAS HAUL ROAD
STA. 2+000 to 3+000

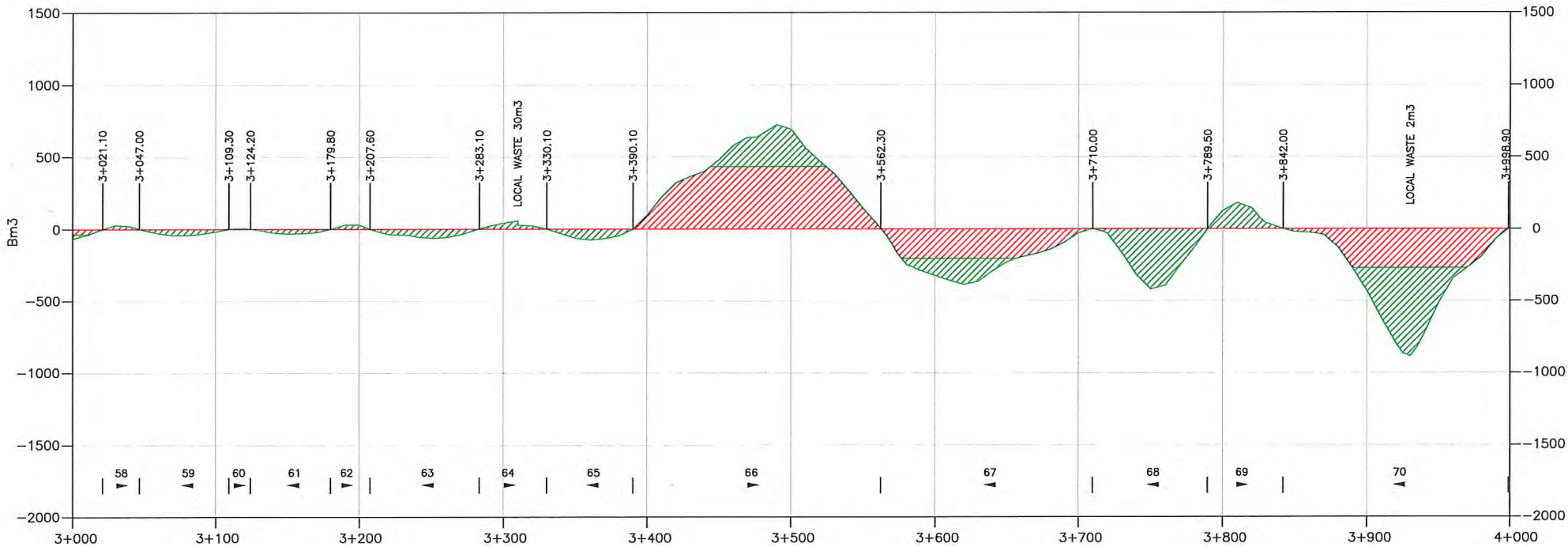
MASS HAUL 3		LATITUDE: 54° 38' 11.65"		NAD83	NORTHING: 6056036	DRAWING NUMBER	REV
LONGITUDE: 127° 5' 3.99"		9U	EASTING: 623633	18364-204-M3		B	

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
58	3021.1	3047.0	109.0	63.3	63.3	0.0	0.0	78.0	>	
59	3047.0	3109.3	256.2	124.5	124.5	0.0	0.0	187.1	<	
60	3109.3	3124.2	61.6	30.7	30.7	0.0	0.0	44.8	>	
61	3124.2	3179.8	223.0	103.4	103.4	0.0	0.0	166.9	<	
62	3179.8	3207.6	143.4	85.8	85.8	0.0	0.0	124.3	>	
63	3207.6	3283.1	339.1	179.7	179.7	0.0	0.0	258.0	<	
64	3283.1	3330.1	194.5	101.4	71.5	0.0	29.9	141.2	>	Local Waste
65	3330.1	3390.1	249.8	149.8	149.8	0.0	0.0	180.3	<	
66	3390.1	3562.3	736.6	844.7	844.7	0.0	0.0	517.4	>	
67	3562.3	3710.0	632.9	511.2	511.2	0.0	0.0	443.6	<	
68	3710.0	3789.5	409.0	589.5	589.5	0.0	0.0	238.9	>	
69	3789.5	3842.0	233.1	254.3	254.3	0.0	0.0	157.6	<	
70	3842.0	3998.9	698.9	1078.0	1076.1	0.0	1.9	471.4	<	Local Waste

NOTES:

1. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.



LEGEND:

- BALANCE LINE
- NET MASS LINE
- MOVEMENT DIRECTION
- FREE HAUL (<80m)
- OVERHAUL (>80m)

INTENDED TO BE PLOTTED ON 11"x17"
ANY COPIES or PDFS MAY NOT BE TO SCALE

ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHAUL	
REV	DATE	DESCRIPTION		DRW	CHK	ENG	
A	FEB.19	ISSUED FOR REVIEW		KAK	KD	TW	
B	MAY.19	ISSUED FOR CONSTRUCTION		JMP	KD	TW	



DESIGNED		BM DATE		2019-01-14	
QUALITY CONTROL		TW DATE		2019-02-06	
QUALITY ASSURANCE		DATE			
DRAWN		KAK DATE		2019-02-13	

DWB Consulting Services Ltd.
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Phone: (250) 562-5541 Fax: (250) 562-5561



TENAS HAUL ROAD
STA. 3+000 to 4+000

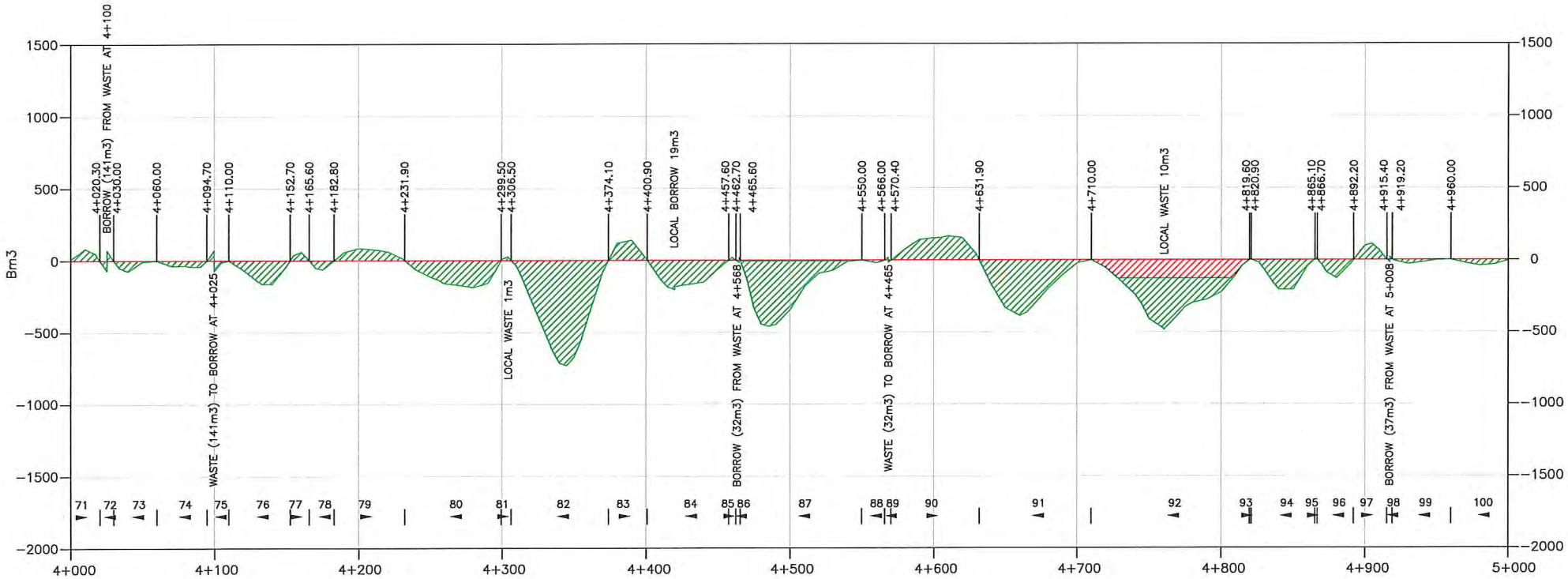
MASS HAUL 4		DRAWING NUMBER		REV	
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	18364-204-M4
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	B

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
71	3998.9	4020.3	94.6	116.7	116.7	0.0	0.0	64.2	>	
72	4020.3	4030.0	35.6	0.0	140.9	140.9	0.0	29.0	<	Borrow supplied by Waste at 4+100
73	4030.0	4060.0	134.5	145.8	145.8	0.0	0.0	90.1	<	
74	4060.0	4094.7	146.7	113.3	113.3	0.0	0.0	104.2	<	
75	4094.7	4110.0	70.7	150.8	10.0	0.0	140.9	45.9	<	Waste To Borrow at 4+025
76	4110.0	4152.7	177.4	200.7	200.7	0.0	0.0	128.2	<	
77	4152.7	4165.6	60.1	82.5	82.5	0.0	0.0	38.9	>	
78	4165.6	4182.8	69.8	79.1	79.1	0.0	0.0	51.8	<	
79	4182.8	4231.9	200.2	159.6	159.6	0.0	0.0	147.3	>	
80	4231.9	4299.5	303.8	346.8	346.8	0.0	0.0	203.3	<	
81	4299.5	4306.5	37.4	63.4	62.2	0.0	1.3	20.9	>	Local Waste
82	4306.5	4374.1	381.6	876.8	876.8	0.0	0.0	203.1	<	
83	4374.1	4400.9	114.6	182.3	182.4	0.0	0.0	80.5	>	
84	4400.9	4457.6	263.4	268.7	288.1	19.3	0.0	170.4	<	Local Borrow
85	4457.6	4462.7	22.8	27.5	27.5	0.0	0.0	15.2	>	
86	4462.7	4465.6	12.7	5.0	37.2	32.1	0.0	8.6	<	Borrow supplied by Waste at 4+568
87	4465.6	4550.0	414.0	600.0	600.0	0.0	0.0	253.6	<	
88	4550.0	4566.0	68.5	55.3	55.3	0.0	0.0	48.0	<	
89	4566.0	4570.4	22.3	33.5	1.4	0.0	32.1	13.4	<	Waste To Borrow at 4+465
90	4570.4	4631.9	316.2	360.3	360.3	0.0	0.0	184.5	>	
91	4631.9	4710.0	364.8	476.1	476.1	0.0	0.0	234.7	<	
92	4710.0	4819.6	509.5	721.0	711.0	0.0	10.0	329.1	<	Local Waste
93	4819.6	4820.9	6.1	6.9	6.9	0.0	0.0	4.1	>	
94	4820.9	4865.1	198.5	293.2	293.2	0.0	0.0	132.6	<	
95	4865.1	4866.7	7.6	11.9	11.9	0.0	0.0	4.9	>	
96	4866.7	4892.2	116.6	153.8	153.8	0.0	0.0	76.7	<	
97	4892.2	4915.4	112.3	152.0	152.0	0.0	0.0	69.7	>	
98	4915.4	4919.2	14.8	0.7	37.6	36.9	0.0	11.4	<	Borrow supplied by Waste at 5+008
99	4919.2	4960.0	170.7	112.8	112.8	0.0	0.0	122.4	<	
100	4960.0	5002.1	178.0	121.3	121.3	0.0	0.0	126.4	<	

NOTES:

1. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.



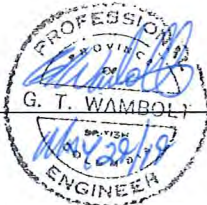
LEGEND:

- BALANCE LINE
- NET MASS LINE
- MOVEMENT DIRECTION
- FREE HAUL (<80m)
- OVERHAUL (>80m)

INTENDED TO BE PLOTTED ON 11"x17"
ANY COPIES or PDFS MAY NOT BE TO SCALE

ISSUED FOR CONSTRUCTION

SCALE HORIZ. 1:4000 VERT. 1:400			CAD FILENAME 18364-204-EASTHAUL		
			DATE 2019-05-24		
REV	DATE	DESCRIPTION	DRW	CHK	ENG
A	FEB.19	ISSUED FOR REVIEW	KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



SENIOR DESIGNER
DATE 2019-05-24

DWB Consulting Services Ltd.	
1579 9th Avenue Prince George, B.C. V2L 3R8 Phone: (250) 562-5541 Fax: (250) 562-5561	
DESIGNED	BM DATE 2019-01-14
QUALITY CONTROL	TW DATE 2019-02-00
QUALITY ASSURANCE	DATE
DRAWN	KAK DATE 2019-02-13



TELKWA COAL
LIMITED
TENAS HAUL ROAD
STA. 4+000 to 5+000

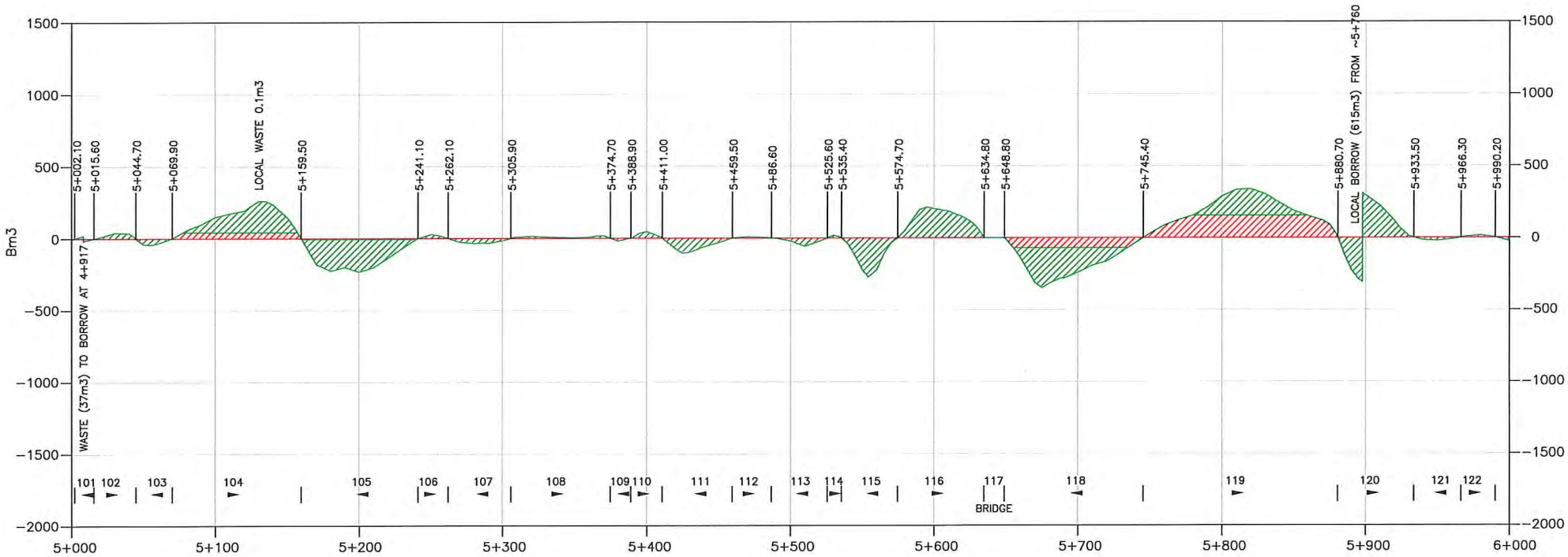
MASS HAUL 5				
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036
LONGITUDE:	127° 5' 3.99"	SU	EASTING:	623633
			18364-204-M5	B

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
101	5002.1	5015.6	59.0	49.2	12.2	0.0	36.9	40.5	<	Waste To Borrow at 4+917
102	5015.6	5044.7	118.2	72.2	72.2	0.0	0.0	87.6	>	
103	5044.7	5069.9	108.1	78.1	78.1	0.0	0.0	75.6	<	
104	5069.9	5159.5	367.9	331.6	331.5	0.0	0.1	269.4	>	Local Waste
105	5159.5	5241.1	358.0	346.4	346.4	0.0	0.0	245.1	<	
106	5241.1	5262.1	86.0	51.0	51.0	0.0	0.0	62.9	>	
107	5262.1	5305.9	179.7	121.0	121.0	0.0	0.0	131.6	<	
108	5305.9	5374.7	281.5	158.8	158.8	0.0	0.0	206.7	>	
109	5374.7	5388.9	58.7	45.3	45.3	0.0	0.0	42.5	<	
110	5388.9	5411.0	93.1	74.5	74.5	0.0	0.0	66.7	>	
111	5411.0	5459.5	191.6	143.5	143.5	0.0	0.0	145.7	<	
112	5459.5	5486.6	106.1	45.5	45.5	0.0	0.0	81.3	>	
113	5486.6	5525.6	161.2	123.0	123.0	0.0	0.0	117.2	<	
114	5525.6	5535.4	41.4	40.4	40.4	0.0	0.0	29.5	>	
115	5535.4	5574.7	175.5	303.4	303.4	0.0	0.0	118.0	<	
116	5574.7	5634.8	381.4	309.2	309.2	0.0	0.0	259.5	>	
117	5634.8	5648.8	0.0	0.0	0.0	0.0	0.0	n/a	n/a	BRIDGE CROSSING
118	5648.8	5745.4	564.8	420.6	420.6	0.0	0.0	303.7	<	
119	5745.4	5880.7	755.5	434.0	434.0	0.0	0.0	406.2	>	
120	5880.7	5933.5	270.5	21.0	635.7	614.7	0.0	158.6	>	Local Borrow from ~5+760 area
121	5933.5	5966.3	184.0	76.2	76.2	0.0	0.0	98.7	<	
122	5966.3	5990.2	131.6	51.6	51.6	0.0	0.0	71.7	>	

NOTES:

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LEGEND:

- BALANCE LINE
- NET MASS LINE
- MOVEMENT DIRECTION
- FREE HAUL (<80m)
- OVERHAUL (>80m)

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SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME 18364-204-EASTHAUL		
REV		DATE	DESCRIPTION	DRW	CHK	ENG
A		FEB.19	ISSUED FOR REVIEW	KAK	KD	TW
B		MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



SENIOR DESIGNER
DATE 2019-05-24

DWB Consulting Services Ltd.		1579 9th Avenue Prince George, B.C. V2L 3R6 Phone: (250) 562-5541 Fax: (250) 562-5561	
DESIGNED	BM	DATE	2019-01-14
QUALITY CONTROL	TW	DATE	2019-02-09
QUALITY ASSURANCE		DATE	
DRAWN	KAK	DATE	2019-02-13



TENAS HAUL ROAD
STA. 5+000 to 6+000

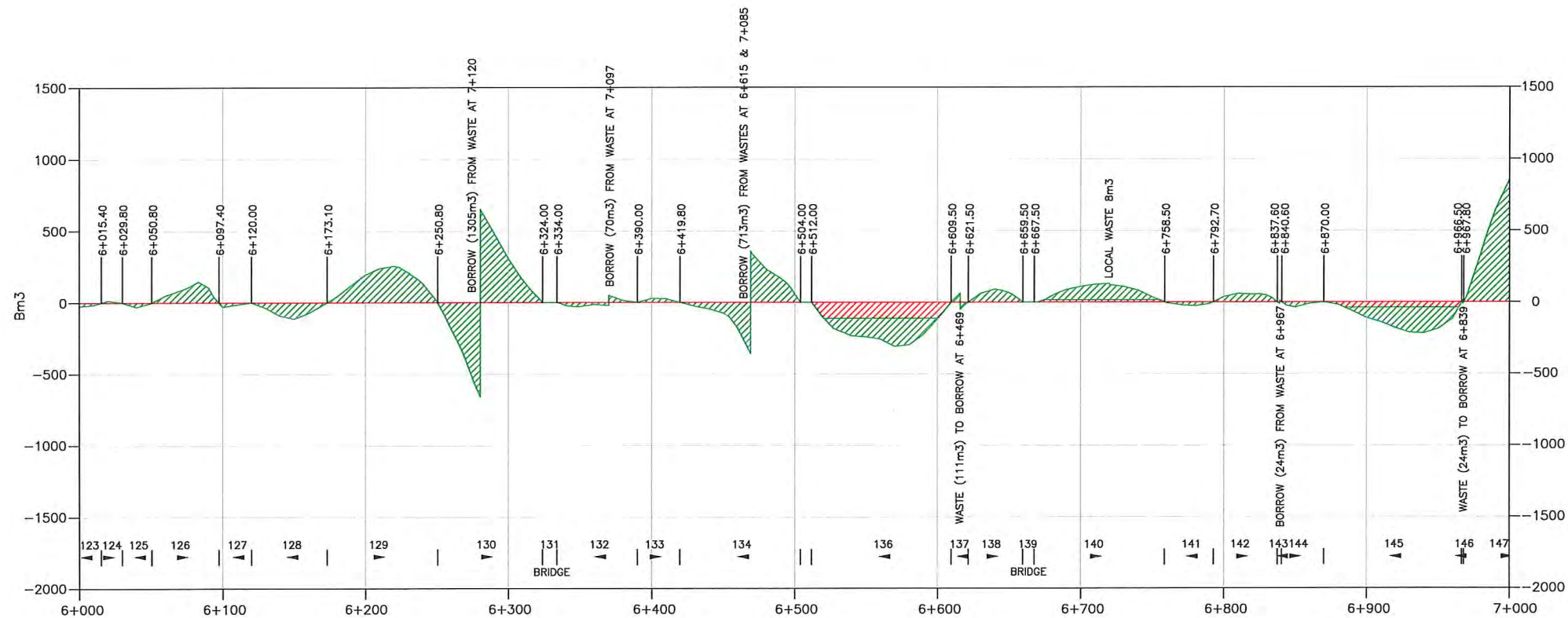
MASS HAUL 6		DRAWING NUMBER		REV
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING: 6056036	B
LONGITUDE:	127° 5' 3.99"	9U	EASTING: 623633	
		18364-204-M6		

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
123	5990.2	6015.4	136.3	68.1	68.1	0.0	0.0	75.7	<	
124	6015.4	6029.8	78.0	40.3	40.3	0.0	0.0	43.3	>	
125	6029.8	6050.8	102.4	56.8	56.8	0.0	0.0	63.0	<	
126	6050.8	6097.4	203.9	208.9	208.9	0.0	0.0	139.9	>	
127	6097.4	6120.0	94.0	80.3	80.3	0.0	0.0	68.0	<	
128	6120.0	6173.1	219.8	151.2	151.2	0.0	0.0	159.6	<	
129	6173.1	6250.8	335.2	301.2	301.2	0.0	0.0	233.2	>	
130	6250.8	6324.0	352.2	21.5	1326.3	1304.8	0.0	296.8	>	Borrow supplied by Waste at 7+120
131	6324.0	6334.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a	BRIDGE CROSSING
132	6334.0	6390.0	242.0	158.1	228.5	70.4	0.0	181.8	<	Borrow supplied by Waste at 7+097
133	6390.0	6419.8	124.9	69.8	69.8	0.0	0.0	89.5	>	
134	6419.8	6504.0	375.0	37.6	750.9	713.3	0.0	332.3	<	Borrow mostly supplied by Waste at 6+615 & 7+085
135	6504.0	6512.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a	BRIDGE CROSSING
136	6512.0	6609.5	412.8	390.5	390.5	0.0	0.0	306.3	<	
137	6609.5	6621.5	62.6	111.4	0.0	0.0	111.4	48.8	<	Waste To Borrow at 6+469
138	6621.5	6659.5	192.5	114.5	114.5	0.0	0.0	180.3	>	
139	6659.5	6667.5	0.0	0.0	0.0	0.0	0.0	0.0	n/a	BRIDGE CROSSING
140	6667.5	6758.5	359.2	172.1	164.5	0.0	7.6	286.9	>	Local Waste
141	6758.5	6792.7	143.9	75.3	75.3	0.0	0.0	102.7	<	
142	6792.7	6837.6	203.6	116.5	116.5	0.0	0.0	134.8	>	
143	6837.6	6840.6	15.8	0.2	24.6	24.4	0.0	9.2	<	Borrow supplied by Waste at 6+967
144	6840.6	6870.0	129.9	75.1	75.1	0.0	0.0	88.2	<	
145	6870.0	6966.5	419.0	346.9	346.9	0.0	0.0	289.8	<	
146	6966.5	6967.8	7.5	24.4	0.0	0.0	24.4	4.0	<	Waste To Borrow at 6+839
147	6967.8	7033.0	477.6	1082.1	1082.1	0.0	0.0	274.4	>	

NOTES:

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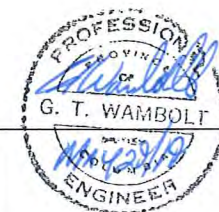
LEGEND:

- BALANCE LINE
- NET MASS LINE
- MOVEMENT DIRECTION
- FREE HAUL (<80m)
- OVERHAUL (>80m)

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ISSUED FOR CONSTRUCTION

SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHAUL	
REV		DATE		DESCRIPTION		DATE	
A		FEB.19		ISSUED FOR REVIEW		2019-05-24	
B		MAY.19		ISSUED FOR CONSTRUCTION			
DRW		CHK		ENG			
KAK		KD		TW			
JMP		KD		TW			
DATE		2019-05-24		SENIOR DESIGNER			
				DATE		2019-05-24	



DESIGNED		BM DATE		2019-01-14	
QUALITY CONTROL		TW DATE		2019-02-00	
QUALITY ASSURANCE		DATE			
DRAWN		KAK DATE		2019-02-13	

TELKWA COAL
LIMITED

TENAS HAUL ROAD
STA. 6+000 to 7+000

MASS HAUL 7

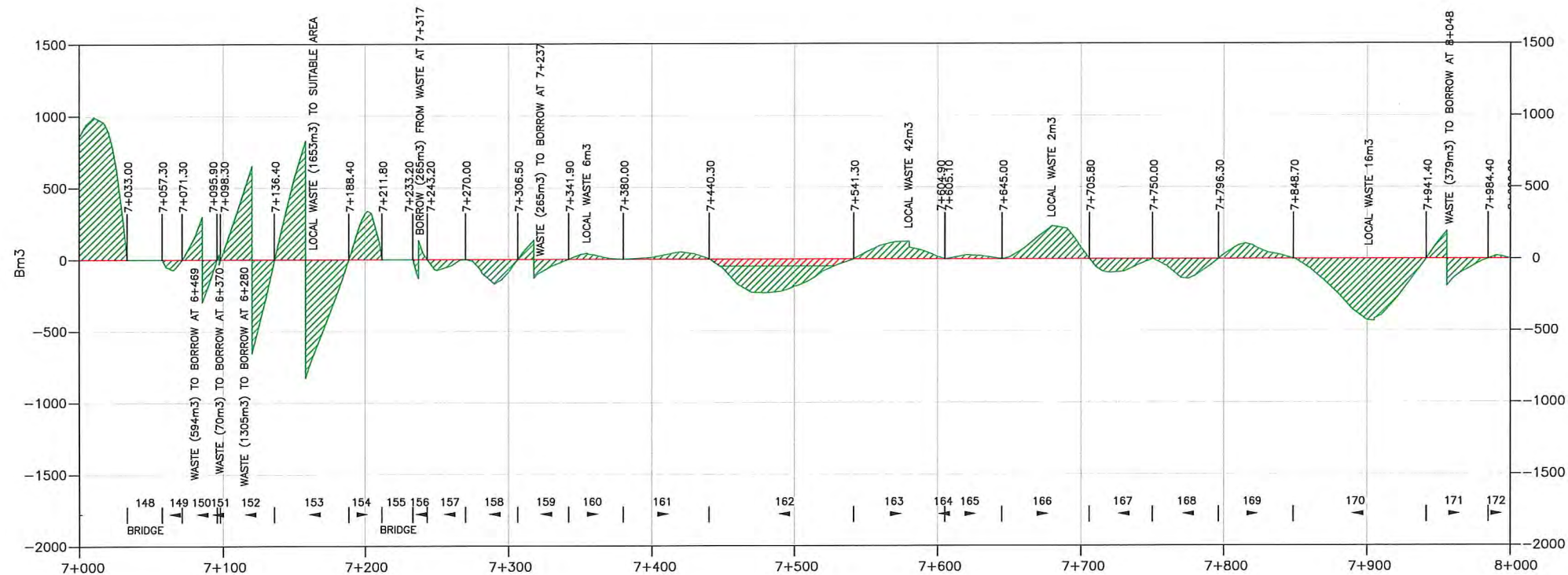
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	SU	EASTING:	623633	18364-204-M7	B

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
148	7033.0	7057.3	0.0	0.0	0.0	0.0	0.0	0.0	n/a	BRIDGE CROSSING
149	7057.3	7071.3	76.5	126.1	126.1	0.0	0.0	55.2	<	
150	7071.3	7095.9	169.3	601.4	7.1	0.0	594.2	74.3	<	Waste To Borrow at 6+469
151	7095.9	7098.3	16.7	70.4	0.0	0.0	70.4	7.1	<	Waste To Borrow at 6+370
152	7098.3	7136.4	251.0	1304.8	0.0	0.0	1304.8	114.3	<	Waste To Borrow at 6+280
153	7136.4	7188.4	353.9	1652.6	0.0	0.0	1652.6	194.9	<	Waste to suitable waste area
154	7188.4	7211.8	202.6	437.6	437.6	0.0	0.0	110.4	>	
155	7211.8	7233.2	0.0	0.0	0.0	0.0	0.0	0.0	n/a	BRIDGE CROSSING
156	7233.2	7243.2	51.0	6.6	271.4	264.8	0.0	39.2	<	Borrow supplied by Waste at 7+317
157	7243.2	7270.0	137.2	174.0	174.0	0.0	0.0	85.0	<	
158	7270.0	7306.5	186.7	195.4	195.4	0.0	0.0	109.8	<	
159	7306.5	7341.9	172.6	274.3	9.5	0.0	264.8	106.2	<	Waste To Borrow at 7+237
160	7341.9	7380.0	159.7	100.9	95.4	0.0	5.5	114.4	>	Local Waste
161	7380.0	7440.3	248.3	139.0	139.0	0.0	0.0	181.2	>	
162	7440.3	7541.3	419.4	299.5	299.5	0.0	0.0	303.2	<	
163	7541.3	7604.9	268.4	157.0	115.3	0.0	41.7	191.3	>	Local Waste
164	7604.9	7605.1	0.6	0.3	0.3	0.0	0.0	0.5	<	
165	7605.1	7645.0	154.3	61.7	61.7	0.0	0.0	119.9	>	
166	7645.0	7705.8	257.8	262.4	260.8	0.0	1.7	182.5	>	Local Waste
167	7705.8	7750.0	179.3	104.2	104.2	0.0	0.0	132.9	<	
168	7750.0	7796.1	201.3	157.5	157.5	0.0	0.0	138.6	<	
169	7796.1	7848.7	215.2	128.8	128.8	0.0	0.0	157.8	>	
170	7848.7	7941.4	384.6	425.9	441.9	16.0	0.0	278.4	<	
171	7941.4	7984.4	192.0	380.7	1.5	0.0	379.2	128.9	>	Waste To Borrow at 8+048
172	7984.4	8000.0	62.0	30.8	30.8	0.0	0.0	46.8	>	

NOTES:

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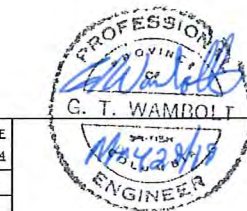
LEGEND:

- BALANCE LINE
NET MASS LINE
MOVEMENT DIRECTION
FREE HAUL (<80m)
OVERHAUL (>80m)

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SCALE HORIZ. 1:4000 VERT. 1:400		CAD FILENAME 18364-204-EASTHALE	
		DATE 2019-05-24	
REV	DATE	DESCRIPTION	DRW CHK ENG
A	FEB.19	ISSUED FOR REVIEW	KAK KD TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP KD TW



SENIOR DESIGNER
DATE 2019-05-24

DWB Consulting Services Ltd. 1579 9th Avenue Prince George, B.C. V2L 3R8 Phone: (250) 562-5541 Fax: (250) 562-5561	
DESIGNED	BM DATE 2019-01-14
QUALITY CONTROL	TW DATE 2019-02-00
QUALITY ASSURANCE	DATE
DRAWN	KAK DATE 2019-02-13



TENAS HAUL ROAD
STA. 7+000 to 8+000

MASS HAUL 8

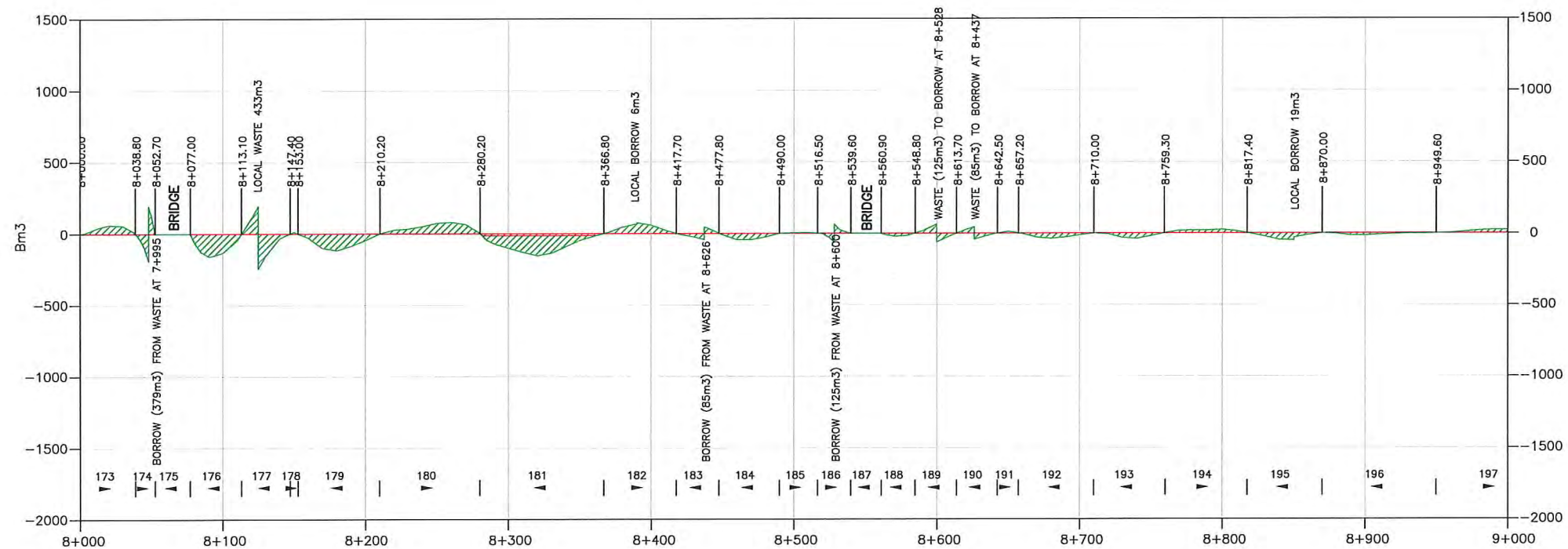
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	18364-204-M8	B

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
173	8000.0	8038.8	200.6	110.2	110.2	0.0	0.0	173.4	>	
174	8038.8	8052.7	78.8	1.4	380.6	379.2	0.0	64.2	>	Borrow supplied by Waste at 7+955
175	8052.7	8077.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a	BRIDGE CROSSING
176	8077.0	8113.1	167.4	169.3	169.3	0.0	0.0	121.8	<	
177	8113.1	8147.4	165.0	439.2	6.1	0.0	433.1	103.0	<	Haul waste to suitable disposal area
178	8147.4	8153.0	20.7	15.3	15.3	0.0	0.0	16.8	>	
179	8153.0	8210.2	215.2	134.5	134.5	0.0	0.0	171.8	<	
180	8210.2	8280.2	256.9	116.5	116.5	0.0	0.0	210.5	>	
181	8280.2	8366.8	309.1	180.2	180.2	0.0	0.0	260.1	<	
182	8366.8	8417.7	207.4	142.5	149.0	6.4	0.0	152.7	>	Local Borrow
183	8417.7	8447.8	112.3	41.7	127.0	85.4	0.0	90.6	<	Borrow supplied by Waste at 8+626
184	8447.8	8490.0	159.2	74.4	74.4	0.0	0.0	127.0	<	
185	8490.0	8516.5	134.0	66.8	66.8	0.0	0.0	119.2	>	
186	8516.5	8539.6	142.6	58.7	183.6	124.9	0.0	108.6	>	Borrow supplied by Waste at 8+600
187	8539.6	8560.9	0.0	0.0	0.0	0.0	0.0	0.0	n/a	BRIDGE CROSSING
188	8560.9	8584.8	106.5	54.7	54.7	0.0	0.0	85.3	<	
189	8584.8	8613.7	123.5	126.3	1.4	0.0	124.9	86.7	<	Waste to Borrow at 8+528
190	8613.7	8642.5	119.8	94.0	8.6	0.0	85.4	86.4	<	Waste to Borrow at 8+437
191	8642.5	8657.2	56.7	25.4	25.4	0.0	0.0	44.4	>	
192	8657.2	8710.0	200.7	89.1	89.1	0.0	0.0	158.5	<	
193	8710.0	8759.3	187.9	86.5	86.5	0.0	0.0	148.0	<	
194	8759.3	8817.4	225.5	115.9	115.9	0.0	0.0	174.7	>	
195	8817.4	8870.0	201.2	89.7	108.2	18.6	0.0	158.0	<	Local Borrow
196	8870.0	8949.6	305.3	135.9	135.9	0.0	0.0	239.1	<	
197	8949.6	9027.8	296.1	114.4	112.4	0.0	2.0	234.8	>	Local Waste

NOTES:

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LEGEND:

- BALANCE LINE
NET MASS LINE
MOVEMENT DIRECTION
FREE HAUL (<80m)
OVERHAUL (>80m)

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ISSUED FOR CONSTRUCTION

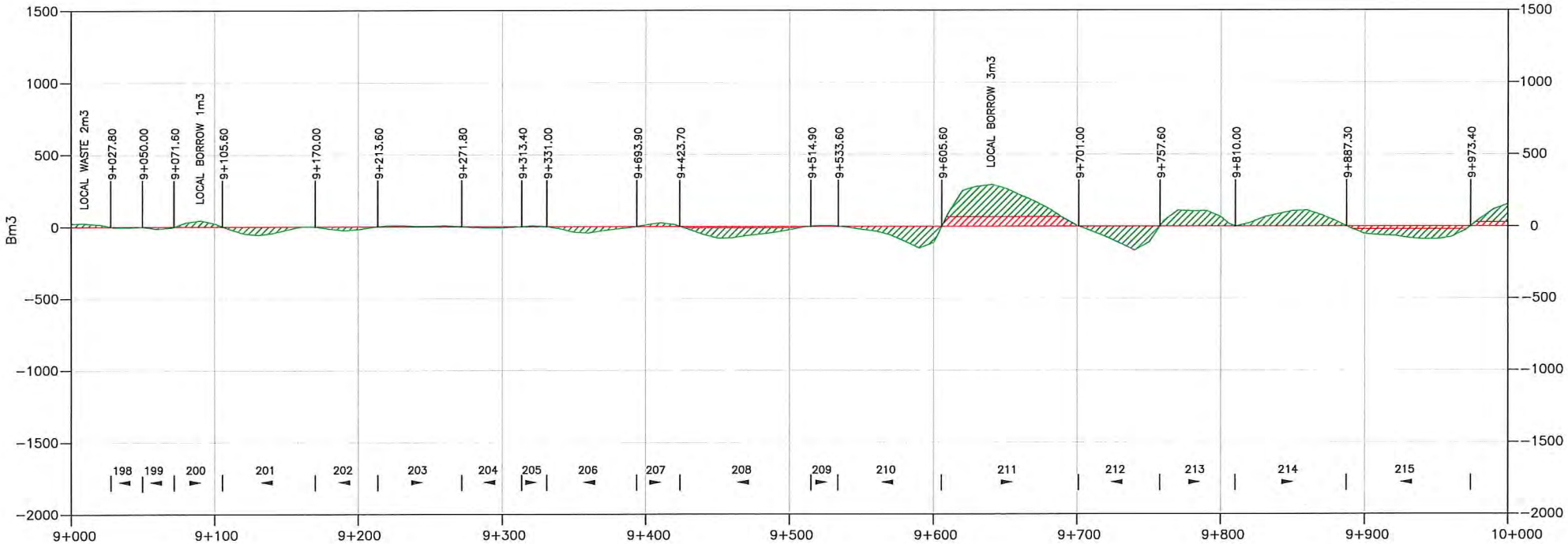
SCALE				HORIZ. 1:4000 VERT. 1:400				CAD FILENAME				18364-204-EASTHALF			
								DATE				2019-05-24			
REV		DATE		DESCRIPTION				DRW		CHK		ENG			
A		FEB.19		ISSUED FOR REVIEW				KAK		KD		TW			
B		MAY.19		ISSUED FOR CONSTRUCTION				JMP		KD		TW			

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
198	9027.8	9050.0	85.1	34.6	34.6	0.0	0.0	66.8	<	
199	9050.0	9071.6	83.7	42.7	42.7	0.0	0.0	64.9	<	
200	9071.6	9105.6	129.4	62.6	63.3	0.7	0.0	102.1	>	Local Borrow
201	9105.6	9170.0	246.1	103.7	103.7	0.0	0.0	193.5	<	
202	9170.0	9213.6	167.4	67.0	67.0	0.0	0.0	130.8	<	
203	9213.6	9271.8	222.9	89.2	89.2	0.0	0.0	174.8	>	
204	9271.8	9313.4	159.0	66.9	66.9	0.0	0.0	125.1	<	
205	9313.4	9331.0	68.2	30.4	30.4	0.0	0.0	52.7	>	
206	9331.0	9393.9	244.6	108.9	108.9	0.0	0.0	189.2	<	
207	9393.9	9423.7	111.7	44.0	44.0	0.0	0.0	89.6	>	
208	9423.7	9514.9	350.6	150.9	150.9	0.0	0.0	273.8	<	
209	9514.9	9533.6	71.8	29.7	29.7	0.0	0.0	56.3	>	
210	9533.6	9605.6	270.2	219.0	219.0	0.0	0.0	216.2	<	
211	9605.6	9701.0	363.2	339.9	343.0	3.1	0.0	286.5	>	Local Borrow
212	9701.0	9757.6	213.5	218.9	218.9	0.0	0.0	169.9	<	
213	9757.6	9810.0	206.1	172.0	172.0	0.0	0.0	157.5	>	
214	9810.0	9887.3	302.0	187.8	187.8	0.0	0.0	232.2	>	
215	9887.3	9973.4	334.9	205.2	205.2	0.0	0.0	258.8	<	

NOTES:

1. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.



LEGEND:

- BALANCE LINE
- NET MASS LINE
- MOVEMENT DIRECTION
- FREE HAUL (<80m)
- OVERHAUL (>80m)

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SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHAUL	
REV		DATE		DESCRIPTION		DATE	
A	FEB.19	ISSUED FOR REVIEW		KAK	KD	2019-05-24	
B	MAY.19	ISSUED FOR CONSTRUCTION		JMP	KD		



SENIOR DESIGNER
DATE 2019-05-24

DESIGNED		BM DATE		2019-01-14	
QUALITY CONTROL		TW DATE		2019-02-08	
QUALITY ASSURANCE		DATE			
DRAWN		KAK DATE		2019-02-13	

DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561



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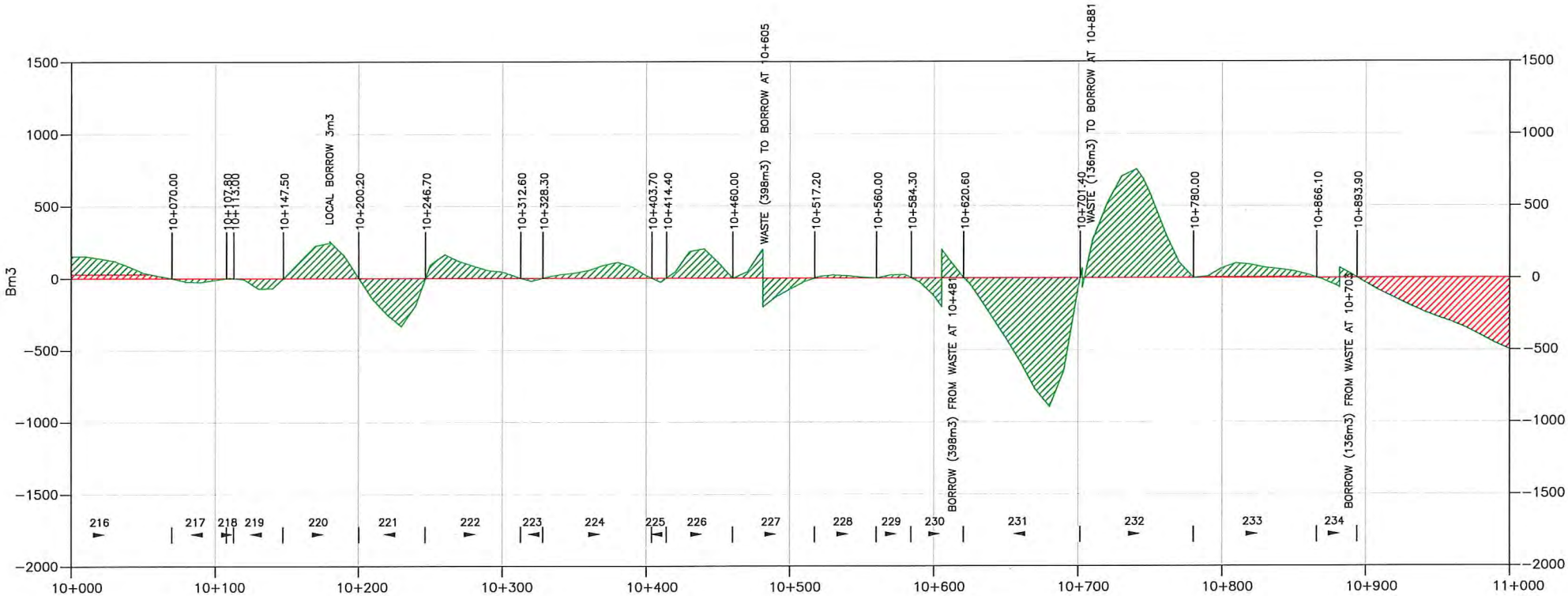
TENAS HAUL ROAD
STA. 9+000 to 10+000

MASS HAUL 10		DRAWING NUMBER		REV	
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	18364-204-M10
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	B

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
216	9973.4	10070.0	372.4	260.2	260.2	0.0	0.0	290.1	>	
217	10070.0	10107.8	150.7	84.1	84.1	0.0	0.0	113.4	<	
218	10107.8	10113.0	21.1	15.9	15.9	0.0	0.0	15.9	>	
219	10113.0	10147.5	134.1	146.0	146.0	0.0	0.0	103.3	<	
220	10147.5	10200.2	213.4	280.8	291.4	10.6	0.0	158.6	>	Local Borrow
221	10200.2	10246.7	196.5	384.6	384.6	0.0	0.0	139.5	<	
222	10246.7	10312.6	260.8	262.5	262.5	0.0	0.0	197.9	>	
223	10312.6	10328.3	61.2	33.4	33.4	0.0	0.0	47.1	<	
224	10328.3	10403.7	298.3	203.4	203.4	0.0	0.0	226.5	>	
225	10403.7	10414.0	41.1	45.6	45.6	0.0	0.0	31.2	<	
226	10414.0	10460.0	194.6	260.2	260.2	0.0	0.0	138.0	>	
227	10460.0	10517.2	254.1	485.6	88.0	0.0	397.6	171.8	>	Waste To Borrow at 10+605
228	10517.2	10560.0	166.9	86.9	86.9	0.0	0.0	128.5	>	
229	10560.0	10584.3	92.5	46.1	46.1	0.0	0.0	72.9	>	
230	10584.3	10620.6	127.0	2.0	399.6	397.6	0.0	109.3	>	Borrow supplied by Waste at 10+481
231	10620.6	10701.4	371.2	952.0	952.0	0.0	0.0	242.7	<	
232	10701.4	10780.0	384.2	945.7	810.1	0.0	135.6	236.0	>	Waste To Borrow at 10+881
233	10780.0	10866.1	323.3	187.9	187.9	0.0	0.0	258.5	>	
234	10866.1	10893.9	101.6	8.1	143.6	135.6	0.0	83.6	>	Borrow supplied by Waste at 10+703

NOTES:
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LEGEND:
— BALANCE LINE
— NET MASS LINE
1 | 2 MOVEMENT DIRECTION
FREE HAUL (<80m)
OVERHAUL (>80m)

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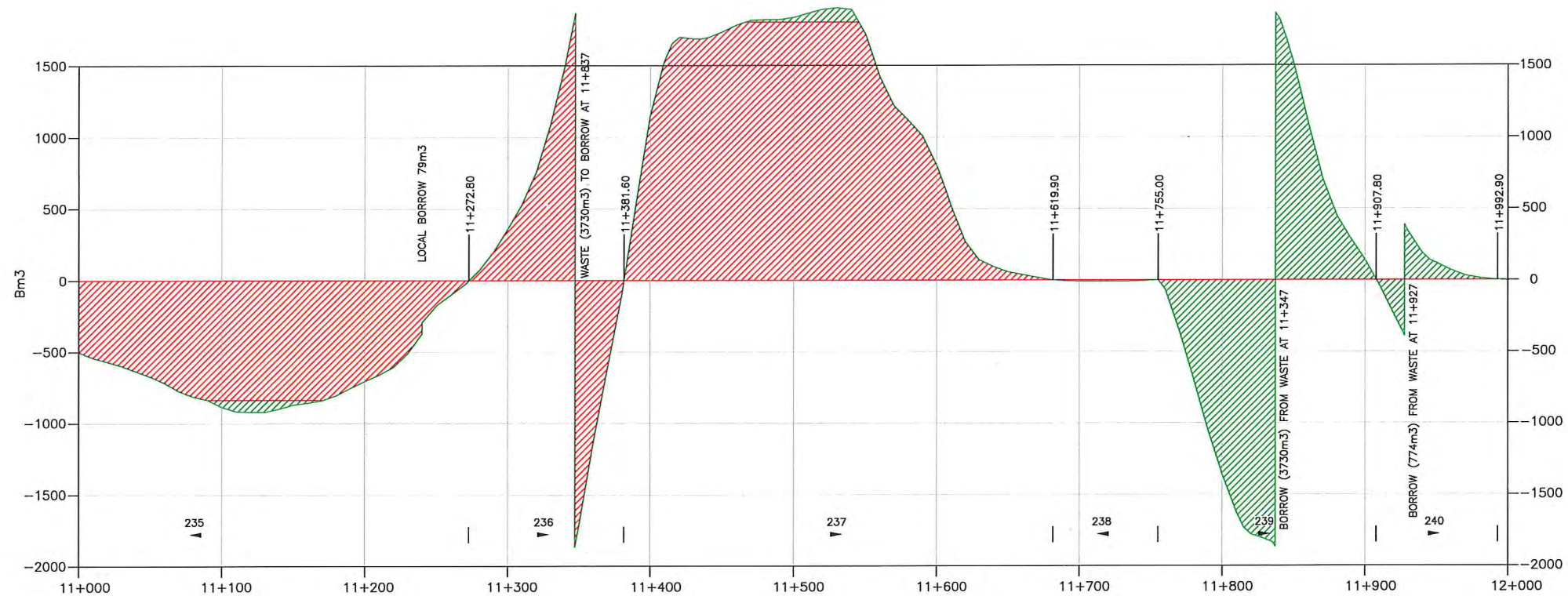
SCALE HORIZ. 1:4000 VERT. 1:400				CAD FILENAME 18364-204-EASTHALE		
				DATE 2019-05-24		
REV	DATE	DESCRIPTION		DRW	CHK	ENG
A	FEB.19	ISSUED FOR REVIEW		KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION		JMP	KD	TW

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
235	10893.9	11272.8	1770.0	1068.3	1147.0	78.6	0.0	1138.1	<	Local Borrow
236	11272.8	11381.6	204.2	3730.0	0.0	0.0	3730.0	399.1	>	Waste To Borrow at 11+837
237	11381.6	11681.9	447.5	2004.1	2004.1	0.0	0.0	684.1	>	
238	11681.9	11755.0	65.4	45.4	45.4	0.0	0.0	145.4	<	
239	11755.0	11907.8	322.6	35.9	3765.9	3730.0	0.0	308.7	>	Borrow supplied by Waste at 11+347
240	11907.8	11992.9	112.1	8.5	782.1	773.6	0.0	164.4	>	Borrow supplied by Waste at 12+577

NOTES:

1. FOR GENERAL NOTES, SPECIFICATIONS & TYPICAL SECTIONS SEE DRAWING 18364-204-01 & 18364-204-02.



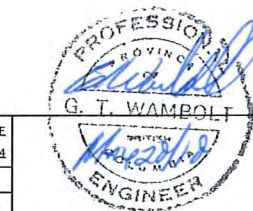
LEGEND:

- BALANCE LINE
— NET MASS LINE
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OVERHAUL (>80m)

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SCALE HORIZ. 1:4000 VERT. 1:400		CAD FILENAME 18364-204-EASTHALE		DATE 2019-05-24	
REV	DATE	DESCRIPTION	DRW	CHK	ENG
A	FEB.19	ISSUED FOR REVIEW	KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW



SENIOR DESIGNER
DATE 2019-05-24



DWB Consulting Services Ltd.
1579 9th Avenue
Prince George, B.C.
V2L 3R8
Phone: (250) 562-5541 Fax: (250) 562-5561

DESIGNED — BM DATE 2019-01-14
QUALITY CONTROL — TW DATE 2019-02-08
QUALITY ASSURANCE — DATE —
DRAWN — KAK DATE 2019-02-13



TELKWA COAL
LIMITED
TENAS HAUL ROAD
STA. 11+000 to 12+000

MASS HAUL 12

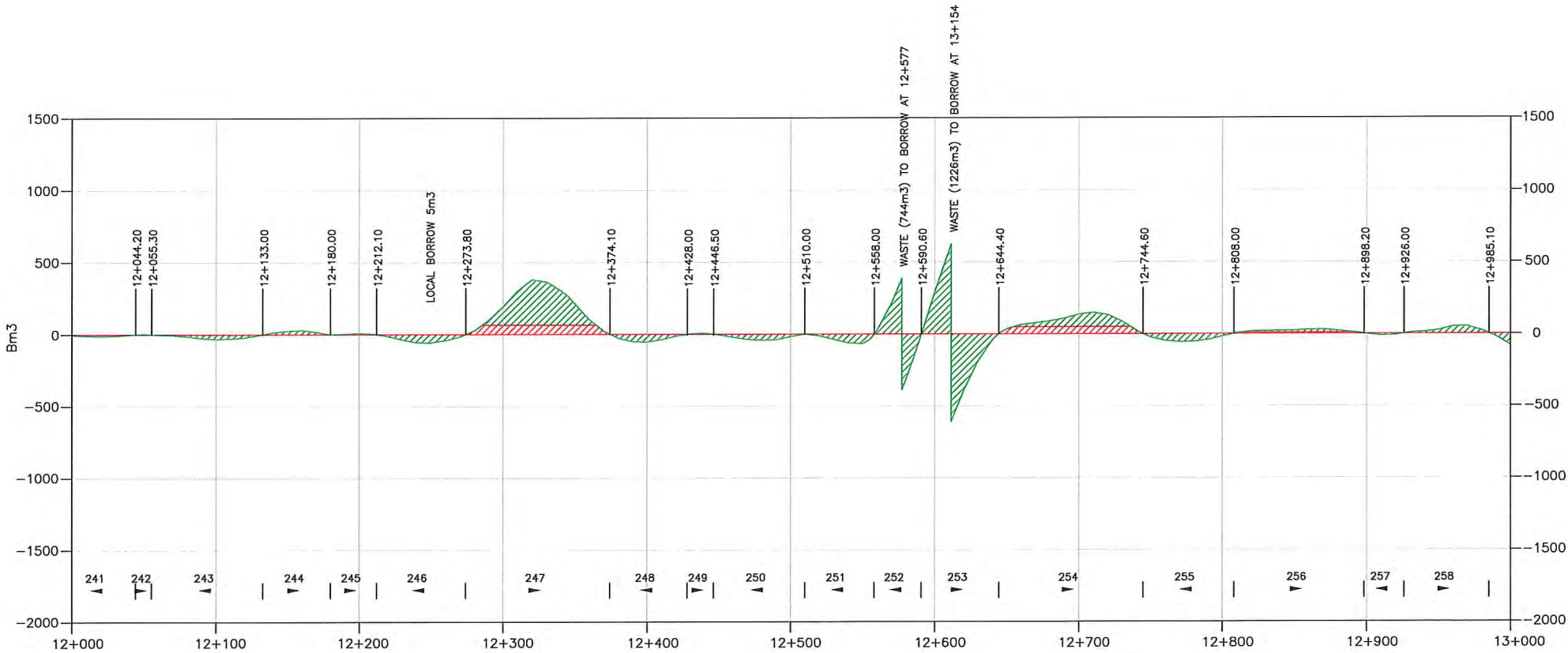
LATITUDE: 54° 38' 11.65"	NAD83	NORTHING: 6056036	DRAWING NUMBER	REV
LONGITUDE: 127° 5' 3.99"	SU	EASTING: 623633	18364-204-M12	B

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
241	11992.9	12044.2	46.7	34.5	34.5	0.0	0.0	109.0	<	
242	12044.2	12055.3	13.0	14.6	14.6	0.0	0.0	33.6	>	
243	12055.3	12133.0	93.3	124.8	124.8	0.0	0.0	233.4	<	
244	12133.0	12180.0	56.2	81.6	81.6	0.0	0.0	141.0	>	
245	12180.0	12212.1	36.7	48.1	48.1	0.0	0.0	96.4	>	
246	12212.1	12273.8	69.3	86.9	91.7	4.8	0.0	185.2	<	Local Borrow
247	12273.8	12374.1	128.1	540.1	540.1	0.0	0.0	301.5	>	
248	12374.1	12428.0	61.7	72.5	72.5	0.0	0.0	161.9	<	
249	12428.0	12446.5	22.7	25.0	25.0	0.0	0.0	55.5	>	
250	12446.5	12510.0	78.2	126.3	126.3	0.0	0.0	190.8	<	
251	12510.0	12558.0	59.2	117.1	117.1	0.0	0.0	144.3	<	
252	12558.0	12590.6	58.2	775.5	2.0	0.0	773.6	98.0	<	Waste To Borrow at 11+927
253	12590.6	12644.4	82.0	1232.3	6.4	0.0	1225.9	161.5	>	Waste To Borrow at 13+169
254	12644.4	12744.6	130.0	361.9	361.9	0.0	0.0	301.1	>	
255	12744.6	12808.0	74.4	102.5	102.5	0.0	0.0	190.2	<	
256	12808.0	12898.2	109.2	153.8	153.8	0.0	0.0	271.1	>	
257	12898.2	12926.0	33.7	45.5	45.5	0.0	0.0	83.4	<	
258	12926.0	12985.1	77.6	172.5	172.5	0.0	0.0	177.5	>	

NOTES:

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LEGEND:

- BALANCE LINE
NET MASS LINE
MOVEMENT DIRECTION
FREE HAUL (<80m)
OVERHAUL (>80m)

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SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		18364-204-EASTHALE	
REV		DATE	DESCRIPTION	DRW	CHK	ENG	DATE
A		FEB.19	ISSUED FOR REVIEW	KAK	KD	TW	2019-05-24
B		MAY.19	ISSUED FOR CONSTRUCTION	JMP	KD	TW	



SENIOR DESIGNER
DATE 2019-05-24

DESIGNED		BM DATE		2019-01-14	
QUALITY CONTROL		TW DATE		2019-02-08	
QUALITY ASSURANCE		DATE			
DRAWN		KAK DATE		2019-02-13	

DWB Consulting Services Ltd.
1579 9th Avenue
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TENAS HAUL ROAD
STA. 12+000 to 13+000

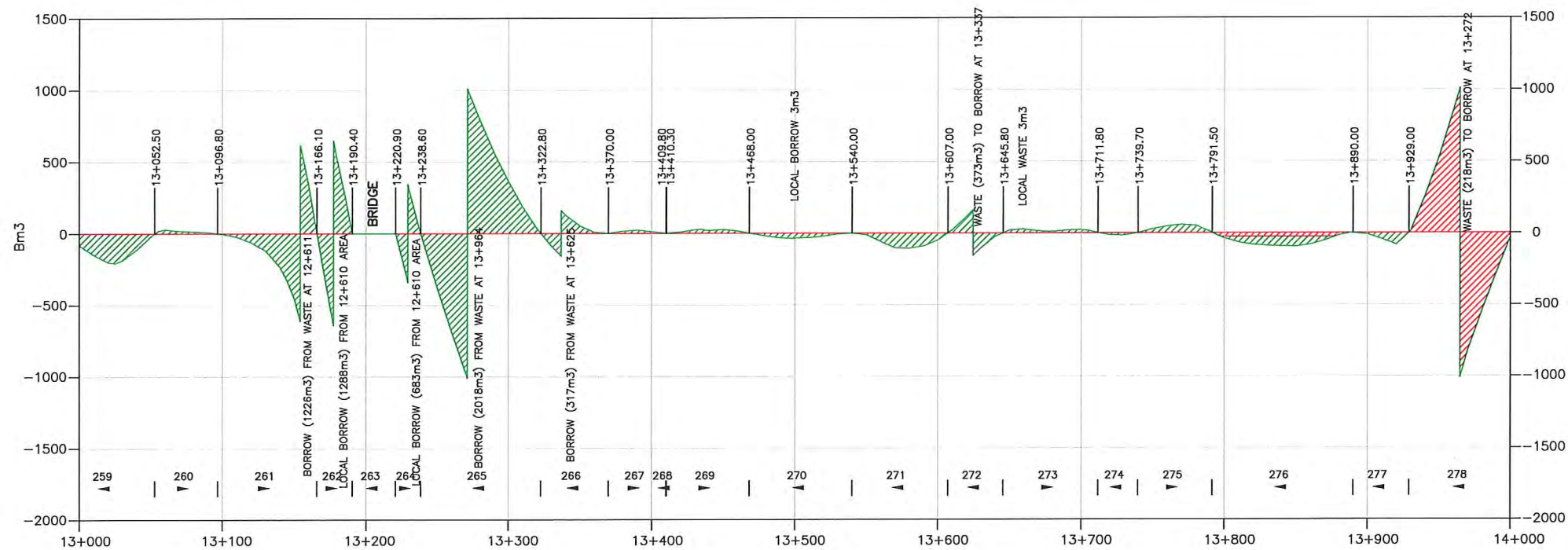
MASS HAUL 13		DRAWING NUMBER		REV
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING: 6056036	18364-204-M13
LONGITUDE:	127° 5' 3.99"	9U	EASTING: 623633	B

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
259	12985.1	13052.5	74.3	288.5	288.5	0.0	0.0	158.6	<	
260	13052.5	13096.8	44.1	73.2	73.2	0.0	0.0	87.7	>	
261	13096.8	13166.1	168.0	8.9	1234.8	1225.9	0.0	270.3	>	Borrow supplied by Waste at 12+611
262	13166.1	13190.4	150.7	0.0	1287.6	1287.6	0.0	119.5	>	Local Borrow (Endhaul) from 12+610 area
263	13190.4	13220.9	0.0	0.0	0.0	0.0	0.0	n/a	>	BRIDGE CROSSING
264	13220.9	13238.6	90.5	0.0	683.2	683.2	0.0	67.7	>	Local Borrow (Endhaul) from 12+610 area
265	13238.6	13322.8	220.4	0.0	2017.8	2017.8	0.0	274.6	<	Borrow supplied by Waste at 13+964
266	13322.8	13370.0	52.1	20.9	337.4	316.6	0.0	141.7	<	Borrow supplied by Waste at 13+624
267	13370.0	13409.8	44.2	59.1	59.1	0.0	0.0	119.6	>	
268	13409.8	13410.3	0.5	0.5	0.5	0.0	0.0	1.5	<	
269	13410.3	13468.0	59.6	64.7	64.7	0.0	0.0	159.4	>	
270	13468.0	13540.0	59.6	55.9	58.5	2.6	0.0	141.3	<	Local Borrow
271	13540.0	13607.0	63.4	117.0	117.0	0.0	0.0	132.2	<	
272	13607.0	13645.8	42.8	316.6	0.0	0.0	316.6	77.4	<	Waste To Borrow at 13+337
273	13645.8	13711.8	62.5	64.0	61.4	0.0	2.6	155.3	>	Local Waste
274	13711.8	13739.7	22.8	22.3	22.3	0.0	0.0	55.4	<	
275	13739.7	13791.5	46.0	64.8	64.8	0.0	0.0	103.7	>	
276	13791.5	13890.0	92.1	121.0	121.0	0.0	0.0	191.0	<	
277	13890.0	13929.0	39.0	130.3	130.3	0.0	0.0	75.5	<	
278	13929.0	14001.4	129.9	2121.0	103.2	0.0	2017.8	140.0	<	Waste To Borrow at 13+271

NOTES:

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LEGEND:

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- MOVEMENT DIRECTION
- FREE HAUL (<80m)
- OVERHAUL (>80m)

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SCALE		HORIZ. 1:4000 VERT. 1:400		CAD FILENAME		DATE	
REV		DATE		DESCRIPTION		DRW	
A		FEB.19		ISSUED FOR REVIEW		KAK	
B		MAY.19		ISSUED FOR CONSTRUCTION		JMP	

PROFESSIONAL
G. T. WAMBOLT
ENGINEER
DATE 2019-05-24

DWB Consulting Services Ltd.		DESIGNED		BM DATE		2019-01-14	
1579 9 th Avenue Prince George, B.C. V2L 3R8 Phone: (250) 562-5541 Fax: (250) 562-5561		QUALITY CONTROL		TW DATE		2019-02-06	
		QUALITY ASSURANCE		DATE			
		DRAWN		KAK DATE		2019-02-13	

TELKWA COAL
LIMITED

TENAS HAUL ROAD
STA. 13+000 to 14+000

MASS HAUL 14

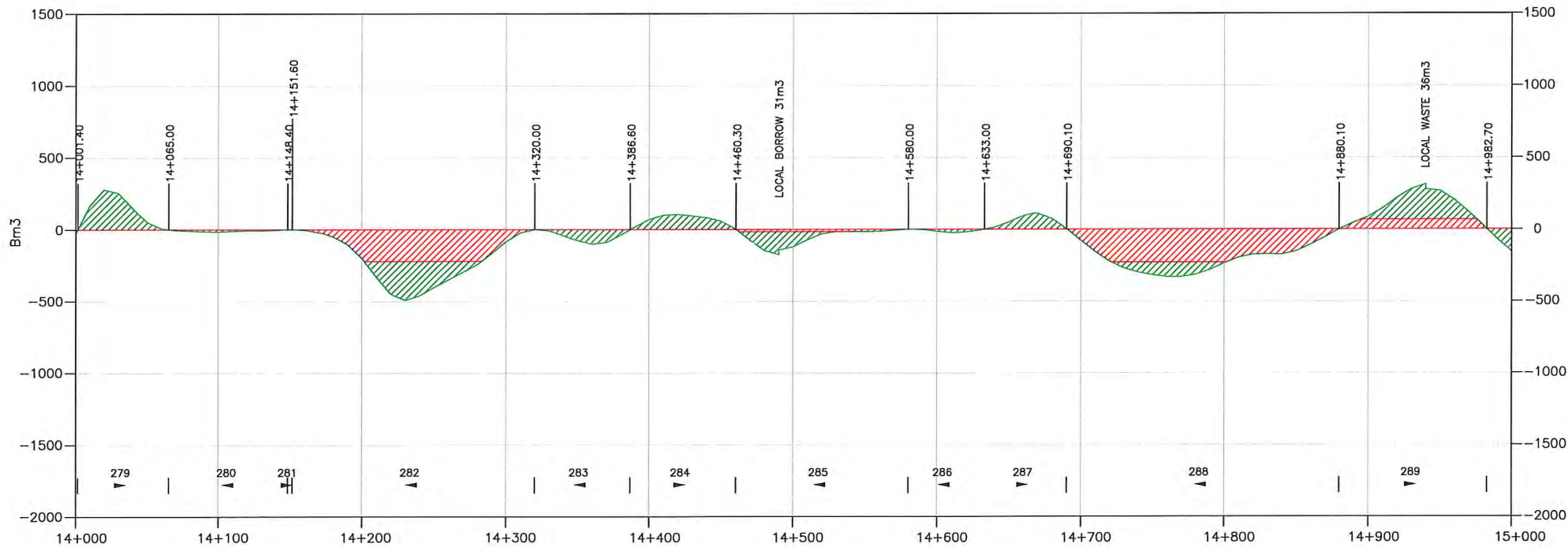
LATITUDE:	54° 38' 11.65"	NAD83	NORTHING:	6056036	DRAWING NUMBER	REV
LONGITUDE:	127° 5' 3.99"	9U	EASTING:	623633	18364-204-M14	B

BALANCE POINT VOLUME SUMMARY

Movement Number	From Station	To Station	Stripping (bm3)	OM Cut (bm3)	Fill (bm3 equiv.)	Borrow (bm3)	Waste (bm3)	Surfacing (cm3)	Mass Direction	Comment
279	14001.4	14065.0	74.3	404.5	404.5	0.0	0.0	122.9	>	
280	14065.0	14148.4	67.6	42.8	42.8	0.0	0.0	161.5	<	
281	14148.4	14151.6	2.7	2.2	2.2	0.0	0.0	6.5	>	
282	14151.6	14320.0	200.7	522.3	522.3	0.0	0.0	397.9	<	
283	14320.0	14386.6	81.5	136.4	136.4	0.0	0.0	216.8	<	
284	14386.6	14460.3	87.5	154.2	154.2	0.0	0.0	221.4	>	
285	14460.3	14580.0	136.5	205.3	236.4	31.1	0.0	359.4	<	Local Borrow
286	14580.0	14633.0	61.4	74.0	74.0	0.0	0.0	159.2	<	
287	14633.0	14690.1	65.6	122.3	122.3	0.0	0.0	171.7	>	
288	14690.1	14880.1	228.7	448.7	448.7	0.0	0.0	570.6	<	
289	14880.1	14982.7	120.0	333.7	297.5	0.0	36.2	308.1	>	Local Waste

NOTES:

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LEGEND:

- BALANCE LINE
- NET MASS LINE
- MOVEMENT DIRECTION
- FREE HAUL (<80m)
- OVERHAUL (>80m)

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SCALE HORIZ. 1:4000 VERT. 1:400				CAD FILENAME <u>18364-204-EASTHAUL</u>		
				DATE <u>2019-05-24</u>		
REV	DATE	DESCRIPTION		DRW	CHK	ENG
A	FEB.19	ISSUED FOR REVIEW		KAK	KD	TW
B	MAY.19	ISSUED FOR CONSTRUCTION		JMP	KD	TW
</						