

**TRANSITION DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.1  
 RADIUS : 310.000m RIGHT  
 L : 25.000  
 Xc : 24.996  
 m : 2.15616E-05  
 RAMP : 1 in 833  
 Droc : 23.6mm/sec

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.1  
 RADIUS : 600.000m LEFT  
 ARC : 49.884m  
 V : 45 km/hr  
 Ea : 0mm  
 D : 39.9mm

**TRANSITION DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.2  
 RADIUS : 315.000m RIGHT  
 L : 25.000  
 Xc : 24.996  
 m : 2.12177E-05  
 RAMP : 1 in 833  
 Droc : 23.0mm/sec

**TRANSITION DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.3  
 RADIUS : 320.000m RIGHT  
 L : 25.000  
 Xc : 24.996  
 m : 2.08846E-05  
 RAMP : 1 in 833  
 Droc : 22.4mm/sec

**NOTES**

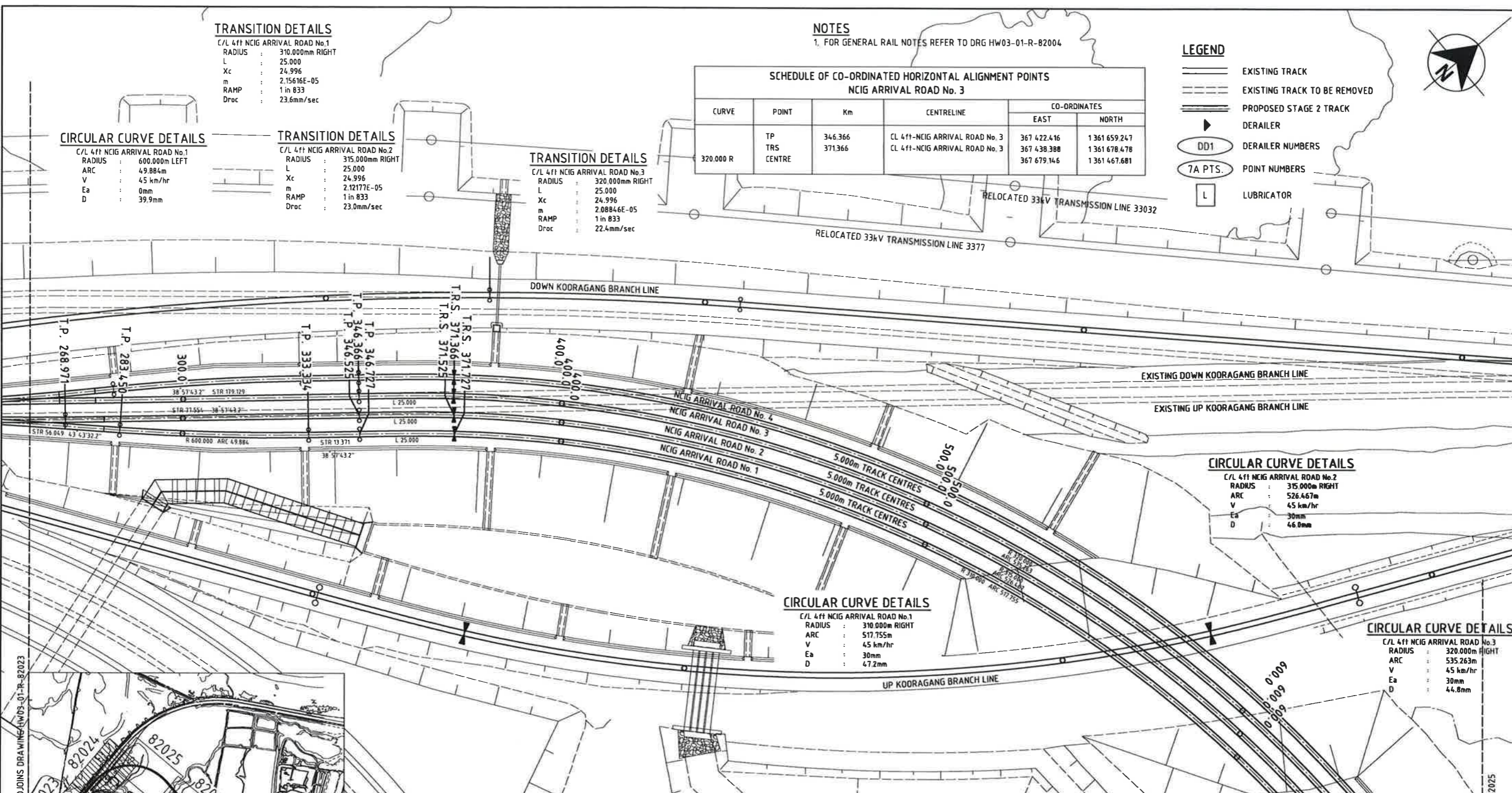
1. FOR GENERAL RAIL NOTES REFER TO DRG HW03-01-R-82004

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
 NCIG ARRIVAL ROAD No. 3**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
320.000 R	TP	346.366	CL 4ft-NCIG ARRIVAL ROAD No.3	367 422.416	1 361 659.247
	TRS	371.366	CL 4ft-NCIG ARRIVAL ROAD No.3	367 438.388	1 361 678.478
	CENTRE			367 679.146	1 361 467.681

**LEGEND**

- EXISTING TRACK
- - - EXISTING TRACK TO BE REMOVED
- == PROPOSED STAGE 2 TRACK
- ▶ DERAILER
- DD1 DERAILER NUMBERS
- 7A PTS. POINT NUMBERS
- L LUBRICATOR



**CIRCULAR CURVE DETAILS**

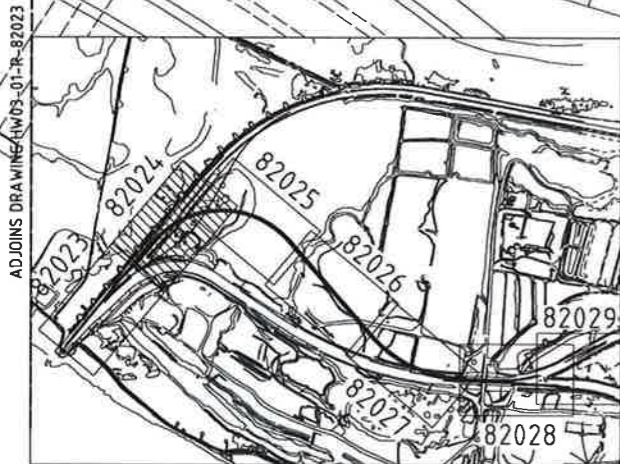
C/L 4ft NCIG ARRIVAL ROAD No.2  
 RADIUS : 315.000m RIGHT  
 ARC : 526.467m  
 V : 45 km/hr  
 Ea : 30mm  
 D : 46.8mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.1  
 RADIUS : 310.000m RIGHT  
 ARC : 517.755m  
 V : 45 km/hr  
 Ea : 30mm  
 D : 47.2mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.3  
 RADIUS : 320.000m RIGHT  
 ARC : 535.263m  
 V : 45 km/hr  
 Ea : 30mm  
 D : 44.8mm



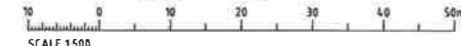
**KEY PLAN  
 NTS**

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
 NCIG ARRIVAL ROAD No. 1**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
600.000 L	TP	283.45	CL 4ft-NCIG ARRIVAL ROAD No. 1	367 388.826	1 361 695.103
	CENTRE			366 955.231	1 362 019.826
	TP	333.334	CL 4ft-NCIG ARRIVAL ROAD No. 1	367 421.769	1 361 642.543
	TP	346.727	CL 4ft-NCIG ARRIVAL ROAD No. 1	367 430.191	1 361 652.957
	TRS	371.727	CL 4ft-NCIG ARRIVAL ROAD No. 1	367 446.170	1 361 672.181
310.000 R	TRS		CL 4ft-NCIG ARRIVAL ROAD No. 1	367 679.146	1 361 467.677
	CENTRE				

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
 NCIG ARRIVAL ROAD No. 2**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
315.000 R	TP	268.971	CL 4ft-NCIG ARRIVAL ROAD No. 2	367 377.537	1 361 595.799
	TP	346.525	CL 4ft-NCIG ARRIVAL ROAD No. 2	367 426.303	1 361 656.102
	TRS	371.525	CL 4ft-NCIG ARRIVAL ROAD No. 2	367 442.279	1 361 675.330
	CENTRE			367 679.146	1 361 467.679



**PRELIMINARY  
 NOT FOR CONSTRUCTION**

Rev.	Date	Revision Details	Drn	Ver.	App.
A6	05/06/12	CLIENT AMENDMENTS	NS		
A5	27/04/12	UP KODRAGANG BRANCH LINE ALIGNMENT REVISED	NS		
A4	17/01/12	VERIFICATION COMPLETE	NS		
A3	17/11/11	DRAFTING REVIEW COMMENTS INCORPORATED	NS		
A2	06/10/11	BACKGROUND EARTHWORKS MODEL REVISED	NS		
A1	06/09/11	PRELIMINARY ISSUE	NS		

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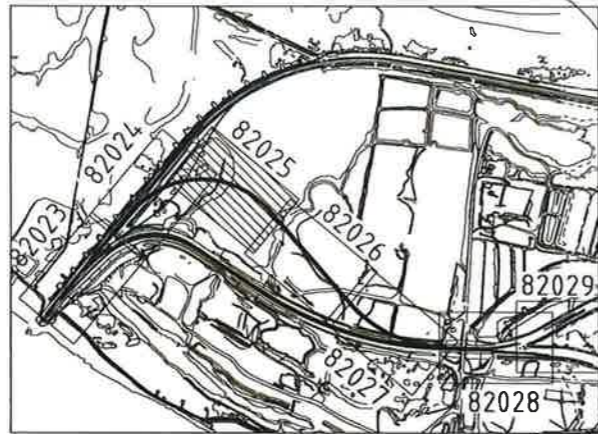
**Newcastle Coal**  
 INFRASTRUCTURE GROUP

Drawn	Signed	Date
NS		
Designed	Signed	Date
NS		
Verified	Signed	Date
SM		
Approved	Signed	Date
DIB		

**NCIG COAL EXPORT TERMINAL - STAGE 2F  
 RAIL AREA  
 NCIG ARRIVAL ROADS  
 SETOUT PLAN - SHEET 2 OF 7**

Project No.	H337400
Scale	1:500
Drawing No.	HW03-01-R-82024
Sheet Size	A1
Rev.	A6

SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS NCIG ARRIVAL ROAD No. 3					
CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
320.000 R	CENTRE			367 679.146	1 361 467.681
	TRS	906.588	CL 4ft-NCIG ARRIVAL ROAD No. 3	367 913.313	1 361 685.778
	TP	931.588	CL 4ft-NCIG ARRIVAL ROAD No. 3	367 929.868	1 361 667.046



KEY PLAN  
NTS

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.1

RADIUS	: 310.000m RIGHT
ARC	: 517.755m
V	: 45 km/hr
Ea	: 30mm
D	: 47.2mm

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.2

RADIUS	: 315.000m RIGHT
ARC	: 526.467m
V	: 45 km/hr
Ea	: 30mm
D	: 46.0mm

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.3

RADIUS	: 320.000m RIGHT
ARC	: 535.263m
V	: 45 km/hr
Ea	: 30mm
D	: 44.8mm

**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.1

RADIUS	: 310.000mm RIGHT
L	: 25.000
Xc	: 24.996
m	: 2.15616E-05
RAMP	: 1 in 833
Droc	: 23.6mm/sec

**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.2

RADIUS	: 315.000mm RIGHT
L	: 25.000
Xc	: 24.996
m	: 2.12117E-05
RAMP	: 1 in 833
Droc	: 23.0mm/sec

**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.3

RADIUS	: 320.000mm RIGHT
L	: 25.000
Xc	: 24.996
m	: 2.08846E-05
RAMP	: 1 in 833
Droc	: 22.4mm/sec

**NOTES**

1. FOR GENERAL RAIL NOTES REFER TO DRG HW03-01-R-82004

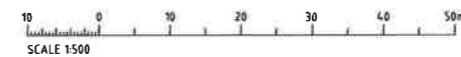
**LEGEND**

- EXISTING TRACK
- EXISTING TRACK TO BE REMOVED
- PROPOSED STAGE 2 TRACK
- DERAILER
- DERAILER NUMBERS
- POINT NUMBERS
- LUBRICATOR

SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS NCIG ARRIVAL ROAD No. 1					
CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
310.000 R	CENTRE		CL 4ft-NCIG ARRIVAL ROAD No. 1	367 679.146	1 361 467.677
	TRS	889.439	CL 4ft-NCIG ARRIVAL ROAD No. 1	367 905.728	1 361 679.245
	TP	914.439	CL 4ft-NCIG ARRIVAL ROAD No. 1	367 922.290	1 361 660.521

SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS NCIG ARRIVAL ROAD No. 2					
CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
315.000 R	CENTRE		CL 4ft-NCIG ARRIVAL ROAD No. 2	367 679.146	1 361 467.679
	TRS	897.992	CL 4ft-NCIG ARRIVAL ROAD No. 2	367 909.520	1 361 682.511
	TP	922.992	CL 4ft-NCIG ARRIVAL ROAD No. 2	367 926.079	1 361 663.784

AD JOINS DRAWING HW03-01-R-82024



Rev.	Date	Revision Details	Drn	Ver.	App.
A6	05/06/12	CLIENT AMENDMENTS		NS	
A5	27/04/12	UP KOORAGANG BRANCH LINE ALIGNMENT REVISED		NS	
A4	17/01/12	VERIFICATION COMPLETE		NS	
A3	17/11/11	DRAFTING REVIEW COMMENTS INCORPORATED		NS	
A2	06/10/11	BACKGROUND EARTHWORKS MODEL REVISED		NS	
A1	06/09/11	PRELIMINARY ISSUE		NS	

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2. Using the drawings or other data for any purpose not approved by or written by Aurecon Hatch.

Client:

**Newcastle Coal**  
INFRASTRUCTURE GROUP

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NS		
Designed	Signed	Date
NS		
Verified	Signed	Date
SM		
Approved	Signed	Date
DIB		

**NCIG COAL EXPORT TERMINAL - STAGE 2F**

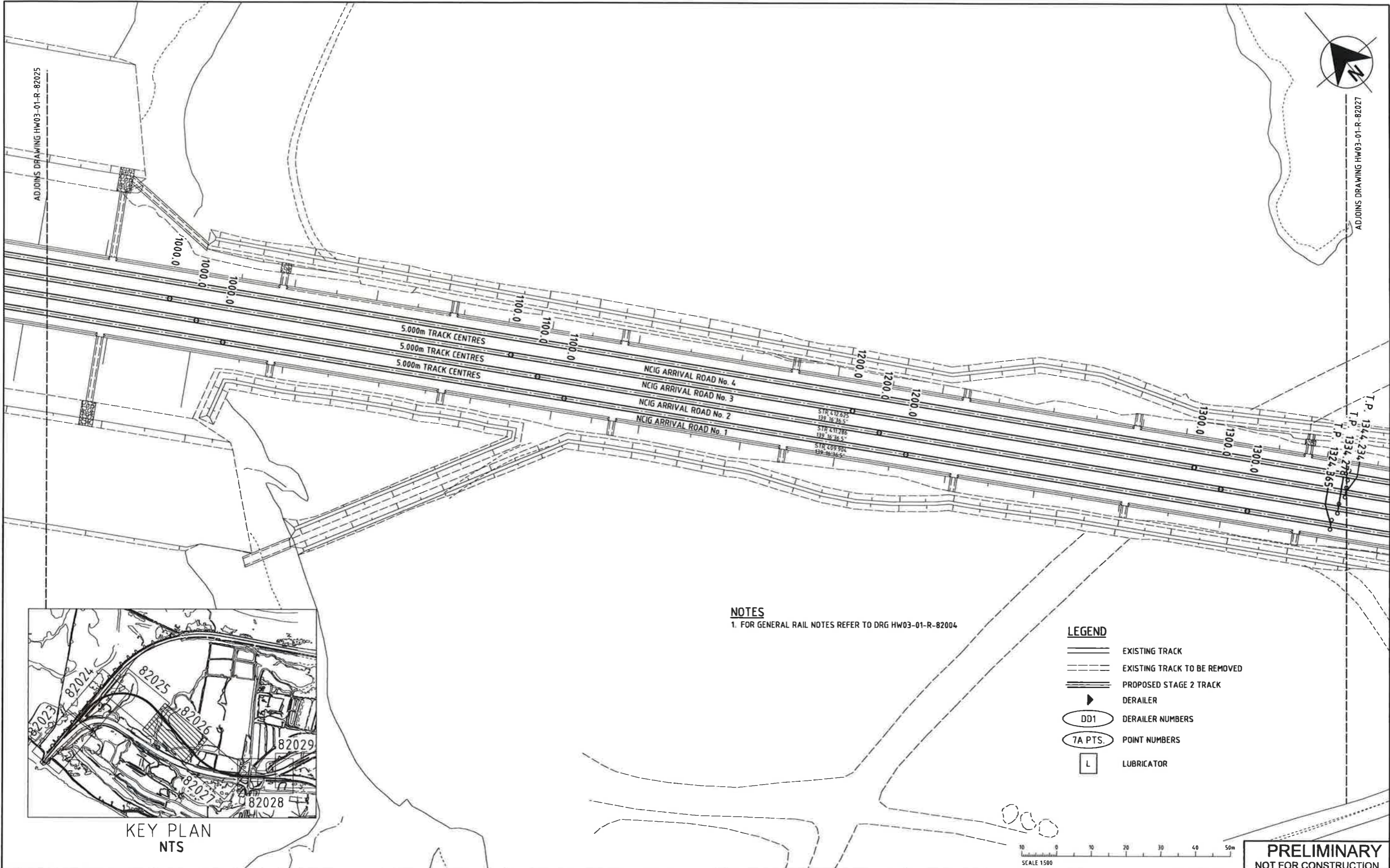
**RAIL AREA**  
**NCIG ARRIVAL ROADS**  
**SETOUT PLAN - SHEET 3 OF 7**

**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

Project No. H337400

Scale 1:500 Sheet Size A1

Drawing No. HW03-01-R-82025 Rev. A6



Rev.	Date	Revision Details	Drn	Ver.	App.
A4	05/06/12	CLIENT AMENDMENTS		NS	
A3	17/01/12	VERIFICATION COMPLETE		NS	
A2	06/10/11	BACKGROUND EARTHWORKS MODEL REVISED		NS	
A1	06/09/11	PRELIMINARY ISSUE		NS	

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 INFRASTRUCTURE GROUP

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NS		
Designed	Signed	Date
NS		
Verified	Signed	Date
SM		
Approved	Signed	Date
DIB		

**NCIG COAL EXPORT TERMINAL - STAGE 2F**  
**RAIL AREA**  
**NCIG ARRIVAL ROADS**  
**SETOUT PLAN - SHEET 4 OF 7**

**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

Project No. **H337400**

Scale **1:500** Sheet Size **A1**

Drawing No. **HW03-01-R-82026** Rev. **A4**

ADJOINS DRAWING HW03-01-R-82026

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG ARRIVAL ROAD No. 3**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
435.500 L	TP	1344.234	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 199.080	1 361 354.315
	TRS	1369.234	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 215.570	1 361 335.526
	CENTRE			368 537.325	1 361 629.012
	TRS	1704.336	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 510.407	1 361 194.344
	TP	1729.336	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 535.383	1 361 193.277

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG ARRIVAL ROAD No. 2**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
440.500 L	TP	1334.278	CL 4ft-NCIG ARRIVAL ROAD No. 2	368 194.404	1 361 352.083
	TRS	1359.278	CL 4ft-NCIG ARRIVAL ROAD No. 2	368 210.892	1 361 333.292
	CENTRE			368 536.438	1 361 630.041
	TRS	1698.515	CL 4ft-NCIG ARRIVAL ROAD No. 2	368 509.355	1 361 190.374
	TP	1723.515	CL 4ft-NCIG ARRIVAL ROAD No. 2	368 534.331	1 361 189.310

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG ARRIVAL ROAD No. 1**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
445.500 L	TP	1324.365	CL 4ft-NCIG ARRIVAL ROAD No. 1	368 189.728	1 361 349.851
	TRS	1349.365	CL 4ft-NCIG ARRIVAL ROAD No. 1	368 206.214	1 361 331.058
	CENTRE			368 535.551	1 361 631.070
	TRS	1692.737	CL 4ft-NCIG ARRIVAL ROAD No. 1	368 508.302	1 361 186.404
	TP	1717.737	CL 4ft-NCIG ARRIVAL ROAD No. 1	368 533.279	1 361 185.342

**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No. 3  
RADIUS : 435.500mm LEFT  
L : 25.000  
Xc : 24.998  
m : 1.53283E-05  
RAMP : 1 in 1000  
Droc : 15.0mm/sec

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.3  
RADIUS : 435.500m LEFT  
ARC : 335.102m  
V : 45 km/hr  
Ea : 25mm  
D : 30.0mm

**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No. 3  
RADIUS : 435.500mm LEFT  
L : 25.000  
Xc : 24.998  
m : 1.53283E-05  
RAMP : 1 in 1000  
Droc : 15.0mm/sec

**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No. 2  
RADIUS : 440.500mm LEFT  
L : 25.000  
Xc : 24.998  
m : 1.51539E-05  
RAMP : 1 in 1000  
Droc : 14.7mm/sec

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.2  
RADIUS : 440.500m LEFT  
ARC : 339.237m  
V : 45 km/hr  
Ea : 25mm  
D : 29.3mm

**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No. 1  
RADIUS : 445.500m LEFT  
L : 25.000  
Xc : 24.998  
m : 1.49834E-05  
RAMP : 1 in 1000  
Droc : 14.4mm/sec

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No.1  
RADIUS : 445.500m LEFT  
ARC : 343.372m  
V : 45 km/hr  
Ea : 25mm  
D : 28.7mm

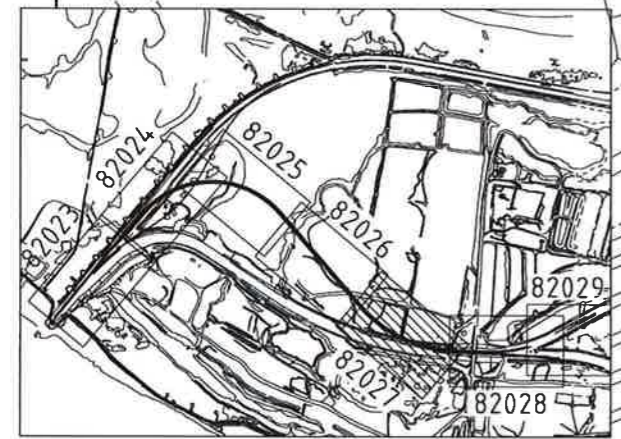
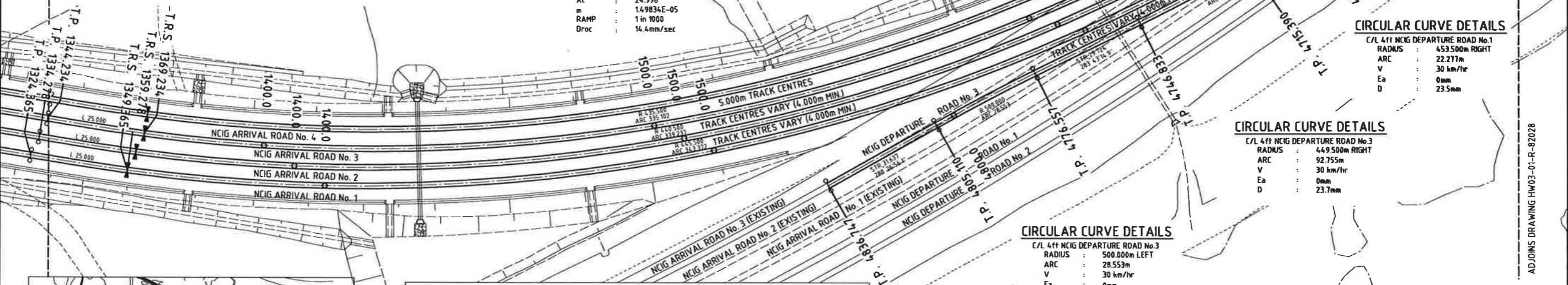
**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No. 2  
RADIUS : 440.500mm LEFT  
L : 25.000  
Xc : 24.998  
m : 1.51539E-05  
RAMP : 1 in 1000  
Droc : 14.7mm/sec

**TRANSITION DETAILS**  
C/L 4ft NCIG ARRIVAL ROAD No. 1  
RADIUS : 445.500mm LEFT  
L : 25.000  
Xc : 24.998  
m : 1.49834E-05  
RAMP : 1 in 1000  
Droc : 14.4mm/sec

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG DEPARTURE ROAD No.1  
RADIUS : 453.500m RIGHT  
ARC : 22.277m  
V : 30 km/hr  
Ea : 0mm  
D : 23.5mm

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG DEPARTURE ROAD No.3  
RADIUS : 449.500m RIGHT  
ARC : 92.755m  
V : 30 km/hr  
Ea : 0mm  
D : 23.7mm

**CIRCULAR CURVE DETAILS**  
C/L 4ft NCIG DEPARTURE ROAD No.3  
RADIUS : 500.000m LEFT  
ARC : 28.553m  
V : 30 km/hr  
Ea : 0mm  
D : 21.3mm



KEY PLAN  
NTS

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG DEPARTURE ROAD No. 3**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
449.500 R	TP	4 654.078	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 520.638	1 361 181.759
	CENTRE			368 535.524	1 361 631.013
	TP	4 746.833	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 428.906	1 361 194.340
500.000 L	TP	4 776.557	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 400.030	1 361 201.390
	CENTRE			368 281.435	1 360 715.659
	TP	4 805.110	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 372.114	1 361 207.367
	TP	4 836.747	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 341.002	1 361 213.105

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG DEPARTURE ROAD No. 1**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
453.500 R	TP	4 653.927	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 520.506	1 361 177.761
	CENTRE			368 535.524	1 361 631.014
	TP	4 676.204	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 498.268	1 361 179.045
	TP	4 715.390	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 459.215	1 361 182.265

**NOTES**  
1. FOR GENERAL RAIL NOTES REFER TO DRG HW03-01-R-82004

- LEGEND**
- EXISTING TRACK
  - EXISTING TRACK TO BE REMOVED
  - PROPOSED STAGE 2 TRACK
  - DERAILER
  - DD1 DERAILER NUMBERS
  - 7A PTS. POINT NUMBERS
  - L LUBRICATOR

SCALE 1:500

**PRELIMINARY  
NOT FOR CONSTRUCTION**

Rev.	Date	Revision Details	Drn	Ver.	App.
A6	05/06/12	CLIENT AMENDMENTS		NS	
A5	28/04/12	NCIG DEPARTURE ROADS CHAINAGES AMENDED		NS	
A4	17/01/12	VERIFICATION COMPLETE		NS	
A3	17/11/11	DRAFTING REVIEW COMMENTS INCORPORATED		NS	
A2	06/10/11	BACKGROUND EARTHWORKS MODEL REVISED		NS	
A1	06/09/11	PRELIMINARY ISSUE		NS	

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**Newcastle Coal**  
INFRASTRUCTURE GROUP

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NS		
Designed	Signed	Date
NS		
Verified	Signed	Date
SM		
Approved	Signed	Date
DIB		

**NCIG COAL EXPORT TERMINAL - STAGE 2F  
RAIL AREA  
NCIG ARRIVAL ROADS  
SETOUT PLAN - SHEET 5 OF 7**

Project No.	H337400
Scale	1:500
Drawing No.	HW03-01-R-82027
Sheet Size	A1
Rev.	A6

No.	Description	T/D Length	M/L Geometry	T/D Geometry	Cat No.	Xing Rate	Switch	Xing Min. Type	Rail(kg)	Reference
26B PTS	Conventional RH	25.731	Straight	Curve R=248.410	X.L. 300/1	1:10.5	6100 FLEX	RBM	60	PRE01-GA-0335 Rev.2
27A PTS	Conventional RH	25.731	Straight	Curve R=248.410	X.L. 300/1	1:10.5	6100 FLEX	RBM	60	PRE01-GA-0335 Rev.2
29A PTS	Conventional RH	25.731	Straight	Curve R=248.410	X.L. 300/1	1:10.5	6100 FLEX	RBM	60	PRE01-GA-0335 Rev.2

**NOTES**  
1. FOR GENERAL RAIL NOTES REFER TO DRG HW03-01-R-82004

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG ARRIVAL ROAD No. 2**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
435.000 L	TP	1845.162	CL 4ft-NCIG ARRIVAL ROAD No. 2	368 655.911	1 361 185.281
	CENTRE			368 670.316	1 361 620.043
	CTP	1983.280	CL 4ft-NCIG ARRIVAL ROAD No. 2	368 792.366	1 361 202.516

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG ARRIVAL ROAD No. 1**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
424.998 L	TP	1845.723	CL 4ft-NCIG ARRIVAL ROAD No. 1	368 661.195	1 361 181.104
	CENTRE			368 675.269	1 361 605.869
	CTP	1990.107	CL 4ft-NCIG ARRIVAL ROAD No. 1	368 803.544	1 361 200.692

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG DEPARTURE ROAD No. 3**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
248.410 R	TP	4 354.027	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 820.265	1 361 168.830
	CENTRE			368 828.492	1 361 417.103
	TP	4 377.614	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 796.764	1 361 170.728
300.000 L	TP	4 393.748	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 780.762	1 361 172.789
	CENTRE			368 742.445	1 360 875.246
	TP	4 422.234	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 752.379	1 361 175.081
1004.000 L	TP	4 438.656	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 735.966	1 361 175.625
	CENTRE			368 702.718	1 360 172.176
	TP	4 459.226	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 715.402	1 361 176.096
996.000 R	TP	4 487.550	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 687.080	1 361 176.453
	CENTRE			368 699.663	1 362 172.374
	TP	4 507.956	CL 4ft-NCIG DEPARTURE ROAD No. 3	368 666.680	1 361 176.920

**LEGEND**

- EXISTING TRACK
- EXISTING TRACK TO BE REMOVED
- PROPOSED STAGE 2 TRACK
- DERAILER
- DERAILER NUMBERS
- POINT NUMBERS
- LUBRICATOR



**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.2  
RADIUS : 435.000m LEFT  
ARC : 138.119m  
V : 30 km/hr  
Ea : 0mm  
D : 24.5mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.1  
RADIUS : 424.998m LEFT  
ARC : 164.384m  
V : 30 km/hr  
Ea : 0mm  
D : 25.0mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG DEPARTURE ROAD No.3  
RADIUS : 996.000m RIGHT  
ARC : 20.406m  
V : 30 km/hr  
Ea : 0mm  
D : 10.7mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG DEPARTURE ROAD No.3  
RADIUS : 1004.000m LEFT  
ARC : 20.510m  
V : 30 km/hr  
Ea : 0mm  
D : 10.6mm

**CIRCULAR CURVE DETAILS**

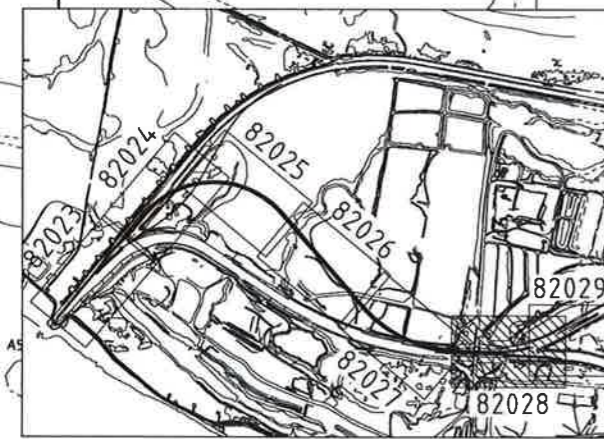
C/L 4ft NCIG DEPARTURE ROAD No.3  
RADIUS : 300.000m LEFT  
ARC : 28.486m  
V : 30 km/hr  
Ea : 0mm  
D : 35.6mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG DEPARTURE ROAD No.1  
RADIUS : 1000.000m LEFT  
ARC : 20.488m  
V : 30 km/hr  
Ea : 0mm  
D : 10.6mm

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG DEPARTURE ROAD No. 1**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
1000.000 L	TP	4 350.701	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 823.590	1 361 168.720
	TP	4 354.027	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 820.265	1 361 168.830
	TP	4 438.505	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 735.834	1 361 171.627
1000.000 R	CENTRE			368 702.718	1 360 172.176
	TP	4 458.993	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 715.352	1 361 176.096
	TP	4 487.318	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 687.029	1 361 172.454
1000.000 R	CENTRE			368 699.663	1 362 172.374
	TP	4 507.805	CL 4ft-NCIG DEPARTURE ROAD No. 1	368 666.547	1 361 172.922



**KEY PLAN  
NTS**

SCALE 1:500

**PRELIMINARY  
NOT FOR CONSTRUCTION**

Rev.	Date	Revision Details	Drn	Ver.	App.
05/06/12		CLIENT AMENDMENTS			NS
A4	28/04/12	NCIG DEPARTURE ROADS LAYOUT REVISED			NS
A3	17/01/12	VERIFICATION COMPLETE			NS
A2	17/11/11	DRAFTING REVIEW COMMENTS INCORPORATED			NS
A1	06/09/11	PRELIMINARY ISSUE			NS

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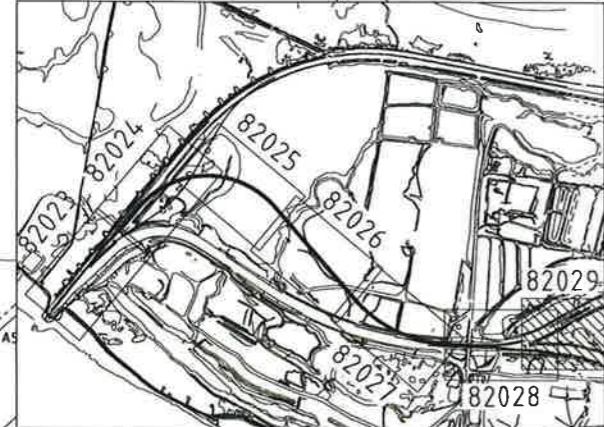
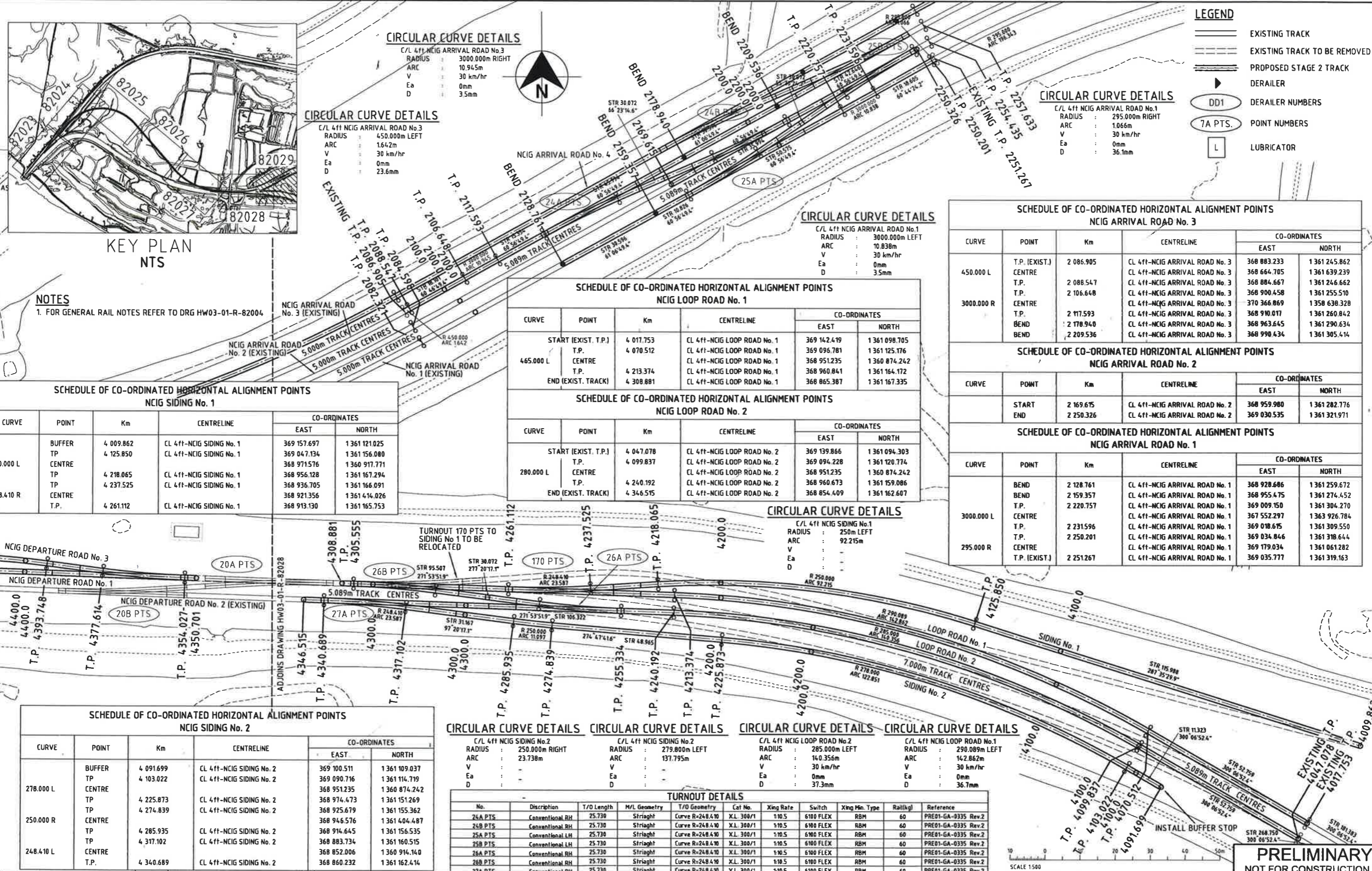
Client:

**Newcastle Coal**  
INFRASTRUCTURE GROUP

Drawn	Signed	Date
NS		
Designed	Signed	Date
NS		
Verified	Signed	Date
SM		
Approved	Signed	Date
DIB		

**NCIG COAL EXPORT TERMINAL - STAGE 2F  
RAIL AREA  
NCIG ARRIVAL ROADS  
SETOUT PLAN - SHEET 6 OF 7**

Project No.	H337400
Scale	1:500
Drawing No.	HW03-01-R-82028
Sheet Size	A1
Rev.	A5



**NOTES**  
1. FOR GENERAL RAIL NOTES REFER TO DRG HW03-01-R-82004

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.3  
RADIUS : 3000.000m RIGHT  
ARC : 10.945m  
V : 30 km/hr  
Ea : 0mm  
D : 3.5mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.3  
RADIUS : 450.000m LEFT  
ARC : 1.642m  
V : 30 km/hr  
Ea : 0mm  
D : 23.6mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG ARRIVAL ROAD No.1  
RADIUS : 3000.000m LEFT  
ARC : 10.838m  
V : 30 km/hr  
Ea : 0mm  
D : 3.5mm

**LEGEND**

- EXISTING TRACK
- EXISTING TRACK TO BE REMOVED
- PROPOSED STAGE 2 TRACK
- DERAILER
- DD1 DERAILER NUMBERS
- 7A PTS. POINT NUMBERS
- L LUBRICATOR

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG SIDING No. 1**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
250.000 L	BUFFER	4 009.862	CL 4ft-NCIG SIDING No. 1	369 157.697	1 361 121.025
	TP	4 125.850	CL 4ft-NCIG SIDING No. 1	369 047.134	1 361 156.080
	CENTRE		CL 4ft-NCIG SIDING No. 1	368 971.576	1 360 917.771
248.410 R	TP	4 218.065	CL 4ft-NCIG SIDING No. 1	368 956.128	1 361 167.294
	TP	4 237.525	CL 4ft-NCIG SIDING No. 1	368 936.705	1 361 166.091
	CENTRE		CL 4ft-NCIG SIDING No. 1	368 921.356	1 361 144.026
	T.P.	4 261.112	CL 4ft-NCIG SIDING No. 1	368 913.130	1 361 165.753

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG LOOP ROAD No. 1**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
465.000 L	START (EXIST. T.P.)	4 017.753	CL 4ft-NCIG LOOP ROAD No. 1	369 142.419	1 361 098.705
	T.P.	4 070.512	CL 4ft-NCIG LOOP ROAD No. 1	369 096.781	1 361 125.176
	CENTRE		CL 4ft-NCIG LOOP ROAD No. 1	368 951.235	1 360 874.242
	T.P.	4 213.374	CL 4ft-NCIG LOOP ROAD No. 1	368 960.841	1 361 164.172
	END (EXIST. TRACK)	4 308.881	CL 4ft-NCIG LOOP ROAD No. 1	368 865.387	1 361 167.335

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG LOOP ROAD No. 2**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
280.000 L	START (EXIST. T.P.)	4 047.078	CL 4ft-NCIG LOOP ROAD No. 2	369 139.866	1 361 094.303
	T.P.	4 099.837	CL 4ft-NCIG LOOP ROAD No. 2	369 094.228	1 361 120.774
	CENTRE		CL 4ft-NCIG LOOP ROAD No. 2	368 951.235	1 360 874.242
	T.P.	4 240.192	CL 4ft-NCIG LOOP ROAD No. 2	368 960.673	1 361 159.086
	END (EXIST. TRACK)	4 346.515	CL 4ft-NCIG LOOP ROAD No. 2	368 854.409	1 361 162.607

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG ARRIVAL ROAD No. 3**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
450.000 L	T.P. (EXIST.)	2 086.905	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 883.233	1 361 245.862
	CENTRE		CL 4ft-NCIG ARRIVAL ROAD No. 3	368 664.705	1 361 639.239
	T.P.	2 088.547	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 884.667	1 361 246.662
3000.000 R	T.P.	2 106.648	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 900.458	1 361 255.510
	CENTRE		CL 4ft-NCIG ARRIVAL ROAD No. 3	370 366.869	1 358 638.328
	T.P.	2 117.593	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 910.017	1 361 260.842
	BEND	2 178.940	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 963.645	1 361 290.634
	BEND	2 209.536	CL 4ft-NCIG ARRIVAL ROAD No. 3	368 990.434	1 361 305.414

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG ARRIVAL ROAD No. 2**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
	START	2 169.675	CL 4ft-NCIG ARRIVAL ROAD No. 2	368 959.980	1 361 282.176
	END	2 250.326	CL 4ft-NCIG ARRIVAL ROAD No. 2	369 030.535	1 361 321.971

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG ARRIVAL ROAD No. 1**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
3000.000 L	BEND	2 128.761	CL 4ft-NCIG ARRIVAL ROAD No. 1	368 928.686	1 361 259.672
	BEND	2 159.357	CL 4ft-NCIG ARRIVAL ROAD No. 1	368 955.475	1 361 274.452
	T.P.	2 220.757	CL 4ft-NCIG ARRIVAL ROAD No. 1	369 009.150	1 361 304.270
295.000 R	CENTRE		CL 4ft-NCIG ARRIVAL ROAD No. 1	367 552.297	1 363 926.784
	T.P.	2 231.596	CL 4ft-NCIG ARRIVAL ROAD No. 1	369 018.675	1 361 309.550
	T.P.	2 250.201	CL 4ft-NCIG ARRIVAL ROAD No. 1	369 034.846	1 361 318.644
	CENTRE		CL 4ft-NCIG ARRIVAL ROAD No. 1	369 179.034	1 361 061.282
	T.P. (EXIST.)	2 251.267	CL 4ft-NCIG ARRIVAL ROAD No. 1	369 035.777	1 361 319.163

**SCHEDULE OF CO-ORDINATED HORIZONTAL ALIGNMENT POINTS  
NCIG SIDING No. 2**

CURVE	POINT	Km	CENTRELINE	CO-ORDINATES	
				EAST	NORTH
278.000 L	BUFFER	4 091.699	CL 4ft-NCIG SIDING No. 2	369 100.511	1 361 109.037
	TP	4 103.022	CL 4ft-NCIG SIDING No. 2	369 090.716	1 361 114.719
	CENTRE		CL 4ft-NCIG SIDING No. 2	368 951.235	1 360 874.242
250.000 R	TP	4 225.873	CL 4ft-NCIG SIDING No. 2	368 974.473	1 361 151.269
	TP	4 274.839	CL 4ft-NCIG SIDING No. 2	368 925.679	1 361 155.362
	CENTRE		CL 4ft-NCIG SIDING No. 2	368 946.576	1 361 404.487
248.410 L	TP	4 285.935	CL 4ft-NCIG SIDING No. 2	368 914.645	1 361 156.535
	TP	4 317.102	CL 4ft-NCIG SIDING No. 2	368 883.734	1 361 160.515
	CENTRE		CL 4ft-NCIG SIDING No. 2	368 852.006	1 360 914.140
	T.P.	4 340.689	CL 4ft-NCIG SIDING No. 2	368 860.232	1 361 162.414

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG SIDING No.2  
RADIUS : 250.000m RIGHT  
ARC : 23.738m  
V :  
Ea :  
D :

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG SIDING No.2  
RADIUS : 279.800m LEFT  
ARC : 137.795m  
V :  
Ea :  
D :

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG LOOP ROAD No.2  
RADIUS : 285.000m LEFT  
ARC : 14.0356m  
V : 30 km/hr  
Ea : 0mm  
D : 37.3mm

**CIRCULAR CURVE DETAILS**

C/L 4ft NCIG LOOP ROAD No.1  
RADIUS : 290.089m LEFT  
ARC : 14.2862m  
V : 30 km/hr  
Ea : 0mm  
D : 36.7mm

**TURNOUT DETAILS**

No.	Description	T/O Length	M/L Geometry	T/O Geometry	Cat No.	Xing Rate	Switch	Xing Min. Type	Rail(kg)	Reference
25A PTS	Conventional RH	25.730	Striaight	Curve R-248.410	X.L. 300/1	1:10.5	6100 FLEX	RBH	60	PRE01-GA-0335 Rev.2
24B PTS	Conventional LH	25.730	Striaight	Curve R-248.410	X.L. 300/1	1:10.5	6100 FLEX	RBH	60	PRE01-GA-0335 Rev.2
25A PTS	Conventional LH	25.730	Striaight	Curve R-248.410	X.L. 300/1	1:10.5	6100 FLEX	RBH	60	PRE01-GA-0335 Rev.2
25B PTS	Conventional LH	25.730	Striaight	Curve R-248.410	X.L. 300/1	1:10.5	6100 FLEX	RBH	60	PRE01-GA-0335 Rev.2
26A PTS	Conventional RH	25.730	Striaight	Curve R-248.410	X.L. 300/1	1:10.5	6100 FLEX	RBH	60	PRE01-GA-0335 Rev.2
26B PTS	Conventional RH	25.730	Striaight	Curve R-248.410	X.L. 300/1	1:10.5	6100 FLEX	RBH	60	PRE01-GA-0335 Rev.2
27A PTS	Conventional RH	25.730	Striaight	Curve R-248.410	X.L. 300/1	1:10.5	6100 FLEX	RBH	60	PRE01-GA-0335 Rev.2

**PRELIMINARY  
NOT FOR CONSTRUCTION**

Rev.	Date	Revision Details	Orn	Ver.	App.
	05/06/12	CLIENT AMENDMENTS			NS
A4	28/04/12	NCIG DEPARTURE ROADS LAYOUT REVISED			NS
A3	17/01/12	VERIFICATION COMPLETE			NS
A2	17/11/11	DRAFTING REVIEW COMMENTS INCORPORATED			NS
A1	06/09/11	PRELIMINARY ISSUE			NS

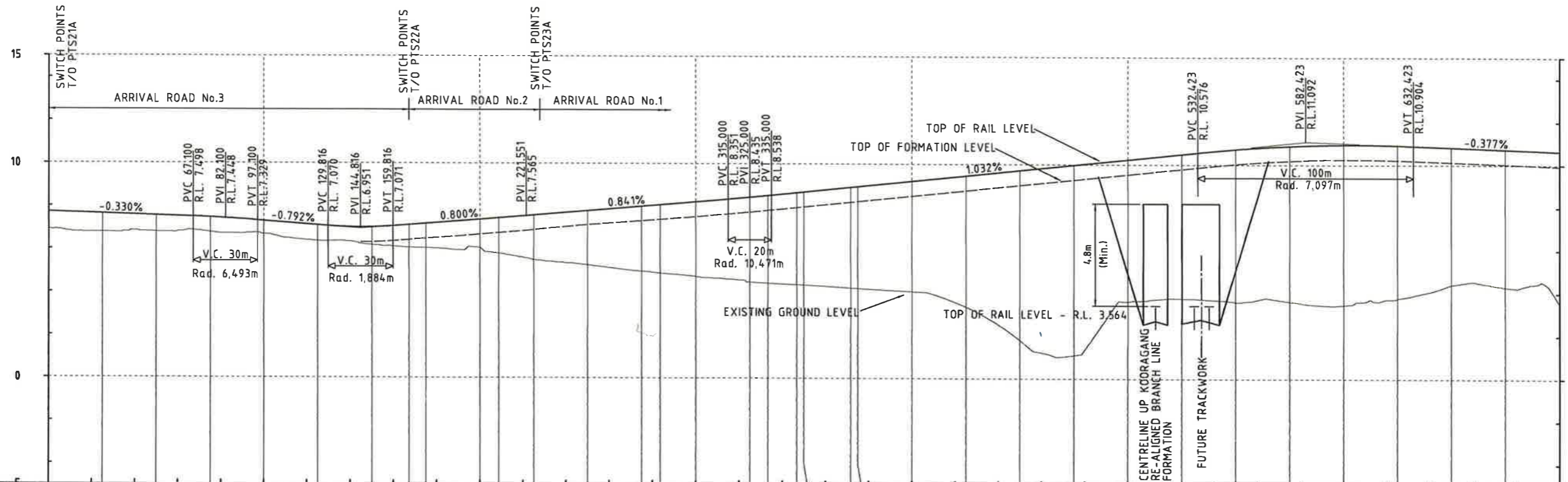
**aurecon HATCH**  
Aurecon Hatch ABN 21 646 421 651 Telephone: +61 2 8465 5589  
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**Newcastle Coal**  
INFRASTRUCTURE GROUP

Drawn	Signed	Date
NS	Signed	Date
Designed	Signed	Date
Verified	Signed	Date
SM	Signed	Date
Approved	Signed	Date
DIB	Signed	Date

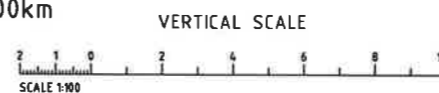
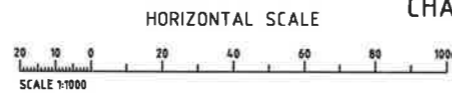
**NCIG COAL EXPORT TERMINAL - STAGE 2F  
RAIL AREA  
NCIG ARRIVAL ROADS  
SETOUT PLAN - SHEET 7 OF 7**

Project No.	H337400
Scale	1:500
Drawing No.	HW03-01-R-82029
Sheet Size	A1
Rev.	A5



CHAINAGE	EXISTING LEVELS	FORMATION LEVELS	CUT/FILL DEPTH TO EXISTING GROUND	TOP OF RAIL LEVELS	CUT/FILL DEPTH TO FORMATION
0.000	6.974			7.719	0.794
25.000	6.783			7.637	0.854
50.000	6.790			7.554	0.764
75.000	6.777			7.467	0.690
100.000	6.657			7.306	0.609
125.000	6.371			7.108	0.737
150.000	6.190	6.318	0.128	7.018	0.700
167.216	6.070	6.430	0.360	7.130	0.700
175.000	6.048	6.491	0.443	7.193	0.702
200.000	6.074	6.692	0.618	7.393	0.701
208.786	5.801	6.765	0.964	7.463	0.698
225.000	5.502	6.902	1.400	7.594	0.692
250.000	5.273	7.144	1.871	7.804	0.660
275.000	4.980	7.331	2.351	8.015	0.684
283.450	4.889	7.395	2.506	8.086	0.691
300.000	4.732	7.525	2.793	8.225	0.700
325.000	4.473	7.748	3.275	8.440	0.692
333.334	4.432	7.879	3.397	8.521	0.692
346.727	4.361	7.963	3.602	8.659	0.696
350.000	4.344	7.996	3.652	8.693	0.697
371.727	4.211	8.217	4.006	8.917	0.700
375.000	4.191	8.251	4.060	8.951	0.700
400.000	4.048	8.509	4.461	9.209	0.700
425.000	3.342	8.767	5.425	9.467	0.700
450.000	1.796	9.026	7.230	9.725	0.699
475.000	1.093	9.284	8.191	9.983	0.699
500.000	3.598	9.541	5.943	10.241	0.700
525.000	3.748	9.799	6.051	10.499	0.700
550.000	3.588	10.039	6.451	10.736	0.697
575.000	3.613	10.193	6.580	10.888	0.695
600.000	3.456	10.256	6.800	10.952	0.696
625.000	3.762	10.229	6.467	10.928	0.699
650.000	4.406	10.137	5.731	10.837	0.700
675.000	4.298	10.043	5.745	10.743	0.700
700.000	3.565	9.949	6.384	10.649	0.700

LONGITUDINAL SECTION  
 NCIG ARRIVAL ROAD No. 1  
 CHAINAGE 0.000km TO 700.000km



NOTES

- ALL TRACK WORK TO BE BUILT TO CLASS 1XC TO ARTC STANDARD TSD11.
- ALL PROPOSED TRACKWORK DESIGNED TO ARTC STANDARD TDS10.
- EXISTING SURVEY SOURCED FROM AVAILABLE PHOTOGRAMATRY DATA. SETOUT & GRADING TO BE CONFIRMED ON SITE AGAINST VERIFIED SURVEY.
- ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
- ALL LEVELS ARE TO THE AUSTRALIAN HEIGHT DATUM (AHD).
- ALL LEVELS ARE MEASURED IN METRES UNLESS SHOWN OTHERWISE.

Rev.	Date	Revision Details	Drn	Ver.	App.
A3	27/04/12	UP KOORAGANG BRANCH LINE ALIGNMENT REVISED	NS		
A2	17/01/12	VERIFICATION COMPLETE	NS		
A1	10/10/11	PRELIMINARY ISSUE	NS		

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I, the person using Aurecon Hatch drawings and other data accept the risk of:  
 1. Using the drawings and other data in this contract from without inspecting and checking them for accuracy against the original hard copy versions.  
 2. Using the drawings or other data for any purpose not agreed to in writing by Aurecon Hatch.

Client:

**Newcastle Coal**  
 INFRASTRUCTURE GROUP

Drawn	Signed	Date
NS	Signed	Date
Designed	Signed	Date
NS	Signed	Date
Verified	Signed	Date
SM	Signed	Date
Approved	Signed	Date
DIB	Signed	Date

NCIG COAL EXPORT TERMINAL - STAGE 2F  
 RAIL AREA  
 NCIG ARRIVAL ROAD NO. 1  
 LONGITUDINAL SECTION SHEET 1 OF 3

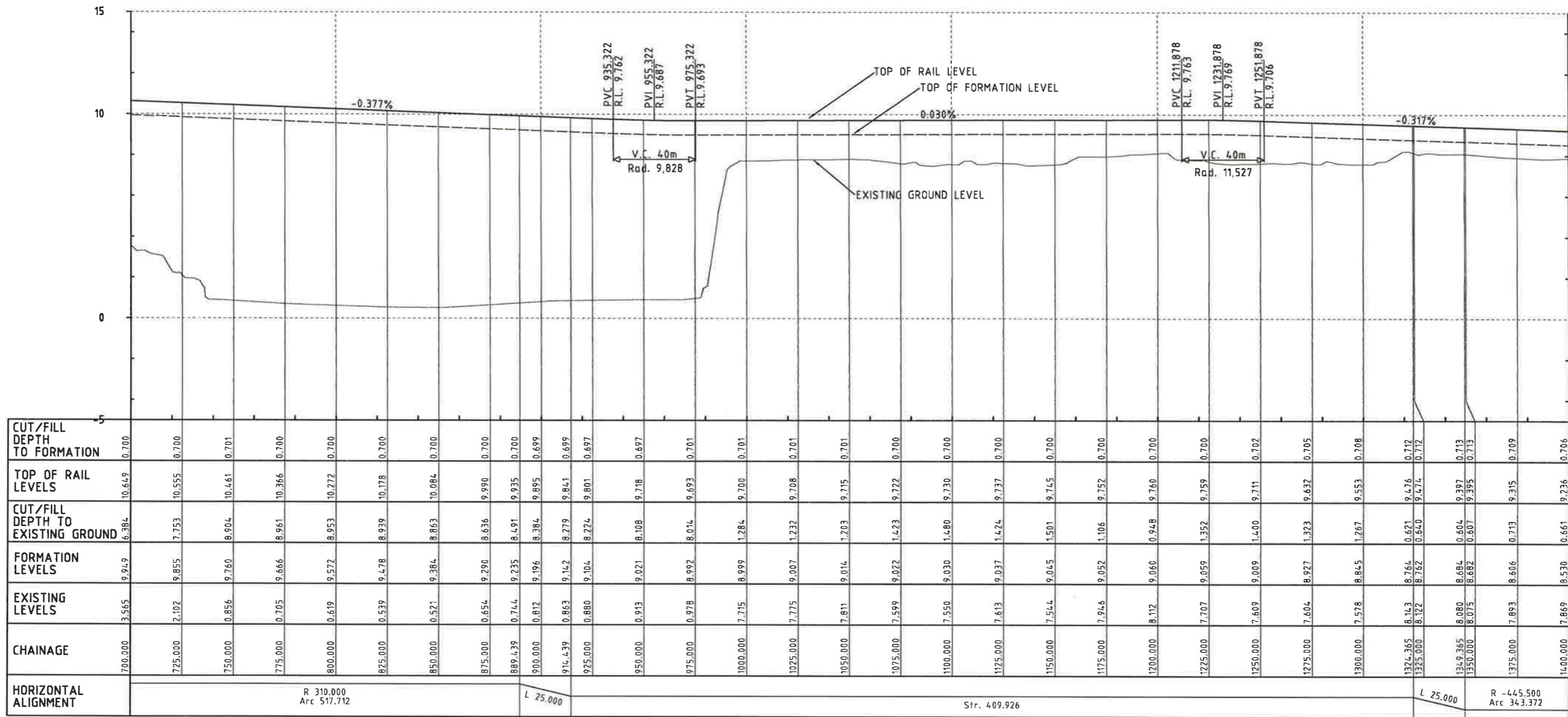
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 NOT FOR CONSTRUCTION

Project No. H337400

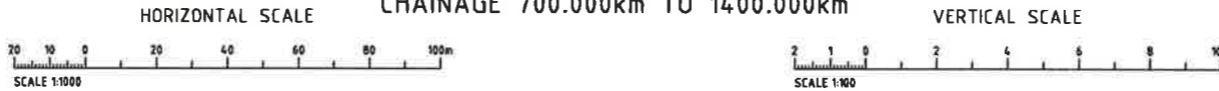
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Drawing No. HW03-01-R-82030



LONGITUDINAL SECTION  
 NCIG ARRIVAL ROAD No. 1  
 CHAINAGE 700.000km TO 1400.000km



- NOTES**
- ALL TRACK WORK TO BE BUILT TO CLASS 1XC TO ARTC STANDARD TSD11.
  - ALL PROPOSED TRACKWORK DESIGNED TO ARTC STANDARD TDS10.
  - EXISTING SURVEY SOURCED FROM AVAILABLE PHOTOGRAMATRY DATA. SETOUT & GRADING TO BE CONFIRMED ON SITE AGAINST VERIFIED SURVEY.
  - ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
  - ALL LEVELS ARE TO THE AUSTRALIAN HEIGHT DATUM (AHD).
  - ALL LEVELS ARE MEASURED IN METRES UNLESS SHOWN OTHERWISE.

Rev.	Date	Revision Details	Drn	Ver.	App.
A2	17/01/12	VERIFICATION COMPLETE		NS	
A1	10/10/11	PRELIMINARY ISSUE		NS	

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Client: **Newcastle Coal**  
 INFRASTRUCTURE GROUP

Drawn	Signed	Date
NS	Signed	
Designed	Signed	Date
NS	Signed	
Verified	Signed	Date
SM	Signed	
Approved	Signed	Date
DIB	Signed	

**NCIG COAL EXPORT TERMINAL - STAGE 2F**  
 RAIL AREA  
 NCIG ARRIVAL ROAD NO. 1  
 LONGITUDINAL SECTION SHEET 2 OF 3

**PRELIMINARY**  
 NOT FOR CONSTRUCTION

Project No. **H337400**

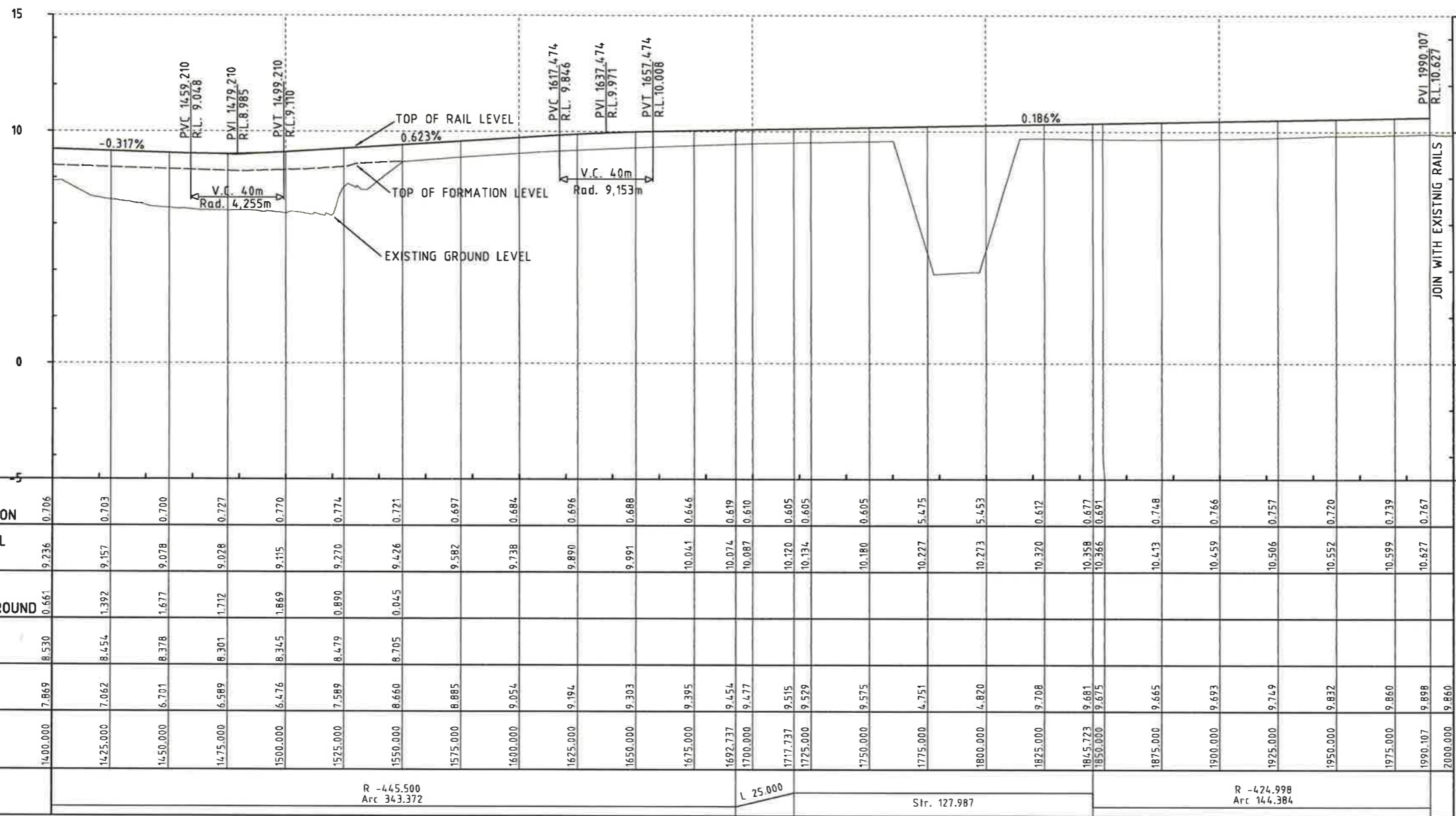
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Drawing No. **HW03-01-R-82031**

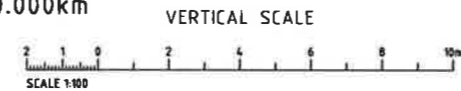
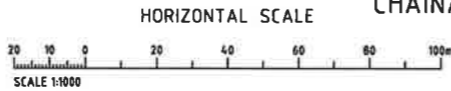
Sheet Size **A1**

Rev. **A2**





LONGITUDINAL SECTION  
 NCIG ARRIVAL ROAD No. 1  
 CHAINAGE 1400.000km TO 2000.000km



- NOTES**
- ALL TRACK WORK TO BE BUILT TO CLASS 1XC TO ARTC STANDARD TSD11.
  - ALL PROPOSED TRACKWORK DESIGNED TO ARTC STANDARD TDS10.
  - EXISTING SURVEY SOURCED FROM AVAILABLE PHOTOGRAMATRY DATA. SETOUT & GRADING TO BE CONFIRMED ON SITE AGAINST VERIFIED SURVEY.
  - ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
  - ALL LEVELS ARE TO THE AUSTRALIAN HEIGHT DATUM (AHD).
  - ALL LEVELS ARE MEASURED IN METRES UNLESS SHOWN OTHERWISE.

Rev.	Date	Revision Details	Drn	Ver.	App.
A2	17/01/12	VERIFICATION COMPLETE			
A1	10/10/11	PRELIMINARY ISSUE			

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 INFRASTRUCTURE GROUP

Drawn	Signed	Date
NS		
Designed	Signed	Date
NS		
Verified	Signed	Date
SM		
Approved	Signed	Date
DIB		

**NCIG COAL EXPORT TERMINAL - STAGE 2F**  
 RAIL AREA  
 NCIG ARRIVAL ROAD NO. 1  
 LONGITUDINAL SECTION SHEET 3 OF 3

**PRELIMINARY**  
 NOT FOR CONSTRUCTION

Project No. H337400  
 Scale 1:100  
 1:1000  
 Drawing No. HW03-01-R-82032  
 Sheet Size A1  
 Rev. A2