

HUNTER 8 ALLIANCE MAITLAND TO MINIMBAH THIRD TRACK TRACK ALIGNMENT - UP REALIGNMENT (PROP)

DRAWING INDEX

DRAWING NUMBER	DRAWING TITLE
TRACK ALIGNMENT - UP REALIGNMENT (PROP)	
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ARTCN1100015602	TRACK ALIGNMENT - UP REALIGNMENT (PROP) - 196km260 TO 196km600
ARTCN1100015603	TRACK ALIGNMENT - UP REALIGNMENT (PROP) - 209km360 TO 209km700
ARTCN1100015604	TRACK ALIGNMENT - UP REALIGNMENT (PROP) - 209km700 TO 210km040
ARTCN1100015605	TRACK ALIGNMENT - UP REALIGNMENT (PROP) - 216km160 TO 216km500
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ARTCN1100015607	TRACK ALIGNMENT - UP REALIGNMENT (PROP) - 216km840 TO 217km180
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ARTCN1100015609	TRACK ALIGNMENT - UP REALIGNMENT (PROP) - 217km520 TO 217km860

FOR CONSTRUCTION

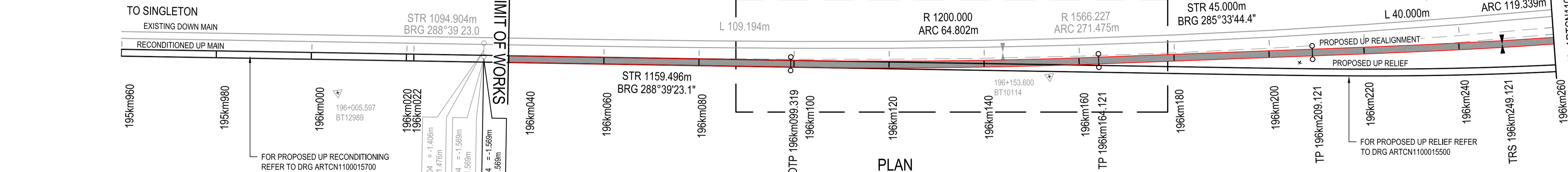
© 2010 Australian Rail Track Corporation Ltd. Drawing standard in accordance with Hunter 8 Alliance standards		ARTC APPROVAL			Designing Company: GHD GHD Job Number: 22-14630		Address: Level 3 GHD Tower, 24 Honeysuckle Drive Newcastle NSW 2300 Australia F 61 2 4941 2796 W www.hunter8alliance.com.au		ARTC DWG NUMBER 0 ARTCN1100015600												
		Approved By			Drawn M.WRIGHT		Designed V.ALEX														
Used on / Next higher assembly:		Signed:			Drafting Check P.TOBIN*		Design Check T.LYONS*		Conditions of Use. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.												
H8R-DWG-S2G-TRA-2600		Approval Date			Approved G.WICKENS* Date 06/08/2010		This Drawing must not be used for Construction unless signed as Approved														
Alternate DMS number:		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Rev</th> <th>Date</th> <th>Revision Description</th> <th>Drawn</th> <th>Checked</th> <th>Approv.</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>06.08.10</td> <td>ISSUED FOR CONSTRUCTION</td> <td>D.J.C</td> <td>T.L*</td> <td>G.W*</td> </tr> </tbody> </table>			Rev	Date	Revision Description	Drawn	Checked	Approv.	0	06.08.10	ISSUED FOR CONSTRUCTION	D.J.C	T.L*	G.W*			MAITLAND TO MINIMBAH - THIRD TRACK TRACK ALIGNMENT - UP REALIGNMENT (PROP) DRAWING INDEX		Sheet No. - Scale (A1): N.T.S
Rev	Date	Revision Description	Drawn	Checked	Approv.																
0	06.08.10	ISSUED FOR CONSTRUCTION	D.J.C	T.L*	G.W*																

SCHEDULE OF COORDINATED ALIGNMENT POINTS					
RADIUS	POINT	KM	CENTRELINE	EASTING	NORTHING
	TP	194km941.393	RECONDITIONED UP MAIN	349456.921	1377174.786
	TOTP	196km099.319	REALIGNED UP MAIN	348358.353	1377545.699
1200.000 LEFT	CENTRE		REALIGNED UP MAIN	347974.482	1376408.755
	TP	196km164.121	REALIGNED UP MAIN	348296.426	1377564.762
	TP	196km209.121	REALIGNED UP MAIN	348253.076	1377576.835
	TRS	196km249.121	REALIGNED UP MAIN	348214.466	1377587.286
918.716 LEFT	CENTRE		REALIGNED UP MAIN	347987.321	1376697.093
	TRS	196km368.460	REALIGNED UP MAIN	348097.244	1377609.209

CIRCULAR CURVE DETAILS	
RADIUS:	1200.000m
ARC:	64.802m
V:	85km/h (Norm)
Ea:	0mm
D:	71mm
⊙:	347974.482
⊙:	1376408.755

TRANSITION DETAILS	
RADIUS:	918.716m
LENGTH:	40.000m
V:	85km/h (Norm)
Xc:	39.998m
Droc:	32mm/sec
M:	4.539 x 10 ⁻⁵

UP MAIN PULLS	
CHAINAGE	PULL (m)
196km040.000	-0.018
196km060.000	-0.012
196km080.000	+0.057
TOTP 196km099.319	+0.236
196km100.000	+0.246
196km120.000	+0.400
196km140.000	+0.429
196km160.000	+0.359
TP 196km184.121	+0.354
196km180.000	+0.310
196km200.000	+0.524
TP 196km209.121	+0.734
196km220.000	+0.980
196km240.000	+1.568
TRS 196km249.121	+1.854
196km260.000	+2.081



RAIL

- ALL NEW TRACKWORK TO COMPLY WITH ARTC STANDARDS.
- EXISTING 6R ALIGNMENT OBTAINED FROM ARTC - HUNTER VALLEY SURVEY OFFICE.
- KILOMETRAGE ORIGIN - EXISTING KM ADJ. 193km280.000 CL 6R.
- HORIZONTAL ALIGNMENTS ARE BASED ON ARTC 6R ALIGNMENT.
- VERTICAL ALIGNMENTS HAVE BEEN REGRESSED WITH INRAIL SOFTWARE FROM DETAIL SURVEY.
- EXISTING TRACK TO BE PULLED TO DESIGN ALIGNMENT BEFORE, OR IN CONJUNCTION WITH DESIGN WORKS.
- THESE DRAWINGS DO NOT INCLUDE SIGNALING WORKS.
- THESE DRAWINGS DO NOT DETAIL TRACK POSSESSION FOR TRACK RECONDITIONING OR NEW WORKS CONSTRUCTION.
- VARIOUS TRACK SIGNS ARE NOT SHOWN ON THESE DRAWINGS.
- KINEMATIC ENVELOPE BASED ON AMERICAN WIDE BODY PLATE B ROLLING STOCK AND ARTC STANDARD BDS 13.
- SPEED BOARDS ARE NOT SHOWN ON THESE DRAWINGS.
- CLEARANCE BOARDS ARE NOT SHOWN ON THESE DRAWINGS.

GENERAL NOTES

- ALL WORK WITHIN THE RAIL CORRIDOR TO COMPLY WITH THE ARTC STANDARDS AND NETWORK RULES AND REGULATIONS.
- THESE NOTES APPLY TO ALL DESIGN DRAWINGS.
- UNLESS DRAWINGS ARE IDENTIFIED AS "FOR CONSTRUCTION" THEY ARE NOT TO BE USED FOR CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON DRAWINGS BEFORE CONSTRUCTION AND FABRICATION.
- ALL CIVIL DRAWING DIMENSIONS IN m UNO.
- DO NOT OBTAIN DIMENSIONS BY SCALING OF DRAWINGS.
- REFER DISCREPANCIES TO ARTC PROJECT MANAGER BEFORE PROCEEDING WITH WORK.
- TRACK POSSESSIONS TO BE ARRANGED WITH ARTC PROJECT MANAGER IN ACCORDANCE WITH ARTC NETWORK RULES AND PROCEDURES.
- DESIGN RAIL IS DEFINED AS THE THEORETICAL LEVEL OF THE RUNNING SURFACE OF THE RAILS IN ACCORDANCE WITH TDS08.
- DESIGN FORMATION IS DEFINED AS THE FINISHED SURFACE LEVEL, THIS INCLUDES THE REQUIRED CAPPING LAYER IN ACCORDANCE WITH TDS08.
- EXISTING RAIL LEVEL IS DEFINED AS THE SURVEYED LEVEL OF THE RUNNING SURFACE OF THE RAILS.
- EXISTING SURFACE IS DEFINED AS THE SURVEY GROUND SURFACE.
- NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE, BUT INDICATES REQUIRED PROPERTIES OF ITEM. ALTERNATIVES HAVING REQUIRED PROPERTIES MAY BE OFFERED FOR APPROVAL.
- INSTALL PROPRIETARY ITEMS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS UNLESS METHOD OTHERWISE IN CONTRACT DOCUMENTS.
- THESE DRAWINGS DO NOT DETAIL CONSTRUCTION METHODS OR TEMPORARY WORKS.
- WHERE NEW WORK ABUTS EXISTING, PROVIDE A SMOOTH TRANSITION FREE OF ABRUPT CHANGES.

SURVEY

- DETAIL SURVEY INFORMATION FROM MONTEATH AND POWYS SURVEYORS FIELDWORK COMPLETED OCTOBER 2009.
- CADASTRAL BOUNDARY INFORMATION IS BASED ON WORK BY MONTEATH AND POWYS SURVEYORS OCTOBER 2009.
- PRELIMINARY SURVEY INFORMATION IS BASED ON AERIAL SURVEY BY FUGRO SPACIAL SOLUTIONS P/L COMPLETED OCTOBER 2007.
- LEVELS ARE AHD AND COORDINATES ISG.
- ALL LEVELS SHALL BE OBTAINED FROM ESTABLISHED REGISTERED BENCHMARKS AS IDENTIFIED IN DRG No. ARTCN1100015661 FROM MONTEATH AND POWYS SURVEYORS DATED OCTOBER 2009.
- THE CONTRACTOR SHALL IDENTIFY AND PROVIDE PROTECTION FOR ALL REGISTERED SURVEY MARKS WITHIN THE CORRIDOR OR FORMAL RE-ESTABLISHMENT.
- REGISTERED SURVEY MARKS THAT ARE AFFECTED BY THE WORKS SHALL BE RELOCATED IN ACCORDANCE WITH THE STATUTORY AUTHORITY THAT THE MARK IS REGISTERED WITH.
- THE CONTRACTOR SHALL UNDERTAKE A FULL CONTROL SURVEY TO ARTC STANDARDS BEFORE COMMENCEMENT OF THE CONSTRUCTION PHASE.
- THE CONTRACTOR SHALL UNDERTAKE TRACK LOCATION SURVEY TO ARTC STANDARDS TO ADEQUATE DETAIL TO ASCERTAIN THE REQUIREMENTS FOR TRACK TAMPING AND SLEWING OR TIE IN TO THE NEW DESIGN.
- TRACK CONTROL MARKS (TCM) MUST BE INSTALLED IN ACCORDANCE WITH ARTC DESIGN STANDARD TEP22 AND TO BE LOCATED ON THE OUTSIDE EDGE OF FILL EMBANKMENTS TO PROVIDE ADDITIONAL DELINEATION FOR ACCESS TRACKS.

REFERENCE

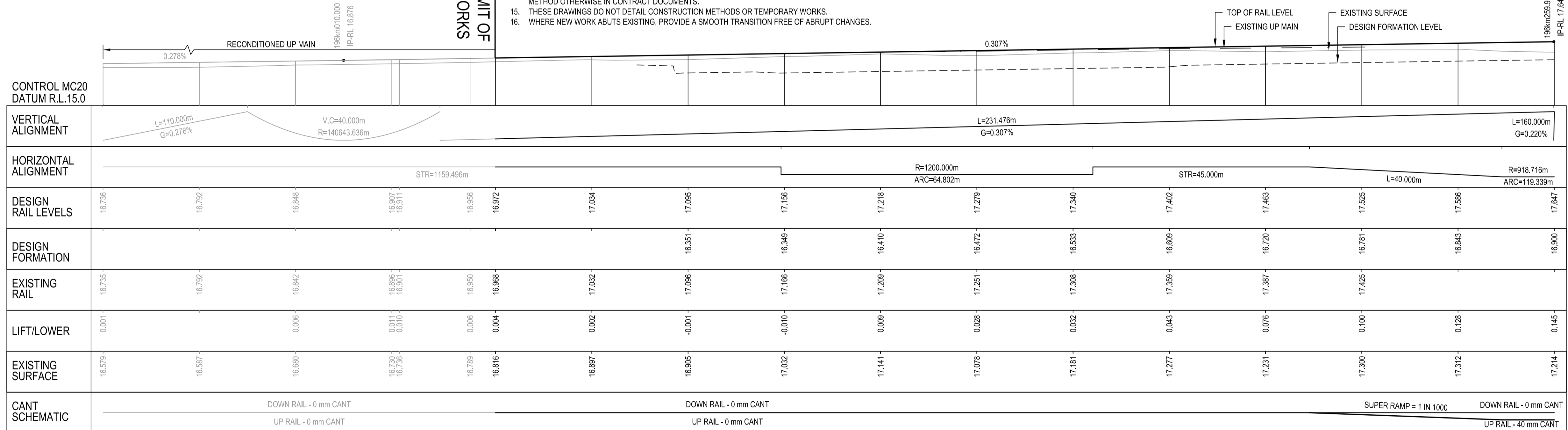
- TRACK ALIGNMENT - UP RELIEF (PROP) ARTCN1100015500.....TO.....15597
 TRACK ALIGNMENT - UP REALIGNMENT (PROP) ARTCN1100015600.....TO.....15609
 TRACK ALIGNMENT - SURVEY TABLE ARTCN1100015661
 TRACK ALIGNMENT - UP MAIN RECONDITIONING (PROP) ARTCN1100015700.....TO.....15725
 TRACK ALIGNMENT - DOWN MAIN RECONDITIONING (PROP) ARTCN1100015730.....TO.....15735
 TRACK ALIGNMENT - ROTHBURY RIOT SIDING (PROP) ARTCN1100015800.....TO.....15801

UP REALIGNMENT (PROP)

- TRACK CLASSIFICATION - MAINLINE: CLASS 1XC 60KG RAIL IN ACCORDANCE WITH ARTC STANDARD TDS 11.
 - HEAVY DUTY CONCRETE SLEEPERS TO BE USED IN ACCORDANCE TO ARTC STANDARD TDS 01.
 - ALL NEW TRACKWORK TO BE CONTINUOUS WELDED.
 - BALLAST MINIMUM 300 mm BELOW SLEEPERS IN ACCORDANCE WITH ARTC STANDARD TDS 11.
 - JOINTS ARE NOT PERMITTED IN 60 kg RAIL OR ON CONCRETE SLEEPER TRACK.
 - DESIGN SPEED FOR THE PROPOSED UP REALIGNMENT IS 130 kph
- XPT 130 kph
 NORMAL PASSENGER 115 kph
 HEAVY HAUL TRAINS 80 kph

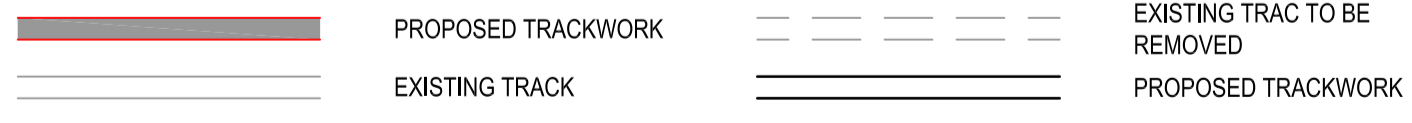
PLAN
SCALE 1:500

LONGITUDINAL SECTION
SCALE 1:500(H) 1:100(V)



KILOMETRAGE	195km960	195km980	196km000	196km020	196km040	196km060	196km080	196km100	196km120	196km140	196km160	196km180	196km200	196km220	196km240	196km260
EXISTING RAIL	16.735	16.792	16.842	16.896	16.950	16.998	17.032	17.066	17.098	17.129	17.158	17.185	17.210	17.231	17.248	17.261
DESIGN RAIL LEVELS	16.736	16.792	16.848	16.907	16.956	16.972	17.004	17.034	17.065	17.095	17.126	17.156	17.186	17.216	17.246	17.276
LIFT/LOWER	0.001	0.006	0.006	0.011	0.006	0.004	0.002	-0.001	-0.001	-0.009	-0.009	-0.028	-0.032	-0.043	-0.076	-0.145
EXISTING SURFACE	16.579	16.587	16.680	16.739	16.789	16.816	16.887	16.905	17.002	17.141	17.078	17.181	17.277	17.231	17.300	17.314

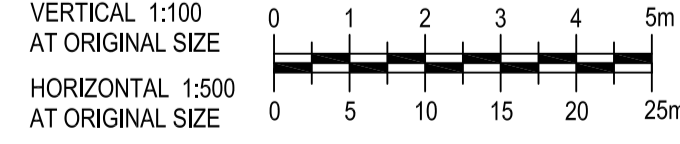
LEGEND



LONGITUDINAL SECTION

SCALE 1:500(H) 1:100(V)

WARNING: PUBLIC UTILITY SERVICES MAY EXIST ON OR ADJACENT TO THE SITE. THESE SERVICES MAY NOT BE SITUATED ALONG ROUTES INDICATED ON THIS DRAWING.



FOR CONSTRUCTION

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Used on / Next higher assembly:	H8R DWG NUMBER	Signed:	
	H8R-DWG-S2G-TRA-2601		
Alternate DMS number:	0	06.08.10	ISSUED FOR CONSTRUCTION
Approval Date	Rev	Date	Revision Description

Designing Company:	GHD	Address:	Level 3 GHD Tower, 24 Honeysuckle Drive Newcastle NSW 2300 Australia F 61 2 4941 2796 W www.hunter8alliance.com.au
GHD Job Number:	22-14630	Drawn:	M.WRIGHT
		Designed:	V.ALEX
		Drafting Check:	P.TOBIN*
		Design Check:	T.LYONS*
Approved:	G.WICKENS*	Conditions of Use: This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.	
Date:	06/08/2010	This Drawing must not be used for construction unless signed as Approved.	

Drawn	M.WRIGHT	Designed	V.ALEX
Drafting Check	P.TOBIN*	Design Check	T.LYONS*
Approved	G.WICKENS*	Date	06/08/2010

Hunter ALLIANCE

ARTC DWG NUMBER 0

ARTCN1100015601

MAITLAND TO MINIMBAH - THIRD TRACK
 TRACK ALIGNMENT - UP REALIGNMENT (PROP)
 195km960 TO 196km260

Sheet No. 1 of 9
 Scale (A1): 1:500(H) 1:100(V)

PLOT DATE: 06 August 2010 4:11 PM
 PLOTTED BY: DCR42
 GHD FILE PATH: G:\2010\14630\Drawings\G8r\ARTCN1100015601.dwg



RADIUS	POINT	KM	CENTRELINE	EASTING	NORTHING
918.716 LEFT	TRS	196km249.121	REALIGNED UP MAIN	348214.466	1377587.286
	CENTRE		REALIGNED UP MAIN	347987.321	1376697.093
	TRS	196km368.460	REALIGNED UP MAIN	348097.244	1377609.209
	TP	196km408.460	REALIGNED UP MAIN	348057.467	1377613.418
	TP	197km531.235	EXISTING UP MAIN	346939.347	1377723.521

RADIUS:	918.716m
ARC:	119.339m
V:	85km/h (Norm)
Ea:	40mm
D:	39.998m
M:	347987.321
	1376697.093

RADIUS:	918.716m
LENGTH:	40.000m
V:	85km/h (Norm)
Xc:	39.998m
Droc:	32mm/sec
M:	4.539 x 10 ⁻⁴

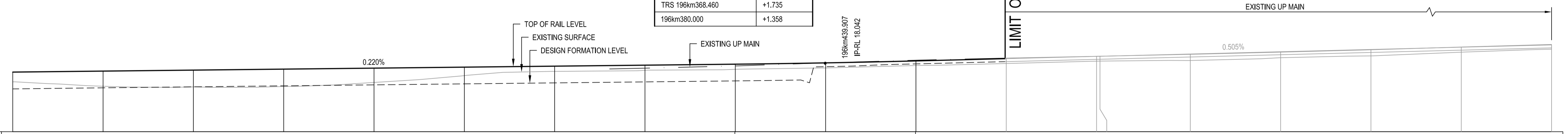
CHAINAGE	PULL (m)
196km260.000	+2.081
196km280.000	+2.410
196km300.000	+2.560
196km320.000	+2.543
196km340.000	+2.328
196km360.000	+1.928
TRS 196km368.460	+1.735
196km380.000	+1.358

CHAINAGE	PULL (m)
TP 196km408.460	+0.552
196km420.000	+0.293
196km440.000	+0.055
196km460.000	-0.024

LIMIT OF WORKS

km ADJUSTMENT AT 196km500.000 = -2.081m
LONG 20'000.000 to 320.000 = -22.081m

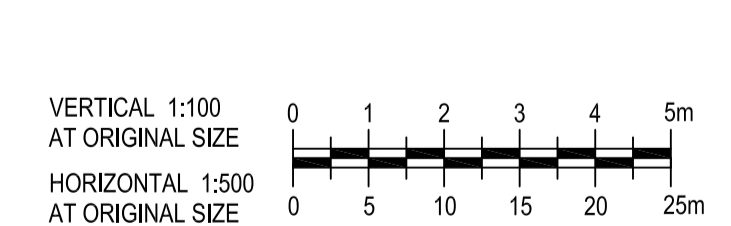
km ADJUSTMENT AT 196km500.000 = -0.755m
LONG 20'000.000 to 320.000 = -20.755m



CONTROL MC20
DATUM R.L.15.0

VERTICAL ALIGNMENT	L=160.000m G=0.220%		V.C=40.000m R=13996.047m		L=192.795m G=0.505%		L=192.795m G=0.505%													
HORIZONTAL ALIGNMENT	R=918.716m ARC=119.339m		L=40.000m		STR=1123.528m		STR=1123.528m													
DESIGN RAIL LEVELS	17.647	17.691	17.735	17.779	17.823	17.867	17.911	17.955	17.999	18.057	18.144	18.245	18.346	18.350	18.451	18.552	18.653	18.754	18.855	
DESIGN FORMATION	16.900	16.948	16.992	17.036	17.080	17.124	17.168	17.212	17.256	17.299	17.343	17.387	17.431	17.475	17.519	17.563	17.607	17.651	17.695	
EXISTING RAIL																				
LIFT/LOWER	0.145	0.152	0.162	0.179	0.191	0.180	0.172	0.133	0.079	-0.002	-0.091	-0.024	-0.003	-0.002	0.015	0.019	0.015	-0.007	-0.020	
EXISTING SURFACE	17.214	17.013	16.882	17.003	17.186	17.469	17.679	17.725	17.771	17.831	17.839	18.029	18.132	18.136	18.162	18.266	18.367	18.532	18.694	
CANT SCHEMATIC	DOWN RAIL - 0 mm CANT				SUPER RAMP = 1 IN 1000				DOWN RAIL - 0 mm CANT				DOWN RAIL - 0 mm CANT				UP RAIL - 0 mm CANT			
KILOMETRAGE	196km260	196km280	196km300	196km320	196km340	196km360	TRS 196km368.460	196km380	196km400	TP 196km408.460	196km420	196km440	196km460	196km480	196km500	196km520	196km540	196km560	196km580	196km600

JOINS DRAWING No.ARTCNT100015601



LONGITUDINAL SECTION
SCALE 1:500(H) 1:100(V)

- NOTES:**
- FOR GENERAL NOTES REFER TO DRG No. ARTCN100015601.
 - INDICATED TRAIN SPEEDS USED IN CALCULATIONS REFER TO MODELLED TRAIN SPEEDS. FREIGHT, PASSENGER AND XPT MAXIMUM SPEEDS COMPLY AT HIGHER RATES OF CHANGE.

FOR CONSTRUCTION

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Used on / Next higher assembly:	H8R-DWG-S2G-TRA-2602
Alternate DMS number:	

ARTC APPROVAL	Approved By				
Signed:					
Approval Date	06.08.10	ISSUED FOR CONSTRUCTION			
Rev	Date	Revision Description	Drawn	Checked	Approved
			D.J.C	T.L*	G.W*

Designing Company:	GHD	Address:	Level 3 GHD Tower, 24 Honesuckle Drive Newcastle NSW 2300 Australia F 61 2 4941 2796 W www.hunter8alliance.com.au
GHD Job Number:	22-14630	Drawn:	M.WRIGHT
		Designed:	V.ALEX
		Drafting Check:	P.TOBIN*
		Design Check:	T.LYONS*
Approved:	G.WICKENS*	Conditions of Use: This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.	
Date:	06/08/2010	This Drawing must not be used for Construction unless signed as Approved	

		ARTC DWG NUMBER	0
ARTCN100015602			
MAITLAND TO MINIMBAH - THIRD TRACK TRACK ALIGNMENT - UP REALIGNMENT (PROP) 196km260 TO 196km600			Sheet No. 2 of 9 Scale (A1): 1:500(H) 1:100(V)

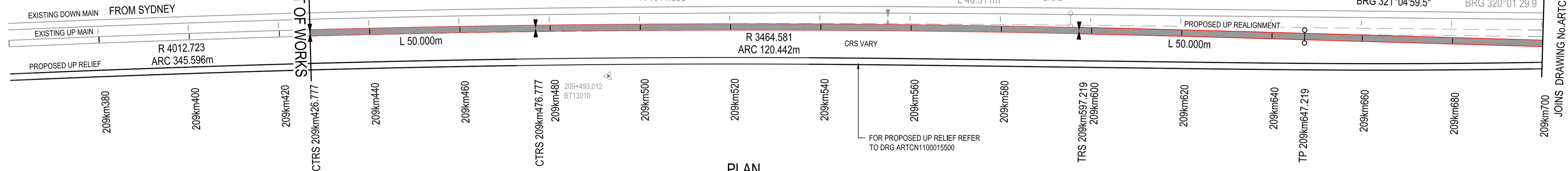
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UP MAIN PULLS	
CHAINAGE	PULL (m)
CTRS 209km426.777	-0.032
209km440.000	-0.025
209km460.000	-0.035
CTRS 209km476.777	-0.050
209km480.000	-0.044
209km500.000	-0.018
209km520.000	+0.015

UP MAIN PULLS	
CHAINAGE	PULL (m)
209km540.000	+0.082
209km560.000	+0.171
209km580.000	+0.300
TRS 209km597.219	+0.467
209km600.000	+0.499
209km620.000	+0.785
209km640.000	+1.130

UP MAIN PULLS	
CHAINAGE	PULL (m)
TP 209km647.219	+1.261
209km660.000	+1.494
209km680.000	+1.862
209km700.000	+2.234

↑ DENOTES PULLING TO THE UP SIDE
 ↓ DENOTES PULLING TO THE DN SIDE



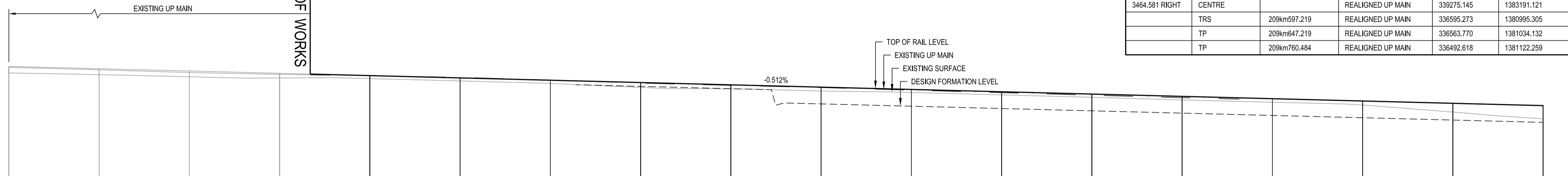
CIRCULAR CURVE DETAILS	
RADIUS:	4012.723m
ARC:	345.596m
V:	115km/h (Norm)
Ea:	0mm
D:	39mm
E	339684.175
N	1383556.017

COMPOUND TRANSITION DETAILS	
RADIUS:	4012.723m - 3464.581m
LENGTH:	50.000m
V:	85km/h (Norm)
Xc:	328.428m
Xc':	381.171m
Droc:	17mm/sec
M:	0.127 x 10 ⁶

CIRCULAR CURVE DETAILS	
RADIUS:	3464.581m
ARC:	120.442m
V:	85km/h (Norm)
Ea:	20mm
D:	5mm
E	339275.145
N	1383191.121

TRANSITION DETAILS	
RADIUS:	3464.581m
LENGTH:	50.000m
V:	85km/h (Norm)
Xc:	50m
Droc:	3mm/sec
M:	9.622 x 10 ⁶

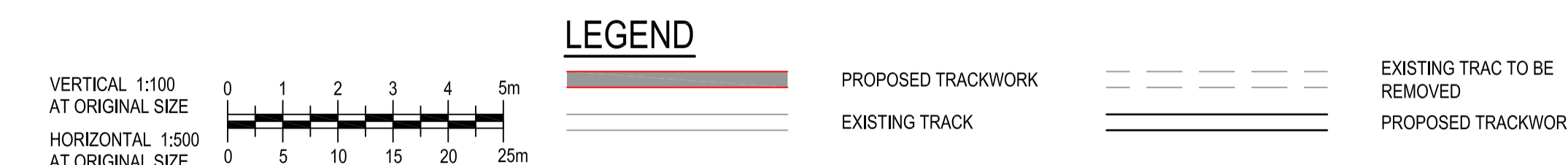
SCHEDULE OF COORDINATED ALIGNMENT POINTS					
RADIUS	POINT	KM	CENTRELINE	EASTING	NORTHING
	TRS	209km081.181	EXISTING UP MAIN	336948.898	1380619.999
	CENTRE		EXISTING UP MAIN	339684.175	1383556.017
	CTRS	209km426.777	REALIGNED UP MAIN	336706.484	1380866.166
	CTRS	209km476.777	REALIGNED UP MAIN	336673.212	1380903.488
	CENTRE		REALIGNED UP MAIN	339275.145	1383191.121
	TRS	209km597.219	REALIGNED UP MAIN	336595.273	1380995.305
	TP	209km647.219	REALIGNED UP MAIN	336563.770	1381034.132
	TP	209km760.484	REALIGNED UP MAIN	336492.618	1381122.259



CONTROL MC20
DATUM R.L.55.0

ALIGNMENT	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	DESIGN RAIL LEVELS	DESIGN FORMATION	EXISTING RAIL	LIFT/LOWER	EXISTING SURFACE	CANT SCHEMATIC
VERTICAL ALIGNMENT	L=713.109m G=-0.512%							
HORIZONTAL ALIGNMENT		R=4012.723m ARC=345.596m L=50.000m						
DESIGN RAIL LEVELS			59.983		59.940	0.043	59.690	DOWN RAIL - 0 mm CANT
DESIGN FORMATION			59.881		59.830	0.051	59.615	UP RAIL - 0 mm CANT
EXISTING RAIL			59.779		59.712	0.067	59.522	SUPER RAMP = 1 IN 2500
LIFT/LOWER			59.676		59.628	0.048	59.489	DOWN RAIL - 20 mm CANT
EXISTING SURFACE			59.574		59.589	-0.024	59.440	SUPER RAMP = 1 IN 2500
CANT SCHEMATIC			59.471		59.495	0.026	59.337	UP RAIL - 0 mm CANT
			59.369		59.378	-0.009	59.224	DOWN RAIL - 20 mm CANT
			59.267		59.241	0.026	59.050	SUPER RAMP = 1 IN 2500
			59.164		59.140	0.024	58.984	UP RAIL - 0 mm CANT
			59.062		59.043	0.019	58.891	DOWN RAIL - 20 mm CANT
			58.960		58.929	0.031	58.826	SUPER RAMP = 1 IN 2500
			58.857		58.817	0.040	58.718	UP RAIL - 0 mm CANT
			58.755		58.706	0.049	58.613	DOWN RAIL - 20 mm CANT
			58.653		58.595	0.058	58.494	SUPER RAMP = 1 IN 2500
			58.550		58.507	0.056	58.393	UP RAIL - 0 mm CANT
			58.448		58.408	0.051	58.289	DOWN RAIL - 0 mm CANT
			58.346		58.303	0.049	58.187	SUPER RAMP = 1 IN 2500
			58.243		58.200	0.052	58.081	UP RAIL - 0 mm CANT

KILOMETRAGE	209km360	209km380	209km400	209km420	209km440	209km460	209km480	209km500	209km520	209km540	209km560	209km580	209km600	209km620	209km640	209km660	209km680	209km700
CTRS				209km426.777														
CTRS							209km476.777											
TRS													209km597.219					
TP																		209km647.219



LONGITUDINAL SECTION
SCALE 1:500(H) 1:100(V)

- NOTES:
- FOR GENERAL NOTES REFER TO DRG No. ARTCN1100015601.
 - INDICATED TRAIN SPEEDS USED IN CALCULATIONS REFER TO MODELLED TRAIN SPEEDS. FREIGHT, PASSENGER AND XPT MAXIMUM SPEEDS COMPLY AT HIGHER RATES OF CHANGE.

FOR CONSTRUCTION

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Used on / Next higher assembly:	H8R DWG NUMBER H8R-DWG-S2G-TRA-2603
Alternate DMS number:	

ARTC APPROVAL	Approved By				
Signed:					
Approval Date	06.08.10	ISSUED FOR CONSTRUCTION			
Rev	Date	Revision Description	Drawn	Checked	Approved
			D.J.C	T.L*	G.W*

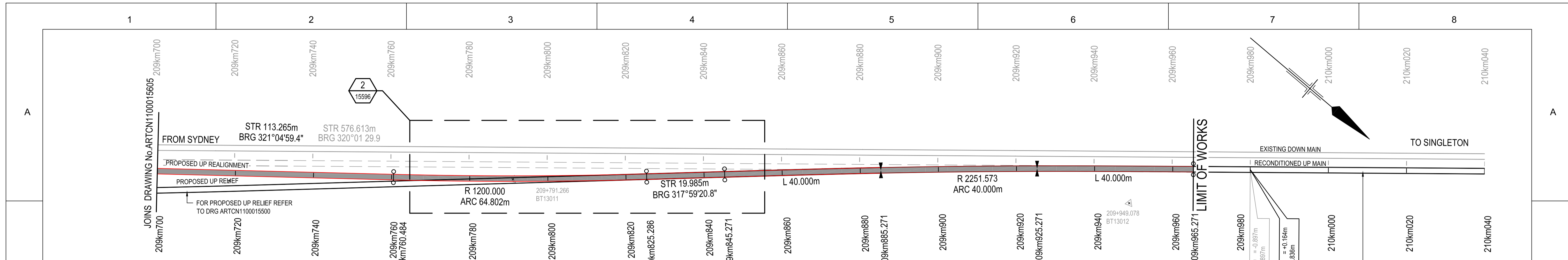
Designing Company:	GHD	Address:	Level 3 GHD Tower, 24 Honeysuckle Drive Newcastle NSW 2300 Australia F 61 2 4941 2798 W www.hunter8alliance.com.au
GHD Job Number:	22-14630	Designed	V.ALEX
Drawn	M.WRIGHT	Design Check	T.LYONS*
Drafting Check	P.TOBIN*	Approved	G.WICKENS*
Date	06/08/2010	Date	06/08/2010

ARTC DWG NUMBER 0

ARTCN1100015603

MAITLAND TO MINIMBAH - THIRD TRACK
TRACK ALIGNMENT - UP REALIGNMENT (PROP)
209km360 TO 209km700

Sheet No.
3 of 9
Scale (A1):
1:500(H) 1:100(V)



UP MAIN PULLS	
CHAINAGE	PULL (m)
209km700.000	+2.234
209km720.000	+2.607
209km740.000	+2.980
209km760.000	+3.353
TP 209km760.484	+3.362
209km780.000	+3.563
209km800.000	+3.435
209km820.000	+2.978
TOTP 209km825.286	+2.802
209km840.000	+2.277

UP MAIN PULLS	
CHAINAGE	PULL (m)
TP 209km845.271	+2.089
209km860.000	+1.568
209km880.000	+0.922
TRS 209km885.271	+0.776
209km900.000	+0.431
209km920.000	+0.114
TRS 209km925.271	+0.062
209km940.000	-0.025
209km960.000	-0.044
TP 209km965.271	-0.044

* DENOTES PULLING TO THE UP SIDE
* DENOTES PULLING TO THE DN SIDE

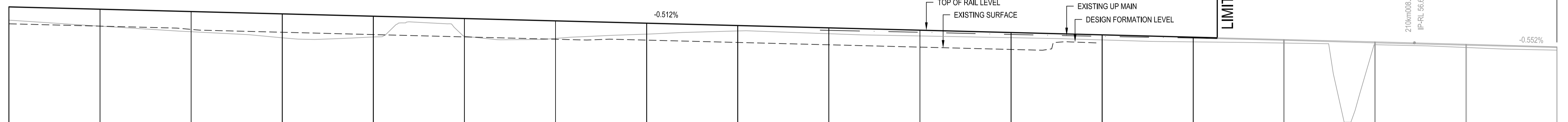
CIRCULAR CURVE DETAILS	
RADIUS:	1200.000m
ARC:	64.802m
V:	85km/h (Norm)
Ea:	0mm
D:	71mm
M:	335568.947
N:	1380368.430

SCHEDULE OF COORDINATED ALIGNMENT POINTS					
RADIUS	POINT	KM	CENTRELINE	EASTING	NORTHING
	TP	209km647.219	REALIGNED UP MAIN	336563.770	1381034.132
	TOEP	209km760.484	REALIGNED UP MAIN	336492.618	1381122.259
1200.000 LEFT	CENTRE		REALIGNED UP MAIN	335558.947	1380368.430
	TOTP	209km825.286	REALIGNED UP MAIN	336450.569	1381171.556
	TP	209km845.271	REALIGNED UP MAIN	336437.193	1381186.405
	TRS	209km885.271	REALIGNED UP MAIN	336410.511	1381216.204
2251.573 RIGHT	CENTRE		REALIGNED UP MAIN	338096.790	1382708.197
	TRS	209km925.271	REALIGNED UP MAIN	336384.272	1381246.396
	TP	209km965.271	RECONDITIONED UP MAIN	336358.484	1381276.972
	TP	210km178.039	RECONDITIONED UP MAIN	336221.896	1381439.896

TRANSITION DETAILS	
RADIUS:	2251.573m
LENGTH:	40.000m
V:	85km/h (Norm)
Xc:	40.000m
Droc:	11mm/sec
M:	1.851x 10 ⁶

CIRCULAR CURVE DETAILS	
RADIUS:	2251.573m
ARC:	40.000m
V:	85km/h (Norm)
Ea:	20mm
D:	18mm
M:	338096.790
N:	1382708.197

TRANSITION DETAILS	
RADIUS:	2251.573m
LENGTH:	40.000m
V:	85km/h (Norm)
Xc:	40.000m
Droc:	11mm/sec
M:	1.851x 10 ⁶



VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	DESIGN RAIL LEVELS	DESIGN FORMATION	EXISTING RAIL	LIFT/LOWER	EXISTING SURFACE	CANT SCHEMATIC	KILOMETRAGE
L=713.109m G=-0.512%	STR=113.265m R=1200.000m ARC=64.802m STR=19.985m L=40.000m R=2251.573m ARC=40.000m L=40.000m STR=212.604m	58.243 58.141 58.039 57.936 57.834 57.732 57.629 57.527 57.425 57.322 57.220 57.118 57.015 56.913 56.811 56.709 56.607 56.502 56.402	57.500 57.398 57.295 57.129 57.027 56.925 56.822 56.784 56.682 56.579 56.477 56.375 56.271 56.169 56.067 55.964 55.862 55.760 55.658	57.661 57.389 57.153 56.886 56.621 56.354 56.087 55.820 55.553 55.286 55.019 54.752 54.485 54.218 53.951 53.684 53.417 53.150 52.883 52.616	0.052 0.050 0.052 0.057 0.067 0.069 0.065 0.090 0.115 0.110 0.091 0.084 0.068 0.038 0.035 0.044 0.041 0.031 0.031	57.661 57.389 57.153 56.886 56.621 56.354 56.087 55.820 55.553 55.286 55.019 54.752 54.485 54.218 53.951 53.684 53.417 53.150 52.883 52.616	DOWN RAIL - 0 mm CANT UP RAIL - 0 mm CANT SUPER RAMP = 1 IN 2000 DOWN RAIL - 20 mm CANT UP RAIL - 0 mm CANT DOWN RAIL - 0 mm CANT UP RAIL - 0 mm CANT	209km700 209km720 209km740 209km760 209km780 209km800 209km820 209km840 209km860 209km880 209km900 209km920 209km940 209km960 209km980 210km000 210km020 210km040

LEGEND

WARNING: PUBLIC UTILITY SERVICES MAY EXIST ON OR ADJACENT TO THE SITE. THESE SERVICES MAY NOT BE SITUATED ALONG ROUTES INDICATED ON THIS DRAWING.

VERTICAL 1:100 AT ORIGINAL SIZE
HORIZONTAL 1:500 AT ORIGINAL SIZE

PROPOSED TRACKWORK
EXISTING TRACK
EXISTING TRAC TO BE REMOVED
PROPOSED TRACKWORK

NOTES:

- FOR GENERAL NOTES REFER TO DRG No. ARTCN1100015601.
- INDICATED TRAIN SPEEDS USED IN CALCULATIONS REFER TO MODELLED TRAIN SPEEDS, FREIGHT, PASSENGER AND XPT. MAXIMUM SPEEDS COMPLY AT HIGHER RATES OF CHANGE.

FOR CONSTRUCTION

ARTC DWG NUMBER 0

ARTCN1100015604

MAITLAND TO MINIMBAH - THIRD TRACK
TRACK ALIGNMENT - UP REALIGNMENT (PROP)
209km700 TO 210km040

Sheet No. 4 of 9
Scale (A1): 1:500(H) 1:100(V)

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ARTC APPROVAL Approved By

Used on / Next higher assembly: H8R-DWG-S2G-TRA-2604

Alternate DMS number:

Approval Date

Rev	Date	Revision Description	Drawn	Checked	Approved
0	06.08.10	ISSUED FOR CONSTRUCTION	D.J.C	T.L*	G.W*

Designing Company: GHD
GHD Job Number: 22-14630
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Drawn: M.WRIGHT
Designed: V.ALEX
Drafting Check: P.TOBIN*
Design Check: T.LYONS*

Approved: G.WICKENS*
Date: 06/08/2010

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