

Level 1 Supervision & Inspection Report

KING STREET WALLAN – STAGE 1

Prepared for Newnham Earthmoving Pty Ltd

24/04/2024





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Introduction

Construction Sciences is the largest private provider of construction materials testing services across Australia. We have a total staff of over 600 staff in 48 permanent offices/laboratories.

We have provided QA testing services to some of the largest road and mining infrastructure projects in these states, as well as overseas.

Over the last 3 to 4 years, Construction Sciences has established more site laboratories for road, rail, mining, and other large infrastructure projects than any other company.

We benefit our clients with the following clear differentiators;

- **Staff Mobilisation:** Construction Sciences' geographic expansion and mobility allow for teams to be available when required, and currently we have the lion's share of major projects in Australia.
- **Quality Management:** Construction Sciences' purpose-built software, COMPLY provides our clients with confidence, by knowing project data is securely stored. COMPLY has a built-in secure audit trail and a fully tracked Quality system. We are also ISO9001 compliant and certified.
- **Client Relationships:** We listen to your needs and respond with innovative solutions that are tailored for your business. We believe in building relationships with our staff and local community.
- **Safety:** At Construction Sciences we embrace a 'safety' culture and it is a key consideration with every project.

Construction Sciences Pty Ltd was commissioned by Newnham Earthmoving Pty Ltd to provide Level 1 inspection and testing services for the placement of fill at the residential development:-

PROJECT: King Street Wallan – Stage 1

ADDRESS: 149 – 157 King street, Wallan, VIC 3756

The earthwork activities for the development were carried out from 22/03/2022 to 19/04/2024.

This report presents the results of compaction and moisture control, including the laboratory testing carried out during the placement of fill material. Approximately 3500m³ of compacted fill has been placed during this project. The fill volume has been determined from the information provided by Newnham Earthmoving. This report includes compaction and moisture control results for King street - Stage 1 earthworks.



Specification Requirements

This project was supervised in accordance with AS3798-2007 '*Guidelines on earthworks for commercial and residential developments*' and with the project specification prepared for the project.

The specification requirements were that all compacted fill has to be placed and compacted in layers to a density ratio of not less than 95% of the maximum dry density as determined by AS1289.5.1.1 (standard compaction).

Existing Surface Assessments

Prior to commencement of earthworks, Construction Sciences confirmed that all unsuitable and weaker material such as top soil, silt, uncontrolled or loose soil, organic affected material and other wet areas had been appropriately stripped as specified in AS 3798-2007.

Fill Placement

All fill material on site was thoroughly inspected by Construction Sciences site representative to ensure it meets the "**suitable material**" requirements outlined in AS3798-2007.

The fill material typically comprised of:

- Silty Clay, medium to highly plastic, light brown/grey (Onsite);

Placement of fill was carried out using the following plant:

- Excavator
- Pad foot Roller
- Water cart
- Dozer

Fill material was spread in near-horizontal layers and compacted in successive layers to a maximum compacted thickness of 200mm to 300mm using a Pad-foot Roller.



Site Works

Supervision for this project was carried out in the period between 22nd of March 2022 to 19th of April 2024, this included the earthworks for Stage 1 development. The subgrade inspections were performed in accordance with the Level 1 guidelines presented in AS 3798 2007 Section 5.5 Test Rolling.

The contractor was instructed to remove any root- affected materials in the surface soil and soft spots prior to the commencement of level 1 filling in accordance with AS 3798 2007 Section 6.1.5 Stripping. On 22/03/2022, the Construction Sciences Level 1 GITA personnel visited the site to inspect the stripped zone where no unsuitable materials encountered. Fill material consisted of low plastic silty clay sourced from the onsite sewer spoil and imported fill from Hidden valley, conditioned onsite and compacted in place.

Following the removal of topsoil and uncontrolled fill, the design subgrade was assessed and prepared for earthworks. Field inspections were carried out regularly with observations made and recorded accordingly. Material properties of the typical material type are shown in table 1 below.

Table 1. Summary of PI & PSD Results

Sample No	Atterberg limits			
	LS %	LL %	PL %	PI %
S/129988	4.0	26	18	8

Compaction Control Testing

Compaction control tests were carried out at regular intervals throughout the placement of fill in accordance with the minimum test frequency recommendations included in AS3798-2007 '*Guidelines on earthworks for commercial and residential developments*'. All test results are included in the Appendix B. A summary of the test results is included as Table 2 & Table 3 below.

A total of nine (9) field density tests were carried out throughout the period of earthworks. These tests equate to one test every 400m³ of compacted fill placed. The average density ratio was 99.7% with a standard deviation of 2.0%. The approximate compacted thickness of fill was placed in near horizontal layers of 200 mm to 300mm.

Disturbed samples taken from each density test site were tested at Construction Sciences' NATA accredited soil laboratory, using the HILF rapid compaction method, in accordance with AS 1289 5.7.1.

The location of all tests is shown on the attached Site Map in Appendix B.



Table 2. Summary of field density test results - Level 1 Supervision & Inspection Report

Date	Sample No.	Report No	Density Ratio	Layer number
24/03/2022	S/889732	R/306568-1	99.0	Layer 1
24/03/2022	S/889733	R/306568-1	99.0	Layer 1
24/03/2022	S/889734	R/306568-1	98.5	Layer 1
12/04/2022	S/898481	R/287344-1	99.0	Layer 1
12/04/2022	S/898482	R/287344-1	102.0	Layer 1
12/04/2022	S/898483	R/287344-1	99.5	Layer 1
19/04/2024	S/1203252	R/392342-1	99.5	Layer 1
19/04/2024	S/1203253	R/392342-1	97.5	Layer 2
19/04/2024	S/1203254	R/392342-1	104.0	FSL
No of tests = 9 Mean Density Ratio = 99.7% Standard Dev = 2.0%				

Table 3. Summary of field moisture results - Level 1 Supervision & Inspection Report

Date	Sample No.	Report No	Moisture Ratio	Layer number
24/03/2022	S/889732	R/306568-1	90.5	Layer 1
24/03/2022	S/889733	R/306568-1	91.0	Layer 1
24/03/2022	S/889734	R/306568-1	91.5	Layer 1
12/04/2022	S/898481	R/287344-1	86.0	Layer 1
12/04/2022	S/898482	R/287344-1	87.5	Layer 1
12/04/2022	S/898483	R/287344-1	85.5	Layer 1
19/04/2024	S/1203252	R/392342-1	103.5	Layer 1
19/04/2024	S/1203253	R/392342-1	87.0	Layer 2
19/04/2024	S/1203254	R/392342-1	97.5	FSL
No of Tests = 9 Mean Moisture Ratio = 91.0% Standard Dev = 6.0%				

Notes:

1. Level of test positions determined relative to on site benchmark
2. Standard laboratory compaction used, AS12789.5.

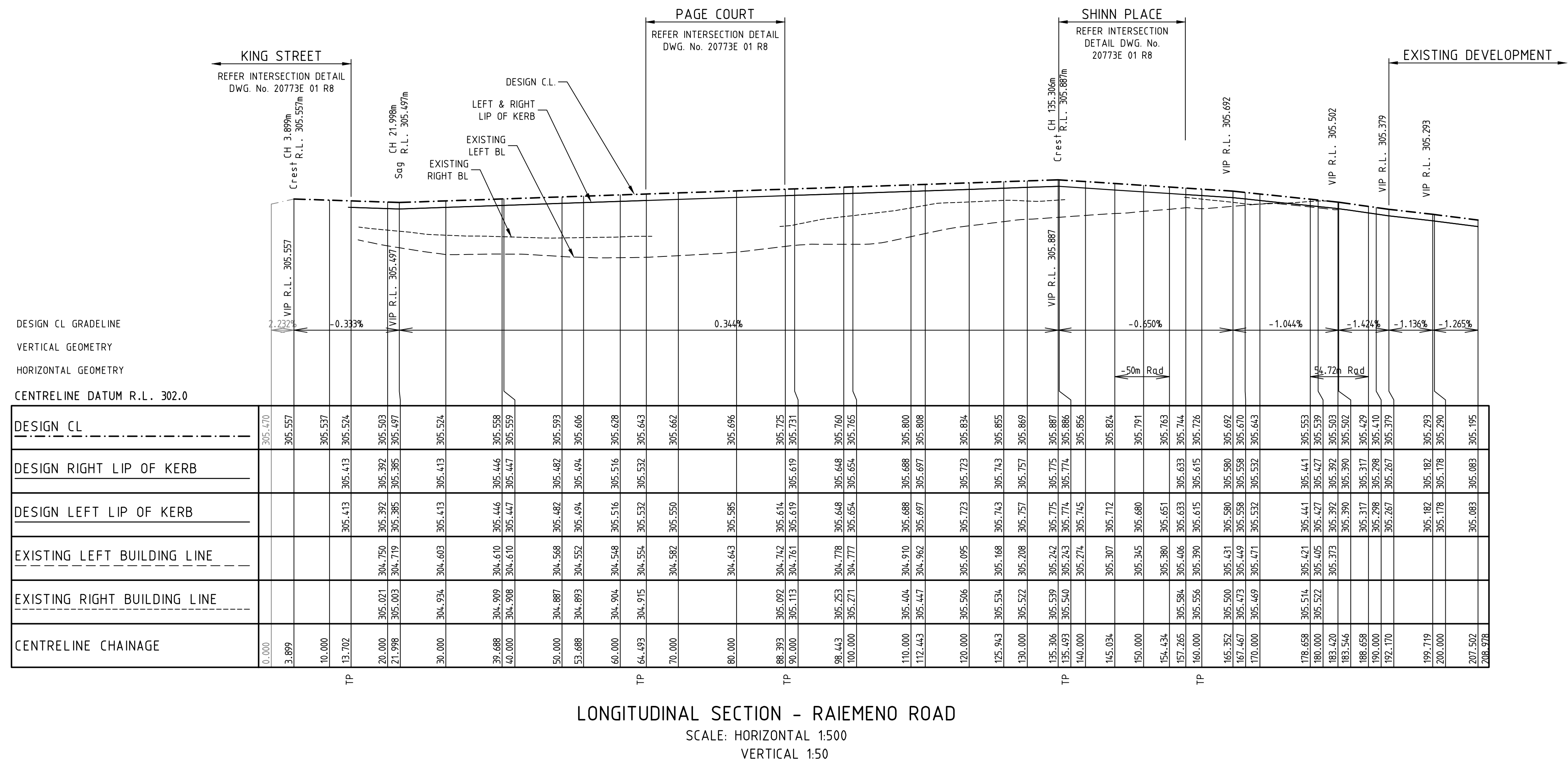


Conclusion

It is considered that the placement of fill at King street, Wallan was carried out in a controlled manner and the fill was compacted to a dry density ratio not less than the specified requirement. It is concluded that the fill may be deemed to be '*controlled fill*' in accordance with AS2870 – 2011 '*Residential Slabs & Footings*'. This report includes compaction and moisture control results for Stage 1 earthworks onsite.

Appendix A

Layout Plan

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LONGITUDINAL SECTION - RAIEMENO ROAD

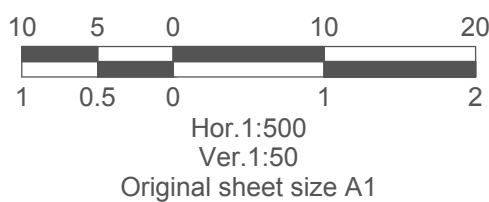
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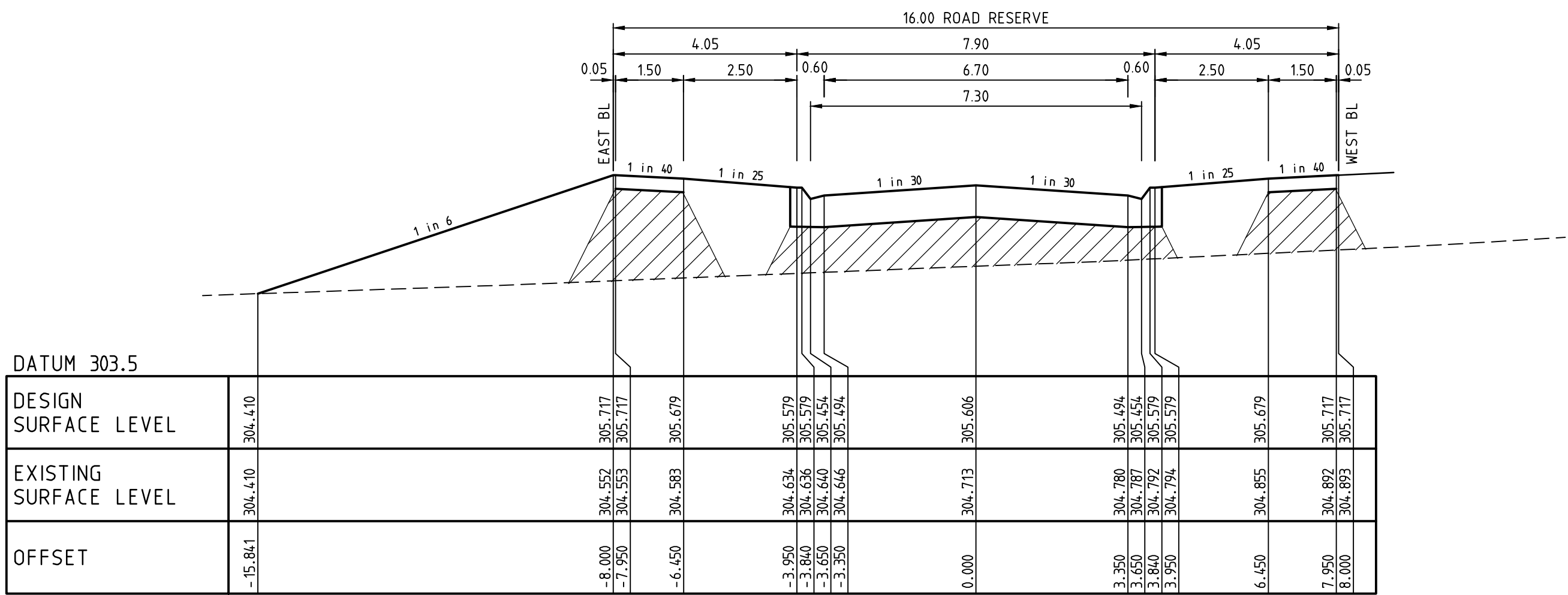
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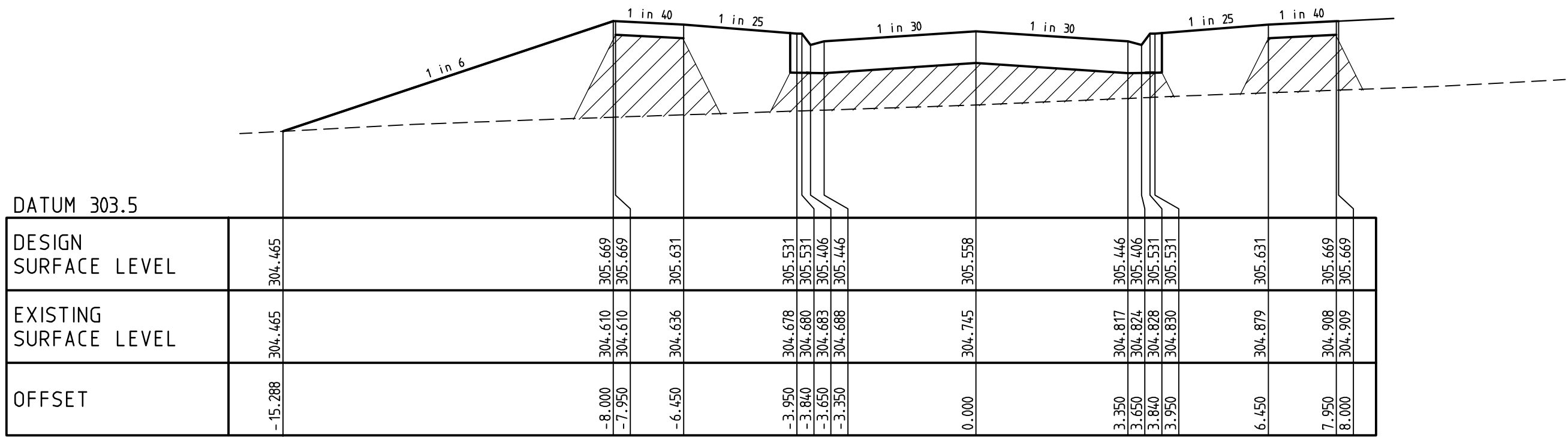
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LEGEND

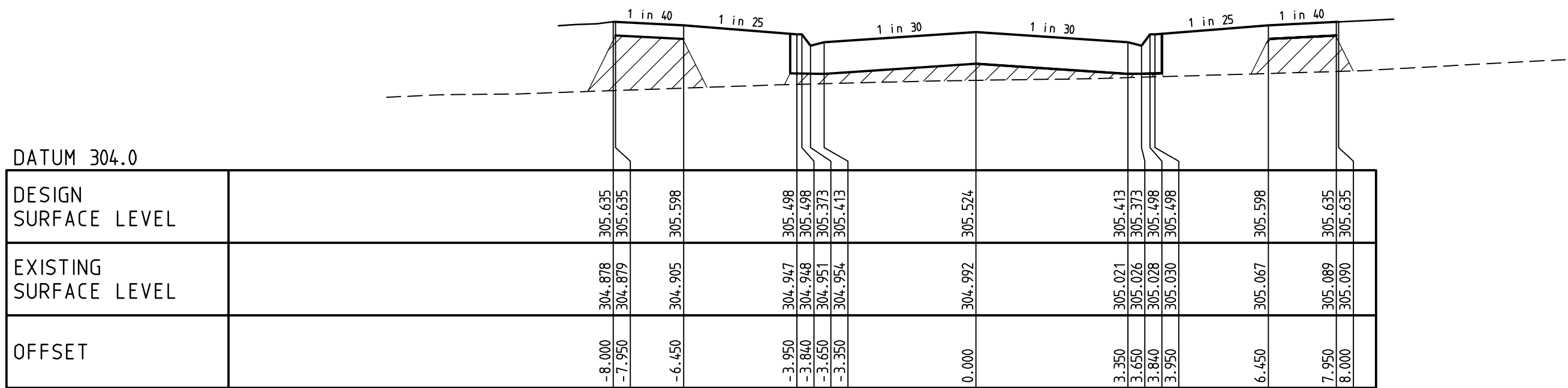
STRUCTURAL FILL TO BE PLACED UNDER ALL PAVEMENT AREAS ABOVE EXISTING SURFACE LEVEL



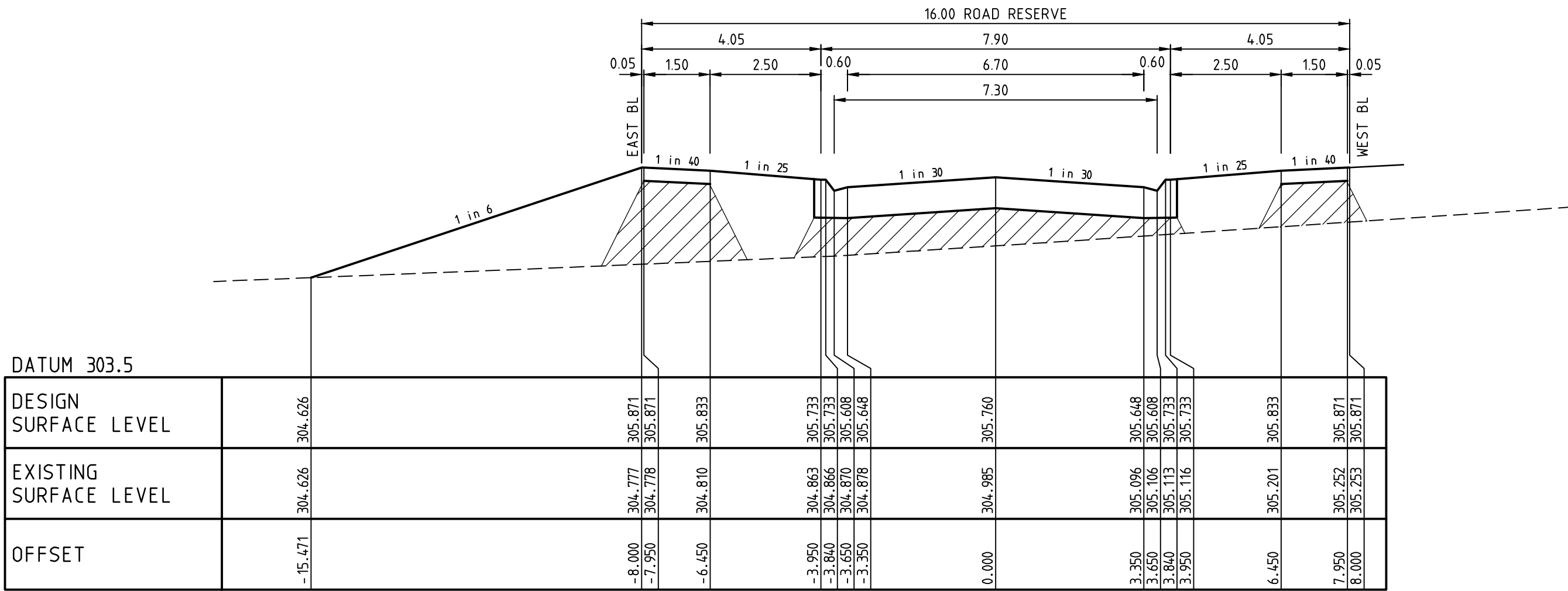
Ch 53.69



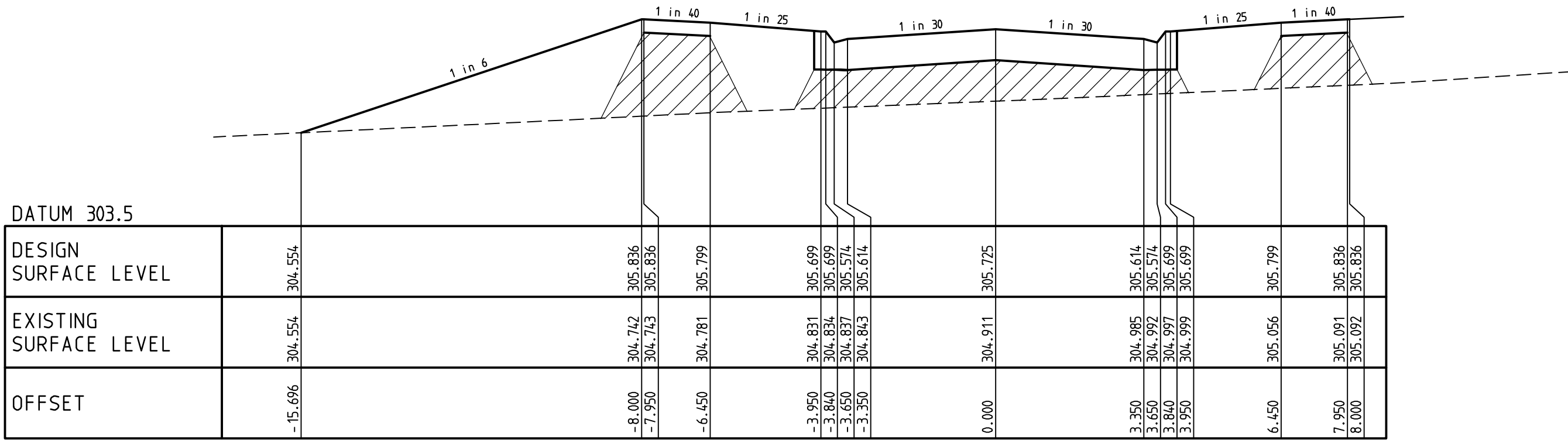
Ch 39.69



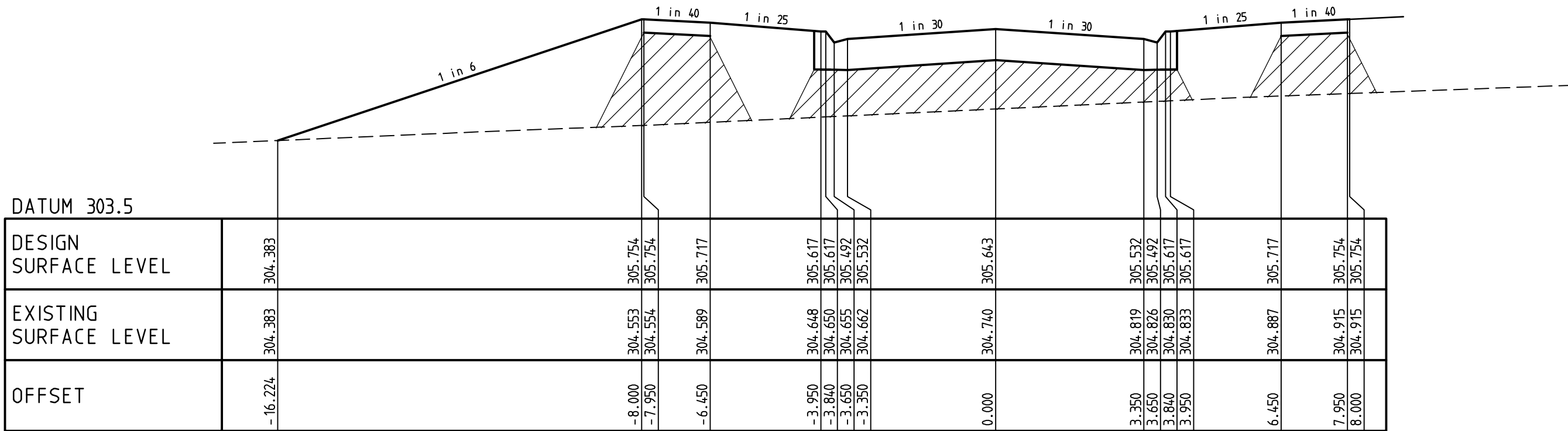
TPCh 13.70



Ch 98.44



Ch 88.39



TPCh 64.49

CROSS SECTIONS - RAIEMENO ROAD
SCALE: HORIZONTAL 1:100
VERTICAL 1:50

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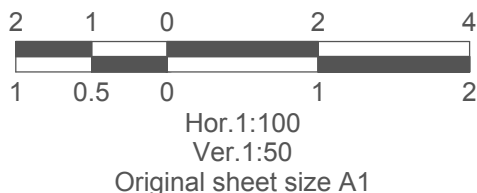
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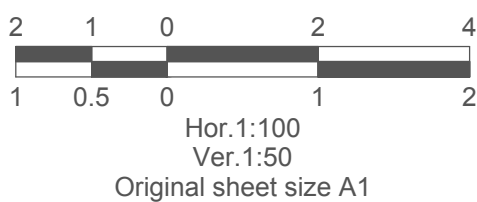
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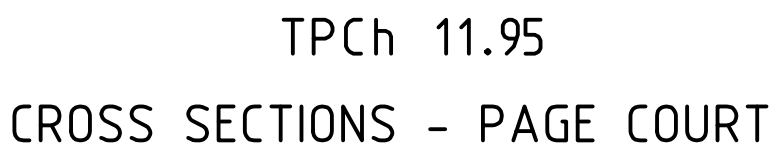
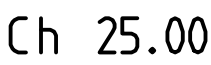
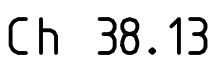
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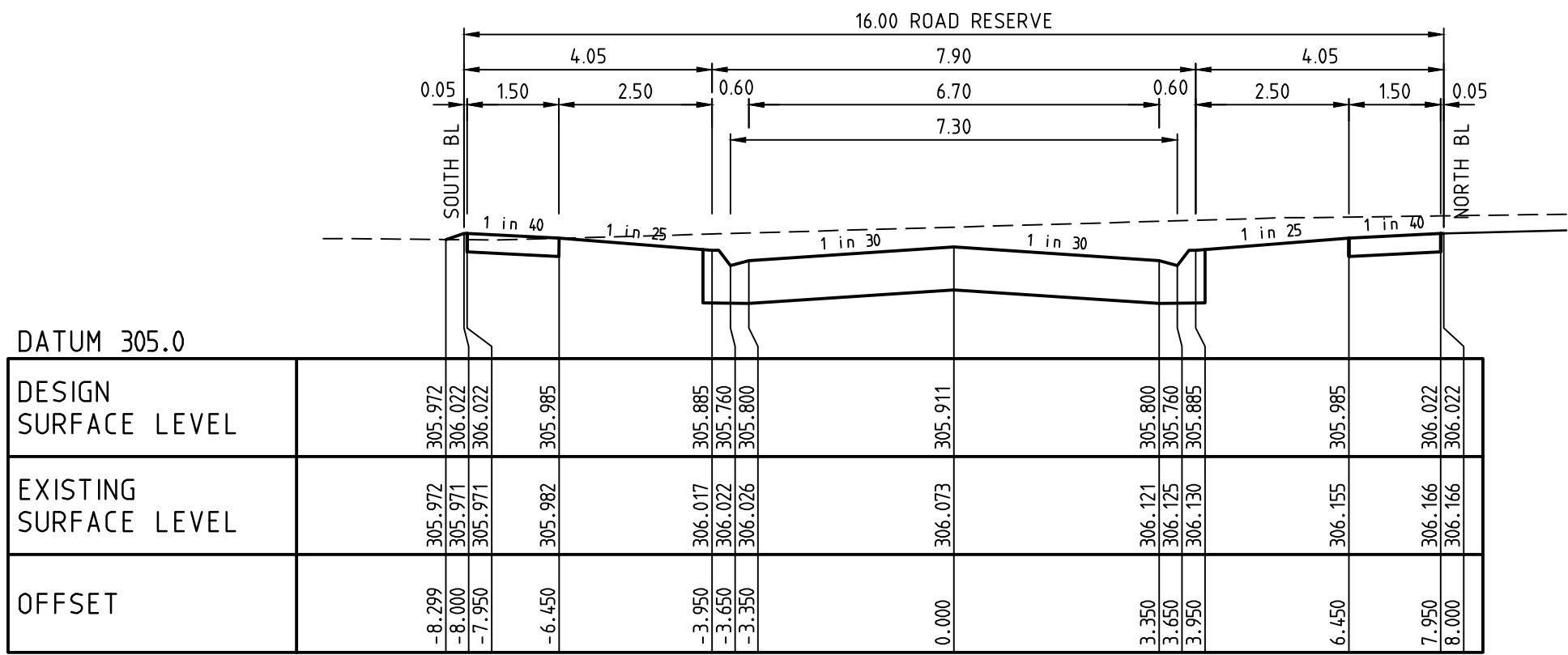
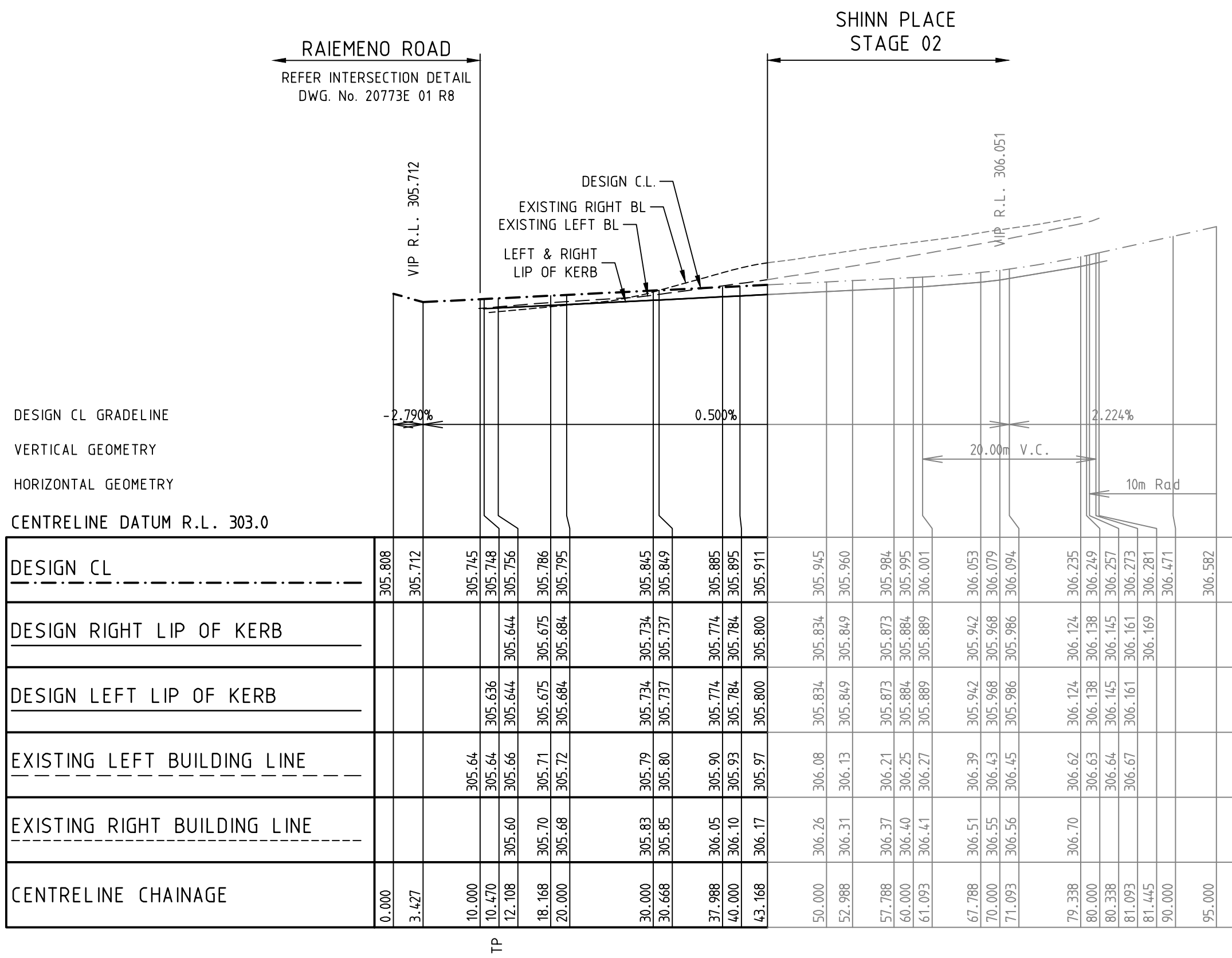
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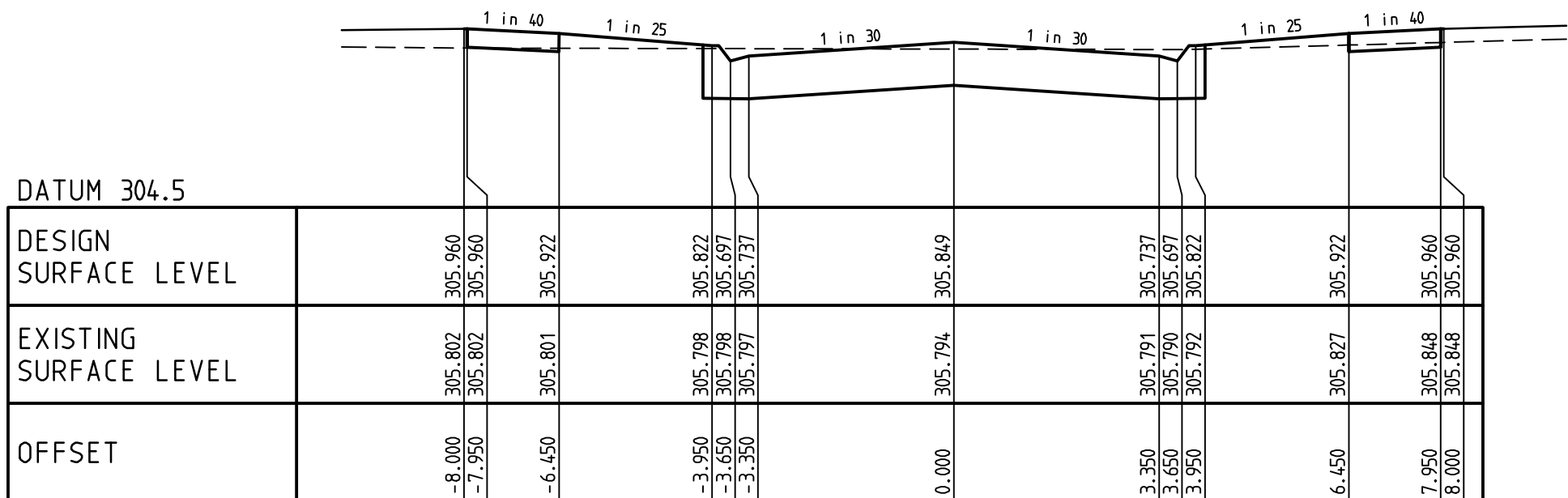
Sheet 5 of 11



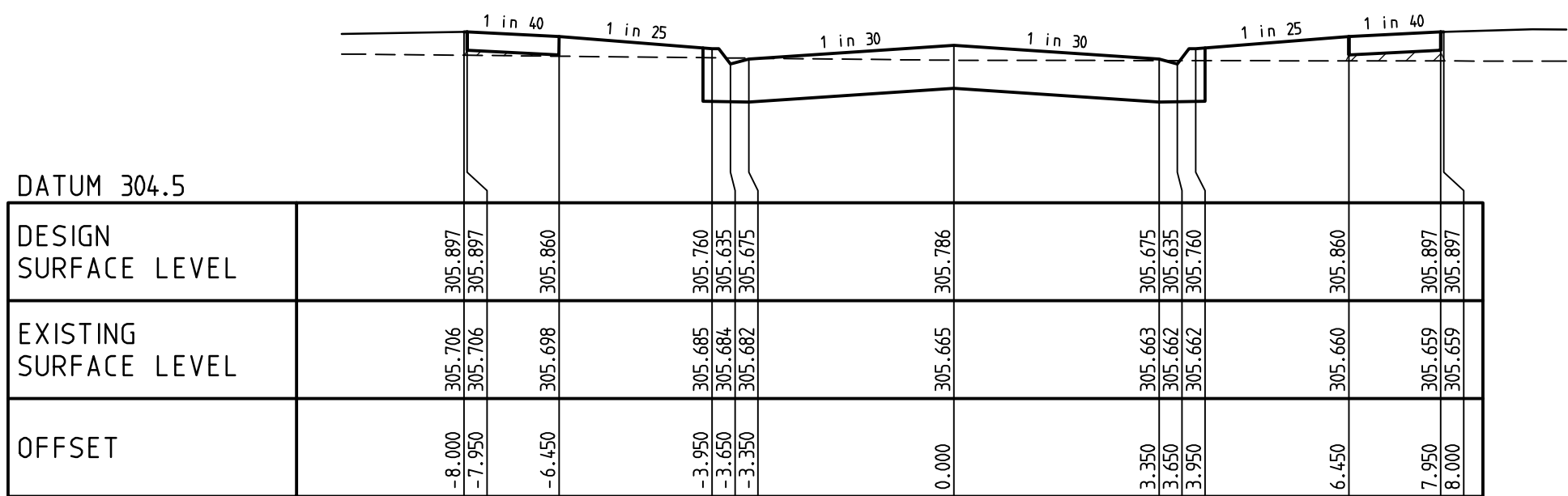




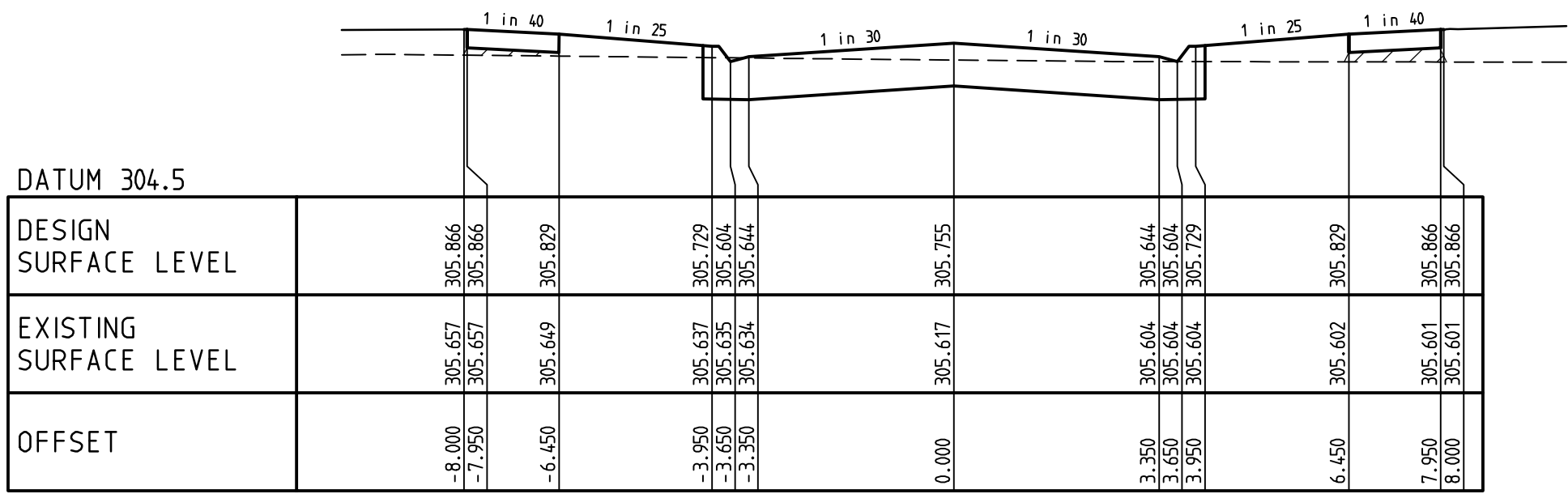
Ch 43.168



Ch 30.668



Ch 18.168



TPCh 12.008

CROSS SECTIONS - SHINN PLACE

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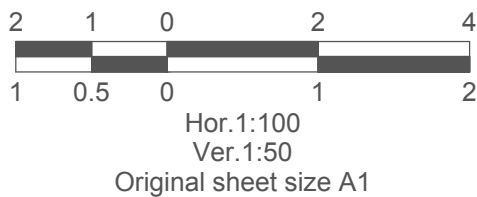
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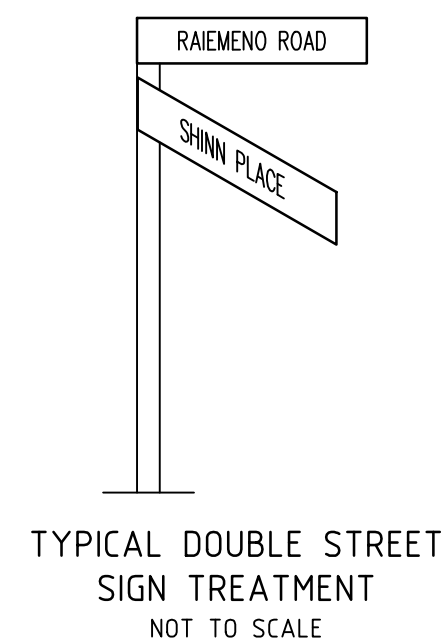


KING STREET, WALLAN - STAGE 1
Page Court & Shinn Place - Cross Sections

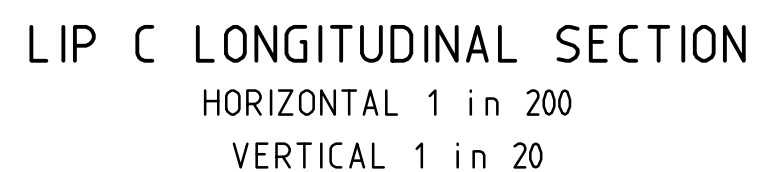
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TRAFFIC SIGNS LEGEND	
S1	- GIVE WAY R1-2
	
S2	- STREET SIGN
	

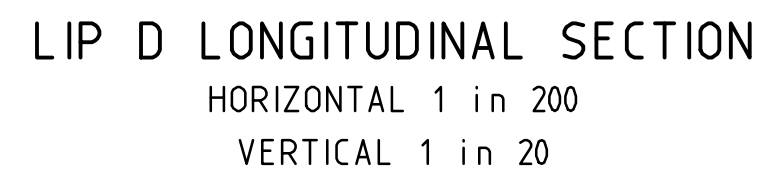
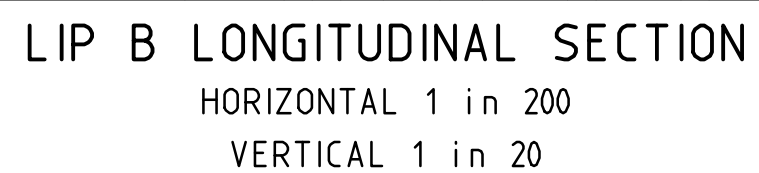
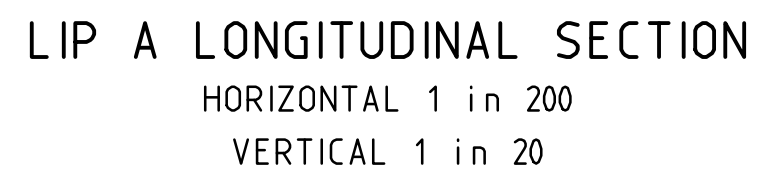


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C2	322167.652	5857498.962	305.736
C3	322165.462	5857496.421	305.696
C4	322162.464	5857494.910	305.661
C5	322159.119	5857494.662	305.644

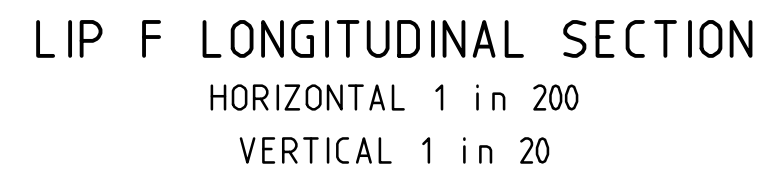
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A2	322176.311	5857569.432	305.556
A3	322174.121	5857566.891	305.539
A4	322171.124	5857565.380	305.522
A5	322167.779	5857565.132	305.505



SETOUT TABLE (LIP OF KERB D)

POINT	EASTING	NORTHING	RL(m)
D1	322158.302	5857488.012	305.644
D2	322159.910	5857487.814	305.652
D3	322162.740	5857486.954	305.667
D4	322165.112	5857485.185	305.662
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D6	322167.442	5857479.844	305.633



SETOUT TABLE (LIP OF KERB F)

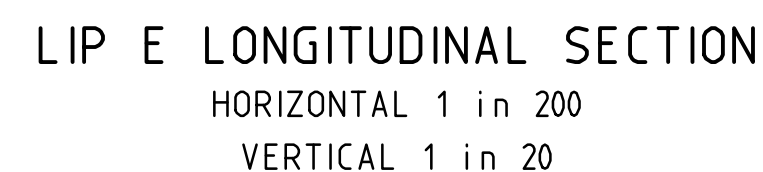
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F2	322191.682	5857626.075	305.374
F3	322194.788	5857628.802	305.330
F4	322198.808	5857629.765	305.257
F5	322202.811	5857628.742	305.170



POINT	EASTING	NORTHING	RL(m)
B1	322166.962	5857558.482	305.505
B2	322170.147	5857557.431	305.522
B3	322172.689	5857555.241	305.553
B4	322174.199	5857552.243	305.586
B5	322174.448	5857548.898	305.620

SETOUT TABLE (LIP OF KERB E)

POINT	EASTING	NORTHING	RL(m)
E1	322183.614	5857623.495	305.378
E2	322183.320	5857627.404	305.434
E3	322181.545	5857630.901	305.563
E4	322178.561	5857633.446	305.707
E5	322174.830	5857634.648	305.811



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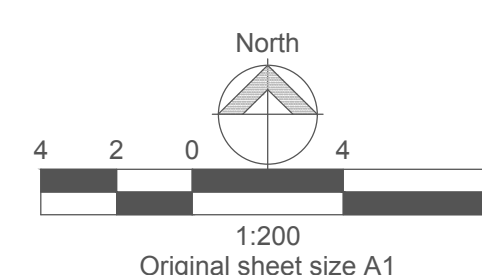
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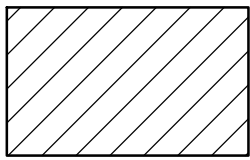


KING STREET, WALLAN - STAGE 1

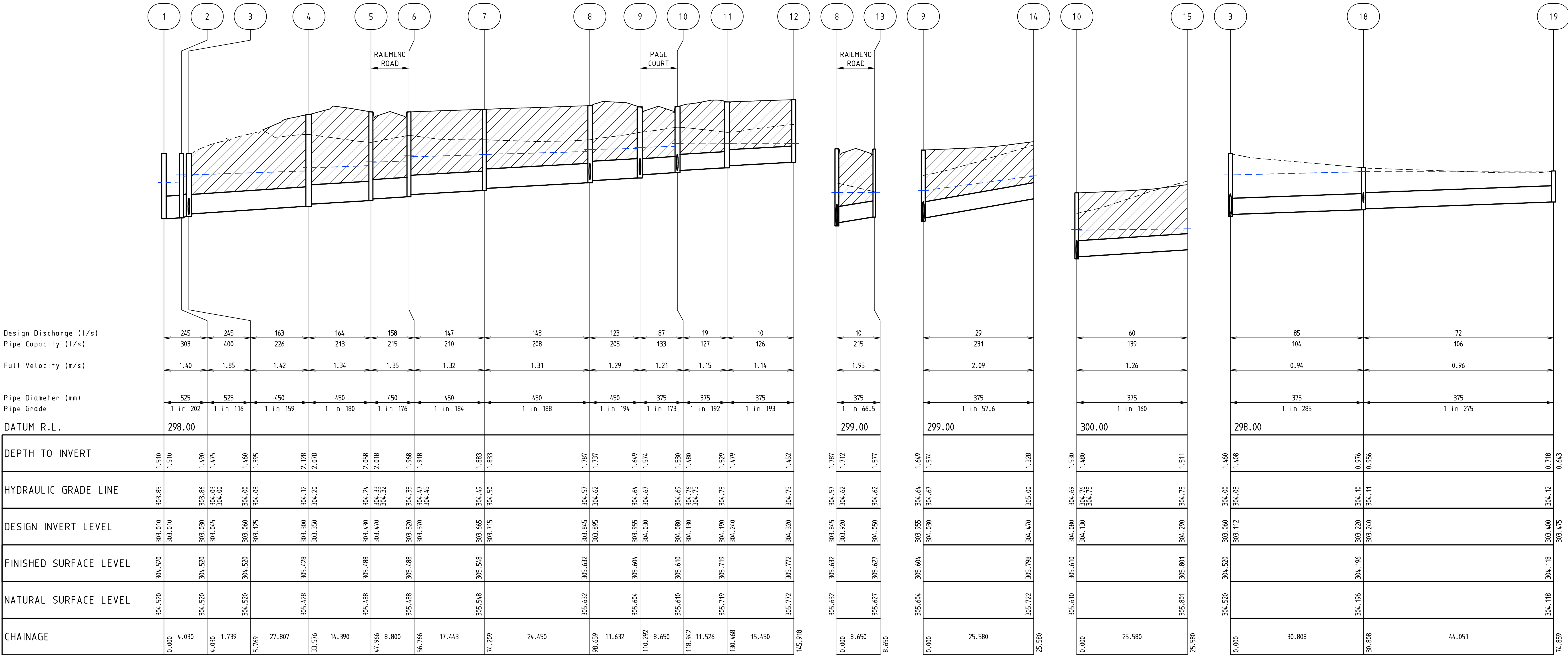
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CLASS 3 CRUSHED ROCK BACKFILL



DRAINAGE - LONGITUDINAL SECTION
SCALE: HORIZONTAL 1:500
VERTICAL 1:50

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A	DRAINAGE NETWORK AMENDED	DB	DG	15.07.2021

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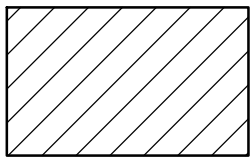
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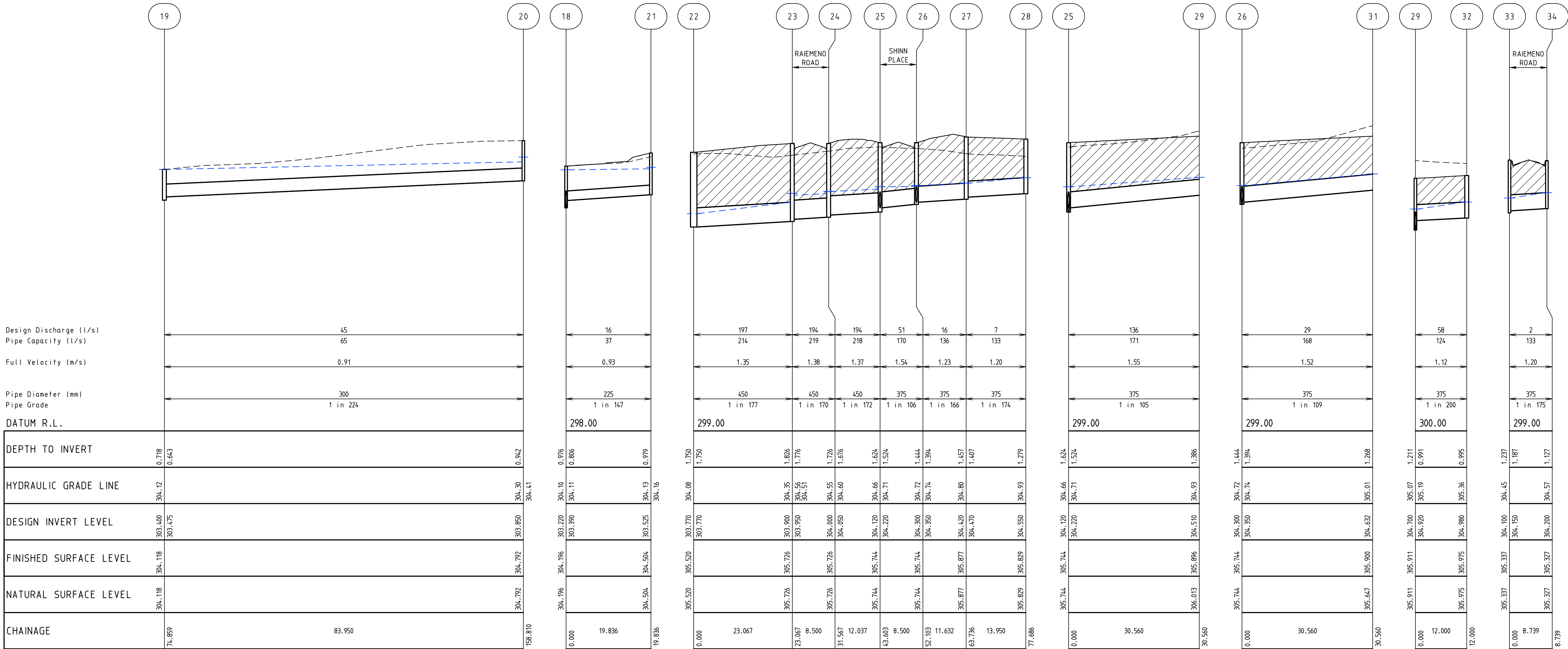
KING STREET, WALLAN - STAGE 1
Drainage Longitudinal Sections - Sheet 1 of 2

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CLASS 3 CRUSHED ROCK BACKFILL



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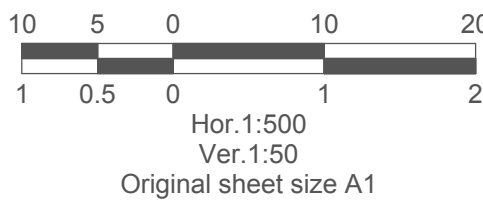
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KING STREET, WALLAN - STAGE 1
Drainage Longitudinal Sections - Sheet 2 of 2

149 - 157 King Street, Wallan
Mitchell Shire Council

20773E 01 R10

PIT SCHEDULE										
PIT No.	TYPE	INTERNAL		INLET		OUTLET		PIT COVER RL	DEPTH	REMARKS
		W	L	DIA	INV LEV	DIA	IL			
Ex.1	JP	1200	1050	525	303.01	Ex.1050		304.52	1.51	EXISTING PIT TO BE RECONSTRUCTED
2	JP	750	900	525	303.05	525	303.03	304.52	1.49	REFER EDCM STANDARD DRAWING EDCM605
3	JP	750	900	450	303.13	525	303.06	304.52	1.46	REFER EDCM STANDARD DRAWING EDCM605
				375	303.11					
4	JP	900	900	450	303.35	450	303.30	305.43	2.13	REFER EDCM STANDARD DRAWING EDCM605. TO BE CONVERTED TO SEP IN THE FUTURE
5	SEP	750	900	450	303.47	450	303.43	305.49	2.06	REFER EDCM STANDARD DRAWING EDCM603
6	SEP	600	900	450	303.57	450	303.52	305.49	1.97	REFER EDCM STANDARD DRAWING EDCM603
7	SEP	600	900	450	303.72	450	303.67	305.55	1.88	REFER EDCM STANDARD DRAWING EDCM603
8	SEP	600	900	450	303.90	450	303.85	305.63	1.79	REFER EDCM STANDARD DRAWING EDCM603
				375	303.92					
9	SEP	600	900	375	304.03	450	303.96	305.60	1.65	REFER EDCM STANDARD DRAWING EDCM603
				375	304.03					
10	SEP	600	900	375	304.13	375	304.08	305.61	1.53	REFER EDCM STANDARD DRAWING EDCM603
				375	304.13					
11	SEP	600	900	375	304.24	375	304.19	305.72	1.53	REFER EDCM STANDARD DRAWING EDCM603
12	SEP	600	900			375	304.32	305.77	1.45	REFER EDCM STANDARD DRAWING EDCM603
13	SEP	600	900			375	304.05	305.63	1.58	REFER EDCM STANDARD DRAWING EDCM603
14	PIPE END	-	-			375	305.10	306.54	1.44	PROVIDE PIPE END FOR FUTURE CONNECTION
15	PIPE END	-	-	375	304.29	375	304.29	305.80	1.51	PROVIDE PIPE END FOR FUTURE CONNECTION
18	JP	600	900	375	303.24	375	303.22	304.20	0.98	REFER EDCM STANDARD DRAWING EDCM605
				225	303.39					
19	JP	600	600	300	303.48	375	303.40	304.12	0.72	REFER EDCM STANDARD DRAWING EDCM605
20	JP	600	900			300	303.85	304.79	0.94	REFER EDCM STANDARD DRAWING EDCM605
21	JP	600	900			225	303.53	304.50	0.98	REFER EDCM STANDARD DRAWING EDCM605
22	JP	600	900	450	303.77			305.52	1.75	REFER EDCM STANDARD DRAWING EDCM605
23	SEP	600	900	450	303.95	450	303.90	305.73	1.83	REFER EDCM STANDARD DRAWING EDCM603
24	SEP	600	900	450	304.05	450	304.00	305.73	1.73	REFER EDCM STANDARD DRAWING EDCM603
25	SEP	600	900	375	304.22	450	304.12	305.74	1.62	REFER EDCM STANDARD DRAWING EDCM603
				375	304.22					
26	SEP	600	900	375	304.35	375	304.30	305.74	1.44	REFER EDCM STANDARD DRAWING EDCM603
				375	304.35					
27	SEP	600	900	375	304.47	375	304.42	305.88	1.46	REFER EDCM STANDARD DRAWING EDCM603
28	SEP	600	900			375	304.55	305.83	1.28	REFER EDCM STANDARD DRAWING EDCM603
29	PIPE END	-	-	375	304.75	375	304.70	305.91	1.21	PROVIDE PIPE END FOR FUTURE CONNECTION
				375	304.92					
31	PIPE END	-	-			375	304.85	306.03	1.18	PROVIDE PIPE END FOR FUTURE CONNECTION
Ex33	SEP	600	900	375	304.15			305.34	1.24	REFER EDCM STANDARD DRAWING EDCM603
34	SEP	600	900			375	304.20	305.33	1.13	REFER EDCM STANDARD DRAWING EDCM603

Millar & Merrigan authorise the use of this drawing only for the purpose described by the status stamp shown below. This drawing should be read in conjunction with all relevant contracts, specifications, reports & drawings.

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	Initials	Date
Designed	SW	FEB 2021
Drafted	FM	MAR 2021
Checked	BB	MAY 2021
Authorised		
Approved by Council		

SUBJECT TO APPROVAL

A	DRAINAGE NETWORK AMENDED	DB	DG	15.07.2021	
No.	Revision Description	Design	Authorised	Date	

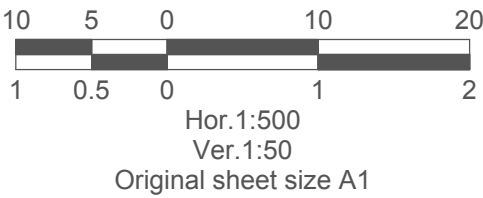
Millar | Merrigan

Land Development Consultants

Civil Engineering
Land Surveying
Landscape Architecture
Project Management
Town Planning
Urban Design

SAI GLOBAL Quality ISO 9001

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KING STREET, WALLAN - STAGE 1

Pit Schedule

149 - 157 King Street, Wallan
Mitchell Shire Council

20773E 01 R11

Appendix B

Field Density Test Results

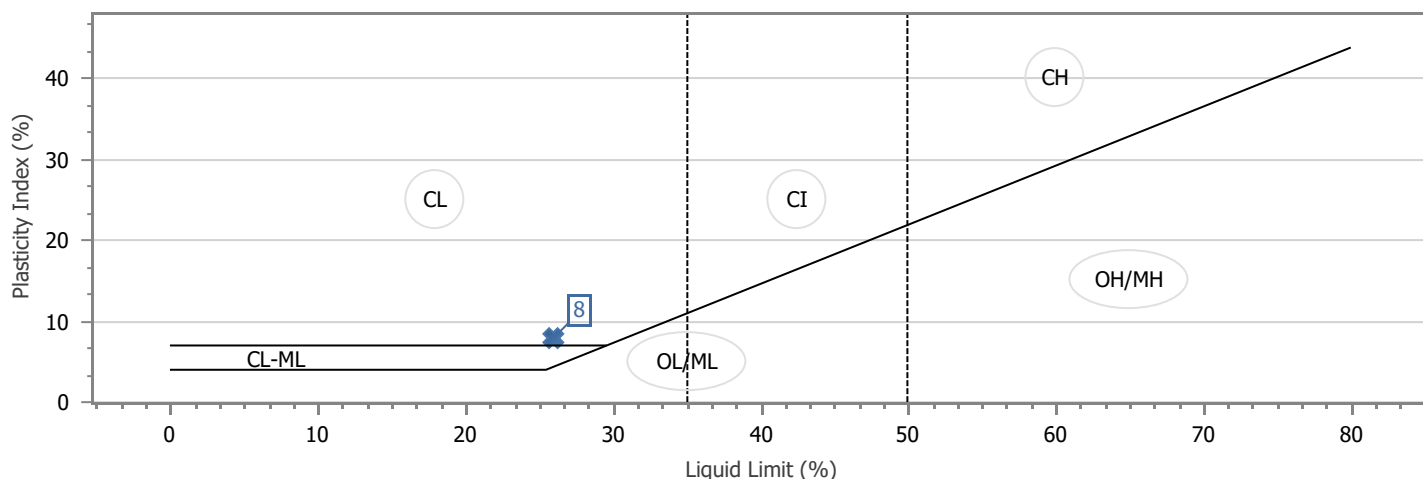
ATTERBERG LIMITS REPORT

Client:	Newnham Earthmoving Pty Ltd	Report Number:	14874/R/286499-1
Client Address:	45A Murphy Street, ROMSEY	Project Number:	14874/P/2440
Project:	King Street	Lot Number:	
Location:	Wallan	Internal Test Request:	14874/T/129988
Supplied To:	n/a	Client Reference/s:	Stripping Inspection - 22/03/22
Area Description:		Report Date / Page:	12/04/2022 Page 1 of 1

Test Procedures:	AS1289.3.1.2, AS 1289.3.3.1, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS1726 (Tables 9/10)		
Sample Number	14874/S/889718	Sample Location	
Sampling Method	AS1141.3.1 CI 8.4.3	Stockpile	
Date Sampled	22/03/2022		
Sampled By	Daniel Boyd		
Date Tested	11/04/2022		
Drying / Prep Method	Oven Dried / Dry Sieved	Material Source	Onsite
LL Water Type	Potable	Material Type	Insitu
LL Device Type	Cassagrande	Specification	-
Client Reference	-	Prep Mat > 53mm (%)	-
Material Description	Insitu		

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		26	
Plastic Limit (%)		18	
Plasticity Index (%)		8	
Linear Shrinkage (%)		4.0	
Linear Shrinkage Mould Length / Defects:	Mould Length: 250.1mm / Cracking		

Atterberg Limits 'A-Line' Graph



Remarks	NATA accreditation does not cover the performance of AS1289.1.4.2.
---------	--

		Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number:	1986		
Corporate Site Number:	14874		
Approved Signatory: Jagdish Chand Form ID: W11Rep Rev 2			

LOT REPORT - WET DENSITY RATIO

Client:	Newnham Earthmoving Pty Ltd	Report Number:	14874/R/306568-1
Client Address:	45A Murphy Street, ROMSEY	Project Number:	14874/P/2440
Project:	King Street	Lot Number:	
Location:	Wallan	Internal Test Request:	14874/T/129990
Supplied To:	n/a	Client Reference/s:	Level 1 24.03.22
Area Description:		Report Date / Page:	30/08/2022 Page 1 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/889732	14874/S/889733	14874/S/889734	
ID / Client ID	-	-	-	
Lot Number	-	-	-	
Date / Time Tested	24/03/2022 10:30	24/03/2022 10:30	24/03/2022 10:30	
Material Source	Onsite	Onsite	Onsite	
Material Type	Insitu	Insitu	Insitu	
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / -	275 / 300 / -	
Standard or Modified	Standard	Standard	Standard	
Layer Number				
Location Number	1	2	3	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	0	
Compaction Sample Number	14874/S/889732	14874/S/889733	14874/S/889734	
Sample Description	Insitu	Insitu	Insitu	
Moisture Test Results:				
Field Moisture Content (%)	20.5	22.6	20.1	
Adjusted / Moist. Variation (%)	2.0	2.0	2.0	
Optimum Moisture Content (%)	22.5	25.0	22.0	
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	
Moisture Ratio (%)	90.5	91.0	91.5	
Density Test Results:				
Field Wet Density (t/m³)	1.92	1.91	1.93	
Adj/Peak Conv Wet Density (t/m³)	1.94	1.93	1.95	
Density Ratio Required (%)	95	95	95	
Hilf Density Ratio (%)	99.0	99.0	98.5	

Remarks	NATA accreditation does not cover the performance of AS1289.1.4.2.
---------	--

 Accredited for compliance with ISO/IEC 17025 – Testing Accreditation Number: 1986 Corporate Site Number: 14874		 Approved Signatory: William Midgley Form ID: W5ASMRRepSum Rev 4
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LOT REPORT - WET DENSITY RATIO

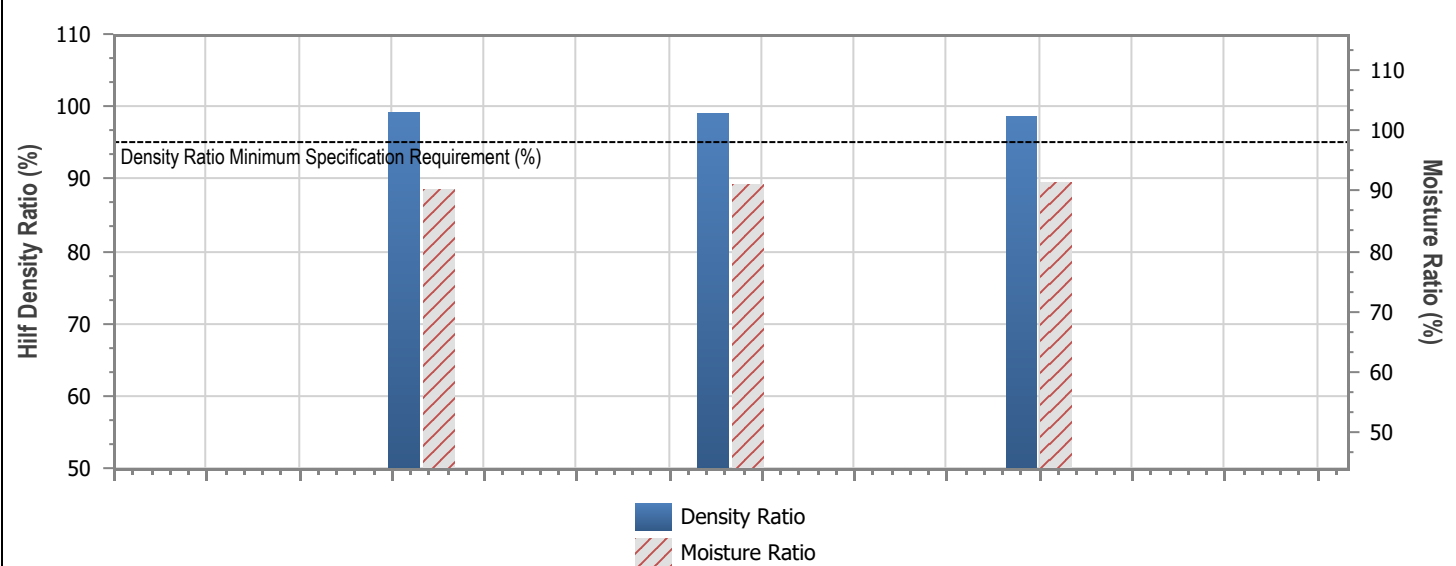
Client:	Newnham Earthmoving Pty Ltd	Report Number:	14874/R/306568-1
Client Address:	45A Murphy Street, ROMSEY	Project Number:	14874/P/2440
Project:	King Street	Lot Number:	
Location:	Wallan	Internal Test Request:	14874/T/129990
Supplied To:	n/a	Client Reference/s:	Level 1 24.03.22
Area Description:		Report Date / Page:	30/08/2022 Page 2 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		

LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	90.3	91.4	90.9	0.570
Half Density Ratio (%)	98.6	99.2	98.9	0.333

Lot Number: -
Mean Moisture Ratio (%): 90.9
Mean Density Ratio (%): 98.9

Remarks	NATA accreditation does not cover the performance of AS1289.1.4.2.
---------	--

 Accredited for compliance with ISO/IEC 17025 – Testing Accreditation Number: 1986 Corporate Site Number: 14874	 Approved Signatory: William Midgley Form ID: W5ASMRRRepSum Rev 4
---	---

LOT REPORT - WET DENSITY RATIO

Client:	Newnham Earthmoving Pty Ltd	Report Number:	14874/R/287344-1
Client Address:	45A Murphy Street, ROMSEY	Project Number:	14874/P/2440
Project:	King Street	Lot Number:	
Location:	Wallan	Internal Test Request:	14874/T/131281
Supplied To:	n/a	Client Reference/s:	Level 1 Testing- 12/4/22
Area Description:	Refer to MAP	Report Date / Page:	19/04/2022 Page 1 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/898481	14874/S/898482	14874/S/898483	
ID / Client ID	Refer to Map	-	-	
Lot Number	-	-	-	
Date / Time Tested	12/04/2022 10:30	12/04/2022 10:30	12/04/2022 10:30	
Material Source	Imported	Imported	Imported	
Material Type	Allotment Fill	Allotment Fill	Allotment Fill	
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	
Depths: Test / Nom / Actual (mm)	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	
Standard or Modified	Standard	Standard	Standard	
Layer Number	1	1	1	
Location Number	1	2	3	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	0	
Compaction Sample Number	14874/S/898481	14874/S/898482	14874/S/898483	
Sample Description	Allotment Fill	Allotment Fill	Allotment Fill	
Moisture Test Results:				
Field Moisture Content (%)	16.9	17.8	16.7	
Adjusted / Moist. Variation (%)	3.0	2.5	3.0	
Optimum Moisture Content (%)	19.5	20.5	19.5	
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	
Moisture Ratio (%)	86.0	87.5	85.5	
Density Test Results:				
Field Wet Density (t/m³)	1.90	1.93	1.90	
Adj/Peak Conv Wet Density (t/m³)	1.92	1.90	1.91	
Density Ratio Required (%)	95	95	95	
Hilf Density Ratio (%)	99.0	102.0	99.5	

Remarks	NATA accreditation does not cover the performance of AS1289.1.4.2.
---------	--

Accredited for compliance with ISO/IEC 17025 – Testing		
	Accreditation Number: 1986	
	Corporate Site Number: 14874	
		Approved Signatory: Daniel Boyd
		Form ID: W5ASMRRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

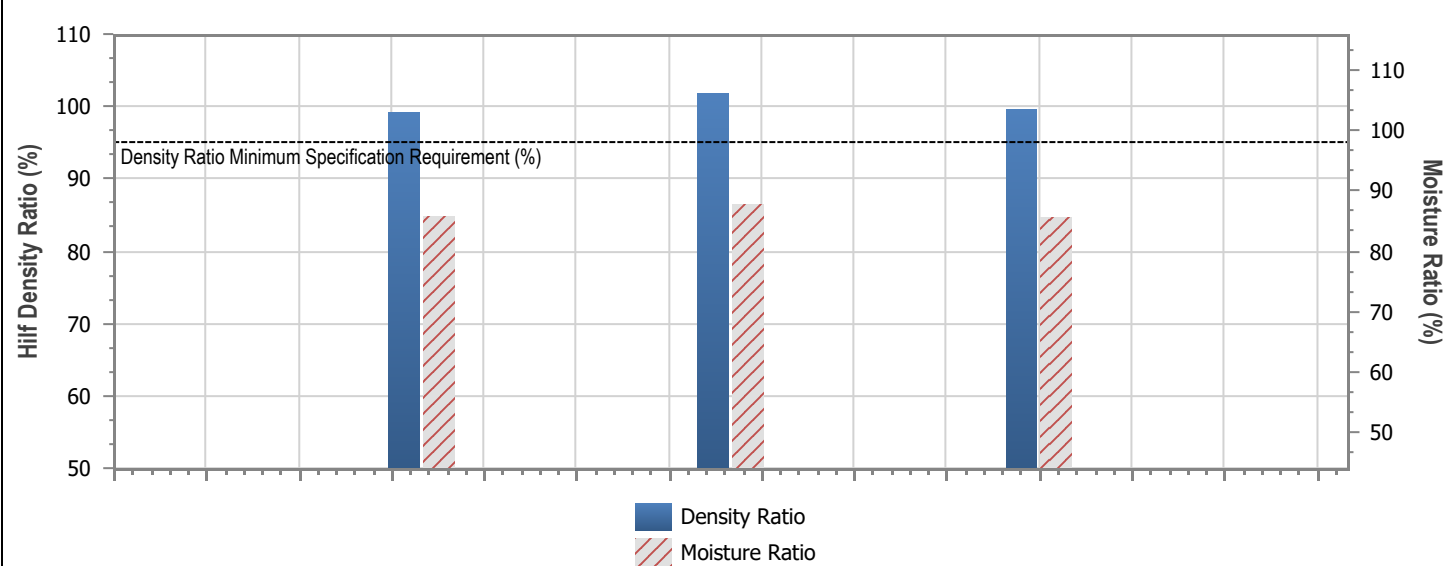
Client:	Newnham Earthmoving Pty Ltd	Report Number:	14874/R/287344-1
Client Address:	45A Murphy Street, ROMSEY	Project Number:	14874/P/2440
Project:	King Street	Lot Number:	
Location:	Wallan	Internal Test Request:	14874/T/131281
Supplied To:	n/a	Client Reference/s:	Level 1 Testing- 12/4/22
Area Description:	Refer to MAP	Report Date / Page:	19/04/2022 Page 2 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		

LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	85.6	87.7	86.4	1.160
Half Density Ratio (%)	99.2	101.8	100.2	1.400

Lot Number: -
Mean Moisture Ratio (%): 86.4
Mean Density Ratio (%): 100.2

Remarks	NATA accreditation does not cover the performance of AS1289.1.4.2.
---------	--

 Accredited for compliance with ISO/IEC 17025 – Testing Accreditation Number: 1986 Corporate Site Number: 14874		 Approved Signatory: Daniel Boyd Form ID: W5ASMRRepSum Rev 4
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Site Location Sketch

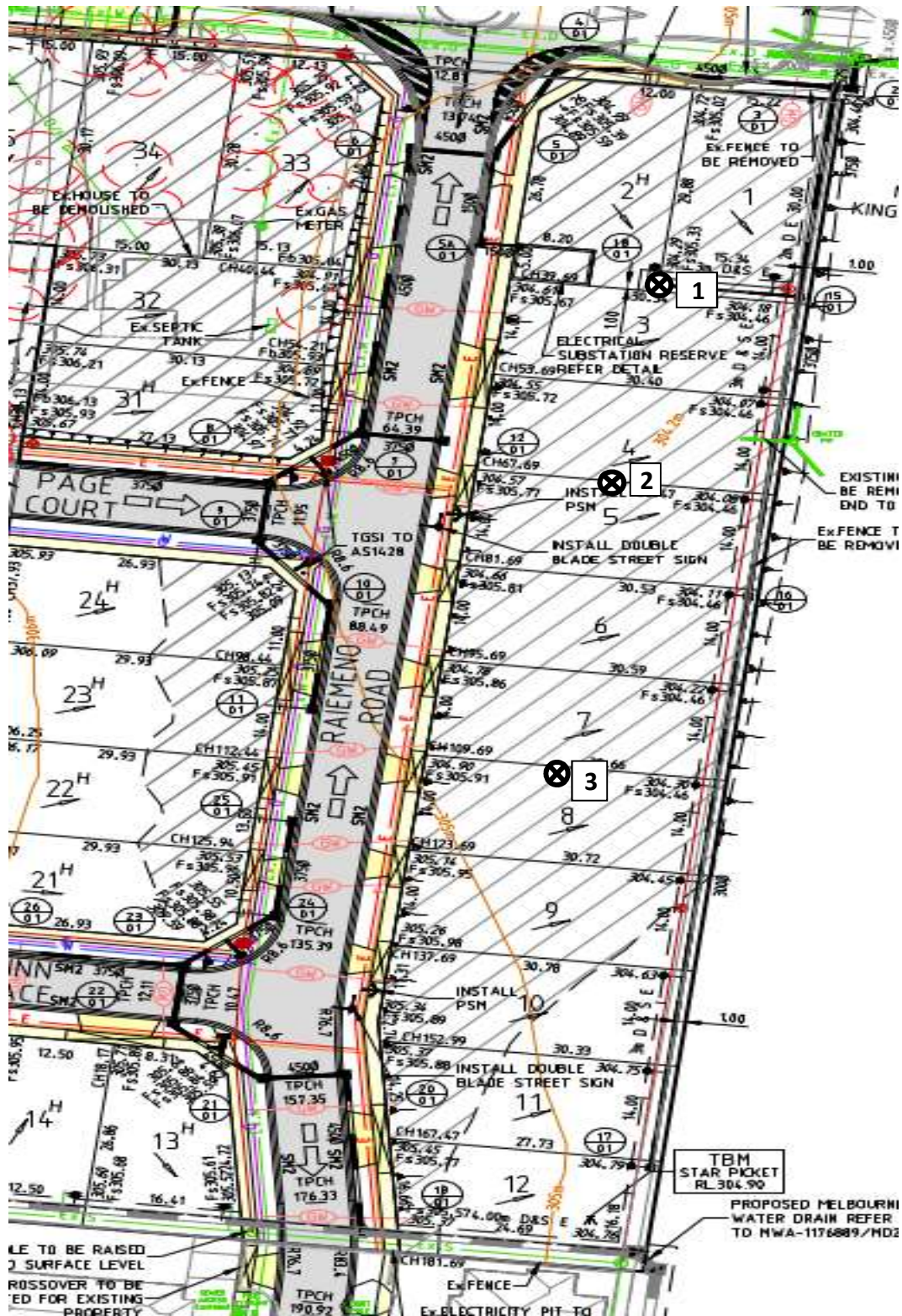
Test site locations only
NOT TO SCALE

Client: Newnham Earthmoving

Job No. P2440

Test Request No. T/17508

Date Tested: 19/04/2024



LOT REPORT - WET DENSITY RATIO

Client:	Newnham Earthmoving Pty Ltd	Report Number:	14874/R/392342-1
Client Address:	45A Murphy Street, ROMSEY	Project Number:	14874/P/2440
Project:	King Street	Lot Number:	
Location:	Wallan	Internal Test Request:	14874/T/174508
Component:	Allotment Fill	Client Reference/s:	Level 1 Testing - 19/04/24
Area Description:	Refer to Map	Report Date / Page:	24/04/2024 Page 1 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/1203252	14874/S/1203253	14874/S/1203254	
ID / Client ID	-	-	-	
Lot Number	-	-	-	
Date / Time Tested	19/04/2024 08:00	19/04/2024 08:00	19/04/2024 08:00	
Material Source	Onsite	Onsite	Onsite	
Material Type	Allotment Fill	Allotment Fill	Allotment Fill	
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	
Depths: Test / Nom / Actual (mm)	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	
Standard or Modified	Standard	Standard	Standard	
Layer Number	1	2	FSL	
Location Number	1	2	3	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	6	0	0	
Compaction Sample Number	14874/S/1203252	14874/S/1203253	14874/S/1203254	
Sample Description	Allotment Fill	Allotment Fill	Allotment Fill	
Moisture Test Results:				
Field Moisture Content (%)	17.9	12.9	19.7	
Adjusted / Moist. Variation (%)	-0.5	2.0	0.5	
Optimum Moisture Content (%)	17.5	15.0	20.0	
Moisture Variation from OMC	(Wetter than OMC)	(Drier than OMC)	(Drier than OMC)	
Moisture Ratio (%)	103.5	87.0	97.5	
Density Test Results:				
Field Wet Density (t/m³)	2.12	1.95	2.08	
Adj/Peak Conv Wet Density (t/m³)	2.13	2.00	2.00	
Density Ratio Required (%)	95	95	95	
Hilf Density Ratio (%)	99.5	97.5	104.0	

Remarks	NATA accreditation does not cover the performance of AS1289.1.4.2.
---------	--

 Accredited for compliance with ISO/IEC 17025 – Testing Accreditation Number: 1986 Corporate Site Number: 14874		 Approved Signatory: Nawin Dahal Form ID: W5ASMRRepSum Rev 4
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LOT REPORT - WET DENSITY RATIO

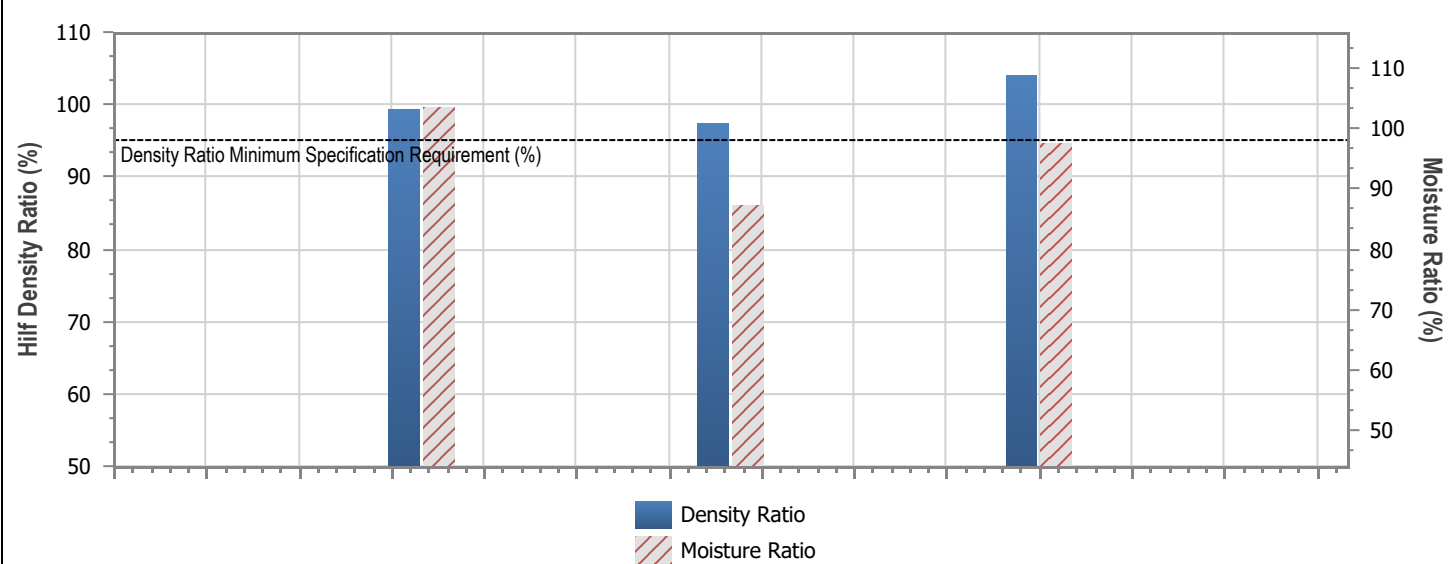
Client:	Newnham Earthmoving Pty Ltd	Report Number:	14874/R/392342-1
Client Address:	45A Murphy Street, ROMSEY	Project Number:	14874/P/2440
Project:	King Street	Lot Number:	
Location:	Wallan	Internal Test Request:	14874/T/174508
Component:	Allotment Fill	Client Reference/s:	Level 1 Testing - 19/04/24
Area Description:	Refer to Map	Report Date / Page:	24/04/2024 Page 2 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		

LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	87.2	103.5	96.1	8.244
Half Density Ratio (%)	97.3	103.9	100.2	3.405

Lot Number: -
Mean Moisture Ratio (%): 96.1
Mean Density Ratio (%): 100.2

Remarks	NATA accreditation does not cover the performance of AS1289.1.4.2.
---------	--

 Accredited for compliance with ISO/IEC 17025 – Testing Accreditation Number: 1986 Corporate Site Number: 14874		 Approved Signatory: Nawin Dahal Form ID: W5ASMRRepSum Rev 4
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Appendix C

Site Photos

Figure 1: Level 1 Stripping Inspection - 22/03/2024



Figure 2: Level 1 Stripping Inspection - 22/03/2024



Figure 3: Level 1 Stripping Inspection - 22/03/2024



Figure 4: Level 1 Existing material onsite - 22/03/2024





Appendix D

Site Visit Records

SITE VISIT RECORD - EARTHWORKS



**Construction
Sciences**

CLIENT: NEWHAMS EARTHMOVING

PROJECT NO: P2440

PROJECT: KING STREET - STAGE 1

DATE: 22/3/22

LOCATION: WALLAN

BY: D. BOYO

REQUESTED BY: W. CLARE

Item 1: EARTHWORKS/PAVEMENT/STRIPPING PROGRESS

CLIENT REQUEST A STRIPPING INSPECTION OF EARTHWORKS FILL AREA. FILL AREA CONSISTS OF LOT 2, LOT 31 - 37 & LOT 21 - 24.

THERE IS APPROXIMATELY 3000M³ OF FILL TO BE PLACED IN FILL AREA. WHICH WILL BE AROUND 500MM THICKNESS AT THE LOWEST POINT.

MATERIAL PROPOSED TO BE USED ON SITE IS A COMBINATION OF MATERIAL SOURCED ON SITE FROM SEWER SPOIL. THIS MATERIAL IS A MEDIUM/LOW PLASTIC SILTY CLAY WITH GRAVEL. AND IMPORTED MATERIAL FROM HIDDEN VALLEY WHICH IS OF SIMILAR PROPERTIES. A SAMPLE OF THIS INSITU MATERIAL WAS COLLECTED AND OTHER SAMPLE OF THE IMPORTED MATERIAL WILL NEED TO BE TESTED ONCE IMPORTING OF MATERIAL COMMENCES.

SITE WAS STRIPPED OF ALL ORGANICS AND BASE WAS COMPACTED WITH PADFOOT ROLLER. BASE LOOKED WELL COMPACTED WITH NO SOFT SPOTS NOTICED.

Weather Conditions: FINE

Item 2: SITE PLANT OPERATIONAL

1 X EXCAVATOR

1 X PADFOOT ROLLER

Item 3: PHOTO LOG (Photos should be date imprinted) CAMERA:

SEE COMPLY DOCUMENTS.

Item 4: MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
1	PI	INSITU MATERIAL	

Item 8: FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 14:00

(am/pm)

Time off Site: 15:00

(am/pm)

Located across Australia and New Zealand

QLD

Airlie
Bowen
Brisbane (Albion)
Brisbane (Beenleigh)
Brisbane (Brendale)
Brisbane (Kingston)
Brisbane (Petrie)
Cairns
Emerald
Gladstone
Gold Coast
Mackay
Moranbah
Rockhampton
Sunshine Coast
Toowoomba
Townsville

NSW

Ballina
Coffs Harbour
Marulan (Lynwood)
Newcastle
Sydney (Glendenning)
Sydney (St Peters)
Taree
Wollongong

VIC

Ararat
Bendigo
Echuca
Melbourne (Chadstone)
Melbourne (Pakenham)
Melbourne (Oaklands Junction)
Melbourne (Sunshine West)
Traralgon

WA

Bunbury
Newman
Perth
Port Hedland

SA

Adelaide
Port Augusta

NT

Darwin

ACT

Canberra

NZ

Wellington

