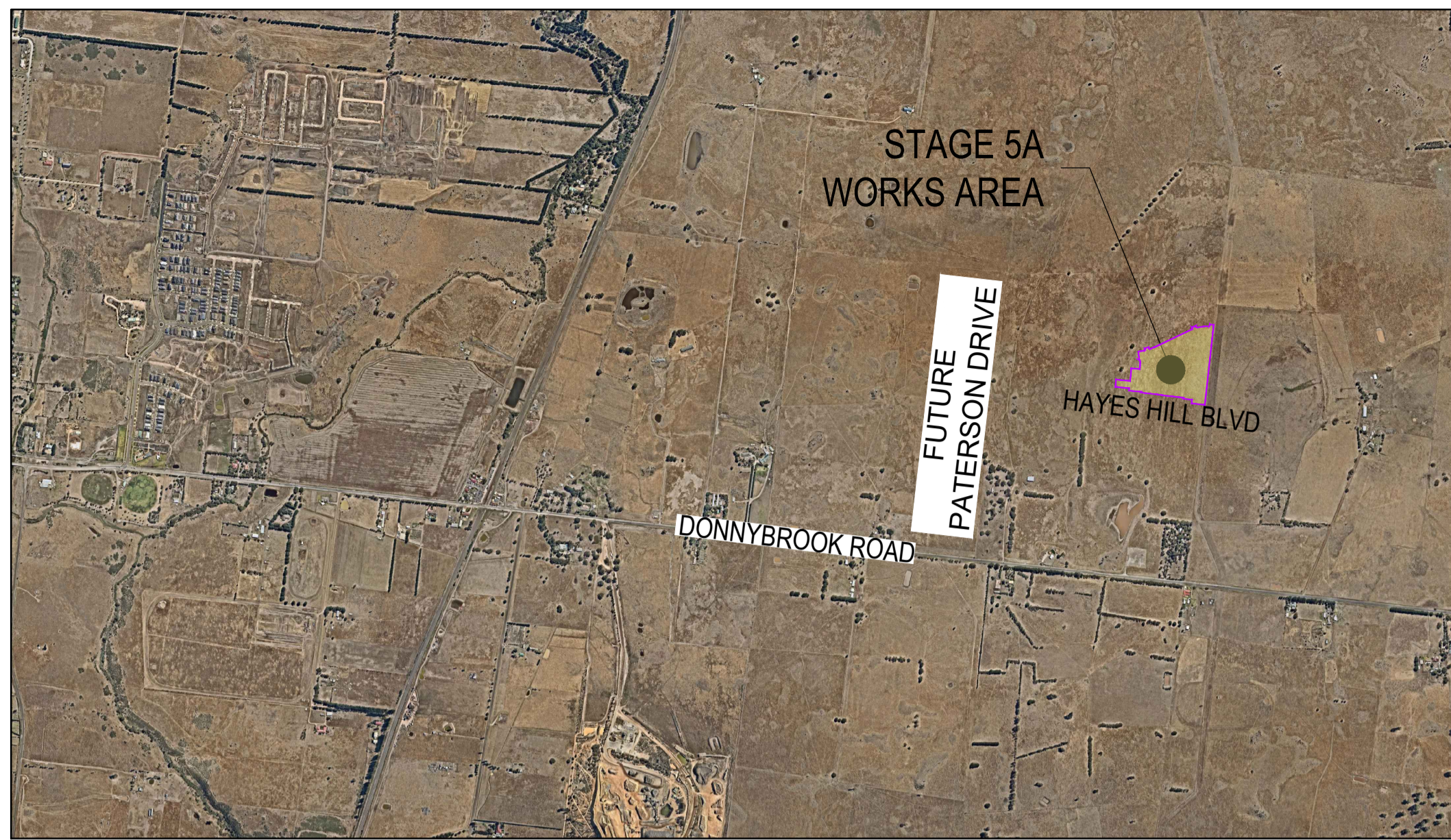


# Olivine Estate

## Stage 5A



### GENERAL NOTES (WHITTLESEA CITY COUNCIL)

- THE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE VPA MANUAL AND SPECIFICATIONS. WORKS TO BE CARRIED OUT TO THE SATISFACTION OF COUNCIL'S SUPERVISING OFFICER.
- THE CONTRACTOR IS RESPONSIBLE FOR SAFETY OF WORK ON SITE IN ACCORDANCE WITH APPROPRIATE LEGISLATION. THEY SHALL ERECT AND MAINTAIN ALL SHORING, PLANKING AND STRUTTING, DEWATERING DEVICES, BARRICADES, SIGNS, LIGHTS, ETC. NECESSARY TO KEEP WORKS IN A SAFE AND STABLE CONDITION, AND TO PROTECT THE PUBLIC FROM HAZARDS ASSOCIATED WITH THE WORKS.
- THE CONTRACTOR SHALL:
  - COMPLY WITH THE SAFETY REQUIREMENTS OF THE MINES ACT, GENERAL REGULATIONS AND STATUTORY RULES, AND THE MINES (TRENCHES) REGULATIONS 1982.
  - NOTIFY THE OCCUPATIONAL HEALTH AND SAFETY AUTHORITY OF HIS INTENTION TO COMMENCE TRENCHING OPERATIONS WHERE TRENCHES ARE 1.5 METRES OR DEEPER.
  - ENSURE THAT THE MINE MANAGER OR HIS DEPUTY AS REQUIRED BY THE REGULATIONS IS IN ATTENDANCE WHEN TRENCHING OPERATIONS ARE IN PROGRESS.
- THE CONTRACTOR IS TO NOTIFY COUNCIL AND ALL SERVICE AUTHORITIES SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- THE LOCATION OF EXISTING SERVICES SHOULD BE DETERMINED BY THE CONTRACTOR PRIOR TO COMMENCING ANY EXCAVATION BY CONTACTING ALL RELEVANT SERVICE AUTHORITIES. ANY EXISTING SERVICES SHOWN ON THE DRAWINGS ARE OFFERED AS A GUIDE ONLY AND ARE NOT GUARANTEED AS CORRECT.
- REDGUM TREES MARKED ON THE APPROVED PLANS FOR REMOVAL MUST BE REMOVED IN ACCORDANCE WITH COUNCIL'S PLANNING PERMIT. NO EXCAVATION SHALL BE CARRIED OUT WITHIN 5.0m OF ANY EXISTING TREE WITHOUT WRITTEN APPROVAL FROM COUNCIL'S SUPERVISING OFFICER.
- ALL ROAD CHAINAGES ARE MEASURED ALONG THE ROAD CENTRELINE EXCEPT KERB RETURNS AND COURTHEADS, WHERE LIP OF KERB CHAINAGES ARE SPECIFIED. ALL DIMENSIONS AND RADII ARE GIVEN TO THE LIP OF KERB. DO NOT SCALE OFF THESE DRAWINGS, WRITTEN DIMENSIONS ONLY SHALL BE USED.
- ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM.
- WHEN ENGAGED IN BLASTING OPERATIONS THE CONTRACTOR SHALL NOT BLAST WITHIN 4.5m OF AN EXISTING LINE OF WATER, GAS OR SEWER PIPES OR WITHIN 15m OF ANY COMPLETED PART OF THE WORKS WITHOUT THE CONSENT OF THE SUPERINTENDENT. BLASTING REQUIRES A BLASTING PERMIT FROM COUNCIL.
- ALL EXCAVATED OR FILLED AREAS OUTSIDE THE ROAD RESERVES TO BE STRIPPED OF TOPSOIL AND STOCKPILED PRIOR TO EARTHWORKS COMMENCING. THESE AREAS SHALL BE SURFACED WITH A 100mm MINIMUM TO 200mm MAXIMUM LAYER OF TOPSOIL AS SPECIFIED.
- NO TOPSOIL TO BE REMOVED FROM SITE.
- NO FILL OR STOCKPILING OF MATERIAL IS TO BE PLACED ON ANY RESERVE UNLESS DIRECTED BY THE SUPERINTENDENT.
- FILLING ON ALLOTMENTS AND UNDER ROAD PAVEMENTS TO HAVE LEVEL 1 SUPERVISION IN ACCORDANCE WITH AS3798-1996. INDIVIDUAL LOT CERTIFICATES ARE TO BE PROVIDED TO THE SUPERINTENDENT.
- FILLING UNDER DRIVEWAYS AND FOOTPATH IS TO BE APPROVED BY THE SUPERINTENDENT AND CONSTRUCTED IN LAYERS 150mm DEPTH. COMPACTION ACHIEVING 98% AUSTRALIAN STANDARD DENSITY.
- CUT AND FILL BATTERS ARE NOT TO EXCEED 1 in 6 UNLESS SHOWN OTHERWISE.
- ALLOTMENTS TO BE GRADED TO ENSURE A MINIMUM GRADE OF 1 in 150.
- ALL DRAINAGE PIPES UP TO AND INCLUDING 150mm IN DIAMETER SHALL BE RUBBER RING JOINTED. PIPES ABOVE THIS SIZE MUST BE FLUSH JOINTED WITH EXTERNAL SEALING BANDS.
- ALL DRAINAGE TRENCHES UNDER ROAD PAVEMENTS, KERB & CHANNEL, PARKING BAYS, DRIVEWAYS, FOOTPATHS AND BEHIND KERBS & CHANNEL SHALL BE BACKFILLED WITH CRUSHED ROCK AS SPECIFIED.
- ALL PITS GREATER THAN OR EQUAL TO 900mm DEPTH TO BE PROVIDED WITH STEP IRONS IN ACCORDANCE WITH SD1041 AND COUNCIL STANDARD DRAWING EDMC 609.
- PROPERTY INLETS AS PER WHITTLESEA CITY COUNCIL STANDARD DRAWING EDMC 701-704 AND ARE TO BE LOCATED 1.0m FROM LOW SIDE BOUNDARY UNLESS SHOWN OTHERWISE.
- ALL HOUSE DRAIN CONNECTIONS ARE TO BE LOCATED NO CLOSER THAN 7.0m FROM THE SIDE BOUNDARY OR FROM EASEMENT ALONG THE SIDE BOUNDARY UNLESS NOTED OTHERWISE AND CONNECTED DIRECTLY TO UNDERGROUND DRAIN OR PIT. HOUSE DRAIN LOCATION TO BE MARKED (50mm STAMPED IMPRESSION) ON THE TOP OF THE KERB. SUBSOIL DRAINS SHALL BE INSTALLED BEHIND OR BELOW ALL KERB AND CHANNEL AS PER STANDARD DRAWING EDMC 202.
- CONDUIT LOCATIONS ARE SUBJECT TO AMENDMENT AND CONDUITS SHALL NOT BE LAID UNTIL WRITTEN APPROVAL IS GIVEN BY THE SUPERINTENDENT. CONDUITS TO BE EXTENDED TO PROPERTY LINE AND ARE REQUIRED WHEN CONNECTIONS EXTEND UNDER ROAD PAVEMENT, FOOTPATH OR OTHER INFRASTRUCTURE. BOTH KERBS ARE TO BE MARKED WITH THE LETTERS H (PROPERTY STORMWATER CONNECTION), E (ELECTRICAL), G (GAS), T (TELEPHONE), W (WATER) AND C (COUNCIL COMMUNICATION) AS PER STANDARD DRAWING EDMC 303.
- ALL SERVICING TRENCHES UNDER ROADS, DRIVEWAYS, FOOTPATHS ETC. ARE TO BE BACKFILLED & COMPACTED WITH F.C.R. IN THE CASE OF TRENCHES UNDER ROADS WHERE BACKFILLING HAS NOT ACHIEVED THE SPECIFIED COMPACTION OR SHOWS EXCESSIVE MOVEMENT UNDER PROFFROLLING, THE BACKFILLING SHALL BE REMOVED AND REPLACED WITH 2% STABILISED COMPACTED F.C.R. ALL SERVICES ARE TO BE PLACED PRIOR TO THE CAPPING LAYER.
- NO TELSTRA PITS ARE TO BE LOCATED IN THE FOOTPATH.
- VEHICULAR CROSSINGS TO BE LOCATED CLEAR OF DRAINAGE PITS, SEWER MAINTENANCE HOLES AND EXISTING TREES. VEHICLE CROSSINGS TO BE 1.5m FROM PROPERTY BOUNDARY OR EASEMENT UNLESS OTHERWISE SHOWN. VEHICULAR CROSSINGS TO BE CONSTRUCTED AS PER WHITTLESEA CITY COUNCIL'S SPECIFICATIONS AND EDMC 501 TO 503.
- ALL PEDESTRIAN CROSSING THROUGH SPLITTER ISLANDS TO BE IN ACCORDANCE WITH SD606.
- ALL STREET SIGNS TO BE IN ACCORDANCE WITH SD812. STREET SIGNS TO BE ATTACHED TO LIGHT POLES USING 'SINGLE DIRECTION COLLAR' OR '90° RIGHT ANGLE COLLAR' UNLESS SHOWN OTHERWISE.
- ALL PAVEMENT MARKINGS AND TRAFFIC SIGNS SHOULD BE TO AS1742.2 AND AS1742.1 STANDARD RESPECTIVELY. TEMPORARY LINEMARKING TO BE PLACED DURING MAINTENANCE PERIOD PRIOR TO PLACEMENT OF WEARING COURSE. FINAL LINEMARKING TO BE LONG LIFE ROAD MARKING WITH LONGITUDINAL LINES IN THERMOPLASTIC AND TRANSVERSE MARKINGS IN COLD APPLIED.
- THE CAPPING LAYER MUST BE DEMONSTRATED THROUGH TESTING THAT ITS PROPERTIES (CBR, PERMEABILITY, ETC.) SATISFY LIMITS AS OUTLINED IN THE TECHNICAL SPECIFICATION TABLE 20.3.5B WITH A MINIMUM MODULUS OF 100MPa. UPON COMPLETION OF CONSTRUCTION THE WHOLE SITE SHALL BE CLEANED UP, GRADED, ALL RUBBISH REMOVED AND LEFT IN A CLEAN AND TIDY CONDITION TO THE SATISFACTION OF THE SUPERINTENDENT.
- ALL FOOTPATHS & SHARED PATHS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH EDMC 401.

### Drawing Index

- 1700E-05A-01 Cover Plan
- 1700E-05A-02 Layout Plan - 1
- 1700E-05A-03 Layout Plan - 2
- 1700E-05A-04 Typical Cross Sections
- 1700E-05A-05 Longitudinal Sections - 1
- 1700E-05A-06 Longitudinal Sections - 2
- 1700E-05A-07 Longitudinal Sections - 3
- 1700E-05A-08 Longitudinal Sections - 4
- 1700E-05A-09 Cross Sections: Olivine Boulevard
- 1700E-05A-10 Cross Sections: Grammar Avenue
- 1700E-05A-11 Cross Sections: Faculty Avenue Ch 133.85 - Ch. 227.99
- 1700E-05A-12 Cross Sections: Faculty Avenue Ch 242.95 - Ch. 310.10
- 1700E-05A-13 Cross Sections: Faculty Avenue Ch 333.70 - Ch. 399.75
- 1700E-05A-14 Cross Sections: Foundation Avenue Ch 54.00 - Ch. 124.30
- 1700E-05A-15 Cross Sections: Foundation Ave & Institute Dr (Lane) Ch 150.56 - 169.53 & Ch 18.28 - Ch 65.08
- 1700E-05A-16 Cross Sections: Institute Drive Ch - 193.34 - Ch 292.35
- 1700E-05A-17 Cross Sections: Institute Drive Ch - 306.35 - Ch 373.52
- 1700E-05A-18 Cross Sections: Road D, H & A Ch - 17.92 - 20.77, 15.21 - 20.21, 17.52 - 20.41
- 1700E-05A-19 Cross Sections: Hayes Hill Boulevard Ch - 562.72 - Ch 619.74
- 1700E-05A-20 Cross Sections: Hayes Hill Boulevard Ch - 635.74 - Ch 674.74
- 1700E-05A-21 Cross Sections: Hayes Hill Boulevard Ch - 722.74 - Ch 766.51
- 1700E-05A-22 Cross Sections: Hayes Hill Boulevard Ch - 791.07 - Ch 829.16
- 1700E-05A-23 Cross Sections: Federation Avenue
- 1700E-05A-24 Intersection Detail Plan & Lip Profiles - 1
- 1700E-05A-25 Intersection Detail Plan & Lip Profiles - 2
- 1700E-05A-26 Intersection Detail Plan & Lip Profiles - 3
- 1700E-05A-27 Intersection Detail Plan & Lip Profiles - 4
- 1700E-05A-28 Intersection Detail Plan & Lip Profiles - 5
- 1700E-05A-29 Drainage Longitudinal Sections - 1
- 1700E-05A-30 Drainage Longitudinal Sections - 2
- 1700E-05A-31 Drainage Longitudinal Sections - 3
- 1700E-05A-32 Drainage Longitudinal Sections - 4
- 1700E-05A-33 Drainage Longitudinal Sections - 5
- 1700E-05A-34 Drainage Longitudinal Sections - 6
- 1700E-05A-35 Drainage Longitudinal Sections - 7
- 1700E-05A-36 Pit Schedule
- 1700E-05A-37 Signs & Linemarking Plan - 1
- 1700E-05A-38 Signs & Linemarking Plan - 2
- 1700E-05A-39 General Note & Pavements Details
- 1700E-05A-40 Concrete Jointing Details
- 1700E-05A-41 Earthworks Plan - 1
- 1700E-05A-42 Earthworks Plan - 2
- 1700E-05A-43 Retaining Wall Longitudinal Sections - 1
- 1700E-05A-44 Retaining Wall Longitudinal Sections - 2
- 1700E-05A-85 Safety in Design

ROAD NAME	SERVICES OFFSET SCHEDULE									
	GAS		NON-DRINKING WATER		DRINKING WATER		ELECTRICITY		NBN	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
HAYES HILL BOULEVARD	NORTH	2.10	NORTH	2.60	NORTH	3.10	SOUTH	2.35	SOUTH	1.85
OLIVINE BOULEVARD	EAST	2.10	EAST	2.60	EAST	3.10	WEST	4.30	WEST	3.60
GRAMMAR AVENUE	WEST	2.10	WEST	2.50	WEST	3.00	EAST	2.35	EAST	1.85
FACULTY AVENUE	WEST	2.10	WEST	2.50	WEST	3.00	EAST	2.35	EAST	1.85
FOUNDATION AVENUE	EAST	2.10	EAST	2.50	EAST	3.00	WEST	2.35	WEST	1.85
FACULTY AVENUE	NORTH	2.10	NORTH	2.50	NORTH	3.00	SOUTH	2.35	SOUTH	1.85
INSTITUTE DRIVE (ADJACENT GAS EASEMENT)	WEST	2.10	WEST	2.50	WEST	3.00	EAST	1.50	EAST	0.70
INSTITUTE DRIVE (LANE)	WEST	1.80	WEST	2.20	WEST	2.70	WEST	3.70	WEST	3.20
ROAD D	EAST	2.10	EAST	2.50	EAST	3.00	WEST	2.35	WEST	1.85
ROAD A	EAST	2.10	EAST	2.50	EAST	3.00	WEST	2.35	WEST	1.85
ROAD H	WEST	2.10	WEST	2.50	WEST	3.00	EAST	1.50	EAST	0.70
FEDERATION AVENUE	WEST	2.10	WEST	2.10	WEST	3.00	EAST	2.35	EAST	1.85

ROAD NAME	ROAD LAYOUT TABLE							
	RESERVE WIDTH (m)	ROAD WIDTH (m)			KERB TYPE		VERGE WIDTH (m)	
		LIP to LIP	INV to INV	BACK to BACK	NTH/WEST	STH/EAST	NTH/WEST	STH/EAST
HAYES HILL BOULEVARD	30.00	11.10	12.00	12.30	B2	B2	6.60	11.40
OLIVINE BOULEVARD	22.00	5.10	6.00	6.30	B2	B2	6.45	4.95
GRAMMAR AVENUE	16.00	6.40	7.30	7.60	B2	B2	4.35	4.35
FACULTY AVENUE	16.00	6.40	7.30	7.60	B2	B2	4.35	4.35
FOUNDATION AVENUE	16.00	6.40	7.30	7.60	B2	B2	4.35	4.35
FACULTY AVENUE	16.00	6.40	7.30	7.60	B2	B2	4.35	4.35
INSTITUTE DRIVE (ADJACENT GAS EASEMENT)	15.00	6.40	7.30	7.60	B2	B2	4.35	3.35
INSTITUTE DRIVE (LANE)	12.00	4.00	-	-	-	-	4.90	3.10
ROAD D	16.00	6.40	7.30	7.60	B2	B2	4.35	4.35
ROAD A	16.00	6.40	7.30	7.60	B2	B2	4.35	4.35
ROAD H	15.00	6.40	7.30	7.60	B2	B2	4.35	3.35
FEDERATION AVENUE	16.00	6.40	7.30	7.60	B2	B2	4.35	4.35

**WARNING**  
SAFETY MEASURES REQUIRED  
Please note there are risks attached to the construction of this project, and any ongoing maintenance of structures. Consider the safety of all. For potential risks, consequences and controls refer to Safety in Design Risk Register SID P4.E6: 1700E-05A-01  
**ASSESS THE RISK - STAY SAFE**

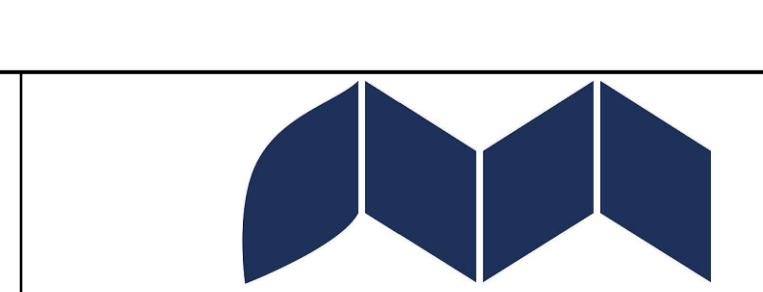
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REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
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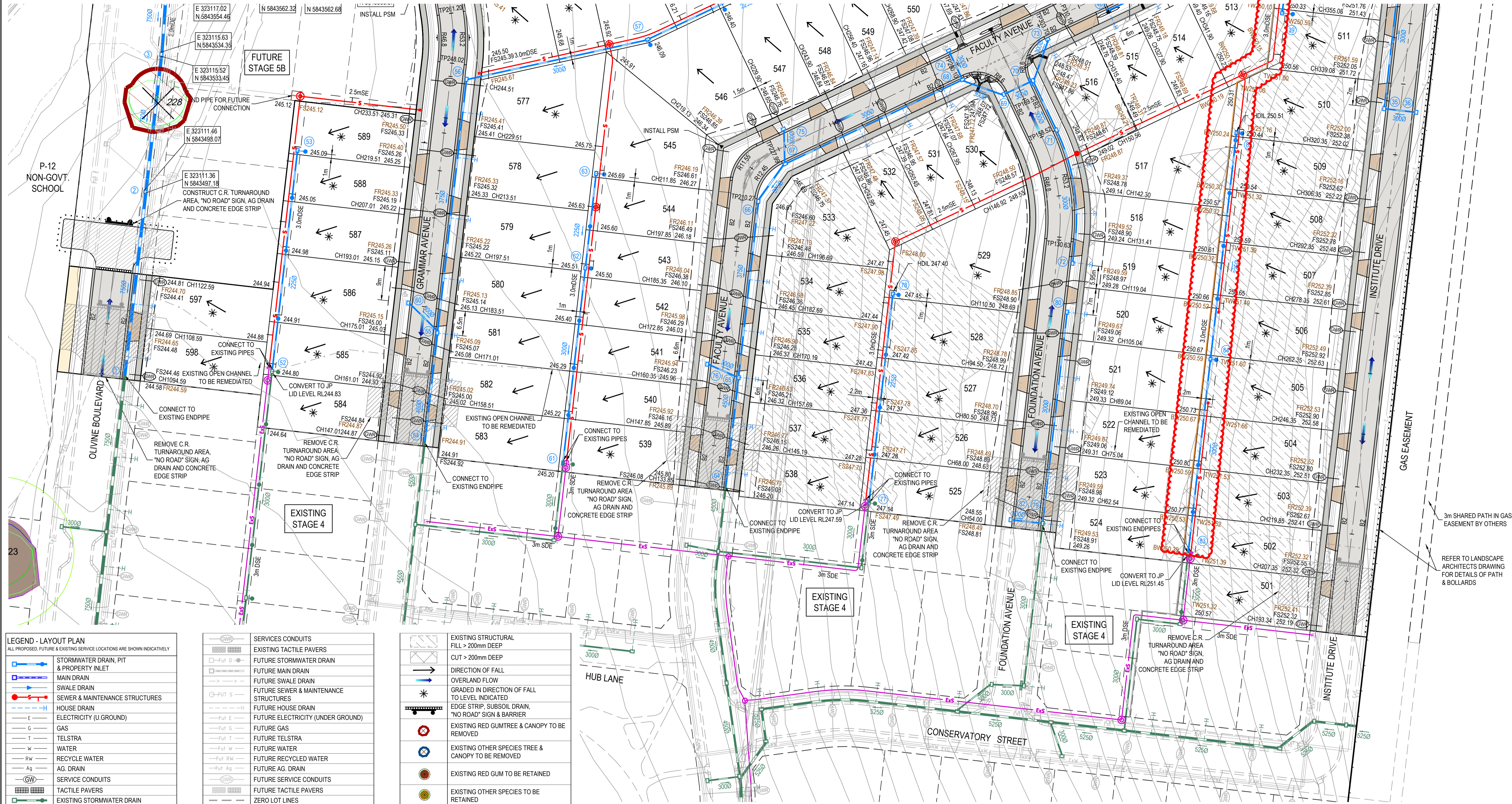


Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Cover Plan

**SUBJECT TO APPROVAL**

MELBOURNE REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-01	01 of 45	A





**LEGEND - LAYOUT PLAN**  
ALL PROPOSED, FUTURE & EXISTING SERVICE LOCATIONS ARE SHOWN INDICATIVELY

	STORMWATER DRAIN, PIT & PROPERTY INLET
	MAIN DRAIN
	SWALE DRAIN
	SEWER & MAINTENANCE STRUCTURES
	HOUSE DRAIN
	ELECTRICITY (U.GROUND)
	GAS
	TELSTRA
	WATER
	RECYCLE WATER
	AG DRAIN
	SERVICE CONDUITS
	TACTILE PAVERS
	EXISTING STORMWATER DRAIN
	EXISTING MAIN DRAIN
	EXISTING SWALE DRAIN
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	EXISTING HOUSE DRAIN
	EXISTING ELECTRICITY (UNDER GROUND)
	EXISTING GAS
	EXISTING TELSTRA
	EXISTING WATER
	EXISTING RECYCLED WATER
	EXISTING AG DRAIN

	SERVICES CONDUITS
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	FUTURE WATER
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	FUTURE AG DRAIN
	FUTURE SERVICE CONDUITS
	FUTURE TACTILE PAVERS
	ZERO LOT LINES
	141.34 EXISTING SURFACE LEVEL
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	FR157.40 FINISHED RIDGE LINE LEVEL
	CH270.00 CHAINAGE
	TW159.60 TOP OF RETAINING WALL LEVEL
	BW159.00 BOTTOM OF RETAINING WALL LEVEL
	EXISTING RETAINING WALL
	RETAINING WALL
	FUTURE RETAINING WALL
	STRUCTURAL FILL > 200mm DEEP

	EXISTING STRUCTURAL FILL > 200mm DEEP
	CUT > 200mm DEEP
	DIRECTION OF FALL
	OVERLAND FLOW
	GRADED IN DIRECTION OF FALL TO LEVEL INDICATED
	EDGE STRIP, SUBSOIL DRAIN, 'NO ROAD' SIGN & BARRIER
	EXISTING RED GUMTREE & CANOPY TO BE REMOVED
	EXISTING OTHER SPECIES TREE & CANOPY TO BE REMOVED
	EXISTING RED GUM TO BE RETAINED
	EXISTING OTHER SPECIES TO BE RETAINED
	PERMANENT SURVEY MARK
	TEMPORARY BENCH MARK
	PROPOSED DRIVEWAY & FOOTPATH
	PROPOSED SHARED FOOTPATH
	PROPOSED ROAD PAVING

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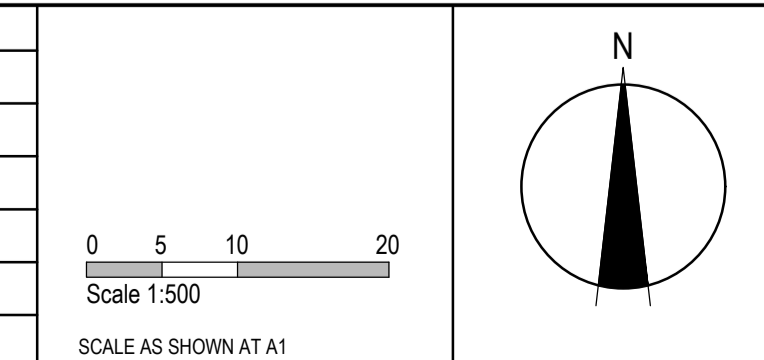
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 Quality Management ISO 9001 Global-Mark.com.au	 O&M Management AS/NZS 8001 Global-Mark.com.au	 Environmental Management ISO 14001 Global-Mark.com.au
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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
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**mirvac**

Olivine Estate - Stage 5A Whittlesea City Council Road and Drainage Layout Plan - 1	
MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-02</b>
SHEET No. <b>02 of 45</b>	REVISION <b>A</b>



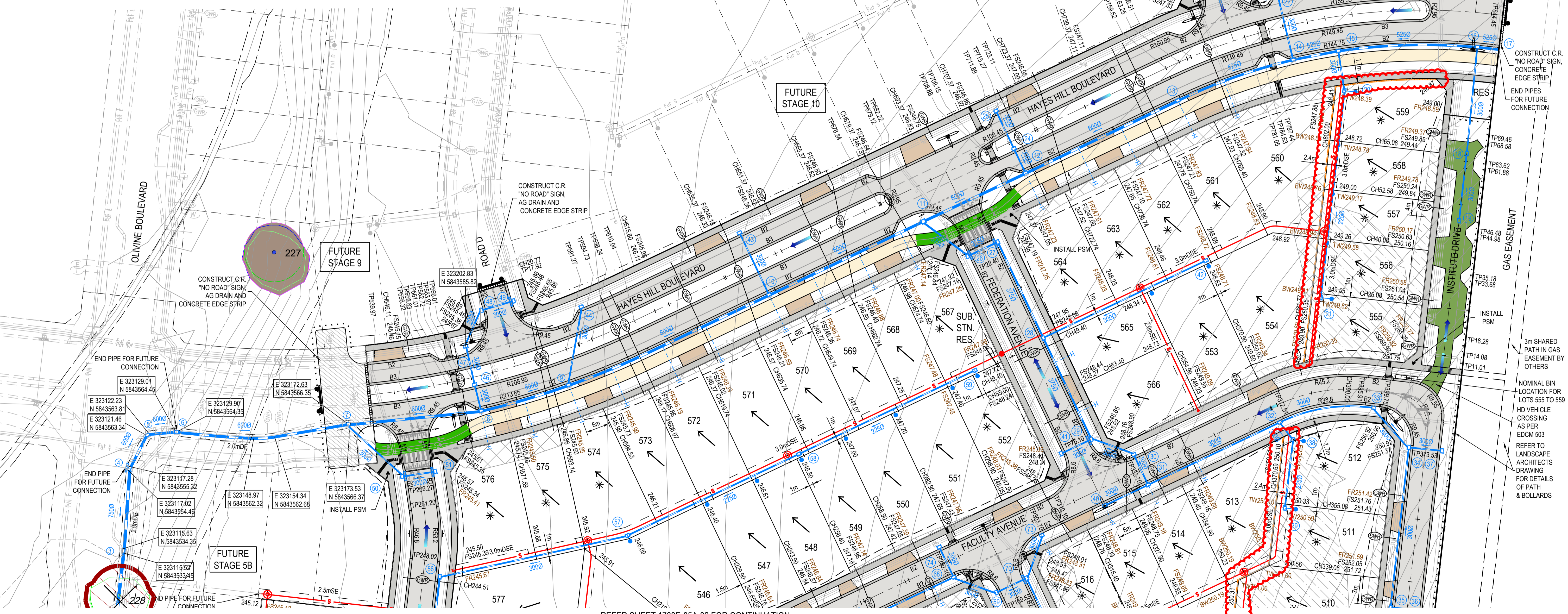
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	EXISTING HOUSE DRAIN
	EXISTING ELECTRICITY (UNDER GROUND)
	EXISTING GAS
	EXISTING TELSTRA
	EXISTING WATER
	EXISTING RECYCLED WATER
	EXISTING AG. DRAIN

	SERVICE CONDUITS
	EXISTING TACTILE PAVERS
	FUTURE STORMWATER DRAIN
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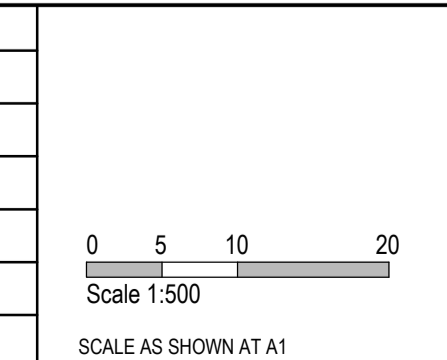


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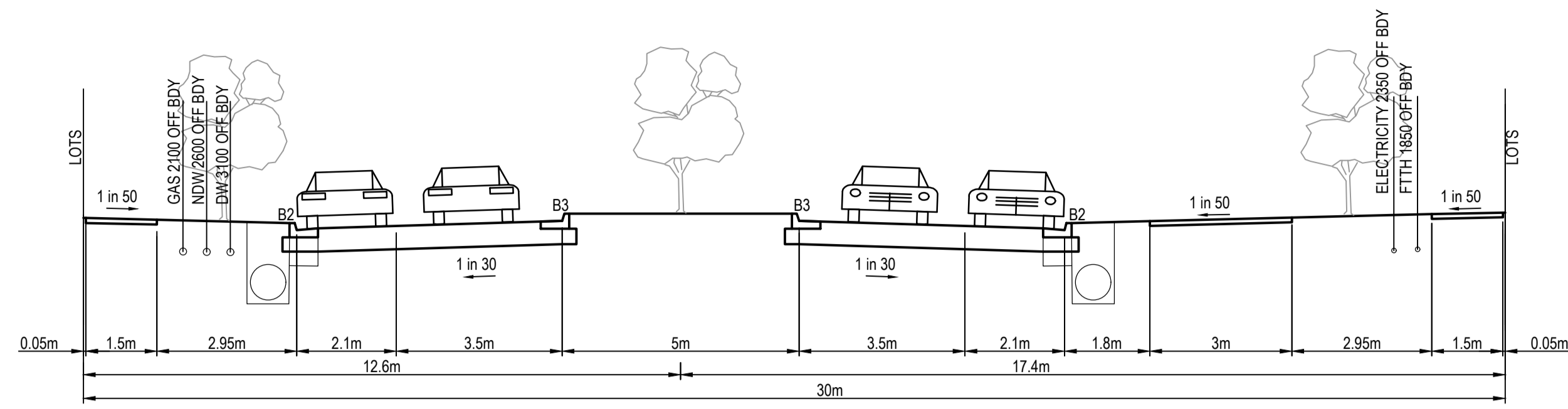
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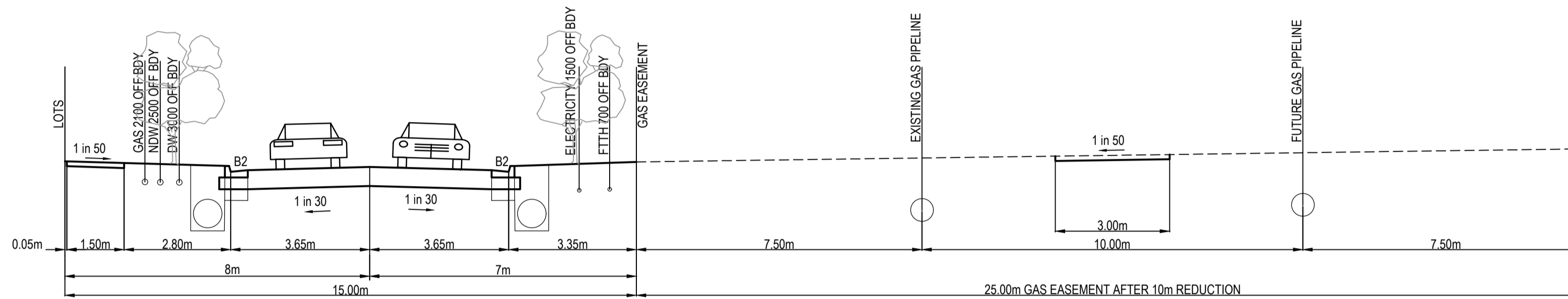
Oliveville Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Layout Plan - 2

MELWAYS REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-03	03 of 45	A

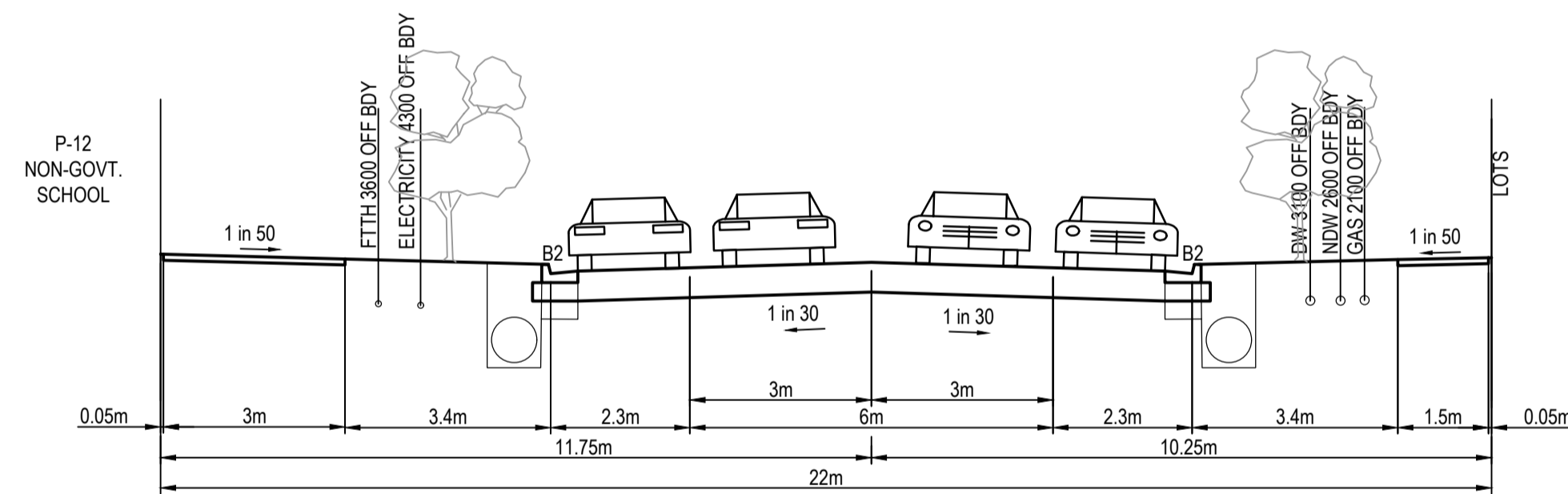




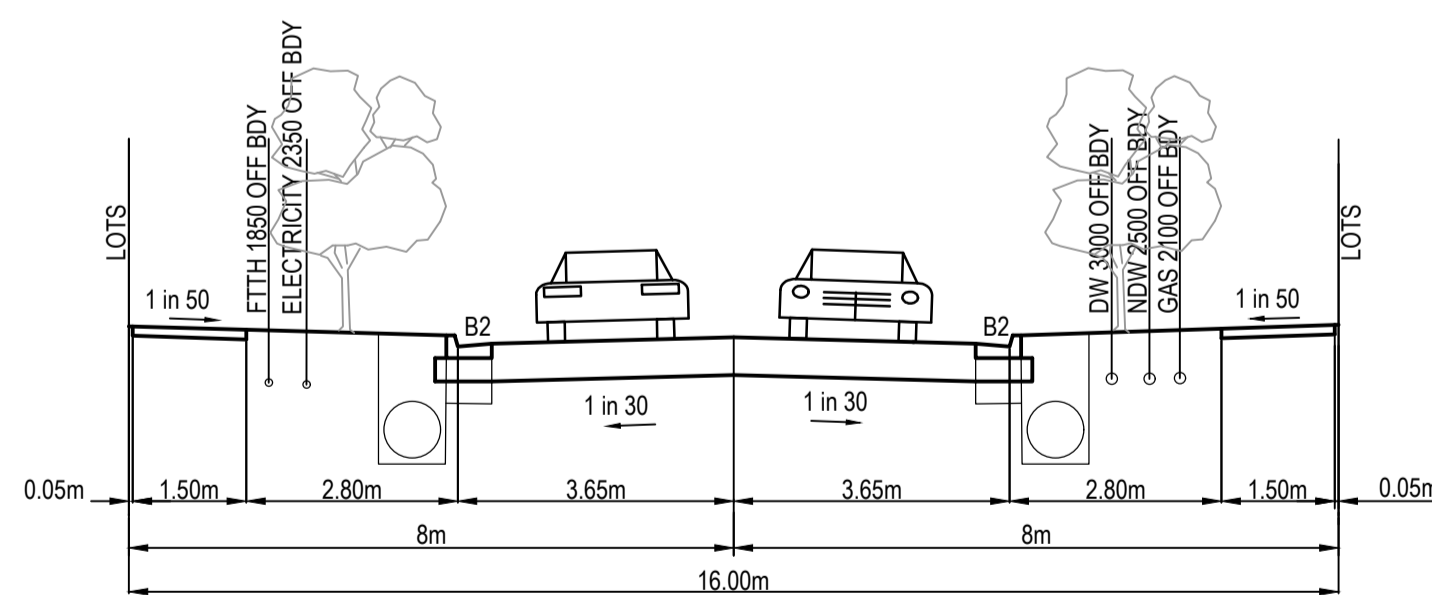
**HAYES HILL BOULEVARD**



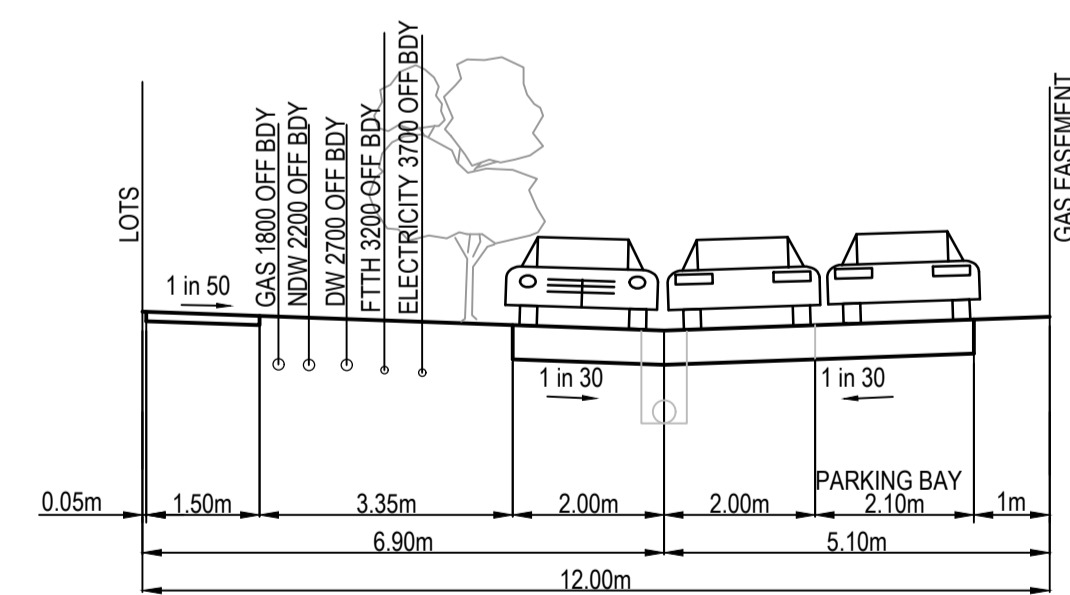
**15m MODIFIED ACCESS STREET 1 ADJACENT GAS EASEMENT**  
INSTITUTE DRIVE & ROAD H ADJACENT GAS EASEMENT



**22.0m MODIFIED ACCESS STREET 2**  
OLIVINE BOULEVARD



**16m ACCESS STREET**  
GRAMMAR AVENUE, FACULTY AVENUE,  
FOUNDATION AVENUE, FEDERATION  
AVENUE, ROAD D & ROAD A



**12m ACCESS LANE**  
INSTITUTE DRIVE (LANE)

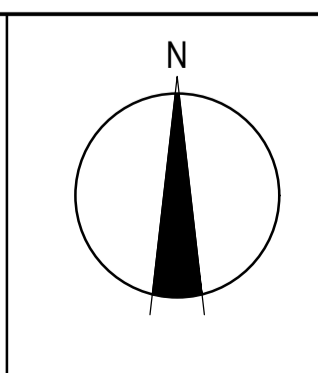
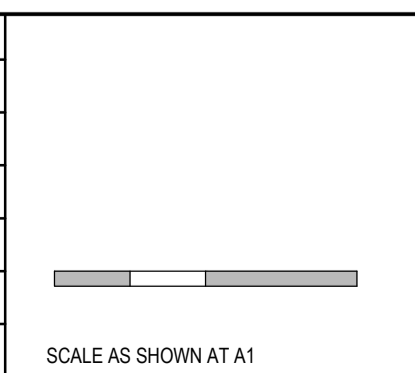
**WARNING**  
**BWARE OF UNDERGROUND SERVICES**  
The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown. Locate all underground services before commencement of works  
**DIAL 1100 BEFORE YOU DIG**  
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REV	DATE	AMENDMENT / REVISION DESCRIPTION	DES/DT	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



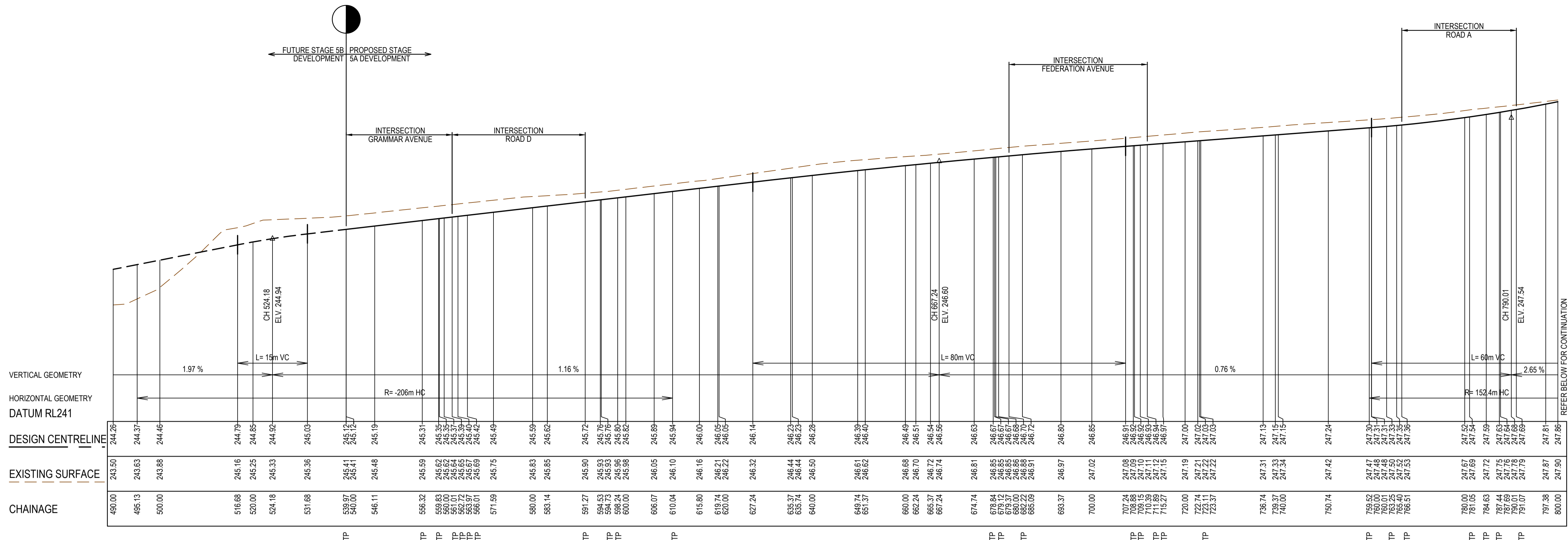
**SMEC**  
Member of the Surbana Jurong Group  
ABN 47 065 475 149  
Tower 4, Level 20, 727 Collins Street  
Docklands, VIC 3008  
Ph 03 9514 1500



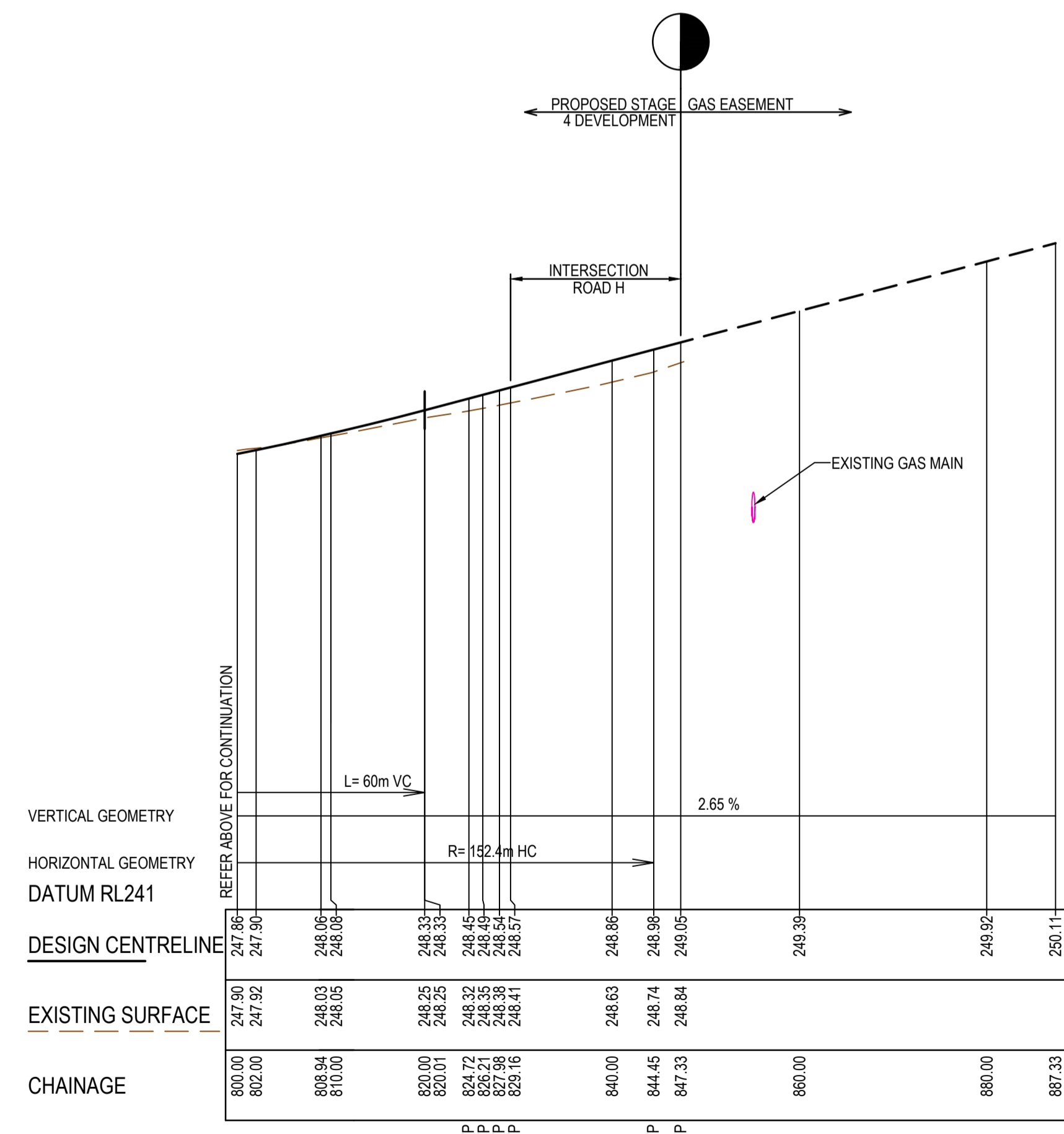
Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Typical Cross Sections

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-04</b>	SHEET No. <b>04 of 45</b>	REVISION <b>A</b>
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**SUBJECT TO APPROVAL**



HAYES HILL BOULEVARD LONGITUDINAL SECTION



HAYES HILL BOULEVARD LONGITUDINAL SECTION

FEDERATION AVENUE DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	0.000	323224.927	5843629.952	246.711	IP	154°35'49.04"		
2	89.400	323363.279	5843549.196	248.332	IP	154°35'49.04"		

INSTITUTE DRIVE (LANE) DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	0.000	323444.462	5843571.577	250.946	IP	42°39'39.37"		
2	3.986	323447.163	5843574.508	250.846	TC	42°39'39.37"		
1	9.032	323450.700	5843578.347	251.042	IP		10.091	-16.000
2	14.077	323451.294	5843583.532	251.049	CT	6°31'31.48"		
3	69.577	323457.601	5843638.673	249.750	IP	6°31'31.48"		

ROAD D DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	0.000	323215.453	5843580.781	245.559	IP	343°36'47.86"		
2	20.769	323209.594	5843600.707	245.438	IP	343°36'47.86"		

OLIVINE BOULEVARD DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	0.000	323100.184	5843449.008	233.709	IP	6°33'20.00"		
2	28.000	323103.381	5843476.825	233.981	IP	6°33'20.00"		

GRAMMAR AVENUE DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	147.007	323180.926	5843431.174	244.741	IP	6°33'20.00"		
2	248.017	323192.458	5843531.523	245.263	TC	6°33'20.00"		
1	254.506	323193.214	5843538.107	245.231	IP		13.180	-50.000
2	281.196	323192.229	5843544.862	245.198	CT	351°27'10.03"		
3	291.537	323187.720	5843574.666	245.229	IP	351°27'10.03"		

FACULTY AVENUE DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	133.845	323260.117	5843419.555	245.841	IP	6°33'19.92"		
1	213.054	323269.160	5843498.246	246.380	TC	6°33'19.92"		
2	219.133	323269.920	5843504.860	246.431	IP		12.156	12.000
3	225.211	323275.934	5843507.716	246.479	CT	64°35'49.01"		
1	321.905	323383.279	5843549.196	248.333	IP			
3	372.507	323408.989	5843570.904	249.828	TC	64°35'49.04"		
4	384.210	323419.842	5843576.058	250.184	IP		23.405	42.000
1	395.912	323431.779	5843574.693	250.541	CT	96°31'31.48"		
2	403.796	323439.611	5843573.797	250.781	CT	96°31'31.48"		
5	406.501	323442.391	5843573.479	250.863	IP		5.410	8.600
6	409.205	323444.452	5843571.586	250.945	IP	132°34'02.34"		

FOUNDATION AVENUE DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	53.996	323343.436	5843408.821	248.684	IP	6°33'20.00"		
1	130.632	323352.186	5843484.956	248.656	TC	6°33'20.00"		
2	144.576	323353.820	5843499.180	248.494	IP		27.889	-50.000
1	158.521	323347.678	5843512.113	248.124	CT	334°35'49.04"		
3	185.352	323336.168	5843536.351		IP	334°35'49.04"		

INSTITUTE DRIVE DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	193.343	323426.241	5843381.236	251.811	IP	6°31'31.48"		
1	377.576	323447.178	5843564.275	251.144	TC	6°31'31.48"		
2	381.618	323447.675	5843568.616	251.045	IP		8.085	-8.600
3	385.661	323444.462	5843571.577	250.946	IP	312°39'39.04"		

HAYES HILL BOULEVARD DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	529.950	323168.579	5843572.720	245.005	IP	86°52'17.68"		
2	569.993	323209.073	5843574.933	245.471	IP		80.086	-206.000
1	610.036	323245.707	5843592.331	245.936	CT	64°35'49.04"		
2	759.523	323380.741	5843656.458	247.303	TC	64°35'49.04"		
3	801.986	323420.122	5843675.160	247.903	IP		84.926	152.400
1	844.449	323463.437	5843670.206	248.976	CT	96°31'31.48"		
4	847.335	323466.304	5843669.878	249.053	IP	96°31'31.48"		

ROAD H DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	0.000	323459.342	5843670.618	248.867	IP	6°31'31.51"		
2	20.210	323461.639	5843690.698	248.190	IP	6°31'31.51"		

ROAD A DESIGN LINE

IP	CHAINAGE	X COORD	Y COORD	Z COORD	TYPE	BEARING	LENGTH	RADIUS
1	0.000	323397.906	5843663.366	247.495	IP	341°33'27.33"		
2	20.406	323391.450	5843682.725	247.405	IP	341°33'27.33"		

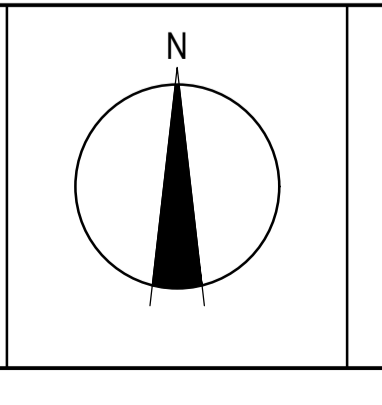
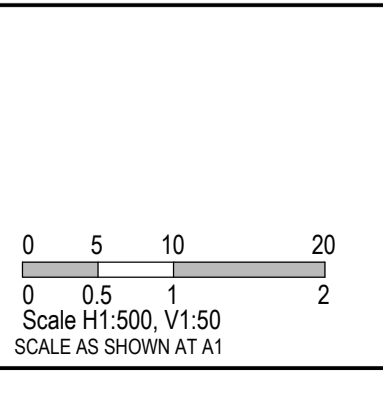
REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
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Quality Management ISO 9001  
 OHS Management AS/NZS 1881  
 Environmental Management ISO 14001

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



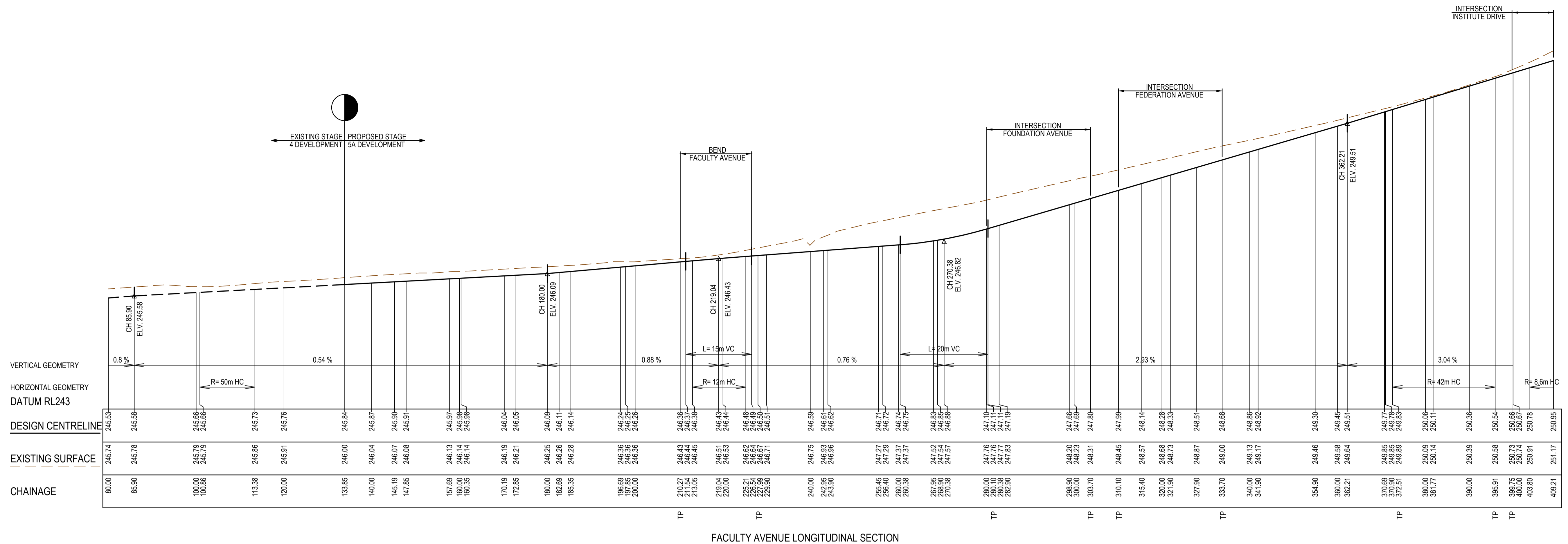
**SMEC**  
 Member of the **Surbana Jurong Group**  
 ABN 47 065 475 149  
 Tower 4, Level 20, 727 Collins Street  
 Docklands, VIC 3008  
 Ph 03 9514 1500

**mirvac**

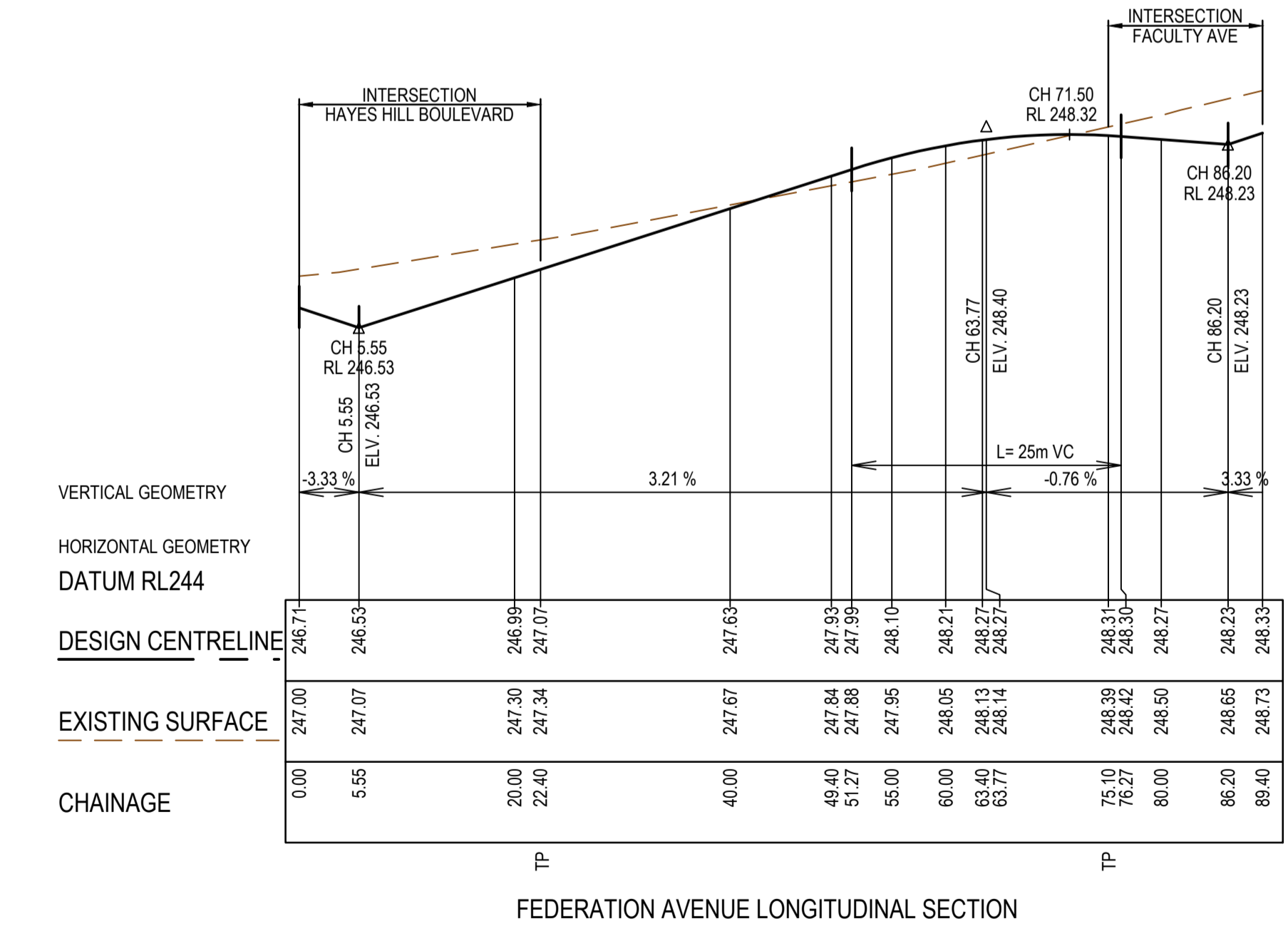
Olivine Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Longitudinal Sections - 1

MELBOURNE REF: 8 M2  
 PROJECT / DRAWING No: 1700E-05A-05  
 SHEET No: 05 of 45  
 REVISION: A

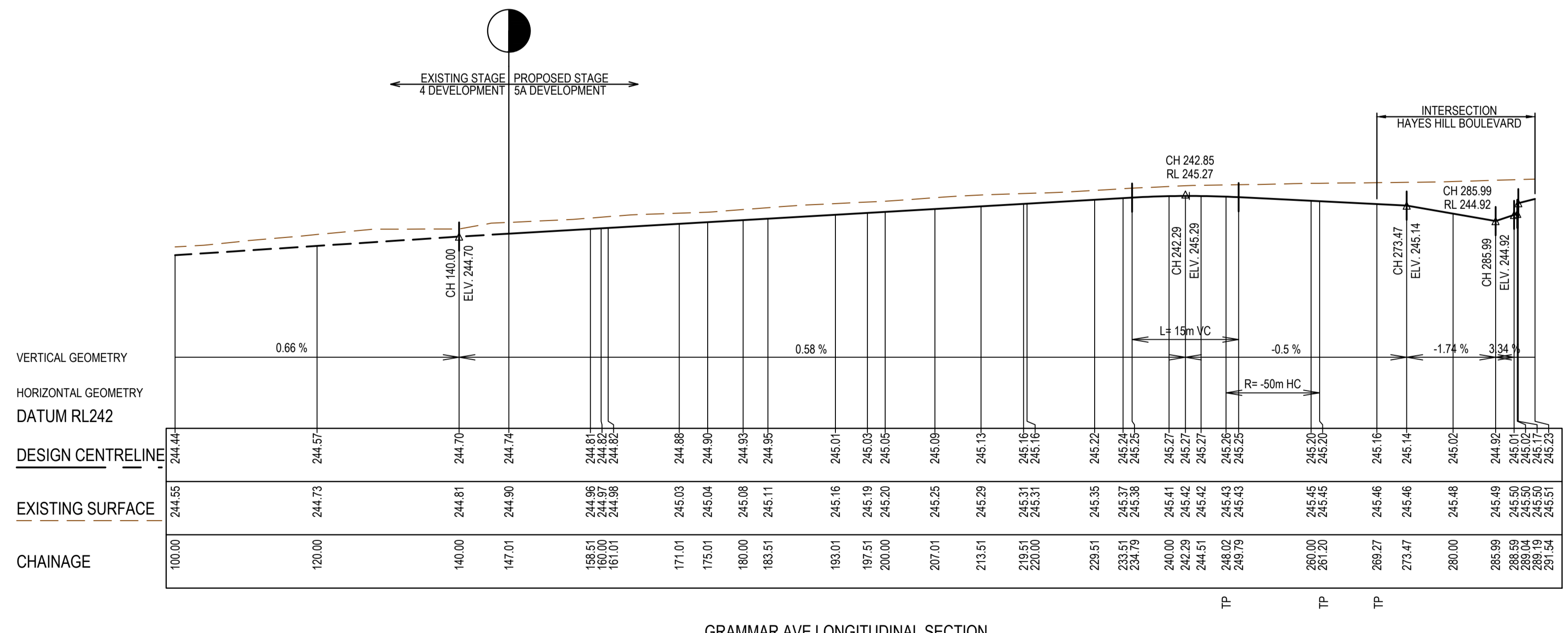




FACULTY AVENUE LONGITUDINAL SECTION



FEDERATION AVENUE LONGITUDINAL SECTION

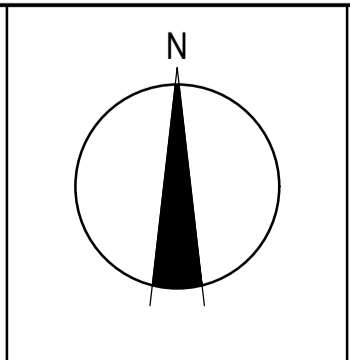
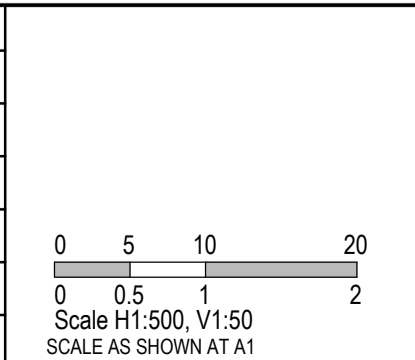


GRAMMAR AVE LONGITUDINAL SECTION

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DES/DT	APPROVAL
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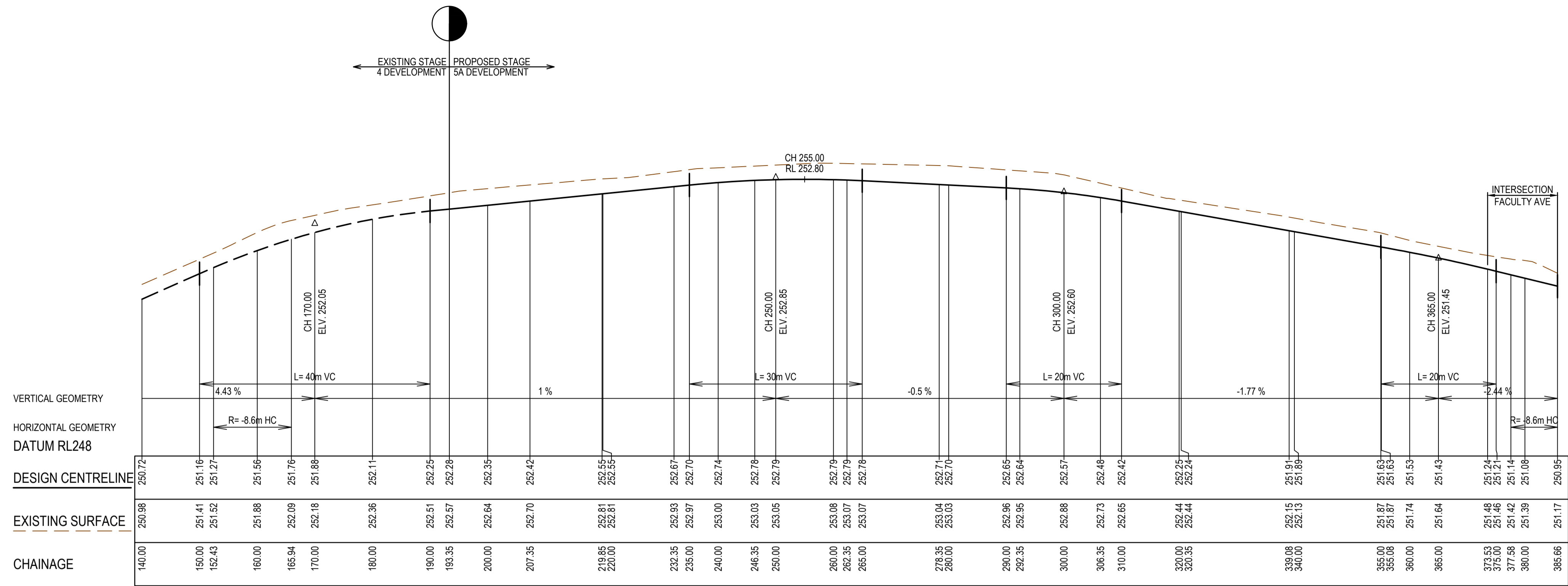


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Tower 4, Level 20, 727 Collins Street  
Docklands, VIC 3008  
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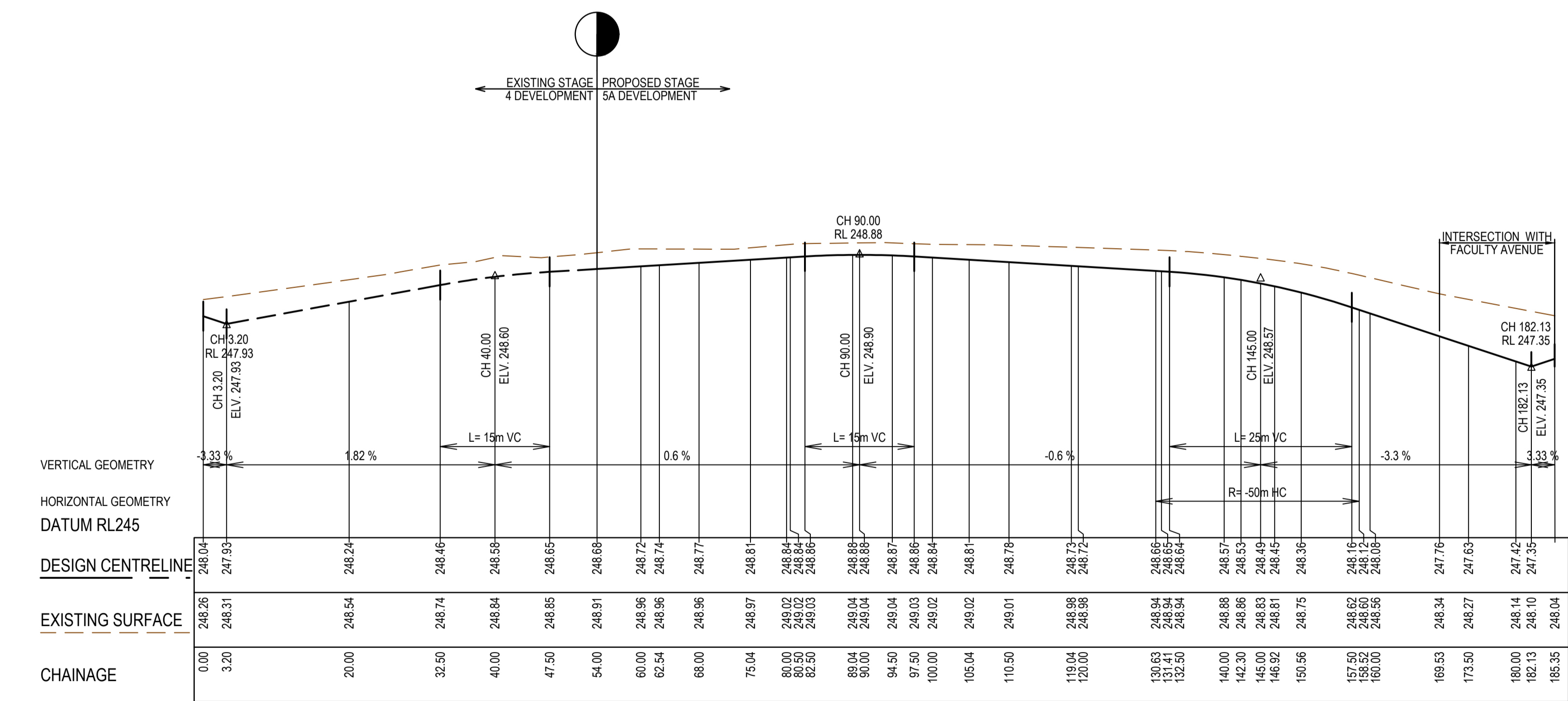
**mirvac**

Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Longitudinal Sections - 2

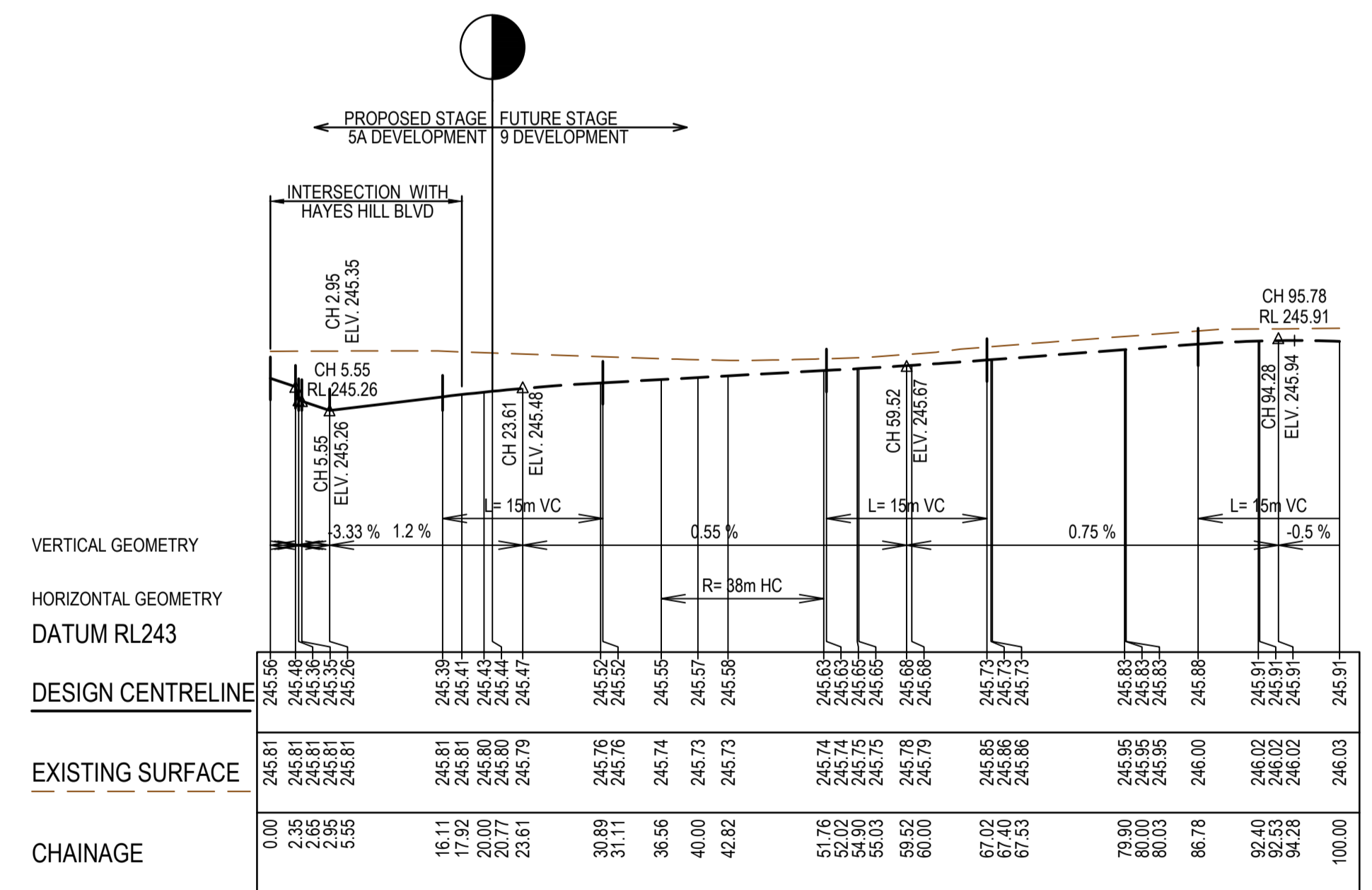
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INSTITUTE DRIVE LONGITUDINAL SECTION



FOUNDATION AVENUE LONGITUDINAL SECTION

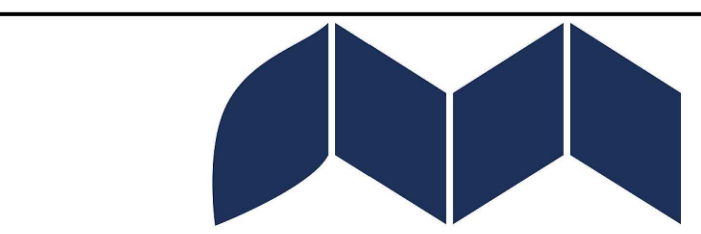
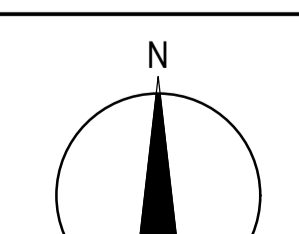


ROAD D LONGITUDINAL SECTION

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
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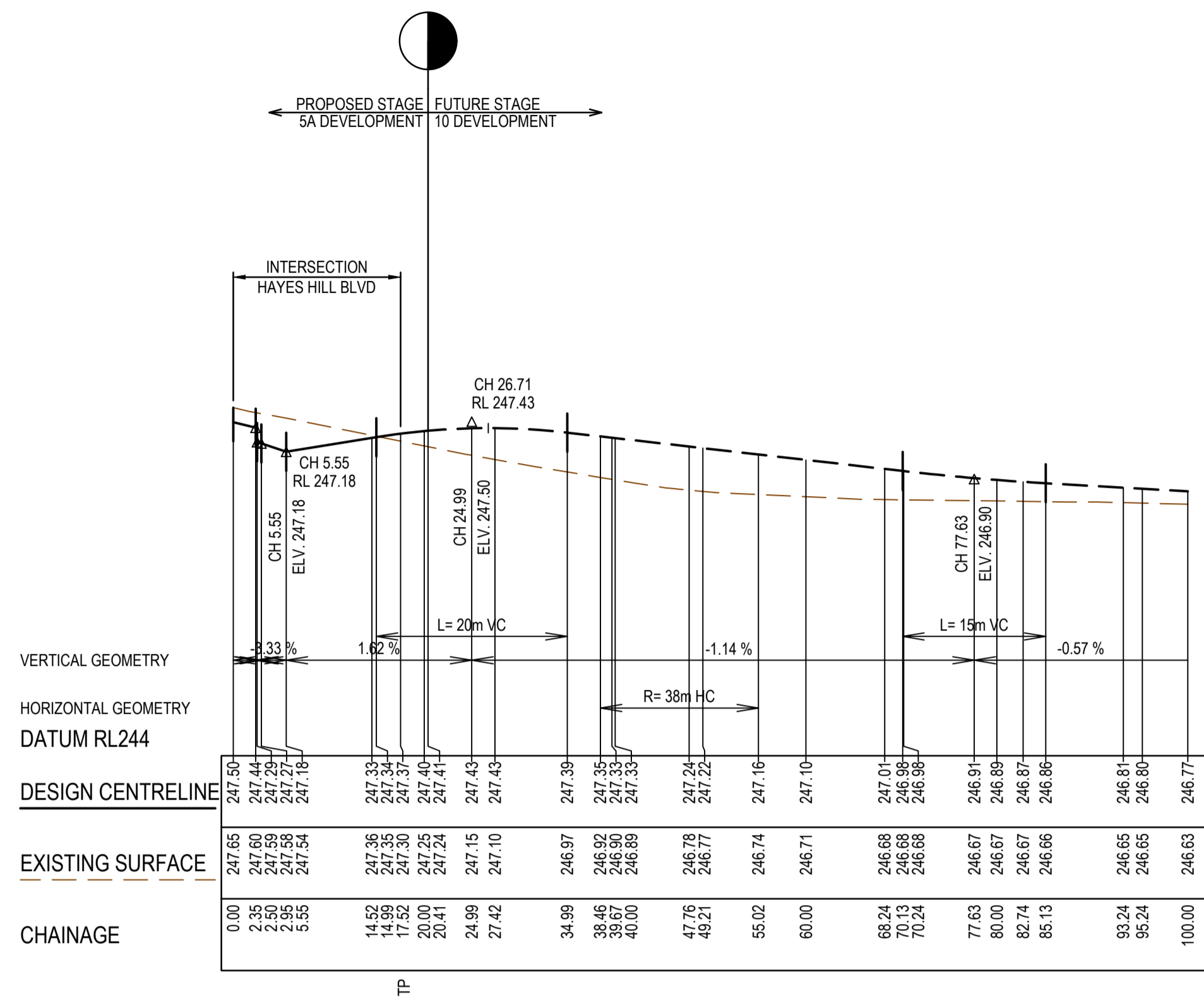
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AUTHORISED	A.Burrows
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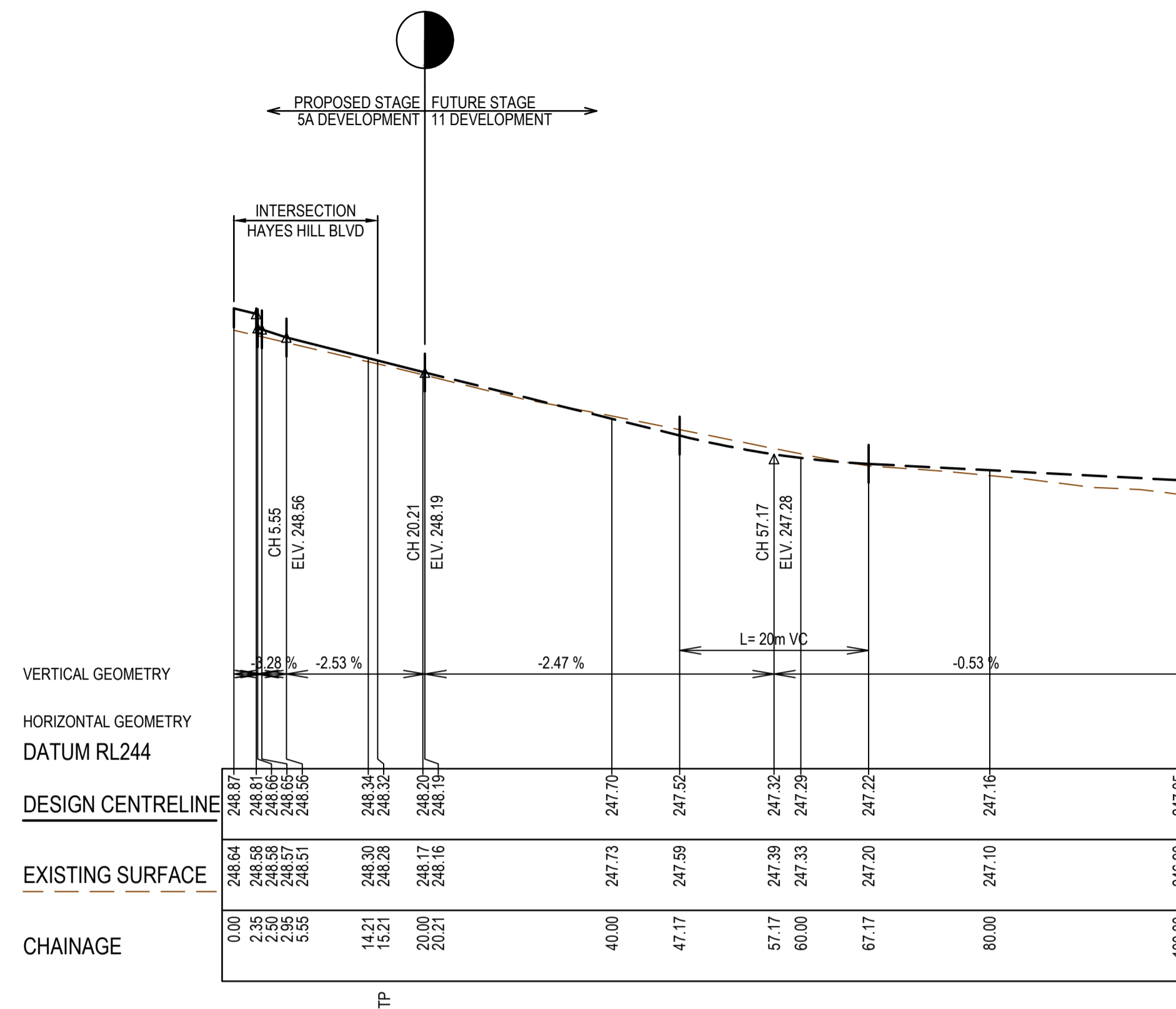


Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Longitudinal Sections - 3

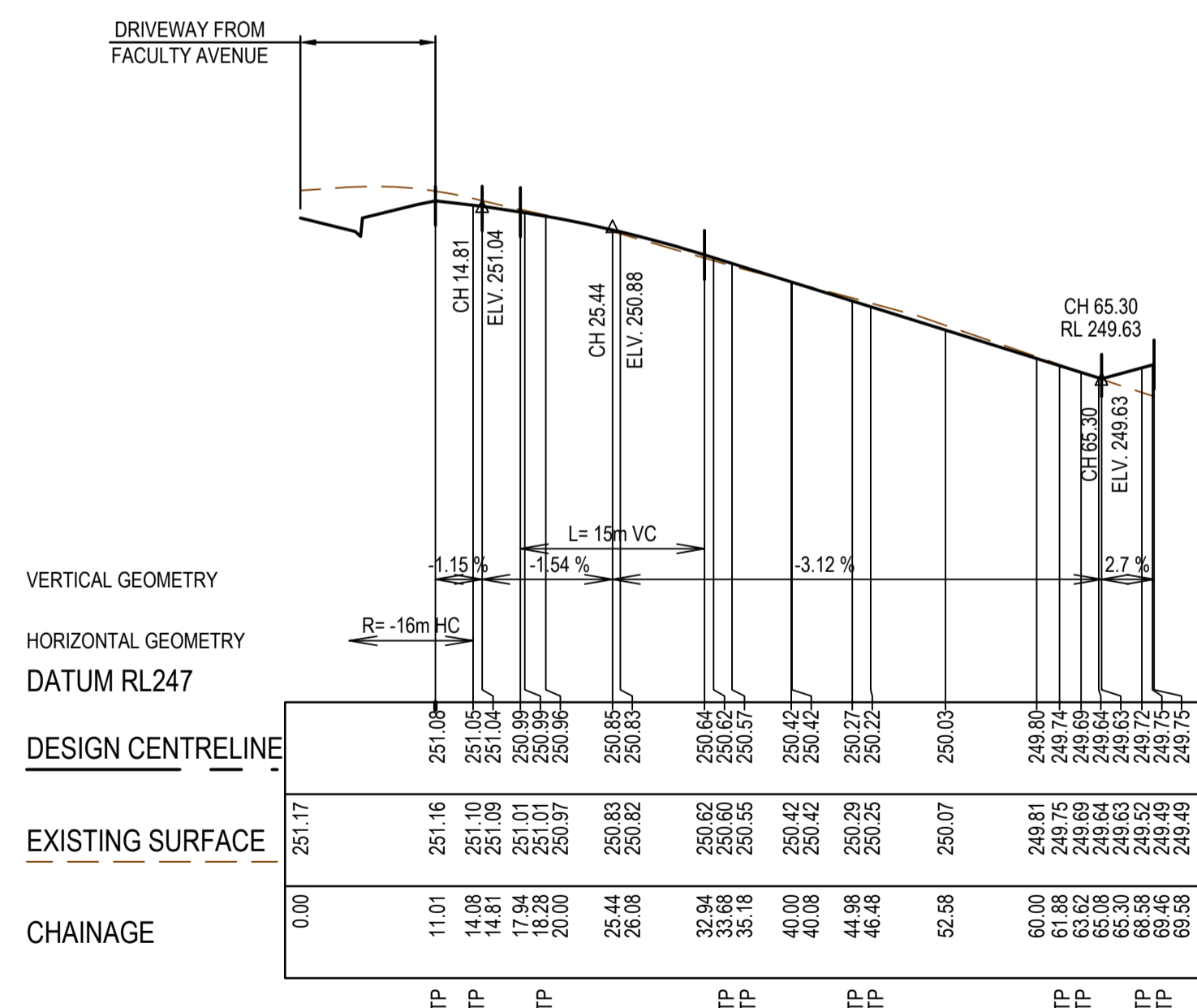




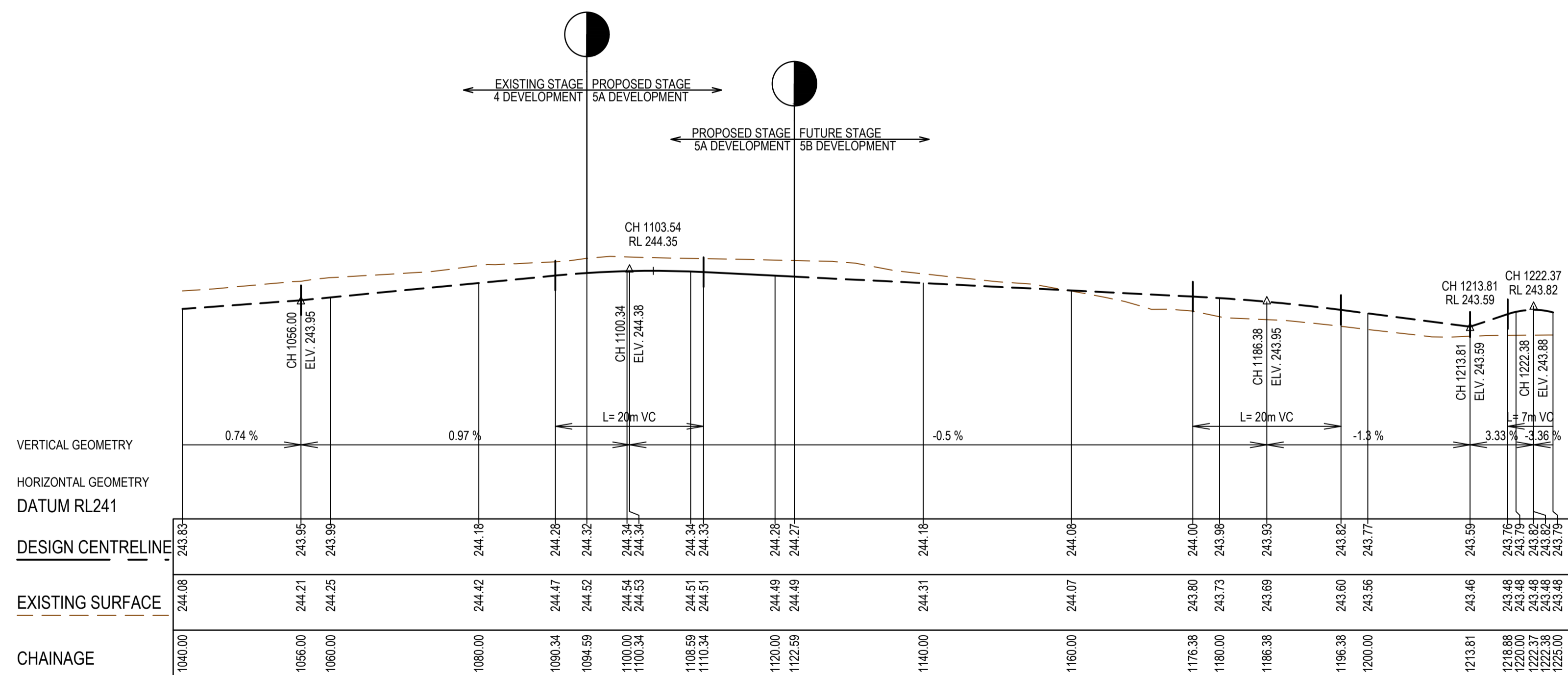
ROAD A LONGITUDINAL SECTION



ROAD H LONGITUDINAL SECTION



INSTITUTE DRIVE (LANE) LONGITUDINAL SECTION



OLIVINE BOULEVARD LONGITUDINAL SECTION

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
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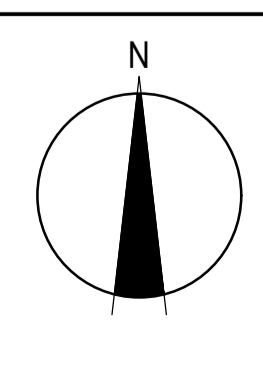
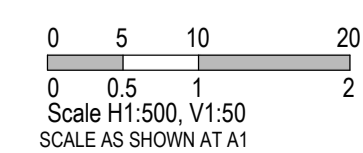
**SUBJECT TO APPROVAL**

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Quality Management ISO 9001  
 OHS Management AS/NZS 1880  
 Environmental Management ISO 14001

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 ABN 47 065 475 149  
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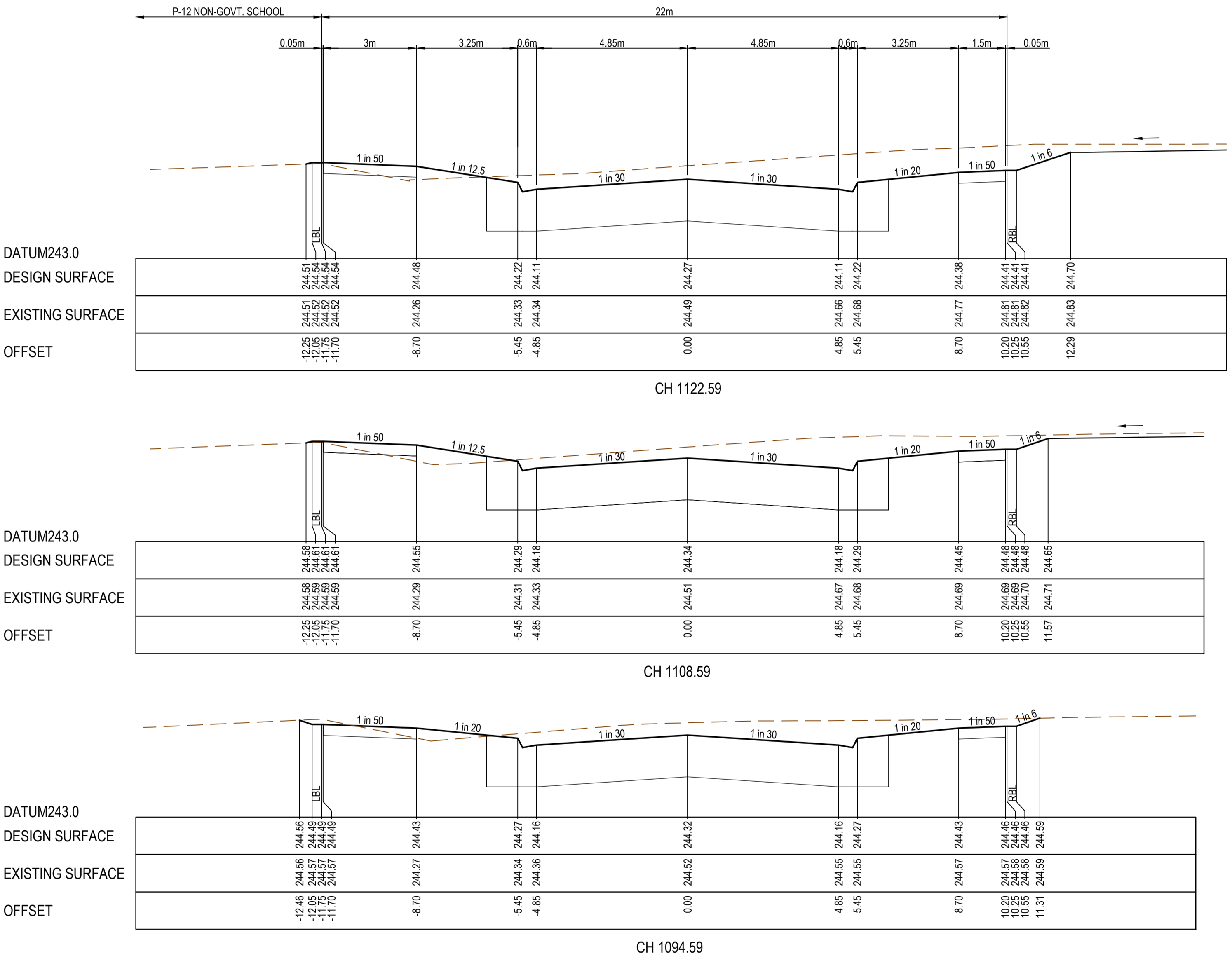


Olivine Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Longitudinal Sections - 4

MELBOURNE REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-08</b>	SHEET No. <b>08 of 45</b>	REVISION <b>A</b>
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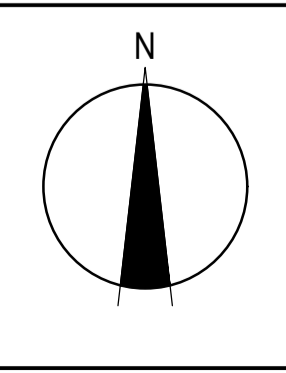
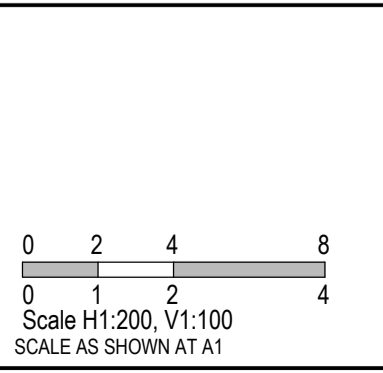
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
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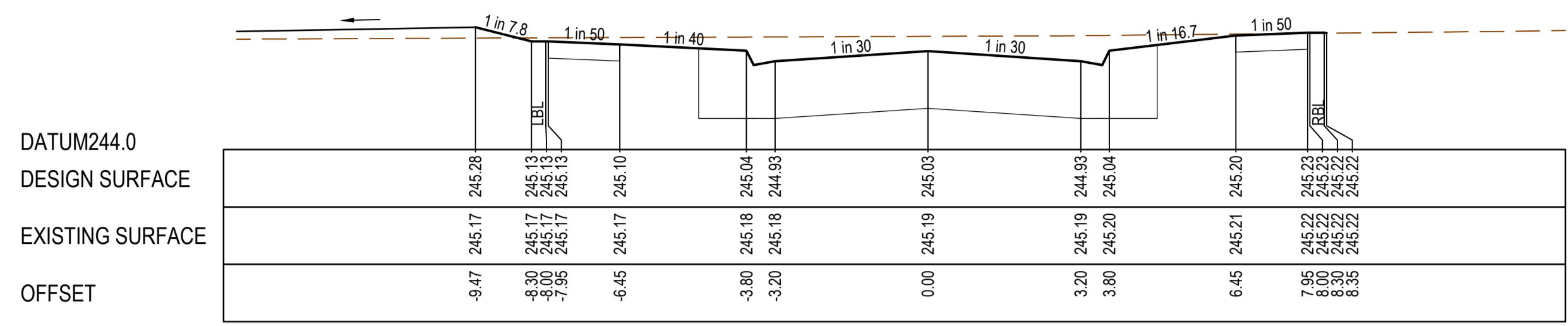
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 © ABN 47 065 475 149  
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 Docklands, VIC 3008  
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Olivine Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Cross Sections: Olivine Boulevard

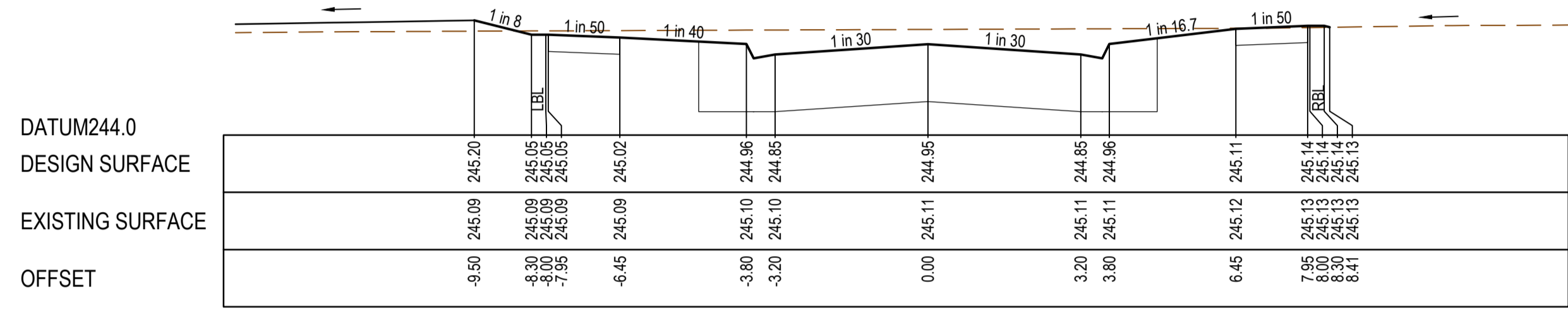
MELWAYS REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-09	09 of 45	A



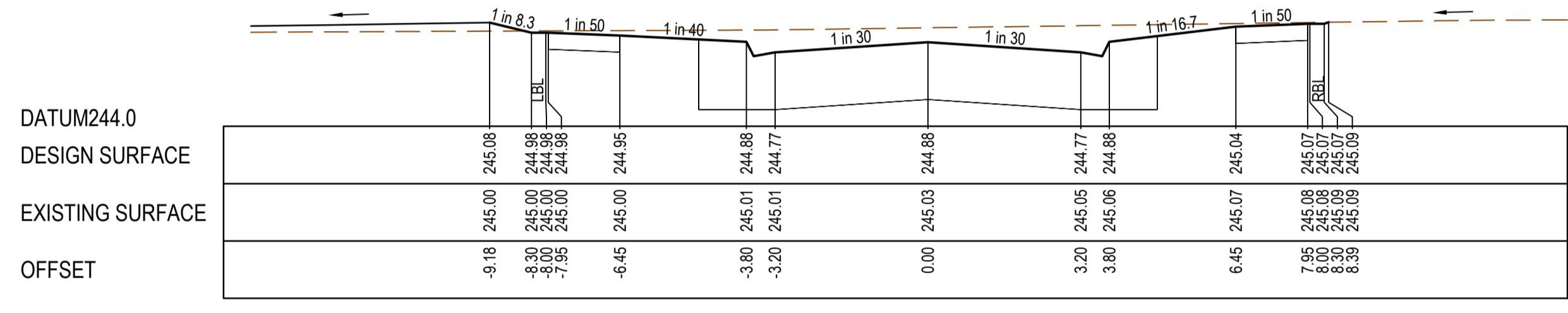
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



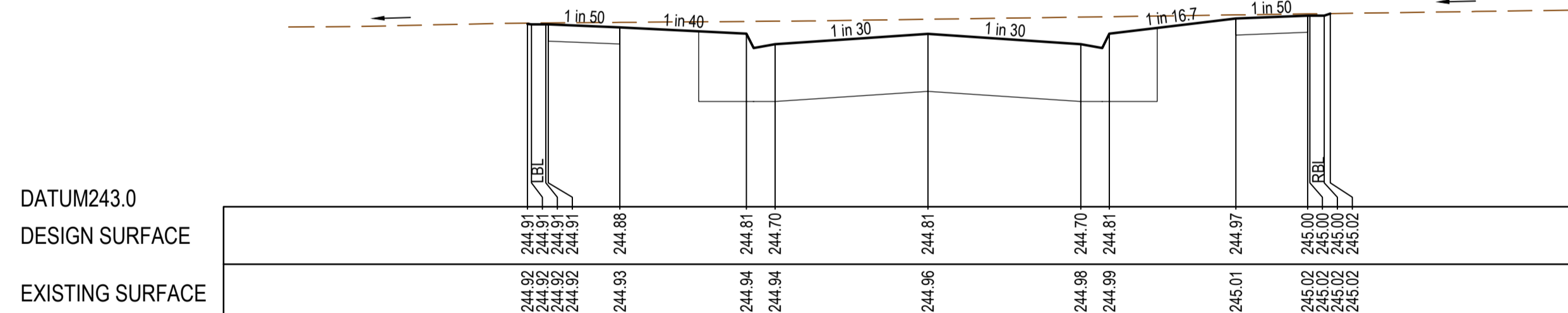
CH 197.51



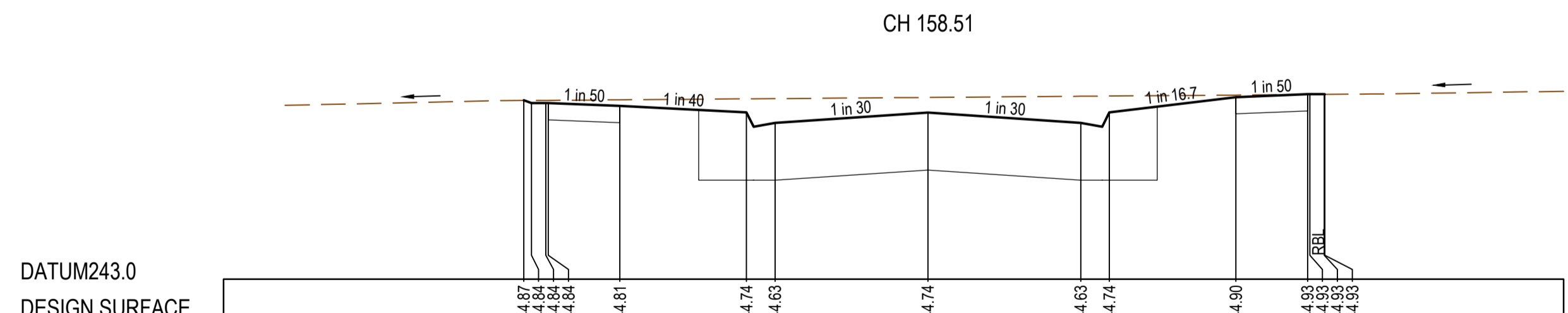
CH 183.51



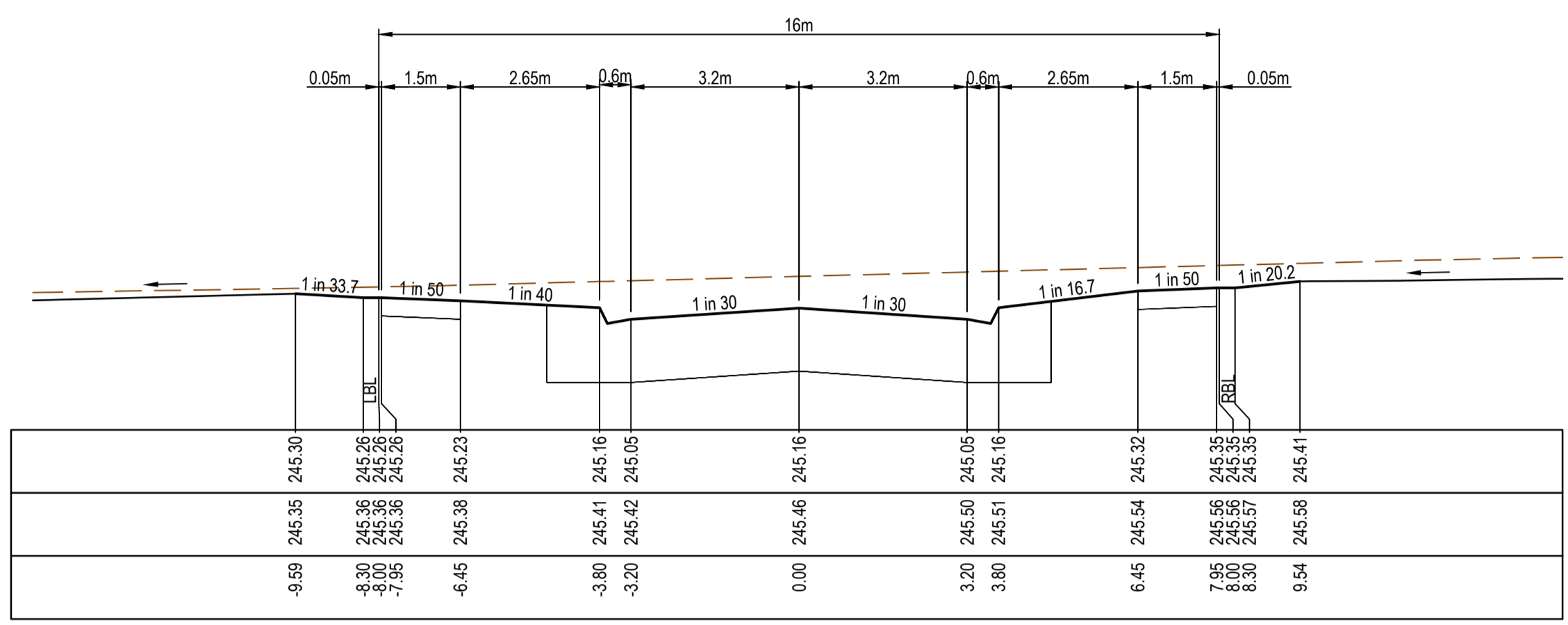
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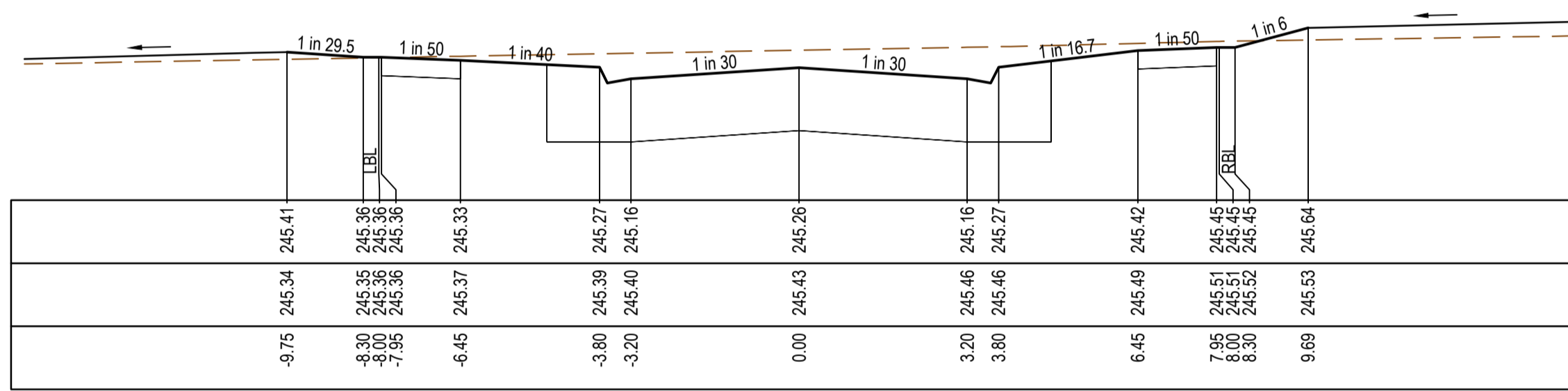
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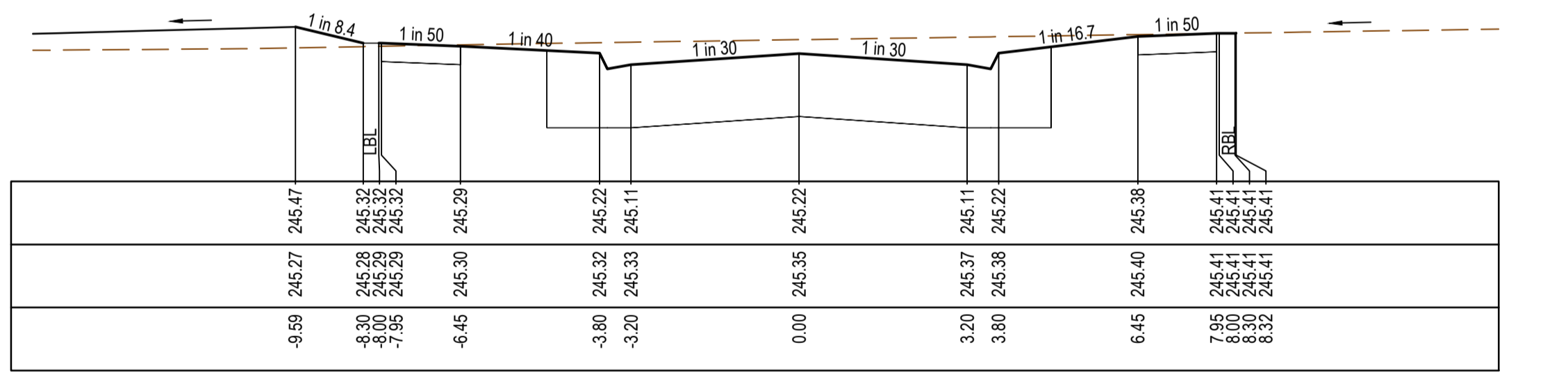
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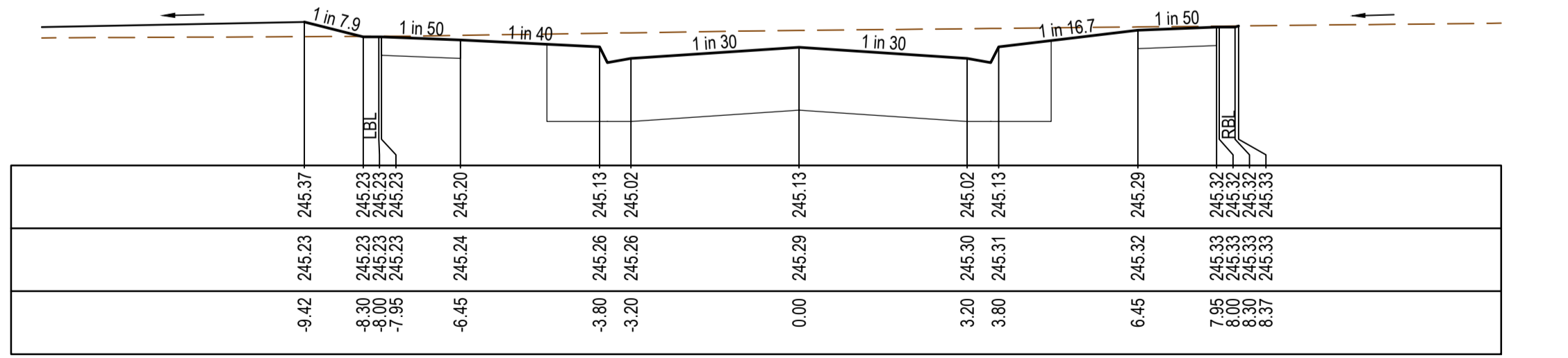
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TP 248.02



CH 229.51

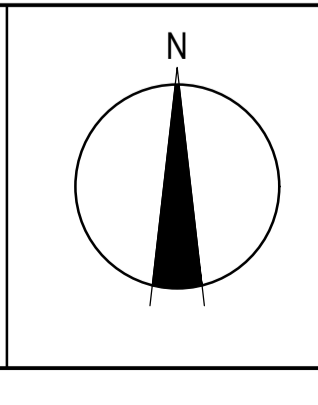
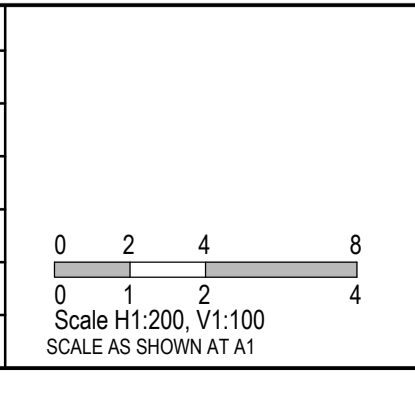


CH 213.51

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

**SUBJECT TO APPROVAL**

TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



**SMEC**  
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Tower 4, Level 20, 727 Collins Street  
Docklands, VIC 3008  
Ph 03 9514 1500

**mirvac**

Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Grammar Avenue

MELBOURNE REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-10	10 of 45	A



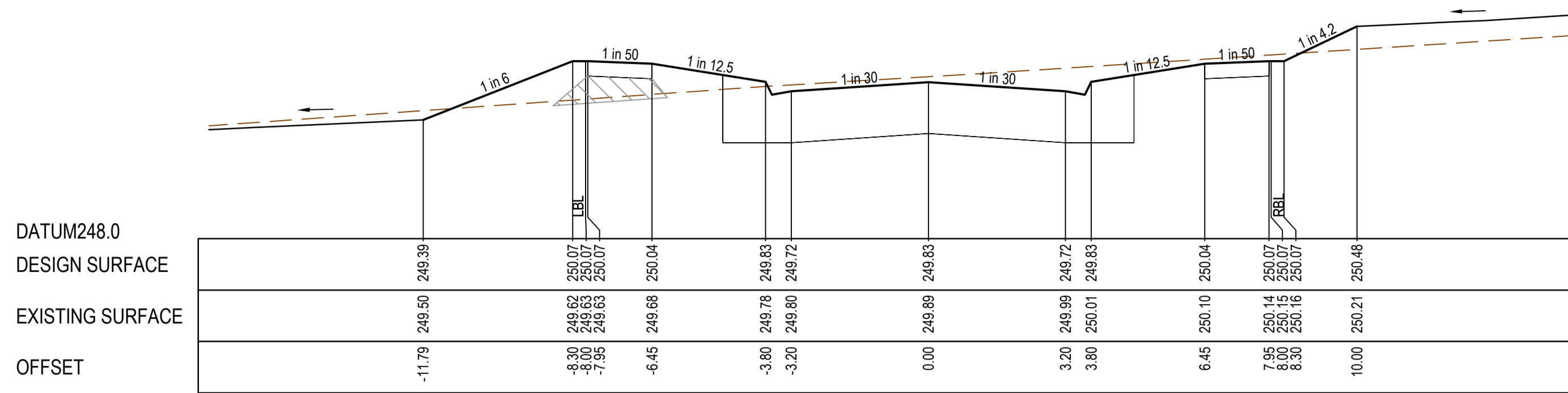




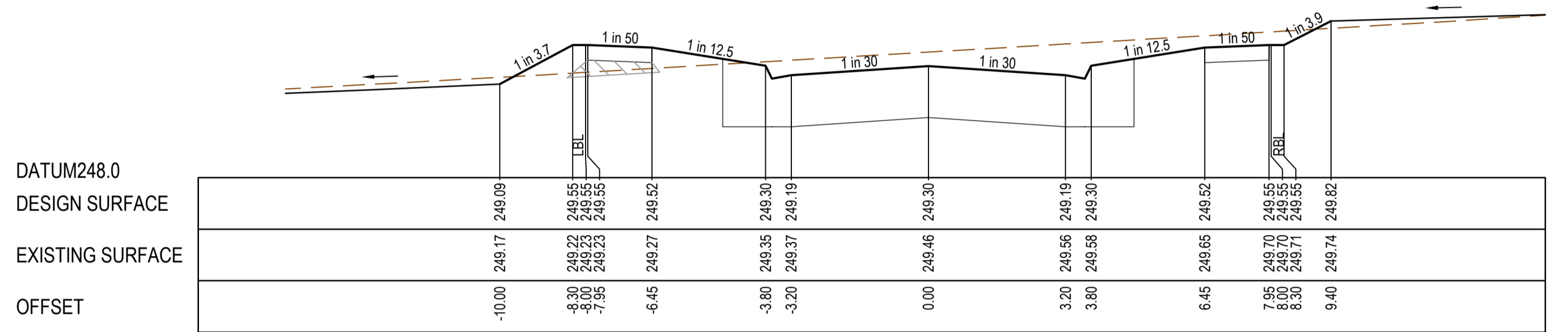




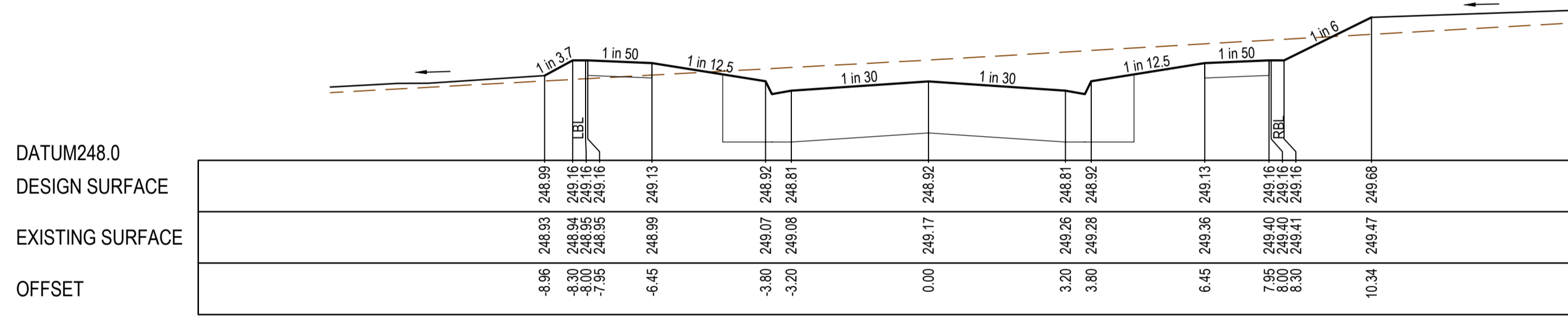
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



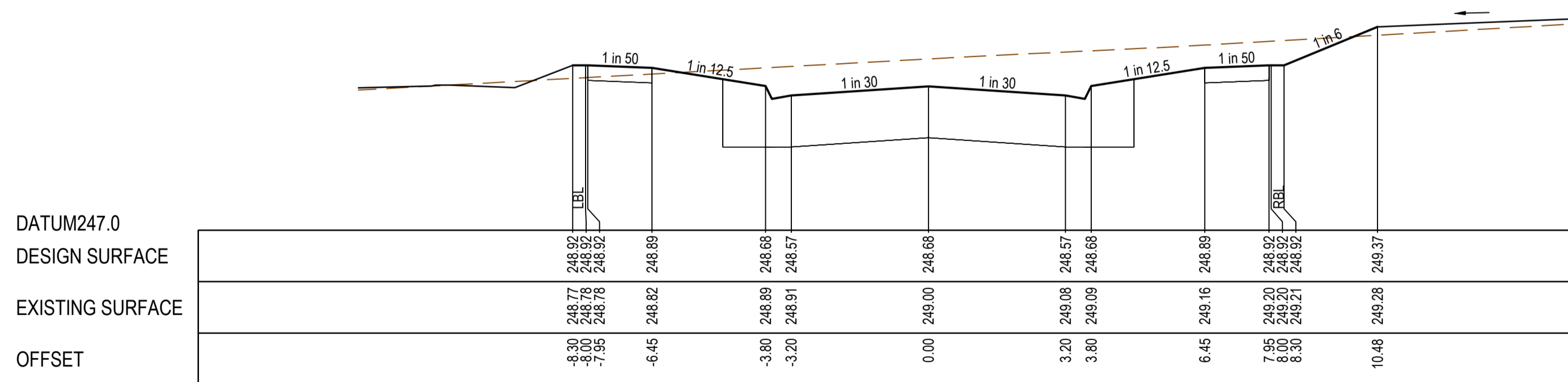
TP 372.51



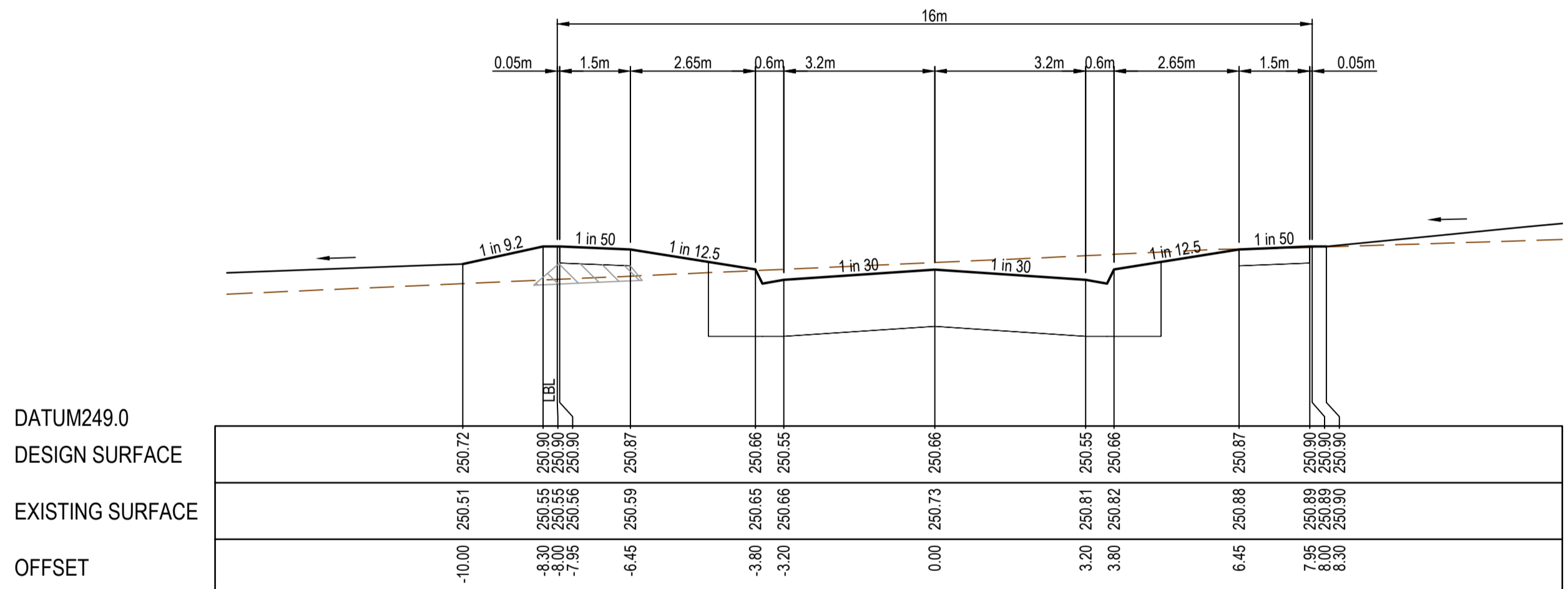
CH 354.90



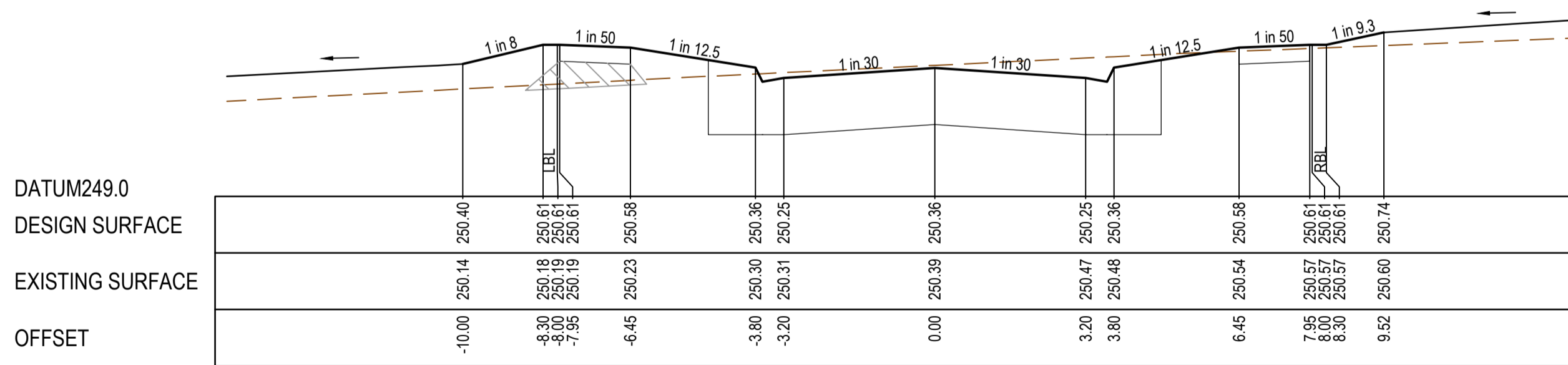
CH 341.90



TP 333.70



TP 399.75



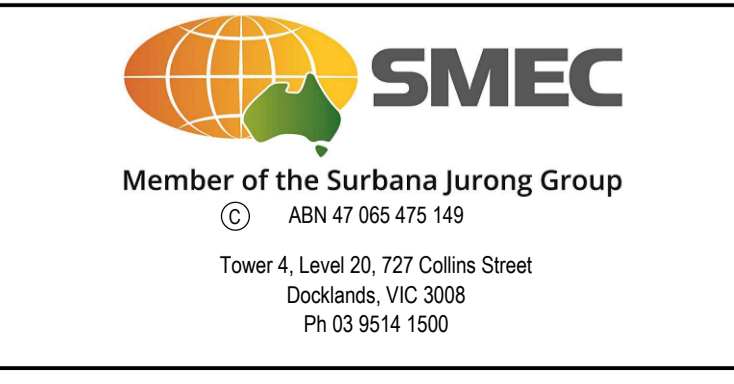
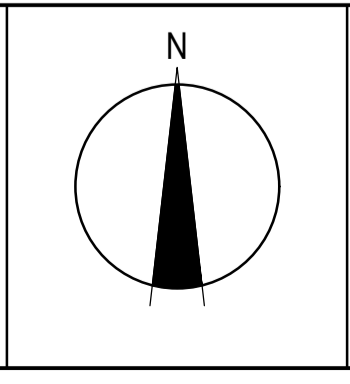
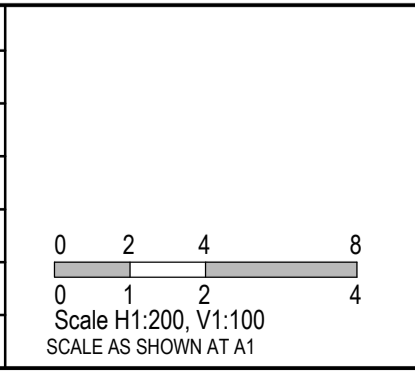
CH 390.00

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

**SUBJECT TO APPROVAL**

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Faculty Avenue  
Ch 333.70 - Ch. 399.75

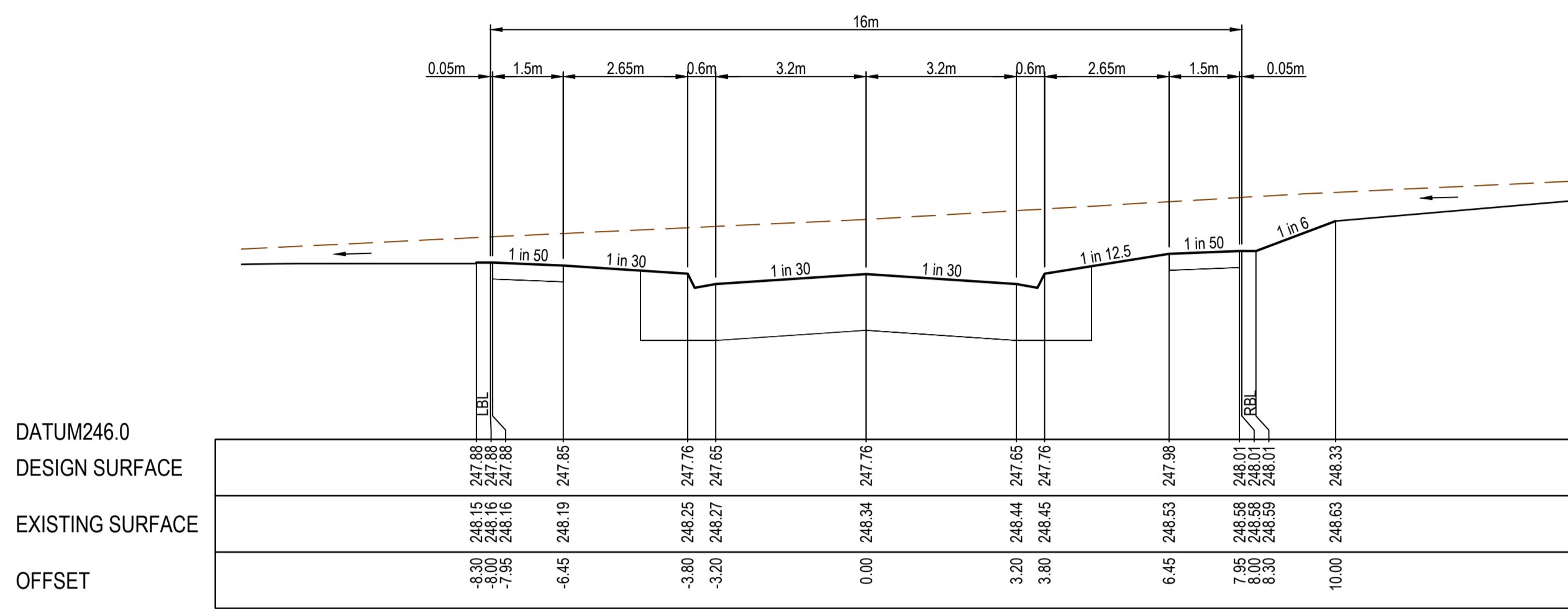
MELWAYS REF 8 M2	PROJECT / DRAWING No. 1700E-05A-13	SHEET No. 13 of 45	REVISION A
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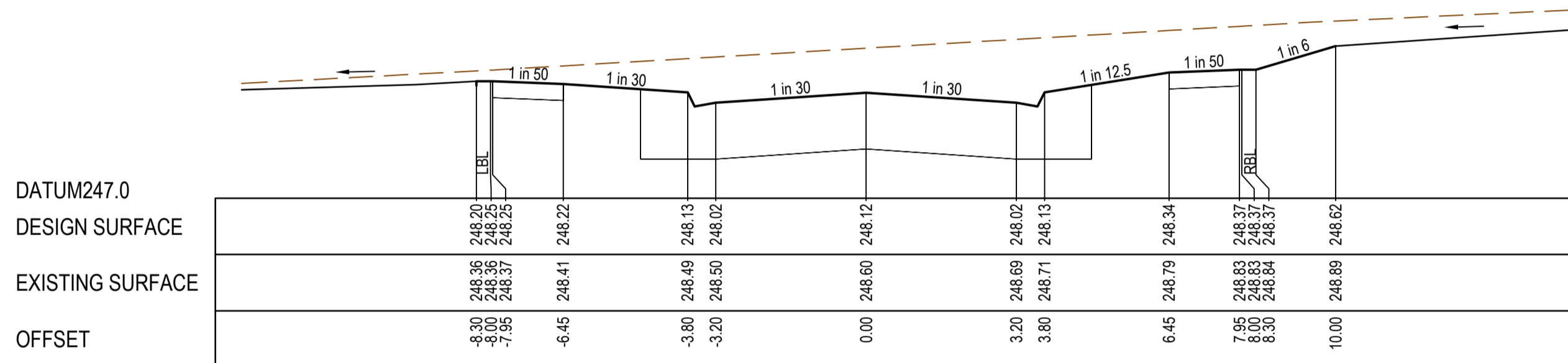




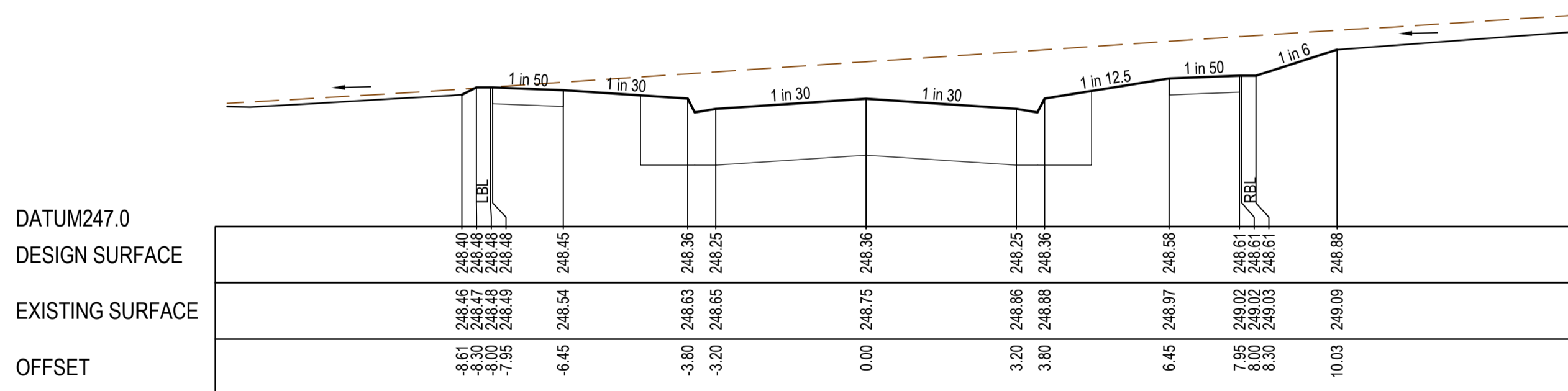
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



TP 169.53

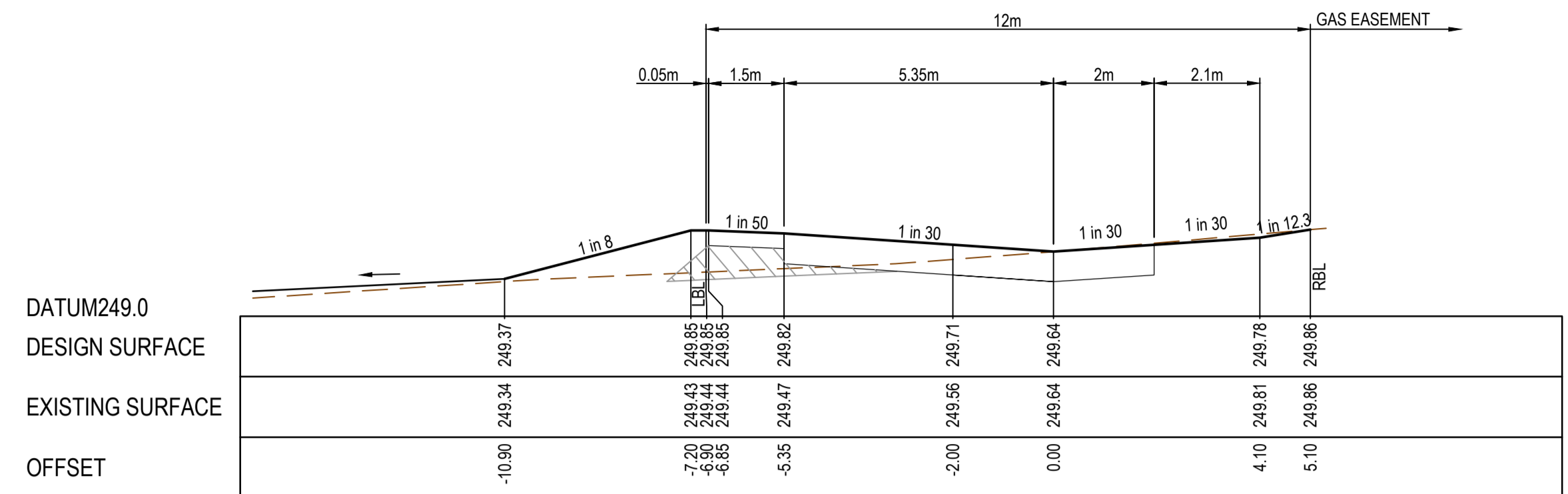


TP 158.52

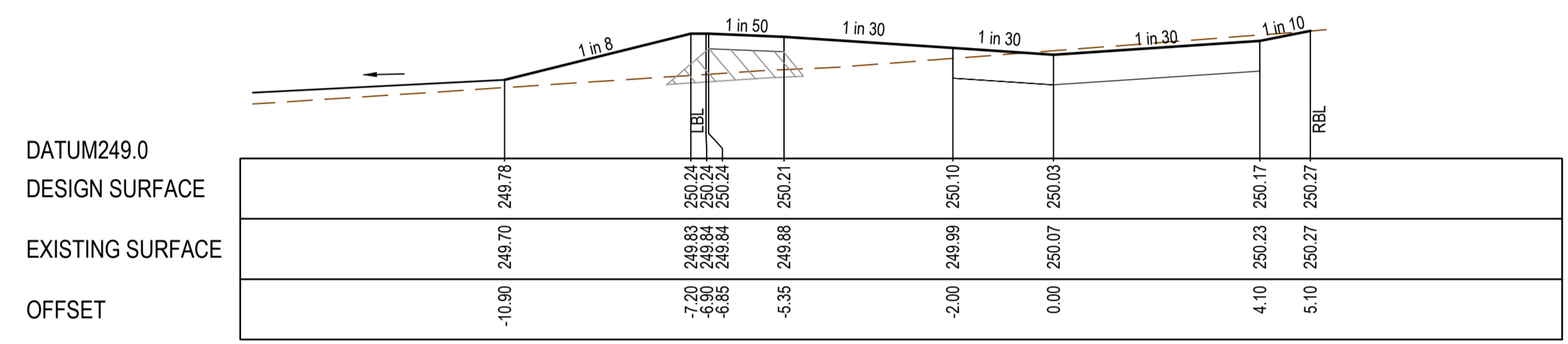


TP 150.56

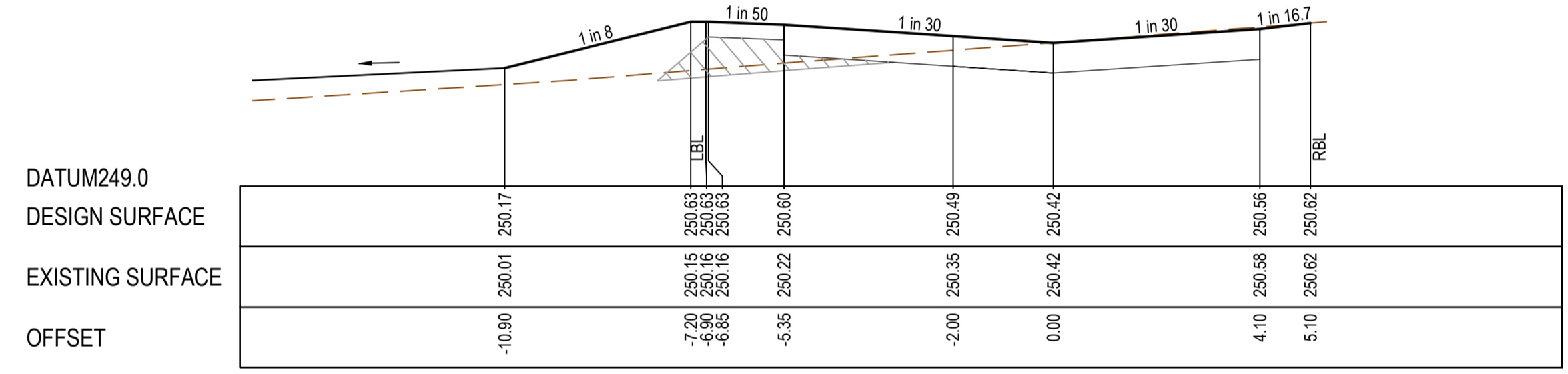
FOUNDATION AVENUE



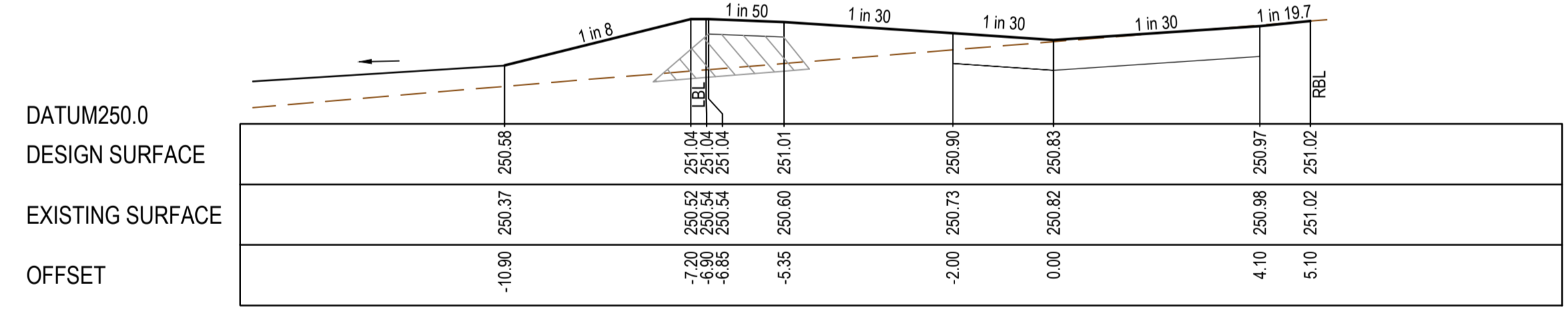
CH 65.08



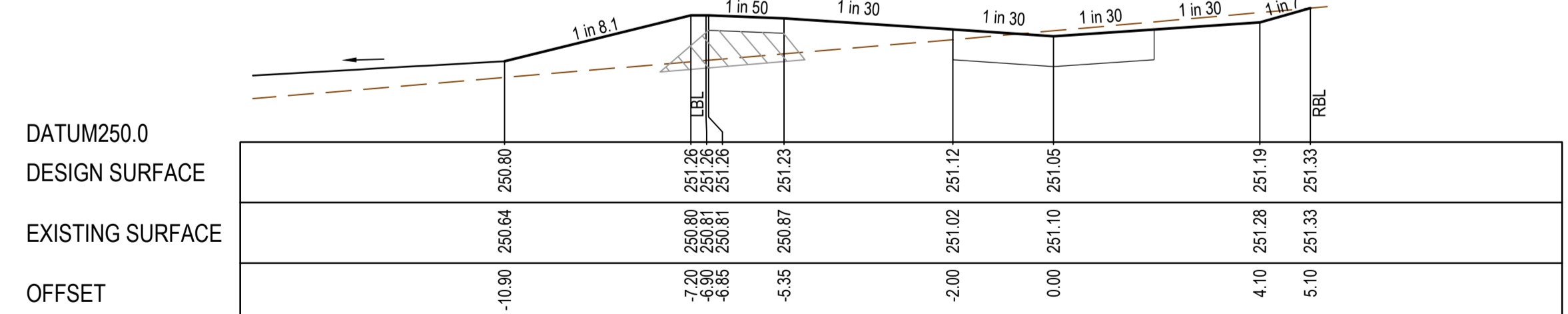
CH 52.58



CH 40.08



CH 26.08



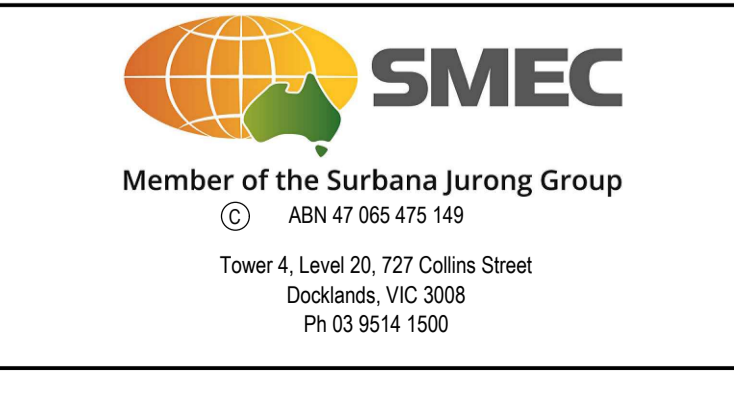
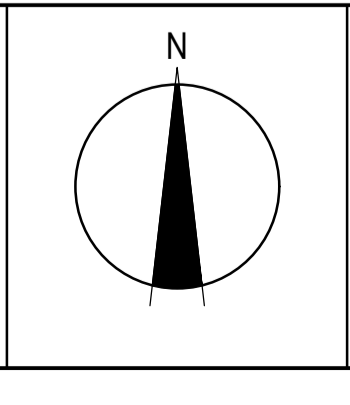
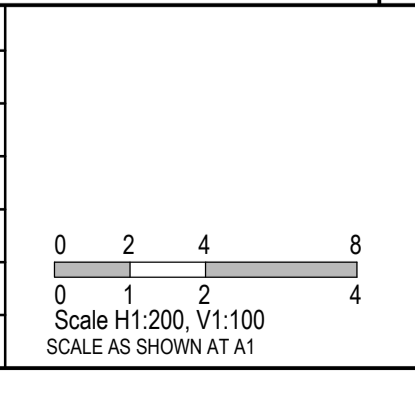
TP 14.08

INSTITUTE DRIVE (LANE)

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

**SUBJECT TO APPROVAL**

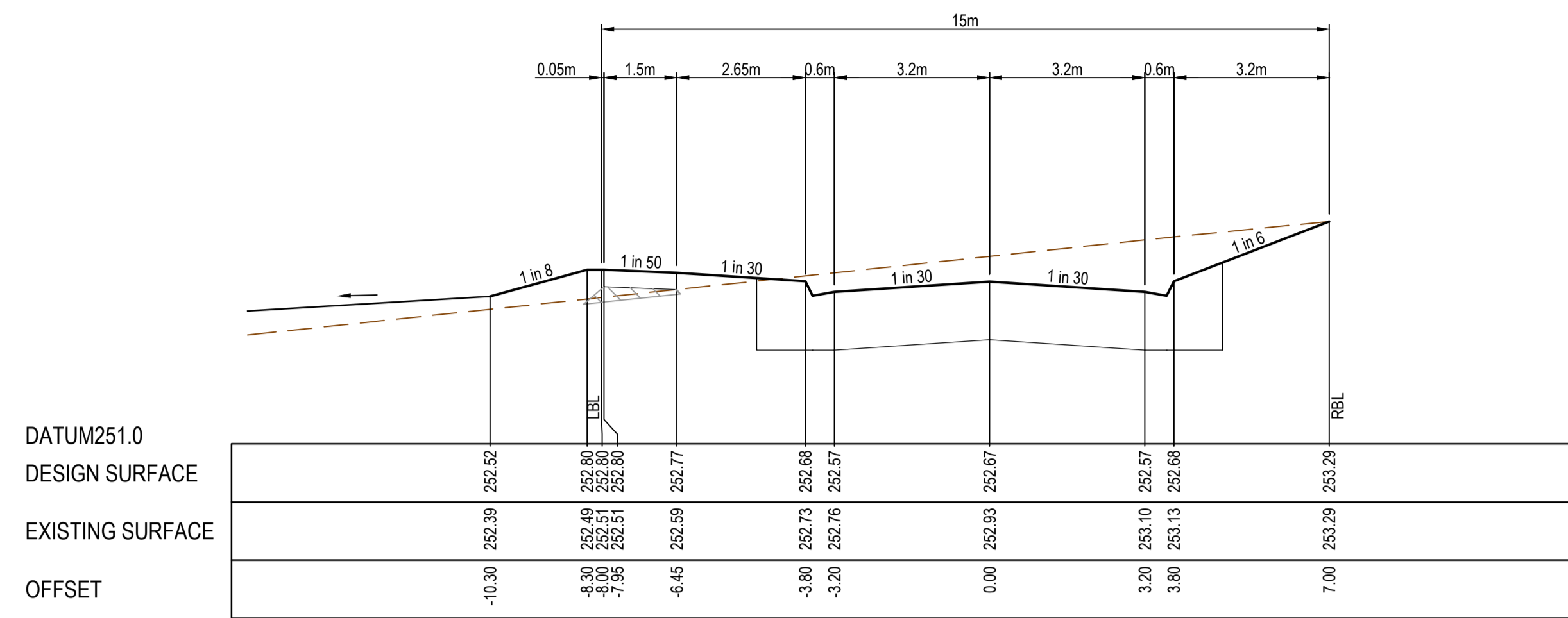
All setting out should be carried out in accordance with MPA/Council's standard drawings or as nominated on hard copy plans provided by SMEC. Any digital information supplied by this office is for information only. Any discrepancies should be discussed with the superintendent.	
TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



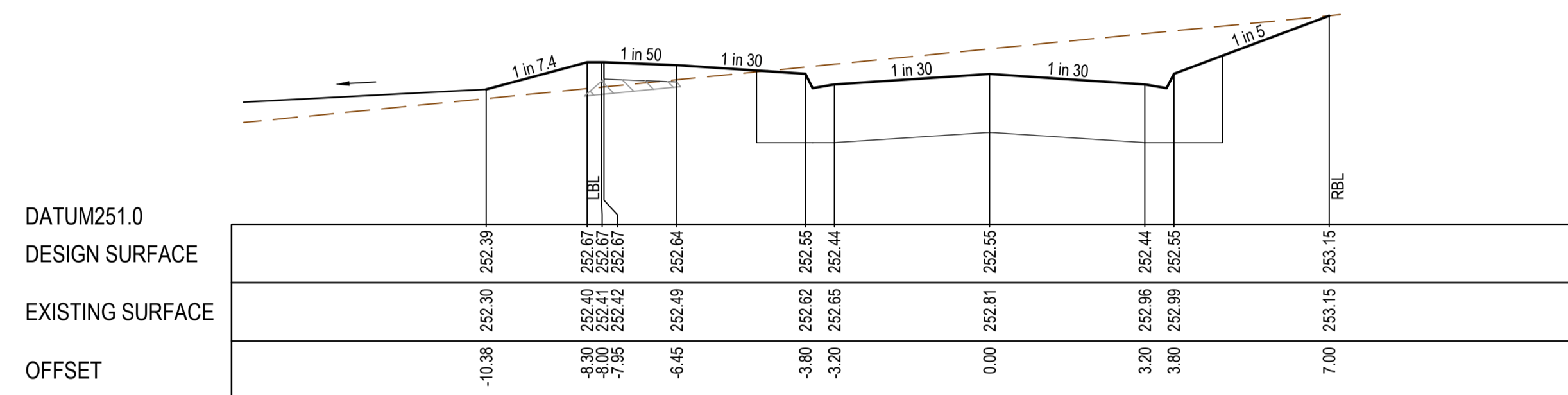
Olivine Estate - Stage 5A Whittlesea City Council Road and Drainage Cross Sections: Foundation Ave & Institute Dr (Lane) Ch 150.56 - 169.53 & Ch 18.28 - Ch 65.08			
MELWAYS REF 8 M2	PROJECT / DRAWING No. 1700E-05A-15	SHEET No. 15 of 45	REVISION A



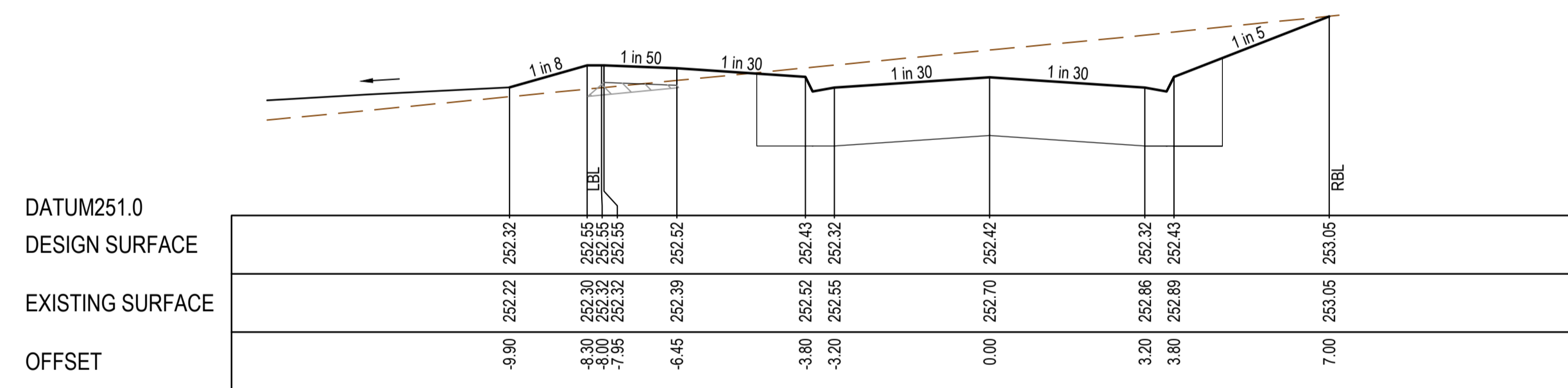
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



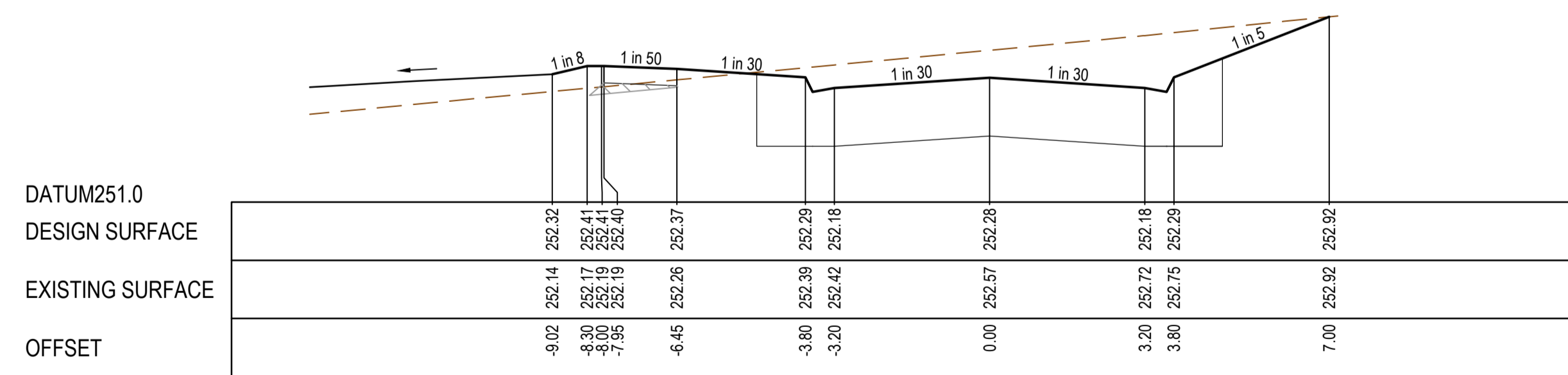
CH 232.35



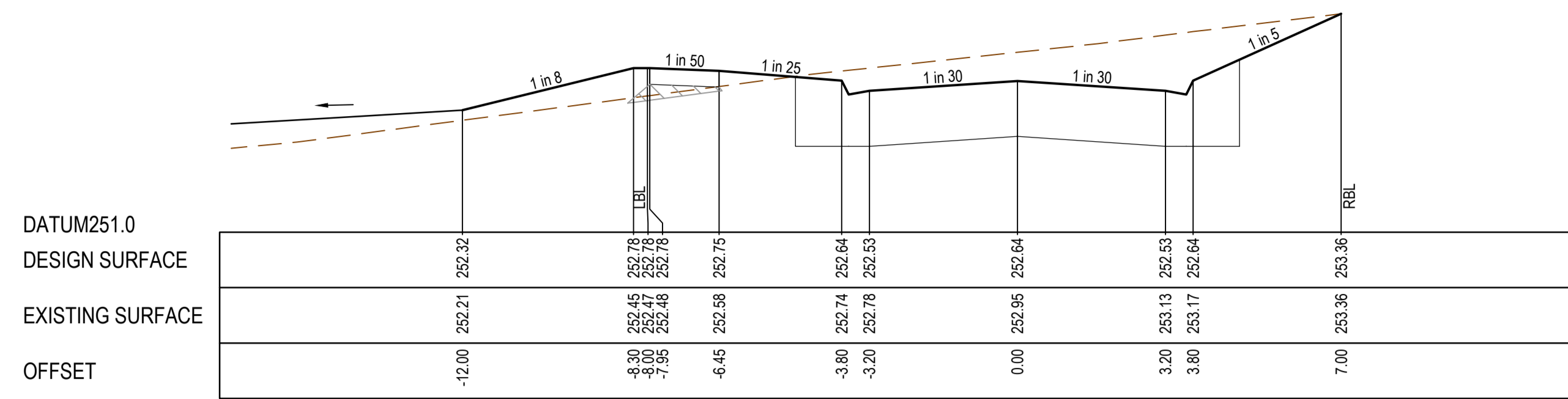
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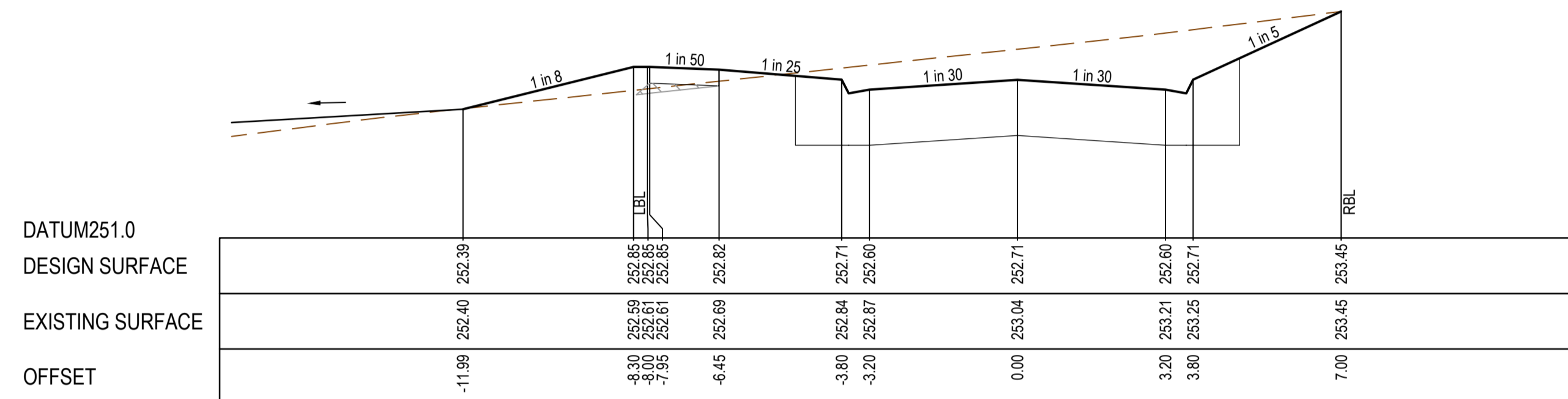
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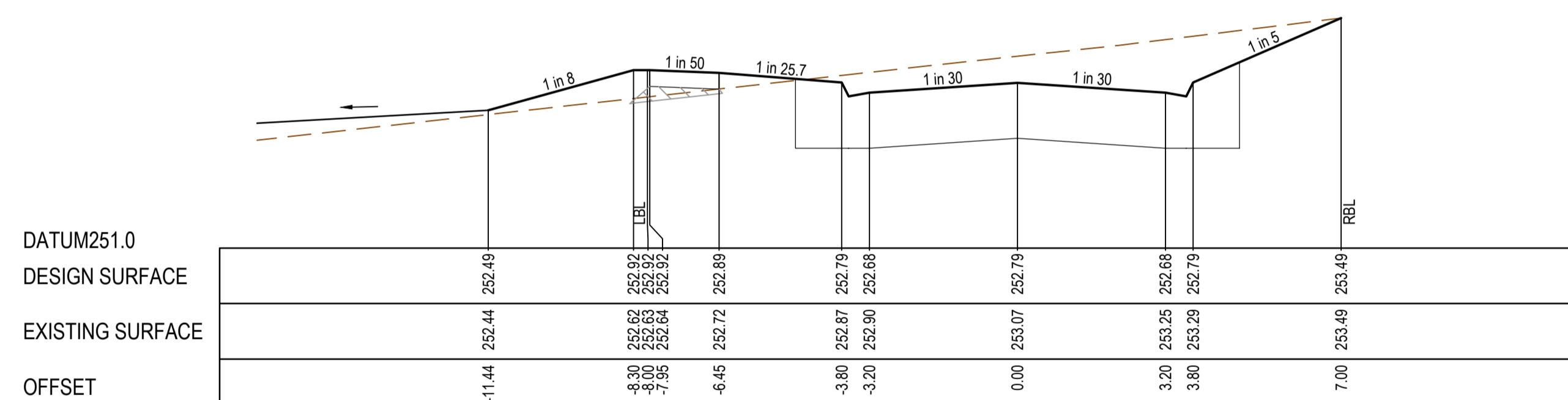
CH 193.34



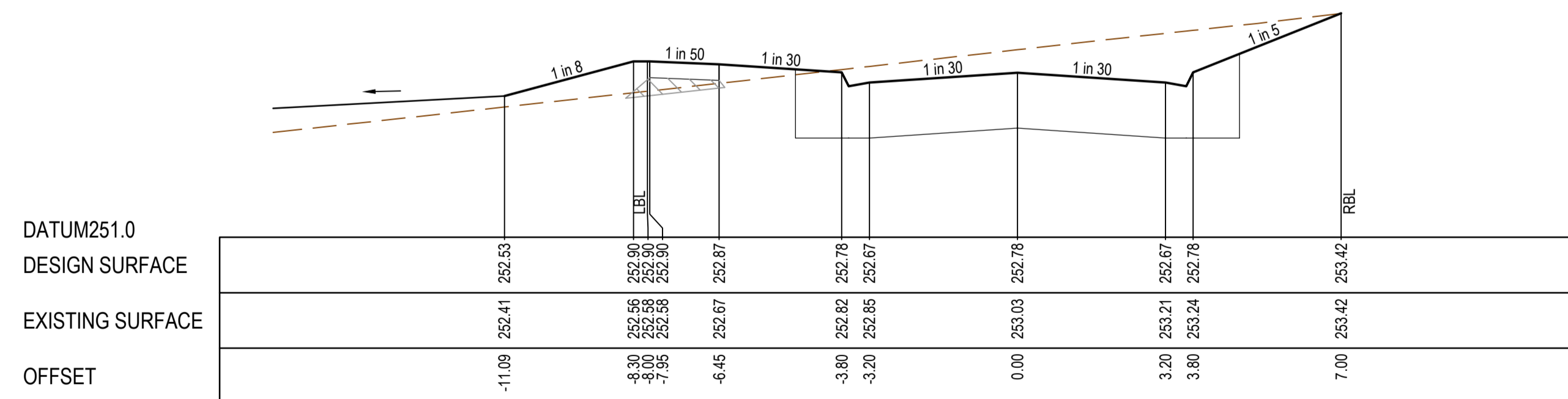
CH 292.35



CH 278.35



CH 262.35



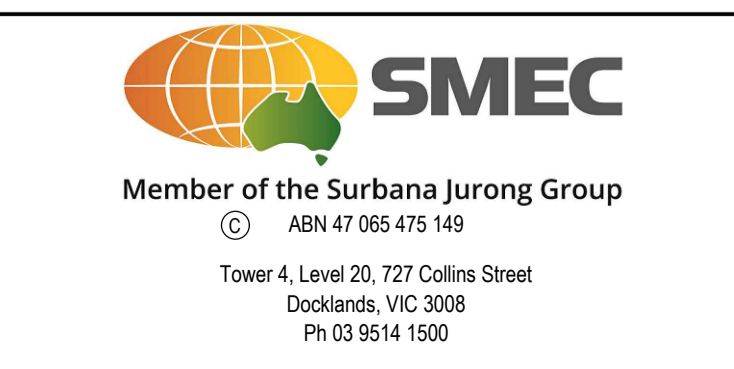
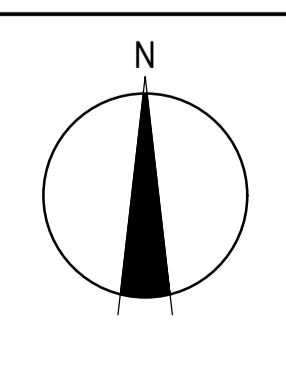
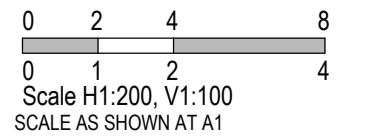
CH 246.35

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

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DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	

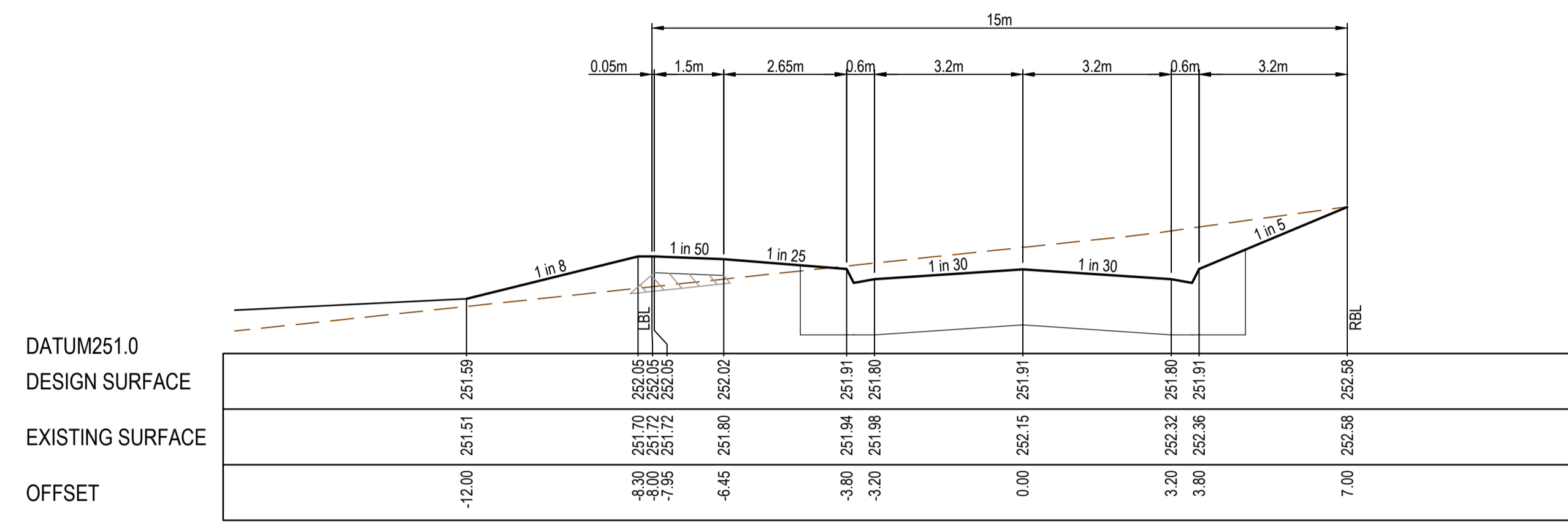


Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Institute Drive  
Ch - 193.34 - Ch 292.35

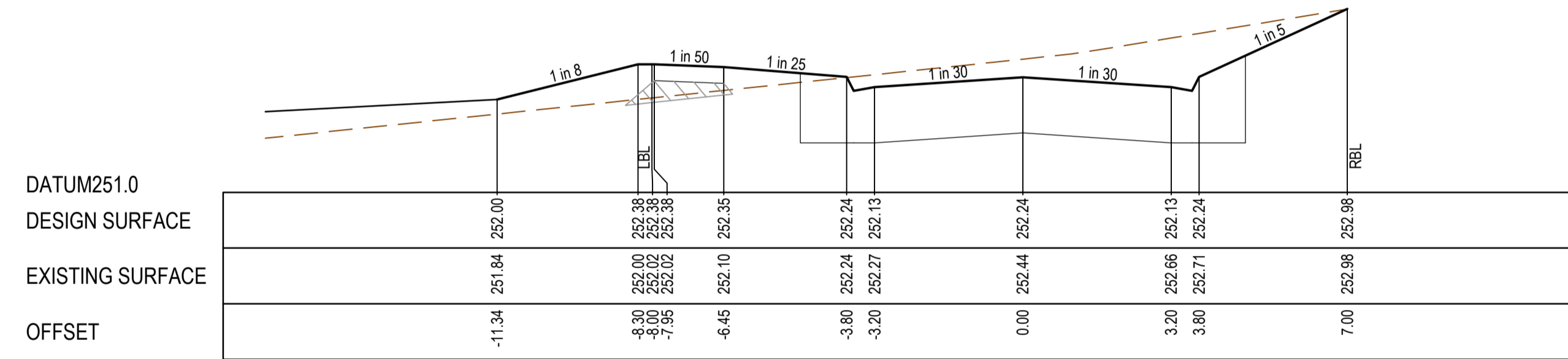
MELBOURNE REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-16	16 of 45	A



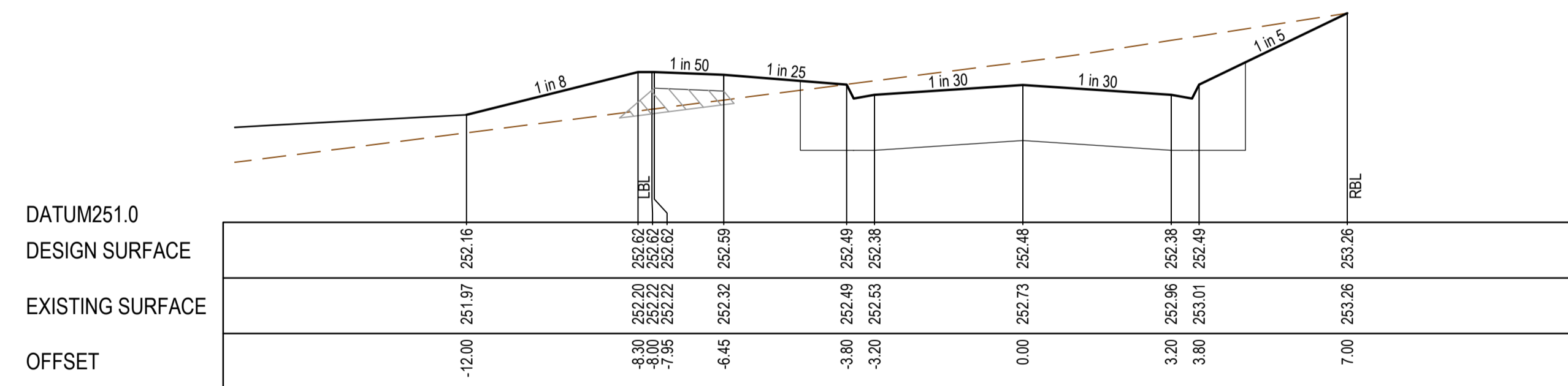
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



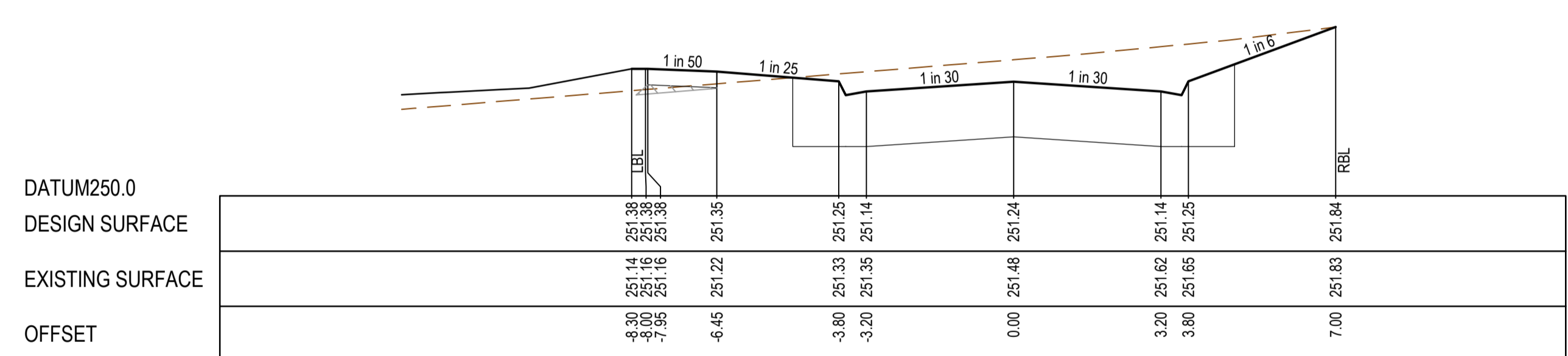
CH 339.07



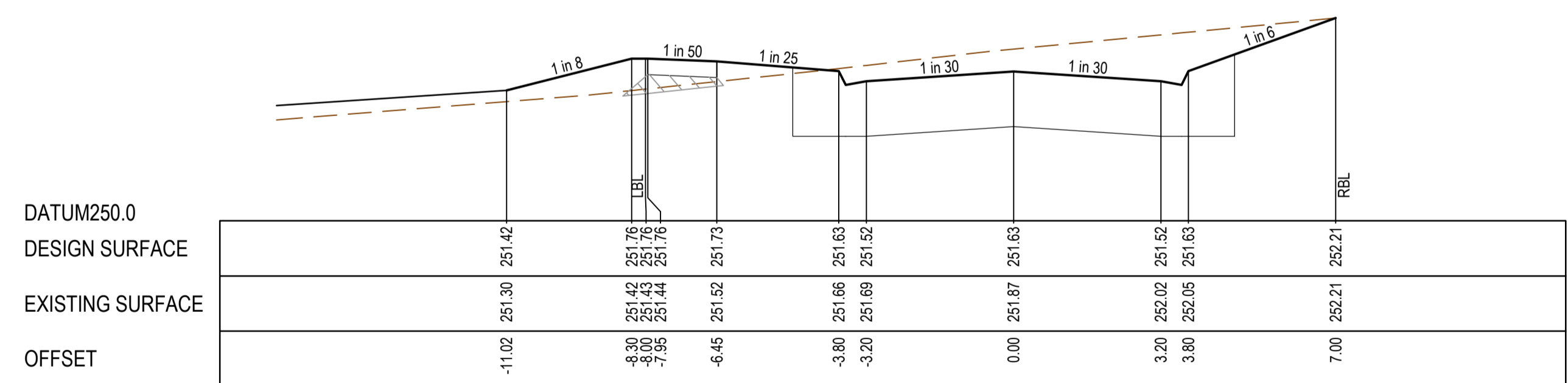
CH 320.35



CH 306.35



TP 373.53

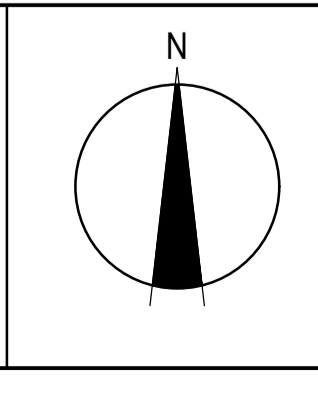
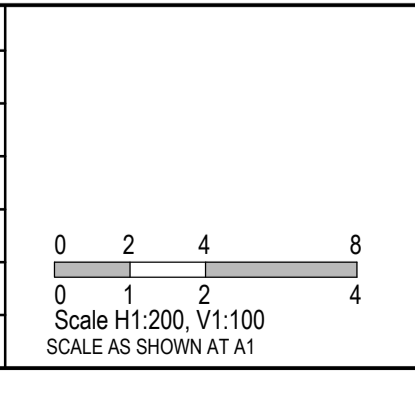


CH 355.07

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

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		DESIGNER	S.MacLaren
		CHECKED	K.Moore
		AUTHORISED	A.Burrows
		REFERENCE No. 1	
		REFERENCE No. 2	



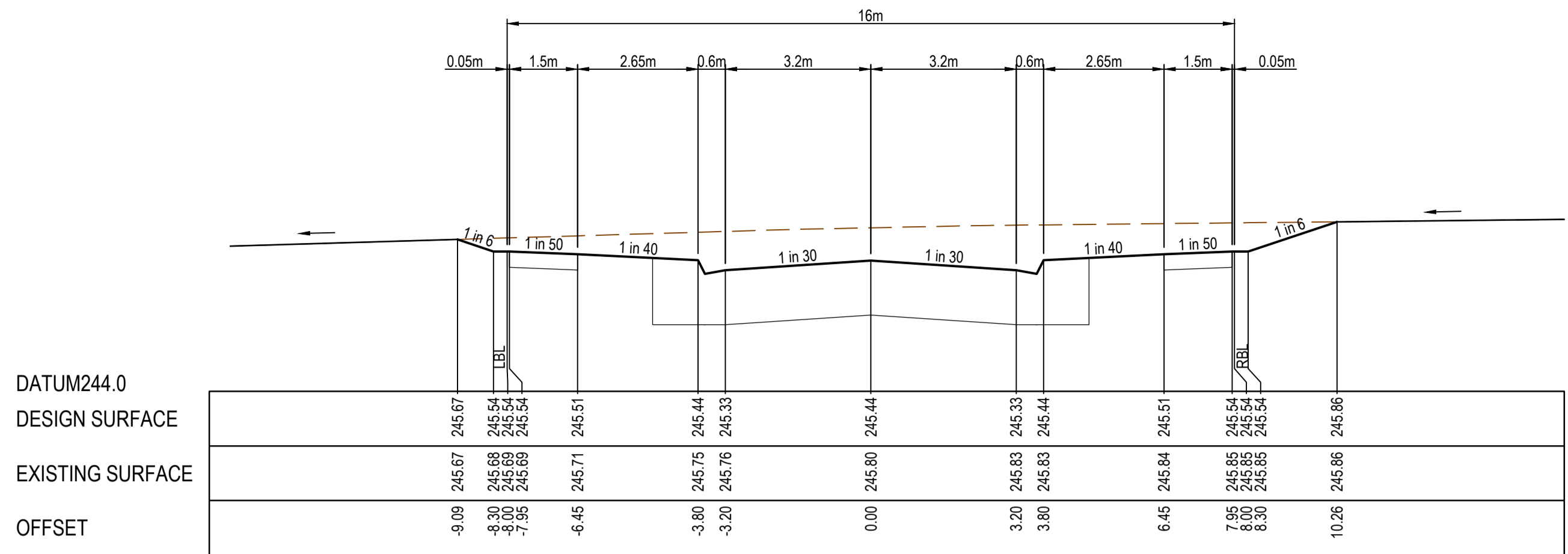
Member of the Surlana Jurong Group  
ABN 47 065 475 149  
Tower 4, Level 20, 727 Collins Street  
Docklands, VIC 3008  
Ph 03 9514 1500

Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Institute Drive  
Ch - 306.35 - Ch 373.52

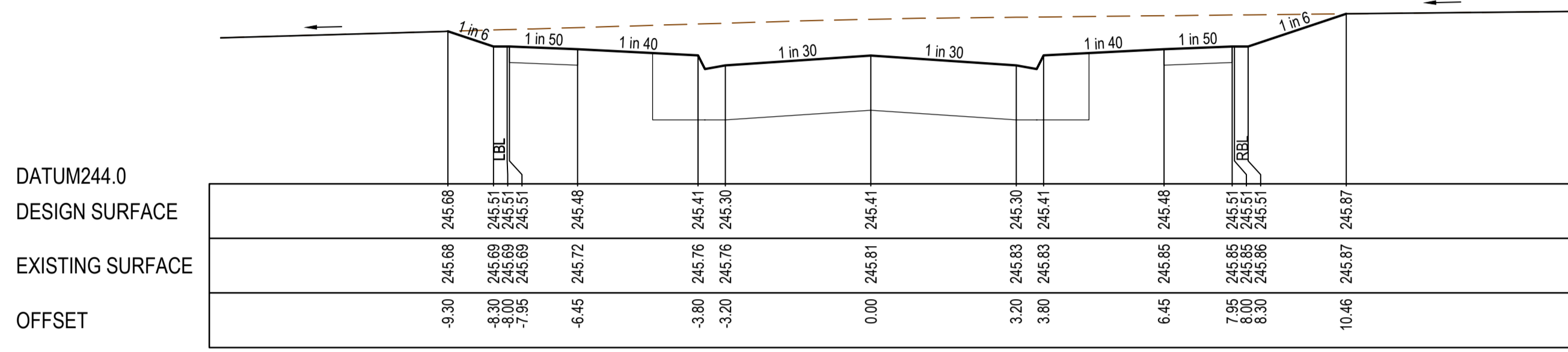
MELWAYS REF 8 M2	PROJECT / DRAWING No. 1700E-05A-17	SHEET No. 17 of 45	REVISION A
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STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE

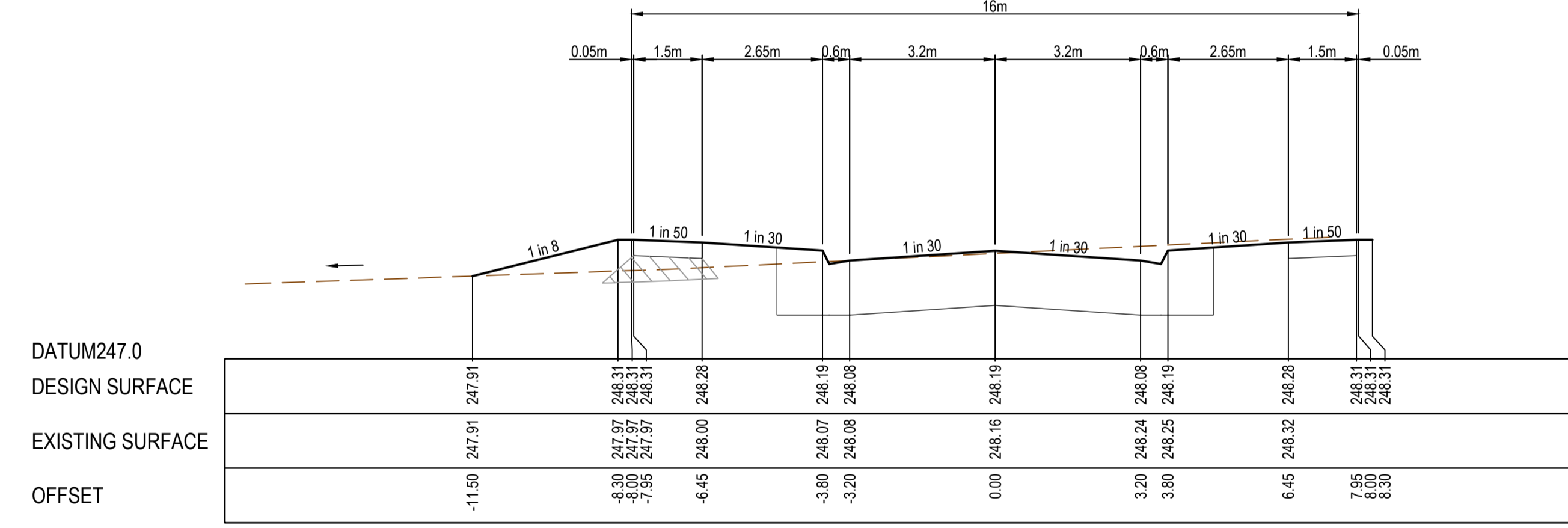


CH 20.77

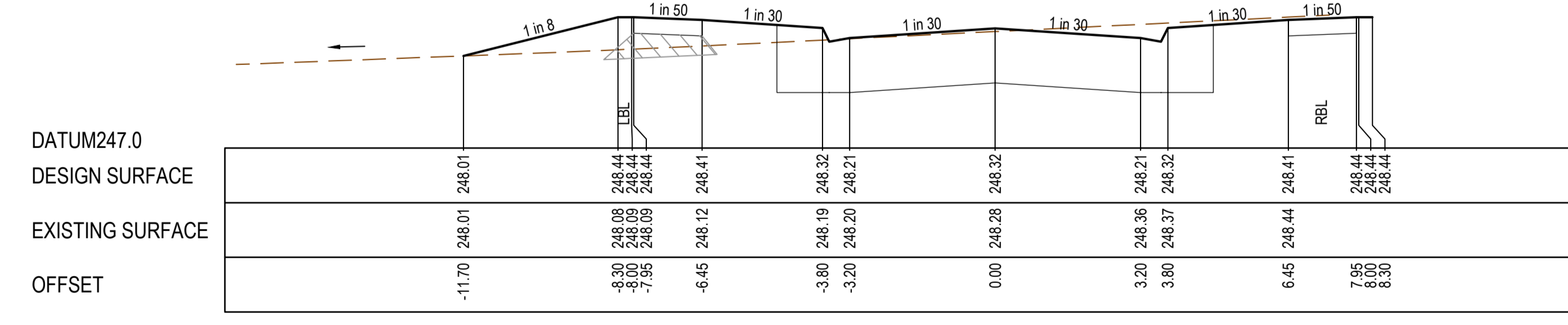


TP 17.92

ROAD D

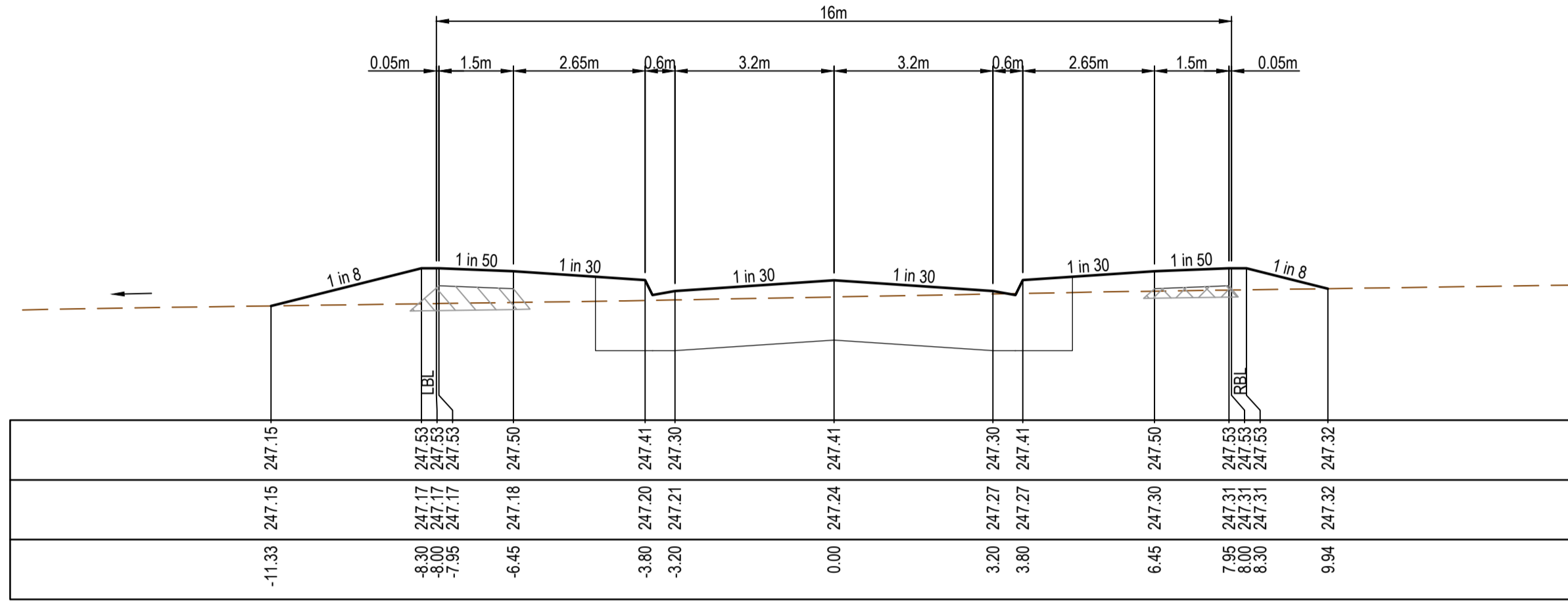


CH 20.21

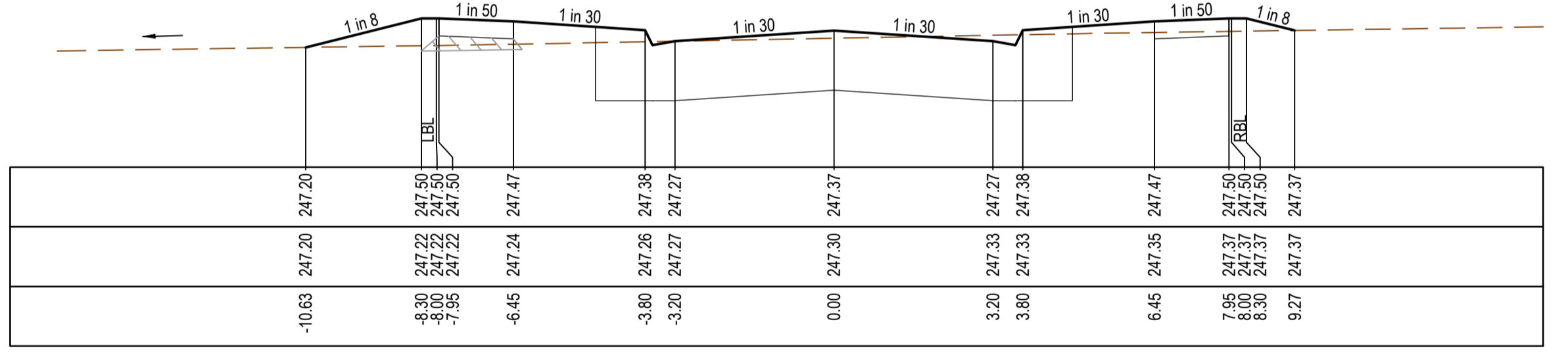


TP 15.21

ROAD H



CH 20.41



TP 17.52

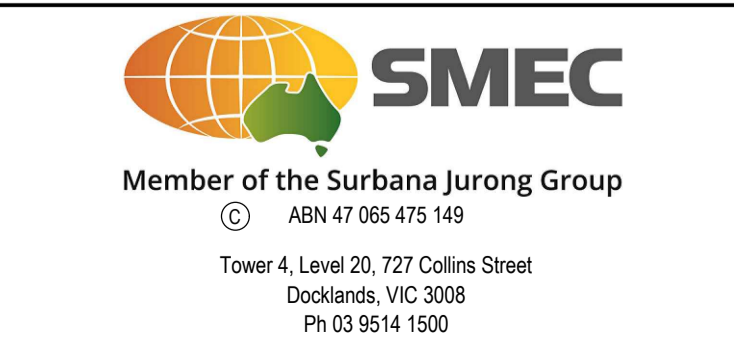
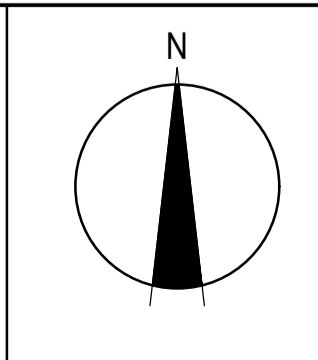
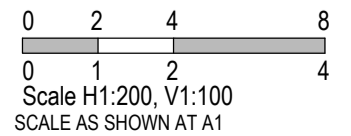
ROAD A

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
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DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Road D, H & A  
Ch - 17.92 - 20.77, 15.21 - 20.21, 17.52 - 20.41

MELWAYS REF 8 M2	PROJECT / DRAWING No. 1700E-05A-18	SHEET No. 18 of 45	REVISION A
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**SUBJECT TO APPROVAL**







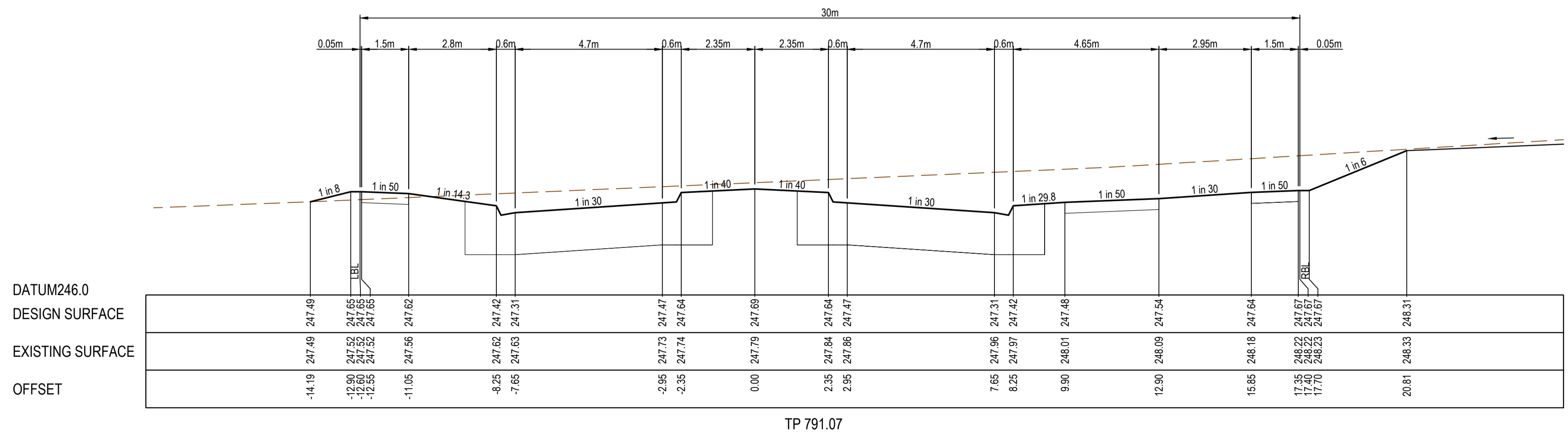
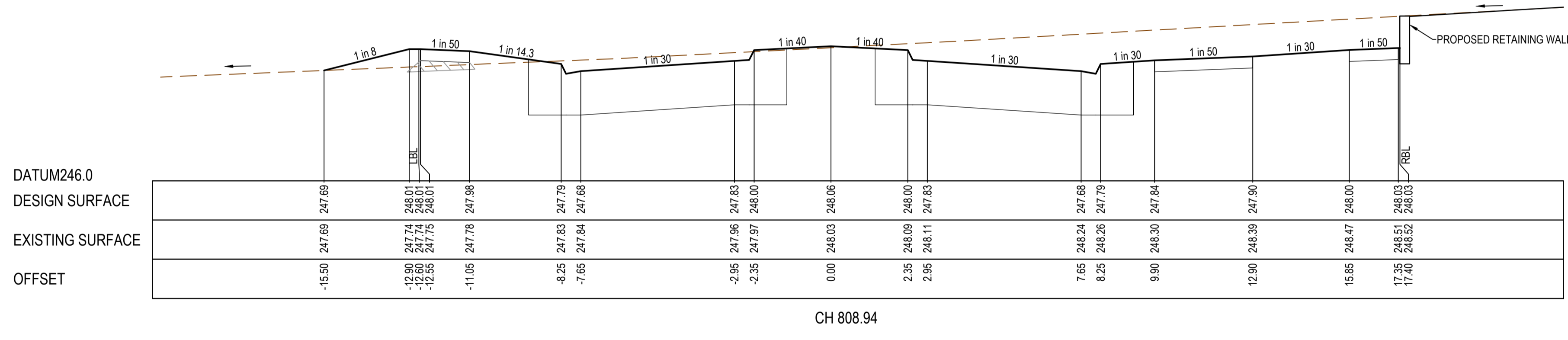
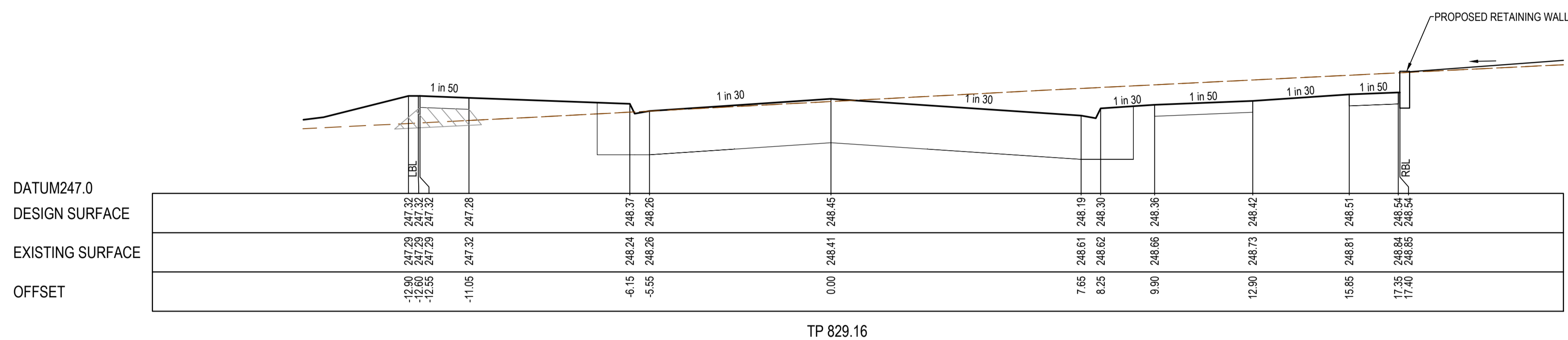
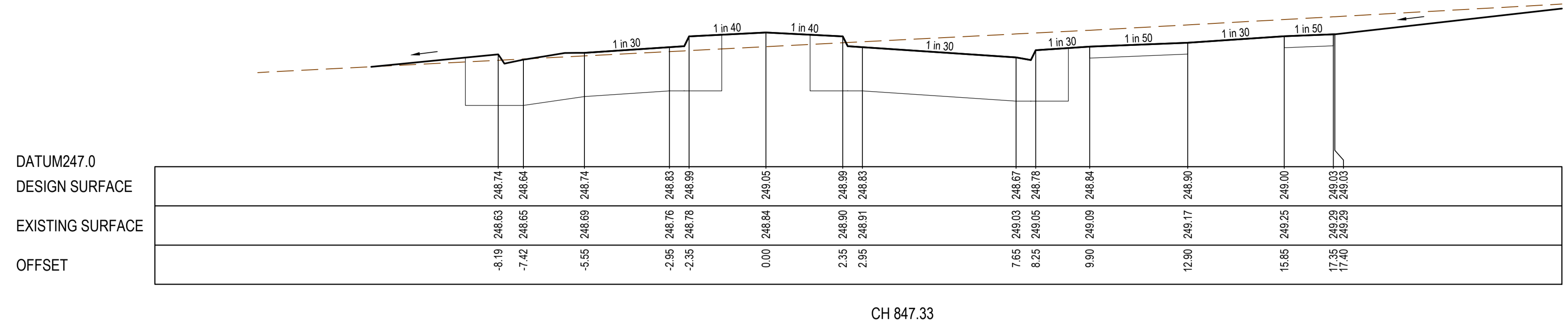








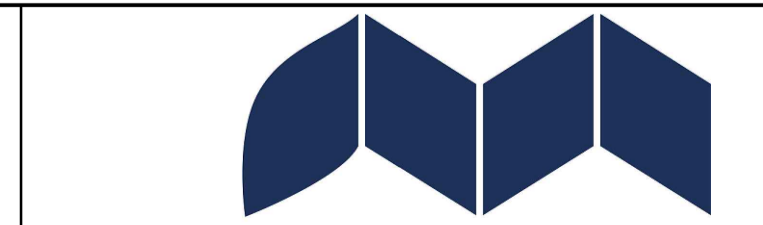
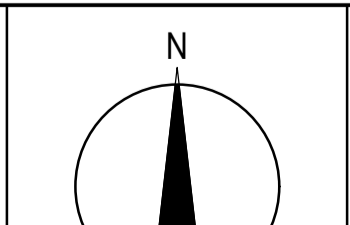
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



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Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Hayes Hill Boulevard  
Ch - 791.07 - Ch 829.16

**SUBJECT TO APPROVAL**



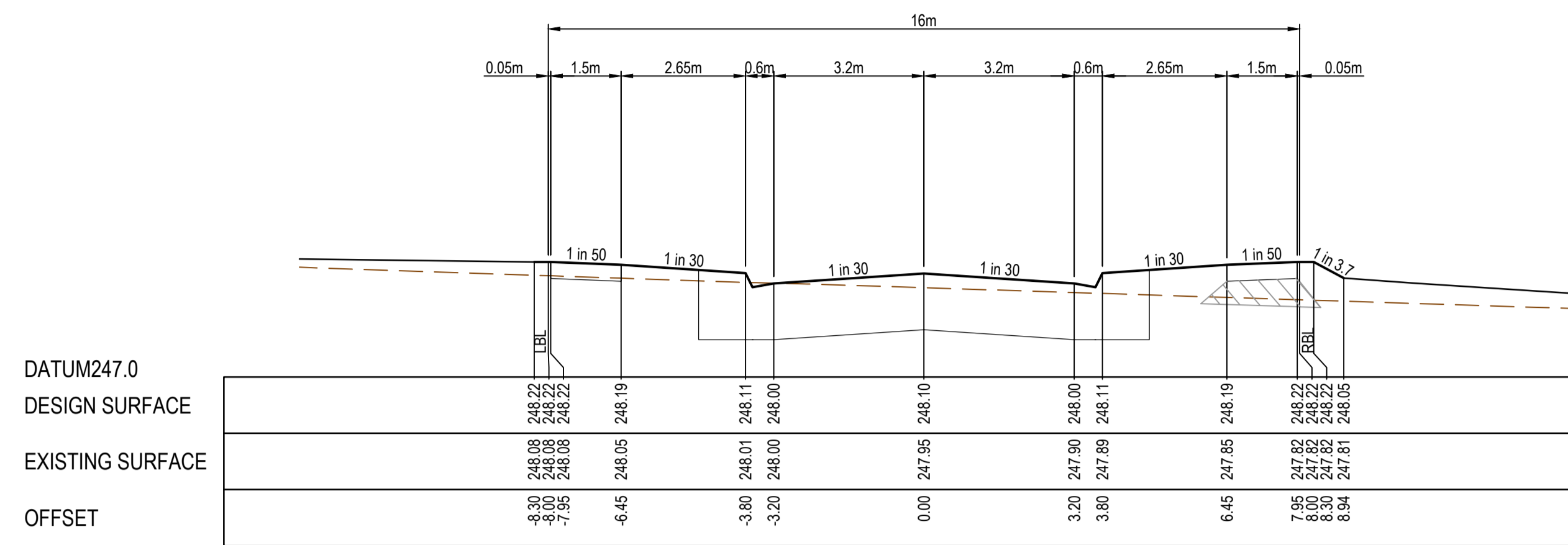
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SCALE AS SHOWN AT A1

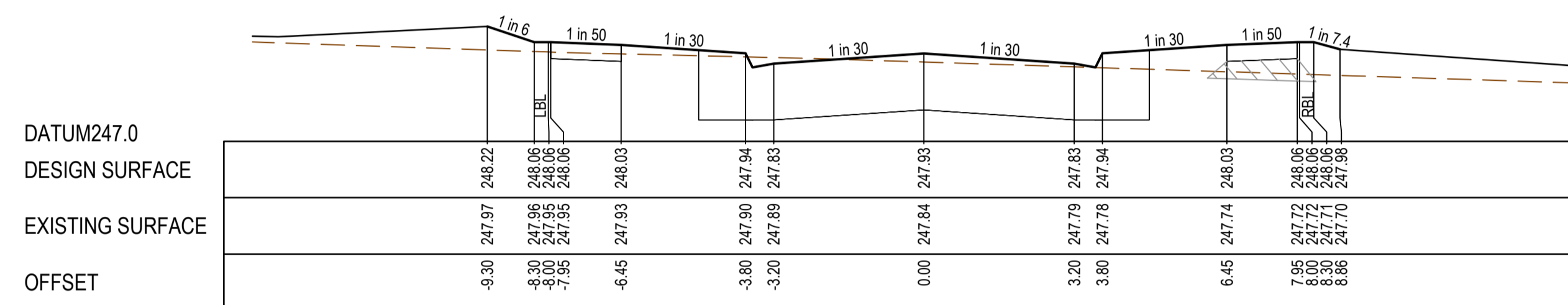
MELWAYS REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-22	22 of 45	A



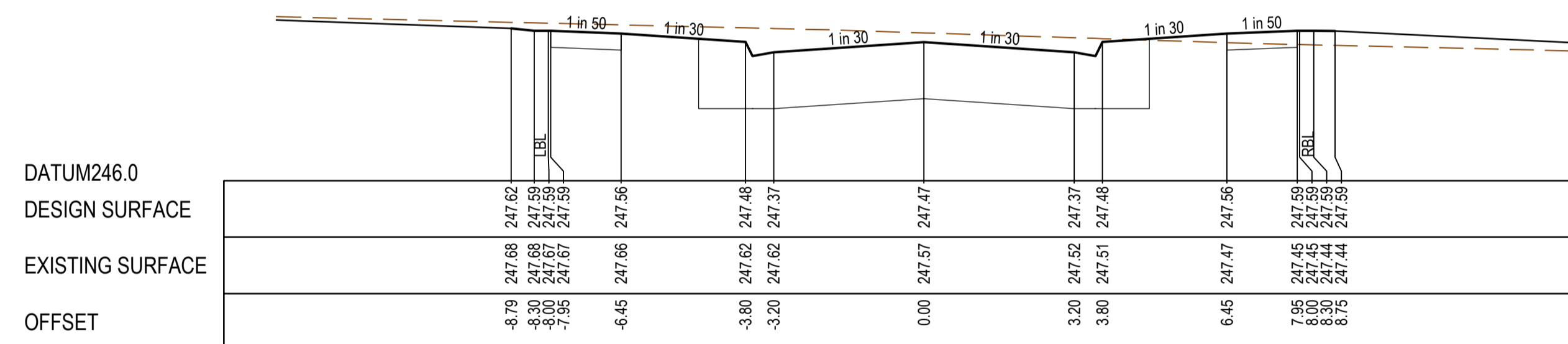
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



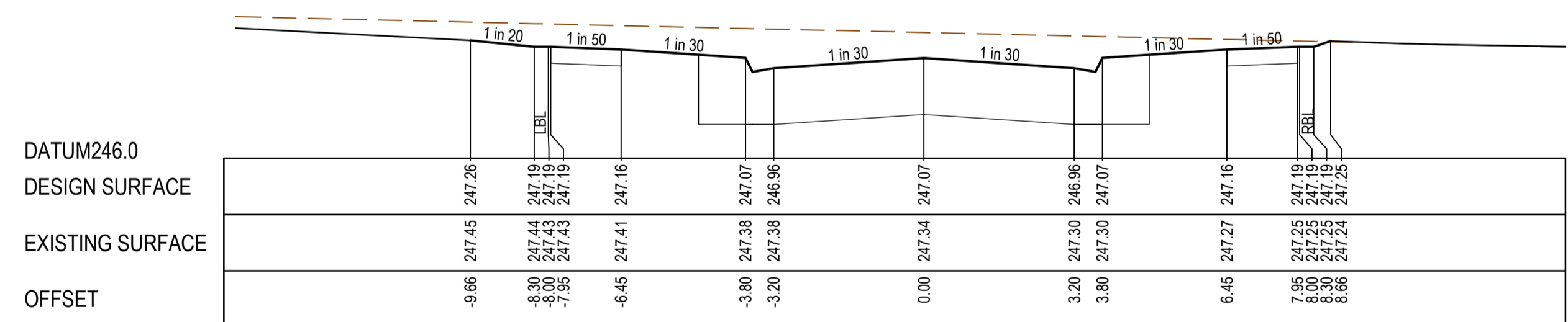
CH 55.00



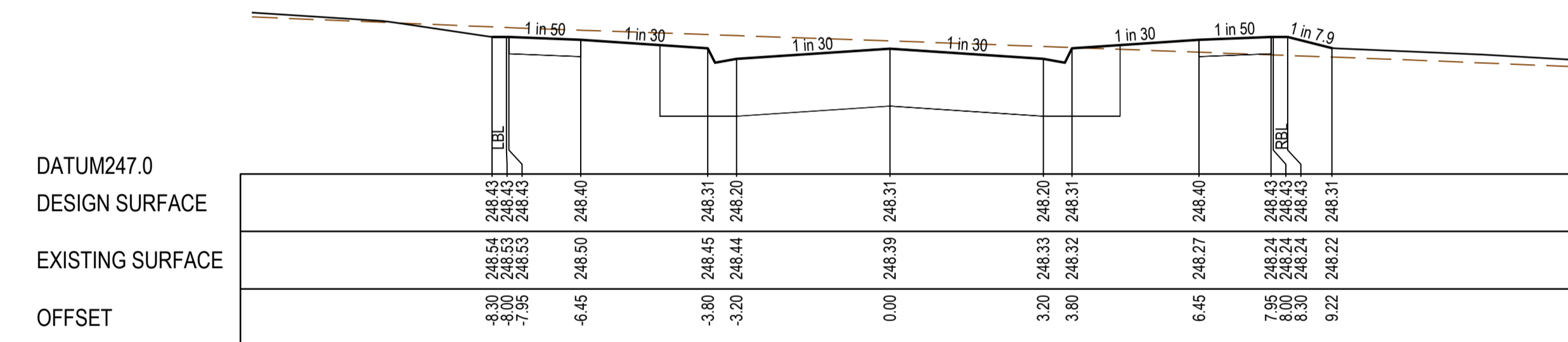
CH 49.40



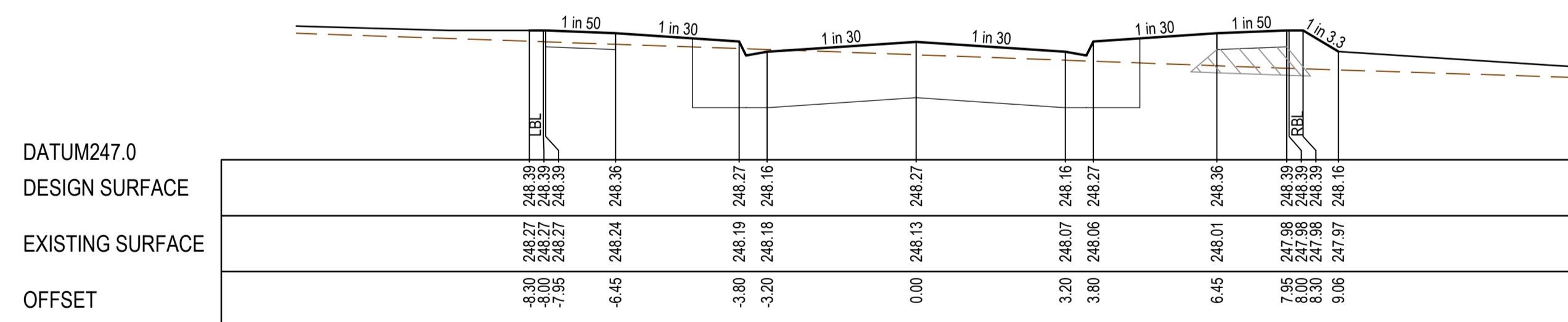
CH 35.00



TP 22.40



TP 75.10



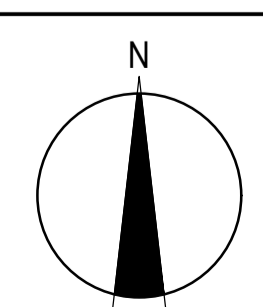
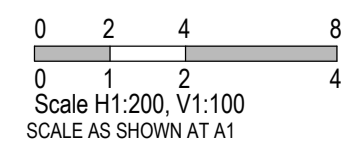
CH 63.40

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
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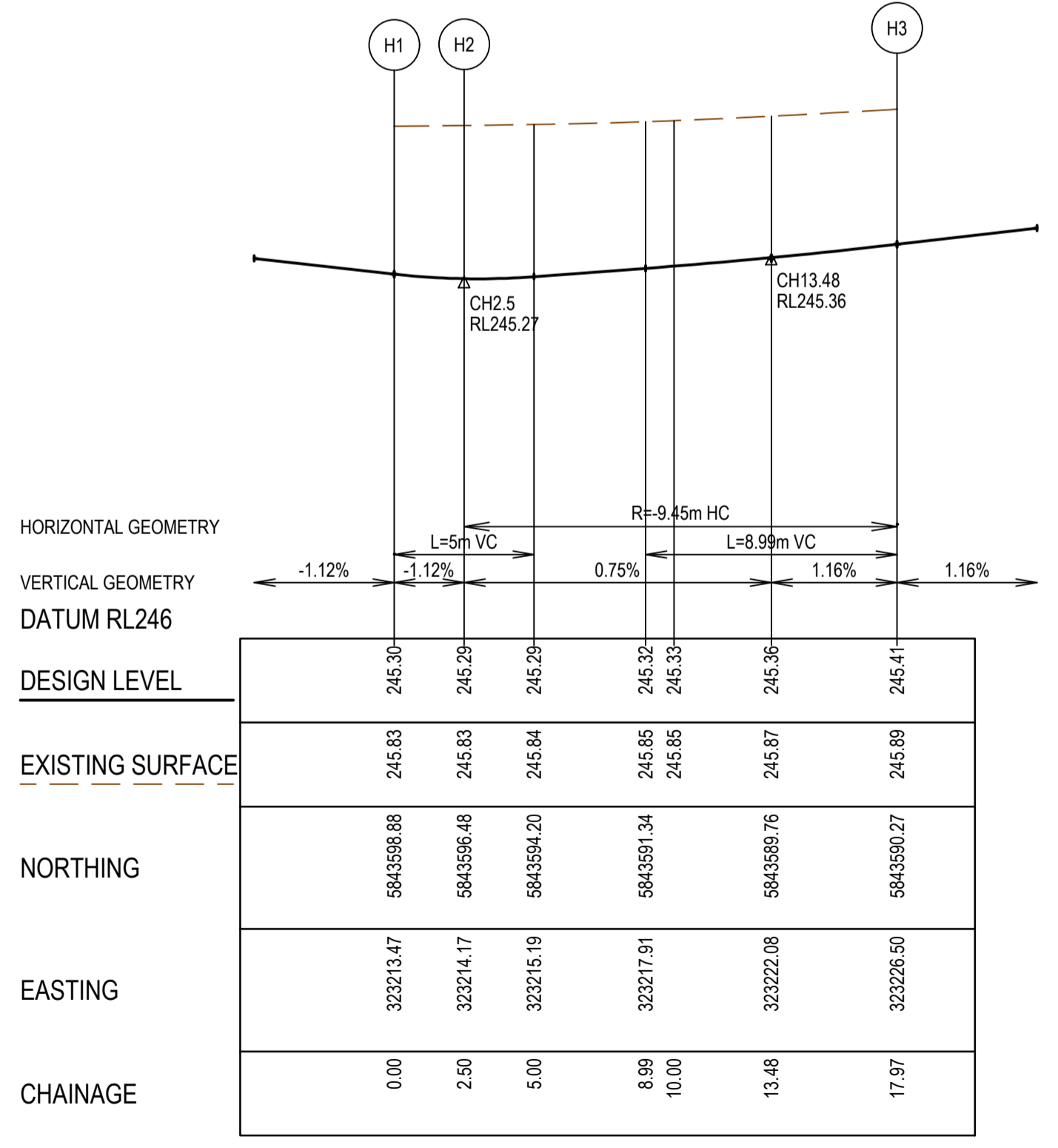
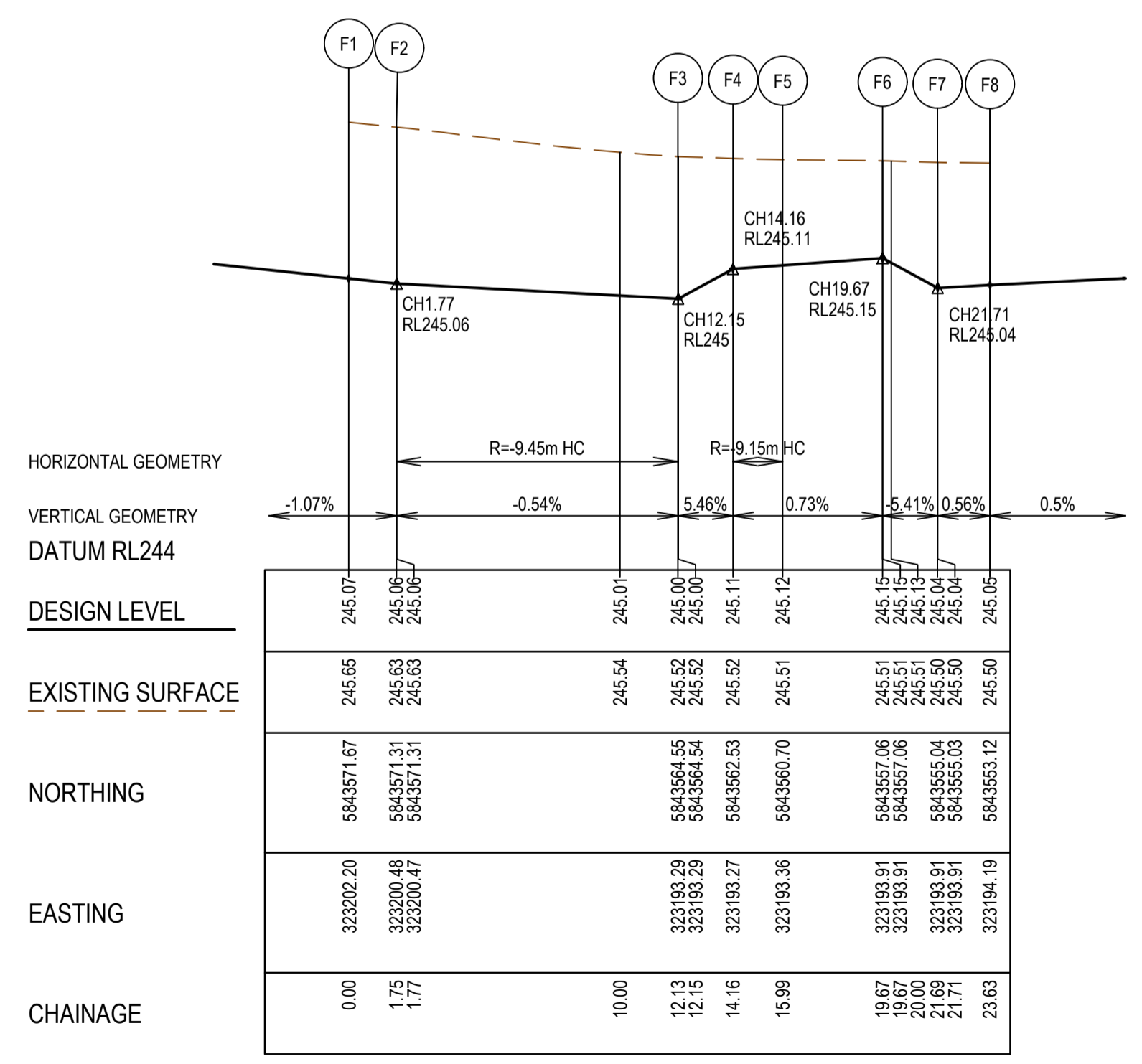
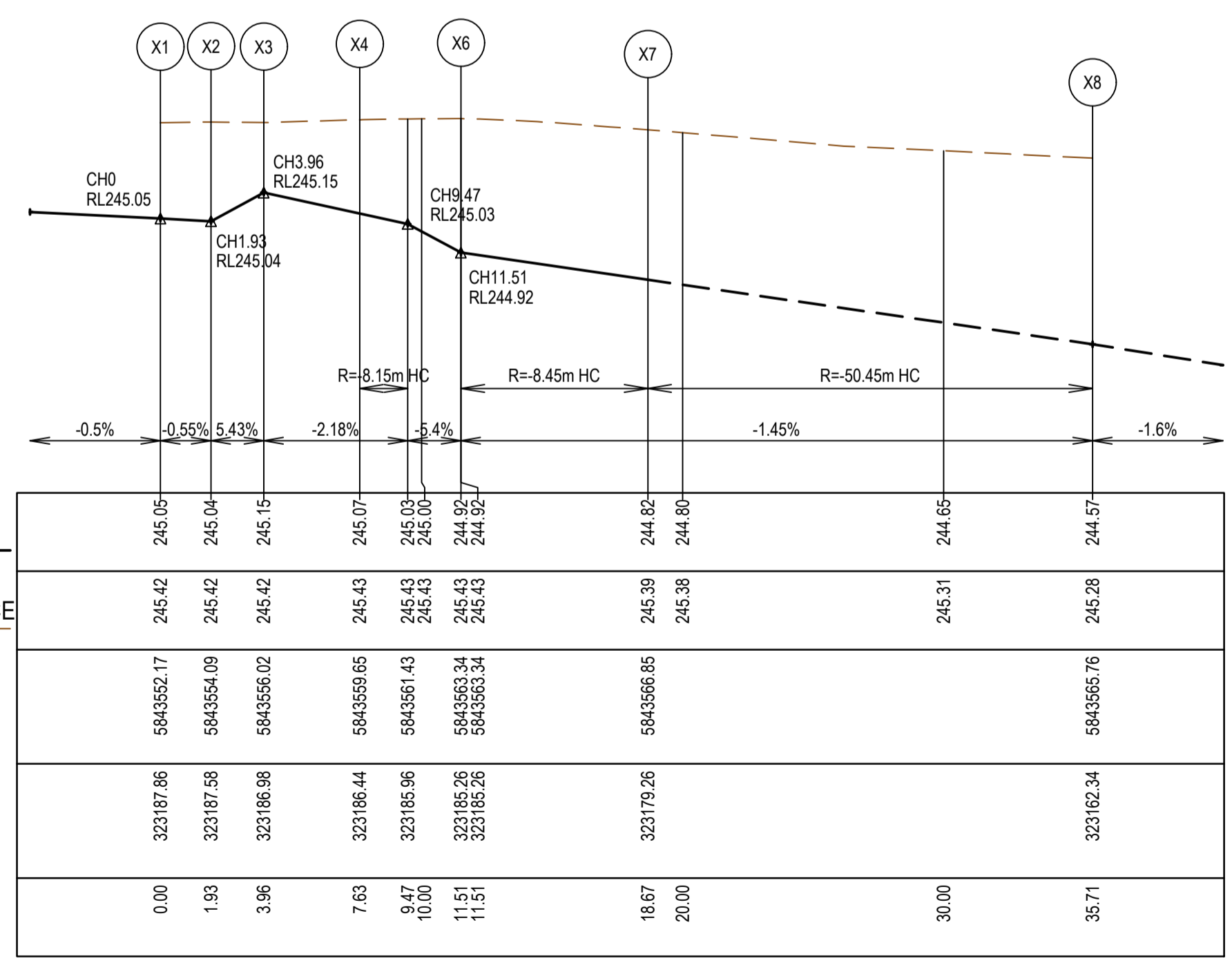
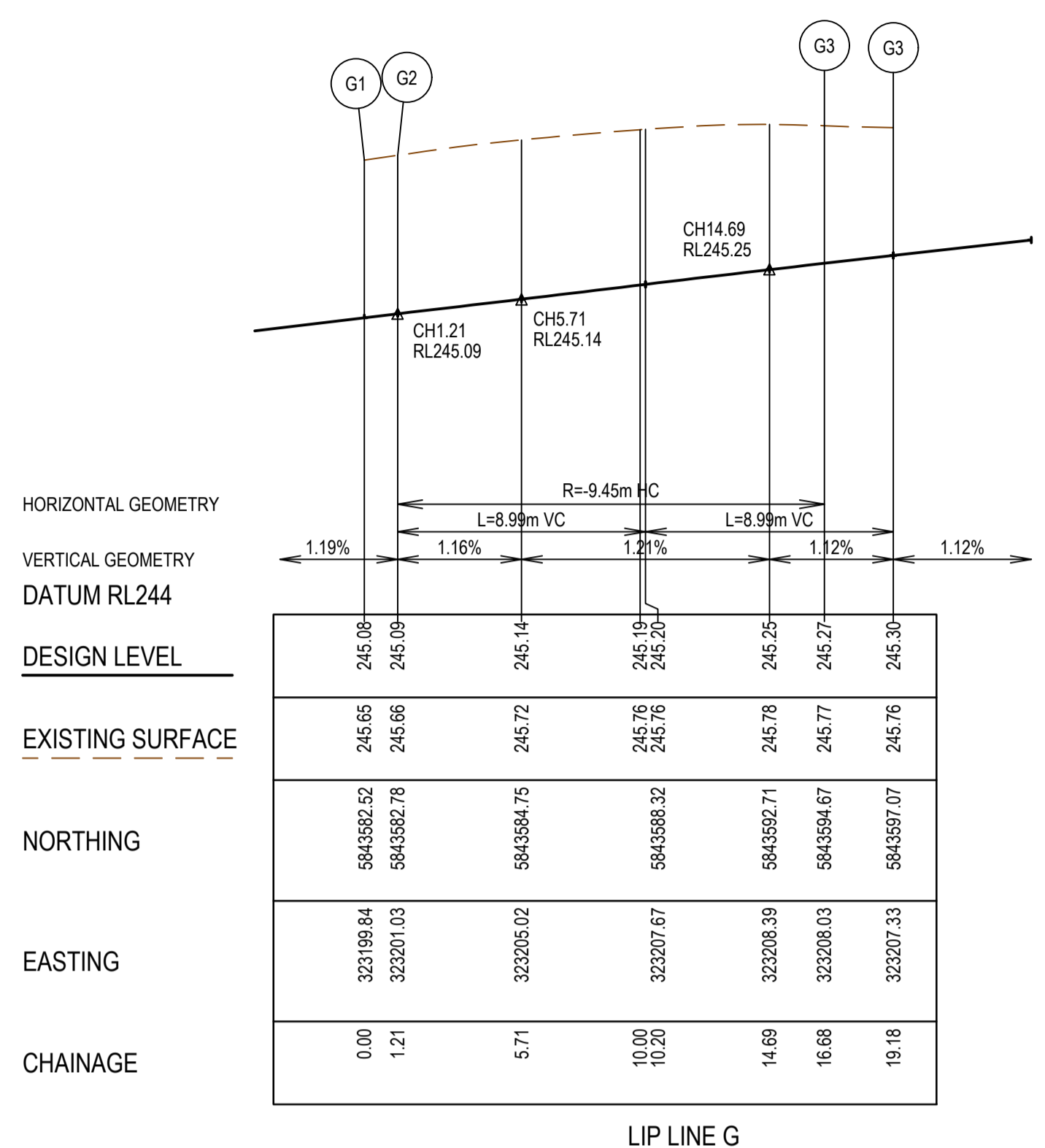
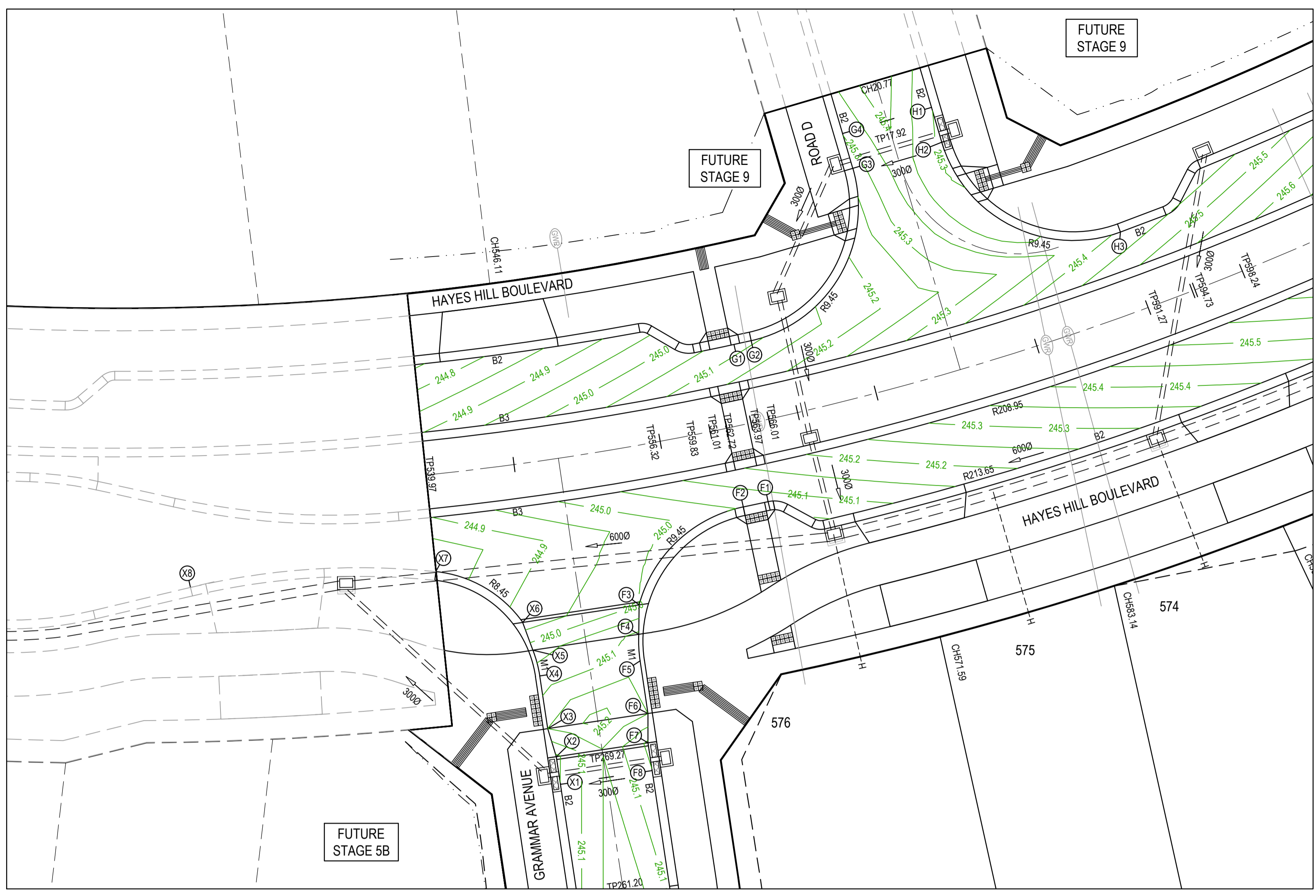
**SMEC**  
Member of the Surlana Jurong Group  
ABN 47 065 475 149  
Tower 4, Level 20, 727 Collins Street  
Docklands, VIC 3008  
Ph 03 9514 1500



Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Federation Avenue

MELBOURNE REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-23</b>	SHEET No. <b>23 of 45</b>	REVISION <b>A</b>
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REV A DATE 21.09.18 AMENDMENT / REVISION DESCRIPTION ISSUED TO COUNCIL FOR APPROVAL DES/DTF SM/RB APPROVAL AB

**SUBJECT TO APPROVAL**

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TITLE NAME  
 DRAFTER R.Barua  
 DESIGNER S.MacLaren  
 CHECKED K.Moore  
 AUTHORISED A.Burrows  
 REFERENCE No. 1  
 REFERENCE No. 2

0 2 4 8  
 0 0.2 0.4 0.8  
 Scale H1:200, V1:20  
 Scale 1:200  
 SCALE AS SHOWN AT 1

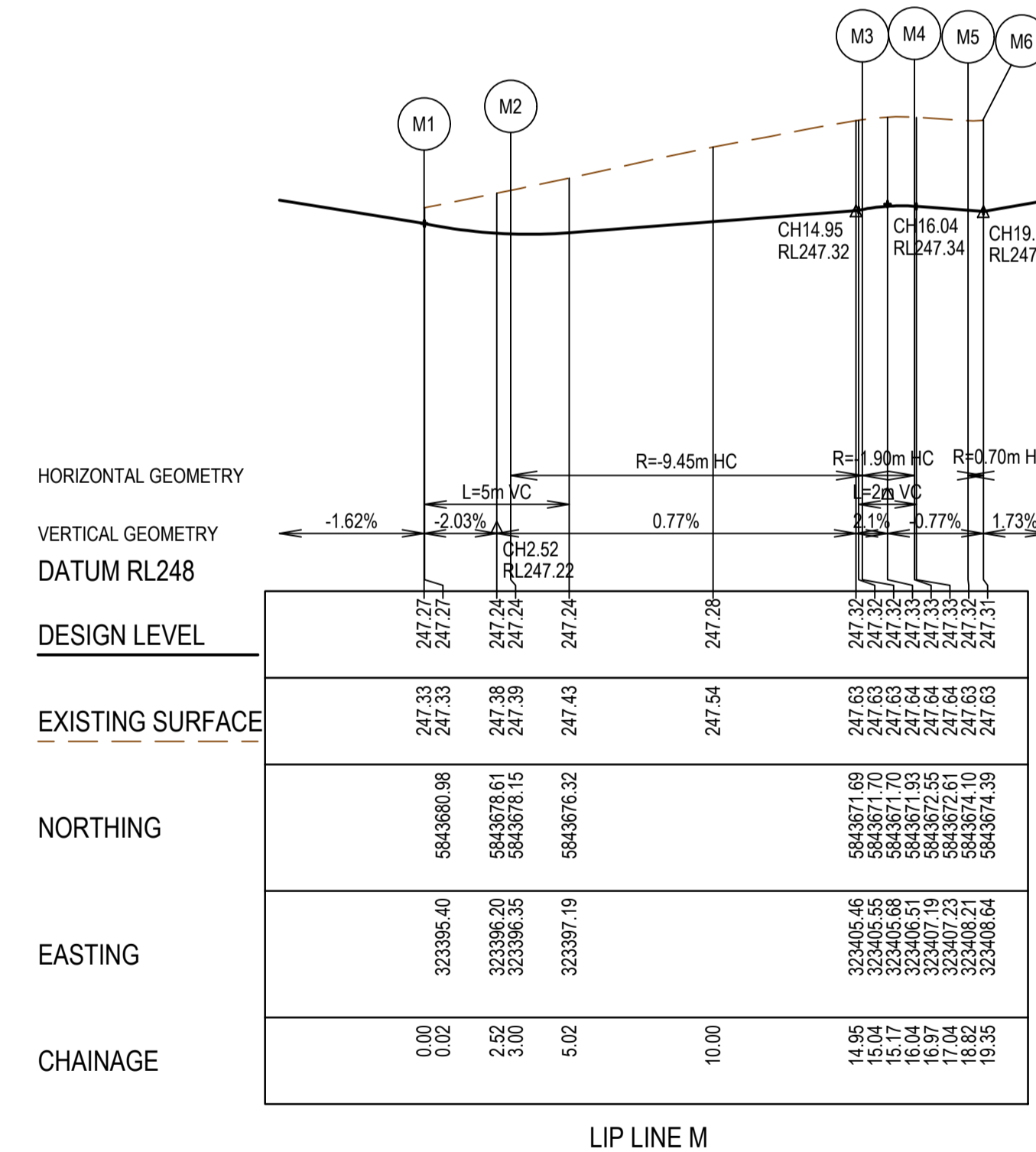
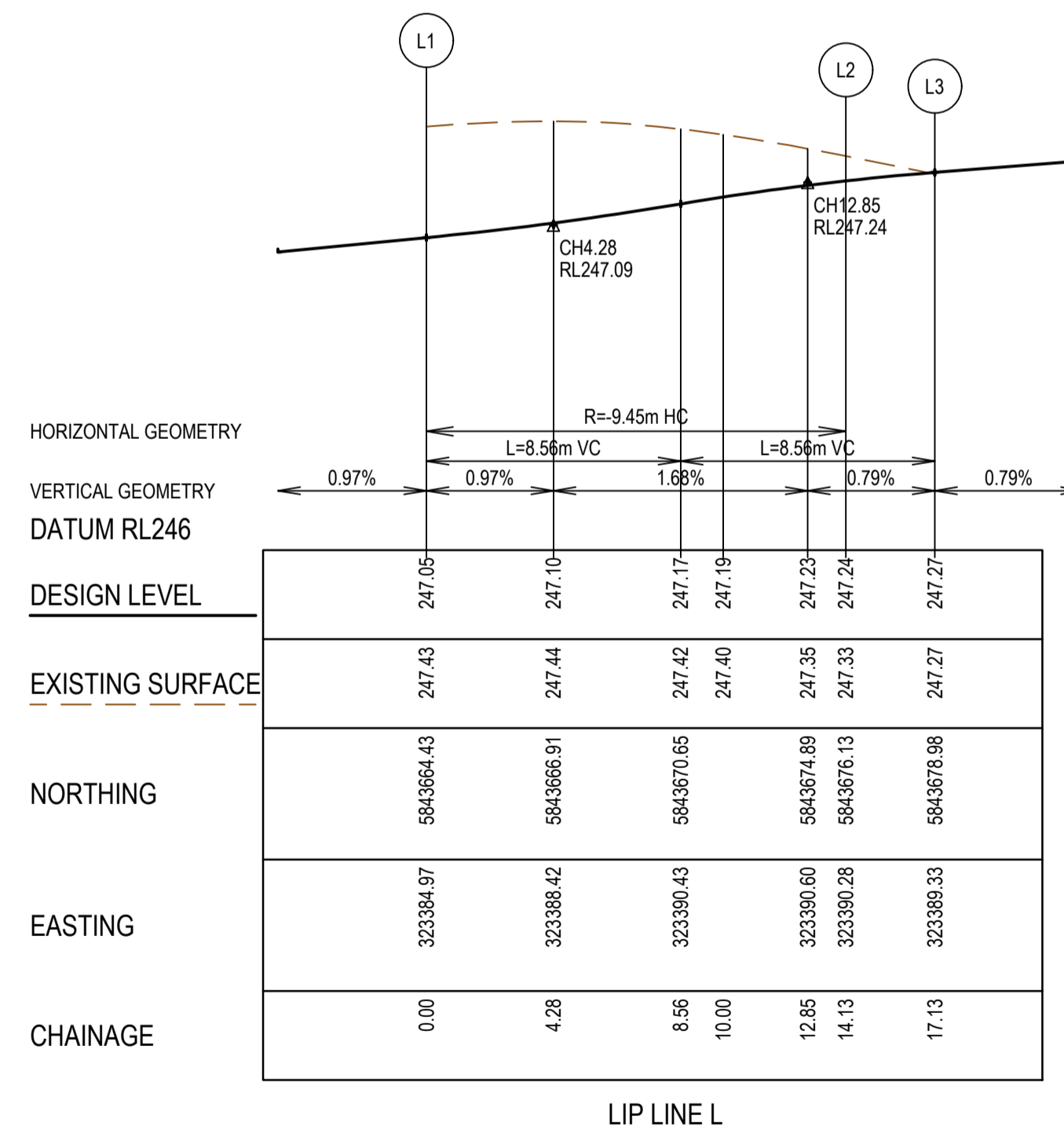
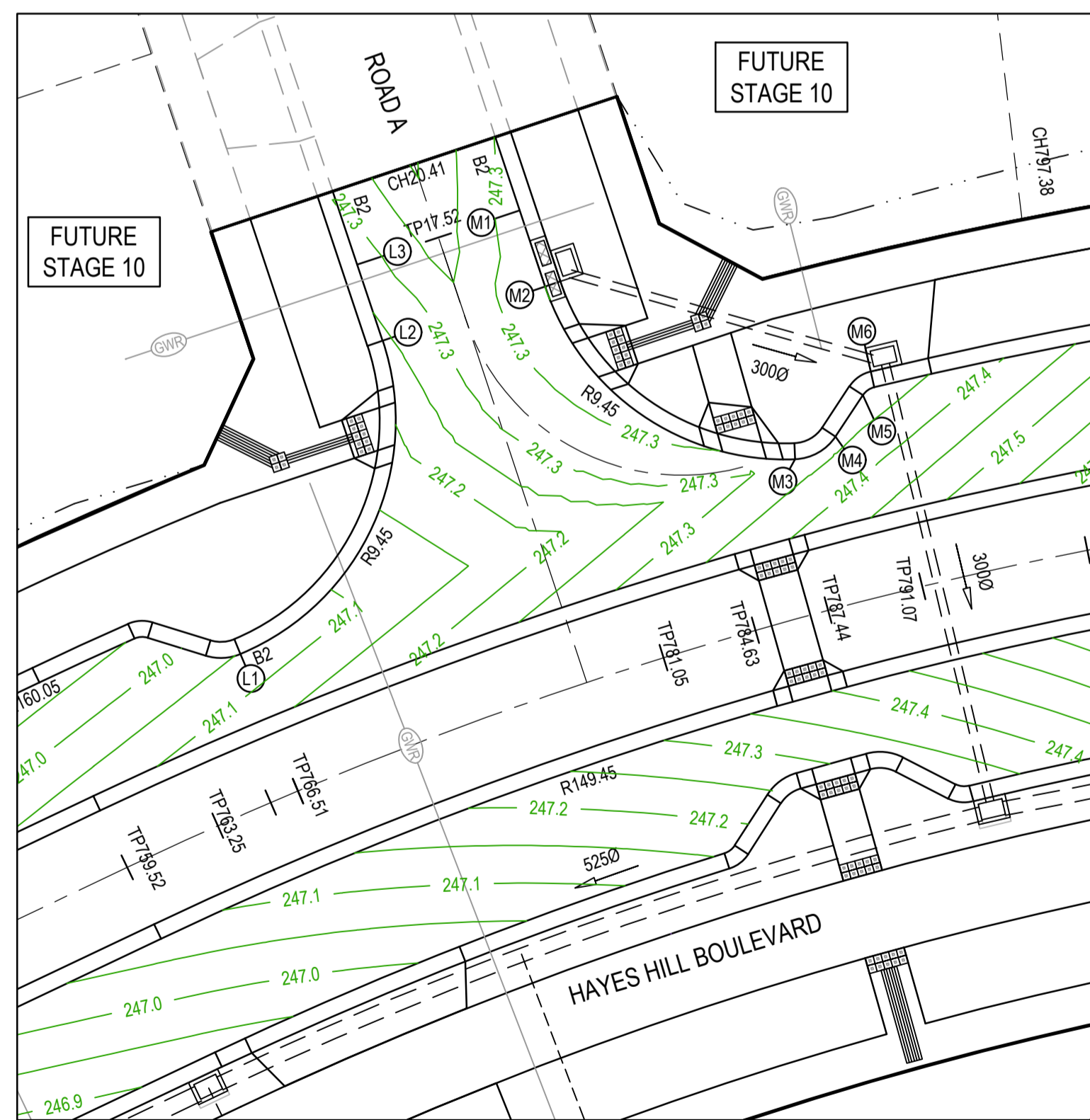
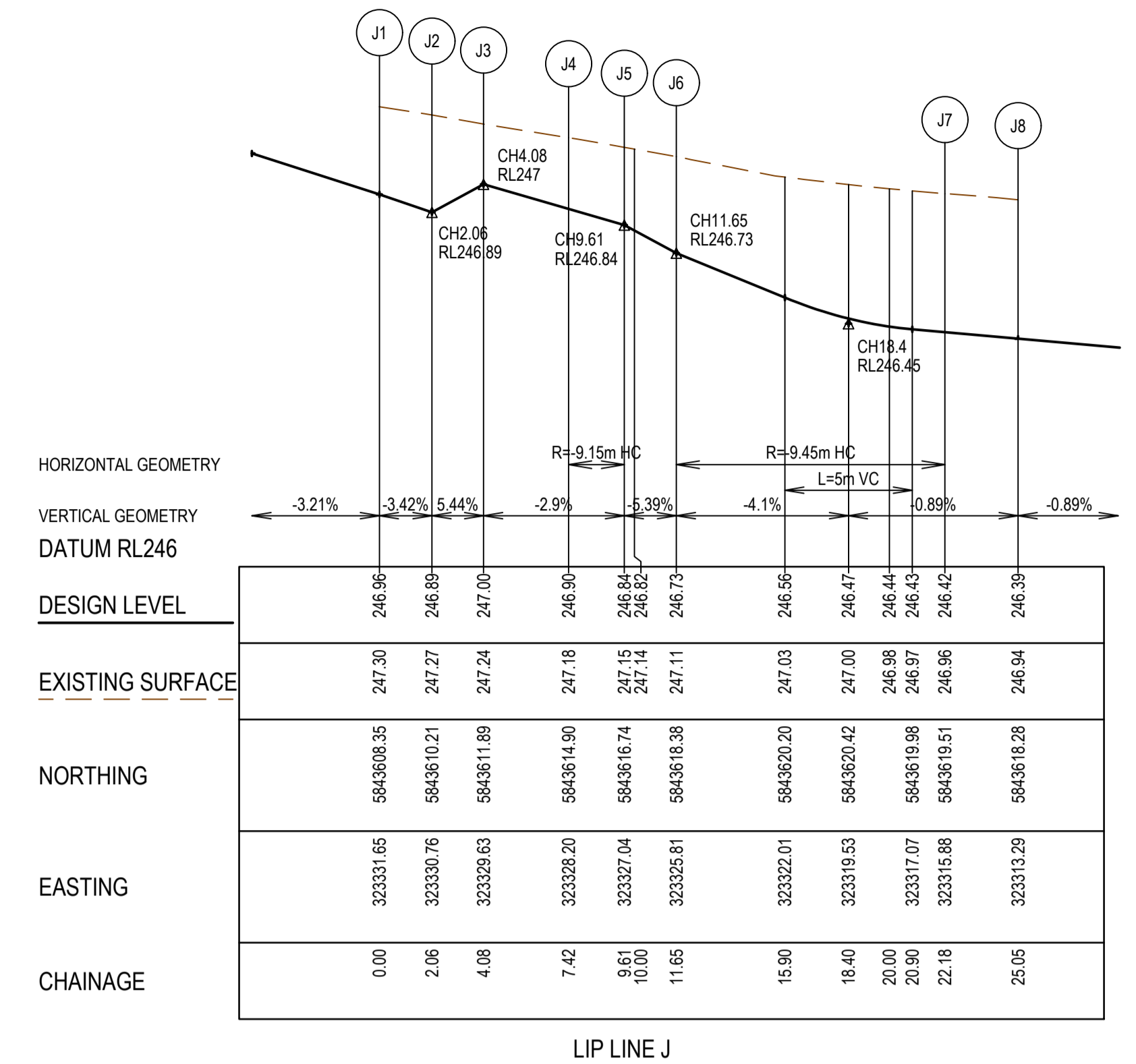
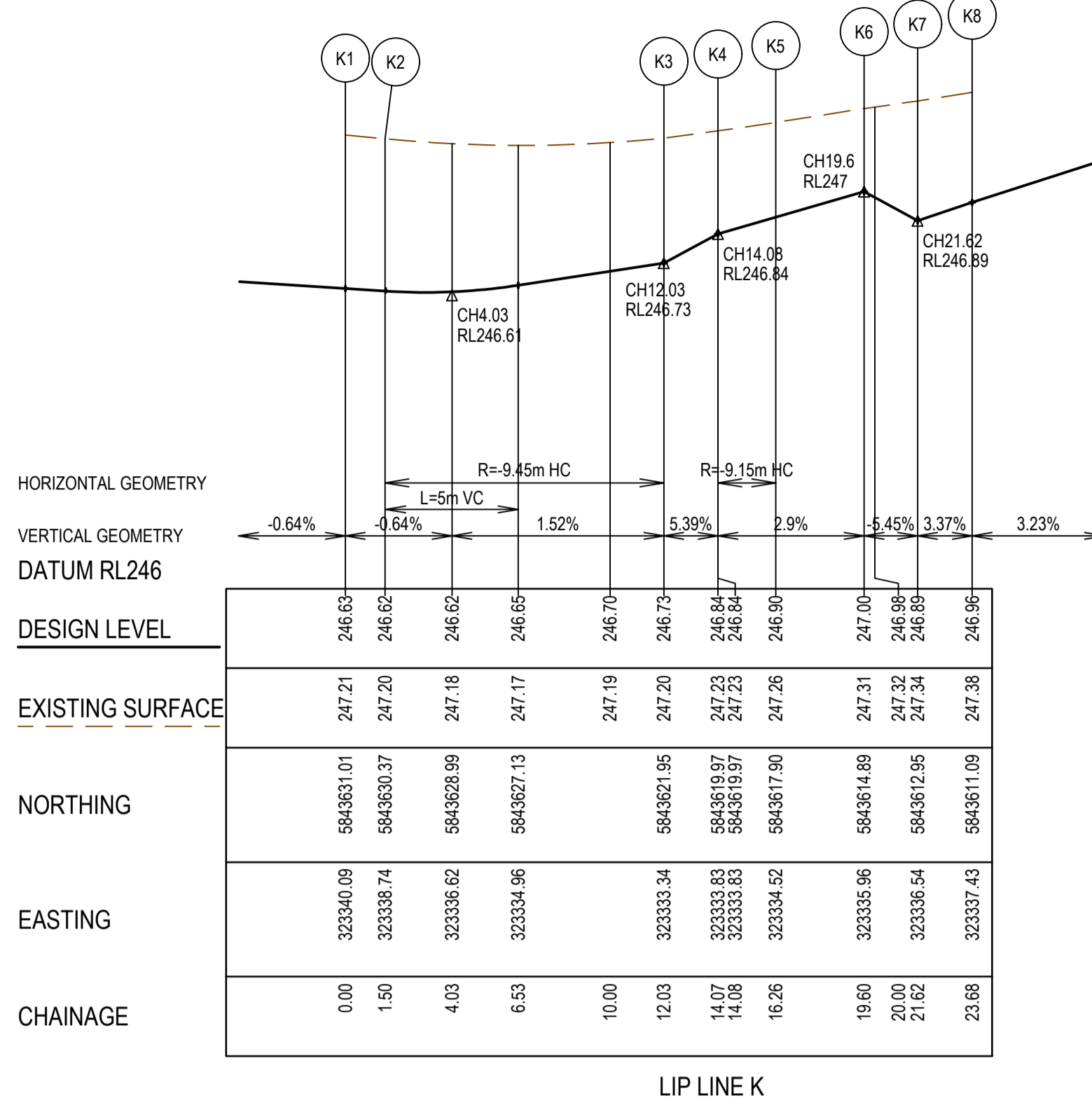
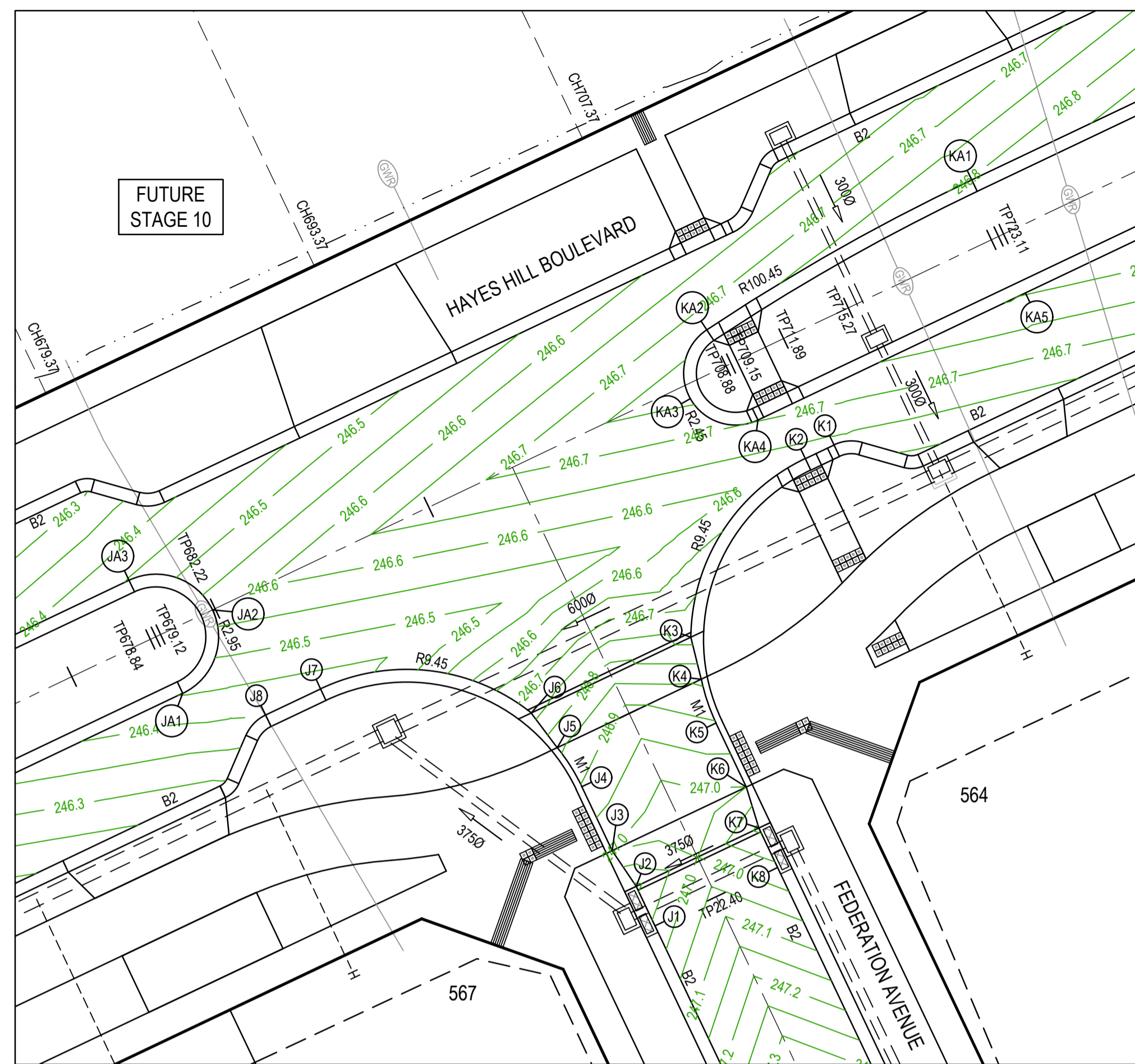
**SMEC**  
 Member of the Surbana Jurong Group  
 ABN 47 065 475 149  
 Tower 4, Level 20, 727 Collins Street  
 Docklands, VIC 3008  
 Ph 03 9514 1500



Olivine Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Intersection Detail Plan &  
 Lip Profiles - 1

MELBOURNE REF 8 M2 PROJECT / DRAWING No. 1700E-05A-24 SHEET No. 24 of 45 REVISION A





Alignment KA

Point no	Easting	Northing	RL
KA1	323346.582	5843643.502	
KA2	323334.093	5843636.436	246.731
KA3	323333.316	5843633.189	246.761
KA4	323336.499	5843632.182	246.702
KA5	323349.113	5843638.172	246.808

Curve no | Radius | Arc | A | B | X | Y | Mid point RL

KA1 - KA2	8.192	100.450	14.362	0.257	0.192	3.590	3.585	3.591	246.766
KA2 - KA3	85.904	2.450	3.673	0.657	0.487	0.897	0.772	0.918	246.751
KA3 - KA4	85.904	2.450	3.673	0.657	0.487	0.897	0.772	0.918	246.711

Alignment JA

Point no	Easting	Northing	RL
JA1	323309.381	5843619.304	246.453
JA2	323310.780	5843623.234	246.578
JA3	323306.850	5843624.633	246.453

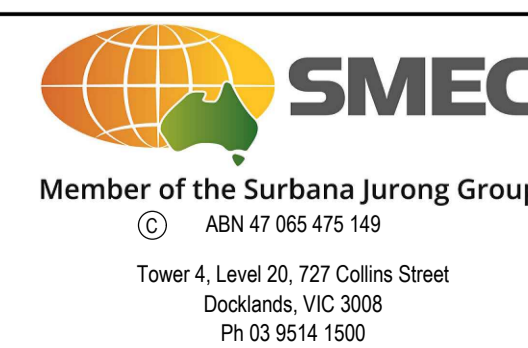
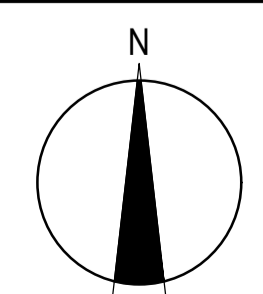
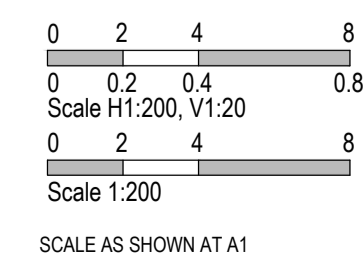
Curve no | Radius | Arc | A | B | X | Y | Mid point RL

JA1 - JA2	90.000	2.950	4.634	0.864	0.639	1.129	0.957	1.158	246.500
JA2 - JA3	90.000	2.950	4.634	0.864	0.639	1.129	0.957	1.158	246.501

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

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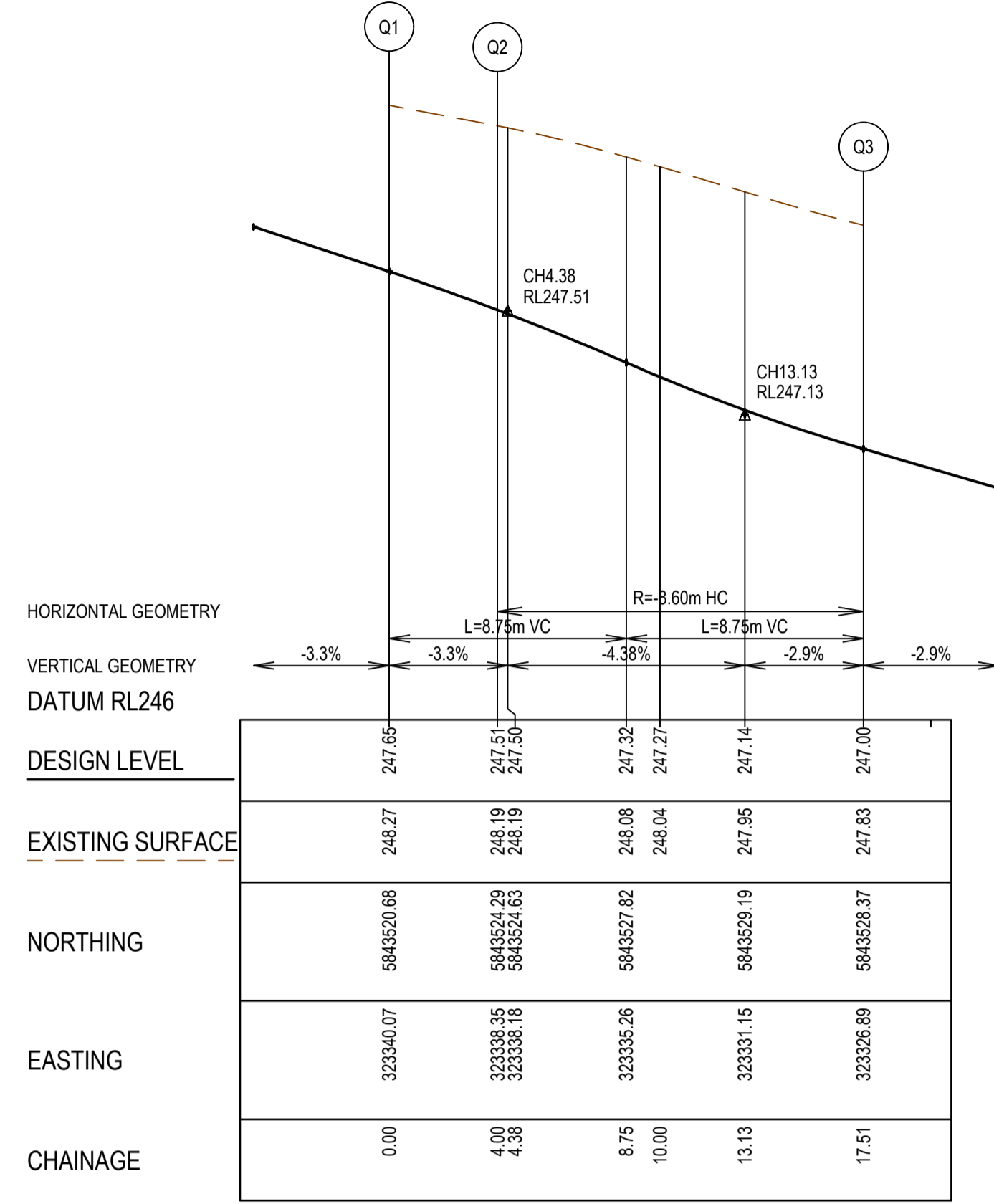
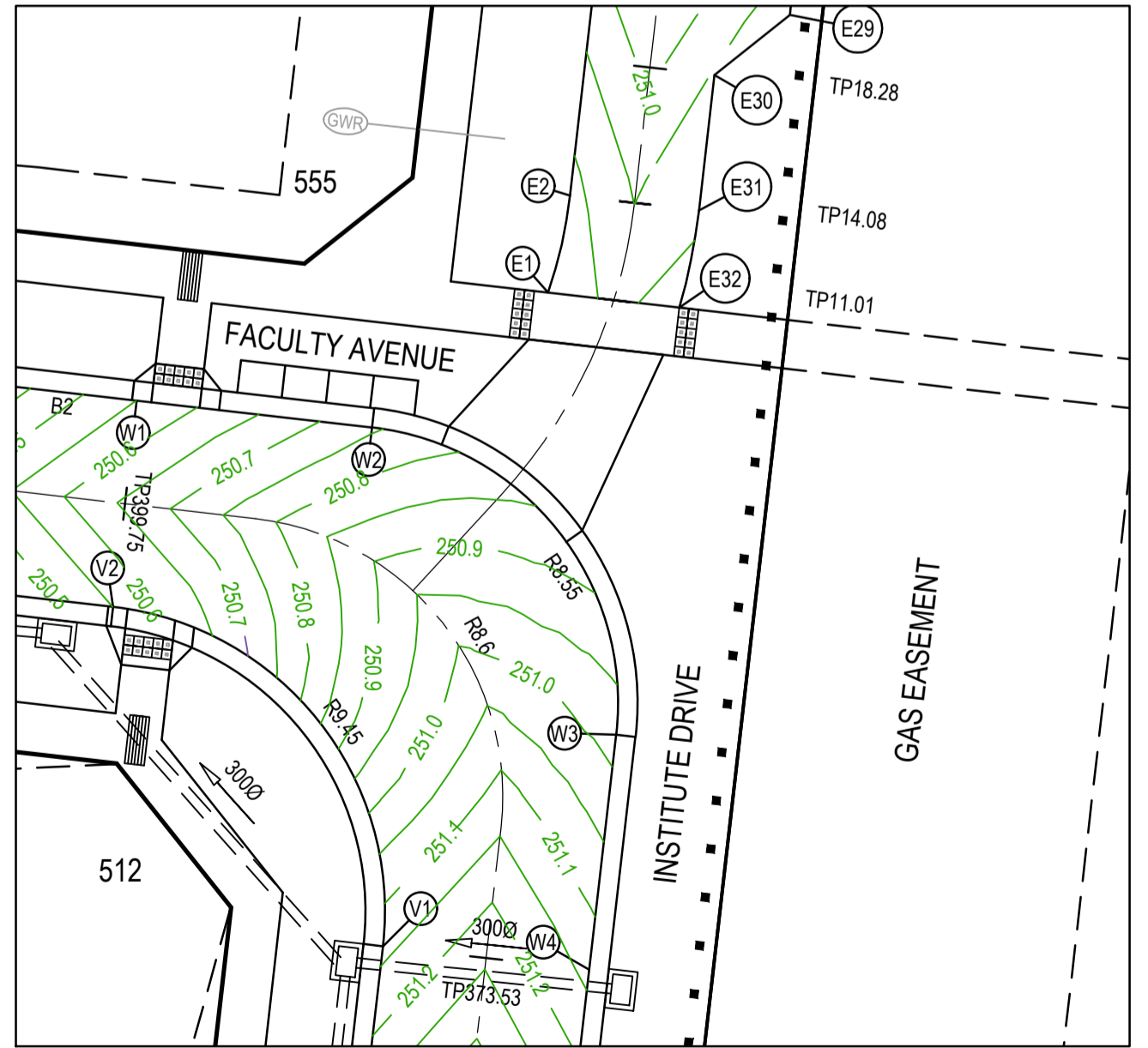
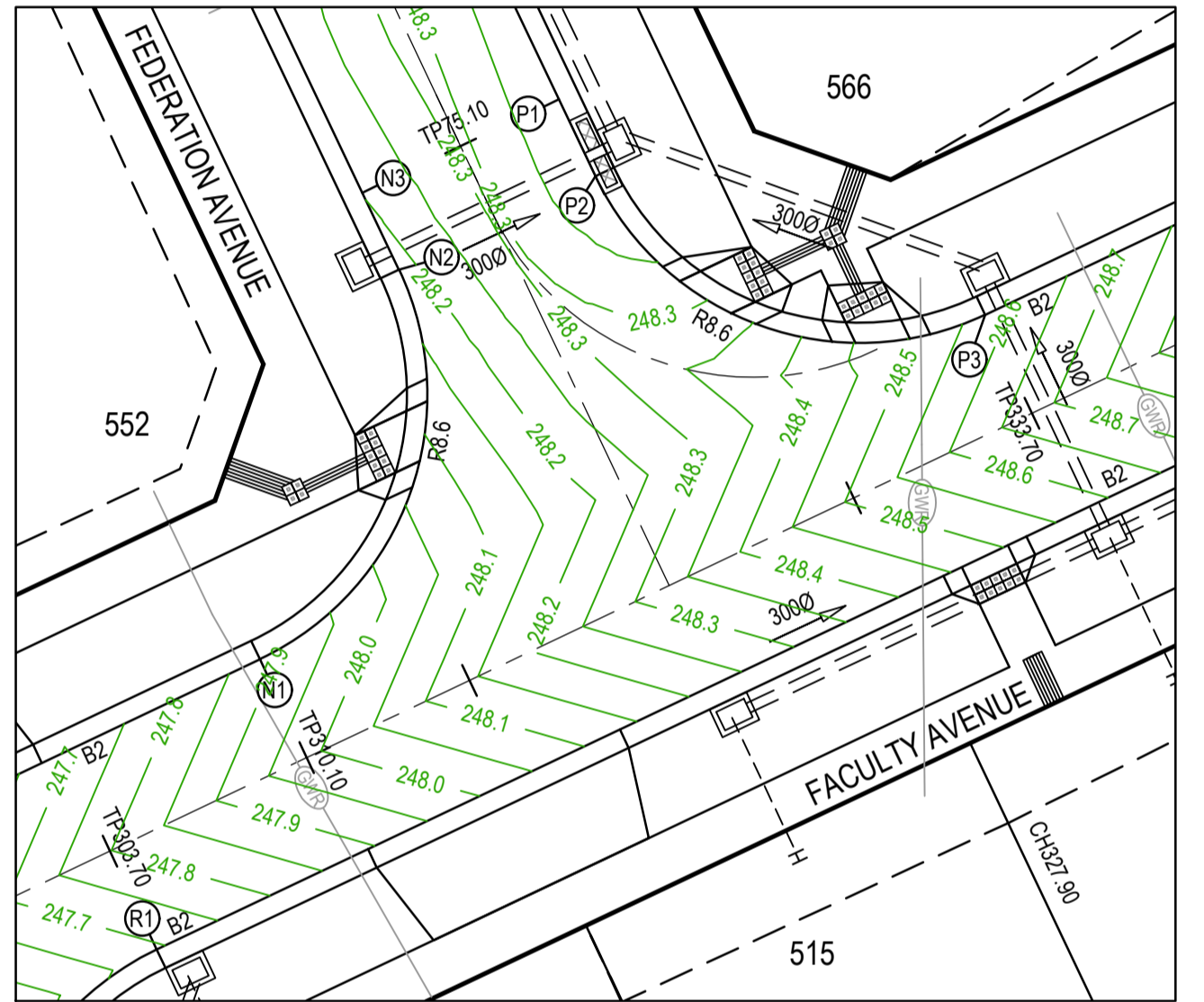
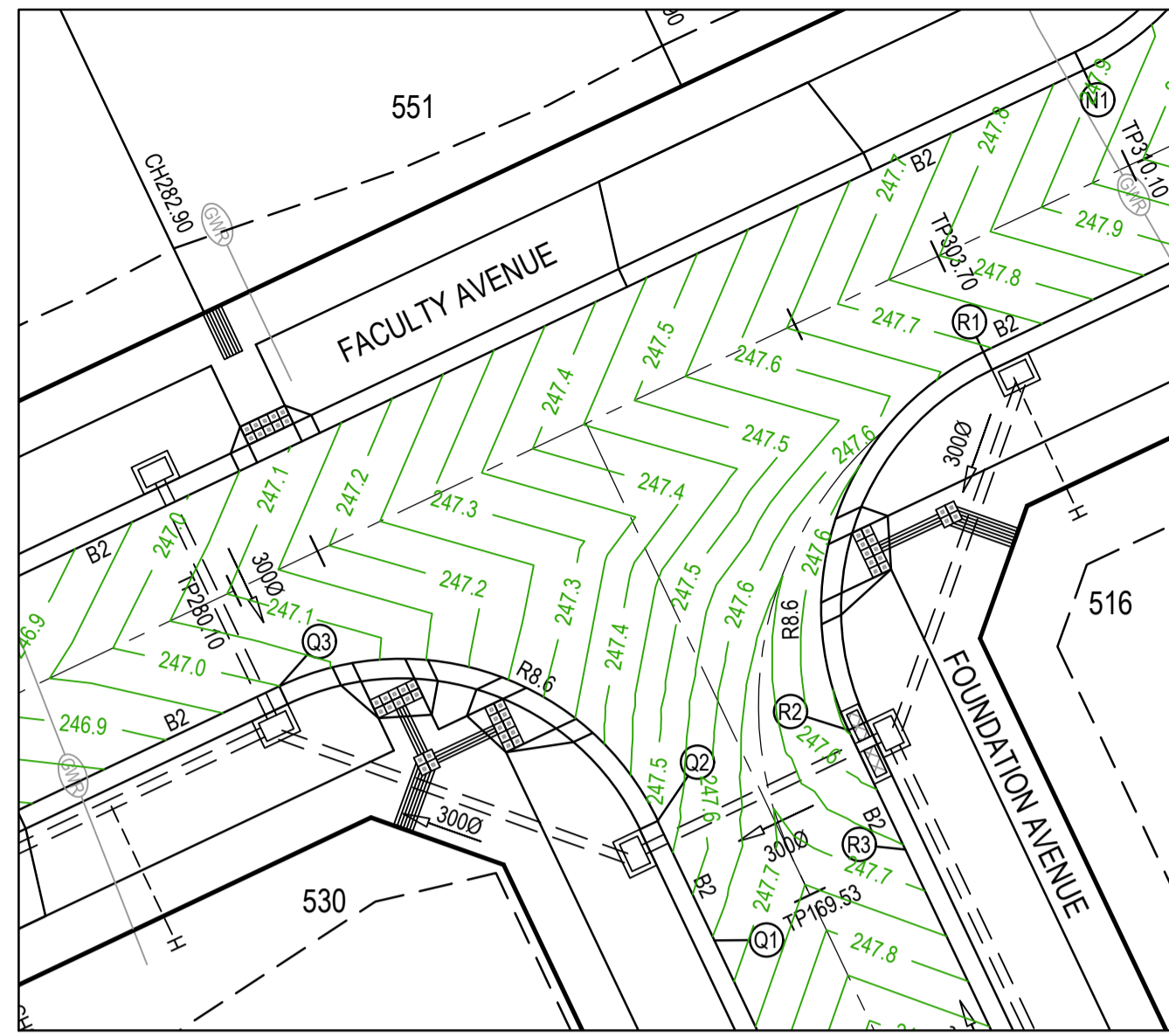
TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



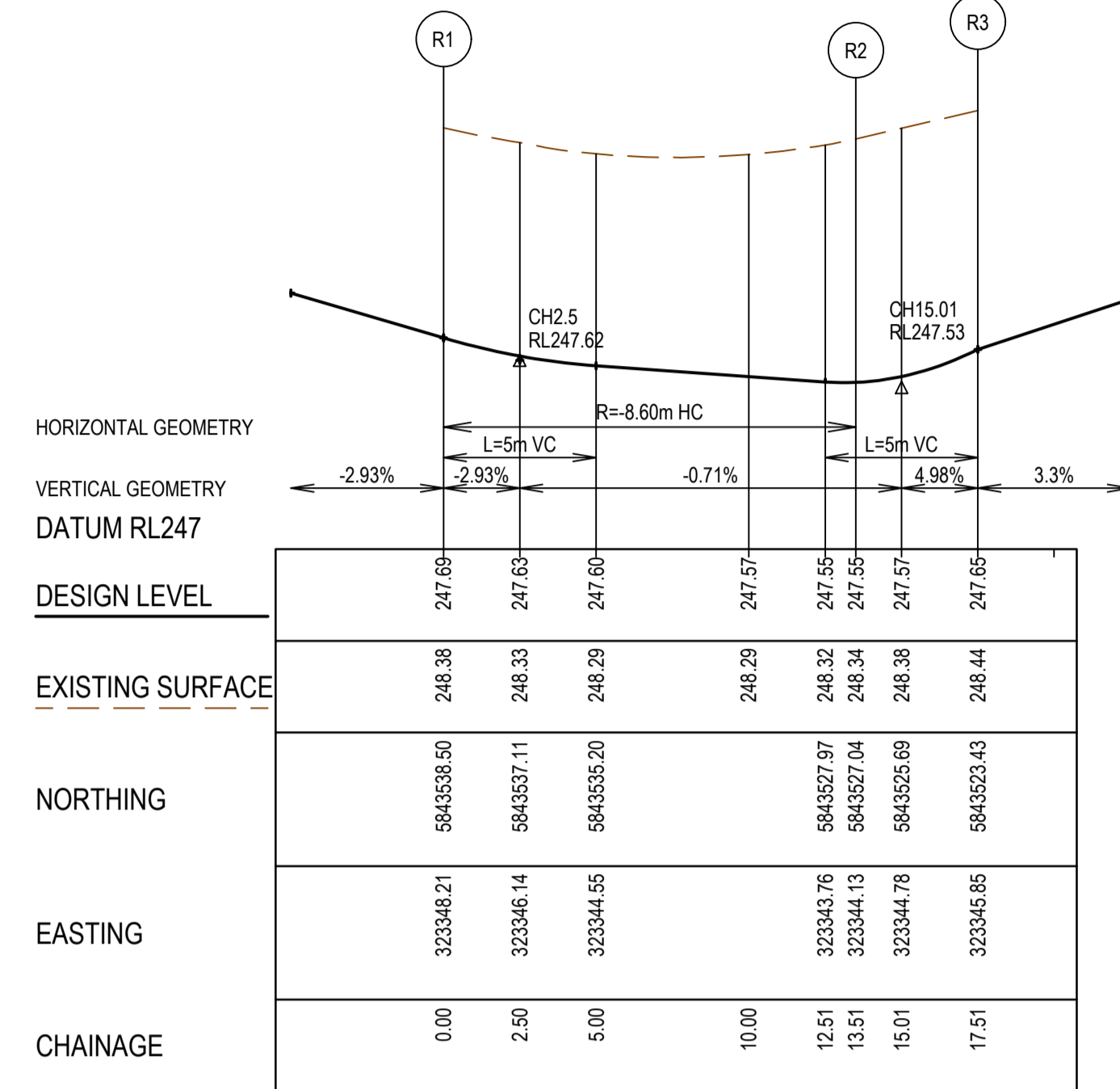
Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Intersection Detail Plan &  
Lip Profiles - 2

MELBOURNE REF	PROJECT / DRAWING No	SHEET No	REVISION
8 M2	1700E-05A-25	25 of 45	A

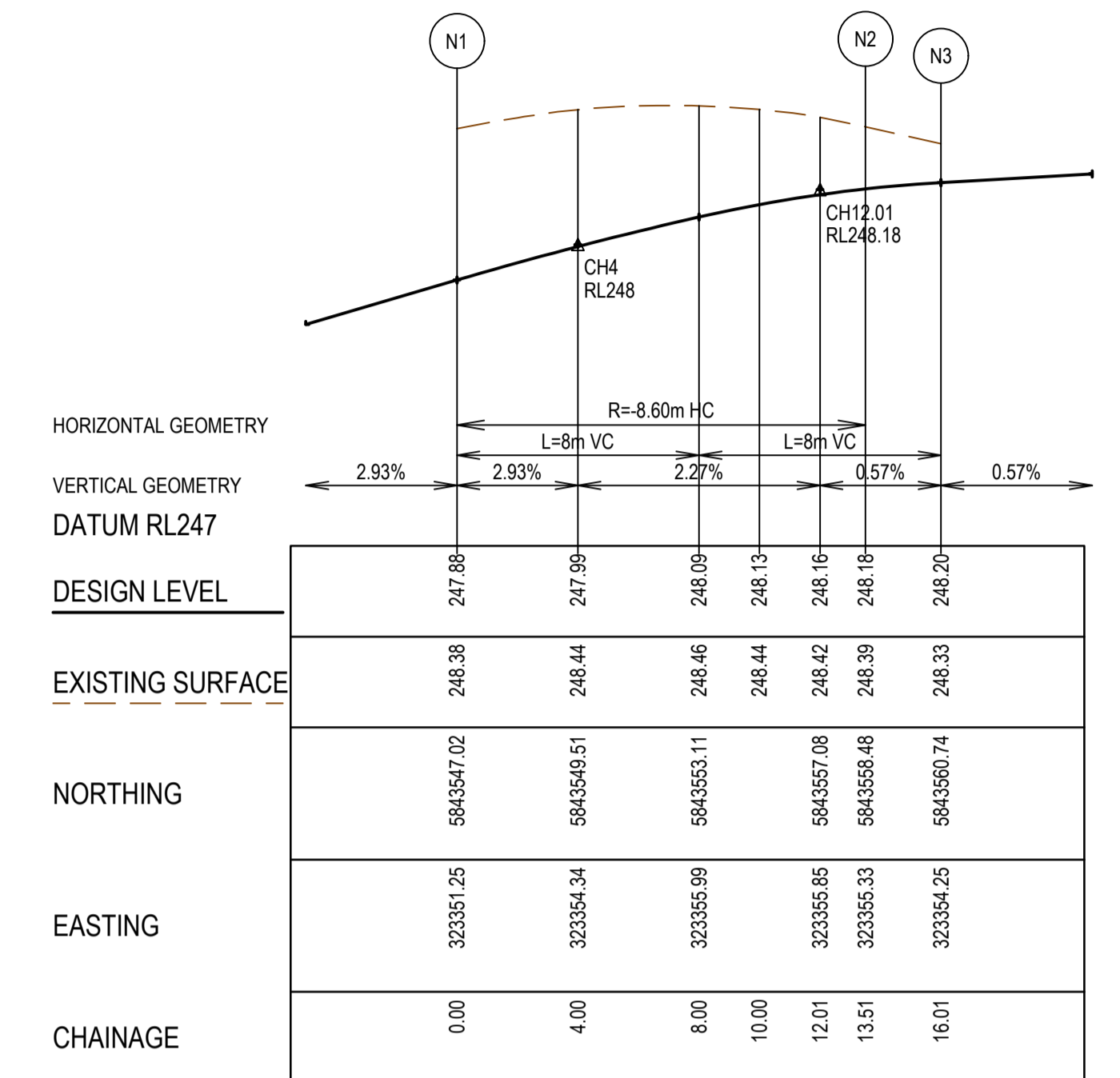




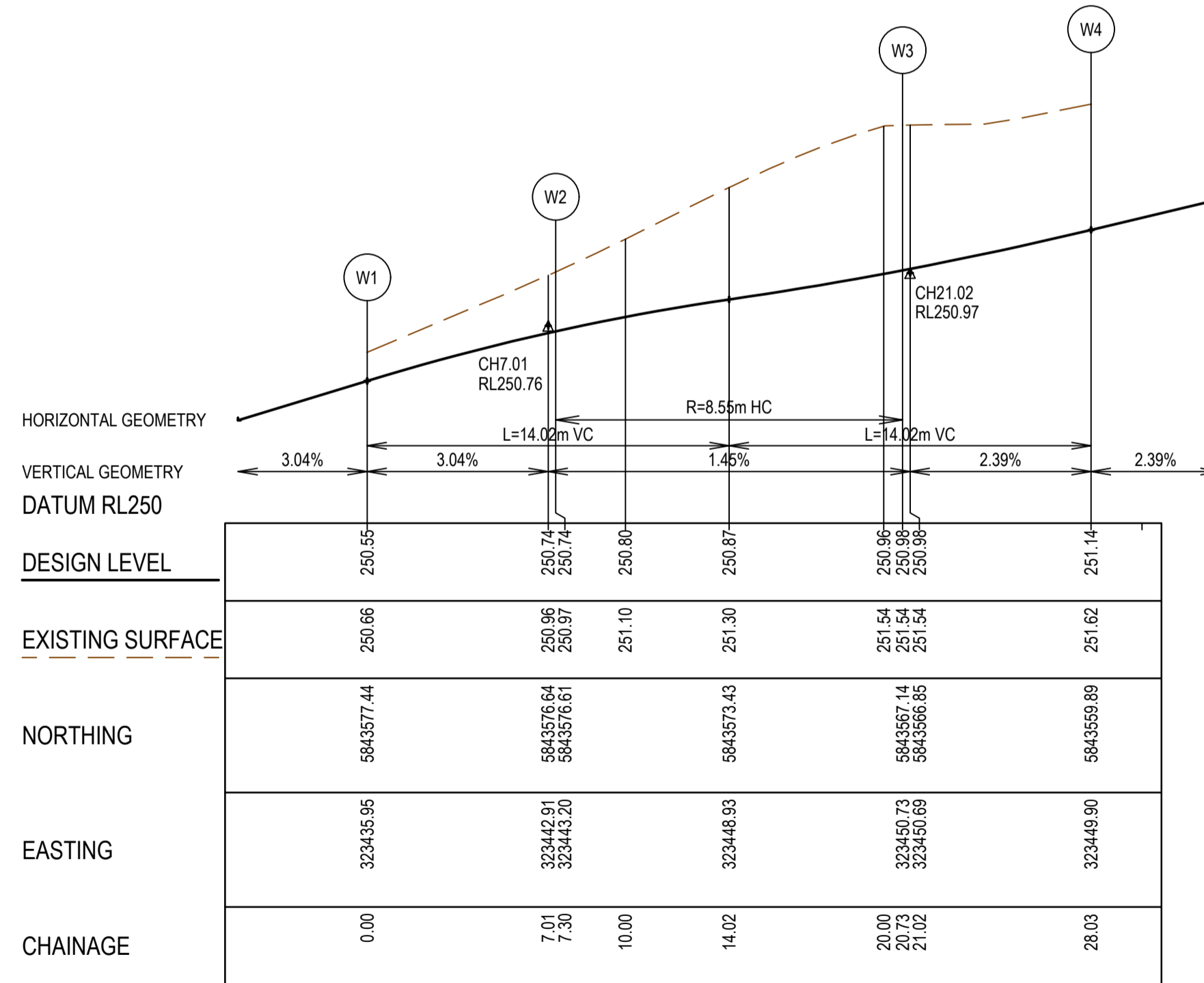
LIP LINE Q



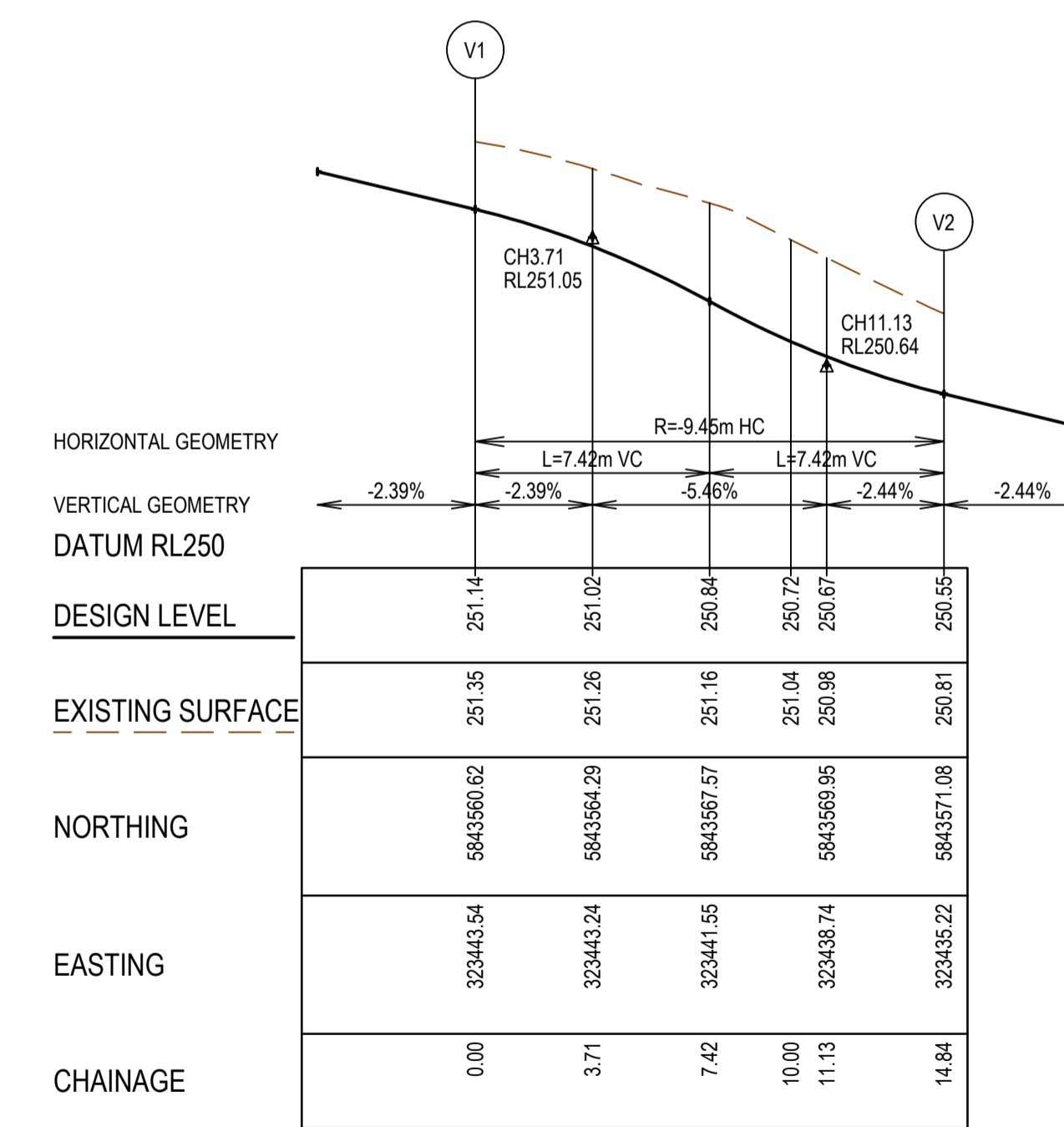
LIP LINE R



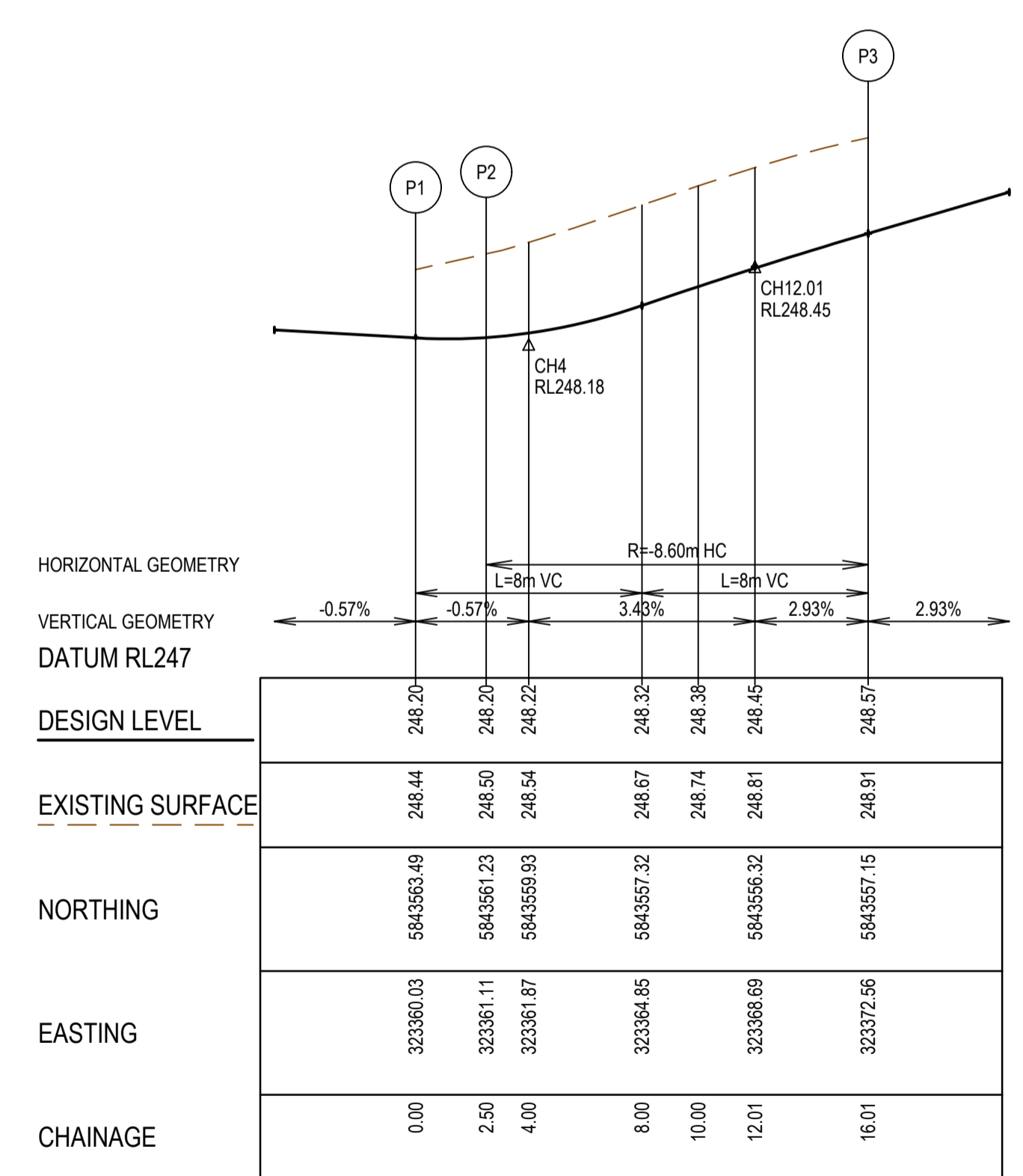
LIP LINE N



LIP LINE W



LIP LINE V

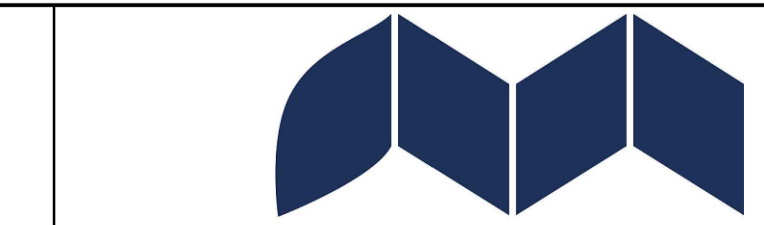
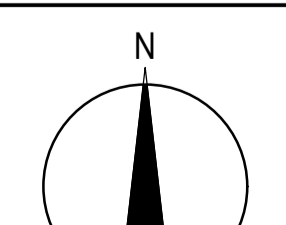
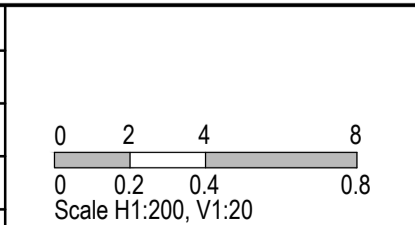


LIP LINE P

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

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DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Intersection Detail Plan &  
Lip Profiles - 3











Alignment E

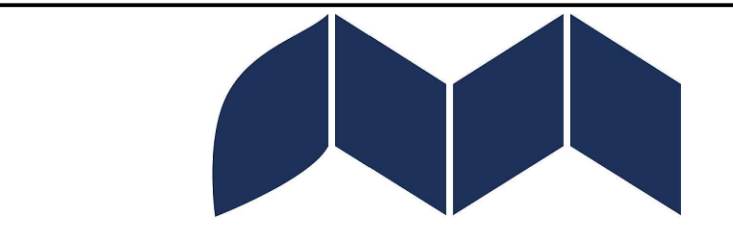
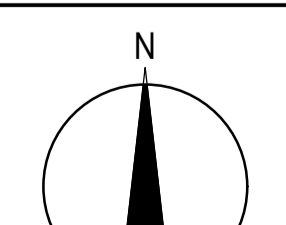
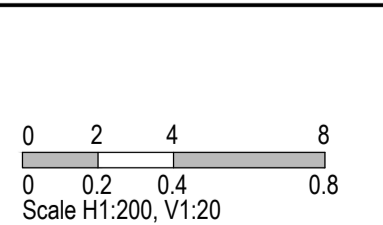
Point no	Easting	Northing	RL
E1	323448.626	5843580.768	251.078
E2	323449.306	5843583.760	251.116
E3	323450.119	5843590.863	251.001
E4	323446.859	5843591.840	251.101
E5	323447.257	5843595.317	251.029
E6	323450.653	5843595.533	250.903
E7	323451.795	5843605.518	250.615
E8	323448.535	5843606.495	250.708
E9	323449.331	5843613.449	250.490
E10	323452.727	5843613.665	250.360
E11	323454.636	5843630.356	249.840
E12	323451.376	5843631.333	249.936
E13	323452.172	5843638.287	249.920
E14	323457.594	5843637.667	249.745
E15	323459.802	5843638.299	249.806
E16	323461.357	5843636.342	249.871
E17	323460.767	5843635.873	249.851
E18	323458.911	5843632.527	249.793
E19	323458.713	5843630.795	249.817
E20	323460.560	5843628.470	249.943
E21	323459.288	5843617.343	250.292
E22	323456.963	5843615.495	250.288
E23	323456.792	5843614.005	250.335
E24	323458.640	5843611.680	250.470
E25	323458.003	5843606.116	250.645
E26	323455.678	5843604.268	250.640
E27	323455.508	5843602.778	250.687
E28	323457.356	5843600.453	250.820
E29	323456.083	5843589.326	251.088
E30	323453.758	5843587.478	251.055
E31	323453.280	5843583.305	251.117
E32	323452.675	5843580.304	251.117

Curve no	L	Radius	Arc	A	B	X	Y	I	Mid point RL
E1 - E2	12.583	14.000	3.075	0.084	0.063	0.768	0.766	0.769	251.120
E14 - E15	45.000	3.000	2.356	0.228	0.171	0.585	0.563	0.589	249.775
E17 - E18	45.000	5.000	3.927	0.381	0.285	0.975	0.938	0.982	249.805
E31 - E32	9.756	18.000	3.065	0.065	0.049	0.766	0.765	0.766	251.129

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Intersection Detail Plan &  
Lip Profiles - 5

**SUBJECT TO APPROVAL**

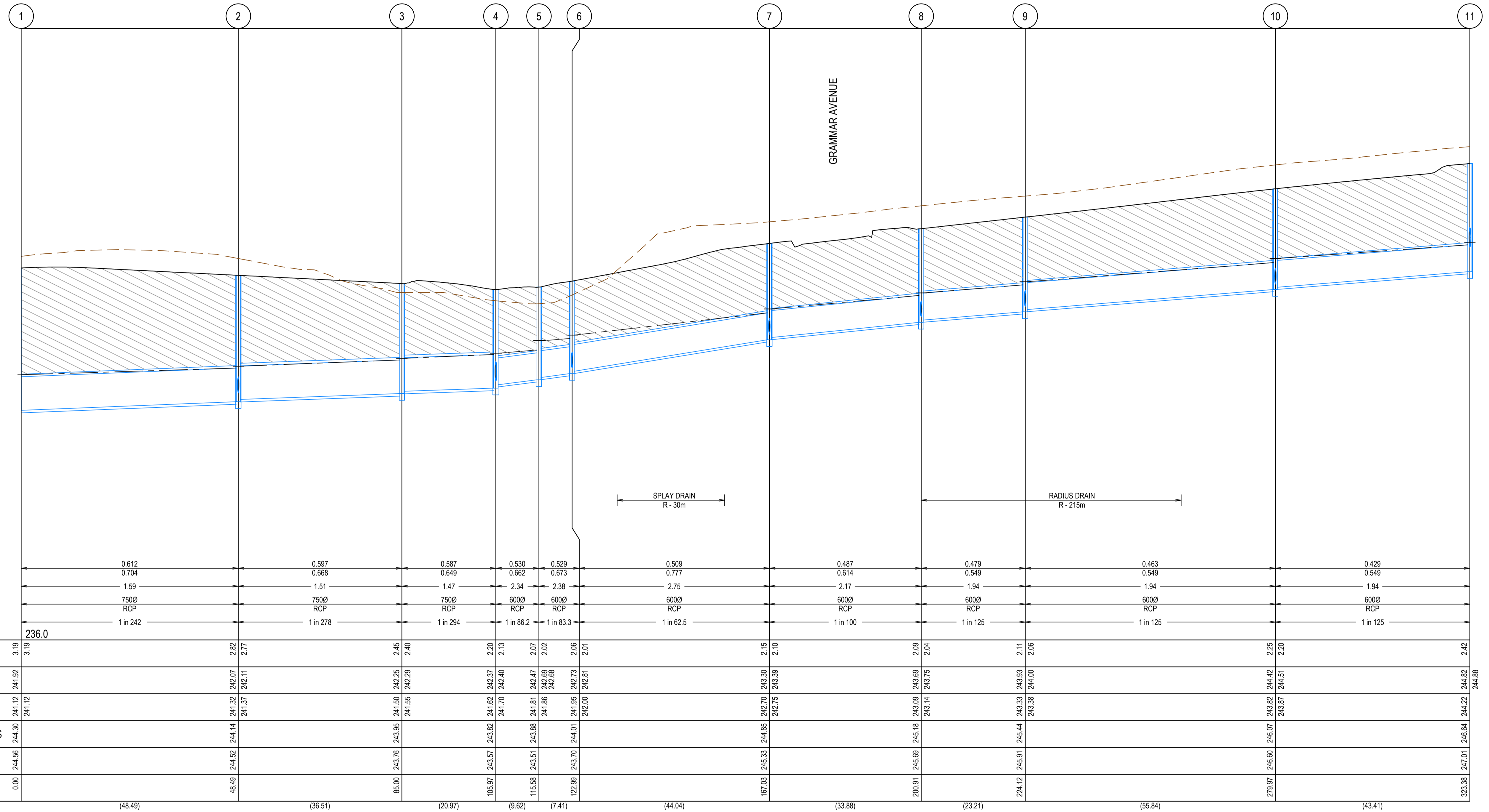


MELBAYS REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-28	28 of 45	A



**NOTE**

- ALL DRAINS TO BE BACKFILLED IN ACCORDANCE WITH CLAUSE 35.1.7 OF COUNCIL'S SPECIFICATION.
- WHERE DRAINS ARE UNDER ANY PAVED AREA OR BEHIND THE KERB AND CHANNEL THE DRAINS IS TO BE BACKFILLED AS FOLLOWS
  - 30mm NOM. SIZE CLASS 3 FCR TO 100mm ABOVE THE TOP OF PIPE.
  - LOW PERMEABILITY CLASS 4 FCR FROM 100mm ABOVE THE TOP OF PIPE TO UNDERSIDE OF PAVEMENT

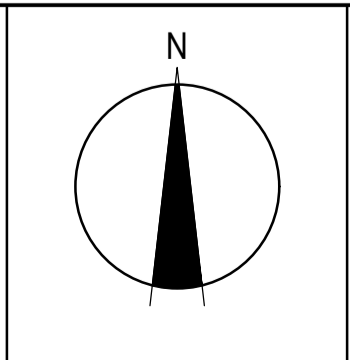
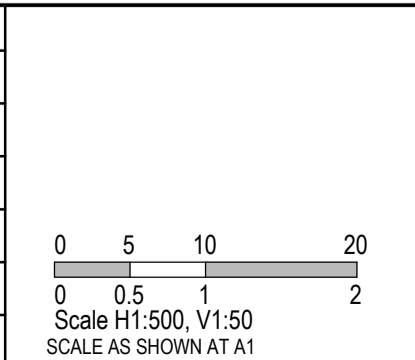


REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
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**SMEC**  
Member of the Surbana Jurong Group  
ABN 47 065 475 149  
Tower 4, Level 20, 727 Collins Street  
Docklands, VIC 3008  
Ph 03 9514 1500

**mirvac**

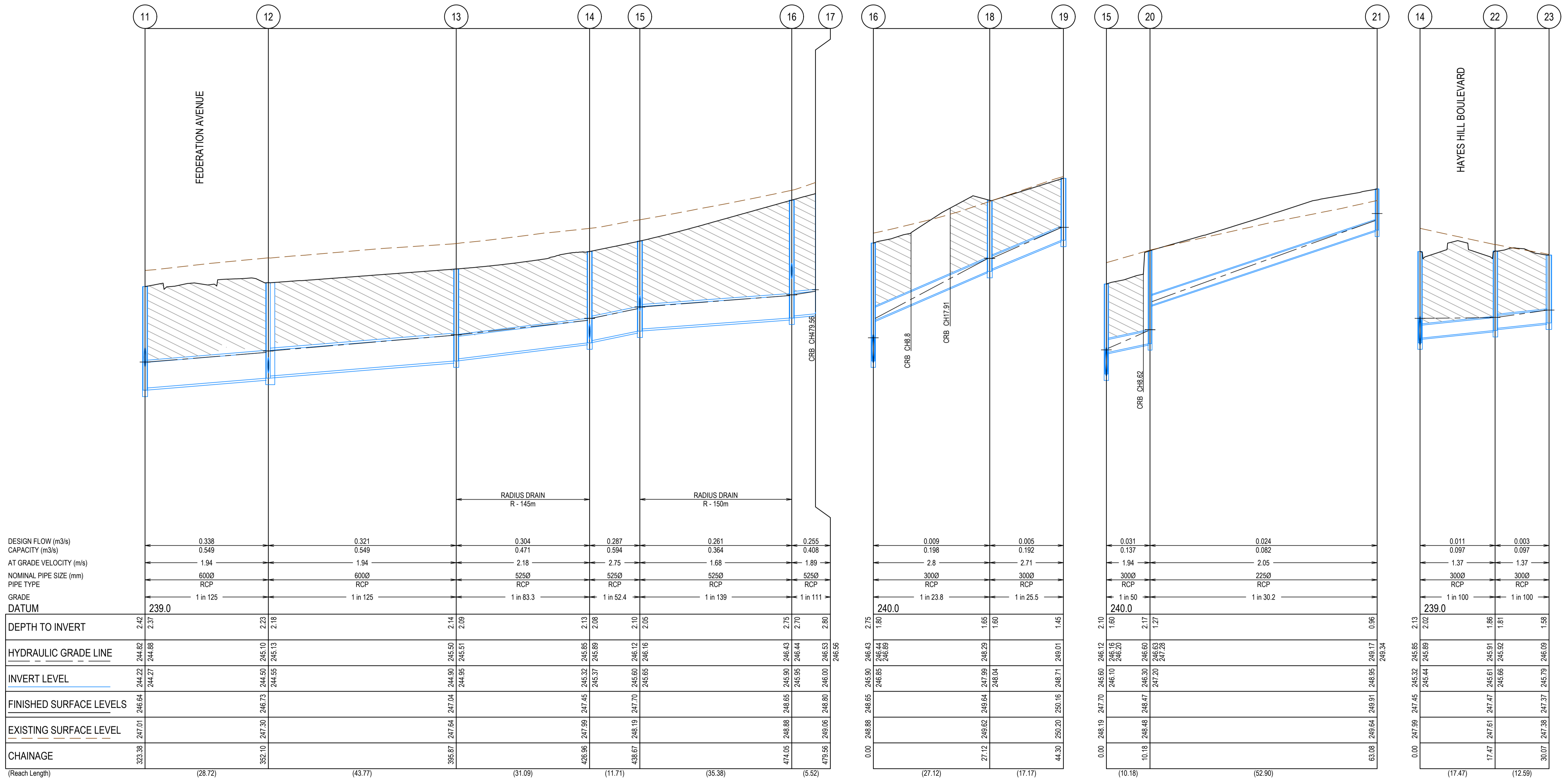
Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Drainage Longitudinal Sections - 1

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-29</b>	SHEET No. <b>29 of 45</b>	REVISION <b>A</b>
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**NOTE**

- ALL DRAINS TO BE BACKFILLED IN ACCORDANCE WITH CLAUSE 35.1.7 OF COUNCIL'S SPECIFICATION.
- WHERE DRAINS ARE UNDER ANY PAVED AREA OR BEHIND THE KERB AND CHANNEL THE DRAINS IS TO BE BACKFILLED AS FOLLOWS
  - 30mm NOM. SIZE CLASS 3 FOR TO 100mm ABOVE THE TOP OF PIPE.
  - LOW PERMEABILITY CLASS 4 FOR FROM 100mm ABOVE THE TOP OF PIPE TO UNDERSIDE OF PAVEMENT



DESIGN FLOW (m3/s)	CAPACITY (m3/s)	AT GRADE VELOCITY (m/s)	NOMINAL PIPE SIZE (mm)	PIPE TYPE	GRADE	DATUM
0.338	0.549	1.94	6000	RCP	1 in 125	239.0
0.321	0.549	1.94	6000	RCP	1 in 125	
0.304	0.471	2.18	5250	RCP	1 in 83.3	
0.287	0.594	2.75	5250	RCP	1 in 52.4	
0.261	0.364	1.68	5250	RCP	1 in 139	
0.255	0.408	1.89	5250	RCP	1 in 111	
0.009	0.198	2.8	3000	RCP	1 in 23.8	240.0
0.005	0.192	2.71	3000	RCP	1 in 25.5	
0.031	0.137	1.94	3000	RCP	1 in 50	240.0
0.024	0.082	2.05	2250	RCP	1 in 30.2	
0.011	0.097	1.37	3000	RCP	1 in 100	239.0
0.003	0.097	1.37	3000	RCP	1 in 100	

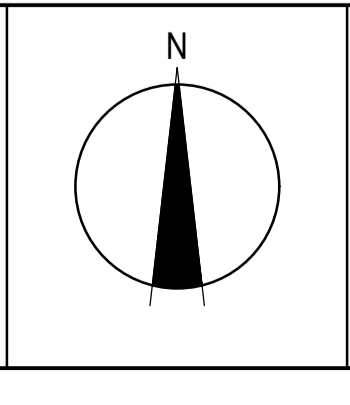
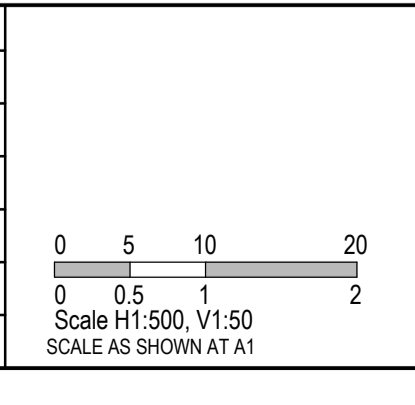
  

DEPTH TO INVERT	HYDRAULIC GRADE LINE	INVERT LEVEL	FINISHED SURFACE LEVELS	EXISTING SURFACE LEVEL	CHAINAGE
2.42	244.82	242.42	246.64	247.01	323.38
2.37	244.88	242.51	246.73	247.30	352.10
2.23	245.10	242.87	246.73	247.30	396.87
2.16	245.13	242.97	246.73	247.30	426.96
2.14	245.50	243.36	247.04	247.64	438.67
2.09	245.51	243.42	247.04	247.64	474.05
2.13	245.65	243.52	247.45	247.99	498.67
2.06	245.89	243.83	247.45	247.99	474.05
2.10	246.12	243.92	247.70	248.19	498.67
2.05	246.16	243.91	247.70	248.19	474.05
2.75	246.43	243.68	248.65	248.88	474.05
2.70	246.44	243.74	248.65	248.88	479.56
2.80	246.53	243.73	248.80	249.06	479.56
2.80	246.56	243.76	248.80	249.06	479.56
2.75	246.43	243.68	248.65	248.88	0.00
1.80	246.85	245.05	248.85	249.19	0.00
1.85	246.85	245.05	248.85	249.19	27.12
1.60	248.04	246.44	249.99	248.24	27.12
1.45	249.01	247.56	250.16	248.71	44.30
2.10	246.12	244.02	247.70	248.19	0.00
1.60	246.20	244.60	248.10	248.10	10.18
2.17	246.60	244.43	248.47	248.48	10.18
1.27	247.28	245.01	249.20	249.20	30.07
0.96	249.17	248.21	249.91	249.64	63.08
249.34	249.34	248.38	249.91	249.64	63.08
2.13	245.85	243.75	247.45	247.99	0.00
2.02	245.89	243.81	247.45	247.99	17.47
1.86	245.91	243.85	247.61	247.61	17.47
1.81	245.92	243.81	247.61	247.61	30.07
1.56	246.09	243.53	247.31	247.38	30.07

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

**SUBJECT TO APPROVAL**

TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



**SMEC**  
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ABN 47 065 475 149  
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Docklands, VIC 3008  
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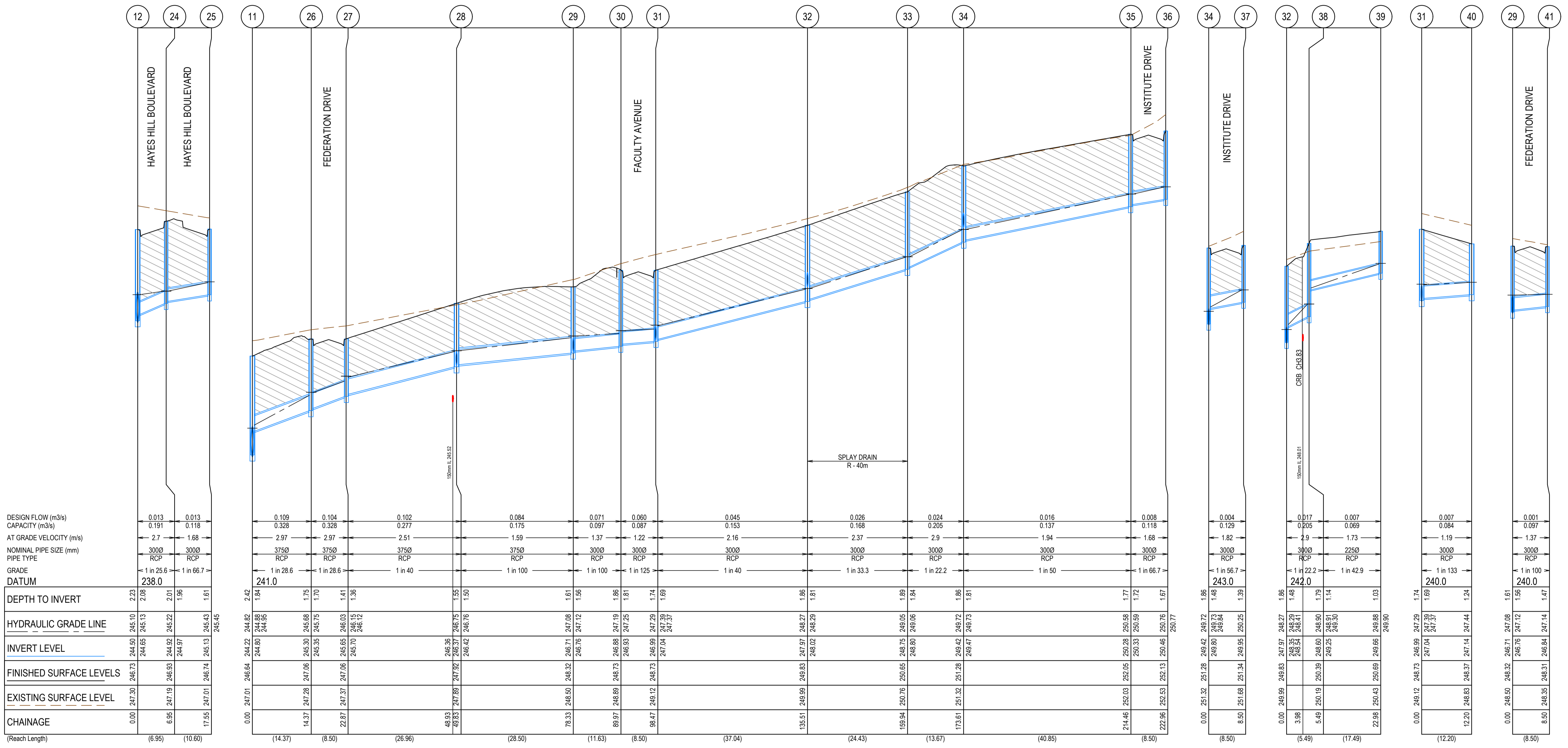
Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Drainage Longitudinal Sections - 2

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-30</b>	SHEET No. <b>30 of 45</b>	REVISION <b>A</b>
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**NOTE**

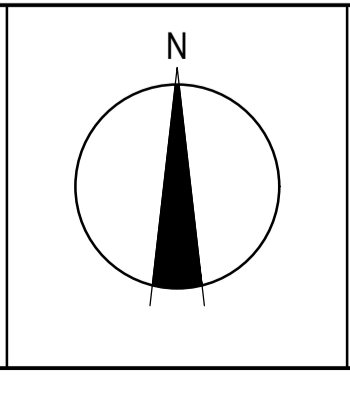
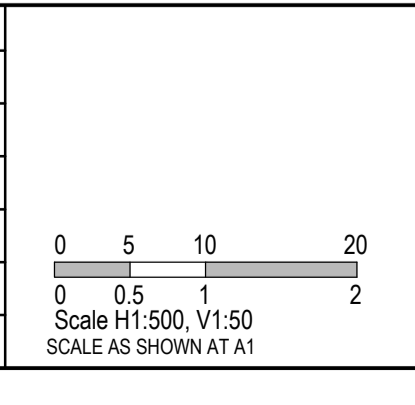
- ALL DRAINS TO BE BACKFILLED IN ACCORDANCE WITH CLAUSE 35.1.7 OF COUNCIL'S SPECIFICATION.
- WHERE DRAINS ARE UNDER ANY PAVED AREA OR BEHIND THE KERB AND CHANNEL THE DRAINS IS TO BE BACKFILLED AS FOLLOWS
  - 30mm NOM. SIZE CLASS 3 FCR TO 100mm ABOVE THE TOP OF PIPE.
  - LOW PERMEABILITY CLASS 4 FCR FROM 100mm ABOVE THE TOP OF PIPE TO UNDERSIDE OF PAVEMENT



REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

**SUBJECT TO APPROVAL**

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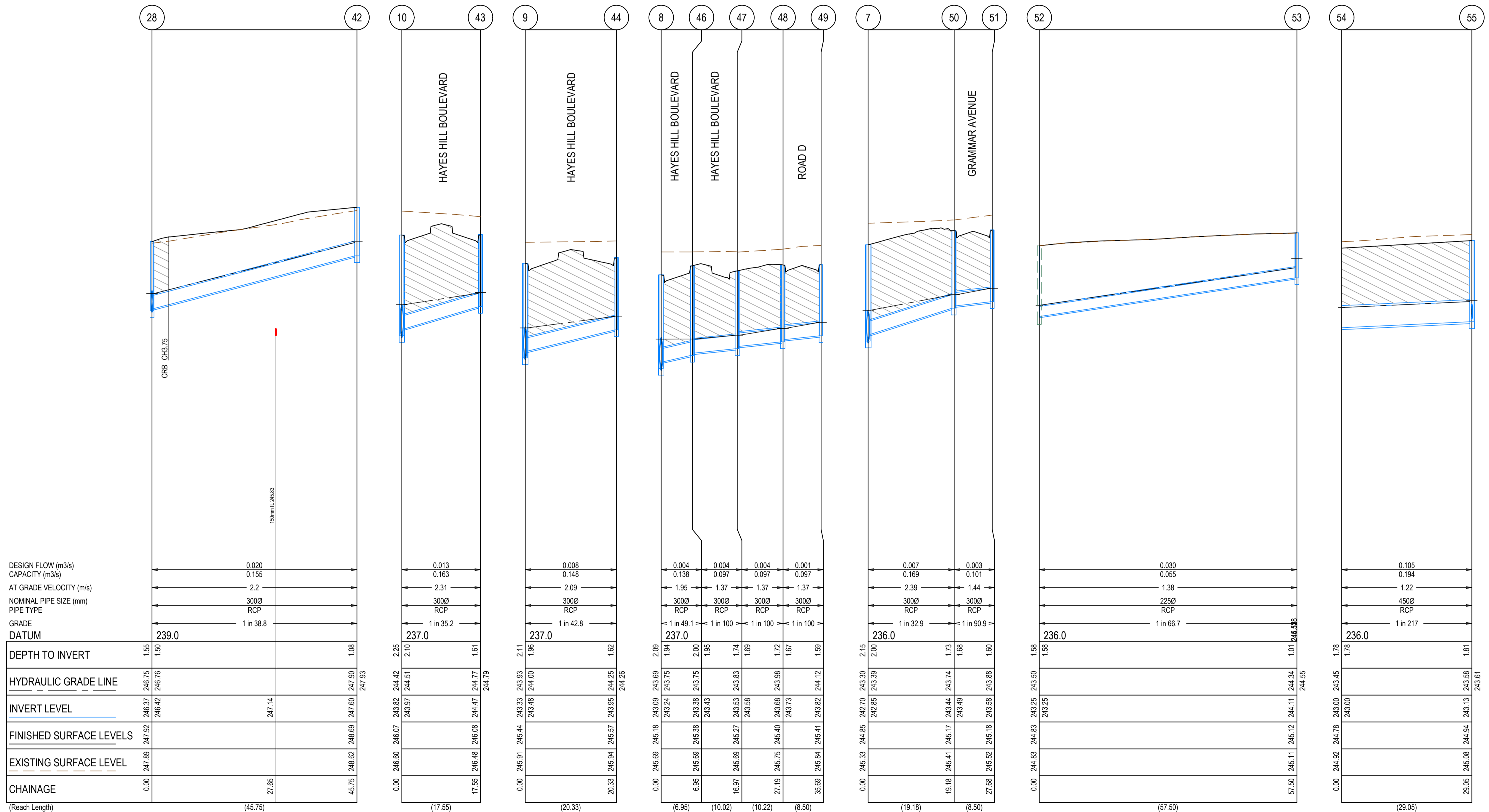
Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Drainage Longitudinal Sections - 3

MELBOURNE REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-31</b>	SHEET No. <b>31 of 45</b>	REVISION <b>A</b>
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**NOTE**

- ALL DRAINS TO BE BACKFILLED IN ACCORDANCE WITH CLAUSE 35.1.7 OF COUNCIL'S SPECIFICATION.
- WHERE DRAINS ARE UNDER ANY PAVED AREA OR BEHIND THE KERB AND CHANNEL THE DRAINS IS TO BE BACKFILLED AS FOLLOWS
  - 30mm NOM. SIZE CLASS 3 FCR TO 100mm ABOVE THE TOP OF PIPE.
  - LOW PERMEABILITY CLASS 4 FCR FROM 100mm ABOVE THE TOP OF PIPE TO UNDERSIDE OF PAVEMENT



REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
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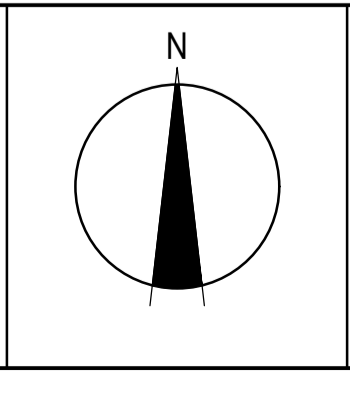
**SUBJECT TO APPROVAL**

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Quality Management ISO 9001  
 OHS Management AS/NZS 1881  
 Environmental Management ISO 14001

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



**SMEC**  
 Member of the Surbana Jurong Group  
 ABN 47 065 475 149  
 Tower 4, Level 20, 727 Collins Street  
 Docklands, VIC 3008  
 Ph 03 9514 1500



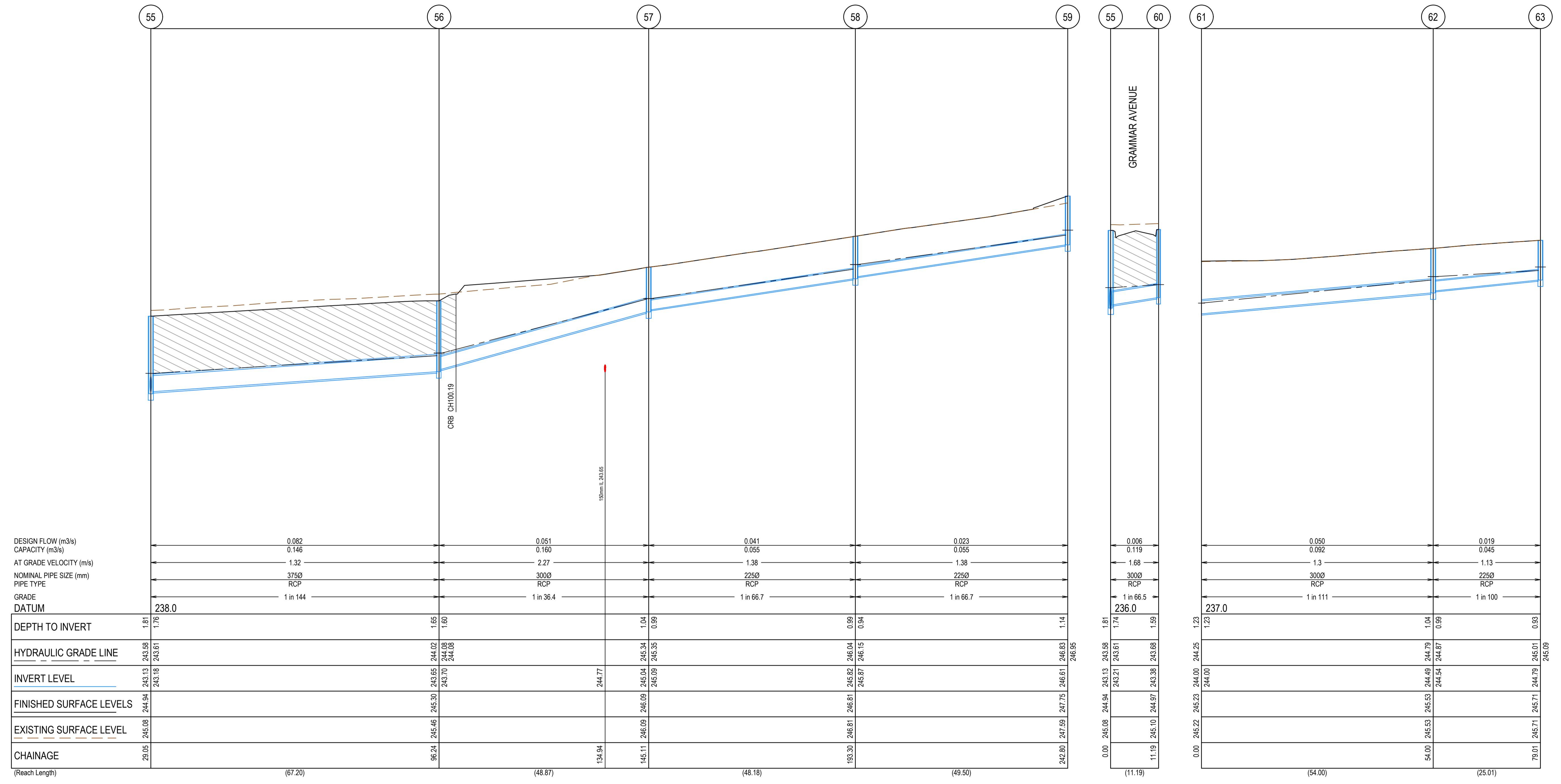
Olivine Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Drainage Longitudinal Sections - 4

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-32</b>	SHEET No. <b>32 of 45</b>	REVISION <b>A</b>
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**NOTE**

- ALL DRAINS TO BE BACKFILLED IN ACCORDANCE WITH CLAUSE 35.1.7 OF COUNCIL'S SPECIFICATION.
- WHERE DRAINS ARE UNDER ANY PAVED AREA OR BEHIND THE KERB AND CHANNEL THE DRAINS IS TO BE BACKFILLED AS FOLLOWS
  - 30mm NOM. SIZE CLASS 3 FCR TO 100mm ABOVE THE TOP OF PIPE.
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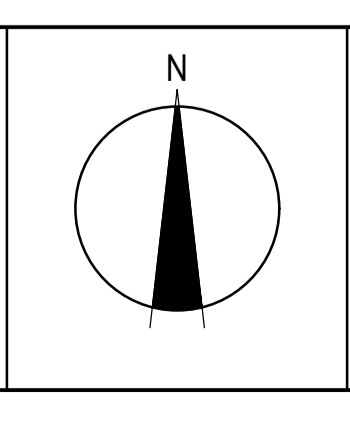
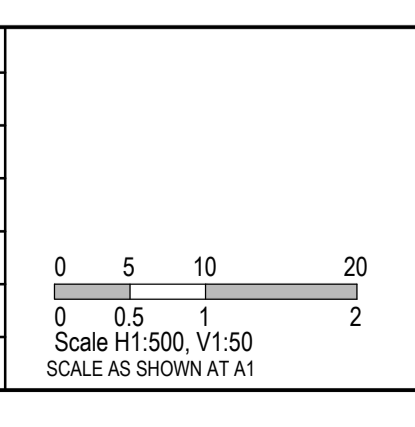


REV	DATE	AMENDMENT / REVISION DESCRIPTION	DES/DT	APPROVAL
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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MaClaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



**SMEC**  
Member of the **Surbana Jurong Group**  
ABN 47 065 475 149  
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Docklands, VIC 3008  
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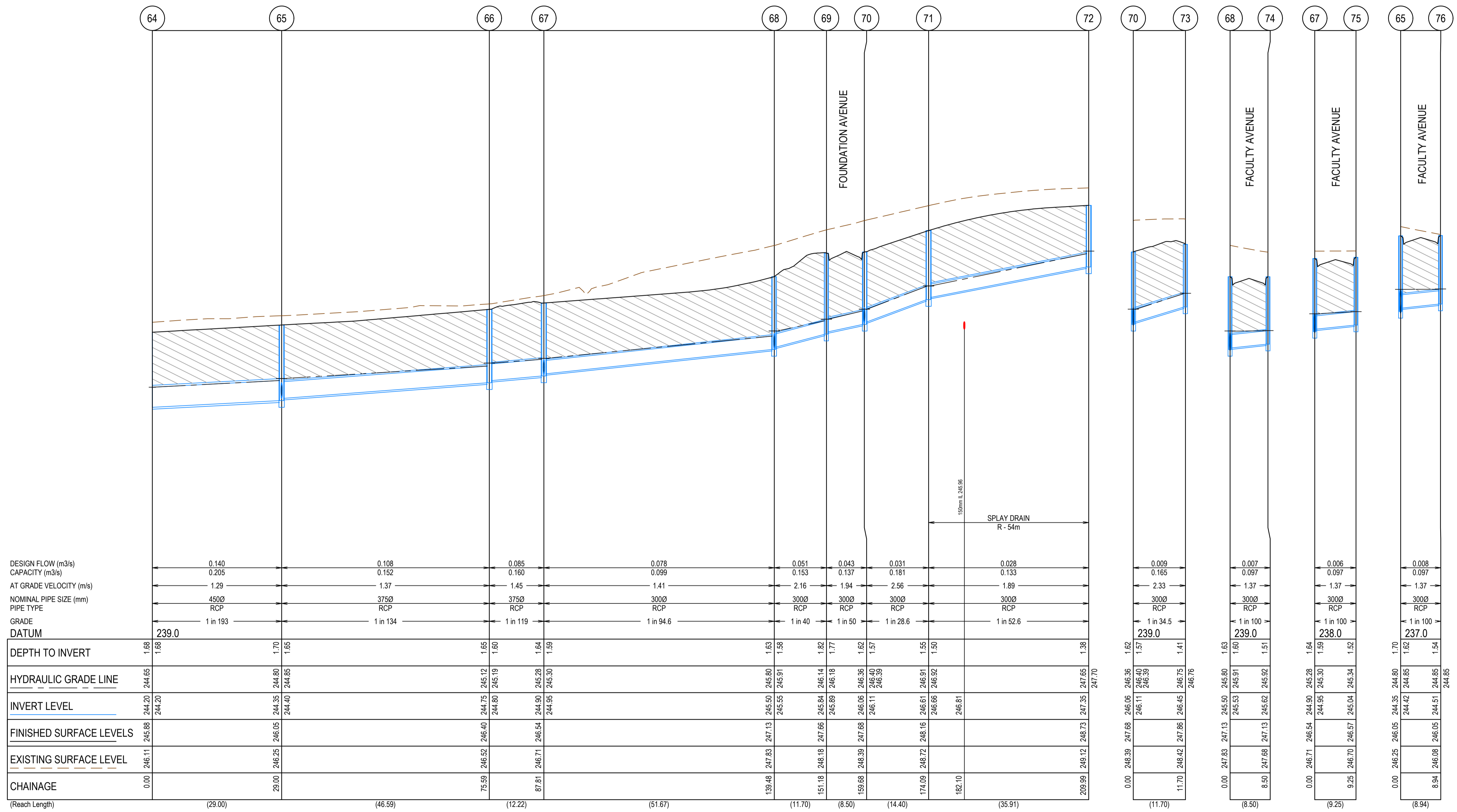
Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Drainage Longitudinal Sections - 5

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-33</b>	SHEET No. <b>33 of 45</b>	REVISION <b>A</b>
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**NOTE**

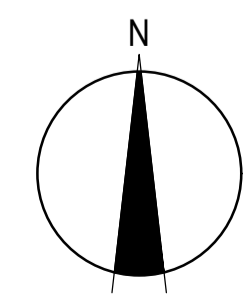
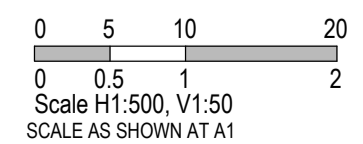
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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



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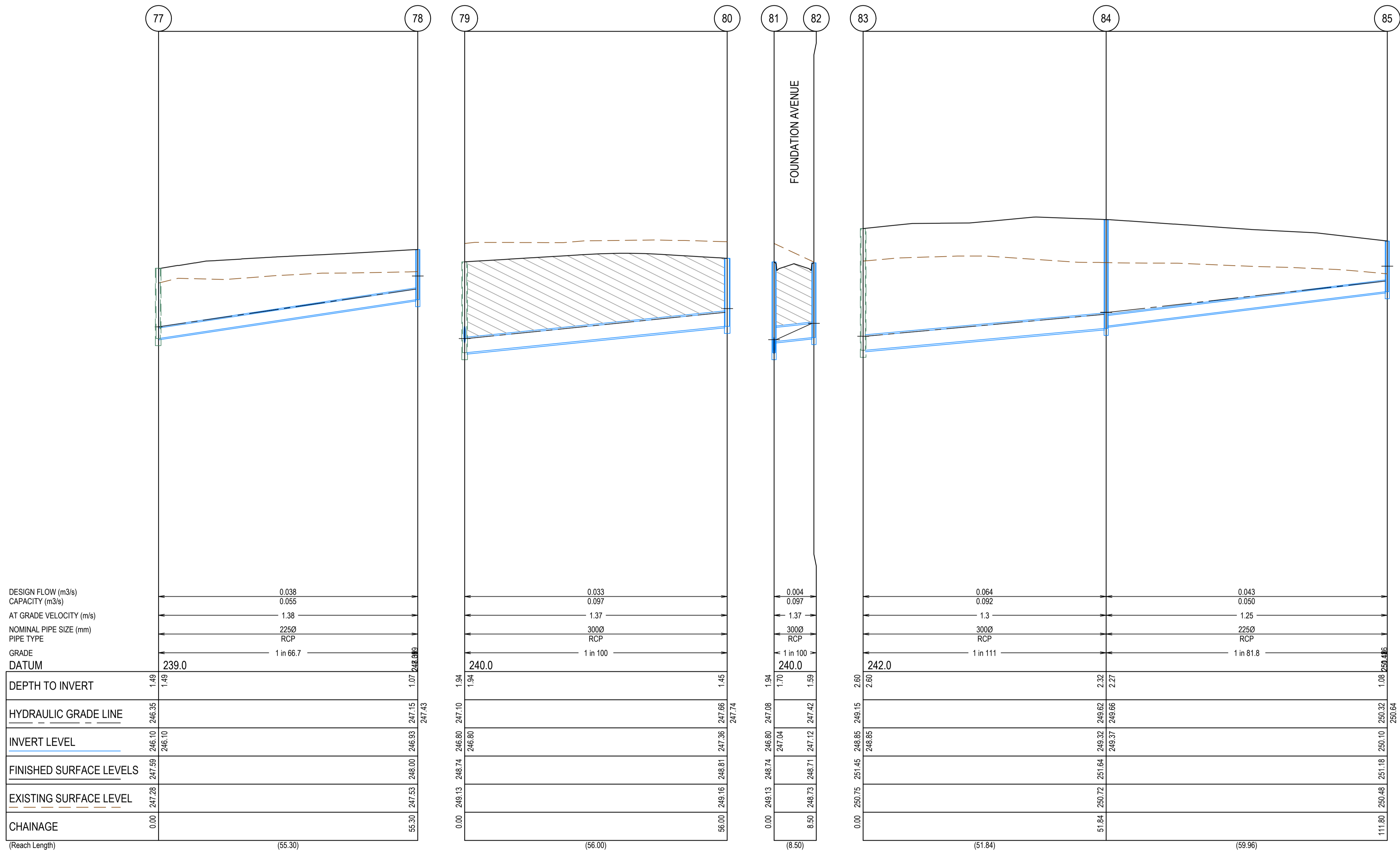
Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Drainage Longitudinal Sections - 6

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-34</b>	SHEET No. <b>34 of 45</b>	REVISION <b>A</b>
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**NOTE**

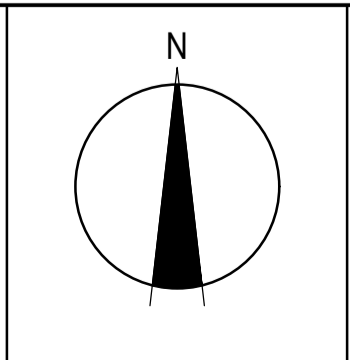
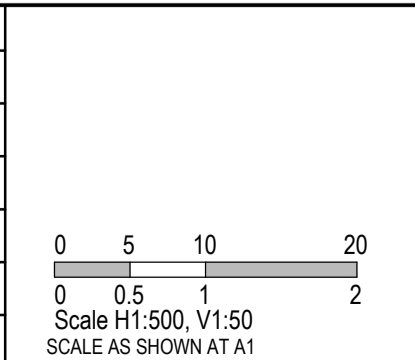
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  - 30mm NOM. SIZE CLASS 3 FCR TO 100mm ABOVE THE TOP OF PIPE.
  - LOW PERMEABILITY CLASS 4 FCR FROM 100mm ABOVE THE TOP OF PIPE TO UNDERSIDE OF PAVEMENT



DEPTH TO INVERT	HYDRAULIC GRADE LINE	INVERT LEVEL	FINISHED SURFACE LEVELS	EXISTING SURFACE LEVEL	CHAINAGE
1.49	246.35	246.10	247.59	247.28	0.00
1.49	246.93	246.10	248.00	247.53	55.30
1.07	247.15	246.80	248.00	247.53	55.30
1.94	247.10	246.80	248.74	248.13	56.00
1.94	247.66	246.80	248.74	248.13	56.00
1.45	247.66	246.80	248.81	248.16	56.00
1.70	247.04	247.04	248.74	248.74	8.50
1.59	247.42	247.12	248.71	248.73	8.50
2.60	248.15	248.85	250.75	250.75	51.84
2.32	248.62	248.32	251.64	250.72	51.84
2.27	249.66	249.37	251.64	250.72	51.84
1.08	250.32	250.10	251.18	250.48	111.80
1.08	250.64	250.32	251.18	250.48	111.80

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



**SMEC**  
Member of the Surbana Jurong Group  
© ABN 47 065 475 149  
Tower 4, Level 20, 727 Collins Street  
Docklands, VIC 3008  
Ph 03 9514 1500



Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Drainage Longitudinal Sections - 7

**SUBJECT TO APPROVAL**

MELWAYS REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-35	35 of 45	A



NAME	PIT TYPE	INTERNAL WD	LEN	INLET DIA	INV LEV	OUTLET DIA	INV LEV	PIT SETOUT RL	DEPTH	STD DWG	REMARKS
1	Ex ENDDPIPE			750	241.13			244.30	0.00		CONNECT TO EXISTING ENDDPIPE
2	JUNCTION PIT	900	900	750	241.37	750	241.32	244.14	2.82	EDCM 607	HAUNCH PIT. COVER 600x900
3	JUNCTION PIT	900	900	750	241.55	750	241.50	243.95	2.45	EDCM 607	HAUNCH PIT. COVER 600x900
4	JUNCTION PIT	900	1050	600	241.70	750	241.62	243.82	2.20	EDCM 607	HAUNCH PIT. COVER 600x900
5	JUNCTION PIT	900	900	375	241.81	600	241.81	243.88	2.07	EDCM 607	HAUNCH PIT. COVER 600x900
6	JUNCTION PIT	900	900	600	242.00	600	241.95	244.01	2.06	EDCM 607	HAUNCH PIT. COVER 600x900
7	JUNCTION PIT	900	900	300	242.10	600	242.75	244.85	2.15	EDCM 607	HAUNCH PIT. COVER 600x900
8	GRATED ENTRY PIT	900	900	600	243.14	600	243.09	245.18	2.09	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
9	GRATED ENTRY PIT	900	900	300	243.24	600	243.33	245.44	2.11	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
10	GRATED ENTRY PIT	900	900	600	243.87	600	243.82	246.07	2.25	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
11	JUNCTION PIT	900	900	300	243.97	600	244.22	246.64	2.42	EDCM 607	HAUNCH PIT. COVER 600x900
12	GRATED ENTRY PIT	900	900	600	244.27	600	244.22	246.64	2.42	EDCM 607	HAUNCH PIT. COVER 600x900
13	GRATED ENTRY PIT	750	900	375	244.80	600	244.55	246.73	2.23	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
14	GRATED ENTRY PIT	750	900	600	244.65	600	244.50	246.73	2.23	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
15	GRATED ENTRY PIT	750	900	525	244.95	600	244.90	247.05	2.14	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
16	GRATED ENTRY PIT	750	900	525	245.37	525	245.32	247.45	2.13	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
17	ENDDPIPE			300	245.44						BLANK OFF ENDDPIPE
18	GRATED PIT	600	900	525	245.65	525	245.60	247.70	2.10	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
19	GRATED PIT	600	900	525	246.10	525	245.90	248.65	2.75	EDCM 601 & 607	HAUNCH PIT. COVER 600x900
20	JUNCTION PIT	600	900	300	246.85	300	246.00	248.80	2.80		BLANK OFF ENDDPIPE
21	JUNCTION PIT	600	900	300	247.99	300	247.99	249.64	1.66	EDCM 605	600x900 COVER. PROVIDE GATIC GULLY GRATE (ROAD V-TYPE) 331V964 OR SIMILAR
22	JUNCTION PIT	600	900	225	248.71	225	248.95	249.91	0.96	EDCM 605	600x900 COVER. PROVIDE GATIC GULLY GRATE (ROAD V-TYPE) 331V964 OR SIMILAR
23	JUNCTION PIT	600	900	300	248.47	300	245.61	247.47	1.86	EDCM 601 & 605	
24	JUNCTION PIT	600	900	300	248.95	300	245.79	247.37	1.58	EDCM 602 & 605	
25	JUNCTION PIT	600	900	300	244.97	300	244.92	246.93	2.01	EDCM 605	
26	JUNCTION PIT	600	900	300	245.13	300	245.13	246.74	1.61	EDCM 601 & 605	
27	JUNCTION PIT	600	900	375	245.35	375	245.30	247.06	1.75	EDCM 602 & 605	
28	JUNCTION PIT	600	900	375	245.70	375	245.65	247.06	1.41	EDCM 602 & 605	
29	JUNCTION PIT	600	900	375	246.43	375	246.38	247.92	1.55	EDCM 601 & 605	
30	JUNCTION PIT	600	900	300	246.43	300	246.76	248.32	1.61	EDCM 602 & 605	
31	JUNCTION PIT	600	900	300	246.76	300	246.88	248.73	1.86	EDCM 601 & 605	
32	JUNCTION PIT	600	900	300	247.04	300	246.99	248.73	1.74	EDCM 601 & 605	
33	JUNCTION PIT	600	900	300	247.04	300	247.97	249.83	1.86	EDCM 601 & 605	
34	JUNCTION PIT	600	900	300	248.02	300	248.75	250.65	1.89	EDCM 601 & 605	
35	JUNCTION PIT	600	900	300	248.35	300	249.47	251.28	1.86	EDCM 601 & 605	
36	JUNCTION PIT	600	900	300	248.80	300	250.29	252.05	1.77	EDCM 601 & 605	
37	JUNCTION PIT	600	900	300	249.47	300	250.46	252.13	1.67	EDCM 601 & 605	
38	JUNCTION PIT	600	900	225	249.25	300	249.95	251.34	1.39	EDCM 601 & 605	
39	JUNCTION PIT	600	900	225	249.80	300	248.60	250.39	1.79	EDCM 605	
40	JUNCTION PIT	600	900	225	249.66	300	249.66	250.69	1.03	EDCM 605	

NAME	PIT TYPE	INTERNAL WD	LEN	INLET DIA	INV LEV	OUTLET DIA	INV LEV	PIT SETOUT RL	DEPTH	STD DWG	REMARKS
40	GRATED ENTRY PIT	600	900			300	247.14	248.38	1.24	EDCM 601 & 605	
41	GRATED ENTRY PIT	600	900			300	246.85	248.31	1.47	EDCM 601 & 605	
42	JUNCTION PIT	600	900			300	247.60	248.69	1.08	EDCM 605	
43	GRATED ENTRY PIT	600	900			300	244.47	246.08	1.61	EDCM 601 & 605	
44	GRATED ENTRY PIT	600	900			300	243.95	245.57	1.62	EDCM 601 & 605	
46	JUNCTION PIT	600	900	300	243.43	300	243.38	245.38	2.00	EDCM 605	
47	JUNCTION PIT	600	900	300	243.58	300	243.53	245.27	1.74	EDCM 605	
48	GRATED ENTRY PIT	600	900	300	243.73	300	243.68	245.40	1.72	EDCM 601 & 605	
49	DOUBLE GRATED ENTRY PIT	600	900			300	243.82	245.41	1.59	EDCM 602 & 605	
50	DOUBLE GRATED ENTRY PIT	600	900	300	243.49	300	243.44	245.17	1.73	EDCM 602 & 605	
51	DOUBLE GRATED ENTRY PIT	600	900			300	243.58	245.18	1.60	EDCM 602 & 605	
52	Ex PIT			225	243.25			244.83	0.00		CONNECT TO EXISTING JUNCTION PIT
53	JUNCTION PIT	600	900			225	244.11	245.12	1.01	EDCM 605	
54	Ex ENDDPIPE			450	243.00			244.78	0.00		CONNECT TO EXISTING ENDDPIPE
55	GRATED ENTRY PIT	600	900	375	243.18	450	243.13	244.95	1.81	EDCM 601 & 605	
56	GRATED ENTRY PIT	600	900	300	243.21						
57	GRATED ENTRY PIT	600	900	300	243.70	375	243.65	245.30	1.65	EDCM 601 & 605	
58	JUNCTION PIT	600	900	225	245.09	300	245.04	246.09	1.04	EDCM 605	
59	JUNCTION PIT	600	900	225	245.87	225	245.82	246.81	0.99	EDCM 605	
60	JUNCTION PIT	600	900	225	246.61	225	246.61	247.75	1.14	EDCM 605	
61	JUNCTION PIT	600	900	300	243.38	300	243.38	244.97	1.59	EDCM 601 & 605	
62	Ex PIT			300	244.00			245.23	0.00		CONNECT TO EXISTING PIT
63	JUNCTION PIT	600	900	225	244.54	300	244.49	245.53	1.04	EDCM 605	
64	JUNCTION PIT	600	900	225	244.79	225	244.79	245.71	0.93	EDCM 605	
65	Ex ENDDPIPE			450	244.20			245.88	0.00		CONNECT TO EXISTING ENDDPIPE
66	GRATED ENTRY PIT	600	900	375	244.40	450	244.35	246.05	1.70	EDCM 601 & 605	
67	GRATED ENTRY PIT	600	900	300	244.43						
68	GRATED ENTRY PIT	600	900	300	244.95	300	244.95	246.54	1.64	EDCM 601 & 605	
69	GRATED ENTRY PIT	600	900	300	245.55	300	245.55	247.13	1.63	EDCM 601 & 605	
70	GRATED ENTRY PIT	600	900	300	245.53						
71	GRATED ENTRY PIT	600	900	300	245.89	300	245.84	247.66	1.82	EDCM 601 & 605	
72	DOUBLE GRATED ENTRY PIT	600	900	300	246.11	300	246.06	247.68	1.62	EDCM 602 & 605	
73	GRATED ENTRY PIT	600	900	300	246.66	300	246.66	248.16	1.55	EDCM 601 & 605	
74	GRATED ENTRY PIT	600	900	300	247.35	300	247.35	248.73	1.38	EDCM 601 & 605	
75	GRATED ENTRY PIT	600	900	300	246.45	300	246.45	247.86	1.41	EDCM 601 & 605	
76	GRATED ENTRY PIT	600	900	300	245.62	300	245.62	247.13	1.51	EDCM 601 & 605	
77	GRATED ENTRY PIT	600	900	300	245.04	300	245.04	246.57	1.52	EDCM 601 & 605	
78	GRATED ENTRY PIT	600	900	300	244.51	300	244.51	246.05	1.54	EDCM 601 & 605	
79	Ex PIT			225	246.10			247.59	0.00		CONNECT TO EXISTING JUNCTION PIT
80	JUNCTION PIT	600	900	225	246.93	225	246.93	248.00	1.07	EDCM 605	
81	Ex PIT			300	246.80			248.74	0.00		CONNECT TO EXISTING GRATED ENTRY PIT
82	GRATED ENTRY PIT	600	900			300	247.36	248.81	1.45	EDCM 601 & 605	
83	GRATED ENTRY PIT	600	900			300	247.12	248.72	1.59	EDCM 601 & 605	
84	Ex PIT			300	248.85			251.45	0.00		CONNECT TO EXISTING JUNCTION PIT
85	JUNCTION PIT	600	900	225	249.52	300	249.47	251.64	2.17	EDCM 605	
86	JUNCTION PIT	600	900	225	250.10	225	250.10	251.18	1.08	EDCM 605	

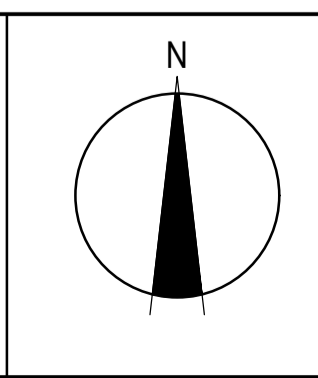
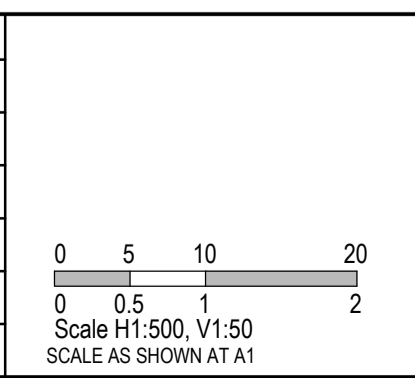
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A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

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Quality Management - ISO 9001  
 OHS Management - AS/NZS 4801  
 Environmental Management - ISO 14001

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



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 Ph 03 9514 1500

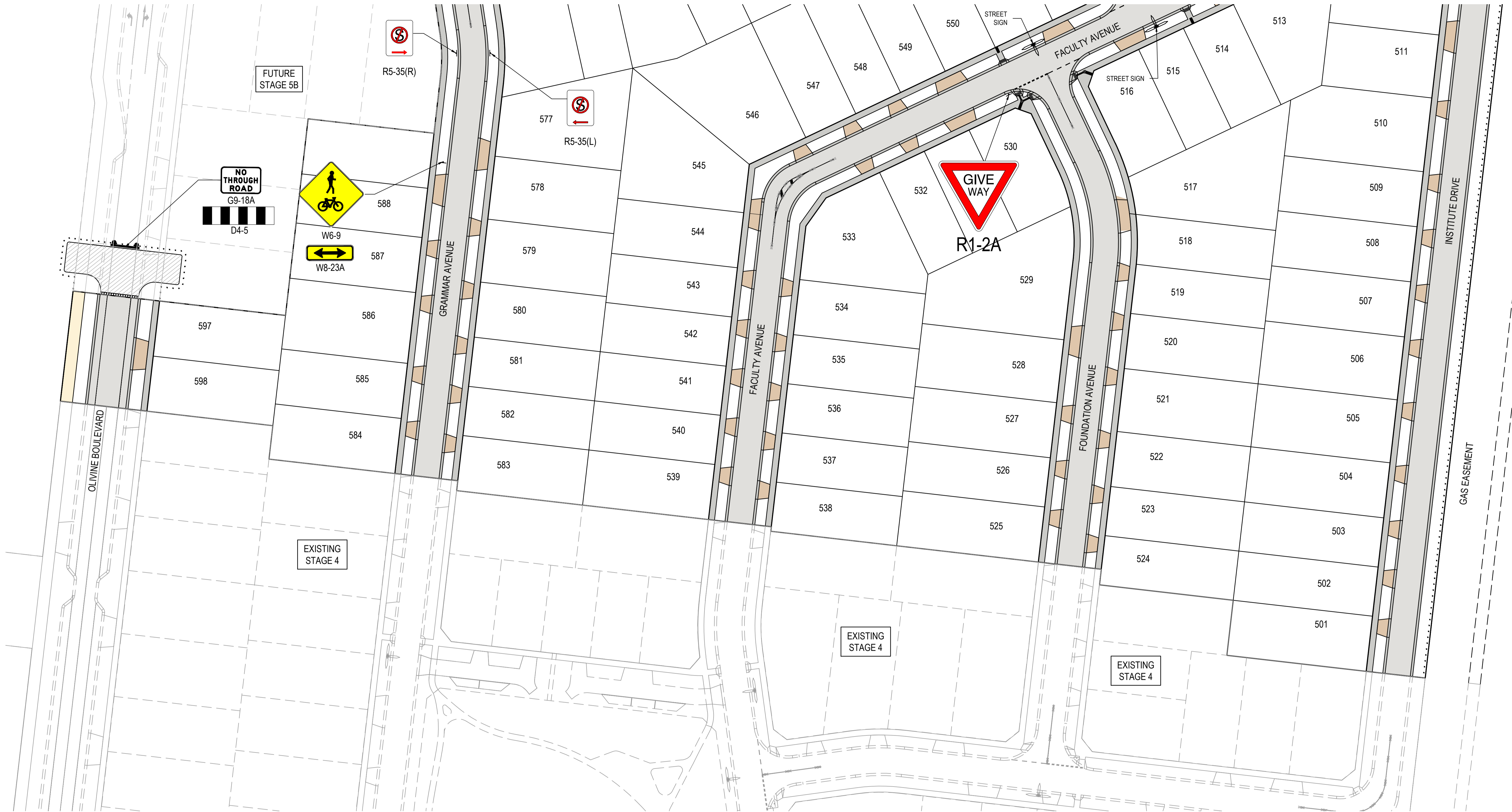


Olivine Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Pit Schedule

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-36</b>	SHEET No. <b>36 of 45</b>	REVISION <b>A</b>
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REFER SHEET 1700E-05A-38 FOR CONTINUATION



- NOTES**
- 90° BENDS TO HAVE CENTRELINE MARKING WITH RRPMS AT MAX 6m SPACING.
  - RRPMs TO BE IN ACCORDANCE WITH VICROADS TRAFFIC ENGINEERING MANUAL VOL 2.
  - ALL LINEMARKING & SIGNAGE TO BE IN ACCORDANCE WITH AUSTRALIAN STANDARD AS1742.

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

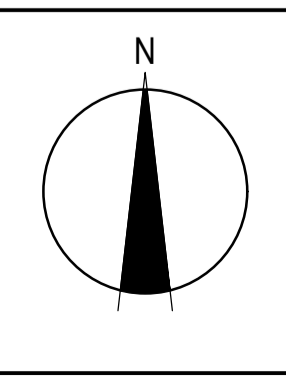
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Quality Management - ISO 9001  
 OHS Management - AS/NZS 4801  
 Environmental Management - ISO 14001

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	

0 5 10 20  
 Scale 1:500  
 SCALE AS SHOWN AT 1



**SMEC**  
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 © ABN 47 065 475 149  
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 Docklands, VIC 3008  
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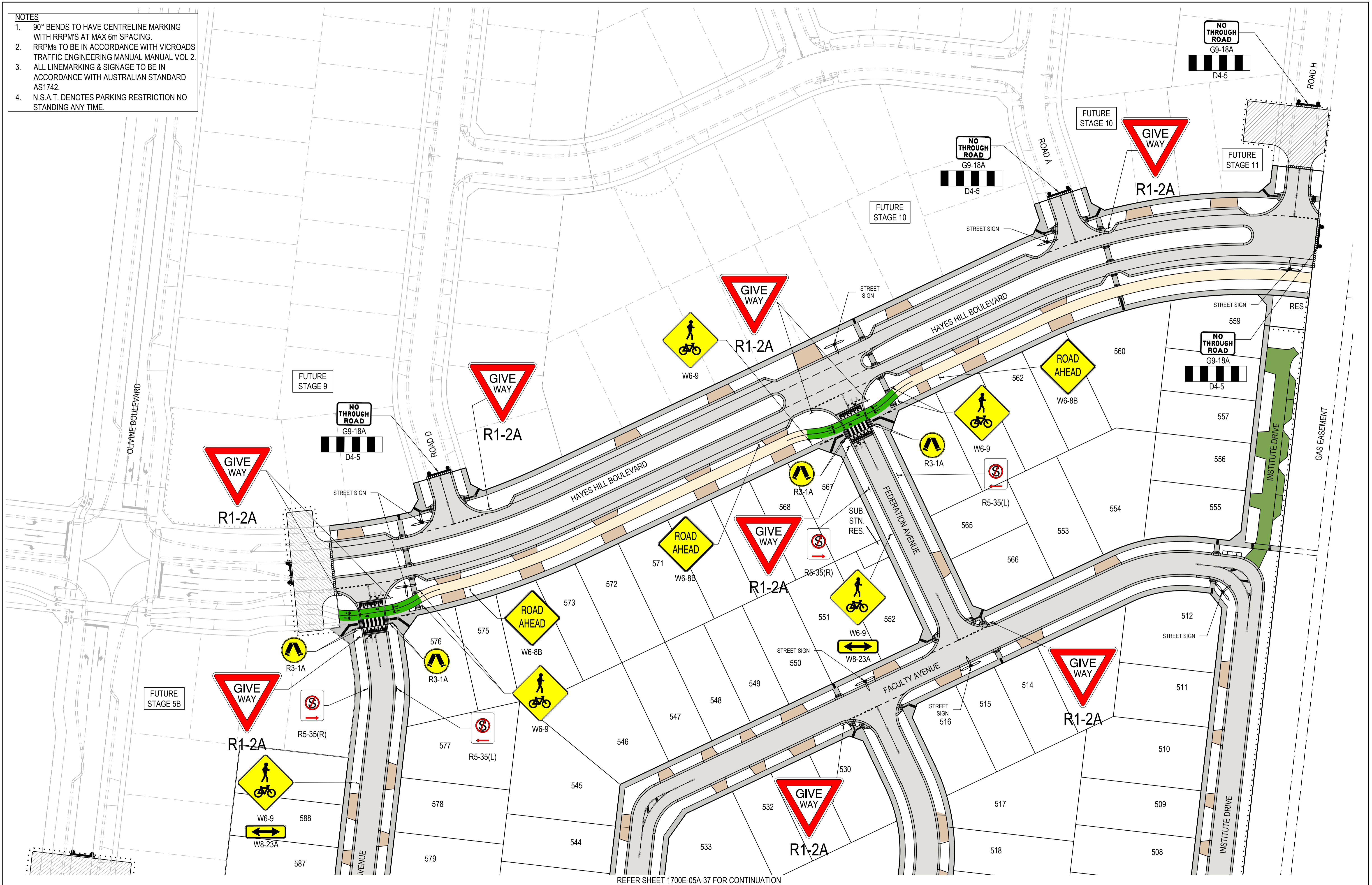
Olivine Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Signs & Linemarking Plan - 1

MELWAYS REF 8 M2 PROJECT / DRAWING No. 1700E-05A-37 SHEET No. 37 of 45 REVISION A

**SUBJECT TO APPROVAL**



- NOTES**
- 90° BENDS TO HAVE CENTRELINE MARKING WITH RRPM'S AT MAX 6m SPACING.
  - RRPMs TO BE IN ACCORDANCE WITH VICROADS TRAFFIC ENGINEERING MANUAL VOL 2.
  - ALL LINEMARKING & SIGNAGE TO BE IN ACCORDANCE WITH AUSTRALIAN STANDARD AS1742.
  - N.S.A.T. DENOTES PARKING RESTRICTION NO STANDING ANY TIME.

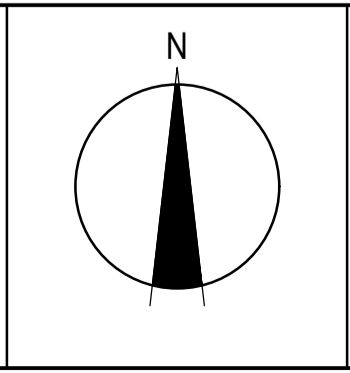
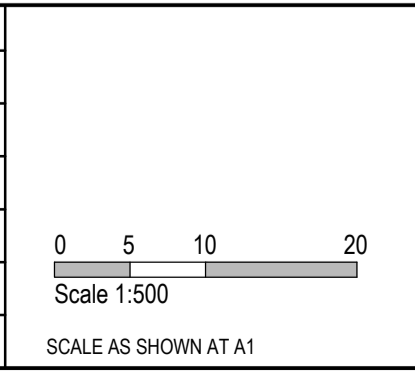


REFER SHEET 1700E-05A-37 FOR CONTINUATION

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

**SUBJECT TO APPROVAL**

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  		DRAFTER	R.Barua
		DESIGNER	S.MacLaren
		CHECKED	K.Moore
		AUTHORISED	A.Burrows
		REFERENCE No. 1	
		REFERENCE No. 2	



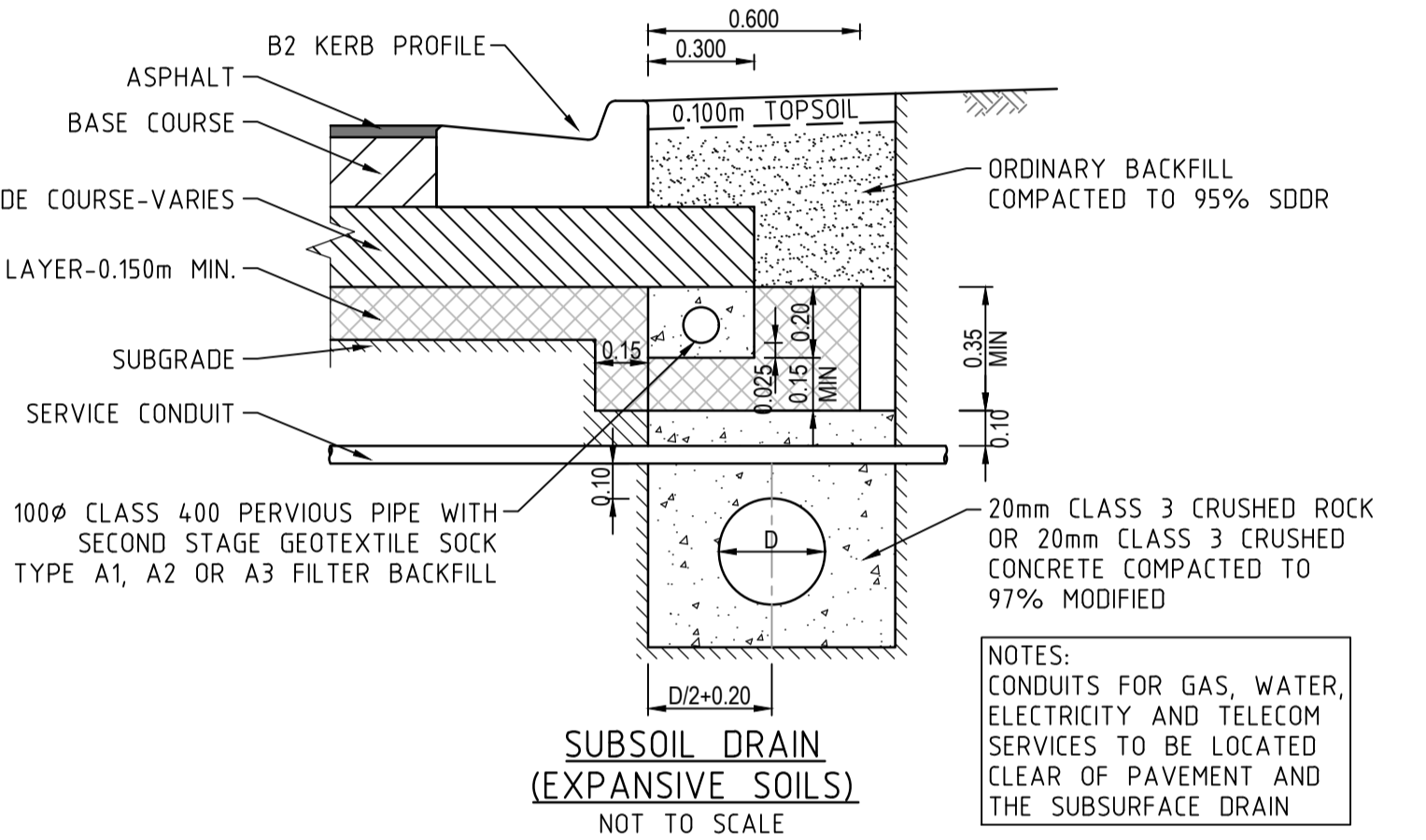
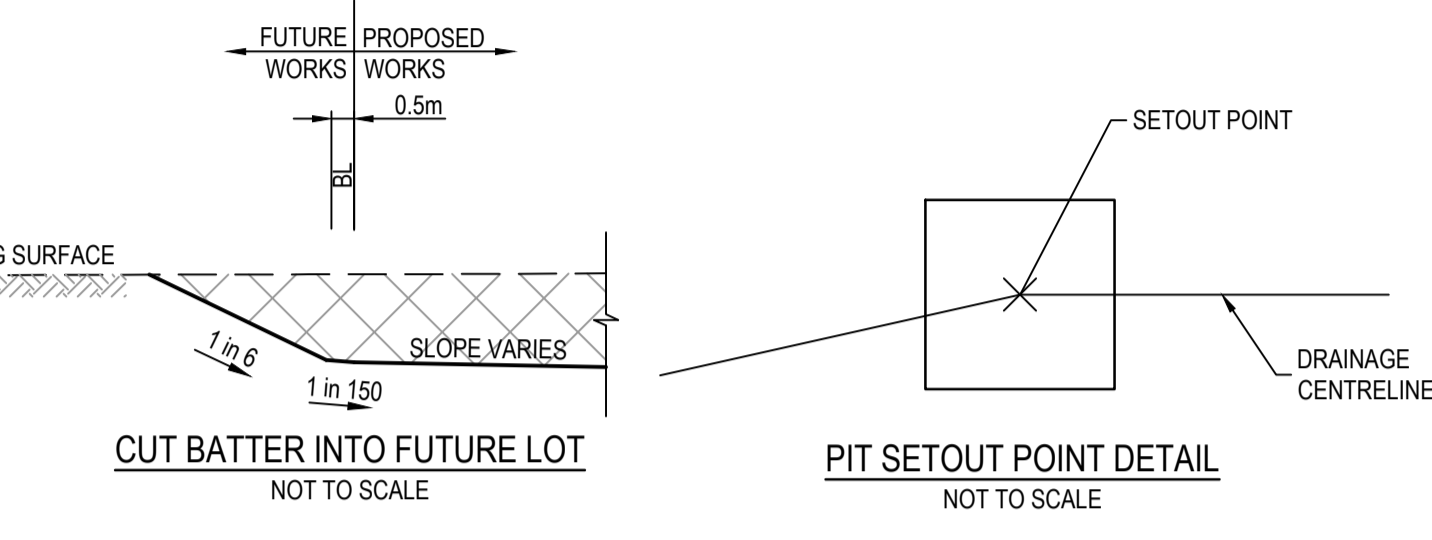
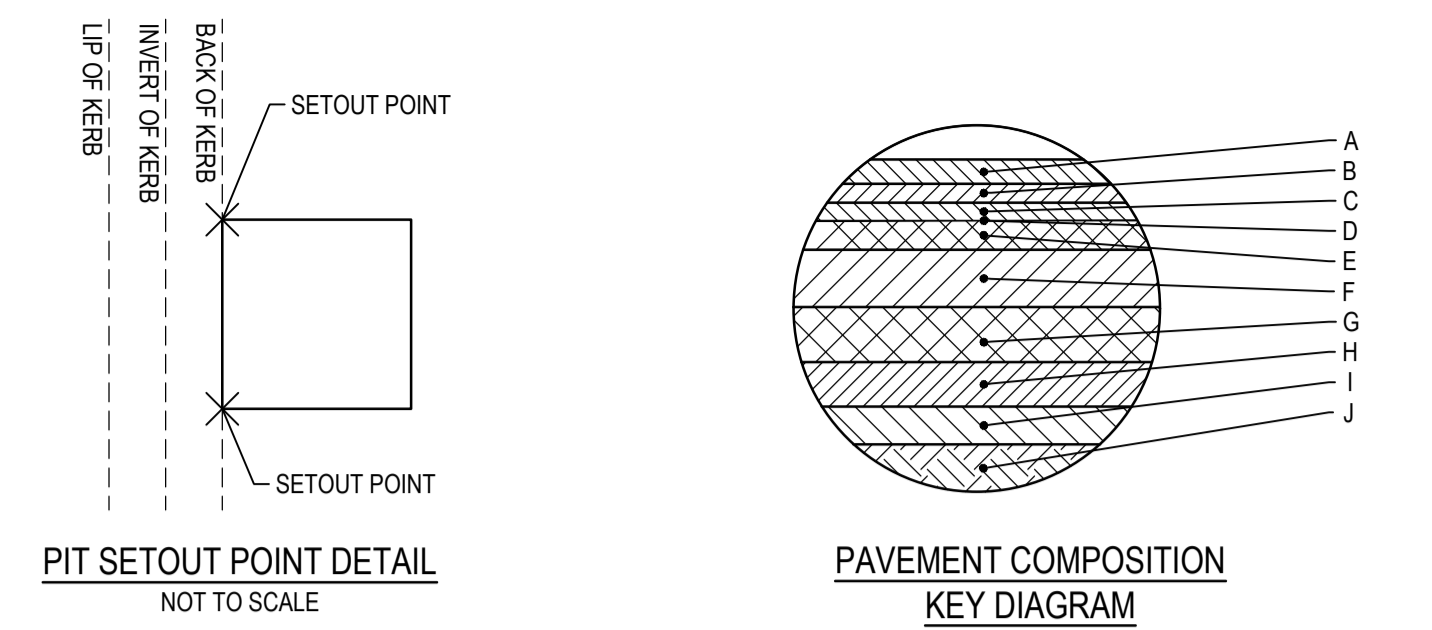
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Docklands, VIC 3008  
Ph 03 9514 1500



Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Signs & Linemarking Plan - 2

MELWAYS REF 8 M2	PROJECT / DRAWING No. 1700E-05A-38	SHEET No. 38 of 45	REVISION A
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**OLIVINE BOULEVARD  
PAVEMENT COMPOSITION**

670mm DEPTH PAVEMENT COMPOSITION		
PAVEMENT LAYER	LAYER THICKNESS (mm)	MATERIAL
A WEARING COURSE	40	SIZE 10 TYPE N ASPHALT (CLASS 170 BINDER)
B INTERMEDIATE COURSE 1	40	SIZE 10 TYPE N ASPHALT (CLASS 170 BINDER)
C INTERMEDIATE COURSE 2	-	-
D SAMI SEAL	-	SIZE 10 S18RF
E PRIME	-	-
F BASE COURSE	110	SIZE 20 CLASS 2 CRUSHED ROCK, COMPACTED TO A MINIMUM DENSITY RATIO OF 98% (MODIFIED) AS1289.5.2.1
G UPPER BASE COURSE	70	CLASS 3 CRUSHED ROCK COMPACTED TO A MINIMUM DENSITY RATIO OF 98% (MODIFIED) AS1289.5.2.1
H LOWER SUBBASE	100	CLASS 4 CRUSHED ROCK COMPACTED TO A MINIMUM DENSITY RATIO OF 98% (MODIFIED) AS1289.5.2.1. THE LOWER SUBBASE LAYER MAY BE ELIMINATED AND REPLACED WITH A SINGLE UPPER SUBBASE LAYER 170mm IN THICKNESS
I CAPPING LAYER	300	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY k≤5x10 <sup>-9</sup> m/s. OR LIME STABILISED SITE WON CLAY WHICH CONFORMS TO THE PARAMETERS ABOVE.
J SUBGRADE	-	CBR 1.5% EXPANSIVE

**FEDERATION AVENUE, GRAMMAR AVENUE, FACULTY AVENUE,  
FOUNDATION AVENUE, INSTITUTE DRIVE, ROAD D, ROAD A & ROAD H  
PAVEMENT COMPOSITION**

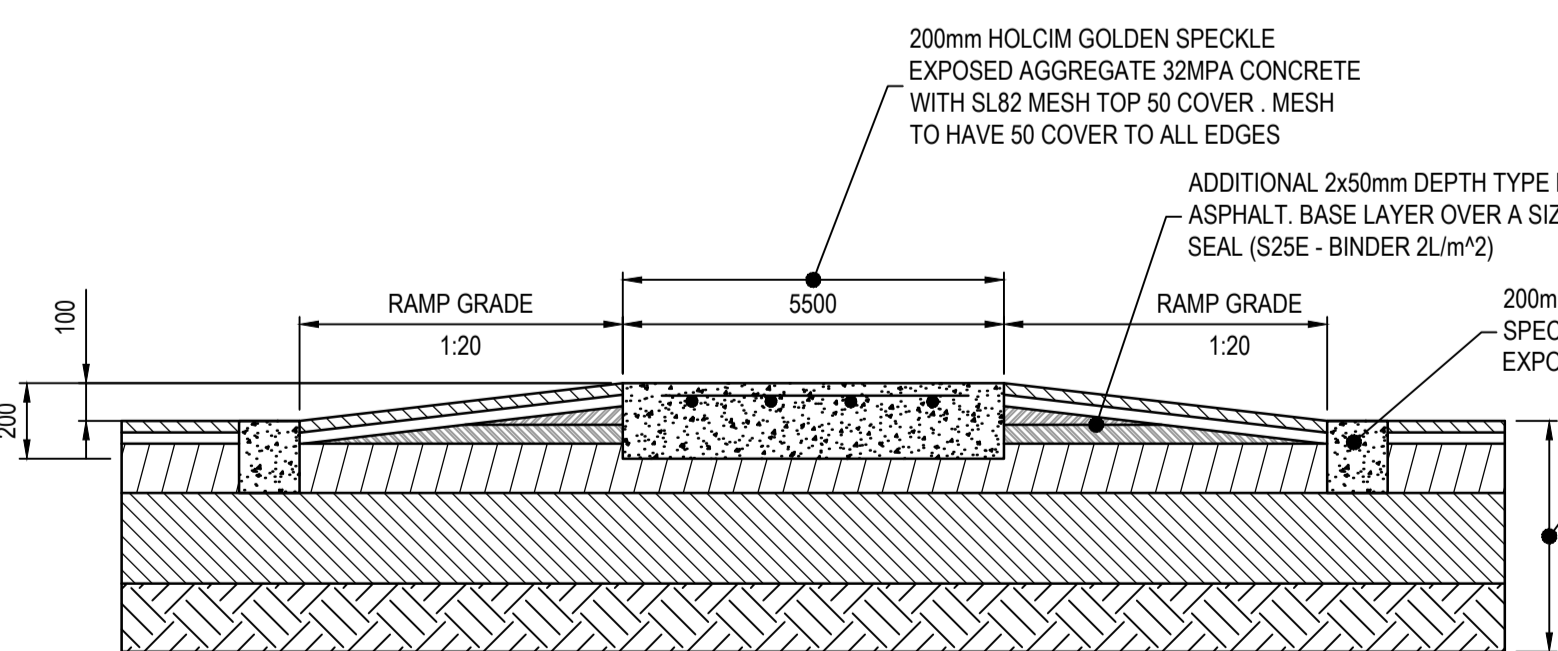
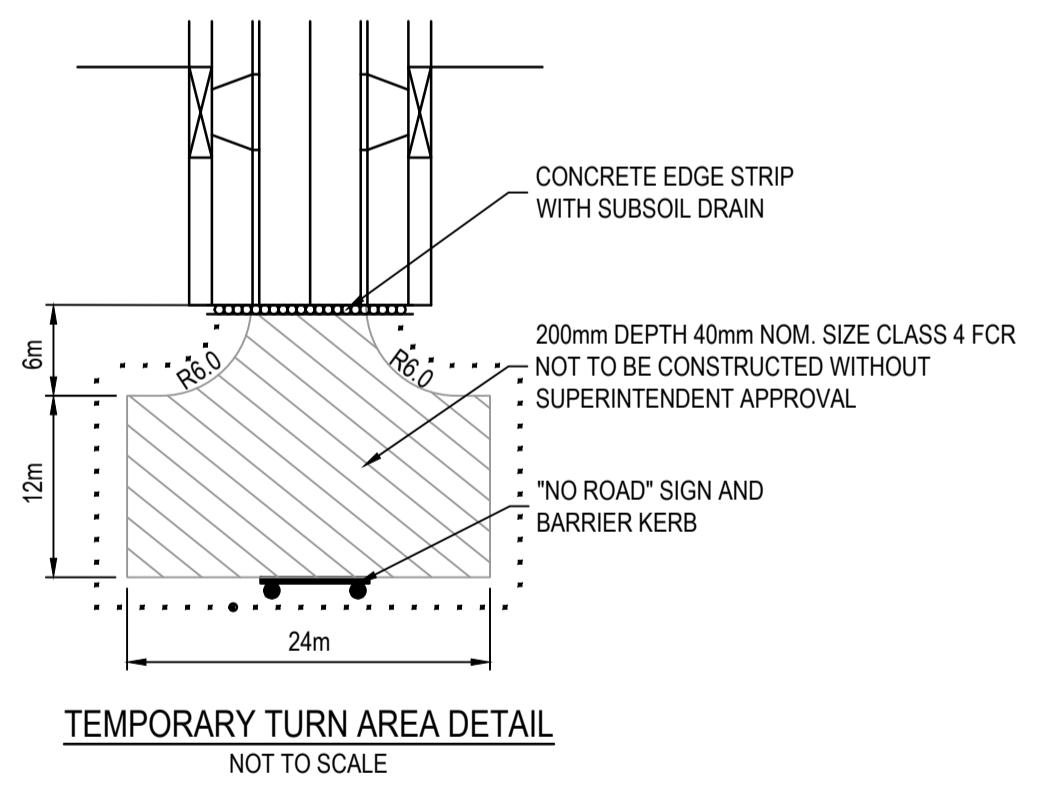
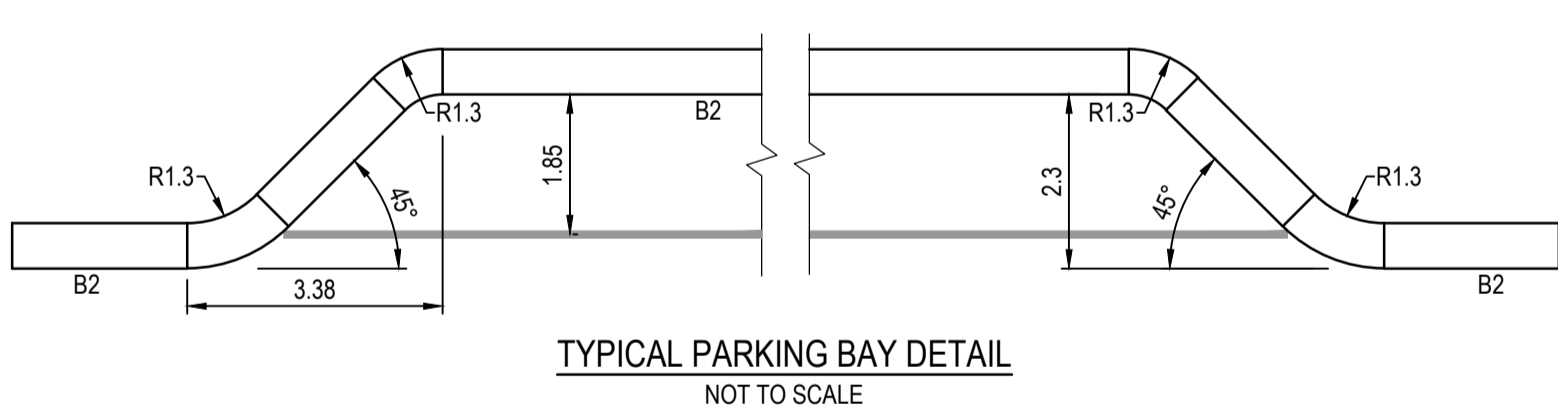
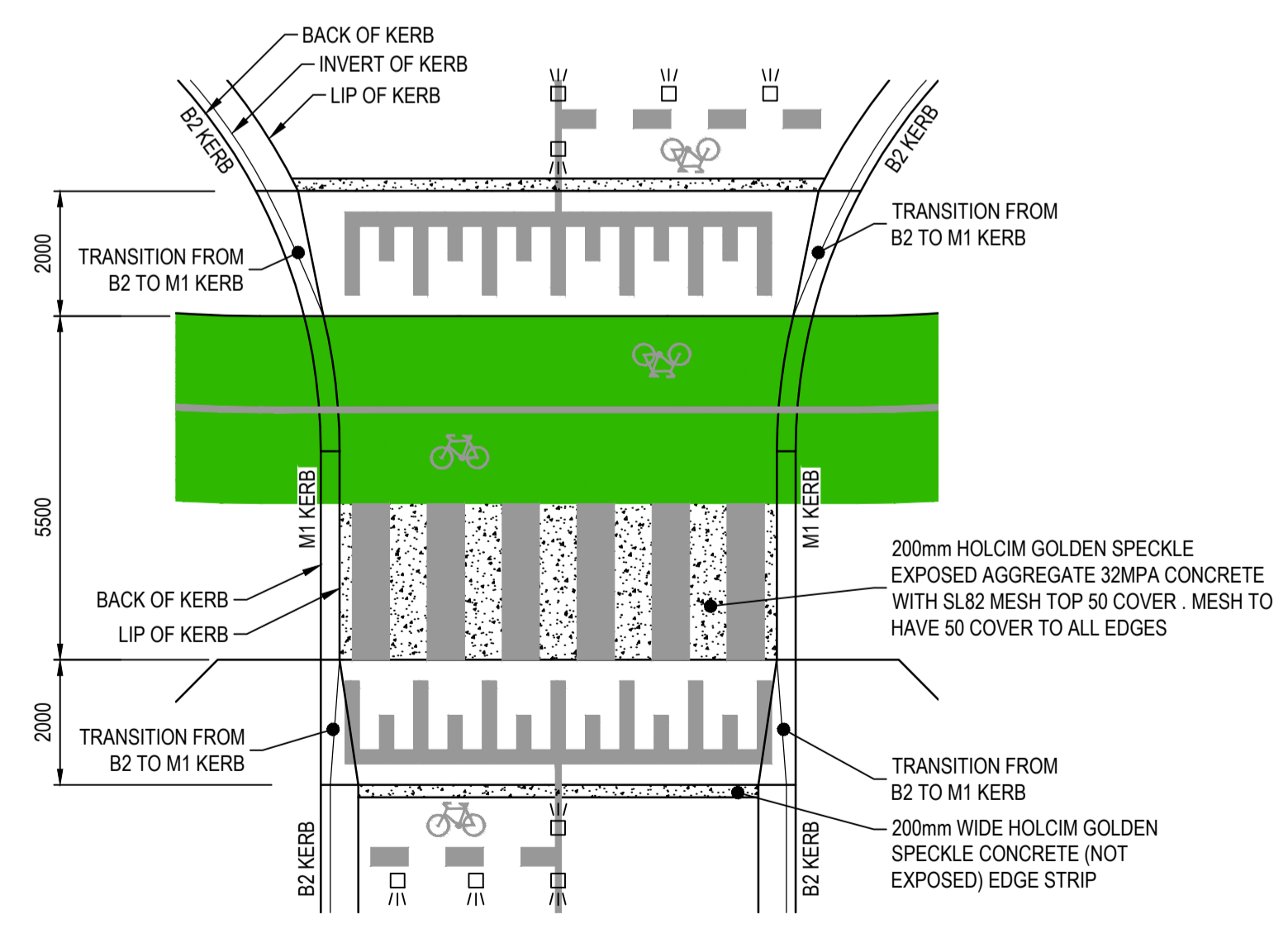
595mm DEPTH PAVEMENT COMPOSITION		
PAVEMENT LAYER	LAYER THICKNESS (mm)	MATERIAL
A WEARING COURSE	30	SIZE 10 TYPE N ASPHALT (CLASS 170 BINDER)
B INTERMEDIATE COURSE 1	30	SIZE 10 TYPE N ASPHALT (CLASS 170 BINDER)
C INTERMEDIATE COURSE 2	-	-
D SAMI SEAL	10	SIZE 10 S18RF
E PRIME	-	-
F BASE COURSE	130	SIZE 20 CLASS 2 CRUSHED ROCK COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 98% (MODIFIED) AS1289.5.2.1
G UPPER BASE COURSE	-	-
H LOWER BASE	110	CLASS 4 CRUSHED ROCK COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 98% (MODIFIED) AS1289.5.2.1
I CAPPING LAYER	285	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY k≤5x10 <sup>-9</sup> m/s. OR LIME STABILISED SITE WON CLAY WHICH CONFORMS TO THE PARAMETERS ABOVE.
J SUBGRADE	-	SUBGRADE CLAY AS FOUND (C.B.R = 2%) (IF REQUIRED, SUBGRADE IMPROVEMENT WORKS TO BE UNDERTAKEN TO COUNCIL'S SATISFACTION)

**HAYES HILL BOULEVARD (OUTSIDE OF SIGNALISED INTERSECTION)  
PAVEMENT COMPOSITION**

675mm DEPTH PAVEMENT COMPOSITION		
PAVEMENT LAYER	LAYER THICKNESS (mm)	MATERIAL
A WEARING COURSE	40	SIZE 14 TYPE H ASPHALT (CLASS 320 BINDER)
B INTERMEDIATE COURSE 1	80	SIZE 20 TYPE SI ASPHALT (CLASS 320 BINDER)
C INTERMEDIATE COURSE 2	75	SIZE 20 TYPE SI ASPHALT (CLASS 320 BINDER)
D SAMI SEAL	-	-
E PRIME	-	-
F BASE COURSE	180	SIZE 20 CLASS 3 CEMENT TREATED CRUSHED ROCK COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 98% (MODIFIED) AS1289.5.2.1
G UPPER BASE COURSE	-	-
H LOWER BASE	150	CLASS 4 CRUSHED ROCK COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 98% (MODIFIED) AS1289.5.2.1
I CAPPING LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY k≤5x10 <sup>-9</sup> m/s. OR LIME STABILISED SITE WON CLAY WHICH CONFORMS TO THE PARAMETERS ABOVE.
J SUBGRADE	-	SUBGRADE CLAY AS FOUND (C.B.R = 2%) (IF REQUIRED, SUBGRADE IMPROVEMENT WORKS TO BE UNDERTAKEN TO COUNCIL'S SATISFACTION)

**MEWS COMPOSITION - EDCM503**

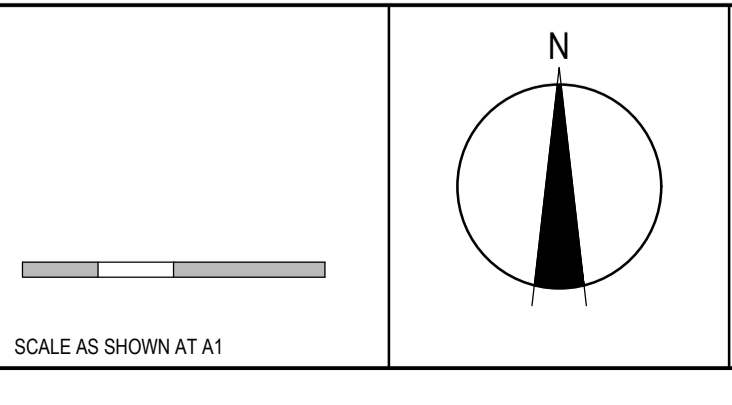
300mm DEPTH PAVEMENT COMPOSITION		
PAVEMENT LAYER	LAYER THICKNESS (mm)	MATERIAL
CONCRETE	200	N25 EXPOSED AGGREGATE CONCRETE WITH SL82 MESH TOP 50 COVER. MESH TO HAVE 50 COVER TO ALL EDGES
SUB BASE	100	CLASS 3 CRUSHED ROCK OR CLASS 3 CRUSHED CONCRETE MECHANICALLY COMPACTED



REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB
B	26.10.18	PAVEMENT TYPES UPDATED	SM/SM	AB

**SUBJECT TO APPROVAL**

TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	



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**mirvac**

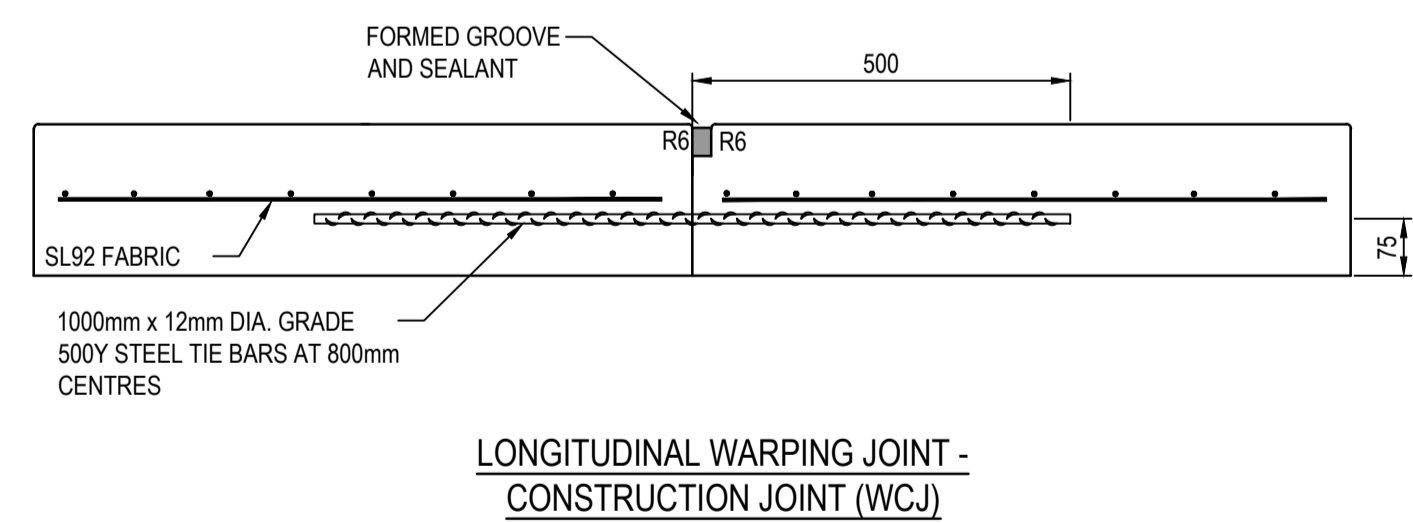
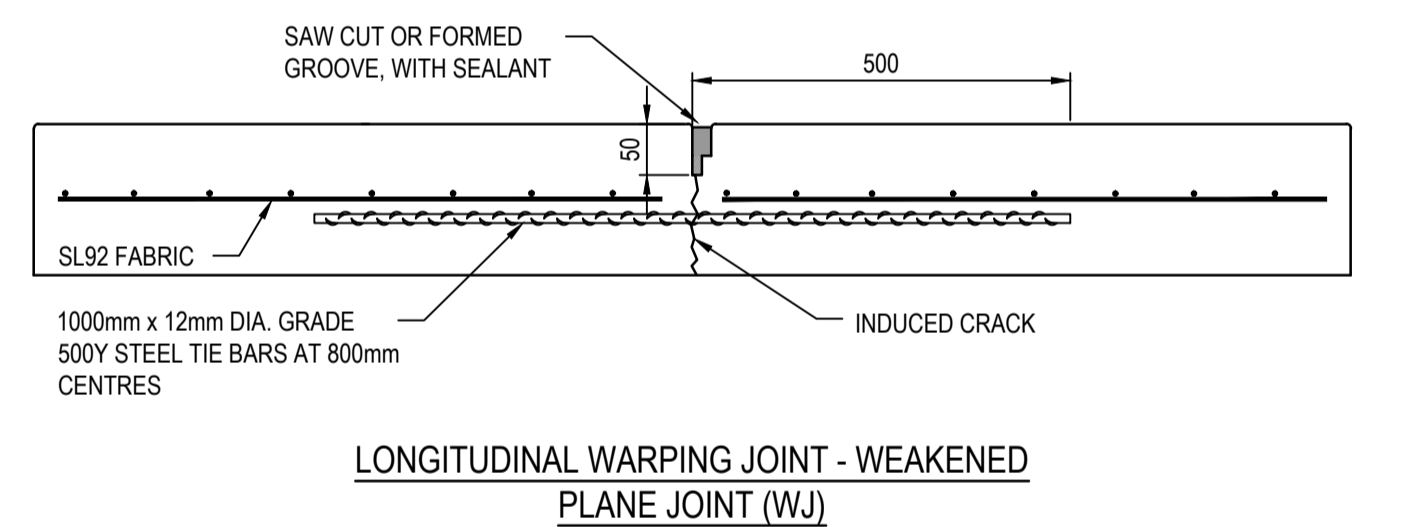
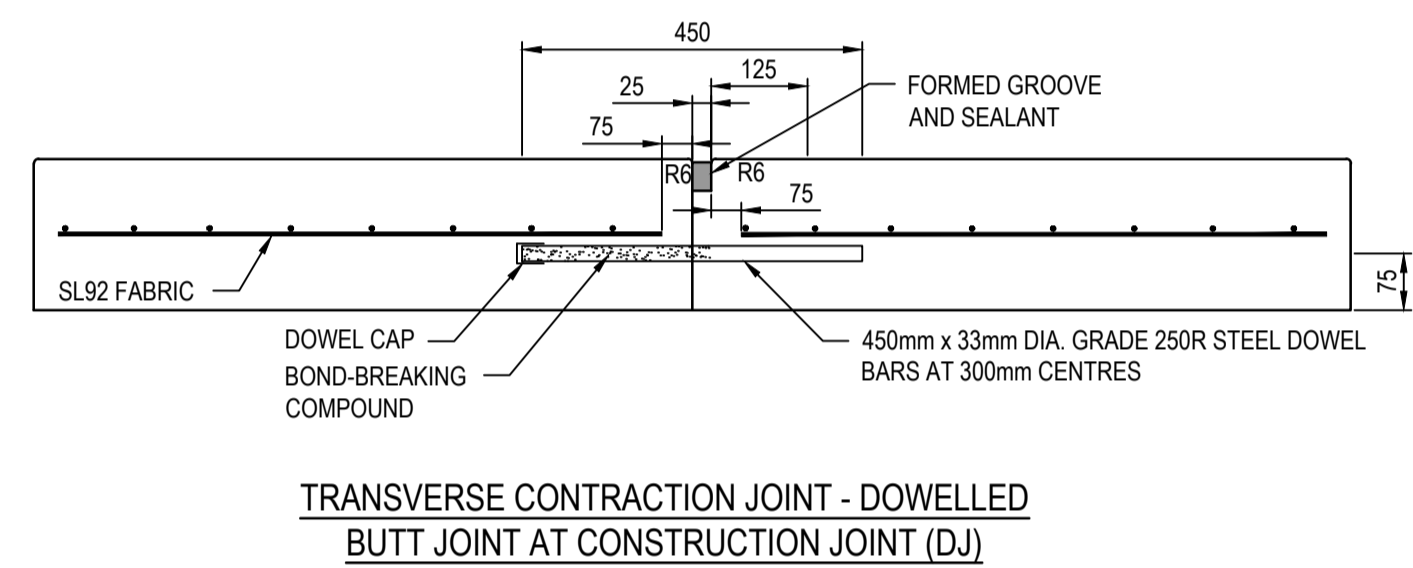
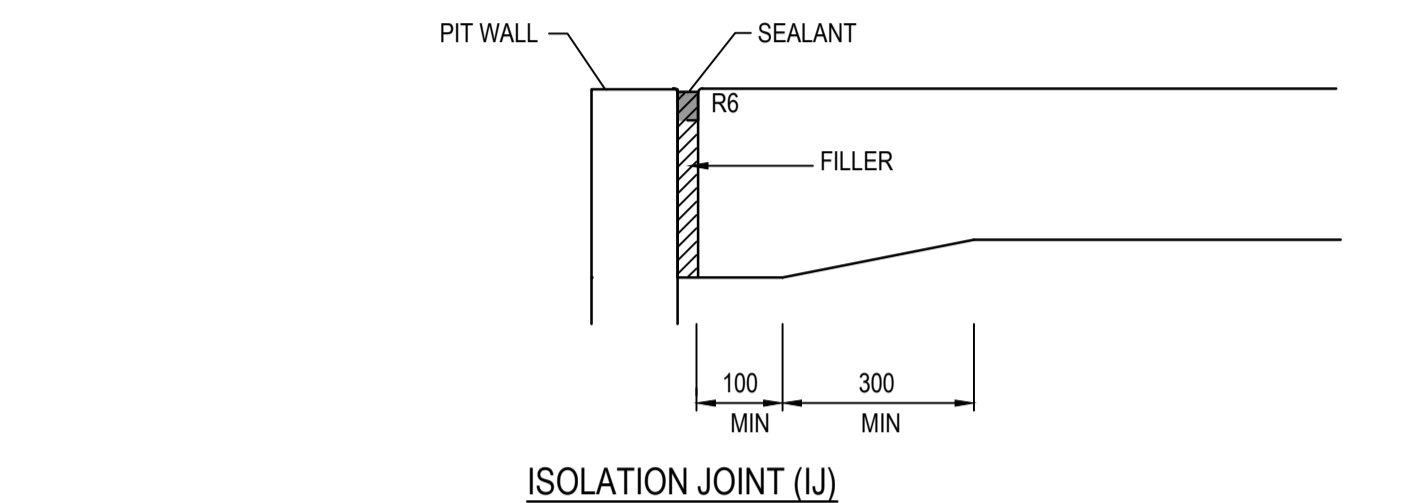
Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
General Note & Pavements Details

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-39</b>	SHEET No. <b>39 of 45</b>	REVISION <b>B</b>
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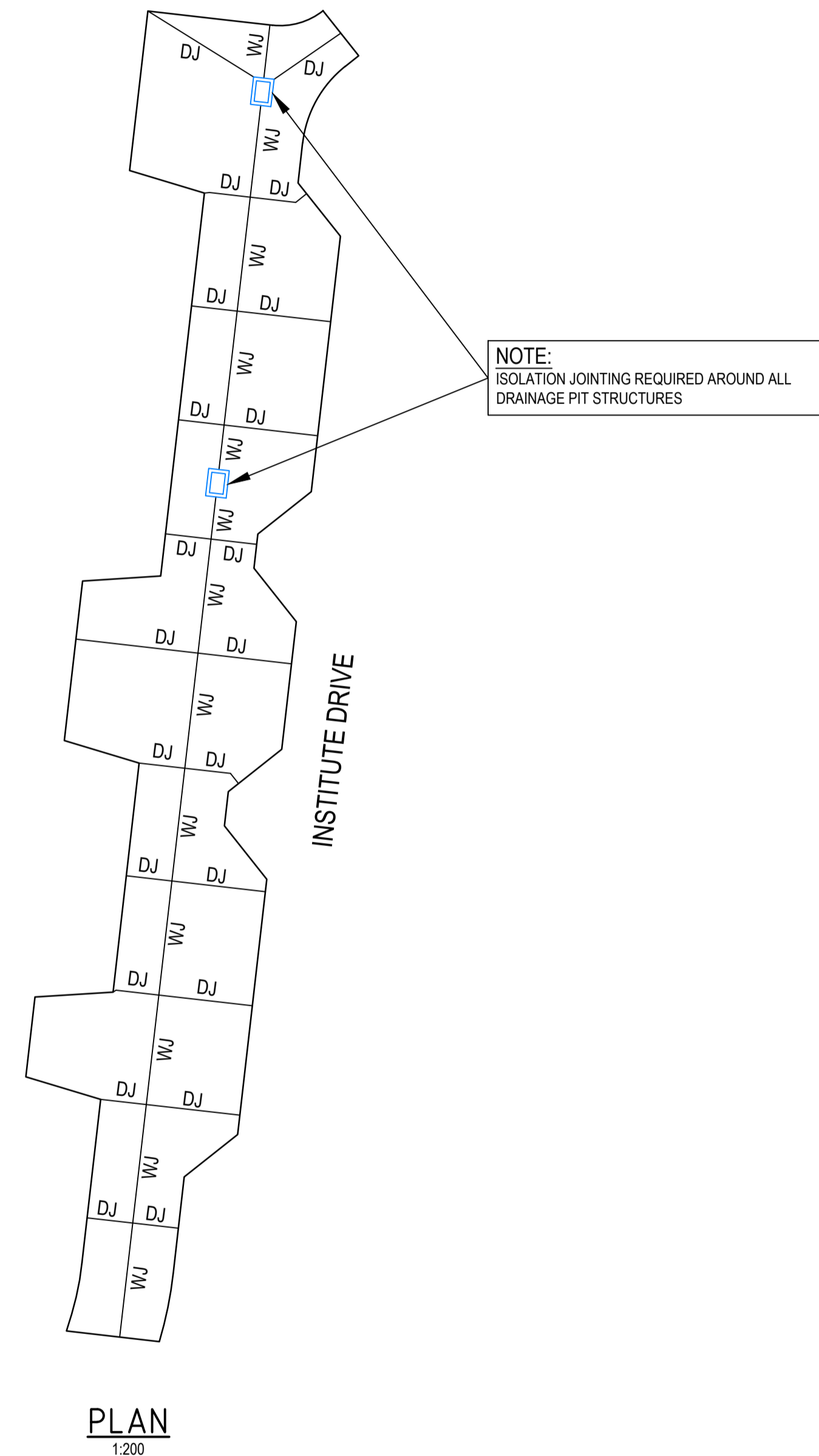


- JOINT DETAIL NOTES:**
1. SAW JOINTS ARE TO BE PLACED AT A MAXIMUM 5m SPACING AT INTERSECTIONS AND CONSTRUCTED 18-24 HOURS AFTER POURING.
  2. TRANSVERSE/CONTRACTION JOINTS ARE TO BE PLACED AT A MAXIMUM SPACING OF 12m.
  3. ISOLATION JOINTS ARE TO BE PLACED AROUND PITS.
  4. ALL JOINTS SHALL BE LOCATED AND SPACED IN ACCORDANCE WITH "CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA - CONCRETE PAVEMENT DESIGN FOR RESIDENTIAL STREETS 1997".

**NOTE:**  
CONCRETE SHALL BE CURED IN ACCORDANCE WITH AS3600 AND NOT TO BE TRAFFICKED UNTIL AT LEAST SEVEN DAYS AFTER POURING.



**CONCRETE JOINTING DETAILS**  
NOT TO SCALE



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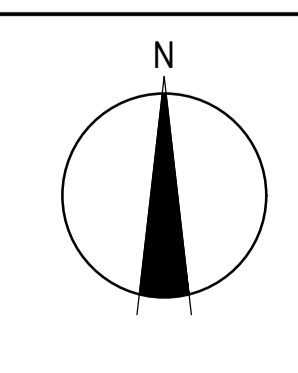
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Quality Management - ISO 9001  
 OHS Management - AS/NZS 1801  
 Environmental Management - ISO 14001

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	

0 2 4 8  
 Scale 1:200  
 SCALE AS SHOWN AT A1



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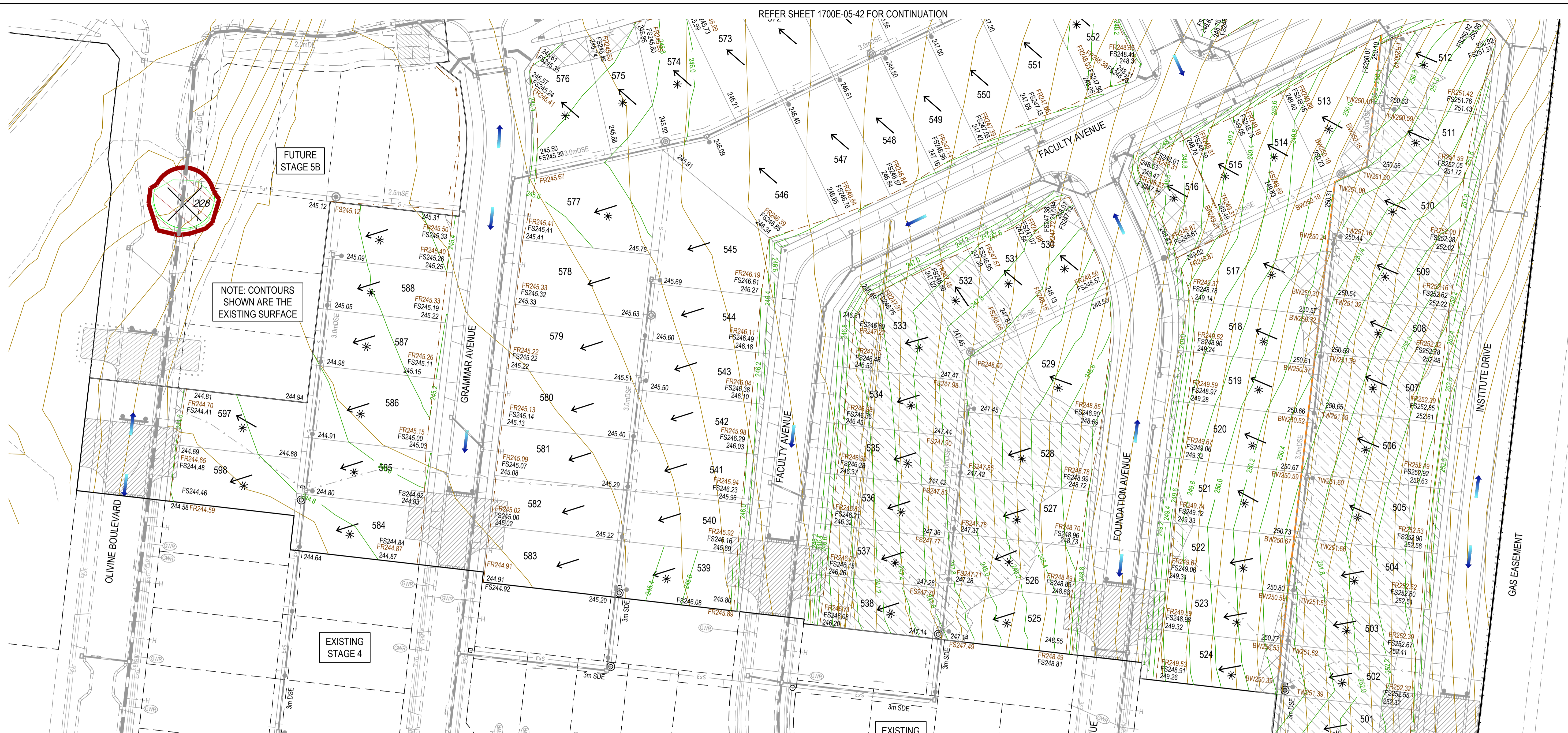


Olivine Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Concrete Jointing Details

MELWAYS REF <b>8 M2</b>	PROJECT / DRAWING No. <b>1700E-05A-40</b>	SHEET No. <b>40 of 45</b>	REVISION <b>A</b>
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REFER SHEET 1700E-05-42 FOR CONTINUATION



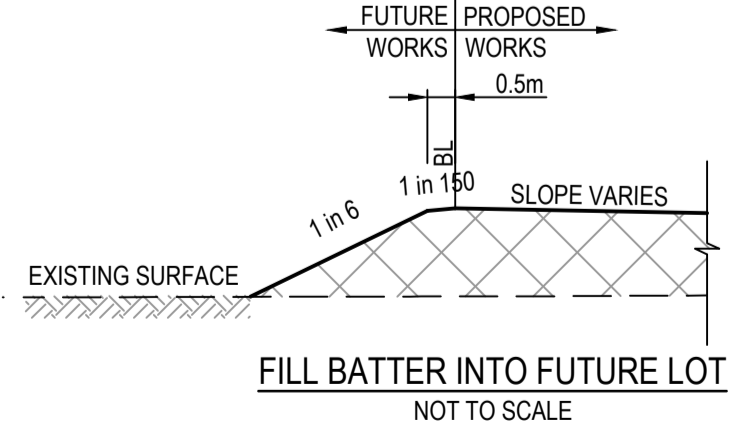
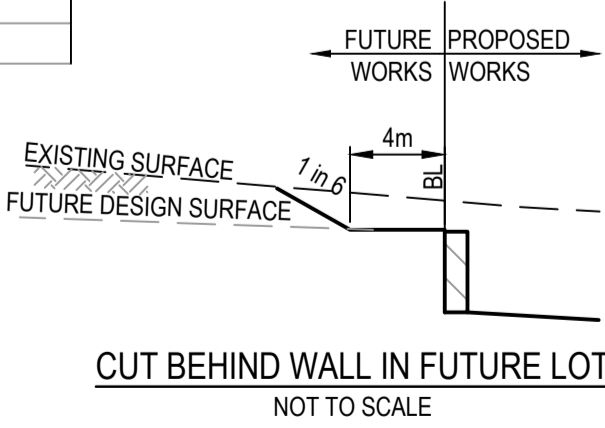
NOTE: CONTOURS SHOWN ARE THE EXISTING SURFACE

**LEGEND - LAYOUT PLAN**  
ALL PROPOSED, FUTURE & EXISTING SERVICE LOCATIONS ARE SHOWN INDICATIVELY

	STORMWATER DRAIN, PIT & PROPERTY INLET
	MAIN DRAIN
	SWALE DRAIN
	SEWER & MAINTENANCE STRUCTURES
	HOUSE DRAIN
	ELECTRICITY (U.G.)
	GAS
	TELSTRA
	WATER
	RECYCLE WATER
	AG. DRAIN
	SERVICE CONDUITS
	TACTILE PAVERS
	EXISTING STORMWATER DRAIN
	EXISTING MAIN DRAIN
	EXISTING SWALE DRAIN
	EXISTING SEWER & MAINTENANCE STRUCTURES
	EXISTING HOUSE DRAIN
	EXISTING ELECTRICITY (UNDER GROUND)
	EXISTING GAS
	EXISTING TELSTRA
	EXISTING WATER
	EXISTING RECYCLED WATER
	EXISTING AG. DRAIN

	SERVICE CONDUITS
	EXISTING TACTILE PAVERS
	FUTURE STORMWATER DRAIN
	FUTURE MAIN DRAIN
	FUTURE SWALE DRAIN
	FUTURE SEWER & MAINTENANCE STRUCTURES
	FUTURE HOUSE DRAIN
	FUTURE ELECTRICITY (UNDER GROUND)
	FUTURE GAS
	FUTURE TELSTRA
	FUTURE WATER
	FUTURE RECYCLED WATER
	FUTURE AG. DRAIN
	FUTURE SERVICE CONDUITS
	FUTURE TACTILE PAVERS
	ZERO LOT LINES
	141.34 EXISTING SURFACE LEVEL
	FR157.40 FINISHED BUILDING LINE LEVEL
	FR157.40 FINISHED RIDGE LINE LEVEL
	CH270.00 CHAINAGE
	TW159.60 TOP OF RETAINING WALL LEVEL
	BW159.00 BOTTOM OF RETAINING WALL LEVEL
	EXISTING RETAINING WALL
	RETAINING WALL
	FUTURE RETAINING WALL
	STRUCTURAL FILL > 200mm DEEP

	EXISTING STRUCTURAL FILL > 200mm DEEP
	CUT > 200mm DEEP
	DIRECTION OF FALL
	OVERLAND FLOW
	GRADED IN DIRECTION OF FALL TO LEVEL INDICATED
	EDGE STRIP, SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
	EXISTING RED GUM TREE & CANOPY TO BE REMOVED
	EXISTING OTHER SPECIES TREE & CANOPY TO BE REMOVED
	EXISTING RED GUM TO BE RETAINED
	EXISTING OTHER SPECIES TO BE RETAINED
	PERMANENT SURVEY MARK
	TEMPORARY BENCH MARK



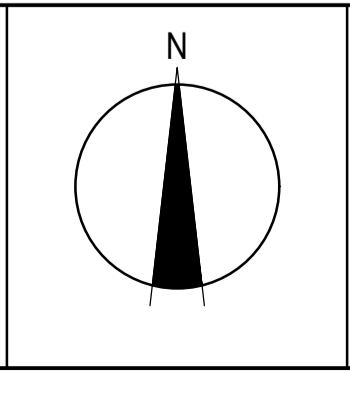
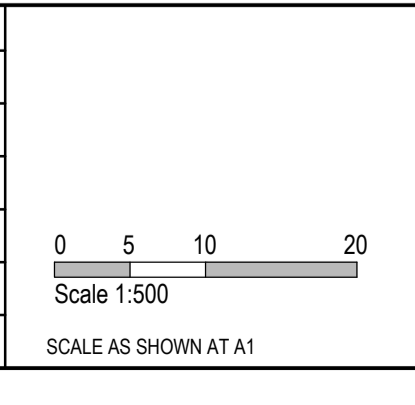
**WARNING**  
**BEWARE OF UNDERGROUND SERVICES**  
The locations of underground services are approximate only and their exact position should be proven on site.  
No guarantee is given that all existing services are shown.  
Locate all underground services before commencement of works  
**DIAL 1100 BEFORE YOU DIG**  
www.1100.com.au

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DESIGNER	S.MacLaren
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AUTHORISED	A.Burrows
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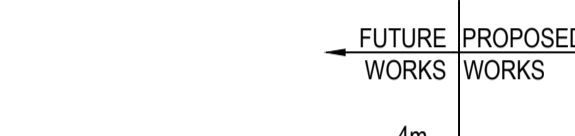
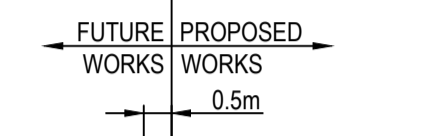
Olivine Estate - Stage 5A Whittlesea City Council Road and Drainage Earthworks Plan - 1	
MELWAYS REF 8 M2	PROJECT / DRAWING No. 1700E-05A-41
SHEET No. 41 of 45	REVISION A



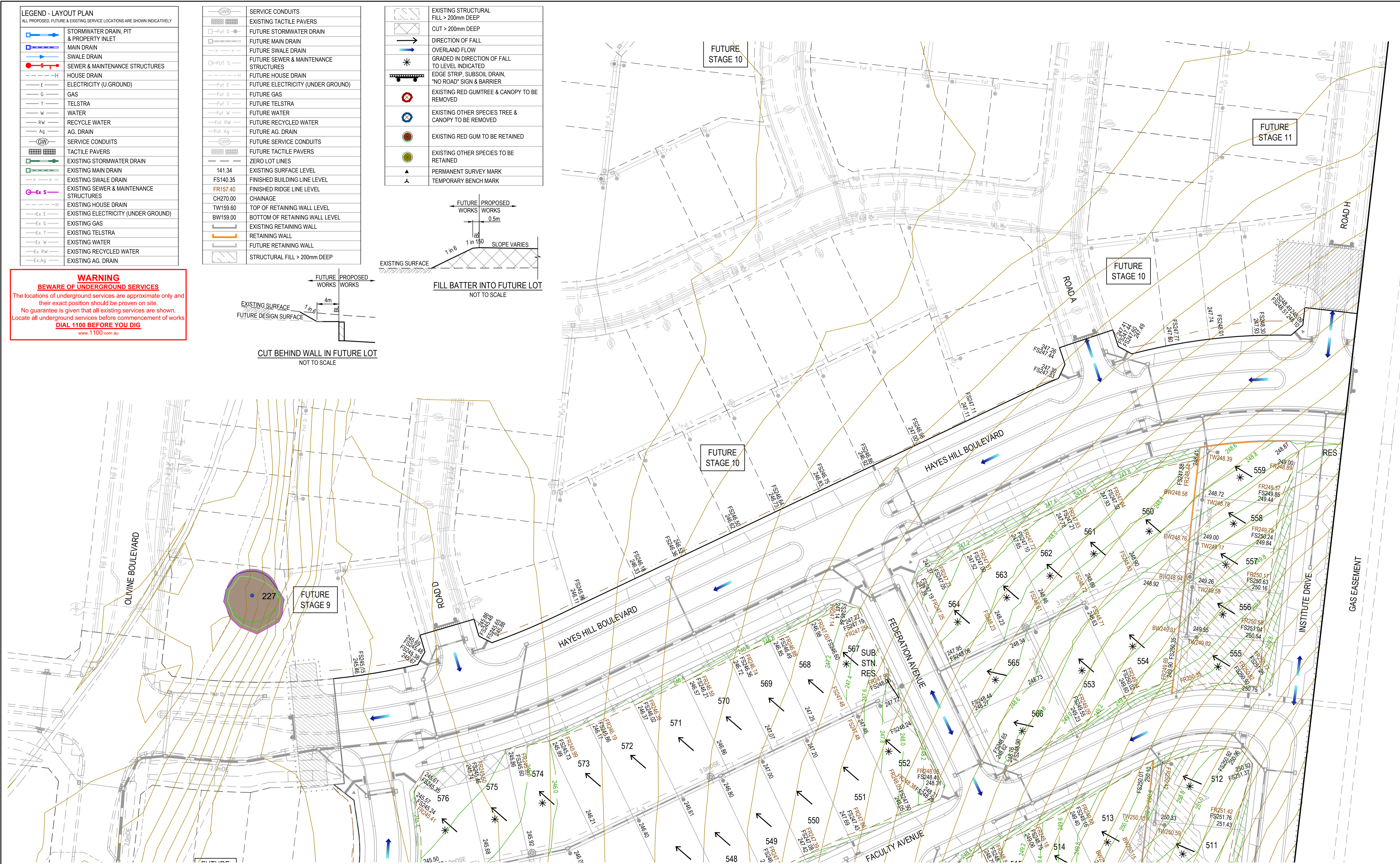
LEGEND - LAYOUT PLAN	
ALL PROPOSED, FUTURE & EXISTING SERVICE LOCATIONS ARE SHOWN INDICATIVELY	
	STORMWATER DRAIN, PIT & PROPERTY INLET
	MAIN DRAIN
	SWALE DRAIN
	SEWER & MAINTENANCE STRUCTURES
	HOUSE DRAIN
	ELECTRICITY (U.GROUND)
	GAS
	TELSTRA
	WATER
	RECYCLED WATER
	AG. DRAIN
	SERVICE CONDUITS
	TACTILE PAVERS
	EXISTING STORMWATER DRAIN
	EXISTING MAIN DRAIN
	EXISTING SWALE DRAIN
	EXISTING SEWER & MAINTENANCE STRUCTURES
	EXISTING HOUSE DRAIN
	EXISTING ELECTRICITY (UNDER GROUND)
	EXISTING GAS
	EXISTING TELSTRA
	EXISTING WATER
	EXISTING RECYCLED WATER
	EXISTING AG. DRAIN

	FUTURE STORMWATER DRAIN
	FUTURE MAIN DRAIN
	FUTURE SWALE DRAIN
	FUTURE SEWER & MAINTENANCE STRUCTURES
	FUTURE HOUSE DRAIN
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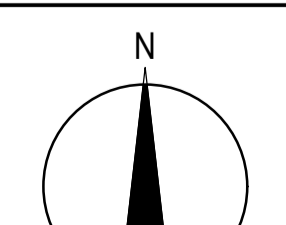


REFER SHEET 1700E-05A-41 FOR CONTINUATION

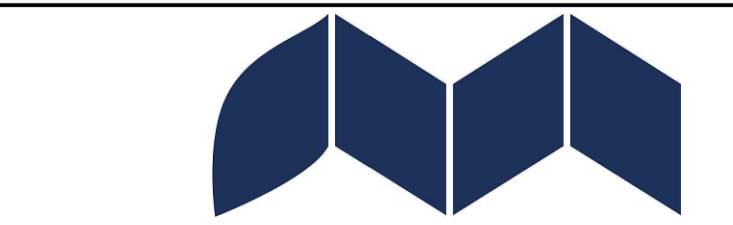
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DESIGNER	S.MacLaren
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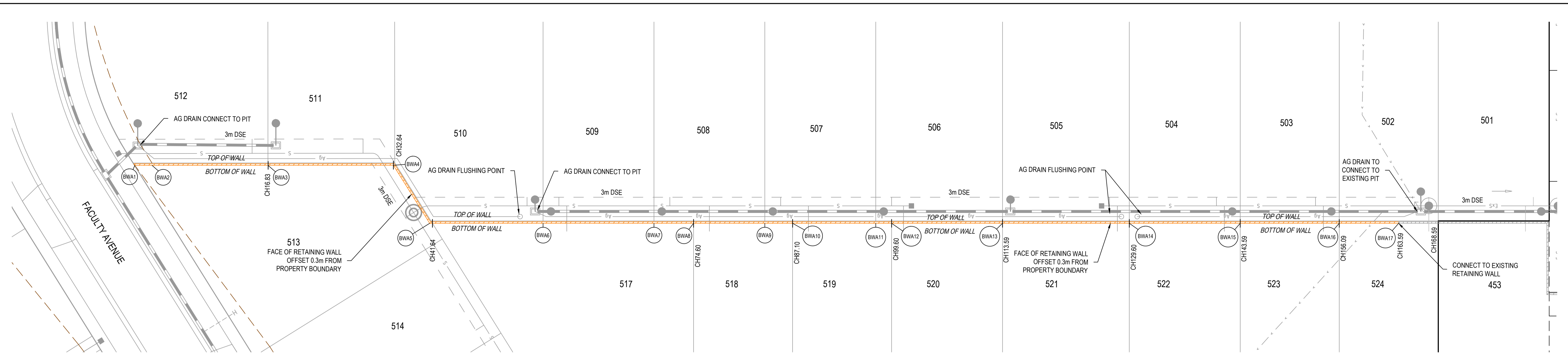
Olive Estate - Stage 5A  
 Whittlesea City Council  
 Road and Drainage  
 Earthworks Plan - 2

**SUBJECT TO APPROVAL**

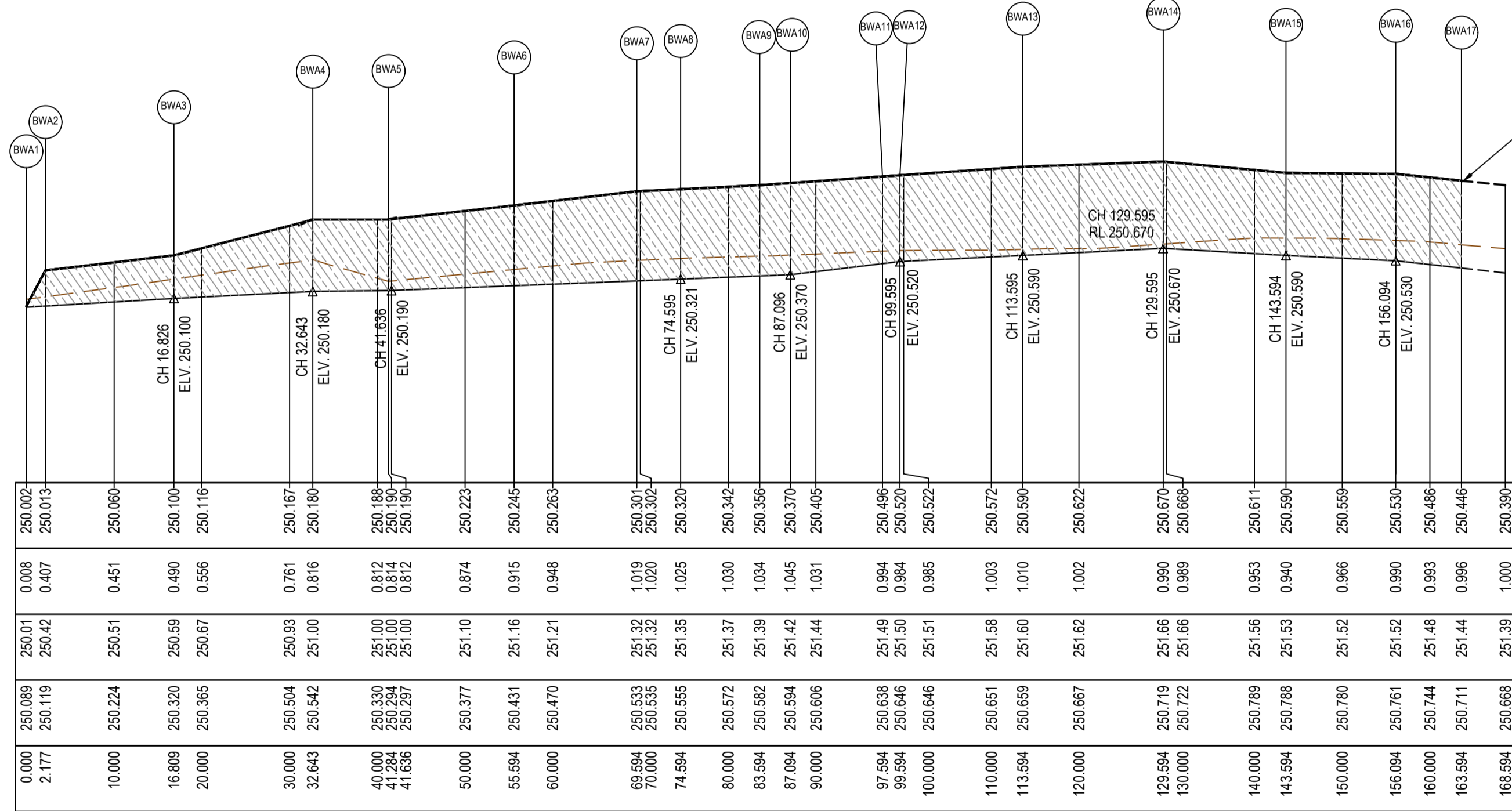


MELBAYS REF	PROJECT / DRAWING No.	SHEET No.	REVISION
8 M2	1700E-05A-42	42 of 45	A



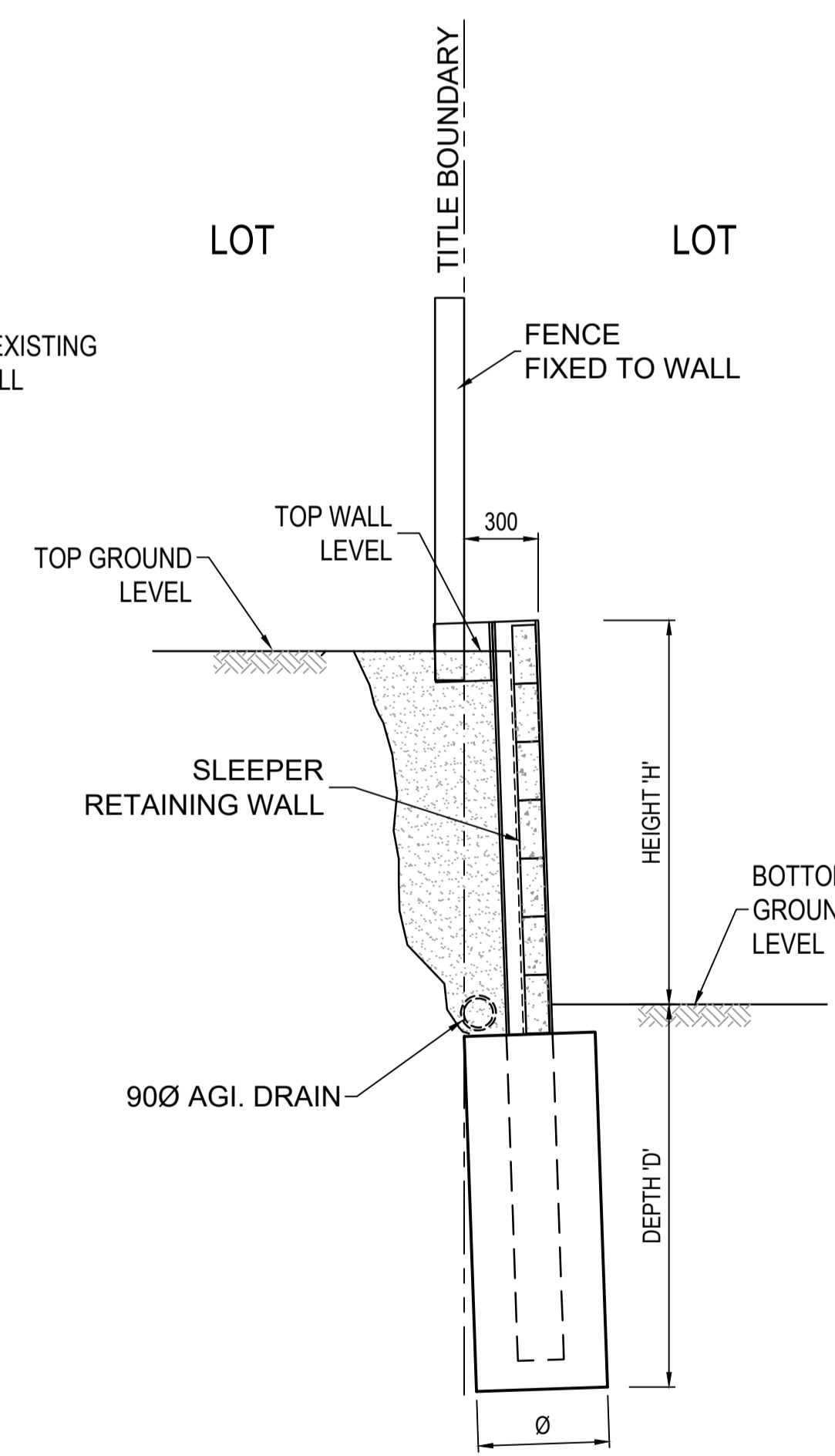


PLAN  
SCALE 1:250



RETAINING WALL - LONGITUDINAL SECTION

HORIZONTAL SCALE 1:50 @ A1  
VERTICAL SCALE 1:50 @ A1



RETAINING WALL TYPICAL SECTION  
NOT TO SCALE

RETAINING WALL DESIGN AND APPROVALS REQUIREMENTS

NOTE: RETAINING WALL DETAILS AND DESIGN CERTIFICATION TO BE SUBMITTED TO COUNCIL PRIOR TO COMMENCEMENT OF CONSTRUCTION OF WALLS

ROCK RETAINING WALLS

- CONTRACTOR TO OBTAIN ANY RELEVANT BUILDING PERMITS. COPY OF BUILDING PERMIT TO BE PROVIDED TO PRINCIPAL.
- CONTRACTOR TO PROVIDE STRUCTURAL ENGINEER INSPECTION AND CERTIFICATION FOR CONSTRUCTION OF ALL WALLS, IRRESPECTIVE OF NEED FOR PERMIT OR OTHERWISE.
- CONTRACTOR TO ENSURE ALL REQUIREMENTS OF BUILDING PERMIT HAVE BEEN ADDRESSED.

LEGEND	
ALL PROPOSED, FUTURE & EXISTING SERVICE LOCATIONS ARE SHOWN INDICATIVELY	
	STORMWATER DRAIN, PIT & PROPERTY INLET
	MAIN DRAIN
	SWALE DRAIN
SEWER & MAINTENANCE STRUCTURES	
	HOUSE DRAIN
	ELECTRICITY (U GROUND)
	ELECTRICITY (O HEAD)
	GAS
	TELSTRA
	OPTIC FIBRE
	WATER
	RECYCLE WATER
	AG DRAIN
SERVICE CONDUITS	
	CHAINAGE
	TOP OF RETAINING WALL LEVEL
	BOTTOM OF RETAINING WALL LEVEL
	EXISTING RETAINING WALL
	RETAINING WALL
	AG DRAIN

LEGEND	
	EXISTING SURFACE
	DESIGN LINE
	RETAINING WALL - CONCRETE SLEEPER

Alignment BWA

Point no	Easting	Northing	RL
BWA1	323410.462	5843562.747	250.013
BWA2	323410.214	5843560.584	250.013
BWA3	323408.552	5843546.047	250.100
BWA4	323406.752	5843530.316	250.180
BWA5	323398.947	5843526.609	250.190
BWA6	323397.313	5843512.392	250.245
BWA7	323395.715	5843498.484	250.301
BWA8	323395.144	5843493.517	250.320
BWA9	323394.116	5843484.575	250.356
BWA10	323393.717	5843481.098	250.370
BWA11	323392.518	5843470.667	250.496
BWA12	323392.290	5843468.680	250.520
BWA13	323390.691	5843454.771	250.590
BWA14	323388.865	5843438.876	250.670
BWA15	323387.266	5843424.968	250.590
BWA16	323385.839	5843412.549	250.530
BWA17	323384.983	5843405.098	250.446

REV A DATE 21.09.18 AMENDMENT / REVISION DESCRIPTION ISSUED TO COUNCIL FOR APPROVAL DES/DT SM/RB APPROVAL AB

**SUBJECT TO APPROVAL**

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TITLE	NAME
DRAFTER	R.Barua
DESIGNER	S.MacLaren
CHECKED	K.Moore
AUTHORISED	A.Burrows
REFERENCE No. 1	
REFERENCE No. 2	

0 5 10 20  
0 0.5 1 2  
Scale H1:500, V1:50  
0 2.5 5 10  
Scale 1:250  
SCALE AS SHOWN AT A1

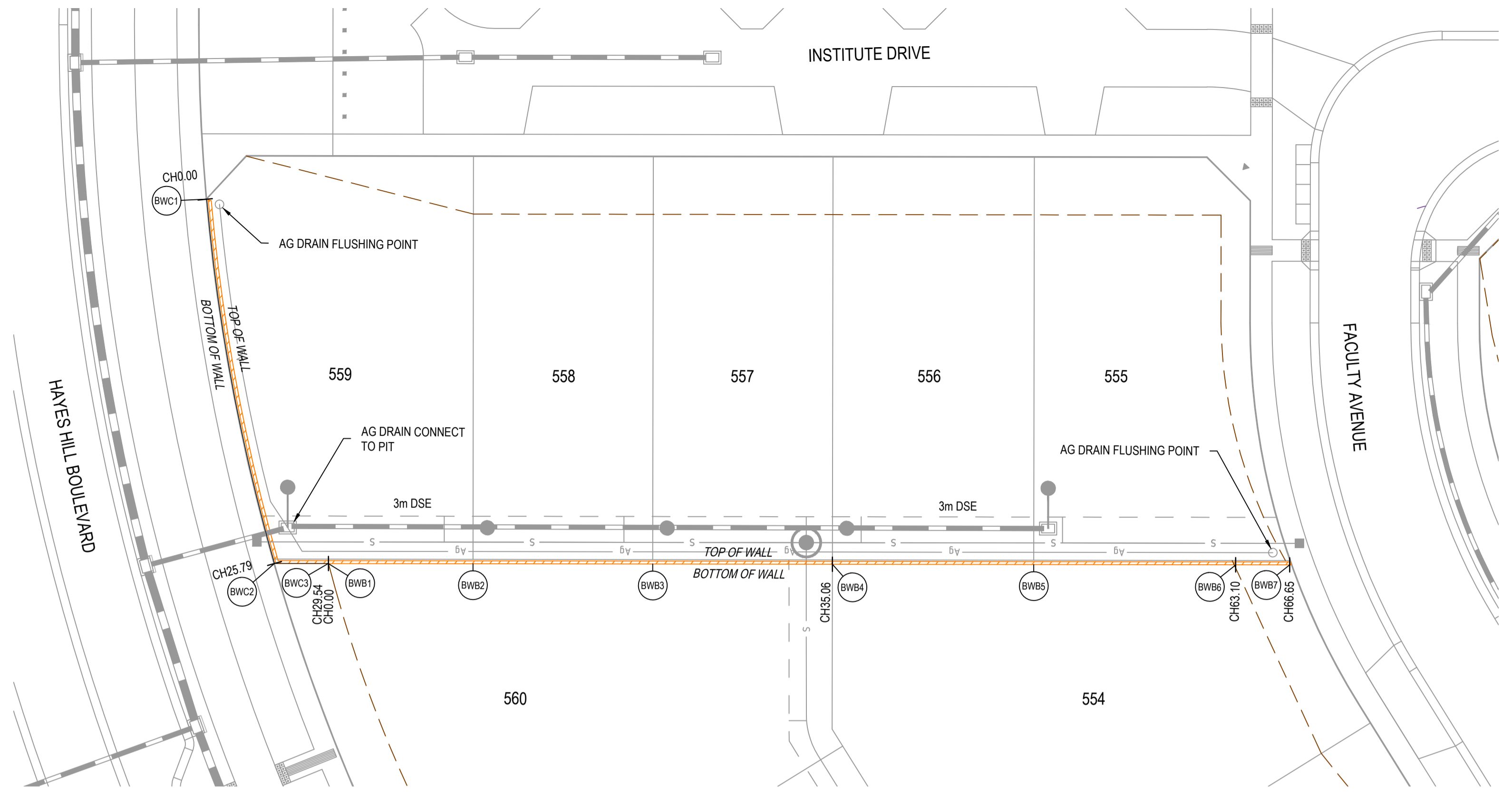
**SMEC**  
Member of the Surlana Jurong Group  
ABN 47 065 475 149  
Tower 4, Level 20, 727 Collins Street  
Docklands, VIC 3008  
Ph 03 9514 1500

**mirvac**

Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Retaining Wall Longitudinal Sections - 1

MELWAYS REF 8 M2	PROJECT / DRAWING No. 1700E-05A-43	SHEET No. 43 of 45	REVISION A
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PLAN  
SCALE 1:250

**RETAINING WALL DESIGN AND APPROVALS REQUIREMENTS**

NOTE: RETAINING WALL DETAILS AND DESIGN CERTIFICATION TO BE SUBMITTED TO COUNCIL PRIOR TO COMMENCEMENT OF CONSTRUCTION OF WALLS

**ROCK RETAINING WALLS**

- CONTRACTOR TO OBTAIN ANY RELEVANT BUILDING PERMITS. COPY OF BUILDING PERMIT TO BE PROVIDED TO PRINCIPAL.
- CONTRACTOR TO PROVIDE STRUCTURAL ENGINEER INSPECTION AND CERTIFICATION FOR CONSTRUCTION OF ALL WALLS, IRRESPECTIVE OF NEED FOR PERMIT OR OTHERWISE.
- CONTRACTOR TO ENSURE ALL REQUIREMENTS OF BUILDING PERMIT HAVE BEEN ADDRESSED.

**LEGEND**  
ALL PROPOSED, FUTURE & EXISTING SERVICE LOCATIONS ARE SHOWN INDICATIVELY

	STORMWATER DRAIN, PIT & PROPERTY INLET
	MAIN DRAIN
	SWALE DRAIN
	SEWER & MAINTENANCE STRUCTURES
	HOUSE DRAIN
	ELECTRICITY (U.GROUND)
	ELECTRICITY (O.HEAD)
	GAS
	TELSTRA
	OPTIC FIBRE
	WATER
	RECYCLE WATER
	AG DRAIN
	SERVICE CONDUITS
	CHAINAGE
	TOP OF RETAINING WALL LEVEL
	BOTTOM OF RETAINING WALL LEVEL
	EXISTING RETAINING WALL
	RETAINING WALL
	AG DRAIN

**Alignment BWB**

Point no	Easting	Northing	RL
BWB1	323423.260	5843648.192	248.439
BWB2	323422.117	5843638.202	248.583
BWB3	323420.697	5843625.783	248.762
BWB4	323419.276	5843613.364	248.940
BWB5	323417.685	5843599.455	249.314
BWB6	323416.088	5843585.489	249.692
BWB7	323415.662	5843581.763	250.350

**Alignment BWC**

Point no	Easting	Northing	RL
BWC1	323449.371	5843653.754	248.587
BWC2	323423.686	5843651.917	247.869
BWC3	323423.260	5843648.192	248.438

Curve no	I	Radius	Arc	A	B	X	Y	I	Mid point RL
BWC1 - BWC2	10.945	135.000	25.790	0.615	0.461	6.445	6.430	6.447	248.228

**LEGEND**

	EXISTING SURFACE
	DESIGN LINE
	RETAINING WALL - CONCRETE SLEEPER
	RETAINING WALL - ROCK

**RETAINING WALL - LONGITUDINAL SECTION**

HORIZONTAL GEOMETRY DATUM RL245

CH 25.800 RL 247.869

CH 25.800 ELV. 247.869

CH 25.800 ELV. 247.869

R = -135m HC

CHAINAGE	EXISTING SURFACE	TOP OF WALL	HEIGHT OF WALL	BOTTOM OF WALL
0.000	248.874	248.89	0.30	248.597
10.000	248.681	248.69	0.38	248.309
20.000	248.503	248.50	0.47	248.030
25.790	248.403	248.39	0.52	247.869
29.538	248.488	248.49	0.05	248.439

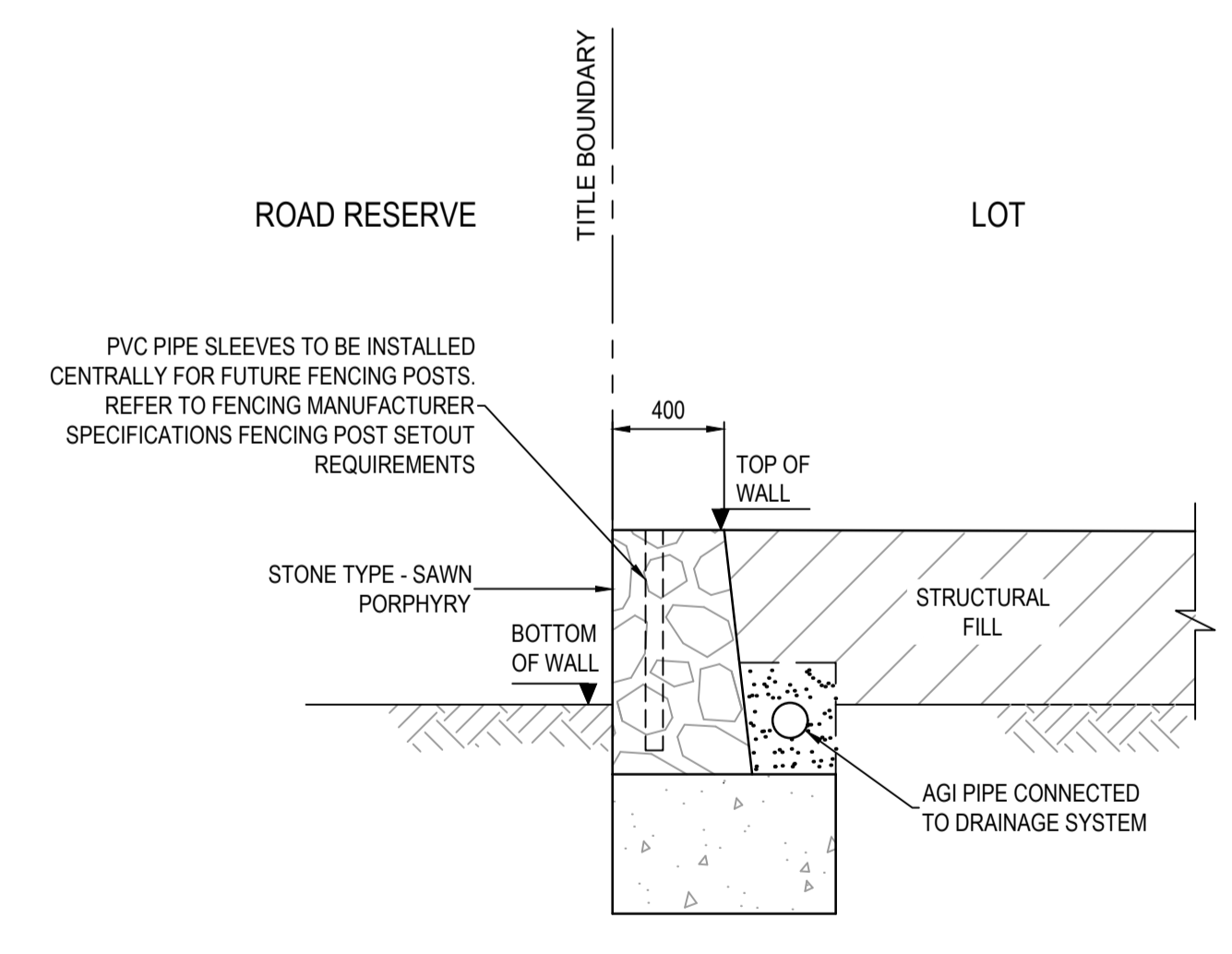
RETAINING WALL - LONGITUDINAL SECTION  
HORIZONTAL SCALE 1:500 @ A1  
VERTICAL SCALE 1:50 @ A1

**RETAINING WALL - LONGITUDINAL SECTION**

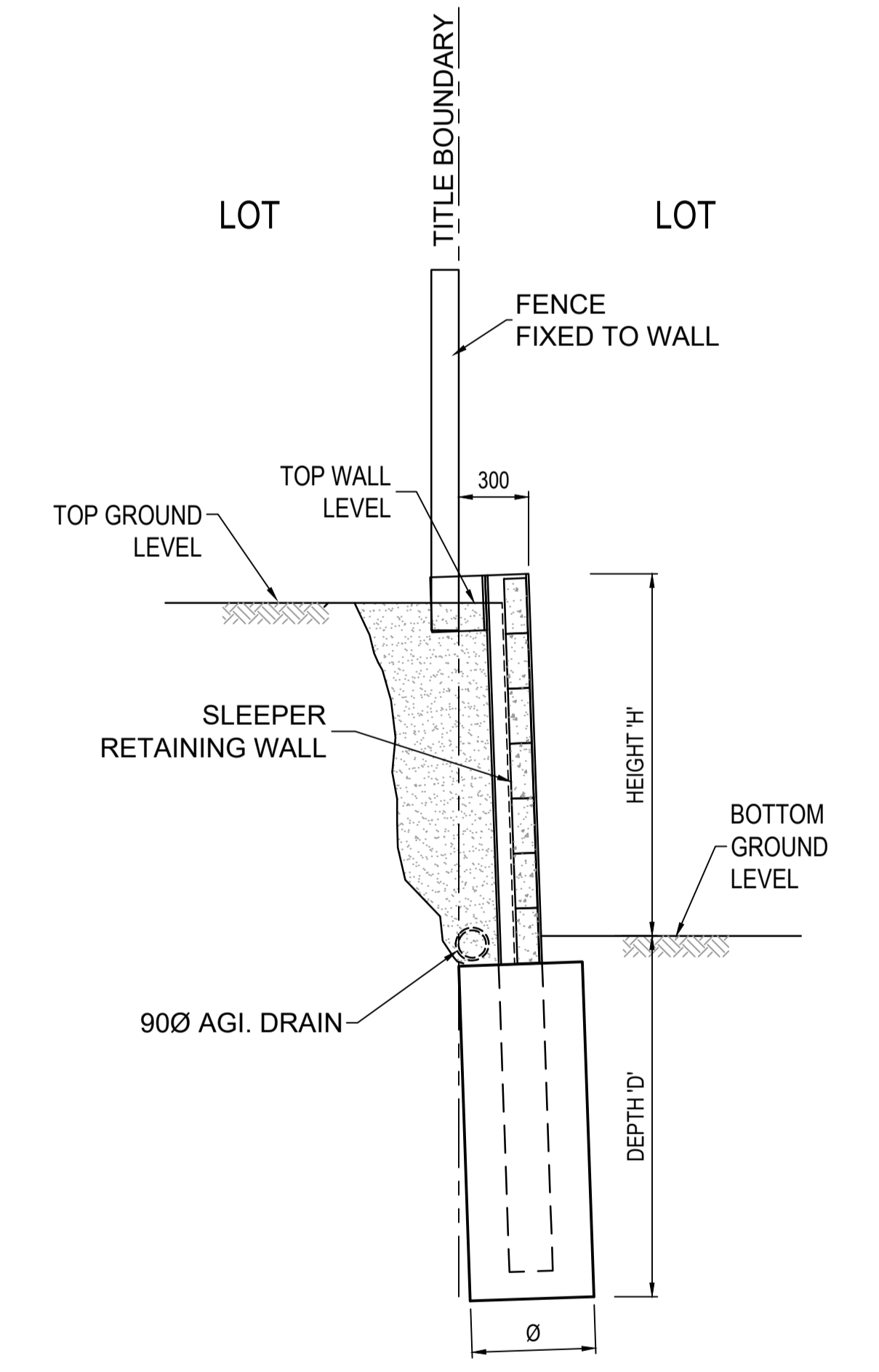
HORIZONTAL GEOMETRY DATUM RL246

CHAINAGE	EXISTING SURFACE	TOP OF WALL	HEIGHT OF WALL	BOTTOM OF WALL
0.000	248.688	248.50	0.06	248.693
10.000	248.713	248.78	0.20	248.582
20.000	248.939	249.09	0.37	248.725
22.555	248.996	249.17	0.41	248.762
30.000	249.153	249.42	0.55	248.869
35.055	249.254	249.58	0.64	248.940
40.000	249.352	249.67	0.60	249.072
49.055	249.538	249.82	0.51	249.314
50.000	249.559	249.85	0.56	249.340
60.000	249.753	250.16	0.55	249.607
63.101	249.813	250.25	0.56	249.690
66.653	249.881	250.36	0.01	250.350

RETAINING WALL - LONGITUDINAL SECTION  
HORIZONTAL SCALE 1:500 @ A1  
VERTICAL SCALE 1:50 @ A1



TYPICAL MORTARED ROCK RETAINING WALL  
NOT TO SCALE



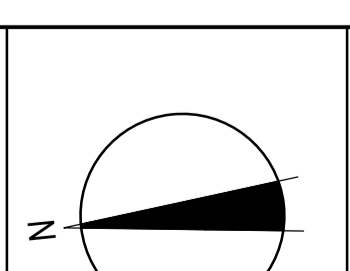
RETAINING WALL TYPICAL SECTION  
NOT TO SCALE

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN	APPROVAL
A	21.09.18	ISSUED TO COUNCIL FOR APPROVAL	SM/RB	AB

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CHECKED	K.Moore
AUTHORISED	A.Burrows
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REFERENCE No. 2	

Scale	Scale
0 5 10 20	0 0.5 1 2
Scale H1:500, V1:50	0 2.5 5 10
Scale 1:250	
SCALE AS SHOWN AT A1	



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**mirvac**

Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Retaining Wall Longitudinal Sections - 2

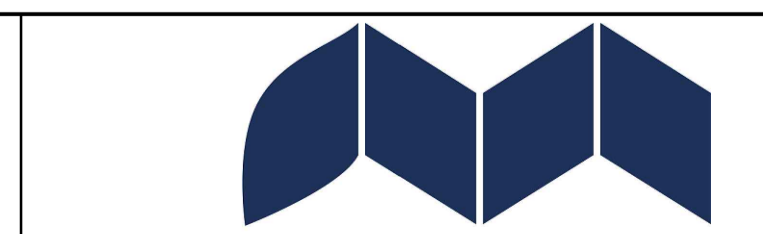
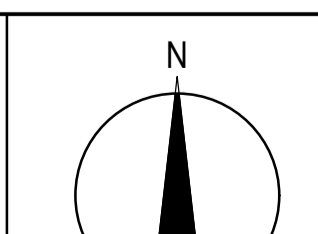


PHASE	DISCIPLINE CODE	RISK REGISTER -Construction- Operations- Maintenance	POTENTIAL RISK	RISK OWNER	POTENTIAL CONSEQUENCES	POTENTIAL ELIMINATION MEASURE, DESIGN INITIATIVE or CONTROL (Identify any Standard or Code of practice used)	HOW ISSUE ADDRESSED IN DESIGN AND/OR CONSTRUCTION OF THE WORKS	IS THE RISK ELIMINATED YES/NO	Residual Risk Likelihood (0-5)	Residual Risk Consequence (0-5)	Residual Risk Rating	RESIDUAL RISK OWNER
			<b>Road Furniture / Roadside features</b>									
Construction	RD	#N/A	Construction close to live traffic	Contractor	Disruptions to live traffic, construction incident involving live traffic.	Provide safe temporary traffic control (TCP)	TCP provided within contract	N	5	3	15	Constructor
Construction	RD	#N/A	Culverts	Contractor	Potential risk from culverts under construction and height / fall hazards	Falling from a height	Temporary barriers to be provided	N	2	5	10	Constructor
Construction	US	#N/A	Utilities become a hazard within clear zones	Contractor	Vehicle conflict with utility / pit	Personal injury, vehicle damage	Sequence works and protect with temp barrier or traffic control (TCP)	N	1	5	5	Constructor
Operational	RD	#N/A	Sight Lines	Road Authority	Inadequate drivers response time.	Increased potential for accidents	Ensure design complies with relevant standard. Undertake thorough Safety Audit	N	1	4	4	Road Authority
Operational	LS	#N/A	Signs and street lights	Road Authority	Potential for drivers / riders to strike signs and street lights	Increased potential for accidents	Ensure design complies with relevant standard. Undertake thorough Safety Audit	N	1	4	4	Road Authority
Operational	RF	#N/A	Headwalls	Road Authority	Potential vehicle conflict within clear zone	Increased potential for accidents	Establish adequate clear zone provision	N	2	4	8	Road Authority
Operational	RD	#N/A	Culverts	Relevant Authority	Potential fall hazard during maintenance, by vehicles and pedestrians	Falling from a height	Barriers to be provided in accordance with road standards	N	2	5	10	Constructor
			<b>Retaining Walls</b>									
Construction	RW	#N/A	Retaining Wall Alignment	Contractor	Falling from height during construction or commissioning of walls and adjacent structures eg. sewer manholes	Falling from a height	Provide temporary and permanent fencing at top of wall.	N	1	1	1	Constructor
Operational	RW	#N/A	Retaining Wall Alignment	Road/ Local Authority	Lack of safe access/setback from road	Increased potential for accidents	Establish adequate and accessible clear zone provision. Provide guardrail where required	N	1	1	1	Authority
Operational	RW	#N/A	Retaining Wall Height	Road/ Local Authority	Potential for falling from height	Personal injury	Provide temporary and permanent fencing at top of wall.	N	1	5	5	Authority
Operational	RW	#N/A	Retaining Wall Design	Road/ Local Authority	Potential for wall failure	Increased potential for accidents	Structural design in accordance with standards, geotechnical conditions, end use and good practise.	N	1	5	5	Authority
			<b>Drainage</b>									
Operational	DR	#N/A	Grated Pits	Relevant Authority	Trip/fall hazard with large spaced grate	Increased potential for accidents	Provide pedestrian/bicycle friendly grates where applicable. Refer to pit schedule	N	3	2	6	Authority
Operational	DR	#N/A	Non Standard Large Pits	Relevant Authority	Potential for pit failure	Increased risk to maintenance crews/ vehicles	Structural design in accordance with relevant design principles.	N	1	4	4	Authority
Operational	DR	#N/A	Culvert Endwalls/Headwalls	Relevant Authority	Potential for falling from height	Increased potential for accidents	Fencing to be provided where culverts/headwalls are at height in accordance with relevant authority standards	N	1	4	4	Authority
Operational	DR	#N/A	Culvert Endwall/Headwall Outlets	Relevant Authority	Children playing in large pipes / watercourses and access for maintenance	Increased potential for accidents	Grate provided to authority standards	N	2	5	10	Authority
Maintenance	DR	#N/A	Access to Pits	Relevant Authority	Lack of safe access for maintenance	Increased risk to maintenance crews	Provide safe working conditions for maintenance. Provide safe landing/ access arrangements as per relevant authority standards	N	2	5	10	Authority
Maintenance	DR	#N/A	Deep Pits	Relevant Authority	Lack of safe entry for maintenance	Increased potential for accidents	Contractor to be certified for work in confined spaces, step irons to be provided to appropriate authority standards. Refer to pit schedule	N	1	5	5	Authority
Maintenance	DR	#N/A	Access to drains / culverts	Relevant Authority	Lack of safe access for maintenance	Increased risk to maintenance crews	Provide safe working conditions for maintenance. Access as approved by authority	N	2	3	6	Authority
			<b>Sewer</b>									
Construction	SE	#N/A	Sewer Manhole located adjacent to Retaining Wall Alignment	Contractor	Falling from height during construction or commissioning of adjacent sewer manholes	Falling from a height	Provide temporary fencing until such time that permanent fencing is constructed	N	1	1	1	Constructor
Maintenance	SE	#N/A	Deep Manholes	Relevant Authority	Lack of safe entry for maintenance	Increased potential for accidents	Contractor to be certified for work in confined spaces, landings and step access provided as per authority standards and schedule	N	1	5	5	Authority
Maintenance	SE	#N/A	Access to Manholes	Relevant Authority	Lack of safe access for maintenance	Increased risk to maintenance crews	Provide safe working conditions for maintenance. Manholes located in compliance with authority standards	N	1	5	5	Authority
Maintenance	SE	#N/A	Pump Station Access	Relevant Authority	Lack of safe access for maintenance	Increased risk to maintenance crews	Provide safe working conditions for maintenance	N	2	4	8	Authority
			<b>Electricity</b>									
Operational	ES	#N/A	Electrical Design	Relevant Authority	Location of assets within clear zones e.g. pits/ substations	Increased potential for accidents	Electrical designed by sub consultant with appropriate accreditation and in accordance with authority standards	N	2	3	6	Authority
			<b>Telstra</b>									
Operational	TE	#N/A	Telstra Design	Relevant Authority	Location of assets within clear zones e.g. pits	Increased potential for accidents	Telecommunications designed by authority consultant with appropriate accreditation and in accordance with authority standards	N	2	3	6	Authority
			<b>Water</b>									
Operational	WA	#N/A	Water Design	Relevant Authority	Location of assets within clear zones e.g. pits/ substations	Increased potential for accidents	Water pits designed in accordance with authority standards	N	2	3	6	Authority
			<b>Gas</b>									
Operational	GA	#N/A	Gas Design	Relevant Authority	Location of assets within clear zones e.g. pits/ substations	Increased potential for accidents	Water pits designed in accordance with authority standards	N	1	1	1	Authority

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Olivine Estate - Stage 5A  
Whittlesea City Council  
Road and Drainage  
Safety in Design

**SUBJECT TO APPROVAL**



MELBAYS REF: 8 M2  
PROJECT / DRAWING No: 1700E-05A-85  
SHEET No: 45 of 45  
REVISION: A