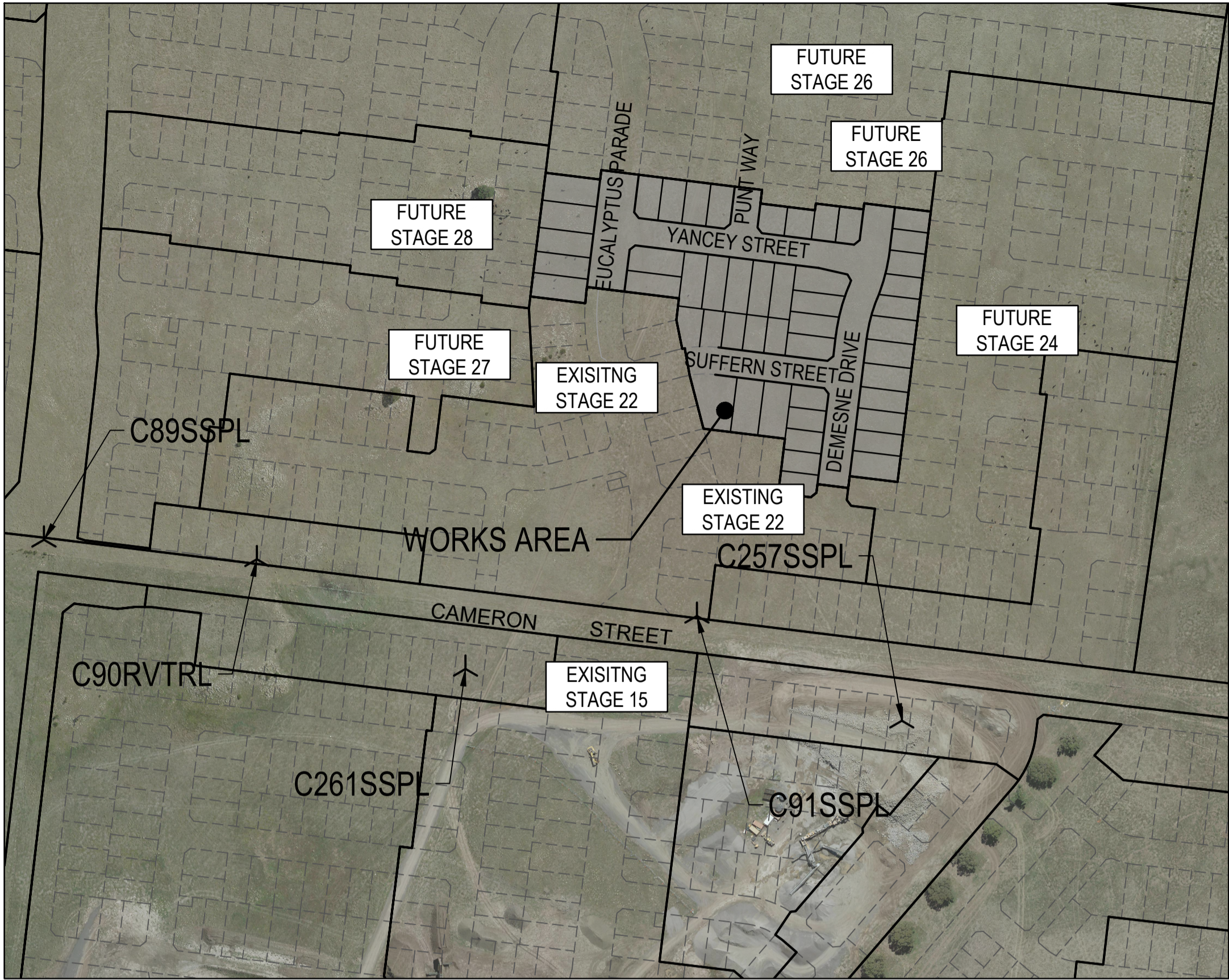


# Olivine Estate Stage 23



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### GENERAL NOTES (WHITTLESEA CITY COUNCIL)

1. THE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS. WORKS TO BE CARRIED OUT TO THE SATISFACTION OF COUNCIL'S SURVEILLANCE COORDINATOR OR HIS REPRESENTATIVE.
2. 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.
3. THE CONTRACTOR SHALL:
  - 3.1. COMPLY WITH THE SAFETY REQUIREMENTS OF THE MINES ACT, GENERAL REGULATIONS AND STATUTORY RULES, AND THE MINES (TRENCHES) REGULATIONS 1982.
  - 3.2. NOTIFY THE OCCUPATIONAL HEALTH AND SAFETY AUTHORITY OF THEIR INTENTION TO COMMENCE TRENCHING OPERATIONS WHERE TRENCHES ARE 1.5 METRES OR DEEPER.
  - 3.3. ENSURE THAT THE MINE MANAGER OR THEIR DEPUTY AS REQUIRED BY THE REGULATIONS IS IN ATTENDANCE WHEN TRENCHING OPERATIONS ARE IN PROGRESS.
4. THE CONTRACTOR IS TO NOTIFY COUNCIL'S SENIOR SURVEILLANCE ENGINEER AND ALL SERVICE AUTHORITIES SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. 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.
6. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM.
7. THE CONTRACTOR SHALL COOPERATE WITH OTHER AUTHORITIES AND SHALL ENSURE THAT ALL SERVICES ARE INSTALLED PRIOR TO THE FINAL PAVEMENT COURSE. THE CONTRACTOR SHALL CHECK WITH THE SUPERINTENDENT THE EXACT LOCATION OF ALL SERVICES PRIOR TO THE INSTALLATION OF CONDUITS.
8. ANY EXISTING PAVEMENT OR DRAINAGE WORKS DAMAGED DURING CONSTRUCTION OR THE MAINTENANCE PERIOD TO BE REINSTATED TO THE SATISFACTION OF THE COUNCIL REPRESENTATIVE.
9. 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. APPROPRIATE SILTATION CONTROL IS TO BE CARRIED OUT DURING THE CONSTRUCTION AND MAINTENANCE PERIODS.
11. 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.
12. ALL TREES AND SHRUBS TO BE RETAINED UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT AUTHORITY BECAUSE ROAD CONSTRUCTION NECESSITATES THEIR REMOVAL, OR REMOVAL IS DIRECTED BY THE AUTHORISED ENGINEER. TREES TO BE REMOVED ARE TO BE SUITABLY LABELLED. WHEN IT IS PROPOSED TO REMOVE EXISTING TREES IN ROAD RESERVES OR COUNCIL RESERVES, CONSULTATION IS TO OCCUR WITH COUNCIL'S PARKS AND GARDENS DEPARTMENT.
13. VICROADS ROADWORK SIGNING CODE OF PRACTICE WHICH COMPLIES WITH THE AUSTRALIAN STANDARD 1742.3-2002 IS TO BE ADHERED TO DURING THE CONSTRUCTION WORKS.
14. 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), R (RECYCLED WATER) AND C (COUNCIL COMMUNICATION) AS PER STANDARD DRAWING EDM 303.
15. ALL EARTHWORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S EARTHWORK SPECIFICATION AND THE EARTHWORKS SECTION OF SMEC'S CONTRACT SPECIFICATION.
16. BATTERS INTO ALLOTMENTS SHALL NOT BE STEEPER THAN 1 IN 6 UNLESS NOTED OTHERWISE.
17. ALL EXCAVATED OR FILLED AREAS OUTSIDE THE ROAD RESERVE AND NATURESTRIPS TO BE STRIPPED OF TOPSOIL AND STOCKPILED PRIOR TO EARTHWORK COMMENCING.
18. NO FILLING OR STOCKPILING OF MATERIAL IS TO BE PLACED ON ANY RESERVE UNLESS DIRECTED BY THE SUPERINTENDENT.
19. NO TOPSOIL TO BE REMOVED FROM SITE UNLESS OTHERWISE APPROVED.
20. LOTS SHALL BE EVENLY GRADED TO ENSURE MINIMUM LOT FALLS AS SPECIFIED ON DRAWINGS ARE ACHIEVED.
21. ALL DRAINAGE PIPES TO BE CLASS 2 RCP UNLESS NOTED OTHERWISE. ALL DRAINAGE PIPE UP TO AND INCLUDING 750mm IN DIAMETER SHALL BE RUBBER RING JOINTED. PIPES ABOVE THIS SIZE MAY BE FLUSH JOINTED WITH EXTERNAL SEALING BANDS. RUBBER RING PIPES TO BE PRESSURE RESISTANT, I.E. SPECIFIC MANUFACTURERS RUBBER RING TO BE USED, SUITED TO PRESSURE CONDITIONS AND THE PIPES ARE NOT TO HAVE ANY PLUGS.
22. ALL PITS GRATER THAN OR EQUAL TO 1000mm DEPTH TO BE PROVIDED WITH STEP IRONS IN ACCORDANCE WITH EDM 609.
23. ALL DRAINAGE TRENCHES UNDER ROAD PAVEMENTS, KERB & CHANNEL, PARKING BAYS, DRIVEWAYS, FOOTPATHS AND BEHIND KERBS & CHANNEL SHALL BE BACKFILLED WITH COMPACTED CRUSHED ROCK AS SPECIFIED. OFFSETS TO DRAINAGE IN EASEMENTS AS SHOWN ARE TO THE CENTRELINE OF THE DRAIN.
25. AG DRAINS TO BE PROVIDED BEHIND ALL KERBS AND SHALL HAVE SUITABLE OUTLET. CONSTRUCTION TO BE IN ACCORDANCE WITH EDM 605-608.
26. HOUSE DRAINS ARE TO BE CONNECTED DIRECT TO UNDERGROUND DRAIN UNLESS NOTED OTHERWISE.
27. PROPERTY INLET PITS AS PER EDM 701-704.
28. DRIVEWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH COUNCILS STANDARDS AND CLEAR OF DRAINAGE PITS, SEWER MAINTENANCE HOLES AND EXISTING TREES.
29. FOOTPATHS ARE TO BE OFFSET 50mm FROM THE BUILDING LINE.
30. ALL PAVEMENT MARKINGS AND TRAFFIC SIGNS SHOULD BE TO AS1742.2 AND 1742.1 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.
31. UPON COMPLETION OF CONSTRUCTION, THE WHOLE SITE SHALL BE CLEANED UP AND GRADED OVER. ALL RUBBISH IS TO BE REMOVED AND THE SITE IS TO BE LEFT IN A CLEAN AND TIDY CONDITION TO THE SATISFACTION OF THE SUPERINTENDENT.
32. ALL SERVICE TRENCHES UNDER FOOTPATH, ROAD PAVEMENTS, VEHICLE CROSSINGS AND OTHER ROAD STRUCTURES ARE TO BE BACKFILLED IN ACCORDANCE WITH RELEVANT COUNCIL AND AUTHORITY STANDARDS. FOOTPATHS ARE TO BE CONTINUOUSLY REINFORCED CONCRETE IN ACCORDANCE WITH EDM 403 UNLESS OTHERWISE SPECIFIED.
34. A BUILDING PERMIT MUST BE OBTAINED FOR ANY STRUCTURE/RETAINING WALL EXCEEDING 1.0m IN HEIGHT PRIOR TO COMMENCEMENT OF CONSTRUCTION, IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA. COPY OF BUILDING PERMITS AND 'CERTIFICATE OF COMPLIANCE - CONSTRUCTION' (REGARDLESS OF HEIGHT) FOR ALL COMPONENTS OF RETAINING WALL INCLUDING AG DRAINS TO BE SUBMITTED TO COUNCIL PRIOR TO STATEMENT OF COMPLIANCE.

TBM SETOUT TABLE				
POINT	EAST	NORTHING	ELEVATION	DESCRIPTION
C89SSPL	322,731.47	5,844,398.54	247.61	STAR PICKET
C90RVTRVL	322,156.34	5,844,387.18	249.01	RIVET
C91SSPL	323,111.41	5,844,354.26	246.33	STAR PICKET
C257SSPL	323,230.60	5,844,293.25	247.43	STAR PICKET
C261SSPL	322,976.76	5,844,323.39	244.79	STAR PICKET

**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-023-500  
**ASSESS THE RISK - STAY SAFE**

**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
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**DIAL 1100 BEFORE YOU DIG**  
www.1100.com.au

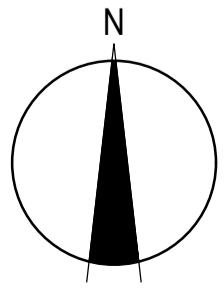
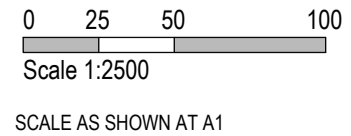
### AS CONSTRUCTED PLANS

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AS CONSTRUCTED

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PERMIT REF. NO.

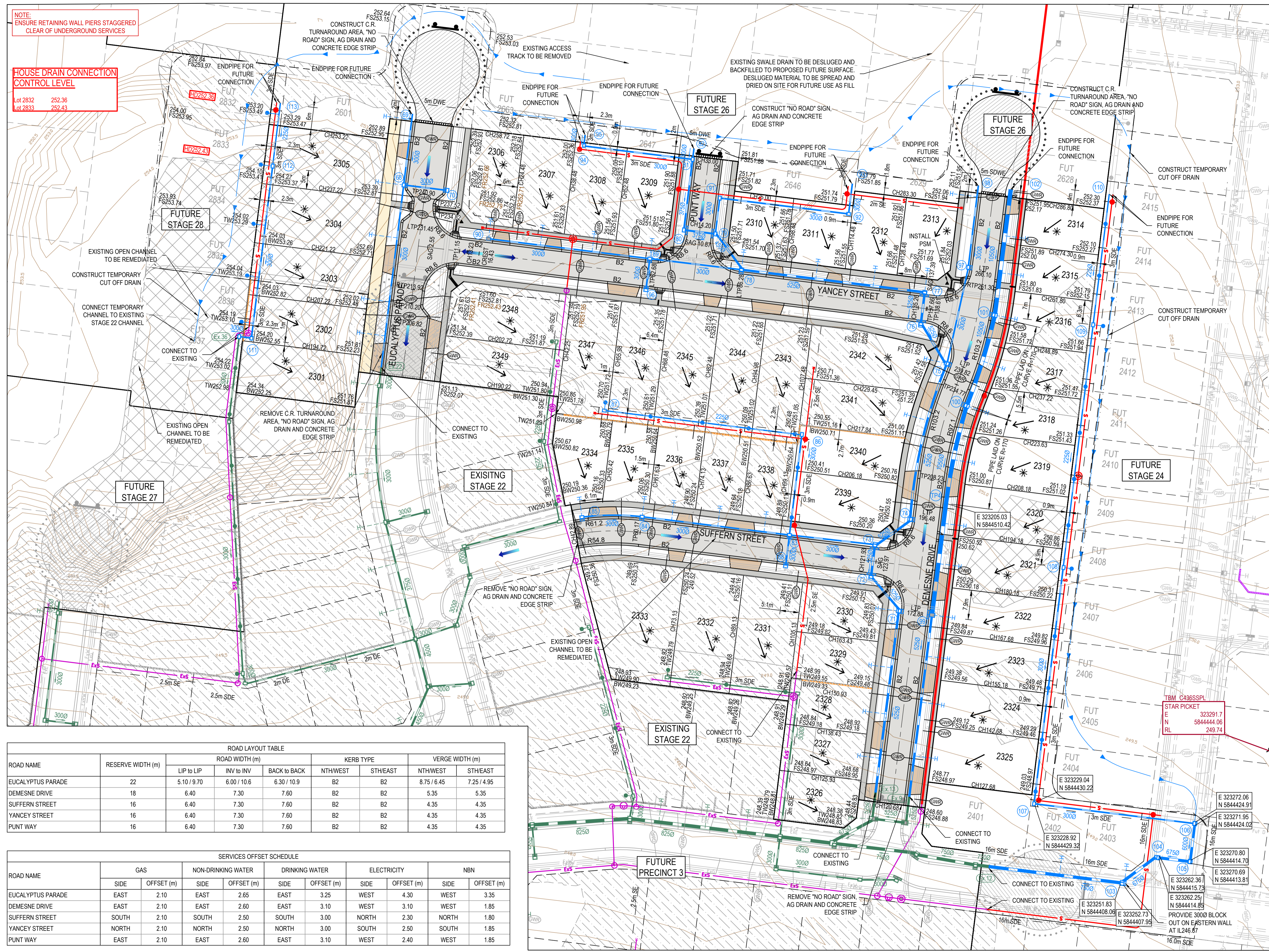


Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Cover Plan & General Notes

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-101</b>	SHEET No. <b>01 of 26</b>	REVISION <b>2</b>
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**NOTE:**  
ENSURE RETAINING WALL PIERS STAGGERED  
CLEAR OF UNDERGROUND SERVICES

**HOUSE DRAIN CONNECTION  
CONTROL LEVEL**  
Lot 2832 252.36  
Lot 2833 252.43



**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)
- ELECTRICITY (O.GROUND)
- GAS
- TELSTRA
- OPTIC FIBRE
- 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 ELECTRICITY OVERHEAD
- EXISTING GAS
- EXISTING TELSTRA
- EXISTING OPTIC FIBRE
- EXISTING WATER
- EXISTING RECYCLED WATER
- EXISTING AG. DRAIN
- EXISTING 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 ELECTRICITY OVERHEAD
- FUTURE GAS
- FUTURE TELSTRA
- FUTURE OPTIC FIBRE
- FUTURE WATER
- FUTURE RECYCLED WATER
- FUTURE AG. DRAIN
- FUTURE SERVICE CONDUITS
- FUTURE TACTILE PAVERS
- ZERO LOT LINES
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LEVEL
- FINISHED RIDGE LINE LEVEL
- CHAINAGE
- TOP OF RETAINING WALL LEVEL
- 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
- PROPOSED DRIVEWAY & FOOTPATH
- PROPOSED INDUSTRIAL DRIVEWAY
- PROPOSED SHARED FOOTPATH
- PROPOSED ROAD PAVING
- EXISTING ROAD PAVING

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ROAD LAYOUT TABLE								
ROAD NAME	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
EUCALYPTUS PARADE	22	5.10 / 9.70	6.00 / 10.6	6.30 / 10.9	B2	B2	8.75 / 6.45	7.25 / 4.95
DEMESNE DRIVE	18	6.40	7.30	7.60	B2	B2	5.35	5.35
SUFFERN STREET	16	6.40	7.30	7.60	B2	B2	4.35	4.35
YANCEY STREET	16	6.40	7.30	7.60	B2	B2	4.35	4.35
PUNT WAY	16	6.40	7.30	7.60	B2	B2	4.35	4.35

SERVICES OFFSET SCHEDULE										
ROAD NAME	GAS		NON-DRINKING WATER		DRINKING WATER		ELECTRICITY		NBN	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
EUCALYPTUS PARADE	EAST	2.10	EAST	2.65	EAST	3.25	WEST	4.30	WEST	3.35
DEMESNE DRIVE	EAST	2.10	EAST	2.60	EAST	3.10	WEST	3.10	WEST	1.85
SUFFERN STREET	SOUTH	2.10	SOUTH	2.50	SOUTH	3.00	NORTH	2.30	NORTH	1.80
YANCEY STREET	NORTH	2.10	NORTH	2.50	NORTH	3.00	SOUTH	2.50	SOUTH	1.85
PUNT WAY	EAST	2.10	EAST	2.60	EAST	3.10	WEST	2.40	WEST	1.85

**AS CONSTRUCTED PLANS**  
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Quality Management - ISO 9001  
OH&S Management - AS/NZS 4801  
Environmental Management - ISO 14001

PLAN OF SUB. NO.  
PERMIT REF. NO.

**AS CONSTRUCTED**

Scale 1:500  
SCALE AS SHOWN AT 1

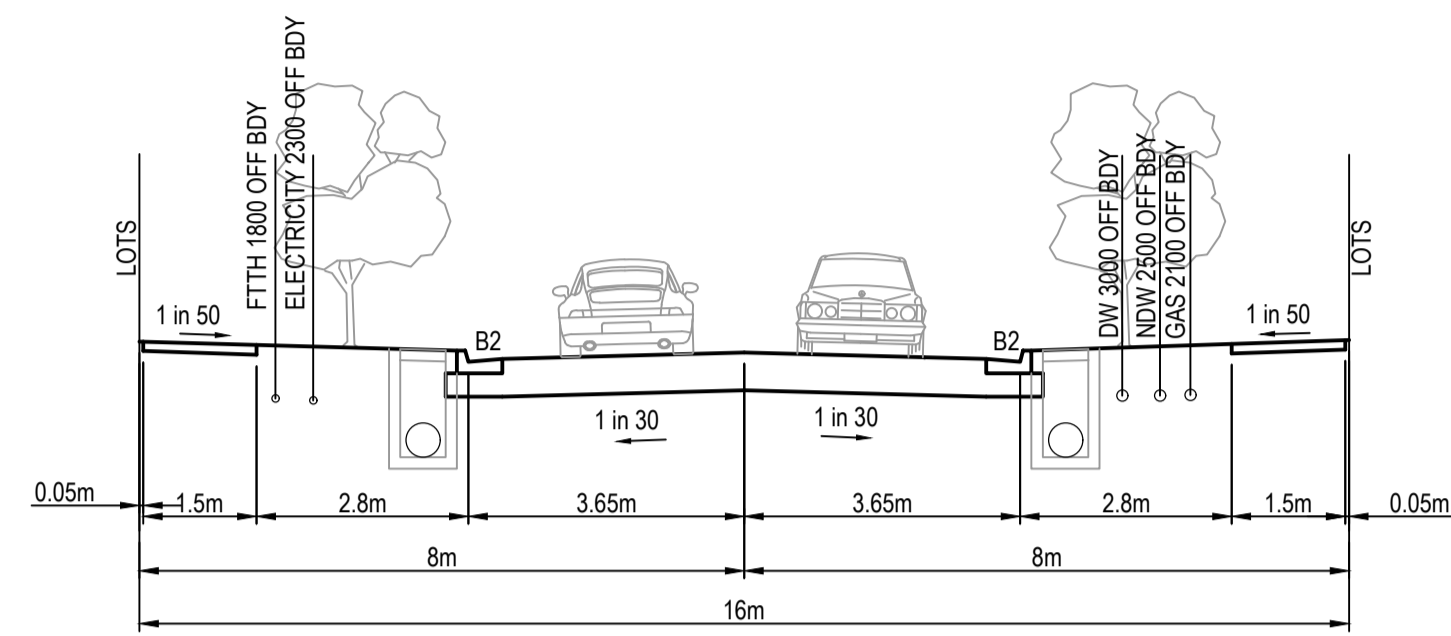
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**SMEC**  
Member of the Surlana Jurong Group  
Collins Square, Tower 4, Level 20, 727 Collins St  
Melbourne, VIC, 3008, Australia  
03 9514 1500

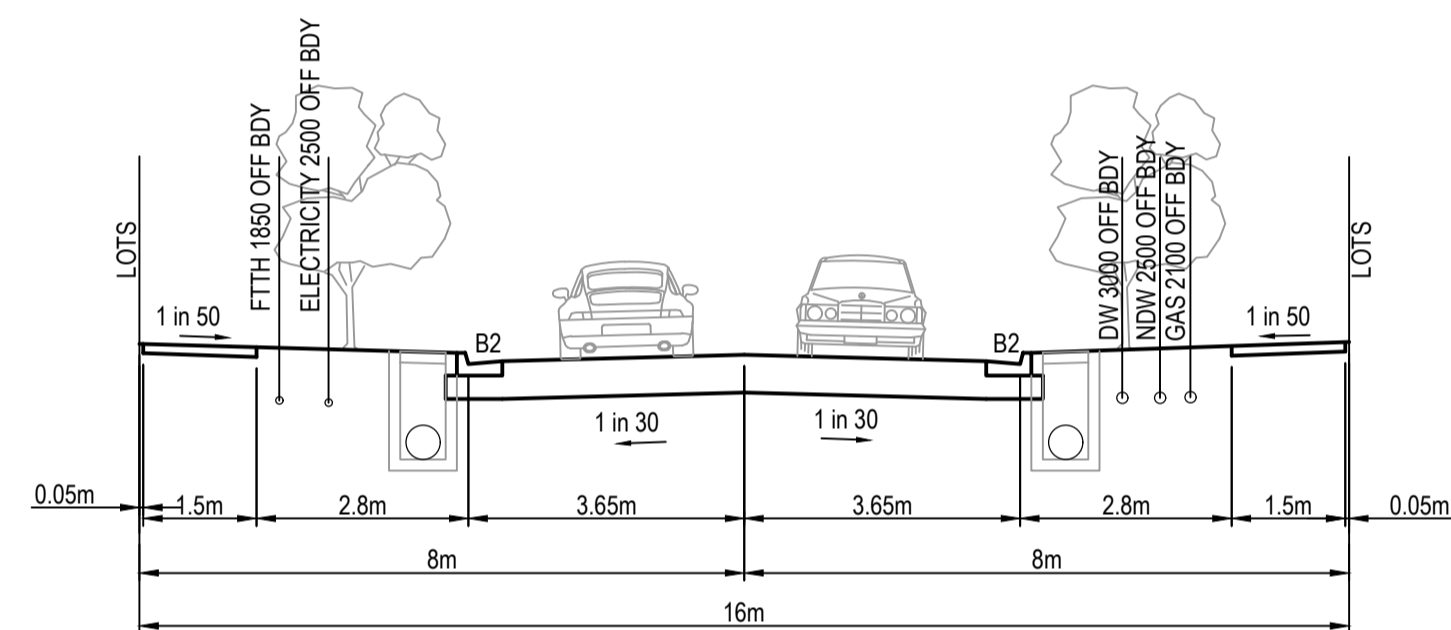
**mirvac**

Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Layout Plan

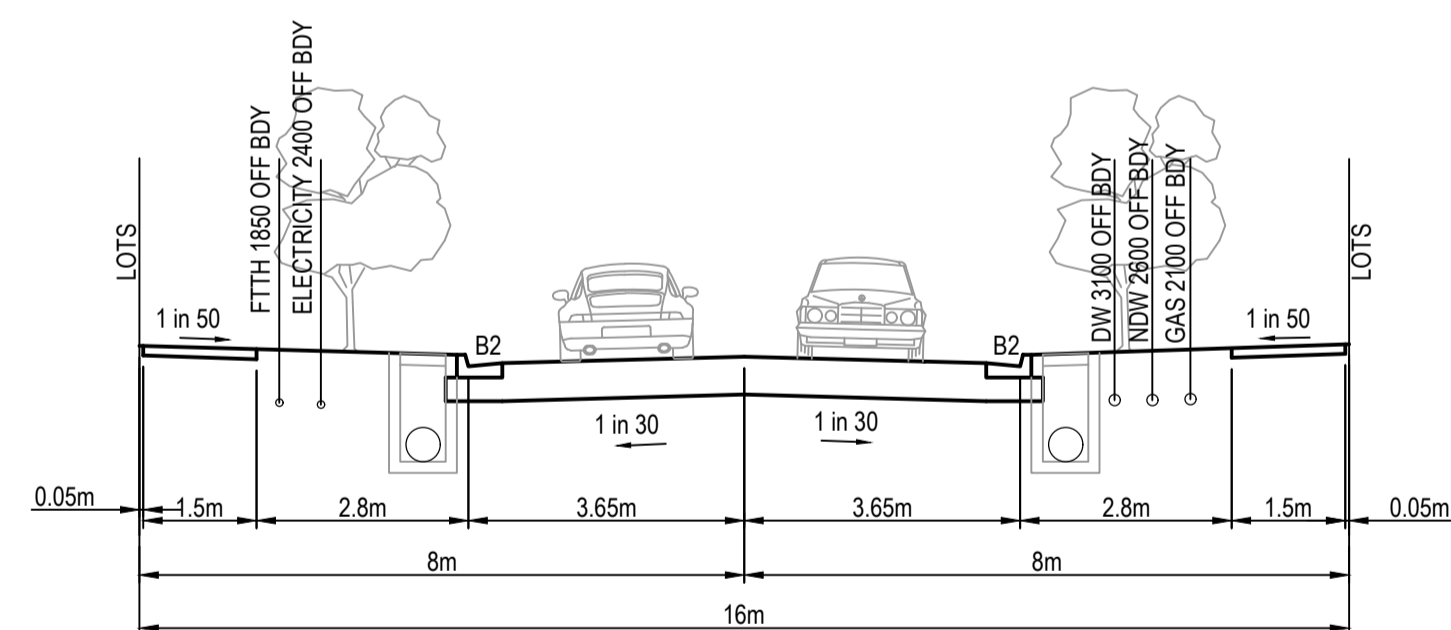
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PROJECT / DRAWING No: 1700E-023-111  
SHEET No: 02 of 26  
REVISION: 4



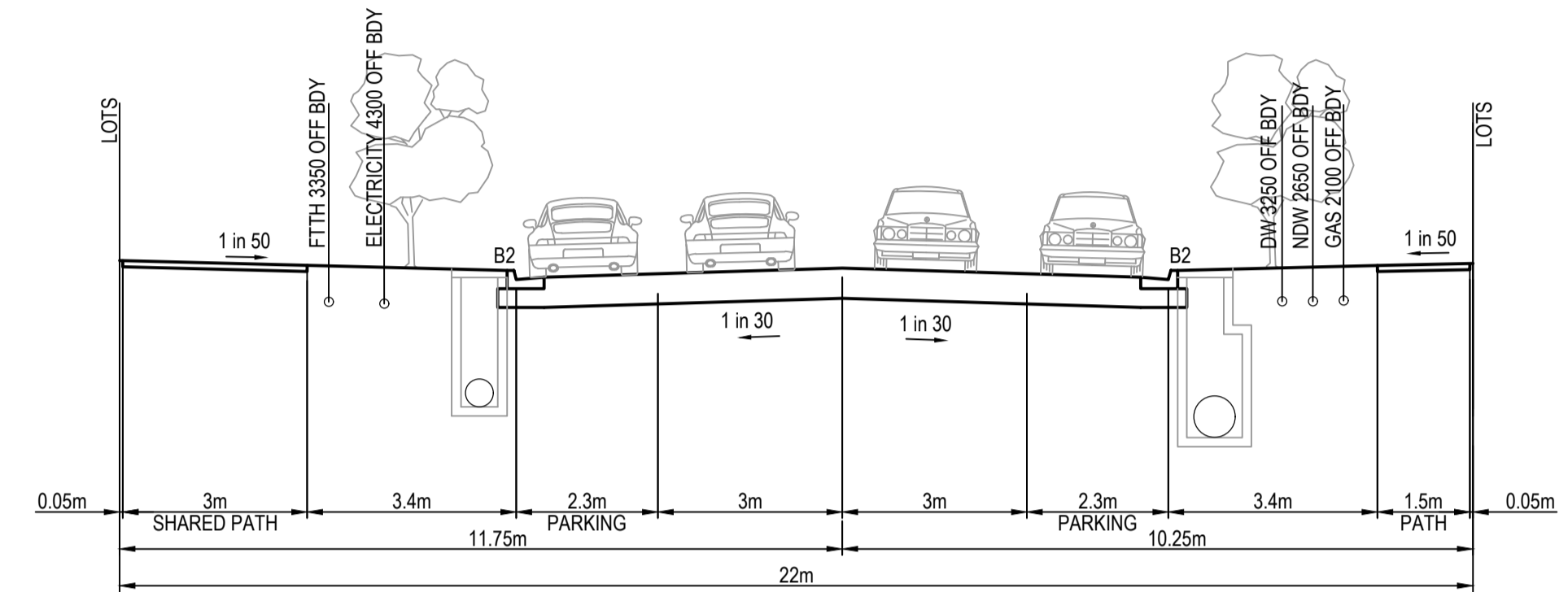
**16m ACCESS STREET**  
SUFFERN STREET



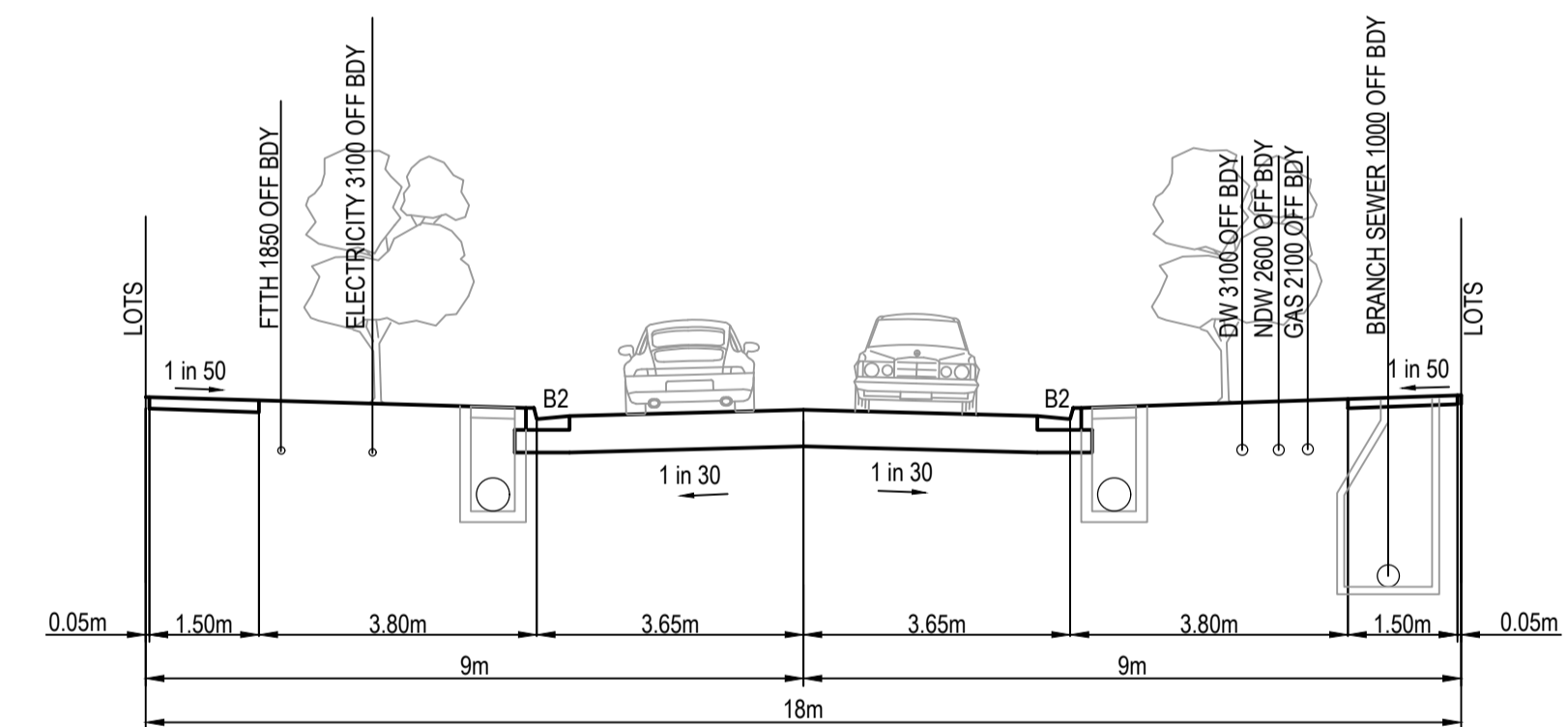
**16m ACCESS STREET**  
YANCEY STREET



**16m ACCESS STREET**  
PUNT WAY



**22m MODIFIED ACCESS STREET**  
EUCALYPTUS PARADE



**18m ACCESS STREET**  
DEMESNE DRIVE

**AS CONSTRUCTED PLANS**

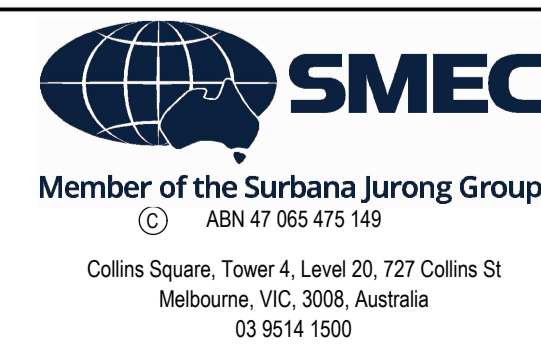
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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
PERMIT REF. NO.

SCALE AS SHOWN AT A1



Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Typical Cross Sections

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-112</b>	SHEET No. <b>03 of 26</b>	REVISION <b>3</b>
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**LEGEND - EARTHWORKS 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)
	ELECTRICITY (O/H)
	GAS
	TELSTRA
	OPTIC FIBRE
	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 ELECTRICITY OVERHEAD
	EXISTING GAS
	EXISTING TELSTRA
	EXISTING OPTIC FIBRE
	EXISTING WATER
	EXISTING RECYCLED WATER
	EXISTING AG. DRAIN
	EXISTING 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 ELECTRICITY OVERHEAD
	FUTURE GAS
	FUTURE TELSTRA
	FUTURE OPTIC FIBRE
	FUTURE WATER
	FUTURE RECYCLED WATER
	FUTURE AG. DRAIN
	FUTURE SERVICE CONDUITS
	FUTURE TACTILE PAVERS
	ZERO LOT LINES
	141.34 EXISTING SURFACE LEVEL
	FS140.35 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 TREE TO BE RETAINED
	EXISTING TREE TO BE REMOVED
	PERMANENT SURVEY MARK
	TEMPORARY BENCH MARK
	PROPOSED DRIVEWAY & FOOTPATH
	PROPOSED INDUSTRIAL DRIVEWAY
	PROPOSED SHARED FOOTPATH
	PROPOSED ROAD PAVING
	EXISTING ROAD PAVING

TBM C436SSPL  
STAR PICKET  
323291.7  
5844444.06  
RL  
249.74

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**AS CONSTRUCTED PLANS**

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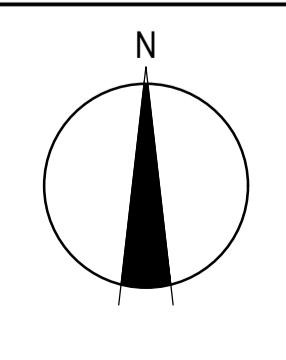
Quality Management ISO 9001  
OH&S Management AS/NZS 4500  
Environmental Management ISO 14001

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
PERMIT REF. NO.

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SCALE AS SHOWN AT A1

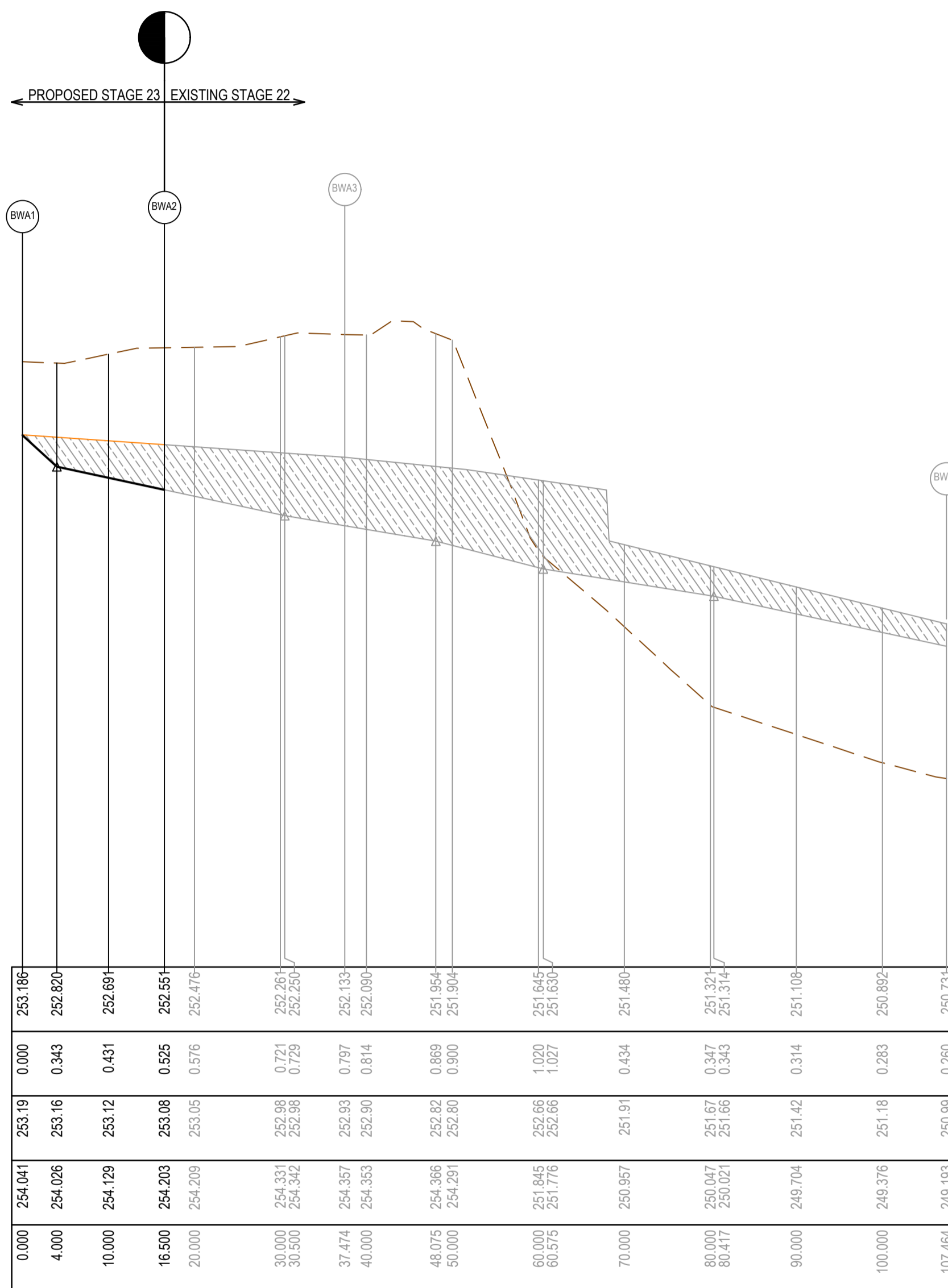
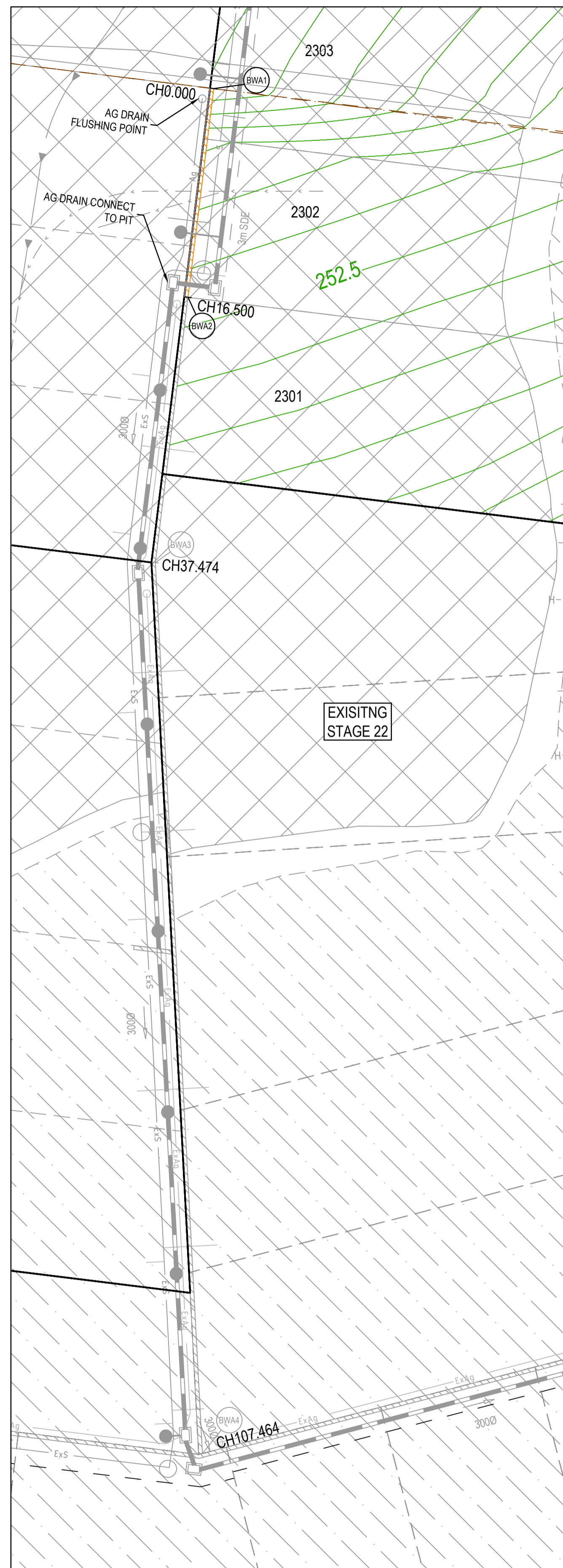


**SMEC**  
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03 9514 1500

**mirvac**

Olive Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Earthworks & Retaining Wall

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-131</b>	SHEET No. <b>04 of 26</b>	REVISION <b>2</b>
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RETAINING WALL BWA - LONGITUDINAL SECTION

**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

**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.

**ALIGNMENT BWA**

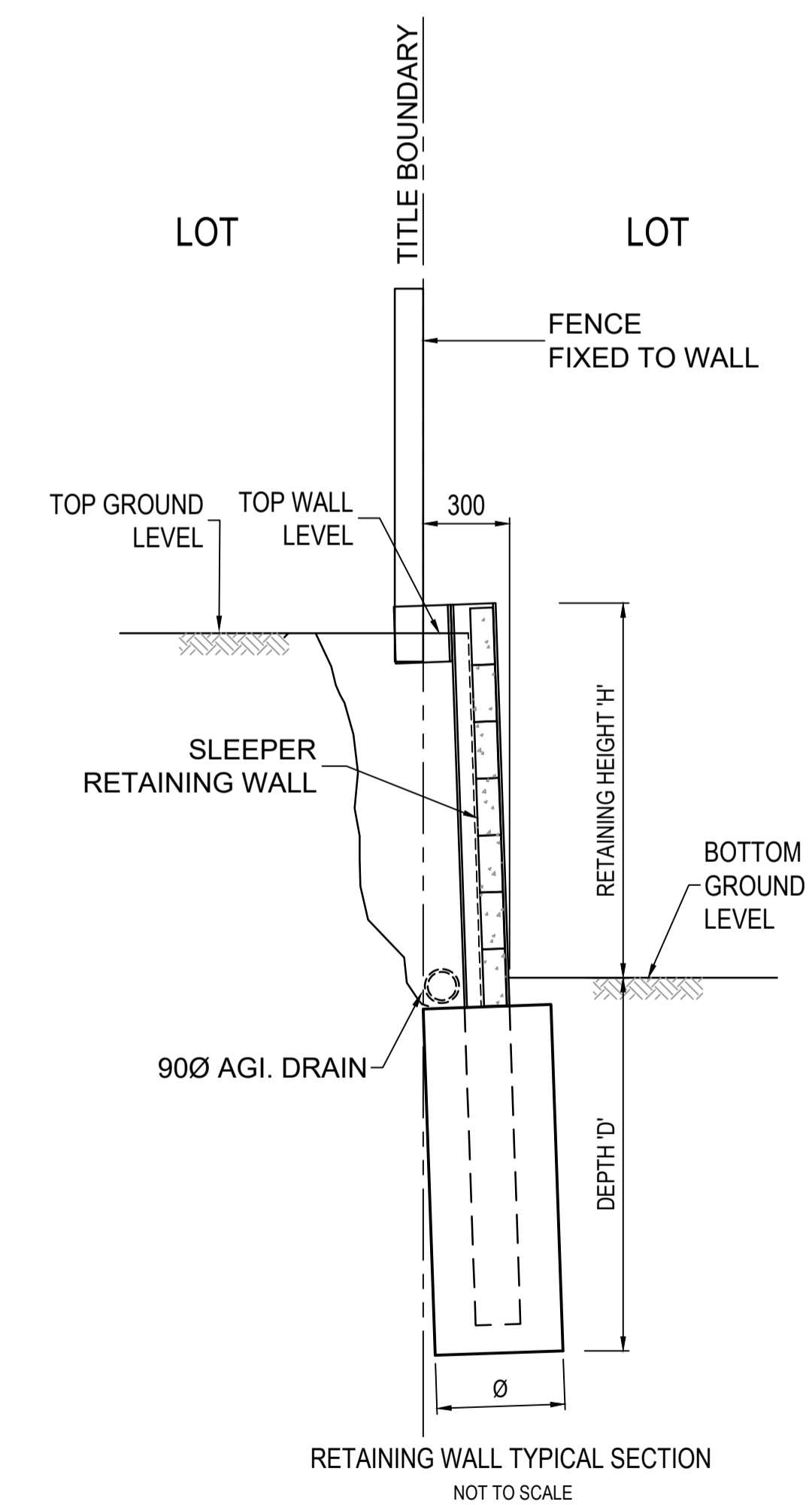
Point no	Easting	Northing	RL
BWA1	323016.486	5844570.408	253.186
BWA2	323016.465	5844554.032	252.551
BWA3	323013.897	5844533.216	252.133
BWA4	323017.597	5844463.323	250.731

**LEGEND**

	EXISTING SURFACE
	DESIGN LINE
	RETAINING WALL - CONCRETE SLEEPER

**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 - CONCRETE SLEEPER
	AG DRAIN



RETAINING WALL TYPICAL SECTION  
NOT TO SCALE

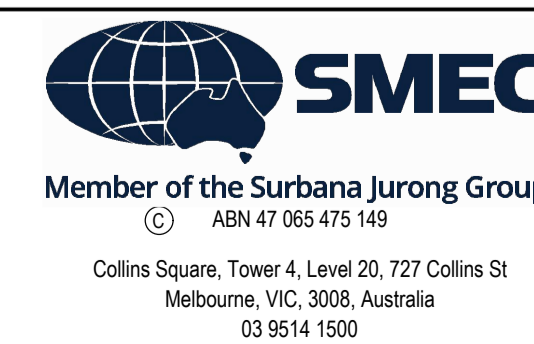
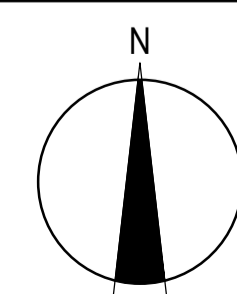
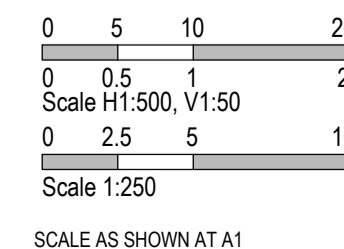
**AS CONSTRUCTED PLANS**

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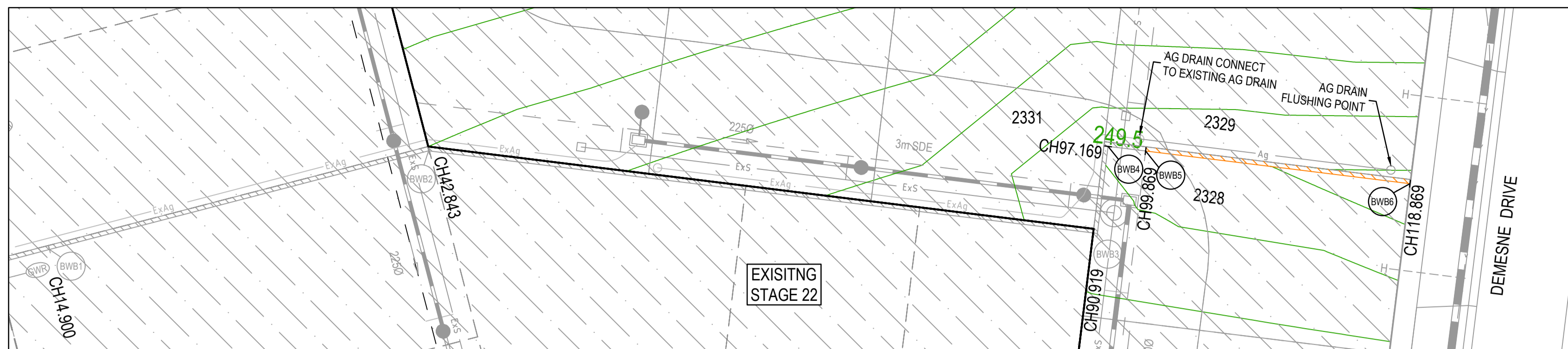
PLAN OF SUB. NO.  
PERMIT REF. NO.

**AS CONSTRUCTED**



Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Retaining Wall Setout Plan - 1

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-132</b>	SHEET No. <b>05 of 26</b>	REVISION <b>2</b>
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**ALIGNMENT BWB**

Point no	Easting	Northing	RL
BWB1	323088.170	5844455.921	249.601
BWB2	323115.214	5844462.955	249.231
BWB3	323162.928	5844457.067	249.265
BWB4	323163.693	5844463.270	249.310
BWB5	323166.373	5844462.940	249.331
BWB6	323185.230	5844460.613	249.475

**ALIGNMENT BWC**

Point no	Easting	Northing	RL
BWC1	323069.173	5844542.692	252.059
BWC2	323100.635	5844538.811	251.300
BWC3	323100.084	5844534.344	251.290
BWC4	323102.466	5844534.051	250.954
BWC5	323165.422	5844526.283	250.638
BWC6	323166.035	5844531.245	250.709
BWC7	323193.999	5844527.795	251.108

**RETAINING WALL DESIGN AND APPROVALS REQUIREMENTS**

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- CONTRACTOR TO ENSURE ALL REQUIREMENTS OF BUILDING PERMIT HAVE BEEN ADDRESSED.

**LEGEND**

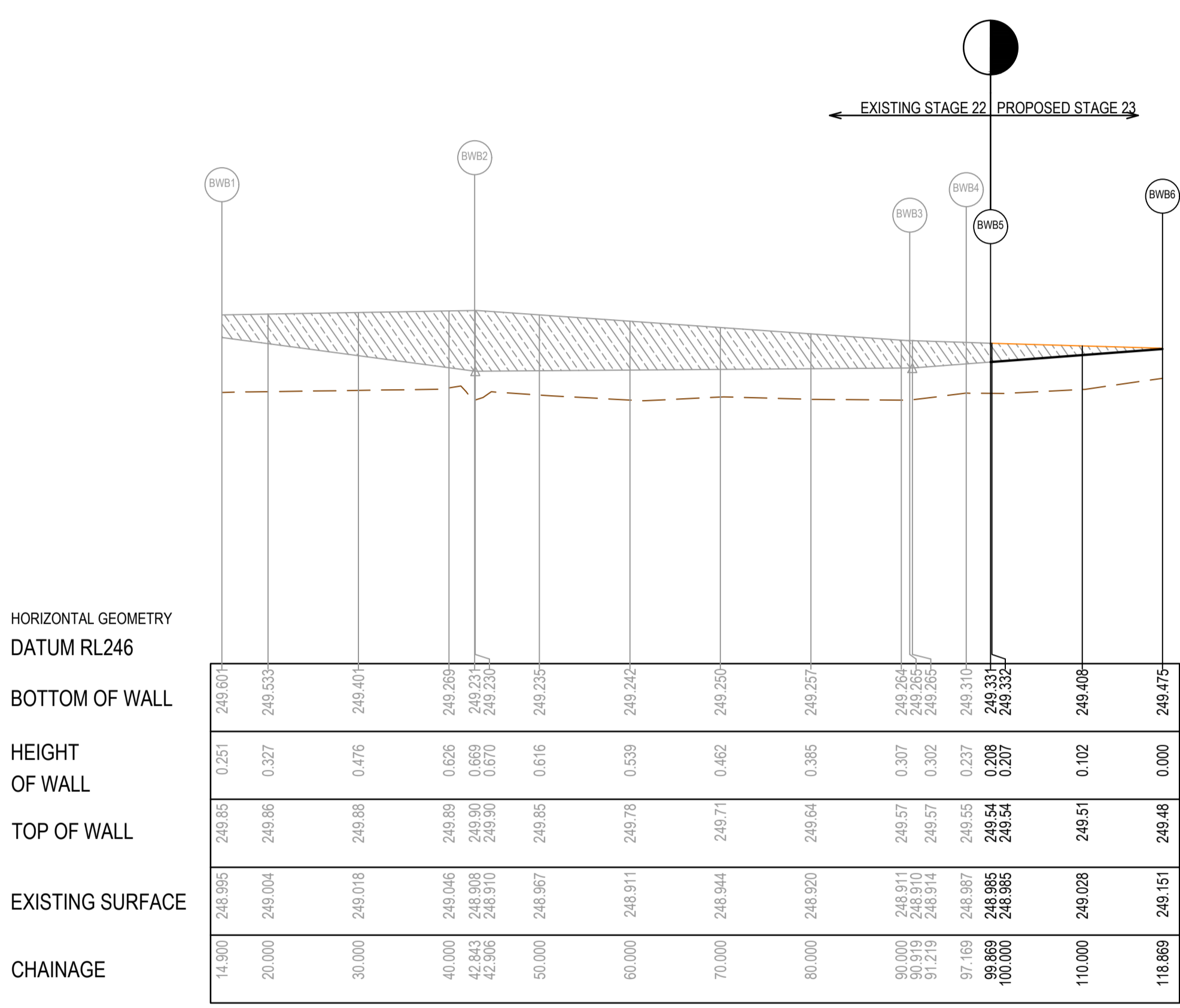
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	DESIGN LINE
	RETAINING WALL - CONCRETE SLEEPER

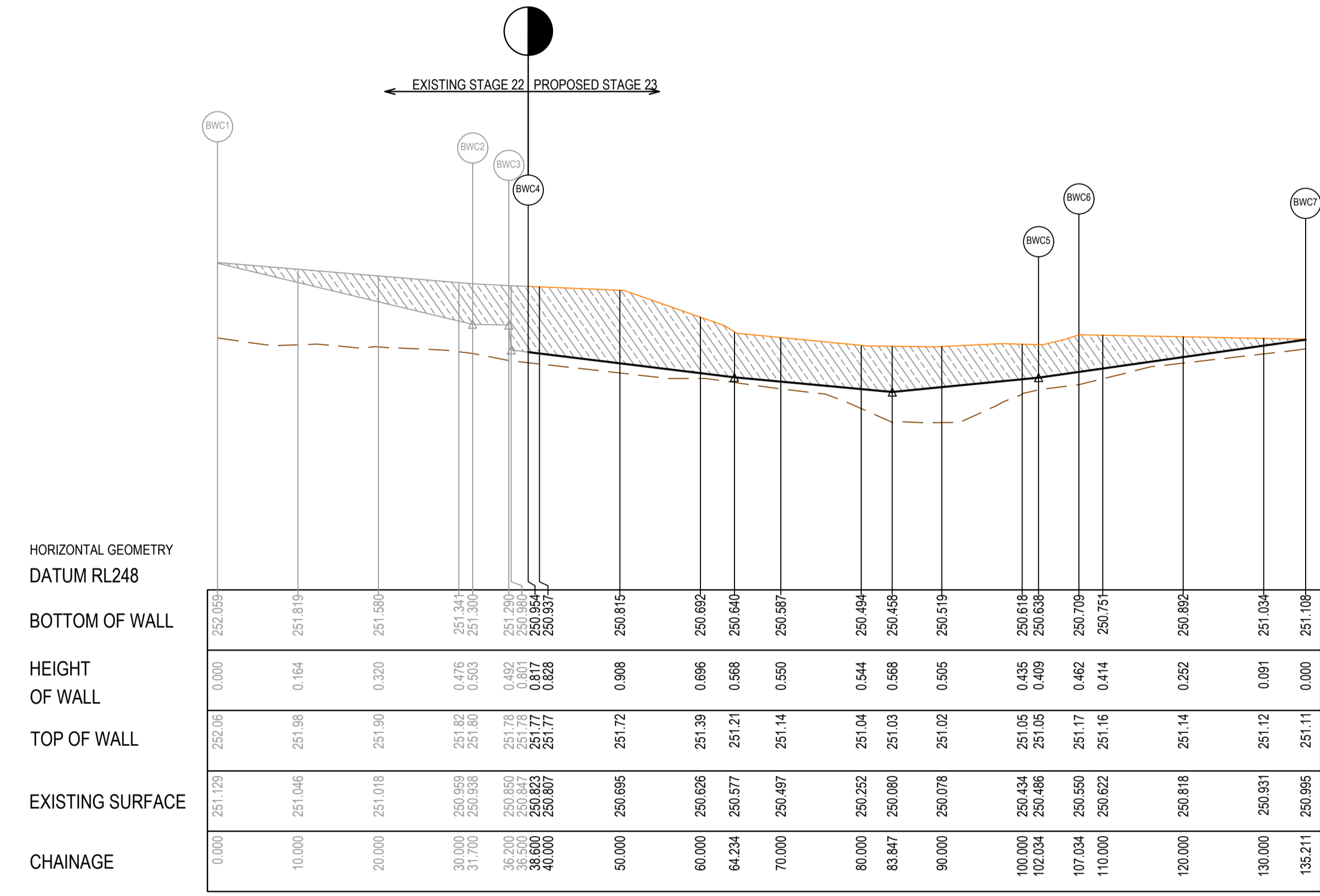
**LEGEND**

ALL PROPOSED, FUTURE & EXISTING SERVICE LOCATIONS ARE SHOWN INDICATIVELY

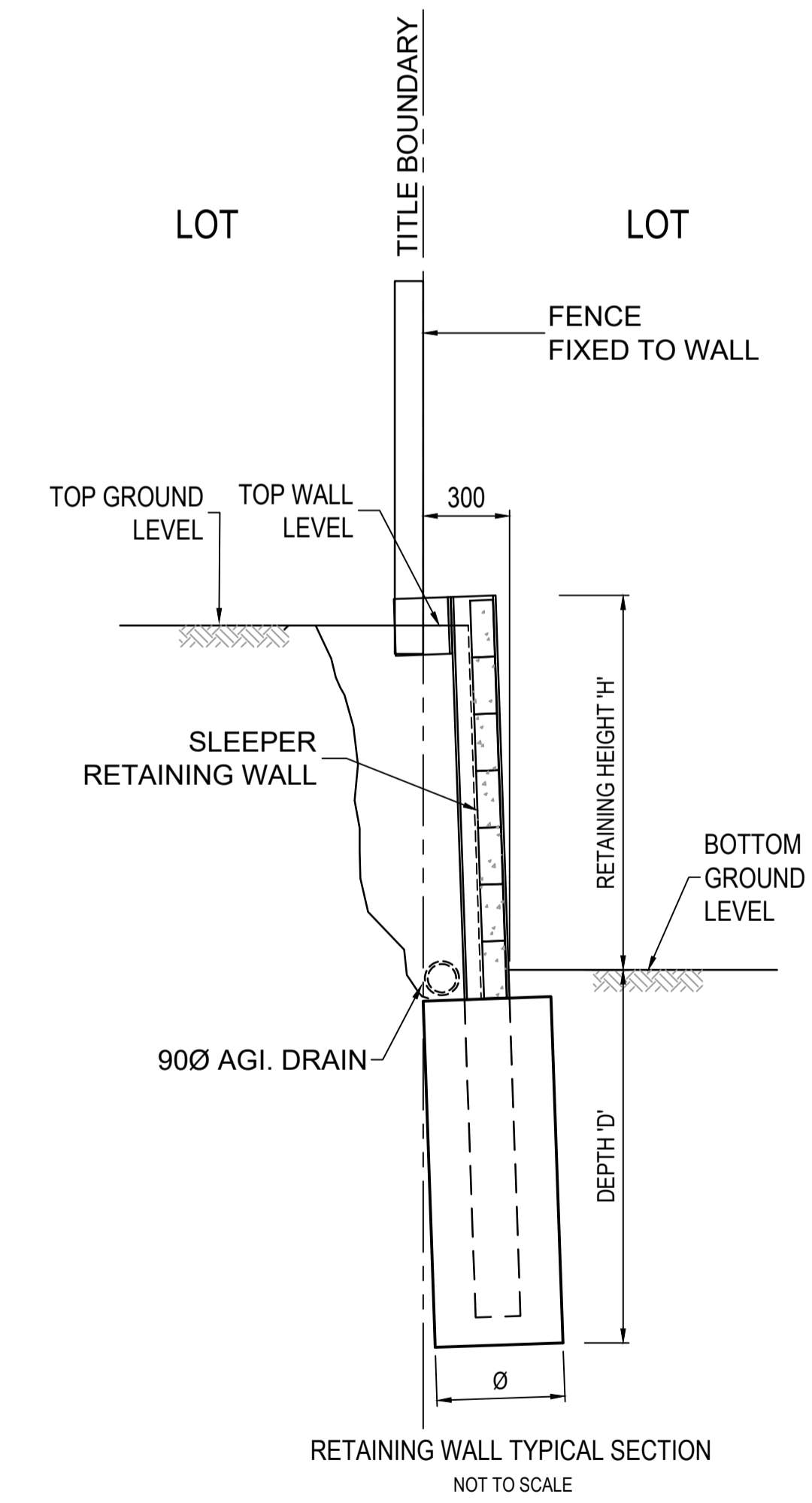
	STORMWATER DRAIN, PIT & PROPERTY INLET
	MAIN DRAIN
	SWALE DRAIN
	SEWER & MAINTENANCE STRUCTURES
	HOUSE DRAIN
	ELECTRICITY (U GROUND)
	ELECTRICITY (O HEAD)
	GAS
	TELSTRA
	OPTIC FIBRE
	WATER
	RECYCLE WATER
	AG DRAIN
	SERVICE CONDUITS
	CHAINAGE
	TOP OF RETAINING WALL LEVEL
	BOTTOM OF RETAINING WALL LEVEL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



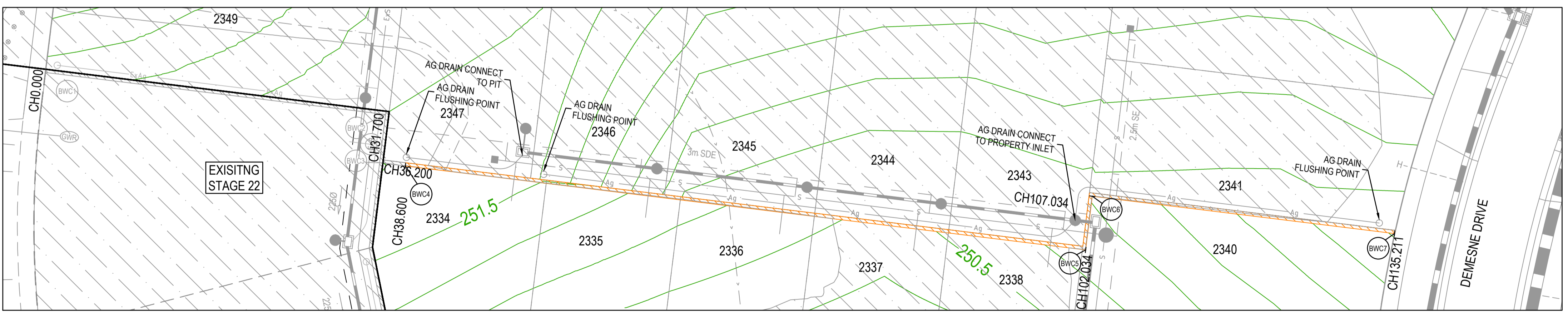
RETAINING WALL BWB - LONGITUDINAL SECTION



RETAINING WALL BWC - LONGITUDINAL SECTION



RETAINING WALL TYPICAL SECTION NOT TO SCALE



**AS CONSTRUCTED PLANS**

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 OHS Management AS/NZS 4801  
 Environmental Management ISO 14001

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
 PERMIT REF. NO.

0 5 10 20  
 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  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

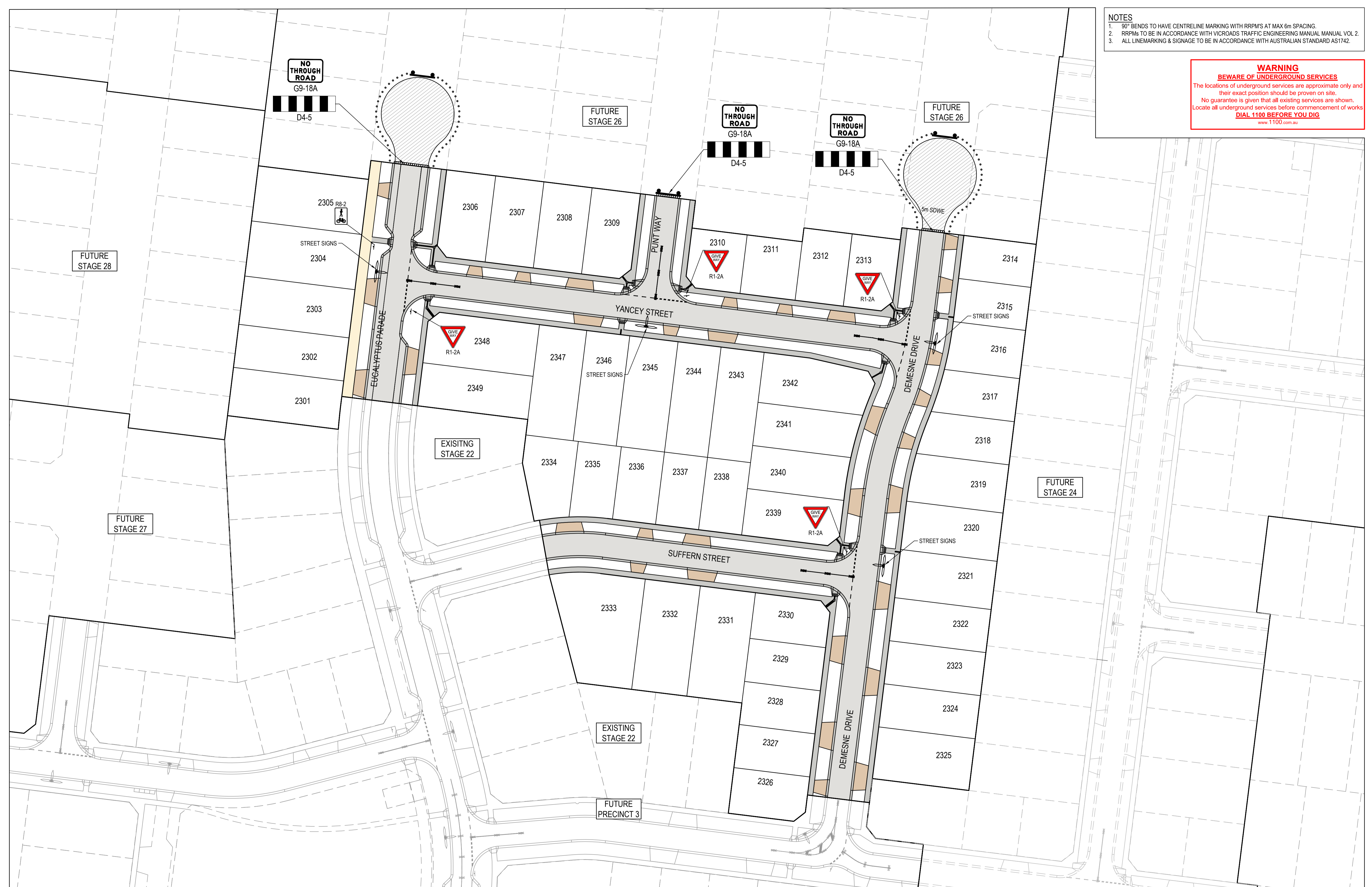
**mirvac**

Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Retaining Wall Setout Plan - 2

MELWAYS REF: 8M2  
 PROJECT / DRAWING No: 1700E-023-133  
 SHEET No: 06 of 26  
 REVISION: 2

- 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.

**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

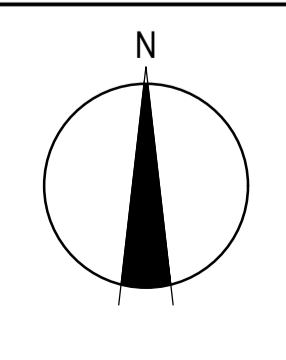


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  	PLAN OF SUB. NO.
	PERMIT REF. NO.
<b>AS CONSTRUCTED</b>	

SCALE 1:500  
 SCALE AS SHOWN AT A1



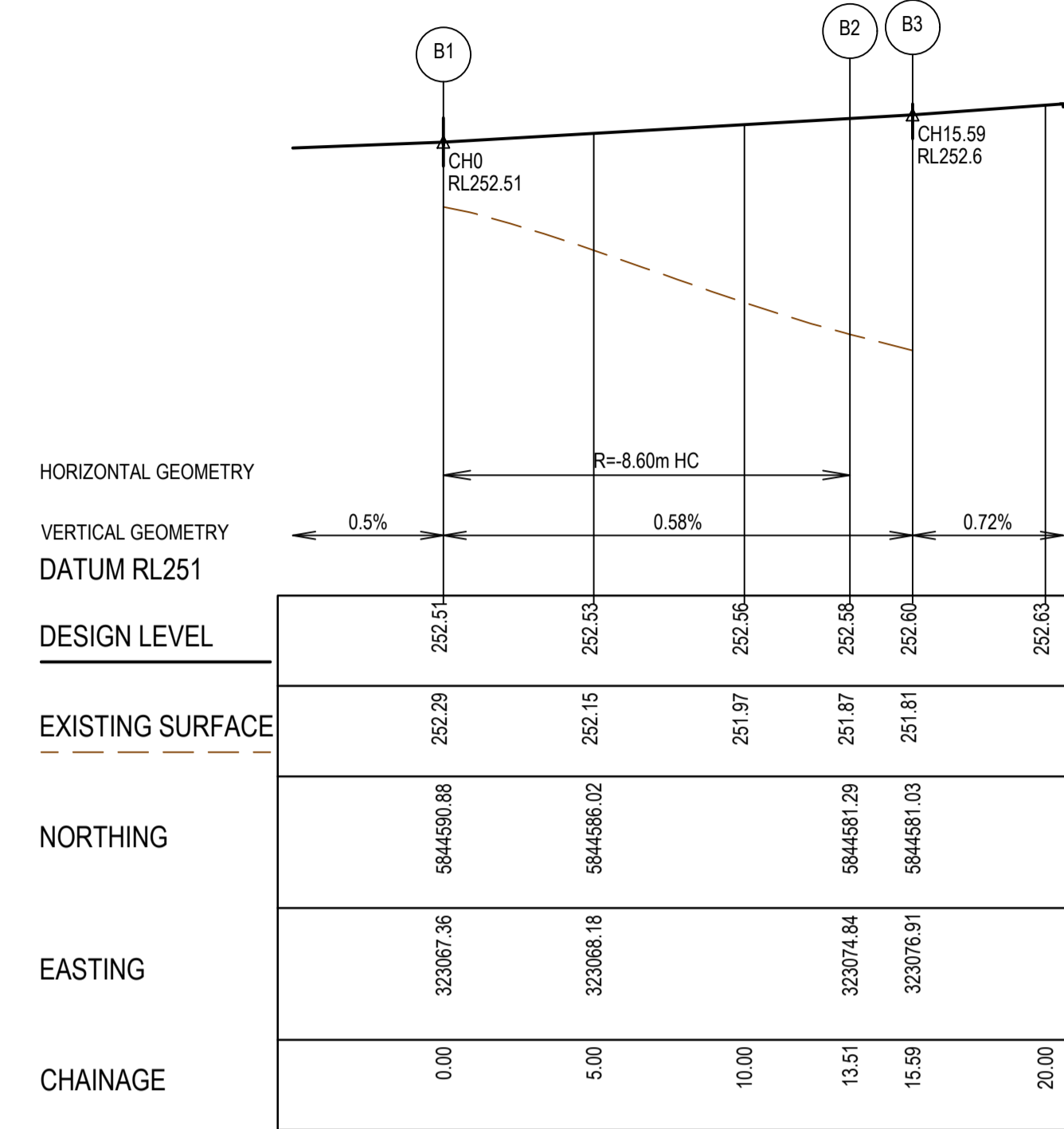
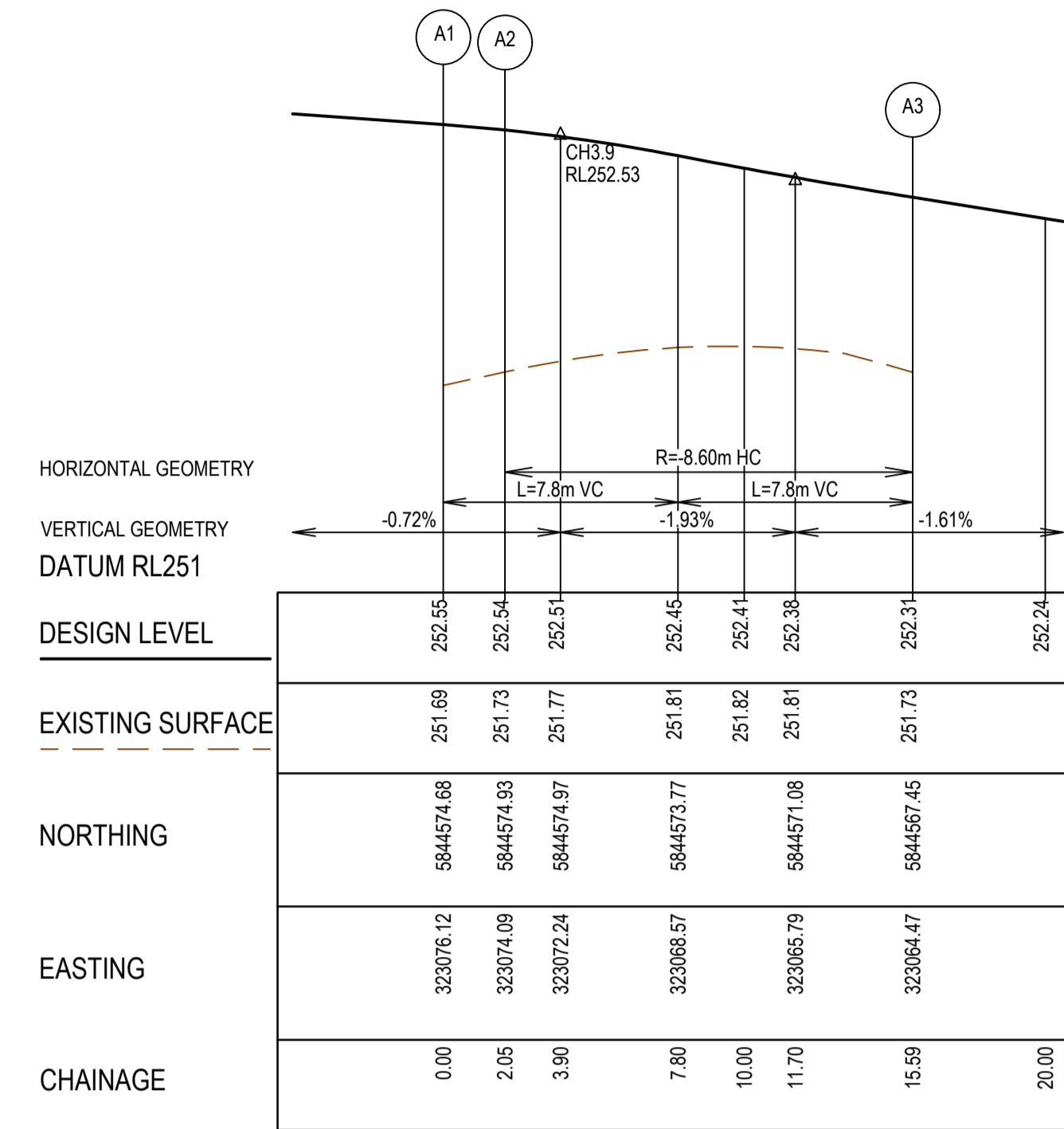
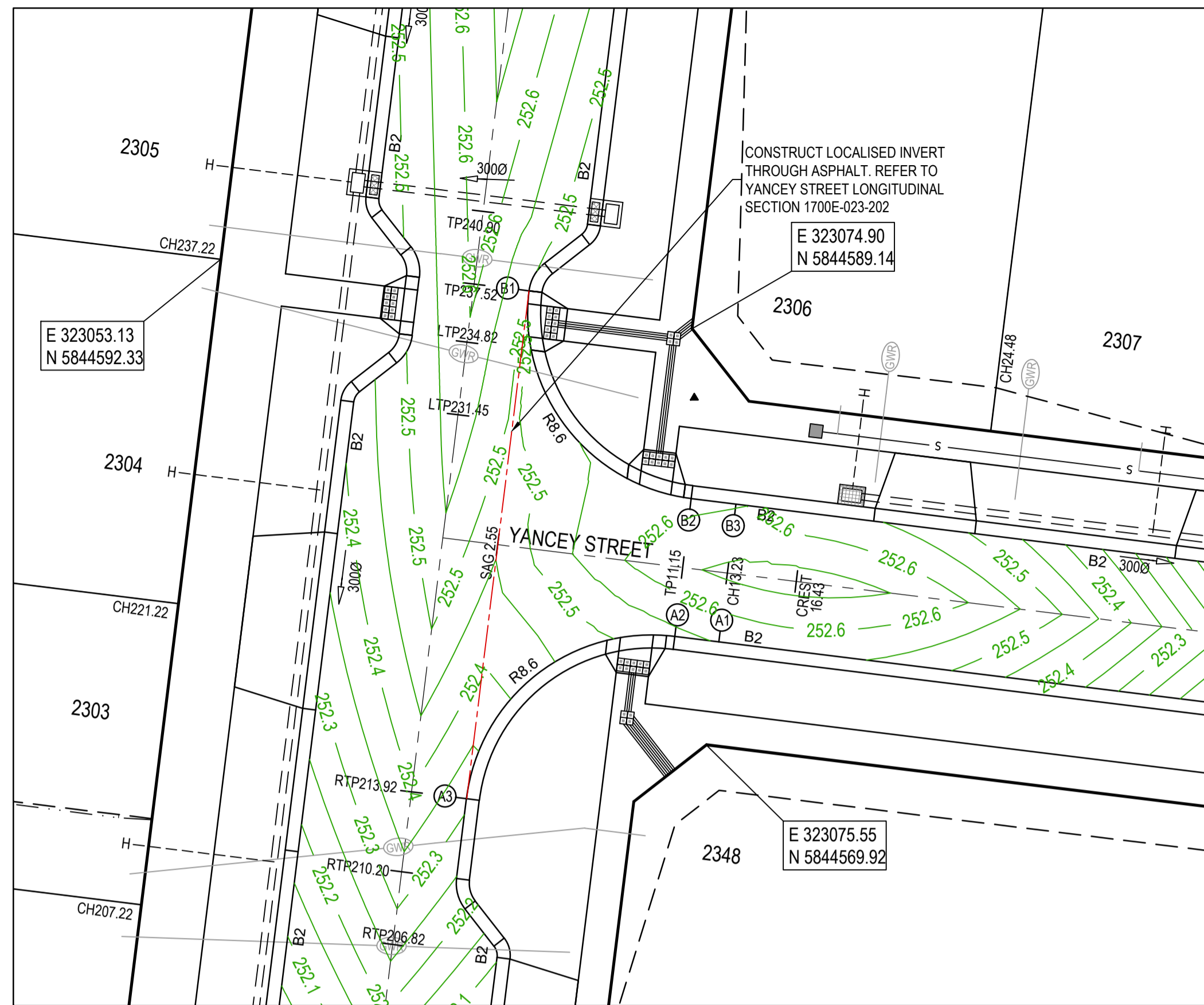
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 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500



Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Signage & Linemarking Plan

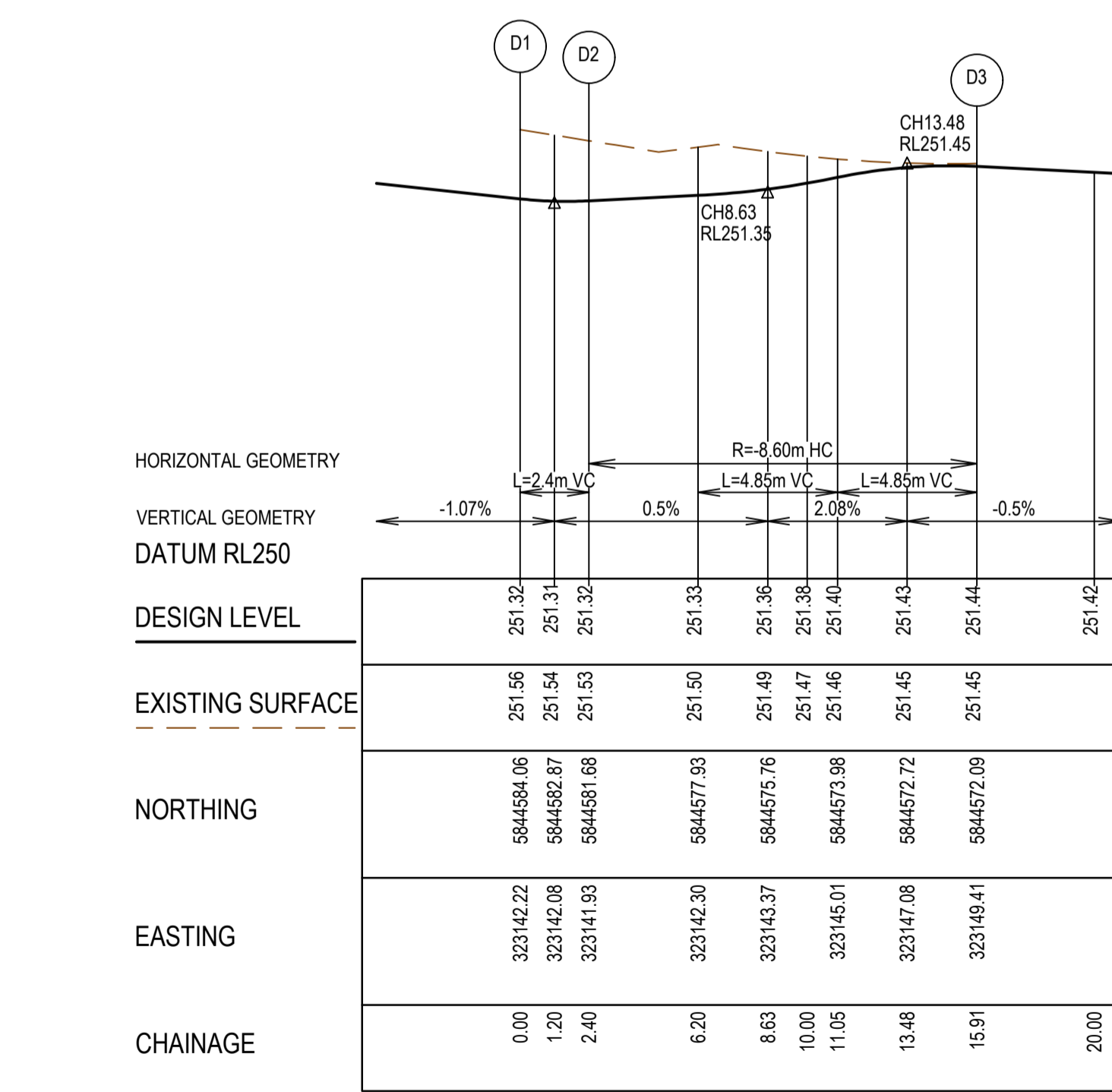
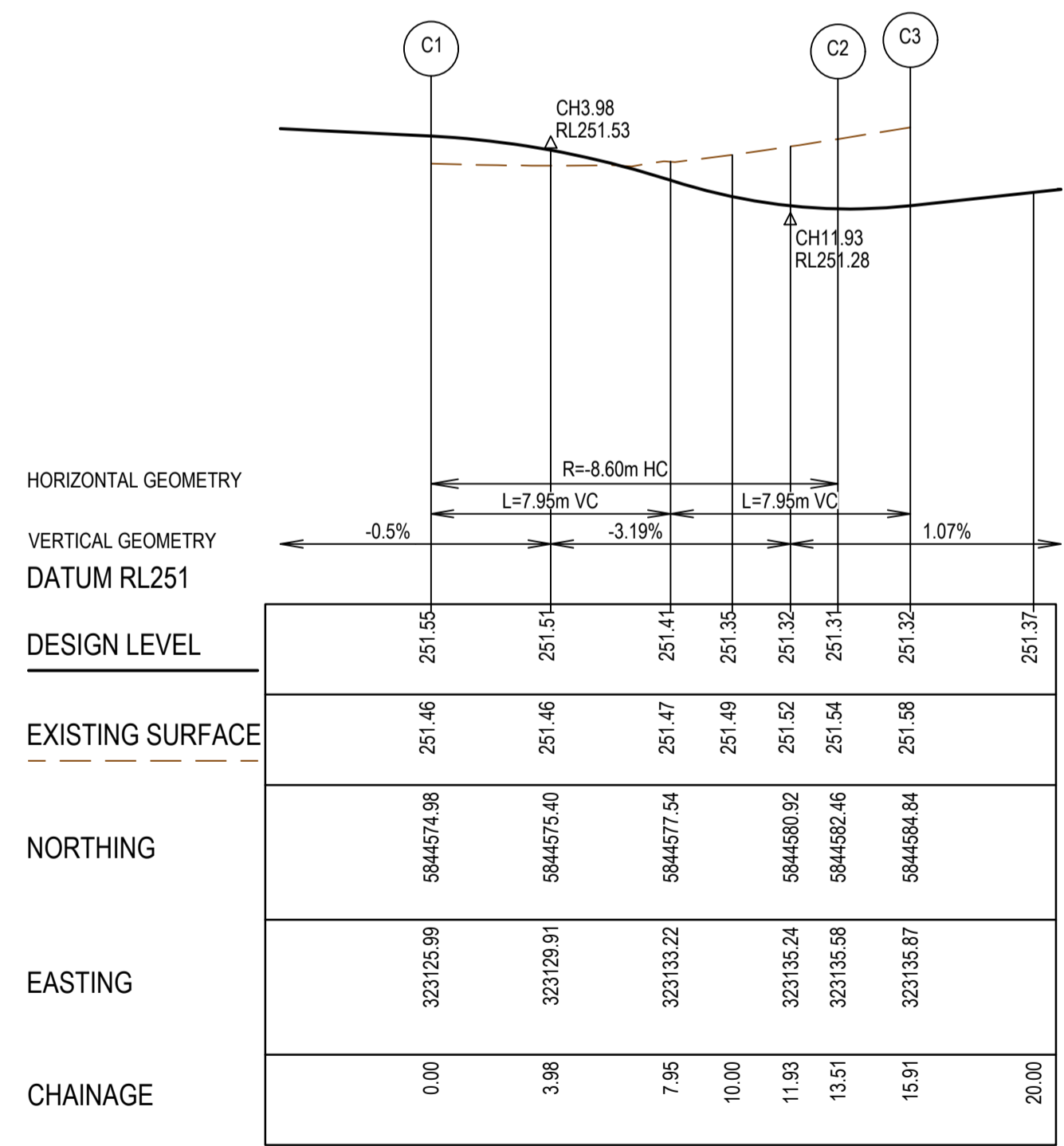
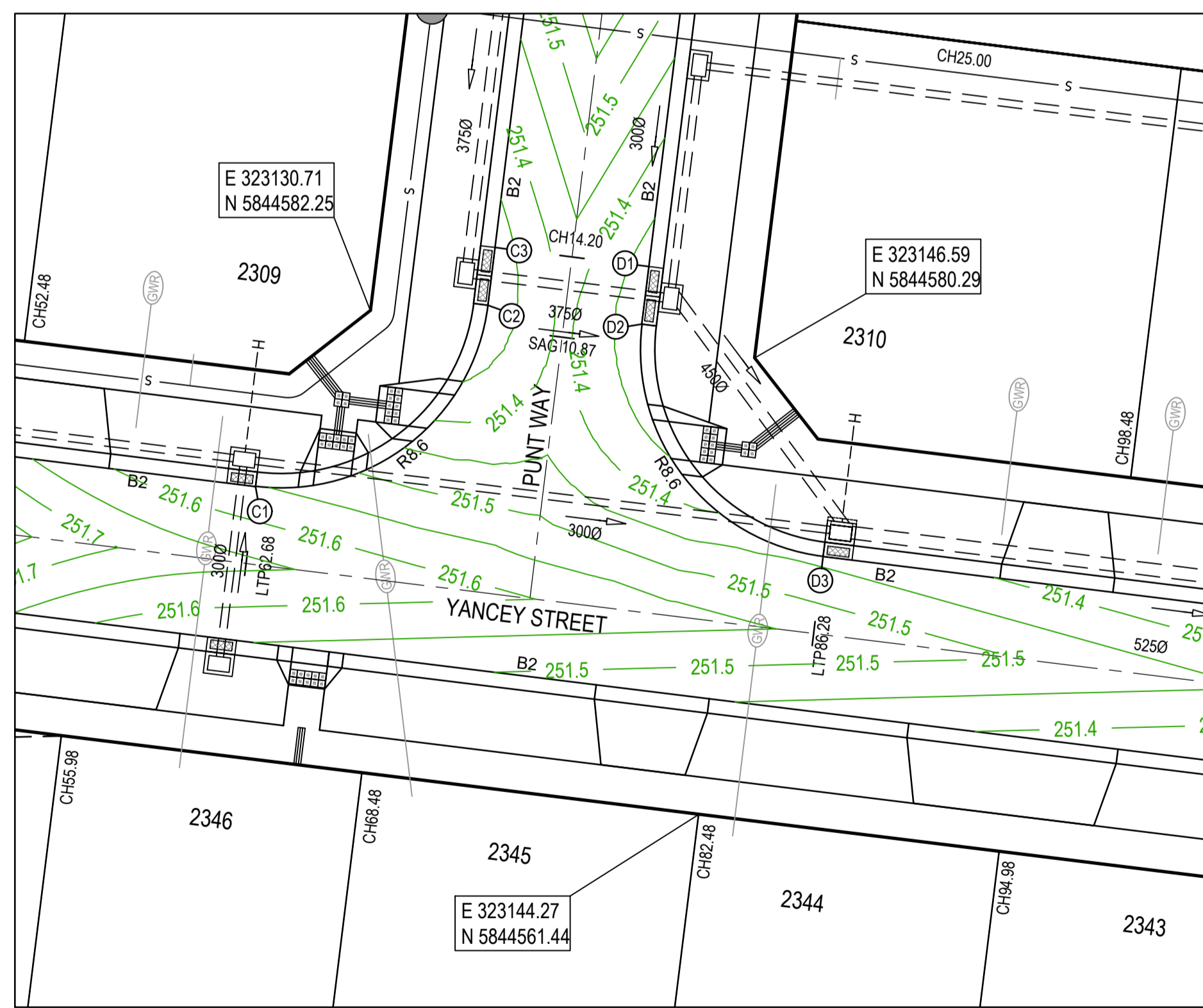
MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-171</b>	SHEET No. <b>07 of 26</b>	REVISION <b>2</b>
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- NOTES**
- ALL VEHICLE CROSSINGS AND PRAM CROSSINGS TO BE MINIMUM OF 0.75m FROM PITS.
  - ALL PRAM CROSSINGS TO BE MINIMUM OF 2.0m FROM VEHICLE CROSSINGS.
  - VEHICLE EXCLUSION MEASURES BETWEEN ROAD RESERVE AND RESERVE TO FORM PART OF THE LANDSCAPE WORKS.



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

	STORMWATER DRAIN, PIT & PROPERTY INLET
	MAIN DRAIN
	SEWER & MAINTENANCE STRUCTURES
	HOUSE DRAIN
	SERVICE CONDUITS
	TACTILE PAVERS
	EXISTING STORMWATER DRAIN
	EXISTING MAIN DRAIN
	EXISTING SEWER & MAINTENANCE STRUCTURES
	EXISTING SERVICE CONDUITS
	EXISTING TACTILE PAVERS
	FUTURE STORMWATER DRAIN
	FUTURE MAIN DRAIN
	FUTURE SEWER & MAINTENANCE STRUCTURES
	FUTURE HOUSE DRAIN
	FUTURE SERVICE CONDUITS
	FUTURE TACTILE PAVERS
	EXISTING RETAINING WALL
	RETAINING WALL
	FUTURE RETAINING WALL
	EDGE STRIP, SUBSOIL DRAIN, 'NO ROAD' SIGN & BARRIER
	PERMANENT SURVEY MARK
	TEMPORARY BENCH MARK
	PROPOSED DRIVEWAY & FOOTPATH



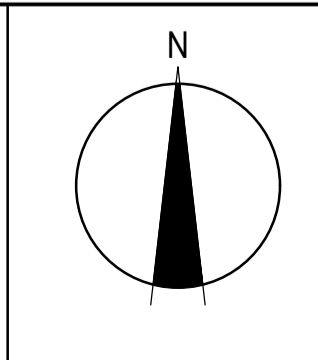
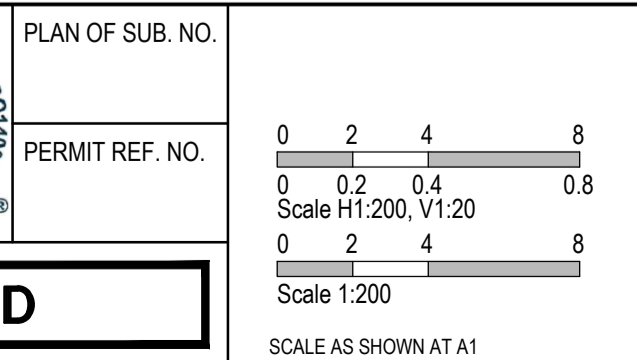
**AS CONSTRUCTED PLANS**

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Quality Management ISO 9001  
OH&S Management AS/NZS 4801  
Environmental Management ISO 14001

PLAN OF SUB. NO.  
PERMIT REF. NO.

**AS CONSTRUCTED**



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ABN 47 065 475 149  
Collins Square, Tower 4, Level 20, 727 Collins St  
Melbourne, VIC, 3008, Australia  
03 9514 1500

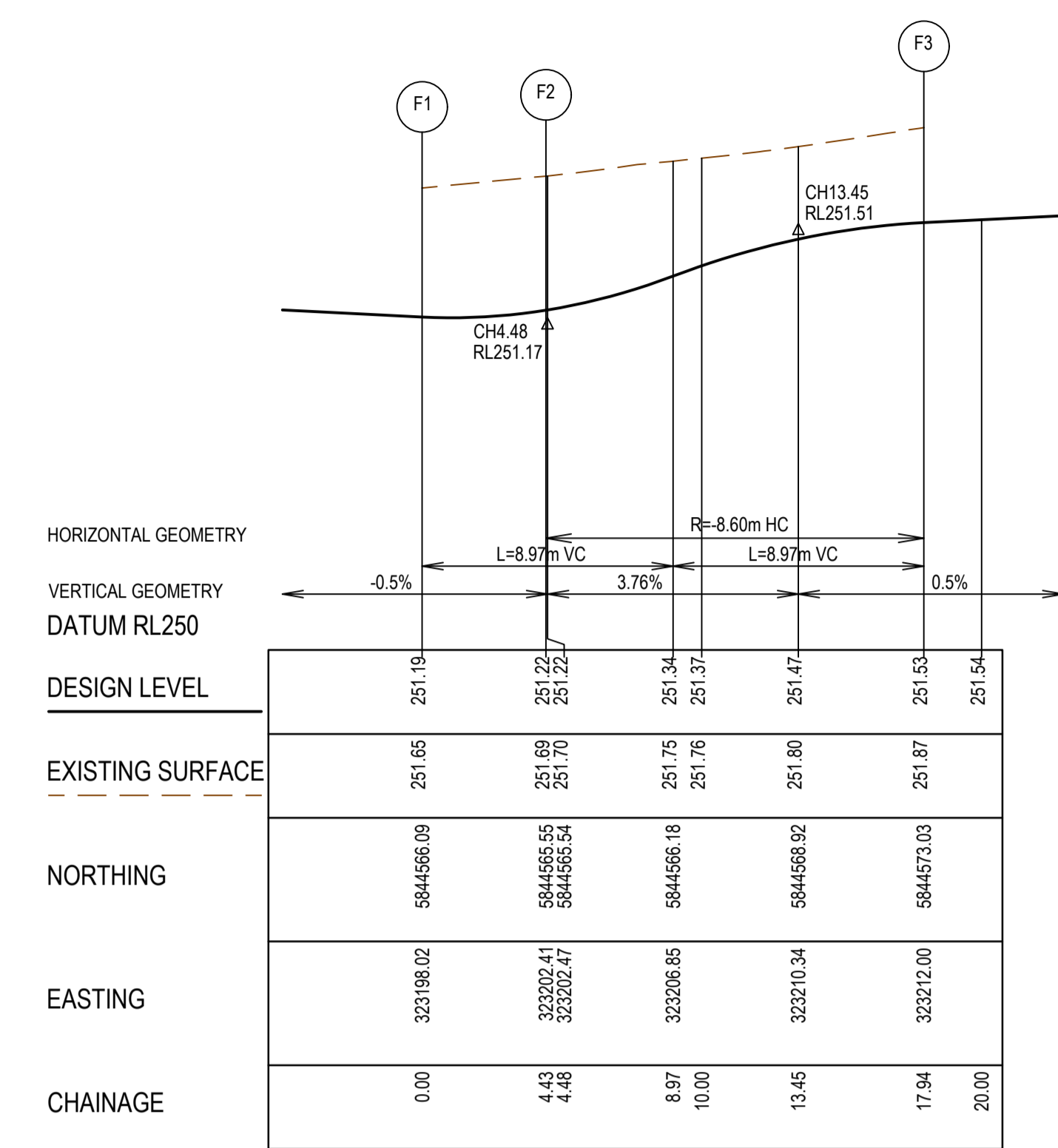
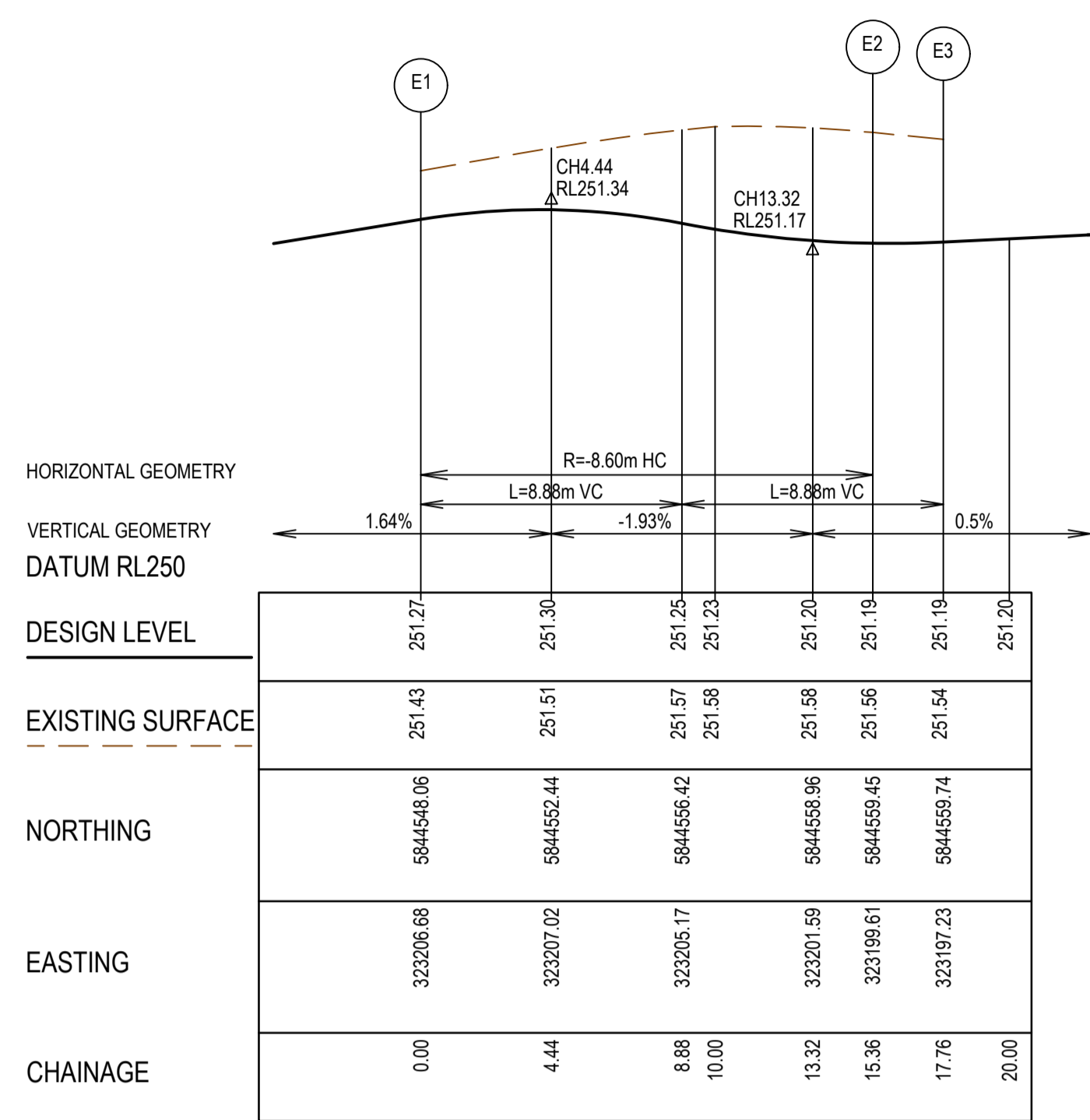
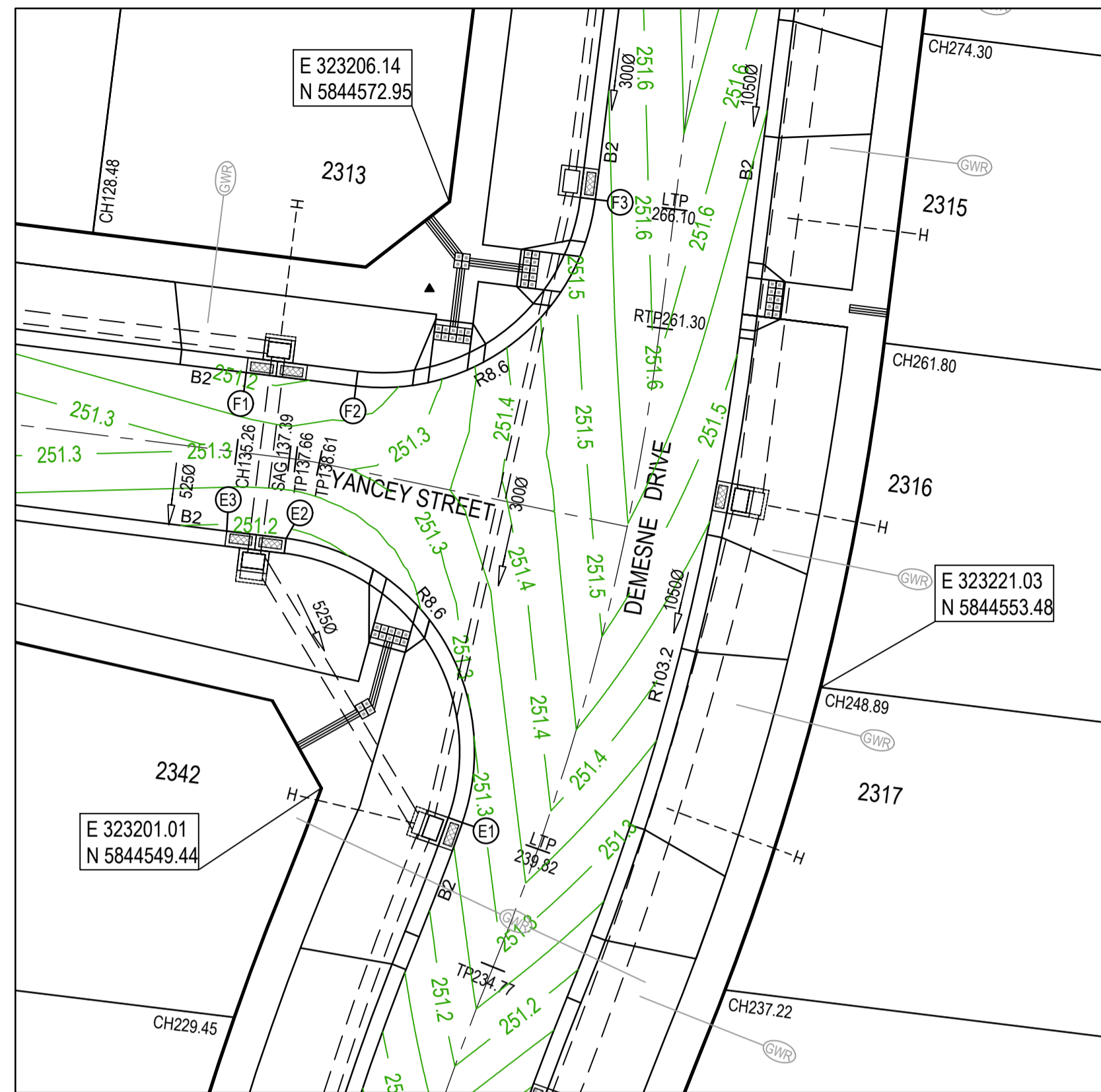
**mirvac**

Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Intersection Detail plan - 1

MELWAYS REF: 8M2  
PROJECT / DRAWING No: 1700E-023-181  
SHEET No: 08 of 26  
REVISION: 2

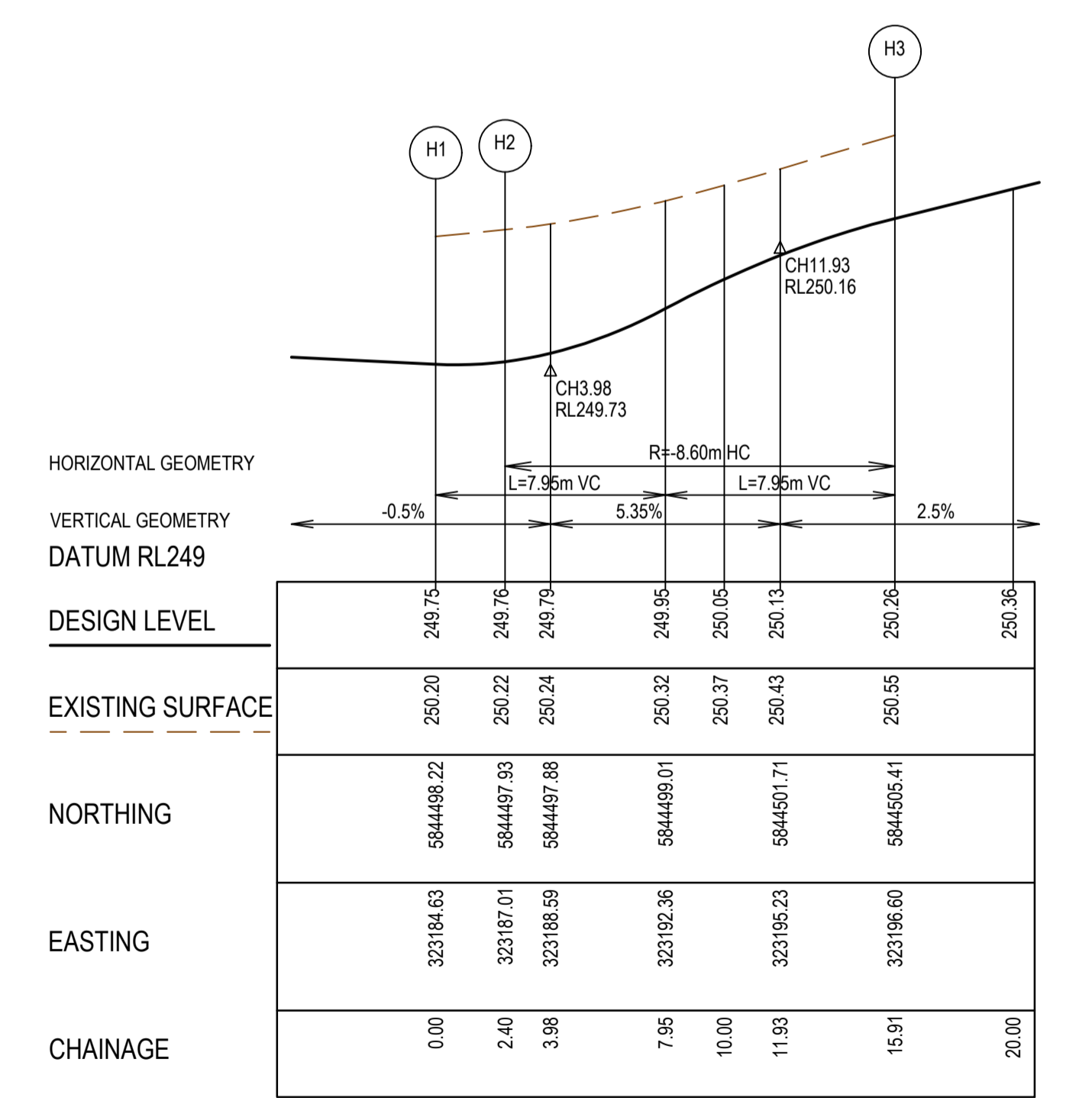
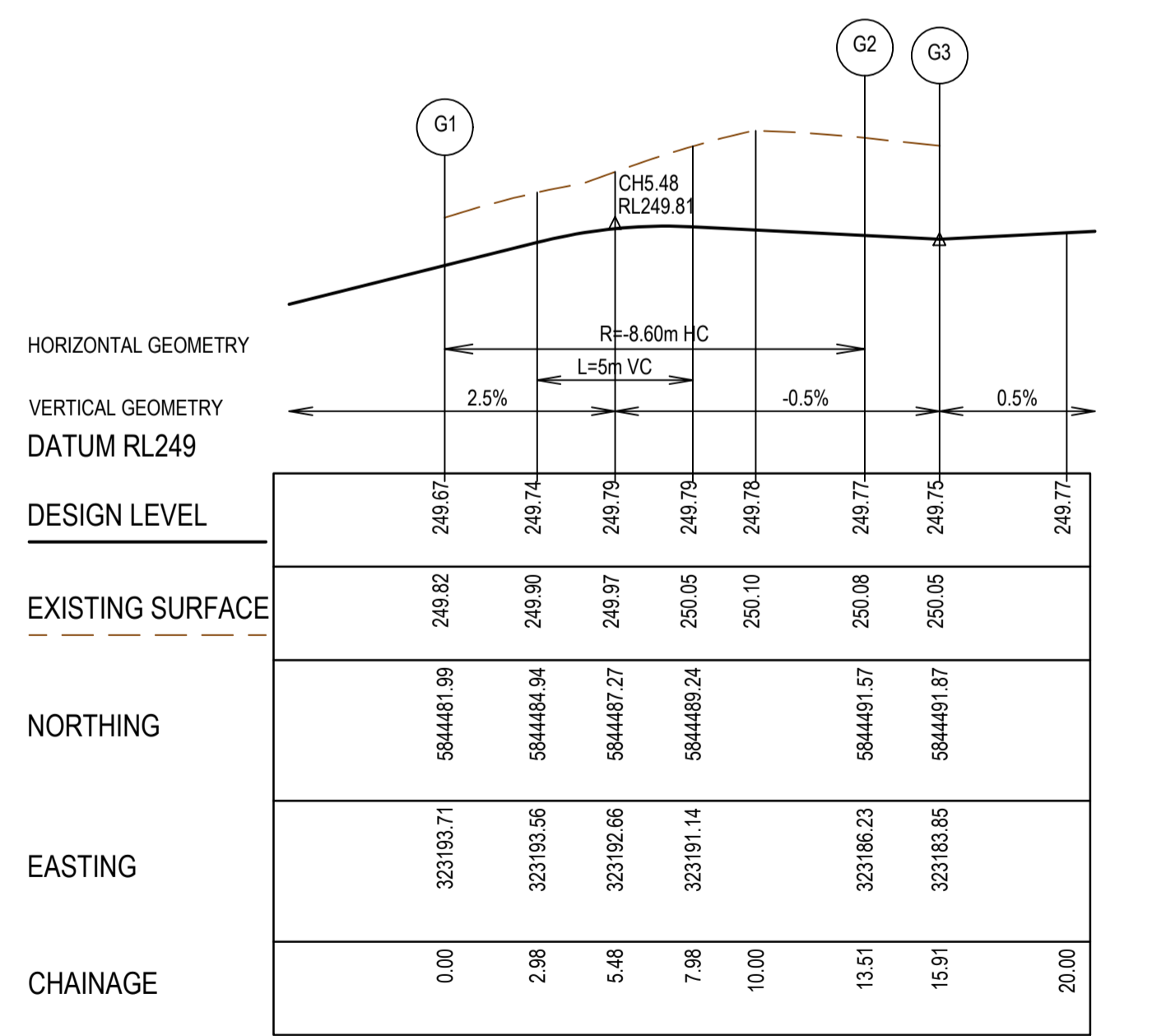
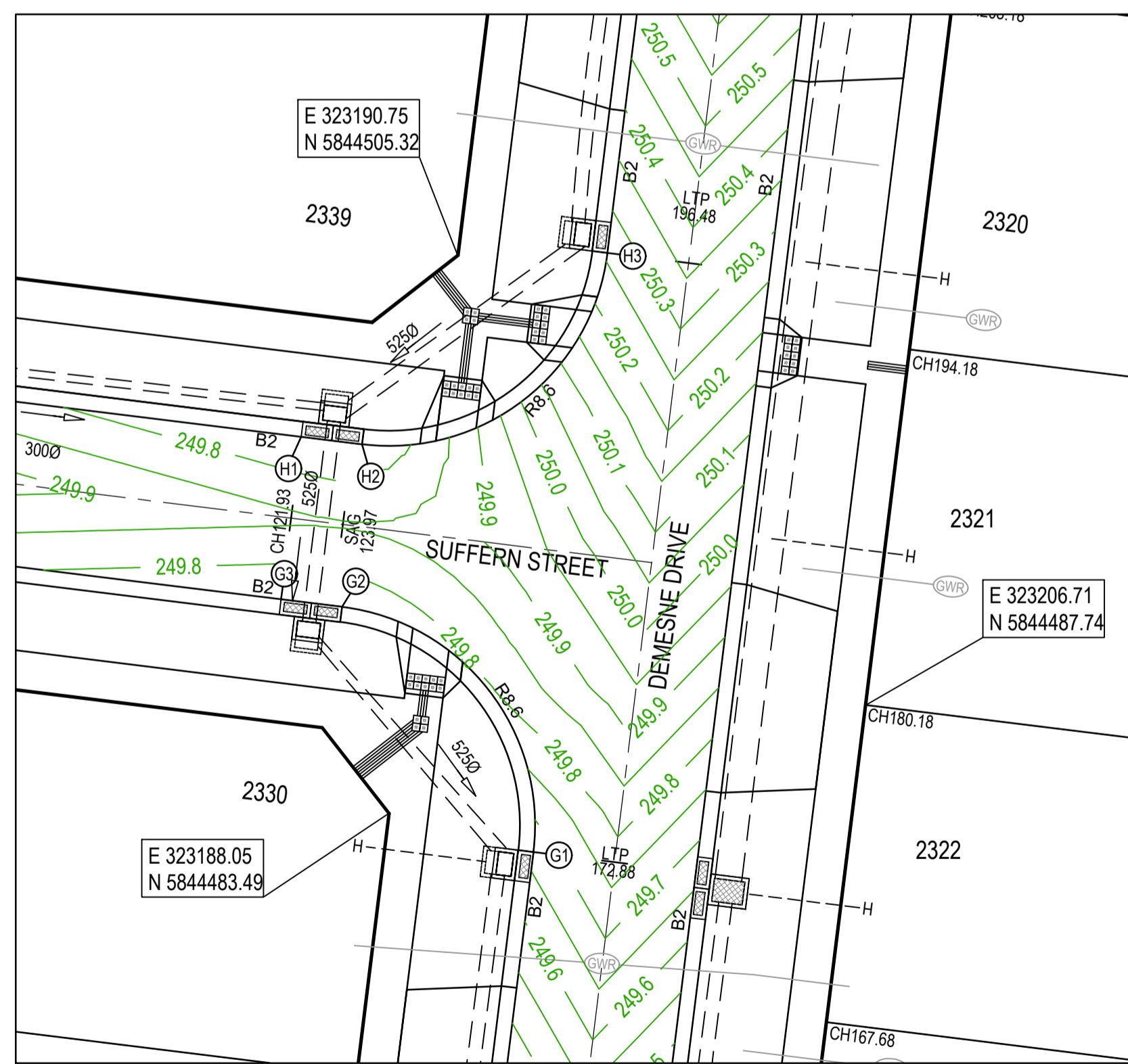


- NOTES**
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  2. ALL PRAM CROSSINGS TO BE MINIMUM OF 2.0m FROM VEHICLE CROSSINGS.
  3. VEHICLE EXCLUSION MEASURES BETWEEN ROAD RESERVE AND RESERVE TO FORM PART OF THE LANDSCAPE WORKS.



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

[Symbol]	STORMWATER DRAIN, PIT & PROPERTY INLET
[Symbol]	MAIN DRAIN
[Symbol]	SEWER & MAINTENANCE STRUCTURES
[Symbol]	HOUSE DRAIN
[Symbol]	SERVICE CONDUITS
[Symbol]	TACTILE PAVERS
[Symbol]	EXISTING STORMWATER DRAIN
[Symbol]	EXISTING MAIN DRAIN
[Symbol]	EXISTING SEWER & MAINTENANCE STRUCTURES
[Symbol]	EXISTING SERVICE CONDUITS
[Symbol]	EXISTING TACTILE PAVERS
[Symbol]	FUTURE STORMWATER DRAIN
[Symbol]	FUTURE MAIN DRAIN
[Symbol]	FUTURE SEWER & MAINTENANCE STRUCTURES
[Symbol]	FUTURE HOUSE DRAIN
[Symbol]	FUTURE SERVICE CONDUITS
[Symbol]	FUTURE TACTILE PAVERS
[Symbol]	EXISTING RETAINING WALL
[Symbol]	RETAINING WALL
[Symbol]	FUTURE RETAINING WALL
[Symbol]	EDGE STRIP, SUBSOIL DRAIN, 'NO ROAD' SIGN & BARRIER
[Symbol]	PERMANENT SURVEY MARK
[Symbol]	TEMPORARY BENCH MARK
[Symbol]	PROPOSED DRIVEWAY & FOOTPATH



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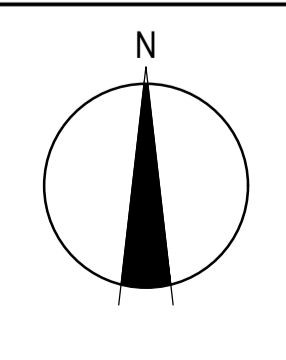
Quality Management ISO 9001  
 OHS Management AS/NZS 4500  
 Environmental Management ISO 14001

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
 PERMIT REF. NO.

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 0 0.2 0.4  
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 SCALE AS SHOWN AT A1



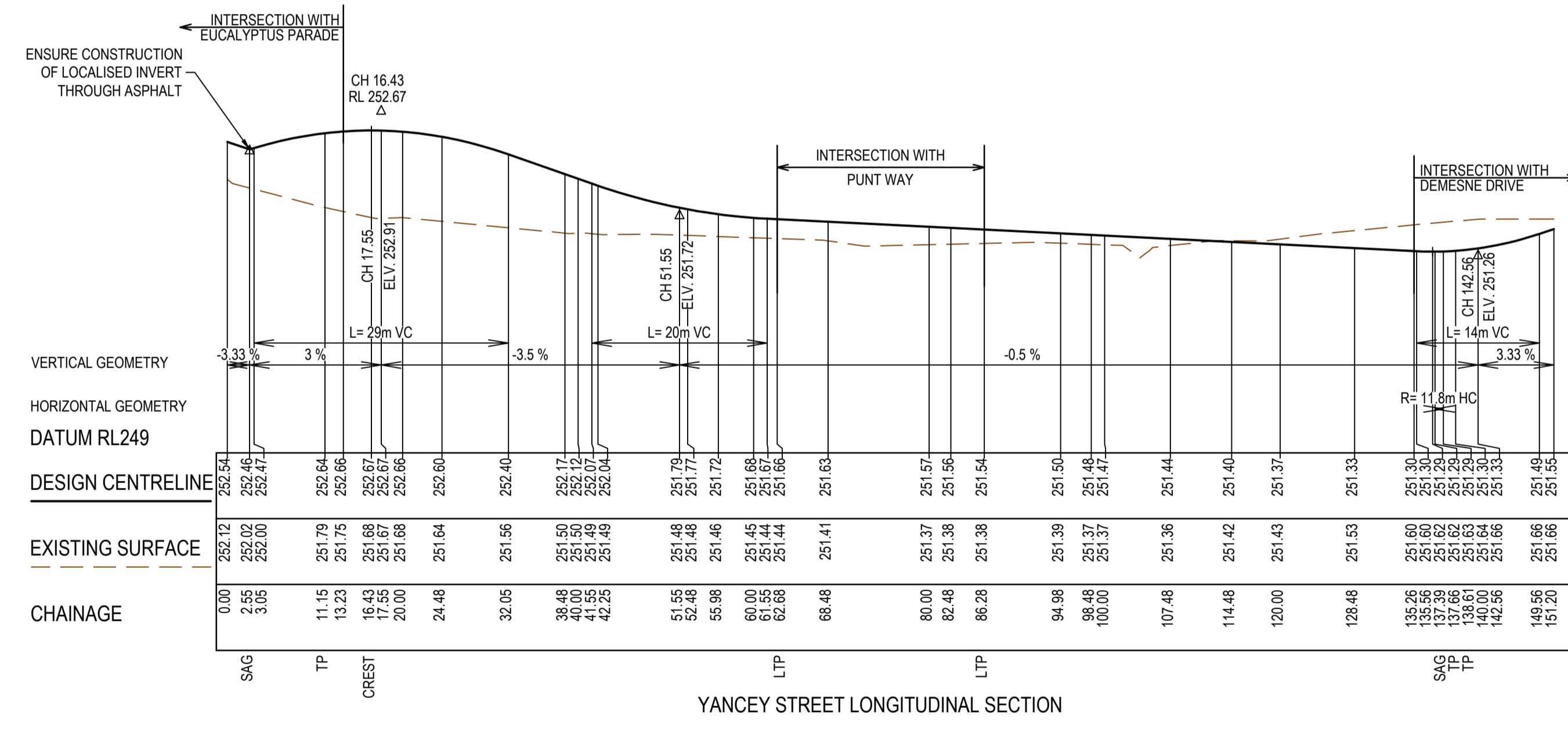
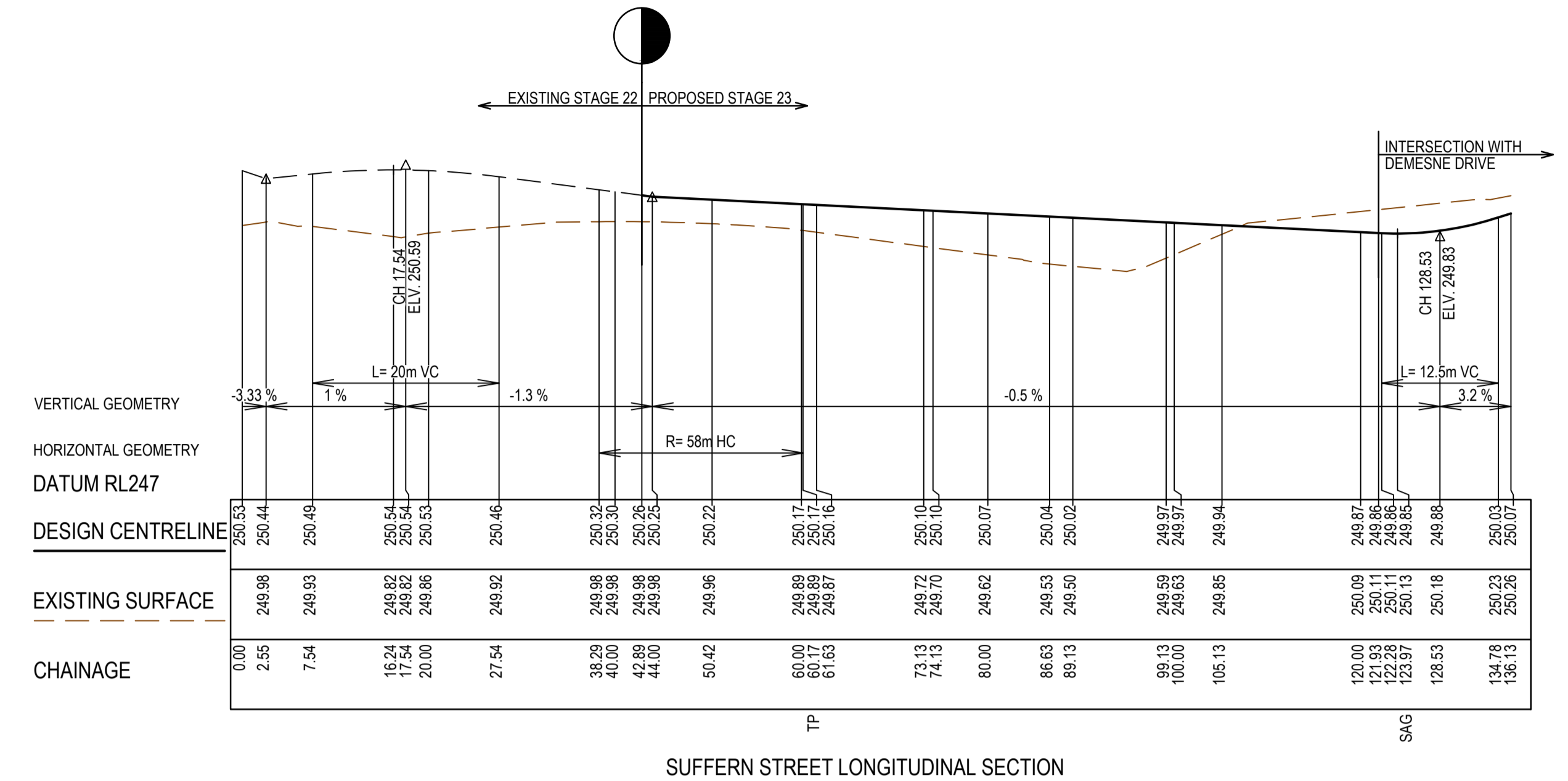
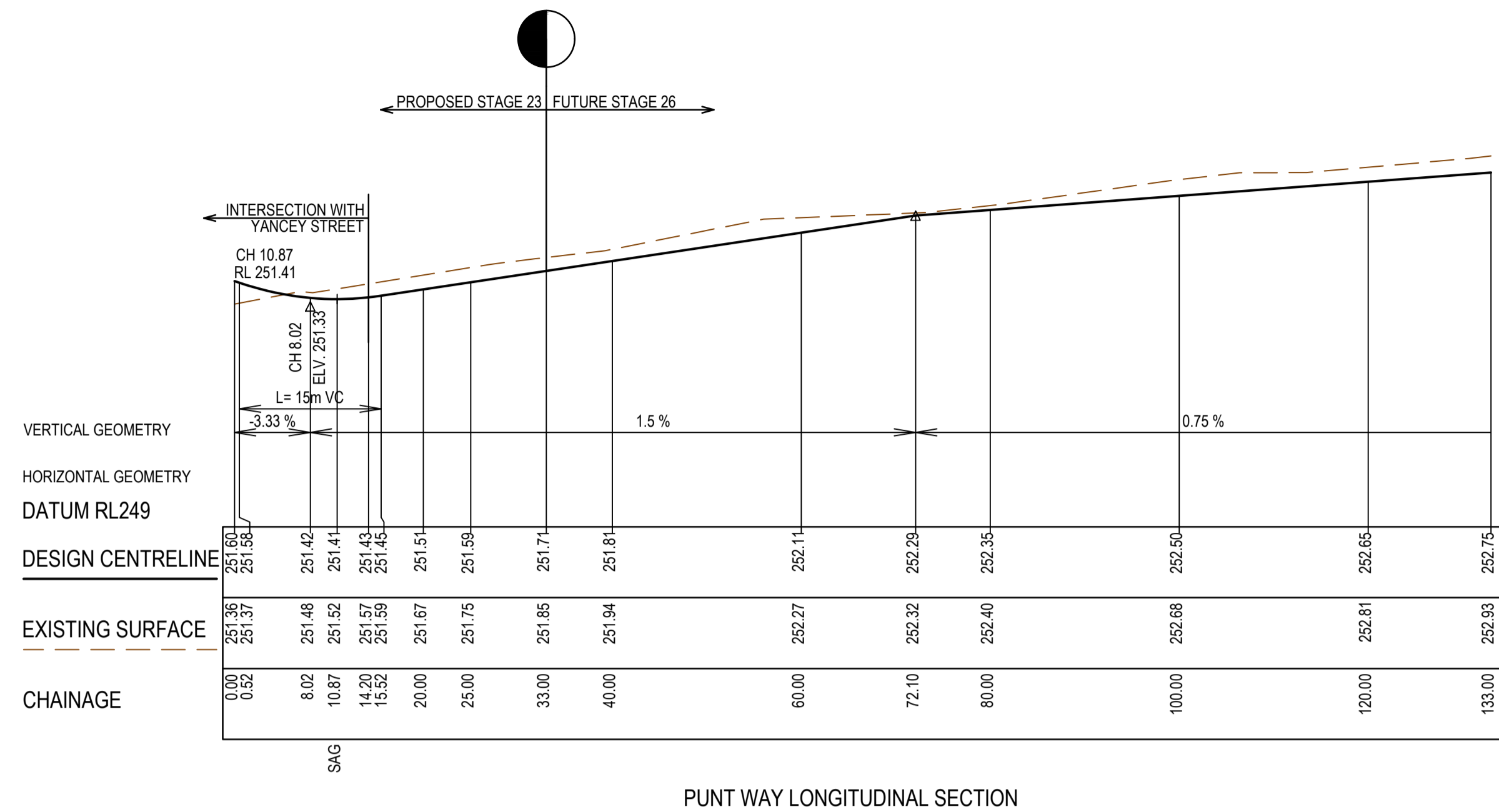
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 ABN 47 065 475 149  
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 Melbourne, VIC, 3008, Australia  
 03 9514 1500

**mirvac**

Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Intersection Detail plan - 2

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-182</b>	SHEET No. <b>09 of 26</b>	REVISION <b>2</b>
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Quality Management ISO 9001  
 OHS Management AS/NZS 4801  
 Environmental Management ISO 14001

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
 PERMIT REF. NO.

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 Scale H1:500, V1:50  
 SCALE AS SHOWN AT A1

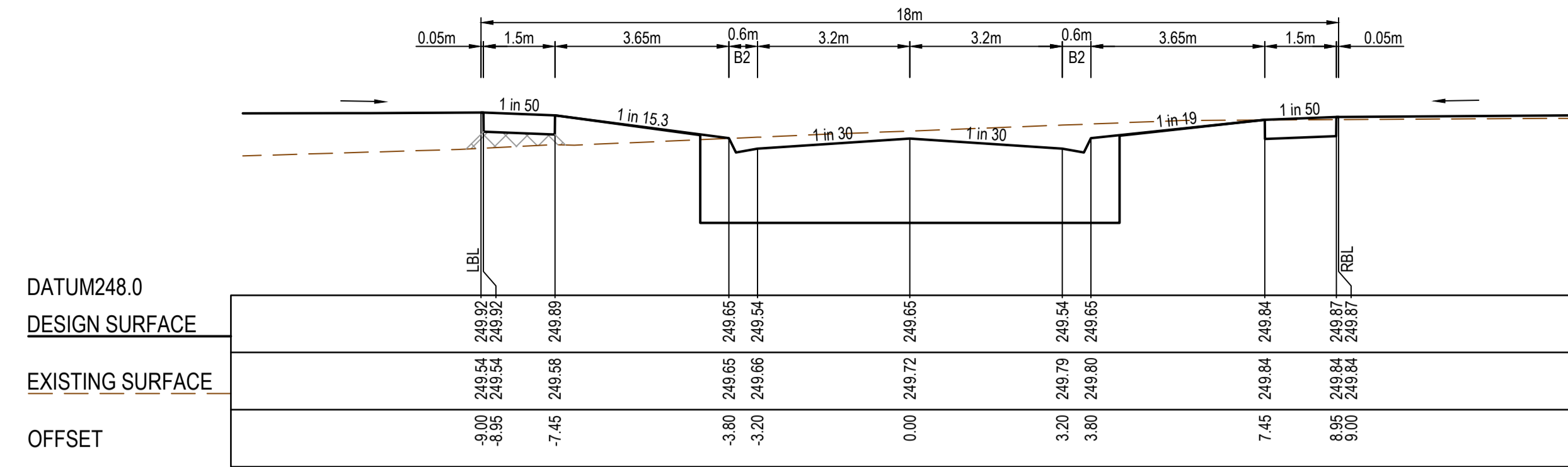
**SMEC**  
 Member of the Surlana Jurong Group  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

**mirvac**

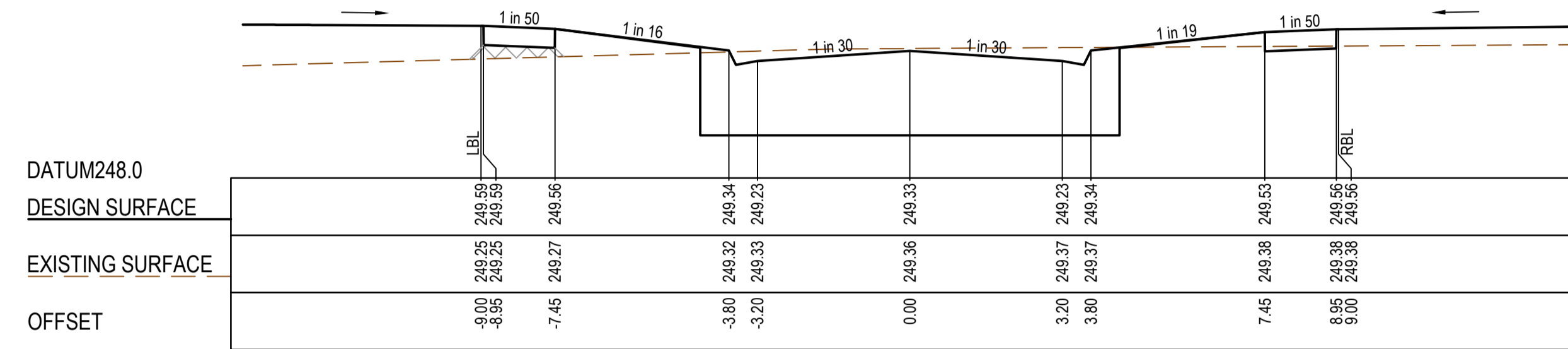
Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Longitudinal Section - 2

MELWAYS REF: 8M2  
 PROJECT / DRAWING No: 1700E-023-202  
 SHEET No: 11 of 26  
 REVISION: 2

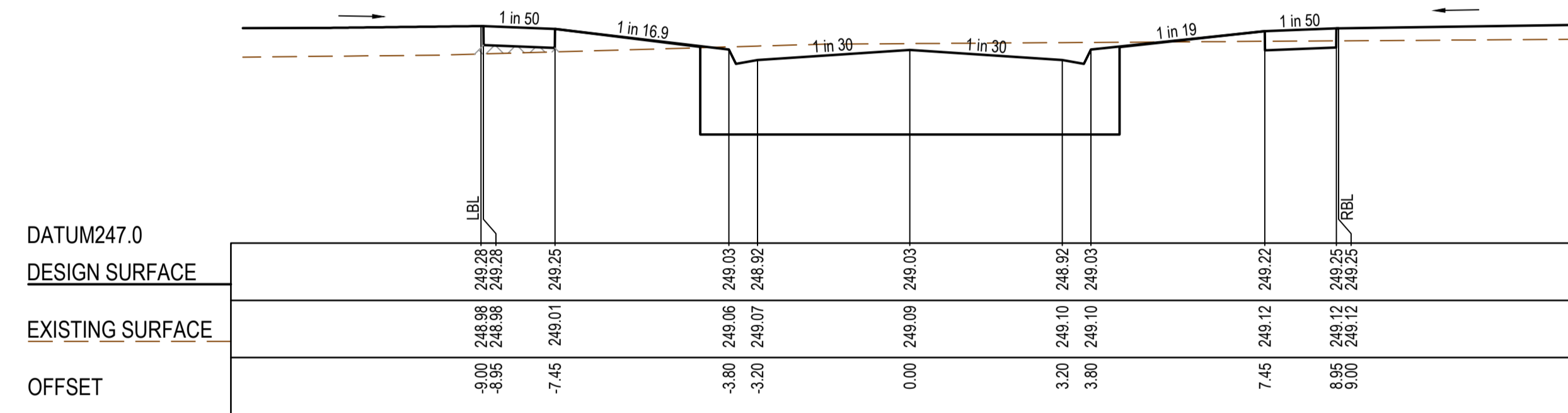
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



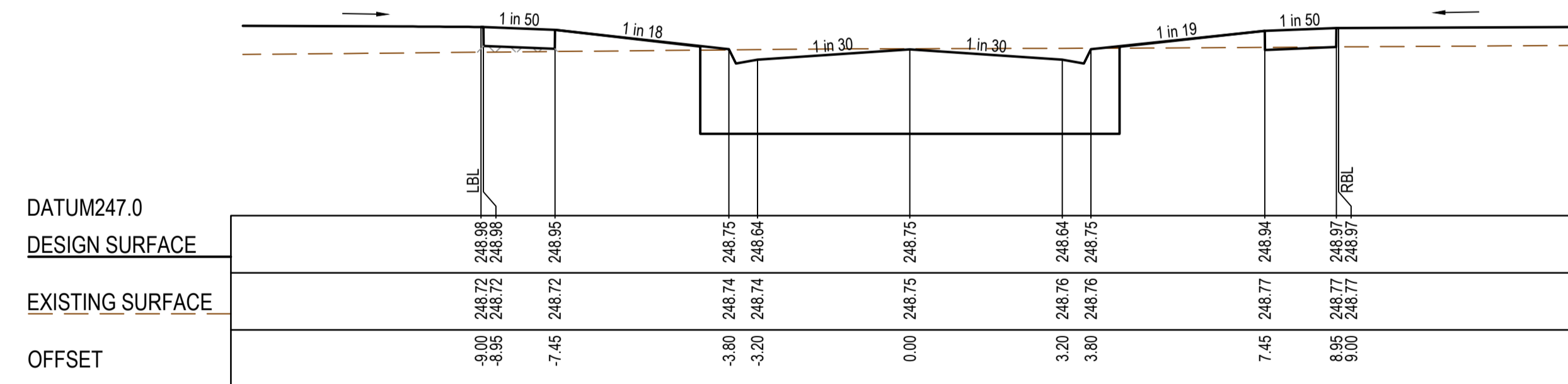
CH 167.68



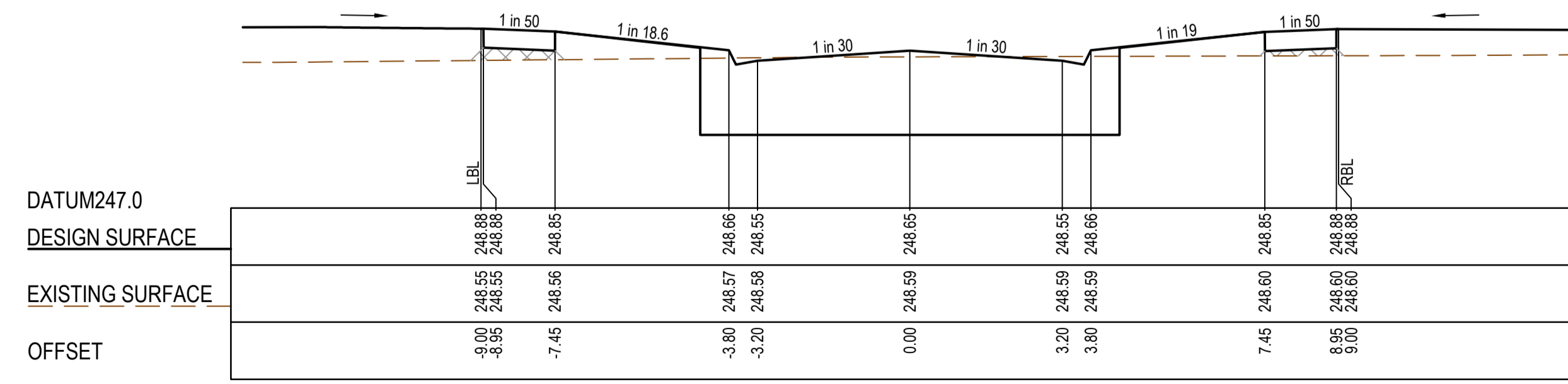
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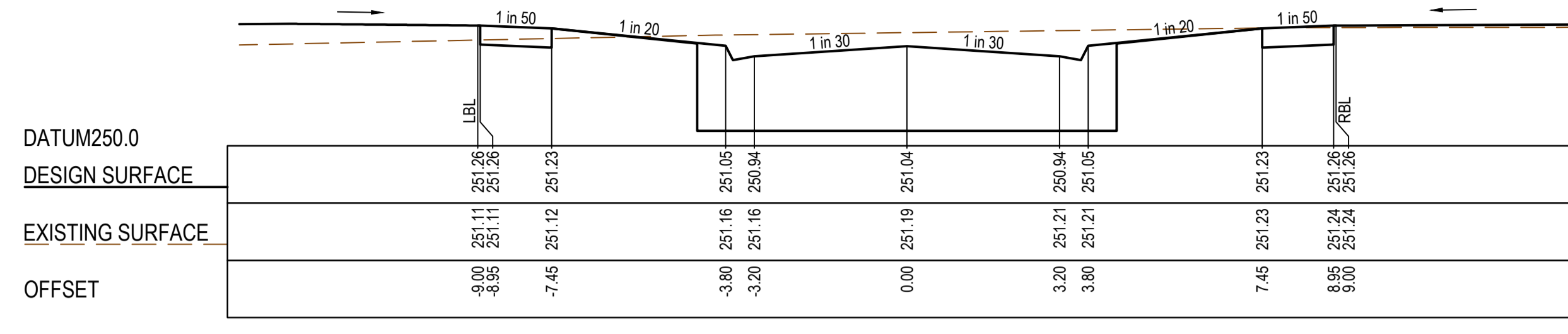
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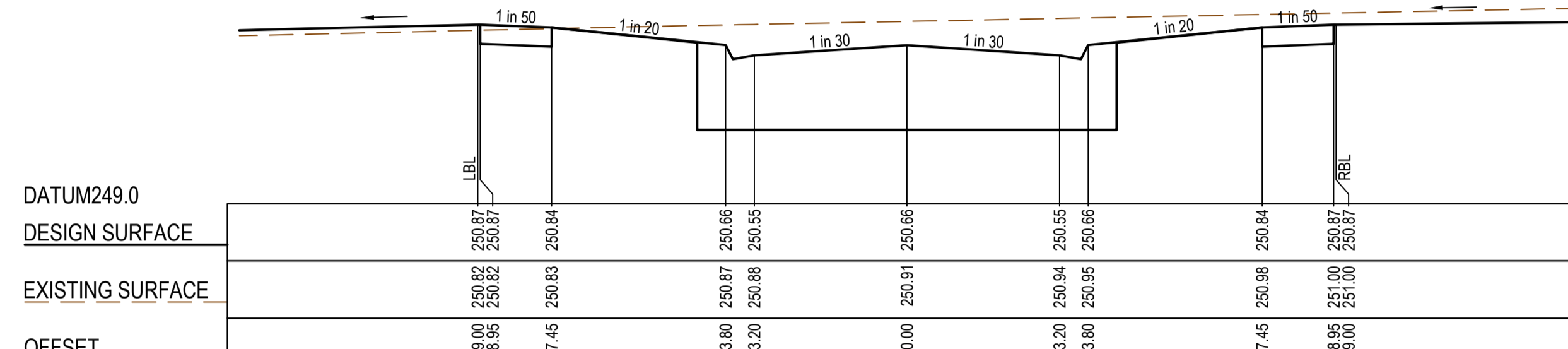
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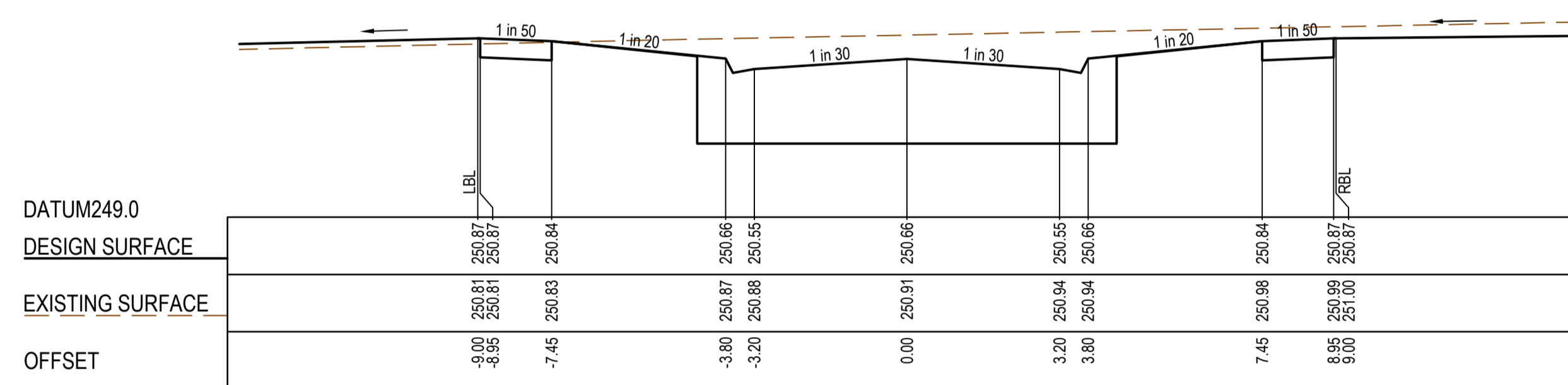
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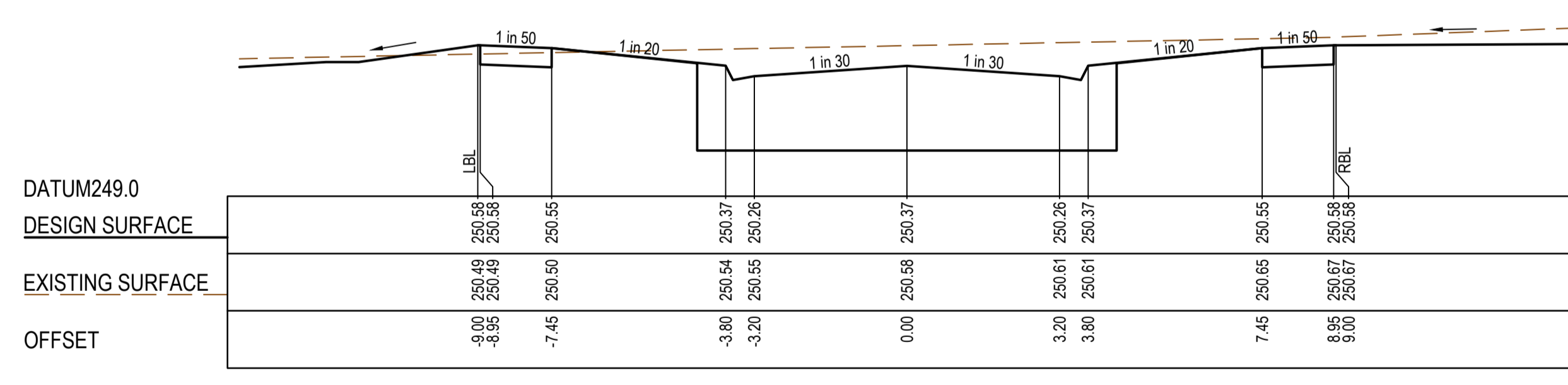
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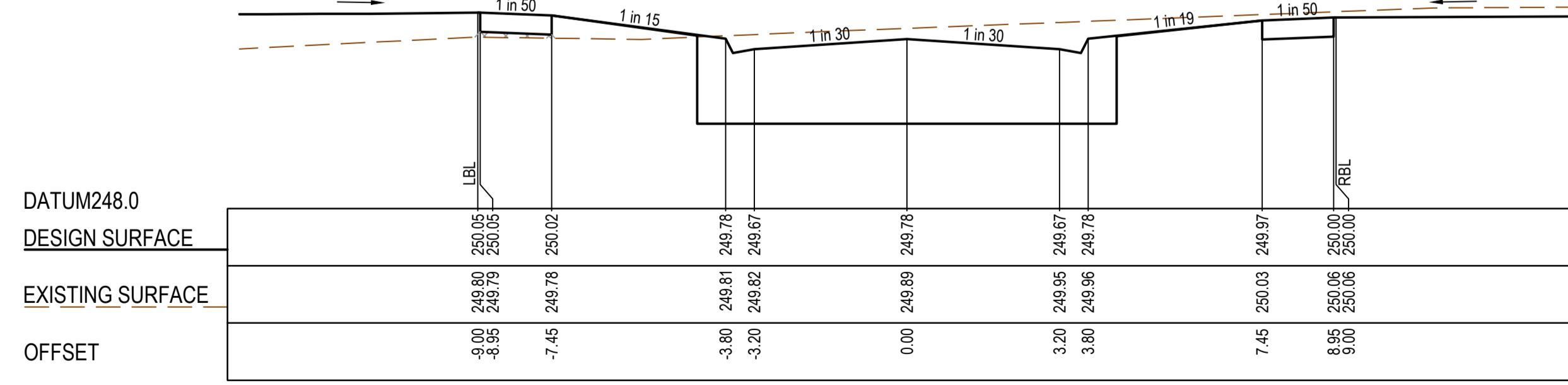
TPCH 208.23



CH 208.18



LTPCH 196.48



LTPCH 172.88

**AS CONSTRUCTED PLANS**

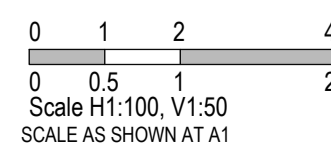
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PLAN OF SUB. NO.

PERMIT REF. NO.

**AS CONSTRUCTED**



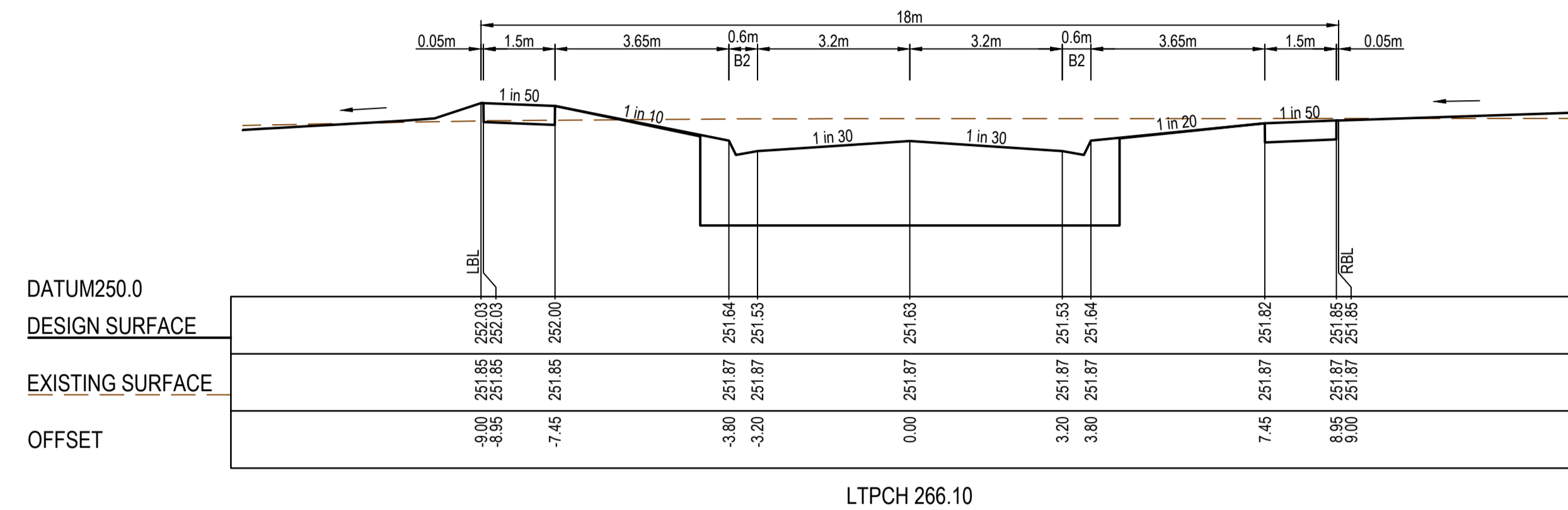
Collins Square, Tower 4, Level 20, 727 Collins St  
Melbourne, VIC, 3008, Australia  
03 9514 1500



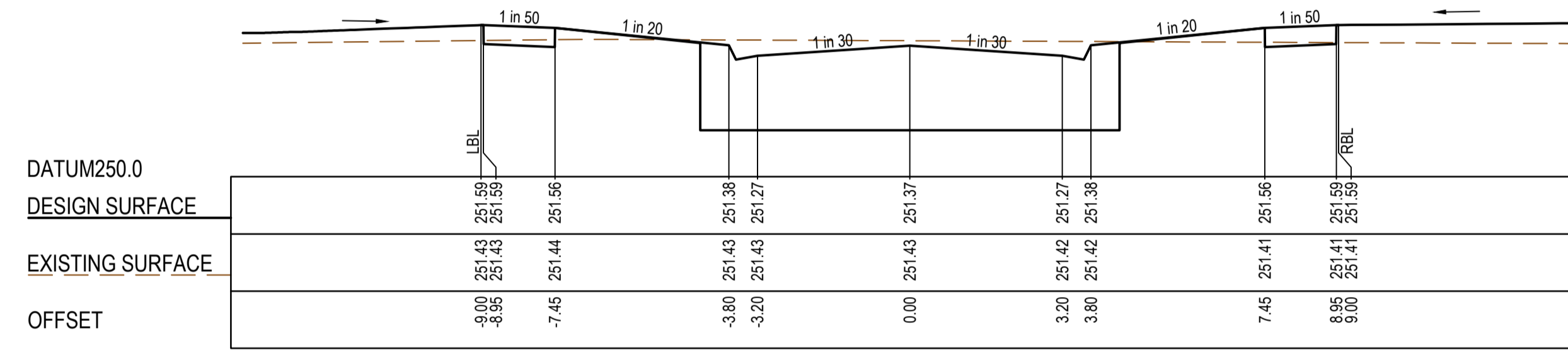
Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Demense Drive 1,  
Ch 120.68 - Ch 223.63

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No <b>1700E-023-251</b>	SHEET No <b>12 of 26</b>	REVISION <b>2</b>
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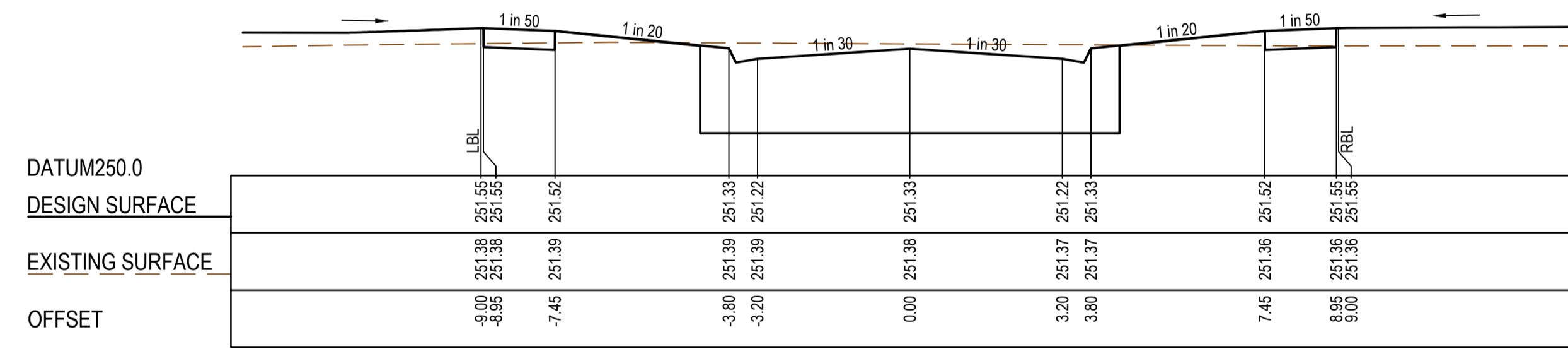
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



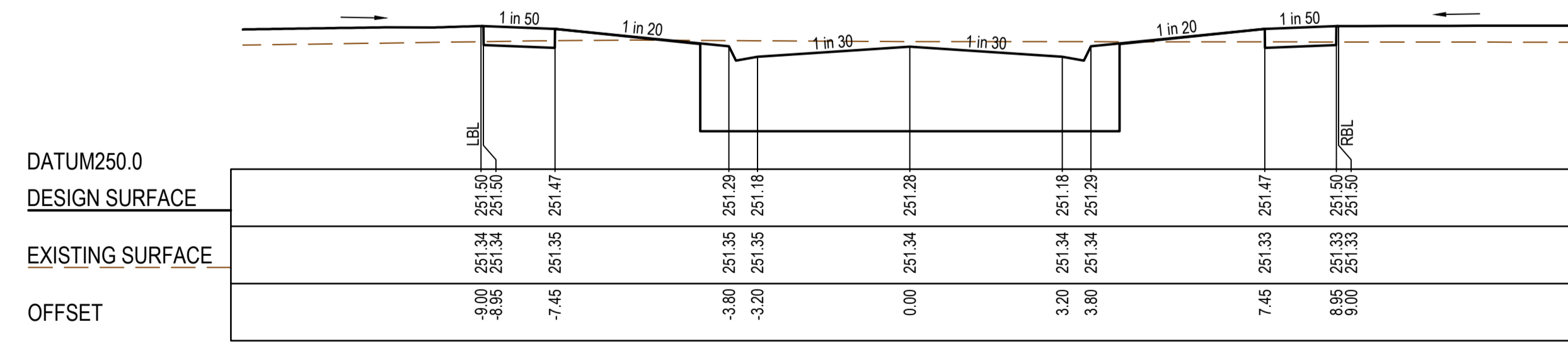
LTPCH 266.10



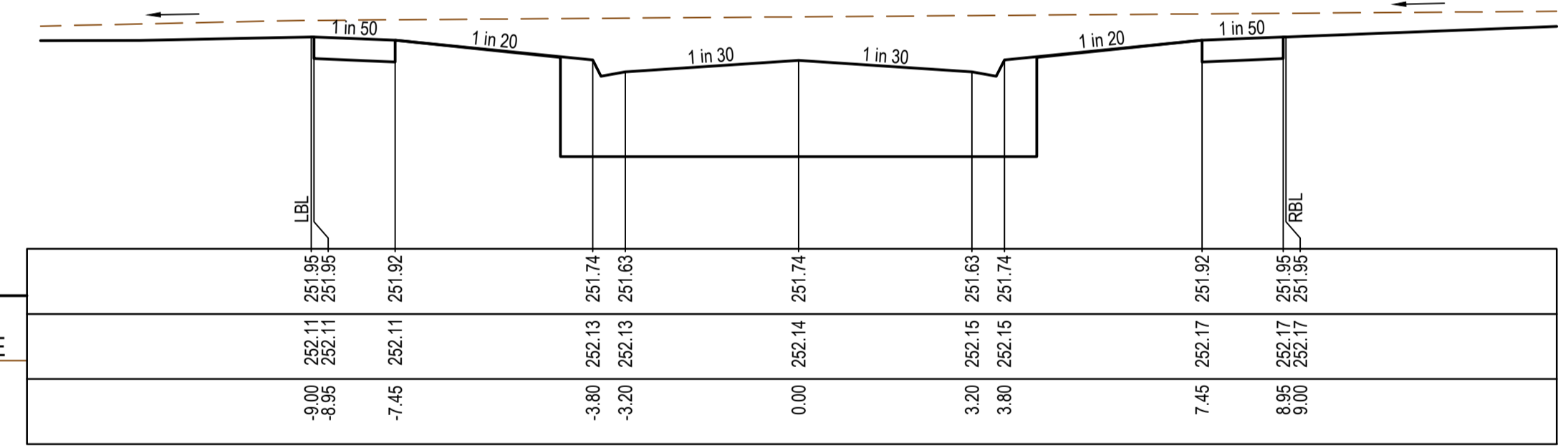
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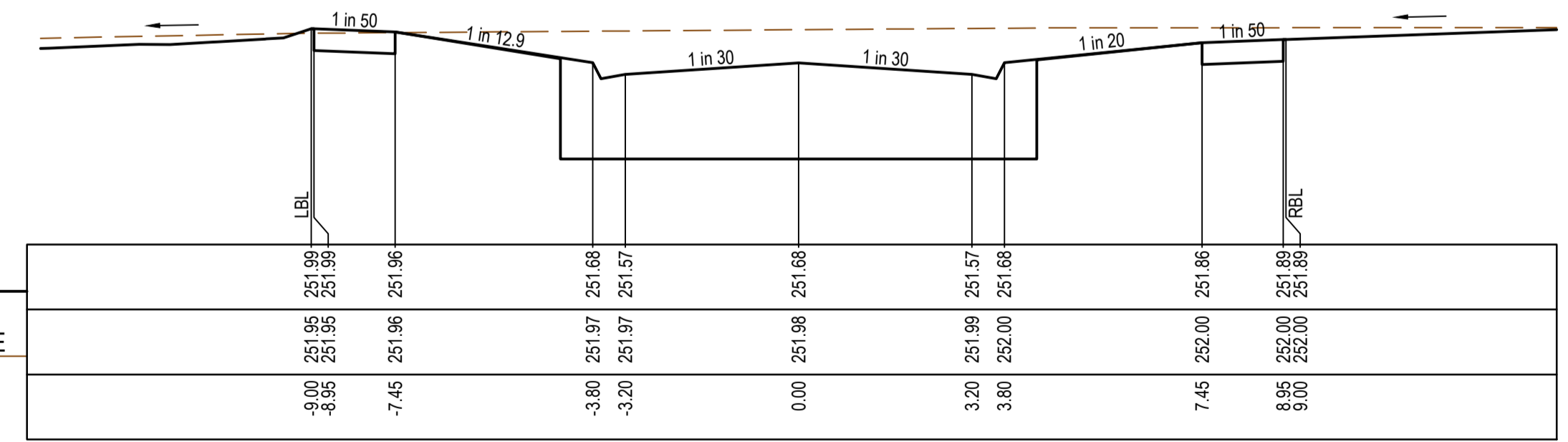
CH 237.22



TPCH 234.77



CH 286.80



CH 274.30

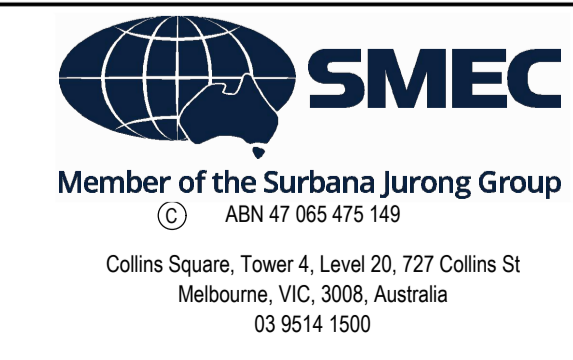
**AS CONSTRUCTED PLANS**

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**AS CONSTRUCTED**

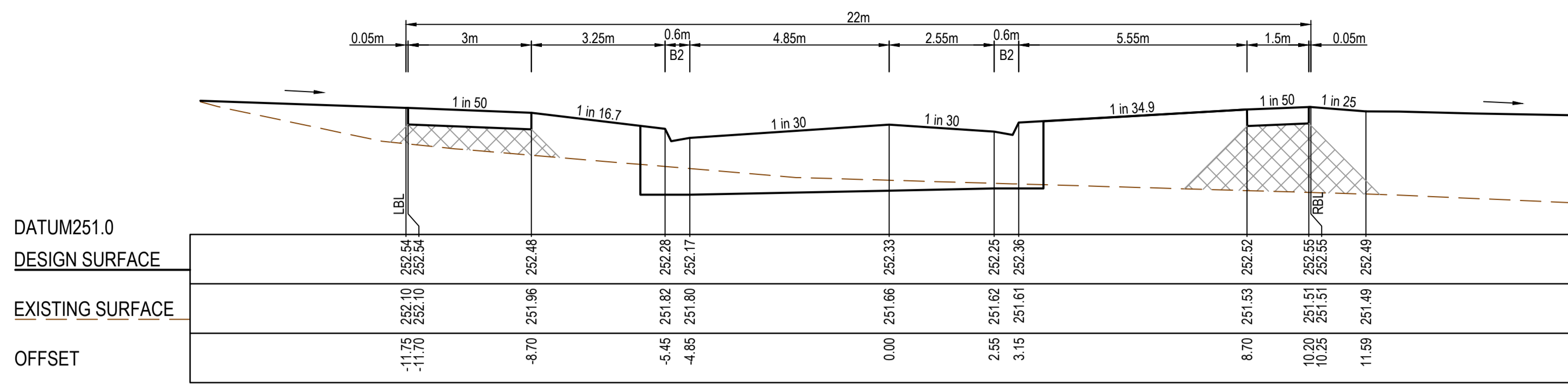
PLAN OF SUB. NO.	
PERMIT REF. NO.	
SCALE	0 1 2 4 0 0.5 1 1:50 SCALE AS SHOWN AT A1



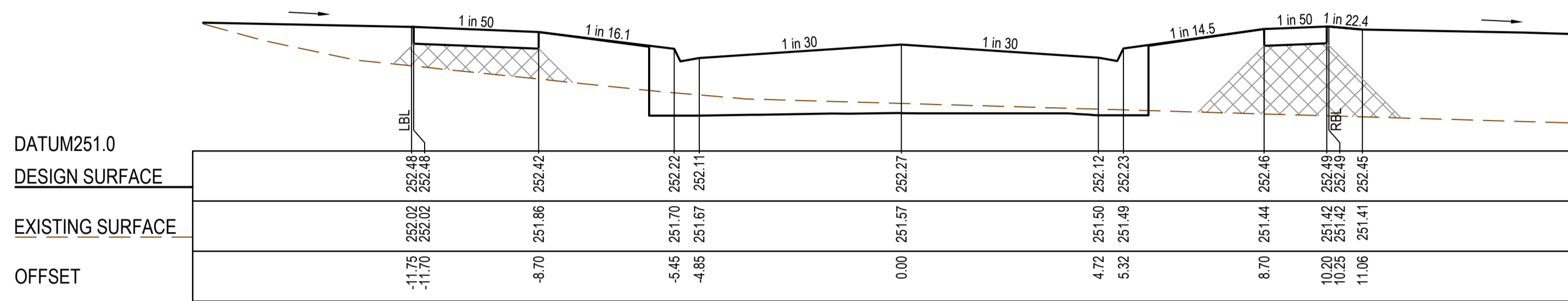
Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Demense Drive 2,  
Ch 234.77 - Ch 286.80

MELWAYS REF	PROJECT / DRAWING No	SHEET No	REVISION
8M2	1700E-023-252	13 of 26	2

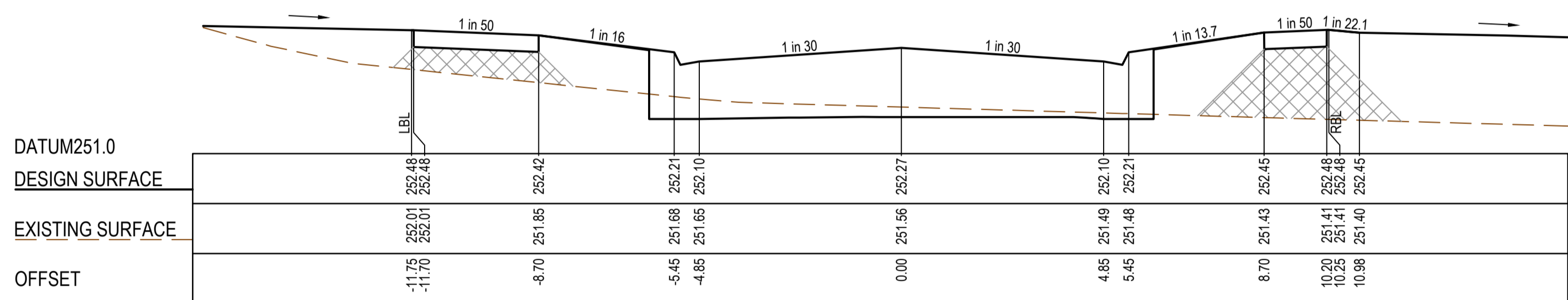
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



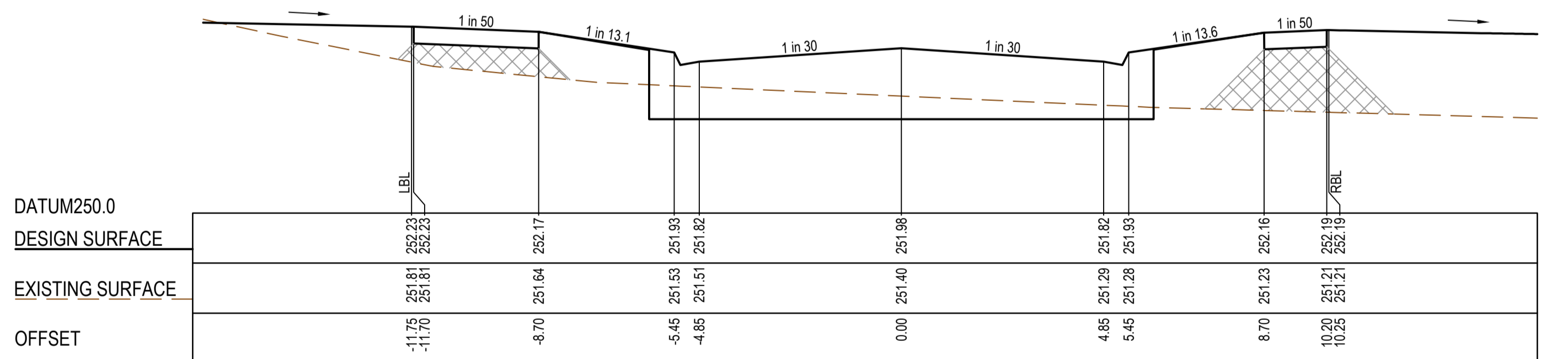
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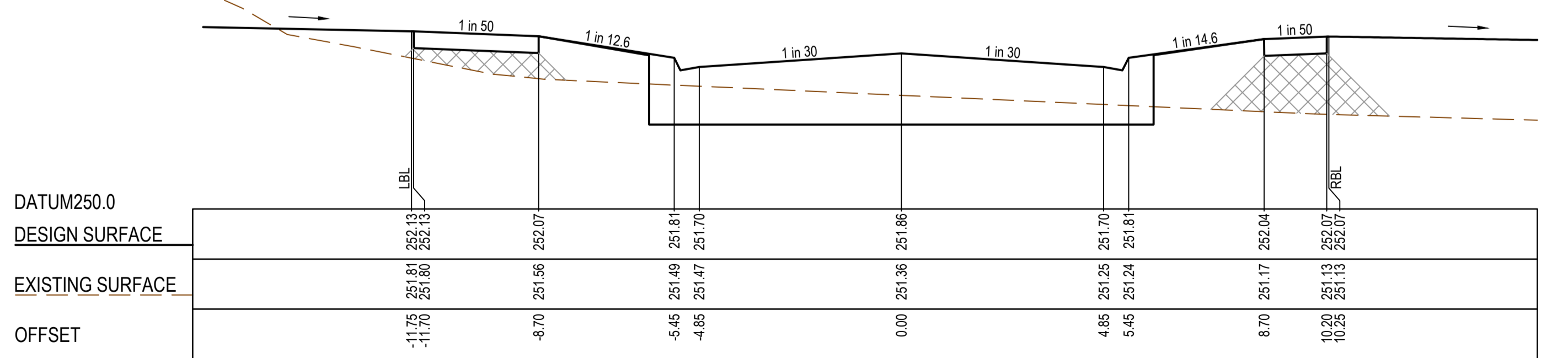
CH 207.22



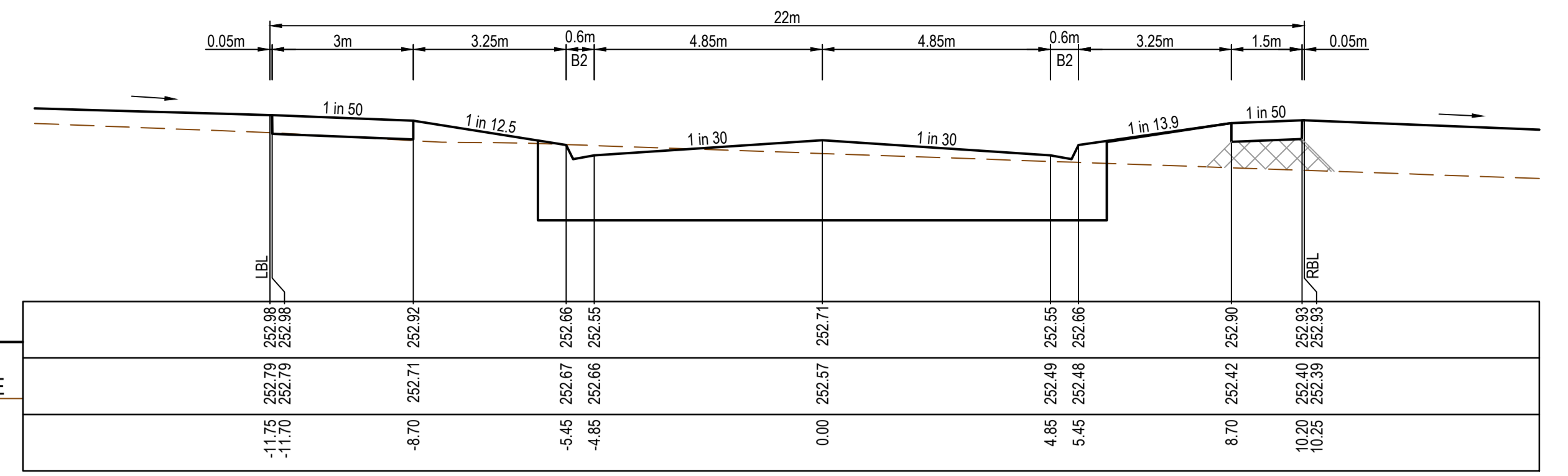
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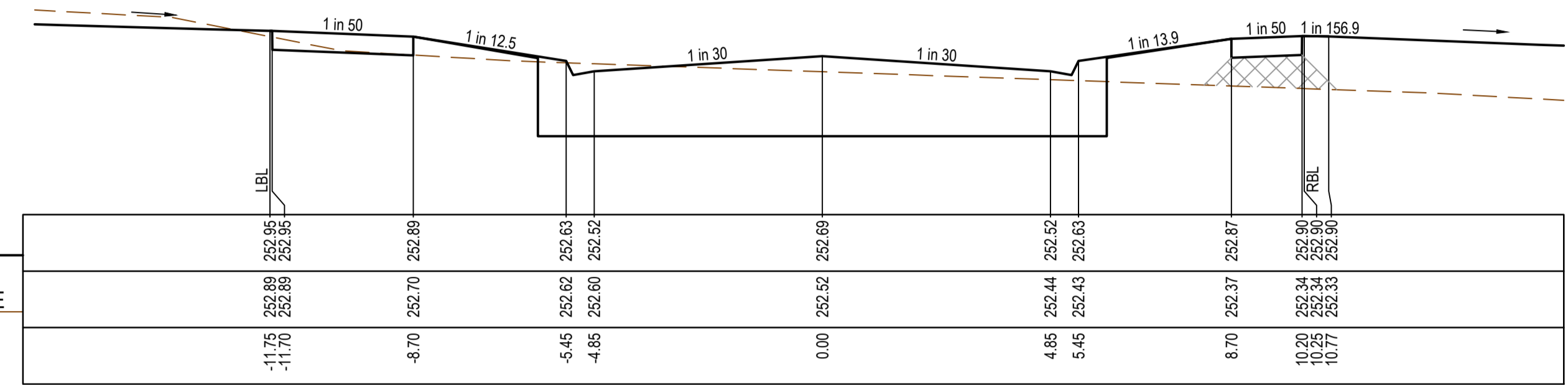
CH 194.72



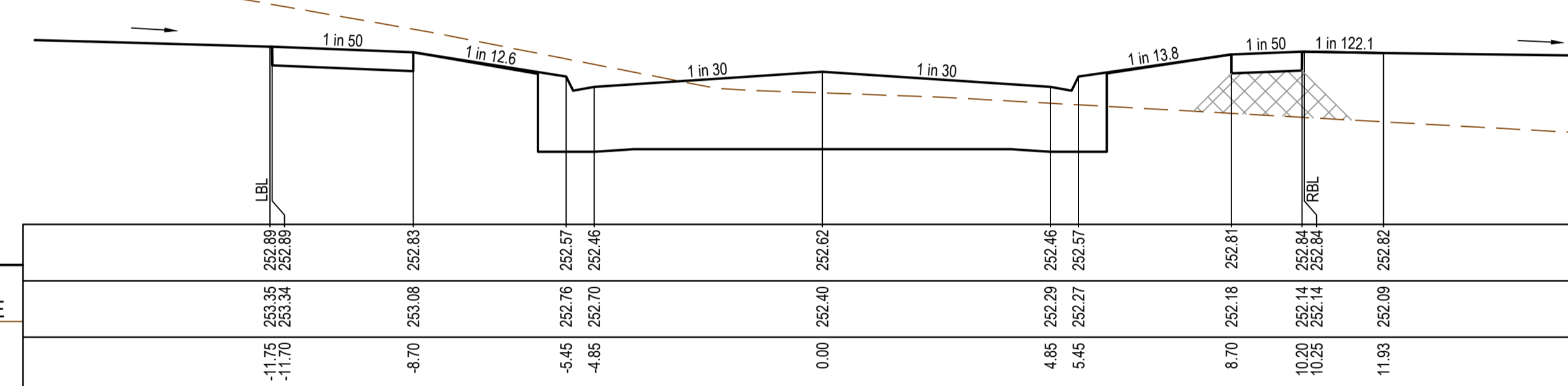
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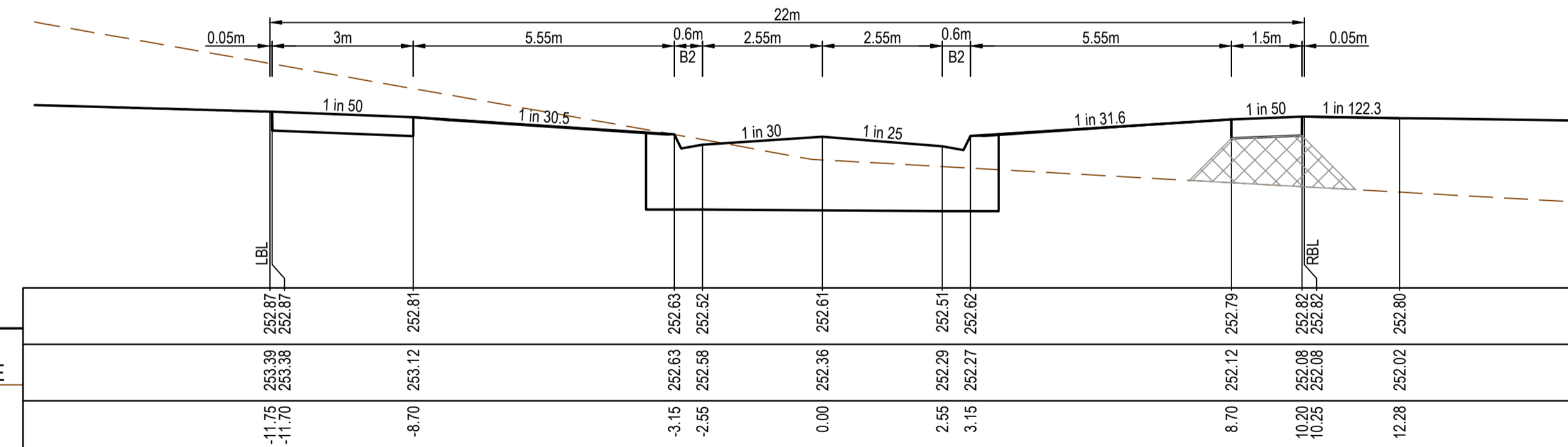
CH 258.72



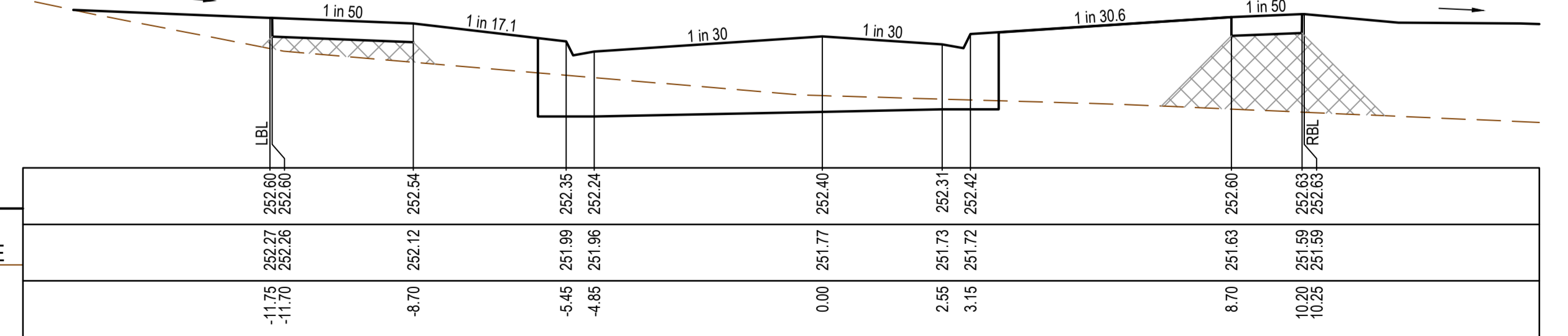
CH 253.22



TPCH 240.90



TPCH 237.52



RTPCH 213.92

**AS CONSTRUCTED PLANS**

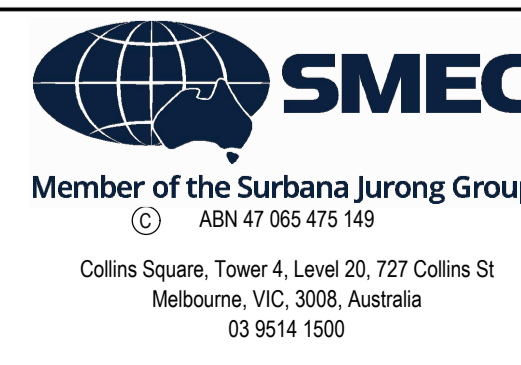
The purpose of these as-constructed plans is to update the design drawings to show significant changes which occurred during construction. Note that the levels shown on these plans are design levels, and have not been verified by survey. All information shown on these plans should be verified on site. SMEC Australia Pty Ltd accept no responsibility for loss or damages resulting from the inappropriate usage of these plans.



**AS CONSTRUCTED**

PLAN OF SUB. NO.	
PERMIT REF. NO.	

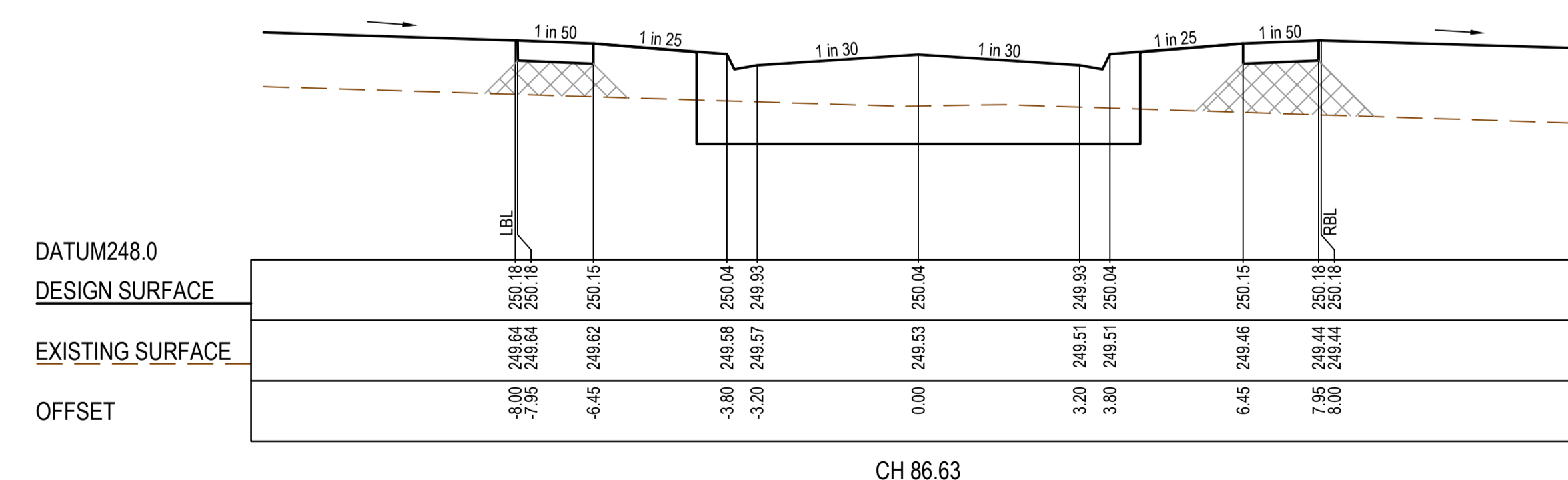
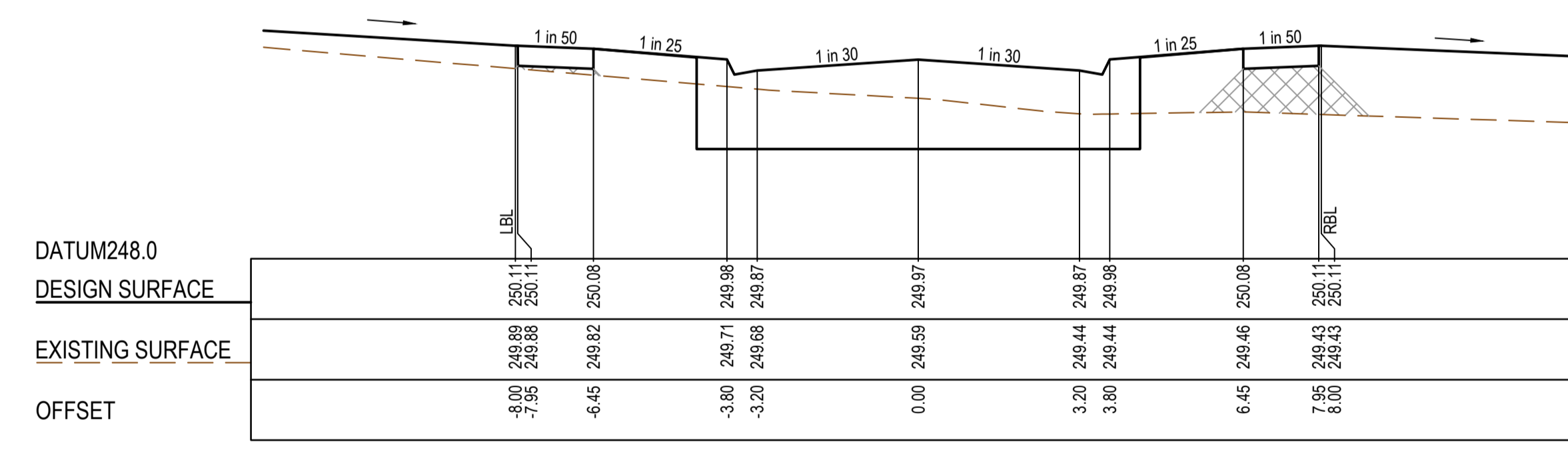
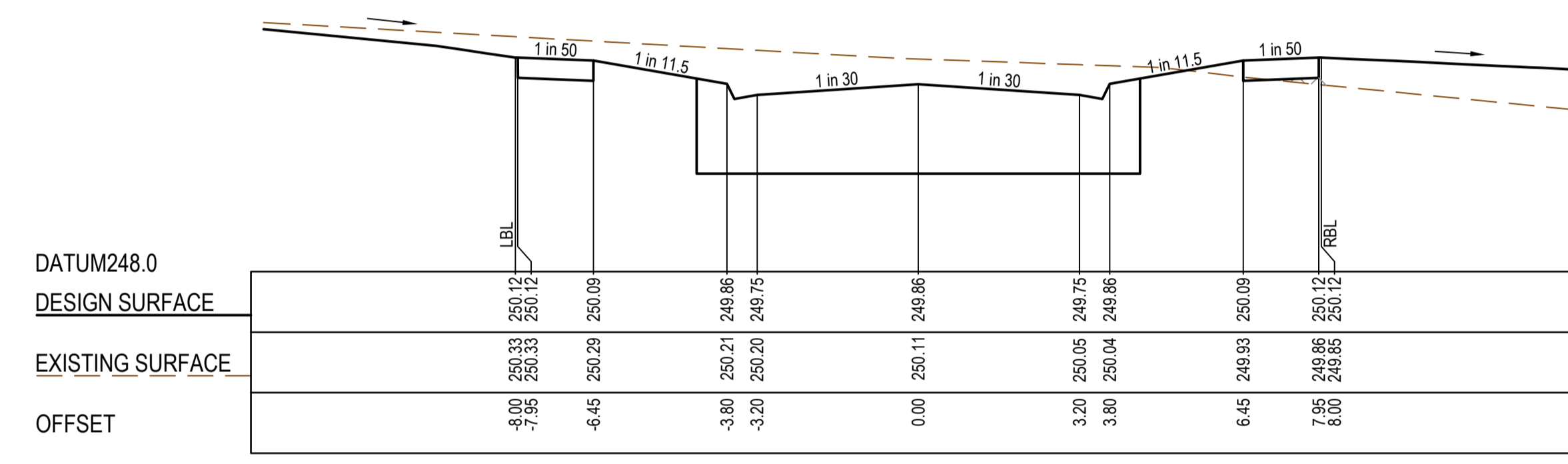
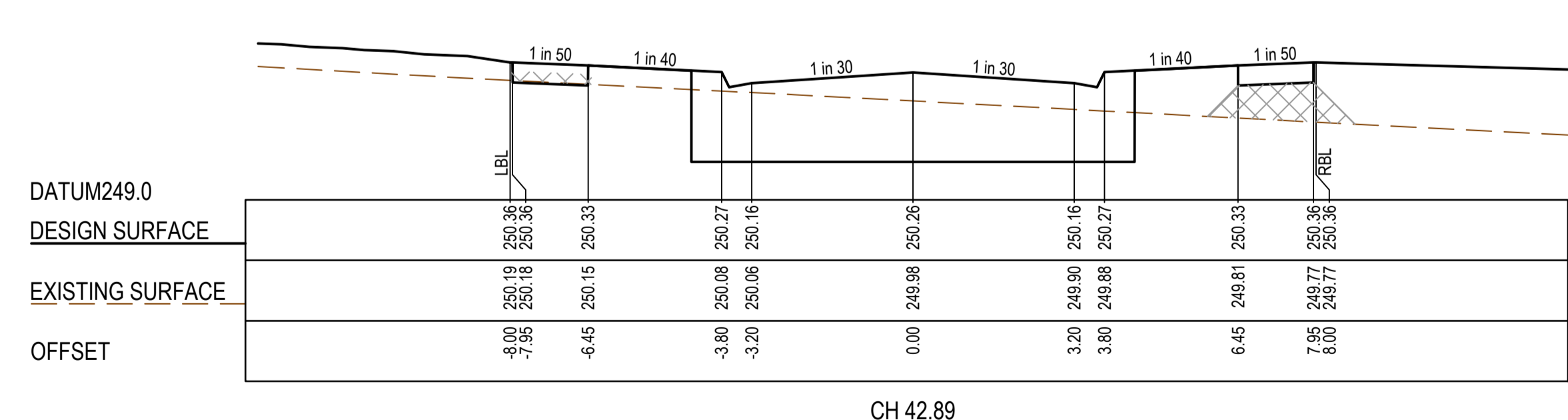
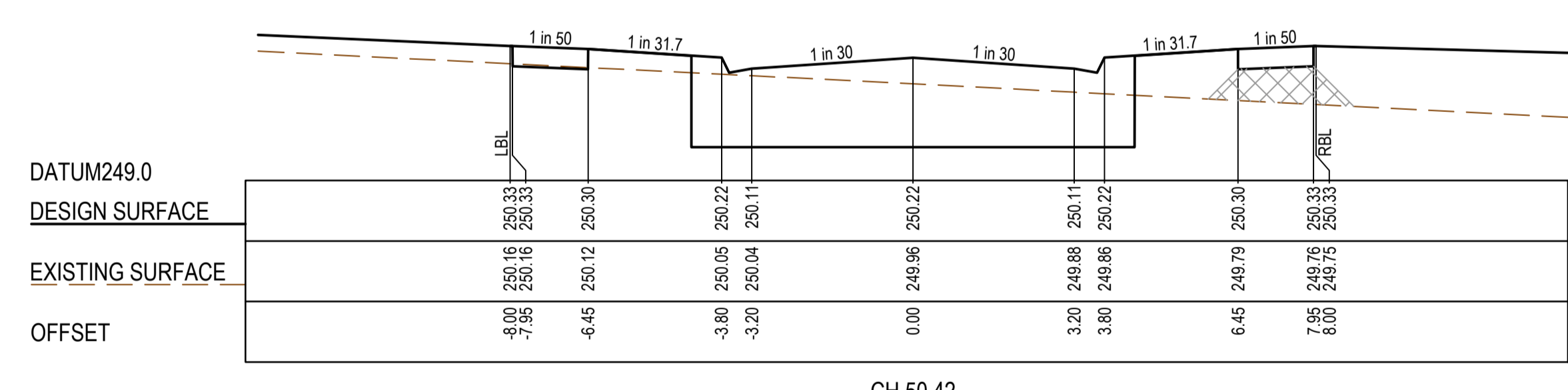
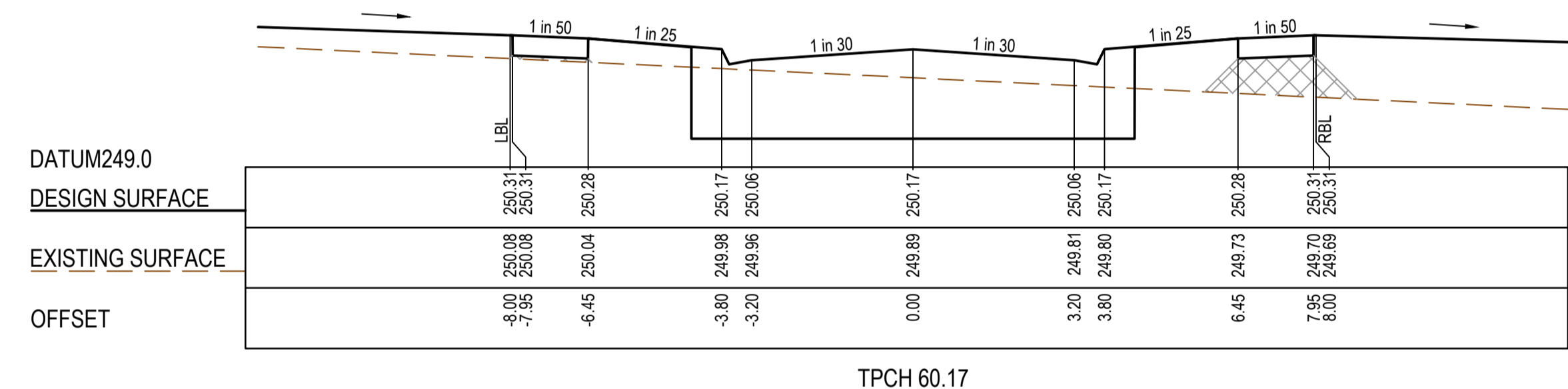
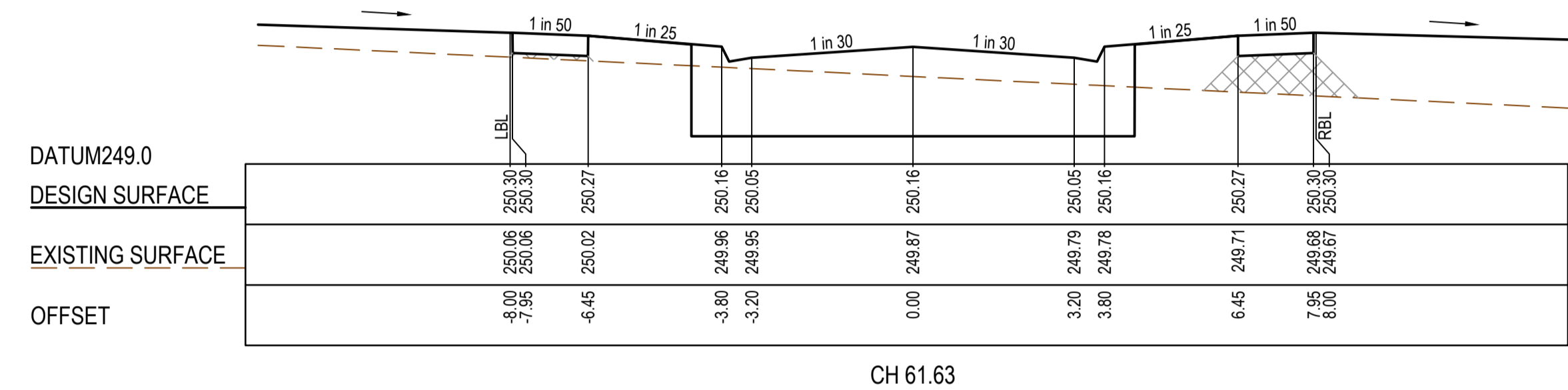
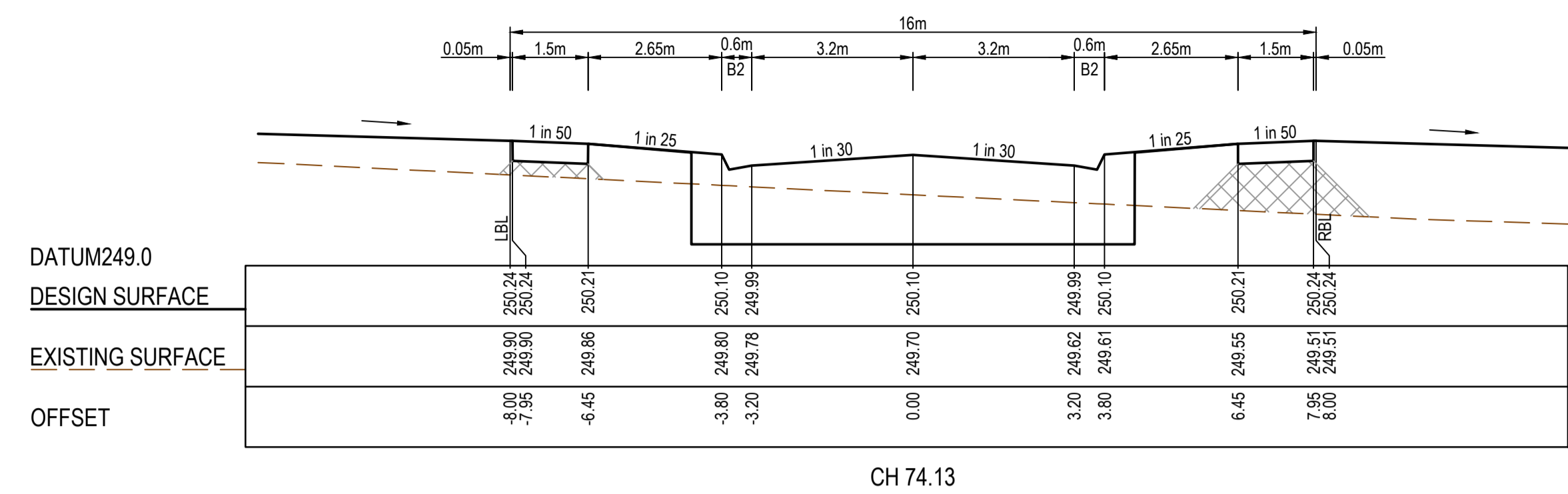
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Scale H1:100, V1:50  
SCALE AS SHOWN AT A1



Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Eucalyptus Parade  
Ch 190.22 - Ch 258.72

MELWAYS REF 8M2	PROJECT / DRAWING No 1700E-023-253	SHEET No 14 of 26	REVISION 1
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STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE



**AS CONSTRUCTED PLANS**  
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 Environmental Management ISO 14001  
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PLAN OF SUB. NO.  
 PERMIT REF. NO.

**AS CONSTRUCTED**

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 Scale H1:100, V1:50  
 SCALE AS SHOWN AT 1

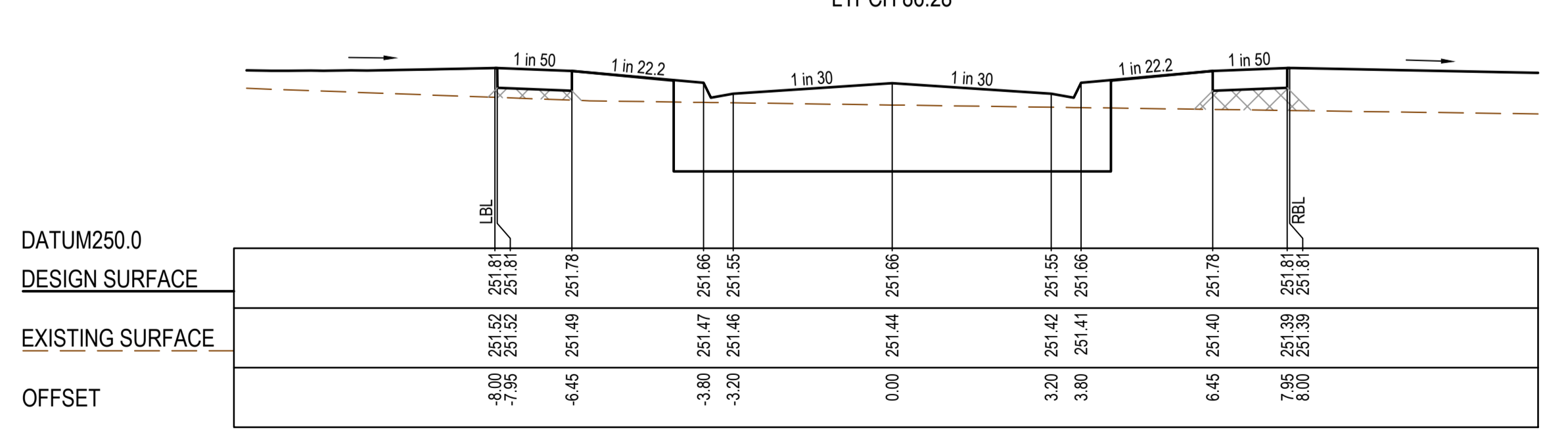
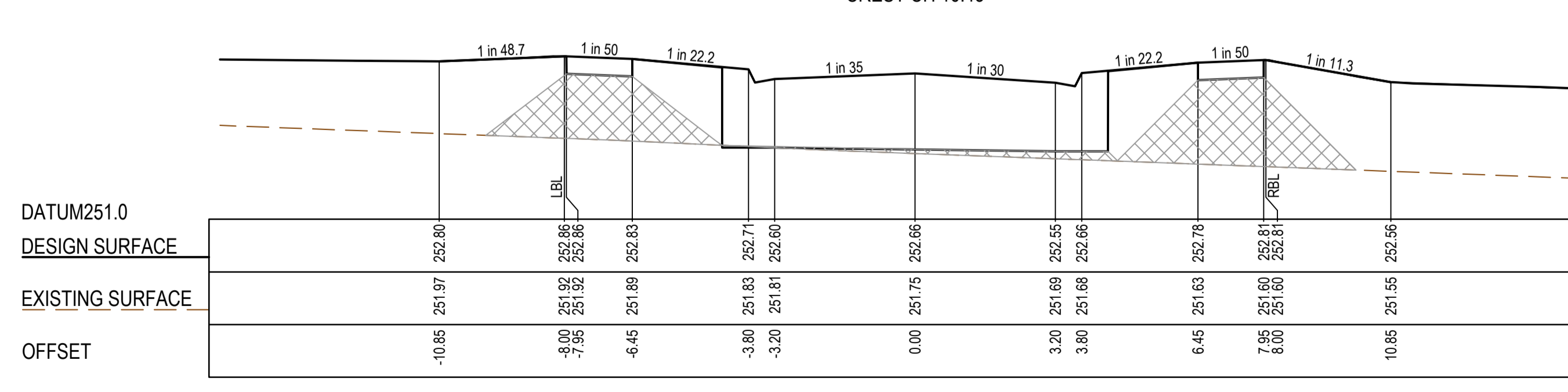
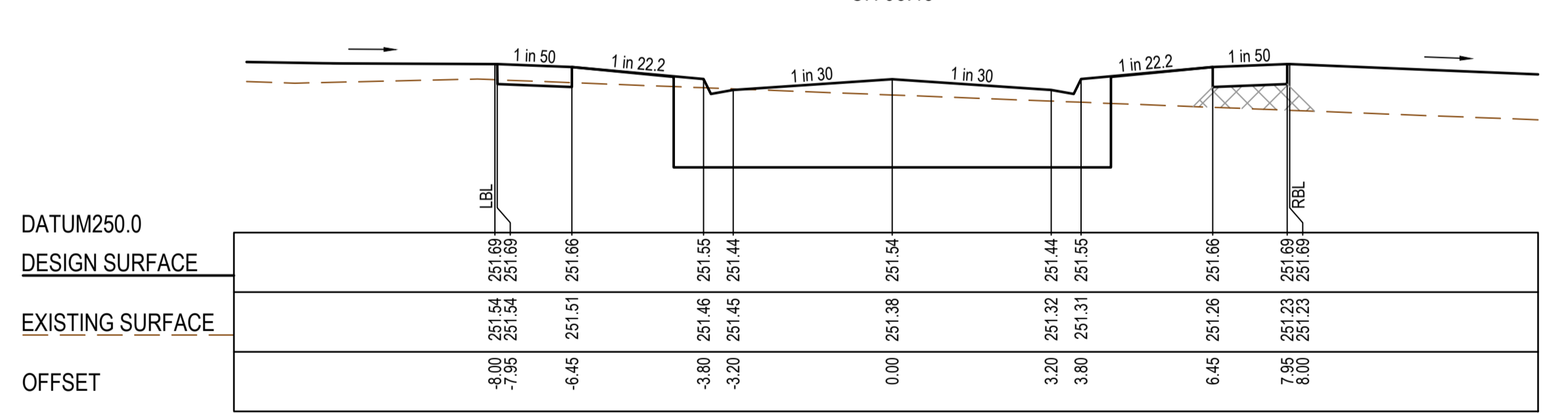
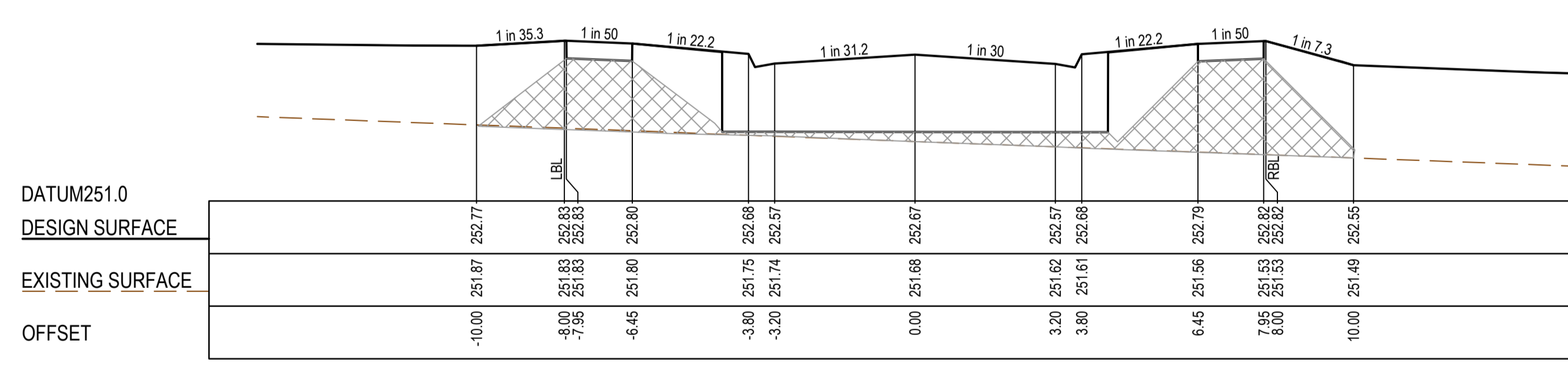
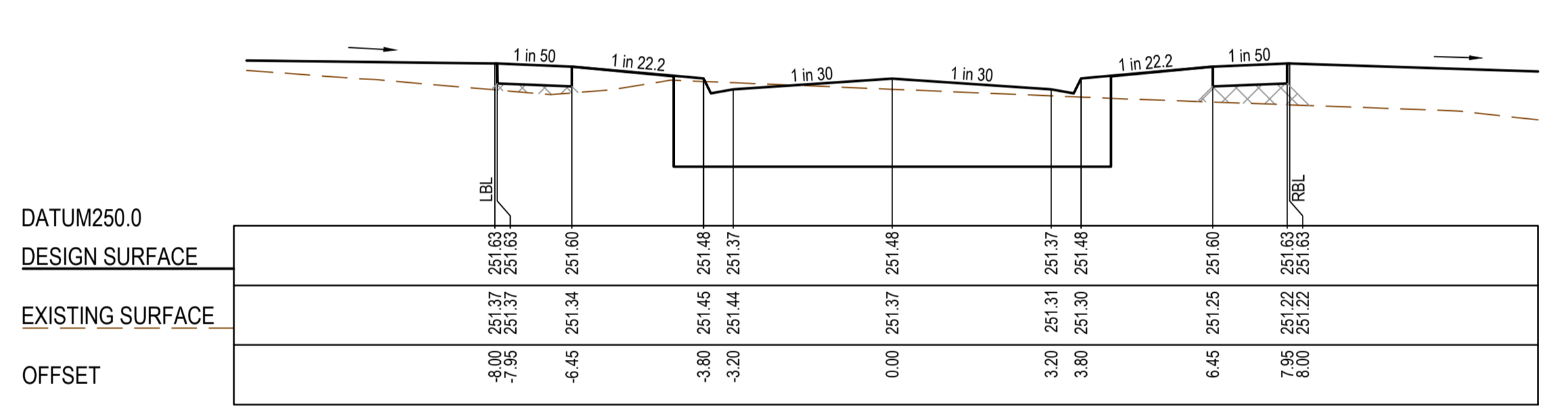
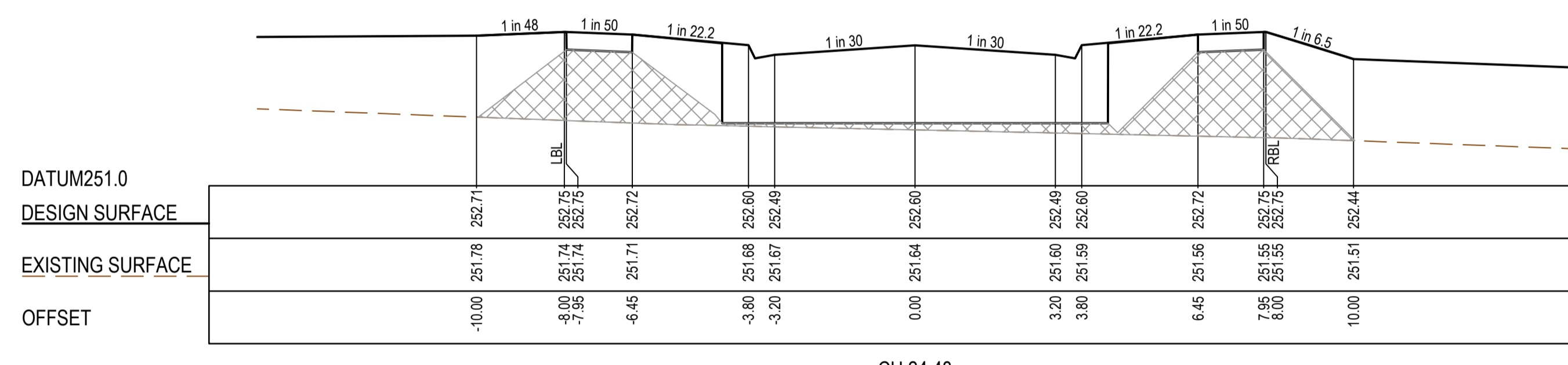
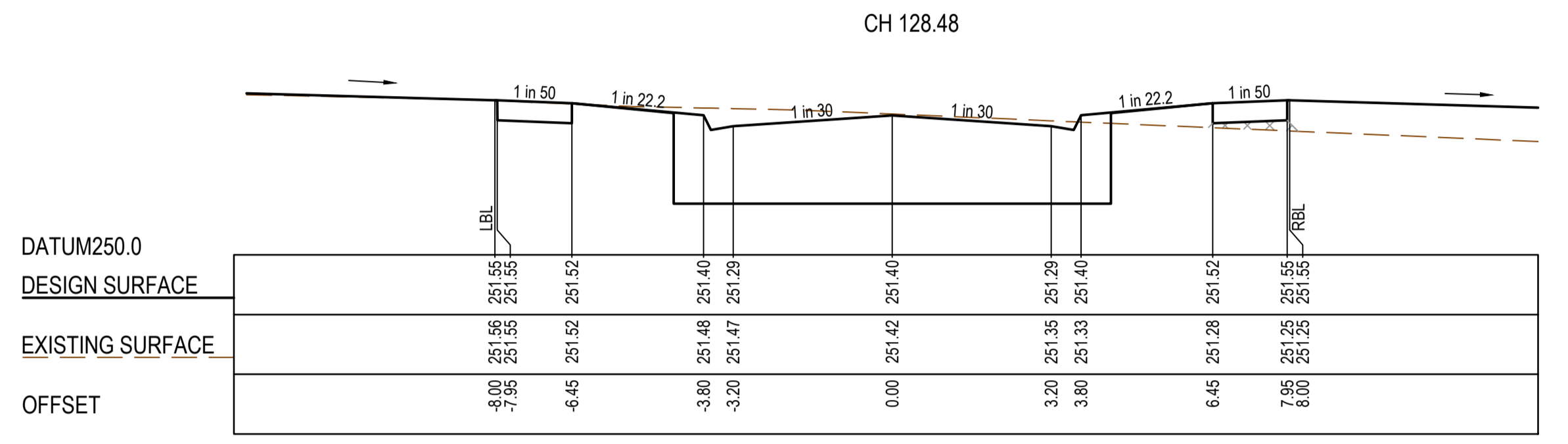
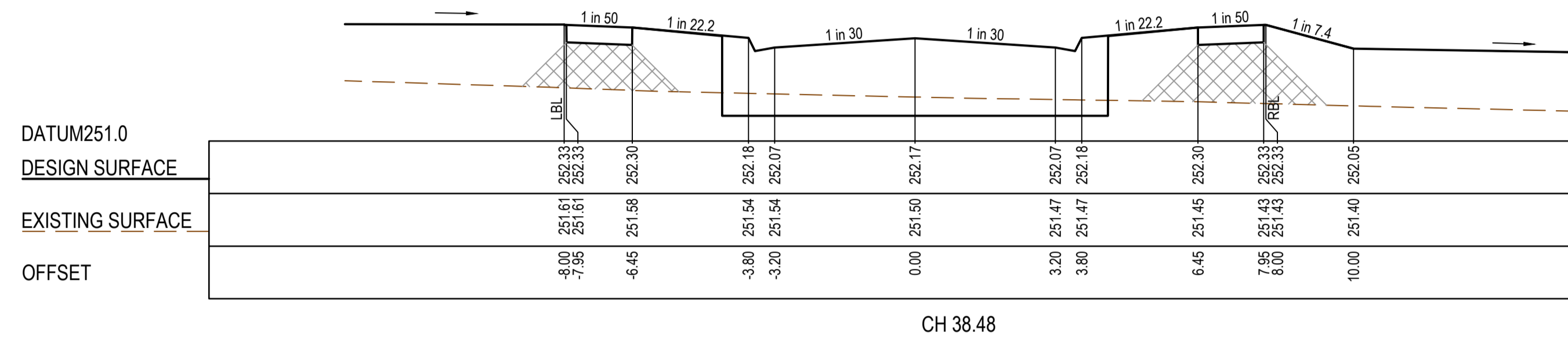
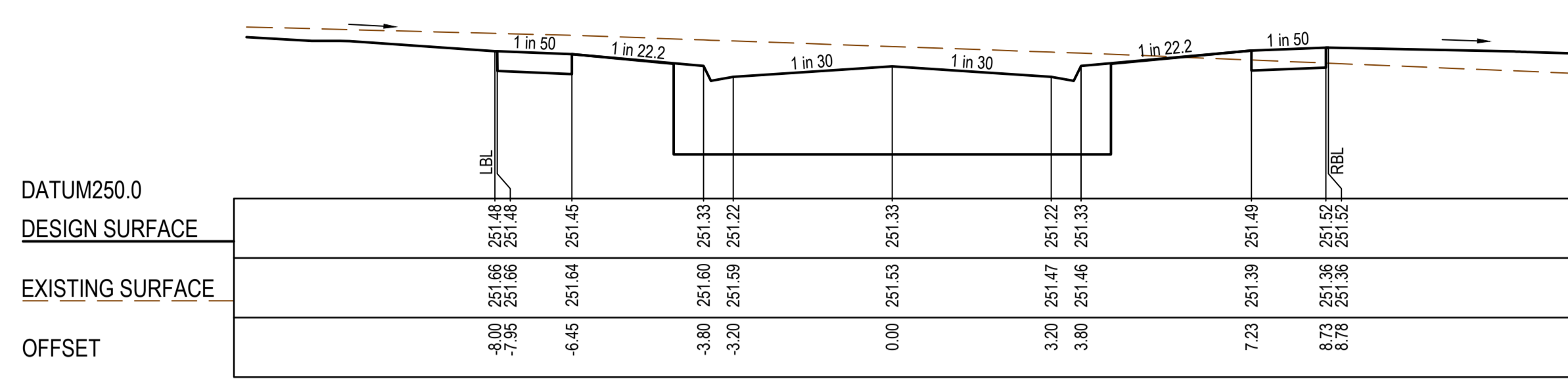
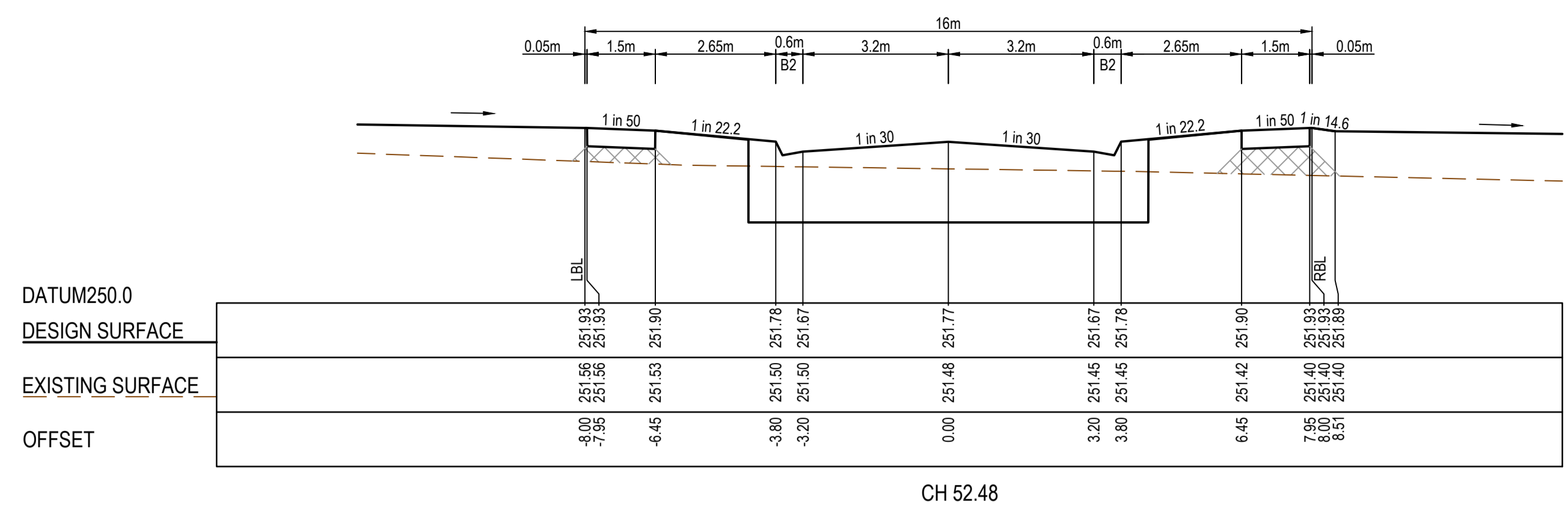
**SMEC**  
 Member of the Surlana Jurong Group  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
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 03 9514 1500

**mirvac**

Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Cross Sections: Suffern Street  
 Ch 42.89 - Ch 121.93

MELWAYS REF: 8M2  
 PROJECT/DRAWING No: 1700E-023-254  
 SHEET No: 15 of 26  
 REVISION: 1

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



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 Environmental Management ISO 14001

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
 PERMIT REF. NO.

0 1 2 4  
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 Scale H1:100, V1:50  
 SCALE AS SHOWN AT A1

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 Member of the Surlana Jurong Group  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

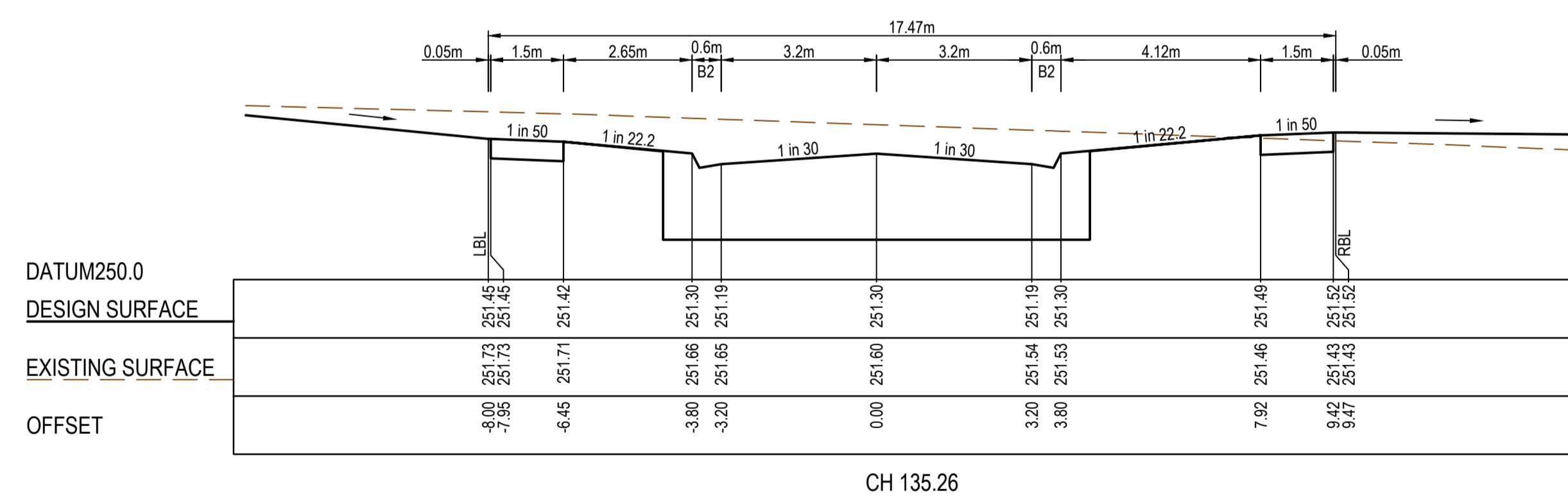
**mirvac**

Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Cross Sections: Yancey Street 1,  
 Ch 13.23 - Ch 128.48

MELWAYS REF: 8M2  
 PROJECT / DRAWING No: 1700E-023-255  
 SHEET No: 16 of 26  
 REVISION: 1

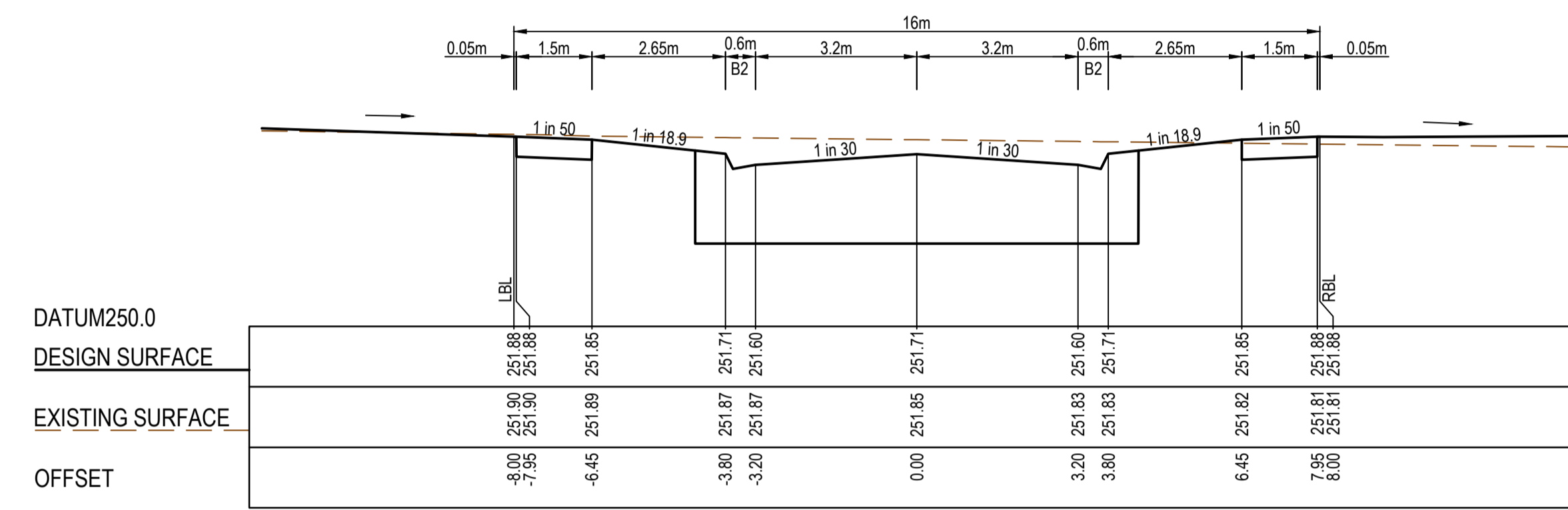


STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE EXISTING SURFACE

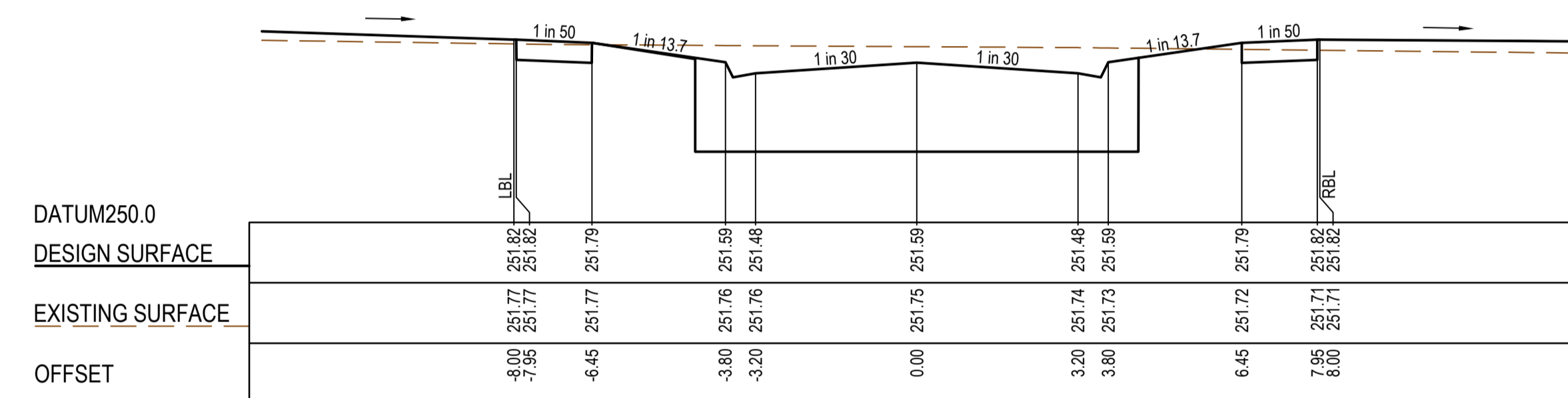


CH 135.26

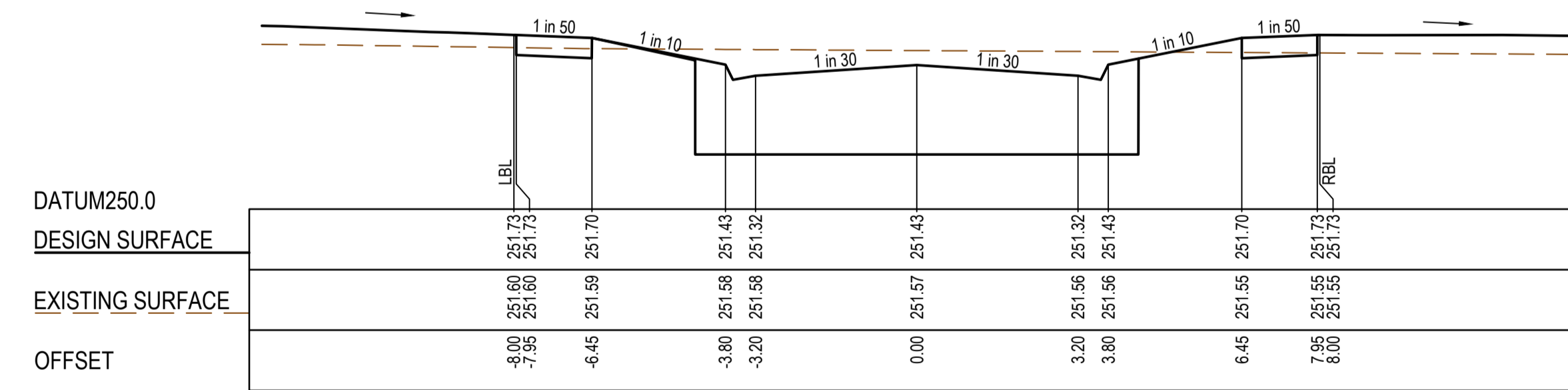
YANCEY STREET



CH 33.00



CH 25.00



CH 14.20

PUNT WAY

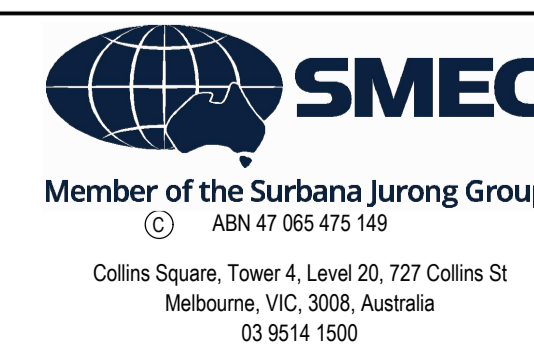
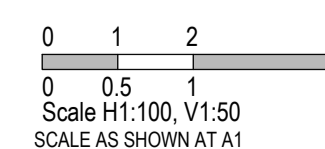
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**AS CONSTRUCTED**

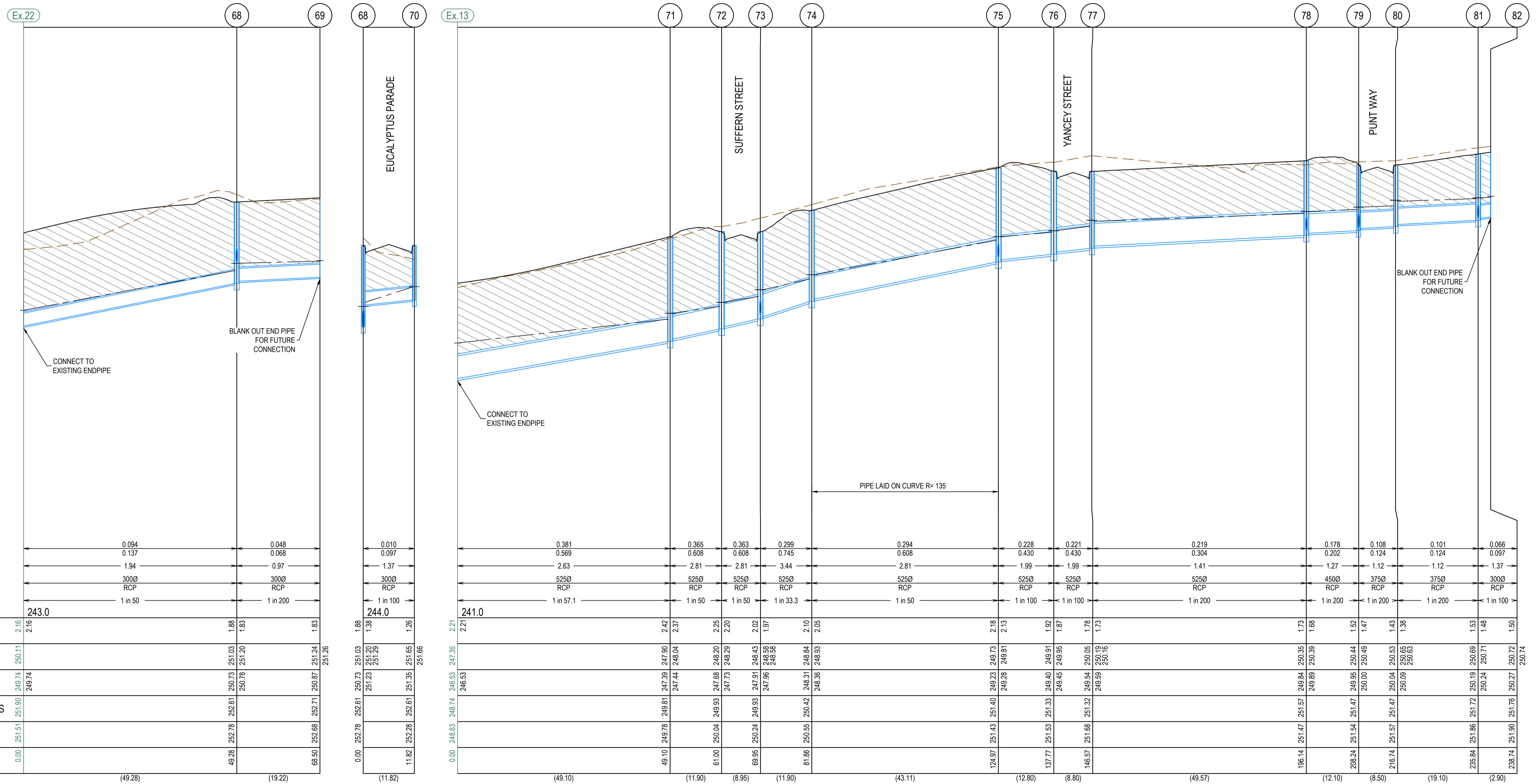
PLAN OF SUB. NO.  
PERMIT REF. NO.



Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Cross Sections: Yancey Street 2,  
& Punt Way

MELWAYS REF 8M2	PROJECT / DRAWING No. 1700E-023-256	SHEET No. 17 of 26	REVISION 2
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**CRUSHED ROCK BACKFILL**  
 CRB INDICATES CRUSHED ROCK BACKFILL COMPACTED IN ACCORDANCE WITH COUNCIL STANDARDS & SPECIFICATIONS, CLASS 3 UNLESS SPECIFIED OTHERWISE



REACH	START STATION	END STATION	DESIGN FLOW (m³/s)	CAPACITY (m³/s)	AT GRADE VELOCITY (m/s)	NOMINAL PIPE SIZE (mm)	PIPE TYPE	GRADE	DATUM	DEPTH TO INVERT	HYDRAULIC GRADE LINE	INVERT LEVEL	FINISHED SURFACE LEVELS	EXISTING SURFACE LEVEL	CHAINAGE
68-69	0.00	49.28	0.094	0.137	1.94	3000	RCP	1 in 50	243.0	2.16	250.11	249.74	251.90	251.51	0.00
										1.83	251.20	250.78	252.61	252.28	49.28
69-70	68.50	68.50	0.048	0.068	0.97	3000	RCP	1 in 200	243.0	1.83	251.20	250.78	252.61	252.28	68.50
										1.83	251.20	250.78	252.61	252.28	68.50

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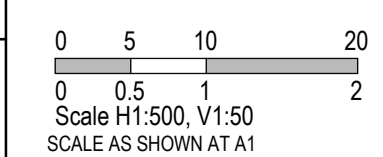
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OH&S Management AS/NZS 1880  
 Global-Mark.com.au®

Environmental Management ISO 14001  
 Global-Mark.com.au®

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 PERMIT REF. NO.

**AS CONSTRUCTED**



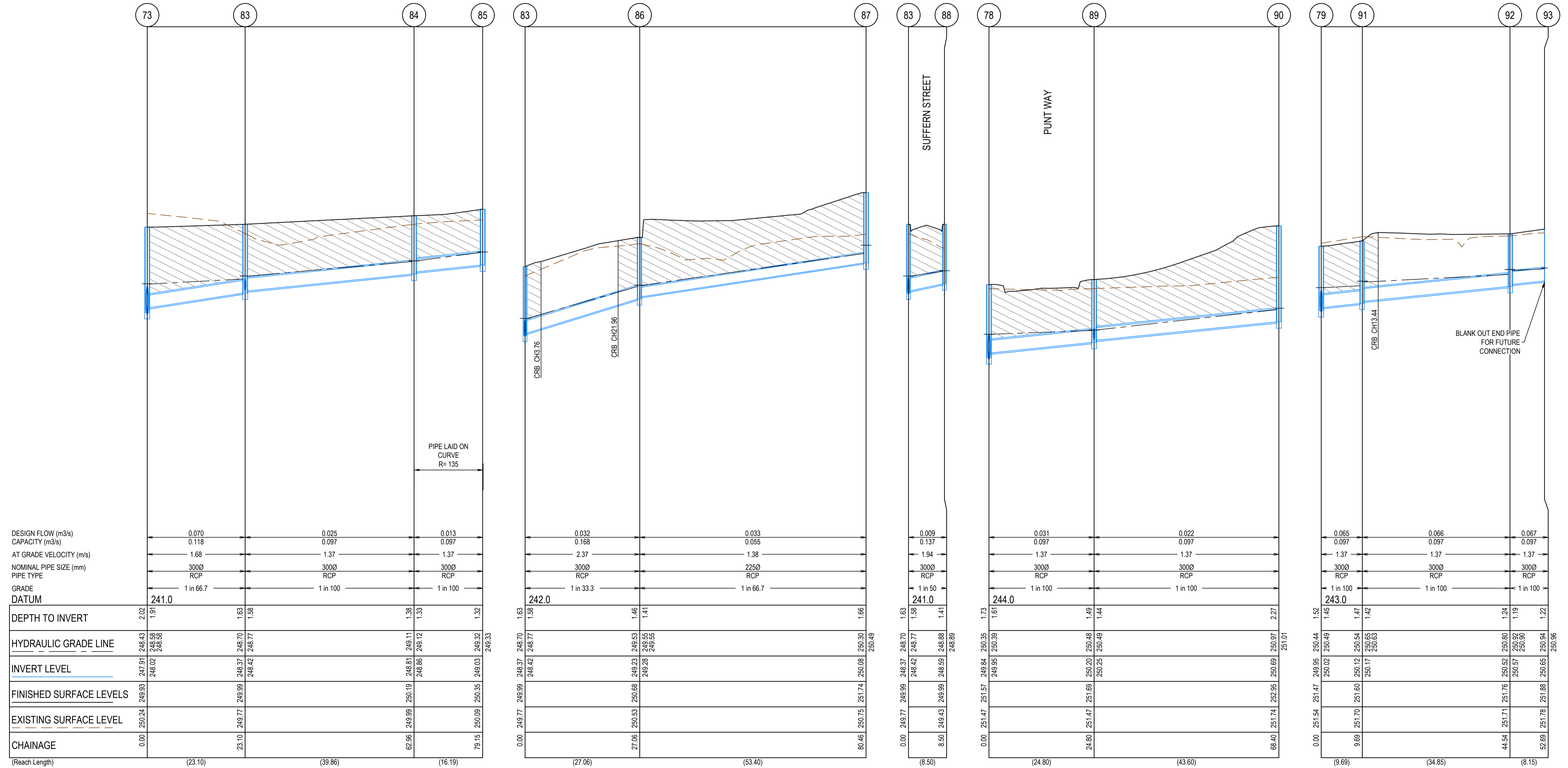
**SMEC**  
 Member of the Surlana Jurong Group  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

**mirvac**

Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Drainage Longitudinal Sections - 1

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-301</b>	SHEET No. <b>18 of 26</b>	REVISION <b>2</b>
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**CRUSHED ROCK BACKFILL**  
 CRB INDICATES CRUSHED ROCK BACKFILL COMPACTED IN ACCORDANCE WITH COUNCIL STANDARDS & SPECIFICATIONS, CLASS 3 UNLESS SPECIFIED OTHERWISE



**AS CONSTRUCTED PLANS**

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PLAN OF SUB. NO.  
 PERMIT REF. NO.

**AS CONSTRUCTED**

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 SCALE AS SHOWN AT 1

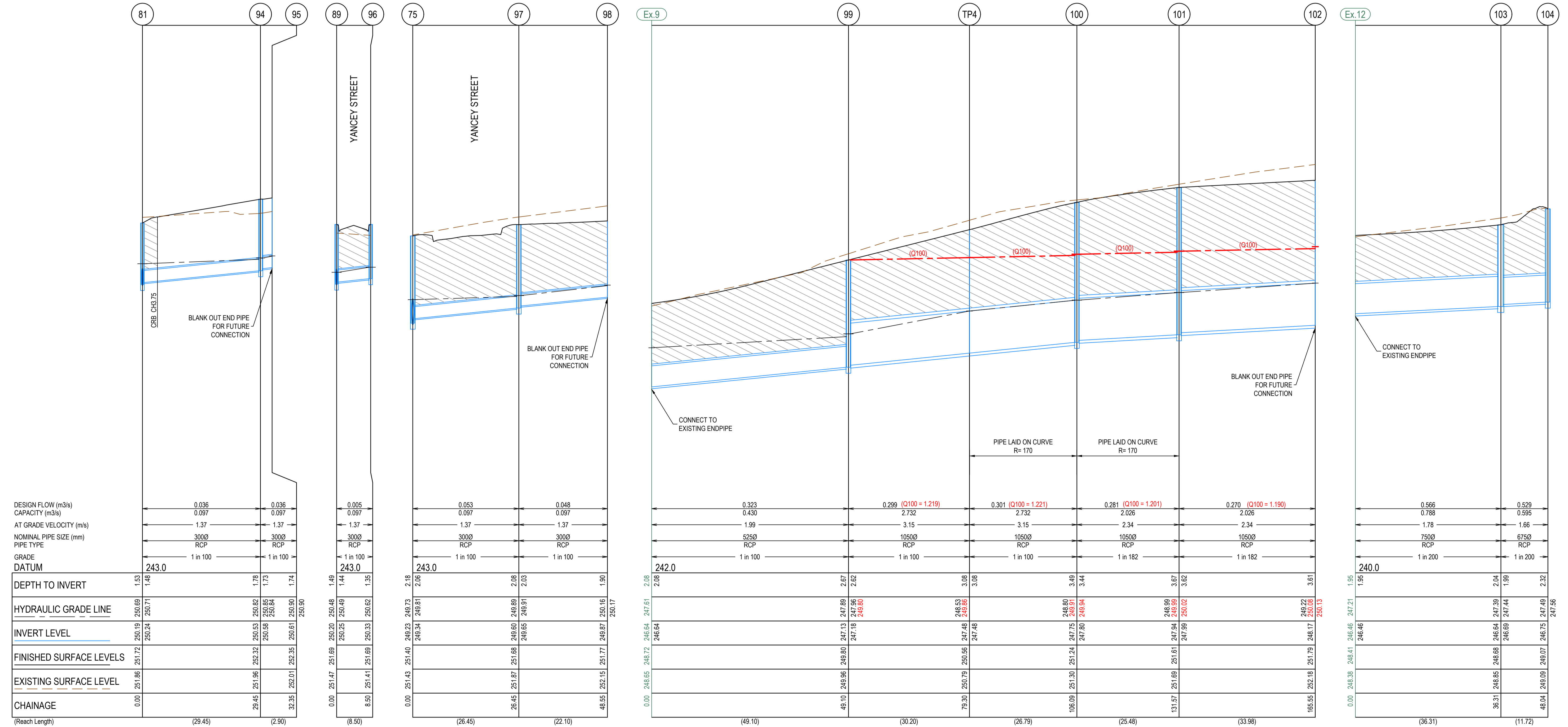
**SMEC**  
 Member of the Surlana Jurong Group  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

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Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Drainage Longitudinal Sections - 2

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-302</b>	SHEET No. <b>19 of 26</b>	REVISION <b>2</b>
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**CRUSHED ROCK BACKFILL**  
 CRB INDICATES CRUSHED ROCK BACKFILL COMPACTED IN ACCORDANCE WITH COUNCIL STANDARDS & SPECIFICATIONS, CLASS 3 UNLESS SPECIFIED OTHERWISE



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 OHS Management AS/NZS 4801  
 Environmental Management ISO 14001

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
 PERMIT REF. NO.

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 Scale H1:500, V1:50  
 SCALE AS SHOWN AT A1

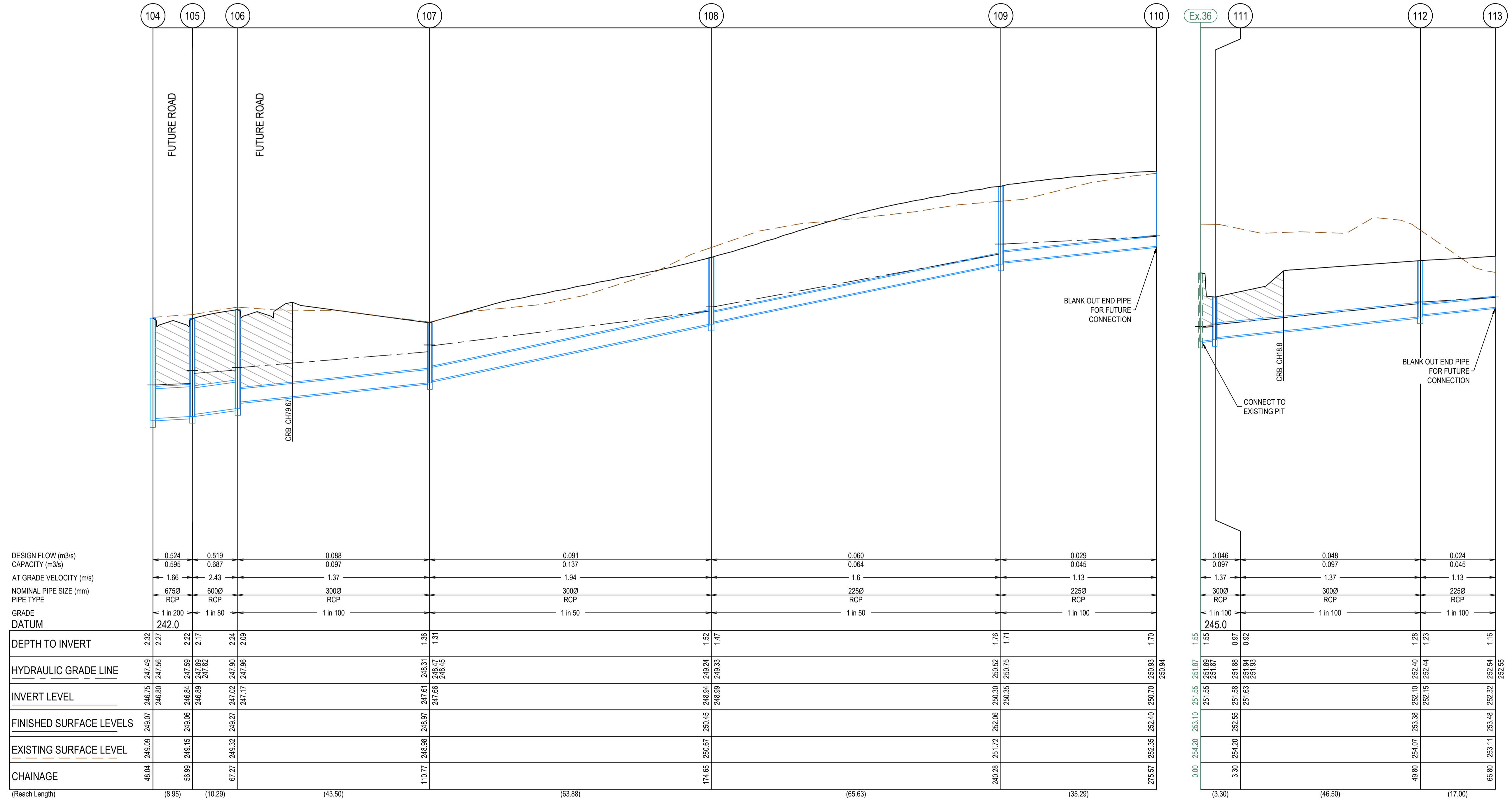
**SMEC**  
 Member of the Surlana Jurong Group  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

**mirvac**

Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Drainage Longitudinal Sections - 3

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-303</b>	SHEET No. <b>20 of 26</b>	REVISION <b>1</b>
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**CRUSHED ROCK BACKFILL**  
 CRB INDICATES CRUSHED ROCK BACKFILL COMPACTED IN ACCORDANCE WITH COUNCIL STANDARDS & SPECIFICATIONS, CLASS 3 UNLESS SPECIFIED OTHERWISE



**AS CONSTRUCTED PLANS**

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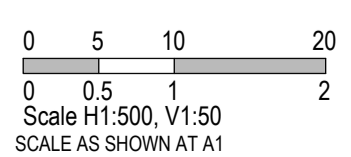
Quality Management ISO 9001  
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OH&S Management AS/NZS 1864  
 Global-Mark.com.au®

Environmental Management ISO 14001  
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PLAN OF SUB. NO.  
 PERMIT REF. NO.

**AS CONSTRUCTED**



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 03 9514 1500

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Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Drainage Longitudinal Sections - 4

MELWAYS REF <b>8M2</b>	PROJECT / DRAWING No. <b>1700E-023-304</b>	SHEET No. <b>21 of 26</b>	REVISION <b>1</b>
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**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

**ROAD PAVEMENT COMPOSITION - ACCESS PLACE TYPE 1**  
 (PUNT WAY & SUFFERN STREET)

750mm DEPTH PAVEMENT COMPOSITION		
PAVEMENT LAYER	LAYER THICKNESS (mm)	MATERIAL
A ASPHALT WEARING COURSE	30	SIZE 10 TYPE L ASPHALT (CLASS 320 BINDER)
B ASPHALT BASE COURSE	30	SIZE 10 TYPE N ASPHALT (CLASS 320 BINDER)
C SAMII SEAL	6.7	SIZE 10 S18RF
D PRIME	YES	
E BASE COURSE	130	SIZE 20 CLASS 2 CRUSHED ROCK COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
F UPPER SUBBASE	100	CLASS 3 CRUSHED ROCK (OR HIGHER QUALITY MATERIAL) COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
G LOWER SUBBASE	160	CLASS 4 CRUSHED ROCK (OR HIGHER QUALITY MATERIAL) COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
H CAPPING LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY ks5x10 <sup>-10</sup> m/s COMPACTED TO 98% MDD (STANDARD)
I CONSTRUCTION LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY ks5x10 <sup>-10</sup> m/s COMPACTED TO 98% MDD (STANDARD)
J SUBGRADE		SUBGRADE CLAY AS FOUND (DESIGN CBR = 2% EXPANSIVE)

**ROAD PAVEMENT COMPOSITION - ACCESS PLACE TYPE 2**  
 (YANCEY STREET)

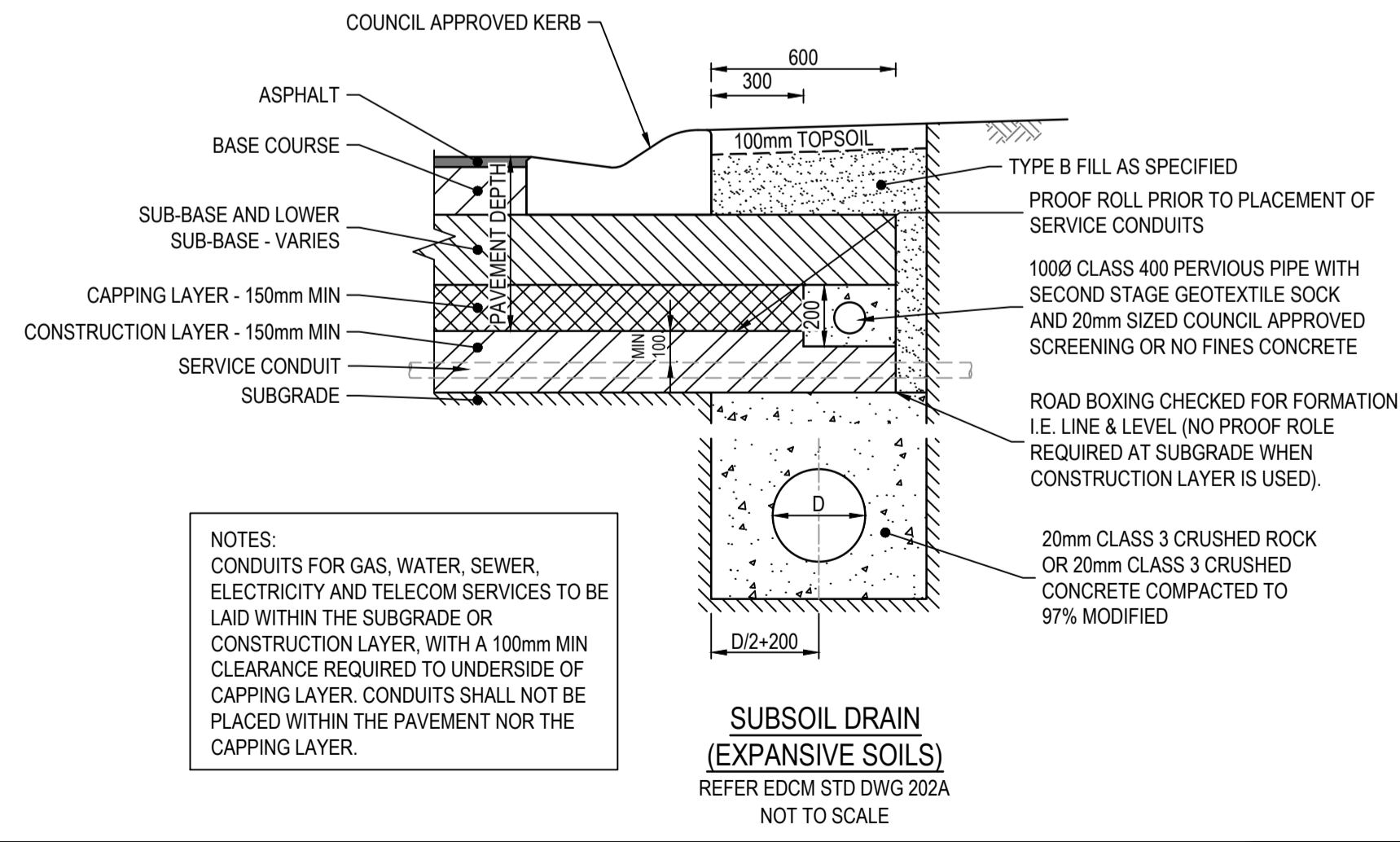
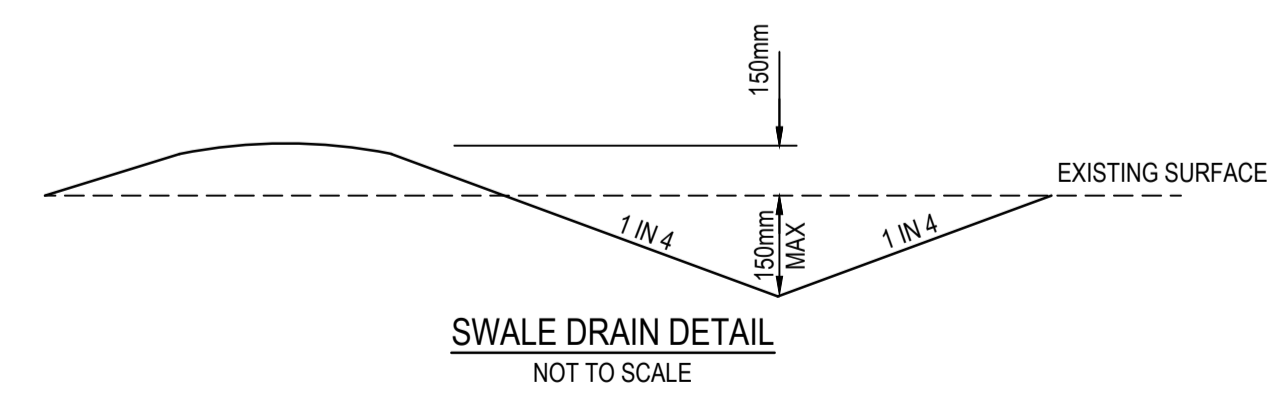
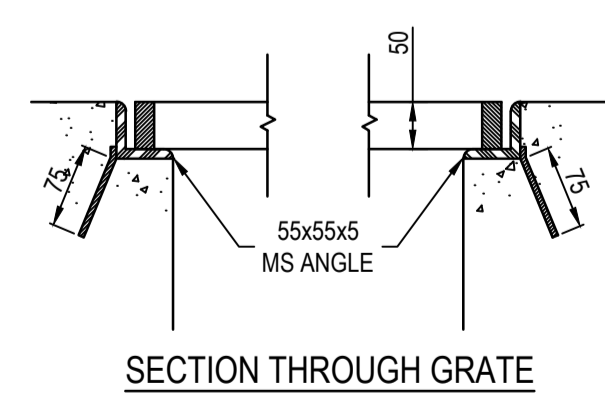
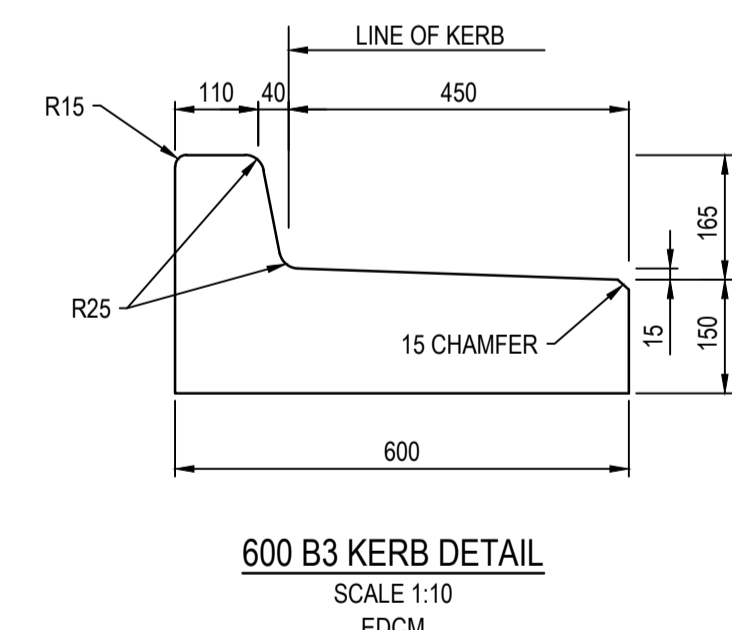
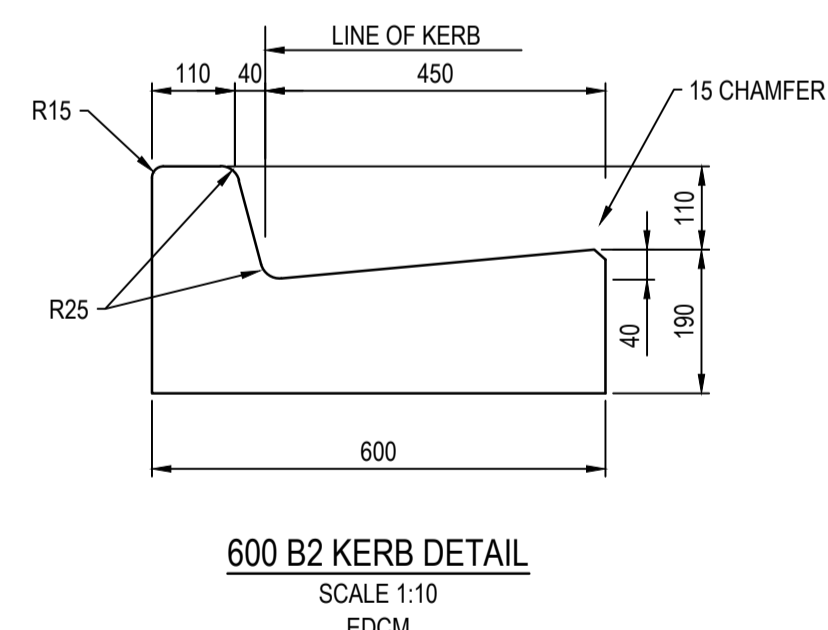
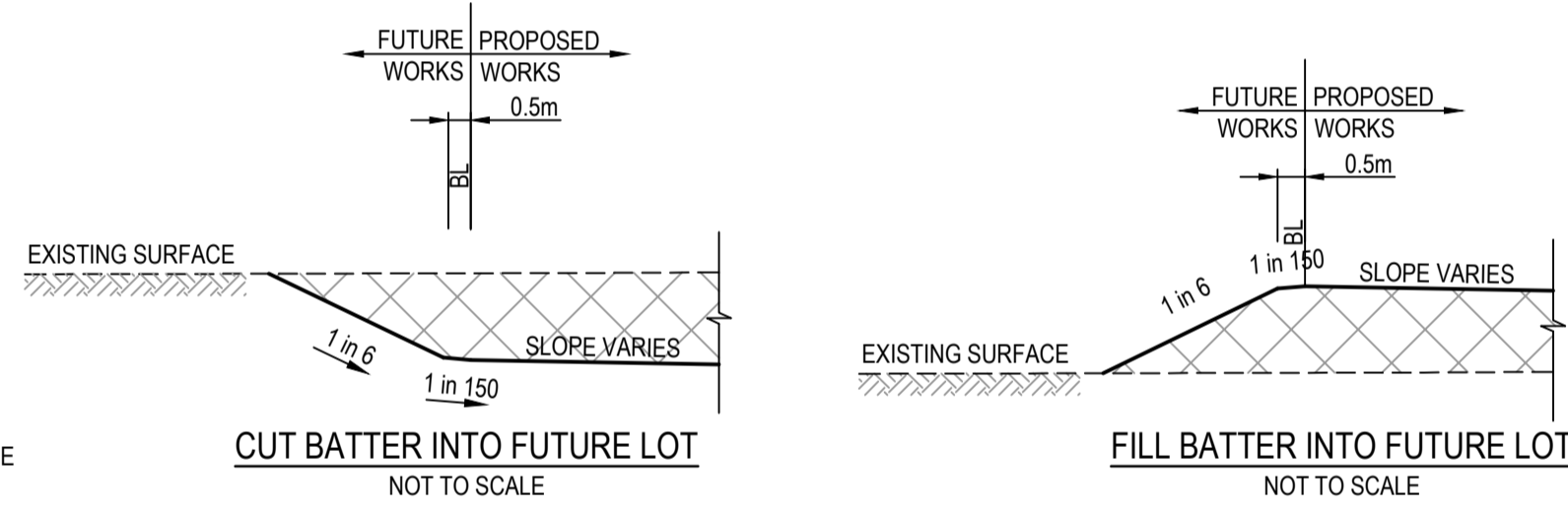
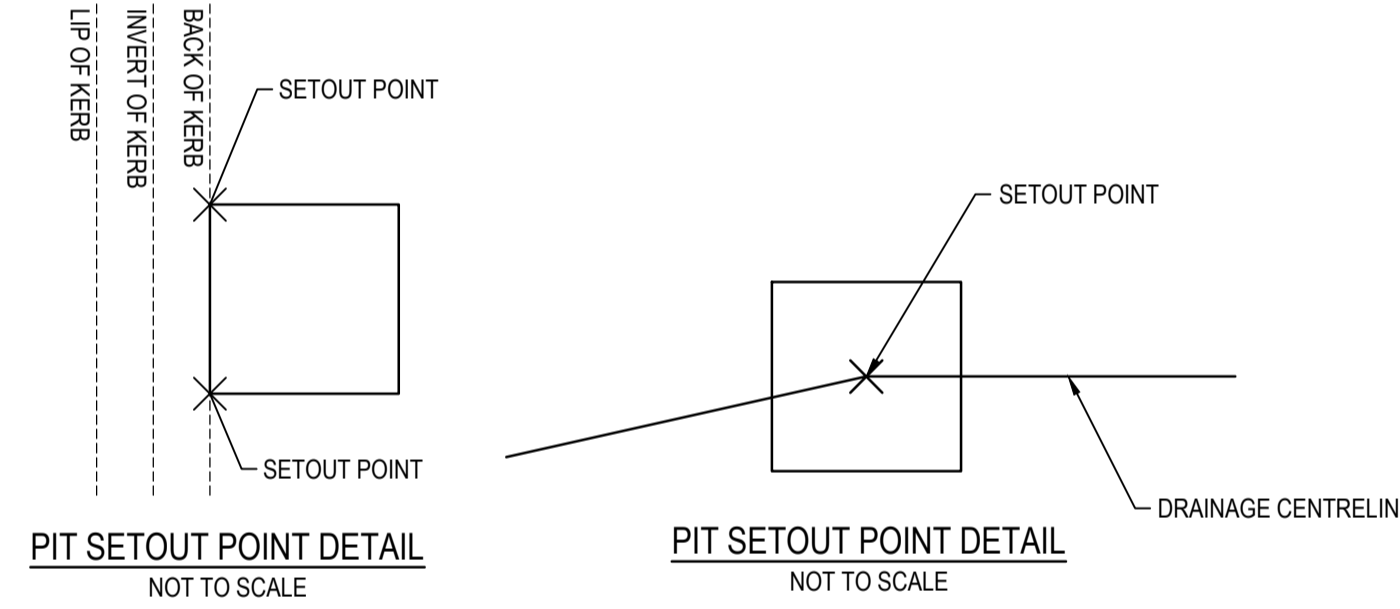
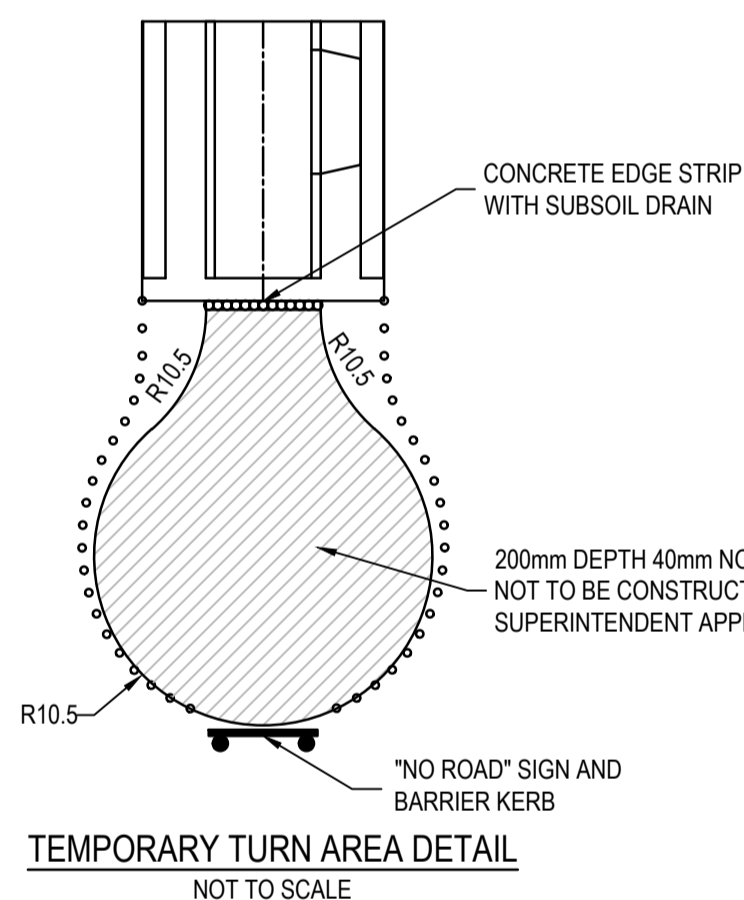
780mm DEPTH PAVEMENT COMPOSITION		
PAVEMENT LAYER	LAYER THICKNESS (mm)	MATERIAL
A ASPHALT WEARING COURSE	30	SIZE 10 TYPE L ASPHALT (CLASS 320 BINDER)
B ASPHALT BASE COURSE	30	SIZE 10 TYPE N ASPHALT (CLASS 320 BINDER)
C SAMII SEAL	6.7	SIZE 10 S18RF
D PRIME	YES	
E BASE COURSE	130	SIZE 20 CLASS 2 CRUSHED ROCK COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
F UPPER SUBBASE	110	CLASS 3 CRUSHED ROCK (OR HIGHER QUALITY MATERIAL) COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
G LOWER SUBBASE	180	CLASS 4 CRUSHED ROCK (OR HIGHER QUALITY MATERIAL) COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
H CAPPING LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY ks5x10 <sup>-10</sup> m/s COMPACTED TO 98% MDD (STANDARD)
I CONSTRUCTION LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY ks5x10 <sup>-10</sup> m/s COMPACTED TO 98% MDD (STANDARD)
J SUBGRADE		SUBGRADE CLAY AS FOUND (DESIGN CBR = 2% EXPANSIVE)

**ROAD PAVEMENT COMPOSITION - ACCESS STREET LEVEL 2 TYPE 3**  
 (DEMESNE DRIVE)

880mm DEPTH PAVEMENT COMPOSITION		
PAVEMENT LAYER	LAYER THICKNESS (mm)	MATERIAL
A ASPHALT WEARING COURSE	40	SIZE 14 TYPE N ASPHALT (CLASS 320 BINDER)
B ASPHALT BASE COURSE	40	SIZE 14 TYPE HP ASPHALT (CLASS A10E BINDER)
C SAMII SEAL	6.7	SIZE 10 S18RF
D PRIME	YES	
E BASE COURSE	110	SIZE 20 CLASS 2 CRUSHED ROCK COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
F UPPER SUBBASE	190	CLASS 3 CRUSHED ROCK (OR HIGHER QUALITY MATERIAL) COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
G LOWER SUBBASE	200	CLASS 4 CRUSHED ROCK (OR HIGHER QUALITY MATERIAL) COMPACTED TO A MINIMUM DENSITY OF 98% MDD (MODIFIED) AS1289.5.2.1
H CAPPING LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY ks5x10 <sup>-10</sup> m/s COMPACTED TO 98% MDD (STANDARD)
I CONSTRUCTION LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY ks5x10 <sup>-10</sup> m/s COMPACTED TO 98% MDD (STANDARD)
J SUBGRADE		SUBGRADE CLAY AS FOUND (DESIGN CBR = 2% EXPANSIVE)

**ROAD PAVEMENT COMPOSITION - CONNECTOR STREET TYPE 4**  
 (EUCALYPTUS PARADE)

690mm DEPTH PAVEMENT COMPOSITION		
PAVEMENT LAYER	LAYER THICKNESS (mm)	MATERIAL
A WEARING COURSE	40	SIZE 14 TYPE H ASPHALT (CLASS 320 BINDER)
B INTERMEDIATE COURSE	75	SIZE 20 TYPE SI ASPHALT (CLASS 320 BINDER)
C BASE COURSE	75	SIZE 20 TYPE SI ASPHALT (CLASS 320 BINDER)
D PRIME	-	
E BASE COURSE	100	SIZE 20 NOMINAL SIZE CLASS 3 CEMENT TREATED CRUSHED ROCK, COMPACTED TO A AT LEAST 98% MDD (MODIFIED DRY DENSITY RATIO) AT A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT WITH A MINIMUM YOUNG'S MODULUS OF 500 MPa. MINIMUM DESIGN CEMENTITIOUS BINDER CONTENT OF 3% BY MASS AS PER VICROADS SPECIFICATION 8015, TABLE 815.101.
F UPPER SUBBASE	100	CLASS 4 CRUSHED ROCK OR CLASS CC4 CRUSHED CONCRETE (OR HIGHER QUALITY MATERIAL) COMPACTED TO A MINIMUM DENSITY OF 95% (MODIFIED) AS1289.5.2.1
H CAPPING LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY ks5x10 <sup>-10</sup> m/s COMPACTED TO 98% MDD (STANDARD)
I CONSTRUCTION LAYER	150	IMPORTED TYPE A FILL WITH CBR≥8% SWELL≤1.5% PERMEABILITY ks5x10 <sup>-10</sup> m/s COMPACTED TO 98% MDD (STANDARD)
J SUBGRADE		SUBGRADE CLAY AS FOUND (DESIGN CBR = 2% EXPANSIVE)



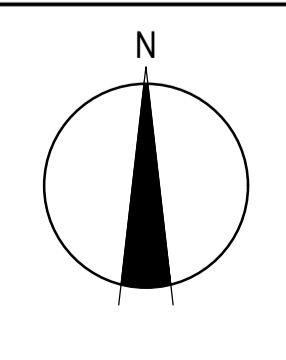
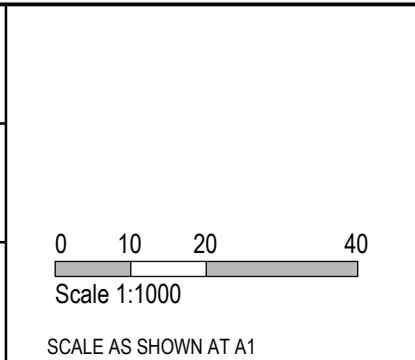
**AS CONSTRUCTED PLANS**

The purpose of these as-constructed plans is to update the design drawings to show significant changes which occurred during construction. Note that the levels shown on these plans are design levels, and have not been verified by survey. All information shown on these plans should be verified on site. SMEC Australia Pty Ltd accept no responsibility for loss or damages resulting from the inappropriate usage of these plans.

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

PLAN OF SUB. NO.  
 PERMIT REF. NO.

**AS CONSTRUCTED**



**SMEC**  
 Member of the Surlana Jurong Group  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

**mirvac**

Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Pavement Details & General Details

MELWAYS REF: 8M2 PROJECT / DRAWING No: 1700E-023-411 SHEET No: 23 of 26 REVISION: 2

THE FOLLOWING HAVE BEEN IDENTIFIED AS SIGNIFICANT ENVIRONMENTAL ASPECTS FOR THE SITE:

- CHMP, REF: 12653\_12112014
- KANGAROO MANAGEMENT PLAN, REF: 6406\_FINAL\_24062016
- RIVER RED GUM TREE MANAGEMENT PLAN, REF: 008833\_22032018
- CEMP, REF: 9630\_FINAL(V1)\_26102017

THESE ASPECTS SHALL BE MANAGED WITH THE ENVIRONMENTAL PROTECTION MEASURES OUTLINED ON THIS PLAN.

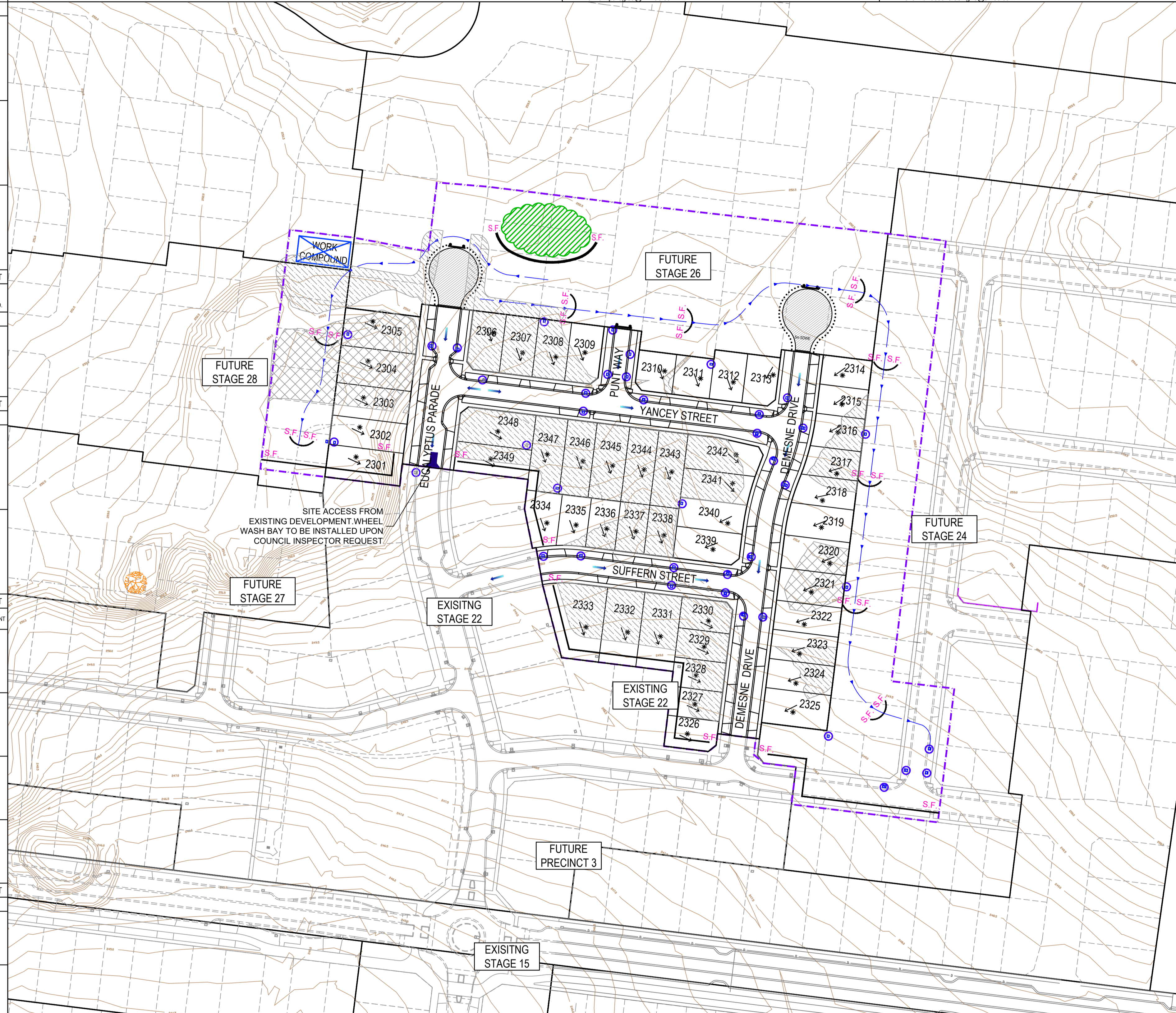
I HAVE PREPARED THIS ENVIRONMENTAL MANAGEMENT PLAN AND AGREE TO UNDERTAKE WORKS AND ENSURE SUB-CONTRACTORS UNDERTAKE WORKS IN ACCORDANCE WITH THIS PLAN.

DEVELOPER Mirvac  
Level 5, Building Q3, 6 Riverside Quay  
Southbank VIC 3006  
NAME: Chris Kiparoglou  
0466 941 870  
chris.kiparoglou@mirvac.com

CONSULTANT SMEC - URBAN DEVELOPMENT  
Collins Square, Tower 4, Level 20  
727 Collins St, Melbourne, VIC 3008  
NAME: Shankar Tisseverasinghe  
0434 581 518  
shankar.tisseverasinghe@smec.com

CONTRACTOR Winslow Constructors Pty Ltd  
50 Barry Road  
Campbellfield VIC 3061  
NAME: Adam Stojanovski  
0427 446 501  
adams@winslow.com.au

MANAGEMENT	
1. RESPONSIBILITIES: Civil Contractor: WINSLOW CONSTRUCTORS PTY LTD Superintendent: SMEC	4. STAGING OF WORKS: - AS PER CONSTRUCTION PROGRAM
EMERGENCY CONTACTS: 1. SHANKAR TISSEVERASINGHE - (03) 9869947 2. RILEY GIACOMINI - (03) 95141822	5. INFORMING RESIDENTS: AS REQUIRED
2. COMMUNICATION OF EMP REQUIREMENTS: - INDUCTION OF ALL PERSONS WORKING ON SITE REGARDING REQUIREMENTS AS SET OUT ON THE EMP - EMP TO BE DISPLAYED IN VISIBLE LOCATION WITHIN SITE COMPOUND EG. ON WALLS OF SITE SHEDS / OFFICE.	6. ASSOCIATED DOCUMENTS:
3. INSPECTIONS AND MAINTENANCE: - TWO INSPECTIONS PER WEEK - PRIOR TO AND AFTER STORM EVENT AND/OR HEAVY RAIN - MAINTAINS SO REQUIRED WITH ALL RECTIFICATION TO BE ADDRESSED WITH 12 HOURS OF INCIDENT / REPORT.	
NOISE RISK: SIGNIFICANT	
REQUIREMENT: EPA VICTORIA AND COUNCIL REQUIREMENTS MUST BE ADHERED TO IN RELATION TO THE LEVEL OF NOISE AND WORKING HOURS, TO ENSURE THAT RESIDENTS AND OTHER APPLICABLE NEIGHBOURS TO THE SITE ARE NOT DISTURBED UNREASONABLY. THE GENERATION OF NOISE MUST BE MINIMISED	
7. WORKING HOURS: 08.00 TO 16.30 MON - FRI 09.00 TO 13.00 SATURDAY	
8. NOISE MINIMISATION METHODS: - MAINTAIN WORKING HOUR - RESTRICT USE OF NOISY EQUIPMENT AND PROCESSES TO AVOID DISTURBANCES TO ADJACENT RESIDENTS - FOLLOW EPA NOISE CONTROL GUIDELINES - TG30292	9. OTHER:
DUST RISK: SIGNIFICANT	
REQUIREMENT: DUST GENERATION MUST BE MINIMISED TO ENSURE THERE IS NO HEALTH RISK OR LOSS OF AMENITY.	
10. MINIMISING DUST GENERATION: - AVOID STRIPPING LARGE AREAS OF THE SITE WHEN NOT REQUIRED. - WATER SPRAYING AS REQUIRED. - MINIMISE STRIPPED AREAS - MINIMISE ACTIVITIES ON HIGH WIND DAYS.	12. CONTINGENCIES: - IF HIGH WIND IS EXPECTED WHILE LARGE AREAS OF THE SITE ARE STRIPPED, SPRAY WATER IN ORDER TO ESTABLISH A THICK CRUST OVER UNVEGETATED LAND. ALSO MONITOR DRYNESS OF EXPOSED EARTH. SHOULD GROUND DRY OUT SIGNIFICANTLY, CONSIDER WATER SPRAYING OR COVER AREA WITH SOIL OR GRASS.  NOTE: IF A HOSE IS USED FOR WATER SPRAYING, THE HOSE IS TO BE FILLED WITH A LARGE TRIGGER NOZZLE. CHECK WATER RESTRICTIONS WITH LOCAL AUTHORITY FOR GUIDELINES.
11. DUST SUPPRESSION: - WATER SPRAYING - REDUCE ACTIVITY ON WINDY DAYS.	13. OTHER: REFER TO DUST MANAGEMENT PLAN FOR FURTHER INFORMATION
EROSION AND SEDIMENT RISK: SIGNIFICANT	
REQUIREMENT: EROSION AND SEDIMENT MUST BE MANAGED IN ACCORDANCE WITH CURRENT BEST PRACTICE ENVIRONMENTAL MANAGEMENT PRACTICES, TO PREVENT SEDIMENT-LOADED WATER FROM ENTERING ANY DRAINAGE SYSTEM OR NATURAL WATERWAY.	
14. DRAINAGE MANAGEMENT: - STORMWATER FLOWING ONTO SITE WILL BE CONTROLLED BY CUT SWALES, DRAINS, STRIPWAYS AND SILT FENCE OR OTHER CONTROLS TO FILTER FLOW WHERE APPLICABLE. - ENSURE STORMWATER PITS AND DRAINS ARE PROTECTED FROM SILT/SEDIMENT BY USING APPROPRIATE METHODS.	17. SEDIMENT TRAPS: - SEDIMENT BASIN / SILT FENCE AS REQUIRED. - PIT LIDS MUST BE FITTED AS SOON AS POSSIBLE - USE TEMPORARY PIT LIDS UNTIL INSTALLED. USE SILT FENCES, SILT SAUSAGES, CUT OFF DRAINS AND OTHER SILT PROTECTION METHODS WHERE NECESSARY AS DETAILED IN THIS EMP PLAN AND AS REQUIRED BY THE SITUATION.
15. SOIL STABILISATION DURING CONSTRUCTION: GRADE AND SEAL SOIL AS REQUIRED. RE-INSTATE DISTURBED AREAS AS SOON AS PRACTICAL.	18. DEWATERING: WHERE POSSIBLE WATER SHALL BE DIRECTED OVER EXISTING GRASS & PLANTED AREAS FOR FURTHER SEDIMENT CONTROL. PRIOR TO DISCHARGE INTO STORMWATER SYSTEM. IF THIS IS NOT POSSIBLE, WATER TO BE COLLECTED INTO A TEMPORARY SUMP AND THEN SENT THROUGH SILT TRAPS BEFORE ENTERING INTO THE DRAINAGE SYSTEM.
POST WORKS: - JUTE MATTING RETAINED - TOPSOILING AND GRASSING DISTURBED SOIL AREAS TO BE CARRIED OUT AS SOON AS PRACTICAL.	19. VEHICLE AND ROAD MANAGEMENT, SITE ACCESS: - ACCESS THROUGH COMO PARADE  CLEANING VEHICLES: ALL VEHICLES LEAVING THE SITE MUST REMOVE ANY EXCESS SEDIMENTS / CLAY COLLECTED ON THE VEHICLES WHEELS ON SITE. EACH OPERATOR MUST MANUALLY REMOVE EXCESS CLAY SUCH THAT IT MINIMISES DEPOSITS ON THE ROAD.
16. STOCKPILE PROTECTION: - SILT FENCES TO BE ERECTED AROUND THE DOWNSTREAM SIDE OF STOCKPILES WHERE APPLICABLE. STOCKPILES TO BE PLACED AWAY FROM DRAINAGE INLETS, OPEN DRAINS, WATER COURSES & PAVED AREAS. A CUT-OFF DRAIN WITH EARTH BAND TO BE INSTALLED ON THE UPSLOPE SIDE OF THE STOCKPILE TO DIVERT RUN-OFF AWAY FROM THE STOCKPILE. MINIMISE THE NUMBER OF STOCKPILES WHERE POSSIBLE.	20. OTHER: ROADS ARE TO BE CLEANED PRIOR TO RAINSTORMWATER EVENTS. STORMWATER PITS ALONG THE ESTABLISHED ROADWAY WHICH ARE SUBJECT TO SEDIMENT DEPOSITS, WILL BE EITHER FITTED WITH KERB INLET PROTECTORS OR SHALL BE FITTED WITH (GEO-FABRIC) FILTER MATERIAL TO CAPTURE SEDIMENTS. ROADS ARE TO BE INSPECTED AND ANY SEDIMENT DEPOSITED ON THESE ROADS REMOVED.
WASTE RISK: SIGNIFICANT	
REQUIREMENT: LITTER AND WASTE MUST BE CONTAINED ON SITE, BEFORE DISPOSAL IN A RESPONSIBLE MANNER. WASTE GENERATION MUST BE MINIMISED	
21. MOVEMENT OF SOIL CONTAMINANT STATUS: CLEAN	23. WASTE STORAGE AND DISPOSAL: WASTE BINS TO BE PLACED IN COMPOUND FOR DAILY RUBBISH AND REMOVED OFFSITE AS REQUIRED.
22. WASTE MINIMISATION METHODS: - THE COLLECTION OF SURVIVAL PRESS AND OTHER MATERIALS ARE TO BE COLLECTED AND RE-USED ONSITE AND RECYCLED FOR FUTURE PROJECTS. - MATERIALS TO BE STORED IN COMPOUND OR SITE CONTAINER.	24. OTHER: N/A
CHEMICALS RISK: SIGNIFICANT	
REQUIREMENT: STORAGE AND SPILL MANAGEMENT PRACTICES MUST BE IMPLEMENTED TO ENSURE THAT NO ENVIRONMENTAL DAMAGE CAN RESULT FROM THE ESCAPE OR SPILLAGE OF CHEMICALS OR FUELS.	
25. STORAGE: - MINIMAL QUANTITIES STORED IN SITE CONTAINER.	27. REFUELLING PROCEDURE: - ALL REFUELLING TO BE CARRIED OUT BY EXTERNAL CONTRACTOR WITH PROCEDURES AND SPILL KITS AVAILABLE DURING REFUELLING.
26. SPILL MANAGEMENT: - SEE ITEM 27: REFUELLING UNDERTAKEN BY EXTENDED FUEL CONTRACTOR WHO CARRIES ALL THE REQUIRED SPILL KITS ETC.	28. OTHER: N/A



LEGEND - ENVIRONMENTAL MANAGEMENT PLAN	
ALL PROPOSED, FUTURE & EXISTING SERVICE LOCATIONS ARE SHOWN INDICATIVELY	
	STORMWATER DRAINAGE PITS
	SWALE DRAIN
	EXISTING STORMWATER DRAINAGE PITS
	EXISTING SWALE DRAIN
	EXISTING RETAINING WALL
	SLEEPER RETAINING WALL
	ROCK RETAINING WALL
	EXISTING TREE TO BE RETAINED
	EXISTING TREE TO BE REMOVED
	TREE PROTECTION FENCING REFER ARBORICULTURE REPORT
	PROPOSED DRIVEWAY & FOOTPATH
	SILT FENCE OR SIMILAR APPROVED EROSION PROTECTION FENCE
	TEMPORARY CHAINWIRE FENCE
	EXISTING CHAINWIRE FENCE
	CATCH DRAIN ALONG LOW POINTS WITH SILT CURTAINS OR SIMILAR PLACED AT MIN. 150M
	CATCH DRAIN WITH STRAW BALES / SILT FENCE OR SIMILAR.
	SUGGESTED STOCKPILE LOCATION
	STORMWATER PIT PROTECTION
	EXISTING MAJOR CONTOUR LINE
	EXISTING MINOR CONTOUR LINE
	VEGETATION TO BE REMOVED
	NO GO ZONE / GAS EASEMENT
	EXISTING RED GUM TREE & CANOPY TO BE REMOVED
	EXISTING OTHER SPECIES TREE & CANOPY TO BE REMOVED

**GAS AND DUST MANAGEMENT NOTES**

ALL WORKS TO BE UNDERTAKEN SHOULD REFER TO SMEC DUST MANAGEMENT PLAN REPORT DATED 20TH SEPTEMBER 2019 AND SMEC CONSTRUCTION MANAGEMENT PLAN WORKS IN VICINITY OF GAS TRANSMISSION MAIN DATED 3RD OCTOBER 2019.

CHEMICALS RISK: SIGNIFICANT	
REQUIREMENT: STORAGE AND SPILL MANAGEMENT PRACTICES MUST BE IMPLEMENTED TO ENSURE THAT NO ENVIRONMENTAL DAMAGE CAN RESULT FROM THE ESCAPE OR SPILLAGE OF CHEMICALS OR FUELS.	
25. STORAGE: - MINIMAL QUANTITIES STORED IN SITE CONTAINER.	27. REFUELLING PROCEDURE: - ALL REFUELLING TO BE CARRIED OUT BY EXTERNAL CONTRACTOR WITH PROCEDURES AND SPILL KITS AVAILABLE DURING REFUELLING.
26. SPILL MANAGEMENT: - SEE ITEM 27: REFUELLING UNDERTAKEN BY EXTENDED FUEL CONTRACTOR WHO CARRIES ALL THE REQUIRED SPILL KITS ETC.	28. OTHER: N/A

SIGNIFICANT FLORA / FAUNA RISK: SIGNIFICANT	
REQUIREMENT: ALL SIGNIFICANT FLORA AND FAUNA ON AND ADJACENT TO THE SITE MUST BE PROTECTED	
29. YES/NO - DETAILS: REFER TO ENDORSED LANDSCAPE MASTER PLAN	31. REQUIREMENT: 31.

ARCHAEOLOGICAL / HERITAGE RISK: SIGNIFICANT	
REQUIREMENT: PLACES, SITES AND OBJECTS OF ARCHAEOLOGICAL OR HERITAGE SIGNIFICANCE MUST BE PROTECTED	
30. YES/NO - DETAILS: THE RECOMMENDATIONS WITHIN APPROVED CULTURAL HERITAGE MANAGEMENT PLAN No 12015 PREPARED BY HERITAGE INSIGHT Pty Ltd DATED 18TH JANUARY 2011, AS APPROVED BY THE SECRETARY, DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT ON 15TH APRIL 2012, OR ANY SUBSEQUENT APPROVED PLAN, MUST BE UNDERTAKEN, PRIOR TO AND DURING, THE CONSTRUCTION OF THE DEVELOPMENT HEREBY APPROVED.	32. REQUIREMENT: 32.

RISK:	

**AS CONSTRUCTED PLANS**

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Quality Management ISO 9001  
OHS Management AS/NZS 4501  
Environmental Management ISO 14001

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
PERMIT REF. NO.

0 10 20 40  
Scale 1:1000  
SCALE AS SHOWN AT A1

N

**SMEC**  
Member of the Surlana Jurong Group  
ABN 47 065 475 149  
Collins Square, Tower 4, Level 20, 727 Collins St  
Melbourne, VIC, 3008, Australia  
03 9514 1500

**mirvac**

Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Environmental Management Plan - 1  
Layout Plan

MELWAYS REF: 8M2  
PROJECT / DRAWING No: 1700E-023-451  
SHEET No: 24 of 26  
REVISION: 2



RISK ASSESSMENT CHECKLIST	
<b>NOISE</b> <b>ISSUES:</b> - NATURE OF NOISE GENERATING WORKS: VEHICLES, FIXED MACHINERY, CONSTRUCTION ACTIVITIES. - POTENTIAL NOISE RECEPTORS: SURROUNDING RESIDENTS / CONTRACTORS: - PROXIMITY OF WORKS TO NOISE RECEPTORS: ADJACENT RESIDENTS - THE RESIDENTS OF CRESSY WAY & EMINENCE DRIVE LIVE, 100m FROM THE SITE	LIKELIHOOD LIKELY  CONSEQUENCE MAJOR  OVERALL RISK LOW
<b>DUST</b> <b>ISSUES:</b> - DUST SOURCES: MOVEMENTS OF VEHICLES - POTENTIAL DUST RECEPTORS: SURROUNDING RESIDENTS / CONTRACTORS - PROXIMITY OF WORKS TO DUST RECEPTORS: ADJACENT RESIDENTS - EXTENT OF EXPOSED EARTH AND DURATION OF TIME EXPOSED: DURATION OF STAGED WORKS - WIND CONDITIONS:	LIKELIHOOD LIKELY  CONSEQUENCE MAJOR  OVERALL RISK LOW
<b>EROSION AND SEDIMENT</b> <b>ISSUES:</b> - EROSION AND SEDIMENT SOURCES: EXPOSED TOPSOIL - POTENTIAL EROSION AND SEDIMENT RECEPTORS: STORMWATER SYSTEM, CREEK SYSTEM. - PROXIMITY OF WORKS TO EROSION AND SEDIMENT RECEPTORS: ADJACENT RESIDENTS - EXTENT OF EXPOSED EARTH AND DURATION OF TIME EXPOSED: AREA APPROXIMATELY 5 HA EXPOSED FOR 8 MONTHS. - SLOPE: MINIMAL - 3 METRES OVER 250M - SITE DRAINAGE REGIME: SURFACE SWALES AND UNDERGROUND DRAINAGE - RAINFALL: 400 - 600MM / YEAR - VEHICLE MOVEMENTS ON AND OFF SITE: TO BE KEPT TO A MINIMUM AND VIA A SINGLE ENTRY / EXIT.	LIKELIHOOD LIKELY  CONSEQUENCE MAJOR  OVERALL RISK LOW
<b>WASTE</b> <b>ISSUES:</b> - NATURE OF WASTE TO BE GENERATED: BUILDING AND CONSTRUCTION PRODUCTS, LITTER. - PRESENCE OF WASTE ON SITE PRIOR TO WORK COMMENCEMENT: EXISTING SHEDS. - POTENTIAL WASTE RECEPTORS: SURROUNDING RESIDENTS. - PROXIMITY TO POTENTIAL WASTE RECEPTORS: ADJACENT RESIDENTS - THE RESIDENTS AT CRESSY WAY & EMINENCE DRIVE LIVE < 100M FROM THE SITE	LIKELIHOOD LIKELY  CONSEQUENCE MAJOR  OVERALL RISK LOW
<b>CHEMICALS</b> <b>ISSUES:</b> - TYPES OF CHEMICALS AND FUELS USED AND/OR STORED ON SITE: REFER TO MATERIAL SAFETY DATA SHEET (MSDS) - QUANTITIES OF CHEMICALS AND FUELS USED AND/OR STORED ON SITE: REFER TO MATERIAL SAFETY DATA SHEET (MSDS) - POTENTIAL CHEMICAL RECEPTORS: SURROUNDING RESIDENTS / CONTRACTORS / WATERWAYS - PROXIMITY TO POTENTIAL CHEMICAL RECEPTORS: 200 METRES	LIKELIHOOD LIKELY  CONSEQUENCE MAJOR  OVERALL RISK LOW
<b>SIGNIFICANT FLORA/FAUNA</b> <b>ISSUES:</b> - TYPES OF FLORA/FAUNA: NIL - VULNERABILITY OF FLORA/FAUNA: N/A - PROXIMITY OF FLORA/FAUNA TO WORKS: N/A - WORK ACTIVITIES WHICH MAY THREATEN FLORA/FAUNA: N/A - POTENTIAL IMPACTS ON FLORA/FAUNA: N/A - REFER TO 0697-06-81, ITEM No.29 FOR DETAILS.	LIKELIHOOD LIKELY  CONSEQUENCE MAJOR  OVERALL RISK LOW
<b>ARCHAEOLOGICAL/HERITAGE</b> <b>ISSUES:</b> - TRADITIONAL LAND OWNERS CONSULTED? YES - SURVEY OR ASSESSMENT CONDUCTED? YES - PROBABILITY OF ENCOUNTERING ARCHAEOLOGICAL/HERITAGE ITEMS DURING WORKS: LOW - TYPES OF ARCHAEOLOGICAL/HERITAGE ITEMS ON SITE: NIL - PROXIMITY OF ARCHAEOLOGICAL/HERITAGE ITEMS TO WORKS ON SITE: N/A - WORK ACTIVITIES WHICH MAY THREATEN ARCHAEOLOGICAL/HERITAGE ITEMS: NIL - REFER TO 0697-06-81, ITEM No.30 FOR DETAILS.	LIKELIHOOD LIKELY  CONSEQUENCE MAJOR  OVERALL RISK LOW

I HAVE PREPARED THIS ENVIRONMENTAL MANAGEMENT PLAN AND AGREE TO UNDERTAKE WORKS AND ENSURE SUB-CONTRACTORS UNDERTAKE WORKS IN ACCORDANCE WITH THIS PLAN.

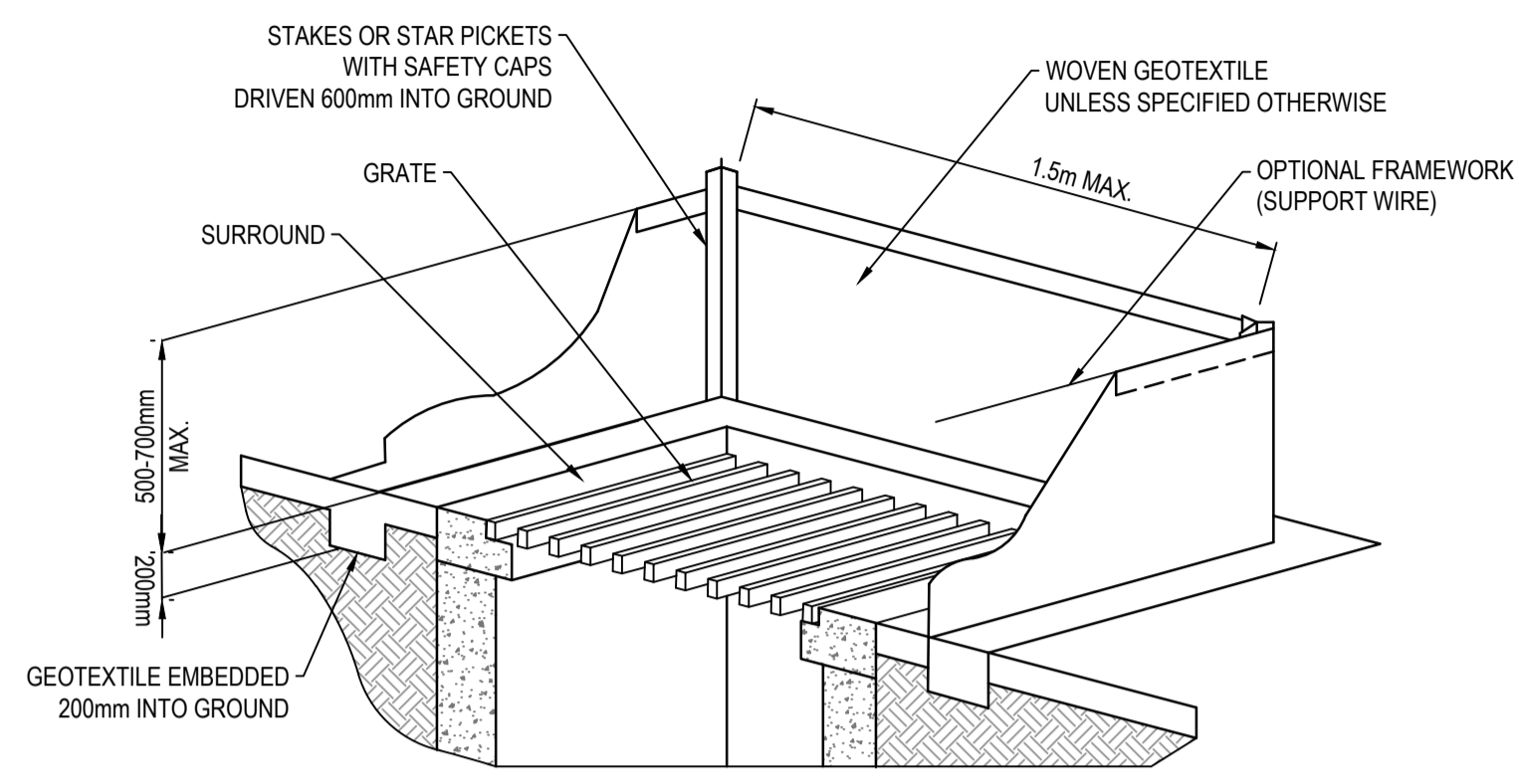
DEVELOPER Mirvac  
 Level 5, Building Q3, 6 Riverside Quay  
 Southbank VIC 3006  
 NAME: Chris Kiparoglou  
 0466 941 870  
 chris.kiparoglou@mirvac.com

CONSULTANT SMEC - URBAN DEVELOPMENT  
 COLLINS SQUARE, TOWER 4, LEVEL 20  
 727 COLLINS ST, MELBOURNE, VIC, 3008  
 NAME: Shankar Tisseverasinghe  
 0434 581 518  
 shankar.tisseverasinghe@smec.com

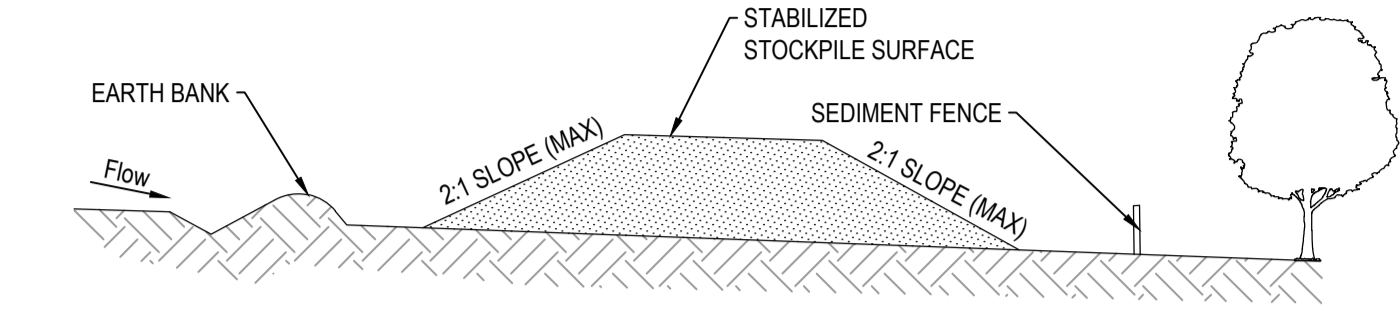
CONTRACTOR Winslow Constructors Pty Ltd  
 50 Barry Road  
 Campbellfield VIC 3061  
 NAME: Adam Stojanovski  
 0427 446 501  
 adams@winslow.com.au

ENVIRONMENTAL PROTECTION MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING DESIGNS.

**GEOTEXTILE INLET GUARD - PHASE B\*\***



**STOCKPILES**

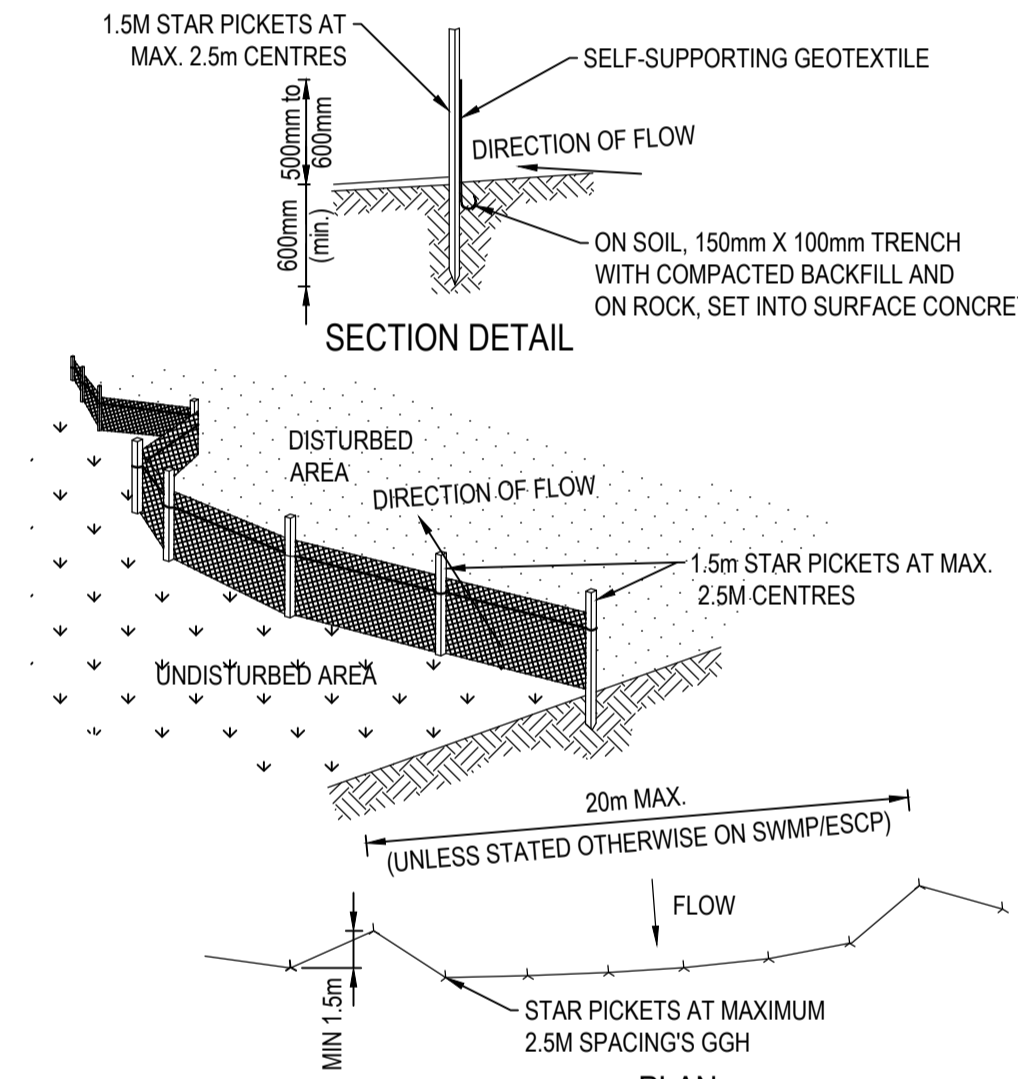


- CONSTRUCTION NOTES:**
- WHERE POSSIBLE LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
  - CONSTRUCT ON THE CONTOUR AS A LOW, FLAT, ELONGATED MOUND.
  - WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
  - REHABILITATE IN ACCORDANCE WITH THE SWMP/ESCP.
  - CONSTRUCT EARTH BANK (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.
  - THE PLACEMENT OF FILL MUST BE DESIGNED TO ENSURE THAT IT DOES NOT COMPROMISE NATIVE VEGETATION TO BE PROTECTED.
  - SOIL MUST NOT BE STOCKPILED ON NATIVE VEGETATION

**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**  
 www.1100.com.au

**PRELIMINARY**  
 NOT APPROVED FOR CONSTRUCTION  
 THIS PLAN HAS BEEN PREPARED FOR INFORMATION ONLY IN ACCORDANCE WITH CLAUSE XX  
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCING THE FINAL EMP AS PART OF THE LUMP SUM PRICE FOR THE WORKS

**SILT/DRIFT FENCE - PHASE A\*\***

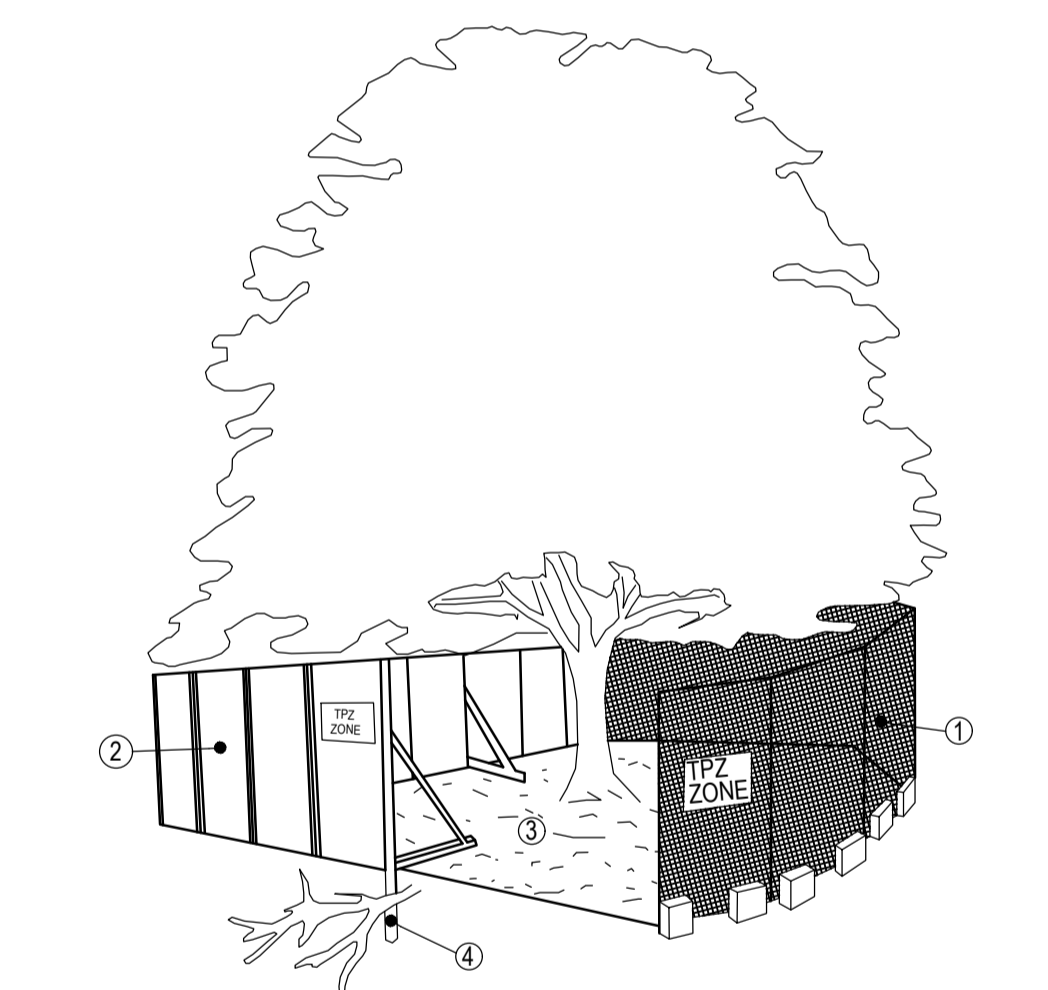


- CONSTRUCTION NOTES:**
- CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
  - CUT A 150MM DEEP TRENCH ALONG THE UPSIDE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
  - DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS
  - FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
  - JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150MM OVERLAP.
  - BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

**TREE PROTECTIVE FENCING**

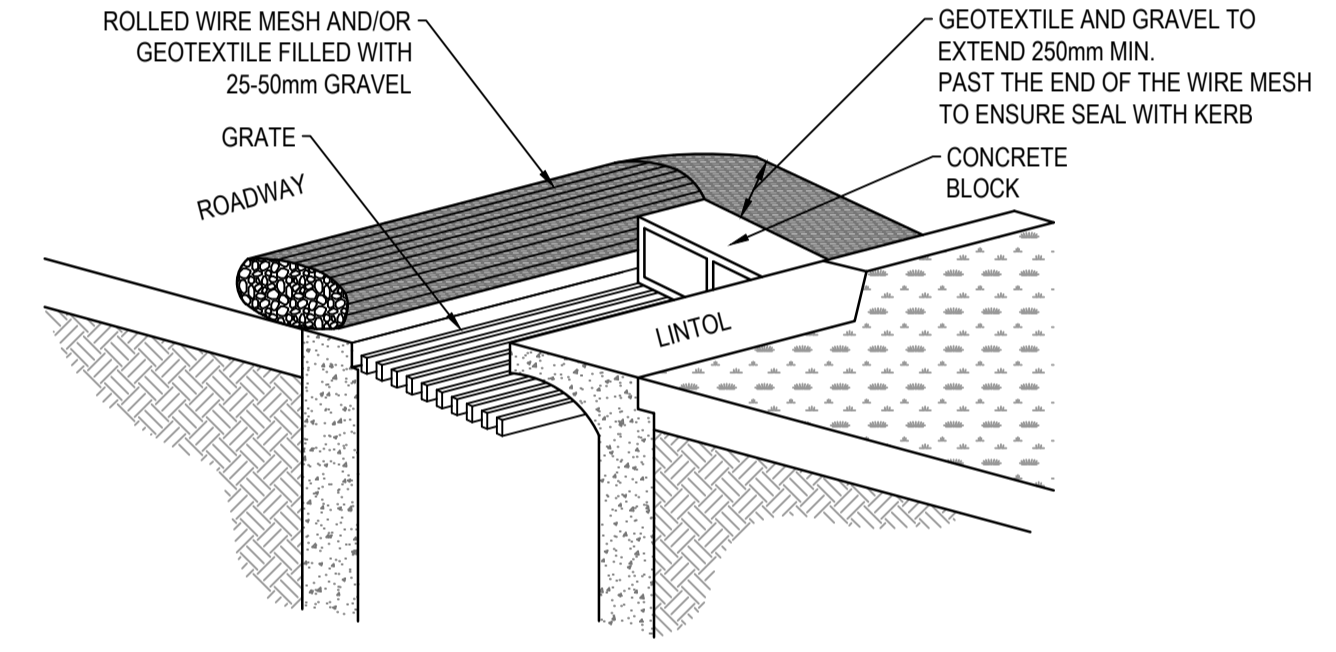
**TREE PROTECTION/NO-GO FENCING**

- ALL INDIGENOUS TREES TO TWICE THE CANOPY
- PROTECTIVE FENCING (HIGHLY VISIBLE) AROUND TWICE THE CANOPY
- DISTANCE OF EACH SCATTERED TREE AND MORE THAN 2 METRES FROM AREAS OF NATIVE VEGETATION IDENTIFIED TO BE PROTECTED.



- CONSTRUCTION NOTES:**
- CHAIN WIRE MESH PANELS WITH SHADE CLOTH (IF REQUIRED) ATTACHED, HELD IN PLACE WITH CONCRETE FEET.
  - ALTERNATIVE PLYWOOD OR WOODEN PALING FENCE PANELS. THIS FENCING MATERIAL ALSO PREVENTS BUILDING MATERIALS OR SOIL ENTERING THE TPZ.
  - MULCH INSTALLATION ACROSS SURFACE OF TPZ (AT THE DISCRETION OF THE PROJECT ARBORIST). NO EXCAVATION, CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT OR STORAGE OF MATERIALS OF ANY KIND IS PERMITTED WITHIN THE TPZ.
  - BRACING IS PERMISSIBLE WITHIN THE TPZ. INSTALLATION OF SUPPORTS SHOULD AVOID DAMAGING ROOTS.

**INLET FILTER BAG - PHASE B\*\***



**OTHER ISSUES 1**

ISSUES:  
 ALL CONTRACTORS TO IMPLEMENT AND ADHERE TO THE GUIDELINES AS DESCRIBED WITHIN THIS EMP. PLEASE REFER TO ALL ASSOCIATED DOCUMENTS AND DETAILED DESIGN DRAWINGS FOR EXACT LOCATION OF ELEMENTS.  
 ALL CONTRACTORS TO IMPLEMENT, MONITOR AND REVIEW ENVIRONMENTAL PROTECTIVE MEASURES ON A STAGE BY STAGE BASIS.

**OTHER ISSUES 2**

ISSUES:  
 LIKELIHOOD  
 LIKELY  
  
 CONSEQUENCE  
 MAJOR  
  
 OVERALL RISK  
 LOW

LIKELIHOOD  
 LIKELY  
  
 CONSEQUENCE  
 MAJOR  
  
 OVERALL RISK  
 LOW

**AS CONSTRUCTED PLANS**  
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Quality Management ISO 9001  
 OHS Management AS/NZS 4501  
 Environmental Management ISO 14001

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
 PERMIT REF. NO.

SCALE AS SHOWN AT A1

Member of the **Surbana Jurong Group**  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

**SMEC**  
 Member of the **Surbana Jurong Group**  
 ABN 47 065 475 149  
 Collins Square, Tower 4, Level 20, 727 Collins St  
 Melbourne, VIC, 3008, Australia  
 03 9514 1500

**mirvac**

Olivine Estate - Stage 23  
 Whittlesea City Council  
 Road and Drainage  
 Environmental Management Plan - 2  
 Details

MELWAYS REF: 8M2  
 PROJECT / DRAWING No: 1700E-023-456  
 SHEET No: 25 of 26  
 REVISION: 1

PHASE	DISCIPLINE CODE	POTENTIAL RISK (Construction, Operations, Maintenance)	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	Roads	Construction close to live traffic	New works will be constructed adjacent to live traffic when abutting existing stages.	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	Roads	Culverts	Potential risk from culverts under construction and height / fall hazards	Contractor	Falling from a height	Temporary barriers to be provided	Temporary barrier provided in contract	N	2	5	10	Constructor
Construction	US	Utilities or Services	Utilities become a hazard within clear zones	Vehicle conflict with utility / pit	Contractor	Personal injury, vehicle damage	Sequence works and protect with temp barrier or traffic control (TCP)	TCP provided within contract	N	1	5	5	Constructor
Operational	RD	Roads	Sight Lines	Inadequate drivers response time.	Road Authority	Increased potential for accidents	Ensure design complies with relevant standard. Undertake thorough Safety Audit	Vis lines checked and discussed with approval authority as part of design approval process	N	1	4	4	Road Authority
Operational	LS	Lines and Signs	Signs and street lights	Potential for drivers / riders to strike signs and street lights	Road Authority	Increased potential for accidents	Ensure design complies with relevant standard. Undertake thorough Safety Audit	Refer to appropriate standard for sign and lighting offsets	N	1	4	4	Road Authority
Operational	RF	Road Furniture	Headwalls	Potential vehicle conflict within clear zone	Road Authority	Increased potential for accidents	Establish adequate clear zone provision	Adequate barrier provided as per appropriate standard where within clear zone. Culvert headwall selection in accordance with authority standard	N	2	4	8	Road Authority
Operational	RD	Roads	Culverts	Potential fall hazard during maintenance, by vehicles and pedestrians	Relevant Authority	Falling from a height	Barriers to be provided in accordance with road standards	Barriers to be provided and safe batter slopes (>1:3)	N	2	5	10	Constructor
<b>Retaining Walls</b>													
Construction	RW	Retaining Walls	Retaining Wall Alignment	Falling from height during construction or commissioning of walls and adjacent structures eg. sewer manholes	Contractor	Falling from a height	Provide temporary and permanent fencing at top of wall.	Provide fencing (at heights) during design process	N	1	1	1	Constructor
Operational	RW	Retaining Walls	Retaining Wall Alignment	Lack of safe access/setback from road	Road/ Local Authority	Increased potential for accidents	Establish adequate and accessible clear zone provision. Provide guardrail where required	Wall located in suitable position during design process and approved by authority	N	1	1	1	Authority
Operational	RW	Retaining Walls	Retaining Wall Height	Potential for falling from height	Road/ Local Authority	Personal injury	Provide temporary and permanent fencing at top of wall.	Provide fencing (at heights) during design process	N	1	5	5	Authority
Operational	RW	Retaining Walls	Retaining Wall Design	Potential for wall failure	Road/ Local Authority	Increased potential for accidents	Structural design in accordance with standards, geotechnical conditions, end use and good practise.	Refer to structural drawings and calculations	N	1	5	5	Authority
<b>Drainage</b>													
Operational	DR	Drainage	Grated Pits	Trip/fall hazard with large spaced grate	Relevant Authority	Increased potential for accidents	Provide pedestrian/bicycle friendly grates where applicable. Refer to pit schedule	Design in accordance with authority and manufacturers standards	N	3	2	6	Authority
Operational	DR	Drainage	Non Standard Large Pits	Potential for pit failure	Relevant Authority	Increased risk to maintenance crews/ vehicles	Structural design in accordance with relevant design principles.	Refer to structural drawings and calculations	N	1	4	4	Authority
Operational	DR	Drainage	Culvert Endwalls/Headwalls	Potential for falling from height	Relevant Authority	Increased potential for accidents	Fencing to be provided where culverts/headwalls are at height in accordance with relevant authority standards	Allow for fencing in Design Process	N	1	4	4	Authority
Operational	DR	Drainage	Culvert Endwall/Headwall Outlets	Children playing in large pipes / watercourses and access for maintenance	Relevant Authority	Increased potential for accidents	Grate provided to authority standards	Design in accordance with authority and manufacturers standards	N	2	5	10	Authority
Maintenance	DR	Drainage	Access to Pits	Lack of safe access for maintenance	Relevant Authority	Increased risk to maintenance crews	Provide safe working conditions for maintenance. Provide safe landing/ access arrangements as per relevant authority standards	Where possible design pit in location for easy access and outside of permanent water bodies	N	2	5	10	Authority
Maintenance	DR	Drainage	Deep Pits	Lack of safe entry for maintenance	Relevant Authority	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	Design in accordance with authority standards	N	1	5	5	Authority
Maintenance	DR	Drainage	Access to drains / culverts	Lack of safe access for maintenance	Relevant Authority	Increased risk to maintenance crews	Provide safe working conditions for maintenance. Access as approved by authority	Design pit in location for easy access as agreed with authority	N	2	3	6	Authority
<b>Sewer</b>													
Construction	SE	Sewer	Sewer Manhole located adjacent to Retaining Wall Alignment	Falling from height during construction or commissioning of adjacent sewer manholes	Contractor	Falling from a height	Provide temporary fencing until such time that permanent fencing is constructed	Provide fencing (at heights) during design process	N	1	1	1	Constructor
Maintenance	SE	Sewer	Deep Manholes	Lack of safe entry for maintenance	Relevant Authority	Increased potential for accidents	Contractor to be certified for work in confined spaces, landings and step access provided as per authority standards and schedule	Design in accordance with authority standards. Refer pit schedule on drawings	N	1	5	5	Authority
Maintenance	SE	Sewer	Access to Manholes	Lack of safe access for maintenance	Relevant Authority	Increased risk to maintenance crews	Provide safe working conditions for maintenance. Manholes located in compliance with authority standards	Where possible design manhole in location for easy access	N	1	5	5	Authority
Maintenance	SE	Sewer	Pump Station Access	Lack of safe access for maintenance	Relevant Authority	Increased risk to maintenance crews	Provide safe working conditions for maintenance	Design pump station in location for easy access	N	2	4	8	Authority
<b>Electricity</b>													
Operational	ES	Electrical Services	Electrical Design	Location of assets within clear zones e.g. pits/ substations	Relevant Authority	Increased potential for accidents	Electrical designed by sub consultant with appropriate accreditation and in accordance with authority standards	Pits designed below ground. Where above ground adequate offset from vehicle clear zones has been provided or barrier protection provided	N	2	3	6	Authority
<b>Telstra</b>													
Operational	TE	Telstra	Telstra Design	Location of assets within clear zones e.g. pits	Relevant Authority	Increased potential for accidents	Telecommunications designed by authority consultant with appropriate accreditation and in accordance with authority standards	Pits designed below ground. Where above ground adequate offset from vehicle clear zones has been provided or barrier protection provided	N	2	3	6	Authority
<b>Water</b>													
Operational	WA	Water	Water Design	Location of assets within clear zones e.g. pits/ substations	Relevant Authority	Increased potential for accidents	Water pits designed in accordance with authority standards	Pits designed below ground. Where above ground adequate offset from vehicle clear zones has been provided or barrier protection provided	N	2	3	6	Authority
<b>Gas</b>													
Operational	GA	Gas	Gas Design	Location of assets within clear zones e.g. pits/ substations	Relevant Authority	Increased potential for accidents	Water pits designed in accordance with authority standards	Pits designed below ground. Where above ground adequate offset from vehicle clear zones has been provided or barrier protection provided	N	1	1	1	Authority

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**AS CONSTRUCTED**

PLAN OF SUB. NO.  
PERMIT REF. NO.

SCALE AS SHOWN AT A1



Olivine Estate - Stage 23  
Whittlesea City Council  
Road and Drainage  
Safety In Design

MELWAYS REF: 8M2 PROJECT / DRAWING No: 1700E-023-500 SHEET No: 26 of 26 REVISION: 1