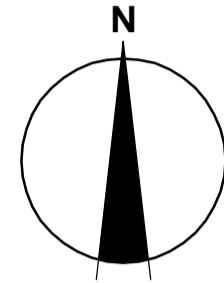


ESTUARY

Stage 2A

City of Greater Geelong



LOCALITY PLAN
MELWAYS REF: 468 D5

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- 0250EHL-02A- 03 Layout Plan
- 0250EHL-02A- 04 Services Layout Plan
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- 0250EHL-02A- 23 Subdivision Setout Plan



Designed for Living



Principal

Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006



Level 1, 47 Pakington Street,
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Tel: +61 3 5228 3100
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ABN. 99 124 206 819

Standard Construction Notes

1. GENERAL

- 1.1 **Drawings** - The drawings are to be read in conjunction with the contract specification and the responsible Authorities standard drawings and current specifications for Roadworks and Drainage. Any observed discrepancy to be referred to the Superintendent prior to start of work.
- 1.2 **Responsible Authority Documentation Availability** - A set of the respective responsible Authority standard construction documentation including drawings and specification/s are to be provided by the Contractor and made available on-site for the duration of the construction period.
- 1.3 **Conformity with Drawings** - All works are to be finished in conformity with the lines, grades, thicknesses and cross sections shown in the drawings.
- 1.4 **Materials and Workmanship** - Materials and workmanship to comply with responsible Authority specifications and relevant SAA Codes.
- 1.5 **Tolerances** - Works are to be constructed in compliance with tolerances specified by the relevant responsible Authorities.
- 1.6 **Minimum Standards** - The standards of work and materials stated in the drawings and specification are the minimum acceptable irrespective of relevant responsible Authority minimum standards.
- 1.7 **Sewer/Water Supply** - Construction notes specific to sewer and water supply asset construction are incorporated in the drawings approved by the Water Company as attached hereto.

2. EXISTING CONDITIONS

- 2.1 **Discrepancy with Drawings** - Any discrepancy observed/identified between the drawings and existing conditions and site features are to be referred to the Superintendent prior to start of any related work.
- 2.2 **Municipal Assets & Infrastructure** - The condition of existing Council assets potentially affected by the works is to be assessed by a joint site inspection with Council Officers prior to the start of works. Asset conditions are to be recorded and witnessed by Council and the Contractor. The Contractor is to arrange and record site inspections and is liable for all rectification/reinstatement costs for damage to existing assets.
- 2.3 **Utility Services** - The locations of existing utility services, as shown in the drawings, are not guaranteed. Exact service locations are to be proven prior to start of works. Service location works are to comply with the requirements of the relevant responsible Authority. The Contractor is liable for rectification/reinstatement costs for damage to existing utility services.

3. NOTIFICATIONS

- 3.1 **Council** - Minimum notification periods are:
- (a) **two (2) days** written notice of intention to start works
 (b) **two (2) days** notice to inspect condition of existing Council assets
 (c) **twenty four (24) hours** notice for weekend work
 (d) **twenty four (24) hours** notice for:
 - inspection of drainage works
 - inspection of sub-soil drains
 - proof roll of prepared sub-grade or constructed pavement
 - inspection of prepared base for concrete works
 - other works as stated in the drawings or specified

Or as otherwise agreed with Council Officers.

- 3.2 **Property Owners/Tenants** - Seven (7) days written notice to property owners/tenants affected by the works.

4. OCCUPATION OF PUBLIC ROADS

All roadworks signage to comply with VicRoads Worksite Traffic Management Code incorporating AS 1742.3.

- 4.1 **Roads under VicRoads jurisdiction** - The Contractor is to arrange VicRoads consent via "Application for Consent - Works within Road Reserves" (refer VicRoads web site).

- 4.2 **Roads under Council control** - The Contractor is to arrange and acquire requisite Road Closure Permits via Council's Traffic Officer.

5. SET OUT

- 5.1 **Survey Stations and Reference Marks** - The locations of survey stations and reference marks are to be verified prior to start of works.
- 5.2 **Road Chainages** - Road chainages as shown in the drawings are to road centreline, unless otherwise stated.
- 5.3 **Kerb & Channel** - Kerb and channel radii and levels relate to edge of channel, unless otherwise stated.
- 5.4 **Drainage Pits** - The locations and orientation of drainage pits are to be accurately set out from co ordinates and/or offsets as stated.
- 5.5 **Pipe Drains** - Drainage lines are to be accurately set out from coordinates and/or offsets as stated. Further to Standard Note 5.4 drainage lines at pits are to be accurately set out to ensure that the outlet pipe is aligned directly opposite the inlet pipe (where deflection angles are 45o or less) or as otherwise stated in the drawings or directed.

6. TOPSOIL

- 6.1 **Stripping Limits** - Clearing and stripping of topsoil to be restricted to areas to be excavated/filled as stated in the drawings or limits as otherwise directed by the Superintendent.
- 6.2 **Surplus Material** - Surplus topsoil must be re-used on-site unless otherwise stated in the drawings or directed by the Superintendent.

7. EXISTING VEGETATION

All existing trees and significant vegetation within and external to the worksite are to be retained, preserved and protected unless otherwise stated in the drawings or directed by the Superintendent.

8. EXCAVATION/TRENCHING

- 8.1 **Trenching** - Trenching operations exceeding 1.5 metres depth are to comply with the provisions of the Mines (Trenches) Regulations 1982.
- 8.2 **Work close to Trees and Vegetation** - Excavation work within the drip line of trees is not to be performed unless otherwise stated in the drawings or approved by the Superintendent.
- 8.3 **Unstable Sub-Grade** - Unstable sub-grade/"soft spots" to be excavated to a sound proof-rolled base and backfilled with material approved by Council.

9. SOIL EROSION

The Contractor must install necessary protection works to effectively manage and limit soil erosion within the worksite. Works to include, but are not limited to:

- 9.1 **Silt Fences** - downstream of all exposed areas.
- 9.2 **Silt Barriers** - upstream of all pits

10. DRAINAGE WORK

- 10.1 **Existing Drains** - The location of existing drainage assets to be verified prior to start of works.
- 10.2 **Pipe Class** - Pipes to be, unless otherwise stated in the drawings:
- (a) Roads & Reserves - Class 2 Rubber Ring Jointed RCP
 (b) Easements - Rubber Ring Jointed RCP/FRP or Sewer Class Solvent Cement UPVC
- 10.3 **Pit Covers** - Pit covers are to be placed to match actual finished surface profiles - level and cross fall - of adjacent structures/surfaces. Finished surface levels stated in the drawings are indicative, for depth range purposes, and are not to be used as the basis for setting final pit cover levels
- 10.4 **Pit Construction** - Precast standard pits are to be installed. Cast in-situ standard pits are only to be constructed where approved by the Superintendent. All sumps in precast concrete pits are to be infilled with concrete flush to the inlet level of the outlet pipe unless otherwise approved by the superintendent.
- 10.5 **Sub-Soil Drains**
- (a) Entry to pits to be trimmed flush with inner wall and effectively mortared in place through the full pit wall thickness.

- (b) Details of granular filter material including source to be submitted to the Superintendent prior to start of sub-soil drainage works.

11. BACKFILL MATERIAL

- 11.1 **Trenches under all pavement, edgings/kerb sections & Nature Strips** - 20mm Class 3 Fine Crushed Rock or other material as approved by Council.
- 11.2 **Allotments/Reserves/** - Selected best quality excavated in-situ material or other material as approved by Council.

12. COMPACTION STANDARDS

Compaction standards are to be checked and proven in accordance with the requirements of AS 1289. Where unspecified by the responsible Authority, the following minimum standards will apply:

12.1 Structural Fill

- (a) Fill base - top 150mm 95% standard compaction
 (b) Fill zone - 95% standard compaction
 (c) Under road pavement - zone less than 450mm under road pavement surface 98% standard compaction

12.2 Road Pavement

- (a) Road sub-grade - top 150mm 98% standard compaction
 (b) Pavement materials - 98% modified compaction

12.3 Trench Backfill

- (a) Granular under all pavement & edgings/kerb sections - 98% modified compaction
 (b) Granular behind kerbing - 95% modified compaction
 (c) Earth around structures - 95% standard compaction

13. CONCRETE WORK

- 13.1 **Minimum Strength**
 - Concrete for drainage pits to have a minimum compressive strength of 32 MPa at 28 days.
 - Concrete for all other applications to have a minimum compressive strength of 25 MPa at 28 days
- 13.2 **Bar Chairs** - All reinforcement in footpaths, vehicle crossings and roads to be supported by appropriately sized bar chairs.
- 13.3 **Slump** - Concrete to have 75mm maximum slump.
- 13.4 **Kerb Cement Content** - Concrete for kerb extrusion machines to have a minimum cement content of 280 kg/m3.
- 13.5 **Services Distribution Mains & Conduits** - Mains and conduits are to be installed prior to kerb section construction works.
- 13.6 **Footpaths** - All footpaths are to be a minimum of 125mm thick with F62 reinforcement, bedded on min of 75mm compacted Class 3 FCR. Bedding to extend 100mm beyond the edges of the footpath. Contraction joints to be constructed at 12.5m intervals. Class 4 FCR is to be used where filling is required under footpath Class 3 FCR bedding material.
- 13.7 **Continuous Kerb** - To allow for a continuous concrete kerb and channel pour the "Gatic" HD concrete surround is to be in place prior to the pour commencing. If the pit surrounds are not in place then the initial kerb and channel pour is to stop one metre either side of pit.

14. ROAD PAVEMENT WORK

- 14.1 **Pavement Composition** - The minimum standard of pavement composition is stated in the drawings for the respective road sections.
- 14.2 **Road surfacing** - Road surfacing must not be performed until all other works have been completed.

15. IDENTIFICATION MARKING

All identification marking figures are to be a minimum of 50mm high.

- 15.1 **Conduits** - Letter "W", "G" "E" or "T" for water, gas, electricity or telecommunications conduit to be stamped into face of kerb sections at frontage of lot served.
- 15.2 **House Drain Connections** - Letter "H" to be stamped into face of kerb sections

opposite street drain connection point.

- 15.3 **Lot Nos.** - Lot Nos. to be stenciled in white paint on face of kerb sections at lot frontages.

16. TESTING

- 16.1 **Specified Testing** - Testing will be conducted in compliance with specified requirements. The Contractor is liable for all costs.
- 16.2 **Proof-Rolling** - Pneumatic tyred plant minimum weight 20 tonne with minimum ground contact pressure 450 kPa per tyre.

17. EXPOSED SURFACES RESTORATION

- 17.1 **Topsoiling** - All exposed residual surface areas at completion of civil works to be topsoiled with 100mm depth of best available material.
- 17.2 **Allotments/Reserves** - Allotments and reserves are to be evenly graded at a minimum gradient of 1 in 100 to their nominated drainage connection points.
- 17.3 **Nature Strips** - Nature strip surfaces are to be trimmed to grade between adjacent surfaces. Top-soiling and compaction operations are to ensure there is no later settlement/subsidence.
- 17.4 **Top-Dressing** - Undisturbed grassed areas are to be top-dressed and evenly graded as directed by the Superintendent.
- 17.5 **Hydroseeding** - At completion of the above works all prepared exposed surfaces are to be well watered and hydroseeded.

- 17.6 **Batter Slopes** - Batter slopes shall be a maximum of 1 in 5 for fill and 1 in 3 for cut unless otherwise shown.

18. FINAL WORKS PRESENTATION

At Practical Completion the following minimum standards of presentation will apply:

- 18.1 **Roads/Paved Areas** - All roads and paved areas are to be swept/washed down to produce clean surfaces free of all deleterious materials.
- 18.2 **Pipe Systems** - All pipe systems are to be flushed and cleared of all accumulated debris and deleterious materials.
- 18.3 **Site** - The site is to be prepared to a state acceptable for presentation to the public for sale purposes and is to be in a condition satisfactory to the Superintendent with completion of, at least, the following activities:
 (a) all incidental and minor works
 (b) site clean up operations
 (c) site cleared of all facilities, temporary structures, plant, litter, surplus materials, etc. that are to be removed off-site.
- 18.4 **Reserve Frontages** - Round topped treated pipe bollards (0.6m high) are to be placed across reserve frontages at 1.5m centres. A demountable section for vehicle access consisting of an appropriate length of 50mm diameter (2.3mm wall thickness) galvanised water pipe, short section of chain (3 links) welded to each end. Two galvanised steel bollards - one each side of the entry, with one end to have a D20 padlock, which locks in to a link, which has been welded onto the bollard. Unless otherwise stated on plans.
- 18.5 **Street Signs** - Street signs are to be located as indicated on the plans and installed in accordance with Vicroads Traffic Engineering Manual Volume 2. Mounting height is to be to the underside of the sign and is to be a minimum of 2.1m and maximum of 3.0m
- 18.6 **No Through Road** - No through road signs are to be install below the street sign where applicable.

19. MAINTENANCE WORKS

The Contractor must responsively repair/remediate defective works as directed during the maintenance period.

- 19.1 **Council Assets** - for Maintenance Period of 3 months
- 19.2 **Water Company Assets** - for Defects Liability Period of 12 months and Maintenance Period of 2 years
- 19.3 **Inspection & General Maintenance Activities** - the Contractor must undertake regular site inspections of all completed works. Special attention must be given to the adequacy of the following soil protection works:

- (a) Silt fences
 (b) Silt barriers



Designed	C. Barker	November 2009
Drawn	M. Wilks	November 2009
Checked	C. Birkett	November 2009
Approved	J. Golden	November 2009

Scale@A1

ESTUARY

Stage 2A
 City of Greater Geelong
 Roadworks and Drainage
 General Notes

Drawing No. 0250EHL-02A-02 Rev B
 Sheet No. 2 of 23

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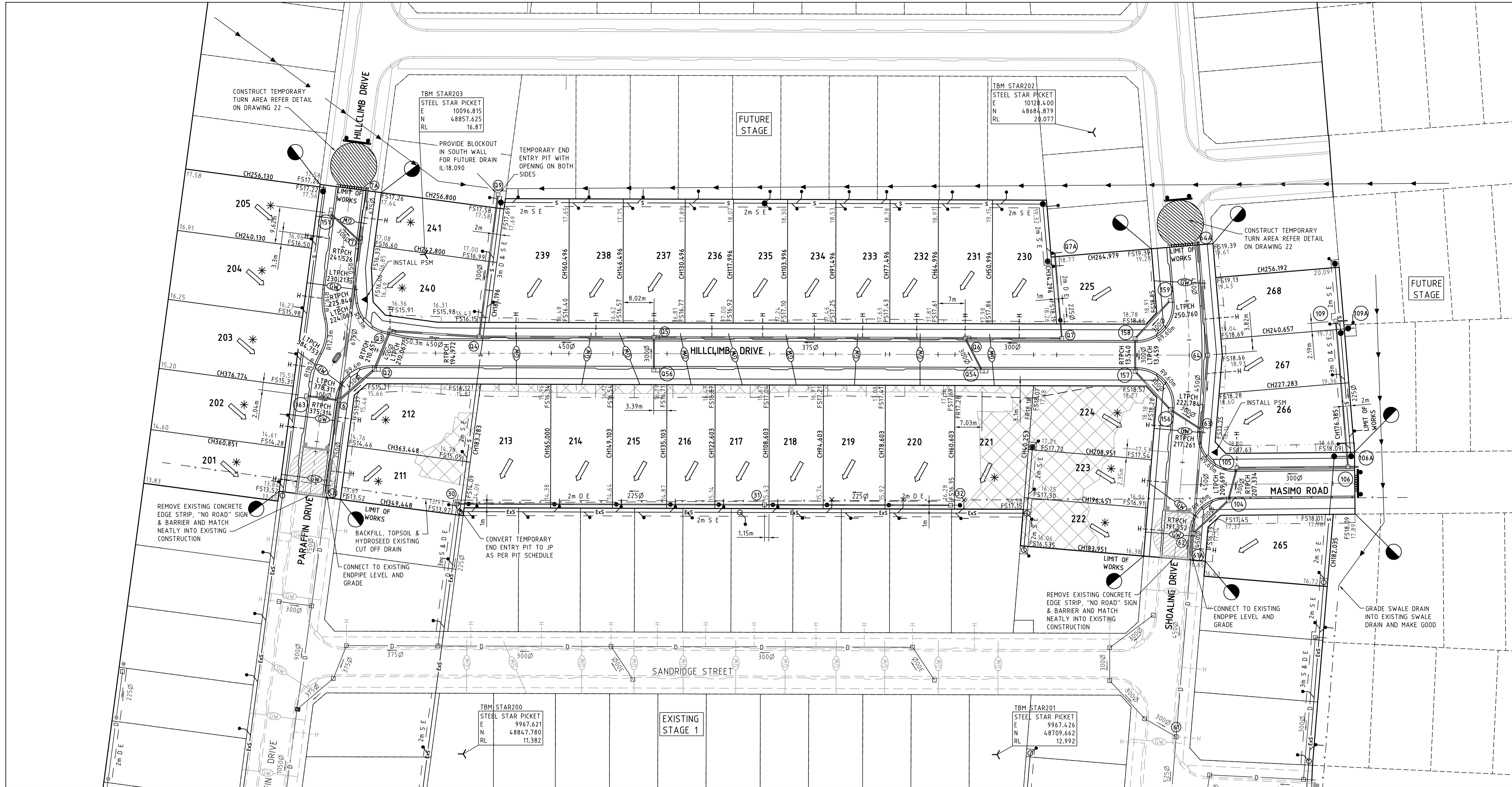


Principal Leopold Developments Pty Ltd
 Level 1, 6 Riverside Quay
 Southbank, Victoria 3006

B	COUNCIL AMENDMENTS	18.03.10	
A	ISSUED TO COUNCIL	20.01.10	
	REVISION	DATE	APP'D

DRAWING NOTES

- Do not scale drawings - use only dimensions stated.
- Dimensions - Dimensions are in metres [m] unless otherwise stated.
- Australian Height Datum - Reduced levels are to Australian Height (AHD) unless otherwise stated.



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.

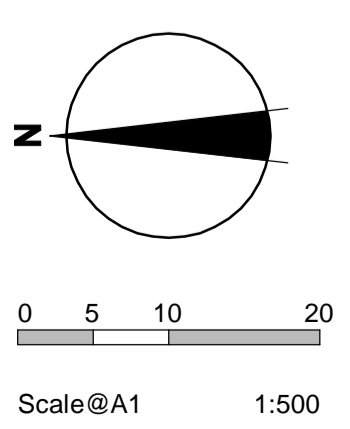
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		LIP to LIP	INV to INV	BACK to BACK	NTH/WEST	STH/EAST	NTH/WEST	STH/EAST
SHOALING DRIVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
HILLCLIMB DRIVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
PARAFFIN DRIVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
MASIMO ROAD	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25

ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
SHOALING DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	1.80	NORTH	2.30
SHOALING DRIVE TRUNK MAIN	-	-	NORTH	2.90	-	-	-	-
HILLCLIMB DRIVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
PARAFFIN DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
MASIMO ROAD	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70

REVISION	DATE	APP'D
E DRIVEWAY LOCATION AMENDED FOR LOT 267	15.06.10	
D MINOR AMENDMENTS	25.5.10	
C VEHICLE ACCESS LOCATION & DRAINAGE AMENDED	19.05.10	
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

- Electricity (Underground)
- Gas
- Telstra
- Water
- Stormwater Drain, Pit and Property Inlet
- Swale Drain
- Sewer, Maintenance Structures and Property Connection
- House Drain
- Gas & Water Conduits
- Tactile Paver - Directional
- Tactile Paver - Hazard
- Existing Electricity (Underground)
- Existing Electricity (Overhead)
- Existing Gas
- Existing Telstra
- Existing Water
- Existing Stormwater Drain
- Existing Sewer
- Existing House Drain
- Existing Tree to Remain
- Existing Tree to be Removed
- Existing Swale Drain
- Existing Surface Level
- Finished Building Line Level
- Finished Ridge Line Level
- Top of Retaining Wall
- Bottom of Retaining Wall
- Retaining Wall
- Intersection Threshold Treatment
- Structural Fill > 200mm Deep
- Ex. Structural Fill > 200mm Deep
- Proposed Driveway
- Allotment to be graded evenly in direction of fall to levels indicated
- Direction of Fall
- Overland Flow
- Permanent Survey Mark
- Temporary Bench Mark
- Concrete Edge Strip with Subsoil Drain underneath "No Road" sign and Barrier
- Zero Lot Lines
- Limit of Works

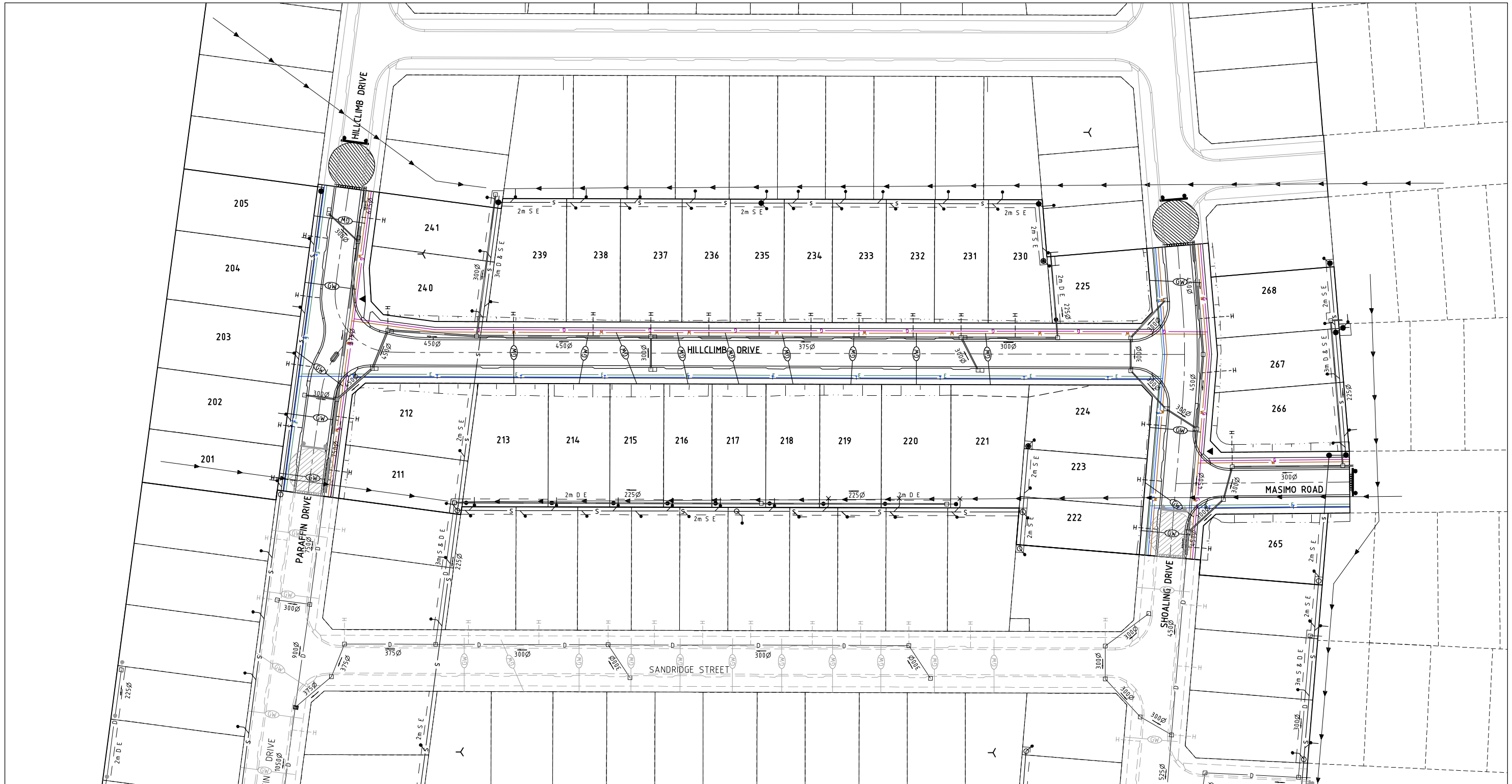


Designed C. Barker November 2009
 Drawn M. Wilks November 2009
 Checked C. Birkett November 2009
 Approved J. Golden November 2009

ESTUARY
 Stage 2A
 City of Greater Geelong
 Roadworks and Drainage
 Layout Plan

Drawing No. 0250EHL-02A-03 Rev E
 Sheet No. 3 of 23
 © SM Urban Pty Ltd ABN 99 124 206 819





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
SHOALING DRIVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
HILLCLIMB DRIVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
PARAFFIN DRIVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
MASIMO ROAD	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25

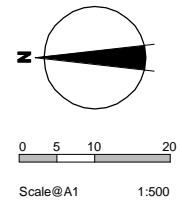
ROAD NAME	SERVICES OFFSET SCHEDULE							
	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
SHOALING DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	1.80	NORTH	2.30
SHOALING DRIVE TRUNK MAIN	-	-	NORTH	2.90	-	-	-	-
HILLCLIMB DRIVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
PARAFFIN DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
MASIMO ROAD	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70

WARNING
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REVISION	DATE	APP'D
C MINOR AMENDMENTS	25.5.10	
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

- E — Existing Electricity (Underground)
- O/H E — Existing Electricity (Overhead)
- G — Gas
- T — Telstra
- W — Water
- S — Stormwater Drain, Pit and Property Inlet
- SW — Swale Drain
- S — Sewer, Maintenance Structures and Property Connection
- H — House Drain
- GW — Gas & Water Conduits
- T — Tactile Paver - Directional
- H — Tactile Paver - Hazard
- Ex E — Existing Electricity (Underground)
- Ex O/H E — Existing Electricity (Overhead)
- Ex G — Existing Gas
- Ex T — Existing Telstra
- Ex W — Existing Water
- Ex S — Existing Stormwater Drain
- Ex S — Existing Sewer
- Ex H — Existing House Drain
- Ex GW — Existing Gas & Water Conduits
- Ex T — Existing Tree to Remain
- Ex X — Existing Tree to be Removed
- — Existing Swale Drain
- 14134 Existing Surface Level
- FS14.35 Finished Building Line Level
- FR157.40 Finished Ridge Line Level
- TW159.38 Top of Retaining Wall
- BW159.38 Bottom of Retaining Wall
- Intersection Threshold Treatment
- Structural Fill > 200mm Deep
- Ex. Structural Fill > 200mm Deep
- Proposed Driveway
- Allotment to be graded evenly in direction of fall to levels indicated
- Direction of Fall
- Overland Flow
- Permanent Survey Mark
- Temporary Bench Mark
- Concrete Edge Strip with Subsoil Drain underneath "No Road" sign and Barrier
- Zero Lot Lines
- Limit of Works





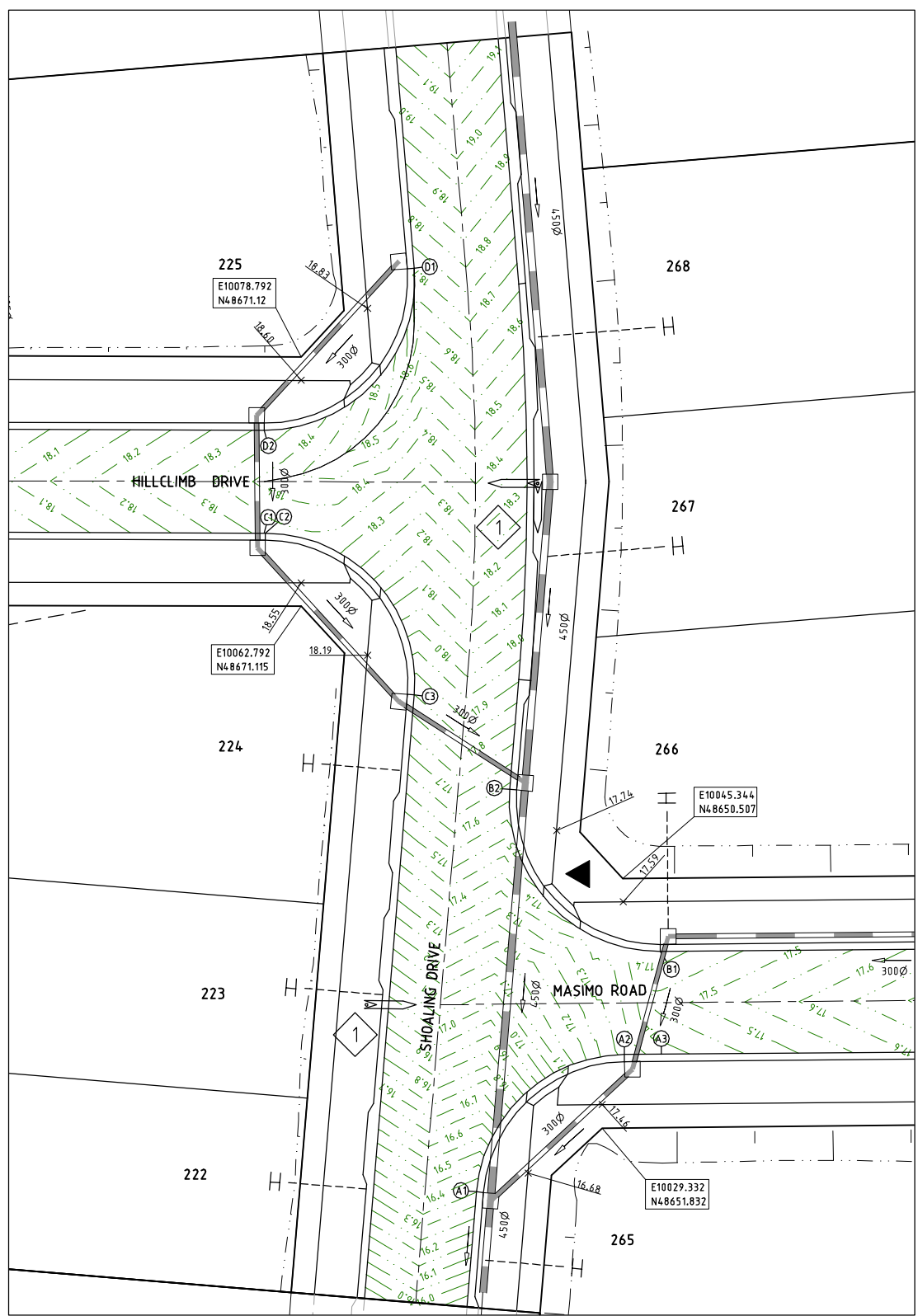
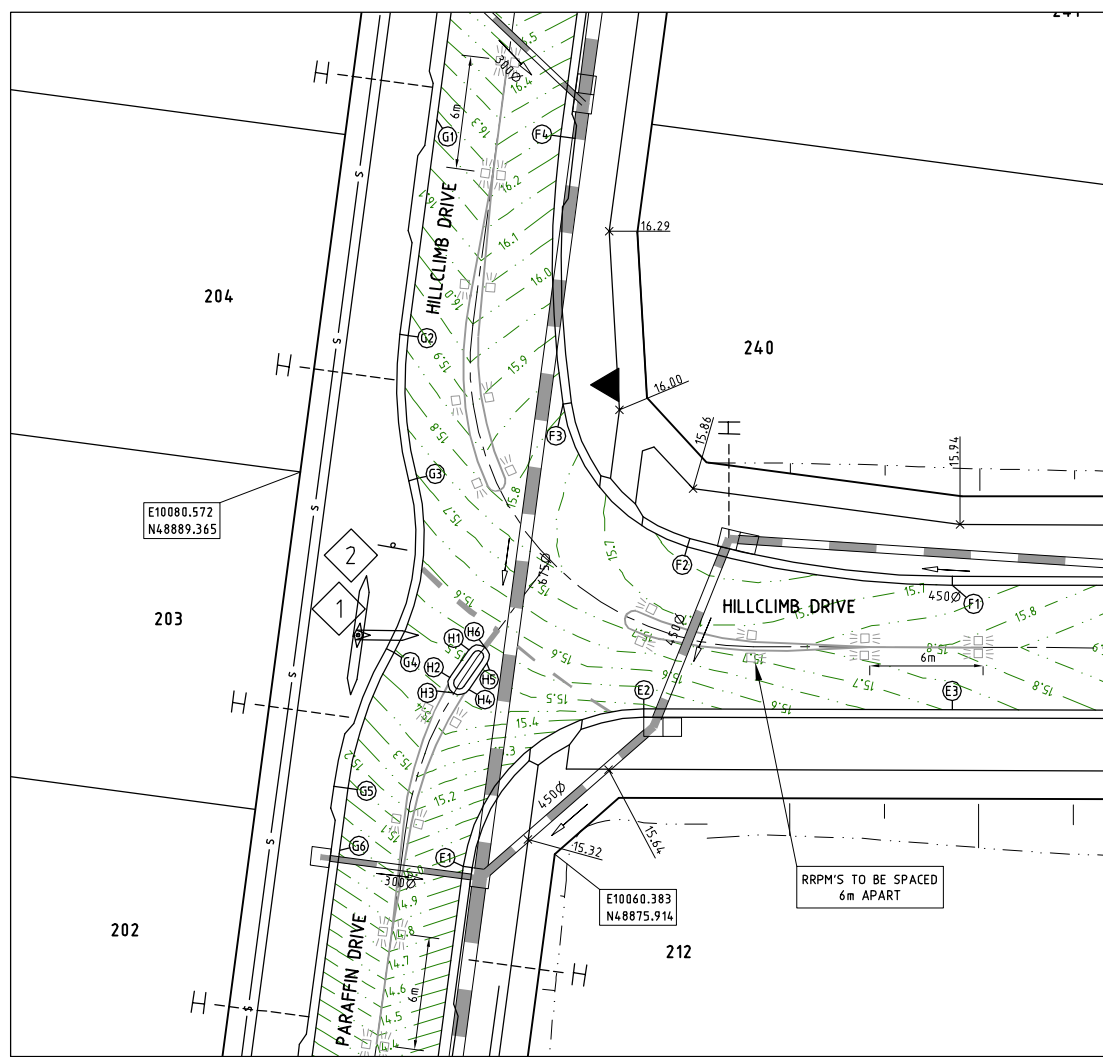
Designed	C. Barker	November 2009
Drawn	M. Wilks	November 2009
Checked	C. Birkett	November 2009
Approved	J. Golden	November 2009

ESTUARY
 Stage 2A
 City of Greater Geelong
 Roadworks and Drainage
 Services Layout Plan

Drawing No. 0250EHL-02A-04 Rev C
 Sheet No. 4 of 23
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SIGN SCHEDULE

SIGN	REF
	1
STREET SIGN	
	2
R1-2	



WARNING
 BEWARE OF UNDERGROUND SERVICES
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- NOTES**
- REFER TO SHEET No. 6 FOR LIP PROFILES.
 - REFER TO SHEET No. 7 FOR SETOUT INFORMATION.



Principal Leopold Developments Pty Ltd
 Level 1, 6 Riverside Quay
 Southbank, Victoria 3006

REVISION	DATE	APP'D
C MINOR AMENDMENTS	25.5.10	
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

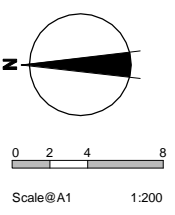
LEGEND

	Electricity (Underground)
	Gas
	Telstra
	Water
	Stormwater Drain, Pit and Property Inlet
	Swale Drain
	Sewer, Maintenance Structures and Property Connection
	House Drain
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	Existing Electricity (Underground)
	Existing Electricity (Overhead)
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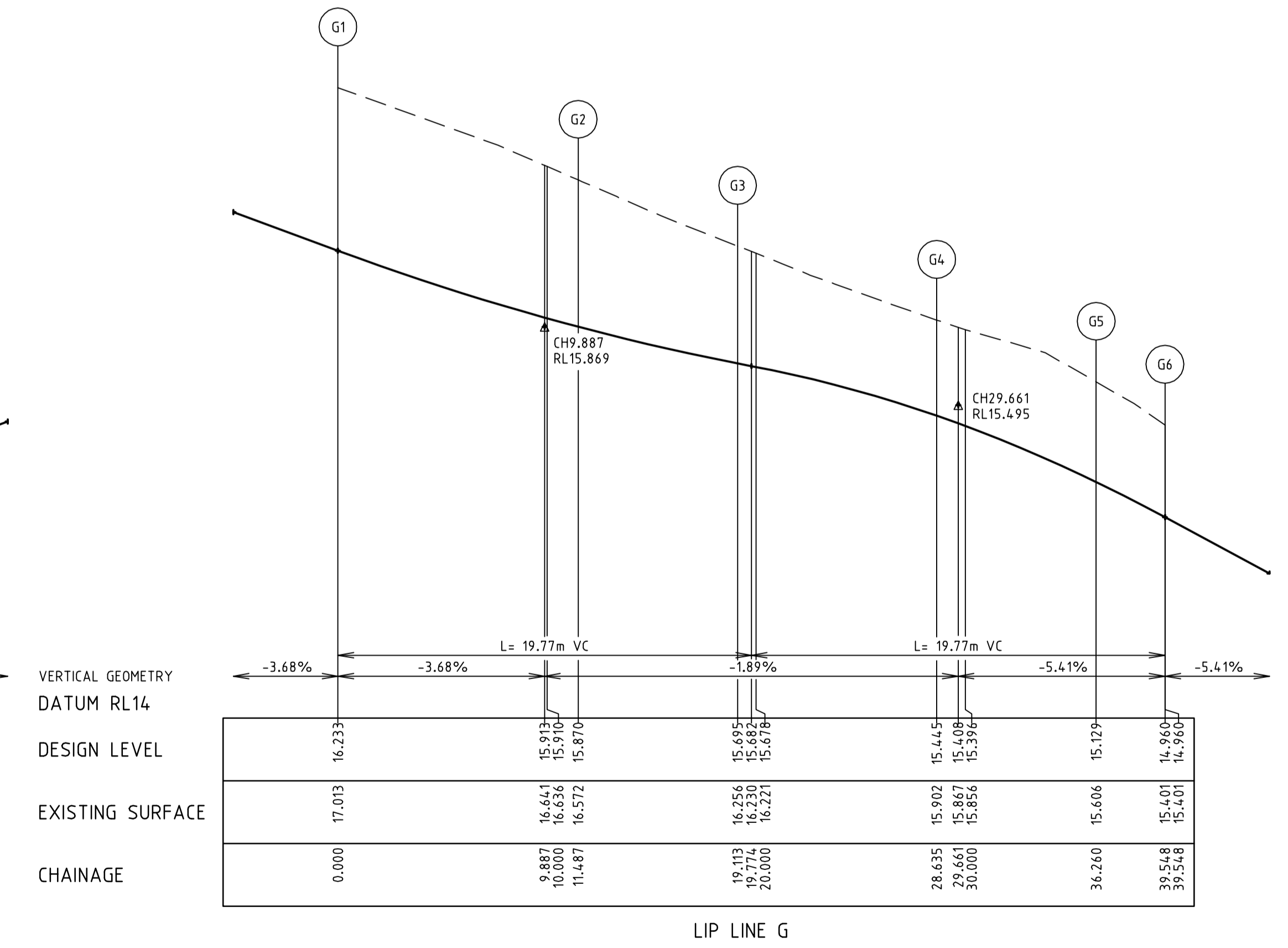
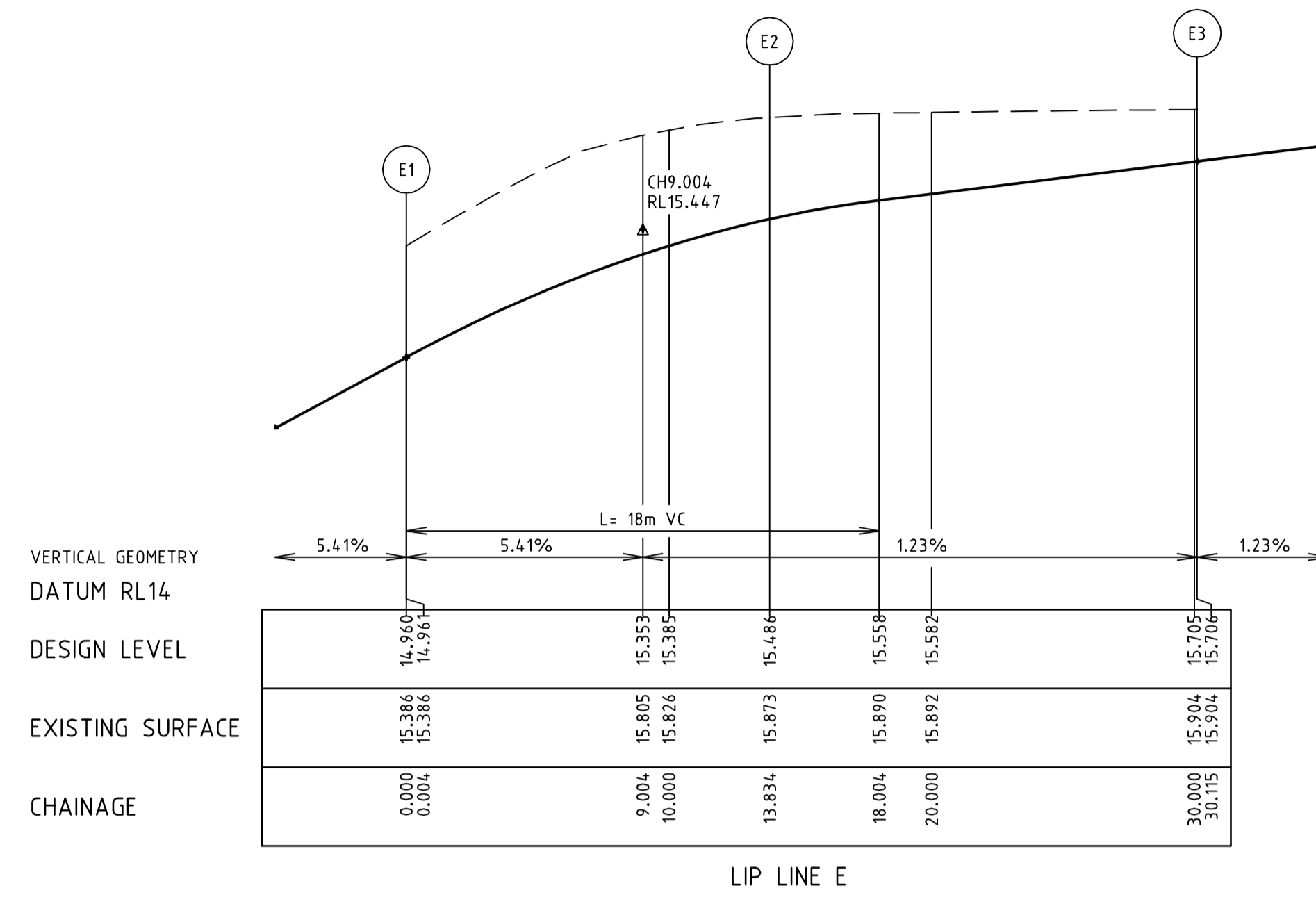
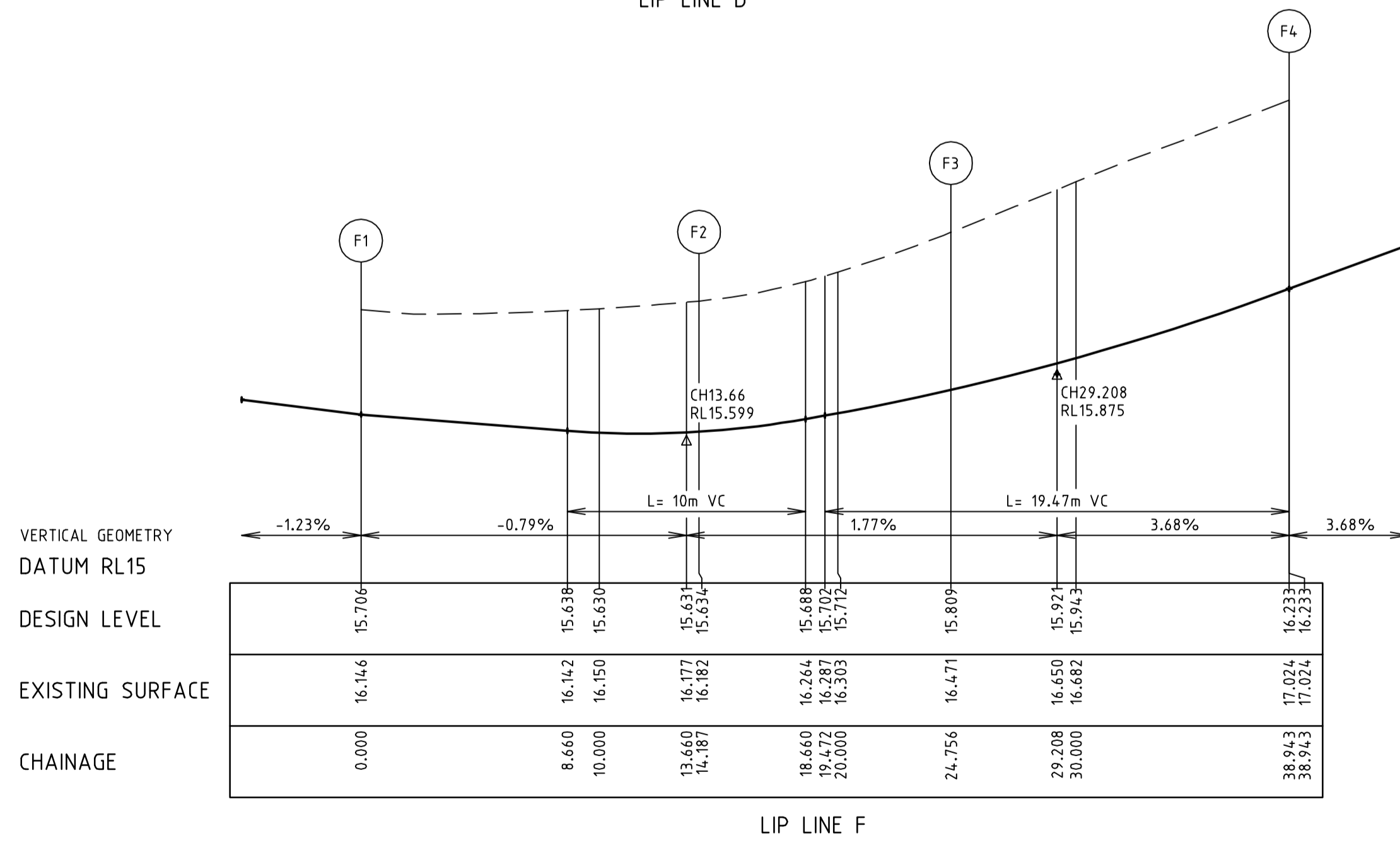
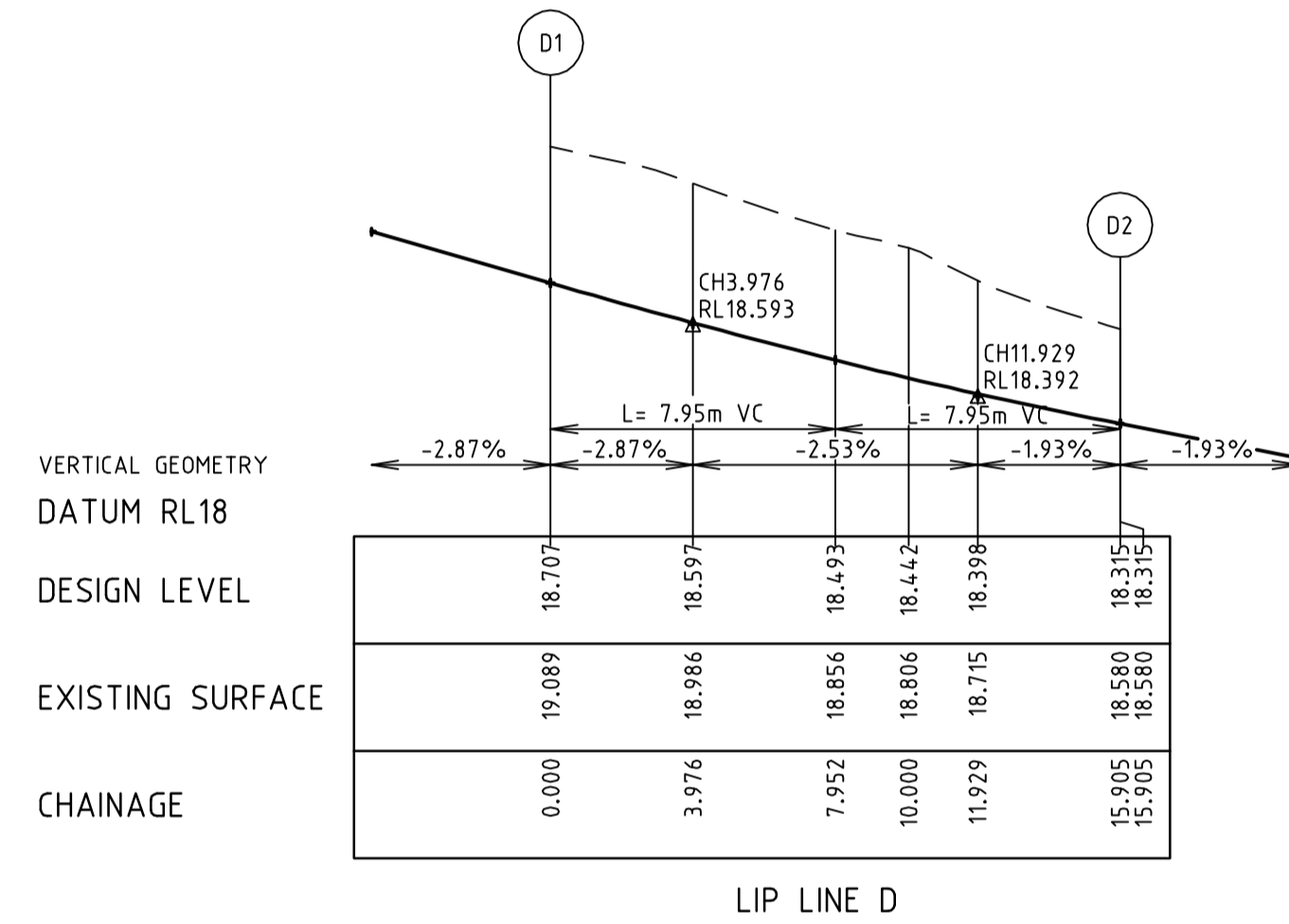
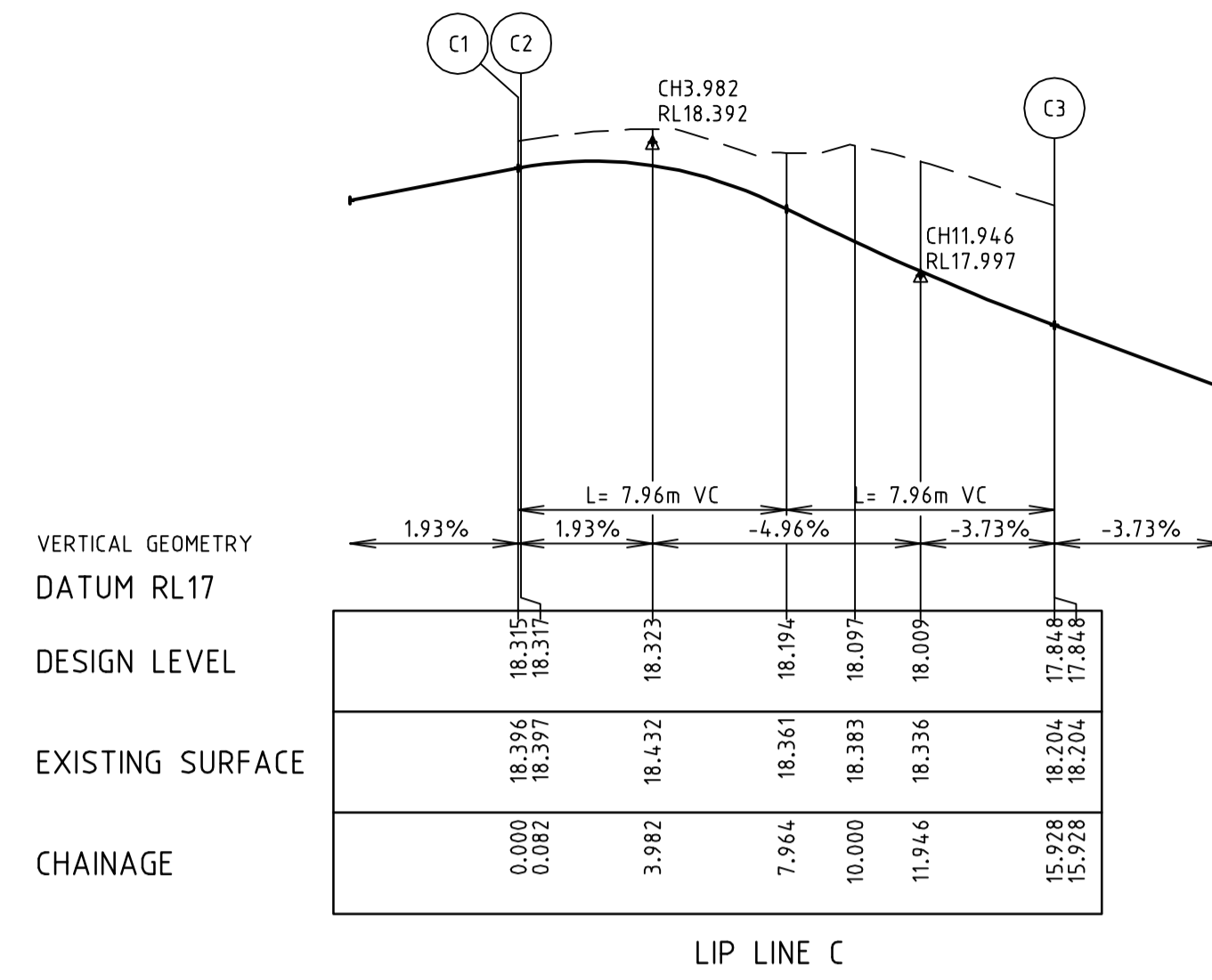
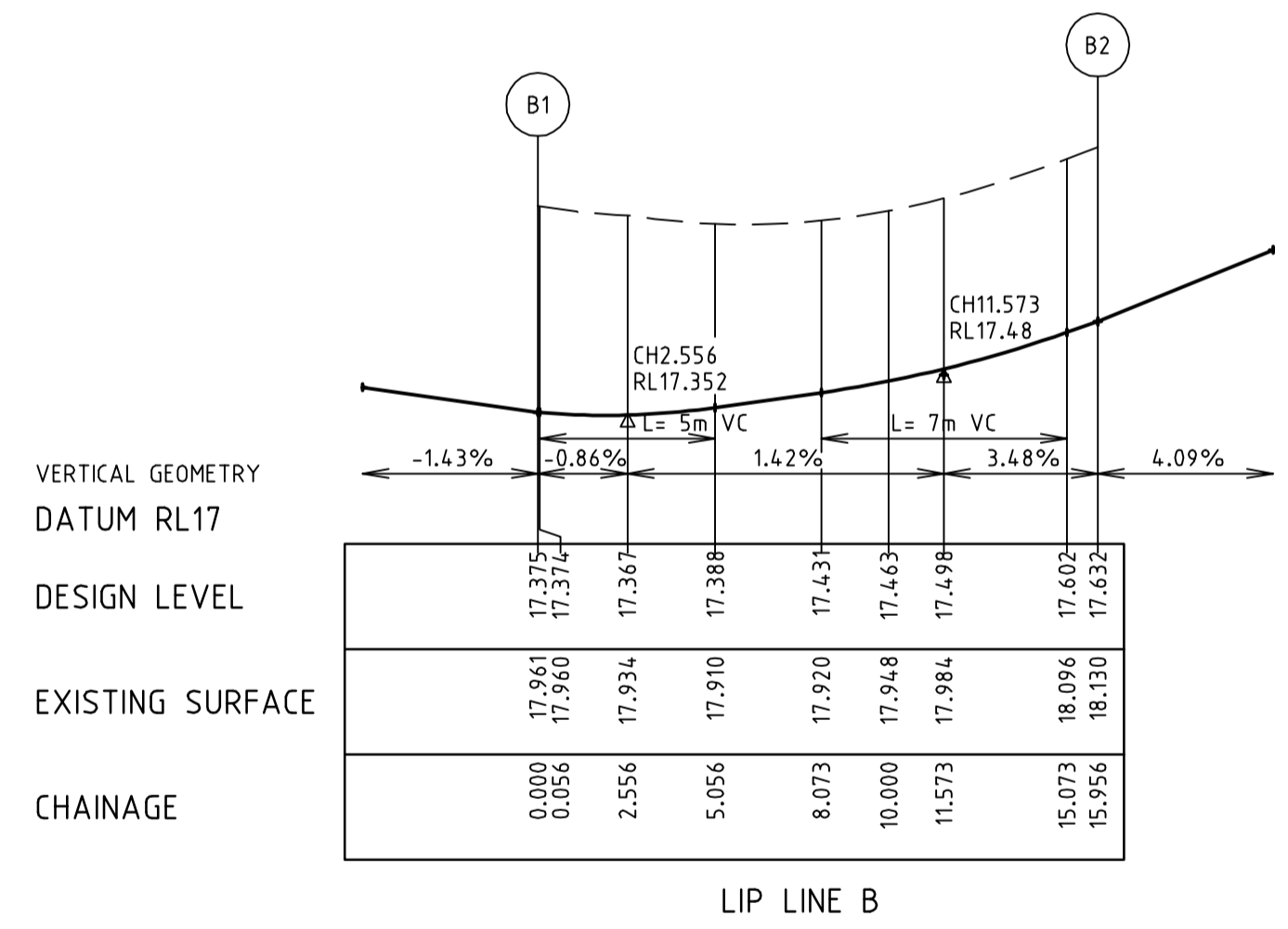
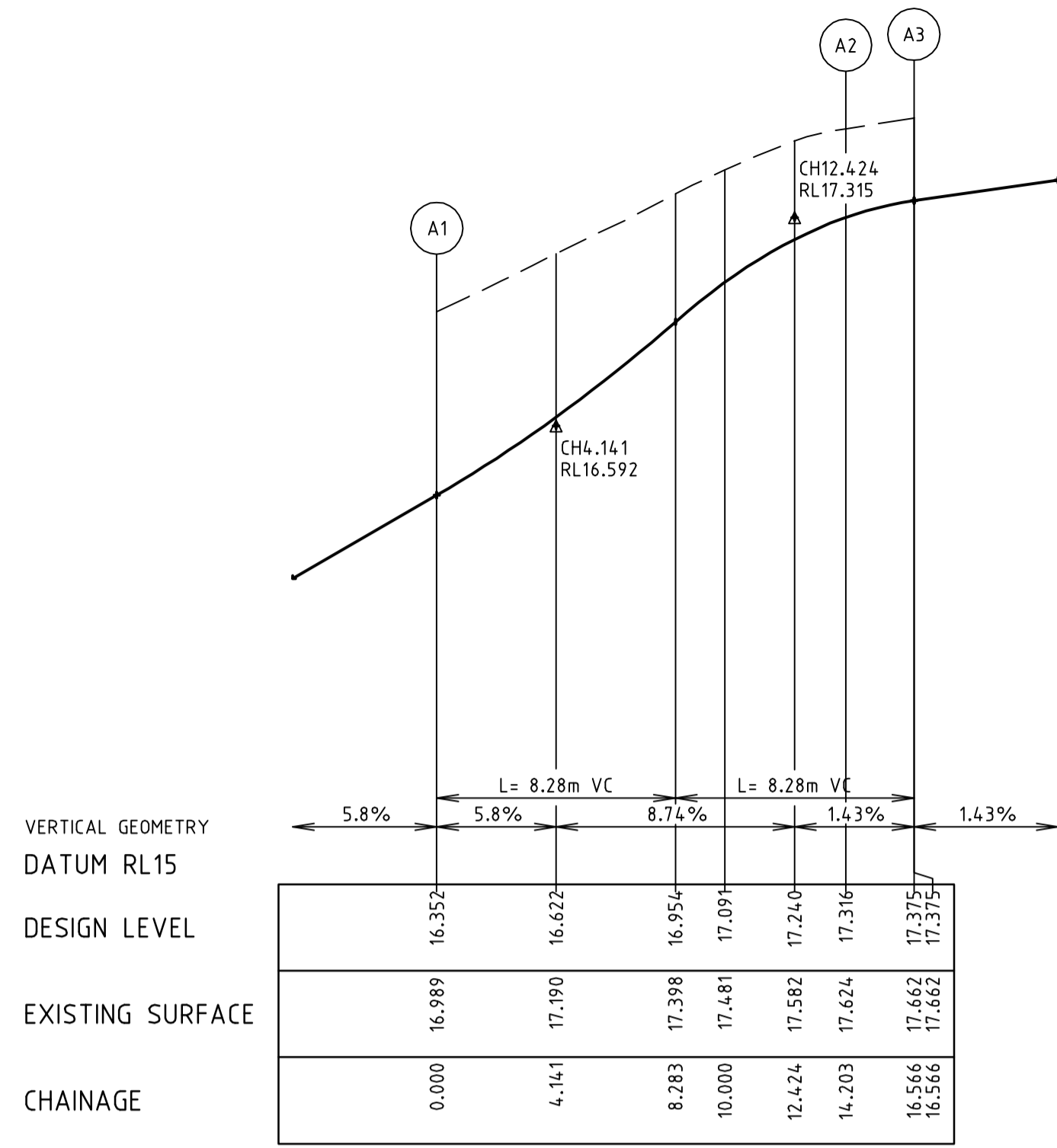
	Allotment to be graded evenly in direction of fall to levels indicated
	Direction of Fall
	Overland Flow
	Permanent Survey Mark
	Temporary Bench Mark
	Concrete Edge Strip with Subsoil Drain underneath "No Road" sign and Barrier
	Zero Lot Lines
	Limit of Works



Designed	C. Barker	November 2009
Drawn	M. Wilks	November 2009
Checked	C. Birkett	November 2009
Approved	J. Golden	November 2009

ESTUARY
 Stage 2A
 City of Greater Geelong
 Roadworks and Drainage
 Intersection Detail Plan

Drawing No. 0250EHL-02A-05 Rev C
 Sheet No. 5 of 23
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Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006

REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

---	EXISTING SURFACE
—	DESIGN LINE

NOTES

- CHAINAGES REFER TO LIP OF KERB/EDGE OF CONCRETE.
- REFER TO SHEET NUMBER 7 FOR SETOUT INFORMATION.

0 2 4 8
0 0.2 0.4 0.8
Scale@A1 H1:200, V1:20



Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Lip Profiles

Drawing No. 0250EHL-02A-06
Sheet No. 6 of 23

Rev B

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HILLCLIMB DRIVE DESIGN LINE	CHAINAGE	EASTING	NORTHING	BEARING	
	0.000	10070.761	48659.942	0°09'30"	IP
	100.000	10071.037	48759.942	0°09'30"	
	200.000	10071.314	48859.941	0°09'30"	
	207.887	10071.335	48867.828	0°09'30"	TC
	210.000	10071.514	48869.931	9°32'39"	
	220.000	10076.646	48878.223	53°57'34"	
	229.823	10085.939	48880.579	97°35'25"	CT
	229.823	10085.939	48880.579	97°35'25"	IP
	258.013	10113.882	48876.856	97°35'25"	IP

IP 1
 COORDINATE = 10070.7610 48659.9421
 CHAINAGE = 0.0000

IP 2
 COORDINATE = 10071.3355 48867.8281
 CHAINAGE = 207.8868
 INTERSECT ANGLE = 0°00'00"

IP 3
 COORDINATE = 10071.3761 48882.5201
 CENTRE = 10084.2354 48867.7925
 RADIUS = 12.9000
 LENGTH = 21.9366
 INTERSECT ANGLE = 97°25'55"

START TANGENT

COORDINATE = 10071.3355 48867.8281
 LENGTH = 14.6920
 CHAINAGE = 207.8868
 BEARING = 0°09'30"

END TANGENT

COORDINATE = 10085.9394 48880.5794
 LENGTH = 14.6920
 CHAINAGE = 229.8233
 BEARING = 97°35'25"

IP 4
 COORDINATE = 10085.9394 48880.5794
 CHAINAGE = 229.8233
 INTERSECT ANGLE = 0°00'00"

IP 5
 COORDINATE = 10113.8817 48876.8559
 CHAINAGE = 258.0127

MASIMO ROAD DESIGN LINE	CHAINAGE	EASTING	NORTHING	BEARING	
	176.385	10037.635	48617.119	359°30'00"	IP
	200.000	10037.429	48640.734	359°30'00"	
	221.470	10037.242	48662.202	359°30'00"	IP

IP 1
 COORDINATE = 10037.6352 48617.1194
 CHAINAGE = 176.3849

IP 2
 COORDINATE = 10037.2418 48662.2025
 CHAINAGE = 221.4697

PARAFFIN DRIVE DESIGN LINE	CHAINAGE	EASTING	NORTHING	BEARING	
	349.448	10034.510	48887.433	97°35'25"	IP
	376.581	10061.405	48883.849	97°35'25"	TC
	386.826	10070.783	48880.009	126°56'32"	CT
	392.130	10075.022	48876.821	126°56'32"	IP

IP 1
 COORDINATE = 10034.5097 48887.4327
 CHAINAGE = 349.4480

IP 2
 COORDINATE = 10066.5967 48883.1569
 CENTRE = 10058.7629 48864.0240
 RADIUS = 20.0000
 LENGTH = 10.2457
 INTERSECT ANGLE = 29°21'07"

START TANGENT

COORDINATE = 10061.4047 48883.8488
 LENGTH = 5.2379
 CHAINAGE = 376.5807
 BEARING = 97°35'25"

END TANGENT

COORDINATE = 10070.7831 48880.0089
 LENGTH = 5.2379
 CHAINAGE = 386.8264
 BEARING = 126°56'32"

IP 3
 COORDINATE = 10075.0220 48876.8214
 CHAINAGE = 392.1300

SHOALING DRIVE DESIGN LINE	CHAINAGE	EASTING	NORTHING	BEARING	
	182.981	10017.167	48663.865	94°44'00"	IP
	200.000	10034.127	48662.460	94°44'00"	
	224.318	10058.363	48660.454	94°44'00"	IP
	224.318	10058.363	48660.454	94°44'00"	TC
	249.189	10083.205	48660.461	85°14'00"	CT
	249.189	10083.205	48660.461	85°14'00"	IP
	264.979	10098.941	48661.773	85°14'00"	IP

IP 1
 COORDINATE = 10017.1666 48663.8647
 CHAINAGE = 182.9811

IP 2
 COORDINATE = 10058.3625 48660.4537
 CHAINAGE = 224.3180
 INTERSECT ANGLE = 0°00'00"

IP 3
 COORDINATE = 10070.7841 48659.4252
 CENTRE = 10070.7403 48809.9421
 RADIUS = -150.0000
 LENGTH = 24.8709
 INTERSECT ANGLE = 9°30'00"

START TANGENT

COORDINATE = 10058.3625 48660.4537
 LENGTH = 12.4640
 CHAINAGE = 224.3180
 BEARING = 94°44'00"

END TANGENT

COORDINATE = 10083.2050 48660.4609
 LENGTH = 12.4640
 CHAINAGE = 249.1889
 BEARING = 85°14'00"

IP 4
 COORDINATE = 10083.2050 48660.4609
 CHAINAGE = 249.1889
 INTERSECT ANGLE = 0°00'00"

IP 5
 COORDINATE = 10098.9408 48661.7730
 CHAINAGE = 264.9793

ALIGNMENT A	POINT NO	EASTING	NORTHING	RL
	A1	10025.237	48659.885	16.352
	A2	10034.045	48650.402	17.316
	A3	10034.065	48648.039	17.375

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
A1 - A2	84.767	9.600	14.203	2.509	1.860	3.470	3.001	3.551	16.853

ALIGNMENT B	POINT NO	EASTING	NORTHING	RL
	B1	10040.665	48648.096	17.375
	B2	10051.057	48657.747	17.632

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
B1 - B2	95.233	9.600	15.956	3.129	2.312	3.875	3.216	3.989	17.429

ALIGNMENT C	POINT NO	EASTING	NORTHING	RL
	C1	10067.498	48673.492	18.315
	C2	10067.498	48673.410	18.317
	C3	10057.106	48663.869	17.848

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
C2 - C3	94.575	9.600	15.846	3.088	2.282	3.850	3.204	3.962	18.192

ALIGNMENT D	POINT NO	EASTING	NORTHING	RL
	D1	10084.496	48663.880	18.707
	D2	10074.098	48673.473	18.315

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
D1 - D2	94.925	9.600	15.905	3.110	2.298	3.863	3.210	3.976	18.493

ALIGNMENT E	POINT NO	EASTING	NORTHING	RL
	E1	10059.713	48880.745	14.960
	E2	10068.045	48871.203	15.496
	E3	10068.035	48867.837	15.531

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
E1 - E2	82.568	9.600	13.834	2.386	1.770	3.384	2.950	3.459	15.306

ALIGNMENT F	POINT NO	EASTING	NORTHING	RL
	F1	10074.635	48867.819	15.615
	F2	10085.503	48877.308	15.877

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
F1 - F2	97.432	9.600	16.325	3.266	2.411	3.959	3.255	4.081	15.697

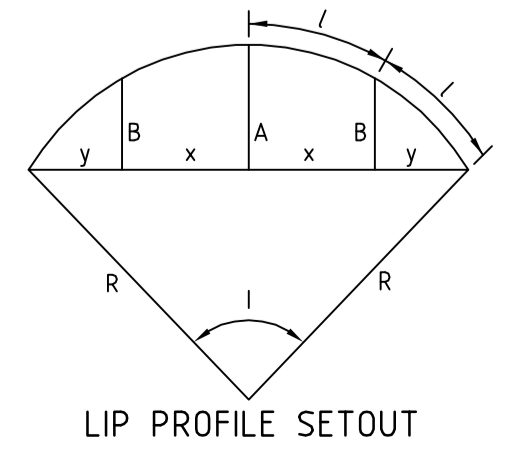
ALIGNMENT G	POINT NO	EASTING	NORTHING	RL
	G1	10086.375	48883.851	15.877
	G2	10078.924	48884.843	15.686
	G3	10074.839	48884.505	15.570
	G4	10068.983	48884.963	15.374
	G5	10061.841	48887.120	15.030
	G6	10060.585	48887.287	14.960

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
G2 - G3	24.655	9.600	4.131	0.221	0.166	1.031	1.019	1.033	15.629
G3 - G4	43.080	8.000	6.015	0.559	0.418	1.495	1.442	1.504	15.481
G4 - G5	18.425	23.300	7.493	0.301	0.225	1.871	1.859	1.873	15.216

ALIGNMENT H	POINT NO	EASTING	NORTHING	RL
	H1	10071.181	48880.460	
	H2	10069.717	48881.471	
	H3	10068.889	48881.281	
	H4	10069.078	48880.454	
	H5	10070.466	48879.496	
	H6	10071.309	48879.619	

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
H1 - H2	4.950	20.600	1.780	0.019	0.014	0.445	0.445	0.445	
H2 - H3	90.000	0.600	0.942	0.176	0.130	0.230	0.195	0.236	
H3 - H4	90.000	0.600	0.942	0.176	0.130	0.230	0.195	0.236	
H4 - H5	4.971	19.440	1.687	0.018	0.014	0.422	0.421	0.422	
H5 - H6	90.381	0.600	0.946	0.177	0.131	0.231	0.195	0.237	
H6 - H1	90.381	0.600	0.946	0.177	0.131	0.231	0.195	0.237	

NOTES
 1. SETOUT CO-ORDINATES REFER TO LIP OF KERB/EDGE OF CONCRETE.
 2. REFER TO SHEET NUMBER 6 FOR LIP PROFILES.



smec urban
 consulting group
 Geelong Tel +61 3 5228 3100

Designed C. Barker November 2009
 Drawn M. Wilks November 2009
 Checked C. Birkett November 2009
 Approved J. Golden November 2009

ESTUARY
 Stage 2A
 City of Greater Geelong
 Roadworks and Drainage
 Setout Information Plan

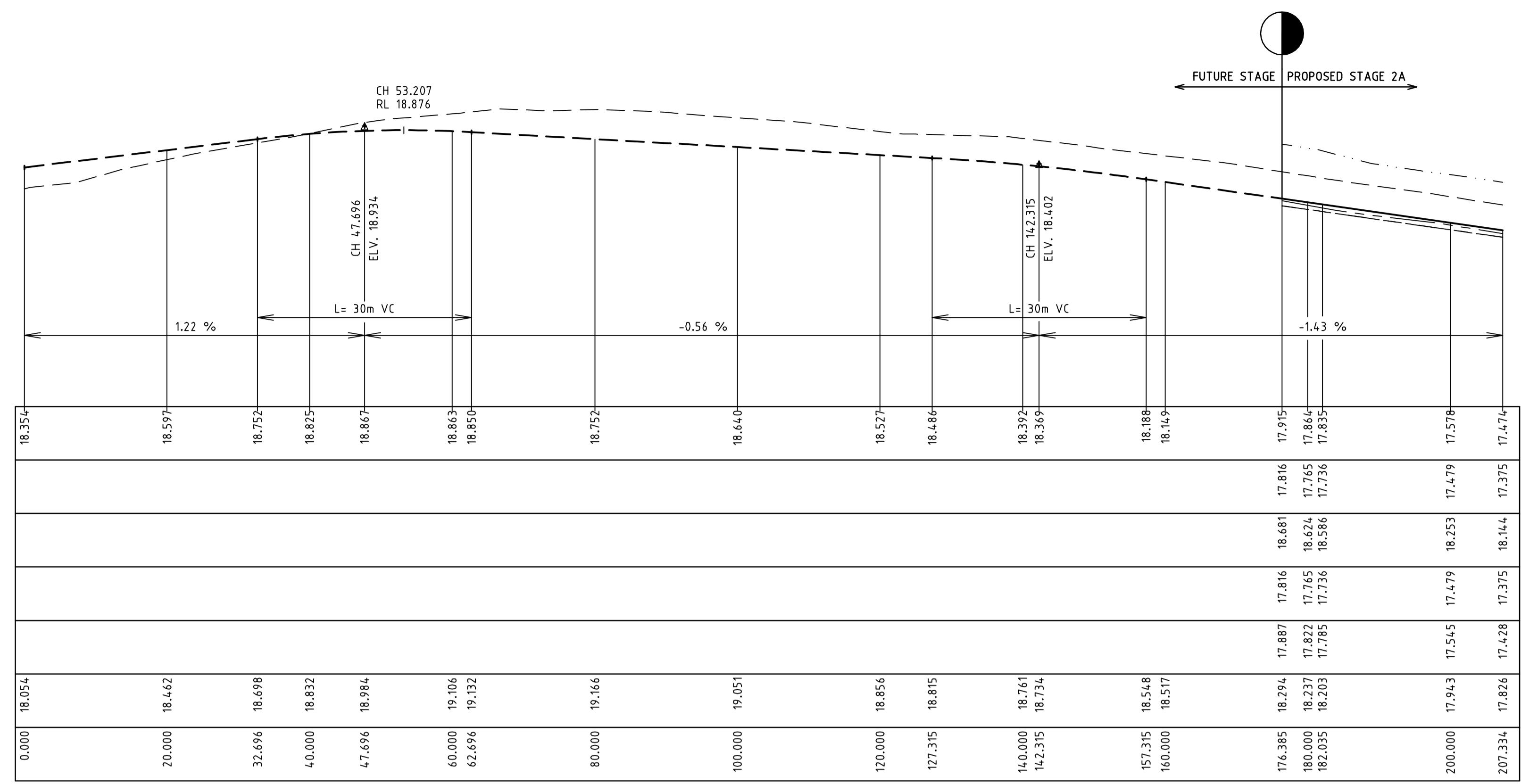
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 Sheet No. 7 of 23
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estuary leopold

Principal Leopold Developments Pty Ltd
 Level 1, 6 Riverside Quay
 Southbank, Victoria 3006

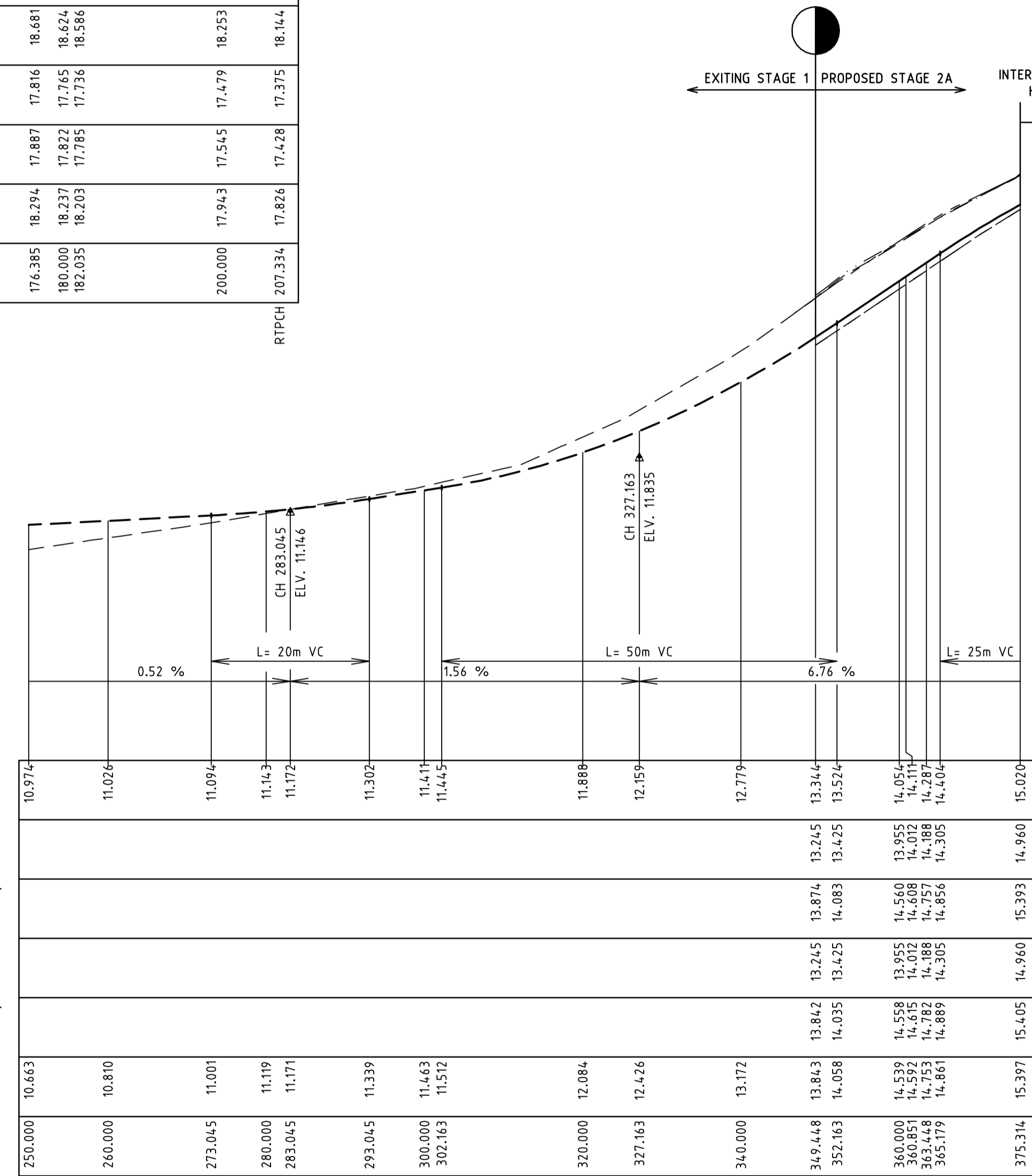
REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

VERTICAL GEOMETRY
 HORIZONTAL GEOMETRY
 DATUM RL15
 DESIGN CENTRELINE
 RIGHT LIP OF KERB
 EXISTING SURFACE AT RIGHT BOUNDARY
 LEFT LIP OF KERB
 EXISTING SURFACE AT LEFT BOUNDARY
 EXISTING SURFACE
 CHAINAGE



MASIMO ROAD LONGITUDINAL SECTION

VERTICAL GEOMETRY
 HORIZONTAL GEOMETRY
 DATUM RL8
 DESIGN CENTRELINE
 RIGHT LIP OF KERB
 EXISTING SURFACE AT RIGHT BOUNDARY
 LEFT LIP OF KERB
 EXISTING SURFACE AT LEFT BOUNDARY
 EXISTING SURFACE
 CHAINAGE



PARAFFIN DRIVE LONGITUDINAL SECTION



Principal Leopold Developments Pty Ltd
 Level 1, 6 Riverside Quay
 Southbank, Victoria 3006

B	COUNCIL AMENDMENTS	18.03.10	
A	ISSUED TO COUNCIL	20.01.10	
REVISION		DATE	APP'D

LEGEND

- EXISTING SURFACE
- DESIGN LINE
- FUTURE DESIGN LINE
- RIGHT BUILDING LINE
- RIGHT LIP OF KERB
- LEFT BUILDING LINE
- LEFT LIP OF KERB



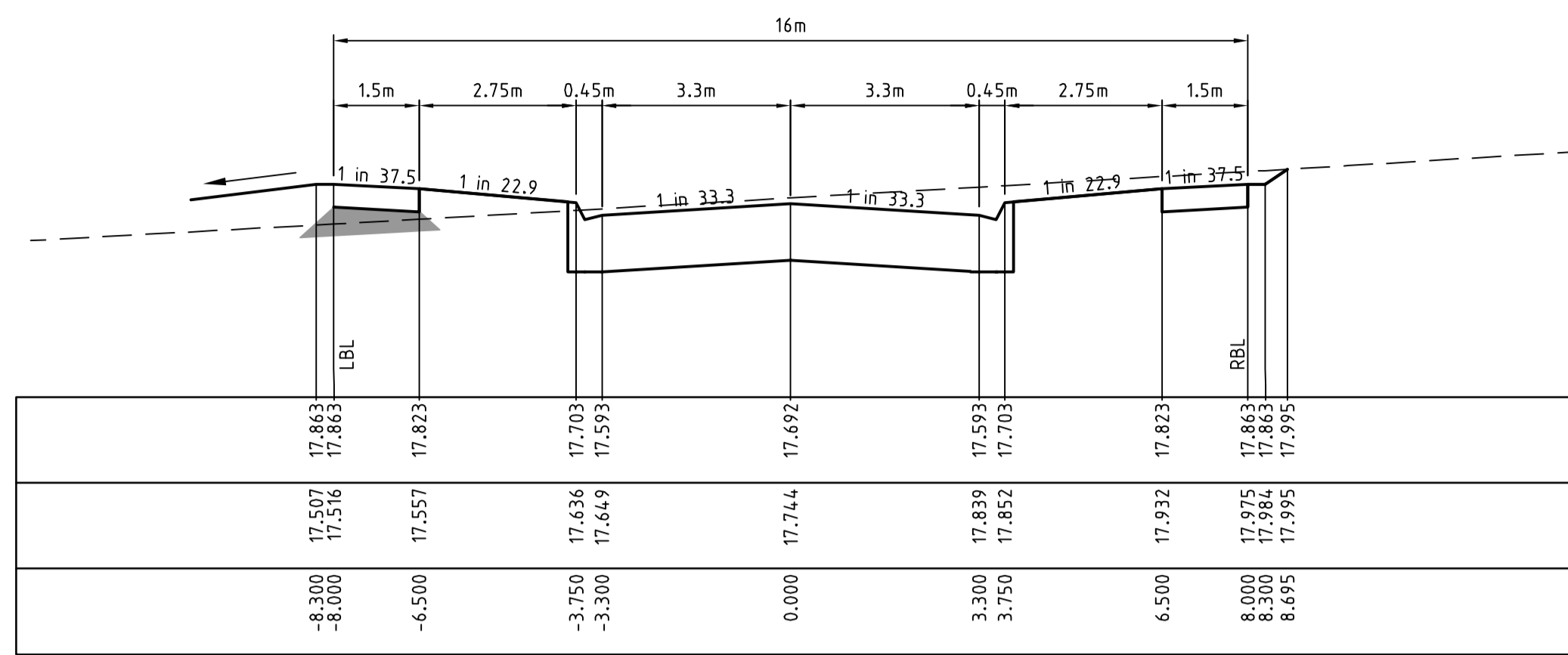
Designed C. Barker November 2009
 Drawn M. Wilks November 2009
 Checked C. Birkett November 2009
 Approved J. Golden November 2009

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 0 0.5 1 2
 Scale @A1 H1:500, V1:50

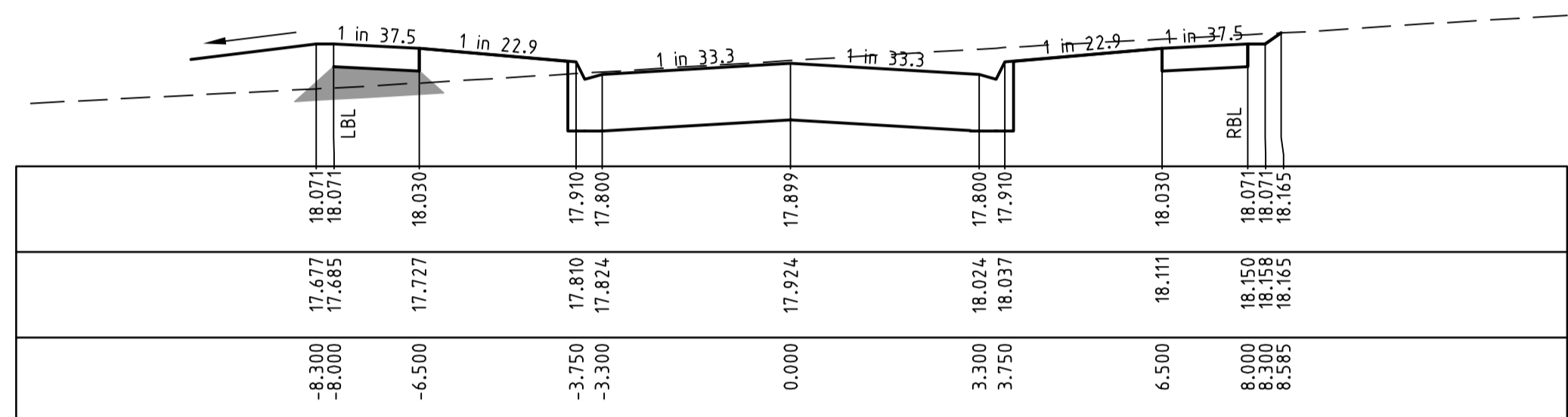
ESTUARY
 Stage 2A
 City of Greater Geelong
 Roadworks and Drainage
 Longitudinal Sections - 2

Drawing No. 0250EHL-02A-09 Rev B
 Sheet No. 9 of 23

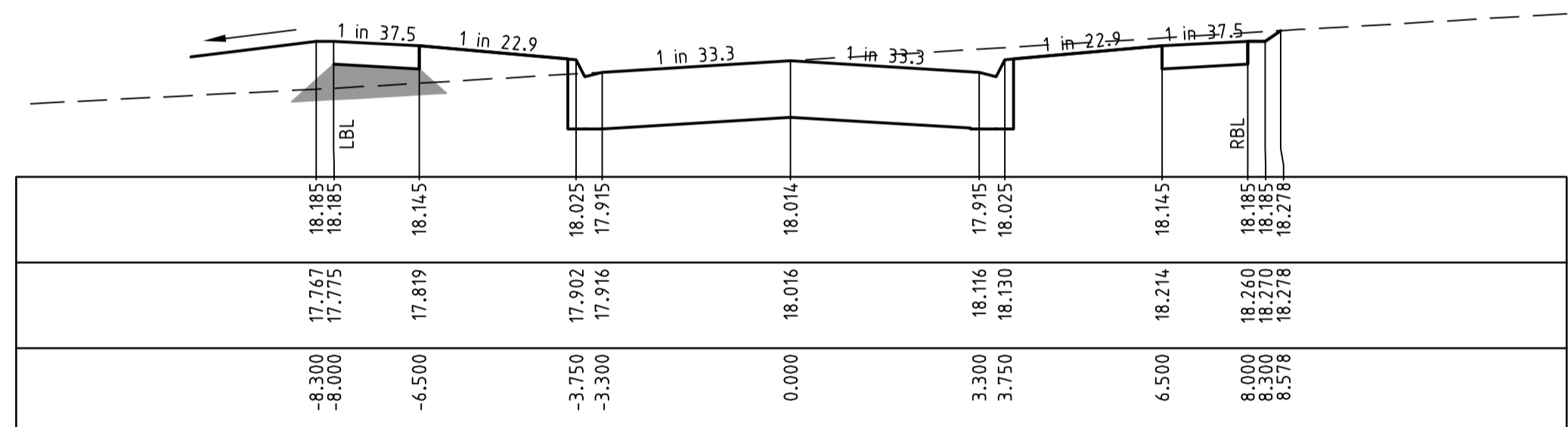
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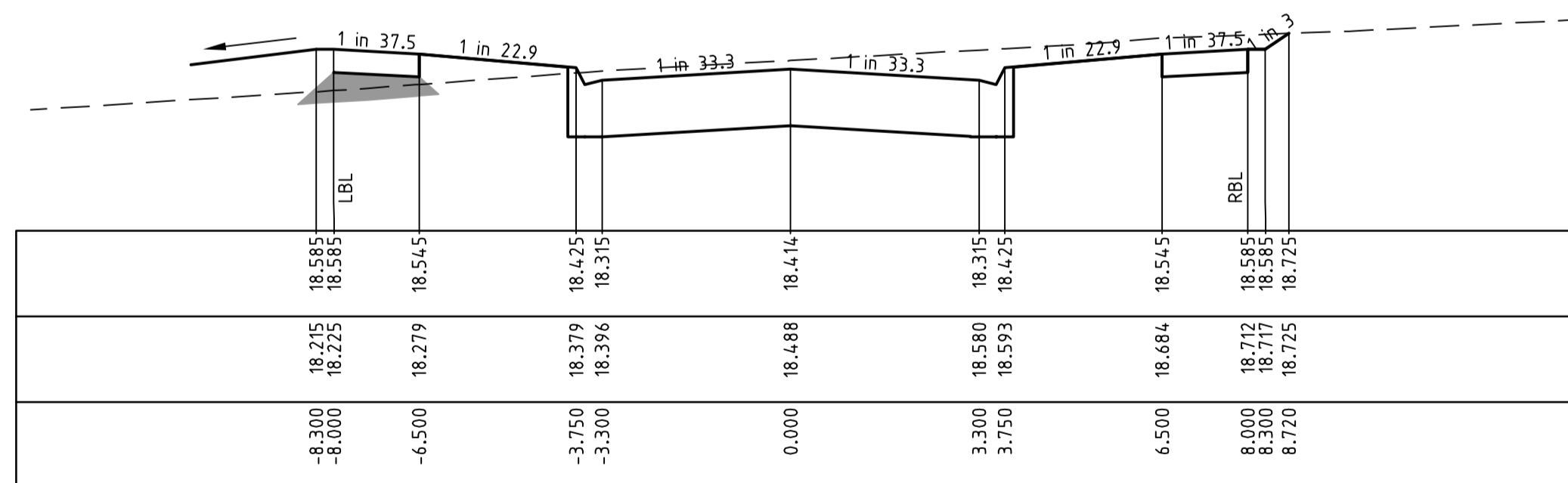
CH 50.996



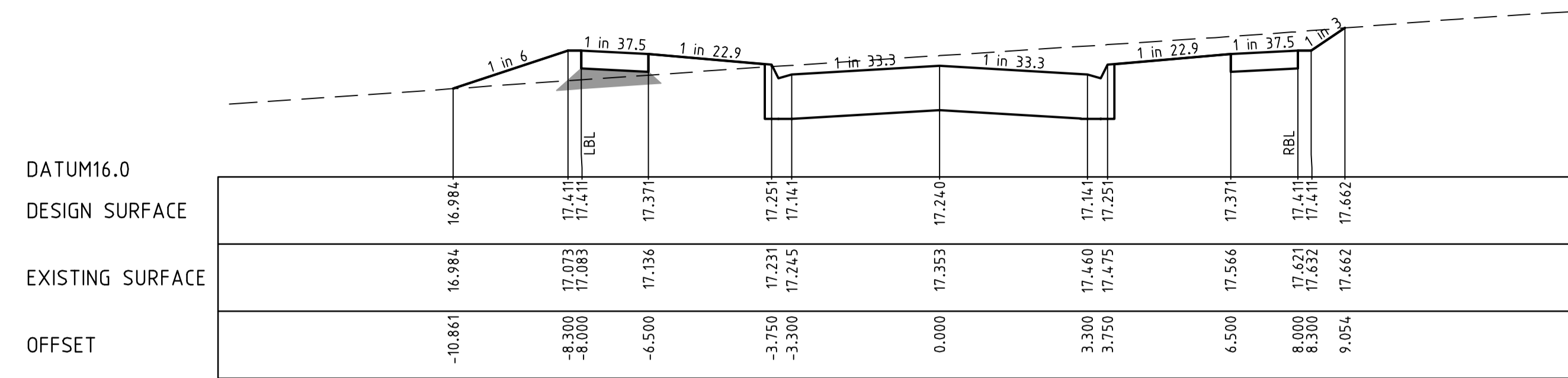
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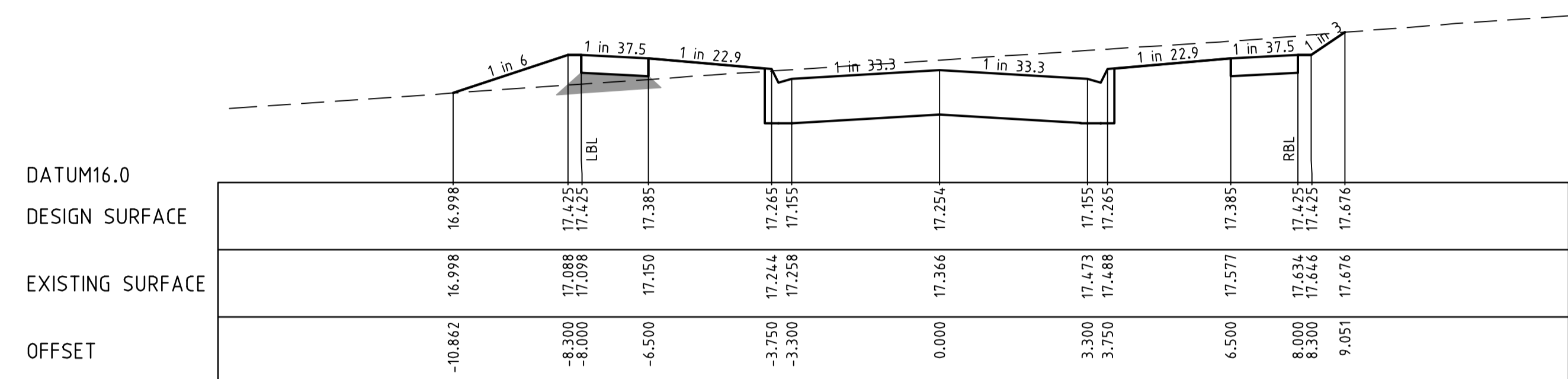
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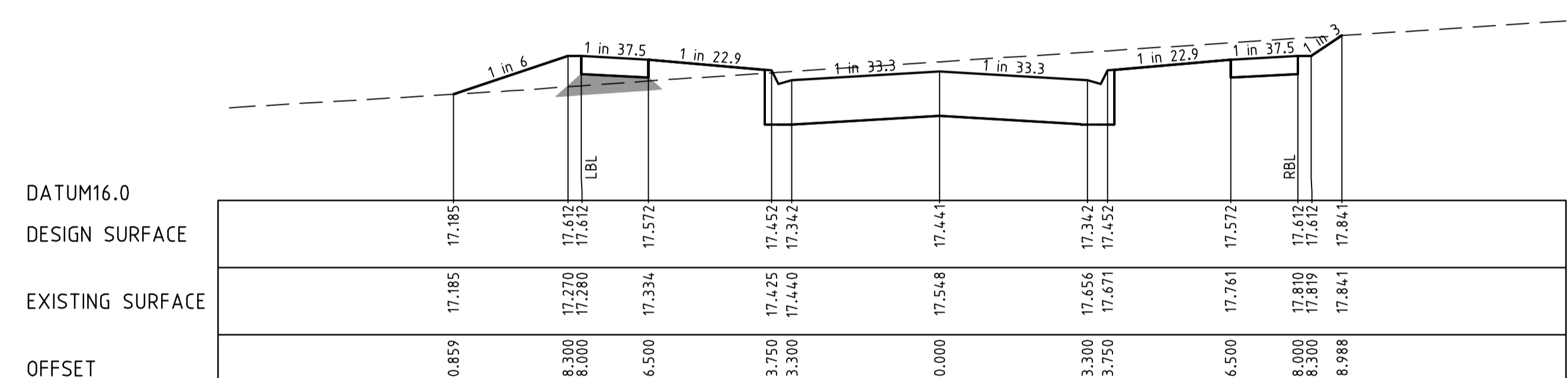
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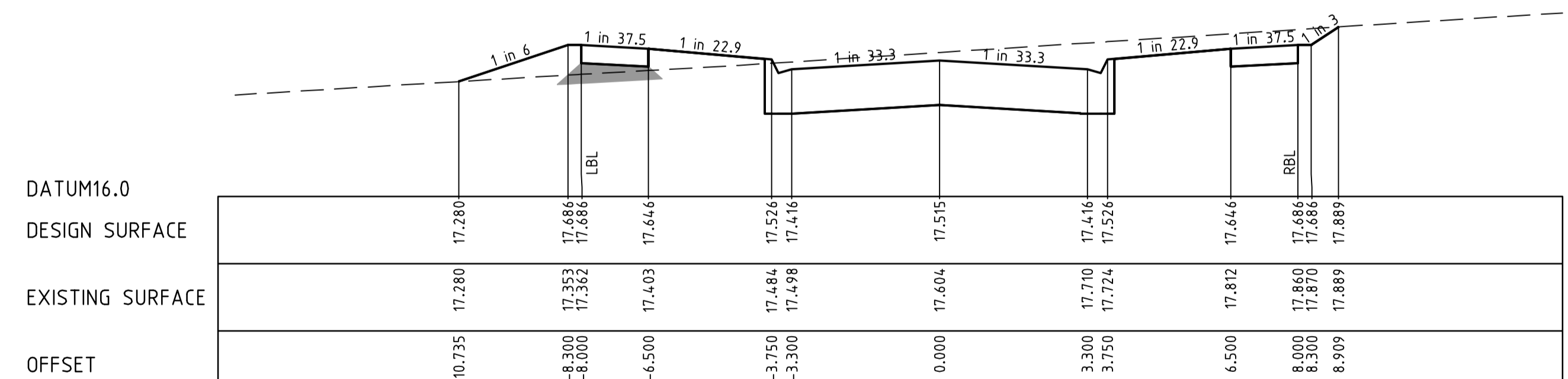
CH 78.603



CH 77.496



CH 64.996



CH 60.603



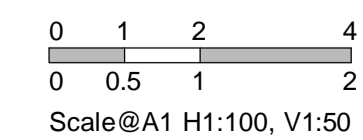
Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006

REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

- EXISTING SURFACE
- DESIGN LINE

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



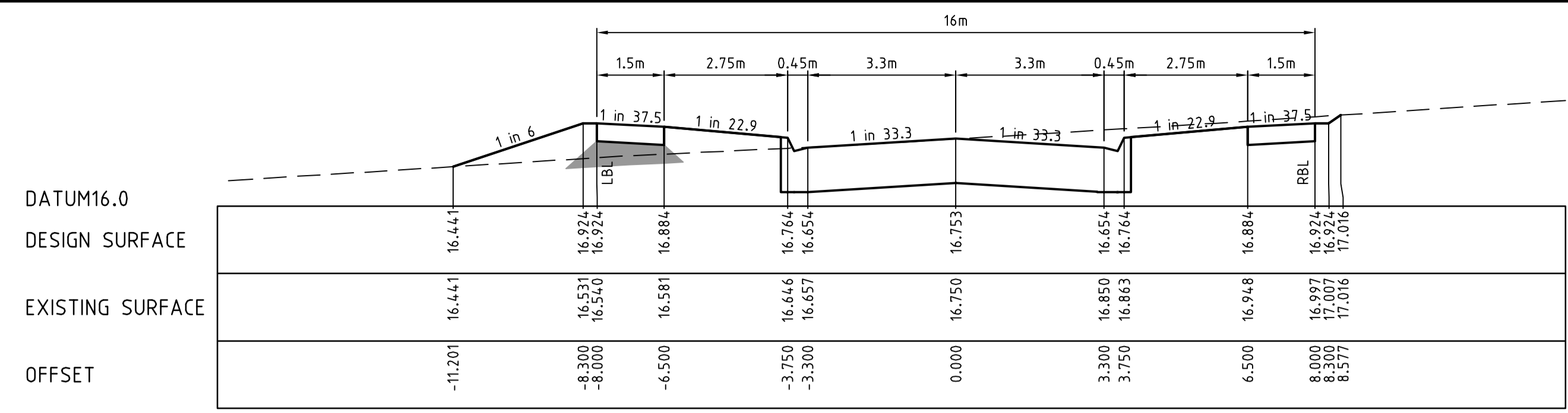
Geelong Tel +61 3 5228 3100
Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Cross Sections - Hillclimb Drive - 1
Ch 13.540 - Ch 78.603

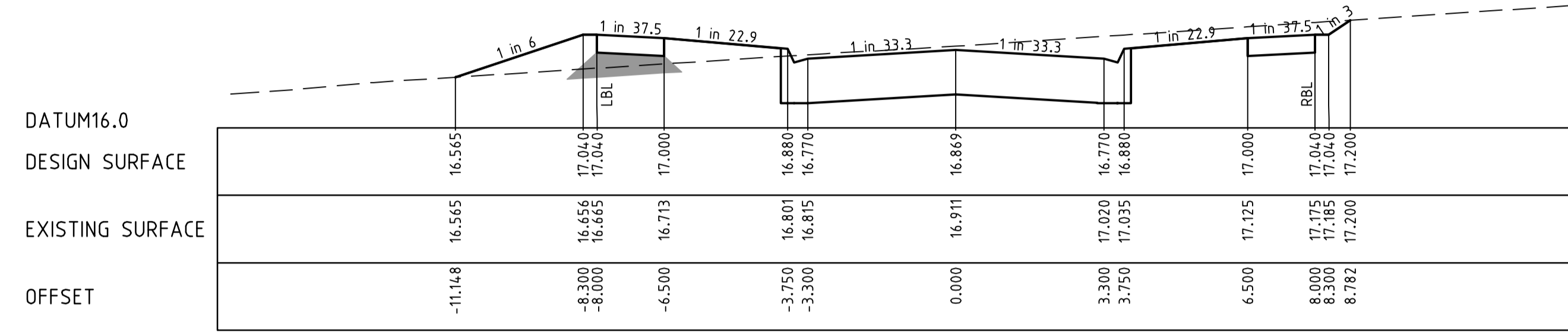
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Sheet No. 11 of 23

Rev B

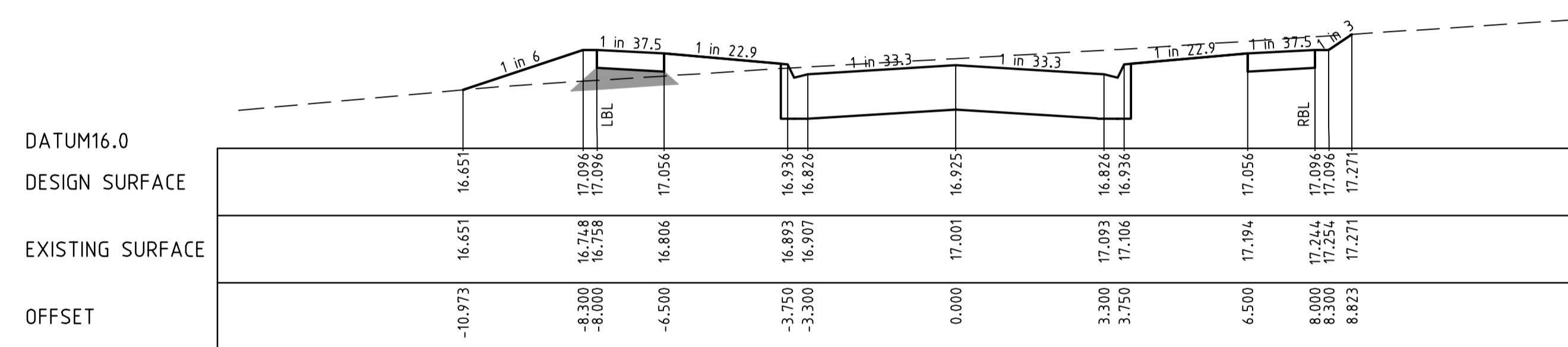
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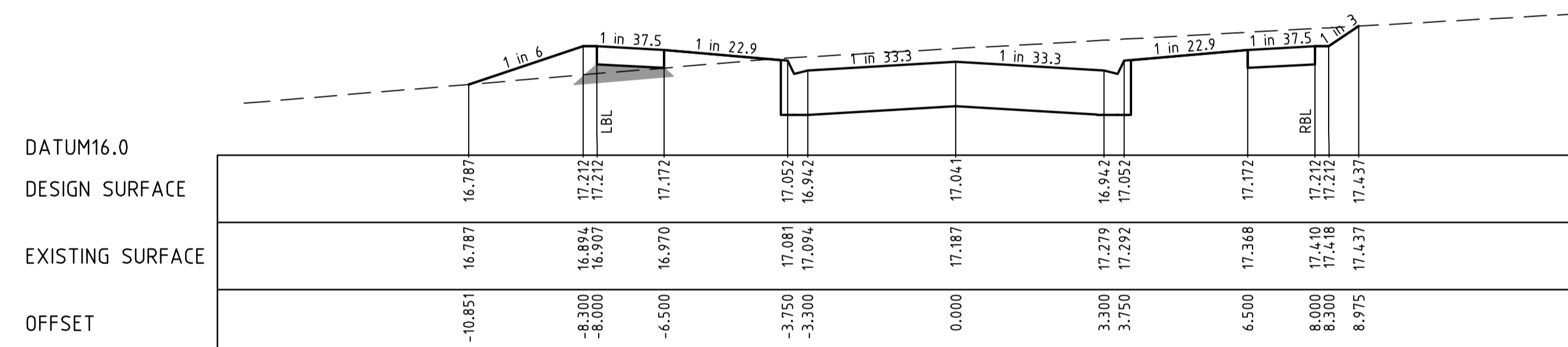
CH 117.996



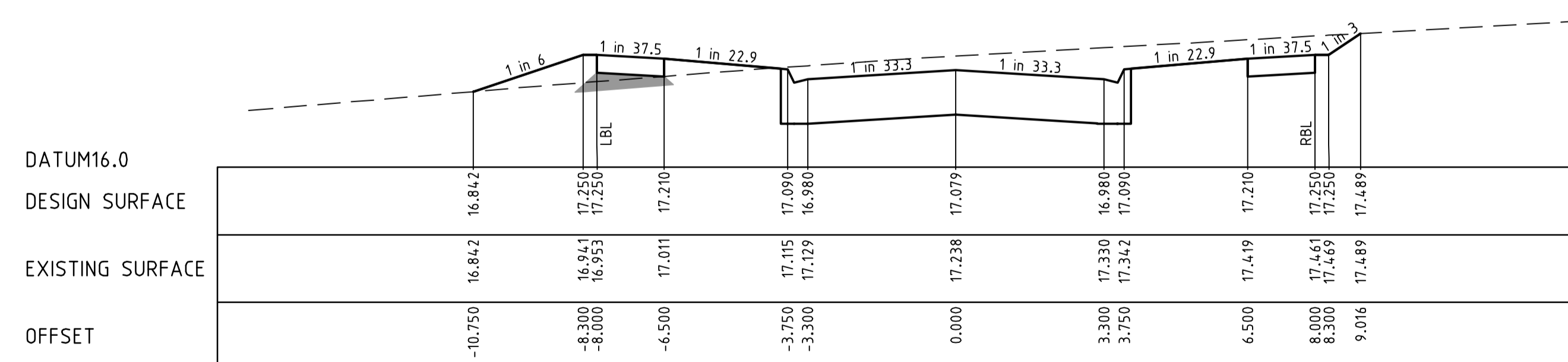
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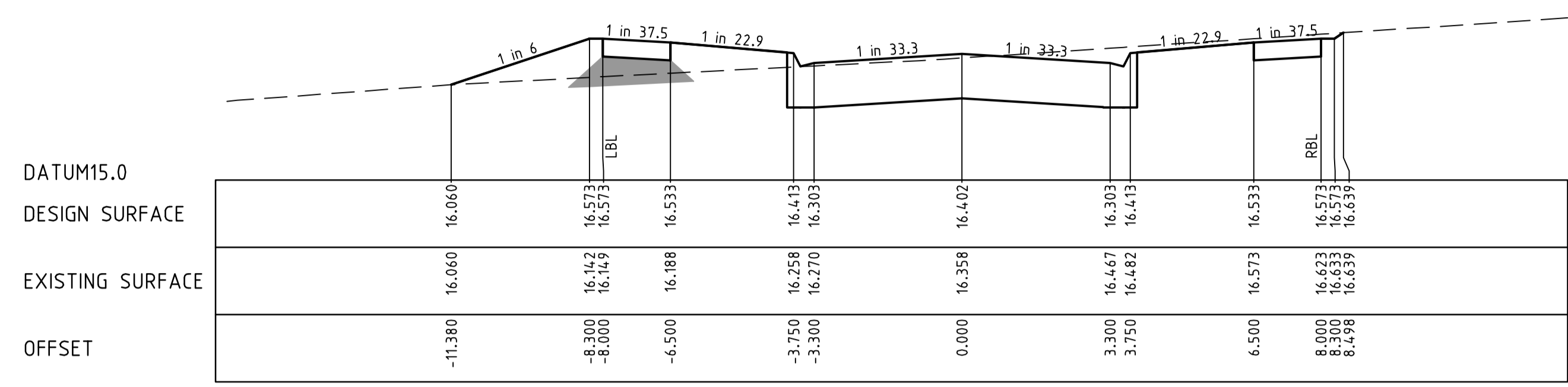
CH 103.996



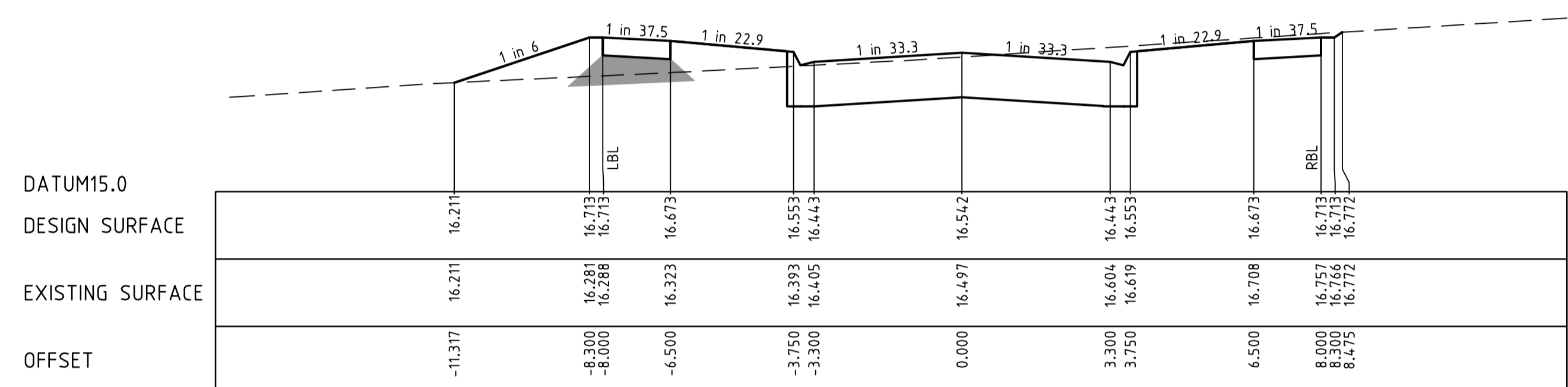
CH 94.603



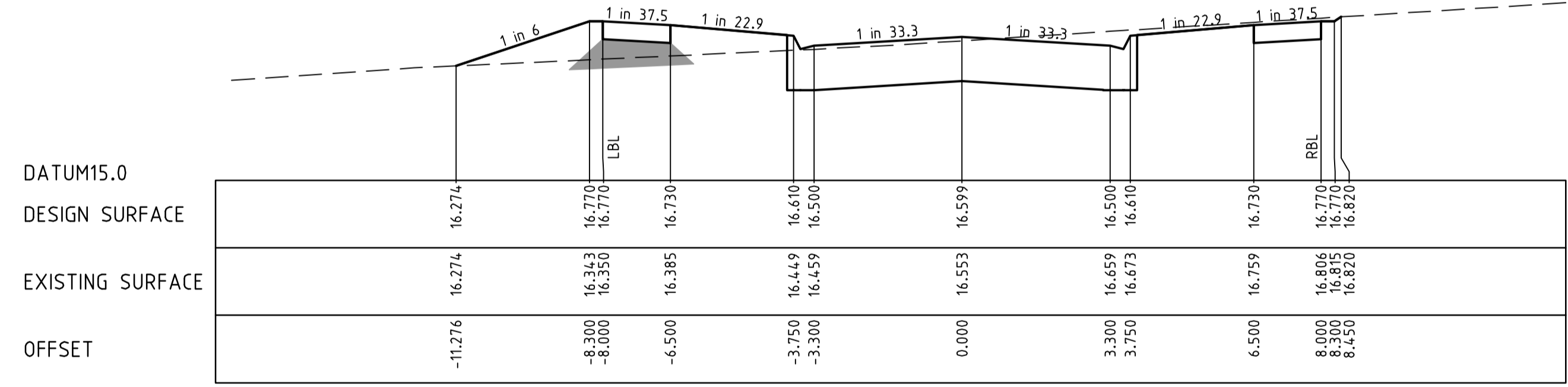
CH 91.496



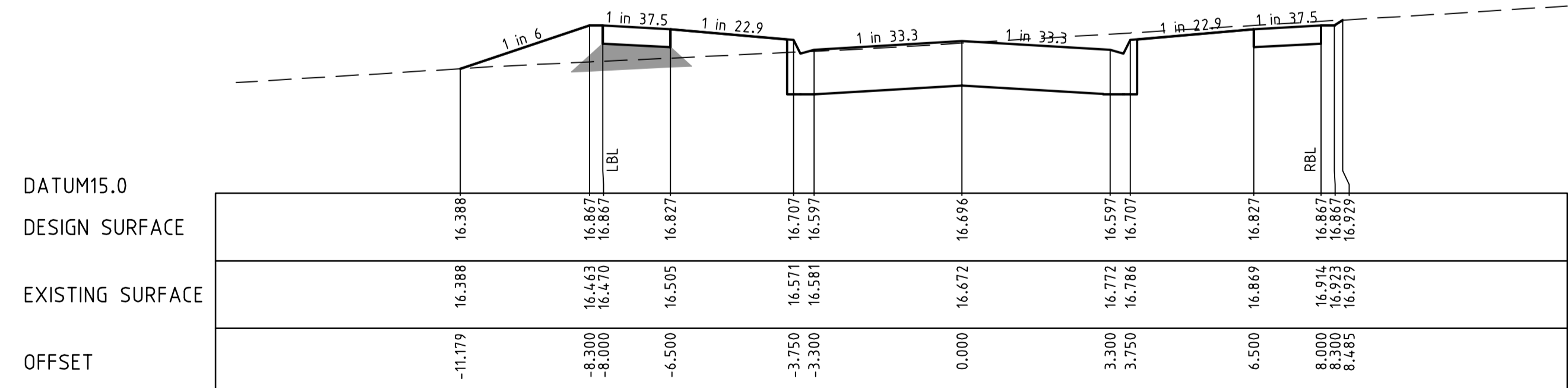
CH 146.496



CH 135.103



CH 130.496



CH 122.603



Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006

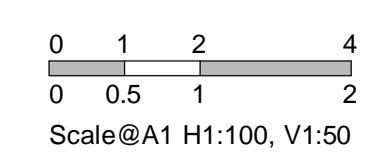
REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

--- EXISTING SURFACE

— DESIGN LINE

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

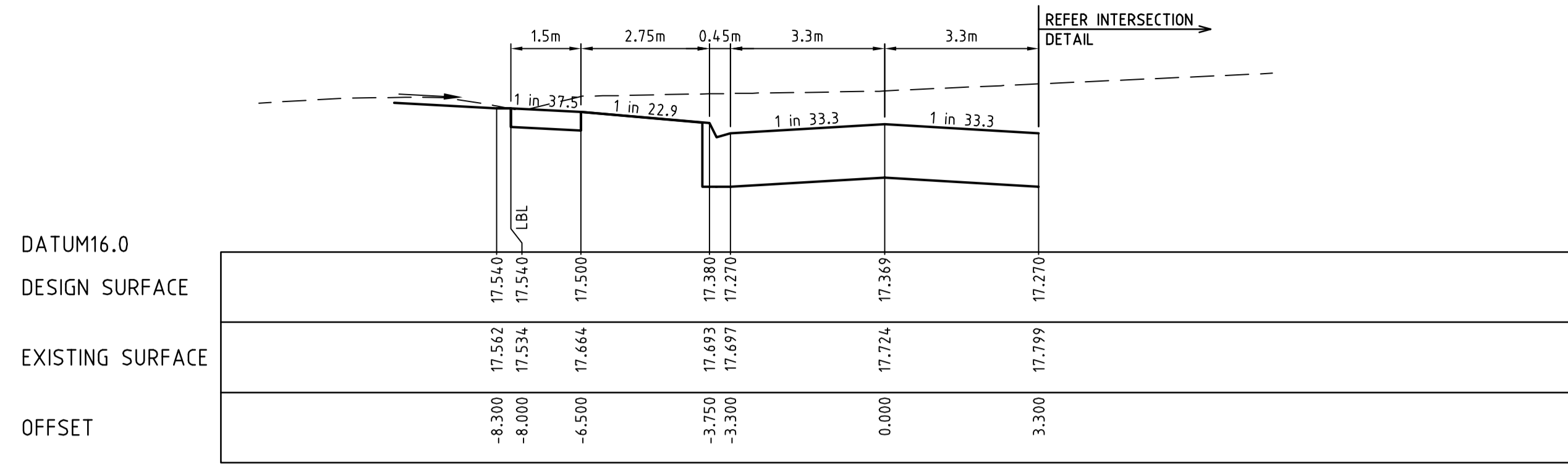


Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

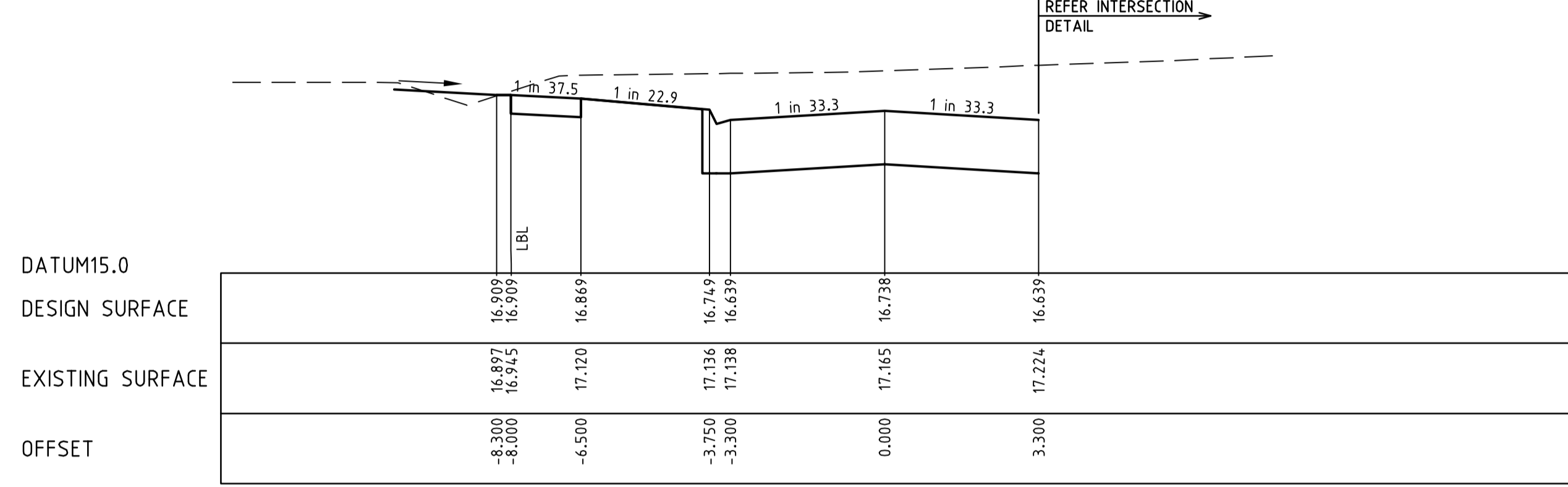
ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Cross Sections - Hillclimb Drive - 2
Ch 91.496 - Ch 146.496

Drawing No. 0250EHL-02A-12
Sheet No. 12 of 23
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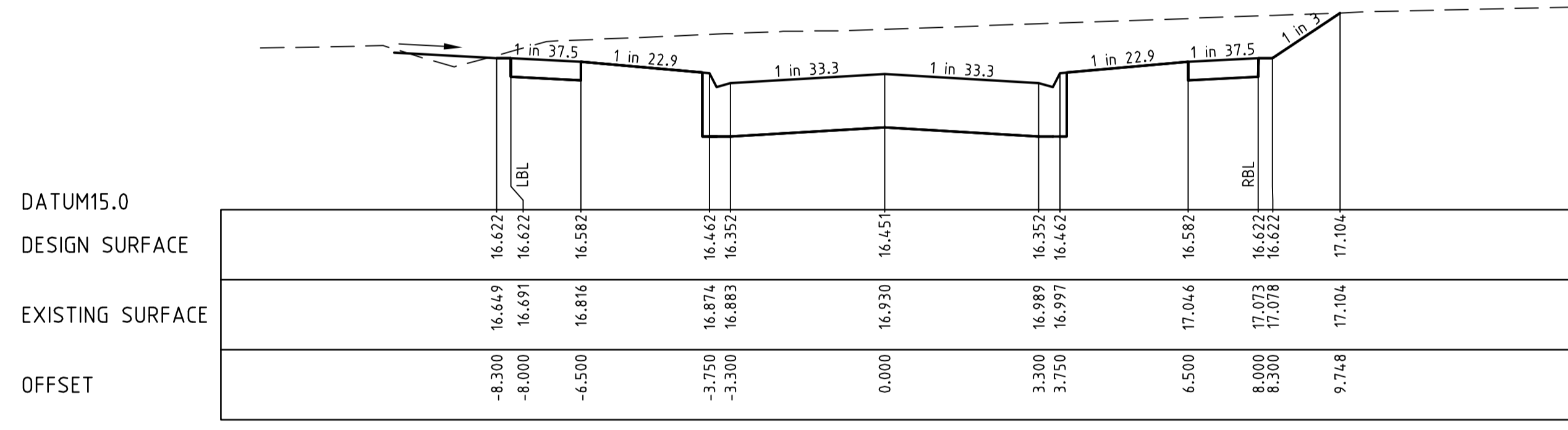
Rev B



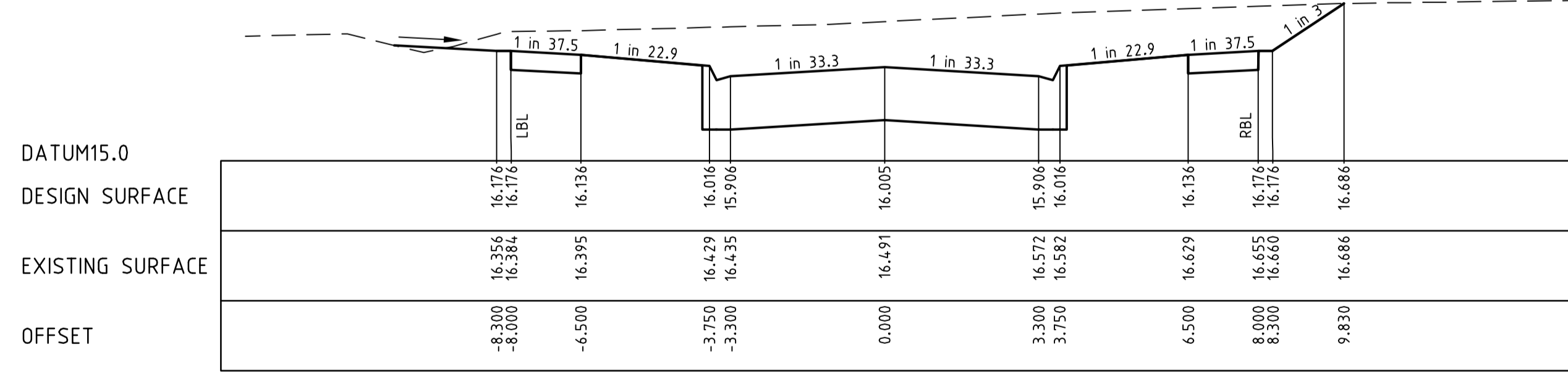
CH 208.951



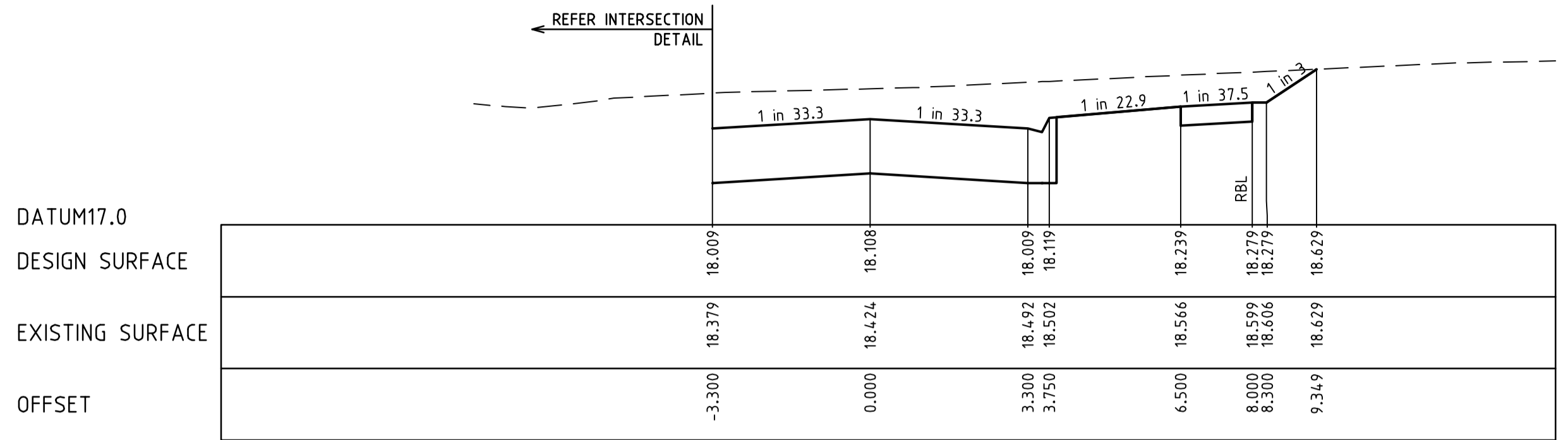
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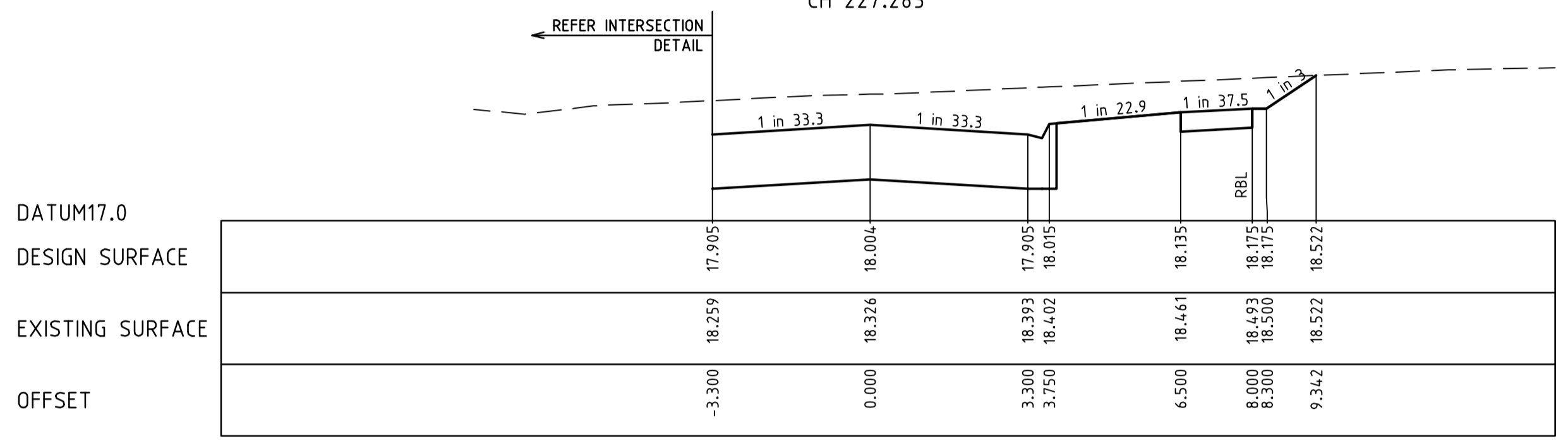
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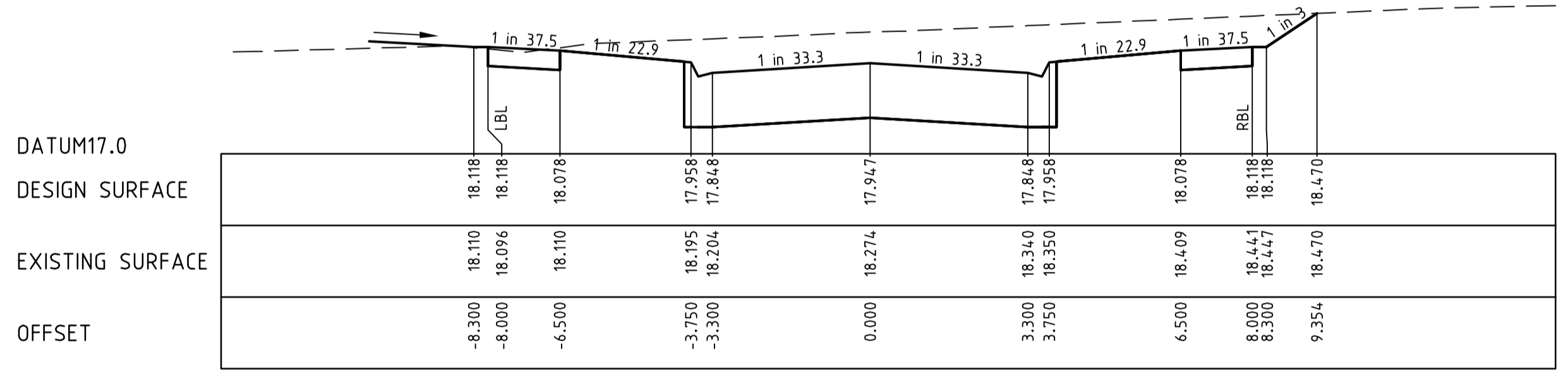
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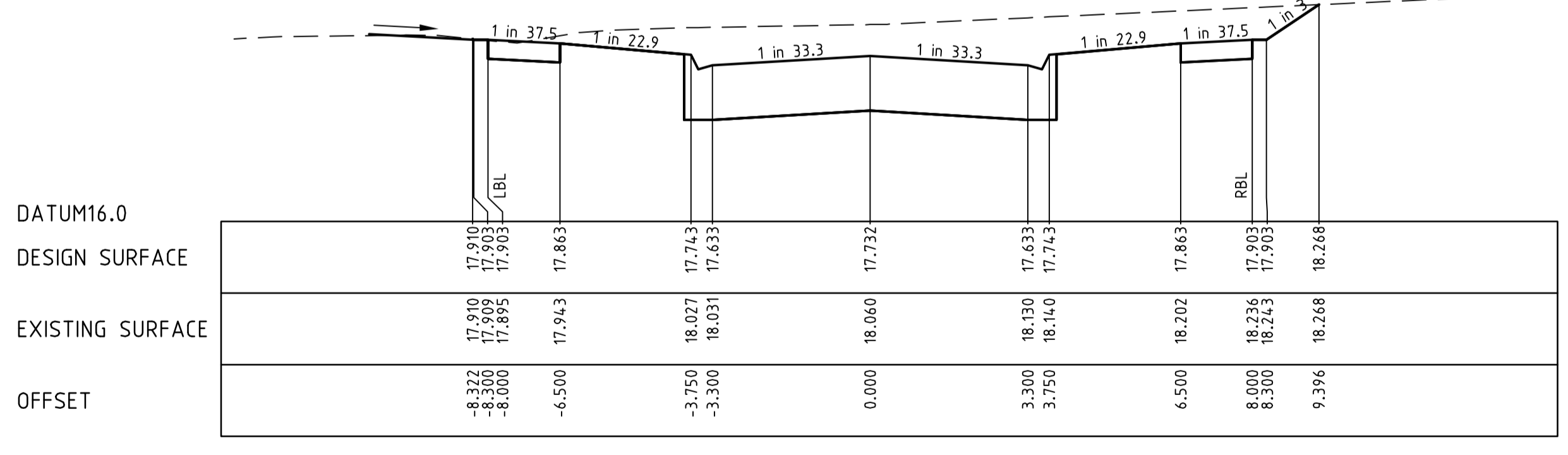
CH 227.283



CH 224.318



LTPCH 222.784



RTPCH 217.261



Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006

B	COUNCIL AMENDMENTS	18.03.10		
A	ISSUED TO COUNCIL	20.01.10		
	REVISION	DATE	APP'D	

LEGEND

--- EXISTING SURFACE

— DESIGN LINE

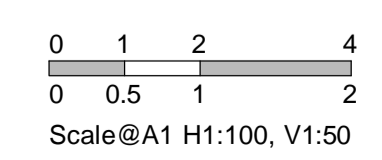


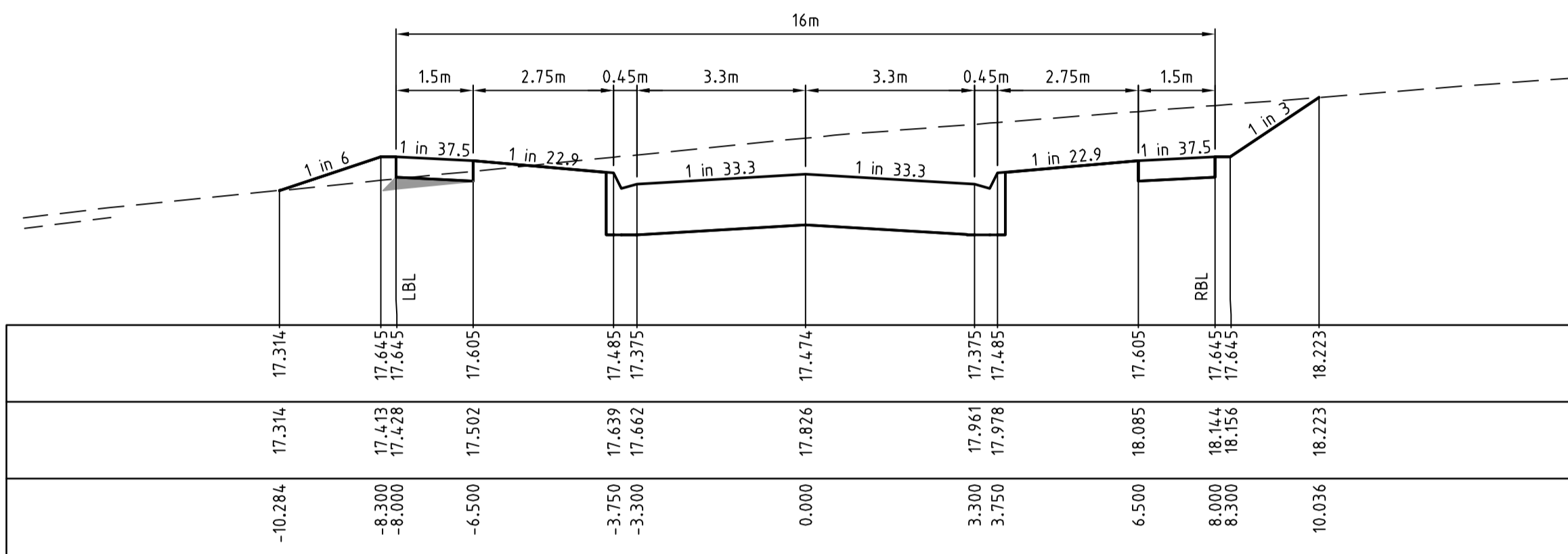
Geelong Tel +61 3 5228 3100

Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

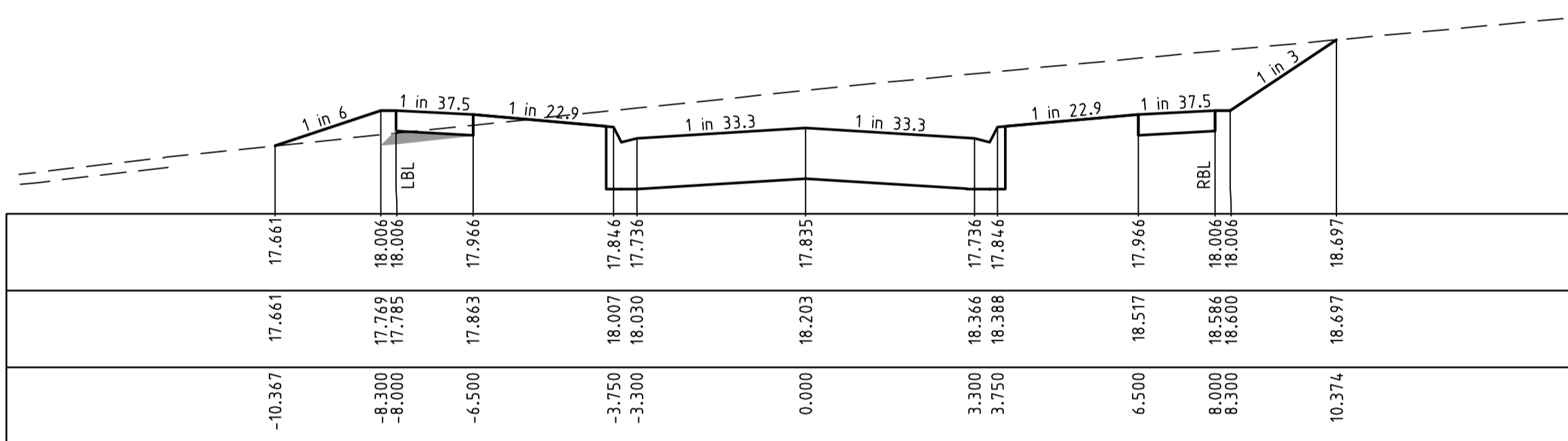
ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Cross Sections - Shoaling Drive - 1
Ch 183.951 - Ch 227.283

Drawing No. 0250EHL-02A-14 Rev B
Sheet No. 14 of 23
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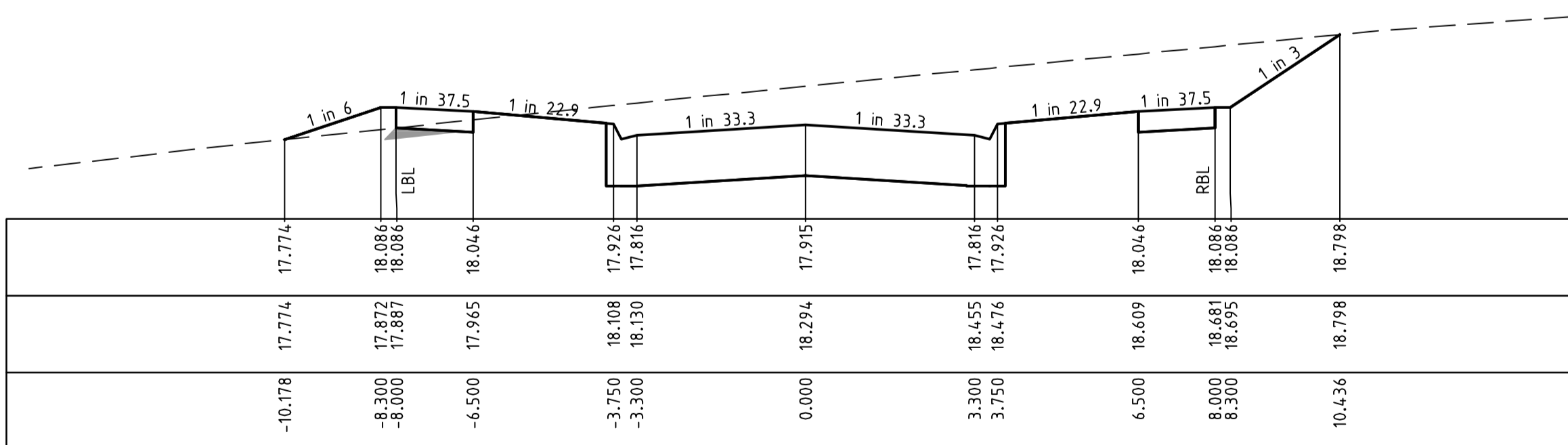




RTPCH 207.334



CH 182.035



CH 176.385



Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006

REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

- EXISTING SURFACE
- DESIGN LINE

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



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Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

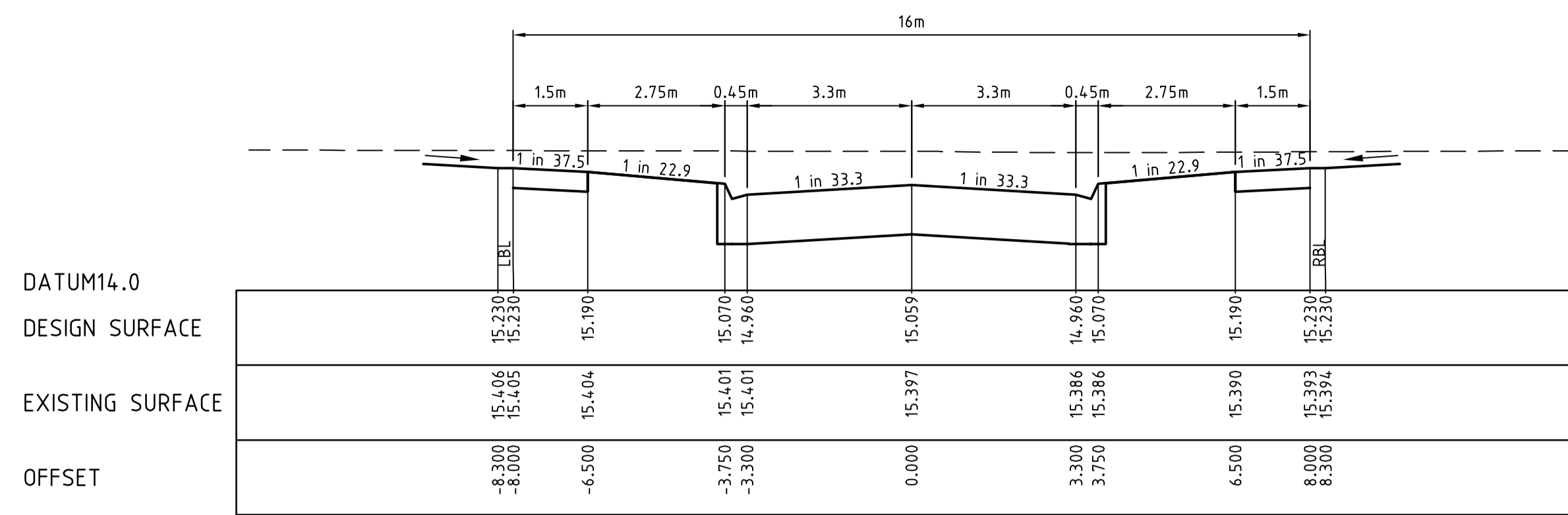
ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Cross Sections - Masimo Road
Ch 176.385 - Ch 207.334

Drawing No. 0250EHL-02A-16
Sheet No. 16 of 23

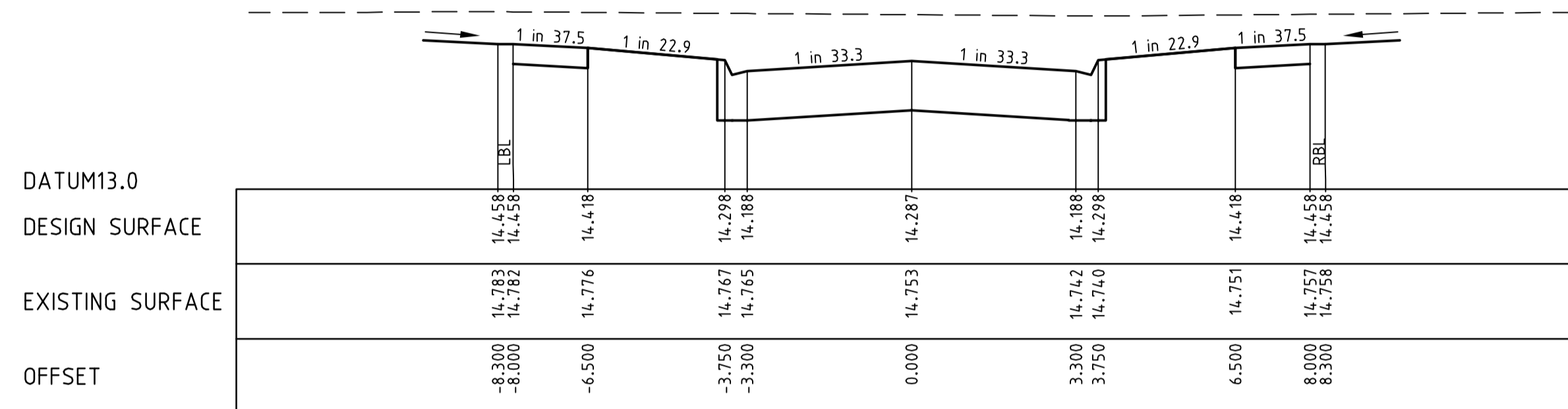
Rev B

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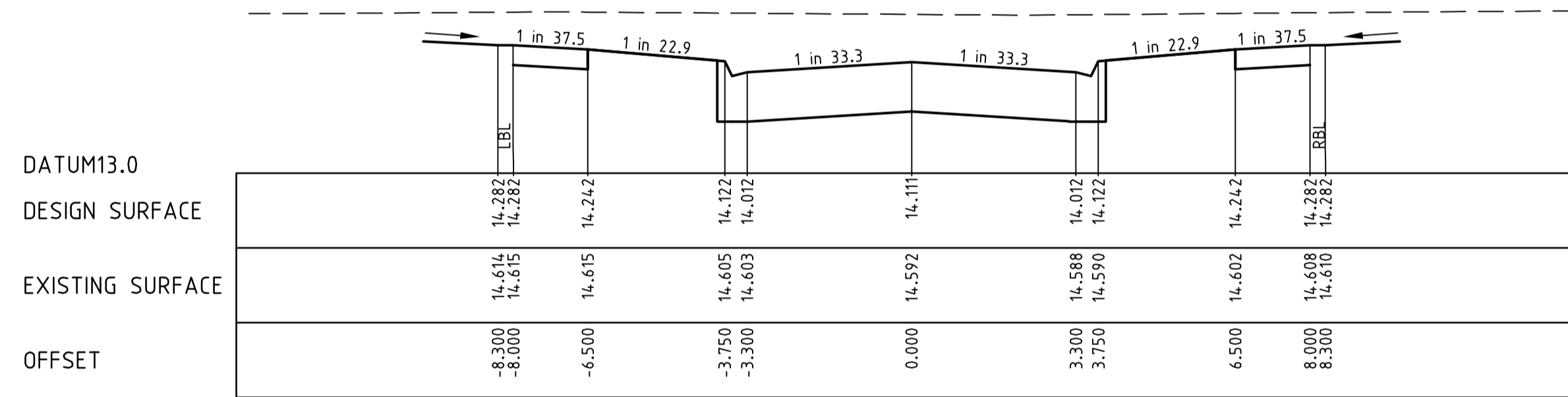
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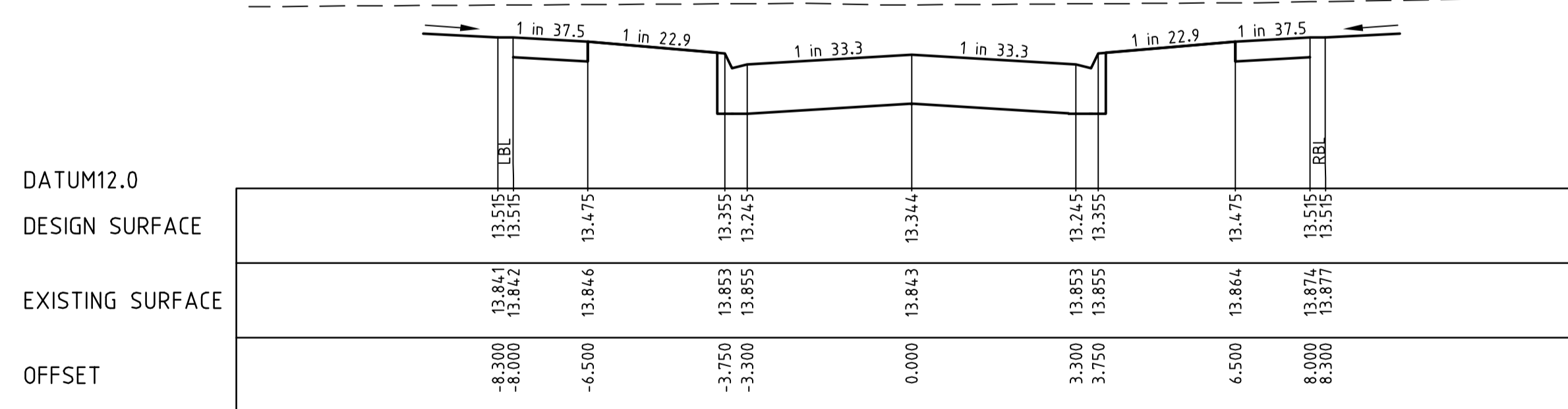
RTPCH 375.314



CH 363.448



CH 360.851



CH 349.448



Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006

REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

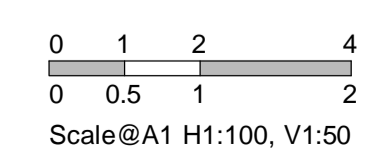
LEGEND

--- EXISTING SURFACE

— DESIGN LINE



Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

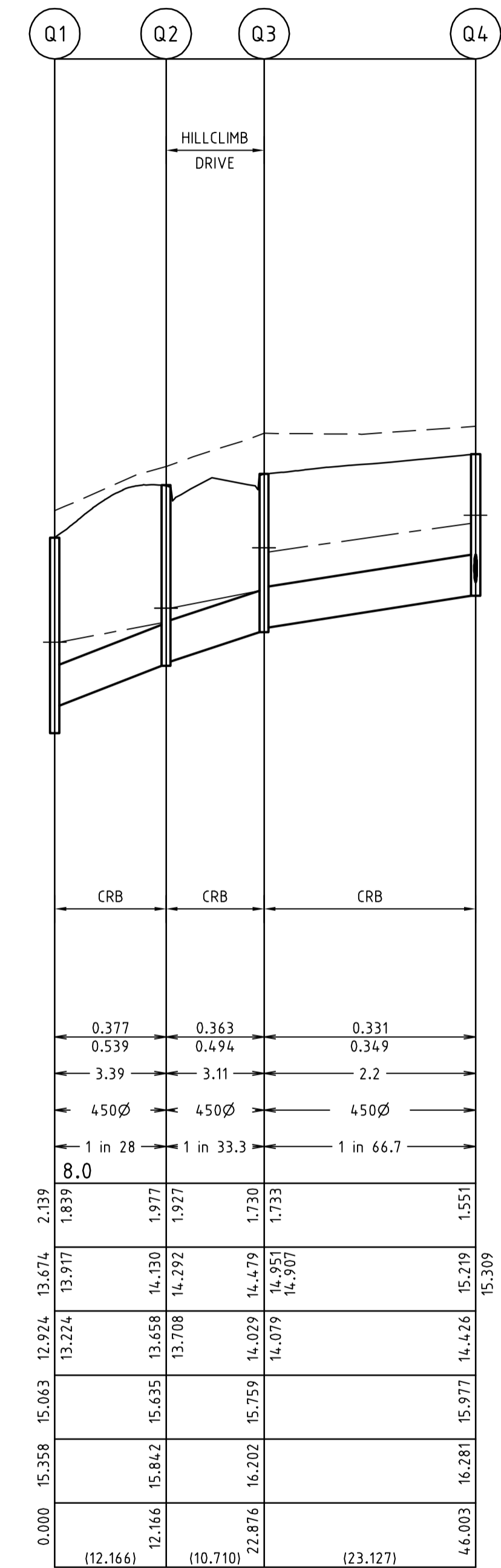
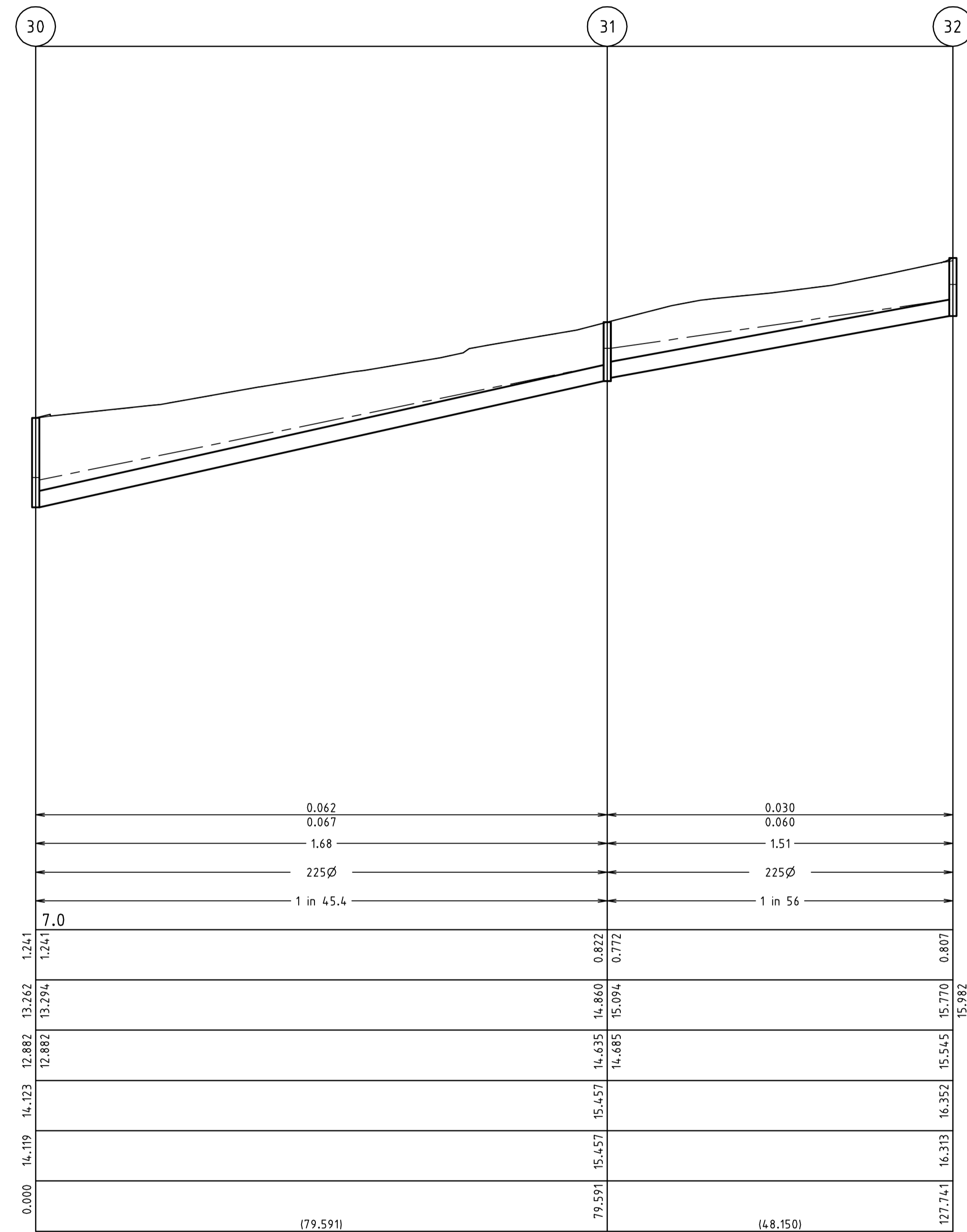
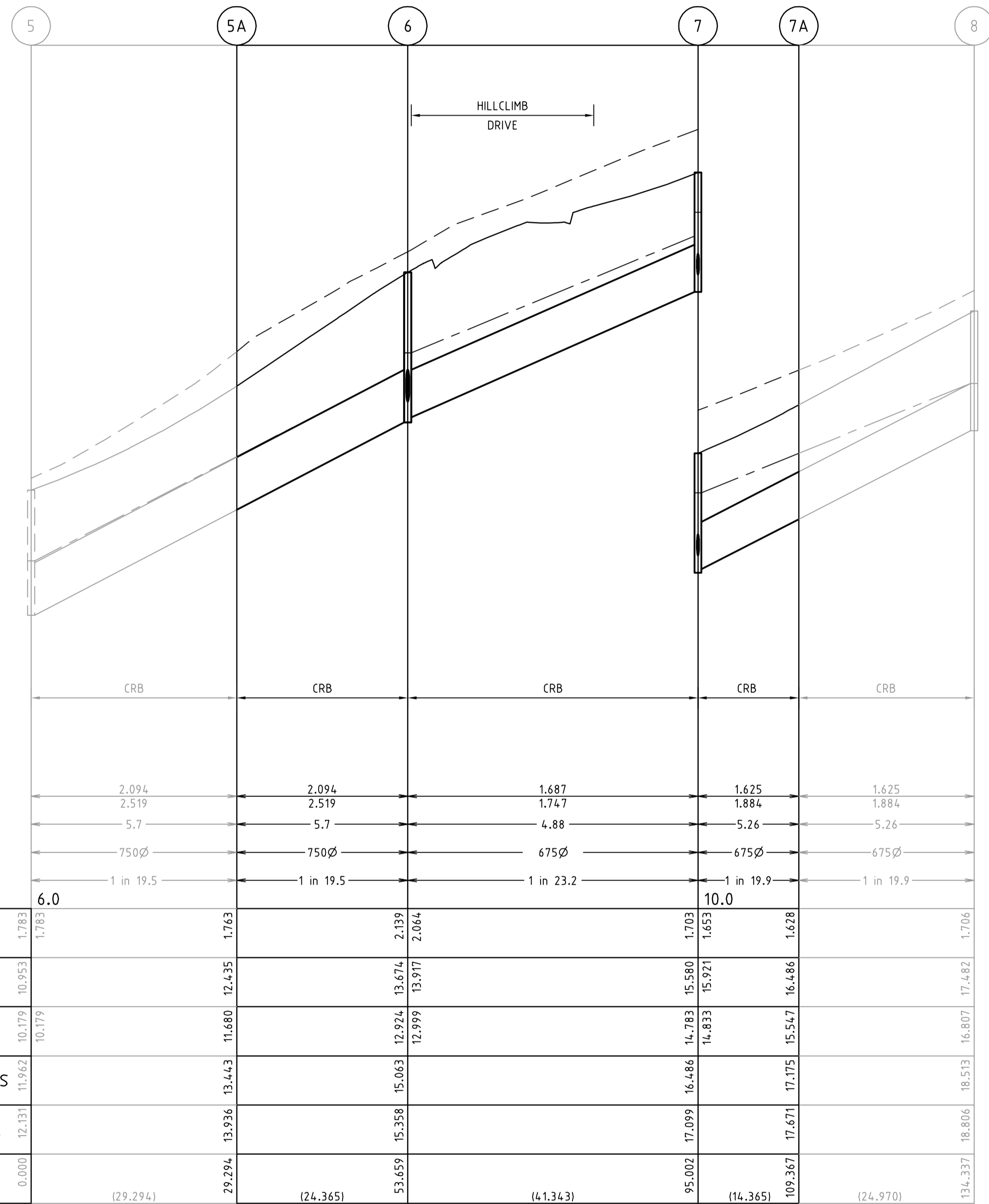


ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Cross Sections - Paraffin Drive
Ch 349.448 - Ch 375.314

Drawing No. 0250EHL-02A-17 **Rev B**

Sheet No. 17 of 23

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Level 1, 6 Riverside Quay
Southbank, Victoria 3006

REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

- EXISTING SURFACE
- DESIGN SURFACE
- DRAINAGE PIPE/PIT
- EXISTING DRAINAGE PIPE/PIT
- HYDRAULIC GRADE LINE



Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

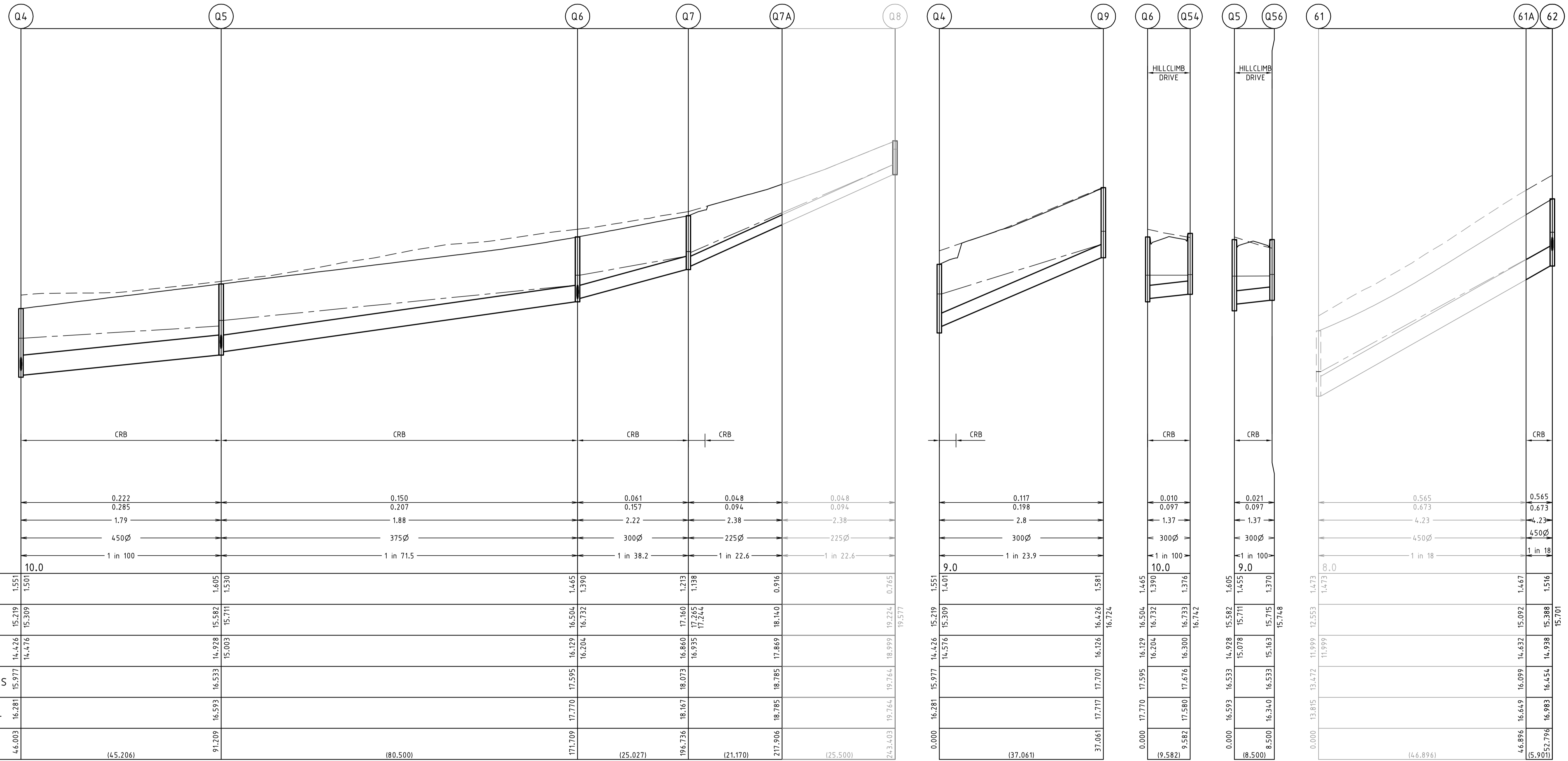
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ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Drainage Longitudinal Sections - 1

Drawing No. 0250EHL-02A-18
Sheet No. 18 of 23

Rev B

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Level 1, 6 Riverside Quay
Southbank, Victoria 3006

REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

- EXISTING SURFACE
- DESIGN SURFACE
- DRAINAGE PIPE/PIT
- EXISTING DRAINAGE PIPE/PIT
- HYDRAULIC GRADE LINE



Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

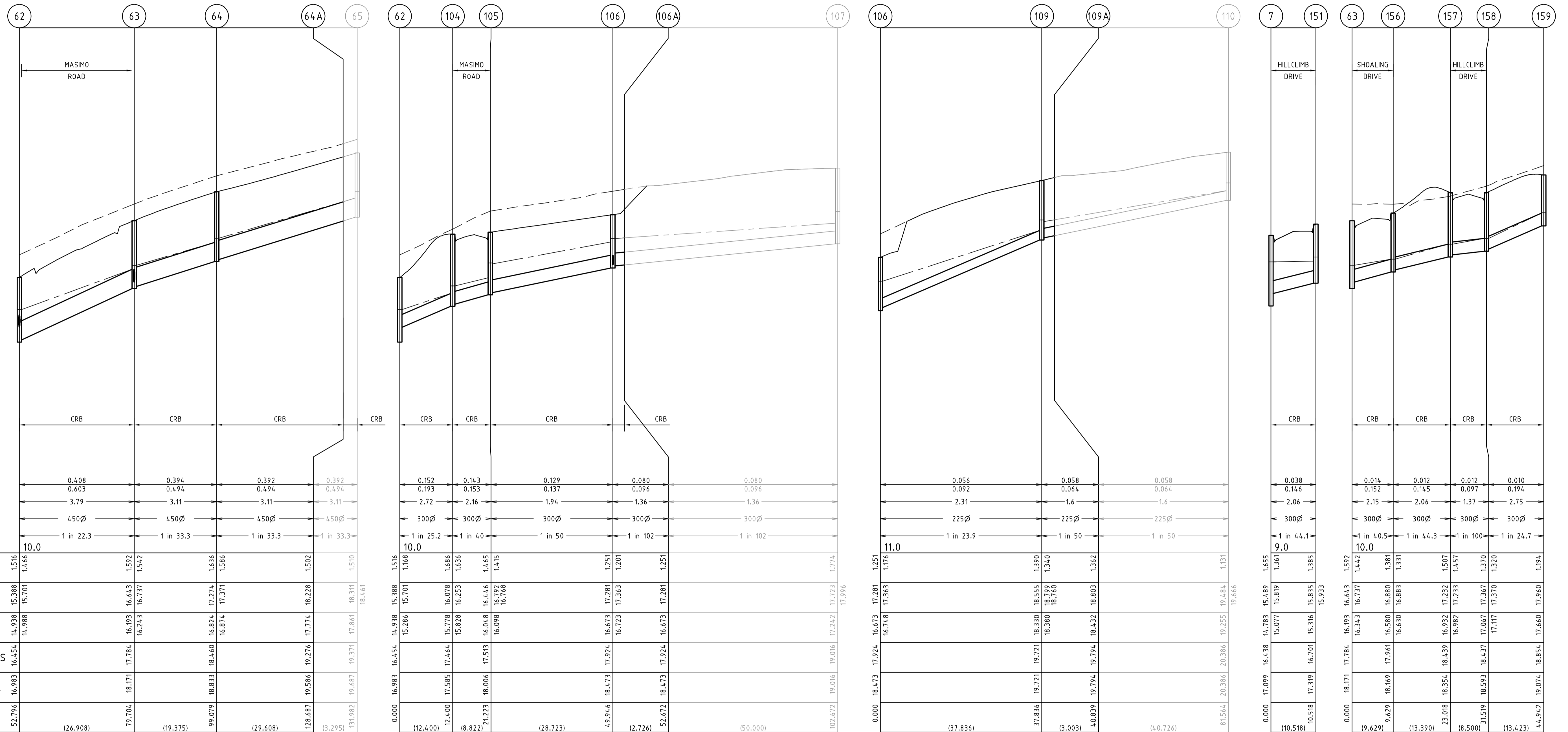
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ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Drainage Longitudinal Sections - 2

Drawing No. 0250EHL-02A-19
Sheet No. 19 of 23

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Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006

REVISION	DATE	APP'D
C PIT 7 TO 151 AMENDED	28.05.10	
B COUNCIL AMENDMENTS	18.03.10	
A ISSUED TO COUNCIL	20.01.10	

LEGEND

- EXISTING SURFACE
- DESIGN SURFACE
- DRAINAGE PIPE/PIT
- EXISTING DRAINAGE PIPE/PIT
- ISSUED HYDRAULIC GRADE LINE



Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

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ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Drainage Longitudinal Sections - 3

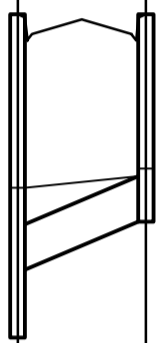
Drawing No. 0250EHL-02A-20
Sheet No. 20 of 23

Rev C

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6 163

PARAFFIN DRIVE



CRB

DESIGN FLOW (m3/s) 0.023
 CAPACITY (m3/s) 0.187
 AT GRADE VELOCITY (m/s) 2.64
 PIPE SIZE (mm) 300
 GRADE DATUM in 26.8
 7.0

DEPTH TO INVERT	2.139	1.689	1.371
HYDRAULIC GRADE LINE	13.674	13.917	13.991
INVERT LEVEL	12.924	13.374	13.691
FINISHED SURFACE LEVELS	15.063	15.063	15.063
EXISTING SURFACE LEVEL	15.358	15.367	15.367
CHAINAGE (Reach Length)	0.000	8.500	(8.500)

PIT NUMBER	TYPE	INTERNAL		INLET		OUTLET		F.S.L.	DEPTH	STANDARD DRAWING	REMARKS
		WIDTH (mm)	LENGTH (mm)	DIAMETER (mm)	INV R.L. (m)	DIAMETER (mm)	INV R.L. (m)				
5A	EX EP			750	11.680			13.443	1.763		
6	SEP	900	900	675	12.999	750	12.924	15.063	2.139	CGG305, 309	CONNECT TO EXISTING END PIPE
				450	13.224						
				300	13.374						
7	DSEP	2200	900	675	14.833	675	14.783	16.438	1.655	CGG305,312	
7A	EP					675	15.547	17.175	1.628		
30	EX JP			225	12.882			14.123	1.241		
31	JP	900	600	225	14.685	225	14.635	15.457	0.822	CGG305, 308	
32	JP	900	600			225	15.545	16.352	0.807	CGG305, 308	
61A	EX EP			450	14.632			16.099	1.467		CONNECT TO EXISTING END PIPE
62	SEP	900	900	450	14.988	450	14.938	16.454	1.516	CGG305, 309	
				300	15.286						
63	SEP	900	900	450	16.243	450	16.193	17.784	1.592	CGG305, 309	
				300	16.343						
64	JP	900	900	450	16.874	450	16.824	18.460	1.636	CGG305, 306	
64A	EP					450	17.774	19.276	1.502		
104	SEP	900	900	300	15.828	300	15.778	17.464	1.686	CGG305, 309	
105	SEP	900	900	300	16.098	300	16.048	17.513	1.465	CGG305, 309	
106	SEP	900	900	300	16.723	300	16.673	17.924	1.251	CGG305, 309	
				225	16.748						
106A	EP					300	16.673	17.924	1.251		
109	JP	900		225	18.380	225	18.330	19.721	1.390	CGG305, 308	
109A	EP					225	18.432	19.794	1.362		
151	DSEP	2200	900			300	15.316	16.701	1.385	CGG305, 312	
156	SEP	900	900	300	16.630	300	16.580	17.961	1.381	CGG305, 308	
157	SEP	900	900	300	16.982	300	16.932	18.439	1.507	CGG305, 308	
158	SEP	900	900	300	17.117	300	17.067	18.437	1.370	CGG305, 308	
159	SEP	900	900			300	17.660	18.854	1.194	CGG305, 308	
163	SEP	900	900			300	13.691	15.063	1.371	CGG305, 308	
Q2	DSEP	2200	900	450	13.708	450	13.658	15.628	1.970	CGG305, 312	Q100 PIPE
Q3	DSEP	2200	900	450	14.079	450	14.029	15.759	1.730	CGG305, 312	Q100 PIPE
Q4	JP	900	900	450	14.476	450	14.426	15.977	1.551	CGG305, 306	Q100 PIPE
				300	14.576						
Q5	DSEP	2200	900	375	15.003	450	14.928	16.533	1.605	CGG305, 312	Q100 PIPE
				300	15.078						
Q54	DSEP	2200	900			300	16.300	17.676	1.376	CGG305, 312	Q100 PIPE
Q56	DSEP	2200	900			300	15.163	16.533	1.370	CGG305, 312	Q100 PIPE
Q6	DSEP	2200	900	300	16.204	375	16.129	17.595	1.465	CGG305, 312	Q100 PIPE
				300	16.204						
Q7	JP	900	900	225	16.935	300	16.860	18.073	1.213	CGG305, 306	Q100 PIPE
Q7A	EP					225	17.869	18.785	0.916		Q100 PIPE
Q9	JP	900	900			300	16.126	17.707	1.581	CGG305, 306	Q100 PIPE CONSTRUCT AS TEMPORARY END ENTRY PIT



Principal Leopold Developments Pty Ltd
 Level 1, 6 Riverside Quay
 Southbank, Victoria 3006

REVISION	DATE	APP'D
C	PITS 7 AND 151 AMENDED	28.05.10
B	COUNCIL AMENDMENTS	18.03.10
A	ISSUED TO COUNCIL	20.01.10

LEGEND

- EXISTING SURFACE
- DESIGN SURFACE
- DRAINAGE PIPE/PIT
- EXISTING DRAINAGE PIPE/PIT
- HYDRAULIC GRADE LINE



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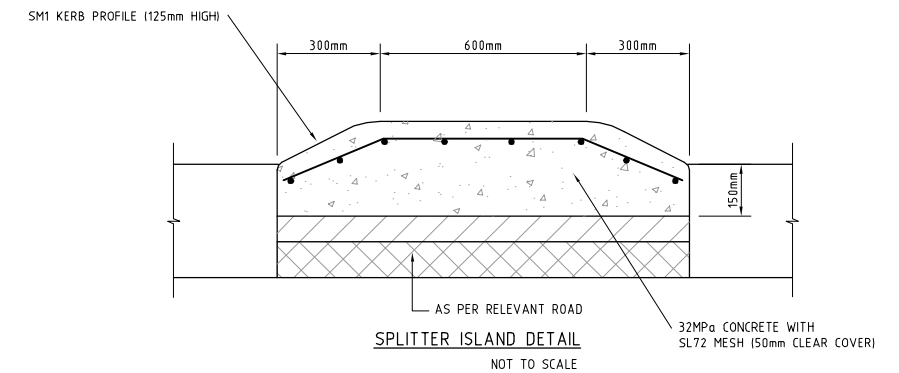
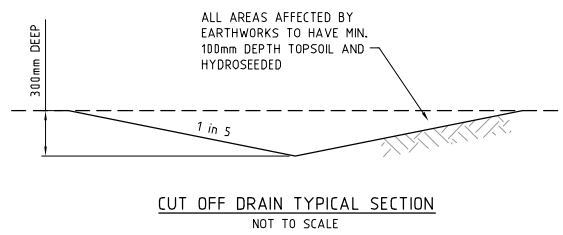
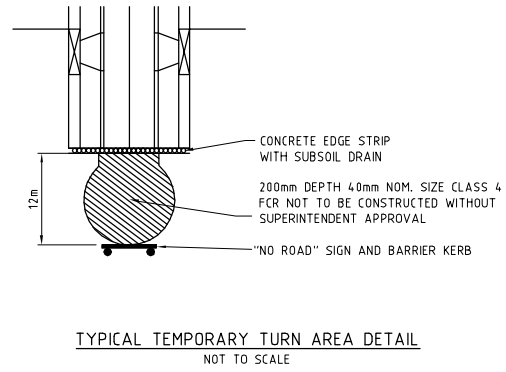
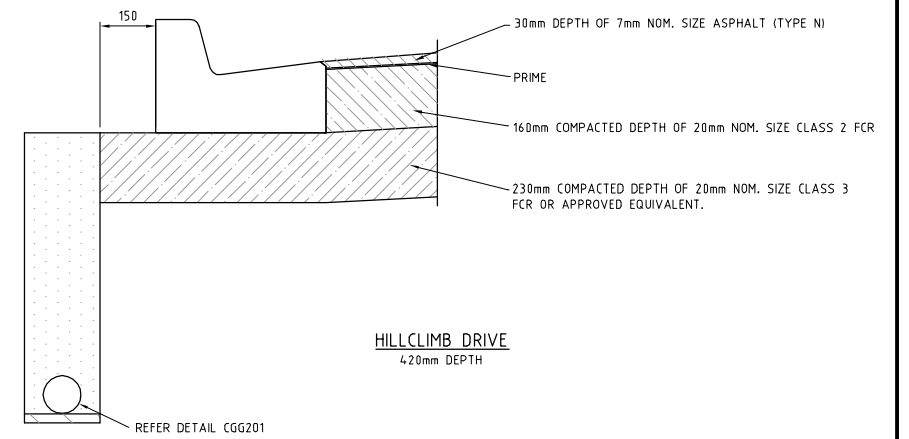
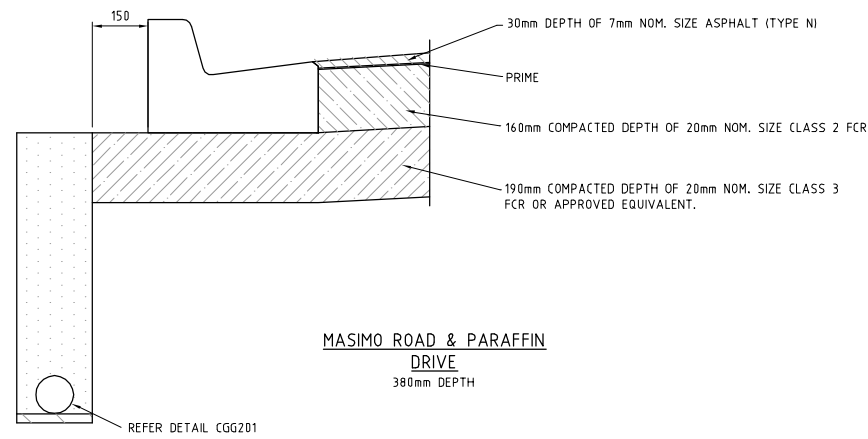
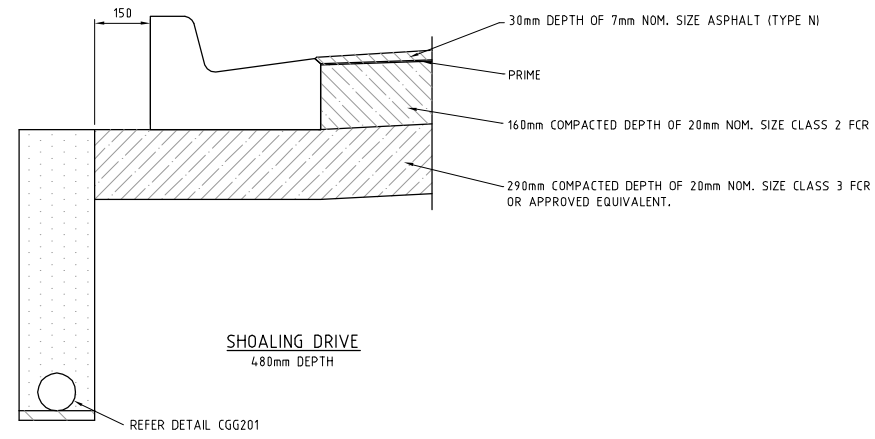
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ESTUARY
 Stage 2A
 City of Greater Geelong
 Roadworks and Drainage
 Drainage Longitudinal Sections - 4
 & Pit Schedule

Drawing No. 0250EHL-02A-21
 Sheet No. 21 of 23

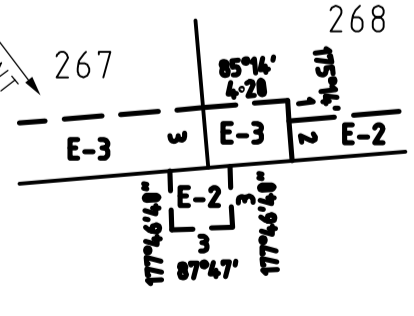
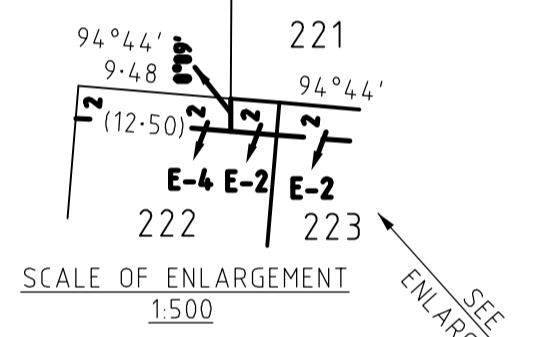
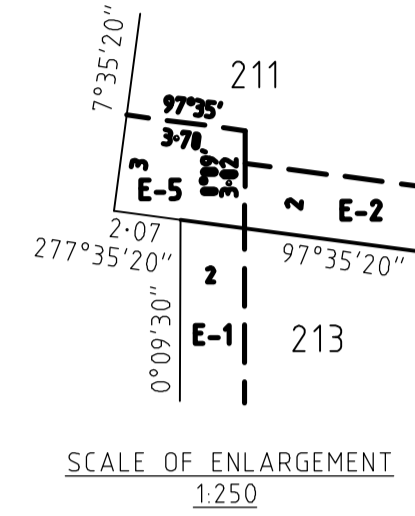
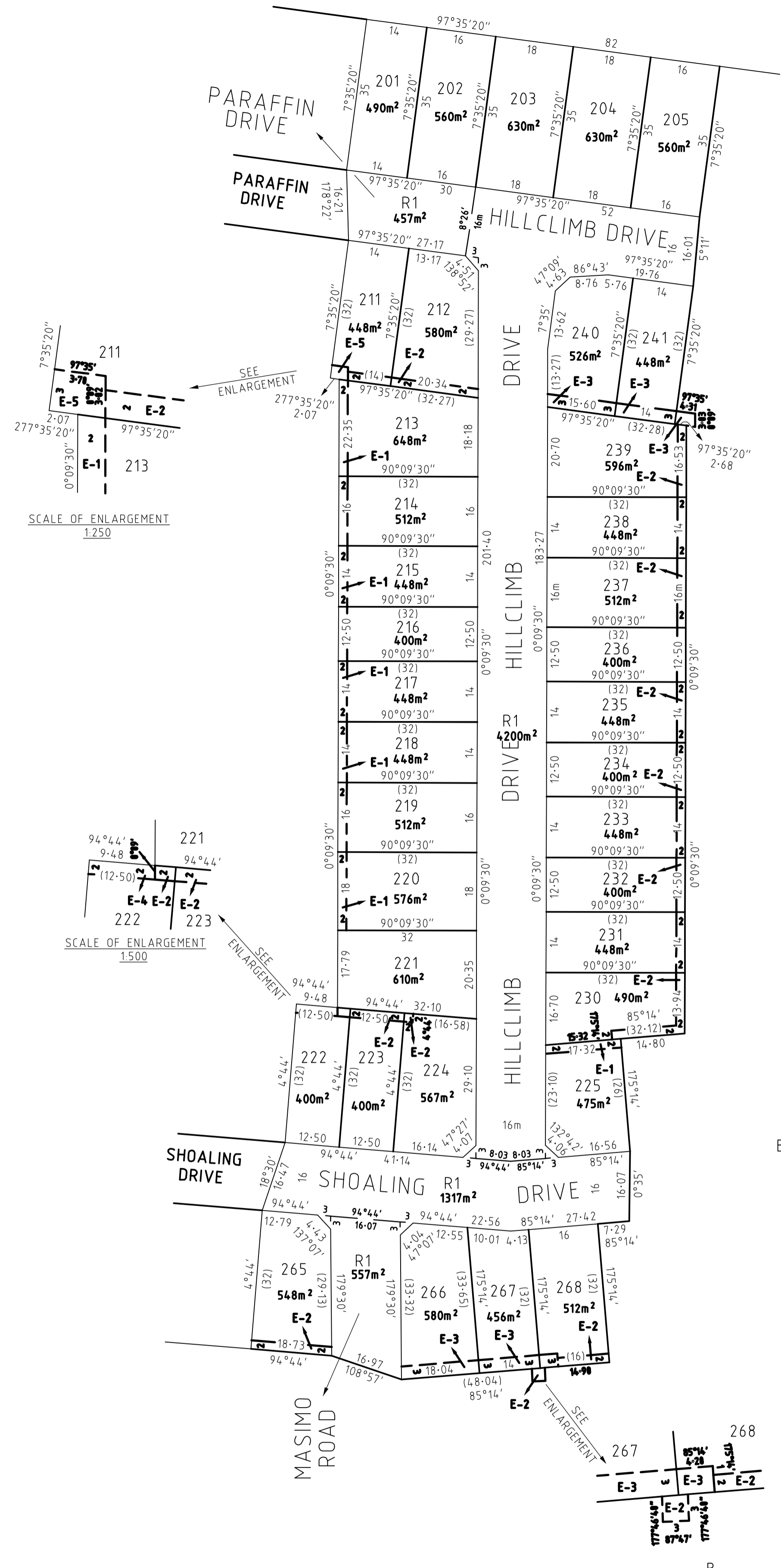
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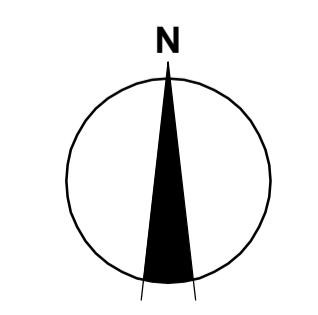
B	COUNCIL AMENDMENTS	18.03.10	
A	ISSUED TO COUNCIL	20.01.10	
	REVISION	DATE	APP'D

MGA 94 ZONE 55



Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
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REVISION	DATE	APP'D
B COUNCIL AMENDMENTS	18-03-10	
A ISSUED TO COUNCIL	20-01-10	



Scale@A1 1:500



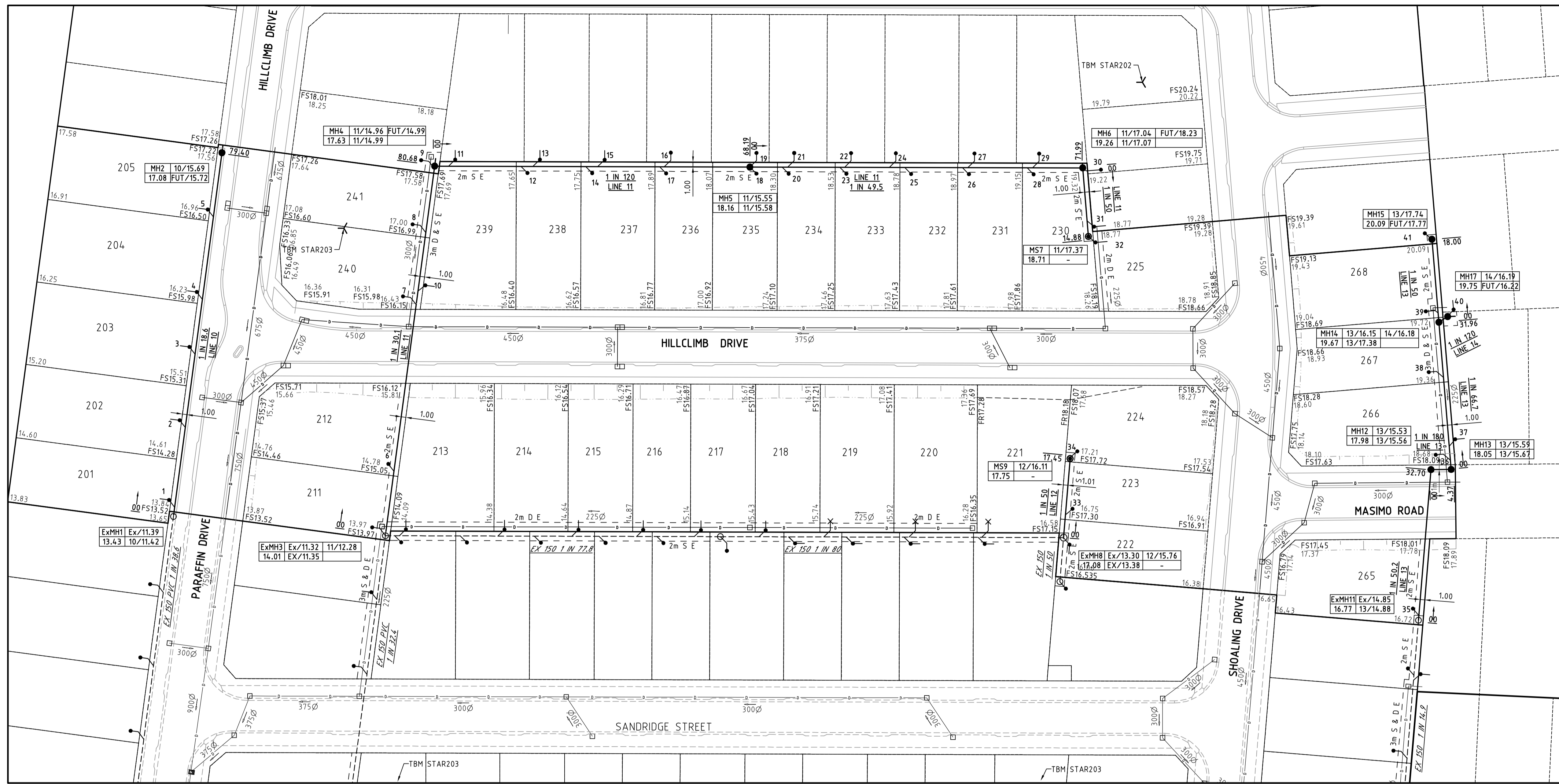
Designed C. Barker November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved C. Birkett November 2009

ESTUARY
Stage 2A
City of Greater Geelong
Roadworks and Drainage
Subdivision Setout Plan

Drawing No. 0250EHL-02A-23
Sheet No. 23 of 23

Rev 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.

BARWON WATER APPROVED CONTRACTOR TO CONNECT TO EXISTING ACCESS CHAMBER AT CONTRACTORS COST. 7 CLEAR DAYS NOTICE PRIOR TO THE COMMENCEMENT OF WORKS MUST BE GIVEN TO THE SUPERINTENDENT AND BARWON WATER SENIOR QUALITY AUDITOR.

BARWON WATER APPROVED CONTRACTOR TO CONSTRUCT NEW HOUSE CONNECTIONS OVER EXISTING MAIN AT CONTRACTORS COST. 7 CLEAR DAYS NOTICE PRIOR TO THE COMMENCEMENT OF WORKS MUST BE GIVEN TO THE SUPERINTENDENT AND BARWON WATER SENIOR QUALITY AUDITOR.

- NOTES**
GENERAL
- SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE WATER SERVICES ASSOCIATION OF AUSTRALIA STANDARD CODES (WSA 02-2002 - WSA 03-2002) IN CONJUNCTION WITH BARWON WATERS SUPPLEMENTS TO THE CODES.
 - BARWON WATER AND THE PROJECT MANAGER TO BE NOTIFIED 7 CLEAR WORKING DAYS NOTICE PRIOR TO COMMENCEMENT OF WORKS.
 - THE CONTRACTOR SHALL COMPLY WITH SAFETY REQUIREMENTS OF THE MINES ACT, GENERAL REGULATIONS AND STATUTORY RULES, AND THE MINES (TRENCHES) REGULATIONS 1982.
 - NOTIFY THE DEPARTMENT OF LABOUR OF HIS INTENTION TO COMMENCE TRENCHING OPERATIONS WHERE TRENCHES ARE 1.5 METRES OR DEEPER.
 - INSURE THAT THE MINE MANAGER OR HIS DEPUTY AS REQUIRED BY THE REGULATIONS IS IN ATTENDANCE WHEN TRENCHING OPERATIONS ARE IN PROGRESS.
 - THE CONTRACTOR SHALL MAKE ALL WORKS AVAILABLE FOR THE INSPECTOR/SURVEYOR TO CARRY OUT THE NECESSARY INSPECTIONS AND SURVEYING BEFORE BACKFILLING IS COMMENCED.
 - SEWERS ARE APPROXIMATE ONLY. ALL RELEVANT SERVICE AUTHORITY'S ARE TO BE CONTACTED PRIOR TO THE COMMENCEMENT OF EXCAVATION TO ESTABLISH THEIR EXACT LOCATION.
 - CONTACT PRIOR TO COMMENCEMENT OF WORKS: CITY OF GREATER GEELONG, POWERCOR, TELSTRA, TRU, VICTORIAN WORKCOVER AUTHORITY.
 - ALL SERVICES ARE TO BE LOCATED ON SITE PRIOR TO ANY EXCAVATION.
 - INVERT LEVELS OF EXISTING SEWERS AND WATERMANS TO BE CHECKED PRIOR TO THE COMMENCEMENT OF WORKS.
 - CLASS 2 BACKFILL TO BE USED UNDER DRIVEWAYS FOR WATER AND SEWER RETICULATION.
 - PROPERTY OWNERS ARE TO BE NOTIFIED IN WRITING BY THE CONSULTANT 14 CLEAR DAYS PRIOR TO COMMENCEMENT OF WORKS.
 - COPY OF CADASTRAL MAP GRID (MGA) CONNECTION & COPY OF AUSTRALIAN HEIGHT DATUM (AHD) CONNECTION IS TO BE PROVIDED BY CONTRACTOR.
 - WORKS SHALL BE EFFECTED BETWEEN THE HOURS OF 8:00am AND 5:00pm MONDAY - FRIDAY. IN THE EVENT THAT WORKS ARE TO BE EFFECTED OUTSIDE THESE WORKING HOURS, A LETTER REQUESTING APPROVAL FOR SUCH OUT OF HOURS WORK SHALL BE LODGED TO THE SENIOR QUALITY AUDITOR.

- THE CONTRACTOR SHALL COMPLY WITH SAFETY REQUIREMENTS RELATING TO WORKING NEAR POWER LINES AS SET BY THE CHIEF ELECTRICAL INSPECTOR WHERE NECESSARY AN ACCREDITED TRAINED SPOTTER IS TO BE PROVIDED.
 - WATER RESTRICTIONS ARE TO APPLY FROM MIDNIGHT JUNE 30th 2006, IN ACCORDANCE WITH BY-LAW NO. 187. ONLY TRIGGER HOSES (MAXIMUM SIZE 25mm) MAY BE USED FOR CONSTRUCTION WORK NOT INCLUDING TRENCHING, UNLESS OTHERWISE EXEMPTED BY THE AUTHORITY IN WRITING. MECHANICAL COMPACTION IS TO BE USED IN ACCORDANCE WITH MRWA SPECIFICATION 04-03 FOR TRENCH WORKS UNTIL FURTHER NOTICE. ANY WATER USED TO FLUSH WATER MAINS IS TO BE RECLAIMED AND USED FOR CONSTRUCTION PURPOSES.
- SEWER**
- THE CONTRACTOR SHALL CORE CUT ALL HOLES INTO EXISTING PRECAST SEWER MAINTENANCE HOLES.
 - ALL FSL'S SHOWN IN MAINTENANCE HOLES INFORMATION BOX ARE TOP OF MANHOLE LEVELS.
 - ALL END OF LINES NOMINATED AS TMS ARE TO HAVE A TERMINAL MAINTENANCE SHAFT AS PER BARWON WATER STANDARD DRAWING 70095.
 - WHERE FUTURE SEWER MAINS ARE INDICATED A 150mm ACCESS COUPLING AND CAP ARE TO BE PLACED OUT OF THE MANHOLE.
 - WARNING: ENTRY INTO ANY MAINTENANCE HOLE IS CONTROLLED BY CONFINED SPACE REGULATIONS BEING "OCCUPATIONAL HEALTH & SAFETY (CONFINED SPACES) REGULATIONS 1996, STATUTORY RULE NO 148/1996 AND A.S. 2865 - 1995 SAFE WORKING IN CONFINED SPACES". PERSON(S) REQUIRING ACCESS TO ANY BARWON WATER MANHOLE AS PART OF THE DEVELOPER WORKS PROCESS MUST CONTACT THE SENIOR QUALITY AUDITOR PH (03) 5226 9204 FOR ANY REQUIREMENTS DURING THE CONSTRUCTION OF WORKS TO GAIN ACCESS TO A BARWON WATER MANHOLE THE PROCEDURE AS OUTLINED IN THE ATTACHED FLOWCHART IS TO BE FOLLOWED, AND "THE CONFINED SPACE ENTRY PERMIT APPLICATION FORM" (ALSO ATTACHED) IS TO BE COMPLETED AND LODGED WITH THE SENIOR QUALITY AUDITOR 3 (THREE) CLEAR WORKING DAYS PRIOR TO ENTRY.
 - ALL SEWERS ARE TO BE PVC-SNB.
 - DETECTOR TAPE TO BE PLACED OVER SEWERS AT ALL ROAD CROSSINGS AND ALL CURVED SEWER MAINS.
 - BORED SECTIONS OF SEWER TO BE CCTV INSPECTED IN ACCORDANCE WITH BARWON WATER'S LAND DEVELOPMENT MANUAL AND SUBMITTED TO BARWON WATER FOR ACCEPTANCE.
 - ALL MANHOLE JOINTS, INCLUDING DROPS TO BE SEALED WITH FERROPRE OR APPROVED EQUIVALENT.
 - ALL EXCAVATIONS AROUND A NEWLY CONSTRUCTED MANHOLE TO BE BACKFILLED WITH 3% CEMENT STABILISED SAND.
- SPECIAL**
- TRENCH COMPACTION RESULTS TO BE SUBMITTED BY CONSULTANT WITH 'AS CONSTRUCTED' NOTES.

ROAD NAME	SERVICES OFFSET SCHEDULE							
	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
SHOALING DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	1.80	NORTH	2.30
SHOALING DRIVE TRUNK MAIN	-	-	NORTH	2.90	-	-	-	-
HILLCLIMB DRIVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
PARAFFIN DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
MASIMO ROAD	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70

MAINTENANCE HOLE CHAMBER INFORMATION LEGEND			
MH No.	LINE No. / DOWNSTREAM INVERT	LINE No. / UPSTREAM INVERT	
F.S.L.	LINE No. / UPSTREAM INVERT	LINE No. / UPSTREAM INVERT	

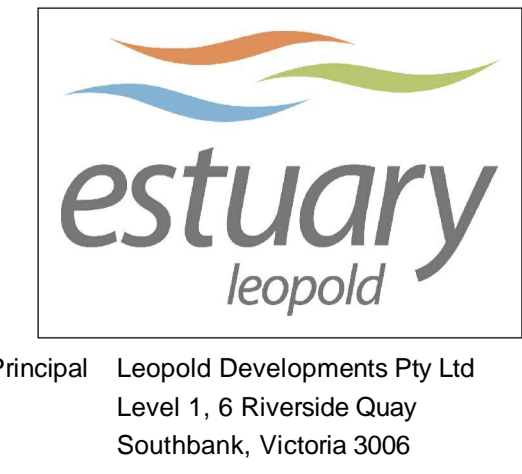
NEW SEWER MAINS		
SIZE	TYPE	LENGTH
150mm	PVC SNB	422.52

SURVEY CONTROL MGA 94 ZONE 55					
PM	EASTING	NORTHING	RL	DESCRIPTION	PARISH
MOOLAP PM 321	27704.0	57694.80	9.436	BRASS PLAQUE IN CONCRETE	MOOLAP
MOOLAP PM 137	278263.348	5769552.155	-	BRASS PLAQUE IN CONCRETE	MOOLAP
MOOLAP PM 69	277138.741	5770359.313	8.503	BRASS PLAQUE IN CONCRETE	MOOLAP

SURVEY CONTROL ARBITRARY					
PM	EASTING	NORTHING	RL	DESCRIPTION	PARISH
PM69	10000.000	50000.000	8.503	BRASS PLAQUE IN CONCRETE	MOOLAP
PM137	11124.354	49193.067	-	BRASS PLAQUE IN CONCRETE	MOOLAP
PM321	9897.742	48994.921	9.436	BRASS PLAQUE IN CONCRETE	MOOLAP

SURVEY CONTROL					
TBM	EASTING	NORTHING	RL	DESCRIPTION	PARISH
SPIKE 1	9874.79	48950.39	9.49	SPIKE IN BITUMEN	MOOLAP
STAR 2	9810.80	48462.72	11.64	STAR PICKET	MOOLAP

WORKS SHALL NOT COMMENCE UNTIL PLANS SIGNED BY BARWON WATER
 ACCEPTED BY BARWON WATER DEVELOPMENT SERVICES CO-ORDINATOR



REVISION	DATE	APPD
B BARWON WATER AMENDMENTS	18.03.10	
A ISSUED TO BARWON WATER	20.01.10	

CONSTRUCTION NOTES

1. CONSTRUCTION OF THE SEWER AND WATER MAINS IS TO BE IN ACCORDANCE WITH THE BARWON WATER STANDARD SPECIFICATIONS "CONSTRUCTION OF GRAVITY SEWERS AND RISING MAINS" AND "CONSTRUCTION OF WATER MAINS".

2. EVERY ENDEAVOUR TO ENSURE THE LOCATION OF ALL EXISTING SERVICES ON THE PLAN ARE CORRECT. HOWEVER ACTUAL LOCATIONS ARE TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATIONS.

3. NOMINAL SIZE OF WATER MAINS INDICATED IN HIGHLIGHTS. OFFSETS ARE INDICATED IN METRES.

4. ALL SEWER PIPES ARE 150mm UNLESS OTHERWISE SHOWN.

PIPE TYPES

ASBESTOS CEMENT	AC	WATER CHANGE OF PIPE SIZE	W
CAST IRON CEMENT LINED	CC	EXISTING WATERMAIN	W
DUCTILE CEMENT LINED	CCCL	STORMWATER	W
MILD STEEL CEMENT LINED	MSCL	GAS	W
POLYETHYLENE	PE	TELSTRA	W
POLYETHYLENE (AS SPECIFIED)	PE	S.E.C.	W
REINFORCED CONCRETE	RC	SEWER	W
VITREOUS CLAY	VC		

FITTINGS AND SYMBOLS

SEWER TYPE "A" JUMP	—/—
SEWER TYPE "B" JUMP	—/—
TYPE "C" SLIDE LINE	—/—
OBLIQUE JUNCTION	—/—
TYPE "A" SPECIAL	—/—

OTHER U/G SERVICES

EXISTING WATERMAIN	—
STORMWATER	—
GAS	—
TELSTRA	—
S.E.C.	—
SEWER	—

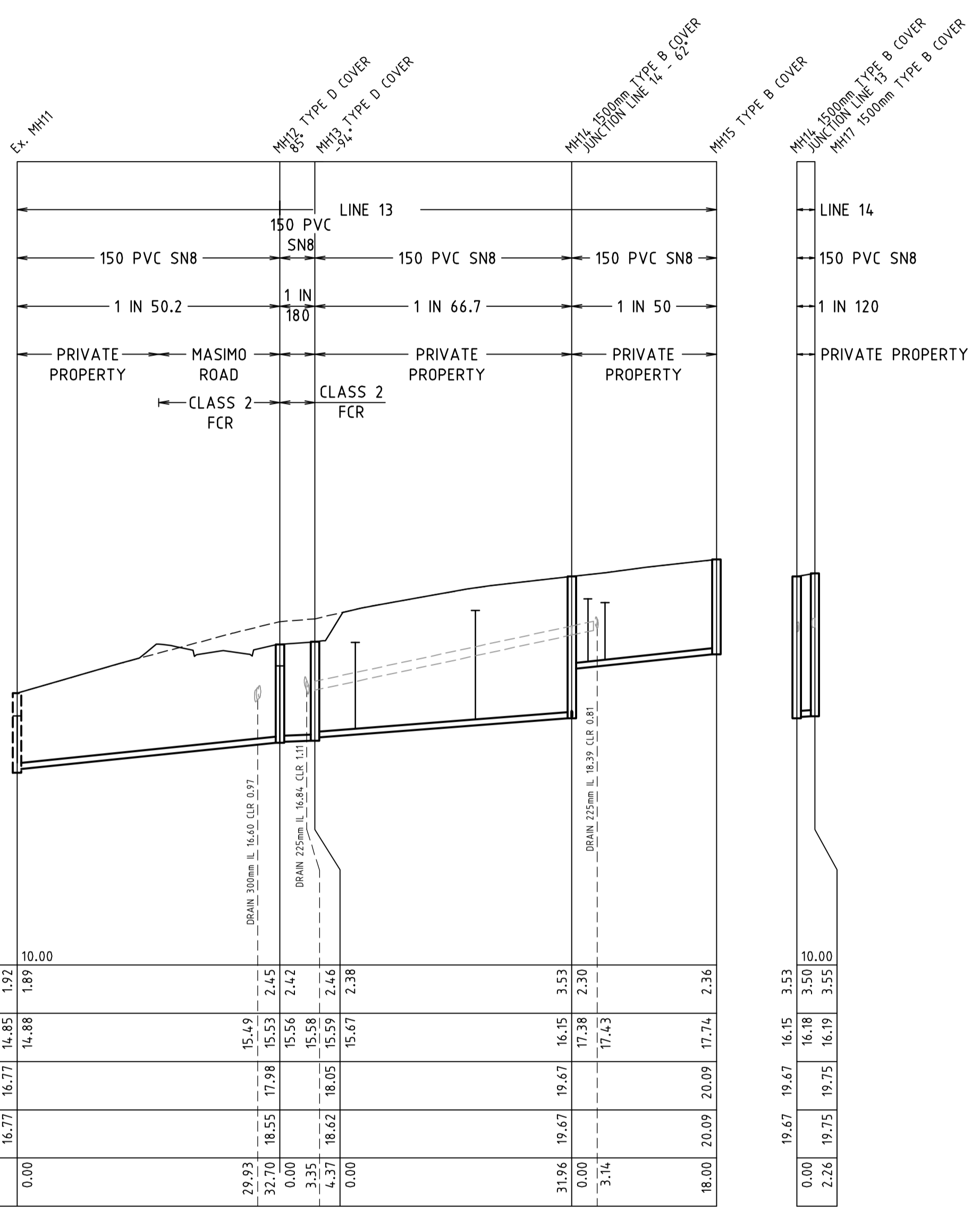
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 Geelong Tel +61 3 5228 3100

Designed	C. Barker	November 2009
Drawn	M. Wilks	November 2009
Checked	C. Birkett	November 2009
Approved	J. Golden	November 2009

Barwon Region Water Corporation
 Extension No. 61-14677
 ESTUARY Stage 2A
 Sewer Detail Plan

Drawing No. O250EHL-02A-50 Rev B
 Sheet No. 1 of 3
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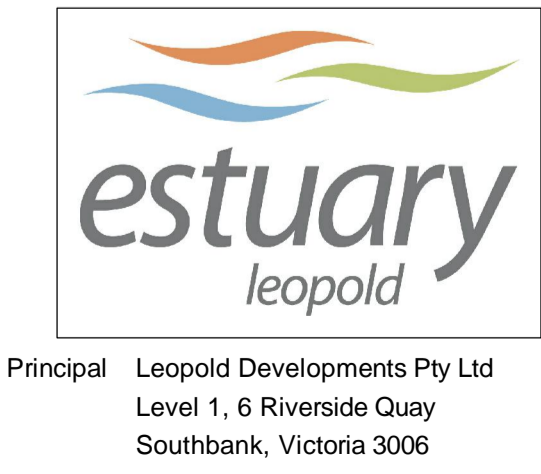


Datum R.L.	10.00					
DEPTH TO INVERT	1.92	1.89				
R.L. OF INVERT	14.85	14.88	15.49	15.53	15.56	15.58
R.L. OF FIN. SURF.	16.77	16.77	17.98	17.98	18.05	18.05
R.L. OF NAT. SURF.	16.77	16.77	18.55	18.55	18.62	18.62
DISTANCE	0.00		29.93	32.70	0.00	3.35
					4.37	0.00
						31.96
					0.00	0.00
					3.14	0.00
						18.00
						2.36

LINE NO.	MANHOLE NO.	HC NO.	LOT NAME	CONNECTION TYPE	CHAINAGE	IL SEWER	IL BRANCH	BRANCH HEIGHT
10	MH1	1	Lot 201	A	2.00	11.50	12.65	1.15
10	MH1	2	Lot 202	A	19.40	12.45	13.60	1.15
10	MH1	3	Lot 203	A	35.40	13.32	14.32	1.00
10	MH1	4	Lot 204	A	47.40	13.97	15.06	1.08
10	MH1	5	Lot 205	A	65.40	14.96	15.71	0.76
11	MH3	6	Lot 212	B	14.07	12.74	14.49	1.75
11	MH3	7	Lot 240	A Special	50.42	13.96	15.89	1.93
11	MH3	8	Lot 241	A Special	66.14	14.49	16.43	1.94
11	MH4	9	Lot 242	A Special	0.00	14.96	17.07	2.12
11	MH3	10	Lot 239	A	53.42	14.06	15.77	1.71
11	MH4	11	Lot 244	A	3.02	15.01	16.75	1.74
11	MH4	12	Lot 238	B	18.66	15.14	17.03	1.89
11	MH4	13	Lot 245	A	21.35	15.16	16.91	1.75
11	MH4	14	Lot 237	B	32.66	15.26	17.17	1.91
11	MH4	15	Lot 246	A	35.35	15.28	17.05	1.77
11	MH4	16	Lot 247	A Special	49.66	15.40	17.27	1.87
11	MH4	17	Lot 236	B	48.66	15.39	17.30	1.90
11	MH5	18	Lot 235	B	0.00	15.55	17.51	1.95
11	MH5	19	Lot 248	A Special	0.00	15.55	17.51	1.95
11	MH5	20	Lot 234	B	6.97	15.72	17.48	1.77
11	MH5	21	Lot 249	A Special	8.16	15.74	17.60	1.86
11	MH5	22	Lot 250	A Special	20.47	15.99	17.83	1.84
11	MH5	23	Lot 233	B	19.47	15.94	17.91	1.94
11	MH5	24	Lot 251	A Special	30.16	16.19	18.05	1.86
11	MH5	25	Lot 232	B	33.47	16.26	18.17	1.91
11	MH5	26	Lot 231	B	45.97	16.52	18.34	1.83
11	MH5	27	Lot 252	A Special	47.16	16.54	18.29	1.75
11	MH5	28	Lot 230	B	59.97	16.80	18.55	1.75
11	MH5	29	Lot 253	A	61.15	16.83	18.44	1.62
11	MS7	30	Lot 227	A	0.00	17.04	18.35	1.31
11	MH6	31	Lot 226	A Special	12.88	17.33	18.18	0.86
11	MH6	32	Lot 225	A Special	0.00	17.37	18.12	0.76
12	MH8	33	Lot 223	B	5.58	15.87	16.73	0.86
12	MS9	34	Lot 224	B	0.00	16.11	17.16	1.05
13	MH11	35	Lot 265	B	1.00	14.89	16.20	1.31
13	MH12	36	Lot 266	B	0.00	15.53	17.76	2.22
13	MH13	37	Fut Lot	A	5.01	15.74	18.03	2.29
13	MH13	38	Lot 267	A Special	19.96	15.97	18.82	2.86
13	MH14	39	Lot 268	A Special	2.00	17.41	19.12	1.71
13	MH17	40	Fut Lot	A	0.00	17.45	19.02	1.57
13	MH54	41	Fut Lot	B	0.00	17.74	19.50	1.76

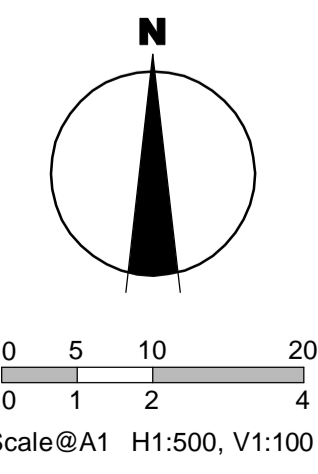
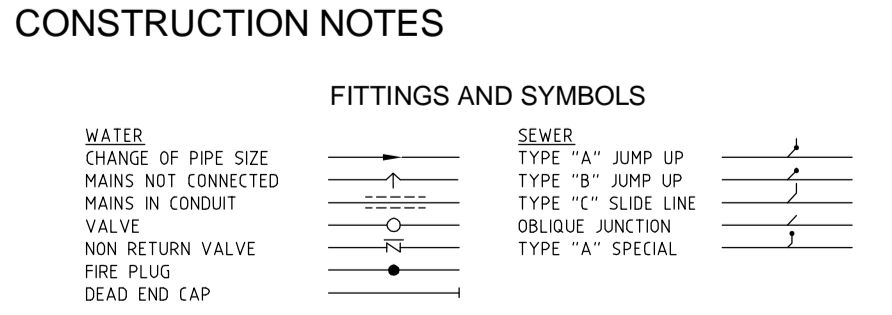
WORKS SHALL NOT COMMENCE UNTIL PLANS SIGNED BY BARWON WATER

ACCEPTED BY BARWON WATER DEVELOPMENT SERVICES CO-ORDINATOR



REVISION	DATE	APP'D
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A ISSUED TO BARWON WATER	20.01.10	

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4. ALL SEWER PIPES ARE 150mm UNLESS OTHERWISE SHOWN.



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Designed C. Barker November 2009
 Drawn M. Wilks November 2009
 Checked C. Birkett November 2009
 Approved J. Golden November 2009

Barwon Region Water Corporation
 Extention No. 61 - 14677
 ESTUARY
 Stage 2A
 Sewer Longitudinal Sections

Drawing No. O250EHL-02A-52 Rev B
 Sheet No. 3 of 3
 © SM Urban Pty Ltd ABN 99 124 206 819

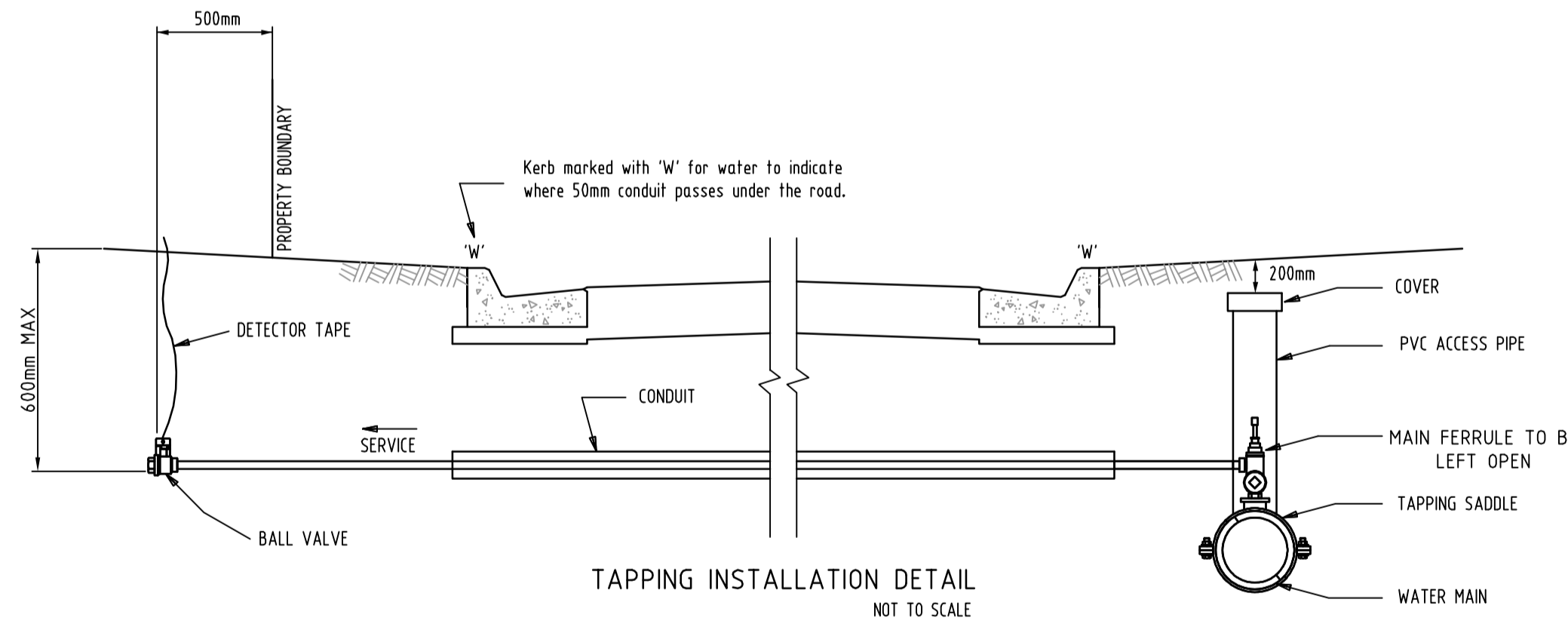
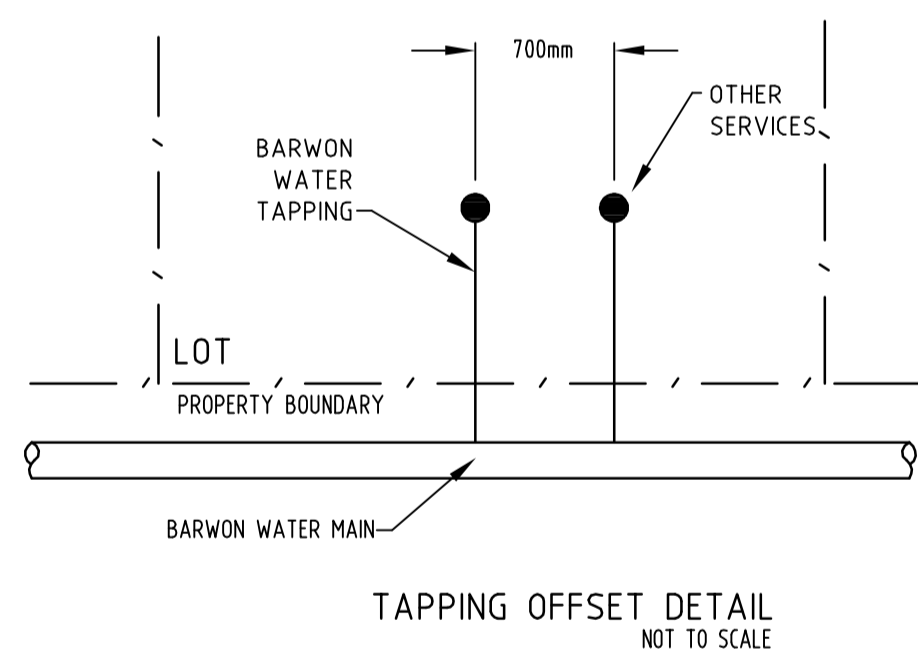


DESIGN HEAD=123.2m AHD
TEST PRESSURE=1600kPa

- NOTES**
GENERAL
- SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE WATER SERVICES ASSOCIATION OF AUSTRALIA STANDARD CODES (WSA 02-2002 - WSA 03-2002) IN CONJUNCTION WITH BARWON WATER'S SUPPLEMENTS TO THE CODES.
 - BARWON WATER AND THE PROJECT MANAGER TO BE NOTIFIED 7 CLEAR WORKING DAYS NOTICE PRIOR TO COMMENCEMENT OF WORKS.
 - THE CONTRACTOR SHALL:
 - COMPLY WITH SAFETY REQUIREMENTS OF THE MINES ACT, GENERAL REGULATIONS AND STATUTORY RULES, AND THE MINES (TRENCHES) REGULATIONS 1982.
 - NOTIFY THE DEPARTMENT OF LABOUR OF HIS INTENTION TO COMMENCE TRENCHING OPERATIONS WHERE TRENCHES ARE 1.5 METRES OR DEEPER. INSURE THAT THE MINE MANAGER OR HIS DEPUTY AS REQUIRED BY THE REGULATIONS IS IN ATTENDANCE WHEN TRENCHING OPERATIONS ARE IN PROGRESS.
 - THE CONTRACTOR SHALL MAKE ALL WORKS AVAILABLE FOR THE INSPECTOR/SURVEYOR TO CARRY OUT THE NECESSARY INSPECTIONS AND SURVEYING BEFORE BACKFILLING IS COMMENCED.
 - SERVICES ARE APPROXIMATE ONLY. ALL RELEVANT SERVICE AUTHORITY'S ARE TO BE CONTACTED PRIOR TO THE COMMENCEMENT OF EXCAVATION TO ESTABLISH THEIR EXACT LOCATION.
 - CONTACT PRIOR TO COMMENCEMENT OF WORKS:
CITY OF GREATER GEELONG
POWERCOR
TELSTRA
TRU
VICTORIAN WORKCOVER AUTHORITY
 - ALL SERVICES ARE TO BE LOCATED ON SITE PRIOR TO ANY EXCAVATION.
 - INVERT LEVELS OF EXISTING SEWERS AND WATERMANS TO BE CHECKED PRIOR TO THE COMMENCEMENT OF WORKS.
 - CLASS 2 BACKFILL TO BE USED UNDER DRIVEWAYS FOR WATER AND SEWER RETICULATION.
 - PROPERTY OWNERS ARE TO BE NOTIFIED IN WRITING BY THE CONSULTANT 14 CLEAR DAYS PRIOR TO COMMENCEMENT OF WORKS.
 - COPY OF CADASTRAL MAP GRID (MGA) CONNECTION & COPY OF AUSTRALIAN HEIGHT DATUM (AHD) CONNECTION IS TO BE PROVIDED BY CONTRACTOR
 - WORKS SHALL BE EFFECTED BETWEEN THE HOURS OF 8.00am AND 5.00pm MONDAY - FRIDAY. IN THE EVENT THAT WORKS ARE TO BE EFFECTED OUTSIDE THESE WORKING HOURS, A LETTER REQUESTING APPROVAL FOR SUCH OUT OF HOURS WORK SHALL BE LODGED TO THE SENIOR QUALITY AUDITOR.
 - THE CONTRACTOR SHALL COMPLY WITH SAFETY REQUIREMENTS RELATING TO WORKING NEAR POWER LINES AS SET BY THE CHIEF ELECTRICAL INSPECTOR WHERE NECESSARY AN ACCREDITED TRAINED SPOTTER IS TO BE PROVIDED.
 - WATER RESTRICTIONS ARE TO APPLY FROM MIDNIGHT JUNE 30th 2006. IN ACCORDANCE WITH BY-LAW NO. 187. ONLY TRIGGER HOSES (MAXIMUM SIZE 25mm) MAY BE USED FOR CONSTRUCTION WORK NOT INCLUDING TRENCHING, UNLESS OTHERWISE EXEMPTED BY THE AUTHORITY IN WRITING. MECHANICAL COMPACTION IS TO BE USED IN ACCORDANCE WITH MRWA SPECIFICATION 04-03 FOR TRENCH WORKS UNTIL FURTHER NOTICE. ANY WATER USED TO FLUSH WATER MAINS IS TO BE RECLAIMED AND USED FOR CONSTRUCTION PURPOSES.

- WATER**
- ENSURE WATERMANS ARE GRADED TO SUFFICIENT DEPTH UNDER ROADWAYS TO OBTAIN REQUIRED CLEARANCE UNDER STORM WATER DRAINS AND PAVEMENT LEVELS.
 - MARKER POSTS TO BE PLACED AT FIRE PLUGS. FIRE PLUG INDICATORS ARE TO BE IN ACCORDANCE WITH CPA & WSAA REQUIREMENTS.
 - ALL ALLOTMENTS ARE TO BE PROVIDED WITH A WATER SERVICE AS PART OF WATER RETICULATION WORKS. THE WATER MAIN IS TO BE TAPPED USING A TAPPING SADDLE AND PRESSURE FERRULE (FERRULE TO BE LEFT OPEN). A MINIMUM SIZE SERVICE (i.e. 20mm COPPER, 25mm PE) IS THEN TO BE EXTENDED TO A POINT 500mm WITHIN THE PROPERTY. THE SERVICE IS TO BE A CONTINUOUS LENGTH WITH NO JOINTS. IN THE CASE OF PE OR ANY OTHER NON-METALLIC SERVICE BEING INSTALLED, A COPPER TRACE WIRE IS TO BE INCORPORATED. A BURIED BALL VALVE IS TO BE PLACED AT THE END OF THE SERVICE AND BACKFILLED WITH SAND TO DESIGN SURFACE LEVEL. DETECTOR TAPE FROM BALL VALVE TO BE RUN TO SURFACE LEVEL.
 - PE PIPE TO BE LAID IN ACCORDANCE WITH WSA-01 WITH LONG RADIUS BENDS OR DEFLECTION ONLY. NO COMPRESSION BENDS TO BE USED.
 - AC PIPE NOTE**
ANY WORK INVOLVING THE REMOVAL (CUTTING AND HANDLING), STORAGE, TRANSPORTATION AND DISPOSAL OF WASTE ASBESTOS CEMENT (AC) PIPES MUST BE CARRIED OUT IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY (ASBESTOS) REGULATIONS 1992 AND RELEVANT CODES OF PRACTICE (REMOVAL), THE ENVIRONMENT PROTECTION (PRESCRIBED WASTE) REGULATIONS 1998 (STORAGE, TRANSPORTATION AND DISPOSAL), AND BARWON WATER'S SAFETY MANAGEMENT SYSTEM "SAFEAS".
 - FITZROY BOXES ARE TO BE PLACED OVER MONT TAP (MT) OR ANY TAPPING LOCATED WITHIN THE ROAD PAVEMENT.
 - THRUST BLOCKS ARE TO BE CONSTRUCTED AS PER BARWON WATER STANDARD DRAWING No's 70104, 70105 AND 70106
 - SWABBING OF WATER MAINS IS TO BE DONE IN ACCORDANCE WITH SECTION 6.7 AND SECTION 18 OF WSAA WATER SUPPLY CODE OF AUSTRALIA WSA 03-2002 MRWA EDITION VERSION 1
 - ALL WATER MAINS MUST BE HYDROSTATIC PRESSURE TESTED IN ACCORDANCE WITH SECTION 15.4 OF WSAA WATER SUPPLY CODE OF AUSTRALIA WSA 03-2002 MRWA EDITION VERSION 1.0. THE CONTRACTOR MUST GIVE BARWON WATER THREE WORKING DAYS NOTICE IN WRITING OF THE DATE AND TIME OF THE PROPOSED HYDROSTATIC PRESSURE TESTING TO ENSURE THAT BARWON WATER HAS THE OPPORTUNITY TO WITNESS THESE TESTS.

- SPECIAL**
- TRENCH COMPACTION RESULTS TO BE SUBMITTED BY CONSULTANT WITH 'AS CONSTRUCTED' NOTES.



- All lots are to be tapped using a tapping saddle and pressure ferrule.
- A minimum size service (ie 20mm Copper, 25mm PE) is then to be extended to a point 500mm within the property.
- Service pipe between main ferrule and ball valve to be a continuous length (ie no joints)
- Service to be type 'B' Copper or class 12 type 50 PE.
- In the case of PE or any other non-metallic service being installed, a copper trace wire is to be incorporated.
- A buried ball valve is to be placed at the end of the service.
- Detector tape is to be run to surface level.
- Ball Valve to be in accordance with Australian Standards (ie stamped 'W') Brass fitting with Stainless Steel ball.

THRUST RESTRAINT SCHEDULE				
LOCATION	TYPE	AREA (m ²)	NUMBER	
A 150 x 100 TEE	CONCRETE	0.80	2	
B 300 x 100 TEE	CONCRETE	2.99	1	
C 100Ø 11.25° BEND	CONCRETE	-	1	
D 150Ø 11.25° BEND	CONCRETE	0.16	1	
E 300Ø 11.25° BEND	CONCRETE	0.59	1	

NEW WATER MAINS		
SIZE	TYPE	LENGTH
100Ø	PVC (CLASS - 16)	261.06
150Ø	PVC (CLASS - 16)	162.05
300Ø	OD 337 MSCL (5.0mm)	80.22

SURVEY CONTROL MGA 94 ZONE 55					
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MOOLAP PM 321	27704.0	57694.80	9.436	BRASS PLAQUE IN CONCRETE	MOOLAP
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SURVEY CONTROL					
TBM	EASTING	NORTHING	RL	DESCRIPTION	PARISH
STAR200	9967.621	48847.780	11.382	STEEL STAR PICKET	MOOLAP
STAR201	9967.426	48709.662	12.992	STEEL STAR PICKET	MOOLAP
STAR202	10128.400	48684.879	20.077	STEEL STAR PICKET	MOOLAP
STAR203	10096.815	48857.625	16.872	STEEL STAR PICKET	MOOLAP

ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
SHOALING DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	1.80	NORTH	2.30
SHOALING DRIVE TRUNK MAIN	-	-	NORTH	2.90	-	-	-	-
HILLCLIMB DRIVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
PARAFFIN / HILLCLIMB DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
MASIMO ROAD	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70

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.

WORKS SHALL NOT COMMENCE UNTIL PLANS SIGNED BY BARWON WATER

ACCREDITED BARWON WATER DEVELOPMENT SERVICES CO-ORDINATOR



Principal Leopold Developments Pty Ltd
Level 1, 6 Riverside Quay
Southbank, Victoria 3006

REVISION	DATE	APPD
B BARWON WATER AMENDMENTS	18.03.10	
A ISSUED TO BARWON WATER	20.01.10	

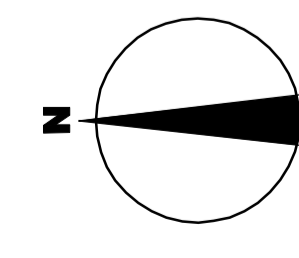
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PIPE TYPES

ASBESTOS CEMENT	AC
CAST IRON CEMENT LINED	DCL
DUCTILE CEMENT LINED	DCL
MILD STEEL CEMENT LINED	MSCL
POLYETHYLENE CHLORIDE	PVC
POLYETHYLENE (AS SPECIFIED)	PE
REINFORCED CONCRETE	RC
VITREOUS CLAY	VC

- FITTINGS AND SYMBOLS**
- WATER CHANGE OF PIPE SIZE
 - MAINS NOT CONNECTED
 - MAINS IN CONDUIT
 - VALVE
 - NON RETURN VALVE
 - FIRE PLUG
 - DEAD END CAP
 - SWAB DIRECTION

- OTHER U/G SERVICES**
- EXISTING WATERMAIN
 - STORMWATER
 - GAS
 - TELSTRA S.E.C.
 - SEWER



Scale@A1 1:500

Designed M. Wilks November 2009
Drawn M. Wilks November 2009
Checked C. Birkett November 2009
Approved J. Golden November 2009

Barwon Region Water Corporation
Estuary No. 61-14677
ESTUARY STAGE 2A
Water Detail Plan
Drawing No. 0250EHL-02A-61 Rev B
Sheet No. 1 of 1
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61-14677