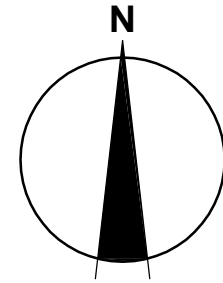


# Estuary

## Stage 5

### City of Greater Geelong



**LOCALITY PLAN**  
MELWAYS REF: 468 D6



*Designed for Living*



### Principal

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

#### Drawing Index

- 0250EHL-05- 01 Locality Plan
- 0250EHL-05- 02 General Notes
- 0250EHL-05- 03 Layout Plan - 1
- 0250EHL-05- 04 Layout Plan - 2
- 0250EHL-05- 05 Services Layout Plan
- 0250EHL-05- 06 Intersection Detail Plan, Lip Profiles & Setout Information
- 0250EHL-05- 07 Longitudinal Sections - 1
- 0250EHL-05- 08 Longitudinal Sections - 2
- 0250EHL-05- 09 Longitudinal Sections - 3
- 0250EHL-05- 10 Cross Sections - Estuary Boulevard
- 0250EHL-05- 11 Cross Sections - Masimo Road Ch15.079 - Ch72.673
- 0250EHL-05- 12 Cross Sections - Masimo Road Ch82.263 - Ch131.867
- 0250EHL-05- 13 Cross Sections - Masimo Road Ch135.263 - Ch175.867
- 0250EHL-05- 14 Cross Sections - Barney Grove Ch46.760 - Ch84.351
- 0250EHL-05- 15 Cross Sections - Barney Grove Ch87.702 - Ch123.351
- 0250EHL-05- 16 Cross Sections - Barney Grove Ch132.202 - Ch146.202
- 0250EHL-05- 17 Cross Sections - Casy Grove Ch42.362 - Ch85.834
- 0250EHL-05- 18 Cross Sections - Casy Grove Ch95.878 - Ch136.878
- 0250EHL-05- 19 Cross Sections - Ila Drive Ch42.494 - Ch100.053
- 0250EHL-05- 20 Cross Sections - Ila Drive Ch112.535 - Ch114.040
- 0250EHL-05- 21 Drainage Longitudinal Sections - 1
- 0250EHL-05- 22 Drainage Longitudinal Sections - 2
- 0250EHL-05- 23 Drainage Longitudinal Sections - 3
- 0250EHL-05- 24 Pit Schedule
- 0250EHL-05- 25 Details
- 0250EHL-05- 26 Subdivision Setout Plan
- 0250EHL-05- 27 Outfall Drainage Layout - 1
- 0250EHL-05- 28 Outfall Drainage Layout - 2
- 0250EHL-05- 29 Outfall Drainage Detail Plan - 1
- 0250EHL-05- 30 Outfall Drainage Detail Plan - 2
- 0250EHL-05- 31 Outfall Drainage Detail Plan - 3
- 0250EHL-05- 32 Outfall Drainage Details
- 0250EHL-05- 33 Outfall Drainage Longitudinal Sections - 1
- 0250EHL-05- 34 Outfall Drainage Longitudinal Sections - 2
- 0250EHL-05- 35 Outfall Drainage Longitudinal Sections - 3
- 0250EHL-05- 36 Outfall Drainage Longitudinal Sections - 4
- 0250EHL-05- 37 Outfall Drainage Cross Sections - 1
- 0250EHL-05- 38 Outfall Drainage Cross Sections - 2



Level 1, 47 Pakington Street,  
Geelong West, VIC, 3218  
Tel: +61 3 5228 3100  
Fax: +61 3 5228 3199

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
- (c) Areas hydroseeded

**DRAWING NOTES**

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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010

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

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p +61 3 5228 3100 | f +61 3 5228 3199 | www.smu.com.au

Adelaide +61 8 8223 6455 Gold Coast +61 7 5578 0222  
Brisbane +61 7 3831 8988 Melbourne +61 3 9869 0800  
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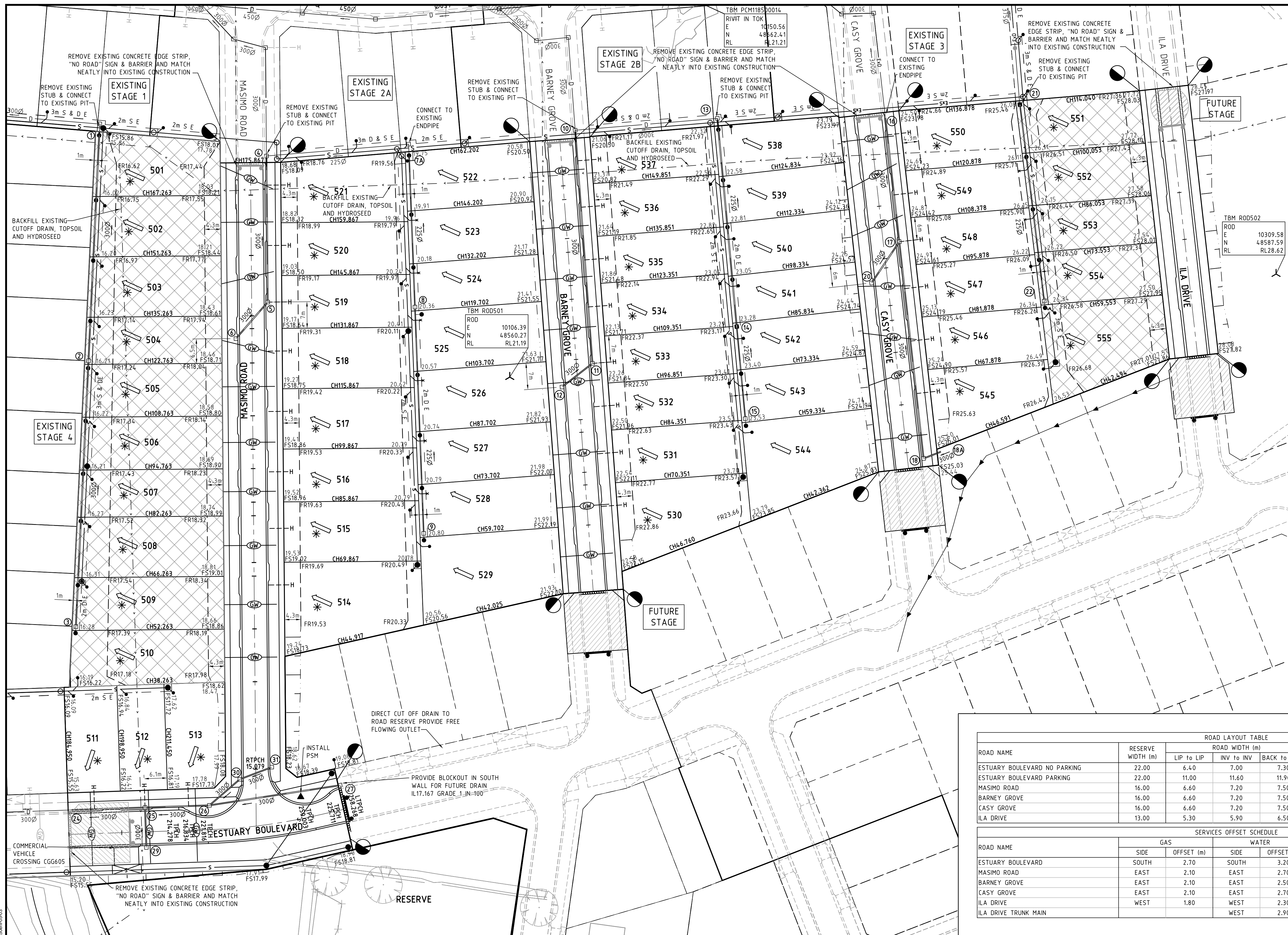
**Estuary**

Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
General Notes

**Drawing No. 0250EHL-05-02 Rev B**  
Sheet No. 2 of 38

Approved for Construction





**LEGEND - LAYOUT PLAN**

- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- PAVEMENT TREATMENT
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING TELSTRA
- EXISTING WATER
- EXISTING STORMWATER DRAIN
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LINE LEVEL
- FINISHED RIDGE LINE LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RETAINING WALL
- ZERO LOT LINES
- PAVEMENT TREATMENT
- STRUCTURAL FILL > 200mm DEEP
- EX. STRUCTURAL FILL > 200mm DEEP
- DIRECTION OF FALL
- OVERLAND FLOW
- ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN
- LIMIT OF WORKS
- EXISTING TREE TO BE REMOVED
- PERMANENT SURVEY MARK
- TEMPORARY BENCH MARK
- PROPOSED DRIVEWAY

**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**  
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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	
ESTUARY BOULEVARD NO PARKING	22.00	6.40	7.00	7.30	B2	B2	7.35	7.35	
ESTUARY BOULEVARD PARKING	22.00	11.00	11.60	11.90	B2	B2	5.05	5.05	
MASIMO ROAD	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25	
BARNEY GROVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25	
CASY GROVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25	
ILA DRIVE	13.00	5.30	5.90	6.50	SM2	SM2	2.25	2.25	

ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
ESTUARY BOULEVARD	SOUTH	2.70	SOUTH	3.20	NORTH	3.40	NORTH	2.80
MASIMO ROAD	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
BARNEY GROVE	EAST	2.10	EAST	2.50	WEST	2.30	WEST	1.70
CASY GROVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
ILA DRIVE	WEST	1.80	WEST	2.30	EAST	0.90	EAST	0.30
ILA DRIVE TRUNK MAIN			WEST	2.90				

REVISION	DATE	DESIGN	APPD
F RESERVE VEHICLE CROSSING ADDED	20.05.11	CB/CB	JG
E DRIVEWAY LOCATION FOR LOT 551 AMENDED	29.03.11	CB/CB	JG
D BARNEY GROVE LIMIT OF WORKS SYMBOL AMENDED	09.03.11	CB/CB	JG
C DRIVE CROSSOVERS FOR LOT 543 & 554 AMENDED	02.03.11	CB/CB	JG
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG

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

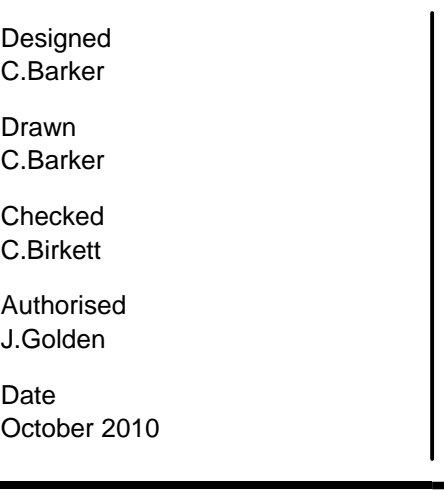
Designed  
C.Barker

Drawn  
C.Barker

Checked  
C.Birkett

Authorised  
J.Golden

Date  
October 2010



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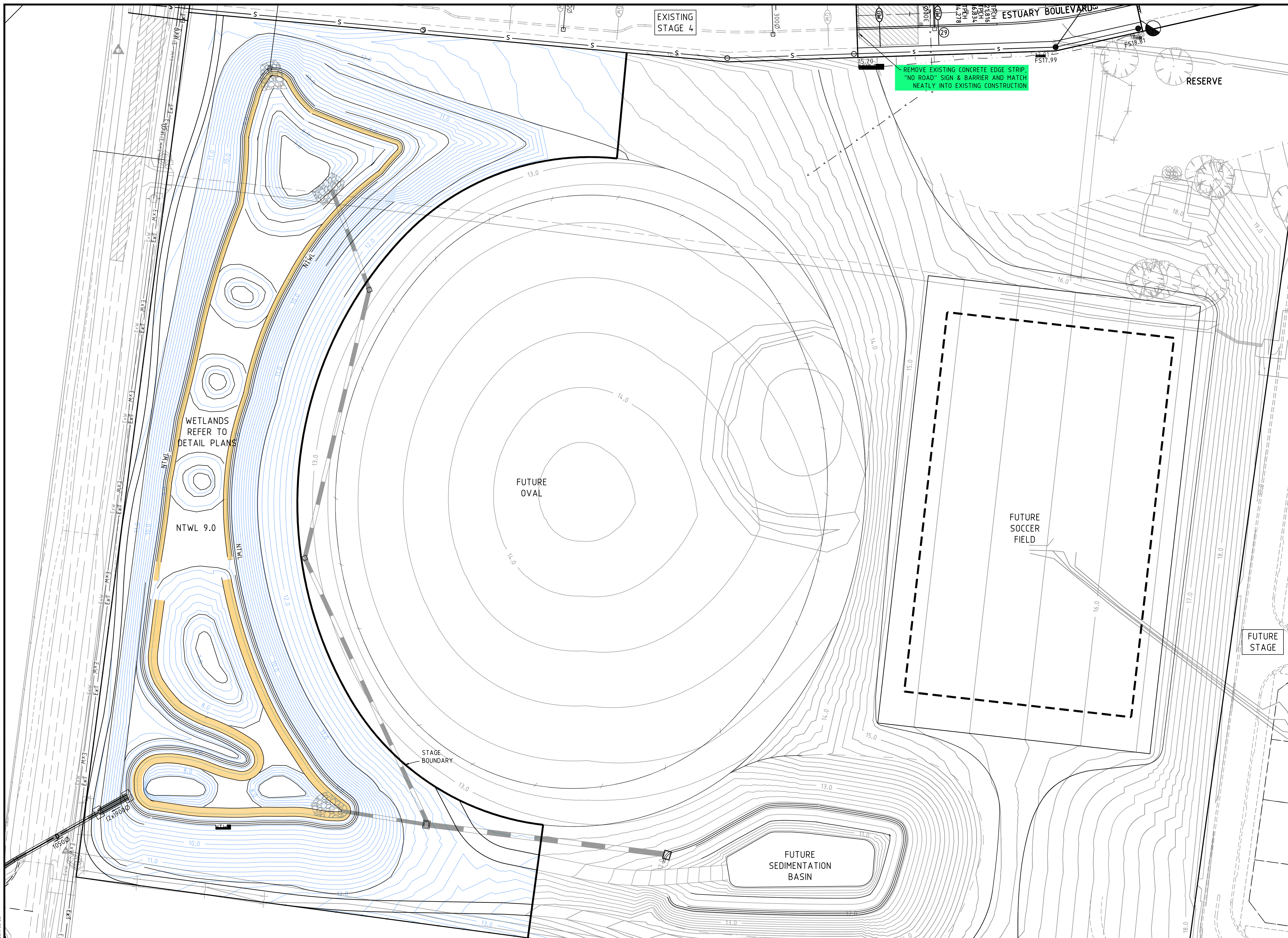
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 Canberra +61 2 6126 1900 Traralgon +61 3 5173 0100

**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Layout Plan - 1

**Drawing No. 0250EHL-05-03** **Rev F**  
 Sheet No. 3 of 40

**Approved for Construction**





**LEGEND - LAYOUT PLAN**

- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- TACTILE PAVERS
- EX. E— EXISTING ELECTRICITY (UNDERGROUND)
- 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
- 141.34 EXISTING SURFACE LEVEL
- FS140.35 FINISHED BUILDING LINE LEVEL
- FR157.40 FINISHED RIDGE LINE LEVEL
- TW159.30 TOP OF RETAINING WALL
- BW159.30 BOTTOM OF RETAINING WALL
- RETAINING WALL
- ZERO LOT LINES
- PAVEMENT TREATMENT
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- LIMIT OF WORKS
- EXISTING TREE TO BE REMOVED
- PERMANENT SURVEY MARK
- TEMPORARY BENCH MARK
- PROPOSED DRIVEWAY

- SAFETY BENCH
- STEPPED ROCK EMBANKMENT
- NTWL
- DESIGN CONTOUR

**WARNING**  
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 Locate all underground services before commencement of works  
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B	COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A	ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG
REVISION		DATE	DES/DFT	APPD

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

Designed  
C.Barker  
 Drawn  
C.Barker  
 Checked  
C.Birkett  
 Authorised  
J.Golden  
 Date  
October 2010

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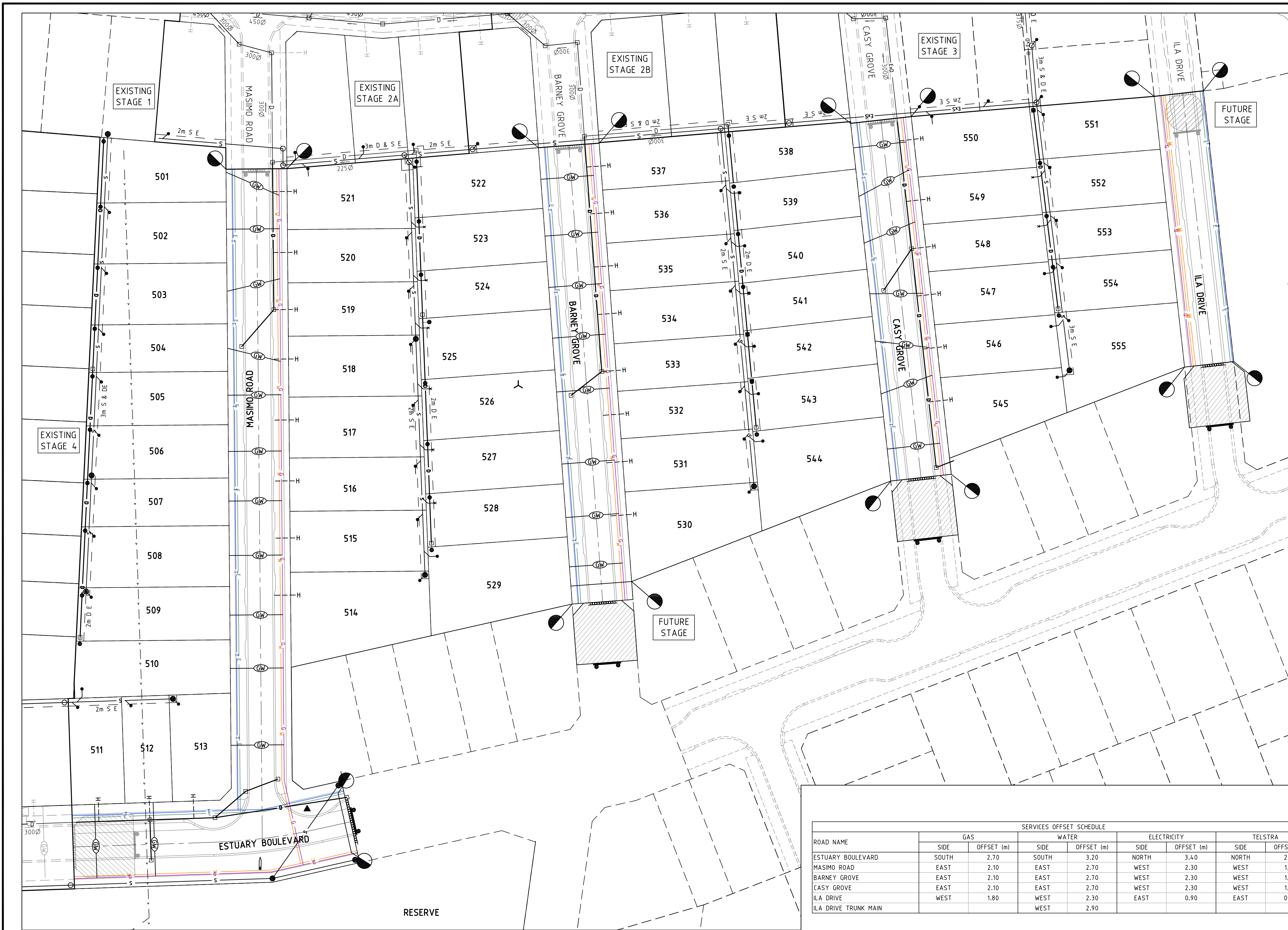
**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Layout Plan - 2

Drawing No. **0250EHL-05-04** Rev B  
 Sheet No. 4 of 38

Approved for Construction

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**LEGEND - FUNCTIONAL LAYOUT PLAN**

- E- ELECTRICITY (UNDERGROUND)
- G- GAS
- T- TELSTRA
- W- WATER
- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
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- ▨ TACTILE PAVERS
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- Ex G- EXISTING GAS
- Ex T- EXISTING TELSTRA
- Ex W- EXISTING WATER
- Ex D- EXISTING STORMWATER DRAIN
- Ex S- EXISTING SEWER
- Ex H- EXISTING HOUSE DRAIN
- Ex S&D- EXISTING SWALE DRAIN
- - - ZERO LOT LINES
- ▨ PAVEMENT TREATMENT
- DIRECTION OF FALL
- OVERLAND FLOW
- \* ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
- ▬ CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
- LIMIT OF WORKS
- EXISTING TREE TO BE REMOVED

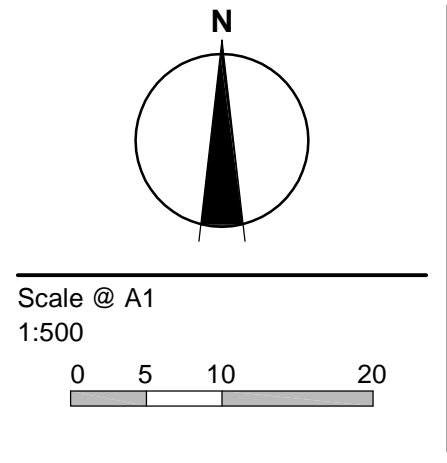
**WARNING**  
**BEWARE OF UNDERGROUND SERVICES**  
 The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown. Locate all underground services before commencement of works.  
**DIAL 1100 BEFORE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

ROAD NAME	SERVICES OFFSET SCHEDULE							
	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
ESTUARY BOULEVARD	SOUTH	2.70	SOUTH	3.20	NORTH	3.40	NORTH	2.80
MASIMO ROAD	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
BARNEY GROVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
CASY GROVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
ILA DRIVE	WEST	1.80	WEST	2.30	EAST	0.90	EAST	0.30
ILA DRIVE TRUNK MAIN			WEST	2.90				

REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG

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

Designed  
C.Barker  
 Drawn  
C.Barker  
 Checked  
C.Birkett  
 Authorised  
J.Golden  
 Date  
October 2010



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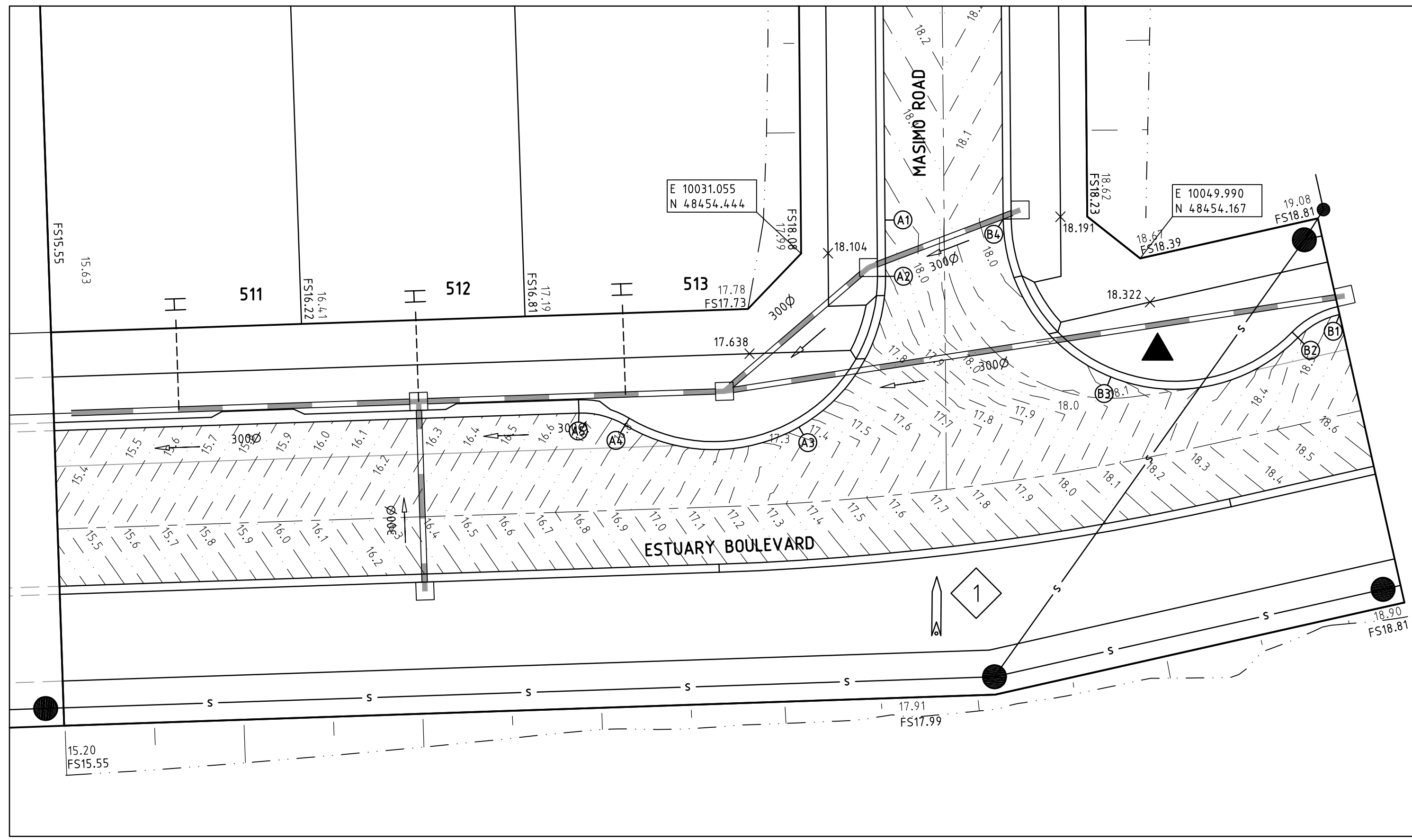
Adelaide +61 8 8223 6455 Gold Coast +61 7 5578 0222  
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 Canberra +61 2 6126 1900 Darwin +61 8 8922 0100

**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Services Layout Plan

**Drawing No. 0250EHL-05-05** **Rev B**  
 Sheet No. 5 of 38

**Approved for Construction**

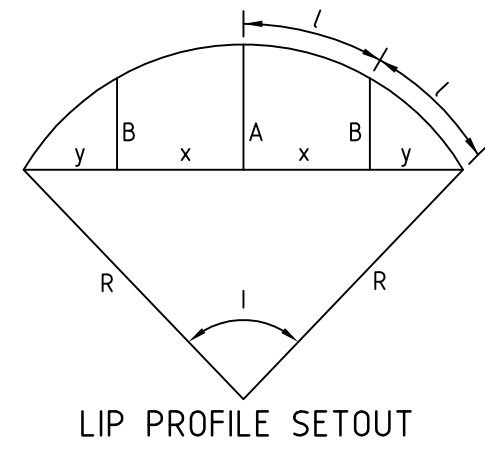




**SIGN SCHEDULE**

SIGN	REF
	1

STREET SIGN



**LEGEND - INTERSECTION PLAN**

- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- TACTILE PAVERS
- EXISTING HOUSE DRAIN
- RETAINING WALL
- PAVEMENT TREATMENT
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
- LIMIT OF WORKS
- EXISTING TREE TO BE REMOVED
- PERMANENT SURVEY MARK
- TEMPORARY BENCH MARK
- PROPOSED DRIVEWAY

**WARNING**  
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 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

**ALIGNMENT A**

POINT NO	EASTING	NORTHING	RL
A1	10035.738	48456.309	17.960
A2	10035.766	48453.165	17.888
A3	10030.928	48444.745	17.395
A4	10021.218	48444.855	16.791
A5	10018.638	48445.525	16.657

**ALIGNMENT B**

POINT NO	EASTING	NORTHING	RL
B1	10061.128	48451.037	18.516
B2	10058.800	48449.738	18.432
B3	10048.352	48447.546	18.132
B4	10042.338	48456.367	17.960

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
A2 - A3	60.765	9.600	10.181	1.318	0.983	2.516	2.340	2.545	17.691
A3 - A4	60.765	9.600	10.181	1.318	0.983	2.516	2.340	2.545	17.074
A4 - A5	32.947	4.700	2.703	0.193	0.144	0.673	0.659	0.676	16.723

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
B1 - B2	32.948	4.700	2.703	0.193	0.144	0.673	0.659	0.676	18.474
B2 - B3	67.566	9.600	11.321	1.621	1.207	2.789	2.549	2.830	18.267
B3 - B4	67.566	9.600	11.321	1.621	1.207	2.789	2.549	2.830	18.016

**ESTUARY BOULEVARD DESIGN LINE**

CHAINAGE	EASTING	NORTHING	BEARING	IP
184.950	9989.510	48439.047	88°05'00"	IP
200.000	10004.552	48439.550	88°05'00"	
221.816	10026.355	48440.280	88°05'00"	TC
250.003	10054.273	48443.856	77°19'00"	CT
258.268	10062.336	48445.671	77°19'00"	IP

**IP 1**

COORDINATE =	9989.5098	48439.0468
CHAINAGE =	184.9496	

**IP 2**

COORDINATE =	10040.4826	48440.7526
CENTRE =	10021.3385	48590.1959
RADIUS =	-150.0000	
LENGTH =	28.1871	
INTERSECT ANGLE =	10°45'60"	

**START TANGENT**

COORDINATE =	10026.3554	48440.2799
LENGTH =	14.1352	
CHAINAGE =	221.8158	
BEARING =	88°05'00"	

**END TANGENT**

COORDINATE =	10054.2728	48443.8562
LENGTH =	14.1352	
CHAINAGE =	250.0028	
BEARING =	77°19'00"	

**IP 3**

COORDINATE =	10062.3360	48445.6708
CHAINAGE =	258.2676	

**LLA DRIVE DESIGN LINE**

CHAINAGE	EASTING	NORTHING	BEARING	IP
42.451	10288.785	48565.914	353°36'00"	IP
100.000	10282.370	48623.105	353°36'00"	
113.997	10280.810	48637.014	353°36'00"	IP

**IP 1**

COORDINATE =	10288.7853	48565.9145
CHAINAGE =	42.4509	

**IP 2**

COORDINATE =	10280.8102	48637.0142
CHAINAGE =	113.9965	

**MASIMO ROAD DESIGN LINE**

CHAINAGE	EASTING	NORTHING	BEARING	IP
0.000	10039.170	48441.260	359°30'00"	IP
100.000	10038.297	48541.255	359°30'00"	
175.867	10037.635	48617.119	359°30'00"	IP

**IP 1**

COORDINATE =	10039.1699	48441.2596
CHAINAGE =	0.0000	

**IP 2**

COORDINATE =	10037.6352	48617.1194
CHAINAGE =	175.8665	

**BARNEY GROVE DESIGN LINE**

CHAINAGE	EASTING	NORTHING	BEARING	IP
46.760	10128.175	48508.160	355°46'00"	IP
100.000	10124.245	48561.255	355°46'00"	
162.202	10119.653	48623.287	355°46'00"	IP

**IP 1**

COORDINATE =	10128.1751	48508.1603
CHAINAGE =	46.7604	

**IP 2**

COORDINATE =	10119.6534	48623.2867
CHAINAGE =	162.2017	

**CASY GROVE DESIGN LINE**

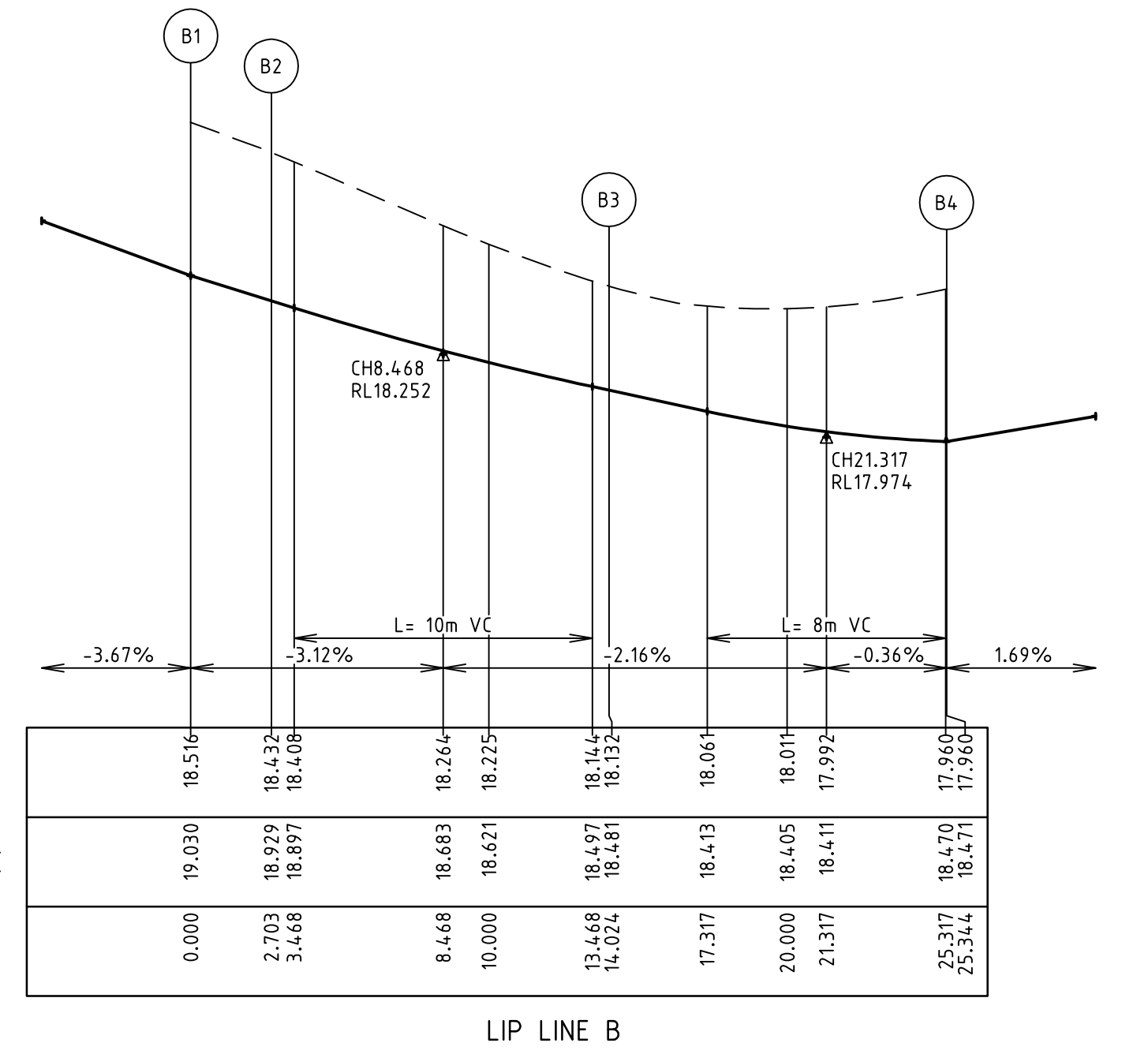
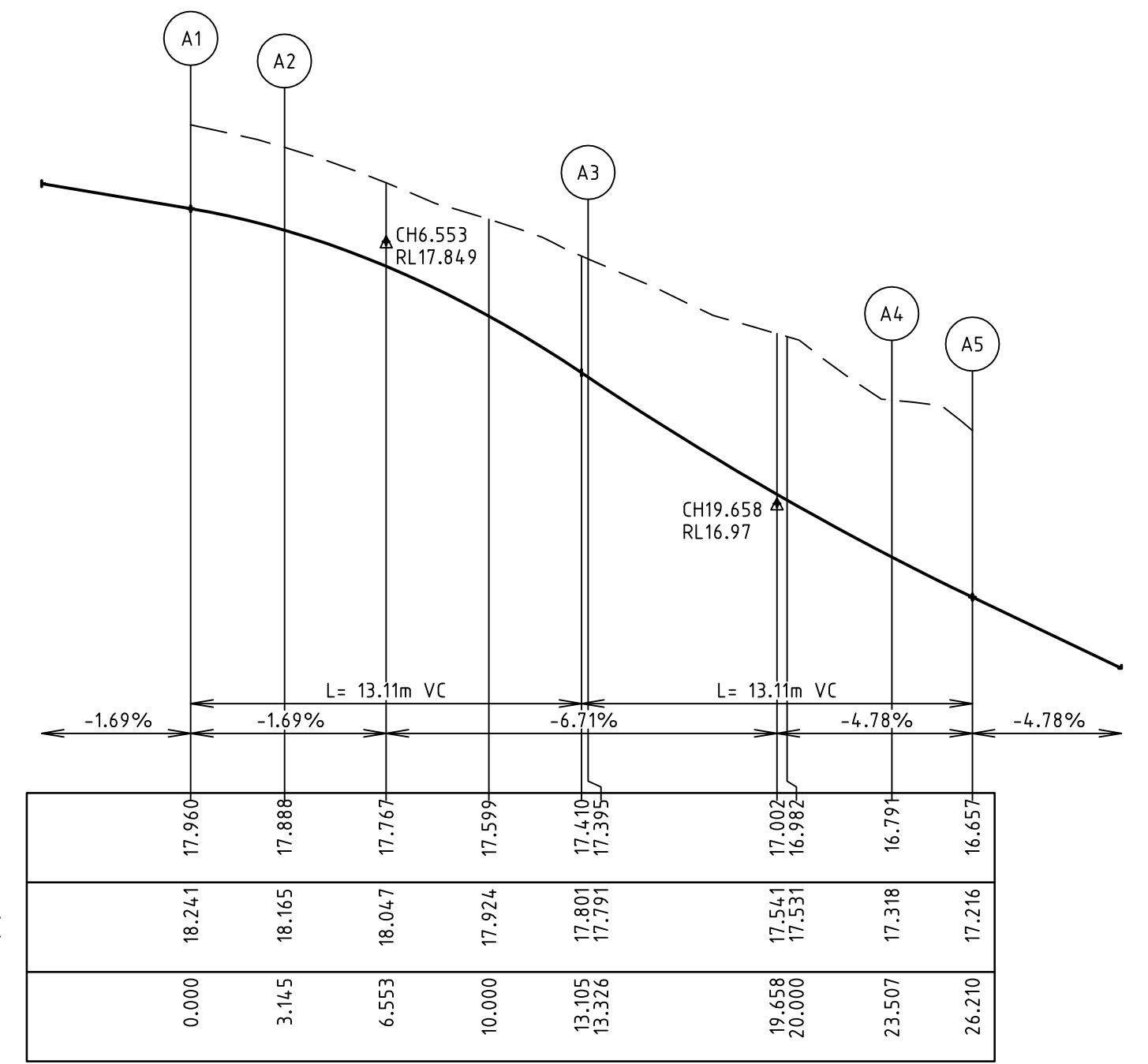
CHAINAGE	EASTING	NORTHING	BEARING	IP
42.362	10212.138	48536.039	353°36'00"	IP
100.000	10205.713	48593.318	353°36'00"	
136.878	10201.602	48629.966	353°36'00"	IP

**IP 1**

COORDINATE =	10212.1378	48536.0392
CHAINAGE =	42.3622	

**IP 2**

COORDINATE =	10201.6022	48629.9660
CHAINAGE =	136.8779	

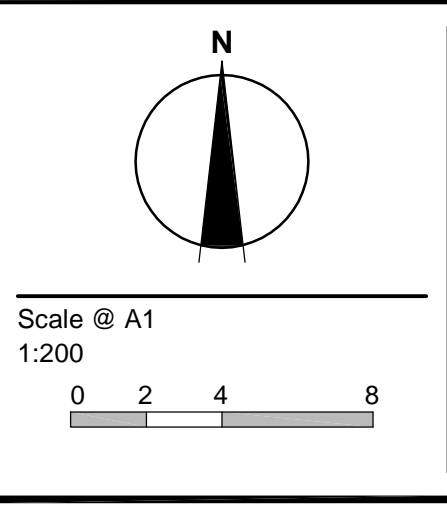


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REVISION	DATE	DES/DF	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG

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

Designed  
C.Barker  
 Drawn  
C.Barker  
 Checked  
C.Birkett  
 Authorised  
J.Golden  
 Date  
October 2010



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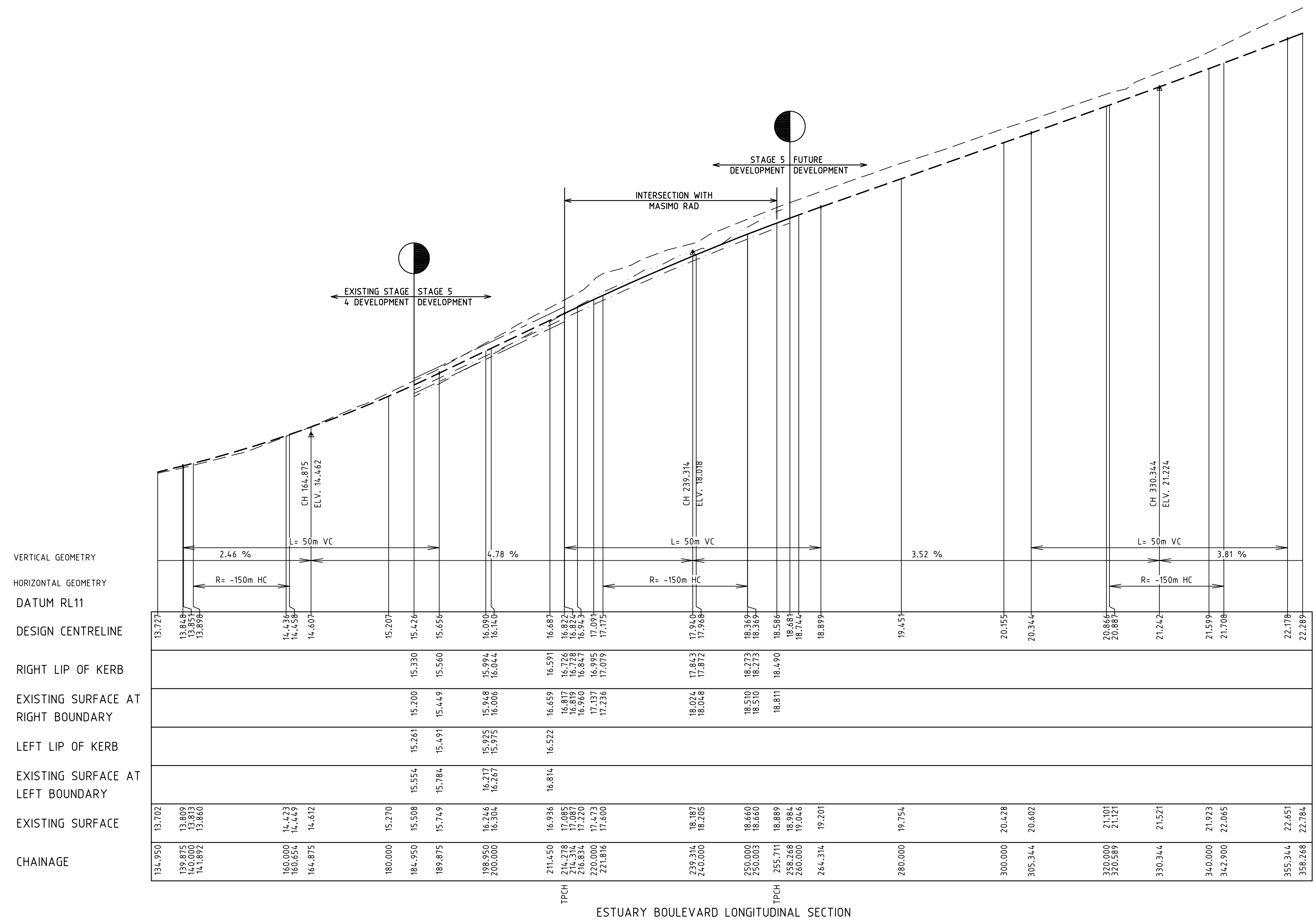
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 Gold Coast +61 7 5578 0222  
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 Tarragona +61 3 5173 0190

**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Intersection Detail Plan, Lip Profiles  
 & Setout Information  
**Drawing No. 0250EHL-05-06**      **Rev B**  
 Sheet No. 6 of 38

**Approved for Construction**



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



VERTICAL GEOMETRY  
HORIZONTAL GEOMETRY  
DATUM RL11  
DESIGN CENTRELINE  
RIGHT LIP OF KERB  
EXISTING SURFACE AT RIGHT BOUNDARY  
LEFT LIP OF KERB  
EXISTING SURFACE AT LEFT BOUNDARY  
EXISTING SURFACE  
CHAINAGE

13.777	13.868	13.851	13.898	14.436	14.458	14.607	15.207	15.426	15.656	16.009	16.100	16.687	16.822	16.872	16.872	17.940	17.968	18.369	18.369	18.586	18.681	18.744	18.899	19.451	20.155	20.344	20.866	20.887	21.242	21.599	21.708	22.178	22.289		
13.702	13.809	13.813	13.860	14.423	14.449	14.612	15.270	15.508	15.761	15.994	16.217	16.536	16.814	16.872	16.872	18.074	18.048	18.510	18.510	18.811	18.889	18.984	19.046	19.201	19.754	20.428	20.602	21.101	21.121	21.521	21.923	22.065	22.651	22.784	
134,950	139,875	140,000	141,892	160,000	160,654	164,875	180,000	184,950	189,875	198,850	200,000	211,450	214,278	214,314	216,834	220,000	221,816	239,314	240,000	250,000	250,003	255,711	258,268	260,000	264,314	280,000	300,000	305,344	320,000	320,589	330,344	340,000	342,900	355,344	358,268

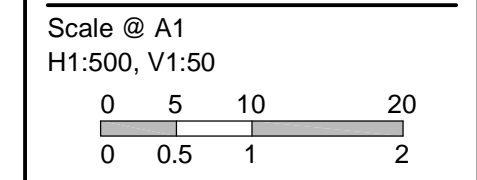
ESTUARY BOULEVARD LONGITUDINAL SECTION

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REVISION	DATE	DES/DFT	APPD
B	20.01.11	CB/CB	JG
A	18.11.10	CB/CB	JG

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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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Cairns +61 2 8126 1900

Gold Coast +61 7 5578 0222  
Melbourne +61 3 9869 0800  
Perth +61 8 9479 0100

**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Longitudinal Sections - 1

**Drawing No. 0250EHL-05-07**      **Rev B**

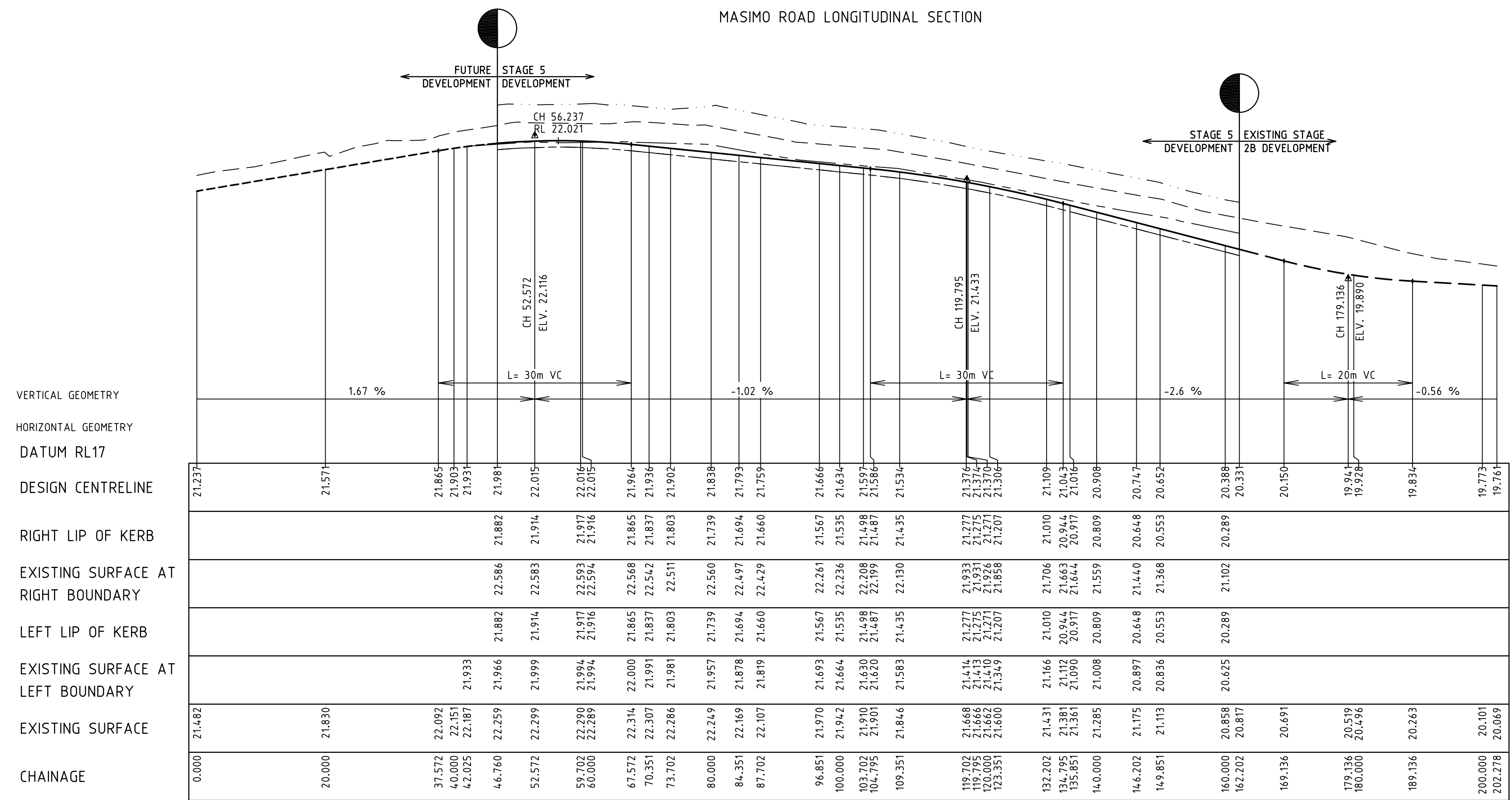
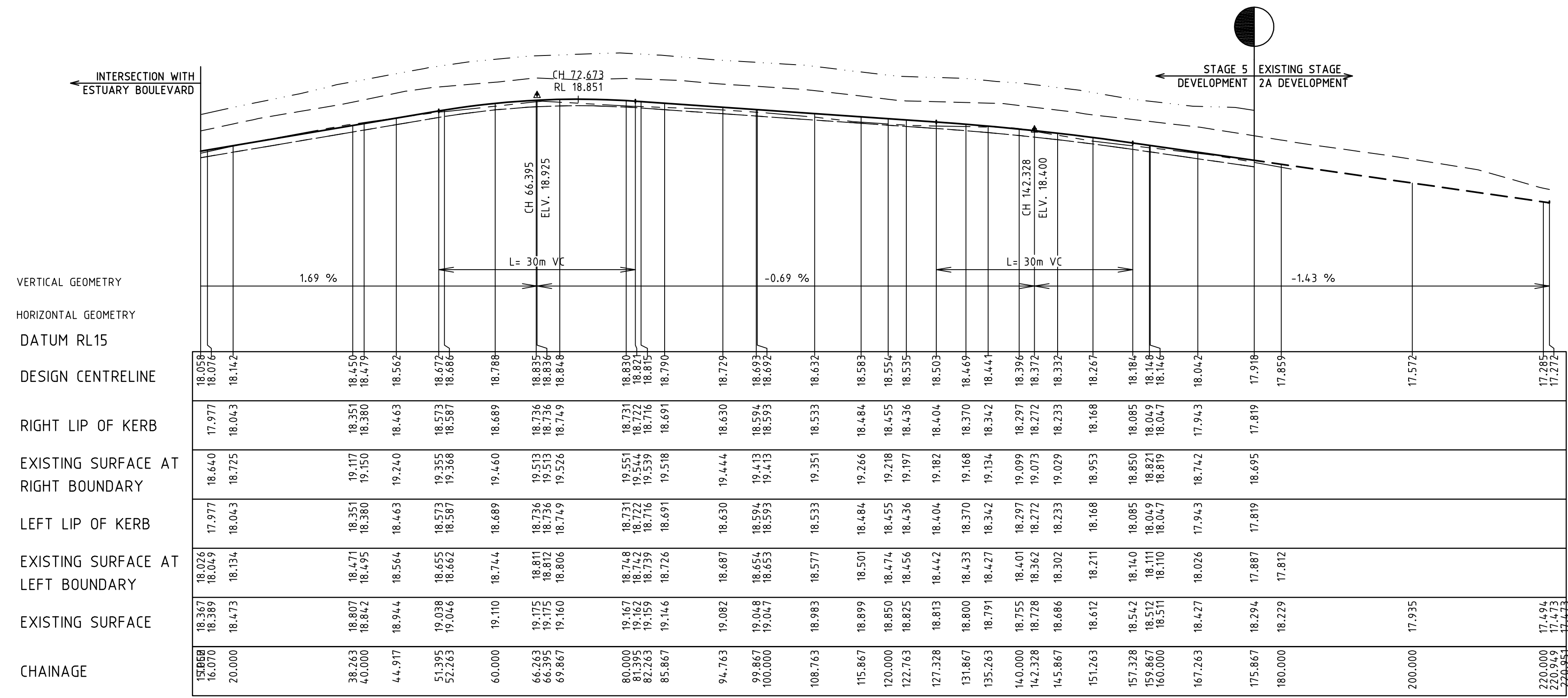
Sheet No. 7 of 38

**Approved for Construction**



**LEGEND**

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



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B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG
REVISION	DATE	DES/DF	APPD

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

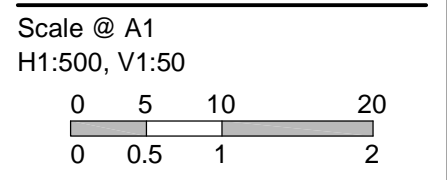
Designed  
**C.Barker**

Drawn  
**C.Barker**

Checked  
**C.Birkett**

Authorised  
**J.Golden**

Date  
October 2010



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Carlisle +61 2 9128 1900

Gold Coast +61 7 5578 0222  
Melbourne +61 3 9869 0800  
Tarragona +61 3 5173 0100

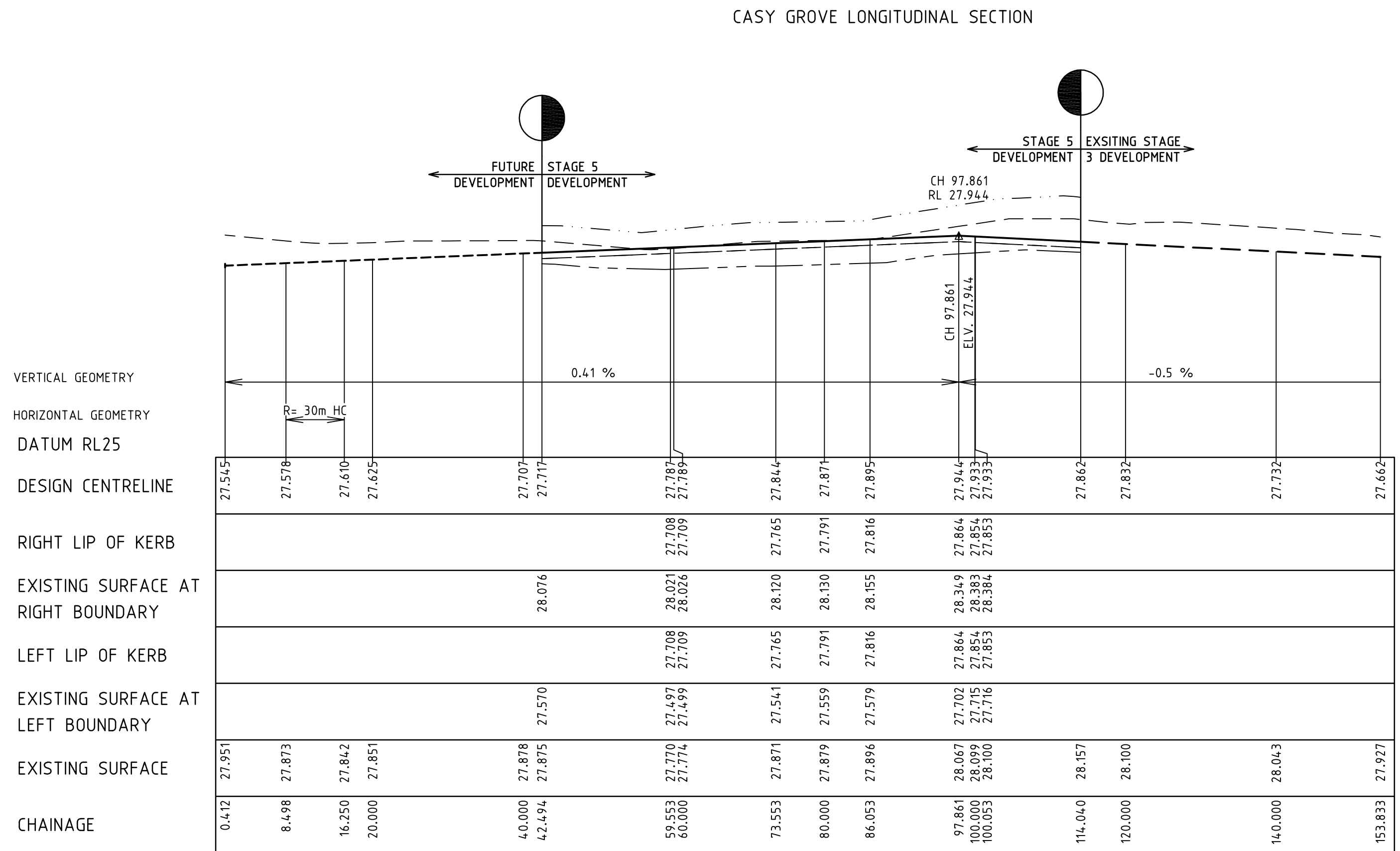
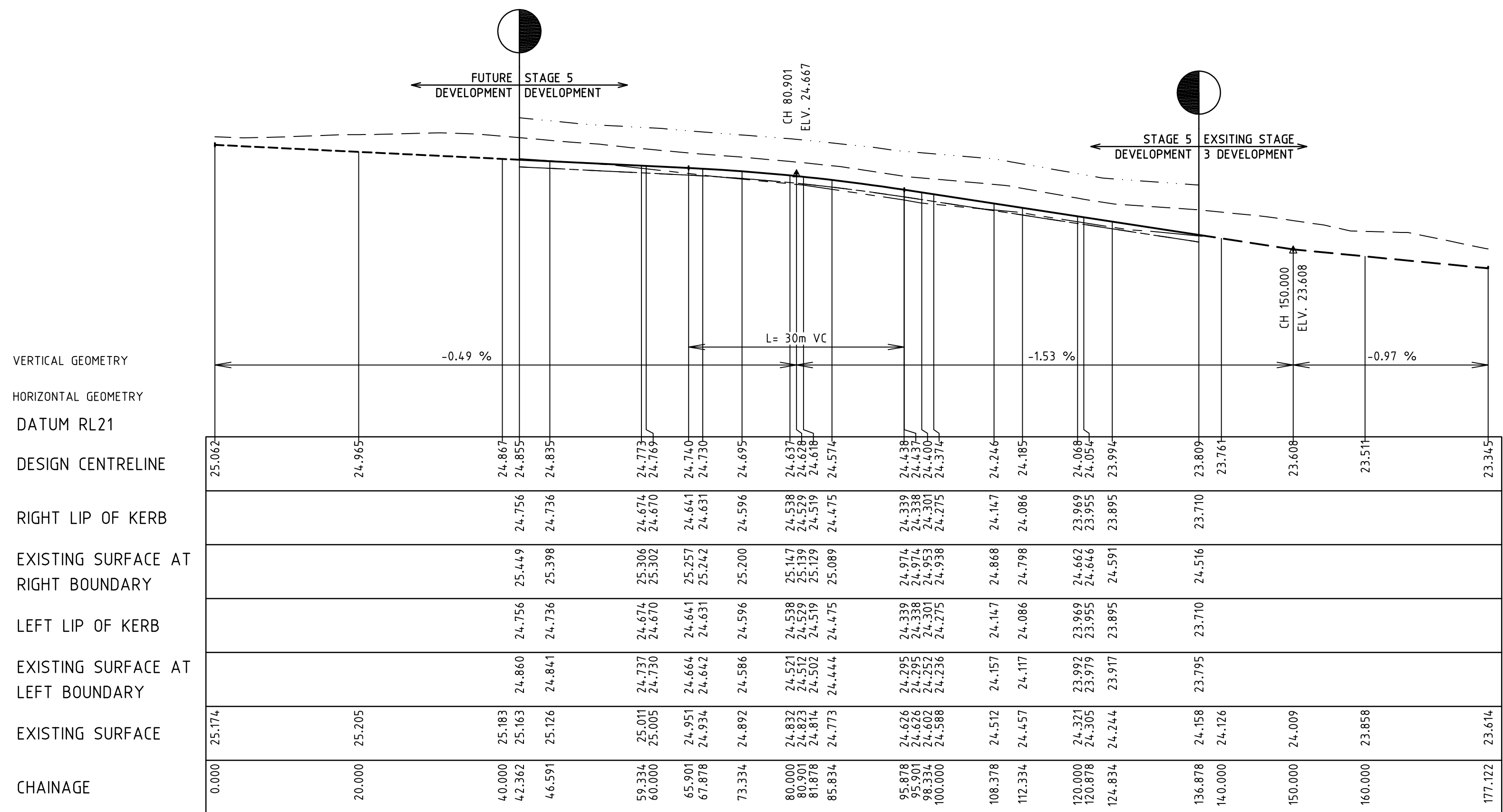
**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Longitudinal Sections - 2

**Drawing No. 0250EHL-05-08**      **Rev B**  
Sheet No. 8 of 38

**Approved for Construction**



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



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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010

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Canberra +61 2 6126 1900 Darwin +61 8 8913 0100

**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Longitudinal Sections - 3

Drawing No. **0250EHL-05-09** Rev B  
Sheet No. 9 of 38

Approved for Construction

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REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG



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

REFER INTERSECTION DETAILS

LEGEND  
 - - - - - EXISTING SURFACE  
 ———— DESIGN LINE  
 - - - - - FUTURE DESIGN LINE

DATUM16.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

CH 216.834

DATUM16.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

TPCH 214.278

DATUM15.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

CH 211.450

DATUM15.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

CH 198.950

DATUM14.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

CH 184.950

DATUM17.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

CH 258.268

DATUM17.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

CH 255.711

DATUM17.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

CH 250.003

DATUM17.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

CH 250.000

DATUM16.0									
DESIGN SURFACE									
EXISTING SURFACE									
OFFSET									

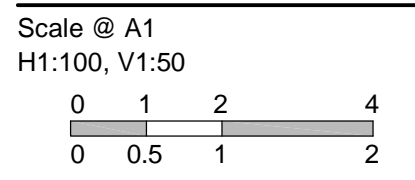
CH 221.816

B	COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A	ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG
REVISION	DATE	DES/DF	APPD	



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

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 C.Barker  
 Drawn  
 C.Barker  
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 C.Birkett  
 Authorised  
 J.Golden  
 Date  
 October 2010



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 Brisbane +61 7 3831 8988 Melbourne +61 3 9869 0800  
 Canberra +61 2 8126 1900 Tarragon +61 3 5173 0190

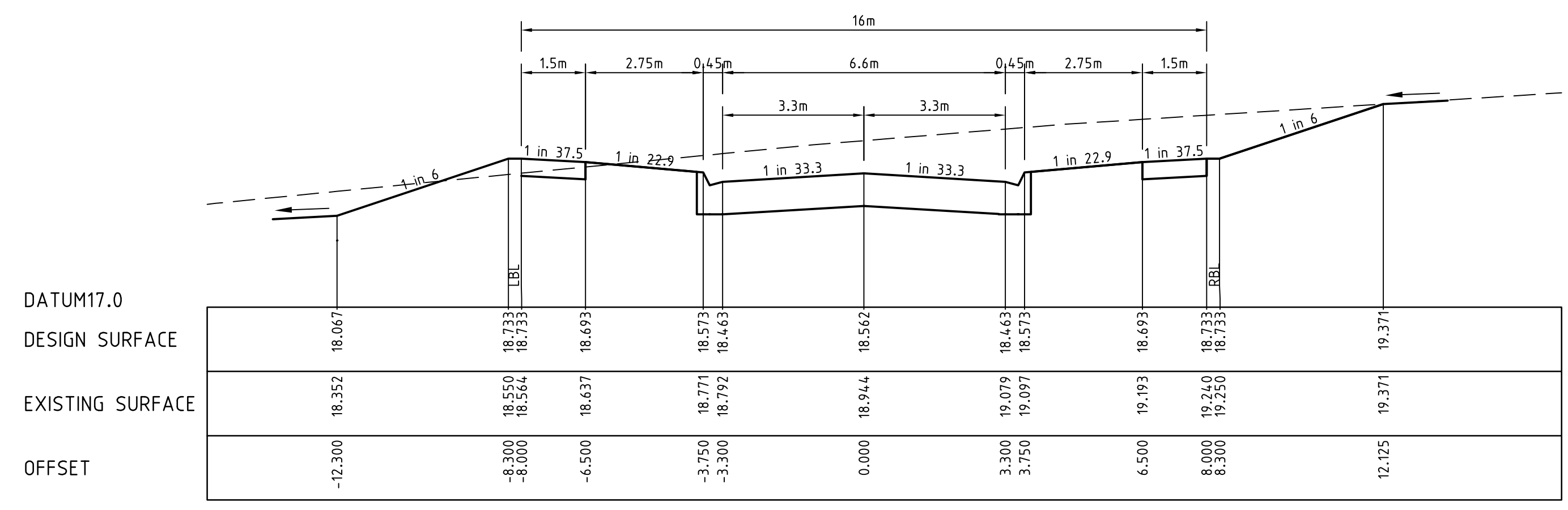
Estuary  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Cross Sections - Estuary Boulevard

Drawing No. 0250EHL-05-10 Rev B  
 Sheet No. 10 of 38

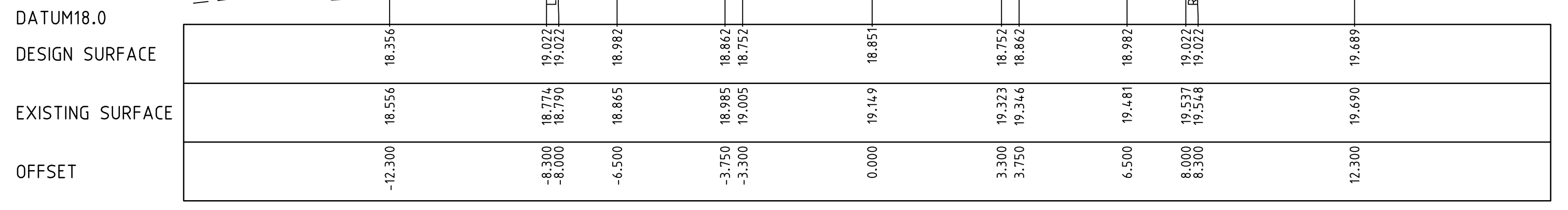
Approved for Construction



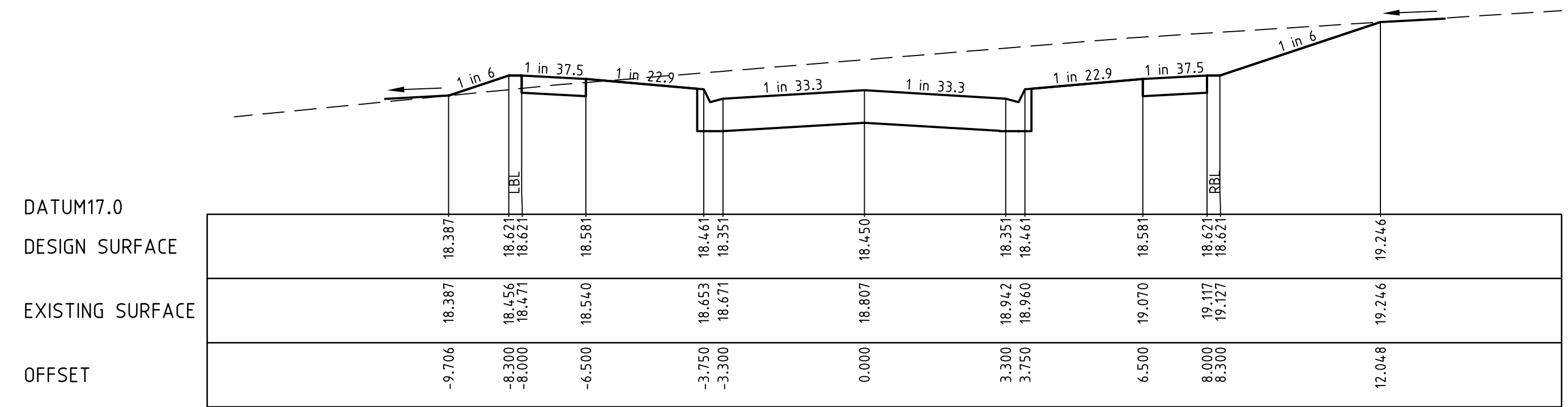
LEGEND  
 --- EXISTING SURFACE  
 ——— DESIGN LINE  
 - - - FUTURE DESIGN LINE



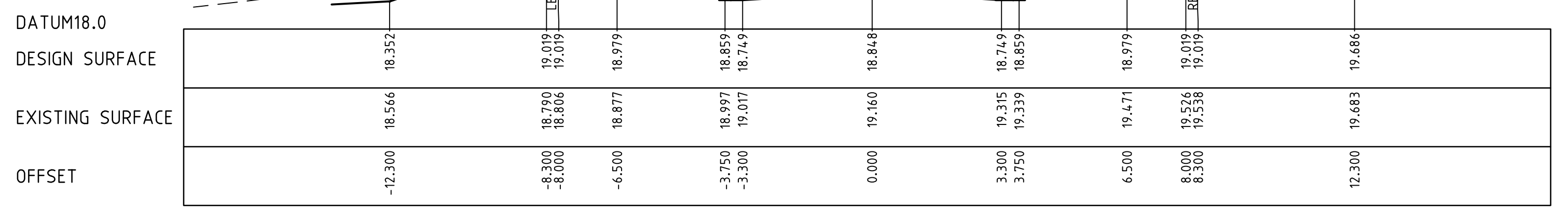
CH 44.917



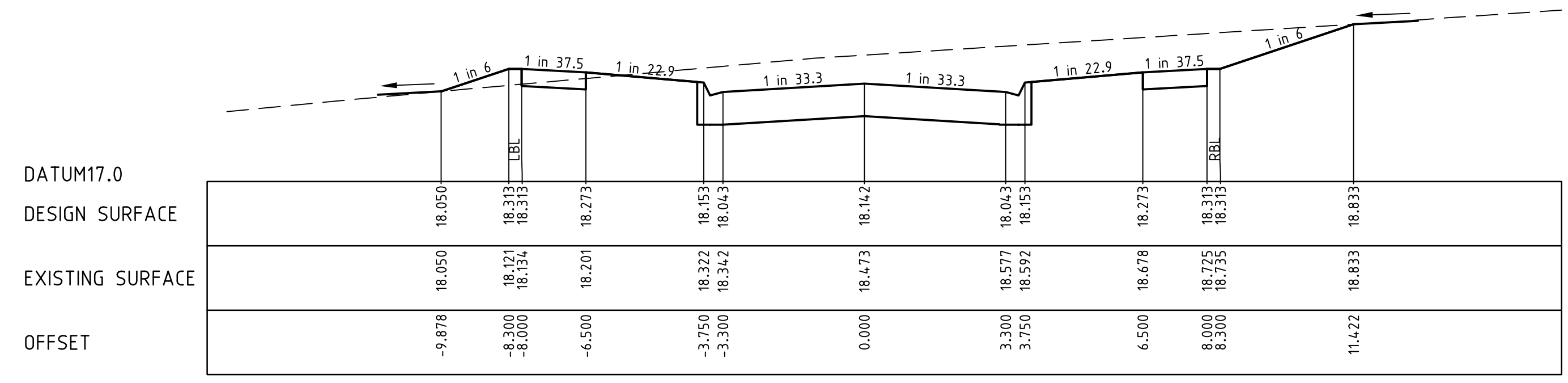
CH 72.673



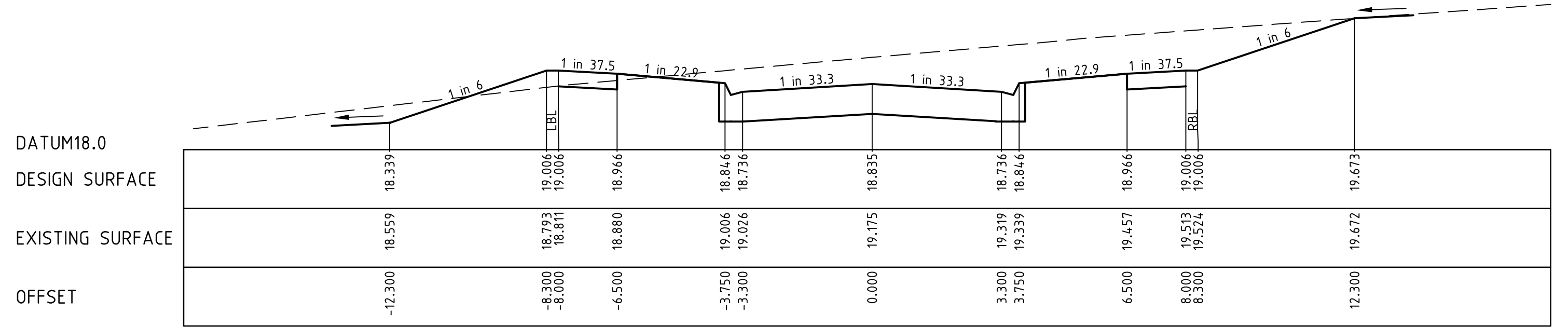
CH 38.263



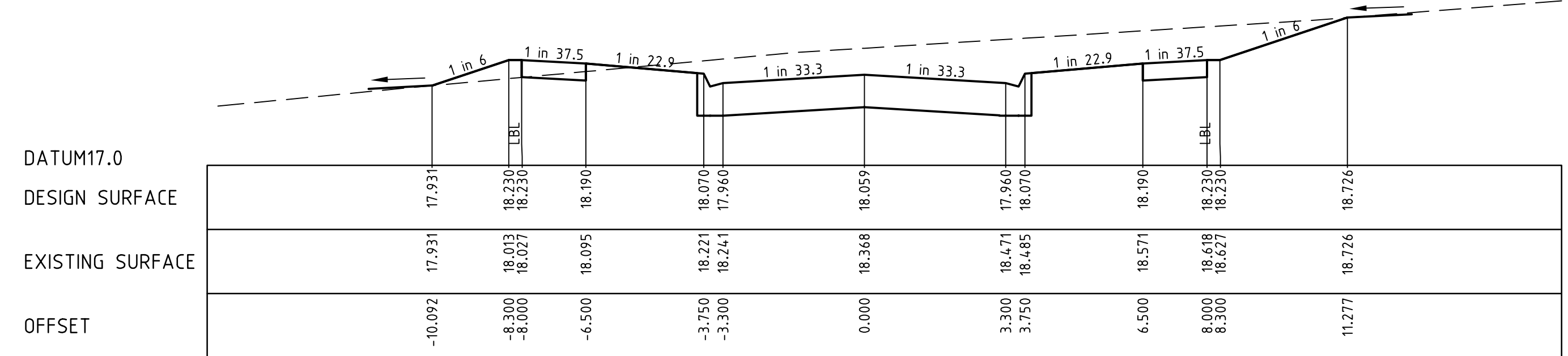
CH 69.867



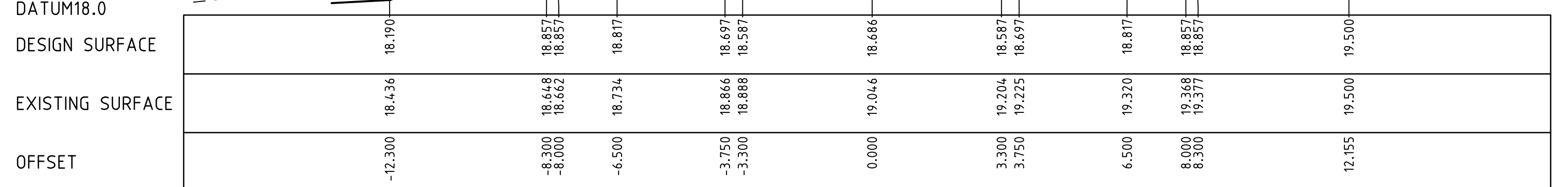
CH 20.000



CH 66.263



RTPCH 15.079



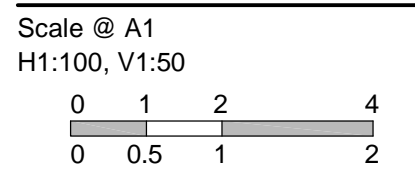
CH 52.263

B	COUNCIL AMENDMENTS		20.01.11	CB/CB	JG
A	ISSUED TO COUNCIL FOR APPROVAL		18.11.10	CB/CB	JG
REVISION		DATE	DES/DF	APPD	



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

Designed  
 C.Barker  
 Drawn  
 C.Barker  
 Checked  
 C.Birkett  
 Authorised  
 J.Golden  
 Date  
 October 2010



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Adelaide +61 8 8223 6455 Gold Coast +61 7 5578 0222  
 Brisbane +61 7 3831 8988 Melbourne +61 3 9869 0800  
 Canberra +61 2 6126 1900 Darwin +61 8 8913 0190

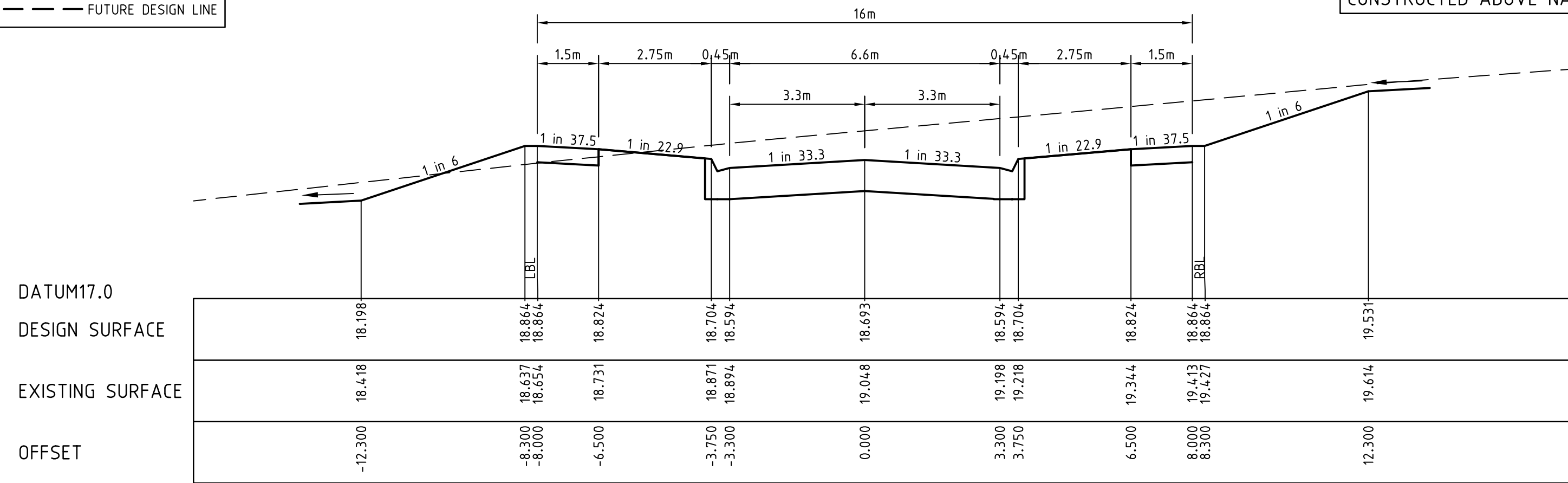
Estuary  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Cross Sections - Masimo Road  
 Ch15.079 - Ch72.673  
 Drawing No. 0250EHL-05-11 Rev B  
 Sheet No. 11 of 38

Approved for Construction

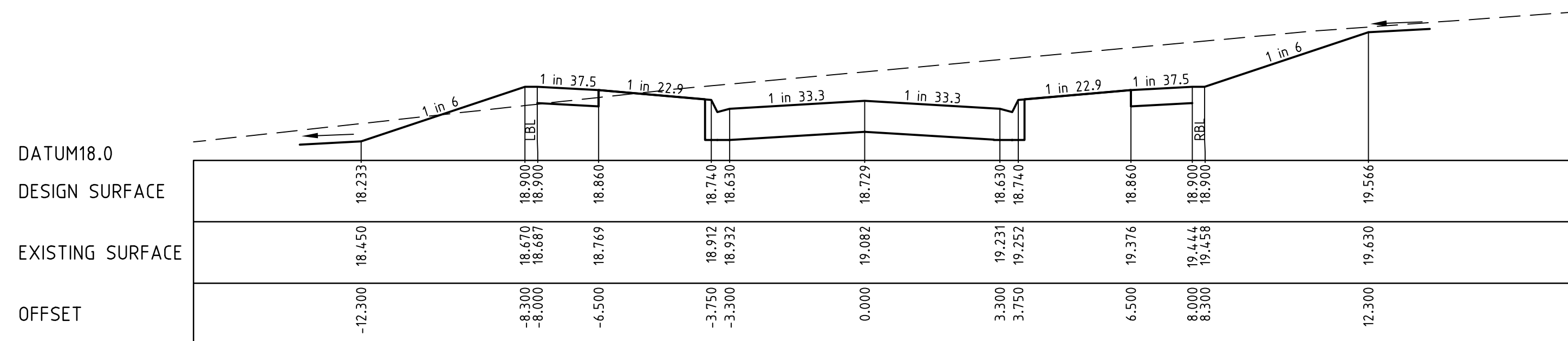


---	EXISTING SURFACE
---	DESIGN LINE
---	FUTURE DESIGN LINE

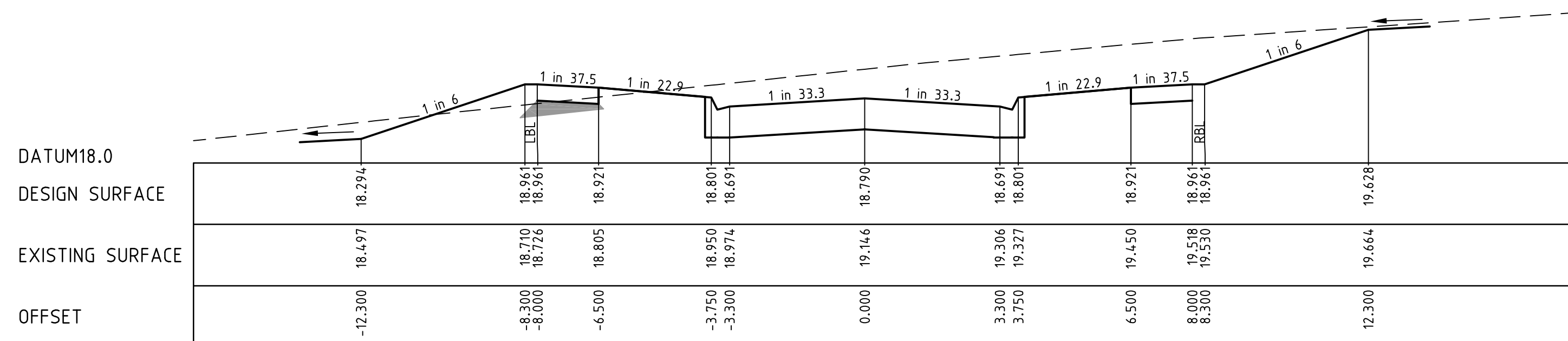
STRUCTURAL FILL REQUIRED UNDER  
PAVEMENT AND FOOTPATHS WHERE  
CONSTRUCTED ABOVE NATURAL SURFACE



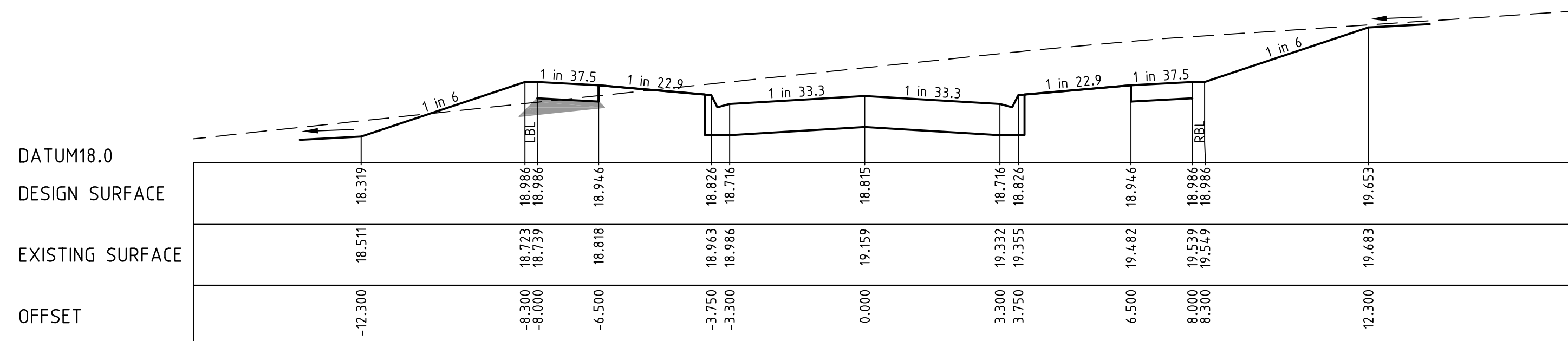
CH 99.867



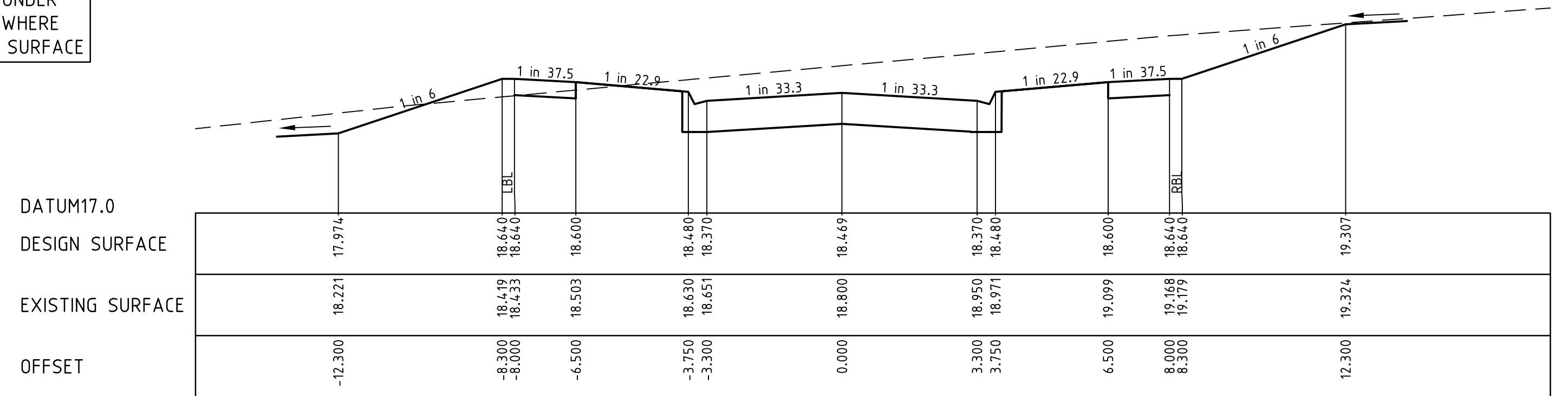
CH 94.763



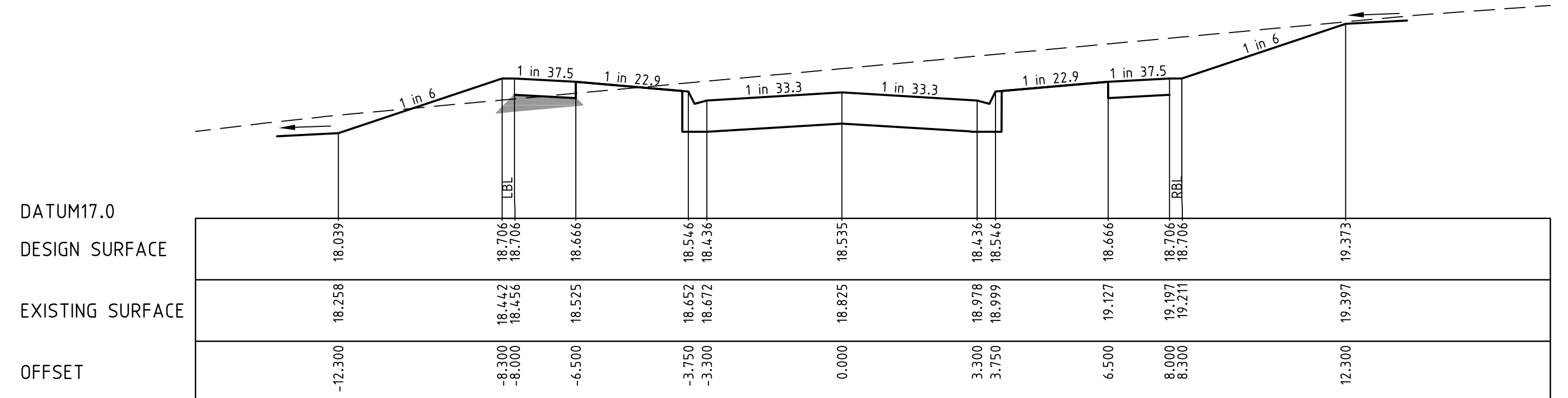
CH 85.867



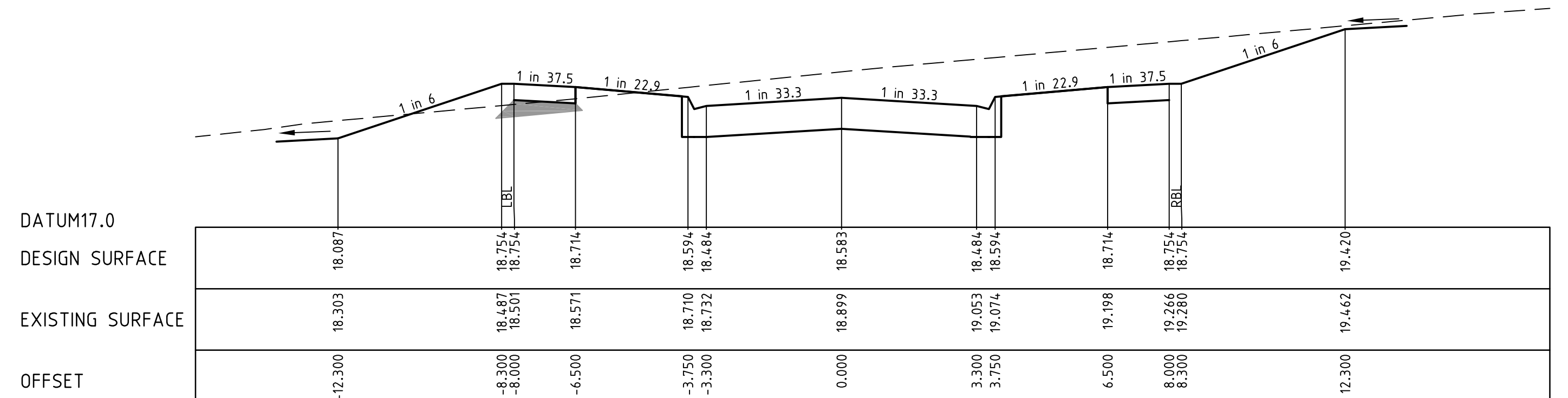
CH 82.263



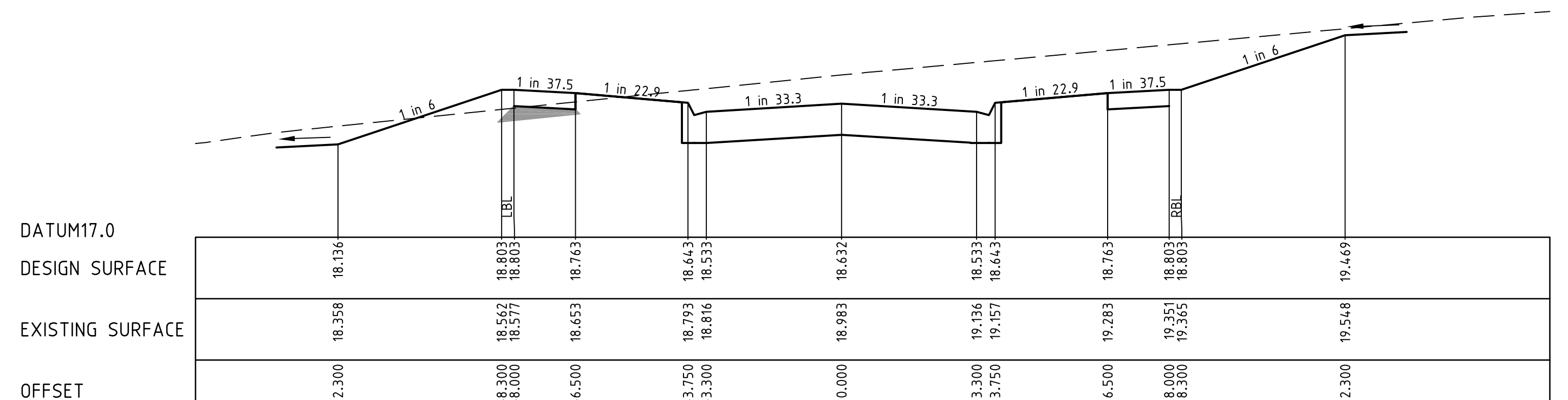
CH 131.867



CH 122.763



CH 115.867



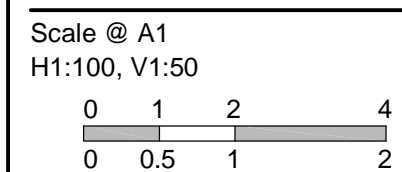
CH 108.763

B	COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A	ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG
REVISION	DATE	DES/DFT	APPD	



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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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Adelaide +61 8 8223 8455 Gold Coast +61 7 5578 0222  
Brisbane +61 7 3831 8988 Melbourne +61 3 9869 0800  
Cairns +61 2 8126 1900 Darwin +61 3 5173 0100

Estuary  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Masimo Road  
Ch82.263 - Ch131.867

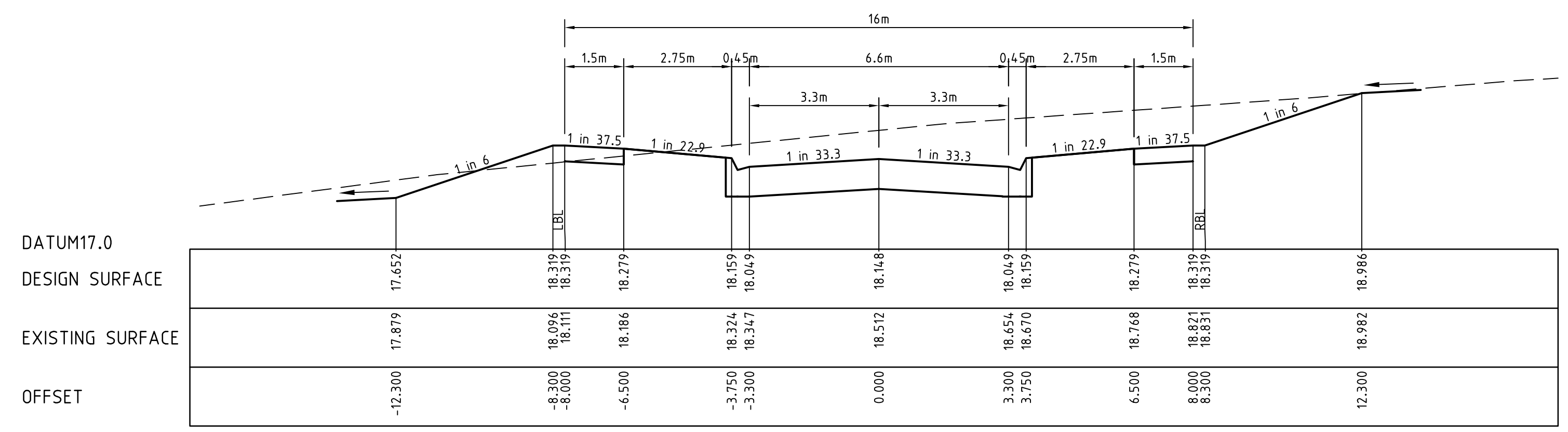
Drawing No. 0250EHL-05-12  
Sheet No. 12 of 38

Rev B

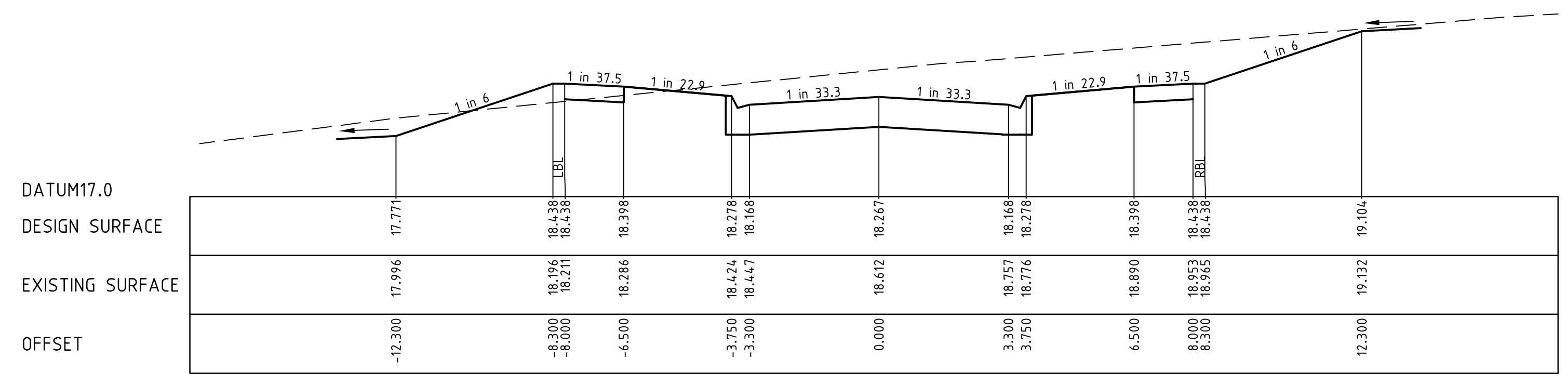
Approved for Construction



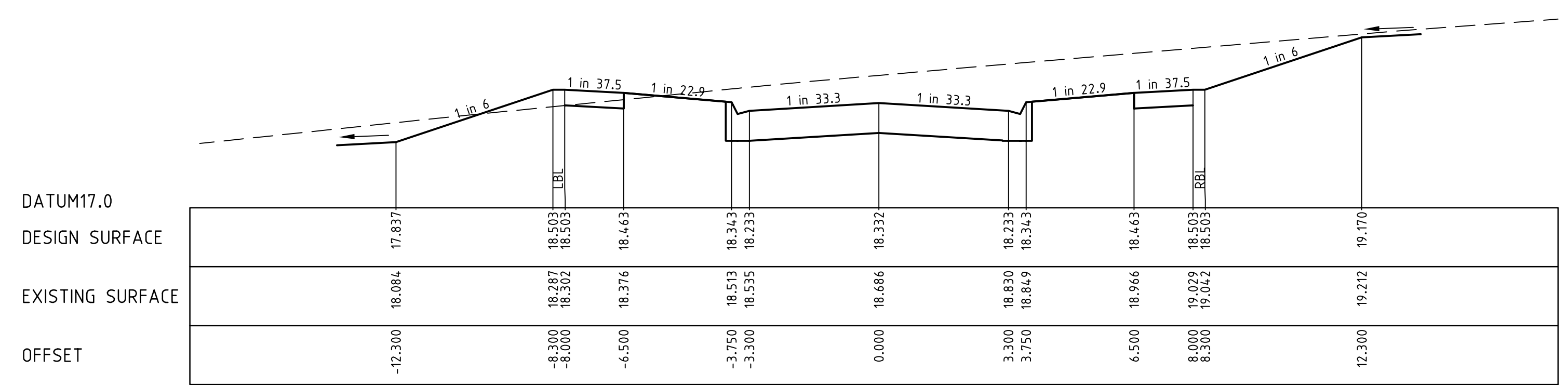
	EXISTING SURFACE
	DESIGN LINE
	FUTURE DESIGN LINE



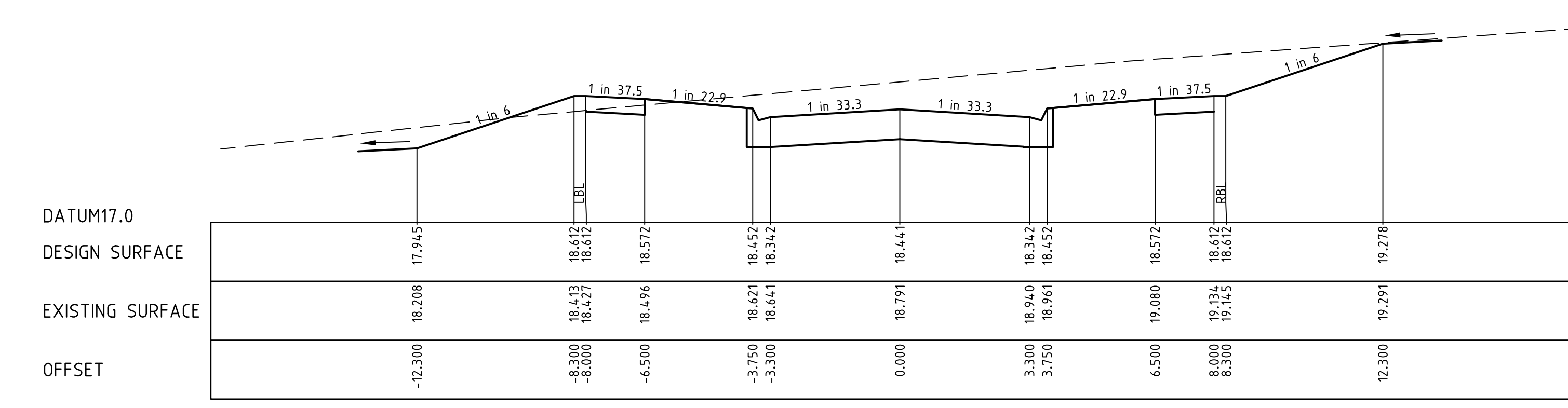
CH 159.867



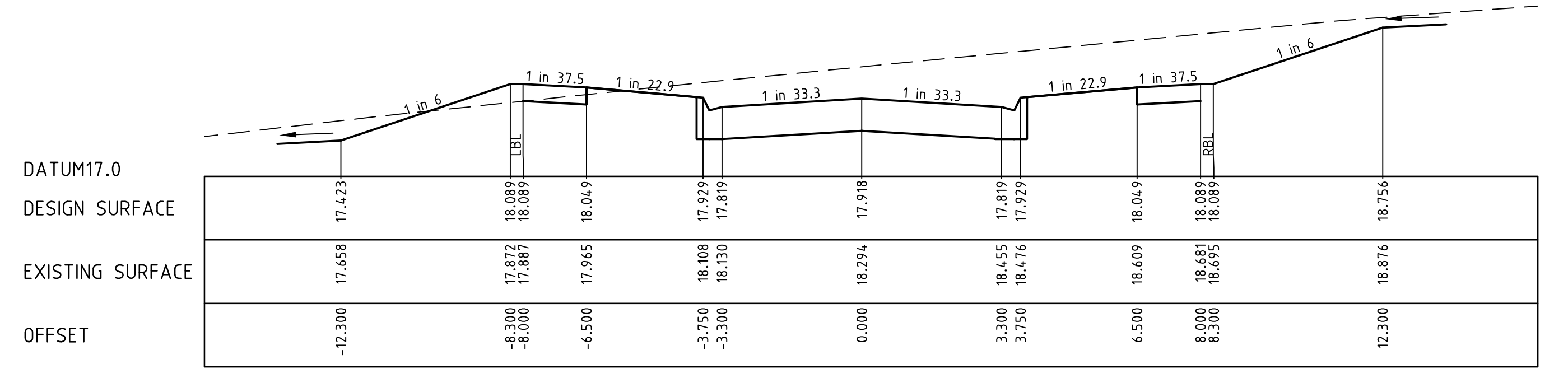
CH 151.263



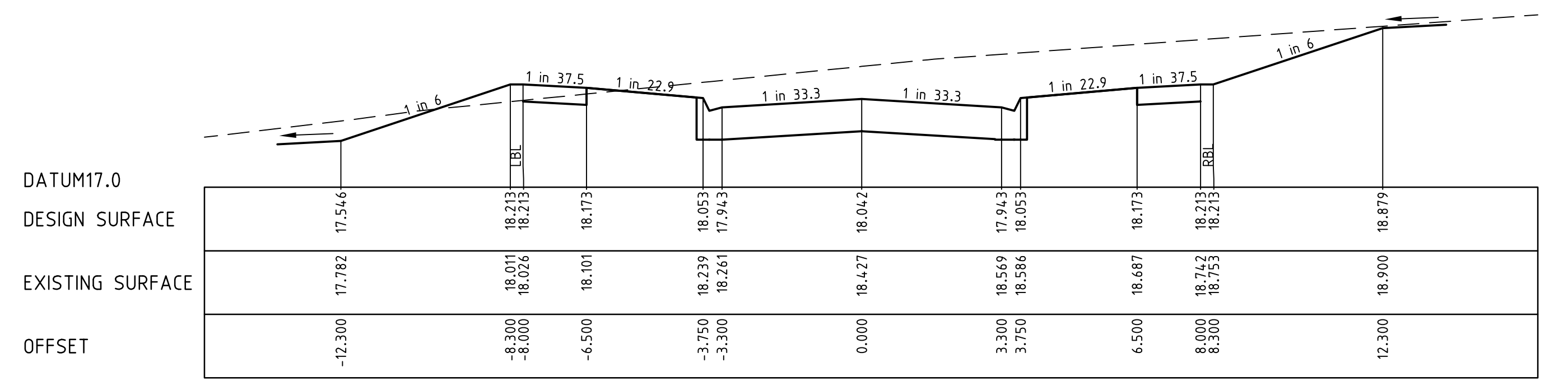
CH 145.867



CH 135.263



CH 175.867



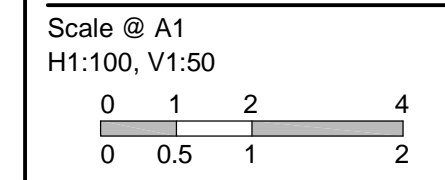
CH 167.263

REVISION	DATE	DES/DF	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG



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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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Adelaide +61 8 8223 6455 Gold Coast +61 7 5578 0222  
Brisbane +61 7 3831 8988 Melbourne +61 3 9869 0800  
Canberra +61 2 6126 1900 Tarragona +61 3 5173 0100

Estuary  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Masimo Road  
Ch135.263 - Ch175.867  
Drawing No. 0250EHL-05-13 Rev B  
Sheet No. 13 of 38

Approved for Construction



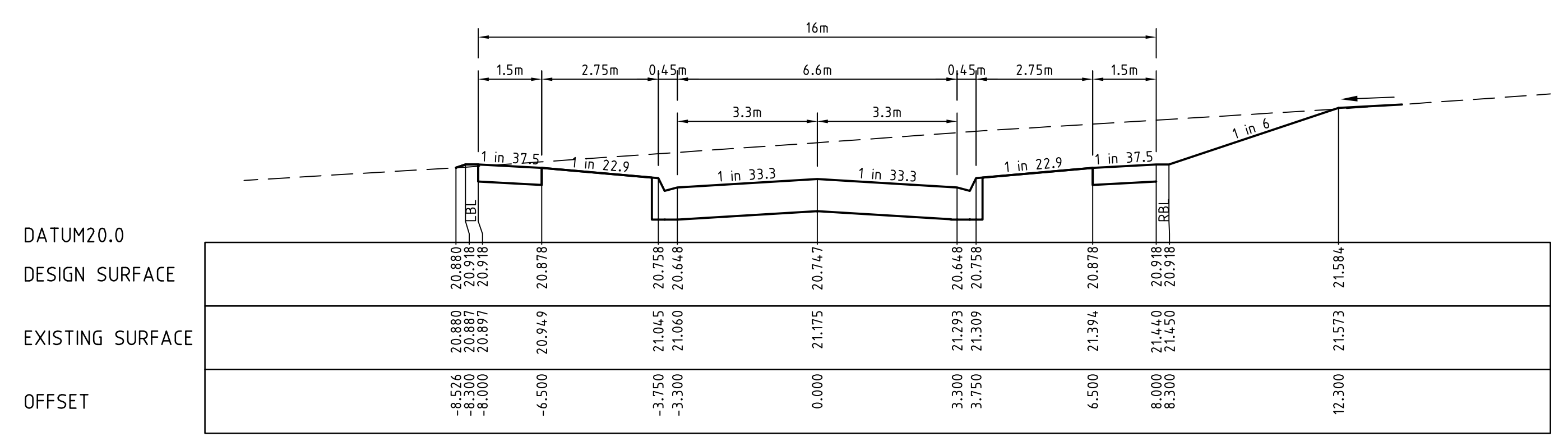




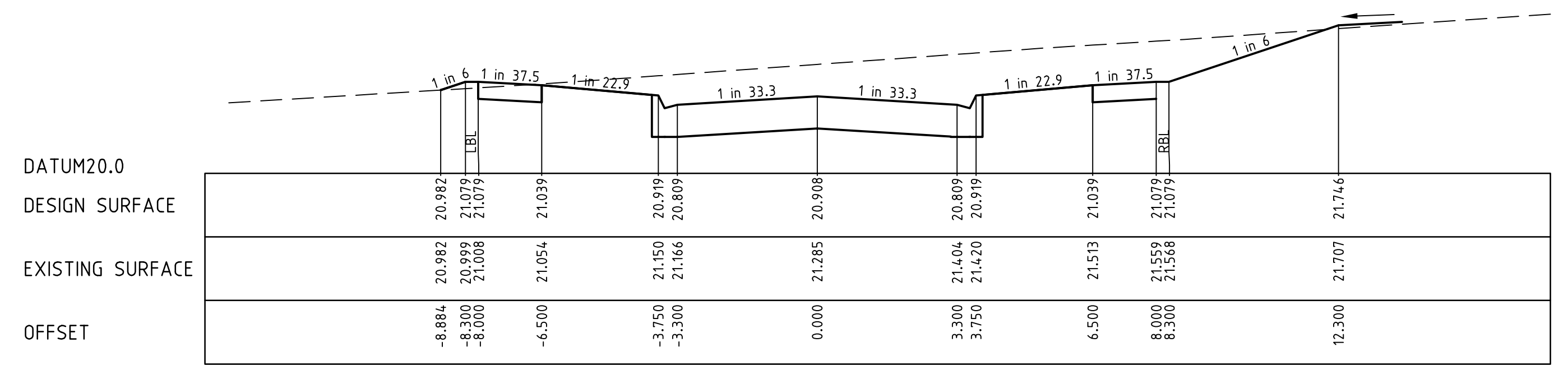




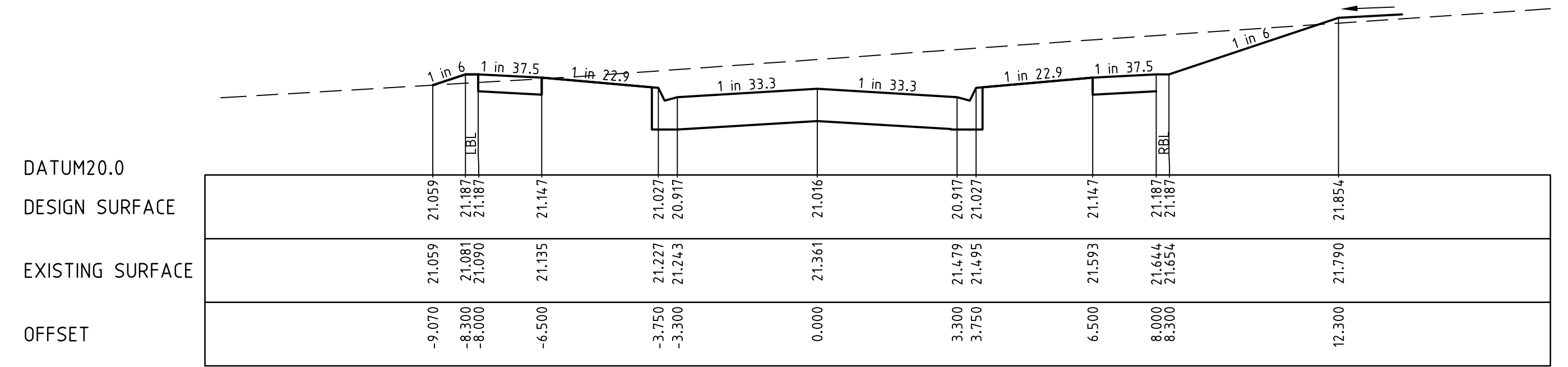
---	EXISTING SURFACE
---	DESIGN LINE
---	FUTURE DESIGN LINE



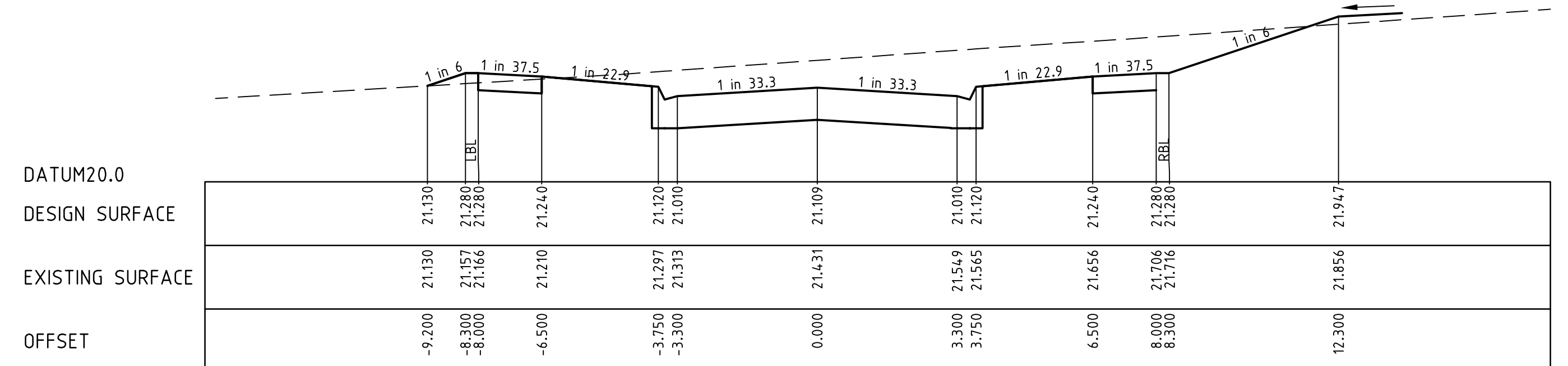
CH 146.202



CH 140.000



CH 135.851



CH 132.202

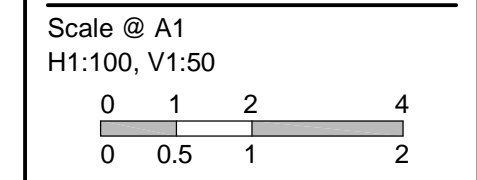
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B	COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A	ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG
REVISION		DATE	DES/DF	APPD



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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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Brisbane +61 7 3831 8988 Melbourne +61 3 9869 0800  
Canberra +61 2 8126 1900 Taranaki +61 3 5173 0100

**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Barney Grove  
Ch132.202 - Ch146.202  
**Drawing No. 0250EHL-05-16** **Rev B**  
Sheet No. 16 of 38

Approved for Construction

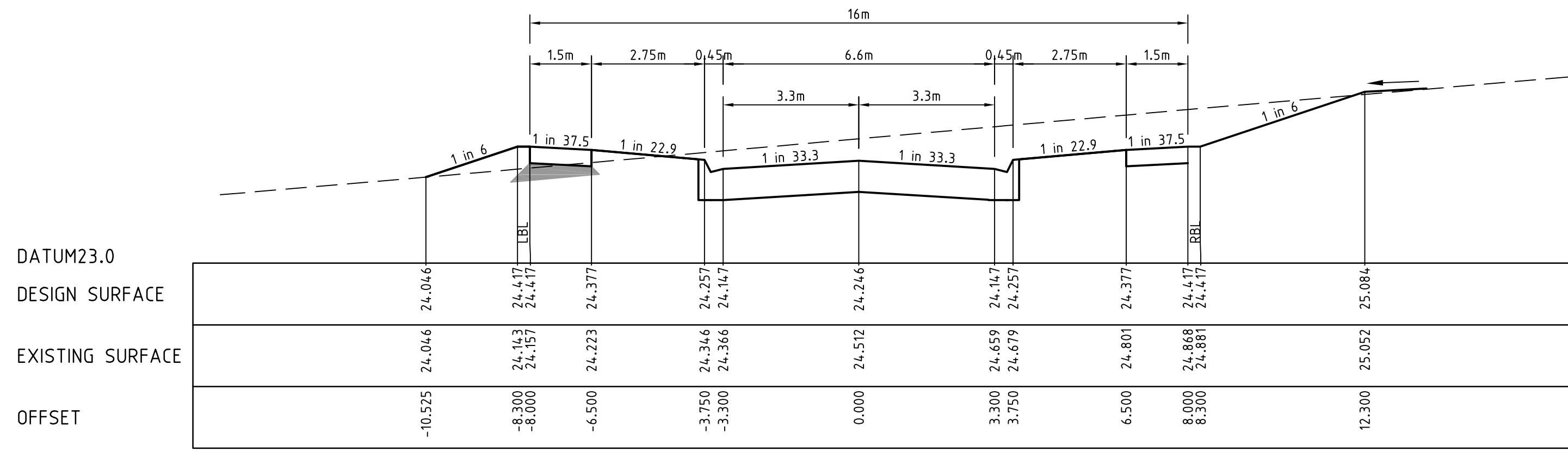




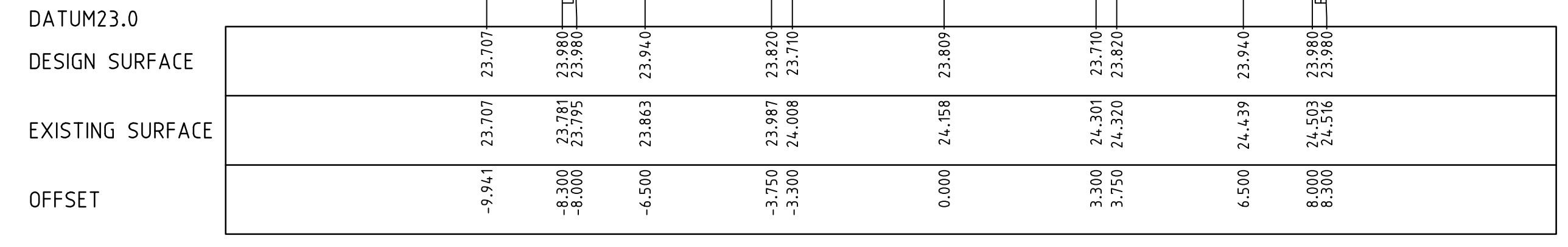


STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE NATURAL SURFACE

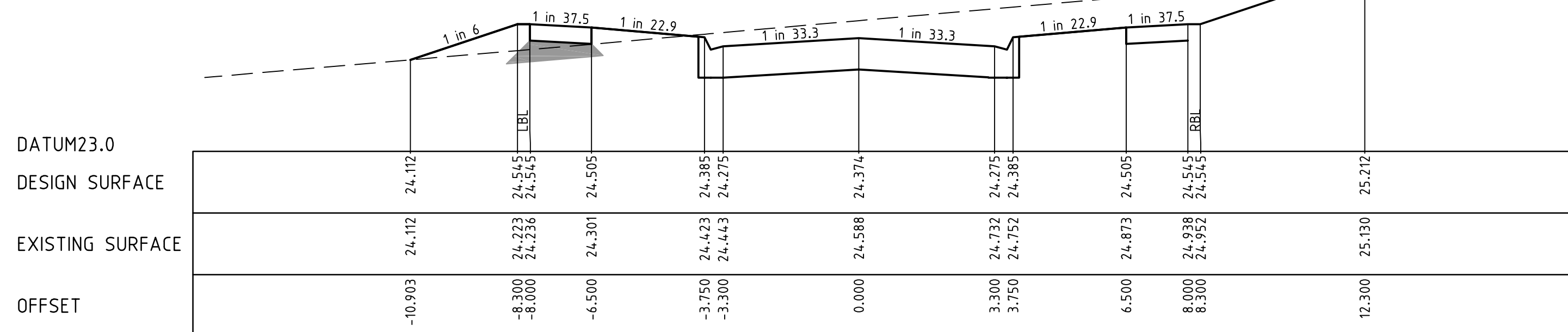
---	EXISTING SURFACE
---	DESIGN LINE
---	FUTURE DESIGN LINE



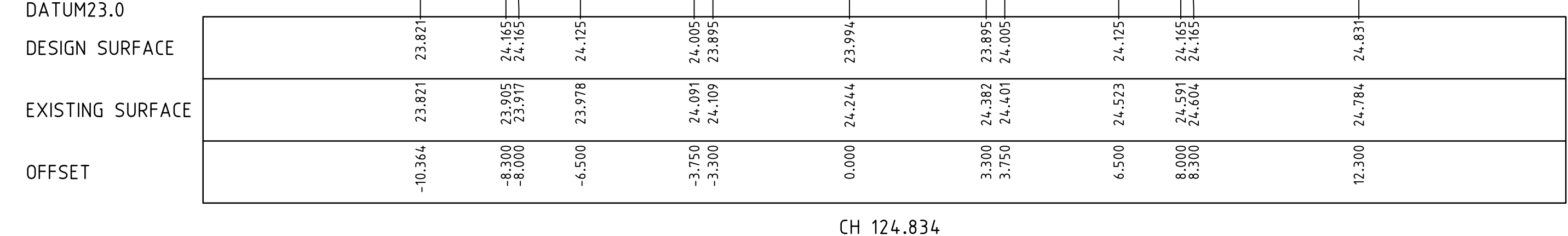
CH 108.378



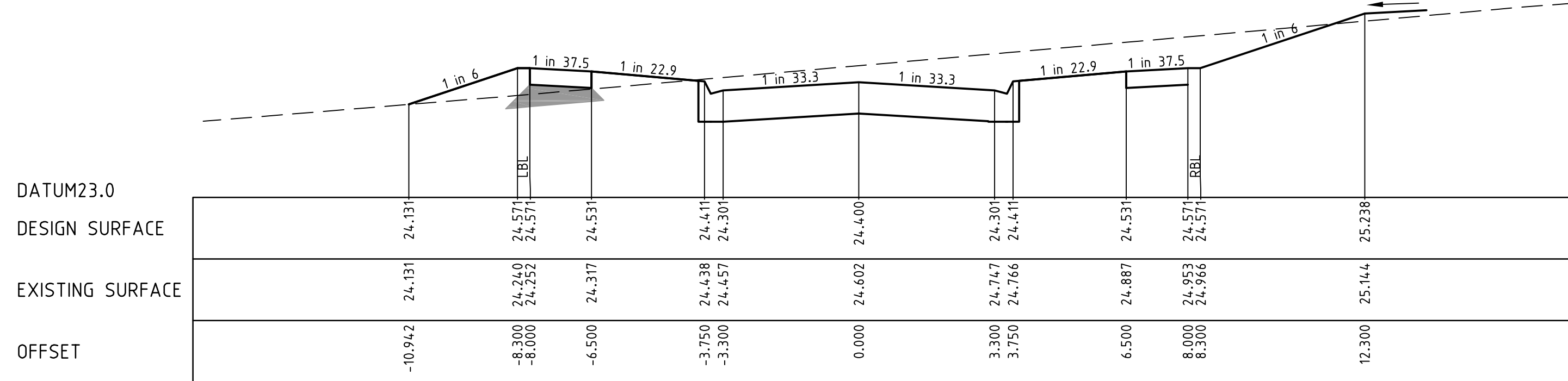
CH 136.878



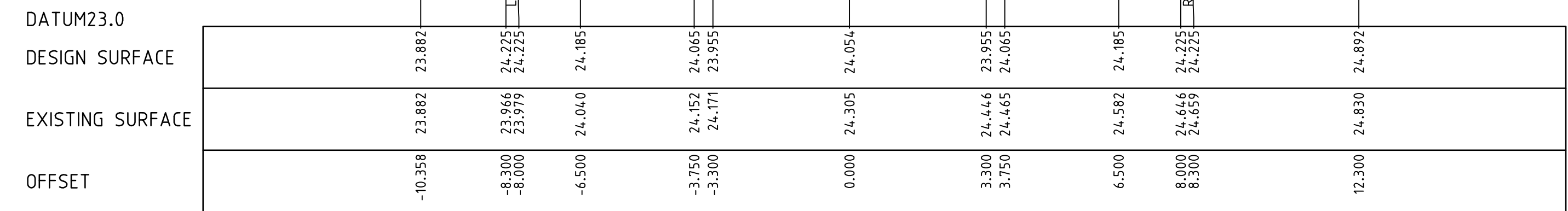
CH 100.000



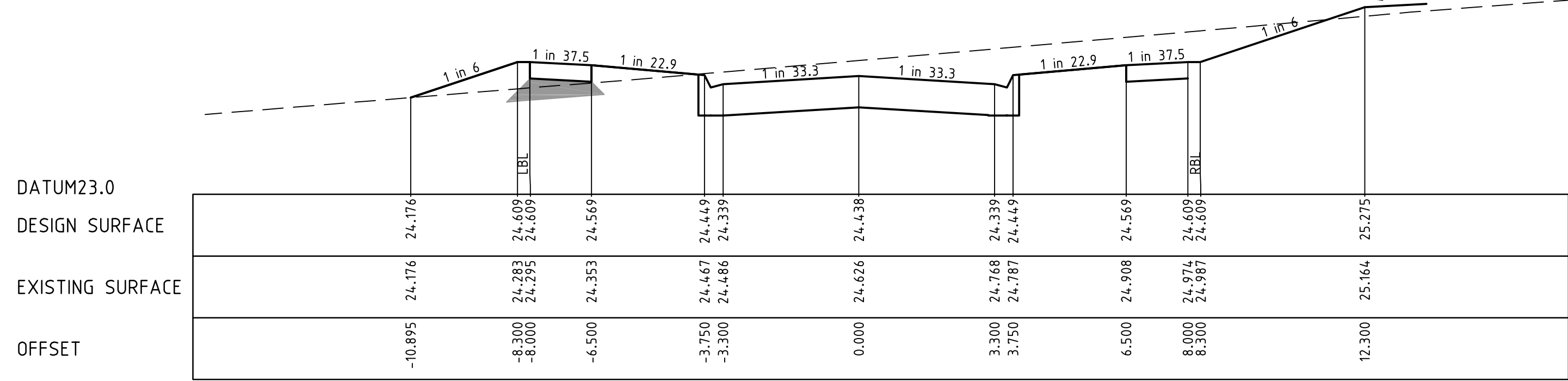
CH 124.834



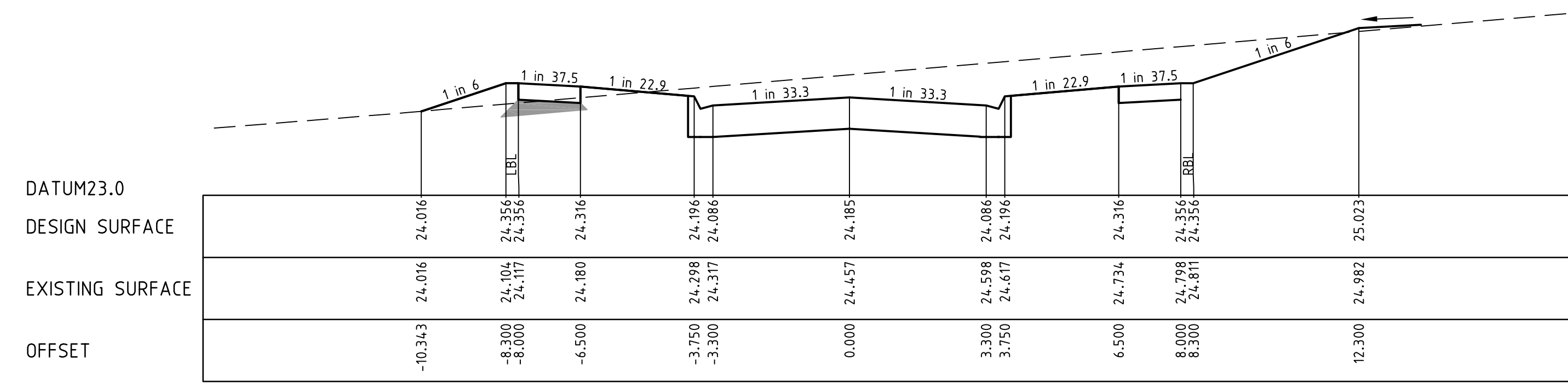
CH 98.334



CH 120.878



CH 95.878



CH 112.334

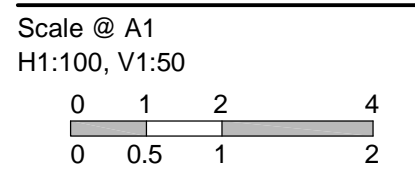
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B	COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A	ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG
REVISION		DATE	DES/DF	APPD



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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Casey Grove  
Ch95.878 - Ch136.878  
**Drawing No. 0250EHL-05-18** **Rev B**  
Sheet No. 18 of 38

Approved for Construction

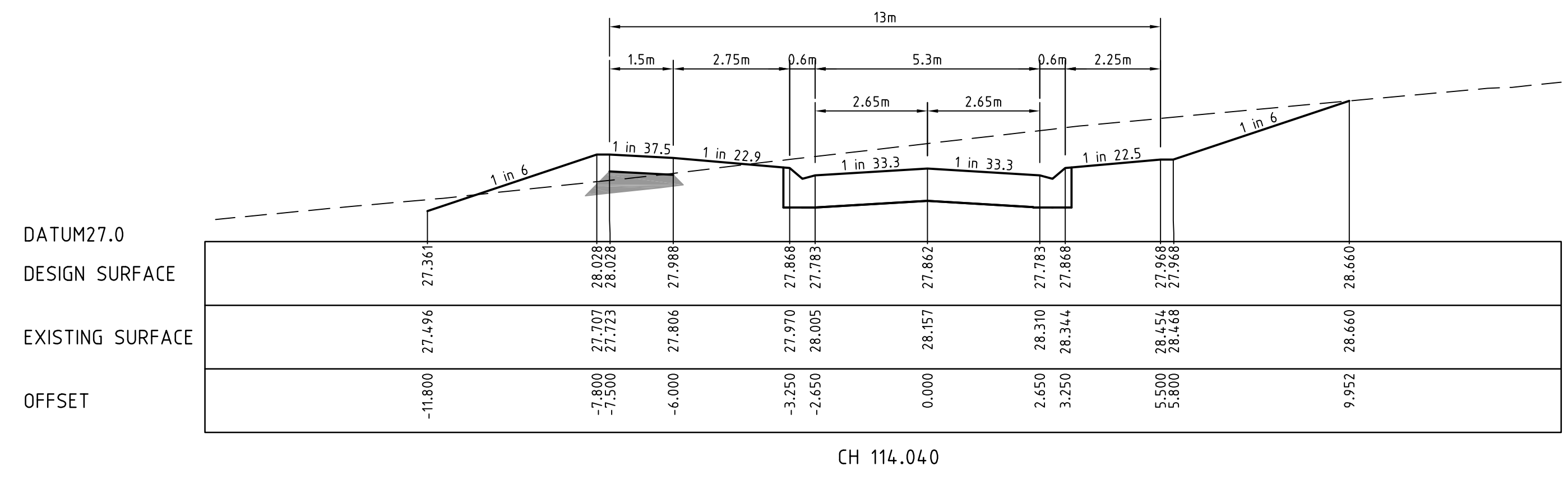






STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE NATURAL SURFACE

LEGEND	
	EXISTING SURFACE
	DESIGN LINE
	FUTURE DESIGN LINE



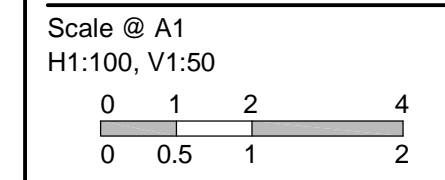
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REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG



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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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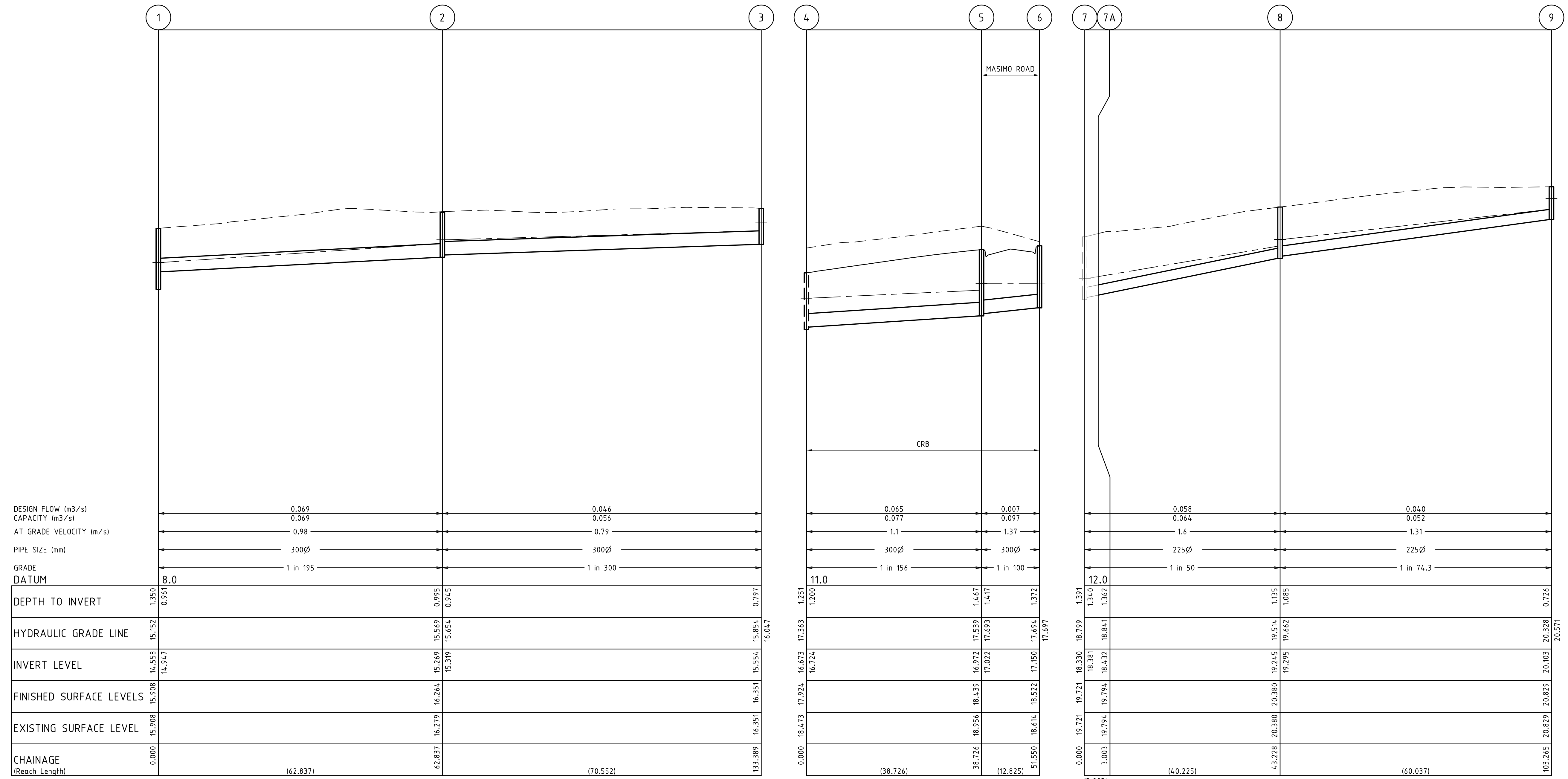
Adelaide	+61 8 8223 6455	Gold Coast	+61 7 5578 0222
Brisbane	+61 7 3831 8988	Melbourne	+61 3 9869 0800
Canberra	+61 2 6126 1900	Taralgon	+61 3 5173 0100

**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Ila Drive  
Ch112.535 - Ch114.040  
**Drawing No. 0250EHL-05-20**      **Rev B**  
Sheet No. 20 of 38

Approved for Construction



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



DESIGN FLOW (m <sup>3</sup> /s)	0.069	0.046
CAPACITY (m <sup>3</sup> /s)	0.069	0.056
AT GRADE VELOCITY (m/s)	0.98	0.79
PIPE SIZE (mm)	300Ø	300Ø
GRADE	1 in 195	1 in 300
DATUM	8.0	
DEPTH TO INVERT	1.350 0.965	15.152 14.947
HYDRAULIC GRADE LINE	15.152	15.569 15.654
INVERT LEVEL	14.538 14.947	15.269 15.319
FINISHED SURFACE LEVELS	15.908	16.264
EXISTING SURFACE LEVEL	15.908	16.279
CHAINAGE (Reach Length)	0.000	62.837
		(62.837)
		(70.552)
		133.389
		16.351
		15.554
		15.854
		16.047
		0.797

DESIGN FLOW (m <sup>3</sup> /s)	0.065	0.007
CAPACITY (m <sup>3</sup> /s)	0.077	0.097
AT GRADE VELOCITY (m/s)	1.1	1.37
PIPE SIZE (mm)	300Ø	300Ø
GRADE	1 in 156	1 in 100
DATUM	11.0	
DEPTH TO INVERT	1.200 1.251	17.263 1.467
HYDRAULIC GRADE LINE	16.724	17.693 1.417
INVERT LEVEL	16.673 16.724	16.972 17.022
FINISHED SURFACE LEVELS	17.924	18.439
EXISTING SURFACE LEVEL	18.473	18.956
CHAINAGE (Reach Length)	0.000	38.726
		(38.726)
		(12.825)
		51.550
		18.614
		18.522
		17.694
		17.697
		1.372

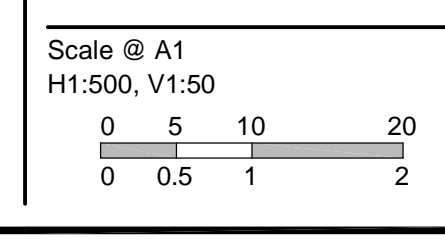
DESIGN FLOW (m <sup>3</sup> /s)	0.058	0.040
CAPACITY (m <sup>3</sup> /s)	0.064	0.052
AT GRADE VELOCITY (m/s)	1.6	1.31
PIPE SIZE (mm)	225Ø	225Ø
GRADE	1 in 50	1 in 74.3
DATUM	12.0	
DEPTH TO INVERT	1.340 1.362	18.799 1.991
HYDRAULIC GRADE LINE	18.381	18.841 1.841
INVERT LEVEL	18.381 18.432	19.794 18.841
FINISHED SURFACE LEVELS	19.721	20.380
EXISTING SURFACE LEVEL	19.794	20.380
CHAINAGE (Reach Length)	0.000	43.228
		(40.225)
		(60.037)
		103.265
		20.829
		20.829
		20.103
		20.328
		0.726

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REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG

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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
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Adelaide +61 8 8223 6455  
Brisbane +61 7 3831 8988  
Canberra +61 2 8126 1900  
Gold Coast +61 7 5578 0222  
Melbourne +61 3 9869 0800  
Perth +61 8 9477 1000  
Sydney +61 2 9550 1000

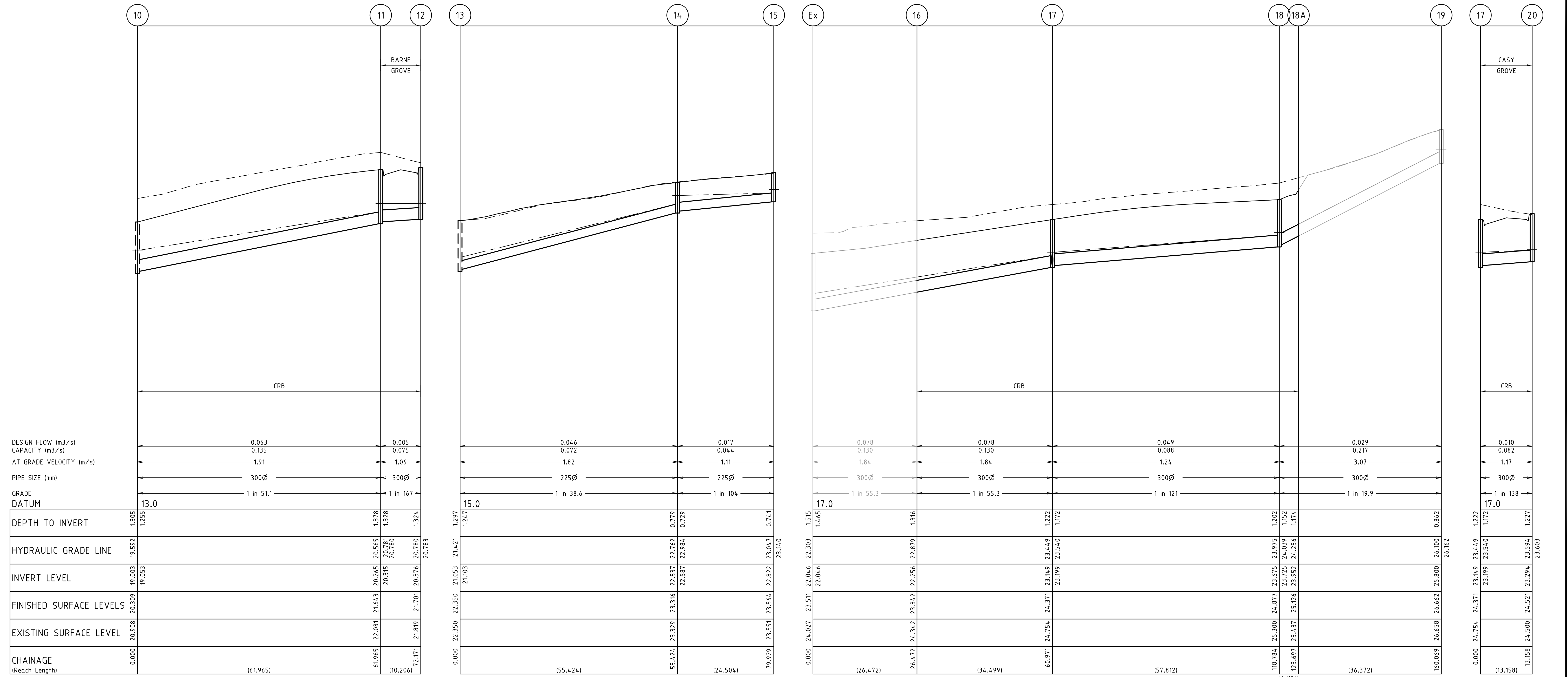
**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Drainage Longitudinal Sections - 1

Drawing No. **0250EHL-05-21** Rev **B**  
Sheet No. 21 of 38

Approved for Construction



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

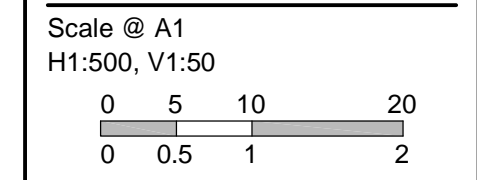


DEPTH TO INVERT	HYDRAULIC GRADE LINE	INVERT LEVEL	FINISHED SURFACE LEVELS	EXISTING SURFACE LEVEL	CHAINAGE (Reach Length)
1.305 1.255		19.003 19.053	20.309 20.309	20.908	0.000
1.278 1.328	20.545 20.582 20.780	20.265 20.315	21.643 20.316	22.081	61.965
1.324	20.780 20.783	20.376	21.701	21.819	72.171
1.247 1.247	21.421	21.063	22.350	22.350	0.000
0.779 0.729	22.762 22.587	22.537 22.587	23.316	23.379	55.424
0.741	23.047	22.822	23.564	23.551	79.929
1.465 1.465	22.303	22.046	23.511	24.027	0.000
1.316	22.879	22.256	23.842	24.342	26.472
1.222 1.172	23.449 23.540	23.149 23.199	24.371	24.754	60.971
1.202 1.152 1.174	23.075 24.039 24.256	23.075 23.725 23.952	24.877	25.437	118.784
0.862	26.100	25.800	26.662	26.658	160.069
1.222 1.172	23.449 23.540	23.149 23.199	24.371	24.754	0.000
1.227	23.594	23.294	24.521	25.000	13.158
1.227	23.603	23.303	24.521	25.000	13.158

REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG

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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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Brisbane +61 7 3831 8988  
Carberra +61 2 6126 1900

Geelong +61 3 5228 3100  
Gold Coast +61 7 5578 0222  
Taranoni +61 3 5173 0160

**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Drainage Longitudinal Sections - 2

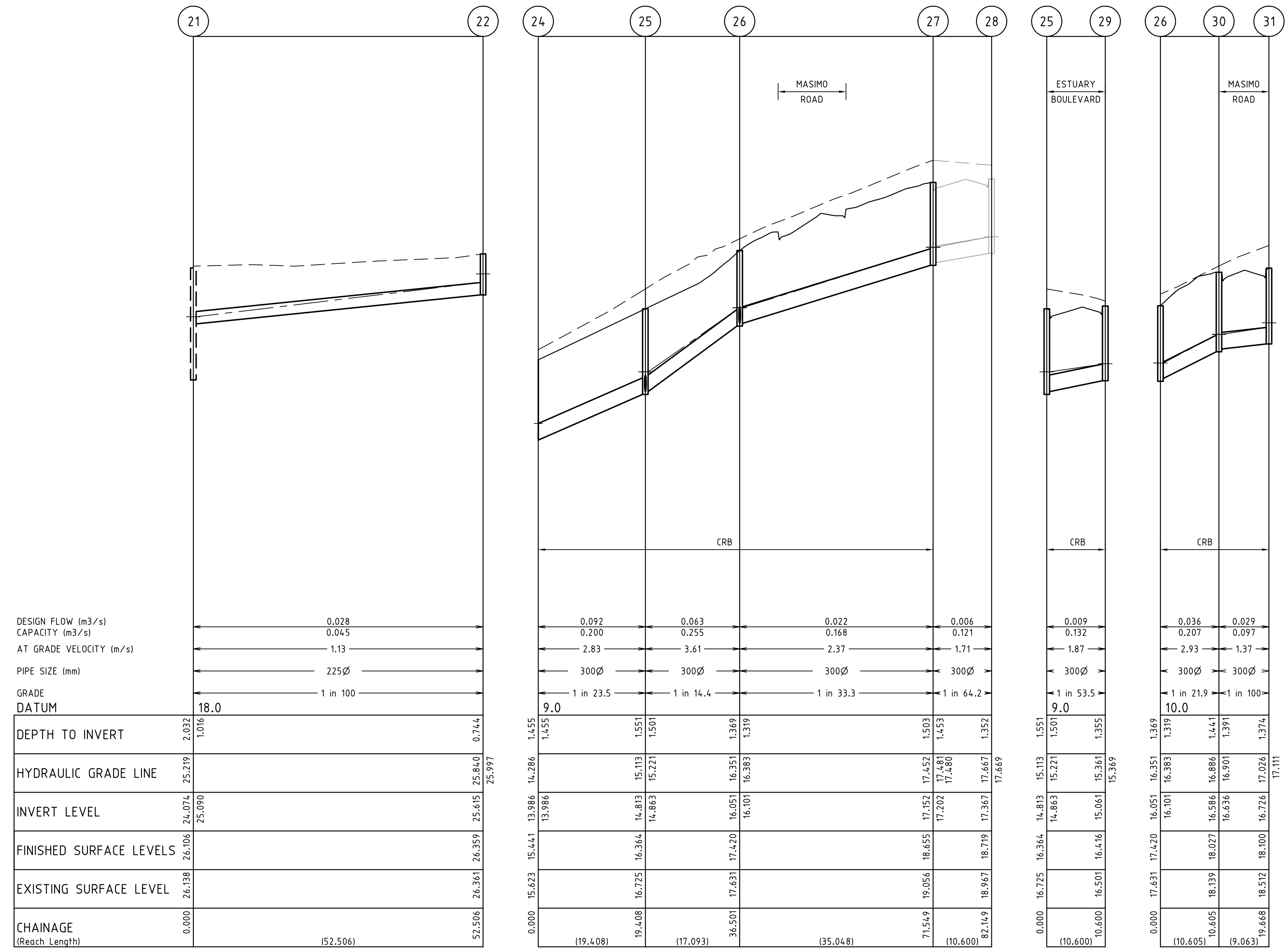
Drawing No. **0250EHL-05-22** Rev **B**  
Sheet No. 22 of 38

Approved for Construction

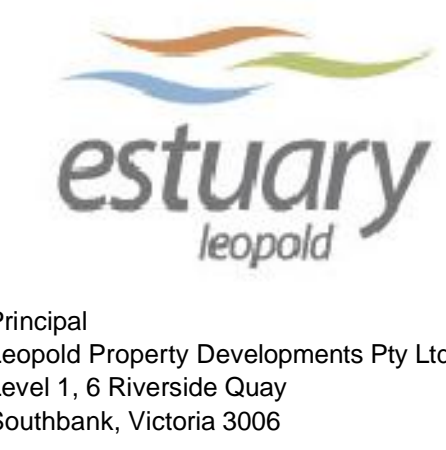
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LEGEND	
	EXISTING SURFACE
	DESIGN SURFACE
	DRAINAGE PIPE/PIT
	EXISTING DRAINAGE PIPE/PIT
	HYDRAULIC GRADE LINE



REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG



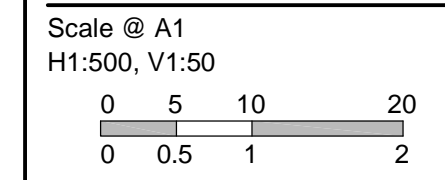
Designed  
C.Barker

Drawn  
C.Barker

Checked  
C.Birkett

Authorised  
J.Golden

Date  
October 2010



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**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Drainage Longitudinal Sections - 3

Drawing No. **0250EHL-05-23**      Rev **B**

Sheet No. 23 of 38

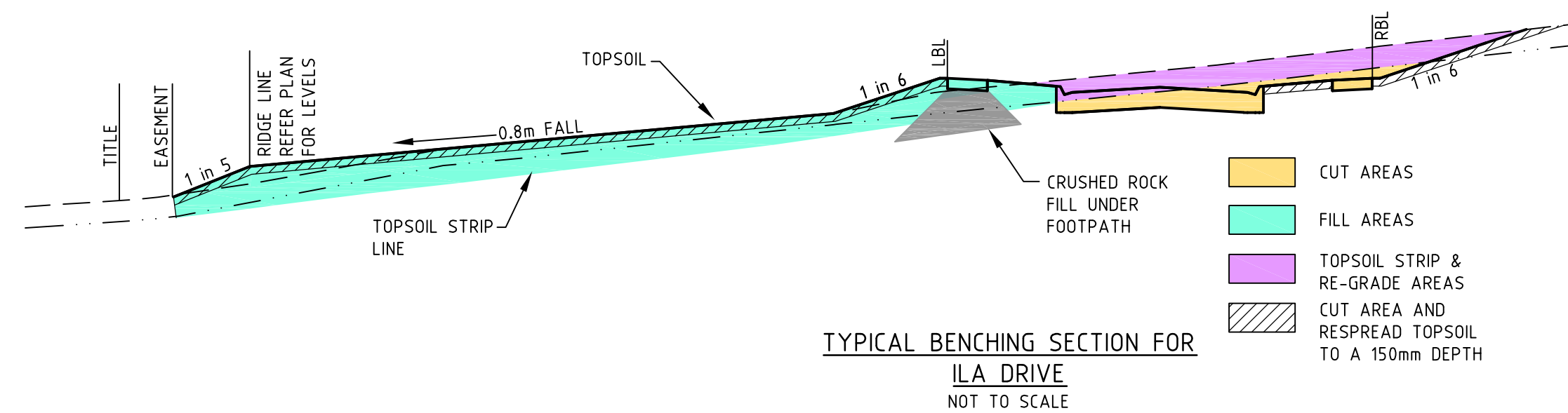
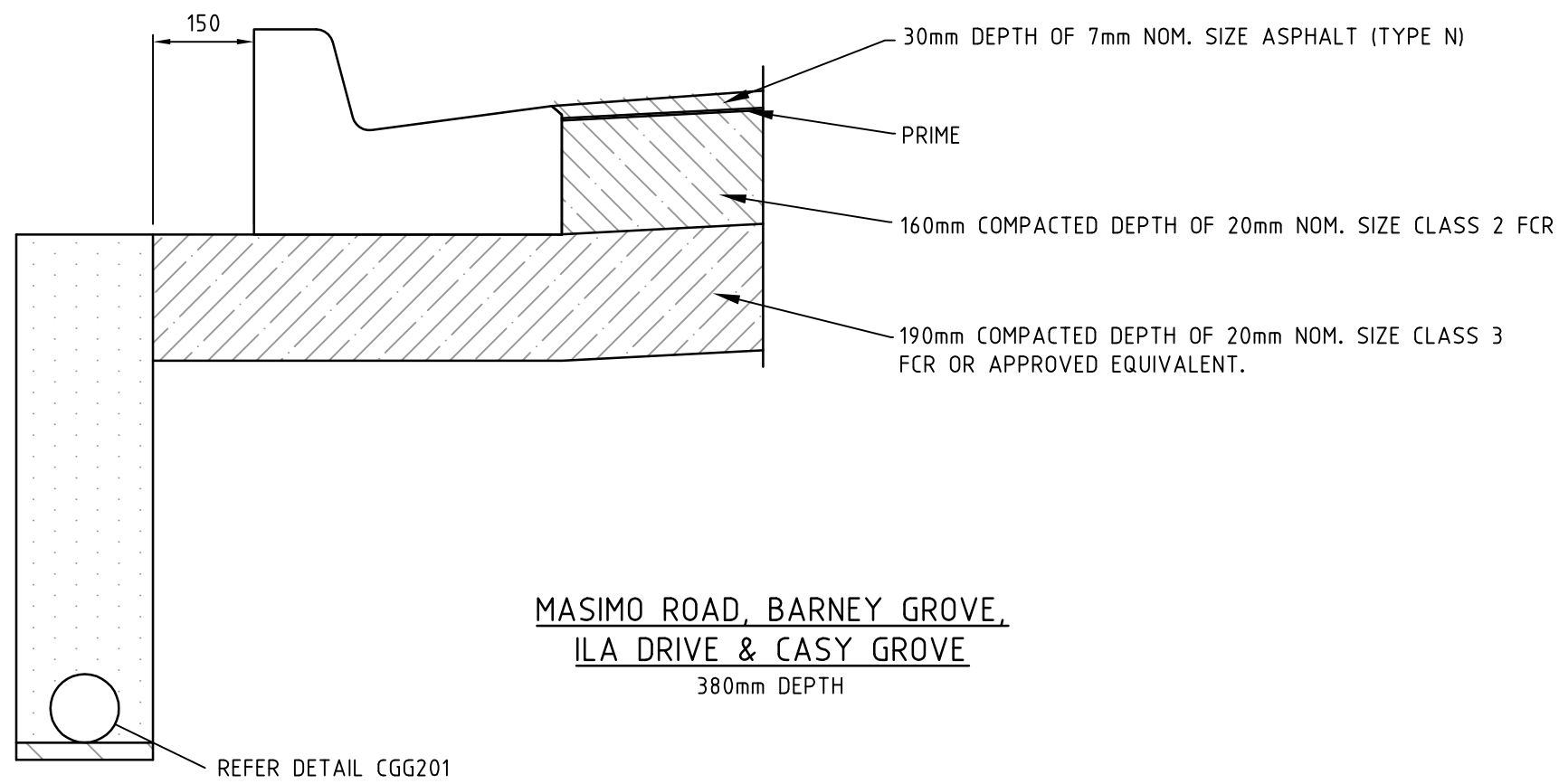
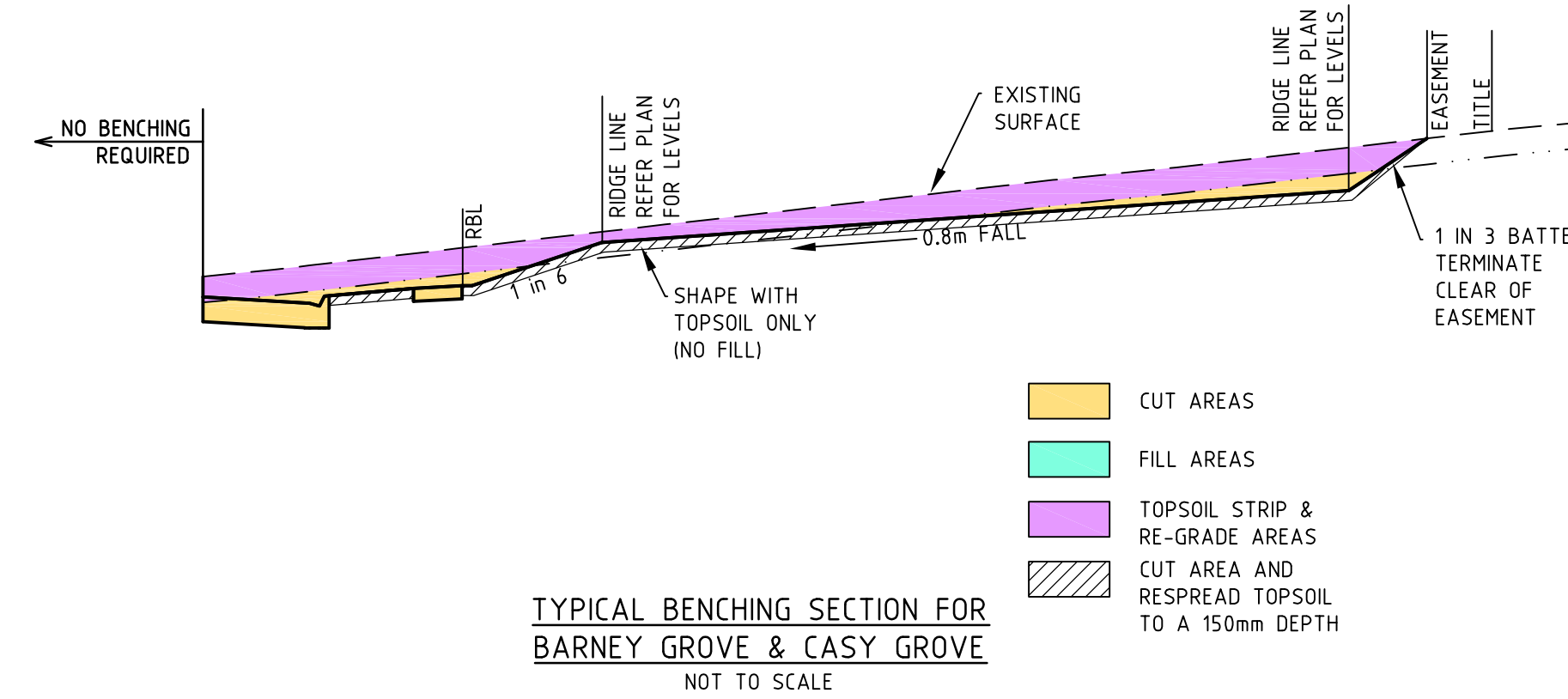
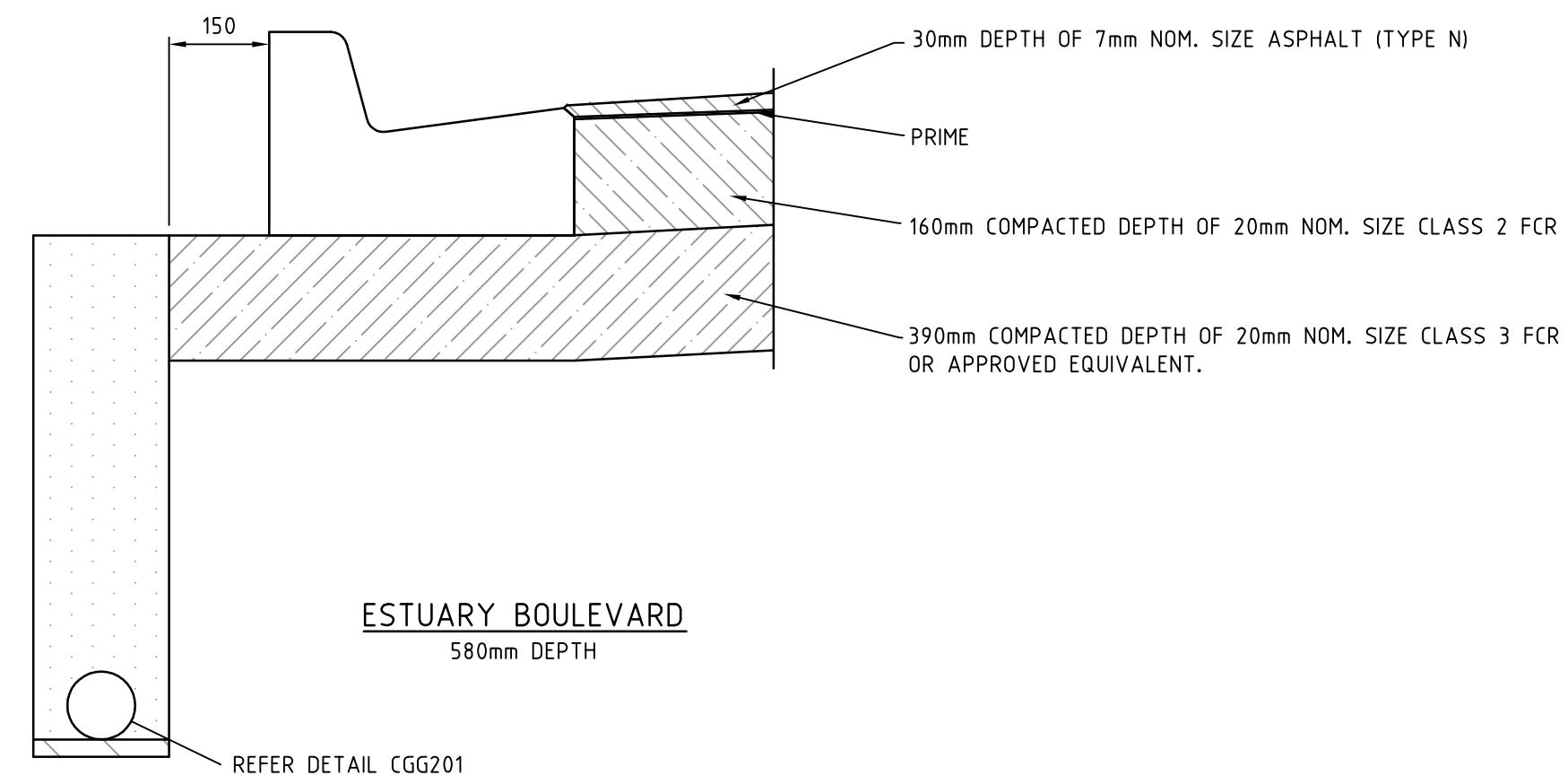
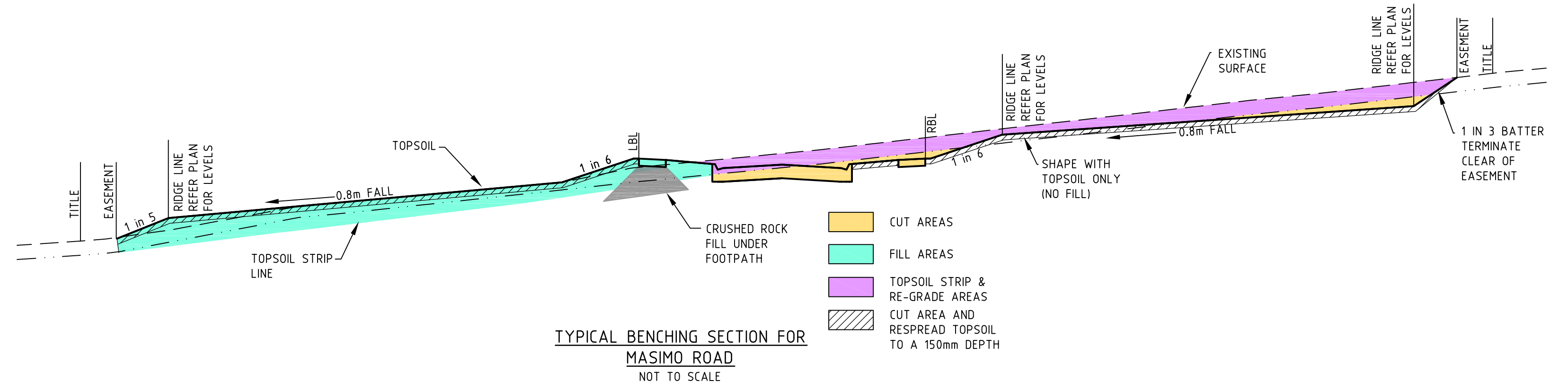
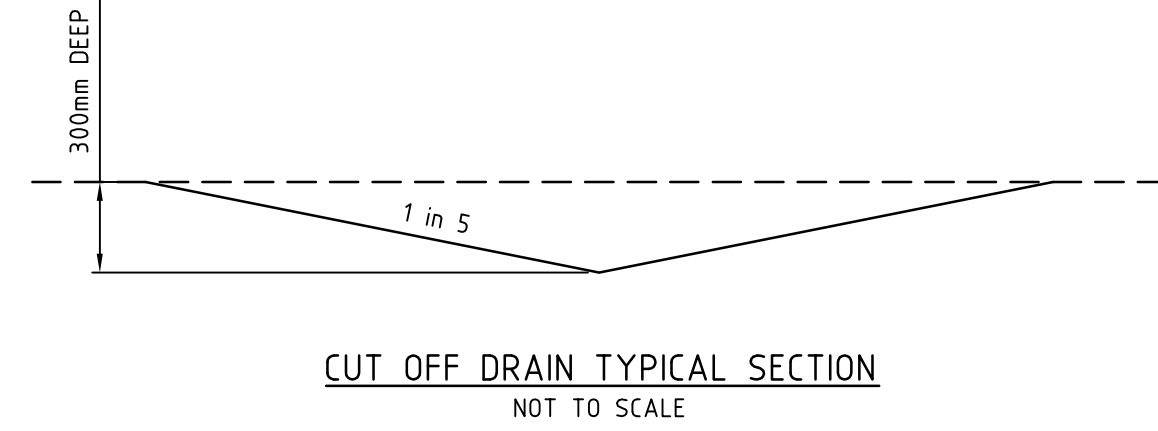
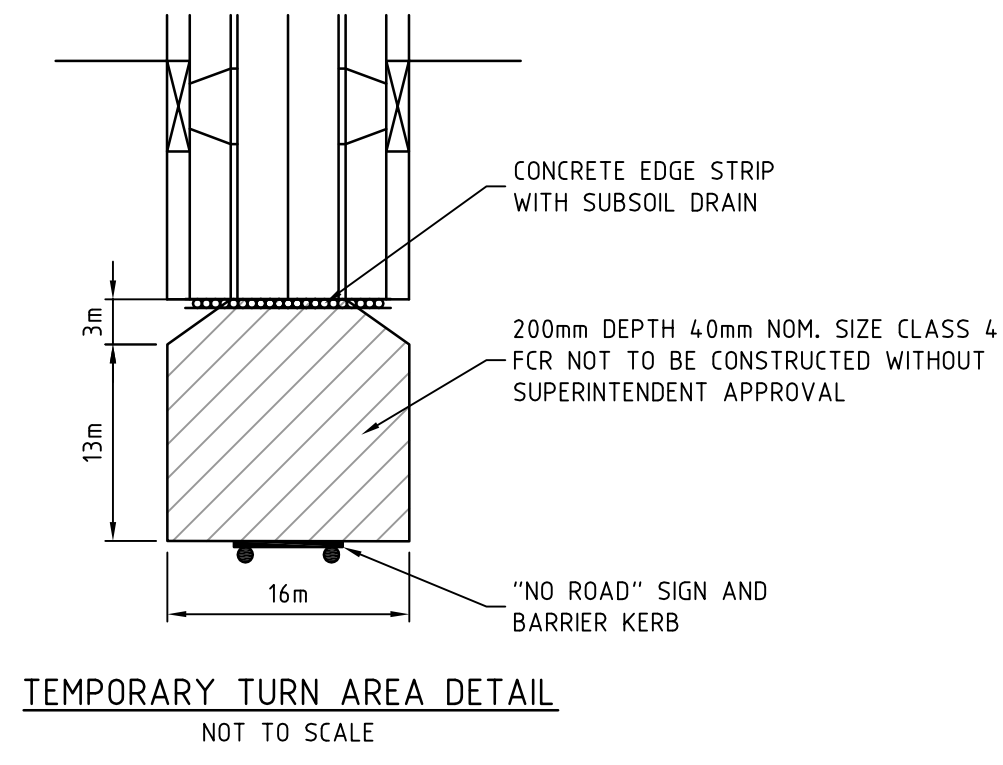
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REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG



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

Designed  
C. Barker

Drawn  
C. Barker

Checked  
C. Birkett

Authorised  
J. Golden

Date  
October 2010

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Scale @ A1  
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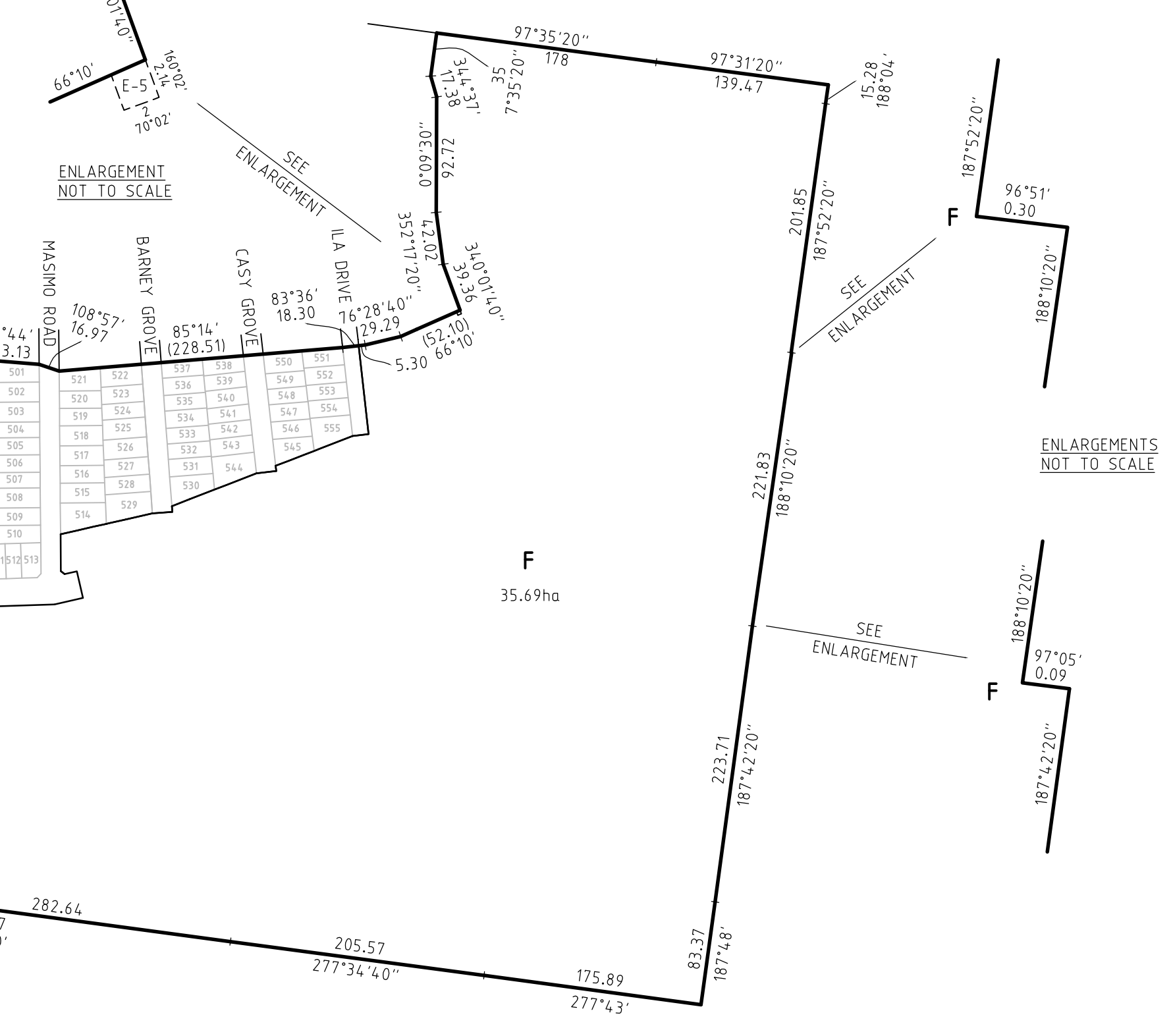
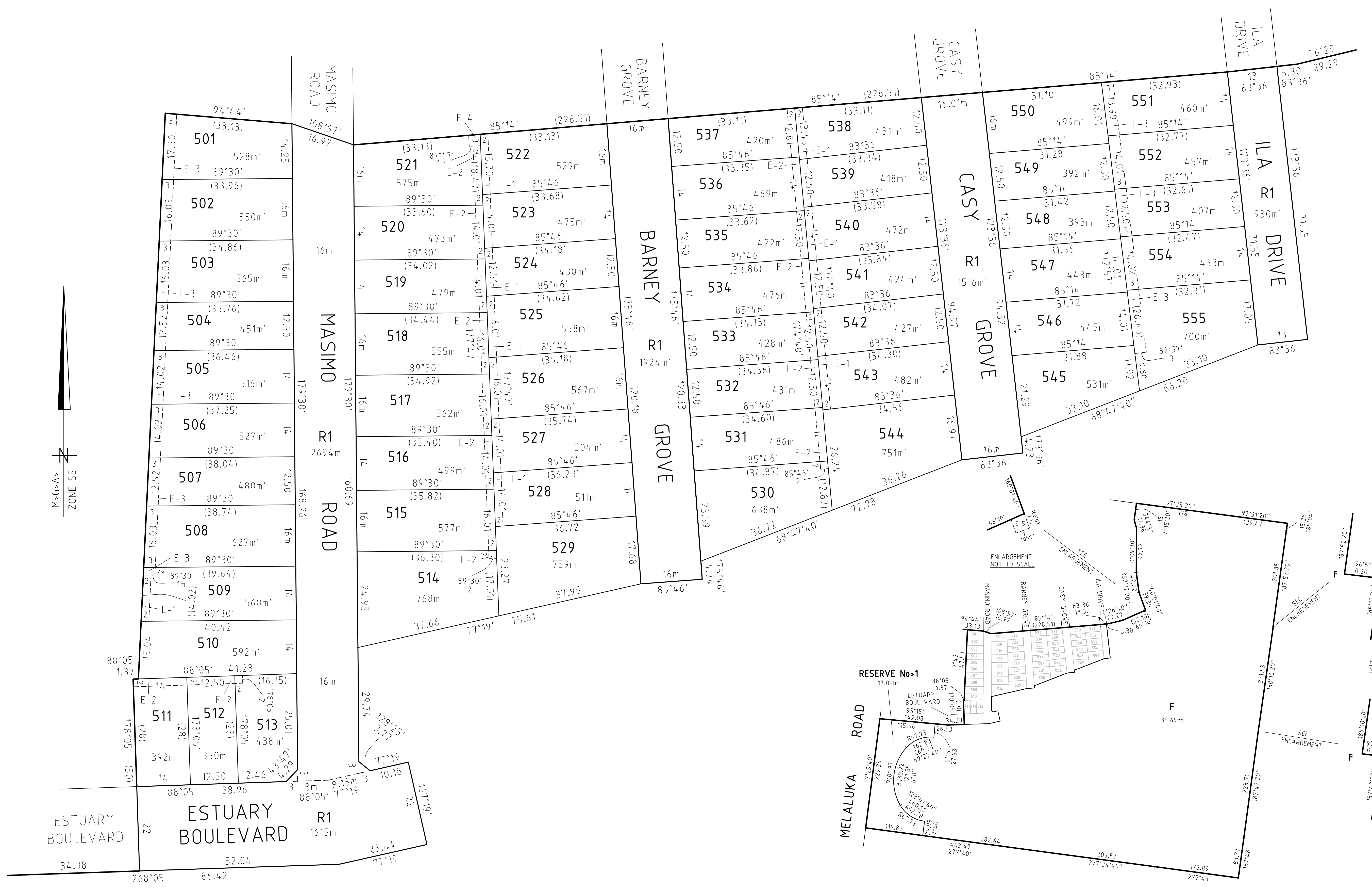
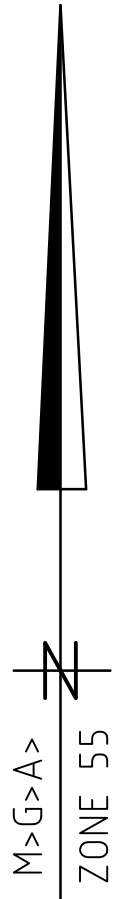
Estuary  
Stage 5  
City Of Greater Geelong  
Roadworks and Drainage  
Details

Drawing No. 0250EHL-05-25  
Sheet No. 25 of 38

Rev B

Approved for Construction

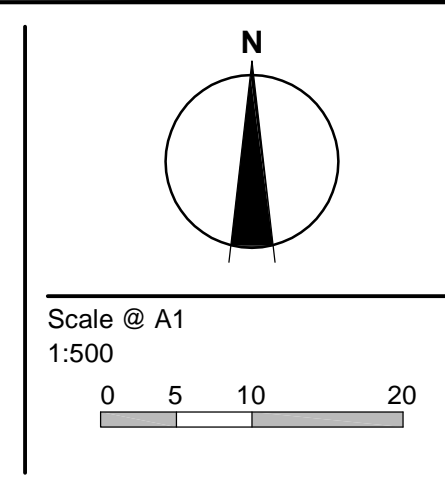




REVISION	DATE	DES/DF	APPD
B COUNCIL AMENDMENTS	20.01.11	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	18.11.10	CB/CB	JG

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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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Cairns +61 2 6126 1900

Gold Coast +61 7 5578 0222  
Melbourne +61 3 9869 0800  
Perth +61 8 9479 0100

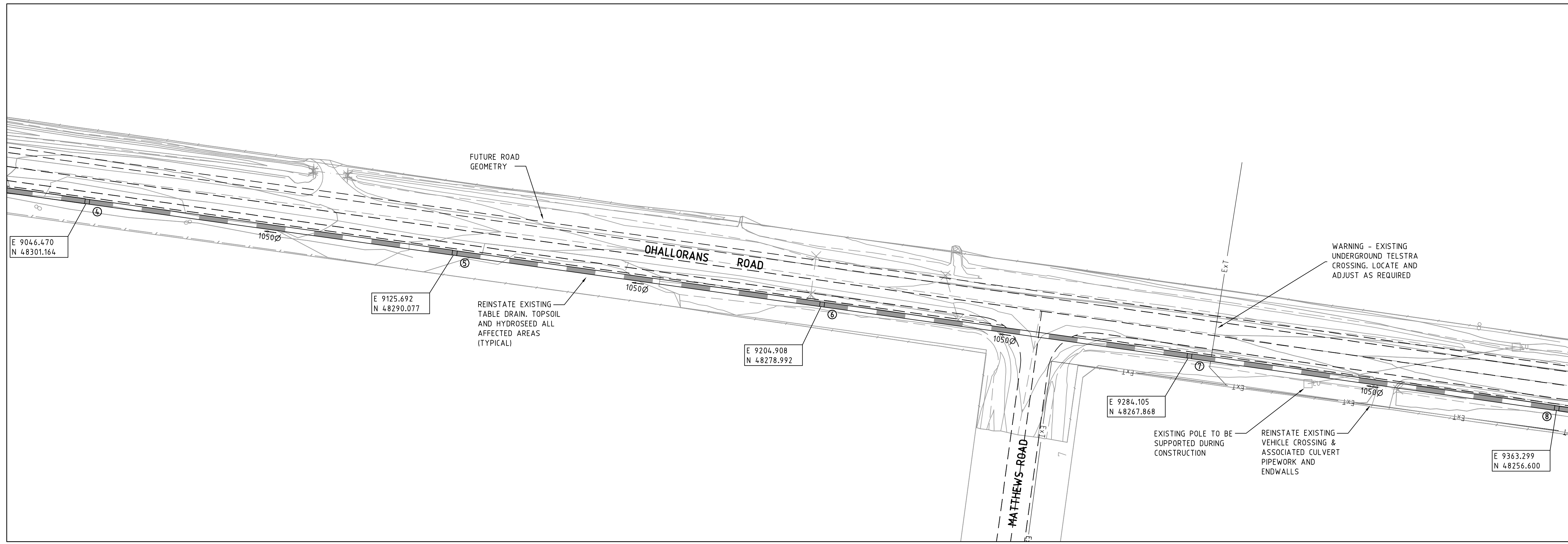
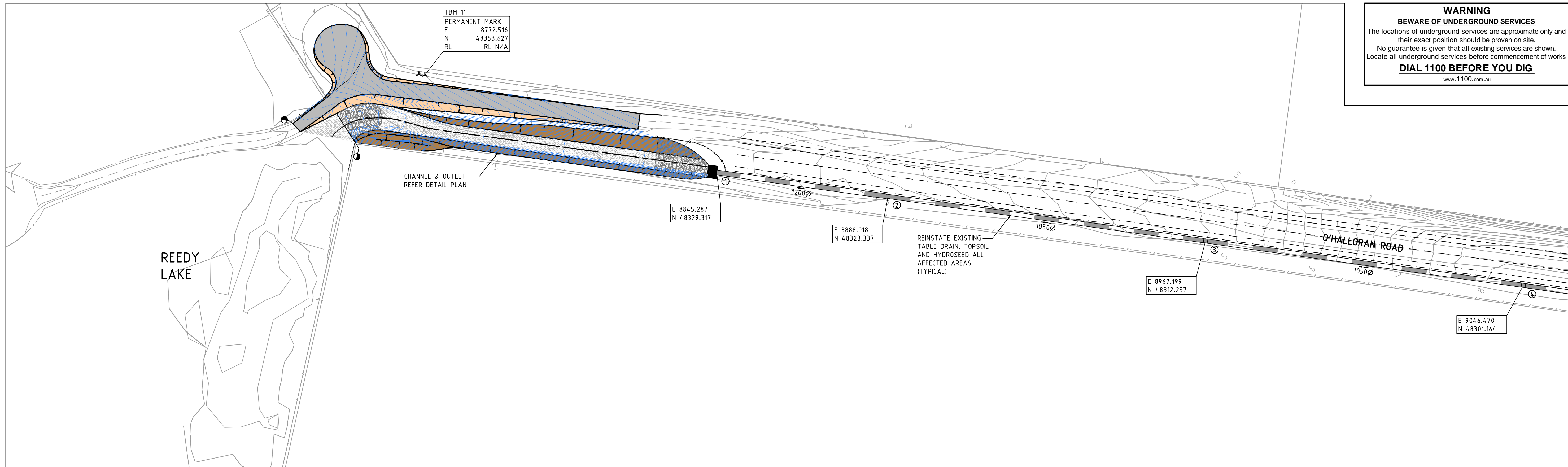
**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Subdivision Setout Plan

Drawing No. **0250EHL-05-26** Rev B  
Sheet No. 26 of 38

Approved for Construction



**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.  
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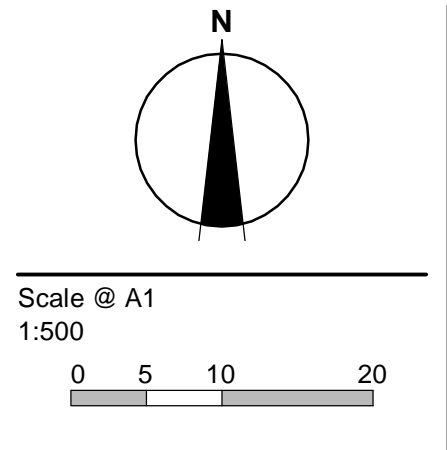
- LEGEND - LAYOUT PLAN**
- S — SWALE DRAIN
  - H — HOUSE DRAIN
  - G — SERVICE CONDUITS
  - Ex E — EXISTING ELECTRICITY (UNDERGROUND)
  - O/H E — EXISTING ELECTRICITY (OVERHEAD)
  - Ex G — EXISTING GAS
  - Ex T — EXISTING TELSTRA
  - Ex W — EXISTING WATER
  - Ex D — EXISTING STORMWATER DRAIN
  - Ex S — EXISTING SEWER
  - — H — EXISTING HOUSE DRAIN
  - — S — EXISTING SWALE DRAIN
  - 141.34 — EXISTING SURFACE LEVEL
  - F5140.35 — FINISHED BUILDING LINE LEVEL
  - F8157.40 — FINISHED RIDGE LINE LEVEL
  - T4159.30 — TOP OF RETAINING WALL
  - B4159.30 — BOTTOM OF RETAINING WALL
  - — — — — RETAINING WALL
  - — — — — ZERO LOT LINES
  - — — — — PAVEMENT TREATMENT
  - — — — — STRUCTURAL FILL > 200mm DEEP
  - — — — — EX. STRUCTURAL FILL > 200mm DEEP
  - — — — — DIRECTION OF FALL
  - — — — — OVERLAND FLOW
  - — — — — ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
  - — — — — CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
  - — — — — LIMIT OF WORKS
  - — — — — EXISTING TREE TO BE REMOVED
  - — — — — PERMANENT SURVEY MARK
  - — — — — TEMPORARY BENCH MARK
  - — — — — PROPOSED DRIVEWAY

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REVISION	DATE	DES/DFT	APPD
C	07.04.11	CB/CB	JG
B	22.02.11	CB	JG
A	20.01.11	CB/CB	JG

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

Designed  
C. Barker  
 Drawn  
C. Barker  
 Checked  
C. Birkett  
 Authorised  
J. Golden  
 Date  
October 2010



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 Traralgon +61 3 5173 0100

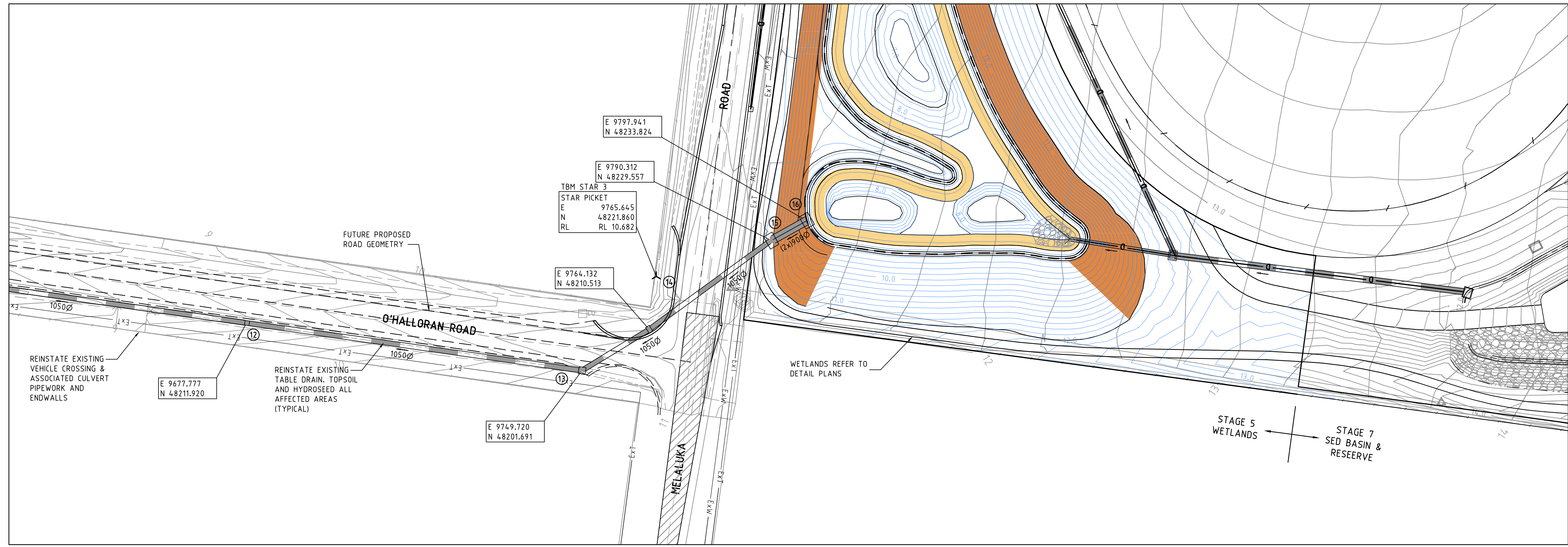
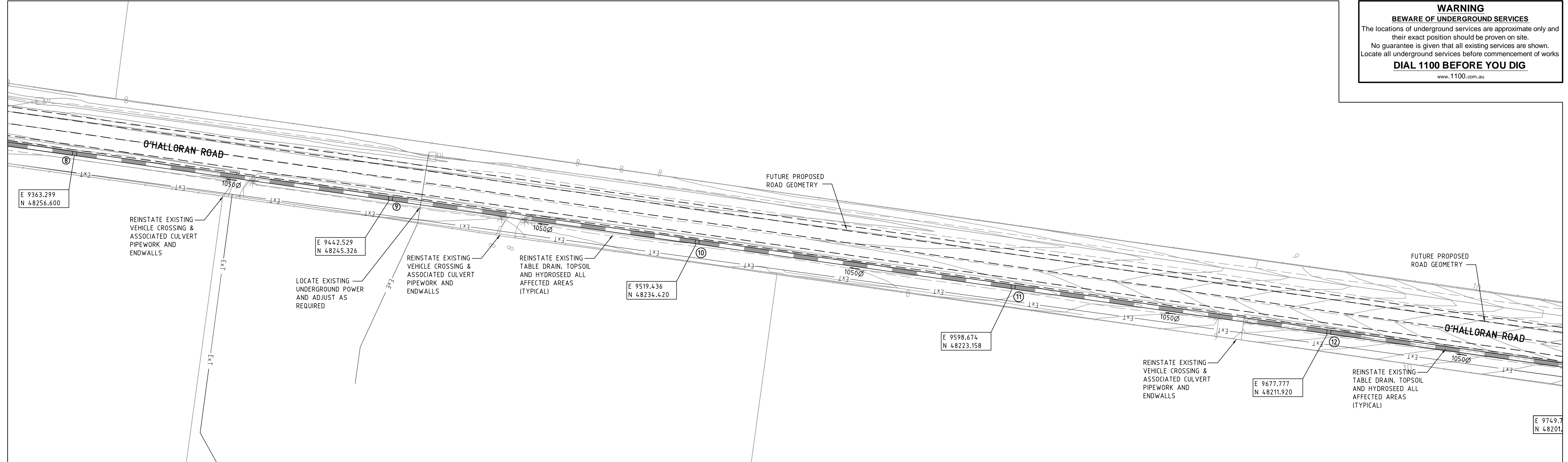
**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Outfall Drainage Layout - 1

Drawing No. **0250EHL-05-27** Rev **C**  
 Sheet No. 27 of 40

Approved for Construction



**WARNING**  
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 The locations of underground services are approximate only and their exact position should be proven on site.  
 No guarantee is given that all existing services are shown. Locate all underground services before commencement of works  
**DIAL 1100 BEFORE YOU DIG**  
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- LEGEND - LAYOUT PLAN**
- SW— SW— SW— STORMWATER DRAIN, PIT & PROPERTY INLET
  - SW— SW— SW— SWALE DRAIN
  - S— S— S— SEWER & MAINTENANCE STRUCTURES
  - H— H— H— HOUSE DRAIN
  - S— S— S— SERVICE CONDUITS
  - T— T— T— TACTILE PAVERS
  - E— E— E— EXISTING ELECTRICITY (UNDERGROUND)
  - O/H— O/H— O/H— EXISTING ELECTRICITY (OVERHEAD)
  - G— G— G— EXISTING GAS
  - T— T— T— EXISTING TELSTRA
  - W— W— W— EXISTING WATER
  - D— D— D— EXISTING STORMWATER DRAIN
  - S— S— S— EXISTING SEWER
  - H— H— H— EXISTING HOUSE DRAIN
  - SW— SW— SW— EXISTING SWALE DRAIN
  - 14134 EXISTING SURFACE LEVEL
  - F5140.35 FINISHED BUILDING LINE LEVEL
  - F8157.40 FINISHED RIDGE LINE LEVEL
  - T4159.30 TOP OF RETAINING WALL
  - B4159.30 BOTTOM OF RETAINING WALL
  - RETAINING WALL
  - ZERO LOT LINES
  - PAVEMENT TREATMENT
  - STRUCTURAL FILL > 200mm DEEP
  - EX. STRUCTURAL FILL > 200mm DEEP
  - DIRECTION OF FALL
  - OVERLAND FLOW
  - ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
  - CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
  - LIMIT OF WORKS
  - EXISTING TREE TO BE REMOVED
  - PERMANENT SURVEY MARK
  - TEMPORARY BENCH MARK
  - PROPOSED DRIVEWAY

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REVISION	DATE	DES/DFT	APPD
C	07.04.11	CB/CB	JG
B	22.02.11	CB	JG
A	20.01.11	CB/CB	JG

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

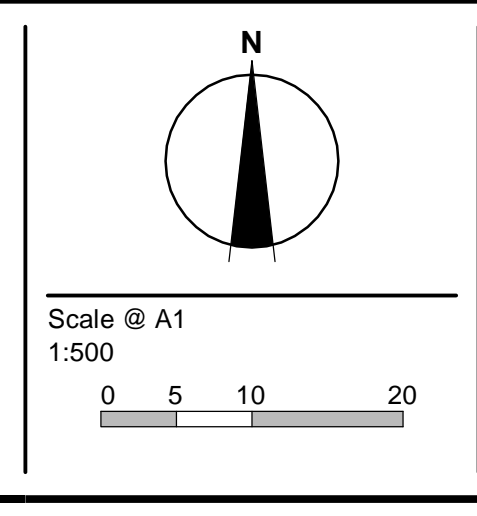
Designed  
C.Barker

Drawn  
C.Barker

Checked  
C.Birkett

Authorised  
J.Golden

Date  
October 2010



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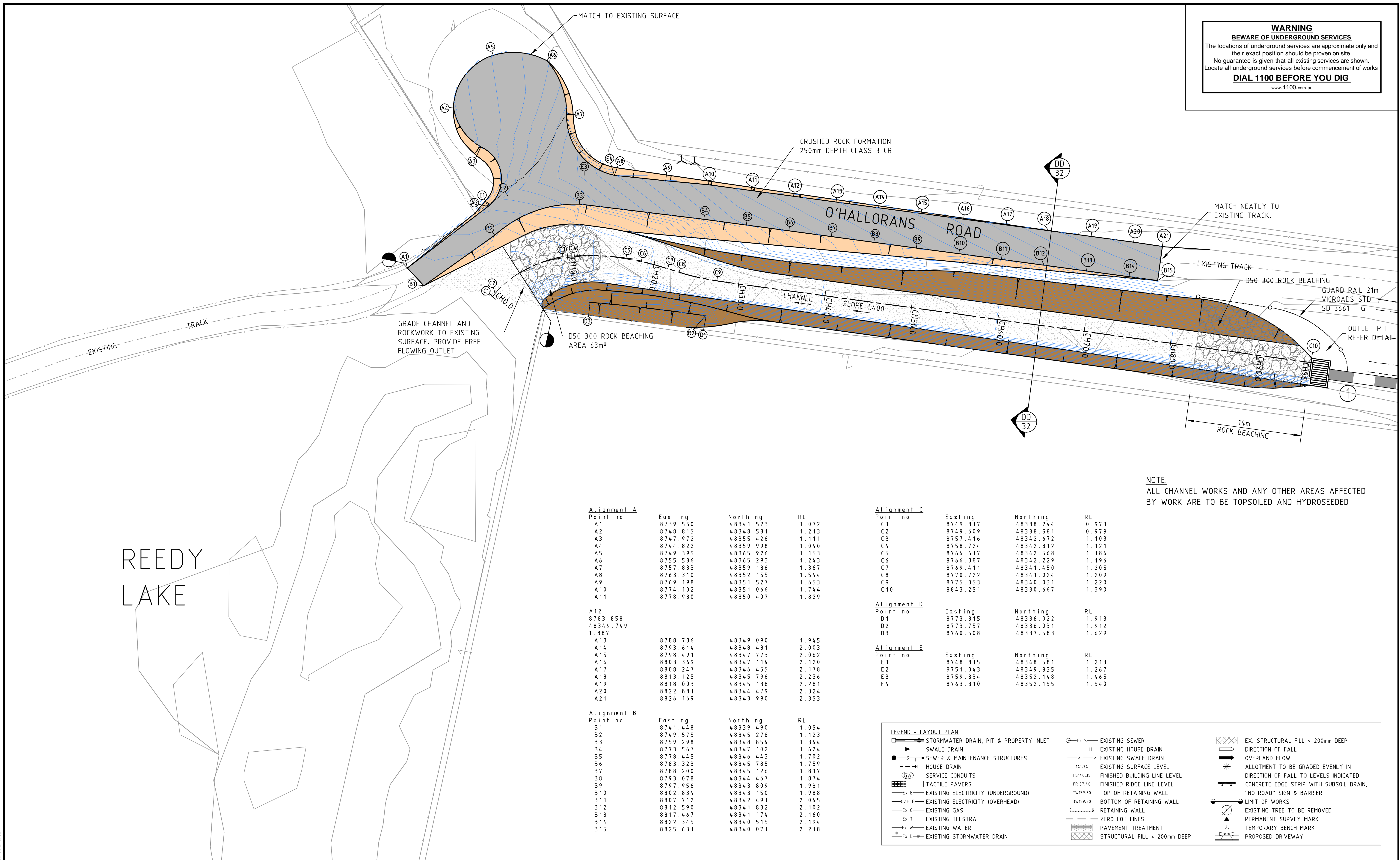
**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Outfall Drainage Layout - 2

Drawing No. **0250EHL-05-28** Rev C  
 Sheet No. 28 of 40

Approved for Construction



**WARNING**  
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 Locate all underground services before commencement of works  
**DIAL 1100 BEFORE YOU DIG**  
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**NOTE:**  
 ALL CHANNEL WORKS AND ANY OTHER AREAS AFFECTED BY WORK ARE TO BE TOPSOILED AND HYDROSEEDING

Alignment	Point no	Easting	Northing	RL
<b>Alignment A</b>				
A1	8739.550	48341.523	1.072	
A2	8748.815	48348.581	1.213	
A3	8747.972	48355.426	1.111	
A4	8744.822	48359.998	1.040	
A5	8749.395	48365.926	1.153	
A6	8755.586	48365.293	1.243	
A7	8757.833	48359.136	1.367	
A8	8763.310	48352.155	1.544	
A9	8769.198	48351.527	1.653	
A10	8774.102	48351.066	1.744	
A11	8778.980	48350.407	1.829	
<b>Alignment B</b>				
B1	8741.448	48339.490	1.054	
B2	8749.575	48345.278	1.123	
B3	8759.298	48348.854	1.344	
B4	8773.567	48347.102	1.624	
B5	8778.445	48346.443	1.702	
B6	8783.323	48345.785	1.759	
B7	8788.200	48345.126	1.817	
B8	8793.078	48344.467	1.874	
B9	8797.956	48343.809	1.931	
B10	8802.834	48343.150	1.988	
B11	8807.712	48342.491	2.045	
B12	8812.590	48341.832	2.102	
B13	8817.467	48341.174	2.160	
B14	8822.345	48340.515	2.194	
B15	8825.631	48340.071	2.218	
<b>Alignment C</b>				
C1	8749.317	48338.244	0.973	
C2	8749.609	48338.581	0.979	
C3	8757.416	48342.672	1.103	
C4	8758.724	48342.812	1.121	
C5	8764.617	48342.568	1.186	
C6	8766.387	48342.229	1.196	
C7	8769.411	48341.450	1.205	
C8	8770.722	48341.024	1.209	
C9	8775.053	48340.031	1.220	
C10	8843.251	48330.667	1.390	
<b>Alignment D</b>				
D1	8773.815	48336.022	1.913	
D2	8773.757	48336.031	1.912	
D3	8760.508	48337.583	1.629	
<b>Alignment E</b>				
E1	8748.815	48348.581	1.213	
E2	8751.043	48349.835	1.267	
E3	8759.834	48352.148	1.465	
E4	8763.310	48352.155	1.540	

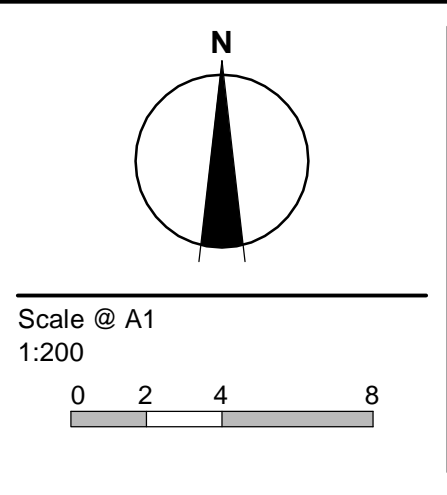
**LEGEND - LAYOUT PLAN**

	STORMWATER DRAIN, PIT & PROPERTY INLET		EXISTING SEWER		EX. STRUCTURAL FILL > 200mm DEEP
	SWALE DRAIN		EXISTING HOUSE DRAIN		DIRECTION OF FALL
	SEWER & MAINTENANCE STRUCTURES		EXISTING SWALE DRAIN		OVERLAND FLOW
	HOUSE DRAIN		EXISTING SURFACE LEVEL		ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
	SERVICE CONDUITS		FINISHED BUILDING LINE LEVEL		CONCRETE EDGE STRIP WITH SUBSOIL DRAIN
	TACTILE PAVERS		FINISHED RIDGE LINE LEVEL		"NO ROAD" SIGN & BARRIER
	EXISTING ELECTRICITY (UNDERGROUND)		TOP OF RETAINING WALL		LIMIT OF WORKS
	EXISTING ELECTRICITY (OVERHEAD)		BOTTOM OF RETAINING WALL		EXISTING TREE TO BE REMOVED
	EXISTING GAS		RETAINING WALL		PERMANENT SURVEY MARK
	EXISTING TELSTRA		ZERO LOT LINES		TEMPORARY BENCH MARK
	EXISTING WATER		PAVEMENT TREATMENT		PROPOSED DRIVEWAY
	EXISTING STORMWATER DRAIN		STRUCTURAL FILL > 200mm DEEP		

REVISION	DATE	DES/DF	APPD
C MINOR AMENDMENTS	07.04.11	CB/CB	JG
B COUNCIL AMENDMENTS	22.02.11	CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	20.01.11	CB/CB	JG

**estuary leopold**  
 Principal  
 Leopold Property Developments Pty Ltd  
 Level 1, 6 Riverside Quay  
 Southbank, Victoria 3006

Designed  
C.Barker  
 Drawn  
C.Barker  
 Checked  
C.Birkett  
 Authorised  
J.Golden  
 Date  
October 2010



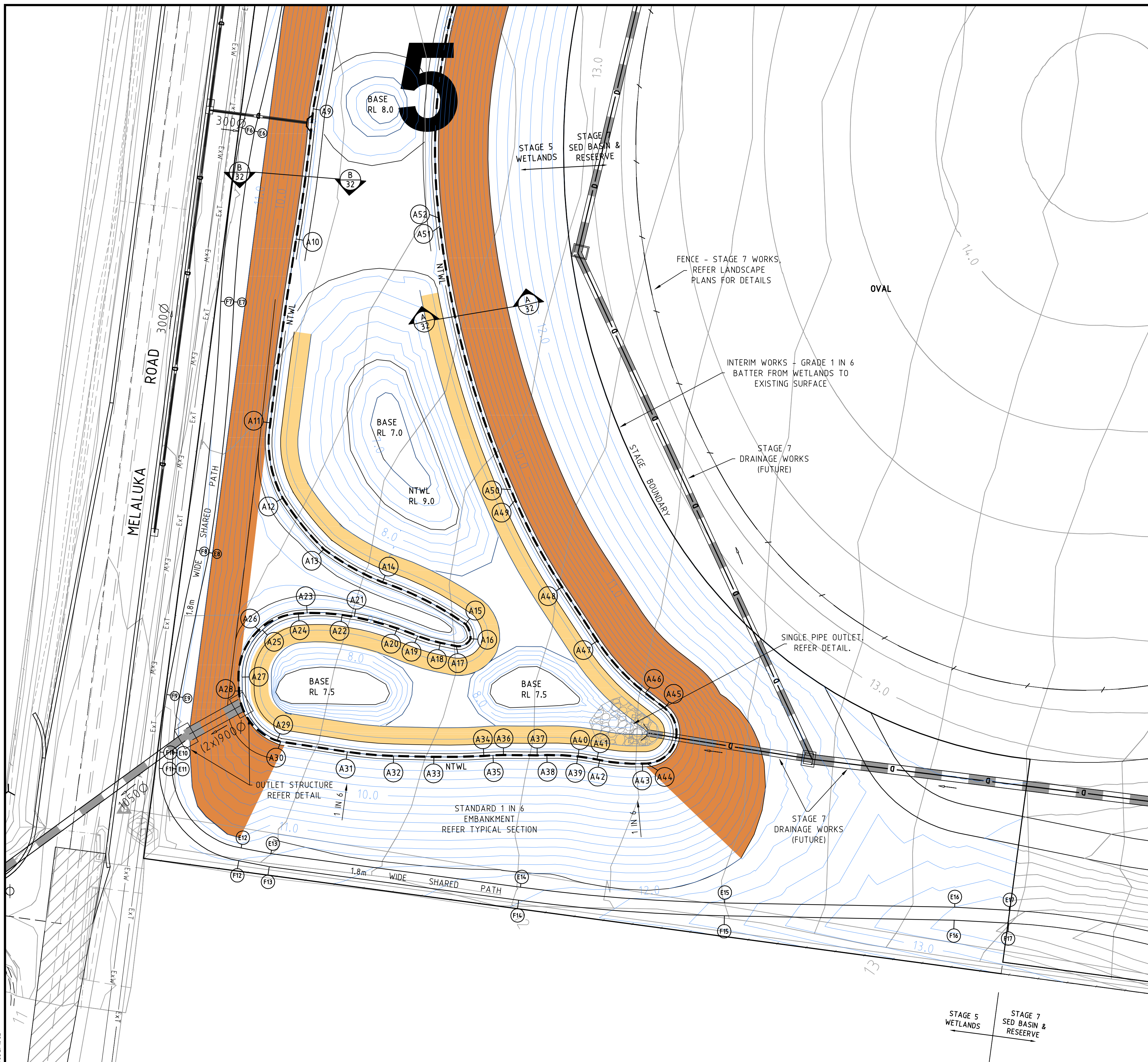
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**smec urban**  
 consulting group  
 Smec Urban  
 Level 1, 47 Pakington Street, Geelong West, VIC, 3218  
 p +61 3 5228 3100 | f +61 3 5228 3199 | www.smu.com.au

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 Brisbane +61 7 3831 8988  
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 Gold Coast +61 7 5578 0222  
 Melbourne +61 3 9869 0800  
 Tarragona +61 3 5173 0100

**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Outfall Drainage Detail Plan - 1  
 Drawing No. 0250EHL-05-29 Rev C  
 Sheet No. 29 of 40  
 Approved for Construction





Alignment A	Point no	Easting	Northing	RL
A1	9846.877	48414.885	9.000	
A2	9841.167	48422.498	9.000	
A3	9834.887	48424.658	9.000	
A4	9830.758	48416.881	9.000	
A5	9828.133	48407.173	9.000	
A6	9826.661	48389.670	9.000	
A7	9816.826	48359.048	9.000	
A8	9810.735	48333.122	9.000	
A9	9807.883	48316.462	9.000	
A10	9805.521	48298.407	9.000	
A11	9801.939	48272.936	9.000	
A12	9803.669	48262.492	9.000	
A13	9809.358	48255.428	9.000	
A14	9817.477	48250.862	9.000	
A15	9829.003	48245.033	9.000	
A16	9829.671	48243.011	9.000	
A17	9827.687	48242.000	9.000	
A18	9825.483	48242.461	9.000	
A19	9822.333	48243.395	9.000	
A20	9819.517	48244.489	9.000	
A21	9813.579	48246.118	9.000	
A22	9811.911	48246.395	9.000	
A23	9807.058	48246.605	9.000	
A24	9805.823	48246.508	9.000	
A25	9800.850	48244.245	9.000	
A26	9800.572	48243.972	9.000	
A27	9798.025	48237.710	9.000	
A28	9798.068	48235.805	9.000	
A29	9802.902	48228.945	9.000	
A30	9803.387	48228.759	9.000	
A31	9812.608	48227.347	9.000	
A32	9819.012	48226.784	9.000	
A33	9824.606	48226.653	9.000	
A34	9831.520	48226.791	9.000	
A35	9832.766	48226.869	9.000	
A36	9834.220	48226.908	9.000	
A37	9838.896	48226.863	9.000	
A38	9840.241	48226.900	9.000	
A39	9844.501	48226.713	9.000	
A40	9844.573	48226.705	9.000	
A41	9847.179	48226.287	9.000	
A42	9847.563	48226.208	9.000	
A43	9853.463	48225.710	9.000	
A44	9854.051	48225.730	9.000	
A45	9856.547	48233.419	9.000	
A46	9853.893	48235.487	9.000	
A47	9847.236	48242.718	9.000	
A48	9842.341	48250.195	9.000	
A49	9835.852	48262.244	9.000	
A50	9835.227	48263.690	9.000	
A51	9825.423	48301.155	9.000	
A52	9825.290	48301.305	9.000	
A53	9828.708	48335.494	9.000	
A54	9830.052	48339.603	9.000	
A55	9841.100	48369.210	9.000	
A56	9865.179	48397.191	9.000	
A57	9870.153	48402.777	9.000	
A58	9868.785	48406.863	9.000	

Alignment E	Point no	Easting	Northing	RL
E1	9823.119	48439.069	11.833	
E2	9822.933	48437.041	11.821	
E3	9816.126	48405.551	11.626	
E4	9807.667	48370.793	11.409	
E5	9806.092	48352.561	11.299	
E6	9799.765	48313.377	11.084	
E7	9796.900	48289.701	11.068	
E8	9793.457	48254.951	11.182	
E9	9789.368	48234.966	11.254	
E10	9788.460	48227.231	11.281	
E11	9788.354	48225.023	11.289	
E12	9797.918	48214.029	11.356	
E13	9802.026	48213.235	11.392	
E14	9804.576	48208.584	11.944	
E15	9804.863	48206.420	12.448	
E16	9896.716	48205.818	13.401	
E17	9904.276	48205.405	13.560	
E18	9929.743	48200.754	14.024	
E19	9937.791	48198.206	14.175	
E20	9956.400	48194.638	14.467	
E21	9974.919	48193.300	14.753	
E22	9991.873	48190.837	15.096	
E23	9996.279	48189.869	15.187	
E24	10009.535	48187.905	15.499	
E25	10042.063	48185.363	16.543	
E26	10062.437	48183.065	17.373	
E27	10074.984	48181.213	17.886	

Alignment F	Point no	Easting	Northing	RL
F1	9821.327	48439.234	11.806	
F2	9821.140	48437.198	11.705	
F3	9814.433	48406.162	11.485	
F4	9805.880	48371.009	11.373	
F5	9804.296	48352.667	11.373	
F6	9798.010	48313.781	11.160	
F7	9795.102	48289.784	11.141	
F8	9791.687	48255.285	11.252	
F9	9787.599	48235.299	11.317	
F10	9786.662	48227.317	11.345	
F11	9786.554	48225.052	11.352	
F12	9797.576	48212.262	11.430	
F13	9801.786	48211.451	11.484	
F14	9836.336	48206.800	12.019	
F15	9864.829	48204.620	12.513	
F16	9896.618	48204.021	13.477	
F17	9904.178	48203.608	13.635	
F18	9928.837	48197.894	14.096	
F19	9936.885	48195.346	14.250	
F20	9956.184	48191.646	14.548	
F21	9974.703	48190.307	14.831	
F22	9991.229	48187.907	15.168	
F23	9995.635	48186.939	15.255	
F24	10009.301	48184.914	15.574	
F25	10041.829	48182.372	16.619	
F26	10061.998	48180.097	17.445	
F27	10074.546	48178.245	17.961	

**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

**LEGEND - LAYOUT PLAN**

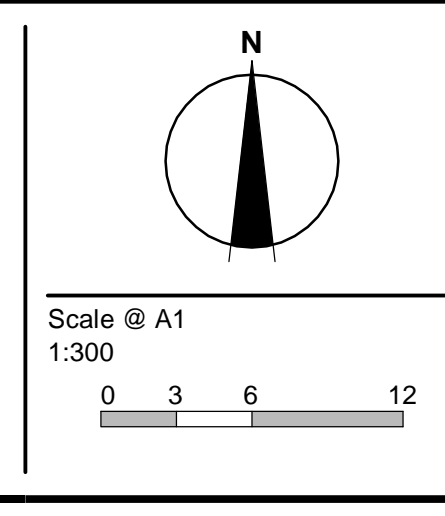
- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- TACTILE PAVERS
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING TELSTRA
- EXISTING WATER
- EXISTING STORMWATER DRAIN
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LINE LEVEL
- FINISHED RIDGE LINE LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RETAINING WALL
- ZERO LOT LINES
- PAVEMENT TREATMENT
- STRUCTURAL FILL > 200mm DEEP
- EX. STRUCTURAL FILL > 200mm DEEP
- DIRECTION OF FALL
- OVERLAND FLOW
- ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN
- "NO ROAD" SIGN & BARRIER
- LIMIT OF WORKS
- EXISTING TREE TO BE REMOVED
- PERMANENT SURVEY MARK
- TEMPORARY BENCH MARK
- PROPOSED DRIVEWAY

- SAFETY BENCH
- STEPPED ROCK EMBANKMENT
- NTWL
- DESIGN CONTOUR

REVISION	DATE	DES/DF	APPD
C MINOR AMENDMENTS	07.04.11	CB/CB	JG
B COUNCIL AMENDMENTS	22.02.11	CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	20.01.11	CB/CB	JG

**estuary leopold**  
 Principal  
 Leopold Property Developments Pty Ltd  
 Level 1, 6 Riverside Quay  
 Southbank, Victoria 3006

Designed  
C.Barker  
 Drawn  
C.Barker  
 Checked  
C.Birkett  
 Authorised  
J.Golden  
 Date  
October 2010



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 consulting group  
 Smec Urban  
 Level 1, 47 Parkington Street, Geelong West, VIC, 3218  
 p +61 3 5228 3100 | f +61 3 5228 3199 | www.smu.com.au

Adelaide +61 8 8223 6455 Gold Coast +61 7 5578 0222  
 Brisbane +61 7 3831 8988 Melbourne +61 3 9869 0800  
 Canberra +61 2 6126 1900 Tarragona +61 3 5173 0130

**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Outfall Drainage Detail Plan - 2

Drawing No. **0250EHL-05-30** Rev C  
 Sheet No. 30 of 40

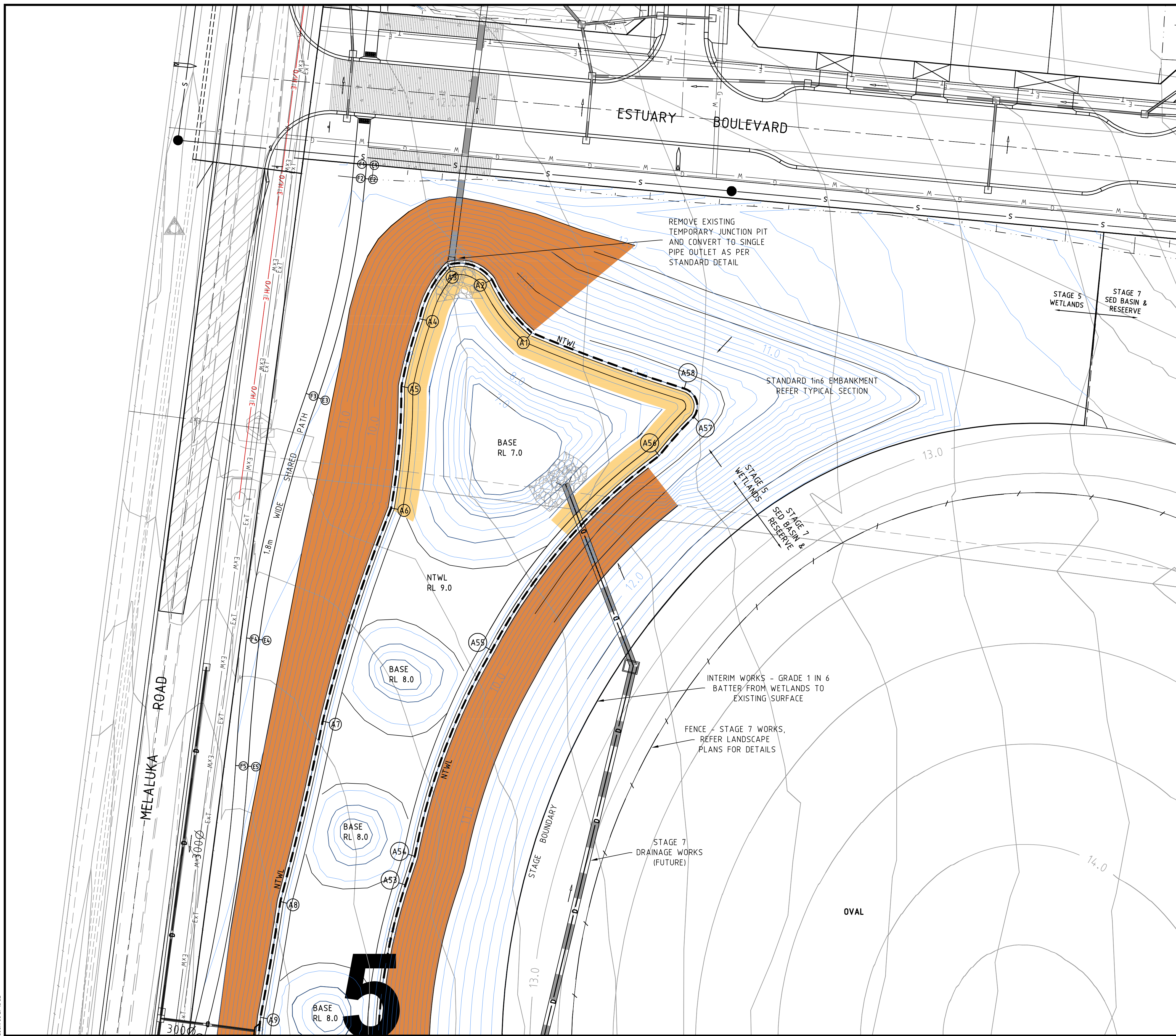
**Approved for Construction**



**WARNING**  
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**DIAL 1100 BEFORE YOU DIG**  
 www.1100.com.au

- LEGEND - LAYOUT PLAN**
- S — S — STORMWATER DRAIN, PIT & PROPERTY INLET
  - SW — SWALE DRAIN
  - H — HOUSE DRAIN
  - S — SEWER & MAINTENANCE STRUCTURES
  - G — SERVICE CONDUITS
  - Ex E — EXISTING ELECTRICITY (UNDERGROUND)
  - O/H E — EXISTING ELECTRICITY (OVERHEAD)
  - Ex G — EXISTING GAS
  - Ex T — EXISTING TELSTRA
  - Ex W — EXISTING WATER
  - Ex D — EXISTING STORMWATER DRAIN
  - Ex S — EXISTING SEWER
  - H — EXISTING HOUSE DRAIN
  - S — EXISTING SWALE DRAIN
  - 141.34 — EXISTING SURFACE LEVEL
  - F5148.35 — FINISHED BUILDING LINE LEVEL
  - FR157.40 — FINISHED RIDGE LINE LEVEL
  - TW159.30 — TOP OF RETAINING WALL
  - BW159.30 — BOTTOM OF RETAINING WALL
  - — RETAINING WALL
  - — ZERO LOT LINES
  - — PAVEMENT TREATMENT
  - — STRUCTURAL FILL > 200mm DEEP
  - — EX. STRUCTURAL FILL > 200mm DEEP
  - — DIRECTION OF FALL
  - — OVERLAND FLOW
  - — ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
  - — CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
  - — LIMIT OF WORKS
  - — EXISTING TREE TO BE REMOVED
  - — PERMANENT SURVEY MARK
  - — TEMPORARY BENCH MARK
  - — PROPOSED DRIVEWAY

- — SAFETY BENCH
- — STEPPED ROCK EMBANKMENT
- — NTWL
- — DESIGN CONTOUR



REVISION	DATE	DES/DFT	APPD
C	07.04.11	CB/CB	JG
B	22.02.11	CB	JG
A	20.01.11	CB/CB	JG

**estuary leopold**

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

Designed  
C.Barker

Drawn  
C.Barker

Checked  
C.Birkett

Authorised  
J.Golden

Date  
October 2010

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Scale @ A1  
 1:300

0 3 6 12

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 Level 1, 47 Pakington Street, Geelong West, VIC, 3218  
 p +61 3 5228 3100 | f +61 3 5228 3199 | www.smu.com.au

Adelaide +61 8 8223 6455  
 Brisbane +61 7 3831 8988  
 Canberra +61 2 6126 1900

Gold Coast +61 7 5578 0222  
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**Estuary**  
 Stage 5  
 City of Greater Geelong  
 Roadworks and Drainage  
 Outfall Drainage Detail Plan - 3

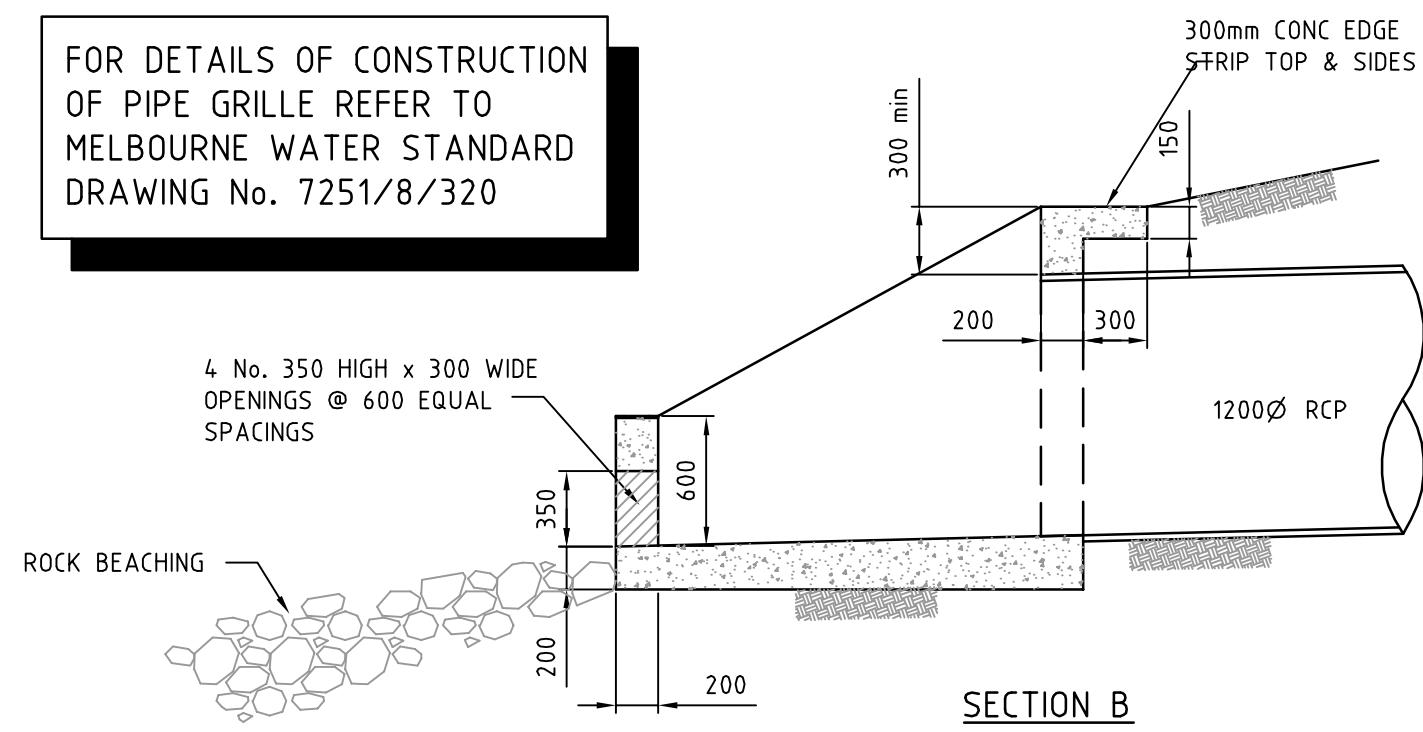
Drawing No. **0250EHL-05-31** Rev C  
 Sheet No. 31 of 40

Approved for Construction

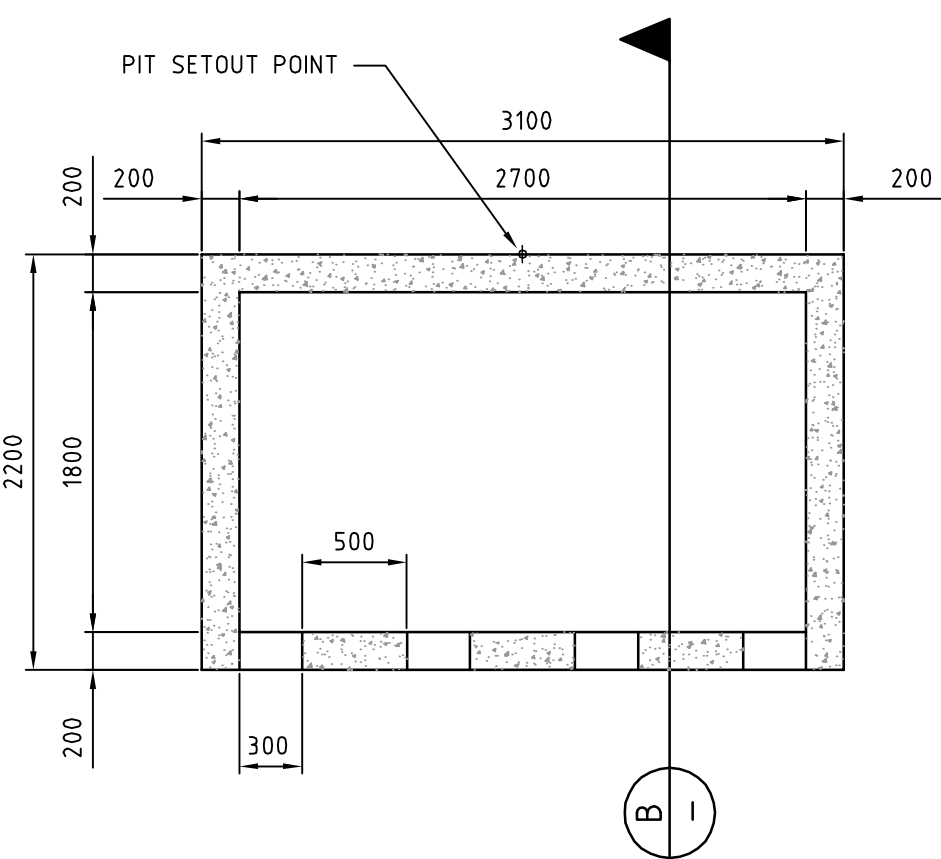
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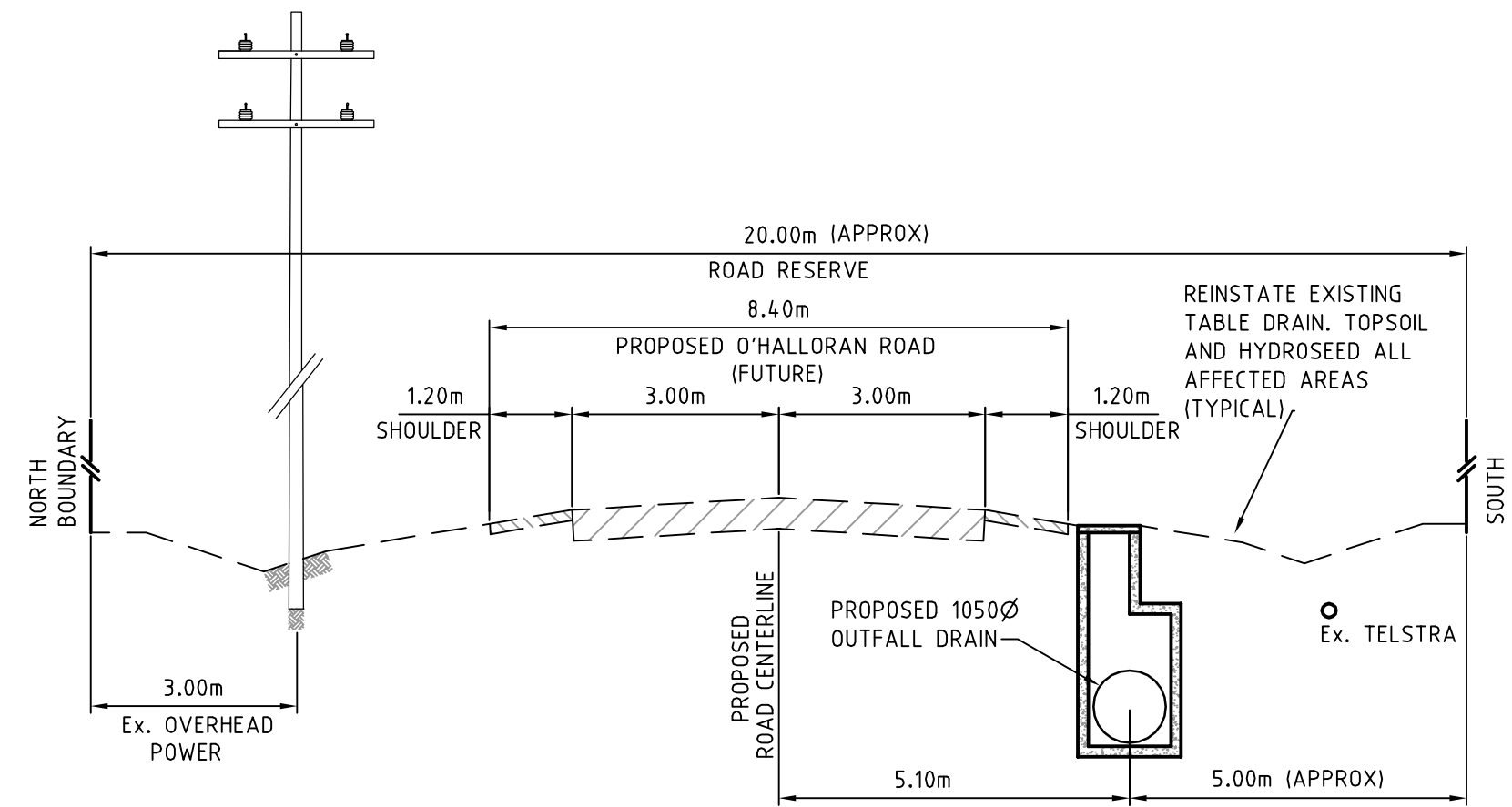
FOR DETAILS OF CONSTRUCTION OF PIPE GRILLE REFER TO MELBOURNE WATER STANDARD DRAWING No. 7251/8/320



REEDY LAKE OUTLET PIT #1 DETAIL  
NOT TO SCALE



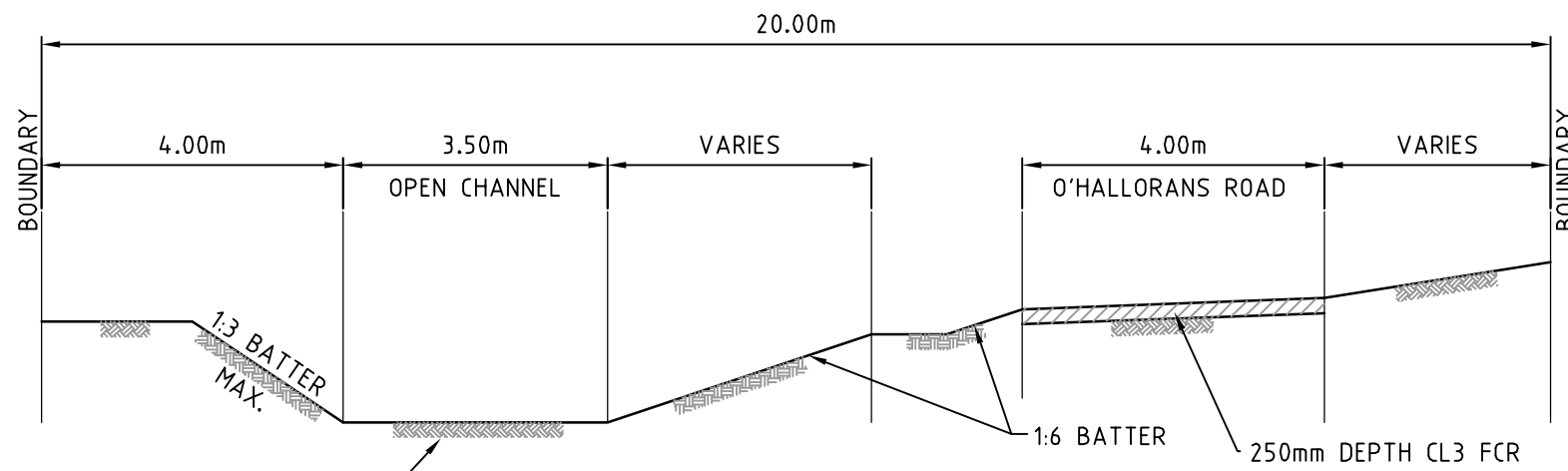
TYPICAL O'HALLORAN ROAD  
NOT TO SCALE



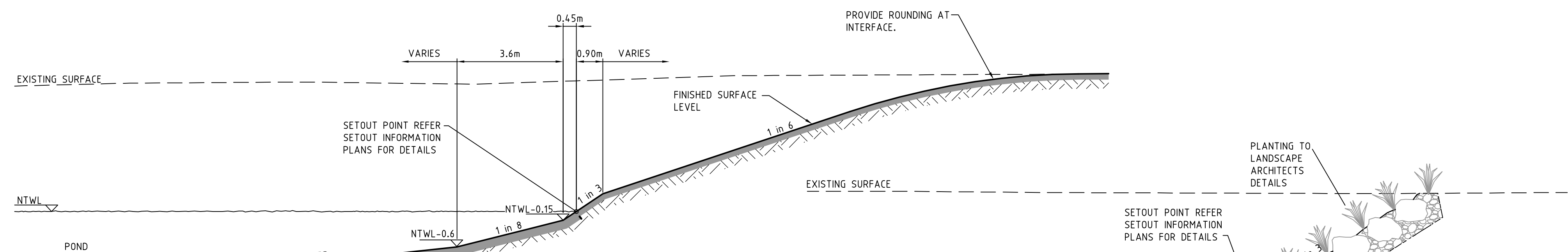
TYPICAL SECTION EMBANKMENT TO POND



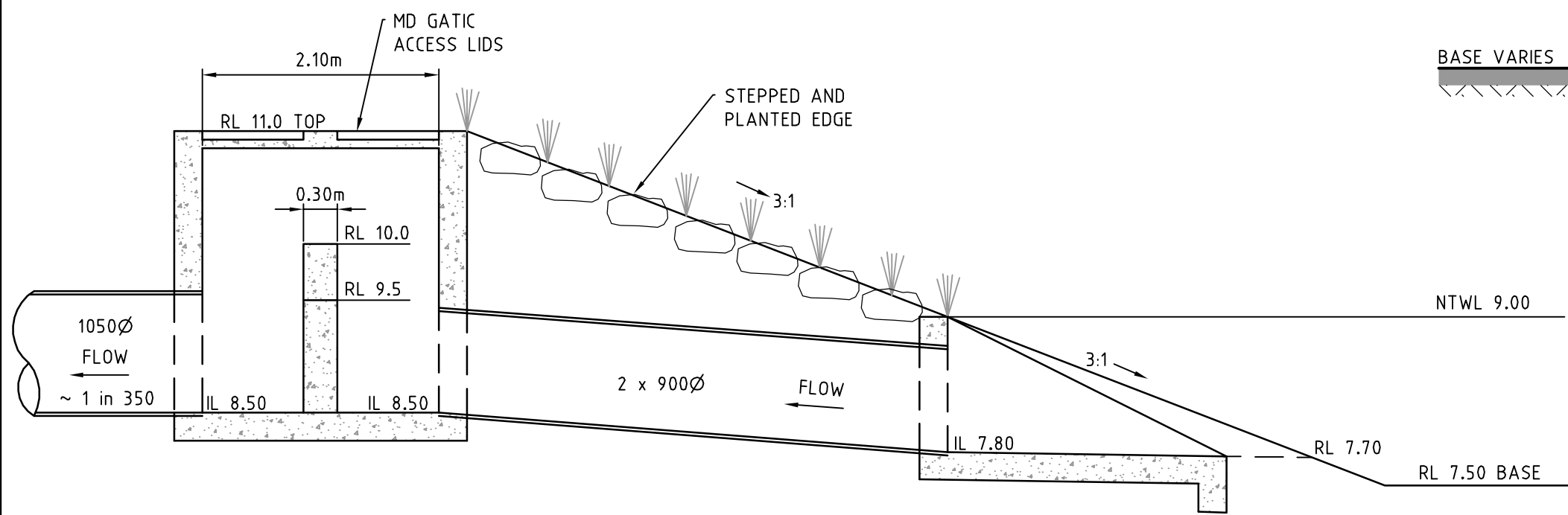
TYPICAL ROCK STEPPED EMBANKMENT



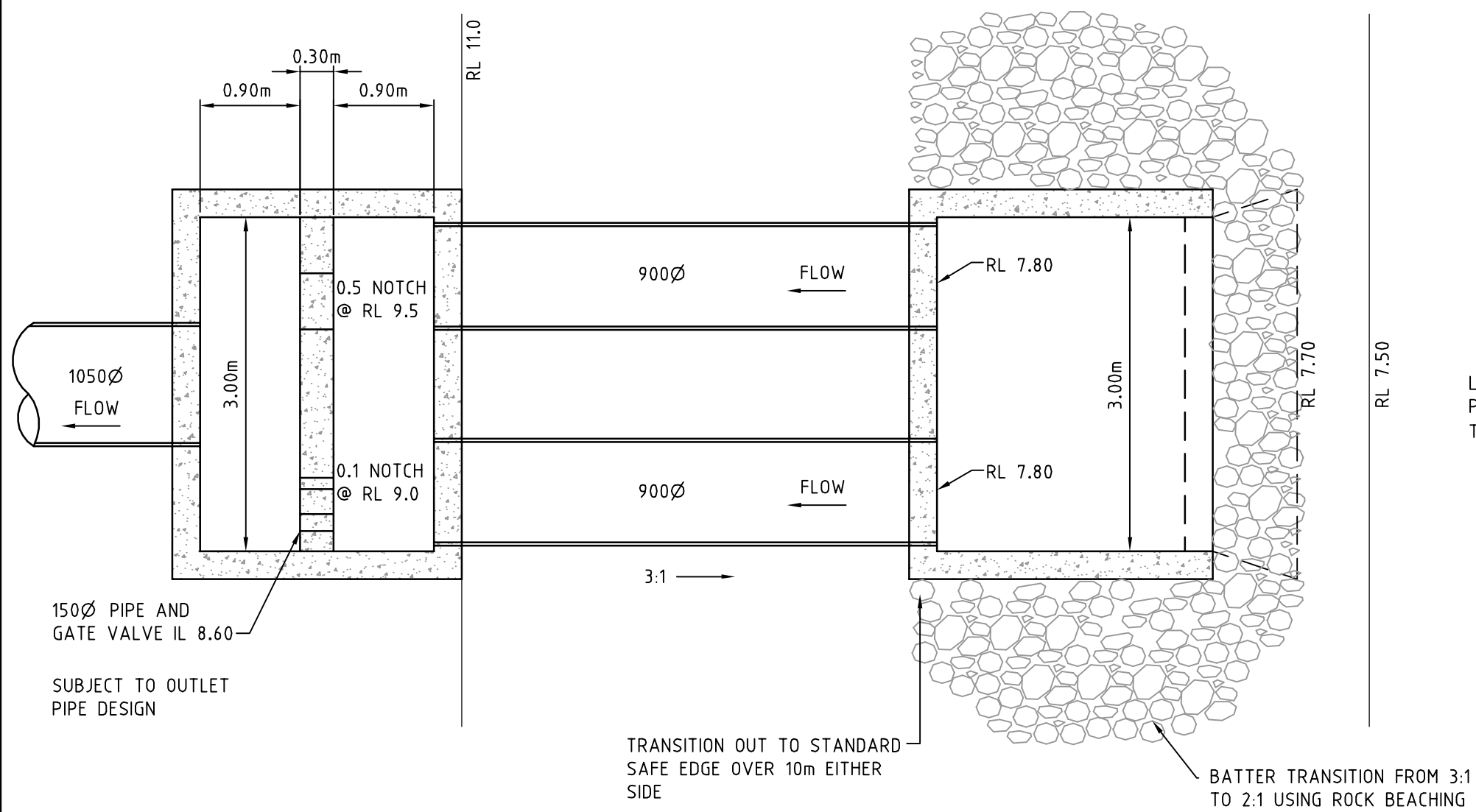
SECTION DD 29  
NTS



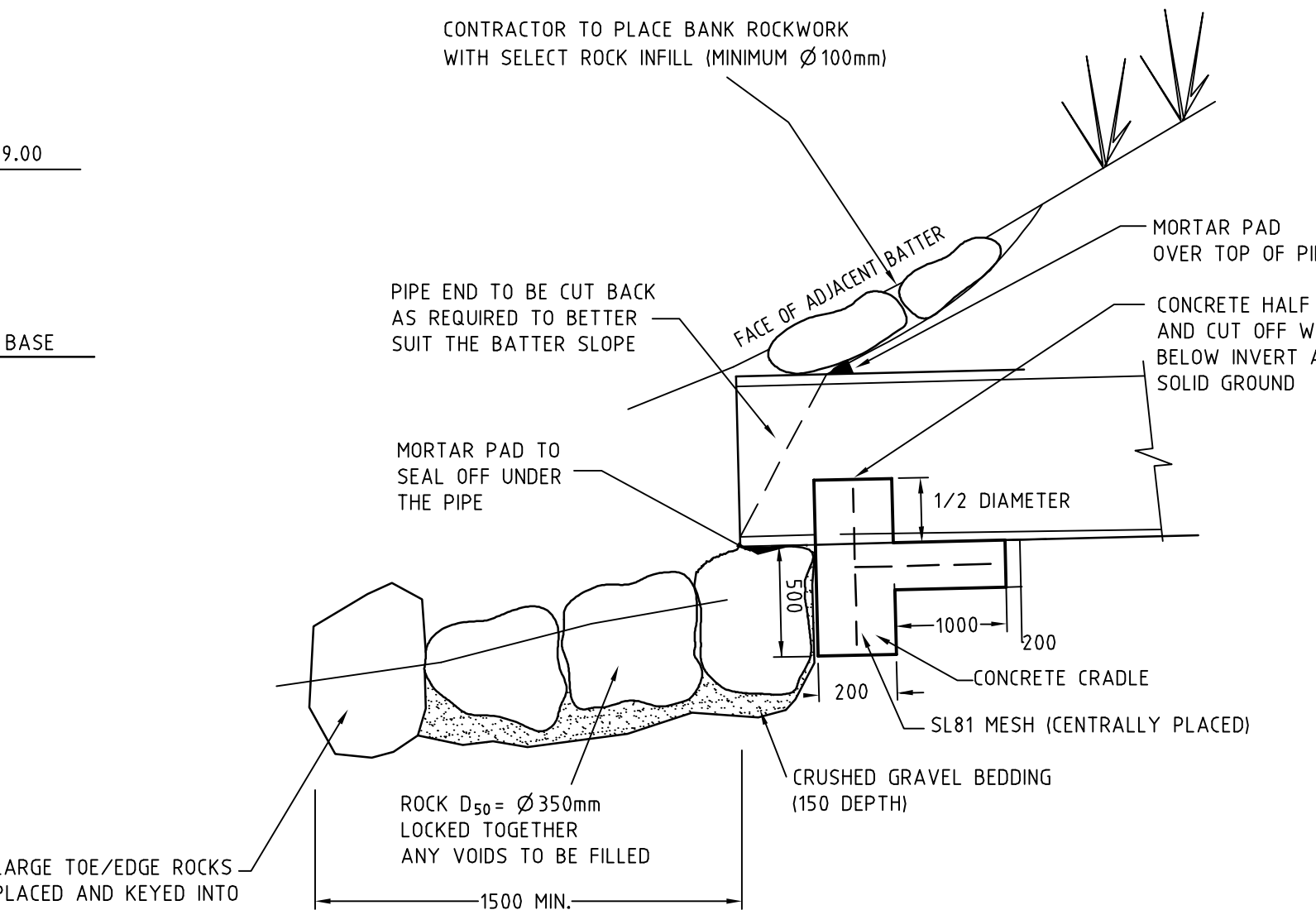
TYPICAL ROCK STEPPED EMBANKMENT WITH PONDS



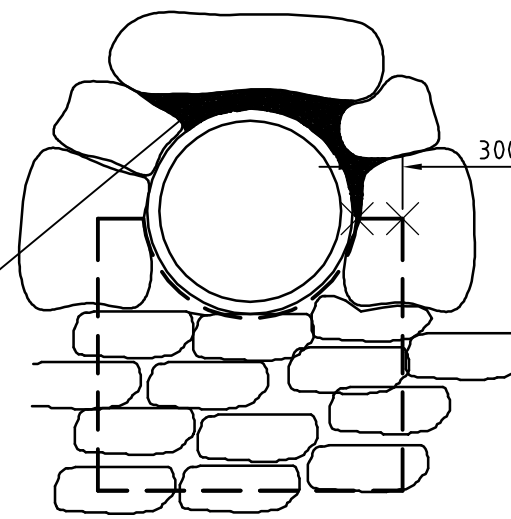
SECTION AA 30  
NTS



OUTLET WORKS ON MELALUKA ROAD FRONTAGE  
NOT TO SCALE



TYPICAL SECTION SINGLE PIPE OUTLET DETAIL  
NOT TO SCALE



ELEVATION - SINGLE PIPE

**ROCK SIZING FOR GENERAL ROCKFILL**  
ROCK SHAPE AND QUALITY  
THE ROCK SUPPLIED FOR GENERAL ROCKFILL SHALL BE:  
- ONLY PLACED OVER PROPERLY PREPARED SURFACES, FREE OF UNSUITABLE FOUNDATION MATERIALS, TOPSOIL AND ORGANIC MATERIALS.  
- HARD, TOUGH AND DURABLE WITH A CRUSHING STRENGTH OF AT LEAST 25 MPa.  
- A WELL GRADED MIXTURE, WHICH ENSURES THAT ALL VOIDS BETWEEN LARGE ROCKS ARE FILLED WITH ROCKS OF PROGRESSIVELY SMALLER SIZE.  
- FREE OF DEFINED CLEAVAGE PLANES AND NOT ADVERSELY AFFECTED BY REPEATED WETTING AND DRYING.  
- PREDOMINANTLY ANGULAR IN SHAPE WITH NOT MORE THAN 25% OF ROCKS, DISTRIBUTED THROUGH THE GRADATION, HAVING A LENGTH MORE THAN TWICE THE BREADTH OR THICKNESS. NO ROCK SHOULD HAVE A LENGTH EXCEEDING 2.5 TIMES ITS BREADTH OR THICKNESS.  
- MATCHED AS CLOSELY AS POSSIBLE, TO THE COLORATION OF MATERIALS IN THE PARTICULAR STREAM SETTING.  
ROCK GRADING  
EXCEPT IN PERIPHERAL AREAS WHICH ARE TO TAPER OUT, THE THICKNESS OF ANY ROCKFILL LAYER SHALL NOT BE LESS THAN THAT SHOWN ON THE DESIGN DRAWINGS, SUBJECT TO A MINIMUM THICKNESS OF 2 x Ø50 WHICH IS 24300 x 450 MM IN THIS INSTANCE.  
A WELL GRADED MIXTURE, WHICH ENSURES THAT ALL VOIDS BETWEEN LARGE ROCKS ARE FILLED WITH A 50/50 MIX OF ROCKS OF PROGRESSIVELY SMALLER SIZE (Ø-100MM) WITH SITE TOPSOIL (CLAY LOAM), WATER IN SOIL AND ROCK COMBINATION PROGRESSIVELY BEFORE EACH NEW LAYER OF LARGER ROCK AND SOIL IS INTRODUCED TO ENSURE A SOLID SOIL AND ROCK MASS FREE OF AIR VOIDS AND SUITABLE FOR LONG TERM PLANT GROWTH. CONTRACTOR IS TO CONFIRM WITH TESTING THAT ALL SOILS TO BE USED ARE TO BE OF NON DISPERSIVE NATURE PRIOR TO PLACEMENT (BY DETERMINATION OF EMERSON CLASS NO).

ROCK WORK & GRANULAR ROCK INFILL BY OTHERS. REFER LANDSCAPE ARCHITECT PLANS

ROCK WORK & GRANULAR ROCK INFILL BY OTHERS. REFER LANDSCAPE ARCHITECT PLANS

REVISION	DATE	DES/DF	APPD
C MINOR AMENDMENTS	07.04.11	CB/CB	JG
B COUNCIL AMENDMENTS	22.02.11	JG	
A ISSUED TO COUNCIL FOR APPROVAL	20.01.11	CB/CB	JG

**estuary leopold**  
Principal  
Leopold Property Developments Pty Ltd  
Level 1, 6 Riverside Quay  
Southbank, Victoria 3006

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010

Scale @ A1  
As Shown

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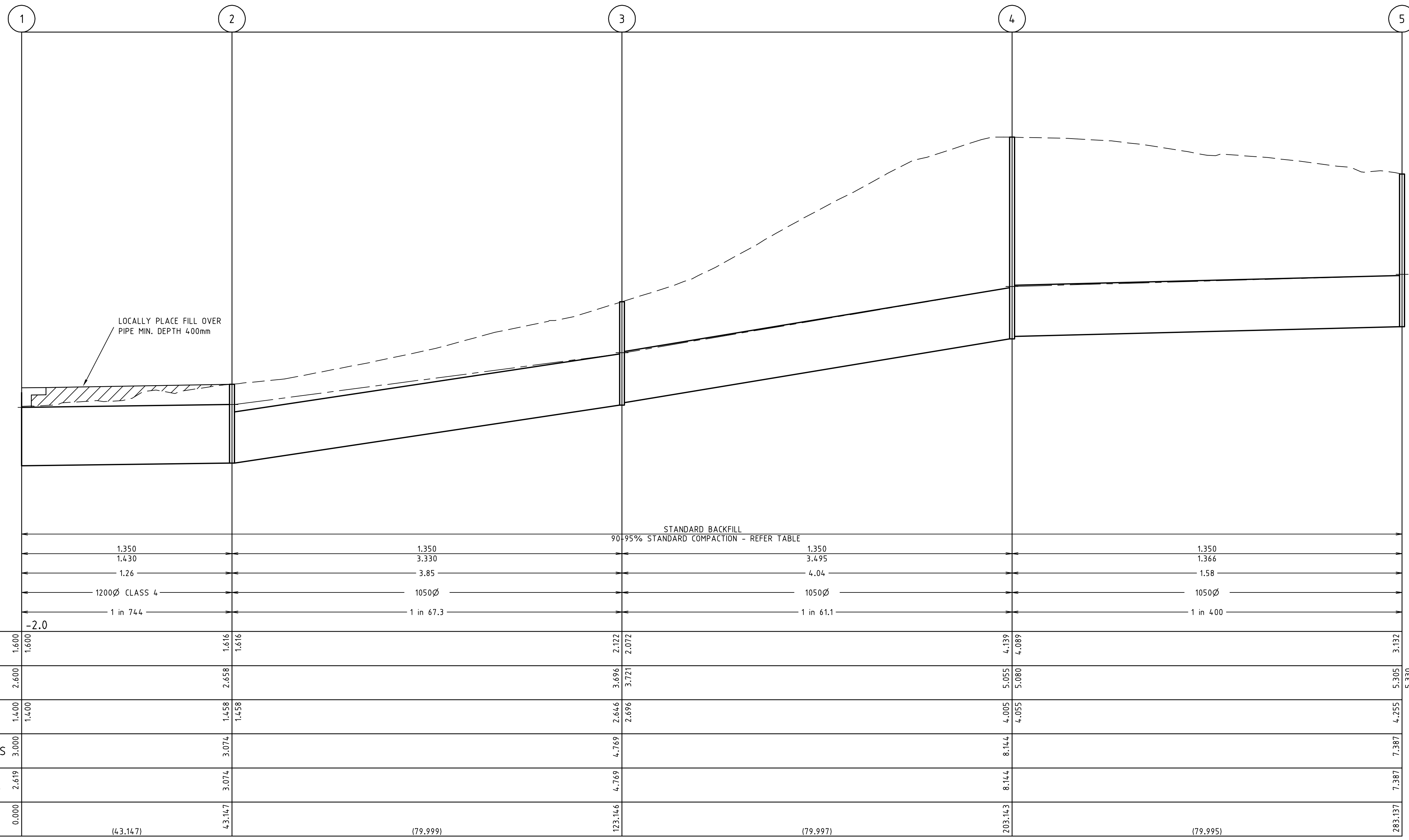
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consulting group  
Smec Urban  
Level 1, 47 Pakington Street, Geelong West, VIC, 3218  
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Adelaide +61 8 8223 6455  
Brisbane +61 7 3831 8988  
Carlisle +61 2 6126 1900  
Gold Coast +61 7 5578 0222  
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**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Outfall Drainage Details  
Drawing No. 0250EHL-05-32  
Sheet No. 32 of 40  
Rev C  
Approved for Construction



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



WITHIN TRENCH FILL ZONE AND UP TO:	MINIMUM DENSITY RATIO REQUIRED	MOISTURE CONTENT % OF STANDARD OMC	TEST FREQUENCY REQUIRED
Within 600mm of finished surface level: (Use Selected Fill.)	95% (minimum)	85% to 115%	1 test * per two layers per 40m length (or part thereof)
600mm below the finished surface level: (Use Ordinary or Selected Fill)	90% minimum	85% to 115%	1 test * per two layers per 100m length (or part thereof)

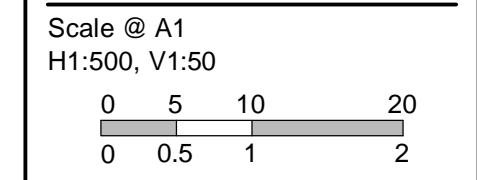
\*Note that 'test' means one field test plus one laboratory test

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REVISION	DATE	DES/DFT	APPD
C MINOR AMENDMENTS	07.04.11	CB/CB	JG
B COUNCIL AMENDMENTS	22.02.11	CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	20.01.11	CB/CB	JG

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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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Brisbane +61 7 3831 8988  
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Melbourne +61 3 9869 0800  
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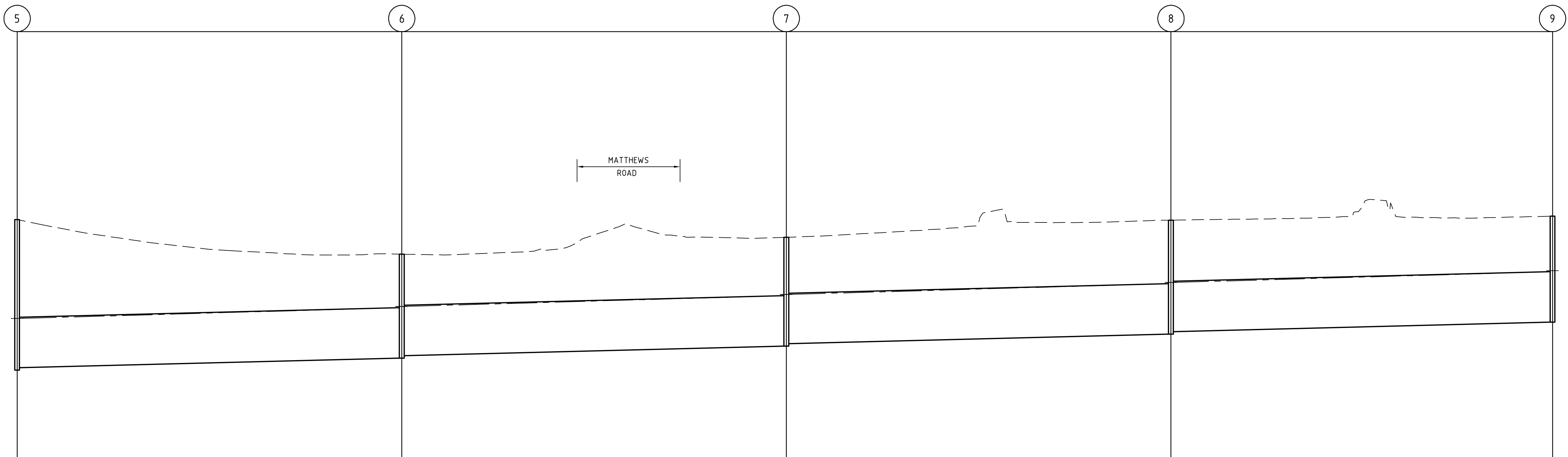
**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Outfall Drainage Longitudinal Sections - 1

Drawing No. **0250EHL-05-33** Rev **C**  
Sheet No. 33 of 40

Approved for Construction



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



	5	6	7	8	9
STANDARD BACKFILL	90-95% STANDARD COMPACTION - REFER TABLE		CRB CROSSING	90-95% STANDARD COMPACTION - REFER TABLE	
CRB CROSSING					
STANDARD BACKFILL	90-95% STANDARD COMPACTION - REFER TABLE		CRB CROSSING	90-95% STANDARD COMPACTION - REFER TABLE	
DESIGN FLOW (m <sup>3</sup> /s)	1.350		1.350		1.350
CAPACITY (m <sup>3</sup> /s)	1.366		1.366		1.366
AT GRADE VELOCITY (m/s)	1.58		1.58		1.58
PIPE SIZE (mm)	1050Ø		1050Ø		1050Ø
GRADE	1 in 400		1 in 400		1 in 400
DATUM	1.0				

DEPTH TO INVERT	3.132	3.082	2.165	2.266	2.216	2.208
HYDRAULIC GRADE LINE	5.305	5.330	5.555	5.805	6.055	6.304
INVERT LEVEL	4.255	4.305	4.555	4.755	5.005	5.254
FINISHED SURFACE LEVELS	7.387	6.670	7.021	7.378	7.378	7.442
EXISTING SURFACE LEVEL	7.387	6.670	7.021	7.378	7.378	7.442
CHAINAGE (Reach Length)	283.137	363.125	443.100	523.091	602.445	
	(79.988)		(79.975)	(79.991)	(79.355)	

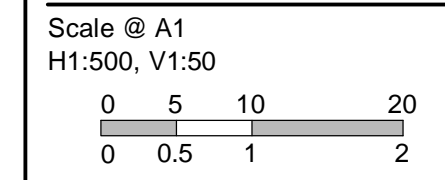
WITHIN TRENCHFILL ZONE AND UP TO:	MINIMUM DENSITY RATIO REQUIRED	MOISTURE CONTENT % OF STANDARD OMC	TEST FREQUENCY REQUIRED
Within 600mm of finished surface level: (Use Selected Fill.)	95% (minimum)	85% to 115%	1 test * per two layers per 40m length (or part thereof)
600mm below the finished surface level: (Use Ordinary or Selected Fill)	90% minimum	85% to 115%	1 test * per two layers per 100m length (or part thereof)

\*Note that 'test' means one field test plus one laboratory test

REVISION	DATE	DES/DFT	APPD
C MINOR AMENDMENTS	07.04.11	CB/CB	JG
B COUNCIL AMENDMENTS	22.02.11	CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	20.01.11	CB/CB	JG

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

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Outfall Drainage Longitudinal Sections - 2

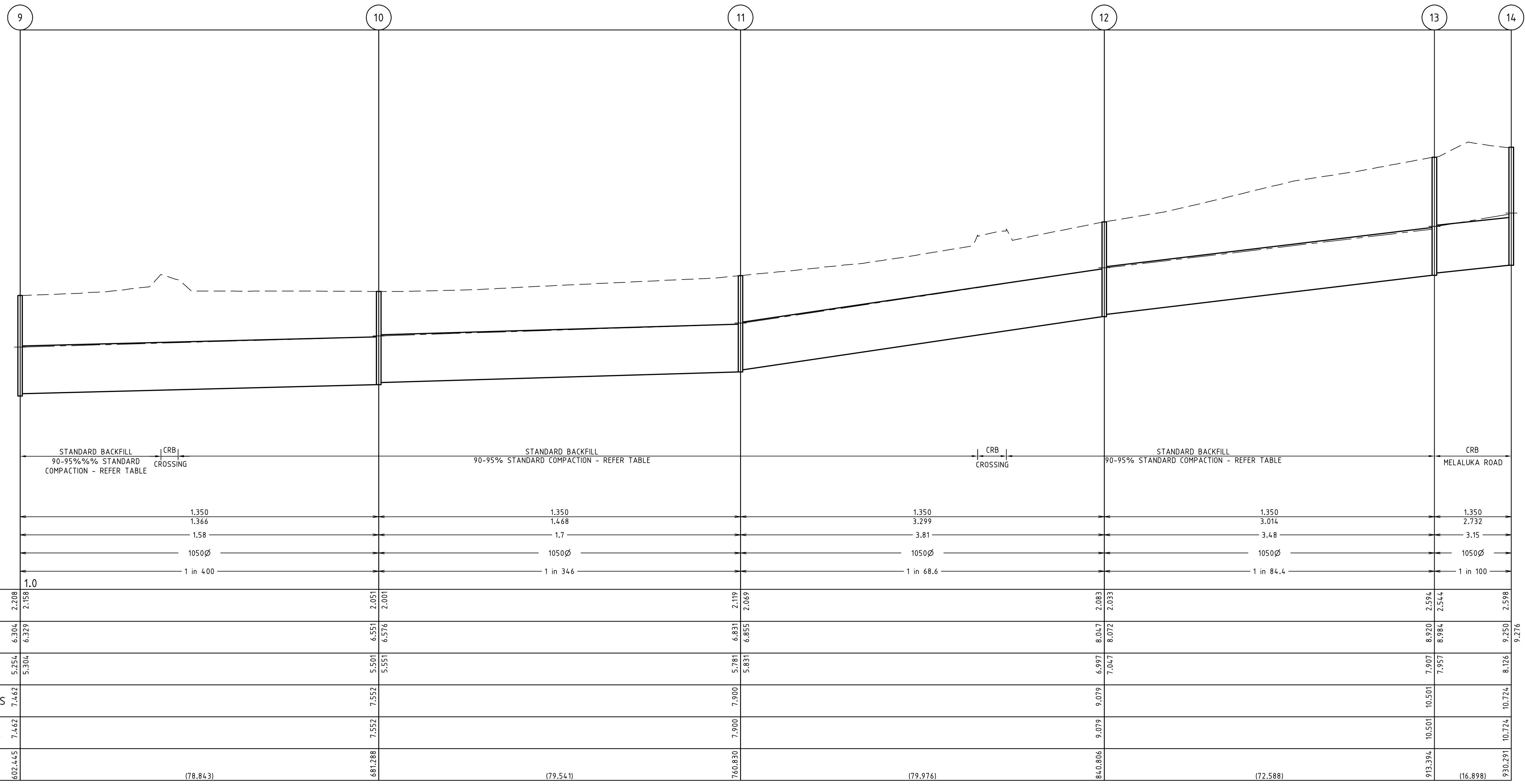
**Drawing No. 0250EHL-05-34** **Rev C**  
Sheet No. 34 of 40

Approved for Construction

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



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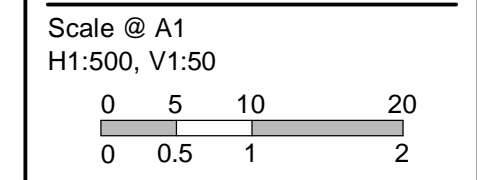
\*Note that 'test' means one field test plus one laboratory test

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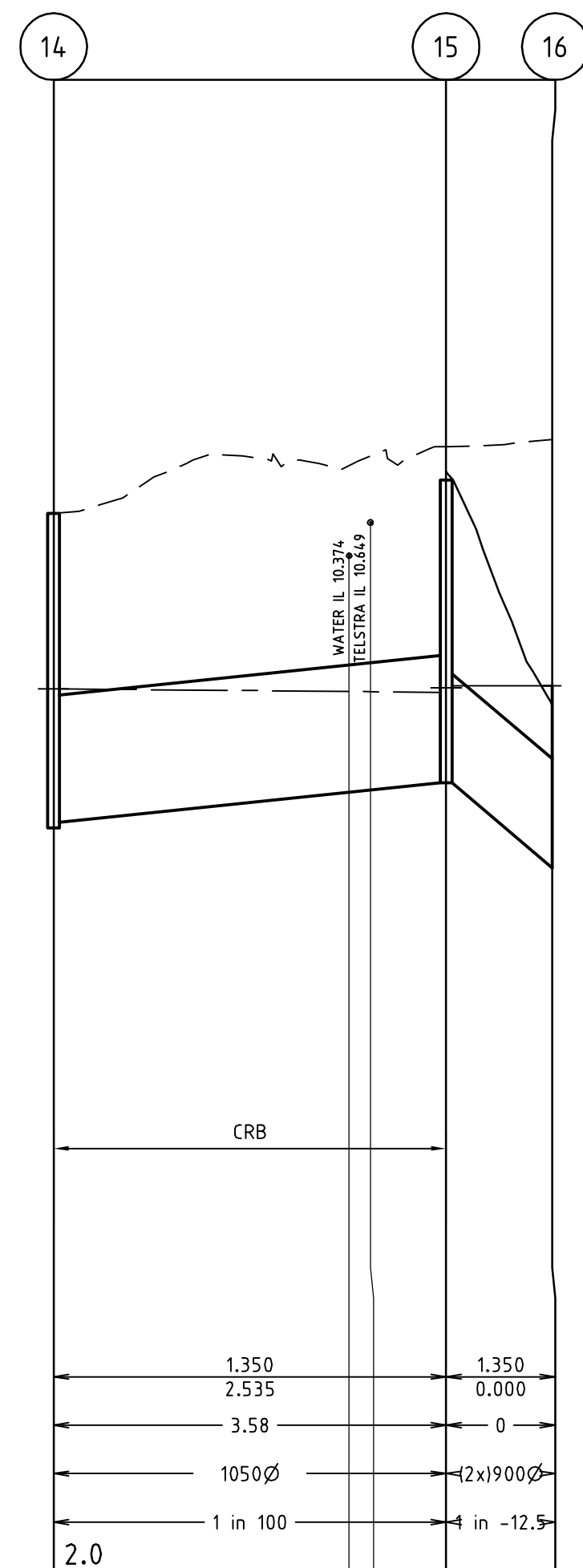
**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Outfall Drainage Longitudinal Sections - 3

**Drawing No. 0250EHL-05-35** **Rev C**  
Sheet No. 35 of 40

Approved for Construction



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



DESIGN FLOW (m3/s)	1.350	1.350								
CAPACITY (m3/s)	2.535	0.000								
AT GRADE VELOCITY (m/s)	3.58	0								
PIPE SIZE (mm)	1050Ø	12x1900Ø								
GRADE	1 in 100	1 in -12.5								
DATUM	2.0									
DEPTH TO INVERT	930.291	956.665	956.665	962.665	971.406	2.598	2.548	2.500	2.500	1.500
HYDRAULIC GRADE LINE	9.250	9.250	9.250	9.250	9.250	9.250	9.250	9.250	9.250	9.300
INVERT LEVEL	8.126	8.176	8.42	8.44	8.500	8.500	8.500	8.500	8.500	7.800
FINISHED SURFACE LEVELS	10.724				11.000	11.000	11.000	11.000	11.000	9.300
EXISTING SURFACE LEVEL	10.724				11.274	11.274	11.274	11.274	11.274	11.332
CHAINAGE (Reach Length)	930.291	(32.374)	956.665	956.665	962.665	962.665	962.665	962.665	962.665	971.406

PIT NUMBER	TYPE	INTERNAL		INLET DIAMETER (mm)	OUTLET		F.S.L. (m)	DEPTH (m)	STANDARD DRAWING	REMARKS
		WIDTH (mm)	LENGTH (mm)		DIAMETER (mm)	INVERT R.L.(m)				
1	ENDWALL			1200			2.900	1.500	REFER DETAIL	
2	JP	900	1500	1050	1.458	1200	1.458	3.074	SD420 & SD410	HAUNCH TO 900 x 900 WITH HD COVER
3	JP	900	1500	1050	2.696	1050	2.646	4.769	SD420 & SD410	
4	JP	900	1500	1050	4.055	1050	4.005	8.144	SD420 & SD410	
5	JP	900	1500	1050	4.305	1050	4.255	7.387	SD420 & SD410	
6	JP	900	1500	1050	4.555	1050	4.505	6.670	SD420 & SD410	
7	JP	900	1500	1050	4.805	1050	4.755	7.021	SD420 & SD410	
8	JP	900	1500	1050	5.055	1050	5.005	7.378	SD420 & SD410	
9	JP	900	1500	1050	5.304	1050	5.254	7.462	SD420 & SD410	
10	JP	900	1500	1050	5.551	1050	5.501	7.552	SD420 & SD410	
11	JP	900	1500	1050	5.831	1050	5.781	7.900	SD420 & SD410	
12	JP	900	1500	1050	7.047	1050	6.997	9.079	SD420 & SD410	
13	JP	1500	1500	1050	7.957	1050	7.907	10.501	SD420 & SD410	
14	JP	900	1500	1050	8.176	1050	8.126	10.724	SD420 & SD410	
15	JP	REFER DETAIL	REFER DETAIL	(2x) 900	8.500	1050	8.500	11.000	REFER DETAIL	
16	ENDWALL						7.800	9.300	REFER DETAIL	

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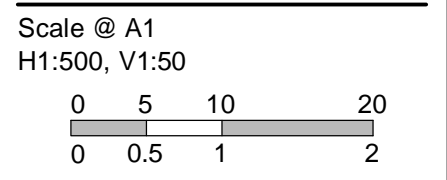
\*Note that 'test' means one field test plus one laboratory test

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REVISION	DATE	DES/DFT	APPD
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Principal  
Leopold Property Developments Pty Ltd  
Level 1, 6 Riverside Quay  
Southbank, Victoria 3006

Designed  
C.Barker  
Drawn  
C.Barker  
Checked  
C.Birkett  
Authorised  
J.Golden  
Date  
October 2010



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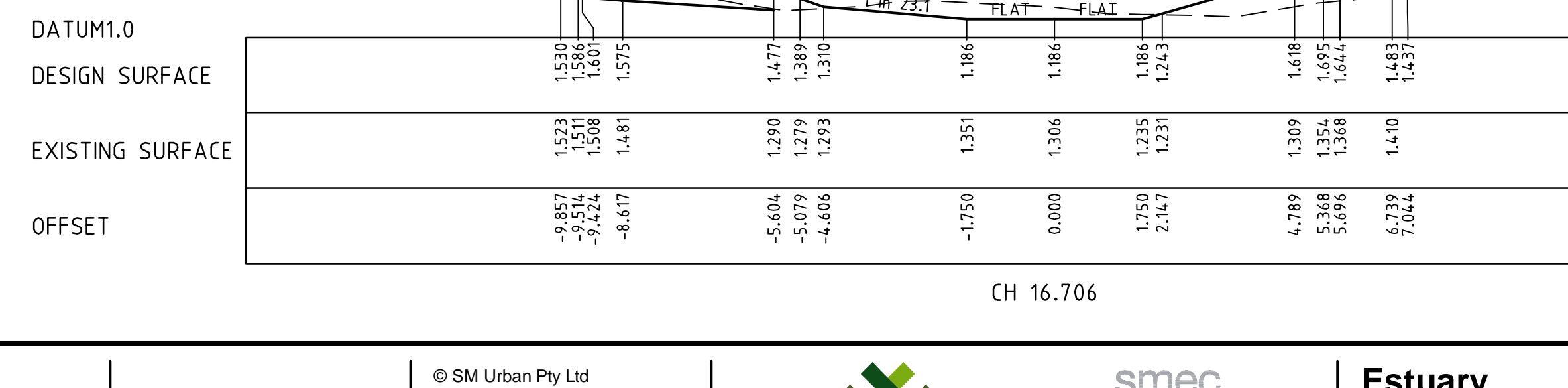
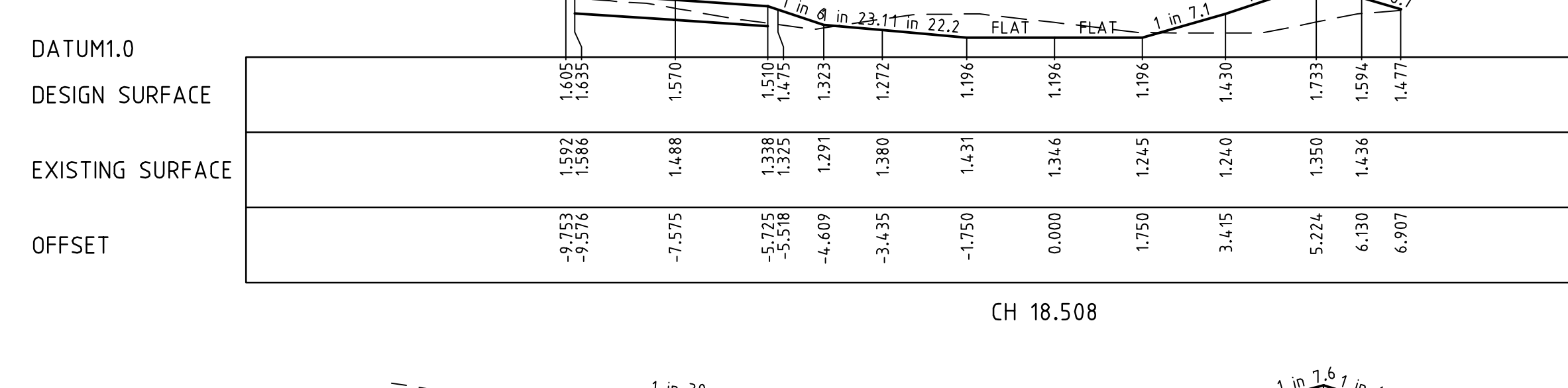
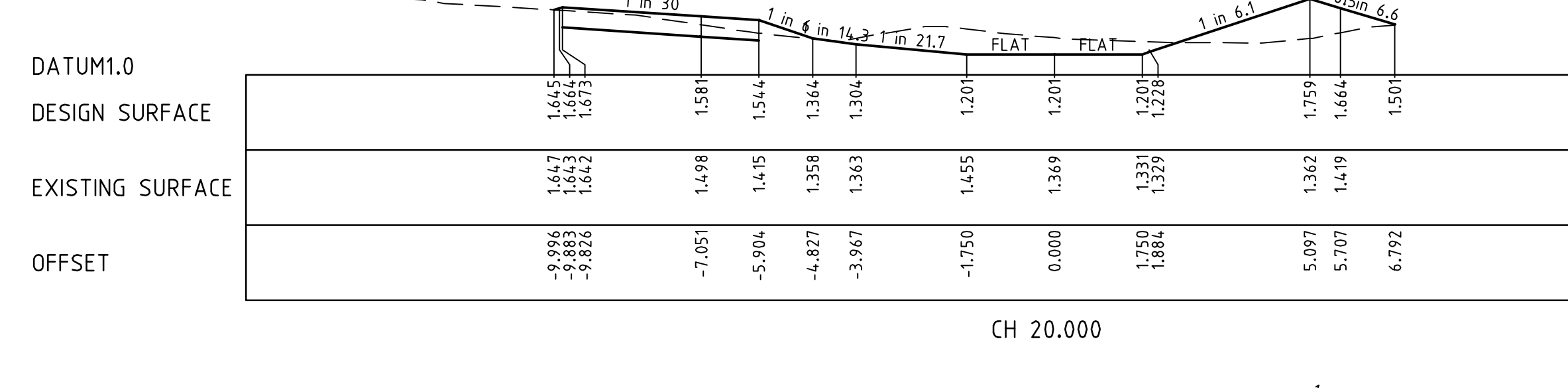
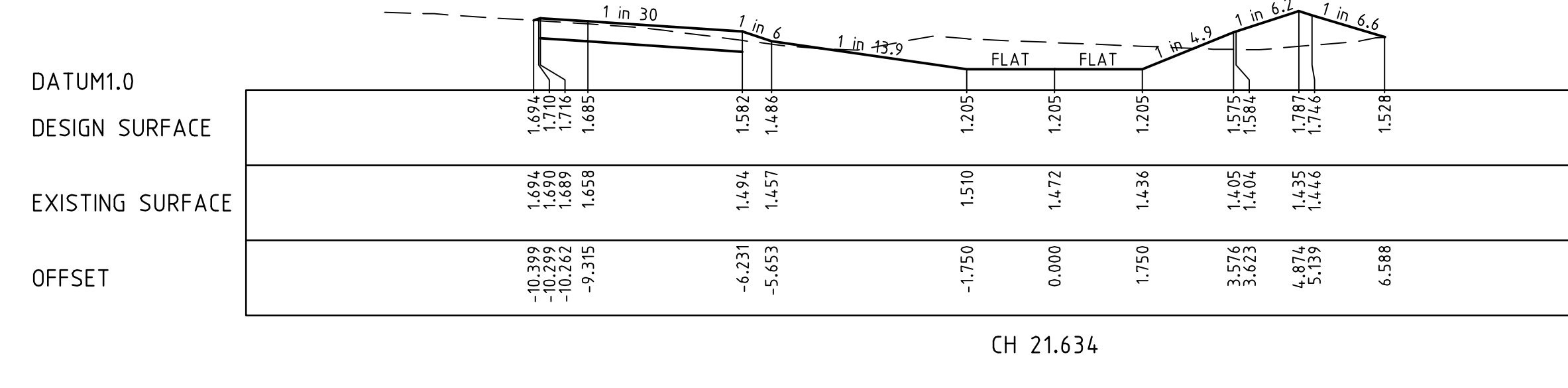
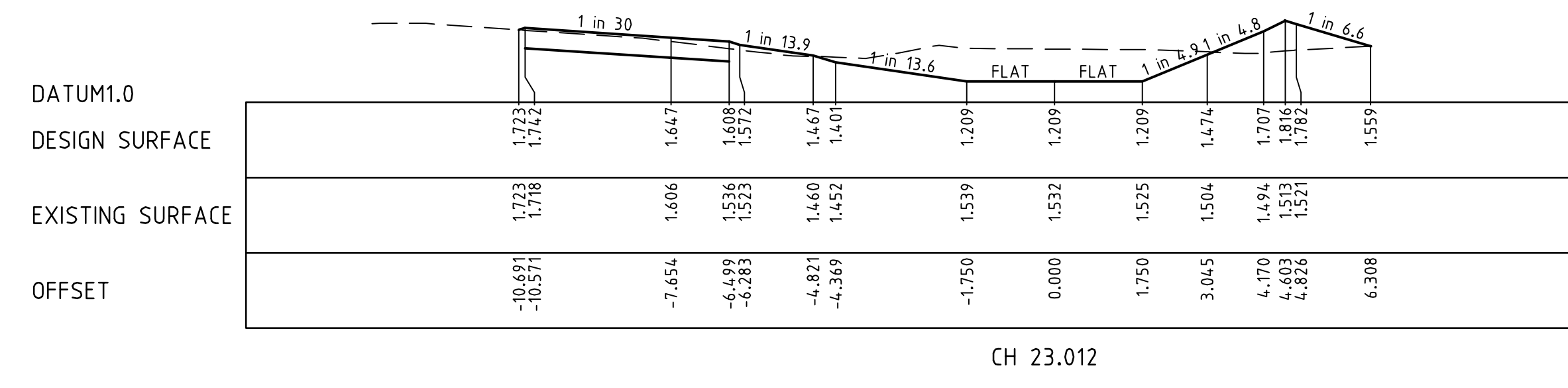
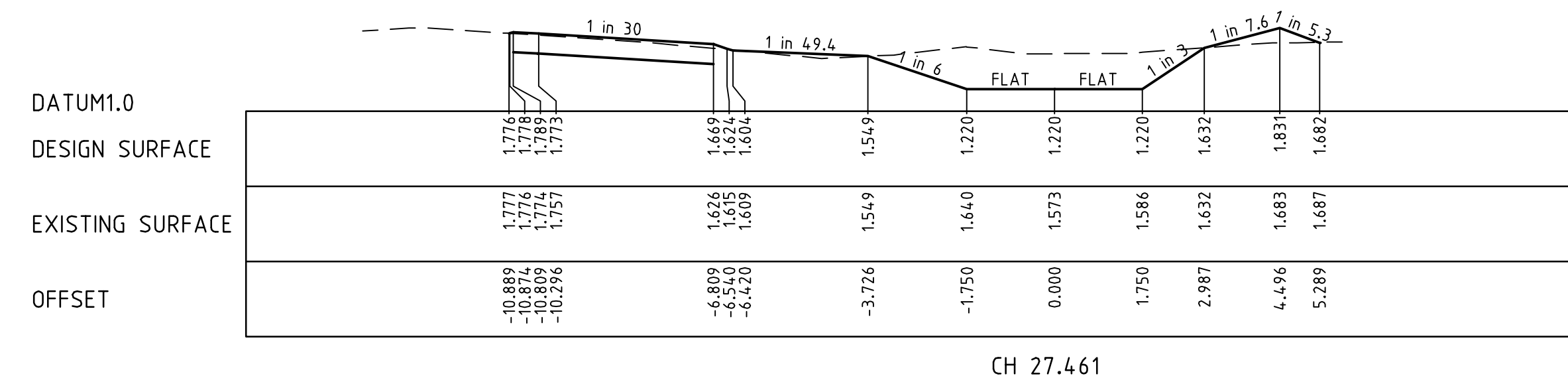
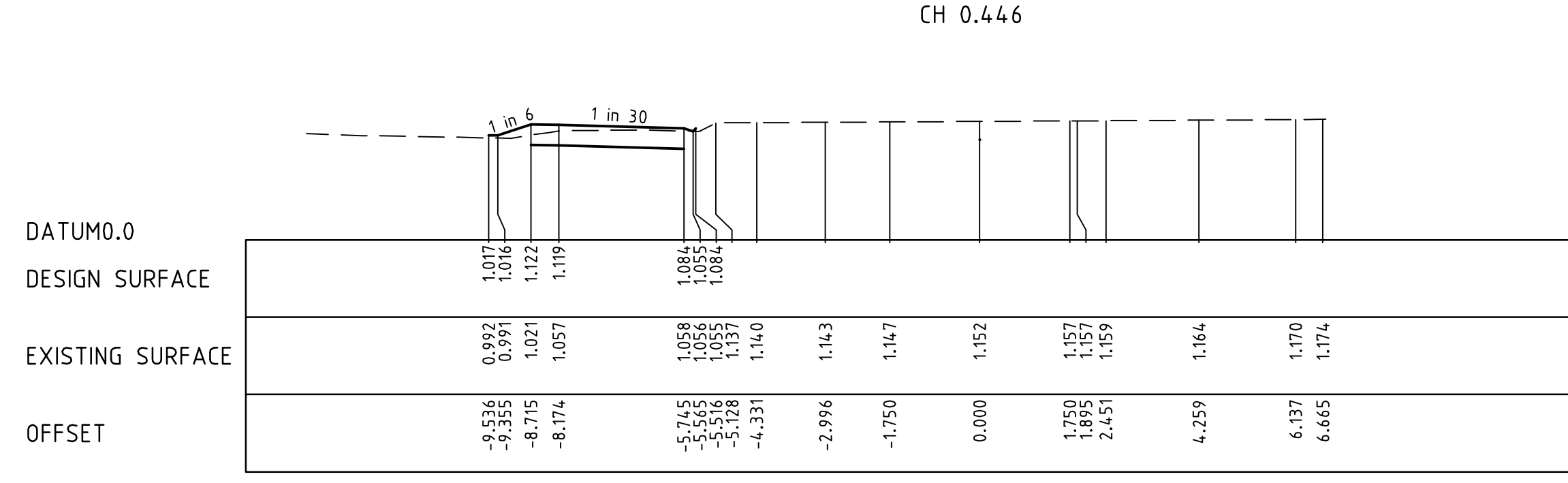
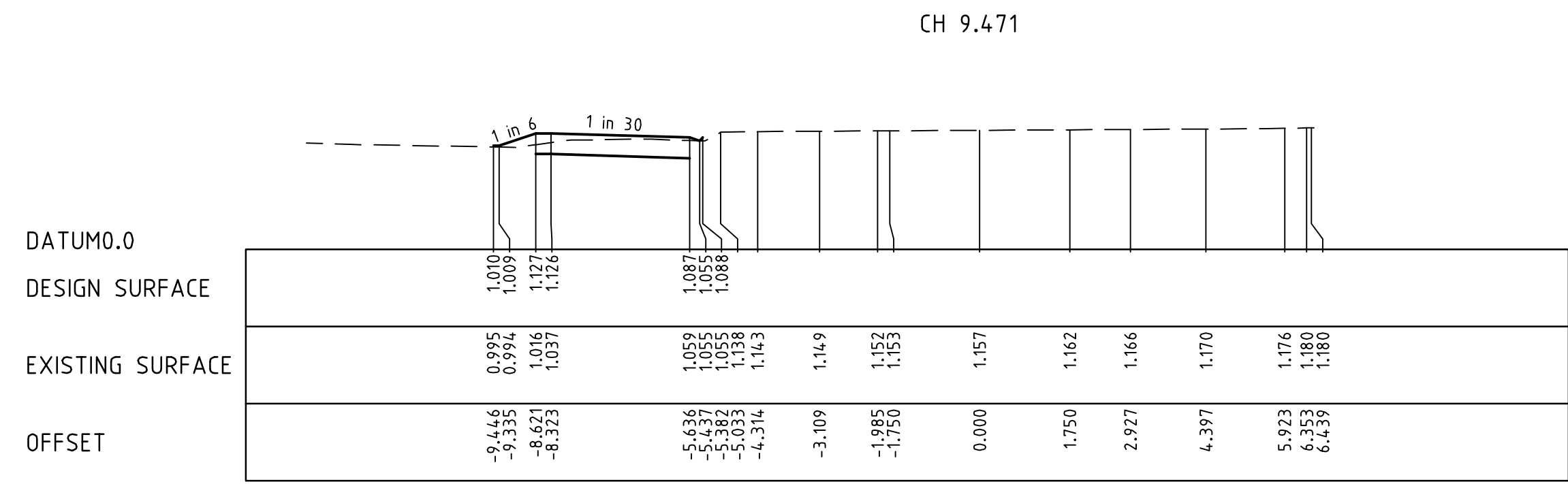
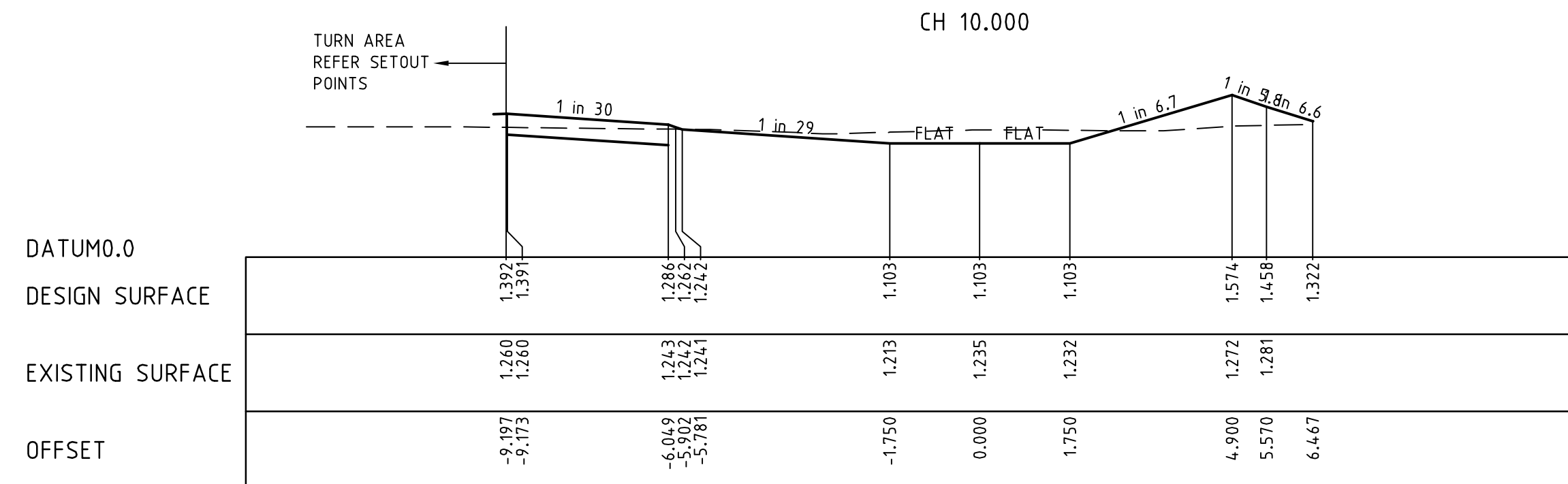
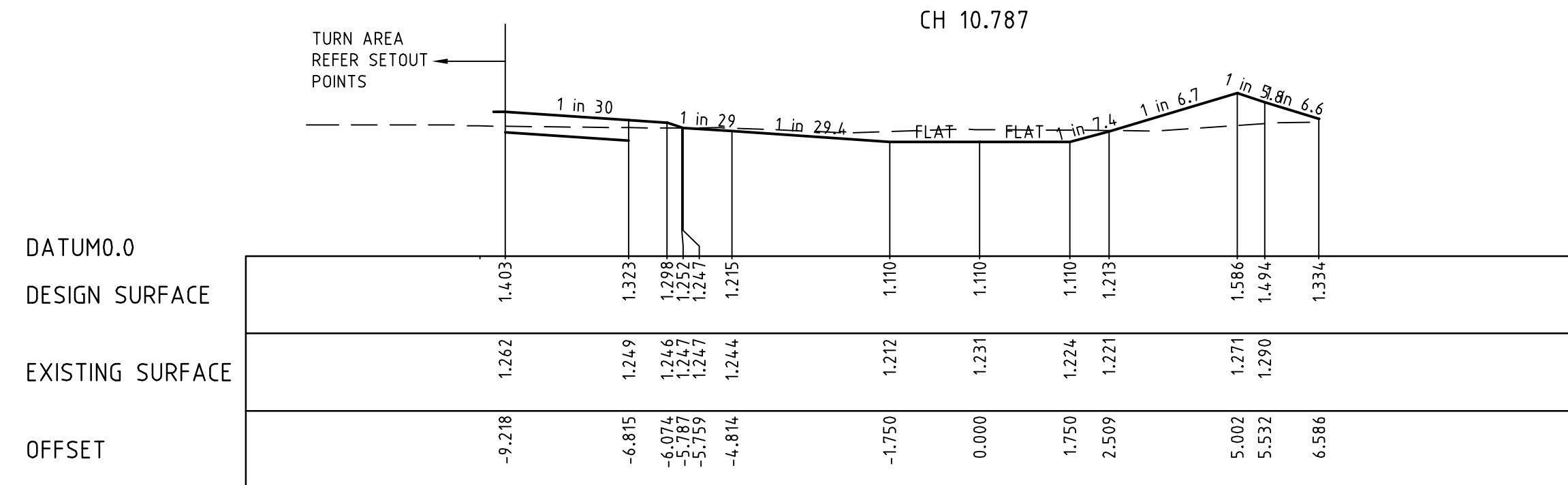
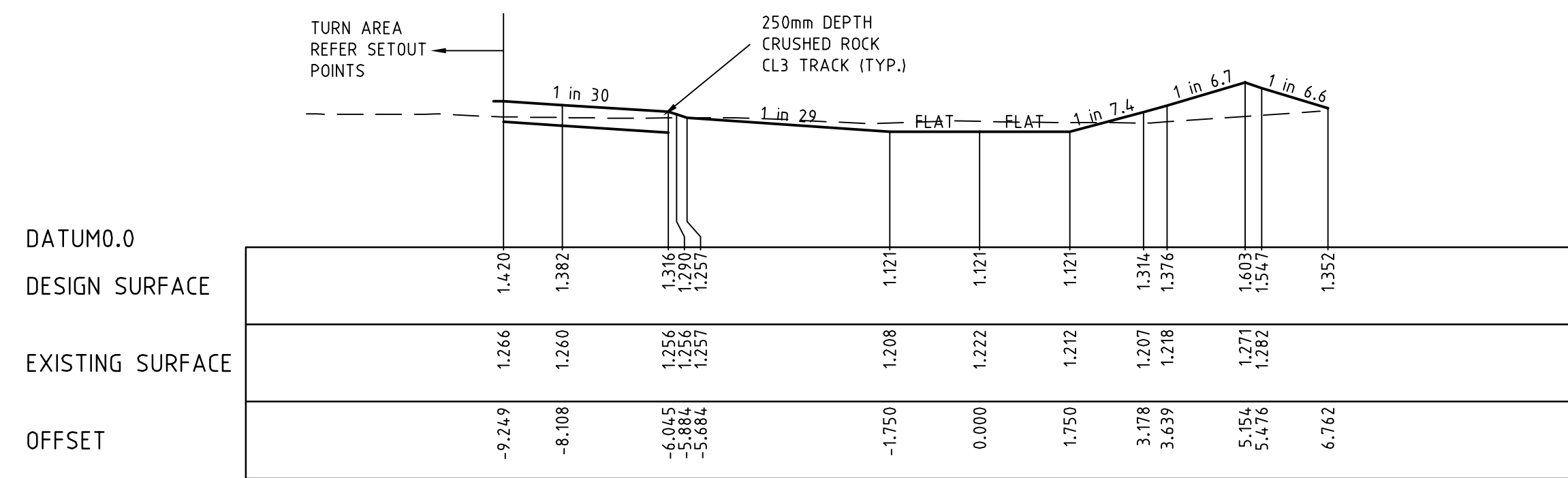
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**Estuary**  
Stage 5  
City of Greater Geelong  
Roadworks and Drainage  
Outfall Drainage Longitudinal Sections - 4

**Drawing No. 0250EHL-05-36**      **Rev C**  
Sheet No. 36 of 40

**Approved for Construction**





LEGEND  
 --- EXISTING SURFACE  
 --- DESIGN LINE  
 --- FUTURE DESIGN LINE

REVISION					
B	MINOR AMENDMENTS	07.04.11	CB/CB	JG	
A	ISSUED TO COUNCIL FOR APPROVAL	20.01.11	CB/CB	JG	
DATE	DES/DF	APPD			

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

Designed  
 M. Wilks  
 Drawn  
 M. Wilks  
 Checked  
 C. Birkett  
 Authorised  
 J. Golden  
 Date  
 October 2010

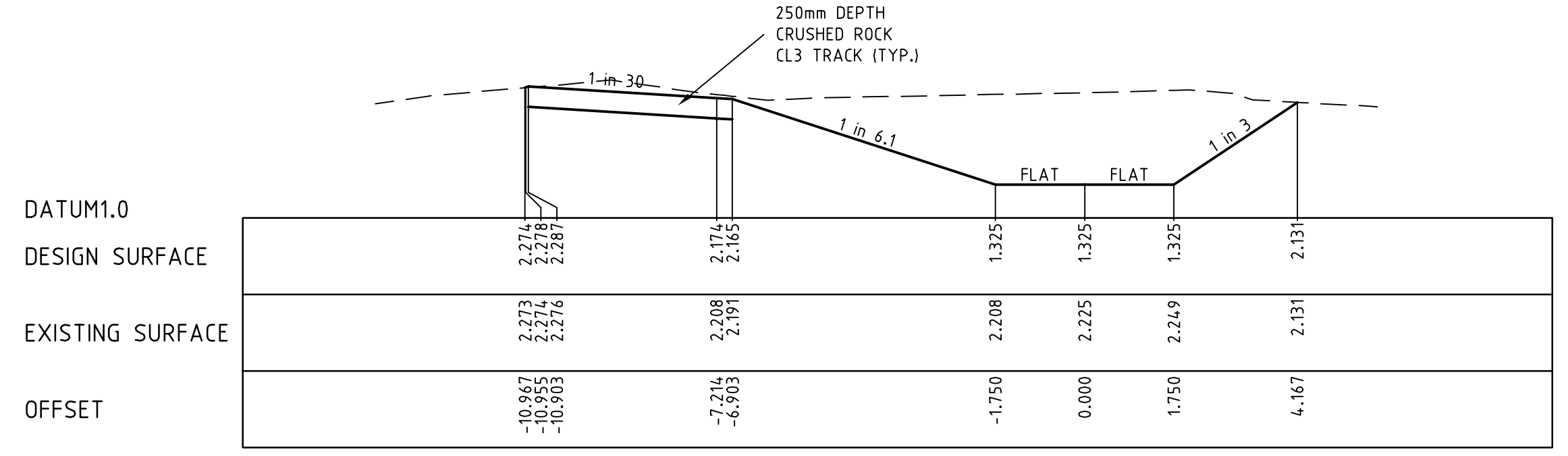
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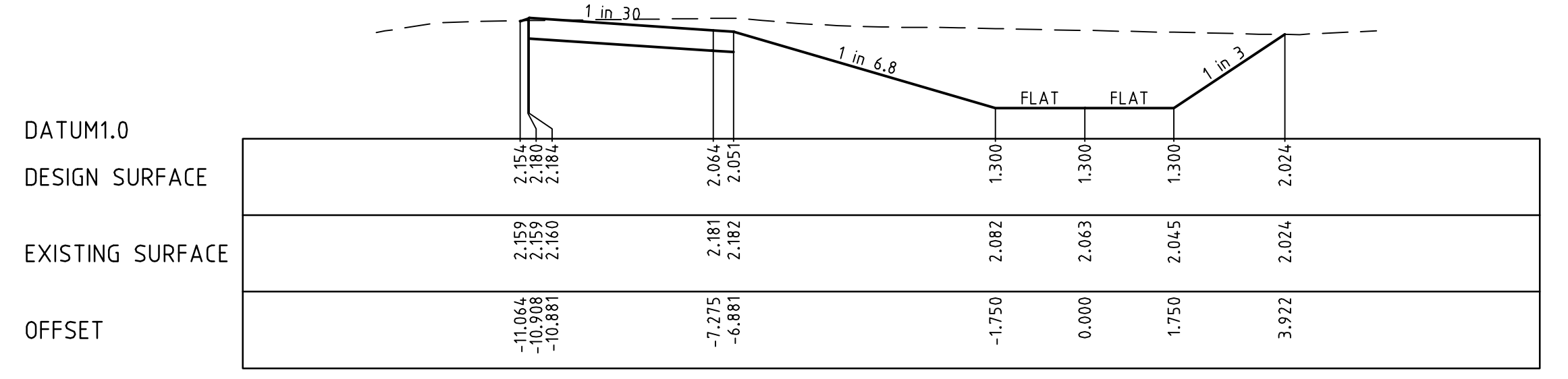
Estuary  
 Stage 5  
 City Of Greater Geelong  
 Roadworks and Drainage  
 Outfall Drainage Cross Sections - 1  
 CH.0000 - Ch27.461  
**Drawing No. 0250EHL-05-37**      **Rev B**  
 Sheet No. 37 of 40  
 Approved for Construction



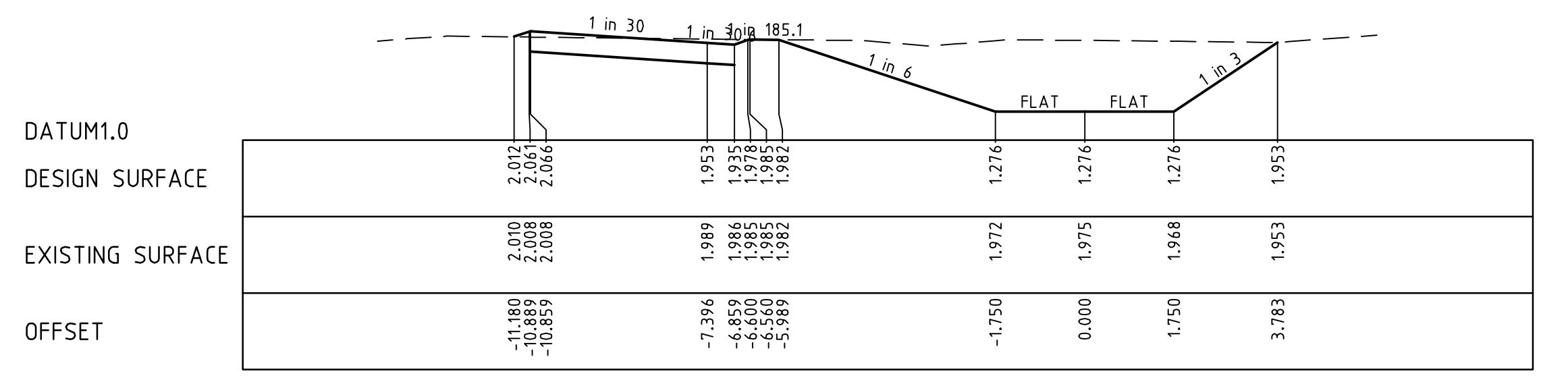
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---	FUTURE DESIGN LINE



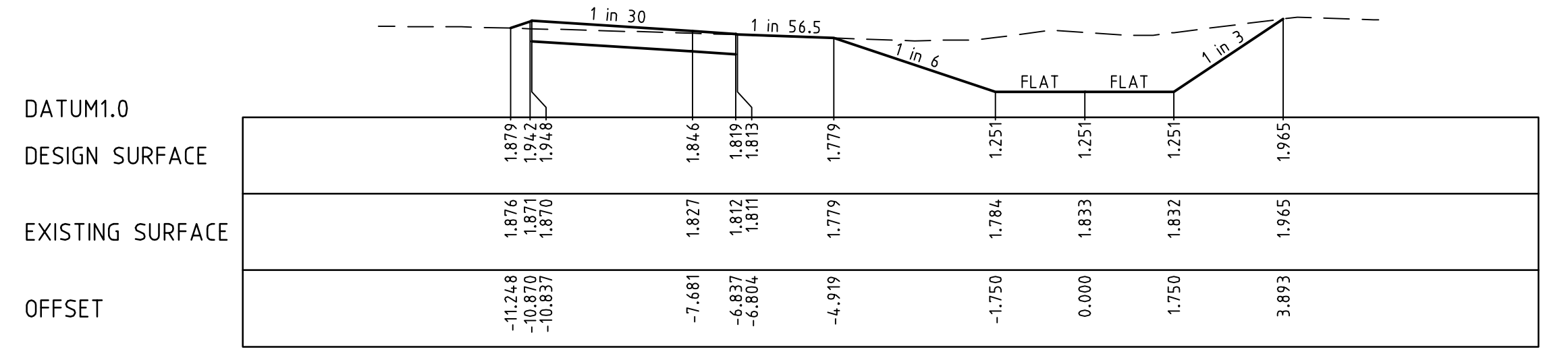
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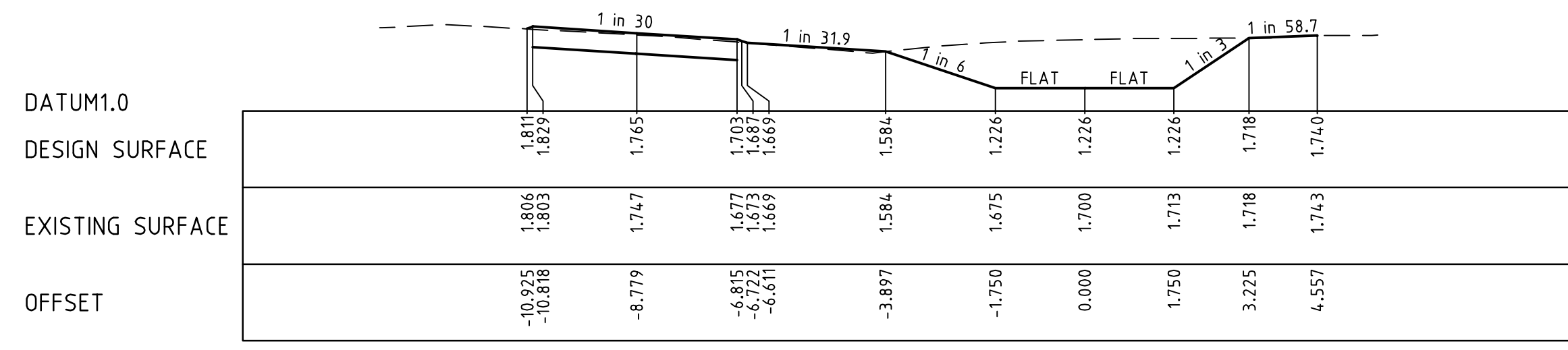
CH 60.000



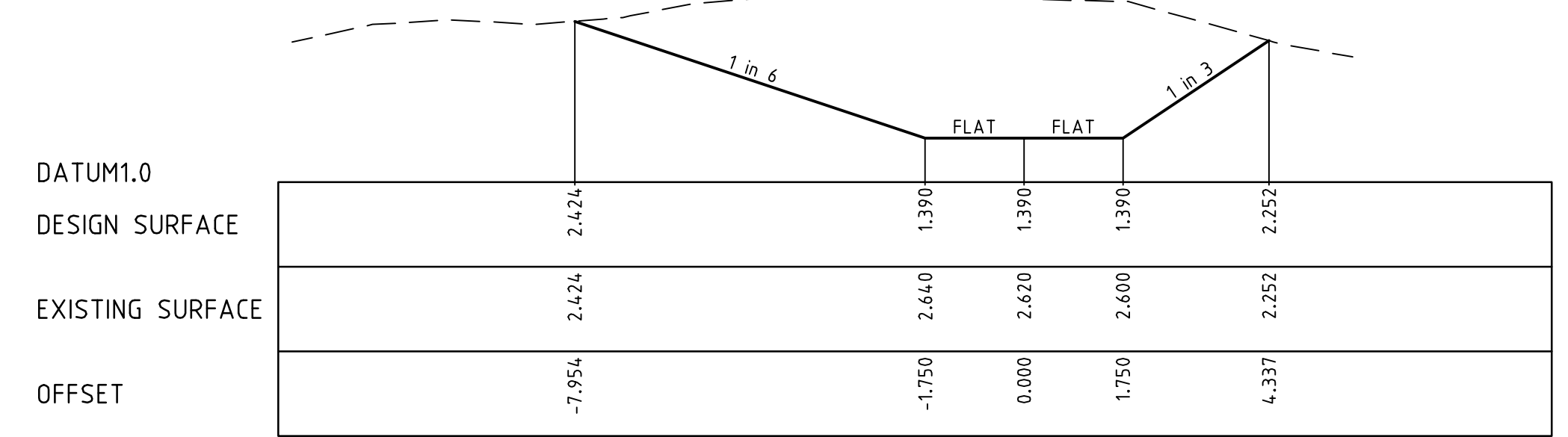
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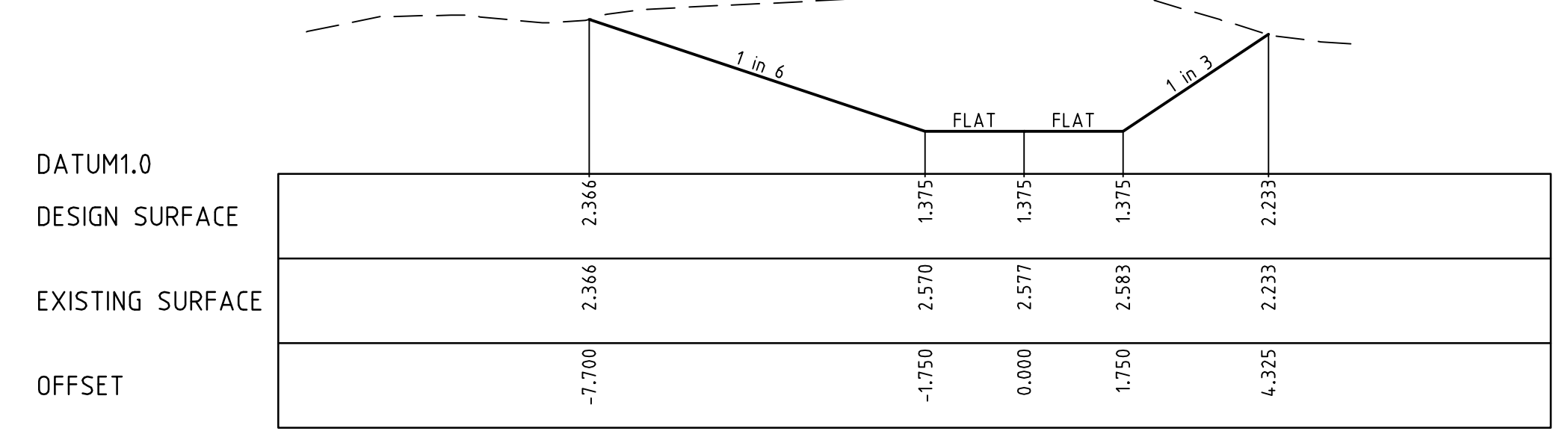
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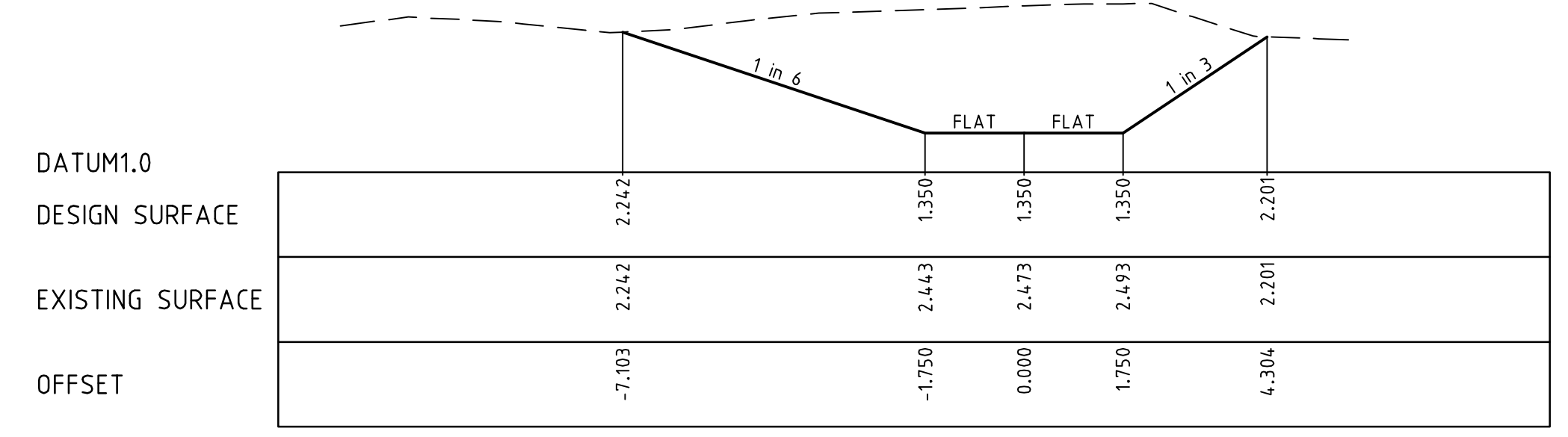
CH 30.000



CH 96.299



CH 90.000



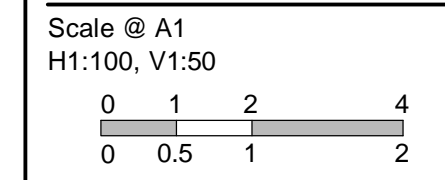
CH 80.000

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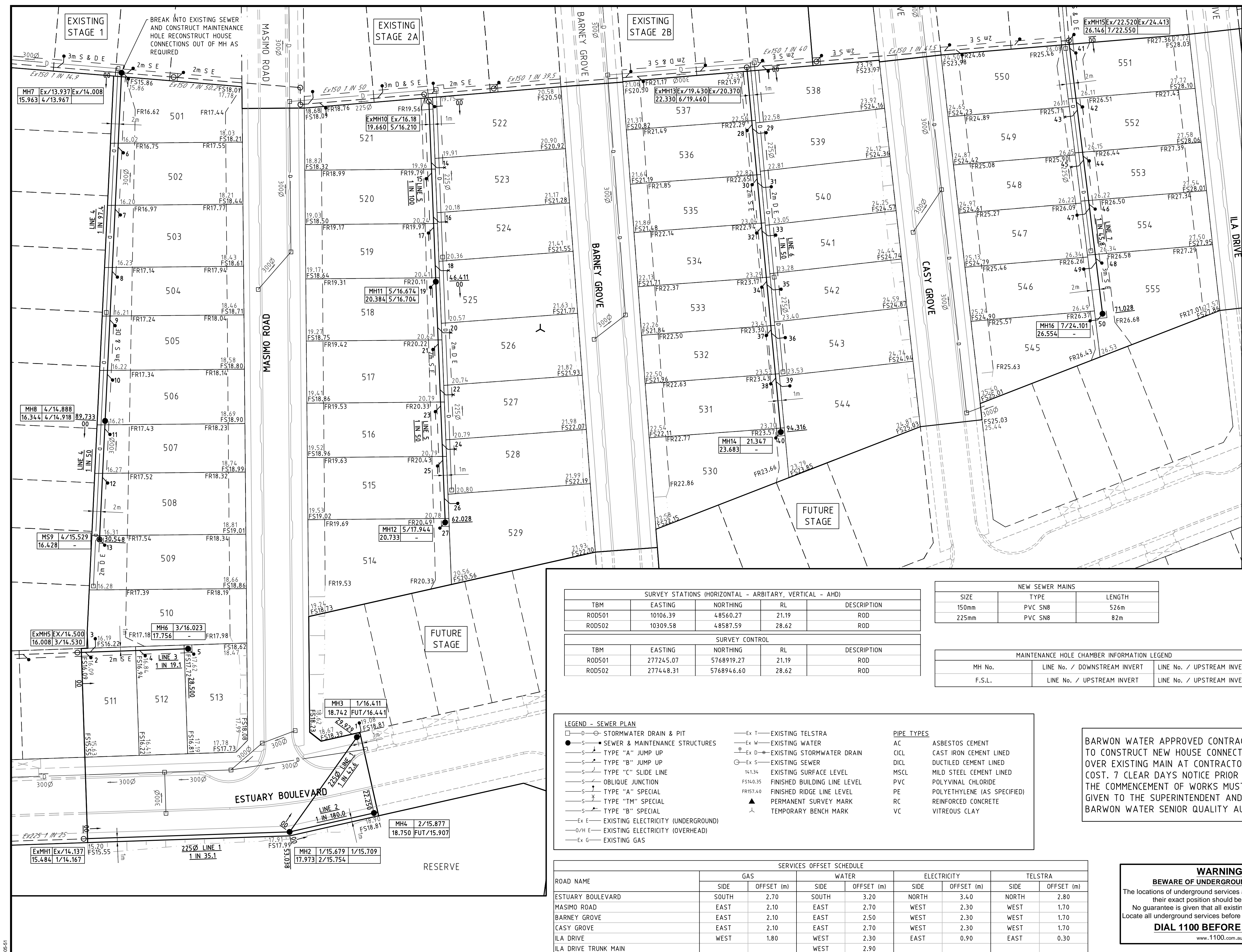
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**Estuary**  
Stage 5  
City Of Greater Geelong  
Roadworks and Drainage  
Outfall Drainage Cross Sections - 2  
Ch30.000 - Ch96.299  
**Drawing No. 0250EHL-05-38**  
Sheet No. 38 of 40

Rev B

Approved for Construction





- 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 DURING 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". PERSONS REQUIRING ACCESS TO ANY BARWON WATER MANHOLE AS PART OF THE DEVELOPER WORKS PROCESS MUST CONTACT THE SENIOR QUALITY AUDITOR PH 1031 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.

**SURVEY STATIONS (HORIZONTAL - ARBITRARY, VERTICAL - AHD)**

TBM	EASTING	NORTHING	RL	DESCRIPTION
RODS01	10106.39	48560.27	21.19	ROD
RODS02	10309.58	48587.59	28.62	ROD

**SURVEY CONTROL**

TBM	EASTING	NORTHING	RL	DESCRIPTION
RODS01	27724.07	5768919.27	21.19	ROD
RODS02	27744.831	5768946.60	28.62	ROD

**NEW SEWER MAINS**

SIZE	TYPE	LENGTH
150mm	PVC SN8	526m
225mm	PVC SN8	82m

**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

- LEGEND - SEWER PLAN**
- Stormwater Drain & Pit
  - Sewer & Maintenance Structures
  - Type "A" Jump Up
  - Type "B" Jump Up
  - Type "C" Line
  - Type "D" Slide Line
  - Oblique Junction
  - Type "A" Special
  - Type "TM" Special
  - Type "B" Special
  - Existing Electricity (Underground)
  - Existing Electricity (Overhead)
  - Existing Gas
  - Existing Telstra
  - Existing Water
  - Existing Stormwater Drain
  - Existing Sewer
  - Finished Building Line Level
  - Finished Ridge Line Level
  - Permanent Survey Mark
  - Temporary Bench Mark
- PIPE TYPES**
- AC ASBESTOS CEMENT
  - CICL CAST IRON CEMENT LINED
  - DICL DUCTILE CEMENT LINED
  - MSCL MILD STEEL CEMENT LINED
  - PVC POLYVINYL CHLORIDE
  - PE POLYETHYLENE (AS SPECIFIED)
  - RC REINFORCED CONCRETE
  - VC VITREOUS CLAY

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.

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.

**SERVICES OFFSET SCHEDULE**

ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
ESTUARY BOULEVARD	SOUTH	2.70	SOUTH	3.20	NORTH	3.40	NORTH	2.80
MASIMO ROAD	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
BARNEY GROVE	EAST	2.10	EAST	2.50	WEST	2.30	WEST	1.70
CASY GROVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
ILA DRIVE	WEST	1.80	WEST	2.30	EAST	0.90	EAST	0.30
ILA DRIVE TRUNK MAIN			WEST	2.90				

**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

WORKS SHALL NOT COMMENCE UNTIL PLANS ARE SIGNED BY BARWON WATER

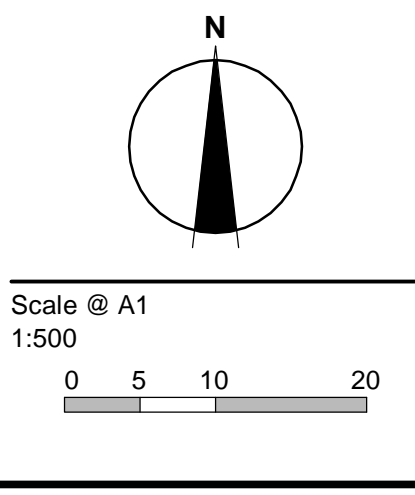
ACCEPTED BY BARWON WATER DEVELOPMENT SERVICES CO-ORDINATOR DEVELOPMENT & CONSERVATION

REVISION	DATE	DESIGN	APPD
B BARWON WATER AMENDMENTS	31.01.11	CB/CB	JG
A ISSUED TO BARWON WATER FOR APPROVAL	15.12.10	CB/CB	JG

**estuary leopard**  
Principal  
Leopold Property Developments Pty Ltd  
Level 1, 6 Riverside Quay  
Southbank, Victoria 3006

- Construction Notes**
- 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".
  - 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.
  - Nominal size of water mains indicated in millimetres & offsets are indicated in metres.
  - All sewer pipes are 1500mm unless otherwise shown.

Designed  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
October 2010

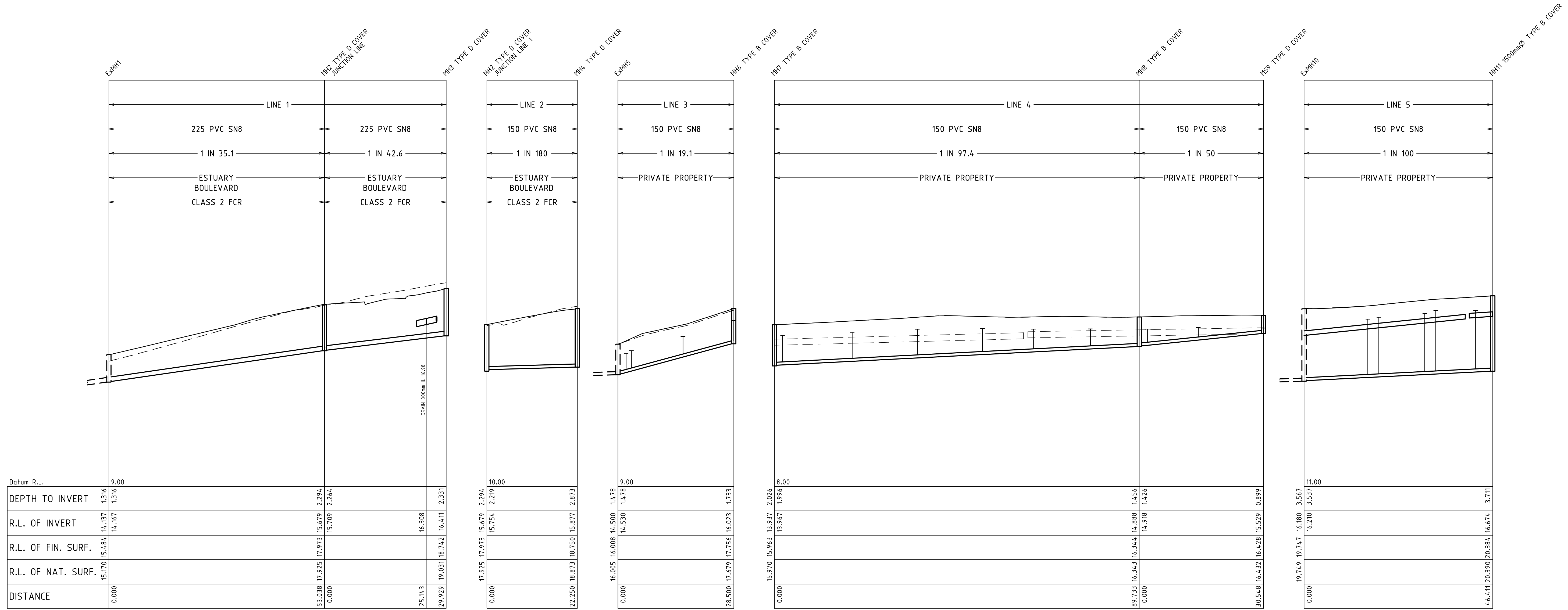


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consulting group  
Smecon Urban  
Level 1, 47 Pakington Street, Geelong West, VIC, 3218  
p +61 3 5228 3100 | f +61 3 5228 3199 | www.smu.com.au  
Adelaide +61 8 8223 6455 Gold Coast +61 7 5578 0222  
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**Barwon Region Water Corporation**  
Barwon Water No. L006627  
Estuary  
Stage No.5  
Sewer Detail Plan  
Drawing No. 0250EHL-05-11 Rev B  
Sheet No. 1 of 3  
Approved for Construction





WORKS SHALL NOT COMMENCE UNTIL PLANS ARE SIGNED BY BARWON WATER

ACCEPTED BY BARWON WATER DEVELOPMENT SERVICES CO-ORDINATOR DEVELOPMENT & CONSERVATION

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REVISION	DATE	DES/DFT	APPD
B	31.01.11	CB/CB	JG
A	15.12.10	CB/CB	JG

**estuary leopard**

Principal  
Leopold Property Developments Pty Ltd  
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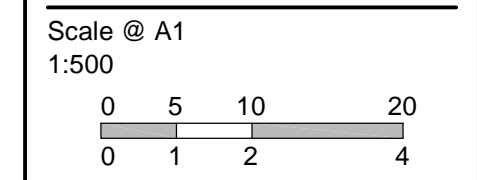
Designed  
C. Barker

Drawn  
C. Barker

Checked  
C. Birkett

Authorised  
J. Golden

Date  
October 2010



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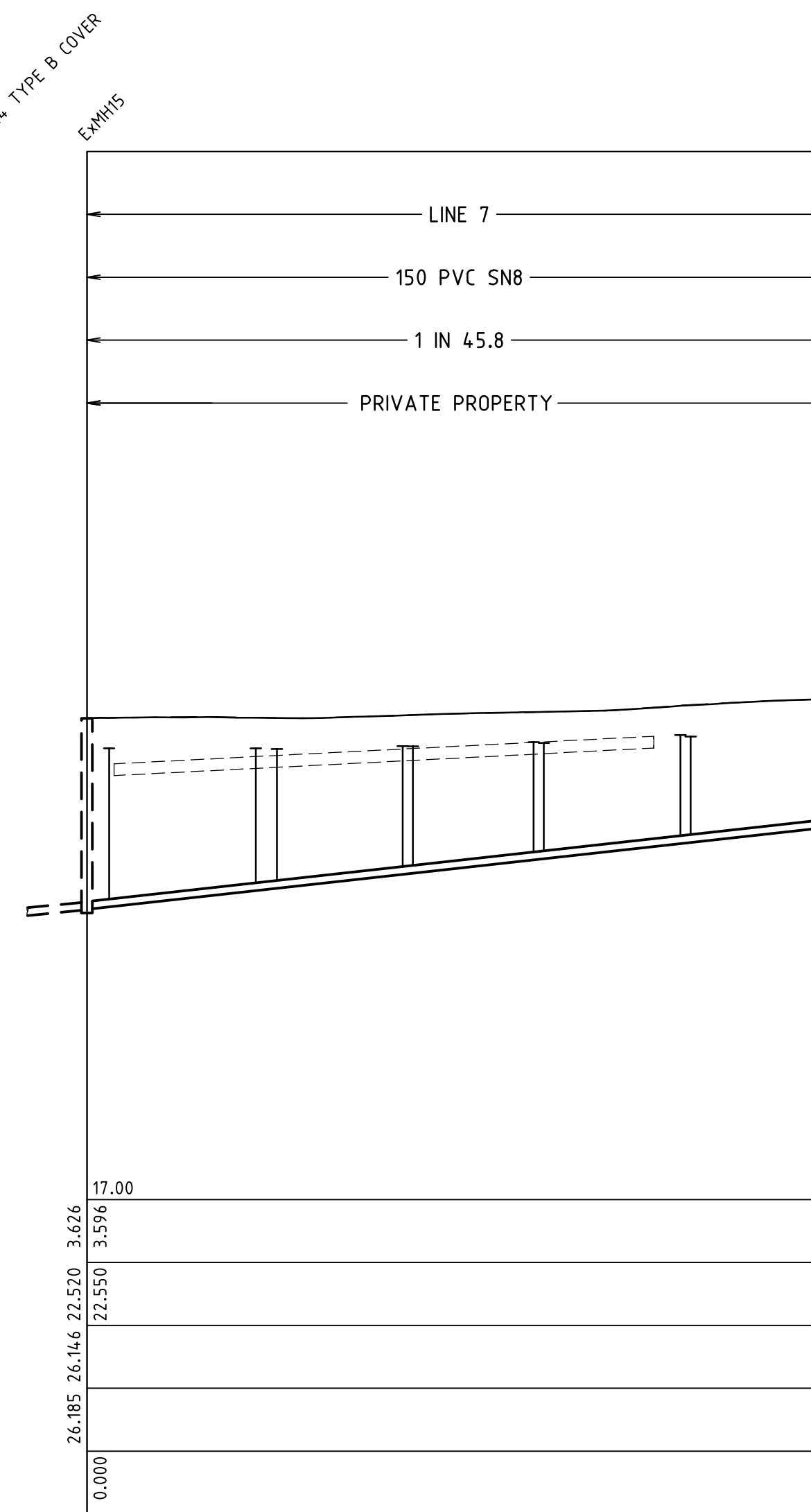
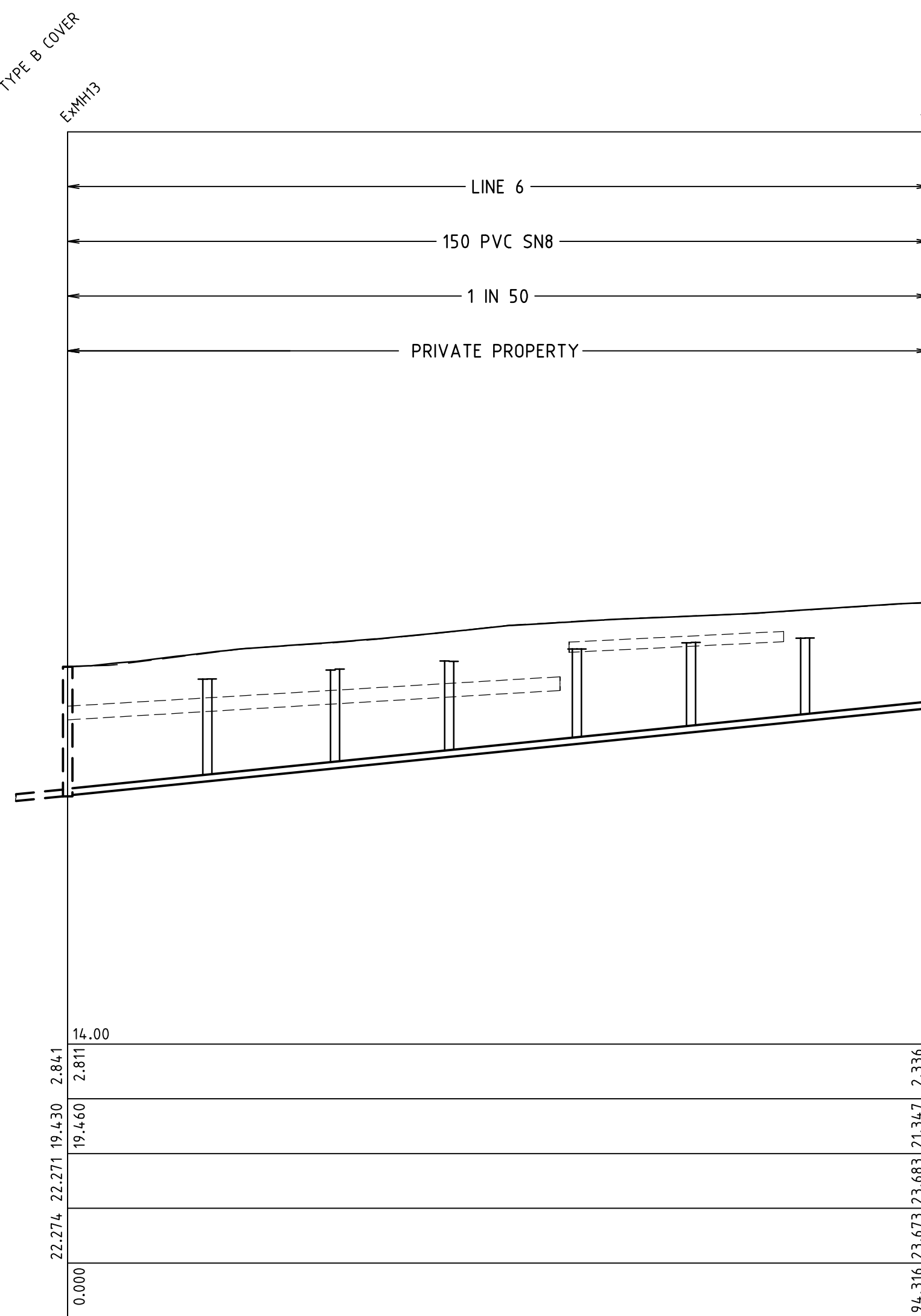
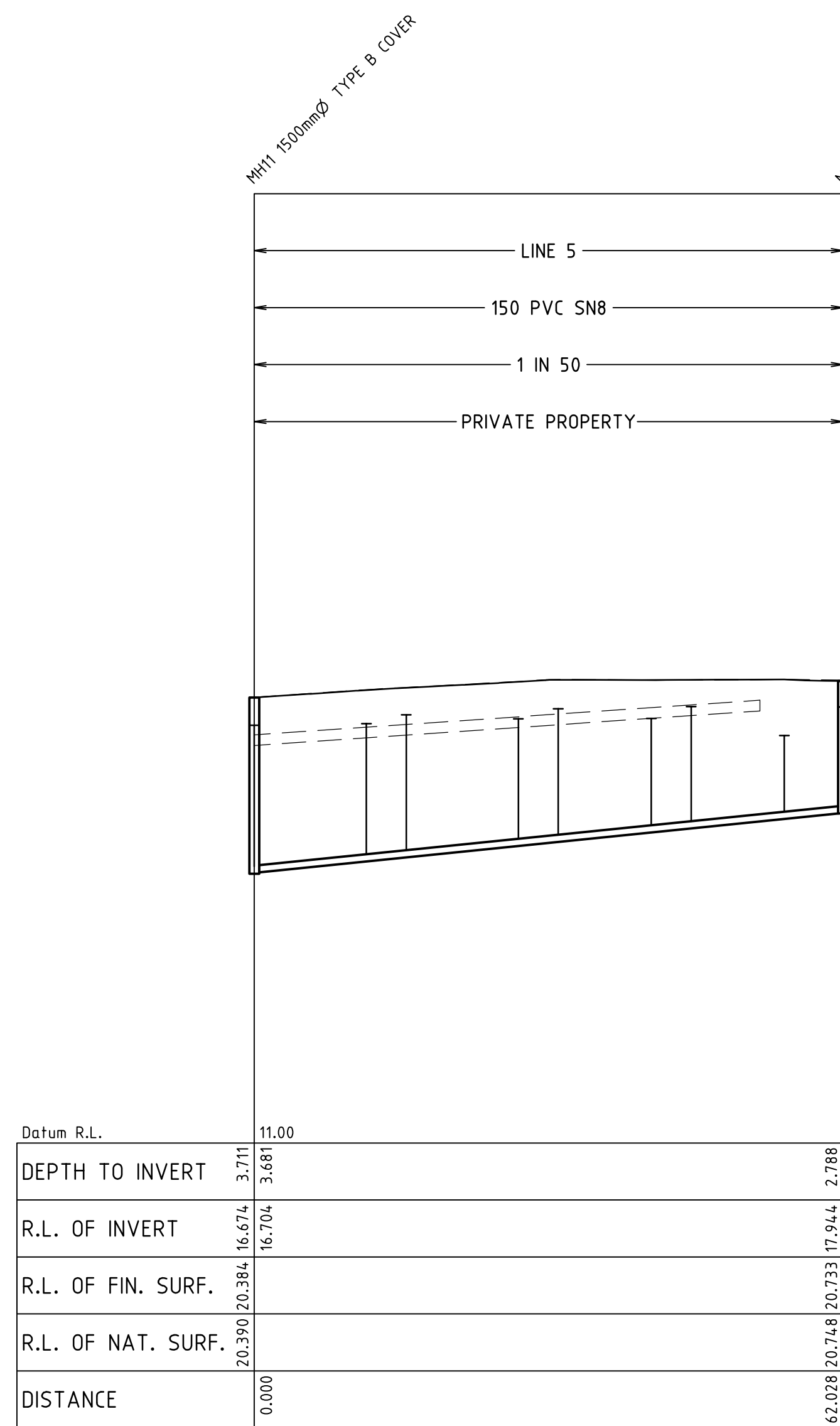
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Melbourne +61 3 9869 0800  
Traralgon +61 3 5173 0190

**Barwon Region Water Corporation**  
Barwon Water No. L006627  
Estuary  
Stage No. 5  
Sewer Longitudinal Sections - 1

Drawing No. **0250EHL-05-52** Rev B  
Sheet No. 2 of 3

Approved for Construction





LINE NO.	MANHOLE NO.	HC NO.	LOT NAME	CONNECTION TYPE	CHAINAGE	IL SEWER	IL BRANCH	BRANCH HEIGHT	LINE NO.	MANHOLE NO.	HC NO.	LOT NAME	CONNECTION TYPE	CHAINAGE	IL SEWER	IL BRANCH	BRANCH HEIGHT
1	MH3	1	Lot 511	A Special	0.00	16.41	18.16	1.75	5	MH11	26	Lot 529	A Special	55.83	17.83	20.17	2.34
3	MH5	2	Lot 510	B	2.00	14.61	15.56	0.95	5	MH12	27	Lot 514	B	0.00	17.94	20.19	2.24
3	MH5	3	Lot 510	A Special	3.30	14.68	15.68	1.00	6	MH13	28	Lot 536	B	14.80	19.75	22.00	2.25
3	MH5	4	Lot 512	B	16.00	15.37	16.38	1.01	6	MH13	29	Lot 539	A Special	15.80	19.77	22.01	2.24
3	MH6	5	Lot 513	B	0.00	16.02	17.17	1.14	6	MH13	30	Lot 535	B	28.80	20.03	22.20	2.17
4	MH7	6	Lot 502	B	19.12	14.16	15.56	1.40	6	MH13	31	Lot 540	A Special	29.80	20.05	22.22	2.17
4	MH7	7	Lot 503	B	35.15	14.33	15.74	1.42	6	MH13	32	Lot 534	B	41.31	20.29	22.40	2.11
4	MH7	8	Lot 504	B	51.17	14.49	15.78	1.28	6	MH13	33	Lot 541	A Special	42.30	20.31	22.39	2.09
4	MH7	9	Lot 505	B	63.69	14.62	15.75	1.12	6	MH13	34	Lot 533	B	55.31	20.57	22.66	2.09
4	MH7	10	Lot 506	B	77.71	14.77	15.76	0.99	6	MH13	35	Lot 542	A Special	56.30	20.59	22.66	2.07
4	MH8	11	Lot 507	B	2.00	14.95	15.75	0.80	6	MH13	36	Lot 532	B	67.81	20.82	22.80	1.97
4	MH8	12	Lot 508	B	14.52	15.21	15.82	0.62	6	MH13	37	Lot 543	A Special	68.81	20.84	22.81	1.96
4	MS9	13	Lot 509	B	0.00	15.53	15.80	0.27	6	MH13	38	Lot 531	B	80.31	21.07	22.90	1.83
5	MH10	14	Lot 523	TM Special	15.69	16.37	19.33	2.97	6	MH13	39	Lot 544	A Special	81.30	21.09	22.90	1.81
5	MH10	15	Lot 520	B Special	18.40	16.39	19.33	2.94	6	MH14	40	Lot 530	B	0.00	21.35	23.09	1.74
5	MH10	16	Lot 524	TM Special	29.70	16.51	19.58	3.07	7	MH15	41	Lot 551	B Special	2.12	22.59	25.61	3.02
5	MH10	17	Lot 519	B Special	32.40	16.54	19.67	3.13	7	MH15	42	Lot 552	B Special	16.11	22.90	25.61	2.71
5	MH10	18	Lot 525	TM Special	42.21	16.64	19.77	3.14	7	MH15	43	Lot 549	TM Special	18.13	22.94	25.60	2.66
5	MH11	19	Lot 518	B Special	0.00	16.67	19.80	3.13	7	MH15	44	Lot 553	B Special	30.12	23.21	25.65	2.45
5	MH11	20	Lot 526	TM Special	11.81	16.93	19.97	3.03	7	MH15	45	Lot 548	TM Special	31.10	23.23	25.65	2.42
5	MH11	21	Lot 517	B Special	16.01	17.02	20.02	3.00	7	MH15	46	Lot 554	B	42.62	23.48	25.73	2.24
5	MH11	22	Lot 527	TM Special	27.82	17.26	20.17	2.91	7	MH15	47	Lot 547	A Special	43.60	23.50	25.71	2.21
5	MH11	23	Lot 516	B Special	32.01	17.34	20.15	2.81	7	MH15	48	Lot 555	B	56.63	23.79	25.86	2.07
5	MH11	24	Lot 528	TM Special	41.83	17.54	20.17	2.63	7	MH15	49	Lot 546	A Special	57.60	23.81	25.83	2.02
5	MH11	25	Lot 515	B Special	46.02	17.63	20.20	2.57	7	MH16	50	Lot 545	A Special	0.00	24.10	25.96	1.86

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ACCEPTED BY BARWON WATER DEVELOPMENT SERVICES CO-ORDINATOR DEVELOPMENT & CONSERVATION

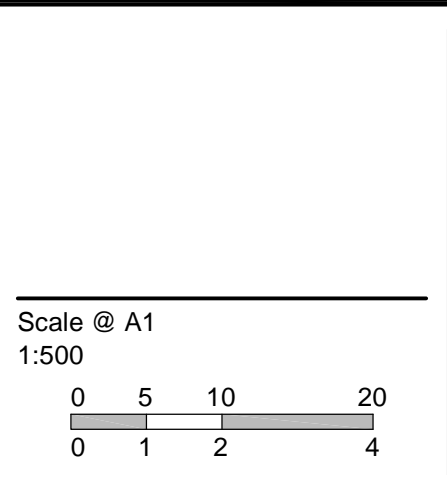
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REVISION	DATE	DES/DF	APPD
B BARWON WATER AMENDMENTS	31.01.11	CB/CB	JG
A ISSUED TO BARWON WATER FOR APPROVAL	15.12.10	CB/CB	JG

Principal  
Leopold Property Developments Pty Ltd  
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Southbank, Victoria 3006

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Designed  
C. Barker  
Drawn  
C. Barker  
Checked  
C. Birkett  
Authorised  
J. Golden  
Date  
October 2010



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**Barwon Region Water Corporation**  
Barwon Water No. L006627  
Estuary  
Stage No. 5  
Sewer Longitudinal Sections - 2

Drawing No. **0250EHL-05-53** Rev B  
Sheet No. 3 of 3

Approved for Construction



DESIGN HEAD=121.3m 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 CFA & WSA 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 WSA WATER SUPPLY CODE OF AUSTRALIA WSA 03-2002 MRWA EDITION 1
  - ALL WATER MAINS MUST BE HYDROSTATIC PRESSURE TESTED IN ACCORDANCE WITH SECTION 19.4 OF WSA WATER SUPPLY CODE OF AUSTRALIA WSA 03-2002 MRWA EDITION 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.



**LEGEND - WATER PLAN**

- Stormwater Drain & Pit
- Water Main
- Change of Pipe Size
- Mains Not Connected
- Mains in Conduit
- Valve
- Non Return Valve
- Fire Plug
- Dead End Cap
- Existing Electricity (Underground)
- Existing Electricity (Overhead)
- Existing Gas
- Existing Telstra
- Existing Water
- Existing Stormwater Drain
- Existing Surface Level
- Finished Building Level
- Finished Ridge Line Level
- Temporary Bench Mark
- Swab Direction

**PIPE TYPES**

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

**SERVICES OFFSET SCHEDULE**

ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
ESTUARY BOULEVARD	SOUTH	2.70	SOUTH	3.20	NORTH	3.40	NORTH	2.80
MASIMO ROAD	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
BARNEY GROVE	EAST	2.10	EAST	2.50	WEST	2.30	WEST	1.70
CASEY GROVE	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70
ILA DRIVE	WEST	1.80	WEST	2.30	EAST	0.90	EAST	0.30
ILA DRIVE TRUNK MAIN			WEST	2.90				

**WARNING**  
**BEWARE OF UNDERGROUND SERVICES**  
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Locate all underground services before commencement of works  
**DIAL 1100 BEFORE YOU DIG**  
www.1100.com.au

**THRUST RESTRAINT SCHEDULE**

LOCATION	TYPE	AREA (m <sup>2</sup> )	NUMBER
A ESTUARY BOULEVARD	150x100 TEE	0.80	1
B ESTUARY BOULEVARD	11.25° BEND	0.16	1
C MASIMO ROAD	11.25° BEND	-	1
D ESTUARY BOULEVARD	150 CAP	0.80	1
E BARNEY, CASEY, ILA	100 CAP	0.38	3
F ILA DRIVE	300 CAP	2.99	1

**NEW WATER MAINS**

SIZE	TYPE	LENGTH
150mm	PVC (CL-16)	75m
100mm	PVC (CL-16)	4.69m
300mm	DICL	72m

**SURVEY STATIONS (HORIZONTAL - ARBITRARY, VERTICAL - AHD)**

TBM	EASTING	NORTHING	RL	DESCRIPTION
RDD501	10106.39	48560.27	21.19	ROD
RDD502	10309.58	48587.59	28.62	ROD

**SURVEY CONTROL**

TBM	EASTING	NORTHING	RL	DESCRIPTION
RDD501	277245.07	5768919.27	21.19	ROD
RDD502	277448.31	5768946.60	28.62	ROD

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A ISSUED TO BARWON WATER FOR APPROVAL	15.12.10	CB/CB	JG

**estuary leopard**

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

Designed  
C. Barker

Drawn  
C. Barker

Checked  
C. Birkett

Authorised  
J. Golden

Date  
October 2010

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4. All sewer pipes are 150mm unless otherwise shown.

Scale @ A1  
1:500

0 5 10 20

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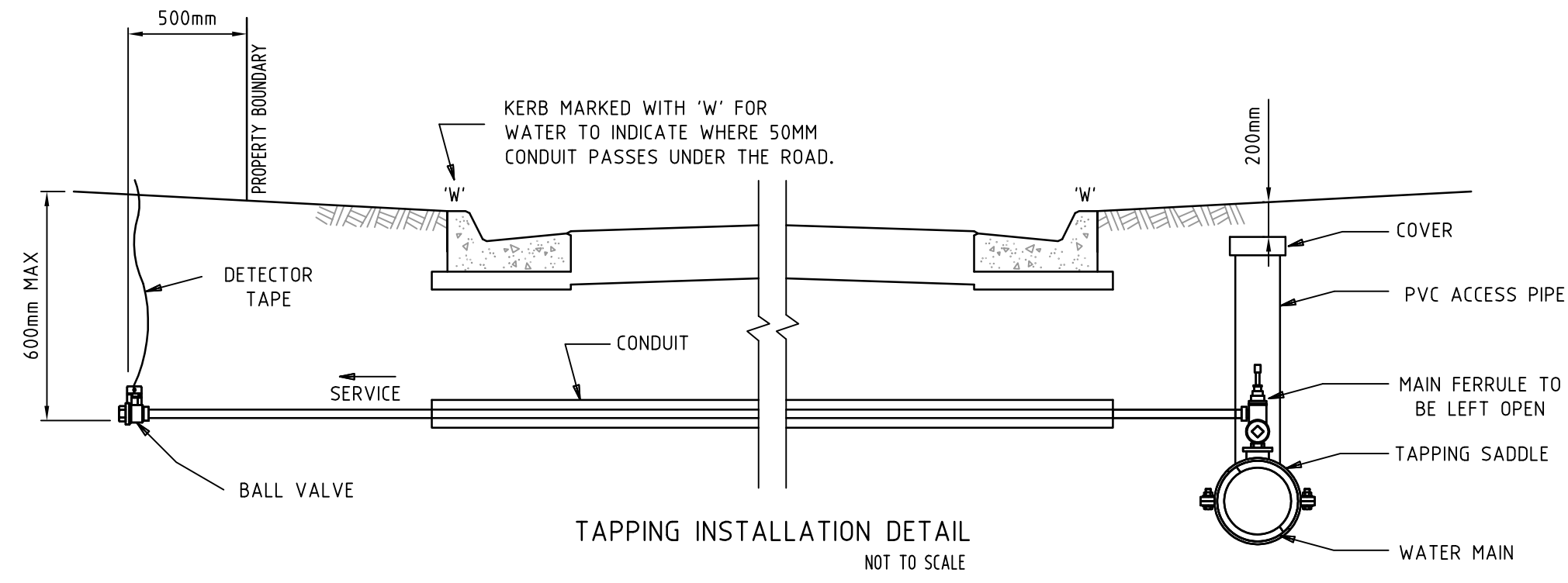
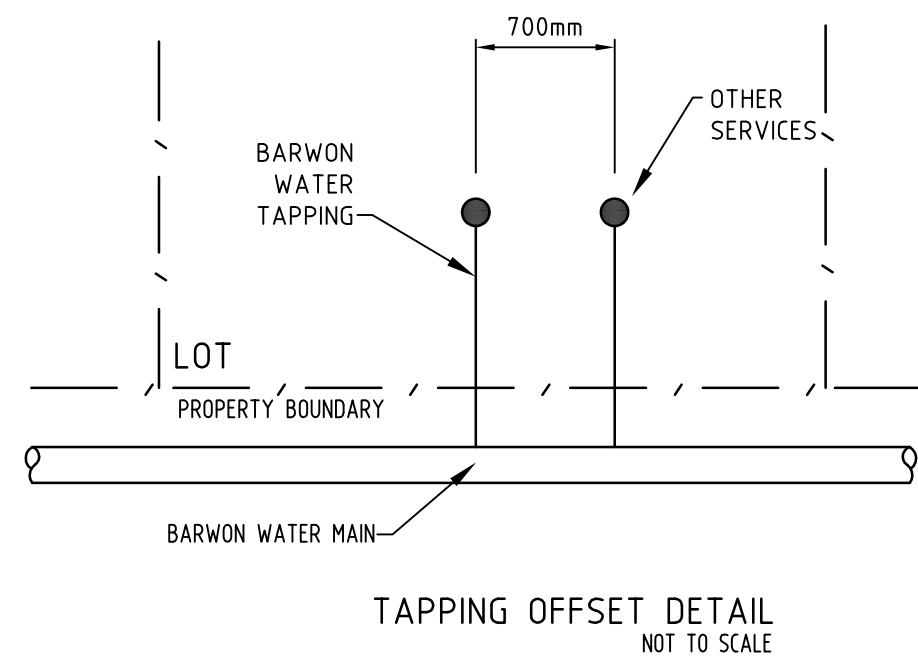
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**Barwon Region Water Corporation**  
Barwon Water No. L006627  
Estuary  
Stage No. 5  
Water Detail Plan

Drawing No. 0250EHL-05-61 Rev B  
Sheet No. 1 of 2

Approved for Construction





1. ALL LOTS ARE TO BE TAPPED USING A TAPPING SADDLE AND PRESSURE FERRULE.
2. A MINIMUM SIZE SERVICE (IE 20MM COPPER, 25MM PE) IS THEN TO BE EXTENDED TO A POINT 500MM WITHIN THE PROPERTY.
3. SERVICE PIPE BETWEEN MAIN FERRULE AND BALL VALVE TO BE A CONTINUOUS LENGTH (IE NO JOINS)
4. SERVICE TO BE TYPE 'B' COPPER OR CLASS 12 TYPE 50 PE.
5. IN THE CASE OF PE OR ANY OTHER NON-METALLIC SERVICE BEING INSTALLED, A COPPER TRACE WIRE IS TO BE INCORPORATED.
6. A BURIED BALL VALVE IS TO BE PLACED AT THE END OF THE SERVICE.
7. DETECTOR TAPE IS TO BE RUN TO SURFACE LEVEL.
8. BALL VALVE TO BE IN ACCORDANCE WITH AUSTRALIAN STANDARDS (IE STAMPED 'W') BRASS FITTING WITH STAINLESS STEEL BALL.

WORKS SHALL NOT COMMENCE UNTIL  
PLANS ARE SIGNED BY BARWON WATER

ACCEPTED BY BARWON WATER  
DEVELOPMENT SERVICES  
CO-ORDINATOR  
DEVELOPMENT & CONSERVATION

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REVISION	DATE	DES/DF	APPD
B	31.01.11	CB/CB	JG
A	15.12.10	CB/CB	JG

**estuary**  
leopold

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

- 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 millimetres & offsets are indicated in metres.
  4. All sewer pipes are 150mm unless otherwise shown.

Designed  
C. Barker

Drawn  
C. Barker

Checked  
C. Birkett

Authorised  
J. Golden

Date  
October 2010

Scale @ A1



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**Smec Urban**  
Level 1, 47 Pakington Street, Geelong West, VIC, 3218  
p +61 3 5228 3100 | f +61 3 5228 3199 | www.smu.com.au

Adelaide	+61 8 8223 6455	Gold Coast	+61 7 5578 0222
Brisbane	+61 7 3831 8988	Melbourne	+61 3 9869 0800
Canberra	+61 2 6126 1900	Traralgon	+61 3 5173 0100

**Barwon Region Water Corporation**  
Barwon Water No. L006627  
Estuary  
Stage No. 5  
Water Details

**Drawing No. 0250EHL-05-62**      **Rev B**

Sheet No. 2 of 2

**Approved for Construction**