

# Estuary

## Stage 2B

### City of Greater Geelong



**LOCALITY PLAN**  
MELWAYS REF: 468 C5



### Principal

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

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ABN. 99 124 206 819

**Standard Construction Notes**

**1. GENERAL**

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

**2. EXISTING CONDITIONS**

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

**3. NOTIFICATIONS**

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

Or as otherwise agreed with Council Officers.
- 3.2 **Property Owners/Tenants** - Seven (7) days written notice to property owners/tenants affected by the works.

**4. OCCUPATION OF PUBLIC ROADS**

- All roadworks signage to comply with VicRoads Worksite Traffic Management Code incorporating AS 1742.3.
- 4.1 **Roads under VicRoads jurisdiction** - The Contractor is to arrange VicRoads consent via "Application for Consent - Works within Road Reserves" (refer VicRoads web site).
- 4.2 **Roads under Council control** - The Contractor is to arrange and acquire requisite Road Closure Permits via Council's Traffic Officer.

**5. SET OUT**

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

**6. TOPSOIL**

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

**7. EXISTING VEGETATION**

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

**8. EXCAVATION/TRENCHING**

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

**9. SOIL EROSION**

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

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

**10. DRAINAGE WORK**

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

Superintendent prior to start of sub-soil drainage works.

**11. BACKFILL MATERIAL**

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

**12. COMPACTION STANDARDS**

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

- 12.1 **Structural Fill**
  - (a) Fill base - top 150mm 95% standard compaction
  - (b) Fill zone - 95% standard compaction
  - (c) Under road pavement - zone less than 450mm under road pavement surface 98% standard compaction
- 12.2 **Road Pavement**
  - (a) Road sub-grade - top 150mm 98% standard compaction
  - (b) Pavement materials - 98% modified compaction
- 12.3 **Trench Backfill**
  - (a) Granular under all pavement & edgings/kerb sections - 98% modified compaction
  - (b) Granular behind kerbing - 95% modified compaction
  - (c) Earth around structures - 95% standard compaction

**13. CONCRETE WORK**

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

**14. ROAD PAVEMENT WORK**

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

**15. IDENTIFICATION MARKING**

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

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

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

**16. TESTING**

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

**17. EXPOSED SURFACES RESTORATION**

- 17.1 **Topsoiling** - All exposed residual surface areas at completion of civil works to be topsoiled with 100mm depth of best available material.
- 17.2 **Allotments/Reserves** - Allotments and reserves are to be evenly graded at a minimum gradient of 1 in 100 to their nominated drainage connection points.
- 17.3 **Nature Strips** - Nature strip surfaces are to be trimmed to grade between adjacent surfaces. Top-soiling and compaction operations are to ensure there is no later settlement/subsidence.
- 17.4 **Top-Dressing** - Undisturbed grassed areas are to be top-dressed and evenly graded as directed by the Superintendent.
- 17.5 **Hydroseeding** - At completion of the above works all prepared exposed surfaces are to be well watered and hydroseeded.
- 17.6 **Batter Slopes** - Batter slopes shall be a maximum of 1 in 5 for fill and 1 in 3 for cut unless otherwise shown.

**18. FINAL WORKS PRESENTATION**

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

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

**19. MAINTENANCE WORKS**

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

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

- (a) Silt fences
- (b) Silt barriers
- (c) Areas hydroseeded



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

A	ISSUED TO COUNCIL	10.04.10	
	REVISION	DATE	APP'D

**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.

Scale@A1



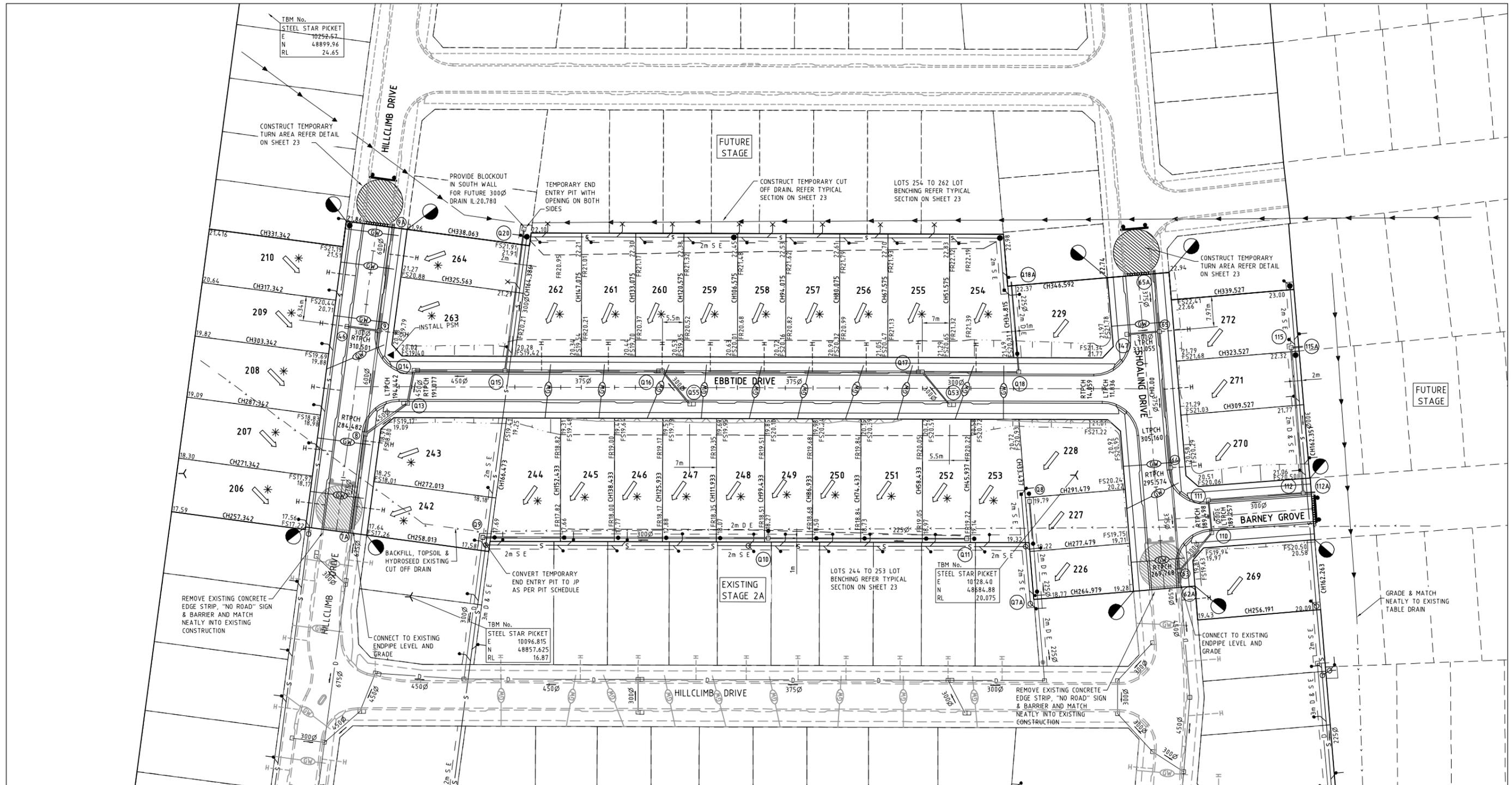
Designed	C. Barker	February 2010
Drawn	M. Wilks	February 2010
Checked	C. Birkett	February 2010
Approved	J. Golden	February 2010

**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
General Notes

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

Sheet No. 2 of 24

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**WARNING**  
**BWARE OF UNDERGROUND SERVICES**  
 THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

ROAD NAME	RESERVE WIDTH (m)	ROAD WIDTH (m)			KERB TYPE		VERGE WIDTH (m)	
		LIP to LIP	INV to INV	BACK to BACK	NTH/WEST	STH/EAST	NTH/WEST	STH/EAST
SHOALING DRIVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
HILLCLIMB DRIVE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
EBBTIDE DRIVE	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

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

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 Level 1, 6 Riverside Quay  
 Southbank, Victoria 3006

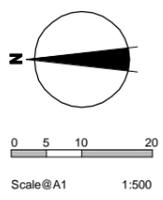
REVISION	DATE	APPD
C LOT 263 BATTER ADJUSTED	17.08.10	
B MINOR AMENDMENTS	19.05.10	
A ISSUED TO COUNCIL	10.04.10	

**LEGEND**

- 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 Sewer
- H — Existing House Drain
- T — Existing Tree to Remain
- X — Existing Tree to be Removed
- S — Existing Swale Drain
- E — Electricity (Underground)
- G — Gas
- T — Telstra
- W — Water
- S — Stormwater Drain, Pit and Property Inlet
- S — Swale Drain
- S — Sewer, Maintenance Structures and Property Connection
- S — House Drain
- G & W — Gas & Water Conduits
- T — Tactile Paver - Directional
- T — Tactile Paver - Hazard

- 141.34 — Existing Surface Level
- FS14.35 — Finished Building Line Level
- FR157.40 — Finished Ridge Line Level
- TW159.38 — Top of Retaining Wall
- BW159.38 — Bottom of Retaining Wall
- Retaining Wall
- Intersection Threshold Treatment
- Structural Fill > 200mm Deep
- Ex. Structural Fill > 200mm Deep
- Proposed Driveway

- Allotment to be graded evenly in direction of fall to levels indicated
- \* — Direction of Fall
- Overland Flow
- Permanent Survey Mark
- Temporary Bench Mark
- Concrete Edge Strip with Subsoil Drain underneath "No Road" sign and Barrier
- Zero Lot Lines
- Limit of Works

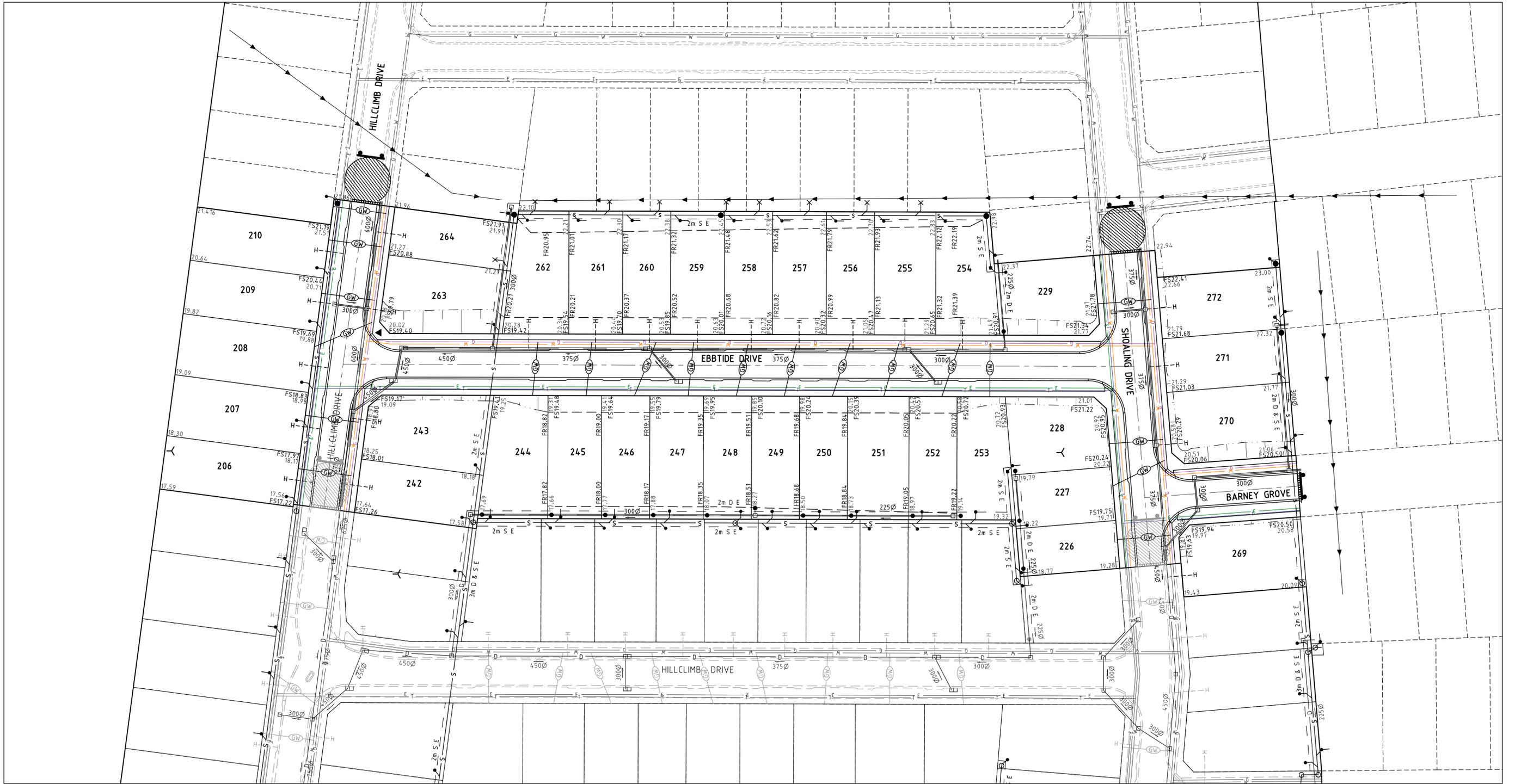


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 Drawn M. Wilks February 2010  
 Checked C. Birkett February 2010  
 Approved J. Golden February 2010

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

Drawing No. 0250EHL-02B-03 Rev C  
 Sheet No. 3 of 24  
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**WARNING**  
**BEWARE OF UNDERGROUND SERVICES**  
 THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

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



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 Level 1, 6 Riverside Quay  
 Southbank, Victoria 3006

REVISION	DATE	APP'D
B MINOR AMENDMENTS	19.05.10	
A ISSUED TO COUNCIL	10.04.10	

- LEGEND**
- E Electricity (Underground)
  - G Gas
  - T Telstra
  - W Water
  - Stormwater Drain, Pit and Property Inlet
  - Swale Drain
  - Sewer, Maintenance Structures and Property Connection
  - House Drain
  - Gas & Water Conduits
  - Tactile Paver - Directional
  - Tactile Paver - Hazard
  - 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
  - Ex H Existing House Drain
  - Existing Tree to Remain
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  - Existing Swale Drain

- 141.34 Existing Surface Level
- FS14.0.35 Finished Building Line Level
- FR157.4.0 Finished Ridge Line Level
- TW159.3.0 Top of Retaining Wall
- BW159.3.0 Bottom of Retaining Wall
- Retaining Wall
- Intersection Threshold Treatment
- Structural Fill > 200mm Deep
- Ex. Structural Fill > 200mm Deep
- Proposed Driveway
- Allotment to be graded evenly in direction of fall to levels indicated
- Direction of Fall
- Overland Flow
- Permanent Survey Mark
- Temporary Bench Mark
- Concrete Edge Strip with Subsoil Drain underneath "No Road" sign and Barrier
- Zero Lot Lines
- Limit of Works



Scale@A1 1:500

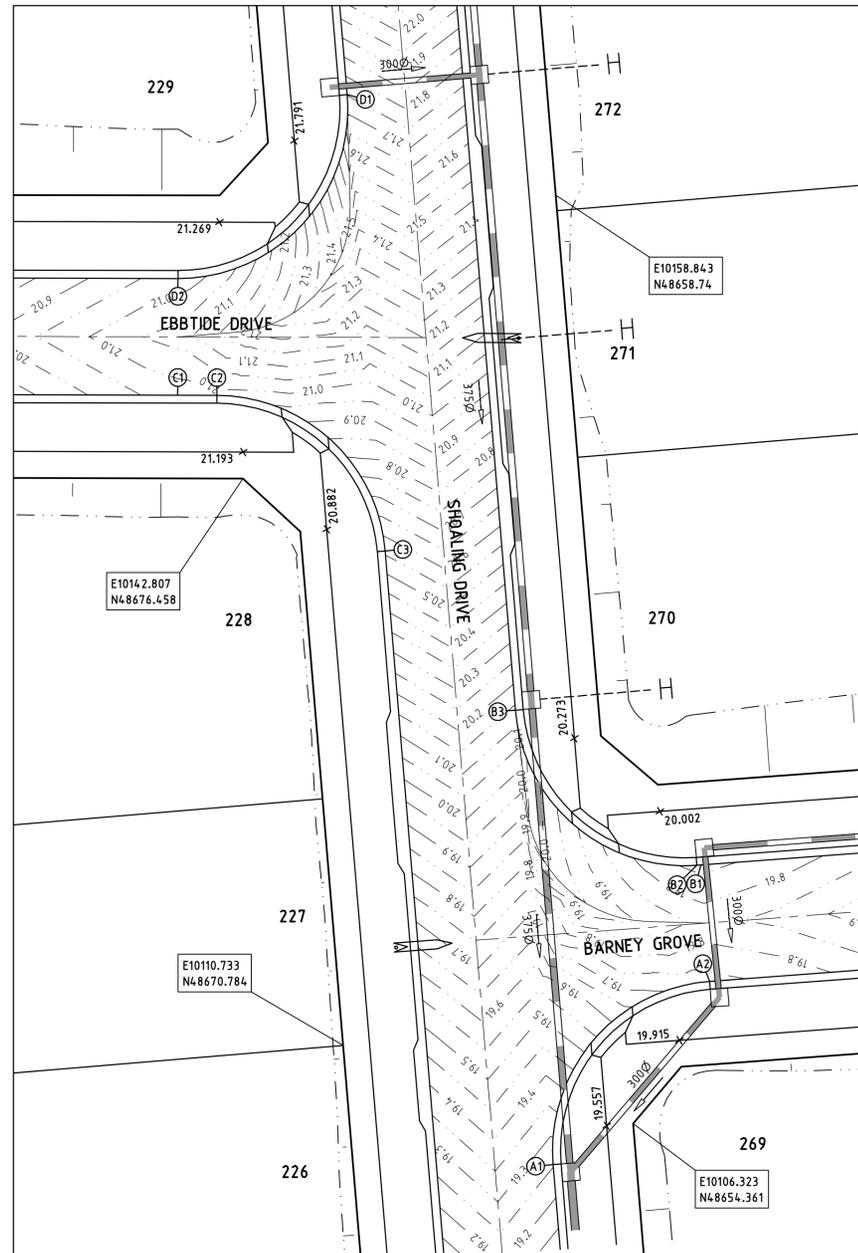
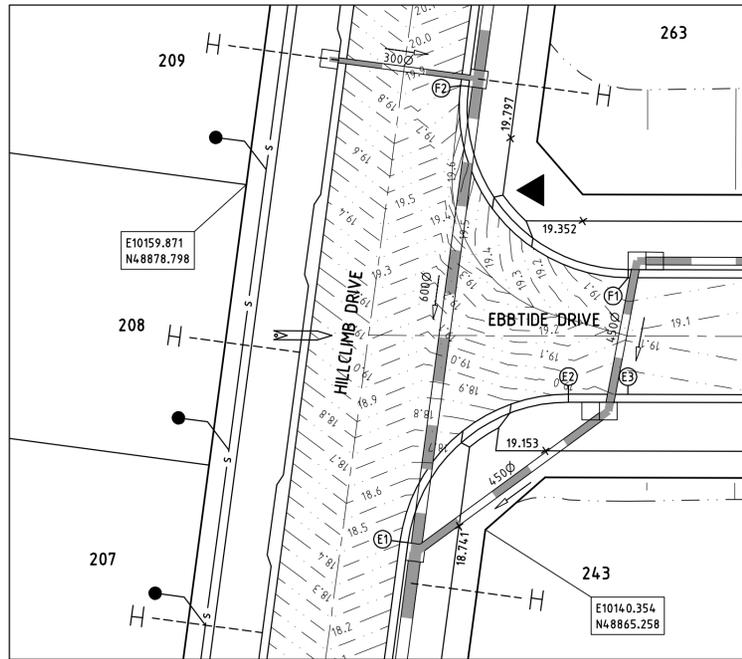


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**Estuary**  
 Stage 2B  
 City of Greater Geelong  
 Roadworks and Drainage  
 Services Layout Plan

**Drawing No. 0250EHL-02B-04** Rev B  
 Sheet No. 4 of 24  
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**SIGN SCHEDULE**

SIGN	REF
STREET SIGN	

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**NOTES**  
 1. REFER TO SHEET Nos 6 FOR LIP PROFILES.  
 2. REFER TO SHEET Nos 7 FOR SETOUT INFORMATION.



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 Southbank, Victoria 3006

REVISION	DATE	APP'D
A ISSUED TO COUNCIL	10.04.10	

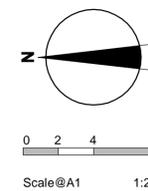
**LEGEND**

	Electricity (Underground)
	Gas
	Telstra
	Water
	Stormwater Drain, Pit and Property Inlet
	Swale Drain
	Sewer, Maintenance Structures and Property Connection
	House Drain
	Gas & Water Conduits
	Tactile Paver - Directional
	Tactile Paver - Hazard

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	Existing Water
	Existing Stormwater Drain
	Existing Sewer
	Existing Stormwater Drain
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	Existing Tree to Remain
	Existing Tree to be Removed
	Existing Swale Drain

	Existing Surface Level
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	Finished Ridge Line Level
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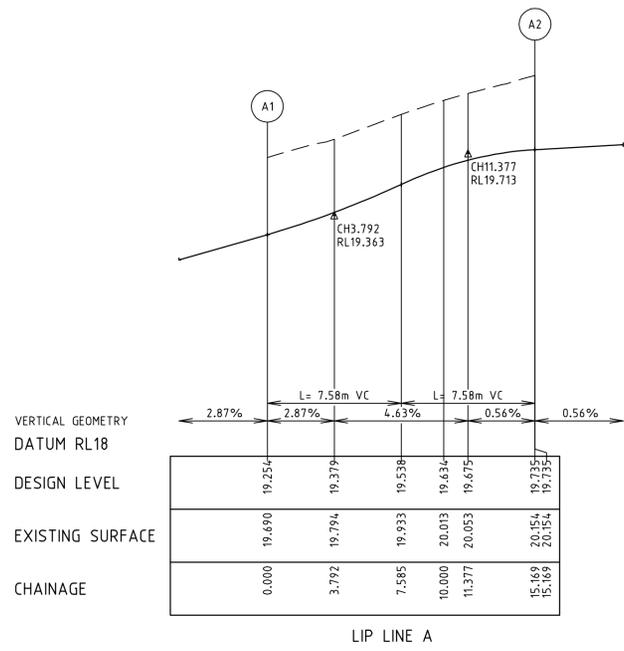
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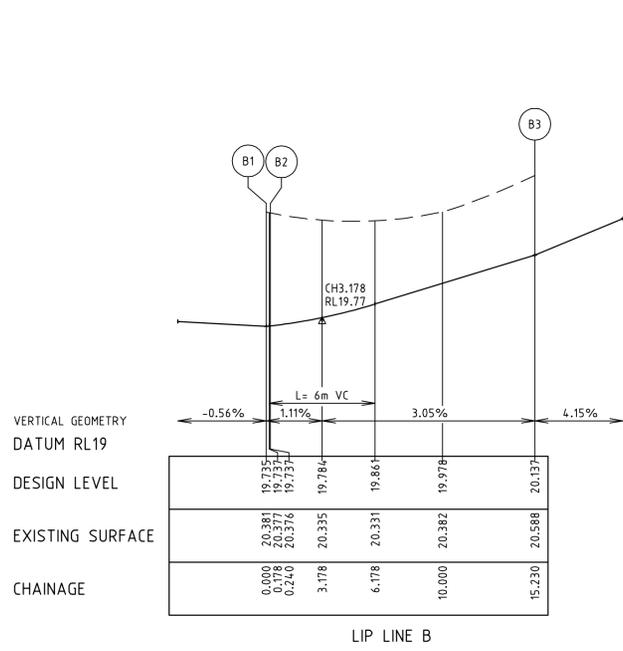
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**ESTUARY**  
 Stage 2B  
 City of Greater Geelong  
 Roadworks and Drainage  
 Intersection Detail Plan

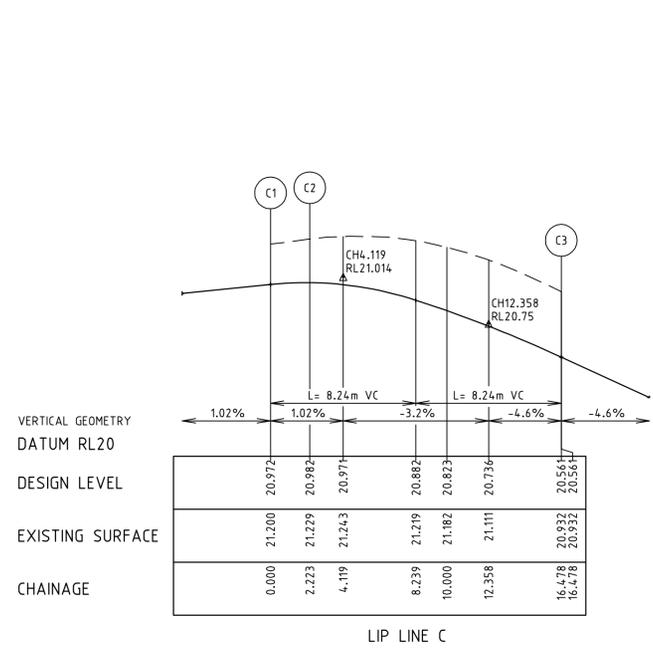
**Drawing No. 0250EHL-02B-05** Rev A  
 Sheet No. 5 of 24  
 © SM Urban Pty Ltd ABN 99 124 206 819



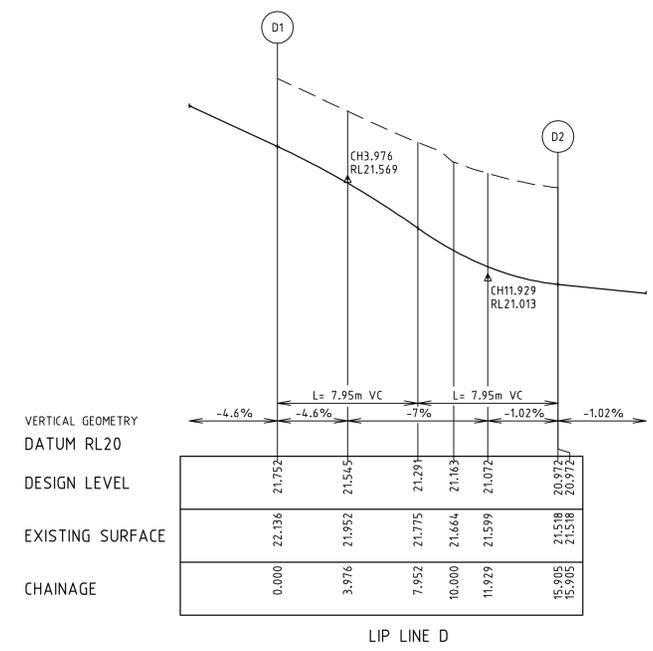
LIP LINE A



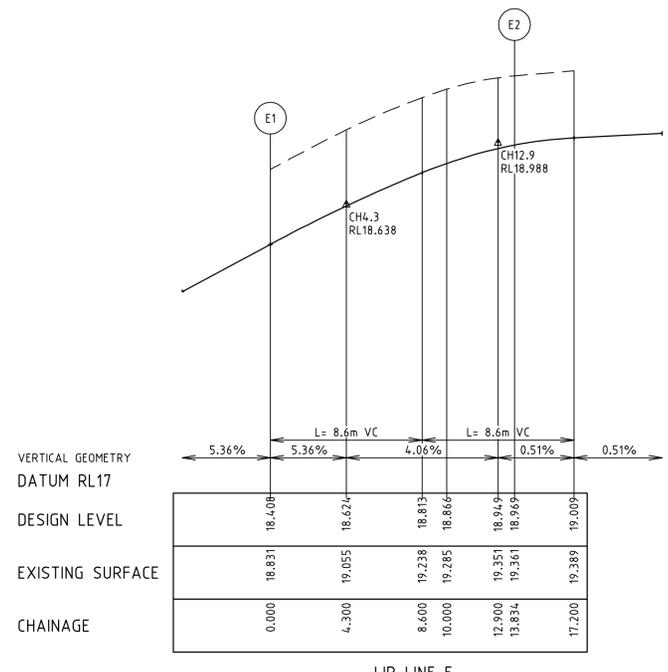
LIP LINE B



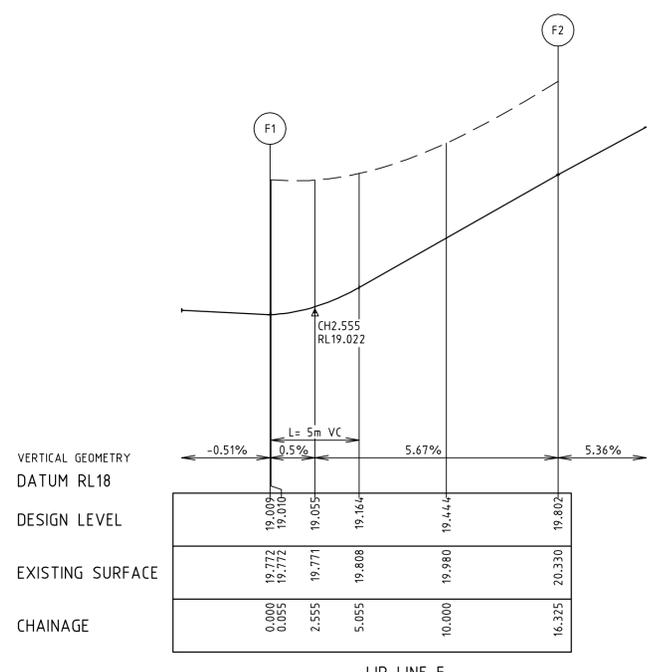
LIP LINE C



LIP LINE D



LIP LINE E



LIP LINE F



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

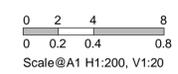
REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

**LEGEND**

---	EXISTING SURFACE
—	DESIGN LINE

**NOTES**

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



Designed	C. Barker	February 2010
Drawn	M. Wilks	February 2010
Checked	C. Birkett	February 2010
Approved	J. Golden	February 2010

**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Lip Profiles

**Drawing No. 0250EHL-02B-06** Rev A  
Sheet No. 6 of 24  
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ALIGNMENT A									
POINT NO	EASTING	NORTHING	RL						
A1	10103.993	48658.883	19.254						
A2	10114.364	48650.025	19.735						
CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
A1 - A2	90.533	9.600	15.169	2.843	2.104	3.694	3.125	3.792	19.538
ALIGNMENT B									
POINT NO	EASTING	NORTHING	RL						
B1	10120.946	48650.512	19.735						
B2	10120.929	48650.751	19.737						
B3	10129.705	48661.027	20.137						
CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
B2 - B3	89.467	9.600	14.990	2.780	2.058	3.653	3.103	3.748	19.909
ALIGNMENT C									
POINT NO	EASTING	NORTHING	RL						
C1	10147.517	48680.164	20.972						
C2	10147.511	48677.941	20.982						
C3	10138.709	48668.401	20.561						
CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
C2 - C3	85.075	9.600	14.254	2.526	1.873	3.482	3.008	3.564	20.846
ALIGNMENT D									
POINT NO	EASTING	NORTHING	RL						
D1	10164.515	48670.552	21.752						
D2	10154.117	48680.146	20.972						
CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
D1 - D2	94.925	9.600	15.905	3.110	2.298	3.863	3.210	3.976	21.291
ALIGNMENT E									
POINT NO	EASTING	NORTHING	RL						
E1	10139.684	48870.089	18.408						
E2	10148.016	48860.546	18.969						
E3	10148.006	48857.181	19.009						
CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
E1 - E2	82.568	9.600	13.834	2.386	1.770	3.384	2.950	3.459	18.743
ALIGNMENT F									
POINT NO	EASTING	NORTHING	RL						
F1	10154.606	48857.162	19.009						
F2	10165.474	48866.652	19.802						
CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
F1 - F2	97.432	9.600	16.325	3.266	2.411	3.959	3.255	4.081	19.340

BARNEY GROVE DESIGN LINE				
CHAINAGE	EASTING	NORTHING	BEARING	
162.249	10119.649	48623.334	355°46'00"	IP
200.000	10116.862	48660.982	355°46'00"	
202.278	10116.694	48663.253	355°46'00"	IP

IP 1  
 COORDINATE = 10119.6492 48623.3339  
 CHAINAGE = 162.2493

IP 2  
 COORDINATE = 10116.6943 48663.2535  
 CHAINAGE = 202.2781

EBBTIDE DRIVE DESIGN LINE				
CHAINAGE	EASTING	NORTHING	BEARING	
0.000	10150.778	48666.096	0°09'30"	IP
100.000	10151.055	48766.095	0°09'30"	
200.000	10151.331	48866.095	0°09'30"	
205.769	10151.347	48871.863	0°09'30"	IP

IP 1  
 COORDINATE = 10150.7783 48666.0956  
 CHAINAGE = 0.0000

IP 2  
 COORDINATE = 10151.3469 48871.8635  
 CHAINAGE = 205.7687

HILLCLIMB DRIVE DESIGN LINE				
CHAINAGE	EASTING	NORTHING	BEARING	
258.013	10113.882	48876.856	97°35'25"	IP
300.000	10155.501	48871.310	97°35'25"	
338.063	10193.230	48866.282	97°35'25"	IP

IP 1  
 COORDINATE = 10113.8817 48876.8559  
 CHAINAGE = 258.0127

IP 2  
 COORDINATE = 10193.2302 48866.2823  
 CHAINAGE = 338.0626

SHOALING DRIVE DESIGN LINE				
CHAINAGE	EASTING	NORTHING	BEARING	
264.979	10098.941	48661.773	85°14'00"	IP
300.000	10133.841	48664.683	85°14'00"	
346.592	10180.272	48668.555	85°14'00"	IP

IP 1  
 COORDINATE = 10098.9408 48661.7730  
 CHAINAGE = 264.9786

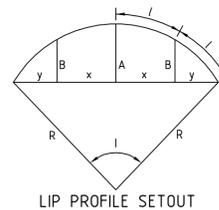
IP 2  
 COORDINATE = 10180.2721 48668.5550  
 CHAINAGE = 346.5922



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 Level 1, 6 Riverside Quay  
 Southbank, Victoria 3006

A	ISSUED TO COUNCIL	10.04.10	
	REVISION	DATE	APP'D

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



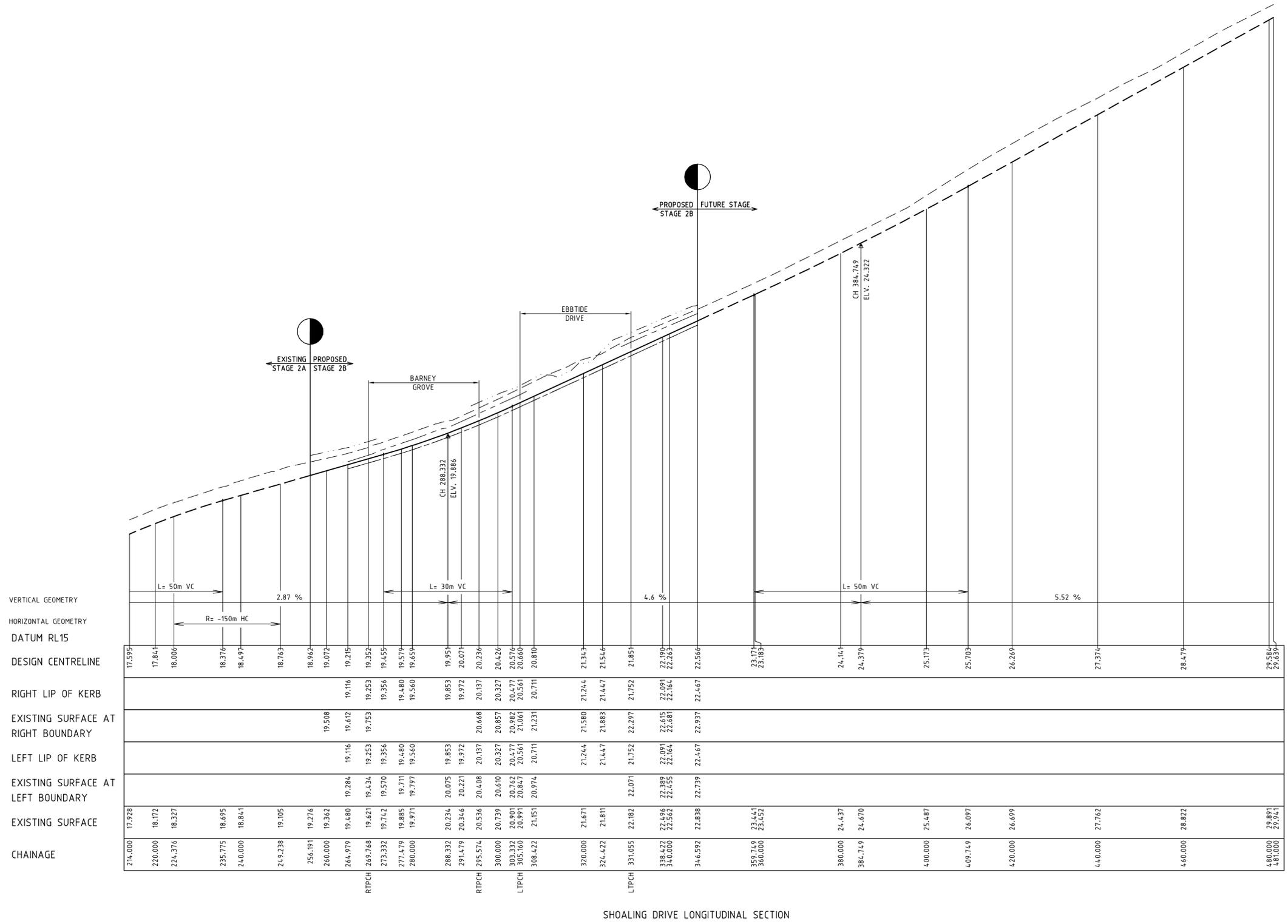
Geelong Tel +61 3 5228 3100  
 Designed C. Barker February 2010  
 Drawn M. Wilks February 2010  
 Checked C. Birkett February 2010  
 Approved J. Golden February 2010

**Estuary**  
 Stage 2B  
 City of Greater Geelong  
 Roadworks and Drainage  
 Setout Information plan

**Drawing No. 0250EHL-02B-07** Rev A  
 Sheet No. 7 of 24  
 © SM Urban Pty Ltd ABN 99 124 206 819







VERTICAL GEOMETRY	L= 50m VC		2.87 %		L= 30m VC		4.6 %		L= 50m VC		5.52 %																											
HORIZONTAL GEOMETRY	R= -150m HC																																					
DATUM RL15																																						
DESIGN CENTRELINE	17.595	17.844	18.006	18.376	18.497	18.763	18.962	19.072	19.215	19.352	19.455	19.480	19.579	19.659	19.951	19.951	20.071	20.236	20.426	20.576	20.660	20.810	21.343	21.546	21.851	22.190	22.283	23.171	23.181	24.141	24.379	25.173	25.703	26.269	27.374	28.479	29.554	29.639
RIGHT LIP OF KERB									19.116	19.253	19.356	19.480	19.560	19.853	19.972	20.137	20.327	20.426	20.477	20.561	20.711	21.244	21.447	21.752	22.091	22.164	23.181	23.181	24.141	24.379	25.173	25.703	26.269	27.374	28.479	29.554	29.639	
EXISTING SURFACE AT RIGHT BOUNDARY							19.508	19.642	19.753	19.853	19.972	20.137	20.327	20.426	20.477	20.561	20.711	21.244	21.447	21.752	22.091	22.164	23.181	23.181	24.141	24.379	25.173	25.703	26.269	27.374	28.479	29.554	29.639					
LEFT LIP OF KERB									19.116	19.253	19.356	19.480	19.560	19.853	19.972	20.137	20.327	20.426	20.477	20.561	20.711	21.244	21.447	21.752	22.091	22.164	23.181	23.181	24.141	24.379	25.173	25.703	26.269	27.374	28.479	29.554	29.639	
EXISTING SURFACE AT LEFT BOUNDARY									19.116	19.253	19.356	19.480	19.560	19.853	19.972	20.137	20.327	20.426	20.477	20.561	20.711	21.244	21.447	21.752	22.091	22.164	23.181	23.181	24.141	24.379	25.173	25.703	26.269	27.374	28.479	29.554	29.639	
EXISTING SURFACE	17.228	18.172	18.327	18.695	18.841	19.105	19.276	19.362	19.480	19.621	19.742	19.885	19.971	20.075	20.221	20.346	20.408	20.477	20.561	20.711	21.244	21.447	21.752	22.091	22.164	23.181	23.181	24.141	24.379	25.173	25.703	26.269	27.374	28.479	29.554	29.639		
CHAINAGE	214.000	220.000	224.376	235.775	240.000	249.238	256.191	260.000	264.979	269.768	273.332	277.479	280.000	288.332	291.479	295.574	300.000	303.332	305.160	306.422	320.000	324.422	331.055	338.422	340.000	346.592	359.749	360.000	386.749	400.000	409.749	420.000	440.000	460.000	480.000	481.000		

SHOALING DRIVE LONGITUDINAL SECTION



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

REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

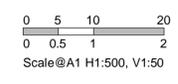
**LEGEND**

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

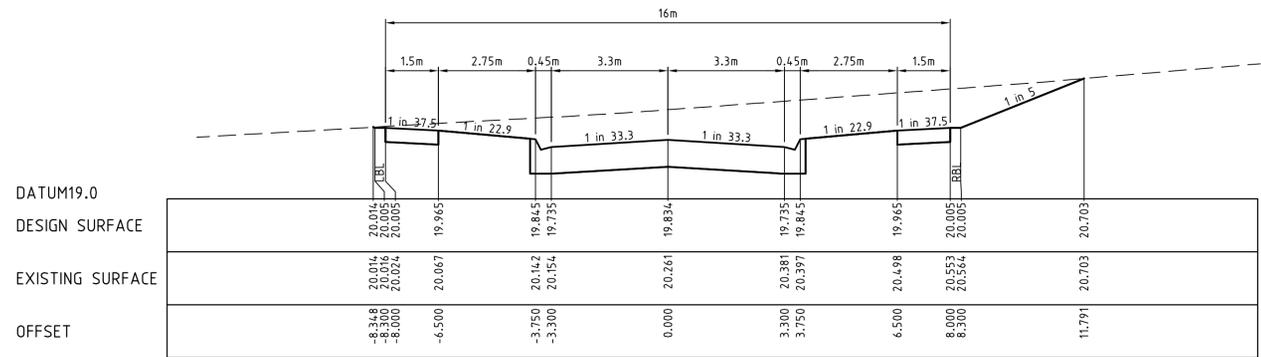


**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Longitudinal Sections - 3

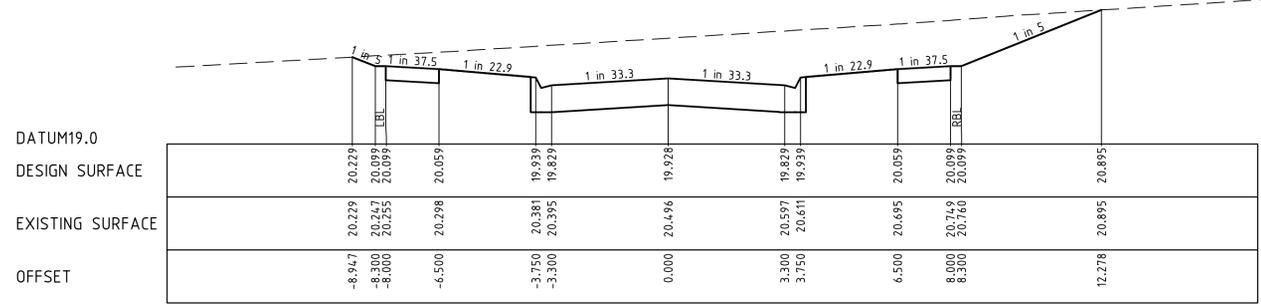
Designed C. Barker February 2010  
Drawn M. Wilks February 2010  
Checked C. Birkett February 2010  
Approved J. Golden February 2010



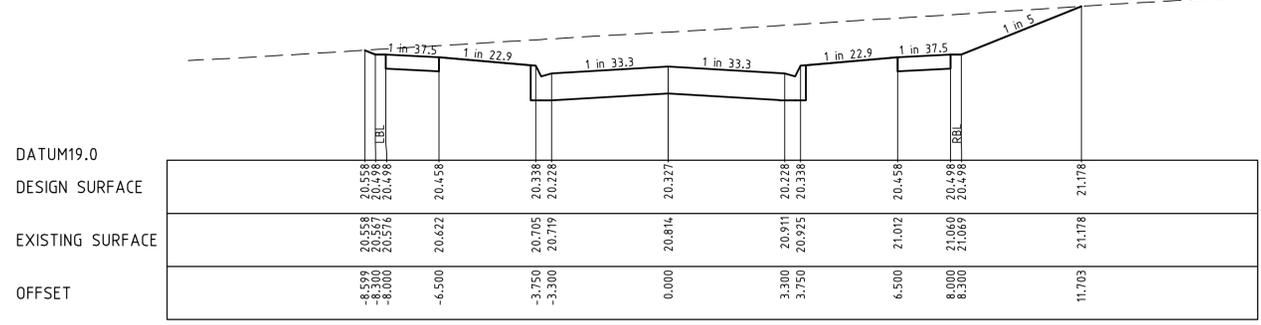
**Drawing No. 0250EHL-02B-10** Rev A  
Sheet No. 10 of 24  
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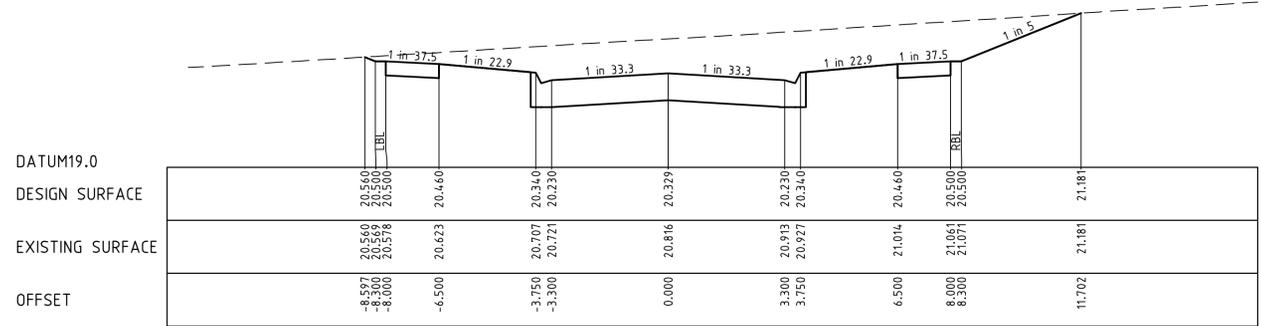
LTPCH 189.257



CH 180.000



CH 162.351



CH 162.263



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

REVISION	DATE	APP'D
B MISSING BOUNDARY LINE TEXT ADDED	19.05.10	
A ISSUED TO COUNCIL	10.04.10	

**LEGEND**

--- EXISTING SURFACE

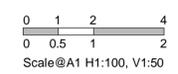
— DESIGN LINE



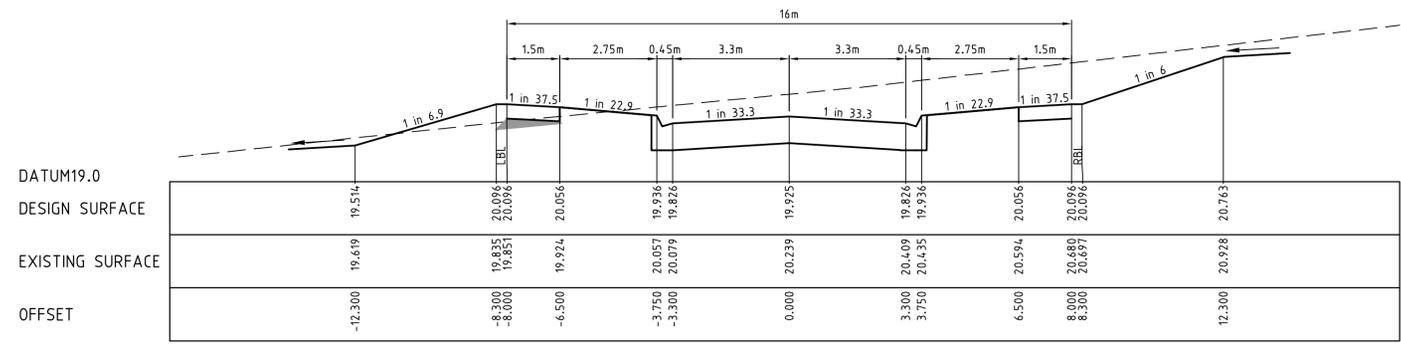
**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Barney Grove

Designed	C. Barker	February 2010
Drawn	M. Wilks	February 2010
Checked	C. Birkett	February 2010
Approved	J. Golden	February 2010

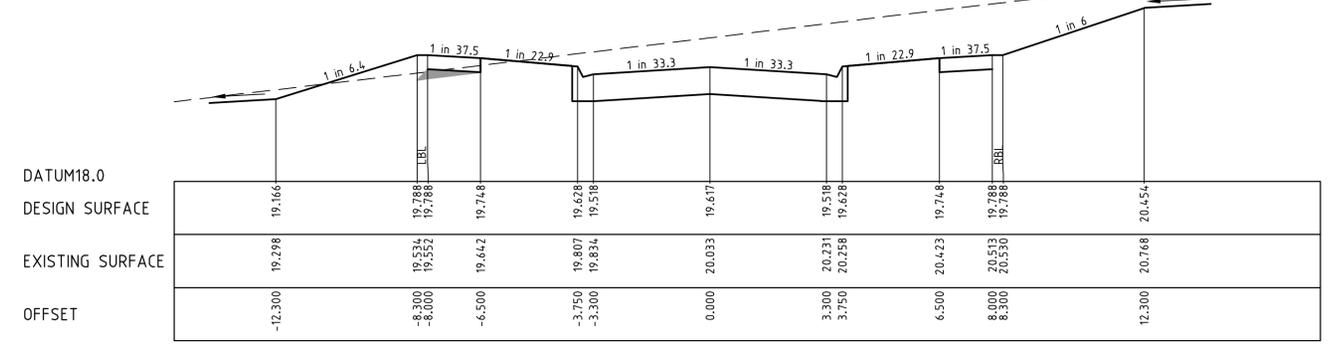
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Sheet No. 11 of 24  
© SM Urban Pty Ltd ABN 99 124 206 819



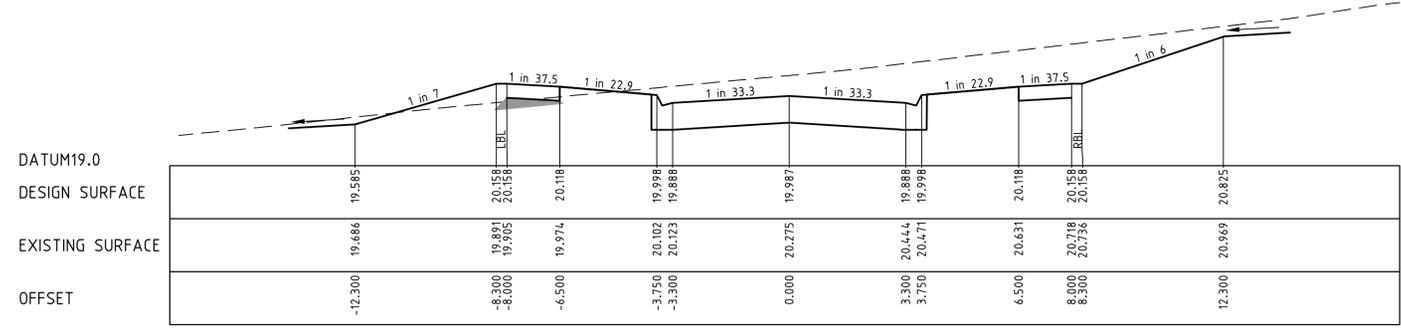




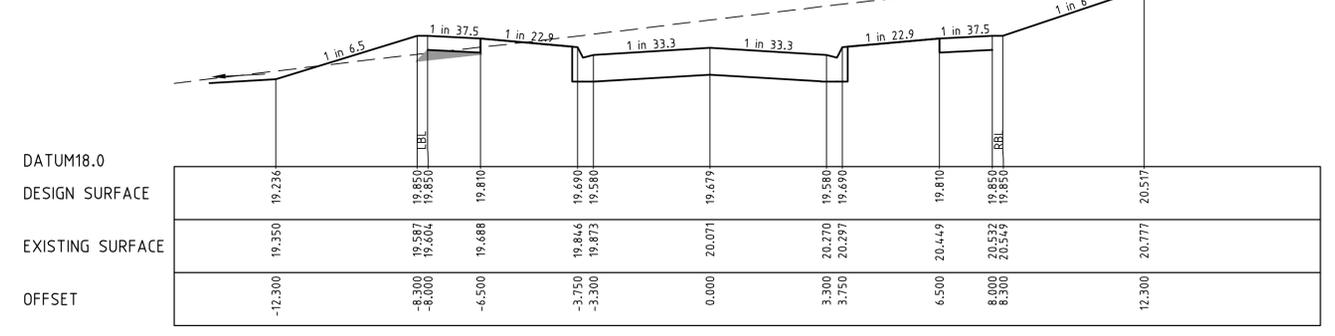
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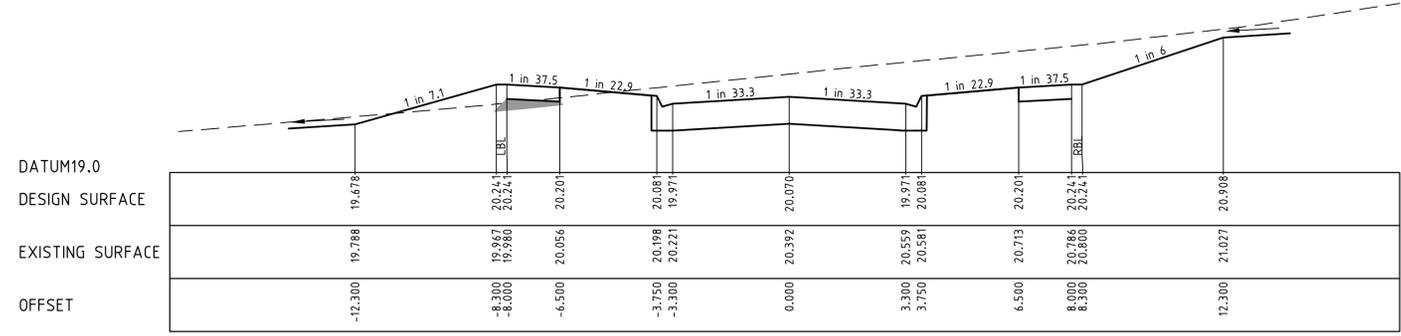
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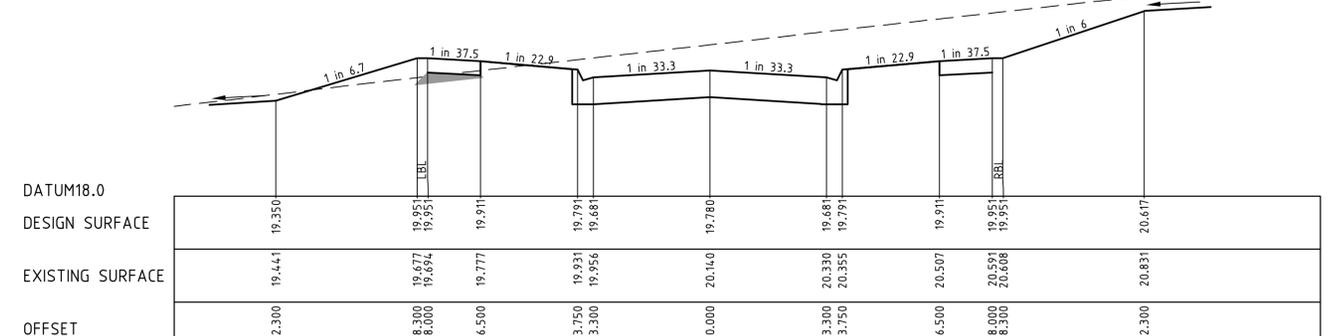
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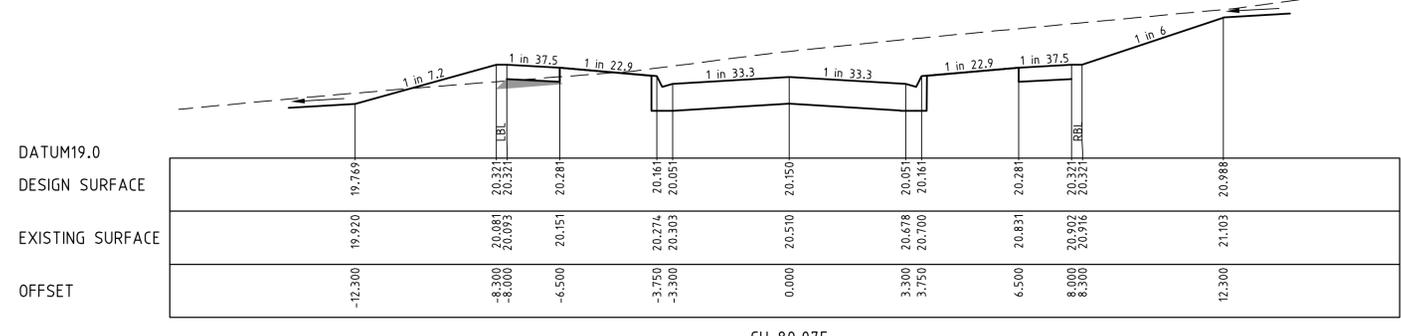
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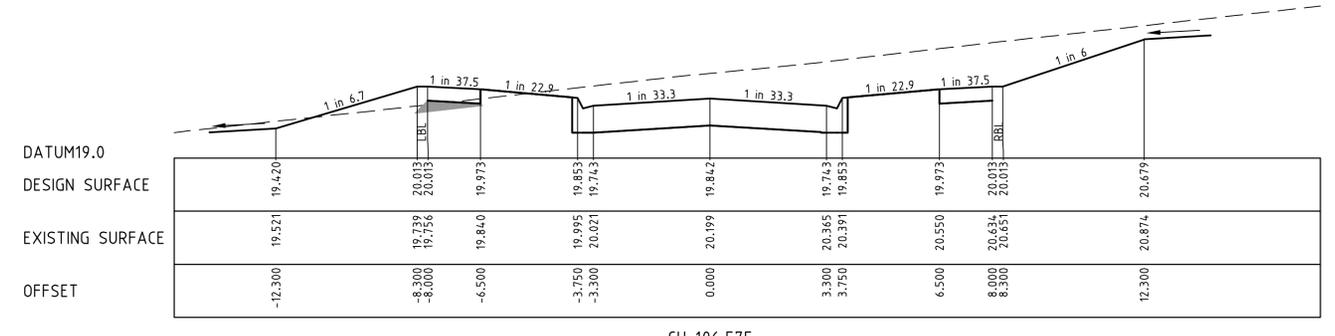
CH 86.933



CH 111.933



CH 80.075



CH 106.575



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Level 1, 6 Riverside Quay  
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REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

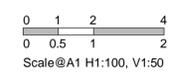
**LEGEND**

--- EXISTING SURFACE

— DESIGN LINE

FOR LOT BENCHING DETAILS REFER LAYOUT PLAN AND TYPICAL SECTION

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



Designed	C. Barker	February 2010
Drawn	M. Wilks	February 2010
Checked	C. Birkett	February 2010
Approved	J. Golden	February 2010

**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Ebbside Drive - 2

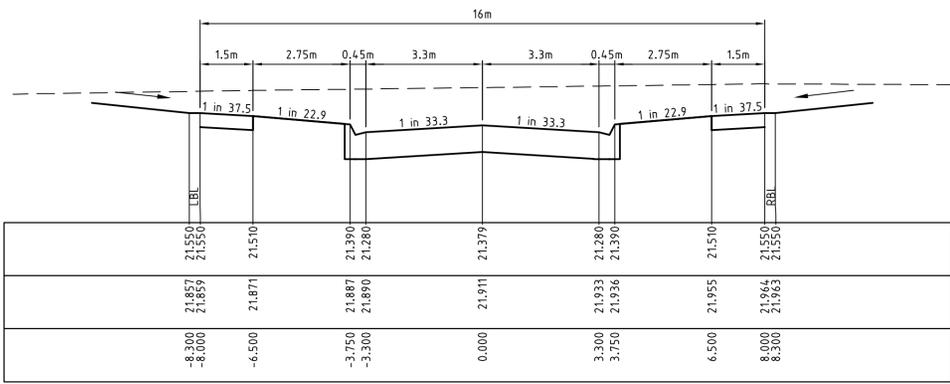
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Sheet No. 13 of 24

Rev A

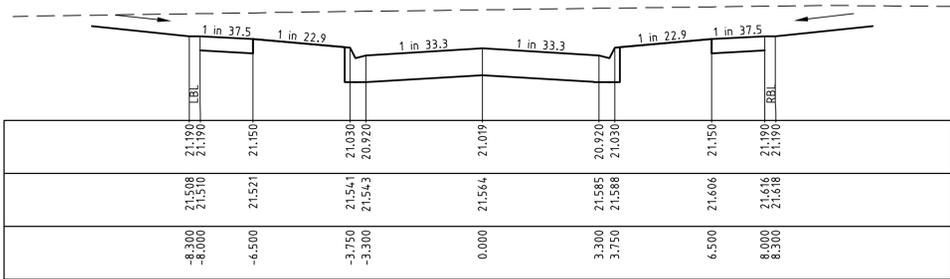
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CH 338.063



CH 331.342



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REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

LEGEND	
---	EXISTING SURFACE
—	DESIGN LINE



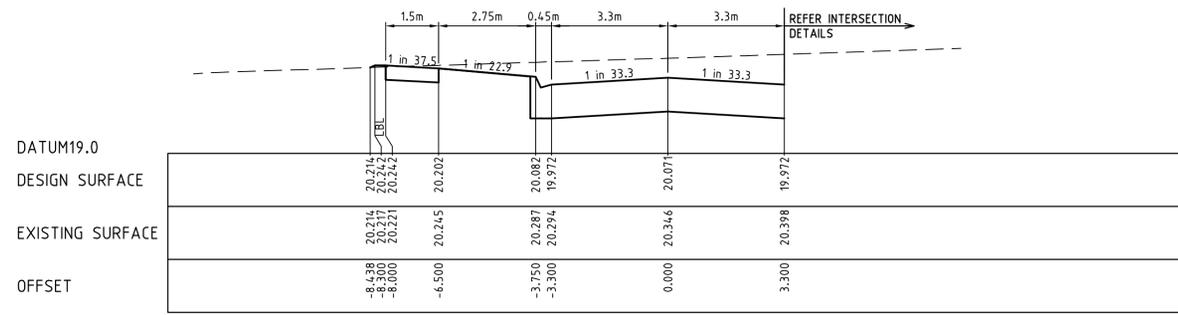
**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Hillclimb Drive - 2

Designed C. Barker February 2010  
Drawn M. Wilks February 2010  
Checked C. Birkett February 2010  
Approved J. Golden February 2010

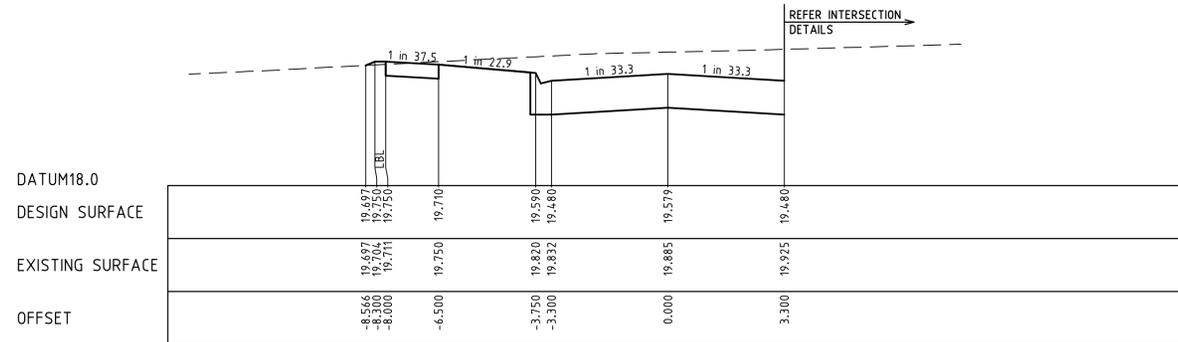
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**Drawing No. 0250EHL-02B-16** Rev A  
Sheet No. 16 of 24

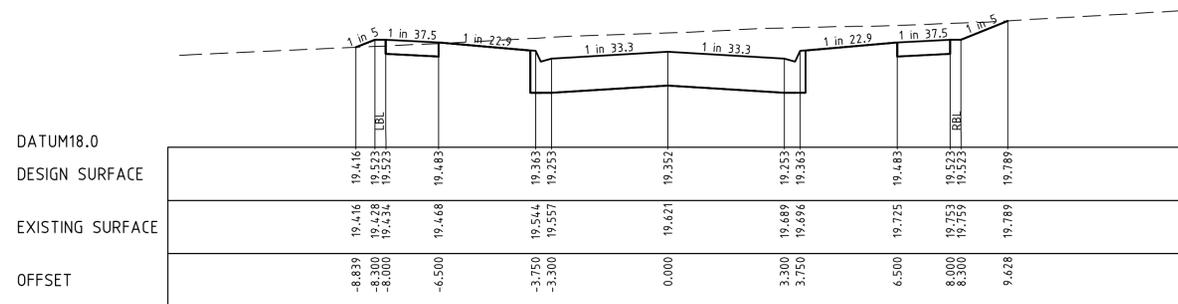
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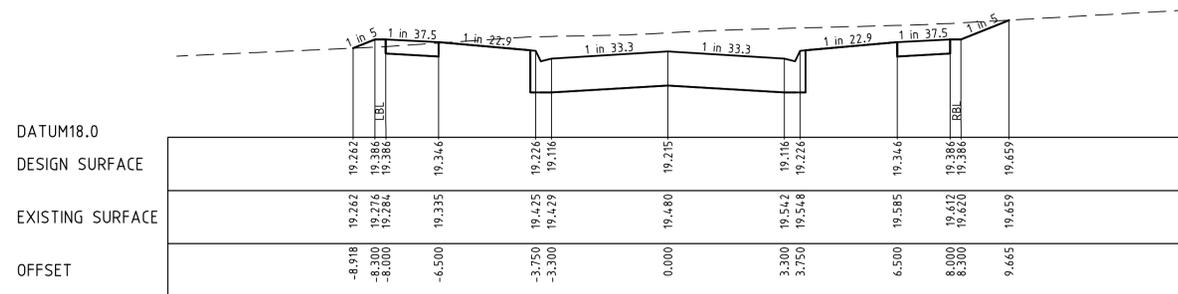
CH 291.479



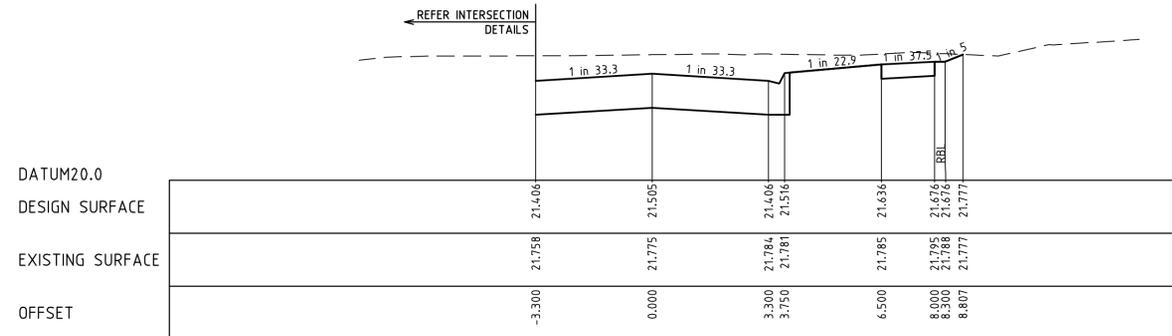
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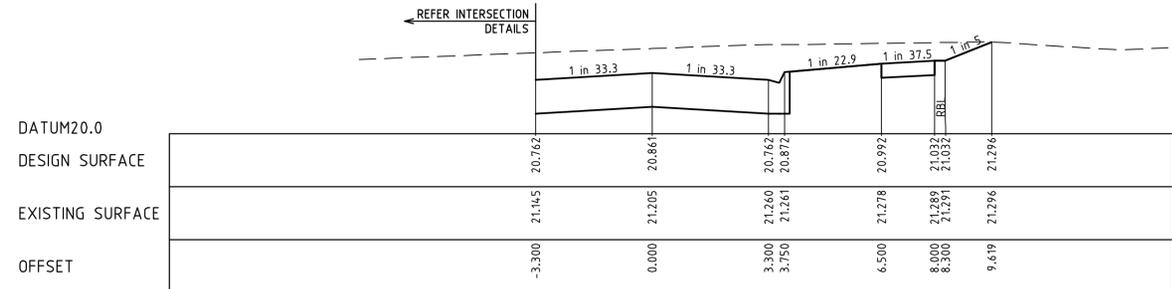
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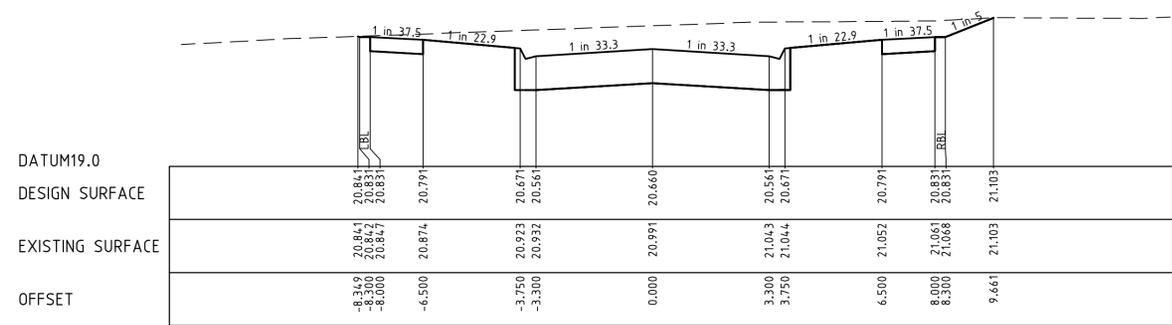
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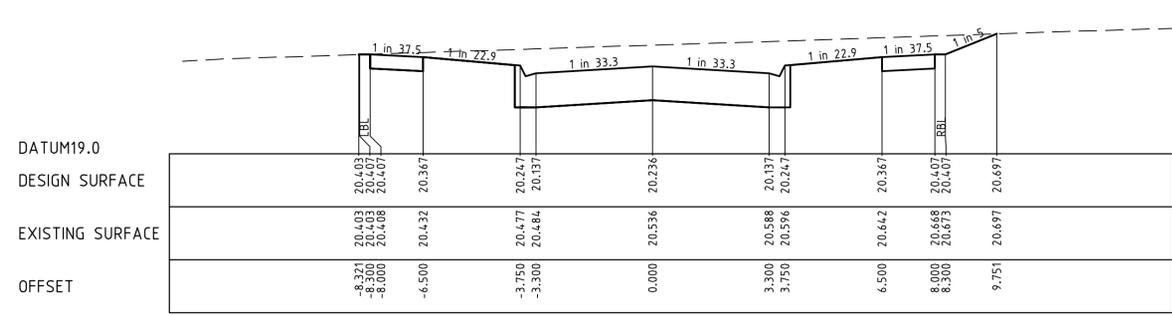
CH 323.527



CH 309.527



LTPCH 305.160



RTPCH 295.574



Principal Leopold Developments Pty Ltd  
Level 1, 6 Riverside Quay  
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REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

LEGEND

- EXISTING SURFACE
- DESIGN LINE



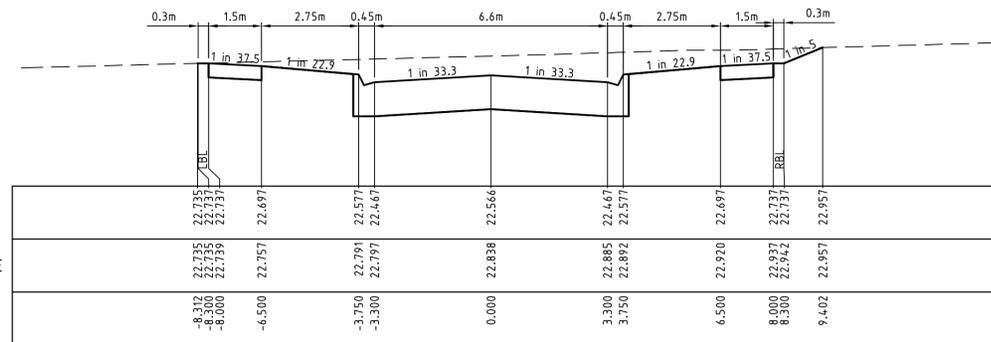
Geelong Tel +61 3 5228 3100  
Designed C. Barker February 2010  
Drawn M. Wilks February 2010  
Checked C. Birkett February 2010  
Approved J. Golden February 2010

Estuary  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Shoaling Drive - 1

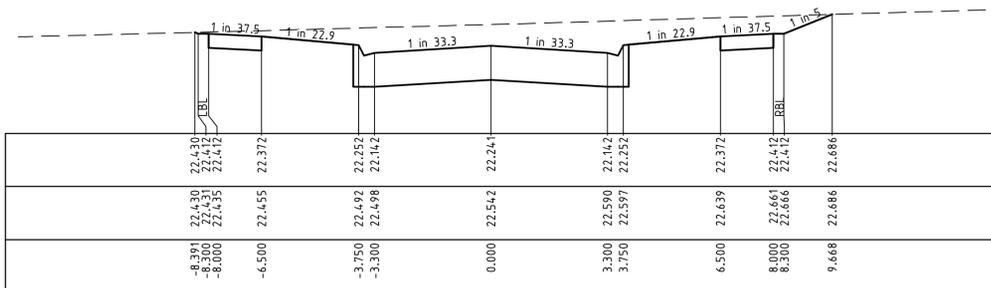
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Sheet No. 17 of 24

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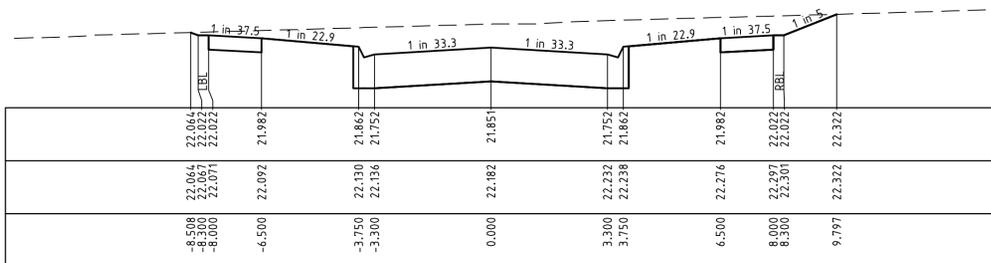
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CH 346.592



CH 339.527



LTPCH 331.055



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Southbank, Victoria 3006

REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

LEGEND	
---	EXISTING SURFACE
—	DESIGN LINE



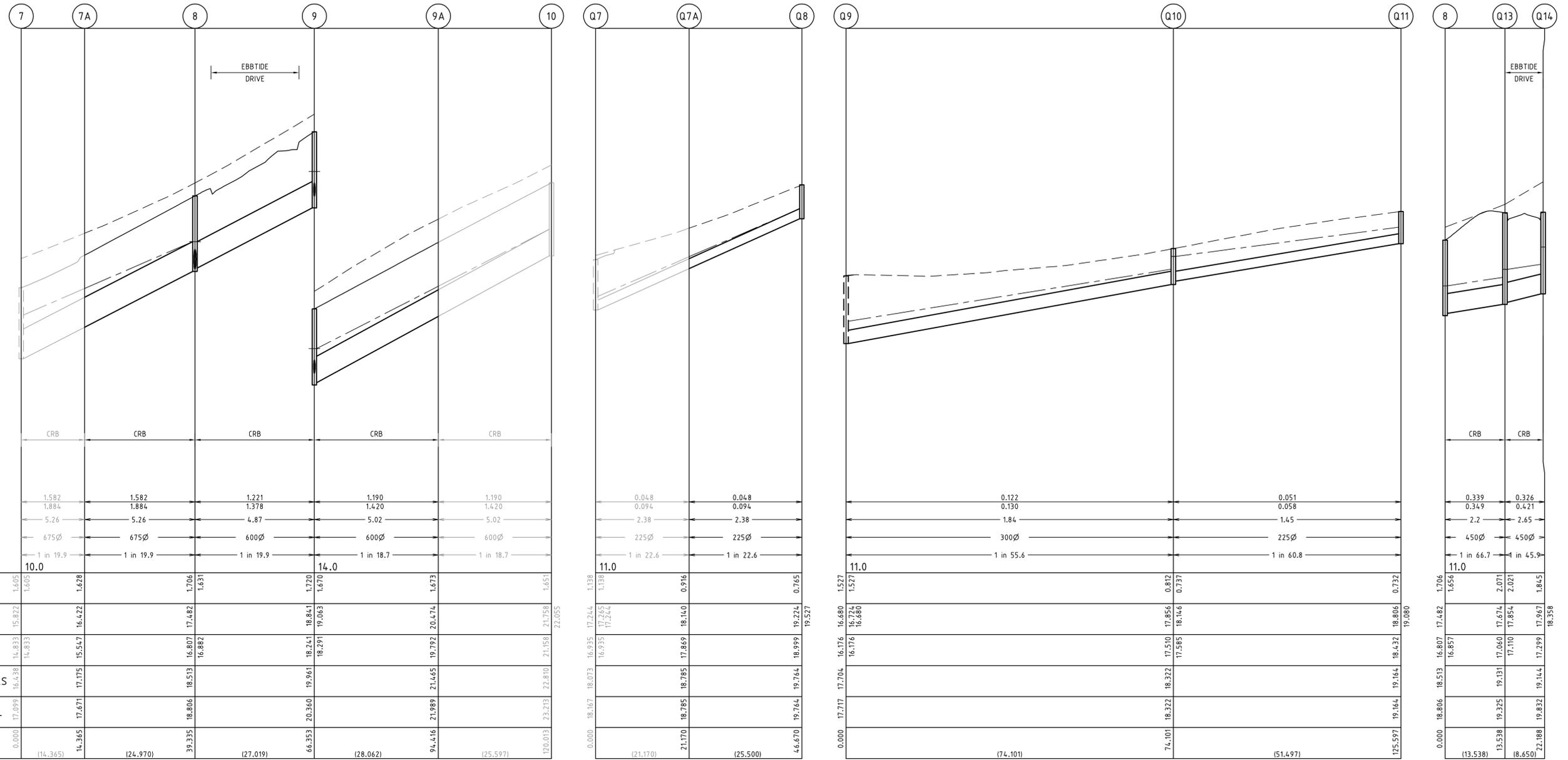
Designed C. Barker February 2010  
Drawn M. Wilks February 2010  
Checked C. Birkett February 2010  
Approved J. Golden February 2010

**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Shoaling Drive - 2

**Drawing No. 0250EHL-02B-18** Rev A  
Sheet No. 18 of 24

Scale@A1 H1:100, V1:50

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Level 1, 6 Riverside Quay  
Southbank, Victoria 3006

REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

**LEGEND**

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



Geelong Tel +61 3 5228 3100  
Designed C. Barker February 2010  
Drawn M. Wilks February 2010  
Checked C. Birkett February 2010  
Approved J. Golden February 2010

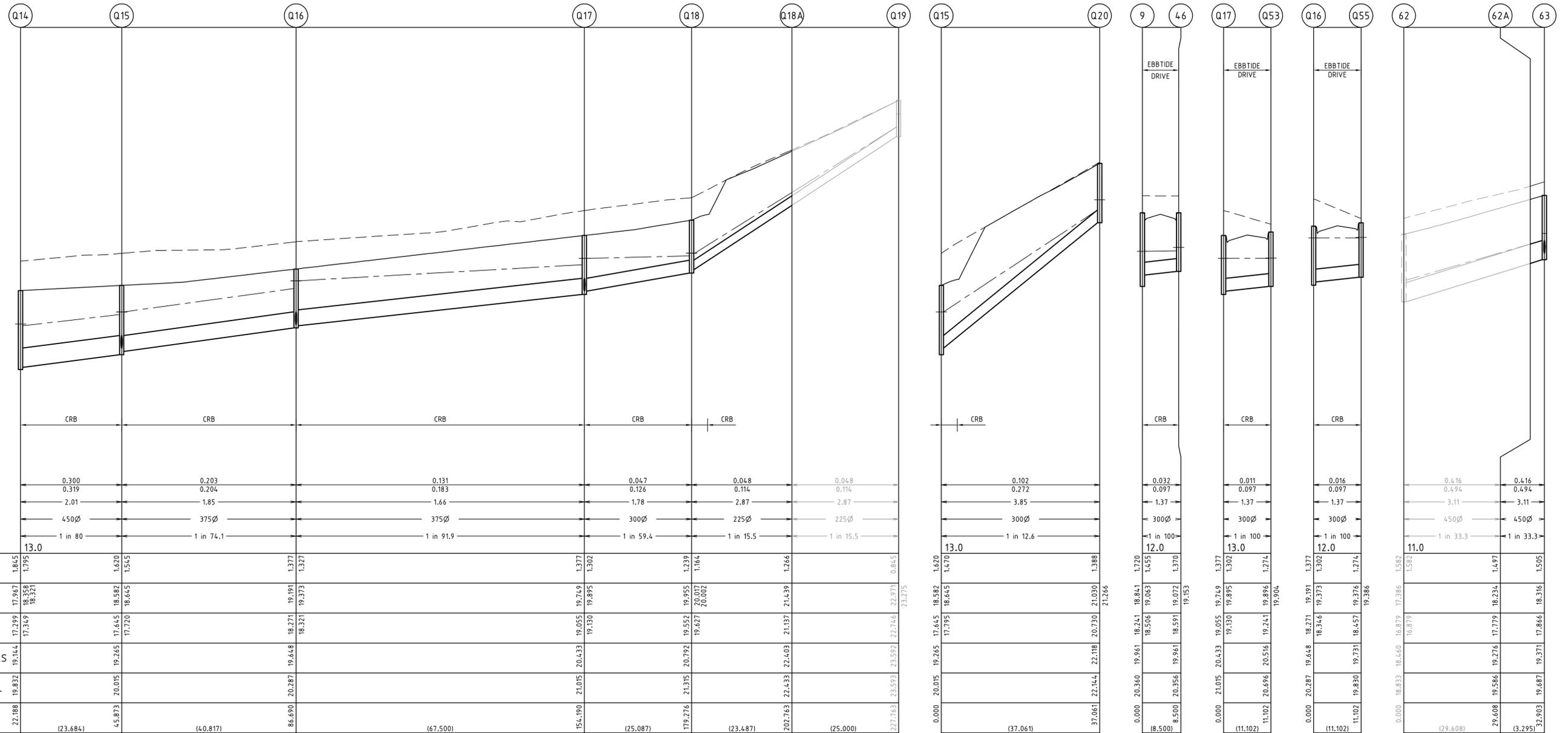
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**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Drainage Longitudinal Sections - 1

**Drawing No. 0250EHL-02B-19**  
Sheet No. 19 of 24

Rev A

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

REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

**LEGEND**

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



Geelong Tel +61 3 5228 3100  
Designed C. Barker February 2010  
Drawn M. Wilks February 2010  
Checked C. Birkett February 2010  
Approved J. Golden February 2010

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

**Drawing No. 0250EHL-02B-20** Rev A  
Sheet No. 20 of 24

0 5 10 20  
0 0.5 1 2  
Scale@A1 H1:500, V1:50

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PIT SCHEDULE											
PIT NUMBER	TYPE	INTERNAL		INLET		OUTLET		COVER LEVEL (m)	DEPTH (m)	STANDARD DRAWING	REMARKS
		WIDTH (mm)	LENGTH (mm)	DIA. (mm)	INVERT RL (m)	DIA. (mm)	INVERT RL (m)				
7A	EXISTING ENDDPIPE			675	15.547			17.175	1.628		CONNECT TO EXISTING ENDDPIPE
8	SIDE ENTRY PIT	900	900	600	16.882	675	16.807	18.513	1.706	CGG305 CGG309	
9	SIDE ENTRY PIT	900	900	600	16.857	600	18.241	19.961	1.720	CGG305 CGG309	
9A	ENDDPIPE					600	19.792	21.465	1.673		
Q7A	EXISTING ENDDPIPE			225	17.869			18.785	0.916		CONNECT TO EXISTING ENDDPIPE. Q100 PIPE
Q8	JUNCTION PIT	900	600			225	18.999	19.764	0.765	CGG306	Q100 PIPE
Q9	EXISTING PIT			300	16.176			17.704	1.527		CONNECT TO JUNCTION PIT FROM END ENTRY PIT. Q100 PIPE
Q10	JUNCTION PIT	900	600	225	17.585	300	17.510	18.322	0.812	CGG306	Q100 PIPE
Q11	JUNCTION PIT	900	600			225	18.432	19.164	0.732	CGG306	Q100 PIPE
Q13	DOUBLE SIDE ENTRY PIT	2200	900	450	17.110	450	17.060	19.131	2.071	CGG305 CGG312	Q100 PIPE
Q14	DOUBLE SIDE ENTRY PIT	2200	900	450	17.349	450	17.299	19.144	1.845	CGG305 CGG312	Q100 PIPE
Q15	JUNCTION PIT	900	900	375	17.720	450	17.645	19.265	1.620	CGG305 CGG306	Q100 PIPE
Q16	DOUBLE SIDE ENTRY PIT	2200	900	375	17.795						
Q16	DOUBLE SIDE ENTRY PIT	2200	900	375	18.321	375	18.271	19.648	1.377	CGG305 CGG312	Q100 PIPE
Q17	DOUBLE SIDE ENTRY PIT	2200	900	300	18.346						
Q17	DOUBLE SIDE ENTRY PIT	2200	900	300	19.130	375	19.055	20.433	1.377	CGG305 CGG312	Q100 PIPE
Q18	JUNCTION PIT	900	900	225	19.130						
Q18	JUNCTION PIT	900	900	225	19.627	300	19.552	20.792	1.239	CGG305 CGG306	Q100 PIPE
Q18A	ENDDPIPE					225	21.137	22.403	1.266		Q100 PIPE
Q20	END ENTRY PIT	900	900			300	20.730	22.118	1.388	CGG305 CGG306	Q100 PIPE
46	SIDE ENTRY PIT	900	900			300	18.591	19.961	1.370	CGG305 CGG309	
Q53	DOUBLE SIDE ENTRY PIT	2200	900			300	19.241	20.516	1.274	CGG305 CGG312	Q100 PIPE
Q55	DOUBLE SIDE ENTRY PIT	2200	900			300	18.457	19.731	1.274	CGG305 CGG312	Q100 PIPE
62A	EXISTING ENDDPIPE			450	17.779			19.276	1.497		CONNECT TO EXISTING ENDDPIPE
63	SIDE ENTRY PIT	900	900	375	17.941	450	17.866	19.371	1.505	CGG305 CGG309	
64	SIDE ENTRY PIT	900	900	300	18.016						
64	SIDE ENTRY PIT	900	900	375	18.874	375	18.824	20.290	1.466	CGG305 CGG309	
65	SIDE ENTRY PIT	900	900	375	20.427	375	20.377	21.907	1.530	CGG305 CGG309	
65A	ENDDPIPE					375	20.452				
65A	ENDDPIPE					375	21.248	22.645	1.397		
110	SIDE ENTRY PIT	900	900	300	18.330	300	18.280	19.870	1.590	CGG305 CGG309	
111	SIDE ENTRY PIT	900	900	300	18.550	300	18.500	19.868	1.368	CGG305 CGG309	
112	JUNCTION PIT	900	900	300	19.053	300	19.003	20.309	1.305	CGG305 CGG306	
112A	ENDDPIPE					300	19.053				
112A	ENDDPIPE					300	19.115	20.390	1.275		
115	JUNCTION PIT	900	900	300	21.103	300	21.053	22.350	1.298	CGG305 CGG306	
115A	ENDDPIPE					300	21.135	22.370	1.235		
115A	ENDDPIPE					300	21.135	22.370	1.235		
147	SIDE ENTRY PIT	900	900			300	20.537	21.907	1.370	CGG305 CGG309	



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

REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

**LEGEND**

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



Geelong Tel +61 3 5228 3100  
Designed C. Barker February 2010  
Drawn M. Wilks February 2010  
Checked C. Birkett February 2010  
Approved J. Golden February 2010

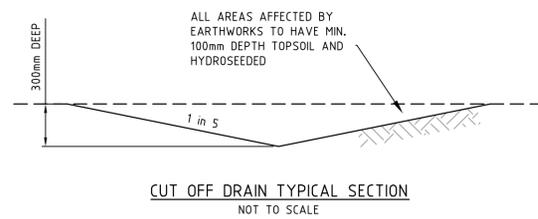
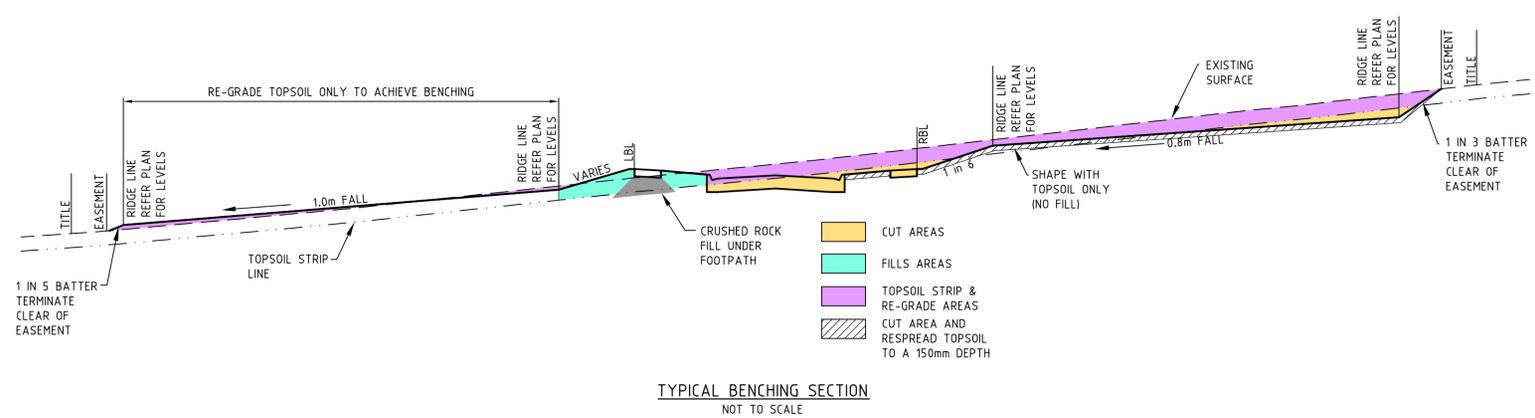
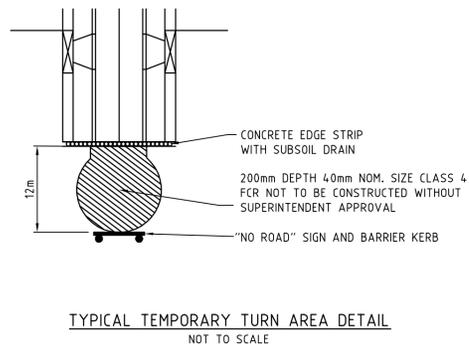
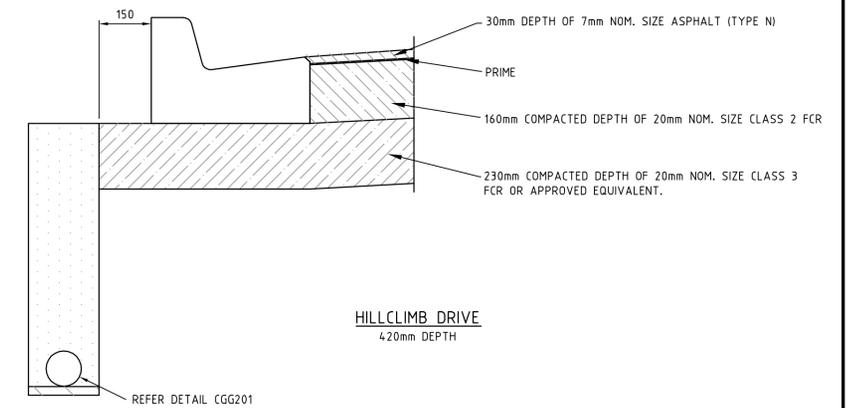
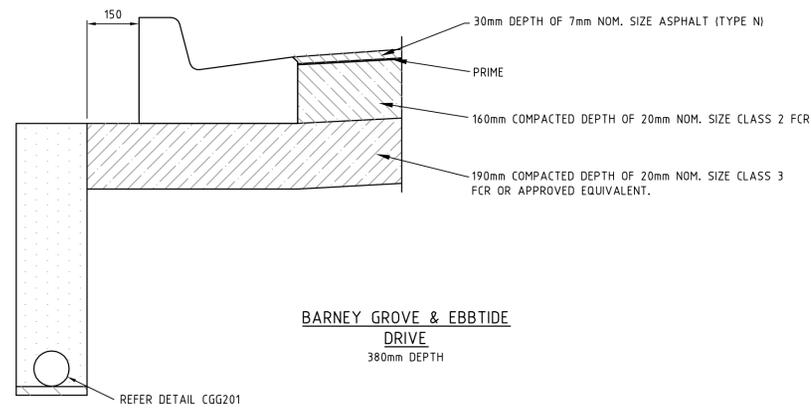
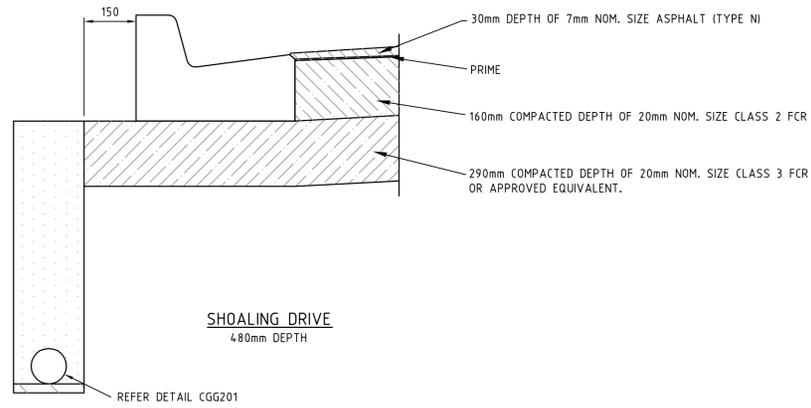
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Scale@A1 H1:500, V1:50

**Estuary**  
Stage 2B  
City of Greater Geelong  
Roadworks and Drainage  
Pit Schedule

**Drawing No. 0250EHL-02B-22**  
Sheet No. 22 of 24

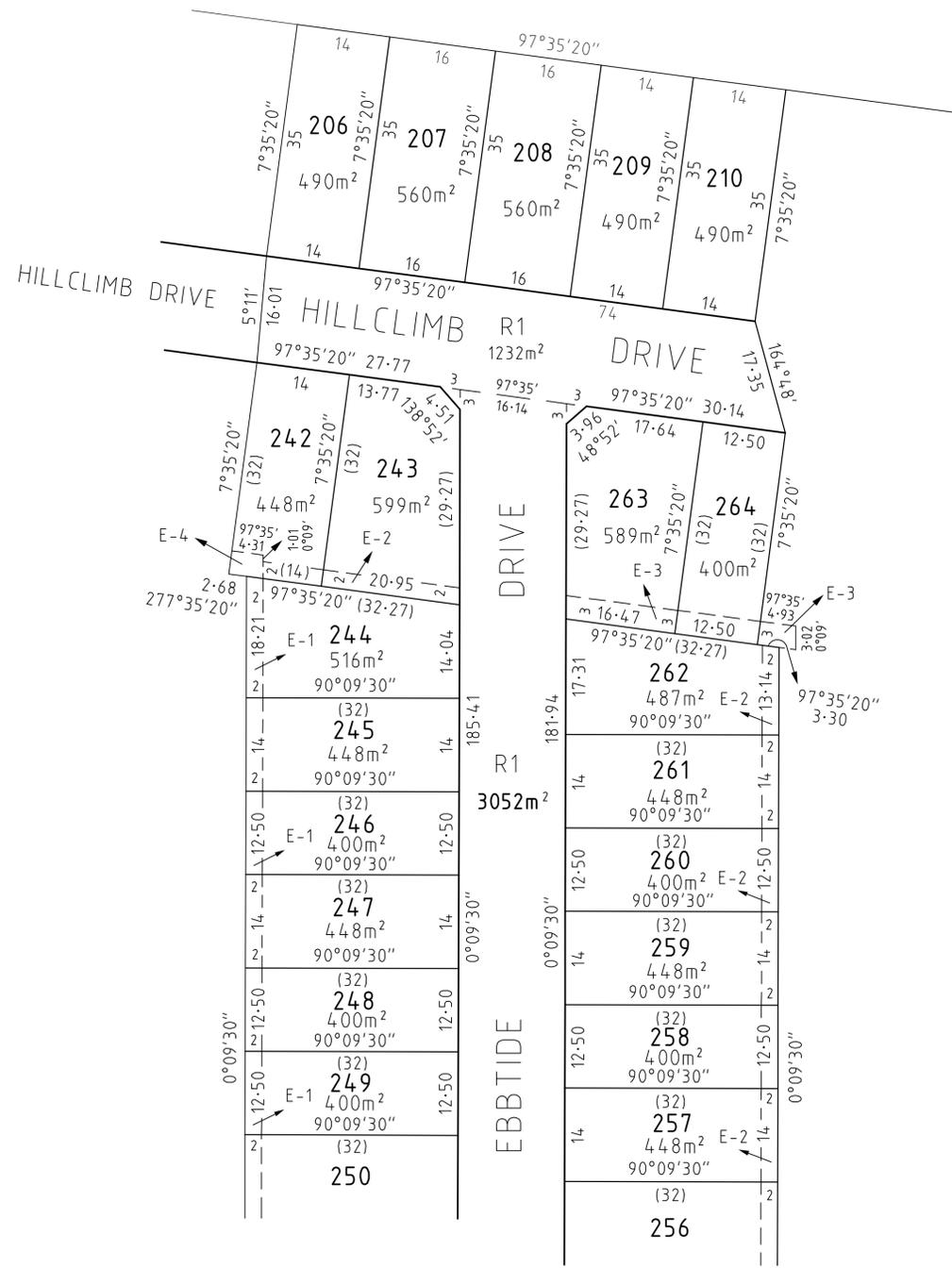
Rev A

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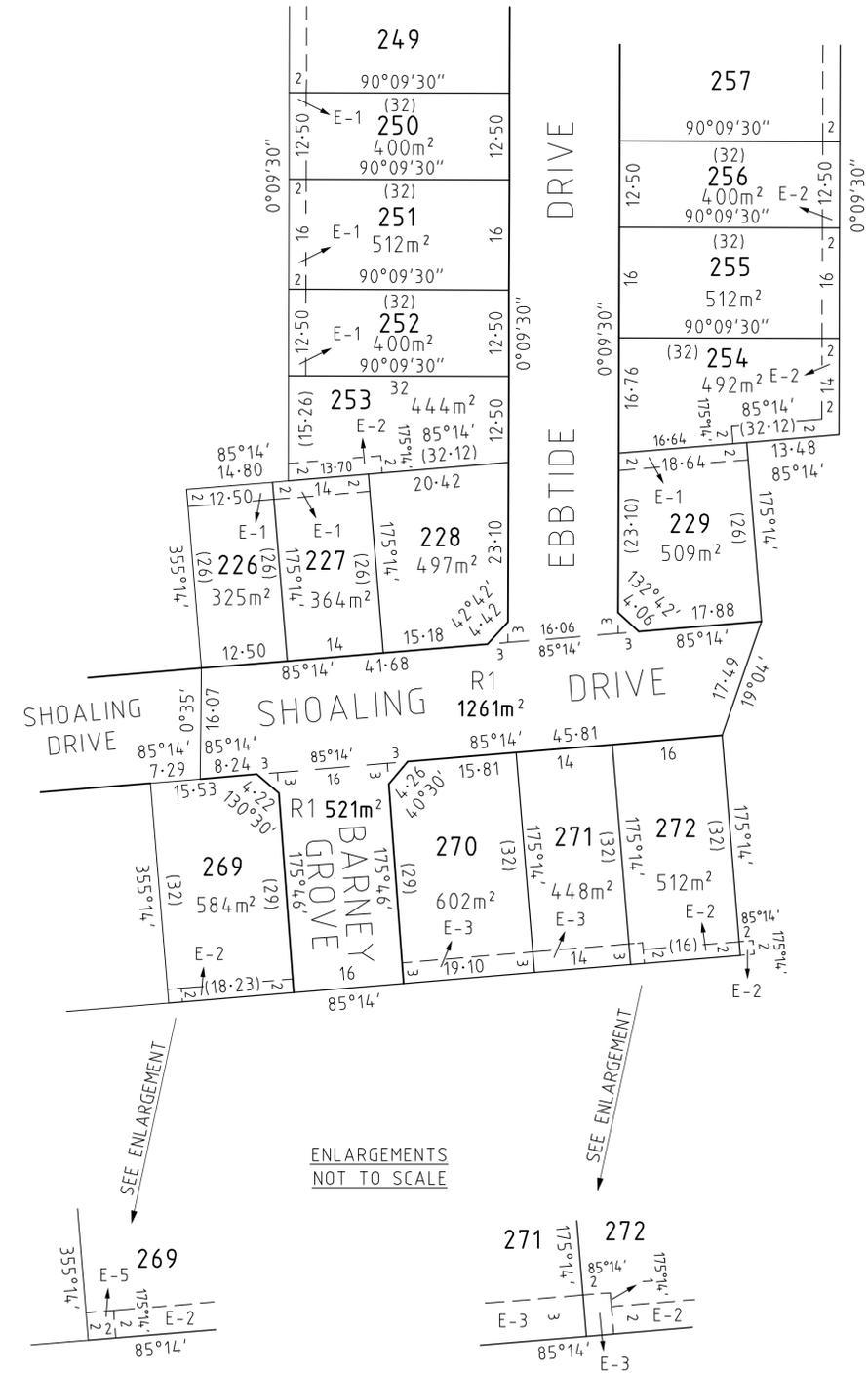
REVISION	DATE	APP'D
A	ISSUED TO COUNCIL	10.04.10

MGA 94 ZONE 55

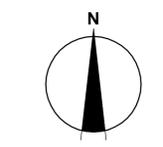


SEE SHEET 4

SEE SHEET 3



ENLARGEMENTS NOT TO SCALE



Scale@A1 1:500



Designed C. Barker February 2010  
 Drawn M. Wilks February 2010  
 Checked C. Birkett February 2010  
 Approved J. Golden February 2010

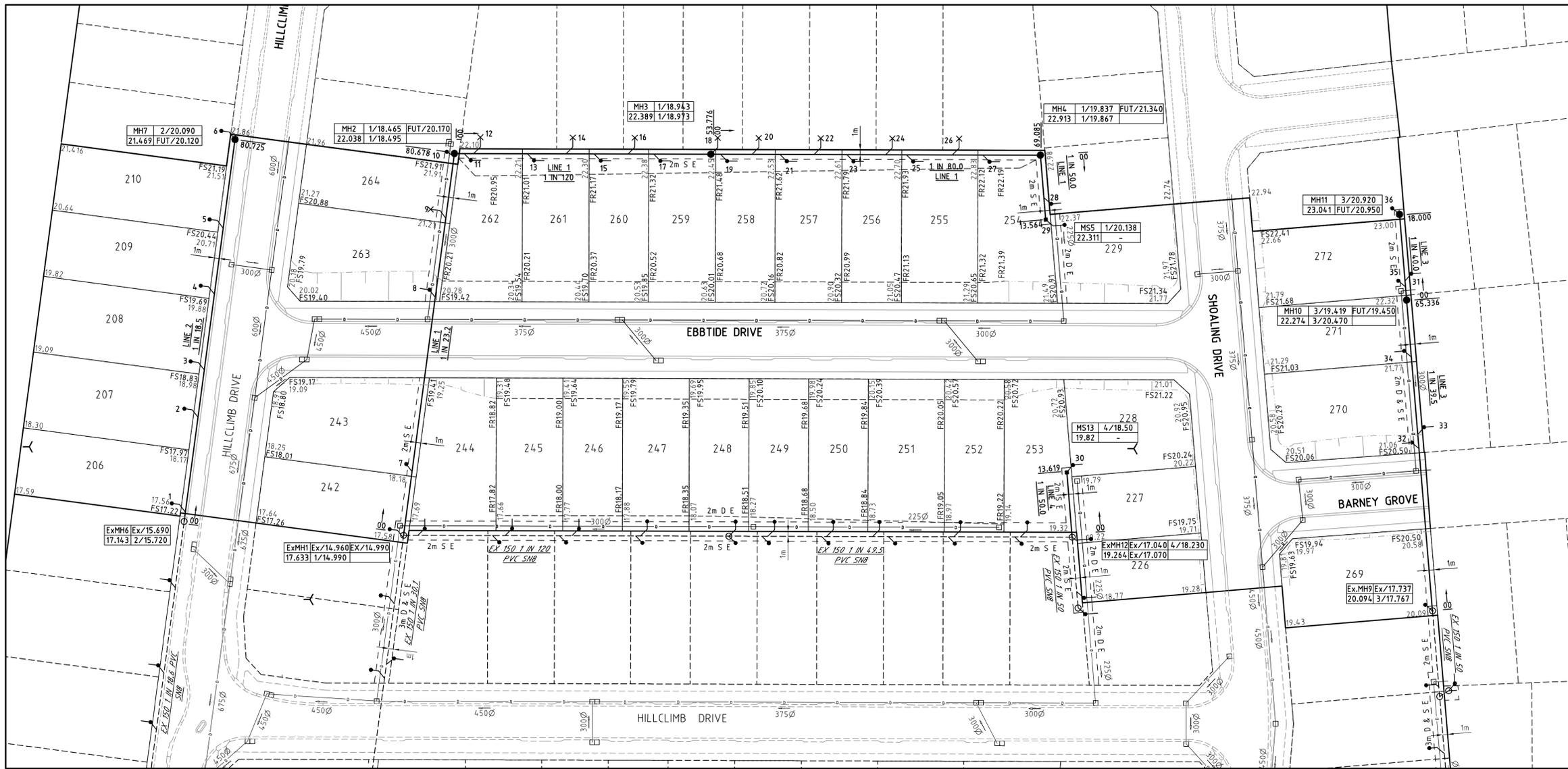
**Estuary**  
 Stage 2B  
 City of Greater Geelong  
 Roadworks and Drainage  
 Subdivision Setout Plan

**Drawing No. 0250EHL-02B-24** Rev A  
 Sheet No. 24 of 24  
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Principal Leopold Developments Pty Ltd  
 Level 1, 6 Riverside Quay  
 Southbank, Victoria 3006

REVISION	DATE	APP'D
A ISSUED TO COUNCIL	10-04-10	



**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

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

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

- NOTES**  
**GENERAL**
- SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE WATER SERVICES ASSOCIATION OF AUSTRALIA STANDARD CODES (WSA 02-2002 - WSA 03-2002) IN CONJUNCTION WITH BARWON WATERS SUPPLEMENTS TO THE CODES.
  - BARWON WATER AND THE PROJECT MANAGER TO BE NOTIFIED 7 CLEAR WORKING DAYS NOTICE PRIOR TO COMMENCEMENT OF WORKS.
  - THE CONTRACTOR SHALL
    - COMPLY WITH SAFETY REQUIREMENTS OF THE MINES ACT, GENERAL REGULATIONS AND STATUTORY RULES, AND THE MINES (TRENCHES) REGULATIONS 1982.
    - NOTIFY THE DEPARTMENT OF LABOUR OF HIS INTENTION TO COMMENCE TRENCHING OPERATIONS WHERE TRENCHES ARE 1.5 METRES OR DEEPER.
    - INSURE THAT THE MINE MANAGER OR HIS DEPUTY AS REQUIRED BY THE REGULATIONS IS IN ATTENDANCE WHEN TRENCHING OPERATIONS ARE IN PROGRESS.
  - THE CONTRACTOR SHALL MAKE ALL WORKS AVAILABLE FOR THE INSPECTOR/SURVEYOR TO CARRY OUT THE NECESSARY INSPECTIONS AND SURVEYING BEFORE BACKFILLING IS COMMENCED.
  - 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.
- SPECIAL**
- RECONNECTION OF EXISTING HOUSE TO NEW BRANCH TO BE UNDERTAKEN BY A LICENSED PLUMBER IN ACCORDANCE WITH PIC CONDITIONS.
  - TRENCH COMPACTION RESULTS TO BE SUBMITTED BY CONSULTANT WITH 'AS CONSTRUCTED' NOTES.

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

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

NEW SEWER MAINS		
SIZE	TYPE	LENGTH
150mm	PVC SN8	394.8

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

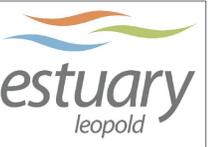
SURVEY CONTROL ARBITRARY					
PM	EASTING	NORTHING	RL	DESCRIPTION	PARISH
PM69	10000.000	50000.000	8.503	BRASS PLAQUE IN CONCRETE	MOOLAP
PM137	11124.354	49193.067	-	BRASS PLAQUE IN CONCRETE	MOOLAP
PM321	9897.742	48994.921	9.436	BRASS PLAQUE IN CONCRETE	MOOLAP

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

WORKS SHALL NOT COMMENCE UNTIL PLANS SIGNED BY BARWON WATER

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



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

REVISION	DATE	APPD
E MINOR AMENDMENTS	17.05.10	
D HOUSE CONNECTIONS AMENDED	28.04.10	
C MINOR AMENDMENTS	22.04.10	
B BARWON WATER AMENDMENTS	14.04.10	
A ISSUED TO BARWON WATER	31.03.10	

**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 TO EXCAVATIONS.
- NOMINAL SIZE OF WATER MAINS INDICATED IN MILLIMETRES. OFFSETS ARE INDICATED IN METRES.
- ALL SEWER PIPES ARE 150mm UNLESS OTHERWISE SHOWN.

**PIPE TYPES**

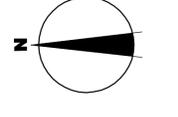
ASBESTOS CEMENT	AC	WATER CHANGE OF PIPE SIZE	W
DUCTILE IRON CEMENT LINED	DCIL	MAINS NOT CONNECTED	MNC
MILD STEEL CEMENT LINED	MSCL	VALVE	V
POLYETHYLENE CHLORIDE	PE	NON RETURN VALVE	NRV
POLYETHYLENE (AS SPECIFIED)	PE	FIRE PLUG	FP
REINFORCED CONCRETE	RC	DEAD END CAP	DEC
VITREOUS CLAY	VC		

**FITTINGS AND SYMBOLS**

SEWER TYPE "A" JUMP UP	SEWER TYPE "B" JUMP UP	SEWER TYPE "C" SLIDE LINE	SEWER TYPE "A" SPECIAL	SEWER TYPE "B" SPECIAL
------------------------	------------------------	---------------------------	------------------------	------------------------

**OTHER U/G SERVICES**

EXISTING WATERMAIN	EXISTING STORMWATER	GAS	TELSTRA	SEWER
--------------------	---------------------	-----	---------	-------



**smec urban**  
consulting group  
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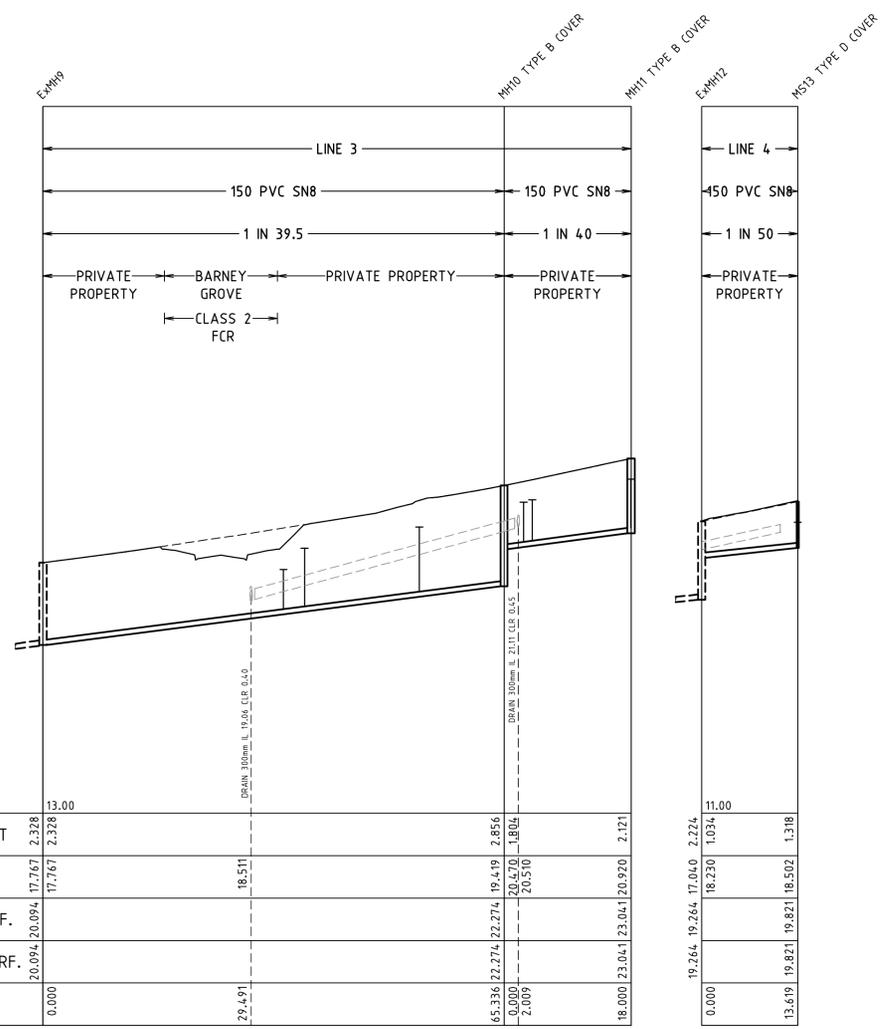
Designed	C. Barker	February 2010
Drawn	M. Wilks	February 2010
Checked	C. Birkett	February 2010
Approved	J. Golden	February 2010

**Barwon Region Water Authority**  
Extension No. L005687  
Estuary Stage 2B  
Sewer Detail Plan

Drawing No. O250EHL-02B-50 Rev E  
Sheet No. 1 of 3  
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L005687



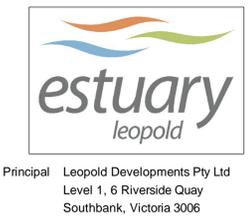


LINE NO.	MANHOLE NO.	HC NO.	LOT NAME	CONNECTION TYPE	CHAINAGE	IL SEWER	IL BRANCH	BRANCH DEPTH
2	MH6	1	LOT 206	A SPECIAL	2.00	15.80	16.67	0.87
2	MH6	2	LOT 207	A SPECIAL	22.00	16.90	17.70	0.80
2	MH6	3	LOT 208	A SPECIAL	32.01	17.45	18.25	0.80
2	MH6	4	LOT 209	A SPECIAL	48.01	18.32	19.12	0.79
2	MH6	5	LOT 210	A SPECIAL	62.01	19.09	19.85	0.76
2	MH7	6	FUT LOT	A SPECIAL	0.00	20.09	20.64	0.55
1	MH1	7	LOT 243	B	13.46	15.55	17.65	2.10
1	MH1	8	LOT 263	A SPECIAL	50.29	17.16	19.10	1.94
1	MH1	9	LOT 264	TM SPECIAL	67.01	17.89	20.65	2.76
1	MH2	10	FUT LOT	A	0.00	18.47	20.41	1.94
1	MH2	11	LOT 262	B SPECIAL	2.02	18.51	21.49	2.98
1	MH2	12	FUT LOT	TM SPECIAL	4.03	18.53	21.50	2.98
1	MH2	13	LOT 261	B SPECIAL	15.28	18.62	21.59	2.97
1	MH2	14	FUT LOT	TM SPECIAL	23.40	18.69	21.67	2.98
1	MH2	15	LOT 260	B SPECIAL	29.28	18.74	21.67	2.93
1	MH2	16	FUT LOT	TM SPECIAL	37.40	18.81	21.72	2.91
1	MH2	17	LOT 259	B SPECIAL	41.78	18.85	21.63	2.79
1	MH3	18	FUT LOT	TM SPECIAL	0.00	18.94	21.82	2.87
1	MH3	19	LOT 258	B SPECIAL	2.00	18.99	21.82	2.83
1	MH3	20	FUT LOT	TM SPECIAL	8.62	19.08	21.86	2.78
1	MH3	21	LOT 257	B SPECIAL	14.50	19.15	21.89	2.74
1	MH3	22	FUT LOT	TM SPECIAL	22.62	19.25	21.95	2.70
1	MH3	23	LOT 256	B SPECIAL	28.50	19.33	21.98	2.65
1	MH3	24	FUT LOT	TM SPECIAL	36.62	19.43	22.06	2.63
1	MH3	25	LOT 255	B SPECIAL	41.00	19.49	22.07	2.58
1	MH3	26	FUT LOT	TM SPECIAL	50.62	19.61	22.15	2.54
1	MH3	27	LOT 254	B SPECIAL	57.00	19.69	22.23	2.54
1	MH4	28	FUT LOT	A	11.56	20.10	21.70	1.60
1	MS5	29	LOT 229	A SPECIAL	0.00	20.14	21.73	1.59
4	MS13	30	LOT 228	A	0.00	18.50	19.24	0.73
3	MH10	31	FUT LOT	A	4.00	20.56	21.87	1.31
3	MH9	32	LOT 270	A SPECIAL	34.09	18.63	19.90	1.27
3	MH9	33	FUT LOT	A SPECIAL	37.08	18.71	20.50	1.79
3	MH9	34	LOT 271	A SPECIAL	53.34	19.12	21.10	1.98
3	MH10	35	LOT 272	B	2.76	20.53	21.80	1.27
3	MH11	36	FUT LOT	B	0.00	20.92	22.46	1.54

Datum R.L.	13.00		
DEPTH TO INVERT	2.328	2.328	
R.L. OF INVERT	17.767	18.511	
R.L. OF FIN. SURF.	20.094	22.274	19.419
R.L. OF NAT. SURF.	20.094	22.274	20.470
DISTANCE	0.000	2.009	18.000

WORKS SHALL NOT COMMENCE UNTIL PLANS SIGNED BY BARWON WATER

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



REVISION	DATE	APP'D
D MINOR AMENDMENTS	17.05.10	
C HOUSE CONNECTIONS AMENDED	28.04.10	
B BARWON WATER AMENDMENTS	14.04.10	
A ISSUED TO BARWON WATER	31.03.10	

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- ALL SEWER PIPES ARE 150mm UNLESS OTHERWISE SHOWN.

**PIPE TYPES**

ASBESTOS CEMENT  
CAST IRON CEMENT LINED  
DUCTILED CEMENT LINED  
MILD STEEL CEMENT LINED  
POLYETHYLENE (AS SPECIFIED)  
REINFORCED CONCRETE  
VITREOUS CLAY

AC  
DCL  
DCL  
MSCL  
PVC  
PE  
VC

**FITTINGS AND SYMBOLS**

WATER CHANGE OF PIPE SIZE  
MAINS NOT CONNECTED  
MAINS IN CONDUIT  
VALVE  
NON RETURN VALVE  
FIRE PLUG  
DEAD END CAP

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

**OTHER U/G SERVICES**

EXISTING WATERMAIN  
STORMWATER  
GAS  
TELSTRA  
S.E.C.  
SEWER (POLE)



**Barwon Region Water Authority**  
Extention No. L005687  
Estuary Stage 2B  
Sewer Longitudinal Sections - 2

Designed C. Barker February 2010  
Drawn M. Wilks February 2010  
Checked C. Birkett February 2010  
Approved J. Golden February 2010

Drawing No. O250EHL-02B-52 Rev D  
Sheet No. 3 of 3  
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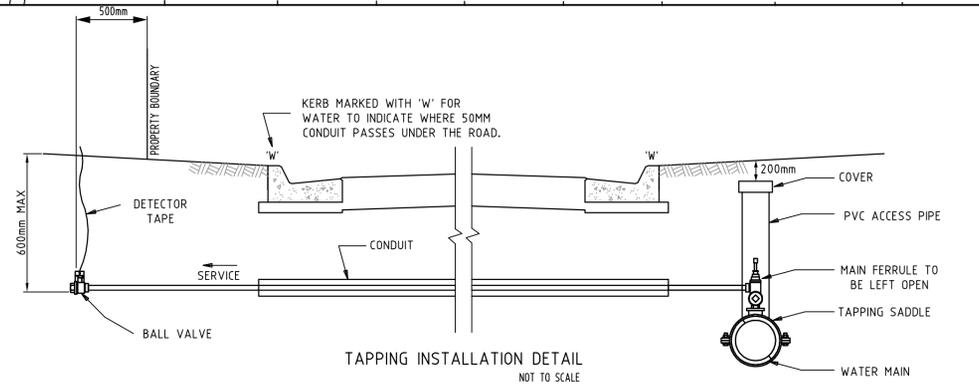
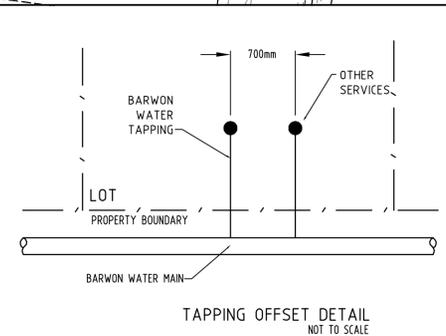
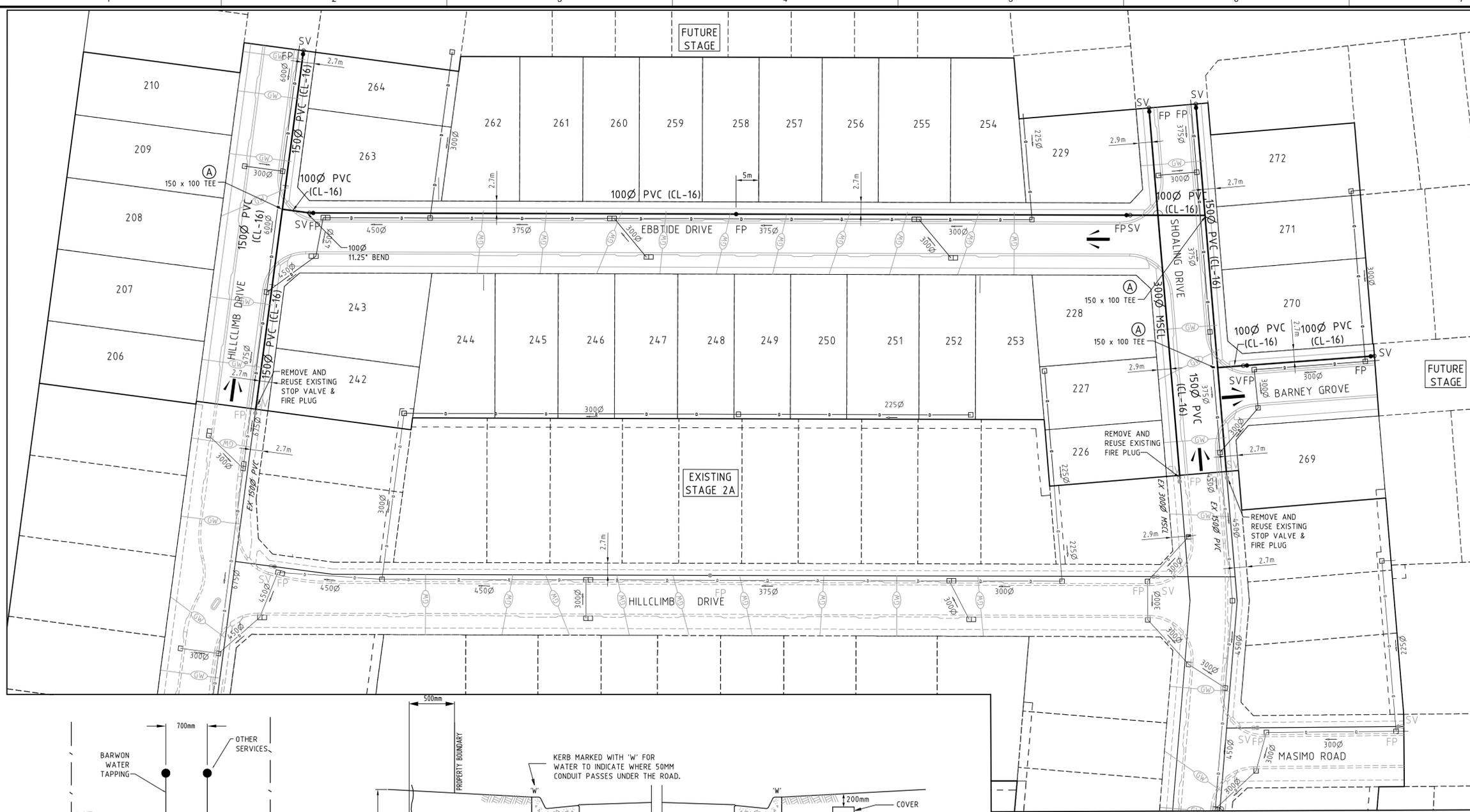
L005687

DESIGN HEAD=119.5m AHD  
TEST PRESSURE=1600kPa

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

- WATER**
- ENSURE WATERMANS ARE GRADED TO SUFFICIENT DEPTH UNDER ROADWAYS TO OBTAIN REQUIRED CLEARANCE UNDER STORM WATER DRAINS AND PAVEMENT LEVELS.
  - MARKER POSTS TO BE PLACED AT FIRE PLUGS. FIRE PLUG INDICATORS ARE TO BE IN ACCORDANCE WITH CPA & WSA4 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 WSA4 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 WSA4 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.



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

LOCATION	TYPE	AREA (m <sup>2</sup> )	NUMBER
A 150 x 100 TEE	CONCRETE	0.80	3

SIZE	TYPE	LENGTH
100Ø	PVC (CLASS - 16)	239.37
150Ø	PVC (CLASS - 16)	161.52
300Ø	OD 337 MSCL (5.0mm)	81.61

PM	EASTING	NORTHING	RL	DESCRIPTION	PARISH
MOOLAP PM 321	277040	5769480	9.436	BRASS PLAQUE IN CONCRETE	MOOLAP
MOOLAP PM 137	278263.348	5769552.155	-	BRASS PLAQUE IN CONCRETE	MOOLAP
MOOLAP PM 69	277138.741	5770359.313	8.503	BRASS PLAQUE IN CONCRETE	MOOLAP

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

TBM	EASTING	NORTHING	RL	DESCRIPTION	PARISH
STAR200	9967.621	48847.780	11.382	STEEL STAR PICKET	MOOLAP
STAR201	9967.426	48709.662	12.992	STEEL STAR PICKET	MOOLAP
STAR202	10128.400	48684.879	20.077	STEEL STAR PICKET	MOOLAP
STAR203	10096.815	48857.625	16.872	STEEL STAR PICKET	MOOLAP

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

WORKS SHALL NOT COMMENCE UNTIL PLANS SIGNED BY BARWON WATER

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

**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.

REVISION	DATE	APPD
C MINOR AMENDMENTS	22.04.10	
B BARWON WATER AMENDMENTS	15.04.10	
A ISSUED TO BARWON WATER	31.03.10	

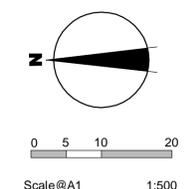
- CONSTRUCTION NOTES**
- CONSTRUCTION OF THE SEWER AND WATER MAINS IS TO BE IN ACCORDANCE WITH THE BARWON WATER STANDARD SPECIFICATIONS "CONSTRUCTION OF GRAVITY SEWERS AND RISING MAINS" AND "CONSTRUCTION OF WATER MAINS".
  - EVERY ENDEAVOUR TO ENSURE THE LOCATION OF ALL EXISTING SERVICES ON THE PLAN ARE CORRECT. HOWEVER ACTUAL LOCATIONS ARE TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT TO EXCAVATIONS.
  - NOMINAL SIZE OF WATER MAINS INDICATED IN MILLIMETRES. OFFSETS ARE INDICATED IN METRES.
  - ALL SEWER PIPES ARE 150Ømm UNLESS OTHERWISE SHOWN.

**PIPE TYPES**

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

- FITTINGS AND SYMBOLS**
- SEWER TYPE "A" JUMP UP
  - SEWER TYPE "B" JUMP UP
  - TYPE "C" SLIDE LINE
  - OBLIQUE JUNCTION
  - TYPE "A" SPECIAL

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



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

**Barwon Region Water Corporation**  
Extension No. L005687  
Estuary Stage 2B  
Water Detail Plan

Drawing No. O250EHL-02B-61 Rev C  
Sheet No. 1 of 1  
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**estuary leopold**  
Principal Leopold Developments Pty Ltd  
Level 1, 6 Riverside Quay  
Southbank, Victoria 3006

L005687