



## 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 45° 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 Class 2, unless otherwise stated in the drawings:

- (a) Roads & Reserves - Class 2 Rubber Ring Jointed RCP
- (b) Easements - Rubber Ring Jointed RCP 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 filled 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.

10.6 **CCTV Inspection of drainage lines** - All drainage lines including curved pipelines are to be inspected via remote camera prior to the issue of the statement of compliance at the contractor's expense and under the supervision of COGG Subdivisions Engineer or representative.

### 11. BACKFILL MATERIAL

11.1 **Trenches under all edgings/kerb sections & Nature Strips** - 20mm Class 3 Fine Crushed Rock or other material as approved by Council.

11.2 **Trenches under road pavement** - Stormwater pipes are to be backfilled with two percent (2%) cement stabilised sand to extend from the bottom of the pipe to the springline (mid point) of the pipe. Class 3 Fine Crushed Rock is then to be used as the backfill material from the springline up to the road pavement base.

11.3 **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/m<sup>3</sup>.

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 SL72 reinforcement, bedded on min of 50mm compacted Class 3 FCR. Bedding to extend 75mm beyond the edges of the footpath (IDM SD205). Contraction joints to be constructed at 15m intervals (IDM SD210). 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 Note - All sign posts to be sleeved in accordance with COGG SD CCG710 - Sign Posts

18.6 **No Through Road** - No through road signs are to be installed below the street sign where applicable.

### 19. MAINTENANCE WORKS

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

19.1 **Council Assets** - for Defects Liability Period of 12 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.

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

Designed  
C. Barker

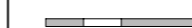
Drawn  
C. Barker

Checked  
C. Birckett

Authorised  
J. Golden

Date  
December 2013

Scale @ A1  
As Shown



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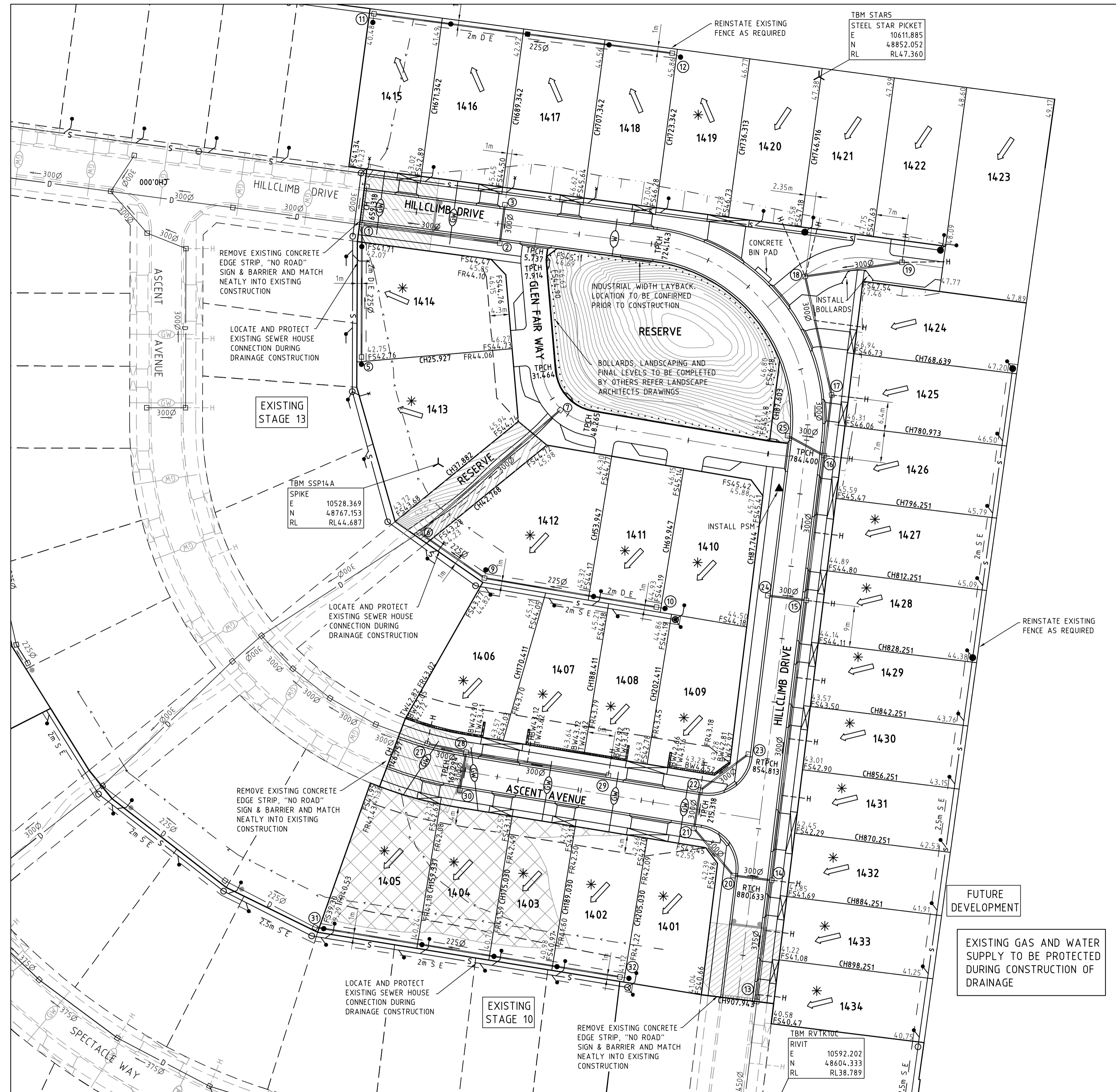
### Estuary

Stage 14  
City Of Greater Geelong  
Roadworks and Drainage  
General Notes

Drawing No. **0250E-14-02**  
Sheet No. 2 of 23

Rev B

Approved for Construction



**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

**ROAD LAYOUT TABLE**

ROAD NAME	RESERVE WIDTH (m)	ROAD WIDTH (m)			KERB TYPE		VERGE WIDTH (m)	
		LIP to LIP	INV to INV	BACK to BACK	NTH/WEST	STH/EAST	NTH/WEST	STH/EAST
GLEN FAIR WAY	9.00	5.50	NA	NA	B1	NA	0.00	3.50
ASCENT AVENUE	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
HILLCLIMB DRIVE E-W LOT 1415 & 1416	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25
HILLCLIMB DRIVE E-W LOT 1417-1426	VAIRES	6.60	7.20	7.50	B2	B2	VARIES	VARIES
HILLCLIMB DRIVE N-S LOT 1427-1434	16.00	6.60	7.20	7.50	B2	B2	4.25	4.25

**SERVICES OFFSET SCHEDULE**

ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
GLEN FAIR WAY	SOUTH	2.00	SOUTH	2.60	SOUTH	1.30	SOUTH	0.70
ASCENT AVENUE	NORTH	2.10	SOUTH	Ex2.70	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1415 & 1416	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1417-1420	NORTH	3.00	NORTH	3.60	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1422-1425	EAST	VARIES	EAST	VARIES	EAST	VARIES	EAST	VARIES
HILLCLIMB DRIVE LOT 1426-1434	EAST	1.70	EAST	2.80	WEST	2.30	WEST	1.70

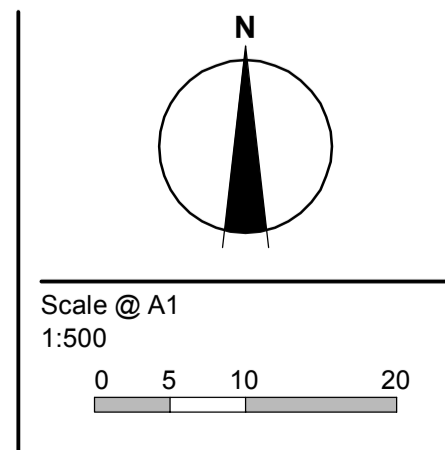
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REVISION	DATE	DESIGN	APP'D
C LOT LEVEL LOT 1410 - 1414 UPDATED	18.03.14	CB/CB	JG
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG



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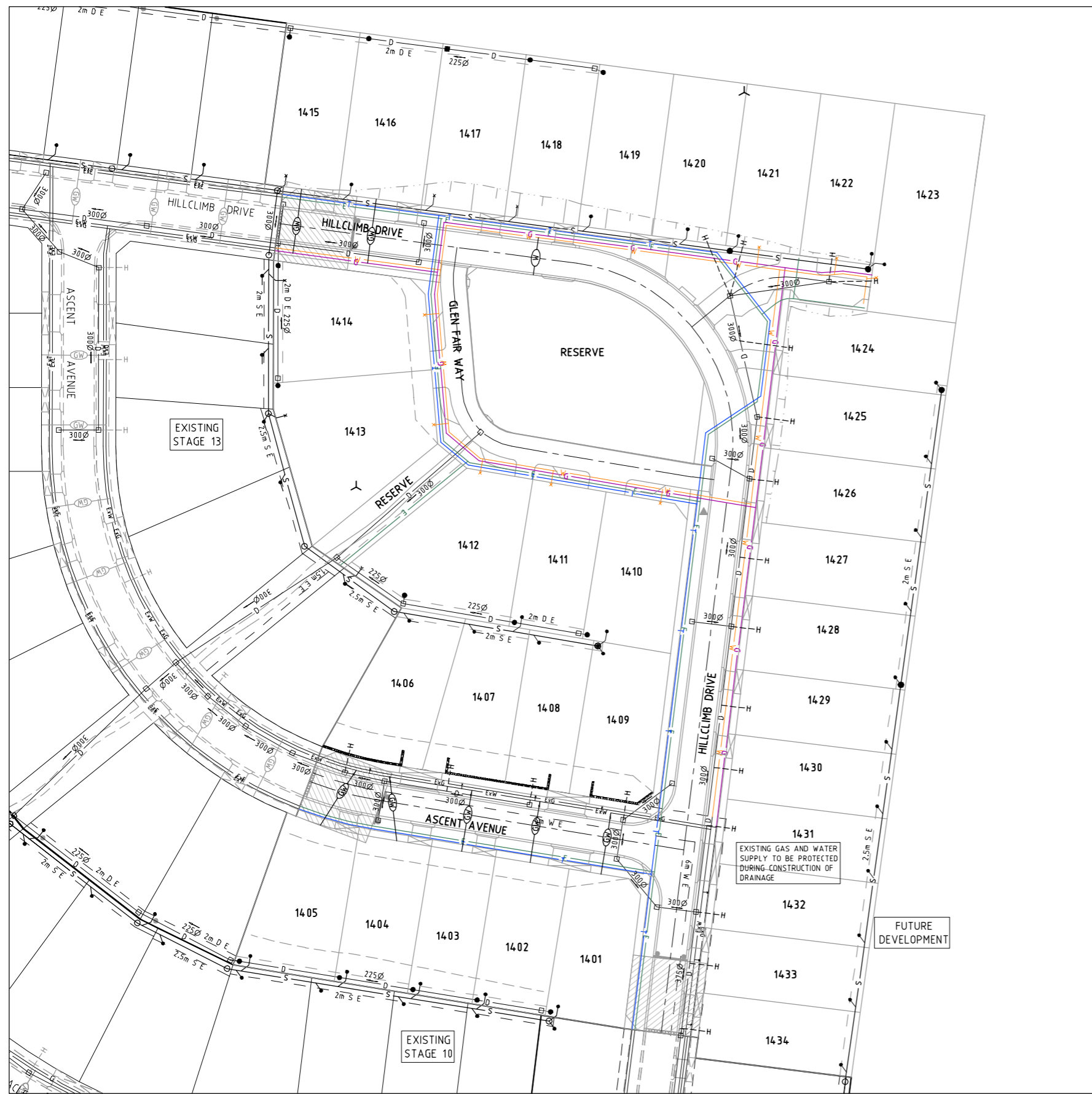
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**Estuary**  
 Stage 14  
 City of Greater Geelong  
 Roadworks and Drainage  
 Layout Plan

Drawing No. 0250E-14-03 Rev C  
 Sheet No. 3 of 23

Approved for Construction



**LEGEND - SERVICES LAYOUT PLAN**

- ELECTRICITY (UNDERGROUND)
- GAS
- COMMUNICATIONS
- WATER
- RECYCLED WATER
- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
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- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
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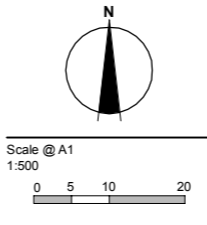
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REVISION	DATE	DESIGN	APPD
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**estuary**  
 LEOPOLD  
 Principal  
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 Level 1, 6 Riverside Quay  
 Southbank, Victoria 3006

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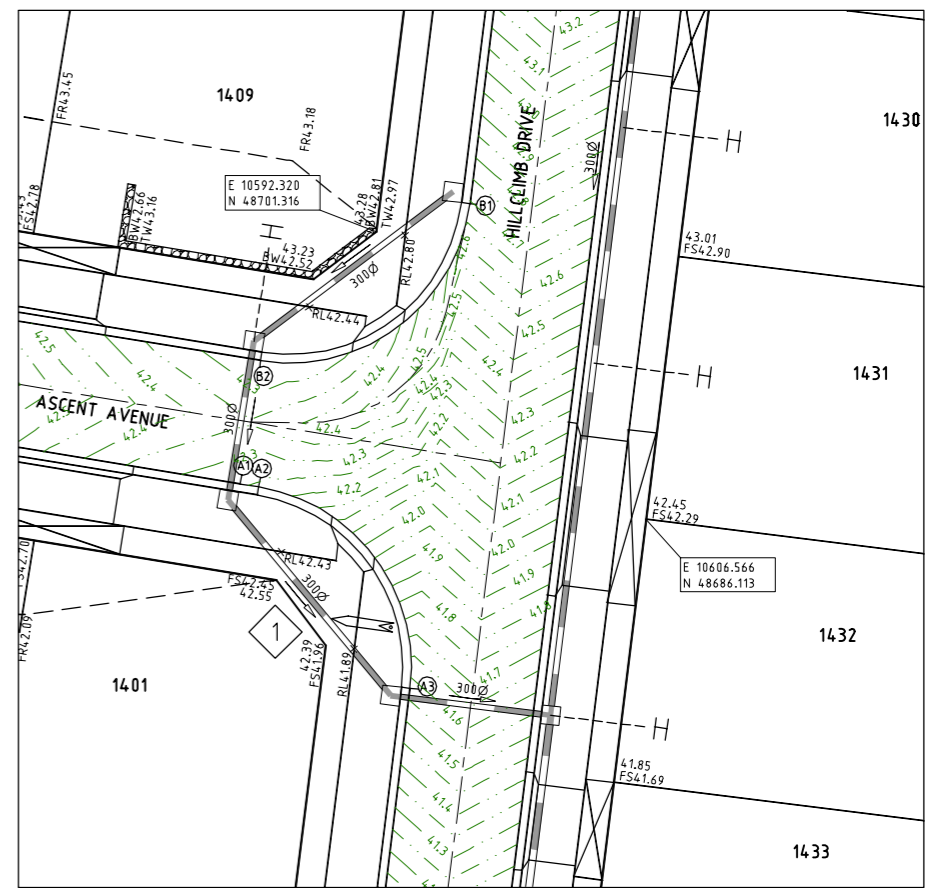
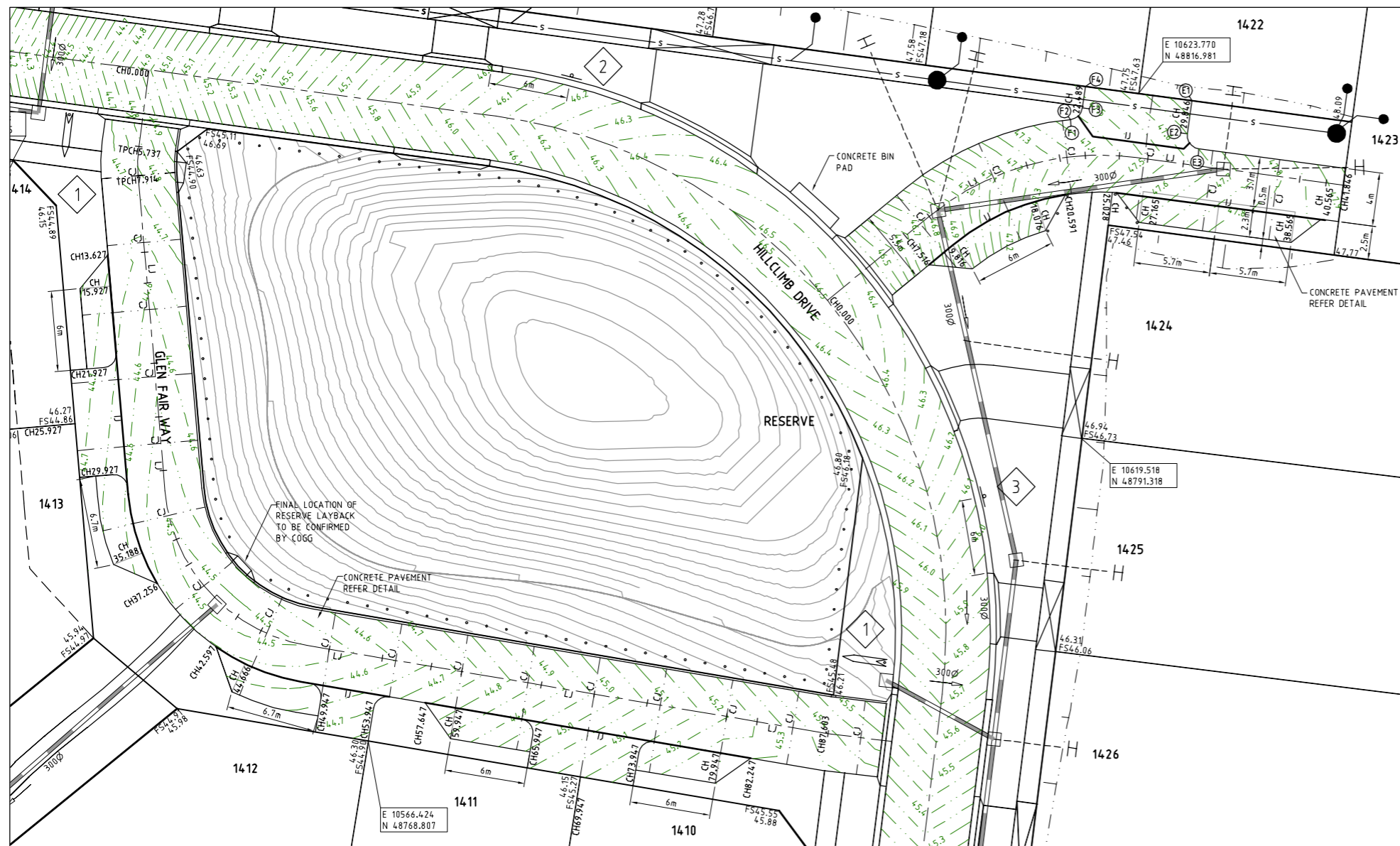
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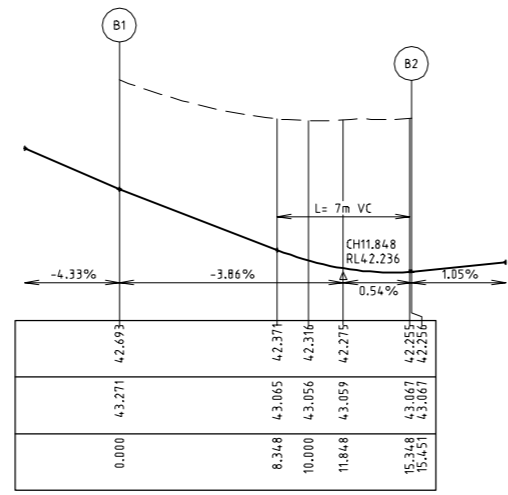
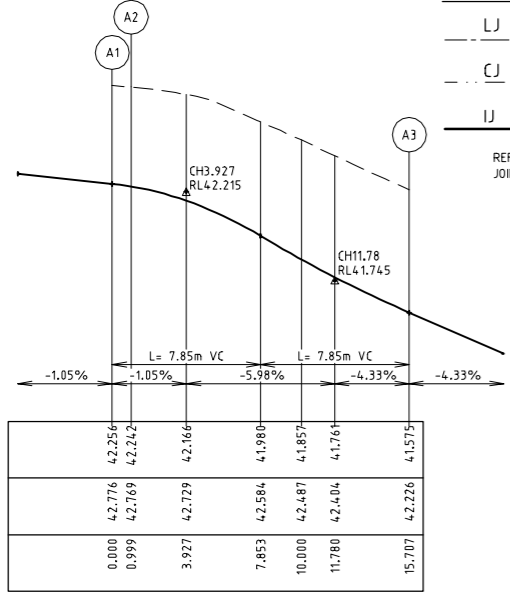
**Estuary**  
 Stage 14  
 City Of Greater Geelong  
 Roadworks and Drainage  
 Services Layout Plan  
**Drawing No. 0250E-14-04** **Rev B**  
 Sheet No. 4 of 23  
**Approved for Construction**





**TYPICAL DRIVEWAY JOINTING DETAIL**

- LJ — LONGITUDINAL JOINT
  - CJ — TRANSVERSE CONTRACTION JOINT
  - IJ — ISOLATION JOINT
- REFER DETAIL PLAN FOR CONCRETE JOINTING NOTES AND DETAILS



**SIGN SCHEDULE**

SIGN	REF
	1
	2
	3

- 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 SUBSOLO DRAIN, "NO ROAD" SIGN & BARRIER
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  - TEMPORARY BENCH MARK
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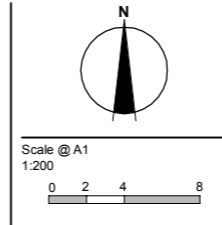
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**NOTES**  
 1. REFER TO SHEET No 7 FOR SETOUT INFORMATION.

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A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG

**estuary**  
 LEOPOLD  
 Principal  
 Leopold Property Developments Pty Ltd  
 Level 1, 6 Riverside Quay  
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Designed  
 C. Barker  
 Drawn  
 C. Barker  
 Checked  
 C. Birckett  
 Authorised  
 J. Golden  
 Date  
 December 2013



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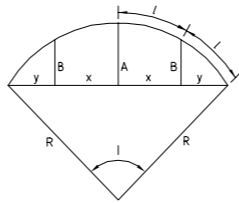

**Estuary**  
 Stage 14  
 City of Greater Geelong  
 Roadworks and Drainage  
 Intersection Layout Plan  
**Drawing No. 0250E-14-06** **Rev B**  
 Sheet No. 6 of 23  
**Approved for Construction**

HILLCLIMB DRIVE DESIGN LINE				ASCENT AVENUE DESIGN LINE				ALIGNMENT A			
CHAINAGE	EASTING	NORTHING	BEARING	CHAINAGE	EASTING	NORTHING	BEARING	POINT NO	EASTING	NORTHING	RL
659.318	10511.671	48823.848	97°35'25"	146.756	10518.325	48703.807	110°48'42"	A1	10585.109	48688.004	42.256
700.000	10551.996	48818.475	97°35'25"	146.756	10518.325	48703.807	110°48'42"	A2	10586.095	48687.844	42.242
724.142	10575.927	48815.286	97°35'25"	148.276	10519.751	48703.281	109°40'51"	A3	10594.080	48677.193	41.575

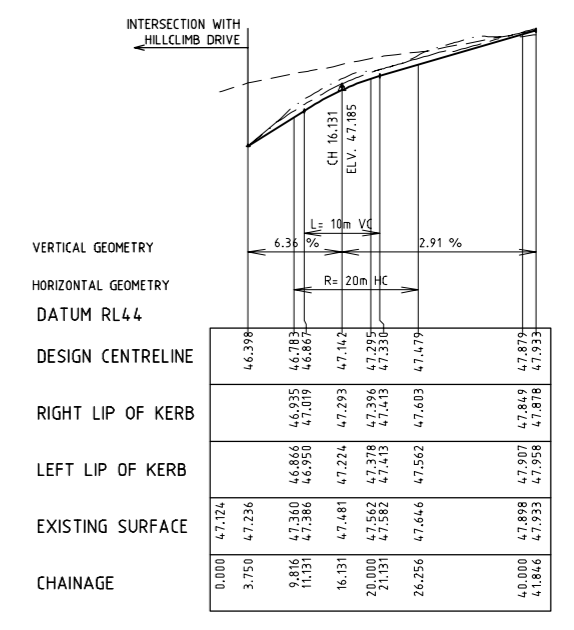
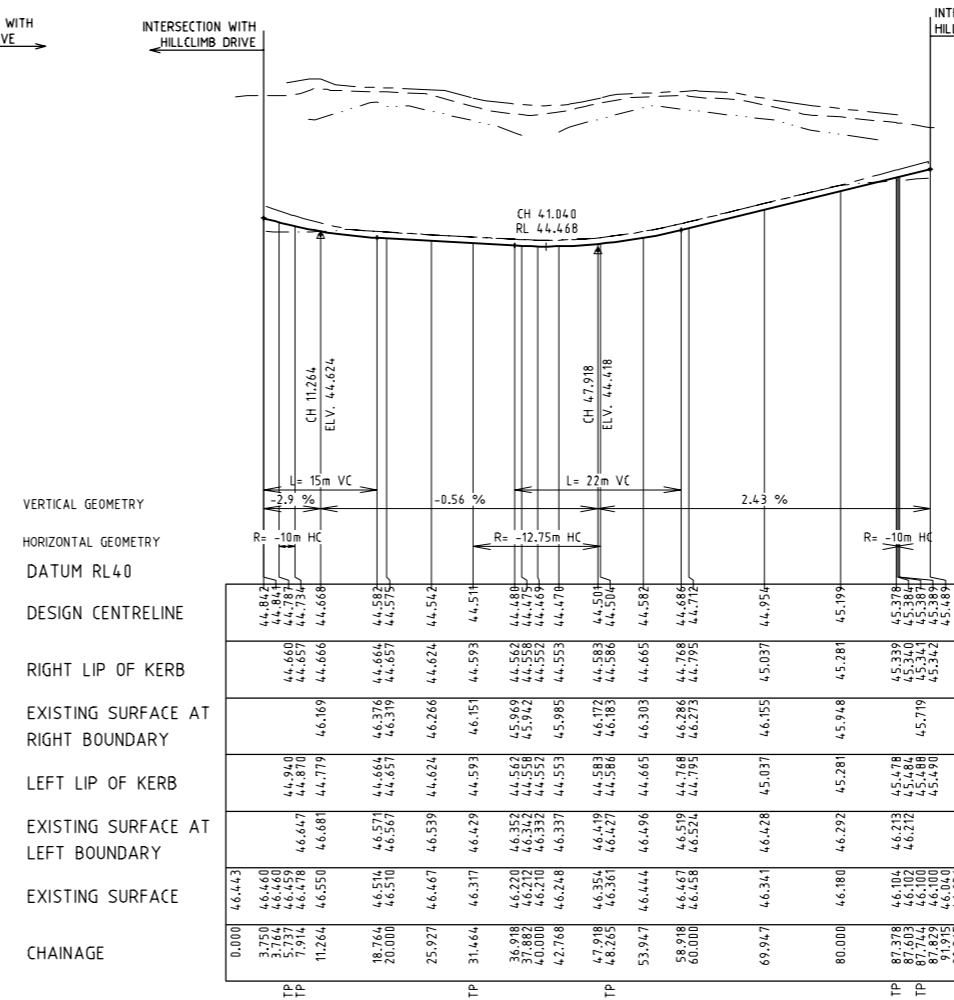
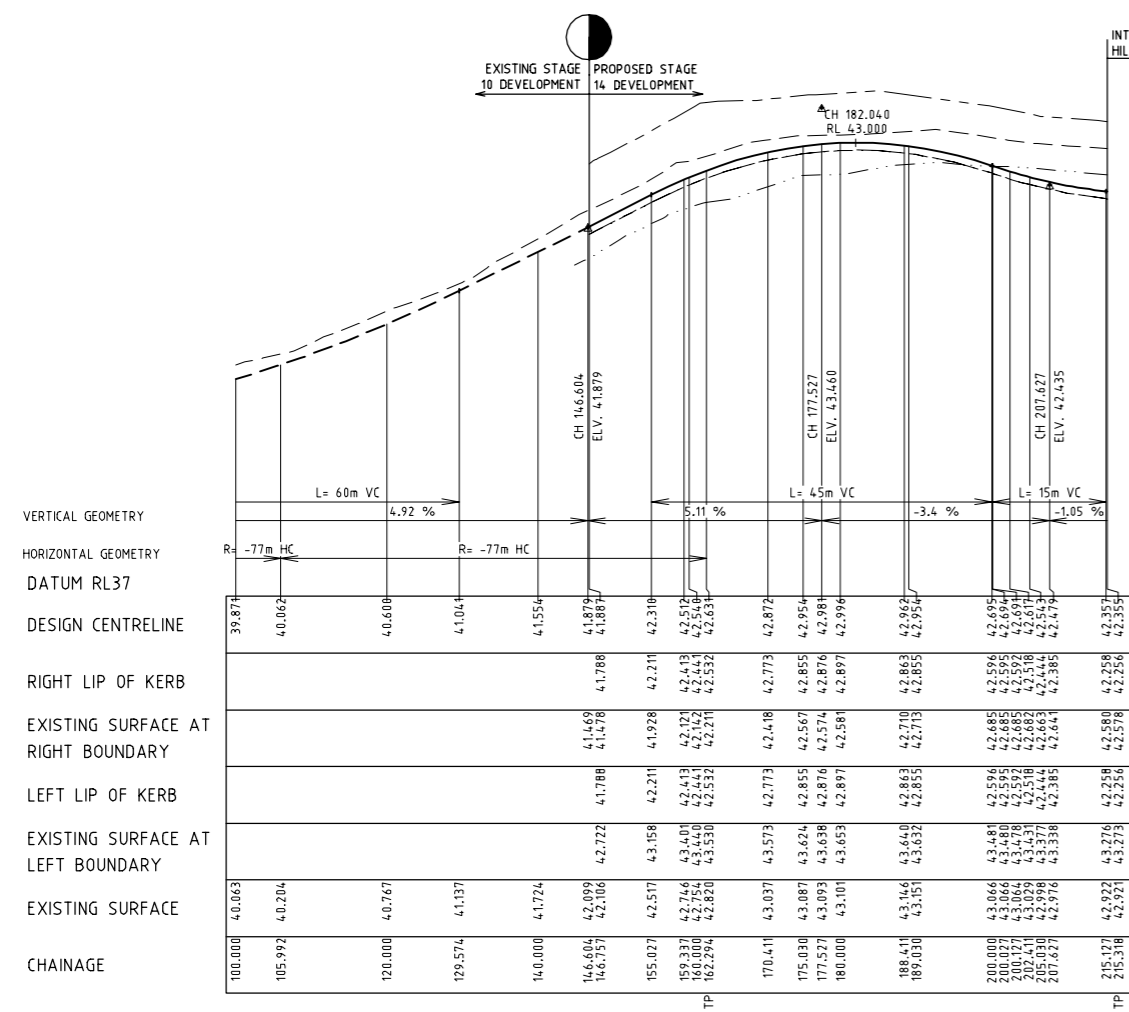
DRIVEWAY DESIGN LINE				GLEN FAIR WAY DESIGN LINE				ALIGNMENT B			
CHAINAGE	EASTING	NORTHING	BEARING	CHAINAGE	EASTING	NORTHING	BEARING	POINT NO	EASTING	NORTHING	RL
0.000	10600.610	48801.580	50°29'36"	0.000	10550.096	48818.728	187°35'25"	B1	10597.241	48702.818	42.693
3.750	10603.504	48803.966	50°29'36"	3.750	10549.601	48815.011	187°35'25"	B2	10586.170	48694.518	42.256

DRIVEWAY DESIGN LINE				GLEN FAIR WAY DESIGN LINE				ALIGNMENT C			
CHAINAGE	EASTING	NORTHING	BEARING	CHAINAGE	EASTING	NORTHING	BEARING	POINT NO	EASTING	NORTHING	RL
0.000	10600.610	48801.580	50°29'36"	0.000	10550.096	48818.728	187°35'25"	C1	10618.696	48815.036	47.428
3.750	10603.504	48803.966	50°29'36"	3.750	10549.601	48815.011	187°35'25"	C2	10618.702	48815.037	47.428

**NOTES**  
 1. SETOUT CO-ORDINATES REFER TO LIP OF KERB/EDGE OF CONCRETE.  
 2. REFER TO SHEET No 6 FOR LIP PROFILES.

				Designed C. Barker Drawn C. Barker Checked C. Birkett Authorised J. Golden Date December 2013	© SMEC Australia Pty Ltd These designs and drawings are the copyright of SMEC Australia Pty Ltd. The drawing shall not be reproduced or copied, in whole or part, without the written permission of SMEC Australia Pty Ltd. The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they are intended.		<b>Estuary</b> Stage 14 City of Greater Geelong Roadworks and Drainage Setout Information Plan
	Principal Leopold Property Developments Pty Ltd Level 1, 6 Riverside Quay Southbank, Victoria 3006				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	Drawing No. <b>0250E-14-07</b> <span style="float: right;">Rev B</span> Sheet No. 7 of 23	
	Approved for Construction				Adelaide +61 8 8223 6655 Brisbane +61 7 3831 8988 Canberra +61 2 6126 1900	Gold Coast +61 7 5578 0222 Melbourne +61 3 9859 0800 Tarragon +61 3 5173 0100	
	B COUNCIL AMENDMENTS A ISSUED TO COUNCIL FOR APPROVAL REVISION			7.03.14 CB/CB JG 12.02.14 CB/CB JG			

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



I:\projects\2014\2014-14-08\2014-14-08.dwg - 14/08/2014 14:08

REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG

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

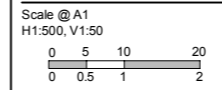
Designed  
C. Barker

Drawn  
C. Barker

Checked  
C. Birkett

Authorised  
J. Golden

Date  
December 2013



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Melbourne +61 3 9859 0800  
Tarragona +61 3 5173 0100

**Estuary**  
Stage 14  
City of Greater Geelong  
Roadworks and Drainage  
Longitudinal Sections - 1

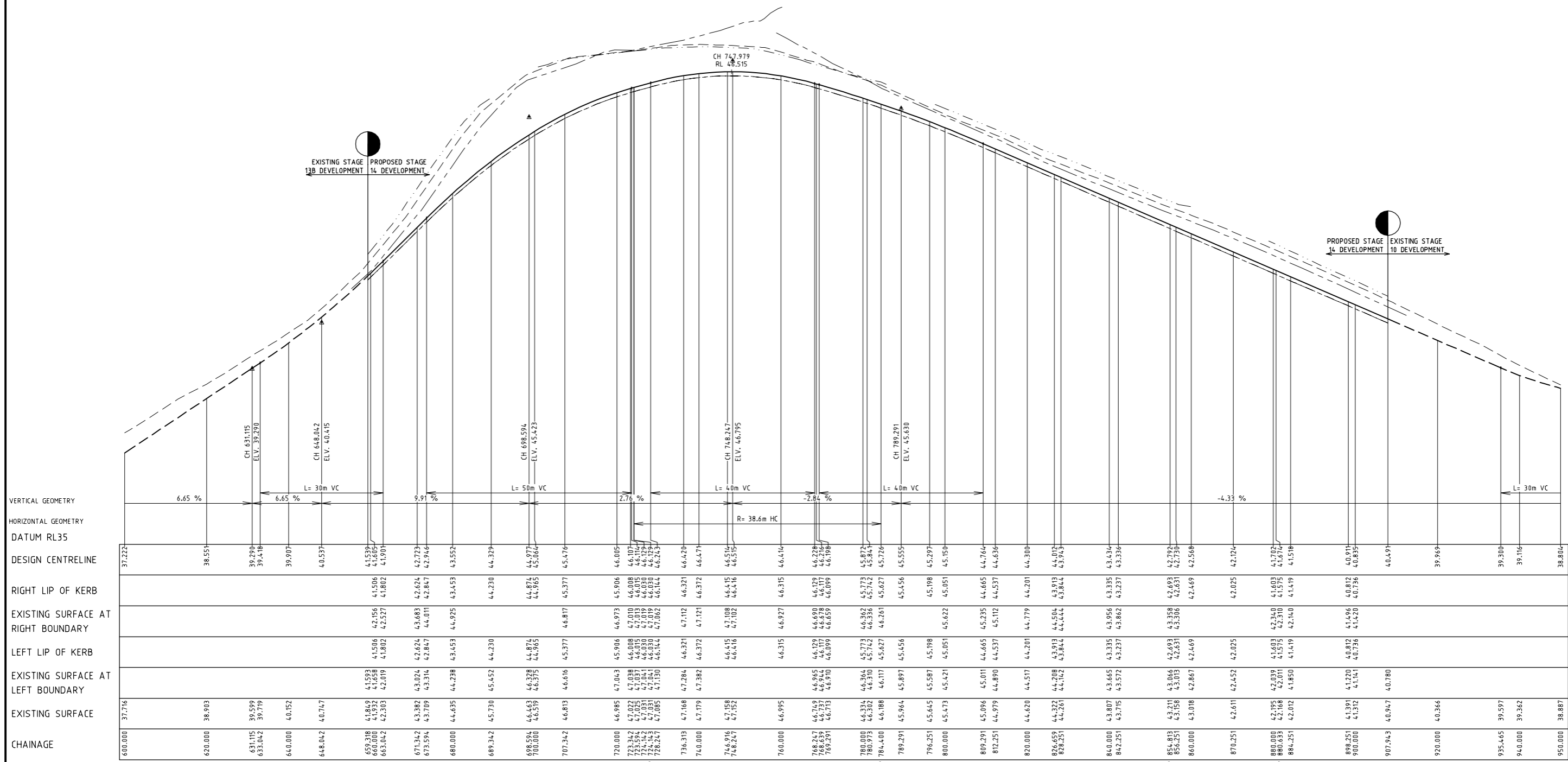
**Drawing No. 0250E-14-08** **Rev B**

Sheet No. 8 of 23

**Approved for Construction**



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

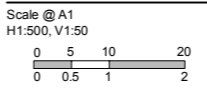


HILLCLIMB DRIVE LONGITUDINAL SECTION

REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	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  
December 2013



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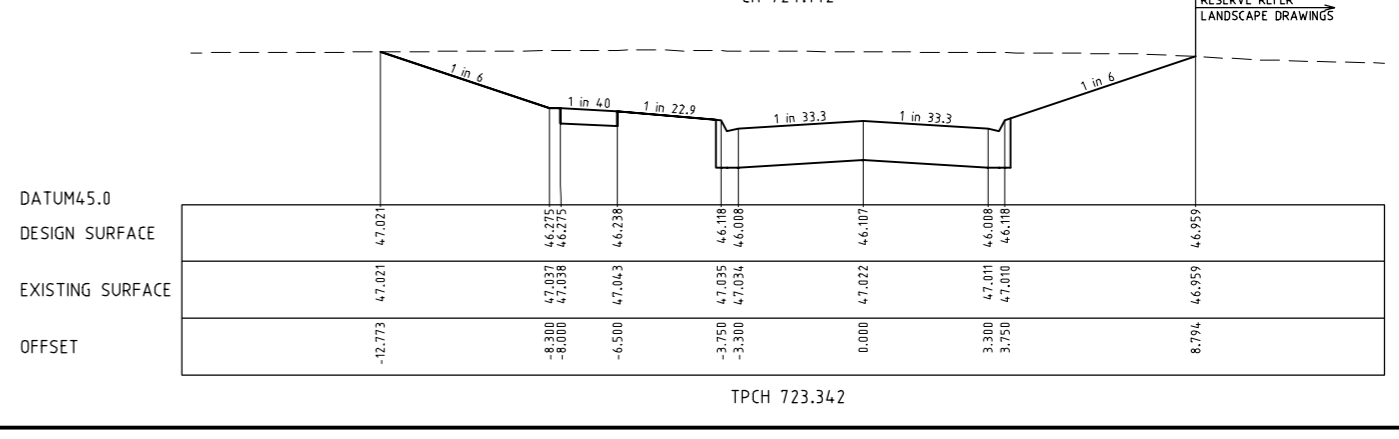
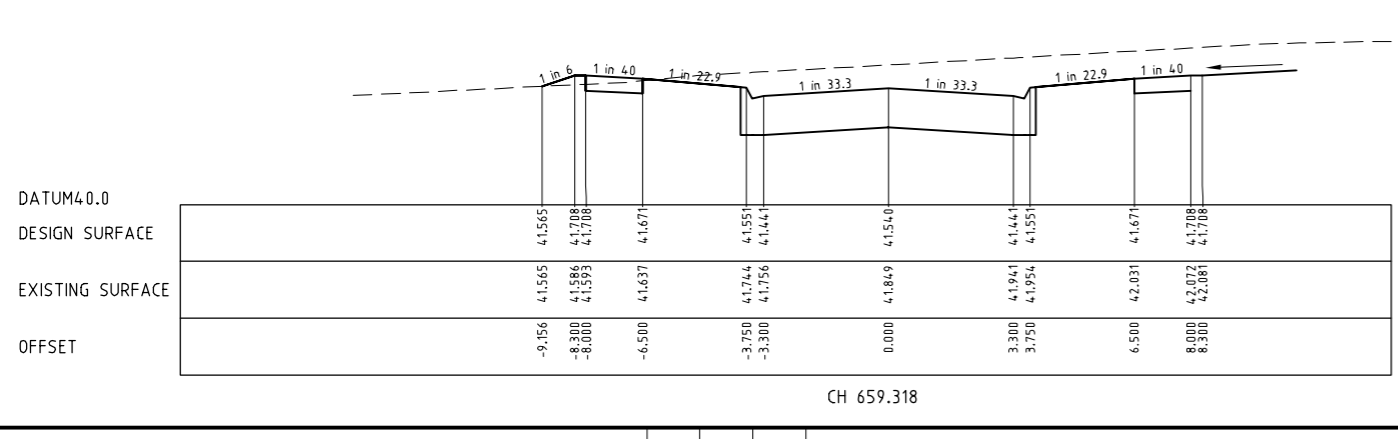
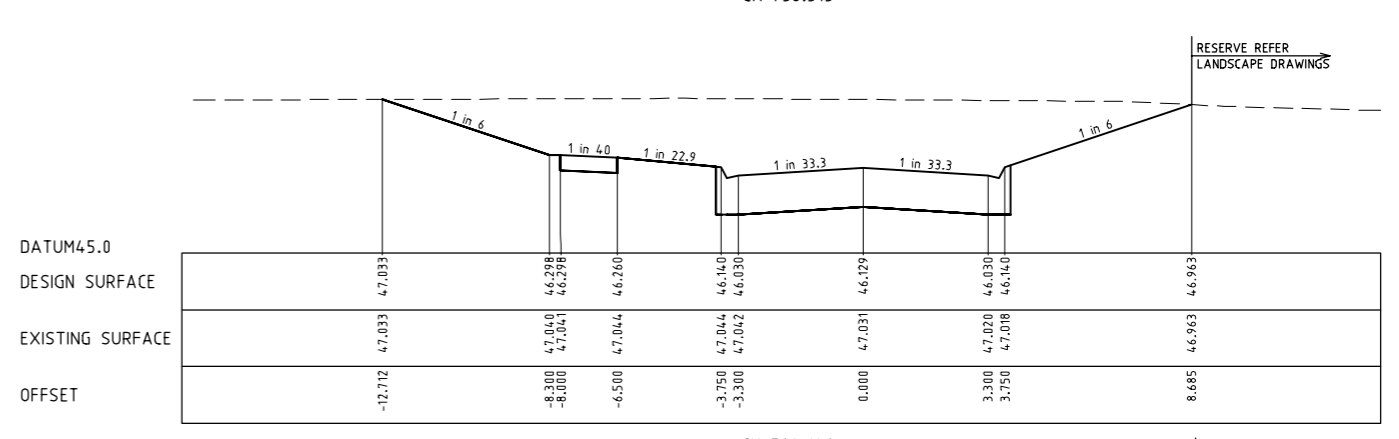
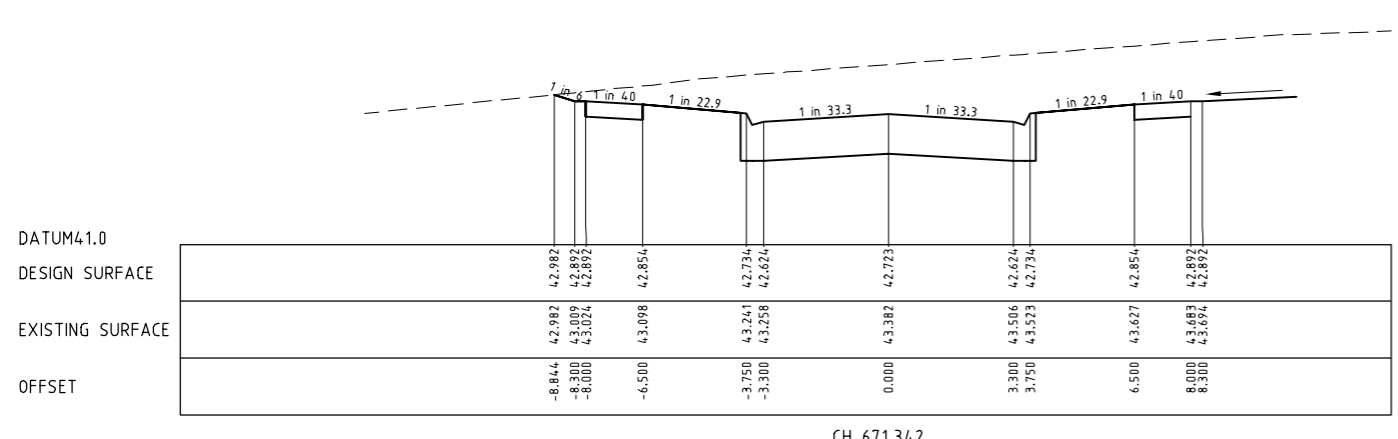
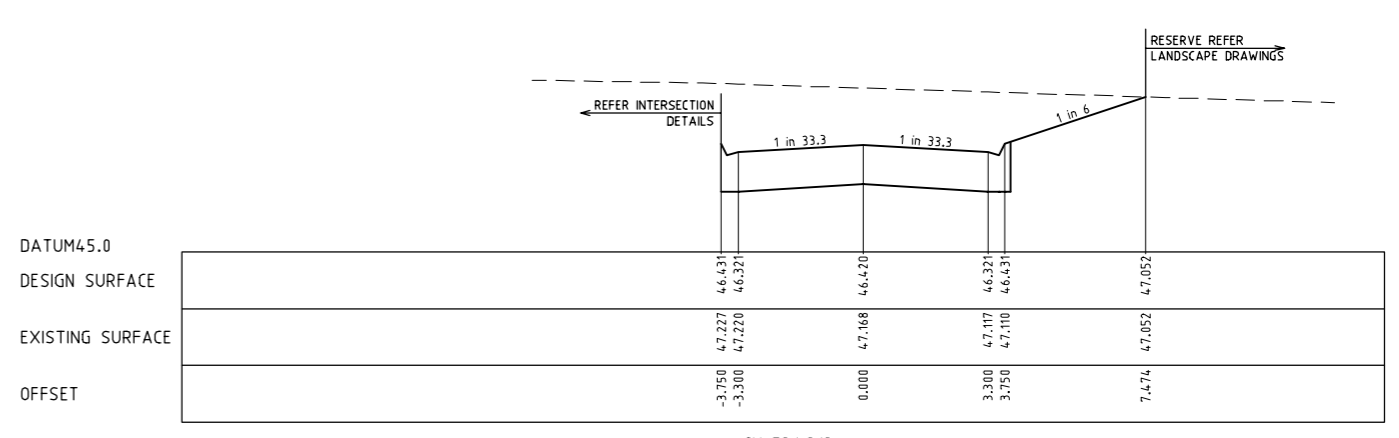
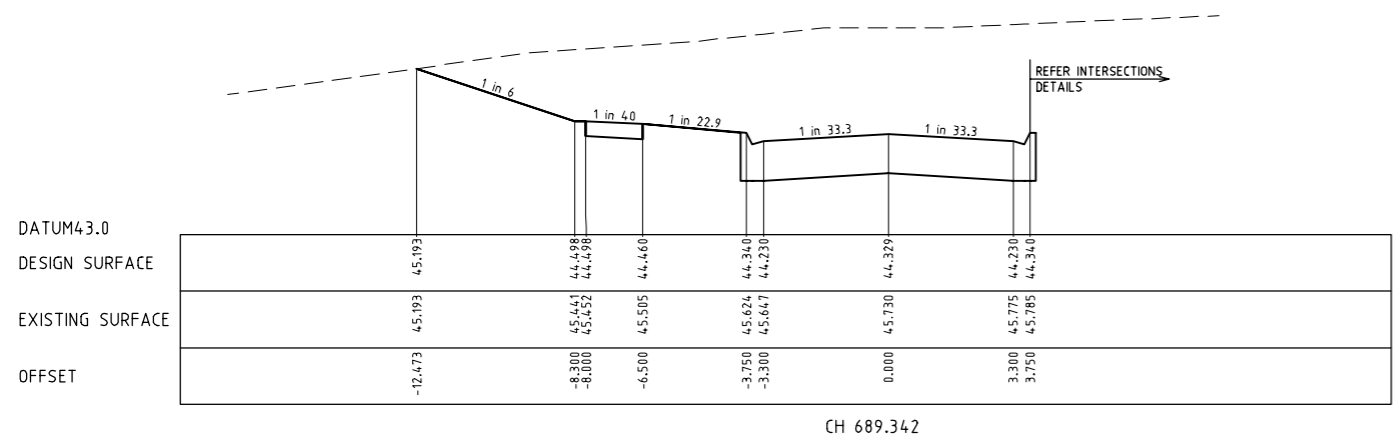
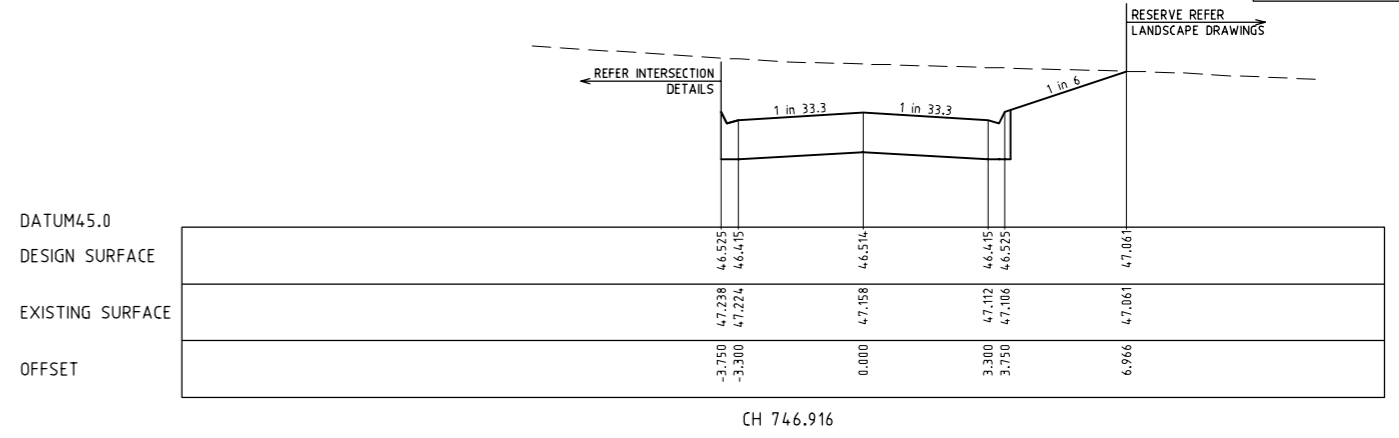
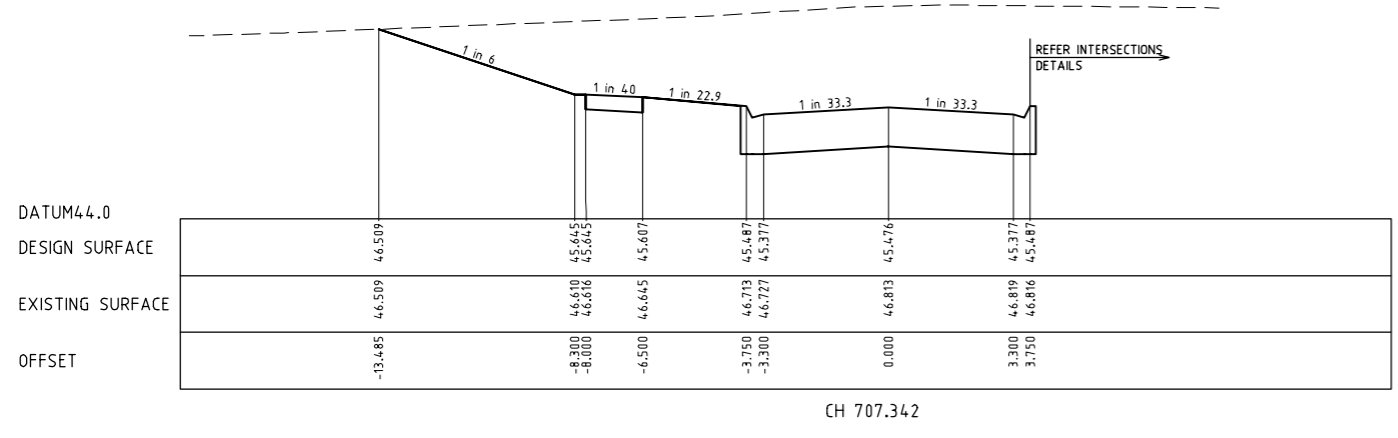
**Estuary**  
Stage 14  
City Of Greater Geelong  
Roadworks and Drainage  
Longitudinal Sections - 2

Drawing No. **0250E-14-09** Rev B  
Sheet No. 9 of 23

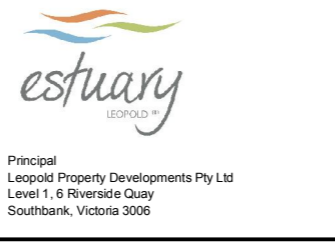
Approved for Construction

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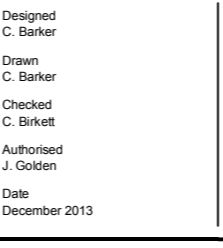
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 --- FUTURE DESIGN LINE



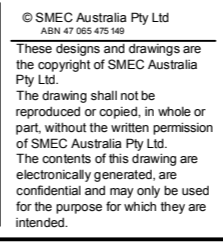
REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG



Designed  
 C. Barker  
 Drawn  
 C. Barker  
 Checked  
 C. Birkett  
 Authorised  
 J. Golden  
 Date  
 December 2013



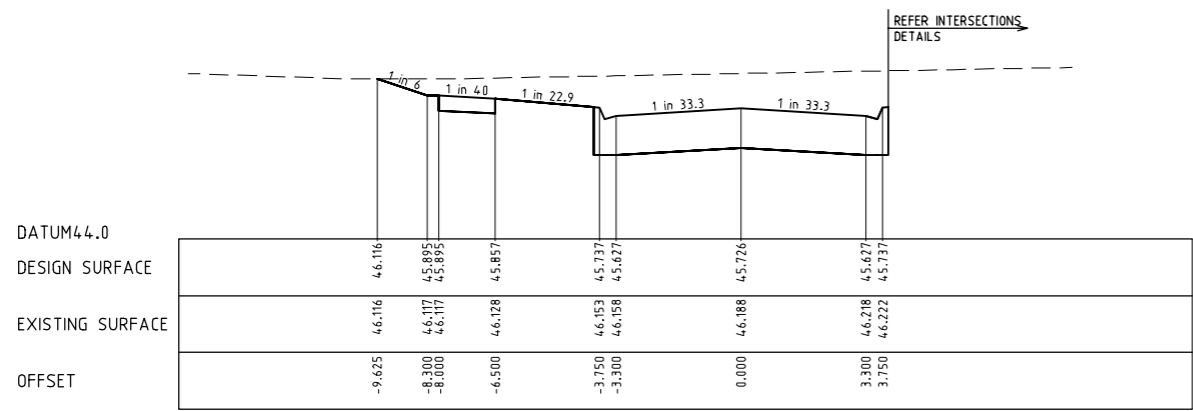
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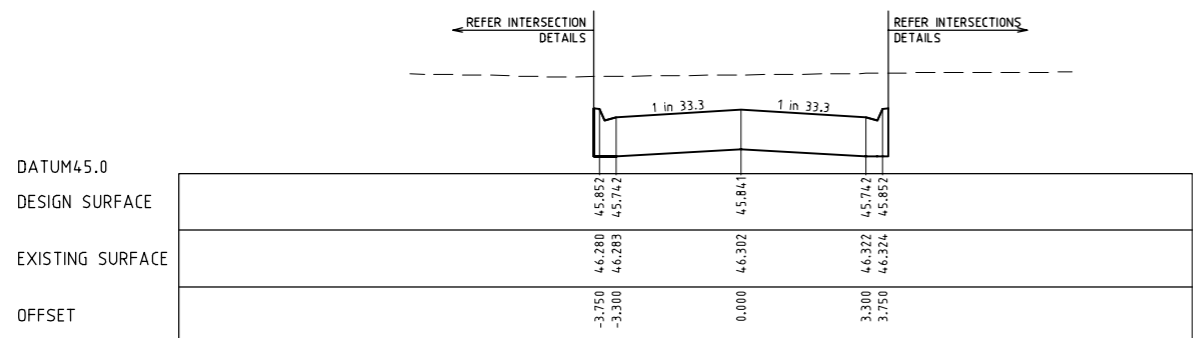
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Estuary  
 Stage 14  
 City Of Greater Geelong  
 Roadworks and Drainage  
 Cross Sections - Hillclimb Drive - 1  
 CH659.318 - CH746.916  
 Drawing No. 0250E-14-10 Rev B  
 Sheet No. 10 of 23  
 Approved for Construction

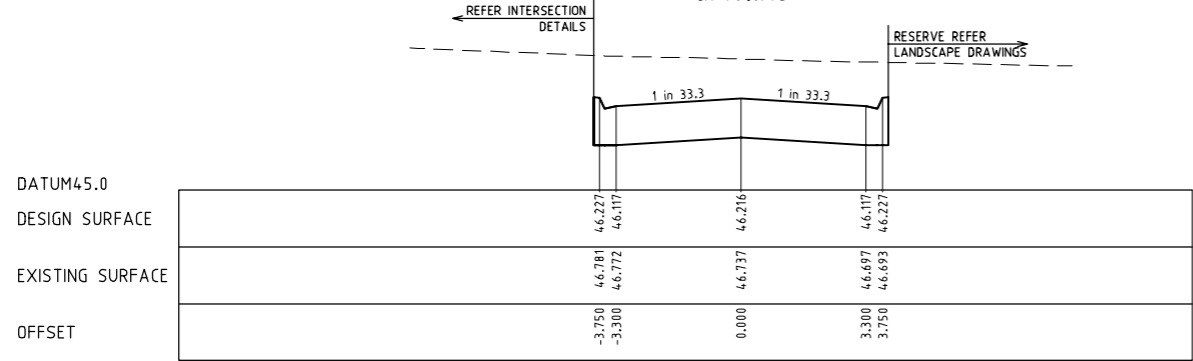
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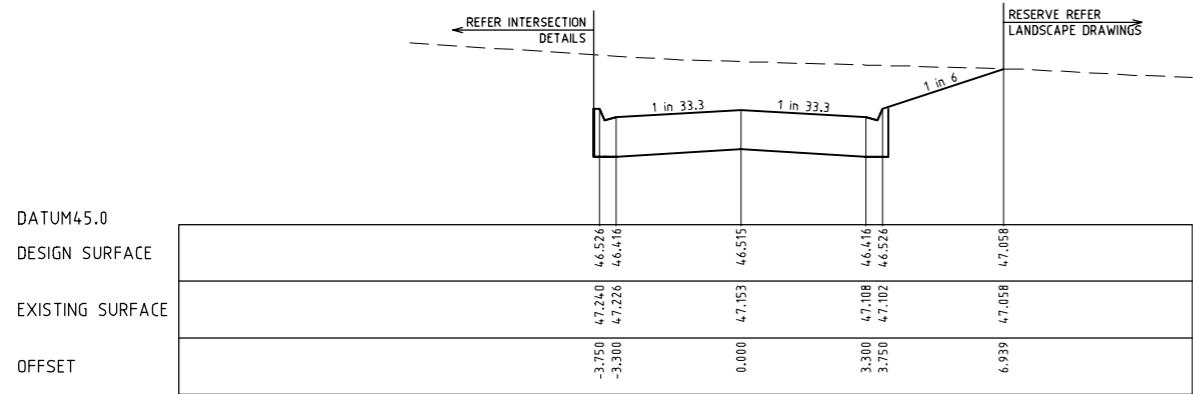
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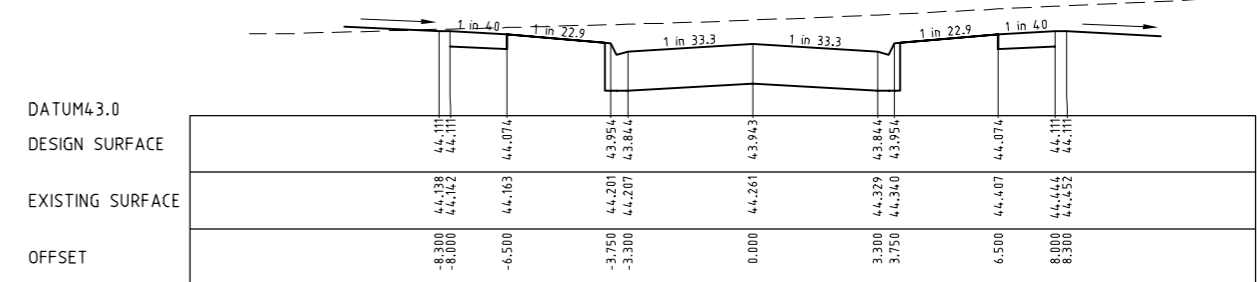
CH 780.973



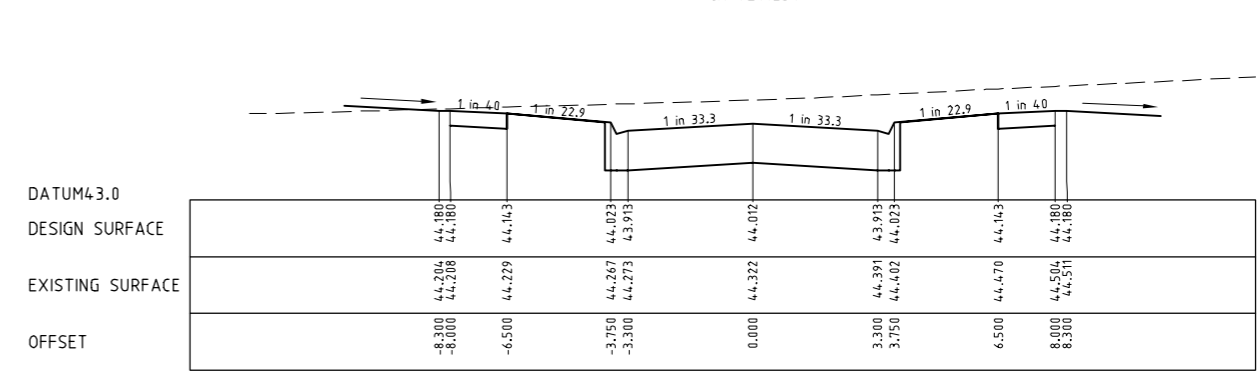
CH 768.639



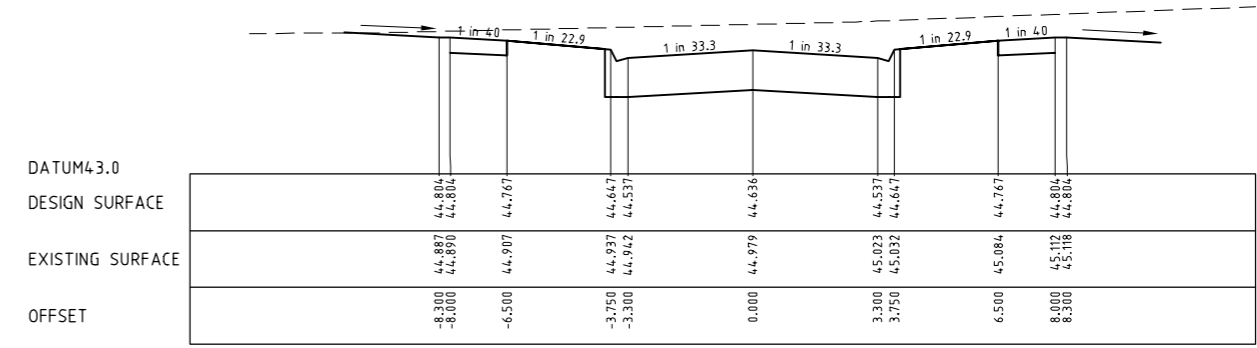
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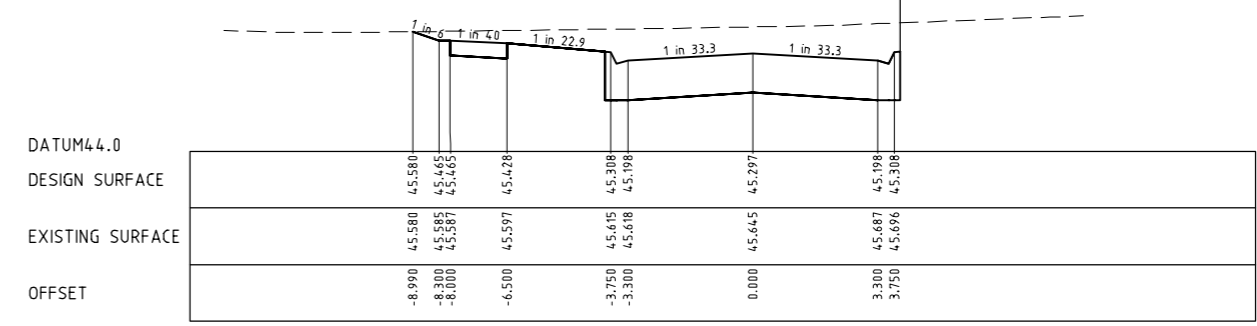
CH 828.251



CH 826.659



CH 812.251

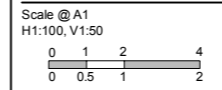


CH 796.251

B	COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
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REVISION		DATE	DESIGNER	APPD

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 Level 1, 6 Riverside Quay  
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Designed  
 C. Barker  
 Drawn  
 C. Barker  
 Checked  
 C. Birkett  
 Authorised  
 J. Golden  
 Date  
 December 2013

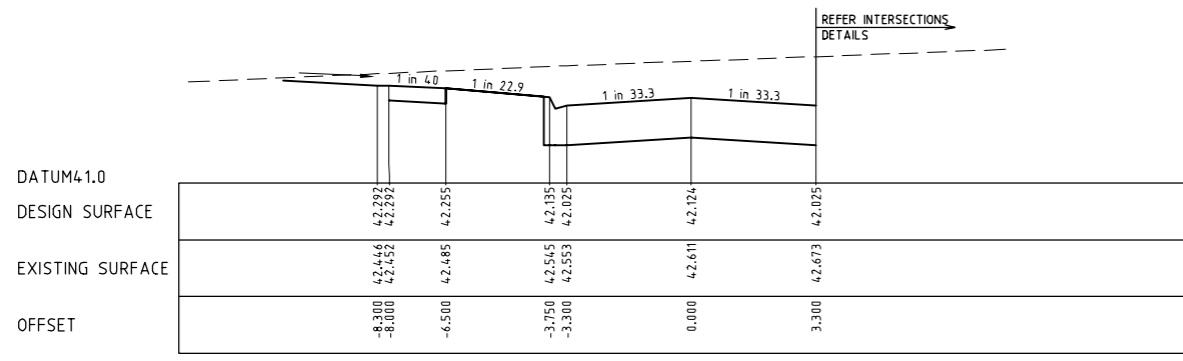


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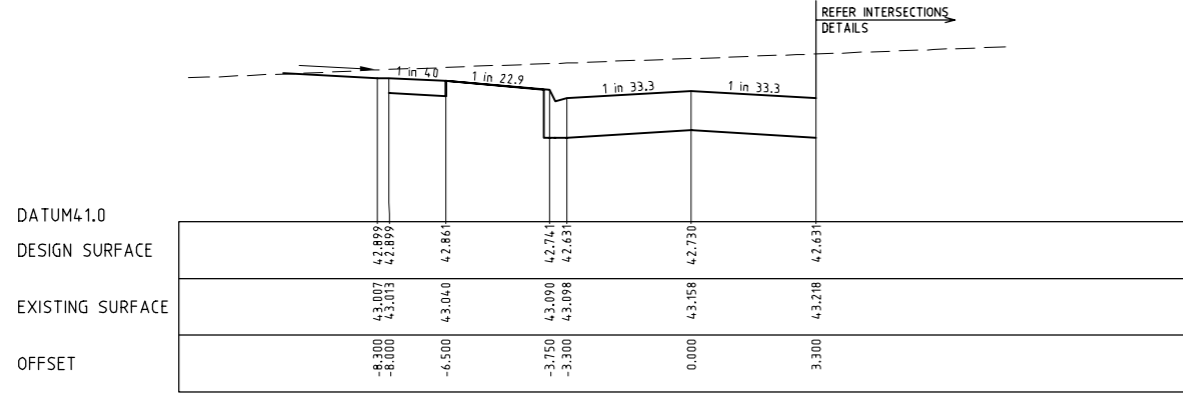
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Estuary  
 Stage 14  
 City Of Greater Geelong  
 Roadworks and Drainage  
 Cross Sections - Hillclimb Drive - 2  
 CH747.979 - CH828.251  
**Drawing No. 0250E-14-11**      **Rev B**  
 Sheet No. 11 of 23  
**Approved for Construction**

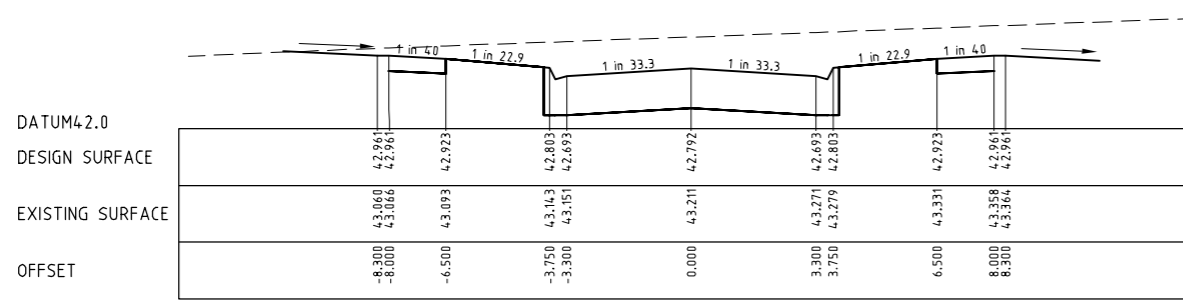
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 - - - FUTURE DESIGN LINE



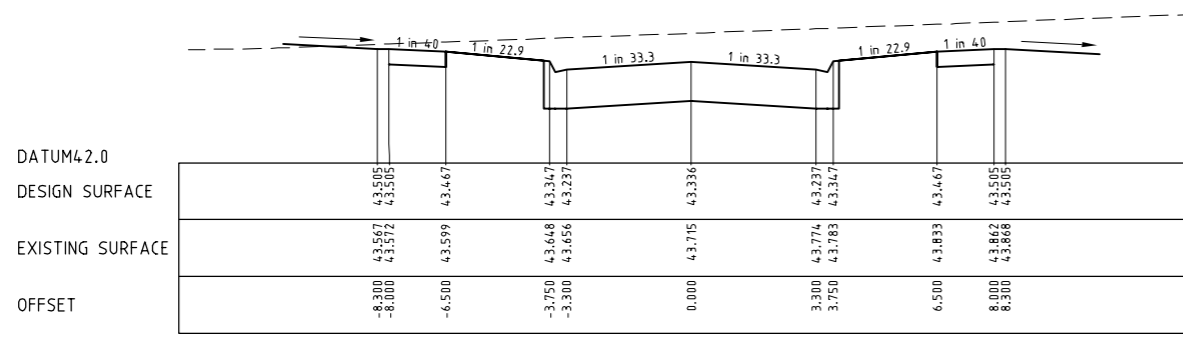
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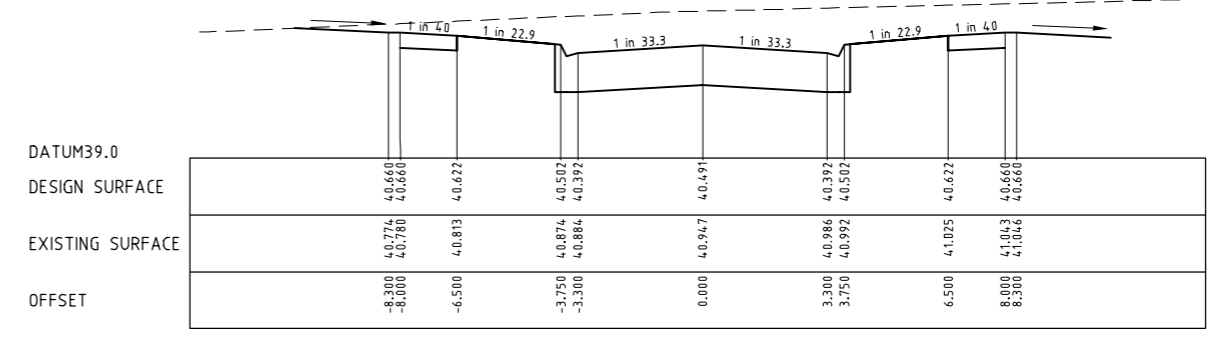
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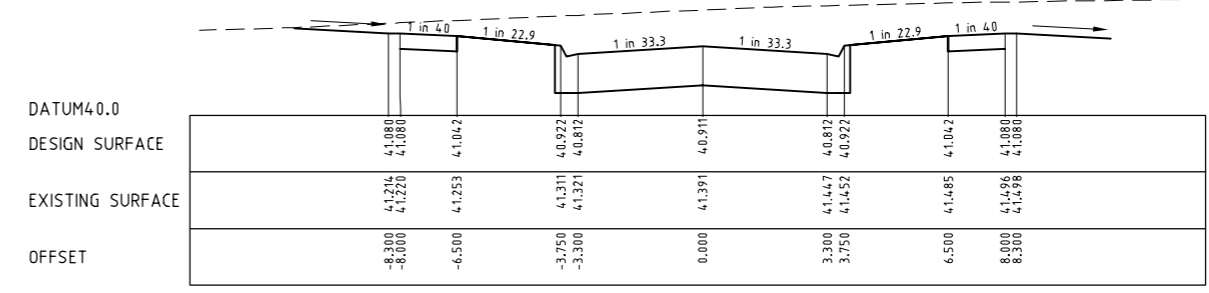
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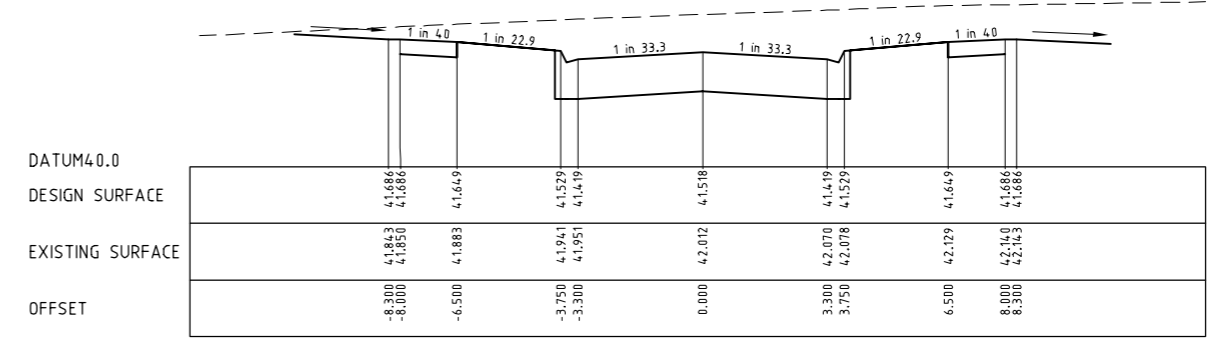
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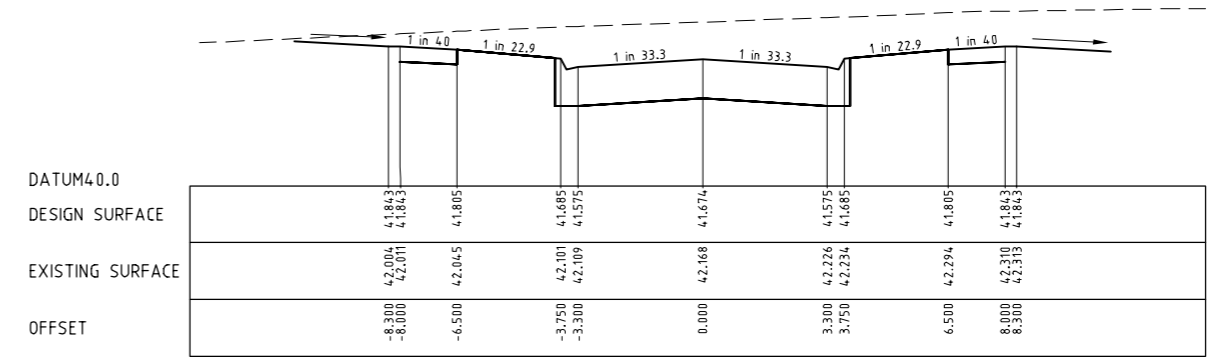
CH 907.943



CH 898.251



CH 884.251



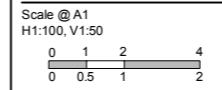
RTPCH 880.633

REVISION					
B	COUNCIL AMENDMENTS	7.03.14	CB/CB	JG	
A	ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG	



Principal  
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 Southbank, Victoria 3006

Designed  
 C. Barker  
 Drawn  
 C. Barker  
 Checked  
 C. Birkett  
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 J. Golden  
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 Tarragona +61 3 5173 0100

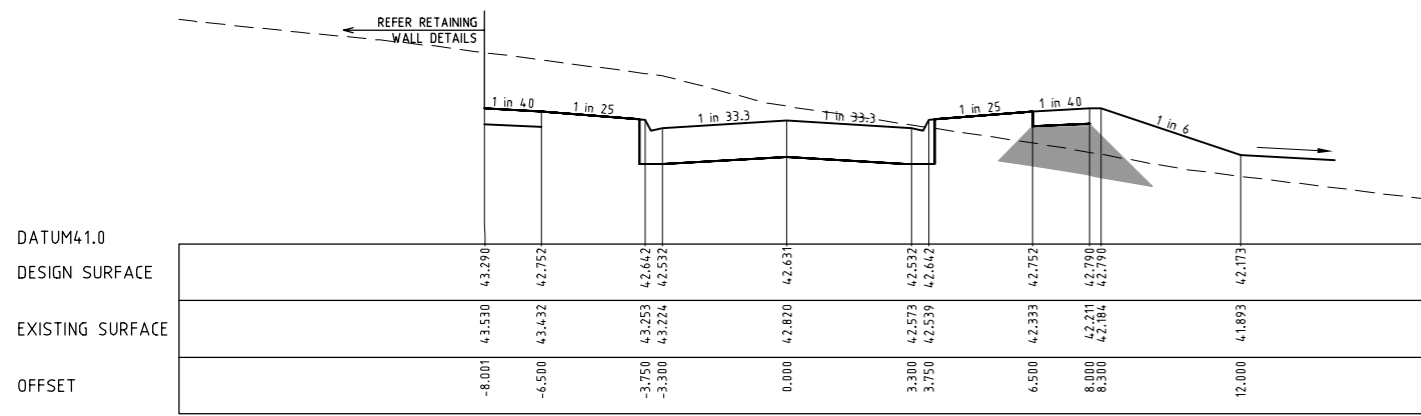
Estuary  
 Stage 14  
 City Of Greater Geelong  
 Roadworks and Drainage  
 Cross Sections - Hillclimb Drive - 3  
 CH842.251 - CH907.943  
 Drawing No. 0250E-14-12  
 Sheet No. 12 of 23

REV B

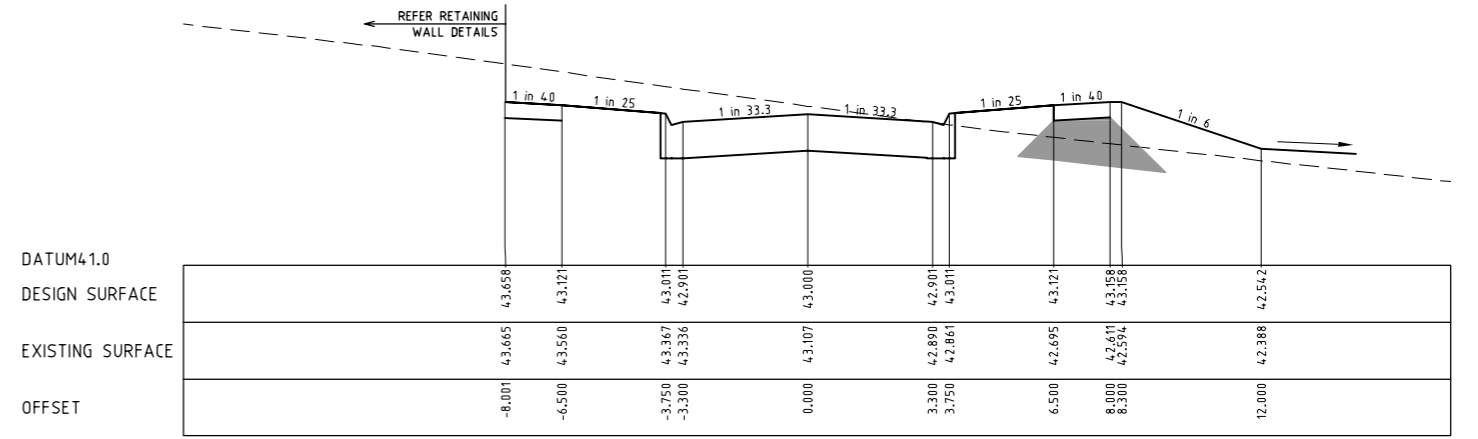
Approved for Construction

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

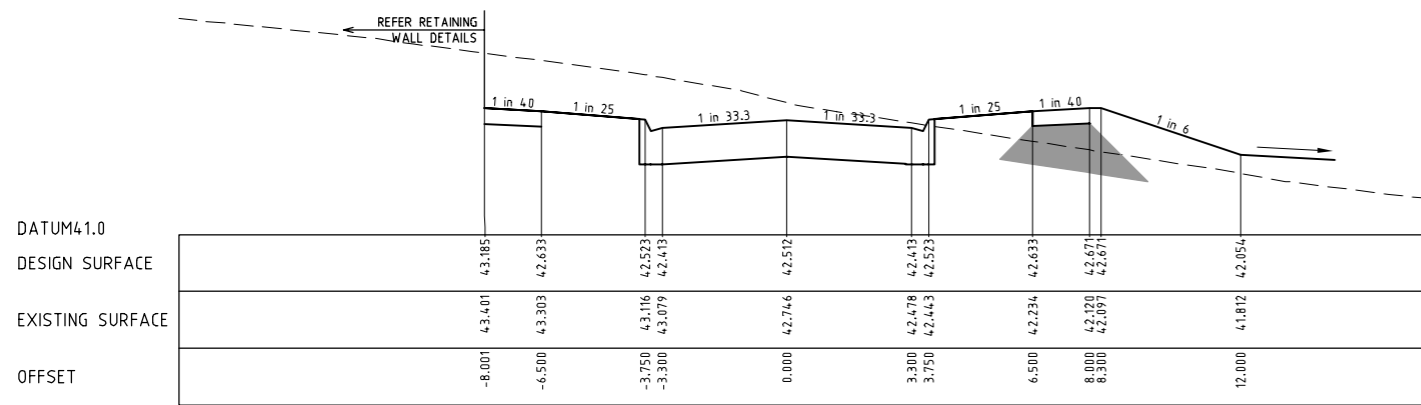
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 - - - FUTURE DESIGN LINE



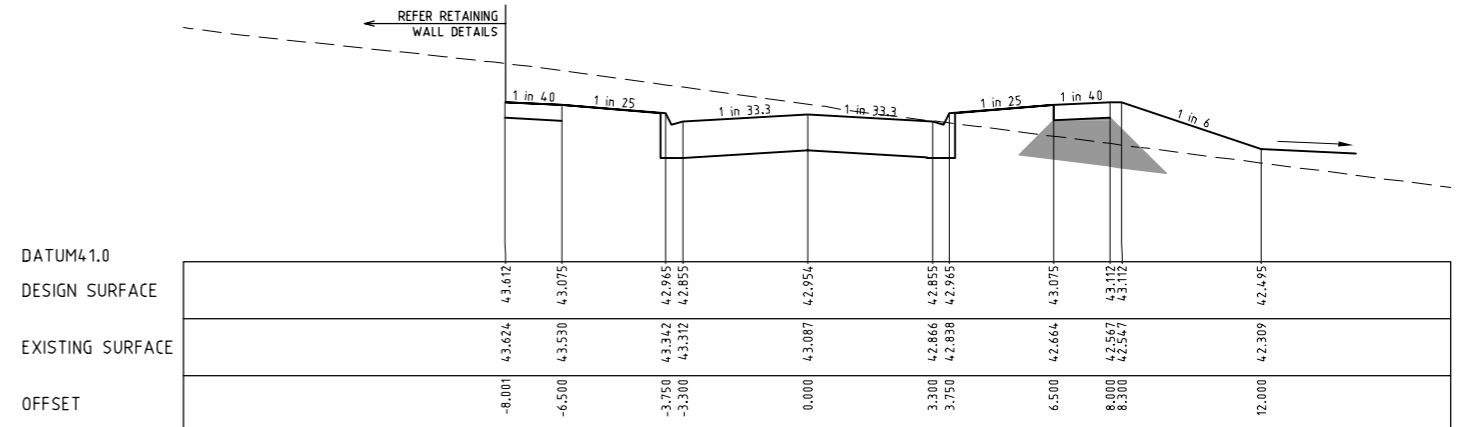
TPCH 162.294



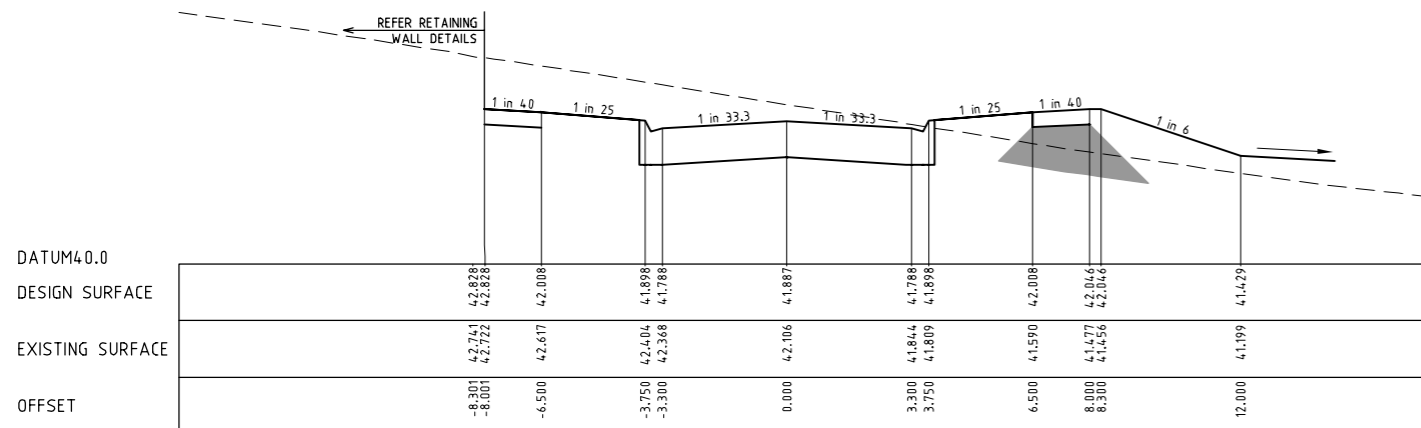
CH 182.040



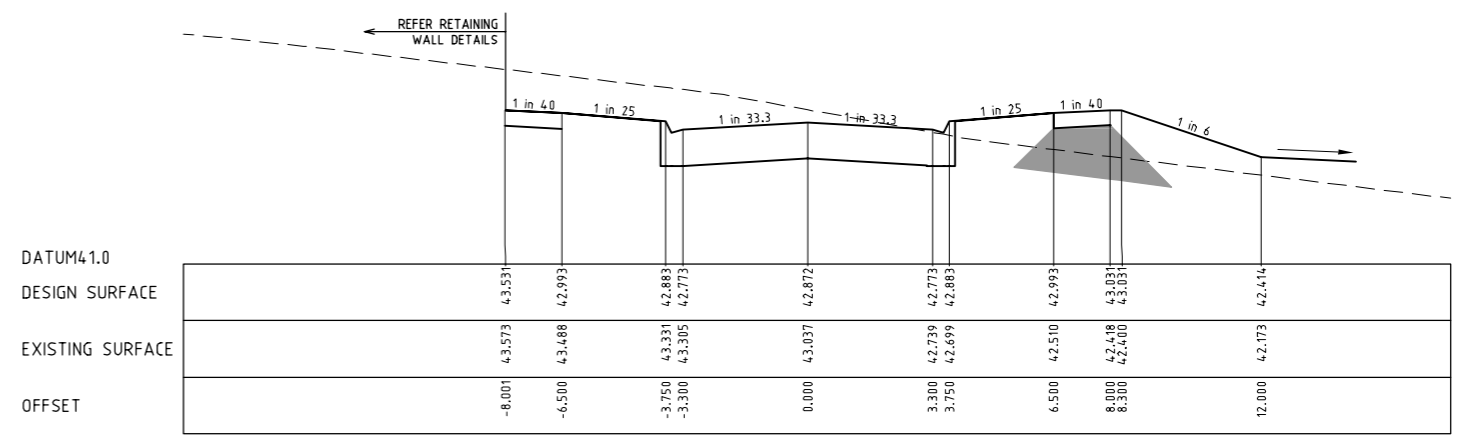
CH 159.337



CH 175.030



CH 146.757



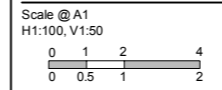
CH 170.411

REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG



Principal  
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 Southbank, Victoria 3006

Designed  
 C. Barker  
 Drawn  
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 Canberra +61 2 6126 1900 Tarragona +61 3 5173 0100

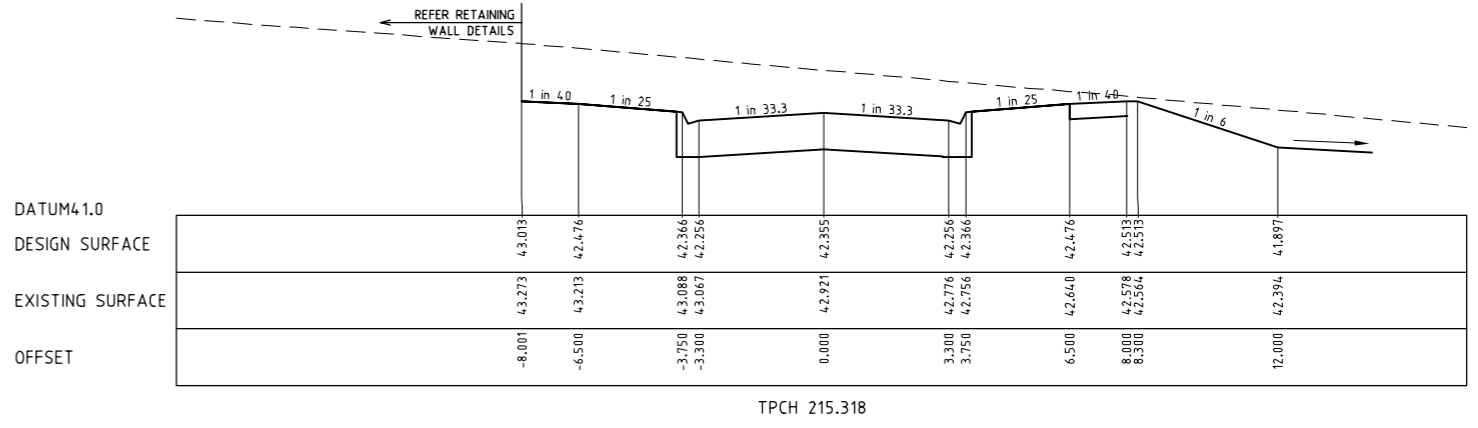
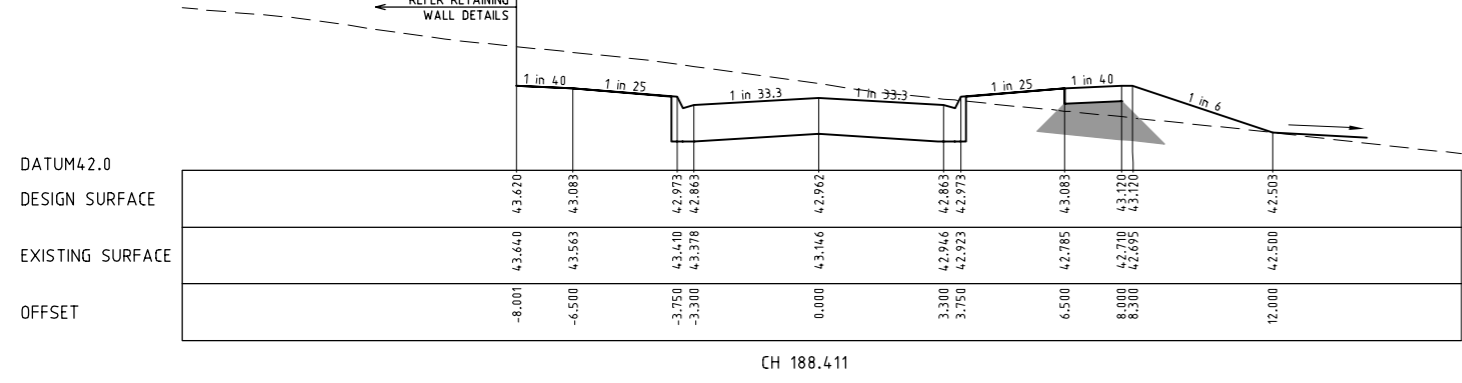
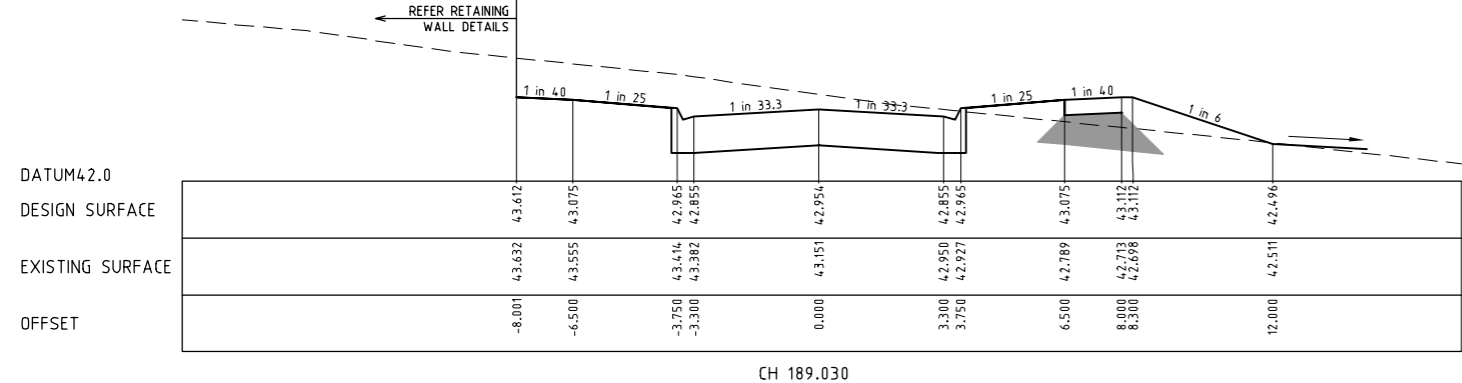
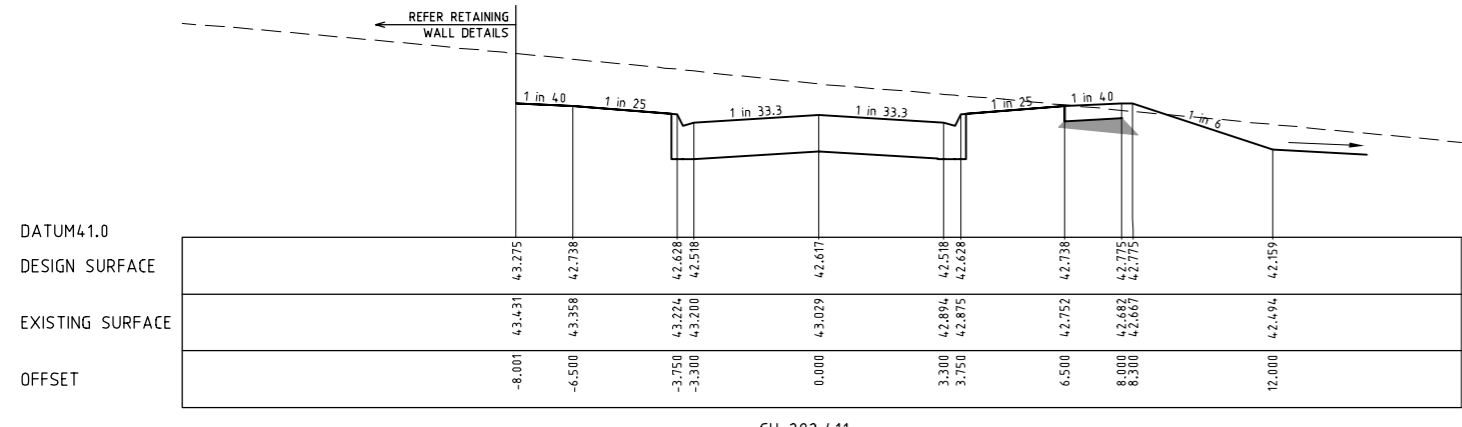
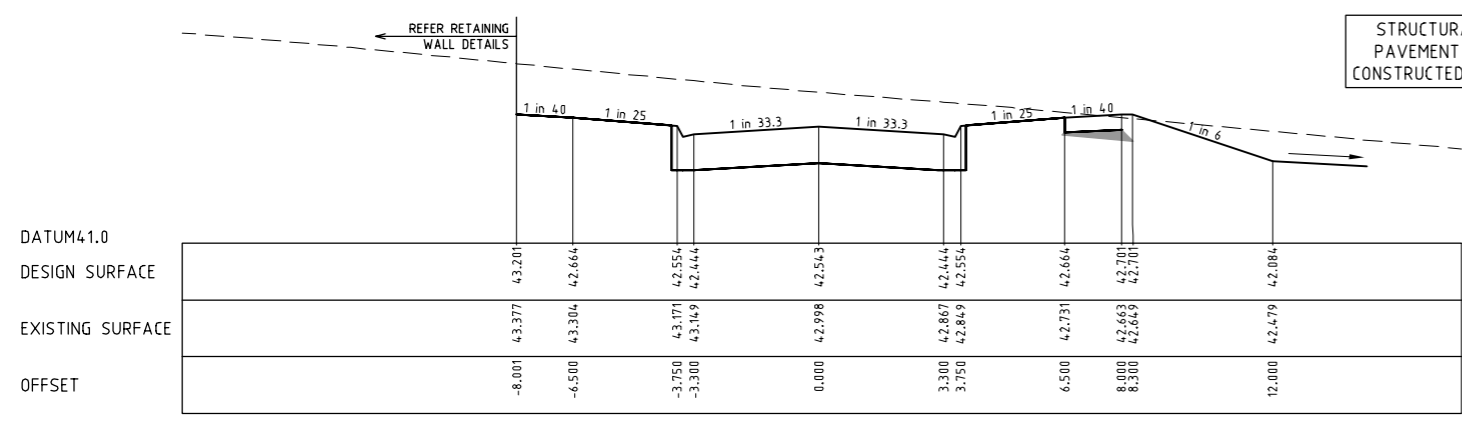
Estuary  
 Stage 14  
 City Of Greater Geelong  
 Roadworks and Drainage  
 Cross Sections - Ascent Avenue - 1  
 CH146.757 - CH182.040

Drawing No. 0250E-14-13 Rev B  
 Sheet No. 13 of 23

Approved for Construction

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

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

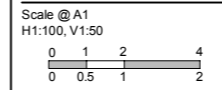


REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG



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

Designed  
C. Barker  
Drawn  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
December 2013



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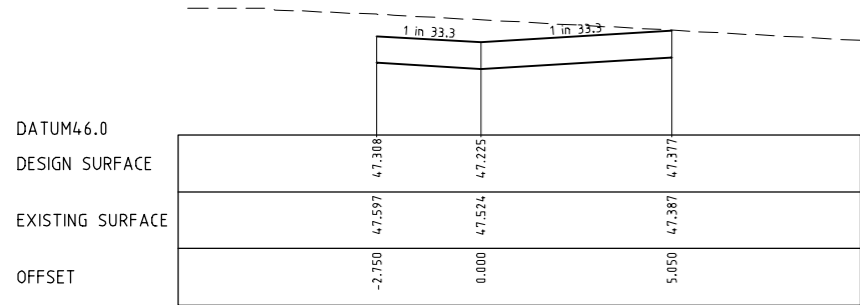
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Brisbane +61 7 3831 8988  
Canberra +61 2 6126 1900

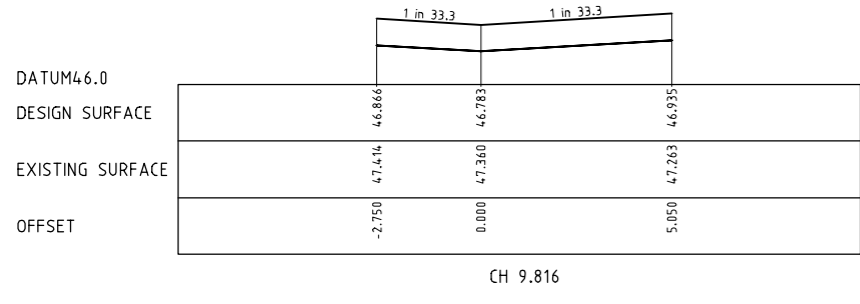
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Melbourne +61 3 9869 0800  
Taraikon +61 3 5173 0100

**Estuary**  
Stage 14  
City Of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Ascent Avenue - 2  
CH188.411 - CH215.318  
**Drawing No. 0250E-14-14** **Rev B**  
Sheet No. 14 of 23  
**Approved for Construction**

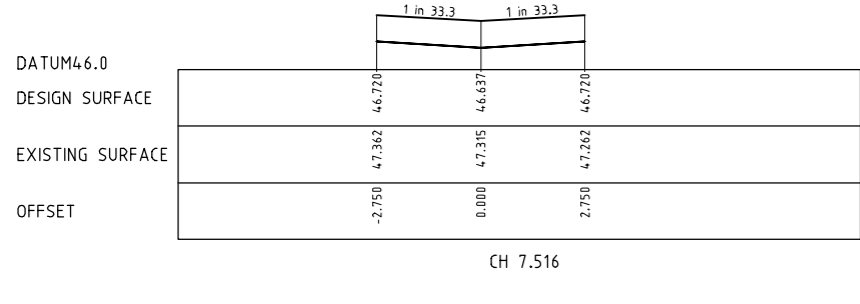
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—	DESIGN LINE
- - -	FUTURE DESIGN LINE



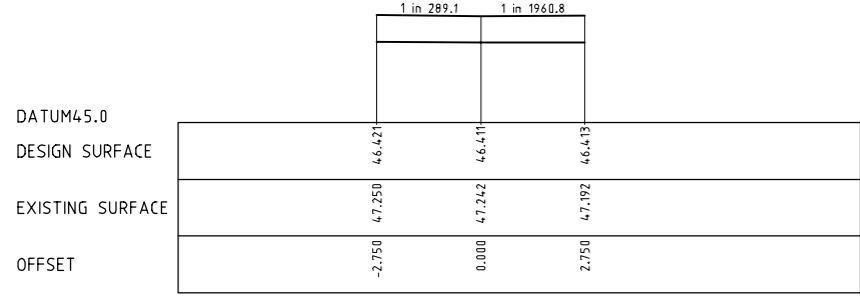
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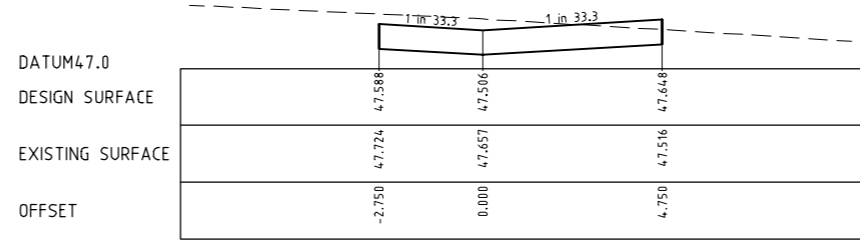
CH 9.816



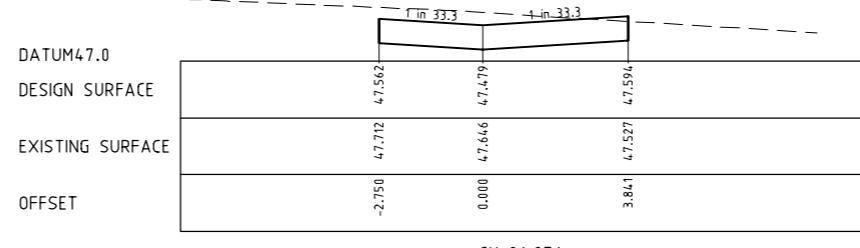
CH 7.516



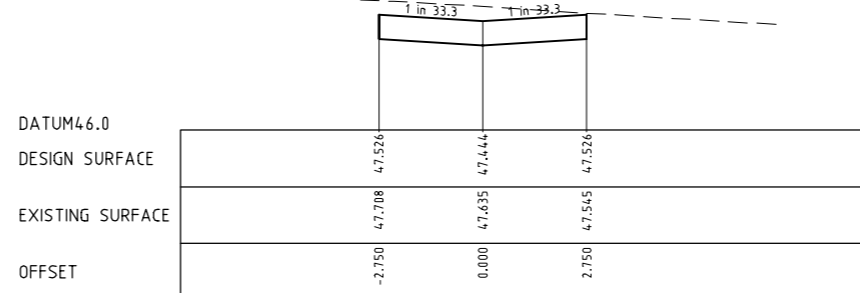
CH 3.961



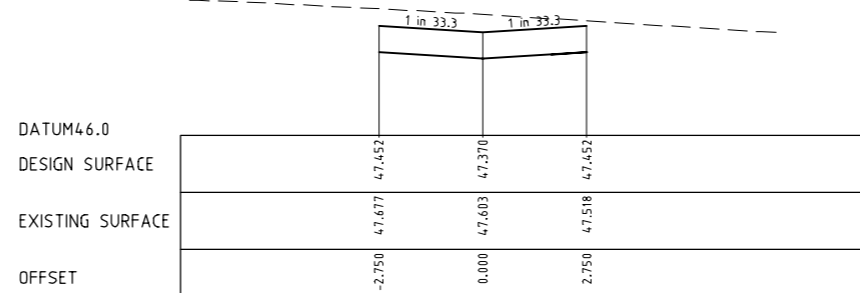
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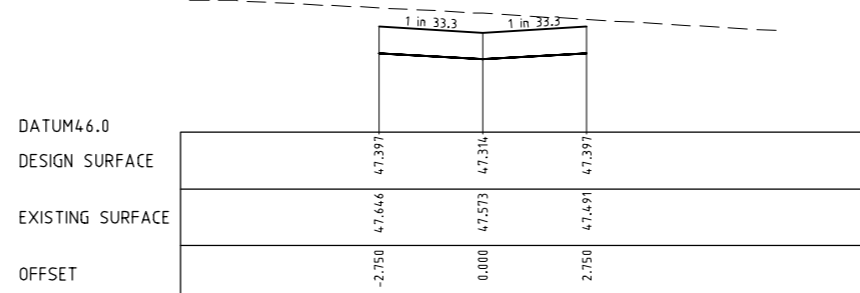
CH 26.256



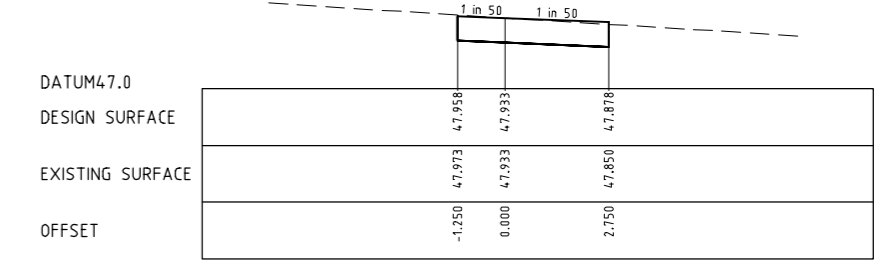
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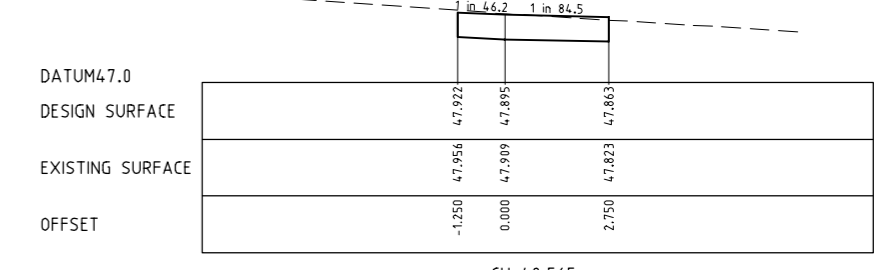
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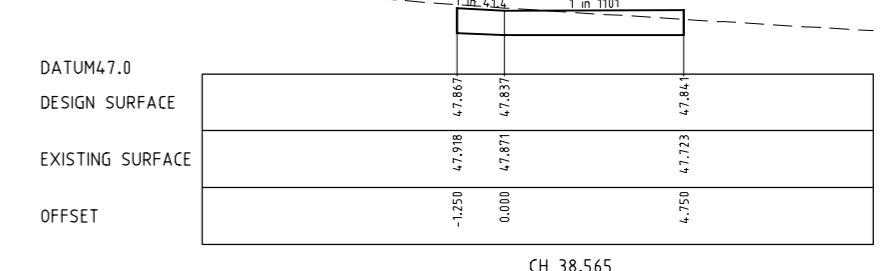
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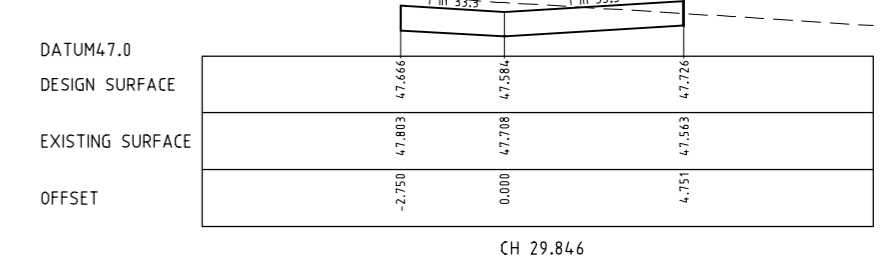
CH 41.846



CH 40.565



CH 38.565

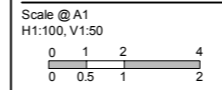


CH 29.846

REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG



Designed  
C. Barker  
Drawn  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
December 2013



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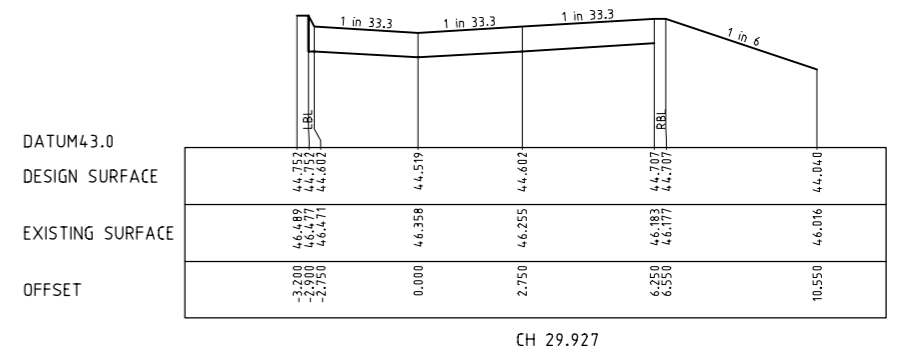
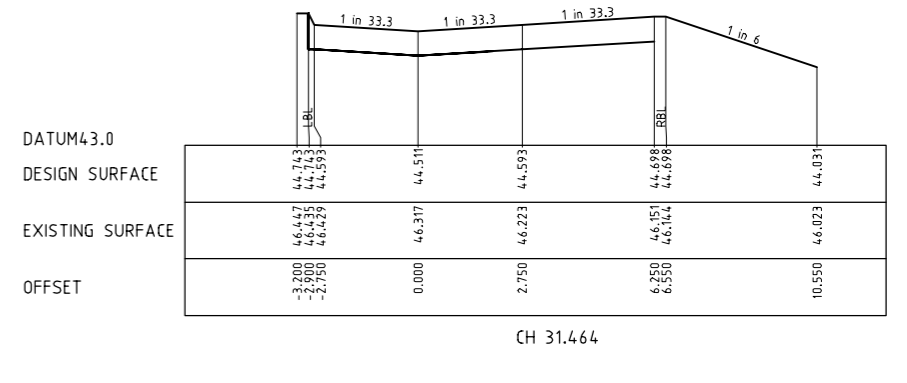
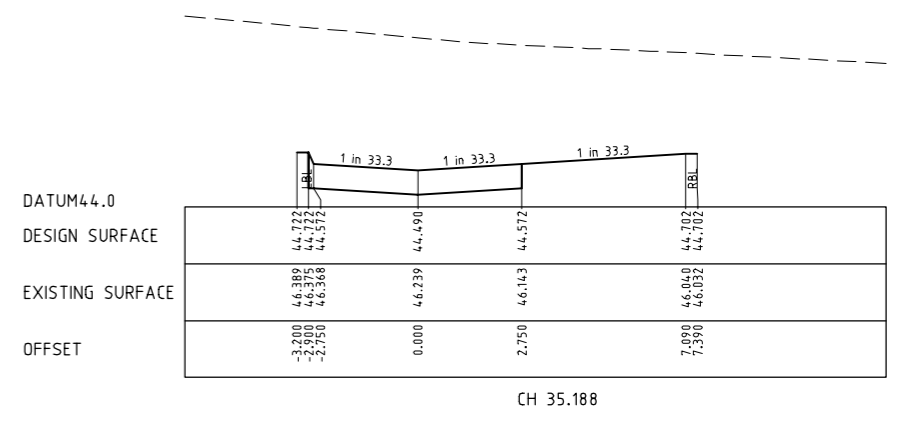
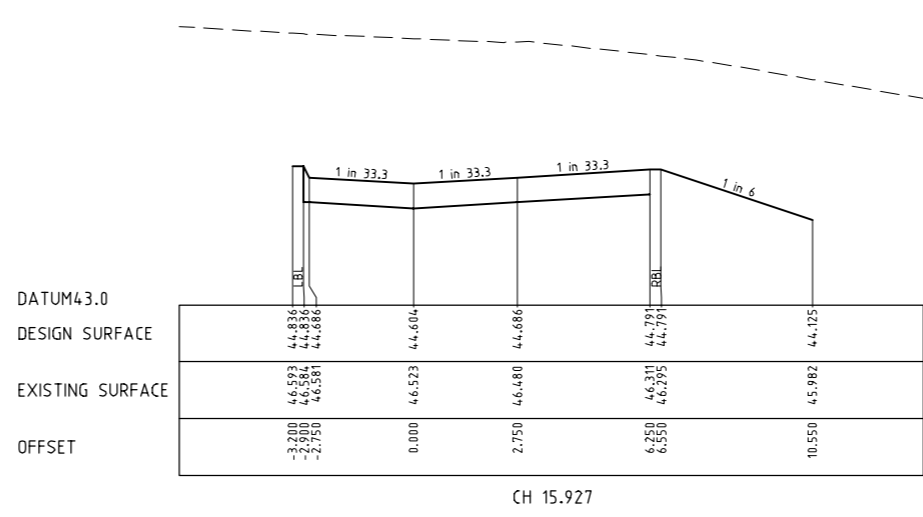
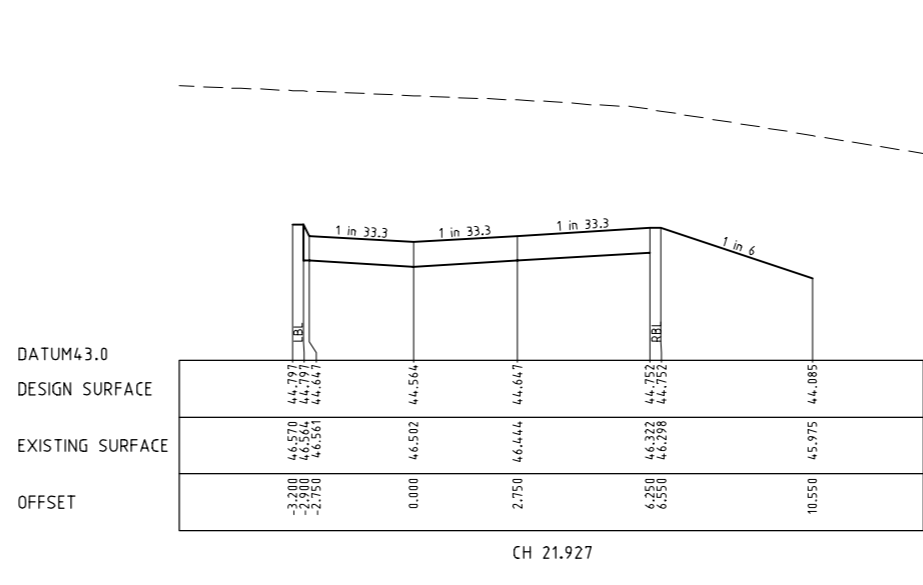
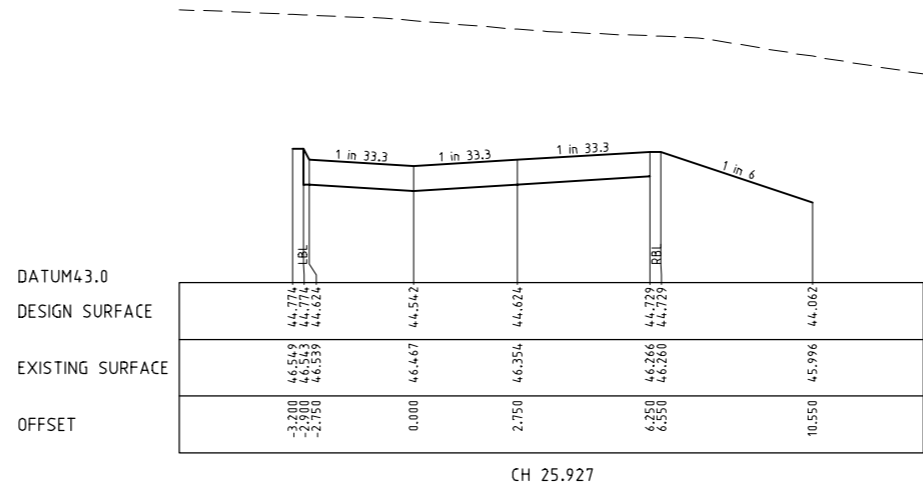
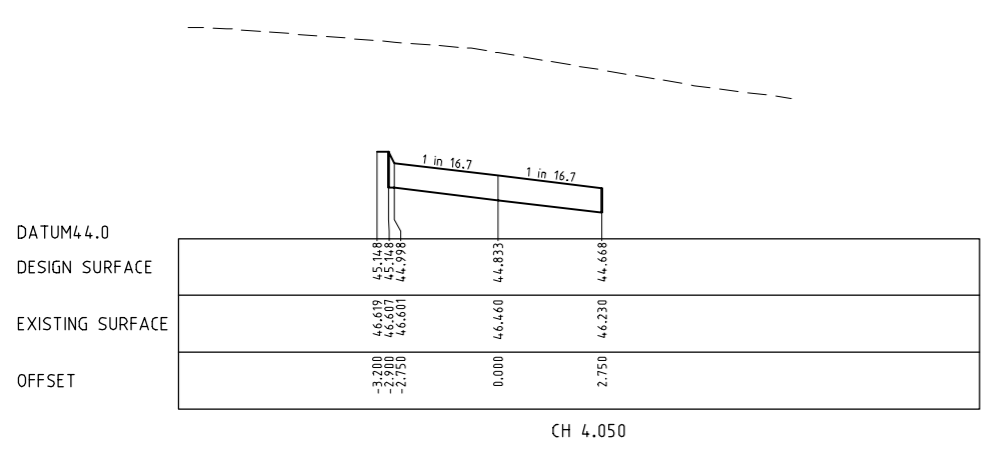
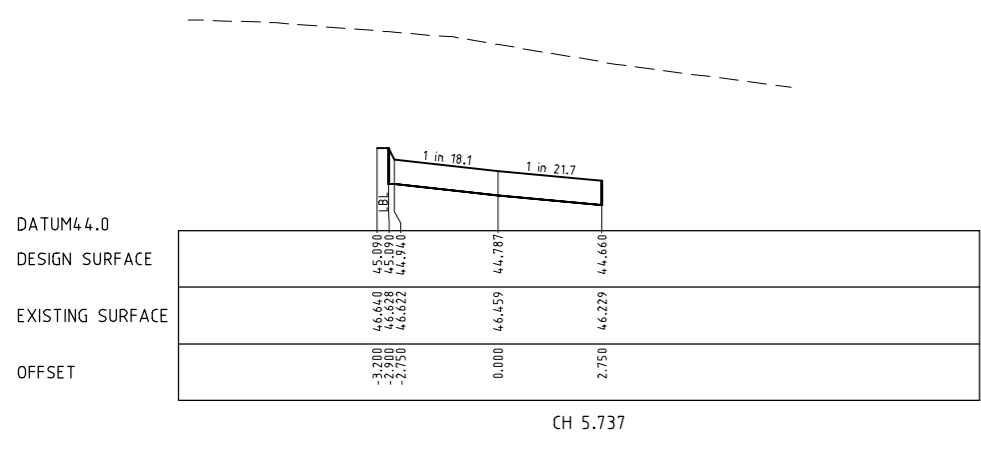
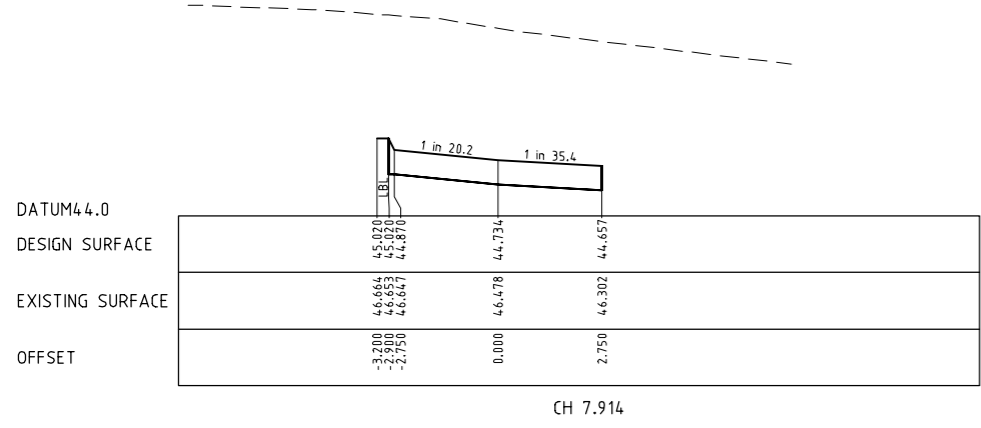
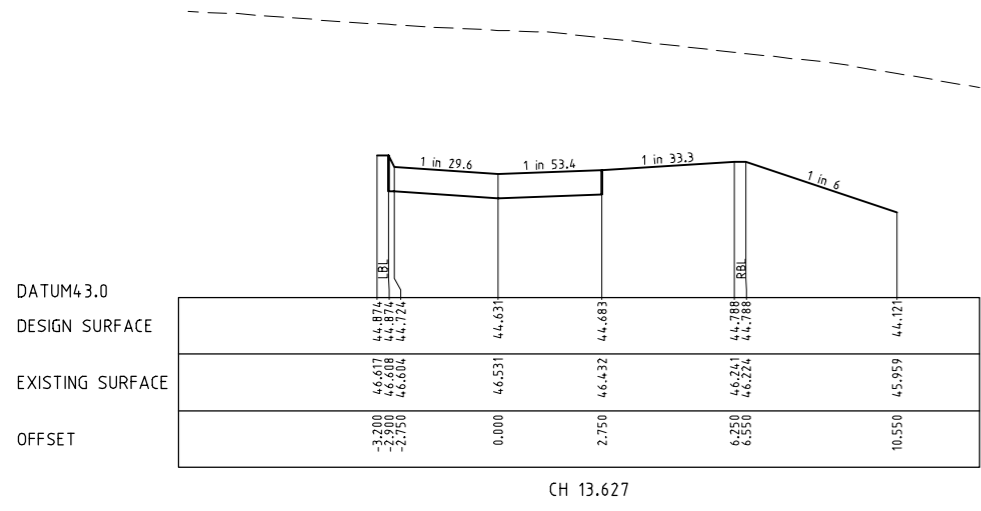


**Estuary**  
Stage 14  
City Of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Driveway

Drawing No. **0250E-14-15** Rev **B**  
Sheet No. 15 of 23

Approved for Construction

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



B	COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A	ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG
REVISION		DATE	DESIGN	APPD

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

Designed  
C. Barker  
Drawn  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
December 2013

Scale @ A1  
H1:100, V1:50  
0 1 2 4  
0 0.5 1 2

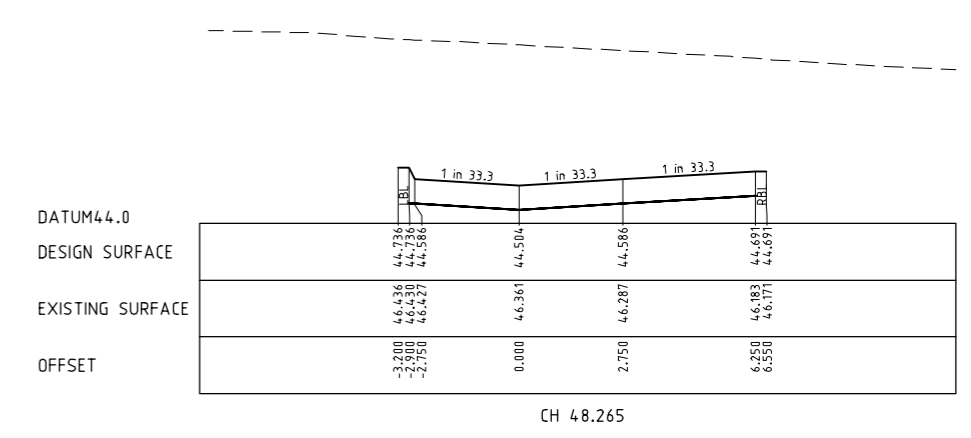
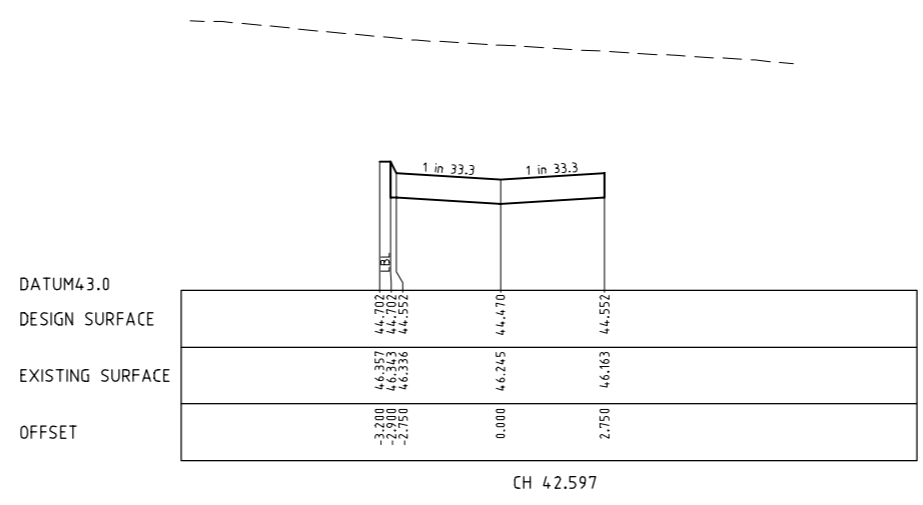
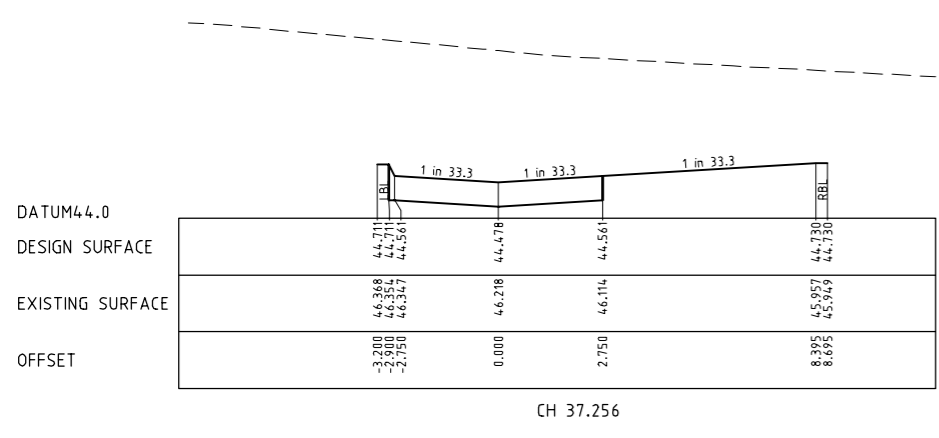
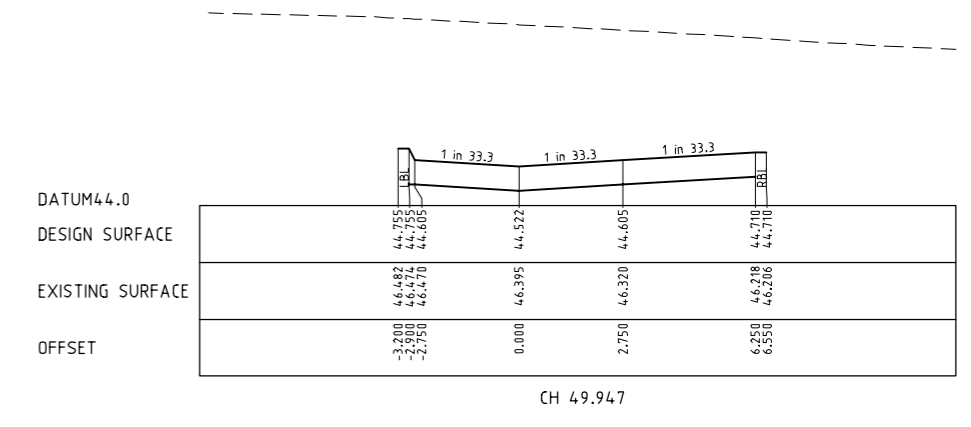
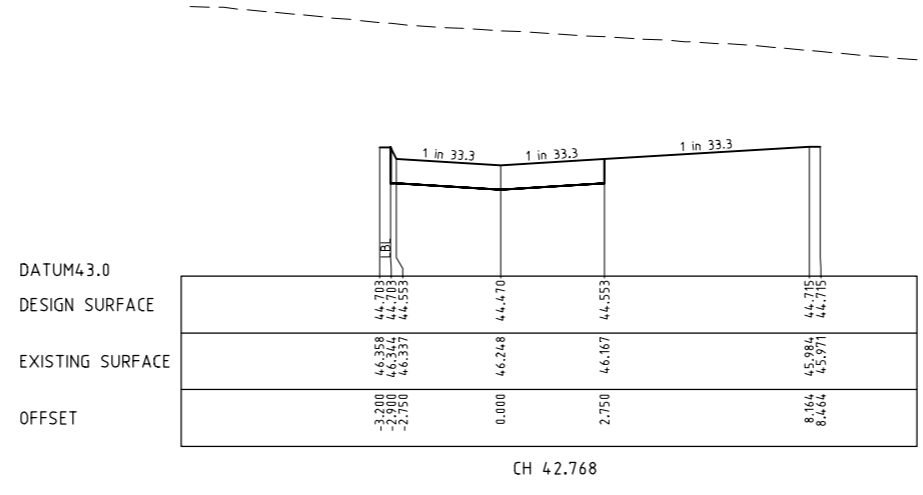
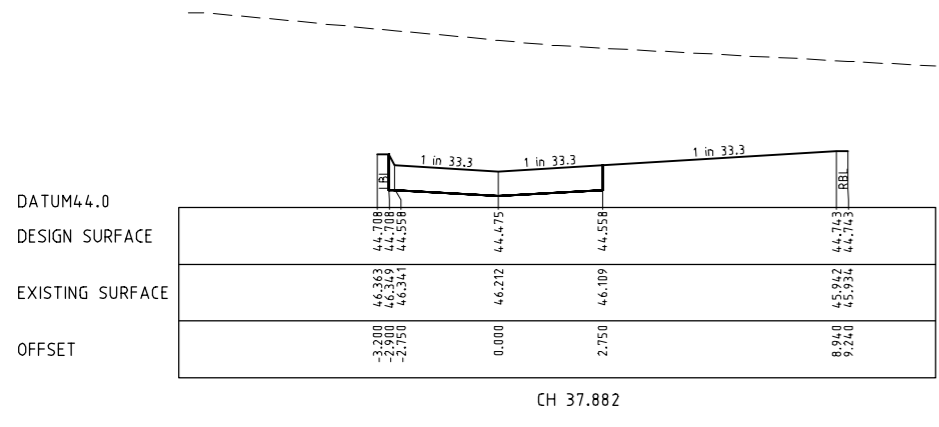
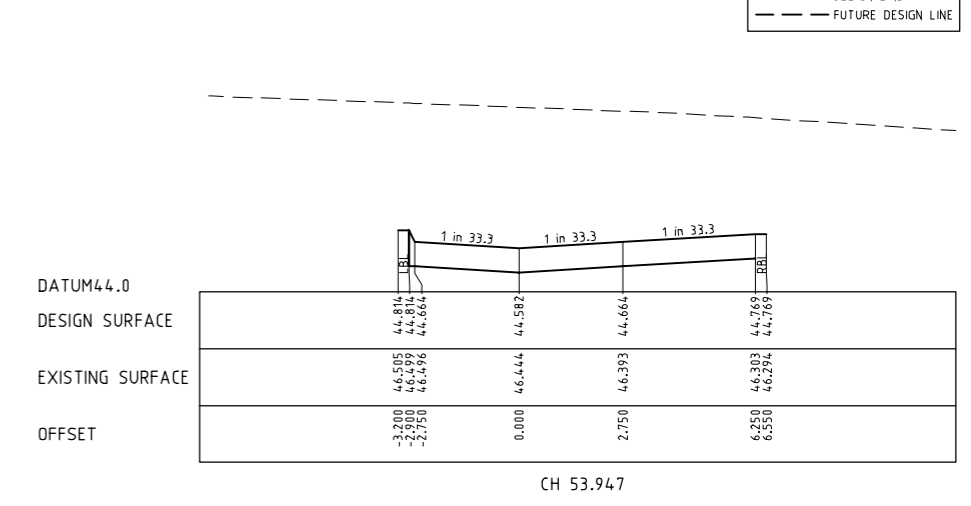
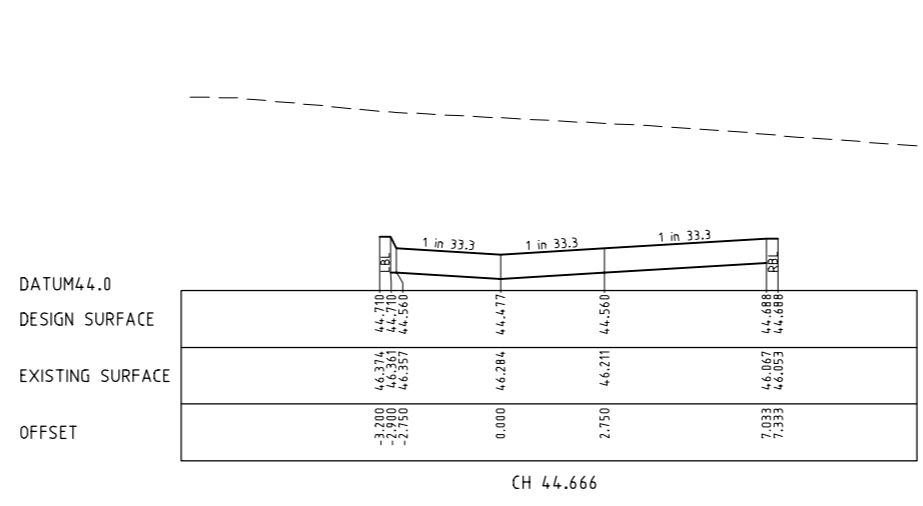
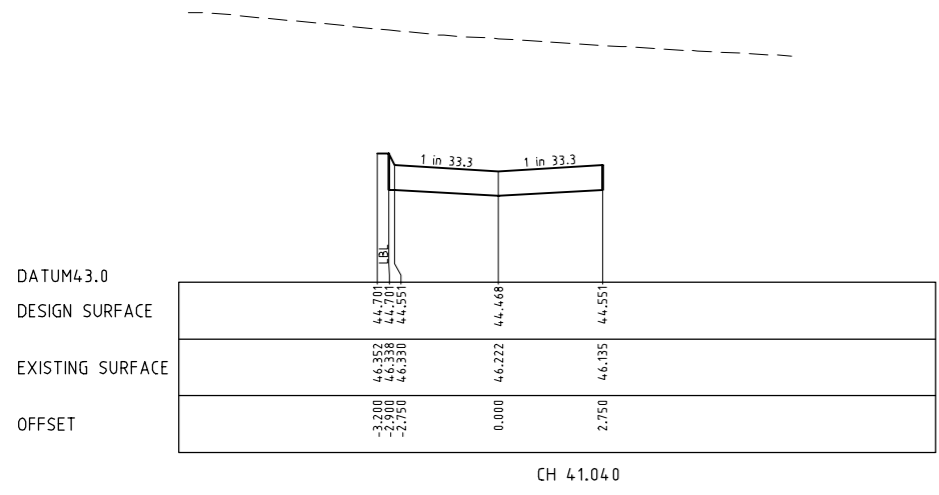
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Estuary  
Stage 14  
City Of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Glen Fair Way - 1  
Drawing No. 0250E-14-16 Rev B  
Sheet No. 16 of 23  
Approved for Construction



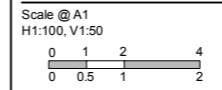
LEGEND  
 --- EXISTING SURFACE  
 --- DESIGN LINE  
 --- FUTURE DESIGN LINE



REVISION	DATE	DESIGN	APPD
A	12.02.14	CB/CB	JG
ISSUED TO COUNCIL FOR APPROVAL			



Designed  
 C. Barker  
 Drawn  
 C. Barker  
 Checked  
 C. Birckett  
 Authorised  
 J. Golden  
 Date  
 December 2013



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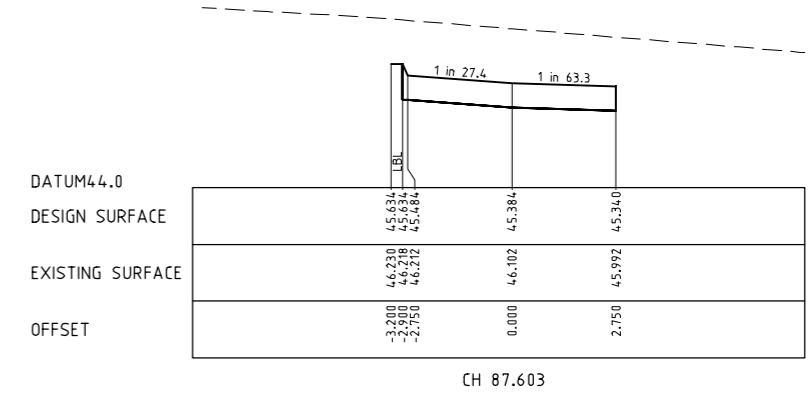
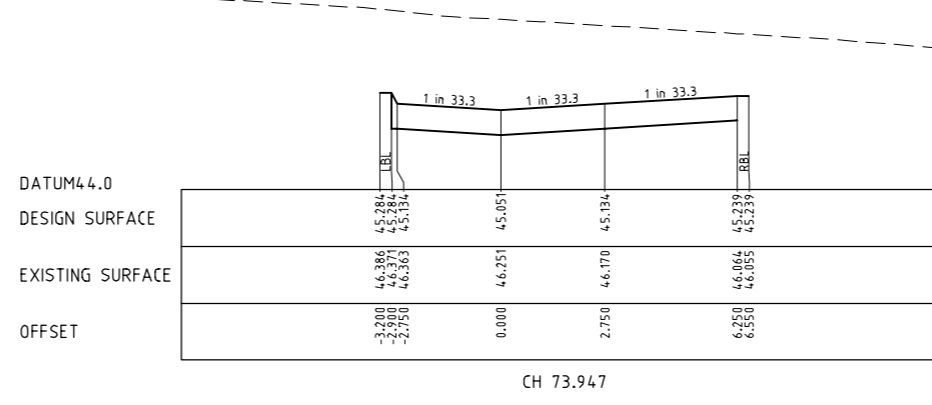
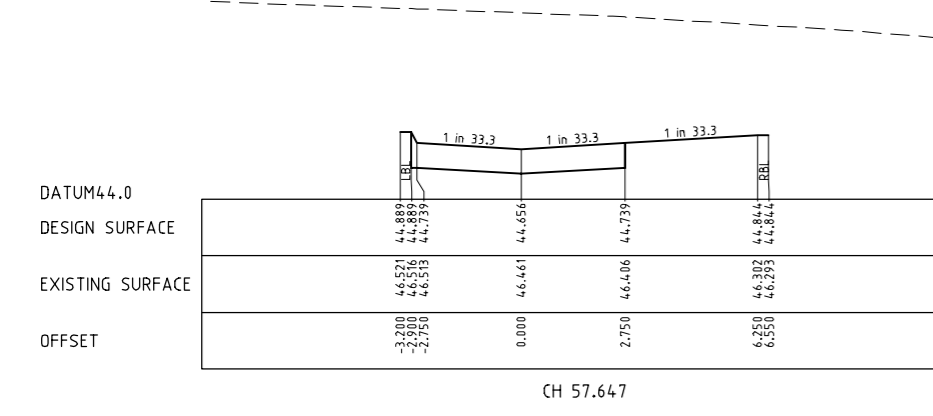
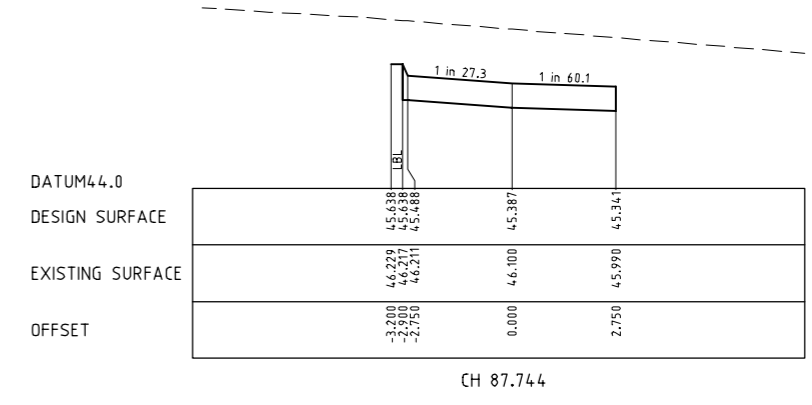
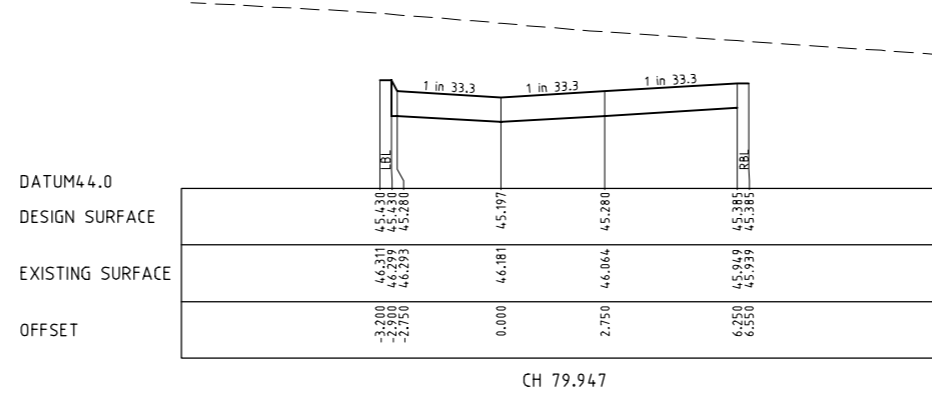
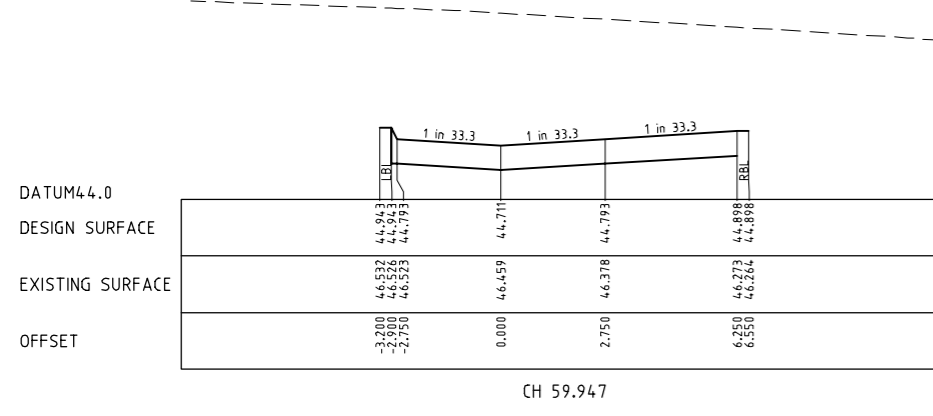
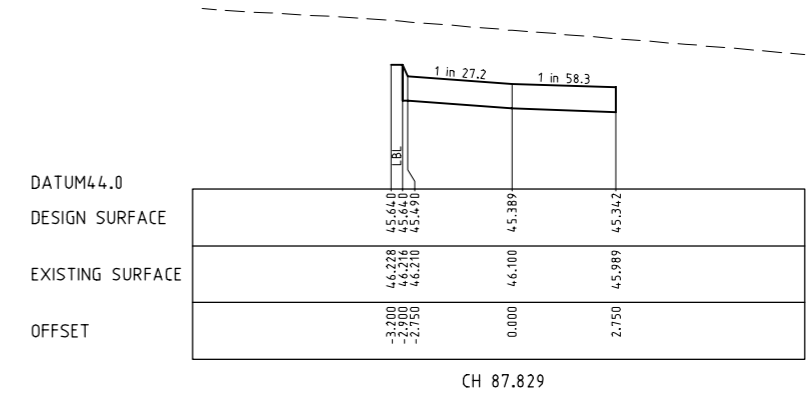
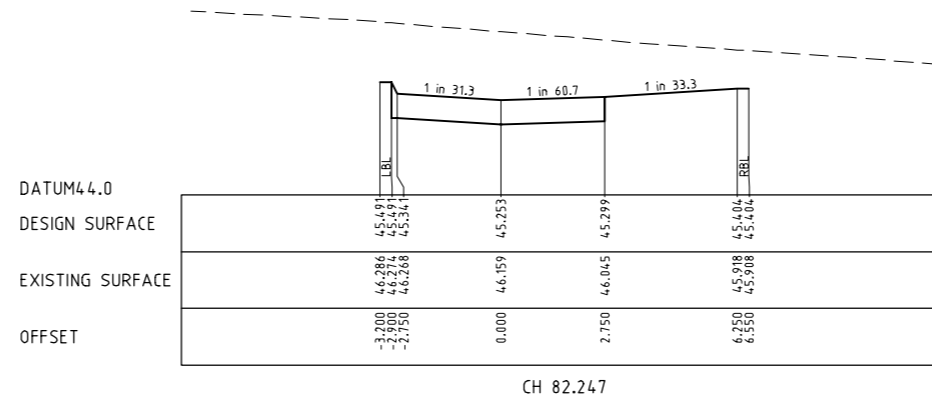
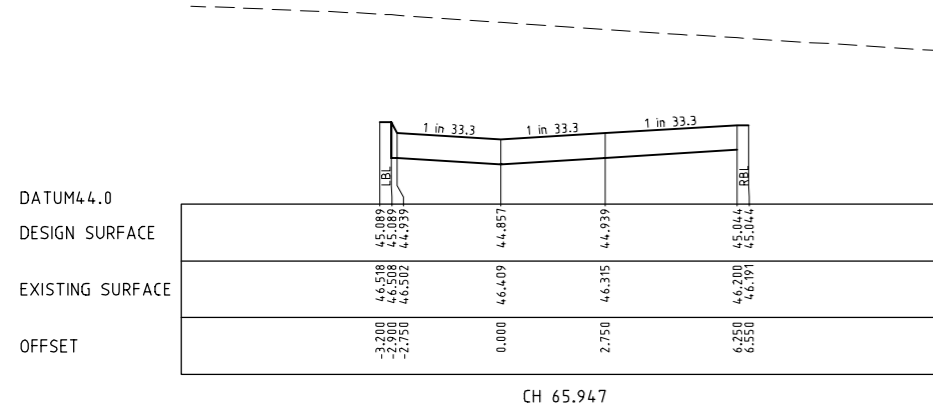
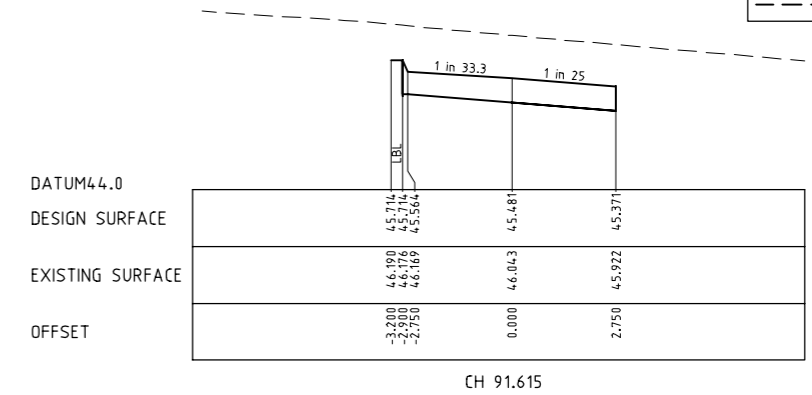
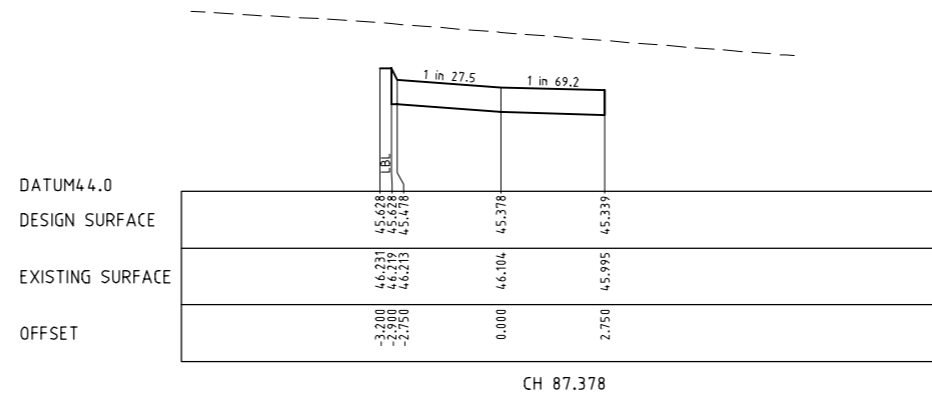
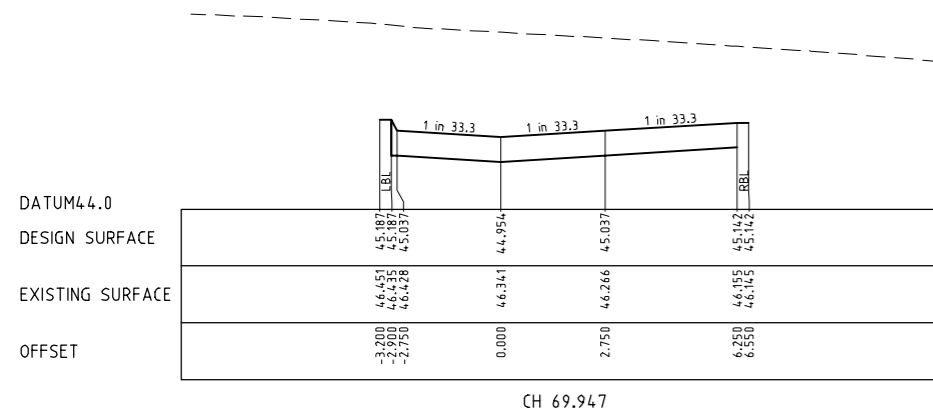


**Estuary**  
 Stage 14  
 City Of Greater Geelong  
 Roadworks and Drainage  
 Cross Sections - Glen Fair Way - 2

Drawing No. **0250E-14-17** Rev **A**  
 Sheet No. 17 of 23

**Subject to Approval**  
 Not to be used for construction

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



REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG

**estuary**  
LEOPOLD™

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

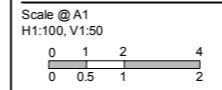
Designed  
C. Barker

Drawn  
C. Barker

Checked  
C. Birckett

Authorised  
J. Golden

Date  
December 2013



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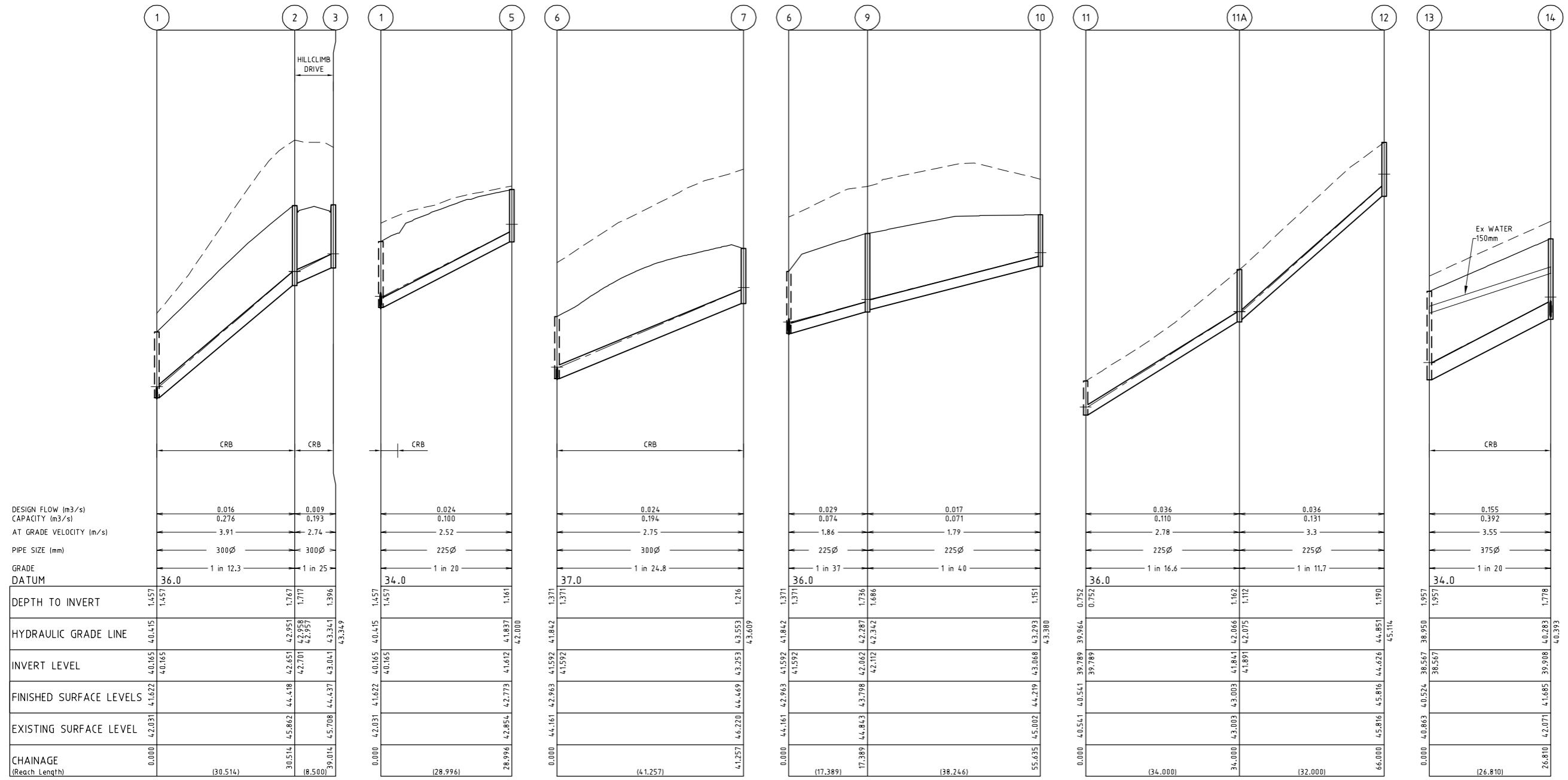
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Melbourne +61 3 9869 0800  
Tarragona +61 3 5173 0100

**Estuary**  
Stage 14  
City Of Greater Geelong  
Roadworks and Drainage  
Cross Sections - Glen Fair Way - 3

Drawing No. **0250E-14-18** Rev B  
Sheet No. 18 of 23

Approved for Construction

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

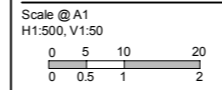


REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG



Principal  
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Level 1, 6 Riverside Quay  
Southbank, Victoria 3006

Designed  
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Drawn  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
December 2013



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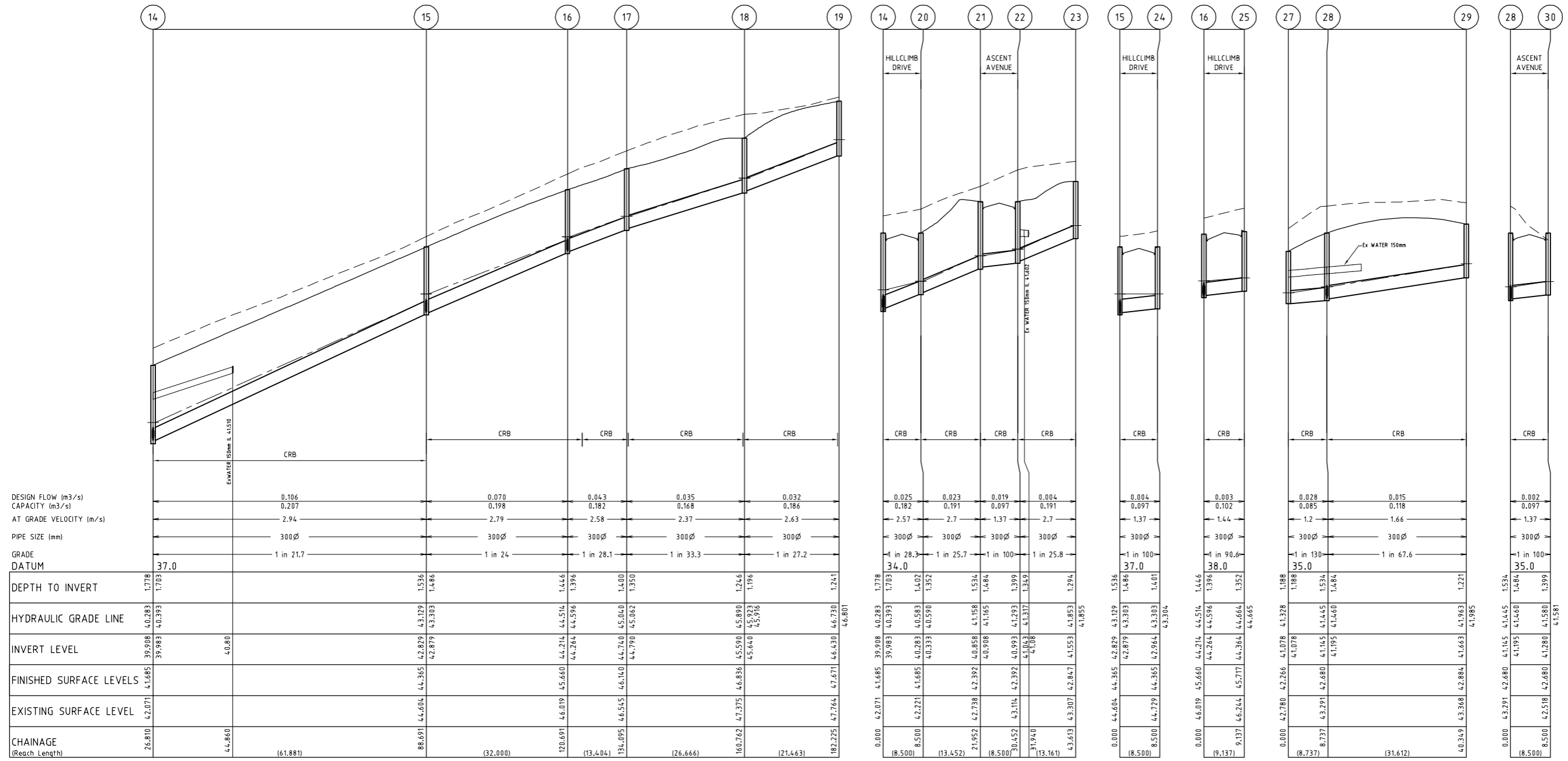
**Estuary**  
Stage 14  
City of Greater Geelong  
Roadworks and Drainage  
Drainage Longitudinal Sections - 1

Drawing No. **0250E-14-19** Rev **B**  
Sheet No. 19 of 23

Approved for Construction

I:\projects\0250E-14-19\0250E-14-19.dwg

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

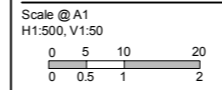


REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG



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

Designed  
C. Barker  
Drawn  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
December 2013



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Canberra +61 2 6126 1900

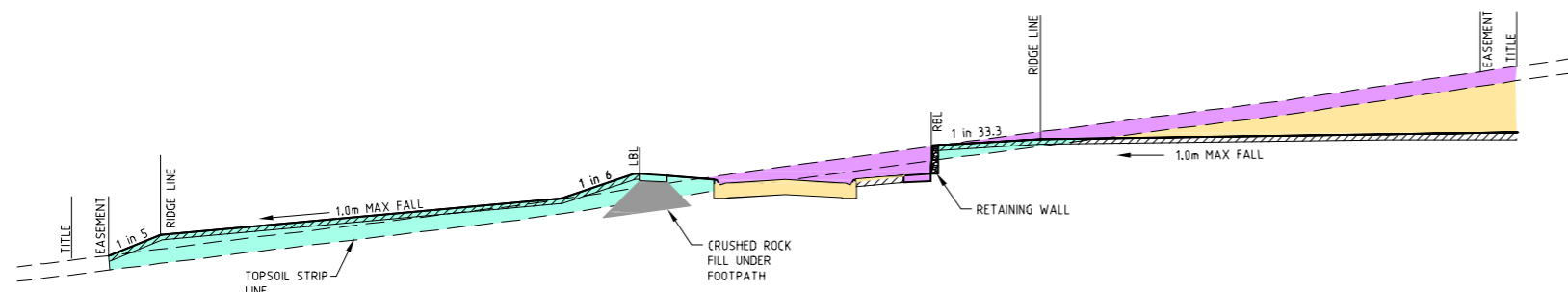
Gold Coast +61 7 5578 0222  
Melbourne +61 3 9859 0800  
Tarragona +61 3 5173 0100

**Estuary**  
Stage 14  
City of Greater Geelong  
Roadworks and Drainage  
Drainage Longitudinal Sections - 2

Drawing No. **0250E-14-20** Rev B  
Sheet No. 20 of 23

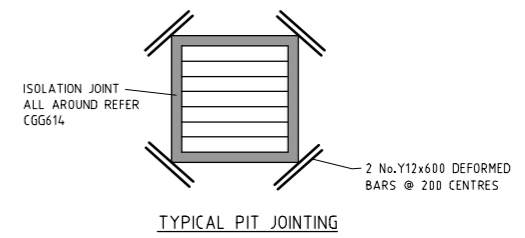
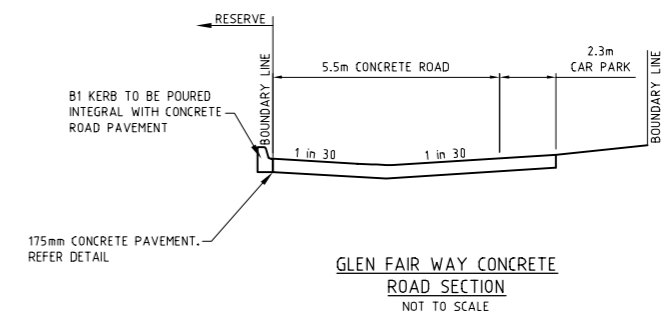
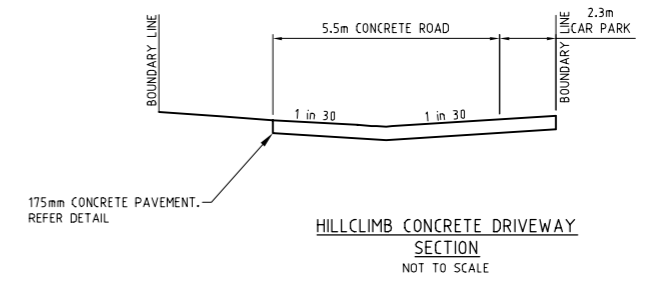
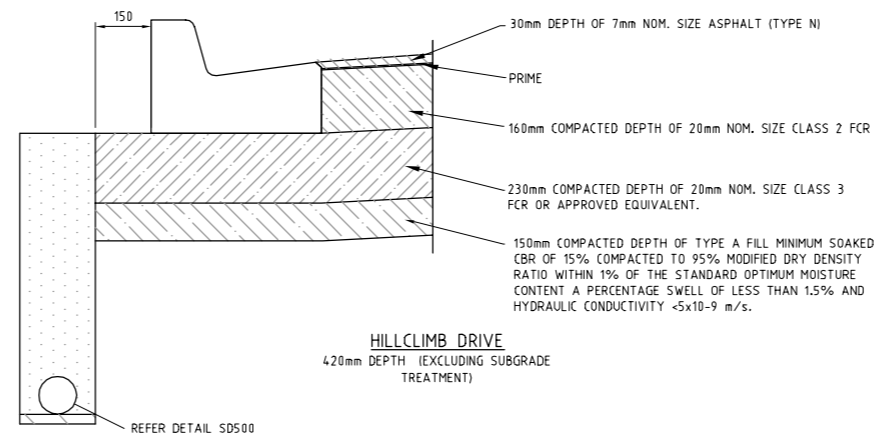
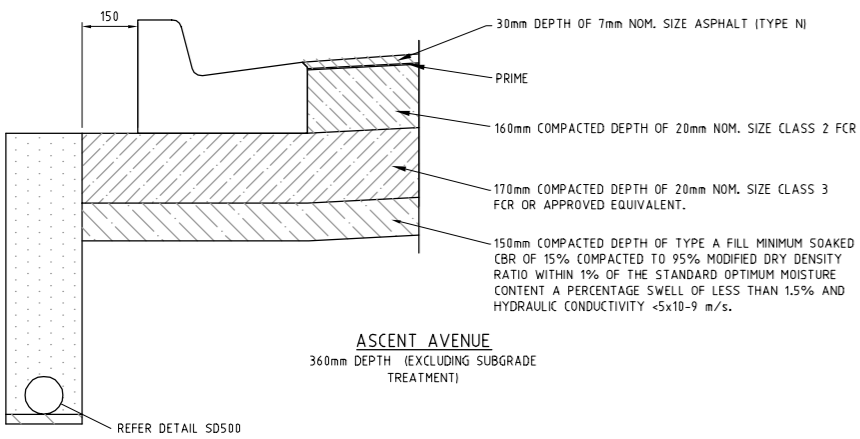
Approved for Construction



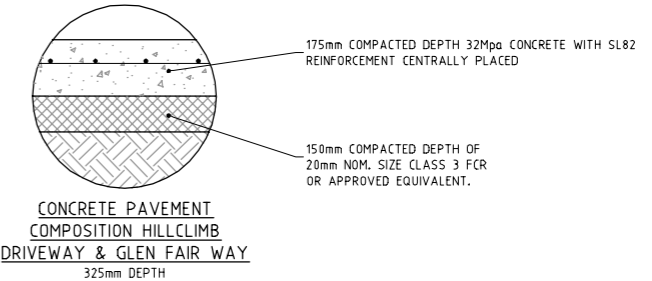


TYPICAL RETAINING WALL SECTION ASCENT AVENUE  
NOT TO SCALE

- CUT AREAS
- FILLS AREAS
- TOPSOIL STRIP
- CUT AREA AND RESPREAD TOPSOIL TO A 150mm DEPTH



- CONCRETE JOINTING NOTES**
- SAW JOINTS ARE TO BE PLACED AT A MAXIMUM 5m SPACING AT INTERSECTIONS AND CONSTRUCTED 18-24 HOURS AFTER POURING.
  - TRANSVERSE/CONTRACTION JOINTS ARE TO BE PLACED AT A MAXIMUM SPACING OF 15m.
  - ISOLATION JOINTS ARE TO BE PLACED AROUND PITS
  - ALL JOINTS SHALL BE LOCATED AND SPACED IN ACCORDANCE WITH "CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA - CONCRETE PAVEMENT DESIGN FOR RESIDENTIAL STREETS 1997"
  - ALL JOINTS TO COMPLY WITH IDM STANDARD DRAWINGS



REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	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. Birckett

Authorised  
J. Golden

Date  
December 2013

Scale @ A1  
As Shown

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Melbourne +61 3 9859 0800  
Tarragona +61 3 5173 0100

**Estuary**  
Stage 14  
City Of Greater Geelong  
Roadworks and Drainage  
Details

Drawing No. 0250E-14-22  
Sheet No. 22 of 23

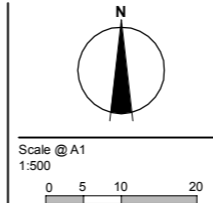
Rev B

Approved for Construction



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

Designed  
C. Barker  
Drawn  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
December 2013



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**Estuary**  
Stage 14  
City Of Greater Geelong  
Roadworks and Drainage  
Subdivision Setout Plan

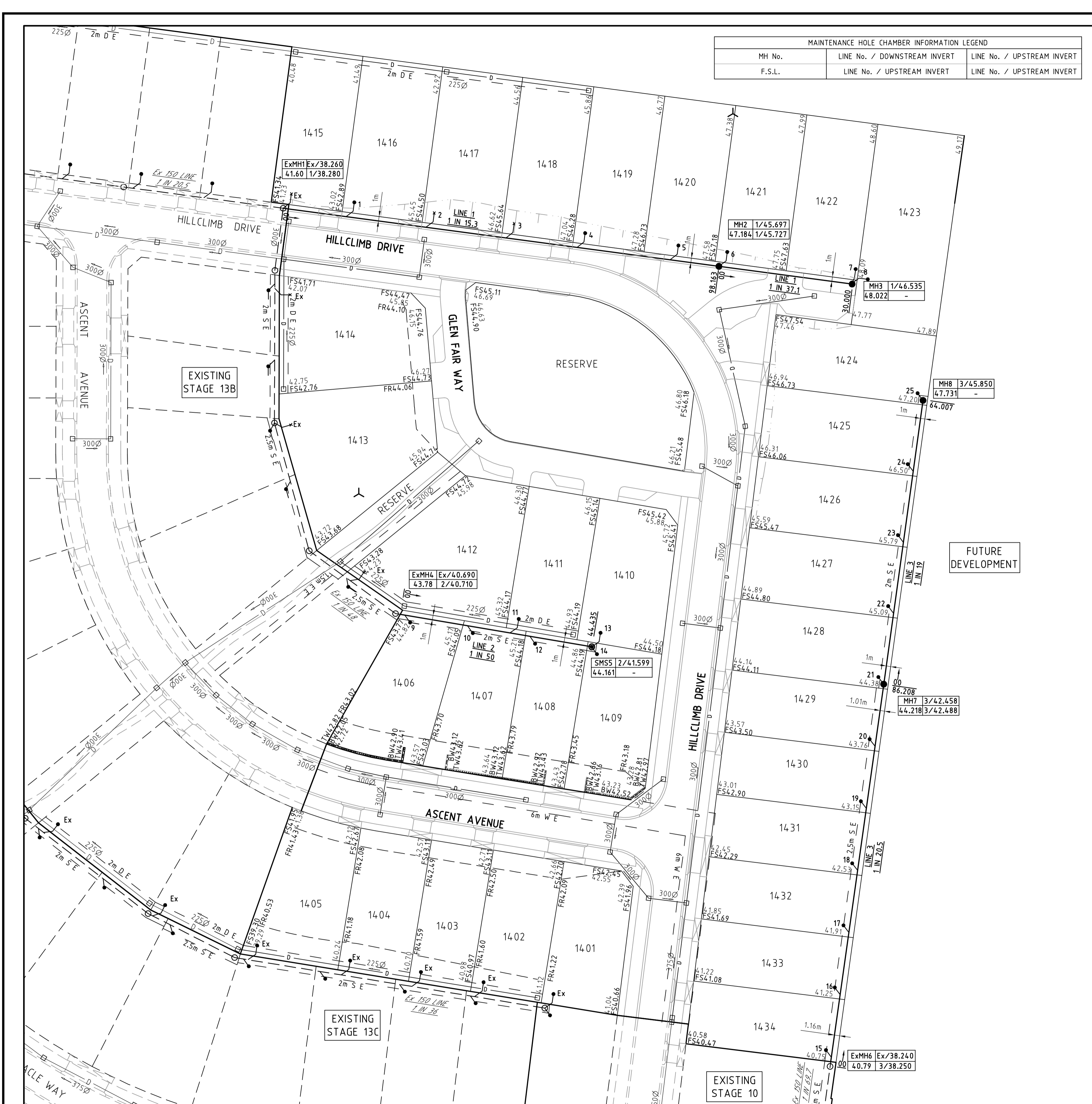
Drawing No. 0250E-14-23  
Sheet No. 23 of 23

Rev B

Approved for Construction

REVISION	DATE	DESIGN	APPD
B COUNCIL AMENDMENTS	7.03.14	CB/CB	JG
A ISSUED TO COUNCIL FOR APPROVAL	12.02.14	CB/CB	JG

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MH No.	LINE No. / DOWNSTREAM INVERT	LINE No. / UPSTREAM INVERT
F.S.L.	LINE No. / UPSTREAM INVERT	LINE No. / UPSTREAM INVERT

○	STORMWATER DRAIN & PIT
●	SEWER & MAINTENANCE STRUCTURES
—	TYPE "A" JUMP UP
—	TYPE "B" JUMP UP
—	TYPE "C" SLIDE LINE
—	OBLIQUE JUNCTION
—	TYPE "A" SPECIAL
—	TYPE "B" SPECIAL
—	TYPE "C" SPECIAL
—	EXISTING ELECTRICITY (UNDERGROUND)
—	EXISTING ELECTRICITY (OVERHEAD)
—	EXISTING GAS
—	EXISTING TELSTRA
—	EXISTING WATER
—	EXISTING STORMWATER DRAIN
—	EXISTING SEWER
—	EXISTING SURFACE LEVEL
—	FINISHED BUILDING LINE LEVEL
—	FINISHED RIDGE LINE LEVEL
▲	PERMANENT SURVEY MARK
▲	TEMPORARY BENCH MARK

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

**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

**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.**

SIZE	TYPE	LENGTH
150	PVC SN8	322.8m

ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
GLEN FAIR WAY	SOUTH	2.00	SOUTH	2.60	SOUTH	1.30	SOUTH	0.70
ASCENT AVENUE	NORTH	2.10	SOUTH	Ex2.70	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1415 & 1416	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1417-1420	SOUTH	3.00	NORTH	3.50	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1422-1425	EAST	VARIES	EAST	VARIES	EAST	VARIES	EAST	VARIES
HILLCLIMB DRIVE LOT 1426-1434	EAST	1.70	EAST	2.80	WEST	2.30	WEST	1.70

TBM	EASTING	NORTHING	RL	DESCRIPTION	SOURCE
R0D501	10106.39	48560.27	21.19	ROD	-
R0D502	10309.58	48587.59	28.62	ROD	-
MOOLAP PM69	1000.00	50000.00	-	BRASS PLAQUE	SMES
MOOLAP PM321	9897.742000	48994.921	9.436	BRASS PLAQUE	SMES
MOOLAP PM302	10212.03	48959.504	22.180	BRASS PLAQUE	SMES

TBM	EASTING	NORTHING	RL	DESCRIPTION
R0D501	27724.57	5768919.27	21.19	ROD
R0D502	27744.831	5768946.60	28.62	ROD
MOOLAP PM69	277138.66	5770359.31	-	BRASS PLAQUE
MOOLAP PM321	27704.0	57694.80	9.436	BRASS PLAQUE
MOOLAP PM302	277310	5769280	22.180	BRASS PLAQUE

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

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

REVISION	DATE	DESIGN	APP'D
C MINOR AMENDMENTS	19.03.14	CB/CB	JG
B BARWON WATER COMMENTS	6.03.14	CB/CB	JG
A ISSUED TO BARWON WATER FOR APPROVAL	13.02.14	CB/CB	JG

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 1500mm unless otherwise shown.

Designed  
 C. Barker  
 Drawn  
 C. Barker  
 Checked  
 C. Birckett  
 Authorised  
 J. Golden  
 Date  
 January 2014

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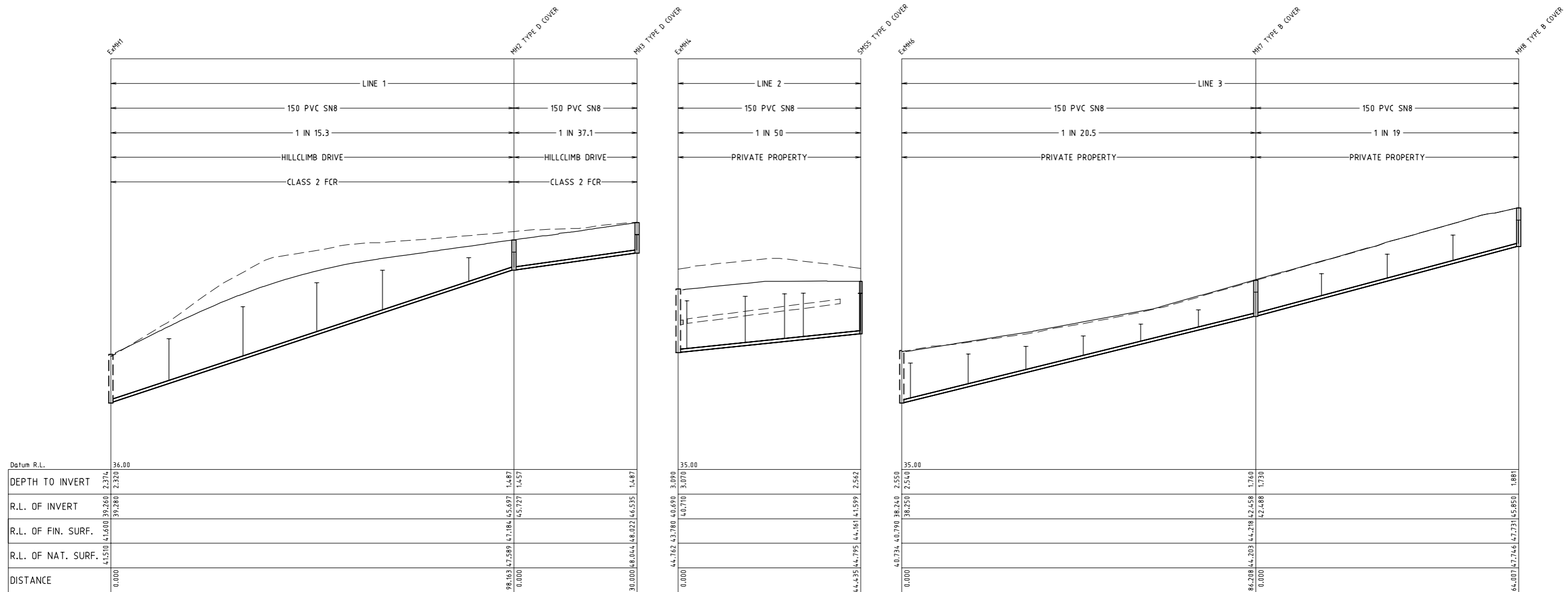
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 Canberra +61 2 6128 1900 Trawalgon +61 3 5173 0100

**Barwon Region Water Corporation**  
 Barwon Water No.L010646  
 Estuary  
 Stage 14  
 Sewer Detail Plan

Drawing No. **0250E-14-51** Rev **C**  
 Sheet No. 1 of 2

**Approved for Construction**





DEPTH TO INVERT	R.L. OF INVERT	R.L. OF FIN. SURF.	R.L. OF NAT. SURF.	DISTANCE
36.00	36.00	36.00	36.00	0.000
2.374	39.260	41.600	41.510	0.000
2.320	39.280	41.600	41.510	0.000
1.487	45.697	47.184	47.589	98.163
1.457	45.727	47.184	47.589	0.000
1.487	45.535	48.023	48.044	30.000
3.090	40.690	43.780	43.762	0.000
3.070	40.710	43.780	43.762	0.000
2.562	41.599	44.161	44.195	44.435
2.550	41.599	44.161	44.195	0.000
2.540	41.599	44.161	44.195	0.000
1.760	42.458	44.218	44.203	86.208
1.730	42.488	44.218	44.203	0.000
1.881	45.850	47.731	47.746	64.007
1.881	45.850	47.731	47.746	0.000

LINE NO.	MANHOLE NO.	HC NO.	LOT NAME	CONNECTION TYPE	CHAINAGE	IL SEWER	IL BRANCH	BRANCH DEPTH
1	MH1	1	LOT 1416	A SPECIAL	14.16	40.18	42.37	2.19
1	MH1	2	LOT 1417	TM SPECIAL	32.16	41.37	43.93	2.56
1	MH1	3	LOT 1418	TM SPECIAL	50.16	42.56	45.09	2.53
1	MH1	4	LOT 1419	A SPECIAL	66.16	43.62	45.71	2.09
1	MH1	5	LOT 1420	A SPECIAL	87.16	45.00	46.31	1.30
1	MH2	6	LOT 1421	A SPECIAL	0.00	45.70	46.59	0.89
1	MH3	7	LOT 1422	A SPECIAL	0.00	46.54	47.43	0.89
1	MH3	8	LOT 1423	A SPECIAL	0.00	46.54	47.45	0.92
2	MH4	9	LOT 1406	B SPECIAL	2.13	40.74	43.21	2.47
2	MH4	10	LOT 1407	B SPECIAL	16.32	41.03	43.43	2.40
2	MH4	11	LOT 1411	A SPECIAL	25.91	41.23	43.56	2.33
2	MH4	12	LOT 1408	B	30.43	41.32	43.59	2.27
2	MH4	13	LOT 1410	A SPECIAL	0.00	41.60	43.57	1.97
2	MH4	14	LOT 1409	B	0.00	41.60	43.59	1.99
3	MH6	15	LOT 1434	B	2.07	38.33	40.17	1.85
3	MH6	16	LOT 1433	B	16.20	39.02	40.62	1.60
3	MH6	17	LOT 1432	B	30.20	39.72	41.00	1.28
3	MH6	18	LOT 1431	B	44.20	40.41	41.50	1.09
3	MH6	19	LOT 1430	B	58.20	41.10	42.08	0.98
3	MH6	20	LOT 1429	B	72.21	41.79	42.77	0.98
3	MH7	21	LOT 1428	B	0.00	42.46	43.64	1.18
3	MH7	22	LOT 1427	B	16.00	43.31	44.53	1.21
3	MH7	23	LOT 1426	B	32.00	44.17	45.48	1.31
3	MH7	24	LOT 1425	B	48.01	45.02	46.42	1.40
3	MH7	25	LOT 1424	B	0.00	45.85	47.15	1.30

WORKS SHALL NOT COMMENCE UNTIL PLANS ARE SIGNED BY BARWON WATER

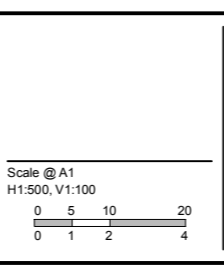
ACCEPTED BY BARWON WATER LAND DEVELOPMENT CO-ORDINATOR DEVELOPMENT SERVICES

REVISION	DATE	DES/DFT	APPD
B	6.03.14	CB/CB	JG
A	13.02.14	CB/CB	JG

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  
Drawn  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
January 2014



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Taraikon +61 3 5173 0100

**Barwon Region Water Corporation**  
Barwon Water No.L101646  
Estuary  
Stage 14  
Sewer Longitudinal Sections

**Drawing No. 0250E-14-52** **Rev B**  
Sheet No. 2 of 2

**Approved for Construction**

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**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
- Ex E EXISTING ELECTRICITY (UNDERGROUND)
- Ex 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
- 141.34 EXISTING SURFACE LEVEL
- F514.0.35 FINISHED BUILDING LINE LEVEL
- FR157.4.0 FINISHED RIDGE LINE LEVEL
- ▲ PERMANENT SURVEY MARK
- △ TEMPORARY BENCH MARK
- ← SWAB DIRECTION

**PIPE TYPES**

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

**THRUST RESTRAINT SCHEDULE**

LOCATION	TYPE	AREA (m <sup>2</sup> )	NUMBER
A 150x150 TEE	CONCRETE	0.59	2
B 150x90 BEND	CONCRETE	0.830	1
C 150x100 TEE	CONCRETE	0.590	1
D 150x100 TAPER	CONCRETE	0.310	1
E 100x11.25° BEND	CONCRETE	NA	1
F 100x4.5° BEND	CONCRETE	0.210	1
G 100x22.5° BEND	CONCRETE	NA	1
H 150x63 TAPER	CONCRETE	NA	1

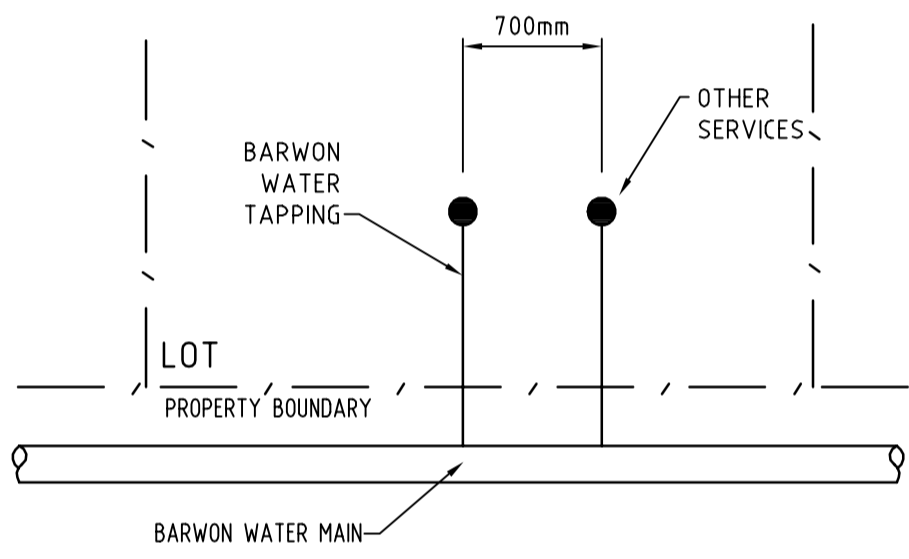
**NEW WATER MAINS**

SIZE	TYPE	LENGTH
63mm	ODPE (PN16) SDR11	24.2m
100mm	PVC CL-16 (SERIES 2)	102.8m
150mm	PVC CL-16 (SERIES 2)	236.3m

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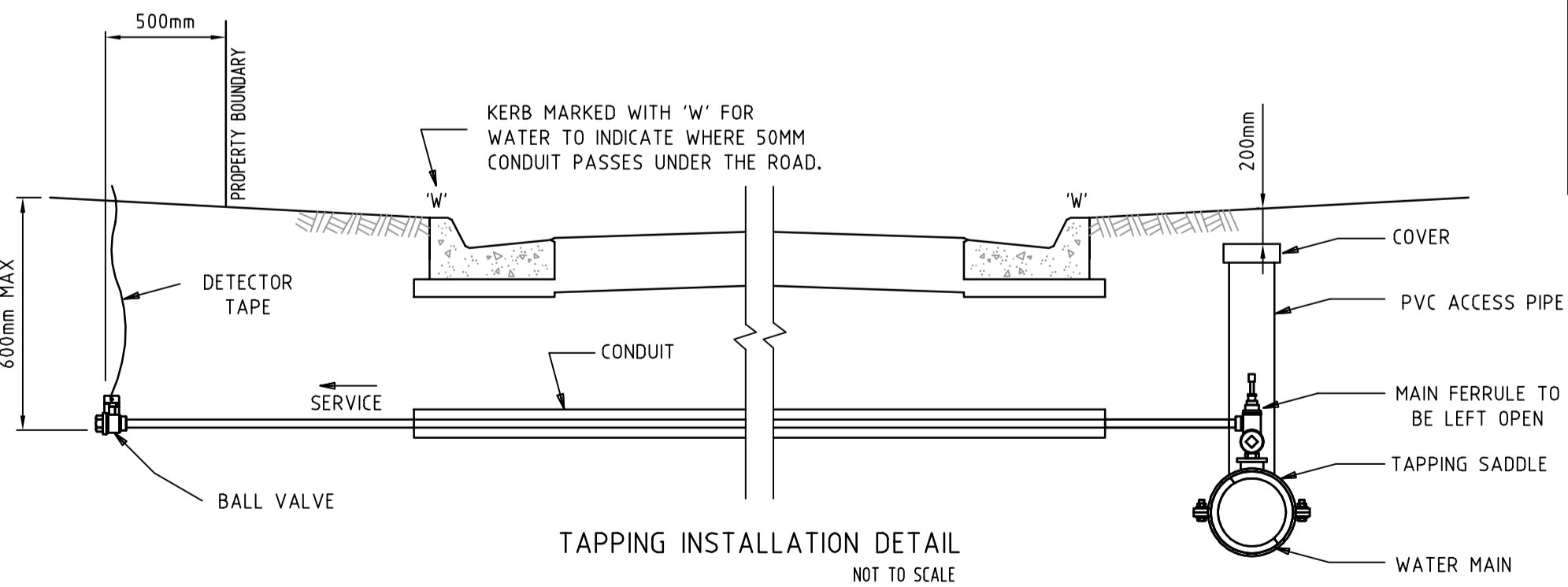
**TAPPING OFFSET DETAIL**  
NOT TO SCALE

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

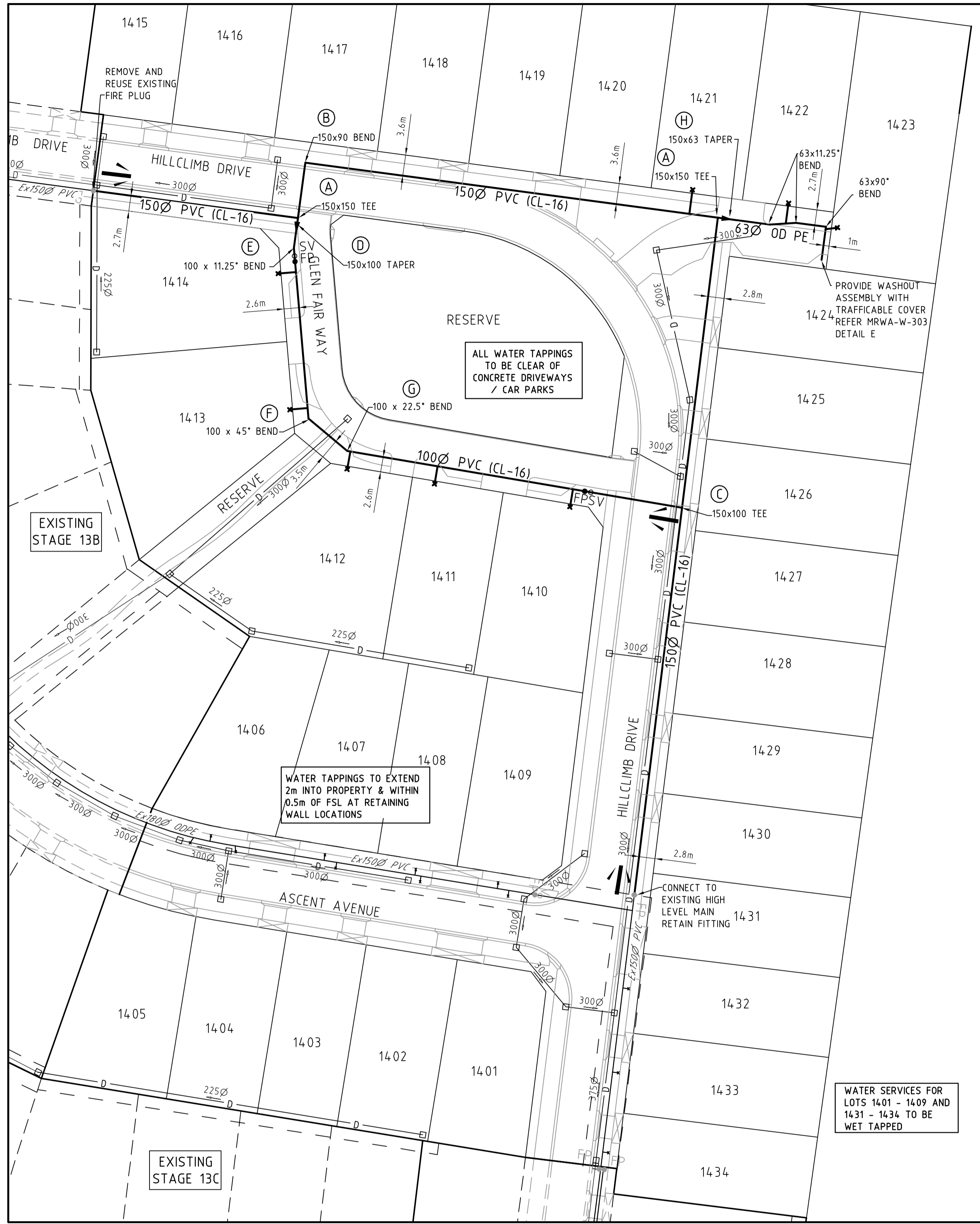
TBM	EASTING	NORTHING	RL	DESCRIPTION	SOURCE
ROD501	10106.39	48560.27	21.19	ROD	-
ROD502	10309.58	48587.59	28.62	ROD	-
MOOLAP PM69	1000.00	50000.00	-	BRASS PLAQUE	SMES
MOOLAP PM321	9897.742000	48994.921	9.436	BRASS PLAQUE	SMES
MOOLAP PM302	10212.03	48959.504	22.180	BRASS PLAQUE	SMES

**SURVEY CONTROL**

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ROD502	27744.831	5768946.60	28.62	ROD
MOOLAP PM69	277138.66	5770359.31	-	BRASS PLAQUE
MOOLAP PM321	27704.0	5769480	9.436	BRASS PLAQUE
MOOLAP PM302	277310	5769280	22.180	BRASS PLAQUE



**TAPPING INSTALLATION DETAIL**  
NOT TO SCALE



- 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 JOINS).
- 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.

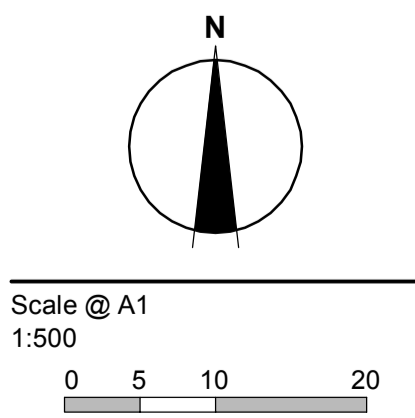
**SERVICES OFFSET SCHEDULE**

ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
GLEN FAIR WAY	SOUTH	2.00	SOUTH	2.60	SOUTH	1.30	SOUTH	0.70
ASCENT AVENUE	NORTH	2.10	SOUTH	Ex2.70	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1415-1416	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1417-1420	NORTH	3.00	NORTH	3.60	NORTH	2.30	NORTH	1.70
HILLCLIMB DRIVE LOT 1422-1425	EAST	VARIES	EAST	VARIES	EAST	VARIES	EAST	VARIES
HILLCLIMB DRIVE LOT 1426-1434	EAST	2.20	EAST	2.80	WEST	2.30	WEST	1.70

**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  
Drawn  
C. Barker  
Checked  
C. Birckett  
Authorised  
J. Golden  
Date  
January 2014



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**DESIGN HEAD=94.4m AHD**  
**TEST PRESSURE=1600kPa**

- NOTES GENERAL**
- WATERMANS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE WATER SERVICES ASSOCIATION OF AUSTRALIA STANDARD CODE WSA03-2011 MRWA EDITION 3.1 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 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 (MG4) 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 & WSAA AND BARWON WATER 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 STANDARD DRAWING No'S BWA-SD-W002, BWA-SD-W003 AND MRWA-W-204, BRWA-W-205(A), MRWA-W-206. A HOLD POINT IS TO BE UNDERTAKEN AT TIME OF CONSTRUCTION OF THRUST BLOCKS PRIOR TO BACKFILL.
  - SWABBING OF WATER MAINS IS TO BE DONE IN ACCORDANCE WITH SECTION 8.7 AND SECTION 18 OF WSAA WATER SUPPLY CODE OF AUSTRALIA WSA 03-2011 MRWA EDITION 3.1
  - ALL WATER MAINS MUST BE HYDROSTATIC PRESSURE TESTED IN ACCORDANCE WITH SECTION 19.4 OF WSAA WATER SUPPLY CODE OF AUSTRALIA WSA 03-2011 MRWA EDITION 3.1. 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.

WORKS SHALL NOT COMMENCE UNTIL PLANS ARE SIGNED BY BARWON WATER

ACCEPTED BY BARWON WATER  
LAND DEVELOPMENT CO-ORDINATOR  
DEVELOPMENT SERVICES

**Barwon Region Water Corporation**  
Barwon Water No.L010646  
Estuary  
Stage 14  
Water Detail Plan

**Drawing No. 0250E-14-61**      **Rev D**  
Sheet No. 1 of 1

**Approved for Construction**

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REVISION	DATE	DESIGN	APP'D
D	17.06.14	CB/CB	JG
C	2.04.14	CB/CB	JG
B	6.03.14	CB/CB	JG
A	13.02.14	CB/CB	JG

Principal  
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