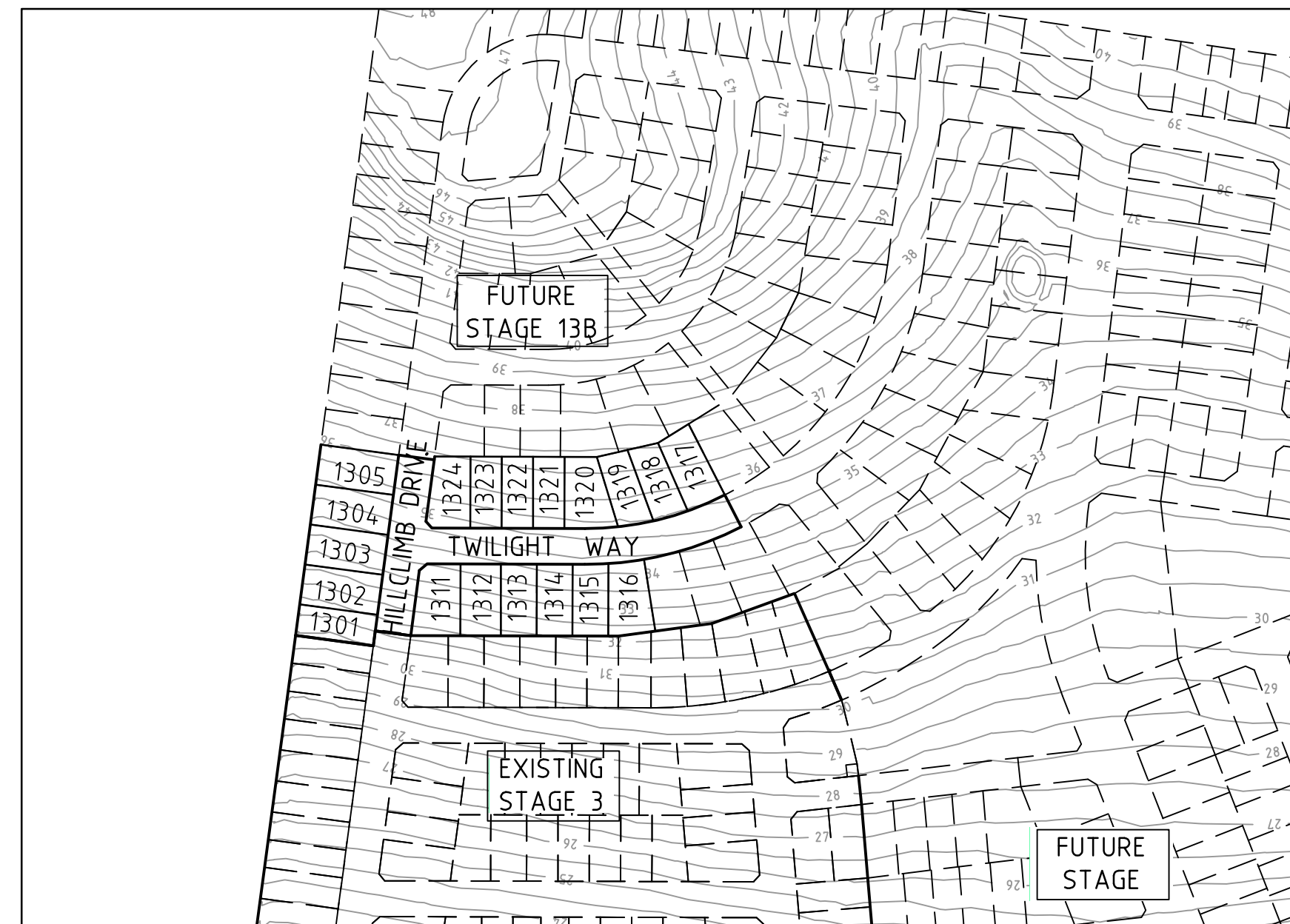
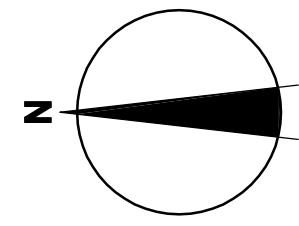


Estuary

Stage 13A

City Of Greater Geelong



LOCALITY PLAN
MELWAYS REF: 468 D5

Drawing Index

- 0250EHL-13A- 01 Locality Plan
- 0250EHL-13A- 02 General Notes
- 0250EHL-13A- 03 Layout Plan
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Designed for Living



Principal

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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

- 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
A.Perkins
Drawn
A.Perkins
Checked
C.Birkett
Authorised
J.Golden
Date
November 2010

Scale @ A1
As Shown

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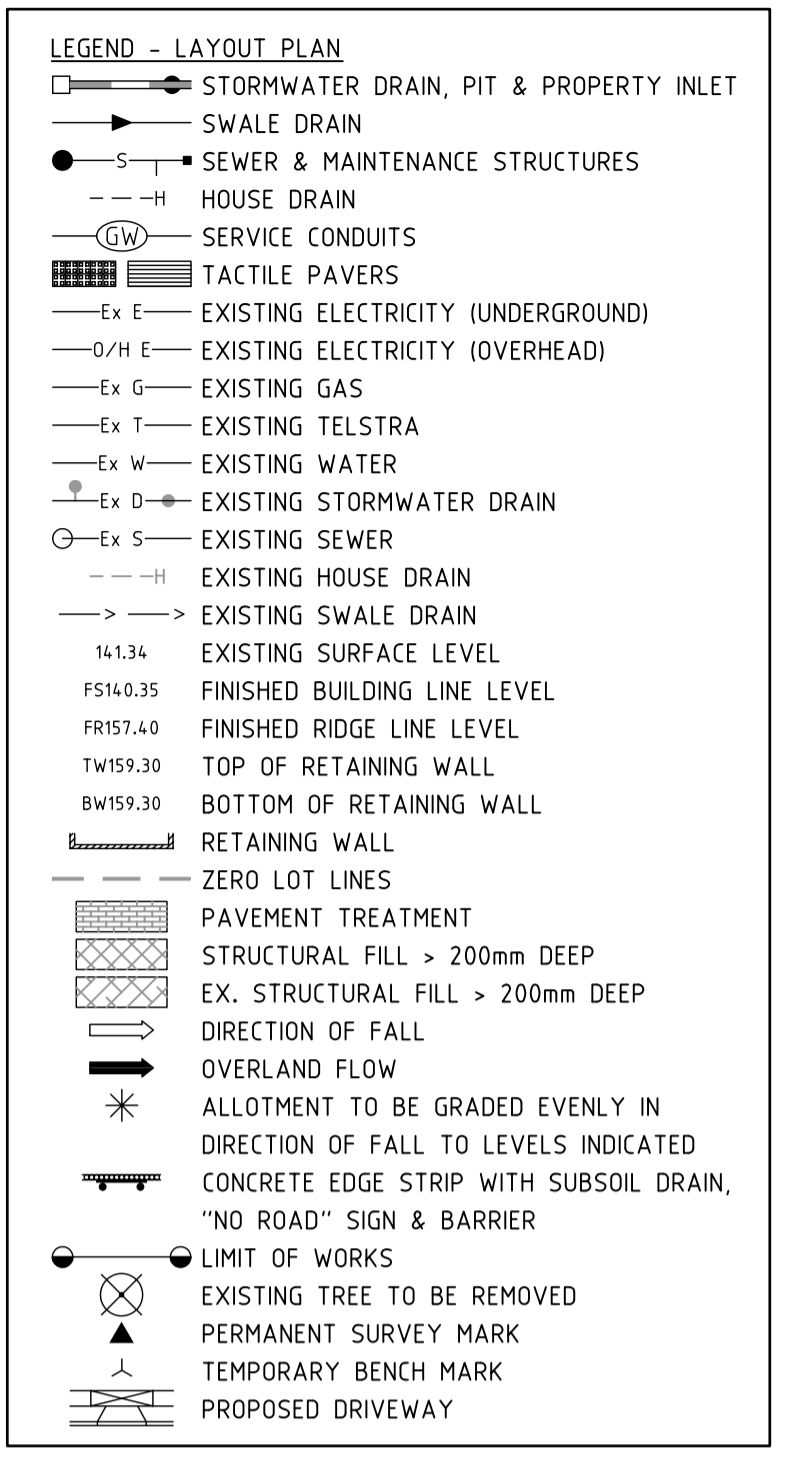
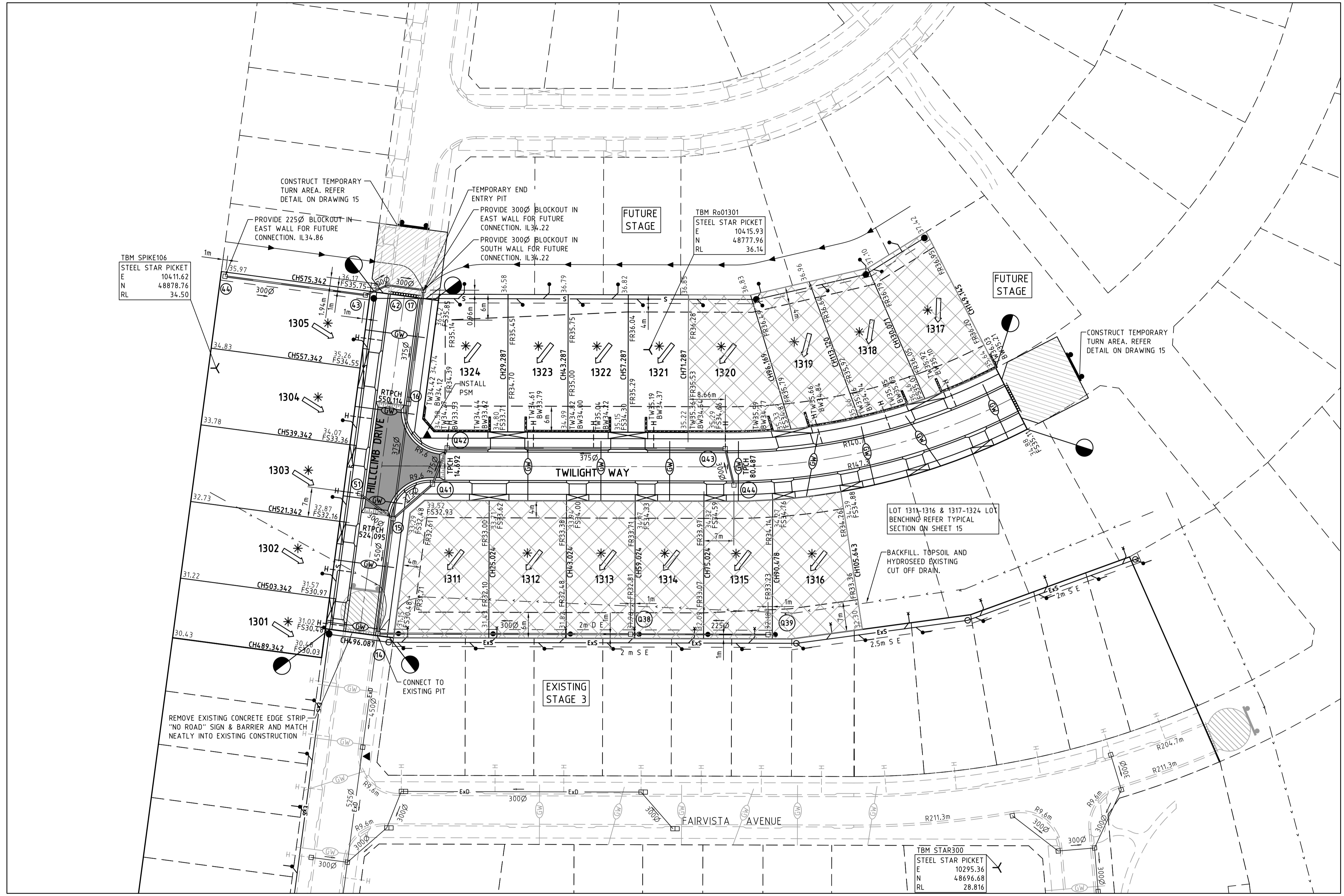
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Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
General Notes

Drawing No. 0250EHL-13A-02 Rev B
Sheet No. 2 of 17

Approved for Construction

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ROAD LAYOUT TABLE

ROAD NAME	RESERVE WIDTH (m)	ROAD WIDTH (m)				KERB TYPE		VERGE WIDTH (m)	
		LIP to LIP	INV to INV	BACK to BACK	NTH/WEST	STH/EAST	NTH/WEST	STH/EAST	
HILLCLIMB DRIVE	16.00	6.60	6.90	7.50	B2	B2	4.25	4.25	
TWILIGHT WAY	16.00	6.60	6.90	7.50	B2	B2	4.25	4.25	

SERVICES OFFSET SCHEDULE

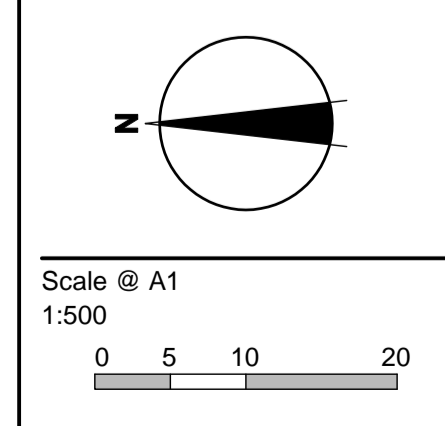
ROAD NAME	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
HILLCLIMB DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
TWILIGHT WAY	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70

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

REVISION	DATE	DES/DFT	APP'D
D VEHICLE CROSSING AMENDMENTS	08.08.11	CB/CB	JG
C MINOR AMENDMENTS	05.04.11	CB/CB	JG
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG

Principal
 Leopold Property Developments Pty Ltd
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 Southbank, Victoria 3006

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 Drawn
A.Perkins
 Checked
C. Birckett
 Authorised
J. Golden
 Date
November 2010



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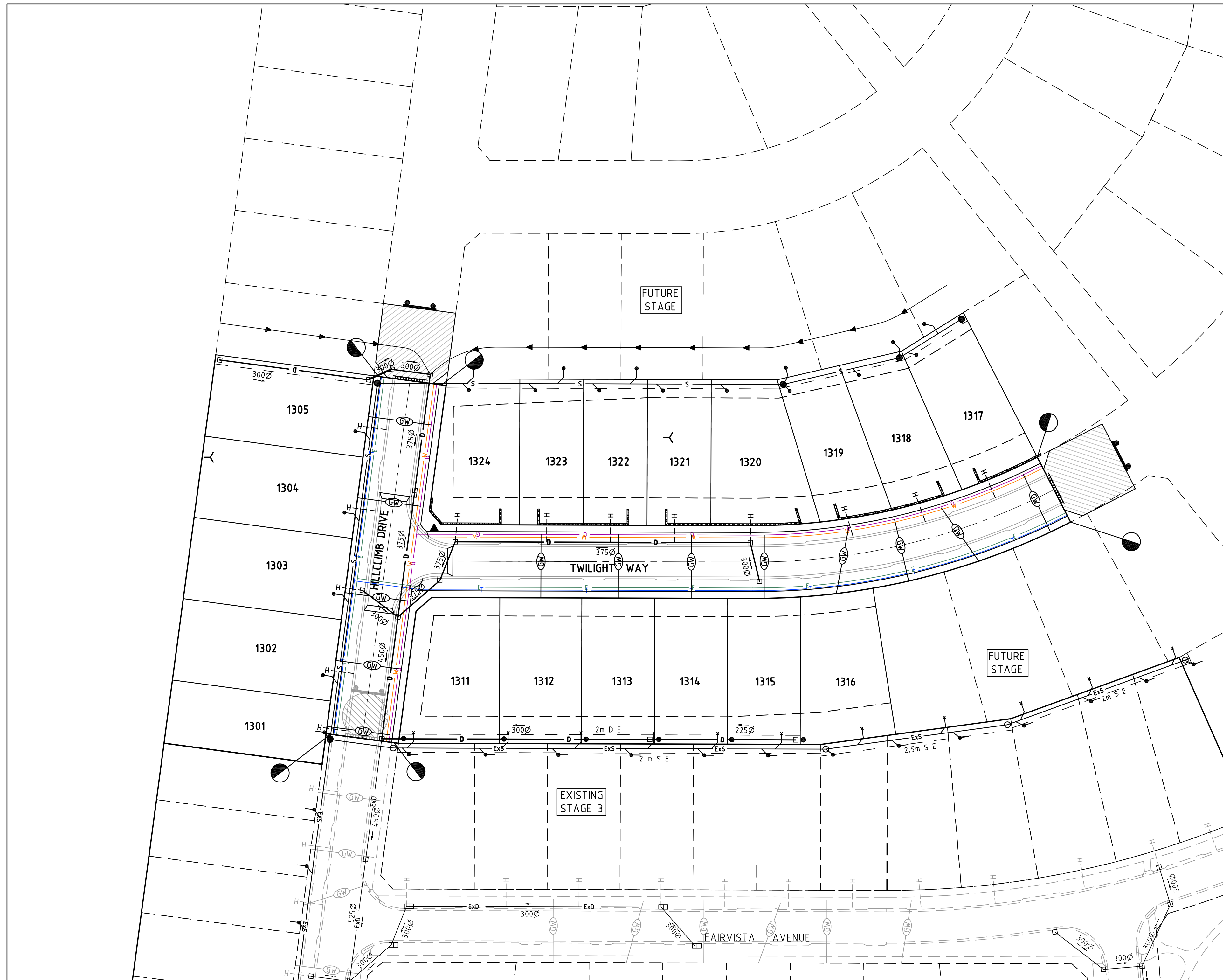
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Estuary
 Stage 13A
 City of Greater Geelong
 Roadworks and Drainage
 Layout Plan

Drawing No. 0250EHL-13A-03 **Rev D**
 Sheet No. 3 of 17

Approved for Construction



LEGEND - FUNCTIONAL LAYOUT PLAN

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

ROAD NAME	SERVICES OFFSET SCHEDULE							
	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
HILLCLIMB DRIVE	SOUTH	2.10	SOUTH	2.70	NORTH	2.30	NORTH	1.70
TWILIGHT WAY	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70

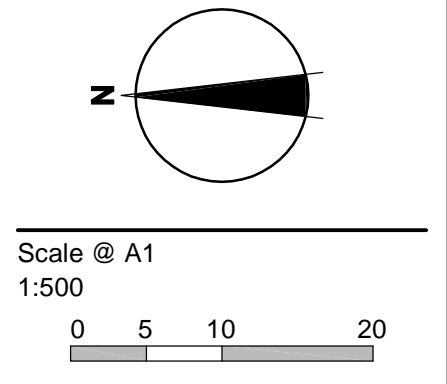
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REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG

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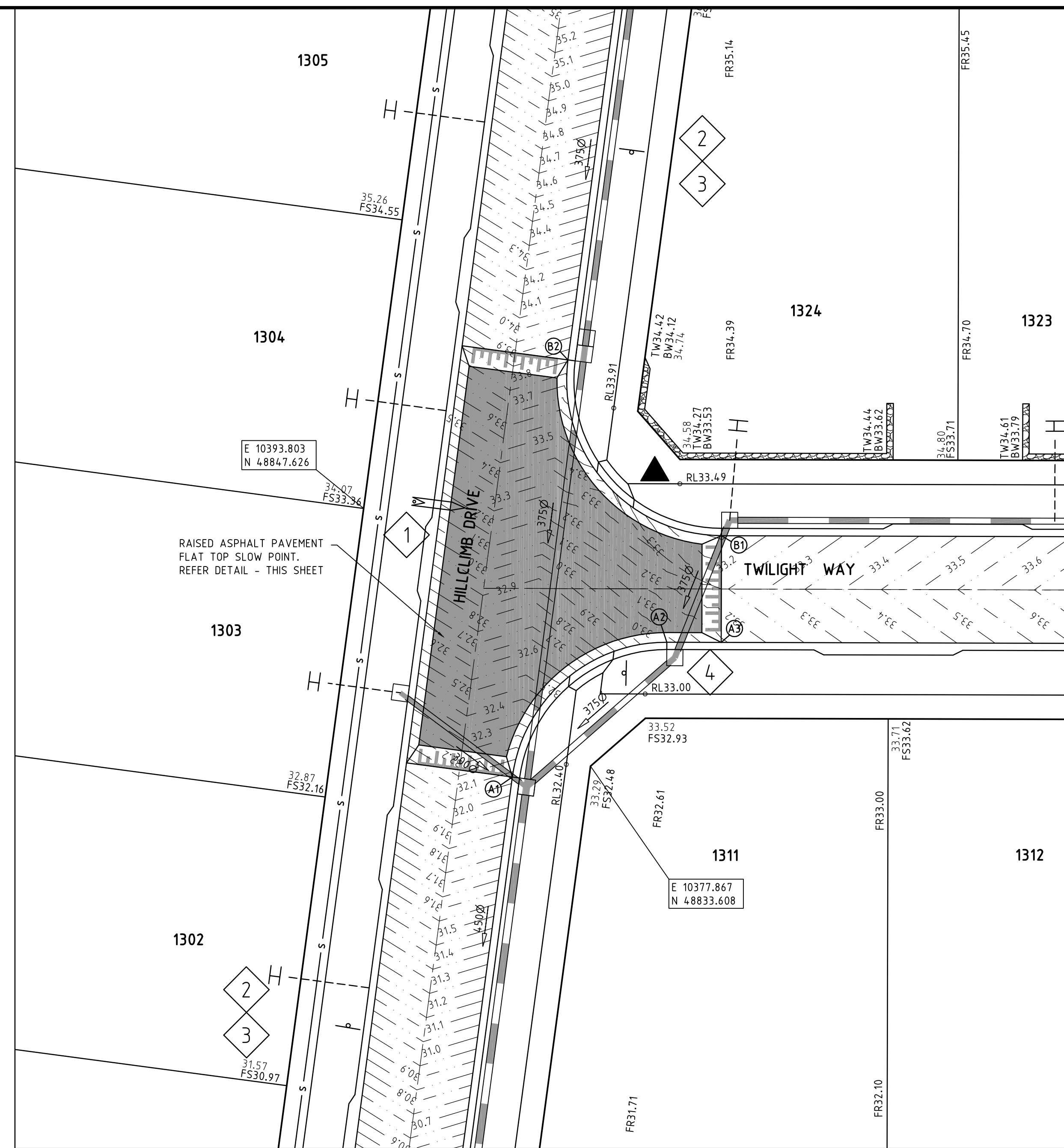
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Estuary
 Stage 13A
 City Of Greater Geelong
 Roadworks and Drainage
 Services Layout Plan

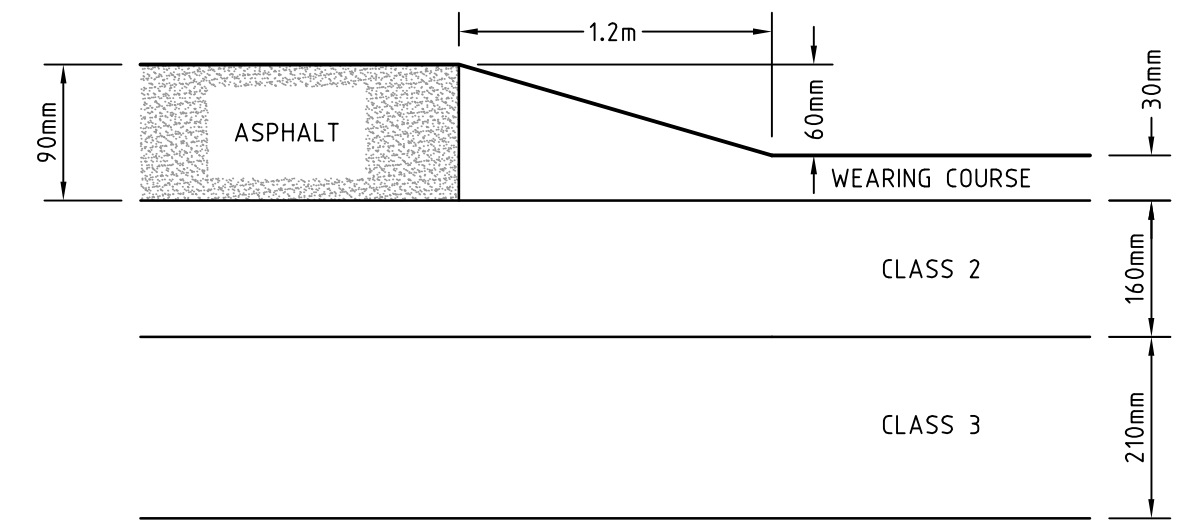
Drawing No. 0250EHL-13A-04 Rev B
 Sheet No. 4 of 17

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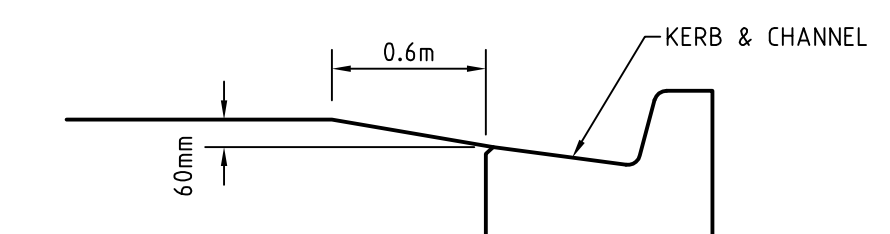


SIGN SCHEDULE

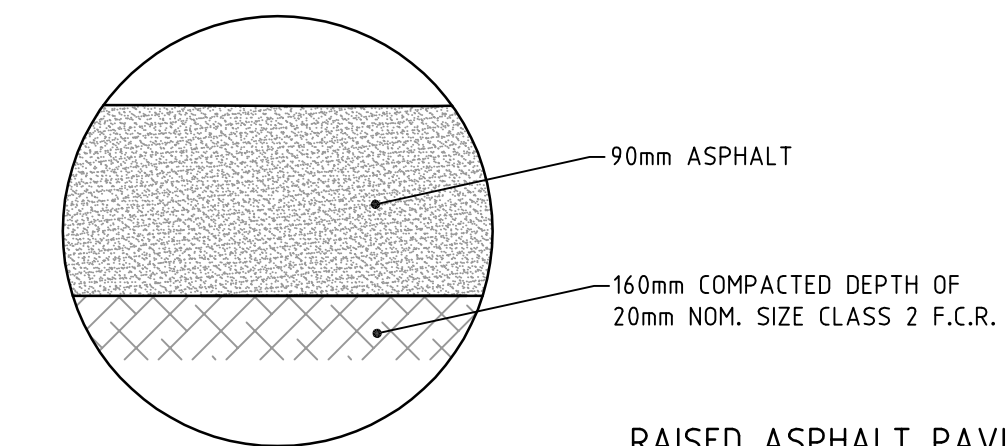
SIGN	REF
	1
STREET SIGN	
	2
W5-10	
	3
W8-2	
	4
R1-2	



TYPICAL SECTION
NOT TO SCALE



SETOUT DETAIL FOR RAISED PAVEMENT TREATMENT
NOT TO SCALE



RAISED ASPHALT PAVING
(NOT TO SCALE)

LEGEND - INTERSECTION PLAN

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

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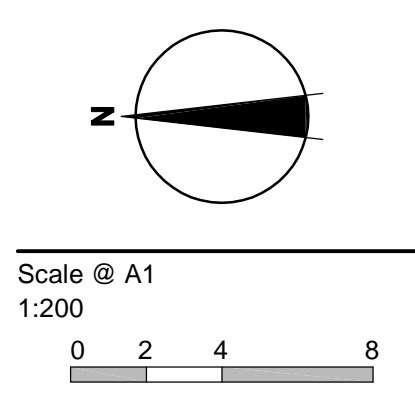
- NOTES**
- REFER TO SHEET No 06 FOR LIP PROFILES.
 - REFER TO SHEET No 07 FOR SETOUT INFORMATION.
 - 90° BENDS TO HAVE CENTRELINE MARKING WITH RRPM'S AT MAX 6m SPACING.

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REVISION	DATE	DES/DFT	APPD
C MINOR AMENDMENTS	05.04.11	CB/CB	JG
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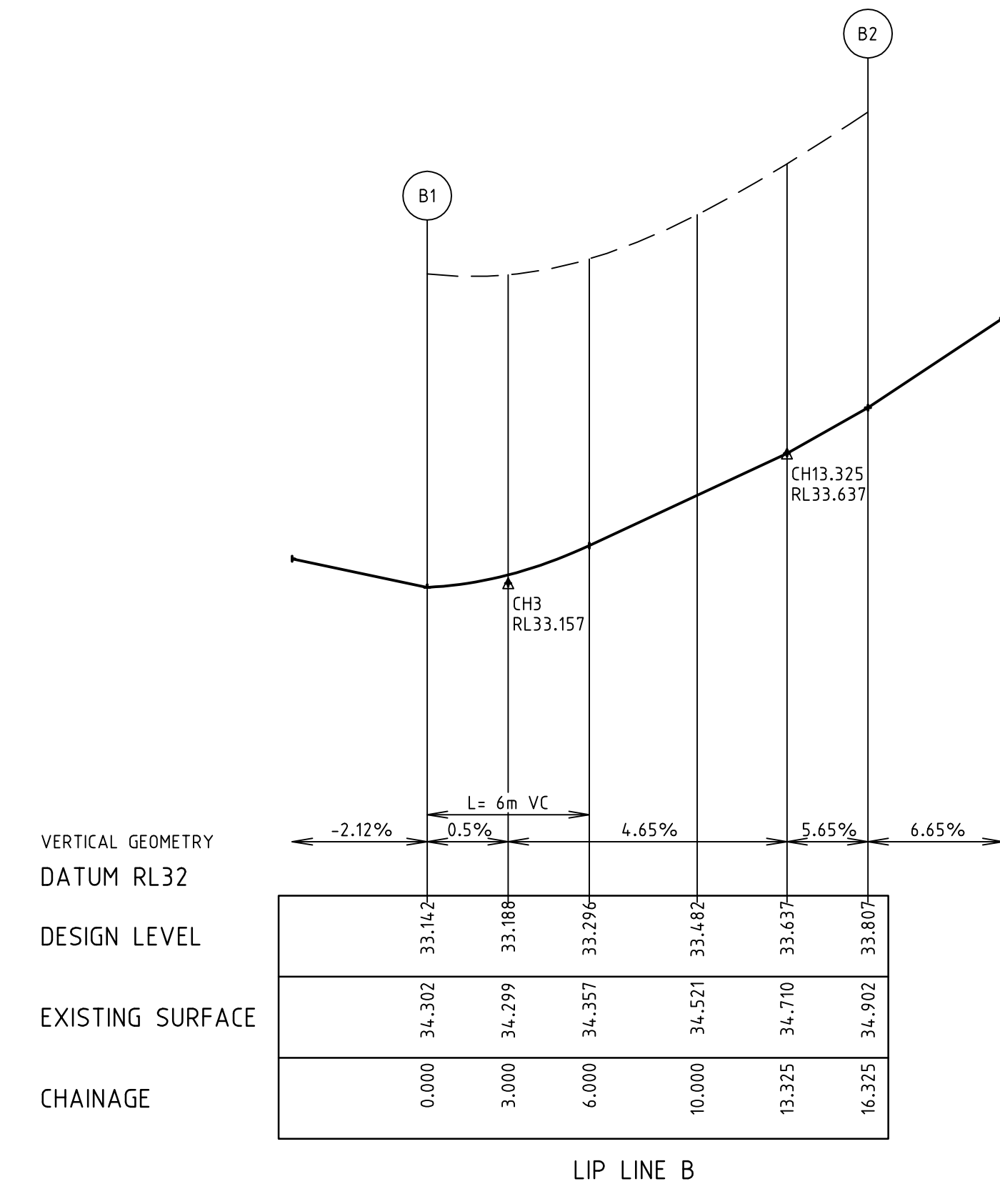
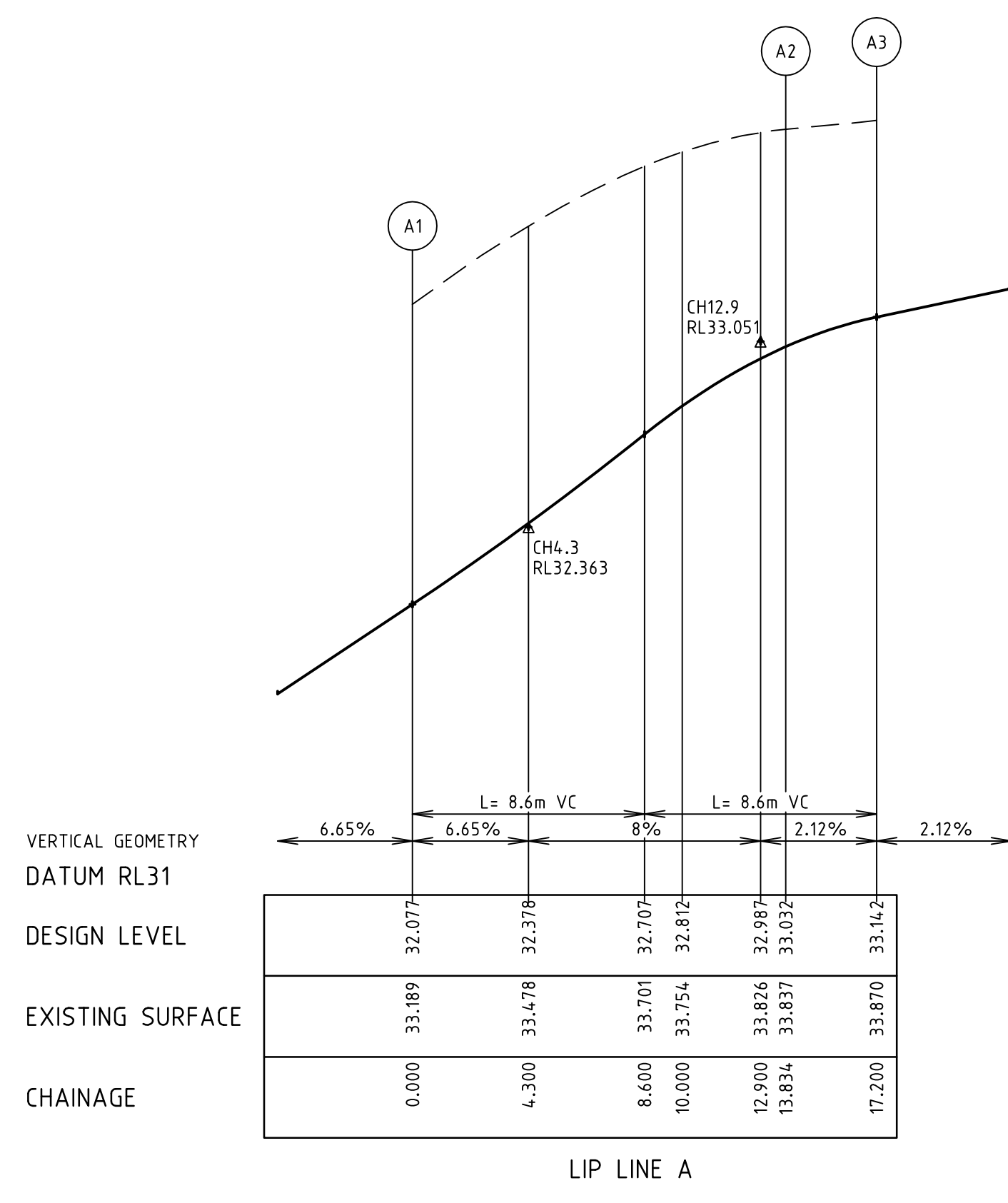
Adelaide +61 8 8223 6455 Gold Coast +61 7 5578 0222
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Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Intersection Detail Plan

Drawing No. 0250EHL-13A-05 Rev C
Sheet No. 5 of 17

Approved for Construction

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



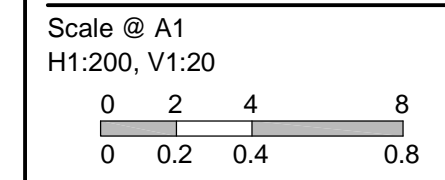
NOTES
 1. CHAINAGES REFER TO LIP OF KERB/EDGE OF CONCRETE.
 2. REFER TO SHEET No 07 FOR SETOUT INFORMATION.

I:\work\eng\0250EHL - horizons\leopold\0250EHL - 13a\dwg\0250EHL-13a-06

REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG

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

Designed
A.Perkins
 Drawn
A.Perkins
 Checked
C. Birkett
 Authorised
J. Golden
 Date
November 2010



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Estuary
 Stage 13A
 City Of Greater Geelong
 Roadworks and Drainage
 Lip Profiles

Drawing No. 0250EHL-13A-06 Rev B

Sheet No. 6 of 17

Approved for Construction

HILLCLIMB DRIVE DESIGN LINE				
CHAINAGE	EASTING	NORTHING	BEARING	
496.087	10349.870	48845.409	97°35'25"	IP
500.000	10353.749	48844.892	97°35'25"	
575.342	10428.431	48834.940	97°35'25"	IP

IP 1
 COORDINATE = 10349.8700 48845.4091
 CHAINAGE = 496.0870

IP 2
 COORDINATE = 10428.4307 48834.9405
 CHAINAGE = 575.3421

TWILIGHT WAY DESIGN LINE				
CHAINAGE	EASTING	NORTHING	BEARING	
0.000	10388.860	48840.213	180°09'30"	IP
80.487	10388.638	48759.727	180°09'30"	IP
80.487	10388.638	48759.727	180°09'30"	TC
100.000	10389.904	48740.270	172°23'39"	
149.144	10404.515	48693.597	152°50'25"	CT
149.144	10404.515	48693.597	90°00'00"	IP

IP 1
 COORDINATE = 10388.8604 48840.2134
 CHAINAGE = 0.0000

IP 2
 COORDINATE = 10388.6380 48759.7272
 CHAINAGE = 80.4865
 INTERSECT ANGLE = 0°00'00"

IP 3
 COORDINATE = 10388.5412 48724.7331
 CENTRE = 10532.6374 48759.3293
 RADIUS = -144.0000
 LENGTH = 68.6576
 INTERSECT ANGLE = 27°19'05"

START TANGENT
 COORDINATE = 10388.6380 48759.7272
 LENGTH = 34.9943
 CHAINAGE = 80.4865
 BEARING = 180°09'30"

END TANGENT
 COORDINATE = 10404.5151 48693.5974
 LENGTH = 34.9943
 CHAINAGE = 149.1441
 BEARING = 152°50'25"

IP 4
 COORDINATE = 10404.5151 48693.5974
 CHAINAGE = 149.1441
 INTERSECT ANGLE = 0°00'00"

IP 5
 COORDINATE = 10404.5151 48693.5974
 CHAINAGE = 149.1441

ALIGNMENT A			
POINT NO	EASTING	NORTHING	RL
A1	10377.197	48838.438	32.077
A2	10385.529	48828.896	33.032
A3	10385.520	48825.531	33.142

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
A1 - A2	82.568	9.600	13.834	2.386	1.770	3.384	2.950	3.459	32.575


ALIGNMENT B			
POINT NO	EASTING	NORTHING	RL
B1	10392.120	48825.512	33.142
B2	10402.988	48835.002	33.807

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
B1 - B2	97.432	9.600	16.325	3.266	2.411	3.959	3.255	4.081	33.397

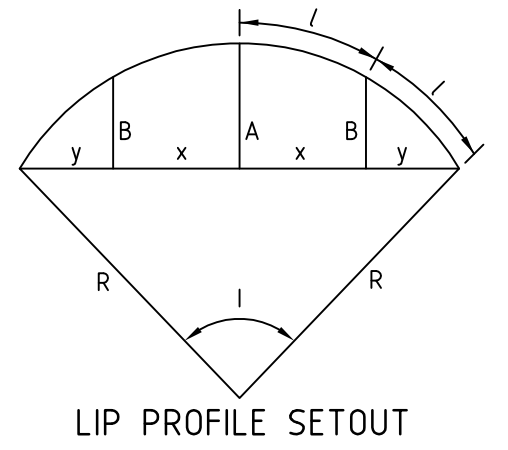
NOTES
 1. SETOUT CO-ORDINATES REFER TO LIP OF KERB/EDGE OF CONCRETE.
 2. REFER TO SHEET No. 06 FOR LIP PROFILES.

I:\work\eng\0250EHL - horizons@leopold\0250EHL - 13a\dwg\0250EHL-13a-07

REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG



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



Designed
A.Perkins
 Drawn
A.Perkins
 Checked
C. Birkett
 Authorised
J. Golden
 Date
November 2010

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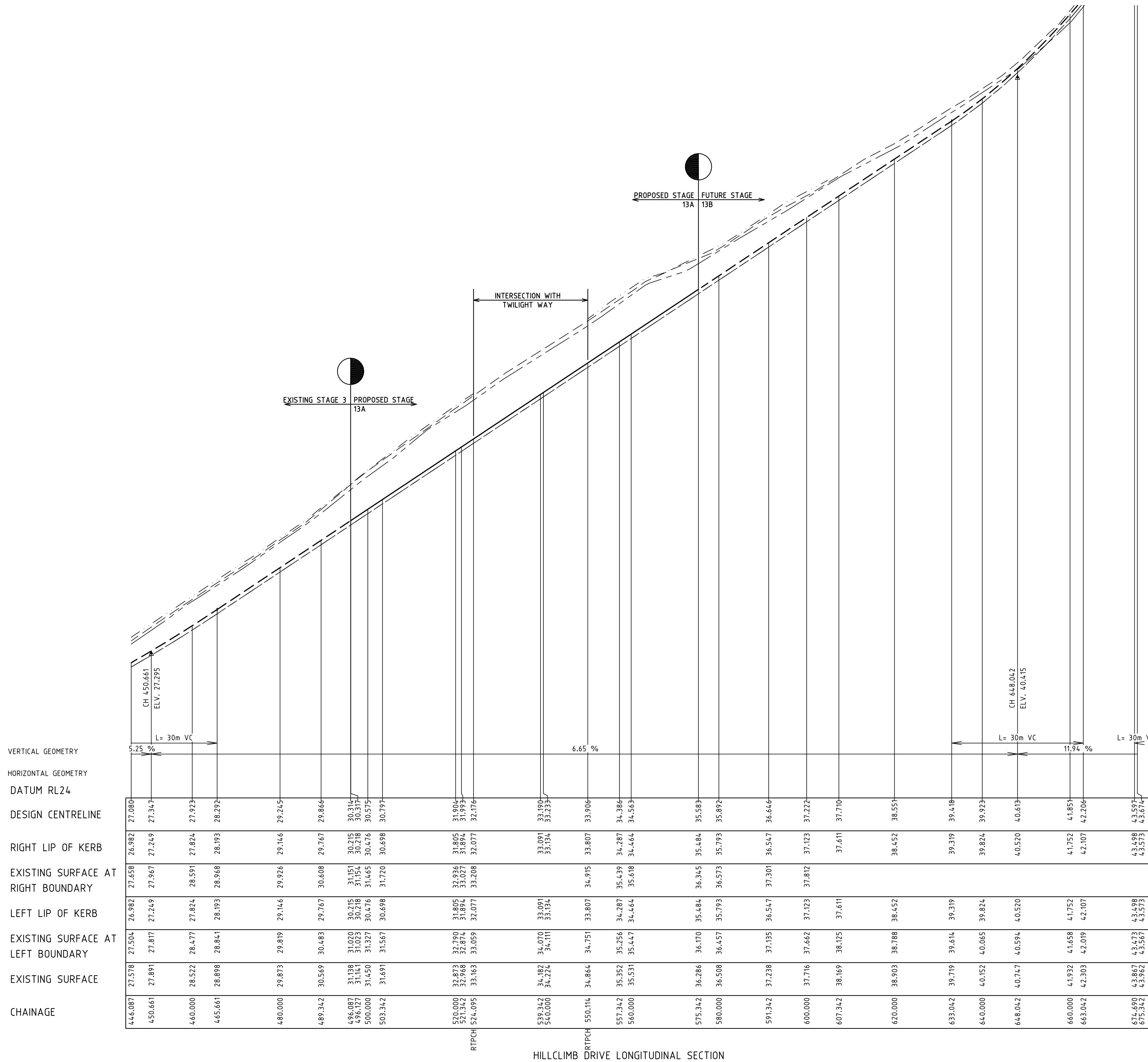
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 Gold Coast +61 7 5578 0222
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 Taranoni +61 3 5173 0100

Estuary
 Stage 13A
 City Of Greater Geelong
 Roadworks and Drainage
 Setout Information Plan

Drawing No. 0250EHL-13A-07 **Rev B**
 Sheet No. 7 of 17

Approved for Construction

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



HILLCLIMB DRIVE LONGITUDINAL SECTION

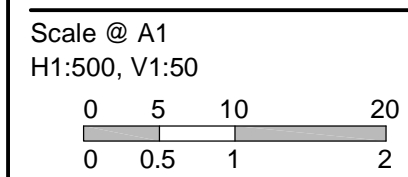


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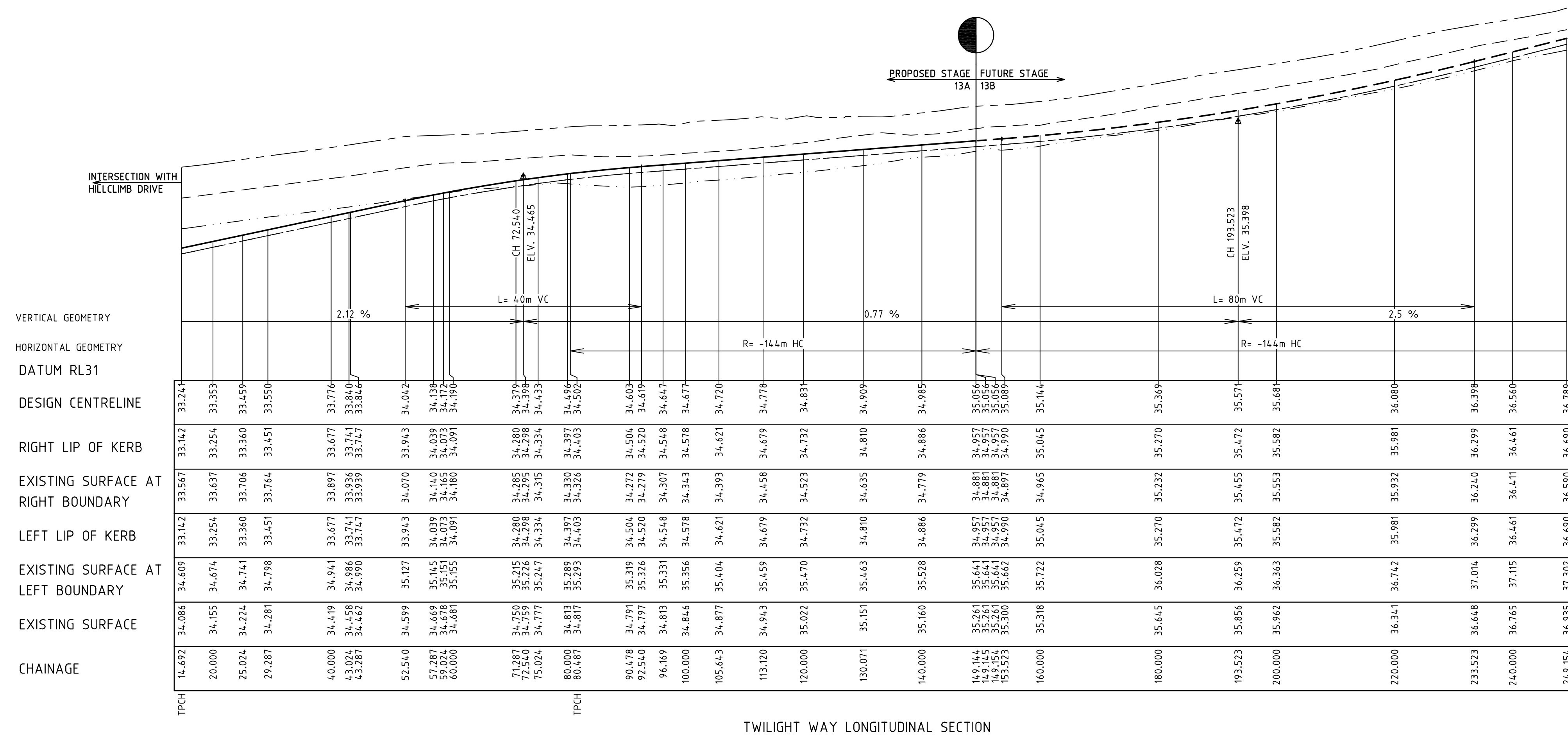
Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Longitudinal Sections - 1

Drawing No. 0250EHL-13A-08 Rev B
Sheet No. 8 of 17

Subject to Approval
Not to be used for construction

REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG

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



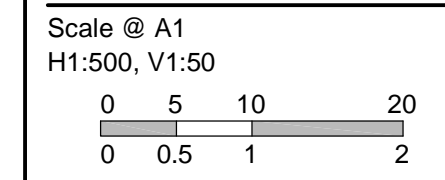
TWILIGHT WAY LONGITUDINAL SECTION

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REVISION	DATE	DES/DFT	APPD
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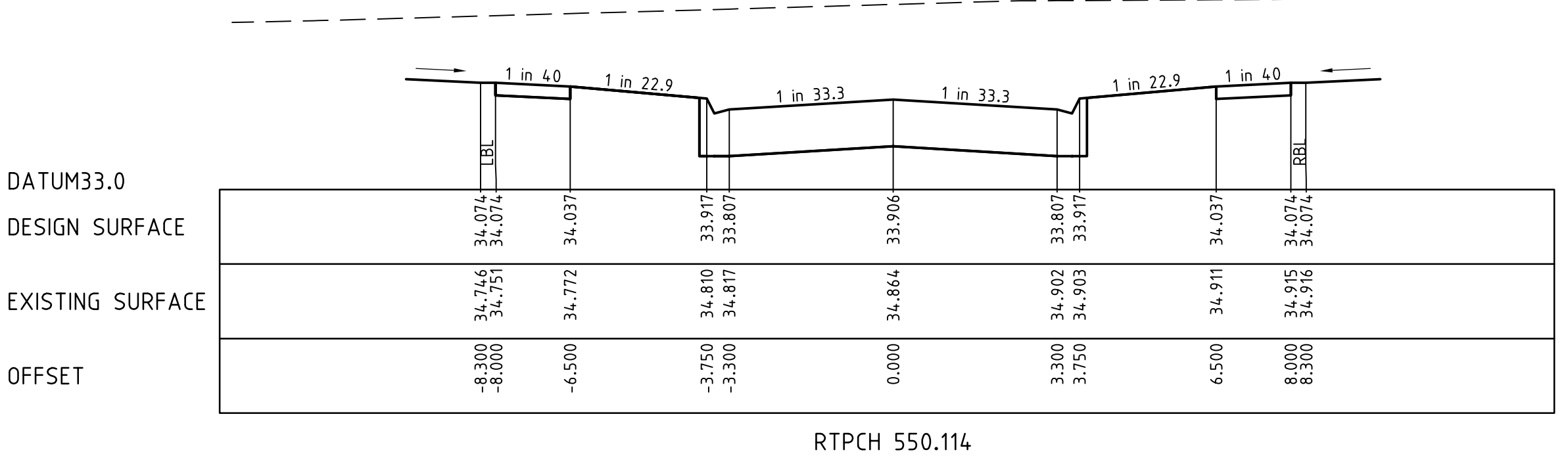
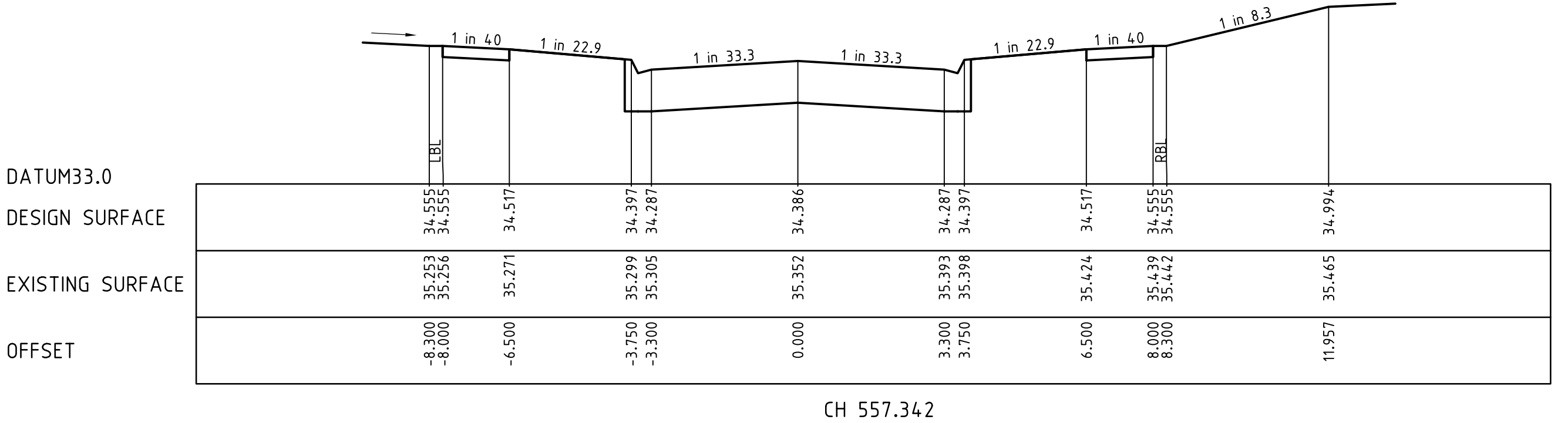
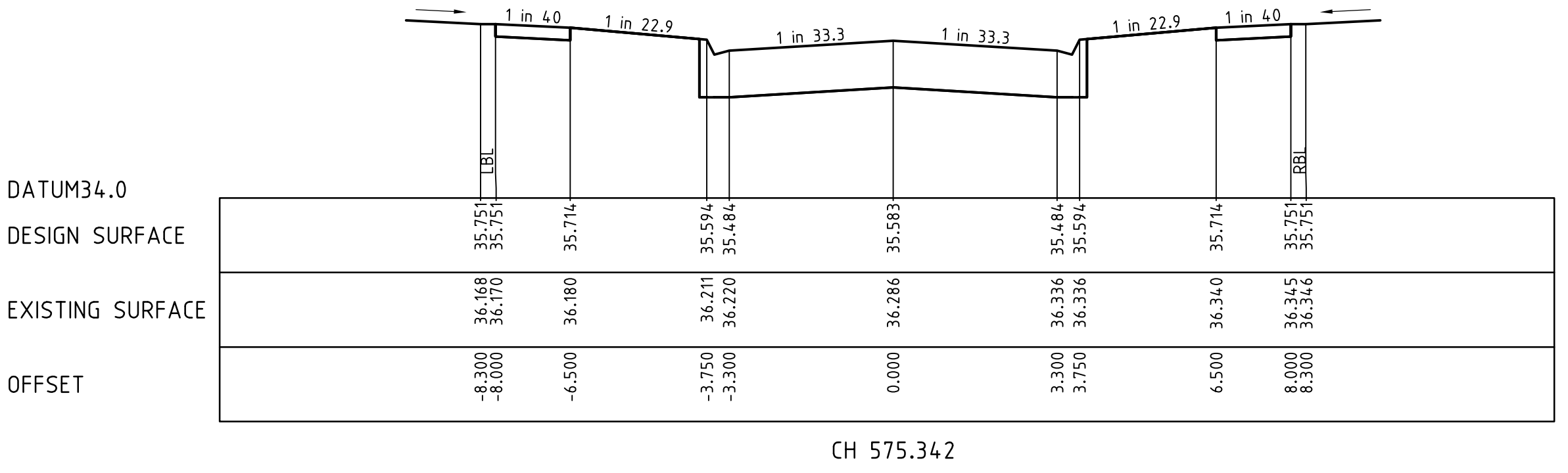
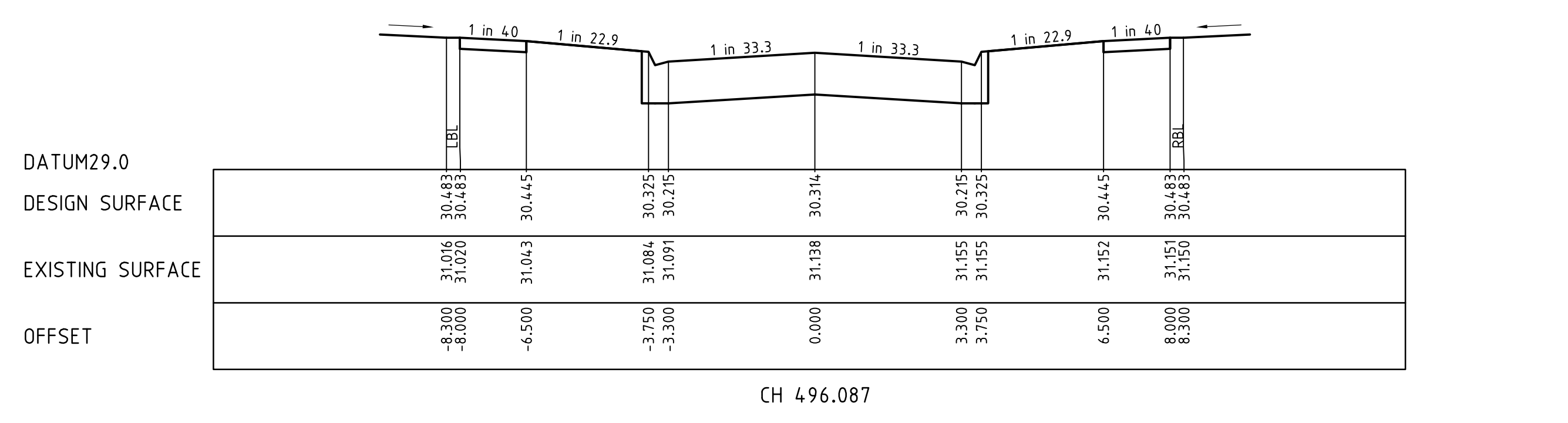
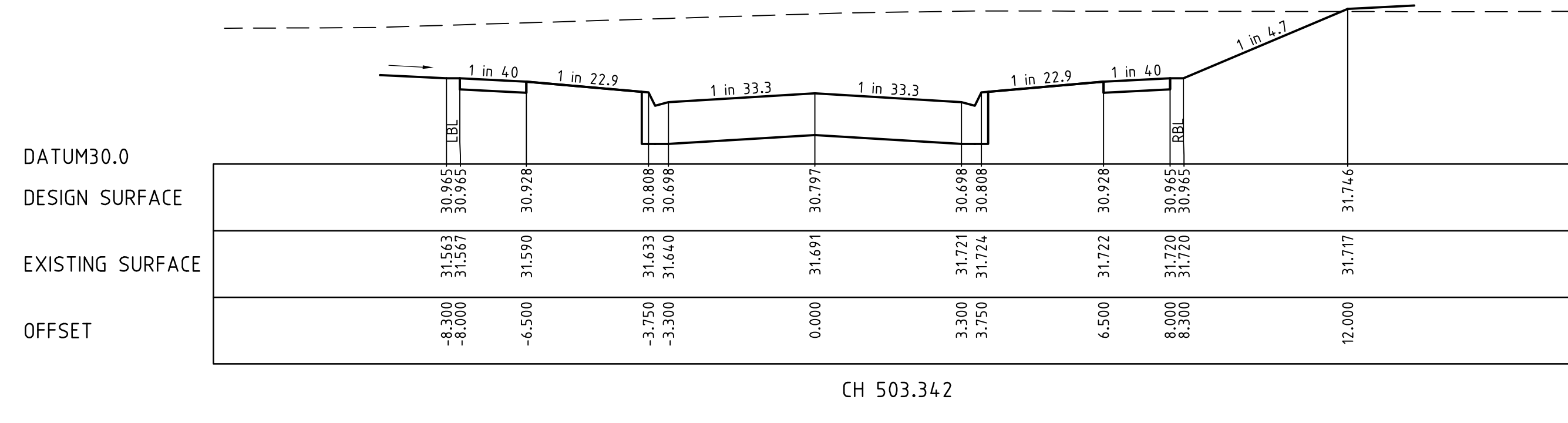
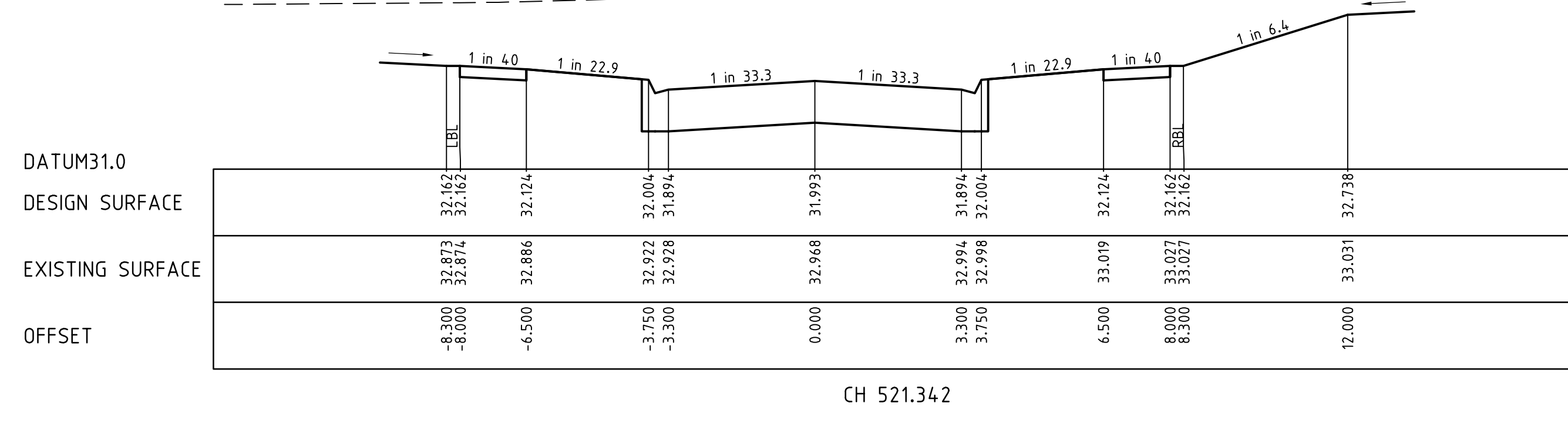
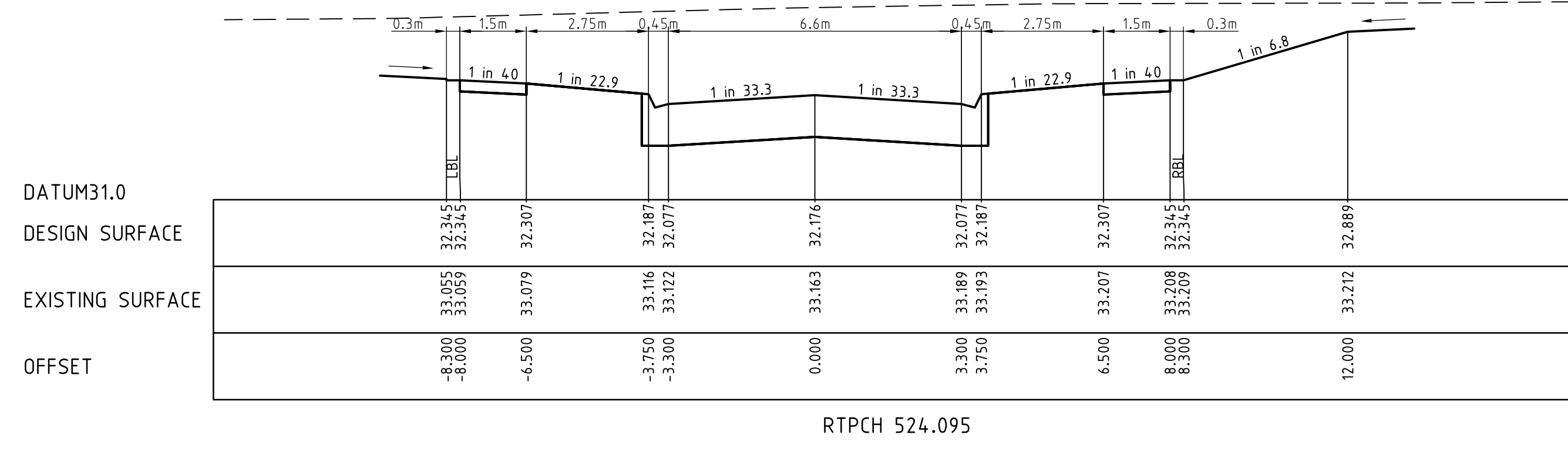
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Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Longitudinal Sections - 2

Drawing No. 0250EHL-13A-09 Rev B
Sheet No. 9 of 17

Approved for Construction

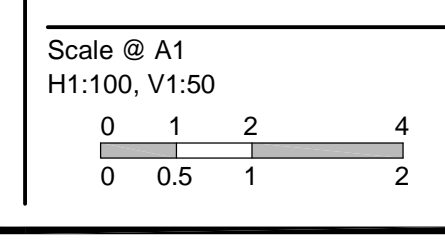
---	EXISTING SURFACE
—	DESIGN LINE
---	FUTURE DESIGN LINE



REVISION	DATE	DES/DF	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG

Principal
Leopold Property Developments Pty Ltd
Level 1, 6 Riverside Quay
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Designed
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Drawn
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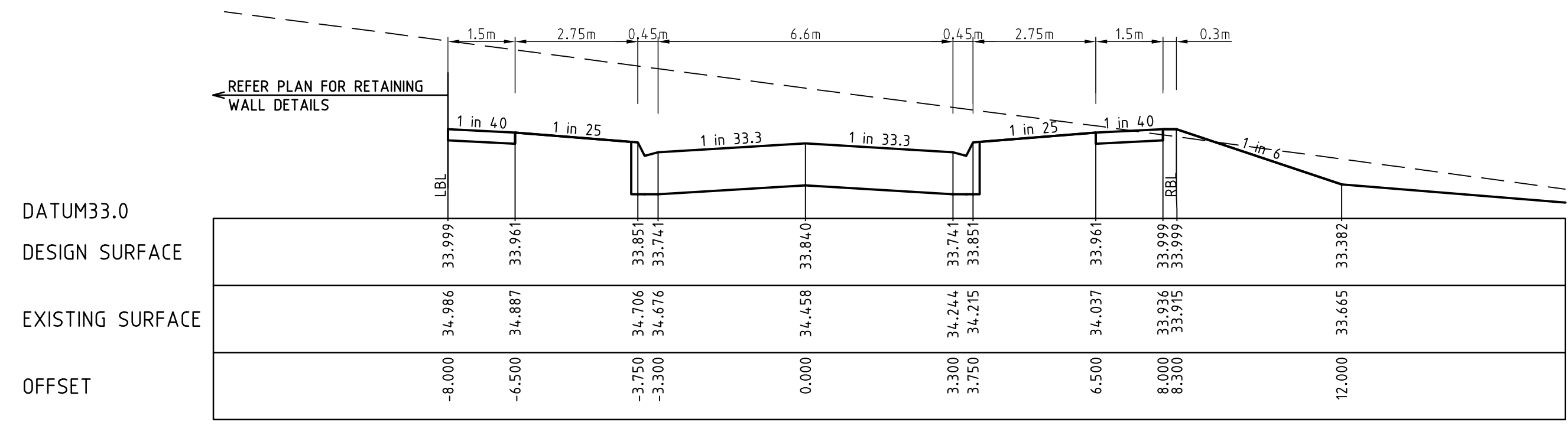
Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Cross Sections Hillclimb Drive

Drawing No. 0250EHL-13A-10 **Rev B**
Sheet No. 10 of 17

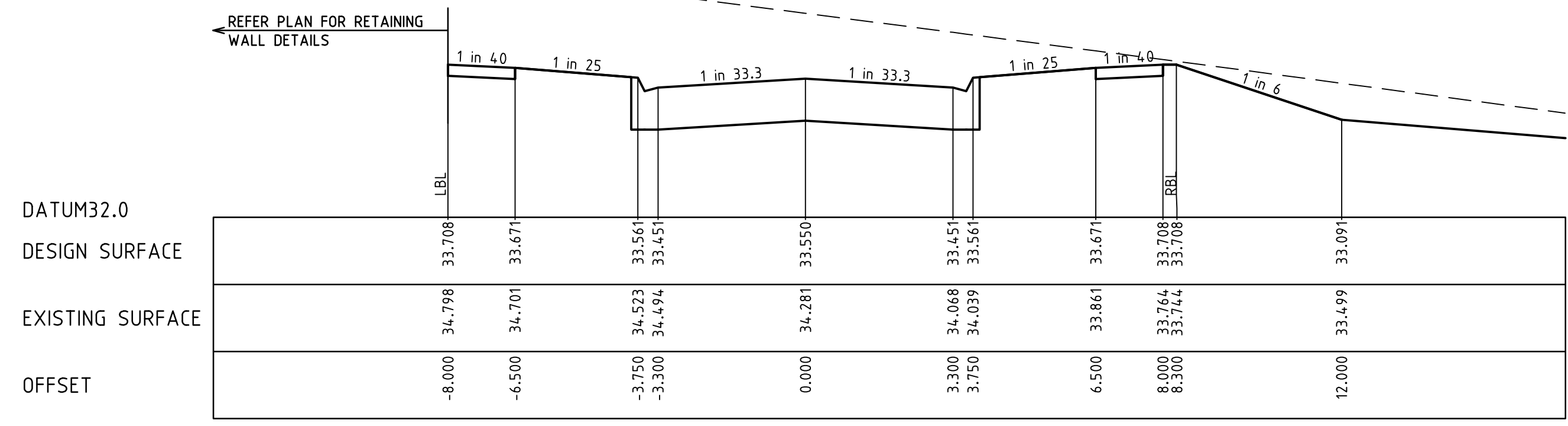
Approved for Construction

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

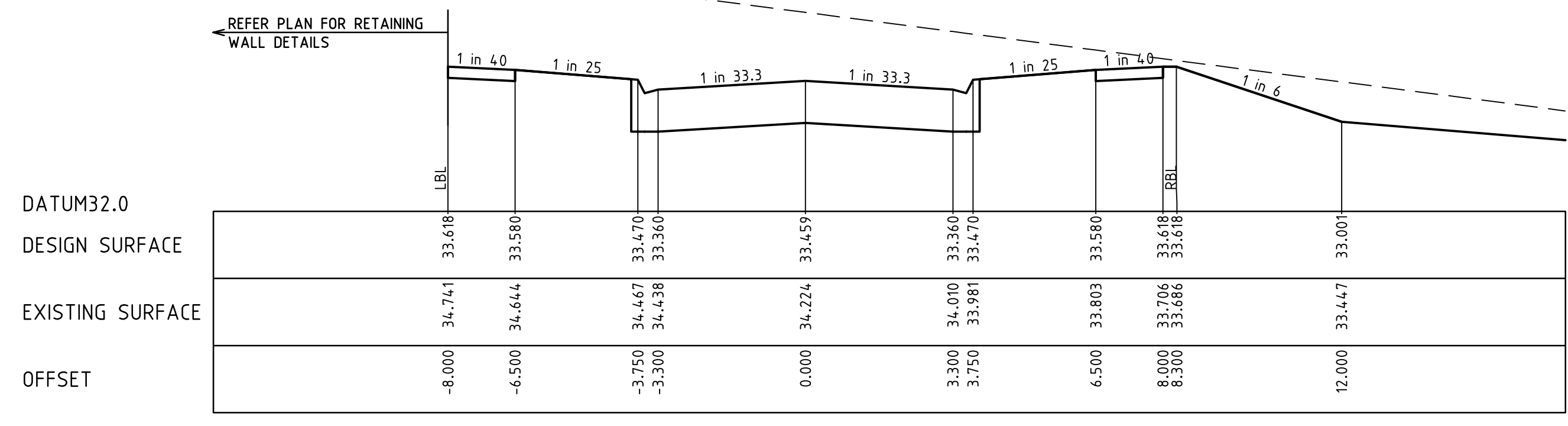
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE NATURAL SURFACE



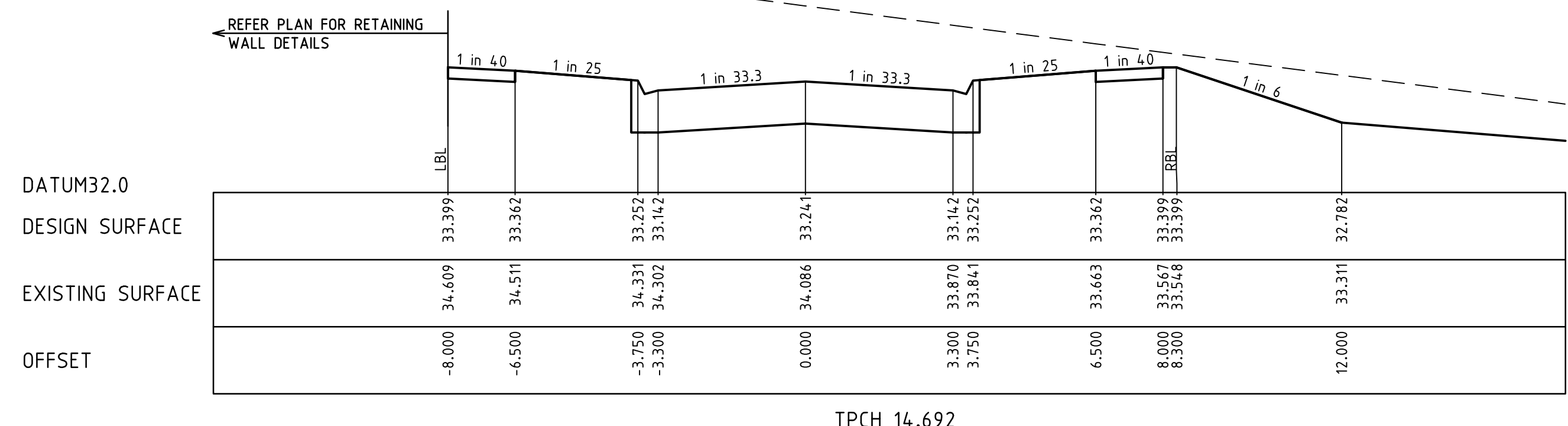
CH 43.024



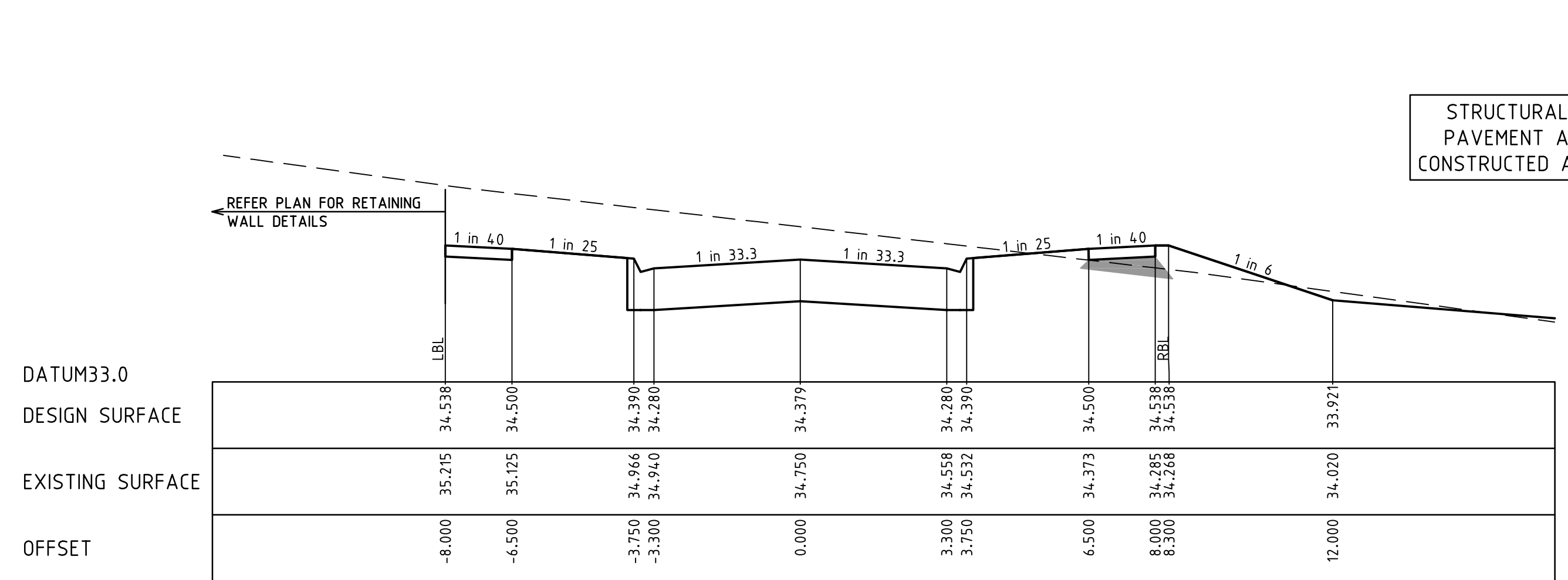
CH 29.287



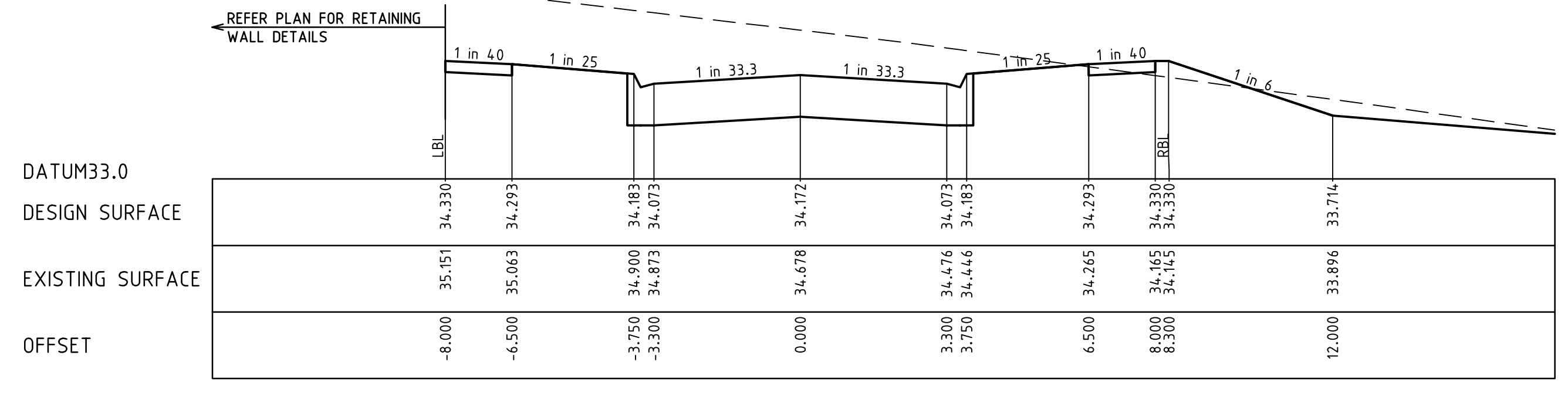
CH 25.024



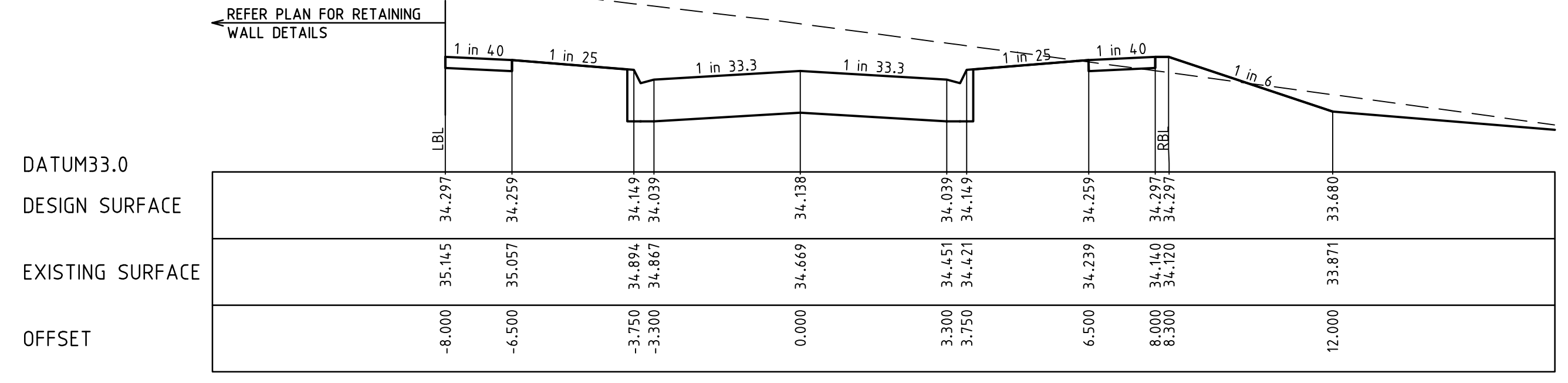
TPCH 14.692



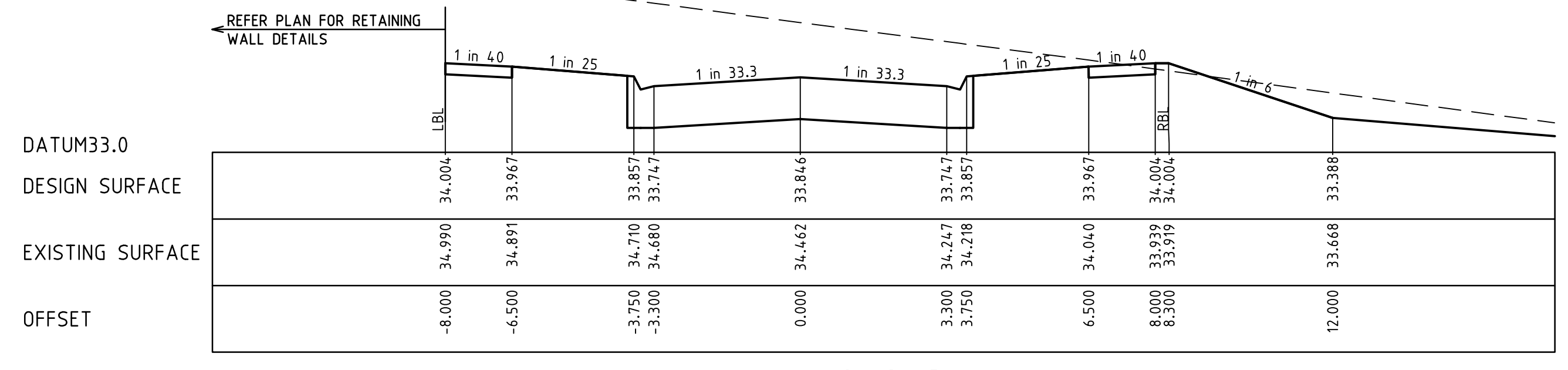
CH 71.287



CH 59.024



CH 57.287



CH 43.287

REVISION	DATE	DES/DF	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG

Principal
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 Level 1, 6 Riverside Quay
 Southbank, Victoria 3006

Designed
A.Perkins
 Drawn
A.Perkins
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C. Birkett
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 Date
November 2010

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

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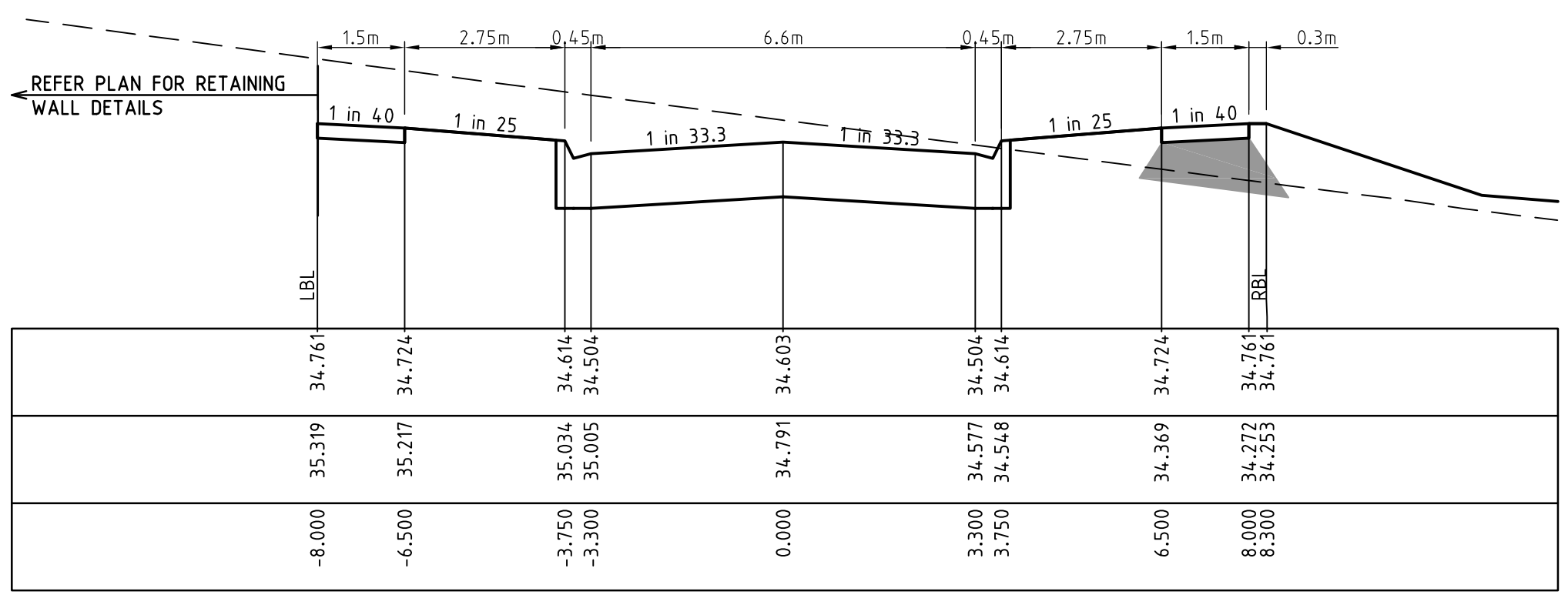
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 Gold Coast +61 7 5578 0222
 Melbourne +61 3 9869 0800
 Tarragona +61 3 5173 0190

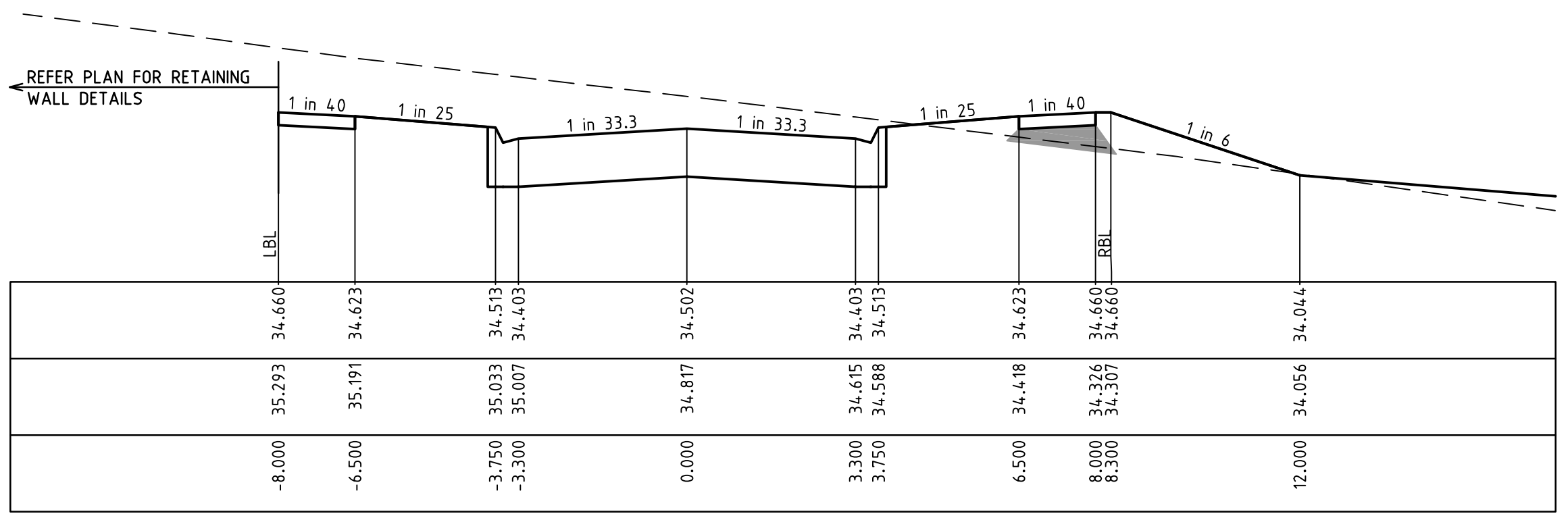
Estuary
 Stage 13A
 City Of Greater Geelong
 Roadworks and Drainage
 Cross Sections Twilight Way -1
 Ch14.692 - Ch71.287
Drawing No. 0250EHL-13A-11 **Rev B**
 Sheet No. 11 of 17
 Approved for Construction

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

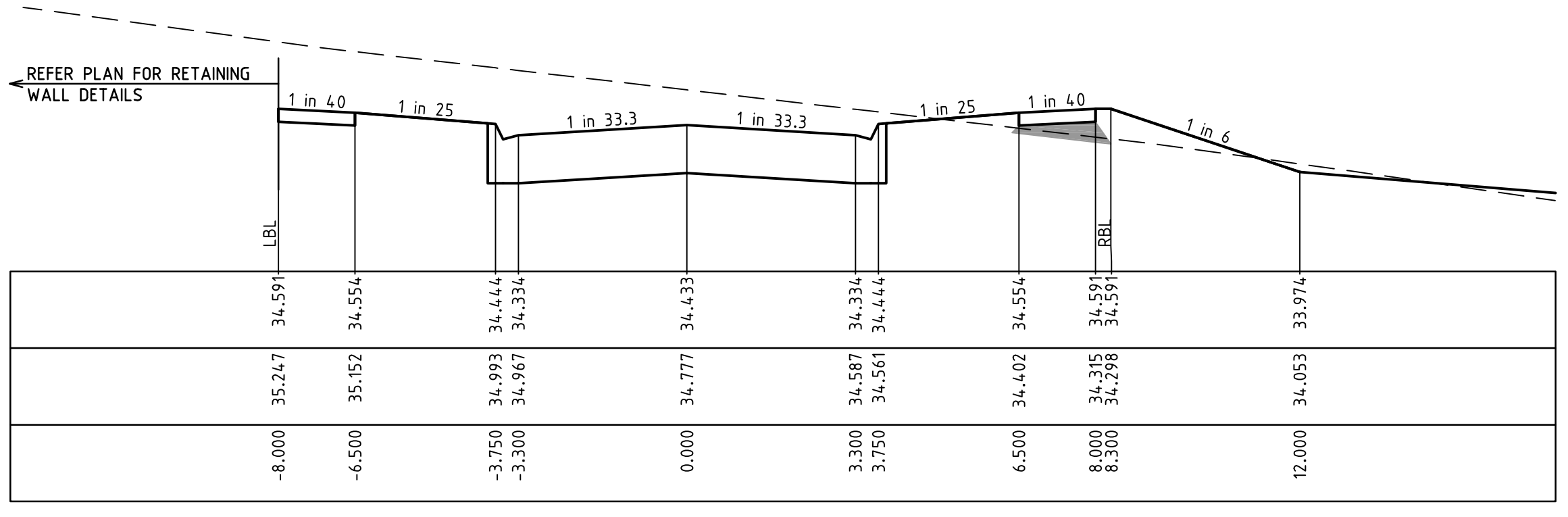
STRUCTURAL FILL REQUIRED UNDER PAVEMENT AND FOOTPATHS WHERE CONSTRUCTED ABOVE NATURAL SURFACE



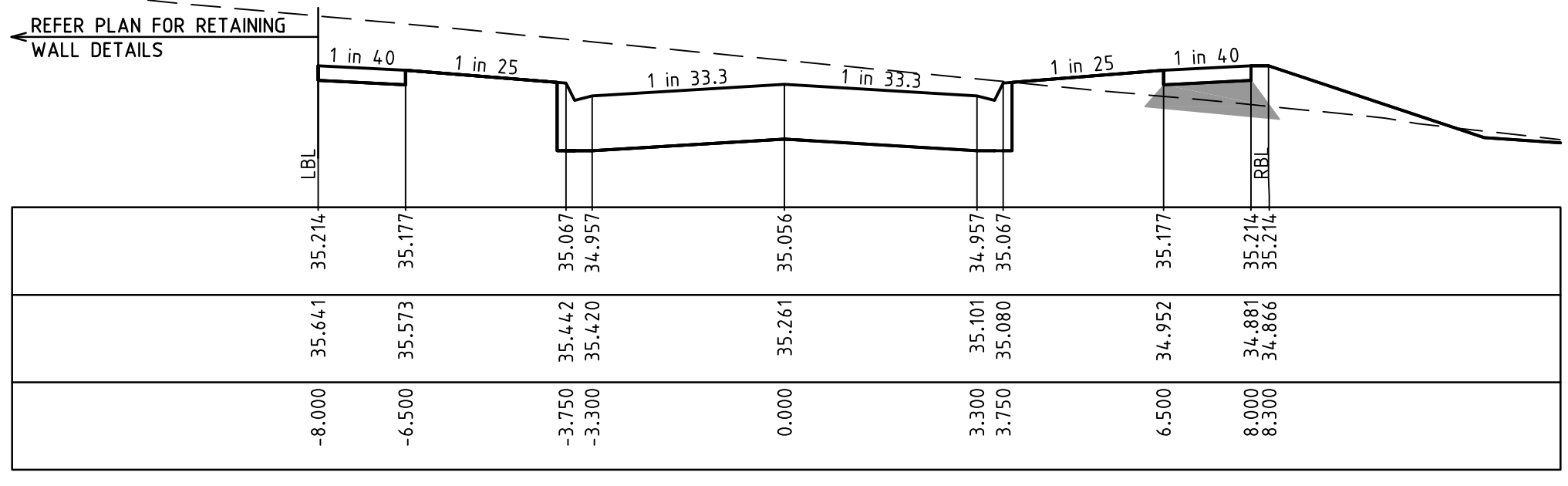
CH 90.478



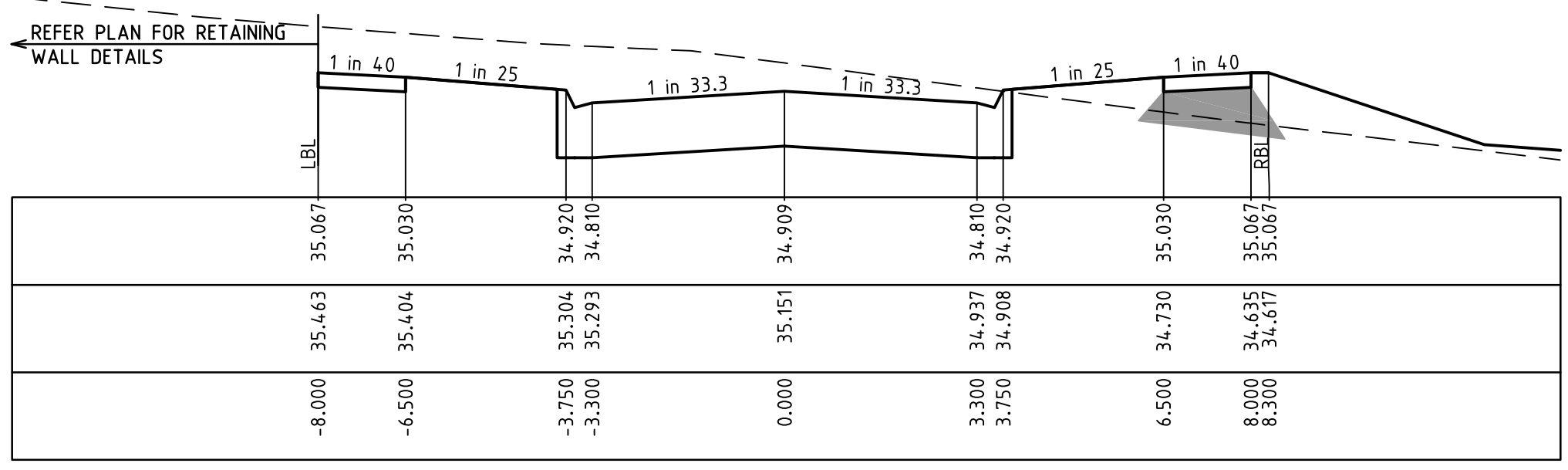
TPCH 80.487



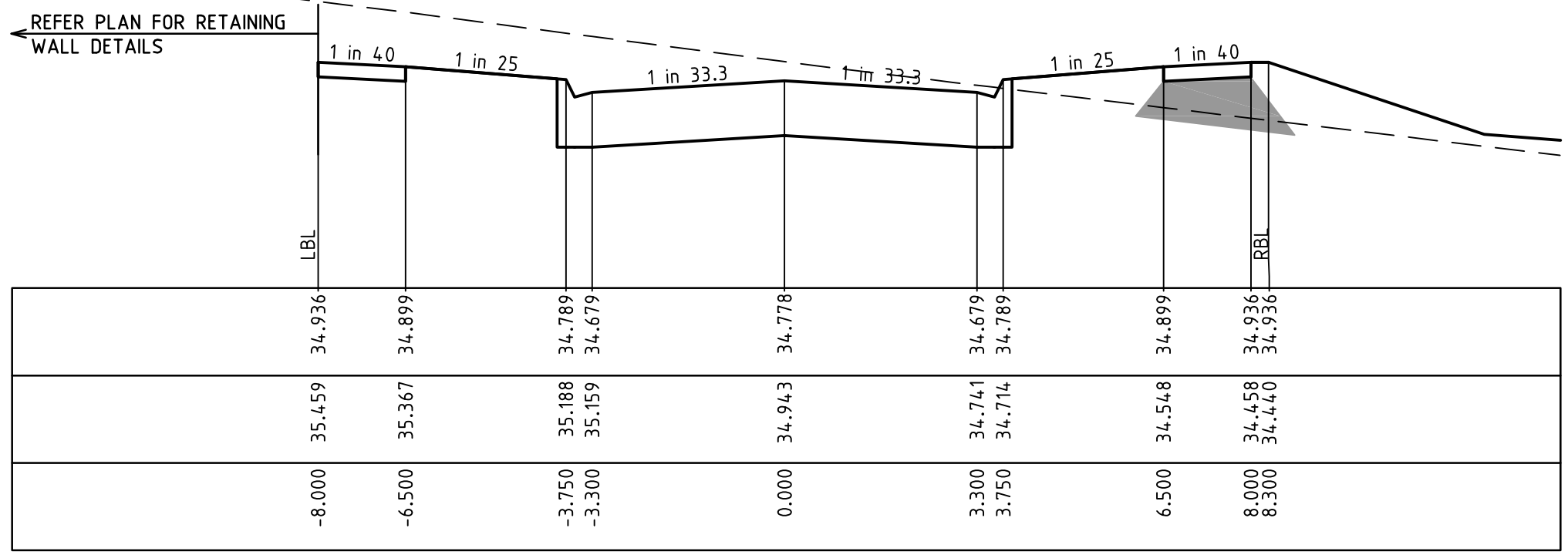
CH 75.024



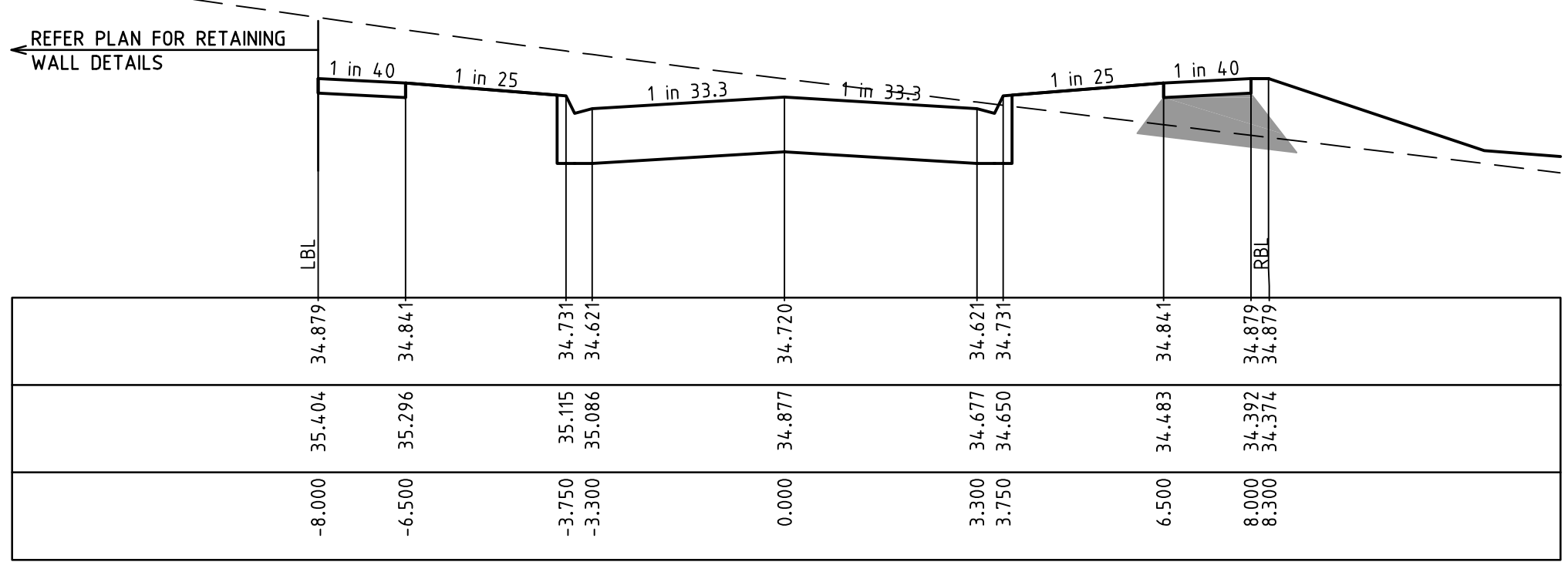
CH 149.144



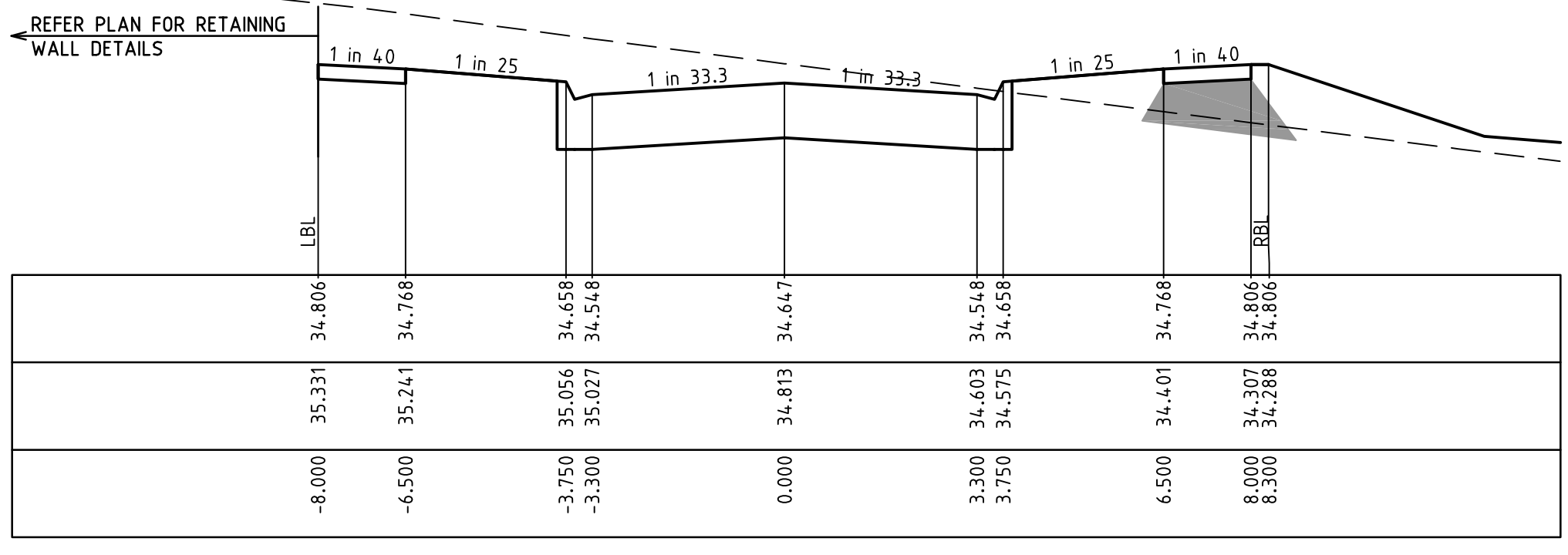
CH 130.071



CH 113.120



CH 105.643



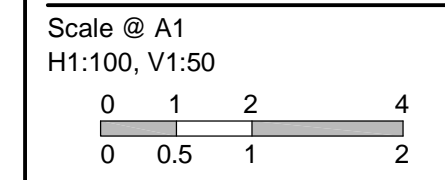
CH 96.169

REVISION	DATE	DES/DF	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG



Principal
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C. Birkett
Authorised
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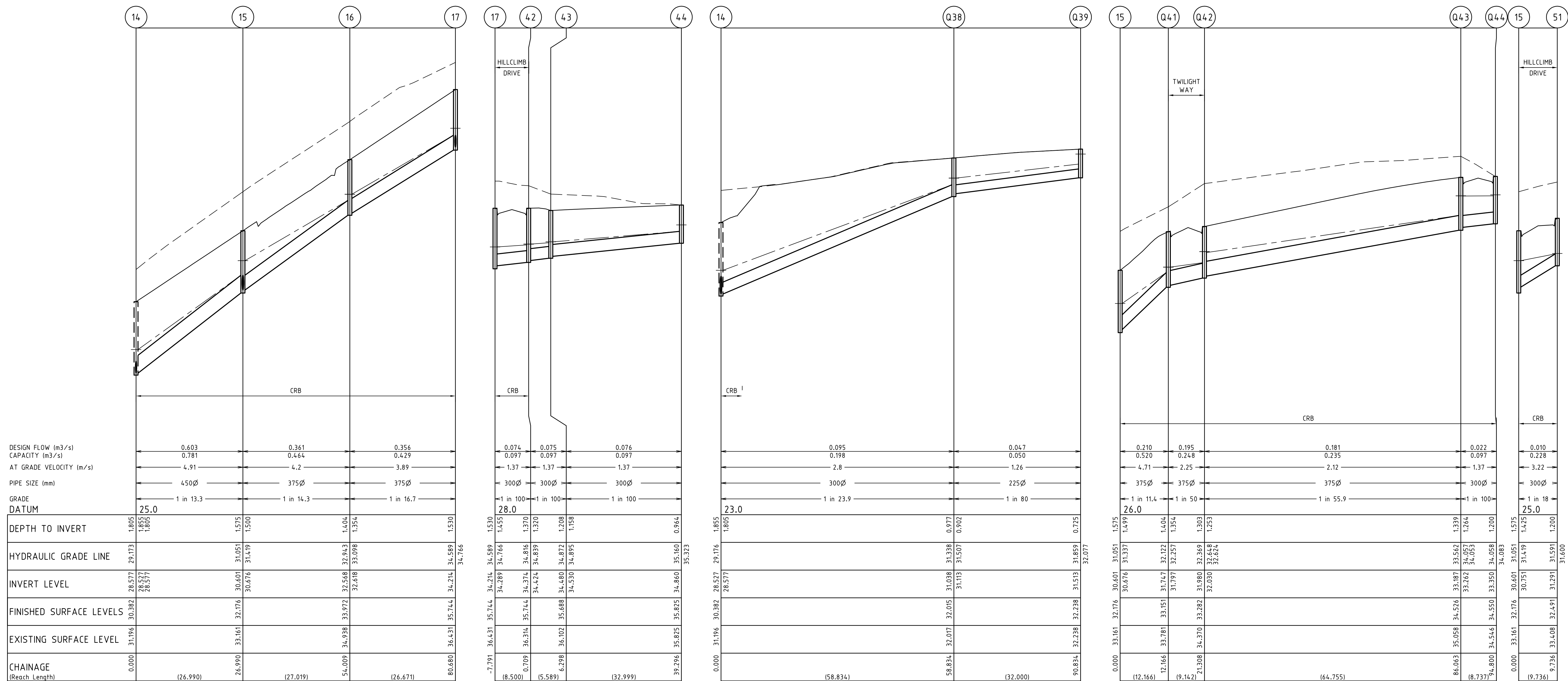
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Carlisle	+61 2 6126 1900	Taragon	+61 3 5173 0190

Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Cross Sections Twilight Way -2
Ch75.024 - Ch149.144
Drawing No. 0250EHL-13A-12 **Rev B**
Sheet No. 12 of 17

Approved for Construction

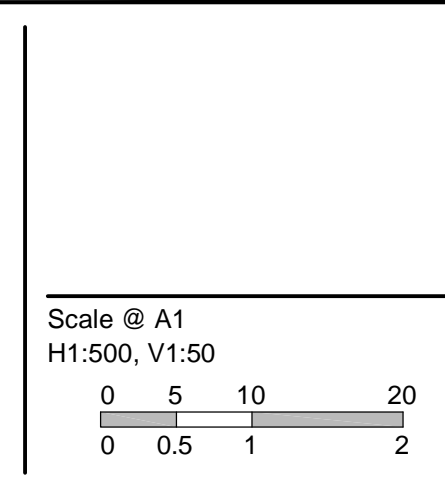
LEGEND	
	EXISTING SURFACE
	DESIGN SURFACE
	DRAINAGE PIPE/PIT
	EXISTING DRAINAGE PIPE/PIT
	HYDRAULIC GRADE LINE



REVISION	DATE	DES/DFT	APPD
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Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Drainage Longitudinal Sections

Drawing No. 0250EHL-13A-13 **Rev B**
Sheet No. 13 of 17


Approved for Construction

I:\work\eng\0250EHL-13a\h1\horizons\0250EHL-13a\h1\0250EHL-13a-13

PIT NUMBER	TYPE	PIT SCHEDULE									
		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)				
14	EX.PIT	900	900	450	28.577			30.382	1.805		CONNECT TO EX.PIT
15	SEP	900	900	375	30.676	450	30.601	32.176	1.575	SD496	
				375	30.676						
				300	30.751						
16	DSEP	900	900	375	32.618	375	32.568	33.972	1.404	SD496	
17	JP	900	900			375	34.214	35.744	1.530	SD425	
				300	34.289						
42	JP	900	900	300	34.424	300	34.374	35.744	1.370	SD425	
43	SEP	900	900	300	34.530	300	34.480	35.688	1.208	SD496	
44	JP	900	900			300	34.860	35.825	0.964	SD425	
Q38	SEP	600	900	225	31.113	300	31.038	32.015	0.977	SD496	
Q39	SEP	600	900			225	31.513	32.238	0.725	SD496	
Q41	SEP	900	900	375	31.797	375	31.747	33.151	1.404	SD496	
Q42	SEP	900	900	375	32.030	375	31.980	33.282	1.303	SD496	
Q43	SEP	900	900	300	33.262	375	33.187	34.526	1.339	SD496	
Q44	SEP	600	900			300	33.350	34.550	1.200	SD496	
51	SEP	600	900			300	31.291	32.491	1.200	SD496	

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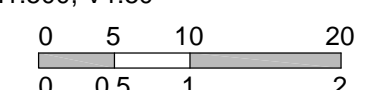
REVISION	DATE	DES/DFT	APPD
B	24.01.11	AP/AP	JG
A	07.12.10	AP/AP	JG



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

Designed
A.Perkins
Drawn
A.Perkins
Checked
C. Birkett
Authorised
J. Golden
Date
November 2010

Scale @ A1
H1:500, V1:50



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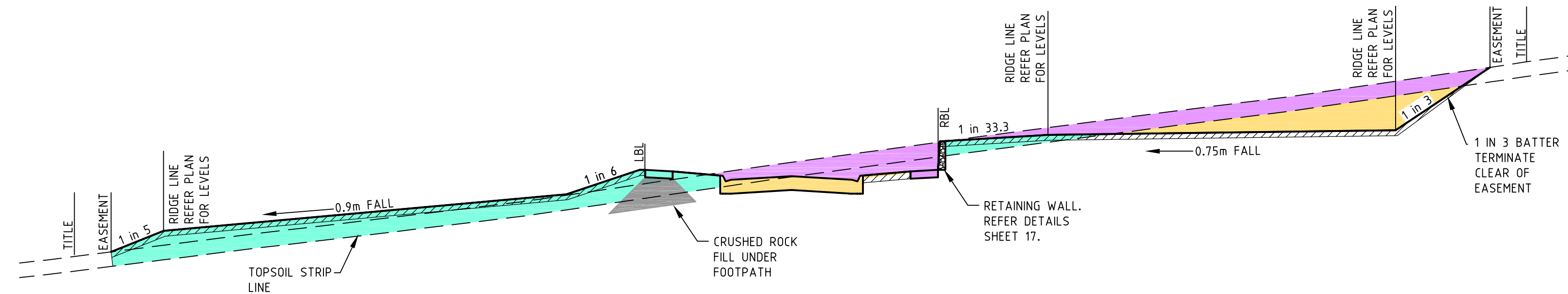
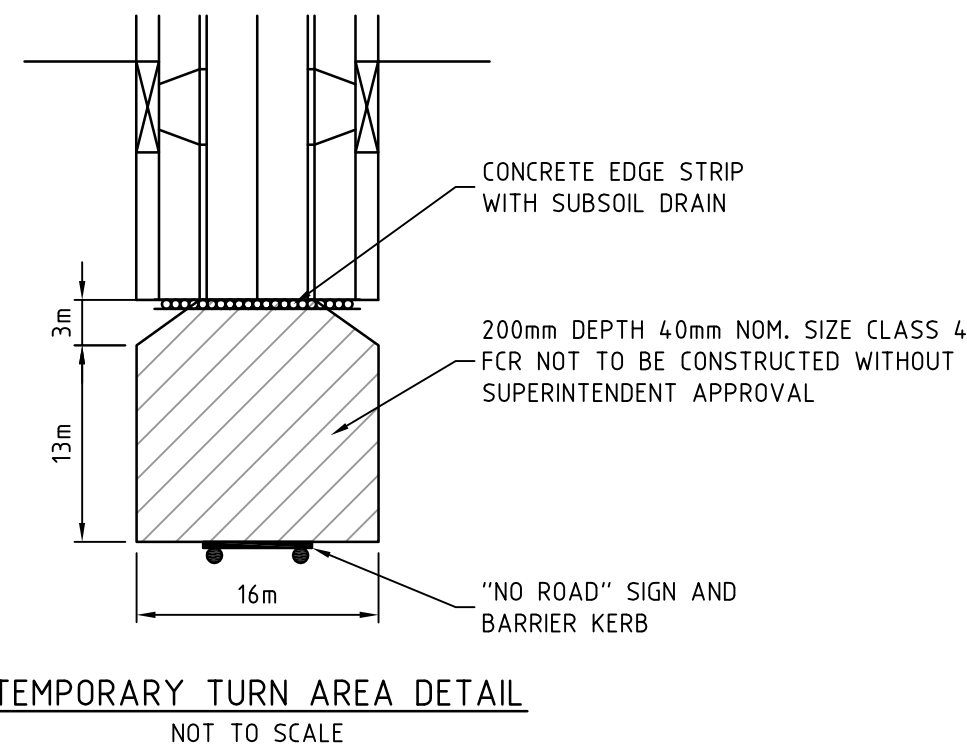
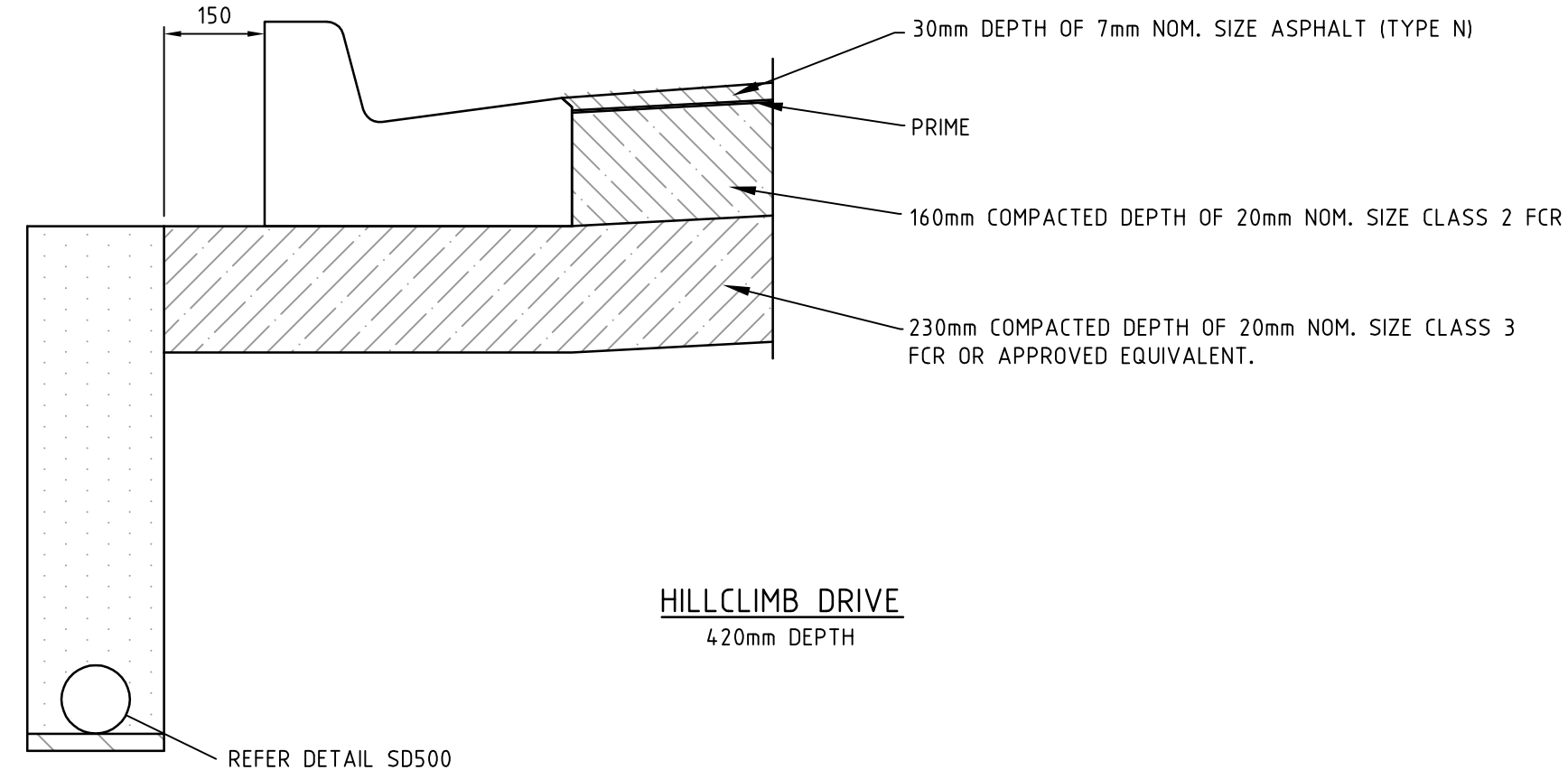
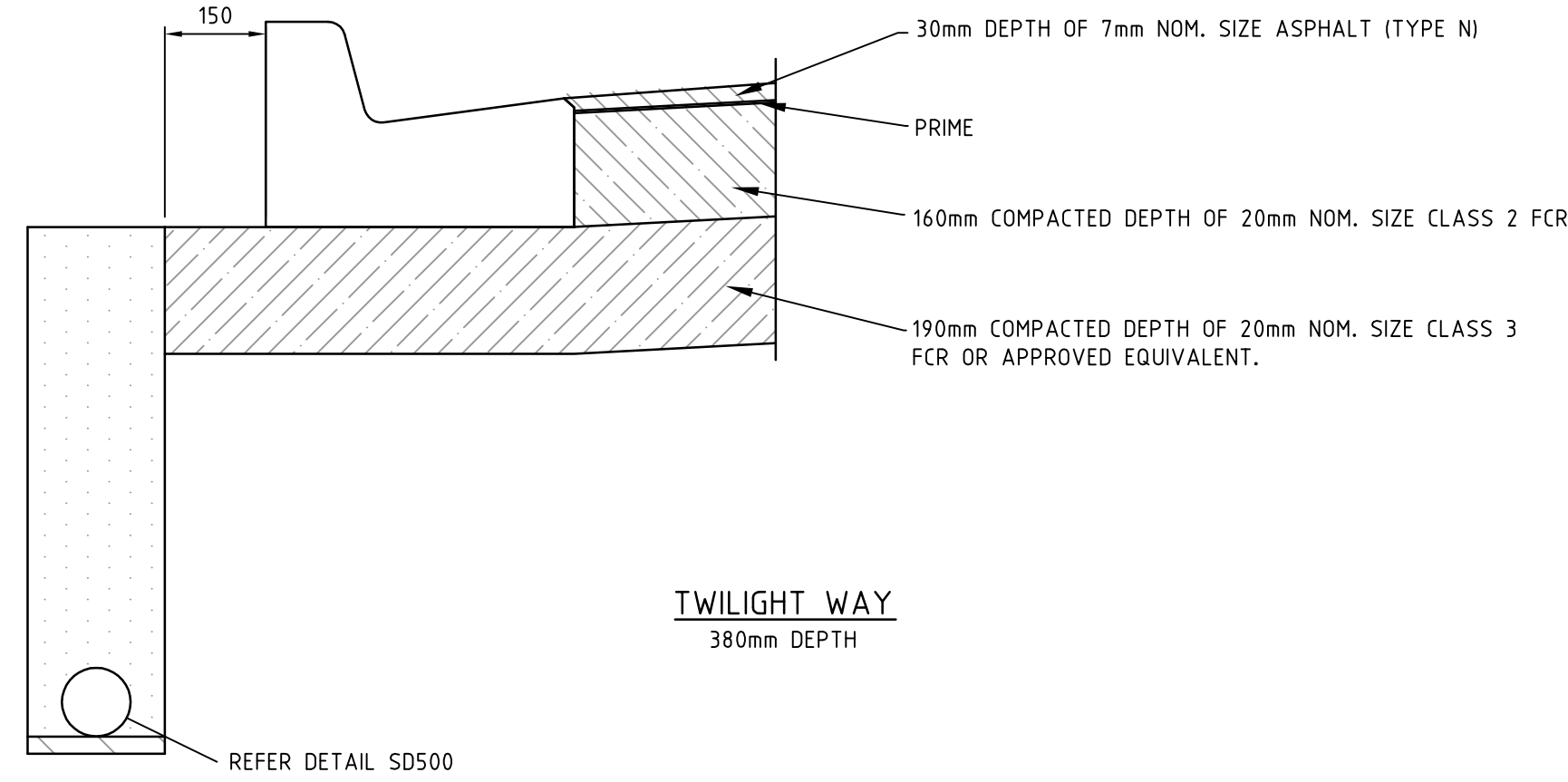
Adelaide +61 8 8223 6455 Gold Coast +61 7 5578 0222
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Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Drainage Pit Schedule

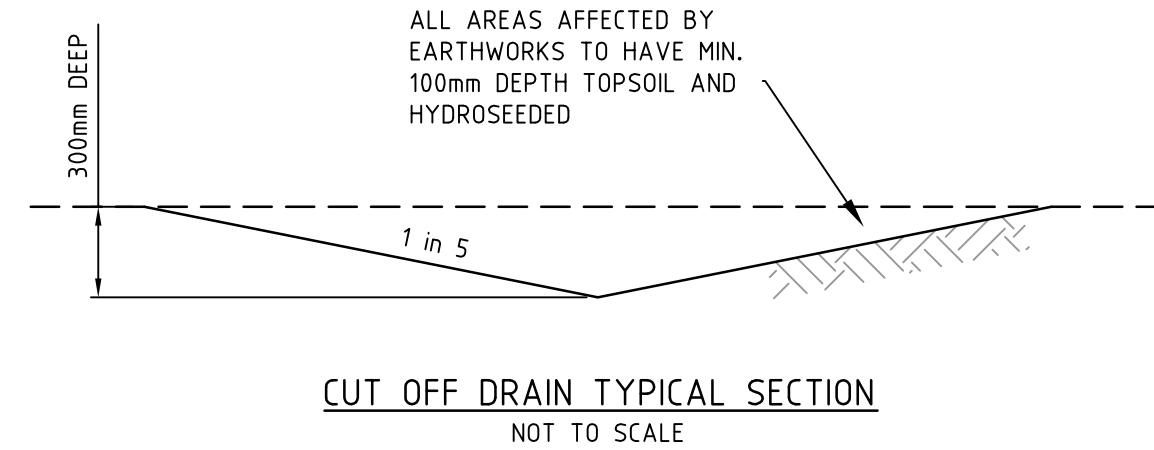
Drawing No. 0250EHL-13A-14 Rev B

Sheet No. 14 of 17

Approved for Construction



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



I:\work\eng\0250EHL - horizons@leopold\0250EHL - 13a\dwg\0250EHL-13a-15

REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG

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

Designed
A.Perkins
Drawn
A.Perkins
Checked
C. Birkett
Authorised
J. Golden
Date
November 2010

Scale @ A1
As Shown

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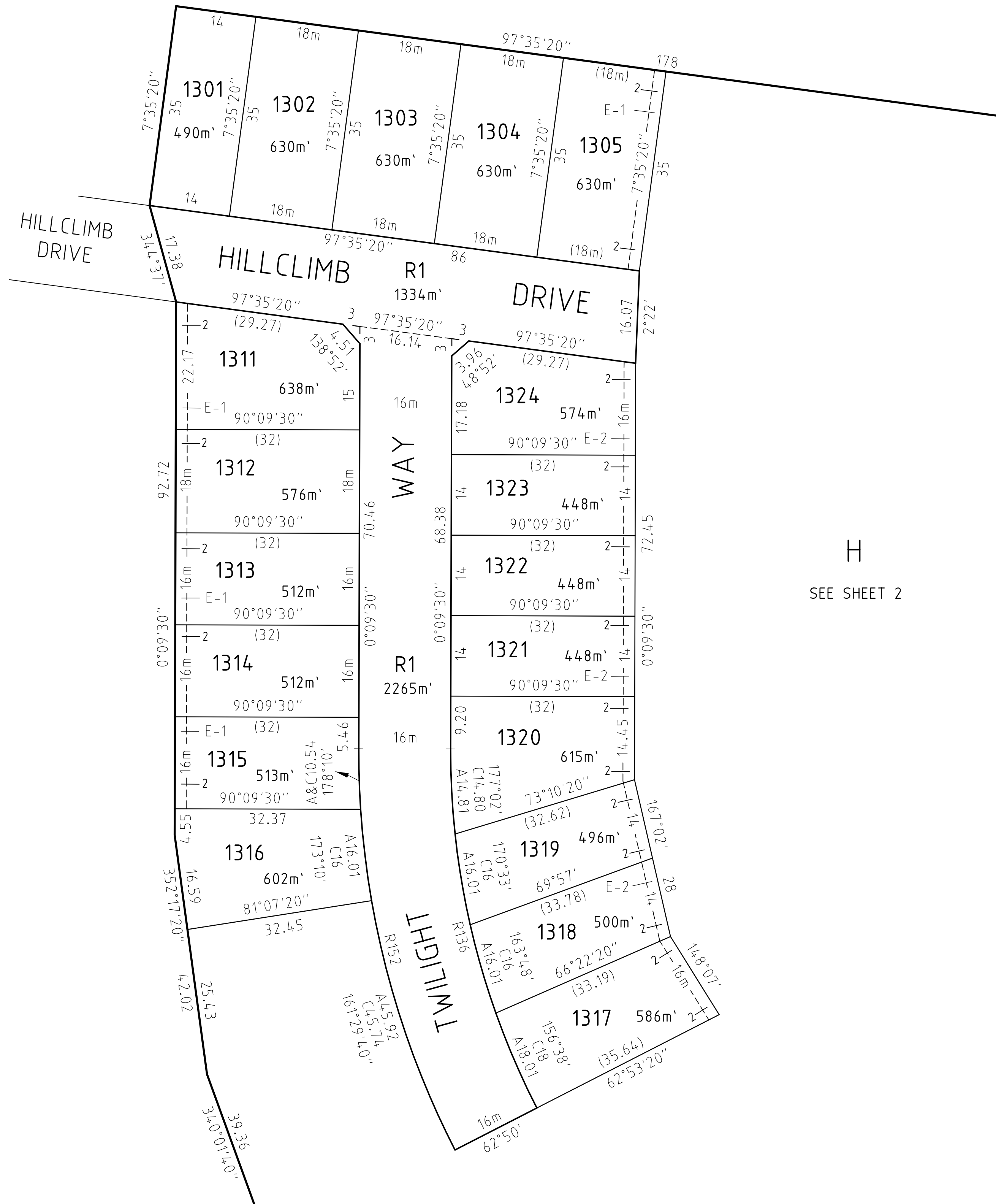
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Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Standard Details

Drawing No. 0250EHL-13A-15 Rev B
Sheet No. 15 of 17

Approved for Construction



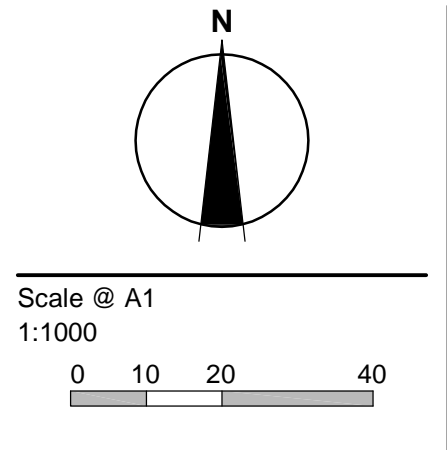
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SEE SHEET 2

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REVISION	DATE	DES/DFT	APPD
B	24.01.11	AP/AP	JG
A	07.12.10	AP/AP	JG

Principal
Leopold Property Developments Pty Ltd
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Designed
A.Perkins
Drawn
A.Perkins
Checked
C. Birkett
Authorised
J. Golden
Date
November 2010



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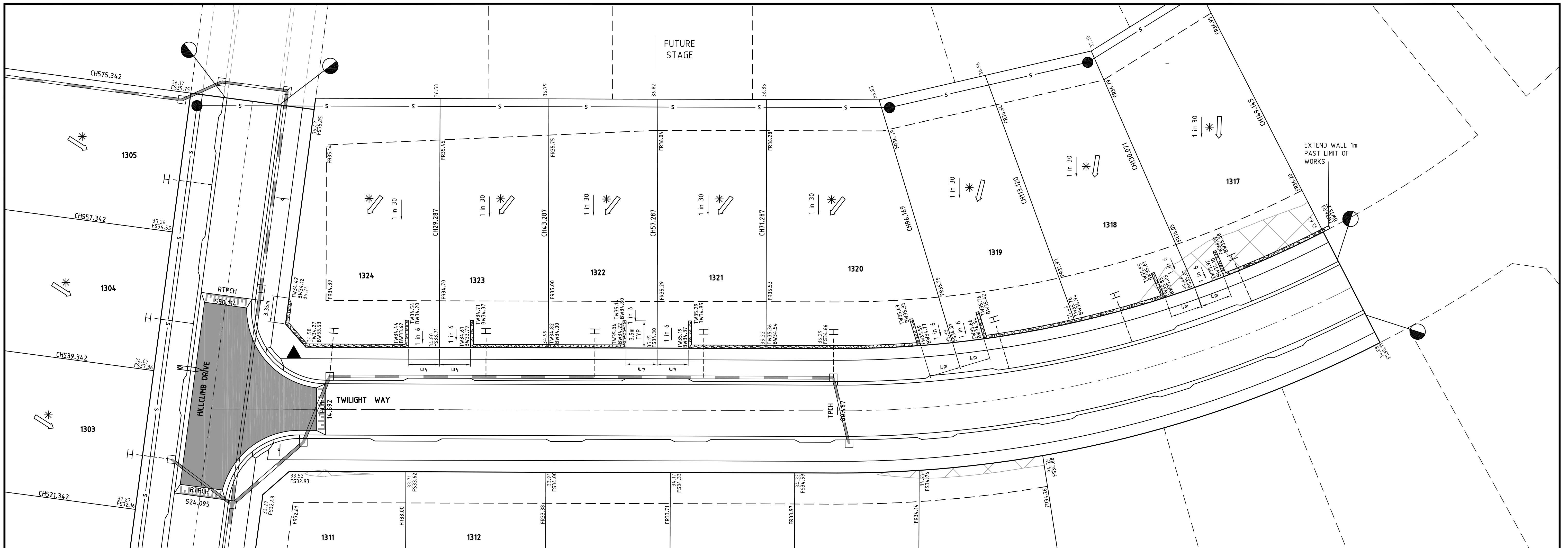
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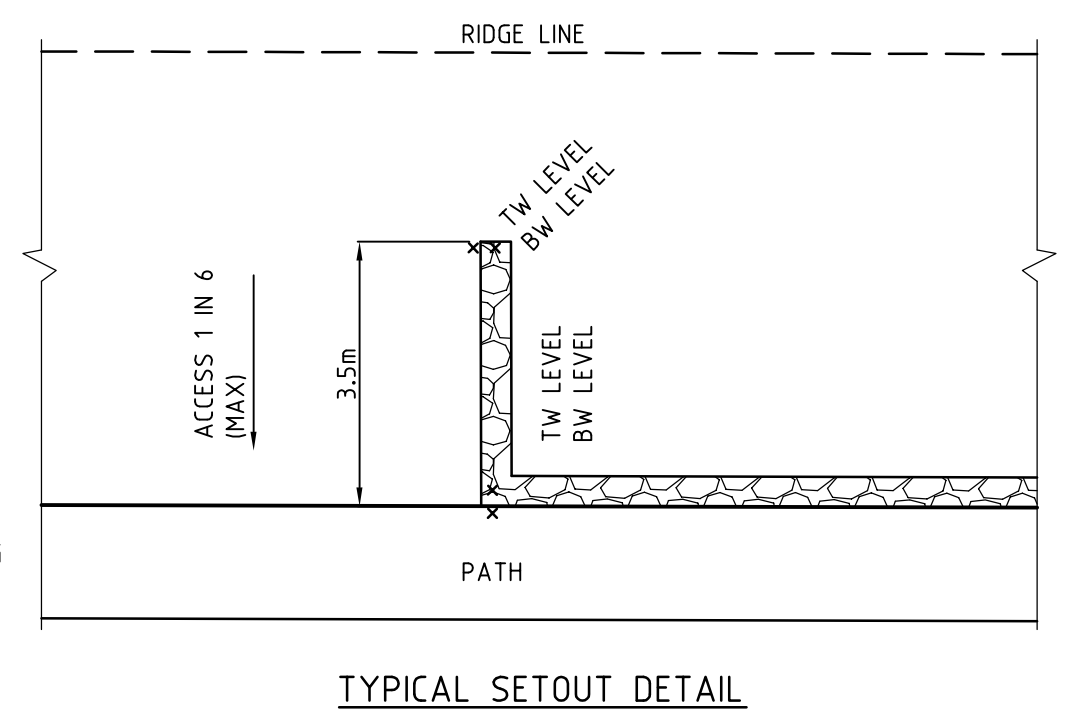
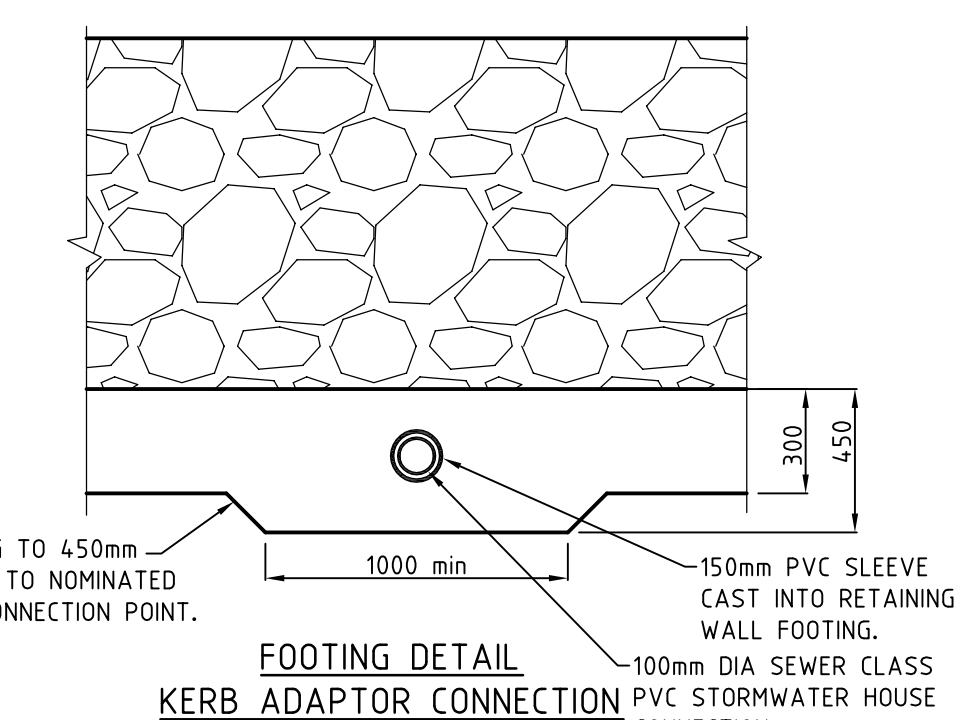
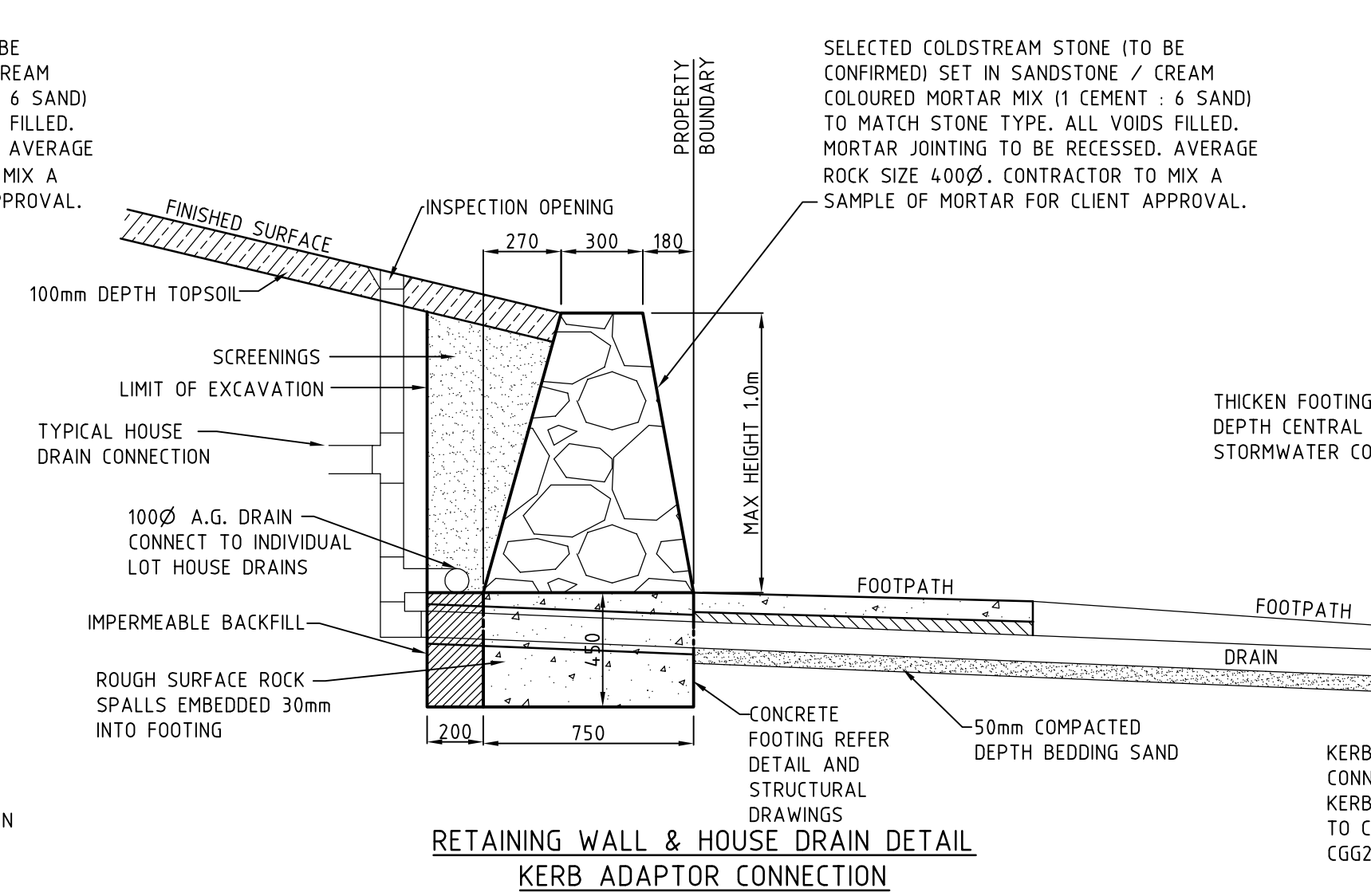
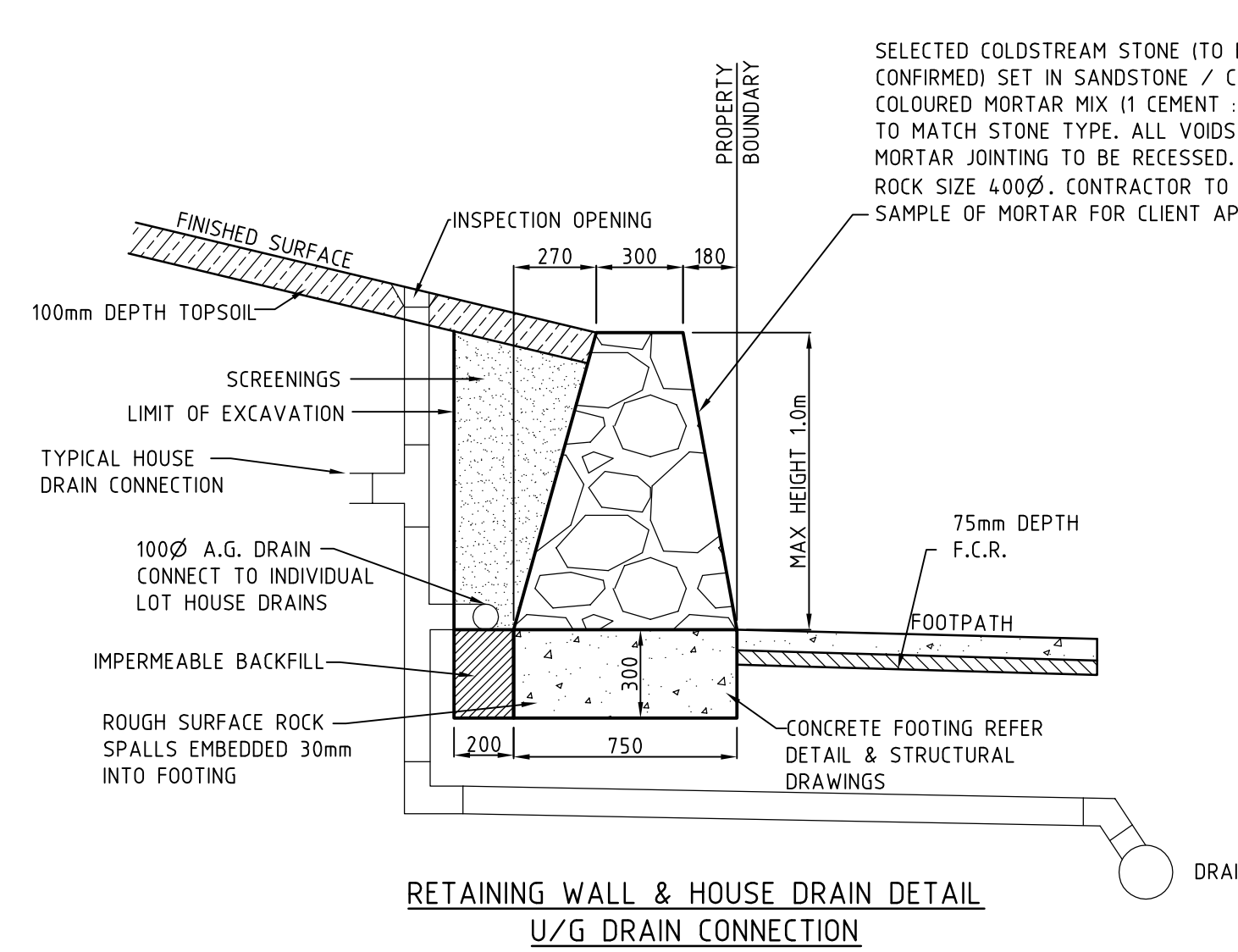
Estuary
Stage 13A
City Of Greater Geelong
Roadworks and Drainage
Subdivision Setout Plan

Drawing No. 0250EHL-13A-16 **Rev B**
Sheet No. 16 of 17

Approved for Construction



- LEGEND - LAYOUT PLAN**
- STORMWATER DRAIN, PIT & PROPERTY INLET
 - SWALE DRAIN
 - SEWER & MAINTENANCE STRUCTURES
 - H HOUSE DRAIN
 - GW SERVICE CONDUITS
 - TACTILE PAVERS
 - Ex E EXISTING ELECTRICITY (UNDERGROUND)
 - O/H E EXISTING ELECTRICITY (OVERHEAD)
 - Ex G EXISTING GAS
 - Ex T EXISTING TELSTRA
 - Ex W EXISTING WATER
 - Ex D EXISTING STORMWATER DRAIN
 - Ex S EXISTING SEWER
 - H EXISTING HOUSE DRAIN
 - EXISTING SWALE DRAIN
 - EXISTING SURFACE LEVEL
 - FS140.35 FINISHED BUILDING LINE LEVEL
 - FR157.40 FINISHED RIDGE LINE LEVEL
 - TW159.30 TOP OF RETAINING WALL
 - BW159.30 BOTTOM OF RETAINING WALL
 - RETAINING WALL
 - ZERO LOT LINES
 - PAVEMENT TREATMENT
 - 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



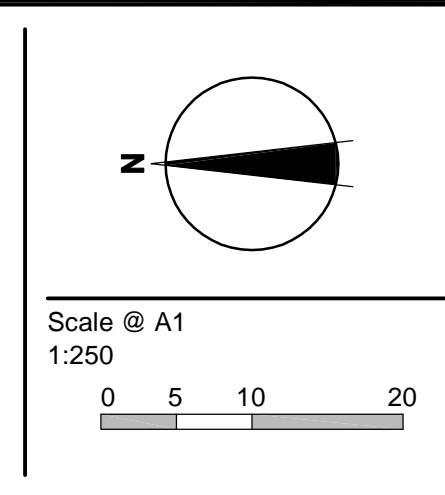
WARNING
BEWARE OF UNDERGROUND SERVICES
 The locations of underground services are approximate only and their exact position should be proven on site.
 No guarantee is given that all existing services are shown. Locate all underground services before commencement of works
DIAL 1100 BEFORE YOU DIG
 www.1100.com.au

REVISION	DATE	DES/DFT	APPD
B COUNCIL AMENDMENT	24.01.11	AP/AP	JG
A ISSUED TO COUNCIL FOR APPROVAL	07.12.10	AP/AP	JG

estuary leopard

Principal
 Leopold Property Developments Pty Ltd
 Level 1, 6 Riverside Quay
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Designed
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 Drawn
A.Perkins
 Checked
C. Birkett
 Authorised
J. Golden
 Date
November 2010



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Estuary
 Stage 13A
 City Of Greater Geelong
 Roadworks and Drainage
 Retaining Wall Layout Plan

Drawing No. **0250EHL-13A-07** Rev **B**
 Sheet No. 17 of 17

Approved for Construction

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

LEGEND - SEWER PLAN

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

PIPE TYPES

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

NOTES
GENERAL

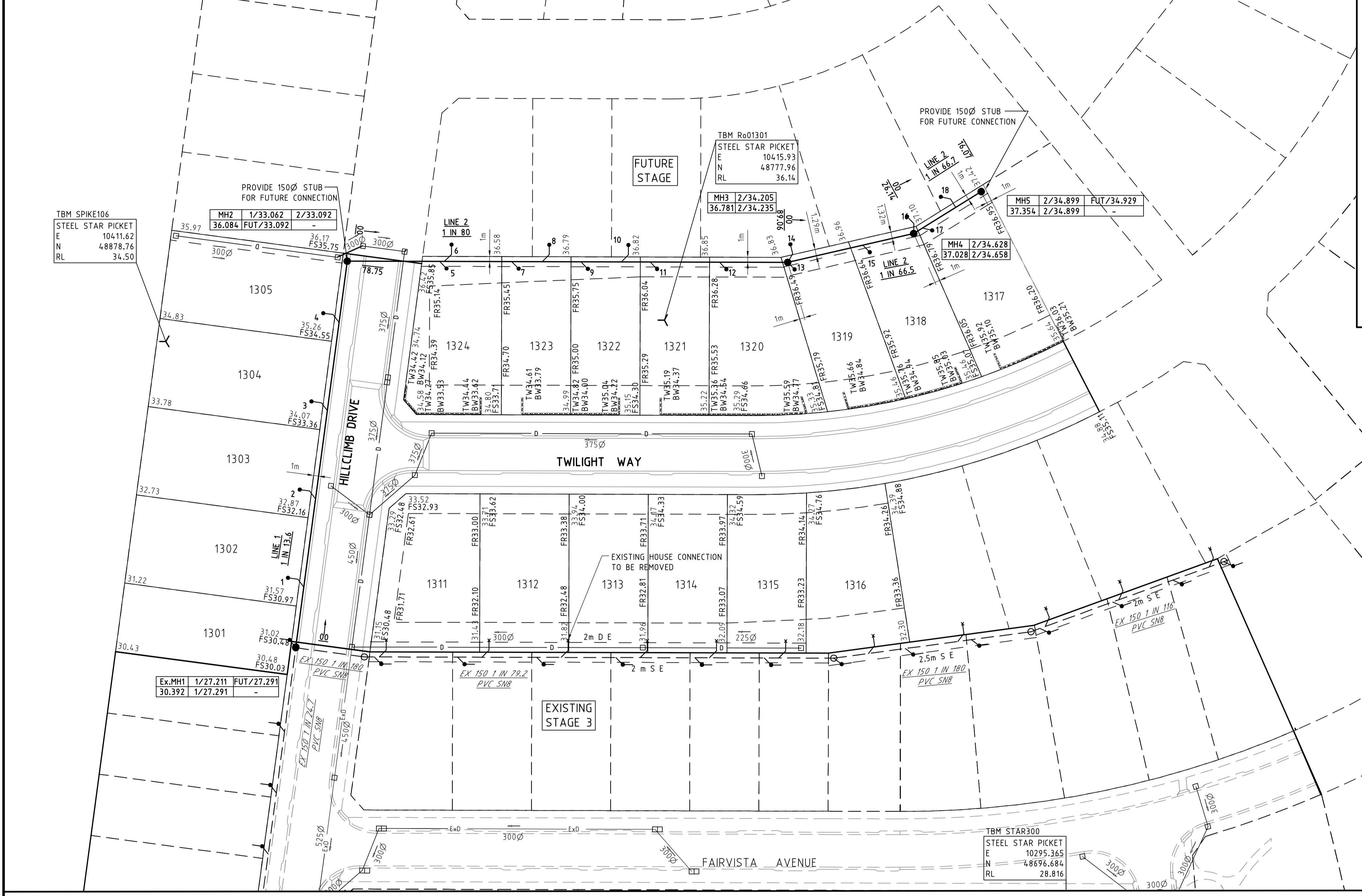
- SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE WATER SERVICES ASSOCIATION OF AUSTRALIA STANDARD CODES (WSA 02-2002 - WSA 03-2002) IN CONJUNCTION WITH BARWON WATER SUPPLEMENTS TO THE CODES.
- BARWON WATER AND THE PROJECT MANAGER TO BE NOTIFIED 7 CLEAR WORKING DAYS NOTICE PRIOR TO COMMENCEMENT OF 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.

SEWER

- THE CONTRACTOR SHALL CORE CUT ALL HOLES INTO EXISTING PRECAST SEWER MAINTENANCE HOLES.
- ALL FSL'S SHOWN IN MAINTENANCE HOLES INFORMATION BOX ARE TOP OF MANHOLE LEVELS.
- ALL END OF LINES NOMINATED AS TMS ARE TO HAVE A TERMINAL MAINTENANCE SHAFT AS PER BARWON WATER STANDARD DRAWING 70095.
- WHERE FUTURE SEWER MAINS ARE INDICATED A 150mm ACCESS COUPLING AND CAP ARE TO BE PLACED OUT OF THE MANHOLE.
- WARNING, ENTRY INTO ANY MAINTENANCE HOLE IS CONTROLLED BY CONFINED SPACE REGULATIONS BEING "OCCUPATIONAL HEALTH & SAFETY (CONFINED SPACES) REGULATIONS 1996, STATUTORY RULE NO 148/1996 AND A.S. 2865 - 1995 SAFE WORKING IN CONFINED SPACES". PERSONS) REQUIRING ACCESS TO ANY BARWON WATER MANHOLE AS PART OF THE DEVELOPER WORKS PROCESS MUST CONTACT THE SENIOR QUALITY AUDITOR PH (03) 5226 9204 FOR ANY REQUIREMENTS.
- DURING THE CONSTRUCTION OF WORKS TO GAIN ACCESS TO A BARWON WATER MANHOLE THE PROCEDURE AS OUTLINED IN THE ATTACHED FLOWCHART IS TO BE FOLLOWED, AND "THE CONFINED SPACE ENTRY PERMIT APPLICATION FORM" (ALSO ATTACHED) IS TO BE COMPLETED AND LODGED WITH THE SENIOR QUALITY AUDITOR 3 (THREE) CLEAR WORKING DAYS PRIOR TO ENTRY.
- ALL SEWERS ARE TO BE PVC-SN8
- DETECTOR TAPE TO BE PLACED OVER SEWERS AT ALL ROAD CROSSINGS AND ALL CURVED SEWER MAINS.
- BORED SECTIONS OF SEWER TO BE CCTV INSPECTED IN ACCORDANCE WITH BARWON WATER'S LAND DEVELOPMENT MANUAL AND SUBMITTED TO BARWON WATER FOR ACCEPTANCE.
- ALL MANHOLE JOINTS, INCLUDING DROPS TO BE SEALED WITH FERROPRE OR APPROVED EQUIVALENT.
- ALL EXCAVATIONS AROUND A NEWLY CONSTRUCTED MANHOLE TO BE BACKFILLED WITH 3% CEMENT STABILISED SAND.

SPECIAL

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



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.

WORKS SHALL NOT COMMENCE UNTIL PLANS ARE SIGNED BY BARWON WATER

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

ROAD NAME	SERVICES OFFSET SCHEDULE							
	GAS		WATER		ELECTRICITY		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
HILLCLIMB DRIVE	SOUTH	2.10	SOUTH	2.60	NORTH	2.30	NORTH	1.70
TWILIGHT WAY	EAST	2.10	EAST	2.70	WEST	2.30	WEST	1.70

NEW SEWER MAINS		
SIZE	TYPE	LENGTH
150mm	PVC SN8	221m

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	

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
STAR8	10252.574	48899.962	24.650	STEEL STAR PICKET	MOOLAP
STAR202	10128.400	48684.879	20.077	STEEL STAR PICKET	MOOLAP
STAR300	10295.365	48696.684	28.816	STEEL STAR PICKET	MOOLAP

REVISION	DATE	DESIGN	APPD
B AMENDMENTS	02.03.11	AP/AP	JG
A ISSUED TO BARWON WATER FOR APPROVAL	25.01.11	AP/AP	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
 A.Perkins
 Drawn
 A.Perkins
 Checked
 C. Birckett
 Authorised
 J. Golden
 Date
 November 2010

Scale @ A1
 1:500

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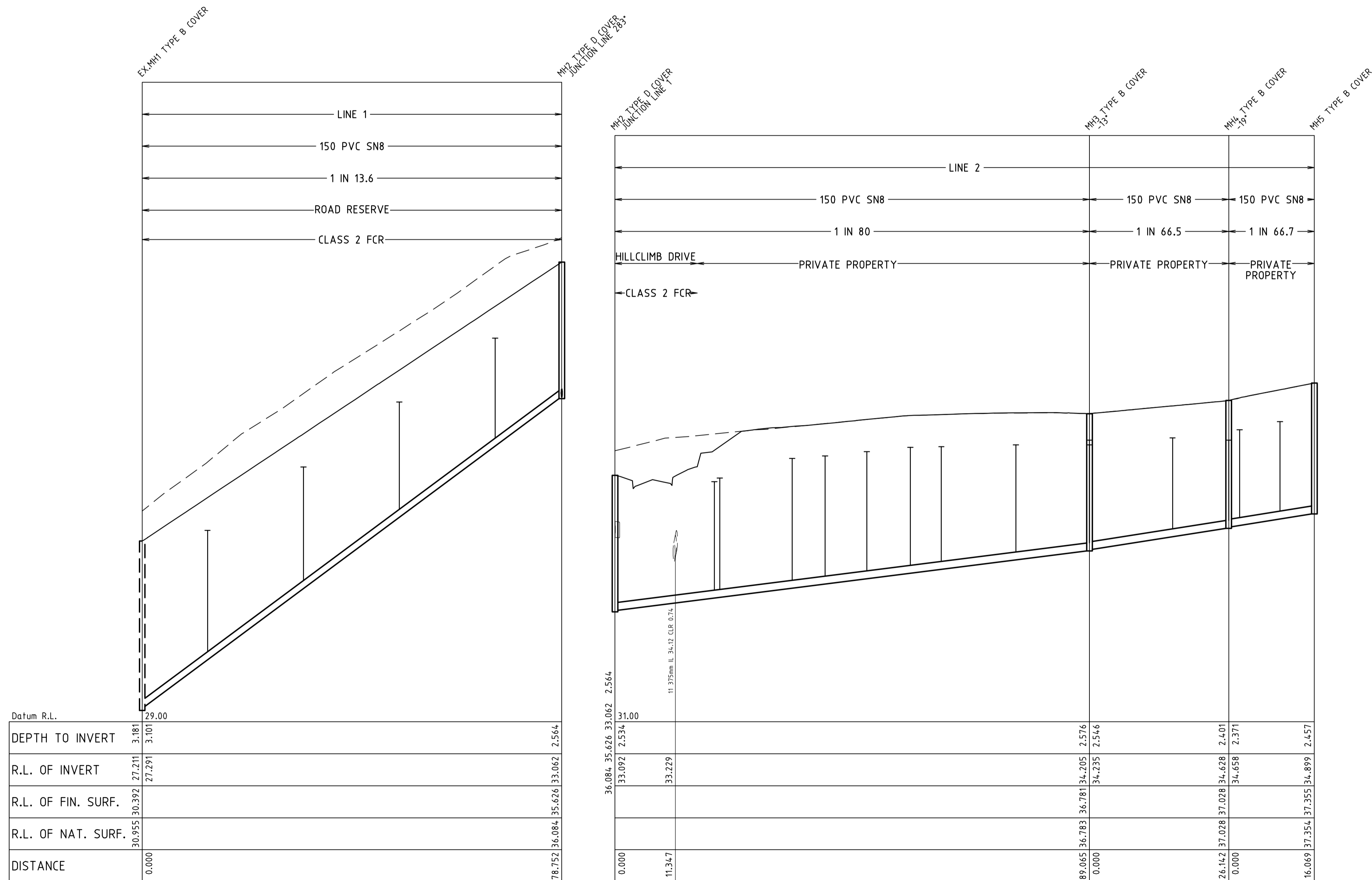
Barwon Region Water Authority
 Barwon Water No. L006759
 Estuary
 Stage 13A
 Sewer Detail Plan

Drawing No. 0250EHL-13A-51 Rev B
 Sheet No. 1 of 2

Approved for Construction

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LINE NO.	MANHOLE NO.	HC NO.	LOT NAME	CONNECTION TYPE	CHAINAGE	IL SEWER	IL BRANCH	BRANCH DEPTH
1	Ex. MH1	1	Lot 1302	A Special	12.26	28.16	30.59	2.43
1	Ex. MH1	2	Lot 1303	A Special	30.26	29.50	31.78	2.28
1	Ex. MH1	3	Lot 1304	A Special	48.26	30.84	33.00	2.16
1	Ex. MH1	4	Lot 1305	A Special	66.26	32.17	34.20	2.02
2	MH2	5	Lot 1324	B	18.67	33.32	35.51	2.19
2	MH2	6	Lot 1325	A Special	19.67	33.33	35.57	2.24
2	MH2	7	Lot 1323	B	33.26	33.51	35.94	2.44
2	MH2	8	Lot 1326	A Special	39.43	33.58	35.99	2.41
2	MH2	9	Lot 1322	B	47.26	33.68	36.07	2.39
2	MH2	10	Lot 1327	A Special	55.43	33.79	36.15	2.36
2	MH2	11	Lot 1321	B	61.26	33.86	36.16	2.30
2	MH2	12	Lot 1320	B	75.26	34.04	36.19	2.16
2	MH3	13	Lot 1319	B	0.00	34.21	36.28	2.08
2	MH3	14	Lot 1328	A Special	0.00	34.21	36.20	1.99
2	MH3	15	Lot 1318	B	0.00	34.47	36.33	1.86
2	MH4	16	Lot 1329	A Special	0.00	34.63	36.28	1.66
2	MH4	17	Lot 1317	B	2.04	34.68	36.48	1.80
2	MH4	18	Lot 1330	A Special	9.63	34.80	36.63	1.83



	0.000	78.752	36.084	35.626	33.062	2.564
Datum R.L.		29.00				
DEPTH TO INVERT	3.181	3.101				
R.L. OF INVERT	27.211	27.291				
R.L. OF FIN. SURF.			33.062	33.062	33.062	33.062
R.L. OF NAT. SURF.	30.955	30.392				
DISTANCE	0.000					

	0.000	11.347	36.084	35.626	33.062	2.564	31.00	33.072	2.534	33.229	36.084	35.626	33.062	2.576	34.235	2.546	26.142	37.028	37.028	34.628	2.401	34.658	2.371	16.069	37.354	37.355	34.899	2.457	
DEPTH TO INVERT																													
R.L. OF INVERT																													
R.L. OF FIN. SURF.																													
R.L. OF NAT. SURF.																													
DISTANCE																													

NOTE
 TM SPECIAL CONNECTIONS TO BE
 CONFIGURED TO PROVIDE CLEARANCE
 TO STORMWATER

WORKS SHALL NOT COMMENCE UNTIL
 PLANS ARE SIGNED BY BARWON WATER

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

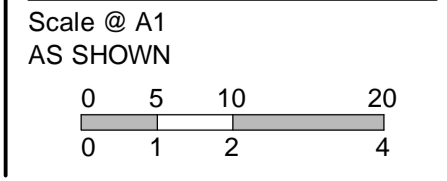
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REV	DATE	DESCRIPTION	APP'D
B	02.03.11	AMENDMENTS	AP/AP JG
A	25.01.11	ISSUED TO BARWON WATER FOR APPROVAL	AP/AP JG

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 150mm unless otherwise shown.

Designed
A. Perkins
 Drawn
A. Perkins
 Checked
C. Birkett
 Authorised
J. Golden
 Date
December 2010



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Barwon Region Water Authority
 Barwon Water No. L006759
 Estuary
 Stage 13A
 Sewer Longitudinal Sections

Drawing No. **0250EHL-13A-52** Rev **B**
 Sheet No. 2 of 2

Approved for Construction



NEW WATER MAINS		
SIZE	TYPE	LENGTH
150Ø	PVC (CLASS - 16)	219.80

THRUST RESTRAINT SCHEDULE				
LOCATION	TYPE	AREA (m²)	NUMBER	
A 150Ø x 150Ø TEE	CONCRETE	0.66	1	
B 150Ø x 11.25" BEND	CONCRETE	0.13	1	

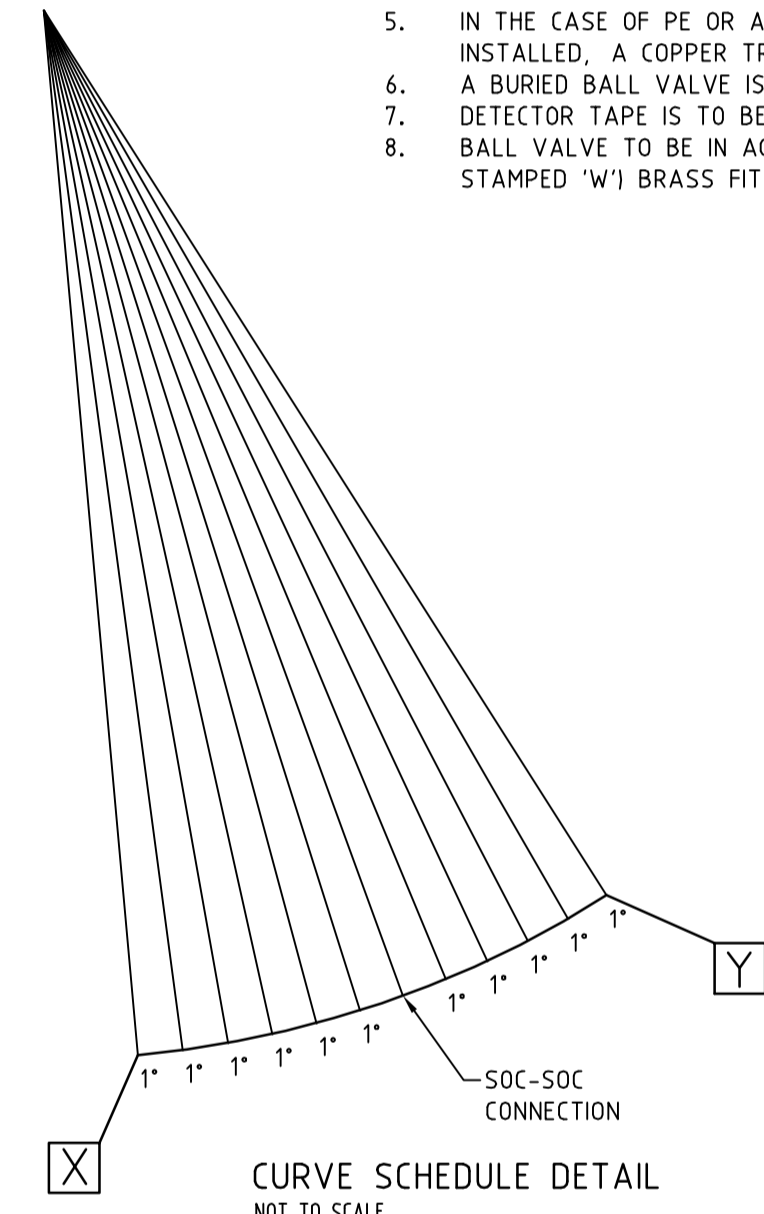
SURVEY CONTROL MGA 94 ZONE 55					
PM	EASTING	NORTHING	RL	DESCRIPTION	PARISH
MOOLAP PM 321	27704.0	57694.80	9.436	BRASS PLAQUE IN CONCRETE	MOOLAP
MOOLAP PM 137	278263.348	576952.155	-	BRASS PLAQUE IN CONCRETE	MOOLAP
MOOLAP PM 69	277138.741	5770359.313	8.503	BRASS PLAQUE IN CONCRETE	MOOLAP

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
STAR8	10252.574	48899.962	24.650	STEEL STAR PICKET	MOOLAP
STAR202	10128.400	48684.879	20.077	STEEL STAR PICKET	MOOLAP
STAR300	10295.365	48696.684	28.816	STEEL STAR PICKET	MOOLAP

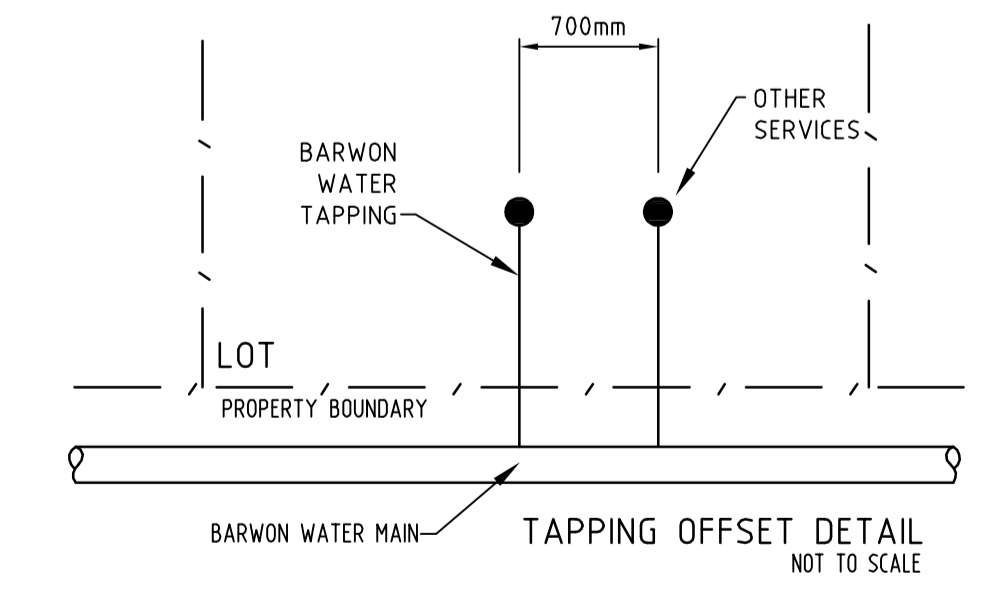
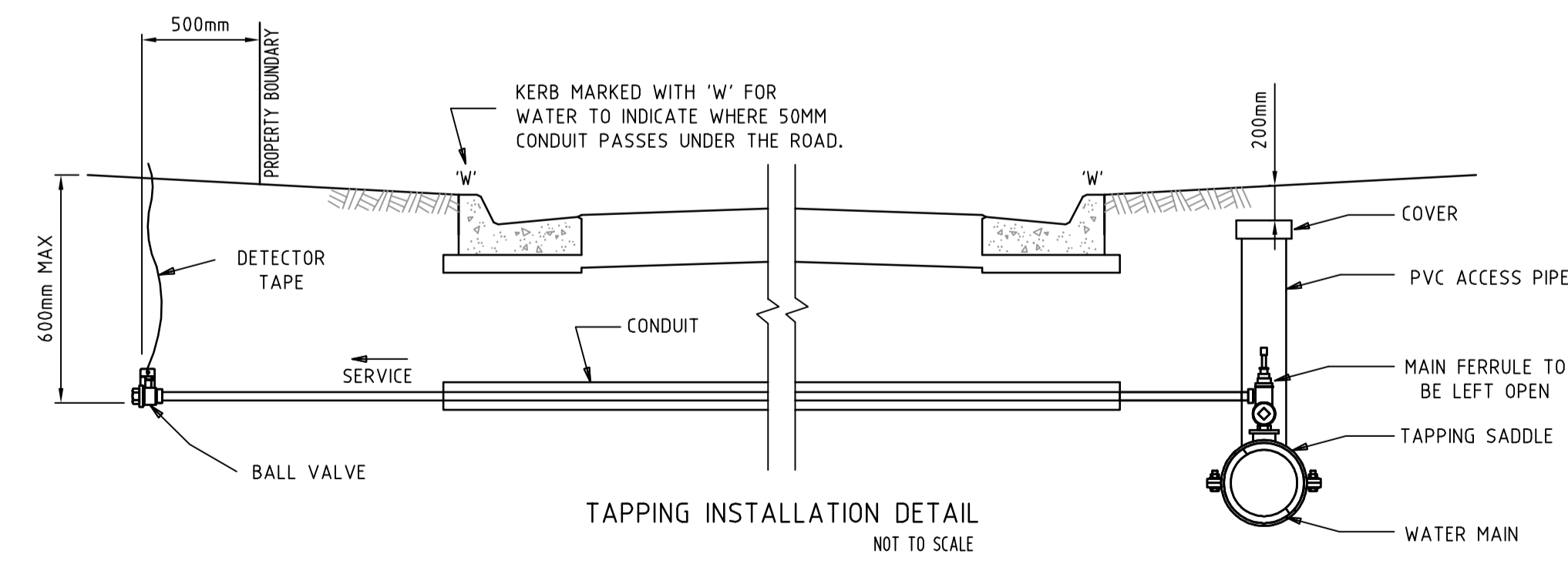
CURVE	RADIUS (m)	PIPE LENGTH (m)	NUMBER OF PIPES	NUMBER OF 1' DEFLECTIONS	No. Soc-SOC CONNECTIONS	BEND REQ'D 11.25'	BEND REQ'D 22.5'	BEND REQ'D 45'
X - Y	138.7	5.8	11	11	2	-	-	-

- 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 'W1' BRASS FITTING WITH STAINLESS STEEL BALL).



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

LEGEND - WATER PLAN		PIPE TYPES	
□	STORMWATER DRAIN & PIT	— O/H E	EXISTING ELECTRICITY (OVERHEAD)
—	WATER MAIN	— Ex G	EXISTING GAS
—	CHANGE OF PIPE SIZE	— Ex T	EXISTING TELSTRA
—	MAINS NOT CONNECTED	— Ex W	EXISTING WATER
—	MAINS IN CONDUIT	— Ex D	EXISTING STORMWATER DRAIN
—	VALVE	—	EXISTING SURFACE LEVEL
—	NON RETURN VALVE	—	FINISHED BUILDING LINE LEVEL
—	FIRE PLUG	—	FINISHED RIDGE LINE LEVEL
—	DEAD END CAP	—	TEMPORARY BENCH MARK
— Ex E	EXISTING ELECTRICITY (UNDERGROUND)	—	SWAB DIRECTION
—		AC	ASBESTOS CEMENT
		CICL	CAST IRON CEMENT LINED
		DICL	DUCTILE CEMENT LINED
		MSCL	MILD STEEL CEMENT LINED
		PVC	POLYVINYL CHLORIDE
		PE	POLYETHYLENE (AS SPECIFIED)
		RC	REINFORCED CONCRETE
		VC	VITREOUS CLAY



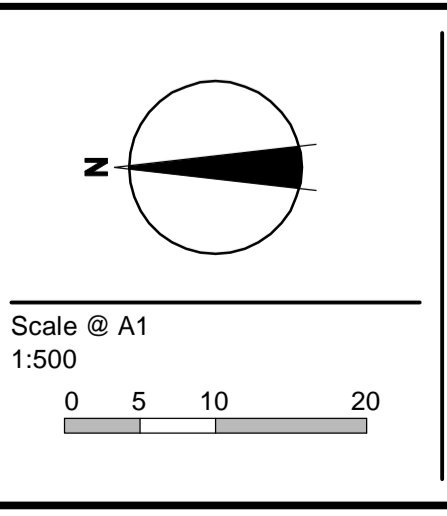
WORKS SHALL NOT COMMENCE UNTIL PLANS ARE SIGNED BY BARWON WATER
 ACCEPTED BY BARWON WATER DEVELOPMENT SERVICES CO-ORDINATOR DEVELOPMENT & CONSERVATION

REVISION	DATE	DESIGN	APP'D
B AMENDMENTS	02.03.11	AP/AP	JG
A ISSUED TO BARWON WATER FOR APPROVAL	25.01.11	AP/AP	JG

Principal
 Leopold Property Developments Pty Ltd
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Designed
 A.Perkins
 Drawn
 A.Perkins
 Checked
 C. Birkett
 Authorised
 J. Golden
 Date
 January 2011



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Barwon Region Water Authority
 Barwon Water No. TBA
 Stage 13A
 Water Detail Plan
 Drawing No. 0250EHL-13A-61 Rev B
 Sheet No. 1 of 1
 Approved for Construction