



● Subdivision Design ● Civil Engineering ● Town Planning ● Project Management

CivilTech Consulting Engineers  
Ph. 0431 065 645  
PO BOX 4285  
Goonellabah NSW 2480

### LOCALITY PLAN:



# BAYSIDE BRUNSWICK

## 126 Lot Residential Subdivision

### 15 Torakina Road, Brunswick Heads

### Lot 13 DP 1251383

for  
**BAYSIDE BRUNSWICK Pty Ltd**

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# CIVIL ENGINEERING

## DEVELOPMENT APPLICATION

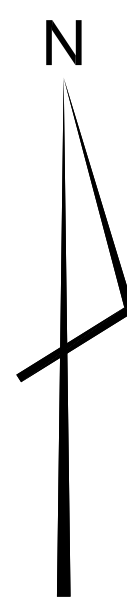
**INDEX SHEET**  
**1133-DA1D**

February 2023





SCALE 1:1,000 AT A1, 1:2,000 AT A3



LEGEND

- SUBJECT SITE BOUNDARY
- PROPOSED LOT BOUNDARY

PLAN FOR DA SUBMISSION ONLY. SITE LAYOUT, LOT NUMBERS AND ENGINEERING DETAILS SUBJECT TO DETAILED DESIGN & COUNCIL APPROVAL.

D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022
B	FOR RE-SUBMISSION	WF	WF	01.08.2022
A	FOR SUBMISSION	WF	WF	01.09.2021

Iss	Description	Des	Drw	Date	Appd
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**BAYSIDE BRUNSWICK Pty. Ltd.**  
**ENGINEERING PLANS FOR D.A.**  
**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

**SUBJECT SITE AERIAL OVERLAY**  
**EXISTING 0.25m CONTOURS**

Scale: 1:2,000 at A3 CAD file: 1133-DA2D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



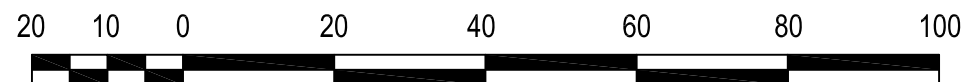
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**2 of 31**

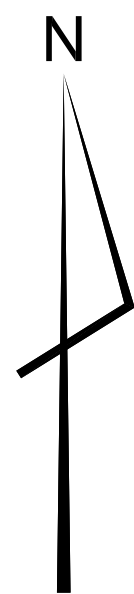
Dwg. No.  
**1133-DA2**

Issue  
**D**





SCALE 1:1,000 AT A1, 1:2,000 AT A3



### LEGEND

- SUBJECT SITE BOUNDARY
- 105  
450m<sup>2</sup>  
NEW LOT POLYGON & LOT AREA
- EASEMENT (PROPOSED TBC)
- PUBLIC ROAD PAVEMENT (PROPOSED)

LOT AREAS AND DIMENSIONS SUBJECT TO D.A. APPROVAL AND DETAILED DESIGN AS PART OF SUBDIVISION WORKS CERTIFICATE

D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022
B	FOR RE-SUBMISSION	WF	WF	01.08.2022
A	FOR SUBMISSION	WF	WF	01.09.2021

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**ENGINEERING PLANS FOR D.A.**  
**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

### SUBDIVISION LAYOUT PLAN

Scale: 1:2,000 at A3  
Datum: AHD

CAD file: 1133-DA3D.dwg

CivilCAD file: 1133-ENG



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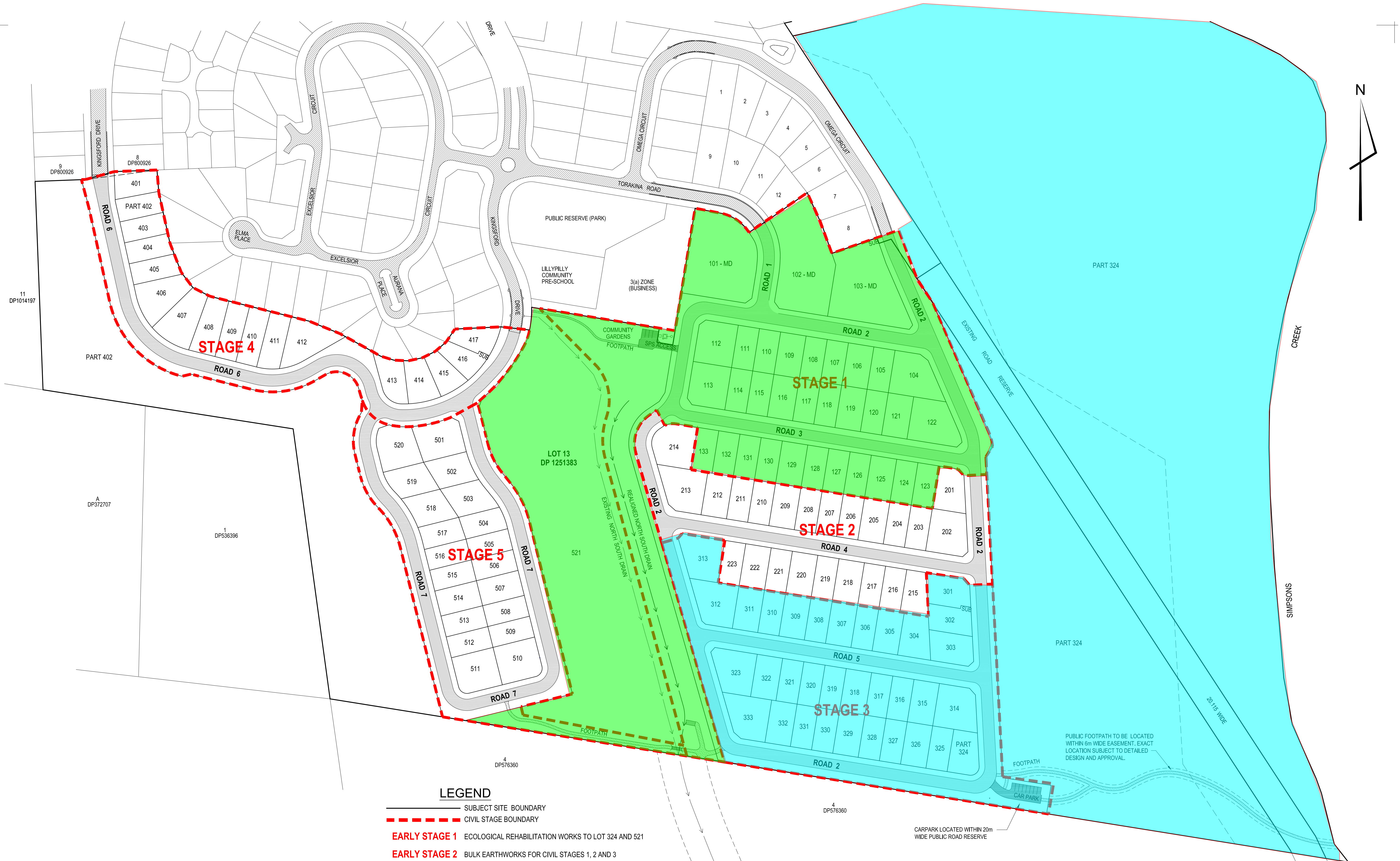
Dwg. No.

**1133-DA3**

Issue

**D**





**LEGEND**

SUBJECT SITE BOUNDARY

CIVIL STAGE BOUNDARY

EARLY STAGE 1

ECOLOGICAL REHABILITATION WORKS TO LOT 324 AND 521

EARLY STAGE 2

BULK EARTHWORKS FOR CIVIL STAGES 1, 2 AND 3

CIVIL STAGE 1

30 LOTS + 3 M.D. LOTS

CIVIL STAGE 2

23 LOTS

CIVIL STAGE 3

33 LOTS

CIVIL STAGE 4

17 LOTS

CIVIL STAGE 5

20 LOTS + LOT 521

EASTERN PRECINCT EARTHWORKS & N-S DRAIN TO BE CONSTRUCTED IN EARLY STAGE 2

WESTERN PRECINCT EARTHWORKS TO BE CONSTRUCTED IN CIVIL STAGE 4 & 5

2010020406080100

SCALE 1:1,250 AT A1, 1:2,500 AT A3

D

FOR RE-SUBMISSION

WF

WF

10.02.2023

C

UPDATE LOT NUMBERS

WF

WF

16.11.2022

B

FOR RE-SUBMISSION

WF

WF

01.08.2022

A

FOR SUBMISSION

WF

WF

01.09.2021

Iss

Description

Des

Drw

Date

Appd

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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

**SUBDIVISION STAGING PLAN**

Scale: 1:2,500 at A3

CAD file: 1133-DA4D.dwg

Datum: AHD

CivilCAD file: 1133-ENG

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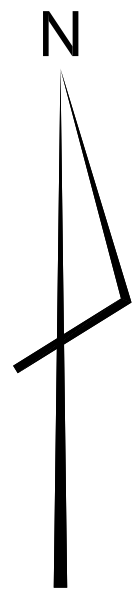
Dwg. No.  
**1133-DA4**

Issue  
**D**





SCALE 1:1,000 AT A1, 1:2,000 AT A3



### LEGEND

- SUBJECT SITE BOUNDARY
- EXISTING NORTH SOUTH DRAIN INVERT
- REALIGNED NORTH SOUTH DRAIN
- EXTENT OF EARTHWORKS
- CUT DEPTH
- FILL DEPTH

### EARTHWORKS VOLUMES

CUT	+ 8,048 m³
FILL	- 64,551 m³
TOPSOIL IMPORT (100mm)	+ 8,020 m³
ROAD PAVEMENT (425mm)	+ 9,590 m³
FILTER MEDIA	+ 3,520 m³
CLEAN SAND TO IMPORT	35,373 m³

PRELIMINARY EARTHWORK VOLUMES ONLY. NO ALLOWANCE HAS BEEN MADE FOR STRIPPING, COMPACTION, BULKING, UNSUITABLE OR TRENCHING EFFECTS.

EARTHWORKS VOLUMES AND EXTENT TO CONFIRMED BY DETAILED DESIGN AS PART OF SUBDIVISION WORKS CERTIFICATE APPLICATION.

D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022
B	FOR RE-SUBMISSION	WF	WF	01.08.2022
A	FOR SUBMISSION	WF	WF	01.09.2021

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ENGINEERING PLANS FOR D.A.  
126 LOT SUBDIVISION OF LOT 13 DP 1251383  
15 TORAKINA ROAD, BRUNSWICK HEADS

### EARTHWORKS CUT FILL PLAN

0.2m DESIGN CONTOURS

Scale: 1:2,000 at A3 CAD file: 1133-DA5D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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Dwg. No.

**1133-DA5**

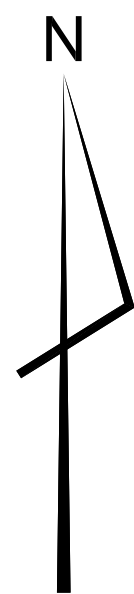
Issue

**D**



20 10 0 20 40 60 80 100

SCALE 1:1,000 AT A1, 1:2,000 AT A3



### LEGEND

- SUBJECT SITE BOUNDARY
- ROAD CENTRELINE
- ROAD PAVEMENT
- BIO-RETENTION SWALE
- LOCAL STREET TRAFFIC CALMING  
(SEE DETAIL ON 1133-DA12)
- BUS ROUTE TRAFFIC CALMING  
(SEE DETAIL ON 1133-DA12)
- 1.2m CONCRETE PEDESTRIAN FOOTPATH
- 2.0m GRAVEL PEDESTRIAN PATH
- EXTENT OF EARTHWORKS
- EXISTING NORTH SOUTH DRAIN INVERT
- REALIGNED NORTH SOUTH DRAIN

REFER TO CIVILTECH PLANS 1133-DA13 TO 1133-DA27 FOR ALL ROAD LONG SECTIONS, TYPICAL SECTIONS & CROSS SECTIONS

DETAILED DESIGN OF ROADWORKS & EARTHWORKS TO BE UNDERTAKEN AS PART OF SUBDIVISION WORKS CERTIFICATE APPLICATION.

Iss	Description	Des	Drw	Date	Appd
D	FOR RE-SUBMISSION	WF	WF	10.02.2023	
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022	
B	FOR RE-SUBMISSION	WF	WF	01.08.2022	
A	FOR SUBMISSION	WF	WF	01.09.2021	

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### ROADWORKS PLAN

#### 0.2m DESIGN CONTOURS

Scale: 1:2,000 at A3 CAD file: 1133-DA6D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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Dwg. No.

**1133-DA6**

Issue

**D**

CONCRETE CARPARK WITH 8 SPACES. 2.6m WIDE AND 5.4m LONG. FALL SOUTH TO BIO-RETENTION SWALE.



A  
DP372707

1  
DP536396

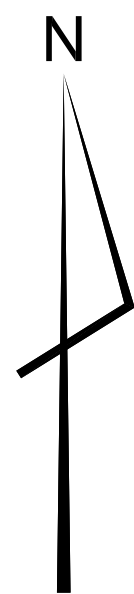
4  
DP576360

4  
DP576360



20 10 0 20 40 60 80 100

SCALE 1:1,000 AT A1, 1:2,000 AT A3



## LEGEND

- SUBJECT SITE BOUNDARY
- EXISTING NORTH SOUTH DRAIN INVERT
- REALIGNED NORTH SOUTH DRAIN
- FINISHED SURFACE LEVEL
- CROWNED ROAD WITH KERB & GUTTER
- ROAD WITH ONE-WAY CROSSFALL OUT TO BIO-RETENTION SWALE
- ROAD WITH ONE-WAY CROSSFALL AND KERB & GUTTER
- BIO-RETENTION SWALE - WBD TYPE 4 WITH NO UNDER DRAIN (REFER DA28)
- SEALED BIO-RETENTION BASIN WBD TYPE 2 (REFER DA28)
- TREE PIT BIO POD (REFER DETAILS ON SHEET DA31)
- 100 x 100 x 3 RHS DRAIN TO PIT OR KERB (EXTEND 1m INTO LOT, CAP AND MARK)

NO STORMWATER PIPES OR PIT NETWORKS TO BE CONSTRUCTED. ALL SURFACE STORMWATER FLOWS WILL DRAIN TO PERIMETER BIO-RETENTION SWALES VIA KERB & GUTTERS, DISH DRAINS & ONE-WAY CROSSFALL ROADS.

ROOF WATER FROM DWELLINGS TO BE DETAINED IN DETENTION TANKS BEFORE DRAINING TO RUBBLE INFILTRATION PITS. PITS THAT SURCHARGE IN LARGE EVENTS WILL BE DRAINED TO KERB VIA RHS PIPES. ALL LOTS TO BE PROVIDED WITH ROOFWATER CONNECTION POINT & VERGE CROSSING AS PER DETAILS ON DA31.

E	FOR RE-SUBMISSION	WF	WF	27.02.2023
D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022
B	FOR RE-SUBMISSION	WF	WF	01.08.2022
A	FOR SUBMISSION	WF	WF	01.09.2021

Iss	Description	Des	Drw	Date	Appd
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**ENGINEERING PLANS FOR D.A.**  
**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## STORMWATER MANAGEMENT PLAN

### 0.2m DESIGN CONTOURS

Scale: 1:2,000 at A3 CAD file: 1133-DA7E.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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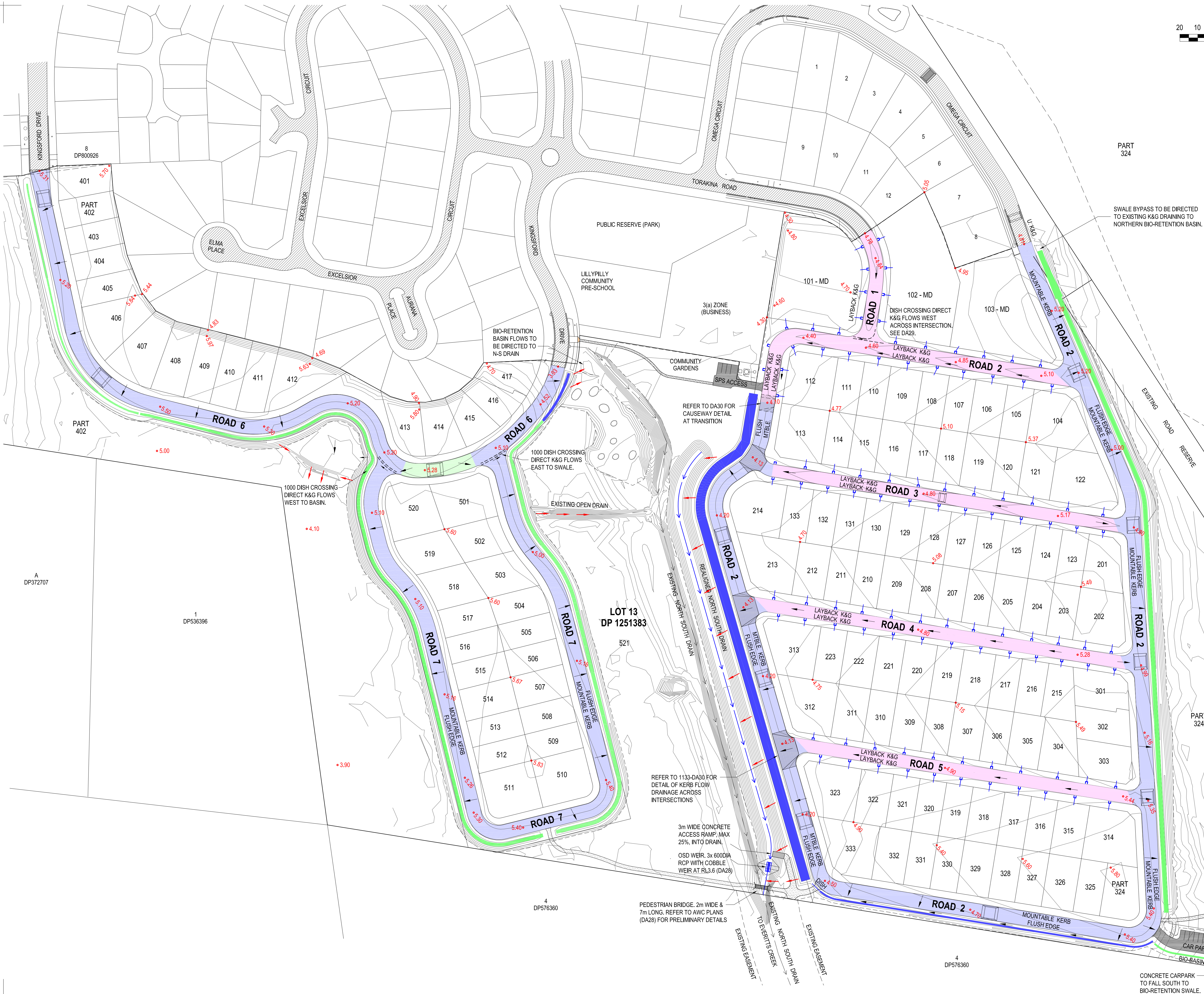
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Dwg. No.  
**1133-DA7**

Issue

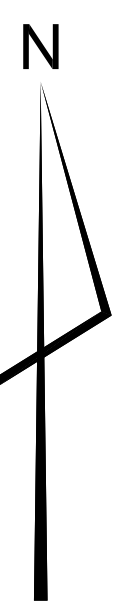
**E**







SCALE 1:1,000 AT A1, 1:2,000 AT A3



LEGEND

- SUBJECT SITE BOUNDARY
- STORMWATER CATCHMENT BOUNDARY, AREA & FLOW DIRECTION
- EXISTING N-S DRAIN INVERT
- REALIGNED NORTH SOUTH DRAIN
- BIO-RETENTION SWALE

Iss	Description	Des	Drw	Date	Appd
D	FOR RE-SUBMISSION	WF	WF	10.02.2023	
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022	
B	FOR RE-SUBMISSION	WF	WF	01.08.2022	
A	FOR SUBMISSION	WF	WF	01.09.2021	

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**STORMWATER CATCHMENT PLAN**  
**0.2m DESIGN CONTOURS**

Scale: 1:2,000 at A3 CAD file: 1133-DA8D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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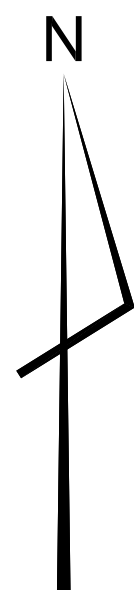
Dwg. No.  
**1133-DA8**

Issue  
**D**





SCALE 1:1,000 AT A1, 1:2,000 AT A3



### LEGEND

- SUBJECT SITE BOUNDARY
- W WATERMAIN (PROPOSED)
- WE WATERMAIN (EXISTING)
- E C SHARED ELEC & COMMS (PROPOSED)
- E O/H ELECTRICITY (TO BE RELOCATED)
- S GRAVITY SEWER (PROPOSED)
- LOW PRESSURE SEWER RM (PROPOSED)  
(BOUNDARY KITS TO EACH LPS LOT WITH PUMP, POD & TELEMETRY BY OTHERS)
- SE GRAVITY SEWER (EXISTING)
- INDICATIVE EASEMENT (PROPOSED)
- EXISTING NORTH SOUTH DRAIN INVERT
- REALIGNED NORTH SOUTH DRAIN

DETAILED DESIGN OF EASEMENTS, GRAVITY SEWER, LOW PRESSURE SEWER & SPS STORAGE TO BE UNDERTAKEN AS PART OF SUBDIVISION WORKS CERTIFICATE APPLICATION.

Iss	Description	Des	Drw	Date	Appd
D	FOR RE-SUBMISSION	WF	WF	10.02.2023	
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022	
B	FOR RE-SUBMISSION	WF	WF	01.08.2022	
A	FOR SUBMISSION	WF	WF	19.08.2021	

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**15 TORAKINA ROAD, BRUNSWICK HEADS**

### GRAVITY SEWER AND LPS CONCEPT PLAN

Scale: 1:2,000 at A3 CAD file: 1133-DA9D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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Dwg. No.

**1133-DA9**

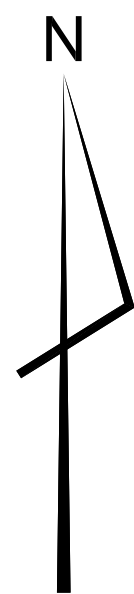
Issue

**D**



20 10 0 20 40 60 80 100

SCALE 1:1,000 AT A1, 1:2,000 AT A3



### LEGEND

- SUBJECT SITE BOUNDARY
- 1000 WATERMAIN (PROPOSED)
- HYDRANTS AT MAX. 60m SPACINGS
- WATERMAIN (EXISTING)
- WE
- SHARED ELEC & COMMS (PROPOSED)
- E
- O/H ELECTRICITY (TO BE RELOCATED)
- S
- GRAVITY SEWER (PROPOSED)
- SE
- GRAVITY SEWER (EXISTING)
- INDICATIVE EASEMENT (PROPOSED)
- EXISTING NORTH SOUTH DRAIN INVERT
- REALIGNED NORTH SOUTH DRAIN

DETAILED DESIGN OF RETICULATED WATER, ELECTRICAL, COMMUNICATIONS & STREET LIGHTS TO BE UNDERTAKEN AS PART OF SUBDIVISION WORKS CERTIFICATE APPLICATION.

D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022
B	FOR RE-SUBMISSION	WF	WF	01.08.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

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### WATER, ELEC & COMMS SCHEMATIC CONCEPT PLAN

Scale: 1:2,000 at A3 CAD file: 1133-DA10D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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**1133-DA10**  
Issue  
**D**





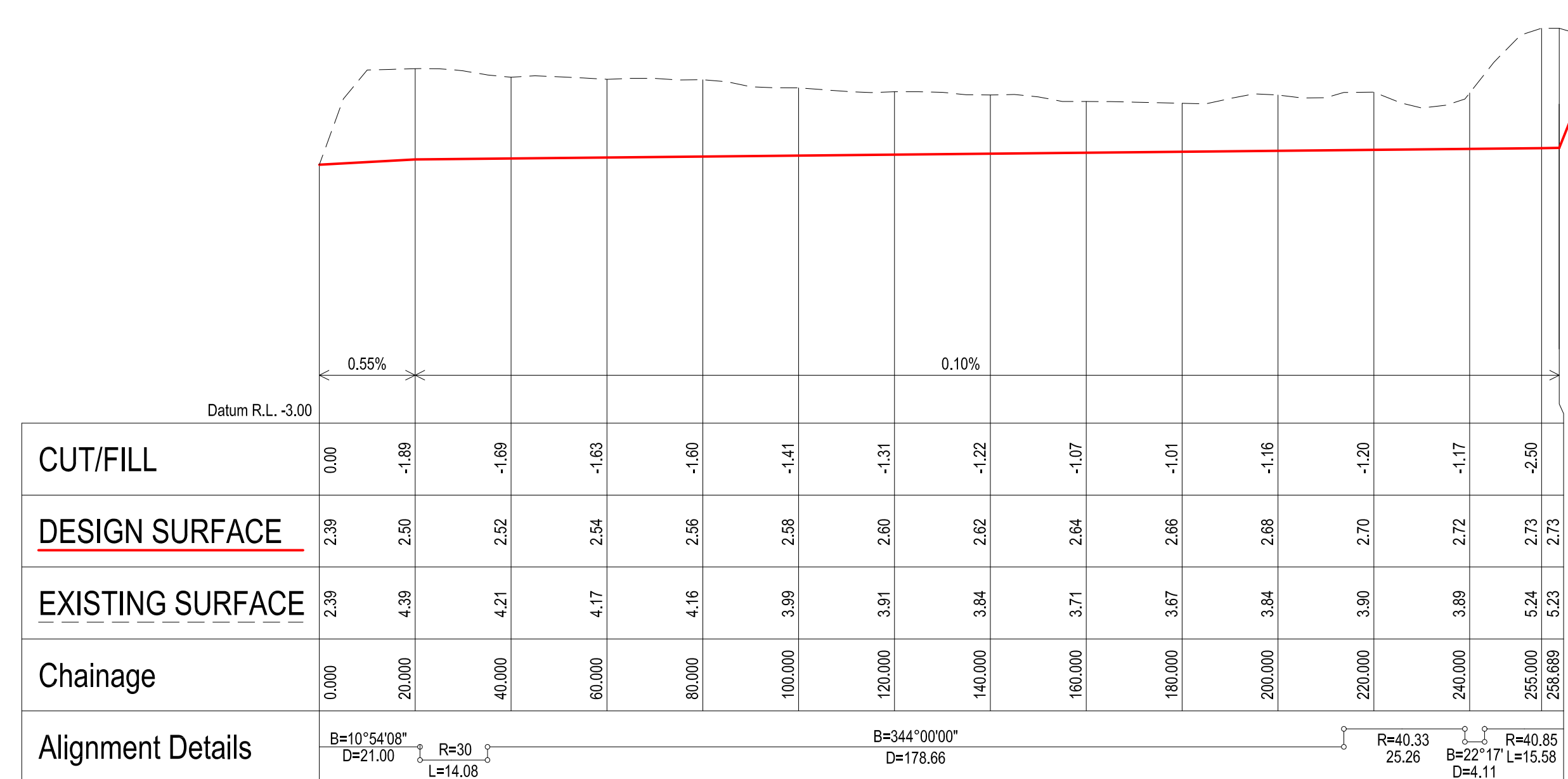
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		3.76	7.65
		3.74	8.65
		3.80	10.00
		3.80	14.65
		3.82	16.85
		4.10	24.85
		4.43	25.08
		4.44	40.00

[illegible][illegible]

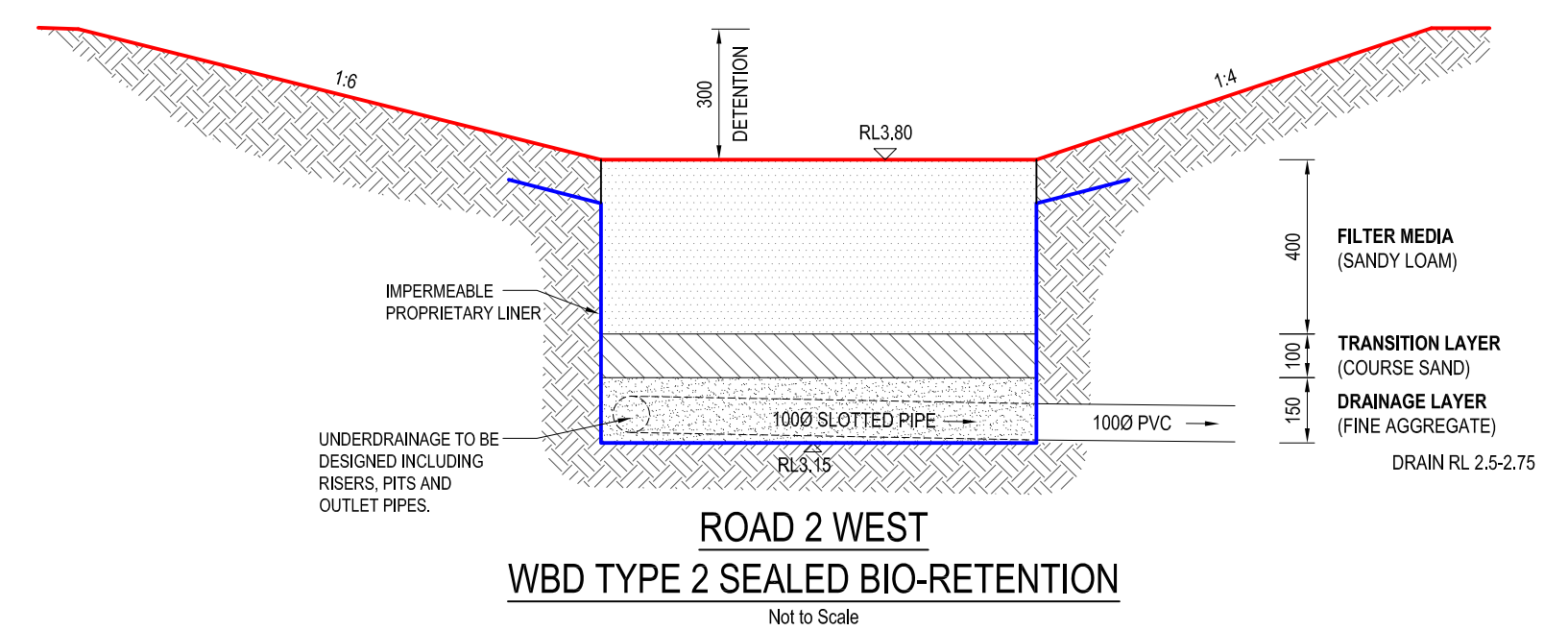
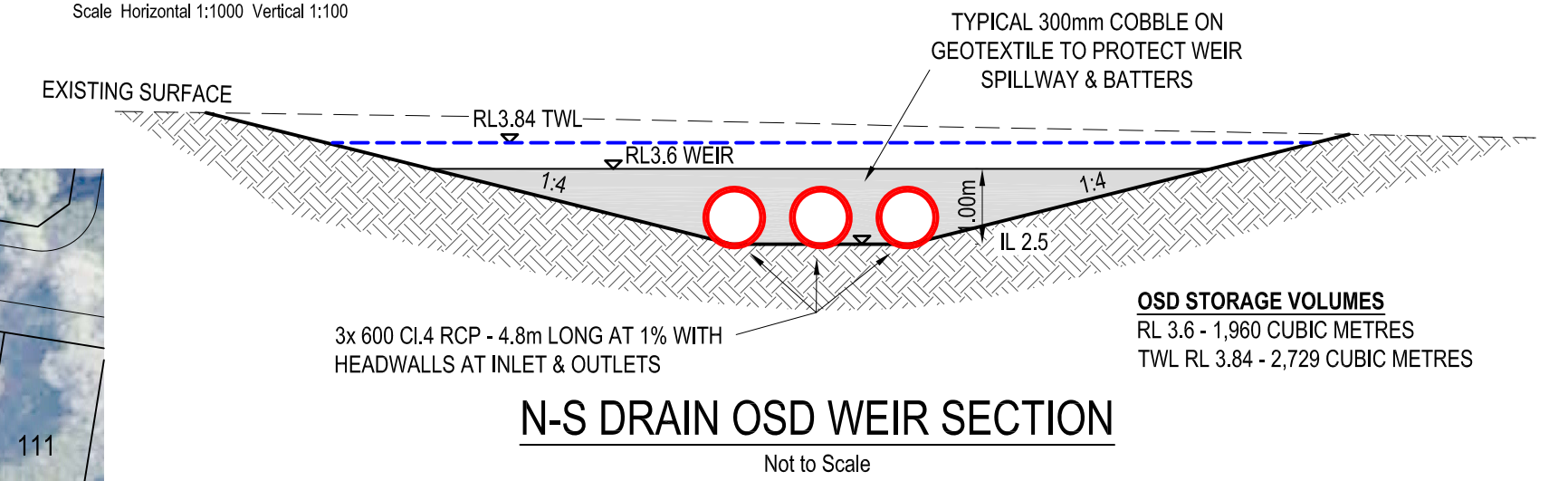
	HT. DIFF	DESIGN	EXISTING	OFFSETS
			4.04	20.00
		4.03	4.03	8.24
		2.53	4.17	2.25
		2.53	4.22	0.00
		2.53	4.25	1.37
		4.10	4.39	7.65
		4.10	4.43	8.65
		3.80	4.41	10.00
		3.80	4.40	14.85
		4.10	4.40	16.85
		4.30	4.45	24.85
		4.43	4.44	25.08
		4.64	4.52	40.00

HT. DIFF		-1.48		0.00	
DESIGN		2.45	2.45	4.42	
EXISTING	4.36	3.93	4.36	4.42	4.46
OFFSETS	20.00	2.25	0.00	8.97	40.00

10.000 N-S DRAIN CROSS SECTIONS  
Scale Horizontal 1:1000 Vertical 1:100



**N-S DRAIN LONG SECTION**  
Scale Horizontal 1:1000 Vertical 1:100



F	TYPE 2 SEALED SWALE ADDED	WF	WF	06.02.2023	
Iss	Description	Des	Drw	Date	Appd

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**BAYSIDE BRUNSWICK Pty. Ltd.**  
ENGINEERING PLANS FOR D.A.  
126 LOT SUBDIVISION OF LOT 13 DP 1251383  
15 TORAKINA ROAD, BRUNSWICK HEADS

## ADDITIONAL NORTH - SOUTH DRAIN PLAN & SECTIONS

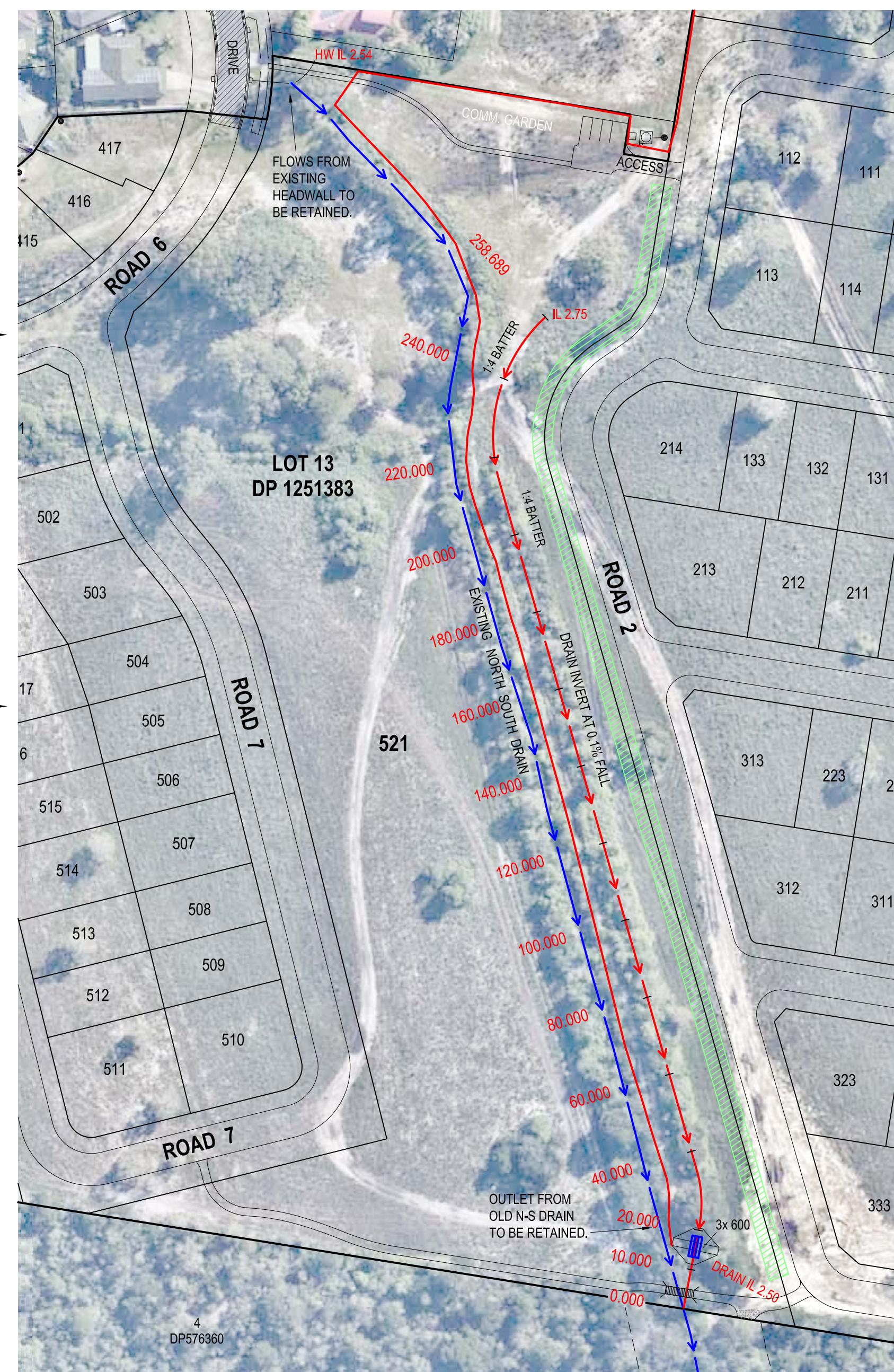
Scale: 1:2,000 at A3  
Datum: AHD



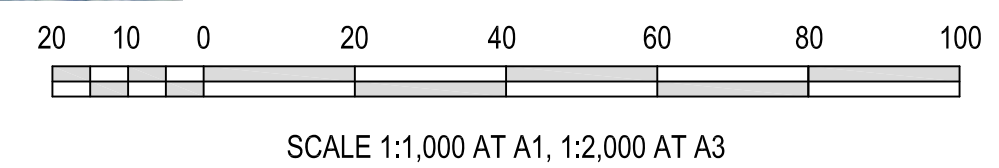
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Sheet No.  
**11 of 31**

Dwg. No. **1133-DA11**



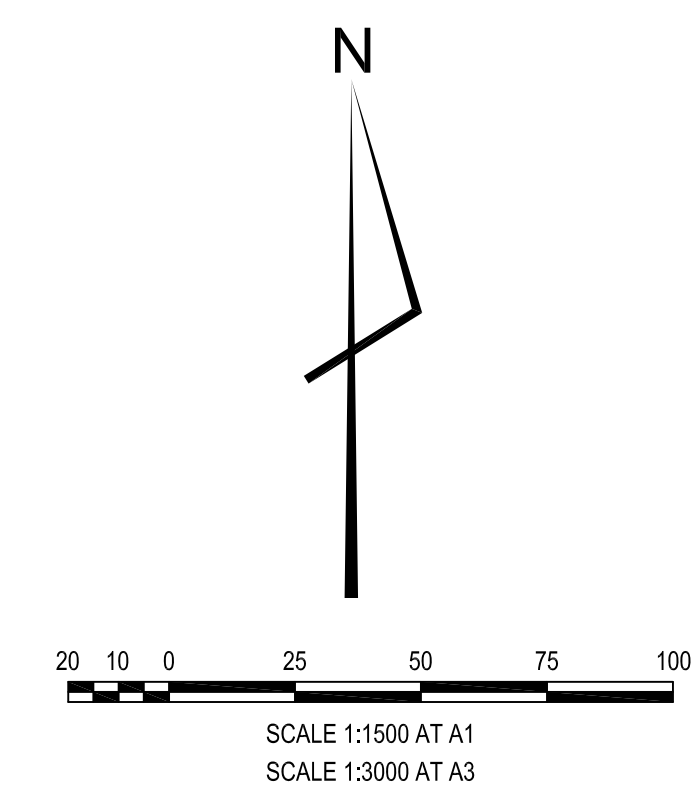
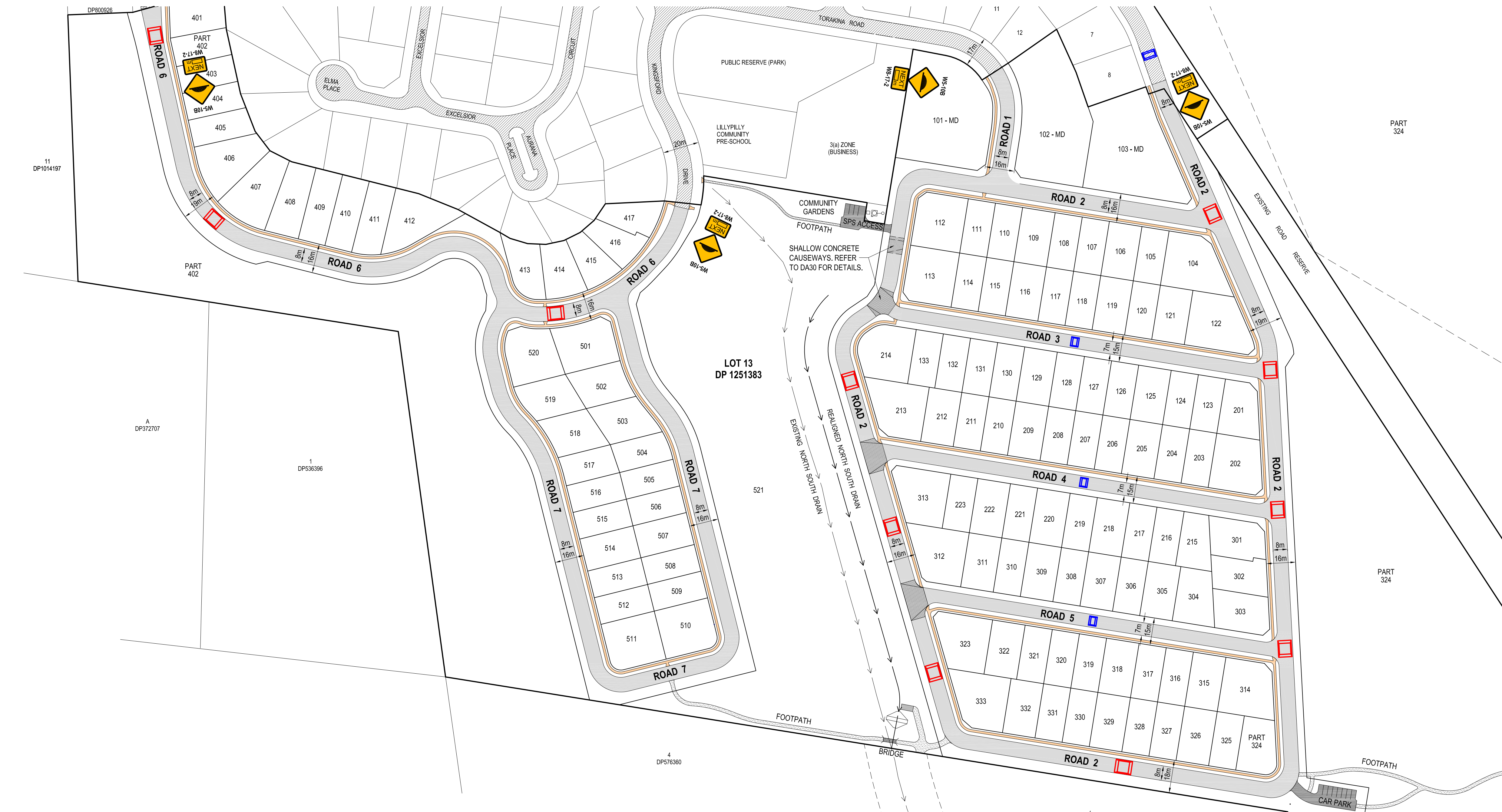
### N-S DRAIN PLAN



Issue

## F





- LEGEND**
- LOCAL STREET TRAFFIC CALMING
  - BUS ROUTE TRAFFIC CALMING
  - 1.2m CONCRETE PEDESTRIAN FOOTPATH
  - 2.0m GRAVEL PEDESTRIAN FOOTPATH
  - PUBLIC ROAD PAVEMENT (PROPOSED)
- SIGNAGE DETAILS TO BE CONFIRMED AS PART OF CONSTRUCTION CERTIFICATE APPLICATION.
- OLD PACIFIC HIGHWAY INTERSECTION UPGRADE DETAILS TO BE CONFIRMED AS PART OF SUBDIVISION WORKS CERTIFICATE APPLICATION IN ACCORDANCE WITH CONCEPT PLAN APPROVAL.

Iss	Description	Des	Drw	Date	Appd
D	FOR RE-SUBMISSION	WF	WF	10.02.2023	
C	UPDATE LOT NUMBERS	WF	WF	16.11.2022	
B	FOR RE-SUBMISSION	WF	WF	01.08.2022	
A	FOR SUBMISSION	WF	WF	01.08.2021	

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**ENGINEERING PLANS FOR D.A.**  
**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## TRAFFIC MANAGEMENT PLAN

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Datum: AHD CivilCAD file: 1133-ENG

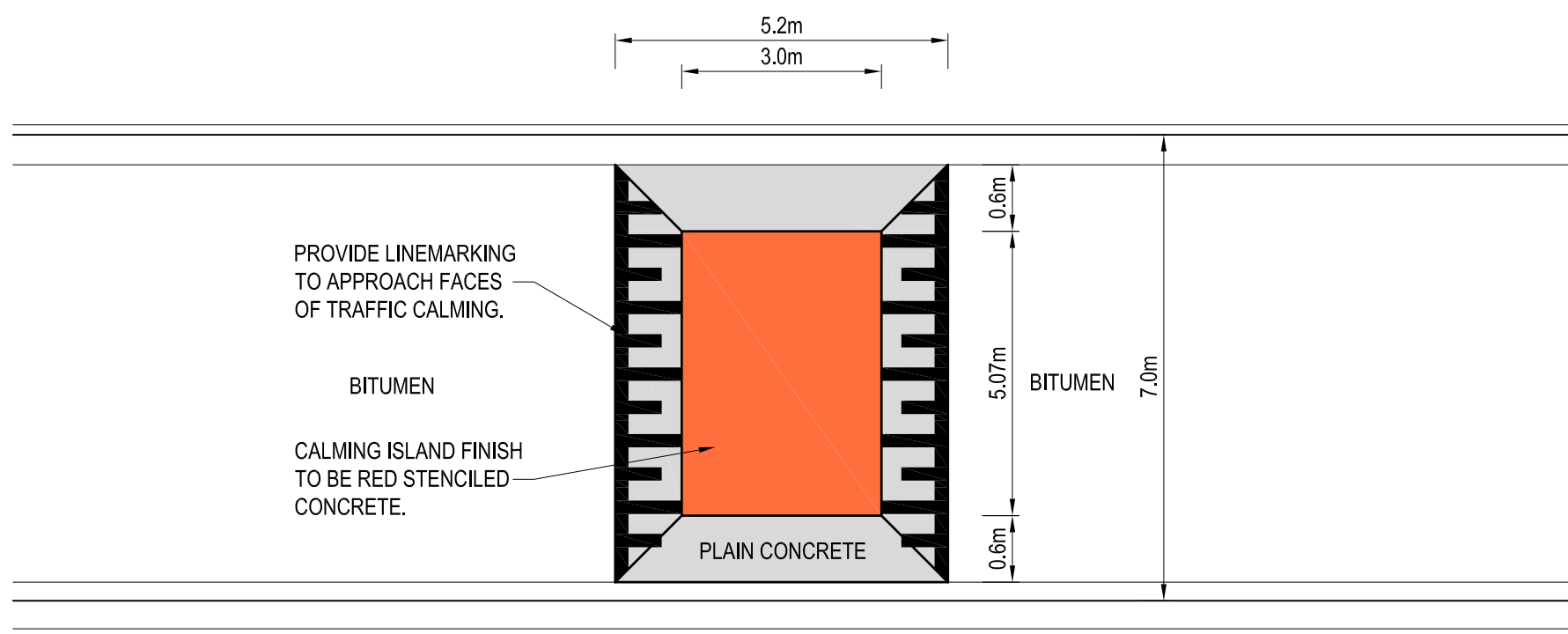


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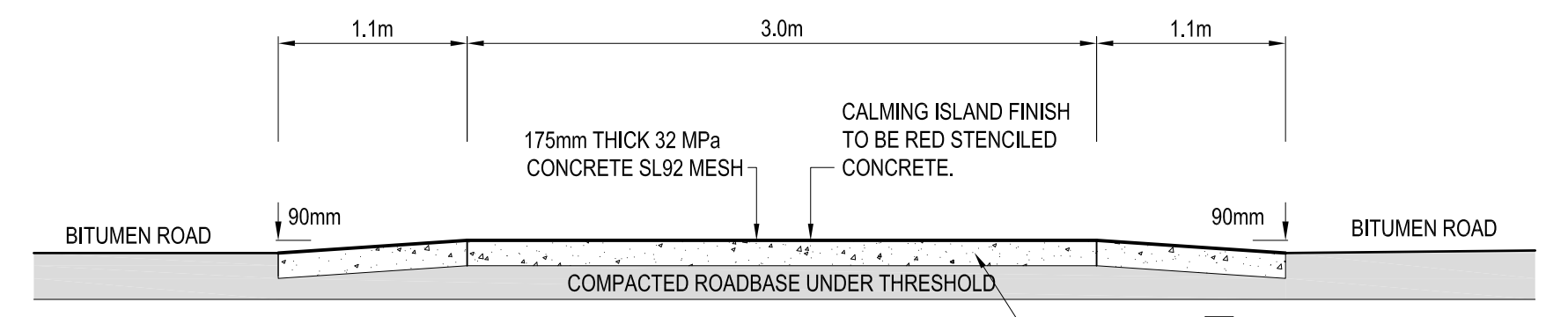
Sheet No.  
**12 of 31**

Dwg. No.  
**1133-DA12**

Issue  
**D**



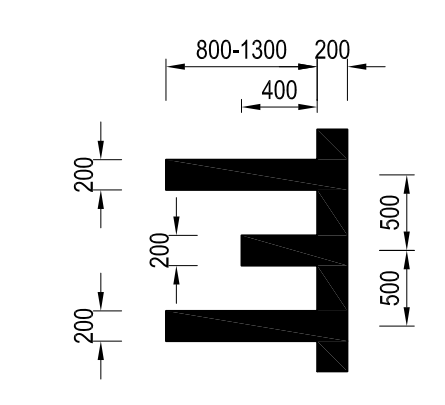
**LOCAL STREET - TRAFFIC CALMING - PLAN VIEW**  
Not to Scale



**LOCAL STREET - TRAFFIC CALMING - SECTION**  
Not to Scale

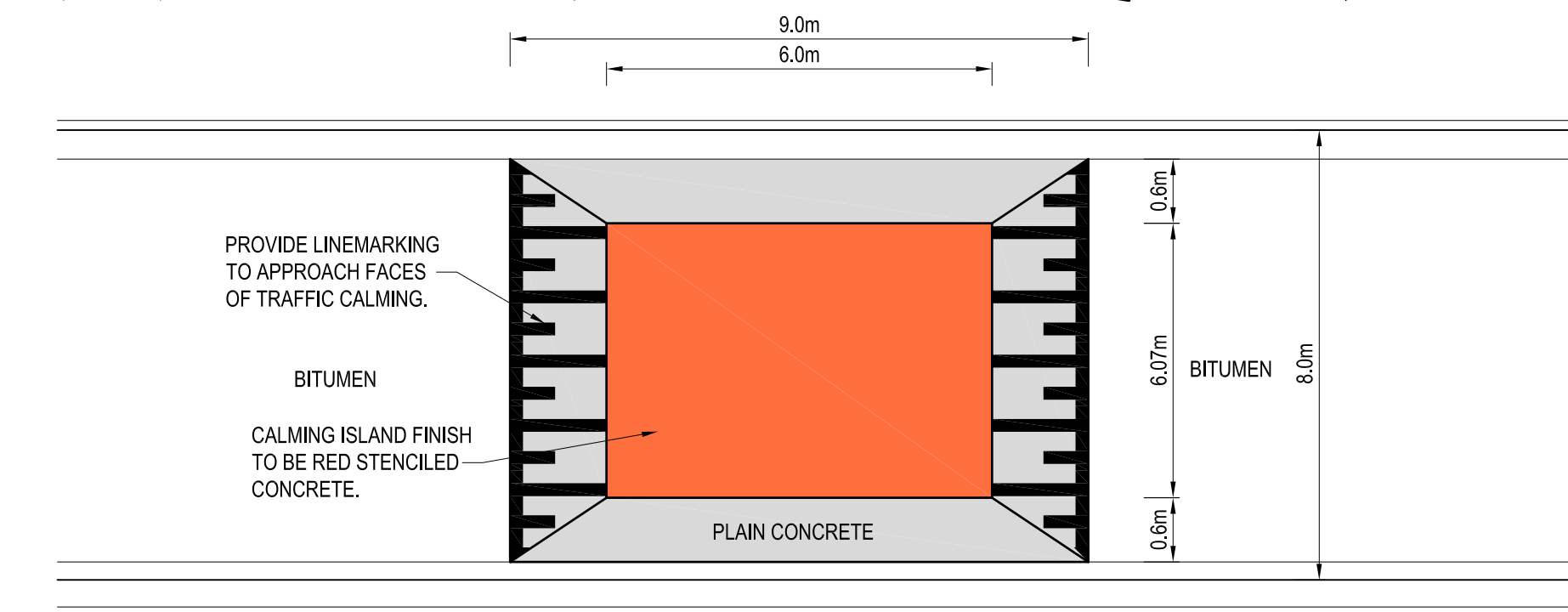
**NOTE:** CONCRETE CAN HAVE A CONSTANT THICKNESS OF 175mm WITH FORMED SUB BASE OR 325mm IN MIDDLE WITH FLAT SUB BASE.

**PAVEMENT DETAILS**  
175mm 32 MPa CONCRETE SL92 MESH  
150mm THICK SUBBASE TO 95% MODIFIED COMPACTION.  
SUBGRADE TO 98% STANDARD COMPACTION. (FILL SUBGRADES TO 100% STANDARD COMPACTION).

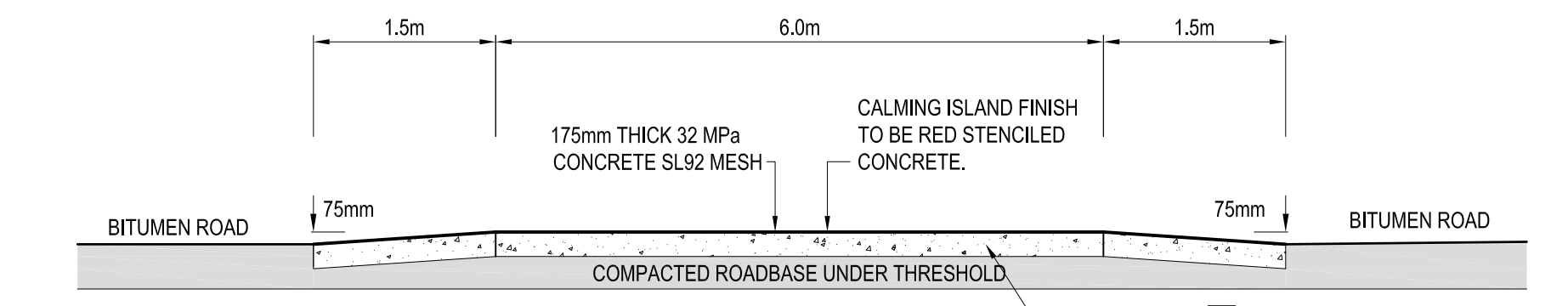


**LINE MARKING DETAIL**  
Not to Scale

LINE MARKING TO BE IN ACCORDANCE WITH AS1742.



**BUS ROUTE - TRAFFIC CALMING - PLAN VIEW**  
Not to Scale

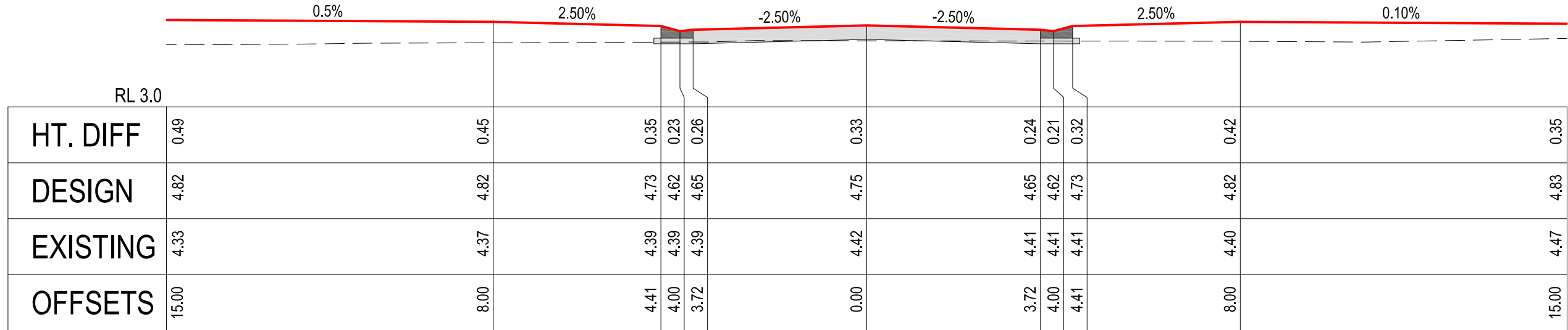


**BUS ROUTE - TRAFFIC CALMING - SECTION**  
Not to Scale

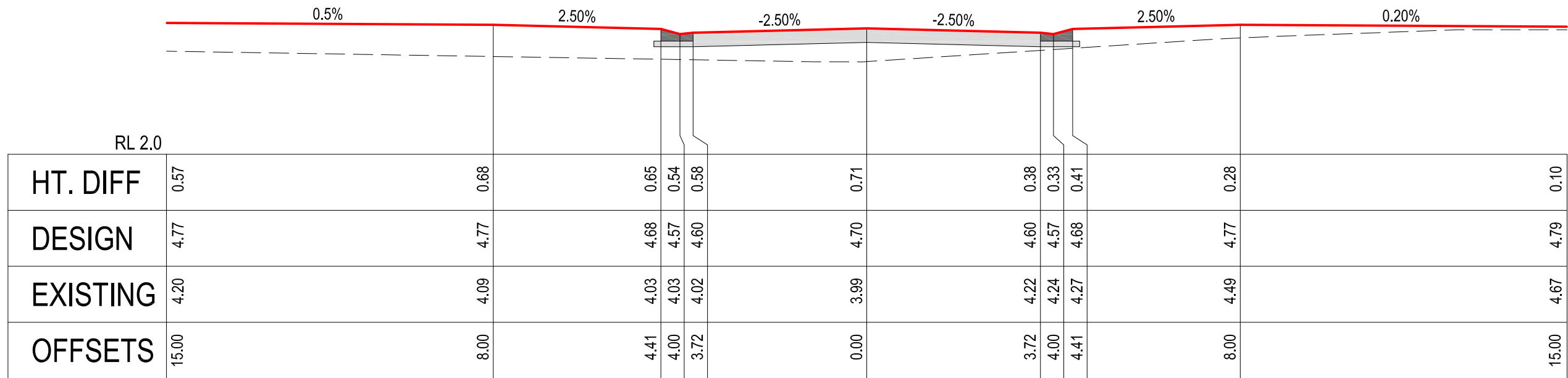
**NOTE:** CONCRETE CAN HAVE A CONSTANT THICKNESS OF 175mm WITH FORMED SUB BASE OR 325mm IN MIDDLE WITH FLAT SUB BASE.

**PAVEMENT DETAILS**  
175mm 32 MPa CONCRETE SL92 MESH  
150mm THICK SUBBASE TO 95% MODIFIED COMPACTION.  
SUBGRADE TO 98% STANDARD COMPACTION. (FILL SUBGRADES TO 100% STANDARD COMPACTION).

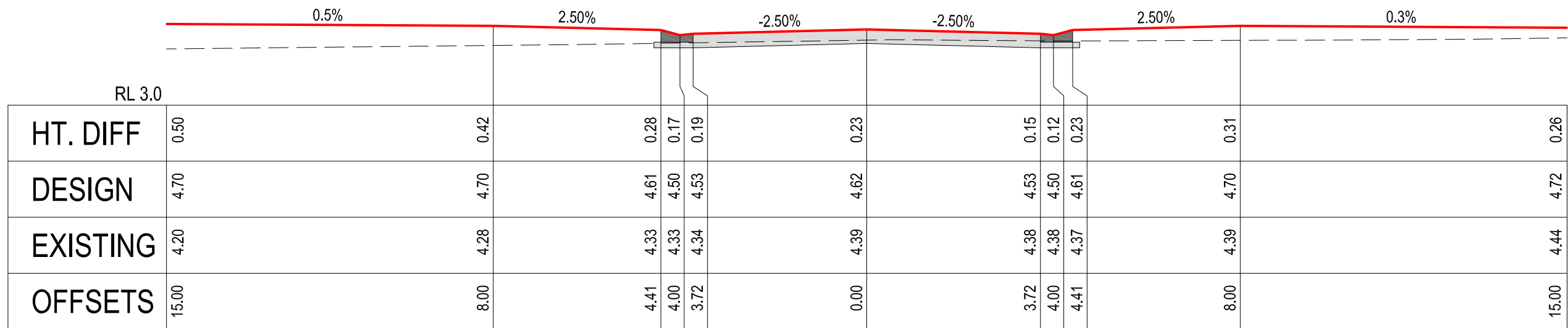




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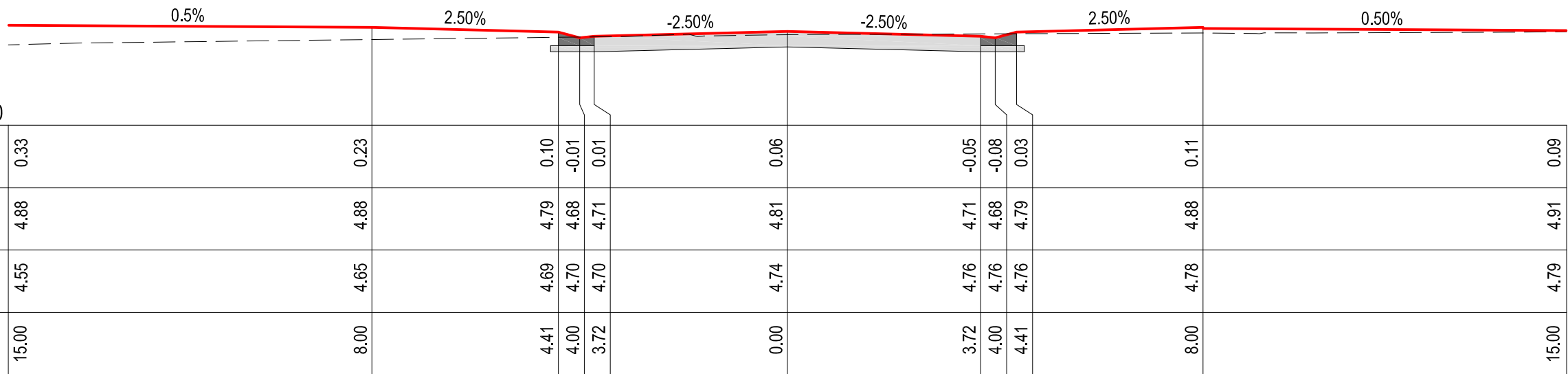
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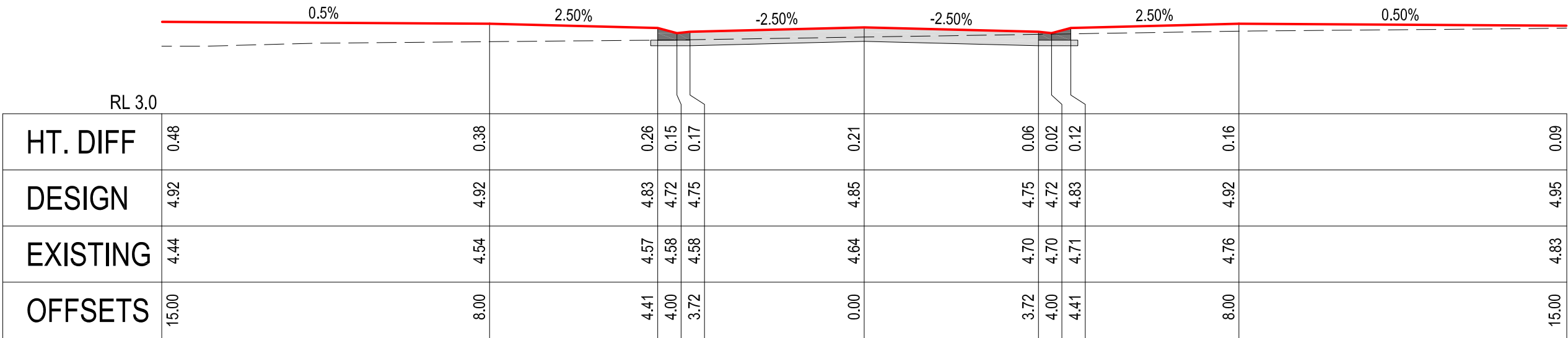
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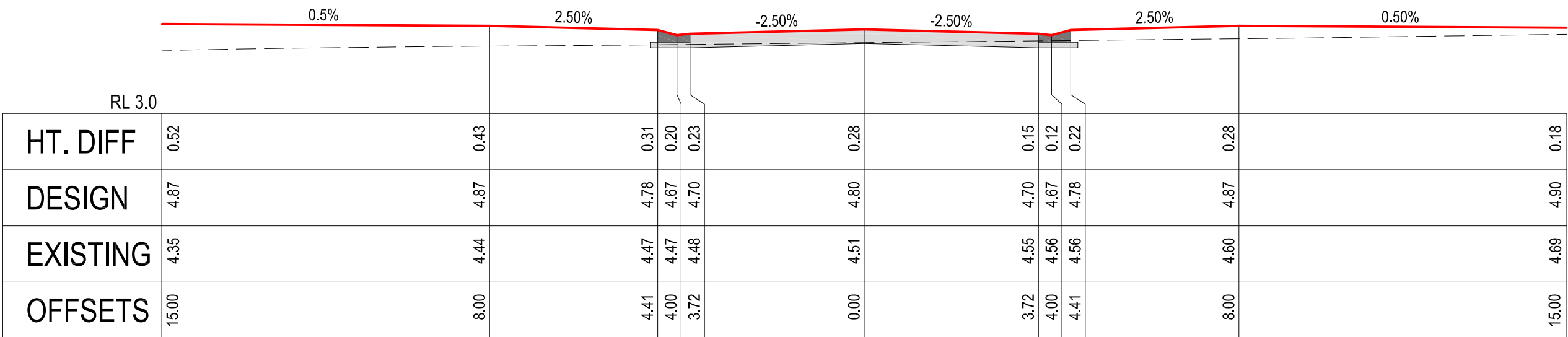
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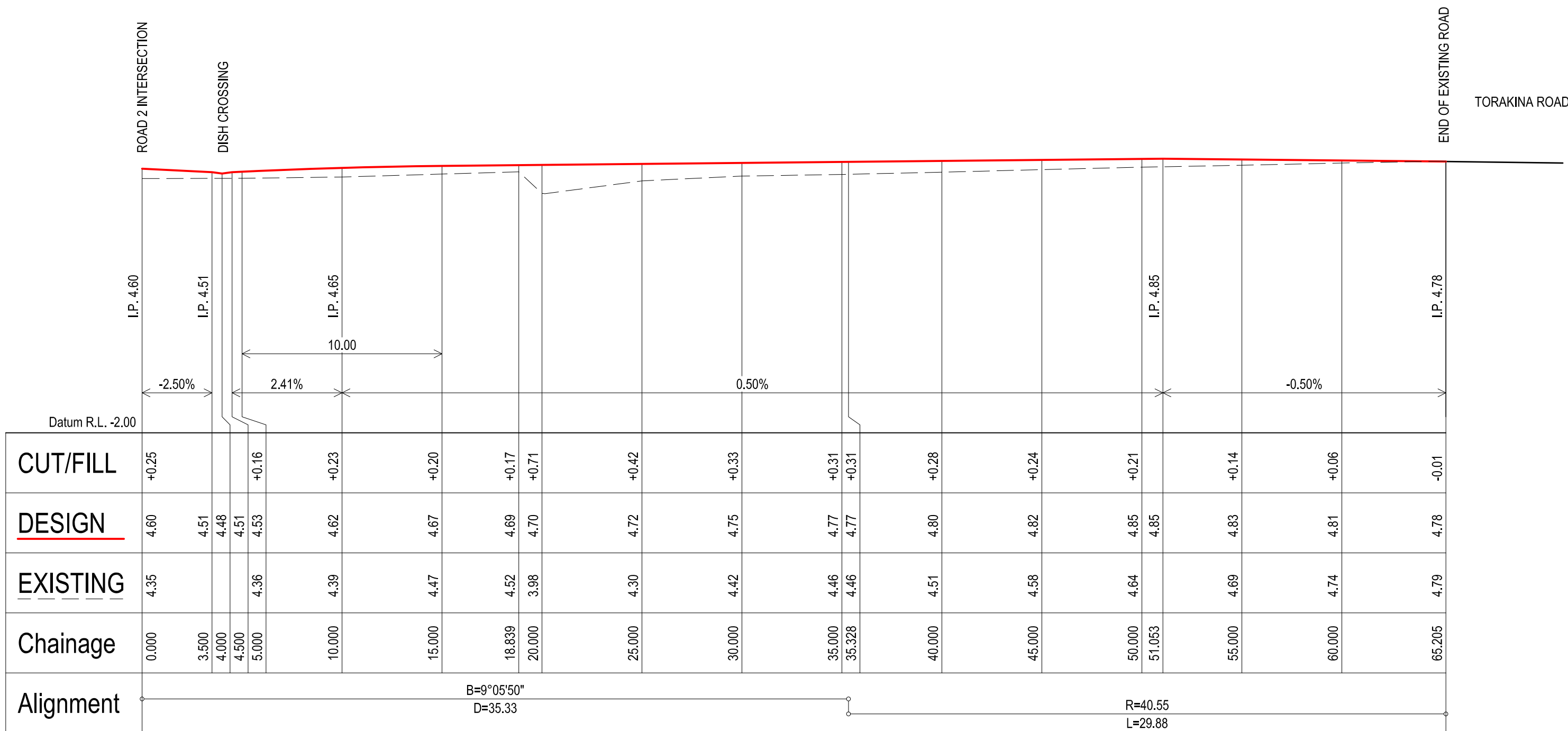
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50.000

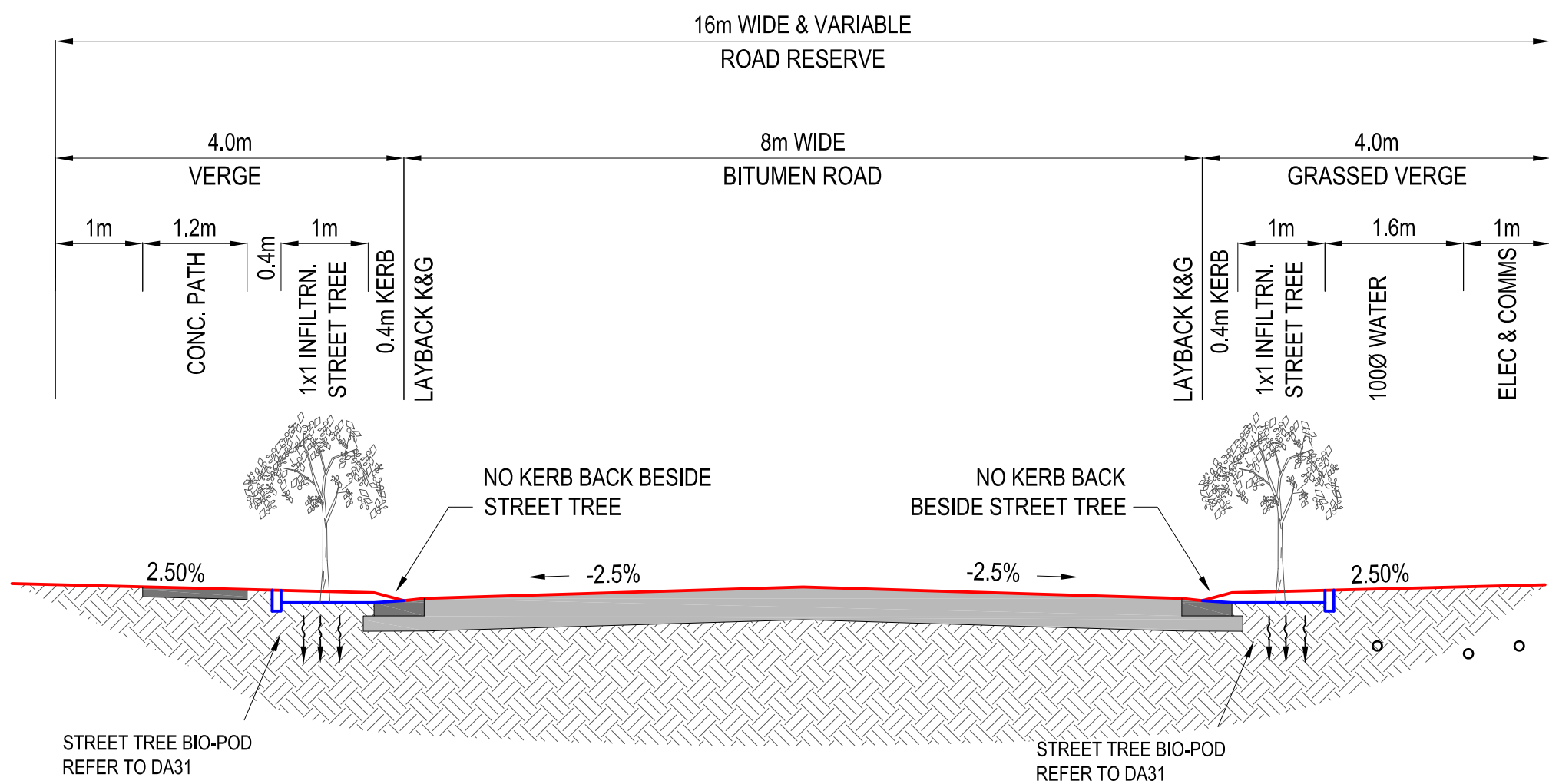


40.000



### ROAD 1 - LONG SECTION

Scale Horizontal 1:200 Vertical 1:100



### ROAD 1 TYPICAL SECTION

Not to Scale

D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

Iss	Description	Des	Drw	Date	Appd
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**ENGINEERING PLANS FOR D.A.**  
**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

### ROAD 1 LONG SECTION & CROSS SECTIONS

Scale: As Shown at A1 CAD file: 1133-DA13D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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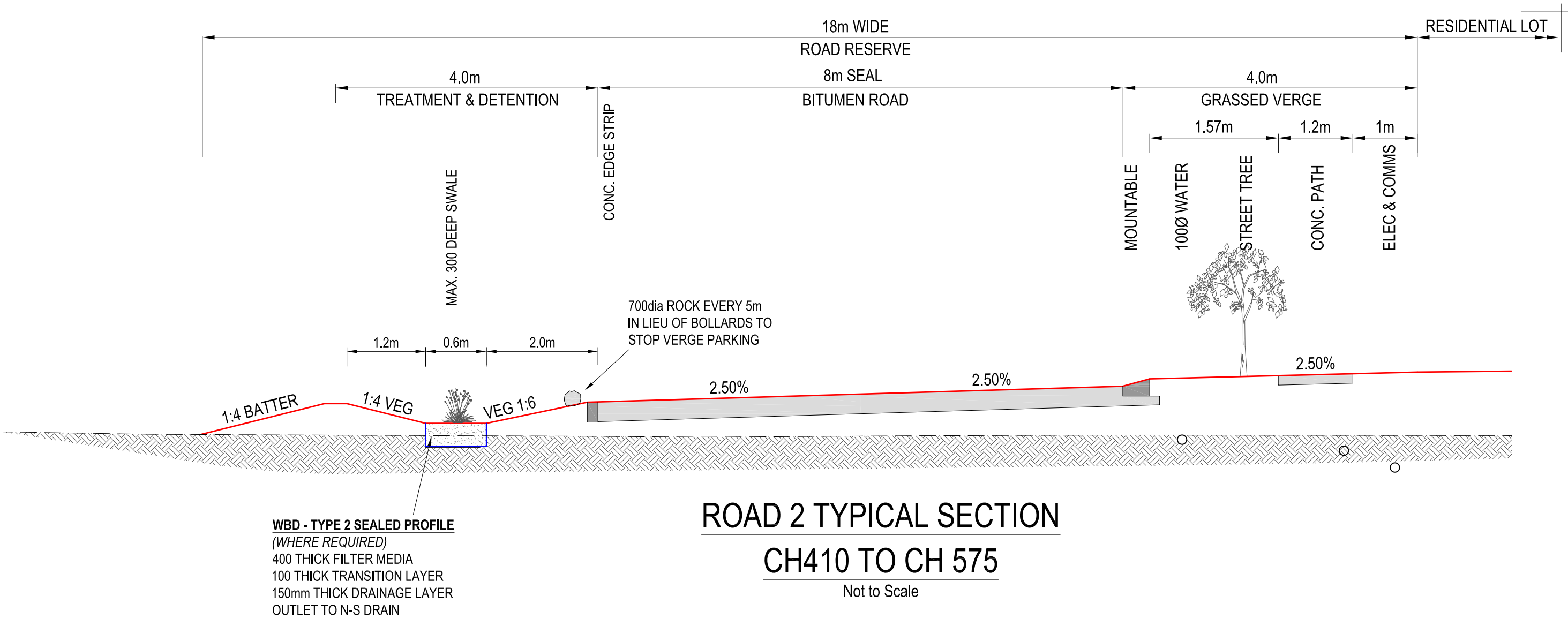
Sheet No.  
**13 of 31**

Dwg. No.  
**1133-DA13**

Issue

**D**

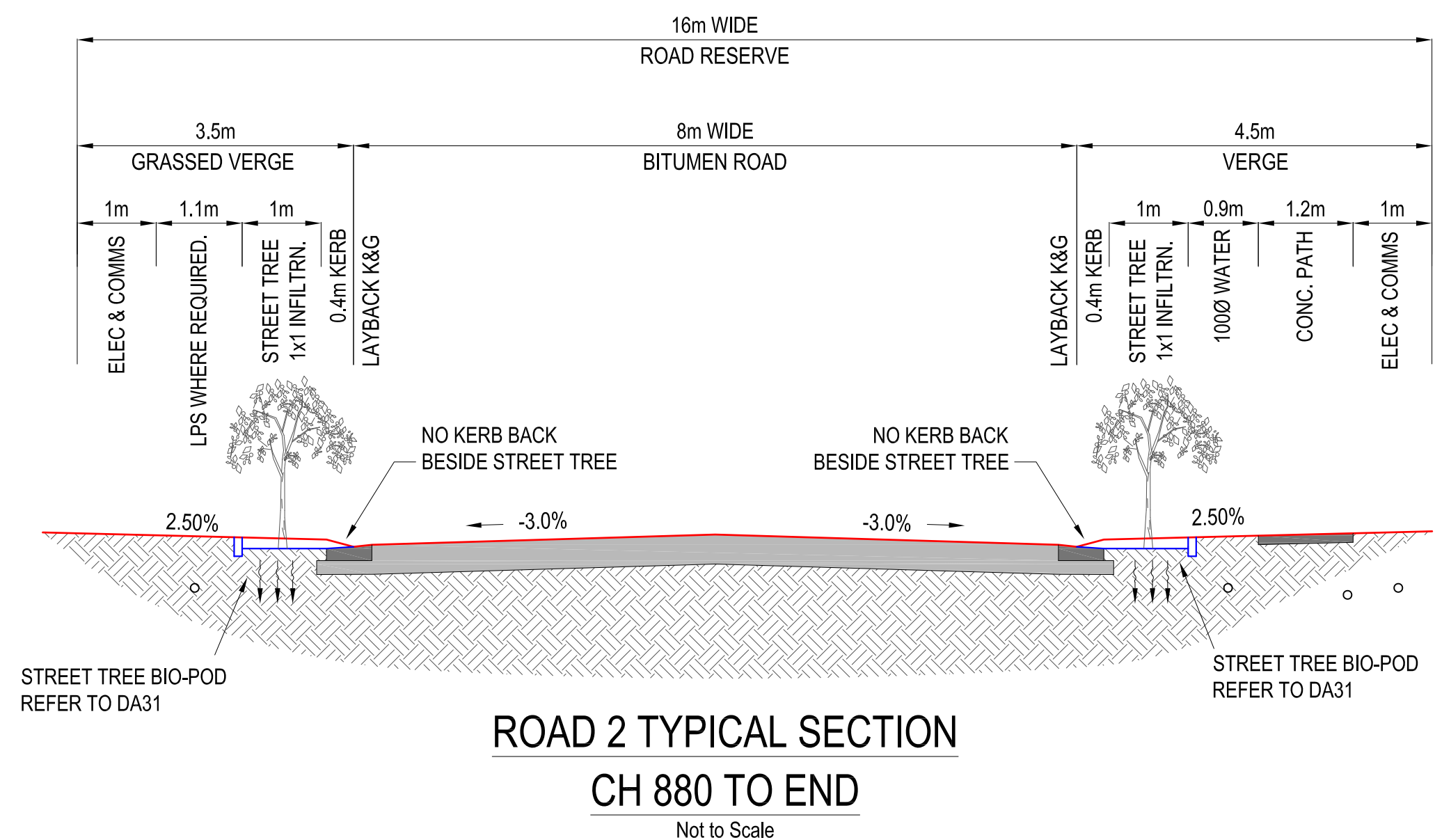
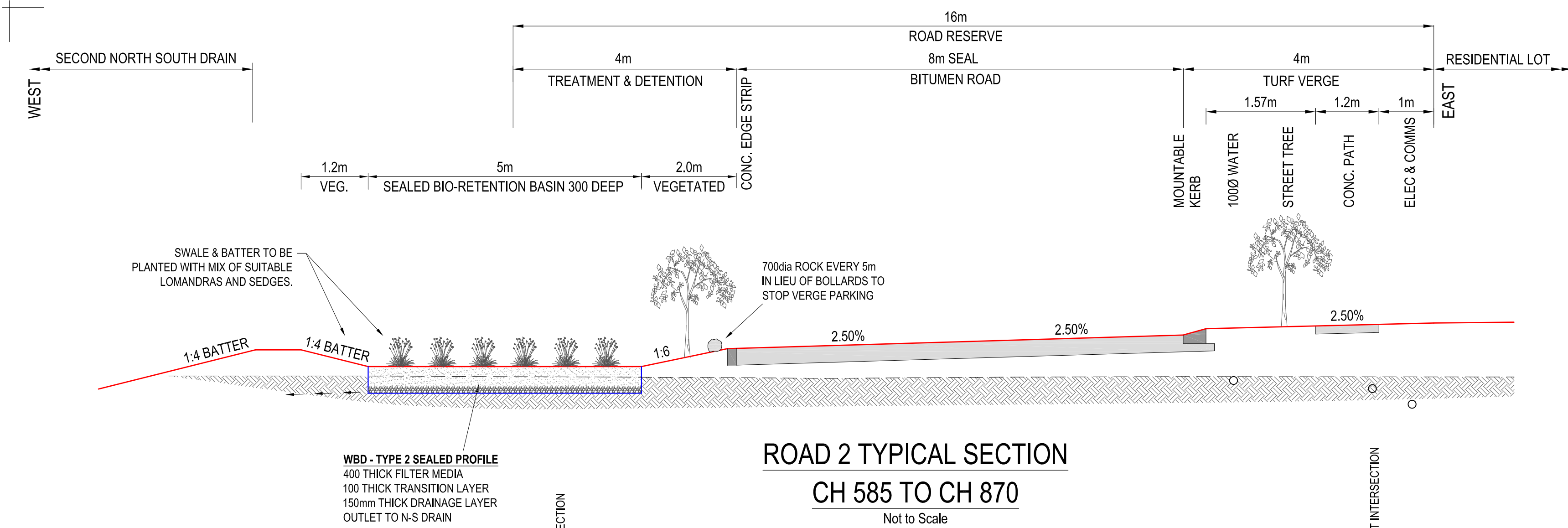




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## Issu





CONTD FROM BELOW		ROAD 2 TYPICAL SECTION CH 585 TO CH 870																ROAD 2 EAST INTERSECTION	
Datum R.L. -2.00		0.51%																I.P. 5.20	
CUT/FILL		+0.06																	
DESIGN SURFACE		4.35																	
EXISTING SURFACE		4.30																	
Chainage		900.000																	
Alignment Details		R=14.00 L=21.94 B=99°05'50" D=35.39 B=99°05'50" D=106.85 R=20.00 L=11.36																	

ROAD 2 - LONG SECTION cont'd  
Scale Horizontal 1:500 Vertical 1:100

		ROAD 2 - LONG SECTION cont'd																													
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ROAD 2 - LONG SECTION cont'd  
Scale Horizontal 1:500 Vertical 1:100

E	FOR RE-SUBMISSION	WF	WF	26.02.2023
D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

Iss	Description	Des	Drw	Date	Appd
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**ENGINEERING PLANS FOR D.A.**  
**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

**ROAD 2 LONG SECTION cont'd**  
**CH 600.00 TO END**

Scale: As Shown at A1 CAD file: 1133-DA15E.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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Sheet No.  
**15 of 31**

Dwg. No.  
**1133-DA15**

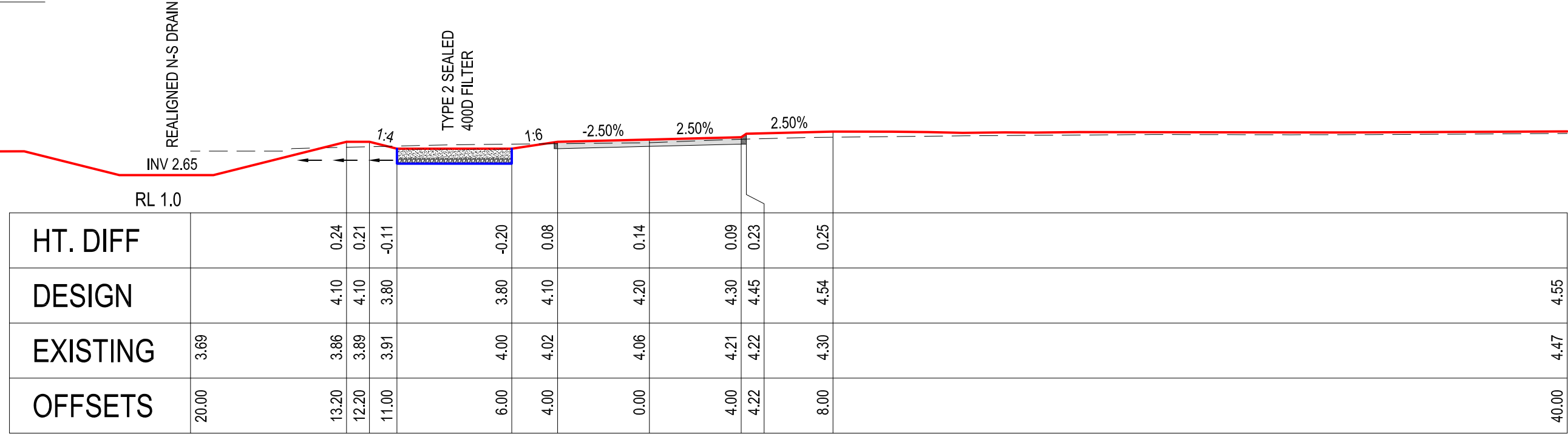
Issue

**E**

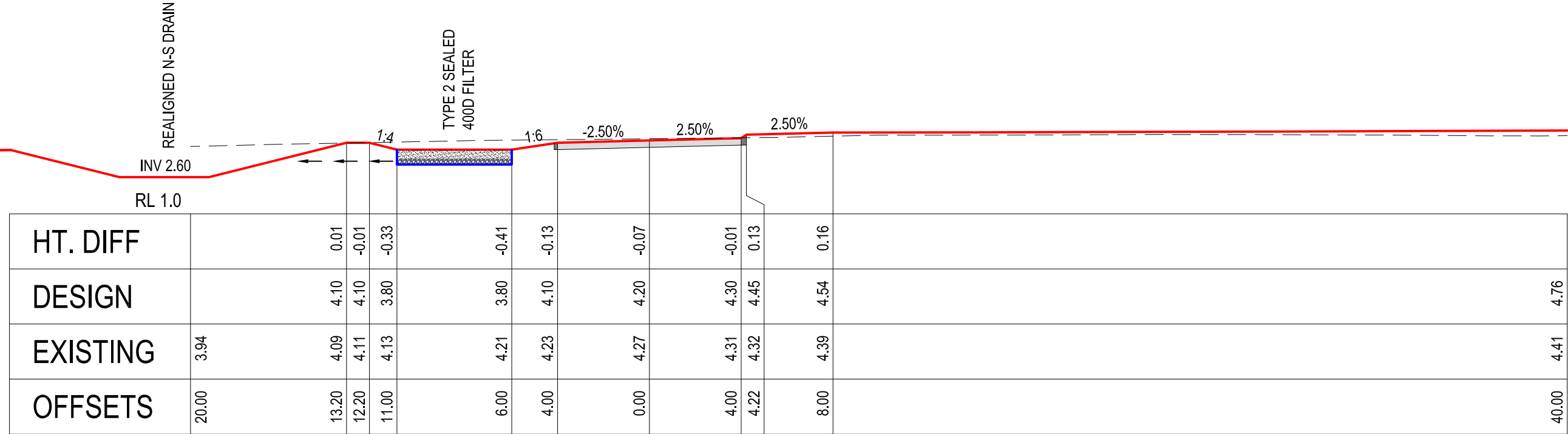




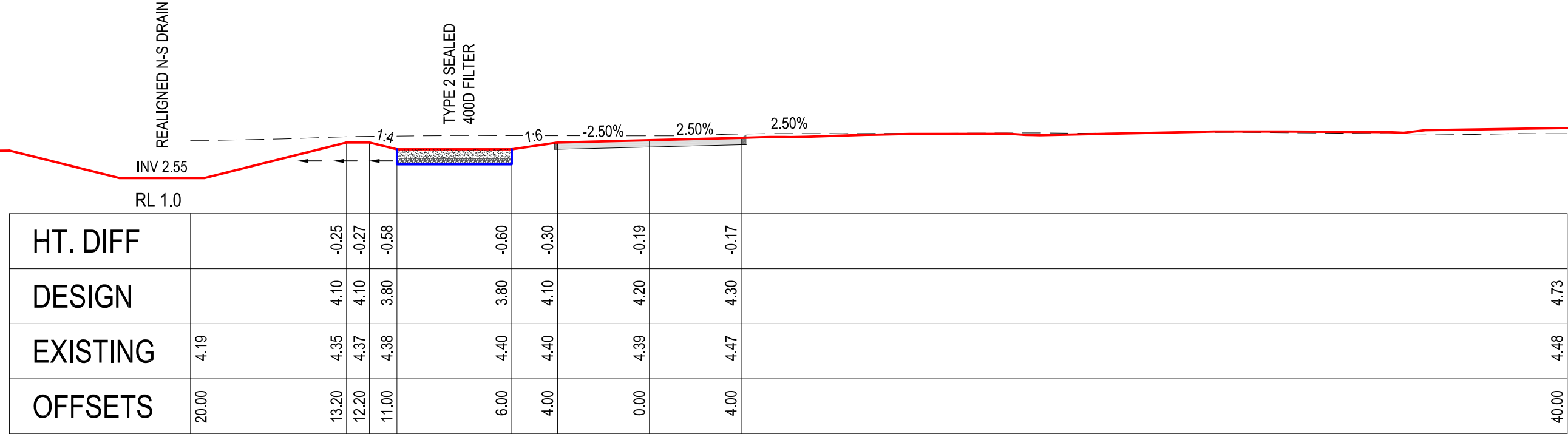




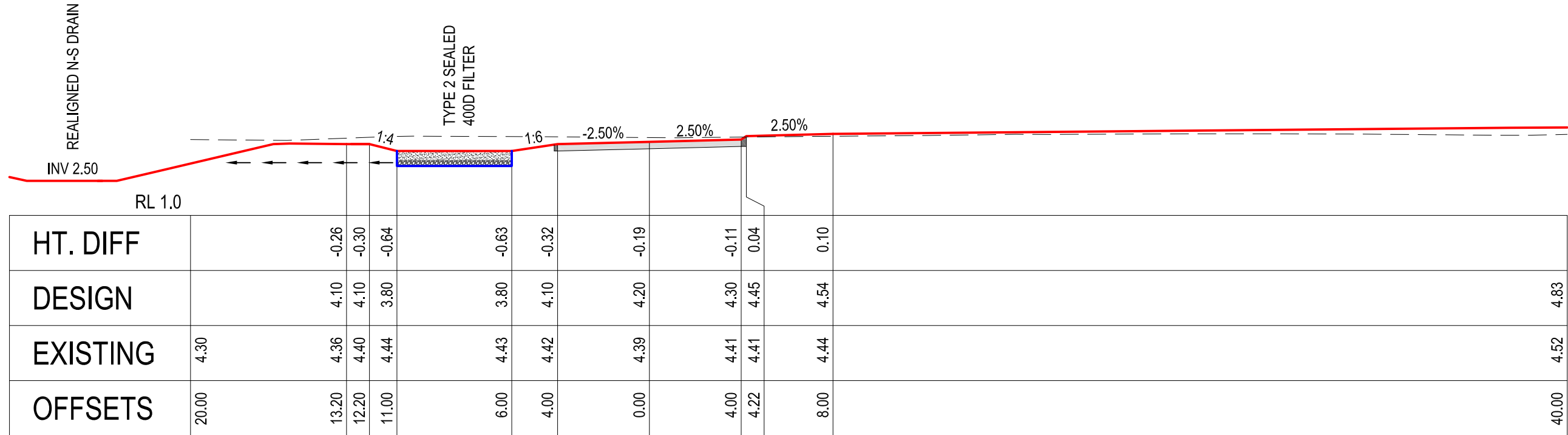
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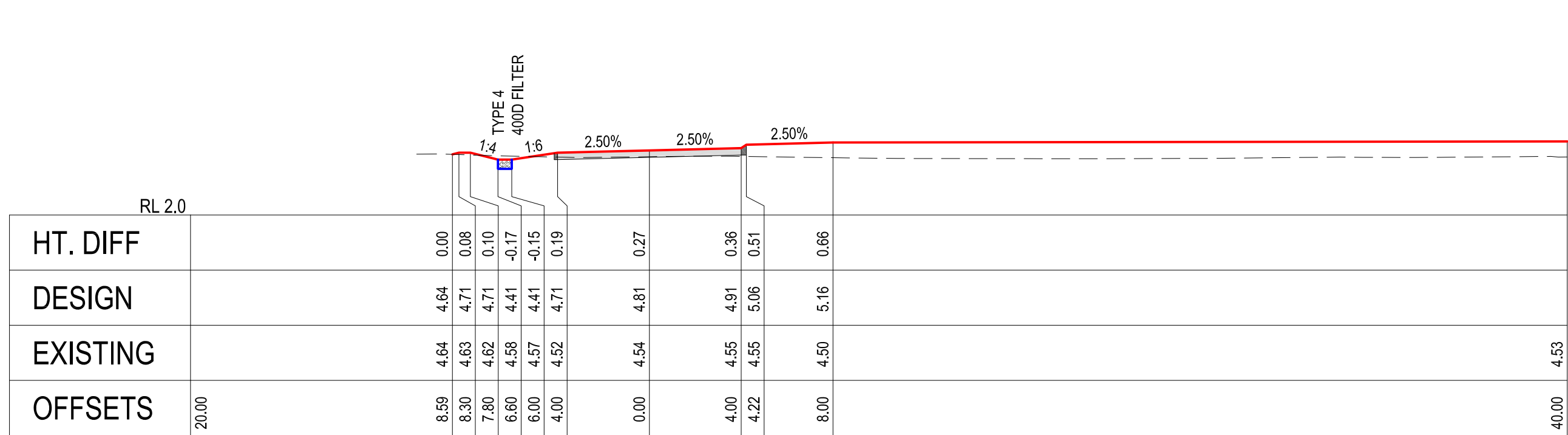
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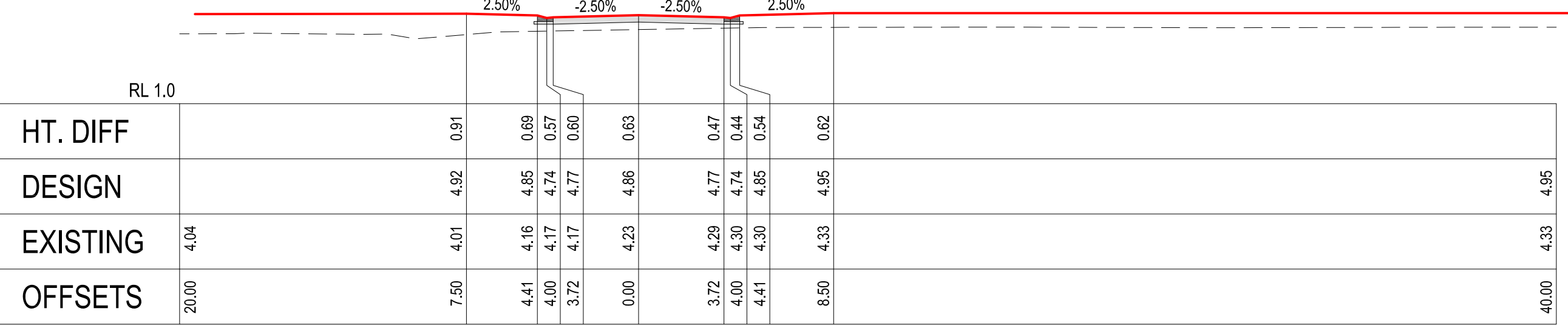
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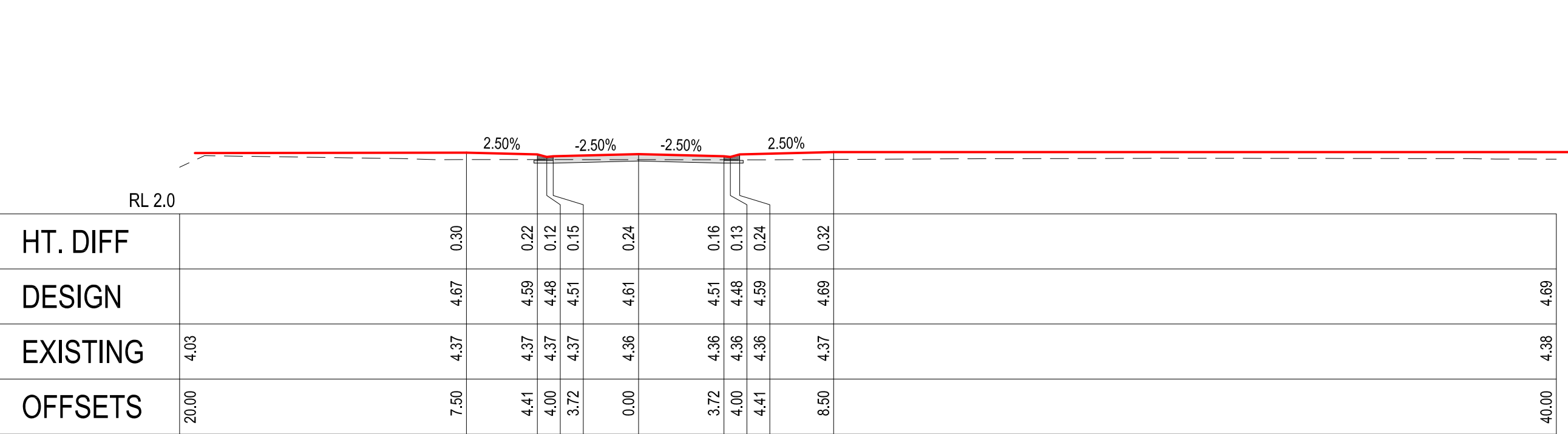
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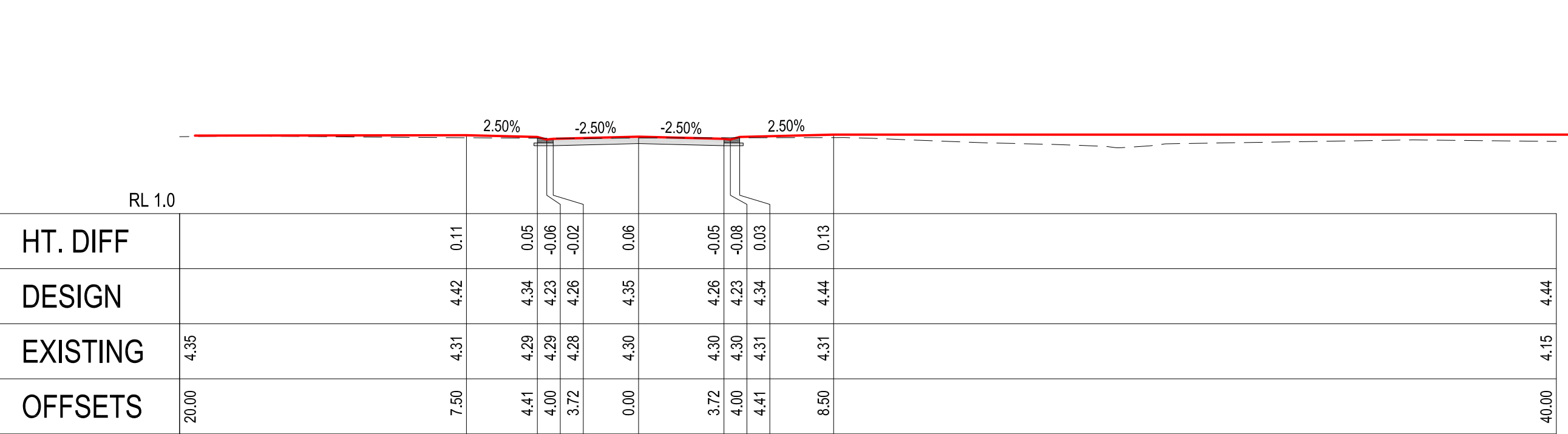
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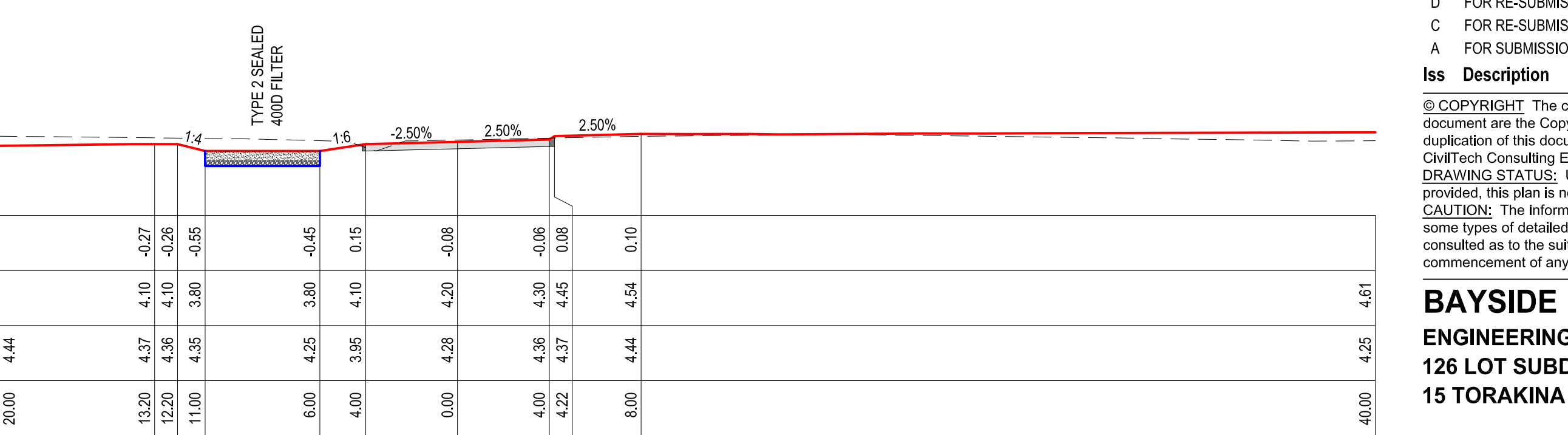
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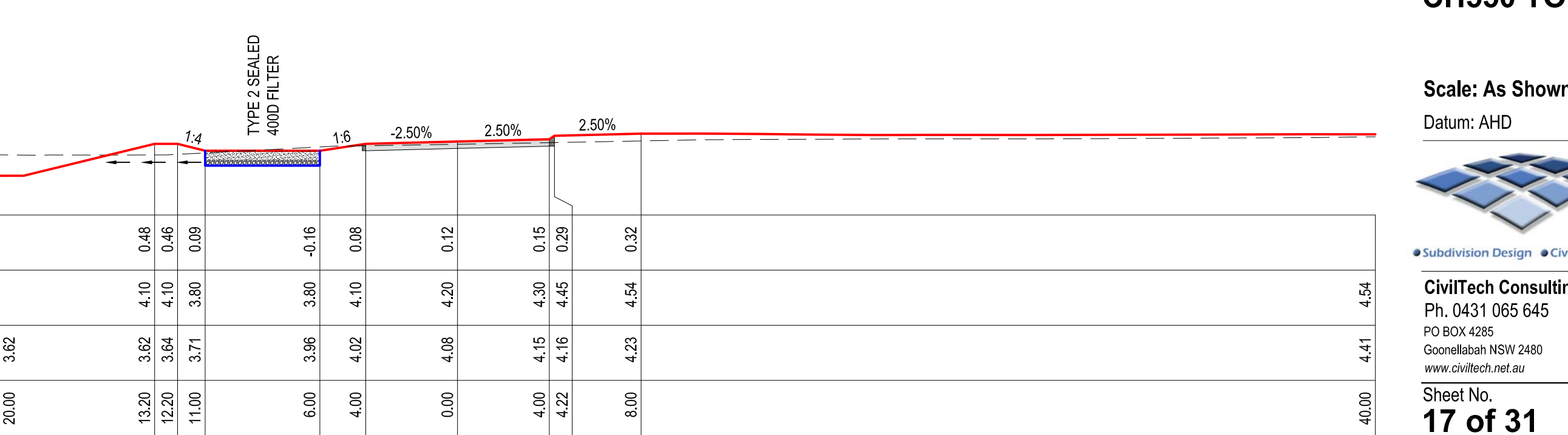
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900.000



850.000



800.000

ROAD 2 - CROSS SECTIONS cont'd

Scale Horizontal 1:200 Vertical 1:200

D	FOR RE-SUBMISSION	WF	WF	10.02.2023	
C	FOR RE-SUBMISSION	WF	WF	15.11.2022	
A	FOR SUBMISSION	WF	WF	01.08.2021	
Iss	Description	Des	Drw	Date	Appd

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**ENGINEERING PLANS FOR D.A.**  
**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

ROAD 2 CROSS SECTIONS  
CH550 TO END

Scale: As Shown at A1 CAD file: 1133-DA17D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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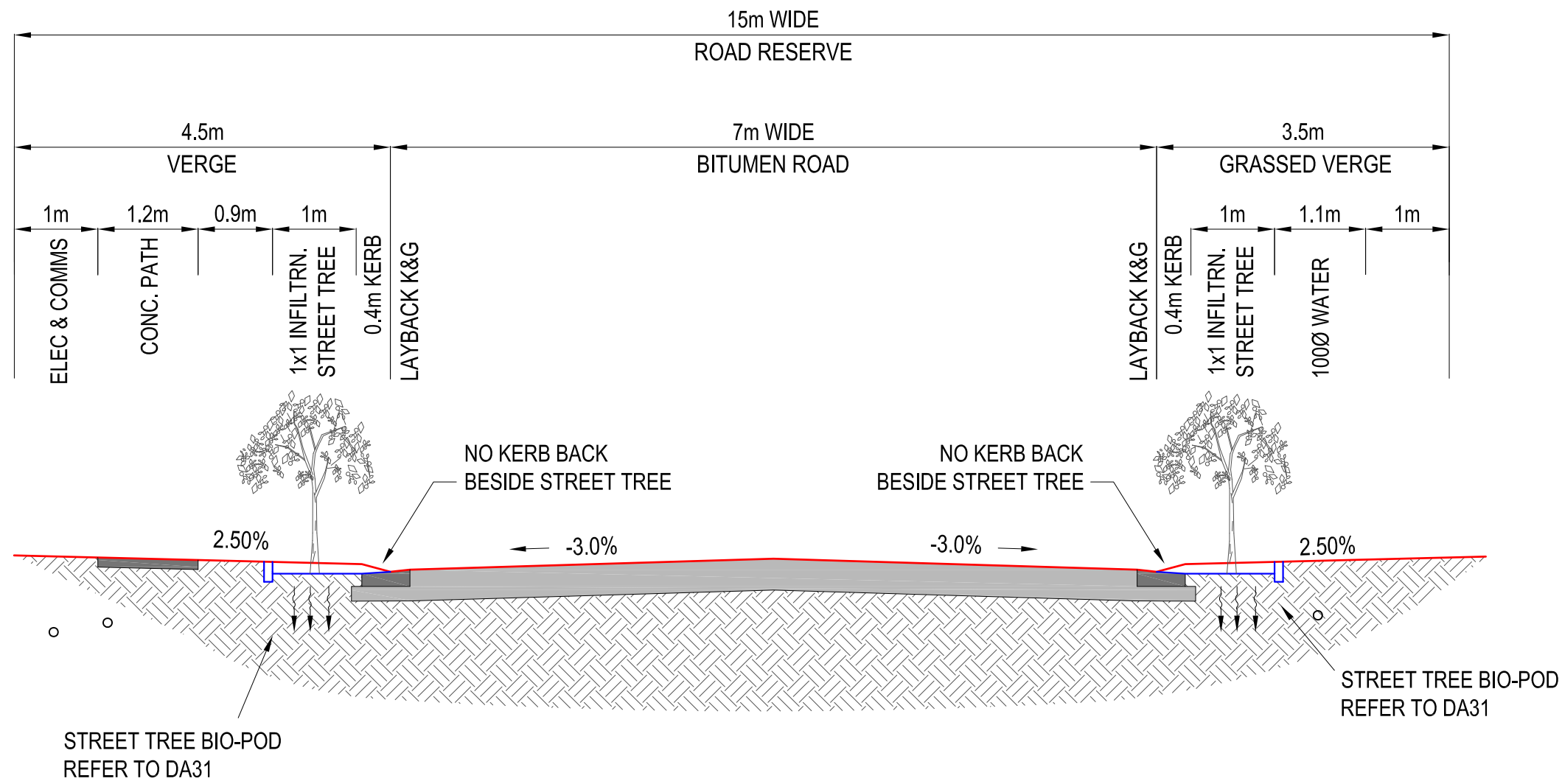
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**17 of 31**

Dwg. No.  
**1133-DA17**

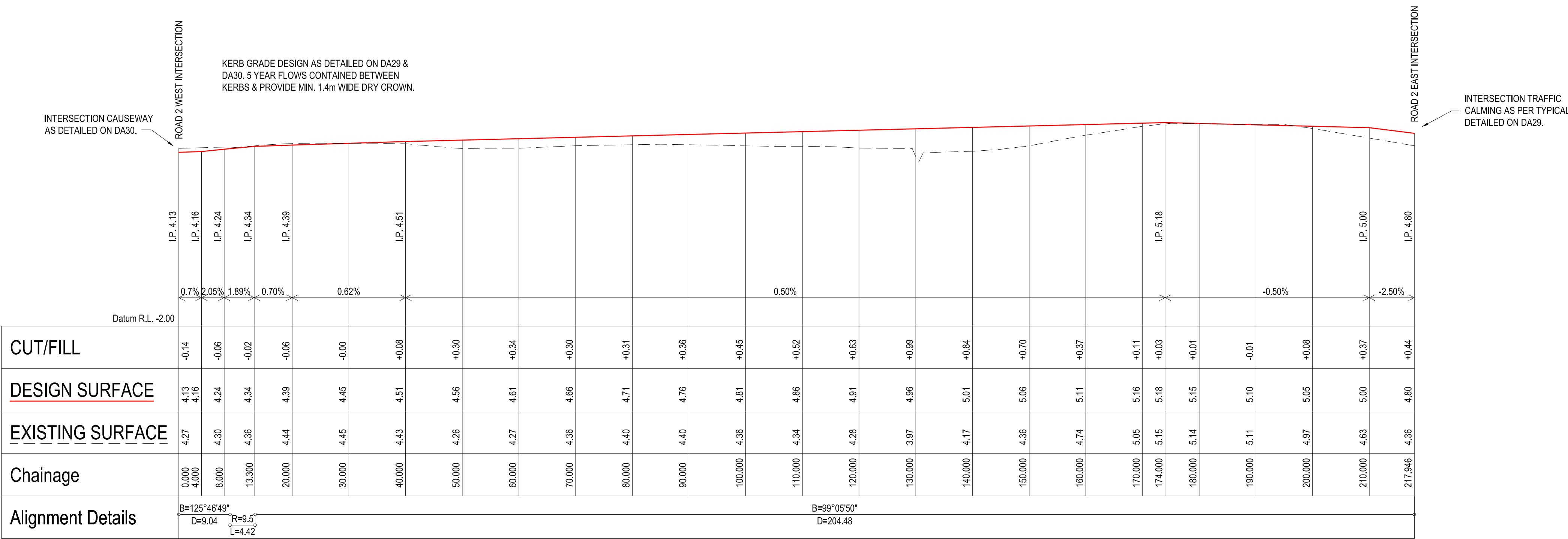
Issue

**D**





ROAD 3 TYPICAL SECTION  
Not to Scale



ROAD 3 - LONG SECTION  
Scale Horizontal 1:500 Vertical 1:100

E	FOR RE-SUBMISSION	WF	WF	10.02.2023
D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

Iss Description Des Drw Date Appd

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126 LOT SUBDIVISION OF LOT 13 DP 1251383  
15 TORAKINA ROAD, BRUNSWICK HEADS

ROAD 3 LONG SECTION  
& TYPICAL SECTION

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Datum: AHD CivilCAD file: 1133-ENG

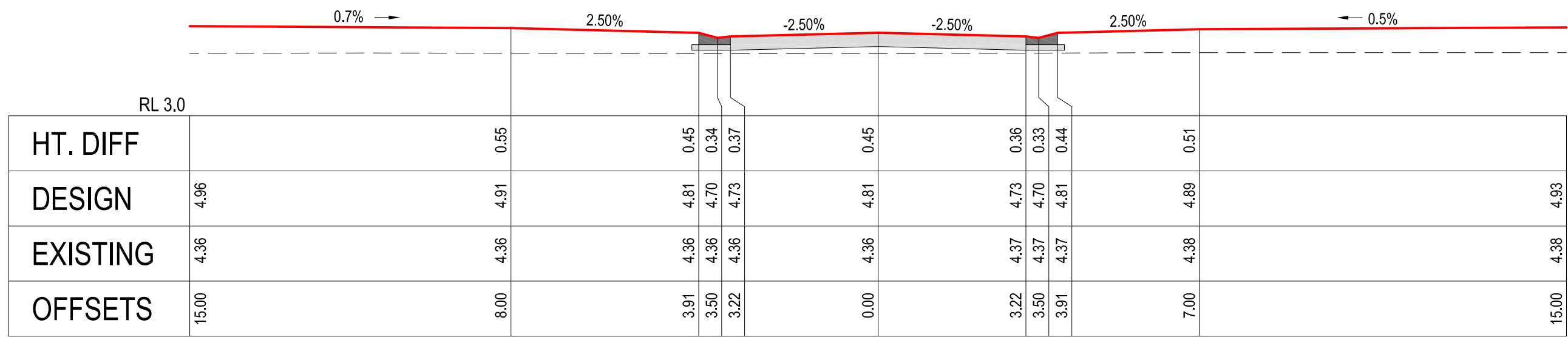


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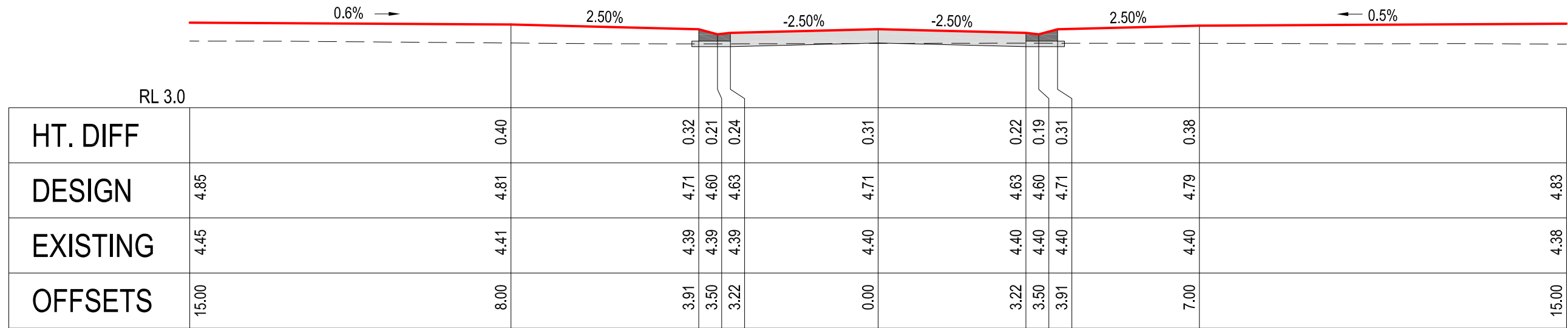
Sheet No.  
18 of 31

Dwg. No. 1133-DA18 Issue E

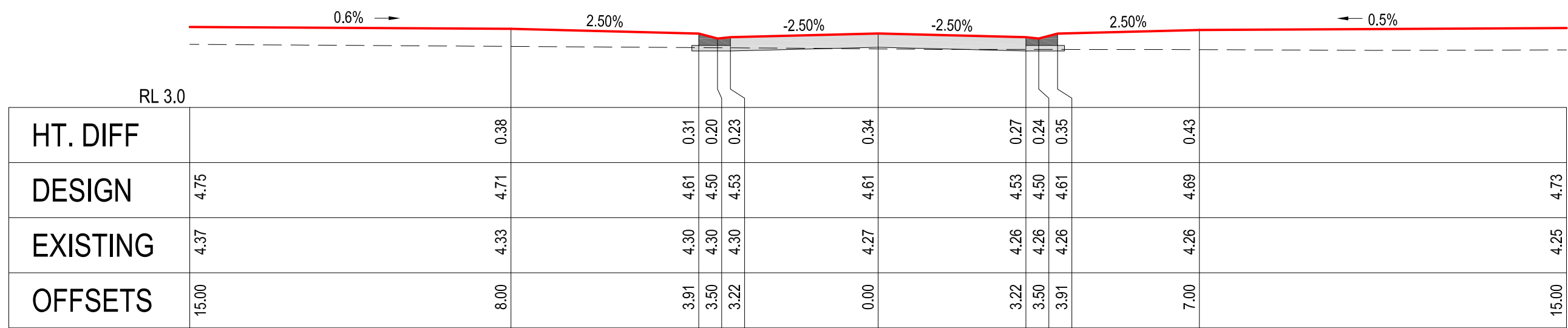




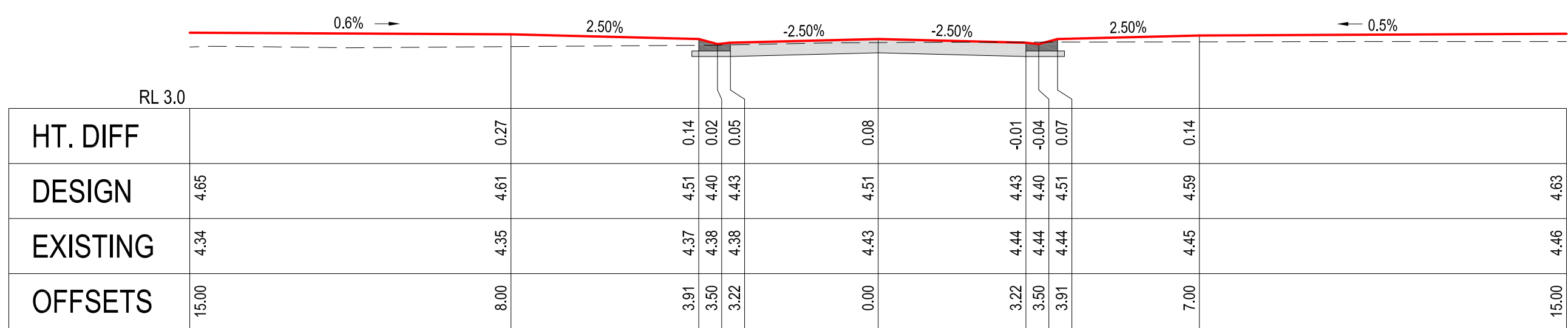
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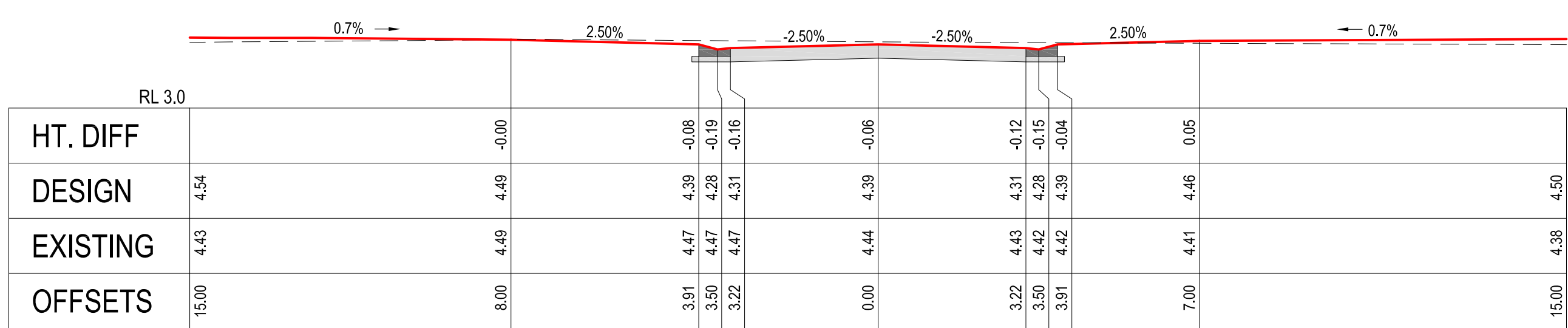
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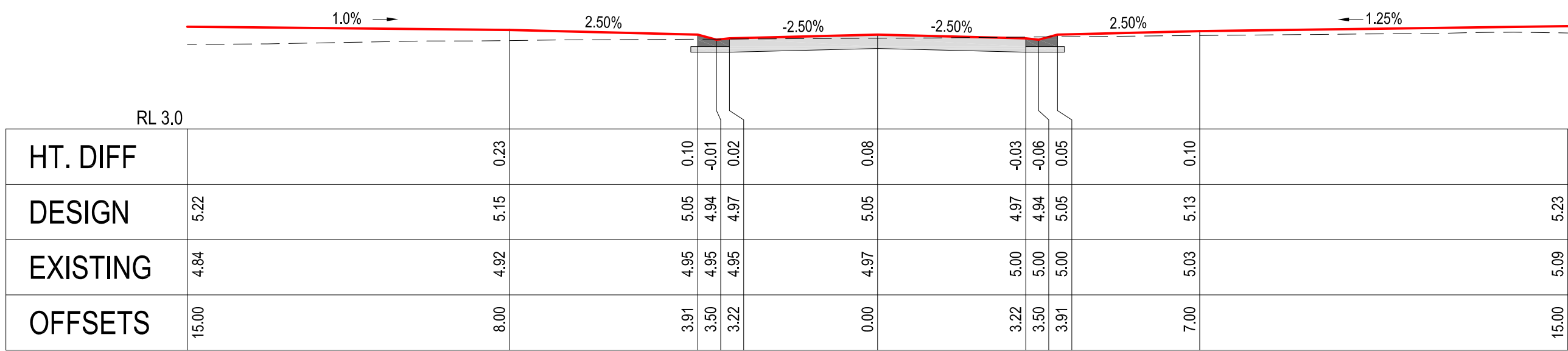
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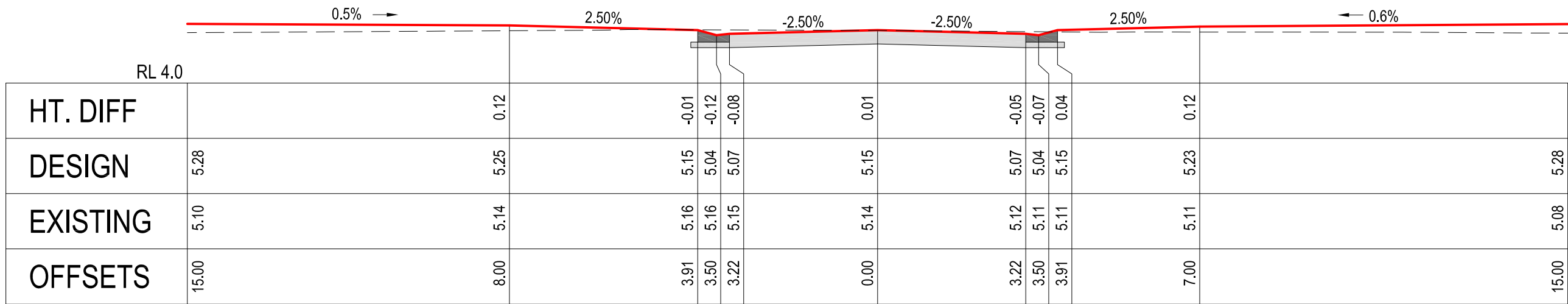
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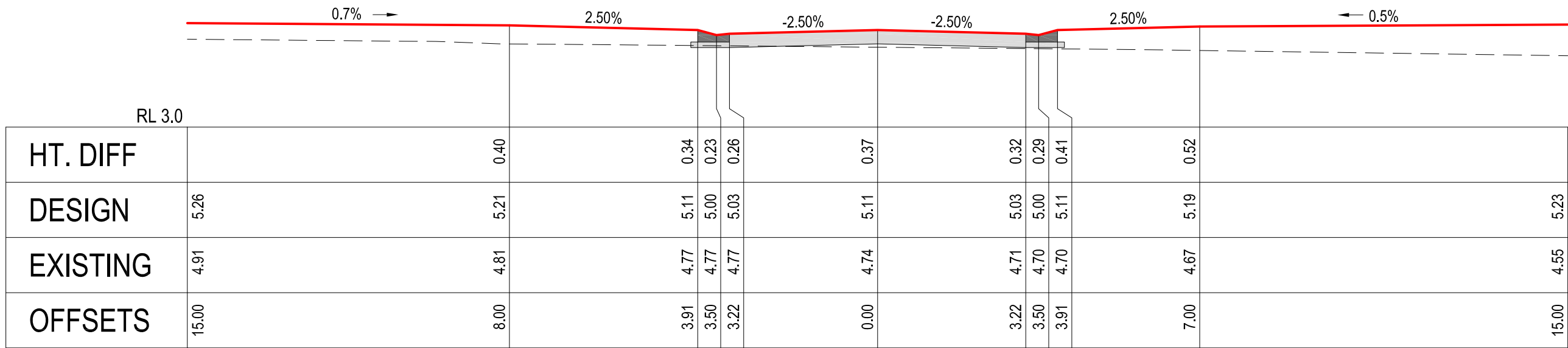
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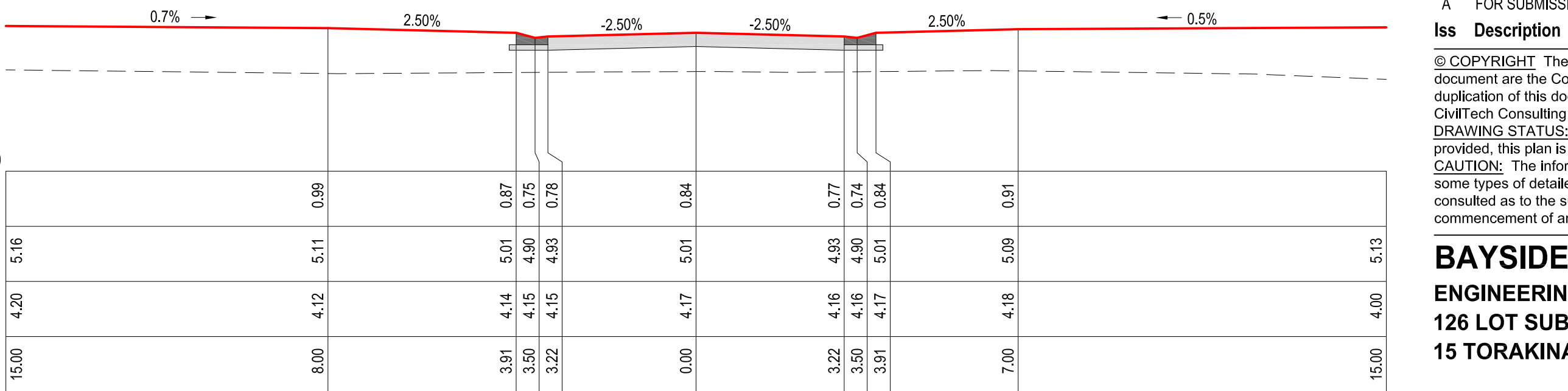
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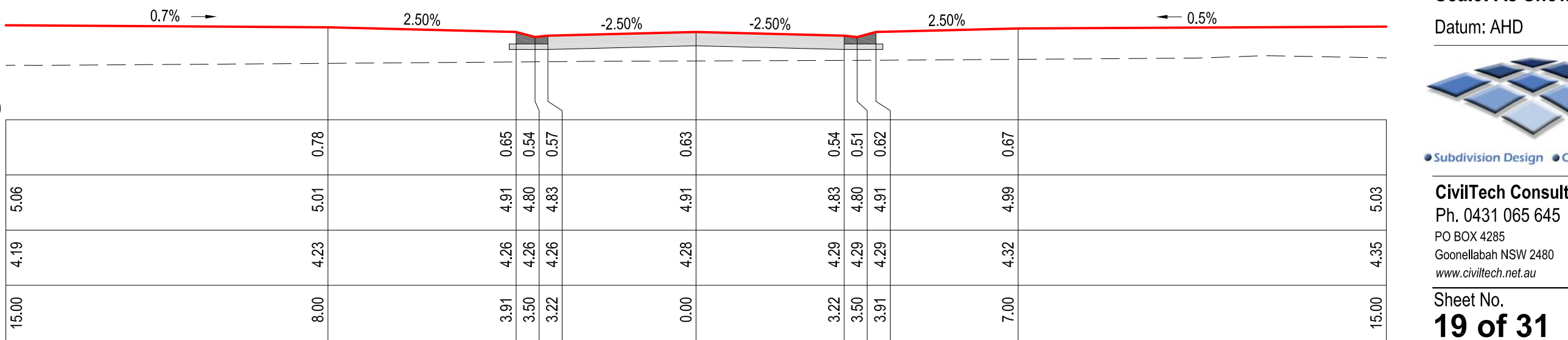
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160.000



140.000



120.000

## ROAD 3 - CROSS SECTIONS

Scale Horizontal 1:200 Vertical 1:200

D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

Iss	Description	Des	Drw	Date	Appd
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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## ROAD 3 CROSS SECTIONS

Scale: As Shown at A1  
Datum: AHD

CAD file: 1133-DA19D.dwg

CivilCAD file: 1133-ENG



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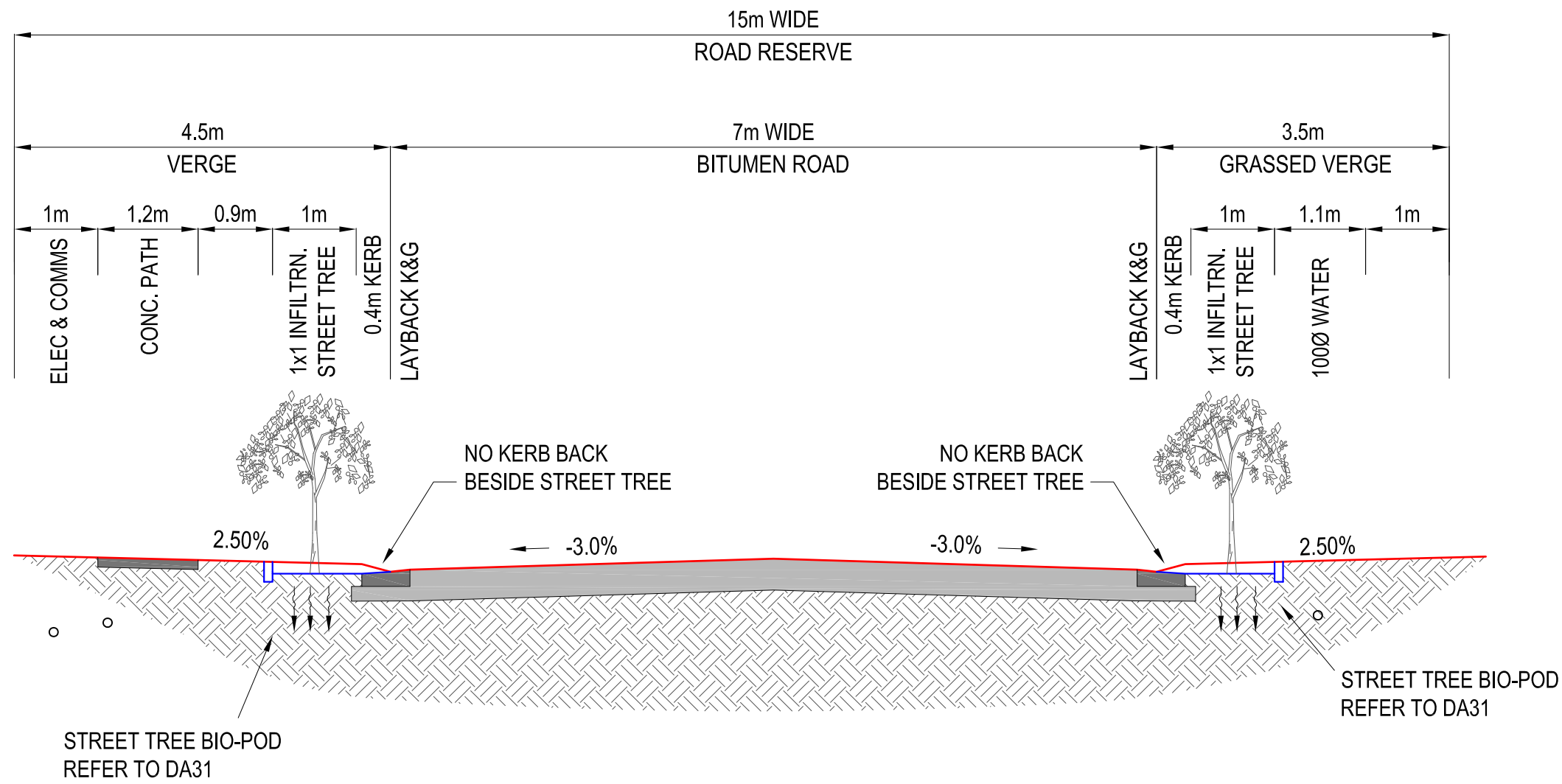
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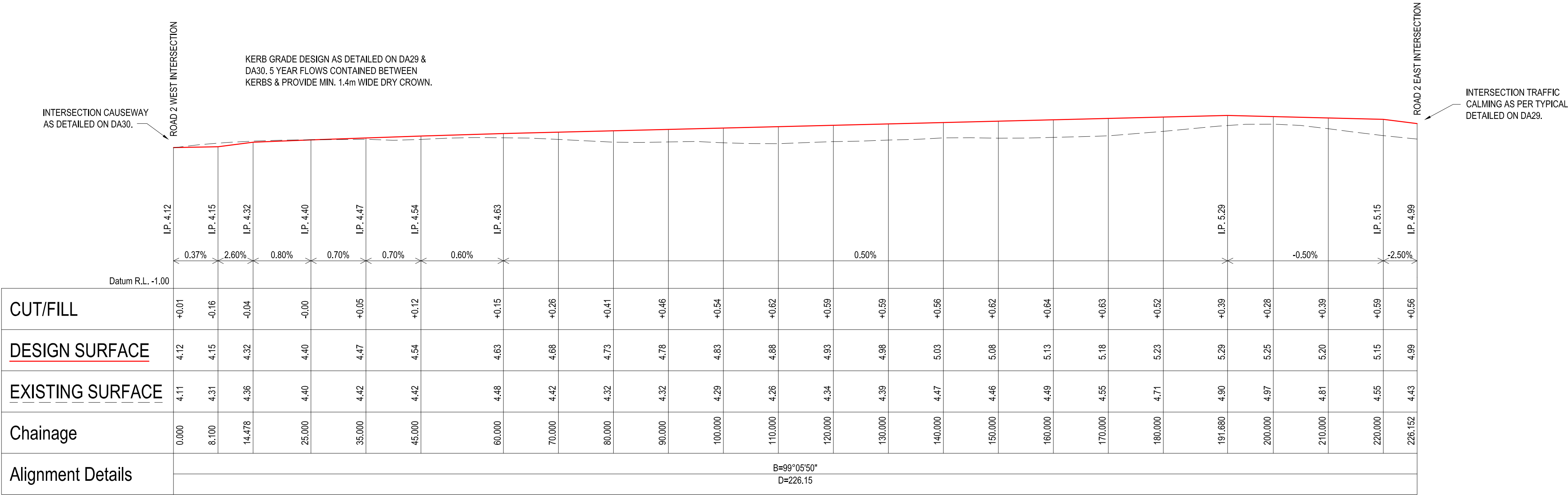
Issue

**D**





ROAD 4 TYPICAL SECTION  
Not to Scale



ROAD 4 - LONG SECTION  
Scale Horizontal 1:500 Vertical 1:100

E	FOR RE-SUBMISSION	WF	WF	27.02.2023
D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

Iss	Description	Des	Drw	Date	Appd
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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## ROAD 4 LONG SECTION & TYPICAL SECTION

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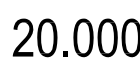
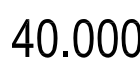
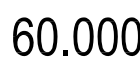
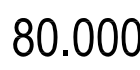
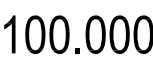
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Sheet No.  
**20 of 31**

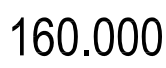
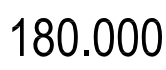
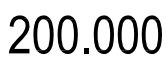
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**1133-DA20**

Issue  
**E**





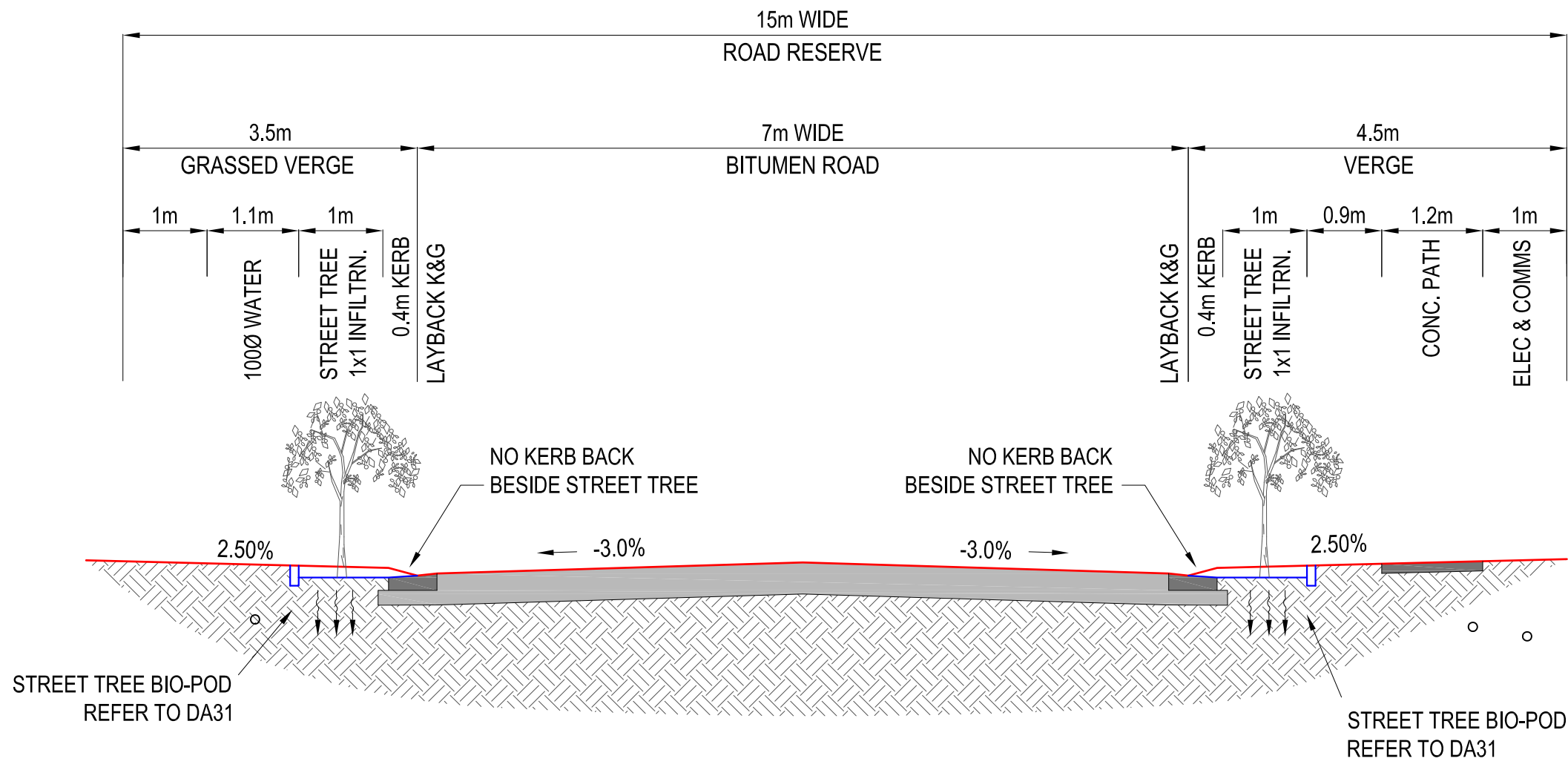
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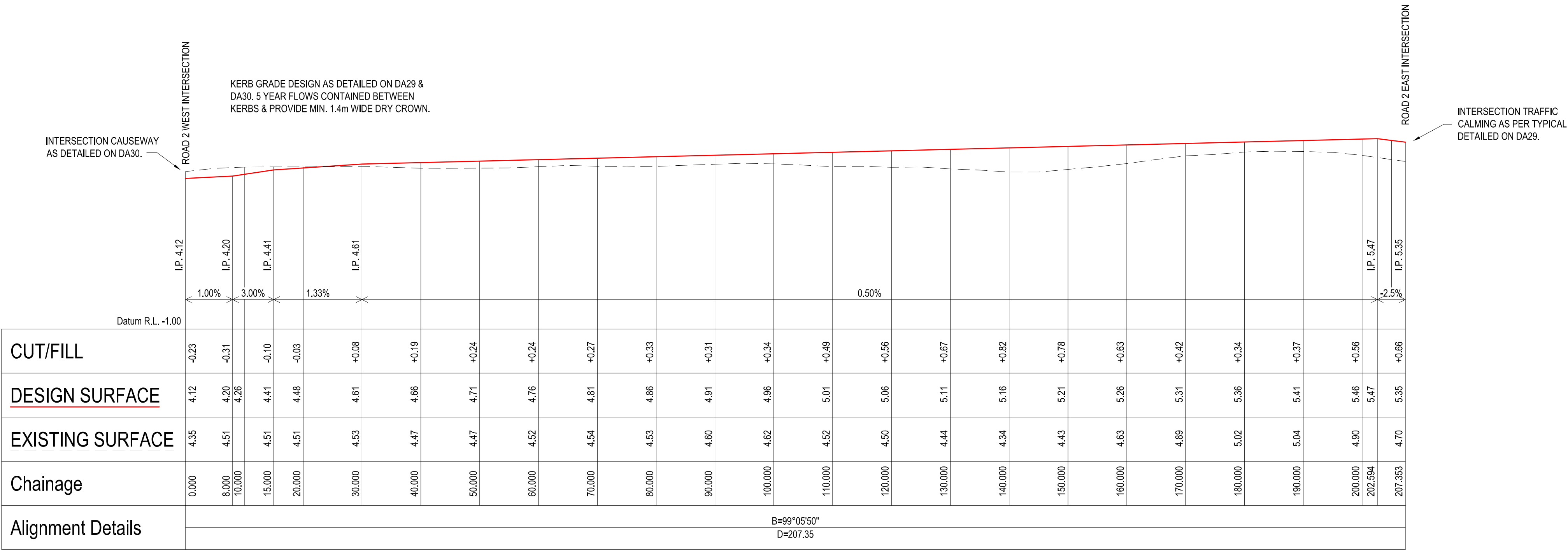
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126 LOT SUBDIVISION OF LOT 13 DP 1251383  
15 TORAKINA ROAD, BRUNSWICK HEADS

Dwg. No. **1133-DA21**





ROAD 5 TYPICAL SECTION  
Not to Scale



ROAD 5 - LONG SECTION  
Scale Horizontal 1:500 Vertical 1:100

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D	FOR RE-SUBMISSION	WF	WF	10.03.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

Iss	Description	Des	Drw	Date	Appd
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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## ROAD 5 LONG SECTION & TYPICAL SECTION

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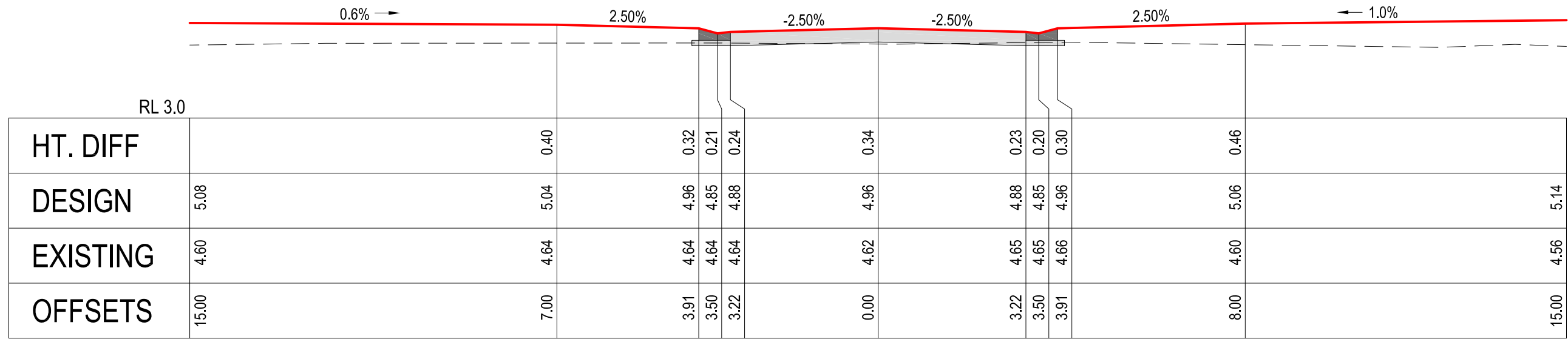
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Sheet No.  
**22 of 31**

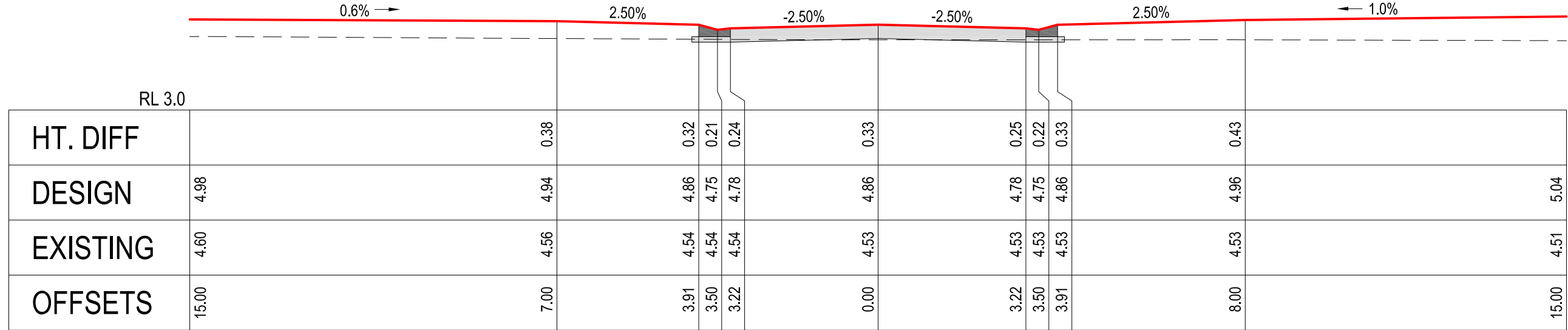
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Issue  
**E**

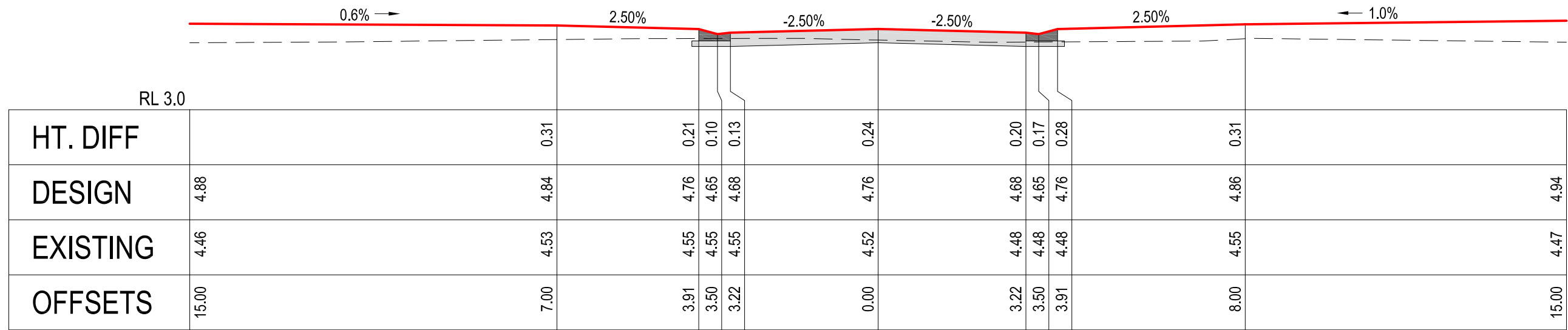




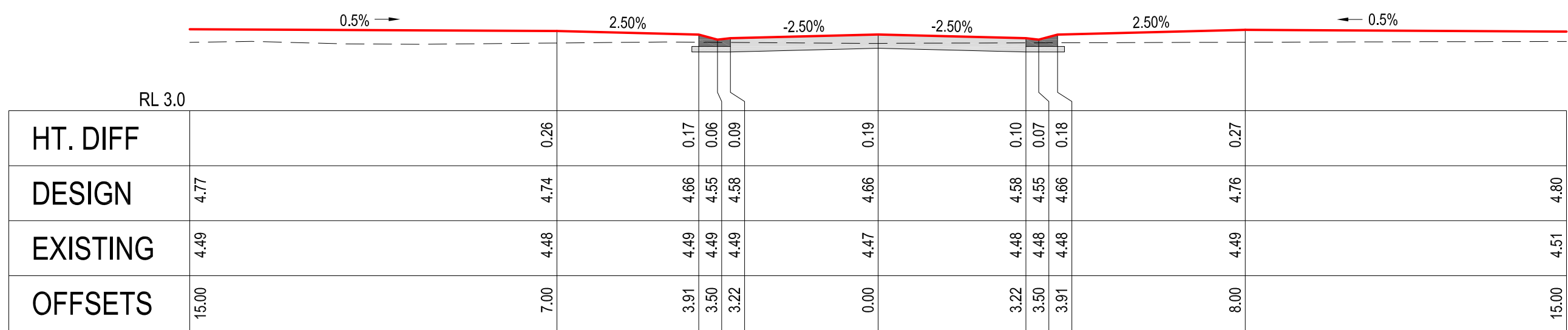
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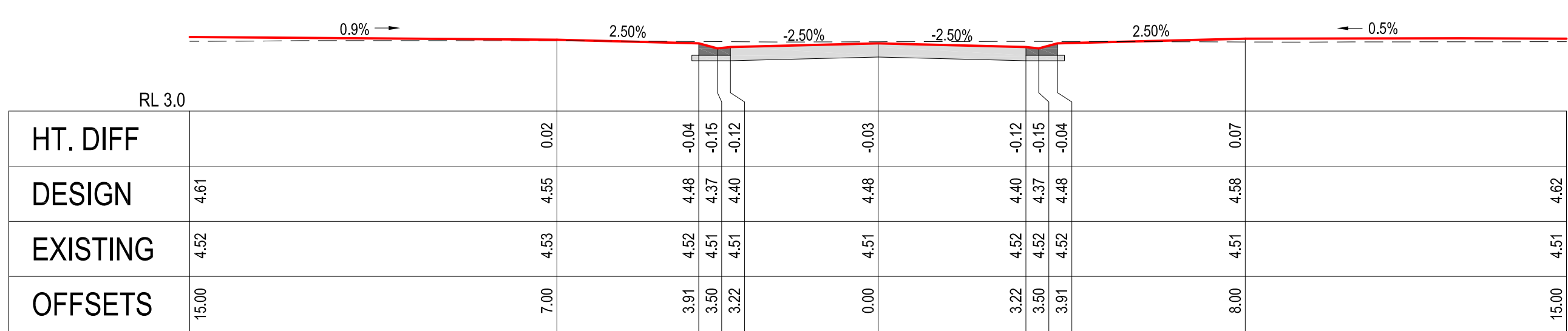
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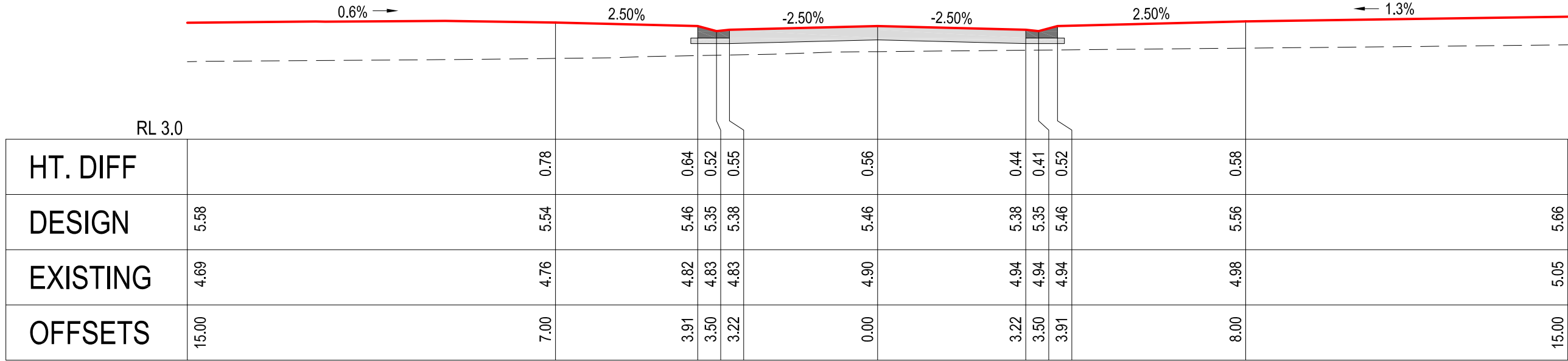
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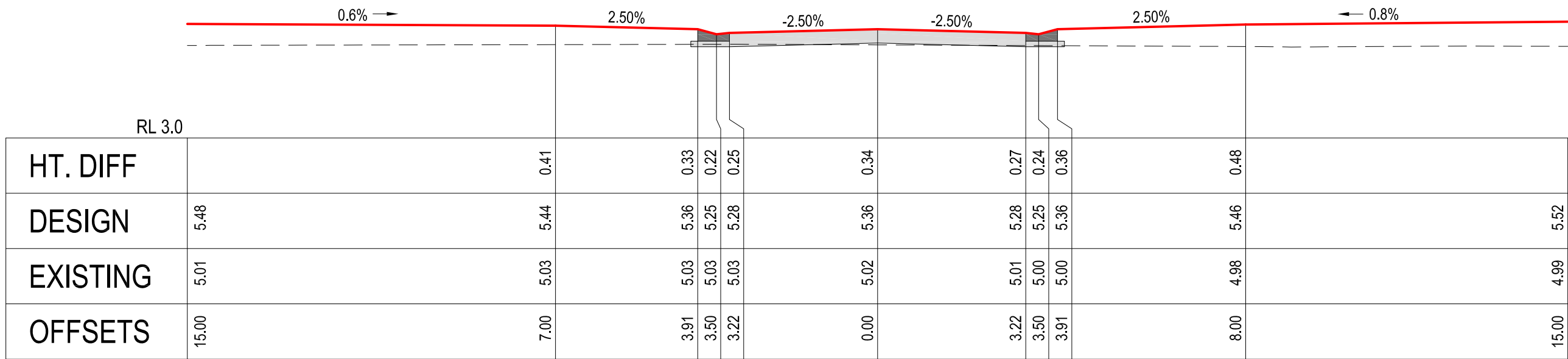
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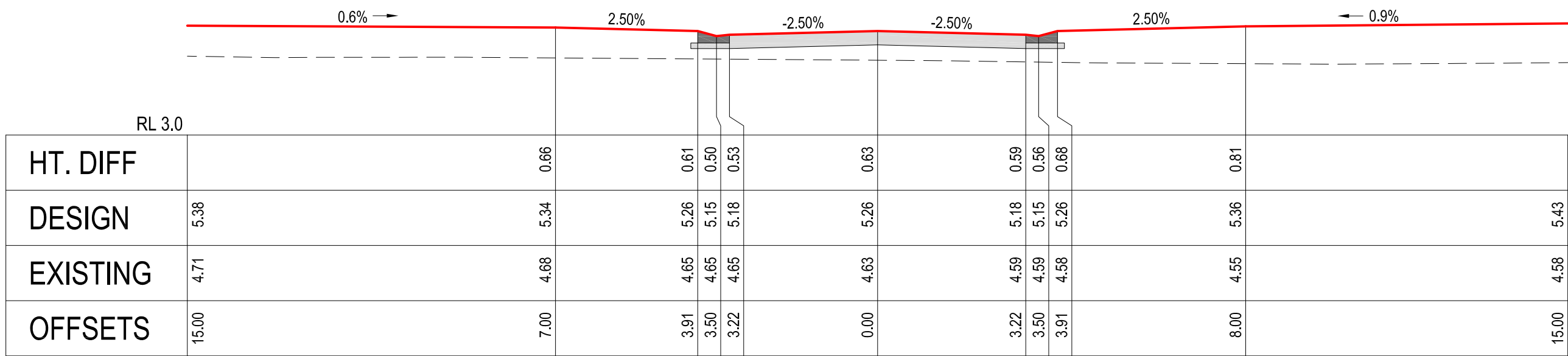
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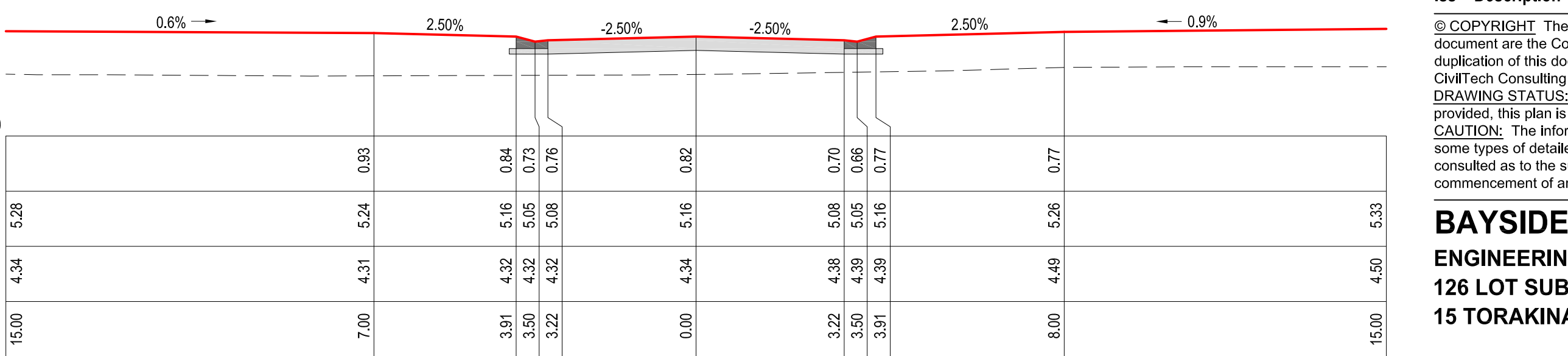
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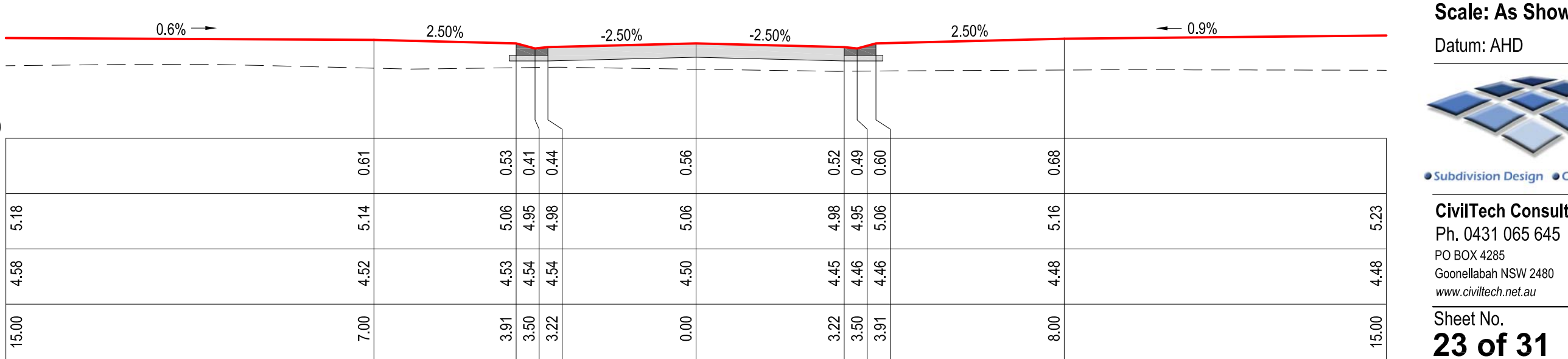
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160.000



140.000



120.000

## ROAD 5 - CROSS SECTIONS

Scale Horizontal 1:200 Vertical 1:200

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C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## ROAD 5 CROSS SECTIONS

Scale: As Shown at A1 CAD file: 1133-DA23D.dwg  
Datum: AHD CivilCAD file: 1133-ENG



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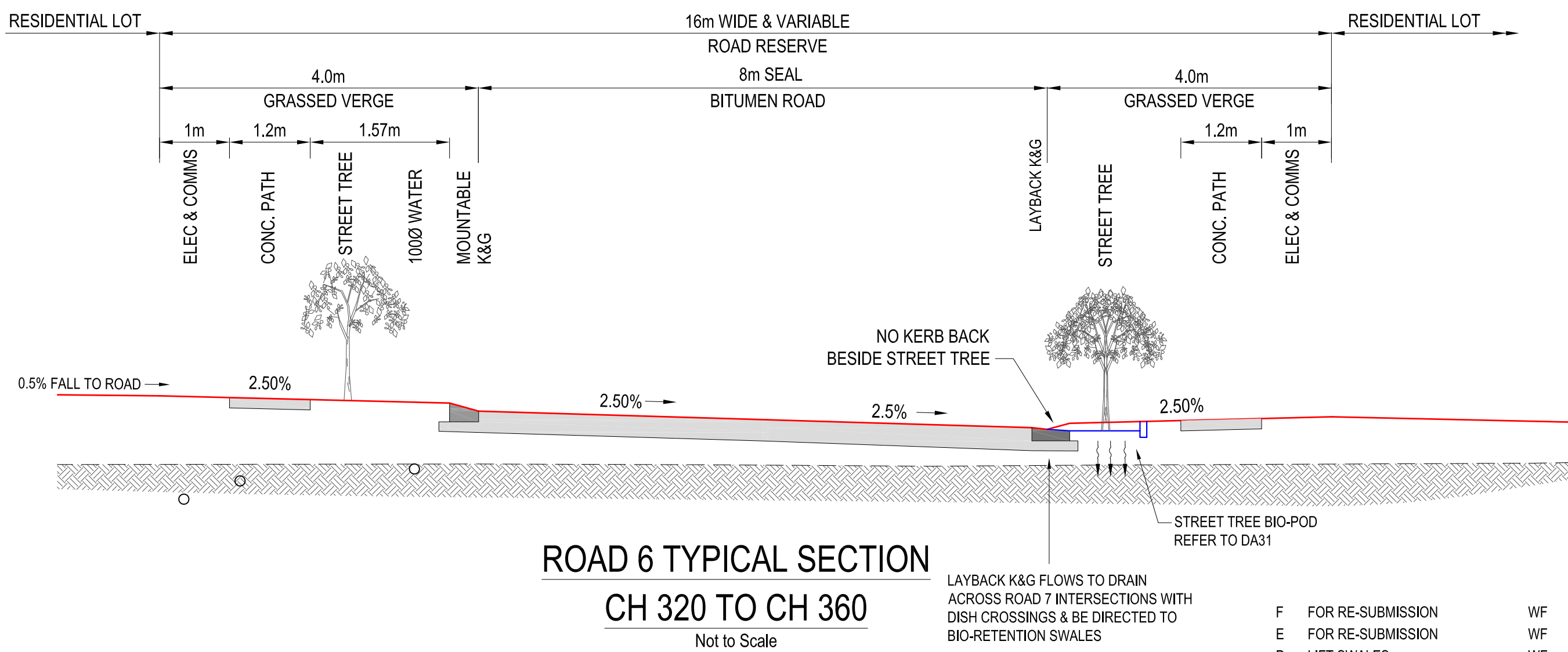
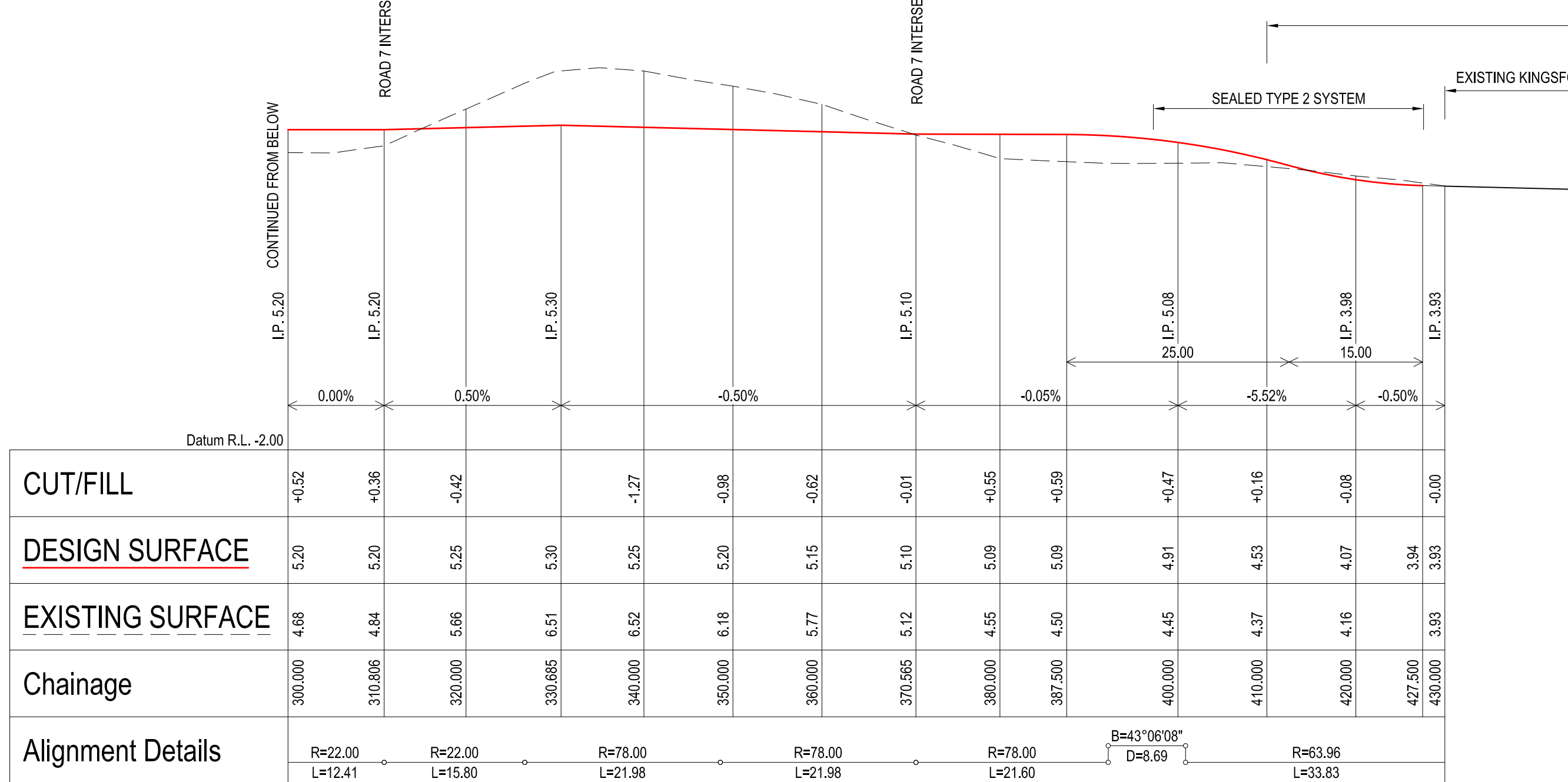
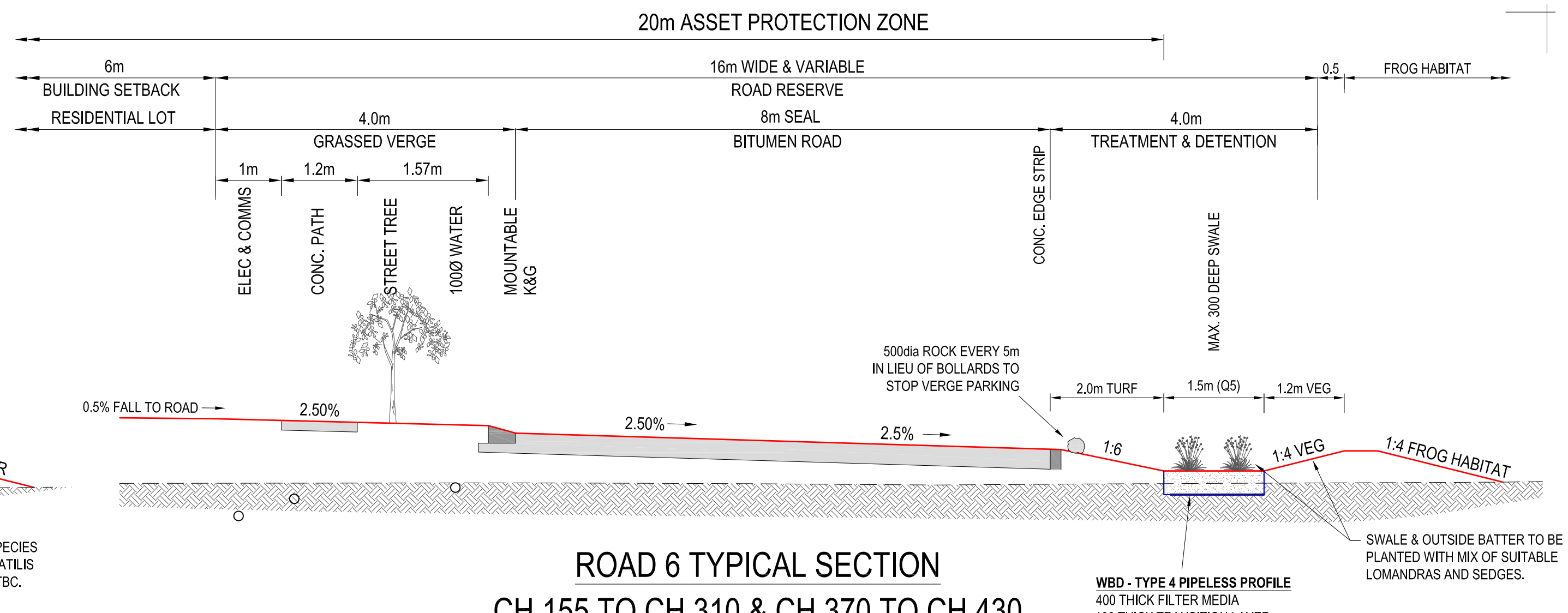
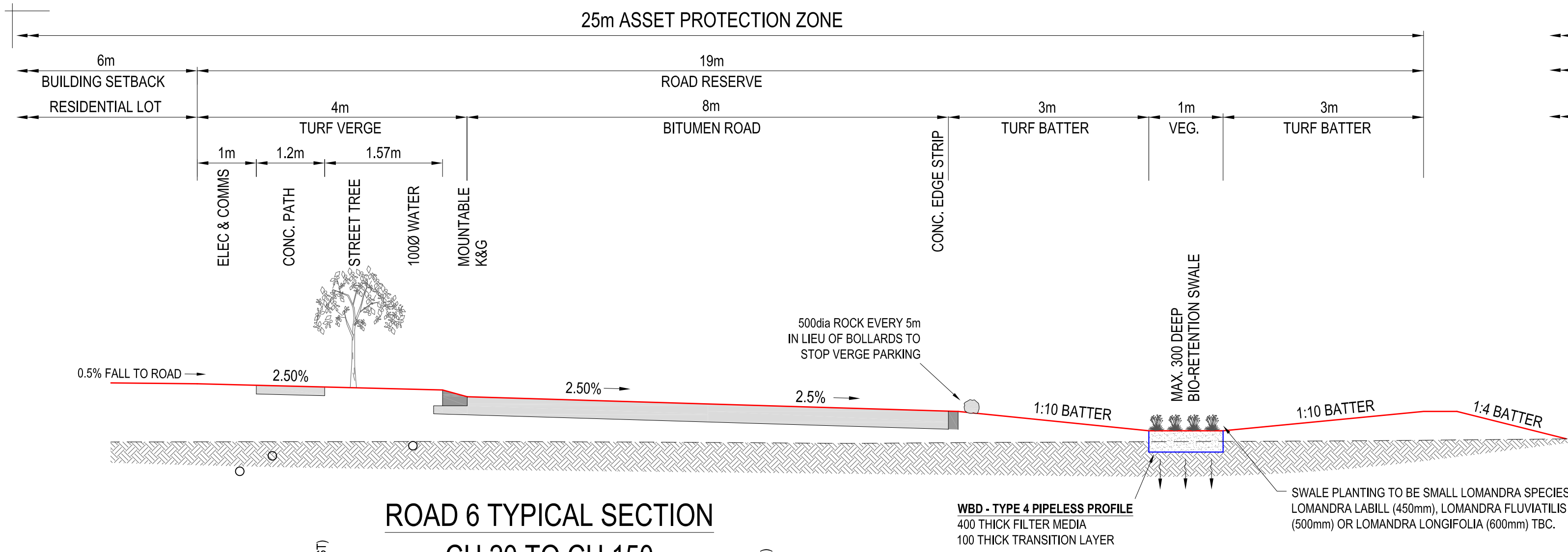
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**23 of 31**

Dwg. No.  
**1133-DA23**

Issue

**D**





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E	FOR RE-SUBMISSION	WF	WF	10.02.2023
D	LIFT SWALES	WF	WF	22.01.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

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126 LOT SUBDIVISION OF LOT 13 DP 1251383  
15 TORAKINA ROAD, BRUNSWICK HEADS

## ROAD 6 LONG SECTION & TYPICAL SECTIONS

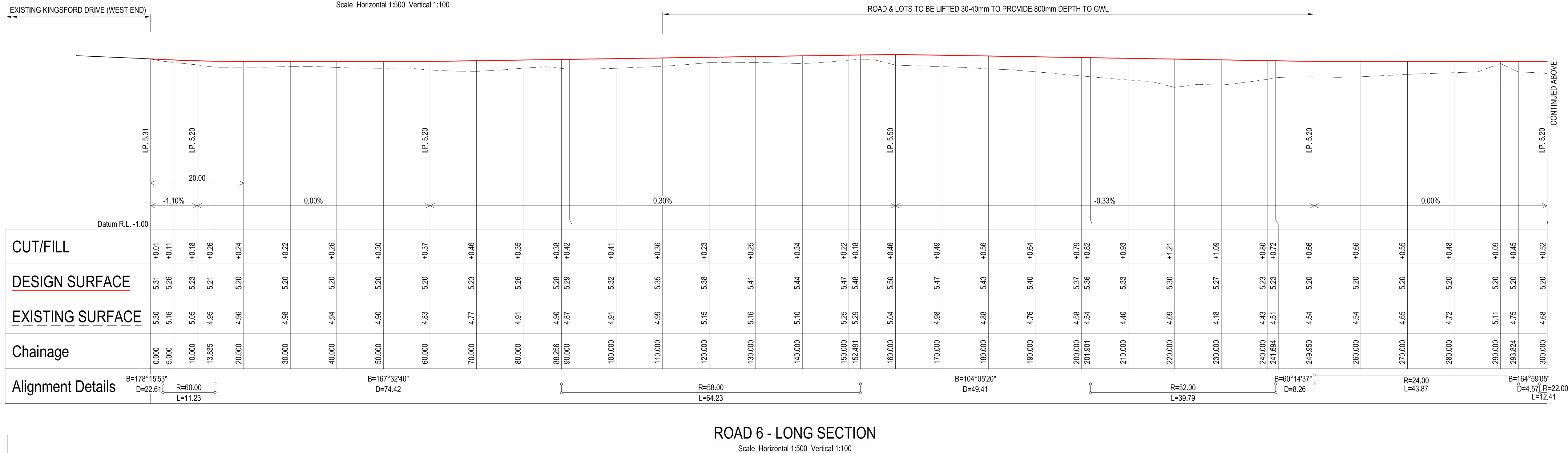
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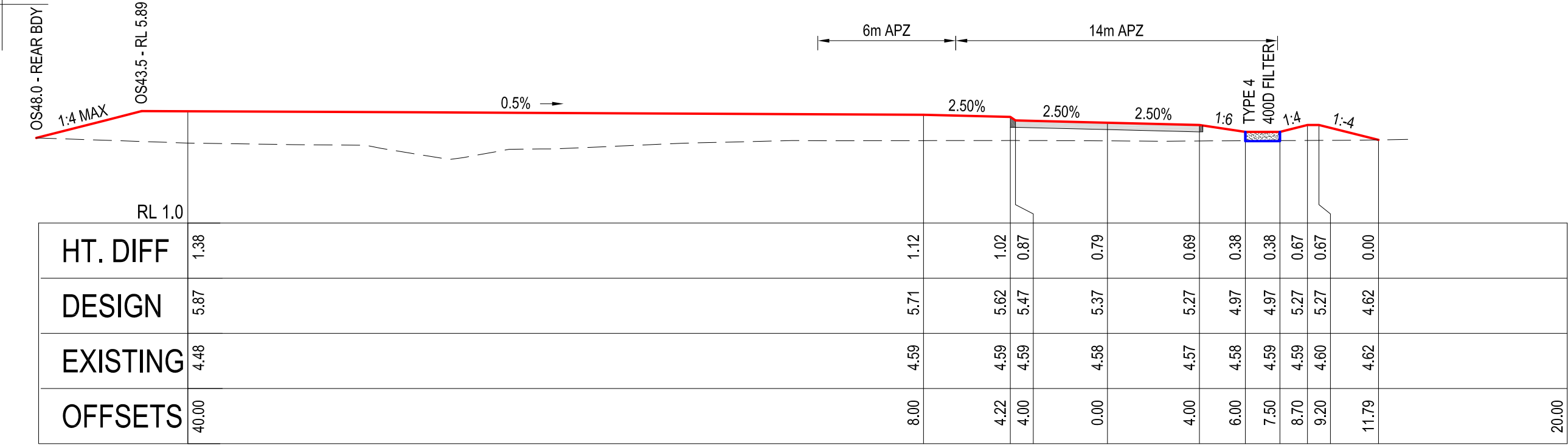
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Sheet No. 24 of 31

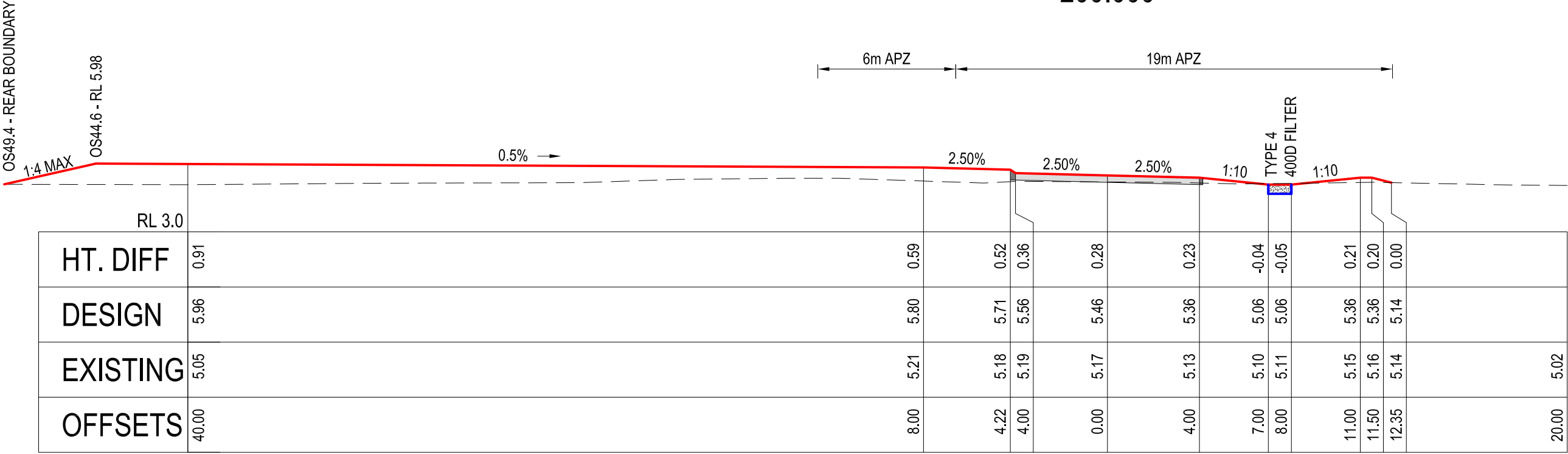
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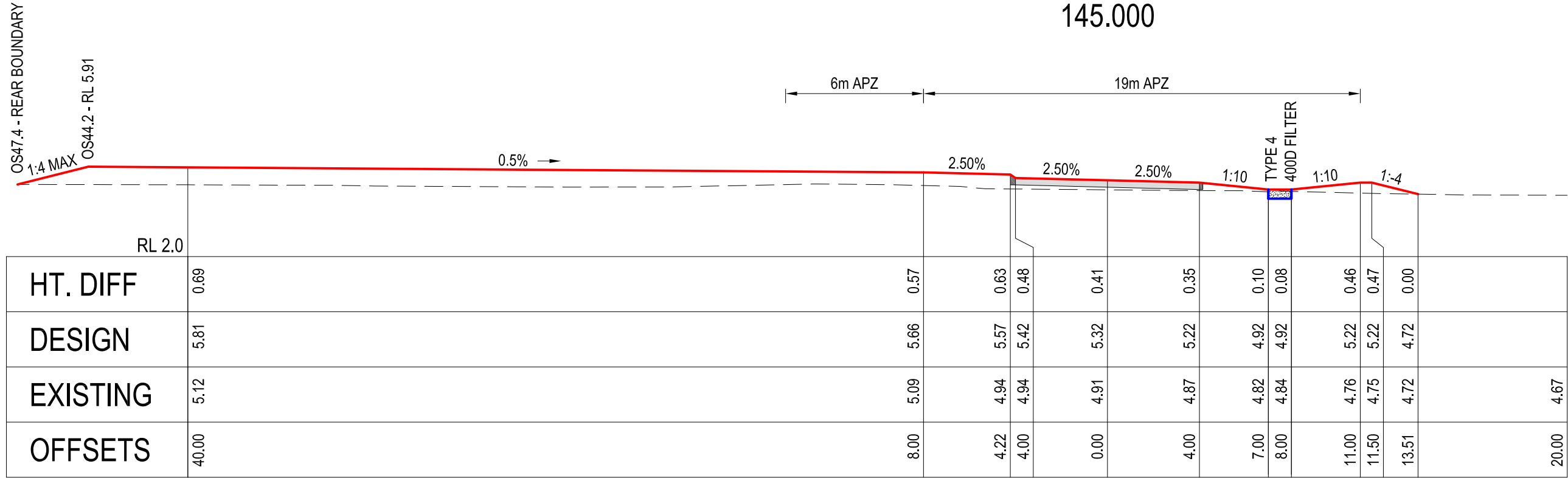




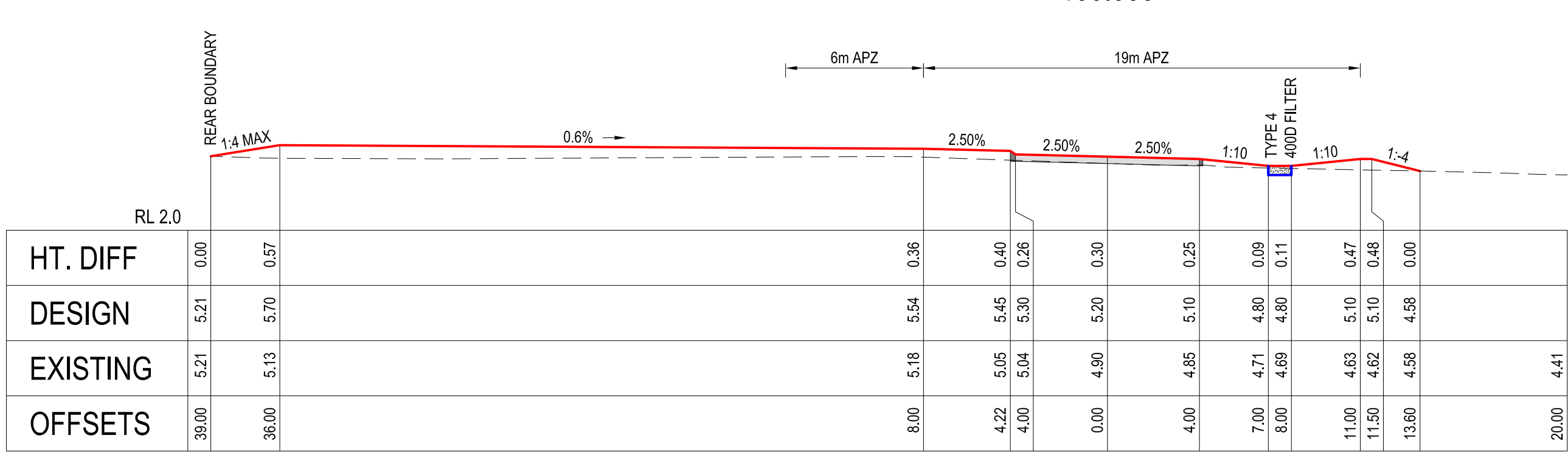
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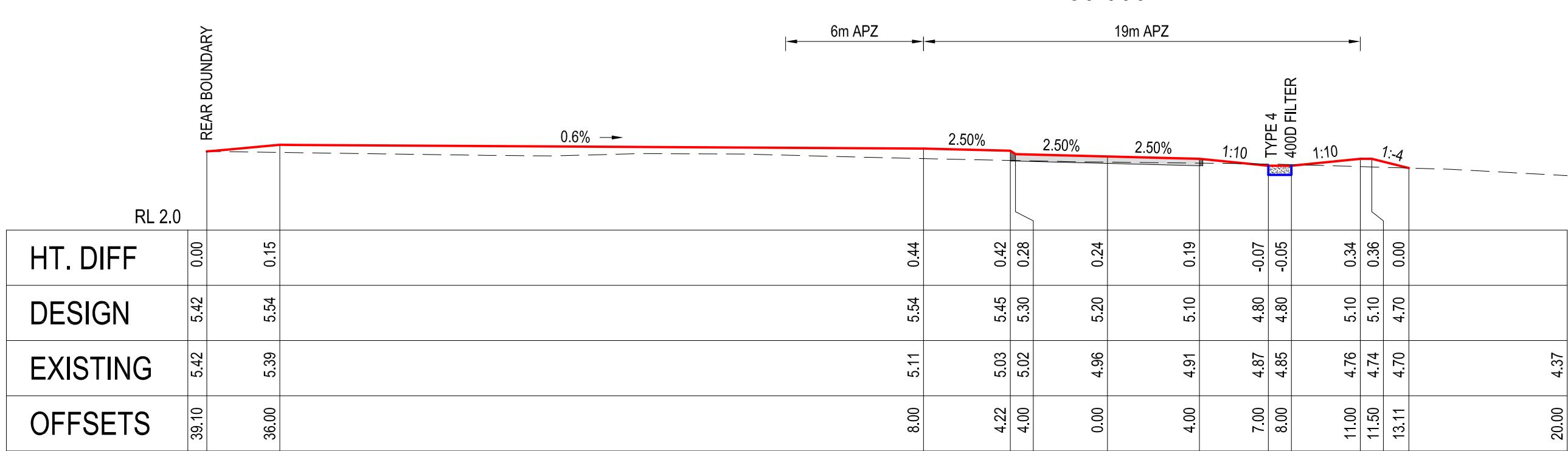
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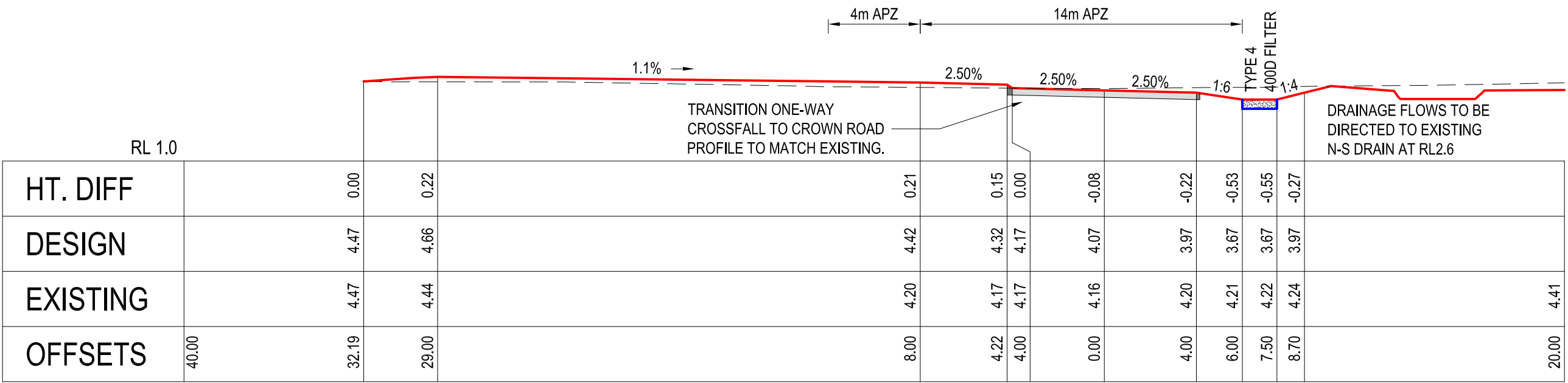
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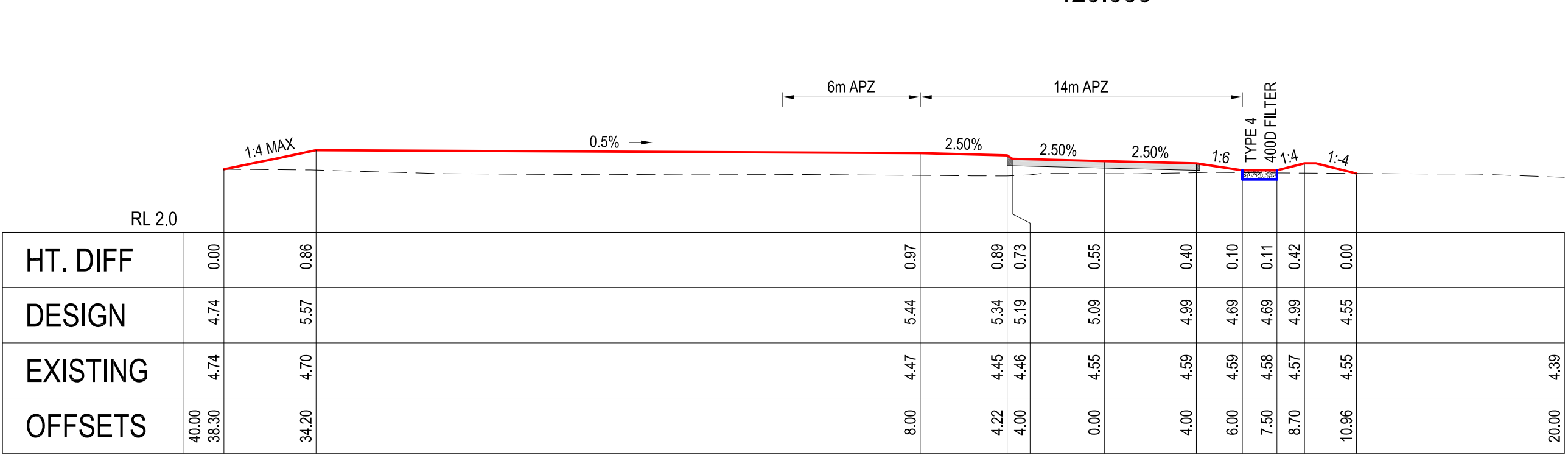
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## ROAD 6 - CROSS SECTIONS

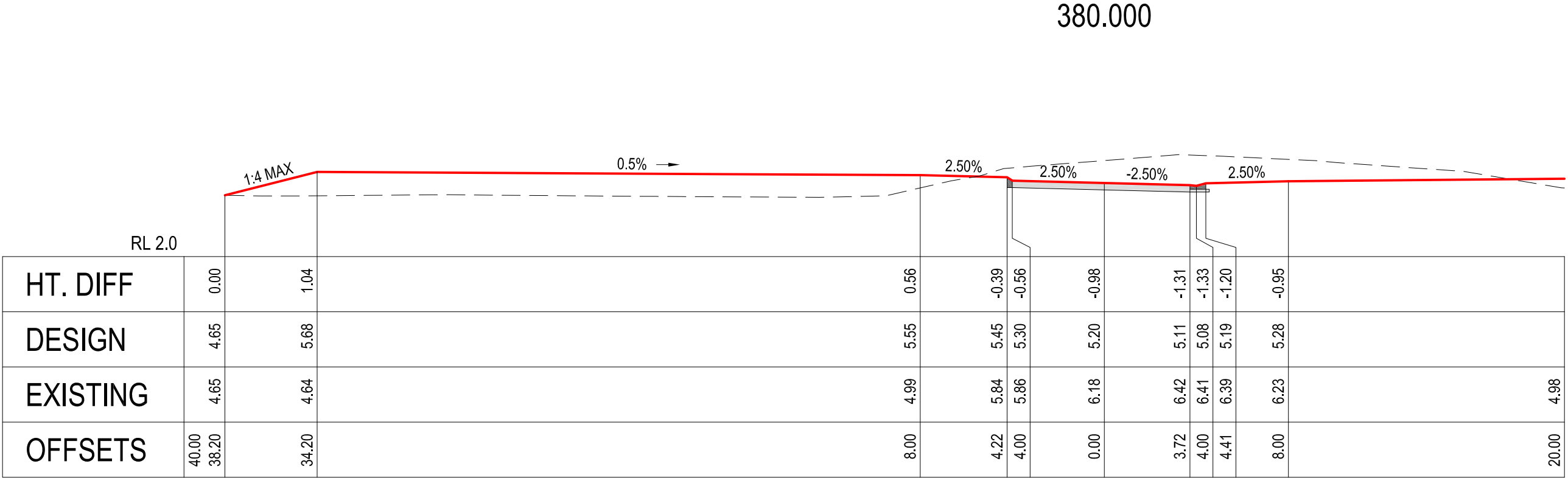
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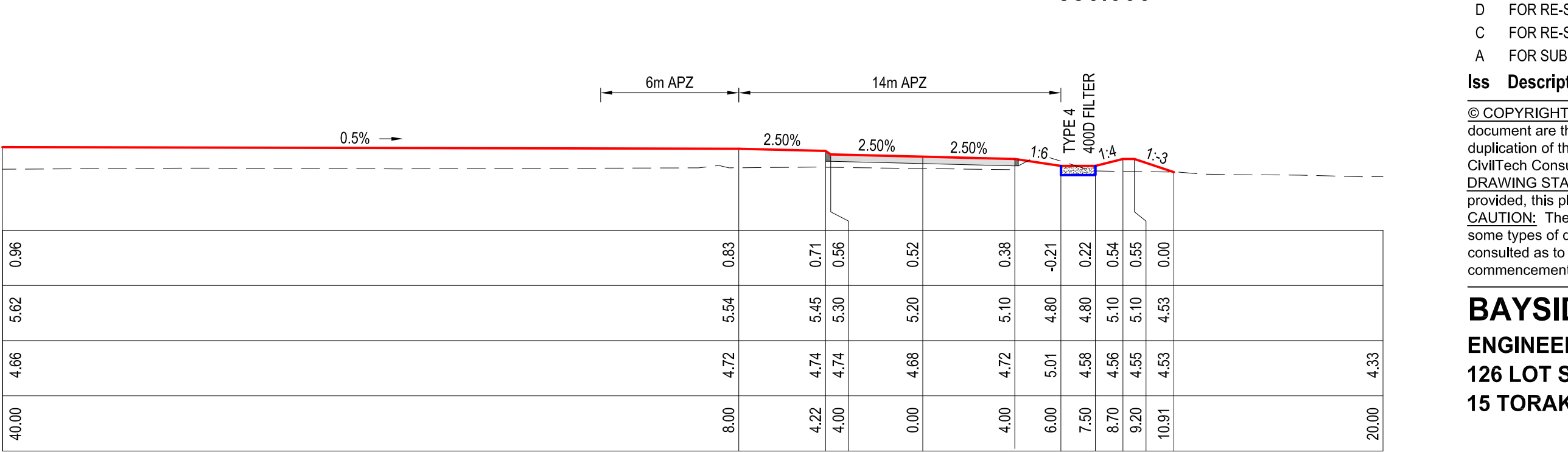
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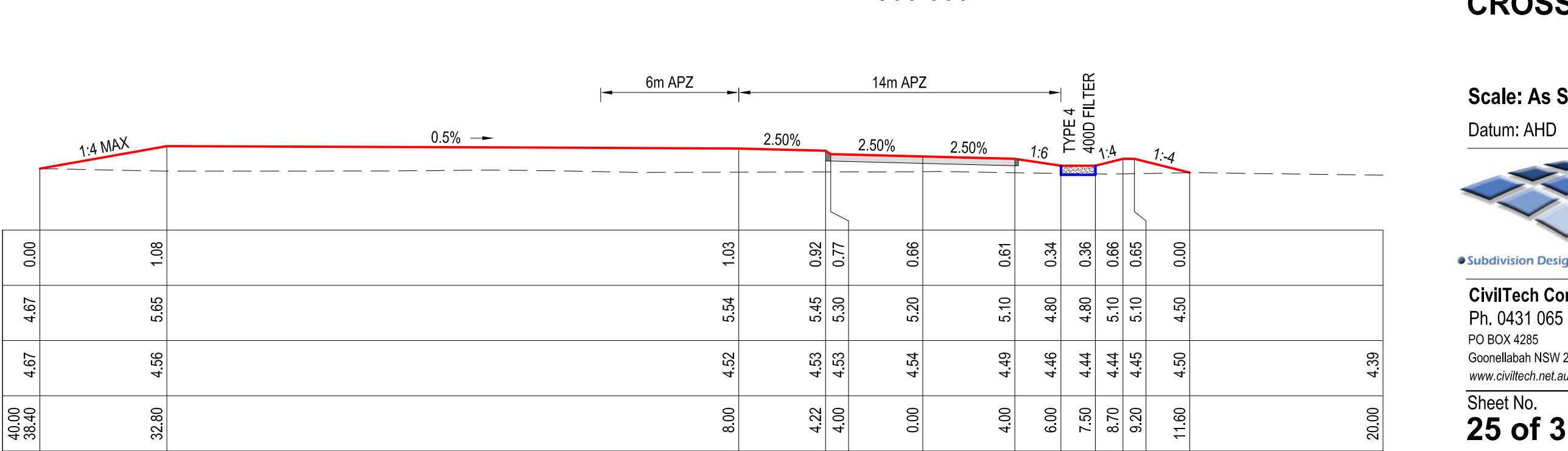
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D	FOR RE-SUBMISSION	WF	WF	10.03.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	01.08.2021

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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## ROAD 6 CROSS SECTIONS

Scale: As Shown at A1  
Datum: AHD

CAD file: 1133-DA25D.dwg  
CivilCAD file: 1133-ENG



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Sheet No.  
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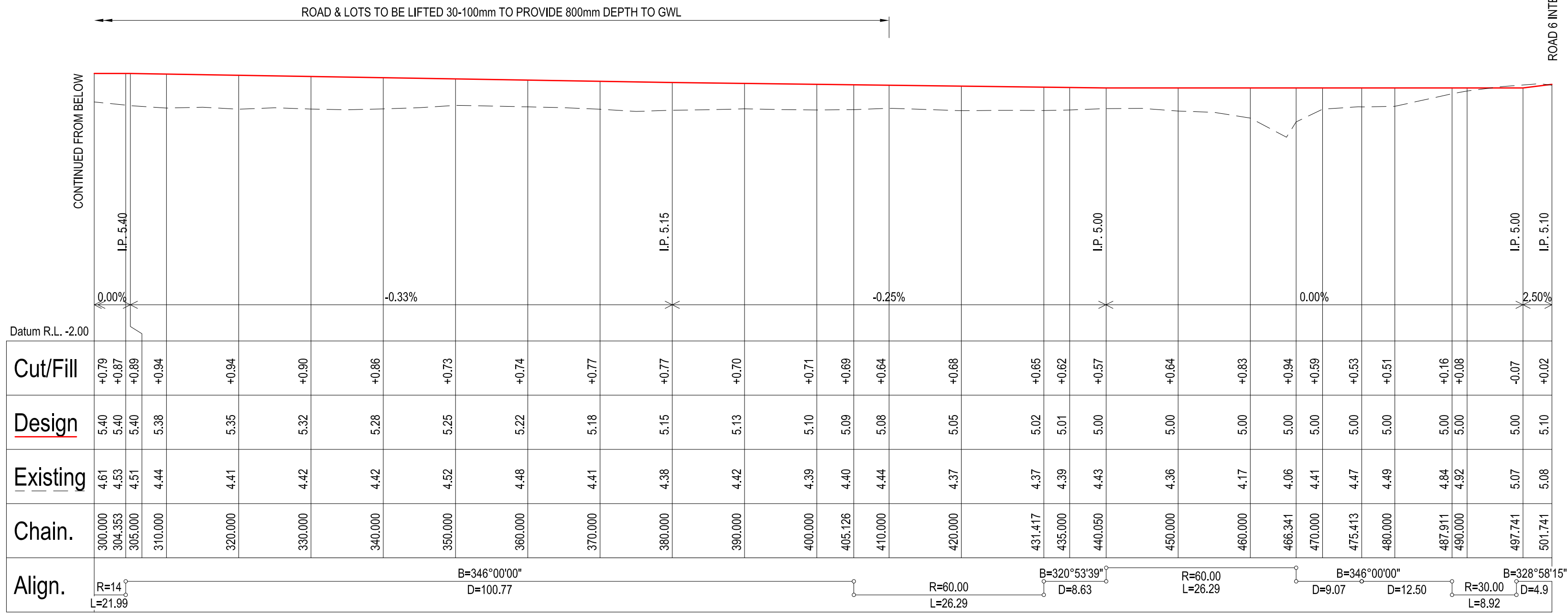
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**1133-DA25**

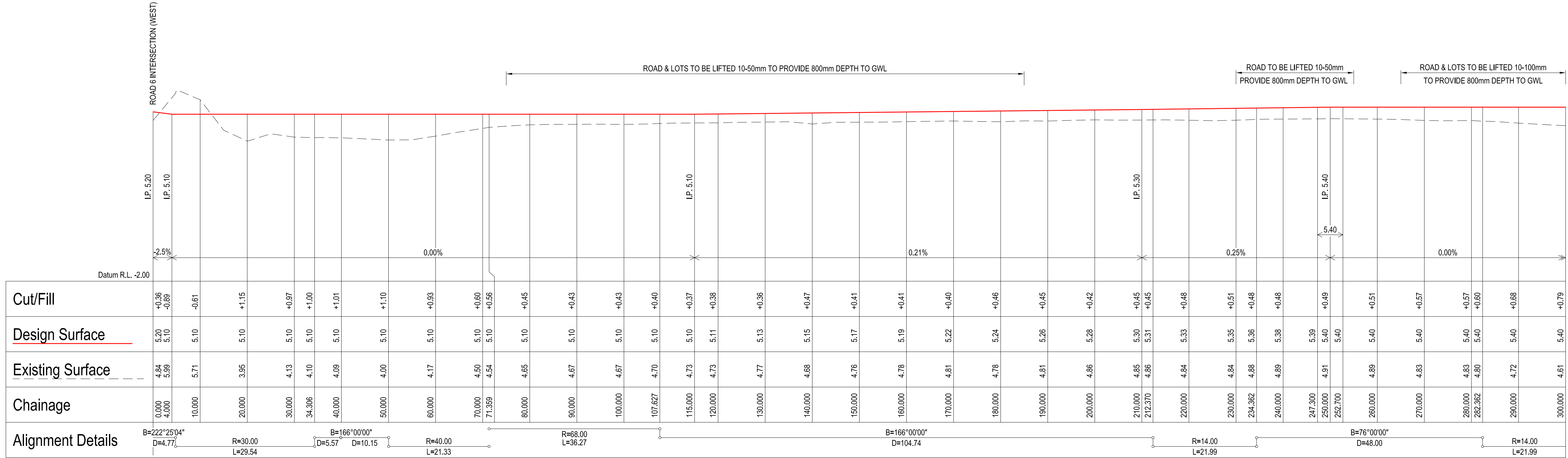
Issue

**D**

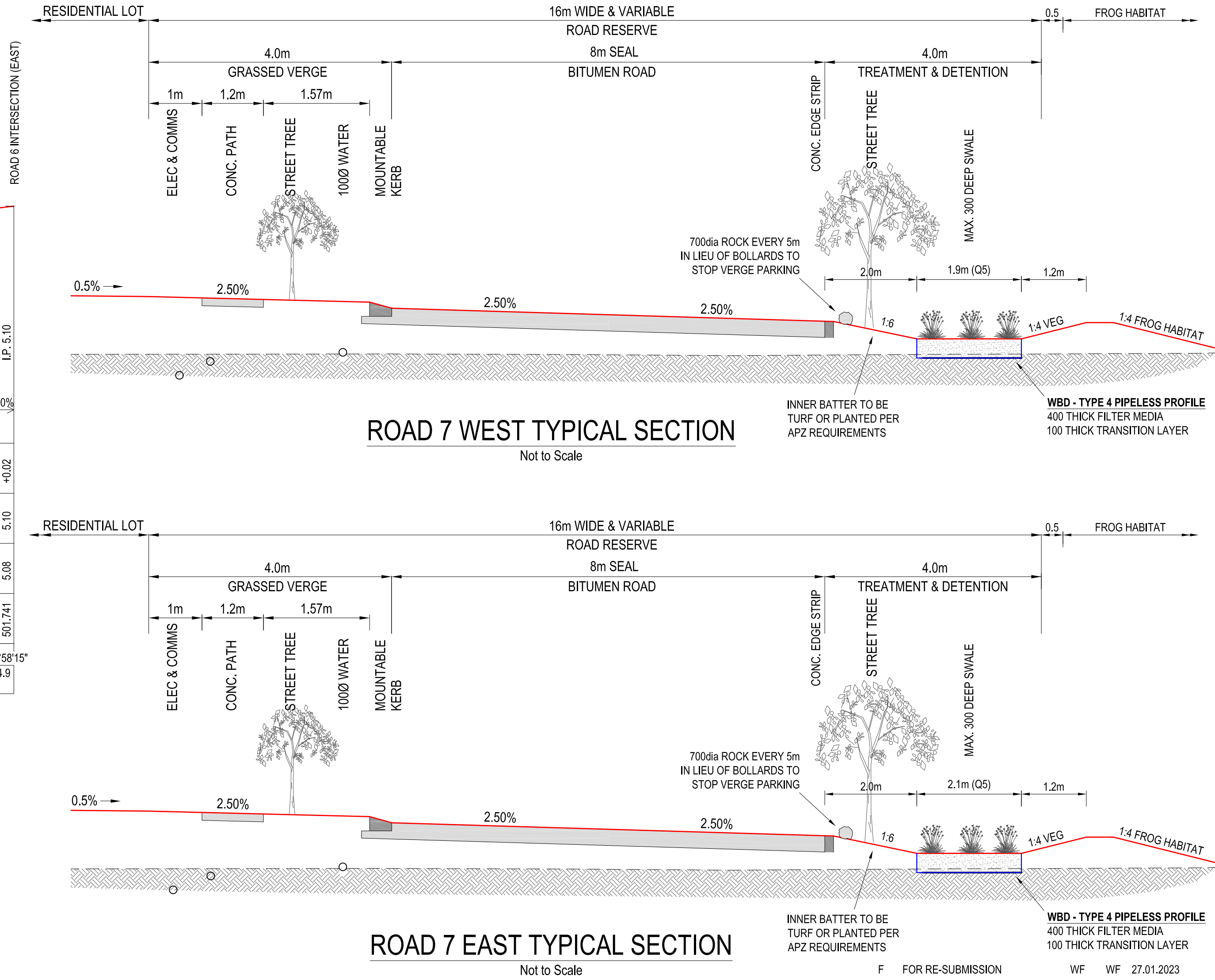




ROAD 7 - LONG SECTION cont'd  
Scale Horizontal 1:500 Vertical 1:100



ROAD 7 - LONG SECTION  
Scale Horizontal 1:500 Vertical 1:100



Iss	Description	Des	Drw	Date	Appd
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E	LIFT SWALES	WF	WF	10.02.2023	
D	LIFT SWALES	WF	WF	22.01.2023	
C	FOR RE-SUBMISSION	WF	WF	15.11.2022	
A	FOR SUBMISSION	WF	WF	01.09.2021	

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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## ROAD 7 LONG SECTION & TYPICAL SECTIONS

Scale: As Shown at A1 CAD file: 1133-DA26F.dwg  
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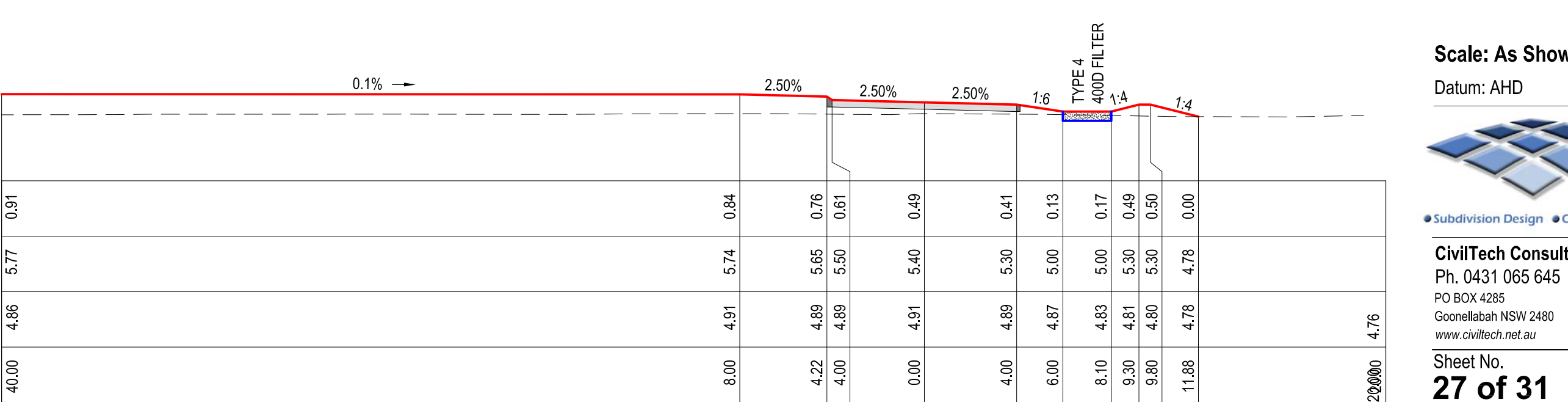
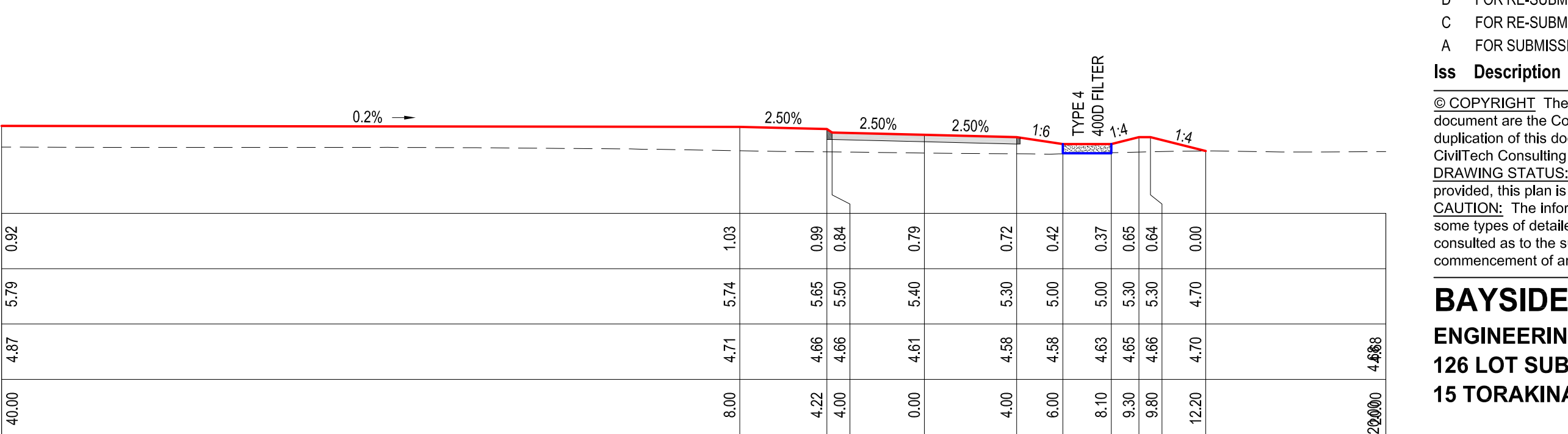
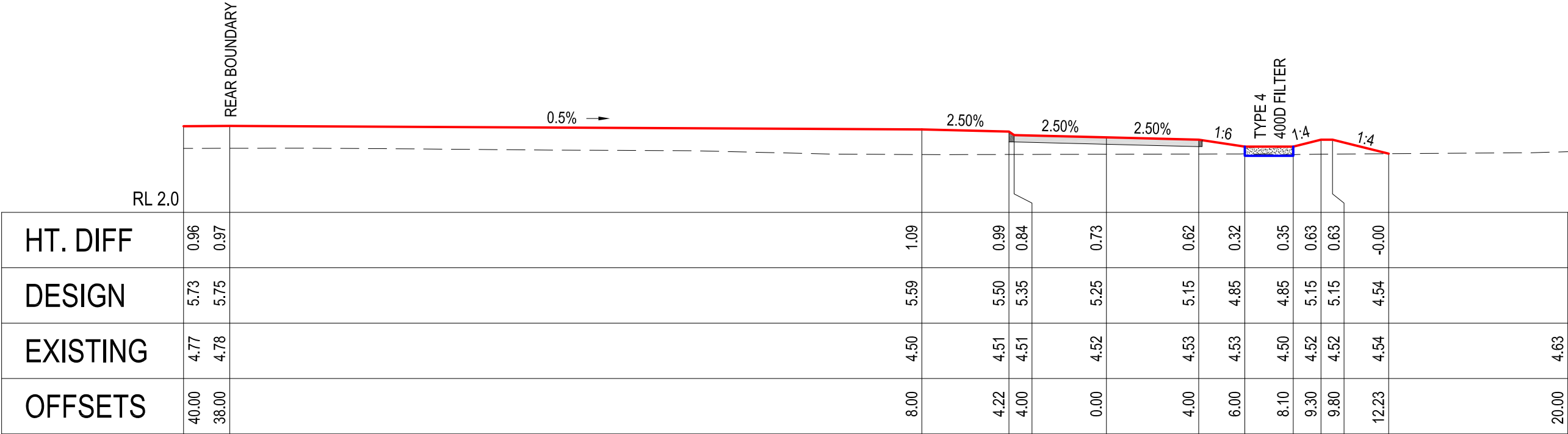
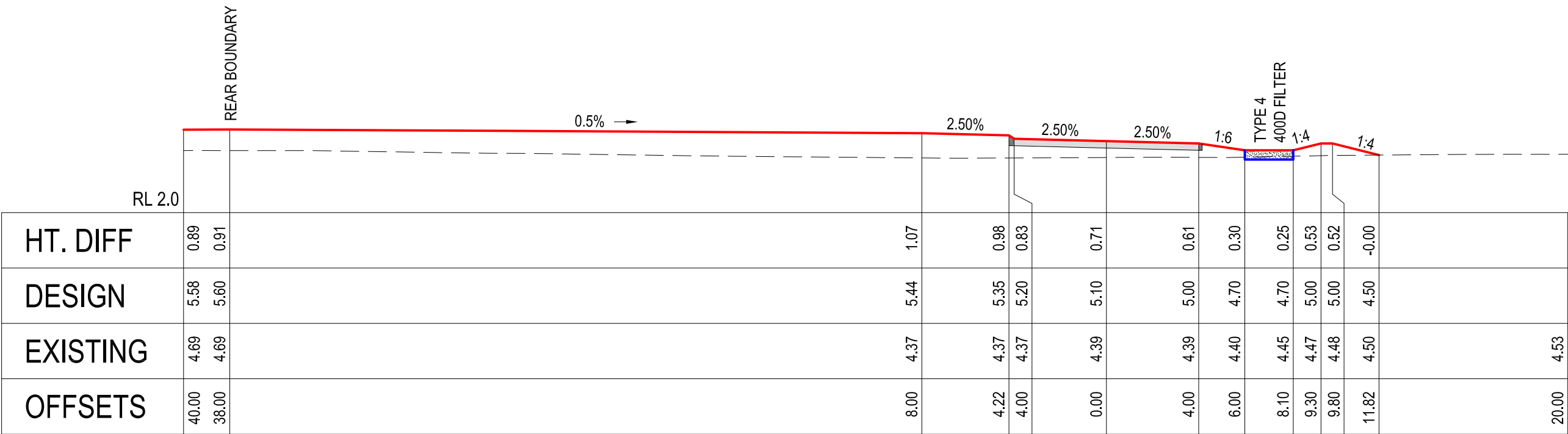
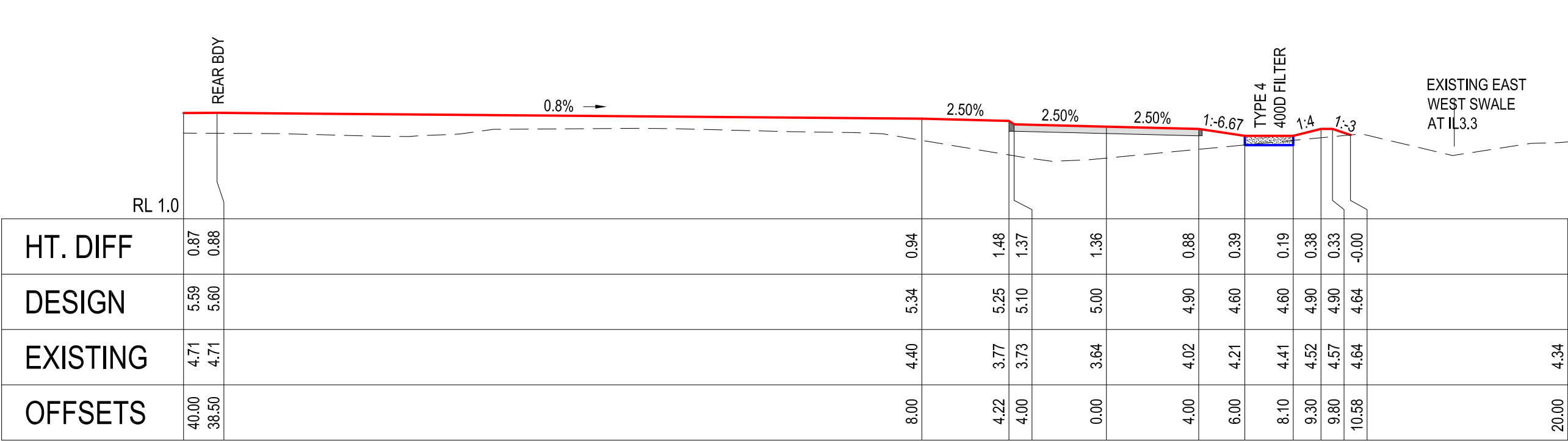
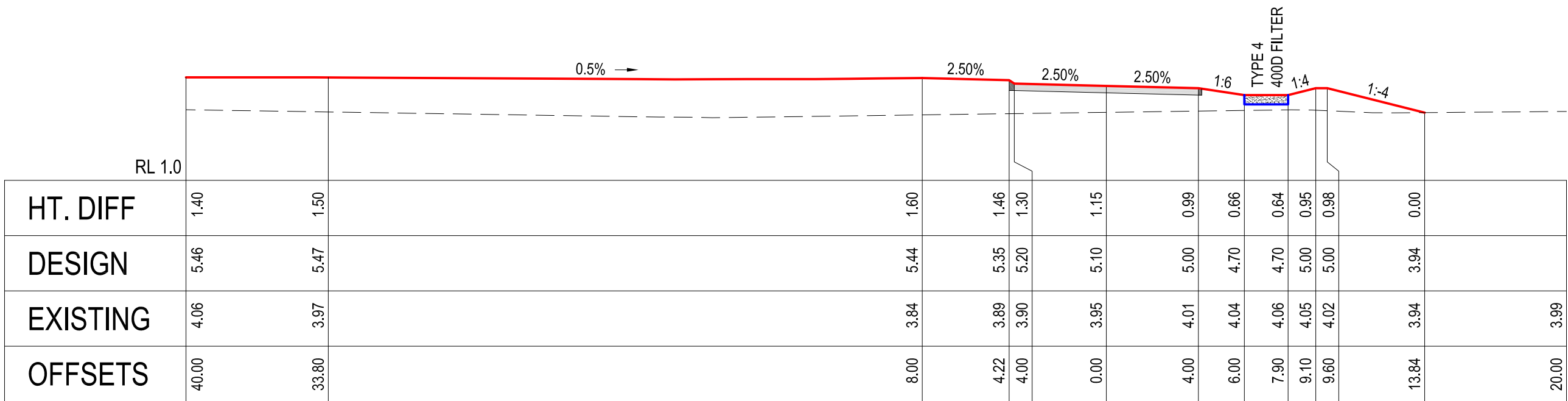
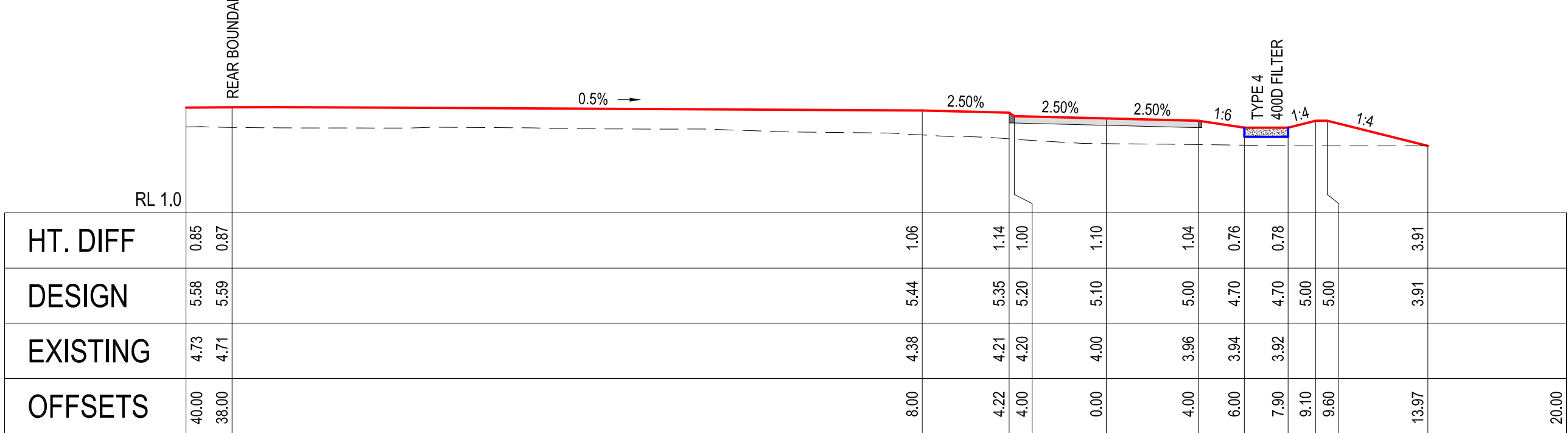
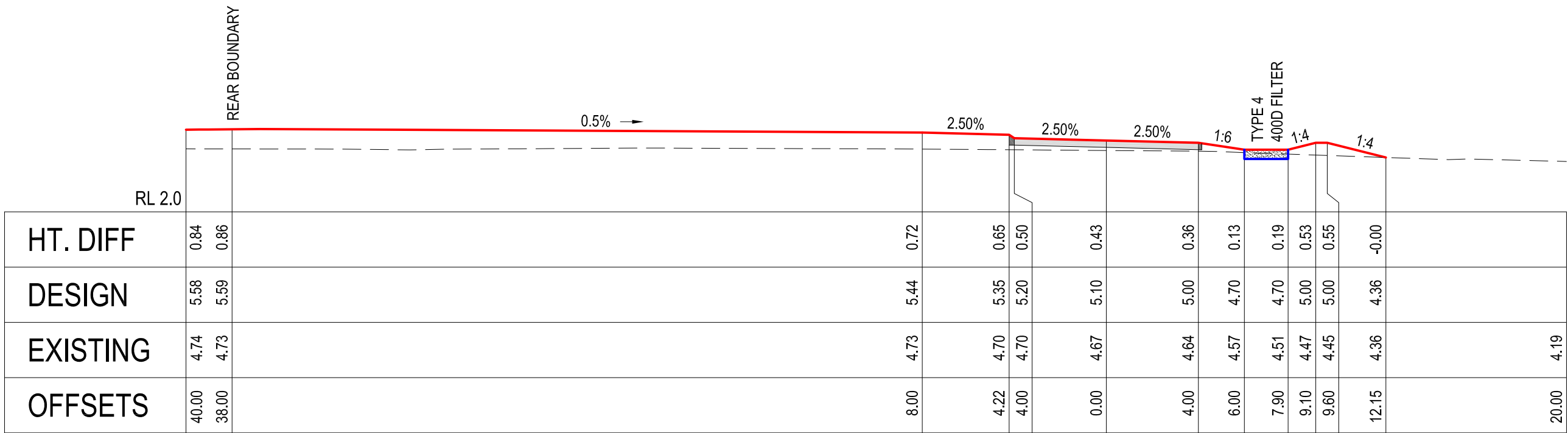
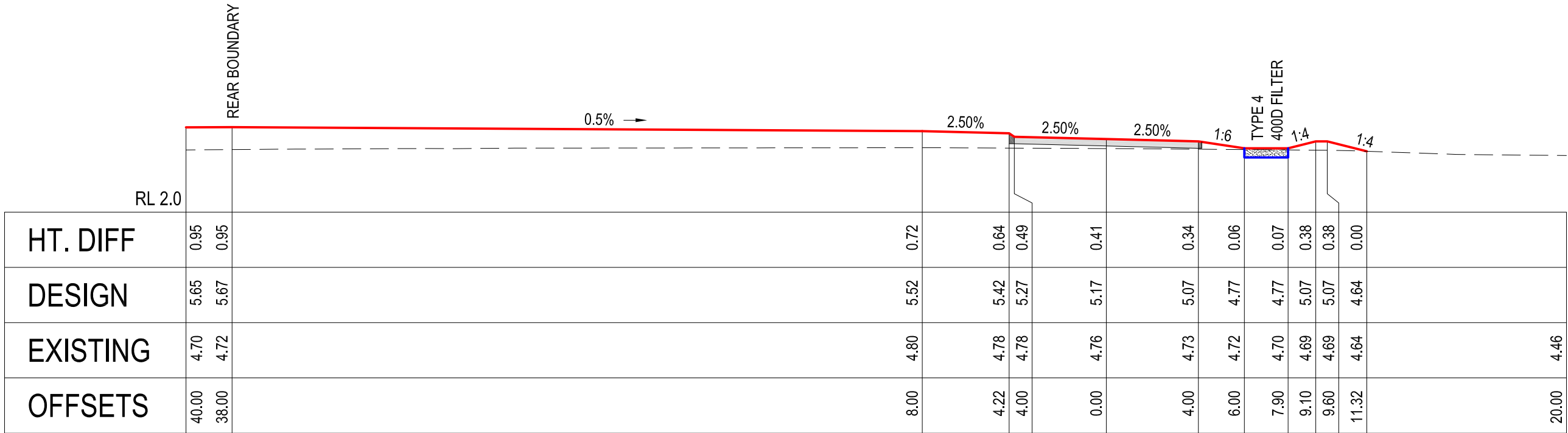
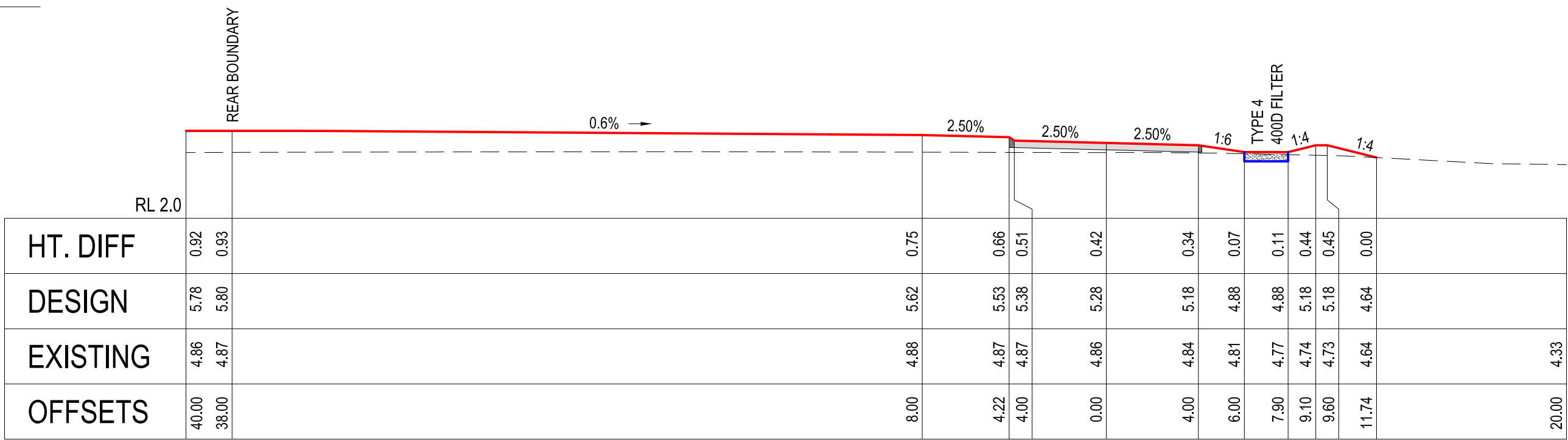
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Sheet No.  
**26 of 31**

Dwg. No.  
**1133-DA26**

Issue  
**F**





ROAD 7 - CROSS SECTIONS

D	FOR RE-SUBMISSION	WF	WF	10.02.2023	
C	FOR RE-SUBMISSION	WF	WF	15.11.2022	
A	FOR SUBMISSION	WF	WF	01.09.2021	
Iss	Description	Des	Drw	Date	Appd

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**ENGINEERING PLANS FOR D.A.**  
**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## ROAD 7 CROSS SECTIONS

Scale: As Shown at A1 CAD file: 1133-DA27D.dwg  
Datum: AHD CivilCAD file: -



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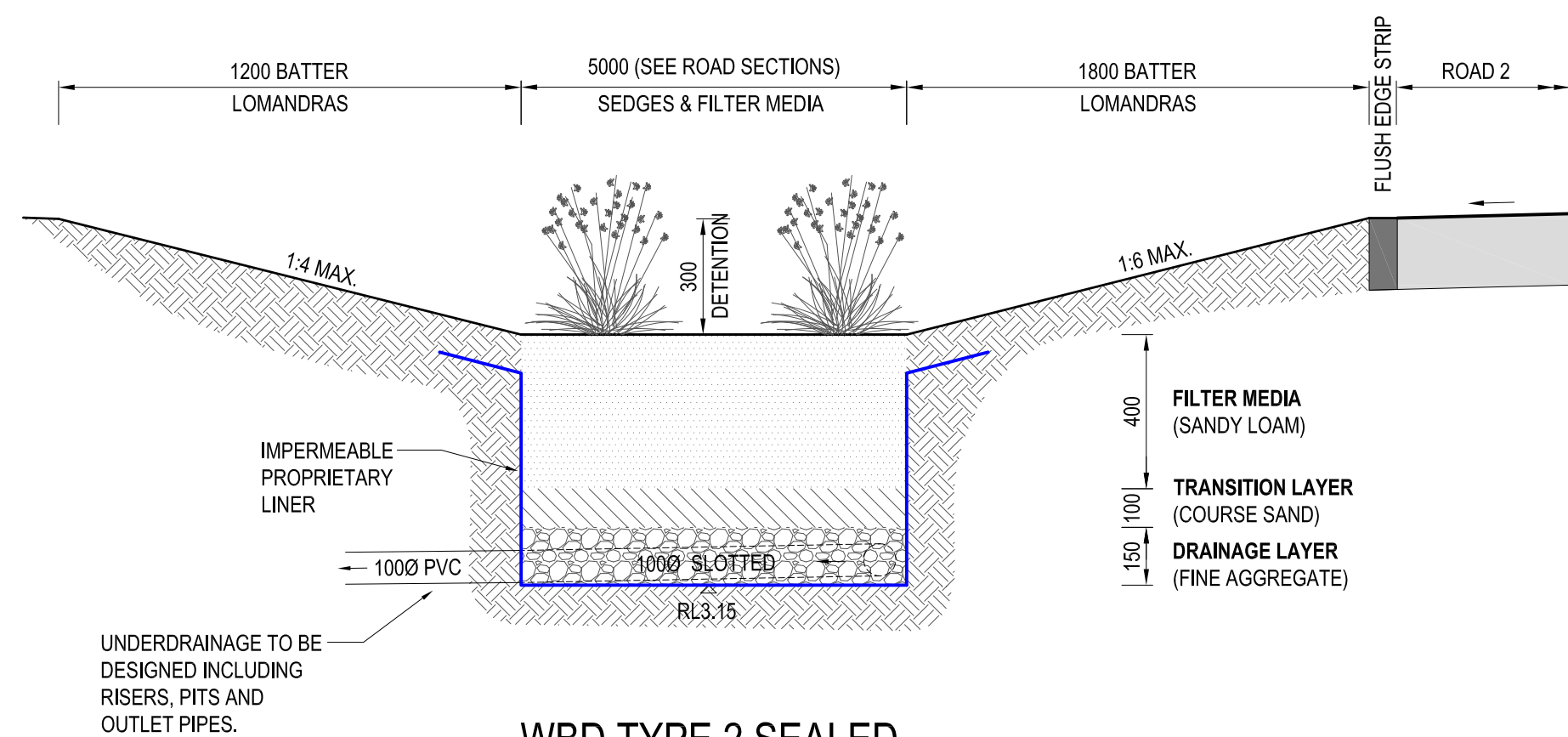
Sheet No.  
**27 of 31**

Dwg. No.  
**1133-DA27**

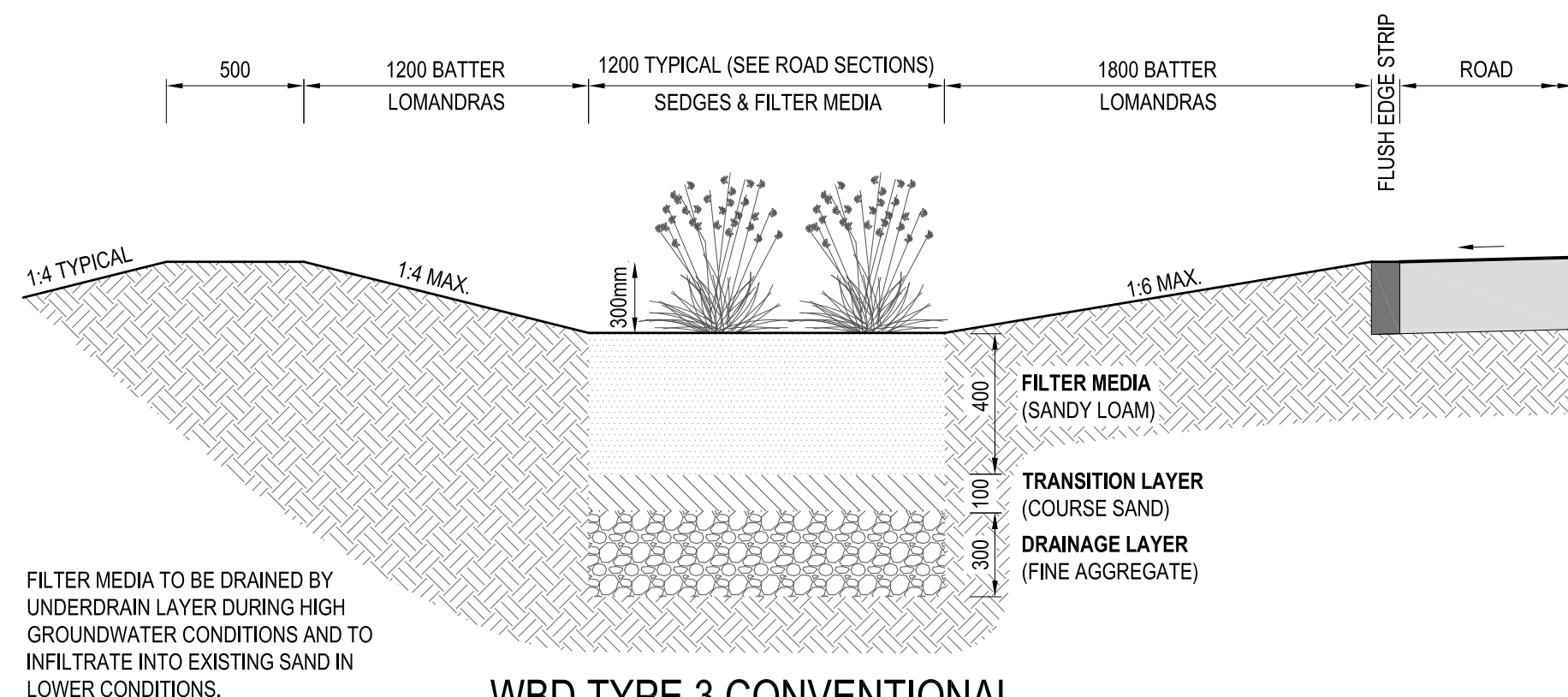
Issue

**D**

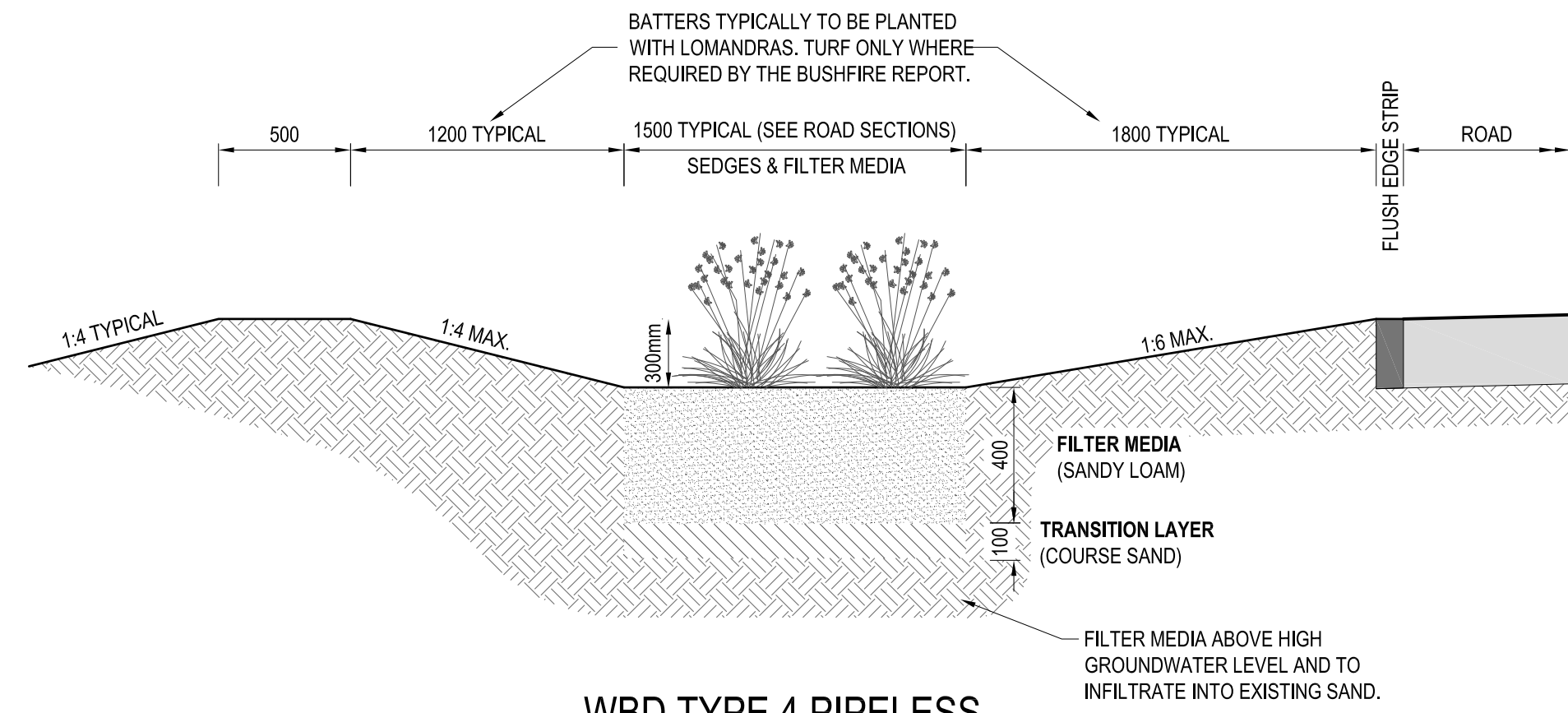




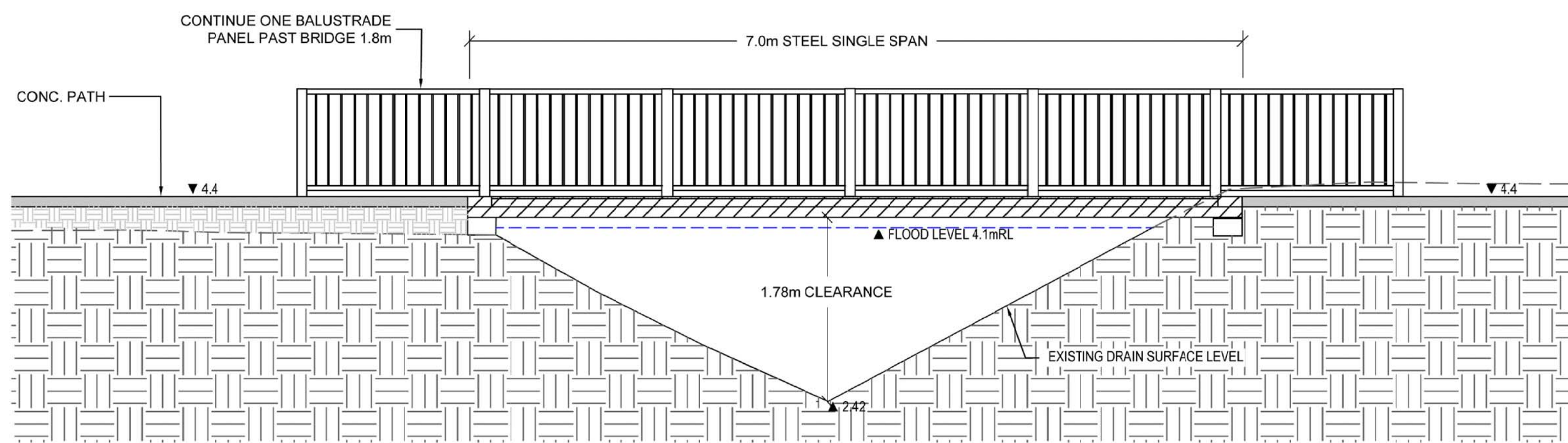
WBD TYPE 2 SEALED  
BIO-RETENTION FOR ROAD 2 WEST  
Not to Scale



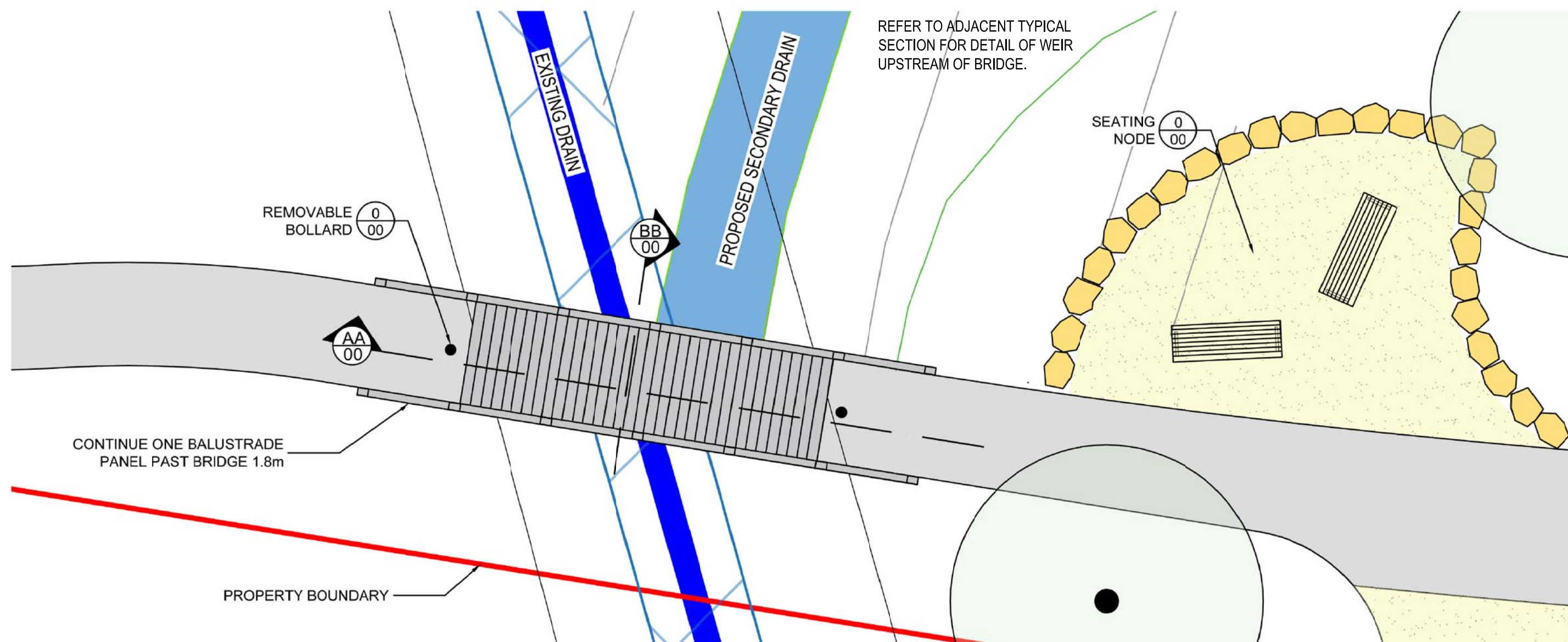
WBD TYPE 3 CONVENTIONAL  
BIO-RETENTION WITH UNDER-DRAIN (OPTIONAL)  
Not to Scale



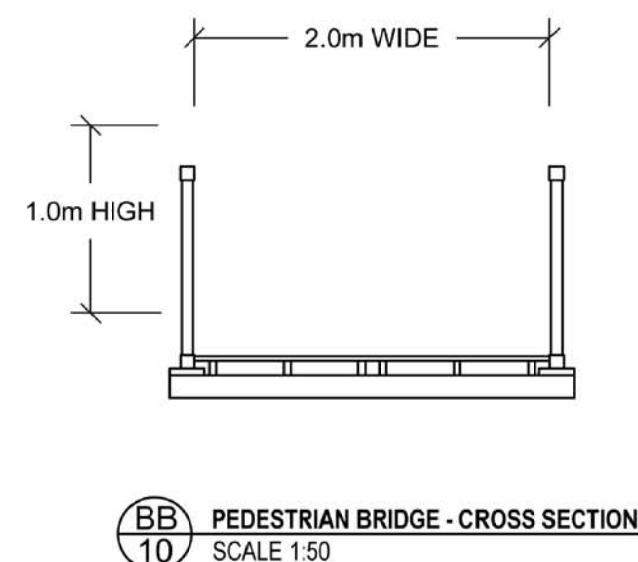
WBD TYPE 4 PIPELESS  
BIO-RETENTION WITH NO UNDER-DRAIN  
Not to Scale



PEDESTRIAN BRIDGE - ELEVATION  
SCALE 1:50



PEDESTRIAN BRIDGE - ELEVATION  
SCALE 1:100

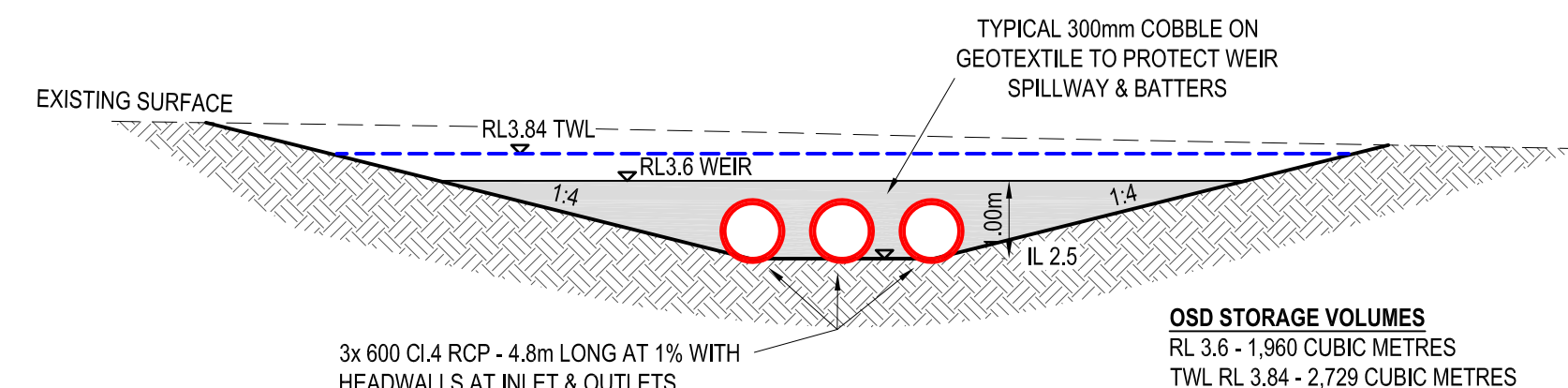


PEDESTRIAN BRIDGE - CROSS SECTION  
SCALE 1:50



CONDAMINE BRIDGE - PRECEDENT IMAGE

BRIDGE SPECIFICATION  
- CONDAMINE BY LANDMARK PRODUCTS PTY LTD  
- 2M WIDE 7M LONG  
- LOADING 3kPa (PEDESTRIAN USE ONLY)  
- FLAT SINGLE SPAN  
- POWDERCOATED DULUX 'SATIN BLACK'  
- COMPOSITE TIMBER DECKING



N-S DRAIN OSD WEIR SECTION  
Not to Scale

D	FOR RE-SUBMISSION	WF	WF	10.02.2023
C	FOR RE-SUBMISSION	WF	WF	15.11.2022
A	FOR SUBMISSION	WF	WF	23.08.2021

**Iss Description Des Drw Date App**

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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

**FILTER MEDIA PROFILES &  
ENGINEERING DETAILS**

Scale: As Shown at A1 CAD file: 1133-DA28D.dwg  
Datum: AHD CivilCAD file: -



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Dwg. No. **1133-DA28** Issue **D**



DRAWING: **PEDESTRIAN BRIDGE  
SOUTHERN DRAIN CROSSING**  
PROJECT: **BAYSIDE BRUNSWICK**  
LOT 12 DP 1251383, BAYSIDE WAY BRUNSWICK HEADS

REV	ISSUE / AMENDMENTS	DATE
A	FOR DISCUSSION	14.05.21
	<b>WORKING FILE</b>	



DO NOT SCALE FROM PLANS. TO BE ADAPTED ON SITE BY CONTRACTOR & CONFIRMED BY THE PROJECT SUPERVISOR. SIZING CALCULATIONS, STRUCTURES, & COMPACTION TO BE CONFIRMED BY ENGINEER OR SUITABLY QUALIFIED PERSONS. ENGINEERS CERTIFICATE BY OTHERS.

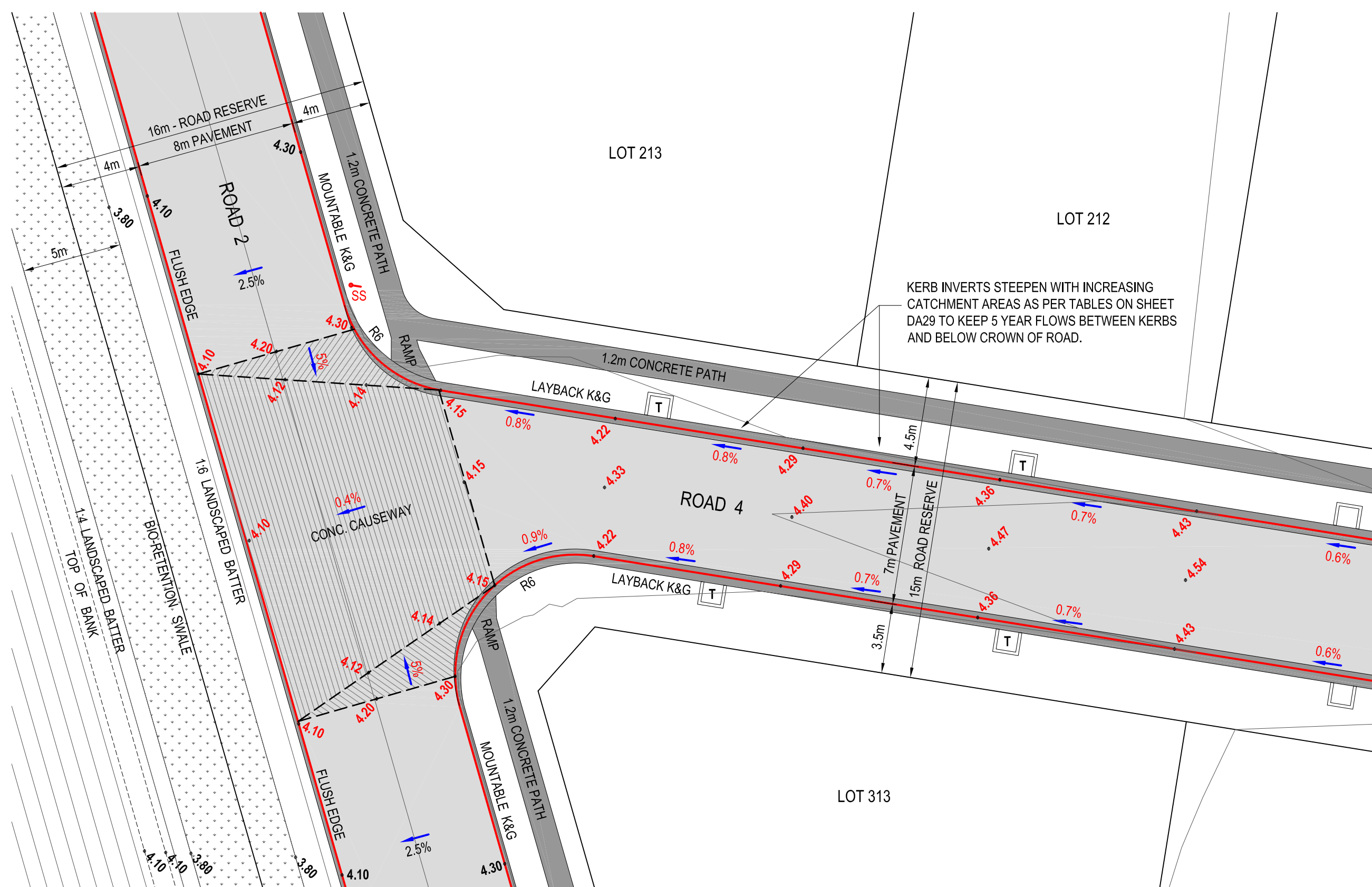
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	CHECKED	DM	DWG No. 1-211400_BAYSIDE_LD_11

REV. **A**





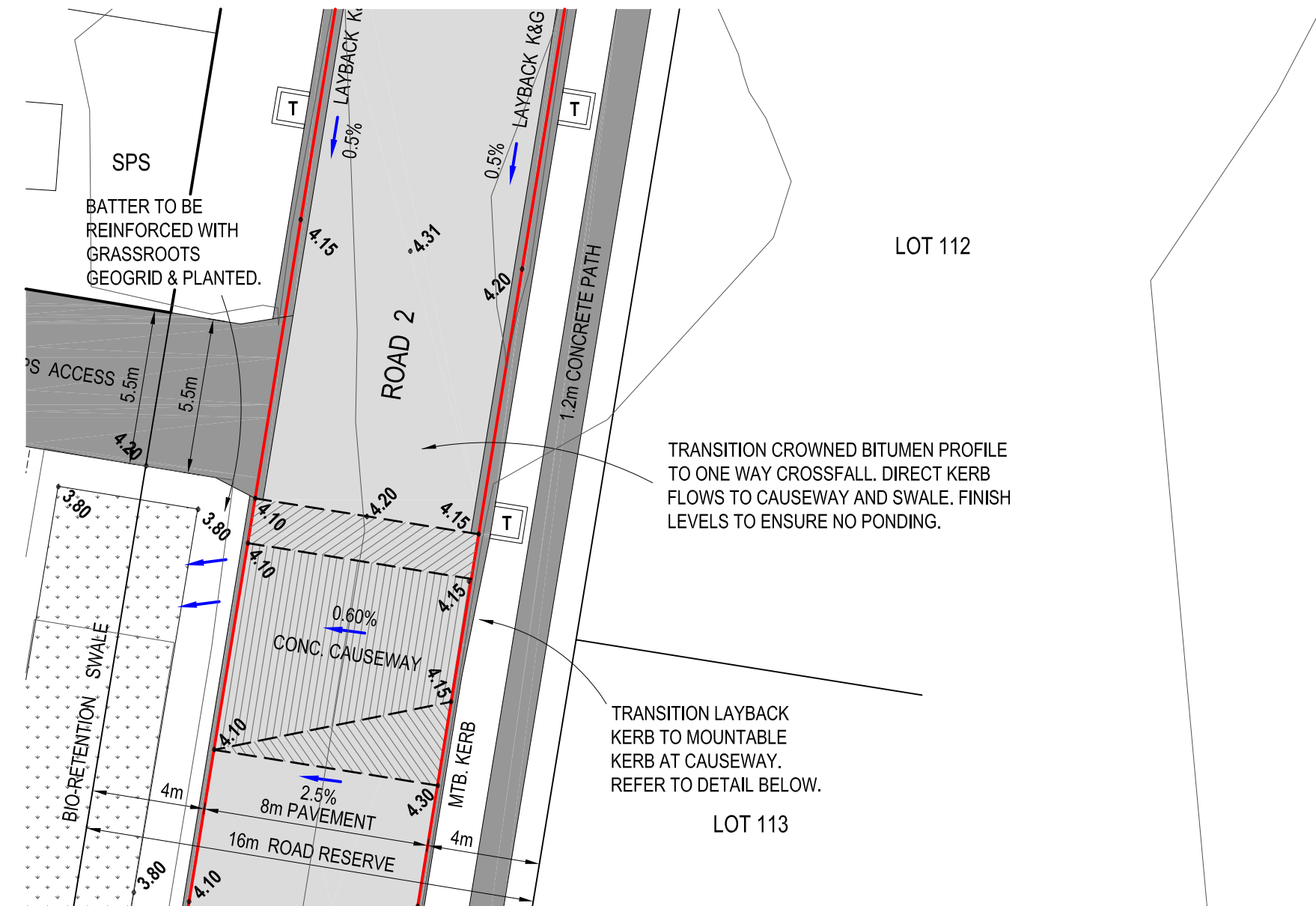




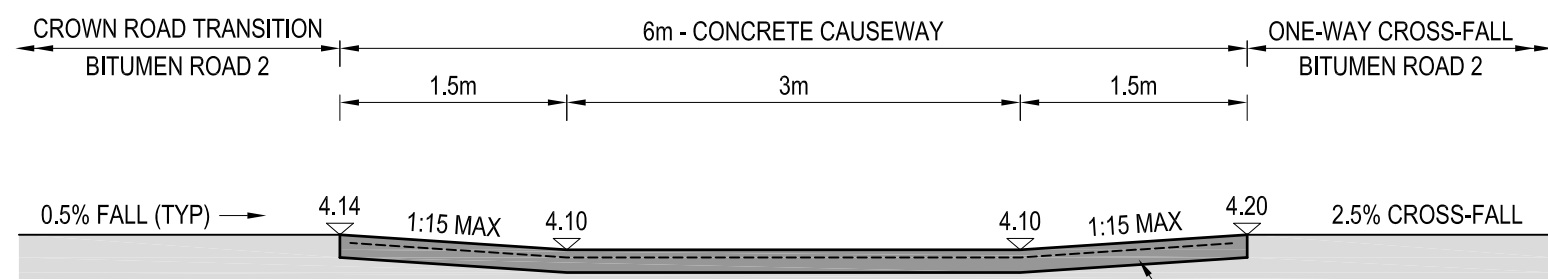
ROAD 2 & 4 WESTERN INTERSECTION  
KERB RETURN DETAILS  
Scale: 1:200 at A1

CAUSEWAY 2-4 HYDRAULIC CALCS

CAUSEWAY GRADE	0.4%	5 YEAR FLOW	369 l/s	100 YEAR FLOW	787 l/s	NRLG COMPLIANCE
MIN BASE WIDTH	10.2 m	FLOW VELOCITY	0.61 m/s	FLOW VELOCITY	0.77 m/s	Y
BATTER SLOPE	5%	FLOW DEPTH	55 mm	FLOW DEPTH	83 mm	Y
MANNINGS n	0.014	V x D RATIO	0.033	V x D RATIO	0.066	Y



ROAD 2  
CAUSEWAY DETAIL PLAN  
Scale: 1:200 at A1



TYPICAL CAUSEWAY SECTION  
Not to scale at A1

5 YEAR 165 l/s	DEPTH = 50mm, VEL. = 0.9m/s	NRLG COMPLIANCE
100 YEAR 350 l/s	DEPTH = 63mm, VEL. = 1.0m/s	Y
CAPACITY 596 l/s	DEPTH = 100mm, VEL. = 1.3m/s	Y

PAVEMENT DETAILS - TBC  
150mm THICK 25MPa CONCRETE CAUSEWAY  
SL82 MESH TOP (50mm TOP & COVER)  
CRUSHER DUST BLINDING LAYER IF REQUIRED.  
150mm THICK MECHANICALLY COMPACTED BASECOURSE

## LEGEND

- KERB INVERT
- KERB FLOW DIRECTION & GRADE
- KERB INVERT LEVEL
- TREE PIT BIO POD (REFER DA31)
- STREET SIGN (NRLG R-12)

A	FOR SUBMISSION	WF	WF	10.02.2023
Iss	Description	Des	Drw	Date

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**126 LOT SUBDIVISION OF LOT 13 DP 1251383**  
**15 TORAKINA ROAD, BRUNSWICK HEADS**

## INTERSECTION TREATMENT DETAILS & CALCULATIONS 0.1m FINISHED CONTOURS

Scale: 1:200 at A1  
Datum: AHD

CAD file: 1133-DA30A.dwg

CivilCAD file: 1133-ENG



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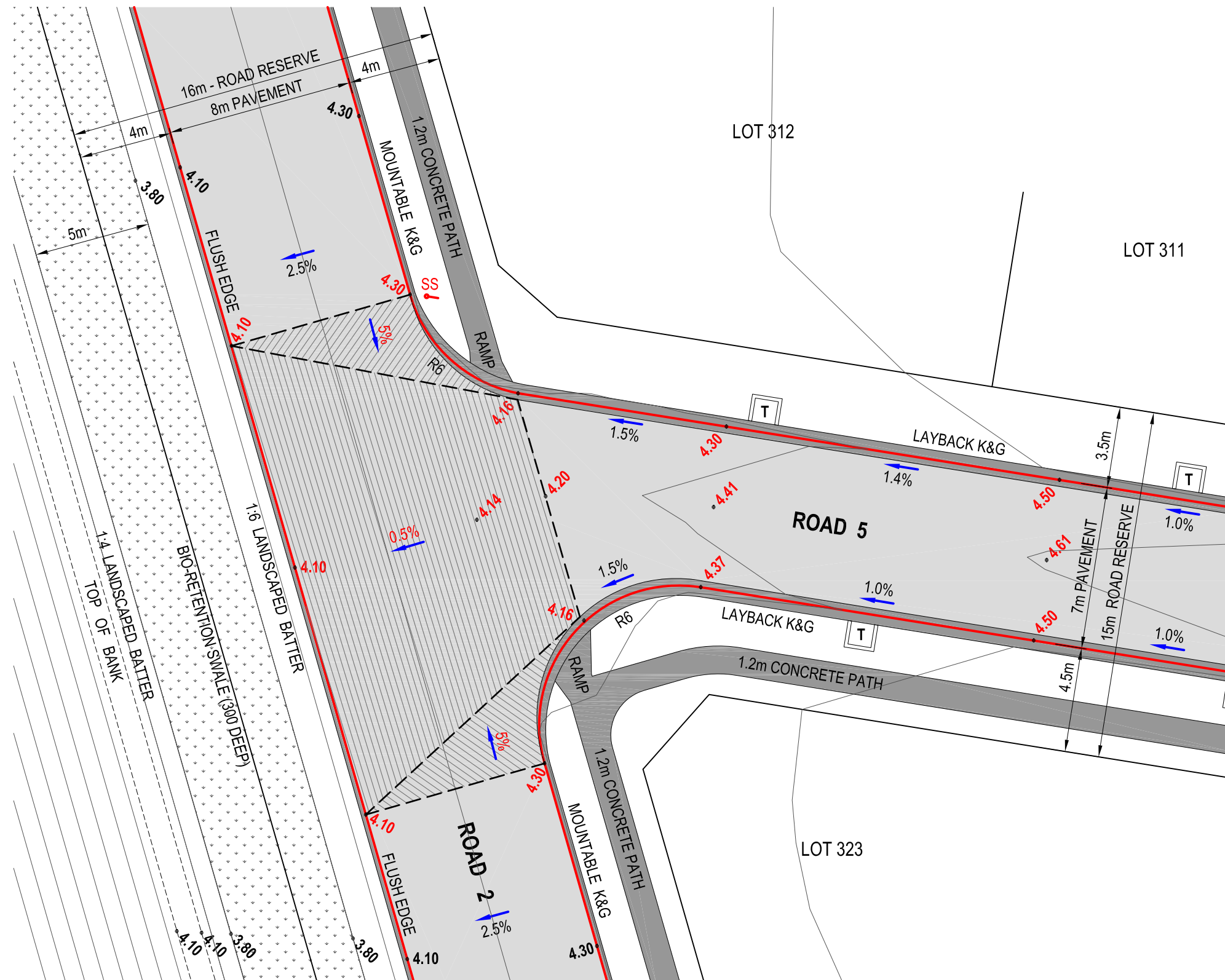
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Dwg. No.

1133-DA30

Issue

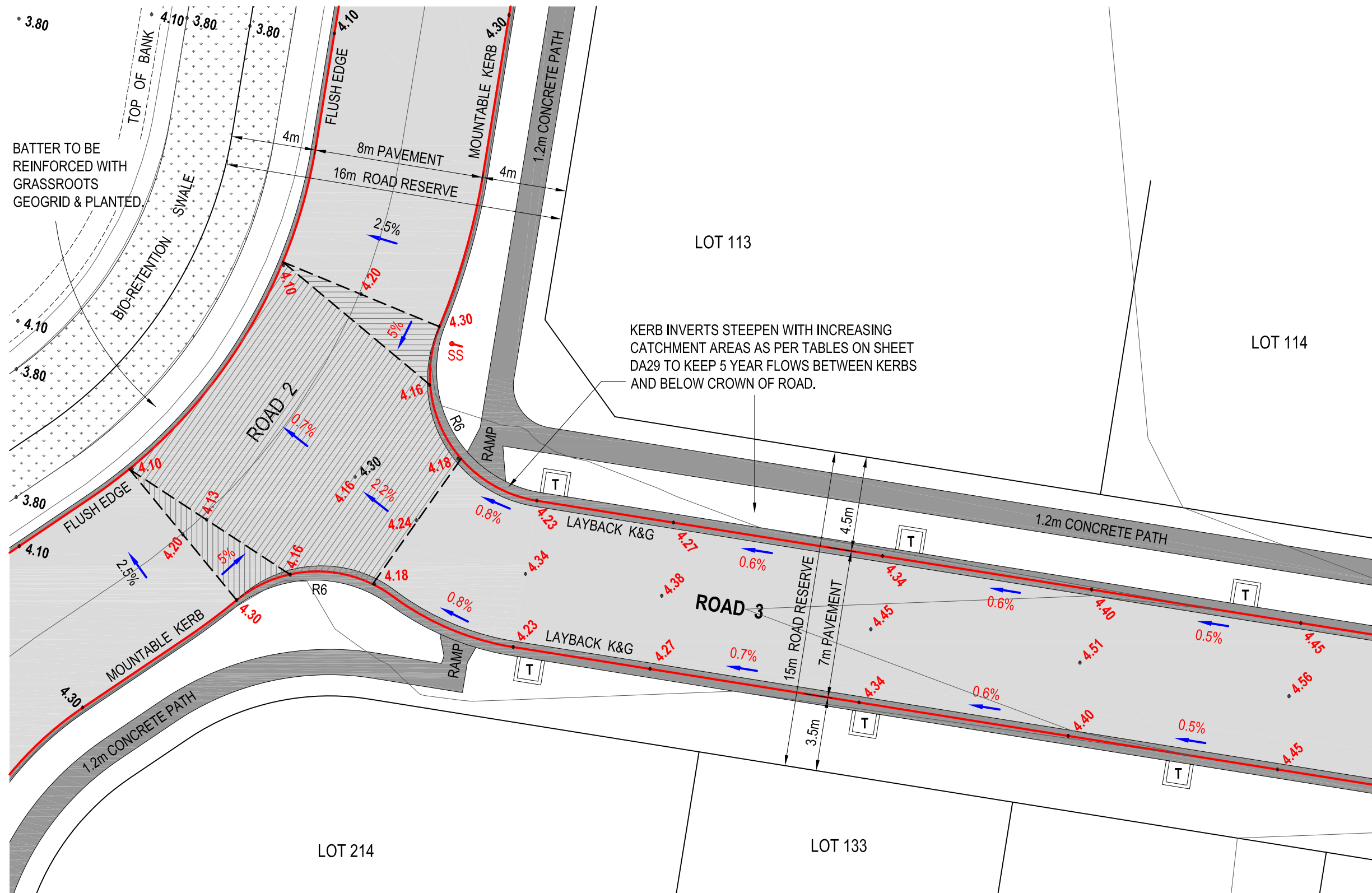
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ROAD 2 & 5 WESTERN INTERSECTION  
KERB RETURN DETAILS  
Scale: 1:200 at A1

CAUSEWAY 2-5 HYDRAULIC CALCS

CAUSEWAY GRADE	0.5%	5 YEAR FLOW	342 l/s	100 YEAR FLOW	731 l/s	NRLG COMPLIANCE
MIN BASE WIDTH	9.7 m	FLOW VELOCITY	0.64 m/s	FLOW VELOCITY	0.83 m/s	Y
BATTER SLOPE	5%	FLOW DEPTH	50 mm	FLOW DEPTH	77 mm	Y
MANNINGS n	0.014	V x D RATIO	0.031	V x D RATIO	0.063	Y



ROAD 2 & 3 WESTERN INTERSECTION  
KERB RETURN DETAILS  
Scale: 1:200 at A1

CAUSEWAY 2-3 HYDRAULIC CALCS

CAUSEWAY GRADE	0.7%	5 YEAR FLOW	349 l/s	100 YEAR FLOW	746 l/s	NRLG COMPLIANCE
MIN BASE WIDTH	8.0 m	FLOW VELOCITY	0.75 m/s	FLOW VELOCITY	0.97 m/s	Y
BATTER SLOPE	5%	FLOW DEPTH	51 mm	FLOW DEPTH	78 mm	Y
MANNINGS n	0.014	V x D RATIO	0.037	V x D RATIO	0.075	Y

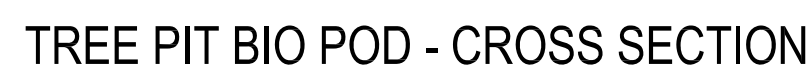




- (TO BE CONSTRUCTED BY LATER BY HOMEOWNERS )
- MINIMUM INFILTRATION AREA - 3m<sup>2</sup>
  - MINIMUM STORAGE VOLUME OF 1,200 LITRES  
AFTER ALLOWING FOR VOID RATIO (i.e. 3m<sup>3</sup> AT 40%  
VOID RATIO, OR 2m<sup>3</sup> AT 60% VOID RATIO)
  - MAXIMUM DEPTH OF 1m PLUS 100mm LANDSCAPE  
COVER



- NOTES:**
1. PROPRIETARY KERB ADAPTOR TO SUIT MOUNTABLE KERB PROFILE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS AND SHALL BE IN GALVANISED STEEL ONLY.
  2. PIPE ACROSS FOOTPATH TO BE LAID WITH THE MAXIMUM AVAILABLE COVER AND WITH A MINIMUM GRADE OF 1 IN 100.



A	FOR SUBMISSION	WF	WF	10.02.2023	
Iss	Description	Des	Drw	Date	Appd

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## TYPICAL STORMWATER INFILTRATION DETAILS

Scale: As Shown at A1  
Datum: AHD



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**1133-DA31**

Issue

**A**