

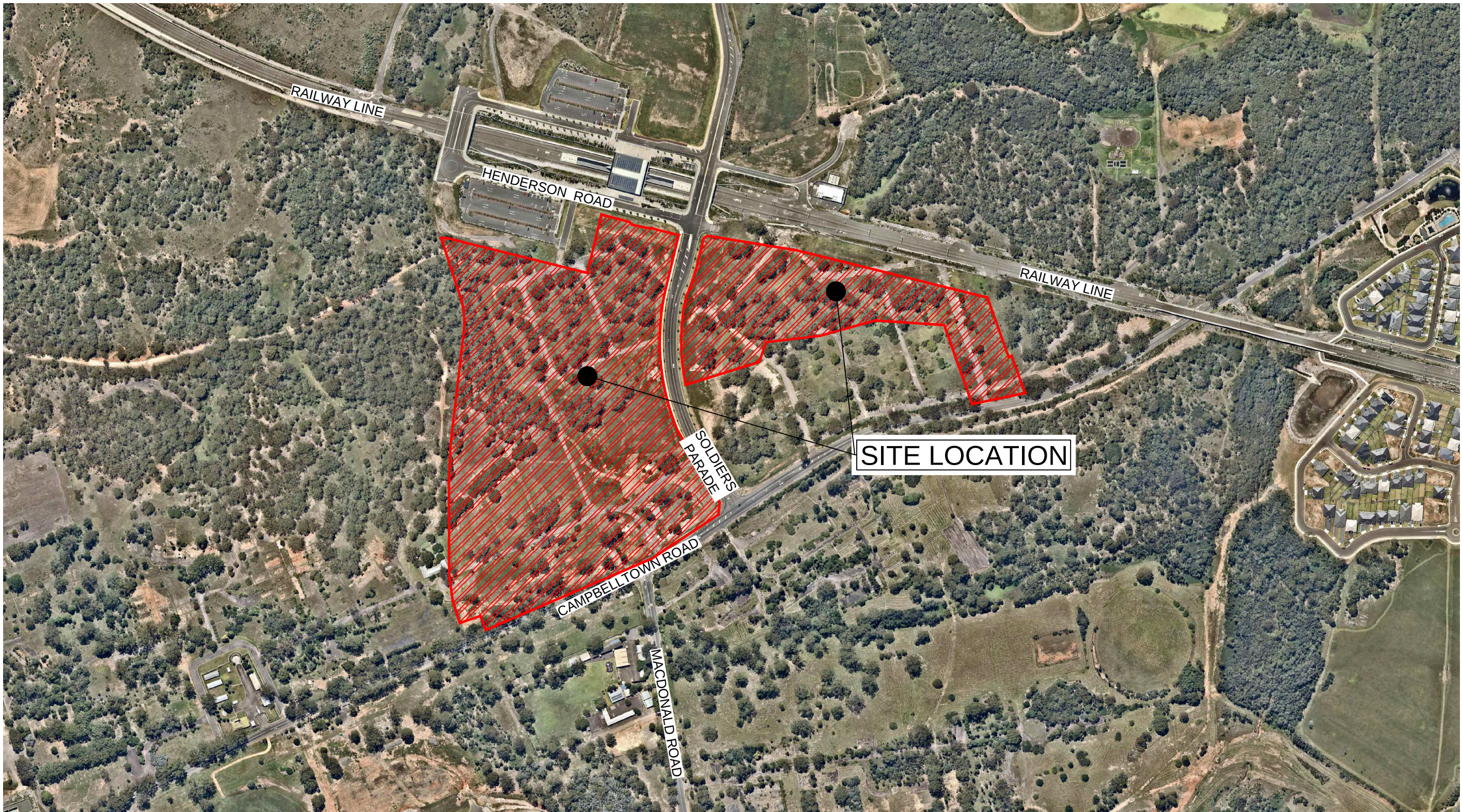


EDMONDSON PARK FRASERS TOWN CENTRE

BULK EARTHWORKS & SERVICES REMOVAL

DEVELOPMENT APPLICATION

INDEX		
PLAN NO.	PLAN NAME	REV
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11022304/DA04	SITE GRADING PLAN SHEET 1	B
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11022304/DA17	SEDIMENT BASIN DETAIL PLAN	B
11022304/DA18	SOIL & WATER MANAGEMENT PLAN	C



LOCALITY SKETCH

Prepared By:

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SURVEY By:
DUNLOP THORPE & CO .PTY. LTD.
SURVEYORS
447 KENT STREET, SYDNEY. 2000
Ph. 9283 6677
Received On: 02/03/16
File Name: 18500_151215 site survey rev d.dwg

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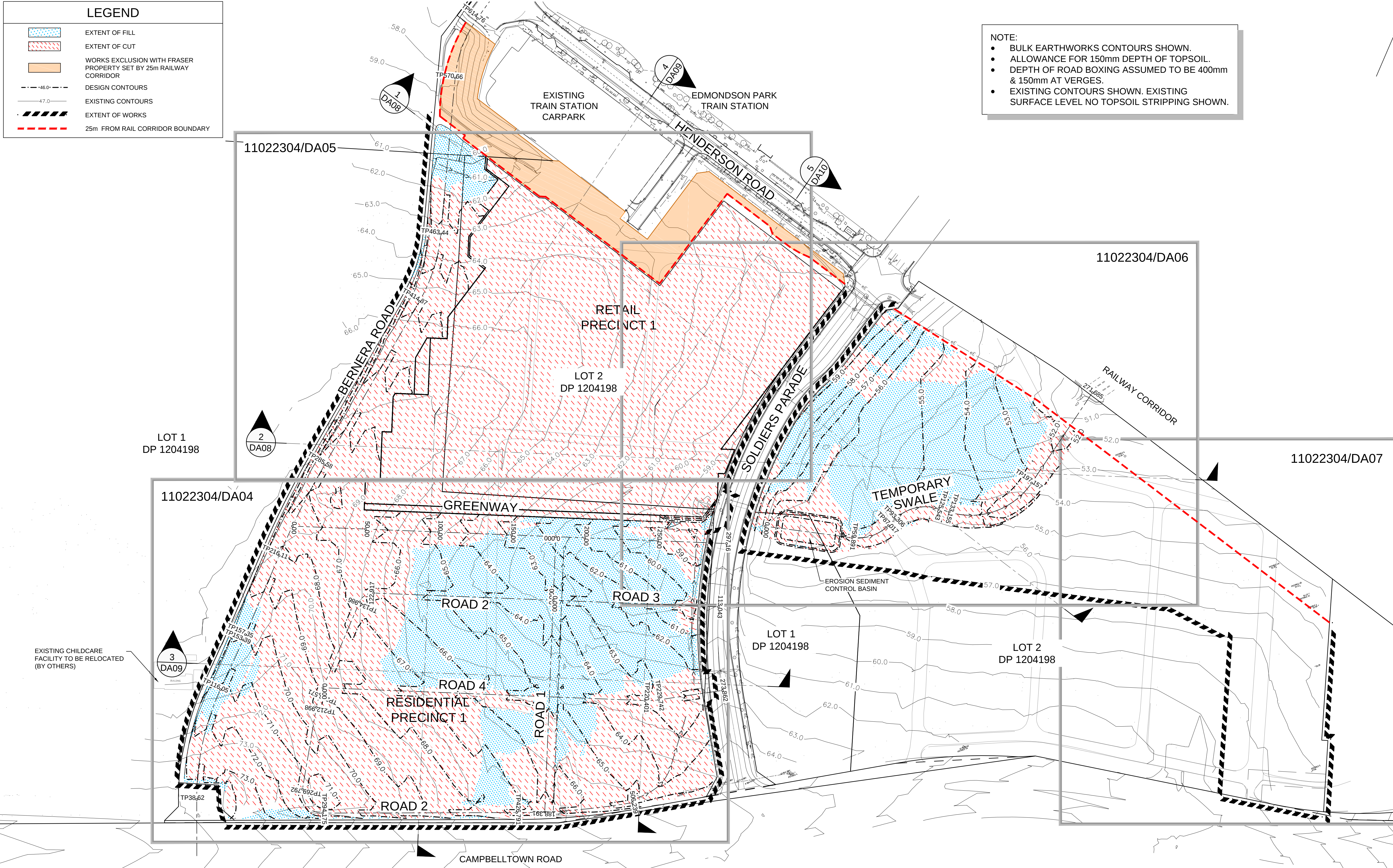
PLAN No.
11022304/DA01 **C**
FILE No. 11022304DA01

LEGEND

- EXTENT OF FILL
- EXTENT OF CUT
- WORKS EXCLUSION WITH FRASER PROPERTY SET BY 25m RAILWAY CORRIDOR
- DESIGN CONTOURS
- EXISTING CONTOURS
- EXTENT OF WORKS
- 25m FROM RAIL CORRIDOR BOUNDARY

NOTE:

- BULK EARTHWORKS CONTOURS SHOWN.
- ALLOWANCE FOR 150mm DEPTH OF TOPSOIL.
- DEPTH OF ROAD BOXING ASSUMED TO BE 400mm & 150mm AT VERGES.
- EXISTING CONTOURS SHOWN. EXISTING SURFACE LEVEL NO TOPSOIL STRIPPING SHOWN.



1:1250 (AT A1)

25 12.5 0 12.5 25 37.5 50 62.5 75 87.5 100 112.5 125

METRES

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AMENDMENT

DES	DRN	CKD	APR	DATE
C				15/06/16
B				20/05/16
A				06/04/16

CLIENT:

FRASERS PROPERTY

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BULK EARTHWORKS & SERVICE REMOVAL
CUT & FILL AND SITE LAYOUT PLAN

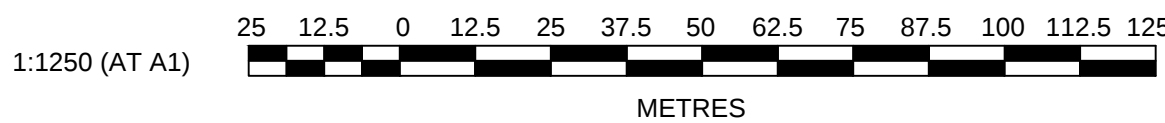
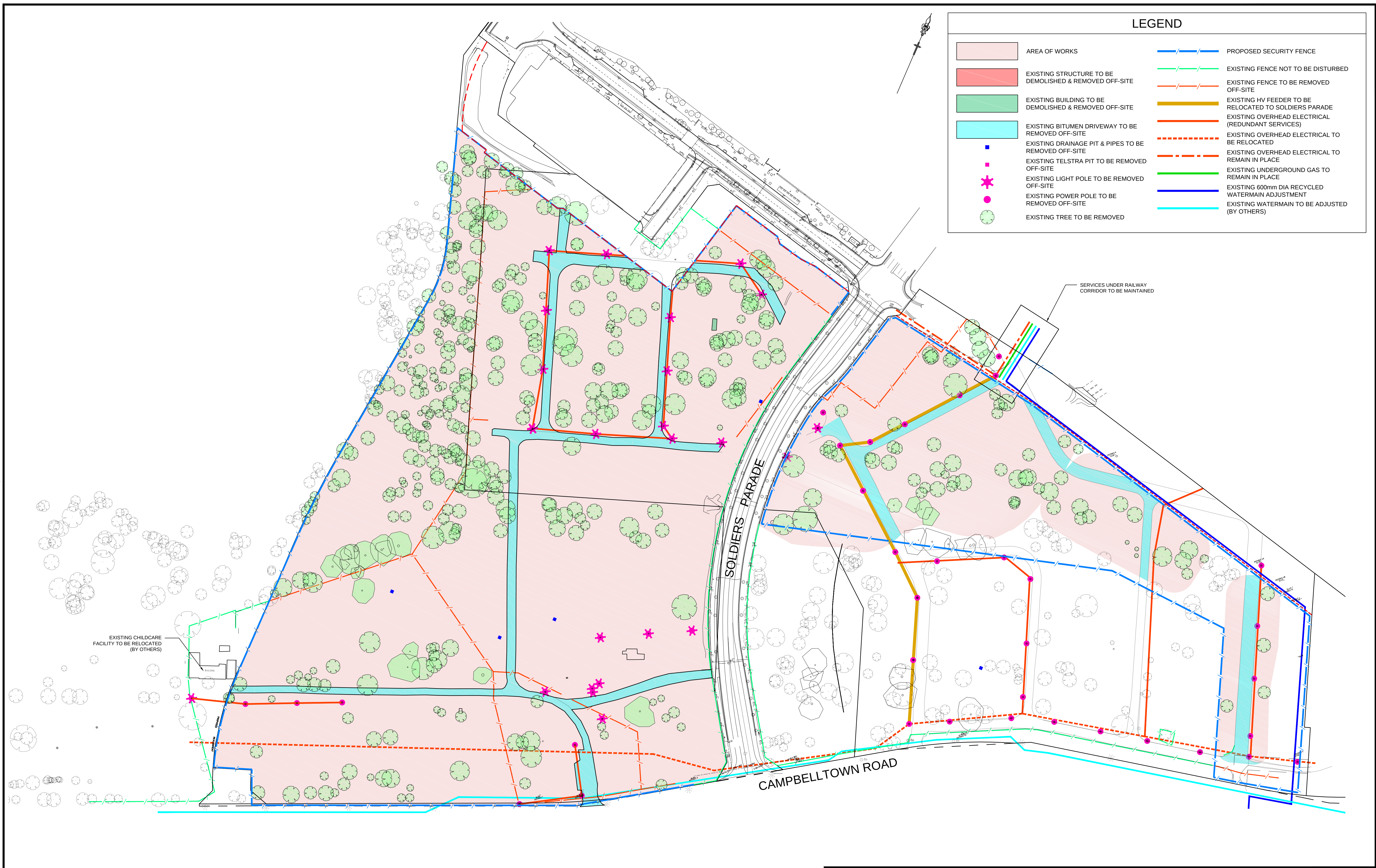
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FILE No: 11022304DA02

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C	SECURITY FENCE ADDED	KM	KM	AM	RO 31/05/16
B	ISSUE FOR DA APPROVAL	KM	NW	AM	MS 20/05/16
A	ADVANCED COPY	KM	NW	AM	06/04/16
AMENDMENT		DES	DRN	CKD	APR DATE

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AZIMUTH: MGA
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CLIENT:

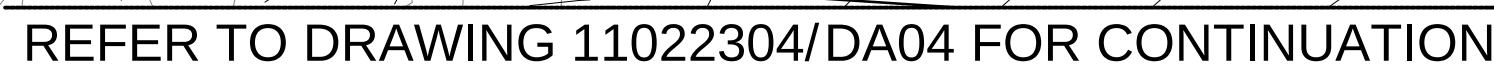
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BULK EARTHWORKS & SERVICE REMOVAL
DEMOLITION AND TREE REMOVAL PLAN

PLAN No: 11022304/DA03 **D**
FILE No: 11022304DA03
SHEET SIZE: A1 ORIGINAL

REFER TO DRAWING 11022304/DA06 FOR CONTINUATION



10 0 10 20 30 40 50
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A	ADVANCED COPY	KM	NW	AM		06/04/19
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AZIMUTH:
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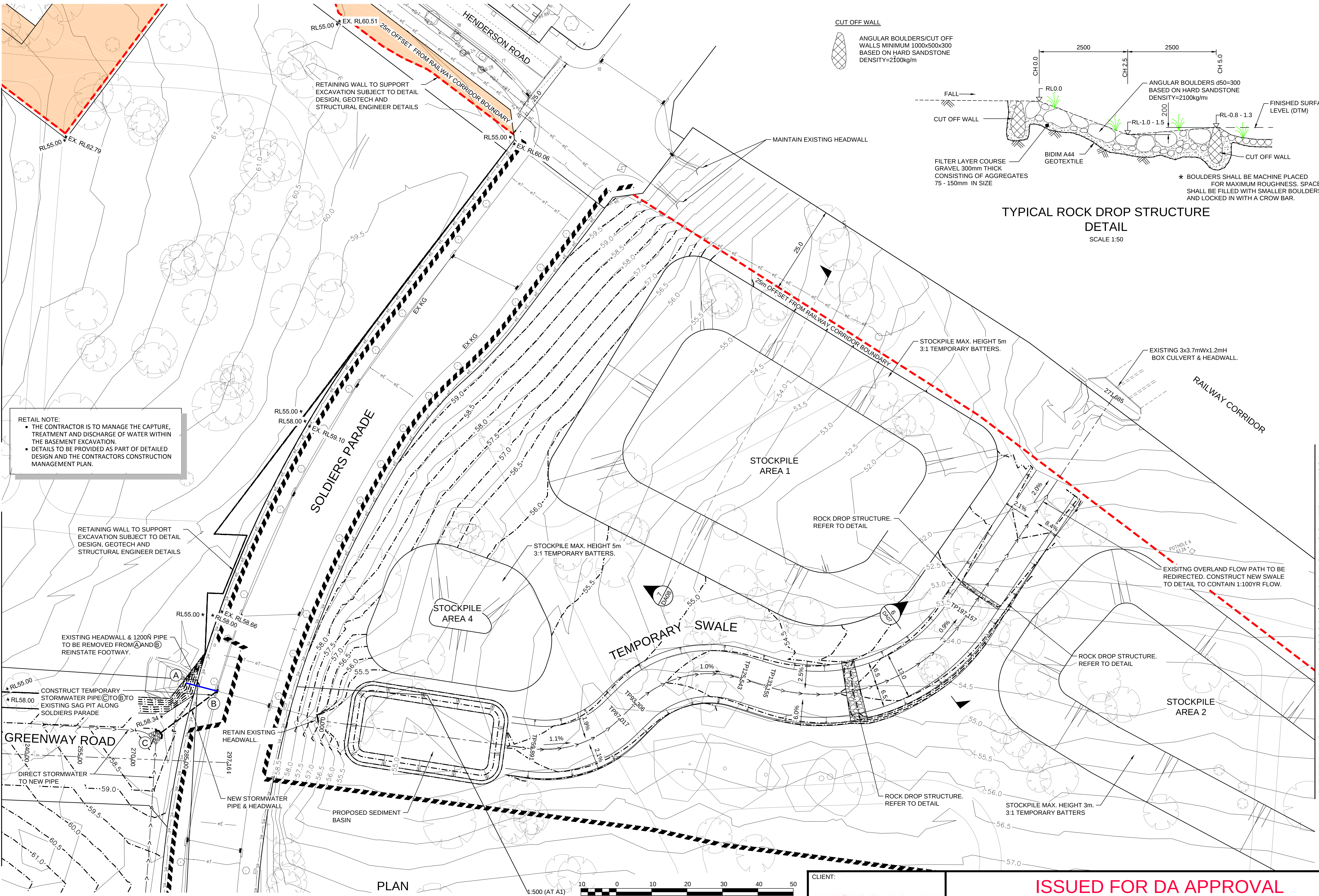
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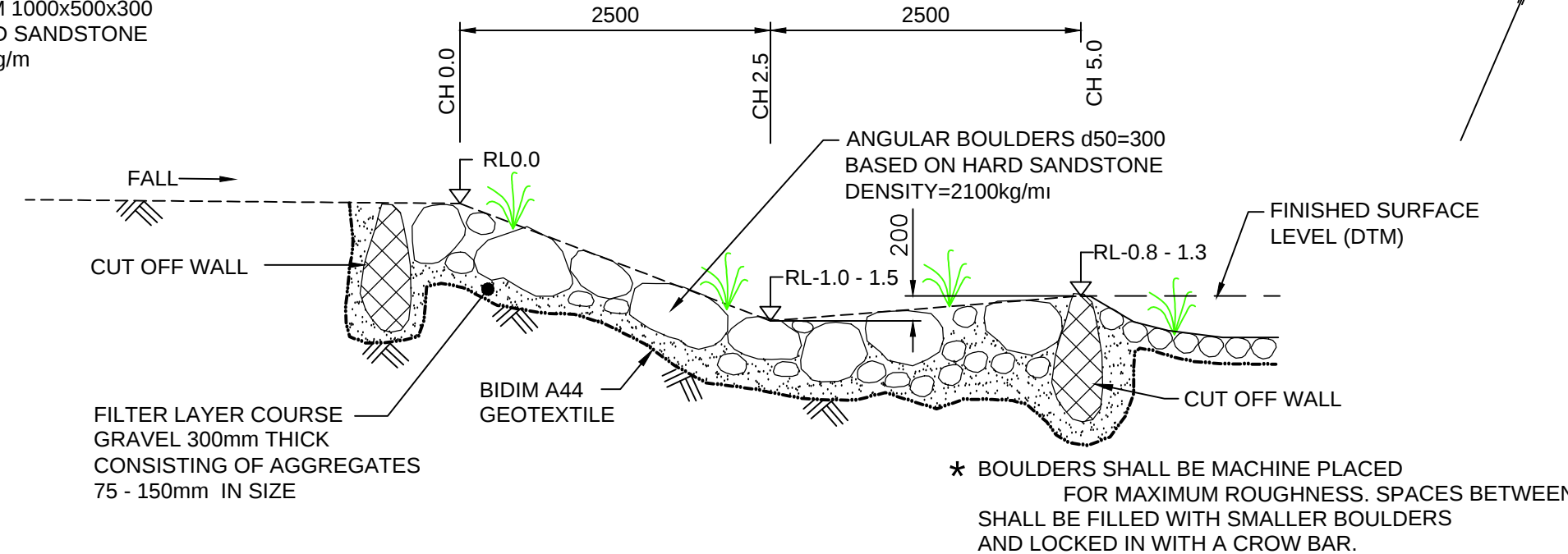
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REFER TO DRAWING 11022304/DA04 FOR CONTINUATION



CUT OFF WALL

ANGULAR BOULDERS/CUT OFF WALLS MINIMUM 1000x500x300 BASED ON HARD SANDSTONE DENSITY=2100kg/m



TYPICAL ROCK DROP STRUCTURE
DETAIL
SCALE 1:50

PLAN
SCALE 1:500



CLIENT:



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DATUM: AHD
ORIGIN:

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SITE GRADING PLAN
SHEET 3

PLAN No: 11022304/DA06
FILE No: 11022304DA06
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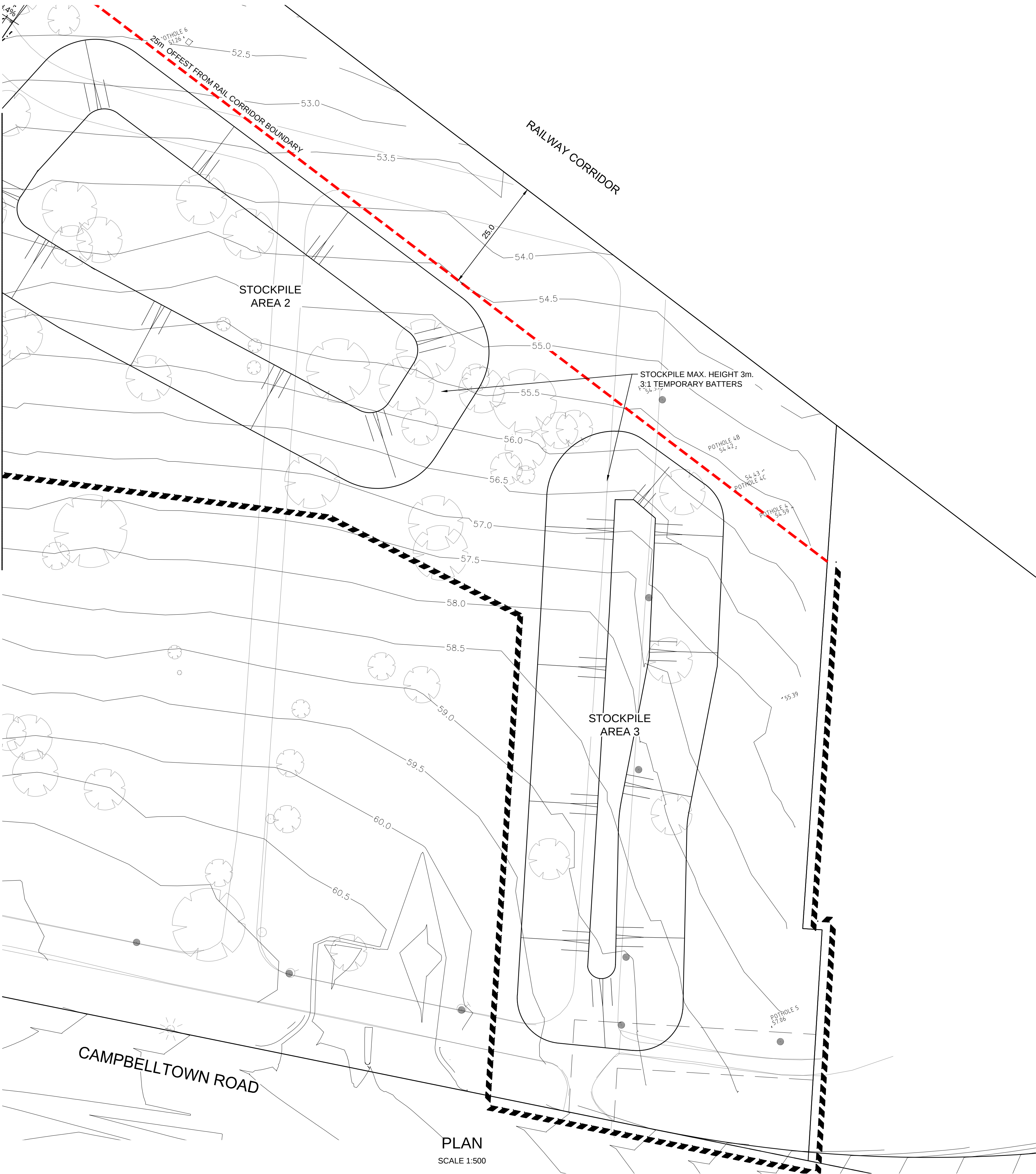
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A					06/04/16

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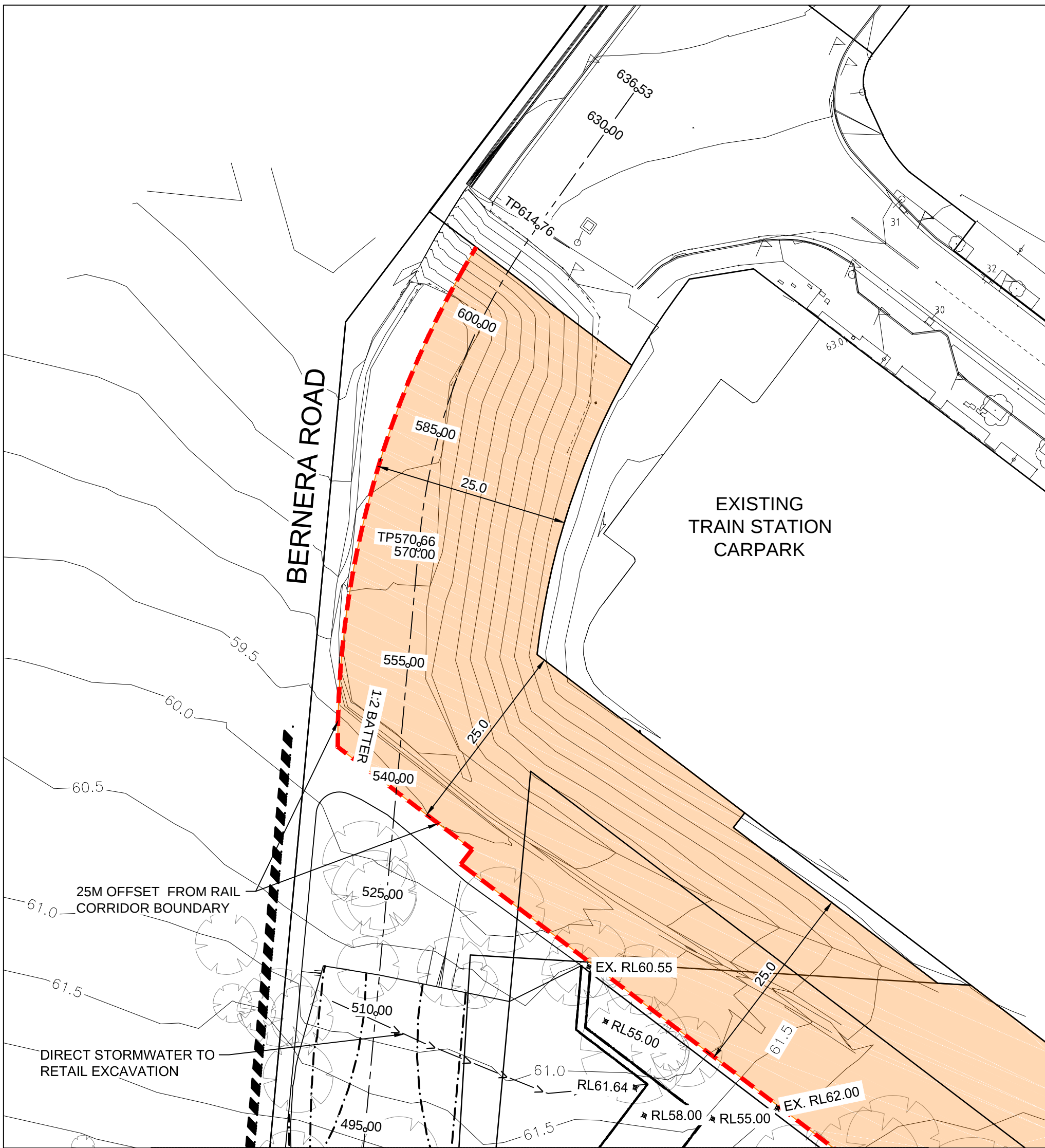
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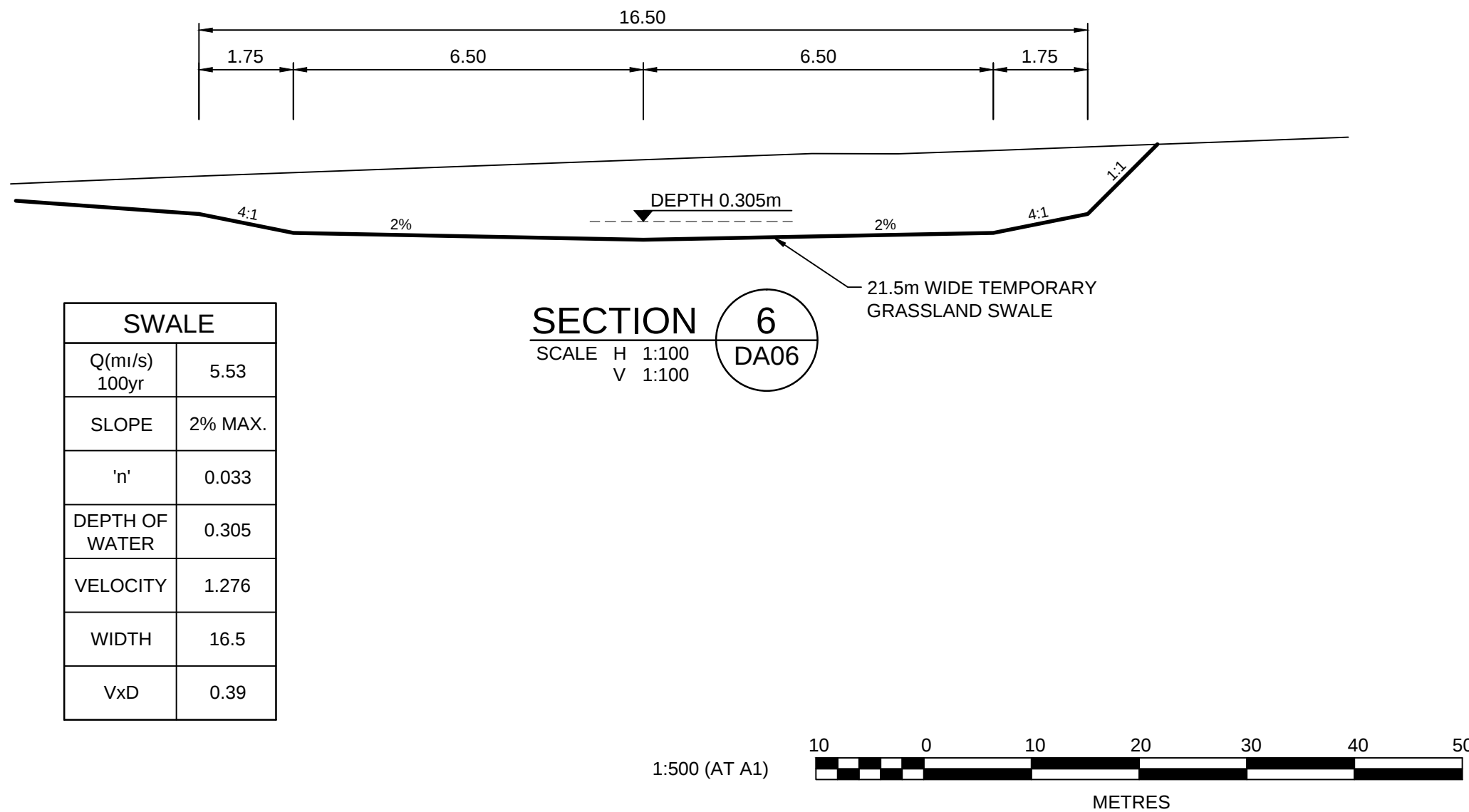
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PLAN
SCALE 1:500



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	AMENDMENT	DES	DRN	CKD	APR	DATE

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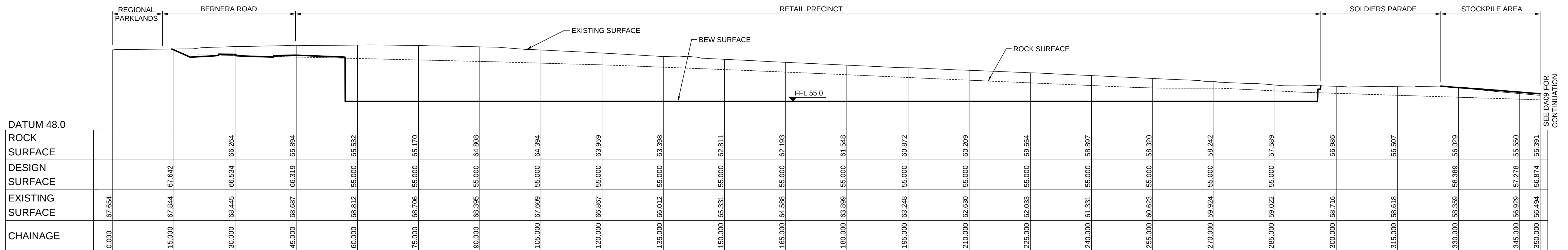


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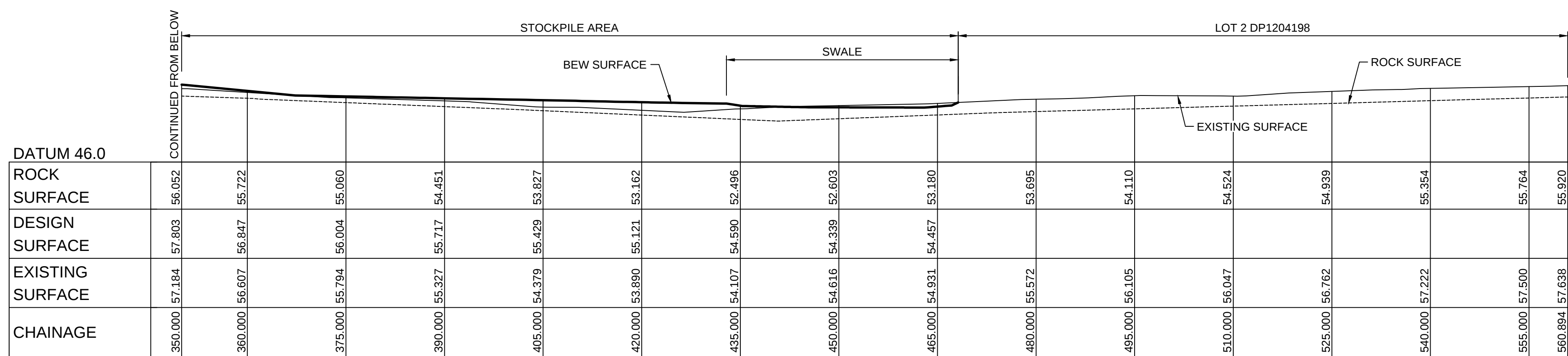
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BULK EARTHWORKS & SERVICE REMOVAL
SITE GRADING PLAN
SHEET 4

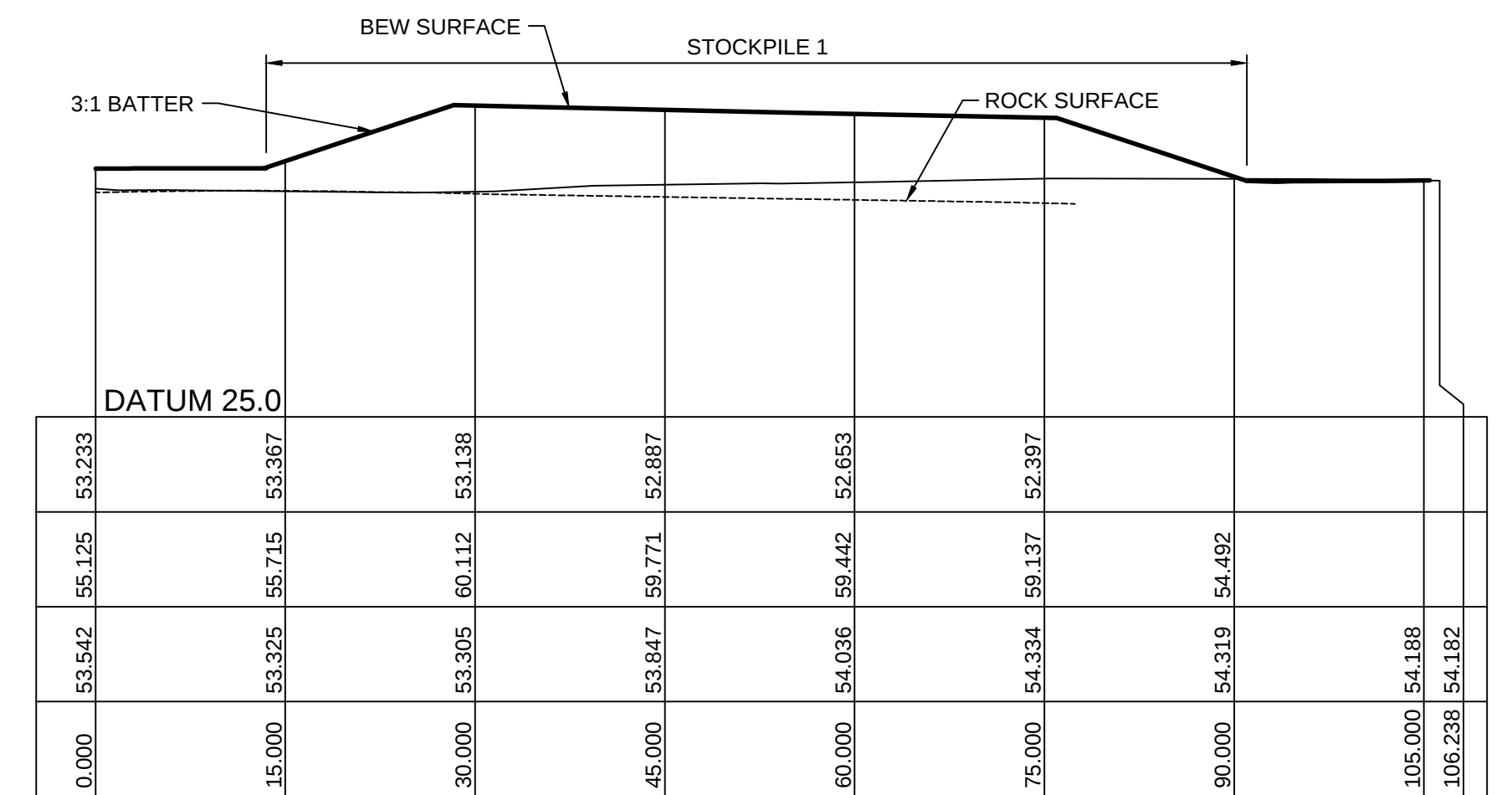
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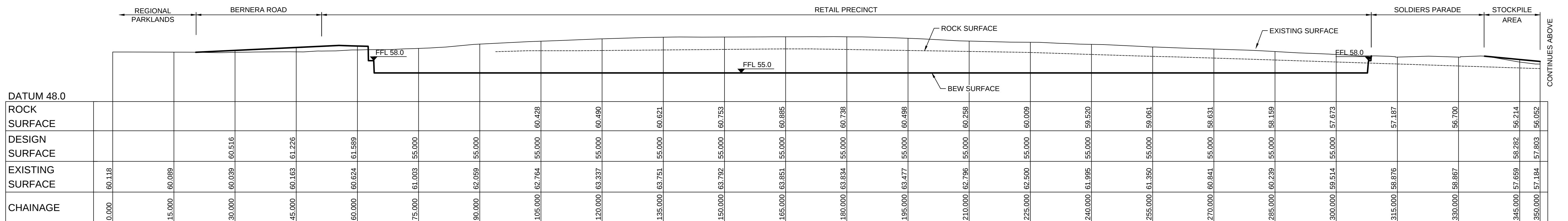
SECTION 2
SCALE 1:500
DA02



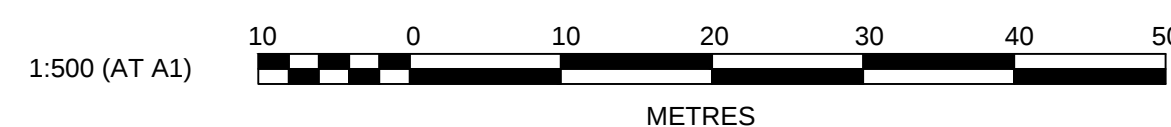
SECTION 1
SCALE 1:500
DA02



SECTION 7
SCALE 1:500 DA06



SECTION 1
SCALE 1:500
DA02



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BULK EARTHWORKS & SERVICE REMOVAL

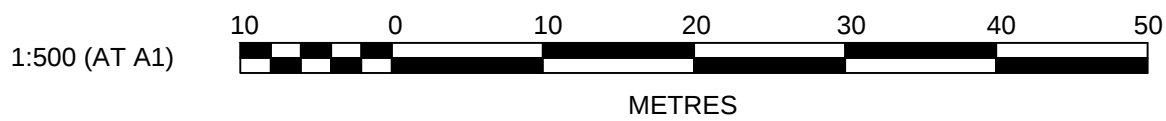
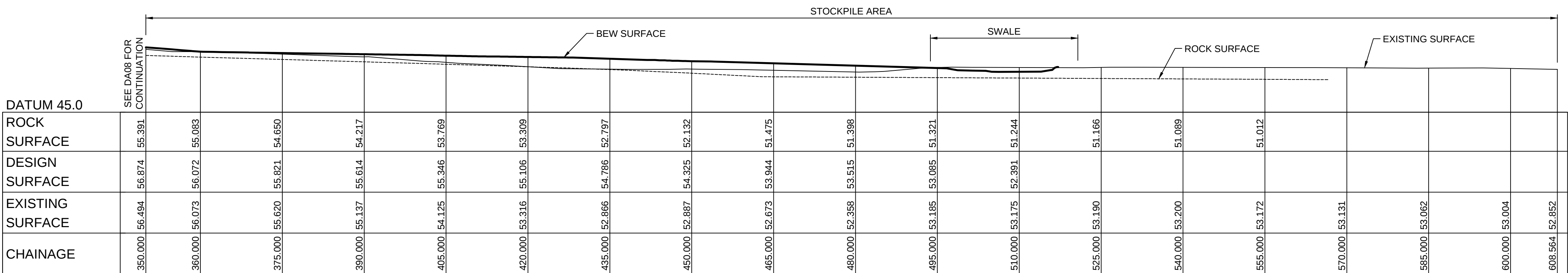
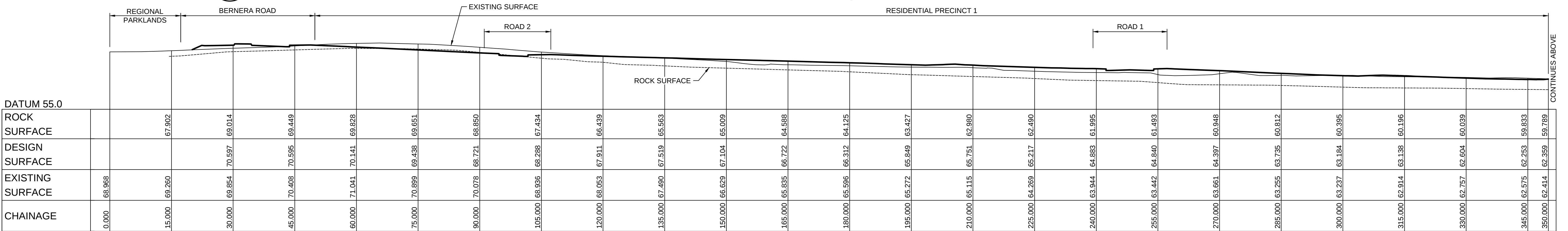
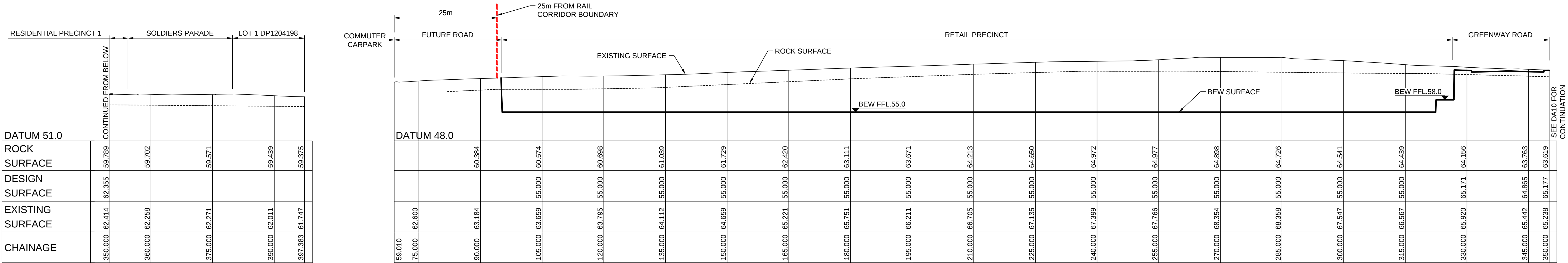
SITE SECTIONS 1, 2 & 7

PLAN No: 11022304/DA08 B

FILE No: 11022304DA08

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	AMENDMENT	DES	DRN	CKD	APR
					DATE

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BULK EARTHWORKS & SERVICE REMOVAL

SITE SECTIONS 3 & 4

PLAN No: 11022304/DA09 **C**

FILE No: 11022304DA09

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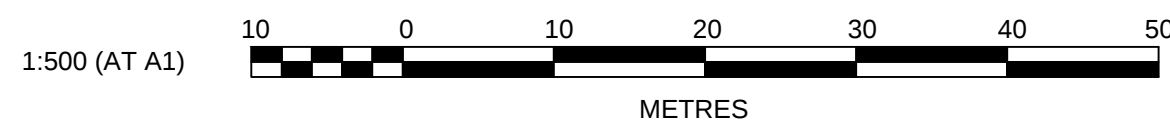
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DATUM 50.0



DATUM 48.0



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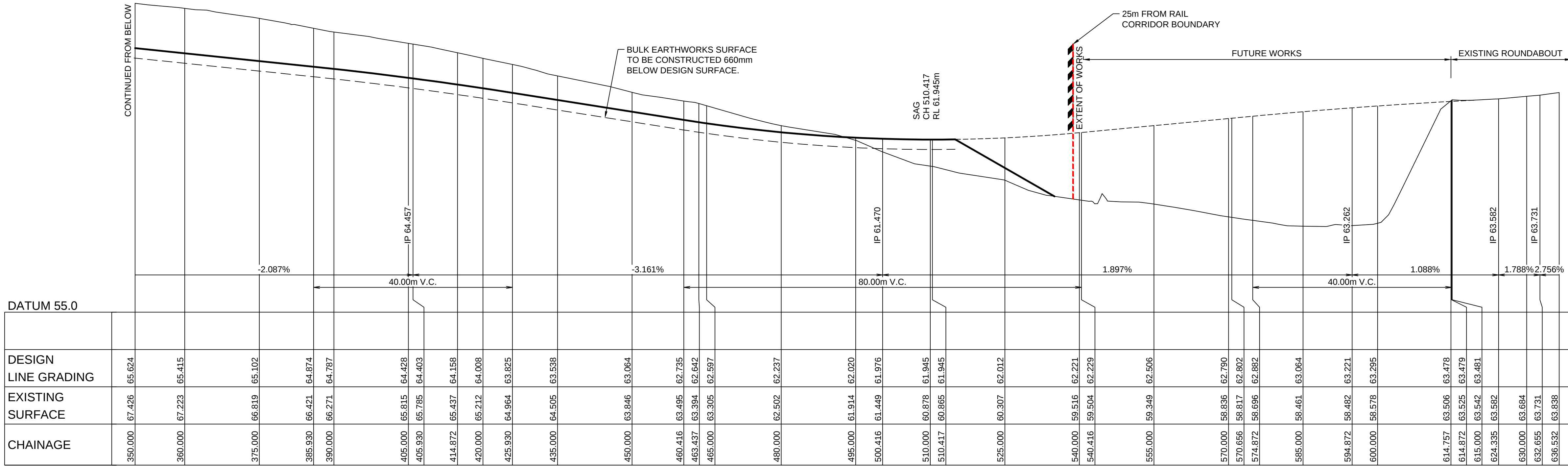
SITE SECTIONS 4 & 5

PLAN No: 11022304/DA10 C

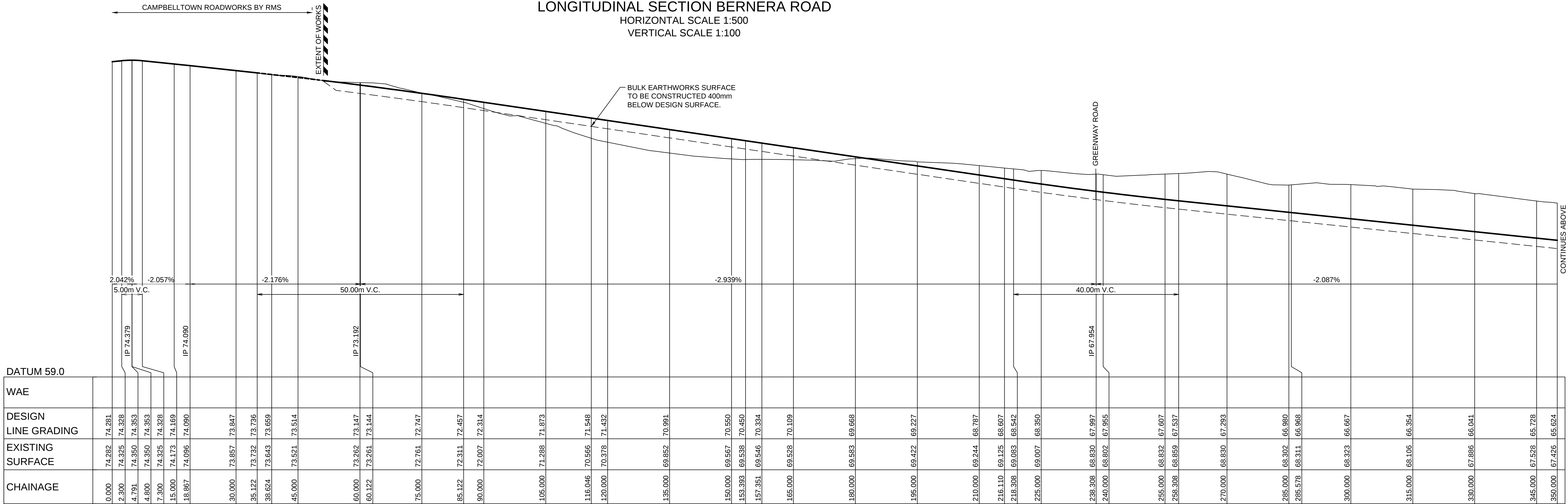
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LONGITUDINAL SECTION BERNERA ROAD
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION BERNERA ROAD
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



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EDMONDSON PARK FRASERS TOWN CENTRE
BULK EARTHWORKS & SERVICE REMOVAL

ROAD LONGITUDINAL SECTIONS
BERNERA ROAD

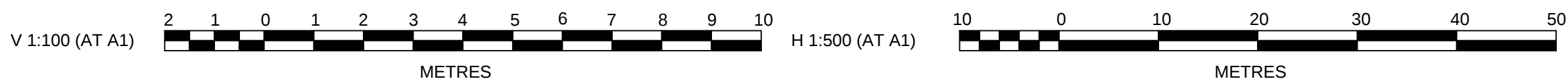
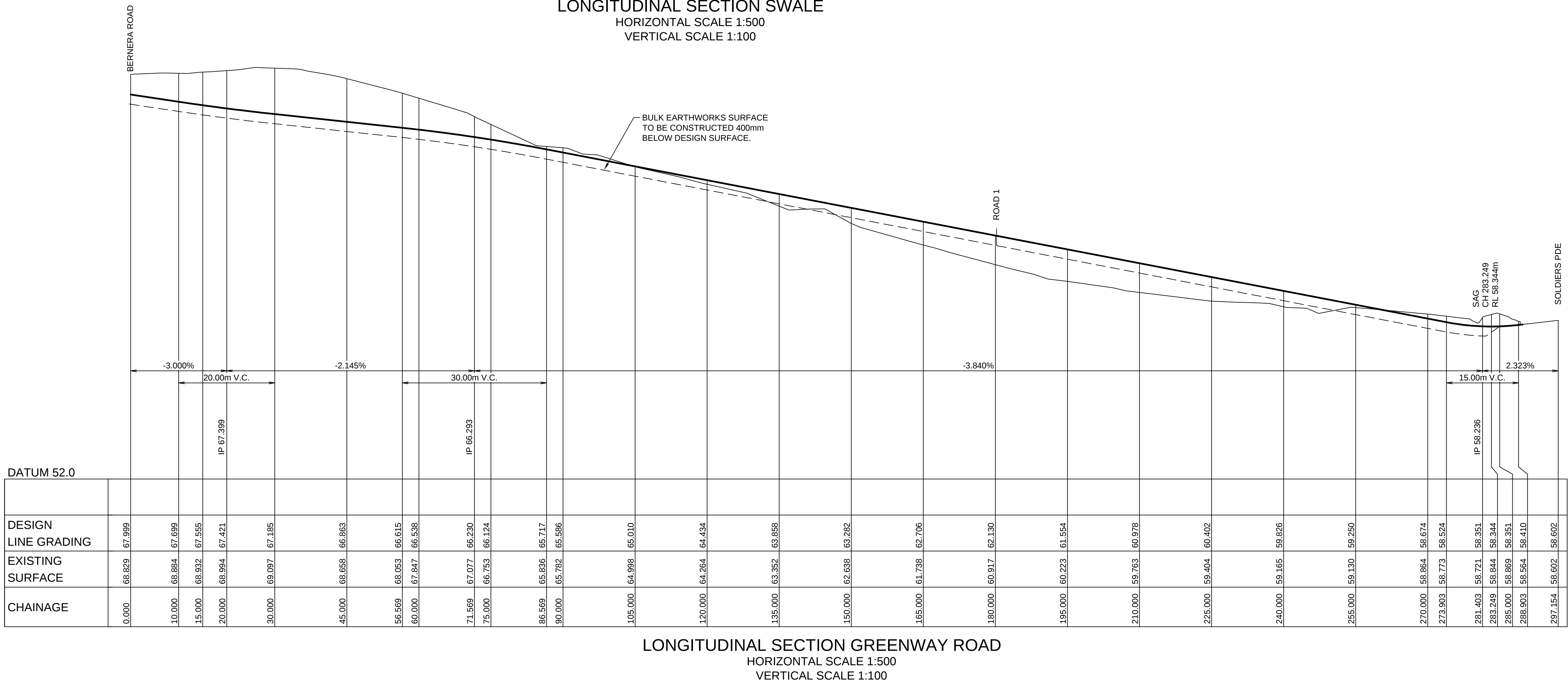
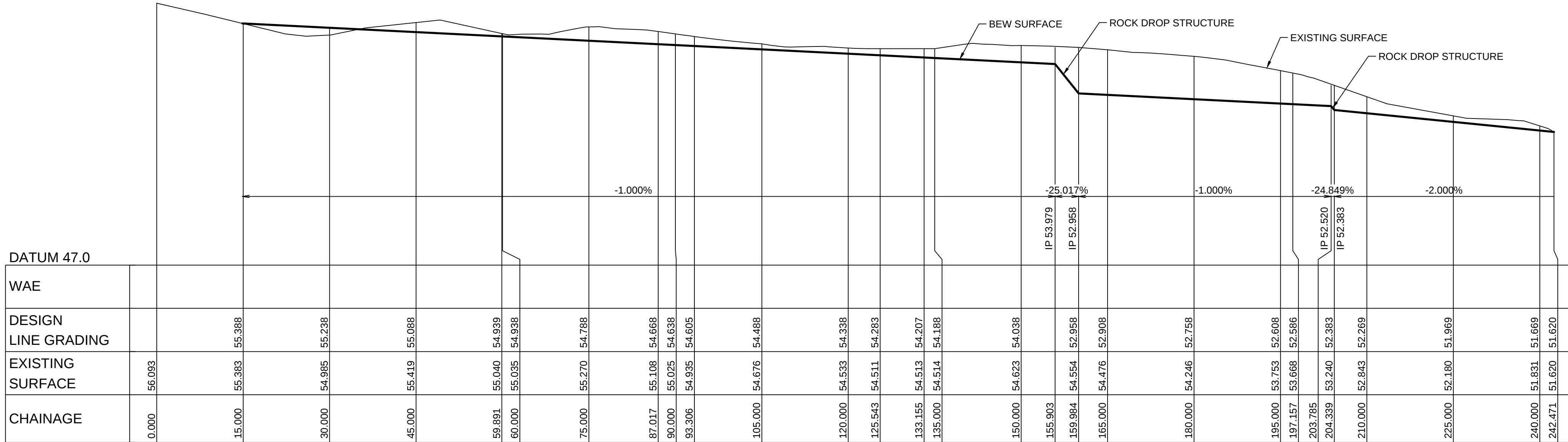
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11022304/DA11

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BULK EARTHWORKS & SERVICE REMOVAL

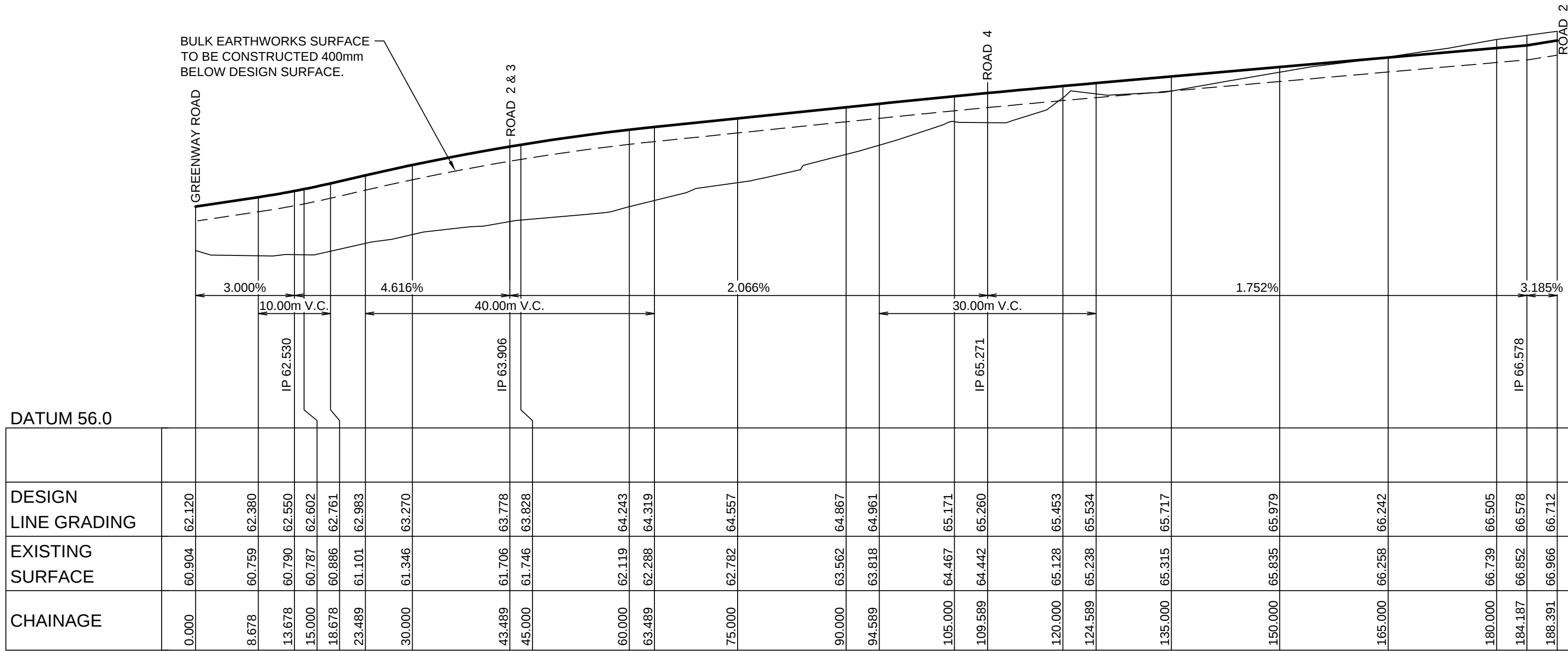
ROAD LONGITUDINAL SECTIONS
GREENWAY ROAD & SWALE

PLAN No:
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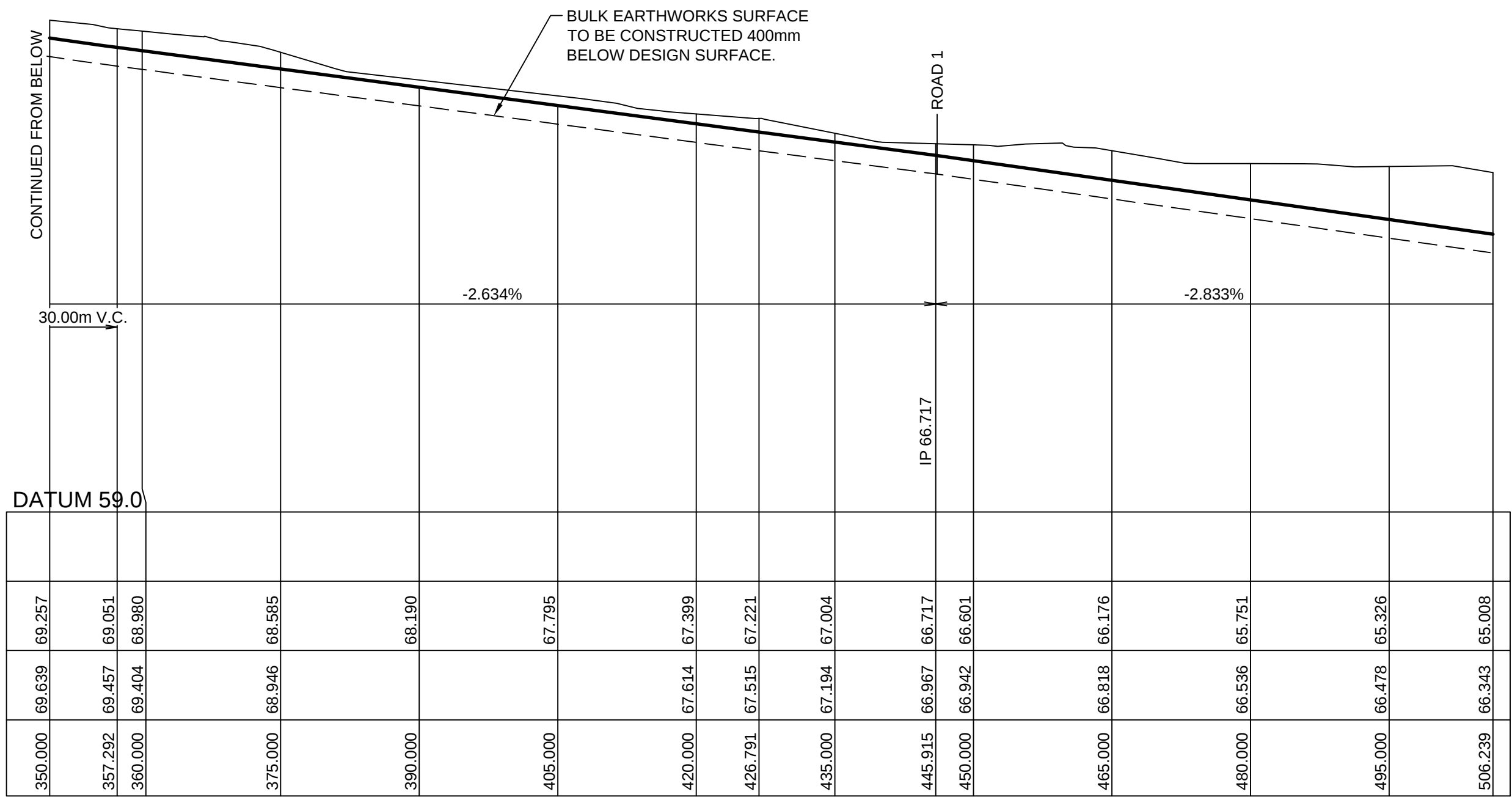
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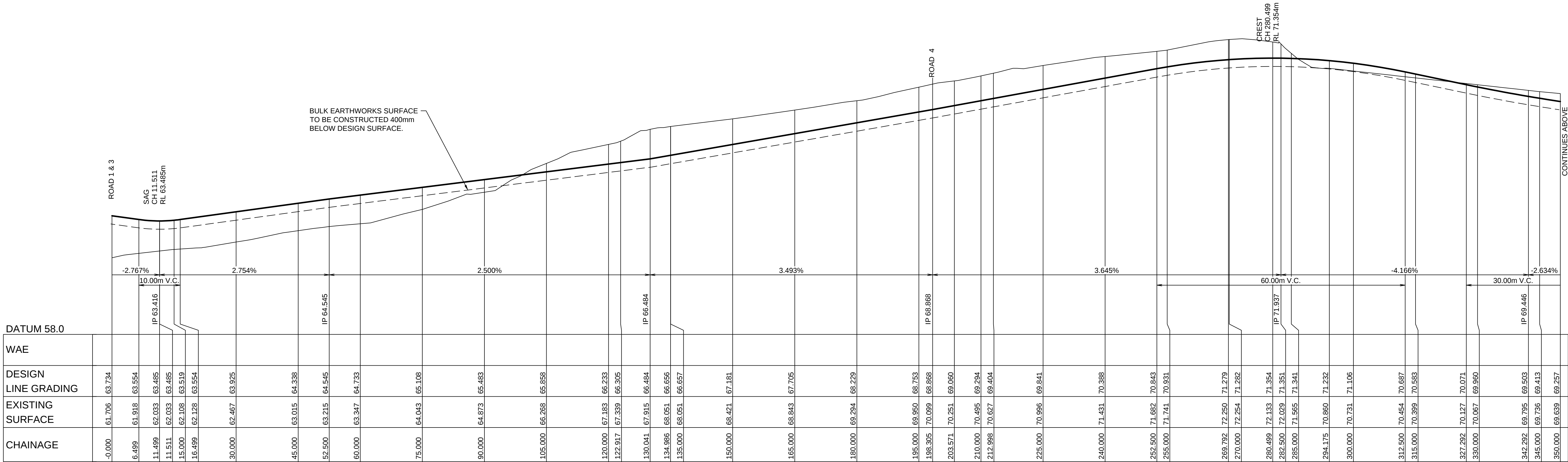
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LONGITUDINAL SECTION ROAD 1
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION ROAD 2
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION ROAD 2
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



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EDMONDSON PARK FRASERS TOWN CENTRE
BULK EARTHWORKS & SERVICE REMOVAL

ROAD LONGITUDINAL SECTIONS
ROAD 1 & 2

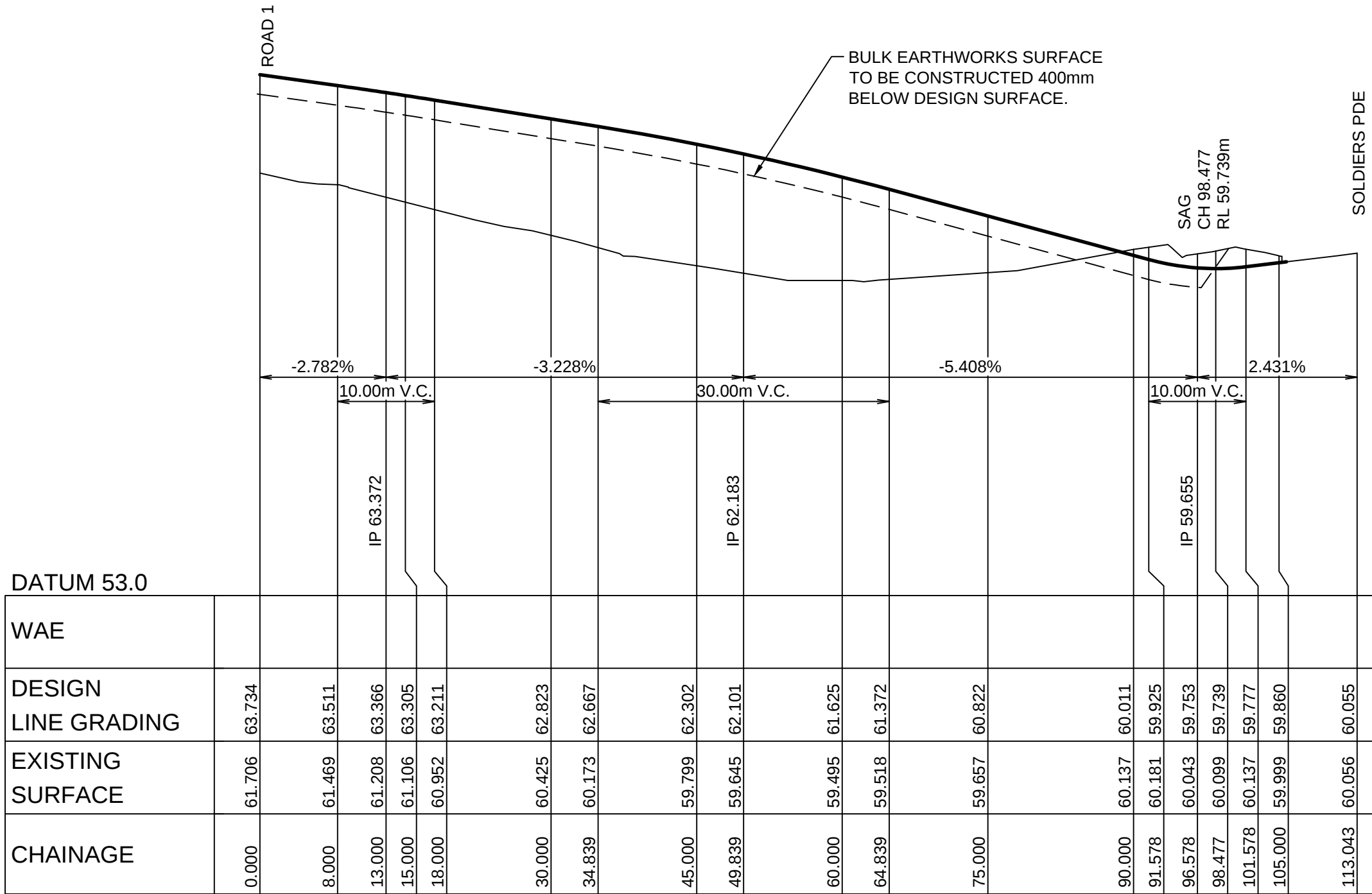
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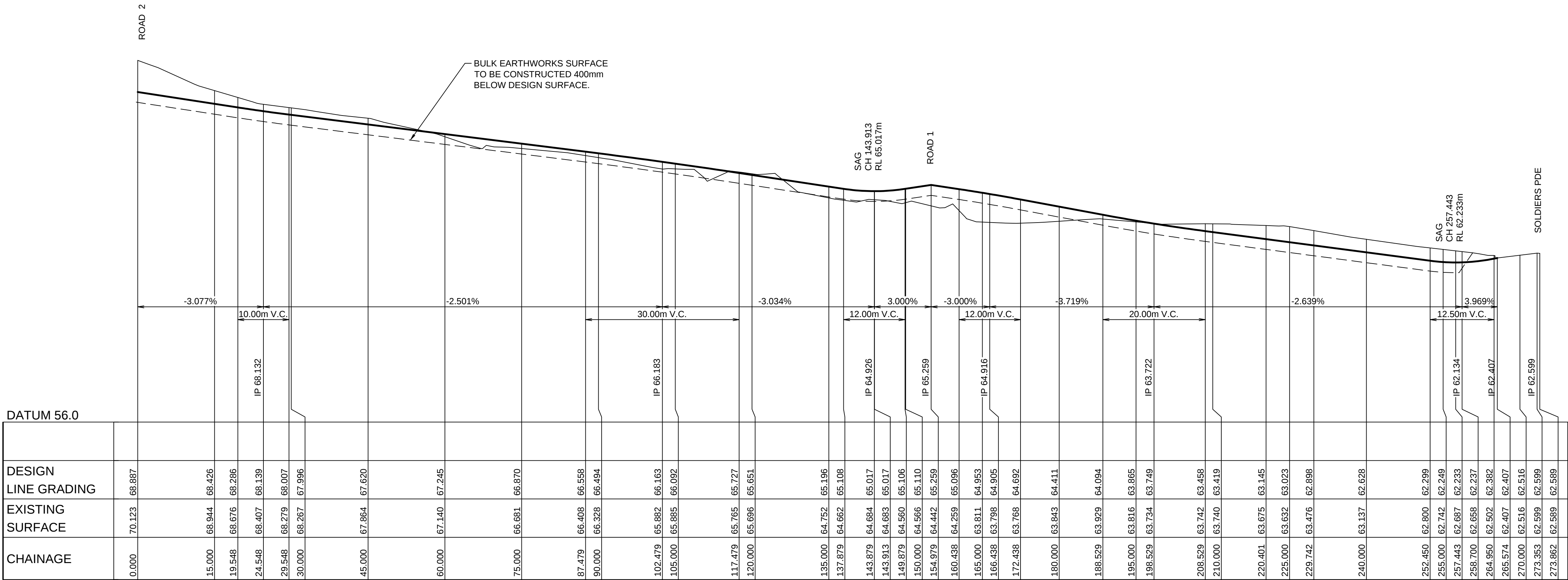
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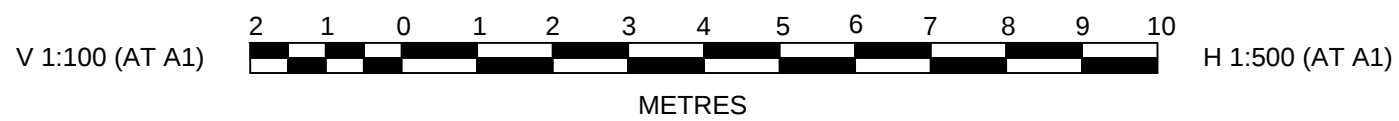
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LONGITUDINAL SECTION ROAD 3
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION ROAD 4
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



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BULK EARTHWORKS & SERVICE REMOVAL

ROAD LONGITUDINAL SECTIONS
ROAD 3 & 4

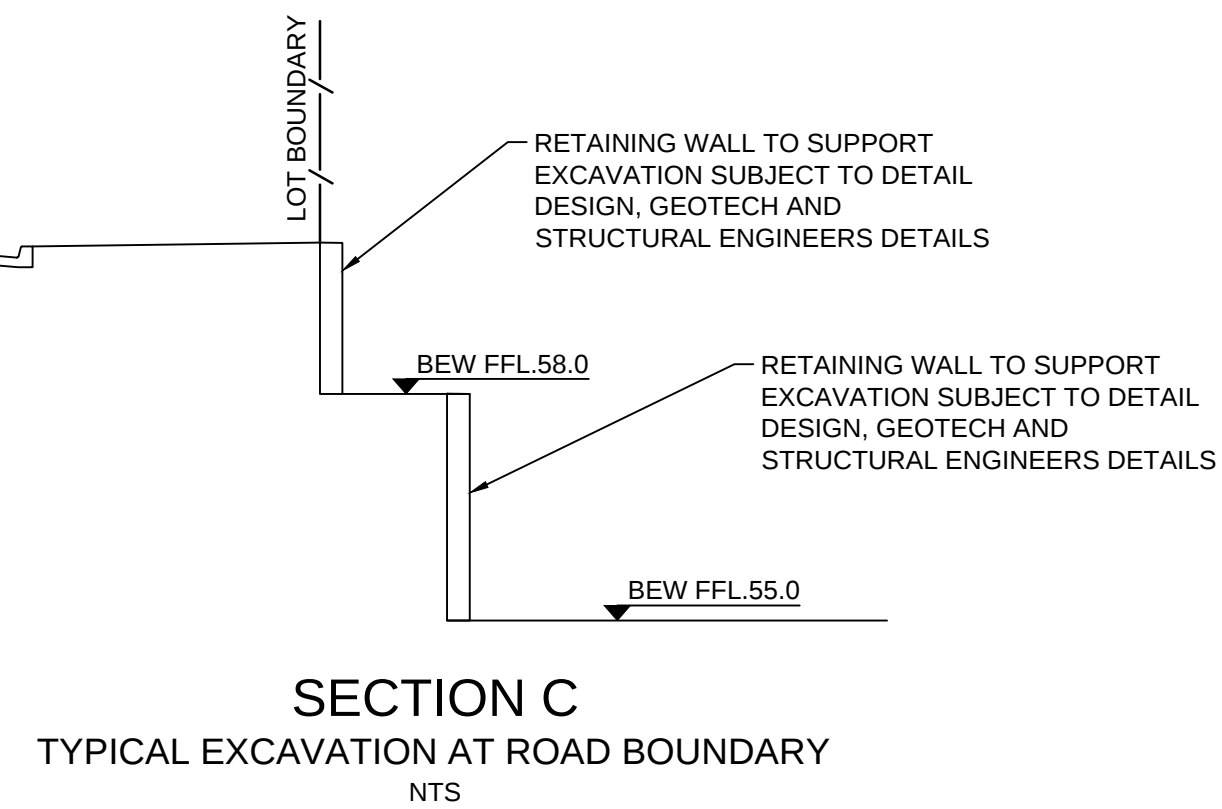
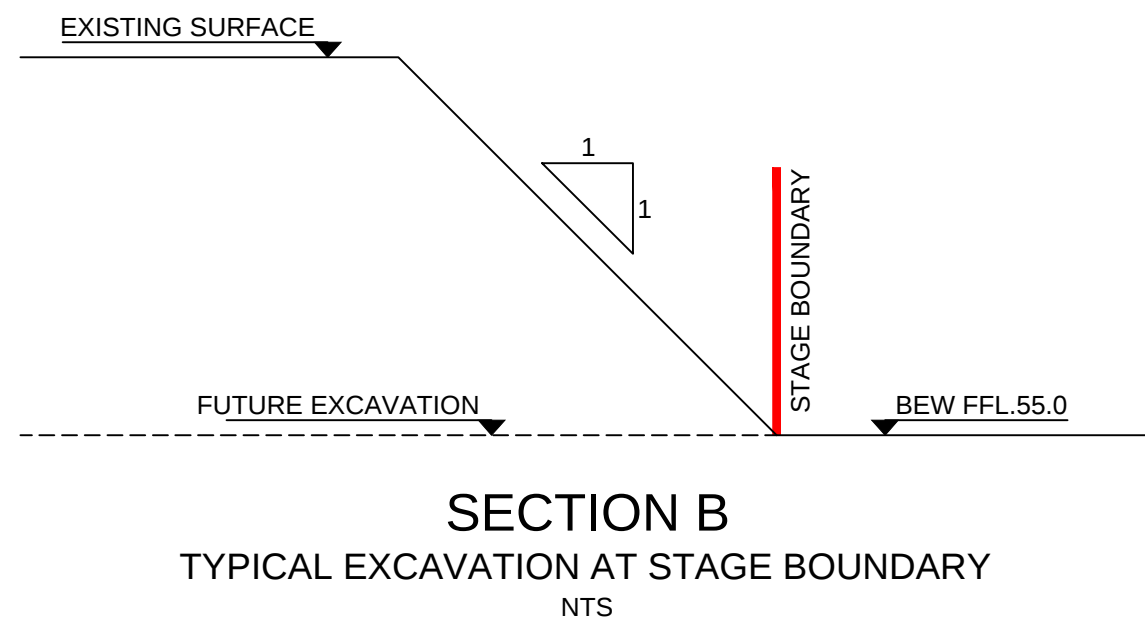
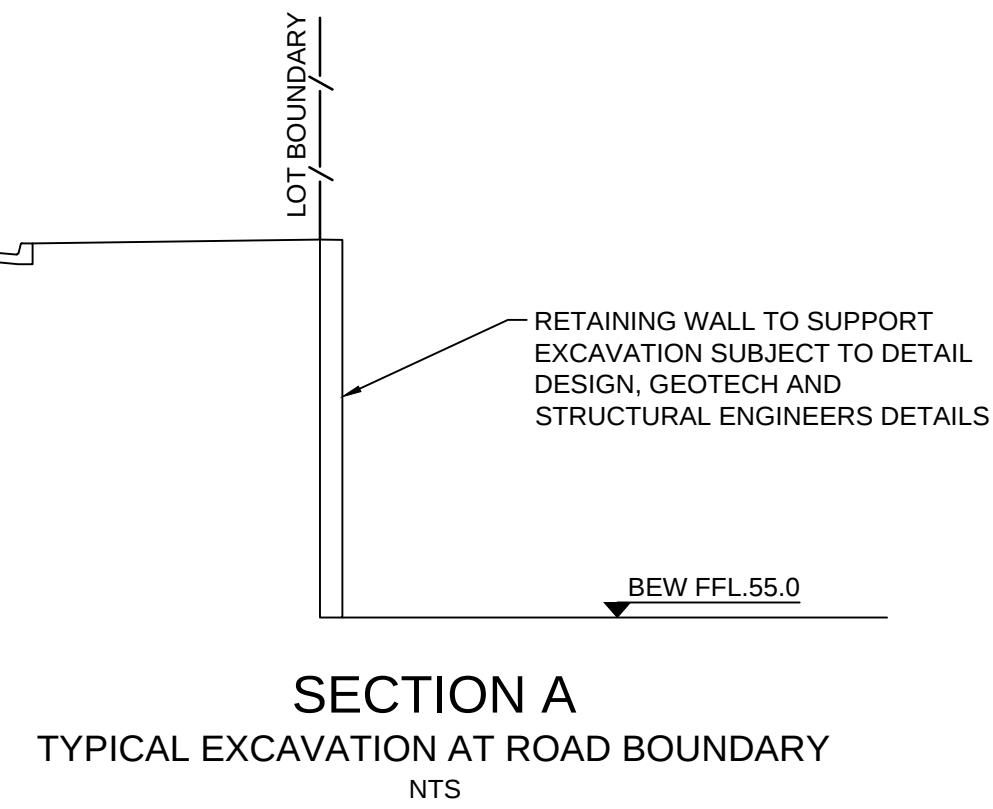
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11022304/DA14 **B**

FILE No: 11022304DA14

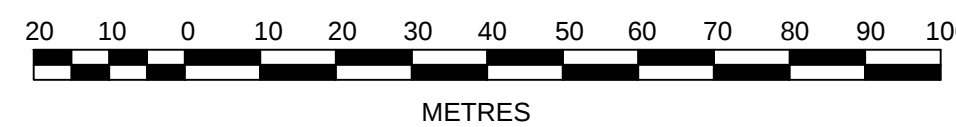
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	AMENDMENT	DES	DRN	CKD	APR	DATE

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1:1000 (AT A1)



RESIDENTIAL
PRECINCT 1

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EDMONDSON PARK FRASERS TOWN CENTRE
BULK EARTHWORKS & SERVICE REMOVAL
RETAIL STAGING PLAN

PLAN No: 11022304/DA15 **C**

FILE No: 11022304DA15

SHEET SIZE: A1 ORIGINAL

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C	RAILWAY CORRIDOR OFFSET REVISED	KM	KM	AM	MS	15/06/16
B	ISSUE FOR DA APPROVAL	KM	NW	AM	MS	20/05/16
A	ADVANCED COPY	KM	NW	AM	MS	06/04/16
	AMENDMENT	DES	DRN	CKD	APR	DATE

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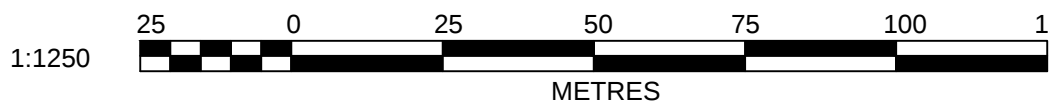
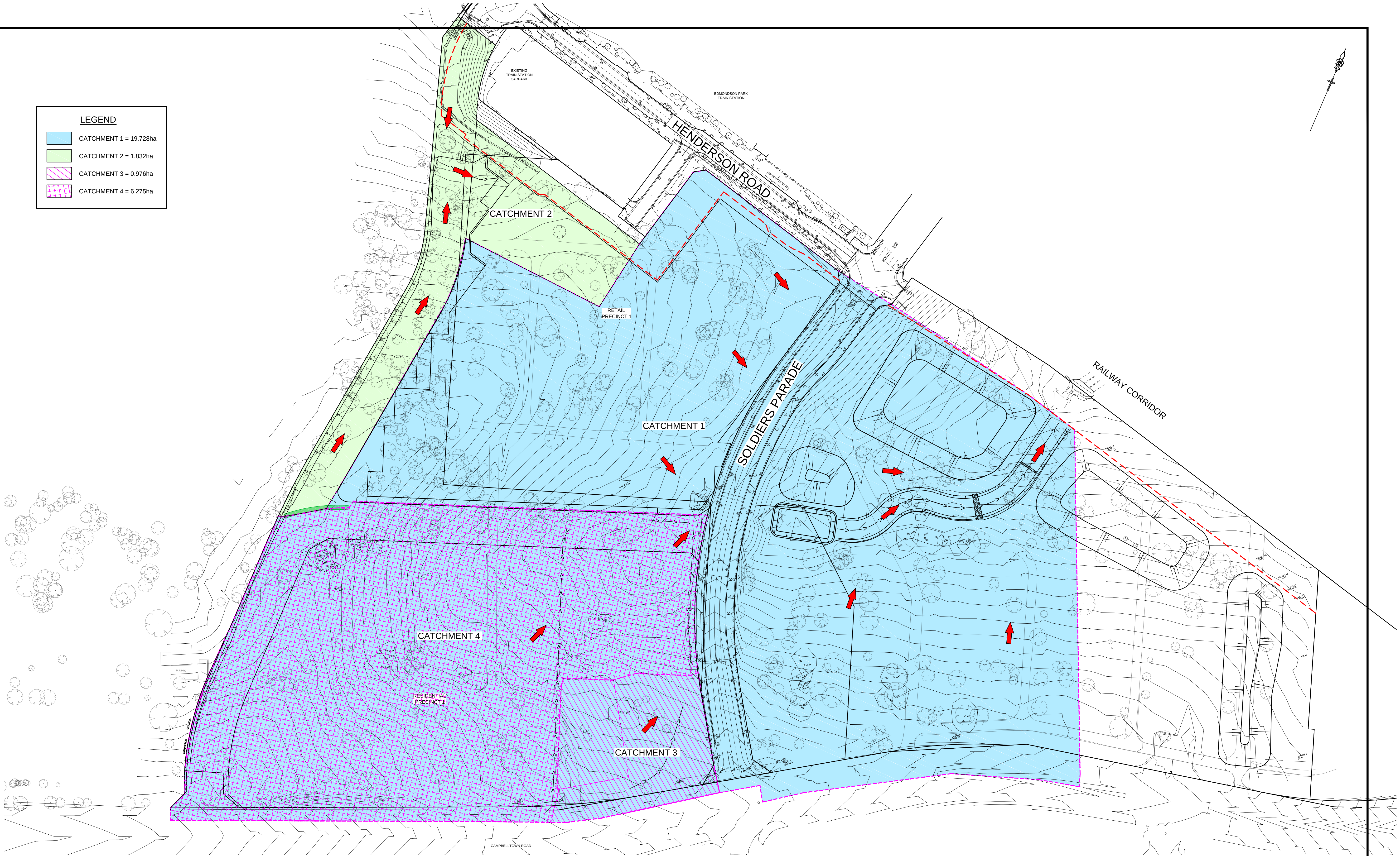
LEGEND

CATCHMENT 1 = 19.728ha

CATCHMENT 2 = 1.832ha

CATCHMENT 3 = 0.976ha

CATCHMENT 4 = 6.275ha



B	ISSUE FOR DA APPROVAL	KM	NW	AM	MS	20/05/16
A	ADVANCED COPY	KM	KM	AM		08/04/16
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
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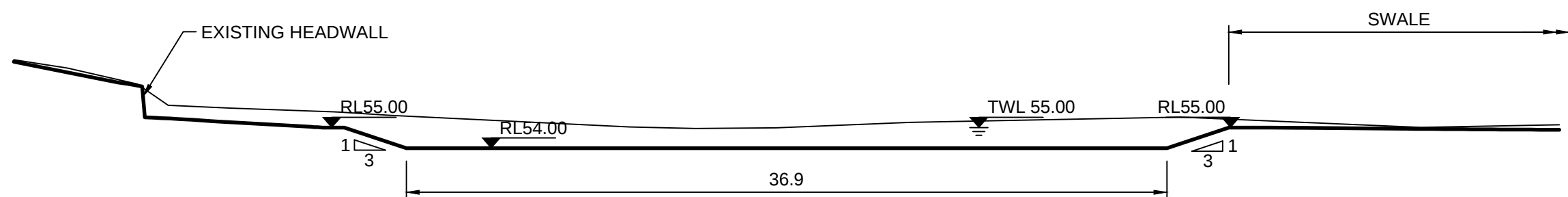
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EDMONDSON PARK FRASERS TOWN CENTRE
BULK EARTHWORKS & SERVICE REMOVAL
CATCHMENT PLAN

PLAN No:	11022304/DA16	B
FILE No:	11022304DA16	
SHEET SIZE:	A1 ORIGINAL	

Plotted: 15 June, 2016 9:33:49 AM File Name: J:\110223 - Edmondson Park Town Centre\03 - Bulk Earthworks & Services Removal\CD\DA17.dwg



SECTION 7
SCALE 1:250

Note: These "Detailed Calculation" spreadsheets relate only to high erosion hazard lands as identified in figure 4.6 or where the designer chooses to use the RUSLE to size sediment basins. The "Standard Calculation" spreadsheets should be used on low erosion hazard lands as identified by figure 4.6 and where the designer chooses not to run the RUSLE in calculations.

1. Site Data Sheet

Site Name: Edmondson Park Town Centre - RP1
Site Location: Edmondson Park Town Centre - RP1
Precinct: RP1
Description of Site: Temporary Basin for RP1

Site area	Sub-catchments	Remarks
Total catchment area (ha)	6.83	
Disturbed catchment area (ha)	6.83	

Soil analysis (enter sediment type if known, or laboratory particle size data)

Sediment Type (C, F or D) (known)	D	From Appendix D
% sand (fraction 0.02 to 0.06 mm)	10	Soil texture should be assessed through mechanical dispersion only. Dispersing agents (e.g. Calgon) should not be used
% silt (fraction 0.02 to 0.02 mm)	30	
% clay (fraction finer than 0.002 mm)	60	
Dispersion percentage	100.0	E.g. enter 10 for dispersion of 10%
% of whole soil dispersive	75	See Section 6.3.3(e) Auto-calculated
Soil Texture Group	D	Automatic calculation from above

Rainfall data

Design rainfall depth (days)	5	See Sections 6.3.4 (a) and (n)
Design rainfall depth (percentage)	75	See Sections 6.3.4 (f) and (g)
x-day, y-percentile rainfall event	19.2	See Section 6.3.4 (h)
Rainfall R factor (if known)	2500	See Appendix B
TFD 2-year 6-hour storm (if known)	11.89	See IFD chart for the site

RUSLE Factors

Rainfall erosivity (R-factor)	2600	Auto-filled from above
Soil erodibility (K-factor)	0.007	
Slope length (m)	80	
Slope gradient (%)	4	RUSLE LS factor calculated for a high n/irritant ratio
Length/gradient (LS-factor)	0.91	
Erosion control practice (P-factor)	1.3	1.3 1.3 1.3 1.3 1.3 1.3
Ground cover (C-factor)	1	1 1 1 1 1 1 1

Calculations

Soil loss (t/ha/yr)	80	
Soil Loss Class	1	See Section 4.4.2(b)
Soil loss (m ³ /ha/yr)	62	
Sediment basin storage volume, m ³	72	See Sections 6.3.4(i) and 6.3.5 (e)

2. Storm Flow Calculations

Peak flow is given by the Rational Formula:

$$Q_p = 0.00278 \times C_{10} \times F_y \times I_{y,15} \times A$$

where:
 C_{10} is peak flow rate (m³/sec) of average recurrence interval (ARI) of "Y" year is the runoff coefficient (dimensionless) for ARI of 10 years. Rural runoff coefficients are given in Volume 2, figure 5 of Pilgrim (1996), while urban runoff coefficients are given in Volume 1, Book VIII, figure 1.13 of Pilgrim (1996) and construction runoff coefficients are given in Appendix F
 F_y is a frequency factor for "Y" years. Rural values are given in Volume 1, Book IV, Table 1.1 of Pilgrim (1996) while urban coefficients are given in Volume 1, Book VIII, Table 1.6 of Pilgrim (1996)
 A is the catchment area in hectares (ha)
 $I_{y,15}$ is the average rainfall intensity (mm/hr) for an ARI of "Y" years and a design duration of "tc" (minutes or hours)

$$\text{Time of concentration } (t_c) = 0.76 \times (A/100)^{0.38} \text{ hrs (Volume 1, Book IV of Pilgrim, 1996)}$$

Note: For urban catchments the time of concentration should be determined by more precise calculations or reduced by a factor of 50 per cent.

To automatically halve the calculated time of concentration, place an "x" in this box: ☒

Peak flow calculations, 1

Site	A (ha)	t _c (min)	Rainfall intensity, I, mm/hr						C ₁₀
			1 yr	5 yr	10 yr	20 yr	50 yr	100 yr	
SB1	6.83	8	72.66	117.2	131.84	150.56	175.11	193.49	0.81

Peak flow calculations, 2

ARI (yr)	Frequency factor (F _y)	Peak flows					Comment
		SB1 (m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	
1 yr	0.8	0.884					
5 yr	0.95	1.712					
10 yr	1	2.008					
20 yr	1.05	2.432					
50 yr	1.15	3.087					
100 yr	1.2	3.571					

4. Volume of Sediment Basins, Type D and Type F Soils

Basin volume = settling zone volume + sediment storage zone volume

Settling Zone Volume

The settling zone volume for Type F and Type D soils is calculated to provide capacity to contain all runoff expected from up to the y-percentile rainfall event. The volume of the basin's settling zone (V) can be determined as a function of the basin's surface area and depth to allow for particles to settle and can be determined by the following equation:

$$V = 10 \times C_v \times A \times R_{x\text{-day}, y\text{-tile}} \text{ (m}^3\text{)}$$

where:

10 = a unit conversion factor

C_v = the volumetric runoff coefficient defined as that portion of rainfall that runs off as stormwater over the x-day period

$R_{x\text{-day}, y\text{-tile}}$ = is the x-day total rainfall depth (mm) that is not exceeded in y percent of rainfall events. (See Sections 6.3.4(d), (e), (f), (g) and (h)).

A = total catchment area (ha)

Sediment Storage Zone Volume

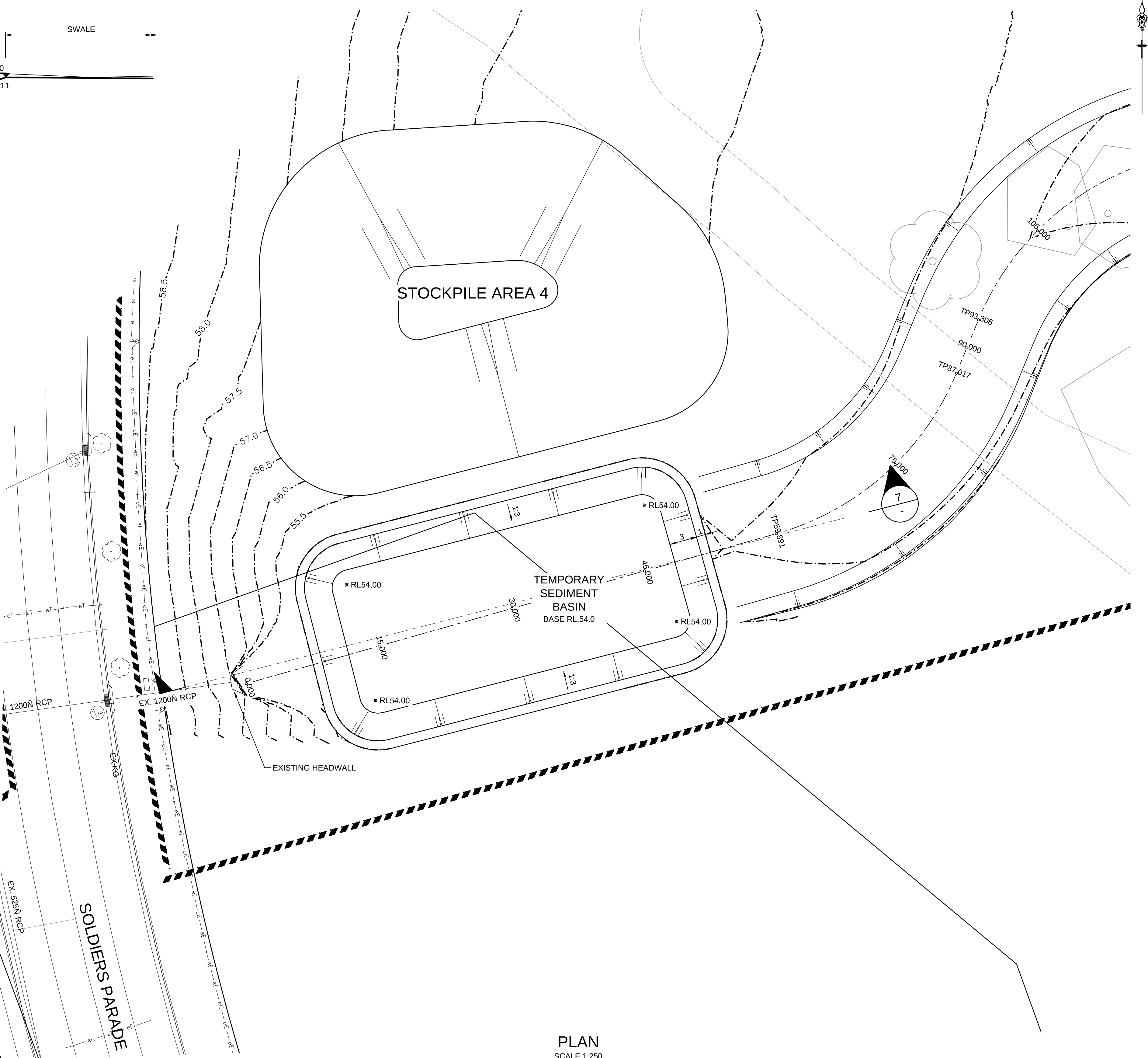
In the detailed calculation on Soil Loss Classes 1 to 4 lands, the sediment storage zone can be taken as 50 percent of the settling zone capacity. Alternately designers can design the zone to store the 2-month soil loss as calculated by the RUSLE (Section 6.3.4(i)). However, on Soil Loss Classes 5, 6 and 7 lands, the zone must contain the 2-month soil loss as calculated by the RUSLE (Section 6.3.4(i)).

Place an "X" in the box below to show the sediment storage zone design parameters used here:

☒ 50% of settling zone capacity,
☒ 2 months soil loss calculated by RUSLE

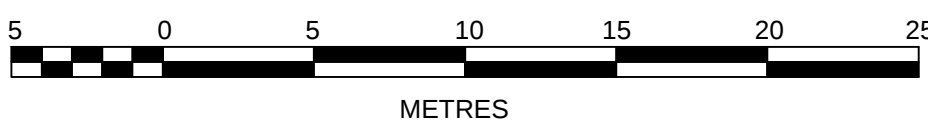
Total Basin Volume

Site	C _v	R _{x-day, y-tile}	Total catchment area (ha)	Settling zone volume (m ³)	Sediment storage volume (m ³)	Total basin volume (m ³)
SB1	0.50	19.2	6.83	656.68	72	727.68



PLAN
SCALE 1:250

1:250 (AT A1)



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EDMONDSON PARK FRASERS TOWN CENTRE
BULK EARTHWORKS & SERVICE REMOVAL
SEDIMENT BASIN DETAIL PLAN

PLAN No:
11022304/DA17 **B**

FILE No: 11022304DA17

SHEET SIZE: A1 ORIGINAL

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	AMENDMENT	DES	DRN	CKD	APR	DATE

LEGEND



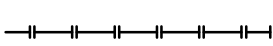
STRAW BALES



FILTER ROLLS (AT KERB INLET PIT)



SURFACE INLET SEDIMENT TRAP.



SEDIMENT FENCE.



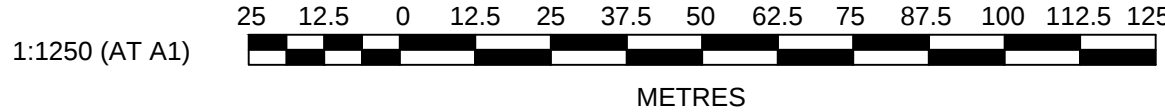
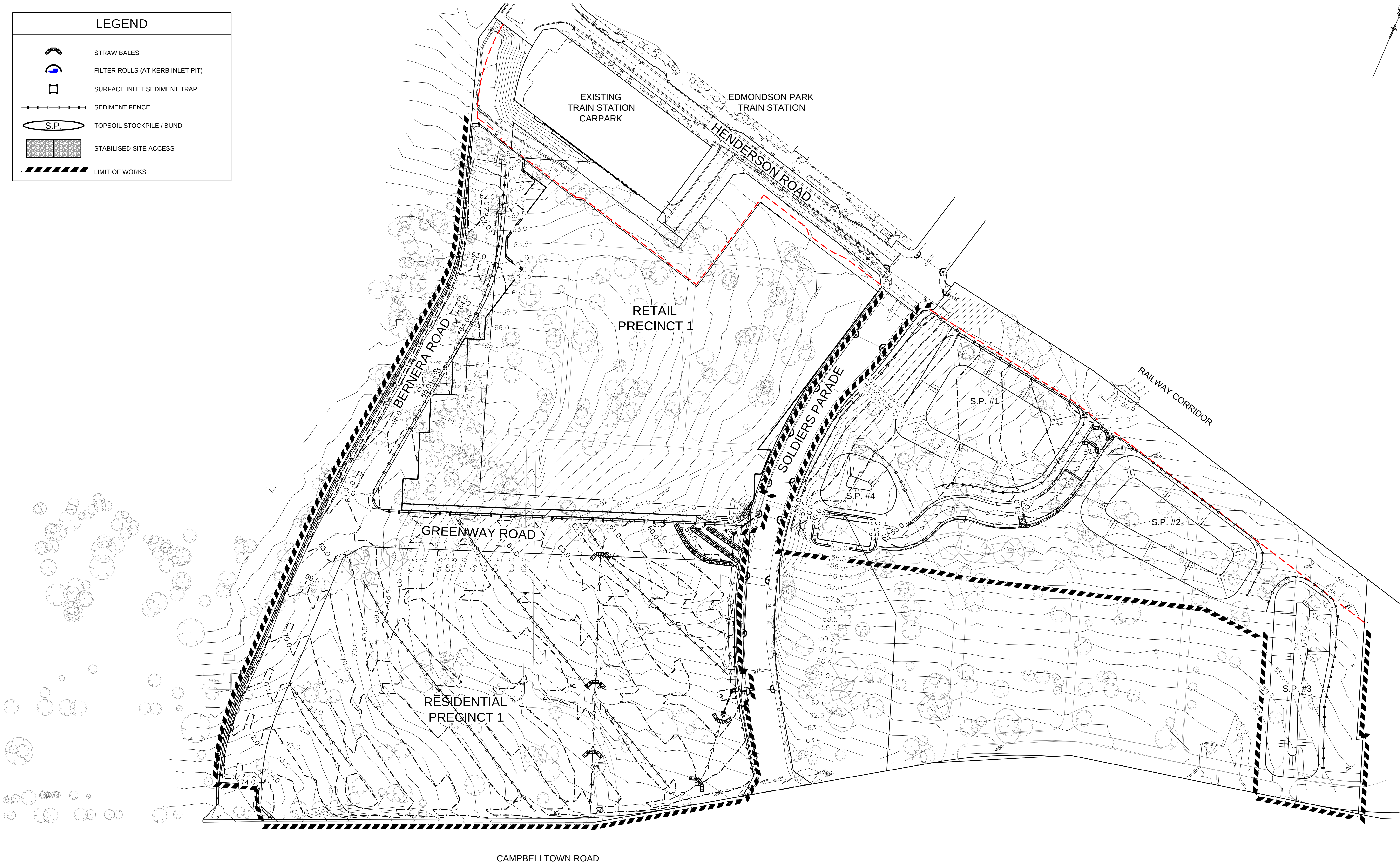
TOPSOIL STOCKPILE / BUND



STABILISED SITE ACCESS



LIMIT OF WORKS



C	RAILWAY CORRIDOR OFFSET REVISED	KM	KM	AM	MS	15/06/16
B	ISSUE FOR DA APPROVAL	KM	NW	AM	MS	20/05/16
A	ADVANCED COPY	KM	KM	AM	MS	08/04/16
	AMENDMENT	DES	DRN	CKD	APR	DATE

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EDMONDSON PARK FRASERS TOWN CENTRE
BULK EARTHWORKS & SERVICE REMOVAL
SOIL & WATER MANAGEMENT PLAN

PLAN No: 11022304/DA18 C
FILE No: 11022304DA18
SHEET SIZE: A1 ORIGINAL