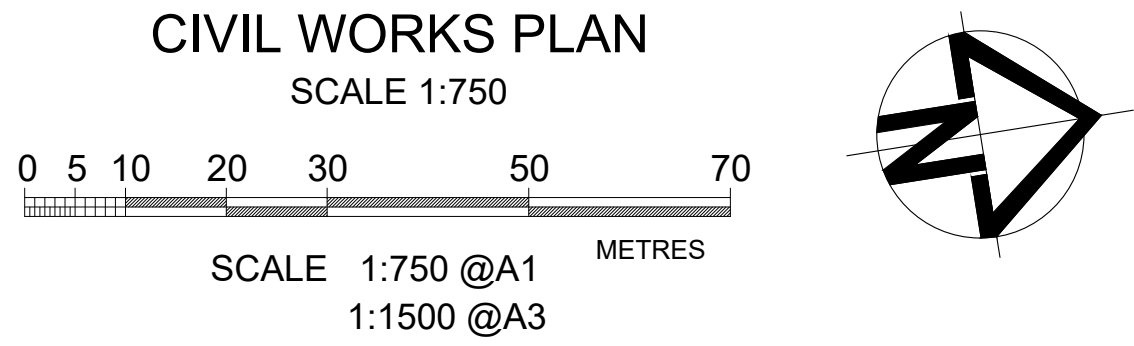
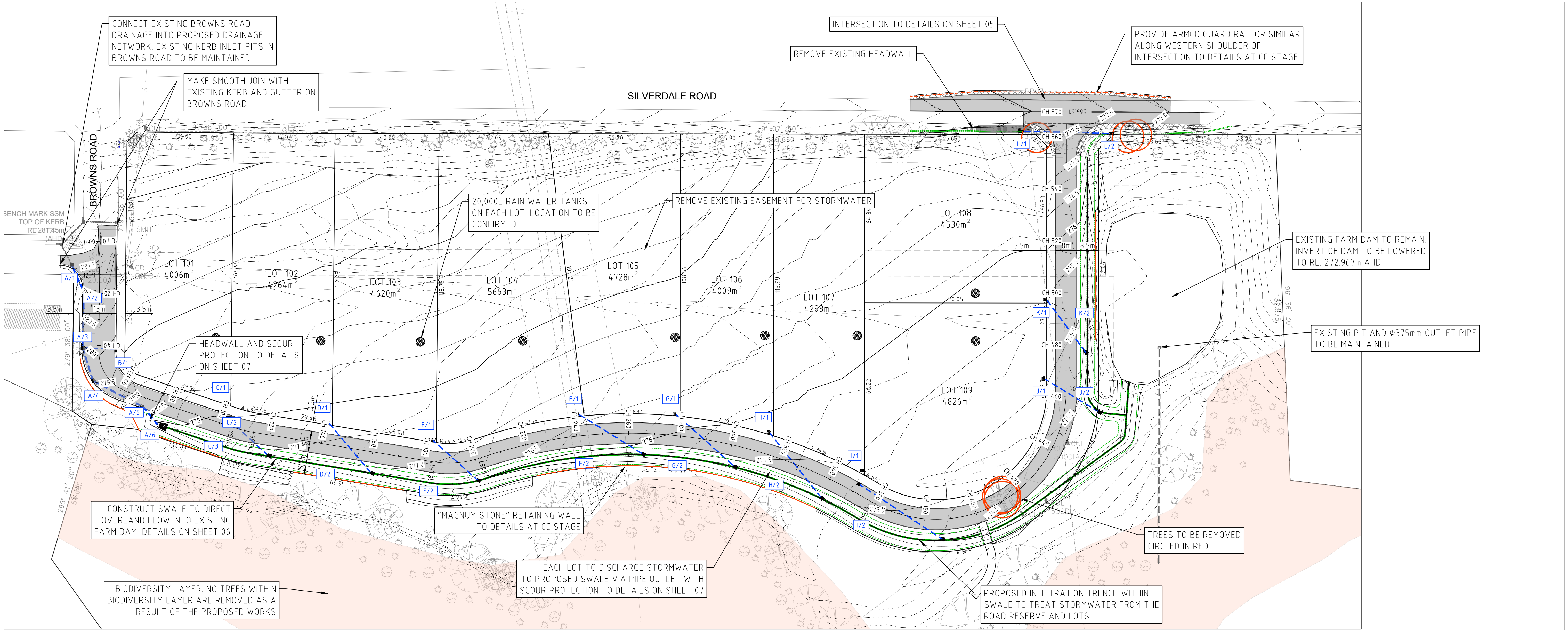




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REVISONS	No.	DESCRIPTION	DRN	APP	DATE
	A	PRELIMINARY CLIENT ISSUE	I.B.	A.C.	14.03.24
	B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24
	C	REVISED TO COMMENTS	I.B.	A.C.	23.04.24
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Site Plus Pty Ltd ABN 73 104 315 095

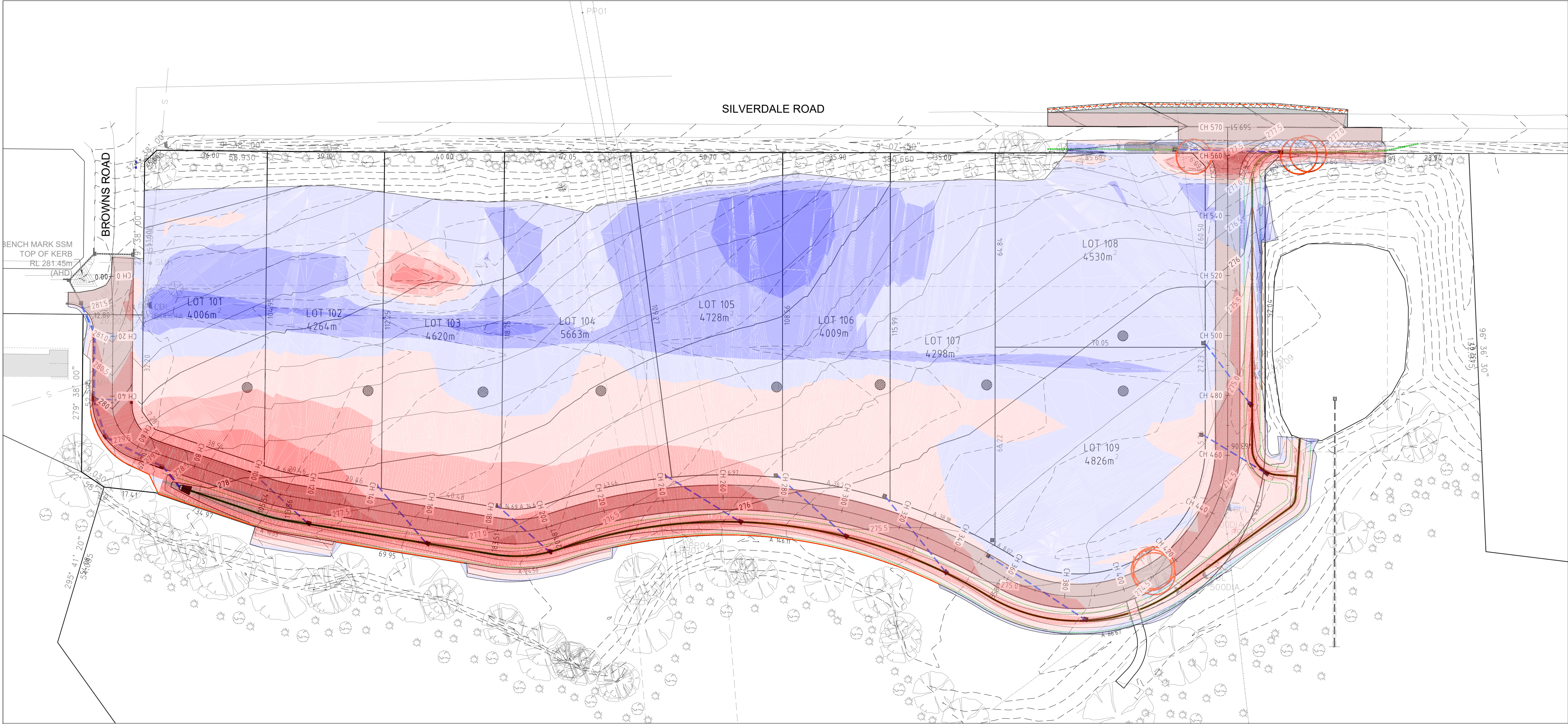
engineering landscape design flooding management

WOLLONGONG - HEAD OFFICE
Shop 1, 18 Arrow Avenue
Figtree NSW 2555
PO Box 506
Figtree NSW 2555
T 61 2 4227 4233
F 61 2 4227 4133
E info@siteplus.com.au

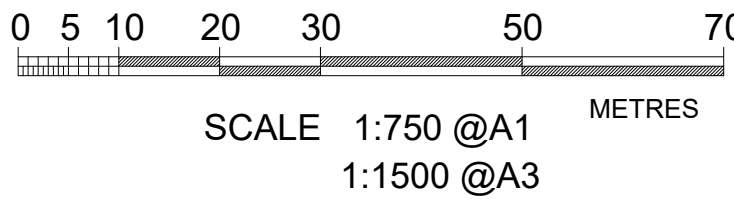
Height Datum	A.H.D
Drawn	I.B.
Designed	A.C.
Checked	A.C.
Approved	A.C.

Client Title		MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST)	
Dwg Status		DA	Local Authority WOLLONDILLY

Dwg Title		PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS	
Ref & Dwg No		23130.DA.C02	
Sheet No		02 of 14	
Scale		1:750 @ A1	
Date	23.04.24	Rev	C A1



BULK EARTHWORKS PLAN
SCALE 1:750



SURFACE ELEVATION DATA			
NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	COLOR
1	-3.09	-2.50	
2	-2.50	-2.00	
3	-2.00	-1.50	
4	-1.50	-1.00	
5	-1.00	-0.50	
6	-0.50	0.00	
7	0.00	0.50	
8	0.50	1.00	
9	1.00	1.50	
10	1.50	1.80	

CUT/FILL SUMMARY

- CUT/FILL SUMMARY ASSUMED 200mm TOP SOIL STRIPPING PRIOR TO EXCAVATION OF CUT OR PLACEMENT OF FILL.

- NO ALLOWANCE MADE FOR UNSUITABLE MATERIAL THAT MAY BE ENCOUNTERED ON SITE.

SUMMARY

CUT=	14,095	cu.m
FILL=	17,107	cu.m
EXCAVATION OF TRENCHES=	275	cu.m
EXCAVATION OF PAVEMENT=	1957	cu.m
TOTAL IMPORT OF MATERIAL TO SITE=		780 cu.m

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REVISIONS

No.	DESCRIPTION	DRN	APP	DATE
A	PRELIMINARY CLIENT ISSUE	I.B.	A.C.	14.03.24
B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24
C	REVISED TO COMMENTS	I.B.	A.C.	23.04.24
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Site Plus Pty Ltd ABN 73 104 315 095

engineering

landscape

design

flooding

management

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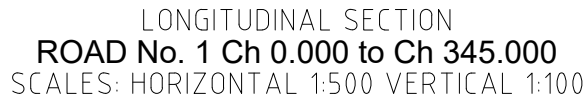
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Drawn	I.B.
Designed	A.C.
Checked	A.C.
Approved	A.C.

Client Title	
MR & MRS NOCERA C/-	
PROFICIENT CONSTRUCTIONS (AUST)	

Dwg Status	DA
Local Authority	WOLLONDILLY

Dwg Title	
PROPOSED SUBDIVISION	
80 SILVERDALE ROAD, THE OAKS	
BULK EARTHWORKS	

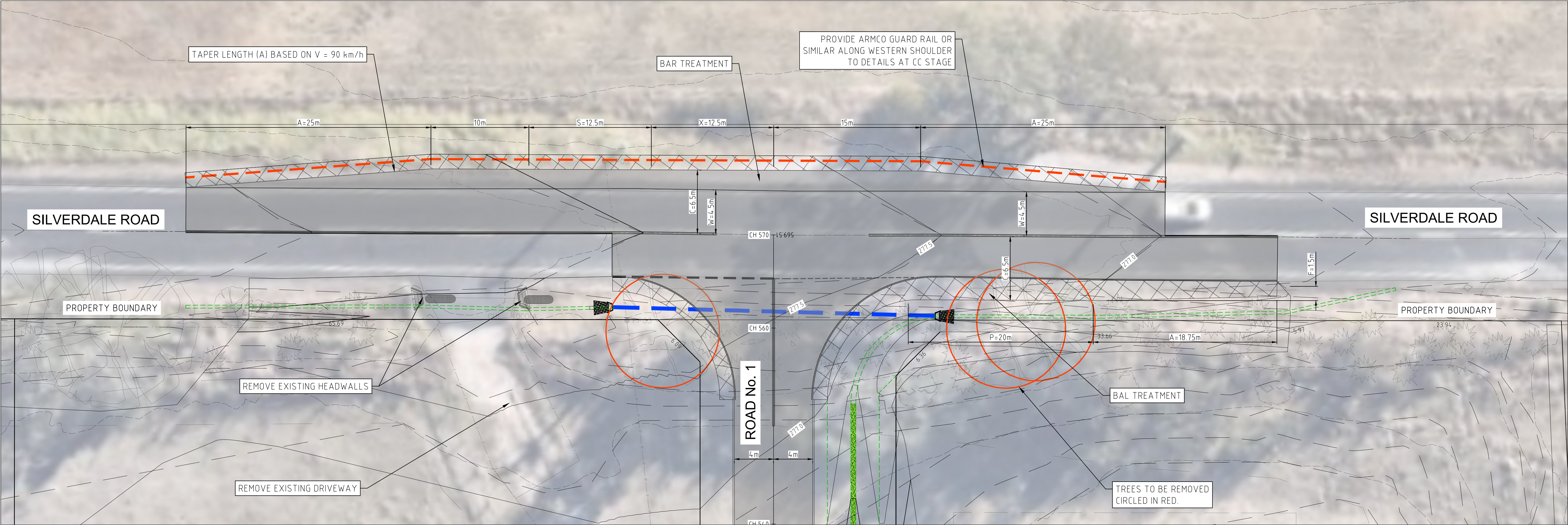
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23130.DA.C03	
Sheet No	03 of 14
Scale	1:750 @ A1
Date	23.04.24
Rev	C
	A1



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Site Plus Pty Ltd ABN 73 104 315 095

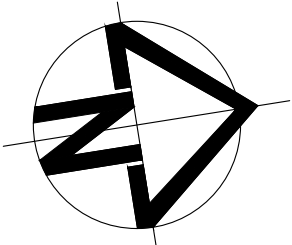
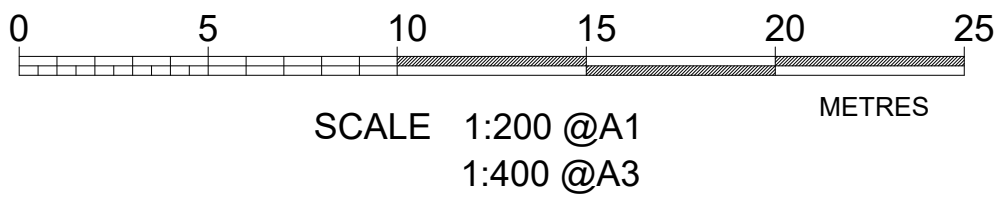
engineering landscape



LEGEND

- 40mm AC
- UNSEALED SHOULDER

INTERSECTION PLAN
SCALE 1:200



T:\Projects\23130_80_Silverdale Road, The Oaks\Drawg\DA\23130_Plans.dwg

REVISIONS				DESCRIPTION				No.			
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---	---	---	---	---	---	---	---	C	REVISED TO COMMENTS	I.B.	A.C.
---	---	---	---	---	---	---	---			DATE	
---	---	---	---	---	---	---	---			23.04.24	
---	---	---	---	---	---	---	---				
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		WOLLONGONG - HEAD OFFICE Shop 1, 18 Arrow Avenue Figtree NSW 2555 PO Box 506 Figtree NSW 2525 T 61 2 4227 4233 F 61 2 4227 4133 E info@siteplus.com.au	
engineering	landscape	design	flooding
management			

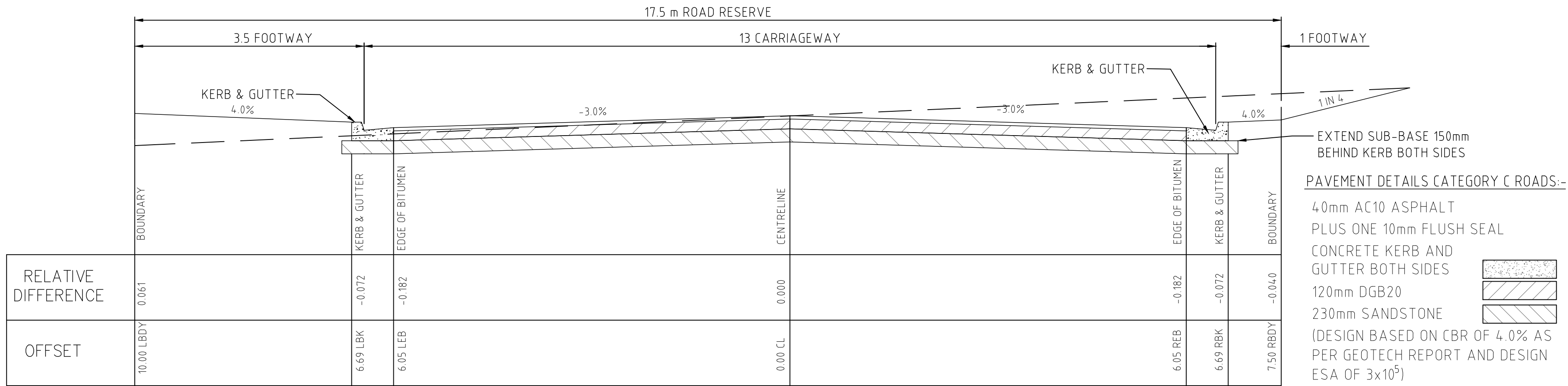
Height Datum	A.H.D
Drawn	I.B.
Designed	A.C.
Checked	A.C.
Approved	A.C.

Client Title	
MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST)	

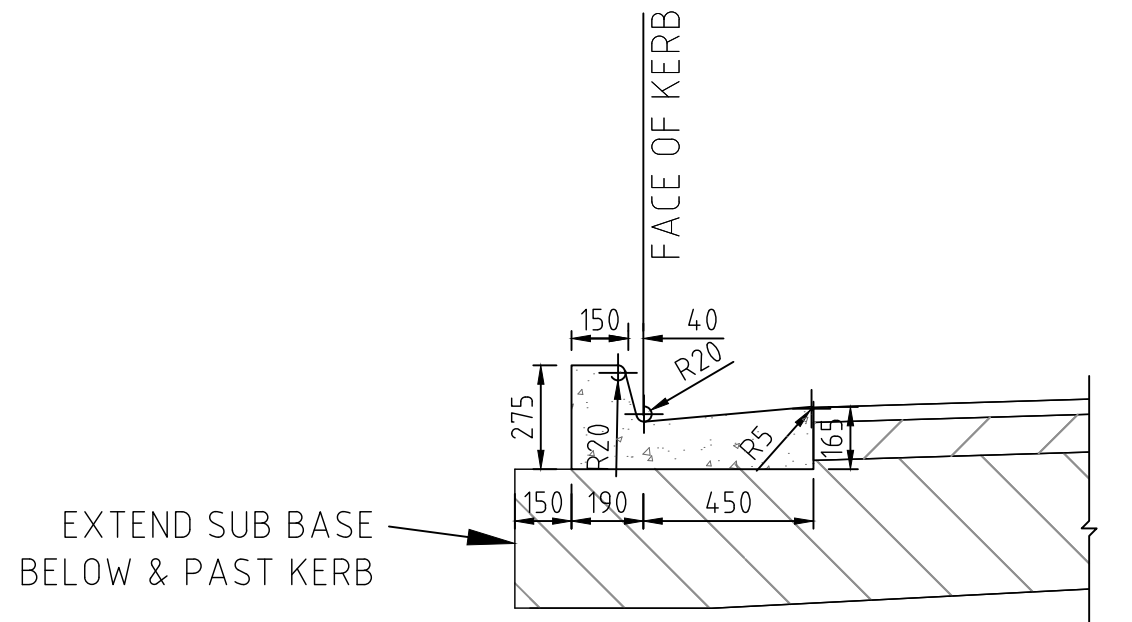
Dwg Status	DA
Local Authority	WOLLONDILLY

Dwg Title	
PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS	
INTERSECTION PLAN	

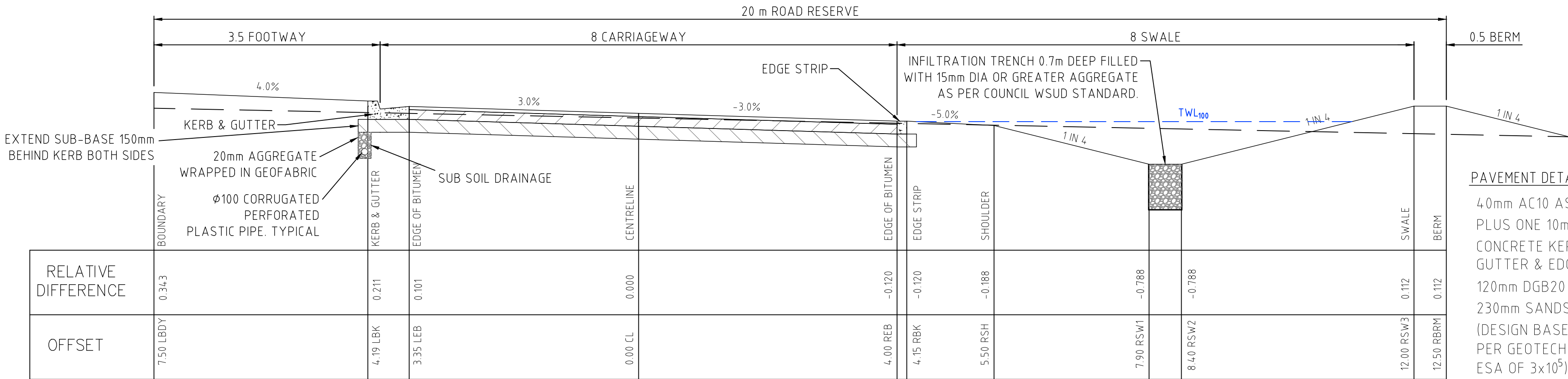
Ref & Dwg No	
23130.DA.C05	
Sheet No	05 of 14
Scale	1:200 @ A1
Date	23.04.24
Rev	C
	A1



ROAD NO.1, CHAINAGES 0.000 - 71.306
TYPICAL CROSS SECTION
SCALE 1:50



KERB AND GUTTER (K&G)
SCALE 1:20

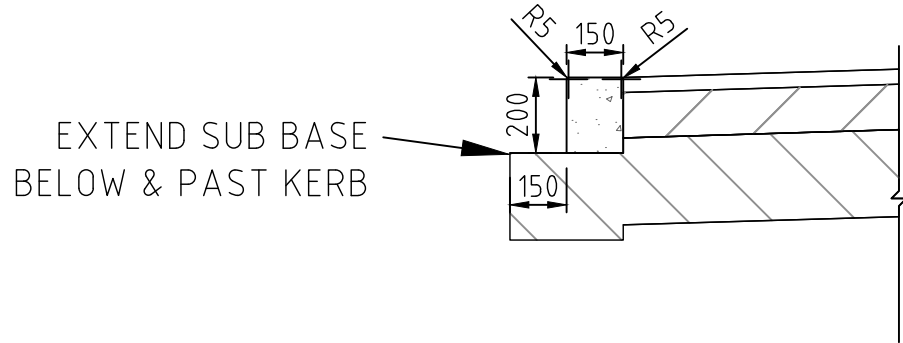


ROAD NO.1, CHAINAGES 71.306 - 101.000
TYPICAL CROSS SECTION
SCALE 1:50

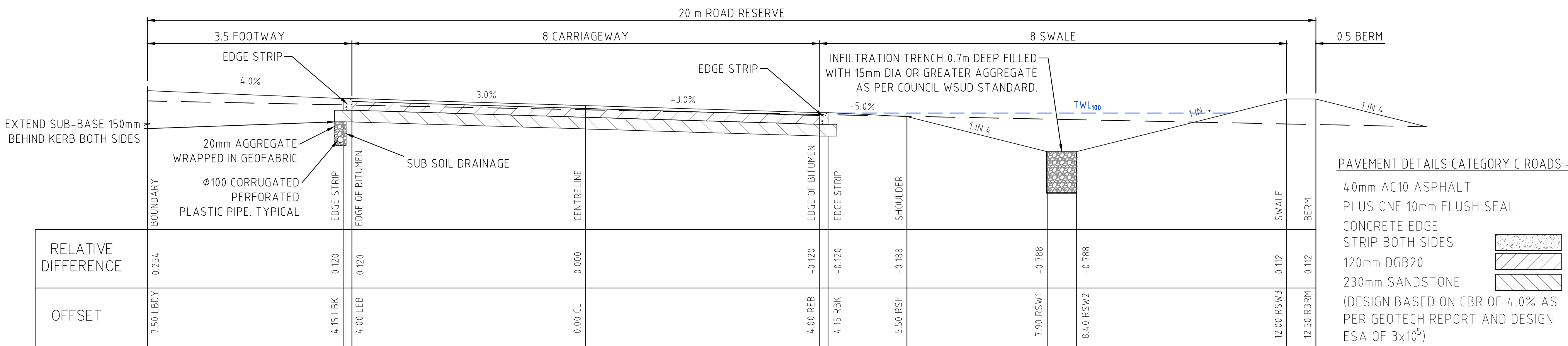
MANNING'S CALCULATIONS

$S_0 = 1.4\%$ AVERAGE
 $n = 0.03$
 $Q_{cap} = 4.16 \text{ m}^3/\text{s}$
 $V_A = 1.92 \text{ m/s}$
 $W.P. = 5.91 \text{ m}$
 $T.W. = 5.75 \text{ m}$
 $d = 0.66 \text{ m}$
 $V.D_{max} = 1.27 \text{ m}$

FLOW CALCULATIONS:
 $Q_{100YR} = 3.94 \text{ m}^3/\text{s}$



EDGE STRIP
SCALE 1:20



ROAD NO.1, CHAINAGES 101.000 - 569.513
TYPICAL CROSS SECTION
SCALE 1:50

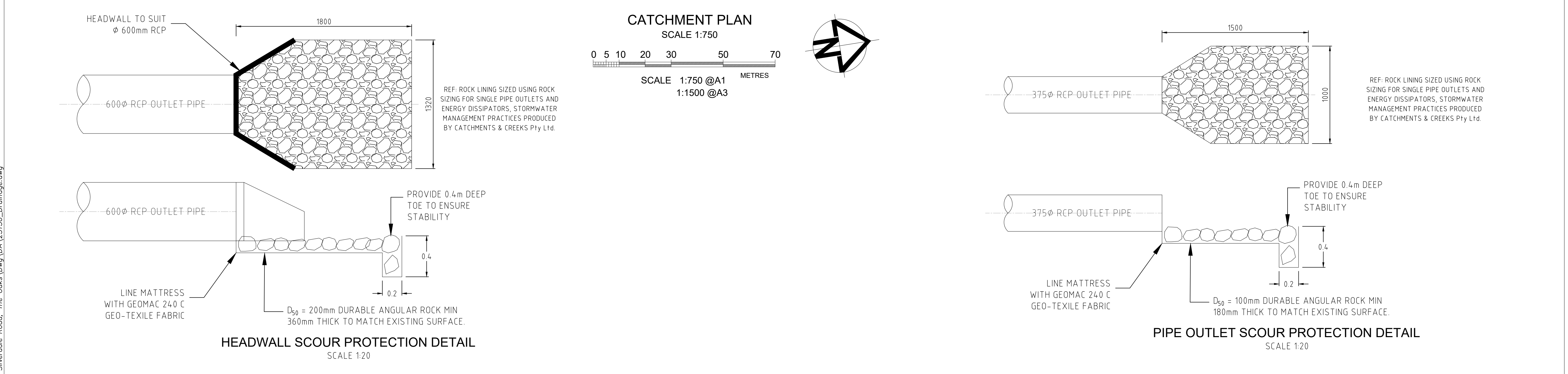
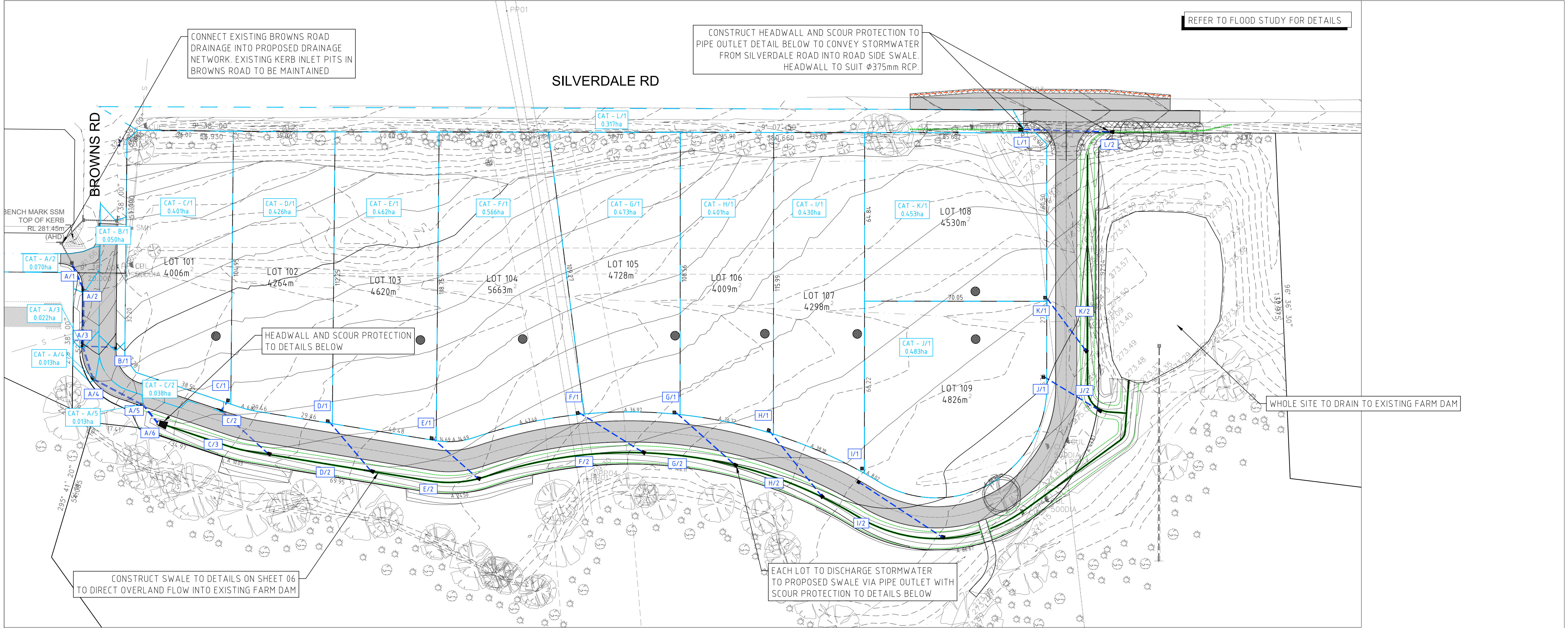
MANNING'S CALCULATIONS

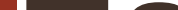
$S_0 = 1.4\%$ AVERAGE
 $n = 0.03$
 $Q_{cap} = 4.16 \text{ m}^3/\text{s}$
 $V_A = 1.92 \text{ m/s}$
 $W.P. = 5.91 \text{ m}$
 $T.W. = 5.75 \text{ m}$
 $d = 0.66 \text{ m}$
 $V.D_{max} = 1.27 \text{ m}$

FLOW CALCULATIONS:
 $Q_{100YR} = 3.94 \text{ m}^3/\text{s}$

T:\Projects\23130_80_Silverdale Road, The Oaks\Drawg\DA\23130_Roads.dwg

REVISIONS	No.	DESCRIPTION	DRN	APP	DATE	 Site Plus Pty Ltd ABN 73 104 315 095	 engineering landscape design flooding management	WOLLONDONG - HEAD OFFICE Shop 1, 18 Arrow Avenue Figtree NSW 2525 PO Box 506 Figtree NSW 2525 T 61 2 4227 4233 F 61 2 4227 4133 E info@siteplus.com.au	Height Datum	A.H.D	Client Title	MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST)	Dwg Title	PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS	Ref & Dwg No	23130.DA.C06		
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	B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24			Designed	A.C.				Sheet	06 of 14				
	C	REVISED TO COMMENTS	I.B.	A.C.	23.04.24			Checked	A.C.	-----			Scale	AS NOTED @ A1				
	----	----	----	----	----			Approved	A.C.	Dwg Status	DA	Local Authority	WOLLONDILLY	Date	23.04.24	Rev	C	A1
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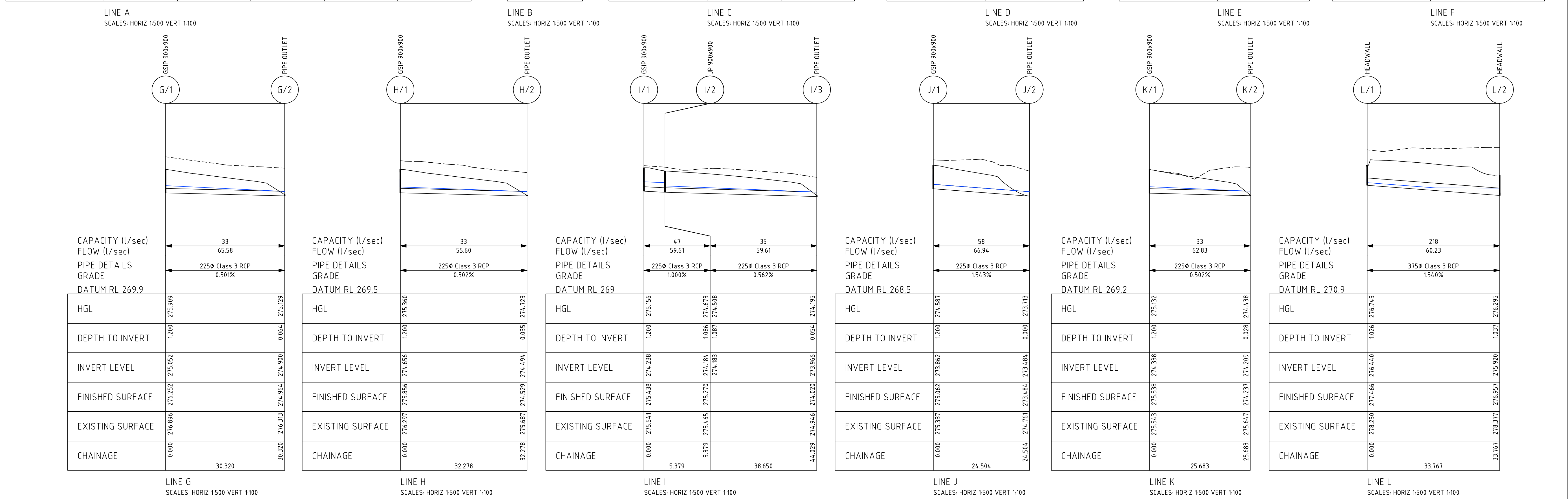
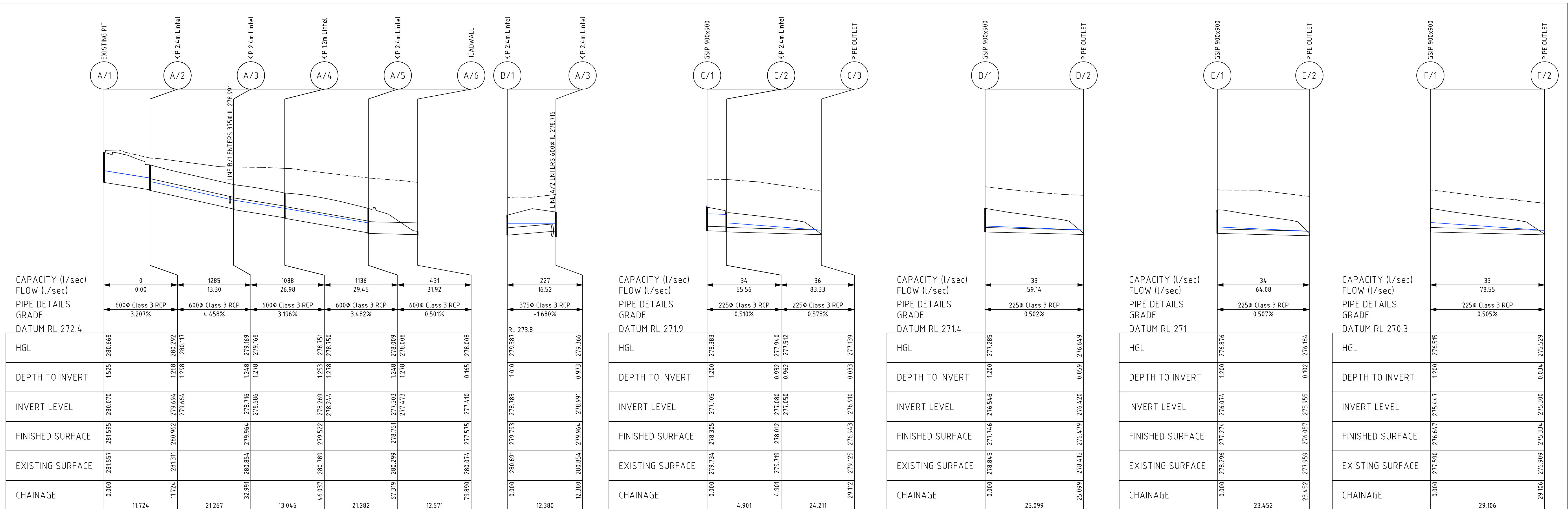
REVISIONS	No.	DESCRIPTION	DRN	APP	DATE	 Site Plus Pty Ltd ABN 73 104 315 095	 engineering landscape design flooding management				Height Datum	A.H.D	Client Title	MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST)		Dwg Title	PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS		Ref & Dwg No		23130.DA.C07							
	A	PRELIMINARY CLIENT ISSUE	I.B.	A.C.	14.03.24						Drawn	I.B.							Sheet No	07 of 14								
	B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24						Designed	A.C.							Sheet	1:750 @ A1								
	C	REVISED TO COMMENTS	I.B.	A.C.	23.04.24						Checked	A.C.							Scale									
	----	----	----	----	----						Approved	A.C.							Dwg Status	DA	Local Authority	WOLLONDILLY	Catchment Plan	Date	23.04.24	Rev	C	A1
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T: \Projects\23130_80_Silverdale Road_ The Oaks\Drawg\DA\23130_Drainage.dwg

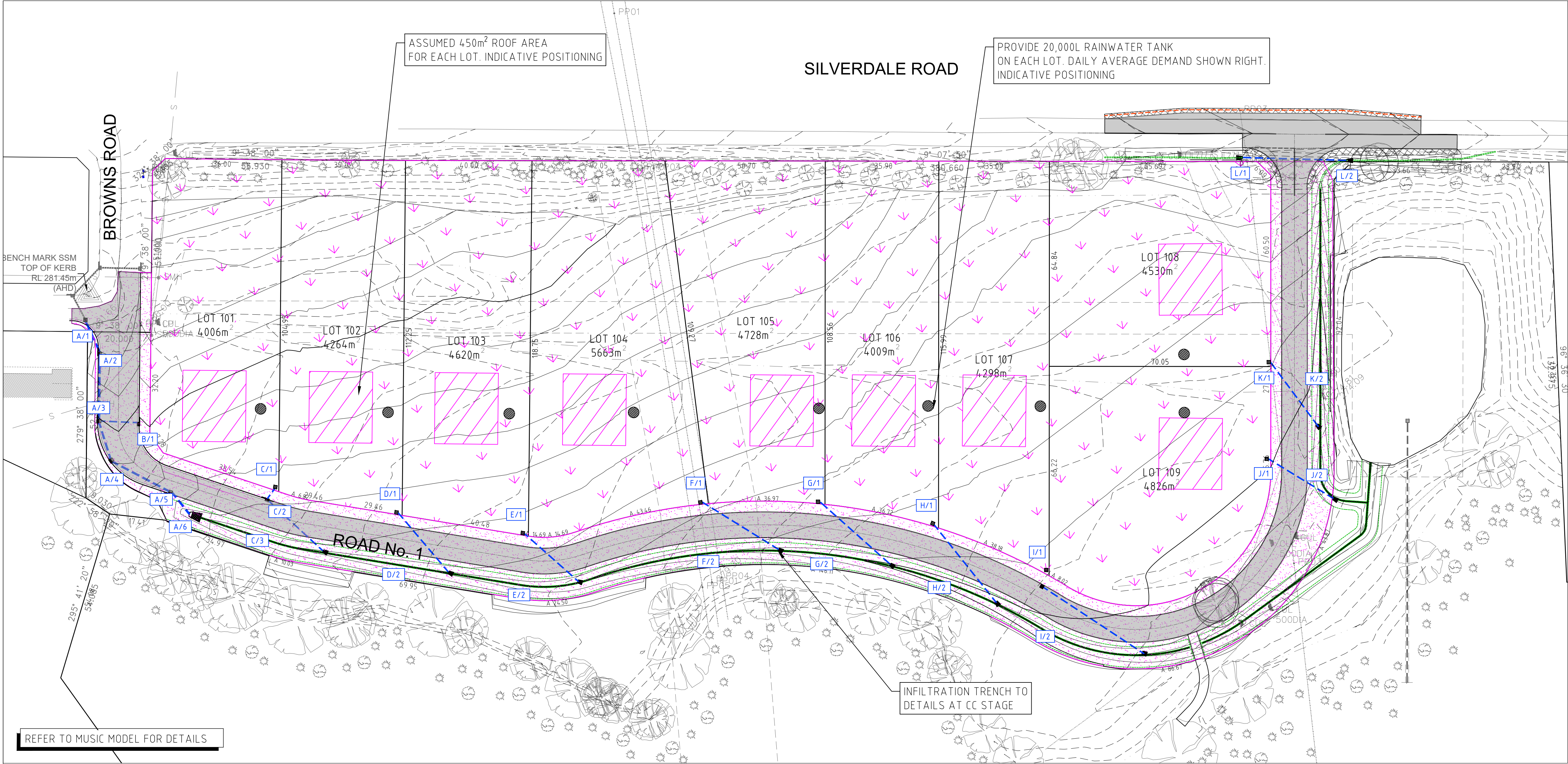
Pit Schedule - Site Drainage												
Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
A/6	HEADWALL				600	277.410	0.165	277.575	276228.01	6227528.060		
A/5	KIP 2.4m Lintel	600	900	600	277.473	600	277.503	1.278	278.751	276218.38	6227519.980	
A/4	KIP 1.2m Lintel	600	900	600	278.244	600	278.269	1.278	279.522	276205.52	6227503.018	
A/3	KIP 2.4m Lintel	600	900	600	278.686	600	278.716	1.278	279.964	276192.60	6227501.243	
A/2	KIP 2.4m Lintel	600	900	600	279.664	600	279.694	1.298	280.962	276171.64	6227504.853	
B/1	KIP 2.4m Lintel	600	900	375	278.783			1.010	279.793	276195.11	6227513.365	
A/1	EXISTING PIT			600	280.070			1.525	281.595	276160.29	6227501.904	
C/3	PIPE OUTLET					225	276.910	0.033	276.943	276244.51	6227564.859	
C/2	KIP 2.4m Lintel	600	900	225	277.050	225	277.080	0.962	278.012	276225.63	6227549.698	
C/1	GSIP 900x900	900	900	225	277.105			1.200	278.305	276221.97	6227552.953	
D/2	PIPE OUTLET					225	276.420	0.059	276.479	276257.22	6227602.852	
D/1	GSIP 900x900	900	900	225	276.546			1.200	277.746	276235.94	6227589.544	
E/2	PIPE OUTLET					225	275.955	0.102	276.057	276266.61	6227643.070	
E/1	GSIP 900x900	900	900	225	276.074			1.200	277.274	276248.68	6227627.955	
F/2	PIPE OUTLET					225	275.300	0.034	275.334	276266.64	6227707.255	
F/1	GSIP 900x900	900	900	225	275.447			1.200	276.647	276247.88	6227685.002	
G/2	PIPE OUTLET					225	274.900	0.064	274.964	276276.74	6227741.277	
G/1	GSIP 900x900	900	900	225	275.052			1.200	276.252	276253.55	6227721.755	
H/2	PIPE OUTLET					225	274.494	0.035	274.529	276294.05	6227772.522	
H/1	GSIP 900x900	900	900	225	274.656			1.200	275.856	276266.11	6227756.356	
I/3	PIPE OUTLET					225	273.966	0.054	274.020	276317.27	6227815.989	
I/2	JP 900x900	600	600	225	274.183	225	274.184	1.087	275.270	276291.18	6227787.473	
I/1	GSIP 900x900	900	900	225	274.238			1.200	275.438	276286.25	6227789.604	
J/2	PIPE OUTLET					225	273.484	0.000	273.484	276278.20	6227882.826	
J/1	GSIP 900x900	900	900	225	273.862			1.200	275.062	276262.52	6227863.996	
K/2	PIPE OUTLET					225	274.209	0.028	274.237	276255.11	6227881.785	
K/1	GSIP 900x900	900	900	225	274.338			1.200	275.538	276232.47	6227869.665	
L/2	HEADWALL					375	275.927	1.030	276.957	276173.36	6227904.242	
L/1	HEADWALL			375	276.265			1.201	277.466	276167.17	6227871.048	

HGL Report - Site Drainage Return Period: 20%yrs Location: depths The Oaks-2016																									
Pipe Connecting Pits (Downstream Upstream)	Pipe ID	Pipe Class	Pipe Diameter	Pipe Length	Pipe Design Flow	Mannings n	Pipe Velocity	Pipe Part Velocity	Pipe Velocity Head	HGL at Downstream Pit	Pipe Friction Slope	Pipe Friction Loss	HGL at Upstream Pit	Pit Loss Coefficient	Pipe Head Loss	Adopted Upstream Water Level	Pit Surcharge Level (Pit Inlet/Outlet Level)	Downstream Pipe Obvert	Upstream Pipe Obvert	Downstream Pipe Invert	Upstream Pipe Invert	Pipe Slope	Pipe Design Flow	Pipe HGL Capacity	Pipe Manning Capacity
			(mm)	(m)	(l/s)		(m/s)	(m/s)	(m)	(m)	(%)	(m)	(m)	Ku	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(%)	(l/s)	(l/s)	(l/s)
A/2 A/1		Class 3 RCP	600	11.724	0.0	0.013	0.00	0.000	0.000	280.292	0.00	0.000	280.668	18.000	0.000	280.668	281.595	280.292	280.668	279.694	280.070	3.207	0.0	1500.5	0.0
A/3 A/2		Class 3 RCP	600	21.267	13.3	0.013	0.05	1.478	0.000	279.169	0.00	0.000	280.117	2.200	0.000	280.117	280.962	279.314	280.262	278.716	279.664	4.458	13.3	1773.9	1284.9
A/4 A/3		Class 3 RCP	600	13.046	27.0	0.013	0.10	1.634	0.000	278.751	0.00	0.000	279.168	2.650	0.001	279.169	279.964	278.867	279.284	278.269	278.686	3.196	27.0	1497.9	1088.0
A/5 A/4		Class 3 RCP	600	21.282	29.5	0.013	0.10	1.727	0.001	278.009	0.00	0.000	278.750	1.014	0.001	278.751	279.522	278.101	278.842	277.503	278.244	3.482	29.5	1564.6	1135.6
A/6 A/5		Class 3 RCP	600	12.571	31.9	0.013	0.11	0.900	0.001	278.008	0.00	0.000	278.008	1.000	0.001	278.009	278.751	278.008	278.071	277.410	277.473	0.501	31.9	578.9	430.8
A/3 B/1		Class 3 RCP	375	12.380	16.5	0.013	0.15	1.195	0.001	279.366	0.00	0.001	279.367	17.659	0.020	279.387	279.793	279.366	279.158	278.991	278.783	-1.680	16.5	318.3	227.3
C/2 C/1		Class 3 RCP	225	4.901	55.6	0.013	1.35	134.9	0.093	277.806	0.01	0.035	277.840	4.394	0.408	278.248	278.305	277.309	277.334	277.080	277.105	0.510	55.6	46.8	33.6
C/3 C/2		Class 3 RCP	225	24.211	83.3	0.013	2.02	2.023	0.209	277.139	0.02	0.373	277.512	1.407	0.294	277.806	278.012	277.139	277.279	276.910	277.050	0.578	83.3	50.0	35.8
D/2 D/1		Class 3 RCP	225	25.099	59.1	0.013	1.44	14.36	0.105	276.649	0.01	0.200	276.849	4.144	0.436	277.285	277.746	276.649	276.775	276.420	276.546	0.502	59.1	46.4	33.3
E/2 E/1		Class 3 RCP	225	23.452	64.1	0.013	1.56	1556	0.123	276.184	0.01	0.218	276.402	3.838	0.474	276.876	277.274	276.184	276.303	275.955	276.074	0.507	64.1	46.6	33.5
F/2 F/1		Class 3 RCP	225	29.106	78.5	0.013	1.91	1.907	0.186	275.529	0.01	0.400	275.929	3.158	0.586	276.515	276.647	275.529	275.676	275.300	275.447	0.505	78.5	46.5	33.4
G/2 G/1		Class 3 RCP	225	30.320	65.6	0.013	1.59	1592	0.129	275.129	0.01	0.295	275.424	3.754	0.485	275.909	276.252	275.129	275.281	274.900	275.052	0.501	65.6	46.3	33.3
H/2 H/1		Class 3 RCP	225	32.278	55.6	0.013	1.35	1350	0.093	274.723	0.01	0.229	274.952	4.391	0.408	275.360	275.856	274.723	274.885	274.494	274.656	0.502	55.6	46.4	33.3
I/2		Class 3 RCP	225	38.650	59.6	0.013	1.45	14.47	0.107	274.195	0.01	0.313	274.508	15.45	0.165	274.673	275.270	274.195	274.412	273.966	274.183	0.562	59.6	49.2	35.3
I/1		Class 3 RCP	225	5.379	59.6	0.013	1.45	14.47	0.107	274.673	0.01	0.044	274.717	4.113	0.440	275.156	275.438	274.413	274.467	274.184	274.238	1.000	59.6	66.6	47.1
J/2 J/1		Class 3 RCP	225	24.504	66.9	0.013	1.63	1625	0.135	273.713	0.01	0.248	274.091	3.680	0.496	274.587	275.062	273.713	274.091	273.484	273.862	154.3	66.9	83.4	58.5
K/2 K/1		Class 3 RCP	225	25.683	62.8	0.013	1.53	1526	0.119	274.438	0.01	0.230	274.668	3.912	0.464	275.132	275.538	274.438	274.567	274.209	274.338	0.502	62.8	46.4	33.4
L/2 L/1		Class 3 RCP	375	33.767	60.2	0.013	0.55	14.41	0.015	276.302	0.00	0.024	276.416	11.235	0.170	276.587	277.466	276.302	276.640	275.927	276.265	1.000	60.2	243.5	175.3

Hydrologic Design Sheet -Site Drainage Return Period: 20% Location: depths The Oaks-2016															
Pit	Catchment Flow Length	Catchment Slope	Catchment Roughness	Catchment Flow Time	Gutter Flow Time	Total Time	Pit C Factor	Total Catchment Area	Aera Contributing	Rainfall Intensity	Total Catchment Flow	Pit Type	Gutter Pit Inflow	Gutter Slope	Total Upstream Catchment
	(m)	(%)	'n'	(min)	(min)	(min)		(ha)	(l/s)	(mm/hr)	(l/s)		(l/s)	(%)	(ha)
A/1									0.0	118.9		SITEPLUS			0.0
A/2				20.00		20	1.000	0.07	0.1	68.4	13.3	SITEPLUS	9.3		0.1
	93.45	5.3	0.012				1.000	0.05							
							0.000								
	93.45	5.3	0.300				1.000	0.02							
A/3				5.00		5	1.000	0.02	0.1	118.9	7.3	SITEPLUS	5.1		0.1
	30.55	4.5	0.012				1.000	0.02							
							0.000								
	4.85	4.0	0.300				1.000	0.01							
A/4				5.00		5	1.000	0.01	0.2	118.9	4.3	SITEPLUS	3.0		0.2
	20.63	3.1	0.012				1.000	0.01							
							0.000								
	9.22	4.0	0.300				1.000	0.00							
A/5				5.00		5	1.000	0.01	0.2	118.9	4.3	SITEPLUS	3.0		0.2
	26.69	1.8	0.012				1.000	0.01							
							0.000								
	1.99	9.3	0.300				1.000	0.00							
B/1				5.00		5	1.000	0.05	0.1	118.9	16.5	SITEPLUS	11.6		0.1
	56.03	3.0	0.012				1.000	0.04							
							0.000								
	4.78	7.8	0.300				1.000	0.02							
C/1				20.00		20	1.000	0.40	0.4	68.4	76.1	SITEPLUS	22.8		0.4
	109.38	3.9	0.012				1.000	0.12							
							0.000								
	109.38	3.9	0.300				1.000	0.28							
C/2				5.00		5	1.000	0.04	0.4	118.9	12.6	SITEPLUS	8.8		0.4
	57.14	1.9	0.012				1.000	0.03							
							0.000								
	4.23	6.1	0.300				1.000	0.01							
D/1				20.00		20	1.000	0.43	0.4	68.4	81.0	SITEPLUS	24.3		0.4
	112.45	3.5	0.012				1.000	0.13							
							0.000								
	112.45	3.5	0.300				1.000	0.30							
E/1				20.00		20	1.000	0.46	0.5	68.4	87.8	SITEPLUS	26.3		0.5
	121.66	3.0	0.012				1.000	0.14							
							0.000								
	121.66	3.0	0.300				1.000	0.32							
F/1				20.00		20	1.000	0.57	0.6	68.4	107.6	SITEPLUS	32.3		0.6
	116.70	3.0	0.012				1.000	0.17							
							0.000								
	116.70	3.0	0.300				1.000	0.40							
G/1				20.00		20	1.000	0.47	0.5	68.4	89.8	SITEPLUS	26.9		0.5
	116.04	3.0	0.012				1.000	0.14							
							0.000								
	116.04	3.0	0.300				1.000	0.33							
H/1				20.00		20	1.000	0.40	0.4	68.4	76.2	SITEPLUS	22.9		0.4
	235.82	3.0	0.012				1.000	0.12							
							0.000								
	235.82	3.0	0.300				1.000	0.28							
I/2									0.4	118.9		SITEPLUS			0.4
I/1				20.00		20	1.000	0.43	0.4	68.4	81.7	SITEPLUS	24.5		0.4
	129.77	2.6	0.012				1.000	0.13							
							0.000								
	129.77	2.6	0.300				1.000	0.30							
J/1				20.00		20	1.000	0.48	0.5	68.4	91.7	SITEPLUS	27.5		0.5
	73.99	2.8	0.012				1.000	0.14							
							0.000								
	73.99	2.8	0.300				1.000	0.34							
K/1				20.00		20	1.000	0.45	0.5	68.4	86.1	SITEPLUS	25.8		0.5
	93.04	3.0	0.012				1.000	0.14							
							0.000								
	93.04	3.0	0.300				1.000	0.32							
L/1				20.00		20	1.000	0.32	0.3	68.4	60.2	SITEPLUS	42.2		0.3
	357.76	8.6	0.012				1.000	0.22							
							0.000								
	357.76	8.6	0.300				1.000	0.10							



REVIEWS	No.	DESCRIPTION	DRN	APP	DATE	siteplus Site Plus Pty Ltd ABN 73 104 315 095 engineering landscape design flooding management WOLLONGONG - HEAD OFFICE Shop 1, 18 Arrow Avenue Figtree NSW 2525 PO Box 506 Figtree NSW 2525 T 61 2 4227 4233 F 61 2 4227 4133 E info@siteplus.com.au	Height Datum	A.H.D	Client Title MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST) -----	Dwg Title PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS DRAINAGE LONG SECTIONS	Ref & Dwg No 23130.DA.C09		
	A	PRELIMINARY CLIENT ISSUE	I.B.	A.C.	14.03.24		Drawn	I.B.				Sheet No	23130.DA.C09
	B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24		Designed	A.C.				Sheet	09 of 14
	C	REVISED TO COMMENTS	I.B.	A.C.	23.04.24		Checked	A.C.				Scale	AS NOTED @ A1
	----	----	----	----	----		Approved	A.C.				Date	23.04.24
	----	----	----	----	----							Rev	C
										A1			



WATER QUALITY MUSIC MODEL RESULTS
BASED ON THE WATER QUALITY MEASURES OUTLINED IN THE WOLLONDILLY WUSD GUIDELINE, THE FOLLOWING FLOW REDUCTION WAS ATTAINED:

FLOW 13.400 ML/yr

REFER TO SITEPLUS'S MUSIC MODEL FOR DETAILS. WOLLONDILLY WUSD GUIDELINES REQUIRES RESIDUAL FLOW RANGING BETWEEN 2.5-3.0 ML/yr/ha

SITE REQUIREMENT CALCULATION:

DEVELOPMENT AREA = 5.193 ha
RESIDUAL FLOW RANGE = 12.983 - 15.579 ML/yr

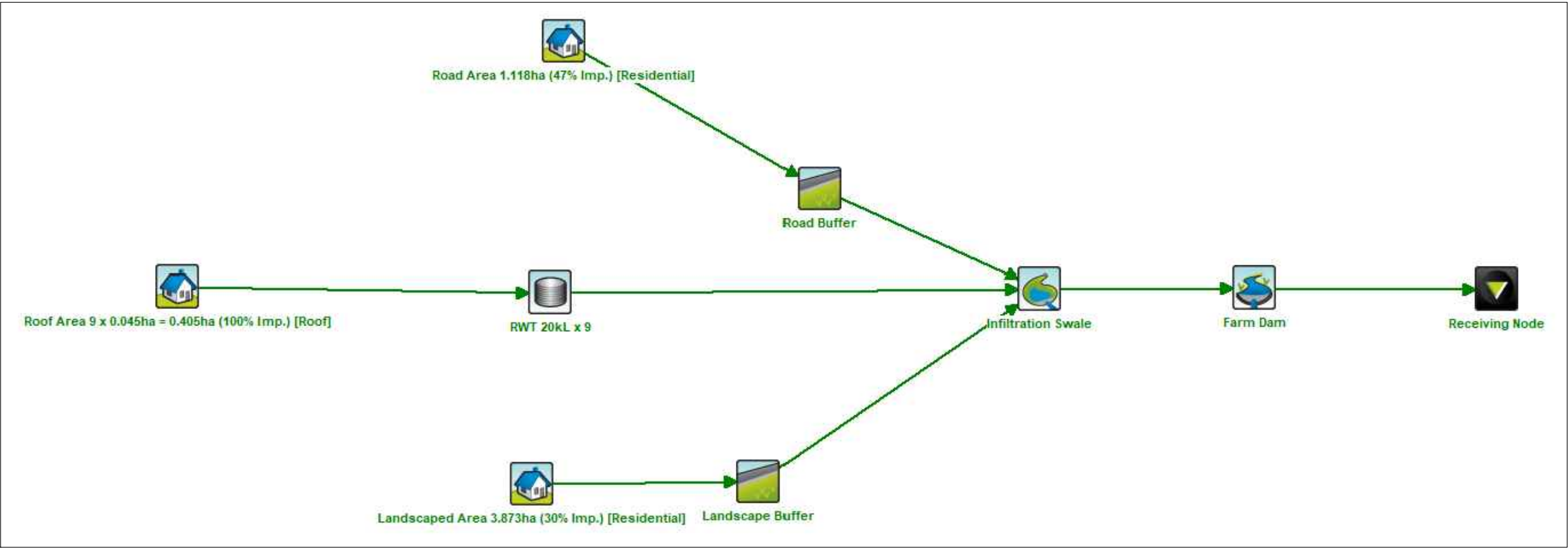
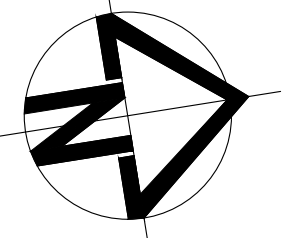
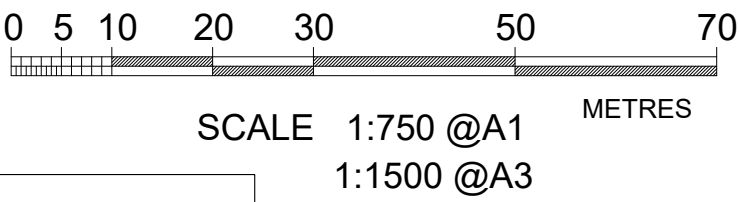
RAINWATER TANK AVERAGE DAILY DEMAND
RAINWATER REUSE WAS BASED ON THE METHODOLOGY OUTLINED IN THE WOLLONDILLY WUSD GUIDELINE:

SIZE OF ROOF = 450 m²
MIN SIZE OF RWT = 18,000 L
MIN AVG DAILY DEMAND = 2,700 L/day

LEGEND

- ROOF AREA 450m²
100% IMPERVIOUS
- LANDSCAPE AREA
30% IMPERVIOUS
- ROAD RESERVE AREA
47% IMPERVIOUS

MUSIC CATCHMENT PLAN
SCALE 1:750

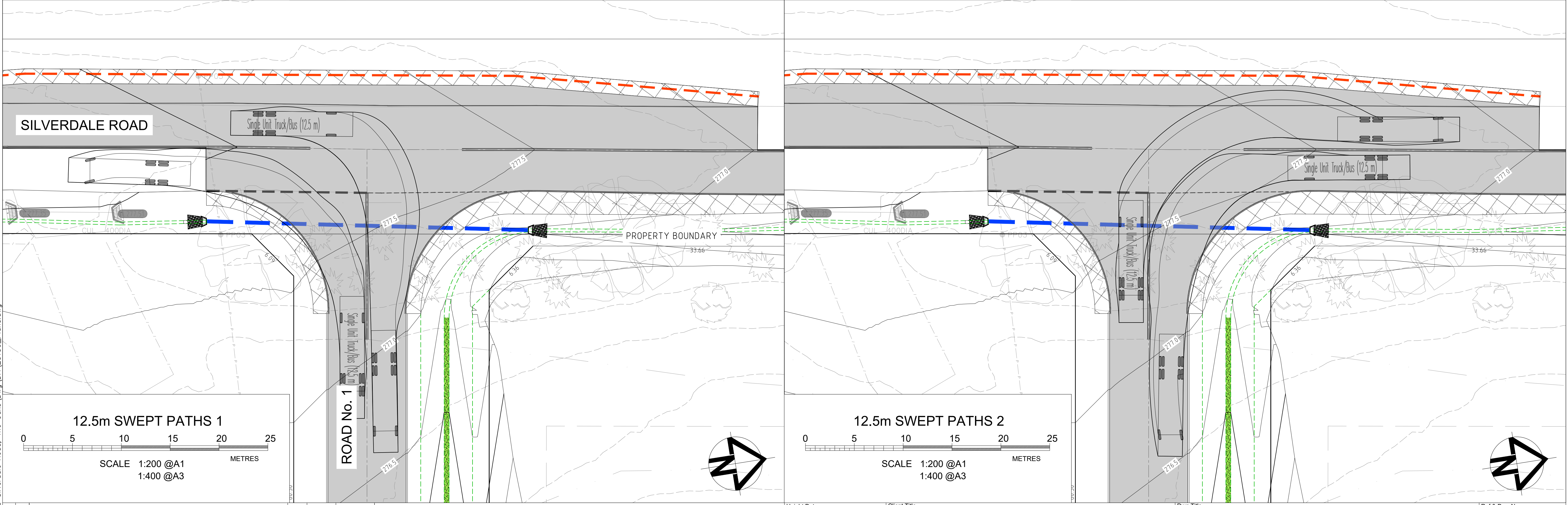
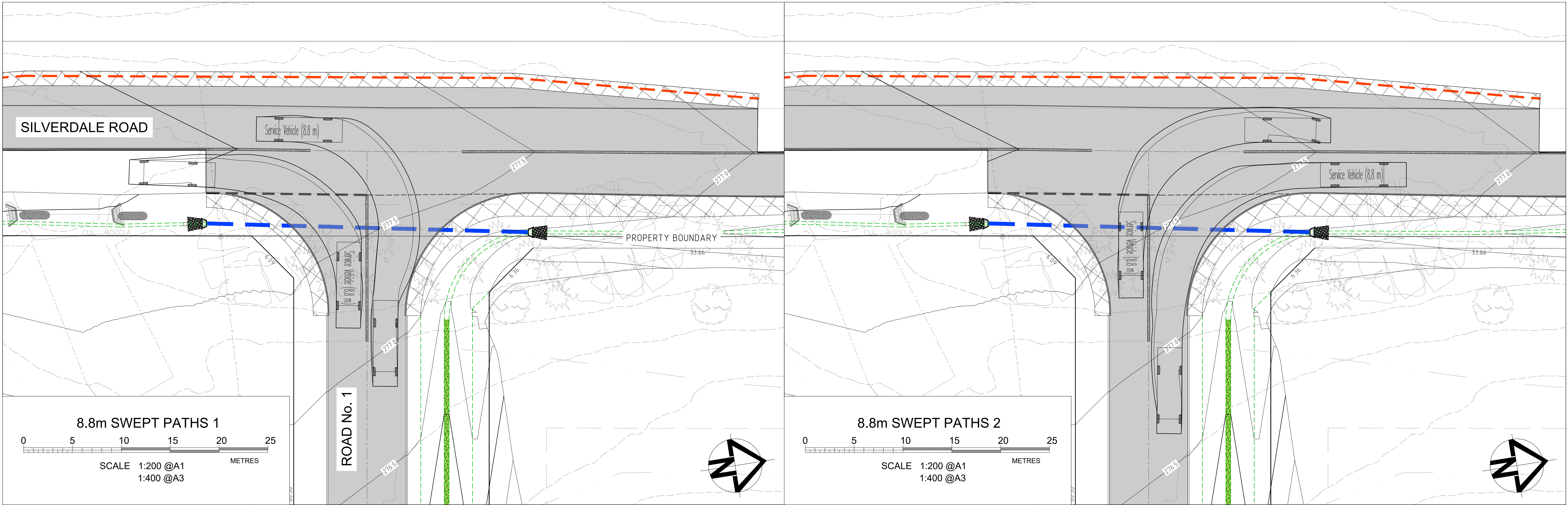


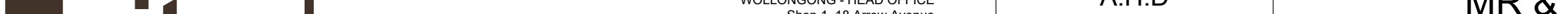
MUSIC SCHEMATIC

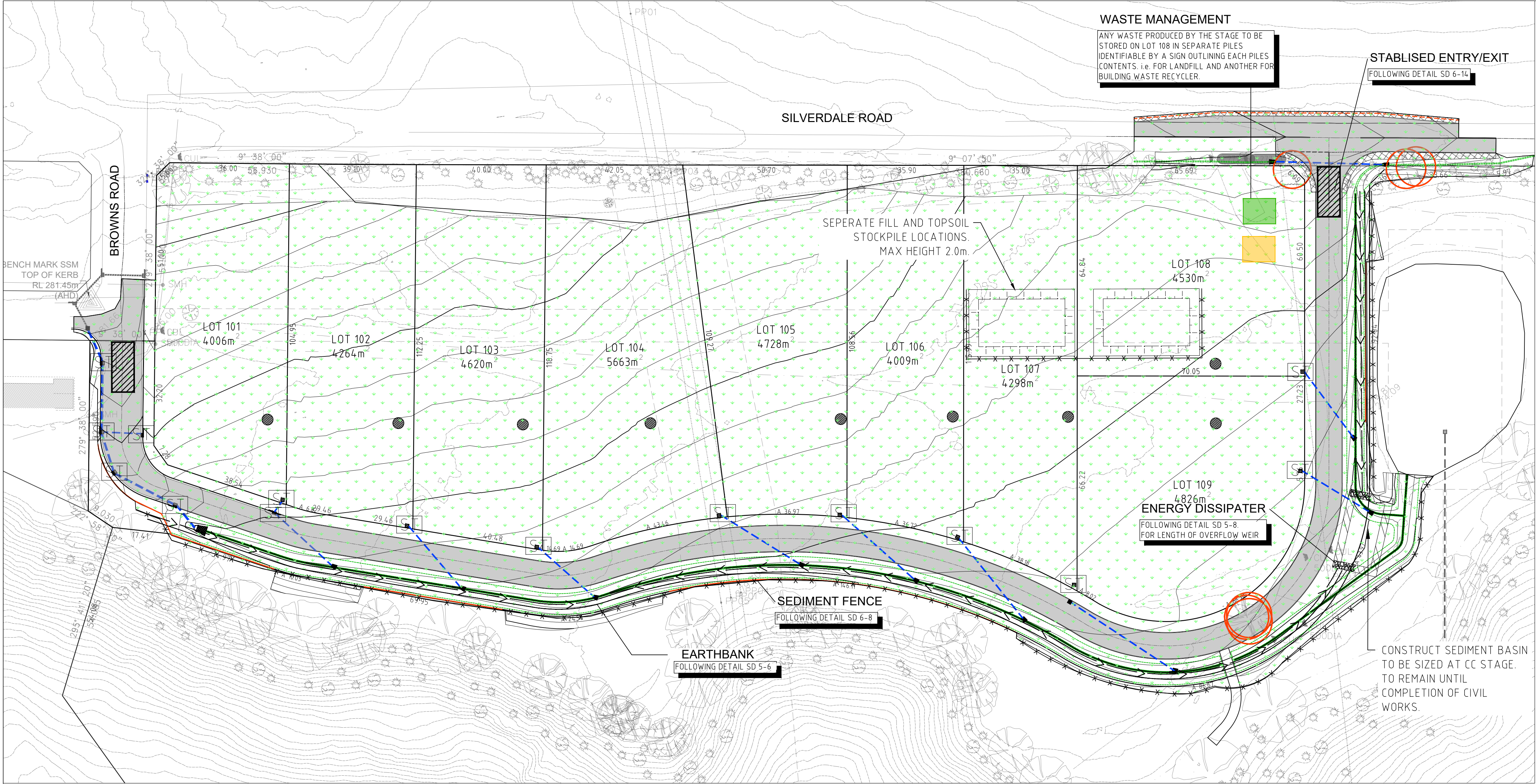
Treatment Train Effectiveness - Receiving Node			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	39.6	13.4	66.2
Total Suspended Solids (kg/yr)	5440	399	92.7
Total Phosphorus (kg/yr)	10.2	1.79	82.4
Total Nitrogen (kg/yr)	81.9	21.7	73.5
Gross Pollutants (kg/yr)	907	0	100

MUSIC RESULTS

REVISIONS	No.	DESCRIPTION	DRN	APP	DATE	 Site Plus Pty Ltd ABN 73 104 315 095  engineering  landscape  design  flooding  management	Height Datum		Client Title		Dwg Title		Ref & Dwg No	
	A	PRELIMINARY CLIENT ISSUE	I.B.	A.C.	14.03.24		Drawn	A.H.D	MR & MRS NOCERA C/-		23130.DA.C10			
	B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24		Designed	I.B.	PROFICIENT CONSTRUCTIONS (AUST)		Sheet No			
	C	REVISED TO COMMENTS	I.B.	A.C.	23.04.24		Checked	A.C.	-----		10 of 14			
	----	----	----	----	----		Approved	A.C.	Dwg Status	Local Authority	Scale			
	----	----	----	----	----			DA	WOLLONDILLY	1:750 @ A1				
	----	----	----	----	----					MUSIC CATCHMENT PLAN	Date			
									23.04.24	Rev	A1			
									C					



REVISIONS	No.	DESCRIPTION	DRN	APP	DATE	 Site Plus Pty Ltd ABN 73 104 315 095		WOLLONGONG - HEAD OFFICE Shop 1, 18 Arrow Avenue Figtree NSW 2555 PO Box 506 Figtree NSW 2555 T 61 2 4227 4233 F 61 2 4227 4133 E info@siteplus.com.au		Height Datum	A.H.D	Client Title	MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST)		Dwg Title	PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS		Ref & Dwg No	23130.DA.C12	
	A	PRELIMINARY CLIENT ISSUE	I.B.	A.C.	14.03.24			Drawn	I.B.	Sheet No										
	B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24			Designed	A.C.	Sheet 12 of 14										
	C	REVISED TO COMMENTS	I.B.	A.C.	23.04.24			Checked	A.C.	Scale										
	----	----	----	----	----			Approved	A.C.	1:200 @ A1										
	----	----	----	----	----	Dwg Status		DA	Local Authority		WOLLONDILLY		INTERSECTION SWEEP PATHS		Date	23.04.24	Rev	C	A1	
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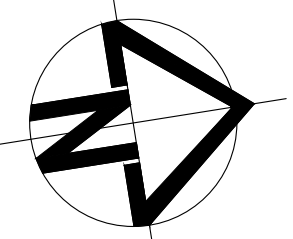
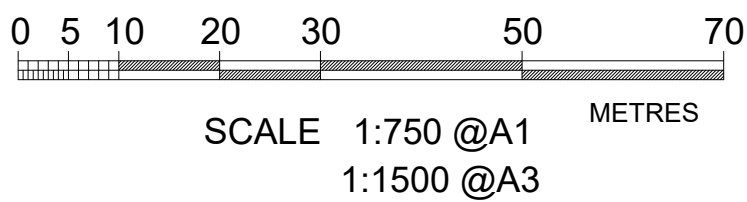


- STATEMENT OF SOIL MANAGEMENT**
- 1 ALL TOPSOIL IS TO BE STOCKPILED IN AREAS DESIGNATED ON PLAN.
 - 2 ALL FORMED EMBANKMENTS (CUT & FILL) ARE TO BE SEEDED WITHIN 7 DAYS.
 - 3 ALL DISTURBED AREAS INCLUDING ANY CONTROLLED FILL ARE TO BE TOPSOILED & SEEDED PRIOR TO COMPLETION OF WORKS. ALL DISTURBED AREAS THAT WILL NOT BE STABILIZED WITHIN 2 MONTHS MUST BE TEMPORARILY REVEGETATED WITHIN 7 DAYS OF CLEARING AREAS THAT FAIL TO ESTABLISH MUST BE RESOWN IMMEDIATELY.
 - 4 ALL GULLY PITS ARE TO BE PROVIDED WITH SEDIMENT FILTER BARRIERS SUCH AS STRAW BAIL OR SANDBAGS
 - 5 PROVIDE TEMPORARY DIVERSION BANKS ON SITE AS DIRECTED
 - 6 AT THE TOP OF ALL FILL EMBANKMENTS, PROVIDE A BERM TO PREVENT WATER RUNNING DOWN EMBANKMENTS. BERM IS TO BE MAINTAINED AT ALL TIMES AS THE FILL EMBANKMENT PROGRESSES TO FINAL LEVEL
 - 7 ALL FORMED EMBANKMENTS (CUT & FILL) TO BE TOPSOILED & SEEDED/FERTILIZED ON FINAL TRIMMING
 - 8 FOR TEMPORARY REVEGETATION PURPOSES, THE REVEGETATION MIXTURE SHOULD BE TO COUNCIL SPECIFICATIONS
 - 9 TRENCHES FOR INTERLOT DRAINAGE LINES ARE TO BE REINSTATED WITH TOPSOIL FOLLOWING PIPE INSTALLATION & BACKFILLING & IMMEDIATELY SEEDED/FERTILIZED
 - 10 THE GROUND SHALL BE TYND / SCARIFIED TO A MIN DEPTH 100mm PRIOR TO SEEDING
 - 11 CONTRACTOR SHOULD LIASE REGULARLY WITH ENGINEER TO DETERMINE AREAS WHICH CAN BE PROGRESSIVELY REVEGETATED
 - 12 TO ASSIST IN DUST CONTROL /WIND EROSION A TRACKIFIER SUCH AS CUROSOL SHOULD BE USED OR EQUIVALENT ENDORSED PRODUCT BY EPA, RATES AS PER MANUFACTURES SPECIFICATION
 - 13 DESIGNATED PLANT AND MACHINERY ACCESSWAYS TO BE DEFINED ONSITE BY THE INSTALLATION OF PARAWEBBING FENCING TO MINIMIZE UNNECESSARY SITE DISTURBANCE
 - 14 IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN SOIL EROSION CONTROL DEVICES AND CONTROL DUST.
 - 15 A LOG BOOK IS TO BE MAINTAINED ON SITE, MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:
 - (i) THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS;
 - (ii) THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS AND WETHER IT IS LIKELY TO BE EFFECTIVE UNTIL THE NEXT AUDIT;
 - (iii) INSTALLATION, REMOVAL & REPAIRS OF ANY EROSION CONTROLS;
 - (iv) THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE;
 - (v) THE NEED FOR DUST PREVENTION STRATEGIES;
 - (vi) ANY REMEDIAL WORKS TO BE UNDERTAKEN;
 - (vii) INSTANCES RESULTING IN DAMAGE TO CONTROLS, ACCIDENTAL OR OTHERWISE;
 - (viii) TIME, DATE, VOLUME AND TYPE OF ANY FLOCCULANTS;
 - (ix) TIME, DATE, VOLUME AND TYPE OF SEDIMENT REMOVED FROM CONTROL STRUCTURES AND WHERE IT HAS BEEN DISPOSED;
- THE LOG BOOK IS TO KEPT ON-SITE AND MADE AVAILABLE ON SITE TO ANY ONE REQUIRING IT. IT SHOULD ALSO CONTAIN MAINTAINENCE REQUIREMENTS AND PROCEDURES FOR ANY CONTROL REQUIRING IT.

- MAINTENANCE PROCEDURES DURING CONSTRUCTION**
- 1 ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED AT ALL TIMES SO THAT THOSE MEASURES ARE FULLY FUNCTIONAL / OPERATIONAL DURING THE CURRENCY OR WORKS. ALL SUCH CONTROLS MUST ALSO BE FULLY FUNCTIONAL / OPERATIONAL SHOULD WORK OPERATIONS CEASE TEMPORARILY, (e.g WEEKENDS, ROSTERED DAYS OFF, etc) 2 RESPREAD MATERIAL GAINED DURING MAINTENANCE OPERATION OR ALTERNATIVELY PLACE ON STOCKPILES.

- GENERAL NOTES**
- 1 REMOVE ALL SOIL & SPOIL MATERIAL FROM THE ROADWAY & GUTTER SYSTEM FOR THAT SECTION OF TRENCHING & / OR OTHER WORKS CARRIED OUT ON ANY ONE DAY. THIS IS TO BE UNDERTAKEN ON THE COMPLETION OF EACH DAY'S WORK.
 - 2 ABSTAIN FROM PLACING SPOIL / STOCKPILES ON OR IN THE IMMEDIATE VICINITY OF THE KERB & GUTTER SYSTEM. A MINIMUM SET BACK OF THREE (3) METRES WILL BE REQUIRED.
 - 3 STOCKPILES REFERED TO IN ITEM 2 ARE NOT TO BE PLACED WITHIN FIFTEEN (15) METRES EITHER SIDE OF KERB INLET PITS. THIS IS TO BE REGARDED AS A DESIGNATED EXCLUSION ZONE.
 - 4 WHERE ROCK IS ENCOUNTERED DURING THE TRENCHING OPERATIONS & THIS MATERIAL IS CONSIDERED TO BE UNSUITABLE AS BACKFILL, THEN ALL OVERSIZED ROCK WILL BE REQUIRED TO BE REMOVED FROM THE SITE & WILL NOT BE PERMITTED TO REMAIN ON THE SURFACE OF REGRADING & SURFACE PREPARATION PRIOR TO SEEDING DISTURBED AREAS.

SOIL AND WATER MANAGEMENT PLAN
SCALE 1:750

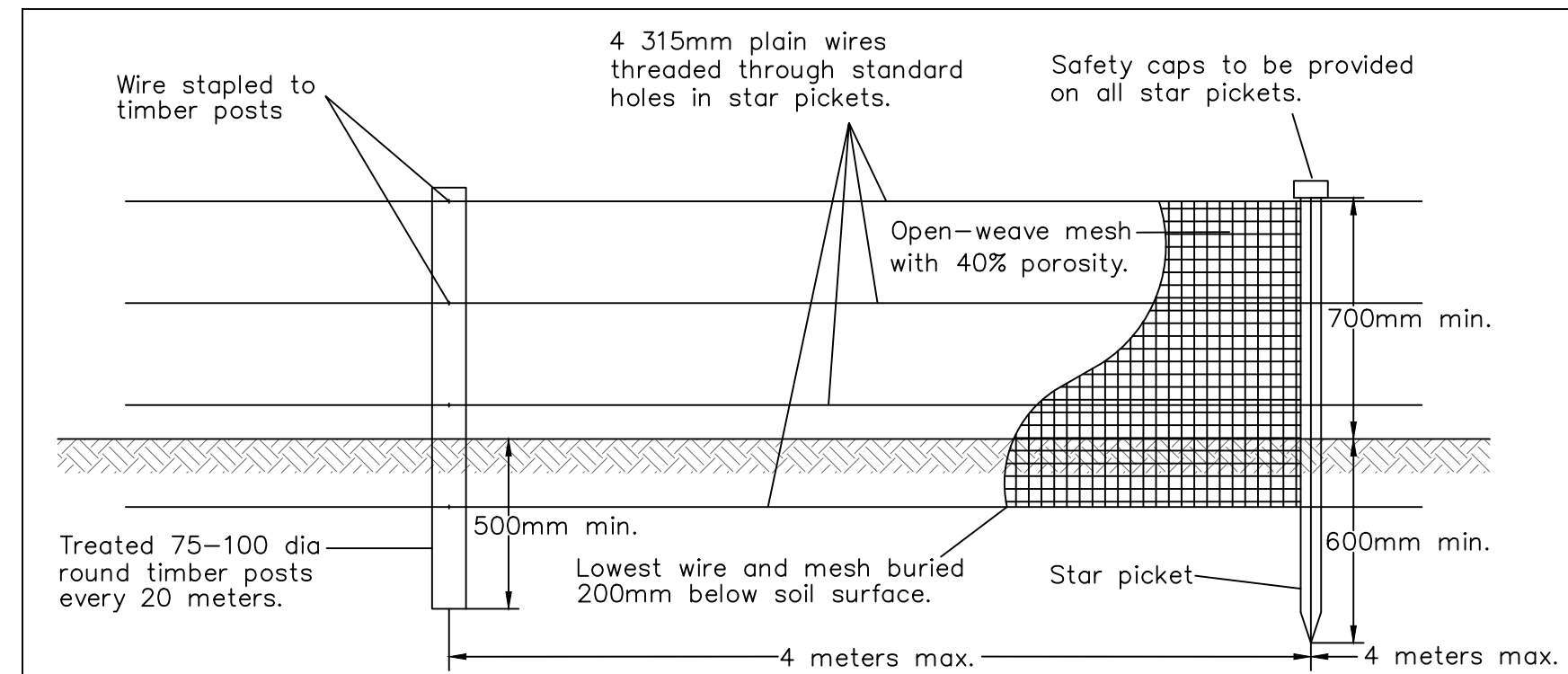


- LEGEND PROPOSED**
- LEVEL SPREADER
 - STORMWATER PIPE
 - GRATED PIT
 - JUNCTION PIT
 - KERB INLET PIT
 - SEDIMENT FENCE
 - SEDIMENT TRAP
 - STABILISED CONSTRUCTION EXIT
 - DISTURBED AREA
 - DIVERSION BANK AND CHANNEL
 - BARRIER FENCE
 - DIVERSION BANK ONLY

NOTE: All erosion and sediment controls must be in accordance with Landcom's Managing Urban Stormwater, Soils and Construction, Volume 1, 4th Edition, March 2004

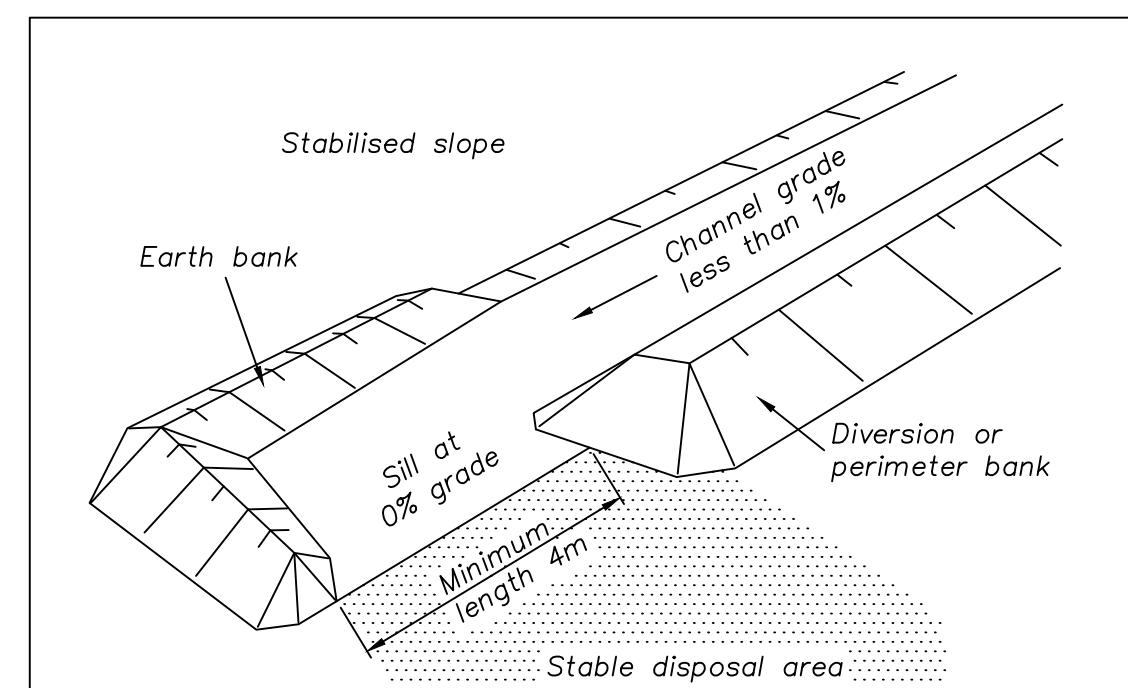
REVISIONS	No.	DESCRIPTION	DRN	APP	DATE	 Site Plus Pty Ltd ABN 73 104 315 095 engineering landscape design flooding management <td colspan="2">WOLLONGONG - HEAD OFFICE Shop 1, 18 Arrow Avenue Figtree NSW 2525 PO Box 506 Figtree NSW 2525 T 61 2 4227 4233 F 61 2 4227 4133 E info@siteplus.com.au</td> <td>Height Datum</td> <td>A.H.D</td> <td colspan="2">Client Title</td> <td colspan="2">MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST)</td> <td>Dwg Title</td> <td colspan="2">PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS</td> <td colspan="2">Ref & Dwg No 23130.DA.C13</td>	WOLLONGONG - HEAD OFFICE Shop 1, 18 Arrow Avenue Figtree NSW 2525 PO Box 506 Figtree NSW 2525 T 61 2 4227 4233 F 61 2 4227 4133 E info@siteplus.com.au		Height Datum	A.H.D	Client Title		MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST)		Dwg Title	PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS		Ref & Dwg No 23130.DA.C13	
	A	PRELIMINARY CLIENT ISSUE	I.B.	A.C.	14.03.24		Drawn	I.B.	-----	Dwg Status	DA	Local Authority	WOLLONDILLY	SOIL & WATER MANAGEMENT PLAN	Sheet No	13 of 14			
	B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24		Designed	A.C.							Scale	1:750 @ A1			
	C	REVISED TO COMMENTS	I.B.	----	23.04.24		Checked	A.C.							Date	23.04.24	Rev	C	A1
	----	----	----	----	----		Approved	A.C.											
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NOTE:	All erosion and sediment controls must be in accordance with Landcom's Managing Urban Stormwater, Soils and Construction, Volume 1, 4th Edition, March 2004
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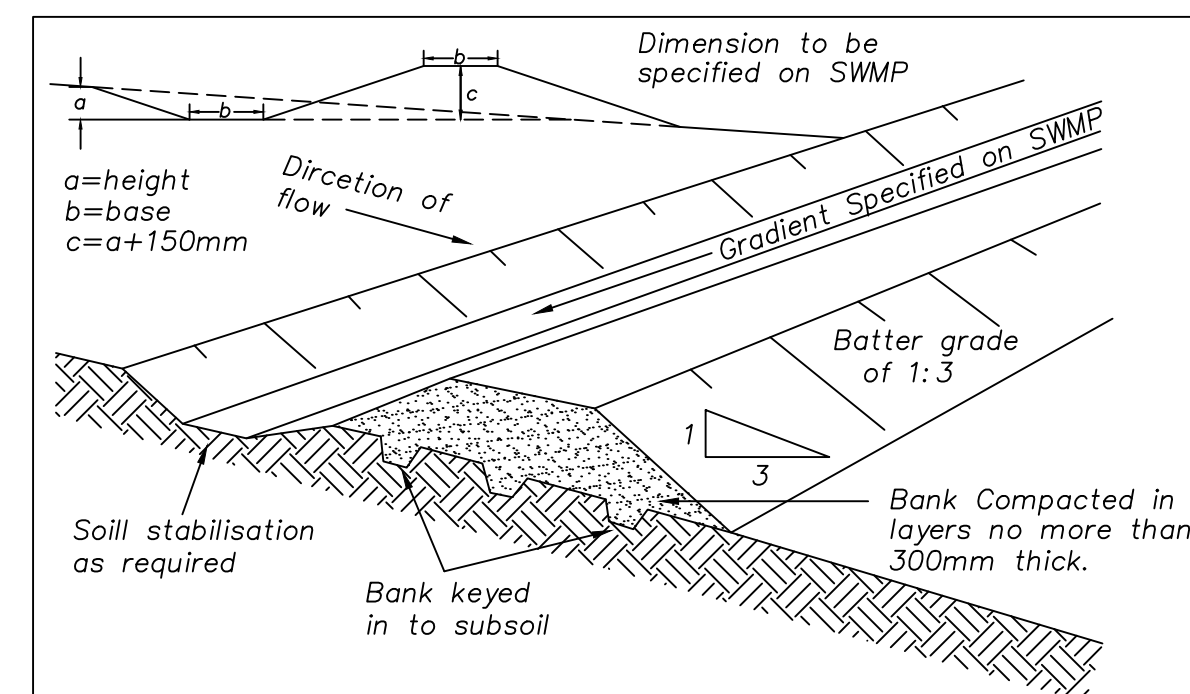
CONTROL OF WIND EROSION - SD 6-15

NOT TO SCALE



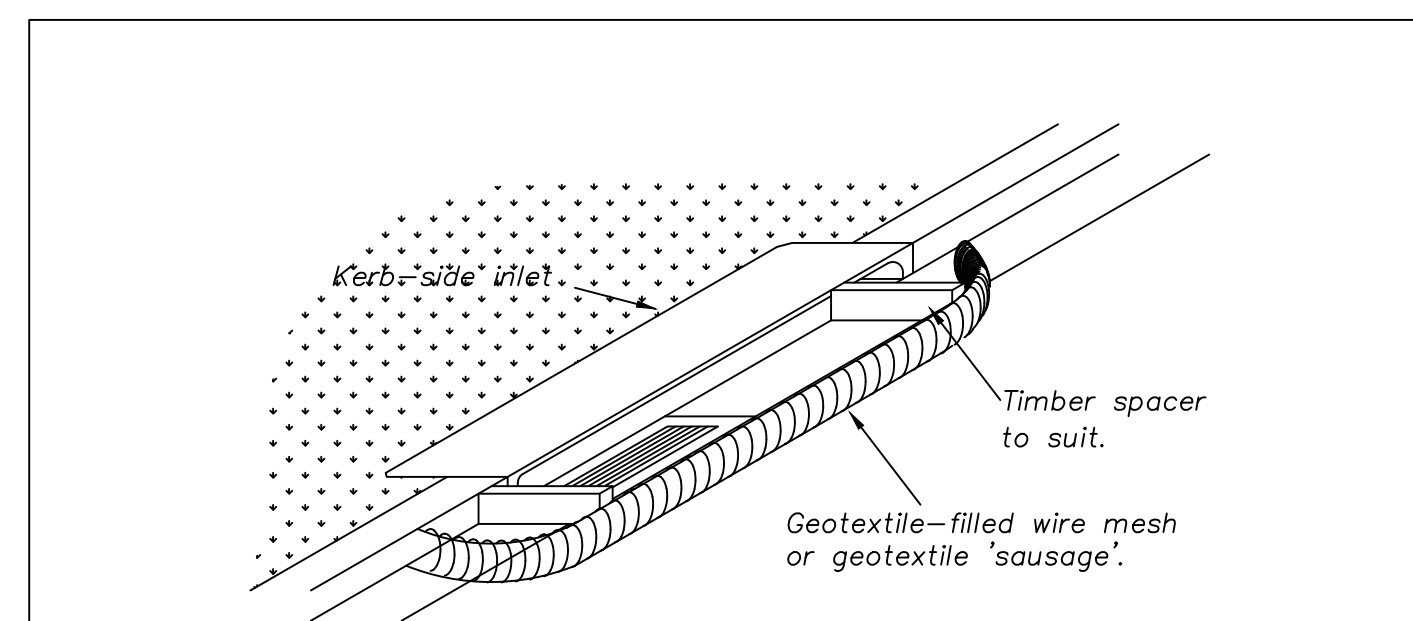
LEVEL SPREADER (OR SILL) SD 5-6

NOT TO SCALE



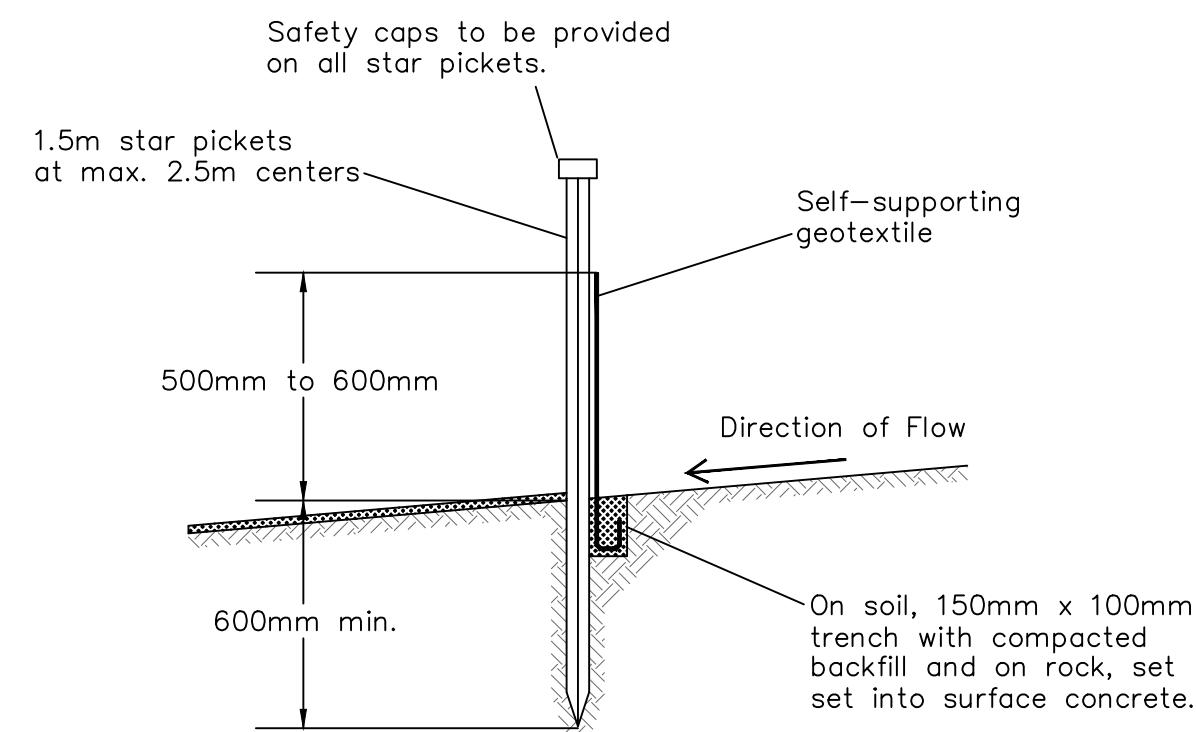
EARTH BANK (HIGH FLOW) - SD 5-6

NOT TO SCALE

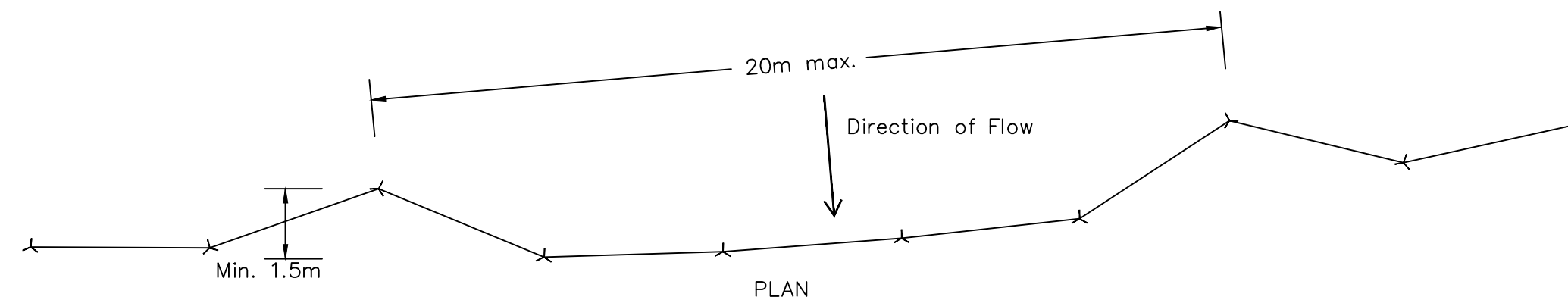


MESH AND GRAVEL INLET FILTER – SD 6-11

NOT TO SCALE

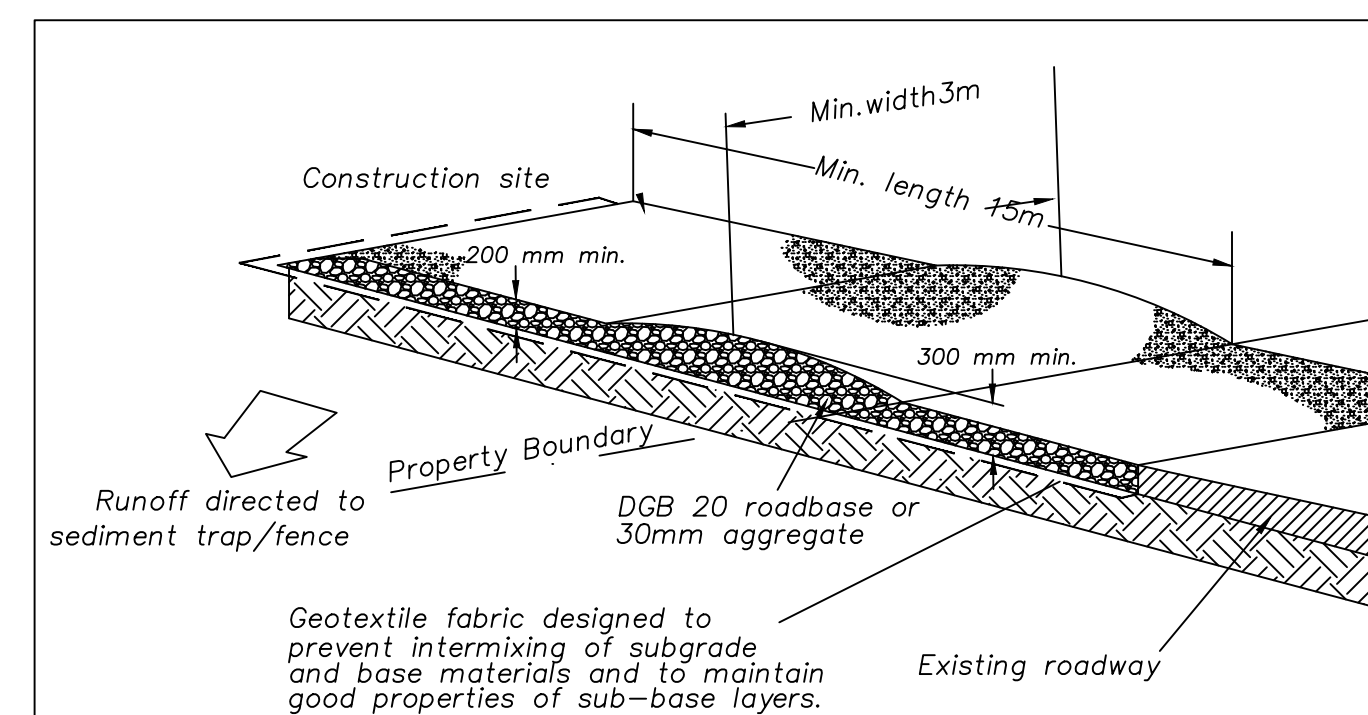


SECTION DETAIL



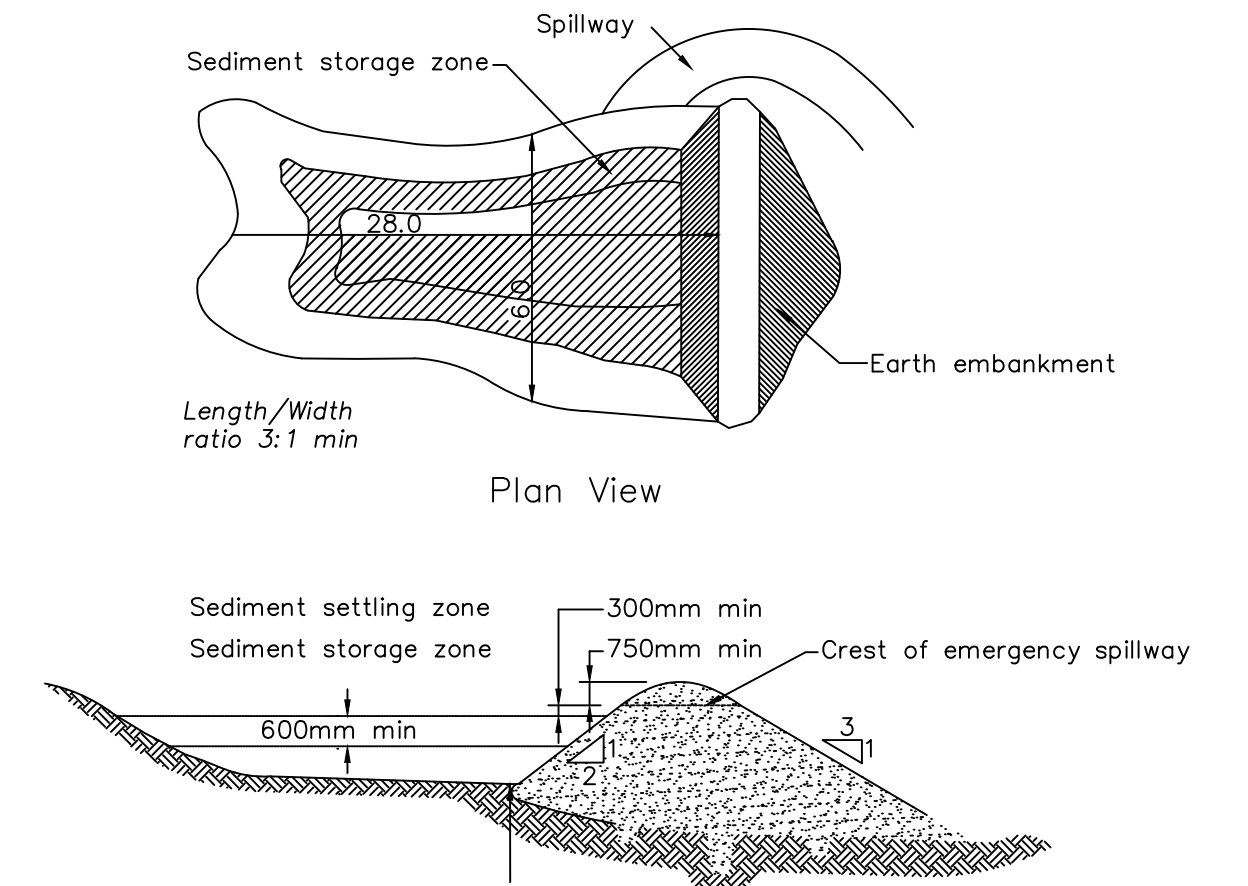
SEDIMENT FENCE — SD 6-8

NOT TO SCALE



STABILISED SITE ACCESS – SD 6-14

NOT TO SCALE



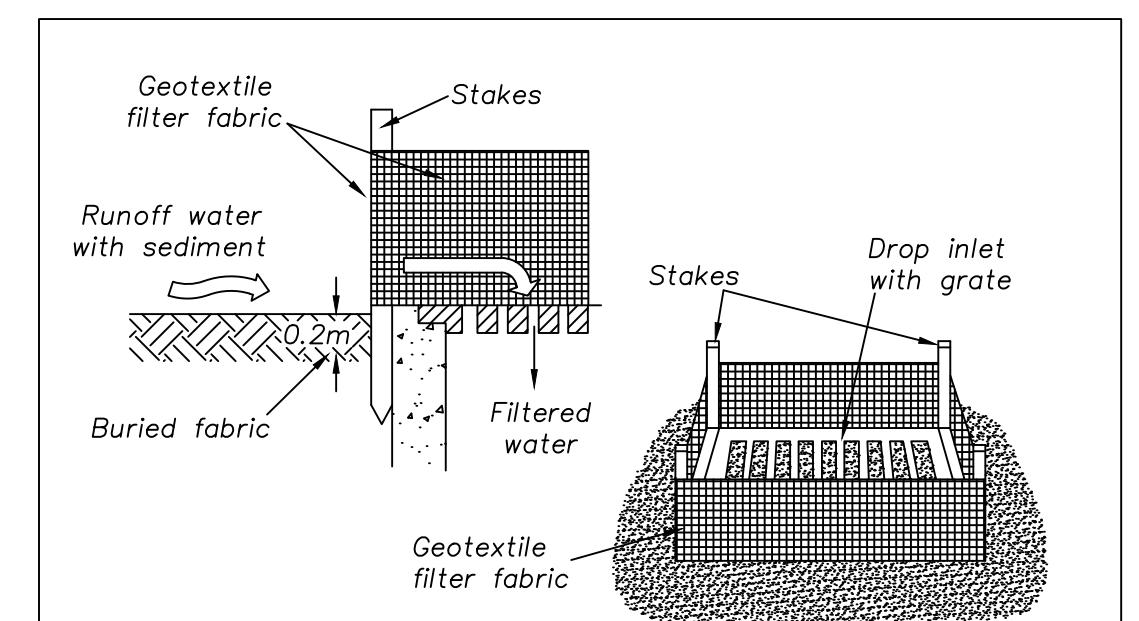
Plan View

NOTES:

1. Remove all vegetation and topsoil from under dam wall and from within storage area.
2. Construct cut-off trench 500mm deep and 1200mm wide along centreline of the embankment extending to a point on the gully wall level with riser crest.
3. Maintain the trench free of water and recompact the materials with equipment specified in the S 20WMP at 95% Standard Proctor Density.
4. Select fill according to the directions of the SWMP that is free of roots, wood, rock, large stones or foreign material.
5. Prepare the site under the embankment by ripping at least 100mm deep to help bond compacted fill to existing substrate.
6. Spread fill in 100mm to 150mm layers and compact at optimum moisture content in accordance with the SWMP.
7. Construct emergency spillway.
8. Rehabilitate structure in accordance with SWMP.
9. Place a "Full of Sediment" marker to show when less than design capacity occurs and sediment removal is required.

WET SEDIMENT BASIN - SD 6-4

NOT TO SCALE



GEOTEXTILE INLET FILTER - SD 6-12

NOT TO SCALE

BASIN TO BE TREATED WITH GYPSUM FLOCCULANT AT THE RATE OF 32 kg/100 m³ OF STORED WATER. THE BASIN SHOULD THEN BE DRAINED FOLLOWING A PERIOD OF AT LEAST 3 DAYS, PROVIDING WATER ANALYSIS TESTS SHOW SUSPENDED SEDIMENT CONCENTRATIONS ARE BELOW 50 mg/l.

Flocculation

NOT TO SCALE

REVISIONS	No.	DESCRIPTION	DRN	APP	DATE	siteplus Site Plus Pty Ltd ABN 73 104 315 095 engineering landscape design flooding management	Height Datum	A.H.D	Client Title	MR & MRS NOCERA C/- PROFICIENT CONSTRUCTIONS (AUST)		Dwg Title	PROPOSED SUBDIVISION 80 SILVERDALE ROAD, THE OAKS		Ref & Dwg No	23130.DA.C14			
	A	PRELIMINARY CLIENT ISSUE	I.B.	A.C.	14.03.24		Drawn	I.B.		Sheet No									
	B	REVISED EARTHWORKS	I.B.	A.C.	05.04.24		Designed	A.C.		Sheet	14		of 14						
	C	REVISED TO COMMENTS	I.B.	A.C.	23.04.24		Checked	A.C.		Scale	N.T.S.								
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