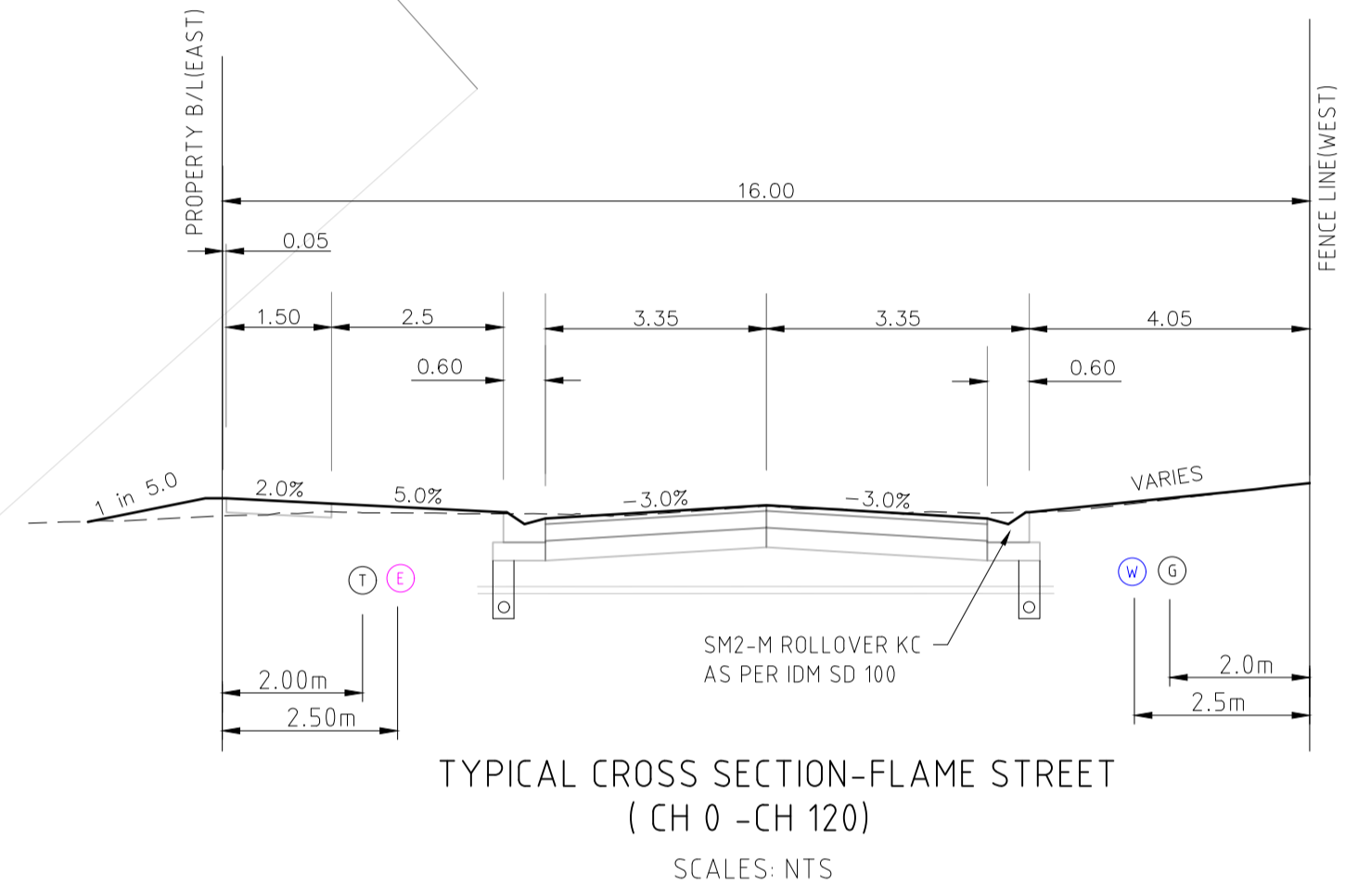


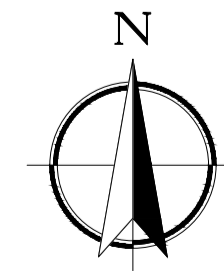
NOTE:  
1 SUBSOIL DRAIN AS PER IDM STANDARD DRAWING SD145  
2 PAVEMENT MAKE-UP REFER PAVEMENT DETAIL  
3 INSTALL SERVICE CONDUITS WITH 600mm MINIMUM COVER



LEGEND	
ES 43.81 FS 43.81	EXISTING & FINISHED LOT CORNER LEVEL
	OVERLAND FLOW DIRECTION
	LOT FALL DIRECTION
	PIPE FLOW DIRECTION
	GAS & WATER WATER CONNECTION
	TELSTRA & ELECTRICAL CONNECTION

PROPOSED DETENTION BASIN  
TOP BASIN AREA 618.75m<sup>2</sup>  
(L-27.5m & W- 22.5m)  
BASIN BASE AREA -303.0m<sup>2</sup>  
(L-15.0m & W-20.2m)  
BATTER 1 in 6 slope  
DEPTH - 0.80m(MIN)  
VOLUME OF THE BASIN -345.6m<sup>3</sup>

DETAIL PLAN  
SCALE 1:500 (A1)



**WARNING**  
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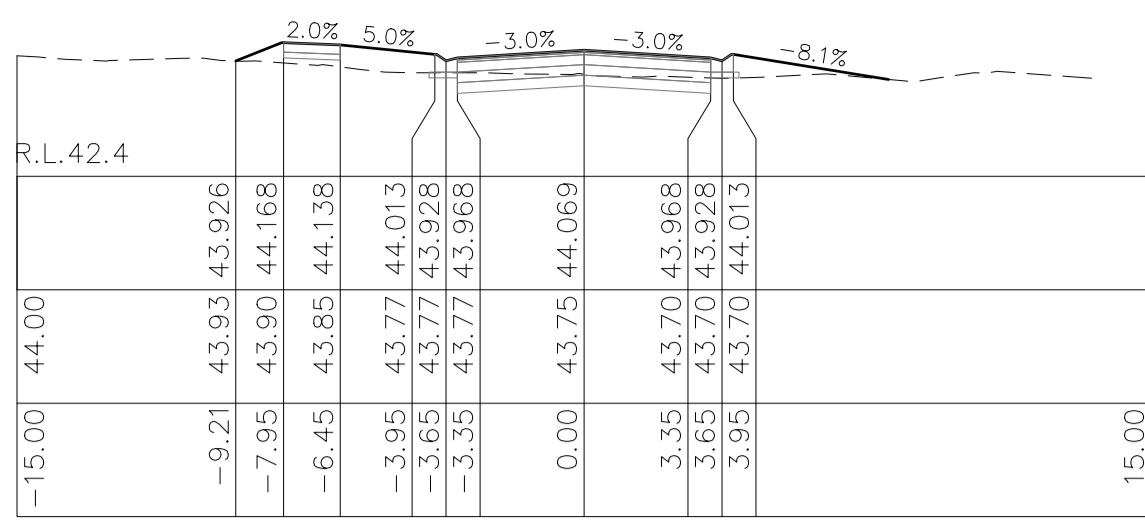
**WARNING**  
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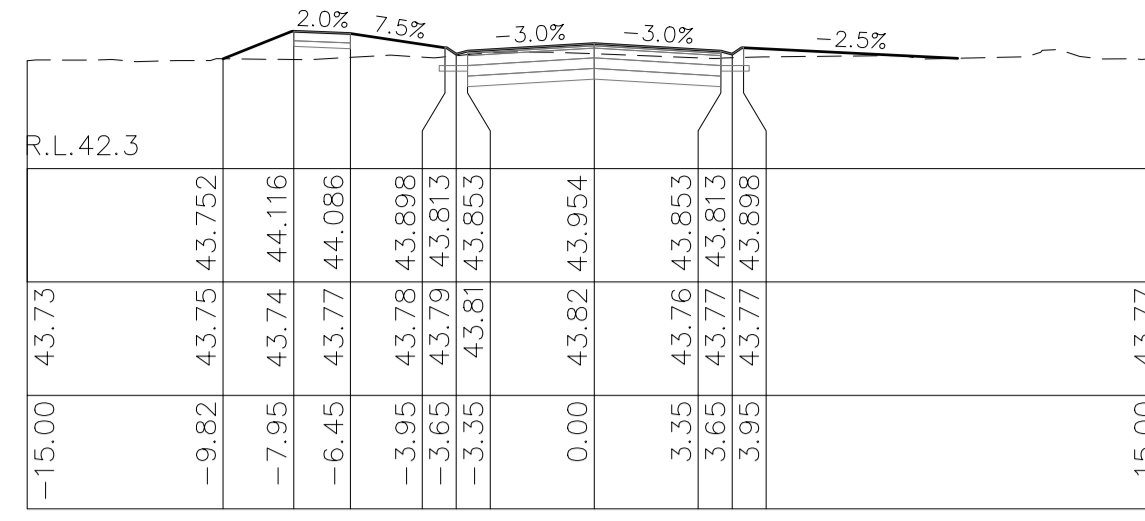
**FINAL**  
ISSUED FOR CONSTRUCTION

DATE	REV	AMENDMENT	LEGEND	WATER MAINS AND FITTINGS	EX. PROP.	SEWER MAINS AND ENTITIES	EX. PROP.	GAS MAINS AND PITS	EX. PROP.	TELECOM CABLES AND PITS	EX. PROP.	ELEC. CABLES AND PITS	EX. PROP.	DESIGNED	DATE	SCALE	AS SHOWN	CIVIL ENGINEERING CONSULTANTS & PROJECT MANAGERS	BAW BAW SHIRE COUNCIL	DRAWING NO. - CCD18072-02	
02.07.2019	F	AMENDED AS PER COUNCIL COMMENTS	EXISTING KERB AND CHANNEL	EX. PROP.	EXISTING DRAINS AND PITS	EX. PROP.	EXISTING DRAINS AND PITS	EX. PROP.	EXISTING DRAINS AND PITS	EX. PROP.	EXISTING DRAINS AND PITS	EX. PROP.	EXISTING DRAINS AND PITS	DESIGNED	VN	SCALE	AS SHOWN	 CIVIL ENGINEERING CONSULTANTS & PROJECT MANAGERS A.C.N. 159 212 245 P.O. BOX 1207, NARRE WARREN 3805 mail@craigcivil.com.au	SUBDIVISION 40-44 DROUIN ROAD LONGWARRY, VICTORIA DETAIL PLAN	DRAWING NO. - CCD18072-02	
22.01.2020	G2	AMENDED AS PER COUNCIL COMMENTS	PROPOSED KERB AND CHANNEL	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	CHECKED	KP	APPROVED	SC			SHEET - 2 OF 14	
14.02.2020	G3	AMENDED SEMP PLAN	EXISTING DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	DATE	MAR 2019	DATE	MAR 2019			REVISION -G6	
18.03.2020	G4	AMENDED PAVEMENT DETAILS	PROPOSED PROPERTY INLET	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	DATUM	AHD	MELWAYS REFERENCE	PHONE: 5995 4388 FAX: 5995 5330			CCD REF. NO. - 18072   A1	
02.04.2020	G5	AMENDED DRAINAGE & ROAD GRADE DETAILS	PROPOSED KERB AND CHANNEL	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS								
09.04.2020	G6	AMENDED OUTLET DRAIN DETAILS	PROPOSED KERB AND CHANNEL	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS	EX. PROP.	PROPOSED DRAINS AND PITS								

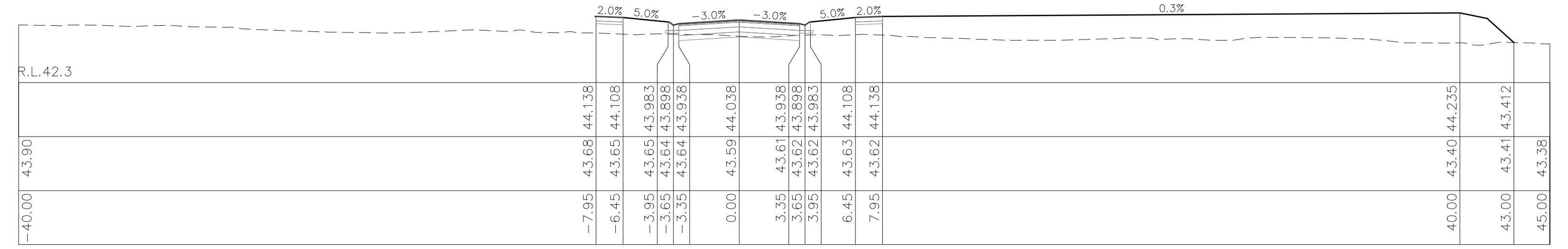




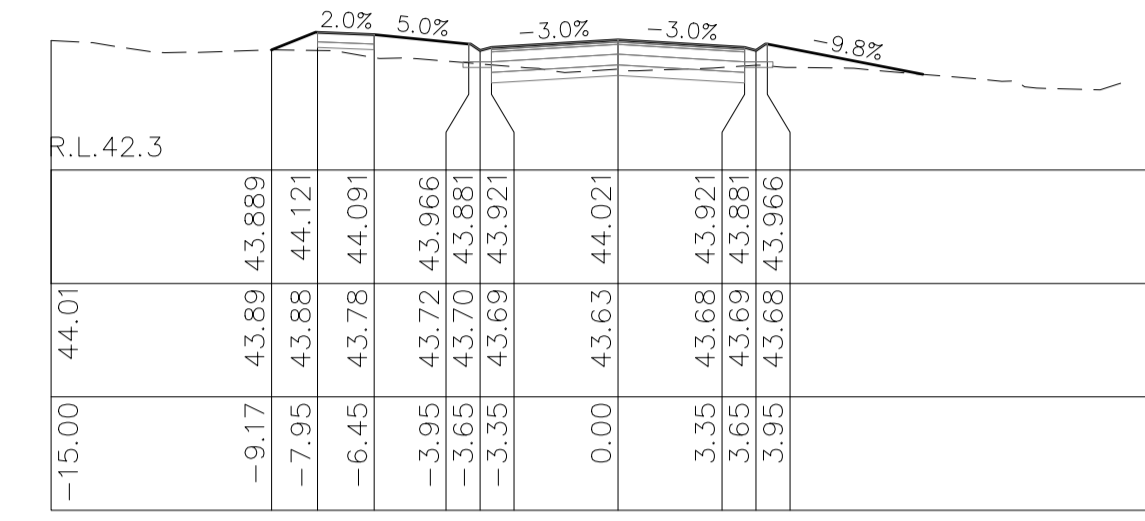
Ch 60.000



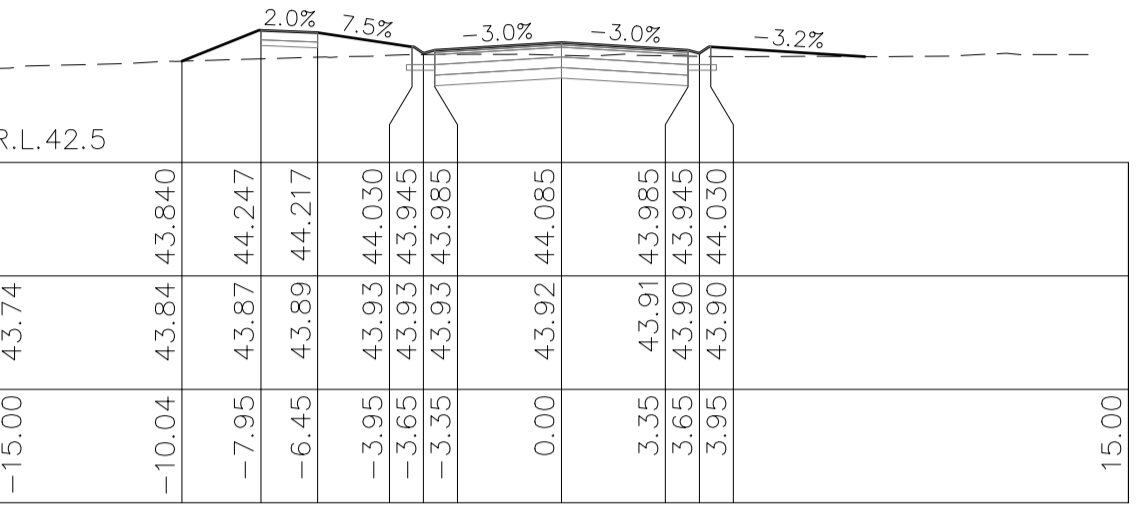
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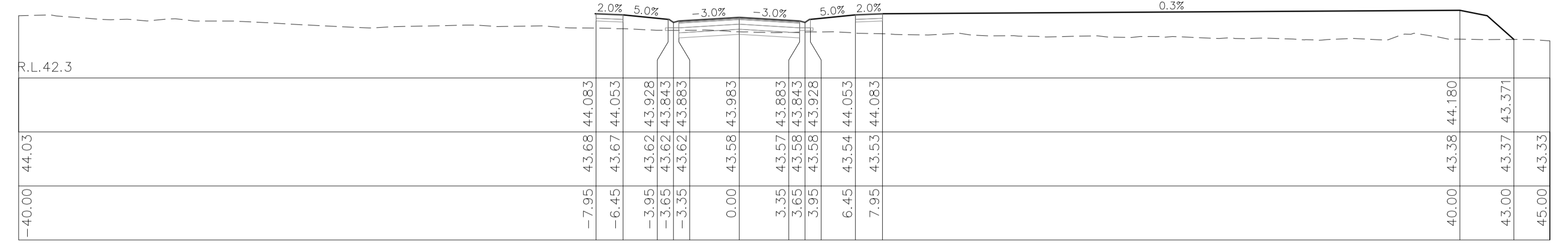
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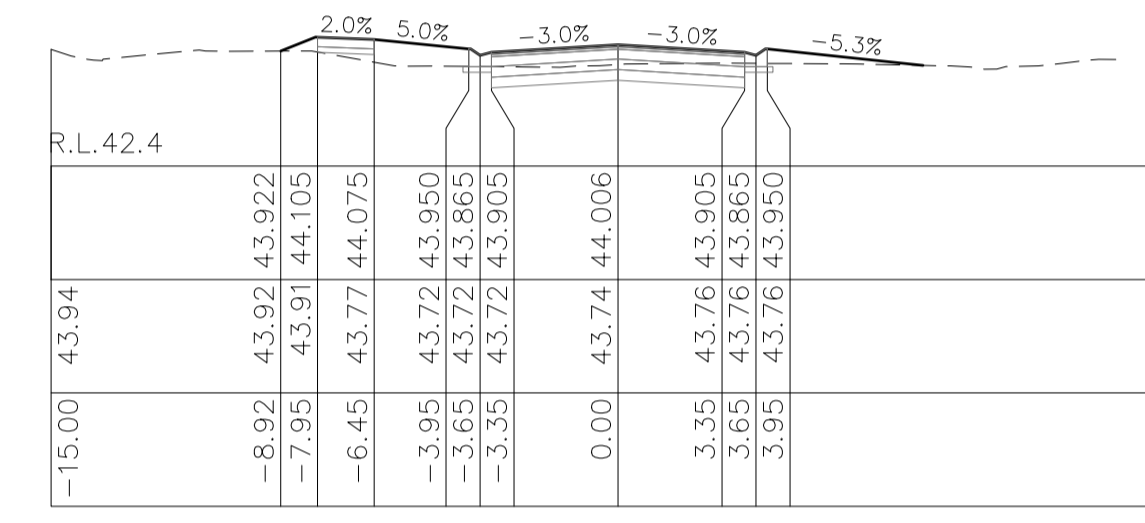
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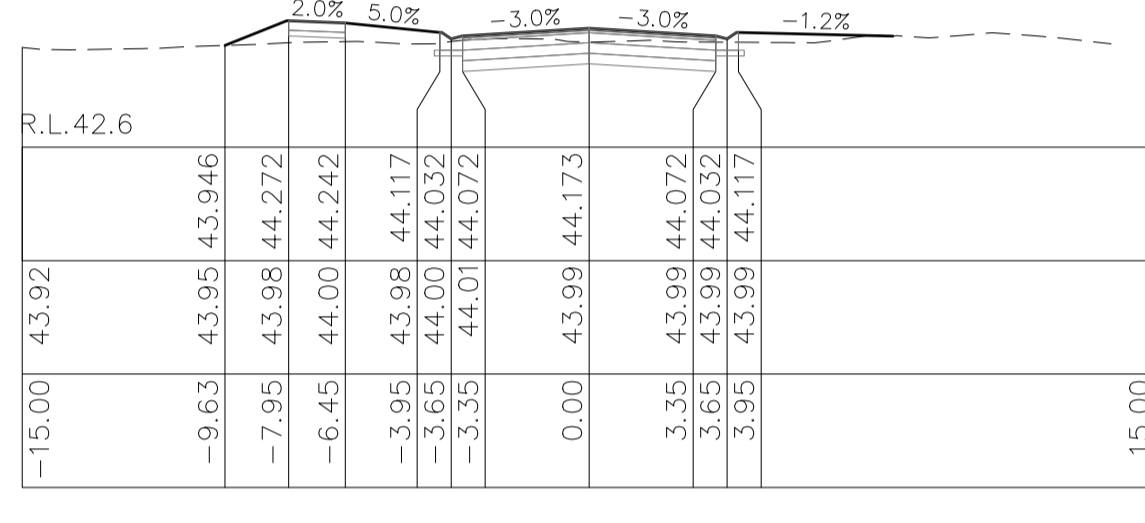
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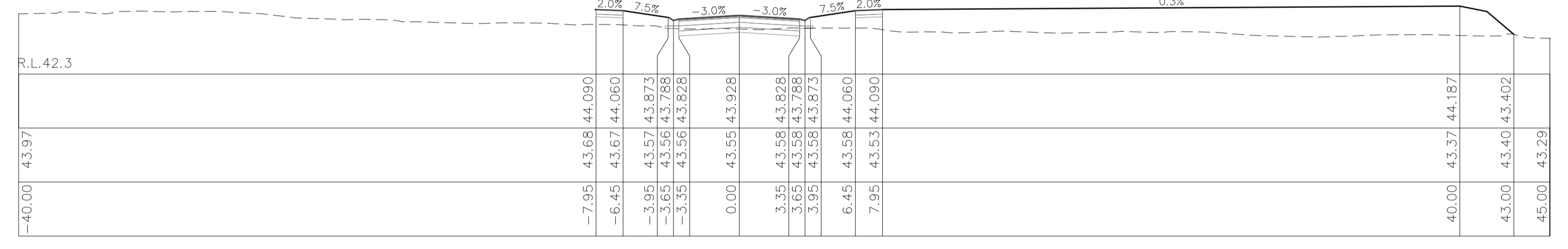
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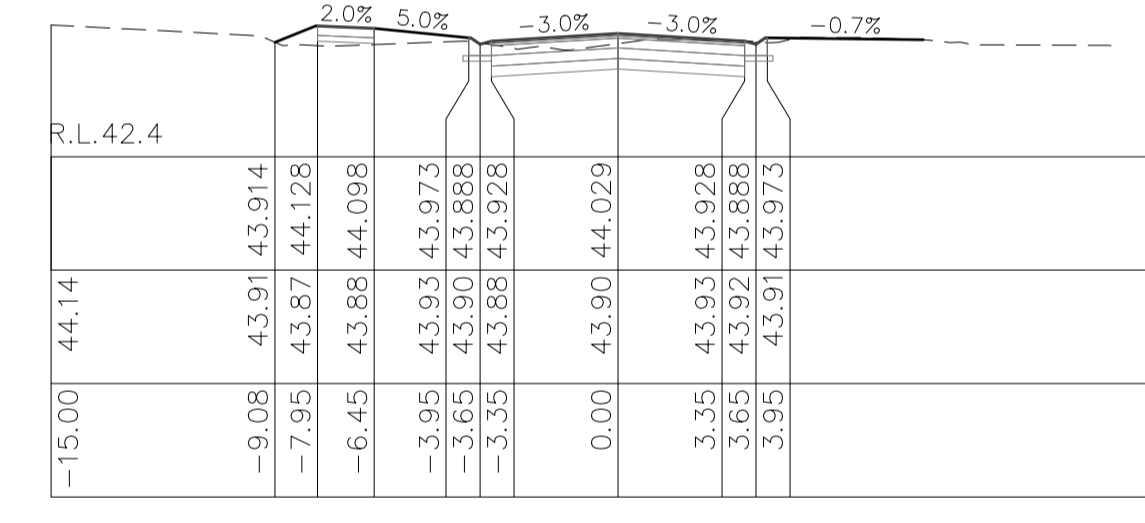
Ch 40.000



Ch 90.000



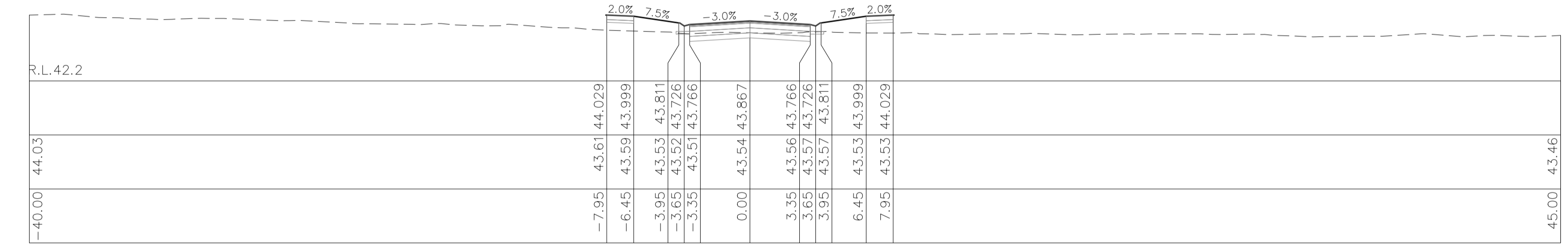
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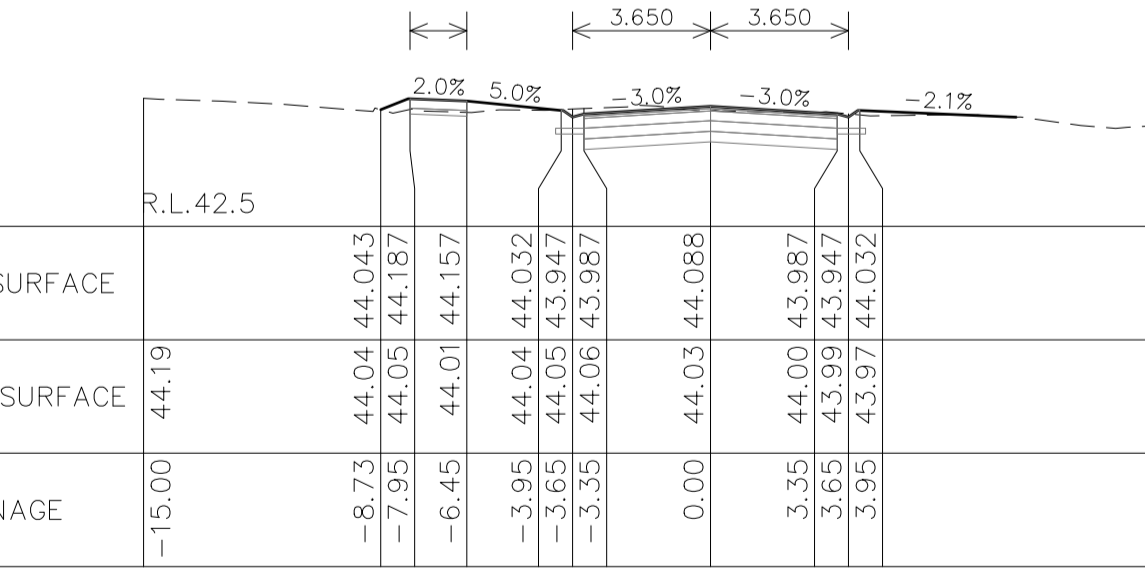
Ch 30.000



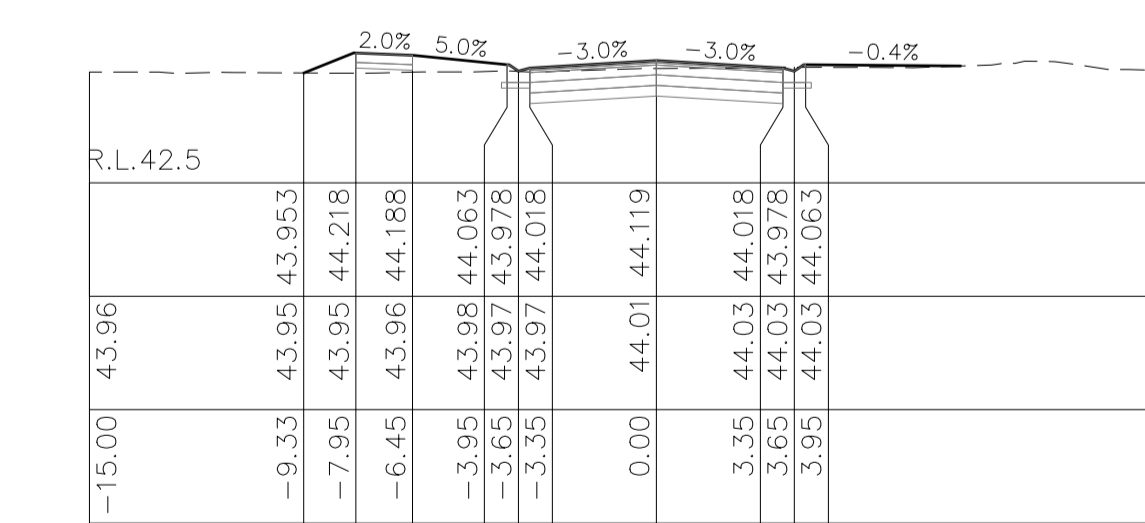
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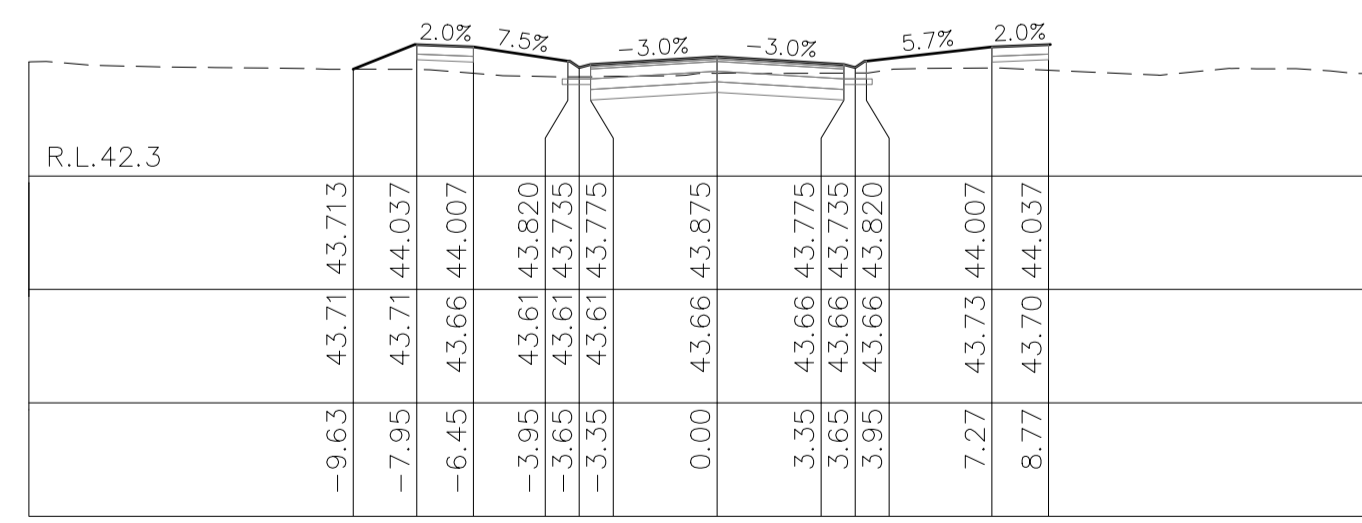
Ch 125.729



Ch 20.000



Ch 70.000



Ch 120.000

CROSS SECTIONS-FLAME STREET & GASLIGHT STREET

CH 10.000 & CH 150.000

SCALES: HORIZONTAL = 1:200; VERTICAL = 1:100 (A1)

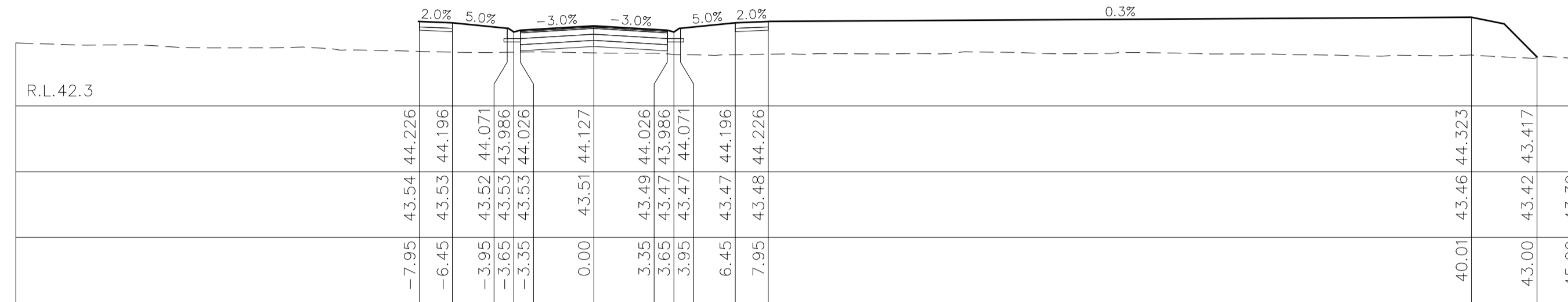
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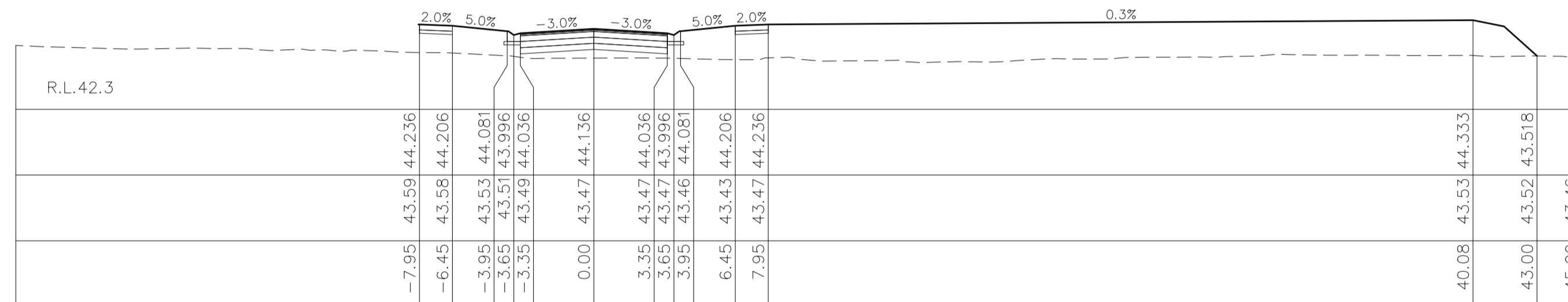
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**FINAL**  
ISSUED FOR CONSTRUCTION

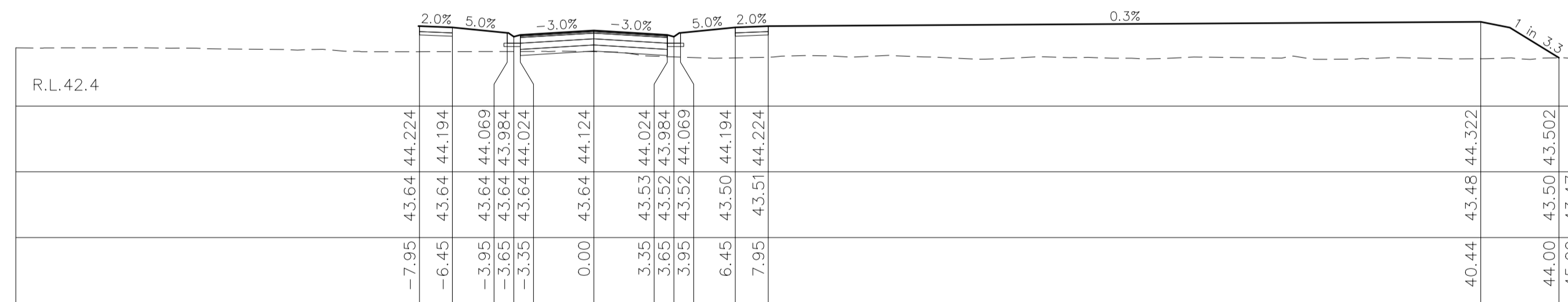
DATE	REV	AMENDMENT	LEGEND	WATER MAINS AND FITTINGS	EX. PROP.	DESIGNED	VN	SCALE	AS SHOWN		BAW BAW SHIRE COUNCIL		DRAWING NO. - CCD18072-04
02.07.2019	F	AMENDED AS PER COUNCIL COMMENTS	EXISTING KERB AND CHANNEL	SEWER MAINS AND ENTITIES	EX. PROP.	DATE	MAR 2019				CIVIL ENGINEERING CONSULTANTS & PROJECT MANAGERS	40-44 DROUIN ROAD	
22.01.2020	G2	AMENDED AS PER COUNCIL COMMENTS	PROPOSED KERB AND CHANNEL	GAS MAINS AND PITS	EX. PROP.	CHECKED	KP	APPROVED	SC	A.C.N. 159 212 245	LONGWARRY, VICTORIA	REVISION -G6	
14.02.2020	G3	AMENDED SEMP PLAN	EXISTING DRAINS AND PITS	TELECOM CABLES AND PITS	EX. PROP.	DATE	MAR 2019	DATE	MAR 2019	P.O. BOX 1207, NARRE WARREN 3805	CROSS SECTIONS- FLAME STREET & GASLIGHT STREET		
18.03.2020	G4	AMENDED PAVEMENT DETAILS	PROPOSED DRAINS AND PITS	ELEC. CABLES AND PITS	EX. PROP.	DATUM	AHD	MELWAYS REFERENCE		PHONE: 5995 4388	CCD REF. NO. - 18072	A1	
02.04.2020	G5	AMENDED DRAINAGE & ROAD GRADE DETAILS	PROPOSED PROPERTY INLET		EX. PROP.					FAX: 5995 5330	Dwg. Location: Z:\CRAIG CIVIL DESIGN\CURRENT PROJECTS\2018\18072 - 40 - 44 Drouin Road, Longwarry\Drawings\CCD Design\18072 - RevG6.dwg; Editor: Vosanthy		
09.04.2020	G6	AMENDED OUTLET DRAIN DETAILS			EX. PROP.								



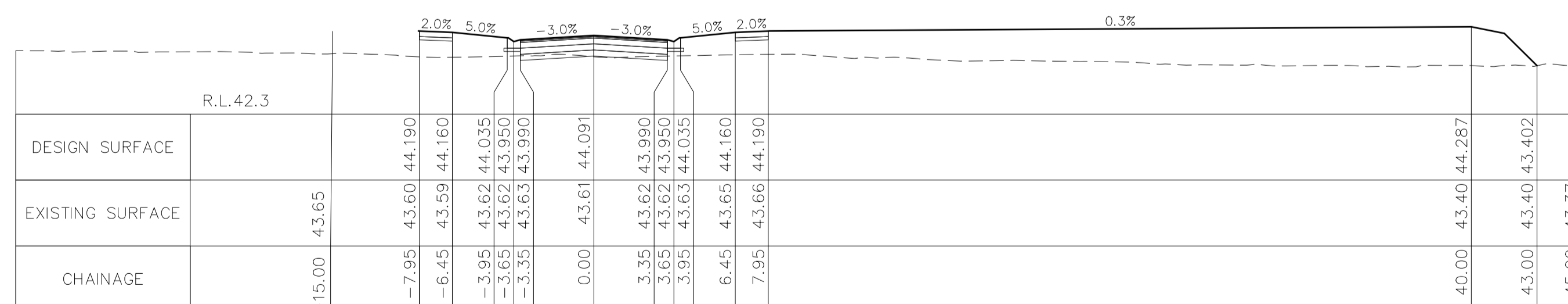
Ch 200.000



Ch 190.000



Ch 180.000

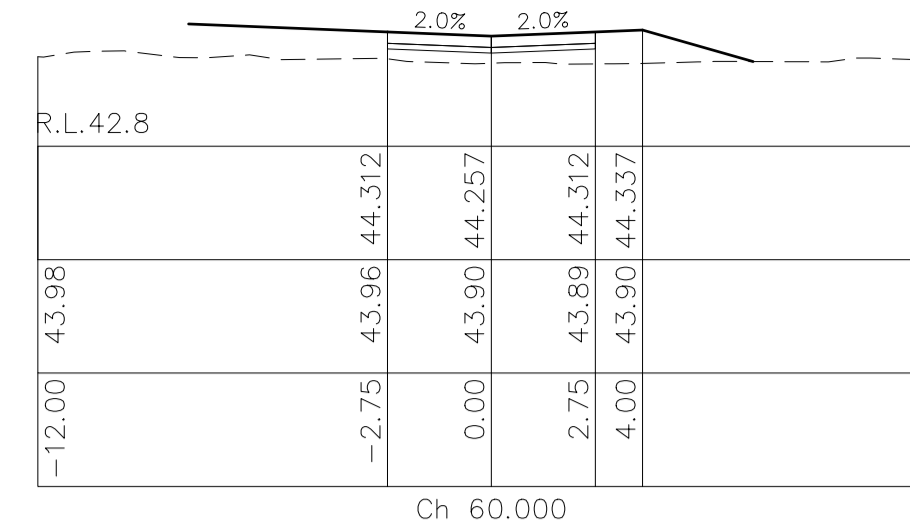


Ch 170.000

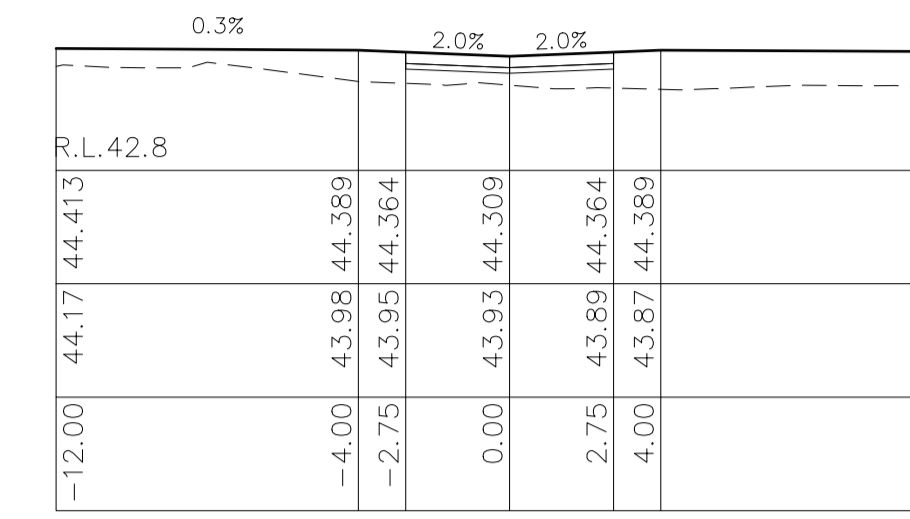
CROSS SECTIONS-GASLIGHT STREET

CH 170.000 & CH 204.769

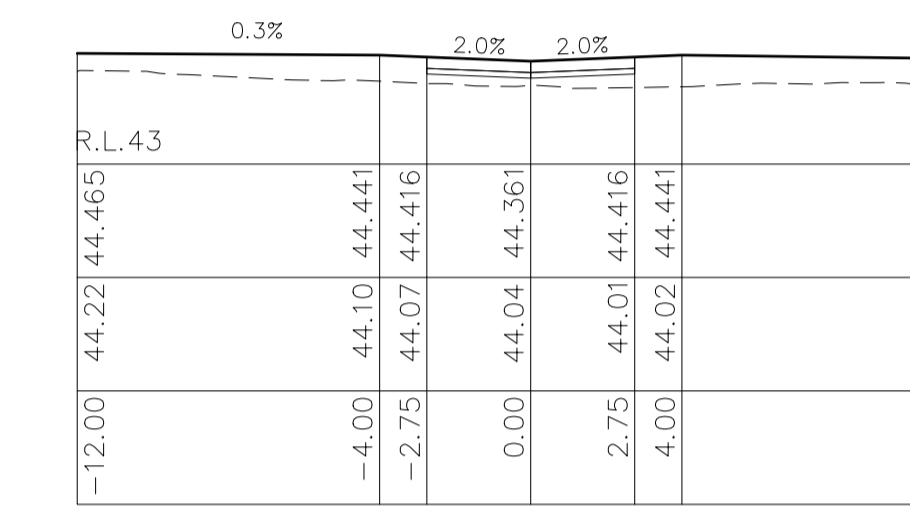
SCALES: HORIZONTAL = 1:200; VERTICAL = 1:100 (A1)



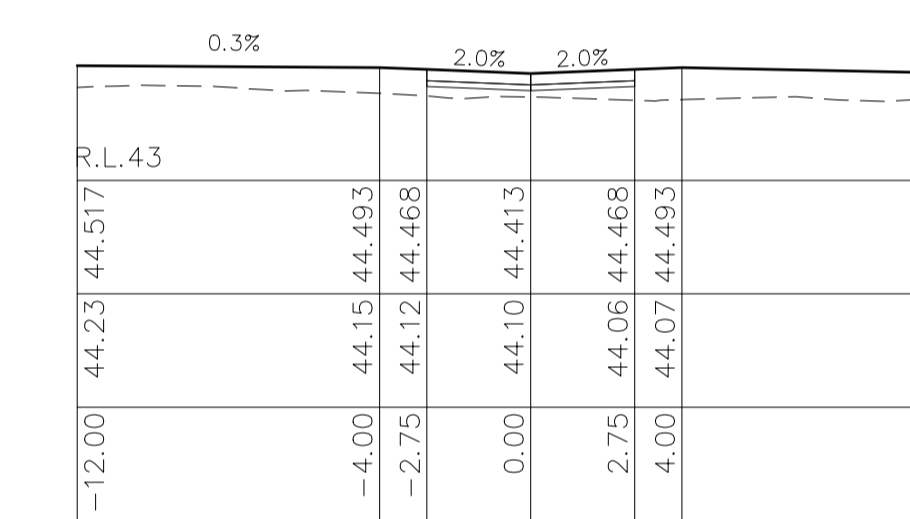
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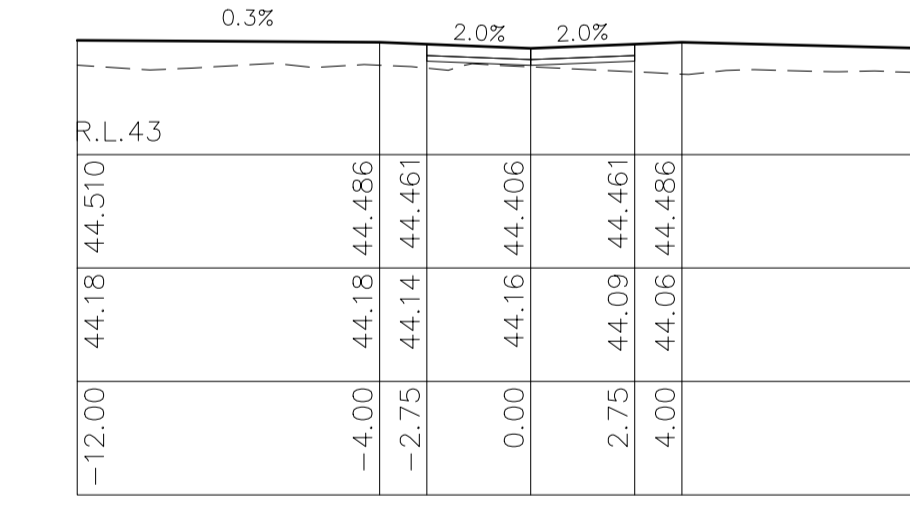
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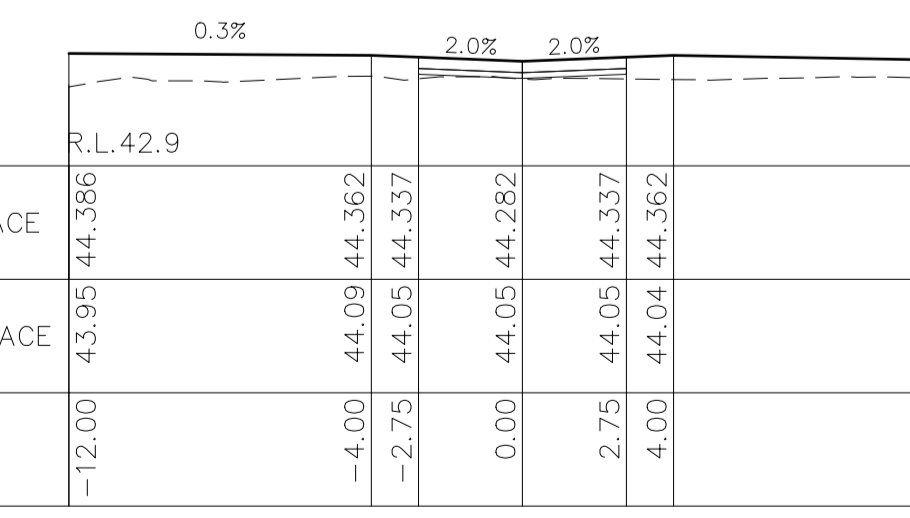
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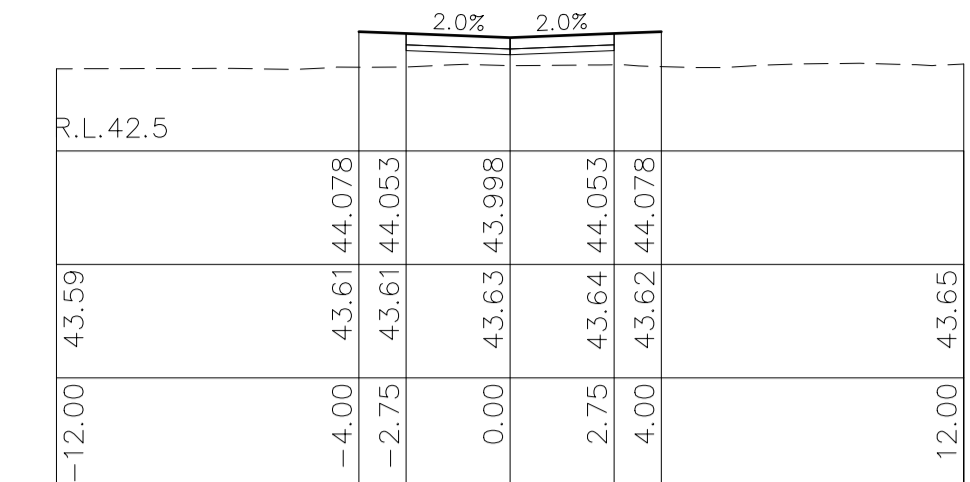
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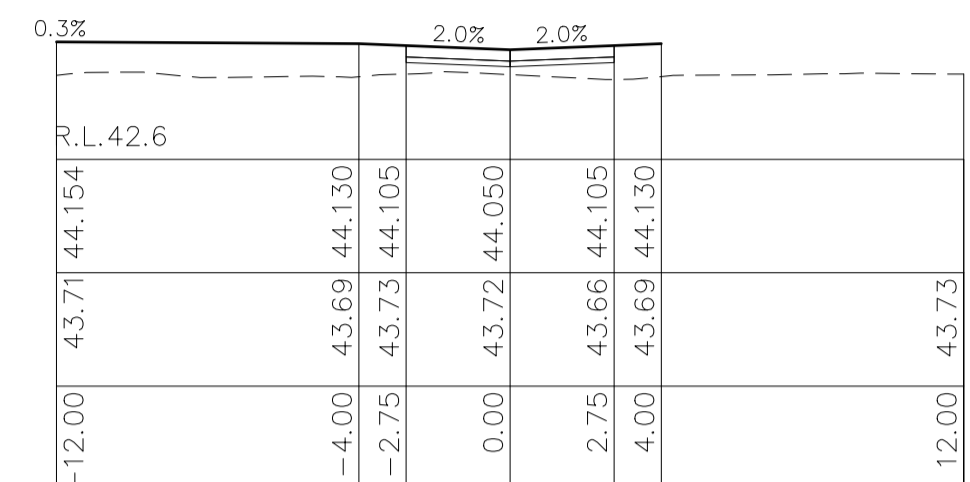
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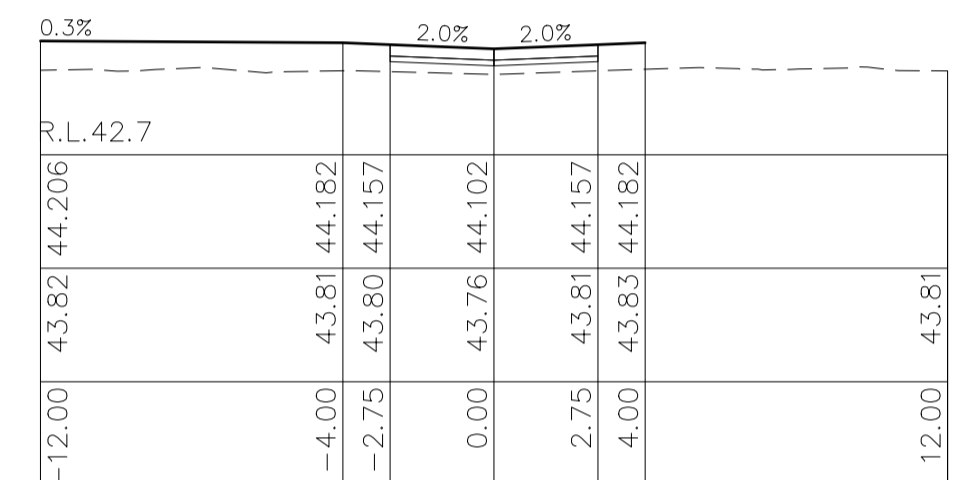
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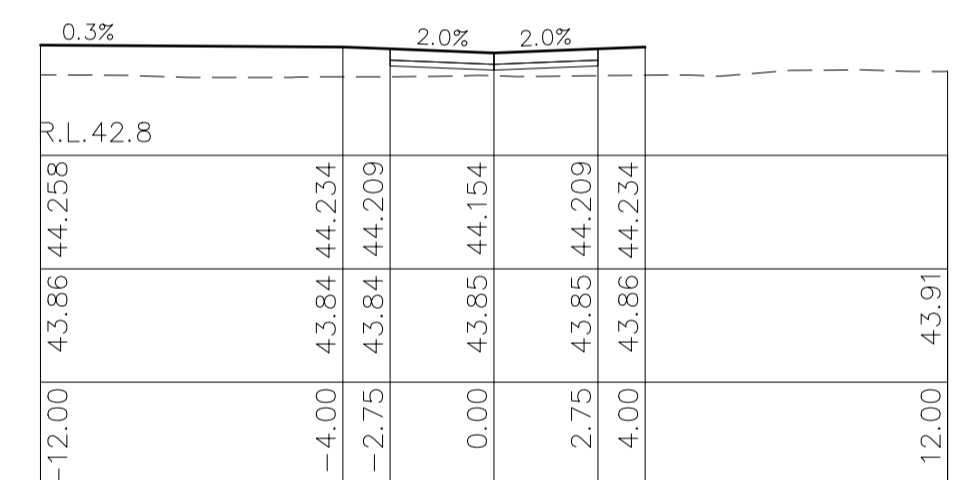
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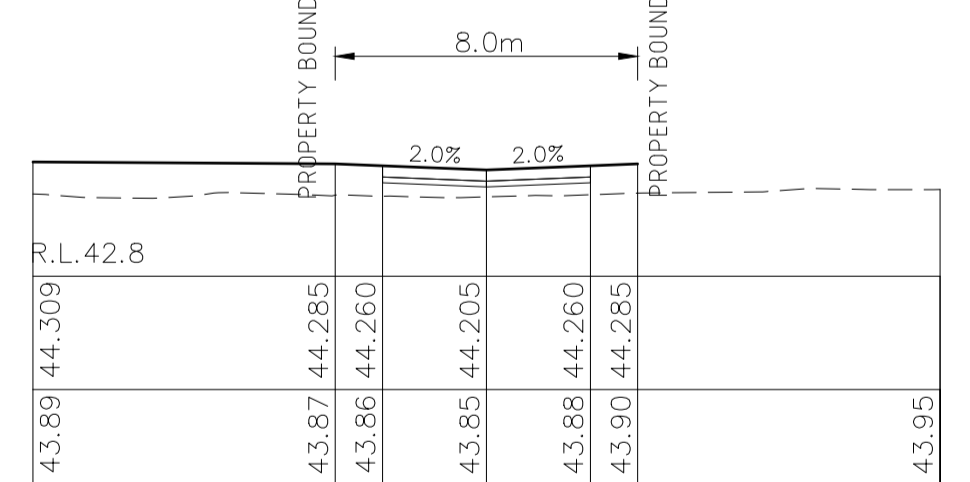
Ch 100.000



Ch 90.000



Ch 80.000



Ch 70.000

CROSS SECTIONS-INVENTOR LANE

CH 10.000 & CH 110.000


SCALES: HORIZONTAL = 1:200; VERTICAL = 1:100 (A1)

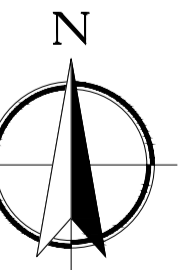


**FINAL**  
ISSUED FOR CONSTRUCTION

DATE	REV	AMENDMENT	LEGEND	WATER MAINS AND FITTINGS	EX. PROP.	DESIGNED	VN	SCALE	AS SHOWN	 CIVIL ENGINEERING CONSULTANTS & PROJECT MANAGERS A.C.N. 159 212 245 P.O. BOX 1207, NARRE WARREN 3805 mail@craigcivil.com.au	BAW BAW SHIRE COUNCIL		DRAWING NO. - CCD18072-05		
02.07.2019	F	AMENDED AS PER COUNCIL COMMENTS	EXISTING KERB AND CHANNEL	SEWER MAINS AND ENTITIES	EX. PROP.	DATE	MAR 2019					SUBDIVISION		SHEET - 5 OF 14	
22.01.2020	G2	AMENDED AS PER COUNCIL COMMENTS	PROPOSED KERB AND CHANNEL	GAS MAINS AND PITS	EX. PROP.	CHECKED	KP	APPROVED	SC			40-44 DROUIN ROAD			REVISION -G6
14.02.2020	G3	AMENDED SEMP PLAN	EXISTING DRAINS AND PITS	TELECOM CABLES AND PITS	EX. PROP.	DATE	MAR 2019	DATE	MAR 2019			LONGWARRY, VICTORIA		CCD REF. NO. - 18072   A1	
18.03.2020	G4	AMENDED PAVEMENT DETAILS	PROPOSED DRAINS AND PITS	ELEC. CABLES AND PITS	EX. PROP.	DATUM	AHD	MELWAYS REFERENCE			CROSS SECTIONS- GASLIGHT STREET& INVENTOR LANE				
02.04.2020	G5	AMENDED DRAINAGE & ROAD GRADE DETAILS	PROPOSED PROPERTY INLET								Dwg. Location: Z:\CRAIG CIVIL DESIGN\CURRENT PROJECTS\2018\18072 - 40 - 44 Drouin Road, Longwarry\Drawings\CCD Design\18072 - Rev6.dwg; Editor: Vosanthi				
09.04.2020	G6	AMENDED OUTLET DRAIN DETAILS									PHONE: 5995 4388 FAX: 5995 5330				



DATE	REV	AMENDMENT	LEGEND	WATER MAINS AND FITTINGS	EX. PROP.	THIS DOCUMENT/DRAWING IS PROTECTED BY FEDERAL COPYRIGHT LAW. COPYING IN ANY SHAPE OR FORM, WHOLE OR PART WITHOUT THE WRITTEN AUTHORISATION OF CRAIG CIVIL DESIGN PTY. LTD. IS STRICTLY PROHIBITED.	DESIGNED	VN	SCALE	AS SHOWN	 CIVIL ENGINEERING CONSULTANTS & PROJECT MANAGERS A.C.N. 159 212 245 P.O. BOX 1207, NARRE WARREN 3805 mail@craigcivil.com.au	BAW BAW SHIRE COUNCIL		DRAWING NO. - CCD18072-06		
02.07.2019	F	AMENDED AS PER COUNCIL COMMENTS	EXISTING KERB AND CHANNEL	SEWER MAINS AND ENTITIES	EX. PROP.	CIVIL PROCEEDINGS CLAIMING DAMAGES OR OTHER REMEDIES MAY BE BROUGHT AGAINST PERSONS FOUND COPYING THIS DOCUMENT.	DATE	MAR 2019	APPROVED	SC		SUBDIVISION		SHEET - 6 OF 14		
22.01.2020	G2	AMENDED AS PER COUNCIL COMMENTS	PROPOSED KERB AND CHANNEL	GAS MAINS AND PITS	EX. PROP.		CHECKED	KP	DATE	MAR 2019		DATE	MAR 2019	LONGWARRY, VICTORIA		REVISION -G6
14.02.2020	G3	AMENDED SEMP PLAN	EXISTING DRAINS AND PITS	TELECOM CABLES AND PITS	EX. PROP.		DATUM	AHD	MELWAYS REFERENCE					CATCHMENT PLAN		CCD REF. NO. - 18072
18.03.2020	G4	AMENDED PAVEMENT DETAILS	PROPOSED DRAINS AND PITS	ELEC. CABLES AND PITS	EX. PROP.											
02.04.2020	G5	AMENDED DRAINAGE & ROAD GRADE DETAILS	PROPOSED PROPERTY INLET													
09.04.2020	G6	AMENDED OUTLET DRAIN DETAILS														



Dwg. Location: Z:\CRAIG CIVIL DESIGN\CURRENT PROJECTS\2018\18072 - 40 - 44 Drouin Road, Longwarry\Drawings\CCD Design\18072 - Rev6.dwg; Editor: Vosanthi









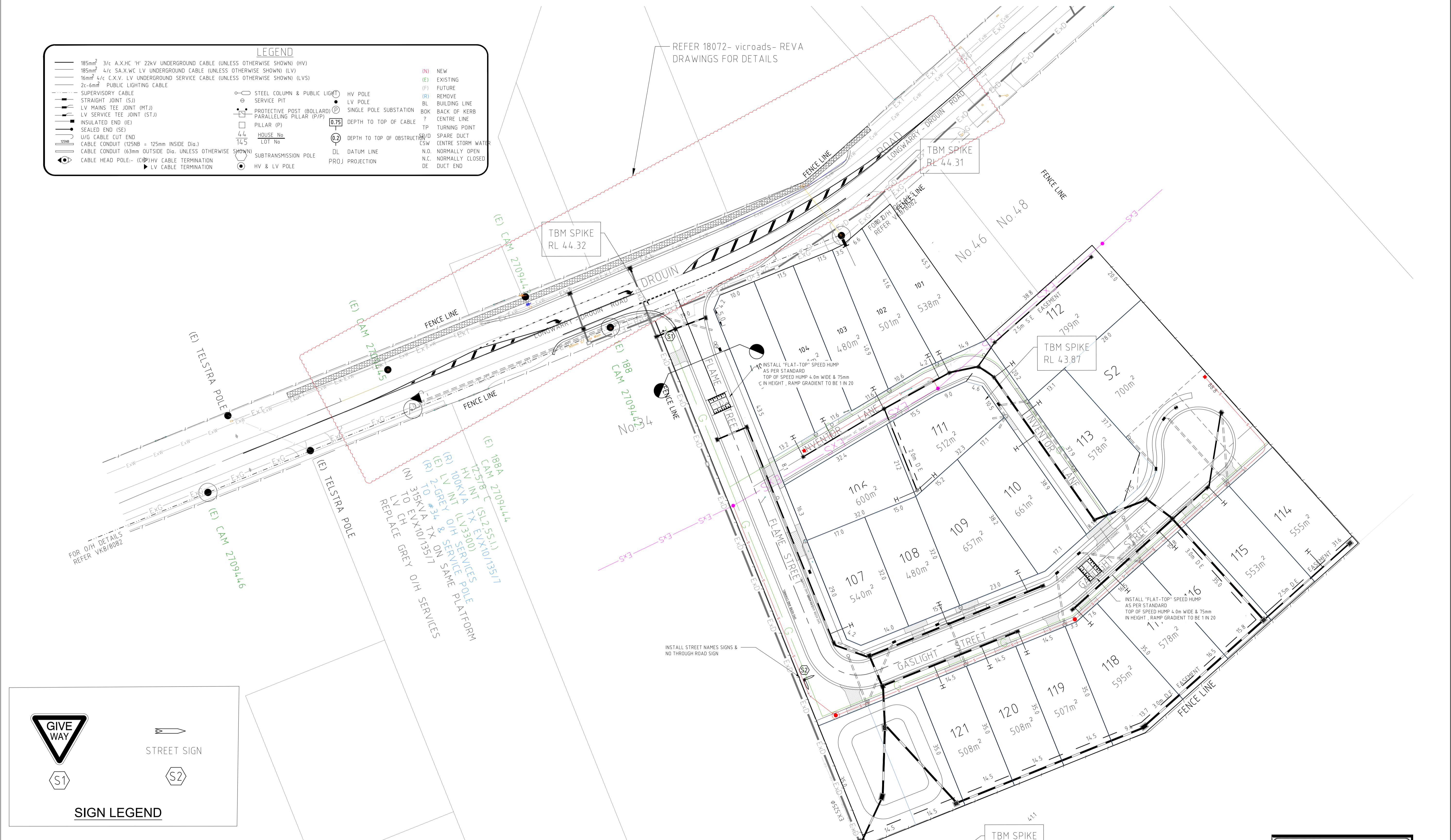
Catchment Hydrology - drainage3 Return Period: 5yrs Location: Melbourne																
Pipe ID	Total Area	Co-efficient of Runoff	Equivalent Areas	Total Equivalent Areas	Catchment Overland Flow Time	Pipe Flow Time	Time of Concentration	Pipe Rainfall Intensity	Total Pipe Flow	Pipe Diameter	Pipe Mannings "n"	Pipe Grade	Pipe Capacity	Velocity Part Full	Pipe Length	Remarks
	(Ha)		(Ha)	(Ha)	(min)	(min)	(min)	(mm/hr)	(l/s)	(mm)		1 in	(l/s)	(m/s)	(m)	
2-1				1329		0.118	15.60	54.52	201300	375	0.013	299.3	101340	1823	12.9	
12-2				1329		0.258	15.34	55.01	203084	450	0.013	299.9	164.627	1.277	19.8	
3-12				0.891		0.406	14.94	55.77	138.092	450	0.013	300.3	164.524	1.159	28.3	
13-12	0.065	0.75	0.049	0.438		0.179	8.08	72.68	88.361	450	0.013	300.3	164.524	1.054	11.3	
	0.036	0.75	0.027		6.000											
	0.029	0.75	0.022		6.000											
3A-3				0.891		0.794	14.14	57.25	141.769	450	0.013	300.3	164.524	1.164	55.4	
14-13	0.050	0.75	0.038	0.281		0.159	7.92	73.32	57.126	450	0.013	300.3	164.524	0.940	9.0	
	0.041	0.75	0.031		6.000											
	0.009	0.75	0.007		5.000											
13A-13	0.166	0.65	0.108	0.108		0.883	6.85	77.59	23.366	450	0.013	277.2	171.242	0.753	39.9	
	0.013	0.75	0.010		5.000											
	0.153	0.64	0.099		6.718											
4-3A				0.891		0.622	13.52	58.41	144.648	450	0.013	300.3	164.524	1.167	43.5	
18-14	0.130	0.75	0.098	0.098		1.120	6.00	81.00	21.938	450	0.013	256.9	177.866	0.761	51.1	
	0.019	0.75	0.014		5.000											
	0.111	0.75	0.083		6.000											
15-14	0.074	0.75	0.056	0.146		0.215	7.71	74.17	29.979	375	0.013	300.3	101.176	0.799	10.3	
	0.018	0.75	0.014		6.000											
	0.056	0.75	0.042		6.000											
5-4	0.012	0.75	0.009	0.849	5.000	0.533	12.99	59.41	14.0063	450	0.013	300.3	164.524	1.162	37.2	
4A-4	0.057	0.75	0.043	0.043	11.339	0.971	11.34	62.50	7.421	375	0.013	300.3	101.176	0.537	31.3	
16-15	0.061	0.75	0.046	0.090		1.462	6.24	80.02	20.005	300	0.013	300.0	55.827	0.723	63.4	
	0.026	0.75	0.020		6.000											
	0.035	0.75	0.026		6.000											
5B-5				0.081		0.303	6.49	79.04	17.785	300	0.013	300.3	55.802	0.703	12.8	
6-5	0.127	0.72	0.092	0.644		0.136	12.85	59.67	106.726	450	0.013	300.3	164.524	1.101	9.0	
	0.027	0.75	0.020		6.000											
	0.030	0.75	0.023		5.000											
	0.070	0.70	0.049		6.000											
5A-5	0.153	0.75	0.115	0.115	6.000	0.769	6.00	81.00	25.819	450	0.013	250.0	180.317	0.805	37.1	
10-9	0.060	0.78	0.047	0.279		0.352	6.55	78.82	61.171	375	0.013	300.3	101.176	0.959	20.3	
	0.051	0.75	0.038		6.000											
	0.009	0.95	0.009		5.000											
5C-5B	0.108	0.75	0.081	0.081		0.489	6.00	81.00	18.225	300	0.013	300.3	55.802	0.706	20.7	
	0.045	0.75	0.034		6.000											
	0.063	0.75	0.047		6.000											
7-6	0.102	0.83	0.085	0.552		0.241	12.61	60.12	92.212	450	0.013	300.3	164.524	1.064	15.4	
	0.042	0.95	0.040		6.000											
	0.060	0.75	0.045		6.000											
8-7	0.084	0.72	0.061	0.467		0.773	11.84	61.56	79.910	450	0.013	300.3	164.524	1.027	47.6	
	0.007	0.95	0.007		5.000											
	0.077	0.70	0.054		11.839											
8A-8	0.160	0.50	0.080	0.407	9.100	0.084	9.10	68.60	77.508	375	0.013	300.3	101.176	1.010	5.1	
9-8A	0.063	0.75	0.047	0.327		0.136	6.90	77.41	70.259	375	0.013	300.3	101.176	0.989	8.1	
	0.013	0.95	0.012		5.000											
	0.050	0.70	0.035		6.260											
10A-10	0.113	0.75	0.085	0.085		0.546	6.00	81.00	19.069	225	0.013	284.3	27.912	0.730	23.9	
	0.052	0.75	0.039		6.000											
	0.061	0.75	0.046		6.000											
11-10	0.191	0.77	0.148	0.148		0.522	6.00	81.00	33.266	300	0.013	300.3	55.802	0.826	25.9	
	0.023	0.95	0.022		6.000											
	0.168	0.75	0.126		6.000											
17-16	0.059	0.75	0.044	0.044		0.245	6.00	81.00	9.956	300	0.013	300.3	55.802	0.596	8.7	
	0.024	0.75	0.018		6.000											
	0.035	0.75	0.026		6.000											

Catchment Hydrology - drainage3 Return Period: 100yrs Location: Melbourne																
Pipe ID	Total Area	Co-efficient of Runoff	Equivalent Areas	Total Equivalent Areas	Catchment Overland Flow Time	Pipe Flow Time	Time of Concentration	Pipe Rainfall Intensity	Total Pipe Flow	Pipe Diameter	Pipe Mannings "n"	Pipe Grade	Pipe Capacity	Velocity Part Full	Pipe Length	Remarks
	(Ha)		(Ha)	(Ha)	(min)	(min)	(min)	(mm/hr)	(l/s)	(mm)		1 in	(l/s)	(m/s)	(m)	
2-1				1355		0.049	11.57	129.57	487.719	375	0.013	299.3	101.340	4.416	12.9	
12-2				1355		0.107	11.46	130.01	489.374	450	0.013	299.9	164.627	3.077	19.8	
3-12				0.891		0.231	11.23	130.96	324.284	450	0.013	300.3	164.524	2.039	28.3	
13-12	0.065	0.75	0.049	0.464		0.150	7.72	155.92	200.805	450	0.013	300.3	164.524	1.263	11.3	
	0.036	0.75	0.027		6.000											
	0.029	0.75	0.022		6.000											
3A-3				0.891		0.447	10.78	132.79	328.821	450	0.013	300.3	164.524	2.067	55.4	
14-13	0.050	0.75	0.038	0.281		0.132	7.59	157.07	122.387	450	0.013	300.3	164.524	1.134	9.0	
	0.041	0.75	0.031		6.000											
	0.009	0.75	0.007		5.000											
13A-13	0.166	0.81	0.134	0.134		0.655	5.13	182.25	68.031	450	0.013	277.2	171.242	1.015	39.9	
	0.013	0.75	0.010		5.000											
	0.153	0.81	0.125		5.000											
4-3A				0.891		0.347	10.44	134.21	332.346	450	0.013	300.3	164.524	2.090	43.5	
18-14	0.130	0.75	0.098	0.098		0.907	6.00	171.00	46.313	450	0.013	256.9	177.866	0.940	51.1	
	0.019	0.75	0.014		5.000											
	0.111	0.75	0.083		6.000											
15-14	0.074	0.75	0.056	0.146		0.177	7.41	158.62	64.110	375	0.013	300.3	101.176	0.969	10.3	
	0.018	0.75	0.014		6.000											
	0.056	0.75	0.042		6.000											
5-4	0.012	0.75	0.009	0.849	5.000	0.309	10.13	135.48	319.391	450	0.013	300.3	164.524	2.008	37.2	
4A-4	0.057	0.75	0.043	0.043	11.339	0.971	11.34	62.50	7.421	375	0.013	300.3	101.176	0.694	31.3	
16-15	0.061	0.75	0.046	0.090		1.462	6.24	80.02	20.005	300	0.013	300.0	55.827	0.723	63.4	
	0.026	0.75	0.020		6.000											
	0.035	0.75	0.026		6.000											
5B-5				0.081		0.251	6.40	167.46	37.678	300	0.013	300.3	55.802	0.847	12.8	
6-5	0.127	0.72	0.092	0.644		0.098	10.03	135.88	243.055	450	0.013	300.3	164.524	1.528	9.0	
	0.027	0.75	0.020		6.000											
	0.030	0.75	0.023		5.000											
	0.070	0.70	0.049		6.000											
5A-5	0.153	0.75	0.115	0.115	6.000	0.623	6.00	171.00	54.506	450	0.013	250.0	180.317	0.993	37.1	
10-9	0.060	0.78	0.047	0.279		0.287	6.43	167.20	129.767	375	0.013	300.3	101.176	1.175	20.3	
	0.051	0.75	0.038		6.000											
	0.009	0.95	0.009		5.000											
5C-5B	0.108	0.75	0.081	0.081		0.405	6.00	171.00	38.475	300	0.013	300.3	55.802	0.853	20.7	
	0.045	0.75	0.034		6.000											
	0.063	0.75	0.047		6.000											
7-6	0.102	0.83	0.085	0.552		0.194	9.84	137.44	210.814							

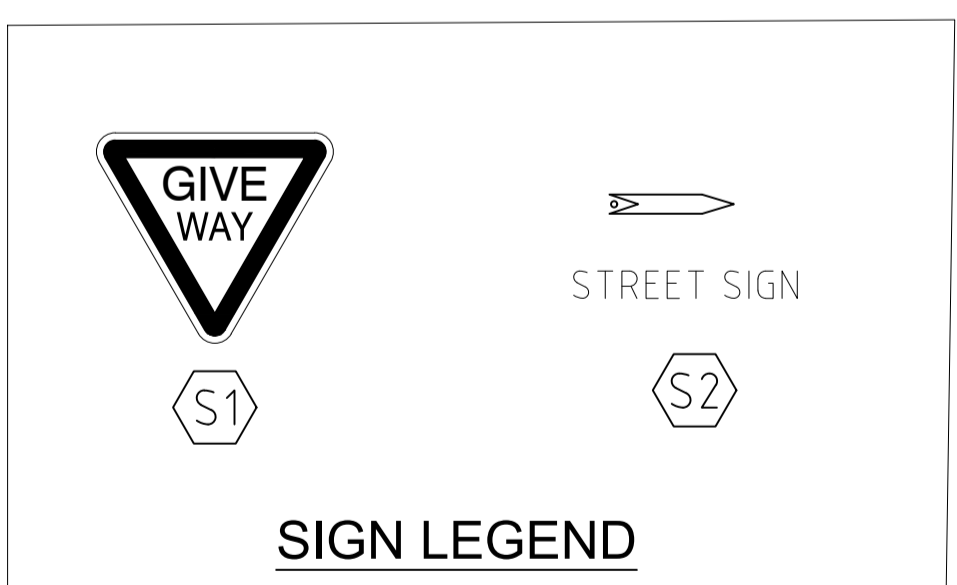


LEGEND	
185mm <sup>2</sup> 3/c A.X.HC 'H' 22kV UNDERGROUND CABLE (UNLESS OTHERWISE SHOWN) (HV)	(N) NEW
185mm <sup>2</sup> 4/c SA.X.WC LV UNDERGROUND CABLE (UNLESS OTHERWISE SHOWN) (LV)	(E) EXISTING
16mm <sup>2</sup> 4/c C.X.V. LV UNDERGROUND SERVICE CABLE (UNLESS OTHERWISE SHOWN) (LVS)	(F) FUTURE
2c-6mm <sup>2</sup> PUBLIC LIGHTING CABLE	(R) REMOVE
SUPERVISORY CABLE	BL BUILDING LINE
STRAIGHT JOINT (S/J)	BOK BACK OF KERB
LV MAINS TEE JOINT (MTJ)	CL CENTRE LINE
LV SERVICE TEE JOINT (STJ)	TP TURNING POINT
INSULATED END (IE)	SD SPARE DUCT
SEALED END (SE)	CSW CENTRE STORM WATER
U/G CABLE CUT END	N.O. NORMALLY OPEN
CABLE CONDUIT (125NB = 125mm INSIDE Dia.)	N.C. NORMALLY CLOSED
CABLE CONDUIT (63mm OUTSIDE Dia. UNLESS OTHERWISE SHOWN)	DE DUCT END
CABLE HEAD POLE:- (CHP) HV CABLE TERMINATION	DL DATUM LINE
LV CABLE TERMINATION	PROJ PROJECTION
STEEL COLUMN & PUBLIC LIGHT	
SERVICE PIT	
PROTECTIVE POST (BOLLARD)	
PARALLELING PILLAR (P/P)	
PILLAR (P)	
HOUSE No	
LOT No	
SUBTRANSMISSION POLE	
HV & LV POLE	
0.75	DEPTH TO TOP OF CABLE
0.2	DEPTH TO TOP OF OBSTRUCTION

REFER 18072- vicroads- REVA DRAWINGS FOR DETAILS

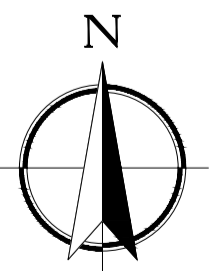


(N) 35kVA TX TO EX/101/135/17  
 (R) 2-GREY O/H SERVICES REPLACE GREY O/H SERVICES  
 (E) 100kVA HV INT (LV33000)  
 (E) 100kVA HV INT (SL2-55-1) EX/101/135/17  
 (E) 188A CAM 2709444  
 (E) 188B CAM 2709445



- NOTES:
- ROAD HUMPS ARE TO BE LOCATED WITHIN 5m OF EXISTING STREET LIGHT OR NEW STREET LIGHT MUST BE INSTALLED WITHIN 5m OF A ROAD HUMPS, UNLESS OTHERWISE SHOWN
  - REFER TRAFFIC ENGINEERING MANUAL VOL 1 CHAPTER 8 FOR FURTHER DETAILS
  - SIGN MUST BE INSTALLED TO SD611 - SIGN INSTALLATION GUIDELINES

LINEMARKING  
 SCALES 1:500 (A1)



**WARNING**  
 BEWARE OF UNDERGROUND SERVICES

THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. A MOCS ENQUIRY ON 1100 MUST BE MADE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS.

**WARNING**  
 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SETOUT INFORMATION PROVIDED ON THIS PLAN WITH THE DESIGN INTENT WHICH INCLUDES, BUT IS NOT LIMITED TO ITEMS SUCH AS LENGTHS, CO-ORDINATES, SETOUT DIMENSIONS AND PEGGED TITLES BY THE PRINCIPAL'S LICENSED SURVEYOR.



**FINAL**  
 ISSUED FOR CONSTRUCTION

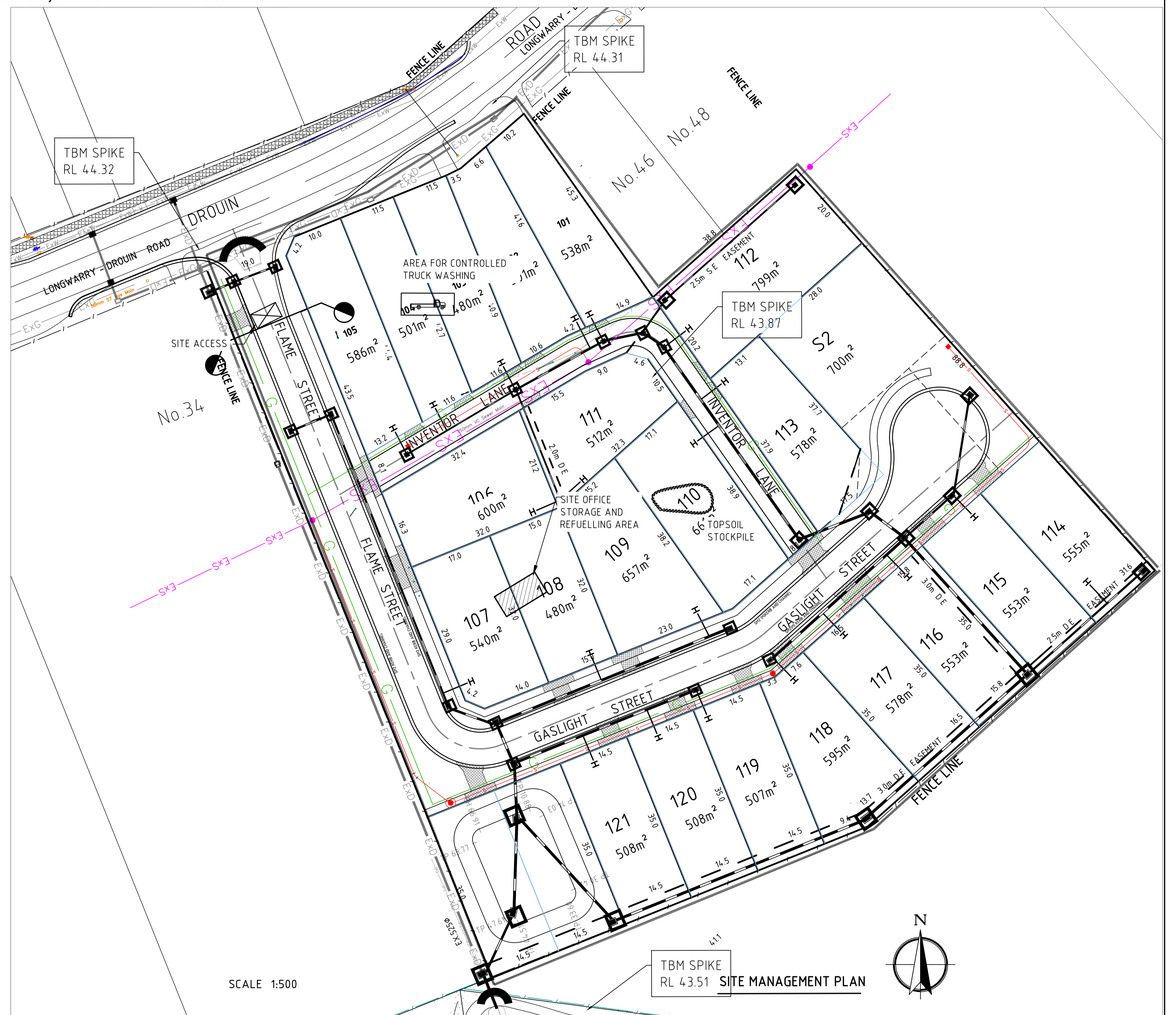
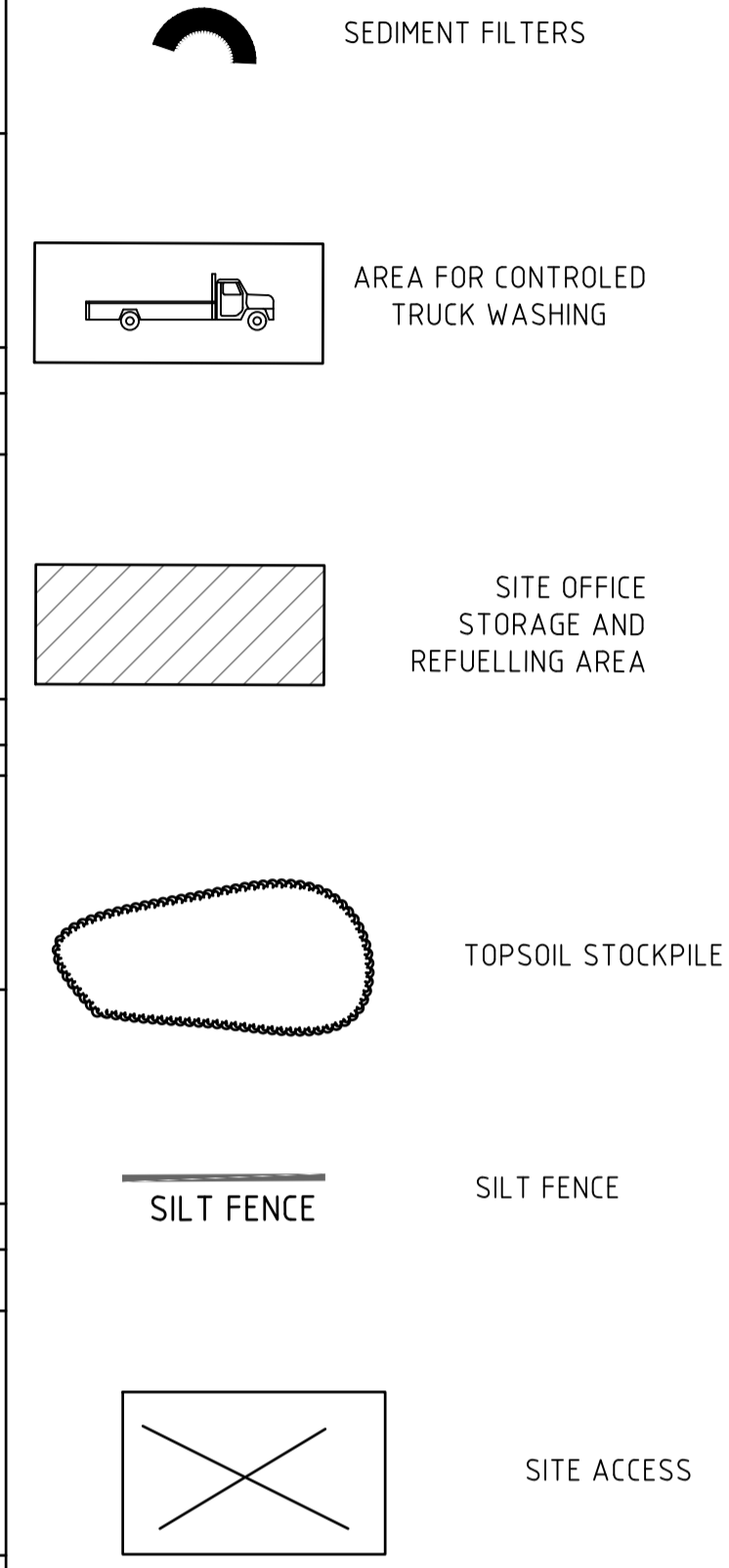
DATE	REV	AMENDMENT	LEGEND	WATER MAINS AND FITTINGS	EX. PROP.	SEWER MAINS AND ENTITIES	EX. PROP.	GAS MAINS AND PITS	EX. PROP.	TELECOM CABLES AND PITS	EX. PROP.	ELEC. CABLES AND PITS	EX. PROP.	DESIGNED	DATE	SCALE	AS SHOWN	CIVIL ENGINEERING CONSULTANTS & PROJECT MANAGERS	BAW BAW SHIRE COUNCIL	DRAWING NO. - CCD18072-12
02.07.2019	F	AMENDED AS PER COUNCIL COMMENTS	EXISTING KERB AND CHANNEL	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	VN	MAR 2019	SCALE	AS SHOWN	Craig Civil Design	SUBDIVISION	DRAWING NO. - CCD18072-12
22.01.2020	G2	AMENDED AS PER COUNCIL COMMENTS	PROPOSED KERB AND CHANNEL	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	KP	APPROVED	SC		40-44 DROUIN ROAD	SHEET - 12 OF 14	
14.02.2020	G3	AMENDED SEMP PLAN	EXISTING DRAINS AND PITS	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	MAR 2019	DATE	MAR 2019		LONGWARRY, VICTORIA	REVISION -G6	
18.03.2020	G4	AMENDED PAVEMENT DETAILS	PROPOSED DRAINS AND PITS	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	AHD	MELWAYS REFERENCE			LINEMARKING, SIGN & LIGHTING DETAILS	CCD REF. NO. - 18072	
02.04.2020	G5	AMENDED DRAINAGE & ROAD GRADE DETAILS	PROPOSED PROPERTY INLET	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.						A1	
09.04.2020	G6	AMENDED OUTLET DRAIN DETAILS		EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.	EX. PROP.							

The following have been identified as significant environmental aspects for the site:  
 PROTECTION OF EXISTING VEGETATION  
 CONTROL OF SOIL EROSION AND TRANSPORTATION OF SILT

These aspects shall be managed with environmental protection measures outlined on this plan:

Management Risk: Significant/Med/Low	
1. Responsibilities: SITE CONTRACTOR RESPONSIBLE FOR ALL ASPECTS ON SITE IMPLEMENTATION INCLUDING INSPECTIONS AND MAINTENANCE EMERGENCY CONTACT: MICHAEL DANIELLO 0425 729 029 STEPHEN CRAIG 0407 992 390	4. Staging of Works: Stage 2 ONLY
2. Communication of Site EMP Requirements: TOOL BOX MEETING UPON WORKS COMMENCEMENT DISPLAY A REGISTER TO SHOW ALL INDUCTIONS HELD. UPON REQUEST THE RELEVANT AUTHORITY CAN VIEW THE REGISTER	5. Informing Residents: SURROUNDING NEIGHBOURS AROUND THE CONSTRUCTION SITE TO BE DONE BY CONTRACTOR
3. Inspections and Maintenance MINIMUM WEEKLY ADDITIONAL IF REQUIRED DISPLAY A REGISTER OF INSPECTIONS CONDUCTED BEFORE AND AFTER WEATHER IMPACTS (RAIN, STORM, WINDS ETC.) UPON REQUEST THE RELEVANT AUTHORITY CAN VIEW THE REGISTER	6. Associated documents: N/A
Noise Risk: Low	
Requirement: EPA Victoria and Council requirements must be adhered to in relation to the level of noise and working hours, to ensure that residents and other applicable neighbours to the site are not disturbed unreasonably. The generation of noise must be minimised.	
7. Working Hours Mon to Fri 7.00am - 5.00pm Saturday 9.00am - 1.00pm	8. Noise Minimisation Methods: MAINTAIN WORKING HOUR. RESTRICT USE OF NOISY EQUIPMENT & PROCESSES TO AVOID DISTURBANCE TO ADJACENT RESIDENTS. FOLLOW EPA NOISE CONTROL GUIDELINES PUBLICATION 1254 (FORMERLY KNOWN AS TG302/92). ALL VEHICLE MOVEMENTS TO AND FROM SITE TO BE DURING WORKING HOURS.
9. Other: WARMING UP OF EQUIPMENT TO BE NO EARLIER THAN 15MINUTES PRIOR TO START TIME FOR THE DAY. NO FLASHING LIGHTS AND BEEPS TO START ON ANY EQUIPMENT UNTIL THE START TIME FOR THE EACH DAY.	
Dust Risk: Med	
Requirement: Litter and waste must be contained on site before disposal in a responsible manner. Waste generation must be minimised.	
10. Minimising Dust Generation: AREAS WHERE GRASS STRIPPED FOR ROAD AND DRAINAGE CONSTRUCTION.	12. Contingencies: IF HIGH WIND IS EXPECTED WHILE LARGE AREAS OF THE SITE ARE STRIPPED, WATER SPRAY IN ORDER TO ESTABLISH A THICK CRUST OVER UN-VEGETATED LAND. SHOULD GROUND DRY OUT SIGNIFICANTLY CONSIDER WATER SPRAYING OR COVER AREA WITH MULCH OR MATTING. NOTE: IF A HOSE IS USED FOR WATER SPRAYING, THE HOSE IS TO BE FITTED WITH A LARGE TRIGGER NOZZLE. CHECK WATER RESTRICTIONS WITH LOCAL AUTHORITY FOR GUIDELINES.
11. Dust Suppression: WATER APPLIED TO EFFECTED AREAS AS REQUIRED VIA SPRAY ON TRUCK AND SUITABLE SIZED HOSE.	13. Other: SHOULD DUST GENERATED DUE TO THESE WORKS BECOME AN ISSUE, THEN WORKS ARE STOP OR MEASURES TAKEN TO ENSURE ADEQUATE CONTROLS ARE IMPLEMENTED.
Erosion and Sediment Requirement: Erosion and Sediment must be managed in accordance with current best practice environmental management practices to prevent sediment laden water from entering any drainage system or natural waterway.	
14. Drainage Management: ALL SITE RUNOFF TO BE TREATED WITH APPROPRIATE SEDIMENT TRAPS.	17. Sediment Traps (sediment retention devices): PLACED AS SHOWN ON PLAN (S.F.)
15. Soil Stabilisation During construction:	18. Dewatering:
16. Stockpile Management: STOCKPILES TO HAVE SEDIMENT PROTECTION.	19. Vehicle and Road Management: Site access: Street Cleaning: ROADS ARE TO BE CLEANED PRIOR TO RAIN/STORM EVENTS. STORMWATER PITS ALONG THE ESTABLISHED ROADWAY, WHICH ARE SUBJECT TO SEDIMENT DEPOSITS, SHALL BE EITHER FITTED WITH KERB INLET PROTECTORS OR SHALL BE FITTED WITH (GEOFABRIC) FILTER MATERIAL TO CAPTURE SEDIMENTS. ROADS ARE TO BE INSPECTED AND ANY SEDIMENT DEPOSITED ON THESE ROADS SHALL BE FULLY REMOVED.  Cleaning Vehicles: PLACED AS SHOWN ON PLAN (DIRT AND MUD TO BE BRUSHED OFF VEHICLES OR SCRAPPED)
20. Other: Street Cleaning: AS REQUIRED	
Waste Requirement: Litter and waste must be contained on site before disposal in a responsible manner. Waste generation must be minimised.	
21. Movement of Soil: Off site/ On site/ N/A Contaminant Status:	23. Waste Storage and Disposal: ALL WASTE TO BE STORED IN CONTAINERS AND REMOVED FROM SITE DAILY
22. Waste Minimisation Methods: ALL WASTE INCLUDING CONTRACTOR LUNCH WASTE TO BE REMOVED FROM SITE DAILY OR STORED IN APPROPRIATE WASTE STORAGE BINS TO BE EMPTIED AS REQUIRED	24. Other:

SITE EMP A1 PLAN (1) - TYPES OF ENVIRONMENTAL PROTECTION MEASURES  
 40-44 LONGWARRY -DROUIN ROAD , LONGWARRY - SUBDIVISION



25. Storage: NO CHEMICALS STORED ON SITE	27. Refuelling Procedure: REFUELLING TO TAKE PLACE AWAY FROM DRAINAGE LINES	Significant Flora/Fauna Risk: Significant/Med/Low Requirement: All significant flora and fauna on and adjacent to the site must be protected. 29. Yes/No. Details: N/A	Archaeological/Heritage N/A 30. Yes/No. Details: N/A	Other Site Specific Issues 31.	32.
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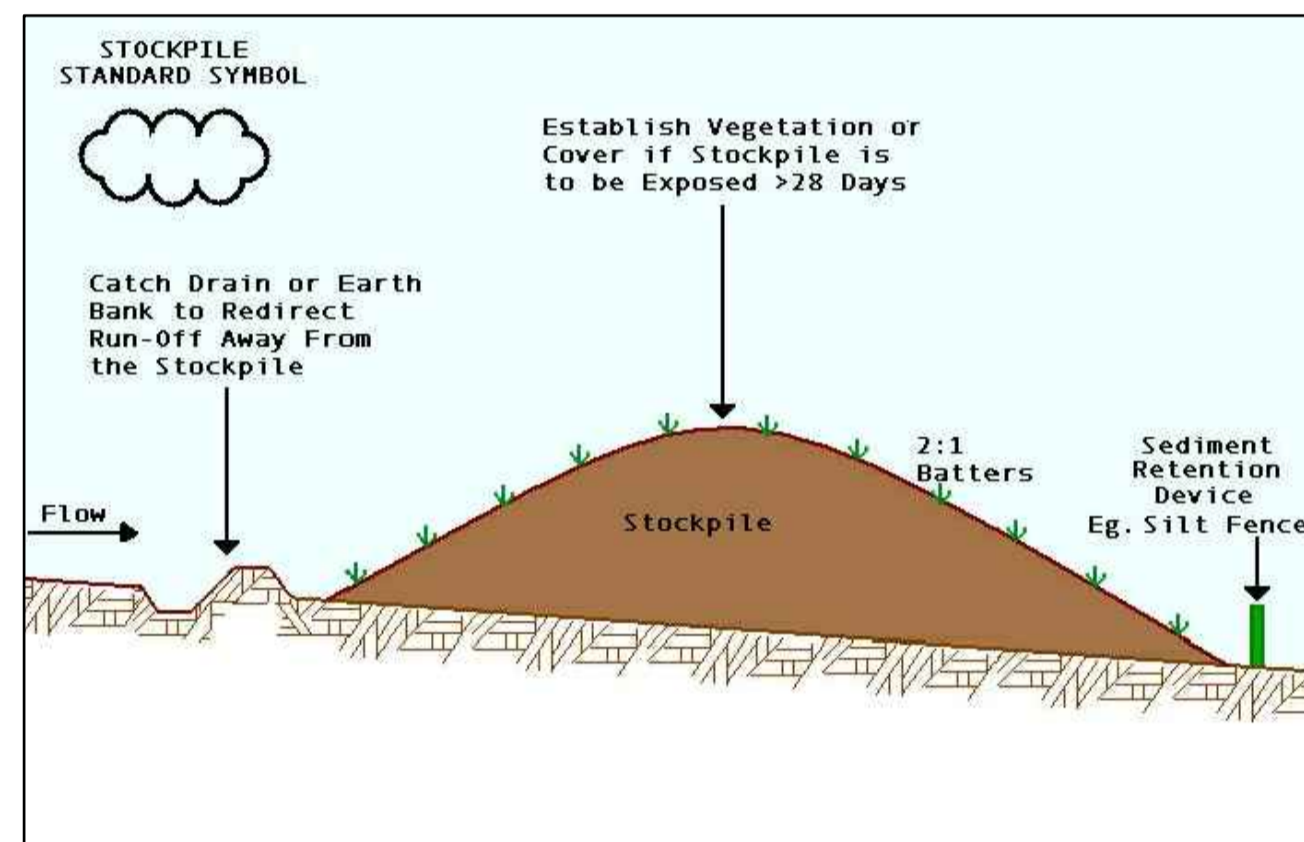
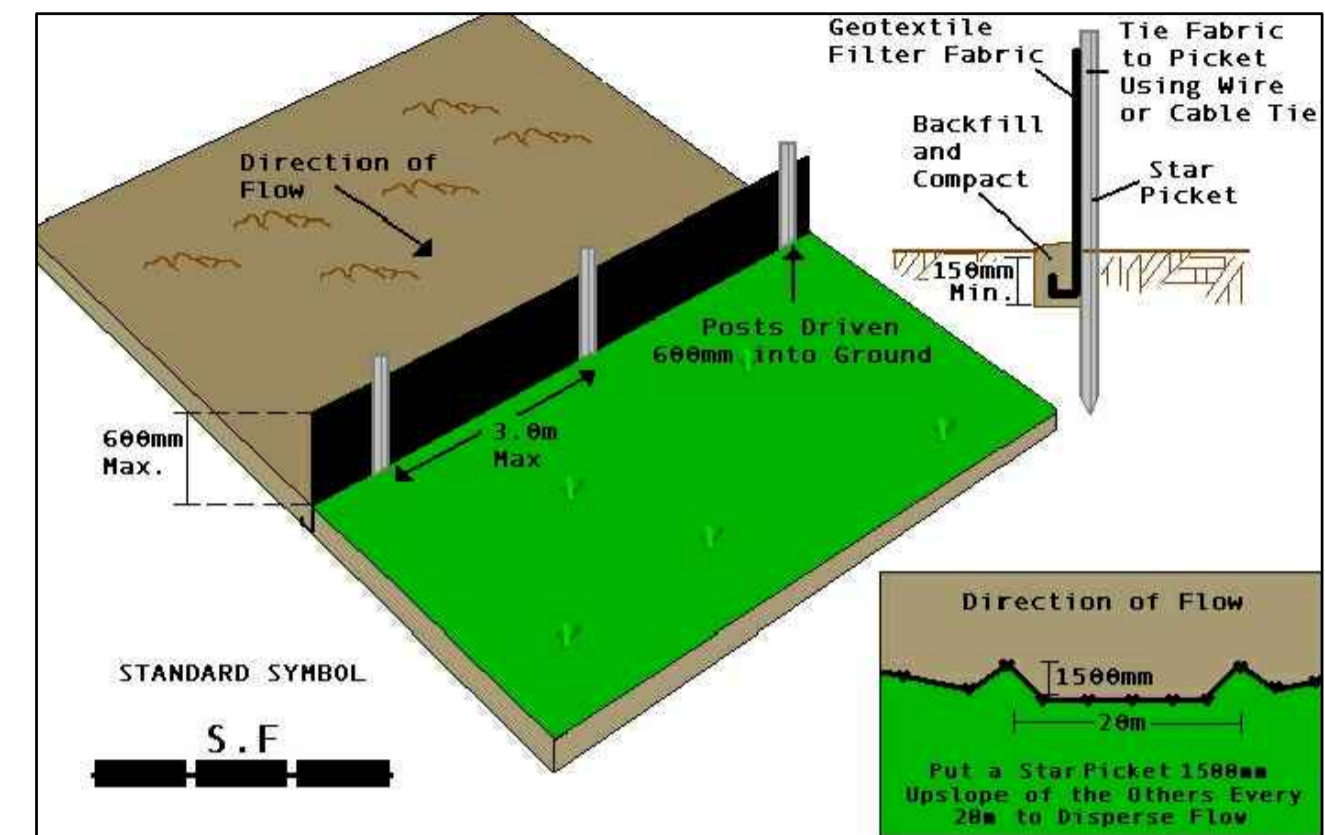
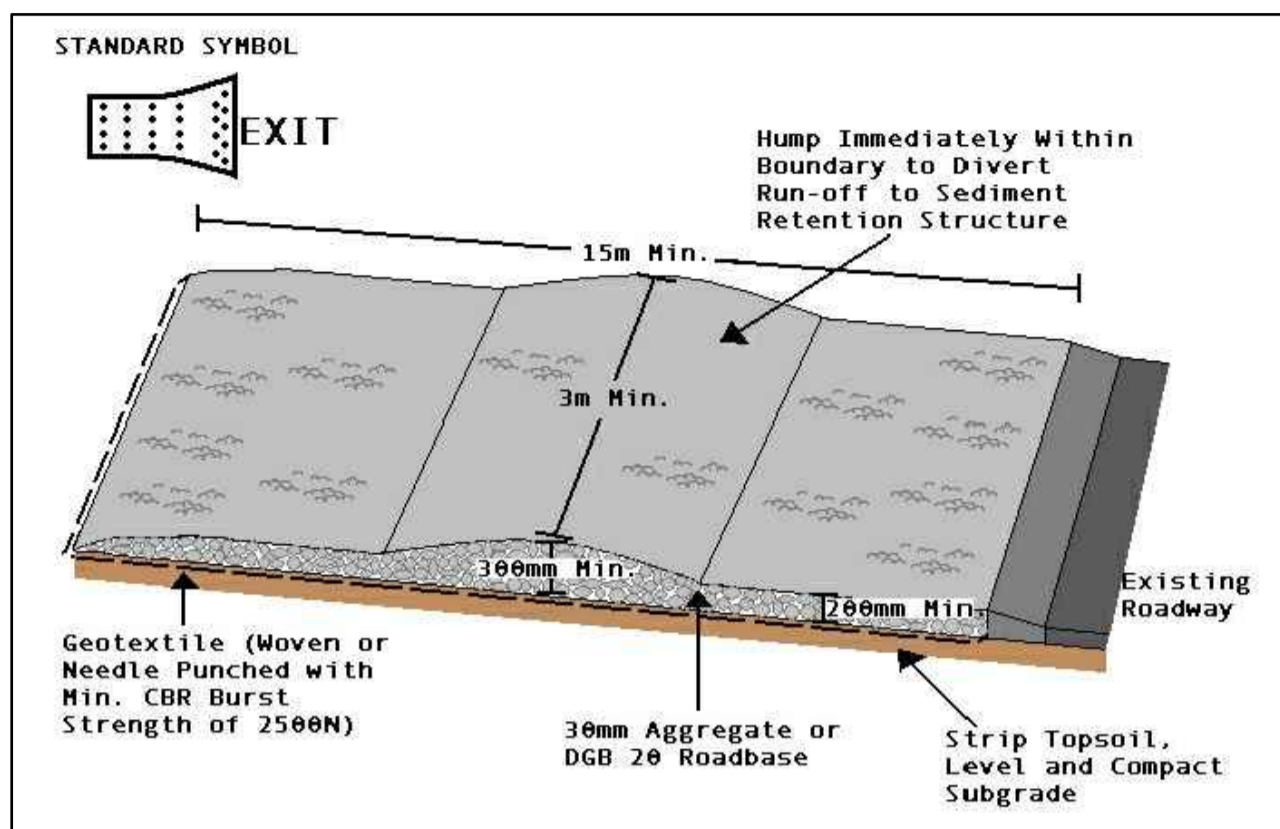


I have read this Site Environmental Management Plan and agree to undertake works and ensure that subcontractors undertake works in accordance with this plan.		Developer	Consultant Craig Civil Design	Contractor Daniello Constructions	Craig Civil Design					
DATE	REV	AMENDMENT	LEGEND	DESIGNED	VN	SCALE	AS SHOWN	 CIVIL ENGINEERING CONSULTANTS & PROJECT MANAGERS A.C.N. 159 212 245 P.O. BOX 1207, NARRE WARREN 3805 PHONE: 5995 4388 mail@craigcivil.com.au FAX: 5995 5330	BAW BAW SHIRE COUNCIL SUBDIVISION 40-44 DROUIN ROAD LONGWARRY, VICTORIA SEMP, SHEET 1 OF 2	DRAWING NO. - CCD18072-13
20.05.2019	C	AMENDED DRAWING	EXISTING KERB AND CHANNEL	DATE	MAR 2019					SHEET - 13 OF 14
24.05.2019	D	INCLUDED LIGHTING DETAILS	PROPOSED KERB AND CHANNEL	CHECKED	KP	APPROVED	SC			REVISION -G3
03.06.2019	E	AMENDED DRAWING	EXISTING DRAINS AND PITS	DATE	MAR 2019	DATE	MAR 2019			CCD REF. NO. - 18072
02.07.2019	F	AMENDED AS PER COUNCIL COMMENTS	PROPOSED DRAINS AND PITS	DATUM	AHD	MELWAYS REFERENCE		A1		
22.01.2020	G2	AMENDED AS PER COUNCIL COMMENTS	PROPOSED PROPERTY INLET	THIS DOCUMENT/DRAWING IS PROTECTED BY FEDERAL COPYRIGHT LAW. COPYING IN ANY SHAPE OR FORM, WHOLE OR PART WITHOUT THE WRITTEN AUTHORISATION OF CRAIG CIVIL DESIGN PTY. LTD. IS STRICTLY PROHIBITED. CIVIL PROCEEDINGS CLAIMING DAMAGES OR OTHER REMEDIES MAY BE BROUGHT AGAINST PERSONS FOUND COPYING THIS DOCUMENT.				Dwg. Location: Z:\CRAIG CIVIL DESIGN\CURRENT PROJECTS\2018\18072 - 40 - 44 Drouin Road, Longwarry\Drawings\CCD Design\18072 - Rev6.dwg; Editor: Vasanthy		

RISK ASSESSMENT CHECKLIST

SITE EMP A1 PLAN (2) – RISK ASSESSMENT AND DESIGNS OF ENVIRONMENTAL PROTECTION MEASURES  
40-44 LONGWARRY –DROUIN ROAD , LONGWARRY – SUBDIVISION

Environmental protection measures shall be constructed in accordance with the following designs:



<b>Noise</b>		<b>Likelihood</b> CERTAIN
<b>Issues:</b> - Nature of noise generating works: EXCAVATION AND COMPACTION WORKS - Potential noise receptors: ADJOINING PROPERTY OWNERS - Proximity of works to noise receptors: (0-200m)		<b>Consequence</b> MODERATE
		<b>Overall Risk</b> LOW
<b>Dust</b>		<b>Likelihood</b> LIKELY
<b>Issues:</b> - Dust Sources: EARTH WORKS - Potential dust receptors: ADJOINING PROPERTIES - Proximity of works to dust receptors: GENERALLY >35m CLOSER WHEN MATCHING TO EXIST ROADS - Extent of exposed earth and duration of time exposed: ROAD AREA < 4 WEEKS - Wind conditions: AREA IS RELATIVELY PROTECTED - Construction to occur during dryer months, - Mechanical application of dust supression (water) to be applied as necessary		<b>Consequence</b> MODERATE
		<b>Overall Risk</b> MEDIUM
<b>Erosion and Sediment</b>		<b>Likelihood</b> LIKELY
<b>Issues:</b> - Erosion and sediment sources: AREAS OF EXPOSED EARTH - Potential erosion and sediment receptors: ADJOINING WATER COURSES - Proximity of works to erosion and sediment receptors: (0-100m) - Extent of exposed earth and duration of time exposed: EXISTING SURFACE < 4 WEEKS - Soil type and erosivity: MODERATE EROSION - Slope: MEDIUM GRADE - Site drainage regime: OVERLAND FLOWS FROM SITE - Rainfall: AVERAGE - Vehicle movements on and off site: ELMSLIE DRIVE		<b>Consequence</b> MODERATE
		<b>Overall Risk</b> MEDIUM
<b>Waste</b>		<b>Likelihood</b> UNLIKELY
<b>Issues:</b> - Nature of waste to be generated: LUNCH, VARIOUS PACKING MATERIALS, ETCETERA - Presence of waste on site prior to work commencement: NIL - Quantity of waste anticipated: MINIMAL - Potential waste receptors: ADJOINING PROPERTIES - Proximity to waste receptors: < 100m		<b>Consequence</b> MINOR
		<b>Overall Risk</b> LOW
<b>Chemicals</b>		<b>Likelihood</b> UNLIKELY
<b>Issues:</b> - Types of chemicals (inc. fuels) to be stored/used on site: NONE - Quantities of chemicals (inc. fuels) to be used on site: MINIMAL - Potential chemical receptors: NIL - Proximity to chemical receptors: <100m		<b>Consequence</b> MINOR
		<b>Overall Risk</b> LOW
<b>Flora/Fauna</b>		<b>Likelihood</b> RARE
<b>Issues:</b> - Types of flora/fauna: - Vulnerability of flora/fauna: LOW - Proximity of works to flora/fauna: < 10m - Work activities which may threaten flora/fauna: EARTHWORKS AREA - Potential impacts on flora/fauna: MINOR		<b>Consequence</b> MINOR
		<b>Overall Risk</b> LOW
<b>Archaeological/Heritage</b>		<b>Likelihood</b> RARE
<b>Issues:</b> - Traditional land owners consulted? : Yes/No (N/A) - Survey or assessment conducted?: (Yes)No - Probability of encountering archaeological/heritage items during works: UNLIKELY - Types of archaeological/heritage items on site: NIL - Proximity of archaeological/heritage items to works: NIL - Work activities which may threaten archaeological/heritage items: NIL - Potential impacts on archaeological/heritage items: NIL		<b>Consequence</b> MINOR
		<b>Overall Risk</b> LOW

Issues: N/A

-  
-  
-  
-

Likelihood

-  
-  
-  
-

Issues: N/A

-  
-  
-  
-

Consequence

-  
-  
-  
-

Overall Risk

-  
-  
-  
-

Likelihood

-  
-  
-  
-



**FINAL**  
ISSUED FOR CONSTRUCTION

DATE	REV	AMENDMENT	LEGEND	WATER MAINS AND FITTINGS	EX. PROP.	THIS DOCUMENT/DRAWING IS PROTECTED BY FEDERAL COPYRIGHT LAW. COPYING IN ANY SHAPE OR FORM, WHOLE OR PART WITHOUT THE WRITTEN AUTHORISATION OF CRAIG CIVIL DESIGN PTY. LTD. IS STRICTLY PROHIBITED. CIVIL PROCEEDINGS CLAIMING DAMAGES OR OTHER REMEDIES MAY BE BROUGHT AGAINST PERSONS FOUND COPYING THIS DOCUMENT.	DESIGNED	VN	SCALE	AS SHOWN	<p>CIVIL ENGINEERING CONSULTANTS &amp; PROJECT MANAGERS A.C.N. 159 212 245 P.O. BOX 1207, NARRE WARREN 3805 mail@craigcivil.com.au</p>	<p>BAW BAW SHIRE COUNCIL SUBDIVISION 40-44 DROUIN ROAD LONGWARRY, VICTORIA SEMP, SHEET 2 OF 2</p>		DRAWING NO. - CCD18072-14
20.05.2019	C	AMENDED DRAWING	EXISTING KERB AND CHANNEL	SEWER MAINS AND ENTITIES	EX. PROP.	DATE	MAR 2019						SHEET - 14 OF 14	
24.05.2019	D	INCLUDED LIGHTING DETAILS	PROPOSED KERB AND CHANNEL	GAS MAINS AND PITS	EX. PROP.	CHECKED	KP	APPROVED	SC				REVISION -G3	
03.06.2019	E	AMENDED DRAWING	EXISTING DRAINS AND PITS	TELECOM CABLES AND PITS	EX. PROP.	DATE	MAR 2019	DATE	MAR 2019				CCD REF. NO. - 18072	A1
02.07.2019	F	AMENDED AS PER COUNCIL COMMENTS	PROPOSED DRAINS AND PITS	ELEC. CABLES AND PITS	EX. PROP.	DATUM	AHD	MELWAYS REFERENCE						
22.01.2020	G2	AMENDED AS PER COUNCIL COMMENTS	PROPOSED PROPERTY INLET											
14.02.2020	G3	AMENDED SEMP PLAN												

Dwg. Location: Z:\CRAIG CIVIL DESIGN\CURRENT PROJECTS\2018\18072 - 40 - 44 Drouin Road, Longwarry\Drawings\CCD Design\18072 - Rev5.dwg; Editor: Vasant