





# Blessington Car Park Drainage Summary

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## Table of Contents

1.	Lackan .....	1
2.	Baltyboys (Sheet 1) .....	2
3.	Baltyboys (Sheet 17) .....	3
4.	Valleymount .....	4
5.	Russeltown .....	5
6.	Blessington Greenway & Car Park Summary .....	7
	Appendix A .....	8
A.1	Appendix A1 - Lackan Drainage Layout Drawing .....	8
A.2	Appendix A2 - Baltyboys (Sheet 1) Drainage Layout Drawing .....	9
A.3	Appendix A3 - Baltyboys (Sheet 17) Drainage Layout Drawing .....	10
A.4	Appendix A4 - Valleymount Drainage Layout Drawing .....	11
A.5	Appendix A4 – Russeltown Drainage Layout Drawing .....	12

## Figures

Figure 1 – Concept Lackan Pipe Network Details .....	1
Figure 2 – Concept Baltyboys (Sheet 1) Pipe Network Details .....	2
Figure 3 – Concept Baltyboys (Sheet 17) Pipe Network Details .....	3
Figure 4 – Concept Valleymount Pipe Network Details .....	4
Figure 5 - Concept Russeltown Pipe Network Details .....	6

# 1. Lackan

The proposed car park located in the Lackan area requires a surface water drainage collection method of kerb and gullies. There is insufficient contour data to determine if a filter drain is required on the south side of the car park, and so if there is a need in the future, a separate surface water collection system will be developed. As shown in drawing 60617025\_SHT\_DD\_BLGWY\_501, the kerb and gullies collecting the surface water connect into the main pipe network running under the car park, which in turn leads to the outfall pipe. The maximum gully spacing in this car park has been calculated to be 27.5m. However, this value has been extrapolated from the surface data available on the west side of this car park due to limitations in the surface data. The design has been developed to minimise the depth of construction where possible, and utilise available space within the carpark. A flow control device is to be located at the manhole upstream of the outlet pipe. This would limit the discharge to the greenfield runoff rate of 2.58 l/s and ensure there is appropriate attenuation of runoff from the proposed impermeable carpark surfaces.

This pipe network is sufficient to provide adequate storage in the network to prevent storm water flooding in the critical 1, 5 and 30 year storm events.

See Appendix A1 for the plan view of the Lackan drainage layout.

Pipe Number	US/MH Name	Pipe Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Time of Entry (mins)	Base Flow (l/s)	Pipe Rough. (mm)	US/IL (m)	C. Height (mm)	US/CL (m)	Pipe DIA (mm)	Auto Design
2.000	M.H. 1	60.232	0.201	299.7	0.141	4.00		0.600	189.840	225	191.040	225	🚰
2.001	M.H. 2	31.907	0.638	50.0	0.019			0.600	189.639	225	191.040	225	🚰
2.002	M.H. 3	18.197	0.064	284.3	0.000			0.600	185.378	1350	191.040	1350	🚰
2.003	M.H. 4	30.551	0.076	402.0	0.080			0.600	185.314	1350	190.141	1350	🚰
2.004	M.H. 5	22.361	0.050	447.2	0.078			0.600	185.238	1350	190.141	1350	🚰
2.005	M.H. 6	26.577	0.886	30.0	0.000			0.600	185.188	300	187.448	300	🚰

Pipe Number	Rain (mm/hr)	TC (mins)	DS/CL (m)	DS/IL (m)	US C.Depth (m)	DS C.Depth (m)	Σ Imp. Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Pro. Vel (m/s)	Pro. Depth (mm)	Velocity (m/s)	Cap (l/s)	Flow (l/s)	Rain No.
2.000	50.00	5.34	191.040	189.639	0.975	1.176	0.141	0.0	0.0	3.8	0.82	148	0.75	29.8	22.8	1
2.001	50.00	5.63	191.040	189.001	1.176	1.814	0.160	0.0	0.0	4.3	1.70	92	1.85	73.7	25.9	1
2.002	50.00	5.75	190.141	185.314	4.312	3.477	0.160	0.0	0.0	4.3	0.74	81	2.38	3406.7	25.9	1
2.003	50.00	6.01	190.141	185.238	3.477	3.553	0.239	0.0	0.0	6.5	0.73	107	2.00	2862.2	38.9	1
2.004	50.00	6.20	187.448	185.188	3.553	0.910	0.317	0.0	0.0	8.6	0.77	126	1.90	2712.7	51.5	1
2.005	50.00	6.36	186.059	184.302	1.960	1.457	0.317	0.0	0.0	8.6	2.42	103	2.88	203.7	51.5	1

Pipe Number	US/MH Name	US/IL (m)	US/CL (m)	GL 1/3 (m)	GL 2/3 (m)	US D.Depth (m)	US Connection	US Access	US/MH Diam/Len (mm)	x	US/MH Width (mm)
2.000	M.H. 1	189.840	191.040			0.975	Open Manhole	Required	1200		
2.001	M.H. 2	189.639	191.040			1.176	Open Manhole	Required	1200		
2.002	M.H. 3	185.378	191.040			4.312	Open Manhole	Required	2400		
2.003	M.H. 4	185.314	190.141			3.477	Open Manhole	Required	2400		
2.004	M.H. 5	185.238	190.141			3.553	Open Manhole	Required	2400		
2.005	M.H. 6	185.188	187.448			1.960	Open Manhole	Required	2400		

Pipe Number	DS/MH Name	DS/CL (m)	DS/IL (m)	Pipe DIA (mm)	Pipe Length (m)	Fall (m)	DS Connection	DS Access	DS/MH Diam/Len (mm)	x	DS/MH Width (mm)
2.000	M.H. 2	191.040	189.639	225	60.232	0.201	Open Manhole	Required	1200		
2.001	M.H. 3	191.040	189.001	225	31.907	0.638	Open Manhole	Required	2400		
2.002	M.H. 4	190.141	185.314	1350	18.197	0.064	Open Manhole	Required	2400		
2.003	M.H. 5	190.141	185.238	1350	30.551	0.076	Open Manhole	Required	2400		
2.004	M.H. 6	187.448	185.188	1350	22.361	0.050	Open Manhole	Required	2400		
2.005	Outfall 1	186.059	184.302	300	26.577	0.886	Open Manhole	No Entry	0		

Figure 1 – Concept Lackan Pipe Network Details

## 2. Baltyboys (Sheet 1)

The proposed car park present in the northern part of the Baltyboys area would require a surface water drainage collection method of kerb and gullies, and filter drains. As shown in drawing 60617025\_SHT\_DD\_BLGWY\_502, there would be a main pipe running under both sections of the car park. For the impermeable areas of the car park, kerb and gullies are required on the western boundaries of the car park, as this is where the gradient of the surface falls towards. A flow control device would be required upstream of a separate outlet pipe, to limit the flow to the greenfield runoff rate of 1.4 l/s. In addition to this, there would be a filter drain collecting cut slope runoff areas on the eastern boundaries of the car park sections. This would then be discharged to the lake via a separate outlet pipe.

This pipe network is sufficient to provide adequate storage in the network to prevent storm water flooding in the critical 1, 5 and 30 year storm events.

See Appendix A2 for the plan view of the Baltyboys (Sheet 1) drainage layout.

Pipe Number	US/MH Name	Pipe Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Time of Entry (mins)	Base Flow (l/s)	Pipe Rough. (mm)	US/IL (m)	C. Height (mm)	US/CL (m)	Pipe DIA (mm)	Auto Design
1.000	M.H. 1	50.659	1.747	29.0	0.174	4.00		1.500	185.500	300	187.000	300	🚰
1.001	M.H. 2	11.302	0.038	297.4	0.038			1.500	183.753	300	185.283	300	🚰
2.000	M.H. 3	69.259	0.346	200.2	0.207	4.00		1.500	184.800	300	186.324	300	🚰
1.002	M.H. 4	22.000	1.048	21.0	0.000			1.500	183.000	300	186.000	300	🚰
3.000	M.H. 5	14.194	0.083	171.0	0.043	4.00		0.600	183.561	225	184.986	225	🚰
3.001	M.H. 6	43.266	0.216	200.3	0.080			0.600	182.066	1050	184.988	1050	🚰
4.000	M.H. 7	35.182	1.675	21.0	0.033	4.00		0.600	184.598	900	186.098	300	🚰
3.002	M.H. 8	10.343	0.383	27.0	0.000			0.600	181.850	300	184.400	300	🚰

Pipe Number	Rain (mm/hr)	TC (mins)	DS/CL (m)	DS/IL (m)	US C.Depth (m)	DS C.Depth (m)	Σ Imp. Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Pro. Vel (m/s)	Pro. Depth (mm)	Velocity (m/s)	Cap (l/s)	Flow (l/s)	Rain No.
1.000	50.00	4.33	185.283	183.753	1.200	1.230	0.174	0.0	0.0	4.7	1.88	80	2.58	182.4	28.3	1
1.001	50.00	4.56	186.000	183.715	1.230	1.985	0.212	0.0	0.0	5.8	0.84	169	0.80	56.7	34.5	1
2.000	50.00	5.18	186.000	184.454	1.224	1.246	0.207	0.0	0.0	5.6	0.97	148	0.98	69.2	33.6	1
1.002	50.00	5.30	182.572	181.952	2.700	0.320	0.419	0.0	0.0	11.4	2.70	116	3.03	214.4	68.1	1
3.000	50.00	4.24	184.988	183.478	1.200	1.285	0.043	0.0	0.0	1.2	0.76	64	1.00	39.6	7.0	1
3.001	50.00	4.53	184.400	181.850	1.872	1.500	0.123	0.0	0.0	3.3	0.80	71	2.43	2105.3	20.1	1
4.000	50.00	4.17	184.400	182.923	1.200	1.177	0.033	0.0	0.0	0.9	1.42	30	3.45	243.6	5.3	1
3.002	50.00	4.59	182.586	181.467	2.250	0.819	0.156	0.0	0.0	4.2	2.06	69	3.04	214.7	25.4	1

Pipe Number	US/MH Name	US/IL (m)	US/CL (m)	GL 1/3 (m)	GL 2/3 (m)	US D.Depth (m)	US Connection	US Access	US/MH Diam/Len (mm)	x	US/MH Width (mm)
1.000	M.H. 1	185.500	187.000			1.200	Open Manhole	Required	1200		
1.001	M.H. 2	183.753	185.283			1.230	Open Manhole	Required	1200		
2.000	M.H. 3	184.800	186.324			1.224	Open Manhole	Required	1200		
1.002	M.H. 4	183.000	186.000			2.700	Open Manhole	Required	1200		
3.000	M.H. 5	183.561	184.986			1.200	Open Manhole	Required	1200		
3.001	M.H. 6	182.066	184.988			1.872	Open Manhole	Required	2100		
4.000	M.H. 7	184.598	186.098			0.600	Open Manhole	Required	1200		
3.002	M.H. 8	181.850	184.400			2.250	Open Manhole	Required	2100		

Pipe Number	DS/MH Name	DS/CL (m)	DS/IL (m)	Pipe DIA (mm)	Pipe Length (m)	Fall (m)	DS Connection	DS Access	DS/MH Diam/Len (mm)	x	DS/MH Width (mm)
1.000	M.H. 2	185.283	183.753	300	50.659	1.747	Open Manhole	Required	1200		
1.001	M.H. 4	186.000	183.715	300	11.302	0.038	Open Manhole	Required	1200		
2.000	M.H. 4	186.000	184.454	300	69.259	0.346	Open Manhole	Required	1200		
1.002	Outfall 1	182.572	181.952	300	22.000	1.048	Open Manhole	No Entry	0		
3.000	M.H. 6	184.988	183.478	225	14.194	0.083	Open Manhole	Required	2100		
3.001	M.H. 8	184.400	181.850	1050	43.266	0.216	Open Manhole	Required	2100		
4.000	M.H. 8	184.400	182.923	300	35.182	1.675	Open Manhole	Required	2100		
3.002	Outfall 2	182.586	181.467	300	10.343	0.383	Open Manhole	No Entry	0		

Figure 2 – Concept Baltyboys (Sheet 1) Pipe Network Details



### 3. Baltyboys (Sheet 17)

The proposed car park in the southern part of the Baltyboys area would require the use of kerb and gullies to collect the surface water. Pipes 1.001 and 1.002 both take in impermeable surface water runoff and verge runoff. As illustrated in drawing 60617025\_SHT\_DD\_BLGWY\_503, the outfall pipe then transfers this water into the lake at a controlled greenfield runoff rate of 4.55 l/s. Therefore, a flow control device would be required upstream of the outlet pipe. A high-level calculation of the gully spacing has given a value of 29.12m and 26.3m, as noted in the drawing. In total, there is proposed to be 3 gullies in this catchment area. This pipe network is sufficient to provide adequate storage in the network to prevent storm water flooding in the critical 1, 5 and 30 year storm events.

See Appendix A3 for the plan view of the Baltyboys (Sheet 17) drainage layout.

Pipe Number	US/MH Name	Pipe Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Time of Entry (mins)	Base Flow (l/s)	Pipe Rough. (mm)	US/IL (m)	C. Height (mm)	US/CL (m)	Pipe DIA (mm)	Auto Design
1.000	M.H. 1	13.720	1.372	10.0	0.024	4.00		0.600	185.704	225	187.204	225	⊕
1.001	M.H. 2	64.025	0.233	274.8	0.133			0.600	183.400	900	186.434	900	⊕
1.002	M.H. 3	44.531	0.891	50.0	0.000			0.600	183.167	225	184.983	225	⊕

Pipe Number	Rain (mm/hr)	TC (mins)	DS/CL (m)	DS/IL (m)	US C.Depth (m)	DS C.Depth (m)	Σ Imp. Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Pro. Vel (m/s)	Pro. Depth (mm)	Velocity (m/s)	Cap (l/s)	Flow (l/s)	Rain No.
1.000	50.00	4.05	186.434	184.332	1.275	1.877	0.024	0.0	0.0	0.6	1.75	24	4.16	165.5	3.9	1
1.001	50.00	4.62	184.983	183.167	2.134	0.916	0.157	0.0	0.0	4.2	0.78	89	1.89	1199.4	25.5	1
1.002	50.00	5.02	183.099	182.276	1.591	0.598	0.157	0.0	0.0	4.2	1.69	91	1.85	73.7	25.5	1

Pipe Number	US/MH Name	US/IL (m)	US/CL (m)	GL 1/3 (m)	GL 2/3 (m)	US D.Depth (m)	US Connection	US Access	US/MH Diam/Len (mm)	x	US/MH Width (mm)
1.000	M.H. 1	185.704	187.204			1.275	Open Manhole	Required	1200		
1.001	M.H. 2	183.400	186.434			2.134	Open Manhole	Required	1800		
1.002	M.H. 3	183.167	184.983			1.591	Open Manhole	Required	1800		

Pipe Number	DS/MH Name	DS/CL (m)	DS/IL (m)	Pipe DIA (mm)	Pipe Length (m)	Fall (m)	DS Connection	DS Access	DS/MH Diam/Len (mm)	x	DS/MH Width (mm)
1.000	M.H. 2	186.434	184.332	225	13.720	1.372	Open Manhole	Required	1800		
1.001	M.H. 3	184.983	183.167	900	64.025	0.233	Open Manhole	Required	1800		
1.002	Outfall 1	183.099	182.276	225	44.531	0.891	Open Manhole	No Entry	0		

Figure 3 – Concept Baltyboys (Sheet 17) Pipe Network Details



# 4. Vallemount

The proposed car park in the Vallemount area would require a surface water drainage collection method of kerb and gullies. The kerb and gullies would be located along the western and northern part of the car park. The proposed drainage design, including gully and carrier drain outline, is shown on drawing 60617025\_SHT\_DD\_BLGWY\_504. A flow control mechanism (Hydro-brake) is necessary upstream of the outfall pipe in the network, to limit the discharge to a greenfield runoff rate of 0.84 l/s.

In addition to this, due to a significant area of runoff coming from the Southeast area, a filter drain is necessary on the southern edge of the site, collecting runoff falling towards the carpark from the surrounding area. This land drain is kept separate until close to the outfall point which is downstream of the flow control mechanism.

See Appendix A4 for the plan view of the Vallemount drainage layout.

Pipe Number	US/MH Name	Pipe Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Time of Entry (mins)	Base Flow (l/s)	Pipe Rough. (mm)	US/IL (m)	C. Height (mm)	US/CL (m)	Pipe DIA (mm)	Auto Design
2.000	M.H. 1	14.337	0.287	50.0	0.010	4.00		0.600	182.880	900	184.380	225	🚰
3.000	M.H. 2	32.461	0.271	119.8	0.046	4.00		0.600	183.042	300	184.542	300	🚰
2.001	M.H. 3	19.914	0.148	134.6	0.013			0.600	180.687	1050	184.284	1050	🚰
2.002	M.H. 4	5.195	0.024	216.5	0.000			0.600	180.539	375	182.779	375	🚰
4.000	M.H. 5	33.229	0.323	102.9	0.054	4.00		0.600	181.900	300	183.400	300	🚰
4.001	M.H. 6	5.350	0.052	102.9	0.000			0.600	181.577	300	184.882	300	🚰
4.002	M.H. 7	39.761	0.386	103.0	0.000			0.600	181.525	300	184.682	300	🚰

Pipe Number	Rain (mm/hr)	TC (mins)	DS/CL (m)	DS/IL (m)	US C.Depth (m)	DS C.Depth (m)	Σ Imp. Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Pro. Vel (m/s)	Pro. Depth (mm)	Velocity (m/s)	Cap (l/s)	Flow (l/s)	Rain No.
2.000	50.00	4.13	184.284	182.593	1.275	1.466	0.010	0.0	0.0	0.3	0.76	23	1.86	73.8	1.6	1
3.000	50.00	4.38	184.284	182.771	1.200	1.213	0.046	0.0	0.0	1.3	0.85	55	1.44	101.5	7.5	1
2.001	50.00	4.49	182.779	180.539	2.547	1.190	0.069	0.0	0.0	1.9	0.77	48	2.97	2571.2	11.2	1
2.002	50.00	4.56	182.833	180.515	1.865	1.943	0.069	0.0	0.0	1.9	0.75	72	1.23	135.6	11.2	1
4.000	50.00	4.36	184.882	181.577	1.200	3.005	0.054	0.0	0.0	1.5	0.94	57	1.55	109.6	8.8	1
4.001	50.00	4.41	184.682	181.525	3.005	2.857	0.054	0.0	0.0	1.5	0.94	57	1.55	109.6	8.8	1
4.002	50.00	4.84	182.833	181.139	2.857	1.394	0.054	0.0	0.0	1.5	0.94	57	1.55	109.5	8.8	1

Pipe Number	US/MH Name	US/IL (m)	US/CL (m)	GL 1/3 (m)	GL 2/3 (m)	US D.Depth (m)	US Connection	US Access	US/MH Diam/Len (mm)	x	US/MH Width (mm)
2.000	M.H. 1	182.880	184.380			0.600	Open Manhole	Required	1200		
3.000	M.H. 2	183.042	184.542			1.200	Open Manhole	Required	1200		
2.001	M.H. 3	180.687	184.284			2.547	Open Manhole	Required	2100		
2.002	M.H. 4	180.539	182.779			1.865	Open Manhole	Required	2100		
4.000	M.H. 5	181.900	183.400			1.200	Open Manhole	Required	1200		
4.001	M.H. 6	181.577	184.882			3.005	Open Manhole	Required	1200		
4.002	M.H. 7	181.525	184.682			2.857	Open Manhole	Required	1200		

Pipe Number	DS/MH Name	DS/CL (m)	DS/IL (m)	Pipe DIA (mm)	Pipe Length (m)	Fall (m)	DS Connection	DS Access	DS/MH Diam/Len (mm)	x	DS/MH Width (mm)
2.000	M.H. 3	184.284	182.593	225	14.337	0.287	Open Manhole	Required	2100		
3.000	M.H. 3	184.284	182.771	300	32.461	0.271	Open Manhole	Required	2100		
2.001	M.H. 4	182.779	180.539	1050	19.914	0.148	Open Manhole	Required	2100		
2.002	Outfall 1	182.833	180.515	375	5.195	0.024	Open Manhole	No Entry	0		
4.000	M.H. 6	184.882	181.577	300	33.229	0.323	Open Manhole	Required	1200		
4.001	M.H. 7	184.682	181.525	300	5.350	0.052	Open Manhole	Required	1200		
4.002	Outfall 2	182.833	181.139	300	39.761	0.386	Open Manhole	No Entry	0		

Figure 4 – Concept Vallemount Pipe Network Details

# 5. Russeltown

The proposed car park in the Russeltown area would require a surface water drainage collection method of kerb and gullies. The kerb and gullies would be situated along the western and northern part of the car park. The proposed drainage design, including gully and carrier drain outline, is shown on drawing 60617025\_SHT\_DD\_BLGWY\_505. A flow control mechanism (Hydro-brake) is necessary upstream of the outfall pipe in the network, to limit the discharge to a greenfield runoff rate of 1.9 l/s.

In addition to this, due to a significant area of runoff coming from the road and surrounding area on both the west and south side area of the car park, a filter drain is necessary on the western and southern edge of the site, which will collect runoff falling towards the carpark from this surrounding area. This land drain is kept separate until close to the outfall point which is downstream of the control mechanism.

See Appendix A5 for the plan view of the Russeltown drainage layout.

Pipe Number	US/MH Name	Pipe Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Time of Entry (mins)	Base Flow (l/s)	Pipe Rough. (mm)	US/IL (m)	C. Height (mm)	US/CL (m)	Pipe DIA (mm)	Auto Design
1.000	1	19.613	0.136	144.2	0.064	4.00		0.600	182.508	900	184.732	900	🚰
1.001	2	90.121	0.300	300.4	0.086			0.600	182.372	900	184.483	900	🚰
1.002	3	41.830	0.150	278.9	0.033			0.600	182.072	900	184.556	900	🚰
2.000	4	15.652	0.144	109.1	0.022	4.00		0.600	182.590	300	184.090	300	🚰
1.003	4	6.637	0.246	27.0	0.000			0.600	181.000	300	184.022	300	🚰
3.000	6	23.775	0.132	180.1	0.044	4.00		0.600	182.596	225	184.021	225	🚰
3.001	7	23.897	0.092	260.0	0.029			0.600	182.464	225	184.198	225	🚰
3.002	8	25.712	0.099	260.0	0.000			0.600	182.372	225	185.000	225	🚰
3.003	9	78.708	0.262	300.0	0.058			0.600	182.198	300	185.000	300	🚰
3.004	10	39.833	0.133	300.0	0.028			0.600	181.936	300	185.295	300	🚰
4.000	11	16.422	0.328	50.0	0.011	4.00		0.600	183.391	225	184.974	225	🚰
3.005	11	14.565	0.520	28.0	0.000			0.600	181.000	300	184.488	300	🚰
1.004	13	9.281	0.079	116.8	0.000			0.600	180.480	300	182.000	300	🚰

Pipe Number	Rain (mm/hr)	TC (mins)	DS/CL (m)	DS/IL (m)	US C.Depth (m)	DS C.Depth (m)	Σ Imp. Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Pro. Vel (m/s)	Pro. Depth (mm)	Velocity (m/s)	Cap (l/s)	Flow (l/s)	Rain No.
1.000	50.00	4.13	184.483	182.372	1.324	1.211	0.064	0.0	0.0	1.7	0.76	50	2.61	1658.7	10.4	1
1.001	50.00	4.96	184.556	182.072	1.211	1.584	0.150	0.0	0.0	4.1	0.75	89	1.80	1146.7	24.3	1
1.002	50.00	5.33	184.022	181.922	1.584	1.200	0.183	0.0	0.0	5.0	0.82	96	1.87	1190.5	29.7	1
2.000	50.00	4.17	184.022	182.446	1.200	1.276	0.022	0.0	0.0	0.6	0.71	38	1.51	106.4	3.6	1
1.003	50.00	5.37	182.000	180.754	2.722	0.946	0.205	0.0	0.0	5.6	2.23	79	3.04	214.7	33.3	1
3.000	50.00	4.41	184.198	182.464	1.200	1.509	0.044	0.0	0.0	1.2	0.75	66	0.97	38.6	7.2	1
3.001	50.00	4.90	185.000	182.372	1.509	2.403	0.073	0.0	0.0	2.0	0.75	95	0.81	32.1	11.9	1
3.002	50.00	5.43	185.000	182.273	2.403	2.502	0.073	0.0	0.0	2.0	0.75	95	0.81	32.1	11.9	1
3.003	50.00	6.89	185.295	181.936	2.502	3.059	0.131	0.0	0.0	3.6	0.81	119	0.90	63.8	21.3	1
3.004	50.00	7.62	184.488	181.803	3.059	2.385	0.159	0.0	0.0	4.3	0.86	133	0.90	63.8	25.8	1
4.000	50.00	4.15	184.488	183.063	1.358	1.200	0.011	0.0	0.0	0.3	0.77	24	1.85	73.7	1.7	1
3.005	50.00	7.70	182.000	180.480	3.188	1.220	0.170	0.0	0.0	4.6	2.08	73	2.98	210.8	27.6	1
1.004	50.00	7.81	182.000	180.400	1.220	1.300	0.375	0.0	0.0	10.2	1.51	166	1.45	102.8	60.9	1

Pipe Number	US/MH Name	US/IL (m)	US/CL (m)	GL 1/3 (m)	GL 2/3 (m)	US D.Depth (m)	US Connection	US Access	US/MH Diam/Len (mm)	x	US/MH Width (mm)
1.000	1	182.508	184.732			1.324	Open Manhole	Required	1800		
1.001	2	182.372	184.483			1.211	Open Manhole	Required	1800		
1.002	3	182.072	184.556			1.584	Open Manhole	Required	1800		
2.000	4	182.590	184.090			1.200	Open Manhole	Required	1200		
1.003	4	181.000	184.022			2.722	Open Manhole	Required	1800		
3.000	6	182.596	184.021			1.200	Open Manhole	Required	1200		
3.001	7	182.464	184.198			1.509	Open Manhole	Required	1200		
3.002	8	182.372	185.000			2.403	Open Manhole	Required	1200		
3.003	9	182.198	185.000			2.502	Open Manhole	Required	1200		
3.004	10	181.936	185.295			3.059	Open Manhole	Required	1200		
4.000	11	183.391	184.974			1.358	Open Manhole	Required	1200		
3.005	11	181.000	184.488			3.188	Open Manhole	Required	1200		
1.004	13	180.480	182.000			1.220	Open Manhole	Required	1200		

Blessington Car Park Drainage Summary

Pipe Number	DS/MH Name	DS/CL (m)	DS/IL (m)	Pipe DIA (mm)	Pipe Length (m)	Fall (m)	DS Connection	DS Access	DS/MH Diam/Len (mm)	x	DS/MH Width (mm)
1.000	2	184.483	182.372	900	19.613	0.136	Open Manhole	Required	1800		
1.001	3	184.556	182.072	900	90.121	0.300	Open Manhole	Required	1800		
1.002	4	184.022	181.922	900	41.830	0.150	Open Manhole	Required	1800		
2.000	4	184.022	182.446	300	15.652	0.144	Open Manhole	Required	1800		
1.003	13	182.000	180.754	300	6.637	0.246	Open Manhole	Required	1200		
3.000	7	184.198	182.464	225	23.775	0.132	Open Manhole	Required	1200		
3.001	8	185.000	182.372	225	23.897	0.092	Open Manhole	Required	1200		
3.002	9	185.000	182.273	225	25.712	0.099	Open Manhole	Required	1200		
3.003	10	185.295	181.936	300	78.708	0.262	Open Manhole	Required	1200		
3.004	11	184.488	181.803	300	39.833	0.133	Open Manhole	Required	1200		
4.000	11	184.488	183.063	225	16.422	0.328	Open Manhole	Required	1200		
3.005	13	182.000	180.480	300	14.565	0.520	Open Manhole	Required	1200		
1.004		182.000	180.400	300	9.281	0.079	Open Manhole	No Entry	0		

Figure 5 - Concept Russeltown Pipe Network Details

## 6. Blessington Greenway & Car Park Summary

In accordance with DN-DNG-03062 Section 9, over the edge drainage is proposed for the greenway, where the runoff is collected in a ditch and then discharged into the lake. Over the edge drainage is recommended for all embankments above 1.5m in height. Careful consideration must be paid to avoid channelized flow down the embankment without sufficient protection. This could occur in locations where:

- Inconsistent rounding of the embankment crest does not allow uniform sheet flow runoff.
- Concentrated flow bypassing terminal gully/outlet or kerb/barrier termination.

If concentrated flow over the embankment is unavoidable, suitable measures to protect the embankment from scour shall be incorporated.

As per DN-DNG-0362 section 9.3, over the edge drainage is not appropriate in areas of the greenway where there may be structures across rivers or junctions.

As per DN-GEO-03047 Section 4.7 'Over the Edge Drainage', the verge on either side of the cycleway must be constructed with a crossfall of no more than 10% so as not to destabilise an errant cyclist. If junctions form part of the design, then other drainage facilities will be designed. Where this occurs, surface drainage shall intercept runoff that may accumulate at these constrained locations, this may include a longitudinal grated or slotted linear drainage channel.

# Appendix A

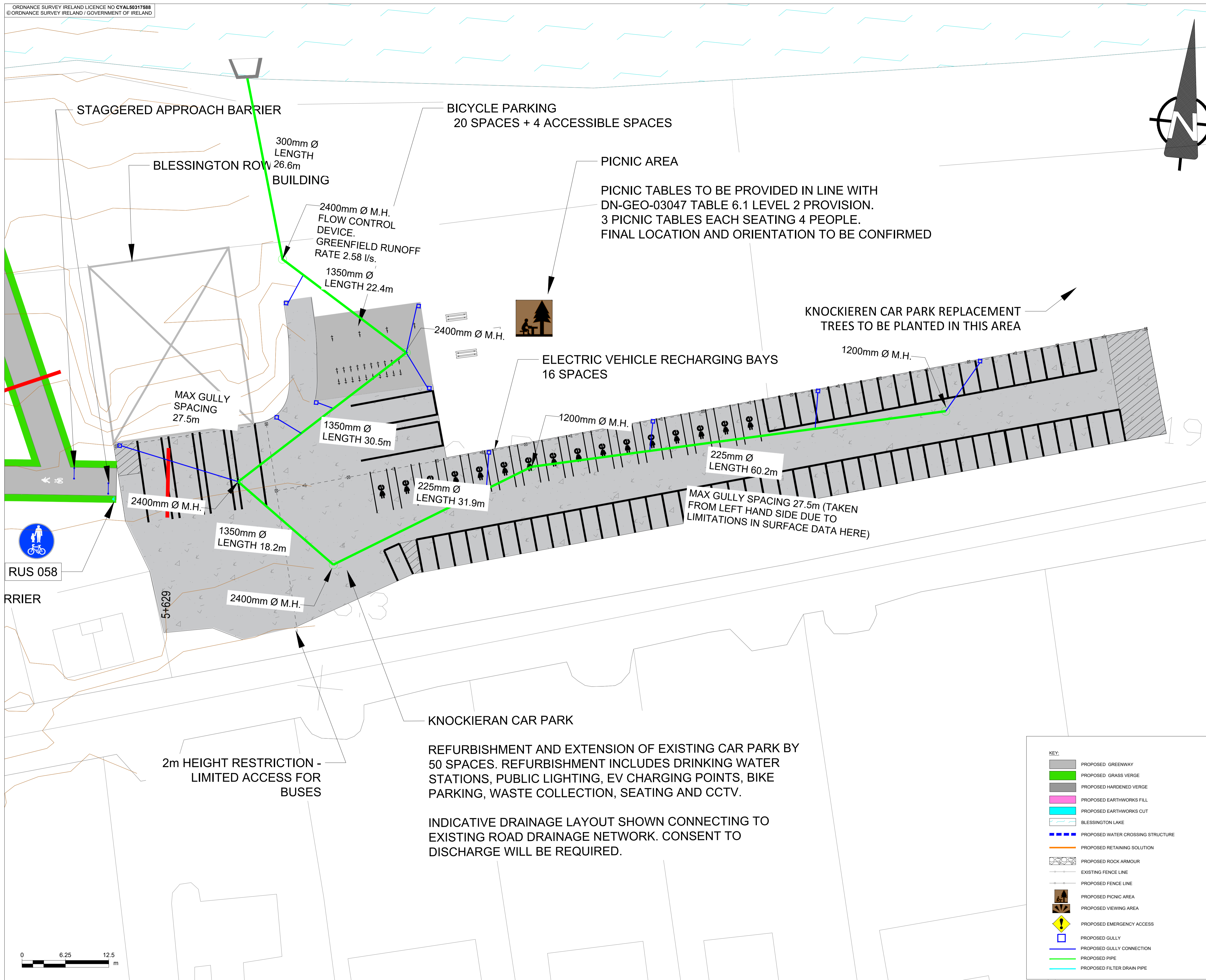
## A.1 Appendix A1 - Lackan Drainage Layout Drawing



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8. eGREENWAY DRAINAGE IS TO BE OVER THE EDGE DRAINAGE

A	DATE	DESCRIPTION
1	14/12/2023	FIRST ISSUE
I/R	DATE	DESCRIPTION

**AECOM DRAFT**



**KEY:**

- PROPOSED GREENWAY
- PROPOSED GRASS VERGE
- PROPOSED HARDENED VERGE
- PROPOSED EARTHWORKS FILL
- PROPOSED EARTHWORKS CUT
- BLESSINGTON LAKE
- PROPOSED WATER CROSSING STRUCTURE
- PROPOSED RETAINING SOLUTION
- PROPOSED ROCK ARMOUR
- EXISTING FENCE LINE
- PROPOSED FENCE LINE
- PROPOSED PICNIC AREA
- PROPOSED VIEWING AREA
- PROPOSED EMERGENCY ACCESS
- PROPOSED GULLY
- PROPOSED GULLY CONNECTION
- PROPOSED PIPE
- PROPOSED FILTER DRAIN PIPE

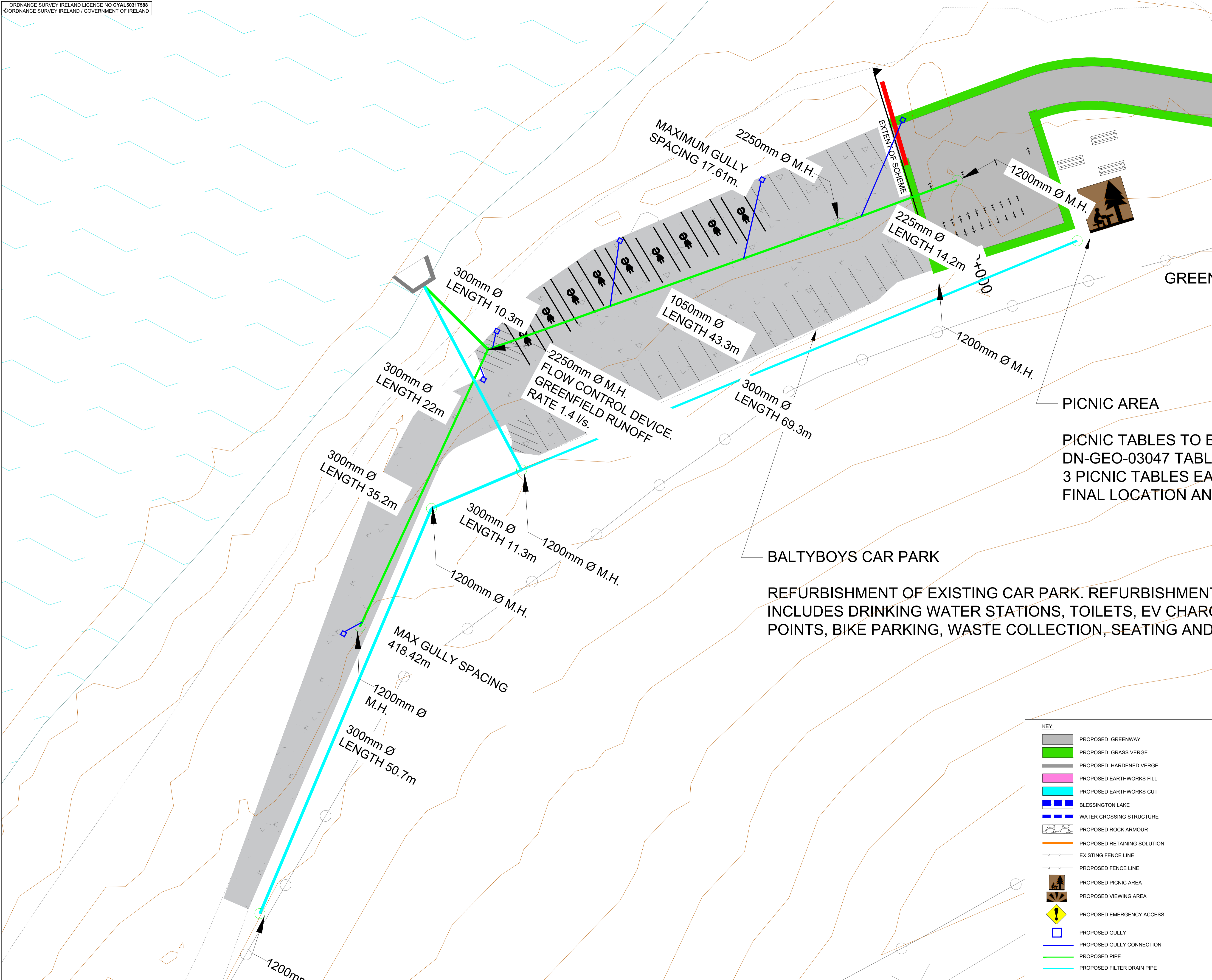
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## **A.2 Appendix A2 - Baltyboys (Sheet 1) Drainage Layout Drawing**



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 Last saved by: FAIRS Last Plotter: 2023-12-19  
 Project Management Initials: Designer: SF Checked: PC Approved: PS ISO A1 594mm x 841mm

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 BLESSINGTON  
 eGREENWAY



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**PROJECT NUMBER**  
 60617025  
**SHEET TITLE**  
 DRAINAGE LAYOUT  
 BALTYBOYS  
 SHEET 1 OF 17  
**SHEET NUMBER**  
 60617025\_SHT\_DD\_BLGWY\_502

**KEY:**

- PROPOSED GREENWAY
- PROPOSED GRASS VERGE
- PROPOSED HARDENED VERGE
- PROPOSED EARTHWORKS FILL
- PROPOSED EARTHWORKS CUT
- BLESSINGTON LAKE
- WATER CROSSING STRUCTURE
- PROPOSED ROCK ARMOUR
- PROPOSED RETAINING SOLUTION
- EXISTING FENCE LINE
- PROPOSED FENCE LINE
- PROPOSED PICNIC AREA
- PROPOSED VIEWING AREA
- PROPOSED EMERGENCY ACCESS
- PROPOSED GULLY
- PROPOSED GULLY CONNECTION
- PROPOSED PIPE
- PROPOSED FILTER DRAIN PIPE

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## **A.3 Appendix A3 - Baltyboys (Sheet 17) Drainage Layout Drawing**



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 Last saved by: FAIRS Last Plotter: 2023-12-19  
 Project Management Initials: Designer: SF Checked: PC Approved: PS ISO A1 594mm x 841mm

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  - EGREENWAY DRAINAGE IS TO BE OVER THE EDGE DRAINAGE

**ISSUE/REVISION**

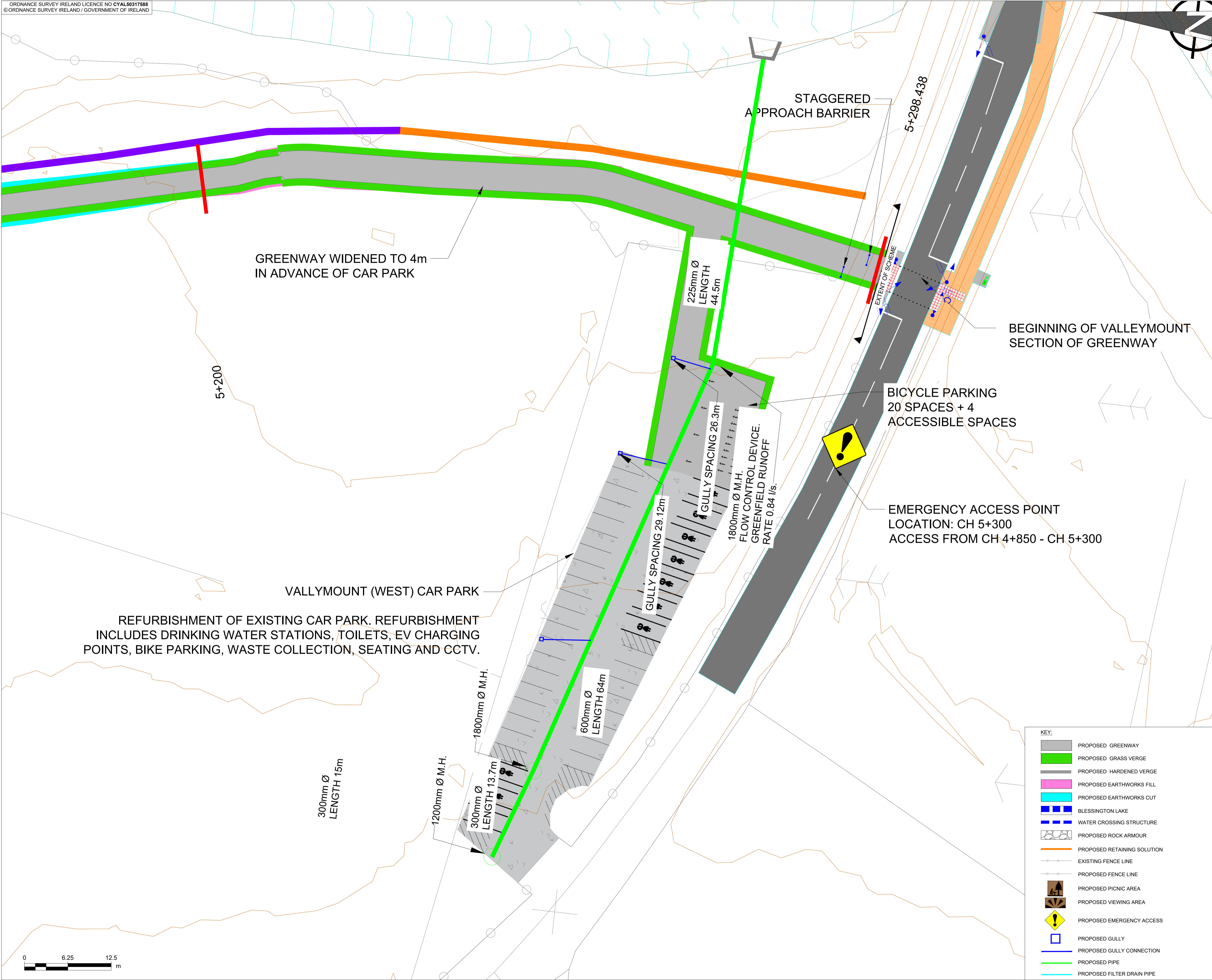
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**PROJECT NUMBER**  
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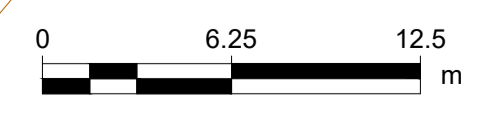
**SHEET TITLE**  
 DRAINAGE LAYOUT  
 BALTBOYS  
 SHEET 17 OF 17

**SHEET NUMBER**  
 60617025\_SHT\_DD\_BLGWY\_503



**KEY:**

[Grey Box]	PROPOSED GREENWAY
[Green Box]	PROPOSED GRASS VERGE
[Orange Box]	PROPOSED HARDENED VERGE
[Pink Box]	PROPOSED EARTHWORKS FILL
[Cyan Box]	PROPOSED EARTHWORKS CUT
[Blue Box]	BLESSINGTON LAKE
[Blue Box]	WATER CROSSING STRUCTURE
[Grey Box]	PROPOSED ROCK ARMOUR
[Orange Box]	PROPOSED RETAINING SOLUTION
[Dashed Line]	EXISTING FENCE LINE
[Dotted Line]	PROPOSED FENCE LINE
[Picnic Table Icon]	PROPOSED PICNIC AREA
[Viewing Area Icon]	PROPOSED VIEWING AREA
[Warning Sign Icon]	PROPOSED EMERGENCY ACCESS
[Square Icon]	PROPOSED GULLY
[Line Icon]	PROPOSED GULLY CONNECTION
[Line Icon]	PROPOSED PIPE
[Line Icon]	PROPOSED FILTER DRAIN PIPE



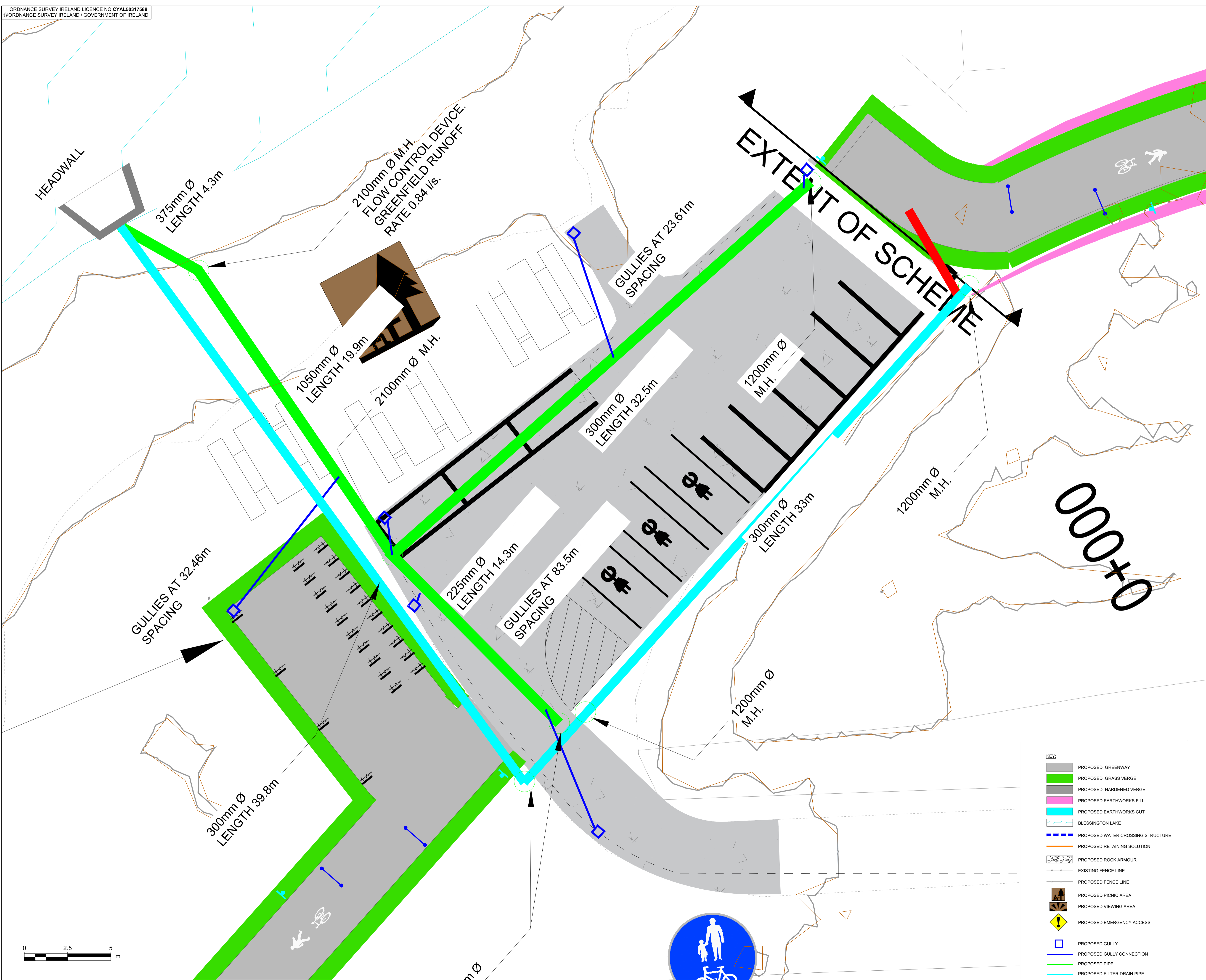
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## **A.4 Appendix A4 - Valleymount Drainage Layout Drawing**



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 Last saved by: FAIRS Last Plotted: 2023-12-19  
 ISO A1 594mm x 841mm  
 Approved: PS  
 Checked: PC  
 Designer: SF  
 Project Management Initials:

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**KEY:**

- PROPOSED GREENWAY
- PROPOSED GRASS VERGE
- PROPOSED HARDENED VERGE
- PROPOSED EARTHWORKS FILL
- PROPOSED EARTHWORKS CUT
- BLESSINGTON LAKE
- PROPOSED WATER CROSSING STRUCTURE
- PROPOSED RETAINING SOLUTION
- PROPOSED ROCK ARMOUR
- EXISTING FENCE LINE
- PROPOSED FENCE LINE
- PROPOSED PICNIC AREA
- PROPOSED VIEWING AREA
- PROPOSED EMERGENCY ACCESS
- PROPOSED GULLY
- PROPOSED GULLY CONNECTION
- PROPOSED PIPE
- PROPOSED FILTER DRAIN PIPE



**PROJECT**  
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 eGREENWAY



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**ISSUE/REVISION**

A	DATE	DESCRIPTION
1	14/12/2023	FIRST ISSUE



**PROJECT NUMBER**  
 60617025

**SHEET TITLE**  
 DRAINAGE LAYOUT  
 VALLEYMOUNT  
 SHEET 1 OF 15

**SHEET NUMBER**  
 60617025\_SHT\_DD\_BLGWY\_504

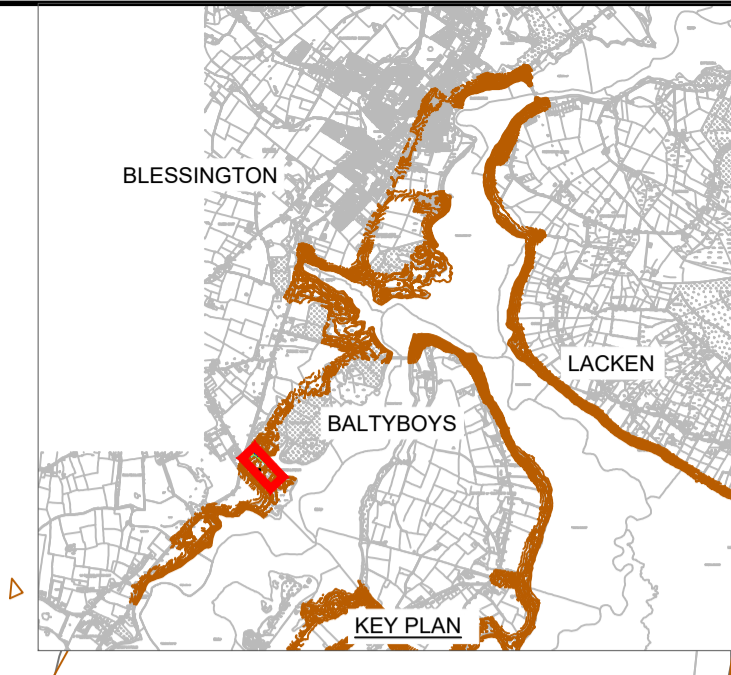
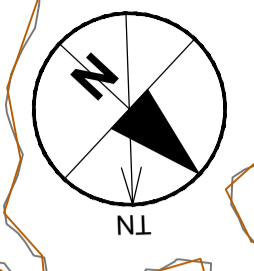
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## **A.5 Appendix A4 – Russeltown Drainage Layout Drawing**



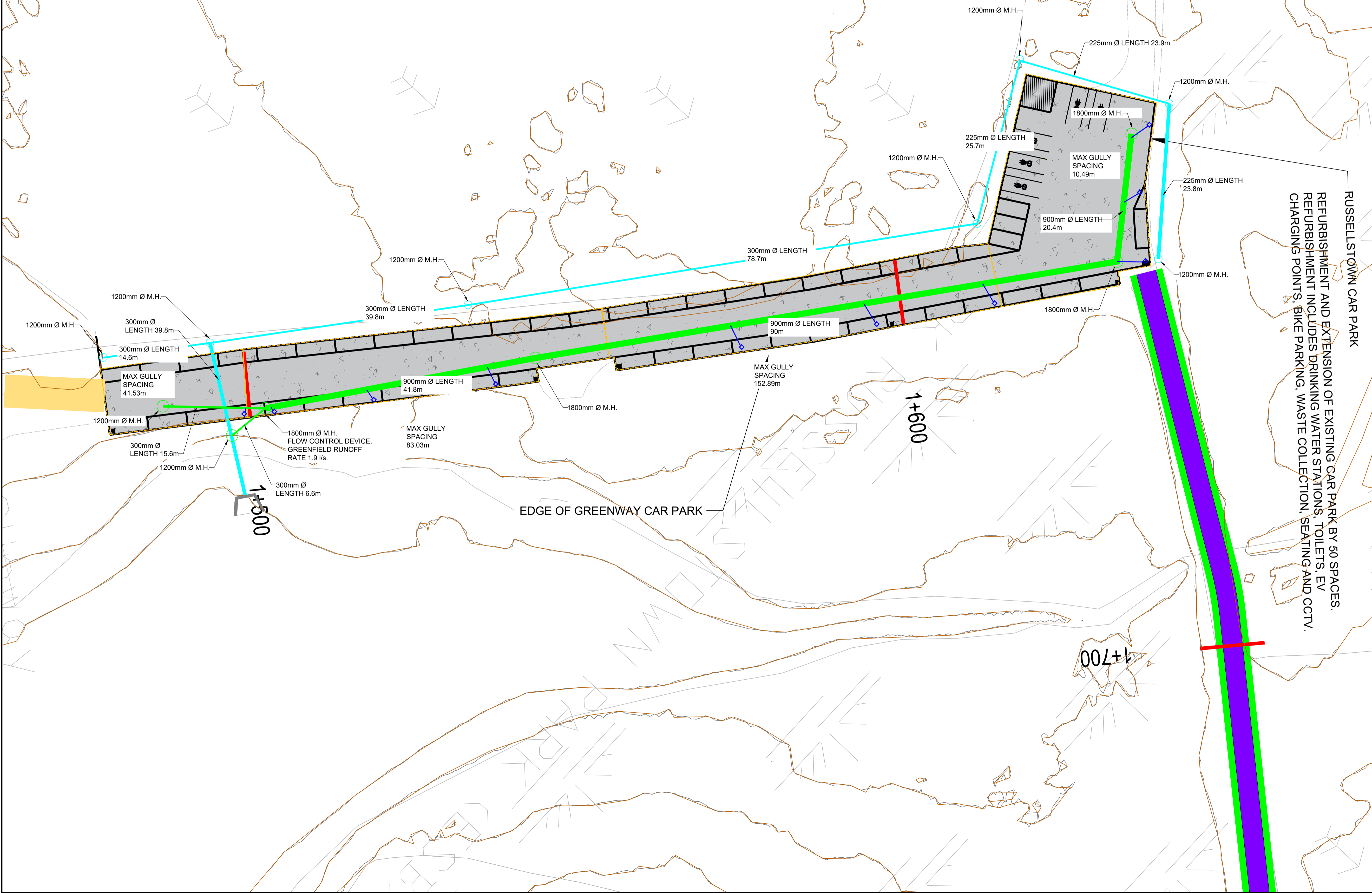
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 Project Management Initials: Designer: SF Checked: PS Approved: PC ISO A1 594mm x 841mm

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**KEY:**

	EXISTING GREENWAY		EXISTING ROUTE - NO WORKS
	EXISTING CARRIAGEWAY		PROPOSED ROCK ARMOUR
	PROPOSED GREENWAY		EXISTING FENCE LINE
	PROPOSED FOOTPATH		PROPOSED RETAINING SOLUTION
	PROPOSED SHARED USE PATH		ROAD CROSSING
	PROPOSED GRASS VERGE		UPGRADED GREENWAY
	PROPOSED EARTHWORKS FILL		PROPOSED PICNIC AREA
	PROPOSED EARTHWORKS CUT		PROPOSED EMERGENCY ACCESS
	BLESSINGTON LAKE		PROPOSED PIPE
	PROPOSED GULLY		PROPOSED FILTER DRAIN PIPE
	PROPOSED GULLY CONNECTION		



RUSSELLSTOWN CAR PARK  
 REFURBISHMENT AND EXTENSION OF EXISTING CAR PARK BY 50 SPACES.  
 REFURBISHMENT INCLUDES DRINKING WATER STATIONS, TOILETS, EV  
 CHARGING POINTS, BIKE PARKING, WASTE COLLECTION, SEATING AND CCTV.

**AECOM**

**PROJECT**  
**BLESSINGTON eGREENWAY**

**CLIENT**

**WICKLOW**  
 ENDLESS OPPORTUNITIES

**CONSULTANT**

AECOM  
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- NOTES**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERING DRAWINGS. ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE EMPLOYER.
  - ALL DIMENSIONS TO BE CHECKED BY THE CONTRACTOR ON SITE PRIOR TO COMMENCEMENT OF WORKS.
  - EMPLOYER'S REPRESENTATIVE TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF WORKS ON SITE.
  - DIMENSIONS OF ALL BOUNDARIES AND ADJOINING ROADS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS.
  - DO NOT SCALE. ALL MEASUREMENTS AND COORDINATES TO BE CHECKED ON SITE.
  - EXISTING FENCE LINES ARE INDICATIVE AND ARE TO BE CONFIRMED ON SITE. EXISTING FENCINGS IS TO BE REVIEWED ON SITE AND REPLACED WHERE REQUIRED
  - EMERGENCY ACCESS POINTS ARE TO BE CLOSED OFF WITH DEMOUNTABLE BOLLARDS. KEYS TO BE HANDED OVER TO THE OVERSEEING ORGANISATION.
  - EGREENWAY DRAINAGE IS TO BE OVER THE EDGE DRAINAGE

**ISSUE/REVISION**

A	10/01/2024	FIRST ISSUE
I/R	DATE	DESCRIPTION

**PROJECT NUMBER**  
60617025

**SHEET TITLE**  
DRAINAGE LAYOUT  
RUSSELLTOWN CAR PARK  
SHEET 5 OF 24

**SHEET NUMBER**  
60617025\_SHT\_DD\_BLGWY\_504

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