Attachment C
Treatment Device Catchment Map and device information

Project:	SGA - North Local			
Project #:	60558831			
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 1: Rapid Transit Corridor (RTC)**			
Date:	10/05/2023	By:	JC/AHL	REV: E

Wetland ID	Alignment	Start CH	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
RTC WETLAND 1-1	RTC-01	0	1384	167	1384	20	27680	0	100%	27680	0	WQ Treatment and SMAF1		1729	6%	**33**	1.6
SH12 WETLAND 02	RTC-01	1384	5055	4392	3671	20	73420	0	100%	73420	0	WQ Treatment and 100 yr attenuation					
SH12 WETLAND 03	RTC-01	5055	5495	5168	440	20	8800	0	100%	8800	0	WQ Treatment and 100 yr attenuation					
RTC WETLAND 1-2	RTC-01	5495	7113	5264	1618	20	32360	0	100%	32360	0	WQ Treatment and 100 yr attenuation					
	SH-12 SB	4770	4960	4599	190	25	4750	0	100%	4750	0	WQ Treatment and 100 yr attenuation					
	Total						37110							2253	6%	24.0	1.6
BW WETLAND 4	RTC-01	7113	8944	8944	1831	20	36620	16479	100%	36620	0	WQ Treatment and 100 yr attenuation					
	BW-01	2408	2763	2636	355	30	10650	3195	100%	10650	0	WQ Treatment and 100 yr attenuation					
	Existing Pond at 74 Badwen Road						5170										
	Total						52440							3047	6%	36.3	1.6
RTC WETLAND 2-2	RTC-01	8944	10131	9387	1187	20	23740	10683	100%	23740	0	WQ Treatment and 100 yr attenuation		1455	6%	38.5	1.6
RTC WETLAND 3-1	RTC-01	10131	11444	10689	1313	20	26260	11817	100%	26260	0	WQ Treatment and 100 yr attenuation		1600	6%	53.5	1.6
RTC WETLAND 3-2	RTC-01	11444	12155	11444	711	20	14220	6399	100%	14220	0	WQ Treatment and 100 yr attenuation		932	7%	54.3	1.6
RTC WETLAND 4-1	RTC-01	12155	13574	13574	1419	20	28380	12771	100%	28380	0	WQ Treatment and 100 yr attenuation		1770	6%	45.6	1.6
RTC WETLAND 4-2	RTC-01	13574	15195	14906	1621	20	32420	14589	100%	32420	0	WQ Treatment and 100 yr attenuation		1947	6%	27.5	1.6
RTC WETLAND 5	RTC-01	15195	16802	16172	1607	20	32140	14463	100%	32140	0	WQ Treatment and 100 yr attenuation					
	Milldale Bus platform						2660		100%	2660	0	WQ Treatment and 100 yr attenuation					
	Milldale PT Hub						13300		100%	13300	0	WQ Treatment and 100 yr attenuation					
	TOTAL						48100							2912	6%	16	1.6

Project:	SGA - North			
Project #:	60558831			
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 2: Milldale Station**			
Date:	7/03/2023	By:	AHL	REV: A

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Additional[1] Catchment Area (m^2)	Total Road Catchment Area (m^2)	Pre-Dev Impervious Area (m^2)	Adopted Post-Dev New and/or redeveloped Impervious Area to be treated %	Post-Dev New and/or redeveloped Impervious Area (m^2)	Post-Dev Unmodified, retained Impervious Area (m^2)	SWMD Target Performance	Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
RTC Wetland 05	Milldale Bus platform							2660	2660		100%	2660	0	WQ Treatment and 100 yr attenuation				
	Milldale PT Hub							13300	13300		100%	13300	0	WQ Treatment and 100 yr attenuation				
	RTC-01	15195	16802	16172	1607	20	32140	0	32140		100%	32140	0	WQ Treatment and 100 yr attenuation				
	TOTAL								48100			48100			2912	6%	16	1.6

Project:	SGA - North
Project #:	60558831
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 3: Pine Valley Road Station**
Date:	15/02/2022 By: AHL REV: A

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Additional[1] Catchment Area (m^2)	Total Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance	Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
PV Station Wetland 1	Station Rd				0	24	0	0	0	0	100%	0	0	WQ Treatment and 100 yr attenuation				
	Park n Ride							20458	20458	0	100%	20458	0	WQ Treatment and 100 yr attenuation				
	PT Hub							7435	7435	0	100%	7435	0	WQ Treatment and 100 yr attenuation				
	TOTAL								27893			27893			2204	8%	23.5	1.6

Project:	SGA - North Local			
Project #:	60558831			
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 4: State Highway 1 +Cycleway**			
Date:	30/01/2024	By: AHL	REV:	G

SWMD	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Post Dev Pavement Width (m)	Road Catchment Area (m^2)	Pre Dev Pavement Width (m)	Pre-Dev Impervious Area (m^2)	Adopted Post-Dev New and/or redeveloped Impervious Area to be treated %	Post-Dev New and/or redeveloped Impervious Area (m^2)	Post-Dev Unmodified, retained Impervious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
SH-12 NorthBound																		
SH-12 NB swale 1	SH-12 NB	0	693	0	693	19	13167						WQ Treatment					
SH-12 NB swale 2	SH-12 NB	693	3660	3660	2967	19	56373						WQ Treatment					
SH-12 NB swale 3	SH-12 NB	3820	4362	3820	542	19	10298						WQ Treatment					
SH-12 NB swale 4	SH-12 NB	4362	5701	4652	1339	19	25441						WQ Treatment					
SH-12 NB swale 5	SH-12 NB	6660	7055	6810	395	19	7505						WQ Treatment					
SH-12 NB swale 6	SH-12 NB	7186	7960	7250	774	19	14706						WQ Treatment					
SH-12 NB swale 7 (Shoulder widening)	SH-12 NB	8880	9860	9860	980	19	18620						WQ Treatment					
SH-12 NB swale 8	SH-12 NB	9860	11200	11200	1340	19	25460						WQ Treatment					
SH-12 NB swale 9	SH-12 NB	11200	11526	11200	326	19	6194						WQ Treatment					
SH-12 SouthBound																		
SH12 SB swale 1	SH-12 SB	180	691	180	511	25	12775						WQ Treatment					
SH12 SB swale 2	SH-12 SB	691	3659	3659	2968	25	74200						WQ Treatment					
SH12 Wetland 02	SH-12 SB	3820	4245	3659	425	25	10625			100%	10625	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB	3660	3820	3660	160	19	3040			100%	3040	0	WQ Treatment and 100 yr attenuation					
	SH-12 SB	3659	3820	3659	161	15	2415			100%	2415	0	WQ Treatment and 100 yr attenuation					
	RTC-01	1384	5055	4392	3671	20	73420			100%	73420	0	WQ Treatment and 100 yr attenuation					
	Total						89500								5670	6%	12.6	1.6
SH12 Wetland 03	SH-12 SB	4245	4770	4599	525	25	13125			100%	13125	0	WQ Treatment and 100 yr attenuation					
	RTC-01	5055	5495	5168	440	20	8800			100%	8800	0	WQ Treatment and 100 yr attenuation					
	Total						21925								1350	6%	17	1.6
RTC Wetland 1-2	SH-12 SB	4770	4960	4599	190	25	4750			100%	4750	0	WQ Treatment and 100 yr attenuation					
	RTC-01	5495	7113	5264	1618	20	32360			100%	32360	0	WQ Treatment and 100 yr attenuation					
	Total						37110								2253	6%	24.0	1.6
SH12 SB swale 3	SH-12 SB	4960	5608	4960	648	25	16200						WQ Treatment					

SWMD	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Post Dev Pavement Width (m)	Road Catchment Area (m^2)	Pre Dev Pavement Width (m)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
SH12 Wetland 05-1	SH-12 SB	6020	6660	6660	640	19	12160			100%	12160	0	WQ Treatment and 100 yr attenuation					
	SH-12 SB	6660	7500	6800	840	19	15960			100%	15960	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB	6020	6660	6660	640	15	9600			100%	9600	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB	7055	7186	7055	131	15	1965			100%	1965	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB On-Ramp at Penlink Interchange				350	12	4200			100%	4200	0	WQ Treatment and 100 yr attenuation					
	SH-12 SB Off-Ramp at Penlink Interchange				483	12	5796			100%	5796	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB On- and Off-ramp to BP	6400	7500				10992			100%	10992	0	WQ Treatment and 100 yr attenuation					
	EC-01	74	144	144	70	13	910		630	100%	910	0	WQ Treatment and 100 yr attenuation					
	EC-01	144	961	578	817	25	20425			100%	20425	0	WQ Treatment and 100 yr attenuation					
	EC-01 (intersection)						3552			100%	3552	0	WQ Treatment and 100 yr attenuation					
	Total						85560								4641	5%	45.7	2.0
SH12 Wetland 05-2 (Upgrade of Existing)	SH-12 SB	7500	7960	7500	460	19	8740			100%	8740	0	WQ Treatment and 100 yr attenuation					
	SH-12 SB	7960	8355	7960	395	19	7505			100%	7505	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB	7960	8375	7960	415	19	7885			100%	7885	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB Off-ramp	7960	8600				11689			100%	11689		WQ Treatment and 100 yr attenuation					
	SH-12 SB On-ramp	7960	8600				6214			100%	6214		WQ Treatment and 100 yr attenuation					
	Total						42033								2638	6%	50.0	2.0
SH12 Wetland 06	SH-12 SB	8355	8721	8721	366	8	2928			100%	2928	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB	8375	8880	8880	505	8	4040			100%	4040	0	WQ Treatment and 100 yr attenuation					
	EX. WK WETLAND CH 8800						4667											
	Total						11635								702	6%	42.5	1.6

SWMD	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Post Dev Pavement Width (m)	Road Catchment Area (m^2)	Pre Dev Pavement Width (m)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
SH12 SB (Swale 4)	SH-12 SB	8721	9860	9860	1139	19	21641						WQ Treatment					
SH12 SB (Swale 5)	SH-12 SB	9860	10859	10859	999	19	18981						WQ Treatment					
Existing WK CH 13220 NB Pond	SH-12 SB	10859	11060	11060	201	19	3819						WQ Treatment and SMAF 1		N/a			
Existing WK CH 13020 NB Pond	SH-12 SB	11060	11526	11200	466	19	8854						WQ Treatment and SMAF 1					
	SH-12 SB On-ramp from Silverdale Interchange						3150						WQ Treatment and SMAF 1					
	SH-12 NB Off-ramp to Silverdale Interchange						3070						WQ Treatment and SMAF 1					
	Existing SH1 catchment - North of SGA work extent						7680						WQ Treatment and SMAF 1					
	Total						22754								N/a			
SH-12 Interchanges																		
SH12 WETLAND 01	Lonely Track Rd Bridge			600	485	8	3880			100%	3880	0	WQ Treatment and 100 yr attenuation		229	6%	75.0	1.6
SH12 WETLAND 4-1	Penlink/Bawden Road interchange						14434			100%	14434	0	WQ Treatment and 100 yr attenuation		883	6%	46.8	1.6
SH12 WETLAND 4-2	SH-12 NB Off-Ramp at Penlink Interchange	0	640	323	485	14	6790			100%	6790	0	WQ Treatment and 100 yr attenuation					
	SH-12 SB On-Ramp at Penlink Interchange	30	673	231	485	14	6790			100%	6790	0	WQ Treatment and 100 yr attenuation					
	SH-12 NB	5701	6020	6020	319	15	4785			100%	4785	0	WQ Treatment and 100 yr attenuation					
	SH-12 SB	5704	6020	6020	316	15	4740			100%	4740	0	WQ Treatment and 100 yr attenuation					
	Total						23105								1400	6%	52.8	1.6
KW Wetland 3	KW-01	1471	1644	1640	173	30	5190		1557	100%	5190	0	WQ Treatment and 100 yr attenuation					
	SH-12 Wikes Rd Interchange (West)			8650			9000		0	100%	9000	0	WQ Treatment and 100 yr attenuation					
	SH-12 Wikes Rd Interchange (East)						17500		0	100%	17500	0	WQ Treatment and 100 yr attenuation					
	Total						31690								1940	6%	61	1.6
SH12 WETLAND 07	SH-12 Silverdale Interchange (East) {Relocated Existing wetland}						11328			100%	11328	0	WQ Treatment and 100 yr attenuation		684	6%	12.8	1.6

Project:	SGA - North Strategic		
Project #:	60558831		
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 5: New State Highway 1 Crossing at Dairy Stream**		
Date:	15/02/2023	By: AHL	REV: A

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance	Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
EC Wetland 2.2																
	EC-01	1330	2283	1330	953	25	23825	8577	100%	23825	0	WQ Treatment and 100 yr attenuation				
	EC-01 (DM-01 intersection)						1700		100%	1700	0	WQ Treatment and 100 yr attenuation				
	DM-01	37	234	36.7	197.7	25	4942.5		100%	4942.5	0	WQ Treatment and 100 yr attenuation				
	DM-01 (bridge)	177	234	177.4	57	20	1140		100%	1140	0	WQ Treatment and 100 yr attenuation				
	TOTAL						31608						1942	6%	47.5	1.6
DM Wetland 1																
	DM-01 (bridge)	234	291	291.4	57	20	1140		100%	1140	0	WQ Treatment and 100 yr attenuation				
	DM-01	291	517	516.6	225.2	25	5630		100%	5630	0	WQ Treatment and 100 yr attenuation				
	TOTAL						6770						420	6%	42.4	1.6

Project:	SGA - North Local			
Project #:	60558831			
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 6: New Upper Orewa Road Extension**			
Date:	11/11/2022	By:	AHL	REV: D

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
UO WETLAND 1	UO-02	0	520	360	520	25	13000	4680	100%	13000	0	WQ Treatment and 100 yr attenuation		816	6%	38	1.6
UO WETLAND 2	UO-02	520	1240	910	720	25	18000	6480	100%	18000	0	WQ Treatment and 100 yr attenuation		1090	6%	22	1.6
UO WETLAND 3	UO-02	1240	2040	1840	800	25	20000	7200	100%	20000	0	WQ Treatment and 100 yr attenuation		1330	7%	13.7	1.6

Project:	SGA - North Local
Project #:	60558831
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 7: Pine Valley Road Upgrade**
Date:	7/02/2023 By: JC REV: D

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
PV WETLAND 1	PV-01	30	748	748	718	25	17950	6462	100%	17950	0	WQ Treatment and 100 yr attenuation		1134	6%	28.0	1.6
PV WETLAND 2	PV-01	748	1198	1024	450	25	11250	4050	100%	11250	0	WQ Treatment and 100 yr attenuation					
	Young Acess Rd					9	900	0	100%	900	0	WQ Treatment and 100 yr attenuation					
	Total						12150							729	6%	26	1.6
PV WETLAND 3	PV-01	1198	1557	1391	359	25	8975	3231	100%	8975	0	WQ Treatment and 100 yr attenuation		566	6%	24.7	1.6
PV WETLAND 4	PV-01	1557	1918	1640	361	25	9025	3249	100%	9025	0	WQ Treatment and 100 yr attenuation		548	6%	24.3	1.6
PV WETLAND 5 (UPGRADE EXISTING)	PV-01	1918	2195	2195	277	25	6925	2493	100%	6925	0	WQ Treatment and 100 yr attenuation					
	Ex. Constructed wetland/ Flood prone area						4759	0	100%	4759	0	WQ Treatment and 100 yr attenuation					
	Total						11684							719	6%	23.67	1.6
PV WETLAND 6	Young Acess Rd					9	980	0	100%	980	0	WQ Treatment and 100 yr attenuation		59	6%	24.9	1.6

Project:	SGA - North Local			
Project #:	60558831			
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 8: Dairy Flat Highway Upgrade (within FUZ)**			
Date:	3/08/2023	By: AHL	REV:	D

Wetland ID	Alignment	Start CH. Rev	End CH.rev	Sag Point/ Wetland CH rev	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
DF WETLAND 1	DF-01	0	1550	1167	1550	30	46500	13950	100%	46500	0	WQ Treatment and 100 yr attenuation					
	Durey Rd					6	3216		100%	3216	0	WQ Treatment and 100 yr attenuation					
	Kennedy Rd					6	2700		100%	2700	0	WQ Treatment and 100 yr attenuation					
	Total						52416							3230	6%	41	1.6
DF WETLAND 2	DF-01	1550	3336	2507	1786	30	53580	16074	100%	53580	0	WQ Treatment and 100 yr attenuation					
	Green Rd					6	3050		100%	3050	0	WQ Treatment and 100 yr attenuation					
	Total						56630							3417	6%	34	1.6
DF WETLAND 3 (with partial swale)	DF-01	3336	3890	3789	554	24	13296	4986	100%	13296	0	WQ Treatment and 100 yr attenuation					
	DF-01	3890	4164	3890	274	13.05	3575.7		100%	3575.7	0	WQ Treatment and 100 yr attenuation					
	Postman Road					6	3530		100%	3530	0	WQ Treatment and 100 yr attenuation					
	Total						20401.7							1245	6%	45.5	1.6
Treatment Swale 3	DF-01	3890	4164	3890	274	6.95	1904.3					WQ Treatment					
Treatment Swale 4.1.1	DF-01	4164	4355	4324	191	6.95	1327.45					WQ Treatment					
Treatment Swale 4.1.2	DF-01	4450	4645	4450	195	6.95	1355.25					WQ Treatment					
Treatment Swale 4.2	DF-01	4680	5537	4715	857	6.95	5956.15					WQ Treatment					
Treatment Swale 5.1	DF-01	5537	5880	5843	343	6.95	2383.85					WQ Treatment					
Treatment Swale 5.2	DF-01	5976	6080	5976	104	6.95	722.8					WQ Treatment					
Treatment Swale 6	DF-01	6624	7235	6792	611	6.95	4246.45					WQ Treatment					
DF WETLAND 4.1 (with swale)	DF-01	3890	4355	4324	465	13.05	6068.25	4185	100%	6068.25	0	WQ Treatment and 100 yr attenuation					
	DF-01	4355	4450	4355	95	24	2280		100%	2280	0	WQ Treatment and 100 yr attenuation					
	DF-01	4450	4645	4450	195	13.05	2544.75		100%	2544.75	0	WQ Treatment and 100 yr attenuation					
	DF-01	4645	4680	4645	35	24	840		100%	840	0	WQ Treatment and 100 yr attenuation					
	Landfill access Rd					6	2127		100%	2127	0	WQ Treatment and 100 yr attenuation					
	Total						13860							894	6%	48.6	1.6
DF WETLAND 4.2 (with swale)	DF-01	4680	5537	4715	857	13.05	11183.85	7713	100%	11183.85	0	WQ Treatment and 100 yr attenuation		695	6%	48.5	1.6

Wetland ID	Alignment	Start CH. Rev	End CH.rev	Sag Point/ Wetland CH rev	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Impervious Area (m^2)	Adopted Post-Dev New and/or redeveloped Impervious Area to be treated %	Post-Dev New and/or redeveloped Impervious Area (m^2)	Post-Dev Unmodified, retained Impervious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
DF WETLAND 5 (with swale)	DF-01	5537	5880	5843	343	13.05	4476.15	3087	100%	4476.15	0	WQ Treatment and 100 yr attenuation					
	DF-01	5880	5976	5880	96	24	2304		100%	2304	0	WQ Treatment and 100 yr attenuation					
	DF-01	5976	6080	5976	104	13.05	1357.2		100%	1357.2	0	WQ Treatment and 100 yr attenuation					
	DF-01	6080	6624	6080	544	30	16320		100%	16320	0	WQ Treatment and 100 yr attenuation					
	KW-01	0	17	17	17	25	425		100%	425	0	WQ Treatment and 100 yr attenuation					
	Total						24882							1477	6%	52.3	1.6
DF WETLAND 6 (with swale)	DF-01	6624	7235	6792	611	13.05	7973.55		100%	7973.55	0	WQ Treatment and 100 yr attenuation					
	DF-01	7235	7315	7235	80	30	2400		100%	2400	0	WQ Treatment and 100 yr attenuation					
	Wilks Rd					6	4532		100%	4532	0	WQ Treatment and 100 yr attenuation					
	Total						14905.55							894	6%	59	1.6
DF WETLAND 7	DF-01	7235	8376	8070	1141	30	34230	10269	100%	34230	0	WQ Treatment and 100 yr attenuation		1938	6%	39.5	1.6
DF WETLAND 8	DF-01	8376	8923	8640	547	30	16410	4923	100%	16410	0	WQ Treatment and 100 yr attenuation		1052	6%	43	1.6
DF WETLAND 9	DF-01	8923	8985.0	9515	62.0	30	1860	558	100%	1860	0	WQ Treatment and 100 yr attenuation					
	Argent Lane	0	533.53		533.53	30	16005.9	0	100%	16006	0	WQ Treatment and 100 yr attenuation					
	Argent Lane (widen)						1840	0	100%	1840	0	WQ Treatment and 100 yr attenuation					
	Silverdale interchange					6	1880		100%	1880	0	WQ Treatment and 100 yr attenuation					
	Total						21585.9							1304	6%	27.6	1.6

Project:	SGA - North Local			
Project #:	60558831			
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NOR 9: Dairy Flat Highway Upgrade (outside FUZ)**			
Date:	3/08/2023	By:	AHL	REV: B

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
DH WETLAND 1-1	DH-01	550	1590	550	1040	20	20800	9360	100%	20800	0	WQ Treatment and 100 yr attenuation		3456	17%	27.3	1.6
DH WETLAND 1-2	DH-01	1590	2470	1590	880	24	21120	7920	100%	21120	0	WQ Treatment and 100 yr attenuation					
	DH-01 (new roundabout)						3577		100%	3577	0	WQ Treatment and 100 yr attenuation					
	DH-01 (branch road new wetland 1-2)						1320		100%	1320	0	WQ Treatment and 100 yr attenuation					
	Total						26017							1688	6%	96	1.6
DH WETLAND 2-1	DH-01	2470	2700	2700	230	24	5520	2070	100%	5520	0	WQ Treatment and 100 yr attenuation		322	6%	129.6	1.6
DH WETLAND 2-2	DH-01	2940	3220	2910	280	21	5880	2520	100%	5880	0	WQ Treatment and 100 yr attenuation		528	9%	123	1.6
DH WETLAND 3	DH-01	3220	4160	4120	940	21	19740	8460	100%	19740	0	WQ Treatment and 100 yr attenuation					
	DH-01 SB	4160	4270	4270	110	7.5	825	495	100%	825	0	WQ Treatment and 100 yr attenuation					
	DH and Potter Rd new roundabout						2067		100%	2067	0	WQ Treatment and 100 yr attenuation					
	Total						22632							1880	8%	87	1.6
DH WETLAND 4	DH-01	4270	5380	5070	1110	7.5	8325	4995	100%	8325	0	WQ Treatment and 100 yr attenuation		2008	24%	57	1.6
DH SWALE 1	DH-01 NB	4180	5070	5070	890	7.5	6675	4005	100%	6675	0	WQ Treatment					
DH SWALE 2	DH-01 NB	5070	5400	5070	330	7.5	2475	1485	100%	2475	0	WQ Treatment					

Project:	SGA - North Local			
Project #:	60558831			
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 10: Wainui Road Upgrade**			
Date:	25/11/2022	By:	JC/AHL	REV: D

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
WR Wetland 1	WR-01	0	1460	1230	1460	24	35040	13140	100%	35040	0	WQ Treatment and 100 yr attenuation		2112	6%	8.5	1.6
WR Wetland 2	WR-01	1460	1625	1460	165	24	3960	1485	100%	3960	0	WQ Treatment and 100 yr attenuation					
	New Roundabout						2394	0	100%	2394	0	WQ Treatment and 100 yr attenuation					
	Total						6354	0	100%	6354	0	WQ Treatment and 100 yr attenuation		401	6%	9.6	1.6

Project:	SGA - North Local
Project #:	60558831
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 11: New Kahikatea-Wilks Link Road**
Date:	24/02/2023 By: AHL REV: E

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
DF Wetland 05	KW-01	0	17	17	17	25	425	153	100%	425	0	WQ Treatment and 100 yr attenuation					
	DF-01	5537	5880	5843	343	13.05	4476	3087	100%	4476	0	WQ Treatment and 100 yr attenuation					
	DF-01	5880	5976	5880	96	24	2304		100%	2304	0	WQ Treatment and 100 yr attenuation					
	DF-01	5976	6080	5976	104	13.05	1357		100%	1357.2	0	WQ Treatment and 100 yr attenuation					
	DF-01	6080	6624	6080	544	30	16320		100%	16320	0	WQ Treatment and 100 yr attenuation					
	TOTAL						24882							1477	6%	52.3	1.6
KW Wetland 1	KW-01	17	663	231	646	25	16150	5814	100%	16150	0	WQ Treatment and 100 yr attenuation		976	6%	55	1.6
KW Wetland 2	KW-01	663	1000	987	337	25	8425	3033	100%	8425	0	WQ Treatment and 100 yr attenuation					
	KW-01	1000	1471		471	30	14130	4239	100%	14130	0	WQ Treatment and 100 yr attenuation					
	Roundabout						5600	0	100%	5600	0	WQ Treatment and 100 yr attenuation					
	TOTAL						28155							1699	6%	56.9	1.6
KW Wetland 3	KW-01	1471	1644	1640	173	30	5190	1557	100%	5190	0	WQ Treatment and 100 yr attenuation					
	SH-12 Wikes Rd Interchange (West)						9000	0	100%	9000	0	WQ Treatment and 100 yr attenuation					
	SH-12 Wikes Rd Interchange (East)						17500	0	100%	17500	0	WQ Treatment and 100 yr attenuation					
	TOTAL						31690							1940	6%	61	1.6

Project:	SGA - North Local		
Project #:	60558831		
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 12: Bawden Road Upgrade and Extension**		
Date:	10/05/2023	By: AHL	REV: G

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Imprevious Area (m^2)	Adopted Post-Dev New and/or redeveloped Imprevious Area to be treated %	Post-Dev New and/or redeveloped Imprevious Area (m^2)	Post-Dev Unmodified, retained Imprevious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
BW WETLAND 1																	
	BW-01b	100	455	0	355	30	10650	3195	100%	10650	0	WQ Treatment and 100 yr attenuation					
	Top Road	0	75	0	75	20	1500	675	100%	1500	0	WQ Treatment and 100 yr attenuation					
	BW and Top Rd Roundabout						2450	0	100%	2450	0	WQ Treatment and 100 yr attenuation					
	Total						14600			14600				882	6%	66	1.6
BW WETLAND 2	BW-01b	455	1680	1530	1225	30	36750	11025	100%	36750	0	WQ Treatment and 100 yr attenuation		2241		38.6	1.6
BW WETLAND 3																	
	BW-01b	1680	2408	2180	728	30	21840	6552	100%	21840	0	WQ Treatment and 100 yr attenuation					
	Existing Pond at 126 Badwen Road						3170										
	Total						25010							1515	6%	36.2	1.6
BW WETLAND 4																	
	BW-01	2408	2763	2636	355	30	10650	3195	100%	10650	0	WQ Treatment and 100 yr attenuation					
	RTC-01	1849	3680	3680	1831	20	36620	16479	100%	36620	0	WQ Treatment and 100 yr attenuation					
	Existing Pond at 74 Badwen Road						5170										
	Total						52440							3047	6%	36.3	1.6
BW WETLAND 5	BW-01b	2763	3062	2918	299	30	8970	2691	100%	8970	0	WQ Treatment and 100 yr attenuation		549	6%	35	1.6
BW WETLAND 6	BW-01b	3062	3310	3340	248	30	7440	2232	100%	7440	0	WQ Treatment and 100 yr attenuation		454	6%	35.3	1.6
BW WETLAND 7	Top Road	75	445	445	370	20	7400	3330	100%	7400	0	WQ Treatment and 100 yr attenuation		456	6%	59.5	1.6
BW WETLAND 8	Old Bawden Rd	0	358	0	358	20	7160	3222	100%	7160	0	WQ Treatment and 100 yr attenuation		437	6%	85.3	1.6

Project:	SGA - North Local			
Project #:	60558831			
Subject :	**Estimate of Stormwater Wetland/Pond Sizing - NoR 13: East Coast Road Upgrade**			
Date:	30/01/2024	By: AHL	REV:	G

Wetland ID	Alignment	Start CH.	End CH.	Sag Point/ Wetland CH	Length of Road Catchment (m)	Pavement Width (m)	Road Catchment Area (m^2)	Pre-Dev Impervious Area (m^2)	Adopted Post-Dev New and/or redeveloped Impervious Area to be treated %	Post-Dev New and/or redeveloped Impervious Area (m^2)	Post-Dev Unmodified, retained Impervious Area (m^2)	SWMD Target Performance		Water Surface Area Provided (m^2)	Water Surface area provided as % of Catchment Area	Top Level (RL m)	Depth (m)
SH12 Wetland 05-1	EC-01	74	144	144	70	13	910	630	100%	910	0	WQ Treatment and SMAF1					
	EC-01	144	961	578	817	25	20425		100%	20425	0	WQ Treatment and SMAF1					
	EC-01 (intersection)						3552		100%	3552	0	WQ Treatment and SMAF1					
	SH-12 SB	6020	6660	6660	640	19	12160		100%	12160	0	WQ Treatment and SMAF1					
	SH-12 SB	6660	7500	6800	840	19	15960		100%	15960	0	WQ Treatment and SMAF1					
	SH-12 NB	6020	6660		640	15	9600		100%	9600	0	WQ Treatment and SMAF1					
	SH-12 NB	7055	7186	7055	131	15	1965		100%	1965	0	WQ Treatment and SMAF1					
	SH-12 NB On-Ramp at Penlink Interchange				350	12	4200		100%	4200	0	WQ Treatment and SMAF1					
	SH-12 SB Off-Ramp at Penlink Interchange				483	12	5796		100%	5796	0	WQ Treatment and SMAF1					
	SH-12 NB On- and Off-ramp to BP						10992		100%	10992	0	WQ Treatment and SMAF1					
	TOTAL						85560							4641	5%	45.7	2.0
EC Wetland 2.1	EC-01	961	1330	1196	369	25	9225	3321	100%	9225	0	WQ Treatment and 100 yr attenuation		590	6%	48.3	1.6
EC Wetland 2.2	EC-01	1330	1650	1330	320	25	8000	2880	100%	8000	0	WQ Treatment and 100 yr attenuation					
	EC-01 (DM-01 intersection)						1700		100%	1700	0	WQ Treatment and 100 yr attenuation					
	DM-01	37	234	37	197.7	25	4943		100%	4942.5	0	WQ Treatment and 100 yr attenuation					
	DM-01 (bridge)	177	234	177	57	20	1140		100%	1140	0	WQ Treatment and 100 yr attenuation					
	TOTAL						15783							949	6%	46.6	1.6
EC Wetland 2.3	EC-01	1650	2283	1630	633	25	15825	5697	100%	15825	0	WQ Treatment and 100 yr attenuation		965	6%	59	1.6
EC Wetland 3	EC-01	2283	2770	2750	487	25	12175	4383	100%	12175	0	WQ Treatment and 100 yr attenuation					
	EC-01 (Jackson Way intersection)						4120		100%	4120	0	WQ Treatment and 100 yr attenuation					
	TOTAL						16295							1009	6%	93	1.6

REV	REVISIONS	DRAWN	DATE
A	FOR INFORMATION	JDT	JAN. 2024

SURVEYED	N/A	N/A
DRAWN	I. MILLER / R. CRUZ	25.01.2023
DRAWING CHECK	J. DELA TORRE	25.01.2023
DESIGN	P. HADWIN	25.01.2023
DESIGN REVIEW	M. BARRIENTOS	25.01.2023
APPROVED	B. BUSNARDO	07.07.2023

TE TUPU NGĀTAHI Supporting Growth

WAKA KOTAHI NZ TRANSPORT AGENCY

Project: **SUPPORTING GROWTH PROGRAMME NORTH**

Drawing Title: GENERAL ARRANGEMENT PROPOSED SW CATCHMENT LAYOUT PLAN
STATE HIGHWAY 1 IMPROVEMENTS (NoR 4) - SHEET 1 OF 3

Drawing Status: **FOR INFORMATION**

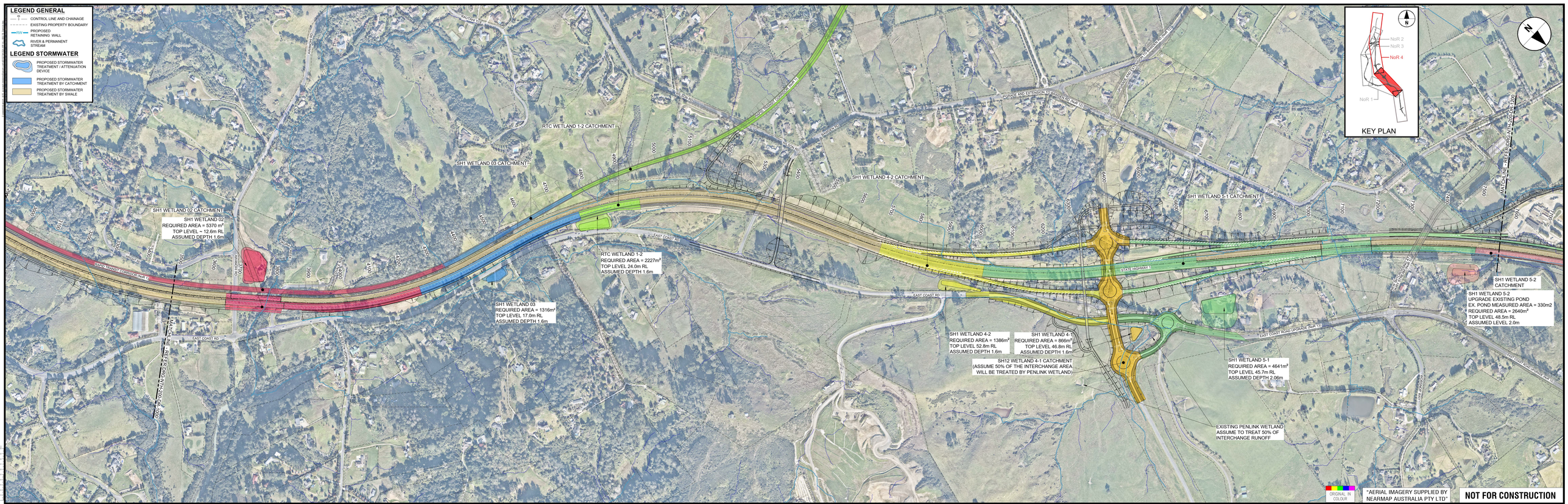
Drawing Date: 18.01.2024

A1 Scales	1:1000	A3 Scales	1:2000

Discipline: DRAINAGE

Drawing No.: SGA-DRG-NTH-200-DR-1000

Revision: A



REV	REVISIONS	DRAWN	DATE
A	FOR INFORMATION	JDT	JAN. 2024

SURVEYED	N/A	N/A
DRAWN	I. MILLER / R. CRUZ	25.01.2023
DRAWING CHECK	J. DELA TORRE	25.01.2023
DESIGN	P. HADWIN	25.01.2023
DESIGN REVIEW	M. BARRIENTOS	25.01.2023
APPROVED	B. BUSNARDO	07.07.2023

TE TUPU NGĀTAHI Supporting Growth

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Project: **SUPPORTING GROWTH PROGRAMME NORTH**

Drawing Title: GENERAL ARRANGEMENT PROPOSED SW CATCHMENT LAYOUT PLAN
STATE HIGHWAY 1 IMPROVEMENTS (NoR 4) - SHEET 2 OF 3

Drawing Status: **FOR INFORMATION**

Drawing Date: 18.01.2024

A1 Scales	1:1000	A3 Scales	1:2000

Discipline: DRAINAGE

Drawing No: SGA-DRG-NTH-200-DR-1100

Revision: A

REV	REVISIONS	DRAWN	DATE
A	FOR INFORMATION	JDT	JAN. 2024

SURVEYED	N/A	N/A
DRAWN	I. MILLER / R. CRUZ	25.01.2023
DRAWING CHECK	J. DELA TORRE	25.01.2023
DESIGN	P. HADWIN	25.01.2023
DESIGN REVIEW	M. BARRIENTOS	25.01.2023
APPROVED	B. BUSNARDO	07.07.2023

TE TUPU NGĀTAHI Supporting Growth

WAKA KOTAHI NZ TRANSPORT AGENCY

Project: **SUPPORTING GROWTH PROGRAMME NORTH**

Drawing Title: GENERAL ARRANGEMENT PROPOSED SW CATCHMENT LAYOUT PLAN
STATE HIGHWAY 1 IMPROVEMENTS (NoR 4) - SHEET 3 OF 3

Drawing Status: **FOR INFORMATION**

Drawing Date: 18.01.2024

A1 Scales	1:1000	A3 Scales	1:2000

Discipline: DRAINAGE

Drawing No: SGA-DRG-NTH-200-DR-1200

Revision: A