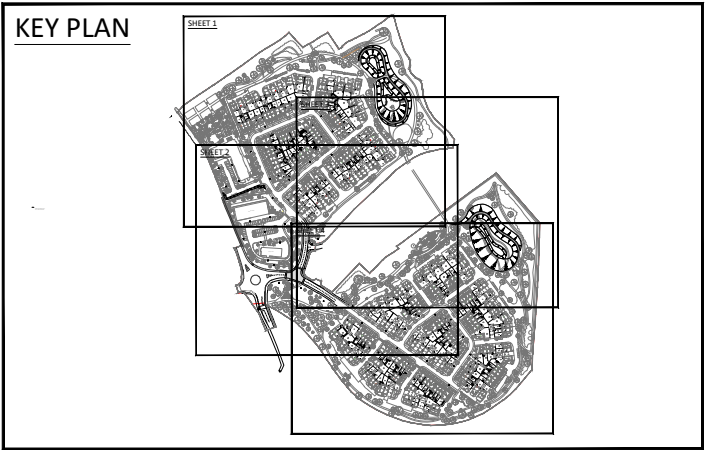
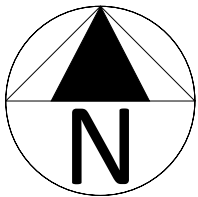
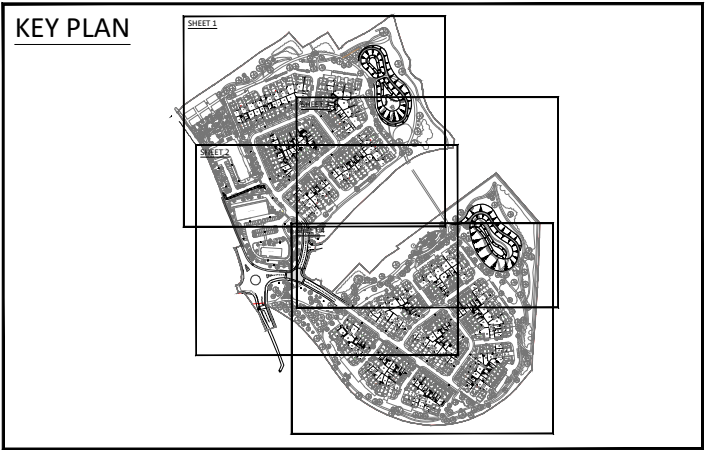
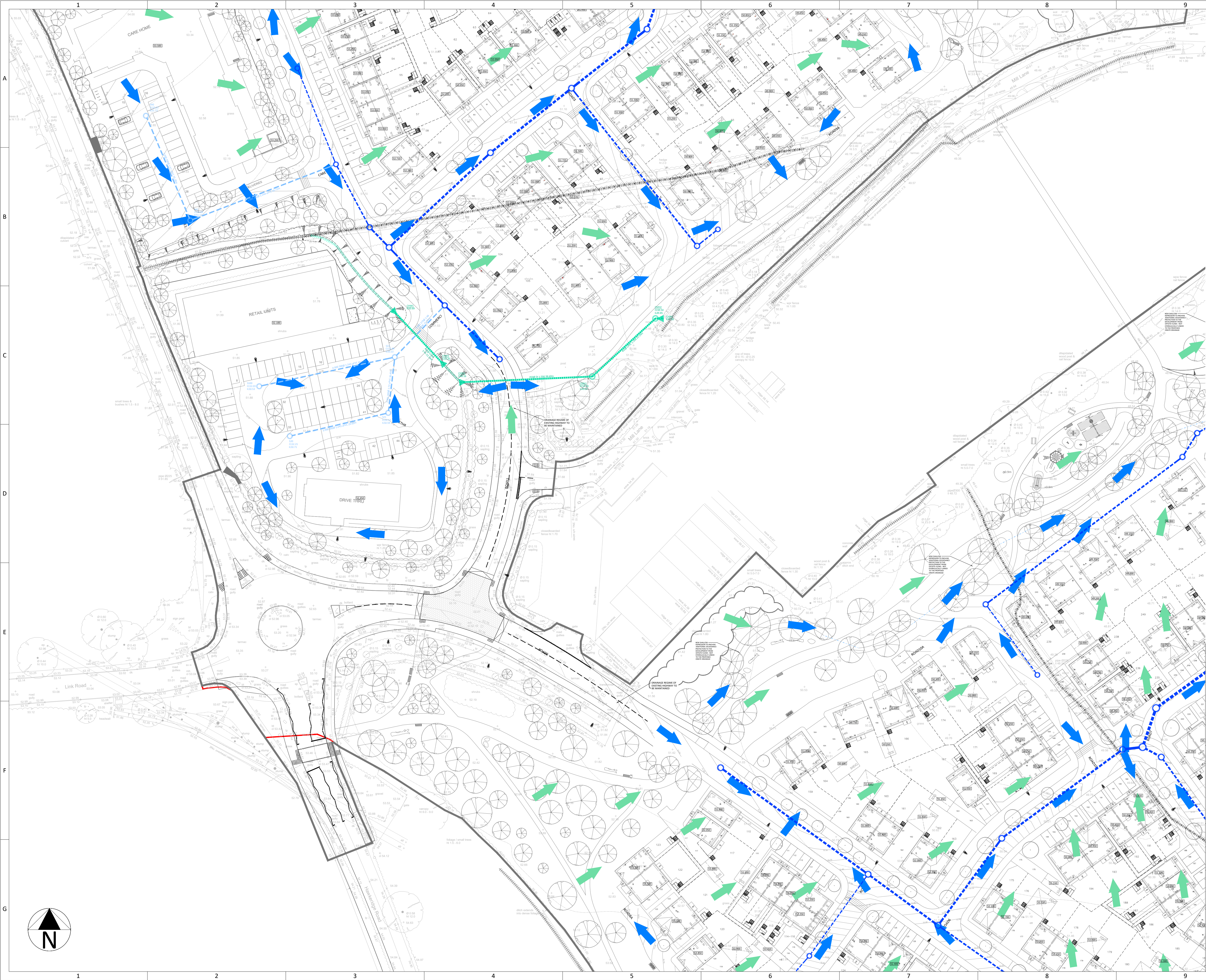


Appendix I – Proposed Flood Exceedance Routes



- LEGEND
- PROPOSED FLOOD EXCEEDANCE ARROW
 - EXISTING FLOOD EXCEEDANCE ARROW

A	FIRST ISSUE	13.07.26	GA	RJ
REV.	DESCRIPTION	Date	BY	CHK
DESIGN BY:				
				
CLIENT:				
				
DRAWING STATUS: PLANNING APPLICATION				
SCALE @ A1: 0 1:500 25 metres				
PROJECT: HAWKE RIDGE BUSINESS PARK				
TITLE: FLOOD EXCEEDANCE ROUTES SHEET 1				
Project Ref: 20001-TUM-PL-XXX-0230				REV: A



- LEGEND
- PROPOSED FLOOD EXCEEDANCE ARROW
 - EXISTING FLOOD EXCEEDANCE ARROW

A	FIRST ISSUE	13.07.26	GA	RJ
REV.	DESCRIPTION	Date	BY	CHK

DESIGN BY:



CLIENT:



DRAWING STATUS: PLANNING APPLICATION

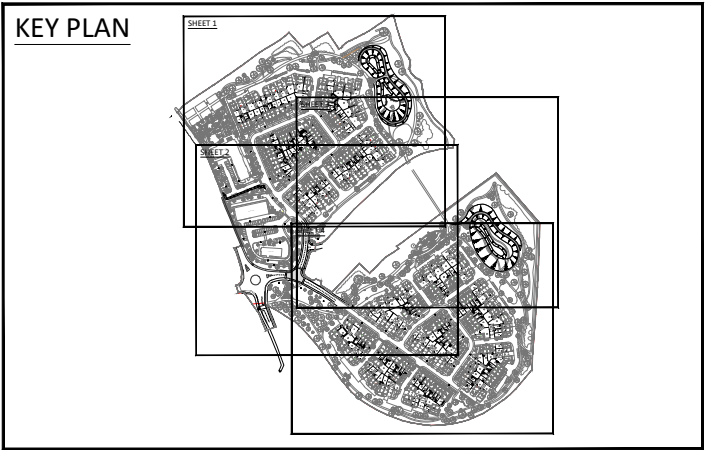
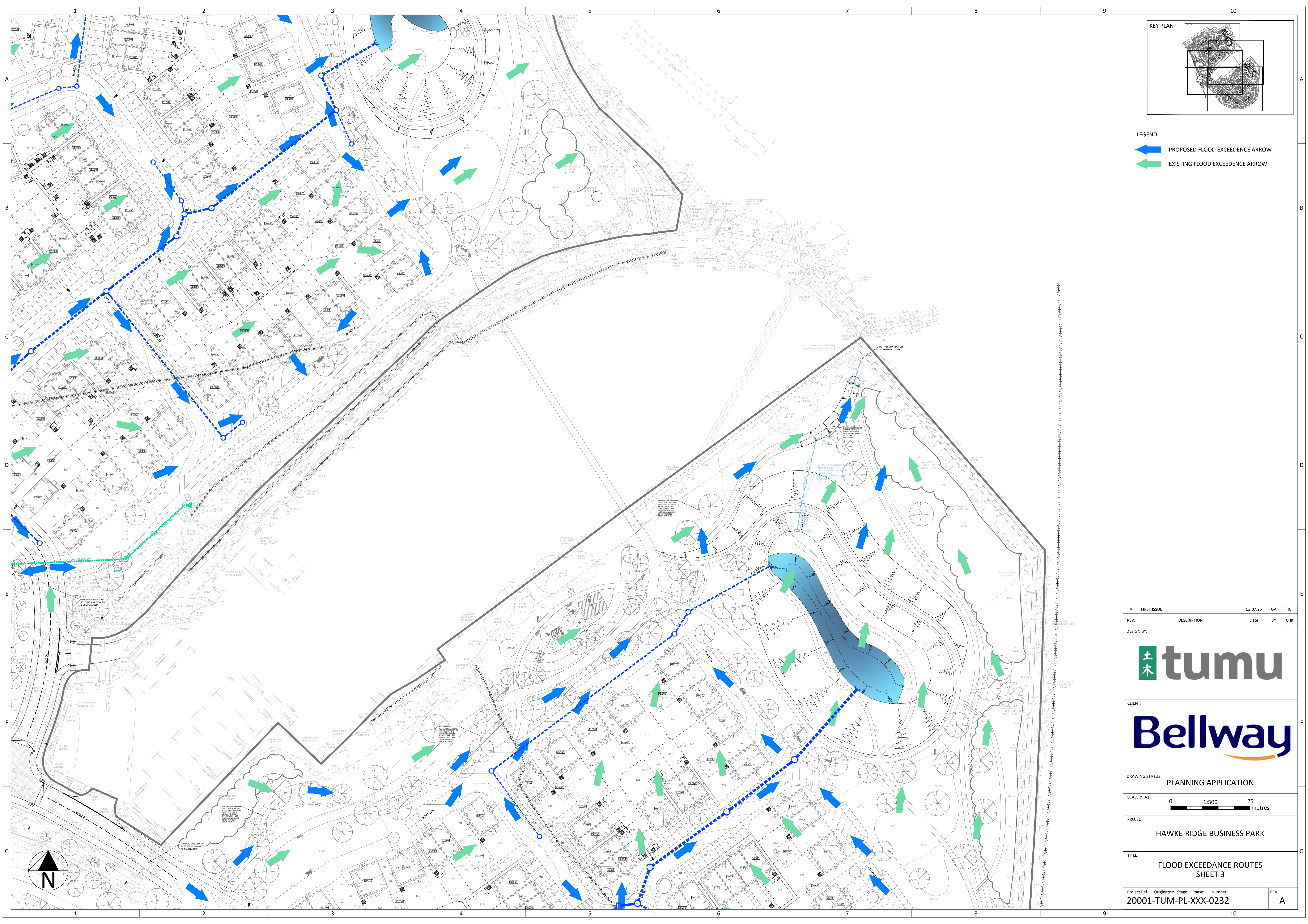
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PROJECT: HAWKE RIDGE BUSINESS PARK

TITLE: FLOOD EXCEEDANCE ROUTES SHEET 2

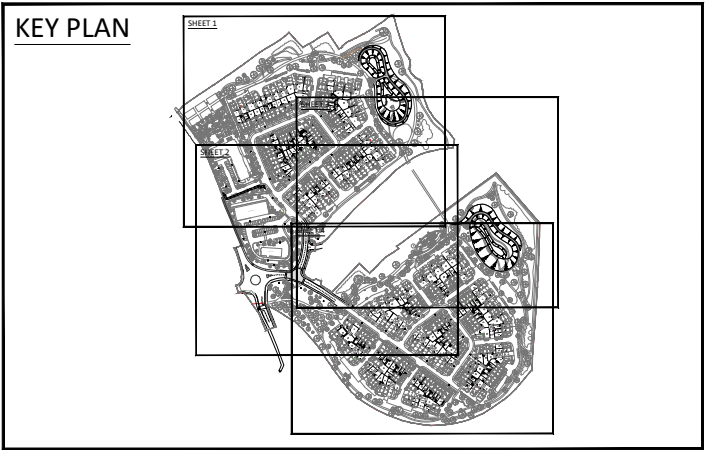
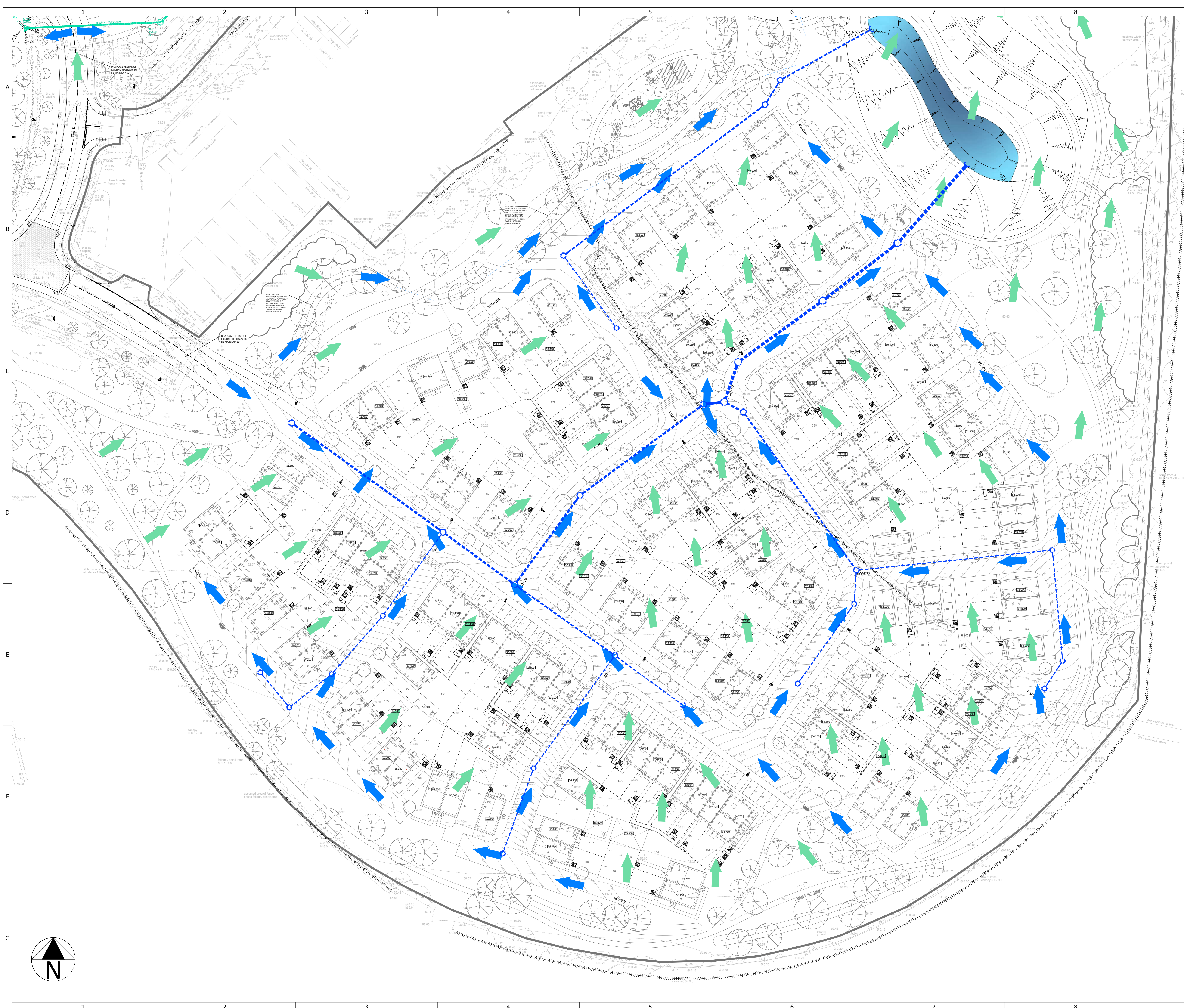
Project Ref: 20001-TUM-PL-XXX-0231

Originator: Stage: Phase: Number: REV: A



- LEGEND
- PROPOSED FLOOD EXCEEDANCE ARROW
 - EXISTING FLOOD EXCEEDANCE ARROW

A	FIRST ISSUE	13.07.26	GA	RJ
REV.	DESCRIPTION	Date	BY	CHK
DESIGN BY:				
CLIENT:				
DRAWING STATUS: PLANNING APPLICATION				
SCALE @ A1: 0 1:500 25 metres				
PROJECT: HAWKE RIDGE BUSINESS PARK				
TITLE: FLOOD EXCEEDANCE ROUTES SHEET 3				
Project Ref: 20001-TUM-PL-XXX-0232				REV: A



- LEGEND
- PROPOSED FLOOD EXCEEDANCE ARROW
 - EXISTING FLOOD EXCEEDANCE ARROW

A	FIRST ISSUE	13.07.26	GA	RJ
REV.	DESCRIPTION	Date	BY	CHK
DESIGN BY:				
				
CLIENT:				
				
DRAWING STATUS: PLANNING APPLICATION				
SCALE @ A1: 0 1:500 25 metres				
PROJECT: HAWKE RIDGE BUSINESS PARK				
TITLE: FLOOD EXCEEDANCE ROUTES SHEET 4				
Project Ref: 20001-TUM-PL-XXX-0233				REV: A

Appendix I – Proposed Foul Water Calculations

Design Settings

Frequency of use (kDU)	0.00	Minimum Velocity (m/s)	0.75
Flow per dwelling per day (l/day)	4000	Connection Type	Level Soffits
Domestic Flow (l/s/ha)	0.0	Minimum Backdrop Height (m)	0.200
Industrial Flow (l/s/ha)	0.0	Preferred Cover Depth (m)	1.800
Additional Flow (%)	0	Include Intermediate Ground	✓

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.000	1	2	13.597	1.500	49.800	49.320	0.480	28.3	150
1.001	2	3	30.248	1.500	49.320	49.118	0.202	150.0	150
2.000	20	21	12.475	1.500	50.563	50.355	0.208	60.0	150
2.001	21	22	17.521	1.500	50.355	49.755	0.600	29.2	150
2.002	22	3	7.160	1.500	49.755	49.118	0.637	11.2	150
1.002	3	4	46.393	1.500	49.118	48.650	0.468	99.1	150
1.003	4	5	25.205	1.500	48.650	48.150	0.500	50.4	150
3.000	30	5	13.496	1.500	49.818	49.649	0.169	80.0	150
1.004	5	6	31.460	1.500	48.150	47.940	0.210	149.8	150
1.005	6	7	6.009	1.500	47.940	47.899	0.041	146.6	150
1.006	7	8	9.067	1.500	47.899	47.839	0.060	150.0	150
1.007	8	9	42.565	1.500	47.839	47.415	0.424	100.4	150
1.008	9	10	8.252	1.500	47.415	46.882	0.533	15.5	150
4.000	40	41	33.976	1.500	50.150	49.650	0.500	68.0	150
4.001	41	42	28.252	1.500	49.650	48.900	0.750	37.7	150
4.002	42	43	22.447	1.500	48.900	48.300	0.600	37.4	150
5.000	50	51	48.658	1.500	50.234	49.405	0.829	58.7	150
5.001	51	43	27.760	1.500	49.405	48.300	1.105	25.1	150
4.003	43	44	10.359	1.500	48.300	47.360	0.940	11.0	150
4.004	44	45	56.413	1.500	47.360	46.983	0.377	149.6	150

Name	Cap (l/s)	Flow (l/s)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)
1.000	29.2	0.3	0.000	0	0.0	0.3	11
1.001	12.6	0.5	0.000	5	0.0	0.3	21
2.000	20.0	0.2	0.000	0	0.0	0.2	11
2.001	28.7	0.6	0.000	9	0.0	0.2	16
2.002	46.3	0.6	0.000	9	0.0	0.2	13
1.002	15.5	1.1	0.000	14	0.0	0.5	28
1.003	21.8	1.2	0.000	16	0.0	0.5	24
3.000	17.3	0.2	0.000	5	0.0	0.0	13
1.004	12.6	1.8	0.000	27	0.0	0.5	38
1.005	12.8	1.8	0.000	27	0.0	0.5	38
1.006	12.6	1.8	0.000	27	0.0	0.5	38
1.007	15.4	1.8	0.000	27	0.0	0.5	34
1.008	39.5	1.8	0.000	27	0.0	0.5	22
4.000	18.8	0.7	0.000	15	0.0	0.0	20
4.001	25.3	0.7	0.000	15	0.0	0.0	17
4.002	25.4	0.8	0.000	18	0.0	0.0	19
5.000	20.2	0.2	0.000	4	0.0	0.0	10
5.001	31.0	0.4	0.000	9	0.0	0.0	13
4.003	46.8	1.3	0.000	27	0.0	0.0	17
4.004	12.6	1.3	0.000	27	0.0	0.0	32

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
4.005	45	46	26.827	1.500	46.983	46.804	0.179	149.9	150
4.006	46	10	35.584	1.500	46.804	46.566	0.238	149.5	150
1.009	10	11	26.927	1.500	46.566	46.386	0.180	149.6	150
1.010	11	12	51.782	1.500	46.386	46.040	0.346	149.7	150

Name	Cap (l/s)	Flow (l/s)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)
4.005	12.6	1.3	0.000	27	0.0	0.0	32
4.006	12.6	1.9	0.000	40	0.0	0.0	39
1.009	12.6	3.9	0.000	73	0.0	0.5	57
1.010	12.6	3.9	0.000	73	0.0	0.5	57

Design Settings

Frequency of use (kDU)	0.00	Minimum Velocity (m/s)	0.75
Flow per dwelling per day (l/day)	4000	Connection Type	Level Soffits
Domestic Flow (l/s/ha)	0.0	Minimum Backdrop Height (m)	0.200
Industrial Flow (l/s/ha)	0.0	Preferred Cover Depth (m)	1.500
Additional Flow (%)	0	Include Intermediate Ground	x

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.000	100	101	52.824	1.500	49.150	48.798	0.352	150.0	150
2.000	120	101	32.265	1.500	51.200	48.790	2.410	13.4	150
1.001	101	102	25.234	1.500	48.790	48.621	0.169	149.3	150
3.000	130	131	30.076	1.500	52.200	50.950	1.250	24.1	150
3.001	131	102	34.756	1.500	50.950	48.629	2.321	15.0	150
1.002	102	103	32.306	1.500	48.621	48.405	0.216	149.6	150
1.003	103	104	45.013	1.500	48.405	47.950	0.455	98.9	150
1.004	104	105	5.420	1.500	47.950	47.913	0.037	146.5	150
4.000	140	141	10.636	1.500	53.000	52.781	0.219	48.6	150
4.001	141	142	30.783	1.500	52.781	51.550	1.231	25.0	150
4.002	142	143	61.010	1.500	51.550	50.000	1.550	39.4	150
4.003	143	144	3.861	1.500	50.000	49.974	0.026	148.5	150
4.004	144	145	28.118	1.500	49.974	49.114	0.860	32.7	150
4.005	145	105	26.246	1.500	49.114	47.913	1.201	21.9	150
1.005	105	106	12.759	1.500	47.913	47.828	0.085	150.0	150
1.006	106	107	55.409	1.500	47.828	47.459	0.369	150.0	150
1.007	107	108	37.312	1.500	47.459	47.210	0.249	150.0	150
1.008	108	109	23.431	1.500	47.210	47.054	0.156	150.0	150
5.000	150	151	29.834	1.500	48.357	47.650	0.707	42.2	150
5.001	151	152	72.223	1.500	47.650	47.169	0.481	150.0	150

Name	Cap (l/s)	Flow (l/s)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)
1.000	12.6	0.3	0.000	7	0.0	0.0	17
2.000	42.5	0.4	0.000	9	0.0	0.0	11
1.001	12.6	1.2	0.000	25	0.0	0.0	31
3.000	31.6	0.3	0.000	7	0.0	0.0	11
3.001	40.1	1.2	0.000	25	0.0	0.0	18
1.002	12.6	2.7	0.000	59	0.0	0.0	48
1.003	15.6	2.8	0.000	60	0.0	0.0	43
1.004	12.8	2.8	0.000	60	0.0	0.0	48
4.000	22.2	0.4	0.000	8	0.0	0.0	14
4.001	31.0	0.4	0.000	8	0.0	0.0	12
4.002	24.7	0.4	0.000	8	0.0	0.0	13
4.003	12.7	0.9	0.000	19	0.0	0.0	27
4.004	27.1	0.9	0.000	19	0.0	0.0	19
4.005	33.2	1.4	0.000	30	0.0	0.0	21
1.005	12.6	4.4	0.000	96	0.0	0.0	61
1.006	12.6	4.6	0.000	99	0.0	0.0	62
1.007	12.6	5.3	0.000	114	0.0	0.0	68
1.008	12.6	5.5	0.000	118	0.0	0.0	69
5.000	23.9	0.4	0.000	9	0.0	0.0	14
5.001	12.6	0.7	0.000	16	0.0	0.0	25

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
5.002	152	109	6.713	1.500	47.169	47.044	0.125	53.7	150
1.009	109	110	13.768	1.500	47.044	46.952	0.092	149.6	150
1.010	110	111	33.375	1.500	46.952	46.730	0.222	150.0	150
1.011	111	112	37.728	1.500	46.730	46.479	0.251	150.1	150
1.012	112	113	25.293	1.500	46.455	46.286	0.169	150.0	150

Name	Cap (l/s)	Flow (l/s)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)
5.002	21.2	0.9	0.000	20	0.0	0.0	21
1.009	12.6	6.4	0.000	138	0.0	0.0	75
1.010	12.6	6.4	0.000	138	0.0	0.0	75
1.011	12.6	6.4	0.000	138	0.0	0.0	75
1.012	12.6	6.4	0.000	138	0.0	0.0	75