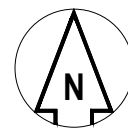

Appendix E – Proposed Impermeable Area Plan, Proposed Drainage, Construction Details and Drainage Calculations



DO NOT SCALE OFF THIS DRAWING

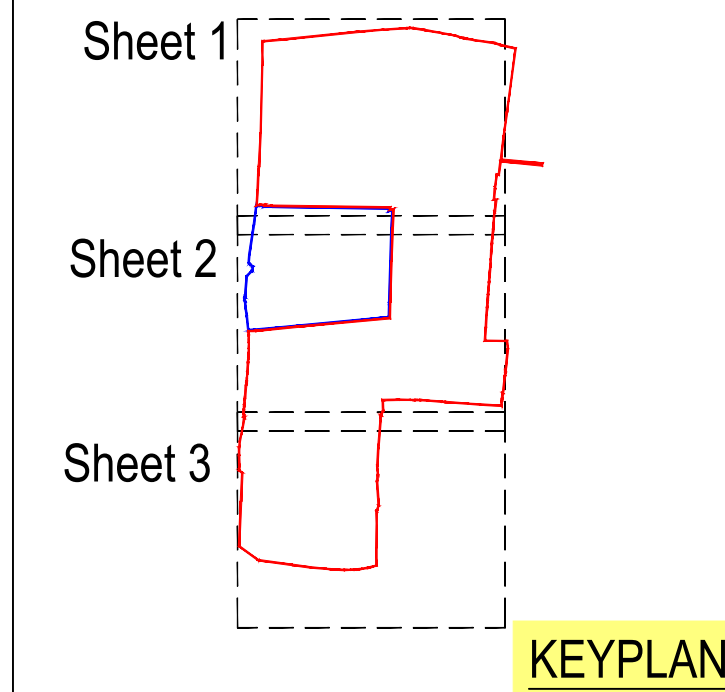
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DRAINAGE KEY	
	Site Boundary
	Existing Foul Water Sewer
	Existing Surface Water Sewer
	Adoptable S104 Foul Water Manhole & Pipe Refer to schedule for size/ types and cover details
	Adoptable S104 Foul Water Rising Main
	Adoptable S104 Surface Water Manhole & Pipe Refer to schedule for size/ types and cover details
	Hydrobrake Manhole (see plan for restricted rate)
	Catch Pit Manhole - 500mm Sump
	Surface Water Road Gully
	Private Foul Water Inspection Chamber & Pipe
	Private Surface Water Inspection Chamber & Pipe
	Private Surface Water Rodding Eye
	Private Surface Water Road Gully
	Crate Soakaway / Crate Attenuation Tank ###
	Filter drain with Perforated Pipe in Tank
	Precast Concrete Headwall
	ACO Swale Inlet
	Tree Root Protection Area
	Proposed Swale

A02	HB/CP ADDED TO MANHOLES	PJ	TZ	SB	24/07/2026
A01	ISSUED FOR APPROVAL	PJ	TZ	SB	22/07/2026
Rev	Comment	By	Chkd	Appr	Date

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Project
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BOLNEY

Drawing Title
PROPOSED DRAINAGE LAYOUT
SHEET 1 OF 3

RWCL Internal Register reference: 5968-003

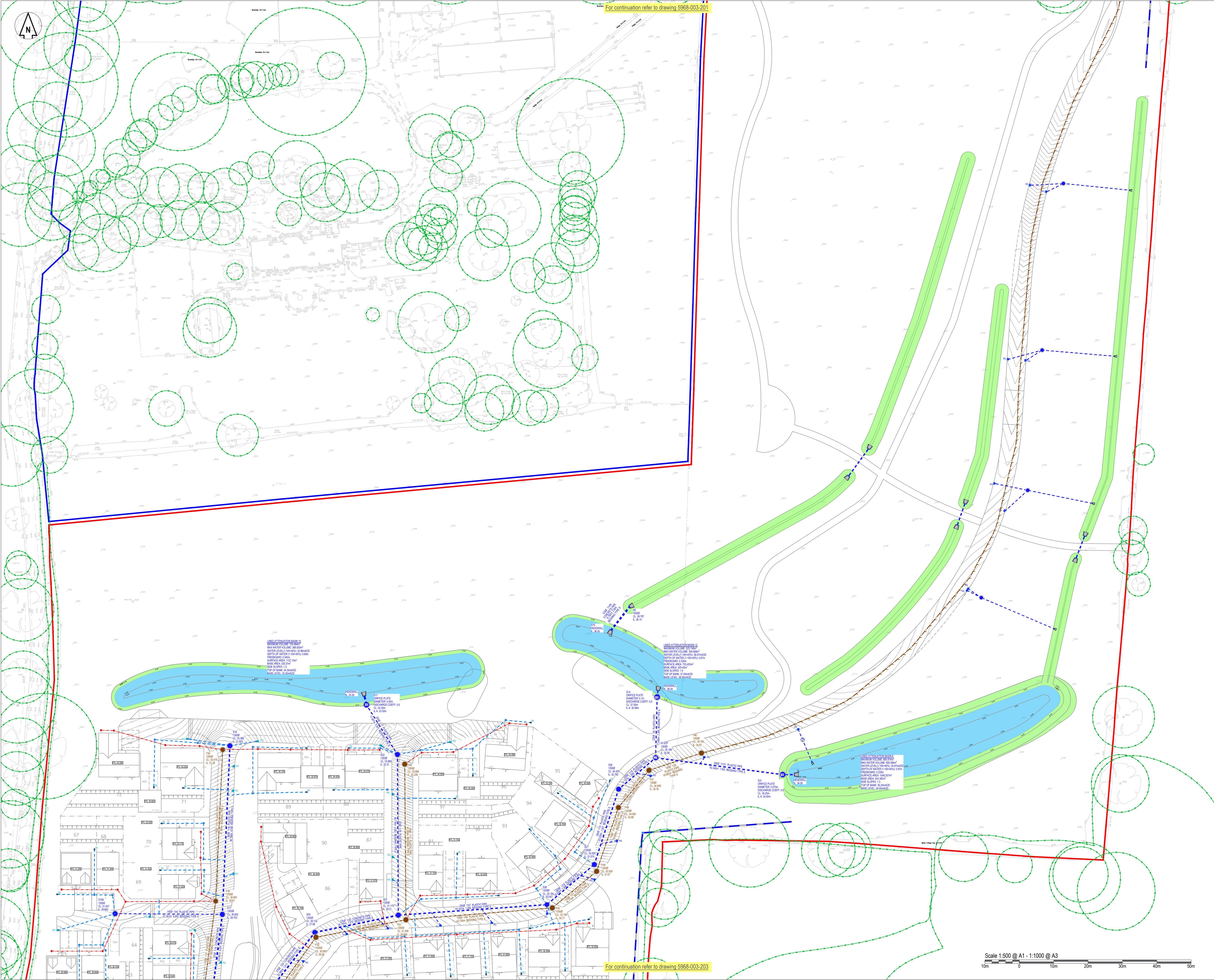
Scales @ A1

201-A02

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For continuation refer to drawing 5968-003-202

Scale 1:500 @ A1 - 1:1000 @ A3
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For continuation refer to drawing 5968-003-201

For continuation refer to drawing 5968-003-203

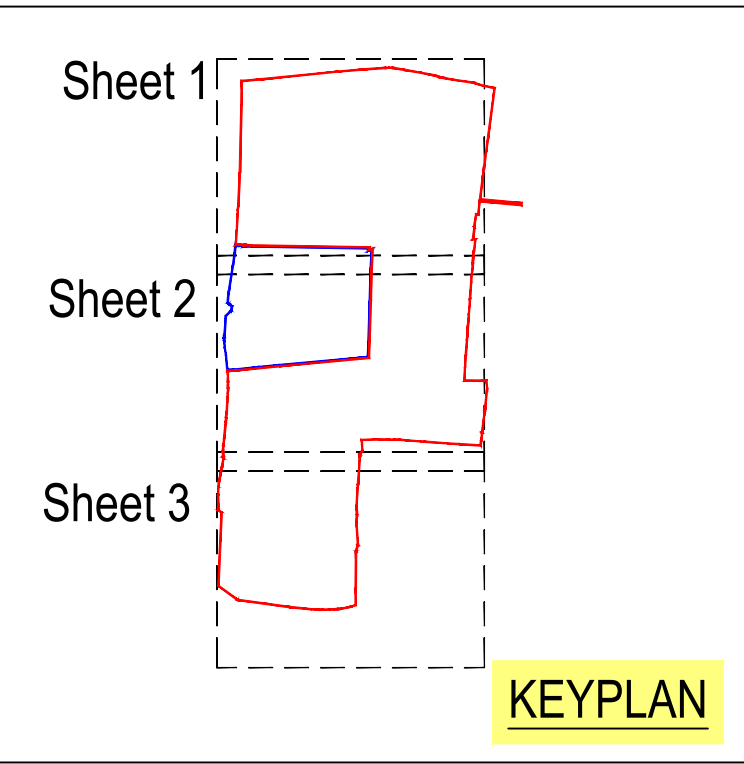
DO NOT SCALE OFF THIS DRAWING

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	Private Surface Water Road Gully
	Crate Skewaway / Crate Attenuation Tank ###
	Filter drain with Perforated Pipe in Tank
	Precast Concrete Headwall
	ACO Swale Inlet
	Tree Root Protection Area
	Proposed Swale

A02	HB/CP ADDED TO MANHOLES	PJ	TZ	SB	24/07/2026
A01	ISSUED FOR APPROVAL	PJ	TZ	SB	22/07/2026
Rev	Comment	By	Chkd	Appr	Date

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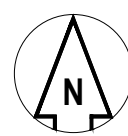
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Project
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Drawing Title
PROPOSED DRAINAGE LAYOUT
SHEET 2 OF 3

RWCL Internal Register reference: 5968-003

Scales @ A1
202-A02



For continuation refer to drawing 5968-003-202

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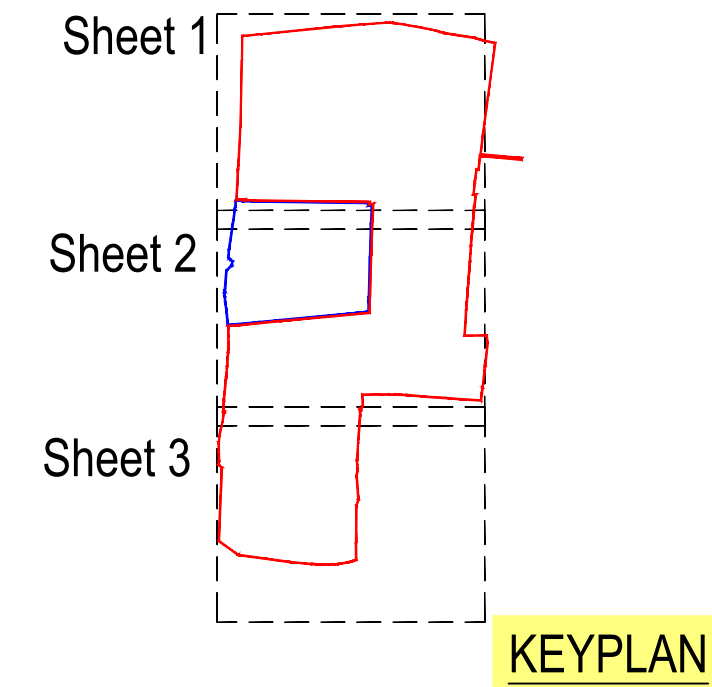
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Rev	Comment	By	Chkd	Appr	Date

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Drawing Title
PROPOSED DRAINAGE LAYOUT
SHEET 3 OF 3

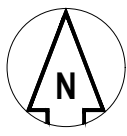
RWCL Internal Register reference: 5968-003

Scales @ A1

203-A02

Scale 1:500 @ A1 - 1:1000 @ A3





DO NOT SCALE OFF THIS DRAWING

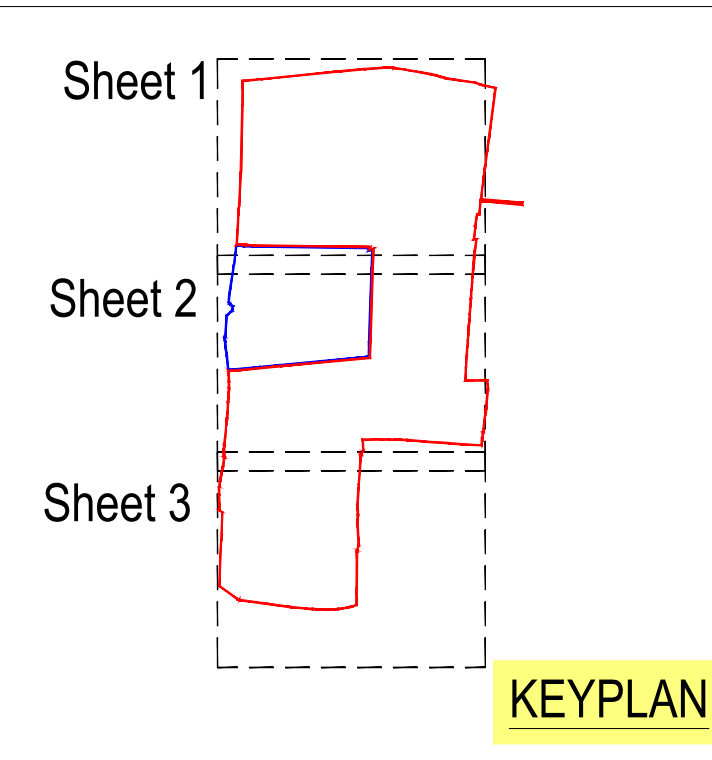
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Key:

	Northern Parcel Area = 75,593m ² (7.66Ha)
	Houses = 7,340.5m ²
	+ Urban creep 10% = 734.5m ²
	Total = 8,075m ²
	Roads, paths & driveways = 17,441m ²
	Proposed Detention Basin = 4,632m ²
	Total Impermeable Area = 30,148m ² = 3.148Ha
	Proposed Landscape Area (included in SW calculations)
	Runoff coefficient (Cv) = 0.45

AD1	ISSUED FOR APPROVAL	TZ	SB	SB	21/07/2026
Rev	Comment	By	Chkd	Appr	Date

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Drawing Title
IMPERMEABLE AREA PLAN
SHEET 1 OF 3

RWCL Internal Register reference: 5968-003

Scales @ A1

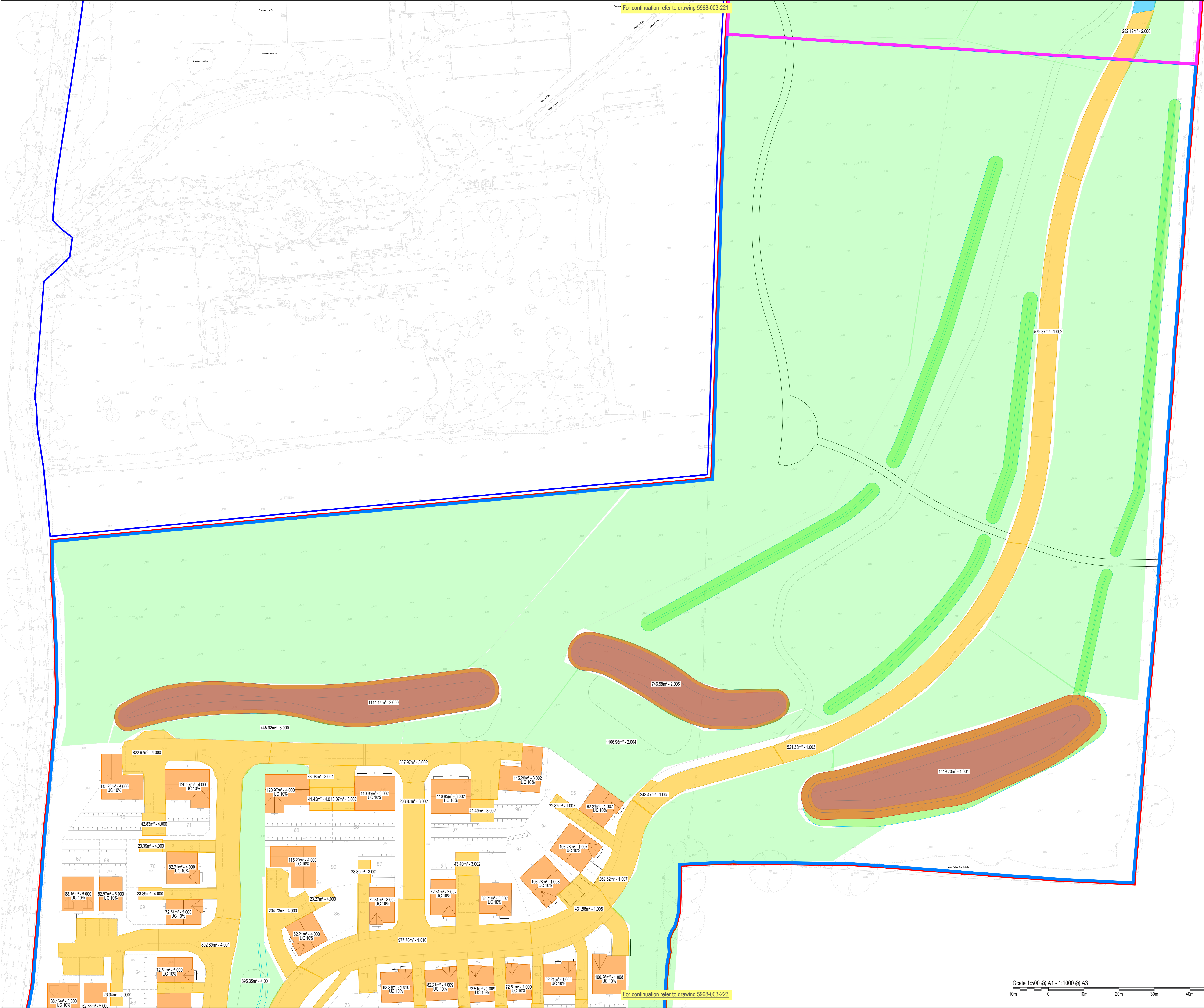
221-A01

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For continuation refer to drawing 5968-003-222

Scale 1:500 @ A1 - 1:1000 @ A3

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For continuation refer to drawing 5968-003-221

For continuation refer to drawing 5968-003-223



DO NOT SCALE OFF THIS DRAWING

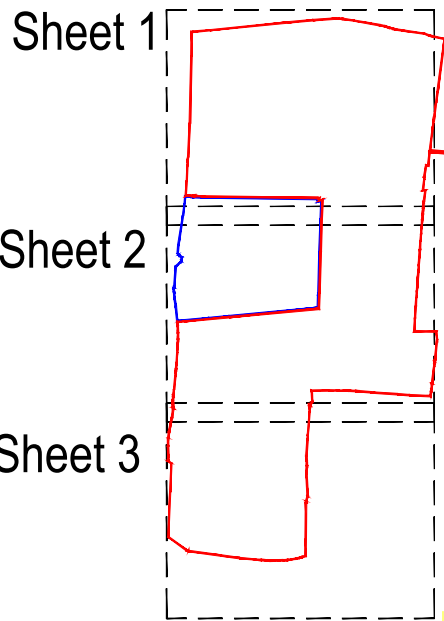
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KEYPLAN

Key:

- Southern Parcel Area = 87,363m² (8.73Ha)
- Houses = 6,670m²
- Urban creep 10% = 667m²
- Total = 7,337m²
- Roads, paths & driveways = 14,960m²
- Proposed Detention Basin = 6,100m²
- Total Impermeable Area = 28,397m² = 2.84Ha
- Proposed Landscape Areas (included in SW calculations)
- Runoff coefficient (Cv) = 0.40

A01 ISSUED FOR APPROVAL		TZ	SB	SB	21/07/2026
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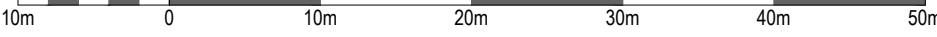
Drawing Title
IMPERMEABLE AREA PLAN
SHEET 2 OF 3

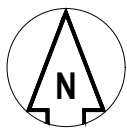
RWCL Internal Register reference: 5968-003

Scales @ A1

222-A01

Scale 1:500 @ A1 - 1:1000 @ A3





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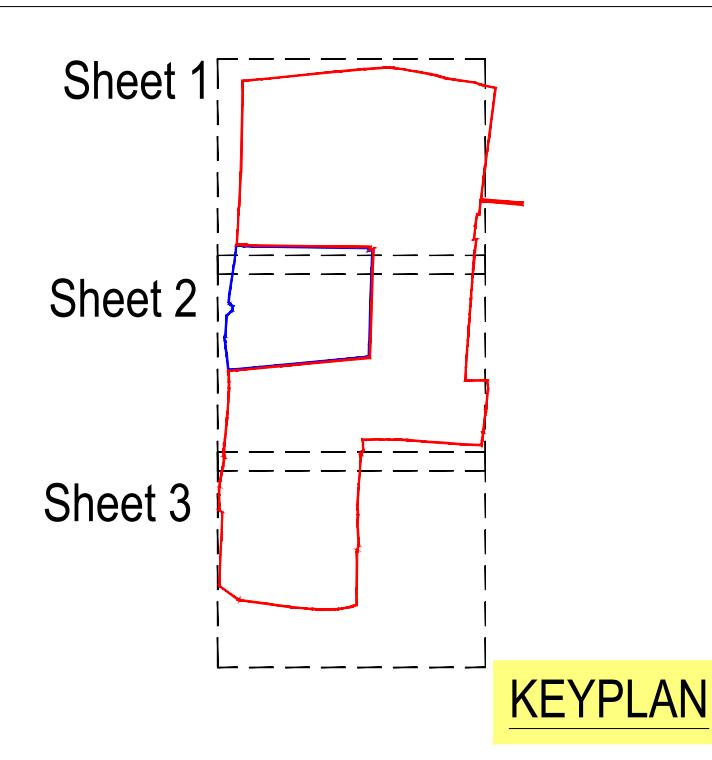
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Legend	
	Site Boundary
	Exceedance flow

A01 ISSUED FOR APPROVAL		HA	SB	SB	22/07/2026
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Drawing Title
EXISTING EXCEEDANCE FLOW PLAN
SHEET 1 OF 3

RWCL Internal Register reference: 5968-003

Scales @ A1

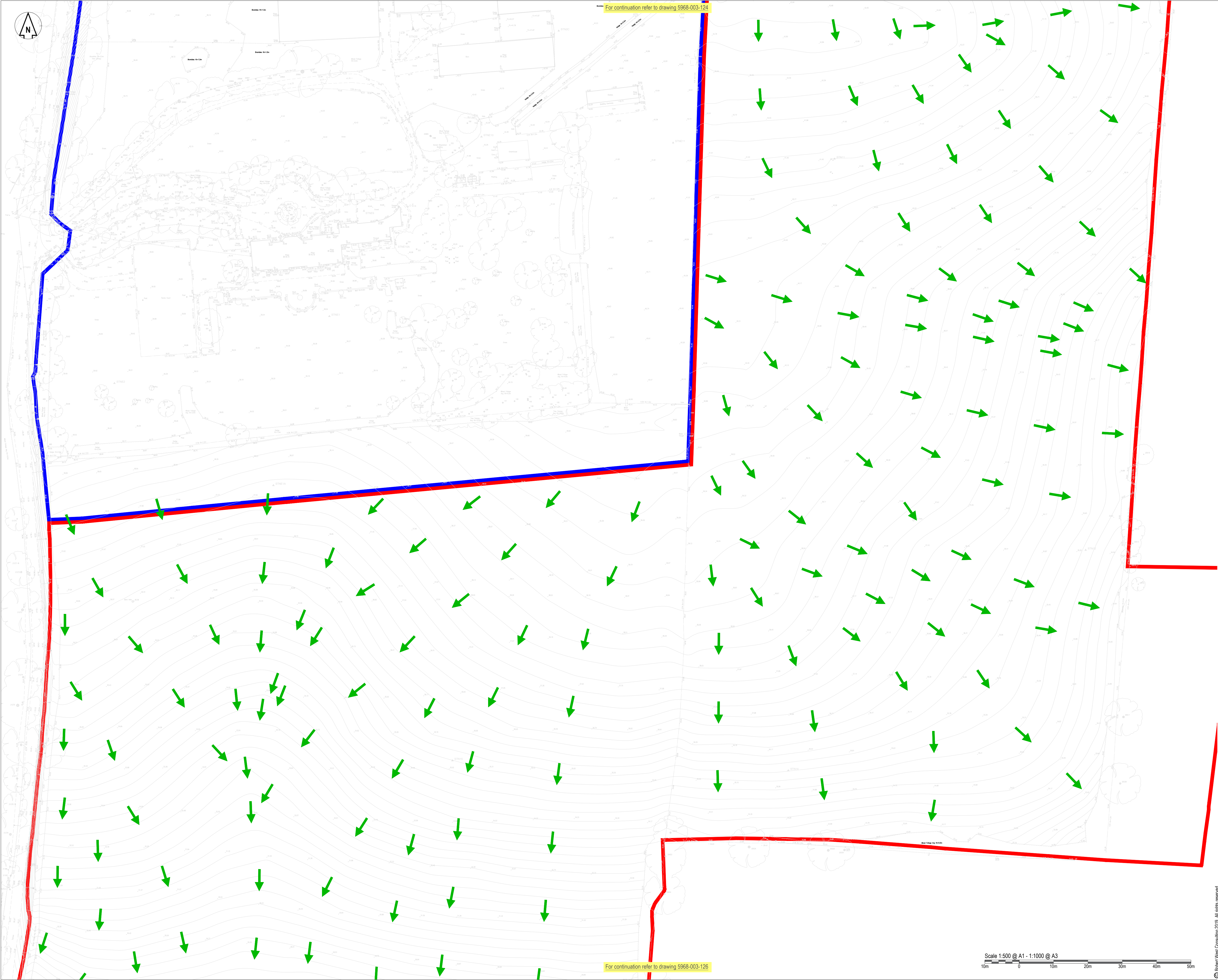
401-A01

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Scale 1:500 @ A1 - 1:1000 @ A3

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For continuation refer to drawing 5968-003-125

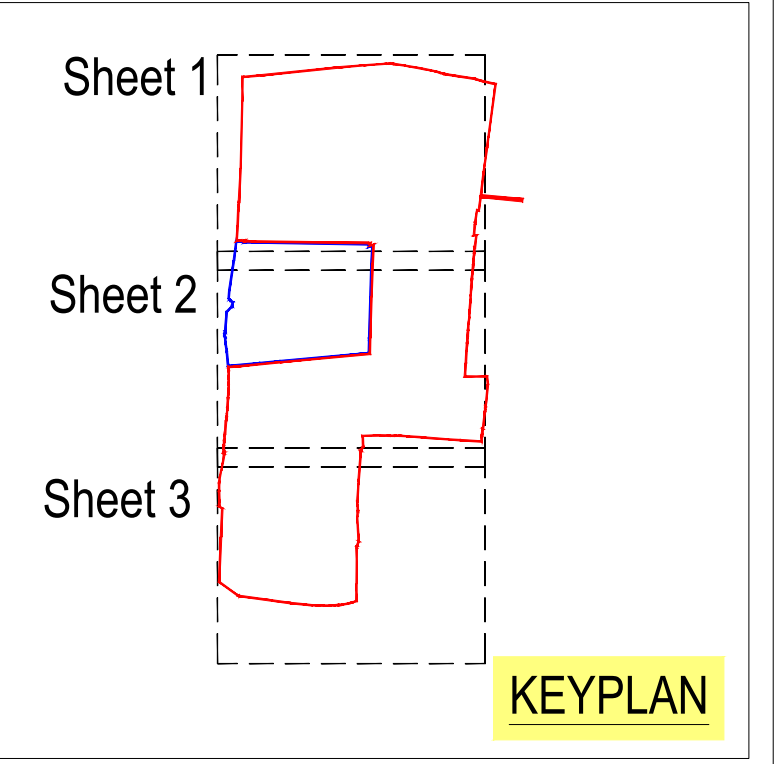


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Legend	
	Site Boundary
	Exceedance flow

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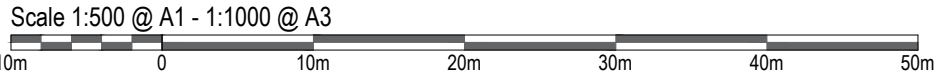
Project
FOXHOLE FARMS
BOLNEY

Drawing Title
EXISTING EXCEEDANCE FLOW PLAN
SHEET 2 OF 3

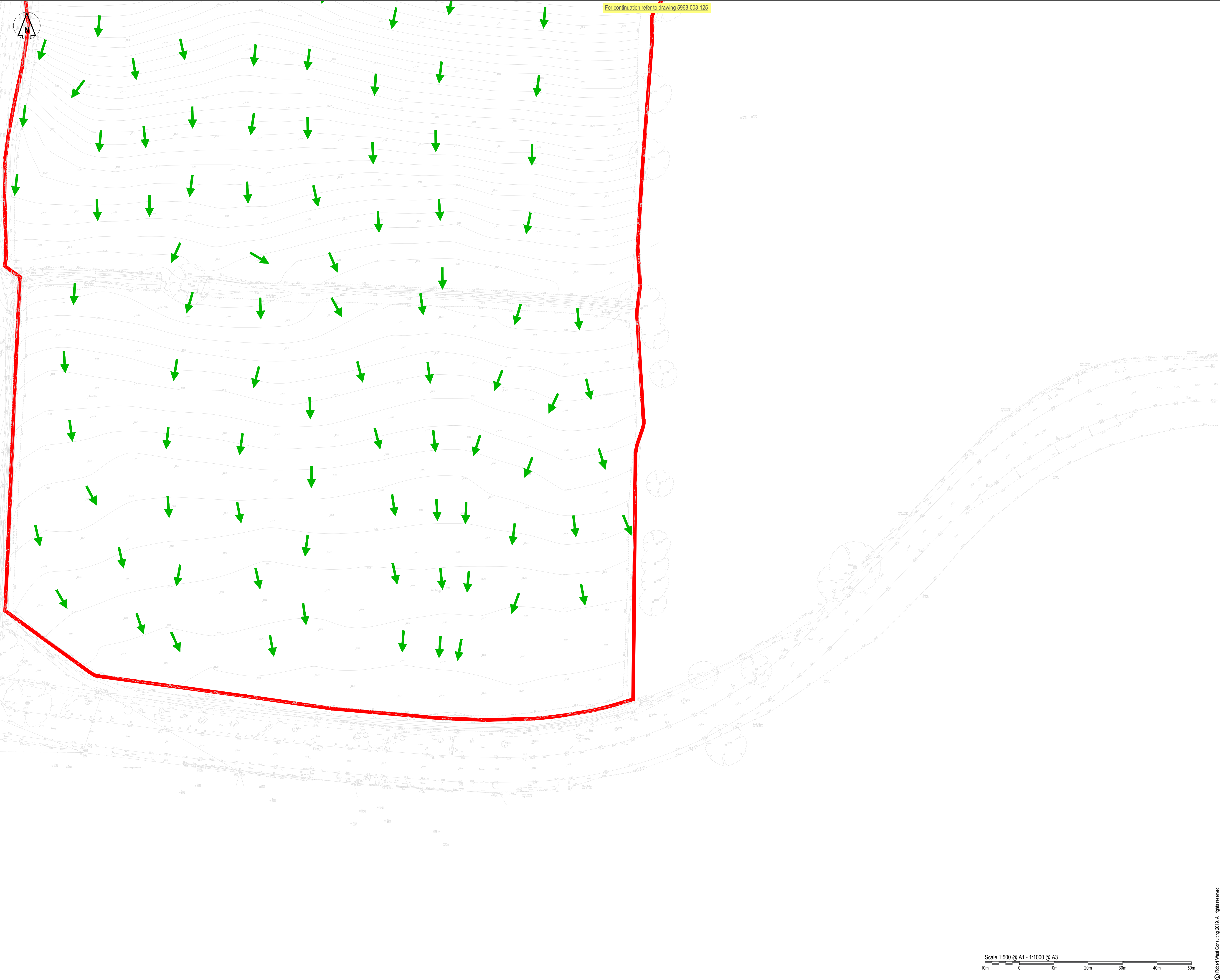
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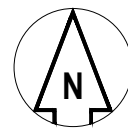
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402-A01



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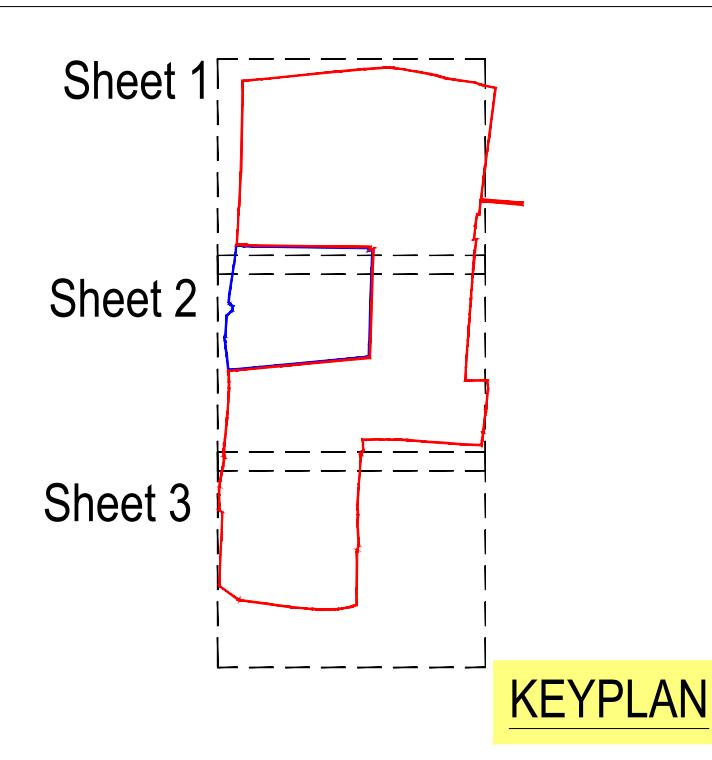
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Legend

- Site Boundary
- Exceedance flow
- Exceedance storage area
- Proposed Major Contour
- Proposed Minor Contour

AD1	ISSUED FOR APPROVAL	HA	SB	SB	22/07/2026
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	Revision History				

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Drawing Title
EXCEEDANCE FLOW PLAN
SHEET 1 OF 3

RWCL Internal Register reference: 5968-003

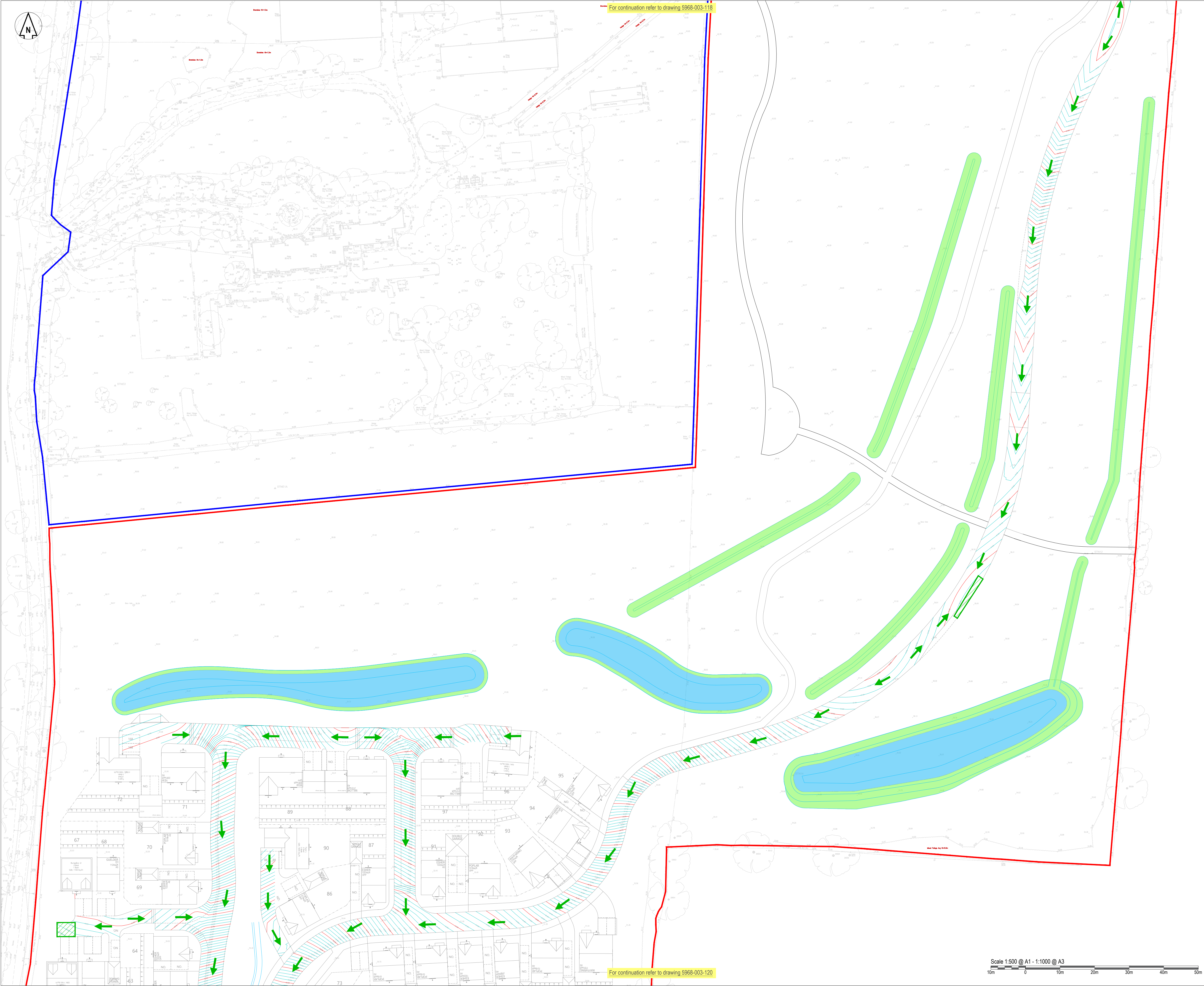
Scales @ A1

411-A01

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Scale 1:500 @ A1 - 1:1000 @ A3

For continuation refer to drawing 5968-003-119



For continuation refer to drawing 5968-003-118

For continuation refer to drawing 5968-003-120

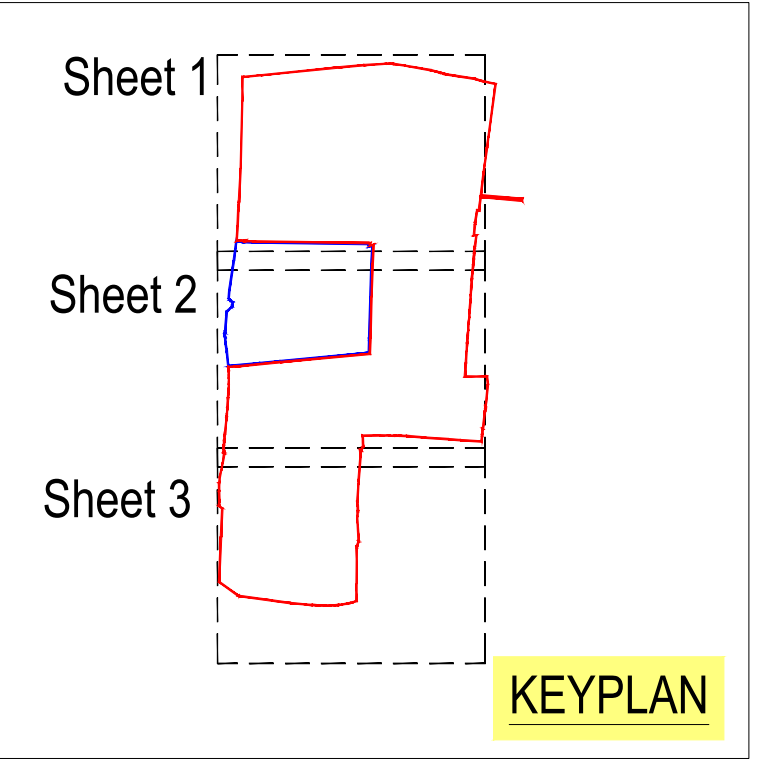
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Legend	
	Site Boundary
	Exceedance flow
	Exceedance storage area
	Proposed Major Contour
	Proposed Minor Contour

A01	ISSUED FOR APPROVAL	HA	SB	SB	22/07/2026
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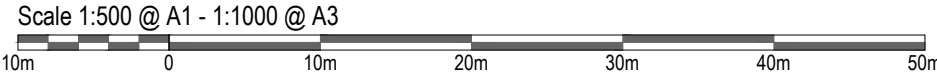
Project
FOXHOLE FARMS
BOLNEY

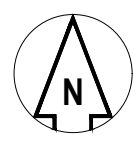
Drawing Title
EXCEEDANCE FLOW PLAN
SHEET 2 OF 3

RWCL Internal Register reference: 5968-003

Scales @ A1

412-A01





For continuation refer to drawing 5968-003-119

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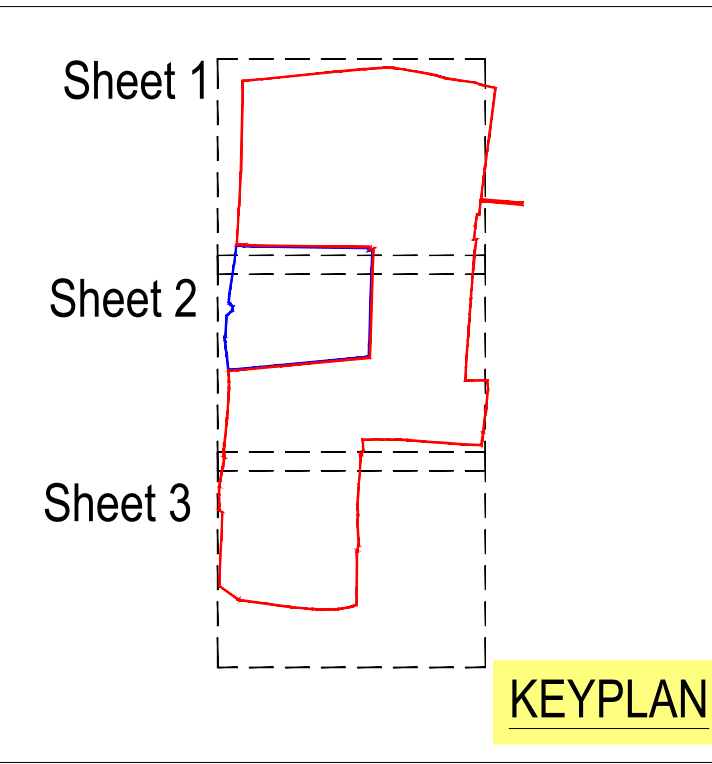
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3. Unauthorised access to the site must be prevented at all times.
4. Existing road drainage to be maintained.
5. Be aware of possible live drainage flows and foul effluent during construction. The Contractor shall assess and implement a safe working system and equipment (PPE) as necessary.

The above residual risks are for non-standard hazards. It is assumed that a competent contractor familiar with the construction of this type of work will be appointed who will be aware of the standard hazards.



Legend

- Site Boundary
- Exceedance flow
- Exceedance storage area
- Proposed Major Contour
- Proposed Minor Contour

AD1	ISSUED FOR APPROVAL	HA	SB	SB	22/07/2026
Rev	Comment	By	Chkd	Appr	Date

Revision History

APPROVAL

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Project
FOXHOLE FARMS
BOLNEY

Drawing Title
EXCEEDANCE FLOW PLAN
SHEET 3 OF 3

RWCL Internal Register reference: 5968-003

Scales @ A1

413-A01

Scale 1:500 @ A1 - 1:1000 @ A3



NOTES

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3. All dimensions in millimeters unless stated otherwise.

Figure B 5
Typical manhole detail - Type A1

Depth from cover level to soffit of pipe 3 m to 6 m with ladder and reducing slab
Rigid material construction with concrete surround

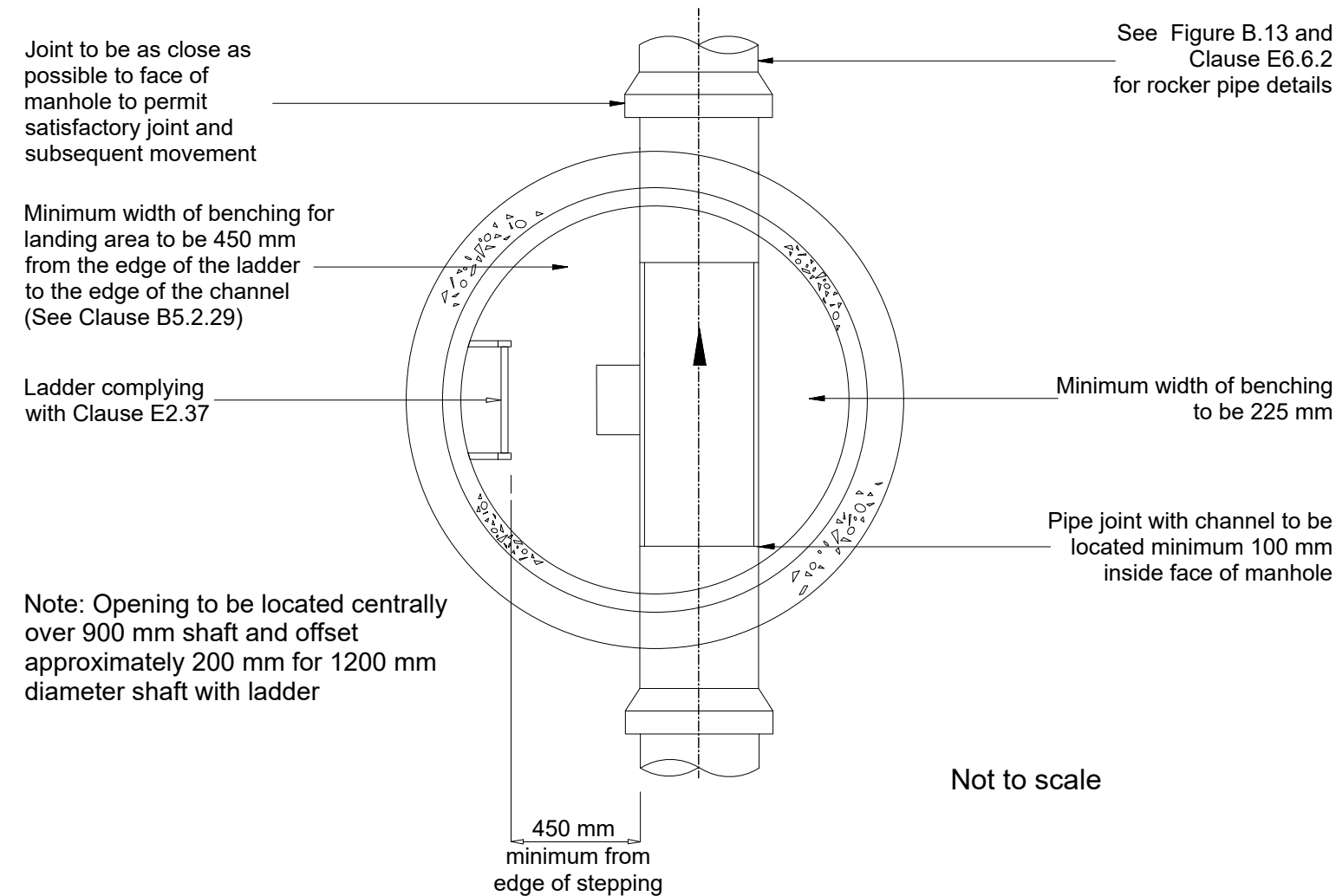
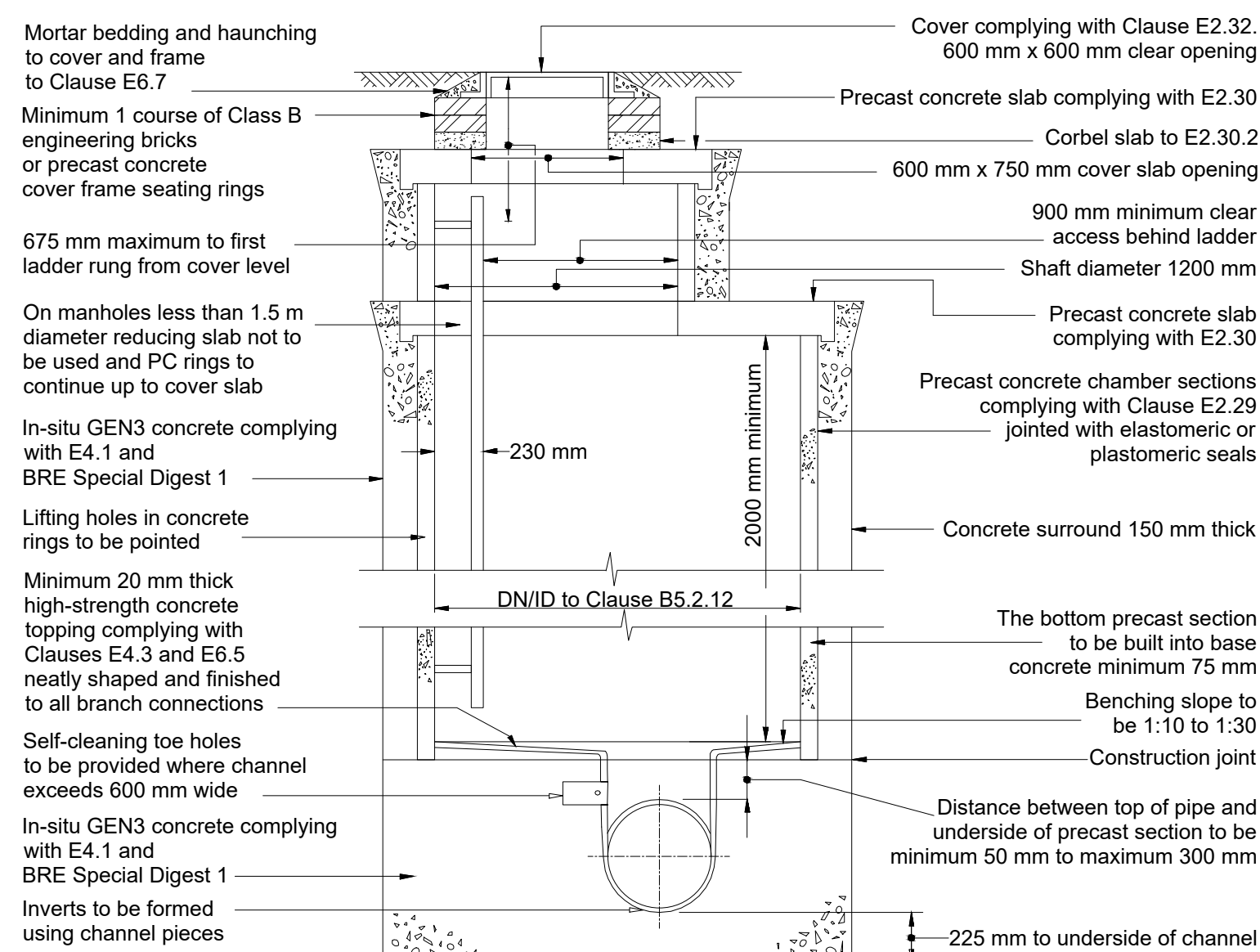


Figure B 7
Typical manhole cover - Type A2

Depth from cover level to soffit of pipe 3 m to 6 m with ladder
Alternative rigid material construction with concrete surround

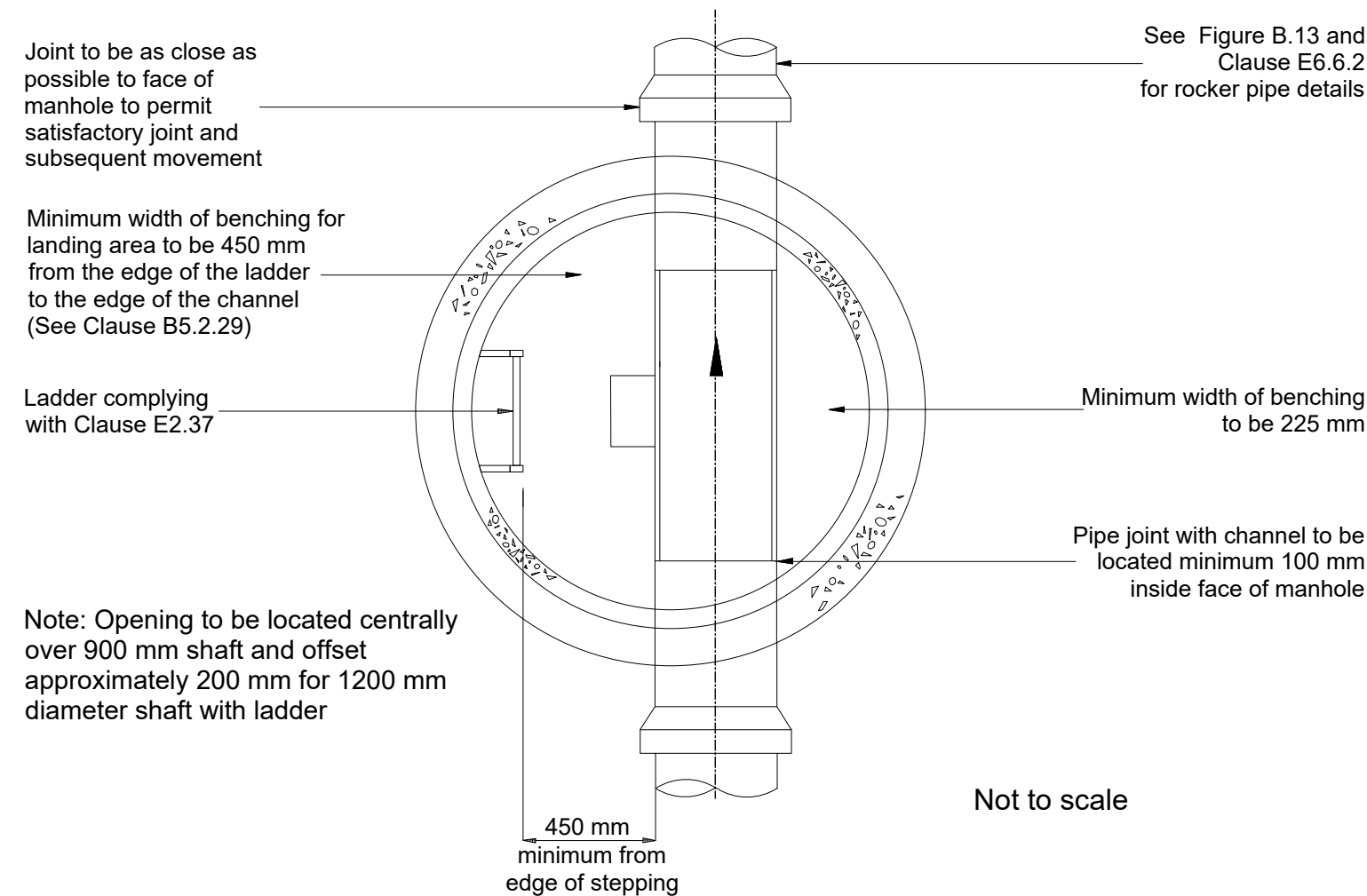
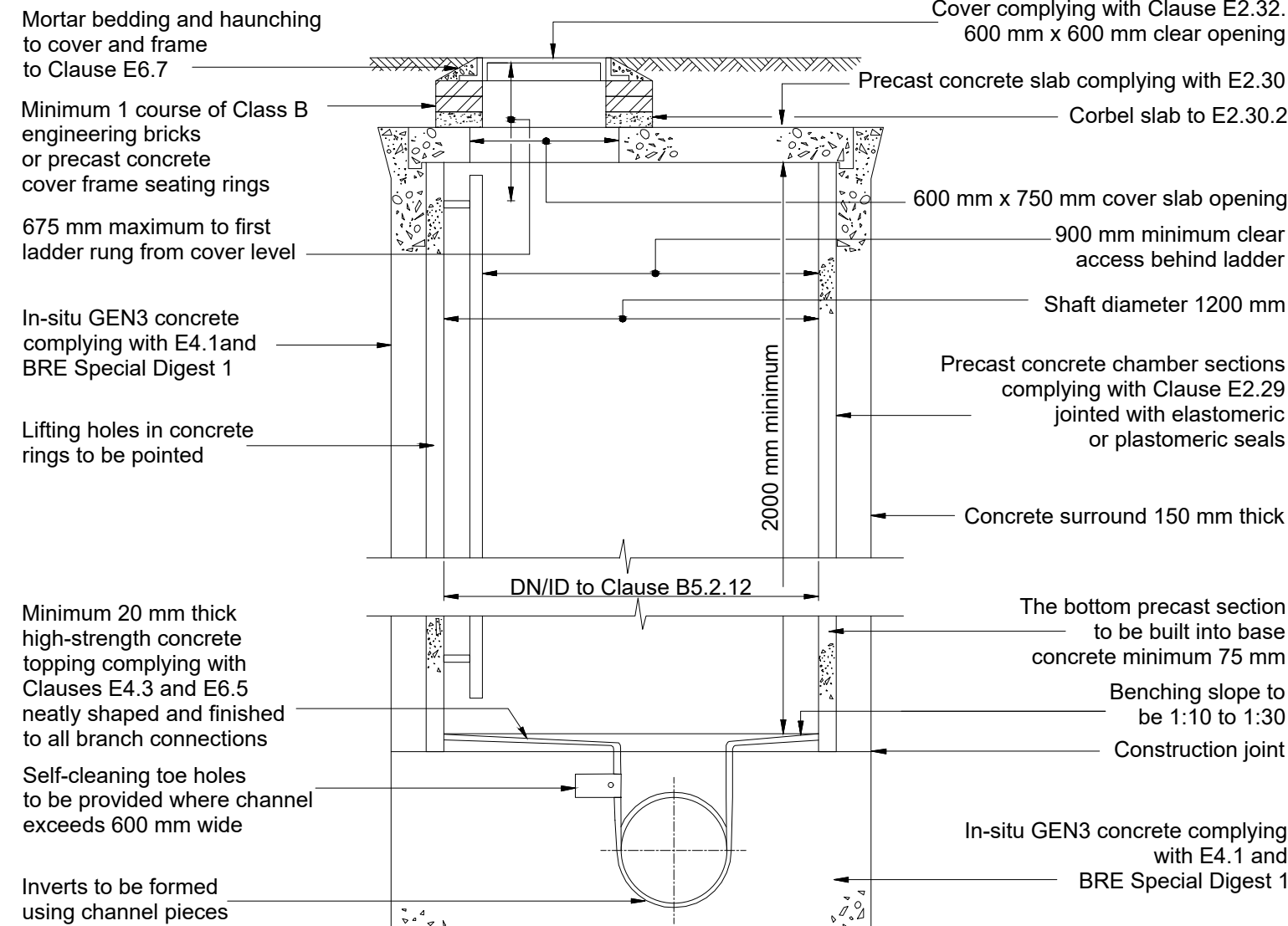
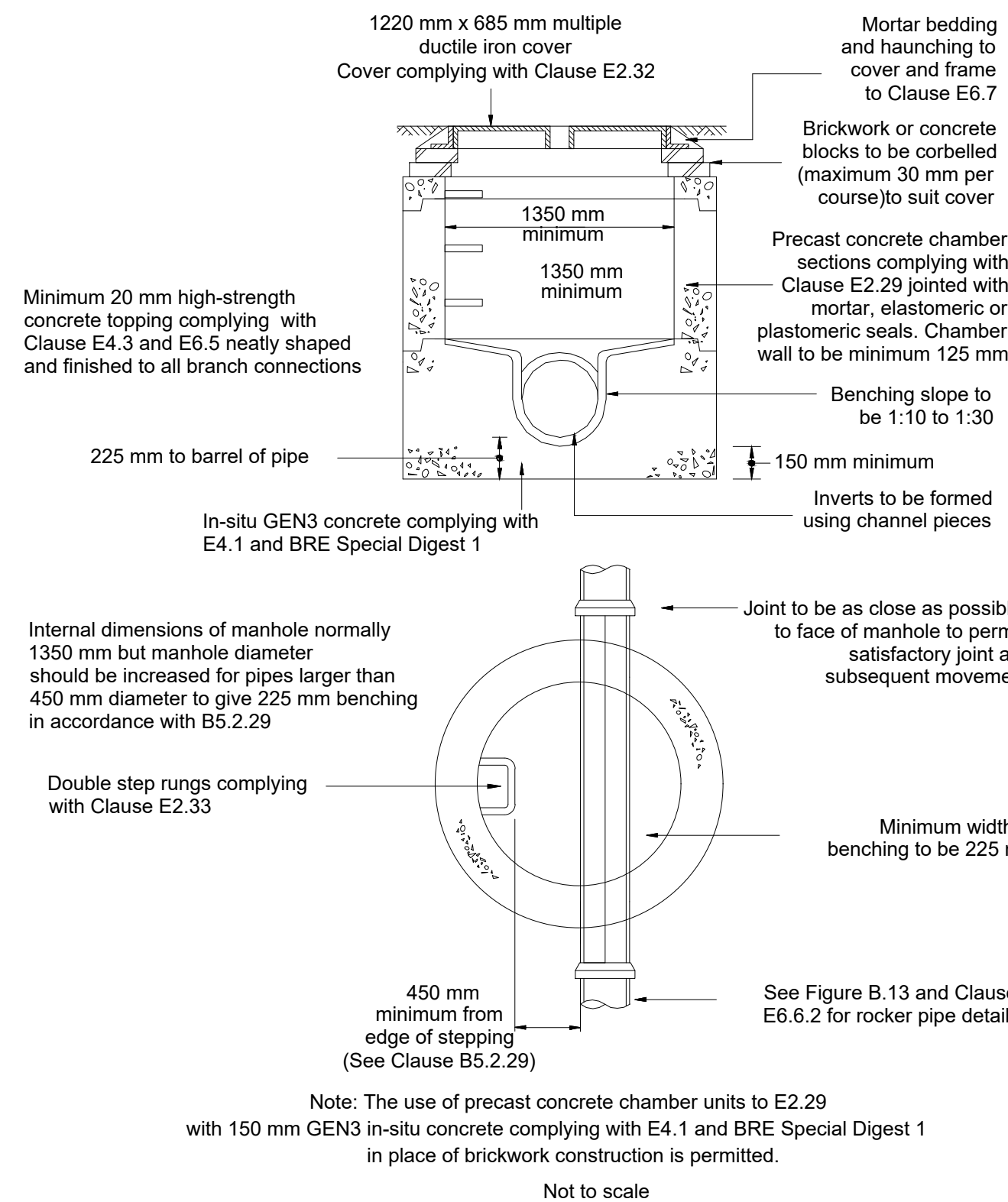


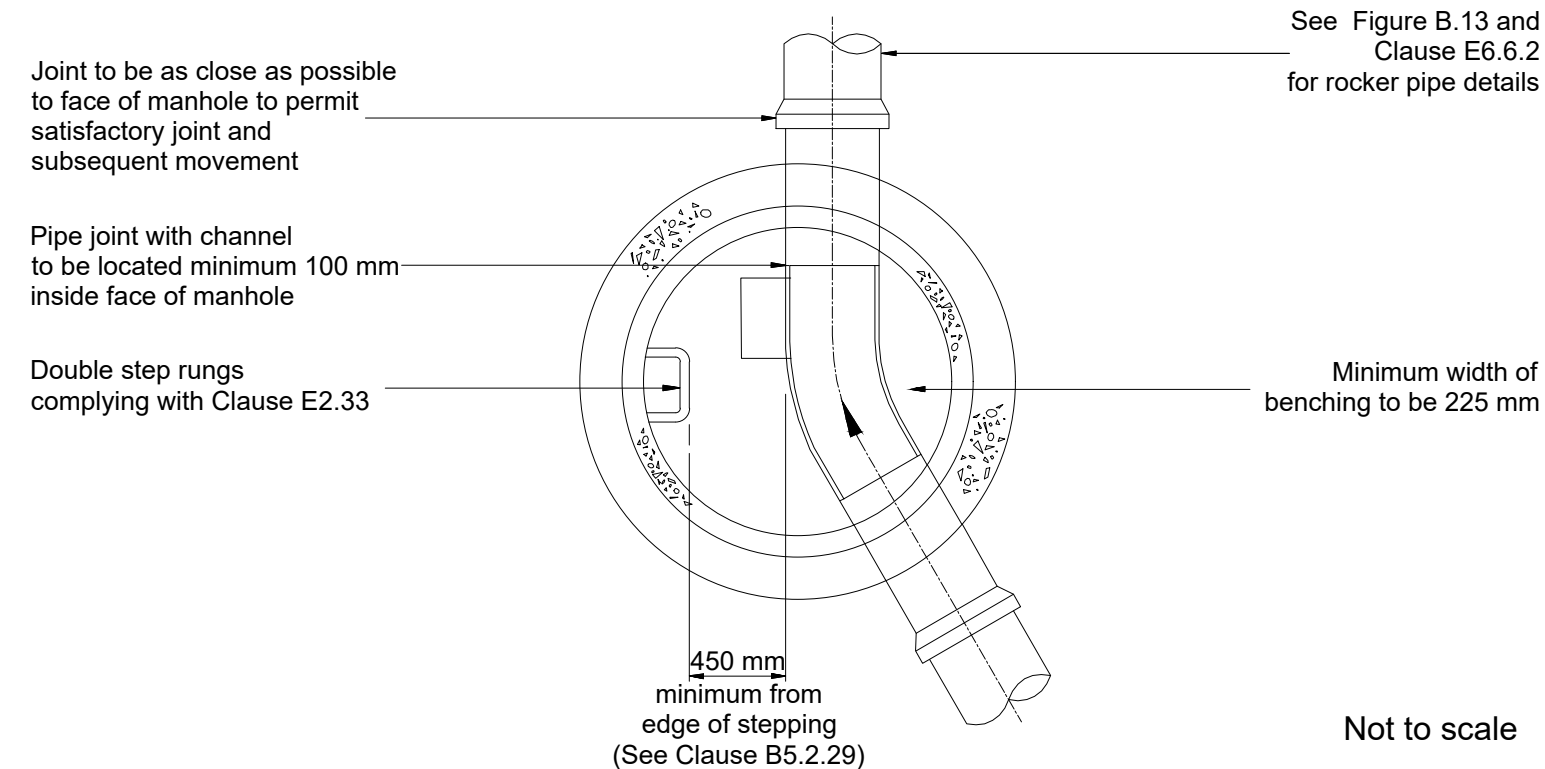
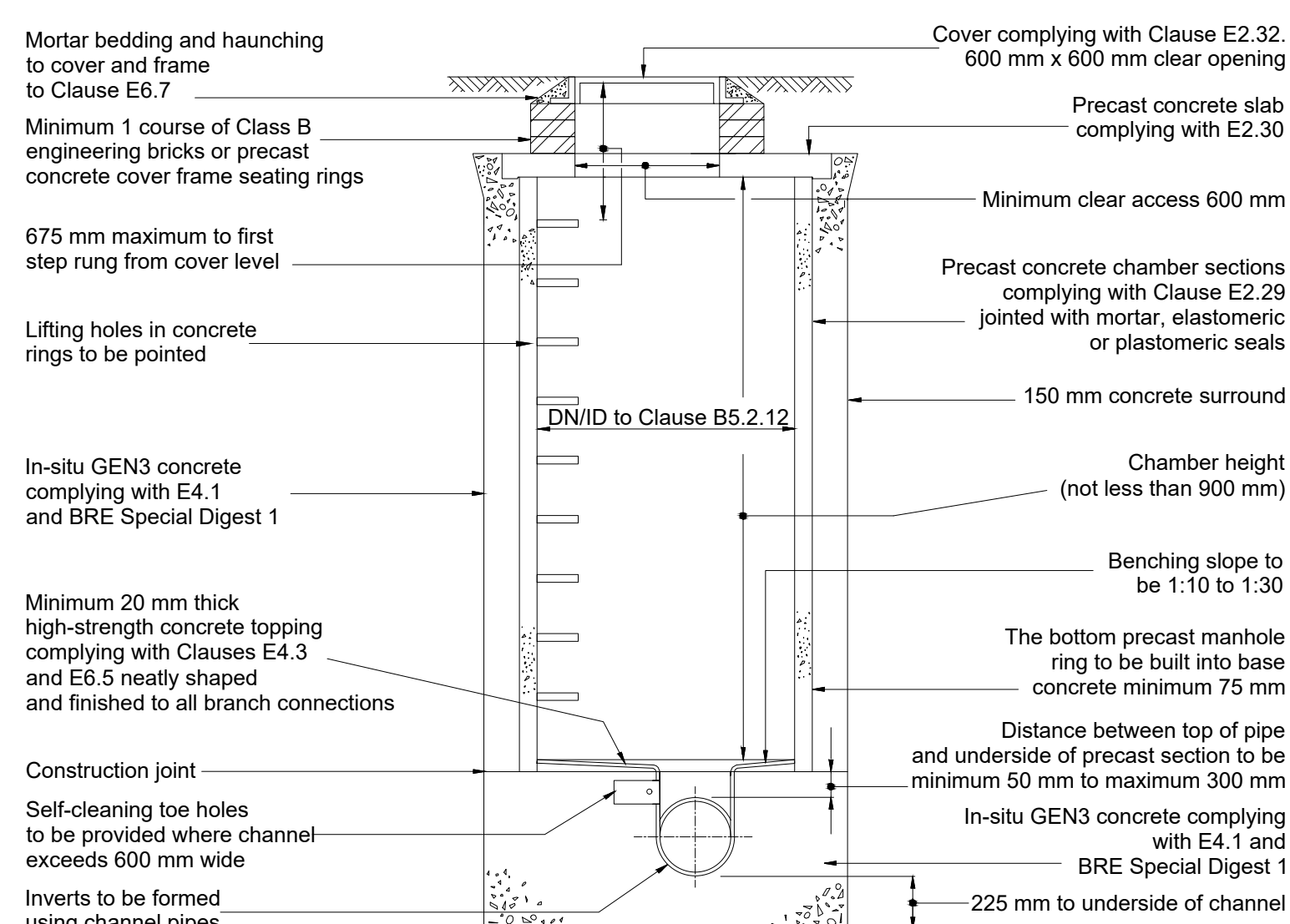
Figure B 15
Typical manhole detail - Type C
Depth from cover level to soffit of pipe less than 1.5 m
Rigid material construction



Note: The use of precast concrete chamber units to E2.29 with 150 mm GEN3 in-situ concrete complying with E4.1 and BRE Special Digest 1 in place of brickwork construction is permitted.

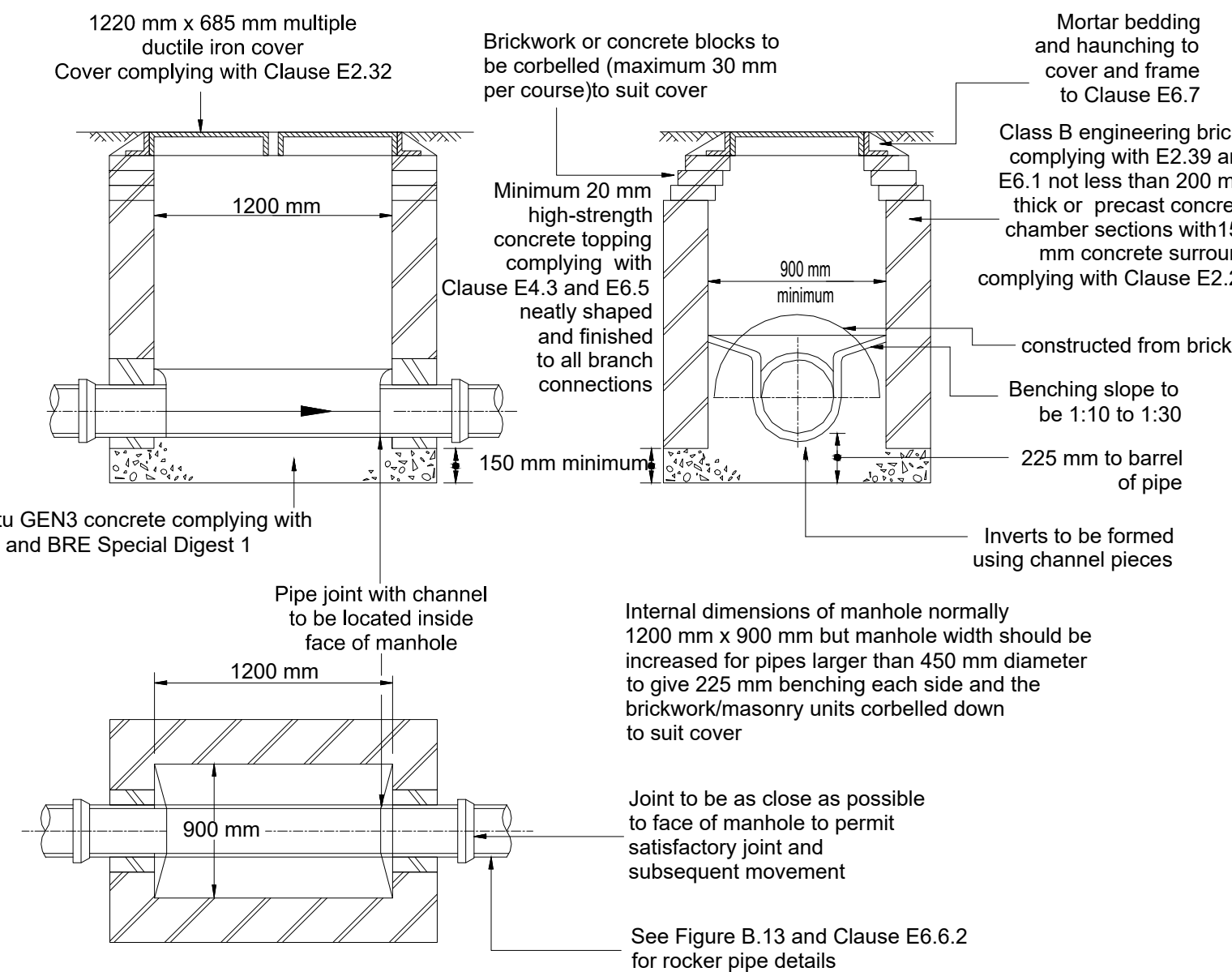
Not to scale

Figure B 10
Typical manhole detail - Type B
Depth from cover level to soffit of pipe 1.5 m to 3.0 m
Alternative Rigid material construction with concrete surround



Not to scale

Figure B 14
Typical manhole detail - Type C
Depth from cover level to soffit of pipe less than 1.5 m
Rigid material construction



Note: The use of precast concrete chamber units to E2.29 with 150 mm GEN3 in-situ concrete complying with E4.1 and BRE Special Digest 1 in place of brickwork construction is permitted.

Not to scale

Rev	Issued for Approval	Comment	By	Chkd	Appr	Date

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Project
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Drawing Title
DRAINAGE DETAILS
SHEET 1

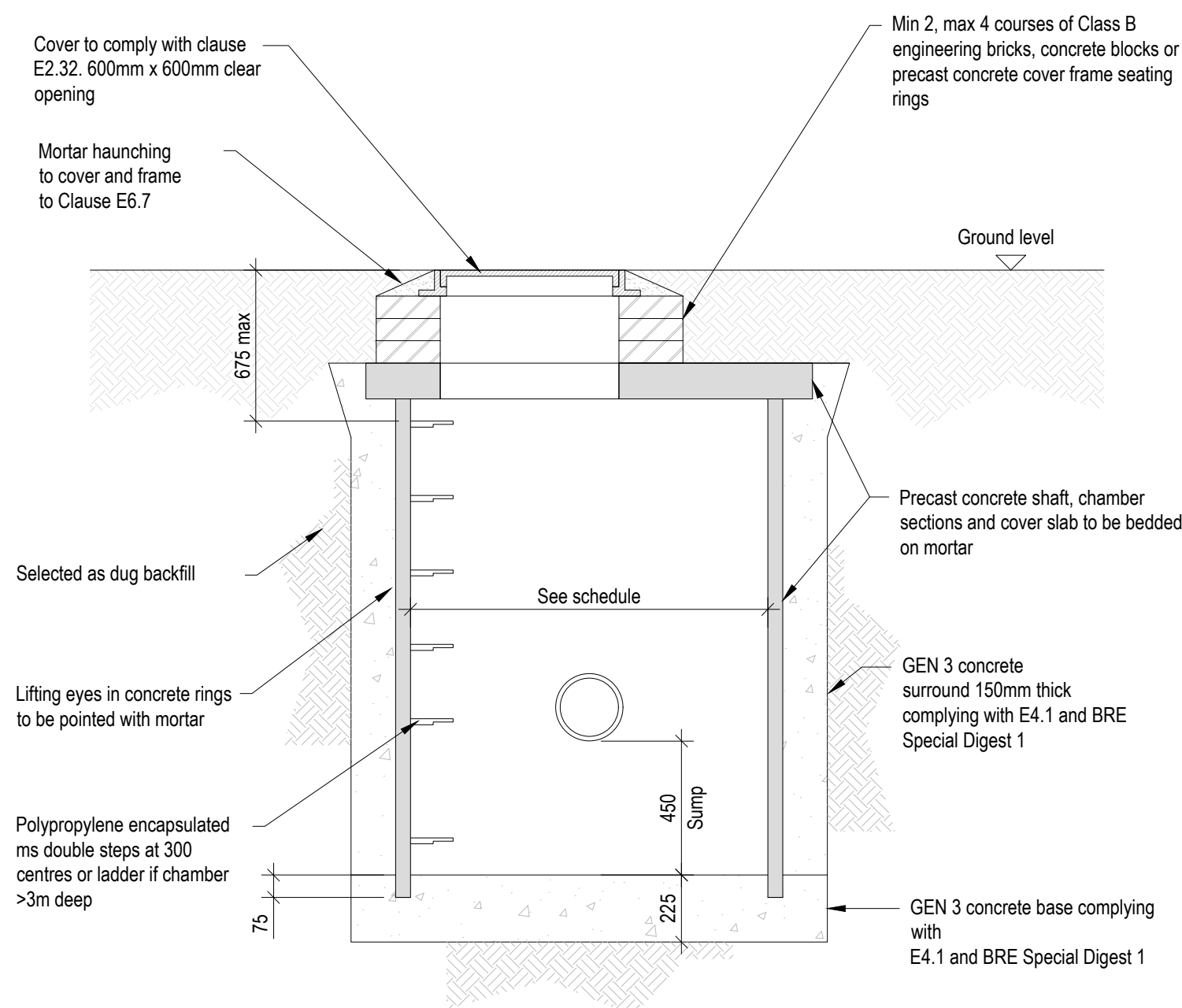
RWCL Internal Register reference: 5968-003

Scales @ A1

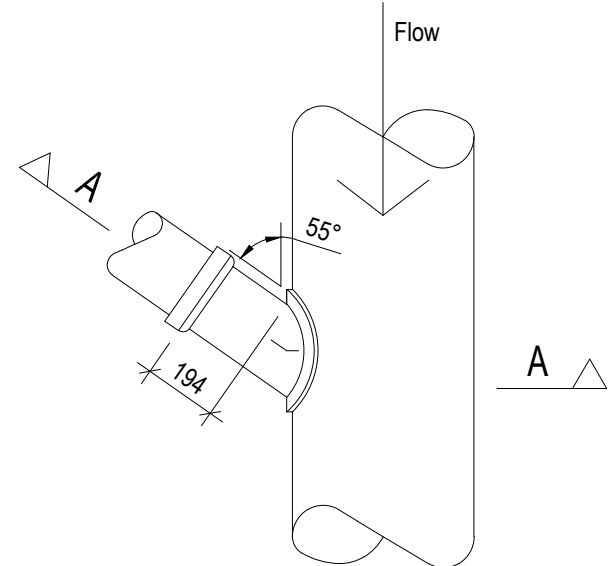
501 -A01

NOTES

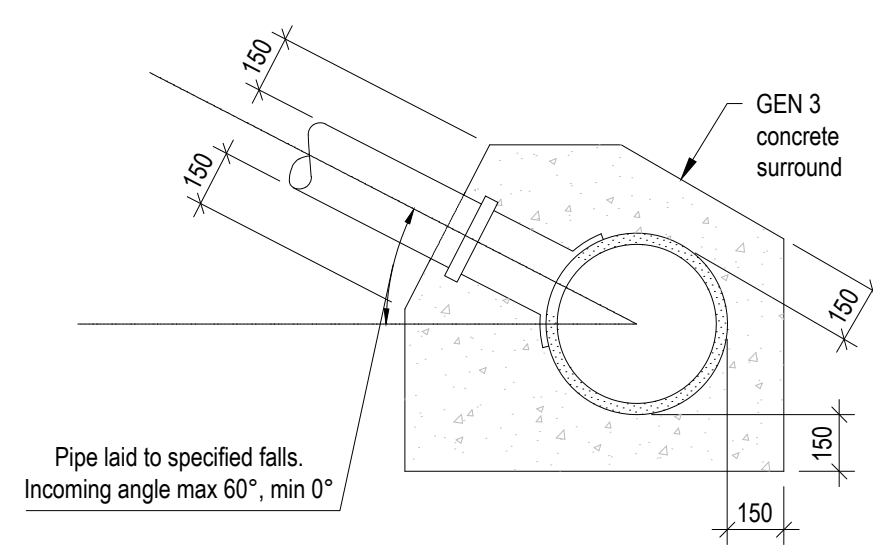
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3. All dimensions in millimeters unless stated otherwise.



TYPICAL PRIVATE PRECAST CONCRETE CATCHPIT DETAIL

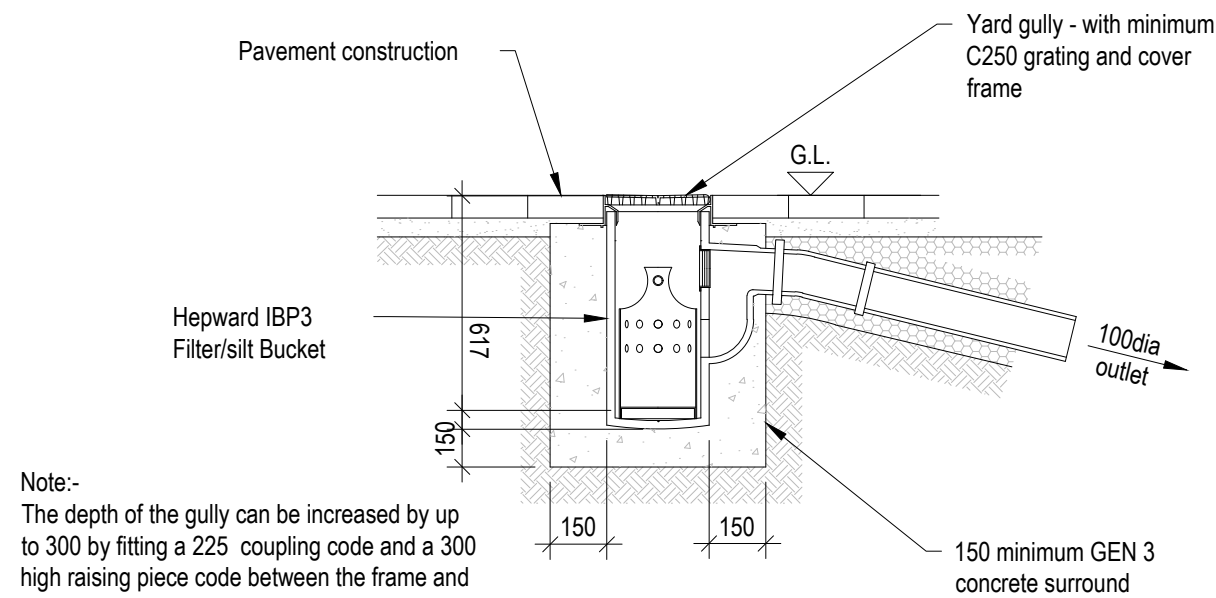


SADDLE CONNECTION - PLAN VIEW

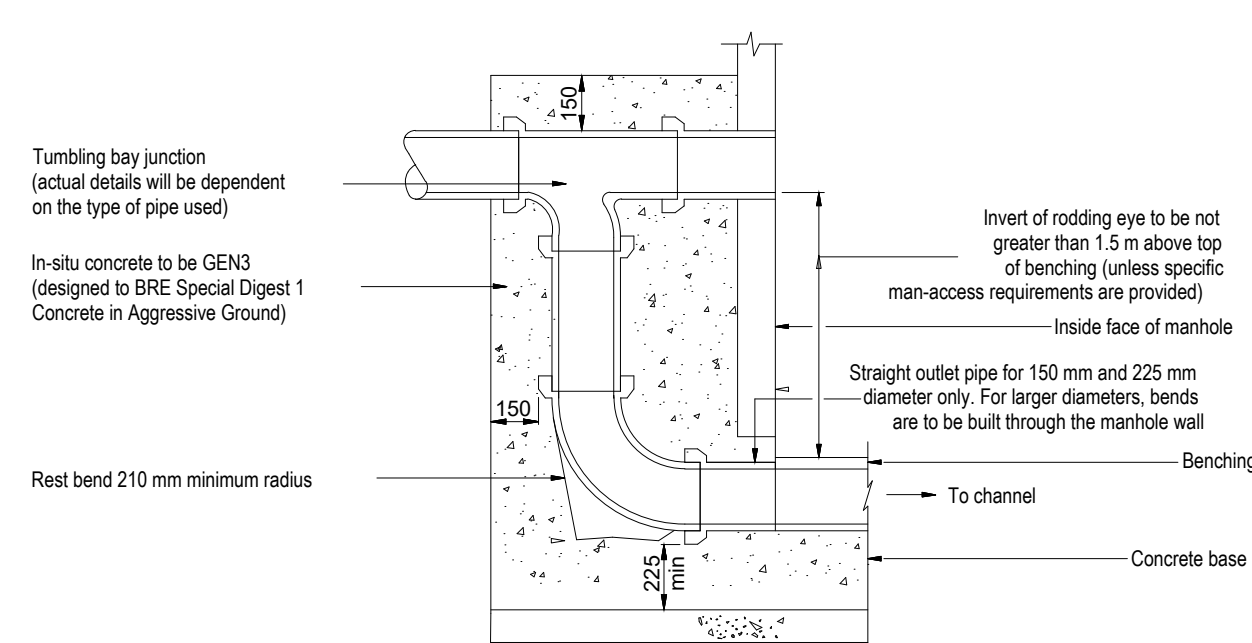


SADDLE CONNECTION SECTION A-A

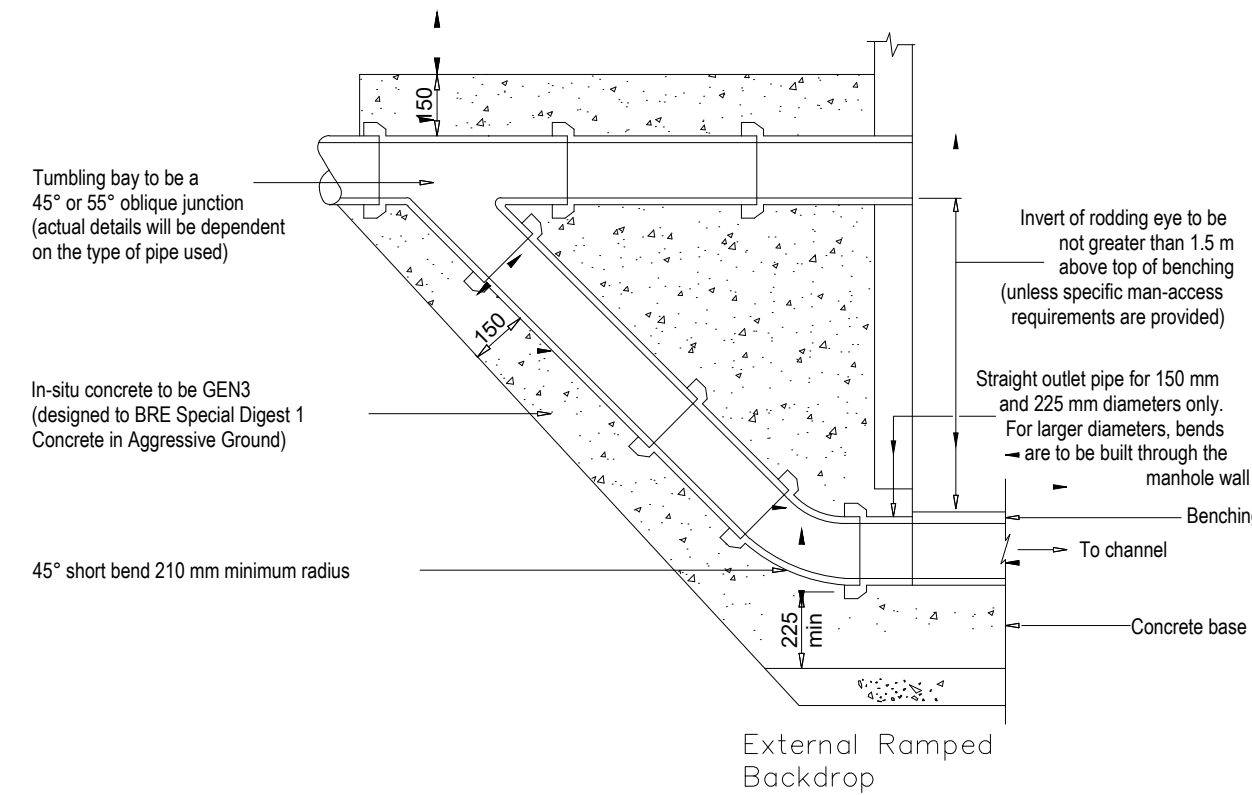
SCALE 1:20



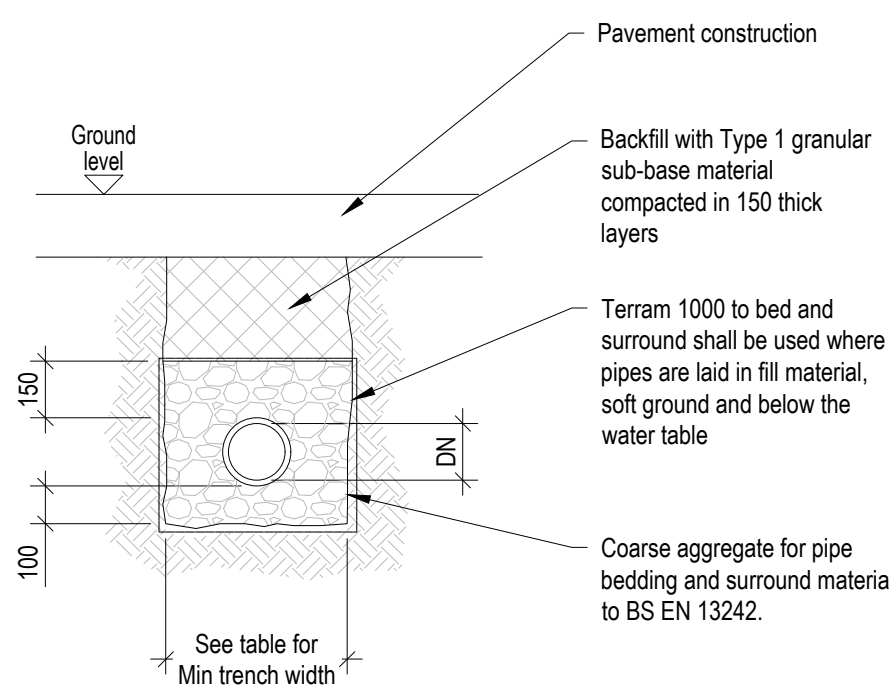
PRIVATE YARD GULLY



TYPICAL EXTERNAL VERTICAL BACKDROP DETAIL

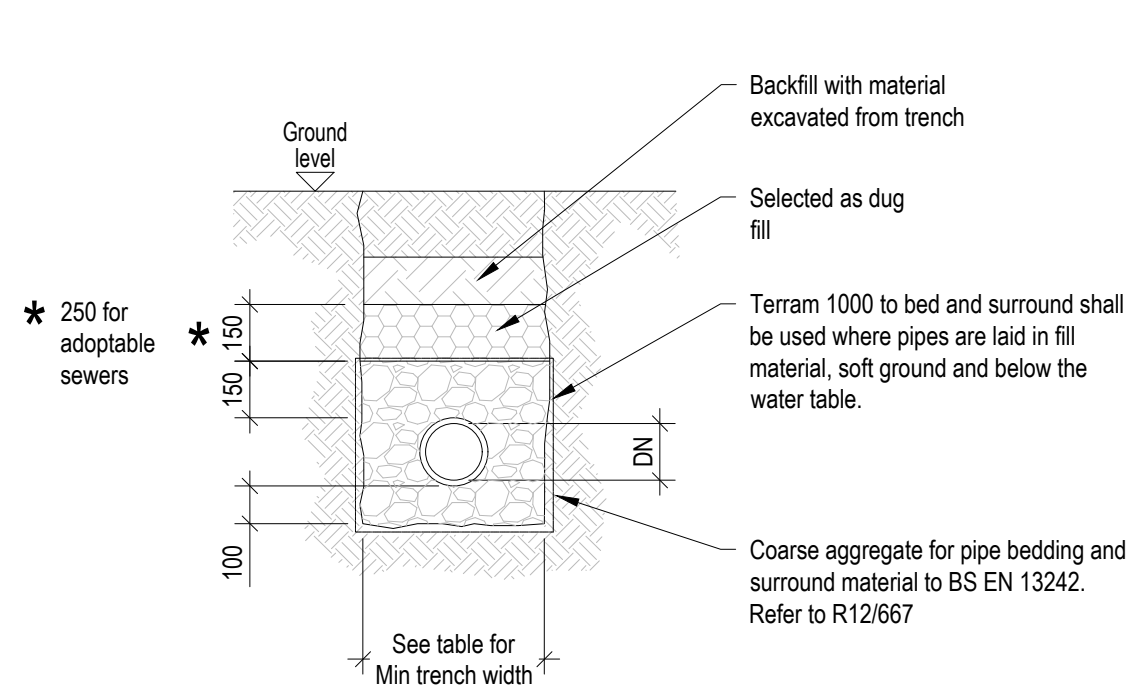


TYPICAL EXTERNAL RAMPED BACKDROP DETAIL



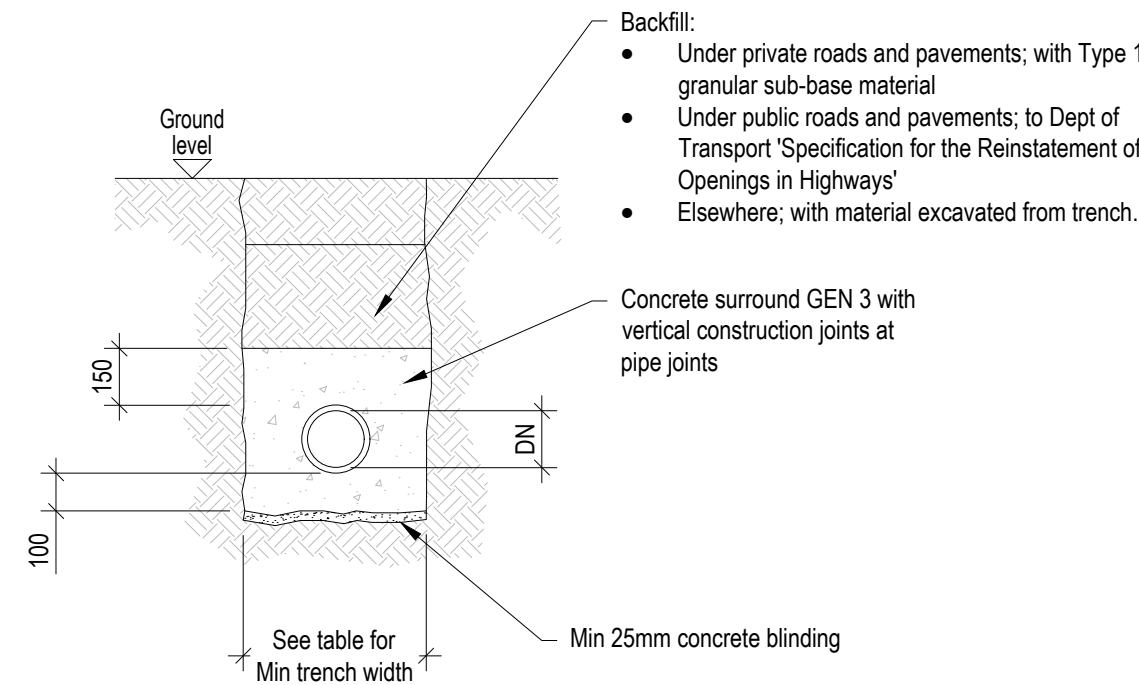
CLASS S SURROUND

GRANULAR SURROUND & BACKFILL FOR AREAS SUBJECT TO VEHICLE LOADING



CLASS S SURROUND

GRANULAR SURROUND & BACKFILL FOR SOFT OR HARD LANDSCAPING AREAS NOT SUBJECT TO VEHICLE LOADING

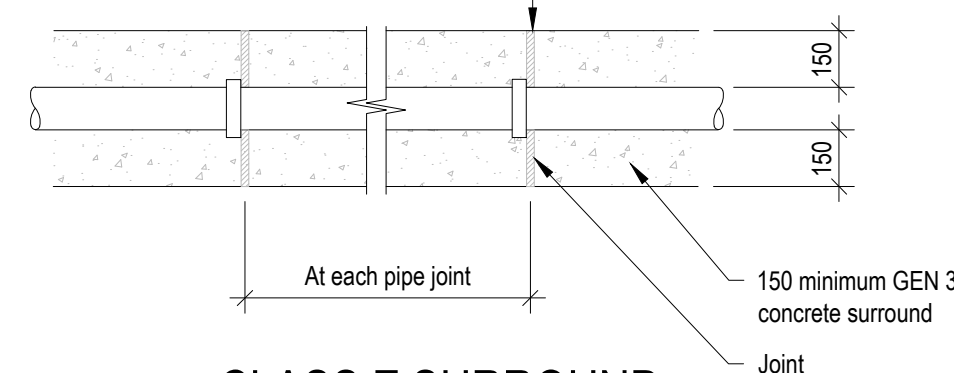


CLASS Z SURROUND

COMPLETE CONCRETE SURROUND

Compressible filler and packing, as specified, to be formed at each pipe joint in concrete surround

Dia. of pipe	Thickness of filler
less than 450	18
450 - 1200	36
exceeding 1200	54



CLASS Z SURROUND

FLEXIBLE JOINTS IN CONCRETE SURROUND

For plastic pipes care is to be taken in placing concrete to avoid deformation or displacement of pipe.

TABLE 1

DN	Minimum trench width (OD + x)		
	Supported trench	Unsupported trench	
		# > 60°	# < 60°
less 225	600	600	600
225 to 350	800	800	800
350 to 700	OD + 700	OD + 700	OD + 400
700 to 1200	OD + 850	OD + 850	OD + 400
greater 1200	OD + 1000	OD + 1000	OD + 400

In the values OD + x, x/2 equals the minimum working space between the pipe and the trench wall or support, where:
OD is external diameter.
is angle of unsupported trench side measured to the horizontal.

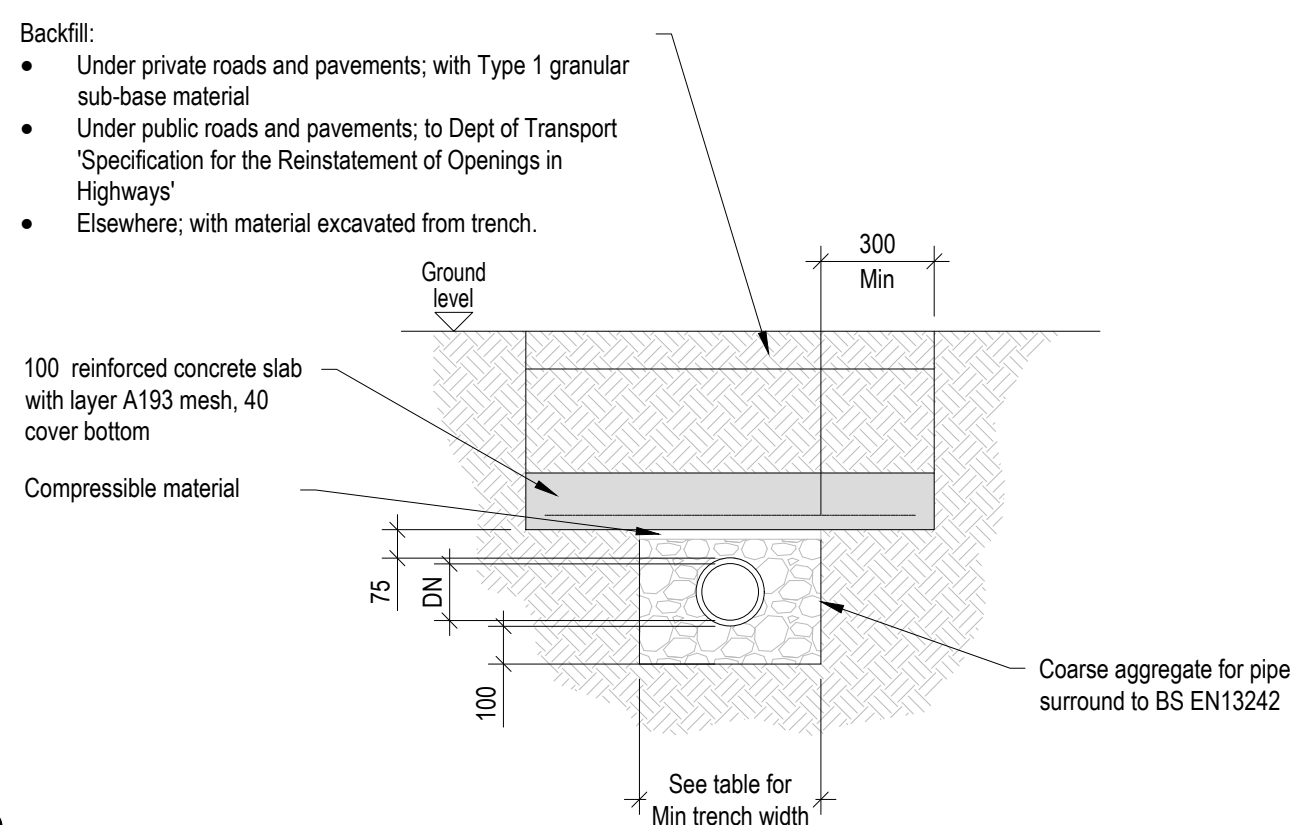
MINIMUM TRENCH WIDTH IN RELATION TO NORMAL SIZE DN

TABLE 2

Trench depth	Minimum trench width
less 1000	As Table 1
1000 to 1750	800
1750 to 4000	900
greater 4000	1000

The minimum trench width shall be the greater of the values taken from tables 1 & 2.

MINIMUM TRENCH WIDTH IN RELATION TO TRENCH DEPTH



CLASS Q GRANULAR SURROUND

Provides protection in landscaped areas against driven tools. For cover < 600. Also use with plastic pipes.

Rev	ISSUED FOR APPROVAL	Comment	By	PU	SB	22/07/2026
Rev	Comment	By	Chkd	Appr	Date	

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Project
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BOLNEY

Drawing Title
DRAINAGE DETAILS
SHEET 3

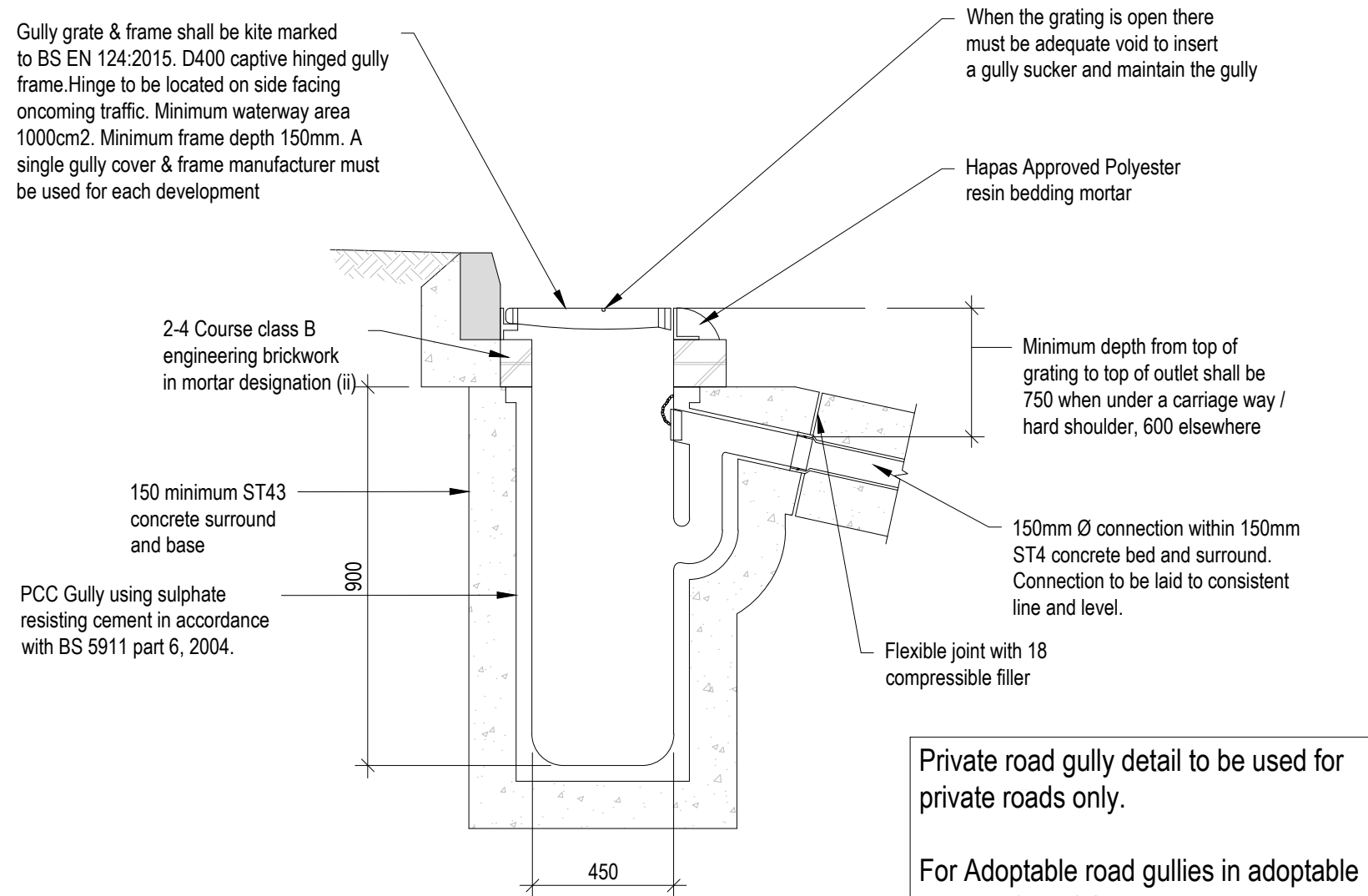
RWCL Internal Register reference: 5968-003

Scales @ A1

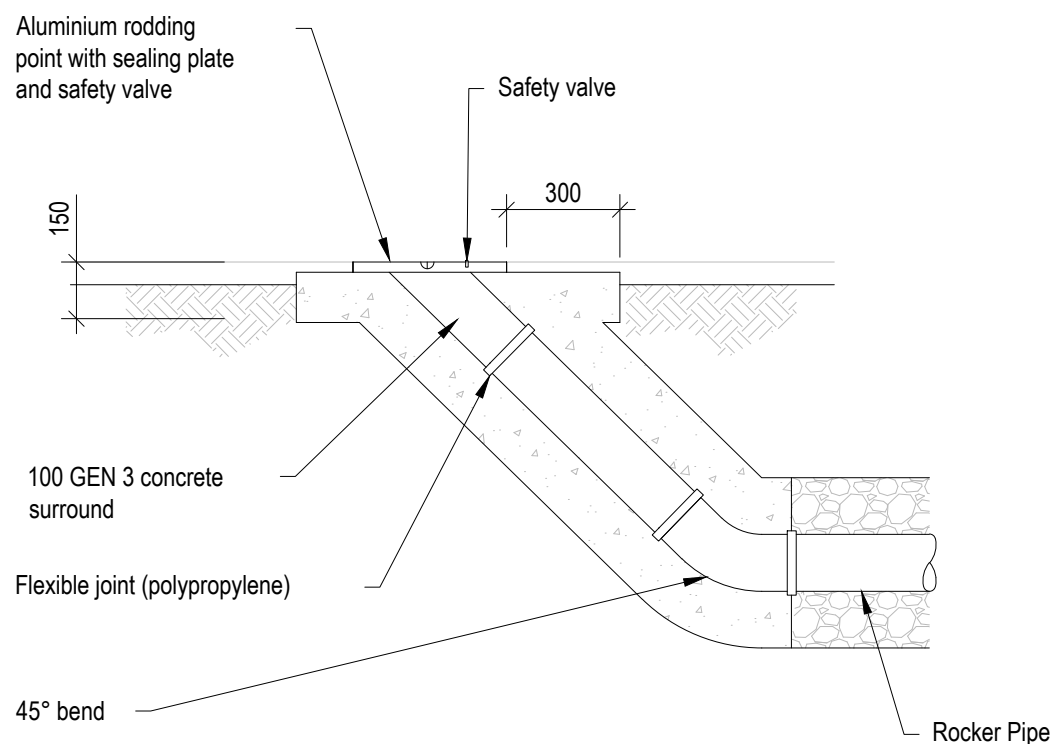
503-A01

NOTES

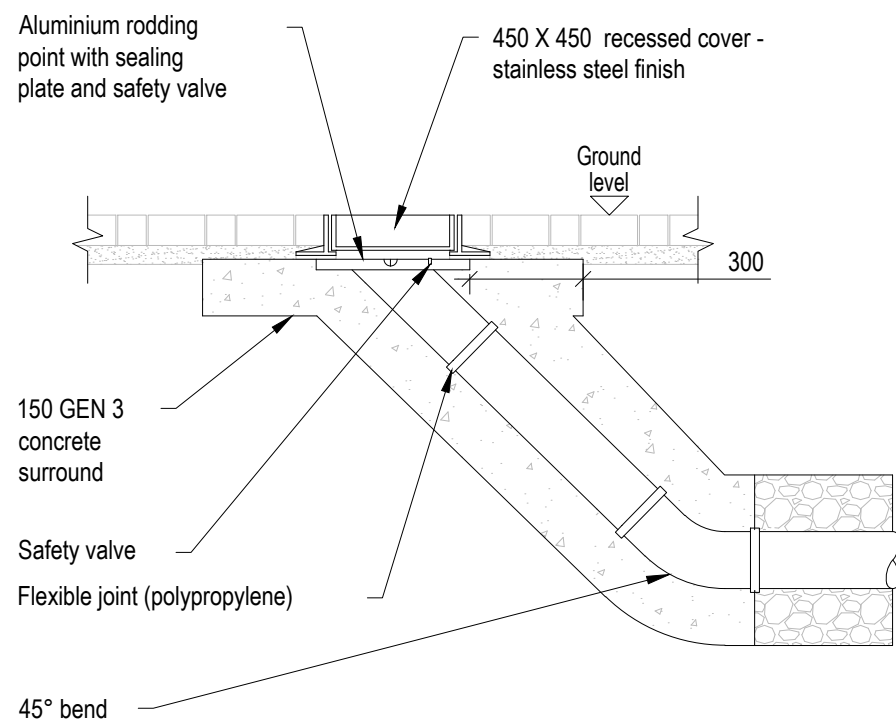
1. The contractor is responsible for verifying all site & setting out dimensions before commencing work.
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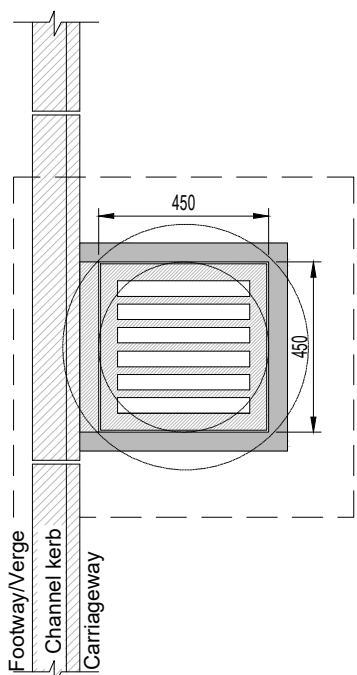
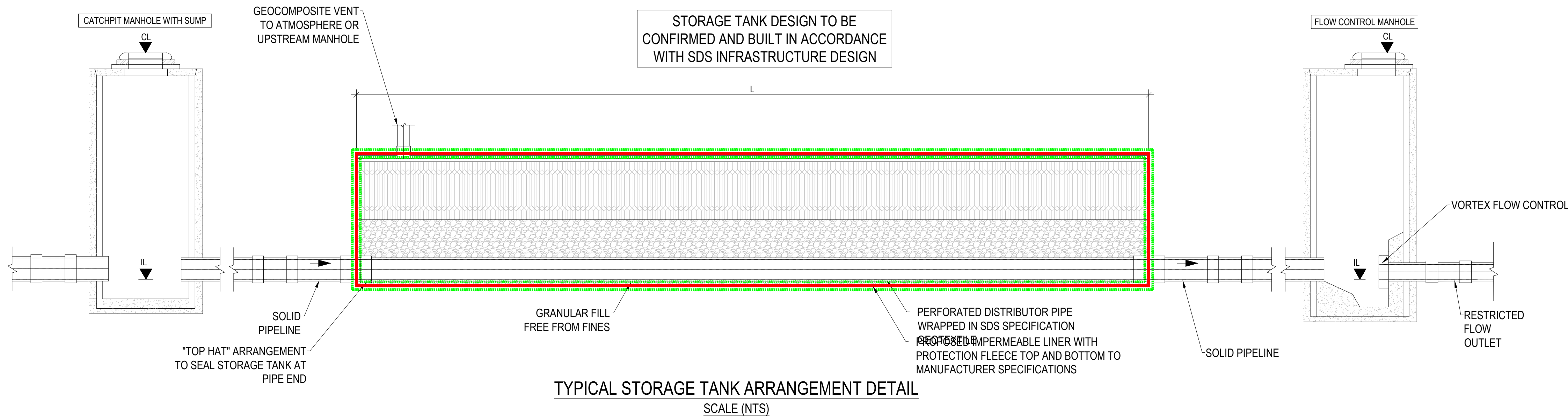
PRIVATE ROAD GULLY AT KERB



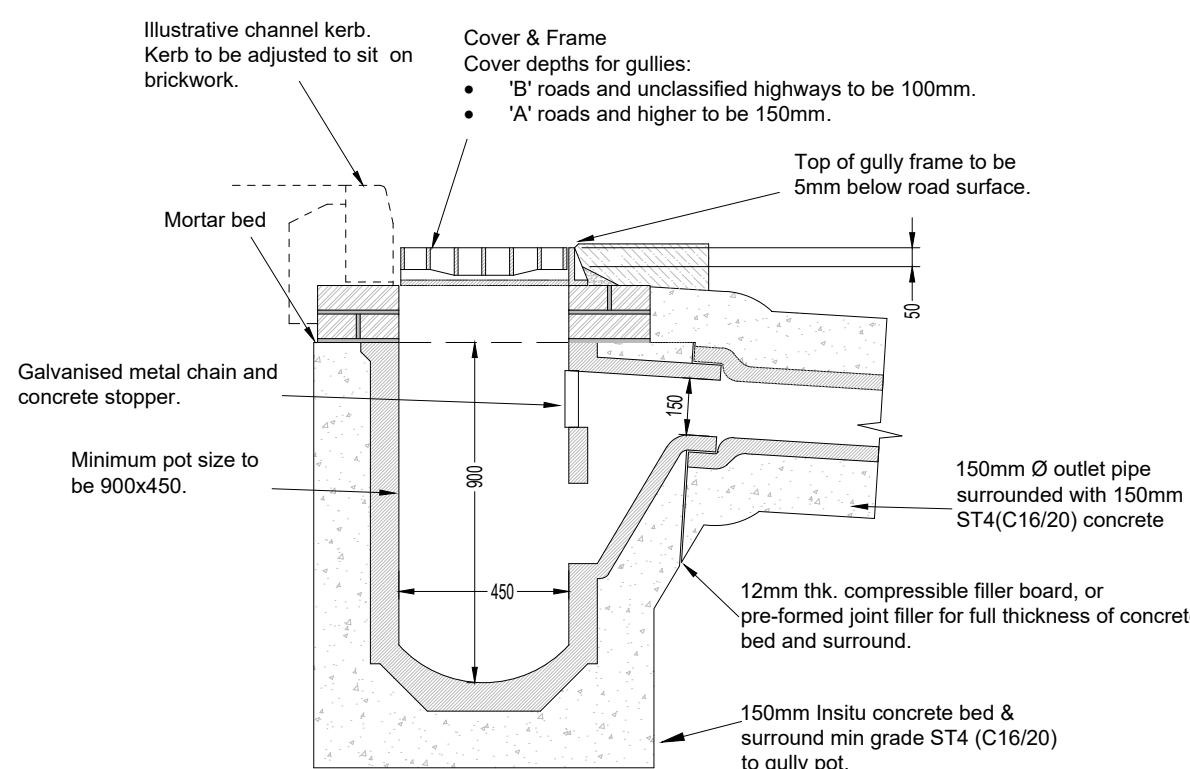
RODDING EYE



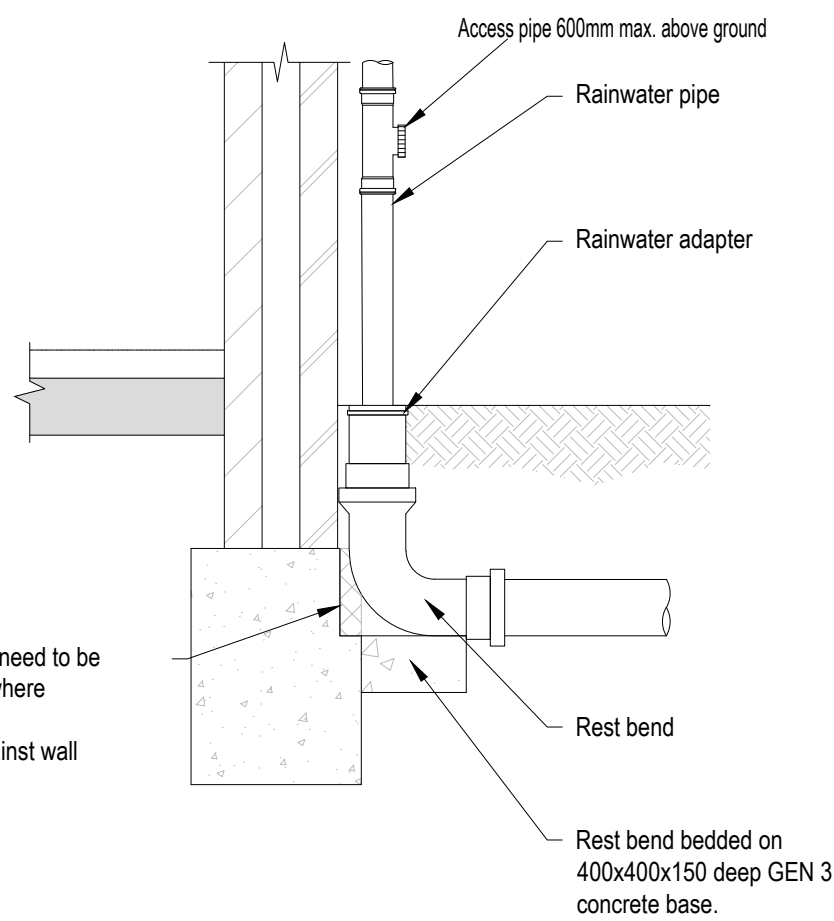
RECESSED RODDING EYE



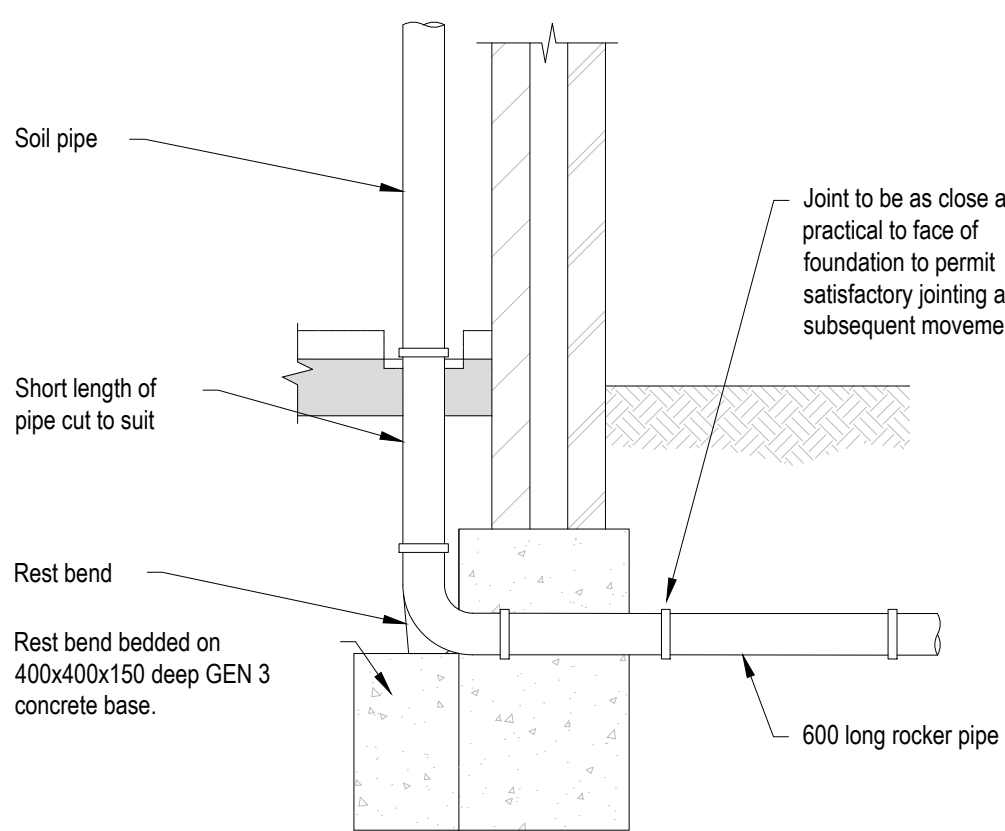
ROAD GULLY AT KERB
Type:Precast Concrete
Plan



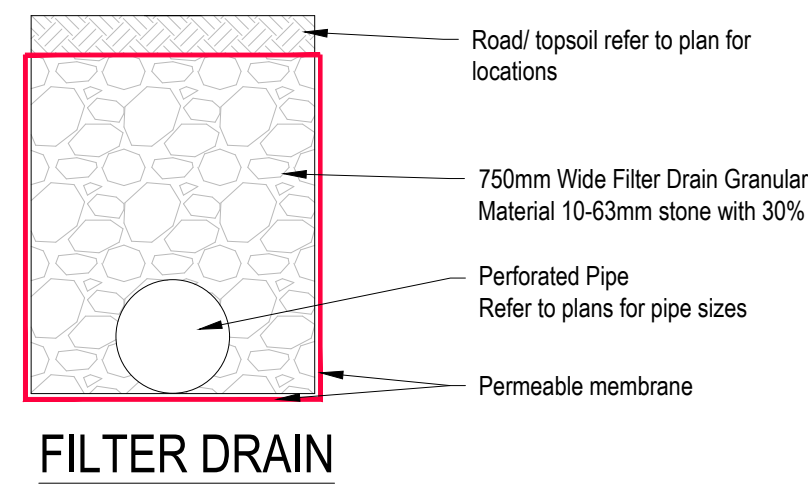
ROAD GULLY AT KERB
Type:Precast Concrete
Section



RAINWATER DOWN PIPE TO DRAIN
(SURFACE WATER SYSTEM)
SCALE 1:20



TYPICAL SOIL VENT PIPE/STUB
STACK/WC DETAIL
SCALE 1:20



FILTER DRAIN

ISSUED FOR APPROVAL		VD	PJ	SB	22/07/2026
Rev	Comment	By	Chkd	Appr	Date

Revision History

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Drawing Title
DRAINAGE DETAILS
SHEET 4

RWCL Internal Register reference: 5968-003

Scales @ A1

504 -A01

Water Hazard

Sign to Face POS (not Basin)

2m Maintenance Zone. 1:20

Basin slope. See GA. Max 1:3 Generally 1:4

Basin Warning Sign

Timber Knee Railing around the Basin

500

150mm Topsoil to Landscape Architects Specification

Suitable Site Won Material to Table 6/1 of SHW, Thickness as per Bouyancy Calculations

38.75

38.70

3 Steepest 1

1100

1100mm Timber Railing around the headwall

Impermeable Geo-membrane to lap into pond liner brackets on Headwall

Freeboard 265

See Drainage plan for Details

Silt interceptor vegetation to Landscape Architects Specification

Reno Mattress 1.8m x 2m x 0.3m deep

For Basin Bed Level see Drainage plan 5968-003-115_117

Invert Level of incoming pipe to be set as per project drawings

Althon Pre-Cast Concrete Headwall. SFA12 A Headwall Inlet sfa1 675 Outfall safety grille

Rocker Pipe

Incoming Pipe

Class S OR Z Pipe Bedding as shown in the Project Drawings

Top Protection
geoNETEX A PP(300TT) by Juta to be used above for protection of impermeable membrane.

1mm thick Junifol HDPE CE impermeable membrane by Juta. To be installed to manufacturers guidelines

Bottom Protection
Where the substrate contains changes in elevation of >12mm, or particle protrusions from the substrate exceed 12mm, the geoNETEX A PP(300TT) by Juta shall be used below the impermeable membrane for protection.

TYPICAL THROUGH BASIN DETAIL INLET PIPE

Scale 1:20

Basin slope. See GA. Max 1:3 Generally 1:4

2m Maintenance Zone. 1:20

Basin Warning Sign

Water Hazard

Sign to Face POS (not Basin)

150mm Topsoil to Landscape Architects Specification
Min. 500mm thick Suitable Site Won Material to Table 6/1 of SHW - SUBJECT TO FLOATATION CALCULATIONS

Basin slope. See GA. Max 1:3 Generally 1:4

2m Maintenance Zone. 1:20

Basin Warning Sign

Water Hazard

Sign to Face POS (not Basin)

150mm Topsoil to Landscape Architects Specification

Suitable Site Won Material to Table 6/1 of SHW, Thickness as per Bouyancy Calculations

38.70

38.75

3 Steepest 1

1100

1100mm Timber Railing around the headwall

Impermeable Geo-membrane to lap into pond liner brackets on Headwall

Freeboard 265

See Drainage plan for Details

Silt interceptor vegetation to Landscape Architects Specification

Reno Mattress 1.8m x 2m x 0.3m deep

For Basin Bed Level see Drainage plan 5968-003-115_117

Althon Pre-Cast Concrete Headwall. SFA13 A Headwall Inlet sfa1 675 Outfall safety grille

Invert Level of outgoing pipe to be set as per project drawings

Outgoing Pipe

Rocker Pipe

Class S OR Z Pipe Bedding as shown in the Project Drawings

Top Protection
geoNETEX A PP(300TT) by Juta to be used above for protection of impermeable membrane.

1mm thick Junifol HDPE CE impermeable membrane by Juta. To be installed to manufacturers guidelines

Bottom Protection
Where the substrate contains changes in elevation of >12mm, or particle protrusions from the substrate exceed 12mm, the geoNETEX A PP(300TT) by Juta shall be used below the impermeable membrane for protection.

TYPICAL THROUGH BASIN DETAIL OUTLET PIPE

Scale 1:20

150mm Topsoil to Landscape Architects Specification

Min. 500mm thick Suitable Site Won Material to Table 6/1 of SHW - SUBJECT TO FLOATATION CALCULATIONS

DO NOT SCALE OFF THIS DRAWING

NOTES

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Rev	ISSUED FOR APPROVAL	Comment	VD	PJ	SB	22/07/2026
			By	Chkd	Appr	Date

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Drawing Title
DRAINAGE DETAILS
SHEET 5

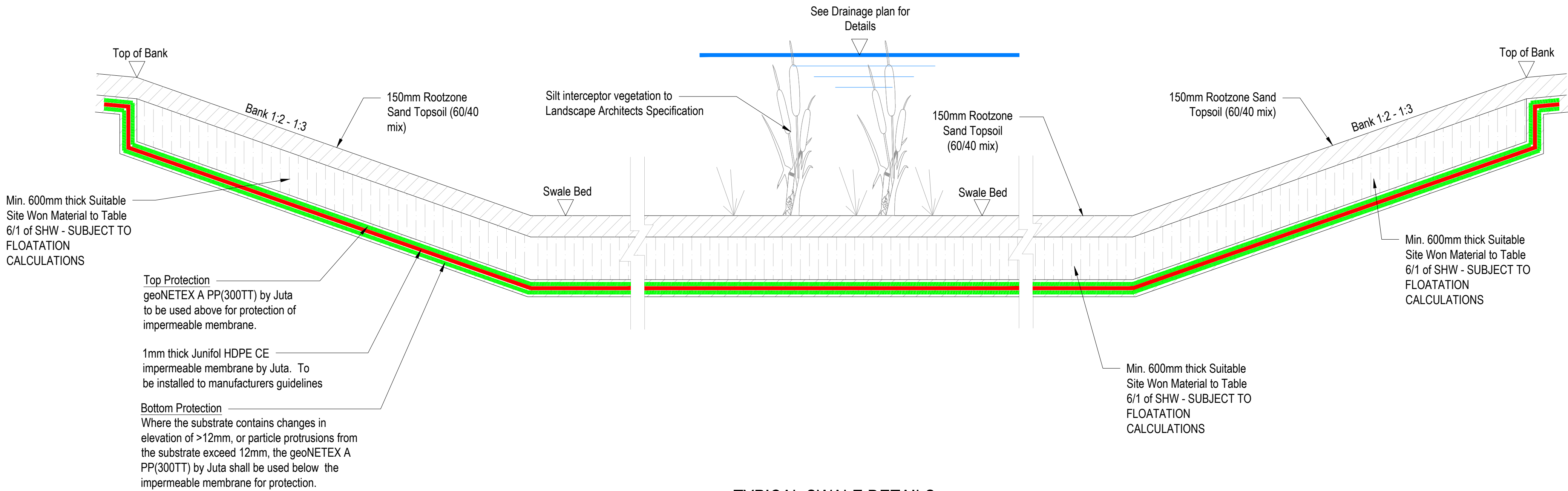
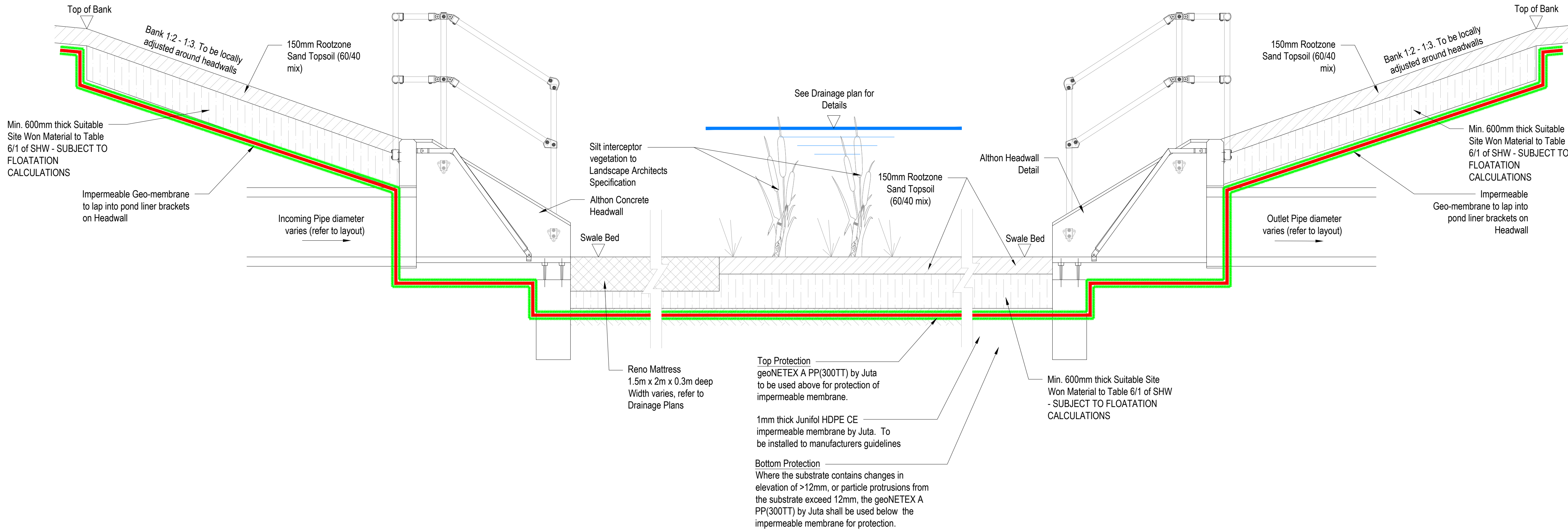
RWCL Internal Register reference: 5968-003

Scales @ A1

505 -A01

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TYPICAL SWALE DETAILS

Scale 1:20

A01	ISSUED FOR APPROVAL	VD	PJ	SB	22/07/2026
Rev	Comment	By	Chkd	Appr	Date

APPROVAL

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Project
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Drawing Title
DRAINAGE DETAILS
SHEET 6

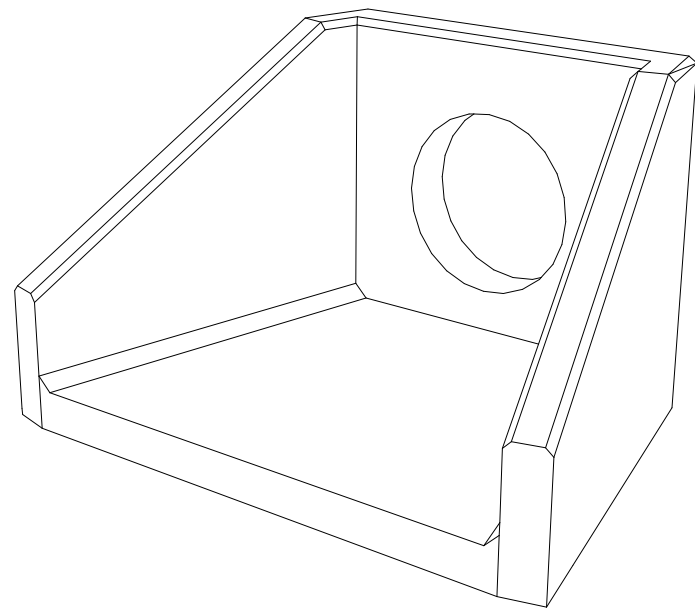
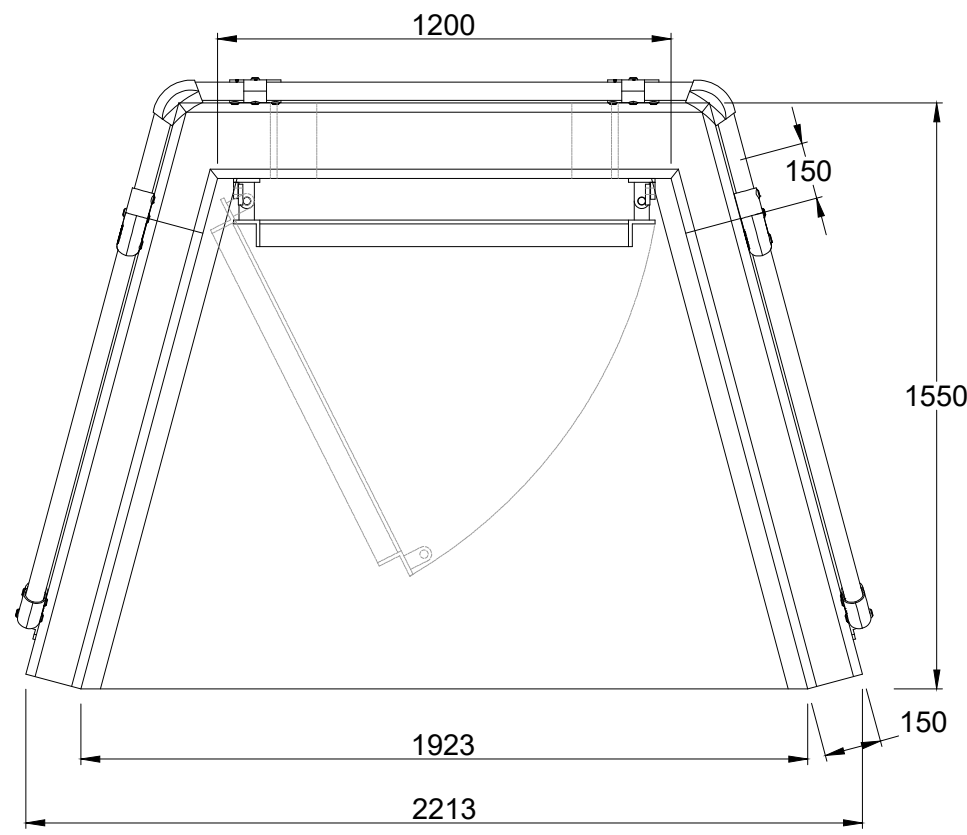
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Scales @ A1

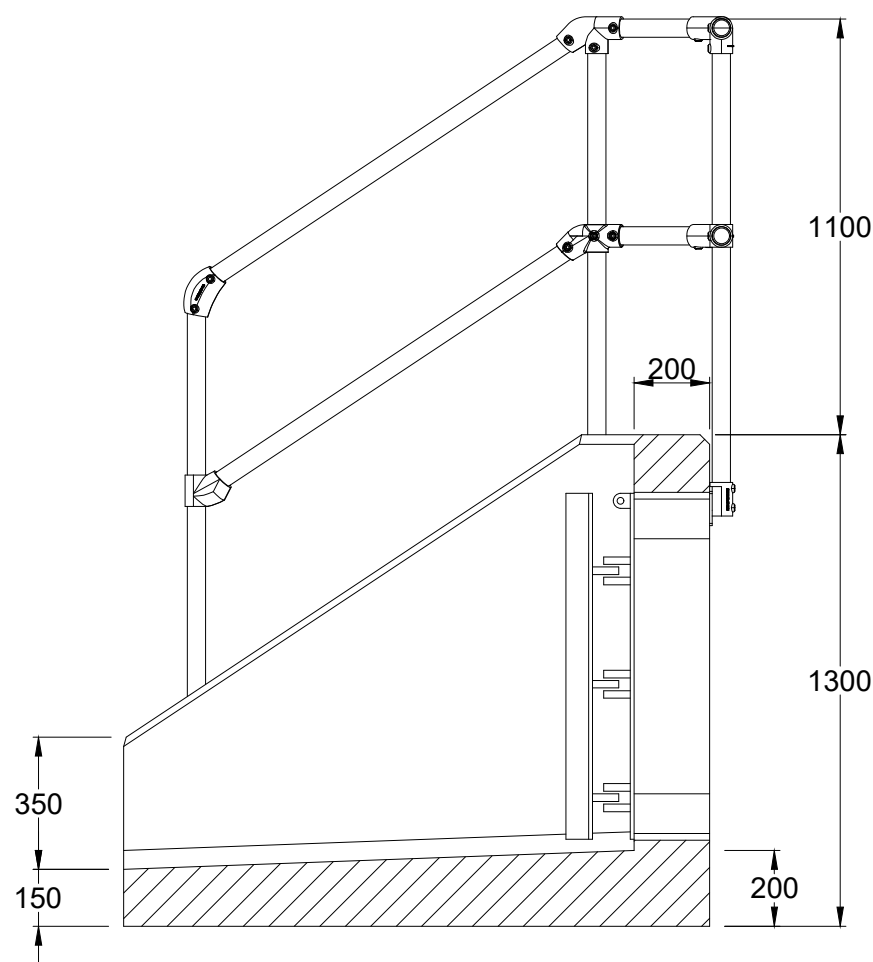
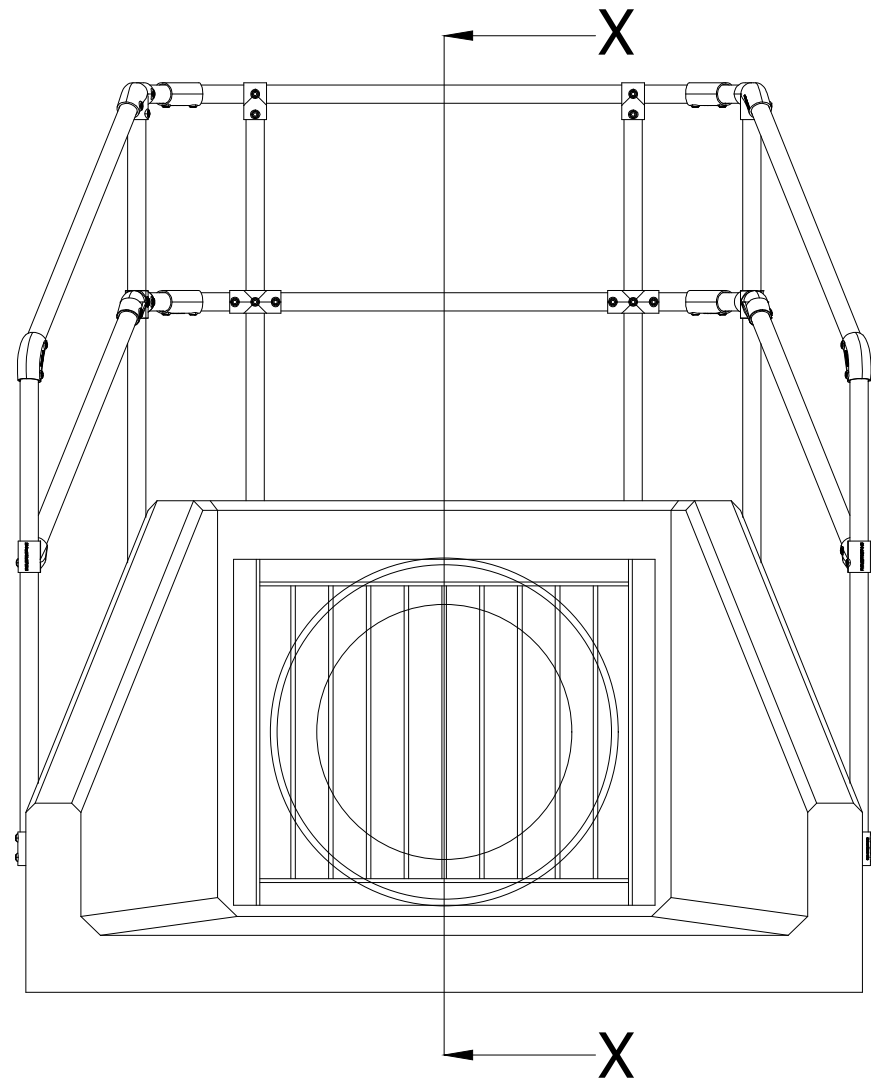
506-A01

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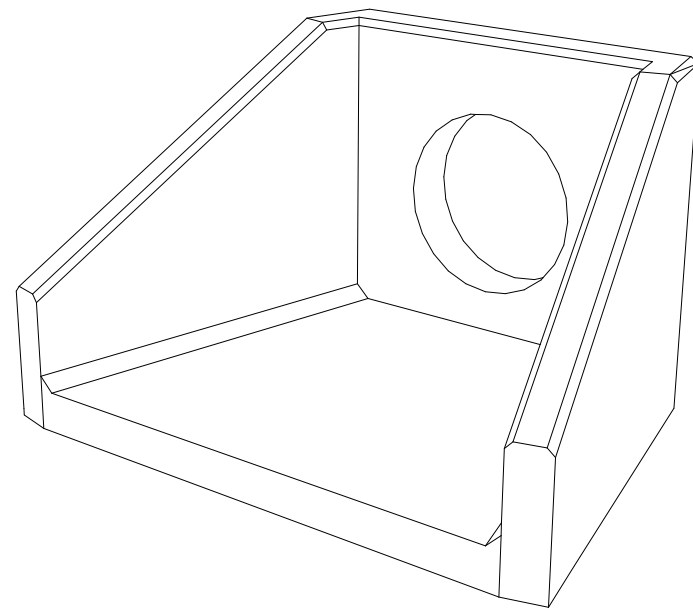
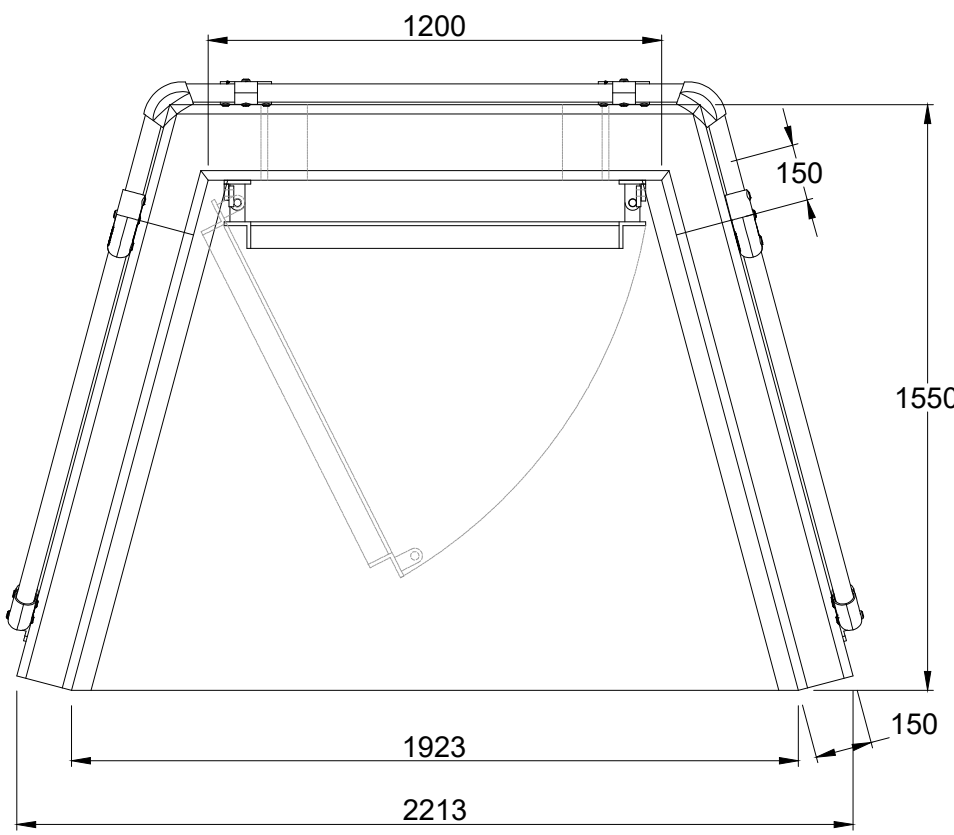
Note: Isometric drawing is for reference only, details may not accurately represent actual design - please see detailed views for technical information



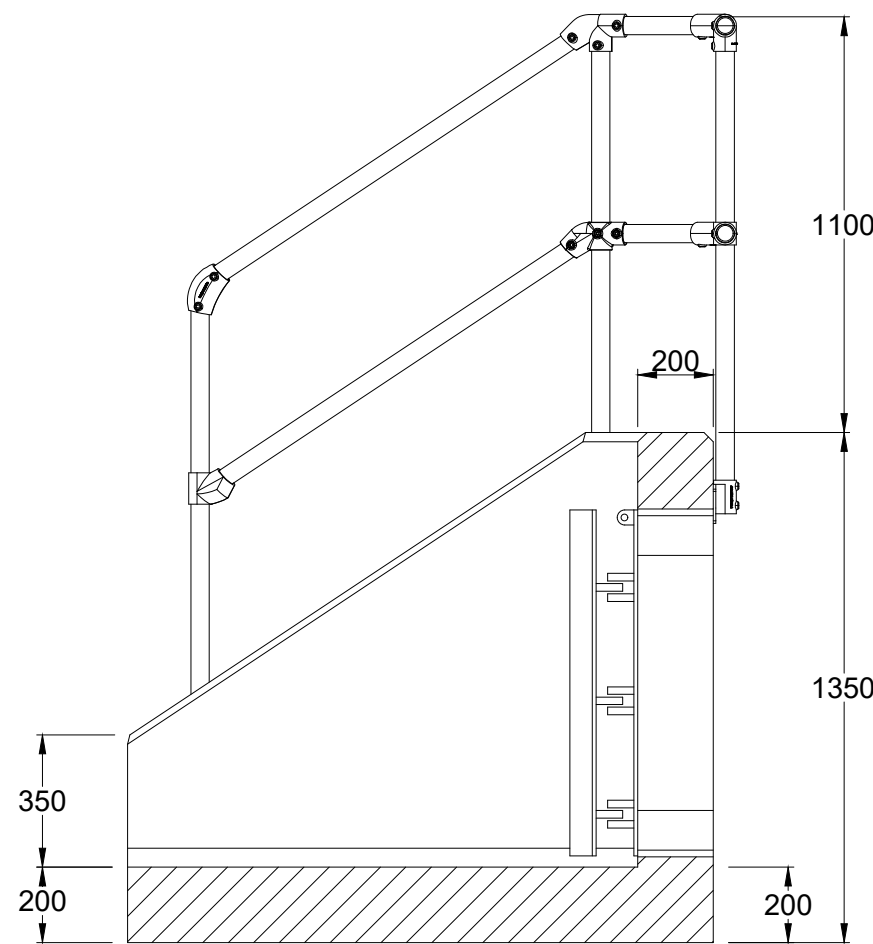
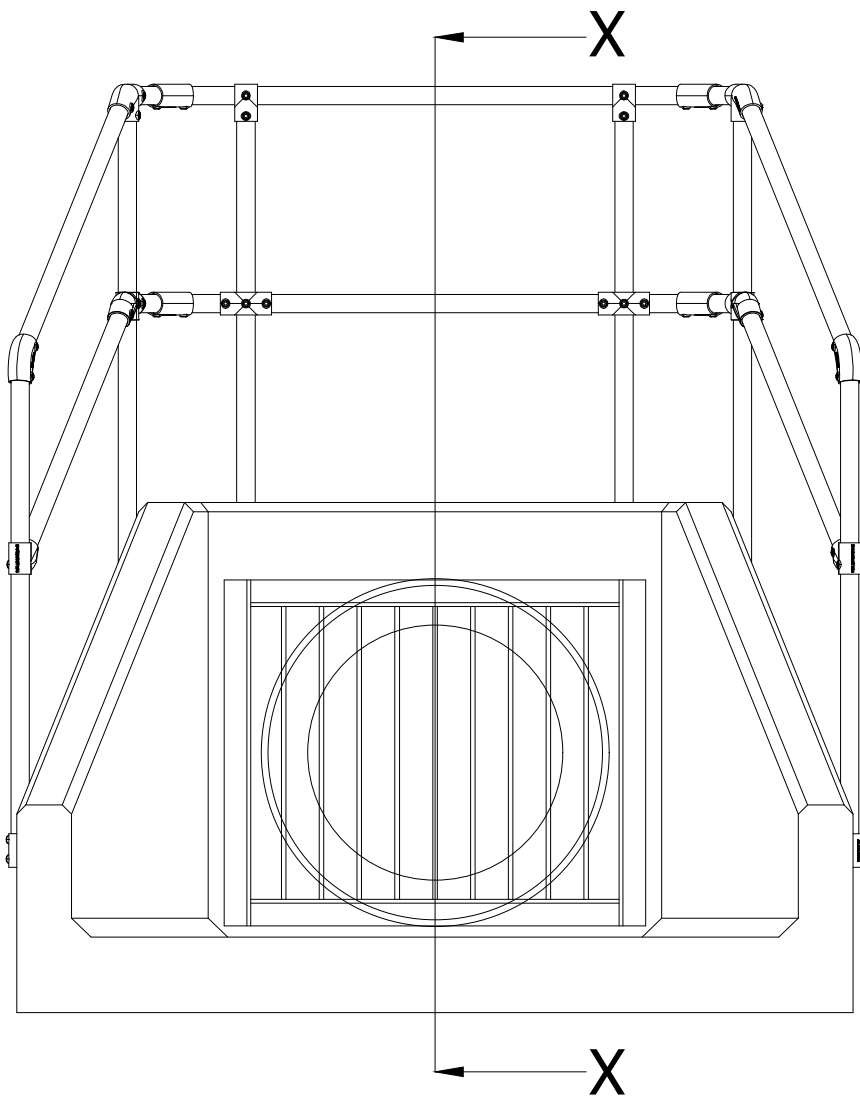
SECTION X-X

**ALTHON PRECAST CONCRETE
HEADWALL - SFA12 A
PIPES INTO BASIN**

Headwall Inlet sfa1 - 3 sided kee klamp -
675 outfall saftey grille



Note: Isometric drawing is for reference only, details may not accurately represent actual design - please see detailed views for technical information



SECTION X-X

**ALTHON PRECAST CONCRETE
HEADWALL - SFA13 A
PIPES OUT OF BASIN**

Headwall Inlet sfa1 - 3 sided kee klamp -
675 outfall saftey grille

A01	ISSUED FOR APPROVAL	VD	PJ	SB	22/07/2026
Rev	Comment	By	Chkd	Appr	Date

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Project
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Drawing Title
DRAINAGE DETAILS
SHEET 7

RWCL Internal Register reference: 5968-003

Scales @ A1

507 -A01

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S88	0.000	1500	Type C	39.256	38.340	0.391	526018.940	122923.529
S90	0.000	1350	Type C	39.217	38.510	0.182	526060.213	122881.887
S89	0.150	1500	Type C	39.396	38.200	0.671	526061.642	122920.346
S80	0.000	1500	Type C	38.673	38.000	0.148	526064.672	122947.808
S81	0.134	1500	Type C	35.029	34.320	0.184	526069.540	122989.952
S82	0.000	---	Type C	35.345	34.220	0.600	526071.589	123027.826
S84	0.000	1350	Type C	35.836	35.290	0.021	526034.466	123123.140
S85	0.000	1350	Type C	36.000	34.850	0.625	526059.737	123118.674
S86	0.000	1350	Type C	35.300	34.560	0.215	526085.244	123109.716
S87	0.335	1500	Type C	35.200	34.300	0.375	526084.372	123084.230
S106	0.000	---	Type C	35.000	34.212	0.263	526075.887	123074.132
S83 OC	0.000	1500	Type C	35.345	34.180	0.790	526067.111	123071.754
S67	0.160	1350	Type B	36.278	34.182	1.796	526051.446	123006.980
S68	0.130	1500	Type C	35.608	33.850	1.383	526050.858	123073.928
S70	0.079	1350	Type C	35.918	34.440	1.178	525993.817	123037.215
S69	0.289	1350	Type B	36.211	33.611	2.225	525993.987	123072.767
S39	0.147	1350	Type C	37.071	35.571	1.200	525979.209	123127.240
S40	0.004	1350	Type C	36.258	34.630	1.328	525924.969	123128.864
S41	0.130	1350	Type C	36.091	34.420	1.371	525916.070	123124.802
S42	0.064	1350	Type C	35.853	34.145	1.333	525918.933	123105.884
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S44	0.016	1350	Type B	35.553	32.550	2.553	525938.084	123076.597
S54	0.035	1350	Type B	34.936	32.305	2.181	525936.143	123056.078
S45	0.271	1350	Type B	33.816	31.655	1.711	525914.898	123019.614
S46	0.030	1500	Type B	33.323	30.820	1.903	525889.812	123032.928
S47	0.111	1500	Type B	33.342	30.700	2.042	525880.549	123051.539
S48CP	0.061	1500	Type C	32.150	30.595	0.955	525832.081	123025.524
S49	0.000	---	Type C	32.200	30.550	1.050	525799.939	123022.705
S63	0.105	1350	Type C	39.682	38.260	1.197	526053.213	122939.960
S64	0.000	1350	Type C	39.369	37.679	1.465	526053.578	122950.728
S65	0.224	1200	Type B	38.989	37.105	1.584	526047.175	122960.767
S66	0.055	1350	Type C	38.175	36.725	1.150	526016.058	122965.867
S55	0.099	1350	Type C	38.750	37.220	1.155	525988.212	122955.027
S56	0.000	1350	Type C	37.631	36.177	1.079	526002.434	122977.802
S57	0.000	1350	Type C	36.952	35.450	1.127	525988.397	122987.514
S58	0.151	1350	Type C	35.830	34.005	1.375	525962.621	122994.801
S94	0.009	1500	Type B	34.254	31.979	1.750	525927.494	123013.048
S59	0.051	1500	Type B	33.912	31.814	1.574	525914.378	122992.039
PS1	0.000	450	Type E	36.826	35.826	0.900	525939.580	122946.738
PS2	0.000	450	Type E	35.012	34.012	0.900	525916.536	122960.783
S60	0.117	1500	Type B	34.294	31.610	2.159	525898.895	122964.229
S61	0.000	1500	Type B	33.317	31.140	1.652	525870.780	122981.046
S75	0.000	1500	Type C	40.469	39.889	0.055	525974.970	122921.588
S76	0.019	1500	Type C	38.935	38.364	0.047	525946.627	122931.023
S77	0.000	1500	Type C	35.708	35.023	0.160	525916.533	122940.770
S78	0.722	1500	Type C	33.859	32.858	0.476	525896.466	122953.740
S79	0.000	1500	Type C	32.900	31.472	0.903	525872.596	122965.890
S71 CP	0.806	1500	Type C	32.200	30.653	0.872	525838.664	122990.769
S107	0.000	---	Type C	32.000	30.520	0.805	525800.658	123010.406
S51	0.152	1500	Type C	33.696	32.266	1.130	525861.244	123094.203
S91	0.045	1350	Type C	32.770	31.937	0.532	525833.394	123118.886
S92CP	0.000	1350	Type C	32.511	31.799	0.412	525832.621	123107.337
S93	0.031	1500	Type C	32.833	31.431	1.026	525832.158	123097.062
S52 CP	0.000	1500	Type C	32.226	30.945	0.831	525814.312	123097.718
S53	0.019	---	Type C	32.000	30.590	0.885	525801.018	123088.080
S72	0.000	2100	Type C	32.000	30.510	1.190	525778.203	123021.954
S73	0.000	2100	Type C	31.200	30.030	0.870	525759.137	123009.864

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S88	38.340	S89	38.200	Circ	525	42.820	306	0.600	0.391	0.671
2.000	S90	38.510	S89	38.200	Circ	525	38.486	124	0.600	0.182	0.671
1.001	S89	38.200	S80	38.000	Circ	525	27.629	138	0.600	0.671	0.148
1.002	S80	38.000	S81	34.320	Circ	525	42.424	12	0.600	0.148	0.184
1.003	S81	34.320	S82	34.220	Circ	525	37.929	379	0.600	0.184	0.600
1.004	S82	34.220	S83 OC	34.180	Circ	525	44.156	1104	0.600	0.600	0.640
3.000	S84	35.290	S85	34.850	Circ	525	25.663	58	0.600	0.021	0.625
3.001	S85	34.850	S86	34.560	Circ	525	27.035	93	0.600	0.625	0.215
3.002	S86	34.560	S87	34.300	Circ	525	25.501	98	0.600	0.215	0.375
3.003	S87	34.300	S106	34.212	Circ	525	13.189	150	0.600	0.375	0.263
3.004	S106	34.212	S83 OC	34.180	Circ	525	9.093	286	0.600	0.263	0.640
1.005	S83 OC	34.180	S68	33.850	Circ	375	16.397	50	0.600	0.790	1.383
4.000	S67	34.182	S68	33.925	Circ	300	66.951	260	0.600	1.796	1.383
1.006	S68	33.850	S69	33.611	Circ	375	56.883	238	0.600	1.383	2.225
5.000	S70	34.440	S69	33.686	Circ	300	35.553	47	0.600	1.178	2.225
1.007	S69	33.611	S44	32.625	Circ	375	56.035	57	0.600	2.225	2.553
6.000	S39	35.571	S40	34.630	Circ	300	54.264	58	0.600	1.200	1.328
6.001	S40	34.630	S41	34.420	Circ	300	9.782	47	0.600	1.328	1.371
6.002	S41	34.420	S42	34.220	Circ	300	19.134	96	0.600	1.371	1.333
6.003	S42	34.145	S43	33.840	Circ	375	24.590	81	0.600	1.333	1.398
6.004	S43	33.765	S44	32.550	Circ	450	11.382	9	0.600	1.398	2.553
1.008	S44	32.550	S54	32.305	Circ	450	20.611	84	0.600	2.553	2.181
1.009	S54	32.305	S45	31.655	Circ	450	42.202	65	0.600	2.181	1.711
1.010	S45	31.655	S46	30.970	Circ	450	28.401	41	0.600	1.711	1.903
1.011	S46	30.820	S47	30.700	Circ	600	20.788	174	0.600	1.903	2.042
1.012	S47	30.700	S48CP	30.595	Circ	600	55.009	525	0.600	2.042	0.955
1.013	S48CP	30.595	S49	30.550	Circ	600	32.265	710	0.600	0.955	1.050
1.014	S49	30.550	S72	30.510	Circ	600	21.749	544	0.600	1.050	0.890
7.000	S63	38.260	S64	37.679	Circ	225	10.775	19	0.600	1.197	1.465
7.001	S64	37.679	S65	37.180	Circ	225	11.907	24	0.600	1.465	1.584
7.002	S65	37.105	S66	36.725	Circ	300	31.532	83	0.600	1.584	1.150
7.003	S66	36.725	S56	36.252	Circ	300	18.112	38	0.600	1.150	1.079
8.000	S55	37.220	S56	36.177	Circ	375	26.851	26	0.600	1.155	1.079
7.004	S56	36.177	S57	35.450	Circ	375	17.069	23	0.600	1.079	1.127
7.005	S57	35.450	S58	34.080	Circ	375	26.786	20	0.600	1.127	1.375
7.006	S58	34.005	S94	32.054	Circ	450	39.584	20	0.600	1.375	1.750
7.007	S94	31.979	S59	31.814	Circ	525	24.767	150	0.600	1.750	1.574
7.008	S59	31.814	S60	31.610	Circ	525	31.830	156	0.600	1.574	2.159
9.000	PS1	35.826	PS2	34.012	Circ	100	26.986	15	0.600	0.900	0.900
9.001	PS2	34.012	S60	32.035	Circ	100	17.975	9	0.600	0.900	2.159
7.009	S60	31.610	S61	31.140	Circ	525	32.761	70	0.600	2.159	1.652
7.010	S61	31.140	S71 CP	30.803	Circ	525	33.556	99	0.600	1.652	0.872
10.000	S75	39.889	S76	38.364	Circ	525	29.872	20	0.600	0.055	0.047
10.001	S76	38.364	S77	35.023	Circ	525	31.633	9	0.600	0.047	0.160
10.002	S77	35.023	S78	32.858	Circ	525	23.894	11	0.600	0.160	0.476
10.003	S78	32.858	S79	31.472	Circ	525	26.784	19	0.600	0.476	0.903
10.004	S79	31.472	S71 CP	30.803	Circ	525	42.076	63	0.600	0.903	0.872
7.011	S71 CP	30.653	S107	30.520	Circ	675	42.779	323	0.600	0.872	0.805
7.012	S107	30.520	S72	30.510	Circ	1200	25.250	2525	0.600	0.280	0.290
11.000	S51	32.266	S93	31.506	Circ	300	29.227	38	0.600	1.130	1.026
12.000	S91	31.937	S92CP	31.799	Circ	300	11.575	84	0.600	0.532	0.412
12.001	S92CP	31.799	S93	31.506	Circ	300	10.285	35	0.600	0.412	1.026
11.001	S93	31.431	S52 CP	31.020	Circ	375	17.858	43	0.600	1.026	0.831
11.002	S52 CP	30.945	S53	30.665	Circ	450	16.420	59	0.600	0.831	0.885
11.003	S53	30.590	S72	30.510	Circ	525	69.952	874	0.600	0.885	0.965
1.015	S72	30.510	S73	30.030	Circ	300	22.576	47	0.600	1.190	0.870

Outfall Details

Outfall Manhole S73 : Free Discharge

Flow Control Details

Controls within Manhole S83 OC

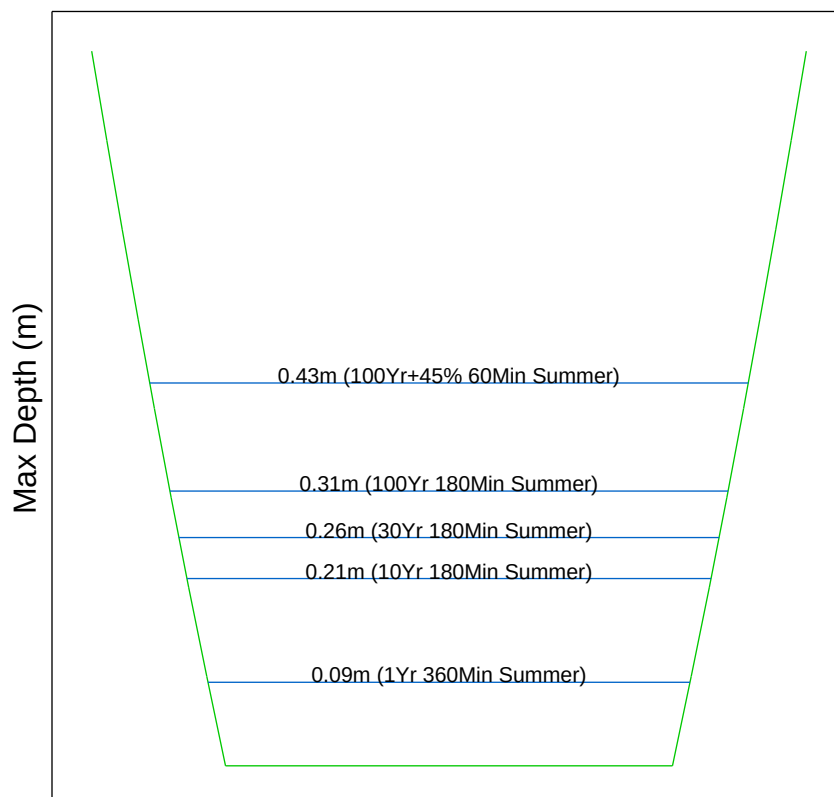
Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.100	0.600

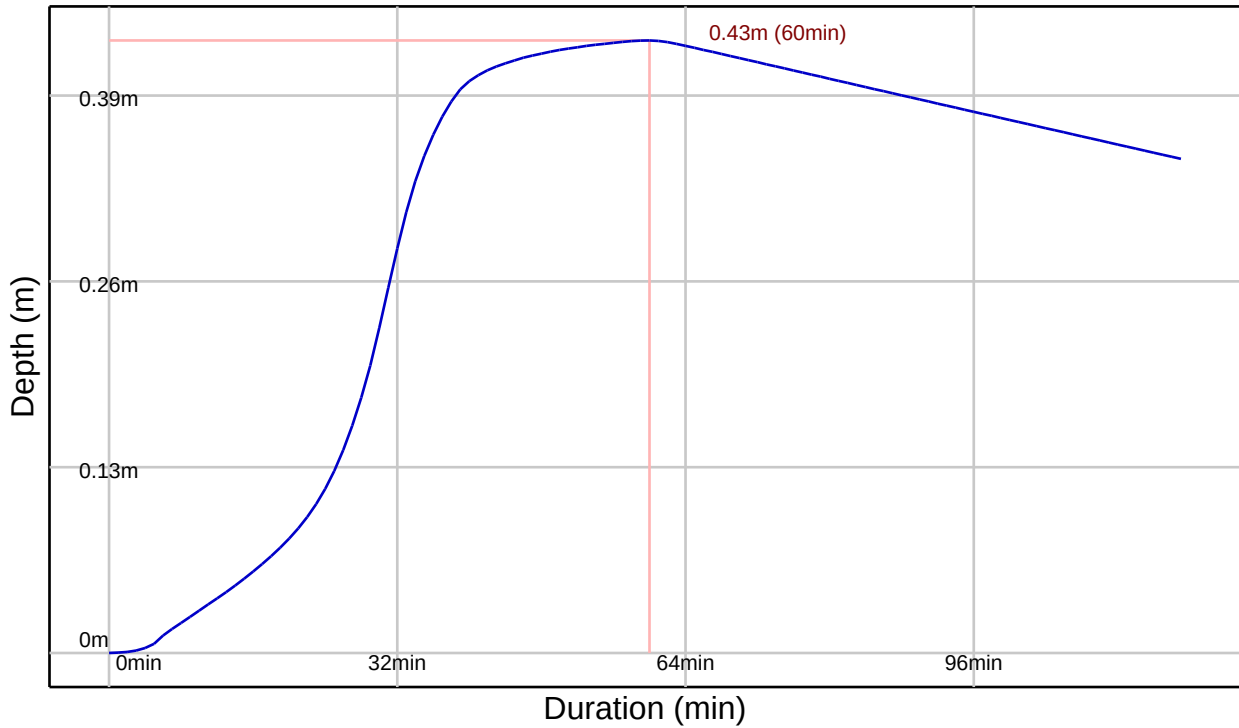
Pond Structure at Manhole S83 OC

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
34.200	0.800	181.557	34.700	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S83 OC



Pond 11 at S83 OC (100Yr+45% 60Min Summer)

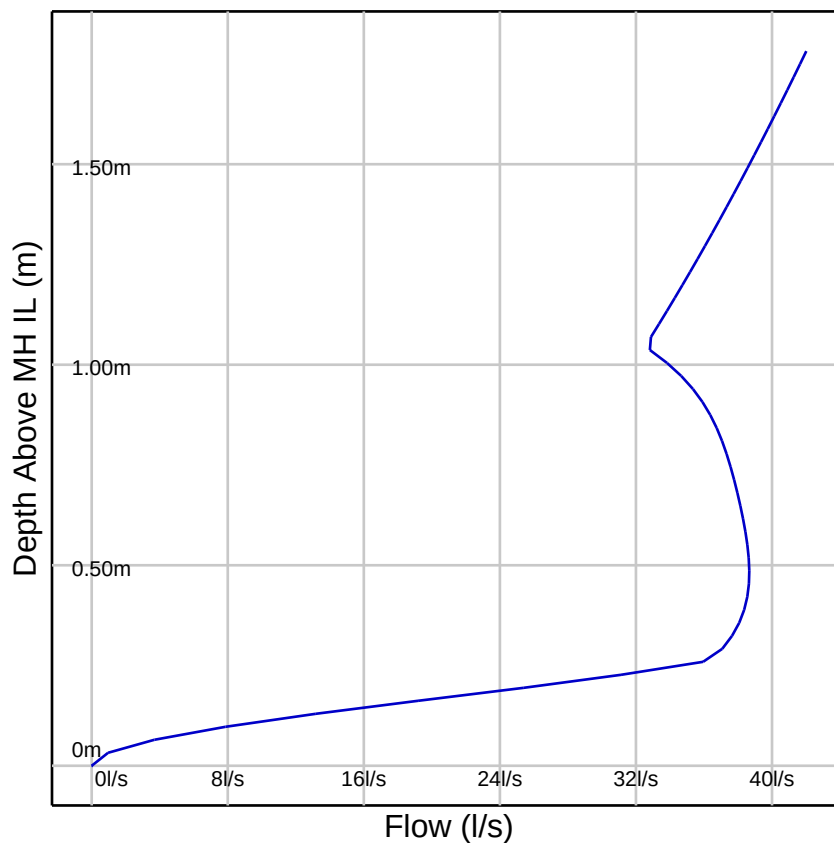


Controls within Manhole S72

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0258-3870-1500-3870	1.500	38.700	0.000	0.482	38.665	1.044	32.508

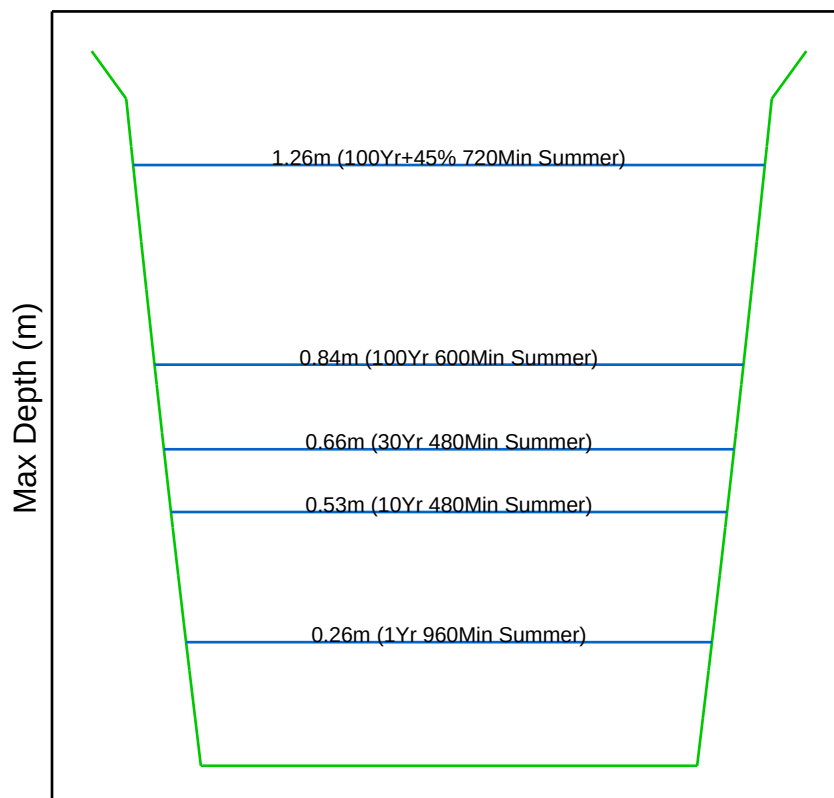
Hydro-Brake® Optimum Control from S72 to S73



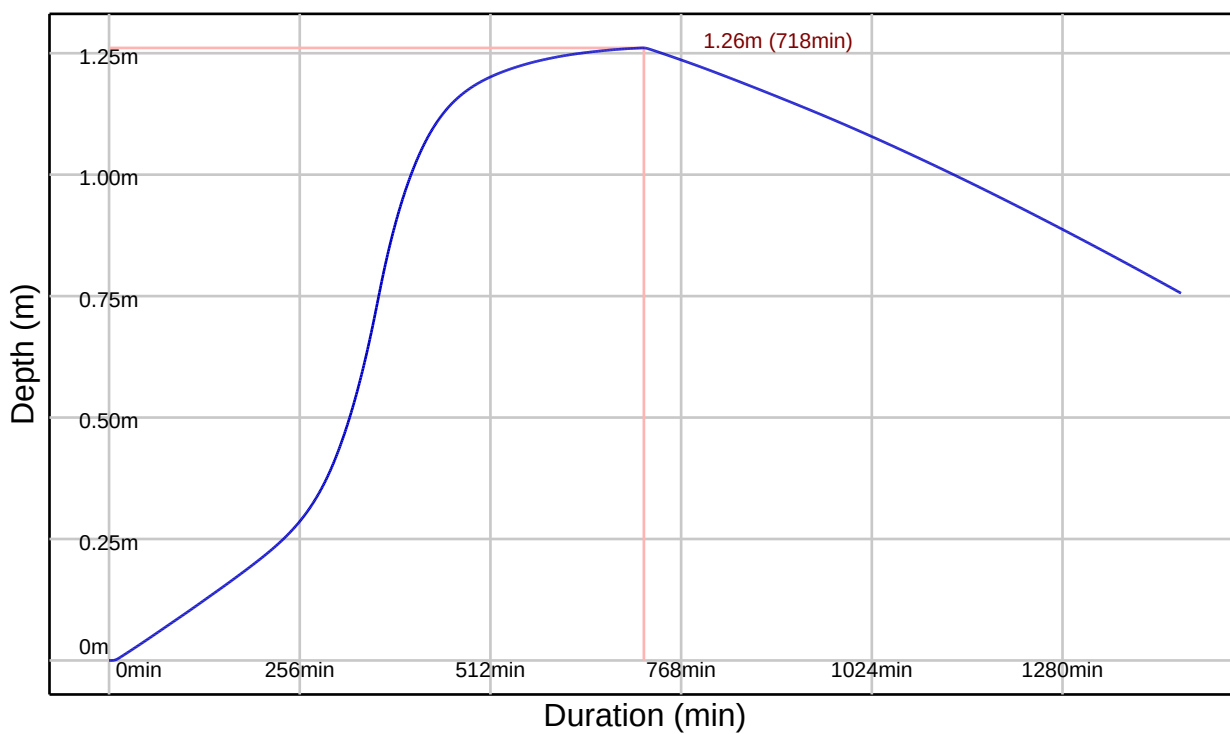
Pond Structure at Manhole S72

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
30.500	1.500	2880.917	31.700	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S72



Pond 4 at S72 (100Yr+45% 720Min Summer)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_525634_122741_v5_1_0.xml

Summer (Cv min: 0.40, max: 1.00), Winter (Cv min: 0.40, max: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 8640, 10080

Return Periods (yrs) + Climate Change: (1, +0%), (10, +0%), (30, +0%), (100, +0%), (100, +45%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	14.400	0.00	0.00	30Yr 480Min Summer	7.403	0.00	-0.06
1Yr 15Min Summer	14.400	0.00	0.00	30Yr 480Min Winter	7.403	0.00	-0.05
1Yr 30Min Winter	9.543	0.00	0.03	30Yr 600Min Summer	6.218	0.00	-0.04
1Yr 30Min Summer	9.543	0.00	0.04	30Yr 600Min Winter	6.218	0.00	-0.04
1Yr 60Min Winter	6.143	0.00	0.02	30Yr 720Min Summer	5.382	0.00	-0.03
1Yr 60Min Summer	6.143	0.00	0.01	30Yr 720Min Winter	5.382	0.00	-0.04
1Yr 120Min Winter	5.157	0.00	-0.02	30Yr 960Min Summer	4.291	0.00	-0.02
1Yr 120Min Summer	5.157	0.00	0.00	30Yr 960Min Winter	4.291	0.00	-0.02
1Yr 180Min Summer	4.455	0.00	-0.06	30Yr 1440Min Summer	3.109	0.00	-0.01
1Yr 180Min Winter	4.455	0.00	-0.05	30Yr 1440Min Winter	3.109	0.00	-0.01
1Yr 240Min Summer	3.755	0.00	-0.06	30Yr 8640Min Summer	0.851	0.00	0.00
1Yr 240Min Winter	3.755	0.00	-0.06	30Yr 8640Min Winter	0.851	0.00	0.00
1Yr 360Min Summer	2.978	0.00	-0.04	30Yr 10080Min Summer	0.777	0.00	0.00
1Yr 360Min Winter	2.978	0.00	-0.06	30Yr 10080Min Winter	0.777	0.00	-0.00
1Yr 480Min Winter	2.505	0.00	-0.06	100Yr 15Min Summer	100.383	0.00	0.14
1Yr 480Min Summer	2.505	0.00	-0.07	100Yr 15Min Winter	100.383	0.00	0.09
1Yr 600Min Summer	2.157	0.00	-0.09	100Yr 30Min Summer	67.241	0.00	0.05
1Yr 600Min Winter	2.157	0.00	-0.05	100Yr 30Min Winter	67.241	0.00	0.04
1Yr 720Min Winter	1.898	0.00	-0.04	100Yr 60Min Summer	43.178	0.00	-0.08
1Yr 720Min Summer	1.898	0.00	-0.08	100Yr 60Min Winter	43.178	0.00	-0.04
1Yr 960Min Summer	1.561	0.00	-0.05	100Yr 120Min Summer	26.048	0.00	0.01
1Yr 960Min Winter	1.561	0.00	-0.03	100Yr 120Min Winter	26.048	0.00	-0.04
1Yr 1440Min Summer	1.178	0.00	-0.01	100Yr 180Min Summer	19.245	0.00	-0.05
1Yr 1440Min Winter	1.178	0.00	-0.02	100Yr 180Min Winter	19.245	0.00	-0.04
1Yr 8640Min Summer	0.429	0.00	0.00	100Yr 240Min Summer	15.588	0.00	-0.12
1Yr 8640Min Winter	0.429	0.00	0.00	100Yr 240Min Winter	15.588	0.00	-0.05
1Yr 10080Min Summer	0.405	0.00	0.00	100Yr 360Min Summer	11.485	0.00	-0.09
1Yr 10080Min Winter	0.405	0.00	0.00	100Yr 360Min Winter	11.485	0.00	-0.06
10Yr 15Min Summer	61.131	0.00	0.16	100Yr 480Min Summer	9.230	0.00	-0.04
10Yr 15Min Winter	61.131	0.00	0.12	100Yr 480Min Winter	9.230	0.00	-0.05
10Yr 30Min Summer	40.365	0.00	0.11	100Yr 600Min Summer	7.789	0.00	-0.03
10Yr 30Min Winter	40.365	0.00	0.07	100Yr 600Min Winter	7.789	0.00	-0.04
10Yr 60Min Summer	25.483	0.00	0.03	100Yr 720Min Summer	6.775	0.00	-0.03
10Yr 60Min Winter	25.483	0.00	-0.02	100Yr 720Min Winter	6.775	0.00	-0.03
10Yr 120Min Summer	16.279	0.00	-0.07	100Yr 960Min Summer	5.435	0.00	-0.02
10Yr 120Min Winter	16.279	0.00	-0.07	100Yr 960Min Winter	5.435	0.00	-0.02
10Yr 180Min Summer	12.362	0.00	-0.05	100Yr 1440Min Summer	3.970	0.00	-0.01
10Yr 180Min Winter	12.362	0.00	-0.07	100Yr 1440Min Winter	3.970	0.00	-0.01
10Yr 240Min Summer	10.009	0.00	-0.09	100Yr 8640Min Summer	1.035	0.00	0.00
10Yr 240Min Winter	10.009	0.00	-0.07	100Yr 8640Min Winter	1.035	0.00	0.00
10Yr 360Min Summer	7.416	0.00	-0.12	100Yr 10080Min Summer	0.935	0.00	0.00
10Yr 360Min Winter	7.416	0.00	-0.06	100Yr 10080Min Winter	0.935	0.00	0.00
10Yr 480Min Summer	5.972	0.00	-0.08	100Yr+45% 15Min Summer	145.555	0.00	0.04
10Yr 480Min Winter	5.972	0.00	-0.05	100Yr+45% 15Min Winter	145.555	0.00	0.08
10Yr 600Min Summer	5.020	0.00	-0.04	100Yr+45% 30Min Summer	97.499	0.00	0.09
10Yr 600Min Winter	5.020	0.00	-0.04	100Yr+45% 30Min Winter	97.499	0.00	0.09
10Yr 720Min Winter	4.344	0.00	-0.04	100Yr+45% 60Min Summer	62.609	0.00	0.29
10Yr 720Min Summer	4.344	0.00	-0.03	100Yr+45% 60Min Winter	62.609	0.00	0.30
10Yr 960Min Winter	3.465	0.00	-0.02	100Yr+45% 120Min Summer	37.769	0.00	0.51
10Yr 960Min Summer	3.465	0.00	-0.02	100Yr+45% 120Min Winter	37.769	0.00	0.48
10Yr 1440Min Summer	2.517	0.00	-0.01	100Yr+45% 180Min Summer	27.905	0.00	0.48
10Yr 1440Min Winter	2.517	0.00	-0.01	100Yr+45% 180Min Winter	27.905	0.00	0.55
10Yr 8640Min Summer	0.726	0.00	0.00	100Yr+45% 240Min Summer	22.603	0.00	0.54
10Yr 8640Min Winter	0.726	0.00	-0.00	100Yr+45% 240Min Winter	22.603	0.00	0.57

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
10Yr 10080Min Summer	0.667	0.00	-0.00	100Yr+45% 360Min Summer	16.654	0.00	0.53
10Yr 10080Min Winter	0.667	0.00	0.00	100Yr+45% 360Min Winter	16.654	0.00	0.50
30Yr 15Min Summer	79.814	0.00	0.11	100Yr+45% 480Min Summer	13.384	0.00	0.38
30Yr 15Min Winter	79.814	0.00	0.10	100Yr+45% 480Min Winter	13.384	0.00	0.36
30Yr 30Min Summer	53.125	0.00	0.07	100Yr+45% 600Min Summer	11.293	0.00	0.23
30Yr 30Min Winter	53.125	0.00	0.04	100Yr+45% 600Min Winter	11.293	0.00	0.21
30Yr 60Min Summer	33.742	0.00	-0.02	100Yr+45% 720Min Summer	9.823	0.00	0.09
30Yr 60Min Winter	33.742	0.00	-0.03	100Yr+45% 720Min Winter	9.823	0.00	0.08
30Yr 120Min Summer	20.790	0.00	-0.03	100Yr+45% 960Min Summer	7.880	0.00	-0.02
30Yr 120Min Winter	20.790	0.00	-0.07	100Yr+45% 960Min Winter	7.880	0.00	-0.02
30Yr 180Min Summer	15.537	0.00	-0.07	100Yr+45% 1440Min Summer	5.756	0.00	-0.02
30Yr 180Min Winter	15.537	0.00	-0.09	100Yr+45% 1440Min Winter	5.756	0.00	-0.01
30Yr 240Min Summer	12.555	0.00	-0.13	100Yr+45% 8640Min Summer	1.500	0.00	0.00
30Yr 240Min Winter	12.555	0.00	-0.08	100Yr+45% 8640Min Winter	1.500	0.00	0.00
30Yr 360Min Summer	9.235	0.00	-0.10	100Yr+45% 10080Min Winter	1.356	0.00	0.00
30Yr 360Min Winter	9.235	0.00	-0.07	100Yr+45% 10080Min Summer	1.356	0.00	0.00

Simulation Results

Return Period (yrs) + Climate Change (%):

1yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S88	15 min Winter	0	38.340	0.000	0.000		OK
S90	15 min Winter	0	38.510	0.000	0.000		OK
S89	15 min Summer	9	38.242	0.042	4.920		OK
S80	15 min Summer	9	38.021	0.021	4.855		OK
S81	15 min Summer	10	34.385	0.065	8.418		OK
S82	15 min Summer	10	34.307	0.087	8.684		OK
S84	15 min Winter	0	35.290	0.000	0.000		OK
S85	15 min Winter	0	34.850	0.000	0.000		OK
S86	15 min Winter	0	34.560	0.000	0.000		OK
S87	15 min Summer	8	34.401	0.101	15.259		OK
S106	15 min Winter	7	34.398	0.186	13.624		OK
S83 OC	360 min Summer	218	34.294	0.094	3.932		OK
S67	15 min Summer	9	34.270	0.087	13.101		OK
S68	15 min Summer	9	33.956	0.106	23.561		OK
S70	15 min Summer	8	34.481	0.041	6.699		OK
S69	15 min Summer	9	33.723	0.113	53.428		OK
S39	15 min Summer	8	35.630	0.059	12.540		OK
S40	15 min Summer	9	34.684	0.054	12.583		OK
S41	15 min Summer	9	34.506	0.086	20.092		OK
S42	15 min Summer	9	34.230	0.085	25.489		OK
S43	15 min Summer	9	33.811	0.046	25.803		OK
S44	15 min Summer	9	32.698	0.148	79.826		OK
S54	15 min Summer	9	32.443	0.138	82.553		OK
S45	15 min Summer	9	31.795	0.140	104.209		OK
S46	15 min Summer	9	31.019	0.199	105.601		OK
S47	15 min Summer	10	30.959	0.259	112.459		OK
S48CP	15 min Summer	10	30.868	0.273	118.179		OK
S49	15 min Summer	11	30.797	0.247	114.168		OK
S63	15 min Summer	8	38.300	0.040	8.899		OK
S64	15 min Summer	8	37.722	0.043	8.868		OK
S65	15 min Summer	8	37.192	0.087	22.122		OK
S66	15 min Summer	8	36.803	0.078	26.678		OK
S55	15 min Summer	8	37.257	0.037	8.402		OK
S56	15 min Summer	9	36.251	0.073	34.596		OK
S57	15 min Summer	9	35.520	0.070	34.792		OK
S58	15 min Summer	9	34.082	0.077	47.311		OK
S94	15 min Summer	9	32.103	0.124	48.226		OK
S59	15 min Summer	9	31.944	0.130	52.488		OK
PS1	15 min Winter	0	35.826	0.000	0.000		OK
PS2	15 min Winter	0	34.012	0.000	0.000		OK
S60	15 min Summer	9	31.724	0.114	62.131		OK
S61	15 min Summer	9	31.266	0.126	62.040		OK
S75	15 min Winter	0	39.889	0.000	0.000		OK
S76	15 min Summer	8	38.376	0.012	1.578		OK
S77	15 min Summer	9	35.036	0.013	1.538		OK
S78	15 min Summer	8	32.913	0.055	27.321		OK
S79	15 min Summer	8	31.545	0.073	27.140		OK
S71 CP	15 min Summer	9	30.896	0.244	140.292		OK
S107	15 min Summer	10	30.764	0.244	134.427		OK
S51	15 min Summer	8	32.320	0.054	12.921		OK
S91	15 min Summer	8	31.961	0.024	1.548		OK
S92CP	15 min Summer	9	31.817	0.018	1.507		OK
S93	15 min Summer	8	31.491	0.059	16.937		OK
S52 CP	15 min Summer	9	31.006	0.061	16.799		OK
S53	960 min Summer	599	30.759	0.169	1.218		OK
S72	960 min Summer	599	30.759	0.259	21.882		OK
S73	960 min Summer	599	30.102	0.072	21.854		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	9	S88	S89	0.021	0.000	0.000	0.000	OK
2.000	15 min Summer	9	S90	S89	0.021	0.000	0.000	0.000	OK
1.001	15 min Summer	9	S89	S80	0.032	0.907	4.855	0.012	OK
1.002	15 min Summer	10	S80	S81	0.043	0.568	4.771	0.003	OK
1.003	15 min Summer	10	S81	S82	0.076	0.451	8.684	0.035	OK
1.004	360 min Summer	217	S82	S83 OC	0.084	0.209	3.510	0.024	OK
3.000	15 min Winter	0	S84	S85	0.000	0.000	0.000	0.000	OK
3.001	15 min Winter	0	S85	S86	0.000	0.000	0.000	0.000	OK
3.002	15 min Summer	8	S86	S87	0.050	0.000	0.000	0.000	OK
3.003	15 min Winter	8	S87	S106	0.138	0.674	24.014	0.061	OK
3.004	15 min Winter	8	S106	S83 OC	0.095	1.286	23.517	0.082	OK
1.005	15 min Summer	23	S83 OC	S68	0.056	0.419	0.934	0.003	OK
4.000	15 min Summer	9	S67	S68	0.086	0.763	12.864	0.188	OK
1.006	15 min Summer	9	S68	S69	0.110	0.873	23.241	0.180	OK
5.000	15 min Summer	8	S70	S69	0.040	1.149	6.548	0.040	OK
1.007	15 min Summer	9	S69	S44	0.112	1.907	52.728	0.198	OK
6.000	15 min Summer	8	S39	S40	0.057	1.342	12.401	0.085	OK
6.001	15 min Summer	9	S40	S41	0.070	1.018	12.721	0.078	OK
6.002	15 min Summer	9	S41	S42	0.084	1.242	20.260	0.178	OK
6.003	15 min Summer	9	S42	S43	0.084	1.377	25.616	0.115	OK
6.004	15 min Summer	9	S43	S44	0.097	1.031	25.815	0.024	OK
1.008	15 min Summer	9	S44	S54	0.143	1.834	79.664	0.226	OK
1.009	15 min Summer	9	S54	S45	0.139	1.982	82.035	0.204	OK
1.010	15 min Summer	9	S45	S46	0.137	2.522	103.132	0.205	OK
1.011	15 min Summer	10	S46	S47	0.228	1.071	104.850	0.201	OK
1.012	15 min Summer	10	S47	S48CP	0.266	0.950	114.006	0.382	OK
1.013	15 min Summer	10	S48CP	S49	0.259	0.987	115.261	0.451	OK
1.014	15 min Summer	11	S49	S72	0.232	1.150	116.352	0.397	OK
7.000	15 min Summer	8	S63	S64	0.042	1.748	8.868	0.073	OK
7.001	15 min Summer	8	S64	S65	0.043	1.676	8.801	0.082	OK
7.002	15 min Summer	8	S65	S66	0.082	1.392	21.965	0.180	OK
7.003	15 min Summer	9	S66	S56	0.077	1.860	26.464	0.147	OK
8.000	15 min Summer	8	S55	S56	0.055	0.830	8.345	0.021	OK
7.004	15 min Summer	9	S56	S57	0.072	2.359	34.792	0.084	OK
7.005	15 min Summer	9	S57	S58	0.069	2.496	34.979	0.077	OK
7.006	15 min Summer	9	S58	S94	0.077	2.633	47.496	0.066	OK
7.007	15 min Summer	9	S94	S59	0.127	1.194	48.341	0.122	OK
7.008	15 min Summer	9	S59	S60	0.122	1.374	52.527	0.136	OK
9.000	15 min Winter	0	PS1	PS2	0.000	0.000	0.000	0.000	OK
9.001	15 min Winter	0	PS2	S60	0.000	0.000	0.000	0.000	OK
7.009	15 min Summer	9	S60	S61	0.120	1.667	62.040	0.107	OK
7.010	15 min Summer	10	S61	S71 CP	0.124	1.582	61.501	0.127	OK
10.000	15 min Summer	8	S75	S76	0.006	0.000	0.000	0.000	OK
10.001	15 min Summer	9	S76	S77	0.012	1.196	1.559	0.001	OK
10.002	15 min Summer	9	S77	S78	0.034	0.282	1.551	0.001	OK
10.003	15 min Summer	8	S78	S79	0.064	1.806	27.140	0.025	OK
10.004	15 min Summer	9	S79	S71 CP	0.083	1.374	27.086	0.044	OK
7.011	15 min Summer	9	S71 CP	S107	0.243	1.204	140.003	0.269	OK
7.012	960 min Summer	599	S107	S72	0.244	0.353	28.637	0.035	OK
11.000	15 min Summer	8	S51	S93	0.053	1.506	12.759	0.071	OK
12.000	15 min Summer	8	S91	S92CP	0.021	0.700	1.531	0.013	OK
12.001	15 min Summer	9	S92CP	S93	0.018	0.851	1.523	0.008	OK
11.001	15 min Summer	9	S93	S52 CP	0.058	1.532	16.799	0.055	OK
11.002	15 min Summer	9	S52 CP	S53	0.060	1.328	16.924	0.040	OK
11.003	960 min Summer	599	S53	S72	0.209	0.170	3.422	0.021	OK
1.015	960 min Summer	599	S72	S73	0.073	1.656	21.854	0.135	OK

Return Period (yrs) + Climate Change (%):

10yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S88	15 min Summer	0	38.340	0.000	0.000		OK
S90	15 min Summer	0	38.510	0.000	0.000		OK
S89	15 min Summer	9	38.283	0.083	20.867		OK
S80	15 min Summer	9	38.043	0.043	21.254		OK
S81	15 min Summer	9	34.462	0.142	39.871		OK
S82	180 min Summer	121	34.410	0.190	3.316		OK
S84	15 min Summer	0	35.290	0.000	0.000		OK
S85	15 min Summer	0	34.850	0.000	0.000		OK
S86	15 min Summer	0	34.560	0.000	0.000		OK
S87	15 min Winter	5	34.478	0.178	34.125		OK
S106	15 min Winter	5	34.495	0.283	28.816		OK
S83 OC	180 min Summer	121	34.410	0.210	8.236		OK
S67	15 min Summer	9	34.389	0.207	55.573		OK
S68	15 min Summer	9	34.107	0.257	103.797		OK
S70	15 min Summer	8	34.523	0.083	28.466		OK
S69	15 min Summer	9	33.883	0.273	231.511		OK
S39	15 min Summer	8	35.694	0.123	53.285		OK
S40	15 min Summer	8	34.761	0.131	54.427		OK
S41	15 min Summer	8	34.621	0.201	86.314		OK
S42	15 min Summer	9	34.334	0.189	108.118		OK
S43	15 min Summer	9	33.858	0.093	109.610		OK
S44	15 min Summer	9	32.944	0.394	347.721		OK
S54	15 min Summer	10	32.687	0.382	340.669		OK
S45	15 min Summer	10	32.233	0.578	425.606		Surcharged
S46	15 min Summer	10	31.684	0.864	438.163		Surcharged
S47	15 min Summer	10	31.577	0.877	469.798		Surcharged
S48CP	15 min Summer	10	31.310	0.715	486.550		Surcharged
S49	15 min Summer	10	31.132	0.582	483.124		OK
S63	15 min Summer	8	38.347	0.087	37.815		OK
S64	15 min Summer	8	37.769	0.091	37.722		OK
S65	15 min Summer	8	37.307	0.202	94.200		OK
S66	15 min Summer	8	36.905	0.180	113.517		OK
S55	15 min Summer	8	37.294	0.074	35.702		OK
S56	15 min Summer	8	36.338	0.161	148.265		OK
S57	15 min Summer	8	35.600	0.150	147.802		OK
S58	15 min Summer	8	34.163	0.158	201.725		OK
S94	15 min Summer	9	32.263	0.284	203.854		OK
S59	15 min Summer	9	32.103	0.289	223.122		OK
PS1	15 min Summer	0	35.826	0.000	0.000		OK
PS2	15 min Summer	0	34.012	0.000	0.000		OK
S60	15 min Summer	9	31.868	0.258	264.926		OK
S61	15 min Summer	9	31.440	0.300	265.950		OK
S75	15 min Summer	0	39.889	0.000	0.000		OK
S76	15 min Summer	8	38.387	0.024	6.705		OK
S77	15 min Summer	8	35.048	0.024	6.647		OK
S78	15 min Summer	8	32.969	0.111	116.278		OK
S79	15 min Summer	8	31.621	0.149	115.816		OK
S71 CP	15 min Summer	9	31.245	0.593	602.791		OK
S107	480 min Summer	356	31.033	0.513	15.766		OK
S51	15 min Summer	8	32.380	0.114	54.906		OK
S91	15 min Summer	8	31.985	0.047	6.576		OK
S92CP	15 min Summer	8	31.835	0.036	6.531		OK
S93	15 min Summer	8	31.558	0.127	72.316		OK
S52 CP	15 min Summer	8	31.074	0.129	71.911		OK
S53	480 min Summer	352	31.033	0.443	1.889		OK
S72	480 min Summer	356	31.033	0.533	38.500		Surcharged
S73	480 min Summer	356	30.126	0.096	38.553		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	9	S88	S89	0.042	0.000	0.000	0.000	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
2.000	15 min Summer	9	S90	S89	0.042	0.000	0.000	0.000	OK
1.001	15 min Summer	9	S89	S80	0.063	1.428	21.254	0.052	OK
1.002	15 min Summer	9	S80	S81	0.093	0.829	21.308	0.015	OK
1.003	15 min Summer	9	S81	S82	0.153	0.762	39.897	0.161	OK
1.004	180 min Summer	121	S82	S83 OC	0.200	0.297	13.564	0.094	OK
3.000	15 min Summer	0	S84	S85	0.000	0.000	0.000	0.000	OK
3.001	15 min Summer	0	S85	S86	0.000	0.000	0.000	0.000	OK
3.002	15 min Winter	5	S86	S87	0.089	0.000	0.000	0.000	OK
3.003	15 min Winter	8	S87	S106	0.230	1.086	59.681	0.151	OK
3.004	180 min Summer	121	S106	S83 OC	0.204	0.672	23.272	0.082	OK
1.005	15 min Summer	17	S83 OC	S68	0.140	0.760	6.195	0.022	OK
4.000	15 min Summer	9	S67	S68	0.196	1.155	56.370	0.823	OK
1.006	15 min Summer	9	S68	S69	0.265	1.278	103.717	0.803	OK
5.000	15 min Summer	9	S70	S69	0.140	1.262	28.274	0.174	OK
1.007	15 min Summer	9	S69	S44	0.296	2.500	232.610	0.875	OK
6.000	15 min Summer	8	S39	S40	0.127	1.853	52.869	0.361	OK
6.001	15 min Summer	9	S40	S41	0.166	1.349	53.871	0.330	OK
6.002	15 min Summer	9	S41	S42	0.194	1.782	85.936	0.757	OK
6.003	15 min Summer	9	S42	S43	0.184	2.022	108.819	0.488	OK
6.004	15 min Summer	9	S43	S44	0.243	1.356	109.671	0.103	OK
1.008	15 min Summer	10	S44	S54	0.383	2.471	345.530	0.980	OK
1.009	15 min Summer	10	S54	S45	0.416	2.541	348.092	0.867	OK
1.010	15 min Summer	10	S45	S46	0.450	3.057	429.424	0.854	OK
1.011	15 min Winter	10	S46	S47	0.600	1.461	413.158	0.792	Surcharged
1.012	15 min Winter	10	S47	S48CP	0.600	1.578	446.056	1.496	Surcharged
1.013	15 min Summer	10	S48CP	S49	0.591	1.715	483.124	1.889	OK
1.014	15 min Summer	10	S49	S72	0.518	1.857	481.478	1.644	OK
7.000	15 min Summer	8	S63	S64	0.089	2.589	37.722	0.311	OK
7.001	15 min Summer	8	S64	S65	0.109	2.134	37.595	0.352	OK
7.002	15 min Summer	8	S65	S66	0.191	1.974	93.489	0.766	OK
7.003	15 min Summer	8	S66	S56	0.173	2.682	112.708	0.626	OK
8.000	15 min Summer	8	S55	S56	0.118	1.204	35.557	0.090	OK
7.004	15 min Summer	8	S56	S57	0.156	3.413	147.802	0.357	OK
7.005	15 min Summer	9	S57	S58	0.146	3.703	147.876	0.326	OK
7.006	15 min Summer	8	S58	S94	0.183	3.314	201.170	0.279	OK
7.007	15 min Summer	9	S94	S59	0.286	1.702	205.530	0.520	OK
7.008	15 min Summer	9	S59	S60	0.273	1.969	224.187	0.579	OK
9.000	15 min Summer	0	PS1	PS2	0.000	0.000	0.000	0.000	OK
9.001	15 min Summer	0	PS2	S60	0.000	0.000	0.000	0.000	OK
7.009	15 min Summer	9	S60	S61	0.279	2.277	265.950	0.458	OK
7.010	15 min Summer	9	S61	S71 CP	0.371	1.951	265.783	0.547	OK
10.000	15 min Summer	8	S75	S76	0.012	0.000	0.000	0.000	OK
10.001	15 min Summer	8	S76	S77	0.024	1.840	6.647	0.004	OK
10.002	15 min Summer	8	S77	S78	0.068	0.410	6.572	0.004	OK
10.003	15 min Summer	8	S78	S79	0.130	2.773	115.816	0.105	OK
10.004	15 min Summer	9	S79	S71 CP	0.295	1.369	114.764	0.188	OK
7.011	15 min Summer	9	S71 CP	S107	0.544	1.963	606.576	1.167	OK
7.012	480 min Summer	356	S107	S72	0.518	0.471	108.287	0.131	OK
11.000	15 min Summer	8	S51	S93	0.112	2.255	54.443	0.303	OK
12.000	15 min Summer	8	S91	S92CP	0.042	1.088	6.531	0.054	OK
12.001	15 min Summer	8	S92CP	S93	0.044	1.144	6.491	0.035	OK
11.001	15 min Summer	8	S93	S52 CP	0.123	2.283	71.911	0.236	OK
11.002	480 min Summer	355	S52 CP	S53	0.228	1.006	13.102	0.031	OK
11.003	480 min Summer	352	S53	S72	0.483	0.260	12.589	0.078	OK
1.015	480 min Summer	356	S72	S73	0.098	1.934	38.553	0.237	OK

Return Period (yrs) + Climate Change (%):
30yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S88	15 min Summer	0	38.340	0.000	0.000		OK
S90	15 min Summer	0	38.510	0.000	0.000		OK
S89	15 min Summer	9	38.295	0.095	27.242		OK
S80	15 min Summer	9	38.049	0.049	27.770		OK
S81	15 min Summer	9	34.485	0.165	52.103		OK
S82	180 min Summer	124	34.456	0.236	3.673		OK
S84	15 min Summer	0	35.290	0.000	0.000		OK
S85	15 min Summer	0	34.850	0.000	0.000		OK
S86	15 min Summer	0	34.560	0.000	0.000		OK
S87	15 min Winter	5	34.526	0.226	44.597		OK
S106	15 min Winter	5	34.491	0.280	45.511		OK
S83 OC	180 min Summer	123	34.456	0.256	9.594		OK
S67	15 min Summer	10	34.530	0.347	60.501		Surcharged
S68	15 min Summer	10	34.356	0.506	105.802		Surcharged
S70	15 min Summer	8	34.535	0.095	37.163		OK
S69	15 min Summer	10	34.226	0.615	234.099		Surcharged
S39	15 min Summer	8	35.714	0.143	69.562		OK
S40	15 min Summer	8	34.793	0.163	71.118		OK
S41	15 min Summer	8	34.669	0.249	112.441		OK
S42	15 min Summer	9	34.369	0.224	141.044		OK
S43	15 min Summer	9	33.871	0.106	143.019		OK
S44	15 min Summer	10	33.478	0.928	367.998		Surcharged
S54	15 min Summer	10	33.172	0.867	377.660		Surcharged
S45	15 min Summer	10	32.577	0.922	476.364		Surcharged
S46	15 min Summer	10	31.901	1.081	486.723		Surcharged
S47	15 min Summer	10	31.769	1.069	527.593		Surcharged
S48CP	15 min Summer	10	31.432	0.837	548.902		Surcharged
S49	15 min Summer	10	31.193	0.643	547.265		Surcharged
S63	15 min Summer	8	38.362	0.102	49.368		OK
S64	15 min Summer	8	37.785	0.106	49.261		OK
S65	15 min Summer	8	37.358	0.253	122.982		OK
S66	15 min Summer	8	36.943	0.218	148.140		OK
S55	15 min Summer	8	37.304	0.084	46.608		OK
S56	15 min Summer	8	36.367	0.189	193.480		OK
S57	15 min Summer	8	35.625	0.175	192.860		OK
S58	15 min Summer	8	34.187	0.182	263.248		OK
S94	15 min Summer	9	32.321	0.342	266.048		OK
S59	15 min Summer	9	32.161	0.347	290.795		OK
PS1	15 min Summer	0	35.826	0.000	0.000		OK
PS2	15 min Summer	0	34.012	0.000	0.000		OK
S60	15 min Summer	9	31.930	0.320	344.857		OK
S61	15 min Summer	9	31.586	0.446	344.484		OK
S75	15 min Summer	0	39.889	0.000	0.000		OK
S76	15 min Summer	8	38.391	0.027	8.754		OK
S77	15 min Summer	8	35.051	0.028	8.682		OK
S78	15 min Summer	8	32.985	0.127	151.809		OK
S79	15 min Summer	8	31.643	0.171	151.270		OK
S71 CP	15 min Summer	9	31.434	0.781	780.719		Surcharged
S107	480 min Summer	392	31.164	0.644	15.565		OK
S51	15 min Summer	8	32.399	0.133	71.679		OK
S91	15 min Summer	8	31.992	0.054	8.585		OK
S92CP	15 min Summer	8	31.840	0.041	8.534		OK
S93	15 min Summer	8	31.579	0.147	94.453		OK
S52 CP	480 min Summer	393	31.166	0.221	2.127		OK
S53	480 min Summer	392	31.167	0.577	1.264		Surcharged
S72	480 min Summer	393	31.164	0.664	38.851		Surcharged
S73	360 min Summer	444	30.126	0.096	38.664		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	9	S88	S89	0.047	0.000	0.000	0.000	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
2.000	15 min Summer	9	S90	S89	0.047	0.000	0.000	0.000	OK
1.001	15 min Summer	9	S89	S80	0.072	1.552	27.770	0.067	OK
1.002	15 min Summer	9	S80	S81	0.107	0.880	27.869	0.019	OK
1.003	180 min Summer	124	S81	S82	0.186	0.450	18.551	0.075	OK
1.004	180 min Summer	124	S82	S83 OC	0.246	0.488	16.838	0.117	OK
3.000	15 min Summer	0	S84	S85	0.000	0.000	0.000	0.000	OK
3.001	15 min Summer	0	S85	S86	0.000	0.000	0.000	0.000	OK
3.002	15 min Winter	5	S86	S87	0.113	0.000	0.000	0.000	OK
3.003	15 min Winter	8	S87	S106	0.253	1.143	76.769	0.194	OK
3.004	180 min Summer	123	S106	S83 OC	0.250	0.723	29.047	0.102	OK
1.005	15 min Summer	17	S83 OC	S68	0.265	0.805	7.430	0.026	OK
4.000	15 min Summer	10	S67	S68	0.300	1.169	73.384	1.072	Surcharged
1.006	15 min Summer	9	S68	S69	0.375	1.259	124.572	0.964	Surcharged
5.000	15 min Summer	8	S70	S69	0.197	1.243	36.941	0.228	OK
1.007	15 min Winter	9	S69	S44	0.375	2.492	260.143	0.979	Surcharged
6.000	15 min Summer	8	S39	S40	0.153	1.918	69.084	0.471	OK
6.001	15 min Summer	9	S40	S41	0.206	1.379	70.137	0.430	OK
6.002	15 min Summer	9	S41	S42	0.239	1.857	112.085	0.987	OK
6.003	15 min Summer	9	S42	S43	0.217	2.148	141.986	0.637	OK
6.004	15 min Summer	9	S43	S44	0.278	1.387	143.091	0.135	OK
1.008	30 min Summer	16	S44	S54	0.450	2.430	366.596	1.040	OK
1.009	15 min Winter	11	S54	S45	0.450	2.520	370.001	0.921	OK
1.010	15 min Winter	10	S45	S46	0.450	3.110	460.766	0.916	OK
1.011	15 min Winter	10	S46	S47	0.600	1.665	470.796	0.903	Surcharged
1.012	15 min Winter	10	S47	S48CP	0.600	1.799	508.529	1.706	Surcharged
1.013	15 min Winter	10	S48CP	S49	0.600	1.870	528.638	2.067	Surcharged
1.014	480 min Summer	325	S49	S72	0.600	0.659	122.563	0.419	Surcharged
7.000	15 min Summer	8	S63	S64	0.104	2.752	49.261	0.406	OK
7.001	15 min Summer	8	S64	S65	0.142	2.160	49.084	0.459	OK
7.002	15 min Summer	8	S65	S66	0.235	2.055	121.994	1.000	OK
7.003	15 min Summer	8	S66	S56	0.208	2.824	147.038	0.817	OK
8.000	15 min Summer	8	S55	S56	0.137	1.278	46.442	0.117	OK
7.004	15 min Summer	8	S56	S57	0.182	3.620	192.860	0.465	OK
7.005	15 min Summer	9	S57	S58	0.170	3.957	193.051	0.425	OK
7.006	15 min Summer	9	S58	S94	0.224	3.319	262.578	0.365	OK
7.007	15 min Summer	9	S94	S59	0.344	1.781	267.829	0.678	OK
7.008	15 min Summer	9	S59	S60	0.333	2.039	291.673	0.753	OK
9.000	15 min Summer	0	PS1	PS2	0.000	0.000	0.000	0.000	OK
9.001	15 min Summer	0	PS2	S60	0.000	0.000	0.000	0.000	OK
7.009	15 min Summer	9	S60	S61	0.383	2.316	344.484	0.593	OK
7.010	15 min Summer	10	S61	S71 CP	0.485	1.971	351.121	0.723	OK
10.000	15 min Summer	8	S75	S76	0.014	0.000	0.000	0.000	OK
10.001	15 min Summer	8	S76	S77	0.027	1.995	8.682	0.005	OK
10.002	15 min Summer	8	S77	S78	0.077	0.444	8.591	0.006	OK
10.003	15 min Summer	8	S78	S79	0.149	2.991	151.270	0.137	OK
10.004	15 min Summer	8	S79	S71 CP	0.348	1.400	150.042	0.245	OK
7.011	15 min Summer	9	S71 CP	S107	0.618	2.271	779.626	1.500	OK
7.012	480 min Summer	392	S107	S72	0.649	0.495	132.633	0.160	OK
11.000	15 min Summer	8	S51	S93	0.130	2.416	71.110	0.396	OK
12.000	15 min Summer	8	S91	S92CP	0.048	1.176	8.534	0.070	OK
12.001	15 min Summer	8	S92CP	S93	0.057	1.214	8.483	0.045	OK
11.001	15 min Summer	8	S93	S52 CP	0.142	2.445	93.907	0.309	OK
11.002	480 min Summer	393	S52 CP	S53	0.336	0.974	21.503	0.051	OK
11.003	240 min Summer	170	S53	S72	0.525	0.341	26.007	0.161	OK
1.015	360 min Summer	444	S72	S73	0.098	1.935	38.664	0.238	OK

Return Period (yrs) + Climate Change (%):
100yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S88	15 min Summer	0	38.340	0.000	0.000		OK
S90	15 min Summer	0	38.510	0.000	0.000		OK
S89	15 min Summer	8	38.306	0.106	35.710		OK
S80	15 min Summer	9	38.055	0.055	34.937		OK
S81	15 min Summer	9	34.508	0.188	65.566		OK
S82	180 min Summer	126	34.508	0.288	4.230		OK
S84	15 min Summer	0	35.290	0.000	0.000		OK
S85	15 min Summer	0	34.850	0.000	0.000		OK
S86	15 min Summer	0	34.560	0.000	0.000		OK
S87	15 min Winter	5	34.513	0.213	56.135		OK
S106	15 min Winter	5	34.509	0.298	75.926		OK
S83 OC	180 min Summer	126	34.508	0.308	10.666		OK
S67	15 min Summer	10	35.104	0.921	76.083		Surcharged
S68	15 min Summer	11	34.881	1.031	97.003		Surcharged
S70	15 min Summer	10	34.777	0.337	37.392		Surcharged
S69	15 min Summer	11	34.733	1.122	206.932		Surcharged
S39	15 min Summer	8	35.734	0.163	87.487		OK
S40	15 min Summer	9	34.867	0.237	87.045		OK
S41	15 min Summer	9	34.810	0.390	138.159		Surcharged
S42	15 min Summer	9	34.405	0.260	174.579		OK
S43	15 min Summer	10	33.980	0.215	166.810		OK
S44	15 min Summer	11	33.969	1.419	381.752		Surcharged
S54	15 min Summer	10	33.609	1.304	407.288		Surcharged
S45	15 min Summer	10	32.934	1.279	526.508		Surcharged
S46	15 min Summer	10	32.117	1.297	536.456		Surcharged
S47	15 min Summer	10	31.956	1.256	586.621		Surcharged
S48CP	15 min Summer	10	31.542	0.946	611.844		Surcharged
S49	600 min Summer	509	31.342	0.792	20.803		Surcharged
S63	15 min Summer	8	38.375	0.115	62.088		OK
S64	15 min Summer	9	37.833	0.154	59.687		OK
S65	15 min Summer	9	37.599	0.494	149.623		Surcharged
S66	15 min Summer	9	37.001	0.276	183.298		OK
S55	15 min Summer	8	37.315	0.095	58.618		OK
S56	15 min Summer	9	36.396	0.218	240.475		OK
S57	15 min Summer	9	35.651	0.201	240.800		OK
S58	15 min Summer	9	34.211	0.206	326.893		OK
S94	15 min Summer	9	32.402	0.423	332.190		OK
S59	15 min Summer	10	32.280	0.466	334.598		OK
PS1	15 min Summer	0	35.826	0.000	0.000		OK
PS2	15 min Summer	0	34.012	0.000	0.000		OK
S60	15 min Summer	10	32.123	0.513	401.978		OK
S61	15 min Summer	9	31.886	0.746	405.677		Surcharged
S75	15 min Summer	0	39.889	0.000	0.000		OK
S76	15 min Summer	8	38.394	0.030	11.009		OK
S77	15 min Summer	8	35.054	0.031	10.922		OK
S78	15 min Summer	8	33.001	0.143	190.939		OK
S79	15 min Summer	9	31.675	0.203	184.239		OK
S71 CP	15 min Summer	9	31.627	0.974	952.275		Surcharged
S107	600 min Summer	511	31.342	0.822	15.101		OK
S51	15 min Summer	8	32.419	0.152	90.149		OK
S91	15 min Summer	8	31.998	0.061	10.797		OK
S92CP	15 min Summer	8	31.845	0.046	10.739		OK
S93	15 min Summer	8	31.600	0.168	118.822		OK
S52 CP	600 min Summer	509	31.344	0.399	1.785		OK
S53	600 min Summer	503	31.343	0.753	2.560		Surcharged
S72	600 min Summer	511	31.342	0.842	37.354		Surcharged
S73	1440 min Winter	1412	30.126	0.096	38.664		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S88	S89	0.053	0.000	0.000	0.000	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
2.000	15 min Summer	8	S90	S89	0.053	0.000	0.000	0.000	OK
1.001	15 min Summer	9	S89	S80	0.080	1.664	34.937	0.085	OK
1.002	15 min Summer	9	S80	S81	0.121	0.926	35.088	0.024	OK
1.003	180 min Summer	126	S81	S82	0.238	0.450	22.308	0.090	OK
1.004	180 min Summer	126	S82	S83 OC	0.298	0.534	20.004	0.139	OK
3.000	15 min Summer	0	S84	S85	0.000	0.000	0.000	0.000	OK
3.001	15 min Summer	0	S85	S86	0.000	0.000	0.000	0.000	OK
3.002	15 min Winter	5	S86	S87	0.107	0.000	0.000	0.000	OK
3.003	15 min Winter	8	S87	S106	0.255	1.148	97.342	0.246	OK
3.004	180 min Summer	126	S106	S83 OC	0.302	0.770	35.655	0.125	OK
1.005	30 min Summer	21	S83 OC	S68	0.375	0.879	16.895	0.059	Surcharged
4.000	15 min Winter	8	S67	S68	0.300	1.174	74.270	1.085	Surcharged
1.006	15 min Winter	14	S68	S69	0.375	1.472	127.837	0.989	Surcharged
5.000	15 min Summer	10	S70	S69	0.300	1.246	46.486	0.287	Surcharged
1.007	15 min Winter	8	S69	S44	0.375	2.494	268.595	1.011	Surcharged
6.000	15 min Summer	9	S39	S40	0.198	1.988	86.938	0.593	OK
6.001	15 min Summer	9	S40	S41	0.269	1.370	86.822	0.532	OK
6.002	15 min Summer	9	S41	S42	0.288	1.981	138.159	1.217	OK
6.003	15 min Summer	9	S42	S43	0.250	2.238	174.716	0.784	OK
6.004	15 min Summer	10	S43	S44	0.332	1.539	173.647	0.164	OK
1.008	30 min Summer	18	S44	S54	0.450	2.415	384.081	1.090	OK
1.009	15 min Winter	11	S54	S45	0.450	2.533	402.781	1.003	OK
1.010	15 min Winter	10	S45	S46	0.450	3.183	506.240	1.006	OK
1.011	30 min Summer	18	S46	S47	0.600	1.838	519.657	0.997	Surcharged
1.012	30 min Summer	18	S47	S48CP	0.600	2.000	565.524	1.897	Surcharged
1.013	30 min Summer	18	S48CP	S49	0.600	2.089	590.648	2.309	Surcharged
1.014	180 min Summer	111	S49	S72	0.600	1.371	303.232	1.036	Surcharged
7.000	15 min Summer	8	S63	S64	0.134	2.793	62.010	0.511	OK
7.001	15 min Summer	9	S64	S65	0.190	2.133	60.547	0.566	OK
7.002	15 min Summer	9	S65	S66	0.288	2.176	151.748	1.244	OK
7.003	15 min Summer	9	S66	S56	0.256	2.891	184.030	1.022	OK
8.000	15 min Summer	9	S55	S56	0.156	1.365	58.426	0.148	OK
7.004	15 min Summer	9	S56	S57	0.210	3.789	240.800	0.581	OK
7.005	15 min Summer	9	S57	S58	0.195	4.162	241.013	0.531	OK
7.006	15 min Summer	9	S58	S94	0.277	3.328	327.108	0.454	OK
7.007	15 min Summer	10	S94	S59	0.440	1.792	330.918	0.838	OK
7.008	15 min Summer	10	S59	S60	0.490	2.020	352.228	0.910	OK
9.000	15 min Summer	0	PS1	PS2	0.000	0.000	0.000	0.000	OK
9.001	15 min Summer	10	PS2	S60	0.044	0.000	0.000	0.000	OK
7.009	15 min Summer	10	S60	S61	0.519	2.234	414.178	0.713	OK
7.010	15 min Winter	10	S61	S71 CP	0.525	1.938	401.984	0.827	OK
10.000	15 min Summer	8	S75	S76	0.015	0.000	0.000	0.000	OK
10.001	15 min Summer	8	S76	S77	0.031	2.144	10.922	0.007	OK
10.002	15 min Summer	8	S77	S78	0.087	0.475	10.815	0.007	OK
10.003	15 min Summer	9	S78	S79	0.171	3.179	190.232	0.172	OK
10.004	15 min Summer	9	S79	S71 CP	0.364	1.364	188.608	0.308	OK
7.011	480 min Summer	366	S71 CP	S107	0.675	0.786	168.543	0.324	Surcharged
7.012	600 min Summer	511	S107	S72	0.827	0.486	138.918	0.168	OK
11.000	15 min Summer	8	S51	S93	0.149	2.555	89.453	0.498	OK
12.000	15 min Summer	8	S91	S92CP	0.054	1.258	10.739	0.088	OK
12.001	15 min Summer	8	S92CP	S93	0.070	1.143	10.681	0.057	OK
11.001	600 min Summer	494	S93	S52 CP	0.172	1.539	17.097	0.056	OK
11.002	600 min Summer	509	S52 CP	S53	0.424	0.855	30.016	0.071	OK
11.003	60 min Winter	56	S53	S72	0.525	0.742	59.916	0.370	OK
1.015	1440 min Winter	1412	S72	S73	0.098	1.935	38.664	0.238	OK

Return Period (yrs) + Climate Change (%):
100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S88	15 min Summer	0	38.340	0.000	0.000		OK
S90	15 min Summer	0	38.510	0.000	0.000		OK
S89	15 min Summer	8	38.327	0.127	51.786		OK
S80	15 min Summer	9	38.066	0.066	50.644		OK
S81	60 min Summer	59	34.629	0.309	6.078		OK
S82	60 min Summer	59	34.629	0.409	6.146		OK
S84	15 min Summer	0	35.290	0.000	0.000		OK
S85	15 min Summer	0	34.850	0.000	0.000		OK
S86	60 min Summer	59	34.628	0.068	0.000		OK
S87	60 min Summer	60	34.628	0.328	6.372		OK
S106	60 min Summer	60	34.628	0.417	6.229		OK
S83 OC	60 min Summer	60	34.629	0.429	12.014		Surcharged
S67	15 min Summer	10	36.219	2.036	110.378		Flood Risk
S68	15 min Summer	10	35.595	1.745	230.970		Flood Risk
S70	15 min Summer	10	35.713	1.273	54.247		Flood Risk
S69	15 min Summer	10	35.603	1.993	261.387		Surcharged
S39	15 min Summer	10	35.949	0.378	101.540		Surcharged
S40	15 min Summer	10	35.529	0.899	102.224		Surcharged
S41	15 min Summer	10	35.447	1.027	154.634		Surcharged
S42	15 min Summer	11	35.086	0.941	169.956		Surcharged
S43	15 min Summer	11	34.876	1.111	179.311		Surcharged
S44	15 min Summer	11	34.823	2.273	406.052		Surcharged
S54	15 min Summer	10	34.416	2.111	435.688		Surcharged
S45	15 min Summer	10	33.655	2.000	608.474		Flood Risk
S46	15 min Summer	10	32.569	1.749	622.801		Surcharged
S47	15 min Summer	10	32.354	1.654	695.210		Surcharged
S48CP	15 min Summer	10	31.774	1.179	731.367		Surcharged
S49	720 min Summer	716	31.761	1.211	20.269		Surcharged
S63	15 min Summer	10	39.014	0.754	72.062		Surcharged
S64	15 min Summer	10	38.763	1.084	76.533		Surcharged
S65	15 min Summer	9	38.458	1.353	203.398		Surcharged
S66	15 min Summer	10	37.452	0.727	233.599		Surcharged
S55	15 min Summer	8	37.335	0.115	85.006		OK
S56	15 min Summer	9	36.444	0.267	317.427		OK
S57	15 min Summer	9	35.692	0.242	316.829		OK
S58	15 min Summer	10	34.311	0.306	414.060		OK
S94	15 min Summer	10	33.399	1.420	422.459		Surcharged
S59	15 min Summer	10	33.189	1.375	447.826		Surcharged
PS1	15 min Summer	0	35.826	0.000	0.000		OK
PS2	15 min Summer	0	34.012	0.000	0.000		OK
S60	15 min Summer	10	32.892	1.282	520.924		Surcharged
S61	15 min Summer	10	32.476	1.336	514.703		Surcharged
S75	15 min Summer	0	39.889	0.000	0.000		OK
S76	15 min Summer	8	38.400	0.036	15.965		OK
S77	15 min Summer	8	35.060	0.037	15.856		OK
S78	15 min Summer	8	33.030	0.172	276.938		OK
S79	15 min Summer	9	32.182	0.710	266.995		Surcharged
S71 CP	15 min Summer	9	32.059	1.406	1240.797		Flood Risk
S107	720 min Summer	717	31.761	1.241	13.675		Flood Risk
S51	15 min Summer	8	32.461	0.194	130.730		OK
S91	15 min Summer	8	32.011	0.073	15.657		OK
S92CP	15 min Summer	8	31.855	0.056	15.586		OK
S93	720 min Summer	715	31.761	0.329	1.774		OK
S52 CP	720 min Summer	716	31.761	0.816	1.720		Surcharged
S53	720 min Summer	716	31.761	1.171	1.883		Flood Risk
S72	720 min Summer	717	31.761	1.261	35.121		Flood Risk
S73	960 min Winter	1808	30.126	0.096	38.664		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S88	S89	0.064	0.000	0.000	0.000	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
2.000	15 min Summer	8	S90	S89	0.064	0.000	0.000	0.000	OK
1.001	15 min Summer	9	S89	S80	0.096	1.867	50.644	0.123	OK
1.002	60 min Summer	59	S80	S81	0.164	0.912	35.444	0.025	OK
1.003	60 min Summer	59	S81	S82	0.359	0.744	65.276	0.264	OK
1.004	60 min Summer	59	S82	S83 OC	0.419	0.705	59.498	0.414	OK
3.000	15 min Summer	0	S84	S85	0.000	0.000	0.000	0.000	OK
3.001	60 min Summer	59	S85	S86	0.034	0.000	0.000	0.000	OK
3.002	60 min Summer	74	S86	S87	0.198	0.016	1.028	0.002	OK
3.003	60 min Summer	60	S87	S106	0.373	1.144	105.236	0.266	OK
3.004	60 min Summer	60	S106	S83 OC	0.423	1.238	103.542	0.363	OK
1.005	15 min Winter	16	S83 OC	S68	0.375	0.907	23.899	0.084	Surcharged
4.000	15 min Winter	10	S67	S68	0.300	1.428	100.918	1.474	Surcharged
1.006	15 min Winter	16	S68	S69	0.375	1.397	140.596	1.088	Surcharged
5.000	15 min Winter	10	S70	S69	0.300	1.249	54.186	0.334	Surcharged
1.007	30 min Summer	14	S69	S44	0.375	2.579	269.185	1.013	Surcharged
6.000	15 min Summer	10	S39	S40	0.300	2.062	122.289	0.835	Surcharged
6.001	30 min Summer	16	S40	S41	0.300	1.487	105.086	0.644	Surcharged
6.002	15 min Winter	9	S41	S42	0.300	2.390	168.576	1.485	Surcharged
6.003	15 min Winter	9	S42	S43	0.375	2.296	216.732	0.972	Surcharged
6.004	30 min Summer	16	S43	S44	0.450	1.568	194.619	0.183	OK
1.008	15 min Winter	13	S44	S54	0.450	2.662	423.304	1.201	OK
1.009	15 min Winter	13	S54	S45	0.450	2.874	457.029	1.138	OK
1.010	30 min Summer	18	S45	S46	0.450	3.701	588.604	1.170	OK
1.011	30 min Summer	18	S46	S47	0.600	2.149	607.516	1.165	Surcharged
1.012	30 min Summer	18	S47	S48CP	0.600	2.381	673.152	2.258	Surcharged
1.013	30 min Summer	18	S48CP	S49	0.600	2.507	708.967	2.772	Surcharged
1.014	30 min Winter	24	S49	S72	0.600	2.415	664.438	2.269	Surcharged
7.000	30 min Summer	16	S63	S64	0.225	2.816	77.179	0.636	OK
7.001	15 min Winter	11	S64	S65	0.225	2.173	76.321	0.714	OK
7.002	15 min Winter	9	S65	S66	0.300	2.607	184.308	1.511	Surcharged
7.003	15 min Winter	9	S66	S56	0.300	3.143	222.192	1.234	Surcharged
8.000	15 min Summer	9	S55	S56	0.190	1.586	84.747	0.214	OK
7.004	15 min Summer	9	S56	S57	0.254	3.978	316.829	0.764	OK
7.005	15 min Summer	10	S57	S58	0.234	4.401	315.923	0.695	OK
7.006	15 min Summer	10	S58	S94	0.378	3.339	435.449	0.605	OK
7.007	15 min Winter	10	S94	S59	0.525	1.795	388.667	0.984	OK
7.008	15 min Winter	11	S59	S60	0.525	1.997	423.072	1.093	OK
9.000	15 min Summer	0	PS1	PS2	0.000	0.000	0.000	0.000	OK
9.001	15 min Summer	7	PS2	S60	0.050	0.000	0.000	0.000	OK
7.009	15 min Winter	11	S60	S61	0.525	2.317	501.503	0.863	OK
7.010	15 min Winter	11	S61	S71 CP	0.525	2.415	522.792	1.076	OK
10.000	15 min Summer	8	S75	S76	0.018	0.000	0.000	0.000	OK
10.001	15 min Summer	8	S76	S77	0.036	2.393	15.856	0.010	OK
10.002	15 min Summer	8	S77	S78	0.105	0.519	15.730	0.011	OK
10.003	15 min Summer	8	S78	S79	0.349	3.290	276.080	0.249	OK
10.004	15 min Winter	9	S79	S71 CP	0.525	1.481	233.214	0.381	OK
7.011	30 min Summer	17	S71 CP	S107	0.675	3.204	1146.477	2.206	Surcharged
7.012	600 min Summer	485	S107	S72	1.200	0.542	203.484	0.245	Surcharged
11.000	15 min Summer	8	S51	S93	0.189	2.772	129.738	0.722	OK
12.000	15 min Summer	8	S91	S92CP	0.064	1.400	15.586	0.128	OK
12.001	720 min Summer	715	S92CP	S93	0.130	0.912	1.946	0.010	OK
11.001	720 min Summer	715	S93	S52 CP	0.352	1.524	21.562	0.071	OK
11.002	180 min Summer	111	S52 CP	S53	0.450	1.243	60.727	0.144	OK
11.003	30 min Winter	24	S53	S72	0.525	1.047	134.835	0.833	OK
1.015	960 min Winter	1808	S72	S73	0.098	1.935	38.664	0.238	OK

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S32	1.302	1800	Type B	38.737	36.120	1.867	526063.349	122870.845
S104	0.000	1800	Type C	36.200	35.200	0.250	526056.537	122798.242
S105	0.058	1800	Type C	36.000	35.130	0.120	526050.902	122758.542
S33	0.052	1800	Type C	36.000	34.730	0.520	526042.366	122736.080
S34	0.226	---	Type C	35.200	34.470	-0.170	526034.333	122698.682
S31OC	0.024	1500	Type C	35.200	34.010	0.890	525961.730	122675.073
S6	0.000	1350	Type C	40.064	38.740	1.174	526011.007	122854.002
S96	0.000	1350	Type C	37.847	36.810	0.887	525987.018	122781.648
S7	0.000	1350	Type C	37.675	36.400	1.125	525978.970	122765.474
S8	0.982	1500	Type C	37.341	36.310	0.881	525959.542	122751.184
S9	0.117	1500	Type C	36.767	36.140	0.102	525912.272	122724.736
S10	0.075	---	Type C	37.000	36.080	0.395	525906.831	122717.842
S14 OC	0.000	1500	Type C	37.000	35.990	0.785	525920.192	122698.339
S13CP	0.000	1350	Type C	35.199	33.590	1.309	525919.758	122680.675
S26	0.085	1350	Type C	34.420	32.785	1.335	525908.991	122671.514
S27	0.078	1350	Type B	33.028	31.074	1.654	525901.910	122649.594
S28	0.032	1200	Type B	32.184	30.047	1.837	525888.117	122637.915
S15	0.819	1500	Type C	35.328	33.690	1.113	525832.057	122711.380
S11 OC	0.008	1500	Type C	34.300	33.300	0.775	525835.605	122696.094
S22	0.153	1350	Type C	33.860	32.310	1.325	525844.619	122681.626
S23	0.109	1350	Type B	31.175	29.210	1.590	525844.868	122634.848
S24	0.009	1350	Type B	30.122	27.980	1.767	525820.584	122629.826
S25	0.052	1350	Type B	28.897	26.874	1.648	525806.704	122612.016
S16	0.188	1350	Type C	33.388	31.920	1.168	525795.834	122684.191
S108	0.051	1350	Type C	31.047	29.663	1.234	525762.275	122635.322
S17	0.183	1350	Type B	30.602	28.703	1.524	525793.666	122635.073
S115	0.000	1350	Type B	29.059	27.111	1.573	525790.747	122612.278
S111	0.105	1200	Type B	27.239	25.395	1.544	525773.885	122580.966
S18	0.000	1350	Type B	27.507	24.950	2.182	525790.948	122581.370
S109	0.000	1350	Type C	27.273	25.925	1.197	525798.546	122591.383
S95CP	0.000	1350	Type B	27.351	24.625	2.350	525798.581	122580.002
S116	0.000	1350	Type B	27.080	24.328	2.377	525805.840	122577.649
S113CP	0.155	1200	Type B	27.118	24.870	1.948	525838.692	122581.891
S117	0.000	1200	Type B	26.100	24.100	1.700	525828.875	122568.304
S29	0.111	1500	Type C	26.100	24.100	1.475	525822.408	122568.762
S30	0.000	1500	Type B	26.816	23.710	2.581	525774.042	122571.858
S19 CP	0.000	1500	Type B	26.714	23.580	2.609	525805.637	122569.574
S20	0.000	2100	Type B	26.348	23.525	2.299	525803.542	122561.586
S99	0.054	1350	Type C	25.584	24.067	1.367	525834.587	122546.924
S100	0.045	1500	Type B	25.739	23.303	1.911	525798.454	122548.222
S36	0.115	1500	Type B	25.210	22.920	1.765	525795.130	122535.876
S97	0.078	1350	Type C	24.751	23.354	1.171	525760.029	122525.031
S98	0.000	1500	Type B	24.697	22.480	1.692	525793.638	122523.666
S37	0.156	1500	Type C	23.618	22.070	1.023	525798.700	122492.493
S38	0.000	1500	Type C	23.245	21.896	0.824	525805.614	122457.925
S119	0.000	1500	Type C	23.150	21.853	0.772	525824.263	122449.988
S101	0.205	1350	Type C	24.840	23.320	1.220	525896.361	122523.364
S102	0.075	1350	Type B	24.659	22.333	1.951	525860.625	122525.092
S103	0.146	1350	Type C	23.093	21.976	0.668	525859.323	122461.607
S118	0.000	1350	Type C	23.150	21.916	0.784	525845.018	122449.193
S35	0.192	1500	Type C	23.000	21.950	0.525	525794.574	122450.269
S120	0.000	1500	Type C	23.150	21.861	0.764	525823.254	122448.270
S3	0.124	1500	Type C	23.150	21.848	0.852	525827.100	122447.602
S2	0.000	2100	Type C	23.000	21.832	0.643	525822.709	122442.111
S1	0.000	2100	Type C	21.885	21.800	-0.440	525821.402	122432.592

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S32	36.120	S104	35.200	Circ	750	72.922	79	0.600	1.867	0.250
1.001	S104	35.200	S105	35.130	Circ	750	40.097	573	0.600	0.250	0.120

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.002	S105	35.130	S33	34.730	Circ	750	24.030	60	0.600	0.120	0.520
1.003	S33	34.730	S34	34.620	Circ	750	38.251	348	0.600	0.520	-0.170
1.004	S34	34.470	S31OC	34.010	Circ	900	76.345	166	0.600	-0.170	0.290
1.005	S31OC	34.010	S13CP	33.590	Circ	300	42.345	101	0.600	0.890	1.309
2.000	S6	38.740	S96	36.810	Circ	150	76.227	39	0.600	1.174	0.887
2.001	S96	36.810	S7	36.400	Circ	150	18.065	44	0.600	0.887	1.125
2.002	S7	36.400	S8	36.310	Circ	150	24.118	268	0.600	1.125	0.881
2.003	S8	36.310	S9	36.140	Circ	525	54.166	319	0.600	0.506	0.102
2.004	S9	36.140	S10	36.080	Circ	525	8.782	146	0.600	0.102	0.395
2.005	S10	36.080	S14 OC	35.990	Circ	525	23.641	263	0.600	0.395	0.485
2.006	S14 OC	35.990	S13CP	33.665	Circ	225	17.669	8	0.600	0.785	1.309
1.006	S13CP	33.590	S26	32.785	Circ	300	14.137	18	0.600	1.309	1.335
1.007	S26	32.785	S27	31.074	Circ	300	23.035	13	0.600	1.335	1.654
1.008	S27	31.074	S28	30.047	Circ	300	18.074	18	0.600	1.654	1.837
1.009	S28	30.047	S23	29.285	Circ	300	43.357	57	0.600	1.837	1.590
3.000	S15	33.690	S11 OC	33.300	Circ	525	15.692	40	0.600	1.113	0.475
3.001	S11 OC	33.300	S22	32.310	Circ	225	17.047	17	0.600	0.775	1.325
3.002	S22	32.310	S23	29.360	Circ	225	46.779	16	0.600	1.325	1.590
1.010	S23	29.210	S24	27.980	Circ	375	24.797	20	0.600	1.590	1.767
1.011	S24	27.980	S25	26.874	Circ	375	22.580	20	0.600	1.767	1.648
1.012	S25	26.874	S116	24.328	Circ	375	34.378	14	0.600	1.648	2.377
4.000	S16	31.920	S17	28.778	Circ	300	49.166	16	0.600	1.168	1.524
5.000	S108	29.663	S17	28.928	Circ	150	31.391	43	0.600	1.234	1.524
4.001	S17	28.703	S115	27.111	Circ	375	22.981	14	0.600	1.524	1.573
4.002	S115	27.111	S18	25.875	Circ	375	30.909	25	0.600	1.573	1.257
6.000	S111	25.395	S18	25.025	Circ	300	17.068	46	0.600	1.544	2.182
4.003	S18	24.950	S95CP	24.625	Circ	375	7.754	24	0.600	2.182	2.350
7.000	S109	25.925	S95CP	25.650	Circ	150	11.381	41	0.600	1.197	1.551
4.004	S95CP	24.625	S116	24.328	Circ	375	7.632	26	0.600	2.350	2.377
1.013	S116	24.328	S19 CP	23.730	Circ	375	8.078	14	0.600	2.377	2.609
8.000	S113CP	24.870	S117	24.100	Circ	300	16.762	22	0.600	1.948	1.700
8.001	S117	24.100	S29	24.475	Circ	300	6.484	17	0.600	1.700	1.325
8.002	S29	24.100	S19 CP	23.580	Circ	525	16.790	32	0.600	1.475	2.609
9.000	S30	23.710	S19 CP	23.580	Circ	525	31.678	244	0.600	2.581	2.609
1.014	S19 CP	23.580	S20	23.525	Circ	525	8.259	149	0.600	2.609	2.299
1.015	S20	23.525	S100	23.303	Circ	525	14.299	64	0.600	2.299	1.911
10.000	S99	24.067	S100	23.678	Circ	150	36.157	93	0.600	1.367	1.911
1.016	S100	23.303	S36	22.920	Circ	525	12.785	33	0.600	1.911	1.765
1.017	S36	22.920	S98	22.480	Circ	525	12.301	28	0.600	1.765	1.692
11.000	S97	23.354	S98	22.780	Circ	225	33.636	59	0.600	1.171	1.692
1.018	S98	22.480	S37	22.070	Circ	525	31.582	77	0.600	1.692	1.023
1.019	S37	22.070	S38	21.896	Circ	525	35.252	202	0.600	1.023	0.824
1.020	S38	21.896	S119	21.853	Circ	525	20.268	471	0.600	0.824	0.772
1.021	S119	21.853	S3	21.848	Circ	525	3.707	842	0.600	0.772	0.777
12.000	S101	23.320	S102	22.408	Circ	300	35.778	39	0.600	1.220	1.951
12.001	S102	22.333	S103	22.051	Circ	375	63.498	225	0.600	1.951	0.668
12.002	S103	21.976	S118	21.916	Circ	450	18.941	317	0.600	0.668	0.784
12.003	S118	21.916	S3	21.848	Circ	450	17.989	266	0.600	0.784	0.852
13.000	S35	21.950	S120	21.861	Circ	525	28.749	321	0.600	0.525	0.764
13.001	S120	21.861	S3	21.848	Circ	525	3.903	321	0.600	0.764	0.777
1.022	S3	21.848	S2	21.832	Circ	525	7.031	429	0.600	0.777	0.643
1.023	S2	21.832	S1	21.800	Circ	525	9.609	300	0.600	0.643	-0.440

Outfall Details

Outfall Manhole S1 : Free Discharge

Flow Control Details

Controls within Manhole S31OC

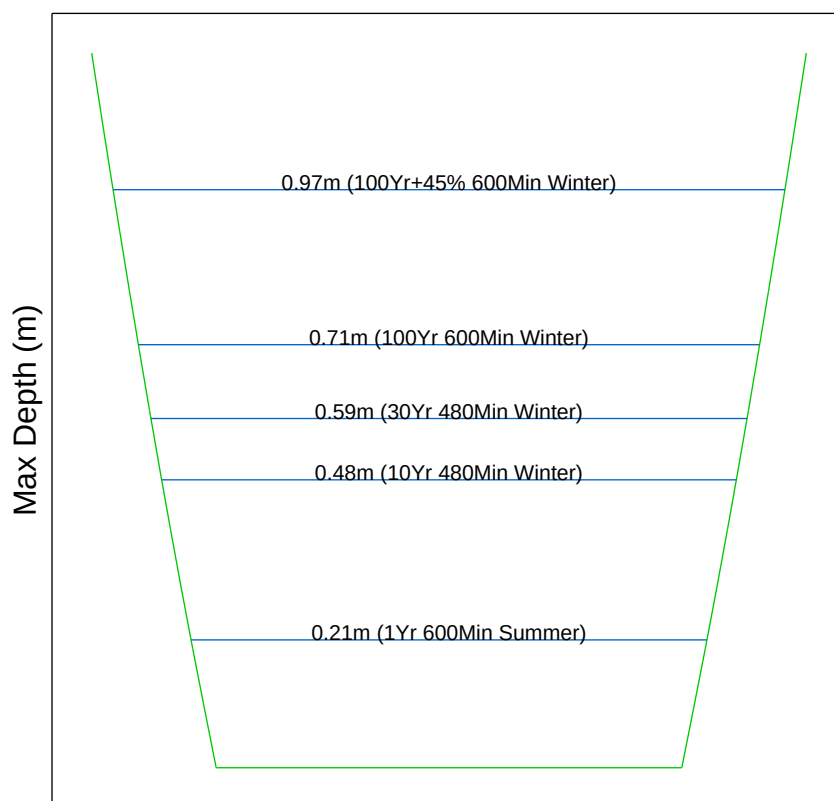
Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.075	0.600

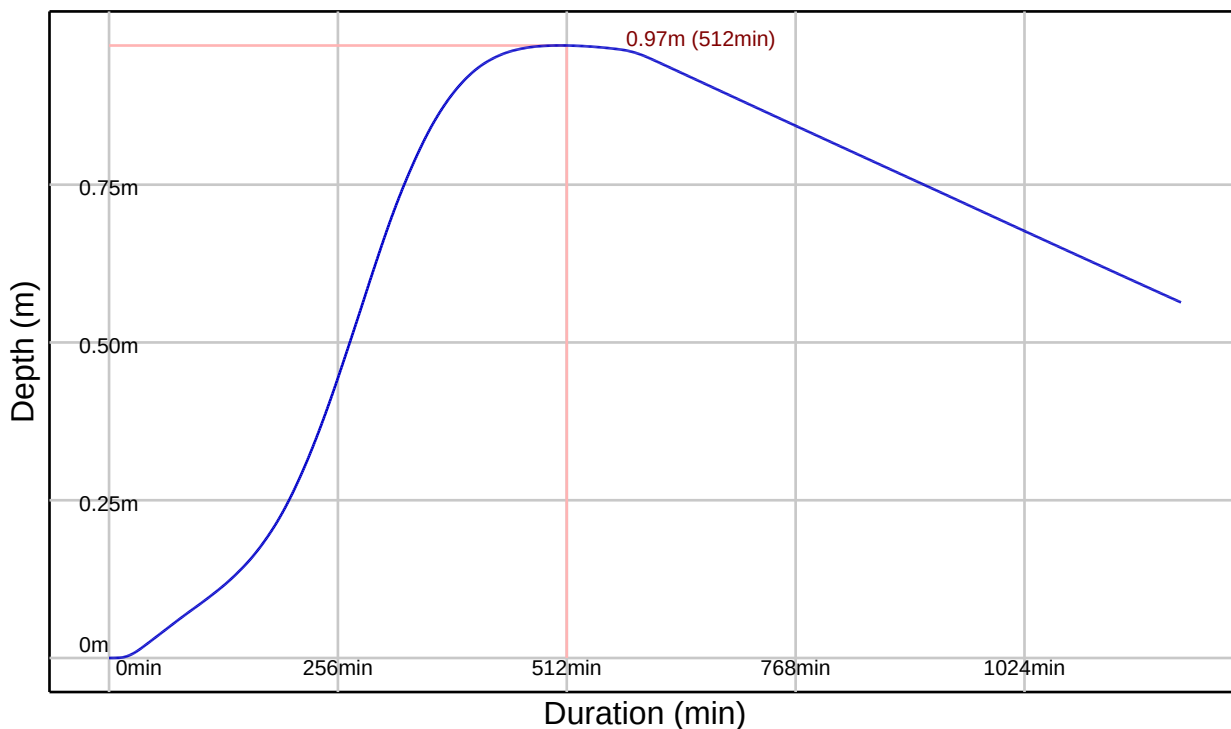
Pond Structure at Manhole S31OC

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
34.000	1.200	595.916	34.900	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S31OC



Pond 8 at S31OC (100Yr+45% 600Min Winter)



Controls within Manhole S14 OC

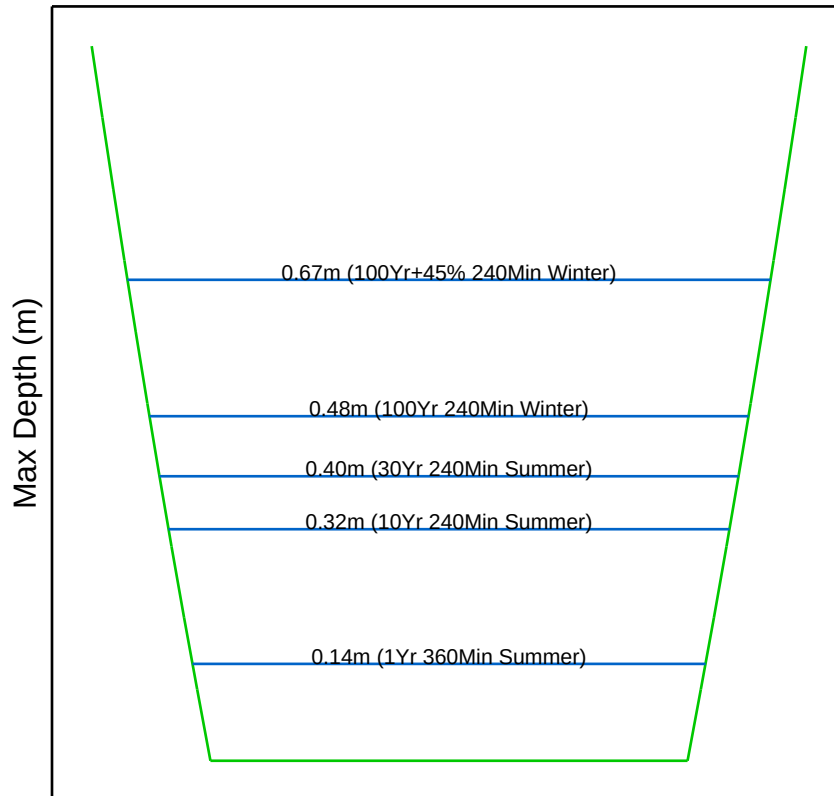
Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.100	0.600

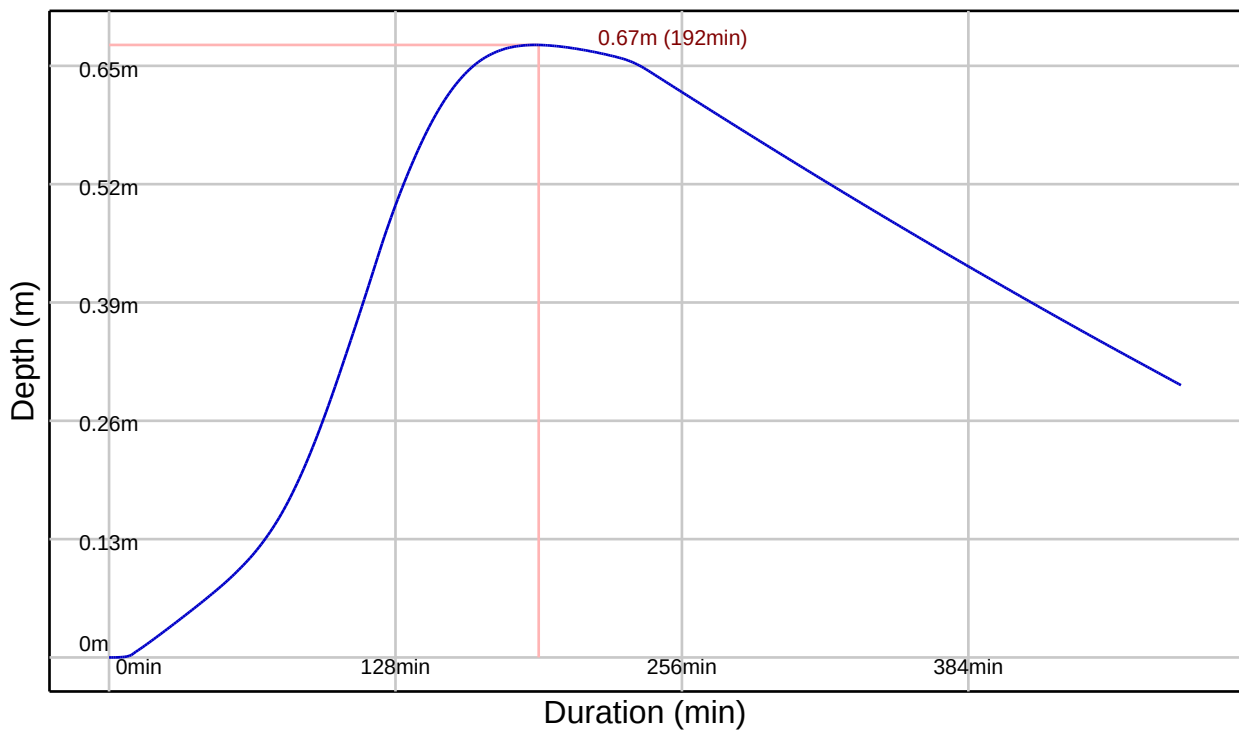
Pond Structure at Manhole S14 OC

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
36.000	1.000	323.592	36.700	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S14 OC



Pond 12 at S14 OC (100Yr+45% 240Min Winter)



Controls within Manhole S11 OC

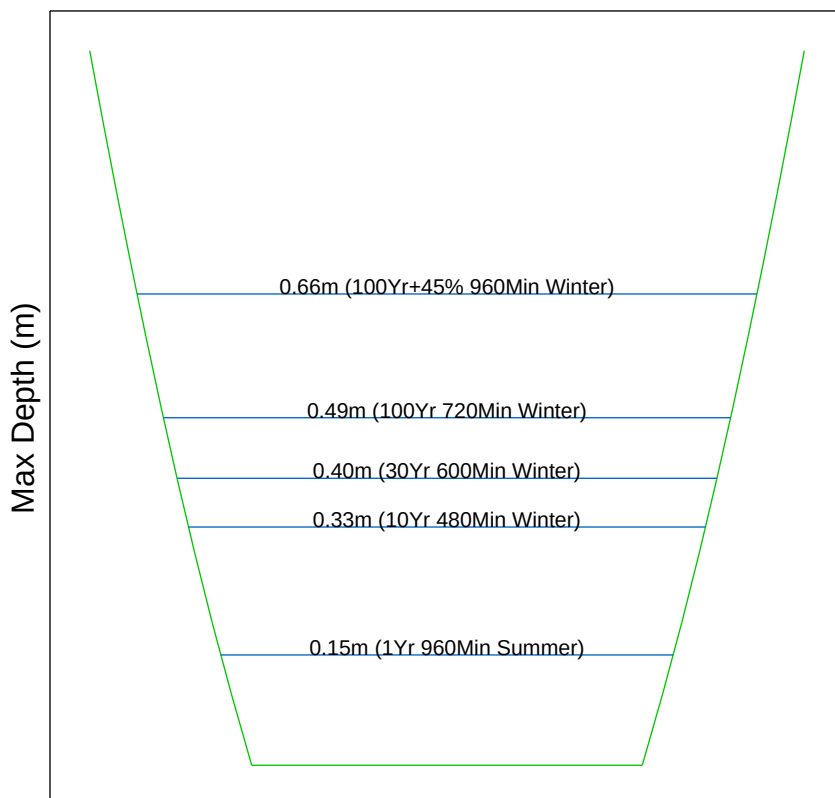
Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.050	0.600

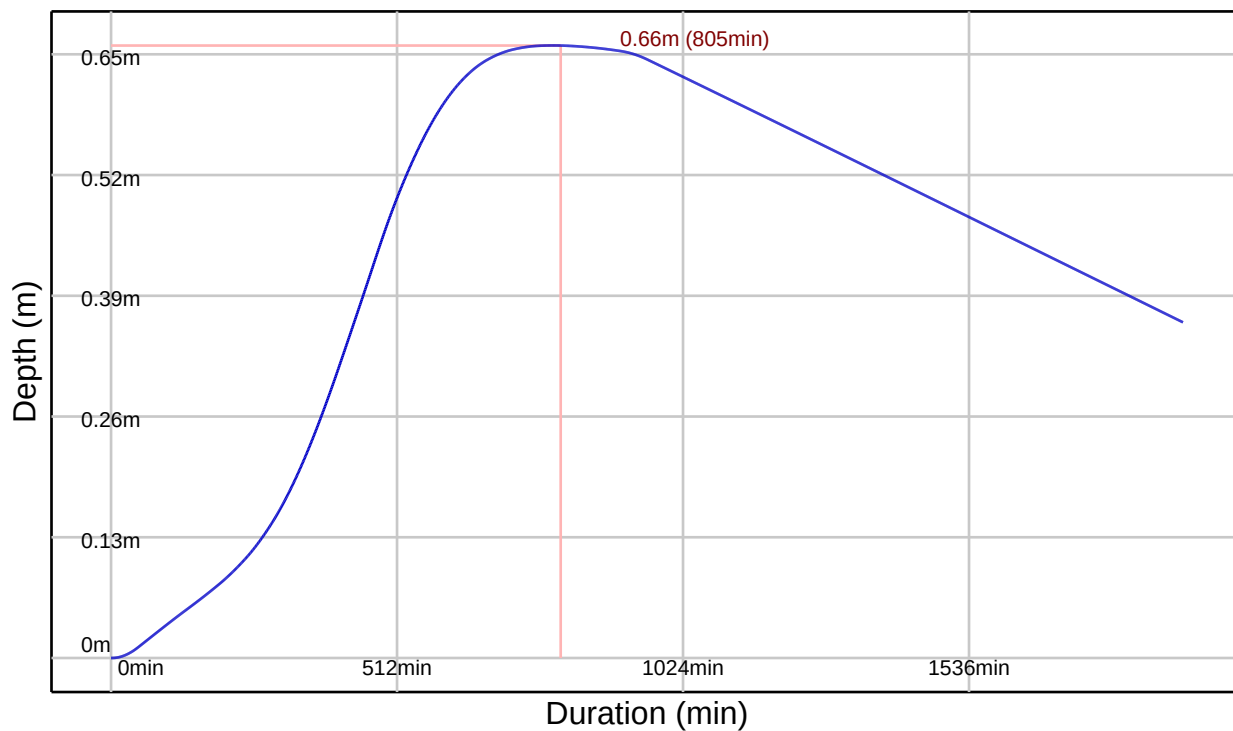
Pond Structure at Manhole S11 OC

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
33.300	1.000	423.433	34.000	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S11 OC



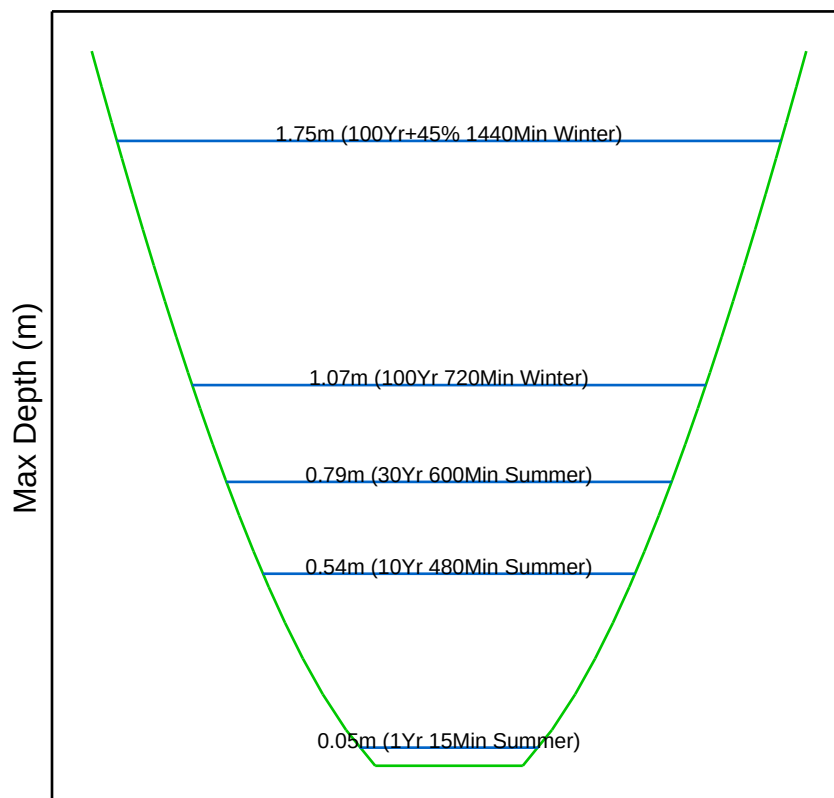
Pond 10 at S11 OC (100Yr+45% 960Min Winter)



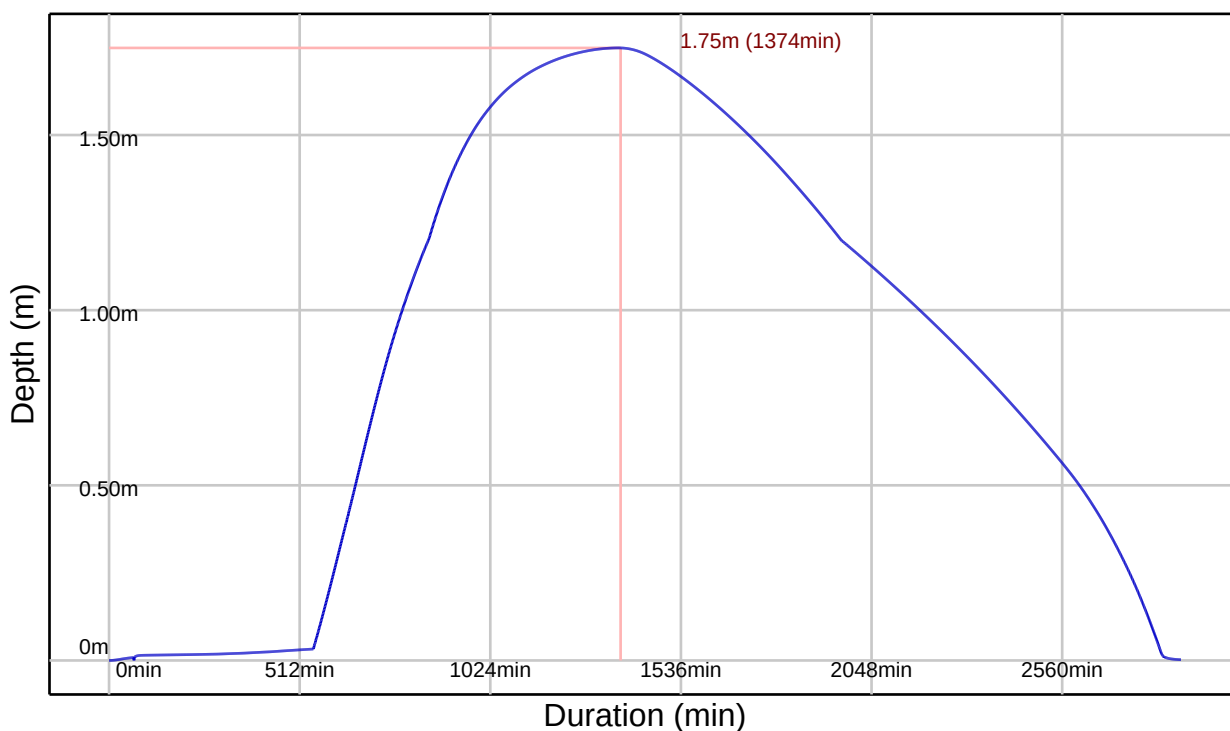
Pond Structure at Manhole S29

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
24.100	2.000	765.235	25.800	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S29



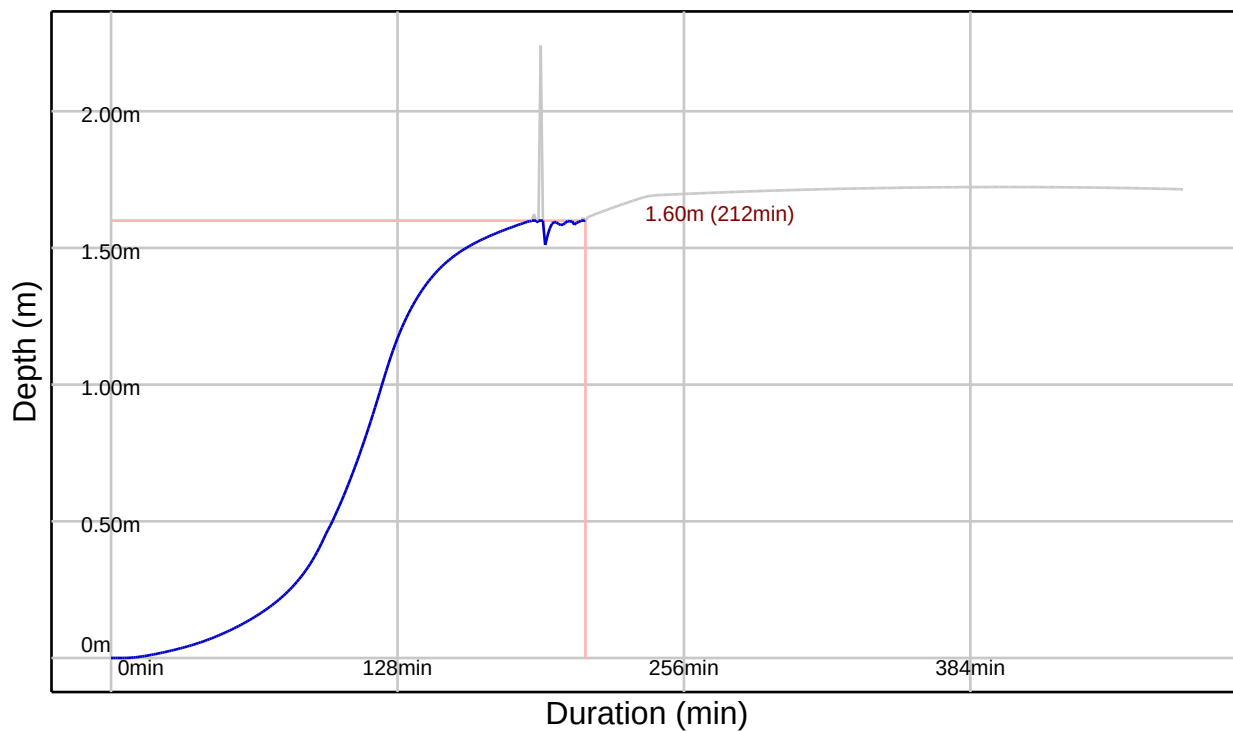
Pond 3 at S29 (100Yr+45% 1440Min Winter)



Tank Structure at Manhole S30

Tank Invert (m)	Tank Height (m)	Porosity Ratio (%)	Area (m2)	Effective Area (m2) Area x Porosity Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
23.700	1.600	95.00	350.560	333.032	532.851	0.00000000	0.00000000	2.00

Tank 1 at S30 (100Yr+45% 240Min Summer)

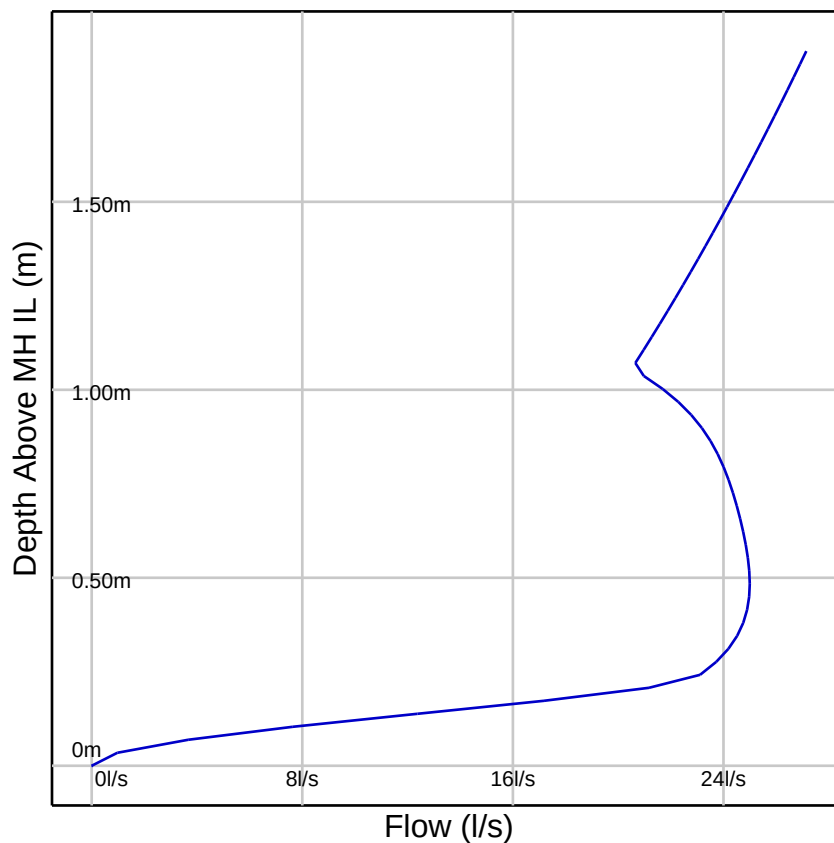


Controls within Manhole S20

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0211-2500-1600-2500	1.600	25.000	0.000	0.484	24.998	1.055	20.500

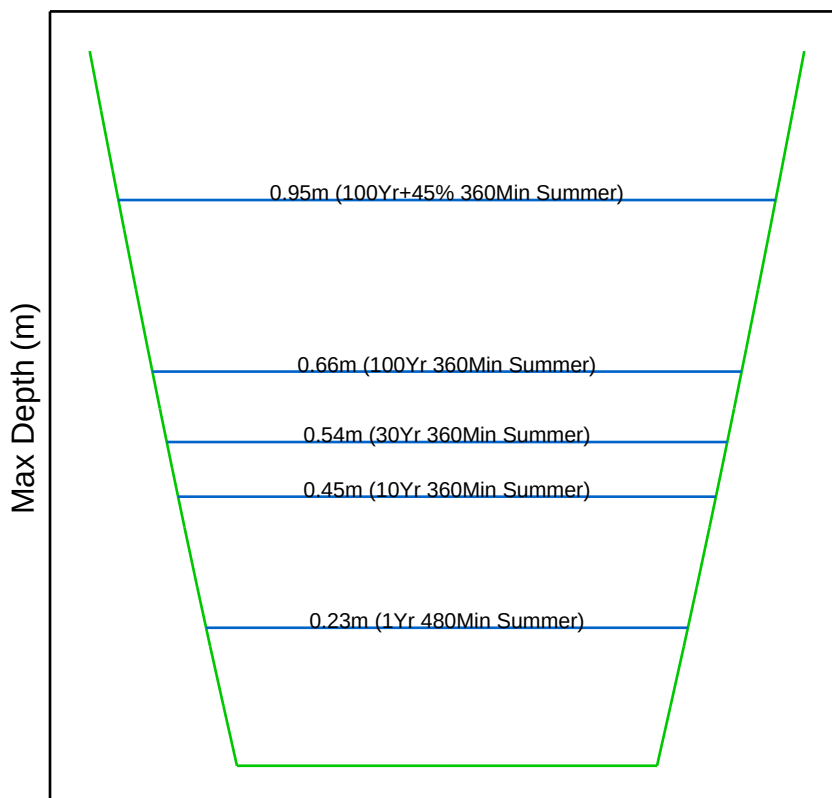
Hydro-Brake® Optimum Control from S20 to S100



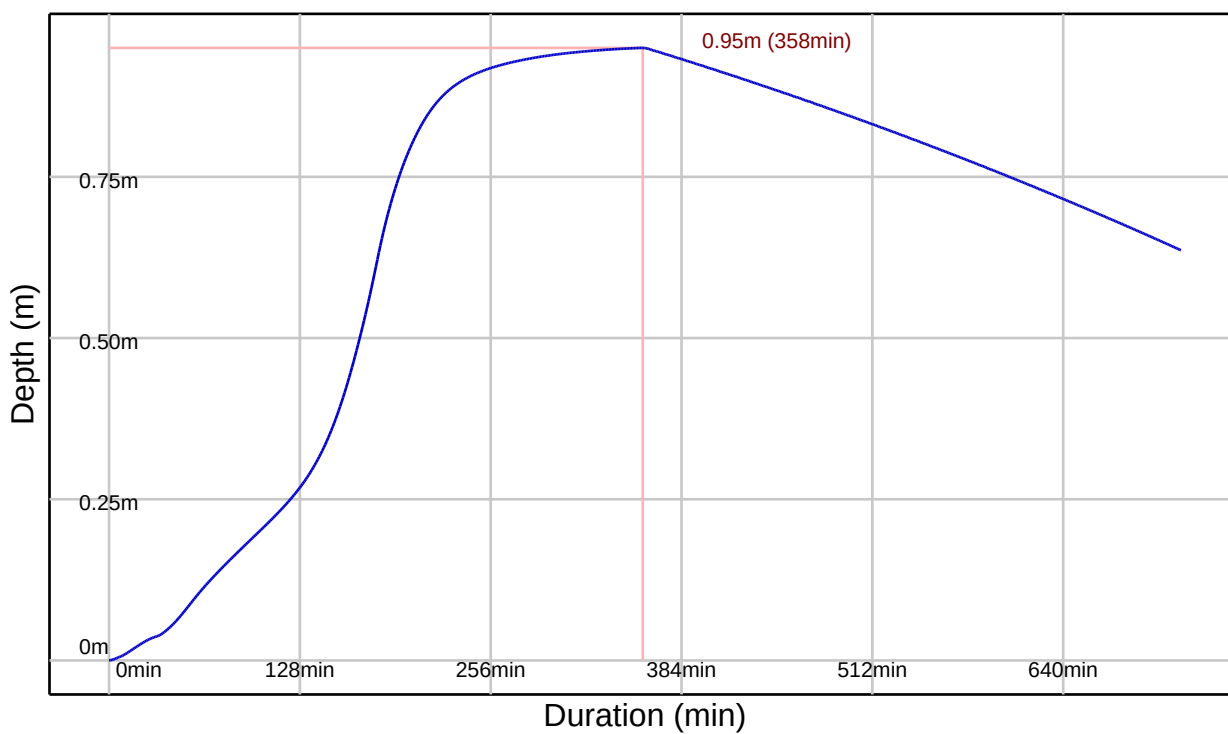
Pond Structure at Manhole S35

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
21.950	1.200	259.731	22.850	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S35



Pond 9 at S35 (100Yr+45% 360Min Summer)

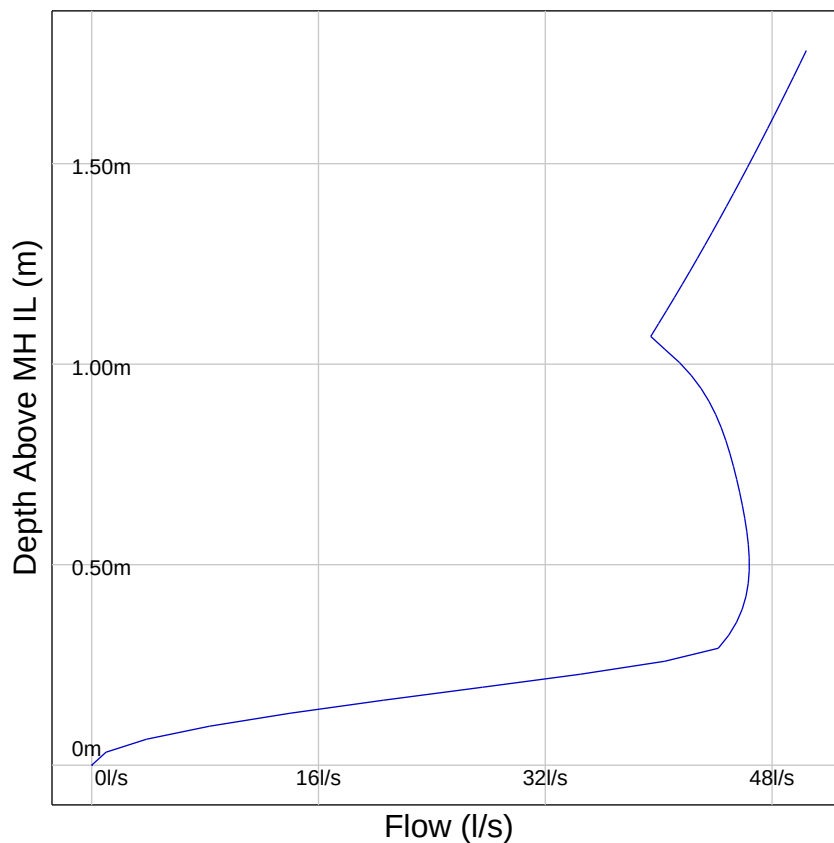


Controls within Manhole S2

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0279-4640-1500-4640	1.500	46.400	0.000	0.500	46.396	1.064	39.347

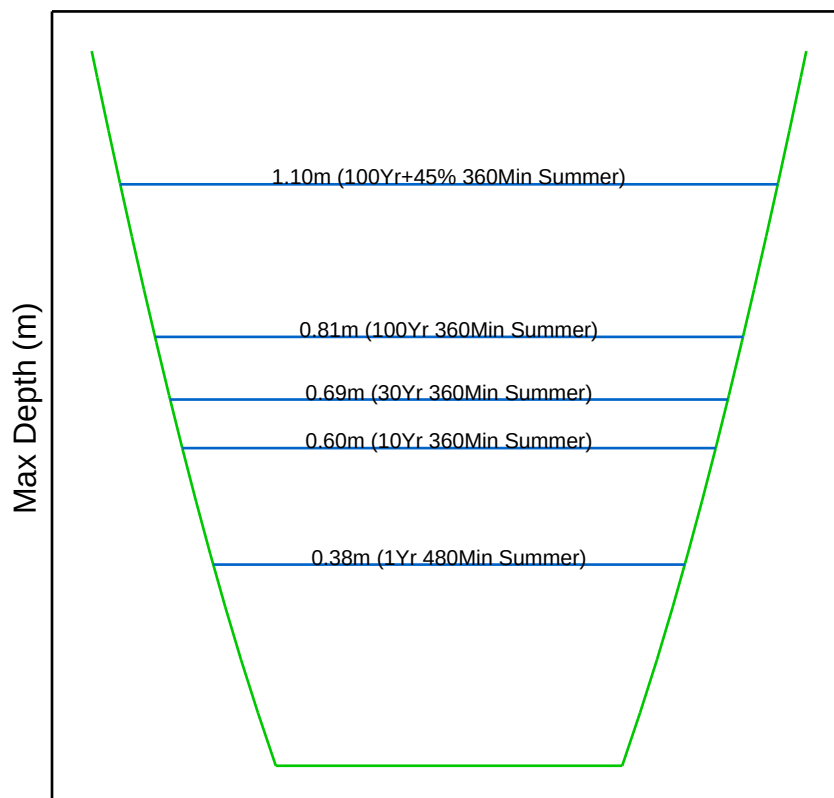
Hydro-Brake® Optimum Control from S2 to S1



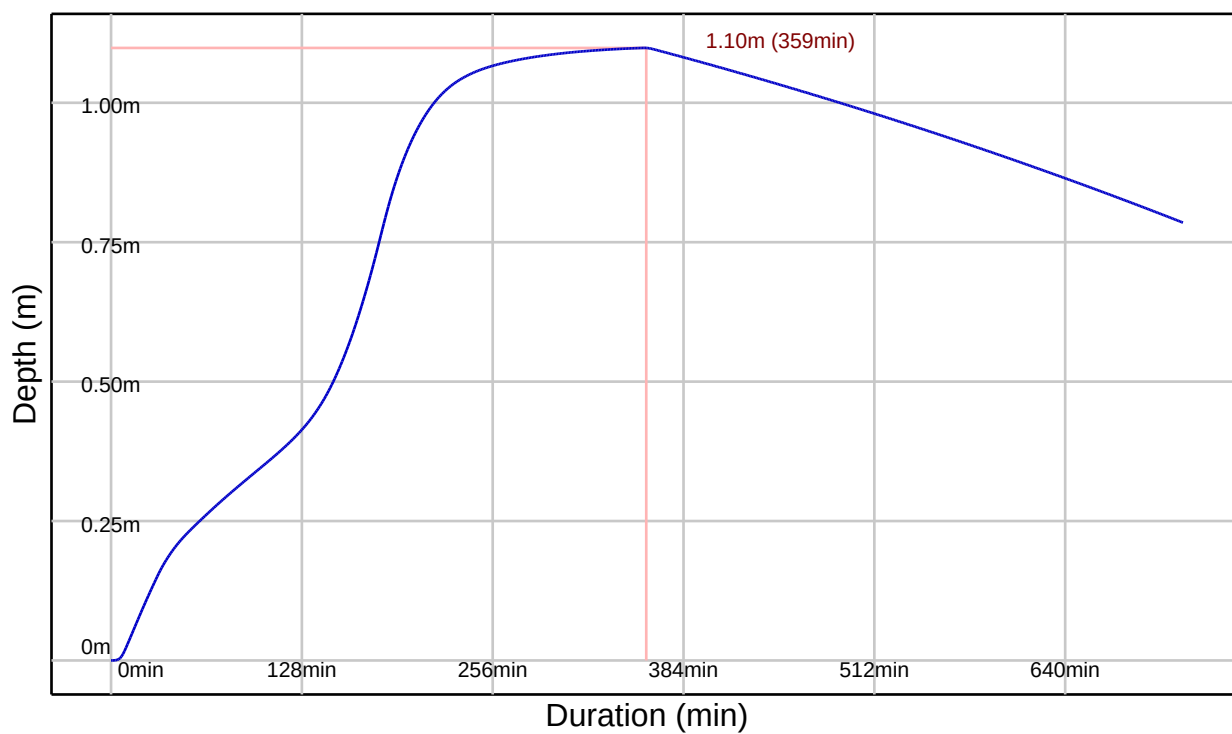
Pond Structure at Manhole S2

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
21.800	1.350	552.572	22.850	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S2



Pond 1 at S2 (100Yr+45% 360Min Summer)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_525634_122741_v5_1_0.xml

Summer (Cv min: 0.40, max: 1.00), Winter (Cv min: 0.40, max: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 8640, 10080

Return Periods (yrs) + Climate Change: (1, +0%), (10, +0%), (30, +0%), (100, +0%), (100, +45%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	14.400	0.00	-0.03	30Yr 480Min Summer	7.403	0.00	0.15
1Yr 15Min Summer	14.400	0.00	-0.02	30Yr 480Min Winter	7.403	0.00	0.15
1Yr 30Min Winter	9.543	0.00	0.05	30Yr 600Min Summer	6.218	0.00	0.04
1Yr 30Min Summer	9.543	0.00	0.03	30Yr 600Min Winter	6.218	0.00	0.04
1Yr 60Min Winter	6.143	0.00	0.04	30Yr 720Min Summer	5.382	0.00	-0.01
1Yr 60Min Summer	6.143	0.00	0.05	30Yr 720Min Winter	5.382	0.00	-0.01
1Yr 120Min Winter	5.157	0.00	0.02	30Yr 960Min Summer	4.291	0.00	0.00
1Yr 120Min Summer	5.157	0.00	0.04	30Yr 960Min Winter	4.291	0.00	0.00
1Yr 180Min Summer	4.455	0.00	0.02	30Yr 1440Min Summer	3.109	0.00	0.01
1Yr 180Min Winter	4.455	0.00	0.01	30Yr 1440Min Winter	3.109	0.00	0.01
1Yr 240Min Summer	3.755	0.00	0.00	30Yr 8640Min Summer	0.851	0.00	0.00
1Yr 240Min Winter	3.755	0.00	0.01	30Yr 8640Min Winter	0.851	0.00	0.00
1Yr 360Min Summer	2.978	0.00	0.03	30Yr 10080Min Summer	0.777	0.00	0.00
1Yr 360Min Winter	2.978	0.00	0.02	30Yr 10080Min Winter	0.777	0.00	0.00
1Yr 480Min Winter	2.505	0.00	0.02	100Yr 15Min Summer	100.383	0.00	0.25
1Yr 480Min Summer	2.505	0.00	0.03	100Yr 15Min Winter	100.383	0.00	0.24
1Yr 600Min Summer	2.157	0.00	0.04	100Yr 30Min Summer	67.241	0.00	0.32
1Yr 600Min Winter	2.157	0.00	0.03	100Yr 30Min Winter	67.241	0.00	0.32
1Yr 720Min Winter	1.898	0.00	0.03	100Yr 60Min Summer	43.178	0.00	0.47
1Yr 720Min Summer	1.898	0.00	0.04	100Yr 60Min Winter	43.178	0.00	0.46
1Yr 960Min Summer	1.561	0.00	0.04	100Yr 120Min Summer	26.048	0.00	0.45
1Yr 960Min Winter	1.561	0.00	0.03	100Yr 120Min Winter	26.048	0.00	0.48
1Yr 1440Min Summer	1.178	0.00	0.03	100Yr 180Min Summer	19.245	0.00	0.45
1Yr 1440Min Winter	1.178	0.00	0.02	100Yr 180Min Winter	19.245	0.00	0.45
1Yr 8640Min Summer	0.429	0.00	0.00	100Yr 240Min Summer	15.588	0.00	0.43
1Yr 8640Min Winter	0.429	0.00	0.00	100Yr 240Min Winter	15.588	0.00	0.43
1Yr 10080Min Summer	0.405	0.00	0.00	100Yr 360Min Summer	11.485	0.00	0.35
1Yr 10080Min Winter	0.405	0.00	0.00	100Yr 360Min Winter	11.485	0.00	0.36
10Yr 15Min Summer	61.131	0.00	-0.02	100Yr 480Min Summer	9.230	0.00	0.28
10Yr 15Min Winter	61.131	0.00	-0.02	100Yr 480Min Winter	9.230	0.00	0.28
10Yr 30Min Summer	40.365	0.00	0.11	100Yr 600Min Summer	7.789	0.00	0.19
10Yr 30Min Winter	40.365	0.00	0.10	100Yr 600Min Winter	7.789	0.00	0.20
10Yr 60Min Summer	25.483	0.00	0.17	100Yr 720Min Summer	6.775	0.00	0.12
10Yr 60Min Winter	25.483	0.00	0.16	100Yr 720Min Winter	6.775	0.00	0.12
10Yr 120Min Summer	16.279	0.00	0.17	100Yr 960Min Summer	5.435	0.00	-0.01
10Yr 120Min Winter	16.279	0.00	0.18	100Yr 960Min Winter	5.435	0.00	-0.01
10Yr 180Min Summer	12.362	0.00	0.20	100Yr 1440Min Summer	3.970	0.00	0.01
10Yr 180Min Winter	12.362	0.00	0.19	100Yr 1440Min Winter	3.970	0.00	0.01
10Yr 240Min Summer	10.009	0.00	0.16	100Yr 8640Min Summer	1.035	0.00	0.00
10Yr 240Min Winter	10.009	0.00	0.15	100Yr 8640Min Winter	1.035	0.00	0.00
10Yr 360Min Summer	7.416	0.00	0.05	100Yr 10080Min Summer	0.935	0.00	0.00
10Yr 360Min Winter	7.416	0.00	0.04	100Yr 10080Min Winter	0.935	0.00	0.00
10Yr 480Min Summer	5.972	0.00	-0.02	100Yr+45% 15Min Summer	145.555	0.00	0.31
10Yr 480Min Winter	5.972	0.00	-0.02	100Yr+45% 15Min Winter	145.555	0.00	0.33
10Yr 600Min Summer	5.020	0.00	-0.00	100Yr+45% 30Min Summer	97.499	0.00	0.63
10Yr 600Min Winter	5.020	0.00	-0.00	100Yr+45% 30Min Winter	97.499	0.00	0.64
10Yr 720Min Winter	4.344	0.00	0.00	100Yr+45% 60Min Summer	62.609	0.00	0.79
10Yr 720Min Summer	4.344	0.00	0.00	100Yr+45% 60Min Winter	62.609	0.00	0.81
10Yr 960Min Winter	3.465	0.00	0.00	100Yr+45% 120Min Summer	37.769	0.00	0.85
10Yr 960Min Summer	3.465	0.00	0.01	100Yr+45% 120Min Winter	37.769	0.00	0.85
10Yr 1440Min Summer	2.517	0.00	0.01	100Yr+45% 180Min Summer	27.905	0.00	1.96
10Yr 1440Min Winter	2.517	0.00	0.01	100Yr+45% 180Min Winter	27.905	0.00	1.06
10Yr 8640Min Summer	0.726	0.00	0.00	100Yr+45% 240Min Summer	22.603	0.00	2.11
10Yr 8640Min Winter	0.726	0.00	0.00	100Yr+45% 240Min Winter	22.603	0.00	1.37

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
10Yr 10080Min Summer	0.667	0.00	0.00	100Yr+45% 360Min Summer	16.654	0.00	0.92
10Yr 10080Min Winter	0.667	0.00	0.00	100Yr+45% 360Min Winter	16.654	0.00	2.25
30Yr 15Min Summer	79.814	0.00	0.15	100Yr+45% 480Min Summer	13.384	0.00	2.82
30Yr 15Min Winter	79.814	0.00	0.15	100Yr+45% 480Min Winter	13.384	0.00	3.02
30Yr 30Min Summer	53.125	0.00	0.26	100Yr+45% 600Min Summer	11.293	0.00	0.46
30Yr 30Min Winter	53.125	0.00	0.23	100Yr+45% 600Min Winter	11.293	0.00	0.86
30Yr 60Min Summer	33.742	0.00	0.28	100Yr+45% 720Min Summer	9.823	0.00	0.33
30Yr 60Min Winter	33.742	0.00	0.26	100Yr+45% 720Min Winter	9.823	0.00	0.34
30Yr 120Min Summer	20.790	0.00	0.27	100Yr+45% 960Min Summer	7.880	0.00	1.16
30Yr 120Min Winter	20.790	0.00	0.30	100Yr+45% 960Min Winter	7.880	0.00	0.39
30Yr 180Min Summer	15.537	0.00	0.33	100Yr+45% 1440Min Summer	5.756	0.00	0.09
30Yr 180Min Winter	15.537	0.00	0.33	100Yr+45% 1440Min Winter	5.756	0.00	0.02
30Yr 240Min Summer	12.555	0.00	0.32	100Yr+45% 8640Min Summer	1.500	0.00	0.00
30Yr 240Min Winter	12.555	0.00	0.31	100Yr+45% 8640Min Winter	1.500	0.00	0.00
30Yr 360Min Summer	9.235	0.00	0.24	100Yr+45% 10080Min Winter	1.356	0.00	0.00
30Yr 360Min Winter	9.235	0.00	0.24	100Yr+45% 10080Min Summer	1.356	0.00	0.00

Simulation Results

Return Period (yrs) + Climate Change (%):

1yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.209	0.089	45.821		OK
S104	15 min Summer	9	35.337	0.137	44.487		OK
S105	15 min Summer	9	35.216	0.086	49.180		OK
S33	15 min Summer	10	34.871	0.141	51.317		OK
S34	15 min Summer	10	34.592	0.122	64.389		OK
S31OC	600 min Summer	396	34.215	0.215	4.766		OK
S6	15 min Winter	0	38.740	0.000	0.000		OK
S96	15 min Winter	0	36.810	0.000	0.000		OK
S7	15 min Summer	9	36.433	0.033	0.063		OK
S8	15 min Summer	9	36.428	0.118	32.046		OK
S9	15 min Summer	8	36.361	0.221	35.548		OK
S10	15 min Summer	8	36.348	0.268	58.865		OK
S14 OC	360 min Summer	222	36.136	0.136	6.060		OK
S13CP	480 min Summer	299	33.631	0.041	10.694		OK
S26	480 min Summer	276	32.824	0.039	11.719		OK
S27	180 min Summer	97	31.120	0.046	14.040		OK
S28	15 min Summer	9	30.114	0.067	16.083		OK
S15	15 min Summer	7	33.795	0.105	34.261		OK
S11 OC	960 min Summer	618	33.454	0.154	1.887		OK
S22	15 min Summer	8	32.358	0.048	13.192		OK
S23	15 min Summer	8	29.283	0.073	38.186		OK
S24	15 min Summer	9	28.055	0.075	38.913		OK
S25	15 min Summer	9	26.944	0.070	43.309		OK
S16	15 min Summer	8	31.968	0.048	16.036		OK
S108	15 min Summer	8	29.703	0.040	4.385		OK
S17	15 min Summer	8	28.763	0.060	31.133		OK
S115	15 min Summer	9	27.181	0.070	30.489		OK
S111	15 min Summer	8	25.442	0.047	8.959		OK
S18	15 min Summer	8	25.029	0.079	39.481		OK
S109	15 min Winter	0	25.925	0.000	0.000		OK
S95CP	15 min Summer	9	24.705	0.080	39.495		OK
S116	15 min Summer	8	24.425	0.096	81.656		OK
S113CP	15 min Summer	8	24.916	0.046	13.210		OK
S117	240 min Summer	40	24.594	0.494	0.676		OK
S29	15 min Summer	10	24.151	0.051	18.875		OK
S30	360 min Summer	231	23.887	0.187	0.000		OK
S19 CP	15 min Summer	10	23.949	0.369	95.192		OK
S20	15 min Winter	10	23.947	0.422	26.721		OK
S99	15 min Summer	9	24.117	0.050	4.440		OK
S100	15 min Summer	9	23.372	0.069	32.485		OK
S36	15 min Summer	9	22.993	0.073	41.969		OK
S97	15 min Summer	8	23.401	0.047	6.620		OK
S98	15 min Summer	9	22.582	0.102	48.538		OK
S37	15 min Summer	8	22.219	0.149	60.850		OK
S38	480 min Summer	298	22.184	0.288	27.981		OK
S119	480 min Summer	299	22.182	0.330	27.904		OK
S101	15 min Summer	8	23.383	0.063	17.473		OK
S102	15 min Summer	9	22.438	0.105	23.050		OK
S103	480 min Summer	299	22.182	0.206	3.847		OK
S118	480 min Summer	299	22.182	0.266	3.847		OK
S35	480 min Summer	299	22.182	0.232	1.702		OK
S120	480 min Summer	299	22.182	0.321	1.694		OK
S3	480 min Summer	299	22.182	0.333	34.540		OK
S2	480 min Summer	300	22.180	0.380	34.411		OK
S1	480 min Summer	300	21.914	0.114	34.451		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	9	S32	S104	0.113	1.128	45.057	0.032	OK
1.001	15 min Summer	9	S104	S105	0.111	1.083	44.452	0.087	OK
1.002	15 min Summer	10	S105	S33	0.113	1.188	48.644	0.030	OK
1.003	15 min Summer	10	S33	S34	0.138	0.939	52.473	0.080	OK
1.004	600 min Summer	363	S34	S31OC	0.122	0.522	19.283	0.012	OK
1.005	480 min Summer	327	S31OC	S13CP	0.041	0.866	4.706	0.043	OK
2.000	15 min Winter	0	S6	S96	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	9	S96	S7	0.017	0.000	0.000	0.000	OK
2.002	15 min Summer	10	S7	S8	0.076	0.094	0.760	0.071	OK
2.003	15 min Summer	9	S8	S9	0.169	0.795	32.071	0.119	OK
2.004	15 min Summer	9	S9	S10	0.245	0.833	53.732	0.134	OK
2.005	15 min Summer	9	S10	S14 OC	0.139	1.858	68.371	0.230	OK
2.006	360 min Summer	222	S14 OC	S13CP	0.027	2.253	6.107	0.032	OK
1.006	480 min Summer	296	S13CP	S26	0.040	1.931	10.697	0.040	OK
1.007	180 min Summer	102	S26	S27	0.042	1.946	11.227	0.037	OK
1.008	15 min Summer	8	S27	S28	0.056	1.531	13.768	0.052	OK
1.009	15 min Summer	9	S28	S23	0.066	1.402	16.292	0.110	OK
3.000	960 min Summer	586	S15	S11 OC	0.087	0.970	7.163	0.009	OK
3.001	15 min Summer	18	S11 OC	S22	0.027	0.848	0.628	0.005	OK
3.002	15 min Summer	8	S22	S23	0.047	2.131	12.947	0.099	OK
1.010	15 min Summer	9	S23	S24	0.074	2.464	38.180	0.085	OK
1.011	15 min Summer	9	S24	S25	0.073	2.602	39.057	0.088	OK
1.012	15 min Summer	9	S25	S116	0.083	2.387	43.424	0.079	OK
4.000	15 min Summer	8	S16	S17	0.048	2.194	15.815	0.056	OK
5.000	15 min Summer	8	S108	S17	0.040	1.142	4.281	0.157	OK
4.001	15 min Summer	8	S17	S115	0.065	2.434	31.030	0.059	OK
4.002	15 min Summer	9	S115	S18	0.069	2.204	30.772	0.077	OK
6.000	15 min Summer	8	S111	S18	0.046	1.275	8.882	0.054	OK
4.003	15 min Summer	9	S18	S95CP	0.080	2.305	39.495	0.096	OK
7.000	15 min Winter	0	S109	S95CP	0.000	0.000	0.000	0.000	OK
4.004	15 min Summer	9	S95CP	S116	0.088	1.999	39.584	0.100	OK
1.013	15 min Summer	10	S116	S19 CP	0.155	3.191	83.273	0.152	OK
8.000	15 min Summer	8	S113CP	S117	0.173	0.903	13.159	0.055	OK
8.001	360 min Summer	181	S117	S29	0.185	0.127	5.011	0.019	OK
8.002	15 min Summer	10	S29	S19 CP	0.210	0.225	18.207	0.021	OK
9.000	15 min Summer	18	S30	S19 CP	0.266	0.250	8.645	0.028	OK
1.014	15 min Summer	10	S19 CP	S20	0.395	0.575	43.296	0.109	OK
1.015	15 min Summer	10	S20	S100	0.070	1.497	24.681	0.041	OK
10.000	15 min Summer	9	S99	S100	0.050	0.876	4.512	0.245	OK
1.016	15 min Summer	9	S100	S36	0.071	1.871	32.609	0.039	OK
1.017	15 min Summer	9	S36	S98	0.087	1.777	42.090	0.046	OK
11.000	15 min Summer	8	S97	S98	0.046	1.101	6.464	0.095	OK
1.018	15 min Summer	9	S98	S37	0.125	1.225	48.537	0.088	OK
1.019	480 min Summer	299	S37	S38	0.200	0.627	34.893	0.103	OK
1.020	480 min Summer	299	S38	S119	0.309	0.410	34.319	0.155	OK
1.021	480 min Summer	299	S119	S3	0.331	0.375	34.030	0.206	OK
12.000	15 min Summer	8	S101	S102	0.062	1.626	17.239	0.097	OK
12.001	15 min Summer	9	S102	S103	0.104	0.922	22.979	0.173	OK
12.002	480 min Summer	299	S103	S118	0.236	0.381	11.008	0.061	OK
12.003	480 min Summer	299	S118	S3	0.299	0.271	10.644	0.054	OK
13.000	480 min Summer	489	S35	S120	0.276	0.053	3.604	0.013	OK
13.001	480 min Summer	489	S120	S3	0.327	0.040	3.761	0.014	OK
1.022	480 min Summer	299	S3	S2	0.341	0.555	43.320	0.186	OK
1.023	480 min Summer	300	S2	S1	0.118	0.948	34.451	0.124	OK

Return Period (yrs) + Climate Change (%):

10yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.302	0.182	194.564		OK
S104	15 min Summer	8	35.473	0.273	192.789		OK
S105	15 min Summer	9	35.322	0.192	211.978		OK
S33	15 min Summer	9	35.039	0.309	231.164		OK
S34	15 min Summer	9	34.734	0.264	292.341		OK
S31OC	480 min Winter	380	34.483	0.483	7.583		Surcharged
S6	15 min Summer	0	38.740	0.000	0.000		OK
S96	15 min Summer	0	36.810	0.000	0.000		OK
S7	15 min Winter	7	36.610	0.210	0.000		Surcharged
S8	15 min Summer	8	36.588	0.278	142.435		OK
S9	15 min Winter	6	36.503	0.363	80.709		OK
S10	15 min Winter	6	36.502	0.422	129.794		OK
S14 OC	240 min Summer	164	36.324	0.324	10.592		Surcharged
S13CP	240 min Winter	191	33.643	0.053	18.237		OK
S26	15 min Summer	9	32.853	0.068	36.266		OK
S27	15 min Summer	9	31.170	0.096	62.981		OK
S28	15 min Summer	9	30.198	0.151	73.835		OK
S15	15 min Summer	7	33.889	0.199	145.602		OK
S11 OC	480 min Winter	407	33.633	0.333	2.893		Surcharged
S22	15 min Summer	8	32.413	0.103	56.642		OK
S23	15 min Summer	9	29.371	0.161	166.161		OK
S24	15 min Summer	9	28.147	0.167	169.411		OK
S25	15 min Summer	9	27.022	0.148	187.721		OK
S16	15 min Summer	8	32.020	0.100	68.092		OK
S108	15 min Summer	8	29.754	0.091	18.620		OK
S17	15 min Summer	8	28.829	0.126	132.723		OK
S115	15 min Summer	8	27.261	0.150	132.451		OK
S111	15 min Summer	8	25.493	0.098	38.044		OK
S18	15 min Summer	8	25.138	0.188	169.362		OK
S109	15 min Summer	0	25.925	0.000	0.000		OK
S95CP	15 min Summer	9	24.839	0.214	166.923		OK
S116	15 min Summer	9	24.658	0.330	355.115		OK
S113CP	15 min Summer	8	24.966	0.096	56.091		OK
S117	15 min Summer	7	24.678	0.578	53.136		OK
S29	480 min Summer	481	24.637	0.537	0.326		Surcharged
S30	480 min Summer	481	24.638	0.938	0.000		Surcharged
S19 CP	480 min Summer	481	24.637	1.057	20.885		Surcharged
S20	480 min Summer	481	24.637	1.112	20.885		Surcharged
S99	15 min Summer	9	24.196	0.129	18.845		OK
S100	15 min Summer	8	23.396	0.093	59.783		OK
S36	15 min Summer	8	23.037	0.117	101.140		OK
S97	15 min Summer	8	23.455	0.100	28.110		OK
S98	15 min Summer	8	22.655	0.175	128.635		OK
S37	360 min Summer	235	22.404	0.334	31.756		OK
S38	360 min Summer	236	22.403	0.507	31.731		OK
S119	360 min Summer	235	22.402	0.549	32.097		Surcharged
S101	15 min Summer	8	23.452	0.132	74.192		OK
S102	15 min Summer	8	22.574	0.241	100.839		OK
S103	360 min Summer	234	22.402	0.426	8.493		OK
S118	360 min Summer	234	22.402	0.486	8.462		Surcharged
S35	360 min Summer	235	22.402	0.452	3.726		OK
S120	360 min Summer	235	22.402	0.541	3.724		Surcharged
S3	360 min Summer	235	22.402	0.553	46.520		Surcharged
S2	360 min Summer	236	22.400	0.600	46.017		Surcharged
S1	360 min Summer	236	21.932	0.132	46.189		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S32	S104	0.228	1.701	192.789	0.139	OK
1.001	15 min Summer	9	S104	S105	0.232	1.645	191.910	0.374	OK
1.002	15 min Summer	9	S105	S33	0.250	1.650	213.106	0.133	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.003	15 min Summer	9	S33	S34	0.300	1.406	231.494	0.351	OK
1.004	480 min Winter	348	S34	S31OC	0.261	0.626	34.151	0.022	OK
1.005	360 min Winter	301	S31OC	S13CP	0.053	1.010	7.603	0.069	OK
2.000	15 min Summer	0	S6	S96	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	7	S96	S7	0.075	0.000	0.000	0.000	OK
2.002	15 min Winter	12	S7	S8	0.150	0.156	2.252	0.210	Surcharged
2.003	15 min Winter	8	S8	S9	0.310	1.187	132.935	0.492	OK
2.004	15 min Winter	7	S9	S10	0.392	1.274	155.325	0.388	OK
2.005	240 min Summer	162	S10	S14 OC	0.284	0.938	54.857	0.184	OK
2.006	240 min Summer	164	S14 OC	S13CP	0.036	2.668	10.929	0.058	OK
1.006	30 min Summer	33	S13CP	S26	0.053	2.163	14.976	0.056	OK
1.007	15 min Summer	9	S26	S27	0.082	2.295	36.012	0.118	OK
1.008	15 min Summer	9	S27	S28	0.123	2.289	62.807	0.236	OK
1.009	15 min Summer	9	S28	S23	0.148	2.103	73.351	0.497	OK
3.000	480 min Winter	354	S15	S11 OC	0.179	1.306	17.470	0.023	OK
3.001	15 min Summer	18	S11 OC	S22	0.059	1.200	1.940	0.015	OK
3.002	15 min Summer	8	S22	S23	0.102	3.193	56.014	0.427	OK
1.010	15 min Summer	9	S23	S24	0.164	3.592	166.299	0.372	OK
1.011	15 min Summer	9	S24	S25	0.157	3.863	169.675	0.382	OK
1.012	15 min Summer	9	S25	S116	0.239	2.778	188.005	0.344	OK
4.000	15 min Summer	8	S16	S17	0.099	3.318	67.509	0.239	OK
5.000	15 min Summer	8	S108	S17	0.089	1.669	18.350	0.673	OK
4.001	15 min Summer	8	S17	S115	0.138	3.580	132.451	0.250	OK
4.002	15 min Summer	8	S115	S18	0.147	3.277	131.434	0.327	OK
6.000	15 min Summer	8	S111	S18	0.105	1.767	37.928	0.231	OK
4.003	15 min Summer	9	S18	S95CP	0.200	2.847	168.916	0.411	OK
7.000	15 min Summer	0	S109	S95CP	0.000	0.000	0.000	0.000	OK
4.004	15 min Summer	9	S95CP	S116	0.272	2.272	168.035	0.424	OK
1.013	15 min Summer	9	S116	S19 CP	0.353	3.311	353.761	0.647	OK
8.000	15 min Summer	8	S113CP	S117	0.198	1.132	55.973	0.234	OK
8.001	480 min Summer	481	S117	S29	0.231	0.246	10.078	0.038	OK
8.002	480 min Winter	698	S29	S19 CP	0.525	0.296	56.343	0.066	OK
9.000	720 min Winter	788	S30	S19 CP	0.525	0.266	42.729	0.138	OK
1.014	600 min Summer	393	S19 CP	S20	0.525	0.507	72.049	0.182	OK
1.015	15 min Summer	8	S20	S100	0.081	1.549	25.018	0.041	OK
10.000	15 min Summer	9	S99	S100	0.128	1.212	19.181	1.042	OK
1.016	15 min Summer	8	S100	S36	0.105	1.951	59.648	0.071	OK
1.017	15 min Summer	8	S36	S98	0.146	2.062	100.893	0.110	OK
11.000	15 min Summer	8	S97	S98	0.099	1.642	27.742	0.408	OK
1.018	15 min Summer	9	S98	S37	0.240	1.350	127.693	0.231	OK
1.019	360 min Summer	235	S37	S38	0.421	0.690	59.358	0.175	OK
1.020	360 min Summer	236	S38	S119	0.516	0.520	58.133	0.262	OK
1.021	240 min Summer	143	S119	S3	0.525	0.509	68.265	0.414	OK
12.000	15 min Summer	8	S101	S102	0.149	2.191	73.835	0.415	OK
12.001	15 min Summer	9	S102	S103	0.270	1.229	100.335	0.756	OK
12.002	360 min Summer	234	S103	S118	0.438	0.474	32.808	0.182	OK
12.003	240 min Summer	138	S118	S3	0.450	0.397	42.755	0.217	OK
13.000	360 min Summer	369	S35	S120	0.488	0.056	7.387	0.027	OK
13.001	240 min Summer	249	S120	S3	0.525	0.039	7.689	0.029	OK
1.022	240 min Summer	141	S3	S2	0.525	0.768	109.202	0.470	OK
1.023	360 min Summer	236	S2	S1	0.137	1.029	46.189	0.166	OK

Return Period (yrs) + Climate Change (%):
30yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.328	0.208	254.037		OK
S104	15 min Summer	8	35.514	0.314	251.896		OK
S105	15 min Summer	9	35.357	0.227	276.577		OK
S33	15 min Summer	9	35.089	0.359	301.820		OK
S34	15 min Summer	9	34.775	0.305	382.362		OK
S31OC	480 min Winter	387	34.586	0.586	10.207		Surcharged
S6	15 min Summer	0	38.740	0.000	0.000		OK
S96	15 min Summer	0	36.810	0.000	0.000		OK
S7	15 min Summer	8	36.637	0.237	1.367		Surcharged
S8	15 min Summer	8	36.636	0.326	185.482		OK
S9	15 min Winter	5	36.536	0.396	71.889		OK
S10	15 min Winter	5	36.553	0.473	77.935		OK
S14 OC	240 min Summer	167	36.398	0.398	12.188		Surcharged
S13CP	240 min Winter	194	33.646	0.056	20.538		OK
S26	15 min Summer	9	32.863	0.078	47.678		OK
S27	15 min Summer	9	31.185	0.111	82.819		OK
S28	15 min Summer	9	30.227	0.180	97.271		OK
S15	15 min Summer	7	33.917	0.227	190.144		OK
S11 OC	600 min Winter	499	33.702	0.402	3.201		Surcharged
S22	15 min Summer	8	32.431	0.121	73.802		OK
S23	15 min Summer	9	29.399	0.189	218.499		OK
S24	15 min Summer	9	28.177	0.197	222.857		OK
S25	15 min Summer	9	27.046	0.172	246.912		OK
S16	15 min Summer	8	32.036	0.116	88.906		OK
S108	15 min Summer	8	29.773	0.110	24.311		OK
S17	15 min Summer	8	28.850	0.147	173.309		OK
S115	15 min Summer	8	27.287	0.175	172.971		OK
S111	15 min Summer	8	25.507	0.112	49.672		OK
S18	15 min Summer	9	25.250	0.300	217.344		OK
S109	15 min Summer	0	25.925	0.000	0.000		OK
S95CP	15 min Summer	9	25.109	0.483	216.537		Surcharged
S116	15 min Summer	9	24.983	0.655	462.260		Surcharged
S113CP	15 min Summer	8	24.997	0.127	73.236		OK
S117	600 min Summer	600	24.894	0.794	0.269		OK
S29	600 min Summer	600	24.894	0.794	0.457		Surcharged
S30	600 min Summer	600	24.895	1.195	0.128		Surcharged
S19 CP	600 min Summer	600	24.894	1.314	22.779		Surcharged
S20	600 min Summer	600	24.894	1.369	22.648		Surcharged
S99	15 min Summer	10	24.358	0.291	20.432		Surcharged
S100	15 min Summer	9	23.402	0.099	66.784		OK
S36	15 min Summer	8	23.050	0.130	120.775		OK
S97	15 min Summer	8	23.472	0.118	36.702		OK
S98	15 min Summer	7	22.671	0.191	148.854		OK
S37	360 min Summer	239	22.496	0.426	30.886		OK
S38	360 min Summer	240	22.495	0.599	30.702		Surcharged
S119	360 min Summer	240	22.494	0.641	30.704		Surcharged
S101	15 min Summer	8	23.474	0.154	96.871		OK
S102	15 min Summer	9	22.690	0.357	126.922		OK
S103	360 min Summer	240	22.494	0.518	9.207		Surcharged
S118	360 min Summer	240	22.494	0.578	9.206		Surcharged
S35	360 min Summer	240	22.494	0.544	4.149		Surcharged
S120	360 min Summer	240	22.494	0.633	4.117		Surcharged
S3	360 min Summer	240	22.494	0.645	46.694		Surcharged
S2	360 min Summer	241	22.492	0.692	46.380		Surcharged
S1	360 min Summer	208	21.933	0.133	46.390		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S32	S104	0.261	1.839	251.896	0.181	OK
1.001	15 min Summer	9	S104	S105	0.270	1.746	250.376	0.488	OK
1.002	15 min Summer	9	S105	S33	0.293	1.740	278.244	0.174	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.003	15 min Summer	9	S33	S34	0.347	1.516	302.920	0.459	OK
1.004	480 min Winter	389	S34	S31OC	0.348	0.652	42.337	0.027	OK
1.005	360 min Winter	315	S31OC	S13CP	0.056	1.045	8.466	0.077	OK
2.000	15 min Summer	0	S6	S96	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	6	S96	S7	0.075	0.000	0.000	0.000	OK
2.002	15 min Winter	7	S7	S8	0.150	0.238	4.206	0.392	Surcharged
2.003	15 min Winter	8	S8	S9	0.347	1.268	169.544	0.628	OK
2.004	15 min Winter	8	S9	S10	0.434	1.383	193.283	0.483	OK
2.005	240 min Summer	166	S10	S14 OC	0.358	1.003	68.288	0.229	OK
2.006	240 min Summer	167	S14 OC	S13CP	0.038	2.763	12.318	0.065	OK
1.006	30 min Summer	33	S13CP	S26	0.059	2.253	17.310	0.065	OK
1.007	15 min Summer	9	S26	S27	0.095	2.484	47.607	0.156	OK
1.008	15 min Summer	9	S27	S28	0.146	2.436	82.871	0.311	OK
1.009	15 min Summer	9	S28	S23	0.177	2.248	97.547	0.661	OK
3.000	600 min Winter	444	S15	S11 OC	0.213	1.278	18.189	0.024	OK
3.001	15 min Summer	18	S11 OC	S22	0.069	1.247	2.215	0.018	OK
3.002	15 min Summer	8	S22	S23	0.119	3.407	73.030	0.556	OK
1.010	15 min Summer	9	S23	S24	0.193	3.814	218.795	0.489	OK
1.011	15 min Summer	9	S24	S25	0.185	4.128	223.350	0.502	OK
1.012	15 min Summer	9	S25	S116	0.274	2.866	247.313	0.452	OK
4.000	15 min Summer	8	S16	S17	0.114	3.566	88.188	0.312	OK
5.000	15 min Summer	8	S108	S17	0.108	1.755	23.932	0.878	OK
4.001	15 min Summer	8	S17	S115	0.161	3.809	172.971	0.327	OK
4.002	15 min Summer	8	S115	S18	0.171	3.504	171.686	0.428	OK
6.000	15 min Summer	9	S111	S18	0.167	1.832	49.521	0.302	OK
4.003	15 min Summer	9	S18	S95CP	0.337	2.859	216.537	0.527	OK
7.000	15 min Summer	0	S109	S95CP	0.000	0.000	0.000	0.000	OK
4.004	15 min Summer	9	S95CP	S116	0.375	2.238	214.947	0.543	Surcharged
1.013	15 min Winter	9	S116	S19 CP	0.375	3.859	426.176	0.779	Surcharged
8.000	15 min Summer	8	S113CP	S117	0.214	1.352	72.835	0.305	OK
8.001	960 min Summer	1501	S117	S29	0.300	0.479	20.689	0.077	Surcharged
8.002	1440 min Winter	959	S29	S19 CP	0.525	0.280	57.582	0.067	OK
9.000	1440 min Winter	1574	S30	S19 CP	0.525	0.281	26.530	0.086	OK
1.014	720 min Winter	426	S19 CP	S20	0.525	0.506	59.265	0.150	OK
1.015	15 min Summer	8	S20	S100	0.084	1.544	24.923	0.041	OK
10.000	15 min Summer	10	S99	S100	0.142	1.297	22.457	1.220	OK
1.016	15 min Summer	9	S100	S36	0.114	2.021	66.805	0.079	OK
1.017	15 min Summer	8	S36	S98	0.159	2.203	120.430	0.131	OK
11.000	15 min Summer	8	S97	S98	0.116	1.754	36.249	0.533	OK
1.018	15 min Summer	9	S98	S37	0.286	1.376	158.176	0.286	OK
1.019	360 min Summer	239	S37	S38	0.476	0.712	67.376	0.198	OK
1.020	180 min Summer	101	S38	S119	0.525	0.594	92.358	0.417	OK
1.021	60 min Winter	43	S119	S3	0.525	0.738	119.792	0.726	OK
12.000	15 min Summer	9	S101	S102	0.216	2.234	96.443	0.542	OK
12.001	15 min Summer	9	S102	S103	0.366	1.250	122.837	0.925	OK
12.002	15 min Winter	9	S103	S118	0.450	1.114	177.189	0.982	OK
12.003	15 min Winter	9	S118	S3	0.450	1.114	177.171	0.898	OK
13.000	240 min Summer	299	S35	S120	0.525	0.049	8.262	0.031	OK
13.001	180 min Winter	190	S120	S3	0.525	0.056	12.143	0.045	OK
1.022	60 min Winter	43	S3	S2	0.525	1.320	199.402	0.858	OK
1.023	360 min Summer	208	S2	S1	0.137	1.030	46.390	0.167	OK

Return Period (yrs) + Climate Change (%):
100yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.355	0.235	319.506		OK
S104	15 min Summer	8	35.556	0.356	317.122		OK
S105	15 min Summer	9	35.395	0.265	347.636		OK
S33	15 min Summer	9	35.140	0.410	379.643		OK
S34	15 min Summer	9	34.817	0.347	481.787		OK
S31OC	600 min Winter	479	34.710	0.710	5.764		Surcharged
S6	15 min Summer	0	38.740	0.000	0.000		OK
S96	15 min Summer	0	36.810	0.000	0.000		OK
S7	15 min Summer	8	36.704	0.304	0.085		Surcharged
S8	15 min Summer	8	36.696	0.386	233.283		OK
S9	15 min Winter	5	36.580	0.440	86.018		OK
S10	15 min Winter	5	36.564	0.484	128.840		OK
S14 OC	240 min Winter	183	36.482	0.482	13.702		Surcharged
S13CP	240 min Winter	200	33.649	0.059	22.847		OK
S26	15 min Summer	9	32.873	0.088	59.416		OK
S27	15 min Summer	8	31.200	0.126	104.516		OK
S28	15 min Summer	9	30.259	0.212	121.931		OK
S15	15 min Summer	1	33.956	0.266	26.313		OK
S11 OC	720 min Winter	596	33.786	0.486	3.543		Surcharged
S22	15 min Summer	8	32.450	0.140	92.645		OK
S23	15 min Summer	8	29.431	0.221	275.855		OK
S24	15 min Summer	8	28.208	0.228	280.270		OK
S25	15 min Summer	9	27.086	0.213	310.714		OK
S16	15 min Summer	8	32.052	0.132	111.818		OK
S108	15 min Summer	9	29.840	0.177	29.273		Surcharged
S17	15 min Summer	8	28.871	0.168	217.187		OK
S115	15 min Summer	8	27.313	0.202	216.873		OK
S111	15 min Summer	9	25.785	0.390	59.812		Surcharged
S18	15 min Summer	9	25.737	0.787	267.154		Surcharged
S109	15 min Summer	0	25.925	0.000	0.000		OK
S95CP	15 min Summer	9	25.547	0.921	263.134		Surcharged
S116	15 min Summer	9	25.362	1.034	570.427		Surcharged
S113CP	720 min Winter	707	25.165	0.295	0.329		OK
S117	720 min Winter	707	25.165	1.065	0.329		OK
S29	720 min Winter	707	25.165	1.065	0.565		Surcharged
S30	720 min Winter	707	25.165	1.465	0.000		Surcharged
S19 CP	720 min Winter	707	25.165	1.585	24.760		Surcharged
S20	720 min Winter	707	25.165	1.640	24.761		Surcharged
S99	15 min Summer	10	24.607	0.540	25.697		Surcharged
S100	15 min Summer	9	23.408	0.105	75.423		OK
S36	15 min Summer	8	23.064	0.144	143.036		OK
S97	15 min Summer	8	23.491	0.136	46.160		OK
S98	15 min Summer	8	22.683	0.203	188.191		OK
S37	15 min Summer	9	22.624	0.554	274.753		Surcharged
S38	360 min Summer	258	22.613	0.717	31.806		Surcharged
S119	360 min Summer	258	22.612	0.759	31.806		Surcharged
S101	15 min Summer	9	23.523	0.203	116.644		OK
S102	15 min Summer	9	22.997	0.664	159.038		Surcharged
S103	15 min Summer	9	22.623	0.647	235.975		Surcharged
S118	360 min Summer	258	22.612	0.696	8.296		Surcharged
S35	360 min Summer	259	22.612	0.662	3.690		Surcharged
S120	360 min Summer	258	22.612	0.751	3.689		Surcharged
S3	360 min Summer	258	22.612	0.763	46.196		Surcharged
S2	360 min Summer	259	22.610	0.810	46.010		Surcharged
S1	180 min Summer	98	21.933	0.133	46.390		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S32	S104	0.296	1.960	317.122	0.228	OK
1.001	15 min Summer	9	S104	S105	0.310	1.828	314.684	0.614	OK
1.002	15 min Summer	9	S105	S33	0.337	1.819	349.991	0.219	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.003	15 min Summer	9	S33	S34	0.394	1.625	381.872	0.579	OK
1.004	600 min Winter	477	S34	S31OC	0.472	0.639	44.544	0.029	OK
1.005	360 min Winter	328	S31OC	S13CP	0.059	1.079	9.374	0.085	OK
2.000	15 min Summer	0	S6	S96	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	6	S96	S7	0.075	0.000	0.000	0.000	OK
2.002	15 min Winter	11	S7	S8	0.150	0.177	2.881	0.268	Surcharged
2.003	15 min Summer	8	S8	S9	0.386	1.365	230.404	0.853	OK
2.004	15 min Winter	9	S9	S10	0.462	1.495	239.355	0.598	OK
2.005	240 min Winter	183	S10	S14 OC	0.442	1.020	53.412	0.179	OK
2.006	240 min Winter	183	S14 OC	S13CP	0.040	2.850	13.725	0.072	OK
1.006	30 min Summer	33	S13CP	S26	0.065	2.329	19.467	0.073	OK
1.007	15 min Summer	9	S26	S27	0.107	2.634	59.397	0.195	OK
1.008	15 min Summer	9	S27	S28	0.169	2.553	103.856	0.390	OK
1.009	15 min Summer	9	S28	S23	0.208	2.351	122.749	0.832	OK
3.000	720 min Winter	594	S15	S11 OC	0.291	1.258	19.819	0.026	OK
3.001	15 min Summer	18	S11 OC	S22	0.079	1.287	2.467	0.020	OK
3.002	15 min Summer	8	S22	S23	0.138	3.582	91.678	0.698	OK
1.010	15 min Summer	9	S23	S24	0.224	4.008	275.111	0.615	OK
1.011	15 min Summer	9	S24	S25	0.220	4.226	281.080	0.632	OK
1.012	15 min Summer	9	S25	S116	0.294	3.347	310.755	0.568	OK
4.000	15 min Summer	8	S16	S17	0.130	3.785	110.949	0.393	OK
5.000	15 min Summer	8	S108	S17	0.143	1.764	29.280	1.074	OK
4.001	15 min Summer	8	S17	S115	0.185	4.001	216.873	0.410	OK
4.002	15 min Summer	8	S115	S18	0.196	3.697	215.518	0.537	OK
6.000	15 min Summer	9	S111	S18	0.300	1.757	58.380	0.356	Surcharged
4.003	15 min Winter	9	S18	S95CP	0.375	2.865	244.664	0.596	Surcharged
7.000	15 min Summer	0	S109	S95CP	0.000	0.000	0.000	0.000	OK
4.004	15 min Winter	9	S95CP	S116	0.375	2.256	242.709	0.613	Surcharged
1.013	15 min Winter	9	S116	S19 CP	0.375	4.759	525.636	0.961	Surcharged
8.000	720 min Winter	707	S113CP	S117	0.298	0.385	7.294	0.031	OK
8.001	180 min Summer	117	S117	S29	0.300	0.703	31.614	0.118	Surcharged
8.002	60 min Winter	42	S29	S19 CP	0.525	0.389	50.499	0.059	OK
9.000	15 min Winter	18	S30	S19 CP	0.525	0.232	50.213	0.162	OK
1.014	15 min Winter	36	S19 CP	S20	0.525	0.787	53.431	0.135	OK
1.015	15 min Summer	8	S20	S100	0.086	1.537	25.020	0.041	OK
10.000	15 min Summer	10	S99	S100	0.145	1.537	26.914	1.462	OK
1.016	15 min Summer	9	S100	S36	0.124	2.051	75.465	0.090	OK
1.017	15 min Summer	8	S36	S98	0.173	2.286	142.595	0.155	OK
11.000	15 min Summer	8	S97	S98	0.134	1.848	45.596	0.670	OK
1.018	15 min Summer	9	S98	S37	0.364	1.384	187.222	0.339	OK
1.019	180 min Summer	137	S37	S38	0.525	0.811	110.667	0.326	OK
1.020	15 min Winter	9	S38	S119	0.525	1.165	252.162	1.137	OK
1.021	30 min Summer	17	S119	S3	0.525	1.124	243.300	1.474	OK
12.000	15 min Summer	9	S101	S102	0.252	2.198	119.201	0.670	OK
12.001	15 min Winter	9	S102	S103	0.375	1.287	142.171	1.071	Surcharged
12.002	15 min Winter	9	S103	S118	0.450	1.356	215.674	1.195	OK
12.003	15 min Winter	9	S118	S3	0.450	1.348	214.420	1.087	OK
13.000	60 min Winter	67	S35	S120	0.525	0.038	8.102	0.030	OK
13.001	30 min Winter	22	S120	S3	0.525	0.204	44.268	0.165	OK
1.022	30 min Winter	23	S3	S2	0.525	1.707	338.739	1.458	OK
1.023	180 min Summer	98	S2	S1	0.137	1.030	46.390	0.167	OK

Return Period (yrs) + Climate Change (%):
100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.411	0.291	463.189		OK
S104	15 min Summer	8	35.643	0.443	459.582		OK
S105	15 min Summer	9	35.476	0.346	505.735		OK
S33	15 min Summer	9	35.244	0.514	552.242		OK
S34	600 min Winter	505	34.971	0.501	10.840		OK
S31OC	600 min Winter	505	34.971	0.971	11.150		Flood Risk
S6	15 min Summer	0	38.740	0.000	0.000		OK
S96	15 min Summer	10	36.868	0.058	0.000		OK
S7	15 min Summer	8	36.882	0.482	4.569		Surcharged
S8	15 min Summer	8	36.897	0.587	338.192		Surcharged
S9	240 min Winter	190	36.673	0.533	14.242		Flood Risk
S10	240 min Winter	190	36.673	0.593	16.668		Surcharged
S14 OC	240 min Winter	190	36.673	0.673	16.669		Surcharged
S13CP	360 min Winter	289	33.655	0.065	27.249		OK
S26	15 min Summer	9	32.890	0.105	84.290		OK
S27	15 min Summer	9	31.246	0.172	148.556		OK
S28	15 min Summer	9	30.543	0.496	174.492		Surcharged
S15	15 min Summer	1	34.038	0.348	38.196		OK
S11 OC	960 min Winter	792	33.960	0.660	4.146		Surcharged
S22	15 min Summer	8	32.501	0.191	133.911		OK
S23	15 min Summer	8	29.494	0.284	383.760		OK
S24	15 min Summer	10	28.502	0.522	363.457		Surcharged
S25	15 min Summer	10	27.665	0.792	403.438		Surcharged
S16	15 min Summer	8	32.084	0.164	162.103		OK
S108	15 min Summer	10	30.401	0.738	35.274		Surcharged
S17	15 min Summer	8	28.910	0.207	306.158		OK
S115	15 min Summer	9	27.428	0.317	300.088		OK
S111	15 min Summer	10	26.943	1.548	72.072		Flood Risk
S18	15 min Summer	10	26.864	1.914	342.321		Surcharged
S109	15 min Summer	10	26.545	0.619	0.864		Surcharged
S95CP	15 min Summer	10	26.539	1.914	344.642		Surcharged
S116	15 min Summer	10	26.221	1.893	743.462		Surcharged
S113CP	1440 min Winter	1369	25.849	0.979	0.735		Surcharged
S117	1440 min Winter	1369	25.849	1.749	0.735		Flood Risk
S29	1440 min Winter	1369	25.849	1.749	1.262		Flood Risk
S30	240 min Summer	192	25.941	2.241	0.000		Surcharged
S19 CP	1440 min Winter	1368	25.849	2.269	27.153		Surcharged
S20	1440 min Winter	1368	25.848	2.324	27.143		Surcharged
S99	15 min Summer	10	25.248	1.181	37.288		Surcharged
S100	15 min Summer	9	23.421	0.118	92.516		OK
S36	15 min Summer	8	23.102	0.182	190.574		OK
S97	15 min Summer	8	23.537	0.182	66.919		OK
S98	15 min Summer	9	23.031	0.551	251.307		Surcharged
S37	15 min Summer	9	22.937	0.867	374.564		Surcharged
S38	360 min Summer	357	22.902	1.006	33.787		Surcharged
S119	360 min Summer	357	22.900	1.048	33.793		Flood Risk
S101	15 min Summer	9	24.381	1.061	169.162		Surcharged
S102	15 min Summer	10	23.656	1.323	203.396		Surcharged
S103	15 min Summer	10	22.954	0.978	311.221		Flood Risk
S118	360 min Summer	357	22.900	0.984	6.303		Flood Risk
S35	360 min Summer	358	22.900	0.950	2.381		Flood Risk
S120	360 min Summer	357	22.900	1.039	2.326		Flood Risk
S3	360 min Summer	357	22.900	1.052	44.220		Flood Risk
S2	360 min Summer	358	22.898	1.098	43.194		Flood Risk
S1	30 min Summer	21	21.933	0.133	46.392		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S32	S104	0.367	2.136	459.582	0.331	OK
1.001	15 min Summer	9	S104	S105	0.394	1.949	457.945	0.893	OK
1.002	15 min Summer	9	S105	S33	0.430	1.945	509.240	0.319	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.003	15 min Summer	9	S33	S34	0.486	1.828	554.168	0.840	OK
1.004	600 min Winter	505	S34	S31OC	0.700	0.704	65.683	0.043	OK
1.005	480 min Winter	433	S31OC	S13CP	0.064	1.151	11.100	0.100	OK
2.000	15 min Summer	10	S6	S96	0.029	0.000	0.000	0.000	OK
2.001	15 min Summer	10	S96	S7	0.104	0.401	5.255	0.196	OK
2.002	15 min Winter	10	S7	S8	0.150	0.270	4.779	0.445	Surcharged
2.003	15 min Summer	8	S8	S9	0.518	1.522	328.208	1.215	OK
2.004	240 min Summer	167	S9	S10	0.525	0.880	102.958	0.257	OK
2.005	60 min Winter	57	S10	S14 OC	0.525	1.725	212.650	0.714	OK
2.006	240 min Winter	191	S14 OC	S13CP	0.044	3.004	16.479	0.087	OK
1.006	30 min Summer	33	S13CP	S26	0.075	2.442	23.088	0.087	OK
1.007	15 min Summer	9	S26	S27	0.138	2.739	84.329	0.277	OK
1.008	15 min Summer	9	S27	S28	0.236	2.643	148.998	0.560	OK
1.009	15 min Summer	9	S28	S23	0.294	2.441	167.348	1.134	OK
3.000	960 min Winter	792	S15	S11 OC	0.397	1.226	31.595	0.041	OK
3.001	15 min Summer	18	S11 OC	S22	0.105	1.353	2.908	0.023	OK
3.002	15 min Summer	8	S22	S23	0.185	3.777	131.962	1.005	OK
1.010	15 min Summer	9	S23	S24	0.330	4.215	386.034	0.863	OK
1.011	15 min Summer	9	S24	S25	0.375	4.231	386.145	0.869	Surcharged
1.012	15 min Winter	10	S25	S116	0.375	3.784	402.584	0.736	Surcharged
4.000	15 min Summer	8	S16	S17	0.162	4.145	160.911	0.570	OK
5.000	15 min Winter	10	S108	S17	0.150	1.953	34.507	1.265	Surcharged
4.001	15 min Summer	9	S17	S115	0.258	4.221	306.074	0.579	OK
4.002	15 min Summer	9	S115	S18	0.346	3.884	294.842	0.734	OK
6.000	15 min Winter	9	S111	S18	0.300	1.796	73.557	0.449	Surcharged
4.003	15 min Winter	9	S18	S95CP	0.375	2.990	330.204	0.804	Surcharged
7.000	30 min Summer	19	S109	S95CP	0.150	0.727	10.110	0.365	Surcharged
4.004	30 min Summer	17	S95CP	S116	0.375	2.942	324.953	0.820	Surcharged
1.013	15 min Winter	9	S116	S19 CP	0.375	6.367	703.259	1.286	Surcharged
8.000	180 min Summer	125	S113CP	S117	0.300	0.956	45.840	0.192	Surcharged
8.001	30 min Winter	21	S117	S29	0.300	1.840	95.968	0.357	Surcharged
8.002	480 min Winter	323	S29	S19 CP	0.525	0.826	178.772	0.209	OK
9.000	15 min Winter	20	S30	S19 CP	0.525	0.249	53.971	0.174	OK
1.014	10080 min Summer	5214	S19 CP	S20	0.525	0.506	71.522	0.181	OK
1.015	15 min Summer	8	S20	S100	0.092	1.473	24.976	0.041	OK
10.000	15 min Winter	10	S99	S100	0.150	1.898	33.535	1.822	Surcharged
1.016	15 min Summer	9	S100	S36	0.150	2.120	92.582	0.110	OK
1.017	15 min Summer	9	S36	S98	0.339	2.203	196.588	0.214	OK
11.000	15 min Summer	9	S97	S98	0.201	1.962	65.935	0.969	OK
1.018	15 min Summer	9	S98	S37	0.525	1.419	246.234	0.446	OK
1.019	15 min Winter	9	S37	S38	0.525	1.584	342.963	1.010	OK
1.020	15 min Winter	9	S38	S119	0.525	1.562	338.182	1.525	OK
1.021	15 min Winter	9	S119	S3	0.525	1.553	336.084	2.036	OK
12.000	15 min Winter	9	S101	S102	0.300	2.212	149.729	0.842	Surcharged
12.001	15 min Winter	10	S102	S103	0.375	1.783	196.977	1.483	Surcharged
12.002	15 min Winter	9	S103	S118	0.450	1.868	297.099	1.646	OK
12.003	15 min Winter	9	S118	S3	0.450	1.850	294.234	1.492	OK
13.000	15 min Winter	14	S35	S120	0.525	0.566	122.602	0.456	OK
13.001	15 min Winter	14	S120	S3	0.525	0.571	123.629	0.460	OK
1.022	30 min Summer	19	S3	S2	0.525	2.441	522.924	2.250	OK
1.023	120 min Summer	61	S2	S1	0.137	1.030	46.391	0.167	OK