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1 Dale Street Liverpool L2 2ET	225-268 Lake View Phase 1 & 2 Rev A Proposed S.W Network	
Date 01/03/2026 File 225-268 PHASE 1 & 2 S.W...	Designed by JCM Checked by KOB	
Innovyze	Network 2020.1.3	

Existing Network Details for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.000	9.840	0.025	400.0	0.118	5.00	0.600	o	900	Pipe/Conduit
1.001	35.413	0.089	397.9	0.123	0.00	0.600	o	900	Pipe/Conduit
1.002	53.587	0.134	399.9	0.025	0.00	0.600	o	900	Pipe/Conduit
1.003	60.954	0.152	401.0	0.056	0.00	0.600	o	900	Pipe/Conduit
2.000	22.856	0.134	170.6	0.015	5.00	0.600	o	225	Pipe/Conduit
2.001	34.827	0.087	400.3	0.108	0.00	0.600	o	900	Pipe/Conduit
3.000	23.216	0.137	169.5	0.018	5.00	0.600	o	225	Pipe/Conduit
2.002	8.588	0.021	409.0	0.047	0.00	0.600	o	900	Pipe/Conduit
2.003	8.566	0.021	407.9	0.000	0.00	0.600	o	900	Pipe/Conduit
1.004	6.064	0.015	404.3	0.000	0.00	0.600	o	900	Pipe/Conduit
1.005	12.240	0.031	394.8	0.047	0.00	0.600	o	900	Pipe/Conduit
1.006	10.716	0.027	396.9	0.000	0.00	0.600	o	900	Pipe/Conduit
1.007	80.104	0.200	400.5	0.000	0.00	0.600	o	900	Pipe/Conduit
1.008	99.351	0.248	400.6	0.130	0.00	0.600	o	900	Pipe/Conduit
1.009	46.230	0.116	400.0	0.000	0.00	0.600	o	900	Pipe/Conduit
1.010	9.396	0.038	247.3	0.000	0.00	0.600	o	300	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
1.000	12	9.975	8.150	0.925	10.150	8.125	1.125		2400
1.001	11	10.150	8.125	1.125	10.375	8.036	1.439		2400
1.002	10	10.375	8.036	1.439	10.125	7.902	1.323		2400
1.003	9	10.125	7.903	1.322	10.030	7.751	1.379		2400
2.000	16	10.050	8.690	1.135	10.260	8.556	1.479		1500
2.001	15	10.260	7.881	1.479	9.900	7.794	1.206		2400
3.000	17	9.985	8.606	1.154	9.900	8.469	1.206		1500
2.002	14	9.900	7.794	1.206	9.925	7.773	1.252		2400
2.003	13	9.925	7.773	1.252	10.030	7.752	1.378		2400
1.004	8	10.030	7.751	1.379	10.060	7.736	1.424		2400
1.005	7	10.060	7.736	1.424	10.100	7.705	1.495		2400
1.006	6	10.100	7.705	1.495	10.250	7.678	1.672		2400
1.007	5	10.250	7.678	1.672	9.500	7.478	1.122		2400
1.008	4	9.500	7.478	1.122	9.250	7.230	1.120		2400
1.009	3	9.250	7.230	1.120	9.250	7.114	1.236		2400
1.010	2	9.250	7.114	1.836	9.000	7.076	1.624	Hydro-Brake®	2400

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Innovyze	Network 2020.1.3	

Free Flowing Outfall Details for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.010	1	9.000	7.076	7.000	250	0
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Simulation Criteria for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Winter
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Storm Duration (mins)	30
Ratio R	0.400		

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Online Controls for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

Hydro-Brake® Optimum Manhole: 2, DS/PN: 1.010, Volume (m³): 37.5

Unit Reference	MD-SHE-0092-5000-2000-5000
Design Head (m)	2.000
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	92
Invert Level (m)	7.114
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.000	5.0
Flush-Flo™	0.398	4.1
Kick-Flo®	0.816	3.3
Mean Flow over Head Range	-	3.9

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.9	1.200	3.9	3.000	6.0	7.000	9.0
0.200	3.8	1.400	4.2	3.500	6.5	7.500	9.3
0.300	4.1	1.600	4.5	4.000	6.9	8.000	9.6
0.400	4.1	1.800	4.8	4.500	7.3	8.500	9.9
0.500	4.1	2.000	5.0	5.000	7.7	9.000	10.2
0.600	4.0	2.200	5.2	5.500	8.0	9.500	10.4
0.800	3.4	2.400	5.4	6.000	8.4		
1.000	3.6	2.600	5.6	6.500	8.7		

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Storage Structures for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

Cellular Storage Manhole: 6, DS/PN: 1.006

Invert Level (m) 8.100 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	180.0	0.0	0.800	180.0	0.0
0.400	180.0	0.0	0.810	0.0	0.0

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1 Dale Street

Liverpool

L2 2ET

225-268 Lake View

Phase 1 & 2 Rev A

Proposed S.W Network

Date 01/03/2026

File 225-268 PHASE 1 & 2 S.W...

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Network 2020.1.3

2 year Return Period Summary of Critical Results by Maximum Level (Rank 1)

for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

Simulation Criteria

Areal Reduction Factor 1.000

Additional Flow - % of Total Flow 0.000

Hot Start (mins) 0

MADD Factor * 10m³/ha Storage 2.000

Hot Start Level (mm) 0

Inlet Coefficient 0.800

Manhole Headloss Coeff (Global) 0.500

Flow per Person per Day (l/per/day) 0.000

Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0

Number of Storage Structures 1

Number of Online Controls 1

Number of Time/Area Diagrams 0

Number of Offline Controls 0

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR

Ratio R 0.400

Region England and Wales Cv (Summer) 1.000

M5-60 (mm) 20.000 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0

Analysis Timestep 2.5 Second Increment (Extended)

DTS Status ON

DVD Status ON

Inertia Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440

Return Period(s) (years) 2, 30, 100

Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	12	15 Summer	2	+0%	100/360 Summer				8.308
1.001	11	15 Summer	2	+0%	100/360 Summer				8.287
1.002	10	15 Summer	2	+0%	100/240 Winter				8.201
1.003	9	15 Summer	2	+0%	100/240 Summer				8.090
2.000	16	15 Summer	2	+0%	100/240 Summer				8.736
2.001	15	30 Summer	2	+0%	100/240 Summer				8.024
3.000	17	15 Summer	2	+0%	100/240 Summer				8.656
2.002	14	15 Summer	2	+0%	100/120 Summer				8.009
2.003	13	15 Summer	2	+0%	100/120 Summer				8.005
1.004	8	15 Summer	2	+0%	100/120 Summer				8.002
1.005	7	15 Summer	2	+0%	100/120 Summer				7.987
1.006	6	240 Winter	2	+0%	100/120 Summer				7.982
1.007	5	240 Winter	2	+0%	100/120 Summer				7.982
1.008	4	240 Winter	2	+0%	100/30 Summer				7.981
1.009	3	240 Winter	2	+0%	30/60 Summer				7.981
1.010	2	240 Winter	2	+0%	2/15 Summer				7.979

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

PN	US/MH Name	Surcharged		Flooded		Half Drain	Pipe	Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)		
1.000	12	-0.742	0.000	0.06			26.3		OK
1.001	11	-0.739	0.000	0.06			49.0		OK
1.002	10	-0.735	0.000	0.06			50.7		OK
1.003	9	-0.713	0.000	0.07			55.1		OK
2.000	16	-0.179	0.000	0.09			3.4		OK
2.001	15	-0.757	0.000	0.03			21.3		OK
3.000	17	-0.175	0.000	0.11			4.1		OK
2.002	14	-0.685	0.000	0.07			30.1		OK
2.003	13	-0.668	0.000	0.07			27.8		OK
1.004	8	-0.649	0.000	0.15			74.2		OK
1.005	7	-0.649	0.000	0.16			79.4		OK
1.006	6	-0.623	0.000	0.05		156	22.7		OK
1.007	5	-0.596	0.000	0.03			22.4		OK
1.008	4	-0.397	0.000	0.03			22.6		OK
1.009	3	-0.149	0.000	0.01			10.2		OK
1.010	2	0.565	0.000	0.08			4.1	SURCHARGED	

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Liverpool
L2 2ET

Date 01/03/2026
File 225-268 PHASE 1 & 2 S.W...

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225-268 Lake View
Phase 1 & 2 Rev A
Proposed S.W Network

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

Simulation Criteria

Areal Reduction Factor 1.000

Hot Start (mins) 0

Hot Start Level (mm) 0

Manhole Headloss Coeff (Global) 0.500

Foul Sewage per hectare (l/s) 0.000

Additional Flow - % of Total Flow 0.000

MADD Factor * 10m³/ha Storage 2.000

Inlet Coefficient 0.800

Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0

Number of Storage Structures 1

Number of Online Controls 1

Number of Time/Area Diagrams 0

Number of Offline Controls 0

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR

Region England and Wales Cv (Summer) 1.000

M5-60 (mm) 20.000

Ratio R 0.400

Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0

Analysis Timestep 2.5 Second Increment (Extended)

DTS Status ON

DVD Status ON

Inertia Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440

Return Period(s) (years) 2, 30, 100

Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	12	15 Summer	30	+0%	100/360 Summer				8.387
1.001	11	15 Summer	30	+0%	100/360 Summer				8.370
1.002	10	360 Winter	30	+0%	100/240 Winter				8.296
1.003	9	360 Winter	30	+0%	100/240 Summer				8.296
2.000	16	15 Summer	30	+0%	100/240 Summer				8.754
2.001	15	360 Winter	30	+0%	100/240 Summer				8.296
3.000	17	15 Summer	30	+0%	100/240 Summer				8.677
2.002	14	360 Winter	30	+0%	100/120 Summer				8.296
2.003	13	360 Winter	30	+0%	100/120 Summer				8.295
1.004	8	360 Winter	30	+0%	100/120 Summer				8.295
1.005	7	360 Winter	30	+0%	100/120 Summer				8.295
1.006	6	360 Winter	30	+0%	100/120 Summer				8.295
1.007	5	360 Winter	30	+0%	100/120 Summer				8.296
1.008	4	360 Winter	30	+0%	100/30 Summer				8.294
1.009	3	360 Winter	30	+0%	30/60 Summer				8.291
1.010	2	360 Winter	30	+0%	2/15 Summer				8.291

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Innovyze	Network 2020.1.3	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

PN	US/MH Name	Surcharged		Flooded		Half Drain		Pipe	Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	Flow (l/s)		
1.000	12	-0.663	0.000	0.11			50.4		OK	
1.001	11	-0.655	0.000	0.14			105.3		OK	
1.002	10	-0.640	0.000	0.02			14.8		OK	
1.003	9	-0.507	0.000	0.02			16.8		OK	
2.000	16	-0.161	0.000	0.18			6.5		OK	
2.001	15	-0.485	0.000	0.01			6.5		OK	
3.000	17	-0.154	0.000	0.21			7.7		OK	
2.002	14	-0.398	0.000	0.02			8.7		OK	
2.003	13	-0.378	0.000	0.02			8.3		OK	
1.004	8	-0.356	0.000	0.05			22.4		OK	
1.005	7	-0.341	0.000	0.05			24.4		OK	
1.006	6	-0.310	0.000	0.05		239	23.7		OK	
1.007	5	-0.282	0.000	0.03			22.9		OK	
1.008	4	-0.084	0.000	0.02			20.4		OK	
1.009	3	0.161	0.000	0.01			9.1		SURCHARGED	
1.010	2	0.877	0.000	0.08			4.1		SURCHARGED	

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1 Dale Street

Liverpool

L2 2ET

225-268 Lake View

Phase 1 & 2 Rev A

Proposed S.W Network

Date 01/03/2026

File 225-268 PHASE 1 & 2 S.W...

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

Simulation Criteria

Areal Reduction Factor 1.000

Hot Start (mins) 0

Hot Start Level (mm) 0

Manhole Headloss Coeff (Global) 0.500

Foul Sewage per hectare (l/s) 0.000

Additional Flow - % of Total Flow 0.000

MADD Factor * 10m³/ha Storage 2.000

Inlet Coeffiecient 0.800

Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0

Number of Online Controls 1

Number of Offline Controls 0

Number of Storage Structures 1

Number of Time/Area Diagrams 0

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model

Region England and Wales Cv (Summer)

M5-60 (mm)

FSR

20.000 Cv (Winter)

Ratio R 0.400

1.000

1.000

Margin for Flood Risk Warning (mm)

Analysis Timestep 2.5 Second Increment (Extended)

DTS Status

DVD Status

Inertia Status

300.0

ON

ON

ON

Profile(s)

Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440

Return Period(s) (years)

Climate Change (%)

Summer and Winter

2, 30, 100

0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

	US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Water
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	Level
									(m)
1.000	12 480	Winter	100	+40%	100/360	Summer			9.237
1.001	11 480	Winter	100	+40%	100/360	Summer			9.237
1.002	10 480	Winter	100	+40%	100/240	Winter			9.237
1.003	9 480	Winter	100	+40%	100/240	Summer			9.237
2.000	16 480	Winter	100	+40%	100/240	Summer			9.237
2.001	15 480	Winter	100	+40%	100/240	Summer			9.237
3.000	17 480	Winter	100	+40%	100/240	Summer			9.237
2.002	14 480	Winter	100	+40%	100/120	Summer			9.237
2.003	13 480	Winter	100	+40%	100/120	Summer			9.237
1.004	8 480	Winter	100	+40%	100/120	Summer			9.237
1.005	7 480	Winter	100	+40%	100/120	Summer			9.238
1.006	6 480	Winter	100	+40%	100/120	Summer			9.238
1.007	5 480	Winter	100	+40%	100/120	Summer			9.239
1.008	4 480	Winter	100	+40%	100/30	Summer			9.239
1.009	3 480	Winter	100	+40%	30/60	Summer			9.239
1.010	2 480	Winter	100	+40%	2/15	Summer			9.239

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Innovyze	Network 2020.1.3	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for 225-268 PHASE 1 & 2 S.W NETWORK.SWS

PN	US/MH Name	Surcharged		Flooded		Half Drain		Pipe	Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	Flow (l/s)		
1.000	12	0.187	0.000	0.02			9.0		SURCHARGED	
1.001	11	0.212	0.000	0.02			18.1		SURCHARGED	
1.002	10	0.301	0.000	0.02			18.1		SURCHARGED	
1.003	9	0.434	0.000	0.02			18.1		SURCHARGED	
2.000	16	0.322	0.000	0.05			1.8		SURCHARGED	
2.001	15	0.456	0.000	0.01			9.4		SURCHARGED	
3.000	17	0.406	0.000	0.05			2.0		SURCHARGED	
2.002	14	0.543	0.000	0.03			14.4		SURCHARGED	
2.003	13	0.564	0.000	0.04			17.5		SURCHARGED	
1.004	8	0.586	0.000	0.06			31.7		SURCHARGED	
1.005	7	0.602	0.000	0.07			34.7		SURCHARGED	
1.006	6	0.633	0.000	0.10			47.6		SURCHARGED	
1.007	5	0.661	0.000	0.04			38.9		SURCHARGED	
1.008	4	0.861	0.000	0.03			23.8		FLOOD RISK	
1.009	3	1.109	0.000	0.02			14.0		FLOOD RISK	
1.010	2	1.825	0.000	0.09			5.0		FLOOD RISK	