

ENFIELD – TOWN CENTRE PARKING, Dublin Road, Enfield, Co. Meath

Our Ref: 4456

Engineering Report

Rev.A

Date: 11/09/23

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Contents

1. Existing Site

The site is located on Main Street, Dublin Road, Enfield, Co. Meath. Under planning reference no. TA200477, the site has been developed recently and occupied by a temporary school. A temporary post-primary school consisting of 6no prefabricated buildings including all utility services and associated site works were constructed on site in 2021. The existing building on site and the existing restricted area with a mast were maintained with no changes. The existing building on site was utilised by the ESB in the past with significant carparking associated with it. The access that currently exists on site was utilised by the ESB associated with the day to day activity of the building. This access has subsequently been utilised by the temporary school which was operation on site from 2021, the temporary school is not operational on site at presently, it has been relocated to the schools new building. There are currently bottle banks on site.

Extract Google Streetview October 2009

2. Proposed Development

When the current temporary buildings are decanted, it is proposed to redevelop the site into a new town centre car park for drivers and cyclists. A total of 107 carparking spaces are to be provided, including 6 accessible bays, one of which will be for an electric vehicle (EV), 7 EV spaces, 30 bicycle stands, 5 e-bicycle charging points, 8 crane-lift recycling bins and pedestrian footpath from main street.

The new town centre car park will provide the following:

- Town centre car parking for access to local businesses.
- Parking for the Play Ground (the existing entrance to the playground will be closed and a new main one from the development will be provided).
- Re-located parking for the Enfield Community Hub.
- Parking for access to public transport links.
- Car changing facilities.
- Bicycle parking.
- Electric bicycle charging facilities.
- Safer recycling facilities.
- Outdoor public plaza (approx. 1200m²) to the front and rear of the Enfield Community Hub.
- CCTV to cover the extent of the development only (not outward looking) and to be mounted on their own poles.
- New recycling bottle banks location for safety and accessibility reasons.

The prefabricated buildings will be dismantled and all utility services associated with them to be grubbed up, demolished or abandoned. The proposed development will comprise the construction a car park with a provision for cyclists, a bring centre, an access road with entrance, turning areas, open spaces / public realm areas, surface water drainage network, public lighting and all associated site development works. The existing building and the existing restricted area with mast will be maintained and integrated into the new site layout.

The existing Access onto Main Street is to be maintained by the proposed development with sightlines enhancements as detailed on the accompanying drawings.

The boundary wall to SuperValu is to be modified to so that the development will be overlooked and provide a level of passive supervision. This boundary wall is to be lowered with railings being incorporated into the existing wall.

3. Surface Water Drainage

3.1 Existing Surface Water Drainage

Currently on site, there is a surface water network including an underground attenuation structure constructed of DRAINMAX" DM-T-1600 M/60 units and a flow control (hydrobrake with a max. allowable discharge rate 2.5l/s) which caters for the temporary school development. The limited runoff is pumped towards the Main Street and then drained via S4 manhole and 150mm dia. gravity pipe to a discharge manhole S5 constructed on the existing 150mm dia. public surface water pipeline within the Main Street. The surface water network design has been modelled with a 500mm surcharged outfall.

3.2 General Details

The proposed surface water drainage network design is based on the Wallingford Procedure Modified Rational Method using appropriate rainfall data from the Irish Met Office. The complete range of storm durations from 15 minutes to 24 hours has been simulated based on a 2, 30 and 100 year storm return period in accordance with GDSDS Volume 2 "Storm Water Management Policy for Developers" published by Dublin Corporation.

20% Additional Flow has been added to the surface water network for a climate change.

Microdrainage WinDes design suite software was used to calculate pipe sizes and gradients, flow velocities, attenuation storage capacity and a flow control (see Appendix A).

3.3 Pre-development Runoff

The maximum allowable runoff rate of 2.5l/s from the site was taken from the drawing Drainage Layout, Issue No 4 for construction under the previously granted planning permission ref. no TA200477.

3.4 New System Details

It is proposed to grub up, demolish or abandon the entire existing surface water network associated with the temporary school except manholes S4 and S5 which are to be maintained. The existing underground attenuation structure is to be disconnected and retained in ground.

Permeable paving surfacing is proposed to the car park bays. The runoff from the proposed car park and open spaces will infiltrate directly to the stone subbase with 40% voids where it will be stored and/or flow towards the proposed gravity surface water network. The runoff from the remaining areas will drain directly via road gullies to the proposed gravity surface water network.

All surface water down pipes which service the existing building shall be disconnected from the combined sewer network and connected to the proposed surface water network via AJ systems.

In order to cater for potential oil and petrol pollutants in the surface water, it is proposed to install CLASS 1 BYPASS SEPARATOR CNSB 15S/21 with 50mm drop between inlet and outlet inverts by PREMIER TECH or similar approved on pipe no. 1.002.

As part of the SuDS strategy, the following features are proposed:

- Attenuation / retention structures underneath the proposed car park bays and pedestrian realms, surfaced with permeable paving blocks.
- Silt traps in gullies.
- Manholes with sumps.
- Class 1 Oil / Petrol Separator.

The surface water drainage network and sections with details are illustrated on drawings no. 4456 C04 - C07.

Details of the design parameters for the surface water network are contained in Appendix A.

3.4.1 Attenuation Structures and Flow Controls

To ensure that the maximum allowable discharge rates of 2.5l/s will not be exceeded, an overall attenuation storage capacity of 536.5m3 will be provided. In order to provide this required overall attenuation storage capacity, it is proposed to construct 3no attenuation structures as follows:

1) AREA C1 = 3000M2, STORAGE CAPACITY = 480M3
ATTENUATION STORAGE STRUCTURE PROVIDED IN STONE SUB-BASE (CLEAN CRUSHED, WASHED, 20-50MM ANGULAR STONE WITH 40% VOIDS),
STORAGE DESIGN INVERT LEVEL=76.68M, STORAGE DESIGN TOP LEVEL=77.08M
(SEE SECTION A ON DWG 4456 C04 FOR DETAILS).

2) AREA C2 = 240M2, STORAGE CAPACITY = 38.4M3
ATTENUATION STORAGE STRUCTURE PROVIDED IN STONE SUB-BASE (CLEAN CRUSHED, WASHED, 20-50MM ANGULAR STONE WITH 40% VOIDS),
STORAGE DESIGN INVERT LEVEL=76.68M, STORAGE DESIGN TOP LEVEL=77.08M
(SEE SECTION B ON DWG 4456 C04 FOR DETAILS).

3) AREA C3 = 113M2, POTENTIAL STORAGE CAPACITY = 18.1M3
ATTENUATION STORAGE STRUCTURE PROVIDED IN STONE SUB-BASE (CLEAN CRUSHED, WASHED, 20-50MM ANGULAR STONE WITH 40% VOIDS),
STORAGE DESIGN INVERT LEVEL=76.68M, STORAGE DESIGN TOP LEVEL=77.08M
(SEE SECTION C ON DWG 4456 C04 FOR DETAILS).

Subgrade infiltration rates were too low and for this reason the subgrade infiltration was disregarded in the attenuation structure calculations.

The runoff from the entire development will be limited by a hydrobrake installed at the existing manhole S4 with a max. discharge rate of 2.5l/s for a design head of 0.755m. Also penstock will be installed to assist the maintenance of manhole S4.

To eliminate surface water back flow from the existing manhole S5, a non-return flap valve is to be installed on the outfall. The outfall was analysed for surcharged conditions.

The drainage network and sections with details are illustrated on drawings no. 4456 C04 - C07.

3.4.2 Comments on Analysis Of The Network

The analysis of the network for 100 years storm return period indicates that there is flood in the upstream manholes of the pipes number 1.001 and 1.002 and the flooded volumes for the critical storm conditions are 5.75m3 and 0.336m3 respectively. These flood volumes are deemed acceptable because they will be stored within the site and will not affect any adjacent areas outside the site boundary.

The analyses of the network for 2 and 30 years storm return periods indicate that there is no flood for these critical storm conditions.

Details of this network and calculations are contained in Appendix A.

4. Foul Sewer Drainage

4.1 General

Currently on site, there is a foul sewer pipeline crossing the site from east to west up to MH7A manhole and a combined sewer pipeline from MH7A manhole downstream. The combined effluent from the existing building is drained via gravity pipelines to MH7A manhole. There is also a foul sewer network and a waste water treatment plant which caters for the temporary school. The foul effluent produced by the school is pumped to a combined foul sewer network via a rising main to MH7A manhole.

It is proposed to grub up, demolish or abandon the entire existing foul sewer network and the waste water treatment plant associated with the temporary school.

The sewer for the existing building will remain and will be protected during the works.

5. Water Supply Network Design

5.1 General

Currently on site, there are 3no watermain supply connections:

- An old watermain supply connection to the existing building.
- A metered watermain supply connection to a hydrant constructed as a part of the temporary school scheme.
- A metered watermain supply connection to the prefabricated buildings as a part of the temporary school scheme.

It is proposed to grub up, demolish or abandon both metered watermain supply connections associated with the temporary school scheme.

The old watermain supply connection to the existing building will remain and will be protected during the works.

6. Road Design

6.1 General

The temporary school scheme required to maintain some old hard surface areas and provide additional new ones covered with tarmacadam to accommodate the school site layout.

In order to construct the proposed drainage structures for the new town centre car park , it is proposed to demolish and remove all existing hard surface areas down to the levels illustrated on drawings no. 4456 C04 - C07.

The proposed access road, parking aisles and turning areas within the scheme will be constructed of bituminous material while the proposed car park bays will be constructed of permeable paving blocks.

It is also proposed to demolish the existing fence along the site frontage and approx. 0.8m of the existing brick boundary wall including a pier in the southern west corner of the site (note: a new pier will be constructed). This will provide an adequate sight visibility of 2.4m x 65m to the east (for design speed 60km/h, posted speed 50km/h on bus routes as per DUMRS) at the side junction of the adjoining development. The removal of this small section of wall will improve pedestrian access to the new proposed pedestrian realm.

Drawings no. 4456 C02 and C03 show the proposed road layout, levels, sight visibility line and types of surfacing. They shall be read in conjunction with the landscape architectural drawings.

6.2 Trip generation

A review of the TRICS database was carried out to establish the traffic generation associated with the proposed development. It was determined that there were no surveyed sites within the data base that accurately represented the site specific characteristics of the proposed site.

It was decided to determine the trip generation rates by referencing the 'Park and Ride' land use contained within the ITE (Institute of Transportation Engineers) Trip Generation Handbook, 9th Edition.

Land Use	AM Peak Hour			PM Peak Hour			Daily Trip Rate		
	Trip Rate	% In	% Out	Trip Rate	% In	% Out	Trip Rate	% In	% Out
ITE 090 - Park & Ride	0.71	69%	31%	0.62	28%	72%	2.51	50%	50%

Table 6.2.1: ITE Trip Rates per space provided: Land Use 090 - Park & Ride

The projected site generated traffic volumes for the AM and PM peak periods were calculated based on the above trip rates. The projected trip generation is detailed below.

Land Use	Quantity	AM Peak Hour			PM Peak Hour			Daily Trip Rate		
		In	Out	Total	In	Out	Total	In	Out	Total
Park & Ride	107 spaces	52	24	76	19	48	67	134	134	268

Table 6.2.2: Site Generated Trip Volumes

It has been estimated that there will be 134 number trips in and out of the carpark daily.

Traffic counts were not undertaken for the proposed development; however the current traffic flow on Main Street was calculated based on traffic counts under taken in 2017. TII Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections were used to determine the 2023 year traffic flow.

Based on the traffic count in 2017 factored to 2023 the 12 hour traffic flow on Main Street is 6120 passenger car units. The proposed development is in the region of 4.39% of the traffic flow on Main Street.

It should be noted that the proposed development will be less than 4.39% as certain trips to the carpark will be shared trips and the carpark movements are based on a 24 hour day whilst the traffic flow on main street is based on a 12 hour count.

7. CCTV Surveillance System

7.1 General

A CCTV surveillance system is to be provided for the development, the CCTV system will consist of pole mounted cameras; locations to be determined post Part 8 Approval. The system is to cover the extent of the development only (not outward looking).

Appendix A

Storm Water Drainage

- Global Variables and Network Details
- Time Area Diagram
- Pipeline and Manholes Schedule
- Global Variables for Network Analyses
- Surcharged Outfall Details
- Flow Control Details
- Storage Details
- Network Results for Critical Storms:
    - 2yr Storm Return Period
    - 30yr Storm Return Period
    - 100yr Storm Return Period

STORM SEWER DESIGN by the Modified Rational Method

Global Variables

Pipe Size File C:\Program Files\Micro Drainage Ltd\WinDes\STANDARD.PIP
Manhole Size File C:\Program Files\Micro Drainage Ltd\WinDes\STANDARD.MHS

Location - Scotland & Ireland

Return Period (years)	2	Maximum Backdrop Height (m)	2.300
M5-60 (mm)	17.500	Min Cover Depth for Optimisation (m)	0.500
Ratio R	0.318	Min Vel for Auto Design Only (m/s)	0.80
Maximum Rainfall (mm/hr)	0	Min Slope for Optimisation (1:X)	500
Foul Sewage (l/s/ha)	0.00	Minimum Outfall Invert (m)	76.200
O'flow Setting (*Foul only)	0	Ground Level at Outfall (m)	77.740
Volumetric Runoff Coeff.	1.00	Outfall Manhole Name	S5
Add Flow / Climate Change (%)	20	Outfall Manhole Dia/Length (mm)	1200
Minimum Backdrop Height (m)	0.000	Outfall Manhole Width (mm)	0

Designed with Level Soffits

Network Design Table

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	26.99	0.103	262.0	0.425	5.00	0.0	0.600	o	225
1.001	38.29	0.146	262.2	0.143	0.00	0.0	0.600	o	225
1.002	14.54	0.056	259.6	0.062	0.00	0.0	0.600	o	225
1.003	3.72	0.125	29.7	0.000	0.00	0.0	0.600	o	150

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E.Area (ha)	E.DWF (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	CAP (l/s)	Flow (l/s)
1.000	0.0	5.6	76.680	0.425	0.0	0.0	0.0	0.80	31.9	0.0
1.001	0.0	6.4	76.577	0.568	0.0	0.0	0.0	0.80	31.9	0.0
1.002	0.0	6.7	76.431	0.630	0.0	0.0	0.0	0.81	32.1	0.0
1.003	0.0	6.7	76.325	0.630	0.0	0.0	0.0	1.85	32.8	0.0

Time Area Diagram

Time From (mins)	Time To (mins)	Area (ha)
0	4	0.356
4	8	0.274

Total Area Contributing (ha) = 0.630

Total Pipe Volume (m^3) = 3.239

PIPELINE SCHEDULES

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH No.	C.Level (m)	I.Level (m)	C.Depth (m)	MH DIAM., L*W (mm)
1.000	o	225	1	77.350	76.680	0.445	1200
1.001	o	225	2	77.340	76.577	0.538	1200
1.002	o	225	3	77.570	76.431	0.914	1200
1.003	o	150	4	77.730	76.325	1.255	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH No.	C.Level (m)	I.Level (m)	C.Depth (m)	MH DIAM., L*W (mm)
1.000	26.99	262.0	2	77.340	76.577	0.538	1200
1.001	38.29	262.2	3	77.570	76.431	0.914	1200
1.002	14.54	259.6	4	77.730	76.375	1.130	1200
1.003	3.72	29.7	S5	77.740	76.200	1.390	1200

MANHOLE SCHEDULES

M/Hole Number	Cover Level (m)	M/Hole Depth (m)	M/Hole Diam.,L*W (mm)	Pipes Out PN	Pipes Out IL.(m)	Pipes Out D (mm)	Pipes In PN	Pipes In IL.(m)	Pipes In D (mm)
1	77.350	0.670	1200	1.000	76.680	225			
2	77.340	0.763	1200	1.001	76.577	225	1.000	76.577	225
3	77.570	1.139	1200	1.002	76.431	225	1.001	76.431	225
4	77.730	1.405	1200	1.003	76.325	150	1.002	76.375	225
S5	77.740	1.540	1200		OUTFALL		1.003	76.200	150

Global Variables

Region	FSR - Scotland & Ireland
Return Period (yrs)	2
M5-60 (mm)	17.500
Ratio R	0.318
Volumetric Runoff Coef	0.750
Profile Type	Summer
PIMP (%)	100
Areal Reduction Factor	1.000
Storm Duration (mins)	15
Hot Start (mins)	0
Hot Start Level (mm)	0
Manhole Headloss Coefficient	0.500
MADD Factor * 10m³/ha Storage	2.000
Foul Sewage/Hectare (l/s)	0.00
Additional Flow - % of Total Flow	0
Inlet Coefficient	0.800
Number of Input Hydrographs	0
Number of Time/Area Diagrams	0
Number of Bifurcations	0
Number of Overflows	0
Number of Off-Line Controls	0
Number of On-Line Controls	1

Starting Storm file name

Z:\DCE Irl Jobs 4000 to 4999\4400-4499\4456 Enfield Park & Ride Facility\DCE Documents\DCE Drainage Reports\WINDES Design Files\4456 Storm.SWS

Surcharged Outfalls

Outfall Pipe Number	Outfall MH/No	C.Level (m)	I.Level (m)	D,L (mm)	B (mm)
1.003	S5	77.740	76.200	1200	0

Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)
-120	76.850	0.500	-85	76.850	0.500	-50	76.850	0.500	-15	76.850	0.500
-119	76.850	0.500	-84	76.850	0.500	-49	76.850	0.500	-14	76.850	0.500
-118	76.850	0.500	-83	76.850	0.500	-48	76.850	0.500	-13	76.850	0.500
-117	76.850	0.500	-82	76.850	0.500	-47	76.850	0.500	-12	76.850	0.500
-116	76.850	0.500	-81	76.850	0.500	-46	76.850	0.500	-11	76.850	0.500
-115	76.850	0.500	-80	76.850	0.500	-45	76.850	0.500	-10	76.850	0.500
-114	76.850	0.500	-79	76.850	0.500	-44	76.850	0.500	-9	76.850	0.500
-113	76.850	0.500	-78	76.850	0.500	-43	76.850	0.500	-8	76.850	0.500
-112	76.850	0.500	-77	76.850	0.500	-42	76.850	0.500	-7	76.850	0.500
-111	76.850	0.500	-76	76.850	0.500	-41	76.850	0.500	-6	76.850	0.500
-110	76.850	0.500	-75	76.850	0.500	-40	76.850	0.500	-5	76.850	0.500
-109	76.850	0.500	-74	76.850	0.500	-39	76.850	0.500	-4	76.850	0.500
-108	76.850	0.500	-73	76.850	0.500	-38	76.850	0.500	-3	76.850	0.500
-107	76.850	0.500	-72	76.850	0.500	-37	76.850	0.500	-2	76.850	0.500
-106	76.850	0.500	-71	76.850	0.500	-36	76.850	0.500	-1	76.850	0.500
-105	76.850	0.500	-70	76.850	0.500	-35	76.850	0.500	0	76.850	0.500
-104	76.850	0.500	-69	76.850	0.500	-34	76.850	0.500	1	76.850	0.500
-103	76.850	0.500	-68	76.850	0.500	-33	76.850	0.500	2	76.850	0.500
-102	76.850	0.500	-67	76.850	0.500	-32	76.850	0.500	3	76.850	0.500
-101	76.850	0.500	-66	76.850	0.500	-31	76.850	0.500	4	76.850	0.500
-100	76.850	0.500	-65	76.850	0.500	-30	76.850	0.500	5	76.850	0.500
-99	76.850	0.500	-64	76.850	0.500	-29	76.850	0.500	6	76.850	0.500
-98	76.850	0.500	-63	76.850	0.500	-28	76.850	0.500	7	76.850	0.500
-97	76.850	0.500	-62	76.850	0.500	-27	76.850	0.500	8	76.850	0.500
-96	76.850	0.500	-61	76.850	0.500	-26	76.850	0.500	9	76.850	0.500
-95	76.850	0.500	-60	76.850	0.500	-25	76.850	0.500	10	76.850	0.500
-94	76.850	0.500	-59	76.850	0.500	-24	76.850	0.500	11	76.850	0.500
-93	76.850	0.500	-58	76.850	0.500	-23	76.850	0.500	12	76.850	0.500
-92	76.850	0.500	-57	76.850	0.500	-22	76.850	0.500	13	76.850	0.500
-91	76.850	0.500	-56	76.850	0.500	-21	76.850	0.500	14	76.850	0.500
-90	76.850	0.500	-55	76.850	0.500	-20	76.850	0.500	15	76.850	0.500
-89	76.850	0.500	-54	76.850	0.500	-19	76.850	0.500	16	76.850	0.500
-88	76.850	0.500	-53	76.850	0.500	-18	76.850	0.500	17	76.850	0.500
-87	76.850	0.500	-52	76.850	0.500	-17	76.850	0.500	18	76.850	0.500
-86	76.850	0.500	-51	76.850	0.500	-16	76.850	0.500	19	76.850	0.500

Surcharged Outfalls

Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)
20	76.850	0.500	93	76.850	0.500	166	76.850	0.500	239	76.850	0.500
21	76.850	0.500	94	76.850	0.500	167	76.850	0.500	240	76.850	0.500
22	76.850	0.500	95	76.850	0.500	168	76.850	0.500	241	76.850	0.500
23	76.850	0.500	96	76.850	0.500	169	76.850	0.500	242	76.850	0.500
24	76.850	0.500	97	76.850	0.500	170	76.850	0.500	243	76.850	0.500
25	76.850	0.500	98	76.850	0.500	171	76.850	0.500	244	76.850	0.500
26	76.850	0.500	99	76.850	0.500	172	76.850	0.500	245	76.850	0.500
27	76.850	0.500	100	76.850	0.500	173	76.850	0.500	246	76.850	0.500
28	76.850	0.500	101	76.850	0.500	174	76.850	0.500	247	76.850	0.500
29	76.850	0.500	102	76.850	0.500	175	76.850	0.500	248	76.850	0.500
30	76.850	0.500	103	76.850	0.500	176	76.850	0.500	249	76.850	0.500
31	76.850	0.500	104	76.850	0.500	177	76.850	0.500	250	76.850	0.500
32	76.850	0.500	105	76.850	0.500	178	76.850	0.500	251	76.850	0.500
33	76.850	0.500	106	76.850	0.500	179	76.850	0.500	252	76.850	0.500
34	76.850	0.500	107	76.850	0.500	180	76.850	0.500	253	76.850	0.500
35	76.850	0.500	108	76.850	0.500	181	76.850	0.500	254	76.850	0.500
36	76.850	0.500	109	76.850	0.500	182	76.850	0.500	255	76.850	0.500
37	76.850	0.500	110	76.850	0.500	183	76.850	0.500	256	76.850	0.500
38	76.850	0.500	111	76.850	0.500	184	76.850	0.500	257	76.850	0.500
39	76.850	0.500	112	76.850	0.500	185	76.850	0.500	258	76.850	0.500
40	76.850	0.500	113	76.850	0.500	186	76.850	0.500	259	76.850	0.500
41	76.850	0.500	114	76.850	0.500	187	76.850	0.500	260	76.850	0.500
42	76.850	0.500	115	76.850	0.500	188	76.850	0.500	261	76.850	0.500
43	76.850	0.500	116	76.850	0.500	189	76.850	0.500	262	76.850	0.500
44	76.850	0.500	117	76.850	0.500	190	76.850	0.500	263	76.850	0.500
45	76.850	0.500	118	76.850	0.500	191	76.850	0.500	264	76.850	0.500
46	76.850	0.500	119	76.850	0.500	192	76.850	0.500	265	76.850	0.500
47	76.850	0.500	120	76.850	0.500	193	76.850	0.500	266	76.850	0.500
48	76.850	0.500	121	76.850	0.500	194	76.850	0.500	267	76.850	0.500
49	76.850	0.500	122	76.850	0.500	195	76.850	0.500	268	76.850	0.500
50	76.850	0.500	123	76.850	0.500	196	76.850	0.500	269	76.850	0.500
51	76.850	0.500	124	76.850	0.500	197	76.850	0.500	270	76.850	0.500
52	76.850	0.500	125	76.850	0.500	198	76.850	0.500	271	76.850	0.500
53	76.850	0.500	126	76.850	0.500	199	76.850	0.500	272	76.850	0.500
54	76.850	0.500	127	76.850	0.500	200	76.850	0.500	273	76.850	0.500
55	76.850	0.500	128	76.850	0.500	201	76.850	0.500	274	76.850	0.500
56	76.850	0.500	129	76.850	0.500	202	76.850	0.500	275	76.850	0.500
57	76.850	0.500	130	76.850	0.500	203	76.850	0.500	276	76.850	0.500
58	76.850	0.500	131	76.850	0.500	204	76.850	0.500	277	76.850	0.500
59	76.850	0.500	132	76.850	0.500	205	76.850	0.500	278	76.850	0.500
60	76.850	0.500	133	76.850	0.500	206	76.850	0.500	279	76.850	0.500
61	76.850	0.500	134	76.850	0.500	207	76.850	0.500	280	76.850	0.500
62	76.850	0.500	135	76.850	0.500	208	76.850	0.500	281	76.850	0.500
63	76.850	0.500	136	76.850	0.500	209	76.850	0.500	282	76.850	0.500
64	76.850	0.500	137	76.850	0.500	210	76.850	0.500	283	76.850	0.500
65	76.850	0.500	138	76.850	0.500	211	76.850	0.500	284	76.850	0.500
66	76.850	0.500	139	76.850	0.500	212	76.850	0.500	285	76.850	0.500
67	76.850	0.500	140	76.850	0.500	213	76.850	0.500	286	76.850	0.500
68	76.850	0.500	141	76.850	0.500	214	76.850	0.500	287	76.850	0.500
69	76.850	0.500	142	76.850	0.500	215	76.850	0.500	288	76.850	0.500
70	76.850	0.500	143	76.850	0.500	216	76.850	0.500	289	76.850	0.500
71	76.850	0.500	144	76.850	0.500	217	76.850	0.500	290	76.850	0.500
72	76.850	0.500	145	76.850	0.500	218	76.850	0.500	291	76.850	0.500
73	76.850	0.500	146	76.850	0.500	219	76.850	0.500	292	76.850	0.500
74	76.850	0.500	147	76.850	0.500	220	76.850	0.500	293	76.850	0.500
75	76.850	0.500	148	76.850	0.500	221	76.850	0.500	294	76.850	0.500
76	76.850	0.500	149	76.850	0.500	222	76.850	0.500	295	76.850	0.500
77	76.850	0.500	150	76.850	0.500	223	76.850	0.500	296	76.850	0.500
78	76.850	0.500	151	76.850	0.500	224	76.850	0.500	297	76.850	0.500
79	76.850	0.500	152	76.850	0.500	225	76.850	0.500	298	76.850	0.500
80	76.850	0.500	153	76.850	0.500	226	76.850	0.500	299	76.850	0.500
81	76.850	0.500	154	76.850	0.500	227	76.850	0.500	300	76.850	0.500
82	76.850	0.500	155	76.850	0.500	228	76.850	0.500	301	76.850	0.500
83	76.850	0.500	156	76.850	0.500	229	76.850	0.500	302	76.850	0.500
84	76.850	0.500	157	76.850	0.500	230	76.850	0.500	303	76.850	0.500
85	76.850	0.500	158	76.850	0.500	231	76.850	0.500	304	76.850	0.500
86	76.850	0.500	159	76.850	0.500	232	76.850	0.500	305	76.850	0.500
87	76.850	0.500	160	76.850	0.500	233	76.850	0.500	306	76.850	0.500
88	76.850	0.500	161	76.850	0.500	234	76.850	0.500	307	76.850	0.500
89	76.850	0.500	162	76.850	0.500	235	76.850	0.500	308	76.850	0.500
90	76.850	0.500	163	76.850	0.500	236	76.850	0.500	309	76.850	0.500
91	76.850	0.500	164	76.850	0.500	237	76.850	0.500	310	76.850	0.500
92	76.850	0.500	165	76.850	0.500	238	76.850	0.500	311	76.850	0.500

Surcharged Outfalls

Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)
312	76.850	0.500	385	76.850	0.500	458	76.850	0.500	531	76.850	0.500
313	76.850	0.500	386	76.850	0.500	459	76.850	0.500	532	76.850	0.500
314	76.850	0.500	387	76.850	0.500	460	76.850	0.500	533	76.850	0.500
315	76.850	0.500	388	76.850	0.500	461	76.850	0.500	534	76.850	0.500
316	76.850	0.500	389	76.850	0.500	462	76.850	0.500	535	76.850	0.500
317	76.850	0.500	390	76.850	0.500	463	76.850	0.500	536	76.850	0.500
318	76.850	0.500	391	76.850	0.500	464	76.850	0.500	537	76.850	0.500
319	76.850	0.500	392	76.850	0.500	465	76.850	0.500	538	76.850	0.500
320	76.850	0.500	393	76.850	0.500	466	76.850	0.500	539	76.850	0.500
321	76.850	0.500	394	76.850	0.500	467	76.850	0.500	540	76.850	0.500
322	76.850	0.500	395	76.850	0.500	468	76.850	0.500	541	76.850	0.500
323	76.850	0.500	396	76.850	0.500	469	76.850	0.500	542	76.850	0.500
324	76.850	0.500	397	76.850	0.500	470	76.850	0.500	543	76.850	0.500
325	76.850	0.500	398	76.850	0.500	471	76.850	0.500	544	76.850	0.500
326	76.850	0.500	399	76.850	0.500	472	76.850	0.500	545	76.850	0.500
327	76.850	0.500	400	76.850	0.500	473	76.850	0.500	546	76.850	0.500
328	76.850	0.500	401	76.850	0.500	474	76.850	0.500	547	76.850	0.500
329	76.850	0.500	402	76.850	0.500	475	76.850	0.500	548	76.850	0.500
330	76.850	0.500	403	76.850	0.500	476	76.850	0.500	549	76.850	0.500
331	76.850	0.500	404	76.850	0.500	477	76.850	0.500	550	76.850	0.500
332	76.850	0.500	405	76.850	0.500	478	76.850	0.500	551	76.850	0.500
333	76.850	0.500	406	76.850	0.500	479	76.850	0.500	552	76.850	0.500
334	76.850	0.500	407	76.850	0.500	480	76.850	0.500	553	76.850	0.500
335	76.850	0.500	408	76.850	0.500	481	76.850	0.500	554	76.850	0.500
336	76.850	0.500	409	76.850	0.500	482	76.850	0.500	555	76.850	0.500
337	76.850	0.500	410	76.850	0.500	483	76.850	0.500	556	76.850	0.500
338	76.850	0.500	411	76.850	0.500	484	76.850	0.500	557	76.850	0.500
339	76.850	0.500	412	76.850	0.500	485	76.850	0.500	558	76.850	0.500
340	76.850	0.500	413	76.850	0.500	486	76.850	0.500	559	76.850	0.500
341	76.850	0.500	414	76.850	0.500	487	76.850	0.500	560	76.850	0.500
342	76.850	0.500	415	76.850	0.500	488	76.850	0.500	561	76.850	0.500
343	76.850	0.500	416	76.850	0.500	489	76.850	0.500	562	76.850	0.500
344	76.850	0.500	417	76.850	0.500	490	76.850	0.500	563	76.850	0.500
345	76.850	0.500	418	76.850	0.500	491	76.850	0.500	564	76.850	0.500
346	76.850	0.500	419	76.850	0.500	492	76.850	0.500	565	76.850	0.500
347	76.850	0.500	420	76.850	0.500	493	76.850	0.500	566	76.850	0.500
348	76.850	0.500	421	76.850	0.500	494	76.850	0.500	567	76.850	0.500
349	76.850	0.500	422	76.850	0.500	495	76.850	0.500	568	76.850	0.500
350	76.850	0.500	423	76.850	0.500	496	76.850	0.500	569	76.850	0.500
351	76.850	0.500	424	76.850	0.500	497	76.850	0.500	570	76.850	0.500
352	76.850	0.500	425	76.850	0.500	498	76.850	0.500	571	76.850	0.500
353	76.850	0.500	426	76.850	0.500	499	76.850	0.500	572	76.850	0.500
354	76.850	0.500	427	76.850	0.500	500	76.850	0.500	573	76.850	0.500
355	76.850	0.500	428	76.850	0.500	501	76.850	0.500	574	76.850	0.500
356	76.850	0.500	429	76.850	0.500	502	76.850	0.500	575	76.850	0.500
357	76.850	0.500	430	76.850	0.500	503	76.850	0.500	576	76.850	0.500
358	76.850	0.500	431	76.850	0.500	504	76.850	0.500	577	76.850	0.500
359	76.850	0.500	432	76.850	0.500	505	76.850	0.500	578	76.850	0.500
360	76.850	0.500	433	76.850	0.500	506	76.850	0.500	579	76.850	0.500
361	76.850	0.500	434	76.850	0.500	507	76.850	0.500	580	76.850	0.500
362	76.850	0.500	435	76.850	0.500	508	76.850	0.500	581	76.850	0.500
363	76.850	0.500	436	76.850	0.500	509	76.850	0.500	582	76.850	0.500
364	76.850	0.500	437	76.850	0.500	510	76.850	0.500	583	76.850	0.500
365	76.850	0.500	438	76.850	0.500	511	76.850	0.500	584	76.850	0.500
366	76.850	0.500	439	76.850	0.500	512	76.850	0.500	585	76.850	0.500
367	76.850	0.500	440	76.850	0.500	513	76.850	0.500	586	76.850	0.500
368	76.850	0.500	441	76.850	0.500	514	76.850	0.500	587	76.850	0.500
369	76.850	0.500	442	76.850	0.500	515	76.850	0.500	588	76.850	0.500
370	76.850	0.500	443	76.850	0.500	516	76.850	0.500	589	76.850	0.500
371	76.850	0.500	444	76.850	0.500	517	76.850	0.500	590	76.850	0.500
372	76.850	0.500	445	76.850	0.500	518	76.850	0.500	591	76.850	0.500
373	76.850	0.500	446	76.850	0.500	519	76.850	0.500	592	76.850	0.500
374	76.850	0.500	447	76.850	0.500	520	76.850	0.500	593	76.850	0.500
375	76.850	0.500	448	76.850	0.500	521	76.850	0.500	594	76.850	0.500
376	76.850	0.500	449	76.850	0.500	522	76.850	0.500	595	76.850	0.500
377	76.850	0.500	450	76.850	0.500	523	76.850	0.500	596	76.850	0.500
378	76.850	0.500	451	76.850	0.500	524	76.850	0.500	597	76.850	0.500
379	76.850	0.500	452	76.850	0.500	525	76.850	0.500	598	76.850	0.500
380	76.850	0.500	453	76.850	0.500	526	76.850	0.500	599	76.850	0.500
381	76.850	0.500	454	76.850	0.500	527	76.850	0.500	600	76.850	0.500
382	76.850	0.500	455	76.850	0.500	528	76.850	0.500	601	76.850	0.500
383	76.850	0.500	456	76.850	0.500	529	76.850	0.500	602	76.850	0.500
384	76.850	0.500	457	76.850	0.500	530	76.850	0.500	603	76.850	0.500

Surcharged Outfalls

Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)
604	76.850	0.500	677	76.850	0.500	750	76.850	0.500	823	76.850	0.500
605	76.850	0.500	678	76.850	0.500	751	76.850	0.500	824	76.850	0.500
606	76.850	0.500	679	76.850	0.500	752	76.850	0.500	825	76.850	0.500
607	76.850	0.500	680	76.850	0.500	753	76.850	0.500	826	76.850	0.500
608	76.850	0.500	681	76.850	0.500	754	76.850	0.500	827	76.850	0.500
609	76.850	0.500	682	76.850	0.500	755	76.850	0.500	828	76.850	0.500
610	76.850	0.500	683	76.850	0.500	756	76.850	0.500	829	76.850	0.500
611	76.850	0.500	684	76.850	0.500	757	76.850	0.500	830	76.850	0.500
612	76.850	0.500	685	76.850	0.500	758	76.850	0.500	831	76.850	0.500
613	76.850	0.500	686	76.850	0.500	759	76.850	0.500	832	76.850	0.500
614	76.850	0.500	687	76.850	0.500	760	76.850	0.500	833	76.850	0.500
615	76.850	0.500	688	76.850	0.500	761	76.850	0.500	834	76.850	0.500
616	76.850	0.500	689	76.850	0.500	762	76.850	0.500	835	76.850	0.500
617	76.850	0.500	690	76.850	0.500	763	76.850	0.500	836	76.850	0.500
618	76.850	0.500	691	76.850	0.500	764	76.850	0.500	837	76.850	0.500
619	76.850	0.500	692	76.850	0.500	765	76.850	0.500	838	76.850	0.500
620	76.850	0.500	693	76.850	0.500	766	76.850	0.500	839	76.850	0.500
621	76.850	0.500	694	76.850	0.500	767	76.850	0.500	840	76.850	0.500
622	76.850	0.500	695	76.850	0.500	768	76.850	0.500	841	76.850	0.500
623	76.850	0.500	696	76.850	0.500	769	76.850	0.500	842	76.850	0.500
624	76.850	0.500	697	76.850	0.500	770	76.850	0.500	843	76.850	0.500
625	76.850	0.500	698	76.850	0.500	771	76.850	0.500	844	76.850	0.500
626	76.850	0.500	699	76.850	0.500	772	76.850	0.500	845	76.850	0.500
627	76.850	0.500	700	76.850	0.500	773	76.850	0.500	846	76.850	0.500
628	76.850	0.500	701	76.850	0.500	774	76.850	0.500	847	76.850	0.500
629	76.850	0.500	702	76.850	0.500	775	76.850	0.500	848	76.850	0.500
630	76.850	0.500	703	76.850	0.500	776	76.850	0.500	849	76.850	0.500
631	76.850	0.500	704	76.850	0.500	777	76.850	0.500	850	76.850	0.500
632	76.850	0.500	705	76.850	0.500	778	76.850	0.500	851	76.850	0.500
633	76.850	0.500	706	76.850	0.500	779	76.850	0.500	852	76.850	0.500
634	76.850	0.500	707	76.850	0.500	780	76.850	0.500	853	76.850	0.500
635	76.850	0.500	708	76.850	0.500	781	76.850	0.500	854	76.850	0.500
636	76.850	0.500	709	76.850	0.500	782	76.850	0.500	855	76.850	0.500
637	76.850	0.500	710	76.850	0.500	783	76.850	0.500	856	76.850	0.500
638	76.850	0.500	711	76.850	0.500	784	76.850	0.500	857	76.850	0.500
639	76.850	0.500	712	76.850	0.500	785	76.850	0.500	858	76.850	0.500
640	76.850	0.500	713	76.850	0.500	786	76.850	0.500	859	76.850	0.500
641	76.850	0.500	714	76.850	0.500	787	76.850	0.500	860	76.850	0.500
642	76.850	0.500	715	76.850	0.500	788	76.850	0.500	861	76.850	0.500
643	76.850	0.500	716	76.850	0.500	789	76.850	0.500	862	76.850	0.500
644	76.850	0.500	717	76.850	0.500	790	76.850	0.500	863	76.850	0.500
645	76.850	0.500	718	76.850	0.500	791	76.850	0.500	864	76.850	0.500
646	76.850	0.500	719	76.850	0.500	792	76.850	0.500	865	76.850	0.500
647	76.850	0.500	720	76.850	0.500	793	76.850	0.500	866	76.850	0.500
648	76.850	0.500	721	76.850	0.500	794	76.850	0.500	867	76.850	0.500
649	76.850	0.500	722	76.850	0.500	795	76.850	0.500	868	76.850	0.500
650	76.850	0.500	723	76.850	0.500	796	76.850	0.500	869	76.850	0.500
651	76.850	0.500	724	76.850	0.500	797	76.850	0.500	870	76.850	0.500
652	76.850	0.500	725	76.850	0.500	798	76.850	0.500	871	76.850	0.500
653	76.850	0.500	726	76.850	0.500	799	76.850	0.500	872	76.850	0.500
654	76.850	0.500	727	76.850	0.500	800	76.850	0.500	873	76.850	0.500
655	76.850	0.500	728	76.850	0.500	801	76.850	0.500	874	76.850	0.500
656	76.850	0.500	729	76.850	0.500	802	76.850	0.500	875	76.850	0.500
657	76.850	0.500	730	76.850	0.500	803	76.850	0.500	876	76.850	0.500
658	76.850	0.500	731	76.850	0.500	804	76.850	0.500	877	76.850	0.500
659	76.850	0.500	732	76.850	0.500	805	76.850	0.500	878	76.850	0.500
660	76.850	0.500	733	76.850	0.500	806	76.850	0.500	879	76.850	0.500
661	76.850	0.500	734	76.850	0.500	807	76.850	0.500	880	76.850	0.500
662	76.850	0.500	735	76.850	0.500	808	76.850	0.500	881	76.850	0.500
663	76.850	0.500	736	76.850	0.500	809	76.850	0.500	882	76.850	0.500
664	76.850	0.500	737	76.850	0.500	810	76.850	0.500	883	76.850	0.500
665	76.850	0.500	738	76.850	0.500	811	76.850	0.500	884	76.850	0.500
666	76.850	0.500	739	76.850	0.500	812	76.850	0.500	885	76.850	0.500
667	76.850	0.500	740	76.850	0.500	813	76.850	0.500	886	76.850	0.500
668	76.850	0.500	741	76.850	0.500	814	76.850	0.500	887	76.850	0.500
669	76.850	0.500	742	76.850	0.500	815	76.850	0.500	888	76.850	0.500
670	76.850	0.500	743	76.850	0.500	816	76.850	0.500	889	76.850	0.500
671	76.850	0.500	744	76.850	0.500	817	76.850	0.500	890	76.850	0.500
672	76.850	0.500	745	76.850	0.500	818	76.850	0.500	891	76.850	0.500
673	76.850	0.500	746	76.850	0.500	819	76.850	0.500	892	76.850	0.500
674	76.850	0.500	747	76.850	0.500	820	76.850	0.500	893	76.850	0.500
675	76.850	0.500	748	76.850	0.500	821	76.850	0.500	894	76.850	0.500
676	76.850	0.500	749	76.850	0.500	822	76.850	0.500	895	76.850	0.500

Surcharged Outfalls

Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)
896	76.850	0.500	969	76.850	0.500	1042	76.850	0.500	1115	76.850	0.500
897	76.850	0.500	970	76.850	0.500	1043	76.850	0.500	1116	76.850	0.500
898	76.850	0.500	971	76.850	0.500	1044	76.850	0.500	1117	76.850	0.500
899	76.850	0.500	972	76.850	0.500	1045	76.850	0.500	1118	76.850	0.500
900	76.850	0.500	973	76.850	0.500	1046	76.850	0.500	1119	76.850	0.500
901	76.850	0.500	974	76.850	0.500	1047	76.850	0.500	1120	76.850	0.500
902	76.850	0.500	975	76.850	0.500	1048	76.850	0.500	1121	76.850	0.500
903	76.850	0.500	976	76.850	0.500	1049	76.850	0.500	1122	76.850	0.500
904	76.850	0.500	977	76.850	0.500	1050	76.850	0.500	1123	76.850	0.500
905	76.850	0.500	978	76.850	0.500	1051	76.850	0.500	1124	76.850	0.500
906	76.850	0.500	979	76.850	0.500	1052	76.850	0.500	1125	76.850	0.500
907	76.850	0.500	980	76.850	0.500	1053	76.850	0.500	1126	76.850	0.500
908	76.850	0.500	981	76.850	0.500	1054	76.850	0.500	1127	76.850	0.500
909	76.850	0.500	982	76.850	0.500	1055	76.850	0.500	1128	76.850	0.500
910	76.850	0.500	983	76.850	0.500	1056	76.850	0.500	1129	76.850	0.500
911	76.850	0.500	984	76.850	0.500	1057	76.850	0.500	1130	76.850	0.500
912	76.850	0.500	985	76.850	0.500	1058	76.850	0.500	1131	76.850	0.500
913	76.850	0.500	986	76.850	0.500	1059	76.850	0.500	1132	76.850	0.500
914	76.850	0.500	987	76.850	0.500	1060	76.850	0.500	1133	76.850	0.500
915	76.850	0.500	988	76.850	0.500	1061	76.850	0.500	1134	76.850	0.500
916	76.850	0.500	989	76.850	0.500	1062	76.850	0.500	1135	76.850	0.500
917	76.850	0.500	990	76.850	0.500	1063	76.850	0.500	1136	76.850	0.500
918	76.850	0.500	991	76.850	0.500	1064	76.850	0.500	1137	76.850	0.500
919	76.850	0.500	992	76.850	0.500	1065	76.850	0.500	1138	76.850	0.500
920	76.850	0.500	993	76.850	0.500	1066	76.850	0.500	1139	76.850	0.500
921	76.850	0.500	994	76.850	0.500	1067	76.850	0.500	1140	76.850	0.500
922	76.850	0.500	995	76.850	0.500	1068	76.850	0.500	1141	76.850	0.500
923	76.850	0.500	996	76.850	0.500	1069	76.850	0.500	1142	76.850	0.500
924	76.850	0.500	997	76.850	0.500	1070	76.850	0.500	1143	76.850	0.500
925	76.850	0.500	998	76.850	0.500	1071	76.850	0.500	1144	76.850	0.500
926	76.850	0.500	999	76.850	0.500	1072	76.850	0.500	1145	76.850	0.500
927	76.850	0.500	1000	76.850	0.500	1073	76.850	0.500	1146	76.850	0.500
928	76.850	0.500	1001	76.850	0.500	1074	76.850	0.500	1147	76.850	0.500
929	76.850	0.500	1002	76.850	0.500	1075	76.850	0.500	1148	76.850	0.500
930	76.850	0.500	1003	76.850	0.500	1076	76.850	0.500	1149	76.850	0.500
931	76.850	0.500	1004	76.850	0.500	1077	76.850	0.500	1150	76.850	0.500
932	76.850	0.500	1005	76.850	0.500	1078	76.850	0.500	1151	76.850	0.500
933	76.850	0.500	1006	76.850	0.500	1079	76.850	0.500	1152	76.850	0.500
934	76.850	0.500	1007	76.850	0.500	1080	76.850	0.500	1153	76.850	0.500
935	76.850	0.500	1008	76.850	0.500	1081	76.850	0.500	1154	76.850	0.500
936	76.850	0.500	1009	76.850	0.500	1082	76.850	0.500	1155	76.850	0.500
937	76.850	0.500	1010	76.850	0.500	1083	76.850	0.500	1156	76.850	0.500
938	76.850	0.500	1011	76.850	0.500	1084	76.850	0.500	1157	76.850	0.500
939	76.850	0.500	1012	76.850	0.500	1085	76.850	0.500	1158	76.850	0.500
940	76.850	0.500	1013	76.850	0.500	1086	76.850	0.500	1159	76.850	0.500
941	76.850	0.500	1014	76.850	0.500	1087	76.850	0.500	1160	76.850	0.500
942	76.850	0.500	1015	76.850	0.500	1088	76.850	0.500	1161	76.850	0.500
943	76.850	0.500	1016	76.850	0.500	1089	76.850	0.500	1162	76.850	0.500
944	76.850	0.500	1017	76.850	0.500	1090	76.850	0.500	1163	76.850	0.500
945	76.850	0.500	1018	76.850	0.500	1091	76.850	0.500	1164	76.850	0.500
946	76.850	0.500	1019	76.850	0.500	1092	76.850	0.500	1165	76.850	0.500
947	76.850	0.500	1020	76.850	0.500	1093	76.850	0.500	1166	76.850	0.500
948	76.850	0.500	1021	76.850	0.500	1094	76.850	0.500	1167	76.850	0.500
949	76.850	0.500	1022	76.850	0.500	1095	76.850	0.500	1168	76.850	0.500
950	76.850	0.500	1023	76.850	0.500	1096	76.850	0.500	1169	76.850	0.500
951	76.850	0.500	1024	76.850	0.500	1097	76.850	0.500	1170	76.850	0.500
952	76.850	0.500	1025	76.850	0.500	1098	76.850	0.500	1171	76.850	0.500
953	76.850	0.500	1026	76.850	0.500	1099	76.850	0.500	1172	76.850	0.500
954	76.850	0.500	1027	76.850	0.500	1100	76.850	0.500	1173	76.850	0.500
955	76.850	0.500	1028	76.850	0.500	1101	76.850	0.500	1174	76.850	0.500
956	76.850	0.500	1029	76.850	0.500	1102	76.850	0.500	1175	76.850	0.500
957	76.850	0.500	1030	76.850	0.500	1103	76.850	0.500	1176	76.850	0.500
958	76.850	0.500	1031	76.850	0.500	1104	76.850	0.500	1177	76.850	0.500
959	76.850	0.500	1032	76.850	0.500	1105	76.850	0.500	1178	76.850	0.500
960	76.850	0.500	1033	76.850	0.500	1106	76.850	0.500	1179	76.850	0.500
961	76.850	0.500	1034	76.850	0.500	1107	76.850	0.500	1180	76.850	0.500
962	76.850	0.500	1035	76.850	0.500	1108	76.850	0.500	1181	76.850	0.500
963	76.850	0.500	1036	76.850	0.500	1109	76.850	0.500	1182	76.850	0.500
964	76.850	0.500	1037	76.850	0.500	1110	76.850	0.500	1183	76.850	0.500
965	76.850	0.500	1038	76.850	0.500	1111	76.850	0.500	1184	76.850	0.500
966	76.850	0.500	1039	76.850	0.500	1112	76.850	0.500	1185	76.850	0.500
967	76.850	0.500	1040	76.850	0.500	1113	76.850	0.500	1186	76.850	0.500
968	76.850	0.500	1041	76.850	0.500	1114	76.850	0.500	1187	76.850	0.500

Surcharged Outfalls

Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)	Time (mins)	Level (m)	Depth (m)
1188	76.850	0.500	1252	76.850	0.500	1316	76.850	0.500	1380	76.850	0.500
1189	76.850	0.500	1253	76.850	0.500	1317	76.850	0.500	1381	76.850	0.500
1190	76.850	0.500	1254	76.850	0.500	1318	76.850	0.500	1382	76.850	0.500
1191	76.850	0.500	1255	76.850	0.500	1319	76.850	0.500	1383	76.850	0.500
1192	76.850	0.500	1256	76.850	0.500	1320	76.850	0.500	1384	76.850	0.500
1193	76.850	0.500	1257	76.850	0.500	1321	76.850	0.500	1385	76.850	0.500
1194	76.850	0.500	1258	76.850	0.500	1322	76.850	0.500	1386	76.850	0.500
1195	76.850	0.500	1259	76.850	0.500	1323	76.850	0.500	1387	76.850	0.500
1196	76.850	0.500	1260	76.850	0.500	1324	76.850	0.500	1388	76.850	0.500
1197	76.850	0.500	1261	76.850	0.500	1325	76.850	0.500	1389	76.850	0.500
1198	76.850	0.500	1262	76.850	0.500	1326	76.850	0.500	1390	76.850	0.500
1199	76.850	0.500	1263	76.850	0.500	1327	76.850	0.500	1391	76.850	0.500
1200	76.850	0.500	1264	76.850	0.500	1328	76.850	0.500	1392	76.850	0.500
1201	76.850	0.500	1265	76.850	0.500	1329	76.850	0.500	1393	76.850	0.500
1202	76.850	0.500	1266	76.850	0.500	1330	76.850	0.500	1394	76.850	0.500
1203	76.850	0.500	1267	76.850	0.500	1331	76.850	0.500	1395	76.850	0.500
1204	76.850	0.500	1268	76.850	0.500	1332	76.850	0.500	1396	76.850	0.500
1205	76.850	0.500	1269	76.850	0.500	1333	76.850	0.500	1397	76.850	0.500
1206	76.850	0.500	1270	76.850	0.500	1334	76.850	0.500	1398	76.850	0.500
1207	76.850	0.500	1271	76.850	0.500	1335	76.850	0.500	1399	76.850	0.500
1208	76.850	0.500	1272	76.850	0.500	1336	76.850	0.500	1400	76.850	0.500
1209	76.850	0.500	1273	76.850	0.500	1337	76.850	0.500	1401	76.850	0.500
1210	76.850	0.500	1274	76.850	0.500	1338	76.850	0.500	1402	76.850	0.500
1211	76.850	0.500	1275	76.850	0.500	1339	76.850	0.500	1403	76.850	0.500
1212	76.850	0.500	1276	76.850	0.500	1340	76.850	0.500	1404	76.850	0.500
1213	76.850	0.500	1277	76.850	0.500	1341	76.850	0.500	1405	76.850	0.500
1214	76.850	0.500	1278	76.850	0.500	1342	76.850	0.500	1406	76.850	0.500
1215	76.850	0.500	1279	76.850	0.500	1343	76.850	0.500	1407	76.850	0.500
1216	76.850	0.500	1280	76.850	0.500	1344	76.850	0.500	1408	76.850	0.500
1217	76.850	0.500	1281	76.850	0.500	1345	76.850	0.500	1409	76.850	0.500
1218	76.850	0.500	1282	76.850	0.500	1346	76.850	0.500	1410	76.850	0.500
1219	76.850	0.500	1283	76.850	0.500	1347	76.850	0.500	1411	76.850	0.500
1220	76.850	0.500	1284	76.850	0.500	1348	76.850	0.500	1412	76.850	0.500
1221	76.850	0.500	1285	76.850	0.500	1349	76.850	0.500	1413	76.850	0.500
1222	76.850	0.500	1286	76.850	0.500	1350	76.850	0.500	1414	76.850	0.500
1223	76.850	0.500	1287	76.850	0.500	1351	76.850	0.500	1415	76.850	0.500
1224	76.850	0.500	1288	76.850	0.500	1352	76.850	0.500	1416	76.850	0.500
1225	76.850	0.500	1289	76.850	0.500	1353	76.850	0.500	1417	76.850	0.500
1226	76.850	0.500	1290	76.850	0.500	1354	76.850	0.500	1418	76.850	0.500
1227	76.850	0.500	1291	76.850	0.500	1355	76.850	0.500	1419	76.850	0.500
1228	76.850	0.500	1292	76.850	0.500	1356	76.850	0.500	1420	76.850	0.500
1229	76.850	0.500	1293	76.850	0.500	1357	76.850	0.500	1421	76.850	0.500
1230	76.850	0.500	1294	76.850	0.500	1358	76.850	0.500	1422	76.850	0.500
1231	76.850	0.500	1295	76.850	0.500	1359	76.850	0.500	1423	76.850	0.500
1232	76.850	0.500	1296	76.850	0.500	1360	76.850	0.500	1424	76.850	0.500
1233	76.850	0.500	1297	76.850	0.500	1361	76.850	0.500	1425	76.850	0.500
1234	76.850	0.500	1298	76.850	0.500	1362	76.850	0.500	1426	76.850	0.500
1235	76.850	0.500	1299	76.850	0.500	1363	76.850	0.500	1427	76.850	0.500
1236	76.850	0.500	1300	76.850	0.500	1364	76.850	0.500	1428	76.850	0.500
1237	76.850	0.500	1301	76.850	0.500	1365	76.850	0.500	1429	76.850	0.500
1238	76.850	0.500	1302	76.850	0.500	1366	76.850	0.500	1430	76.850	0.500
1239	76.850	0.500	1303	76.850	0.500	1367	76.850	0.500	1431	76.850	0.500
1240	76.850	0.500	1304	76.850	0.500	1368	76.850	0.500	1432	76.850	0.500
1241	76.850	0.500	1305	76.850	0.500	1369	76.850	0.500	1433	76.850	0.500
1242	76.850	0.500	1306	76.850	0.500	1370	76.850	0.500	1434	76.850	0.500
1243	76.850	0.500	1307	76.850	0.500	1371	76.850	0.500	1435	76.850	0.500
1244	76.850	0.500	1308	76.850	0.500	1372	76.850	0.500	1436	76.850	0.500
1245	76.850	0.500	1309	76.850	0.500	1373	76.850	0.500	1437	76.850	0.500
1246	76.850	0.500	1310	76.850	0.500	1374	76.850	0.500	1438	76.850	0.500
1247	76.850	0.500	1311	76.850	0.500	1375	76.850	0.500	1439	76.850	0.500
1248	76.850	0.500	1312	76.850	0.500	1376	76.850	0.500	1440	76.850	0.500
1249	76.850	0.500	1313	76.850	0.500	1377	76.850	0.500			
1250	76.850	0.500	1314	76.850	0.500	1378	76.850	0.500			
1251	76.850	0.500	1315	76.850	0.500	1379	76.850	0.500			

On-Line Controls (Hydro-Brake®)

US/PN	Volume (m^3)	Ctrl MH Name	Invert (m)	Type	Dia (m)	D.Head (m)	D.Flow (l/s)	Headloss (m)	Flow (l/s)
1.002	0.530	4	76.325	Md6 SW Only	0.072	0.755	2.5	0.1	1.8
								0.2	2.0
								0.3	1.9
								0.4	2.0
								0.5	2.1
								0.6	2.3
								0.7	2.4
								0.8	2.6
								0.9	2.8
								1.0	2.9
								1.2	3.2
								1.4	3.5
								1.6	3.7

Storage Pond at pipe 1.000 USMH 1

Storage Pond Invert Level (m) 76.680

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.0	1341.2	0.5	0.0	1.0	0.0	1.5	0.0	2.0	0.0	2.5	0.0
0.1	1341.2	0.6	0.0	1.1	0.0	1.6	0.0	2.1	0.0		
0.2	1341.2	0.7	0.0	1.2	0.0	1.7	0.0	2.2	0.0		
0.3	1341.2	0.8	0.0	1.3	0.0	1.8	0.0	2.3	0.0		
0.4	1341.2	0.9	0.0	1.4	0.0	1.9	0.0	2.4	0.0		

Network Details

* - Indicates pipe has been modified outside of WinDes's Storm/Foul & Schedules

PN	Length (m)	Fall (m)	Slope (1:x)	Area (ha)	T.E. (mins)	Rain Pro	k (mm)	Hyd Sect	Dia (mm)
1.000	26.99	0.103	262.0	0.425	5.00	1	0.600	o	225
1.001	38.29	0.146	262.2	0.143	0.00	1	0.600	o	225
1.002	14.54	0.056	259.6	0.062	0.00	1	0.600	o	225
1.003	3.72	0.125	29.8	0.000	0.00	1	0.600	o	150

PN	USMH No.	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl No.	US/MH (mm)
1.000	1	77.350	76.680	0.445	77.340	76.577	0.538		1200
1.001	2	77.340	76.577	0.538	77.570	76.431	0.914		1200
1.002	3	77.570	76.431	0.914	77.730	76.375	1.130		1200
1.003	4	77.730	76.325	1.255	77.740	76.200	1.390	9	1200

PIPELINE SCHEDULES

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH No.	C.Level (m)	I.Level (m)	C.Depth (m)	MH DIAM., L*W (mm)
1.000	o	225	1	77.350	76.680	0.445	1200
1.001	o	225	2	77.340	76.577	0.538	1200
1.002	o	225	3	77.570	76.431	0.914	1200
1.003	o	150	4	77.730	76.325	1.255	1200

Downstream Manhole

PN	Length (m)	Slope (1:x)	MH No.	C.Level (m)	I.Level (m)	C.Depth (m)	MH DIAM., L*W (mm)
1.000	26.99	262.0	2	77.340	76.577	0.538	1200
1.001	38.29	262.2	3	77.570	76.431	0.914	1200
1.002	14.54	259.6	4	77.730	76.375	1.130	1200
1.003	3.72	29.8	S5	77.740	76.200	1.390	1200

MANHOLE SCHEDULES

M/Hole Number	Cover Level (m)	M/Hole Depth (m)	M/Hole Diam.,L*W (mm)	Pipes Out PN	Pipes Out IL.(m)	Pipes Out D (mm)	Pipes In PN	Pipes In IL.(m)	Pipes In D (mm)
1	77.350	0.670	1200	1.000	76.680	225			
2	77.340	0.763	1200	1.001	76.577	225	1.000	76.577	225
3	77.570	1.139	1200	1.002	76.431	225	1.001	76.431	225
4	77.730	1.405	1200	1.003	76.325	150	1.002	76.375	225
S5	77.740	1.540	1200		OUTFALL		1.003	76.200	150

Summary Wizard of "CRITICAL BY RETURN PERIOD"(Rank 1 by Max Level)
Results for Design Storms

Margin for Flood Risk warning (mm)	300	Inertia Status	ON
DTS Status	OFF	Analysis Time Step	Fine
DVD Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	2, 30, 100
Climate Change (%)	20, 20, 20

PN	Storm	Return Period	Climate Change	Rank	First X Surcharge	First Y Flood	First Z Overflow	O/F Act
1.000	1440 Winter	2	20%	1	30/1440 Summer			
1.001	15 Winter	2	20%	1	2/15 Summer	100/15 Summer		
1.002	15 Winter	2	20%	1	2/15 Summer	100/15 Summer		
1.003	15 Winter	2	20%	1	2/15 Summer			

Lvl Ex.	PN	Water Lvl. (m)	Surcharged Depth (m)	Flooded Vol (m³)	Flow/ Capacity	Overflow (l/s)	Pipe Flow (l/s)	Status
	1.000	76.860	-0.045	0.000	0.08	0.0	2.4	O K
3	1.001	77.028	0.226	0.000	0.34	0.0	10.4	SURCH'ED
	1.002	77.091	0.435	0.000	0.15	0.0	4.2	SURCH'ED
	1.003	77.087	0.612	0.000	0.09	0.0	2.0	SURCH'ED

Summary Wizard of "CRITICAL BY RETURN PERIOD"(Rank 1 by Max Level)
Results for Design Storms

Margin for Flood Risk warning (mm)	300	Inertia Status	ON
DTS Status	OFF	Analysis Time Step	Fine
DVD Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	2, 30, 100
Climate Change (%)	20, 20, 20

PN	Storm	Return Period	Climate Change	Rank	First X Surcharge	First Y Flood	First Z Overflow	O/F Act
1.000	1440 Winter	30	20%	1	30/1440 Summer			
1.001	15 Summer	30	20%	1	2/15 Summer	100/15 Summer		
1.002	15 Summer	30	20%	1	2/15 Summer	100/15 Summer		
1.003	15 Summer	30	20%	1	2/15 Summer			

Lvl Ex.	PN	Water Lvl. (m)	Surcharged Depth (m)	Flooded Vol (m³)	Flow/ Capacity	Overflow (l/s)	Pipe Flow (l/s)	Status
	1.000	76.946	0.041	0.000	0.09	0.0	2.7	SURCH'ED
3	1.001	77.339	0.537	0.000	0.33	0.0	9.9	FLD RISK
	1.002	77.520	0.864	0.000	0.27	0.0	7.6	FLD RISK
	1.003	77.520	1.045	0.000	0.10	0.0	2.3	FLD RISK

Summary Wizard of "CRITICAL BY RETURN PERIOD"(Rank 1 by Max Level)
Results for Design Storms

Margin for Flood Risk warning (mm)	300	Inertia Status	ON
DTS Status	OFF	Analysis Time Step	Fine
DVD Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	2, 30, 100
Climate Change (%)	20, 20, 20

PN	Storm	Return Period	Climate Change	Rank	First X Surcharge	First Y Flood	First Z Overflow	O/F Act
1.000	2160 Winter	100	20%	1	30/1440 Summer			
1.001	15 Winter	100	20%	1	2/15 Summer	100/15 Summer		
1.002	15 Summer	100	20%	1	2/15 Summer	100/15 Summer		
1.003	15 Summer	100	20%	1	2/15 Summer			

Lvl Ex.	PN	Water Lvl. (m)	Surcharged Depth (m)	Flooded Vol (m³)	Flow/ Capacity	Overflow (l/s)	Pipe Flow (l/s)	Status
	1.000	77.011	0.106	0.000	0.09	0.0	2.7	SURCH'ED
3	1.001	77.346	0.544	5.750	0.38	0.0	11.4	FLOOD
	1.002	77.570	0.914	0.336	0.30	0.0	8.6	FLOOD
	1.003	77.576	1.101	0.000	0.11	0.0	2.5	FLD RISK