

5017735: Cowplain, Hart Avenue	Date: 09/11/2022			RIDGE
	Designed by:	Checked by:	Approved By:	
Report Details:	BT			
Type: Inflows Storm Phase: Phase	Ridge:			



Catchment Area

Type : Catchment Area

Area (ha)	0.008
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



Catchment Area (1)

Type : Catchment Area

Area (ha)	0.006
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

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Catchment Area (2)

Type : Catchment Area

Area (ha)	0.006
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



Catchment Area (3)

Type : Catchment Area

Area (ha)	0.006
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

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Catchment Area (4)

Type : Catchment Area

Area (ha)	0.006
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



Catchment Area (5)

Type : Catchment Area

Area (ha)	0.008
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

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Catchment Area (6)

Type : Catchment Area

Area (ha)	0.002
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



Catchment Area (7)

Type : Catchment Area

Area (ha)	0.002
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

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Catchment Area (8)

Type : Catchment Area

Area (ha)	0.002
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



Catchment Area (9)

Type : Catchment Area

Area (ha)	0.002
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

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Catchment Area (10)

Type : Catchment Area

Area (ha)	0.002
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



Catchment Area (11)

Type : Catchment Area

Area (ha)	0.002
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

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Catchment Area (12)

Type : Catchment Area

Area (ha)	0.011
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



Catchment Area (13)

Type : Catchment Area

Area (ha)	0.011
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

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	Ridge:			
Report Details: Type: Inflows Storm Phase: Phase				



Catchment Area (14)

Type : Catchment Area

Area (ha)	0.011
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

5017735: Cowplain, Hart Avenue	Date: 09/11/2022		
	Designed by: BT	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: Phase	Ridge:		

RIDGE

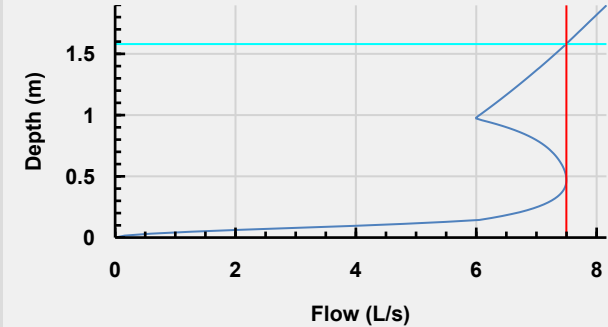
Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)	Lock
2	Manhole	468529.276	110814.519	0.000	1.350	-1.350	Circular	1.500	None
3	Manhole	468546.269	110815.311	0.000	1.520	-1.520	Circular	1.500	None
4	Manhole	468552.255	110815.636	0.000	1.580	-1.580	Circular	1.200	None
7	Manhole	468551.820	110825.043	0.000	1.785	-1.785	Circular	1.200	None
6	Manhole	468563.245	110816.059	0.000	1.335	-1.335	Circular	1.200	None

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
2	Inlet	Catchment Area	(None)	No Restriction
	Inlet (1)	Catchment Area (12) Catchment Area (1) Catchment Area (11) Catchment Area (10)	(None)	No Restriction
3	Inlet	Catchment Area (13) Catchment Area (8) Catchment Area (3)	(None)	No Restriction
	Inlet (1)	1.001 Catchment Area (2) Catchment Area (9)	(None)	No Restriction
4	Inlet	1.002	(None)	No Restriction
	Inlet (1)	2.001	(None)	No Restriction
7	Inlet	1.003	(None)	No Restriction
6	Inlet	Catchment Area (4) Catchment Area (5) Catchment Area (7)	(None)	No Restriction
	Inlet (1)	Catchment Area (14)	(None)	No Restriction
	Inlet (2)	Catchment Area (6)	(None)	No Restriction

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Report Details: Type: Junctions Storm Phase: Phase	BT			
	Ridge:			

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
2	Outlet	1.001	Free Discharge
3	Outlet	1.002	Free Discharge
4	Outlet	1.003	Hydro-Brake®
	Invert Level (m)	-1.580	
	Design Depth (m)	1.580	
	Design Flow (L/s)	7.5	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☒	
	Unit Reference	SHE-0119-7500-1580-7500	
			
6	Outlet	2.001	Free Discharge

5017735: Cowplain, Hart Avenue	Date: 09/11/2022			RIDGE
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Report Details: Type: Network Design Criteria Storm Phase: Phase	Ridge:			

Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Backdrop (m)	0.000
Max. Backdrop (m)	0.000
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Manhole Options

Apply Offset	☐
An error has occurred while processing TextBox 'txtSynchroniseManholeInvertLevelsHeader': The expression contains object 'SynchroniseManholeInvertLevelsTitle' that is not defined in the current context.	☐

5017735: Cowplain, Hart Avenue	Date: 09/11/2022			RIDGE
	Designed by: BT	Checked by:	Approved By:	
Report Title: Rainfall Analysis Criteria	Ridge:			

Runoff Type	Dynamic
Output Interval (mins)	1
Time Step	Shortest
Urban Creep	Use Catchment Values
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR	Type: FSR
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Region	England And Wales
M5-60 (mm)	19.6
Ratio R	0.337
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000
30.0	0.000
100.0	0.000
100.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
240	480
360	720
480	960
960	1920
1440	2880

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Report Details: Type: Junctions Summary Storm Phase: Phase	Ridge:			



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
2	FSR: 1 years: +0 %: 15 mins: Winter	0.000	-1.350	-1.321	0.029	4.1	0.052	0.000	4.0	1.910	OK
3	FSR: 1 years: +0 %: 15 mins: Winter	0.000	-1.520	-1.328	0.192	7.7	0.340	0.000	4.5	3.592	OK
4	FSR: 1 years: +0 %: 15 mins: Winter	0.000	-1.580	-1.328	0.252	7.7	0.285	0.000	6.7	5.414	Surcharged
7	FSR: 1 years: +0 %: 15 mins: Winter	0.000	-1.785	-1.740	0.045	6.7	0.000	0.000	6.7	5.407	OK
6	FSR: 1 years: +0 %: 15 mins: Winter	0.000	-1.335	-1.290	0.045	4.0	0.051	0.000	3.9	1.835	OK

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Report Details: Type: Junctions Summary Storm Phase: Phase	Ridge:			



FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
2	FSR: 30 years: +0 %: 30 mins: Winter	0.000	-1.350	-1.085	0.265	7.9	0.469	0.000	5.5	6.218	OK
3	FSR: 30 years: +0 %: 30 mins: Winter	0.000	-1.520	-1.085	0.436	11.5	0.770	0.000	5.8	11.800	OK
4	FSR: 30 years: +0 %: 30 mins: Winter	0.000	-1.580	-1.085	0.496	11.2	0.560	0.000	7.5	17.850	Surcharged
7	FSR: 30 years: +0 %: 30 mins: Winter	0.000	-1.785	-1.738	0.047	7.5	0.000	0.000	7.5	17.844	OK
6	FSR: 30 years: +0 %: 30 mins: Winter	0.000	-1.335	-1.085	0.251	7.8	0.283	0.000	6.3	6.017	OK

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FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
2	FSR: 100 years: +0 %: 30 mins: Winter	0.000	-1.350	-0.939	0.411	10.3	0.727	0.000	5.7	8.109	OK
3	FSR: 100 years: +0 %: 30 mins: Winter	0.000	-1.520	-0.939	0.581	13.8	1.027	0.000	6.4	15.087	OK
4	FSR: 100 years: +0 %: 30 mins: Winter	0.000	-1.580	-0.939	0.641	12.8	0.725	0.000	7.5	22.731	Surcharged
7	FSR: 100 years: +0 %: 15 mins: Winter	0.000	-1.785	-1.738	0.047	7.5	0.000	0.000	7.5	11.147	OK
6	FSR: 100 years: +0 %: 30 mins: Winter	0.000	-1.335	-0.939	0.396	10.1	0.448	0.000	7.1	7.868	OK

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Report Details: Type: Connections Summary Storm Phase: Phase	Ridge:			



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.001	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	2	3	0.000	-1.321	0.108	1.910	0.3	0	4.0	OK
1.002	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	3	4	0.000	-1.328	0.222	3.592	0.3	0	4.5	OK
1.003	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	4	7	0.000	-1.328	0.046	5.407	1.2	0.09	6.7	Surcharge d
2.001	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	6	4	0.000	-1.290	0.040	1.835	0.4	0.01	3.9	OK

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Report Details: Type: Connections Summary Storm Phase: Phase	Ridge:			



FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.001	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	2	3	0.000	-1.102	0.333	4.449	0.4	0.01	7.3	OK
1.002	FSR: 30 years: +0 %: 15 mins: Summer	Pipe	3	4	0.000	-1.140	0.410	6.964	0.3	0.01	7.4	OK
1.003	FSR: 30 years: +0 %: 30 mins: Winter	Pipe	4	7	0.000	-1.085	0.048	17.844	1.2	0.1	7.5	Surcharge d
2.001	FSR: 30 years: +0 %: 15 mins: Summer	Pipe	6	4	0.000	-1.139	0.206	3.959	0.5	0.02	8.7	OK

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	Ridge:			



FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.001	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	2	3	0.000	-1.041	0.393	4.702	0.4	0.01	8.8	OK
1.002	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	3	4	0.000	-1.043	0.508	7.332	0.3	0.01	7.0	OK
1.003	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	4	7	0.000	-0.989	0.048	11.147	1.2	0.1	7.5	Surcharge d
2.001	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	6	4	0.000	-1.043	0.303	4.836	0.5	0.02	9.5	OK