

Project: 18/MES/0107 33kV GRID PARK COMPOUND AND ACCESS ROAD DRAINAGE CALCULATIONS	Date: 14/02/2025			
	Designed by: KB	Checked by: WSW	Approved By: AM	
Report Details: Type: Manhole Schedule Storm Phase: Civils1	Company Address: STANTEC UK LIMITED UNIT 10, CONNECT 38, 1 DOVER PLACE ASHFORD, KENT, TN23 1FB			

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
S1	41.444 40.348	Diameter / Length: 1.200 Width: 0.750					Manhole - Access not Required
E:389911.063 N:166487.605	1.096		{a} S1.000	Pipe	40.348	Diam/Width:150	Not Applicable
S2	41.260 40.260	Diameter / Length: 1.200 Width: 0.750	{1} S1.000	Pipe	40.260	Diam/Width:150	Manhole - Access not Required
E:389918.477 N:166487.221	1.000		{a} S1.001	Pipe	40.260	Diam/Width:150	Not Applicable
S3	41.128 40.032	Diameter / Length: 1.200 Width: 0.750	{1} S1.001	Pipe	40.107	Diam/Width:150	Manhole - Access not Required
E:389916.116 N:166444.111	1.096		{2} S2.001	Pipe	40.649	Diam/Width:225	
			{a} S1.002	Pipe	40.032	Diam/Width:225	Not Applicable
S4	41.108 39.986	Diameter / Length: 1.200 Width: 0.750	{1} S1.002	Pipe	39.986	Diam/Width:225	Manhole - Access not Required
E:389907.828 N:166430.569	1.122		{a} S1.003	Pipe	39.986	Diam/Width:225	Not Applicable
S5	41.217 39.931	Diameter / Length: 1.200 Width: 0.825	{1} S1.003	Pipe	39.931	Diam/Width:225	Manhole - Access not Required
E:389894.711 N:166420.371	1.287		{a} S1.004	Pipe	39.931	Diam/Width:225	Not Applicable
S7	40.825 39.934	Diameter / Length: 1.200 Width: 0.750	{1} S3.000	Pipe	39.934	Diam/Width:150	Manhole - Access not Required
E:389841.939 N:166332.386	0.891		{a} S3.001	Pipe	39.934	Diam/Width:225	Not Applicable

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Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
S6	40.925 40.000	Diameter / Length: 1.200 Width: 0.750					Manhole - Access not Required
E:389834.644 N:166336.551	0.925		{a} S3.000	Pipe	40.000	Diam/Width:150	Not Applicable

Project: 18/MES/0107 33kV GRID PARK COMPOUND AND ACCESS ROAD DRAINAGE CALCULATIONS	Date: 14/02/2025			
Report Details: Type: Network Design Criteria Storm Phase: Civils1	Designed by: KB		Checked by: WSW	Approved By: AM
Company Address: STANTEC UK LIMITED UNIT 10, CONNECT 38, 1 DOVER PLACE ASHFORD, KENT, TN23 1FB				

Flow Options	
Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30
FSR	
Type: FSR	
Return Period (years)	2.0
Region	England and Wales
M5-60 (mm)	21.0
Ratio R	0.400

Pipe Options	
Lock Slope Options	None
Design Level	Level Soffits
Min. Cover Depth (m)	0.900
Min. Slope (1:x)	500.00
Max. Slope (1:x)	15.00
Min. Backdrop (m)	0.000
Max. Backdrop (m)	1.500
Min. Velocity (m/s)	0.75
Max. Velocity (m/s)	3.0
Use Flow Restriction	☒
Reduce Channel Depths	☐

Pipe Size Library		
Default		
Add. Increment (mm)	75	
Diameter (mm)	Min. Slope (1:x)	Max. Slope (1:x)
100	0.00	0.00
150	0.00	0.00

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Manhole Options

Apply Offset	☐
Synchronise Manhole Invert Levels	☐

Manhole Size Library

Default

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
0	1.200	0.000
375	1.350	0.000
500	1.500	0.000
750	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth

Depth (m)	Diameter / Length (m)	Width (m)
0.000	1.050	0.000
1.500	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

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FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow (m³)
Catchment Area	FSR: 2 years: +0 %: 15 mins: Winter	0.01	2.2	1.030
Catchment Area (1)	FSR: 2 years: +0 %: 15 mins: Winter	0.02	3.2	1.471
Catchment Area (2)	FSR: 2 years: +0 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (3)	FSR: 2 years: +0 %: 15 mins: Winter	0.02	3.5	1.615
Catchment Area (4)	FSR: 2 years: +0 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (5)	FSR: 2 years: +0 %: 15 mins: Winter	0.03	5.8	2.662
Catchment Area (6)	FSR: 2 years: +0 %: 15 mins: Winter	0.01	2.4	1.092
Catchment Area (7)	FSR: 2 years: +0 %: 15 mins: Winter	0.02	3.5	1.624
Catchment Area (8)	FSR: 2 years: +0 %: 15 mins: Winter	0.01	2.3	1.054
Catchment Area (9)	FSR: 2 years: +0 %: 15 mins: Winter	0.01	2.5	1.146
Catchment Area (11)	FSR: 2 years: +0 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (13)	FSR: 2 years: +0 %: 15 mins: Winter	0.01	1.1	0.495
Catchment Area (10)	FSR: 2 years: +0 %: 15 mins: Winter	0.01	1.7	0.782
Catchment Area (12)	FSR: 2 years: +0 %: 15 mins: Winter	0.00	0.6	0.284
Catchment Area (14)	FSR: 2 years: +0 %: 15 mins: Winter	0.00	0.5	0.209
Catchment Area (15)	FSR: 2 years: +0 %: 15 mins: Winter	0.00	0.6	0.272
Catchment Area (16)	FSR: 2 years: +0 %: 15 mins: Winter	0.01	2.9	1.313

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ASHFORD, KENT, TN23 1FB

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FSR: 10 years: Increase Rainfall (%): +0: Critical Storm Per Item

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow (m³)
Catchment Area	FSR: 10 years: +0 %: 15 mins: Winter	0.01	3.4	1.542
Catchment Area (1)	FSR: 10 years: +0 %: 15 mins: Winter	0.02	4.8	2.205
Catchment Area (2)	FSR: 10 years: +0 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (3)	FSR: 10 years: +0 %: 15 mins: Winter	0.02	5.2	2.415
Catchment Area (4)	FSR: 10 years: +0 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (5)	FSR: 10 years: +0 %: 15 mins: Winter	0.03	8.7	3.992
Catchment Area (6)	FSR: 10 years: +0 %: 15 mins: Winter	0.01	3.6	1.638
Catchment Area (7)	FSR: 10 years: +0 %: 15 mins: Winter	0.02	5.3	2.439
Catchment Area (8)	FSR: 10 years: +0 %: 15 mins: Winter	0.01	3.4	1.572
Catchment Area (9)	FSR: 10 years: +0 %: 15 mins: Winter	0.01	3.7	1.721
Catchment Area (11)	FSR: 10 years: +0 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (13)	FSR: 10 years: +0 %: 15 mins: Winter	0.01	1.6	0.738
Catchment Area (10)	FSR: 10 years: +0 %: 15 mins: Winter	0.01	2.5	1.174
Catchment Area (12)	FSR: 10 years: +0 %: 15 mins: Winter	0.00	0.9	0.424
Catchment Area (14)	FSR: 10 years: +0 %: 15 mins: Winter	0.00	0.7	0.320
Catchment Area (15)	FSR: 10 years: +0 %: 15 mins: Winter	0.00	0.9	0.406
Catchment Area (16)	FSR: 10 years: +0 %: 15 mins: Winter	0.01	4.3	1.966

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FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow (m³)
Catchment Area	FSR: 30 years: +20 %: 15 mins: Winter	0.01	5.1	2.357
Catchment Area (1)	FSR: 30 years: +20 %: 15 mins: Winter	0.02	7.3	3.368
Catchment Area (2)	FSR: 30 years: +20 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (3)	FSR: 30 years: +20 %: 15 mins: Winter	0.02	8.0	3.688
Catchment Area (4)	FSR: 30 years: +20 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (5)	FSR: 30 years: +20 %: 15 mins: Winter	0.03	13.2	6.090
Catchment Area (6)	FSR: 30 years: +20 %: 15 mins: Winter	0.01	5.4	2.495
Catchment Area (7)	FSR: 30 years: +20 %: 15 mins: Winter	0.02	8.1	3.715
Catchment Area (8)	FSR: 30 years: +20 %: 15 mins: Winter	0.01	5.2	2.405
Catchment Area (9)	FSR: 30 years: +20 %: 15 mins: Winter	0.01	5.7	2.629
Catchment Area (11)	FSR: 30 years: +20 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (13)	FSR: 30 years: +20 %: 15 mins: Winter	0.01	2.5	1.131
Catchment Area (10)	FSR: 30 years: +20 %: 15 mins: Winter	0.01	3.9	1.789
Catchment Area (12)	FSR: 30 years: +20 %: 15 mins: Winter	0.00	1.4	0.646
Catchment Area (14)	FSR: 30 years: +20 %: 15 mins: Winter	0.00	1.0	0.482
Catchment Area (15)	FSR: 30 years: +20 %: 15 mins: Winter	0.00	1.3	0.616
Catchment Area (16)	FSR: 30 years: +20 %: 15 mins: Winter	0.01	6.5	3.006

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FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow (m³)
Catchment Area	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.0	3.719
Catchment Area (1)	FSR: 100 years: +45 %: 15 mins: Winter	0.02	11.5	5.313
Catchment Area (2)	FSR: 100 years: +45 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (3)	FSR: 100 years: +45 %: 15 mins: Winter	0.02	12.6	5.814
Catchment Area (4)	FSR: 100 years: +45 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (5)	FSR: 100 years: +45 %: 15 mins: Winter	0.03	20.7	9.602
Catchment Area (6)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.5	3.932
Catchment Area (7)	FSR: 100 years: +45 %: 15 mins: Winter	0.02	12.7	5.862
Catchment Area (8)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.2	3.788
Catchment Area (9)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.9	4.139
Catchment Area (11)	FSR: 100 years: +45 %: 15 mins: Summer	0.00	0.0	0.000
Catchment Area (13)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	3.9	1.783
Catchment Area (10)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	6.1	2.816
Catchment Area (12)	FSR: 100 years: +45 %: 15 mins: Winter	0.00	2.2	1.015
Catchment Area (14)	FSR: 100 years: +45 %: 15 mins: Winter	0.00	1.6	0.759
Catchment Area (15)	FSR: 100 years: +45 %: 15 mins: Winter	0.00	2.1	0.976
Catchment Area (16)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	10.2	4.737

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	Designed by: KB	Checked by: WSW	Approved By: AM
Report Details: Type: Junctions Summary Storm Phase: Civils1	Company Address: STANTEC UK LIMITED UNIT 10, CONNECT 38, 1 DOVER PLACE ASHFORD, KENT, TN23 1FB		





FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item

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
S1	FSR: 2 years: +0 %: 120 mins: Summer	41.444	40.348	40.851	0.503	1.0	0.452	0.000	0.9	1.319	Surcharged
S2	FSR: 2 years: +0 %: 120 mins: Summer	41.260	40.260	40.849	0.590	2.8	0.531	0.000	0.8	1.177	Surcharged
S3	FSR: 2 years: +0 %: 240 mins: Winter	41.128	40.032	40.844	0.812	2.2	0.731	0.000	2.5	7.299	Flood Risk
S4	FSR: 2 years: +0 %: 240 mins: Winter	41.108	39.986	40.841	0.856	2.9	0.770	0.000	3.2	7.617	Flood Risk
S5	FSR: 2 years: +0 %: 180 mins: Winter	41.217	39.931	40.840	0.909	2.1	0.900	0.000	2.8	4.882	Surcharged
S7	FSR: 2 years: +0 %: 30 mins: Summer	40.825	39.934	40.808	0.874	6.4	0.787	0.000	7.6	1.936	Flood Risk
S6	FSR: 2 years: +0 %: 60 mins: Winter	40.925	40.000	40.811	0.811	1.8	0.730	0.000	0.6	0.786	Flood Risk

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FSR: 10 years: Increase Rainfall (%): +0: Critical Storm Per Item

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
S1	FSR: 10 years: +0 %: 120 mins: Summer	41.444	40.348	40.873	0.525	1.3	0.472	0.000	2.0	2.128	Surcharged
S2	FSR: 10 years: +0 %: 120 mins: Summer	41.260	40.260	40.870	0.610	2.0	0.549	0.000	2.7	1.943	Surcharged
S3	FSR: 10 years: +0 %: 60 mins: Winter	41.128	40.032	40.861	0.829	5.0	0.746	0.000	5.1	7.367	Flood Risk
S4	FSR: 10 years: +0 %: 60 mins: Winter	41.108	39.986	40.855	0.869	6.3	0.782	0.000	6.3	7.734	Flood Risk
S5	FSR: 10 years: +0 %: 60 mins: Winter	41.217	39.931	40.844	0.913	6.3	0.904	0.000	6.3	5.913	Surcharged
S7	FSR: 10 years: +0 %: 1440 mins: Winter	40.825	39.934	40.833	0.899	6.0	8.629	7.827	6.5	110.681	Flood
S6	FSR: 10 years: +0 %: 1440 mins: Winter	40.925	40.000	40.833	0.833	0.2	0.750	0.000	0.3	3.960	Flood Risk

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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
S1	FSR: 30 years: +20 %: 180 mins: Winter	41.444	40.348	40.946	0.598	1.2	0.538	0.000	1.2	4.541	Surcharged
S2	FSR: 30 years: +20 %: 180 mins: Winter	41.260	40.260	40.945	0.686	1.2	0.617	0.000	1.3	4.403	Surcharged
S3	FSR: 30 years: +20 %: 180 mins: Winter	41.128	40.032	40.945	0.913	4.6	0.822	0.000	5.6	18.623	Flood Risk
S4	FSR: 30 years: +20 %: 180 mins: Winter	41.108	39.986	40.947	0.961	6.9	0.865	0.000	6.5	21.130	Flood Risk
S5	FSR: 30 years: +20 %: 180 mins: Winter	41.217	39.931	40.945	1.015	6.5	1.005	0.000	7.0	19.098	Flood Risk
S7	FSR: 30 years: +20 %: 1440 mins: Winter	40.825	39.934	40.846	0.912	5.3	21.840	21.038	6.3	90.257	Flood
S6	FSR: 30 years: +20 %: 1440 mins: Winter	40.925	40.000	40.846	0.846	0.2	0.761	0.000	0.4	5.752	Flood Risk

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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
S1	FSR: 100 years: +45 %: 180 mins: Winter	41.444	40.348	41.097	0.749	1.9	0.675	0.000	1.7	7.345	Surcharged
S2	FSR: 100 years: +45 %: 180 mins: Winter	41.260	40.260	41.097	0.837	1.7	0.754	0.000	1.7	7.035	Flood Risk
S3	FSR: 100 years: +45 %: 180 mins: Winter	41.128	40.032	41.098	1.066	6.8	0.959	0.000	6.8	30.622	Flood Risk
S4	FSR: 100 years: +45 %: 180 mins: Winter	41.108	39.986	41.099	1.113	8.7	1.002	0.000	8.7	34.056	Flood Risk
S5	FSR: 100 years: +45 %: 180 mins: Winter	41.217	39.931	41.099	1.169	8.7	1.157	0.000	8.7	31.757	Flood Risk
S7	FSR: 100 years: +45 %: 1440 mins: Winter	40.825	39.934	40.868	0.934	6.2	44.468	43.666	4.7	71.537	Flood
S6	FSR: 100 years: +45 %: 1440 mins: Winter	40.925	40.000	40.868	0.868	0.3	0.781	0.000	0.5	8.937	Flood Risk

Project:
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33kV GRID PARK COMPOUND AND ACCESS ROAD
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Report Details:
Type: Stormwater Controls Summary
Storm Phase: Civils1

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KB

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FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
S2.000	FSR: 2 years: +0 %: 15 mins: Winter	40.994	40.869	0.027	0.020	3.2	0.696	0.000	0.025	2.3	1.373	96	OK
S1.005	FSR: 2 years: +0 %: 240 mins: Winter	40.274	40.274	0.540	0.647	5.0	7.665	0.000	15.922	0.0	0.000	81	OK
S3.002	FSR: 2 years: +0 %: 1440 mins: Winter	40.732	40.805	1.029	1.178	0.9	10.214	0.000	5.942	0.0	0.000	63	OK

Project:
18/MES/0107
33kV GRID PARK COMPOUND AND ACCESS ROAD
DRAINAGE CALCULATIONS

Report Details:
Type: Stormwater Controls Summary
Storm Phase: Civils1

Date:
14/02/2025

Designed by:
KB

Checked by:
WSW

Approved By:
AM

Company Address:
STANTEC UK LIMITED
UNIT 10, CONNECT 38, 1 DOVER PLACE
ASHFORD, KENT, TN23 1FB

 **Stantec**



FSR: 10 years: Increase Rainfall (%): +0: Critical Storm Per Item

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
S2.000	FSR: 10 years: +0 %: 15 mins: Winter	41.001	40.871	0.035	0.022	4.8	0.948	0.000	0.026	3.2	2.105	95	OK
S1.005	FSR: 10 years: +0 %: 180 mins: Winter	40.732	40.815	0.998	1.188	8.3	14.524	0.000	20.364	0.0	0.011	64	OK
S3.002	FSR: 10 years: +0 %: 1440 mins: Winter	40.848	40.903	1.146	1.276	6.5	14.909	0.000	8.412	0.0	101.157	47	OK

Project: 18/MES/0107 33kV GRID PARK COMPOUND AND ACCESS ROAD DRAINAGE CALCULATIONS	Date: 14/02/2025		
	Designed by: KB	Checked by: WSW	Approved By: AM
	Report Details: Type: Stormwater Controls Summary Storm Phase: Civils1		
Company Address: STANTEC UK LIMITED UNIT 10, CONNECT 38, 1 DOVER PLACE ASHFORD, KENT, TN23 1FB			



FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
S2.000	FSR: 30 years: +20 %: 180 mins: Winter	40.986	40.945	0.019	0.096	2.0	1.538	0.000	0.218	1.7	7.761	91	OK
S1.005	FSR: 30 years: +20 %: 180 mins: Winter	40.948	40.955	1.213	1.328	11.9	25.348	0.000	29.014	0.1	0.763	37	OK
S3.002	FSR: 30 years: +20 %: 180 mins: Winter	40.852	40.899	1.150	1.272	7.8	14.833	0.000	1.056	0.0	20.052	47	OK

Project:
18/MES/0107
33kV GRID PARK COMPOUND AND ACCESS ROAD
DRAINAGE CALCULATIONS

Report Details:
Type: Stormwater Controls Summary
Storm Phase: Civils1

Date:
14/02/2025

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STANTEC UK LIMITED
UNIT 10, CONNECT 38, 1 DOVER PLACE
ASHFORD, KENT, TN23 1FB

 **Stantec**



FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
S2.000	FSR: 100 years: +45 %: 180 mins: Winter	41.097	41.097	0.130	0.248	4.4	9.056	0.000	0.524	2.3	12.655	48	OK
S1.005	FSR: 100 years: +45 %: 180 mins: Winter	41.098	41.098	1.364	1.471	15.9	40.662	3.323	38.879	0.1	1.404	-2	Flood
S3.002	FSR: 100 years: +45 %: 1440 mins: Winter	40.879	40.899	1.176	1.272	4.7	15.029	0.000	9.000	0.0	76.133	46	OK

Project: 18/MES/0107 33kV GRID PARK COMPOUND AND ACCESS ROAD DRAINAGE CALCULATIONS	Date: 14/02/2025			
	Designed by: KB	Checked by: WSW	Approved By: AM	
Report Details: Type: Connections Summary Storm Phase: Civils1	Company Address: STANTEC UK LIMITED UNIT 10, CONNECT 38, 1 DOVER PLACE ASHFORD, KENT, TN23 1FB			



FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item

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
S1.000	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	S1	S2	41.4	40.574	0.150	0.860	0.6	0.11	2.2	Surcharged
S1.001	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	S2	S3	41.3	40.574	0.150	0.310	0.4	0.15	1.6	Surcharged
S1.002	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	S3	S4	41.1	40.574	0.225	1.663	0.3	0.14	3.8	Surcharged
S1.003	FSR: 2 years: +0 %: 60 mins: Winter	Pipe	S4	S5	41.1	40.837	0.225	3.618	0.3	0.13	3.9	Flood Risk
S2.001	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	S2.000	S3	41.3	40.872	0.019	1.373	1.4	0.01	2.3	OK
S1.004	FSR: 2 years: +0 %: 60 mins: Winter	Pipe	S5	S1.005	41.2	40.838	0.225	0.000	0.1	0.14	4.0	Surcharged
No Delay	FSR: 2 years: +0 %: 15 mins: Summer	No Delay	S1.005	S3.002		39.864	0.000	0.000	0.0		0.0	
S3.000	FSR: 2 years: +0 %: 30 mins: Summer	Pipe	S6	S7	40.9	40.808	0.150	0.016	0.2	0.18	2.9	Flood Risk
S3.001	FSR: 2 years: +0 %: 30 mins: Summer	Pipe	S7	S3.002	40.8	40.808	0.225	0.000	0.2	0.26	7.6	Flood Risk

Project:
18/MES/0107
33kV GRID PARK COMPOUND AND ACCESS ROAD
DRAINAGE CALCULATIONS

Report Details:
Type: Connections Summary
Storm Phase: Civils1

Date:
14/02/2025

Designed by:
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Company Address:
STANTEC UK LIMITED
UNIT 10, CONNECT 38, 1 DOVER PLACE
ASHFORD, KENT, TN23 1FB

 **Stantec**



FSR: 10 years: Increase Rainfall (%): +0: Critical Storm Per Item

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
S1.000	FSR: 10 years: +0 %: 15 mins: Winter	Pipe	S1	S2	41.4	40.839	0.150	0.958	0.7	0.17	3.3	Surcharged
S1.001	FSR: 10 years: +0 %: 15 mins: Winter	Pipe	S2	S3	41.3	40.838	0.150	0.428	0.3	0.28	2.9	Surcharged
S1.002	FSR: 10 years: +0 %: 120 mins: Summer	Pipe	S3	S4	41.1	40.851	0.225	7.283	0.2	0.22	6.2	Flood Risk
S1.003	FSR: 10 years: +0 %: 120 mins: Summer	Pipe	S4	S5	41.1	40.847	0.225	8.676	0.3	0.24	7.3	Flood Risk
S2.001	FSR: 10 years: +0 %: 30 mins: Winter	Pipe	S2.000	S3	41.3	40.876	0.103	2.784	1.3	0.02	3.4	OK
S1.004	FSR: 10 years: +0 %: 120 mins: Summer	Pipe	S5	S1.005	41.2	40.841	0.225	0.000	0.2	0.23	7.0	Surcharged
No Delay	FSR: 10 years: +0 %: 180 mins: Winter	No Delay	S1.005	S3.002		40.745	0.004	0.011	0.0		0.0	
S3.000	FSR: 10 years: +0 %: 60 mins: Winter	Pipe	S6	S7	40.9	40.812	0.150	0.868	0.1	0.13	2.1	Flood Risk
S3.001	FSR: 10 years: +0 %: 30 mins: Winter	Pipe	S7	S3.002	40.8	40.813	0.225	0.000	0.2	0.23	6.8	Flood Risk

Project: 18/MES/0107 33kV GRID PARK COMPOUND AND ACCESS ROAD DRAINAGE CALCULATIONS		Date: 14/02/2025			
Report Details: Type: Connections Summary Storm Phase: Civils1		Designed by: KB	Checked by: WSW	Approved By: AM	
Company Address: STANTEC UK LIMITED UNIT 10, CONNECT 38, 1 DOVER PLACE ASHFORD, KENT, TN23 1FB					



FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item

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
S1.000	FSR: 30 years: +20 %: 15 mins: Summer	Pipe	S1	S2	41.4	40.877	0.150	1.528	0.6	0.26	5.1	Surcharged
S1.001	FSR: 30 years: +20 %: 30 mins: Summer	Pipe	S2	S3	41.3	40.916	0.150	1.122	0.3	0.4	4.2	Surcharged
S1.002	FSR: 30 years: +20 %: 30 mins: Winter	Pipe	S3	S4	41.1	40.905	0.225	8.930	0.3	0.46	12.8	Flood Risk
S1.003	FSR: 30 years: +20 %: 30 mins: Winter	Pipe	S4	S5	41.1	40.893	0.225	10.762	0.4	0.56	16.6	Flood Risk
S2.001	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	S2.000	S3	41.3	40.888	0.135	3.263	1.7	0.04	7.1	OK
S1.004	FSR: 30 years: +20 %: 30 mins: Winter	Pipe	S5	S1.005	41.2	40.872	0.225	0.000	0.4	0.56	16.6	Surcharged
No Delay	FSR: 30 years: +20 %: 240 mins: Winter	No Delay	S1.005	S3.002		40.898	0.013	0.707	0.0		0.1	
S3.000	FSR: 30 years: +20 %: 15 mins: Summer	Pipe	S6	S7	40.9	40.839	0.150	0.584	0.2	0.24	3.7	Flood Risk
S3.001	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	S7	S3.002	40.8	40.825	0.225	0.000	0.3	0.43	12.8	Flood

Project: 18/MES/0107 33kV GRID PARK COMPOUND AND ACCESS ROAD DRAINAGE CALCULATIONS	Date: 14/02/2025			
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Report Details: Type: Connections Summary Storm Phase: Civils1	Company Address: STANTEC UK LIMITED UNIT 10, CONNECT 38, 1 DOVER PLACE ASHFORD, KENT, TN23 1FB			



FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item

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
S1.000	FSR: 100 years: +45 %: 30 mins: Winter	Pipe	S1	S2	41.4	41.017	0.150	4.123	0.6	0.26	5.1	Surcharged
S1.001	FSR: 100 years: +45 %: 30 mins: Winter	Pipe	S2	S3	41.3	41.009	0.150	2.902	0.4	0.47	4.9	Flood Risk
S1.002	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	S3	S4	41.1	40.979	0.225	10.581	0.4	0.63	17.5	Flood Risk
S1.003	FSR: 100 years: +45 %: 30 mins: Summer	Pipe	S4	S5	41.1	40.973	0.225	15.331	0.5	0.72	21.3	Flood Risk
S2.001	FSR: 100 years: +45 %: 15 mins: Summer	Pipe	S2.000	S3	41.3	40.910	0.204	4.624	0.3	0.07	11.4	OK
S1.004	FSR: 100 years: +45 %: 30 mins: Summer	Pipe	S5	S1.005	41.2	40.973	0.225	0.000	0.5	0.71	21.1	Flood Risk
No Delay	FSR: 100 years: +45 %: 240 mins: Winter	No Delay	S1.005	S3.002		41.041	0.015	1.581	0.0		0.1	
S3.000	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	S6	S7	40.9	40.838	0.150	1.742	0.3	0.38	5.9	Flood Risk
S3.001	FSR: 100 years: +45 %: 60 mins: Summer	Pipe	S7	S3.002	40.8	40.837	0.225	0.000	0.4	0.47	14.0	Flood