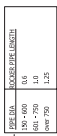
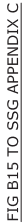
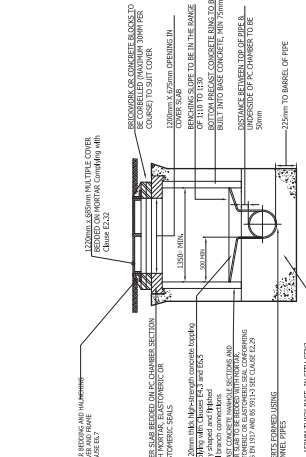
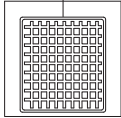


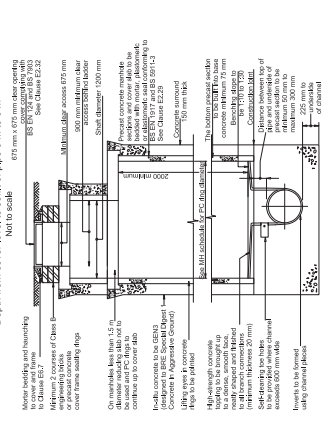
1. The location, size, depth and orientation of existing services that may be shown or referred to in this drawing shall be verified by the contractor before any work is undertaken. The contractor shall verify any cut or installation of utilities. The contractor shall verify any cut or installation of utilities. The contractor shall verify any cut or installation of utilities. The contractor shall verify any cut or installation of utilities.
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NO WORKS TO COMMENCE
SECTION 104 AGREEMENT
SIGNED BY ALL PARTIES.

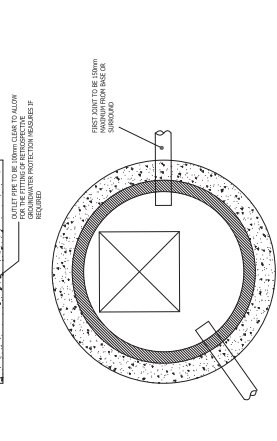


(NTS)

level to soffit of pipe 3 m to 6 m



(NTS)



CATCHPIT (1:20 typical)



Nominal diameter (mm)	Maximum effective length (m)
150 - 600	0.6
601 - 750	1.00
over 750	1.25

All pipes entering the bottom of the manhole to have soffits level.

MANHOLES (NTS)

Client
GRAVITY CONSULTING ENGINEERS

7

Title	
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156

gta Civils & Transport
Gloucester House, 66a Church Walk,

Revision Number	Rev
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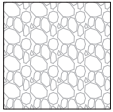
12	1061/74011
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1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations, record drawings or the file. The contractor shall satisfy carry out intrusive investigations and holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. any discrepancies shall be notified to gis prior to works commencing.

2. Tender or bill drawings shall not be used for construction or the ordering of materials.
3. Do not scale. All dimensions and levels to be site confirmed.
4. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.

5. Copyright: This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
6. All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made abortive due to the client proceeding prior to these approvals, is considered wholly at the Clients risk, gta held no responsibility for resulting abortive works or costs.

BOK BOTTOM OF KERB
 BOS BOTTOM OF STONE
 BOT BOTTOM OF TANK
 FOL FINISHED GROUND LEVEL
 OSGR OPEN GRADED CRUSHED ROCK
 TOK TOP OF KERB
 TOS TOP OF STONE
 TOT TOP OF TANK

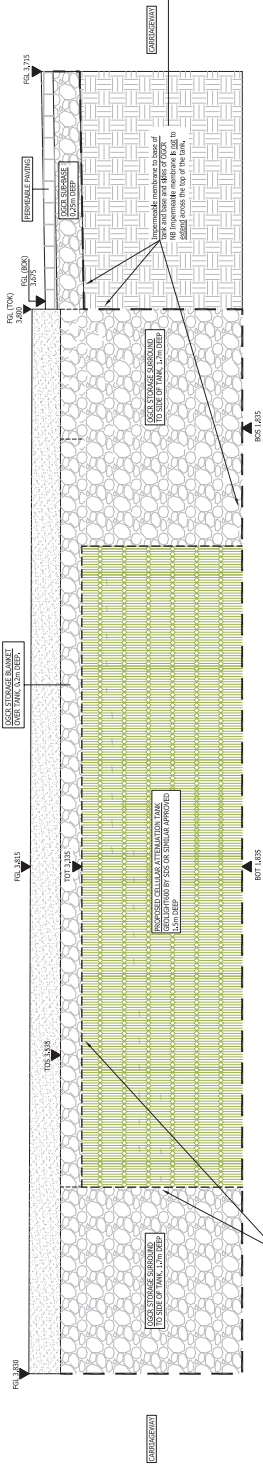


4-20mm size open graded crushed rock with no fines (30% voids)

The following materials to be placed in accordance with the manufacturer's recommendations:

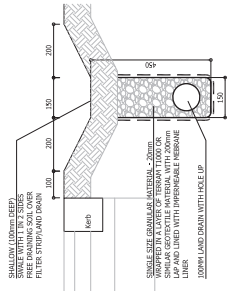
- A single layer of thin (1 mil) impermeable membrane welded in accordance with manufacturer's specification to achieve watertight joints, high performance UCD by US-Queen or equivalent. The membrane should be surrounded with a min. 300g protecter fleece,
- Taped or any other form of non-welded joint in the geomembrane will not be permitted,

Geomembrane to be laid on smooth formation prepared in accordance with the CRT Specification for Highway Works. The formation shall be free of protrusions and any sharp objects.



1. CONCRETE SLAB
2. DRAINAGE CHANNEL
3. INSULATION
4. WATERPROOFING MEMBRANE
5. DRAINAGE CHANNEL
6. INSULATION
7. WATERPROOFING MEMBRANE
8. DRAINAGE CHANNEL
9. INSULATION
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97. WATERPROOFING MEMBRANE
98. DRAINAGE CHANNEL
99. INSULATION
100. WATERPROOFING MEMBRANE

ATTENUATION TANK DETAIL SDS



SWALE WITH FILTER STRIP & LAND DRAIN UNDER

[illegible]

1. The location, size, depth and identification of empty services that may be shown or referred to on this drawing have been assessed from first hand information and are not intended to be used as a basis for safely any other intrusive investigations, but includes no warranty to the effect that the information is correct and is not intended to be used as a basis for any other intrusive investigations, but includes no warranty to the effect that the information is correct and is not intended to be used as a basis for any other intrusive investigations.
2. Trenches or lifting drawings shall not be used for construction of the structure of materials.
3. Do not scale. All dimensions and levels to be confirmed.
4. This drawing shall be used in conjunction with all relevant architects, consultants drawings and specifications, together with the Bill of Materials.
5. Copyright: This drawing must not be copied, amended nor reproduced without the written permission of the author.
6. This drawing and any other drawings made by the author are subject to local Authority and other relevant statutory authorities approval. Any copies or services made without due to the author proceeding without the written permission of the author shall be the responsibility for resulting works or costs.

Technical drawing of a window sill cross-section. The drawing shows a window frame with a sill. Key components and dimensions are labeled:

- 100% COUNTERS OF CHAIRING BRICK**: Points to the brickwork on the left side of the sill.
- 200 X 40mm DEEP ANGLERS CANT BEDDING**: Points to the bedding for the cant bed.
- DAILY WITH RAINING EYE & STOPPED**: Points to the bedding for the raining eye.
- 150# STRAIGHT PIPE ON BEDS TO ANCHOR REQUIRED DEPTH**: Points to the straight pipe anchoring the sill.
- 110**: Dimension for the width of the cant bed.
- 50**: Dimension for the width of the bedding.
- 250**: Dimension for the width of the bedding.
- 510**: Dimension for the width of the bedding.
- PLAN**: Label for the cross-section view.
- WIND**: Label for the wind direction.
- WIND BACK**: Label for the wind back.
- WIND**: Label for the wind direction.

CLASS Z BEDDING

CLASS Z BEDDING

CLASS Z BEDDING IS A TYPE OF BEDDING WHERE THE COVER TO CROWN OF PIPE IS LESS THAN 150mm UNLESS THE BEDDING IS MORE THAN 900mm UNDER THE MANHOLE.

EX

INSPECTION CHAMBER LOCATED CAR PARK AREA'S

DRAIN

CHAIN

100mm COARSE CONCRETE SUB-BASE

150mm FINE AGGREGATE BEDDED WITH CURBING SAND COVER TO BE FINISHED

150mm FINE AGGREGATE BEDDED WITH CURBING SAND COVER TO BE FINISHED

[illegible]

NOTE
WHEN DIMENSION "A" IS GREATER THAN
300mm GRANULAR BED SHALL APPLY, IF LESS
THAN 300mm THEN CONCRETE SURROUND.

BUILDING SLAB

CONCRETE SURROUND

UNDERLAYER IMPROVING MATERIAL

AS SPECIFICATION

100mm

MIN. THICK COMPRESSIVE RAMP TO BE 140mm

PIPE PROFILE IS SELECTED AT 100mm JOINT

Technical drawing of a concrete inspection chamber base. The drawing shows a cross-section of the base with various components labeled:

- CAST IRON GRADE 'C' COVER AND FRAME (top left)
- 100mm INSULATOR OF REINFORCED CONCRETE OR 100mm IN TO SOFTIT (top center)
- 100mm INSULATOR OF REINFORCED CONCRETE SURROUND & BASE (top right)
- 40mm INSPECTION CHAMBER BASE (middle right)
- CHAMBER RISER (bottom center)
- 110mm DRAIN (bottom right)

Dimensions:

- 1.2m (overall width)

PROPOSED CAR PARK AREAS

- COST FROM GRADE - C COVER AND FINISH UCLL
- 30mm SLOPER IF DEPTH THAT IS TO GOFT
- 150mm CR CONCRETE SURFACING & BASE
- 200mm SAND
- 110mm DRAIN

Dimensions: 1.2m

C1	ISSUE FOR CONDITION DISCHARGE	17/10/2024	JR	NR
		Disch	Disch	Disch

Status	CONSTRUCTION
Client	GRAVITY CONSULTING ENGINEERS
Architect	ROYL E & SUMMERS

Project

PRIVATE DRAINAGE DETAILS

Date	OCTOBER 2024	Site @ AT
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ngta Civils & Transport
Gloucester House, 66a Church Walk,
Burgess Hill, West Sussex, RH15 9AS
Tel 01444 871444 Web: www.ngtacivils.co.uk

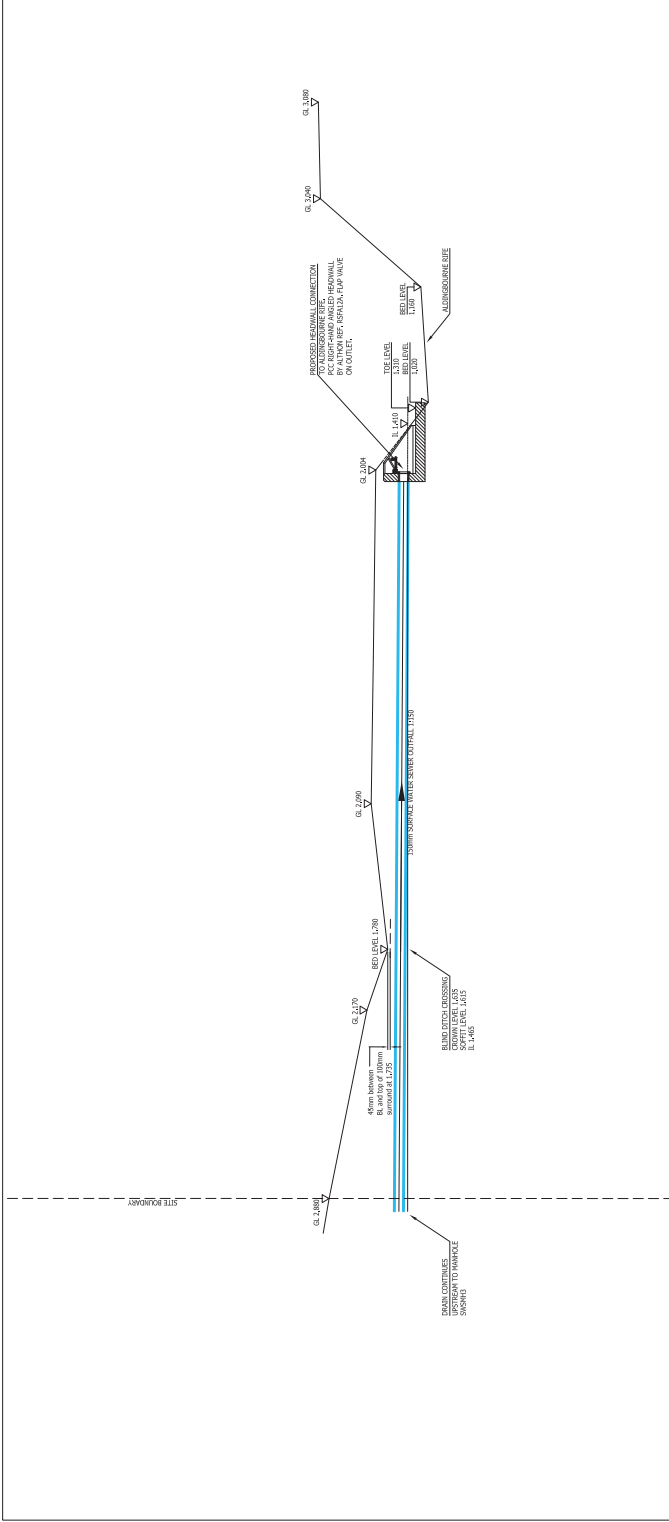
Drawing Number	11642/1701	Rev.	C1
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GENERAL NOTES

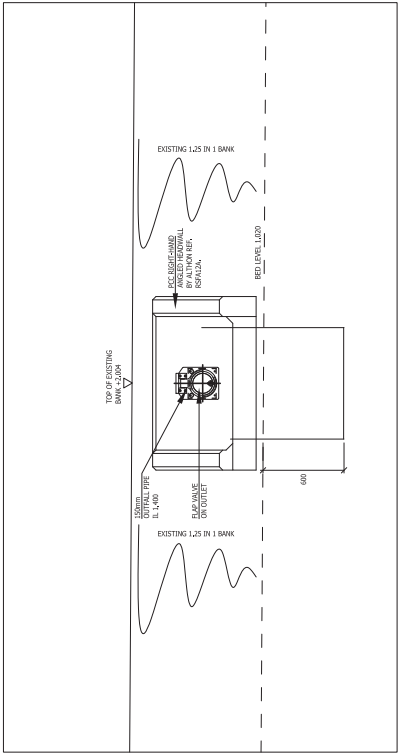
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ABBREVIATIONS

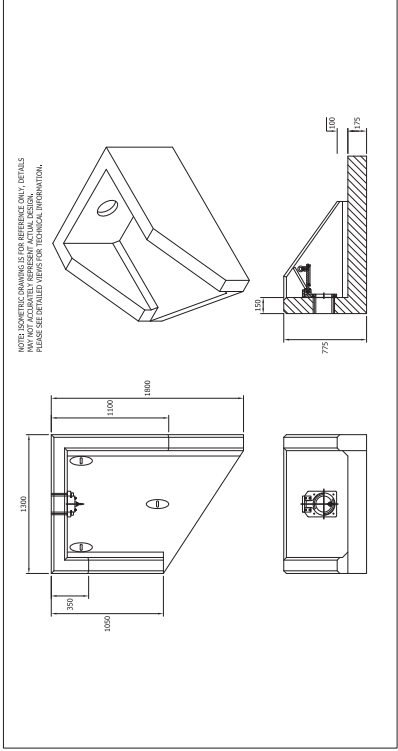
BL BED LEVEL
CL COVER LEVEL
GL GROUND LEVEL
IL INVERT LEVEL
PCC PRE CAST CONCRETE



LONG SECTION THROUGH PROPOSED SURFACE WATER SEWER OUTFALL FROM CHAMBER SWMH11 TO CONNECTION TO ALDINGBOURNE RIFE (1:50)



CROSS SECTION THROUGH ALDINGBOURNE RIFE FACING PROPOSED HEADWALL (1:20)



PCC RIGHT-HAND ANGLED HEADWALL BY ALTHON REF. RSFA12A (1:25)

[illegible]

GENERAL NOTES

5. The location, size, depth and identification of existing septic tank may be known or inferred on the drawing. Lines were assumed from known information and/or other drawings. The location of the septic tank is shown as a rectangular area. The location of the septic tank is shown as a rectangular area. The location of the septic tank is shown as a rectangular area.
6. The drawing shall not be used in conjunction with all relevant submittals, consultants drawings and specifications, together with H&S plan requirements.
7. Copyright. The drawing must not be copied, amended nor reproduced without the written permission of the author.
8. All drawings shall be submitted to the relevant authority for approval. Any works or services made above shall be the client's responsibility. Any works or services made above shall be the client's responsibility. Any works or services made above shall be the client's responsibility.

LEGEND

- | | | | | | | | |
|---|--|--|--|--|--|--|--|
| GRAVEL BOND FENCE | | | | | | | |
| SLEEPER KING POST RETAINING WALL | | | | | | | |
| MASONRY RETAINING WALL | | | | | | | |
| EXPOSED FACE | | | | | | | |
| PROPOSED LEVEL | | | | | | | |
| EXISTING LEVEL | | | | | | | |
| SURFACE GRADIENT | | | | | | | |
| ROOT PROTECTION AREA (PPA) WITHIN SITE BOUNDARY | | | | | | | |

[illegible]

APPENDIX E – DRAINAGE CALCULATIONS

GTA Civils Ltd		Page 1																								
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	North Bersted Former Bartons Infant School Greenfield Runoff																									
Date 16/10/2024 15:31 File	Designed by JR Checked by																									
Micro Drainage		Source Control 2020.1.3																								
<u>ICP SUDS Mean Annual Flood</u> Input <table><tr><td>Return Period (years)</td><td>100</td><td>Soil</td><td>0.400</td></tr><tr><td>Area (ha)</td><td>0.316</td><td>Urban</td><td>0.000</td></tr><tr><td>SAAR (mm)</td><td>741</td><td>Region Number</td><td>Region 7</td></tr></table> Results 1/s <table><tr><td>QBAR Rural</td><td>1.1</td></tr><tr><td>QBAR Urban</td><td>1.1</td></tr><tr><td>Q100 years</td><td>3.7</td></tr><tr><td>Q1 year</td><td>1.0</td></tr><tr><td>Q30 years</td><td>2.6</td></tr><tr><td>Q100 years</td><td>3.7</td></tr></table>			Return Period (years)	100	Soil	0.400	Area (ha)	0.316	Urban	0.000	SAAR (mm)	741	Region Number	Region 7	QBAR Rural	1.1	QBAR Urban	1.1	Q100 years	3.7	Q1 year	1.0	Q30 years	2.6	Q100 years	3.7
Return Period (years)	100	Soil	0.400																							
Area (ha)	0.316	Urban	0.000																							
SAAR (mm)	741	Region Number	Region 7																							
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QBAR Urban	1.1																									
Q100 years	3.7																									
Q1 year	1.0																									
Q30 years	2.6																									
Q100 years	3.7																									
©1982-2020 Innovyze																										

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Inverts
Additional Flow (%)	45	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Manhole Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SWSMH1	0.101	5.00	3.853	Adoptable	1200	492513.604	100887.139	1.812
DUMMY	0.078	5.00	3.550	Adoptable	225	492535.249	100909.009	1.630
SWSMH6			3.550	Adoptable	1200	492554.599	100904.794	1.715
SWSMH5	0.091	5.00	3.724	Adoptable	1800	492557.432	100924.733	1.855
SWSMH2	0.024	5.00	3.790	Adoptable	1800	492567.254	100902.037	2.180
SWSMH3	0.022	5.00	3.476	Adoptable	1800	492586.284	100906.597	1.908
OUTFALL			3.476	Adoptable		492603.177	100925.575	2.076

Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	1.017	40.4	26.5	1.587	1.863	0.101	0.0
2.000	1.050	41.8	20.4	1.405	1.490	0.078	0.0
2.001	2.126	84.5	20.4	1.490	1.955	0.078	0.0
3.000	2.292	496.2	23.8	1.330	1.655	0.091	0.0
1.001	1.364	728.9	77.0	1.355	1.083	0.294	0.0
1.002	1.061	42.2	82.8	1.683	1.851	0.316	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	55.680	164.2	225	1 STANDARD	3.853	2.041	1.587	3.790	1.702	1.863
2.000	13.101	154.1	225	1 STANDARD	3.550	1.920	1.405	3.550	1.835	1.490
2.001	8.568	38.1	225	1 STANDARD	3.550	1.835	1.490	3.790	1.610	1.955
3.000	24.730	95.5	525	1 STANDARD	3.724	1.869	1.330	3.790	1.610	1.655
1.001	19.710	469.3	825	1 STANDARD	3.790	1.610	1.355	3.476	1.568	1.083
1.002	25.407	151.2	225	1 STANDARD	3.476	1.568	1.683	3.476	1.400	1.851

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	SWSMH1	1200	Manhole	Adoptable	SWSMH2	1800	Manhole	Adoptable
2.000	DUMMY	225	Manhole	Adoptable	SWSMH6	1200	Manhole	Adoptable
2.001	SWSMH6	1200	Manhole	Adoptable	SWSMH2	1800	Manhole	Adoptable
3.000	SWSMH5	1800	Manhole	Adoptable	SWSMH2	1800	Manhole	Adoptable
1.001	SWSMH2	1800	Manhole	Adoptable	SWSMH3	1800	Manhole	Adoptable
1.002	SWSMH3	1800	Manhole	Adoptable	OUTFALL		Manhole	Adoptable

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Detailed	Additional Storage (m ³ /ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

5760

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	45	0	0

Node OUTFALL Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m ²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		
Applies to All storms					

Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	0.320	1440	0.320

Node SWSMH3 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Downstream Link	1.002	Sump Available	✓
Replaces Downstream Link	✓	Product Number	CTL-SHE-0058-2000-1800-2000
Invert Level (m)	1.568	Min Outlet Diameter (m)	0.075
Design Depth (m)	1.800	Min Node Diameter (mm)	1200
Design Flow (l/s)	2.0		

Node SWSMH6 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	1.835
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	1440

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	137.0	0.0	1.500	137.0	0.0	1.501	0.0	0.0

Node SWSMH6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	1.835	Slope (1:X)	9999.9
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	1320	Depth (m)	1.605
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	13.000		

Node SWSMH6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.335	Slope (1:X)	9999.9
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.200
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	68.500		

Node SWSMH6 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	1.835
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	1140

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	80.0	0.0	1.700	80.0	0.0	1.701	0.0	0.0

Node SWSMH6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.335	Slope (1:X)	9999.9
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.200
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	68.500		

Node SWSMH6 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	1.835
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	80.0	0.0	1.700	80.0	0.0	1.701	0.0	0.0

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.14%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SWSMH1	11	2.147	0.106	19.3	0.4760	0.0000	OK
15 minute summer	DUMMY	9	2.163	0.243	14.9	0.7060	0.0000	SURCHARGED
360 minute winter	SWSMH6	344	2.092	0.257	6.4	41.5718	0.0000	SURCHARGED
360 minute winter	SWSMH5	344	2.093	0.224	2.8	1.2266	0.0000	OK
360 minute winter	SWSMH2	344	2.092	0.482	6.1	1.5464	0.0000	OK
360 minute winter	SWSMH3	344	2.092	0.524	1.9	1.6978	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	1.720	0.320	1.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SWSMH1	1.000	SWSMH2	18.7	0.833	0.462	1.6212	
15 minute summer	DUMMY	2.000	SWSMH6	20.4	1.559	0.489	0.2635	
360 minute winter	SWSMH6	2.001	SWSMH2	-4.2	-0.119	-0.050	0.3408	
360 minute winter	SWSMH5	3.000	SWSMH2	2.3	0.232	0.005	3.6516	
360 minute winter	SWSMH2	1.001	SWSMH3	1.6	0.154	0.002	6.7132	
360 minute winter	SWSMH3	Hydro-Brake®	OUTFALL	1.4				43.4

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.14%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SWSMH1	12	2.576	0.535	47.5	2.3931	0.0000	SURCHARGED
480 minute winter	DUMMY	472	2.519	0.599	3.8	1.7444	0.0000	SURCHARGED
480 minute winter	SWSMH6	472	2.519	0.684	10.9	110.6472	0.0000	SURCHARGED
480 minute winter	SWSMH5	472	2.519	0.650	4.5	3.5685	0.0000	SURCHARGED
480 minute winter	SWSMH2	472	2.519	0.909	9.3	2.9141	0.0000	SURCHARGED
480 minute winter	SWSMH3	472	2.519	0.951	2.1	3.0791	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	1.720	0.320	1.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SWSMH1	1.000	SWSMH2	38.6	0.971	0.955	2.2145	
480 minute winter	DUMMY	2.000	SWSMH6	3.6	0.653	0.086	0.5210	
480 minute winter	SWSMH6	2.001	SWSMH2	-7.3	-0.184	-0.087	0.3408	
480 minute winter	SWSMH5	3.000	SWSMH2	3.7	0.247	0.008	5.3425	
480 minute winter	SWSMH2	1.001	SWSMH3	1.7	0.173	0.002	10.5081	
480 minute winter	SWSMH3	Hydro-Brake®	OUTFALL	1.4				53.4

Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 99.14%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SWSMH1	12	3.183	1.142	68.9	5.1105	0.0000	SURCHARGED
600 minute winter	DUMMY	585	2.942	1.022	4.6	2.9741	0.0000	SURCHARGED
600 minute winter	SWSMH6	585	2.942	1.107	15.3	179.2335	0.0000	SURCHARGED
600 minute winter	SWSMH5	585	2.942	1.073	5.4	5.8868	0.0000	SURCHARGED
600 minute winter	SWSMH2	585	2.942	1.332	11.8	4.2680	0.0000	SURCHARGED
600 minute winter	SWSMH3	585	2.942	1.374	2.0	4.4466	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	1.720	0.320	1.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SWSMH1	1.000	SWSMH2	51.3	1.290	1.268	2.2145	
600 minute winter	DUMMY	2.000	SWSMH6	4.3	0.664	0.104	0.5210	
600 minute winter	SWSMH6	2.001	SWSMH2	-10.9	-0.275	-0.129	0.3408	
600 minute winter	SWSMH5	3.000	SWSMH2	4.9	0.152	0.010	5.3425	
600 minute winter	SWSMH2	1.001	SWSMH3	1.6	0.062	0.002	10.5081	
600 minute winter	SWSMH3	Hydro-Brake®	OUTFALL	1.7				71.4

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.14%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SWSMH1	12	2.889	0.848	59.5	3.7939	0.0000	SURCHARGED
600 minute winter	DUMMY	585	2.748	0.828	4.0	2.4097	0.0000	SURCHARGED
600 minute winter	SWSMH6	585	2.748	0.913	12.1	147.7239	0.0000	SURCHARGED
600 minute winter	SWSMH5	585	2.748	0.879	4.6	4.8226	0.0000	SURCHARGED
600 minute winter	SWSMH2	585	2.748	1.138	9.9	3.6465	0.0000	SURCHARGED
600 minute winter	SWSMH3	585	2.748	1.180	2.0	3.8189	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	1.720	0.320	1.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SWSMH1	1.000	SWSMH2	47.4	1.191	1.171	2.2145	
600 minute winter	DUMMY	2.000	SWSMH6	3.8	0.639	0.091	0.5210	
600 minute winter	SWSMH6	2.001	SWSMH2	-8.5	-0.213	-0.100	0.3408	
600 minute winter	SWSMH5	3.000	SWSMH2	3.9	0.208	0.008	5.3425	
600 minute winter	SWSMH2	1.001	SWSMH3	1.5	0.045	0.002	10.5081	
600 minute winter	SWSMH3	Hydro-Brake®	OUTFALL	1.6				67.2



Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.14%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	SWSMH1	20	3.807	1.766	78.9	7.9023	0.0000	SURCHARGED
720 minute winter	DUMMY	705	3.287	1.367	5.0	3.9781	0.0000	SURCHARGED
720 minute winter	SWSMH6	705	3.287	1.452	16.7	235.3858	0.0000	SURCHARGED
720 minute winter	SWSMH5	705	3.287	1.418	5.8	7.7794	0.0000	SURCHARGED
720 minute winter	SWSMH2	705	3.287	1.677	12.7	5.3733	0.0000	SURCHARGED
720 minute winter	SWSMH3	705	3.287	1.719	2.1	5.5629	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	1.720	0.320	1.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	SWSMH1	1.000	SWSMH2	57.9	1.456	1.431	2.2145	
720 minute winter	DUMMY	2.000	SWSMH6	4.7	0.664	0.113	0.5210	
720 minute winter	SWSMH6	2.001	SWSMH2	-12.0	-0.302	-0.142	0.3408	
720 minute winter	SWSMH5	3.000	SWSMH2	5.2	0.192	0.011	5.3425	
720 minute winter	SWSMH2	1.001	SWSMH3	1.9	0.016	0.003	10.5081	
720 minute winter	SWSMH3	Hydro-Brake®	OUTFALL	1.9				88.8

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Inverts
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Depth (m)
ExSWMH8	0.259	5.00	2.960	150	1.420
Ex HEADWALL	0.000		2.040	150	0.767

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
Ex OUTFALL	16.000	59.9	150	1 STANDARD	2.960	1.540	1.270	2.040	1.273	0.617

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
Ex OUTFALL	ExSWMH8	150	Manhole	Adoptable	Ex HEADWALL	150	Manhole	Adoptable

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	0	0	0

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	ExSWMH8	11	2.773	1.233	49.4	0.0222	0.0000	SURCHARGED
15 minute summer	Ex HEADWALL	8	1.415	0.142	47.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	ExSWMH8	Ex OUTFALL	Ex HEADWALL	47.5	2.699	2.066	0.2788	21.5

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	ExSWMH8	8	2.960	1.420	121.8	0.0256	17.9072	FLOOD
15 minute summer	Ex HEADWALL	6	1.415	0.142	50.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	ExSWMH8	Ex OUTFALL	Ex HEADWALL	50.7	2.879	2.203	0.2788	34.7

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	ExSWMH8	14	2.960	1.420	139.2	0.0256	28.9524	FLOOD
15 minute summer	Ex HEADWALL	5	1.415	0.142	50.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	ExSWMH8	Ex OUTFALL	Ex HEADWALL	50.7	2.879	2.203	0.2788	59.1

Project

North Bersted

Project ref

11642

Revision

Tank - Anti-Flotation Calculation

V2 - 18.5.22

Tank ref: ?	Calc 1
Tank Area at base (m2)	137.000
Top GW level(m AOD)	2.260
Tank base level(m AOD)	1.835
Depth GW- Base (m)	0.425
Ballast thickness (m)	0.000
Depth of cover over tank	0.300
Depth below water table(m)	0.425
Volume for buoyancy (m ³)	58.225
Tank Buoyancy force (kN)	571.2
Ballast construction depth (m)	0.000
Ballast downward force (kN)	0.00
Soil depth over tank (m)	0.300
Soil downward force (kN))	645.27
Downward anchor forces (kN)	645.27
Net Buoyancy Force	74.08
Factor of safety	1.1
OK	

Circa 1m below existing ground level of 3.360

Indicates field to be completed

Start with an assumed ballast depth, then adjust if FoS is less than 1.1

9.81kN/m³ for water. Positive figure denotes uplift force, negative figure denotes downward force

Note: If a negative figure is shown above for tank buoyancy then no ballast is required

Unsaturated Clay = 1900Kg/m³ or 18.64kN/m³ - Saturated Clay = 2300Kg/m³ or 22.56kN/m³(Engineeringtoolbox.com)

Assumed topsoil. Change if different material/ surfacing

Density of Dry Topsoil = 1600 Kg/m³ = 15.7kn/m³

Negative figure denotes uplift force, positive figure denotes downward force
minimum acceptable value: 1.1

Assumed dry (liner below ballast)

APPENDIX F – CONSTRUCTION METHOD STATEMENT

Method statement: 04a

Activity: Installation of drainage

Location: Romney Broad Walk, North Bersted

Risks.

1. Manual handling related injuries.
2. Slips and trips.
3. Ground penetration.
4. Working in or near excavation (Partial or full burial; suffocation, head injuries; falls from height; and collapse of structures).
5. Machine operations (Crush injuries to operatives; overturning of machine; electric shock and burns; public safety).
6. Falls from height.
7. Lifting operations (Positioning of concrete MH rings, manhole boxes, and trench boxes).

Control measures.

1. Observe correct manual handling techniques when moving materials on site; complete an on-site manual handling risk assessment.
2. Walk working area remove debris or any trip hazards ensure hand tools are not left lying around creating a hazard. Operatives to wear boots with good ankle supports.
3. No ground penetration is to take place until permit has been issued from Parchow Site Manager or designated person with signed permission to excavate. Follow safe digging practices CAT scan dig. Safe hand digging practice when using hand tools is to be used within 0.5m of any known underground service, or greater distance as specified by the service provider. Safe digging entails digging alongside a service, final exposure being undertaken with horizontal digging using shovels/spades. The careful use of picks/forks may be necessary to free lumps of stone or to break up hard layers of chalk/sandstone etc. **The use of excavators is not permitted within 0.5m of any known underground service, or greater distance as specified by the service provider.**
4. Reduce sides of excavations, 1 Metre steps along works until depth is greater than 2M then use trench boxes and manhole boxes. Two trench boxes to be used and abutted to each other when installing any 6M lengths of pipe. Left open excavations to be inspected by Site Supervisor at the beginning of each shift. All trenches to be backfilled as works progress to the open pipe end at the completion of each working day, if practicable. All excavations to be protected by barriers to prevent falling.
5. Only competent and trained operatives to operate and move plant.
6. Manhole covers to be in place, no manhole works to be left uncovered at any time when not being worked on.
7. Excavators to have current test cert to carry out lifting operations. Use correct lifting equipment and inspect for damage prior to lifting. All lifting equipment certification to be held on site. Banksman to ensure no other operatives encroach into lift area. (Complete lift plan on site) Follow Pro Mech installation and setup guide attached to this method statement for the installation of MH boxes and trench boxes.
8. PPE: Hard Hat, Hi Viz, steel toe capped boots and gloves to be worn at all times.

General method of work.

1. Drainage locations will be set out from information provided in drainage layout specification by Parchow Engineer confirming locations.
2. Raise permit to dig with Parchow Site Manager, these works do not commence until this is in place.
3. Cat scan line of excavation checking for services, hand dig and expose any identified services.
4. Excavate area ready to receive MH, ensure arisings are placed far enough away from excavation ready to be used for backfilling. (Depth of excavation is distance)
5. Pipes and manhole components to be stripped and transported from site storage area to working area using a 360-degree tracked excavator and laid out ready for installation.
6. Transport concrete for MH base in dumper. Excavator to remove concrete from dumper and bucket into excavation. No operative to be in excavation during this operation.
7. Operatives to access excavation via secured ladder and level 225mm of concrete to specified level to receive 1200/1350/1800mm MH base ring.
8. Set incoming/outgoing drainage pipes in place and cover with concrete, forming base for MH section.
9. Lift and position base ring, ensuring level and confirm invert level. Bench and form internal channel within manhole.
10. Lift and position MH ring and cover slab to specified level. Manhole covers to be set in place at correct height.
11. Set up manhole surround and mass fill with concrete 150mm of concrete as specified. Concrete placed from excavator bucket, loaded direct from ready mix lorry. Remove surround when concrete has cured, make good any voids with as dug material and compact.
12. Excavate downside of manhole exposing rocker pipe, continue to excavate trench line to other manhole locations.
13. Transport shingle from lay down area using 9T dumper, excavator to place shingle into excavation from bucket. (Ensure no operative in excavation during this process)
14. Level shingle (200mm) to correct level using pipe laser ready to receive pipe. Pipe sizing ranges from 100mm-225mm for this project. **Please note from SWSMH5-SWSMH2 is 525mm pipe and SWSMH2-SWSMH3 is 825mm pipe.**
15. Position length of pipe in excavation making connection to rocker pipe from MH. Confirm connection is good and pipe driven home correctly. Encase pipe with 200mm of shingle (20mm) and backfill with as dug material to road formation level. Compacts backfill with trench roller in 300mm layers, 6 passes.
16. Carry out test of line every two pipes or as instructed, Site Supervisor to decide on site. Confirm tests and quality of works between each manhole along line and sign off with Site Manager.
17. Repeat pipe laying and MH construction methodology along Foul & SW lines until works are complete.

Plant and equipment required.

13T Excavator	MH/Trench boxes
9T Excavator	Pipe laser
9T Dumper	Handheld tools
Trench compactor	
Lifting Equipment	

Date 07/10/2024 Wayne Musselwhite (*Wayne Musselwhite*)

Supporting documentation to be found in:

Parchow Groundworks Romney Broad Walk, North Bersted 469 H&S Plan

I UNDERSTAND AND ACCEPT THE METHOD STATEMENT – 04a

Activity: Installation of drainage

Location: Romney Broad Walk, North Bersted

[illegible]

Method statement: 04b

Activity: Installation of foul drainage IC's (Shallow drainage)

Location: Romney Broad Walk, North Bersted

Risks.

1. Manual handling related injuries
2. Ground penetration.
3. Working in or near excavation (Partial or full burial; suffocation, head injuries; falls; and collapse of structures).
4. Machine operations (Crush injuries to operatives; overturning of machine; electric shock and burns; public safety.)

Control measures.

1. Observe correct manual handling techniques when moving materials on site; complete an on-site manual handling risk assessment.
2. No ground penetration is to take place until permit has been issued from Parchow Site Manager or designated person with signed permission to excavate. Follow safe digging practices CAT scan dig. Safe hand digging practice when using hand tools is to be used within 0.5m of any known underground service, or greater distance as specified by the service provider. Safe digging entails digging alongside a service, final exposure being undertaken with horizontal digging using shovels/spades (insulated). The careful use of picks/forks may be necessary to free lumps of stone or to break up hard layers of chalk/sandstone etc. **The use of excavators is not permitted within 0.5m of any known underground service, or greater distance as specified by the service provider.**
3. Reduce sides of excavations 1-Metre steps or battered angles. Left open excavations to be inspected by site supervisor at the beginning of each shift. All trenches to be backfilled as works progress to the open pipe end at the completion of each working day, if practicable. Unattended trench openings are to be protected.
4. Only competent and trained operatives to operate and move plant. Dumper driver to dismount when dumper is being loaded and observe site speed limits. Seat belts to be worn at all times. All working areas to be segregated by barriers works to stop immediately and machines made safe if others encroach into this area.

PPE: Hard Hat, Hi Viz, steel toe capped boots and gloves to be worn at all times.

General method of work.

1. Drainage locations will be set out from information provided on the drawings by Parchow engineer.
2. Excavator to step excavation in 1M steps to required level for inspection chamber (IC) and trench line. Spoil to be placed at a safe distance from trench.
3. Transport and tip concrete for inspection chamber base. Level to required level.
4. Position and level IC and install rings to required height.
5. Transport and tip shingle from storage area into trench line using dumper.
6. Level shingle to correct level using laser.
7. Position drainage pipes into trench, making connections as you go.
8. Carry out test of line every two pipes or as instructed.
9. Following initial test back fill as per specification and compact.
10. Repeat the above process until drainage is complete.
11. Clear and tidy working area left over spoil loaded and transported to stockpile for reuse or for disposal off site.

9T Excavator
Hand tools
6T Dumper

Supporting documentation to be found in:

[illegible]

Method statement: 04c

Activity: Storm distribution installation

Location: Romney Broad Walk, North Bersted

Risks.

1. Manual handling related injuries
2. Ground penetration (Striking of services)
3. Working within or near excavations
4. Flooding/Water penetration
5. Machine operations (Crush injuries to operatives; overturning of machine; electric shock and burns; public safety.)

Control measures.

1. Observe correct manual handling techniques when moving materials on site; complete an on-site manual handling risk assessment (move crates by mechanical means to working area.)
2. No ground penetration is to take place until permit has been issued from Parchow Site Manager or designated person with signed permission to excavate. Follow safe digging practices CAT scan dig. Safe hand digging practice when using hand tools is to be used within 0.5m of any known underground service, or greater distance as specified by the service provider. Safe digging entails digging alongside a service, final exposure being undertaken with horizontal digging using shovels/spades. The careful use of picks/forks may be necessary to free lumps of stone or to break up hard layers of chalk/sandstone etc. **The use of excavators is not permitted within 0.5m of any known underground service, or greater distance as specified by the service provider.**
3. Left open excavations to be inspected by site foreman at the beginning of each shift. Unattended trench openings are to be protected by secure and rigid fencing or suitable barriers. Ensure all spoil is stored a minimum of that equal to the depth away from side of excavation.
4. Any Water egress to be controlled using pump, sump holes and ducting installed for draining purposes.
5. Only competent and trained operatives to operate and move plant. Do not overload dumpers and observe site speed restrictions, banksman to direct machines as and when required.
6. PPE: Hard Hat, Hi Viz, steel toe capped boots and gloves to be worn at all times.

General method of work.

1. Parchow Engineer to set out locations of storm distribution systems from drawing specifications.
2. Excavator to dig area to required level. Agree with Site Manager any over dig to allow for working space. Arising to be loaded into dumpers and removed to agreed stockpile area.
3. Drainage to be laid from storm IC into verge, making sure all couplings are watertight.
4. Excavator to load dumper with course pea shingle / grit as specified, transport and tip into excavation as instructed by banksman.
5. Excavator to spread grit / pea shingle to a depth of 50mm within excavation to specified level, all levels checked with rotating laser.
6. Repeat process for all plots within site.

Plant and equipment required.

13T Excavator
6T Dumper
Handheld tools

Date 07/10/2024 Wayne Musselwhite (Wayne Musselwhite)

Supporting documentation to be found in:

Parchow Groundworks Romney Broad Walk, North Bersted 469 H&S Plan

I UNDERSTAND AND ACCEPT THE METHOD STATEMENT – 04c

Activity: Storm distribution installation

Location: Romney Broad Walk, North Bersted

[illegible]

Method statement: 04d

Activity: Installation of Attenuation Tank

Location: Romney Broad Walk, North Bersted

Risks.

1. Manual handling related injuries.
2. Ground penetration. (Striking of services)
3. Working within or near excavations.
4. Machine operations (Crush injuries to operatives; overturning of machine; electric shock and burns; public safety.)

Control measures.

1. Observe correct manual handling techniques when moving materials on site; complete an on-site manual handling risk assessment (move crates by mechanical to working area.)
2. Check service details on site locate and mark services if shown, CAT scan working area before commencing works. Raise permit to dig with Parchow Site Manager.
3. Sides of excavation reduced by 1M steps. Access to excavation via as dug ramp make good access as and when required after machine movements. Left open excavations to be inspected by site foreman at the beginning of each shift. Unattended trench openings are to be protected by secure and rigid fencing such as Heras / pedestrian barriers. Ensure all spoil is stored a minimum of that equal to the depth away from side of excavation.
4. Only competent and trained operatives to operate and move plant. Do not overload dumpers and observe site speed restrictions banksman to direct machines as and when required.
5. PPE: Hard Hat, Hi Viz, steel toe capped boots and gloves to be worn at all times.

General method of work.

1. Parchow Engineer to set out location of tank from specification.
2. Excavator to dig area to required depth level of between 1.9 and 2.2M below FGL, levels to be confirmed (Allowing for 100mm of sand or granular material bed) forming 1M steps to sides of excavation, including access ramp. Excavation dimensions are as stated on drawings, over dig to allow for 500mm working space. Excavation to be 200mm deeper if ground is deemed poor. Arising to be loaded into dumpers and removed to agreed stockpile area.
3. Inspect excavation, confirming stepped sides and ramped access are safe before entering excavation, record in site folder.
4. Excavator to load dumper with sand or granular material, as specified and transport and tip into excavation as instructed by banksman. Access / egress via prepared ramp and/or ladder rail.
5. Excavator to spread granular material as stated to a depth of 100mm within excavation to specified level, all levels checked with rotating laser.
6. Confirm levels with Site Supervisor and signed off QA.
7. Install Geotextile membrane and roll out, lapping up sides of excavation. (Install to manufactures details)
8. Position Cellular crates over area. (If works to be carried out by others, see relevant RAMS)
9. Wrap crates as per detail, fitting incoming twin wall inlet and outlet pipes at specified levels. 225mm rocker pipe installed for connection to catchpit manhole SWSMH6 outlet, and SWSMH2 inlet. Backfill and compact at intervals agreed (250mm layers).
10. Clean and tidy area removing all unwanted material from workplace.

13T Excavator
9T Dumper
Membrane
Crates
Laser level, CAT detector

Supporting documentation to be found in:

Parchow Groundworks Romney Broad Walk, North Bersted 469 H&S Plan

I UNDERSTAND AND ACCEPT THE METHOD STATEMENT – 04d

Activity: Installation of Attenuation Tank

Location: Romney Broad Walk, North Bersted

[illegible]

Method statement: 04e**Activity: Installation of Hydrobrake/Flow control unit****Location: Romney Broad Walk, North Bersted****Risks.**

1. Manual handling related injuries.
2. Trips and falls.
3. Entrapment in Manhole.
4. Loss of consciousness/Overcome by fumes.
5. Working in or near an open manhole.

Control measures.

1. Observe correct manual handling techniques when lifting materials on site. Use mechanical lifting where possible.
2. Ensure work areas are kept tidy and free from trip hazards. All used tools are put out of working areas. All manhole covers to be in place once works are completed. No unauthorised personnel to enter work area.
3. Ensure that a banksman/topman is in place at ground level at all times and rescue kit is available to operator in manhole.
4. Ensure gas monitor is used continually through task to ensure air is clean and breathable.
5. Ensure person going into manhole is competent and has had satisfactory training.

P.P.E. Hard hats, Hi Viz, gloves to be worn at all times.

General method of work.

1. No persons to enter open manhole until confined space permit has been issued by Parchow Site Manager. Area around manhole is barriered off and segregated from others before the manhole lid is removed using keys and placed away from opening as to not create a trip hazard or fall into manhole.
2. Rescue kit is set up over manhole, tripod is positioned and operator going into hole to do task is wearing support harness when entering hole. Topman is in place to fix harness onto tripod and ensure nobody enters working area. (In the event of any emergency involving the operator inside manhole the Topman will use winch to lift operator from hole and carry out required procedure for rescue and reporting incident).
3. Check air using gas monitor before operator enters space.
4. Pass hydrobrake to operator carrying out the works one at a time. With the operator installing a hydrobrake then coming back up to retrieve the next one
5. Hydrobrake to be bolted on to pre-existing opening using hand tools.
6. When the task is complete the operator exits from manhole, rescue kit is dismantled, and work is inspected by Supervisor to ensure it meets required finish.
7. Manhole lid is placed back on to opening and barriers removed.
8. Area cleaned and tidied with any waste/debris removed.

Plant and equipment required.

Rescue Kit
Gas monitor
Hydrobrake/Flow control unit
Hand tools
Manhole Keys

Date 07/10/2024 Wayne Musselwhite (wayne Musselwhite)

Supporting documentation to be found in:

Parchow Groundworks Romney Broad Walk, North Bersted 469 H&S Plan

I UNDERSTAND AND ACCEPT THE METHOD STATEMENT – 04e

Activity: Installation of hydrobrake

Location: Romney Broad Walk, North Bersted

[illegible]

Method statement: 04f**Activity: Headwall Installations****Location: Romney Broad Walk, North Bersted****Risks.**

1. Manual handling related injuries.
2. Slips and trips.
3. Ground penetration.
4. Working in or near excavations.
5. Machine operations (Crush injuries to operatives; overturning of machine; electric shock and burns; public safety.).

Control measures.

1. Observe correct manual handling techniques when moving materials on site; complete an on-site manual handling risk assessment. Use mechanical means where practicable.
2. Ensure working area is kept clear of debris, do not leave tools lying around creating trip hazards, keep access clear to excavation. All operatives to be wearing adequate footwear with ankle supports.
3. No ground penetration is to take place until permit has been issued from Parchow Site Manager or designated person with signed permission to excavate. Follow safe digging practices CAT scan dig. Safe hand digging practice when using hand tools is to be used within 0.5m of any known underground service, or greater distance as specified by the service provider. Safe digging entails digging alongside a service, final exposure being undertaken with horizontal digging using shovels/spades. The careful use of picks/forks may be necessary to free lumps of stone or to break up hard layers of chalk/sandstone etc. **The use of excavators is not permitted within 0.5m of any known underground service, or greater distance as specified by the service provider.**
4. Unattended trench openings are to be protected by secure and rigid fencing such as Heras fencing with secured feet and clips.
5. Only competent and trained operatives to operate and move plant. Banksman or stop blocks deployed for machinery on leading edge.

PPE. Hi viz, hard hat, boots with protected toes, mid sole and ankle support, and gloves to be worn at all times.

General method of work.

1. Follow procedures for installation of drainage as per MS04a.
2. Headwall installation point to be set out by engineer as per drawing specifications.
3. Excavation continued from SWSMH3 to new headwall concrete section along Aldingbourne Rife, at depth and new pipe (150mm) installed ready for new section.
4. Concrete base for headwall to be formed and precast headwall section placed at required level, with pipe connection for outlet.
5. Shingle and backfill with compaction in layers, forming batter above headwall. Ground anchor to be backfilled within newly formed bank. Grating covers to be fitted and all debris to be removed from area.
6. Clean and tidy area, removing all unwanted material.

13T Excavator
9T Dumper

Parchow Groundworks Romney Broad Walk, North Bersted 469 H&S Plan

Location: Romney Broad Walk, North Bersted

[illegible]