

PURPOSE OF REPORT – TECHNICAL NOTE IN RESPONSE TO

**RESPONSE TO COMMENTS IN RELATION TO CONDITION 8 OF
PLANNING APPROVAL REF:
EML-OUT/20-030/C/20221111-90744-991**

Version 1.0
Date/Time 21.11.2022

1. INTRODUCTION

As part of the Planning Application EML-OUT/20-030/C/20221111-90744-991, Ridge and Partners Prepared a Flood Risk and Drainage Strategy report for the proposed extension to Gorton Education Village to provide educational premises (Use Class F1); involving new building, landscaping, car parking and servicing.

A consultation response provided by the LLFA dated 11.22.2022 has been reviewed and the following response prepared.

2. PLANNING CONDITION 8 – COMMENTS ON APPLICATION TO DISCHARGE

2.1 CONDITION 8 – DRAINAGE

LLFA Comment	Ridge Response
<i>The information contains updated calculations which now indicate flooding in the 100+CC event. There is no flooding in the 100+CC event under the Planning Portal CDN/22/0551 drainage strategy; we would require further information to support why the system's performance has changed.</i>	Ridge accept this response. The inlet pipe on the attenuation tank has been upsized from a 100mm diameter pipe to a 225mm diameter pipe to allow the flow of water during the more intense storms to do so more easily and ensure the full storage capacity of the attenuation tank is fully utilised.
<i>The preference should be to contain this volume within the network where feasible.</i>	This change ensures that the volume of water present in the 100 year + 40% climate change allowance storm is contained within the network.
<i>If the flooded volume in the 100+CC cannot be contained within the network, we require further evidence that the flows can be managed onsite.</i>	

**BOWKER SADLER ARCHITECTS,
MELLAND HIGH SCHOOL – GORTON EDUCATION VILLAGE**

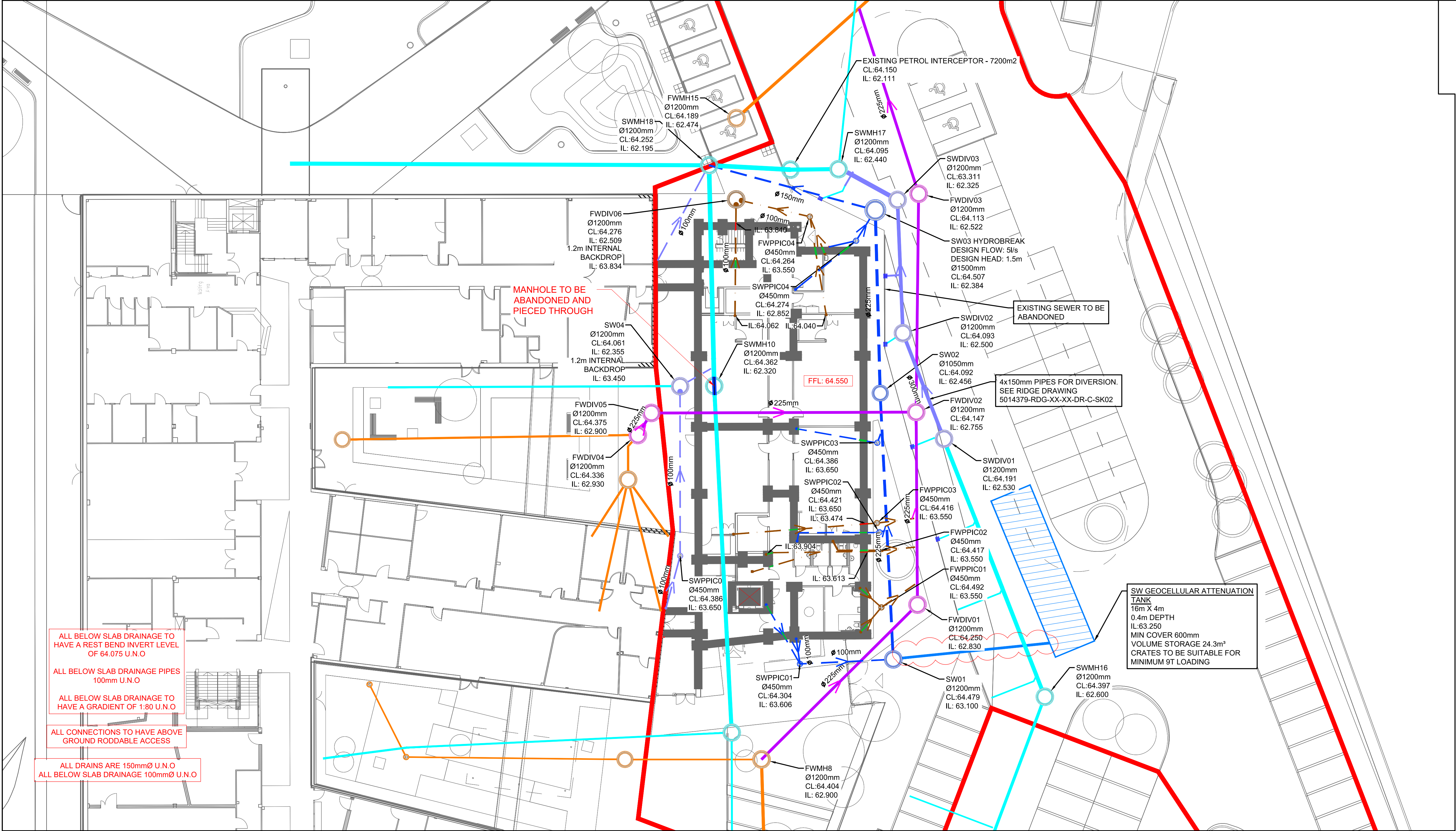
<i>The overland flow layout would need to be supported with evidence of proposed topo levels to demonstrate that the flows will be contained as-shown and that the flooded volume would not present an issue to the applicant as this is shown to affect a dropoff bay and 'formal entrance' according to the 132456/FO/2021 masterplan.</i>	As such, the dropoff bay and 'formal entrance' are no longer at any risk of flooding from any flooded volume. The general arrangement drawing & drainage model have been updated to suit this change (Appendix A & Appendix B respectively.)
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BOWKER SADLER ARCHITECTS, MELLAND HIGH SCHOOL – GORTON EDUCATION VILLAGE

APPENDICES

- Appendix A – Proposed Drainage Plan
- Appendix B – Proposed drainage model results

APPENDIX A – PROPOSED DRAINAGE PLAN



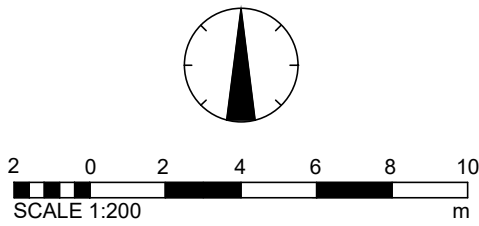
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DRAWING NOTES:

CDM REGULATIONS 2015

SIGNIFICANT OR NON-OBVIOUS RISKS AND RISKS WHICH ARE DIFFICULT TO MANAGE ARE IDENTIFIED ON THIS DRAWING USING THE FOLLOWING SYMBOL, IDENTIFIED TO THE RIGHT WITH BRIEF ACCOMPANYING TEXT. FOR FURTHER DETAILS OF THE RISKS IDENTIFIED BY DESIGNERS, REFERENCE SHOULD BE MADE TO CDM HAZARD REGISTER.



C02	CONSTRUCTION ISSUE - ATTENUATION TANK INLET PIPE UPSIZED TO 2250 FROM 1000	21.11.22	TP	PB
C01	CONSTRUCTION ISSUE - SW DIVERSION UPDATED TO SUIT RPI 008 SOLUTION; DIVERSION CONNECTIONS TO SWMH18 MADE CLEAR; ATTENUATION TANK RELOCATED	05.10.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD

RIDGE

5TH FLOOR
BELVEDERE HOUSE
12 BOOTH STREET
MANCHESTER, M2 4AW

TEL: 0161 833 9579
WWW.RIDGE.CO.UK

DRAINAGE NOTES

- THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT AND DIVERSION WORKS AS NECESSARY, TO ALL EXISTING SERVICES TO THE SATISFACTION OF THE PUBLIC UTILITIES.
- THE CONTRACTOR SHALL ALLOW FOR DEALING WITH SURFACE WATER RUN-OFF INTO EXCAVATIONS AND FROM GROUNDWATER BY MEANS OF SUMPS, PUMPING AND DE-WATERING AS APPROPRIATE, IN ORDER TO KEEP THE EXCAVATION AS REASONABLY DRY AS POSSIBLE DURING THE CONSTRUCTION OF THE WORKS.
- ALL PRIVATE DRAINAGE WITHIN THE SITE IS TO COMPLY WITH THE REQUIREMENTS OF BSEN752 AND BUILDING REGULATIONS PART H. WHERE APPROPRIATE, ALL ADOPTED DRAINAGE SHALL BE DESIGN AND CONSTRUCTED IN ACCORDANCE WITH SEWERS FOR ADOPTION 6th EDITION AND THE ADOPTING AUTHORITIES STANDARD REQUIREMENTS.
- ALL PRIVATE DRAINAGE PIPES TO BE LAID IN TRENCHES BEDDED CLASS 'B' ON SINGLE SIZED AGGREGATE AND BACKFILLED WITH APPROVED SELECTED FILL (40mm DOWN) REUSED FROM EXCAVATED MATERIAL UNDER BUILDINGS AND WHERE COVER TO INVERT IS LESS THAN 1200mm UNDER TRAFFICKED AREAS PIPES TO BE CAST IN CONCRETE (CLASS Z BEDDING), CLASS 'S' BED AND SURROUND MAY BE REQUIRED FOR SEWERS TO BE ADOPTED. REFER TO SPECIFIC DRAWINGS FOR FURTHER INFORMATION.
- SELECTED BACKFILL MATERIAL SHALL CONSIST OF UNIFORM EXCAVATED MATERIAL, FREE FROM STONES LARGER THAN 40mm, CLAY LUMPS LARGER THAN 75mm, TREE ROOTS, CONTAMINATED MATERIAL. SELECTED BACKFILL MATERIAL IS TO BE PLACED IN LAYERS NOT EXCEEDING 150mm THICKNESS. THE MATERIAL SHALL BE COMPACTED TO

- ACHIEVE NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED IN LABORATORY COMPACTION TESTS. SUFFICIENT TESTING SHALL BE CARRIED OUT, BY THE CONTRACTOR, TO DEMONSTRATE THIS IS ACHIEVED (NUMBER 12 AND FREQUENCY OF TESTING TO BE AGREED WITH SHD). WHERE THE MOISTURE CONTENT OF THE MATERIAL PROHIBITS COMPLIANCE WITH THE ABOVE 6F1 OR SIMILAR IMPORTED MATERIAL SHALL BE USED.
- CONCRETE PROTECTION TO PIPEWORK IS TO BE PROVIDED AS FOLLOWS:
 - ALL PIPEWORK WITHIN PEDESTRIAN/SOFT AREAS WITH LESS THAN 600mm COVER
 - ALL PIPEWORK SUBJECT TO VEHICULAR OVERRUN WITH LESS THAN 1.2m COVER.
 - ALL PIPEWORK WITHIN MANHOLES ARE TO BE LAID SOFFIT TO SOFFIT (U.N.O). ALL CHAMBER INVERT LEVELS ARE FOR THE OUTGOING PIPE LEVELS. BACKDROP PIPEWORK SHALL BE CONNECTED AT SOFFIT TO SOFFIT WITH THE RODDING ACCESS LEVEL SPECIFIED.
 - ALL DRAINS TO BE LAID ACCURATELY TO LINE AND LEVEL IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 - ANY GRADIENTS OF DRAINS INDICATED ARE INDICATIVE ONLY AND THE CONTRACTOR SHALL INSTALL THE DRAINS TO THE SPECIFIED LEVELS SHOWN FOR EACH MANHOLE (U.N.O). CATCHPIT INVERT LEVELS ARE FOR THE OUTGOING PIPE WITH THE SUMP LEVEL SPECIFIED SEPARATELY.
 - CO-ORDINATE SETTING OUT INFORMATION FOR MANHOLES IS TO THE INTERSECTION THE DRAINS AND NOT THE CENTRE OF THE MANHOLE.
 - COVER LEVELS OF THE MANHOLES ARE PROVISIONAL AND SUBJECT TO ADJUSTMENT ON SITE TO SUIT THE FINISHED

- GROUND LEVELS. ALL EXTERNAL WORKS CONSTRUCTION AREAS TO BE AS LOCATED BY THE ARCHITECT.
- MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
- VEHICULAR AREAS: CLASS D400 (E600 IN VULNERABLE SE'RVICE YARD LOCATIONS), DOUBLE TRIANGULAR, 150mm DEEP DUCTILE IRON COVER AND FRAME WITH THREE POINT COVER SEATING, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
 - PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
- POSITIONS AND SIZES OF ABOVE GROUND FOUL AND SURFACE WATER DRAINAGE CONNECTIONS ARE TO BE CONFIRMED PRIOR TO CONSTRUCTION WITH THE ARCHITECT & M&E ENGINEER.
 - GULLY GRATINGS AND STEEL CHANNEL COVERS ARE TO BE IN ACCORDANCE WITH BSEN124 AS FOLLOWS:
 - AREAS SUBJECT TO VEHICULAR OVERRUN: CLASS D400 MINIMUM.
 - AREAS NOT SUBJECT TO REGULAR VEHICLE OVERRUN (ADJACENT TO KERBS ETC): CLASS C250.
 - GULLY GRATINGS ADJACENT TO KERBS SHALL BE HINGED ON THE SIDE OF THE TRAFFIC DIRECTION (LEFT HAND SIDE).
 - ALL BRICKWORK IN CONNECTION WITH DRAINAGE IS TO BE SOLID CLASS B ENGINEERING BRICK TO BS3921.
 - ALL PRECAST CONCRETE PIPES, CHAMBER PRODUCTS AND ROAD GULLIES SHALL BE TO BS5911 AND BE KITEMARKED.
 - ALL INSITU AND CONCRETE PRODUCTS SHALL COMPLY WITH THE REQUIREMENTS FOR SULPHATE EXPOSURE IN ACCORDANCE WITH BRE SPECIAL DIGEST 1, CONCRETE IN

- AGGRESSIVE GROUND (2001) PART 1: TABLE 2.
- UPON COMPLETION OF THE WORKS THE CONTRACTOR SHALL CLEAN ALL DRAINAGE BY JETTING, REMOVING ALL DEBRIS FROM SITE. NO DEBRIS SHALL BE PERMITTED TO ENTER THE EXISTING DRAINAGE SYSTEM.
 - CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150MM OF CHAMBER/SHAFT RING JOINTS.
 - ROCKER PIPES TO BE SURROUNDED WITH CONCRETE LOCATED 150mm MINIMUM 200mm MAXIMUM FROM THE FIRST FLEXIBLE JOINT TO THE MANHOLE WALL.
 - SOFT SPOTS IN THE TRENCH FORMATION SHALL BE REMOVED AND REPLACED WITH GRANULAR BEDDING UNLESS INSTRUCTED OTHERWISE.
 - LATERAL CONNECTIONS IN BETWEEN MANHOLE RUNS SHALL BE FORMED BY USING PURPOSE MADE JUNCTION FITTINGS. BEND FITTINGS SHALL BE PROVIDED WHERE APPROPRIATE TO DIRECT THE FLOW INTO MAIN RUNS.
 - IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LIAISE WITH BUILDING CONTROL FOR APPROVALS, INTERIM INSPECTION, SNAGGING AND FINAL INSPECTIONS OF THEIR WORK.
 - THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING STATUTORY UNDERTAKERS APPARATUS AND SERVICE CONNECTIONS ADJACENT TO AND CROSSING THE WORKS BY TRIAL PITS PRIOR TO COMMENCING MACHINE DIG.
 - AT THE CONCLUSION OF THE WORKS THE CONTRACTOR SHALL PROVIDE A MARKED UP DRAWING TO RECORD ANY AS BUILT VARIATIONS NOT SHOWN ON THE DRAWINGS.
 - THE DRAINAGE SYSTEM IS NOT DESIGNED TO ACCEPT

- UNTREATED EFFLUENT FROM A COMMERCIAL KITCHEN CONTAINING GREASE AND OILS. REMOVAL OF GREASE AND OIL SHOULD BE MADE AT SOURCE USING A FLOOR MOUNTED ABOVE GROUND GREASE REMOVAL SYSTEM. IT IS RECOMMENDED THAT A MECHANICAL GREASE REMOVAL SYSTEM BE EMPLOYED FOR THIS PURPOSE NOT A PASSIVE SYSTEM.
- PIPEWORK TO BE OF THE FOLLOWING MANUFACTURER: 100 / 150 / 225MM DIAMETER HEPWORTH SUPERSLEEVE VITRIFIED CLAY PIPES (40kN/mmm CRUSHING STRENGTH), 300mm + TO BE CONCRETE CLASS M. ALTERNATIVELY POLYSEWER UPVC DRAINAGE SYSTEM BY POLYPIPE WHEN INSTALLED IN LINE WITH THE MANUFACTURERS RECOMMENDATIONS. FILTER DRAINAGE TO BE PERFORMED HDPE.
 - ALL RWP, WPC & GULLY CONNECTIONS TO BE 100mm DIA UNO & ARE RODDABLE AT LOCATIONS ABOVE GROUND LEVEL.
 - ALL INSPECTION CHAMBERS WITH A DEPTH GREATER THAN 1.2m TO HAVE A 350mm DIAMETER REDUCING PLATE LOCATED BENEATH COVER AND FRAME TO PREVENT ACCESS.

KEY

- PROPOSED BACKDROP

KEY

- EXISTING SW SEWER
- EXISTING FW SEWER
- PROPOSED SW IC
- PROPOSED SW SEWER
- PROPOSED FW IC
- PROPOSED DIVERTED SW SEWER
- PROPOSED DIVERTED SW MH
- PROPOSED DIVERTED FW SEWER
- PROPOSED DIVERTED FW MH
- PROPOSED GULLY
- DRAINAGE CROSSES OVER FOUNDATION
- FOUNDATION CROSSES THROUGH FOUNDATION

CLIENT:
BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:
GORTON EDUCATION VILLAGE

TITLE:
PROPOSED DRAINAGE LAYOUT

ENG/TECH: AP CSE: AM ICSE: AM SCALE: 1:200 @ A1 STATUS ISSUE: S4

STATUS:
CONSTRUCTION

"UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK"

SUITABILITY: S4 - Issued for Construction Approval

PROJECT: 5014379 RDG ZZ ST DR C 05001 C02

APPENDIX B - PROPOSED DRAINAGE MODEL RESULTS

Project:	Date: 05/10/2022			
	Designed by:	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Storm Phase: Proposed SW	Tommypurdy			
	Company Address:			



Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	64.400
Depth (m)	0.400
Base Level (m)	63.250
Number of Crates Long	32
Number of Crates Wide	8
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	0.5
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	25.070

Outlets

Outlet

Outgoing Connection	tank inlet
Outlet Type	Free Discharge

Project:	Date: 05/10/2022			
	Designed by:	Checked by:	Approved By:	
Report Details:			Company Address:	
Type: Manhole Schedule Storm Phase: Proposed SW				

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
SW03	64.507 62.384	Diameter / Length: 1.500	{1} 1.002	Pipe	62.384	Diam/Width:225	Manhole
E:388530.526 N:394909.868	2.123		{a} 1.003	Pipe	62.384	Diam/Width:225	Not Applicable
SW01	64.479 63.100	Diameter / Length: 1.200	{1} 1.000	Pipe	63.225	Diam/Width:100 Diam/Width:225	Manhole
E:388532.229 N:394867.280	1.379		{2} tank inlet	Pipe	63.100		
			{a} 1.001	Pipe	63.100	Diam/Width:225	Not Applicable
SWPPIC01	64.522 63.994	Diameter / Length: 0.450					Manhole
E:388523.388 N:394866.848	0.528						
			{a} 1.000	Pipe	63.994	Diam/Width:100	Not Applicable
SWMH18	64.252 62.253	Diameter / Length: 1.050	{1} 1.003	Pipe	62.253	Diam/Width:225	Manhole
E:388514.775 N:394914.117	1.999						
							Not Applicable
SW02	64.268 62.500	Diameter / Length: 1.050	{1} 1.001	Pipe	62.500	Diam/Width:225	Manhole
E:388530.988 N:394892.520	1.768						
			{a} 1.002	Pipe	62.500	Diam/Width:225	Not Applicable

Project:	Date: 05/10/2022		
	Designed by:	Checked by:	Approved By:
	Tommypurdy		
Report Details: Type: Inflow Summary Storm Phase: Proposed SW		Company Address:	



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	SWPPIC01		Time of Concentration	0.033	100	0	100	0.033
Catchment Area (1)	SW03		Time of Concentration	0.031	100	0	100	0.031
Catchment Area (2)	SW02		Time of Concentration	0.028	100	0	100	0.028
Catchment Area (3)	SW01		Time of Concentration	0.013	100	0	100	0.013
TOTAL		0.0		0.105				0.105

Project:	Date: 05/10/2022		
	Designed by: Tommypurdy	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Proposed SW	Company Address:		



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

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 1 years: +0 %: 15 mins: Winter	0.03	4.0	1.862
Catchment Area (1)	FSR: 1 years: +0 %: 15 mins: Winter	0.03	3.8	1.755
Catchment Area (2)	FSR: 1 years: +0 %: 15 mins: Winter	0.03	3.4	1.588
Catchment Area (3)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.6	0.751

Project:	Date: 05/10/2022		
	Designed by: Tommypurdy	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Proposed SW		Company Address:	



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

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 30 years: +0 %: 15 mins: Winter	0.03	9.8	4.565
Catchment Area (1)	FSR: 30 years: +0 %: 15 mins: Winter	0.03	9.3	4.310
Catchment Area (2)	FSR: 30 years: +0 %: 15 mins: Winter	0.03	8.4	3.898
Catchment Area (3)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.0	1.846

Project:	Date: 05/10/2022		
	Designed by: Tommy Purdy	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Proposed SW		Company Address:	




FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 100 years: +40 %: 15 mins: Winter	0.03	17.7	8.274
Catchment Area (1)	FSR: 100 years: +40 %: 15 mins: Winter	0.03	16.7	7.811
Catchment Area (2)	FSR: 100 years: +40 %: 15 mins: Winter	0.03	15.1	7.066
Catchment Area (3)	FSR: 100 years: +40 %: 15 mins: Winter	0.01	7.1	3.346

Project:	Date: 05/10/2022		
	Designed by: Tommypurdy	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Proposed SW	Company Address:		




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
SW03	FSR: 1 years: +0 %: 30 mins: Winter	64.50 7	62.38 4	63.173	0.789	6.6	1.395	0.000	4.1	7.785	Surcharged
SW01	FSR: 1 years: +0 %: 30 mins: Winter	64.47 9	63.10 0	63.173	0.073	4.4	0.082	0.000	4.4	3.421	OK
SWPPIC01	FSR: 1 years: +0 %: 15 mins: Winter	64.52 2	63.99 4	64.027	0.033	4.0	0.005	0.000	4.0	1.861	OK
SWMH18	FSR: 1 years: +0 %: 15 mins: Winter	64.25 2	62.25 3	62.299	0.046	4.2	0.000	0.000	4.2	4.603	OK
SW02	FSR: 1 years: +0 %: 30 mins: Winter	64.26 8	62.50 0	63.173	0.673	7.1	0.583	0.000	4.1	5.533	Surcharged

Project:	Date: 05/10/2022			
	Designed by: Tommypurdy	Checked by:	Approved By:	
Report Details: Type: Junctions Summary Storm Phase: Proposed SW	Company Address:			



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
SW03	FSR: 30 years: +0 %: 15 mins: Winter	64.507	62.384	63.705	1.321	15.2	2.334	0.000	4.6	7.157	Surcharged
SW01	FSR: 30 years: +0 %: 15 mins: Winter	64.479	63.100	63.649	0.549	30.2	0.621	0.000	9.8	11.242	Surcharged
SWPPIC01	FSR: 30 years: +0 %: 15 mins: Winter	64.522	63.994	64.048	0.054	9.8	0.009	0.000	9.8	4.559	OK
SWMH18	FSR: 30 years: +0 %: 15 mins: Winter	64.252	62.253	62.300	0.047	4.6	0.000	0.000	4.6	5.945	OK
SW02	FSR: 30 years: +0 %: 15 mins: Winter	64.268	62.500	63.690	1.190	16.3	1.030	0.000	7.1	8.069	Surcharged

Project:	Date: 05/10/2022			
	Designed by: Tommypurdy	Checked by:	Approved By:	
Report Details: Type: Junctions Summary Storm Phase: Proposed SW	Company Address:			



FSR: 100 years: Increase Rainfall (%): +40: 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
SW03	FSR: 100 years: +40 %: 15 mins: Summer	64.507	62.384	63.981	1.597	18.3	2.822	0.000	5.1	9.712	Surcharged
SW01	FSR: 100 years: +40 %: 15 mins: Summer	64.479	63.100	63.883	0.783	53.1	0.885	0.000	10.1	19.145	Surcharged
SWPPIC01	FSR: 100 years: +40 %: 15 mins: Winter	64.522	63.994	64.479	0.485	17.7	0.077	0.000	17.0	8.271	Flood Risk
SWMH18	FSR: 100 years: +40 %: 15 mins: Summer	64.252	62.253	62.303	0.050	5.1	0.000	0.000	5.1	6.574	OK
SW02	FSR: 100 years: +40 %: 15 mins: Summer	64.268	62.500	63.964	1.464	28.2	1.268	0.000	6.1	12.289	Surcharged

Project:	Date: 05/10/2022			
	Designed by:	Checked by:	Approved By:	
Report Details:			Company Address:	
Type: Stormwater Controls Summary Storm Phase: Proposed SW				



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

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. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 1 years: +0 %: 15 mins: Summer	63.250	63.250	0.000	0.000	0.0	0.000	0.000	0.000	0.0	0.000	100.000	OK

Project:	Date: 05/10/2022			
	Designed by: Tommy Purdy	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Proposed SW	Company Address:			



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

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. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 30 years: +0 %: 60 mins: Winter	63.386	63.386	0.136	0.136	16.9	8.261	0.000	0.000	3.6	7.578	67.049	OK

Project:	Date: 05/10/2022			
	Designed by:	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Proposed SW			Company Address: Tommypurdy	



**FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By:
Max. Avg. Depth**

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. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 100 years: +40 %: 60 mins: Winter	63.781	63.781	0.531	0.531	25.1	24.467	0.000	0.000	5.0	13.711	2.404	OK

Project:	Date: 05/10/2022			
	Designed by: Tommy Purdy	Checked by:	Approved By:	
Report Details: Type: Connections Summary Storm Phase: Proposed SW	Company Address:			



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	SW01	SW02	64.479	63.156	0.225	2.582	0.6	0.07	5.6	OK
1.000	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWPPI C01	SW01	64.522	64.027	0.033	1.861	1.8	0.22	4.0	OK
1.003	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SW03	SWMH18	64.507	63.158	0.046	4.603	0.7	0.09	4.2	Surcharged
1.002	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SW02	SW03	64.268	63.158	0.225	3.681	0.3	0.1	4.3	Surcharged
tank inlet	FSR: 1 years: +0 %: 15 mins: Summer	Pipe	Cellular Storage	SW01	64.400	63.250	0.019	0.000	0.0	0	0.0	OK

Project:	Date: 05/10/2022		
	Designed by: Tommy Purdy	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Proposed SW	Company Address:		




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: Summer	Pipe	SW01	SW02	64.479	63.631	0.225	2.385	0.6	0.14	11.2	Surcharged
1.000	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWPPI C01	SW01	64.522	64.048	0.100	4.559	2.2	0.54	9.8	OK
1.003	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SW03	SWMH18	64.507	63.705	0.048	5.945	0.7	0.1	4.6	Surcharged
1.002	FSR: 30 years: +0 %: 15 mins: Summer	Pipe	SW02	SW03	64.268	63.626	0.225	4.050	0.3	0.22	9.2	Surcharged
tank inlet	FSR: 30 years: +0 %: 30 mins: Winter	Pipe	Cellular Storage	SW01	64.400	63.383	0.225	0.000	0.2	0.07	3.7	OK

Project:	Date: 05/10/2022		
	Designed by: Tommy Purdy	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Proposed SW	Company Address:		




FSR: 100 years: Increase Rainfall (%): +40: 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: +40 %: 15 mins: Winter	Pipe	SW01	SW02	64.479	63.847	0.225	1.688	0.7	0.16	12.7	Surcharged
1.000	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	SWPPI C01	SW01	64.522	64.479	0.100	8.271	2.2	0.95	17.0	Flood Risk
1.003	FSR: 100 years: +40 %: 15 mins: Summer	Pipe	SW03	SWMH18	64.507	63.981	0.051	6.574	0.8	0.11	5.1	Surcharged
1.002	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	SW02	SW03	64.268	63.943	0.225	1.452	0.4	0.23	9.9	Surcharged
tank inlet	FSR: 100 years: +40 %: 60 mins: Winter	Pipe	Cellular Storage	SW01	64.400	63.781	0.225	0.000	0.1	0.1	5.0	Surcharged