



RIDGE

GORTON EDUCATION VILLAGE

**REPORT TO DISCHARGE DRAINAGE
RELATED PLANNING CONDITIONS**

JULY 2022

Document Control Sheet

Project No: 5014379

Project Title: Gorton Education Village

Report Title: Report to Discharge Drainage Related Planning Conditions

Report Reference: GEV-RDG-00-ZZ-RP-C-0001

Issue: 1

Status: Final

Date: 28.07.2022

Record of Issue

Issue	Status	Author	Approved	Date
1	Final	Philip Barrett	Philip Barrett	28.07.22

Distribution

Issue	Organisation	Quantity
1	MCC	1



Table of Contents

1.0 Introduction..... 1

2.0 Drainage Related Planning Conditions 2

2.1 Planning Condition 1..... 2

2.1 Planning Condition 8..... 2

2.1 Planning Condition 9..... 3

3.0 Drainage Related Planning Condition and Ridge Response 4

3.1 Planning Condition 1..... 4

3.2 Planning Condition 8..... 6

2.1 Planning Condition 9..... 10

Appendix A – Ridge Design Drawings 11

Appendix B – Hydraulic Calculations 12

Appendix C – Existing Site Information and Maintenance Schedule 13

1.0 Introduction

In December 2021 a planning application was submitted to Manchester City Council for the Erection of two storey extension to existing school to provide 8 additional classrooms and associated support rooms, with associated amendments to existing car park, landscape works and an additional car parking area to increase car parking provision on site by 11 spaces (132456/FO/2021). Planning conditions have been proposed by Manchester City Council and this report has been prepared to discharge these proposed conditions.

2.0 Drainage Related Planning Conditions

2.1 Planning Condition 1

The development hereby permitted shall be carried out in accordance with the following drawings and documents

Drawings numbered 20-030 1000 rev A, 20-030 1001 rev A, 20-030 1002, 20-030 1003, 20-030 1110 revA, 20-030 1100 revD, 20-030 1101 revC, 20-030 1102, 20-030 111 revA, 20-030 1200 revC, 344 01 revB and 344 02revB, Crime Impact Statement version A dated 26 November 2021 (ref:20051/1726/CIS/01) AEC Noise Impact Statement Version A dated 29 November 2021, Arboricultural Method Statement dated 2 December 2021 (ref:TRE/MHSM/RevA) Arboricultural Implications Assessment dated 1 December 2021 (ref:TRE/MHSM/RevA), Biodiversity Impact Assessment dated 21 November 2021 Extended Phase 1 Habitat Survey & Daytime Bat Survey dated October 2021 **Flood Risk and drainage Statement dated December 2021**, Applied Geology Report on Desk Study (ref:AG3331-21-AN30-Issue 3) Flinders Chase Transport Statement (ref:MHS-FC-HGN-FS-RP-D-001) All stamped as received by the City Council as Local Planning Authority, on 9 December 2021.

Drawing numbered MHS-FC-HGN-FS-DR-D-0002 stamped as received by the City Council as Local Planning Authority, on 8 February 2022.

Design and Access Statement stamped as received by the City Council as Local Planning Authority, on 25 April 2022.

Reason- To ensure that the development is carried out in accordance with the approved plans. Pursuant to policies SP1 and DM1 of the Manchester Core Strategy.

2.1 Planning Condition 8

No development shall take place until surface water drainage works have been implemented in accordance with Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015) or any subsequent replacements national standards and details have been submitted to and approved in writing by the Local Planning Authority. In order to avoid/dischage the above drainage condition the following additional information has to be provided:

- Consideration of alternative green SuDS (that is either utilising infiltration or attenuation) if practicable;
- Runoff volume in the 1 in 100 year, 6 hours rainfall shall be constrained to a value as close as is reasonably practical to the greenfield runoff volume for the same event, but never to exceed the runoff volume from the development site prior to redevelopment;
- Evidence that the drainage system has been designed (unless an area is designated to hold/or convey water as part of the design) so that flooding does not occur during a 1 in 100 year rainfall event with allowance for climate change in any part of a building;

- Assessment of overland flow routes for extreme events to be diverted away from buildings (including basements). Overland flow routes need to be designed to convey the flood water in a safe manner in the event of a blockage or exceedance of the proposed drainage system capacity including inlet structures. A layout with overland flow routes needs to be presented with appreciation of these overland flow routes with regards to the properties on the site and adjacent properties off site.

Where surface water is connected to the ordinary watercourse, agreement in principle from Manchester City Council as Lead Local Flood Authority is required. Please note that all new connections to the watercourses shall comply with reduction of flows to Greenfield runoff rates. An email of acceptance of the proposed flows and/or new connection will suffice.

Where an application is part of a larger site it is essential that the new proposal does not compromise the existing drainage. Hydraulic calculation of the proposed system; Construction details of flow control and SuDS elements.

Reason - To promote sustainable development, secure proper drainage and to manage the risk of flooding and pollution, pursuant to policies DM1, EN14 and SP1 of the Manchester Core Strategy and the National Policy Framework.

2.1 Planning Condition 9

No development hereby permitted shall be occupied until details of the implementation, maintenance and management of the sustainable drainage scheme have been submitted to and approved by the local planning authority.

The scheme shall be implemented and thereafter managed in accordance with the approved details. Those details shall include: -

- Verification report providing photographic evidence of construction as per design drawings;
- As built construction drawings if different from design construction drawings;
- Management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public body or statutory undertaker or any other arrangements to secure the operation of the sustainable drainage scheme throughout its lifetime.

Reason: To manage flooding and pollution and to ensure that a managing body is in place for the sustainable drainage system and there is funding and maintenance mechanism for the lifetime of the development, pursuant to policies DM1, EN14 and SP1 of the Manchester Core Strategy and the National Planning Policy Framework.

3.0 Drainage Related Planning Condition and Ridge Response

Detailed below is each planning condition text in black with Ridge response in blue beneath.

3.1 Planning Condition 1

The development hereby permitted shall be carried out in accordance with the following drawings and documents

Drawings numbered 20-030 1000 rev A, 20-030 1001 rev A, 20-030 1002, 20-030 1003, 20-030 1110 revA, 20-030 1100 revD, 20-030 1101 revC, 20-030 1102, 20-030 111 revA, 20-030 1200 revC, 344 01 revB and 344 02revB, Crime Impact Statement version A dated 26 November 2021 (ref:20051/1726/CIS/01) AEC Noise Impact Statement Version A dated 29 November 2021, Arboricultural Method Statement dated 2 December 2021 (ref:TRE/MHSM/RevA) Arboricultural Implications Assessment dated 1 December 2021 (ref:TRE/MHSM/RevA), Biodiversity Impact Assessment dated 21 November 2021 Extended Phase 1 Habitat Survey & Daytime Bat Survey dated October 2021 **Flood Risk and drainage Statement dated December 2021**, Applied Geology Report on Desk Study (ref:AG3331-21-AN30-Issue 3) Flinders Chase Transport Statement (ref:MHS-FC-HGN-FS-RP-D-001) All stamped as received by the City Council as Local Planning Authority, on 9 December 2021.

Drawing numbered MHS-FC-HGN-FS-DR-D-0002 stamped as received by the City Council as Local Planning Authority, on 8 February 2022.

Design and Access Statement stamped as received by the City Council as Local Planning Authority, on 25 April 2022.

Reason- To ensure that the development is carried out in accordance with the approved plans. Pursuant to policies SP1 and DM1 of the Manchester Core Strategy.

In relation to drainage the proposed drainage design should be in accordance with the documents submitted at planning - **Flood Risk and drainage Statement dated December 2021**.

The above document assesses the design parameters for the drainage as below

Table 1 – Drainage / SuDS Summary (please note all Appendix References in Table 1 refer to Flood Risk and drainage Statement dated December 2021.

Item	Brief Description
Fluvial Flooding	Fluvial Flood Zone 1 (Low Risk) on the EA flood maps for planning.
Overland Flow	A review of the Gov.uk surface water map shows majority of the site not being at risk of surface water flooding. There are no overland flow routes passing through the site, The risk of flooding from Surface water overland flow is considered to be low.

Item	Brief Description
Infrastructure Failure	Not located in close proximity to structural, hydraulic or geotechnical infrastructure. The risk of flooding from Infrastructure failure is considered to be low
Artificial Sources	No indication through the SFRA of sewer flooding incidents. The risk of flooding from sewers is considered to be low
Groundwater Flooding	No indication through SFRA or online mapping, that the site is at risk of groundwater flooding. The risk of flooding from Groundwater is considered to be low
Critical Drainage Area	The SFRA maps indicates the site to be within a Critical Drainage Area. Therefore, a Flood Risk Assessment will be required as the site is greater than 0.5Ha within a Critical Drainage Area.
Flood Risk Assessment	An assessment of flood risk has been undertaken at the site. Based on the assessment of sources above, the site is considered to be at low risk of flooding from all sources.
Geology	At the time a writing this statement, a ground investigation report was not available. British Geological Survey (BGS) mapping and borehole information indicates that the site is underlain by superficial deposits over sedimentary bedrock (sandstone). In addition, the Landis Soils Map, shows ground conditions at the site to be <i>'Slowly permeable seasonally wet acid loamy and clayey soils'</i>, with <i>'Impeded drainage'</i>.
Infiltration Rate	It is recommended soakaway testing is undertaken at the appropriate stage to confirm if infiltration is feasible. However, from the desktop survey of the ground conditions it is unlikely infiltration is feasible for the proposed development therefore it has been discounted.
Nearest Watercourses	A local watercourse (brook) is located approximately 100m north to the site.
Nearest Adopted / Private Sewers	Number of private foul and surface water sewers are located within the vicinity of the site. Appendix A includes the existing private sewer plans. The private surface water sewer from existing site currently discharges into the ordinary watercourse (brook), located north of the site.

Item	Brief Description
Surface Water Outfall and SuDS Hierarchal Approach	Based on the above and having discounted Infiltration methods, surface water from the Proposed development will discharge into the unnamed brook to the north of the site via the existing private surface water network. For the outline strategy, discharge to the surface water system has been utilised to demonstrate that the site can be drained. For proposed impermeable areas and Outline Drainage Strategy – see Appendix C
Existing Discharge Rate	The site is currently occupied by educational building, footpaths, and car parking areas that are all positively drained. Although existing site extends to approximately 8000sq.m, only 1150sq.m (positively drained hardstanding areas) is considered for the proposed drainage strategy - see Appendix C for the Existing Impermeable Area Plan. The existing drainage discharges to the private surface water system at multiple points around the site (see existing drainage plans attached in Appendix A) - as shown on the topographical survey (extensive CCTV survey of the network is yet to be undertake and will be carried out to prove the connectivity of the existing drainage to the ordinary watercourse). Site is classed as Brownfield. Existing discharge rates are based on the Modified Rational method ($q=cia$: $i = 50\text{mm/hr}$) as detailed in the SuDS Manual. The Maximum runoff rate for proposed area is 10.7l/s. See Appendix D for the Existing runoff calculation.
Proposed Discharge Rate	Surface water runoff rate is to be in line with the Manchester Trafford and Salford Strategic Flood Risk Assessment, i.e. at least a 50% reduction in runoff rate compared to the existing rates. The maximum discharge rate is to be limited to the Brownfield run off rates with a 50% betterment. The maximum runoff rate for the development 5 l/s.
Allowance for Climate Change	40% - based on >50-year design life to 'the 2080's'.

3.2 Planning Condition 8

No development shall take place until surface water drainage works have been implemented in accordance with Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015) or any subsequent replacements national standards and details have been submitted to and approved in writing by the Local Planning Authority.

The proposed drainage design is based on the 1,150m² of the proposed changes to the site. The remainder for the site is considered to be general maintenance and minor parking changes – this is in line with **Flood Risk and drainage Statement dated December 2021** and Planning Condition 1.

Table 2: Sustainable Drainage Technical Standards Peak Flow Control

	Statement	Comments	Compliance
S2	For greenfield developments, the peak runoff rate from the development to any highway drain, sewer, or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event should never exceed the peak greenfield runoff rate for the same event.	The site is brownfield – see S3	
S3	For developments which were previously developed, the peak runoff rate from the development to any drain, sewer, or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event must be as close as reasonably practicable to the greenfield runoff rate from the development for the same rainfall event but should never exceed the rate of discharge from the development prior to redevelopment for that event.	Surface water runoff rate is to be in line with the Manchester Trafford and Salford Strategic Flood Risk Assessment, i.e. at least a 50% reduction in runoff rate compared to the existing rates. The maximum discharge rate is to be limited to the Brownfield run off rates with a 50% betterment. The maximum runoff rate for the development 5 l/s.	Complied with S2

Table 3: Attenuation Volumes

	Maximum Volume Attenuation (m ³)	Long term storage (using complex flow control)
Proposed Outfall to Existing on site drainage	24.3 m3	N/A – minimum 5 l/s discharge used

Table 4: Sustainable Drainage Technical Standards Volume Control

Statement	Comments	Compliance
S4 Where reasonably practicable, for greenfield development, the runoff volume from the development to any highway drain, sewer, or surface water body in the 1 in 100 year, 6 hour rainfall event should never exceed the greenfield runoff volume for the same event.	Infiltration is not feasible at the site – the site is underlain by clay soils and has a shallow groundwater table	N/A see S5

S5 Where reasonably practicable, for developments which have been previously developed, the runoff volume from the development to any highway drain, sewer, or surface water body in the 1 in 100 year, 6 hour rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event but should never exceed the runoff volume from the development site prior to redevelopment for that event.	Due to the development proposals, there is an increase in impermeable area. As infiltration is not practical at the site, there will be an increase in volume discharge from site	Not complied with due to lack of infiltration potential – see S6
S6 Where it is not reasonably practicable to constrain the volume of runoff to any drain, sewer, or surface water body in accordance with S4 or S5 above, the runoff volume must be discharged at a rate that does not adversely affect flood risk.	Proposed discharge rates are significantly below existing – reducing flood risk. The volume of surface water over and above the existing will be discharges at 2 l/s/ha or 5 l/s whichever is greater	Complied with S6

In order to avoid/discharge the above drainage condition the following additional information has to be provided:

- Consideration of alternative green SuDS (that is either utilising infiltration or attenuation) if practicable;

There is limited capacity for green SuDS within the site. The proposed development area is very tight in terms of space, with the building sandwiched between an existing car park and existing building. The proposed site use as a SEN School limits opportunity for open water, such as swales or for filter drains (due to open stones to the surface). Existing stats through the area requiring maintenance limits the opportunity for permeable paving (impermeable areas through which the stats pass should be provided).

- Runoff volume in the 1 in 100 year, 6 hours rainfall shall be constrained to a value as close as is reasonably practical to the greenfield runoff volume for the same event, but never to exceed the runoff volume from the development site prior to redevelopment;

The requirements of the non technical standards for sustainable drainage are outlined above. Run off from the 100 year 6 hour event will be discharged at 5 l/s. Due to the clay nature of the underlying soils and groundwater at circa 0.9m depth, infiltration is not considered feasible. See extracts of the Phase 2 SI (AG3331-21-AO37) below.

5.4 Glacial Till

Glacial Till was encountered in all exploratory locations (which penetrated the Made Ground) at depths of between 0.7m and 1.5m bgl, achieving a maximum penetration of 14.35m in BH1.

The Glacial Till generally comprised stiff brown slightly gravelly sandy clay. The gravel was fine to coarse subangular to subrounded mudstone, quartzite, and coal. There was no reported evidence of plant root remains or visual desiccation, such as dry, dusty or blocky fissured materials, in the exploratory holes undertaken.

5.5 Groundwater

Groundwater was encountered in the DCS boreholes only as minor seepages, noted between 0.5m and 1.0m bgl in the Made Ground at the locations DCS1, DCS2, DCS2B, and DCS4 and between 0.8m and 1.0m bgl in the Glacial Till at locations DCS2C and DCS3.

Subsequent monitoring of the standpipes between 17th March and 13th April 2022 recorded resting groundwater levels of between 0.7m and 1.6m bgl, showing a relatively steady groundwater level during the monitoring period.

It should be noted that groundwater levels may vary beyond that observed during the fieldwork period due to seasonal effects throughout the year.

- Evidence that the drainage system has been designed (unless an area is designated to hold/or convey water as part of the design) so that flooding does not occur during a 1 in 100 year rainfall event with allowance for climate change in any part of a building;

Calculations are provided in Appendix B which demonstrate that there is no flooding in events upto and including the 1 in 100 year +40%.

- Assessment of overland flow routes for extreme events to be diverted away from buildings (including basements). Overland flow routes need to be designed to convey the flood water in a safe manner in the event of a blockage or exceedance of the proposed drainage system capacity including inlet structures. A layout with overland flow routes needs to be presented with appreciation of these overland flow routes with regards to the properties on the site and adjacent properties off site.

A sketch to show exceedance flow routes has been provided in Appendix C – please note, there is no flooding in the 100 year +40% – the low spot in the car park that ponding may occur in an event of exceedance cannot exceed 100mm depth before overtopping.

Where surface water is connected to the ordinary watercourse, agreement in principle from Manchester City Council as Lead Local Flood Authority is required. Please note that all new connections to the watercourses shall comply with reduction of flows to Greenfield runoff rates. An email of acceptance of the proposed flows and/or new connection will suffice.

There will be no new connection to the ordinary watercourse. The proposed surface water drainage will discharge to the existing private surface water drainage system on site which utilises an existing outfall.

Where an application is part of a larger site it is essential that the new proposal does not compromise the existing drainage. Hydraulic calculation of the proposed system; Construction details of flow control and SuDS elements.

A hydraulic calculation has been provided for the proposed system. Full details of the existing system are not known, but, as part of the proposed drainage system, flows have been reduced by more than 50% from existing and attenuation provided. Construction details are provided in **Appendix X**.

2.1 Planning Condition 9

No development hereby permitted shall be occupied until details of the implementation, maintenance and management of the sustainable drainage scheme have been submitted to and approved by the local planning authority.

A Management and Maintenance Plan has been provided in Appendix X. The school will be responsible for arranging maintenance of the system and space has been provided for providing details of the responsible person and contact details.

The scheme shall be implemented and thereafter managed in accordance with the approved details. Those details shall include: -

- Verification report providing photographic evidence of construction as per design drawings;

This will be provided post construction

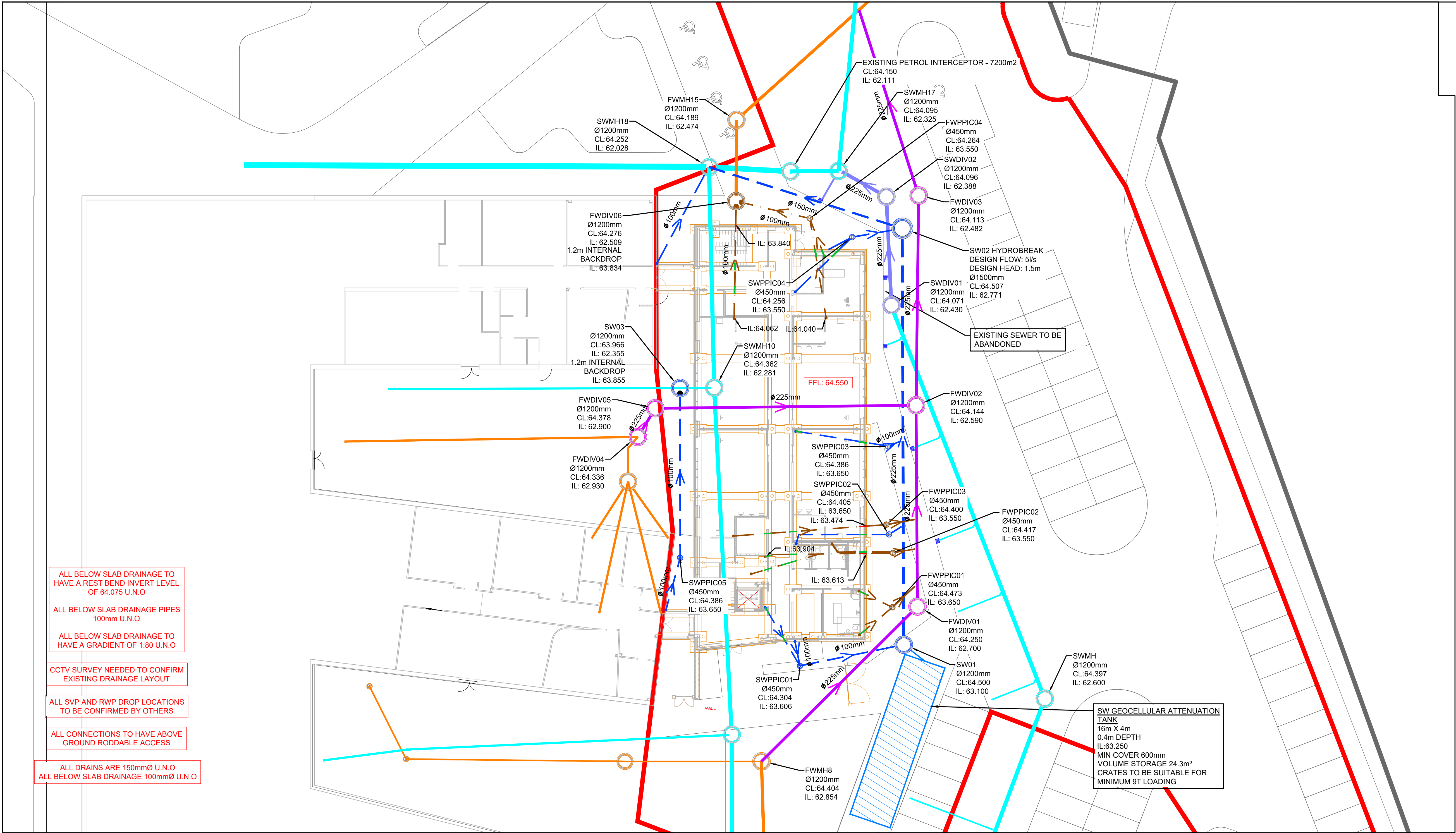
- As built construction drawings if different from design construction drawings;

This will be provided post construction

- Management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public body or statutory undertaker' or any other arrangements to secure the operation of the sustainable drainage scheme throughout its lifetime.

A management and maintenance document has been provided in Appendix C and will be included within the O&M manual at the site.

Appendix A – Ridge Design Drawings



ALL BELOW SLAB DRAINAGE TO HAVE A REST BEND INVERT LEVEL OF 64.075 U.N.O

ALL BELOW SLAB DRAINAGE PIPES 100mm U.N.O

ALL BELOW SLAB DRAINAGE TO HAVE A GRADIENT OF 1:80 U.N.O

CCTV SURVEY NEEDED TO CONFIRM EXISTING DRAINAGE LAYOUT

ALL SVP AND RWP DROP LOCATIONS TO BE CONFIRMED BY OTHERS

ALL CONNECTIONS TO HAVE ABOVE GROUND RODDABLE ACCESS

ALL DRAINS ARE 150mmØ U.N.O
ALL BELOW SLAB DRAINAGE 100mmØ U.N.O

DRAINAGE NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. 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 MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
- a) 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.
 - b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
13. 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.
 14. GULLY GRATINGS AND STEEL CHANNEL COVERS ARE TO BE IN ACCORDANCE WITH BSEN124 AS FOLLOWS:
 - a) AREAS SUBJECT TO VEHICULAR OVERRUN: CLASS D400 MINIMUM.
 - b) AREAS NOT SUBJECT TO REGULAR VEHICLE OVERRUN (ADJACENT TO KERBS ETC): CLASS C250.
 - c) GULLY GRATINGS ADJACENT TO KERBS SHALL BE HINGED ON THE SIDE OF THE TRAFFIC DIRECTION (LEFT HAND SIDE).
 15. ALL BRICKWORK IN CONNECTION WITH DRAINAGE IS TO BE SOLID CLASS B ENGINEERING BRICK TO BS3921.
 16. ALL PRECAST CONCRETE PIPES, CHAMBER PRODUCTS AND ROAD GULLIES SHALL BE TO BS5911 AND BE KITEMARKED.
 17. ALL DRAINAGE INSITU CONCRETE SHALL BE GEN3 (U.N.O).
 18. ALL INSITU AND CONCRETE PRODUCTS SHALL COMPLY WITH THE REQUIREMENTS FOR SULPHATE EXPOSURE IN ACCORDANCE WITH BRE SPECIAL DIGEST 1, CONCRETE IN
 19. 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.
 20. CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150MM OF CHAMBER/SHAFT RING JOINTS.
 21. ROCKER PIPES TO BE SURROUNDED WITH CONCRETE LOCATED 150mm MINIMUM 200mm MAXIMUM FROM THE FIRST FLEXIBLE JOINT TO THE MANHOLE WALL.
 22. SOFT SPOTS IN THE TRENCH FORMATION SHALL BE REMOVED AND REPLACED WITH GRANULAR BEDDING UNLESS INSTRUCTED OTHERWISE.
 23. 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.
 24. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LIAISE WITH BUILDING CONTROL FOR APPROVALS, INTERIM INSPECTION, SNAGGING AND FINAL INSPECTIONS OF THEIR WORK.
 25. 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.
 26. 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.
 27. THE DRAINAGE SYSTEM IS NOT DESIGNED TO ACCEPT

- GROUND LEVELS. ALL EXTERNAL WORKS CONSTRUCTION AREAS TO BE AS LOCATED BY THE ARCHITECT.
12. MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
- a) 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.
 - b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
13. 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.
14. GULLY GRATINGS AND STEEL CHANNEL COVERS ARE TO BE IN ACCORDANCE WITH BSEN124 AS FOLLOWS:
- a) AREAS SUBJECT TO VEHICULAR OVERRUN: CLASS D400 MINIMUM.
 - b) AREAS NOT SUBJECT TO REGULAR VEHICLE OVERRUN (ADJACENT TO KERBS ETC): CLASS C250.
 - c) GULLY GRATINGS ADJACENT TO KERBS SHALL BE HINGED ON THE SIDE OF THE TRAFFIC DIRECTION (LEFT HAND SIDE).
15. ALL BRICKWORK IN CONNECTION WITH DRAINAGE IS TO BE SOLID CLASS B ENGINEERING BRICK TO BS3921.
16. ALL PRECAST CONCRETE PIPES, CHAMBER PRODUCTS AND ROAD GULLIES SHALL BE TO BS5911 AND BE KITEMARKED.
17. ALL DRAINAGE INSITU CONCRETE SHALL BE GEN3 (U.N.O).
18. ALL INSITU AND CONCRETE PRODUCTS SHALL COMPLY WITH THE REQUIREMENTS FOR SULPHATE EXPOSURE IN ACCORDANCE WITH BRE SPECIAL DIGEST 1, CONCRETE IN

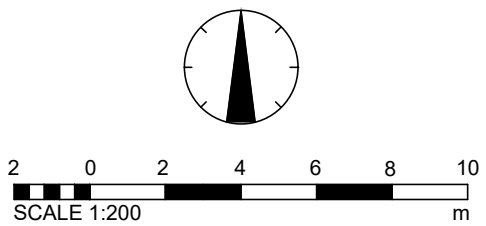
- AGGRESSIVE GROUND (2001) PART 1: TABLE 2.
19. UPON COMPLETION OF THE WORKS THE CONTRACTOR SHALL CLEAN ALL DRAINAGE BY JETTING, REMOVING ALL DEBRIS FROM SITE. NO DEBRIS SHALL BE PERMITTED TO ENTER THE EXISTING DRAINAGE SYSTEM.
20. CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150MM OF CHAMBER/SHAFT RING JOINTS.
21. ROCKER PIPES TO BE SURROUNDED WITH CONCRETE LOCATED 150mm MINIMUM 200mm MAXIMUM FROM THE FIRST FLEXIBLE JOINT TO THE MANHOLE WALL.
22. SOFT SPOTS IN THE TRENCH FORMATION SHALL BE REMOVED AND REPLACED WITH GRANULAR BEDDING UNLESS INSTRUCTED OTHERWISE.
23. 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.
24. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LIAISE WITH BUILDING CONTROL FOR APPROVALS, INTERIM INSPECTION, SNAGGING AND FINAL INSPECTIONS OF THEIR WORK.
25. 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.
26. 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.
27. 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.
28. PIPEWORK TO BE OF THE FOLLOWING MANUFACTURER: 100 / 150 / 225MM DIAMETER HEPWORTH SUPERSLEEVE VITRIFIED CLAY PIPES (40kN/mm 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.
29. ALL RWP, WPC & GULLY CONNECTIONS TO BE 100mm DIA UNO & ARE RODDABLE AT LOCATIONS ABOVE GROUND LEVEL.
30. 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

- DISCLAIMER NOTES:
- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL.
 - THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR.
 - THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHERS.
 - ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR.
 - DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY.
 - ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS.
 - THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES.
 - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
 - USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT.
 - THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS.
 - THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY.

- 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.



P02	STAGE 4 ISSUE	15.02.22	TP	PB
P01	PRELIMINARY ISSUE	01.11.21	AP	AM
REV	DESCRIPTION	DATE	BY	CHKD

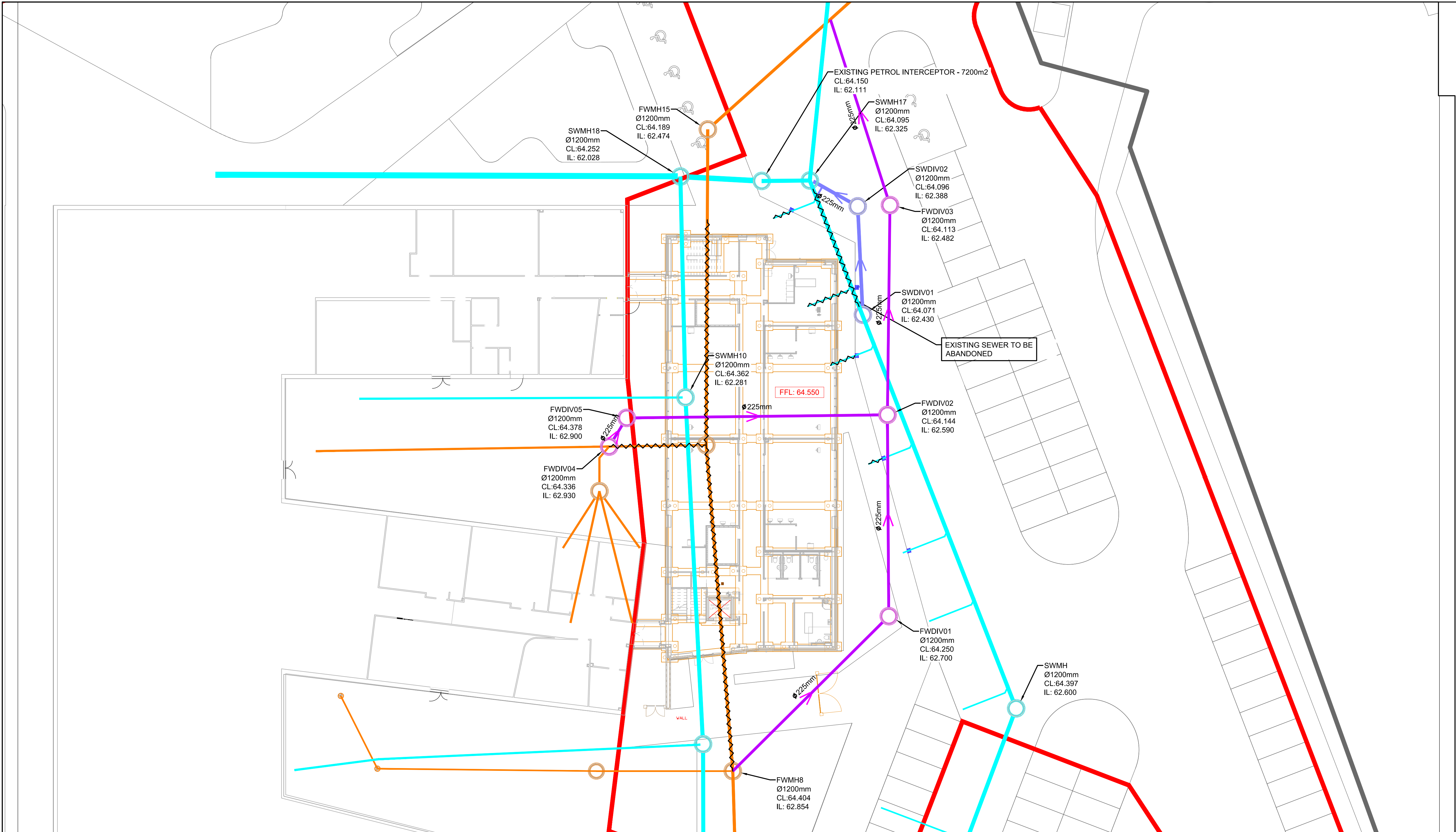
ORIGINATOR:

RIDGE

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

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

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: TENDER				
UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK				
SUITABILITY: S2 - Issued for Information				
PROJECT: 5014379	ORG: RDG	ZONE: ZZ	LEVEL: ST	TYPE: DR
ROLE: C	NUMBER: 05001	REV: P02		



DRAINAGE NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. CONCRETE PROTECTION TO PIPEWORK IS TO BE PROVIDED AS FOLLOWS:
 - a) ALL PIPEWORK WITHIN PEDESTRIAN/SOFT AREAS WITH LESS THAN 600mm COVER
 - b) ALL PIPEWORK SUBJECT TO VEHICULAR OVERRUN WITH LESS THAN 1.2m COVER.
 7. 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.
 8. ALL DRAINS TO BE LAID ACCURATELY TO LINE AND LEVEL IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 9. 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.
 10. CO-ORDINATE SETTING OUT INFORMATION FOR MANHOLES IS TO THE INTERSECTION THE DRAINS AND NOT THE CENTRE OF THE MANHOLE.
 11. 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.
12. MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
 - a) 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.
 - b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
 13. 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.
 14. GULLY GRATINGS AND STEEL CHANNEL COVERS ARE TO BE IN ACCORDANCE WITH BSEN124 AS FOLLOWS:
 - a) AREAS SUBJECT TO VEHICULAR OVERRUN: CLASS D400 MINIMUM.
 - b) AREAS NOT SUBJECT TO REGULAR VEHICLE OVERRUN (ADJACENT TO KERBS ETC): CLASS C250.
 - c) GULLY GRATINGS ADJACENT TO KERBS SHALL BE HINGED ON THE SIDE OF THE TRAFFIC DIRECTION (LEFT HAND SIDE).
 15. ALL BRICKWORK IN CONNECTION WITH DRAINAGE IS TO BE SOLID CLASS B ENGINEERING BRICK TO BS3921.
 16. ALL PRECAST CONCRETE PIPES, CHAMBER PRODUCTS AND ROAD GULLIES SHALL BE TO BS5911 AND BE KITEMARKED.
 17. ALL DRAINAGE INSITU CONCRETE SHALL BE GEN3 (U.N.O).
 18. 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.
19. 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.
 20. CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150MM OF CHAMBER/SHAFT RING JOINTS.
 21. ROCKER PIPES TO BE SURROUNDED WITH CONCRETE LOCATED 150mm MINIMUM 200mm MAXIMUM FROM THE FIRST FLEXIBLE JOINT TO THE MANHOLE WALL.
 22. SOFT SPOTS IN THE TRENCH FORMATION SHALL BE REMOVED AND REPLACED WITH GRANULAR BEDDING UNLESS INSTRUCTED OTHERWISE.
 23. 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.
 24. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LIAISE WITH BUILDING CONTROL FOR APPROVALS, INTERIM INSPECTION, SNAGGING AND FINAL INSPECTIONS OF THEIR WORK.
 25. 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.
 26. 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.
 27. 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.
28. PIPEWORK TO BE OF THE FOLLOWING MANUFACTURER: 100 / 150 / 225MM DIAMETER HEPWORTH SUPERSLEEVE VITRIFIED CLAY PIPES (40kN/mm 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.
 29. ALL RWP, WPC & GULLY CONNECTIONS TO BE 100mm DIA UNO & ARE RODDABLE AT LOCATIONS ABOVE GROUND LEVEL.
 30. 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

- EXISTING SW SEWER
- EXISTING FW SEWER
- PROPOSED DIVERTED SW SEWER
- PROPOSED DIVERTED SW MH
- PROPOSED DIVERTED FW SEWER
- PROPOSED DIVERTED FW MH
- EXISTING DRAIN TO BE GRUBBED OUT
- PROPOSED GULLY

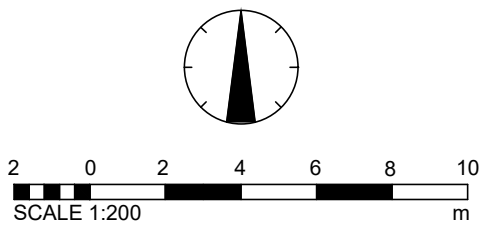
DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL.
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR.
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR.
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

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.



P01	STAGE 4 ISSUE	15.02.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD
ORIGINATOR:				
RIDGE				
5TH FLOOR BELVEDERE HOUSE 12 BOOTH STREET MANCHESTER, M2 4AW				
TEL: 0161 833 9579 WWW.RIDGE.CO.UK				

CLIENT:

BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:

GORTON EDUCATION VILLAGE

TITLE:

DRAINAGE ABANDONMENT PLAN

ENG/TECH:	CSE:	ICSE:	SCALE:	1:200	@	A1
TP	PB	PB	STATUS ISSUE:	S2		

STATUS:

TENDER

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

SUITABILITY: S2 - Issued for Information

PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	ZZ	ST	DR	C	05002	P01

MANHOLE SCHEDULE									
MANHOLE NO.	MANHOLE CO-ORDINATES	COVER LEVEL (m)	DEPTH TO INVERT (m)	MANHOLE SIZE	MANHOLE TYPE	PIPE IN NAME, INVERT LEVEL (m) & DIA	PIPE OUT NAME, INVERT LEVEL (m) & DIA	COVER SIZE (mm) & GRADE	COMMENTS
FWDIV01	E:388534.520 N:394872.466	64.250	1.550	1,200	Type-B	From , IL=62.700, 225mmØ	To FWDIV02, IL=62.700, 225mmØ	600x600 D400	
FWDIV02	E:388534.391 N:394891.544	64.144	1.554	1,200	Type-B	From FWDIV05, IL=62.590, 225mmØ From FWDIV01, IL=62.590, 225mmØ	To FWDIV03, IL=62.590, 225mmØ	600x600 D400	
FWDIV03	E:388534.633 N:394911.413	64.113	1.631	1,200	Type-B	From FWDIV02, IL=62.482, 225mmØ	To , IL=62.482, 225mmØ	600x600 D400	
FWDIV04	E:388508.022 N:394888.541	64.336	1.406	1,200	Type-B		To FWDIV05, IL=62.930, 225mmØ	600x600 D400	INCOMING CONNECTION FROM EXIST IL TBC ON SITE
FWDIV05	E:388509.684 N:394891.252	64.378	1.478	1,200	Type-B	From FWDIV04, IL=62.900, 225mmØ	To FWDIV02, IL=62.900, 225mmØ	600x600 D400	
FWDIV06	E:388517.338 N:394910.882	64.276	1.767	1,200	Type-B	From MH38 (10), IL=63.650, 100mmØ		600x600 D400	CONNECTION TO EXISTING IL TBC ON SITE
FWPPIC01	E:388532.144 N:394872.395	64.473	0.823	450	IC	From MH37 (24), IL=63.650, 100mmØ From MH37 (22), IL=63.650, 100mmØ	To , IL=63.550, 100mmØ	450 B125	D/S SADDLE TO FW DIVERSION
FWPPIC02	E:388532.192 N:394877.562	64.417	0.867	450	IC		To , IL=63.550, 100mmØ	450 B125	D/S SADDLE TO FW DIVERSION
FWPPIC03	E:388531.571 N:394880.232	64.400	0.850	450	IC	From MH37 (37), IL=63.550, 100mmØ	To , IL=63.550, 100mmØ	450 B125	D/S SADDLE TO FW DIVERSION
FWPPIC04	E:388524.318 N:394909.247	64.264	0.714	450	IC	From MH37 (19), IL=63.550, 100mmØ From MH37 (21), IL=63.550, 100mmØ	To , IL=63.550, 100mmØ	450 B125	
SW01	E:388533.215 N:394868.857	64.500	1.400	1,200	Type-B	From SWPPIC01, IL=63.225, 100mmØ	To SW02, IL=63.100, 225mmØ	600x600 D400	ATTENUATION TANK INLET / OUTLET 225mm DIA - IL 63.100
SW02	E:388533.081 N:394908.296	64.507	1.736	1,500	Flow Control	From SW01, IL=62.771, 225mmØ From SWPPIC04, IL=63.896, 100mmØ	To , IL=62.896, 150mmØ	1200 x 675 D400	HYDROBRAKE CHAMBER FLOW - 5 l/s HEAD - 1.5m
SW03	E:388512.024 N:394893.171	63.966	2.066	1,200	Type-B	From SWPPIC05, IL=63.450, 100mmØ		600x600 D400	1.2m BACKDROP CONNECTION TO EXISTING IL TBC ON SITE
SWDIV01	E:388532.063 N:394901.026	64.071	1.641	1,200	Type-B		To SWDIV02, IL=62.430, 225mmØ	600x600 D400	INCOMING PIPE IS EXISTING INVERT LEVEL TBC ON SITE
SWDIV02	E:388531.576 N:394911.303	64.096	1.708	1,200	Type-B	From SWDIV01, IL=62.388, 225mmØ	To , IL=62.388, 225mmØ	600x600 D400	
SWPPIC01	E:388523.388 N:394866.848	64.304	0.698	450	IC	From MH24 (15), IL=63.606, 100mmØ From MH24 (15) (1), IL=63.606, 100mmØ	To SW01, IL=63.994, 100mmØ	450 B125	
SWPPIC02	E:388531.821 N:394879.300	64.405	0.755	450	IC		To , IL=63.650, 100mmØ	450 B125	
SWPPIC03	E:388531.716 N:394887.640	64.386	0.736	450	IC		To , IL=63.650, 100mmØ	450 B125	
SWPPIC04	E:388528.329 N:394907.475	64.256	0.706	450	IC	From MH24 (6), IL=63.550, 100mmØ From , IL=63.550, 100mmØ	To SW02, IL=63.550, 100mmØ	450 B125	
SWPPIC05	E:388512.037 N:394877.088	64.386	0.736	450	IC	From MH24 (12), IL=63.650, 100mmØ	To SW03, IL=63.650, 100mmØ	450 B125	

DRAINAGE NOTES

1. 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.
2. 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.
3. ALL PRIVATE DRAINAGE WITHIN THE SITE IS TO COMPLY WITH THE REQUIREMENTS OF BS EN 752 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.
4. 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 2 BEDDING). CLASS 'S' BED AND SURROUND MAY BE REQUIRED FOR SEWERS TO BE ADOPTED. REFER TO SPECIFIC DRAWINGS FOR FURTHER INFORMATION.
5. 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 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.

6. CONCRETE PROTECTION TO PIPEWORK IS TO BE PROVIDED AS FOLLOWS:
 - a) ALL PIPEWORK WITHIN PEDESTRIAN/SOFT AREAS WITH LESS THAN 600mm COVER.
 - b) ALL PIPEWORK SUBJECT TO VEHICULAR OVERRUN WITH LESS THAN 1.2m COVER.
7. 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.
8. ALL DRAINS TO BE LAID ACCURATELY TO LINE AND LEVEL IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
9. 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.) CATCHPIP INVERT LEVELS ARE FOR THE OUTGOING PIPE WITH THE SUMP LEVEL SPECIFIED SEPARATELY.
10. CO-ORDINATE SETTING OUT INFORMATION FOR MANHOLES IS TO THE INTERSECTION THE DRAINS AND NOT THE CENTRE OF THE MANHOLE.
11. 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.

12. MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
 - a) 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 IF FOUL OR SURFACE WATER DRAINAGE.
 - b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
13. POSITIONS AND SIZES OF ABOVE GROUND FOUL AND SURFACE WATER DRAINAGE CONNECTIONS ARE TO BE CONFIRMED PRIOR TO CONSTRUCTION WITH THE ARCHITECT & G&E ENGINEER.
14. GULLY GRATINGS AND STEEL CHANNEL COVERS ARE TO BE IN ACCORDANCE WITH BSEN124 AS FOLLOWS:
 - a) AREAS SUBJECT TO VEHICULAR OVERRUN: CLASS D400 MINIMUM.
 - b) AREAS NOT SUBJECT TO REGULAR VEHICLE OVERRUN (ADJACENT TO KERBS ETC): CLASS C250.
 - c) GULLY GRATES ADJACENT TO KERBS SHALL BE HINGED TO THE SIDE OF THE TRAFFIC DIRECTION (LEFT HAND SIDE).
15. ALL BRICKWORK IN CONNECTION WITH DRAINAGE IS TO BE SOLID CLASS B ENGINEERING BRICK TO BS3921.
16. ALL PRECAST CONCRETE PIPES, CHAMBER PRODUCTS AND ROAD GULLIES SHALL BE TO BS5911 AND BE KITEMARKED.
17. ALL DRAINAGE INSITU CONCRETE SHALL BE GEN3 (U.N.O.).
18. ALL INSITU AND CONCRETE PRODUCTS SHALL COMPLY WITH THE REQUIREMENTS FOR SULPHATE EXPOSURE IN ACCORDANCE WITH BRE SPECIAL DIGEST 1. CONCRETE

AGGRESSIVE GROUND (2001) PART 1: TABLE 2.

19. 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.
20. CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150MM OF CHAMBER/SHAFT RING JOINTS.
21. ROCKER PIPES TO BE SURROUNDED WITH CONCRETE LOCATED 150mm MINIMUM 200mm MAXIMUM FROM THE FIRST FLEXIBLE JOINT TO THE MANHOLE WALL.
22. SOFT SPOTS IN THE TRENCH FORMATION SHALL BE REMOVED AND REPLACED WITH GRANULAR BEDDING UNLESS INSTRUCTED OTHERWISE.
23. 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.
24. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LIAISE WITH BUILDING CONTROL FOR APPROVALS, INTERIM INSPECTION, SNAGGING AND FINAL INSPECTIONS OF THEIR WORK.
25. 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.
26. 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.
27. 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.

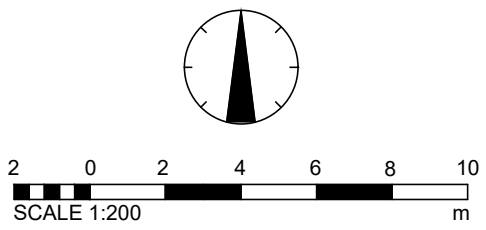
28. PIPEWORK TO BE OF THE FOLLOWING MANUFACTURER: 100 / 150 / 225MM DIAMETER HEPCORTH SUPERSLEEVE VITRIFIED CLAY PIPES (40KN/mm CRUSHING STRENGTH), 300mm + TO BE CONCRETE CLASS M. ALTERNATIVELY 'POLYSEWER' UPVC DRAINAGE SYSTEM BY POLYPIPE WHEN INSTALLED IN LINE WITH THE MANUFACTURERS RECOMMENDATIONS. FILTER DRAINAGE TO BE PERFORATED HDPE.
29. ALL RWP, WPC & GULLY CONNECTIONS TO BE 100mm DIA UNCL & ARE RODDABLE AT LOCATIONS ABOVE GROUND LEVEL.
30. 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.

DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN PERMISSION OF THE ORIGINATOR
- THIS DOCUMENT MUST NOT BE A RESULT – THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHER PARTIES
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR
- DO NOT SCALE THIS DOCUMENT – USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THIS DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED ON THE ORIGINATOR'S FURNISHING OF INFORMATION. IF INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. FURNISHING OF THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

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.



P01	STAGE 4 ISSUE	05.02.22	TP	AM
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

ORIGINATOR:

RIDGE

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

TEL: 0161 833 9579

WWW.RIDGE.CO.UK

CLIENT: BOWKER SADLER ARCHITECTS

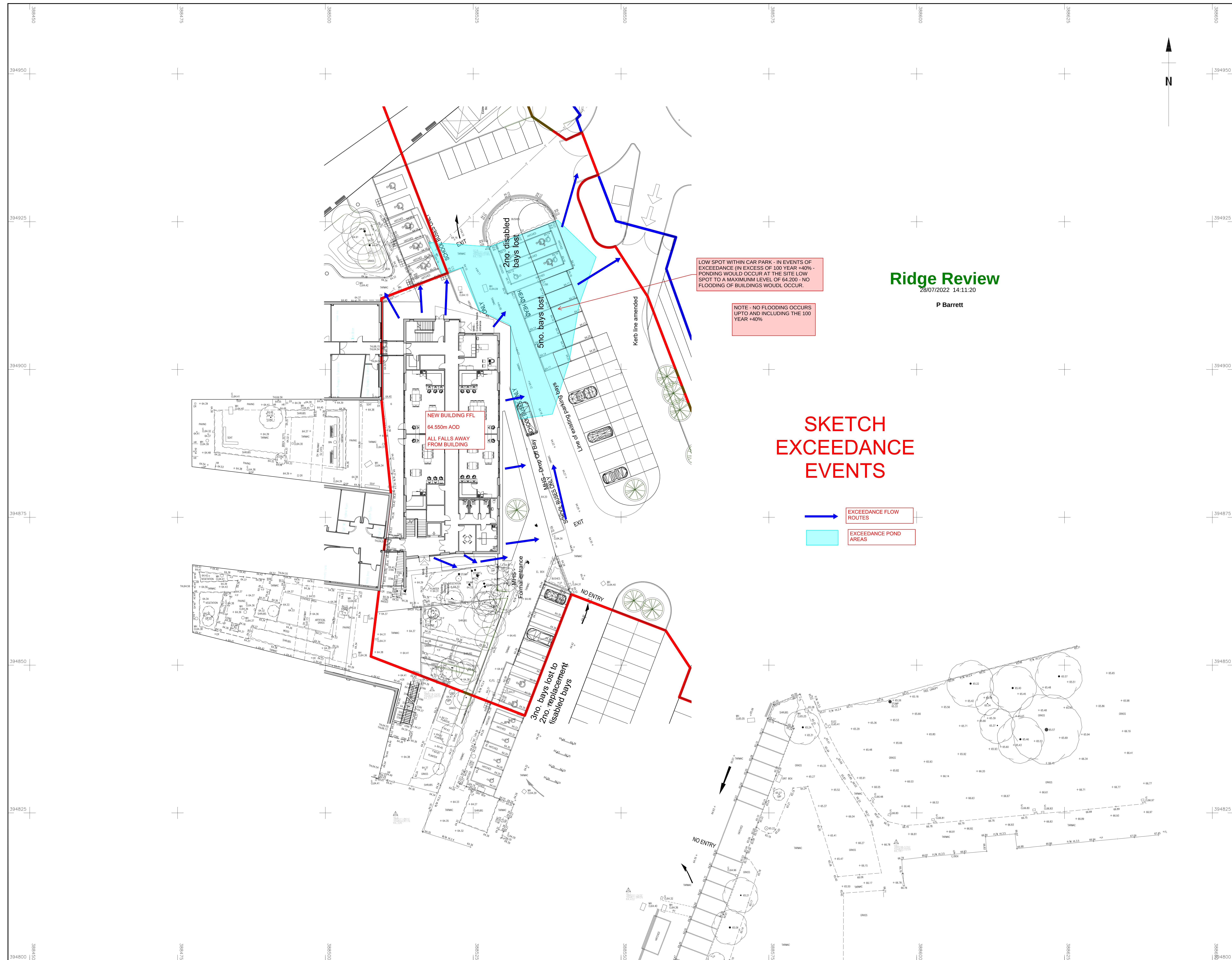
IN ASSOCIATION WITH:

PROJECT:

GORTON EDUCATION VILLAGE

TITLE: MANHOLE SCHEDULES

ENG/TECH:	CSE:	ICSE:	SCALE:	1:200	@	A1	
TP	PB	PB	STATUS ISSUE:	S2			
STATUS: TENDER							
UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK							
SUITABILITY:		S2 - Issued for Information					
PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	ZZ	ST	DR	C	05011	P01

[illegible]

Sheet Index		
Sheet 1 Sheet 2		
Rev.	Date	Description
MALCOLM HUGHES CHARTERED LAND SURVEYORS 55 Cross Street, Sale, Manchester M33 7HF Tel: 0161 905 1265 www.malcolmhughes.co.uk survey@rhfs.co.uk		Credentiations RICS THE SURVEY ASSOCIATION
Client		
BOWKER SADLER ARCHITECTURE HATHERLOW HOUSE, HATHERLOW, ROMILEY STOCKPORT, SK6 3DY		
Project		
GORTON EDUCATION VILLAGE 50 WEMBLEY ROAD MANCHESTER, M18 7DT		
Drawing Title		
TOPOGRAPHICAL SURVEY		
Drawn By	EAD	22/09/21
Survey Date	August 2021	
Checked by	EAD	24/09/21
Scale	1:200 @ A0	
Drawing No	57638/1	(Revised)



DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATOR'S INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY" INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

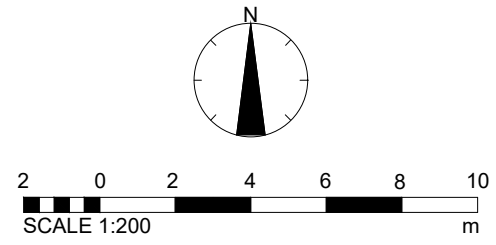
DRAWING NOTES:

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.



KEY

- EXISTING SW SEWER & MANHOLE
- EXISTING CW SEWER & MANHOLE
- EXISTING IMPERMEABLE AREA
- EXISTING GREENFIELD AREA



P01	ISSUED FOR INFORMATION	01.12.21	AM	PB
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

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

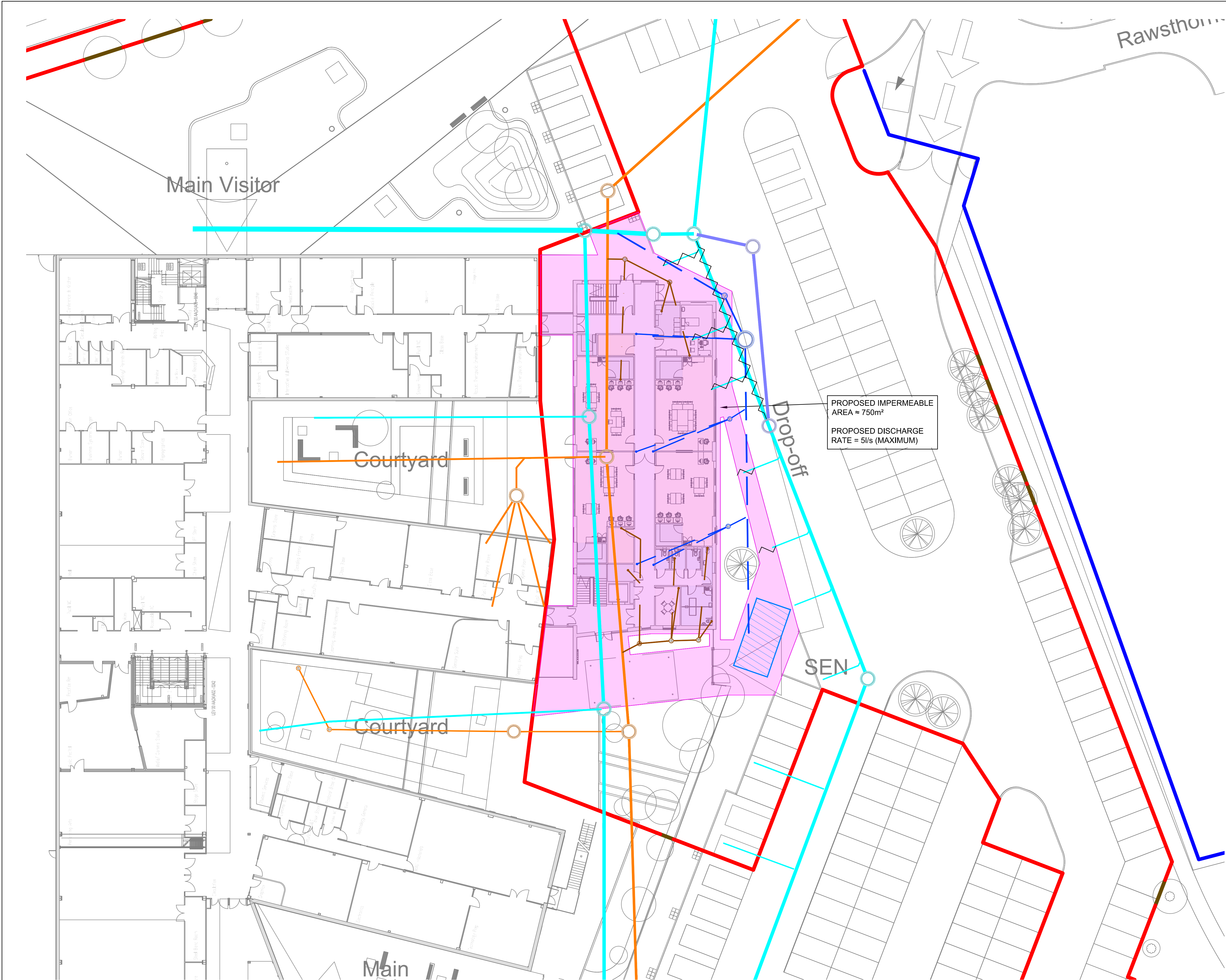
TEL: 0161 833 9579
WWW.RIDGE.CO.UK

CLIENT:
BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:
GORTON EDUCATION VILLAGE

TITLE: EXISTING DRAINAGE AREAS					
ENG/TECH: AM	CSE: PB	ICSE: PB	SCALE: 1:200	@	A1
STATUS:			INFORMATION		
UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK					
SUITABILITY: S2 - Issued for Information					
PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:
5014379	RDG	ZZ	XX	DR	C
				NUMBER:	REV:
				0002	P01



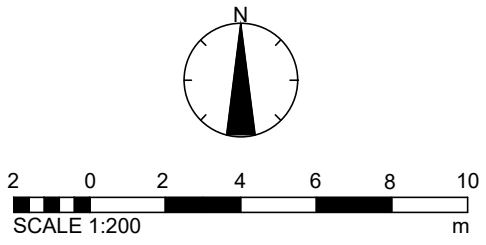
DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL.
- THE ORIGINATOR MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR.
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATOR'S INFORMATION BEING ALTERED BY OTHERS.
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR.
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY.
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS.
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES.
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT.
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY" INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS.
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY.

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.

- KEY
- EXISTING SW SEWER & MANHOLE
 - EXISTING CW SEWER & MANHOLE
 - PROPOSED FW SEWER & MANHOLE
 - PROPOSED SW SEWER & MANHOLE
 - PROPOSED SW DIVERSION
 - PROPOSED IMPERMEABLE AREA



P01	ISSUED FOR INFORMATION	01.12.21	AM	PB
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

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

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

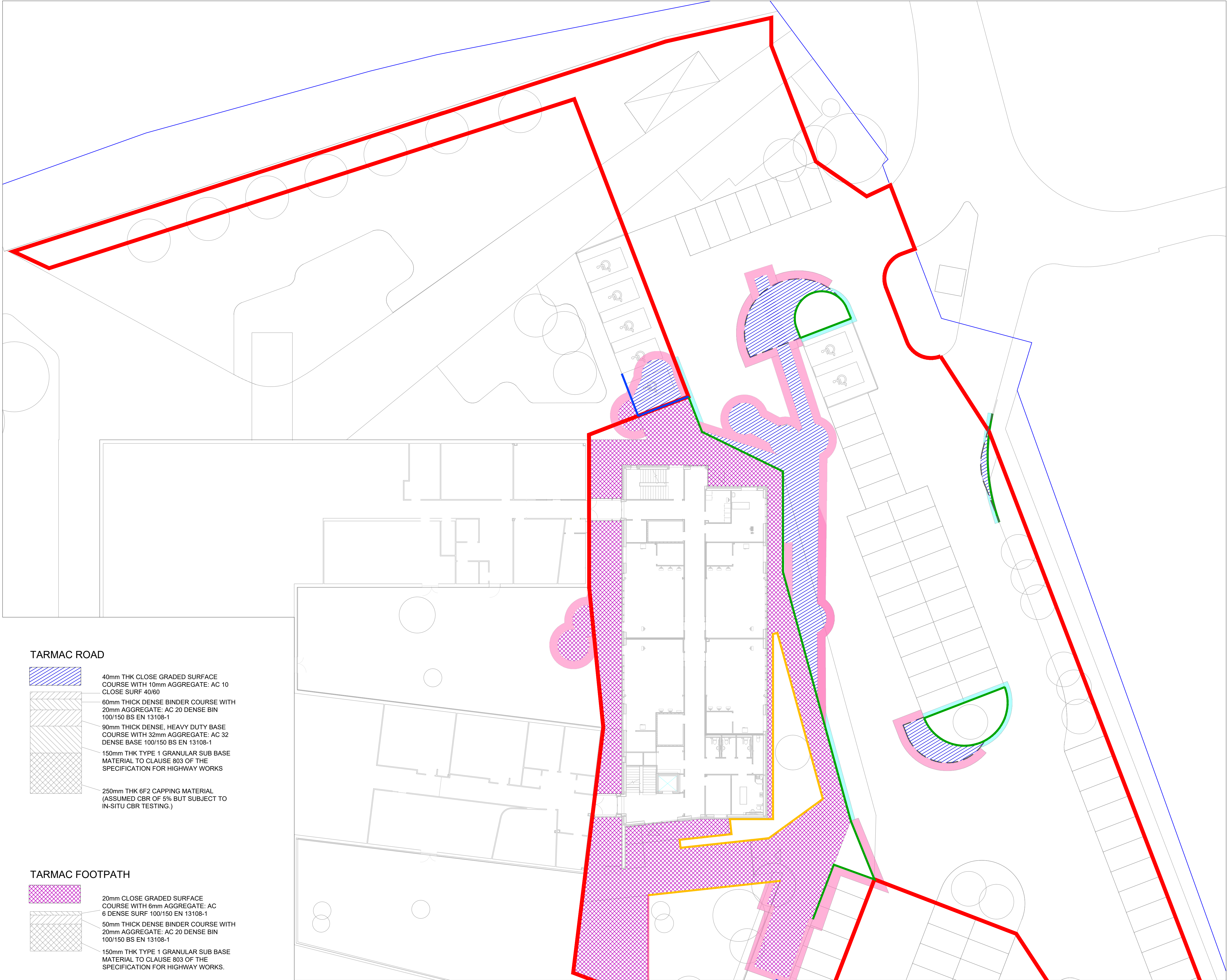
CLIENT:
BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:
GORTON EDUCATION VILLAGE

TITLE:
PROPOSED IMPERMEABLE AREAS

AM	PB	PB	STATUS ISSUE: S2				
STATUS:		INFORMATION					
UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK							
SUITABILITY:		S2 - Issued for Information					
PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	ZZ	XX	DR	C	0003	P01



TARMAC ROAD

- 40mm THK CLOSE GRADED SURFACE COURSE WITH 10mm AGGREGATE: AC 10 CLOSE SURF 40/60
- 60mm THICK DENSE BINDER COURSE WITH 20mm AGGREGATE: AC 20 DENSE BIN 100/150 BS EN 13108-1
- 90mm THICK DENSE, HEAVY DUTY BASE COURSE WITH 32mm AGGREGATE: AC 32 DENSE BASE 100/150 BS EN 13108-1
- 150mm THK TYPE 1 GRANULAR SUB BASE MATERIAL TO CLAUSE 803 OF THE SPECIFICATION FOR HIGHWAY WORKS
- 250mm THK 6F2 CAPPING MATERIAL (ASSUMED CBR OF 5% BUT SUBJECT TO IN-SITU CBR TESTING.)

TARMAC FOOTPATH

- 20mm CLOSE GRADED SURFACE COURSE WITH 6mm AGGREGATE: AC 6 DENSE SURF 100/150 EN 13108-1
- 50mm THICK DENSE BINDER COURSE WITH 20mm AGGREGATE: AC 20 DENSE BIN 100/150 BS EN 13108-1
- 150mm THK TYPE 1 GRANULAR SUB BASE MATERIAL TO CLAUSE 803 OF THE SPECIFICATION FOR HIGHWAY WORKS.

DISCLAIMER NOTES:

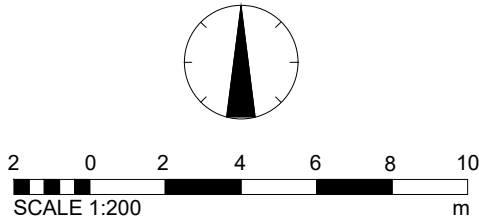
- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

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.

KERBING KEY

- SITE BOUNDARY
- EXISTING KERB TO BE REMOVED
- HB2 KERB (125mm)
- FLUSH KERB
- PIN KERB
- DROP KERB
- 0.5m OVBREAKE ADJACENT TO KERBLINE
- 0.9m TIE IN DETAIL



P01	STAGE 4 ISSUE	15.02.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:



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

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

CLIENT:
BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

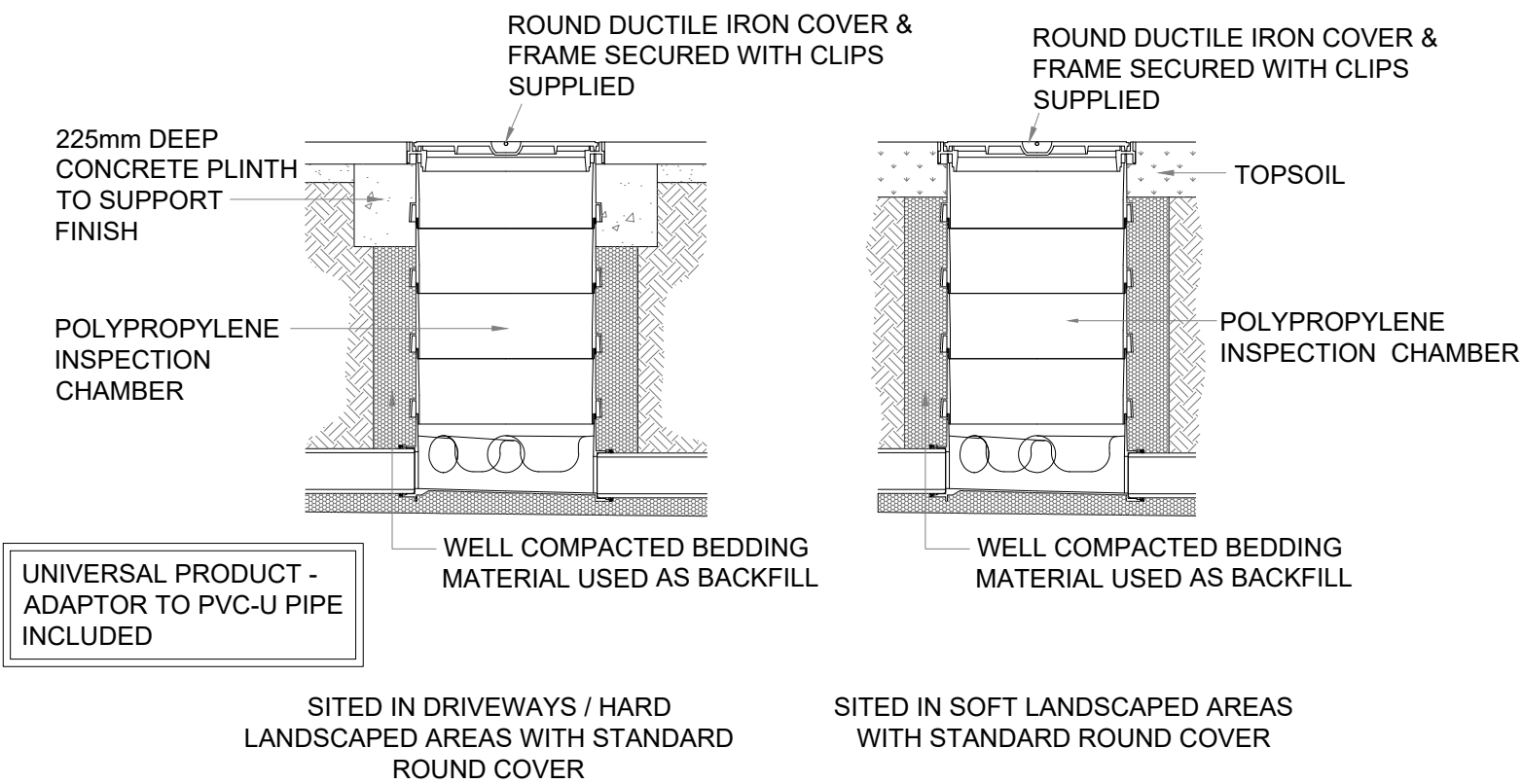
PROJECT:
GORTON EDUCATION VILLAGE

TITLE:
**PROPOSED EXTERNAL WORKS
LAYOUT SHEET 1 OF 2**

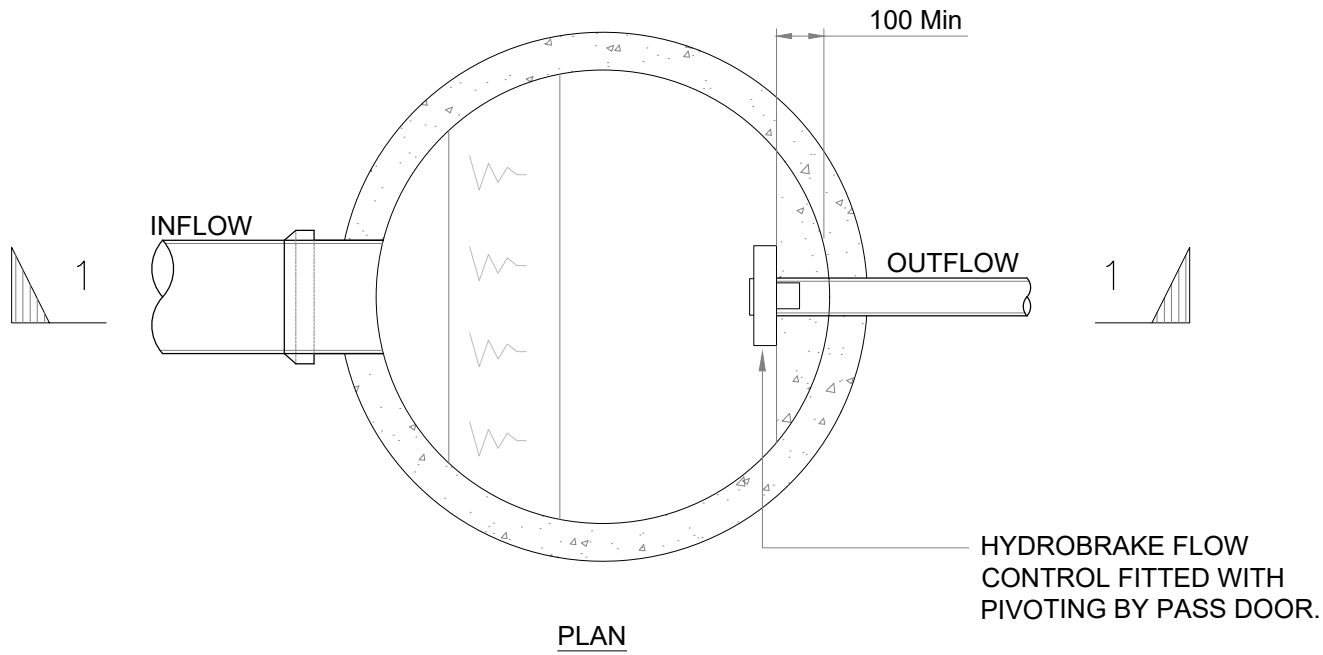
ENG/TECH:	CSE:	ICSE:	SCALE:	1:500	@	A1
TP	AM	PB	STATUS ISSUE:	S1		
STATUS: TENDER						
UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK						
SUITABILITY: S2 - Issued for Information						
PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:
5014379	RDG	ZZ	ST	DR	C	07001
					REV:	P01

GENERAL NOTE

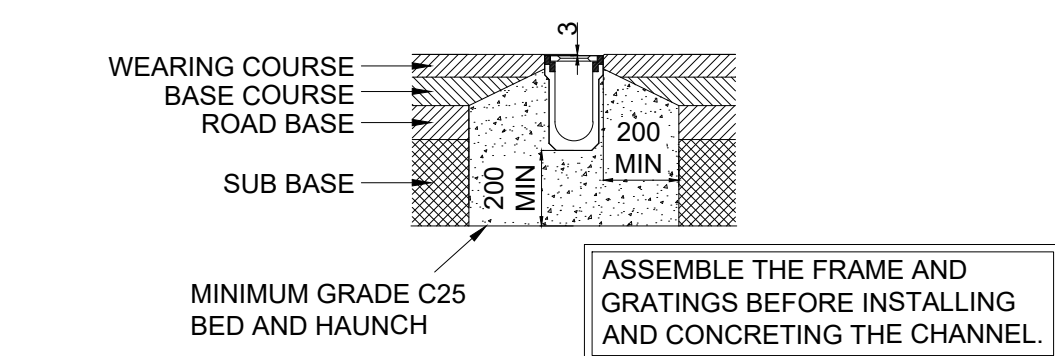
INSPECTION CHAMBERS AND MANHOLES SHOULD HAVE REMOVABLE NON-VENTILATING COVERS OF DURABLE MATERIAL (SUCH AS CAST IRON, CAST OR PRESSED STEEL, PRECAST CONCRETE OR PLASTICS) AND BE OF SUITABLE STRENGTH. SMALL, LIGHTWEIGHT ACCESS COVERS SHOULD BE SECURED (FOR EXAMPLE, WITH SCREWS) TO DETER UNAUTHORISED ACCESS (FOR EXAMPLE, BY CHILDREN). INSPECTION CHAMBERS AND MANHOLES IN BUILDINGS SHOULD HAVE MECHANICALLY FIXED AIR-TIGHT COVERS UNLESS THE DRAIN ITSELF HAS WATER-TIGHT ACCESS COVERS. MANHOLES DEEPER THAN 1m SHOULD HAVE METAL STEP-IRONS.



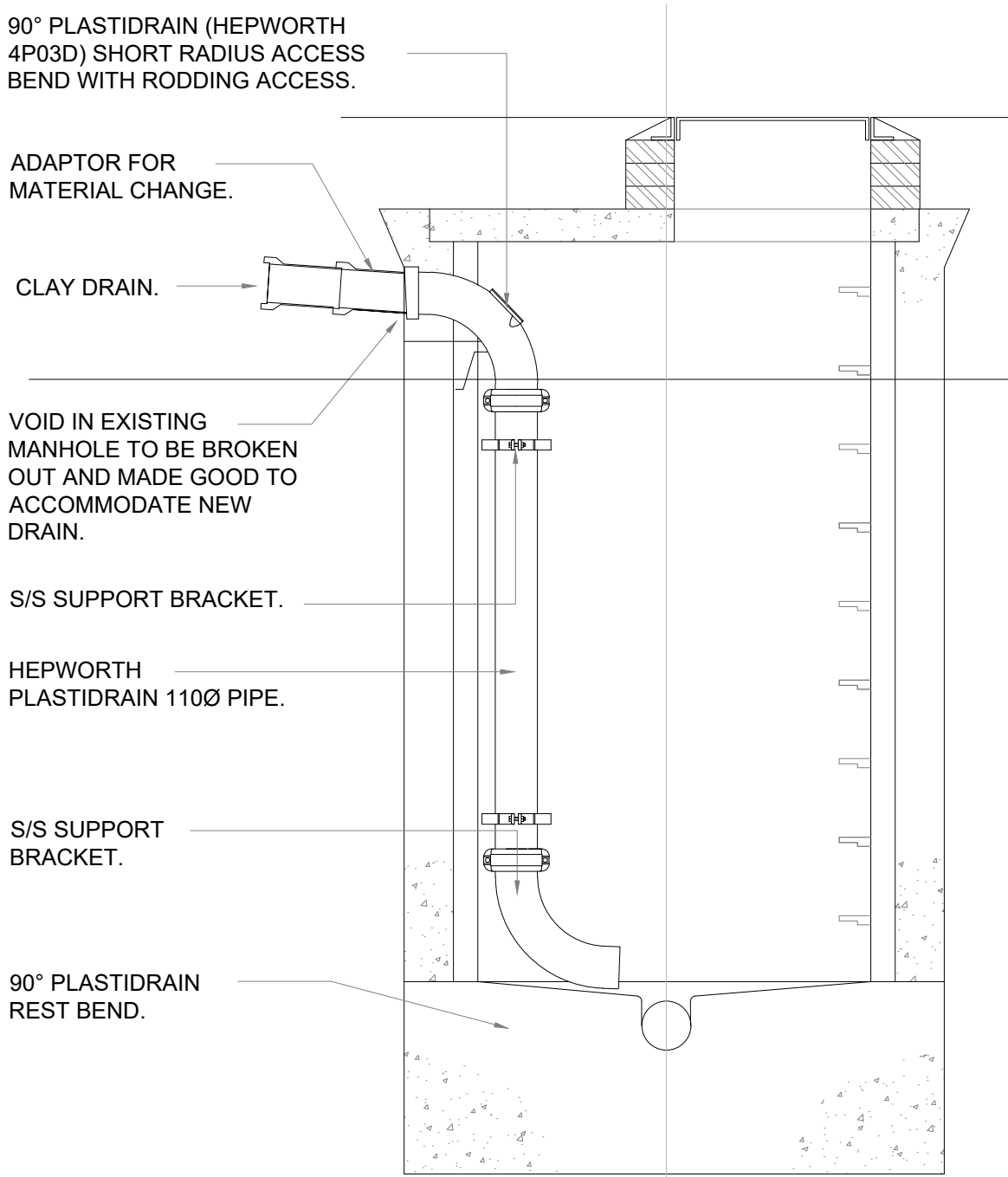
POLYPROPYLENE INSPECTION CHAMBER INSTALLATION DETAIL



VORTEX CONTROL CHAMBER



TYPICAL DRAINAGE CHANNEL IN FLEXIBLE PAVEMENT



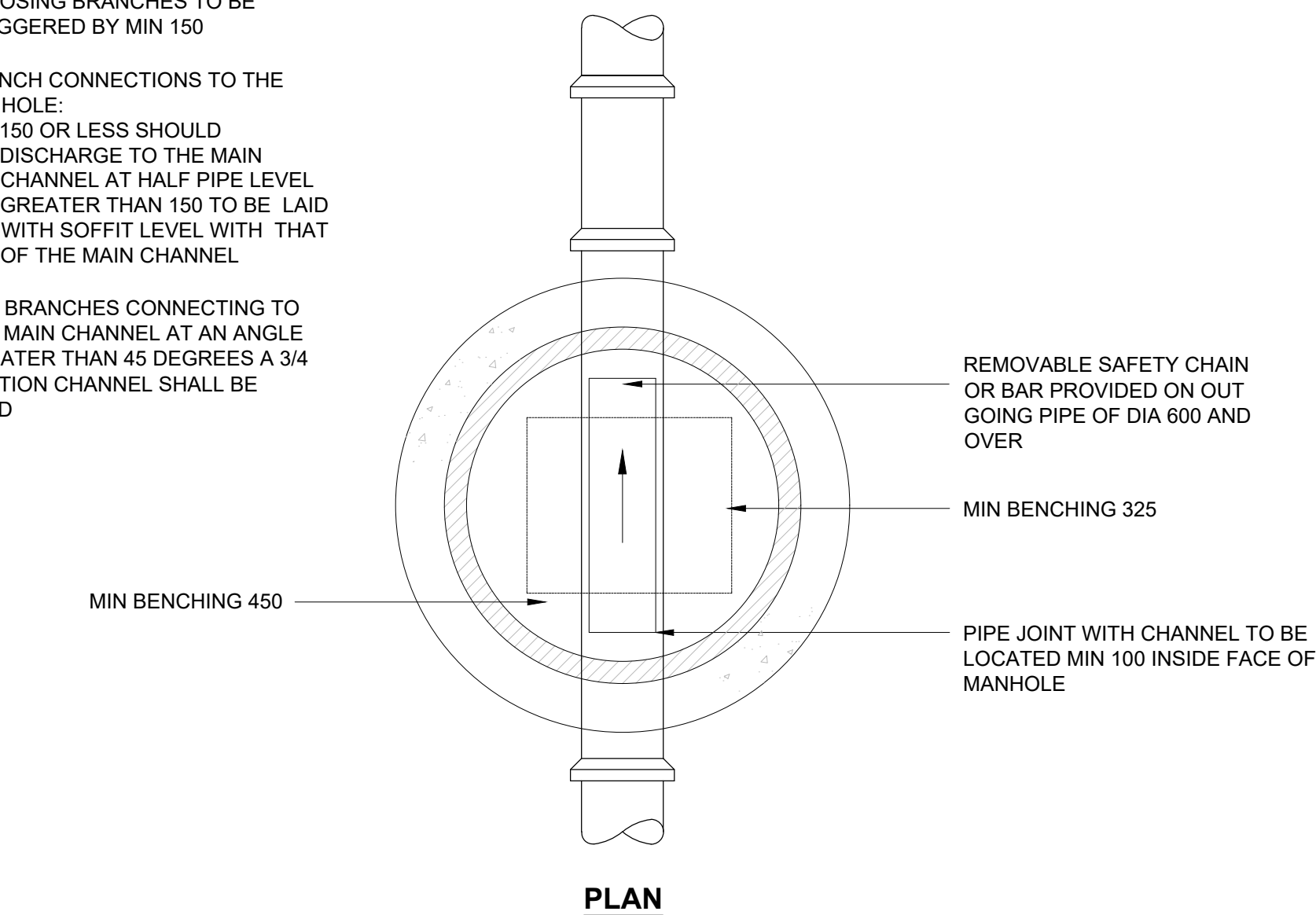
INTERNAL VERTICAL BACKDROP

OPPOSING BRANCHES TO BE STAGGERED BY MIN 150

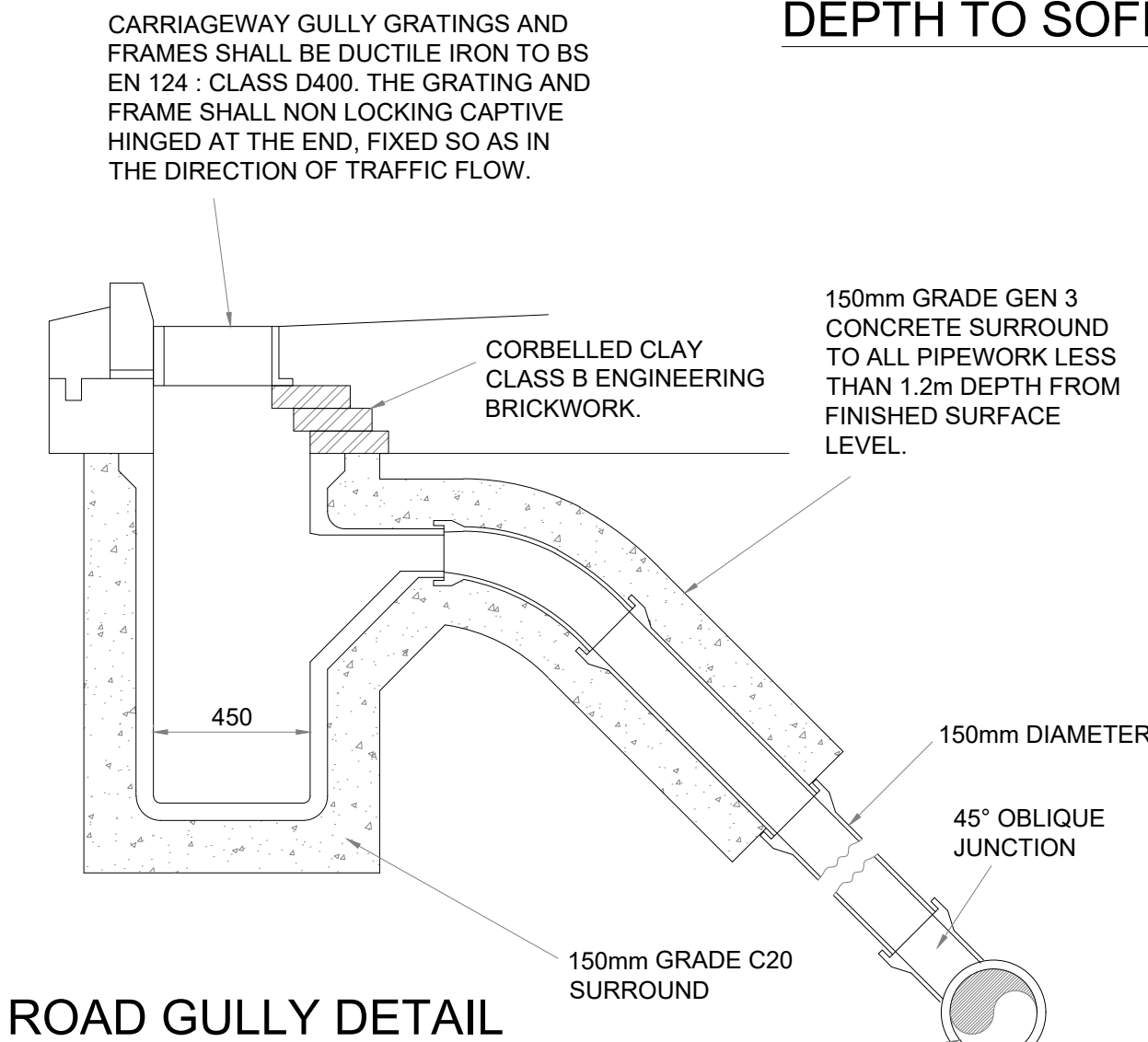
BRANCH CONNECTIONS TO THE MANHOLE:

- 150 OR LESS SHOULD DISCHARGE TO THE MAIN CHANNEL AT HALF PIPE LEVEL
- GREATER THAN 150 TO BE LAID WITH SOFFIT LEVEL WITH THAT OF THE MAIN CHANNEL

FOR BRANCHES CONNECTING TO THE MAIN CHANNEL AT AN ANGLE GREATER THAN 45 DEGREES A 3/4 SECTION CHANNEL SHALL BE USED



PRE CAST CONCRETE MANHOLE TYPE B DEPTH TO SOFFIT UP TO 3.0m



ROAD GULLY DETAIL

- NOTES**
- GULLY POTS: HIGHWAY GULLIES P.C.C. TO B.S. 5911 GULLY POT TO BE OF 100 LITRES CAPACITY.
 - MAXIMUM TRENCH WIDTH FOR 150mm GULLY LEAD IS 600mm.
 - NUMBER OF BENDS MAY VARY DUE TO SITE DIFFERENCES - SEE DRAINAGE SCHEDULE.
 - CONCRETE SURROUND TO PIPES SHALL ALWAYS FINISH AT A JOINT.
 - HEAVY DUTY, CAST IRON, LAMPHOLE TYPE COVER IN HARDSTANDING AND AREAS ACCESSIBLE TO VEHICULAR TRAFFIC, TO B.S. EN 124, 1994 CLASS D400, C250, OR B125 DEPENDANT ON LOCATION.
 - COVER SLAB TO BE 200mm THICK GRADE C20 CONCRETE.

DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

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

⚠

GENERAL NOTES

- DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, ENGINEERS, ARCHITECTS & SERVICES DRAWINGS, INCLUDING APPROVED BUILDERS WORK DRAWINGS. CONTRACTOR TO NOTIFY ENGINEER OF DISCREPANCIES BETWEEN STRUCTURAL DRAWINGS AND SPECIFICATIONS OR OTHER DRAWINGS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- DO NOT SCALE FROM THIS DRAWING. WORK TO DIMENSIONS OR CO-ORDINATES PROVIDED. ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE NOTED. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS, SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY.

200 0 200 400 600 800 1000
SCALE 1:20
mm

P01	STAGE 4 ISSUE	15.02.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

RIDGE

THE COWYARDS
BLENHEIM PARK
OXFORD ROAD
WOODSTOCK, OX20 1QR

TEL: 01993 815000
WWW.RIDGE.CO.UK

CLIENT:
BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:
GORTON EDUCATION VILLAGE

TITLE:
**DRAINAGE DETAILS
SHEET 1 OF 3**

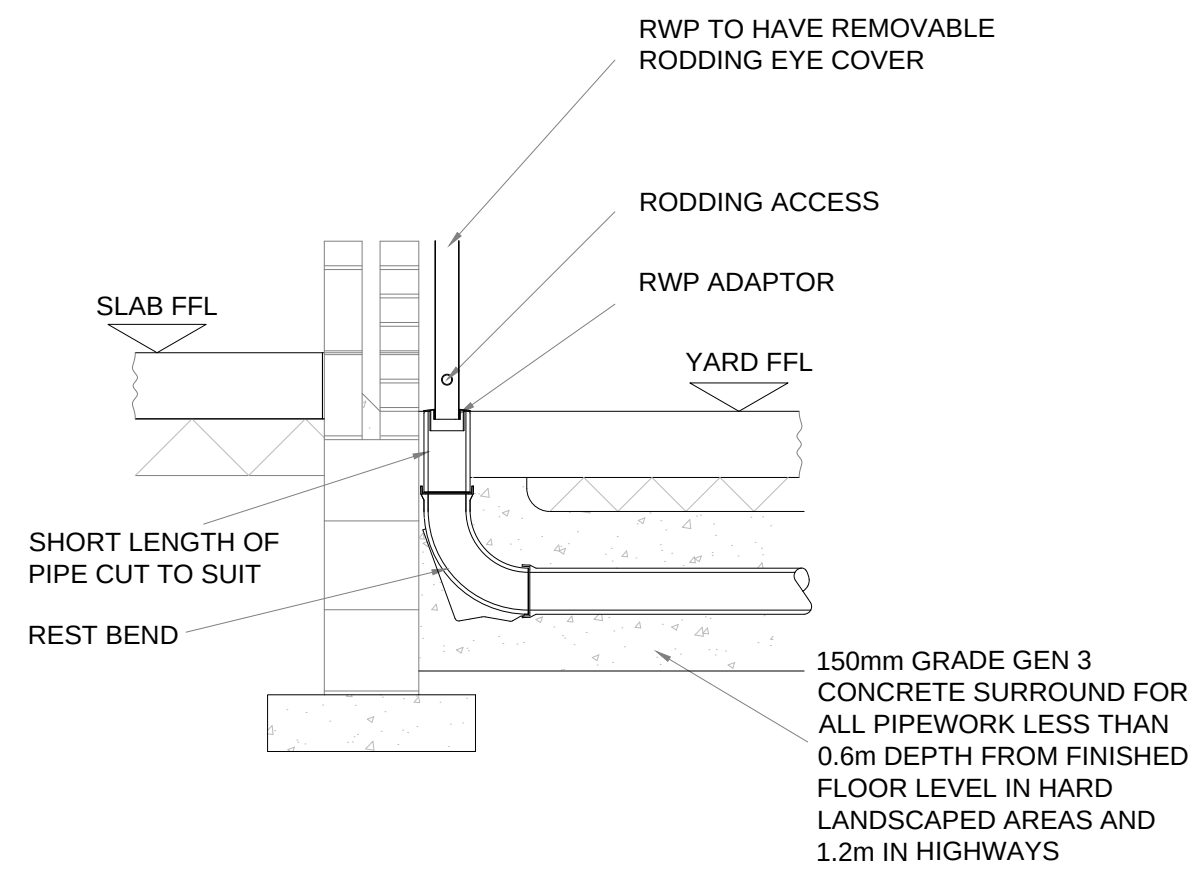
ENG/TECH:	CSE:	ICSE:	SCALE:	1:20	@	A1
TP	PB	PB	STATUS ISSUE:	SO		

STATUS: **TENDER**

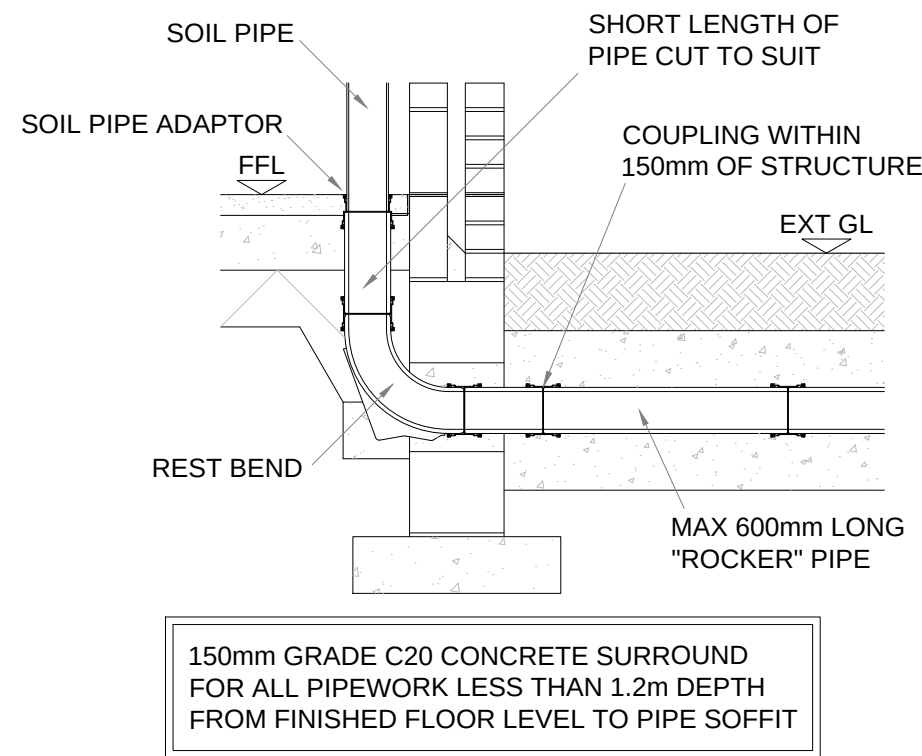
"UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK"

SUITABILITY: SO - Initial Status or WIP

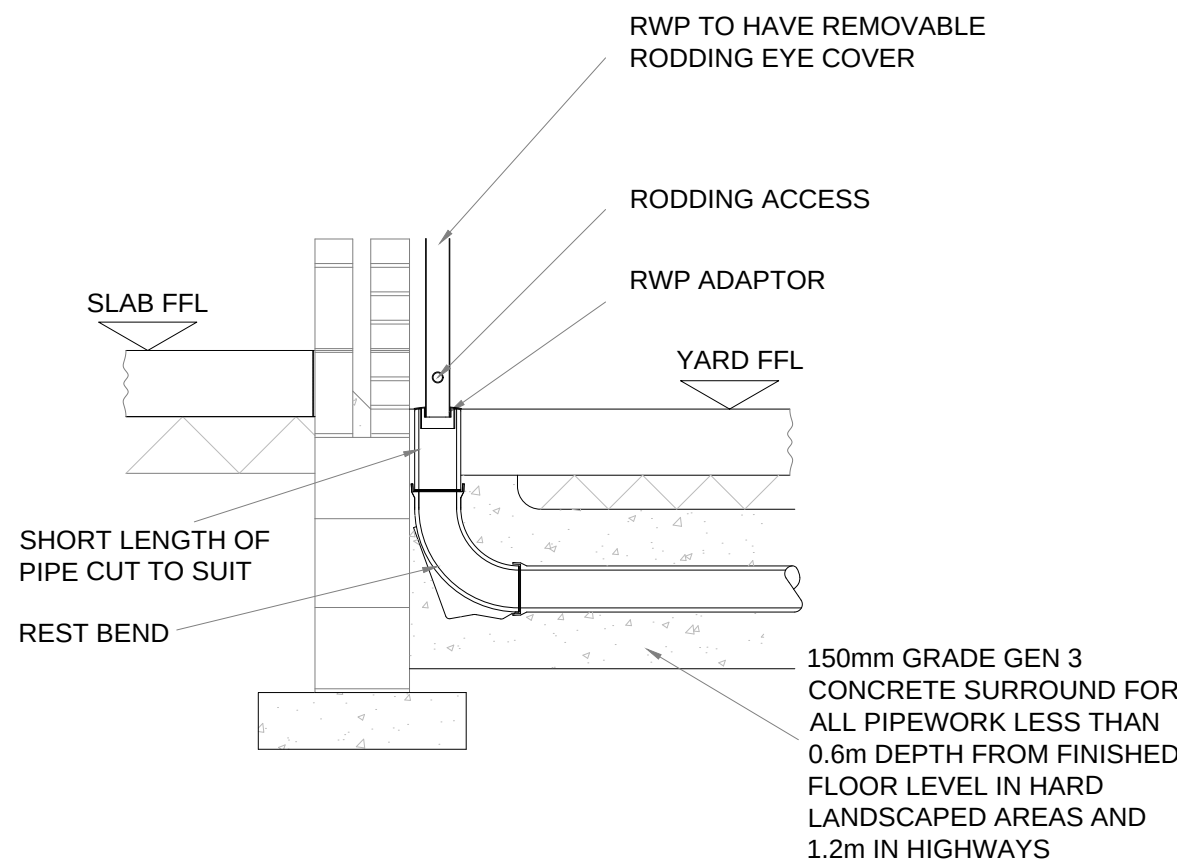
PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	XX	ST	DT	C	05005	P01



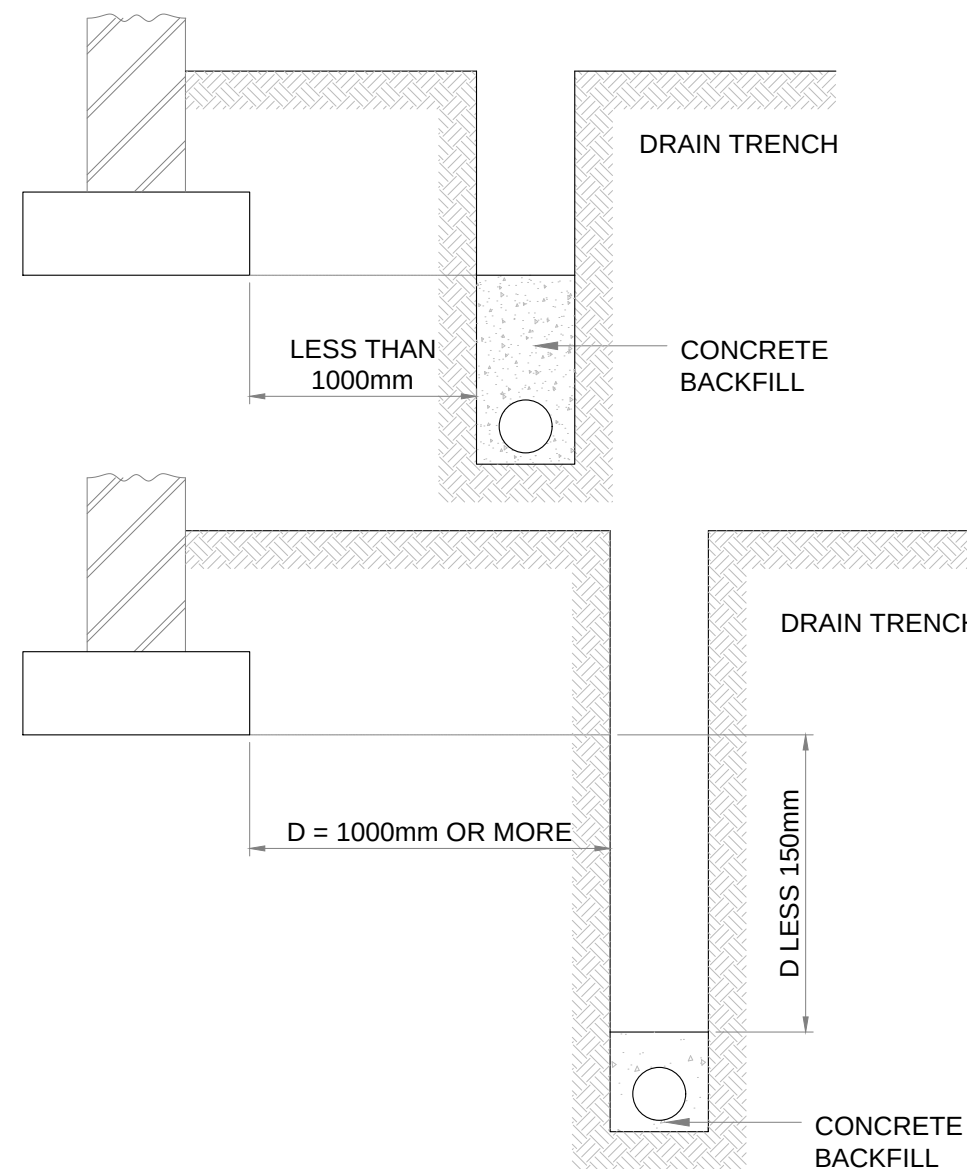
EXTERNAL RAINWATER PIPE CONNECTION



SOIL AND VENT PIPE CONNECTION

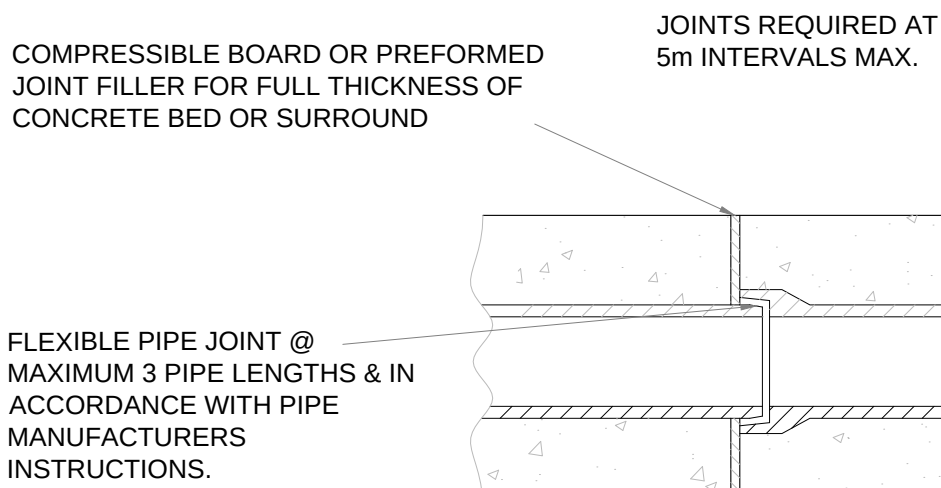


EXTERNAL RAINWATER PIPE CONNECTION



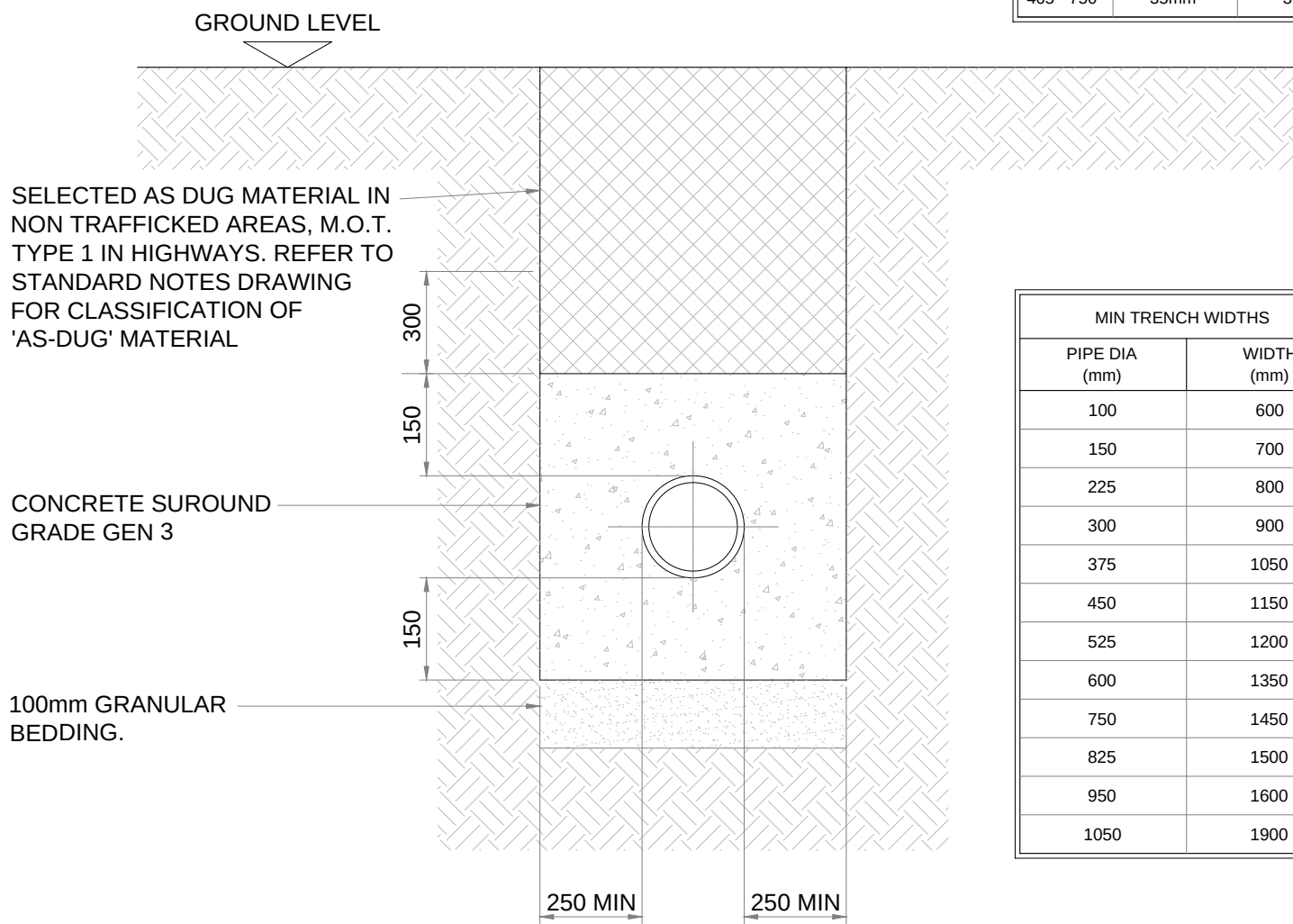
- NOTES
- CONCRETE TO BE GRADE GEN 3
 - JOINTS TO BE PROVIDED IN CONCRETE SURROUND AT NOT GREATER THAN 5.0m CENTRES. BUILDING REGULATIONS PART H1 PARA A11
 - WHERE THE TRENCH IS WITHIN 1m OF THE BUILDING THE TRENCH SHALL BE FILLED WITH CONCRETE UP TO THE LOWEST LEVEL OF THE FOUNDATIONS. WHERE THE TRENCH IS FURTHER THAN 1000mm FROM THE BUILDING, THE TRENCH SHALL BE FILLED WITH CONCRETE UP TO A LEVEL, BELOW THE LOWEST LEVEL OF THE FOUNDATION, EQUAL TO THE DISTANCE FROM THE BUILDING LESS 150mm.

PIPE RUNS ADJACENT TO BUILDING



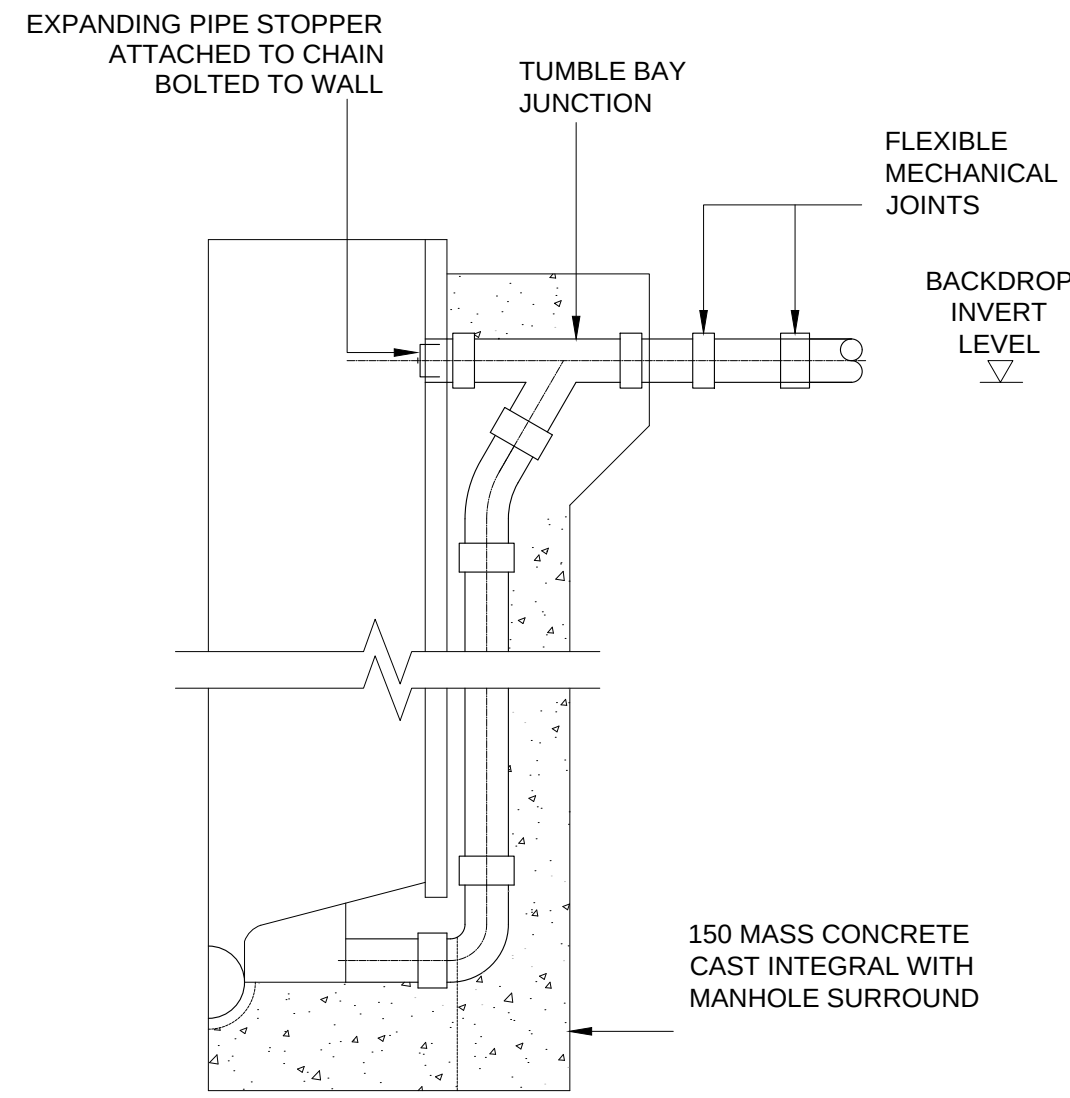
COMPRESSIBLE FILLER IS TO BE USED AT PIPE JOINTS IN CONCRETE PROTECTION TO PIPES. FILLER TO BE USED CAN BE HYDROCELL BY FOSROC, OR APPROVED BITUMEN IMPREGNATED INSULATING BOARD TO B.S. 1142 PART 3. THE COMPRESSIBLE MATERIAL SHALL BE CUT TO MATCH THE PIPELINE SHAPE AND MUST EXTEND THROUGH THE FULL HEIGHT OF THE CONCRETE.

NOMINAL PIPE DIA	COMPRESSIBLE FILLER FOR PIPE JOINTS	
	HYDROCELL	BITUMEN IMPREGNATED BOARD
100 - 300	15mm	18mm
350 - 450	20mm	24mm
465 - 750	35mm	36mm



MIN TRENCH WIDTHS	
PIPE DIA (mm)	WIDTH (mm)
100	600
150	700
225	800
300	900
375	1050
450	1150
525	1200
600	1350
750	1450
825	1500
950	1600
1050	1900

CLASS 'Z' PIPE BEDDING (NTS)

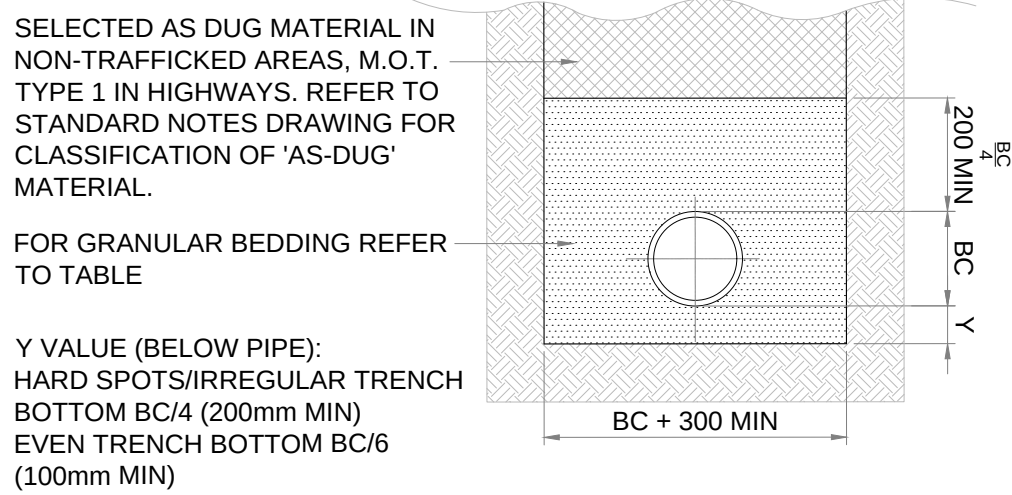


EXTERNAL BACKDROP

BS EN 1610:1997 Annex B Table B.15 Coarse Aggregate - Pipe Bedding							
Sieve Size (mm)	Percentage by mass passing BS sieves for nominal sizes			Single-sized Aggregate (mm)			
	Graded Aggregate (mm)	20 to 5	14 to 5	40	20	14	10
50.0	100	-----	-----	100	-----	-----	-----
37.5	90 - 100	100	-----	85 - 100	100	-----	-----
20.0	35 - 70	90 - 100	100	0 - 25	85 - 100	100	-----
14.0	-----	-----	90 - 100	-----	-----	85 - 100	100
10.0	10 - 40	30 - 60	50 - 85	0 - 5	0 - 25	0 - 50	85 - 100
5.0	0 - 5	0 - 10	0 - 10	-----	0 - 5	0 - 10	0 - 25
2.36	-----	-----	-----	-----	-----	-----	0 - 5

RIGID PIPES BEDDING GRADING

BASED ON BS EN 1610 : 1997 TABLE B.15
FOR RIGID PIPES THE BEDDING SHOULD BE SINGLE SIZE MATERIAL OR GRADED MATERIAL FROM 5MM UP TO A MAX SIZE OF 10MM FOR 100MM PIPES; 14MM FOR 150MM PIPES; 20MM FOR 225MM TO 600MM PIPES; 40MM FOR OVER 675MM PIPES



BC = OUTSIDE DIAMETER

PIPE BEDDING CLASS S (BEDDING FACTOR 2.5)

DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATOR'S INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY" INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

DRAWING NOTES:

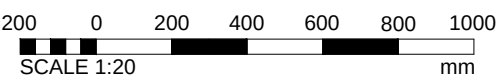
CDM REGULATIONS 2015

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.



GENERAL NOTES

- DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, ENGINEERS, ARCHITECTS & SERVICES DRAWINGS, INCLUDING APPROVED BUILDERS WORK DRAWINGS. CONTRACTOR TO NOTIFY ENGINEER OF DISCREPANCIES BETWEEN STRUCTURAL DRAWINGS AND SPECIFICATIONS OR OTHER DRAWINGS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- DO NOT SCALE FROM THIS DRAWING. WORK TO DIMENSIONS OR CO-ORDINATES PROVIDED. ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE NOTED. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS, SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY.



P01	STAGE 4 ISSUE	15.02.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

RIDGE

THE COWYARDS
BLENHEIM PARK
OXFORD ROAD
WOODSTOCK, OX20 1QR

TEL: 01993 815000
WWW.RIDGE.CO.UK

CLIENT:
BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:
GORTON EDUCATION VILLAGE

TITLE:
DRAINAGE DETAILS
SHEET 2 OF 3

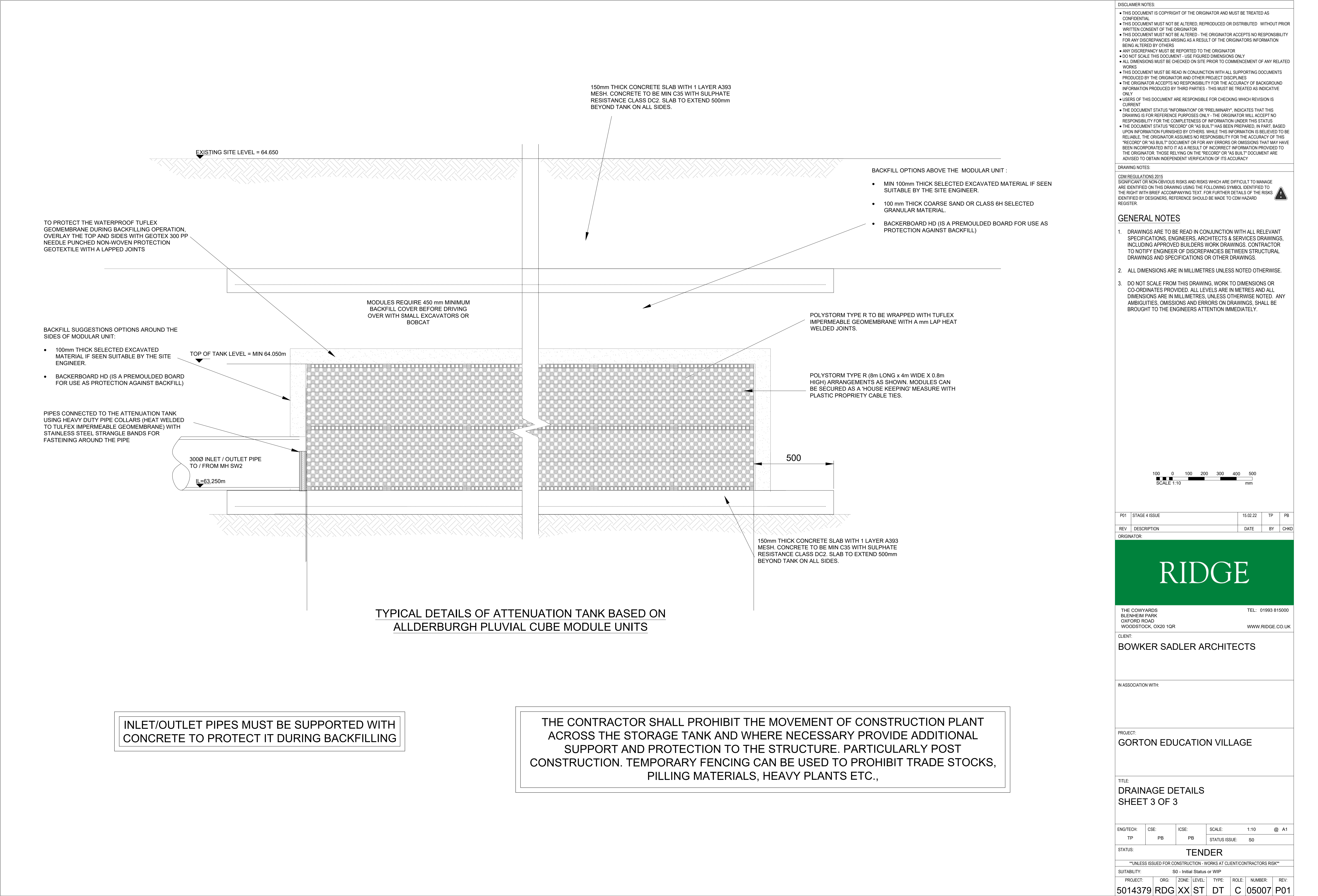
ENG/TECH:	CSE:	ICSE:	SCALE:	1:20	@	A1
TP	PB	PB	STATUS ISSUE:	S0		

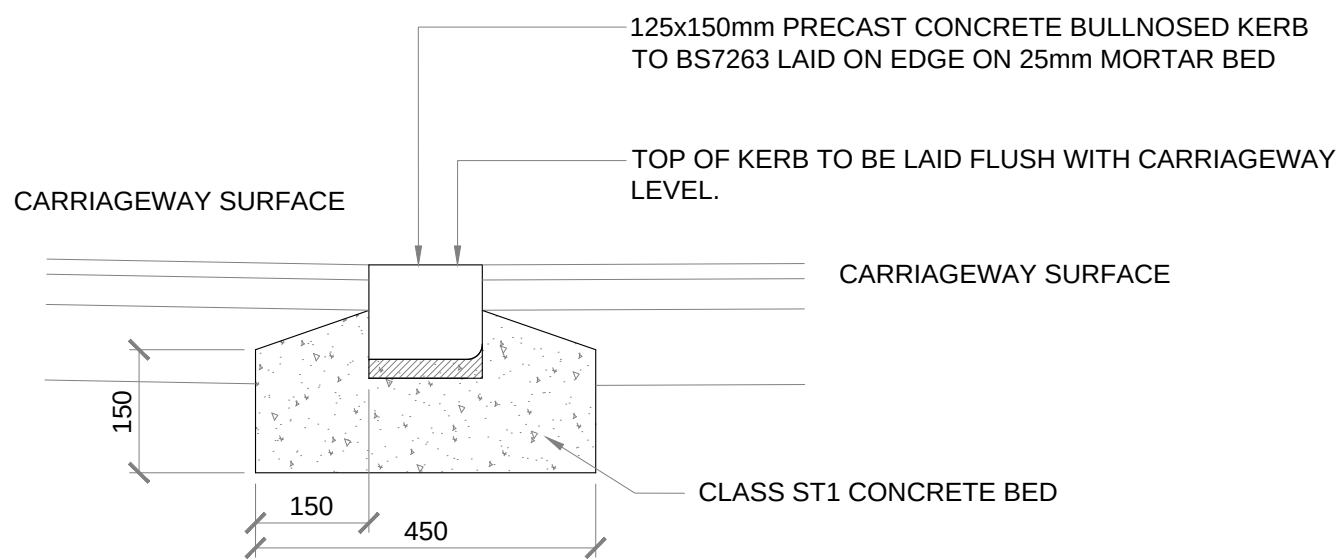
STATUS:
TENDER

UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK

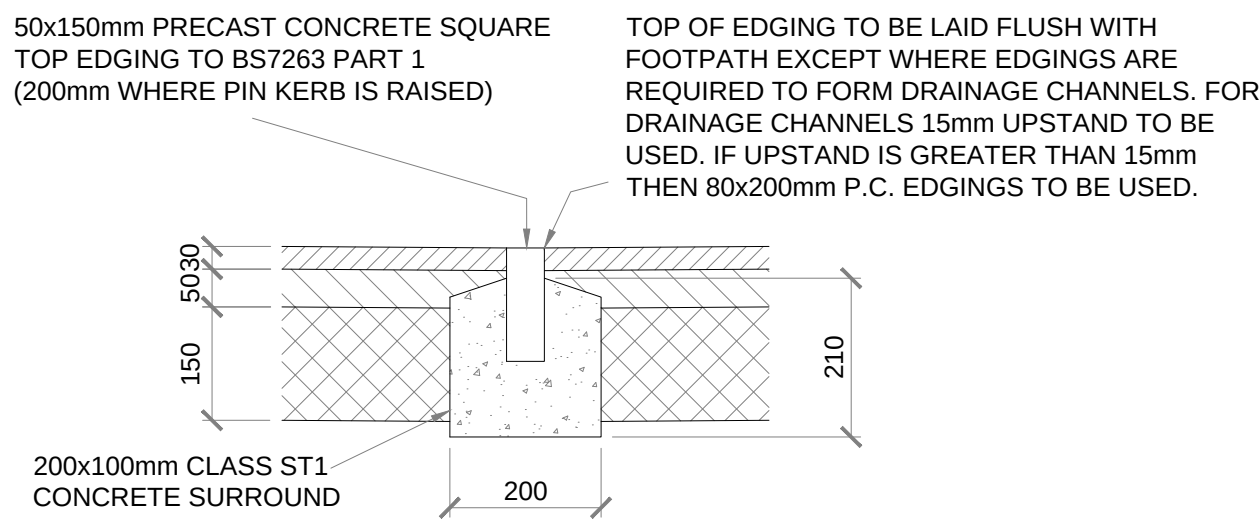
SUITABILITY: S0 - Initial Status or WIP

PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	XX	ST	DT	C	05006	P01

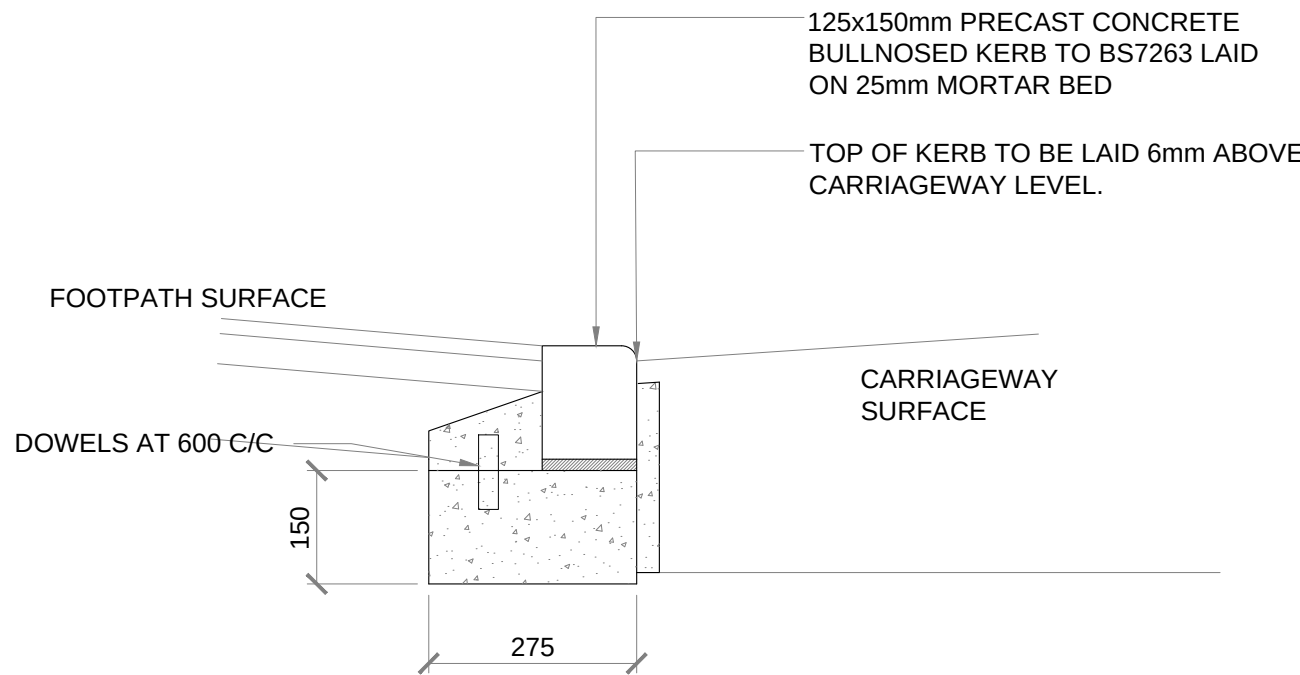




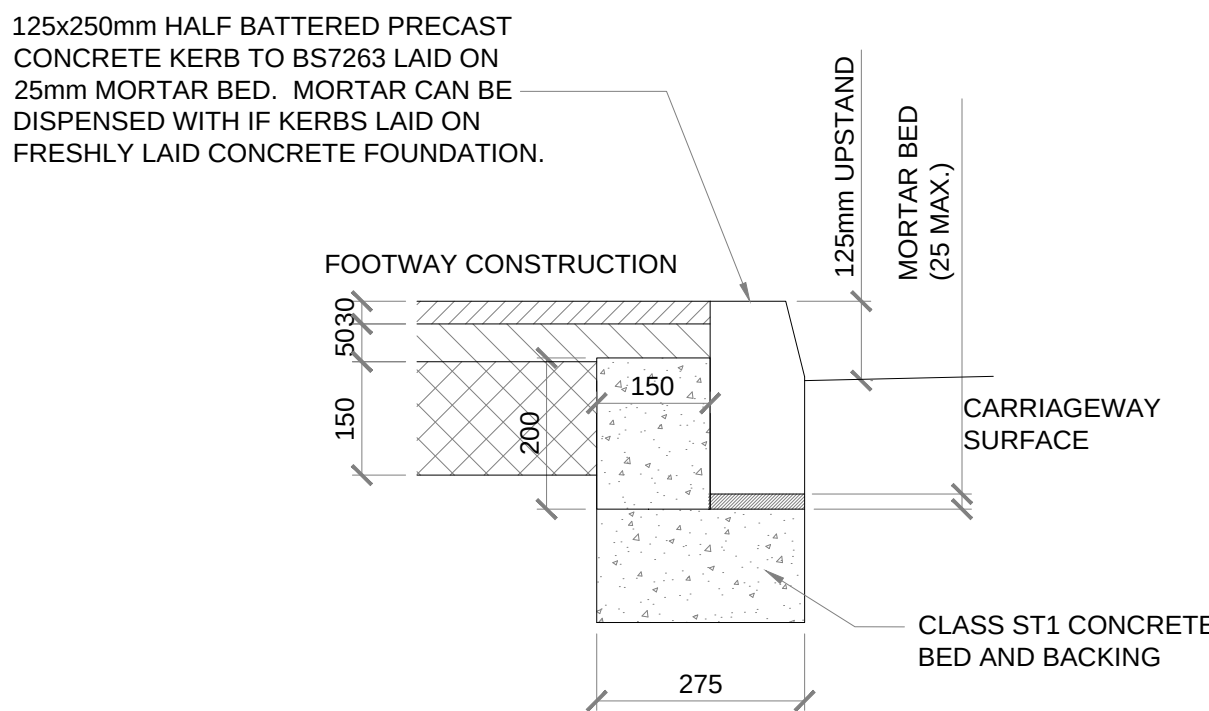
FLUSH KERB



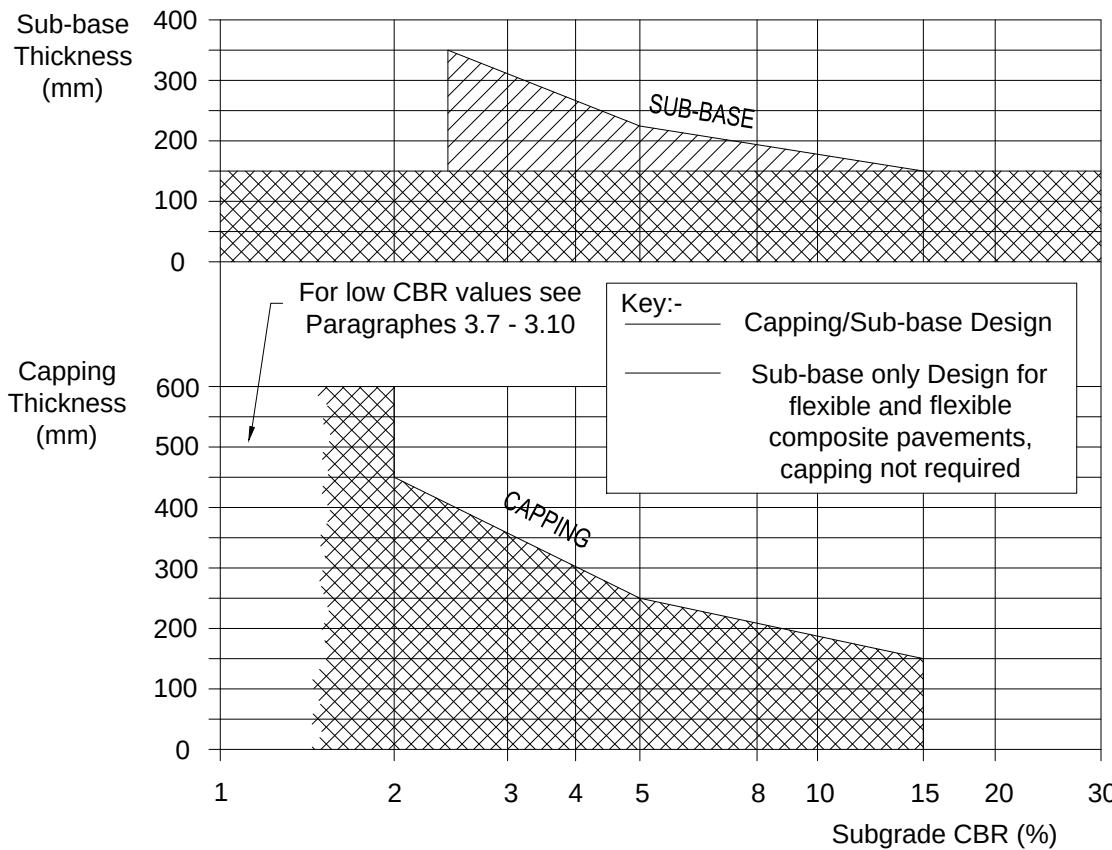
PIN KERB / FOOTWAY EDGING



BULL NOSED DROP KERB (DK)

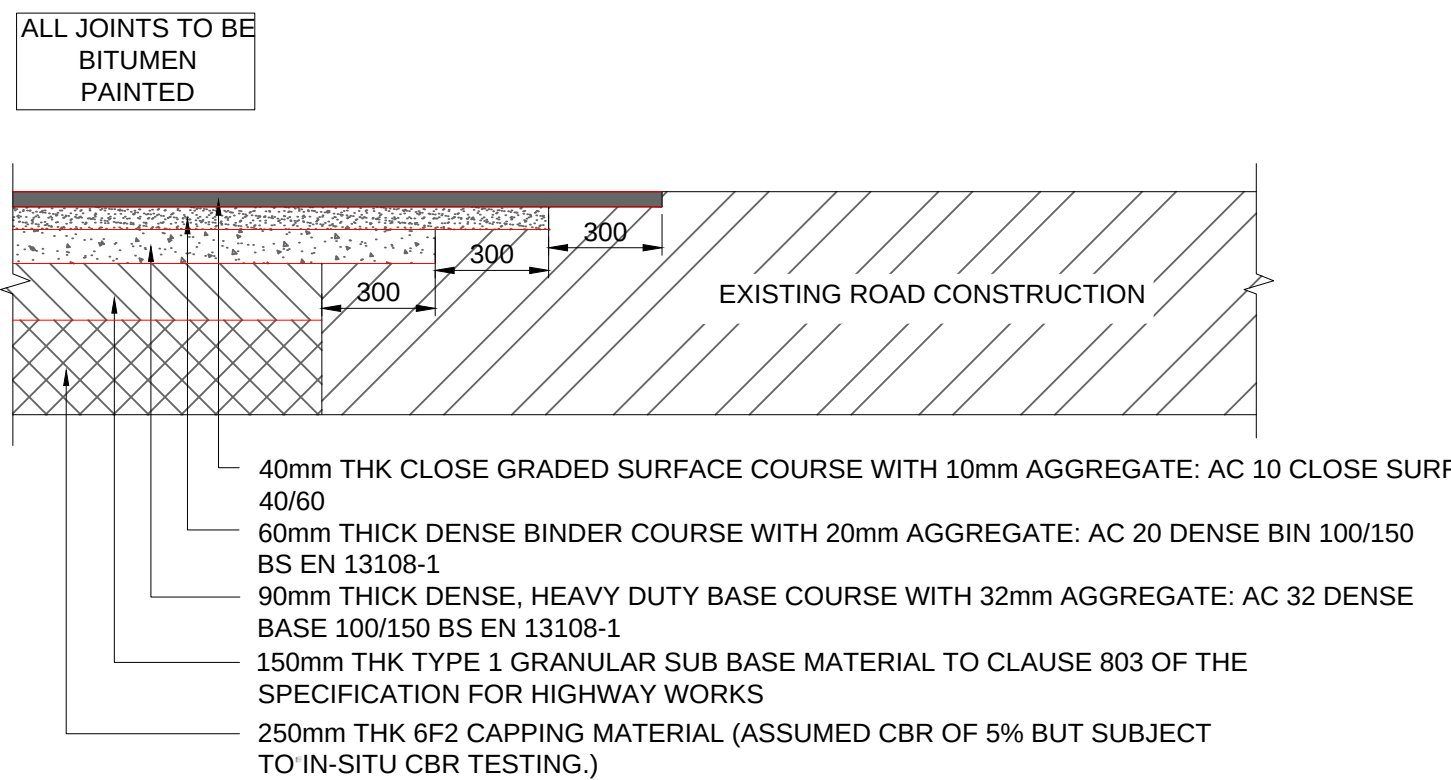


HALF BATTERED KERB (HB2)



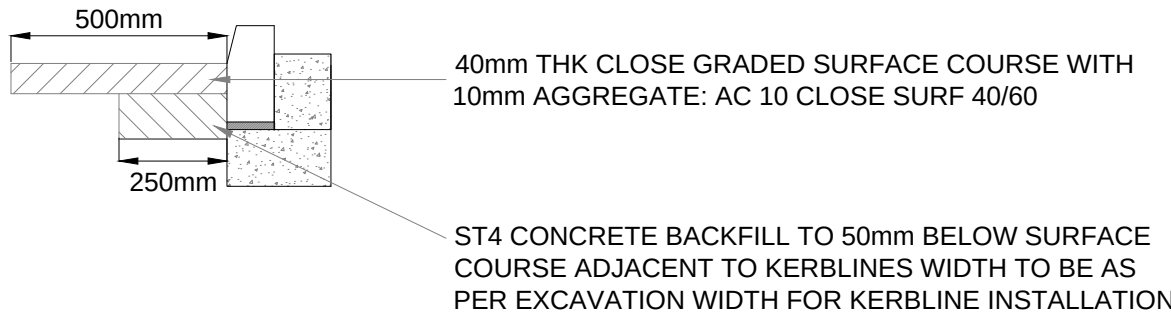
CAPPING & SUB-BASE THICKNESS DESIGN TABLE

(Figure 3.1 of Design Manual for Roads and Bridges Volume 7
Section 2 Part 2 Chapter 3).



JOINT TIE IN DETAIL

- NOTES
1. EXISTING SURFACE AND BINDER COURSES TO BE SAW CUT AND VERTICAL FACES TACK COATED PRIOR TO OVERLAY.
 2. EXISTING PAVEMENT SHALL BE CLEANED AND TACK COATED PRIOR TO OVERLAY.
 3. EXACT LOCATIONS OF TIE-INS TO BE AGREED WITH THE SUPERVISOR.
 4. WHERE THE 'BASE WIDTH' IS IN A TAPERING SECTION AND IS LESS THAN 750mm WIDE, THEN CONCRETE.
 5. AMOUNT OF CUT-BACK TO EXISTING FOUNDATION TO BE AGREED WITH THE SUPERVISOR.
 6. ANY REMAINING EXISTING PAVEMENT CONSTRUCTION CUT BACK TO SOUND VERTICAL FACE TO NEW FORMATION LEVEL.



OVERBREAK ADJACENT TO KERBLINE

DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATOR'S INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

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.



P01	STAGE 4 ISSUE	15.02.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:



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

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

CLIENT:
BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:
GORTON EDUCATION VILLAGE

TITLE:
**PROPOSED EXTERNAL WORKS
DETAILS**

ENG/TECH:	CSE:	ICSE:	SCALE:	1:20	@	A1
TP	AM	PB	STATUS ISSUE:	S1		

STATUS:
TENDER

UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK

SUITABILITY: S2 - Issued for Information

PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	ZZ	ST	DT	C	07005	P01

Appendix B – Hydraulic Calculations

Outputs from the Microdrainage software for the surface water drainage networks serving the development are provided. Pipe references from the hydraulic models can be located on the drainage layout plan.

Scott Hughes Design Ltd		Page 1
The Flint Glass Works 64 Jersey Street Manchester M4 6JW	GORTON EDUCATION VILLAGE SW RESULTS	
Date 30/11/2021 16:08	Designed by AM	
File SW.MDX	Checked by PB	
Micro Drainage	Network 2018.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes Pipe Manhole Sizes Manhole

FSR Rainfall Model - England and Wales

Return Period (years)	100	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	0
Ratio R	0.361	Minimum Backdrop Height (m)	0.600
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	400

Designed with Level Soffits

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	20.408	0.204	100.0	0.053	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	5.442	0.055	98.9	0.053	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	13.634	0.136	100.3	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	5.34	62.701	0.053	0.0	0.0	0.0	1.00	17.8	7.2
1.001	50.00	5.43	62.497	0.106	0.0	0.0	0.0	1.01	17.9	14.4
1.002	50.00	5.65	62.442	0.106	0.0	0.0	0.0	1.00	17.7	14.4

Scott Hughes Design Ltd		Page 2
The Flint Glass Works 64 Jersey Street Manchester M4 6JW	GORTON EDUCATION VILLAGE SW RESULTS	
		
Date 30/11/2021 16:08	Designed by AM	
File SW.MDX	Checked by PB	
Micro Drainage		Network 2018.1

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	Pipe Out PN Invert Level (m)	Diameter (mm)	Pipes In PN Invert Level (m)	Diameter (mm)	Backdrop (mm)
SW1	64.350	1.649	Open Manhole	1200	1.000	62.701	150		
SW2	64.080	1.583	Open Manhole	1500	1.001	62.497	150	1.000	62.497
SW3	64.250	1.808	Open Manhole	600	1.002	62.442	150	1.001	62.442
	64.268	1.962	Open Manhole	0		OUTFALL	1.002	62.306	150

Scott Hughes Design Ltd		Page 3
The Flint Glass Works 64 Jersey Street Manchester M4 6JW	GORTON EDUCATION VILLAGE SW RESULTS	
Date 30/11/2021 16:08 File SW.MDX	Designed by AM Checked by PB	
Micro Drainage	Network 2018.1	

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	SW1	64.350	62.701	1.499	Open Manhole	1200
1.001	o	150	SW2	64.080	62.497	1.433	Open Manhole	1500
1.002	o	150	SW3	64.250	62.442	1.658	Open Manhole	600

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	20.408	100.0	SW2	64.080	62.497	1.433	Open Manhole	1500
1.001	5.442	98.9	SW3	64.250	62.442	1.658	Open Manhole	600
1.002	13.634	100.3		64.268	62.306	1.812	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.002		64.268	62.306	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.361		

Scott Hughes Design Ltd		Page 4
The Flint Glass Works 64 Jersey Street Manchester M4 6JW	GORTON EDUCATION VILLAGE SW RESULTS	
Date 30/11/2021 16:08 File SW.MDX	Designed by AM Checked by PB	
Micro Drainage	Network 2018.1	

Online Controls for Storm

Hydro-Brake® Optimum Manhole: SW2, DS/PN: 1.001, Volume (m³): 3.1

Unit Reference	MD-SHE-0098-5000-1500-5000
Design Head (m)	1.500
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	98
Invert Level (m)	62.497
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.500	5.0	Kick-Flo®	0.878	3.9
Flush-Flo™	0.431	4.9	Mean Flow over Head Range	-	4.3

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.2	0.800	4.3	2.000	5.7	4.000	7.9	7.000	10.3
0.200	4.4	1.000	4.1	2.200	6.0	4.500	8.4	7.500	10.7
0.300	4.8	1.200	4.5	2.400	6.2	5.000	8.8	8.000	11.0
0.400	4.9	1.400	4.8	2.600	6.5	5.500	9.2	8.500	11.3
0.500	4.9	1.600	5.1	3.000	6.9	6.000	9.6	9.000	11.6
0.600	4.8	1.800	5.4	3.500	7.4	6.500	10.0	9.500	11.9

Scott Hughes Design Ltd		Page 5
The Flint Glass Works 64 Jersey Street Manchester M4 6JW	GORTON EDUCATION VILLAGE SW RESULTS	
Date 30/11/2021 16:08	Designed by AM	
File SW.MDX	Checked by PB	
Micro Drainage		Network 2018.1

Storage Structures for Storm

Cellular Storage Manhole: SW1, DS/PN: 1.000

Invert Level (m) 62.701 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

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	32.0	32.0	0.800	32.0	50.1	0.801	0.0	50.1

Scott Hughes Design Ltd		Page 6
The Flint Glass Works 64 Jersey Street Manchester M4 6JW	GORTON EDUCATION VILLAGE SW RESULTS	
Date 30/11/2021 16:08 File SW.MDX	Designed by AM Checked by PB	
Micro Drainage	Network 2018.1	

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

 Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.361 Cv (Winter) 0.840

 Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status OFF

 Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

									Water	Surcharged	Flooded
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)	Volume (m³)
1.000	SW1	30 Winter	1	+0%	30/15	Summer			62.773	-0.078	0.000
1.001	SW2	30 Winter	1	+0%	1/15	Summer			62.765	0.118	0.000
1.002	SW3	30 Winter	1	+0%					62.497	-0.095	0.000

				Pipe			Level
PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status	Exceeded	
1.000	SW1	0.19		3.2	OK		
1.001	SW2	0.32		4.7	SURCHARGED		
1.002	SW3	0.29		4.7	OK		

Scott Hughes Design Ltd		Page 7
The Flint Glass Works 64 Jersey Street Manchester M4 6JW	GORTON EDUCATION VILLAGE SW RESULTS	
Date 30/11/2021 16:08 File SW.MDX	Designed by AM Checked by PB	
Micro Drainage	Network 2018.1	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

 Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.361 Cv (Winter) 0.840

 Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status OFF

 Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

									Water	Surcharged	Flooded	
	US/MH			Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume
PN	Name	Storm		Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)
1.000	SW1	60	Winter	30	+0%	30/15	Summer			63.032	0.181	0.000
1.001	SW2	60	Winter	30	+0%	1/15	Summer			63.021	0.374	0.000
1.002	SW3	30	Winter	30	+0%					62.498	-0.094	0.000

		Pipe		Level	
PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	SW1	0.27		4.5	SURCHARGED
1.001	SW2	0.33		4.9	SURCHARGED
1.002	SW3	0.30		4.9	OK

Scott Hughes Design Ltd		Page 8
The Flint Glass Works 64 Jersey Street Manchester M4 6JW	GORTON EDUCATION VILLAGE SW RESULTS	
Date 30/11/2021 16:08 File SW.MDX	Designed by AM Checked by PB	
Micro Drainage	Network 2018.1	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

 Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.361 Cv (Winter) 0.840

 Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status OFF

 Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

									Water	Surcharged	Flooded	
	US/MH			Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume
PN	Name	Storm		Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)
1.000	SW1	60 Winter		100	+40%	30/15 Summer				63.919	1.068	0.000
1.001	SW2	60 Winter		100	+40%	1/15 Summer				63.907	1.260	0.000
1.002	SW3	60 Winter		100	+40%					62.498	-0.094	0.000

		Pipe		Level	
PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	SW1	0.27		4.5	SURCHARGED
1.001	SW2	0.33		4.9	FLOOD RISK
1.002	SW3	0.30		4.9	OK

Appendix C – Existing Site Information and Maintenance Schedule

Site Investigation findings provided, along with a sketch highlighting the Existing Drainage Regime. The operation and maintenance schedule are included also.

MELLAND HIGH SCHOOL DRAINAGE MAINTENANCE SCHEDULE

Organisation responsible for maintenance: _____

Contact Details – Name: _____

Number: _____

Documents:

- Drainage Layout
- Drainage Details

SUDS have been specified for the site to promote sustainable management of surface water for both flow attenuation and water quality. This document outlines the maintenance schedules for each system in order to maintain the efficiency of the drainage network. The schedules have been created based on guidance from CIRIA C753.

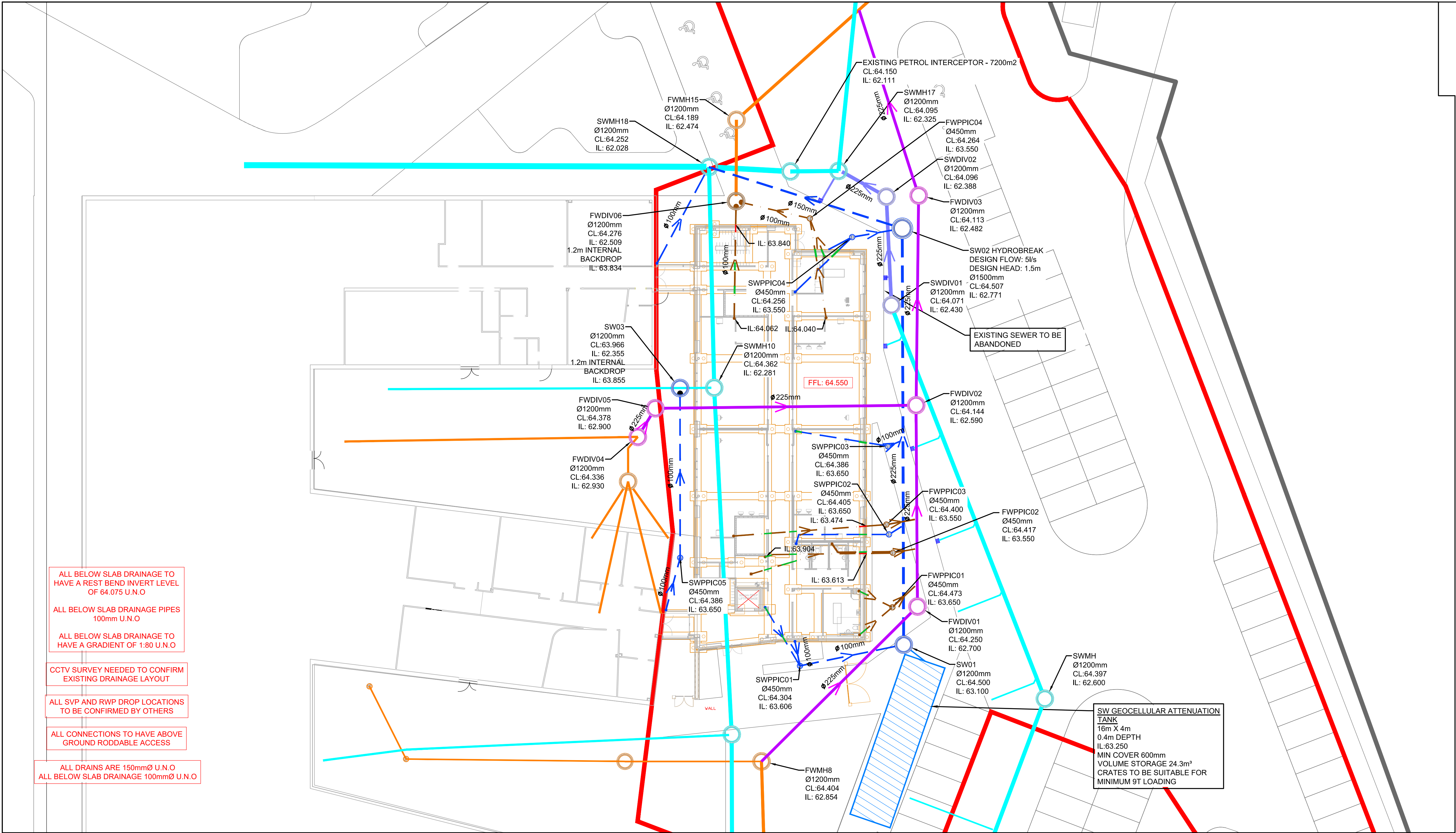
Table 1: Pipes and Manholes Maintenance Schedule

Maintenance schedule	Required Action	Recommended Frequency
Occasional maintenance	Visual inspection of covers, gratings and manhole chambers.	Annually or as required.
	Cleaning out manholes.	Annually or as required.
	CCTV inspection of drainage pipes.	Annually or as required.
Remedial actions	Reactive cleaning of manholes and drains.	During flooding events.
	Cleaning out drains by water jetting.	As required.
	Replace damaged covers, grating and manhole components.	As required.
	Rehabilitation – repairs, relining or replacement.	As determined by inspections.

Table 2: Geocellular Tank Maintenance Schedule

Maintenance Schedule	Required Action	Recommended Frequency
Regular Maintenance	Inspect and identify areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually or as required
	Remove debris from the catchment surface	Monthly
	Remove sediment from pre-treatment structures	Annually

Remedial Actions	Repair / rehabilitate inlets/outlet and vents	As required
Monitoring	Inspect inlets, outlets and vents to ensure they are in good condition and operating as designed.	Annually
	Survey Inside of tank for sediment build up and remove is necessary	Every 5 years or where concerned about operation



ALL BELOW SLAB DRAINAGE TO HAVE A REST BEND INVERT LEVEL OF 64.075 U.N.O

ALL BELOW SLAB DRAINAGE PIPES 100mm U.N.O

ALL BELOW SLAB DRAINAGE TO HAVE A GRADIENT OF 1:80 U.N.O

CCTV SURVEY NEEDED TO CONFIRM EXISTING DRAINAGE LAYOUT

ALL SVP AND RWP DROP LOCATIONS TO BE CONFIRMED BY OTHERS

ALL CONNECTIONS TO HAVE ABOVE GROUND RODDABLE ACCESS

ALL DRAINS ARE 150mmØ U.N.O
ALL BELOW SLAB DRAINAGE 100mmØ U.N.O

DRAINAGE NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. 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 MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
- a) 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.
 - b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
6. CONCRETE PROTECTION TO PIPEWORK IS TO BE PROVIDED AS FOLLOWS:
 - a) ALL PIPEWORK WITHIN PEDESTRIAN/SOFT AREAS WITH LESS THAN 600mm COVER
 - b) ALL PIPEWORK SUBJECT TO VEHICULAR OVERRUN WITH LESS THAN 1.2m COVER.
 7. 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.
 8. ALL DRAINS TO BE LAID ACCURATELY TO LINE AND LEVEL IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 9. 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.
 10. CO-ORDINATE SETTING OUT INFORMATION FOR MANHOLES IS TO THE INTERSECTION THE DRAINS AND NOT THE CENTRE OF THE MANHOLE.
 11. 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.
- a) 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.
 - b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
13. 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.
 14. GULLY GRATINGS AND STEEL CHANNEL COVERS ARE TO BE IN ACCORDANCE WITH BSEN124 AS FOLLOWS:
 - a) AREAS SUBJECT TO VEHICULAR OVERRUN: CLASS D400 MINIMUM.
 - b) AREAS NOT SUBJECT TO REGULAR VEHICLE OVERRUN (ADJACENT TO KERBS ETC): CLASS C250.
 - c) GULLY GRATINGS ADJACENT TO KERBS SHALL BE HINGED ON THE SIDE OF THE TRAFFIC DIRECTION (LEFT HAND SIDE).
 15. ALL BRICKWORK IN CONNECTION WITH DRAINAGE IS TO BE SOLID CLASS B ENGINEERING BRICK TO BS3921.
 16. ALL PRECAST CONCRETE PIPES, CHAMBER PRODUCTS AND ROAD GULLIES SHALL BE TO BS5911 AND BE KITEMARKED.
 17. ALL DRAINAGE INSITU CONCRETE SHALL BE GEN3 (U.N.O).
 18. 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.
19. 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.
 20. CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150mm OF CHAMBER/SHAFT RING JOINTS.
 21. ROCKER PIPES TO BE SURROUNDED WITH CONCRETE LOCATED 150mm MINIMUM 200mm MAXIMUM FROM THE FIRST FLEXIBLE JOINT TO THE MANHOLE WALL.
 22. SOFT SPOTS IN THE TRENCH FORMATION SHALL BE REMOVED AND REPLACED WITH GRANULAR BEDDING UNLESS INSTRUCTED OTHERWISE.
 23. 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.
 24. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LIAISE WITH BUILDING CONTROL FOR APPROVALS, INTERIM INSPECTION, SNAGGING AND FINAL INSPECTIONS OF THEIR WORK.
 25. 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.
 26. 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.
 27. 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.
28. PIPEWORK TO BE OF THE FOLLOWING MANUFACTURER: 100 / 150 / 225MM DIAMETER HEPWORTH SUPERSLEEVE VITRIFIED CLAY PIPES (40kN/mm 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.
 29. ALL RWP, WPC & GULLY CONNECTIONS TO BE 100mm DIA UNO & ARE RODDABLE AT LOCATIONS ABOVE GROUND LEVEL.
 30. 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

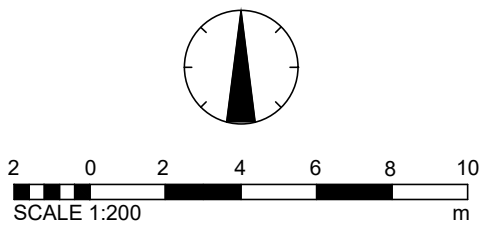
PROPOSED GULLY

DRAINAGE CROSSES OVER FOUNDATION

FOUNDATION CROSSES THROUGH FOUNDATION

- DISCLAIMER NOTES:
- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL.
 - THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR.
 - THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHERS.
 - ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR.
 - DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY.
 - ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS.
 - THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES.
 - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
 - USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT.
 - THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS.
 - THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY.

- 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.



P02	STAGE 4 ISSUE	15.02.22	TP	PB
P01	PRELIMINARY ISSUE	01.11.21	AP	AM
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

RIDGE

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

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

CLIENT:
BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:
GORTON EDUCATION VILLAGE

TITLE:
PROPOSED DRAINAGE LAYOUT

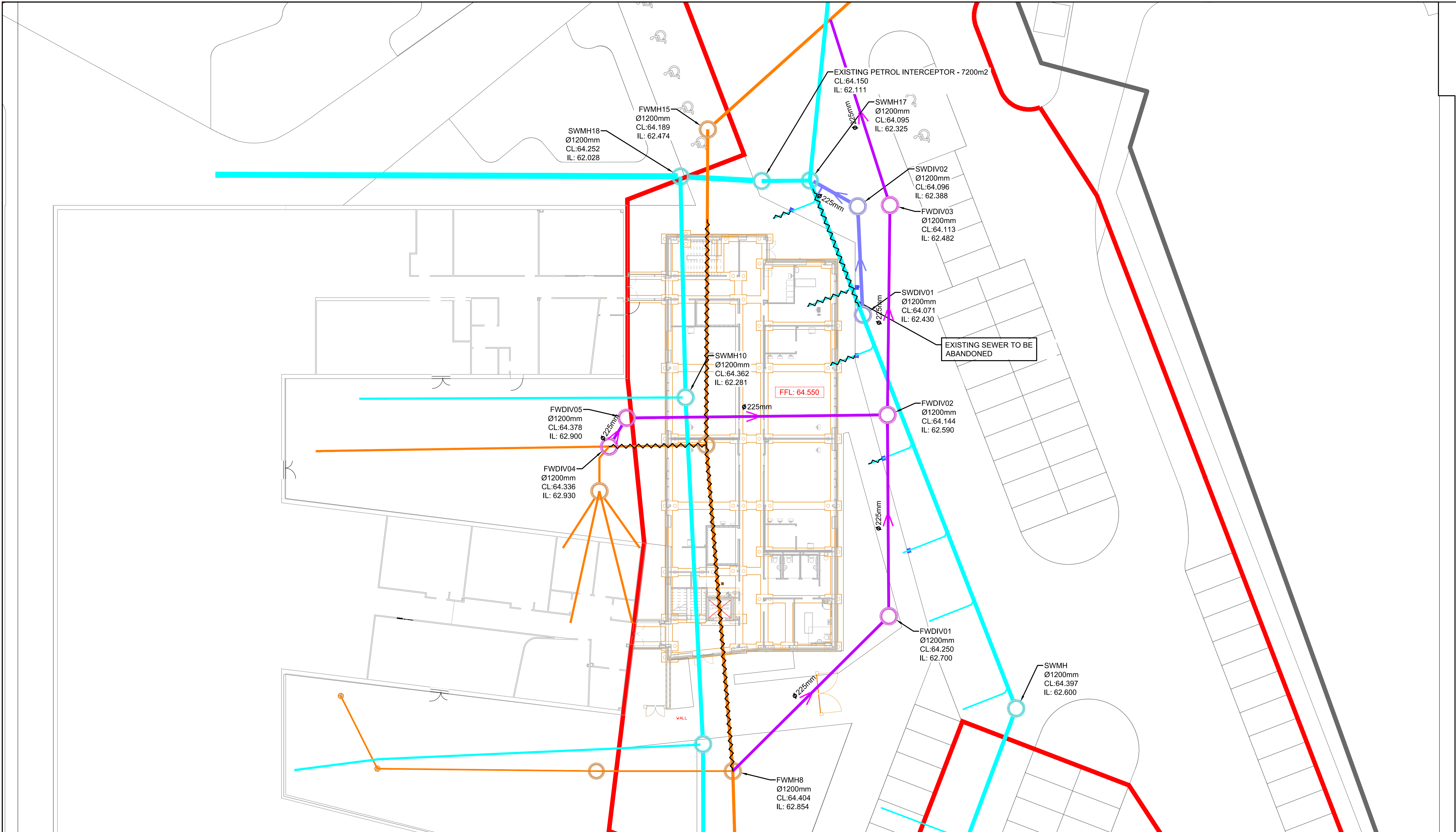
ENG/TECH:	CSE:	ICSE:	SCALE:	1:200	@	A1
AP	AM	AM	STATUS ISSUE:	S2		

STATUS:
TENDER

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

SUITABILITY: S2 - Issued for Information

PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	ZZ	ST	DR	C	05001	P02



DRAINAGE NOTES

1. 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.

2. 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.

3. 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.

4. 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.

5. 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. MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
a) 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.
b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.

6. CONCRETE PROTECTION TO PIPEWORK IS TO BE PROVIDED AS FOLLOWS:
a) ALL PIPEWORK WITHIN PEDESTRIAN/SOFT AREAS WITH LESS THAN 600mm COVER
b) ALL PIPEWORK SUBJECT TO VEHICULAR OVERRUN WITH LESS THAN 1.2m COVER.

7. 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.

8. ALL DRAINS TO BE LAID ACCURATELY TO LINE AND LEVEL IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

9. 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.

10. CO-ORDINATE SETTING OUT INFORMATION FOR MANHOLES IS TO THE INTERSECTION THE DRAINS AND NOT THE CENTRE OF 17. ALL DRAINAGE INSITU CONCRETE SHALL BE GEN3 (U.N.O).

11. 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.

12. MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
a) 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.
b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.

13. 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.

14. GULLY GRATINGS AND STEEL CHANNEL COVERS ARE TO BE IN23. 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.

15. ALL BRICKWORK IN CONNECTION WITH DRAINAGE IS TO BE SOLID CLASS B ENGINEERING BRICK TO BS3921.

16. ALL PRECAST CONCRETE PIPES, CHAMBER PRODUCTS AND ROAD GULLIES SHALL BE TO BS5911 AND BE KITEMARKED.

17. ALL DRAINAGE INSITU CONCRETE SHALL BE GEN3 (U.N.O).

18. 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.
19. 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.
20. CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150MM OF CHAMBER/SHAFT RING JOINTS.
21. ROCKER PIPES TO BE SURROUNDED WITH CONCRETE LOCATED 150mm MINIMUM 200mm MAXIMUM FROM THE FIRST FLEXIBLE JOINT TO THE MANHOLE WALL.
22. SOFT SPOTS IN THE TRENCH FORMATION SHALL BE REMOVED AND REPLACED WITH GRANULAR BEDDING UNLESS INSTRUCTED OTHERWISE.
23. 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.
24. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LIAISE WITH BUILDING CONTROL FOR APPROVALS, INTERIM INSPECTION, SNAGGING AND FINAL INSPECTIONS OF THEIR WORK.
25. 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.
26. 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.
27. 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.
28. PIPEWORK TO BE OF THE FOLLOWING MANUFACTURER: 100 / 150 / 225MM DIAMETER HEPWORTH SUPERSLEEVE VITRIFIED CLAY PIPES (40kN/mm 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.
29. ALL RWP, WPC & GULLY CONNECTIONS TO BE 100mm DIA UNO & ARE RODDABLE AT LOCATIONS ABOVE GROUND LEVEL.
30. 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

EXISTING SW SEWER

EXISTING FW SEWER

PROPOSED DIVERTED SW SEWER

PROPOSED DIVERTED SW MH

PROPOSED DIVERTED FW SEWER

PROPOSED DIVERTED FW MH

EXISTING DRAIN TO BE GRUBBED OUT

PROPOSED GULLY

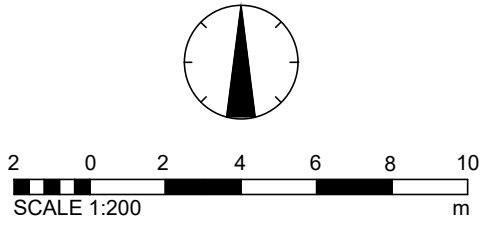
DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL.
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT WRITTEN CONSENT OF THE ORIGINATOR.
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR.
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

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.



P01	STAGE 4 ISSUE	15.02.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD
ORIGINATOR:				
RIDGE				
5TH FLOOR BELVEDERE HOUSE 12 BOOTH STREET MANCHESTER, M2 4AW				
TEL: 0161 833 9579 WWW.RIDGE.CO.UK				

CLIENT:

BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:

GORTON EDUCATION VILLAGE

TITLE:

DRAINAGE ABANDONMENT PLAN

ENG/TECH:	CSE:	ICSE:	SCALE:	1:200	@	A1
TP	PB	PB	STATUS ISSUE:	S2		

STATUS:

TENDER

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

SUITABILITY: S2 - Issued for Information

PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	ZZ	ST	DR	C	05002	P01

MANHOLE SCHEDULE									
MANHOLE NO.	MANHOLE CO-ORDINATES	COVER LEVEL (m)	DEPTH TO INVERT (m)	MANHOLE SIZE	MANHOLE TYPE	PIPE IN NAME, INVERT LEVEL (m) & DIA	PIPE OUT NAME, INVERT LEVEL (m) & DIA	COVER SIZE (mm) & GRADE	COMMENTS
FWDIV01	E:388534.520 N:394872.466	64.250	1.550	1,200	Type-B	From , IL=62.700, 225mmØ	To FWDIV02, IL=62.700, 225mmØ	600x600 D400	
FWDIV02	E:388534.391 N:394891.544	64.144	1.554	1,200	Type-B	From FWDIV05, IL=62.590, 225mmØ From FWDIV01, IL=62.590, 225mmØ	To FWDIV03, IL=62.590, 225mmØ	600x600 D400	
FWDIV03	E:388534.633 N:394911.413	64.113	1.631	1,200	Type-B	From FWDIV02, IL=62.482, 225mmØ	To , IL=62.482, 225mmØ	600x600 D400	
FWDIV04	E:388508.022 N:394888.541	64.336	1.406	1,200	Type-B		To FWDIV05, IL=62.930, 225mmØ	600x600 D400	INCOMING CONNECTION FROM EXIST IL TBC ON SITE
FWDIV05	E:388509.684 N:394891.252	64.378	1.478	1,200	Type-B	From FWDIV04, IL=62.900, 225mmØ	To FWDIV02, IL=62.900, 225mmØ	600x600 D400	
FWDIV06	E:388517.338 N:394910.882	64.276	1.767	1,200	Type-B	From MH38 (10), IL=63.650, 100mmØ		600x600 D400	CONNECTION TO EXISTING IL TBC ON SITE
FWPPIC01	E:388532.144 N:394872.395	64.473	0.823	450	IC	From MH37 (24), IL=63.650, 100mmØ From MH37 (22), IL=63.650, 100mmØ	To , IL=63.550, 100mmØ	450 B125	D/S SADDLE TO FW DIVERSION
FWPPIC02	E:388532.192 N:394877.562	64.417	0.867	450	IC		To , IL=63.550, 100mmØ	450 B125	D/S SADDLE TO FW DIVERSION
FWPPIC03	E:388531.571 N:394880.232	64.400	0.850	450	IC	From MH37 (37), IL=63.550, 100mmØ	To , IL=63.550, 100mmØ	450 B125	D/S SADDLE TO FW DIVERSION
FWPPIC04	E:388524.318 N:394909.247	64.264	0.714	450	IC	From MH37 (19), IL=63.550, 100mmØ From MH37 (21), IL=63.550, 100mmØ	To , IL=63.550, 100mmØ	450 B125	
SW01	E:388533.215 N:394868.857	64.500	1.400	1,200	Type-B	From SWPPIC01, IL=63.225, 100mmØ	To SW02, IL=63.100, 225mmØ	600x600 D400	ATTENUATION TANK INLET / OUTLET 225mm DIA - IL 63.100
SW02	E:388533.081 N:394908.296	64.507	1.736	1,500	Flow Control	From SW01, IL=62.771, 225mmØ From SWPPIC04, IL=63.896, 100mmØ	To , IL=62.896, 150mmØ	1200 x 675 D400	HYDROBRAKE CHAMBER FLOW - 5 l/s HEAD - 1.5m
SW03	E:388512.024 N:394893.171	63.966	2.066	1,200	Type-B	From SWPPIC05, IL=63.450, 100mmØ		600x600 D400	1.2m BACKDROP CONNECTION TO EXISTING IL TBC ON SITE
SWDIV01	E:388532.063 N:394901.026	64.071	1.641	1,200	Type-B		To SWDIV02, IL=62.430, 225mmØ	600x600 D400	INCOMING PIPE IS EXISTING INVERT LEVEL TBC ON SITE
SWDIV02	E:388531.576 N:394911.303	64.096	1.708	1,200	Type-B	From SWDIV01, IL=62.388, 225mmØ	To , IL=62.388, 225mmØ	600x600 D400	
SWPPIC01	E:388523.388 N:394866.848	64.304	0.698	450	IC	From MH24 (15), IL=63.606, 100mmØ From MH24 (15) (1), IL=63.606, 100mmØ	To SW01, IL=63.994, 100mmØ	450 B125	
SWPPIC02	E:388531.821 N:394879.300	64.405	0.755	450	IC		To , IL=63.650, 100mmØ	450 B125	
SWPPIC03	E:388531.716 N:394887.640	64.386	0.736	450	IC		To , IL=63.650, 100mmØ	450 B125	
SWPPIC04	E:388528.329 N:394907.475	64.256	0.706	450	IC	From MH24 (6), IL=63.550, 100mmØ From , IL=63.550, 100mmØ	To SW02, IL=63.550, 100mmØ	450 B125	
SWPPIC05	E:388512.037 N:394877.088	64.386	0.736	450	IC	From MH24 (12), IL=63.650, 100mmØ	To SW03, IL=63.650, 100mmØ	450 B125	

DRAINAGE NOTES

1. 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.
2. 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.
3. ALL PRIVATE DRAINAGE WITHIN THE SITE IS TO COMPLY WITH THE REQUIREMENTS OF BS EN752 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.
4. 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 2 BEDDING). CLASS 'S' BED AND SURROUND MAY BE REQUIRED FOR SEWERS TO BE ADOPTED. REFER TO SPECIFIC DRAWINGS FOR FURTHER INFORMATION.
5. 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 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.

6. CONCRETE PROTECTION TO PIPEWORK IS TO BE PROVIDED AS FOLLOWS:
 - a) ALL PIPEWORK WITHIN PEDESTRIAN/SOFT AREAS WITH LESS THAN 600mm COVER.
 - b) ALL PIPEWORK SUBJECT TO VEHICULAR OVERRUN WITH LESS THAN 1.2m COVER.
7. 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.
8. ALL DRAINS TO BE LAID ACCURATELY TO LINE AND LEVEL IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
9. 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.) CATCHPIP INVERT LEVELS ARE FOR THE OUTGOING PIPE WITH THE SUMP LEVEL SPECIFIED SEPARATELY.
10. CO-ORDINATE SETTING OUT INFORMATION FOR MANHOLES IS TO THE INTERSECTION THE DRAINS AND NOT THE CENTRE OF THE MANHOLE.
11. 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.

12. MANHOLE COVERS AND FRAMES ARE TO BE IN ACCORDANCE WITH BSEN124 AND THE FOLLOWING:
 - a) 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 IF FOUL OR SURFACE WATER DRAINAGE.
 - b) PEDESTRIAN AREAS: CLASS B125, 100mm DEEP, BADGED FW OR SW FOR FOUL OR SURFACE WATER DRAINAGE.
13. POSITIONS AND SIZES OF ABOVE GROUND FOUL AND SURFACE WATER DRAINAGE CONNECTIONS ARE TO BE CONFIRMED PRIOR TO CONSTRUCTION WITH THE ARCHITECT & G&E ENGINEER.
14. GULLY GRATINGS AND STEEL CHANNEL COVERS ARE TO BE IN ACCORDANCE WITH BSEN124 AS FOLLOWS:
 - a) AREAS SUBJECT TO VEHICULAR OVERRUN: CLASS D400 MINIMUM.
 - b) AREAS NOT SUBJECT TO REGULAR VEHICLE OVERRUN (ADJACENT TO KERBS ETC): CLASS C250.
 - c) GULLY GRATES ADJACENT TO KERBS SHALL BE HINGED TO THE SIDE OF THE TRAFFIC DIRECTION (LEFT HAND SIDE).
15. ALL BRICKWORK IN CONNECTION WITH DRAINAGE IS TO BE SOLID CLASS B ENGINEERING BRICK TO BS3921.
16. ALL PRECAST CONCRETE PIPES, CHAMBER PRODUCTS AND ROAD GULLIES SHALL BE TO BS5911 AND BE KITEMARKED.
17. ALL DRAINAGE INSITU CONCRETE SHALL BE GEN3 (U.N.O).
18. ALL INSITU AND CONCRETE PRODUCTS SHALL COMPLY WITH THE REQUIREMENTS FOR SULPHATE EXPOSURE IN ACCORDANCE WITH BRE SPECIAL DIGEST 1. CONCRETE

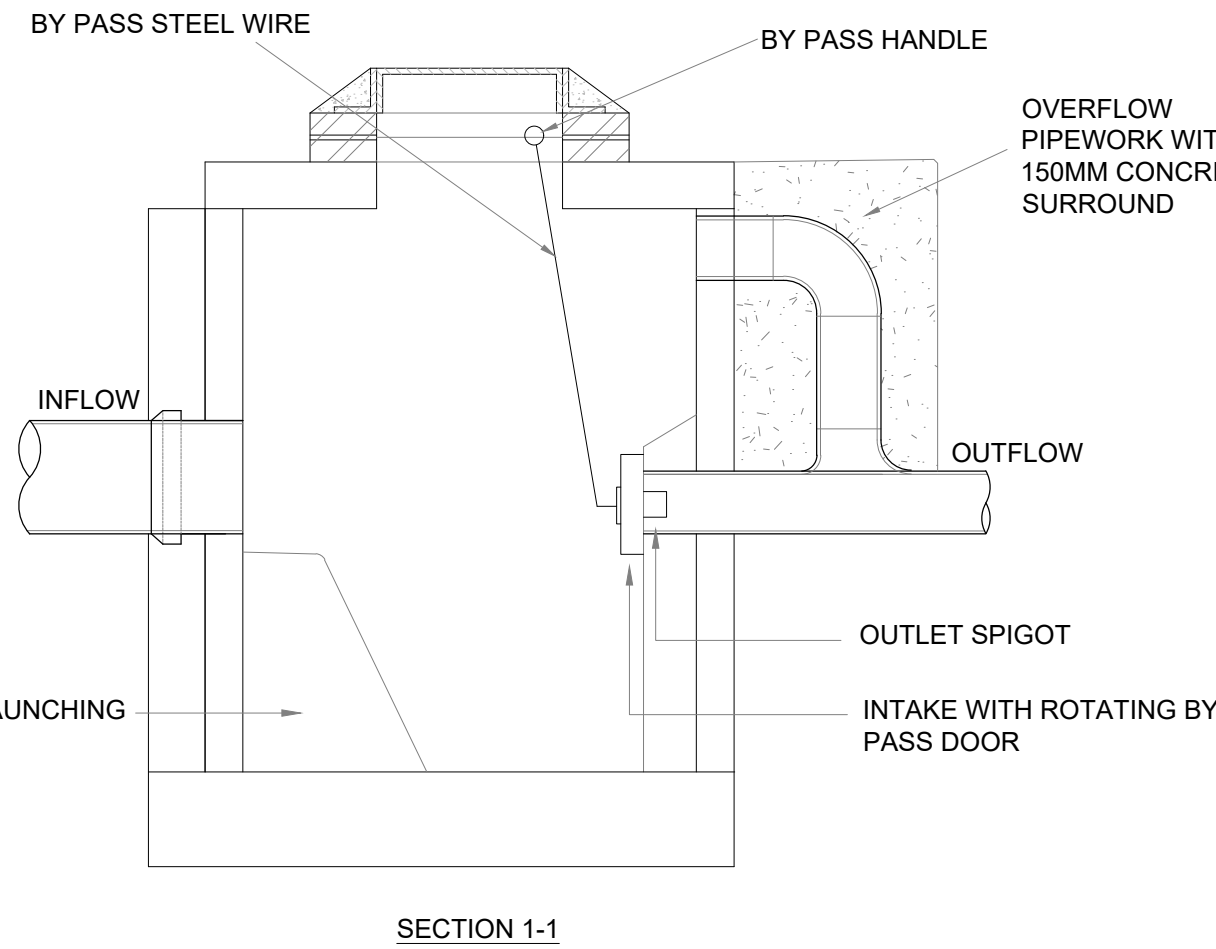
AGGRESSIVE GROUND (2001) PART 1: TABLE 2.

19. 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.
20. CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150MM OF CHAMBER/SHAFT RING JOINTS.
21. ROCKER PIPES TO BE SURROUNDED WITH CONCRETE LOCATED 150mm MINIMUM 200mm MAXIMUM FROM THE FIRST FLEXIBLE JOINT TO THE MANHOLE WALL.
22. SOFT SPOTS IN THE TRENCH FORMATION SHALL BE REMOVED AND REPLACED WITH GRANULAR BEDDING UNLESS INSTRUCTED OTHERWISE.
23. 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.
24. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LIAISE WITH BUILDING CONTROL FOR APPROVALS, INTERIM INSPECTION, SNAGGING AND FINAL INSPECTIONS OF THEIR WORK.
25. 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.
26. 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.
27. THE DRAINAGE SYSTEM IS NOT DESIGNED TO ACCEPT

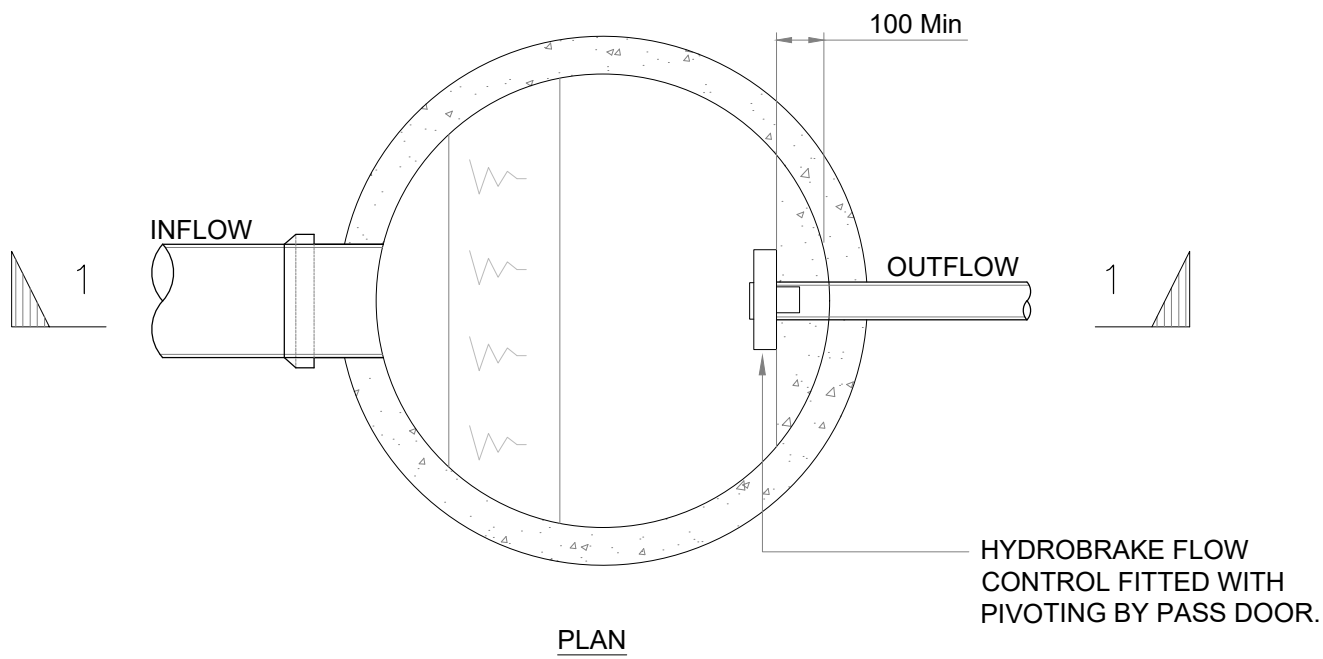
UNTREATED EFFLUENT FROM A COMMERCIAL KITCHEN CONTAINING GREASE AND OILS. REMOVAL OF GREASE AND OIL SHOULD BE MADE AT SOURCE USING A FLOOR MOUNTED ABOVE GROUND GREASE REMOVAL SYSTEM. IT IS RECOMMENDED THAT A MECHANICAL GREASE REMOVAL SYSTEM BE EMPLOYED FOR THIS PURPOSE NOT A PASSIVE SYSTEM.

28. PIPEWORK TO BE OF THE FOLLOWING MANUFACTURER: 100 / 150 / 225MM DIAMETER HEPCORTH SUPERSLEEVE VITRIFIED CLAY PIPES (40KN/mm 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 PERFORATED HDPE.
29. ALL RWP, WPC & GULLY CONNECTIONS TO BE 100mm DIA UNCL & ARE RODDABLE AT LOCATIONS ABOVE GROUND LEVEL.
30. 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.

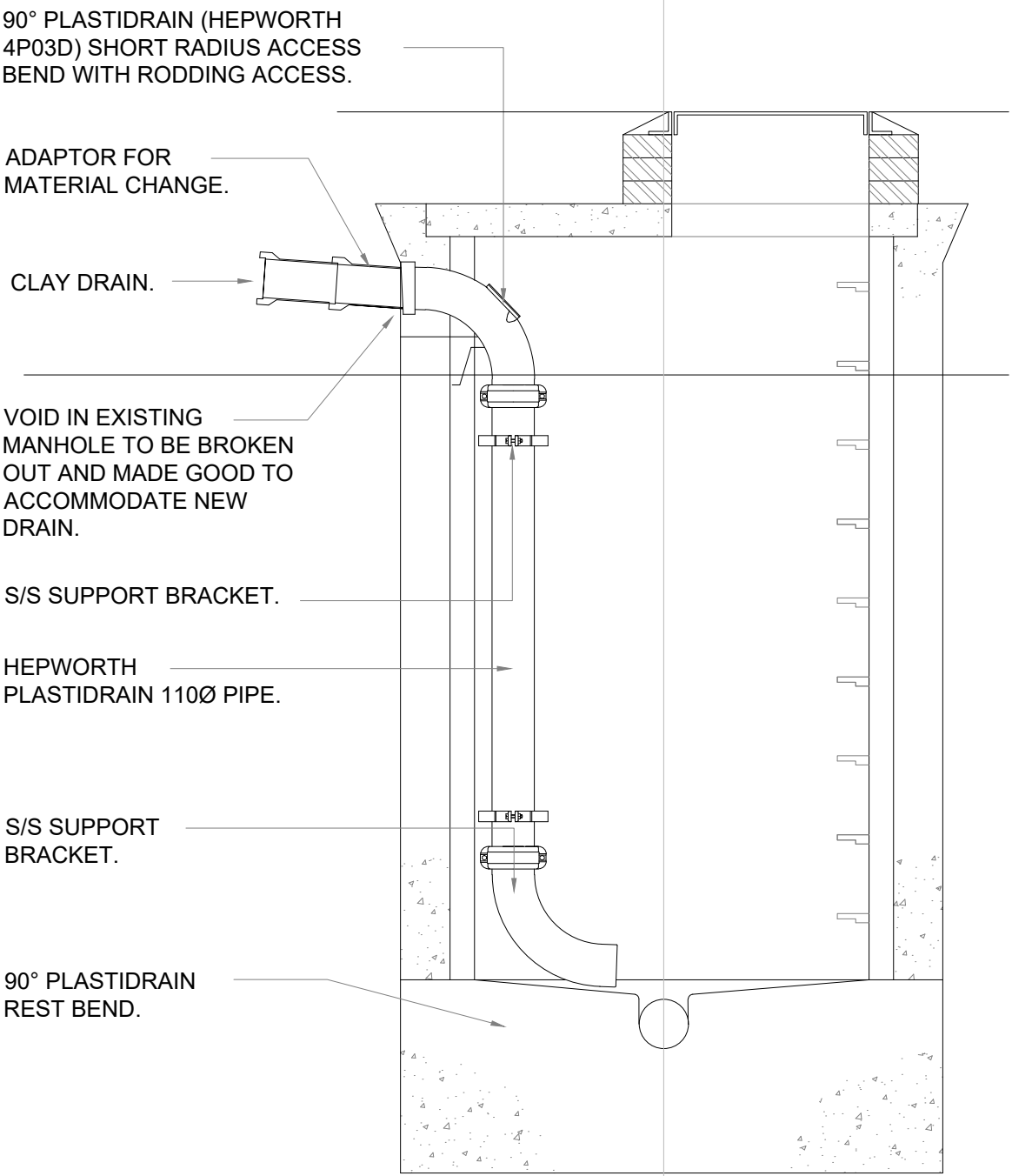
[illegible]



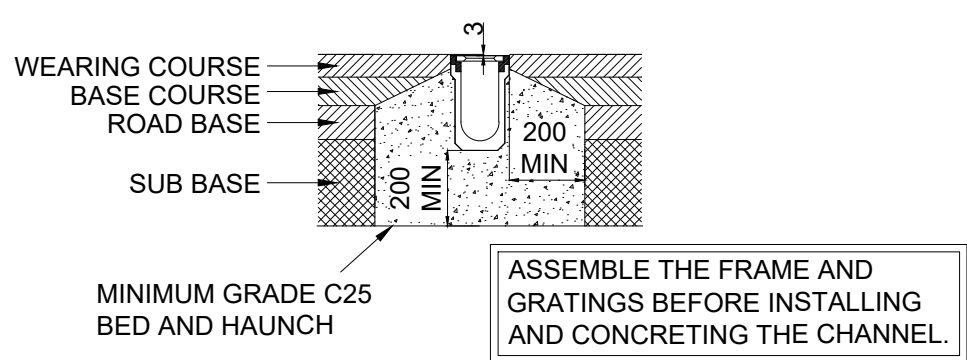
NOTE :
THIS DRAWING IS INDICATIVE ONLY.
SEE MANUFACTURERS DRAWINGS
AND SPECIFICATION FOR
CONSTRUCTION DETAILS.



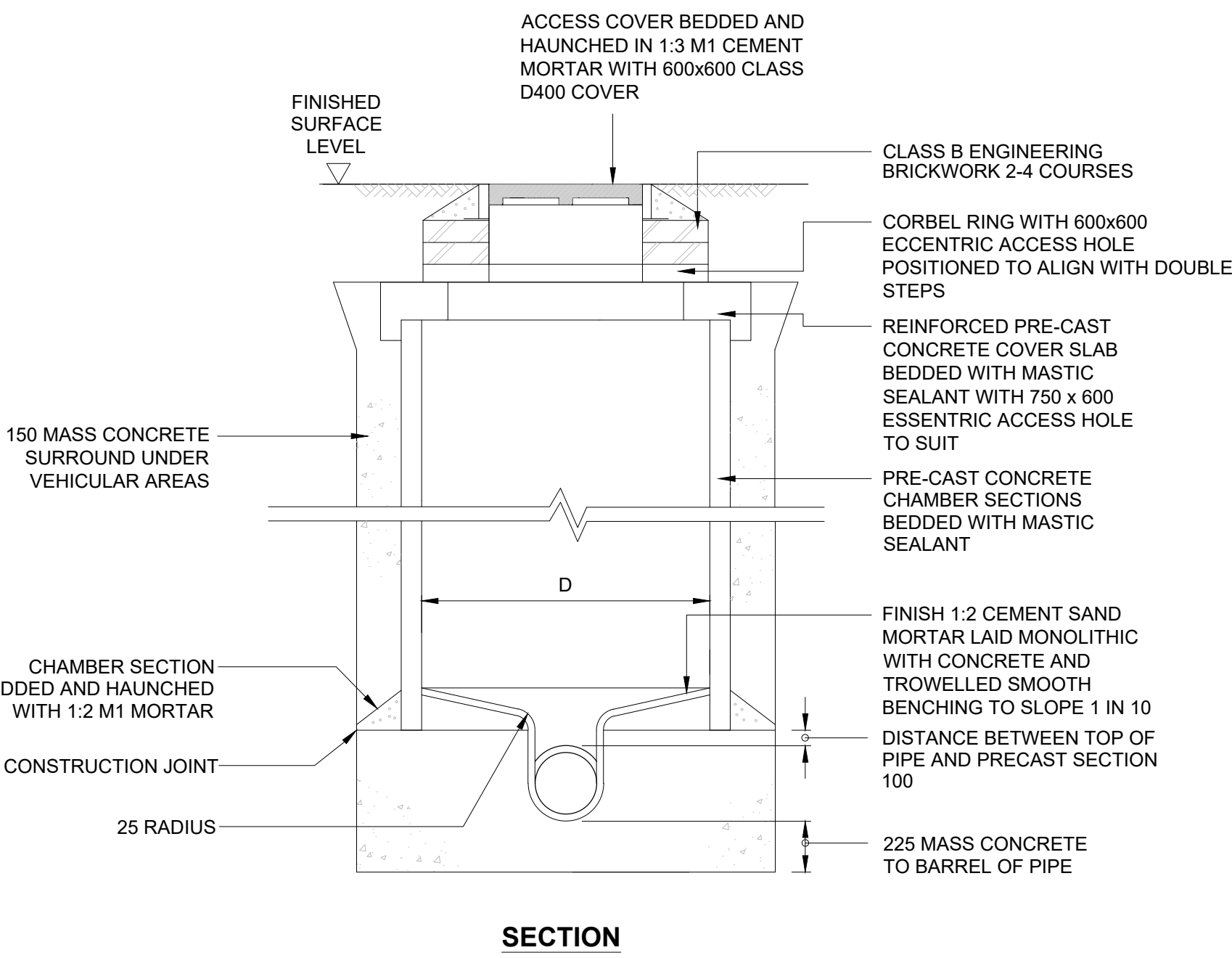
VORTEX CONTROL CHAMBER



INTERNAL VERTICAL BACKDROP



TYPICAL DRAINAGE CHANNEL IN FLEXIBLE PAVEMENT

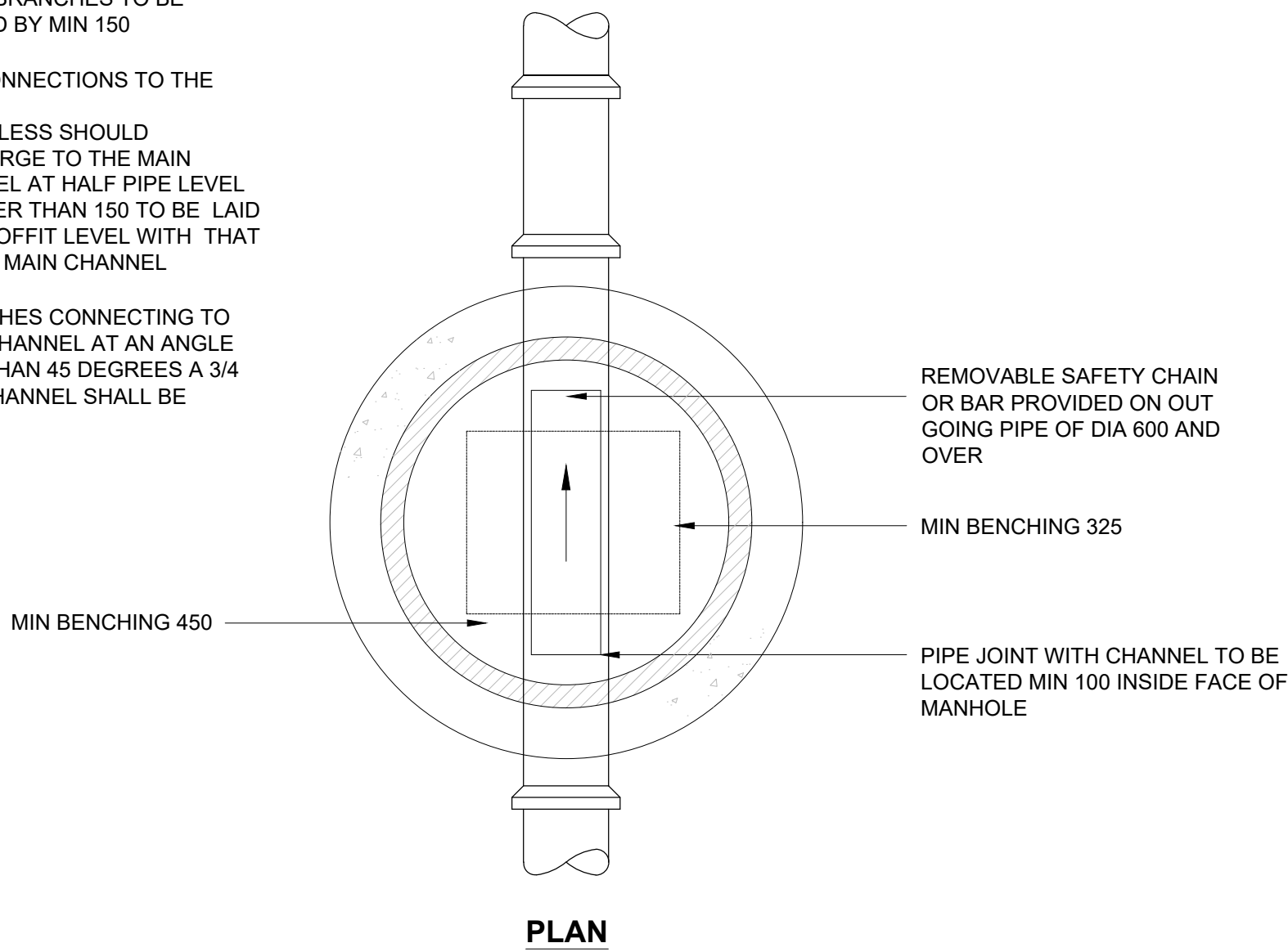


SECTION

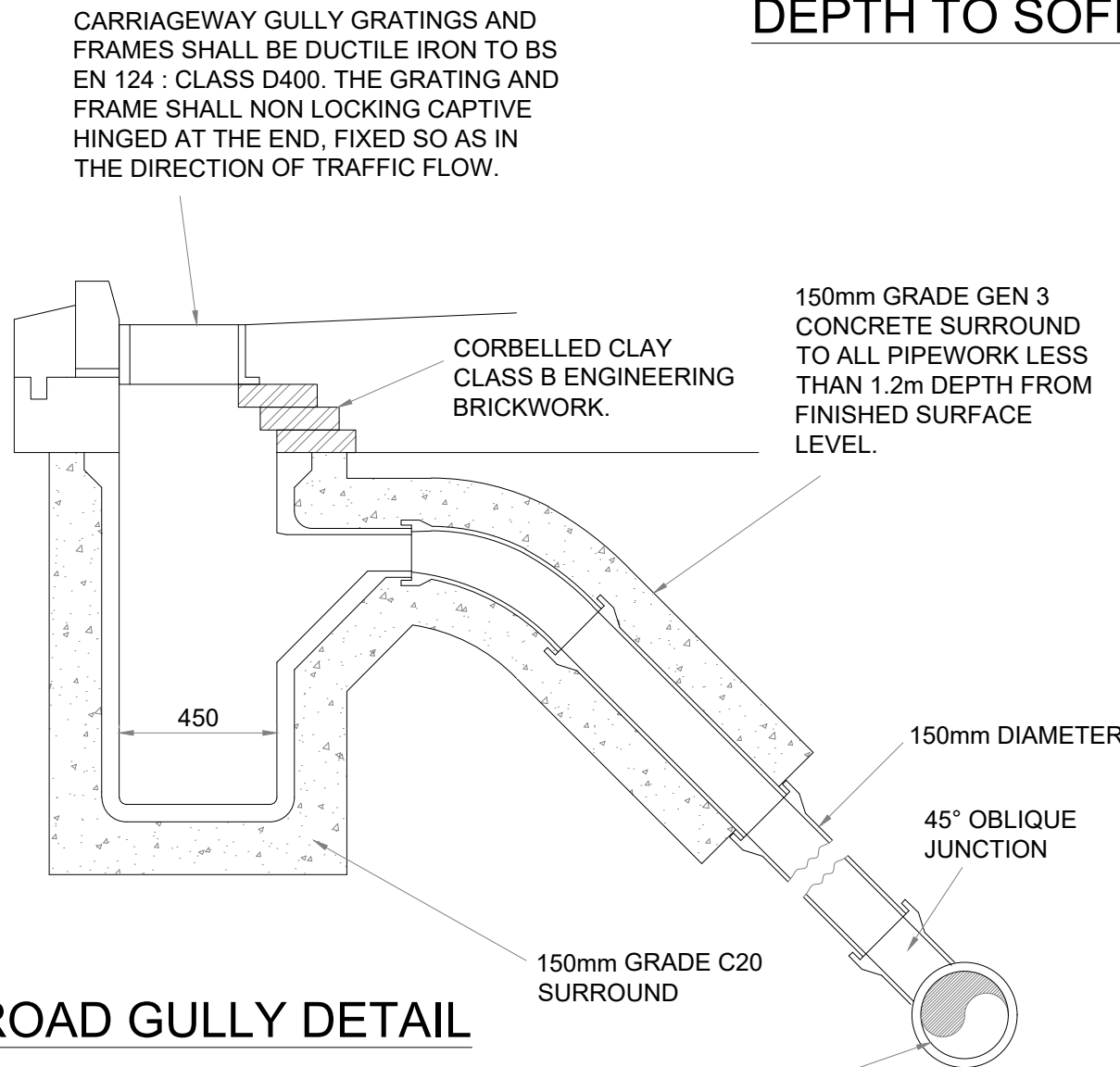
OPPOSING BRANCHES TO BE
STAGGERED BY MIN 150

BRANCH CONNECTIONS TO THE
MANHOLE:
• 150 OR LESS SHOULD
DISCHARGE TO THE MAIN
CHANNEL AT HALF PIPE LEVEL
• GREATER THAN 150 TO BE LAID
WITH SOFFIT LEVEL WITH THAT
OF THE MAIN CHANNEL

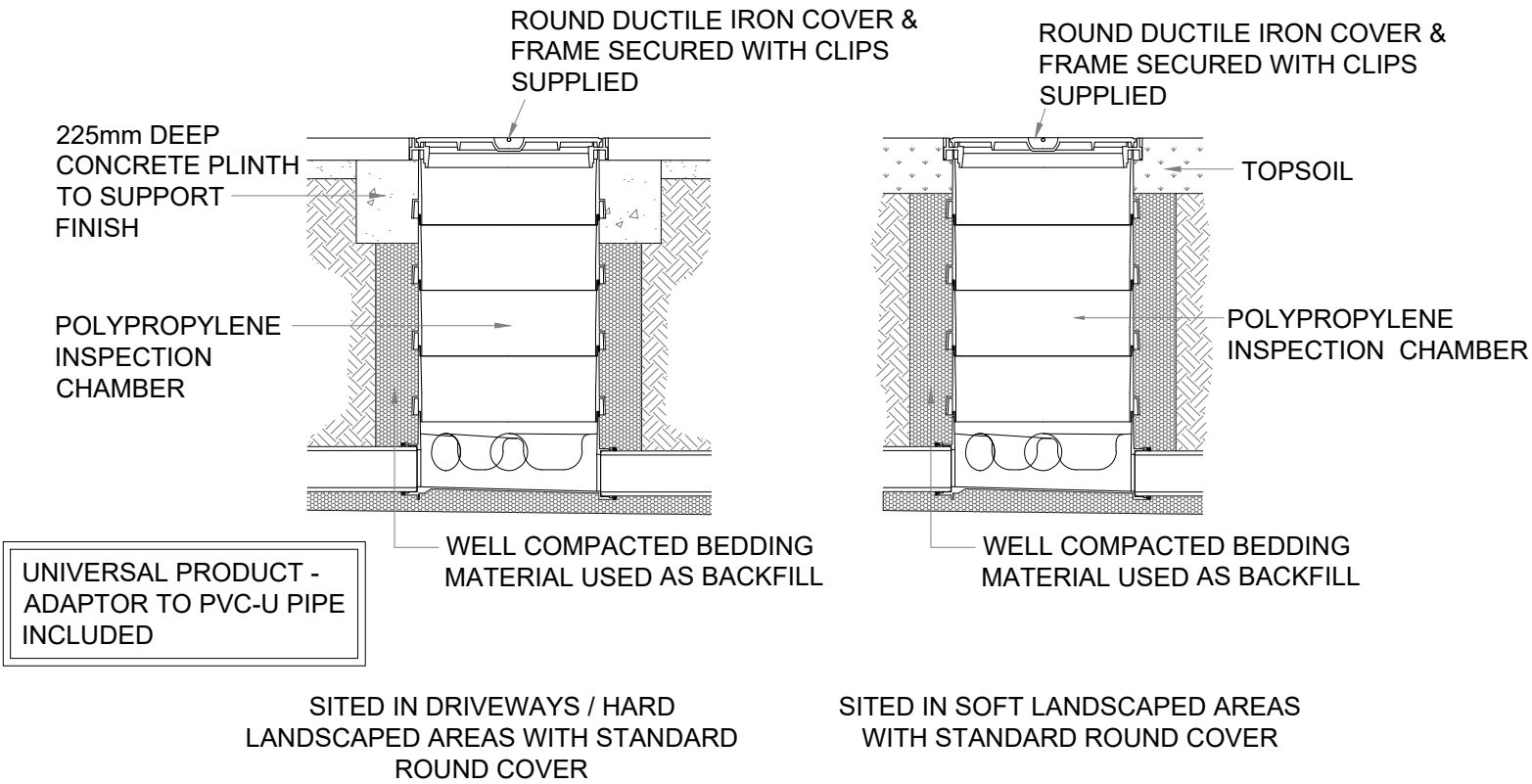
FOR BRANCHES CONNECTING TO
THE MAIN CHANNEL AT AN ANGLE
GREATER THAN 45 DEGREES A 3/4
SECTION CHANNEL SHALL BE
USED



PRE CAST CONCRETE MANHOLE TYPE B
DEPTH TO SOFFIT UP TO 3.0m



ROAD GULLY DETAIL



POLYPROPYLENE INSPECTION
CHAMBER INSTALLATION DETAIL

GENERAL NOTE

INSPECTION CHAMBERS AND MANHOLES SHOULD HAVE REMOVABLE NON-VENTILATING COVERS OF DURABLE MATERIAL (SUCH AS CAST IRON, CAST OR PRESSED STEEL, PRECAST CONCRETE OR PLASTICS) AND BE OF SUITABLE STRENGTH. SMALL, LIGHTWEIGHT ACCESS COVERS SHOULD BE SECURED (FOR EXAMPLE, WITH SCREWS) TO DETER UNAUTHORISED ACCESS (FOR EXAMPLE, BY CHILDREN). INSPECTION CHAMBERS AND MANHOLES IN BUILDINGS SHOULD HAVE MECHANICALLY FIXED AIR-TIGHT COVERS UNLESS THE DRAIN ITSELF HAS WATER-TIGHT ACCESS COVERS. MANHOLES DEEPER THAN 1m SHOULD HAVE METAL STEP-IRONS.

UNIVERSAL PRODUCT -
ADAPTOR TO PVC-U PIPE
INCLUDED

DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

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



GENERAL NOTES

1. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, ENGINEERS, ARCHITECTS & SERVICES DRAWINGS, INCLUDING APPROVED BUILDERS WORK DRAWINGS. CONTRACTOR TO NOTIFY ENGINEER OF DISCREPANCIES BETWEEN STRUCTURAL DRAWINGS AND SPECIFICATIONS OR OTHER DRAWINGS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. DO NOT SCALE FROM THIS DRAWING. WORK TO DIMENSIONS OR CO-ORDINATES PROVIDED. ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE NOTED. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS, SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY.

200 0 200 400 600 800 1000
SCALE 1:20
mm

P01	STAGE 4 ISSUE	15.02.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

RIDGE

THE COWYARDS
BLENHEIM PARK
OXFORD ROAD
WOODSTOCK, OX20 1QR

TEL: 01993 815000

WWW.RIDGE.CO.UK

CLIENT:

BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:

GORTON EDUCATION VILLAGE

TITLE:

DRAINAGE DETAILS
SHEET 1 OF 3

ENG/TECH:	CSE:	ICSE:	SCALE:	1:20	@	A1
TP	PB	PB	STATUS ISSUE:	S0		

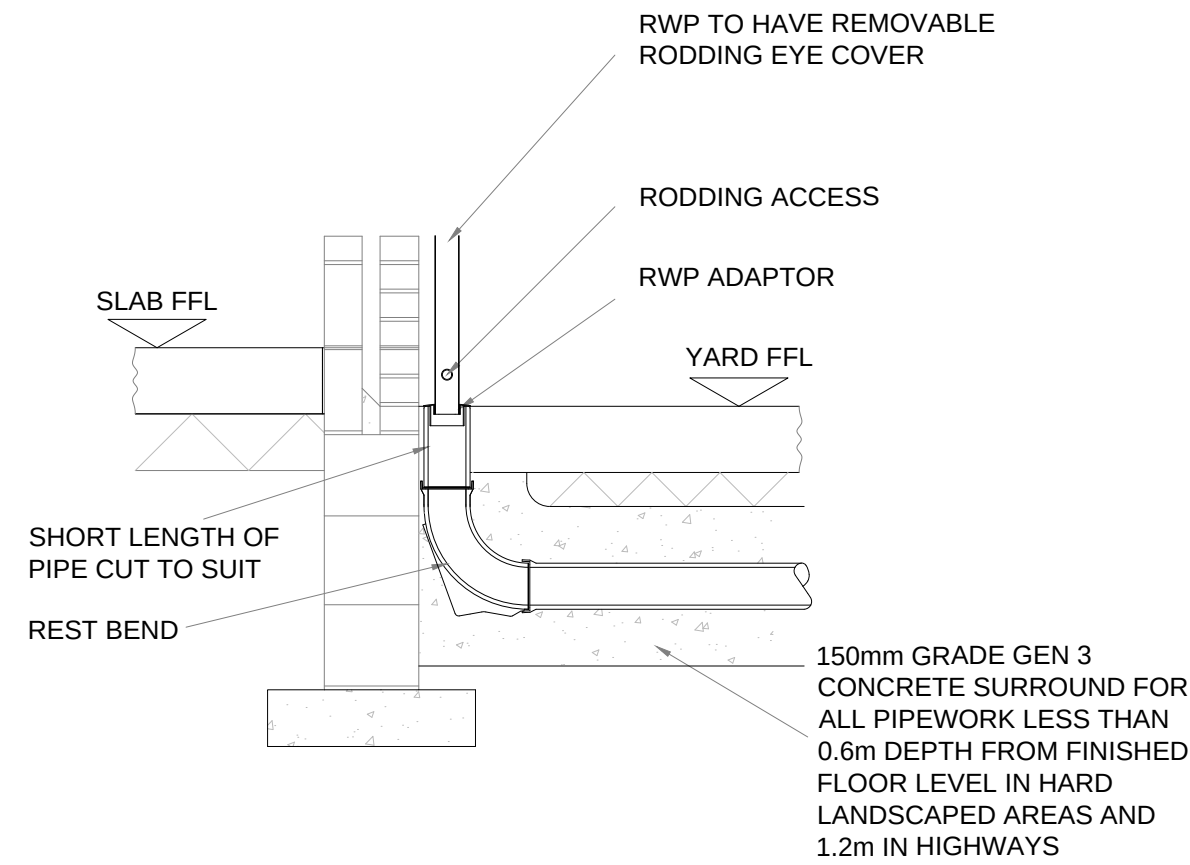
STATUS:

TENDER

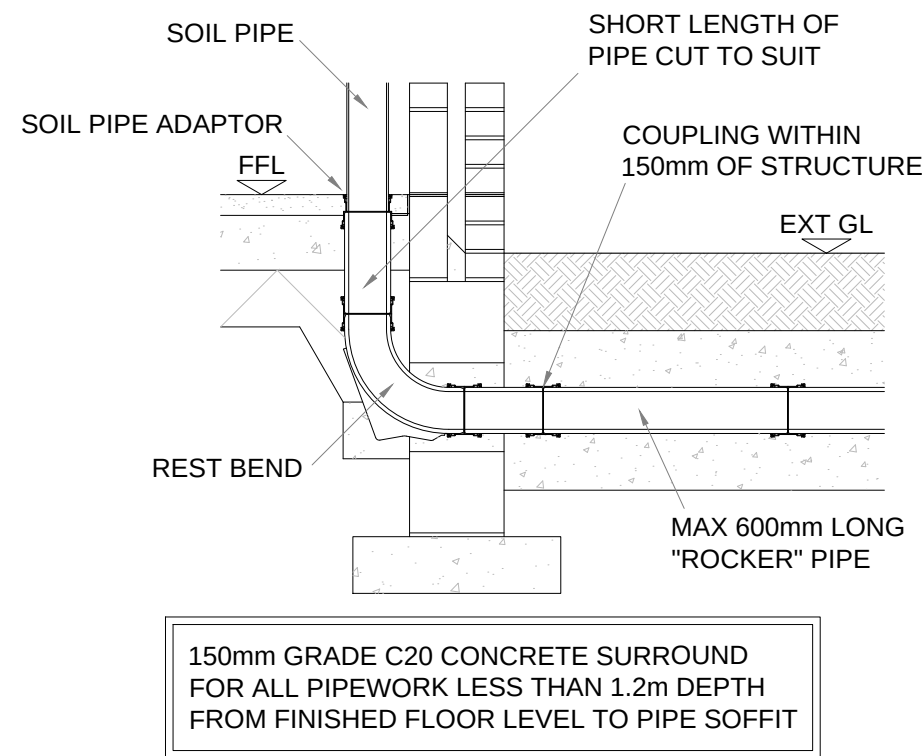
"UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK"

SUITABILITY: S0 - Initial Status or WIP

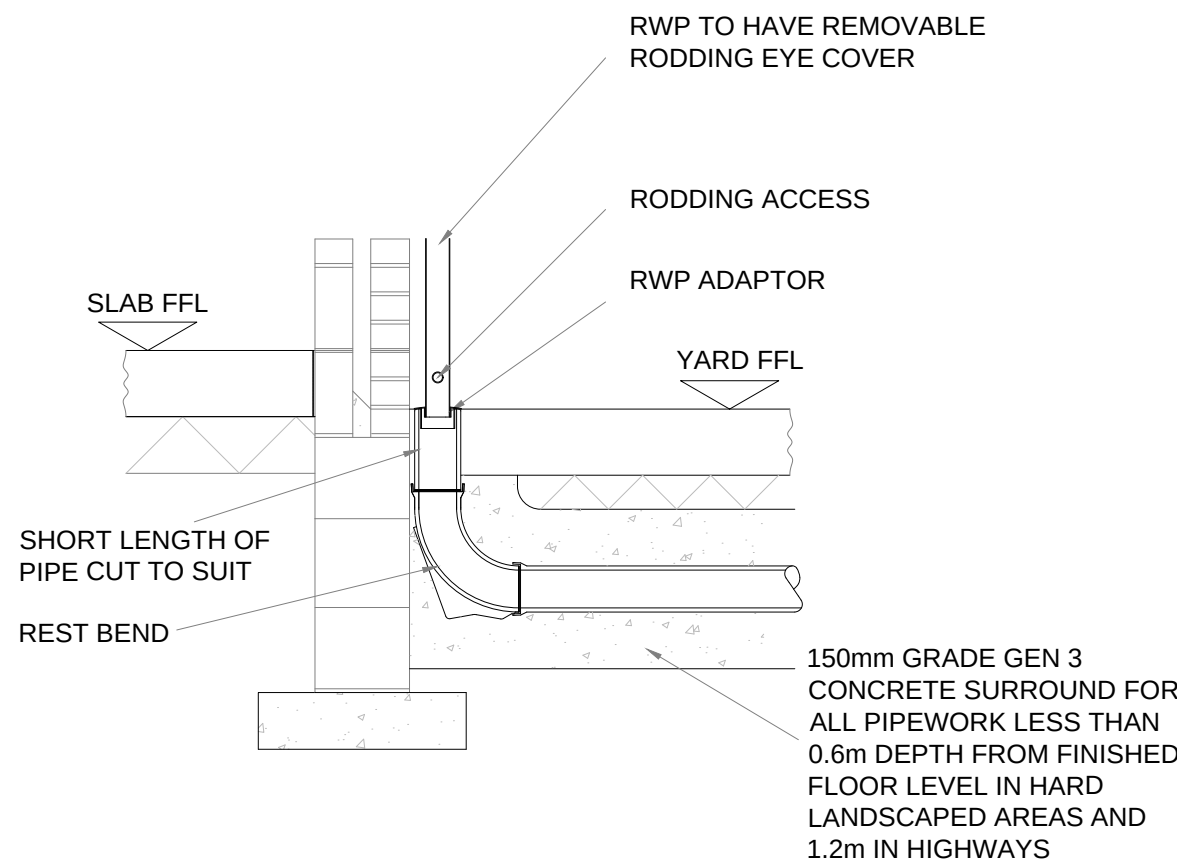
PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	XX	ST	DT	C	05005	P01



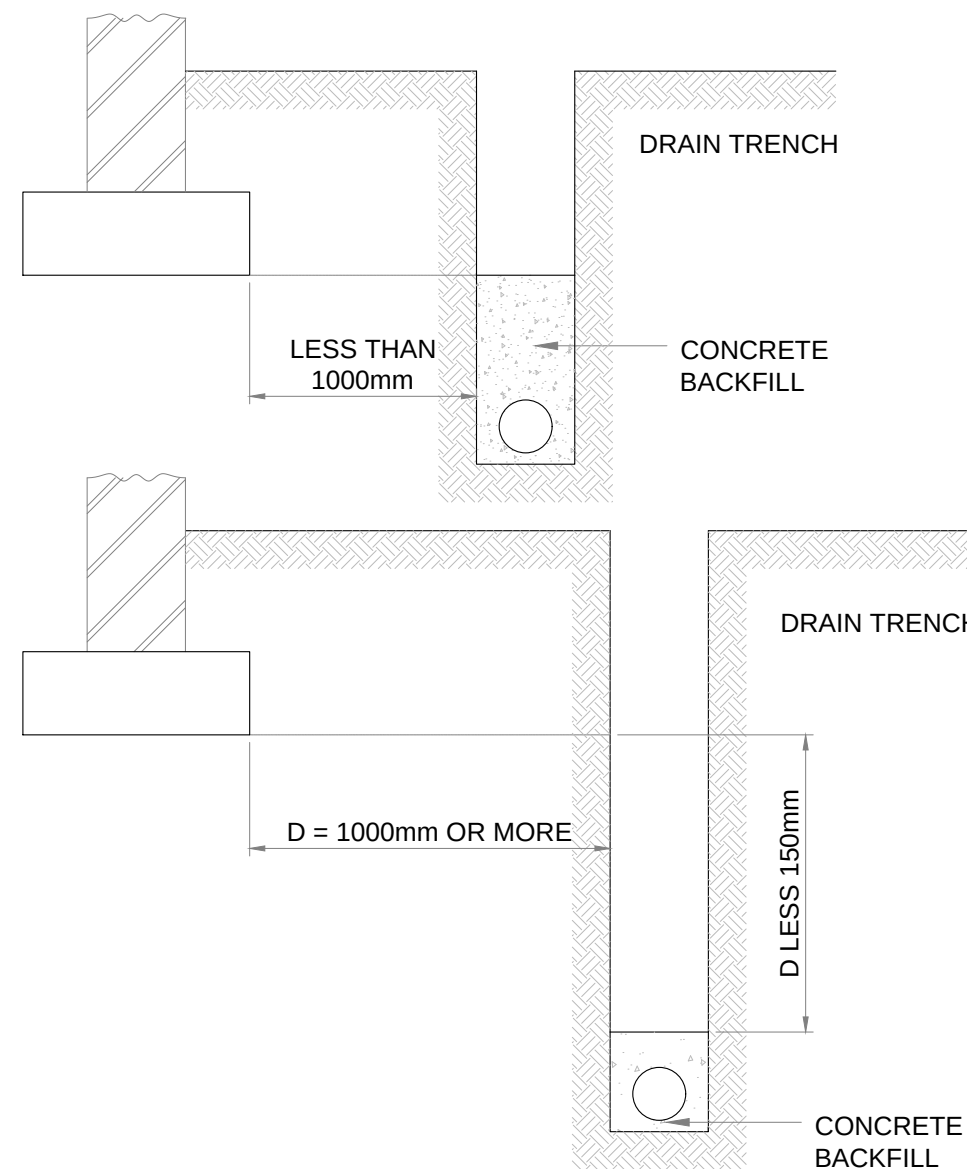
EXTERNAL RAINWATER PIPE CONNECTION



SOIL AND VENT PIPE CONNECTION



EXTERNAL RAINWATER PIPE CONNECTION



NOTES

1. CONCRETE TO BE GRADE GEN 3
2. JOINTS TO BE PROVIDED IN CONCRETE SURROUND AT NOT GREATER THAN 5.0m CENTRES. BUILDING REGULATIONS PART H1 PARA A11
3. WHERE THE TRENCH IS WITHIN 1m OF THE BUILDING THE TRENCH SHALL BE FILLED WITH CONCRETE UP TO THE LOWEST LEVEL OF THE FOUNDATIONS. WHERE THE TRENCH IS FURTHER THAN 1000mm FROM THE BUILDING, THE TRENCH SHALL BE FILLED WITH CONCRETE UP TO A LEVEL, BELOW THE LOWEST LEVEL OF THE FOUNDATION, EQUAL TO THE DISTANCE FROM THE BUILDING LESS 150mm.

PIPE RUNS ADJACENT TO BUILDING

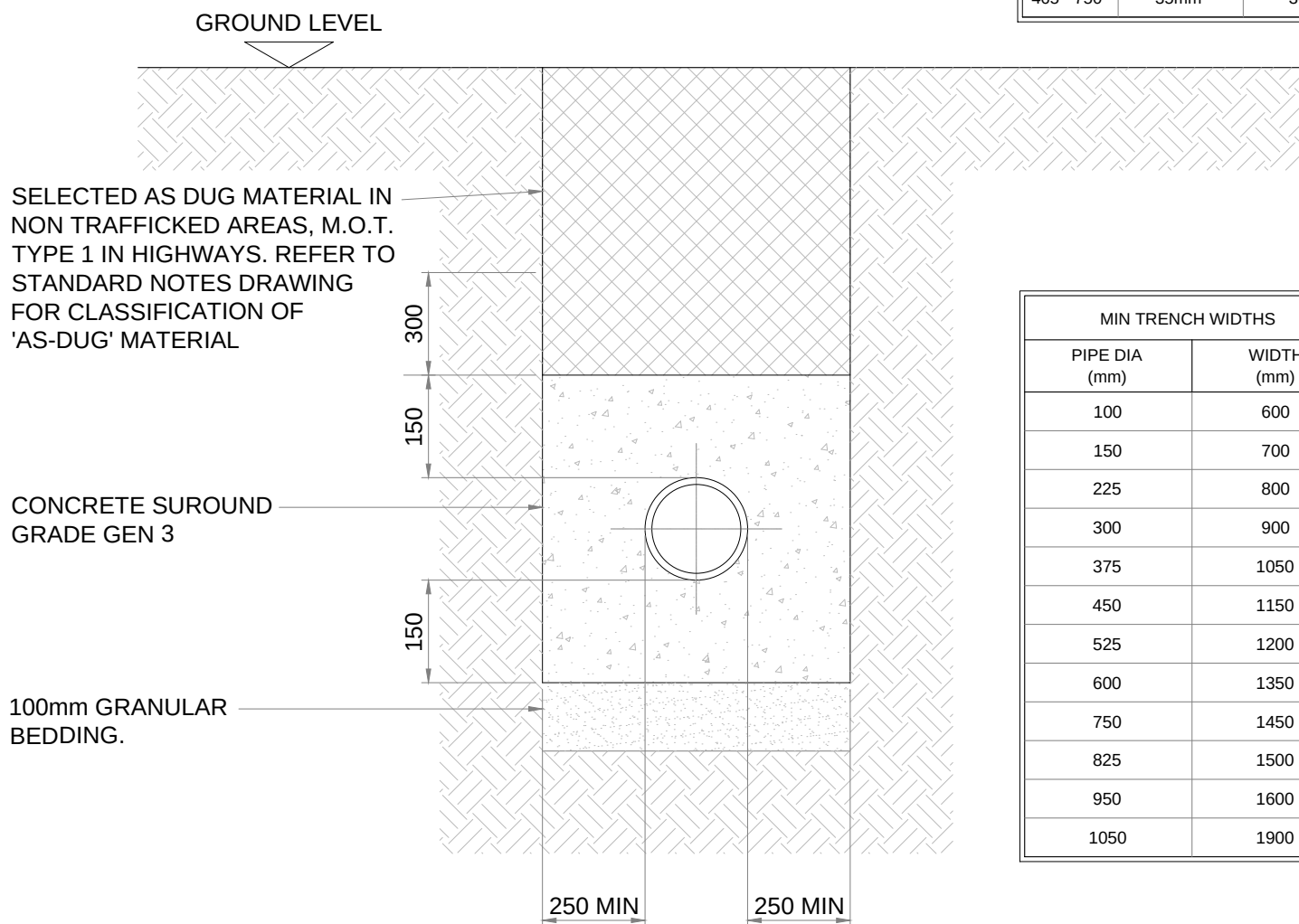
COMPRESSIBLE BOARD OR PREFORMED JOINT FILLER FOR FULL THICKNESS OF CONCRETE BED OR SURROUND

JOINTS REQUIRED AT 5m INTERVALS MAX.

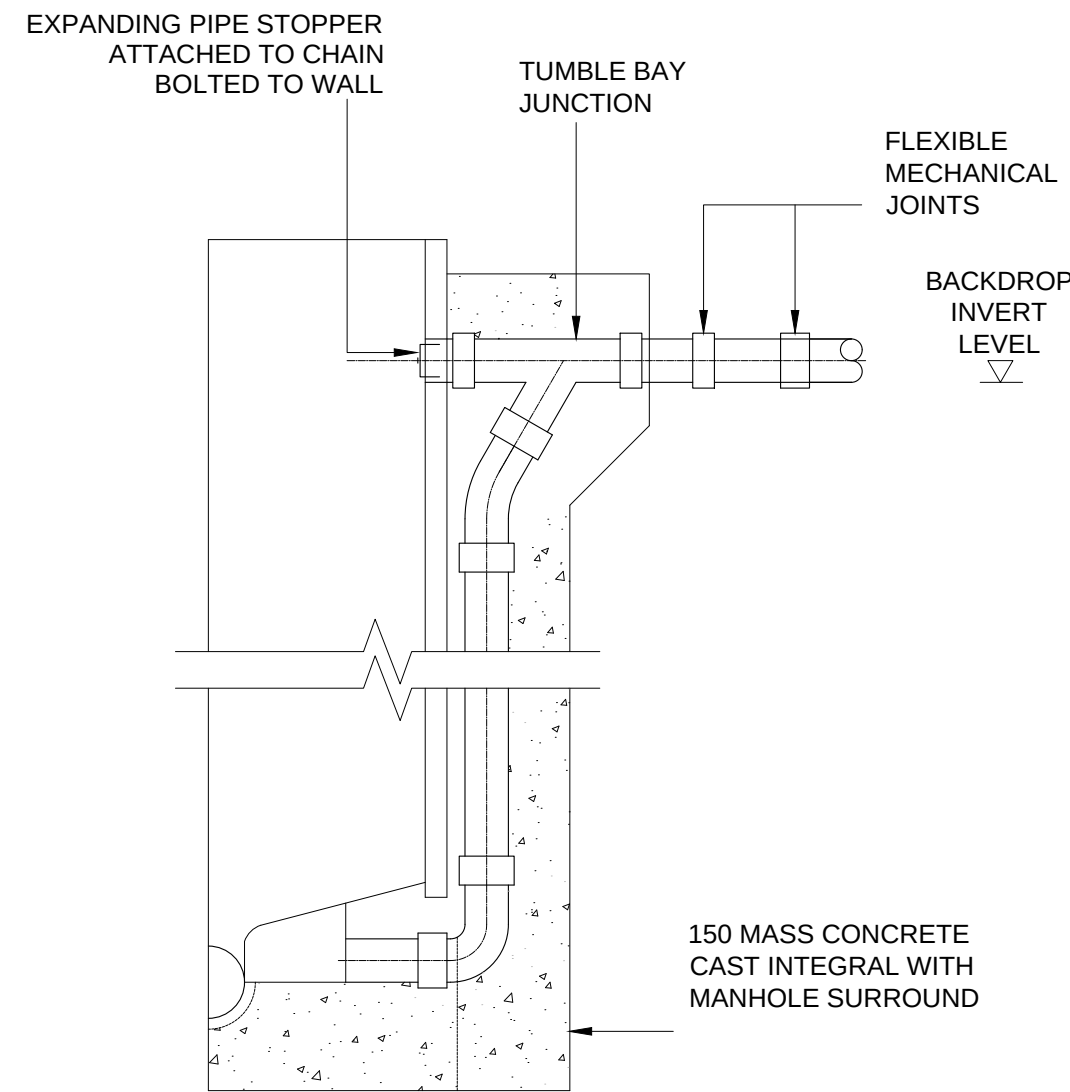
COMPRESSIBLE FILLER IS TO BE USED AT PIPE JOINTS IN CONCRETE PROTECTION TO PIPES. FILLER TO BE USED CAN BE HYDROCELL BY FOSROC, OR APPROVED BITUMEN IMPREGNATED INSULATING BOARD TO B.S. 1142 PART 3. THE COMPRESSIBLE MATERIAL SHALL BE CUT TO MATCH THE PIPELINE SHAPE AND MUST EXTEND THROUGH THE FULL HEIGHT OF THE CONCRETE.

FLEXIBLE PIPE JOINT @ MAXIMUM 3 PIPE LENGTHS & IN ACCORDANCE WITH PIPE MANUFACTURERS INSTRUCTIONS.

NOMINAL PIPE DIA	COMPRESSIBLE FILLER FOR PIPE JOINTS	
	HYDROCELL	BITUMEN IMPREGNATED BOARD
100 - 300	15mm	18mm
350 - 450	20mm	24mm
465 - 750	35mm	36mm



CLASS 'Z' PIPE BEDDING (NTS)



EXTERNAL BACKDROP

BS EN 1610:1997 Annex B Table B.15 Coarse Aggregate - Pipe Bedding							
Sieve Size (mm)	Percentage by mass passing BS sieves for nominal sizes			Single-sized Aggregate (mm)			
	Graded Aggregate (mm)	20 to 5	14 to 5	40	20	14	10
50.0	100	-----	-----	100	-----	-----	-----
37.5	90 - 100	100	-----	85 - 100	100	-----	-----
20.0	35 - 70	90 - 100	100	0 - 25	85 - 100	100	-----
14.0	-----	-----	90 - 100	-----	-----	85 - 100	100
10.0	10 - 40	30 - 60	50 - 85	0 - 5	0 - 25	0 - 50	85 - 100
5.0	0 - 5	0 - 10	0 - 10	-----	0 - 5	0 - 10	0 - 25
2.36	-----	-----	-----	-----	-----	-----	0 - 5

RIGID PIPES BEDDING GRADING

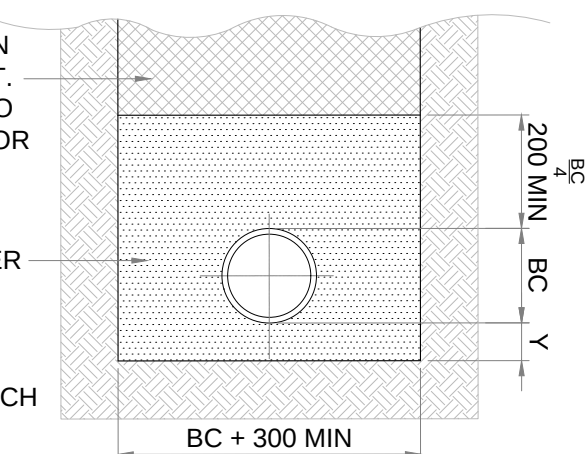
BASED ON BS EN 1610 : 1997 TABLE B.15
FOR RIGID PIPES THE BEDDING SHOULD BE SINGLE SIZE MATERIAL OR GRADED MATERIAL FROM 5MM UP TO A MAX SIZE OF 10MM FOR 100MM PIPES; 14MM FOR 150MM PIPES; 20MM FOR 225MM TO 600MM PIPES; 40MM FOR OVER 675MM PIPES

SELECTED AS DUG MATERIAL IN NON-TRAFFICKED AREAS, M.O.T. TYPE 1 IN HIGHWAYS. REFER TO STANDARD NOTES DRAWING FOR CLASSIFICATION OF 'AS-DUG' MATERIAL.

FOR GRANULAR BEDDING REFER TO TABLE

Y VALUE (BELOW PIPE):
HARD SPOTS/IRREGULAR TRENCH BOTTOM BC/4 (200mm MIN)
EVEN TRENCH BOTTOM BC/6 (100mm MIN)

BC = OUTSIDE DIAMETER



PIPE BEDDING CLASS S (BEDDING FACTOR 2.5)

DISCLAIMER NOTES:

- THIS DOCUMENT IS COPYRIGHT OF THE ORIGINATOR AND MUST BE TREATED AS CONFIDENTIAL
- THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF THE ORIGINATOR
- THIS DOCUMENT MUST NOT BE ALTERED - THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINATORS INFORMATION BEING ALTERED BY OTHERS
- ANY DISCREPANCY MUST BE REPORTED TO THE ORIGINATOR
- DO NOT SCALE THIS DOCUMENT - USE FIGURED DIMENSIONS ONLY
- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF ANY RELATED WORKS
- THIS DOCUMENT MUST BE READ IN CONJUNCTION WITH ALL SUPPORTING DOCUMENTS PRODUCED BY THE ORIGINATOR AND OTHER PROJECT DISCIPLINES
- THE ORIGINATOR ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY
- USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR CHECKING WHICH REVISION IS CURRENT
- THE DOCUMENT STATUS "INFORMATION" OR "PRELIMINARY", INDICATES THAT THIS DRAWING IS FOR REFERENCE PURPOSES ONLY - THE ORIGINATOR WILL ACCEPT NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS
- THE DOCUMENT STATUS "RECORD" OR "AS BUILT" HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ORIGINATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS "RECORD" OR "AS BUILT" DOCUMENT OR FOR ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO THE ORIGINATOR. THOSE RELYING ON THE "RECORD" OR "AS BUILT" DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY

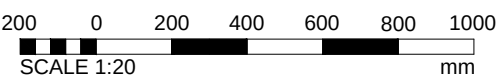
DRAWING NOTES:

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.



GENERAL NOTES

1. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, ENGINEERS, ARCHITECTS & SERVICES DRAWINGS, INCLUDING APPROVED BUILDERS WORK DRAWINGS. CONTRACTOR TO NOTIFY ENGINEER OF DISCREPANCIES BETWEEN STRUCTURAL DRAWINGS AND SPECIFICATIONS OR OTHER DRAWINGS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. DO NOT SCALE FROM THIS DRAWING. WORK TO DIMENSIONS OR CO ORDINATES PROVIDED. ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE NOTED. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS, SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY.



P01	STAGE 4 ISSUE	15.02.22	TP	PB
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

RIDGE

THE COWYARDS
BLENHEIM PARK
OXFORD ROAD
WOODSTOCK, OX20 1QR

TEL: 01993 815000
WWW.RIDGE.CO.UK

CLIENT:

BOWKER SADLER ARCHITECTS

IN ASSOCIATION WITH:

PROJECT:

GORTON EDUCATION VILLAGE

TITLE:

DRAINAGE DETAILS
SHEET 2 OF 3

ENG/TECH:	CSE:	ICSE:	SCALE:	1:20	@	A1
TP	PB	PB	STATUS ISSUE:	S0		

STATUS:

TENDER

UNLESS ISSUED FOR CONSTRUCTION - WORKS AT CLIENT/CONTRACTORS RISK

SUITABILITY: S0 - Initial Status or WIP

PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5014379	RDG	XX	ST	DT	C	05006	P01

