HYDROBRAKE INFORMATION			
MANHOLE CHAMBER	DESIGN HEAD (m)	FLOW RATE (l/s)	HYDROBRAKE REFERENCE
SW UUZA102	1.350	20	SHE-0194-2000-1350-2000
SW UUZB102	1.300	20	SHE-0195-2000-1300-2000
SW UUZC102	1.200	20	SHE-0196-2000-1200-2000
SW UUZD102	1.300	20	SHE-0195-2000-1300-2000

DRAINAGE KEY

- EXISTING UNITED UTILITES SEWERS
- PROPOSED PRIVATE SURFACE WATER DRAINAGE
- PROPOSED PRIVATE FOUL WATER DRAINAGE
- PROPOSED ADOPTABLE COMBINED SEWER
- PROPOSED ADOPTABLE FOUL SEWER
- PROPOSED ADOPTABLE SURFACE WATER SEWER
- PROPOSED ACO MULTIDRAIN LINEAR CHANNEL
- PROPOSED HIGHWAY GULLIES AGREED BY MCC
- PROPOSED CELLULAR SW STORAGE TANK

NOTES

1. ALL DRAINAGE WORKS TO BE IN ACCORDANCE WITH THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY (CESW) AS INCLUDED IN SEWERS FOR ADOPTION 6th EDITION, THE REQUIREMENTS OF APPROVED DOCUMENT H (2002 EDITION), BUILDING REGULATIONS 2000, UNITED UTILITIES STANDARD DETAILS AND THE DETAILS PROVIDED ON THE CONTRACT DRAWINGS.
2. LINE AND LEVEL OF ALL EXISTING DRAINAGE TO BE CONFIRMED BY SITE INSPECTION BEFORE WORKS TAKE PLACE AND REPORTED BACK TO ENGINEER. ANY REDUNDANT MANHOLES TO BE BROKEN OUT AND BACKFILLED WITH GRANULAR MATERIAL. ANY REDUNDANT PIPES TO BE FILLED WITH 10:1 PFA/CEMENT MIX OR BROKEN OUT.
3. ALL FOUL AND SURFACE WATER DRAINS UPTO AND INCLUDING 225MM DIAMETER TO BE CLAY WARE AS HEPWORTH SUPERSLEVE/HEPSLEVE PLUS OR SIMILAR APPROVED. ALL PIPES 300MM DIAMETER AND ABOVE TO BE CONCRETE CLASS M.
4. AS AN ALTERNATIVE THE CONTRACTOR MAY USE APPROVED UNPLASTICISED POLYVINYL CHLORIDE (PVCU).
5. ALL PIPES ARE TO BE LAID IN A CLASS S BEDDING. PIPES LAID UNDER ROAD AND CAR PARKING PAVEMENTS WITH LESS THAN 900MM OF COVER SHALL BE LAID IN A CLASS Z BEDDING WITH FLEXIBLE JOINTS.
6. ALL PIPES TO COMPLY WITH BS EN 295:1 PARAGRAPH 2.9.
7. ALL DRAINAGE PIPELINES SHALL BE PROTECTED DURING CONSTRUCTION WHERE INTERMEDIATE COVER IS LESS THAN 900MM.
8. SEWER TRENCH BACKFILL UNDER ROADS AND PARKING PAVEMENTS TO BE GRANULAR MATERIAL.
9. ALL COVER LEVELS ARE APPROXIMATE. ALL COVERS TO BE SET AT FINISHED PAVEMENT LEVEL, REFER TO APPROPRIATE ARCHITECTS DRAWING.
10. FOR MANHOLE, PIPE BEDDING AND OTHER DETAILS REFER TO THE TYPICAL DRAINAGE DETAILS DRAWING.
11. ALL EXTERNAL GULLY CONNECTIONS, CHANNEL DRAIN GULLY/SUMP CONNECTIONS TO BE 150MM DIA.
12. ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRAINS TO BE SPECIFIED BY OTHERS.
13. CHANNELS IN ALL MANHOLES TO BE SET AT THE APPROPRIATE INCOMING AND OUTGOING PIPE GRADIENTS AND SHALL BE PRE-FORMED UP TO 225ø.
14. ALL BRANCH CONNECTIONS TO BE MADE WITH SWEPT BENDS IN THE DIRECTION OF FLOW IN THE MAIN SEWER.
15. EXTERNAL LINEAR CHANNEL DRAINS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS AND SHALL DISCHARGE VIA TRAPPED RODDABLE GULLY UNITS UNLESS ADVISED OTHERWISE. LINEAR CHANNELS TO BE TO LOAD CLASS D400 SPECIFICATION AND HAVE A 200MM MINIMUM CONCRETE BED AND HAUNCH.
16. FOR HIGHWAY GULLIES AND DRAINAGE, SEE DRAWINGS C1262-S278-309.1 – 309.4 FOR INFORMATION.

Revisions			
P7	MINOR AMENDMENTS TO REFLECT SECTION 104 COMMENTS FROM UU ON 29/10/2018	AM	30/10/18
P6	GRADIENTS & INVERTS OF ADOPTABLE SYSTEM AMENDED TO MATCH MICRODRAINAGE	AM	27/09/18
P5	MINOR AMENDMENTS FOLLOWING UNITED UTILITIES COMMENTS ON 12/09/2018	AM	13/09/18
P4	MINOR AMENDMENTS FOLLOWING UNITED UTILITIES COMMENTS ON 03/08/2018	AM	28/08/18
P3	REDESIGNED FOLLOW UNITED UTILITIES COMMENTS ON 02/07/2018	AM	20/07/18

Project
Bowes Street, Moss Side

Client
ROWLINSONS CONSTRUCTION LTD

Scale	A(1)	Date	Drawn by:
1/250		**20/04/2018**	**AM**

Drawing
SECTION 104 DRAWINGS
DRAINAGE PLAN
SHEET 1 OF 2

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Drawing No **C1262-104-003.1** Rev: **P7**

Status **PLANNING**