- DENOTES SURFACE WATER DRAIN
- DENOTES FOUL WATER DRAIN
- DENOTES ADOPTED COMBINED SEWER
- DENOTES ADOPTED COMBINED MANHOLE
- DENOTES SURFACE WATER MANHOLE
- DENOTES FOUL WATER MANHOLE

ALL PPICS TO BE WAVIN 4501/600 RANGE. WAVIN MULTI-BASE / MINI-ACCESS CHAMBERS MAY BE USED IF THERE ARE 2 OR LESS CONNECTIONS ENTERING THE MANHOLE IN THE CORRECT CONFIGURATION AND THE COVER TO INVERT DEPTH IS LESS THAN 900MM - TBC BY CONTRACTOR. CHAMBERS OF 900Ø+ TO BE PRECAST CONCRETE.

NOTE!
4500 PPIC MANHOLES WITH A DEPTH GREATER THAN 1.2M TO HAVE RESTRICTION ACCESS CAPS

ALL GULLYS TO HAVE 150MM DIAM PIPEWORK. IF 150MM DIAM PIPE IS TO CONNECT TO 100MM PIPE, REDUCERS ARE REQUIRED. IF 150MM DIAM PIPE IS TO ENTER MANHOLE WITH 100MM OUTLET, REDUCERS ARE REQUIRED.

SVP - DENOTES SOIL VENT PIPE
E - DENOTES SHOWER OUTLET
DF - DENOTES DRINK FOUNDATION OUTLET
ST - DENOTES SILT TRAP GULLY
SS - DENOTES STUB STACK
* - DENOTES FOUL DRAIN (TBC BY ARCHITECT)
RWP - DENOTES RAIN WATER PIPE
G - DENOTES ROAD GULLY

NOTE, NO LAND DRAINAGE MAY ENTER THE PUBLIC SEWER NETWORK. SLOTTED LAND DRAINS BEHIND RETAINING WALLS TO BE PROVIDED AND TO DISCHARGE INTO PRIVATE DRAINAGE PIPE BEDDING.

ALL EXISTING & PROPOSED COVER LEVELS & INVERT LEVELS TO BE CONFIRMED BY CONTRACTOR PRIOR TO COMMENCING WORKS

THIS SCHEME IS TO BE CONSIDERED PRELIMINARY UNTIL SUCH TIME AS THE LOCAL COUNCIL (LLFA) UNITED UTILITIES GIVE TECHNICAL APPROVAL. ANY WORKS, OR ORDERING OF MATERIALS, PRIOR TO APPROVALS FROM THE ABOVE MENTIONED BODIES IS DONE SO AT THE CONTRACTORS RISK IN ITS ENTIRETY. BMC WILL ACCEPT NO RESPONSIBILITY FOR ANY ABORTIVE WORKS / MATERIAL COSTS.

ANY UNLABELLED FOUL BRANCH PIPEWORK UNDER BUILDINGS TO BE 100Ø PIPEWORK AT MINIMUM 1:40 FALL.

ALL MANHOLES IN HARDSTANDING AREAS TO HAVE 150MM CONCRETE SURROUND

SURFACE WATER MANHOLES 14 & 19 TO HAVE 325MM SUMP. SURFACE WATER MANHOLE 13 TO HAVE SUMP TO HYDRO INTERNATIONALS REQUIREMENTS

CONTRACTOR TO CHECK INVERT LEVEL OF EXISTING DRAINAGE AS SOON AS POSSIBLE TO ENSURE VALIDITY OF SCHEME. BMC NOT RESPONSIBLE FOR CHECKING OF ANY SITE LEVELS. THIS REMAINS THE RESPONSIBILITY OF THE CONTRACTOR

ROAD GULLY STEMS TO HAVE VERTICAL STEMS AS REQUIRED TO AVOID ANY CLASHES WITH FOUL WATER DRAINAGE

ALL TEMPORARY WORKS FOR CONSTRUCTION OF DRAINAGE TO CONTRACTORS DESIGN AND DETAILS

ALL CONCRETE MANHOLES TO HAVE A 225MM IN SITU CONCRETE BASE

SCHEME HAS BEEN DESIGNED FOR THE FOLLOWING:
1 IN 1 YEAR STORM - NO SURCHARGING.
1 IN 30 YEAR STORM - NO FLOODING.
1 IN 100 YEAR STORM + 40% FOR CLIMATE CHANGE - ANY FLOODING CONTAINED ON SITE (NO FLOODING OCCURS).

DENOTES HYDROBRAKE MANHOLE

DENOTES UNITED UTILITIES EASEMENT REQUIREMENTS

ALL PIPES TO BE INVERT TO INVERT

NOTE : HYDROBRAKE MANHOLE INVERT LEVELS SHOWN ON THIS DRAWING ARE CENTRE OF MANHOLE LEVELS AND NOT INCLUSIVE OF SUMP DEPTHS.

ALL LEVELS PROVIDED ARE TO CENTRE OF MANHOLE RING

NOTE : ATTENUATION UNITS TO BE ROTATED TO ENABLE SPIGOT FIXING AT ALL SIDES AS REQUIRED.

ALL INTERNAL MANHOLES TO HAVE SAINT GOBAIN TRIPLE SEALED RECESSED COVERS

640 WAVIN AQUACELL PRIME UNITS IN TOTAL FOR PHASE 1 WORKS. FOR FINAL SITE, A FURTHER 72 UNITS ARE REQUIRED.

SW13 HYDROBRAKE DETAILS
DESIGN HEAD : 0.950m
DESIGN PASS FORWARD FLOW : 47.5L/S
UNIT REFERENCE : HD-SCU-0222-4750-0950-4750

EXISTING SURFACE WATER SEWER WITHIN CLAYTON LANE SOUTH TO BE INVESTIGATED BY CONTRACTOR. MAPS SHOW 1200Ø BRICK SEWER. HOWEVER POSITION AND LEVELS UNKNOWN. CONNECTION TYPE TBC ONCE SEWER CONDITION ARE KNOWN. CONTRACTOR TO ALLOW FOR UP TO 1M DIG TO INVERT AND TO ALLOW FOR ALL TEMPORARY WORKS TO FACILITATE THE CONNECTION

STEM TO BE PROVIDED TO ALLOW CONNECTION FROM FUTURE SPORTS PITCH. STEM TO BE CAPPED UNTIL FUTURE PHASE IS UNDERTAKEN. DRAINAGE FROM SPORTS PITCH MUST DRAIN AFTER HYDROBRAKE MANHOLE

SW20
1500Ø PRECAST
CL = 55.000
IL = 52.873
CALLOW FOR 2.0M BACKDROP
IL = 50.875m TBC)

CLAYTON LANE SOUTH

FOR DRAINAGE ABOVE THIS LINE, SEE PART PLAN EXTRACT

ASSUMED PITCH LEVEL = 55.000

LEAVE STEM FOR FUTURE PHASE OF WORKS TO CONNECT TO

SW11
1200Ø PRECAST
CL = 55.033
IL = 53.358

SW12
1050Ø PRECAST
CL = 55.033
IL = 53.292

SW3
1500Ø PRECAST
CL = 55.035
IL = 53.135

EXISTING MH2
NEW CL = 54.896
IL = 51.791
TO BE SURVEYED AND THEN REMOVED IF NO LONGER OF SERVICE

RE65
CL = 54.900
IL = 53.451

ACO DECILINE SPIGOT OUTLET WITH OUTLET SIEVE TO DROP DOWN AT COUPLING POSITIONS WHERE INDICATED

FW15
L500 PPIC
CL = 54.980
IL = T.B.C.

FW16
L500 PPIC
CL = 54.916
IL = 53.976

BOR53.969

10M x 10M x 0.8M DEEP WAVIN AQUACELL PRIME UNITS (640 UNITS TOTAL)

DISCHARGE LEAD DRAIN (HDPE) PIPE BEDDING

IL = 53.200m

FALLS @ 1:500

SW14
1200Ø PRECAST
CL = 54.909
IL = 53.215

CONNECTION POINTED AT TOP OF MICRO. ALLOW STEM TO BE ENCASED DURING PHASE 1 WORKS, NOT BLOCK UP UNTIL FUTURE PHASES COMMENCE

AIR VENT

SW8
4500Ø PRECAST CONCRETE SURROUND
CL = 55.860
IL = 55.200

MH5
CL = 58.21Øm
IL = 57.96Øm

MH4
CL = 58.50m
IL = 55.0m

RE
CL = 58.87m
IL = 58.367m

BOR55.862

6000 PRECAST
CL = 58.103m

RE61
CL = 58.795
IL = 58.083

1500Ø SLOTTED DRAIN

SUMPS @ 5.0m C/S MAX

SW2
6000 PPIC
CL = 58.798
IL = 57.795

SW2
6000 PPIC
CL = 58.828
IL = 57.668

FW16
6000Ø PRECAST WITH GREASE TRAP
CL = 58.839
IL = 57.364

RE62
CL = 58.807
IL = 57.890

FW16
6000Ø PPIC
CL = 58.828
IL = 57.284

FW21
6000 PPIC
CL = 58.828
IL = 57.240

FW7
4500 PPIC
CL = 58.835
IL = 56.87Øm

FW6
4500 PPIC
CL = 58.835
IL = 57.952

FW5
4500 PPIC
CL = 58.835
IL = 58.108

FW4
4500 PPIC
CL = 58.835
IL = 58.230

FW3
4500 PPIC
CL = 58.835
IL = 58.350

FW2
4500 PPIC
CL = 58.835
IL = 58.470

FW1
4500 PPIC
CL = 58.835
IL = 58.590

FFL = 59.00m

FFL = 58.65m

FFL = 58.655m

SW6
9000 PRECAST
CL = 58.771
IL = 57.267

SW5
9000 PRECAST
CL = 58.771
IL = 57.267

SW4
9000 PRECAST
CL = 58.771
IL = 57.267

SW7
9000 PRECAST
CL = 58.771
IL = 57.267

SW8
6000 PPIC
CL = 58.736
IL = 57.536

FW23
6000 PPIC
CL = 58.734
IL = 56.586

FW65
6000 PPIC
CL = 58.736
IL = 56.681

ACO MD1000 D100 WASH DOWN DRAIN WITH 2no. SUMPS

EXISTING CAR PARK DRAINAGE TO REMAIN UNCHANGED

EXISTING MH5
CL = 58.70
IL = 57.70

EXISTING MH1
CL = 58.54
IL = 56.49

EXISTING MH2
IL = 58.56
IL = 56.37

EXISTING MH5
CL = 58.58
IL = 57.74

EXISTING BACKDROP WITH 1U SEWER

EXISTING 1200Ø SEWER

EXISTING 1050Ø SEWER

PROVIDE ACCESS

PROVIDE RODDING ACCESS

MAX. 500MM DEEP RAIN GARDEN - SEE DETAILS FOR SPEC.

WHITWORTH STREET

GENERAL PART PLAN ARRANGEMENT FOR FUTURE WORKS
1:200 @ A0
1:400 @ A2

GENERAL ARRANGEMENT OF DRAINAGE
1:200 @ A0
1:400 @ A2

NOTE: SCHEME IS FOR PHASE 1 WORKS ONLY. CAR PARK PHASE HAS BEEN DESIGNED TO BE ACCOMMODATED WITHIN SCHEME SHOWN ON THIS DRAWING AND IS TO CONNECT INTO SW11 WITH THE SCHEME SHOWN IN GRAY. NEW PITCH DRAINAGE TO HAVE OWN ATTENUATION AND MUST CONNECT AFTER SW12. A STEM HAS BEEN PROVIDED FROM SW11.

ALLOWABLE DISCHARGE RATES GIVEN IN BDP REPORT P3000247 OPE-BDP-RPT-S-005

TOTAL PROPOSED DEVELOPMENT
1:1 YEAR = 26.23L/S (26 I/S ACTUAL)
1:100 YEAR + 40% = 82.82L/S (57.4L/S ACTUAL)

PRELIMINARY SUBJECT TO COMMENTS

GENERAL NOTES:

1. THIS DRAWING IS COPYRIGHT AND THE PROPERTY OF BELL MUNRO CONSULTING LTD. THE DRAWING MUST NOT BE REPRODUCED IN PART OR IN WHOLE WITHOUT PRIOR WRITTEN AUTHORITY.
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4. TEMPORARY STABILITY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE MAIN CONTRACTOR AND SHOULD BE ASSESSED ACCORDINGLY.

DRAINAGE NOTES

1. EXACT SVP AND GULLEY LOCATIONS TO BE CONFIRMED FROM SERVICES ENGINEERS /ARCHITECTS DRAWINGS AND DETAILS.
2. ALL NEW PIPEWORK TO BE WAVIN OSMADRAIN OR WAVIN ULTRARIB UPVC (OR SIMILAR APPROVED) UNLESS NOTED OTHERWISE.
3. PLASTIC PIPES (PVC-U)TO BE FLEXIBLY JOINTED AND COMPLY WITH THE REQUIREMENTS OF BS EN 1401-1 1998.
4. WHERE COVER TO PIPES IS LESS THAN 900 IN ROADS AND HARDSTANDINGS OR 600 MM ELSEWHERE, CONCRETE SURROUND IS TO BE PROVIDED IN ACCORDANCE WITH THE DETAIL (CLASS Z BEDDING).
5. ALL OTHER PIPEWORK TO BE IN CLASS S BEDDING.
6. N.B. UNTIL FINAL SERVICE IS PLACED, HEAVY TRAFFIC IS NOT TO BE ALLOWED OVER PIPE TRENCHES WITHOUT SPECIAL PRECAUTIONS.
7. PIPES AND FITTINGS ARE TO BE LAID IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
8. MANHOLE COVERS IN CAR PARKS TO BE LOAD CLASS B400 TO BS EN 124.
9. MANHOLE COVERS IN LANDSCAPED AND PAVED AREAS TO BE LOAD CLASS B125 BS EN 124.
10. MANHOLE COVERS IN PAVED AREAS TO BE RECESSED TO ACCEPT PAVING FINISH.
11. ACCESS COVERS FOR GULLIES IN KERBSIDES TO BE LOAD CLASS C250 BS EN 124.
12. ALL INTERNAL POP UPS TO HAVE RODDABLE ACCESS.
13. ANY PPIC MANHOLE DEEPER THAN 1200MM MUST BE FITTED WITH ACCESS RESTRICTOR CAP.
14. PPIC MANHOLES WITHIN TRAFFICKED AREAS TO BE PROVIDED WITH 150MM ST4 CONCRETE SURROUND
15. ALL EXISTING DRAINAGE TO BE CONFIRMED PRIOR TO CONSTRUCTION COMMENCING.
16. PIPEWORK PASSING THROUGH BUILDING WALLS SHALL BE FITTED WITH ROCKER PIPES AS PER STANDARD DETAIL.
17. ANY UNLABELLED FOUL BRANCH PIPEWORK TO BE 100Ø PIPEWORK AT MINIMUM 1:40 FALL.
18. ANY UNLABELLED STORM WATER BRANCH PIPEWORK TO BE 100Ø AT MINIMUM 1:80 FALL.
19. ALL RWP LOCATIONS AND NUMBERS ARE TO BE CONFIRMED BY ARCHITECT PRIOR TO COMMENCING CONSTRUCTION.

| No | REVISIONS | DATE | BY |
|---|---|---|---|
| 04 | REVISED TO CONTRACTOR'S COMMENTS | 26.03.20 | GM |
| 03 | REVISED TO CONTRACTOR'S COMMENTS | 23.01.20 | GM |
| 02 | FINAL COMMENTS TO PLANT UPDATED TO SW13 | 21.08.20 | GM |
| 01 | HYDROBRAKE DETAILS UPDATED | 20.08.20 | GM |
| 00 | FIRST ISSUE | 07.08.20 | GM |
| NO | COMMENTS | DATE | BY |

BMC

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CLIENT: CADDICK CONSTRUCTION LTD.

PROJECT: OPENSHAW CAMPUS

TITLE: GENERAL ARRANGEMENT OF BELOW GROUND DRAINAGE

| DRAWN BY | CHECKED BY | SCALE | DATE |
|---|---|---|---|
| AH | CM | 1:200 | 03/20 |

DRAWING NUMBER: OC-BM-ZZ-FN-DR-D-4001
REVISION: 04