

File name: \\UK-WSPGROUP\CONCENTRAL DATA\PROJECTS\70079262\WSP-DR-DRAINAGE\ENGINEERING\DRAWINGS\DWG-05-610-MANHOLE SCHEDULES.rvt DWG, printed on: 29 July 2021, 15:47:38, by: Pauline de, Cullum

SURFACE WATER MANHOLES

| MH Ref. | MANHOLE DETAILS |       |      |        |         |           | COVER DETAILS        |                          | PIPE DETAILS |         |          |              | MANHOLE LAYOUT<br>(drg. orientation) | COMMENTS / DETAILS                                  |
|---------|-----------------|-------|------|--------|---------|-----------|----------------------|--------------------------|--------------|---------|----------|--------------|--------------------------------------|-----------------------------------------------------|
|         | Internal Size   | Type  |      | Levels |         | Depth (m) | BS EN 124 Cover Ref. | Cover Size Clear Opening | Type of Pipe | Size In | Size Out | Invert Level |                                      |                                                     |
|         |                 | Brick | Conc | PPIC   | Cover   |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 1.0 | 350Ø            |       |      | *      | 118.175 | 117.500   | 0.675                | A15                      | 350Ø         | uPVC    | 100a     | 117.500      |                                      | LD, LIGHT WEIGHT PPIC DETAIL<br>300mm CATCHPIT SUMP |
|         | LD              |       |      |        |         |           |                      |                          | uPVC         |         | 100b     | 117.500      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 1.1 | 600Ø            |       |      | *      | 118.195 | 117.000   | 1.195                | A15                      | 600Ø         | uPVC    | 150a     | 117.010      |                                      | LD, LIGHT WEIGHT PPIC DETAIL                        |
|         | LD              |       |      |        |         |           |                      |                          | uPVC         |         | 150b     | 116.990      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 1.2 | 600Ø            |       |      | *      | 118.180 | 116.860   | 1.320                | A15                      | 600Ø         | uPVC    | 150a     | 116.870      |                                      | LD, LIGHT WEIGHT PPIC DETAIL                        |
|         | LD              |       |      |        |         |           |                      |                          | uPVC         |         | 150b     | 116.850      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          | uPVC         | 150c    |          | 116.870      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 1.3 | 600Ø            |       |      | *      | 118.160 | 116.770   | 1.390                | A15                      | 600Ø         | uPVC    | 150a     | 116.780      |                                      | LD, LIGHT WEIGHT PPIC DETAIL                        |
|         | LD              |       |      |        |         |           |                      |                          | uPVC         |         | 150b     | 116.760      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          | uPVC         | 150c    |          | 116.780      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 1.4 | 600Ø            |       |      | *      | 118.130 | 116.680   | 1.450                | A15                      | 600Ø         | uPVC    | 150a     | 116.690      |                                      | LD, LIGHT WEIGHT PPIC DETAIL                        |
|         | LD              |       |      |        |         |           |                      |                          | uPVC         |         | 150b     | 116.670      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          | uPVC         | 150c    |          | 116.690      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 2.0 | 600Ø            |       |      | *      | 118.175 | 116.770   | 1.405                | A15                      | 600Ø         | uPVC    | 100a     | 116.780      |                                      | LD, LIGHT WEIGHT PPIC DETAIL                        |
|         | LD              |       |      |        |         |           |                      |                          | uPVC         |         | 150b     | 116.760      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 2.1 | 600Ø            |       |      | *      | 118.060 | 116.640   | 1.420                | A15                      | 600Ø         | uPVC    | 150a     | 116.650      |                                      | LD, LIGHT WEIGHT PPIC DETAIL                        |
|         | LD              |       |      |        |         |           |                      |                          | uPVC         |         | 150b     | 116.630      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          | uPVC         | 150c    |          | 116.650      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          | uPVC         | 150d    |          | 116.650      |                                      |                                                     |
| SMH 2.2 | 1200Ø           |       |      | *      | 118.000 | 116.270   | 1.730                | D400                     | 675x675      | uPVC    | 150a     | 116.270      |                                      | LD, LIGHT WEIGHT PPIC DETAIL<br>300mm CATCHPIT SUMP |
|         | TYPE 2          |       |      |        |         |           |                      |                          | uPVC         |         | 150b     | 116.270      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 3.0 | 900Ø            |       |      | *      | 117.920 | 116.720   | 1.200                | D400                     | 675x675      | uPVC    | 100a     | 117.120      |                                      | LD, LIGHT WEIGHT PPIC DETAIL<br>300mm CATCHPIT SUMP |
|         | TYPE 2          |       |      |        |         |           |                      |                          | uPVC         |         | 100b     | 117.120      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 4.0 | 900Ø            |       |      | *      | 117.620 | 116.420   | 1.200                | D400                     | 675x675      | uPVC    | 100a     | 116.820      |                                      | LD, LIGHT WEIGHT PPIC DETAIL<br>300mm CATCHPIT SUMP |
|         | TYPE 2          |       |      |        |         |           |                      |                          | uPVC         |         | 100b     | 116.820      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 5.0 | 600Ø            |       |      | *      | 118.000 | 116.500   | 1.500                | C250                     | 600Ø         | uPVC    | 100a     | 116.510      |                                      | LD, LIGHT WEIGHT PPIC DETAIL                        |
|         | LD              |       |      |        |         |           |                      |                          | uPVC         |         | 100b     | 116.490      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 5.1 | 1200Ø           |       |      | *      | 117.550 | 115.865   | 1.685                | D400                     | 675x675      | uPVC    | 150a     | 116.165      |                                      | HYDRO-BRAKE CHAMBER<br>300mm CATCHPIT SUMP          |
|         | TYPE B          |       |      |        |         |           |                      |                          | uPVC         |         | 150b     | 116.165      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          |              |         |          |              |                                      |                                                     |
| SMH 5.2 | 1200Ø           |       |      | *      | 117.480 | 115.970   | 1.510                | D400                     | 675x675      | VC      | 150a     | 115.980      |                                      | S104/104 CHAMBER TO BE<br>BUILT OVER EXISTING SWS   |
|         | TYPE B          |       |      |        |         |           |                      |                          | VC           |         | 150b     | 115.960      |                                      |                                                     |
|         |                 |       |      |        |         |           |                      |                          | uPVC         | 150a    |          | 115.980      |                                      |                                                     |

FOUL WATER MANHOLES

| MH Ref. | MANHOLE DETAILS |       |      |        |         |           | COVER DETAILS        |                          | PIPE DETAILS |                      |                      |              | MANHOLE LAYOUT<br>(drg. orientation)     | COMMENTS / DETAILS |                                              |
|---------|-----------------|-------|------|--------|---------|-----------|----------------------|--------------------------|--------------|----------------------|----------------------|--------------|------------------------------------------|--------------------|----------------------------------------------|
|         | Internal Size   | Type  |      | Levels |         | Depth (m) | BS EN 124 Cover Ref. | Cover Size Clear Opening | Type of Pipe | Size In              | Size Out             | Invert Level |                                          |                    |                                              |
|         |                 | Brick | Conc | PPIC   | Cover   |           |                      |                          |              |                      |                      |              |                                          |                    | Invert                                       |
| FMH 1.0 | 600Ø<br>LD      |       |      | *      | 118.180 | 117.198   | 0.982                | A15                      | 600Ø         | uPVC<br>uPVC         | 150a                 | 100b         | 117.208<br>117.188                       |                    | LD, LIGHT WEIGHT PPIC DETAIL                 |
| FMH 1.1 | 600Ø<br>LD      |       |      | *      | 118.185 | 116.898   | 1.287                | A15                      | 600Ø         | uPVC<br>uPVC         | 100a                 | 100b         | 116.908<br>116.888                       |                    | LD, LIGHT WEIGHT PPIC DETAIL                 |
| FMH 1.2 | 600Ø<br>LD      |       |      | *      | 118.185 | 116.580   | 1.605                | A15                      | 600Ø         | uPVC<br>uPVC<br>uPVC | 100a<br>100a<br>150a | 100b         | 116.590<br>116.570<br>116.590<br>116.590 |                    | LD, LIGHT WEIGHT PPIC DETAIL                 |
| FMH 2.0 | 1200Ø<br>TYPE 2 |       |      | *      | 118.187 | 116.360   | 1.827                | C250                     | 675x675      | HDPE<br>HDPE<br>uPVC | 150a<br>150c         | 150b         | 116.370<br>116.350<br>116.370            |                    | LD, LIGHT WEIGHT PPIC DETAIL<br>S185 CHAMBER |
| FMH 2.1 | 1200Ø<br>TYPE 2 |       |      | *      | 118.135 | 115.940   | 2.195                | C250                     | 675x675      | HDPE<br>HDPE         | 150a                 | 150b         | 115.950<br>115.930                       |                    | LD, LIGHT WEIGHT PPIC DETAIL<br>S185 CHAMBER |
| FMH 2.2 | 1200Ø<br>TYPE 2 |       |      | *      | 118.000 | 115.740   | 2.260                | C250                     | 675x675      | HDPE<br>HDPE         | 150a                 | 150b         | 115.750<br>115.730                       |                    | LD, LIGHT WEIGHT PPIC DETAIL<br>S185 CHAMBER |

DO NOT SCALE

NOTES

- ALL LEVELS ARE TO METRES ABOVE ORDNANCE DATUM.
- THE CONTRACTORS ENGINEER SHOULD CONFIRM ALL LEVELS ON-SITE PRIOR TO CONSTRUCTION. IF ANY DISCREPANCIES ARISE THE CONTRACTOR SHOULD MAKE THE DRAINAGE ENGINEER AWARE.
- CONSTRUCTION AND TESTING OF DRAINS AND SEWERS TO COMPLY WITH BS EN 1610  
CONTRACTOR SHALL NOTE THAT TOLERANCES OF + OR - 5% OF THE PIPES INTERNAL DIAMETER MUST BE ACHIEVED UPTO A MAXIMUM OF 20mm.
- FOR MANHOLE CONSTRUCTION INFORMATION REFER TO STANDARD DETAILS DRAWINGS.
- PRECAST MANHOLES SHALL COMPLY WITH BS EN 1917
- POLYPROPYLENE CHAMBERS TO COMPLY WITH BS 7158.
- BRICKWORK CHAMBERS WILL TO BE CONSTRUCTED FROM CLASS B ENGINEERING BRICKS COMPLYING WITH BS 3921. BRICKS SHALL ALSO BE FROST-RESISTANT CATEGORY F.
- CLAY PIPES TO COMPLY TO BS EN 295
- CONCRETE PIPES TO COMPLY TO BS EN 1916
- TYPE OF PIPE "PERF" REFERS TO PERFORATED FILTER DRAINS TO COMPLY TO BS 4962.

PLASTIC PIPE ALTERNATIVES  
IN NON-AGGRESSIVE SOIL CONDITIONS PLASTIC PIPE ALTERNATIVES WILL BE DEEMED ACCEPTABLE. IF THE CONTRACTOR INTENDS TO USE PLASTIC PIPEWORK IN ACCORDANCE WITH BS 4660 - THE FOLLOWING STANDARDS WILL BE REQUIRED:

DRAINAGE CONNECTIONS OF LESS THAN 150Ø SHALL BE SOLID WALL uPVC PIPES COMPLYING WITH BS EN 1401-1

PIPE SIZES 100-150Ø (TO BE USED IN FOUL OR COMBINED FLOW DRAINAGE SYSTEMS) SHALL BE THERMOPLASTIC STRUCTURED WALL PIPE COMPLYING WITH WIS 4-35-01

PIPE SIZES 150-225Ø (TO BE USED IN SURFACE WATER DRAINAGE SYSTEMS) SHALL BE THERMOPLASTIC STRUCTURED WALL PIPES WITH BBA & HAPAS ACCREDITATION.

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED PLASTIC PRODUCTS FOR APPROVAL BY THE ENGINEER.

- THE CONTRACTOR SHALL ALSO NOTE THAT CONNECTIONS TO PUBLIC SEWERS & MATERIALS USED IS SUBJECT TO AGREEMENT WITH THE ADOPTING AUTHORITY AND THE CONTRACTOR SHALL THEREFORE ASSUME THAT TRADITIONAL MATERIALS MUST BE USED UNLESS EXPRESSIVELY INFORMED OTHERWISE.

|                                                                                                                                                                                                                                      |            |           |                  |                  |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------------|------------------|-----|
| P01                                                                                                                                                                                                                                  | 28/07/2021 | CR        | FOR TENDER ISSUE | VM               | MWW |
| REV                                                                                                                                                                                                                                  | DATE       | BY        | DESCRIPTION      | CHK              | APP |
| DRAWING STATUS:                                                                                                                                                                                                                      |            |           |                  |                  |     |
| D2 - FOR TENDER                                                                                                                                                                                                                      |            |           |                  |                  |     |
| <div></div> <div>Opus House, Yale Business Village, Wrexham Technology Park, Wrexham, LL13 7YL, UK<br/>T+ 44 (0) 1978 368 100<br/>wsp.com</div> |            |           |                  |                  |     |
| CLIENT:                                                                                                                                                                                                                              |            |           |                  |                  |     |
| <div></div>                                                                                                                                     |            |           |                  |                  |     |
| SITE/PROJECT:                                                                                                                                                                                                                        |            |           |                  |                  |     |
| HEOL OFFA, JOHNSTOWN - WREXHAM                                                                                                                                                                                                       |            |           |                  |                  |     |
| TITLE:                                                                                                                                                                                                                               |            |           |                  |                  |     |
| MANHOLE SCHEDULES                                                                                                                                                                                                                    |            |           |                  |                  |     |
| SCALE @ A1:                                                                                                                                                                                                                          |            | CHECKED:  |                  | APPROVED:        |     |
| AS SHOWN                                                                                                                                                                                                                             |            | VM        |                  | MAW              |     |
| PROJECT NO:                                                                                                                                                                                                                          |            | DESIGNED: |                  | DATE:            |     |
| 70079262                                                                                                                                                                                                                             |            | CR        |                  | AJ<br>APRIL 2021 |     |
| DRAWING No:                                                                                                                                                                                                                          |            |           |                  | REV:             |     |
| 70079262-WSP-DR-509                                                                                                                                                                                                                  |            |           |                  | P01              |     |
| © WSP UK Ltd                                                                                                                                                                                                                         |            |           |                  |                  |     |