



- THIS DRAWING IS TO BE USED IN CONJUNCTION WITH THE WSP DRAINAGE LAYOUT
2-WSP-GS80-02-01-X-001
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
3. **CONCRETE**
 - 3.1. FOR DESIGNED, DESIGNATED OR STANDARDISED PRESCRIBED CONCRETE REFER TO BS EN 206-1 AND BS 8500. THEY SHOULD HAVE A 20mm NOMINAL MAXIMUM SIZE OF AGGREGATE, AND A SLUMP CLASS 2P FOR TRAFFIC TOWNS AND NO ADMIXTURES
4. **PIPES**
 - 4.1. CONCRETE PIPES TO BE TO BS EN 1916 & BS 5911-1, CLAYWARE PIPES TO BE TO BS EN 12756-1 AND PIPES TO BE TO BS EN 598 & PLASTIC PIPES TO BS EN 13476-1 AND 13476-2
5. **BACKFILL TO TRENCHES – WITHIN TRAFFICED AREAS**
 - 5.1. BACKFILL DITCHES WITHIN TRAFFICED AREAS TO BE BACKFILLED IN ACCORDANCE WITH HMC SPECIFICATIONS FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS APPLICABLE AT CLASSES A,B,C,D.
6. **BACKFILL TO TRENCHES – OUTSIDE TRAFFICED AREAS**
 - 6.1. BACKFILL TO TRENCHES TO BE SELECTED AS-DUG MATERIAL IN ACCORDANCE WITH BUILDING REGULATIONS APPROVED DOCUMENT H.
7. **GRANULAR BEDDING AND SURROUNDING**
 - 7.1. GRANULAR BEDDING FOR PIPES AND BACKFILLING MATERIAL FOR TEMPORARY DRAINS (TRENCH SUB-GRANS) SHALL COMPLY WITH DIAGRAM 10 OF BUILDING REGULATIONS APPROVED DOCUMENT H.
8. **TRENCH WIDTH**
 - 8.1. NOTE THE MAXIMUM TRENCH WIDTH MUST NOT EXCEED IF THE WIDTH IS EXCEEDED THE CONTRACTOR MUST SUBMIT REVISED BUILDING PROPOSALS TO THE SUPERVISING OFFICER/ENGINEER.
9. **SOFT SPOTS AND OVERBURD**
 - 9.1. SOFT SPOTS SHALL BE REMOVED FROM THE BOTTOM OF THE TRENCH AND OTHER EXPOSED AREAS AND THEN BE REPAIRED TO FORMATION LEVEL WITH THE SAME MATERIAL AS THE PERMANENT WORK WHICH IS TO REST ON THAT FORMATION. OVERBURD SHALL BE TREATED IN THE SAME MANNER AT CONTRACTORS EXPENSE AS INDICATED BY THE SUPERVISING OFFICER/ENGINEER.
10. **INVERT LEVELS**
 - 10.1. ALL CHANGES IN FORMED CHANNELS TO HAVE A CONTINUOUS GRADIENT EQUAL TO THE SLOPE OF THE INCOMING OR OUTGOING PIPE THROUGHOUT THE WIDTH OF THE CHANNEL.
11. **SHORT PIPS AT CHAMBERS/ROCKER PIPES**
 - 11.1. NOT WITHSTANDING SPECIFIC REQUIREMENTS FOR INDIVIDUAL CHAMBER TYPES ALL SHORT PIPES TO BE INSTALLED AT CHAMBER PIPES SHALL INCLUDE ROCKER PIPES.
12. **INSPECTION ACCESS CHAMBERS**
 - 12.1. INSPECTION/ACCES CHAMBERS SHALL BE IN ACCORDANCE WITH THE RELEVANT BRITISH STANDARD SPECIFICATIONS AND AS STATED IN TABLE 14 OF BUILDING REGULATIONS APPROVED DOCUMENT H.
13. **MANHOLE CHAMBERS**
 - 13.1. ALL PIPES SHALL BE LAD SOFTT TO SUFFY UNLESS STATED OTHERWISE ON THE MANHOLE SCHEDULE.
 - 13.2. MCC MANHOLES, SODAGAWAYS & COVER SLABS TO BE BS EN 1917 AND BS 5911
 - 13.3. PREFORMED SWEPT CHANNELS SHALL BE USED AT JUNCTIONS AND NO BRANCH SHALL ENTER AT LESS THAN 90 DEGREES FROM THE OUTGOING SEWER.
14. **MANHOLE CHAMBERS**
 - 14.1. MANHOLE ACCESS OPENINGS TO BE IN ACCORDANCE WITH TABLE 12 OF BUILDING REGULATIONS APPROVED DOCUMENT H.
15. **MANHOLE COVERS**
 - 15.1. ALL MANHOLE COVERS SHOULD BE IN ACCORDANCE AND BE BEDDED AND HAUNCHED IN MORTAR.
 - 15.2. THEY SHOULD BE COATED WITH BLACK BITUMINOUS COMPOSITION IN ACCORDANCE WITH BS EN124.
 - 15.3. WHERE THERE IS DOUBT AS TO WHICH COVER SHOULD BE USED, A STRONGER CLASS OF COVER SHOULD BE SELECTED.
 - 15.4. FRAMES FOR MANHOLES SHALL BE BEDDED IN CLASS M BEDDING MORTAR.
 - 15.5. ALL MANHOLE FRAMES TO BE SET PARALLEL TO ADJACENT KERBS OR NEAREST EXISTING PAVEMENT.
 - 15.6. MANHOLE COVERS AND FRAMES TO BE FLUSH WITH SURFACE $\pm 5mm$ MAX.
16. **CONCRETE PROTECTION TO PIPES**
 - 16.1. AT ALL CHANGES OF ENGINES, AWR FROM CHAMBERS AND WHERE PRODUCTION COMSITS THE LENGTH OF UNINTERRUPTED CONCRETE PROTECTION MAY BE INCREASED TO 8m.
17. **COMPRESSION BELLEV FOR UNBURIED PIPES**
 - 17.1. TO BE USED TO INTERRUPT CONCRETE PROTECTION TO PIPELINES AND SHALL CONSIST OF GRITEM INMATED INSULATING BOARD TO BS 1142 AT EACH PIPE AND JOINT.
18. **PROPEIATORY PRODUCTS**
 - 18.1. REFERENCE SHALL BE MADE TO THE MANUFACTURER'S INSTRUCTIONS.
 - 18.2. CONGRERATION WILL BE GIVEN TO ALTERNATIVE PRODUCTS OF EQUAL QUALITY BUT THE CONTRACTOR MAY NOT USE A SUBSTITUTE MATERIAL WITHOUT PRIOR WRITTEN APPROVAL OF THE SUPERVISING OFFICER/ENGINEER.
19. **GEOTEXTILE MEMBRANES**
 - 19.1. PERMEABLE MEMBRANE – 2000 G/GM FORTRAPE AQUAFLOW SC MEMBRANE
 - 19.2. PERMEABLE MEMBRANE – FORTRAPE AQUAFLOW LINEX PERMEABLE GEOTEXTILE

DRAWING STATUS: STAGE 4

wsp

CLIENT: RENAKER

RENAKER

ARCHITECT: **SIMPSON HAUGH**

SITE/PROJECT:

PORT STREET, MANCHESTER

TITLE: BASEMENT DRAINAGE CONSTRUCTION DETAILS

DRAWING No:	REV:
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