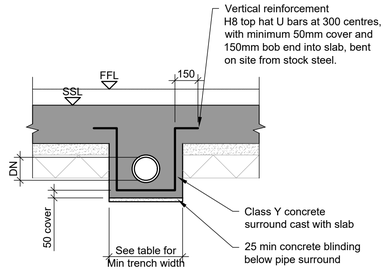


CLASS W SURROUND

FOR PIPES WITH CROWN >300 UNDER BUILDING



CLASS Y SURROUND

FOR PIPES WITH CROWN <300 UNDER BUILDING

For plastic pipes care is to be taken in placing concrete to avoid deformation or displacement of pipe.

TABLE 1

DN	Minimum trench width (OD + x)		
	Supported trench	Unsupported trench	
		# > 60°	# < 60°
less 225	600	600	600
225 to 350	800	800	800
350 to 700	OD + 700	OD + 700	OD + 400
700 to 1200	OD + 850	OD + 850	
greater 1200	OD + 1000	OD + 1000	OD + 400

In the values OD + x, x/2 equals the minimum working space between the pipe and the trench wall or support, where:
OD is external diameter.
is angle of unsupported trench side measured to the horizontal.

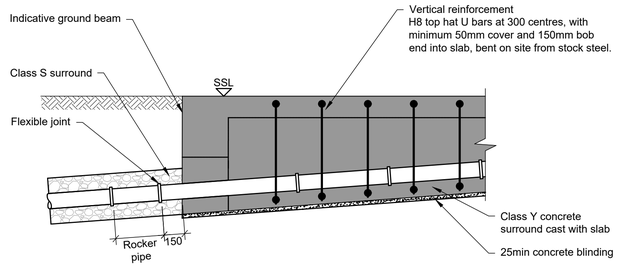
MINIMUM TRENCH WIDTH IN RELATION TO NORMAL SIZE DN

TABLE 2

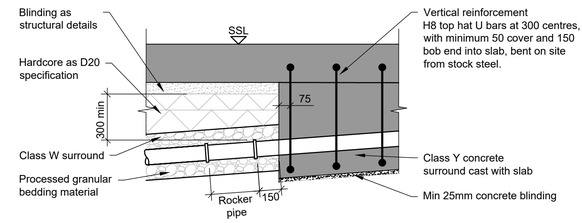
Trench depth	Minimum trench width
less 1000	As Table 1
1000 to 1750	800
1750 to 4000	900
greater 4000	1000

The minimum trench width shall be the greater of the values taken from tables 1 & 2.

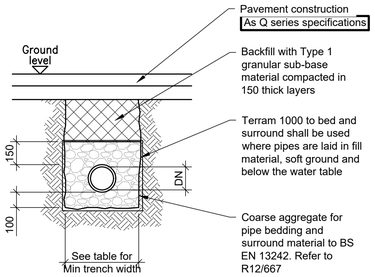
MINIMUM TRENCH WIDTH IN RELATION TO TRENCH DEPTH



TYPICAL DETAIL FOR PIPELINES UNDER SLABS: CLASS Y AND S SURROUND

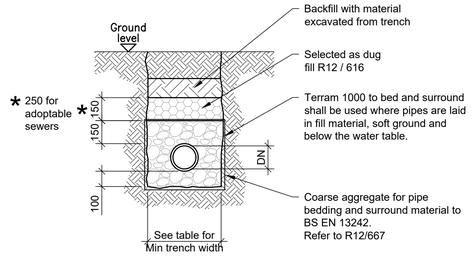


TYPICAL DETAIL FOR PIPELINES UNDER SLABS: CLASS Y AND W SURROUND



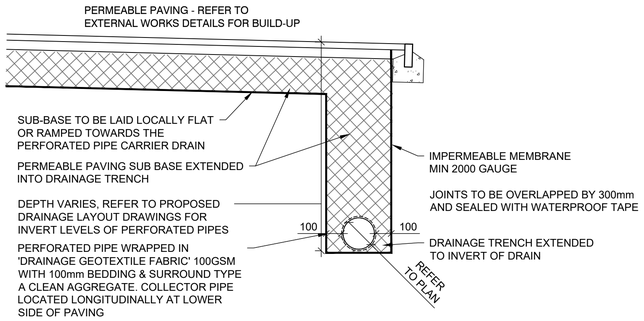
CLASS S SURROUND

GRANULAR SURROUND & BACKFILL FOR AREAS SUBJECT TO VEHICLE LOADING



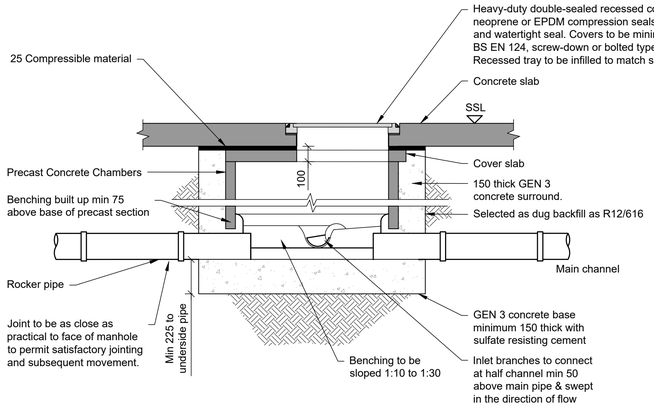
CLASS S SURROUND

GRANULAR SURROUND & BACKFILL FOR SOFT OR HARD LANDSCAPING AREAS NOT SUBJECT TO VEHICLE LOADING



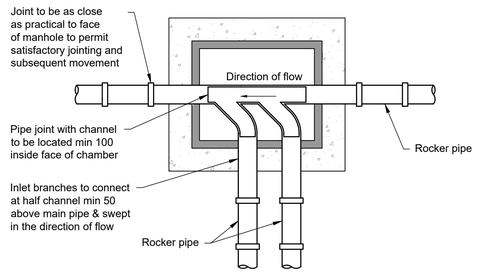
LINED PERMEABLE PAVING & UNDERDRAIN

SCALE 1:20



PCC RECTANGULAR INSPECTION CHAMBER - INTERNAL

REFER TO MANHOLE SCHEDULE FOR SIZE & INVERT.
TYPICAL DETAIL. SEE SCHEDULE FOR DIMENSIONS AND GA FOR NUMBER OF CONNECTING PIPES.



PCC RECTANGULAR INSPECTION CHAMBER - PLAN

DETAIL SHOWN INDICATIVELY ON 750 x 600

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER HBL DRAWINGS ISSUED FOR THIS PROJECT

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELATED DRAWINGS AND SPECIFICATIONS.
3. THE DRAINAGE CONTRACTOR IS RESPONSIBLE TO MAKING AN APPLICATION TO ANY SEWERAGE UNDERTAKER PRIOR TO CONSTRUCTION OF ANY CONNECTION INTO A PUBLIC MANHOLE.
4. THE ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES TO THE DETAILS SHOWN ON THE DRAINAGE AND ANY UNRECORDED CONNECTIONS NOT SHOWN ON THE DRAWINGS.
5. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING DIMENSIONS AND LEVELS AND FOR CONFIRMING THE GIVEN LEVEL OF OUTFALL INTO PUBLIC SEWER, WATERCOURSE OR OTHER OUTFALL PRIOR TO CONSTRUCTION WORKS COMMENCING.
6. UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT AUTHORITIES ALL DRAWINGS ISSUED ARE AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.
7. TO PROTECT THE DRAINAGE SYSTEM FROM CONSTRUCTION SITE DERBIES, THE CONTRACTOR SHALL ENSURE THAT STOPPERS ARE SECURELY PLACED IN ALL CONNECTIONS IMMEDIATELY UPSTREAM OF THE TANK, ONLY TO BE REMOVED ONCE THE FINAL CLEANING OF THE ROADS/ DRAINAGE HAS BEEN COMPLETED.
8. THE DESIGN IS BASED ON THE INFORMATION AVAILABLE ON THE DATE OF ISSUE FROM OTHER PARTIES (E.G. ARCHITECT AND M&E ENGINEER). IT IS SUBJECT TO CHANGE RESULTING FROM UPDATES TO THE AVAILABLE INFORMATION FROM OTHERS.
9. NEW DRAINS AND SEWERS TO BE AS FOLLOWS:
   - 9.1. CONSTRUCTION AND MATERIALS OF PRIVATE SURFACE, FOUL & COMBINED WATER SEWERAGE SYSTEM TO BE IN ACCORDANCE WITH "BUILDING REGULATIONS - APPROVED DOCUMENT H" & "BS EN 752:2017 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS"
   - 9.2. CONSTRUCTION AND MATERIALS OF PUBLIC SURFACE, FOUL & COMBINED WATER SEWERS TO BE IN ACCORDANCE WITH "DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C" AND IN ACCORDANCE WITH LOCAL SEWERAGE UNDERTAKER
   - 9.3. MINIMUM PIPE SIZE FOR ADOPTABLE SURFACE WATER DRAINAGE IS 150mmDN
     - 9.3.1. 100mmDN AT MIN 1:100 FOR 10 DWELLINGS OR LESS
     - 9.3.2. 150mmDN AT MIN 1:150 FOR GREATER THAN 10 DWELLINGS
   - 9.4. MINIMUM PIPE SIZE FOR ADOPTABLE FOUL WATER DRAINAGE IS 100mmDN
     - 9.4.1. 100mmDN 1:40 WHERE 10 DWELLINGS OR LESS AND NO WC
     - 9.4.2. 100mmDN 1:80 WHERE GREATER THAN 10 DWELLINGS AND AT LEAST 1 WC
   - 9.5. ALL ROAD GULLY PIPEWORK SPURS TO BE 150mmDN UNLESS OTHERWISE SPECIFIED
10. LOAD CLASS SELECTION TO COMPLY WITH BS EN 124.
    - 10.1. LOAD CLASS A15 - AREAS INACCESSIBLE TO MOTOR VEHICLES
    - 10.2. LOAD CLASS B125 - FOOTWAYS, PEDESTRIAN AREAS ETC
    - 10.3. LOAD CLASS D250 - GULLY TOPS IN KERBSIDE CHANNELS OF ROADS
    - 10.4. LOAD CLASS D400 - CARRIAGEWAYS OF ROADS (HEAVY DUTY)
    - 10.5. LOAD CLASS E600 - AREAS IMPOSING HIGH WHEEL LOADS
    - 10.6. LOAD CLASS F900 - AREAS IMPOSING PARTICULARLY HIGH WHEEL LOADS
11. ALL FOUL DRAINS BENEATH BUILDINGS AND FROM SOIL VENT PIPES, GULLIES AND WC CONNECTIONS BE 100mmDN AT A GRADIENT NOT LESS THAN OF 1:40.
12. ALL FOUL CONNECTIONS TO BE FULLY TRAPPED AND EACH FOUL CONNECTION TO A BRANCH DRAIN TO HAVE FULL RODDING ACCESS (E.G. LOW-LEVEL RODDING ACCESS).
13. RAINWATER DOWN PIPES ARE TO CONNECT TO A DRAIN VIA A REST BEND.
14. WHERE DRAINAGE IS COMBINED A 'P' TRAP MUST BE PROVIDED ABOVE PROPOSED FLOOR SLAB LEVEL.
15. MINIMUM DEPTH OF COVER TO THE CROWN OF GRAVITY PIPES WITHOUT PROTECTION SHOULD BE AS FOLLOWS (IN ACCORDANCE WITH "DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C")
    - 15.1. 350mm - DOMESTIC GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS
    - 15.2. 500mm - DOMESTIC DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES.
    - 15.3. 900mm - DOMESTIC DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES.
    - 15.4. 900mm - AGRICULTURAL LAND & PUBLIC OPEN SPACE.
    - 15.5. 1200mm - HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLE WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES.
16. BACKFILL TO DRAINAGE TRENCHES UNDER CARRIAGEWAYS TO BE TYPE 1 SUB-BASE MATERIAL, ELSEWHERE BACKFILL TO BE FREE DRAINING READILY AVAILABLE COMPACTABLE MATERIAL FREE FROM RUBBISH, ORGANIC MATTER, FROZEN SOIL, CLAY LUMPS AND LARGE STONES. TO BE COMPACTED IN LAYERS NOT EXCEEDING 250mm THICK
17. A FLEXIBLE JOINT SHALL BE PROVIDED AS CLOSE AS IS FEASIBLE TO THE OUTSIDE FACE OF ANY STRUCTURE INTO WHICH A PIPE IS BUILT, COMPATIBLE WITH THE SATISFACTORY COMPLETION AND SUBSEQUENT MOVEMENTS OF THE JOINT. LENGTH OF THE NEXT PIPE (ROCKER PIPE) IS TO BE IN ACCORDANCE WITH THE TABLE BELOW
    - 17.1. 150-600mmDN - 600mm LONG ROCKER PIPE
    - 17.2. 601-750mmDN - 1000mm LONG ROCKER PIPE
    - 17.3. 751mmDN AND ABOVE - 1250mm LONG ROCKER PIPE
18. PIPE CROSSOVERS TO HAVE MINIMUM OF 300mm CLEARANCE BETWEEN OUTSIDE TOP OF THE LOWER PIPE AND OUTSIDE BOTTOM OF THE UPPER PIPE. WHERE THIS CANNOT BE ACHIEVED A SEPARATION, CONCRETE SURROUND IS TO BE FORMED WHICH WILL EXTEND NOT LESS THE 1000mm EACH SIDE OF THE CROSSING POINT, THE EXTENT OF THE CONCRETE SHOULD BE WITHIN 150mm OF A FLEXIBLE PIPE JOINT. THE CONCRETE SPECIFICATION SHOULD BE IN ACCORDANCE WITH THE STANDARD DETAILS FOR PIPE BED AND SURROUND AS ISSUED BY THE ENGINEER.
19. CONCRETE MIXES INDICATED ON THIS DRAWING ARE DESIGNATED MIXES CONFORMING TO BS 8500-1:2006. ALL CONCRETE TO BE SULPHATE RESISTANT. CONTRACTOR SHOULD ALLOWANCE FOR CARRYING OUT TESTING ONSITE TO CONFIRM SULPHATE LEVEL CLASSIFICATION.
20. ALL PRIVATE MANHOLES AND INSPECTION CHAMBERS TO BE CONSTRUCTED IN ACCORDANCE WITH "BUILDING REGULATIONS - APPROVED DOCUMENT H" & "BS EN 752:2017 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS"
21. ALL MANHOLES AND INSPECTION CHAMBERS TO BE ADOPTED TO BE CONSTRUCTED IN ACCORDANCE WITH "IN ACCORDANCE WITH "DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C" AND IN ACCORDANCE WITH LOCAL SEWERAGE UNDERTAKER.
22. CCTV SURVEY OF ALL THE DRAINAGE SHOULD BE CARRIED OUT ON COMPLETION OF THE BUILDING WORKS AND PASSED ON TO THE CLIENT.

REV.	DATE	DRAWN	DESCRIPTION	CHKD	APPRD
P04	07.09.26	AC	ISSUED FOR DISCHARGE OF CONDITION 16	AC	AC
P03	08.05.26	AC	ISSUED FOR TENDER	RJ	RJ
P02	27.02.26	AC	ISSUED FOR TENDER	AC	AC
P01	05.08.25	AC	ISSUED FOR INFORMATION	AC	AC

STATUS DESCRIPTION: FOR INFORMATION
STATUS: S2

HBL
Craig House,
33 Ballbrook Avenue,
Manchester M20 3JD
+44 (0)161 432 9977 | www.hbl.ltd
Consulting Civil & Structural Engineers

PROJECT
SHELDON BAKERY
OPENSHAW, MANCHESTER

DRAWING TITLE
PROPOSED DRAINAGE DETAILS
SHEET 3

CLIENT
S.H. SHELDON WHOLESALE BAKERY

HBL REF.	DATE	SCALE(S)	
8885	05.08.25	AS SHOWN	A1

DRAWN	CHECKED	APPROVED
AC	AC	AC

DRAWING No.: 8885-HBL-XX-XX-DR-C-5113
REV.: P04