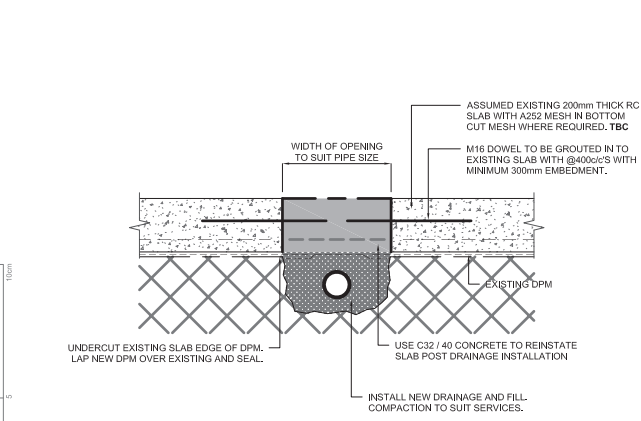
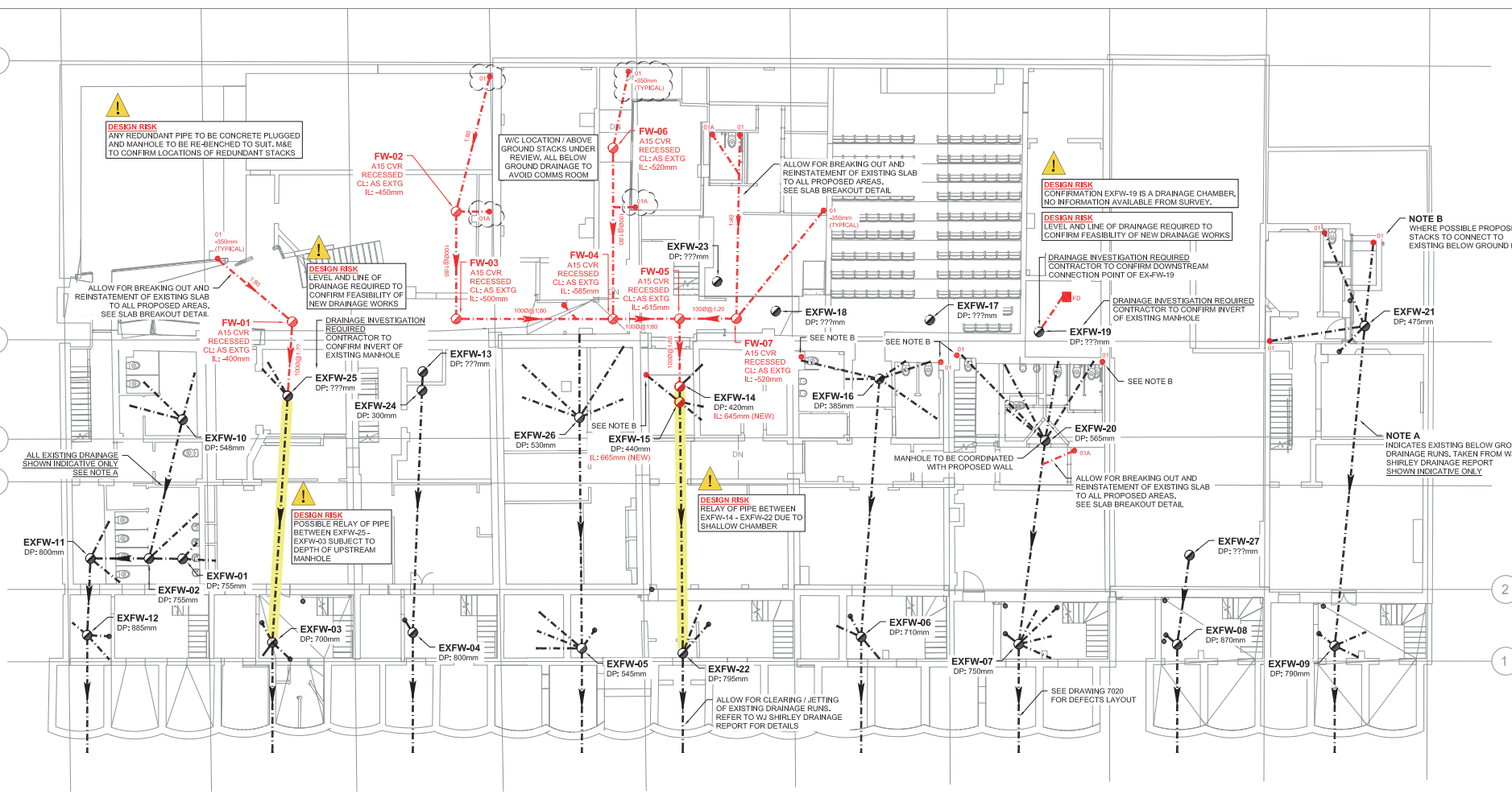


Appendix D: Civils drawings



EXISTING SLAB BREAKOUT
SCALE 1:10

PUBLIC AND PRIVATE EXISTING/PROPOSED DRAINAGE	
	EXISTING PUBLIC FOUL SEWER
	EXISTING PUBLIC STORM SEWER
	EXISTING PUBLIC COMBINED SEWER
	EXISTING PRIVATE FOUL SEWER
	EXISTING PRIVATE STORM SEWER
	PROPOSED PUBLIC STORM SEWER (BY OTHERS)
	PROPOSED PUBLIC FOUL SEWER (BY OTHERS)

FOUNDATIONS	
	INDICATES PIPE THROUGH FOUNDATION
	TOP OF FOUNDATION (TYPICAL)

LEGEND - DRAINAGE	
PROPOSED DRAINAGE - FOUL	
	FOUL WATER DRAIN - PVCu Approx. gradient and diameter as noted, 100mm Ø UNO
	FOUL WATER MANHOLE PC Ring 1.2m Ø UNO
	FOUL WATER INSPECTION CHAMBER PVCu 450mm Ø, Max 1.2m depth - reduced access to 3.0m
Note: All internal foul MFHs and ICs to have recessed covers, double sealed and locking to prevent odours. Refer to layout for location.	
	FOUL WATER SHALLOW ACCESS CHAMBER Max depth to invert 600mm from GL, 300mm Ø
	FOUL RODDING EYE Ø as noted
	FOUL YARD GULLY (to be trapped) Gully reference as noted on drawing. Cover grade to suit loading.
	FLOOR DRAIN (to be trapped) Internal use only, refer to architect for details / specification. Rodddable from above slab into standard 90° rest bend. Floor Drain / Gully to be kept charged to avoid odours.
	FOUL OUTLET / STACK POSITION Shown indicative, refer to architect for setting out. All branches 100mm Ø UNO. 01 - Outlet connects into standard 90° rest bend. 01A - Indicates access required in above slab plumbing for rodding, refer to service engineers drawings for details. SVF - Indicates soil vent pipe by service engineer with access.

- Notes:**
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 - Levels shown in metres above Datum (m.AOD).
 - All private drainage to comply with current Building Regulations, BS EN-752 Drain and Sewer systems outside Buildings and other relevant British Standards and Codes of Practices.
 - All external drainage within trafficked areas with less than 1.2m cover to have type Z concrete bed and surround. All drainage with greater cover than the minimum required to have type S bed and surround.
 - All drainage to be laid soffit to soffit unless otherwise shown.
 - The Contractor is to verify the line, level and diameter of existing sewers before commencing drainage works.
 - All foul drainage to be minimum 100mm diameter, all surface water drainage to be minimum 150mm diameter unless otherwise shown.
 - Cover levels shown on this drawing refer to approximate surface levels. It is the contractor's responsibility to ensure that access covers and frames are set at the final surface levels.
 - Where possible the contractor is to orientate manhole biscuits and covers to locate them parallel to kerbs and paving.
 - The Contractor should comply with HSG 47 'Avoiding Danger from Underground Services' when excavating around existing services.
 - It is the contractors responsibility to determine the location and depth of all existing services, mains and cables prior to construction.
 - Contractor to provide temporary screens in each of the down stream manholes during the construction period of the development in accordance with SFA 2.9.10 and the local sewerage undertakers requirements.
 - All in-situ concrete and precast concrete components to be manufactured using Sulphate Resisting Portland Cement, (SRPC) to BS 4027. If required, subject to soil conditions. Manhole components to be to BS EN 1917:2002.
 - All ironwork to be kile marked by BSI or certified by equal inspection authority.
 - All redundant connections to be capped off and grouted from the down stream manhole.
 - All new drainage pipes to be jettied, CCTV surveyed with DVD recording and any defects highlighted to the supervising officer. Following the rectification of any defects, the drain is to be re-surveyed with CCTV and the recordings made available to the project manager/engineer.
 - Prior to commencing the works the contractor is to confirm details of the existing drainage system as noted on the drawing.
 - Prior to commencing the works the contractor is to undertake the drainage investigation work as noted on the drawing.

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 - ALL DIMENSIONS TO BE CHECKED ON SITE
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECT DRAWINGS
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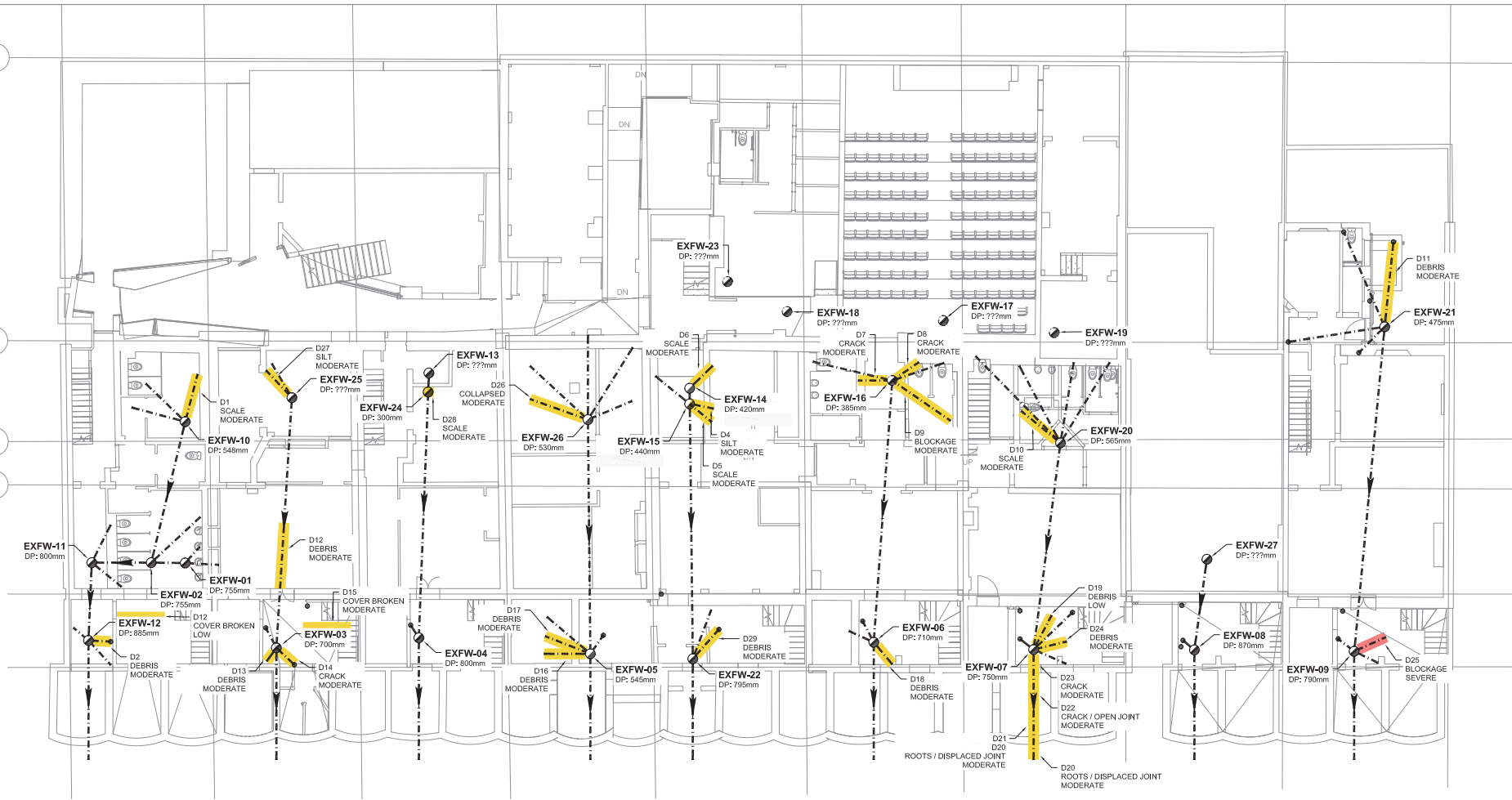
TITLE
DRAINAGE LAYOUT

Birkbeck College
University of London

Department of Estates and Facilities
Malet Street
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Tel : 0171 631 6015
Fax : 0171 631 6019

DRAWN JM	DATE 04.2020	SCALE 1:200 @ A1
DRAWING NUMBER BRK-HYD-GS-ZZ-DR-C-7010	REV T1	

CAD REF

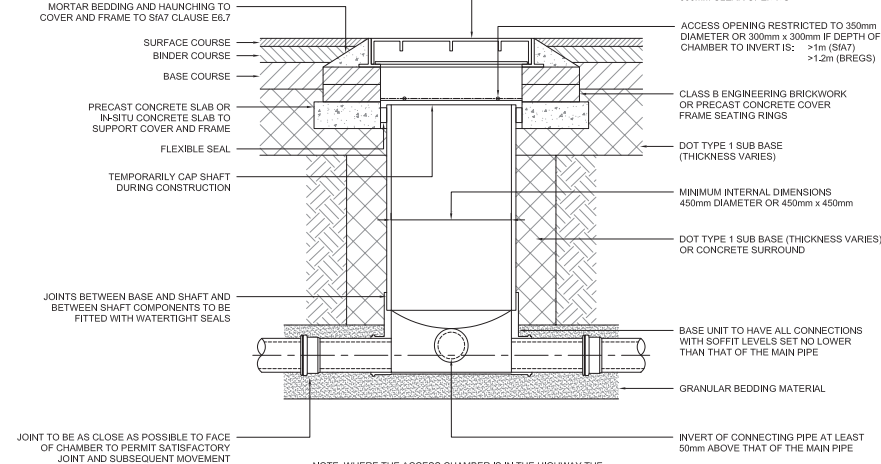


TO BE READ IN CONJUNCTION WITH WJ SHIRLEY DRAINAGE REPORT

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 4. Levels shown in metres above Ordnance Datum (mAOD).

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NOTE				
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PROJECT				
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TITLE				
DRAINAGE DEFECTS LAYOUT				
Birkbeck College				
University of London				
Department of Estates and Facilities				
Malet Street				
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Tel : 0171 631 6015				
Fax : 0171 631 6019				
DRAWN	DATE	SCALE		
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DRAWING NUMBER		REV		
BRK-HYD-GS-ZZ-DR-C-7020		T1		
CAD REF				

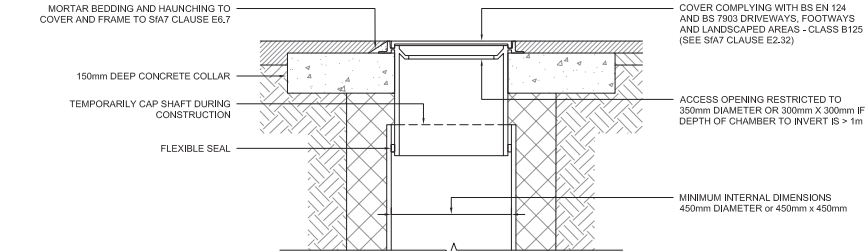
PLASTIC CHAMBERS AND RINGS SHALL COMPLY WITH BS EN 13598-1 AND BS EN 13598-2 OR HAVE EQUIVALENT INDEPENDENT APPROVAL



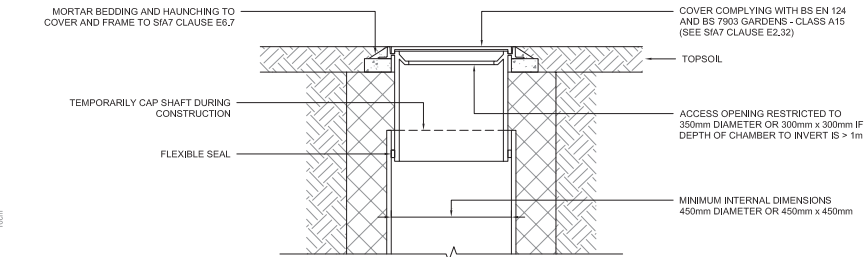
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3 (Flexible material detail)

SCALE 1:10
MAXIMUM DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE
IN AREAS SUBJECT TO VEHICLE LOADING 3m, NON-ENTRY

PLASTIC CHAMBERS AND RINGS SHALL COMPLY WITH BS EN 13598-1 AND BS EN 13598-2 OR HAVE EQUIVALENT INDEPENDENT APPROVAL



SITED IN DOMESTIC DRIVEWAYS OR FOOTWAYS



SITED IN DOMESTIC GARDENS

NOTE: WHERE THE ACCESS CHAMBER IS IN THE HIGHWAY THE HIGHWAY AUTHORITY CAN HAVE SPECIFIC REQUIREMENTS

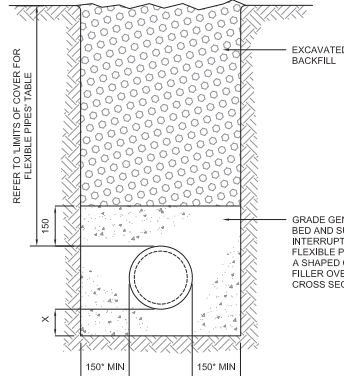
ALTERNATIVE TOP DETAILS FOR LIGHT VEHICLE LOADING AND LANDSCAPED AREAS - TYPE 3

SCALE 1:10

USE OF GRANULAR BEDDING MATERIAL:

NOMINAL BORE OF PIPE (mm)	AGGREGATE SIZE (mm)	
	SINGLE SIZED	GRADED
100	10	-
150	10 OR 14	14 TO 5
225-300	10, 14 OR 20	14 TO 5 OR 20 TO 5
375-525	14 OR 20	14 TO 5 OR 20 TO 5
EXCEEDING 525	14, 20 OR 40	14 TO 5 OR 20 TO 5
		40 TO 5

DIM X ≥ 100mm FOR PIPES ≤ 100mmØ
DIM X ≥ 150mm FOR PIPES > 100mmØ
DIM X ≥ 200mm FOR PIPES TRENCHES IN ROCK



CLASS Z BEDDING
CONCRETE SURROUND

NOTES:

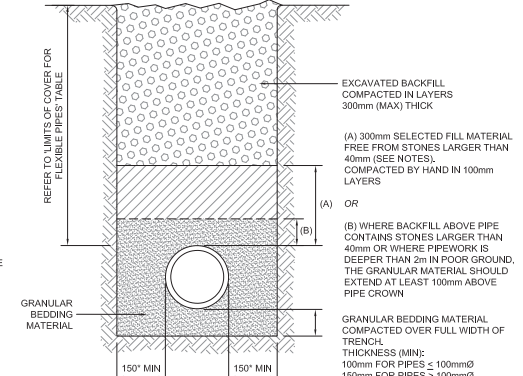
1. * = 150 FOR PIPES DIAMETER UP TO 300mm,
* = 200mm FOR PIPE DIAMETERS OVER 300mmØ

BASED ON NARROW TRENCH THEORY: DESIGNER TO CONFIRM FOR SPECIFIC PIPELINE.

2. BACKFILL MATERIAL TO BE SELECTED EXCAVATED MATERIAL WHERE THIS MATERIAL COMPLIES WITH CESWI. ADDITIONAL MATERIAL TO MAKE UP ANY DEFICIENCY TO BE GRANULAR SUB-BASE TYPE 1 UNLESS STATED OTHERWISE.

3. IN WET, SOFT, OR SILTY SOILS, WHERE LATERAL SUPPORT IS NOT OBTAINED OR WHERE FINES MAY MIGRATE, THE GRANULAR BEDDING MATERIAL SHALL BE SURROUNDED BY GEOTEXTILE FABRIC WITH MIN 200 OVERLAP.

4. TRENCH BACKFILL TO MEET HIGHWAY SPECIFICATION WHEN LAID IN ROAD OR FOOTPATH.



CLASS P BEDDING

TYPICAL PIPE BEDDING FOR PIPES UP TO 800mm DIA

SCALE 1:10

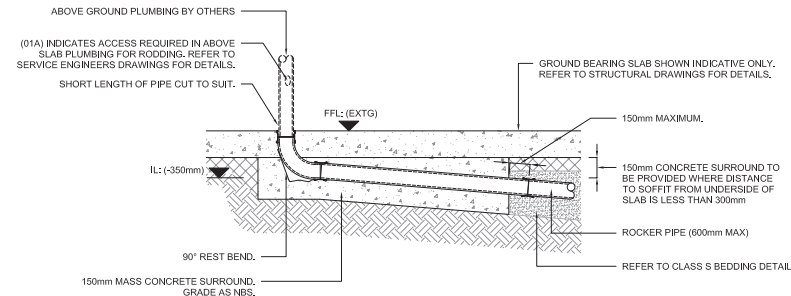
FOR AREAS ADOPTED HIGHWAYS	FOR AREAS SUBJECT TO LIGHT VEHICULAR ACCESS	FOR AREAS NOT UNDER ROADS OR BUILDINGS
USE CLASS P BEDDING WHERE COVER IS: 1.2m Min & 8.0m Max - FOR 100mm DIA PIPES 1.2m Min & 4.0m Max - FOR 150mm DIA PIPES OR GREATER	USE CLASS P BEDDING WHERE COVER IS: 0.3m Min & 8.0m Max - FOR 100mm DIA PIPES 0.3m Min & 5.0m Max - FOR 150mm DIA PIPES OR GREATER	USE CLASS P BEDDING WHERE COVER IS: 0.8m Min & 8.0m Max - FOR 100mm DIA PIPES 0.8m Min & 5.0m Max - FOR 150mm DIA PIPES OR GREATER
FOR DEFINITION OF AREAS OF ADOPTED HIGHWAY SEE LAYOUT DRG	FOR DEFINITION OF AREAS OF VEHICLE ACCESS SEE LAYOUT DRG	
WHERE COVER IS LESS THAN THE ABOVE: FOR UPVC PIPE USE OPTION 1 CLASS Z + REINFORCEMENT AS RECOMMENDED IN BS5955-6:1980 OR OPTION 2 CLASS Q BEDDING + RC SLAB PROTECTION. REFER TO NBS FOR DETAILS.		WHERE COVER IS LESS THAN THE ABOVE: FOR UPVC PIPE USE CLASS Z

NOTE:

REFERENCE SHOULD BE MADE TO PIPE MANUFACTURER/SUPPLIER TO CONFIRM THE LIMITS OF COVER NOTED ABOVE ARE ACCEPTABLE

LIMITS OF COVER TO FLEXIBLE (PVCu) PIPES

BS EN 752 & BUILDING REGS PART H



TYPICAL INTERNAL OUTLET: 01 & 01A
FOR GROUND BEARING SLAB

SCALE 1:20
(REFER TO C-7010 FOR LOCATION)

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TITLE
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SHEET 2

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