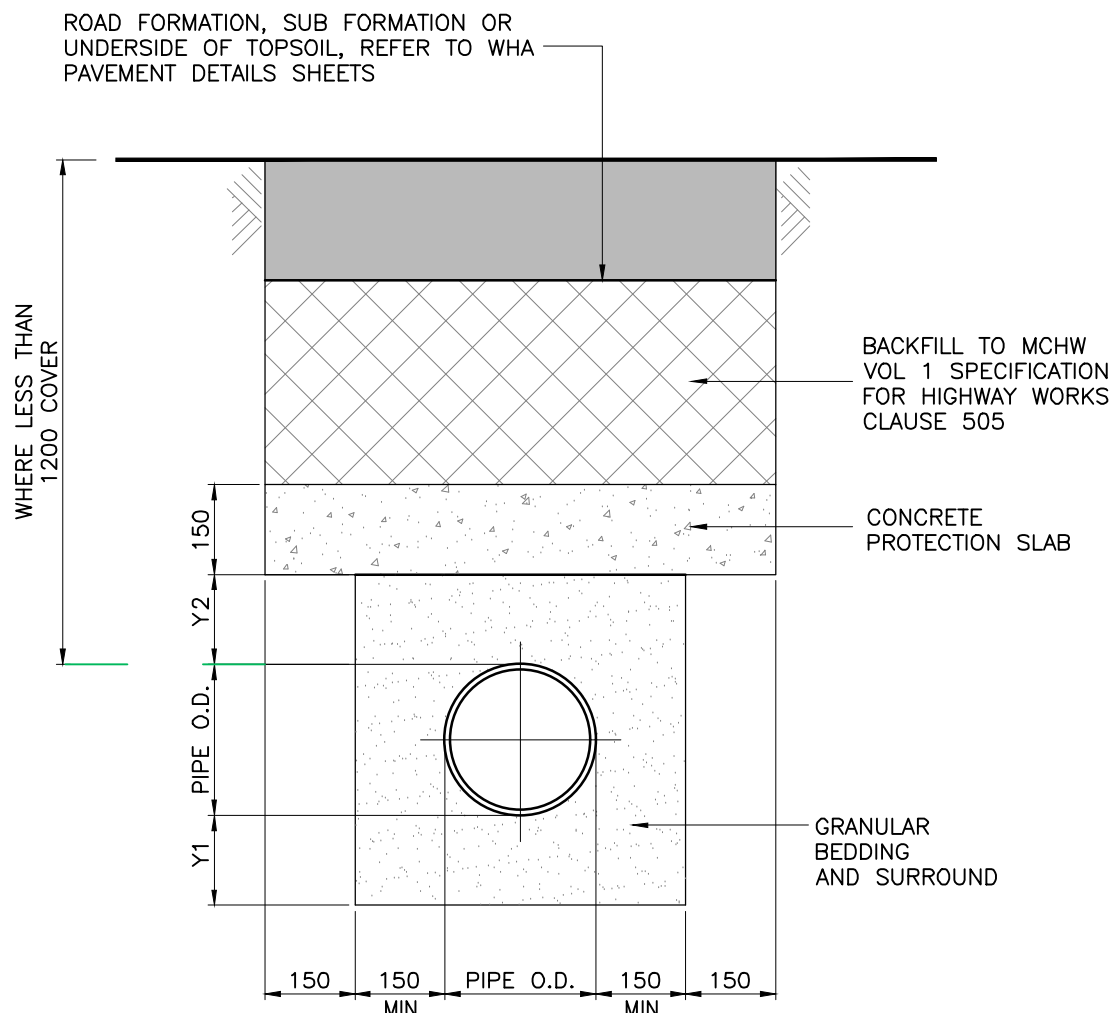
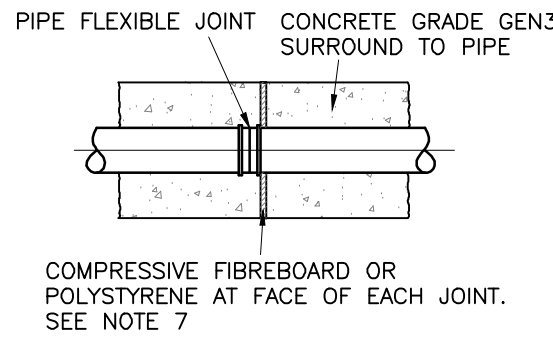
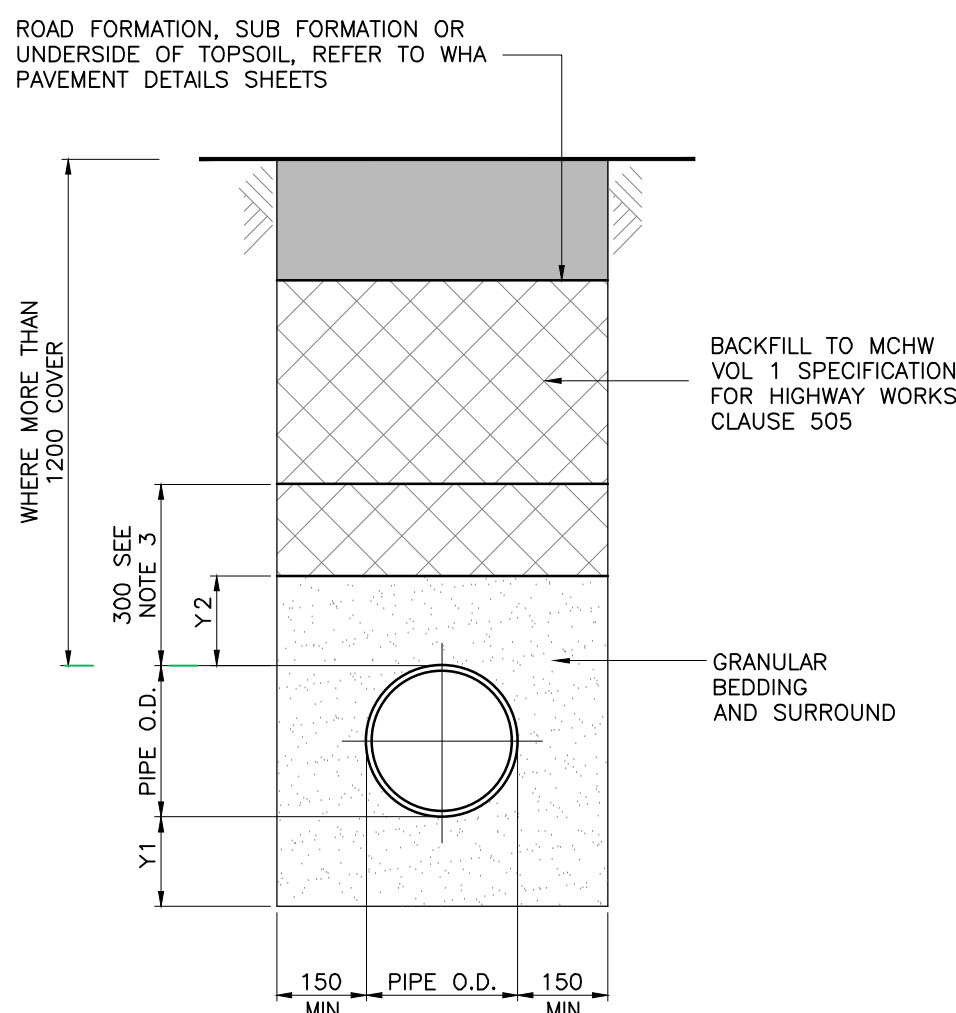




CONCRETE SLAB PROTECTION



LONG SECTION
CLASS Z BEDDING



CLASS S BEDDING
GRANULAR BED AND SURROUND
(BEDDING FACTOR = 2.2)

PIPE DIAMETER	Y minimum		MAXIMUM TRENCH WIDTH	L
	Y1 min.	Y2 min.		
100	150	200	700	18
150	150	200	750	18
200	150	200	800	18
225	150	200	825	18
300	150	200	925	18

NOTES:
1. DIMENSION Y1 SHALL BE USED UNLESS Y2 IS SPECIFIED OR IS DIRECTED BY THE ENGINEER.
2. DIMENSION Y2 SHALL BE USED IN PLACE OF Y1 WHERE THE EXCAVATION IS IN ROCK OR IN MIXED SOILS CONTAINING ROCK BEDS, BOULDERS, LARGE FLINTS OR OTHER IRREGULAR HARD SPOTS.
3. DIMENSION Y2 SHALL BE INCREASE BY 40mm FOR EACH ADDITIONAL 1.0m OF COVER IN EXCESS OF 5.0m.
4. DIMENSION L IS THE WIDTH OF THE COMPRESSIBLE FILLER REQUIRED AT JOINTS IN CONCRETE PROTECTION TO PIPES.

DIMENSIONS FOR PIPE BEDDING

GRANULAR BEDDING NOTES:
1. REFER TO TABLES FOR DIMENSIONS AND BEDDING DETAILS
2. BEDDING BENEATH AND AT THE SIDES OF THE PIPE TO BE WELL COMPACTED
3. THE FIRST 300mm OF FILL ABOVE THE CROWN OF THE PIPE IS TO BE LIGHTLY TAMPED BY HAND. MECHANICAL MAY BE USED ONLY ABOVE THIS LEVEL
4. GEOTEXTILES MAY BE USED WHERE DIRECTED OR APPROVED BY THE ENGINEER TO CONTAIN BEDDING MATERIAL IN CERTAIN SOILS, eg. RUNNING SAND, ETC.
5. IN VERY WET CONDITIONS, WHERE DIRECTED OR APPROVED BY THE ENGINEER A TEMPORARY LAND DRAIN MAY BE LAID WITHIN THE GRANULAR BEDDING
6. CONCRETE CRADLES AND ARCHES MAY BE EXTENDED TO THE SIDES OF THE TRENCH
7. WHERE PIPES WITH FLEXIBLE JOINTS ARE USED THE CONCRETE PROTECTION IS TO BE INTERRUPTED OVER ITS FULL CROSS SECTION AT INTERVALS NOT EXCEEDING 5.0m (OR AS INDICATED BY THE ENGINEER) BY A SHAPED FORMER OF BITUMEN IMPREGNATED COMPRESSIBLE FILLER. THESE INTERRUPTIONS SHALL COINCIDE WITH PIPE JOINTS. SEE DIMENSIONS IN PIPE BEDDING TABLE FOR THICKNESS OF COMPRESSIBLE FILLER
8. CONCRETE TO BE CLASS 2 SULPHATE RESISTING CONCRETE (GRADE GEN3)
9. WHERE FLEXIBLE PIPES ARE USED, CARE MUST BE TAKEN TO PREVENT THE PIPES FROM FLOATING

PIPE DIAMETER	CLASS OF BEDDING	IMPORTED GRANULAR MATERIAL (NOTE 1)
100	F S B	10mm nominal size
OVER 100 to 150	F S B	10 or 14mm nom. single size or 14 to 5mm graded
OVER 150 to 150	F S B	10,14,20mm nom. single size or 14 to 5mm graded or 20 to 5mm graded
OVER 500 (note 2)	F S B	10,14,20mm nom. single size crushed rock or 14 to 5mm graded or 20 to 5mm graded or 40 to 5mm graded

NOTES:
1. IMPORTED GRANULAR MATERIALS TO INCLUDE AGGREGATES TO BS 882, AIR COOLED BLAST FURNACE SLAG TO BS 1047 AND SINTERED PULVERIZED FUEL ASH TO BS 3797
2. ANGULAR MATERIALS SHOULD BE CHOSEN TO ENSURE SUFFICIENT SUPPORT IS PROVIDED TO HEAVIER PIPES
3. CLASS 'S' BEDDING SHALL BE USED WITH ALL FLEXIBLE PIPES

GRANULAR BEDDING & SIDEFILL
MATERIALS FOR RIGID + FLEXIBLE PIPES

GENERAL DRAINAGE NOTES:

8. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND WHA DRAWINGS AND SPECIFICATIONS.
9. THIS DRAINAGE SCHEME HAS BEEN BASED ON INFORMATION RECEIVED UP TO THE DATE OF DRAWING ISSUE. THE CONTRACTOR IS TO SATISFY HIMSELF OF SIZES, DEPTHS AND LOCATIONS OF ALL EXISTING SERVICES ON SITE BEFORE COMMENCING OF ANY WORKS AND FINAL DESIGN. ANY DISCREPANCIES, ERRORS OR OMISSIONS ARE TO BE CLARIFIED WITH THE RELEVANT ENGINEER AT THE EARLIEST OPPORTUNITY.
10. FOUL AND SURFACE WATER CONNECTIONS INTO THE EXISTING PUBLIC SEWERS IS ASSUMED ONLY. FINAL CONNECTIONS LEVELS AND DETAILS TO BE AGREED WITH THE APPROPRIATE WATER AUTHORITY AND CONTRACTOR.
11. MANHOLE COVERS AND FRAMES TO BS EN 124 SERVICE YARDS AND HIGHWAYS (CLASS D400), CAR PARKING AREAS (CLASS B125), SOFT LANDSCAPING AND FOOTWAYS (CLASS A15).
INTERNAL MANHOLES TO HAVE DOUBLE SEALED, SCREWED DOWN COVERS AND FRAMES AS HOWE GREEN OR SIMILAR APPROVED.

FOR FURTHER DETAILS REFER TO MANHOLE AND PIPELINE SCHEDULES AND DETAIL DRAWINGS

12. ADAPTABLE DRAINAGE TO HAVE PIPE BEDDING TYPE S- UNLESS NOTED OTHERWISE. SEE SCHEDULE LONG SECTIONS.
13. INTERNAL PIPE RUNS UNDER BUILDINGS, ETC. TO HAVE 100mm MINIMUM GRANULAR BED AND SURROUND WITH SELECTED BACKFILL. WHERE PRIVATE PIPE IS WITHIN 300 OF THE UNDERSIDE OF SLAB 150 MINIMUM CONCRETE SURROUND TO BE PROVIDED
14. ALL RAINWATER PIPES TO HAVE ACCESSIBLE RODDING POINTS OR INCORPORATED GULLIES WHERE REQUIRED.
15. ALL ROAD GULLIES TO BE TRAPPED & HAVE 150mm DIA. OUTLETS
16. PRIVATE DRAINAGE ONLY - WHERE COVER TO PIPES IS LESS THAN 900mm IN ROADS AND 600mm ELSEWHERE PROVIDE CONCRETE SURROUND OR PROTECTION SLAB UNLESS NOTED OTHERWISE. ALL TO BE IN ACCORDANCE WITH MANUFACTURES DEPTH/LOADING REQUIREMENTS.
17. CLAY PIPEWORK UP TO & INCLUDING 300mm DIA. TO BE CLAY (EXTRA STRENGTH) TO BS EN 285 ON CLASS F BEDDING ABOVE 300mm DIA. PIPES TO BE CONCRETE (CLASS H) TO BS 5911 ON CLASS B BEDDING UNLESS NOTED OTHERWISE.
18. FOUL DRAINAGE TO BE AS 'WAVIN OSMIA SOLID WALL / ULTRARIB' TO BS 4660 & EN1401 ON CLASS S BEDDING OR SIMILAR APPROVED. ALL INSTALLED TO MANUFACTURES RECOMMENDATIONS. UNLESS NOTED OTHERWISE.
19. SURFACE WATER DRAINAGE PIPEWORK TO BE AS 'WAVIN OSMIA TWIN WALL SYSTEM' TO BS 4660 & EN1401 ON CLASS S BEDDING OR SIMILAR APPROVED. ALL INSTALLED TO MANUFACTURES RECOMMENDATIONS. UNLESS NOTED OTHERWISE.
20. DRAINAGE CHANNELS TO BE AS 'ACO' OR SIMILAR APPROVED AS FOLLOWS:
SERVICE YARD AREAS : M150D CHANNELS WITH D.I. GRATING (LOAD CLASS D400) UNLESS NOTED OTHERWISE.
ALL OUTLETS TO HAVE 150 DIA. UNIVERSAL TRAPPED GULLYS OR SUMP UNITS WITH TRASH BUCKETS TO SUIT UNLESS NOTED OTHERWISE.
THE CONTRACTOR TO LIAISE WITH CHANNEL MANUFACTURER (ACO) WITH REGARD TO DEPTH, DETAILS AND PART COMPONENT ARRANGEMENT, ETC.
21. ARCHITECT TO ADVISE ON FINAL POSITIONS OF RAINWATER PIPES AND FOULWATER OUTLETS IN GROUND FLOOR SLAB.
22. EXISTING SEWERS WHICH ARE OR WILL BE DISUSED ARE TO BE TRACED, AND ANY DRAIN WHICH SHOWS SIGNS OF FLOW SHOULD BE INVESTIGATED TO ESTABLISH ITS ORIGIN AND AUTHENTICITY, AND REPORTED TO THE ENGINEER.
23. NO SEWER SHALL BE ABANDONED UNTIL THE CONTRACTOR HAS CONFIRMED THAT THERE ARE NO CONNECTIONS REMAINING.
24. UPON COMPLETION OF THE WORKS A FULL SET OF TEST RECORDS FOR WATER TIGHTNESS AND INTEGRITY OF THE WHOLE UNDERGROUND DRAINAGE SYSTEM SHALL BE ISSUED TO THE EMPLOYERS AGENT.
25. FIVE DAYS PRIOR TO PRACTICAL COMPLETION THE CONTRACTOR SHALL ALSO INCLUDE FOR ARRANGING AND PROVIDING A FULL CLOSED CIRCUIT TELEVISION (CCTV) VIDEO RECORD ON CD SHOWING THE CONDITION OF THE ENTIRE BELOW GROUND DRAINAGE SYSTEM AS INSTALLED. A COPY OF THE CD SHALL BE HANDED TO THE EMPLOYERS AGENT. THIS SHALL BE PRESENTED AS A SEPARATE COST ITEM. ALL TO BE AGREED WITH THE CLIENT.

NOTES

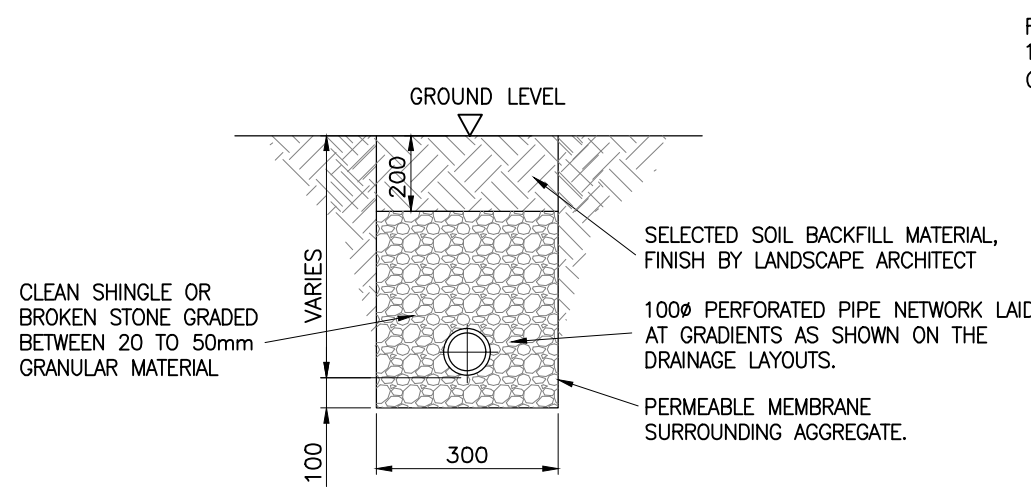
- DO NOT SCALE THIS DRAWING ON PRINT OR ELECTRONICALLY. WORK FROM FIGURED DIMENSIONS ONLY.
- No deviation from the details shown on this drawing is allowed without IESIS's prior permission in writing.
- Read this drawing with all Architects, Service Engineers and IESIS's relevant details and drawings. NB: Setting-out dimensions as per the Architect's drawings take precedence.
- All work is to be in accordance with the relevant specifications issued by IESIS, British Standard Codes of Practice, Statutory requirements and the Contract Documents.
- DRAWING STATUS
P - PRELIMINARY - Evolving drawings for approvals, Tenders, Billings, etc.
C - CONSTRUCTION - Fully developed drawings issued under instruction for construction.

ONLY STATUS C DRAWINGS TO BE USED FOR CONSTRUCTION.

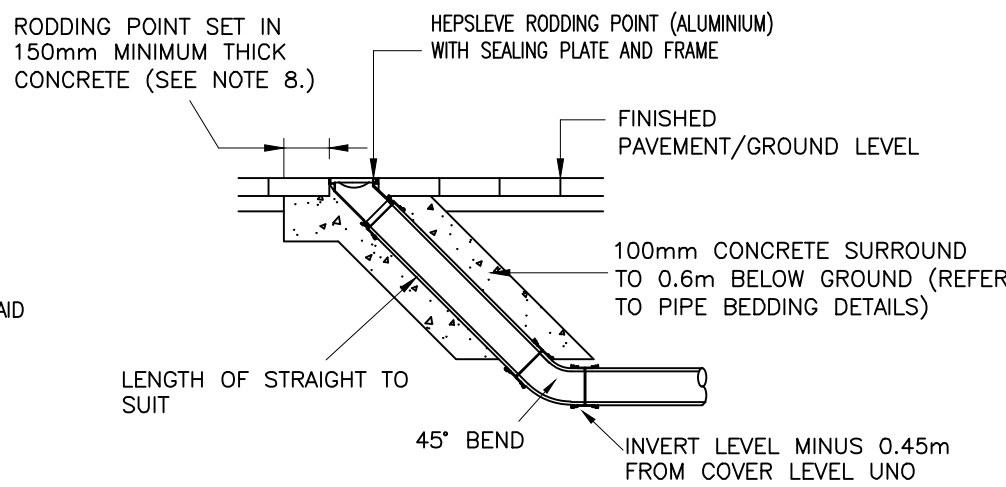
SUITABILITY CODE
WORK IN PROGRESS:
S0 - Work in progress
SHARED (NON-CONTRACTUAL):
S1 - For coordination, **S2** - For information, **S3** - For internal review and comment, **S4** - For construction approval
DOCUMENTATION (FOR CONTRACTOR PURPOSES):
D1 - For costing, **D2** - For Tender, **D3** - For contractor design, **D4** - For manufacture / procurement
CONSTRUCTION:
A - For construction, **B** - For construction but with comments (i.e. areas in abeyance), **C** - Comprehensive revisions required.

SUBJECT TO TECHNICAL APPROVAL

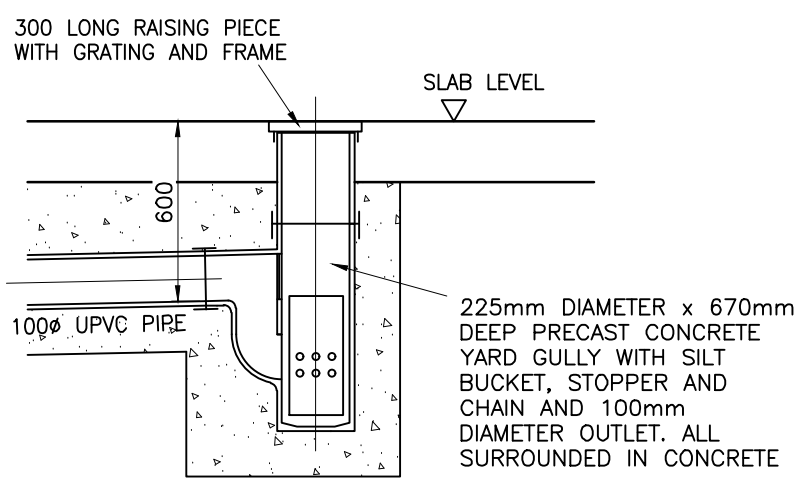
DESIGNED TO CURRENT VERSION OF WATER UK'S
DESIGN AND CONSTRUCTION GUIDANCE



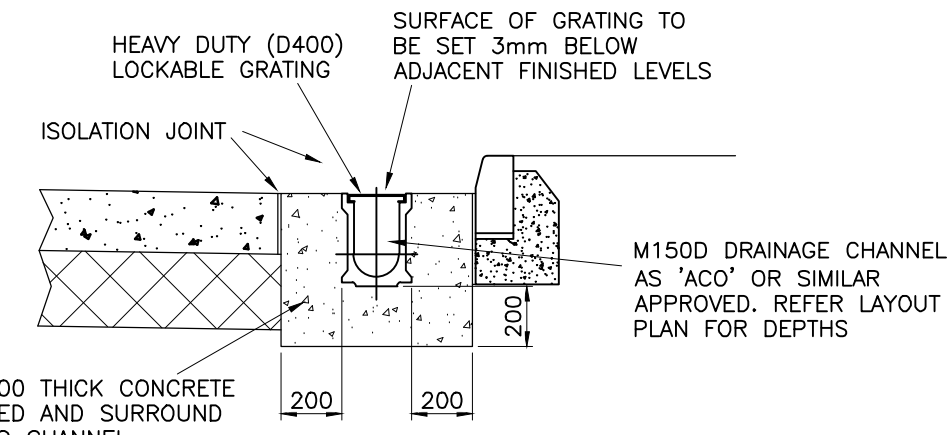
TYPICAL DRAINAGE FILTER DRAIN TRENCH DETAIL
SCALE 1:25



TYPICAL RODDING EYE
ACCESS POINT
SCALE 1:25



TYPICAL YARD GULLY DETAIL
SCALE 1:25



TYPICAL SECTION THROUGH
CHANNEL DRAIN
SCALE 1:25

Status	Rev	Description	Date	By
P2		LAND DRAIN DETAIL ADDED	06.10.25	KW
P1		ISSUED FOR APPROVAL	08.09.25	KW

IESISCIVILS

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Job Title	LAND AT WINNERSH FARM - PHASE 1
Client	TAYLOR WIMPEY WEST LONDON

DRAINAGE DETAILS
SHEET 1

drawn	date	scale @ A1	C1 checked	IESIS Project No.
KW	SEPT'25	NTS	-	SE2326

Drwg No.	Suitability	Status/Revision
22586-18-01	D2	P2