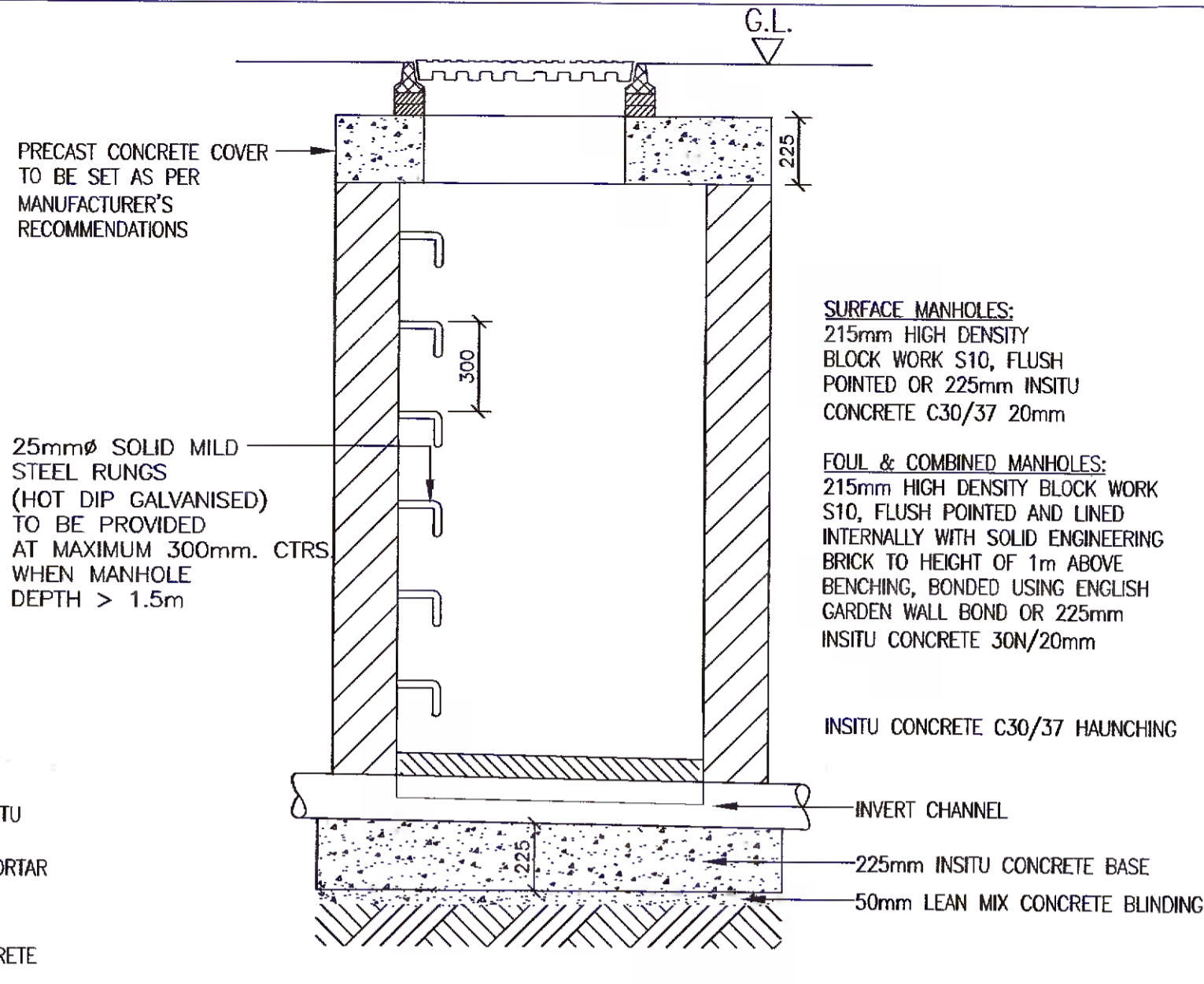
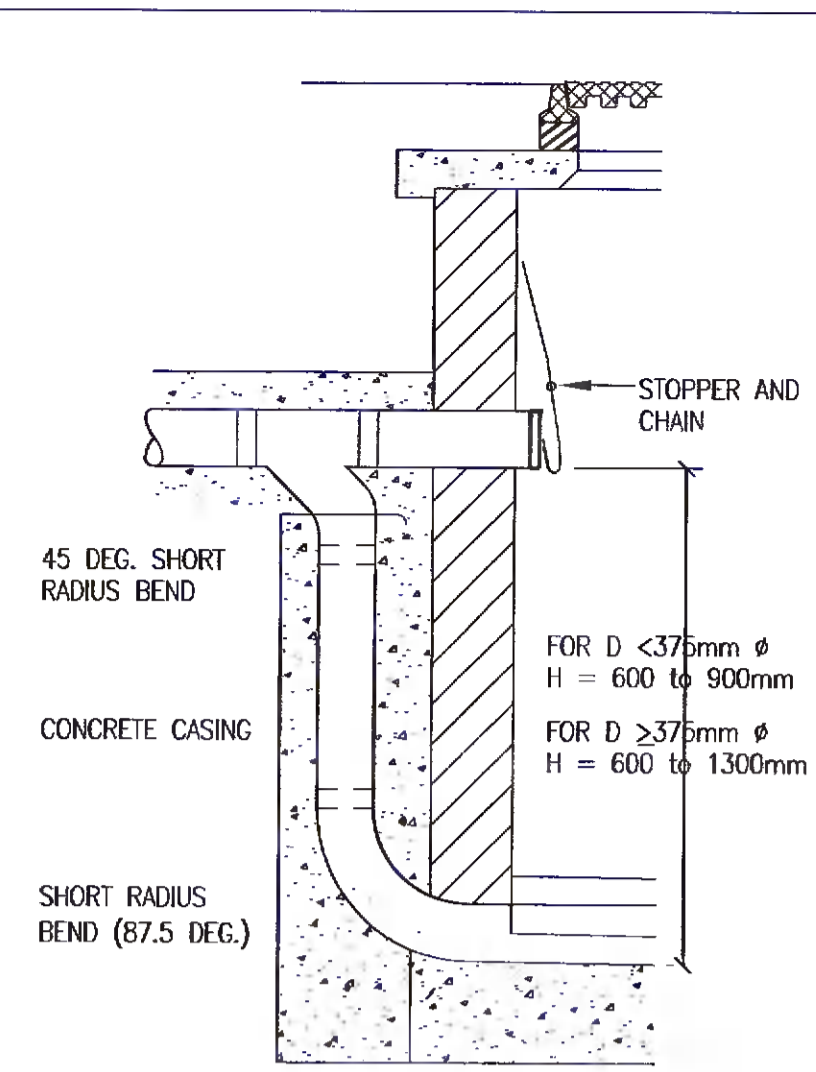


**PRECAST CONCRETE
RING MANHOLE
STD-WW-10**

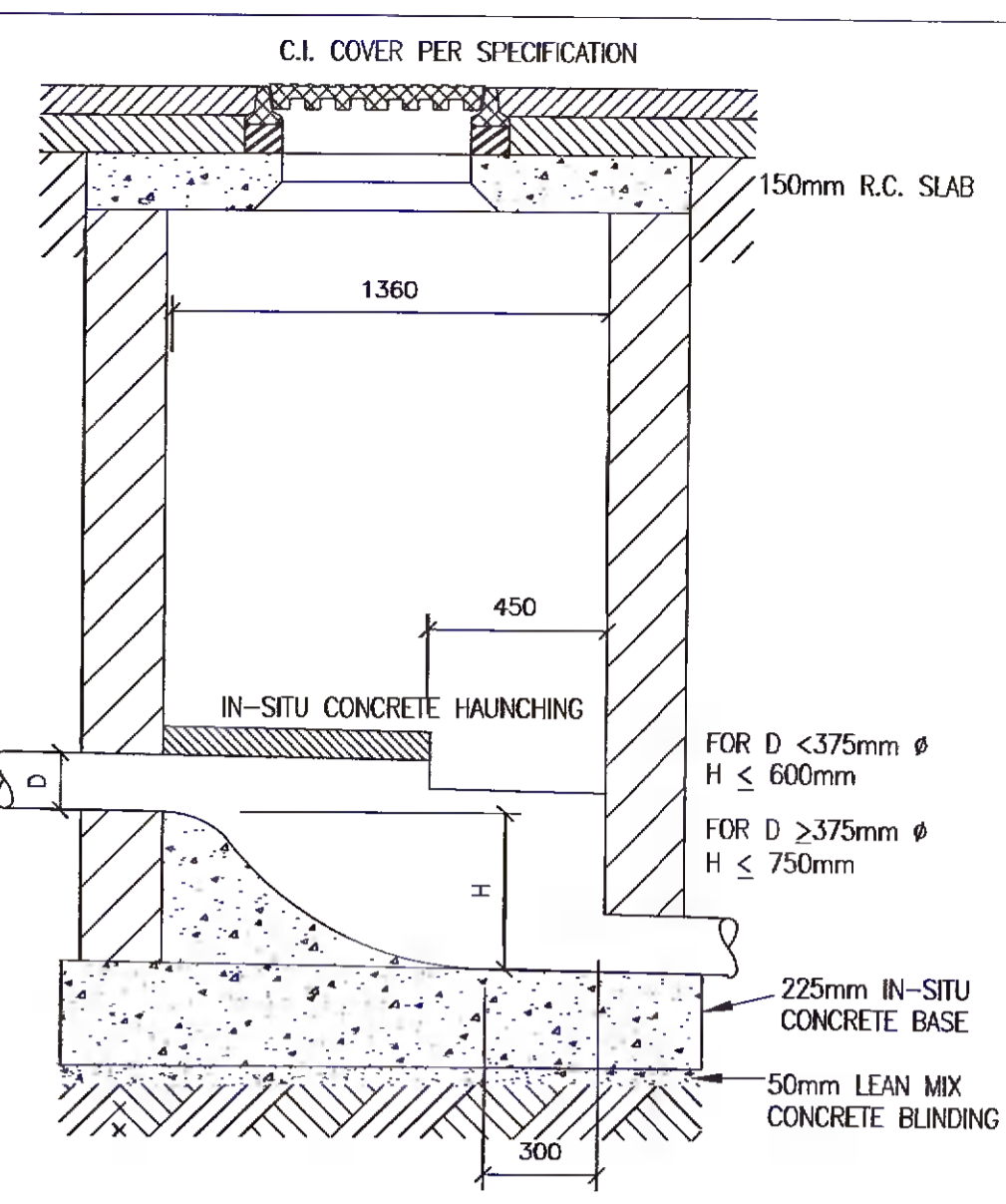


**MASONRY/IN-SITU CONCRETE
MANHOLE: SECTION**
R.C. AND BLOCKWORK MANHOLE DIMENSIONS

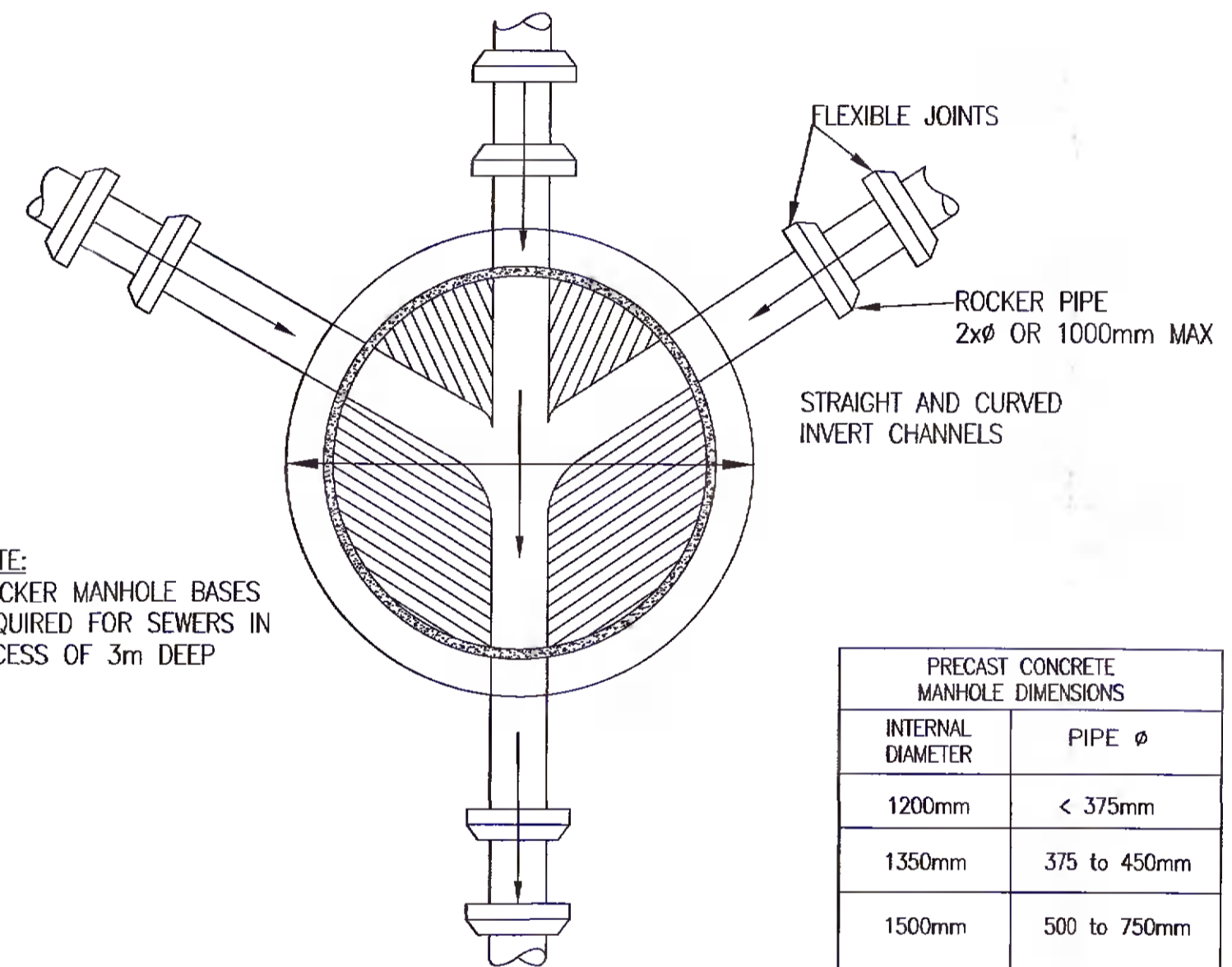
DEPTH (m)	LENGTH (mm)	WIDTH (mm)	LARGEST PIPE Ø (mm)
< 1.0	1200	1200	< 375
> 1.0 < 3.0	1350	1350	375 - 450
> 3.0 < 6.0	1500	1500	225 - 450



BACKDROP DETAIL

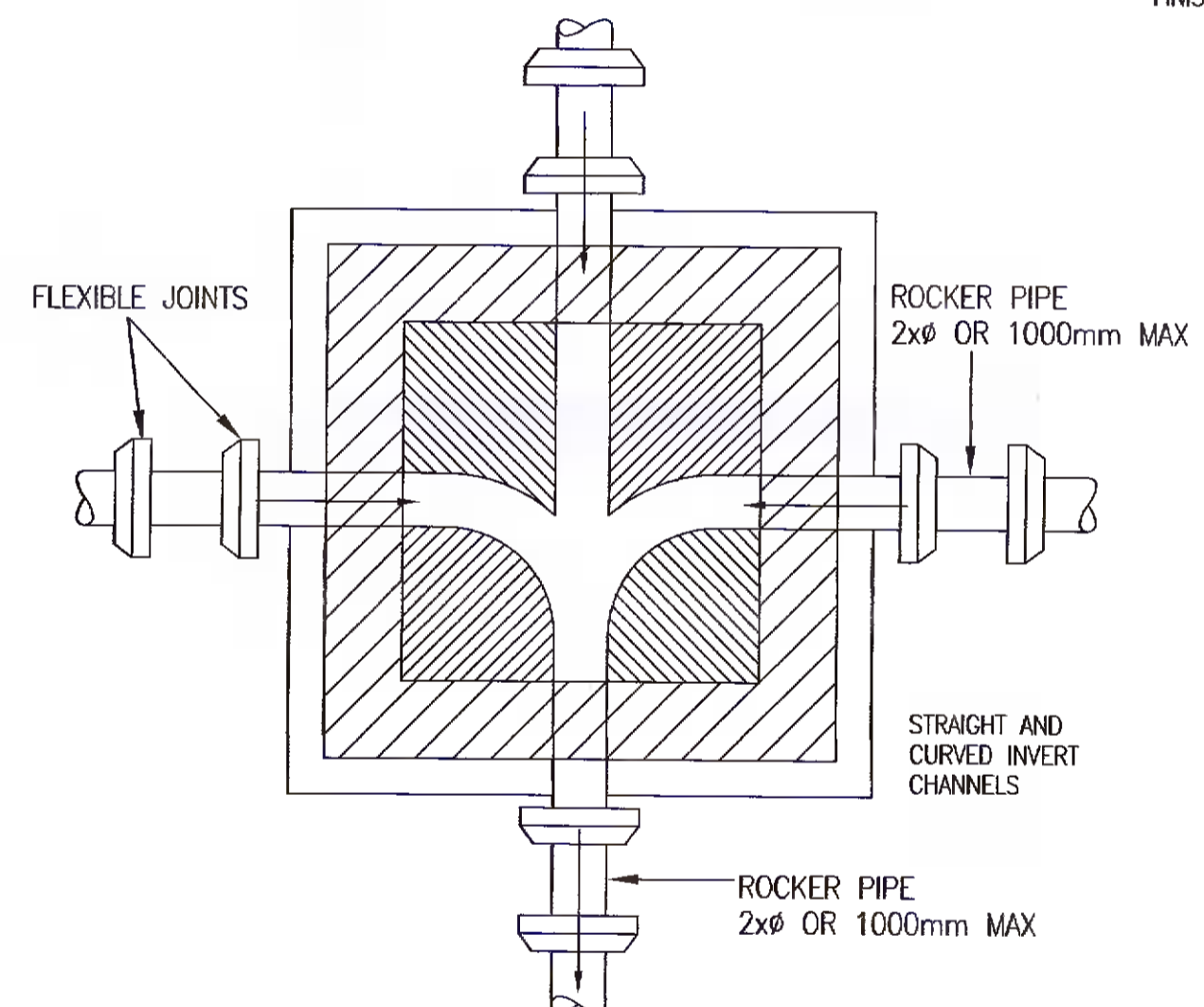


**CONCRETE MASONRY RAMP
MANHOLE: SECTION**

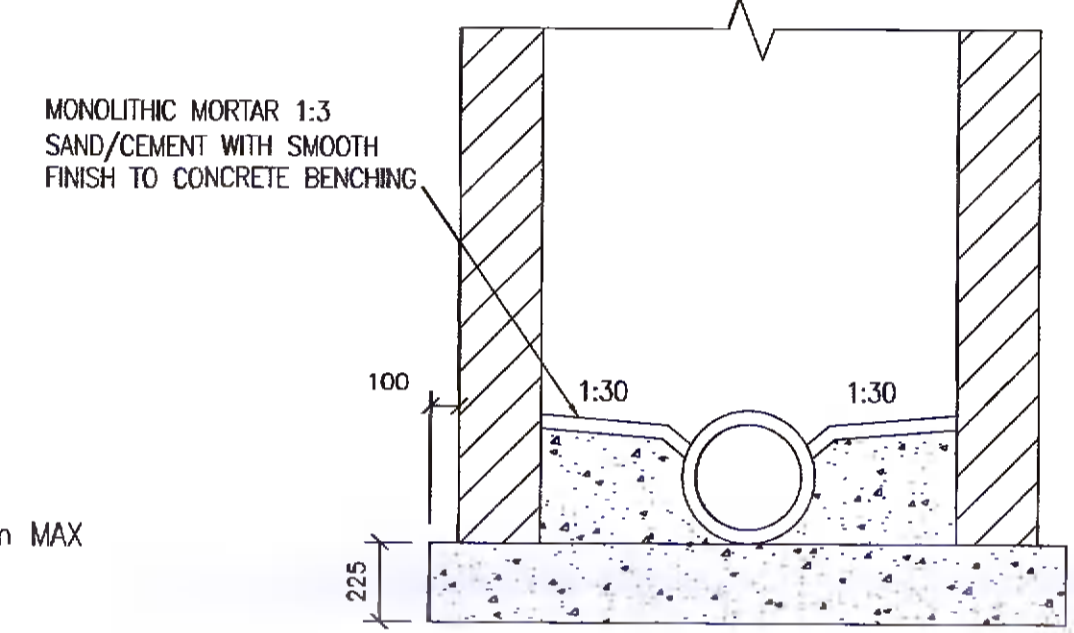


**PRECAST CONCRETE
RING MANHOLE: PLAN**

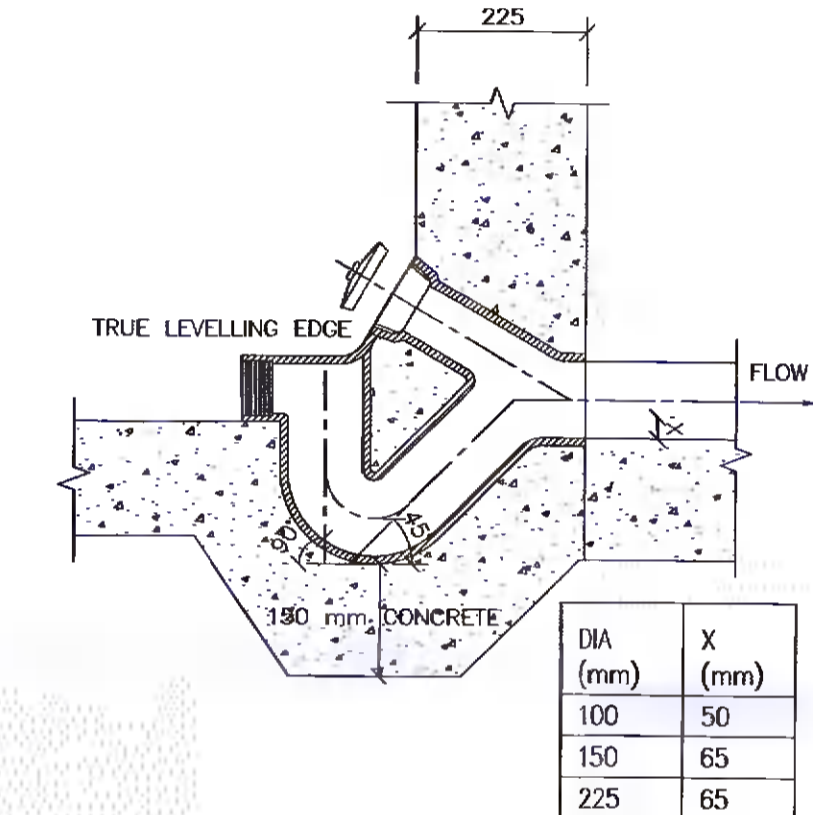
PRECAST CONCRETE MANHOLE DIMENSIONS	
INTERNAL DIAMETER	PIPE Ø
1200mm	< 375mm
1350mm	375 to 450mm
1500mm	500 to 750mm



**MASONRY/IN-SITU CONCRETE:
MANHOLE: PLAN**



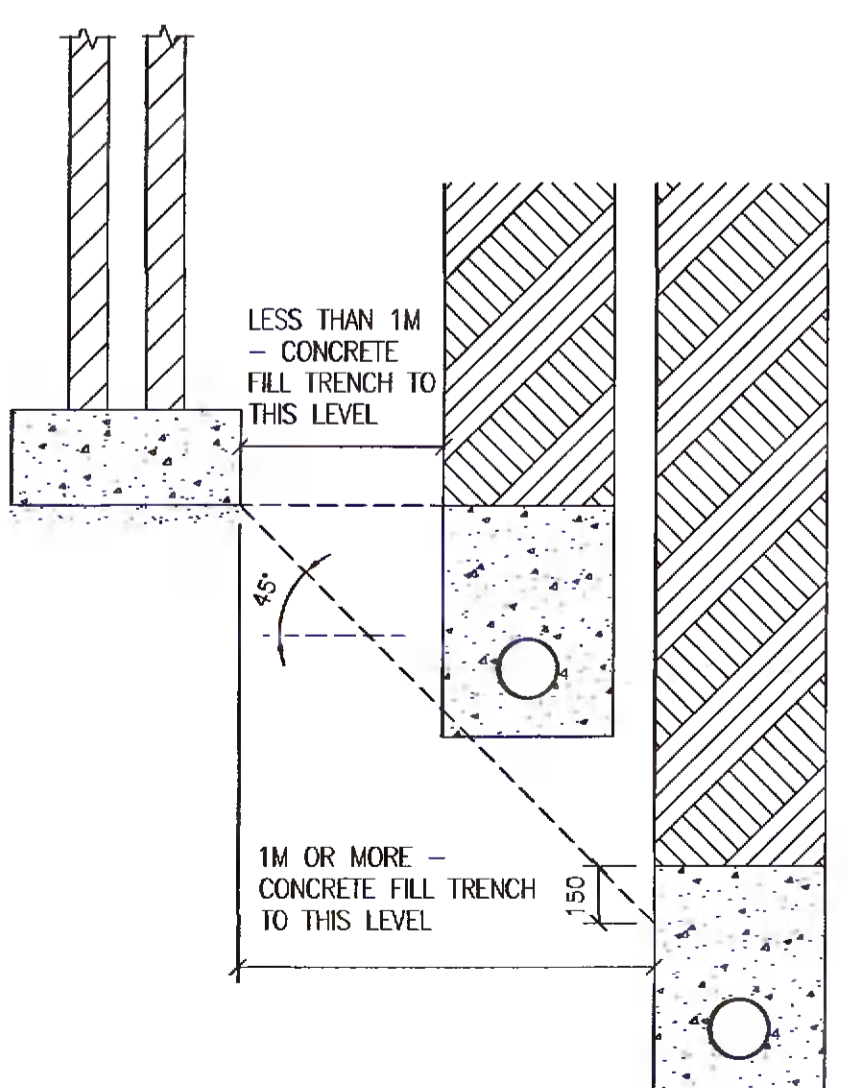
BENCHING DETAIL



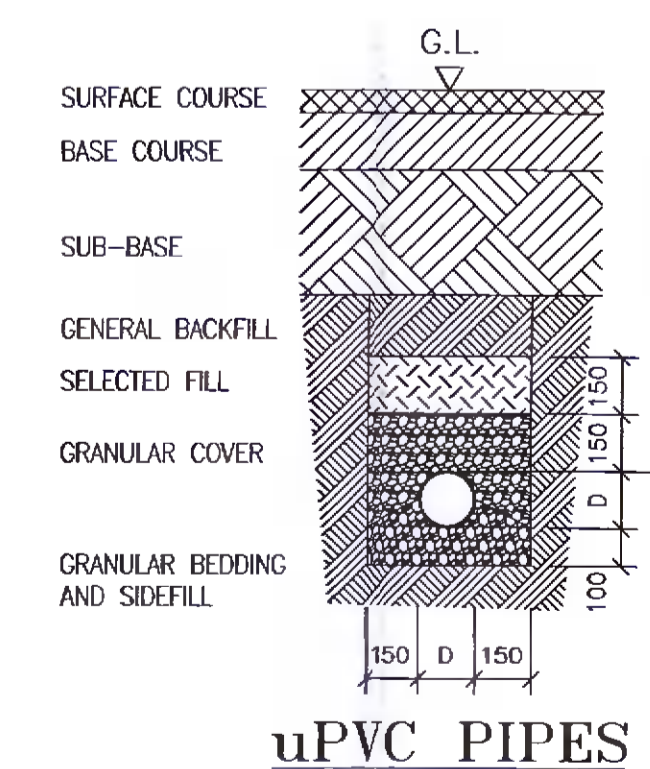
**INTERCEPTOR TRAP
IN MANHOLE
SCALE 1:10**

MANHOLE COVERS NOTE

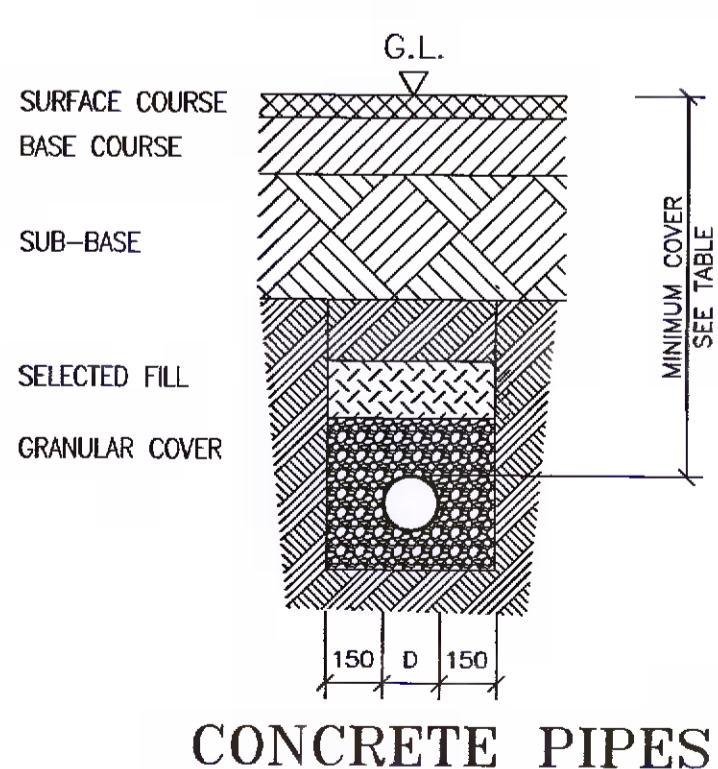
HINGED DOUBLE LEAF CLASS D400 OR E600 MANHOLE COVER AND FRAME TO IS/EN 124. 150MM DEEP FRAME FOR ROADS AND 100MM DEEP FOR FOOTPATHS AND GREEN AREAS. NON-ROCK DESIGN, CLOSED KEYWAYS, AND MANUFACTURED FROM SPHEROIDAL GRAPHITE CAST IRON (DUCTILE CAST IRON), 675 x 675mm (675 DIA) CLEAR OPENING, COVER AND FRAME COATED IN BITUMEN OR OTHER APPROVED MATERIAL. COVER TO HAVE A MINIMUM MASS OF 140KG/m². FRAME BEARING AREA SHALL BE 80,000mm² MIN. FRAMES SHALL BE DESIGNED TO PREVENT COVERS FALLING INTO MANHOLE. FRAMES TO BE BEDDED ON APPROVED MORTAR TO MANUFACTURERS INSTRUCTIONS.



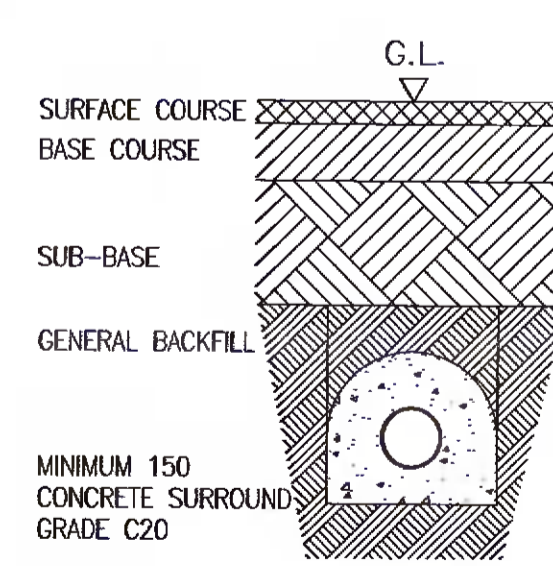
**DRAINAGE ADJACENT
TO FOUNDATIONS**



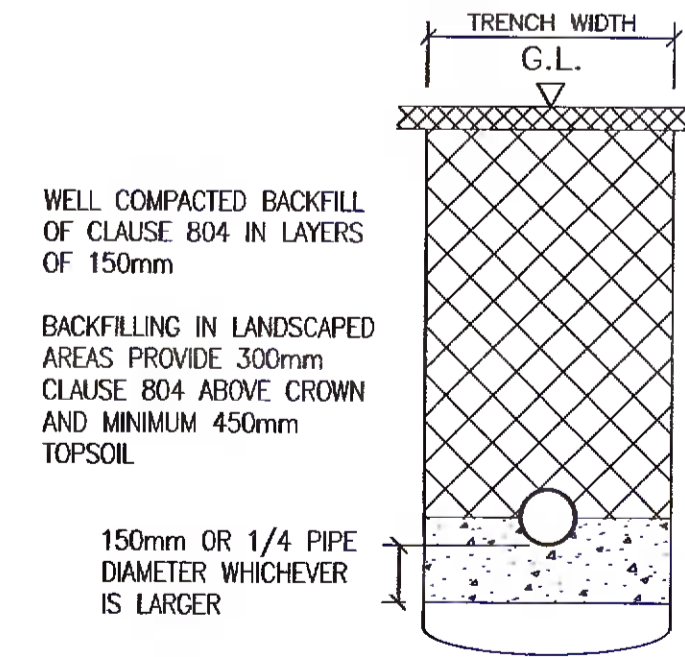
GARDENS AND PATHWAYS WITHOUT POSSIBILITY OF VEHICULAR ACCESS	600mm
OPEN SPACES NOT ADJACENT CARRIAGEWAYS	900mm
ROADS AND DRIVEWAYS	1200mm



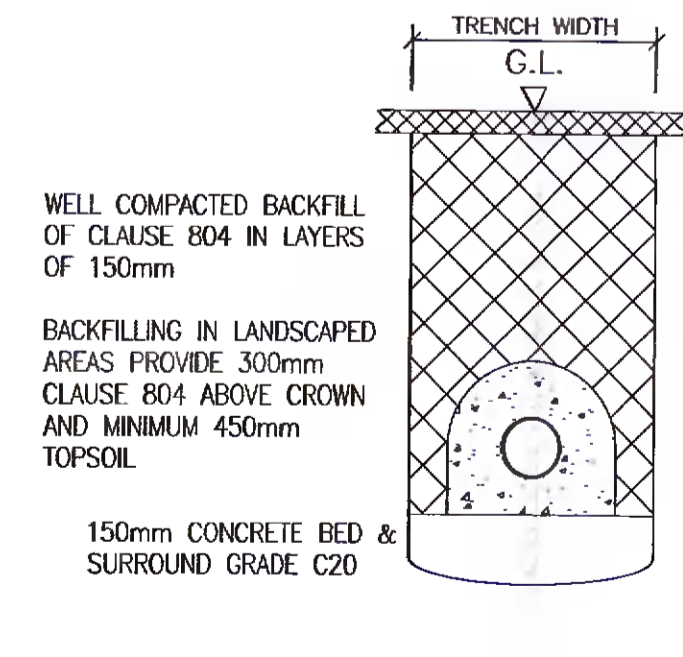
CONCRETE PIPES



**CONCRETE
ENCASEMENT DETAIL**



**CONCRETE
ENCASEMENT DETAIL**



**IF DEPTH OF COVER
> 1.2M**

DRAIN BEDDING AND BACKFILLING DETAILS

NOTES: IF THE MINIMUM COVER AS SET OUT IN THE TABLE CANNOT BE ACHIEVED PROVIDE CONCRETE ENCASEMENT TO DRAIN.

SELECTED BACKFILL SHALL BE FILL MATERIAL, FREE FROM STONES LARGER THAN 40mm, BUILDER'S RUBBISH, VEGETABLE MATTER, TIMBER, FROZEN MATERIAL AND LUMPS OF CLAY OVER 100mm.

GRANULAR MATERIAL SHALL COMPLY WITH LS EN 1610 ANNEX B TABLE B15 AND SHOULD BE SINGLE SIZED MATERIAL OR GRADED MATERIAL FROM 5-10mm FOR 100mm PIPES, 5-14mm FOR 150mm PIPES AND 5-20mm FOR 150-600mm PIPES. COMPACTION FRACTION OF 0.2 OR LESS.

MAIN PIPELINE BEDDING

- NOTES:**
- FOR SETTING OUT REFER TO ARCHITECT'S DRAWINGS.
 - ALL PROPOSED LEVELS SHOWN TO BE CHECKED AND VERIFIED WITH ARCHITECT'S DRAWINGS PRIOR TO CONSTRUCTION.
 - EXISTING LEVELS AS SHOWN ARE INDICATIVE ONLY AND MUST BE CHECKED AND VERIFIED ON SITE PRIOR TO COMMENCEMENT.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, ENGINEER'S AND SUB-CONTRACTOR'S DRAWINGS AND SPECIFICATIONS.
 - DO NOT SCALE THIS DRAWING USE FIGURED DIMENSIONS ONLY BUT ALL DIMENSIONS MUST BE CHECKED AND CONFIRMED ON SITE BY CONTRACTOR.
 - DRAINAGE SERVICES WERE DESIGNED AND SHALL BE INSTALLED IN ACCORDANCE WITH THE "REGIONAL POLICIES OF THE GREATER DUBLIN STRATEGIC DRAINAGE STUDY" VOLUME 2 - NEW DEVELOPMENTS, THE "RECOMMENDATIONS FOR SITE DEVELOPMENT WORKS FOR HOUSING AREAS" - DOELG 1998, AND IW "WASTEWATER INFRASTRUCTURE STANDARD DETAILS".
 - MINIMUM SIZE OF GRAVITY DRAINAGE PIPES TAKEN IN CHARGE BY COUNCIL 225mm
 - MINIMUM COVER TO MAIN DRAINS 1.2m OTHERWISE PIPES REQUIRED TO BE ENCASED IN CONCRETE.
 - SEWERS AND DRAINS TO BE SPIGOT AND SOCKET CONCRETE. REBATED CONCRETE PIPES AND FITTINGS SUITABLE FOR SURFACE WATER SEWERS AND DRAINS ONLY
 - PVC PIPES ARE NOT TO BE USED IN THE CONSTRUCTION OF MAIN PIPELINES, AND CONNECTIONS FROM GULLIES OR PRIVATE DRAINS TO THE PUBLIC SEWER
 - BUILDINGS SHOULD BE LOCATED A MINIMUM OF 3m FROM SEWER WHERE POSSIBLE.
 - CONTRACTOR TO CONTACT THE COUNCIL DRAINAGE ENGINEER AT LEAST 7 DAYS IN ADVANCE OF THE COMMENCEMENT OF ANY DEVELOPMENT WORKS
 - PRIVATE DRAINS TO BE DISCONNECTED FROM PUBLIC SEWERS BY THE INSTALLATION OF AN INTERCEPTING TRAP ON THE FRESH AIR INLET OF THE FINAL MANHOLE ON THE FOUL DRAIN IN THE PRIVATE PROPERTY WITHIN AND CLOSE TO THE SITE BOUNDARY BEFORE TO THE CONNECTION TO THE PUBLIC SEWER
 - ALL NEW BASEMENTS TO PUMP BASEMENT DRAINAGE TO GROUND LEVEL TO DISCHARGE BY GRAVITY AND ARE SUBJECT TO INSPECTION BY THE COUNCIL'S DRAINAGE DEPARTMENT UNLESS PRIOR WRITTEN AGREEMENT IS SOUGHT.
 - NO DWELLING MAY BE OCCUPIED BEFORE IT'S DRAINAGE IS CONNECTED TO THE PUBLIC SEWERAGE SYSTEM IN AN APPROVED MANNER
 - ALL WORKS TO BE CARRIED OUT WITH DUE REGARD FOR ALL RELEVANT HEALTH AND SAFETY LEGISLATION AND BEST PRACTICE
 - SELECTED BACKFILL SHALL BE FREE FROM STONES LARGER THAN 40mm, LUMPS OF CLAY OVER 100mm, TIMBER, FROZEN MATERIAL AND VEGETABLE MATTER
 - GRANULAR MATERIAL SHALL COMPLY WITH LS EN 1610 ANNEX B TABLE B15 AND SHOULD BE SINGLE SIZED MATERIAL OR GRADED MATERIAL FROM 5-10mm FOR 100mm PIPES, 5-14mm FOR 150mm PIPES AND 5-20mm FOR 150-600mm PIPES. COMPACTION FRACTION OF 0.2 OR LESS.
 - STRUCTURAL CONCRETE SHALL BE GRADE C30/37 TO LS EN 206.
 - BLINDING CONCRETE SHALL BE GRADE C12/15 TO LS EN 206.
 - REINFORCING BARS SHALL BE HIGH YIELD TYPE TWO DEFORMED BARS TO B.S. 4449.
 - REINFORCING MESH SHALL BE HIGH YIELD REINFORCING FABRIC TO B.S. 4483.
 - COVER TO REINFORCEMENT UNL.O. TO BE 50mm BELOW GROUND LEVEL, 75mm AGAINST EARTH FACES AND 30mm ELSEWHERE.
 - CONCRETE FINISHES - UNLESS NOTED OTHERWISE, ALL EXPOSED FAIR-FACED CONCRETE TO ACHIEVE TYPE B FINISH TO LS EN 1992. ALL INTERNAL AND HIDDEN CONCRETE TO BE TYPE A FINISH
 - PLASTICISERS OR OTHER ADDITIVES SHALL NOT BE USED WITH CONCRETE OR MORTAR WITHOUT THE PRIOR WRITTEN PERMISSION OF THE ENGINEER.
 - STRUCTURAL STEEL TO BE GRADE 43 TO B.S.E.N. 10025, B.S. 7668, B.S.E.N. 10029, AND B.S.E.N. 10210.
 - CONCRETE MASONRY UNITS SHALL BE CONCRETE BLOCKS MANUFACTURED IN ACCORDANCE WITH LS EN 771-3, MINIMUM STRENGTH 5N UNL.O.
 - MASONRY SHALL BE ERECTED IN ACCORDANCE WITH LS EN 1996-1-1.
 - MORTAR SHALL BE 1:1.5 CEMENT/LIME/SAND. MORTAR DESIGNATION # TO LS EN 1996-1-1 UNL.O.
 - TEMPORARY WORKS SHALL BE THE RESPONSIBILITY OF THE MAIN CONTRACTOR. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A WRITTEN METHOD STATEMENT TOGETHER WITH SUCH DRAWINGS AND SKETCHES AS ARE NECESSARY TO ILLUSTRATE THE METHOD OF WORKING PROPOSED FOR ALL DEMOLITION AND/OR ALTERATIONS TO EXISTING STRUCTURES AND FOR ANY WORKS BELOW GROUND LEVEL. NO SUCH WORK SHALL BE STARTED UNTIL THE PROPOSED METHOD HAS BEEN REVIEWED BY THE ENGINEER. ANY APPROVAL/COMMENTS FROM THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF ANY STATUTORY, COMMON LAW OR CONTRACTUAL DUTIES.
 - THE POSITION OF EXISTING SERVICES INsofar AS THEY ARE KNOWN TO THE ENGINEER AND AS SHOWN ON THIS DRAWING MAY NOT BE ACCURATE AND MERELY INDICATE THEIR PRESENCE IN THIS WORKING AREA. SERVICES OTHER THAN THOSE SHOWN MAY ALSO EXIST. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LOCATING THE EXACT POSITION OF THESE AND ALL OTHER SERVICES ON THE SITE AND IN THE PUBLIC ROADS ADJACENT TO THE SITE, AND SHOULD ALSO CONTACT THE RESPECTIVE AUTHORITIES FOR THE MOST UP-TO-DATE INFORMATION BEFORE COMMENCING THE WORKS.
 - FOR INTERNAL SOIL AND WASTE PIPES ABOVE GROUND LEVEL REFER TO M & E DWGS.

ALL CONSTRUCTION WORK TO COMPLY WITH GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND IW "WASTEWATER INFRASTRUCTURE STANDARD DETAILS"

REV.	DATE	AMENDMENT	DRAWN BY	CHK'D BY
D				
C				
B				
A				

FOR PLANNING

THE MCKENNA PEARCE
PRACTICE
CONSULTING STRUCTURAL + CIVIL ENGINEERS
UNIT 30, SPRUCE AVENUE, STILLORGAN INDUSTRIAL PARK, STILLORGAN, CO. DUBLIN TEL: 01 2897260
Email: mck@mckennapearce.com Web: www.mckennapearce.com

DRAWING TITLE		
SITE DRAINAGE DETAILS		
PROJECT No.	DRAWING No.	REVISION
17097	C02	
PROJECT TITLE	ARCHITECT	
LUCAN SHOPPING CENTRE EXTENSION	JENNINGS DESIGN STUDIO	
DATE	DRAWN BY	COMPUTER REF.
02-06-21	JJ	
		SCALE
		NTS
		SIZE
		A1

DATE AS PER ISSUE DATE. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR STORED IN ANY RETRIEVAL SYSTEM OF ANY NATURE WITHOUT THE WRITTEN PERMISSION OF THE CONSULTING ENGINEER AS COPYRIGHT HOLDER EXCEPT AS AGREED FOR USE ON THE PROJECT FOR WHICH THE DRAWING WAS ORIGINALLY ISSUED.