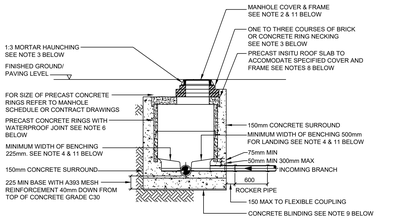
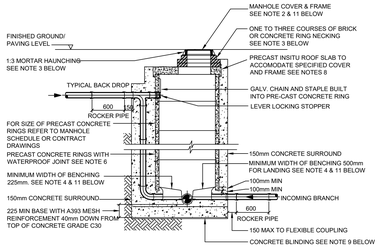
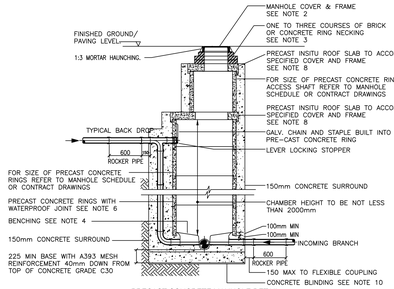


PRECAST CONCRETE MANHOLE DETAIL
DEPTH 1.0m TO 1.5m FROM GROUND
LEVEL TO SOFFIT OF PIPE



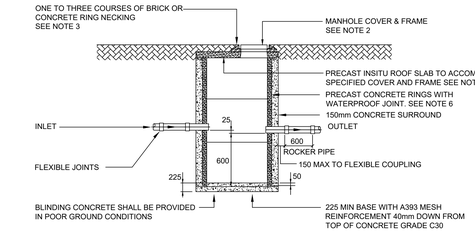
PRECAST CONCRETE MANHOLE DETAIL
MAX DEPTH 3m FROM GROUND LEVEL
TO SOFFIT OF PIPE



PRECAST CONCRETE MANHOLE DETAIL
MAX DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE
3m TO 6m

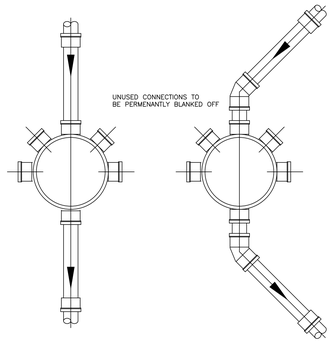
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. FOR TYPES OF COVER AND FRAMES SUITABLE FOR THESE MANHOLES REFER TO MANHOLE SCHEDULE AND CONTRACT DRAWINGS.
3. THE COVER FRAME SHALL BE BEDDED IN A POLYESTER RESIN MORTAR ON ONE TO THREE COURSES AS NECESSARY OF CLASS 'B' ENGINEERING BRICKS TO BS EN 772 OR PRECAST CONCRETE RINGS.
4. BENCHING SHALL BE 20MM MINIMUM THICKNESS FORMED IN HIGH STRENGTH CONCRETE TROWELLED SMOOTH TO A GRADIENT OF 1 IN 10 TO 1 IN 30
5. ALL PRE-CAST CONCRETE COMPONENTS SHALL BE IN ACCORDANCE WITH BS 5911:PART 200 "KITEMARKED".
6. RINGS SHALL BE JOINTED BUY A RUBBER BITUMEN COMPOUND OR OTHER APPROVED SEALANT PROVIDING A FULLY WATERTIGHT SEAL. JOINTS SHALL BE NEATLY FINISHED BOTH INTERNALLY AND EXTERNALLY.
7. FOR DETAILS OF INTERNAL SIZE OF MANHOLE UNITS, DEPTHS, NUMBER OF BRANCHES AND PIPE SIZES REFER TO CONTRACT DRAWINGS AND/OR MANHOLE SCHEDULE.
8. COVER SLABS SHALL BE HEAVY DUTY WITH REINFORCEMENT AS SUPPLIED BY THE MANHOLE UNIT MANUFACTURER WITH A MINIMUM CLEAR OPENING OF 600 X 600 OR AS STATED ON THE CONTRACT DRAWINGS AND MANHOLE SCHEDULE.
9. THE MINIMUM THICKNESS OF CONCRETE BLINDING FOR THE BASE SLAB TO BE CAST ON SHALL BE 50MM THICK.
10. MANHOLE UNITS SHALL BE MANUFACTURED IN ORDINARY PORTLAND CEMENT TO MEET UP TO AND INCLUDING CLASS 3 SOIL CONDITIONS OR SULPHATE RESISTING PORTLAND CEMENT TO MEET UP TO AND INCLUDING CLASS 4 SOIL CONDITIONS.
11. THE MANHOLE COVER AND FRAME FOR 1000 X 675 PRECAST CONCRETE MANHOLES SHALL BE INSTALLED CENTRALLY OVER THE BENCHING/MANHOLE.

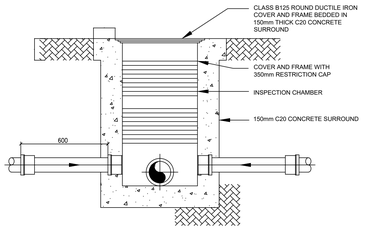


SURFACE WATER CATCHPIT

REFER TO WING WATERPOOFING DETAILS
FOR CAVITY DRAINAGE SUMPS

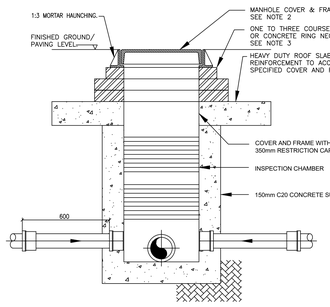


INSPECTION CHAMBER
INLET ORIENTATIONS



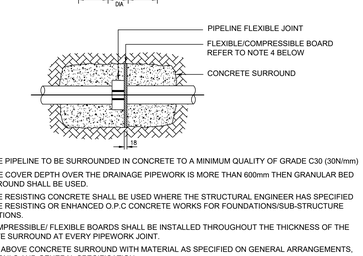
NON MAN ENTRY INSPECTION CHAMBER
CLASS B125 LOADING COVER

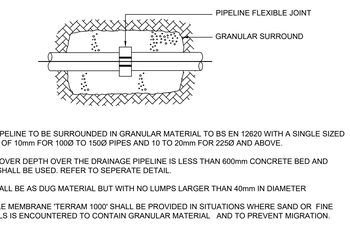
NOTES
1. 450Ø & 600Ø POLYPROPYLENE NON MAN ENTRY INSPECTION CHAMBER WITH 350Ø RESTRICTED ACCESS CAP AS MANUFACTURED BY WAVIN - OSMA TYPE UNIVERSAL INSPECTION CHAMBER.

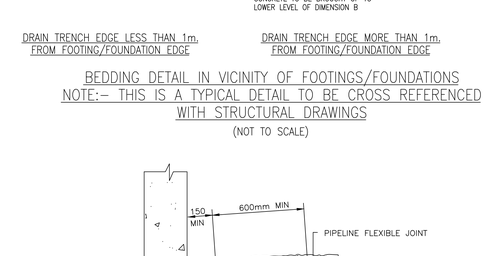


NON MAN ENTRY INSPECTION CHAMBER
CLASS C250 & D400 LOADING COVER

NOTES
1. 450Ø & 600Ø POLYPROPYLENE NON MAN ENTRY INSPECTION CHAMBER WITH 350Ø RESTRICTED ACCESS CAP AS MANUFACTURED BY WAVIN - OSMA TYPE UNIVERSAL INSPECTION CHAMBER.

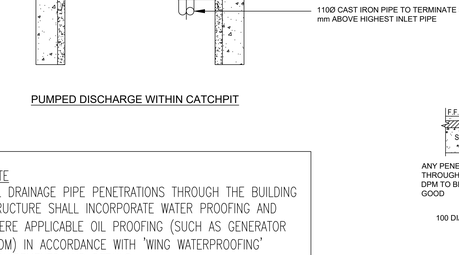




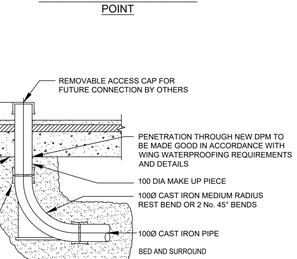


DRAIN TRENCH EDGE LESS THAN 1m.
FROM FOOTING/FOUNDATION EDGE

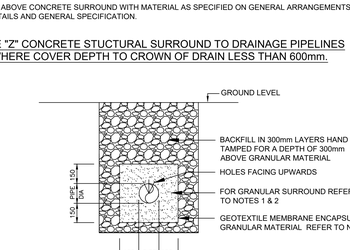
DRAIN TRENCH EDGE MORE THAN 1m.
FROM FOOTING/FOUNDATION EDGE



PUMPED DISCHARGE WITHIN CATCHPIT

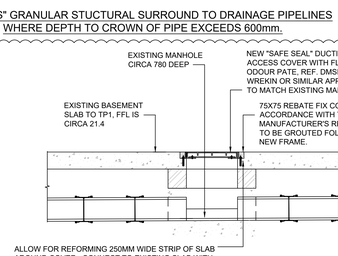


EXTERNAL RAINWATER DRAIN
POINT



NOTES
1. DRAINAGE PIPELINE TO BE SURROUNDED IN CONCRETE TO A MINIMUM QUALITY OF GRADE C30 (30N/mm)
2. WHEN THE COVER DEPTH OVER THE DRAINAGE PIPEWORK IS MORE THAN 600mm THEN GRANULAR BED AND SURROUND SHALL BE USED.
3. SULPHATE RESISTING CONCRETE SHALL BE USED WHERE THE STRUCTURAL ENGINEER HAS SPECIFIED SULPHATE RESISTING OR ENHANCED O.P.C CONCRETE WORKS FOR FOUNDATIONS/SUB-STRUCTURE INSTALLATIONS.
4. 18mm COMPRESSIBLE/ FLEXIBLE BOARDS SHALL BE INSTALLED THROUGHOUT THE THICKNESS OF THE CONCRETE SURROUND AT EVERY PIPEWORK JOINT.
5. BACKFILL ABOVE CONCRETE SURROUND WITH MATERIAL AS SPECIFIED ON GENERAL ARRANGEMENTS, S.T.D. DETAILS AND GENERAL SPECIFICATION.

TYPE "Z" CONCRETE STUCTURAL SURROUND TO DRAINAGE PIPELINES
WHERE COVER DEPTH TO CROWN OF DRAIN LESS THAN 600mm.



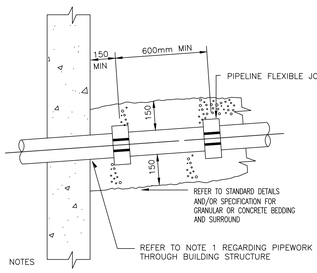
NOTES
1. DRAINAGE PIPELINE TO BE SURROUNDED IN GRANULAR MATERIAL TO BS EN 12620 WITH A SINGLE SIZED AGGREGATE OF 10mm FOR 100Ø TO 150Ø PIPES AND 10 TO 20mm FOR 225Ø AND ABOVE.
2. WHEN THE COVER DEPTH OVER THE DRAINAGE PIPELINE IS LESS THAN 600mm CONCRETE BED AND SURROUND SHALL BE USED. REFER TO SEPERATE DETAIL.
3. BACKFILL SHALL BE AS DUG MATERIAL BUT WITH NO LUMPS LARGER THAN 40mm IN DIAMETER
4. A GEOTEXTILE MEMBRANE 'TERRAM 1000' SHALL BE PROVIDED IN SITUATIONS WHERE SAND OR FINE GRADED SOILS IS ENCOUNTERED TO CONTAIN GRANULAR MATERIAL AND TO PREVENT MIGRATION.

TYPE "S" GRANULAR STUCTURAL SURROUND TO DRAINAGE PIPELINES
WHERE DEPTH TO CROWN OF PIPE EXCEEDS 600mm.

NOTES
1. DRAINAGE PIPELINE TO BE SURROUNDED IN GRANULAR MATERIAL TO BS EN 12620 WITH A SINGLE SIZED AGGREGATE OF 10mm.
2. FILTER DRAIN PIPEWORK SHALL BE HALF PERFORATED SMOOTH BORE CLAY PIPE TYPE HEPLINE SUPER SLEEVE AS MANUFACTURED BY HEPWORTH OR SIMILAR AND APPROVED
3. A GEOTEXTILE MEMBRANE 'TERRAM 1000' SHALL BE PROVIDED ENCASING THE PIPE

FILTER DRAIN

NEW SEALED MANHOLE COVER TO EXISTING BASEMENT CHAMBER

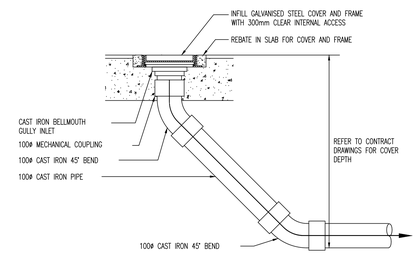


NOTES
1. THIS DETAIL SHALL APPLY TO ANY SITUATION WHERE DRAINAGE PIPEWORK PASSES THROUGH OR IS ENCAPSULATED WITHIN THE BUILDING STRUCTURAL FOUNDATIONS ie BASES, GROUND BEARING EDGE BEAMS, MANHOLE WALLS,INSPECTION CHAMBER WALLS, PILE CAPS AND WHERE THE DRAIN PASSES UNDER BUILDING FOUNDATIONS
2. THE MAIN CONTRACTOR SHALL MAKE ADEQUATE ALLOWANCE WITHIN THE DEFLECTION/SETTLEMENT ROCKER PIPE ARRANGEMENT TO ACCOMMODATE THE EXPECTED GROUND SETTLEMENT OR HEAVE.
3. ALL DEFLECTION ROCKER PIPE ARRANGEMENTS SHALL BE INSTALLED TO THE PIPEWORK MANUFACTURERS RECOMMENDATIONS.
4. REFER TO GENERAL NOTES/SPECIFICATION FOR DETAILS OF PIPEWORK MATERIALS TO BE USED.

ROCKER PIPE DEFLECTION ARRANGEMENT THROUGH STRUCTURAL WALLS

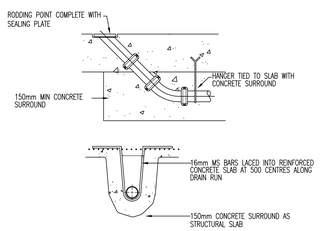
BEDDING DETAIL IN VICINITY OF FOOTINGS/FOUNDATIONS
NOTE:- THIS IS A TYPICAL DETAIL TO BE CROSS REFERENCED WITH STRUCTURAL DRAWINGS
(NOT TO SCALE)

NOTE
ALL DRAINAGE PIPE PENETRATIONS THROUGH THE BUILDING STRUCTURE SHALL INCORPORATE WATER PROOFING AND WHERE APPLICABLE OIL PROOFING (SUCH AS GENERATOR ROOM) IN ACCORDANCE WITH 'WING WATERPROOFING' REQUIREMENTS AND DETAILS.



CAST IRON FOUL WATER RODDING POINT

INTERNAL DRAIN POINT



BELOW SLAB CAST IRON PIPE CONCRETE ENCASEMENT
WHEN DRAIN IS WITHIN 300 mm OF THE BOTTOM OF THE SLAB

CONSTRUCTION

Revisions				
Rev.	Date	Description	Ch'kd	Ch'kd
P1	FEB.21	PRELIMINARY ISSUE.	S.B	C.R
P2	MAR.21	COMMENTS INCORPORATED.	S.B	C.R
C1	MAR.21	COMMENTS INCORPORATED.	S.B	C.R
C2	APR.21	COMMENTS INCORPORATED, SEALED COVER DETAIL ADDED	J.C	

Revisions — Rev. Date Description Ch'kd Ch'kd

Revisions — Rev. Date Description Ch'kd Ch'kd

Revisions — Rev. Date Description Ch'kd Ch'kd

Project Consultants

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Quantity Surveyor

Structural Engineer
MBP

Project Manager

CAD Ref. 3049	Originator SLENDER WINTER PARTNERSHIP LIMITED
Checked S.B Date JAN.21	Client MBP
Drawn G.H Date JAN.21	Project LSHTM 15-17 TAVISTOCK PLACE
Scale NTS@A0	Drawing Title DRAINAGE DETAILS
Revision C2	Drawing Number 3049-PH001

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