

- LEGEND**
- FOUL WATER SEWER
 - FOUL WATER MANHOLE
 - FOUL WATER INSPECTION CHAMBER
 - FOUL WATER CONNECTION
 - SURFACE WATER SEWER
 - SURFACE WATER MANHOLE
 - SURFACE WATER INSPECTION CHAMBER
 - SURFACE WATER SEWER (>600mm)
 - SURFACE WATER RISING MAIN
 - FOUL WATER RISING MAIN
 - SURFACE WATER CHANNEL TO MANUFACTURER SPECIFICATION UNG
 - G GULLY
 - RG ROAD GULLY
 - RE SURFACE WATER RODDING EYE
 - RWP SURFACE WATER CONNECTION
 - ATTENUATION BASIN/TANK
 - BD BACK DROP
 - FG PROPOSED FOUL WATER FLOOR GULLY
 - LAND DRAIN (100mm DIAMETER PERFORATED PIPE)
 - ▶ HEADWALL
 - ▶ OVERLAND FLOW
 - EXISTING SEWER/DRAINAGE FROM PREVIOUS PHASE
 - KERB INLET DRAIN
 - CLASS 1 FULL RETENTION SEPARATOR WITH ALARM
 - FOUL TREATMENT WORKS
 - SMALL ATTENUATION POND/BIO-RETENTION AREA
 - SWALE
 - x il XX.XX PIPE INVERT LEVEL
 - FLOOD COMPENSATION BASIN
 - EXISTING LOCAL FLOODING (REFER TO FRA)
 - SURFACE WATER FLOOD EXTENTS IN 100yr + 40% CC EVENT

100yr +40%CC EVENT FLOODING FROM PIPES 7.000 & 8.000 TOTALS 16.9m³. DEPTH LESS THAN 65mm

100yr +40%CC EVENT FLOODING FROM PIPES 9.000 & 9.001 TOTALS 16.5m³. DEPTH LESS THAN 70mm

100yr +40%CC EVENT FLOODING FROM PIPES 1.000, 2.000 & 3.000 TOTALS 53.8m³. DEPTH LESS THAN 125mm

EXISTING FLOODING AS MODELLED BY THE FLOOD RISK TEAM FOR 100 YEAR +15 CC EVENT. FLOOD LEVEL: 64.75mAOD FLOOD MITIGATION POND PROVIDED IN THE SOUTH OF THE SITE. VOLUME OF FLOODING = 1217m³

NOTES

1. THIS DRAWING IS NOT TO BE SCALED.
2. REFER TO NOTES ON DRAWING 22281-HYD-XX-XX-DR-C-0520.
3. ALL DIMENSIONS ARE TO BE CHECKED ON SITE BEFORE THE COMMENCEMENT OF WORKS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT AND ENGINEER FOR VERIFICATION. FIGURED DIMENSIONS ONLY ARE TO BE TAKEN FROM THIS DRAWING.
4. 'MARKED UP' DRAWINGS ARE TO BE PROVIDED TO THE ENGINEER UPON COMPLETION TO ENABLE PRODUCTION OF 'AS BUILT' DRAWING IN ACCORDANCE WITH CONSTRUCTION (DESIGN & MANAGEMENT): 2015 REGULATIONS 22(j).

REVISIONS				
Rev.	Revision Notes	Date	Drawn By	Checked Approved
P02	REVISED PLANNING	20/11/24	AB	AB CK
P01	PLANNING	19/09/24	MC	AB CK

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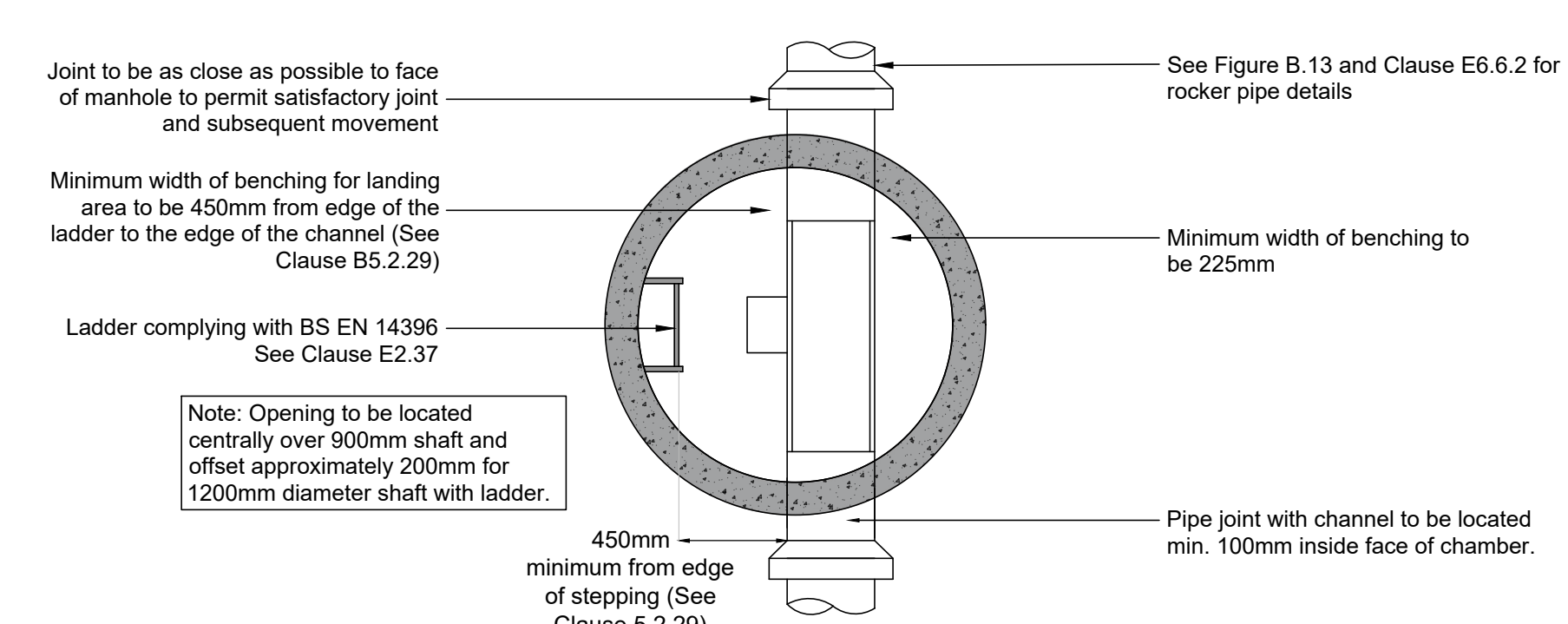
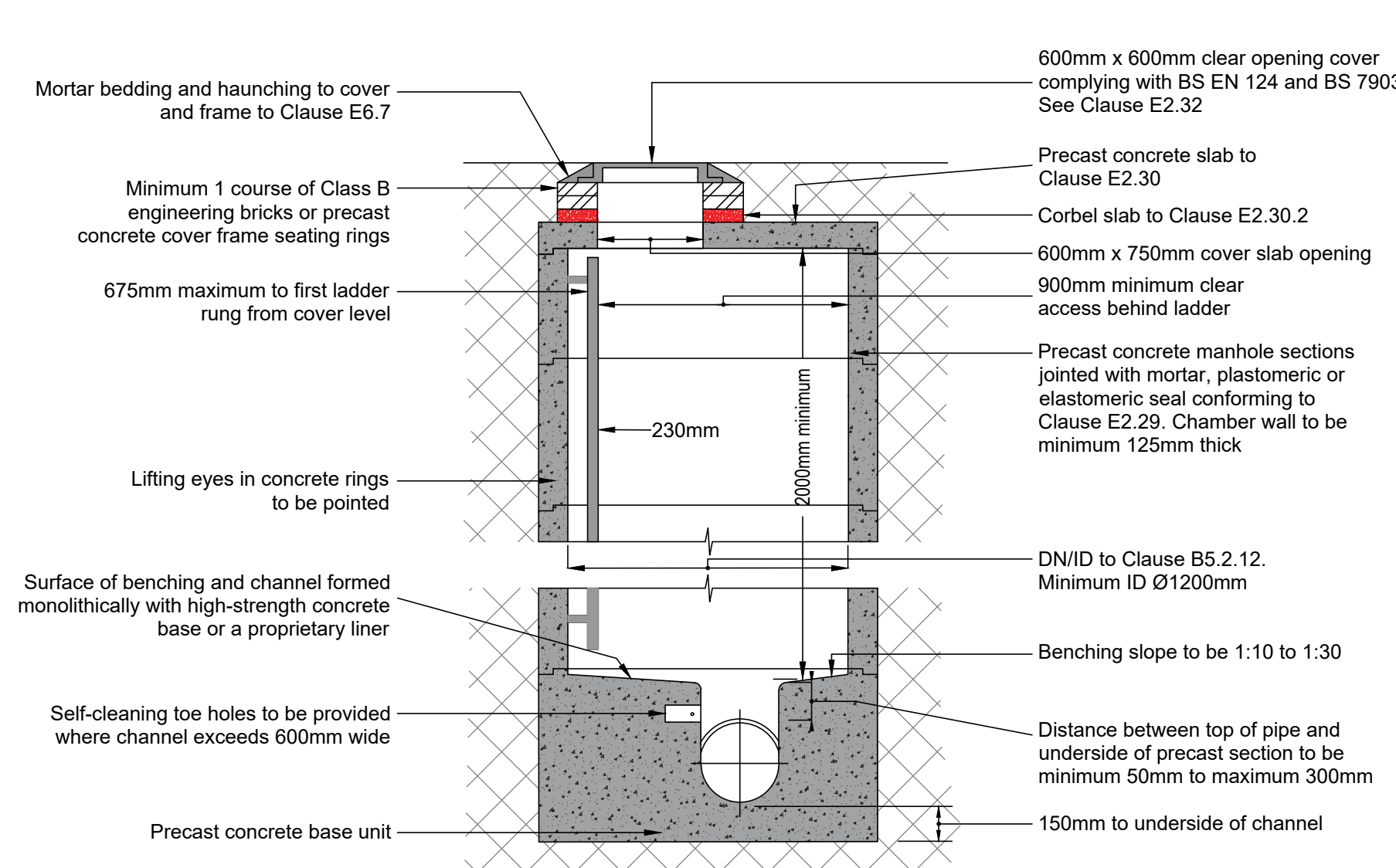
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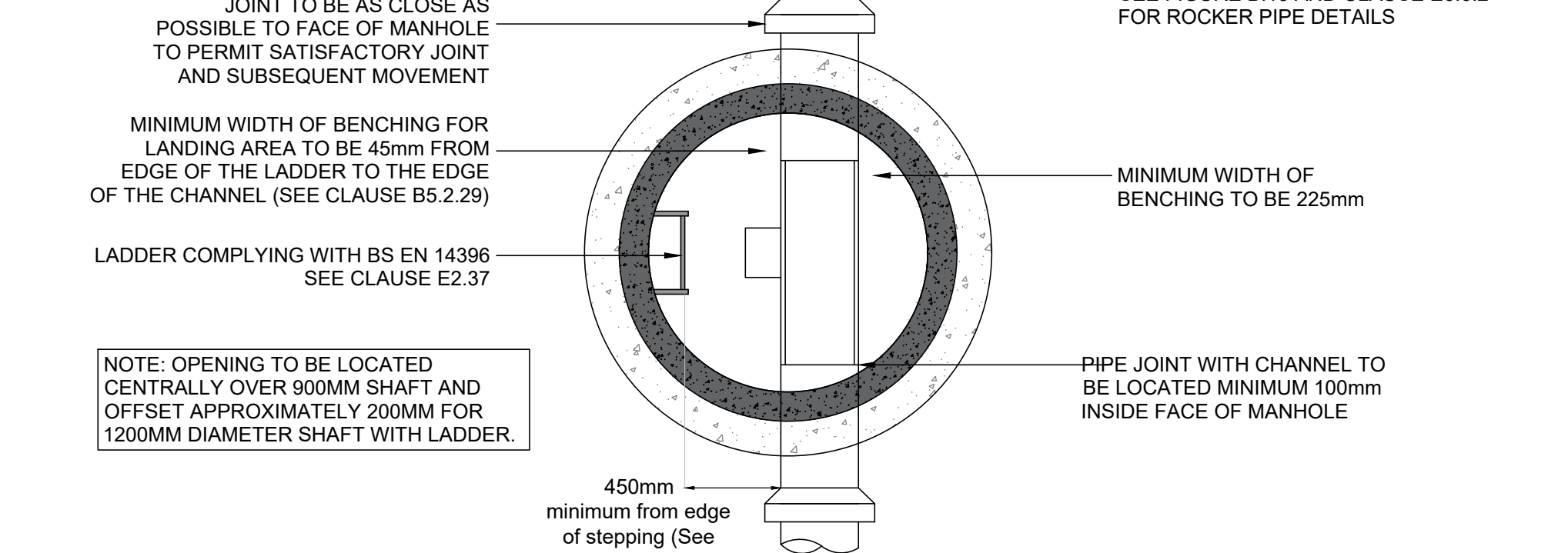
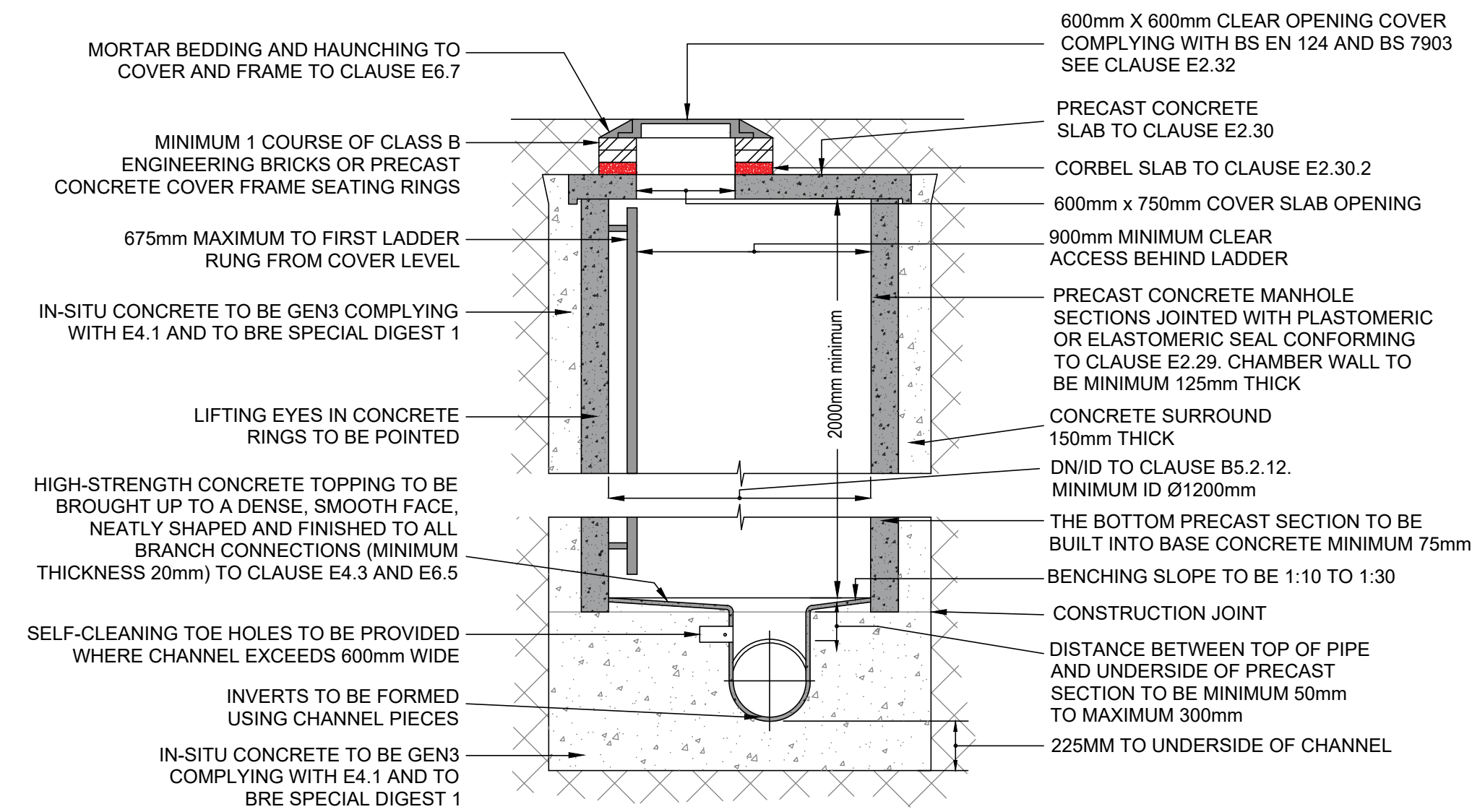
PROJECT
PHASE 3, BICESTER
SYMMETRY PARK

TITLE FLOOD EXCEEDANCE PLAN	
HYDROCK PROJECT NO. 22281	SCALE @ A1 1:1000
STATUS DESCRIPTION SUITABLE FOR REVIEW & COMMENT	STATUS S3
DRAWING NO. 22281-HYD-XX-XX-DR-C-0540	REVISION P02

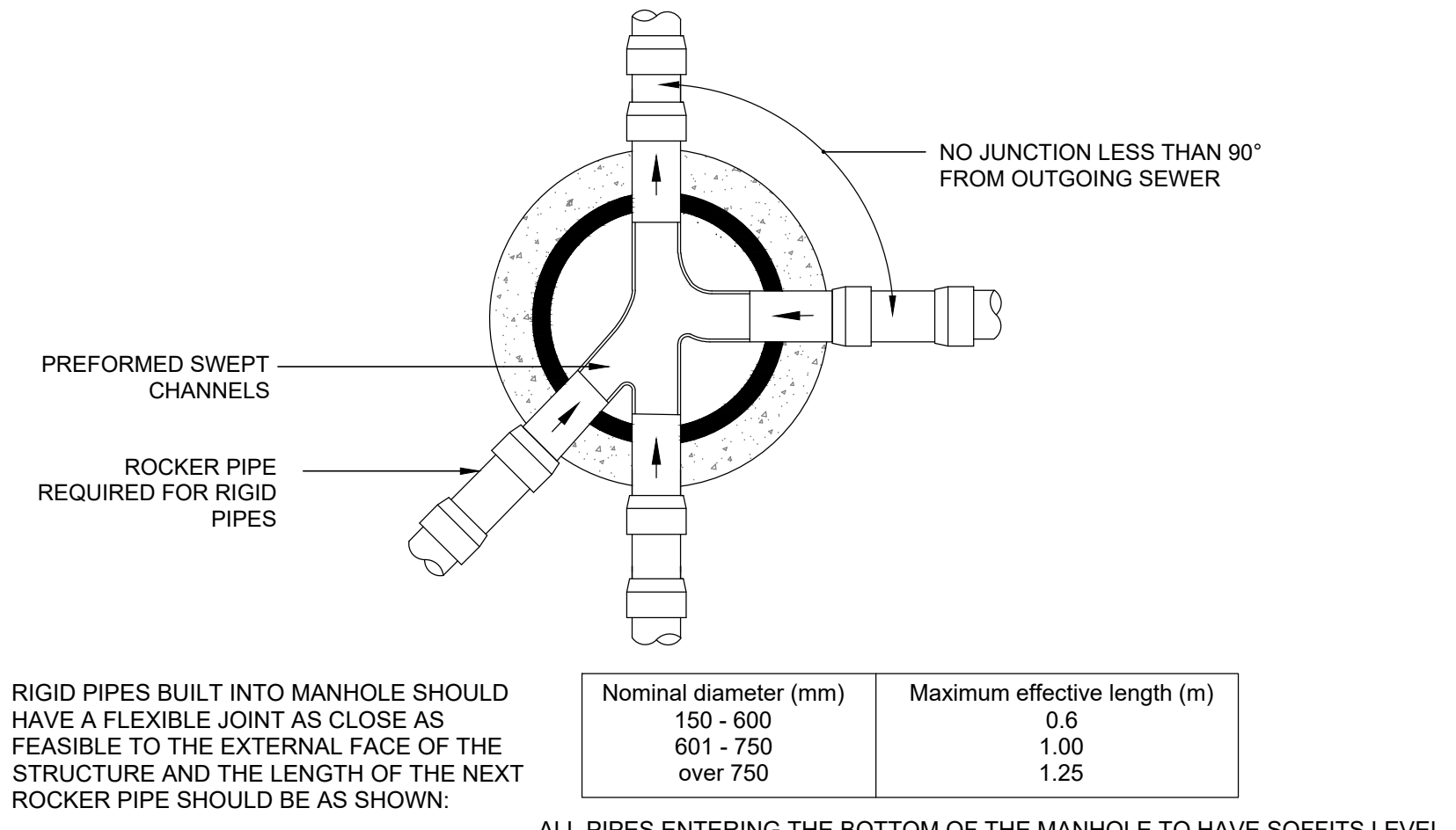
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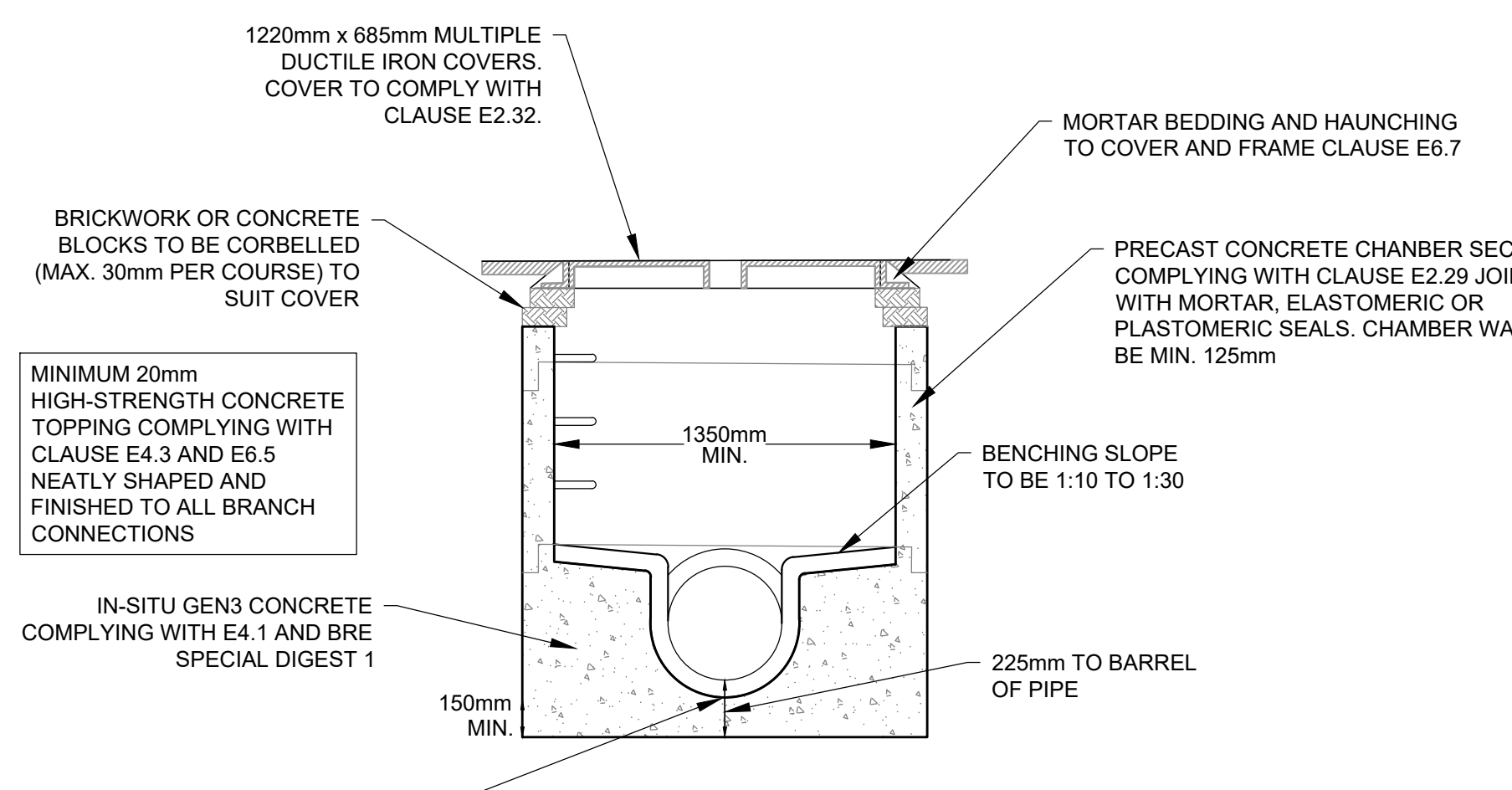
TYPICAL MANHOLE DETAIL - TYPE A2.1
(Depth from cover to soffit of pipe 3m to 6m with ladder)
Rigid material construction without concrete surround



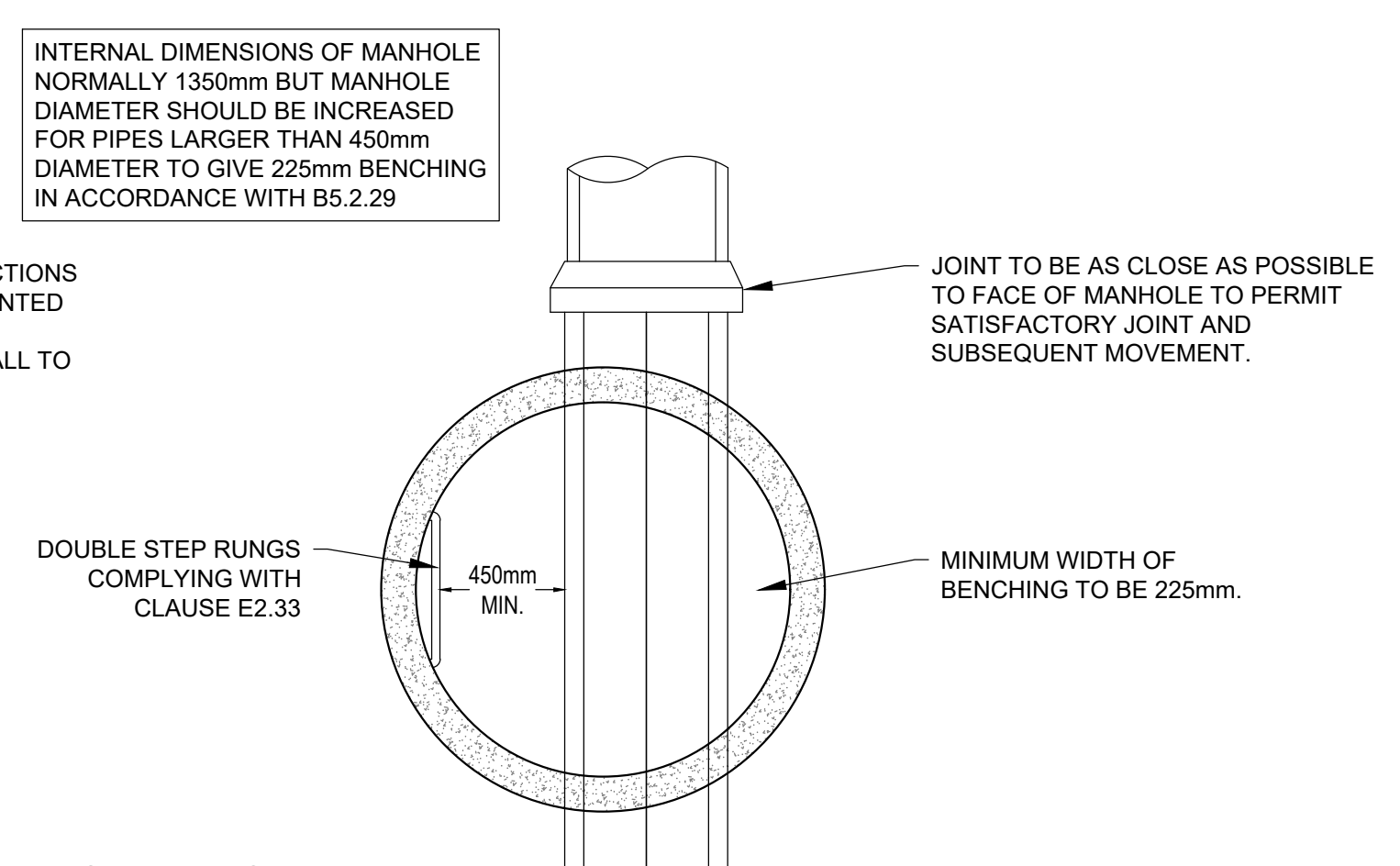
TYPICAL MANHOLE DETAIL - TYPE A2.2
(DEPTH FROM COVER TO SOFFIT OF PIPE 3m TO 6m WITH LADDER)
ALTERNATIVE RIGID MATERIAL CONSTRUCTION WITH CONCRETE SURROUND



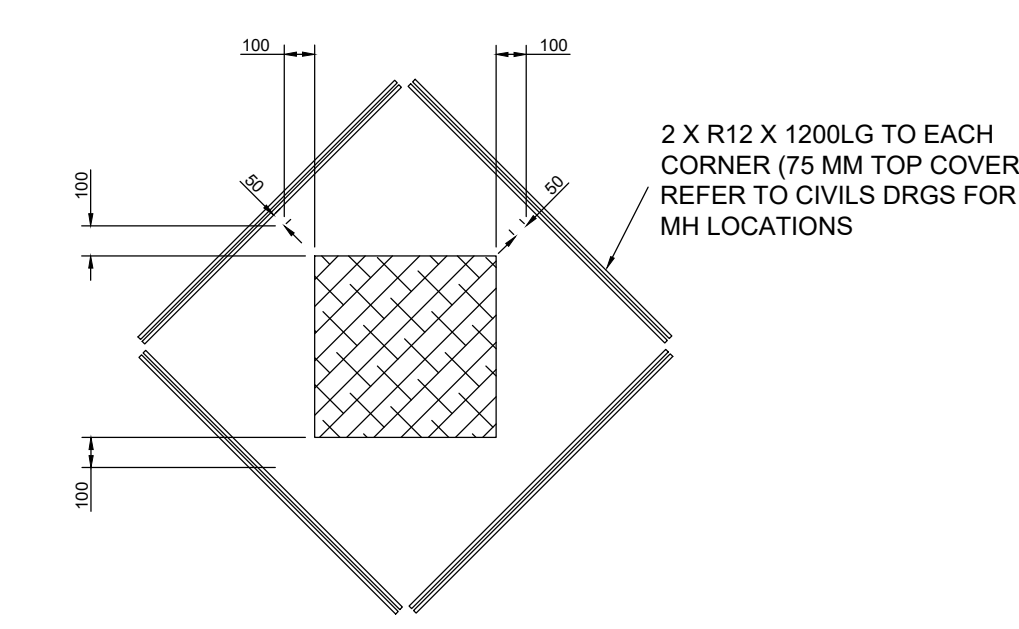
TYPICAL ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES
(Figure B.13, DCG) N.T.S



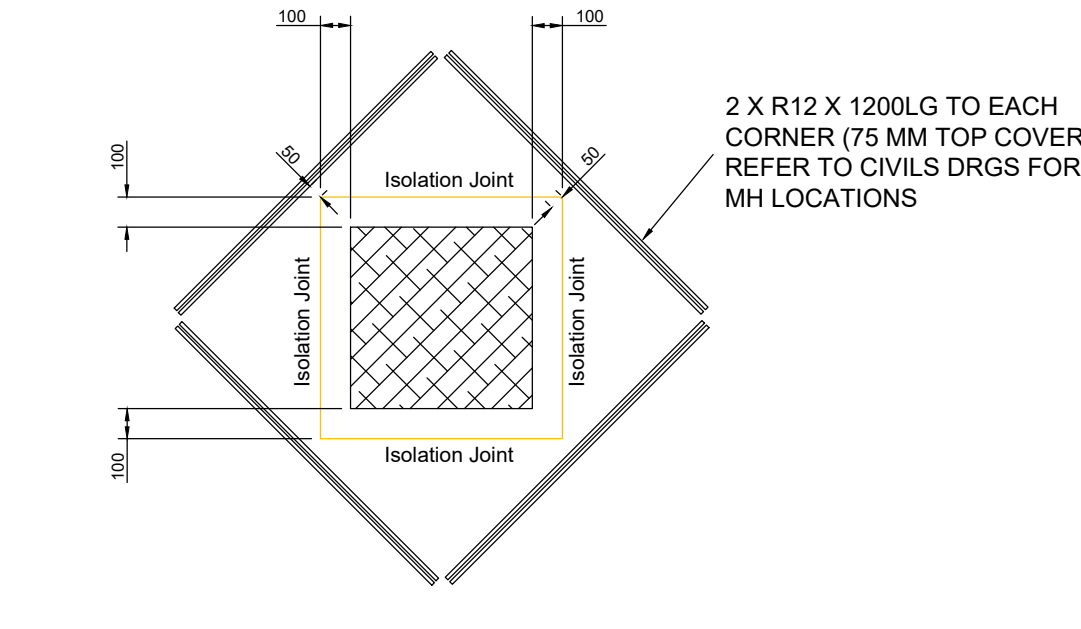
TYPICAL MANHOLE DETAIL - TYPE C
(DEPTH FROM COVER TO SOFFIT OF PIPE LESS THAN 1.5m)
MAXIMUM PIPE SIZE 450mm DIAMETER
SCALE: NTS



MANHOLE TYPE C - PLAN VIEW



TYPICAL DETAIL AROUND MANHOLE COVERS WITHIN SLABS
Scale 1:25



TYPICAL ISOLATION JOINT DETAIL AROUND MANHOLE COVERS WITHIN SLABS
Scale 1:25

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REVISIONS

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P02	REVISED PLANNING	20/11/24	AB	AB CK
P01	PLANNING	19/09/24	MC	AB CK
Rev.	Revision Notes	Date	Drawn By	Checked Approved

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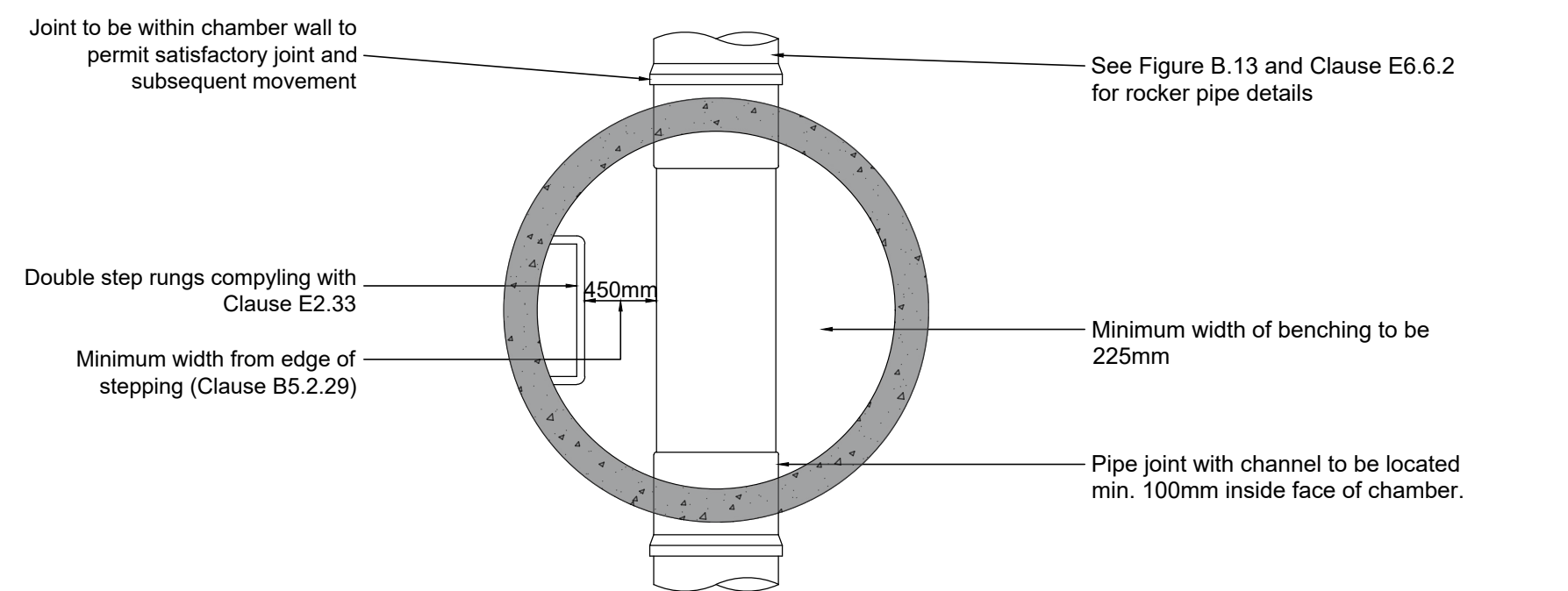
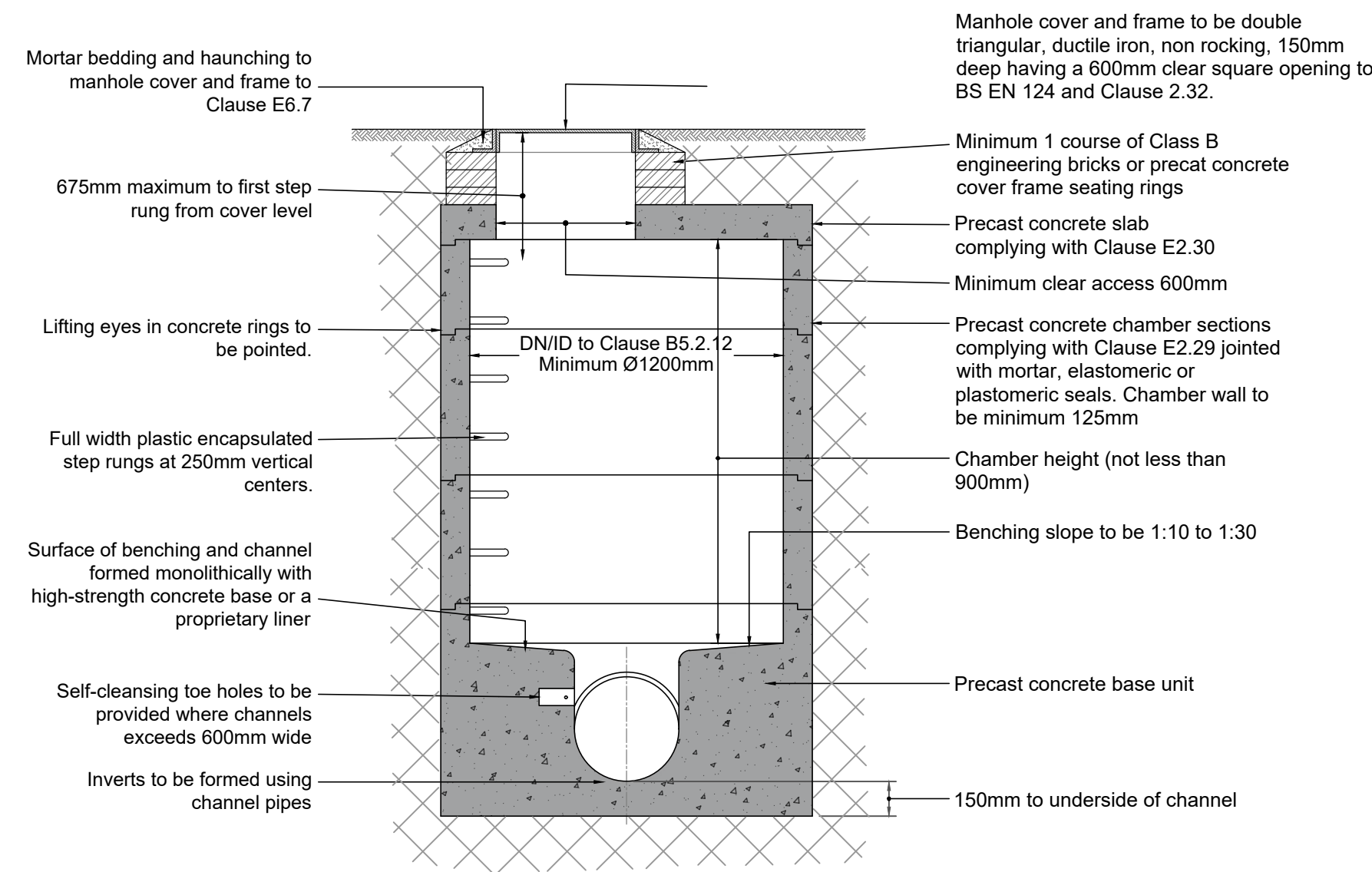
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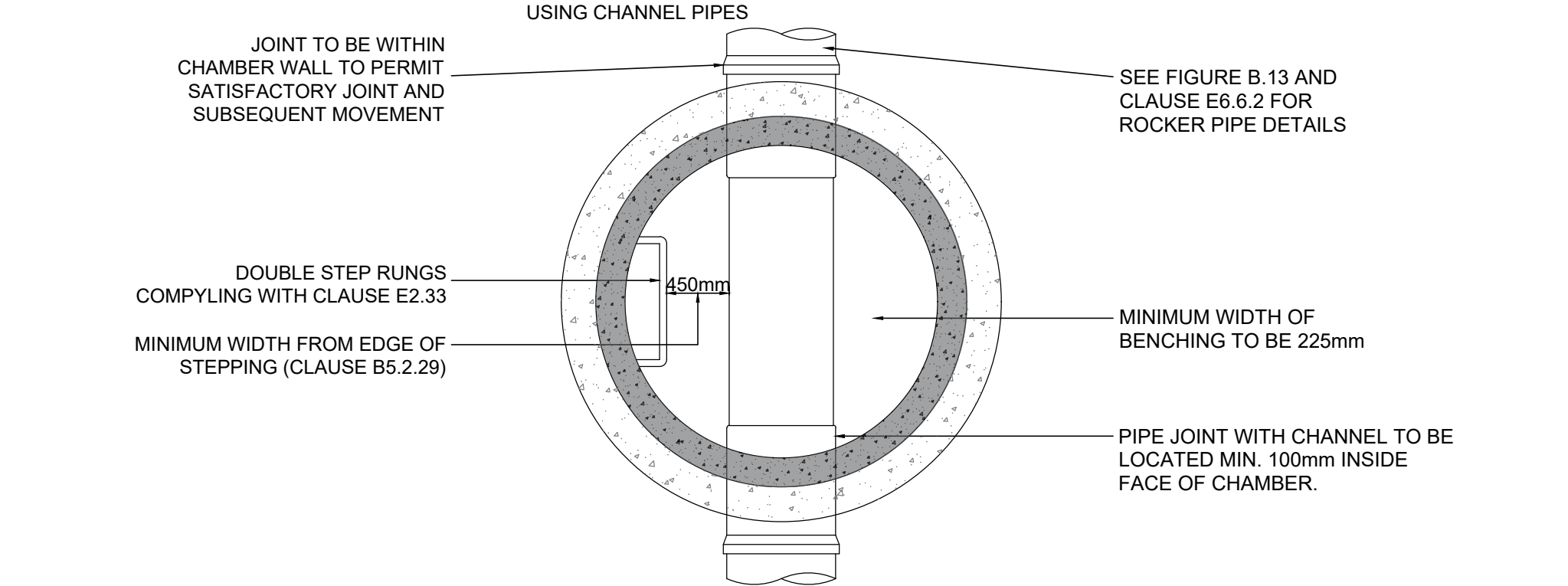
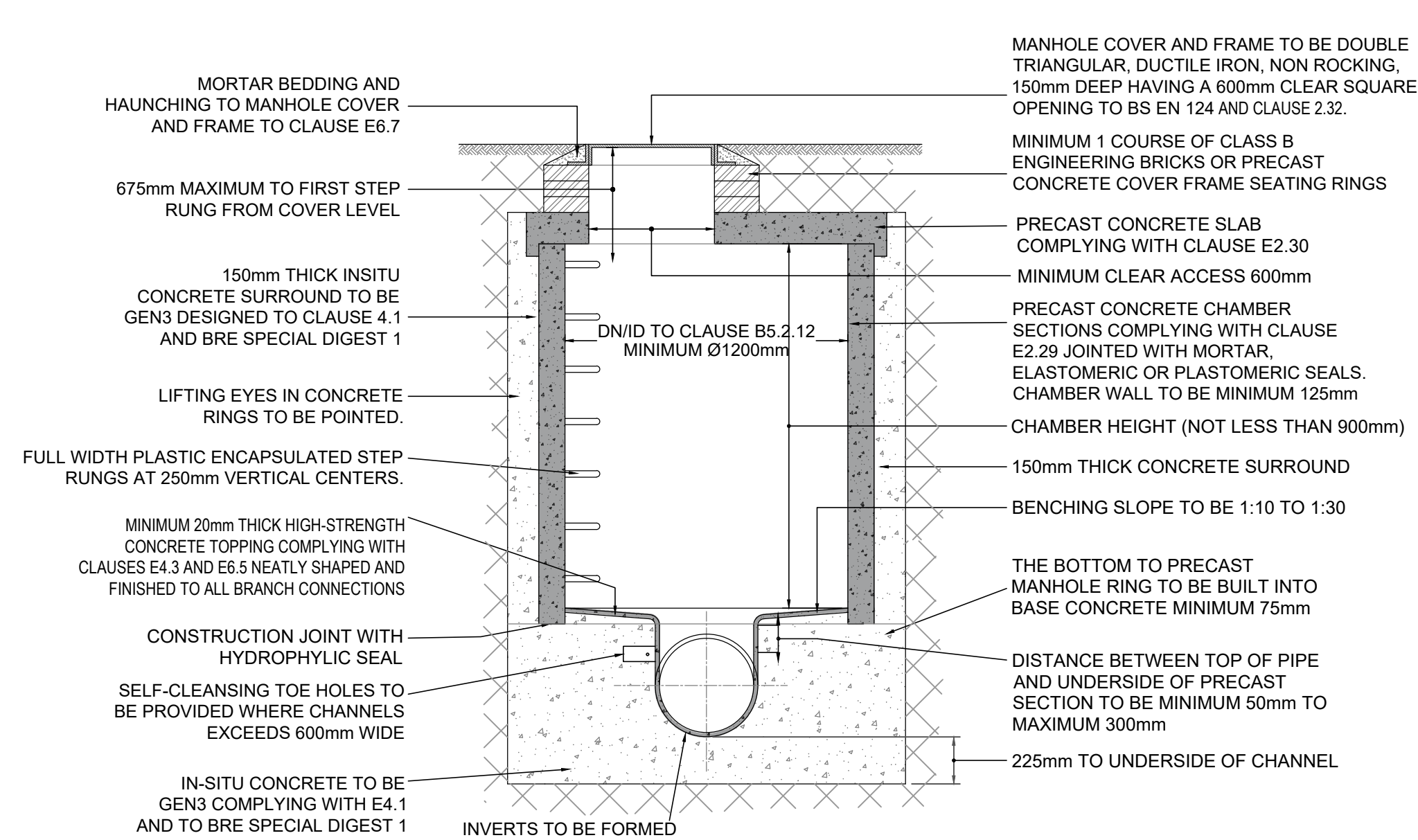
PROJECT
PHASE 3, BICESTER SYMMETRY PARK

TITLE DRAINAGE STANDARD DETAILS SHEET 1	
HYDROCK PROJECT NO. 22281	SCALE @ A1 AS SHOWN
STATUS DESCRIPTION SUITABLE FOR REVIEW & COMMENT	STATUS S3
DRAWING NO. 22281-HYD-XX-XX-DR-C-0550	REVISION P02

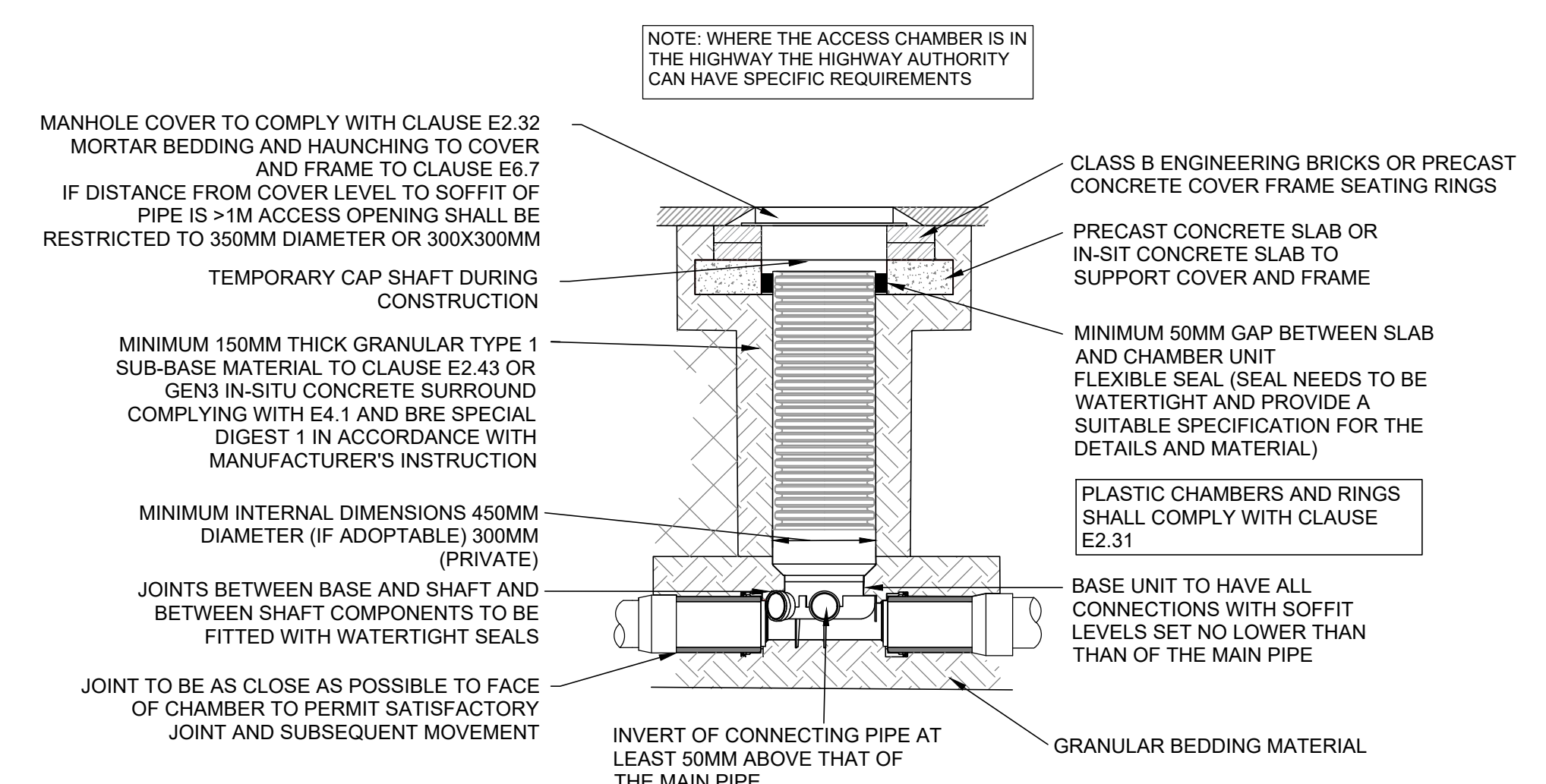
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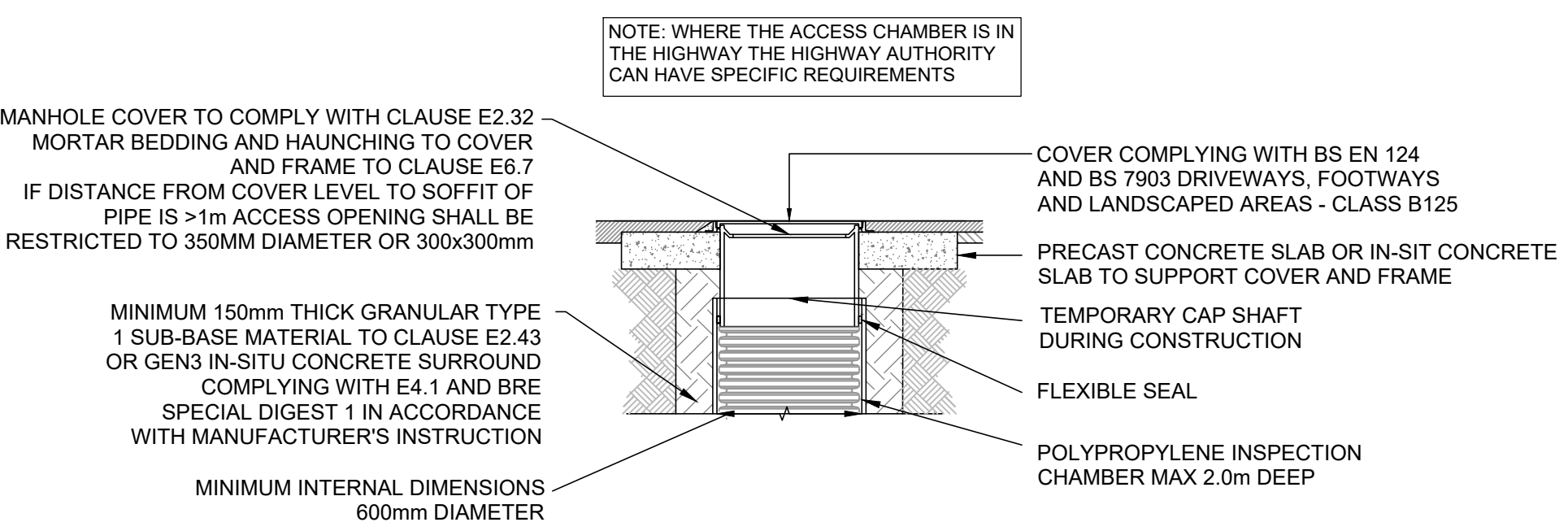
TYPICAL MANHOLE DETAIL - TYPE B1
(Depth from cover to soffit of pipe 1.5 m to 3.0 m)
Rigid material construction without concrete surround



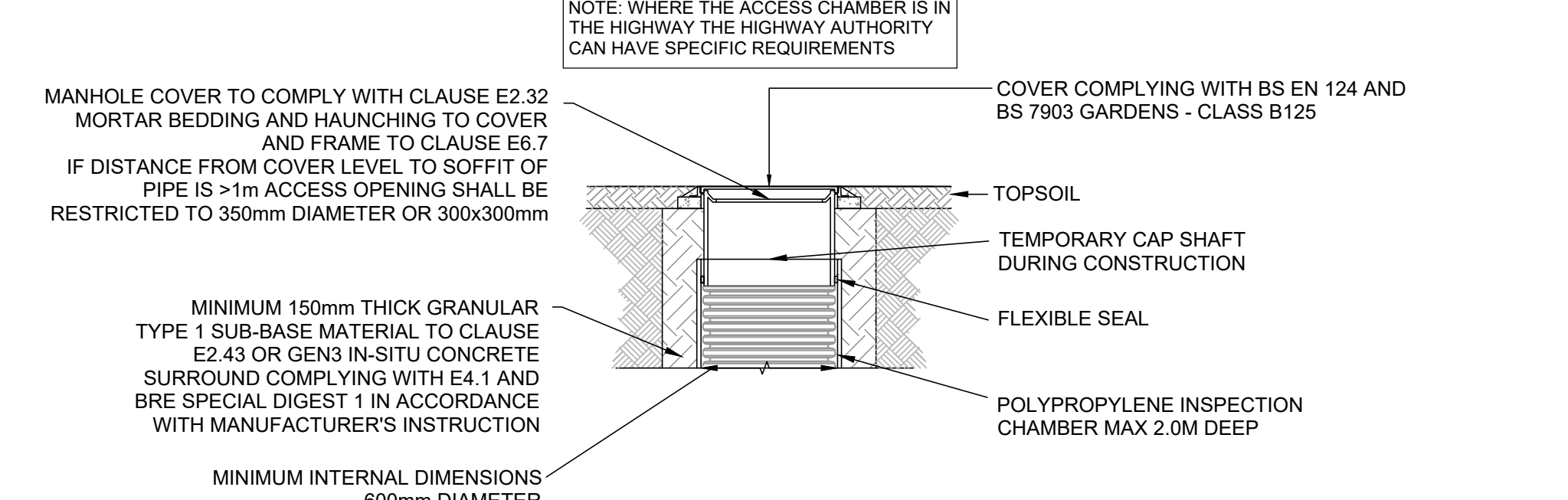
TYPICAL MANHOLE DETAIL - TYPE B2
(Depth from cover to soffit of pipe 1.5m to 3.0m)
ALTERNATIVE RIGID MATERIAL CONSTRUCTION WITH CONCRETE SURROUND



TYPICAL MANHOLE DETAIL - TYPE D1 (TRAFFICKED AREAS)
DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3 M



TYPICAL MANHOLE DETAIL - TYPE D2 (FOOTWAYS)
DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m



TYPICAL MANHOLE DETAIL - TYPE D3 (LANDSCAPED AREAS)
DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m

NOTES

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PROJECT
PHASE 3, BICESTER SYMMETRY PARK

TITLE DRAINAGE STANDARD DETAILS SHEET 2	
HYDROCK PROJECT NO. 22281	SCALE @ A1 AS SHOWN
STATUS DESCRIPTION SUITABLE FOR REVIEW & COMMENT	STATUS S3
DRAWING NO. 22281-HYD-XX-XX-DR-C-0551	REVISION P02

Filename: Z:\00 - Projects\Contractors\22281-SRB Symmetry Park Bicester Phase 3\01 - WPD\DL Drawing\22281-HYD-XX-XX-DR-C-0550_Drainage Std Details.dwg

USE OF GRANULAR BEDDING MATERIAL:

NOMINAL BORE OF PIPE (min)	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 OR 40 TO 5

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

NOTES:

- 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.
- 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.
- TRENCH BACKFILL TO MEET HIGHWAY SPECIFICATION WHEN LAID IN ROAD OR FOOTPATH.
- WHERE PIPES ARE WITHIN ZONE OF INFLUENCE OF BUILDING THEY ARE TO BE CONCRETE ENCASED AS PER TYPE Z BEDDING.
- WHERE DRAINAGE PIPES RUNNING UNDER BUILDINGS ARE 500mm OR MORE BELOW UNDERSIDE OF RAFT THE PIPE IS TO BE CONCRETE ENCASED AS PER TYPE Z BEDDING INSTEAD OF THICKENING THE RAFT FOUNDATION.
- WHERE DRAINAGE PIPES RUN THROUGH OR ADJACENT TO LANDSCAPING WITH TREES, SHRUBS OR BUSHES THE DRAINAGE TRENCH IS TO BE LINED TO PROTECT THE DRAINAGE PIPES FROM POTENTIAL DAMAGE CAUSED BY ROOT DEVELOPMENT WITH TERRAM ROOT GAURD OR APPROVED SIMILAR.

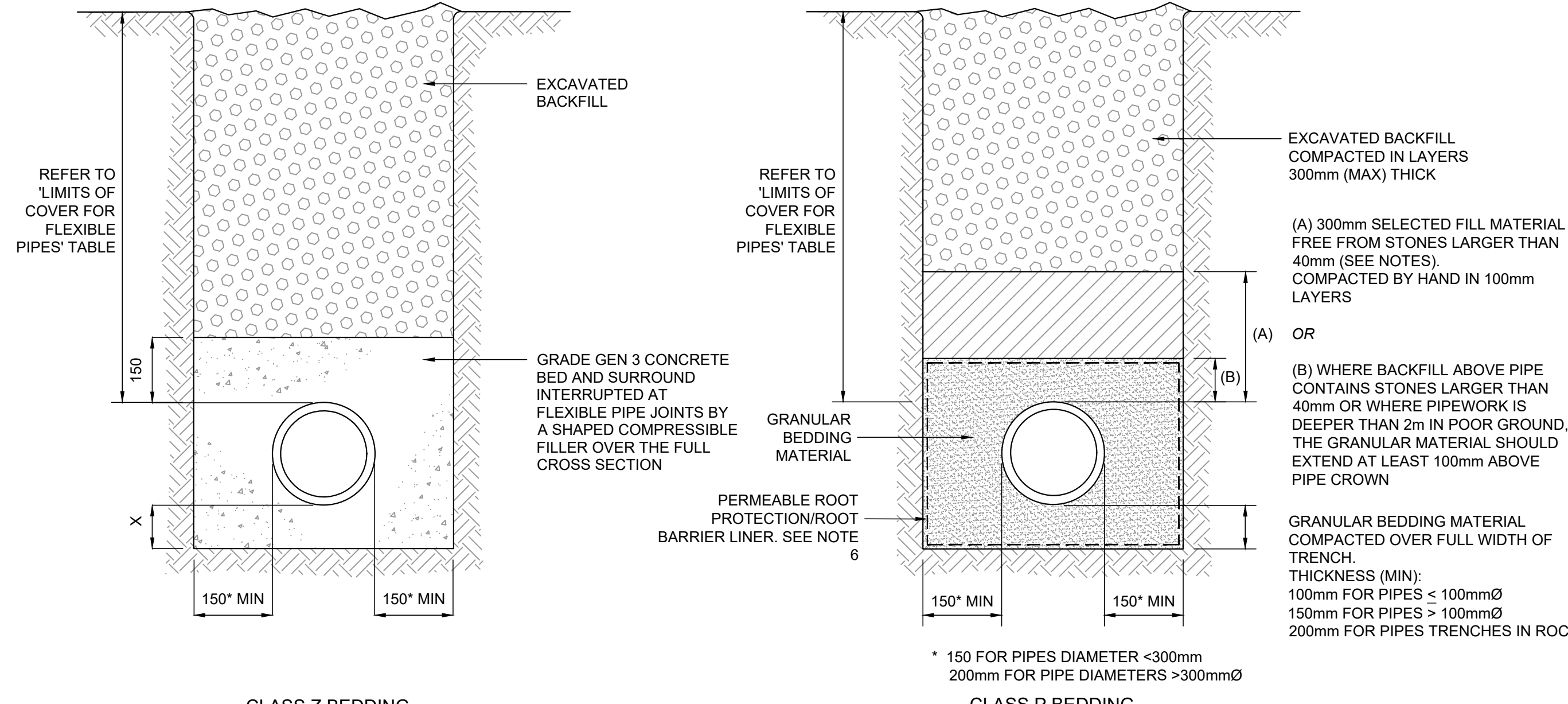
SIZING OF GRANULAR BEDDING MATERIAL:

NOMINAL BORE OF PIPE (MIN)	AGGREGATE SIZE (MM)	
	SINGLE SIZED	GRADED
100	10	10
150 - 200	10 or 14	14 to 5
225 - 300	10, 14 or 20	14 to 5 or 20 to 5
375 - 500	14 or 20	14 to 5 or 20 to 5
EXCEEDING 500	14, 20 or 40	14 to 5, 20 to 5 or 40 to 5

ALL GRAULAR MATERIAL TO BE SINGLE SIZED OR GRADED IN ACCORDANCE WITH BS 882:1992, SINTERED PULVERISED-FUEL ASH TO BS 3797:1990 AND AIR-COOLED BLAST FURNACE SLAGS TO BS 1047:1983 ARE SUITABLE.

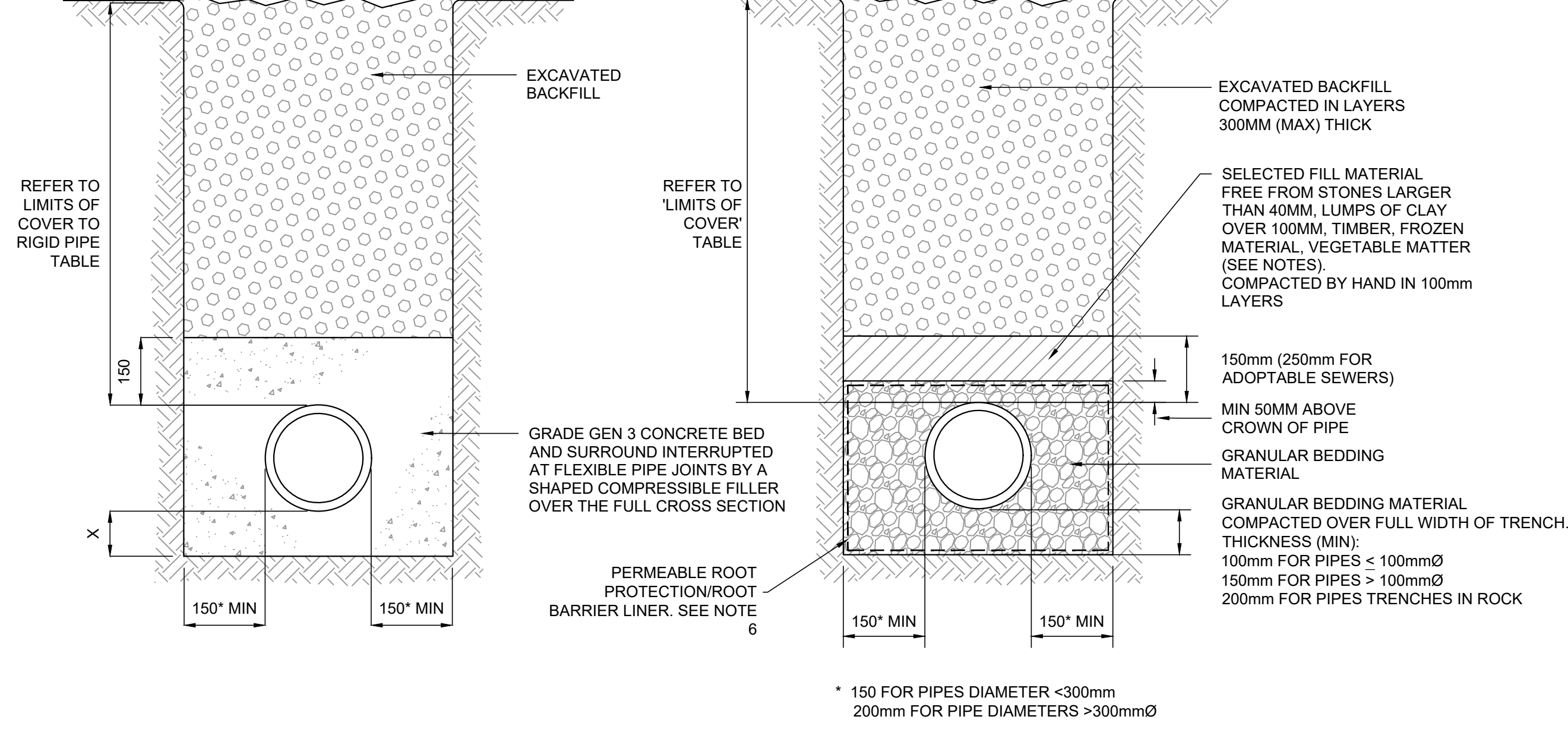
NOTES:

- 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.
- 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.
- TRENCH BACKFILL TO MEET HIGHWAY SPECIFICATION WHEN LAID IN ROAD OR FOOTPATH.
- WHERE PIPES ARE WITHIN ZONE OF INFLUENCE OF BUILDING THEY ARE TO BE CONCRETE ENCASED AS PER TYPE Z BEDDING.
- WHERE DRAINAGE PIPES RUNNING UNDER BUILDINGS ARE 500mm OR MORE BELOW UNDERSIDE OF RAFT THE PIPE IS TO BE CONCRETE ENCASED AS PER TYPE Z BEDDING INSTEAD OF THICKENING THE RAFT FOUNDATION.
- WHERE DRAINAGE PIPES RUN THROUGH OR ADJACENT TO LANDSCAPING WITH TREES, SHRUBS OR BUSHES THE DRAINAGE TRENCH IS TO BE LINED TO PROTECT THE DRAINAGE PIPES FROM POTENTIAL DAMAGE CAUSED BY ROOT DEVELOPMENT WITH TERRAM ROOT GAURD OR APPROVED SIMILAR.



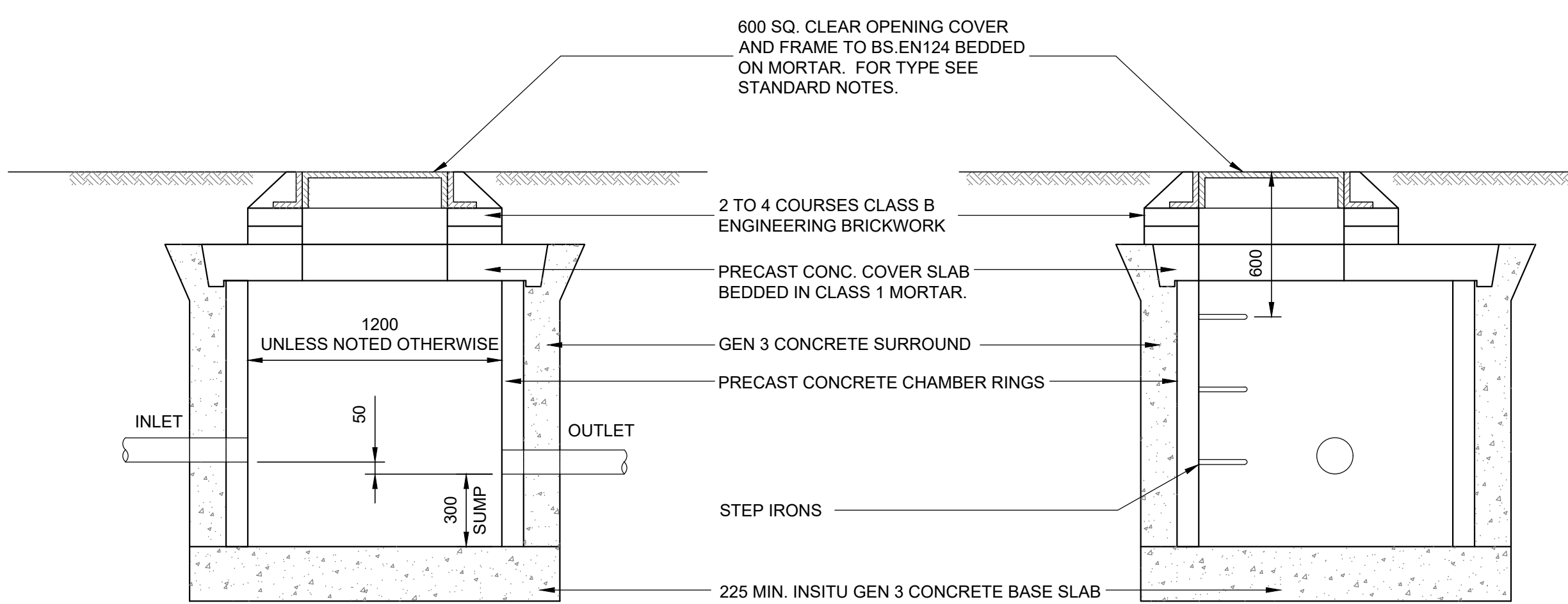
TYPICAL PIPE BEDDING FOR FLEXIBLE PIPES UP TO 800mm DIA

SCALE 1:10



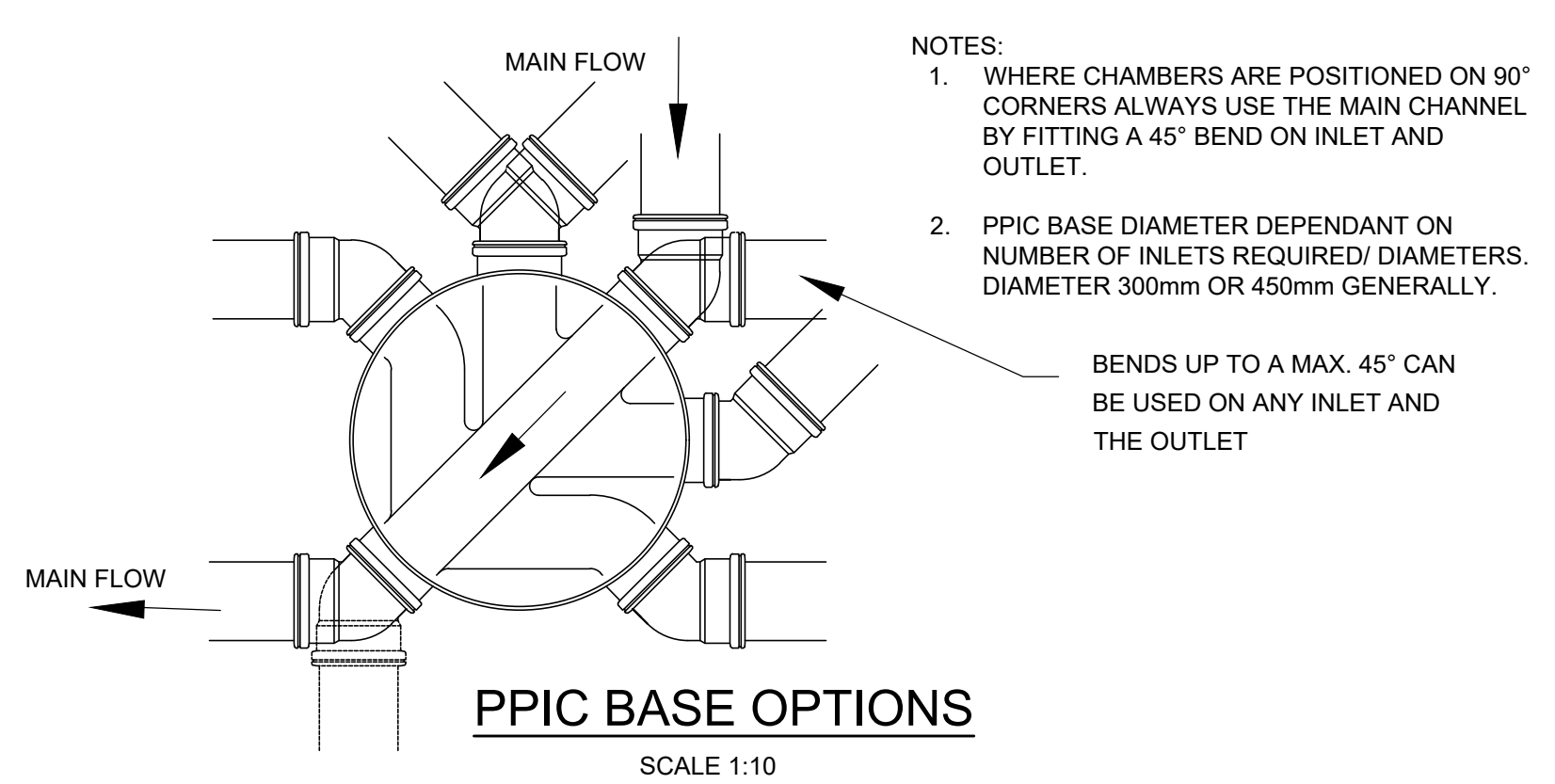
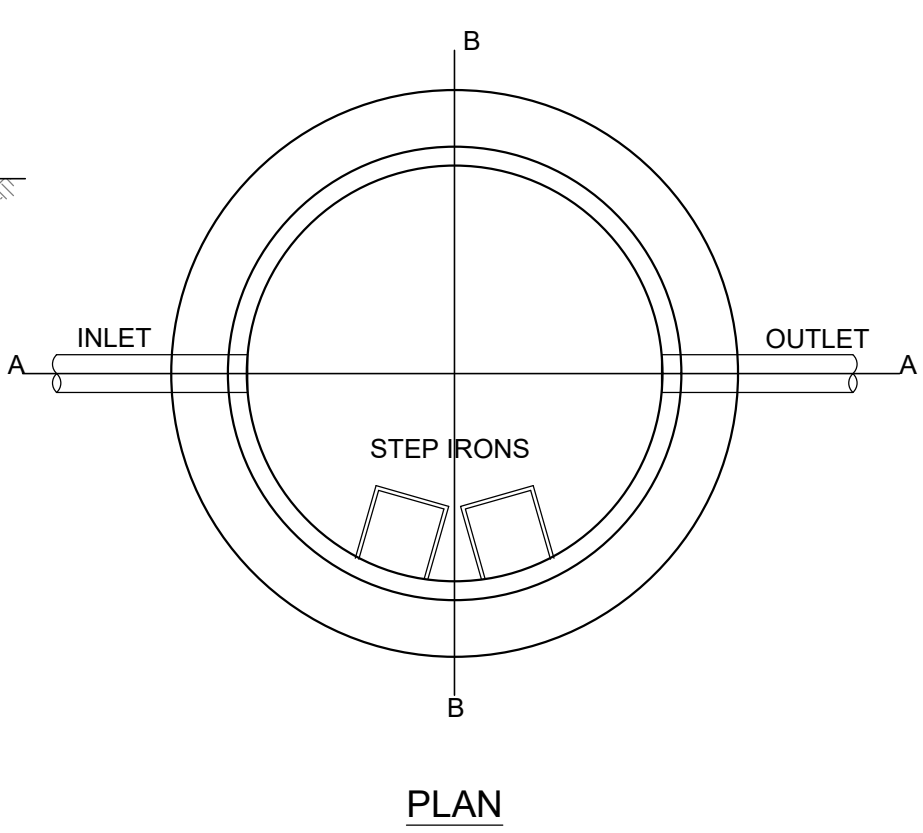
TYPICAL PIPE BEDDING FOR RIGID PIPES UP TO 800mm DIA

SCALE 1:10



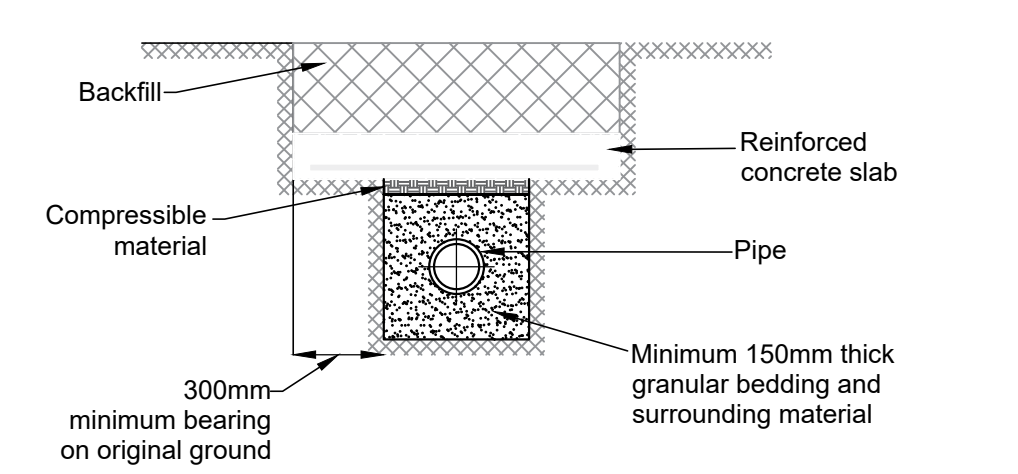
TYPICAL CATCHPIT DETAIL

SCALE 1:20

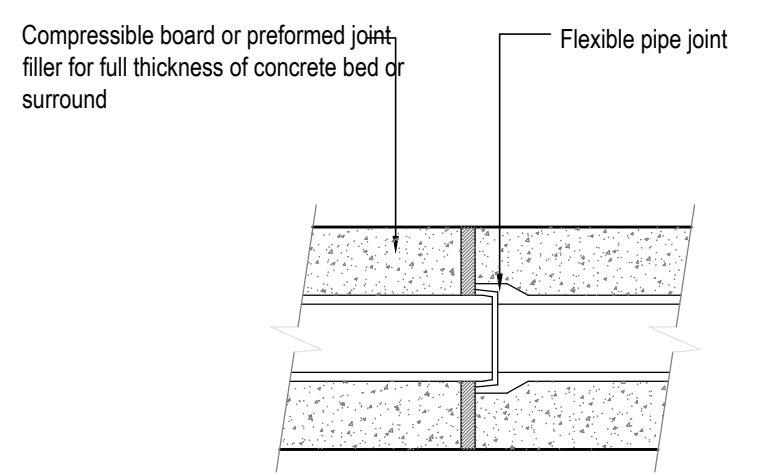


PPIC BASE OPTIONS

SCALE 1:10



SHALLOW DEPTHS PIPE PROTECTION TYPICAL DETAIL



JOINTS FOR CONCRETE SURROUND TO PIPES

(To occur at each pipe joint)
SCALE: NTS

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P01	PLANNING	19/09/24	MC	AB CK

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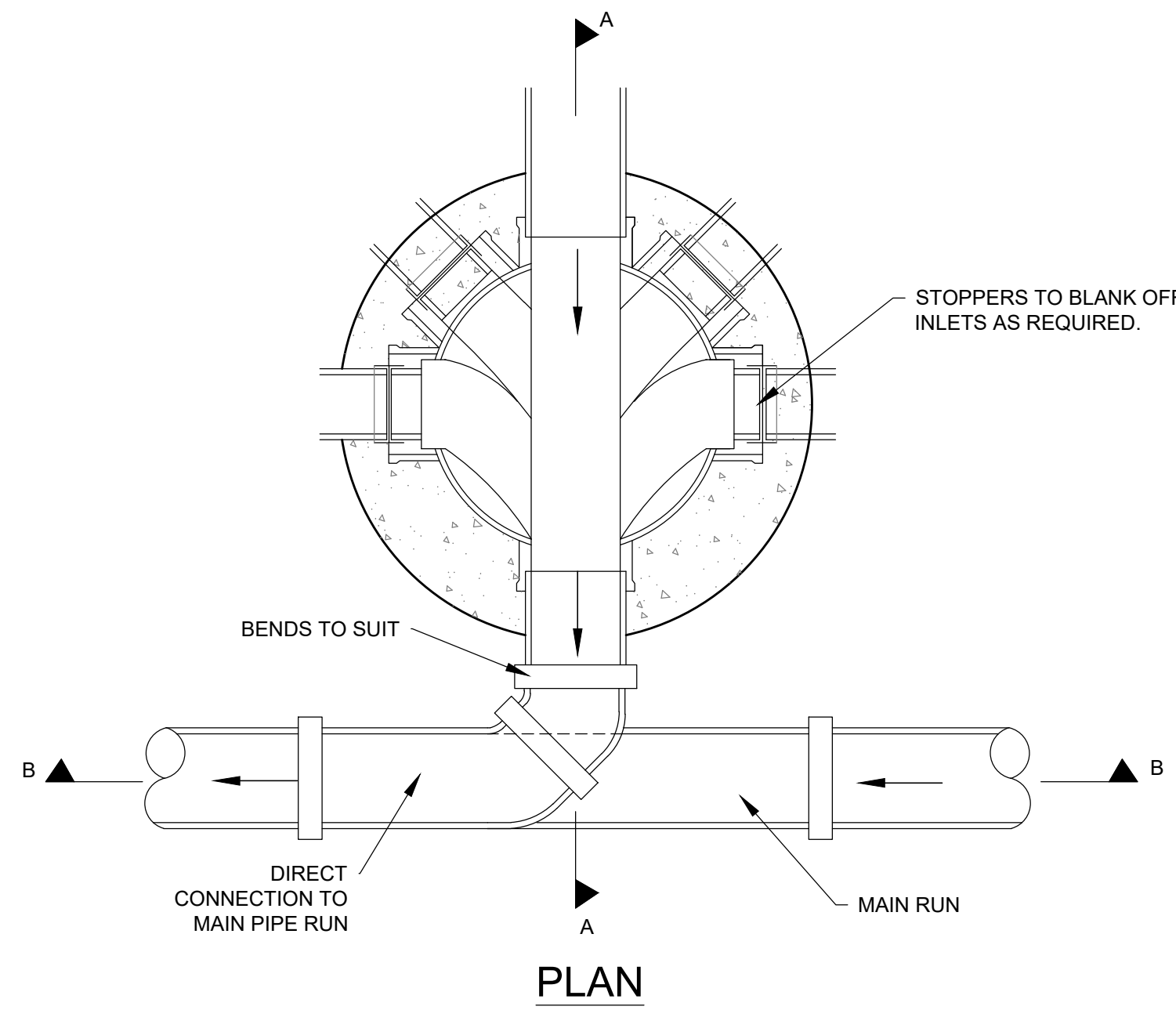
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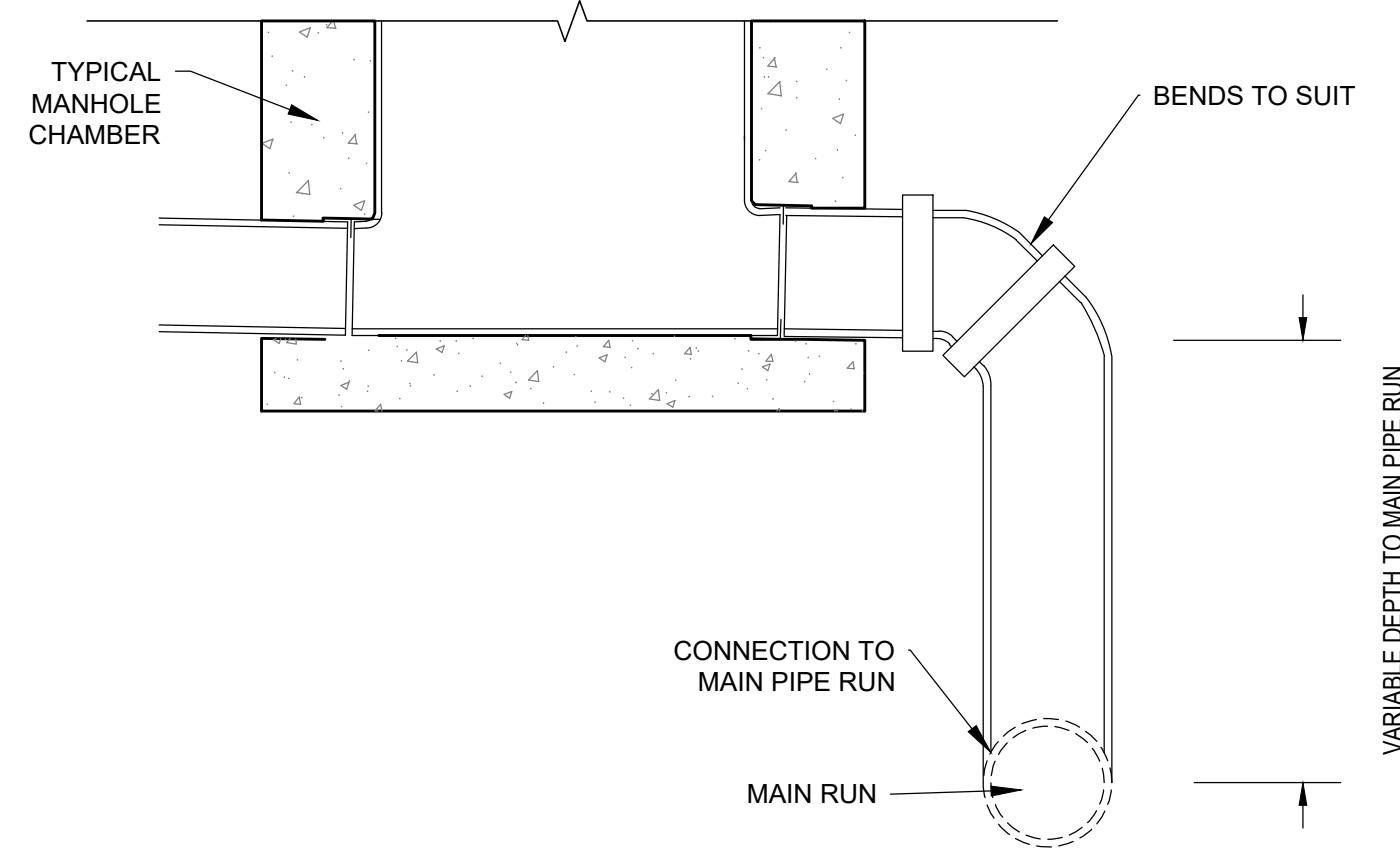
PROJECT
PHASE 3, BICESTER SYMMETRY PARK

TITLE DRAINAGE STANDARD DETAILS SHEET 3	
HYDROCK PROJECT NO. 22281	SCALE @ A1 AS SHOWN
STATUS DESCRIPTION SUITABLE FOR REVIEW & COMMENT	STATUS S3
DRAWING NO. 22281-HYD-XX-XX-DR-C-0552	REVISION P02

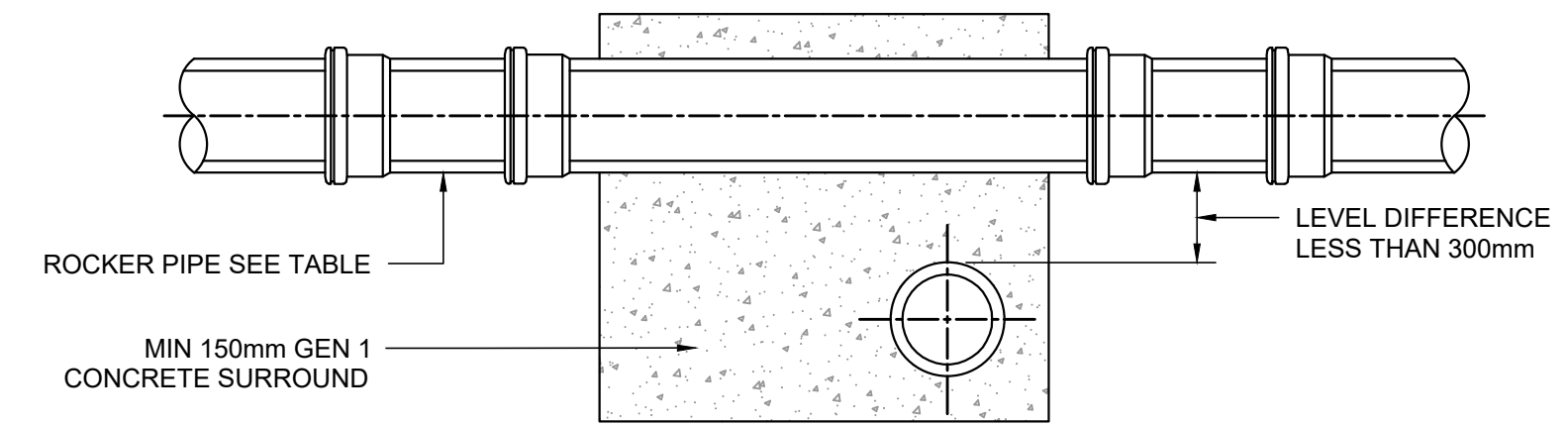
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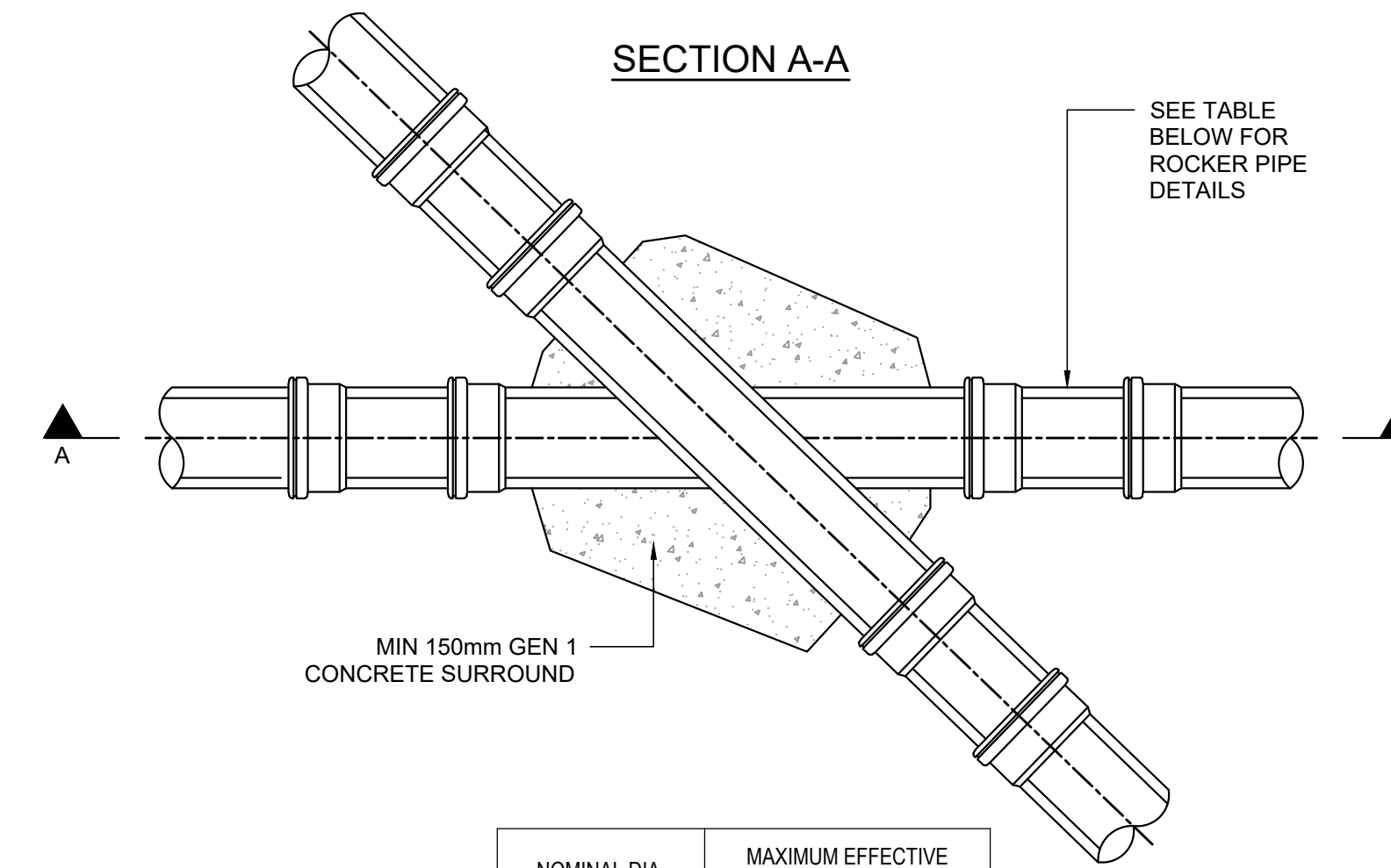
PLAN



SIDE ELEVATION (SECTION A-A)

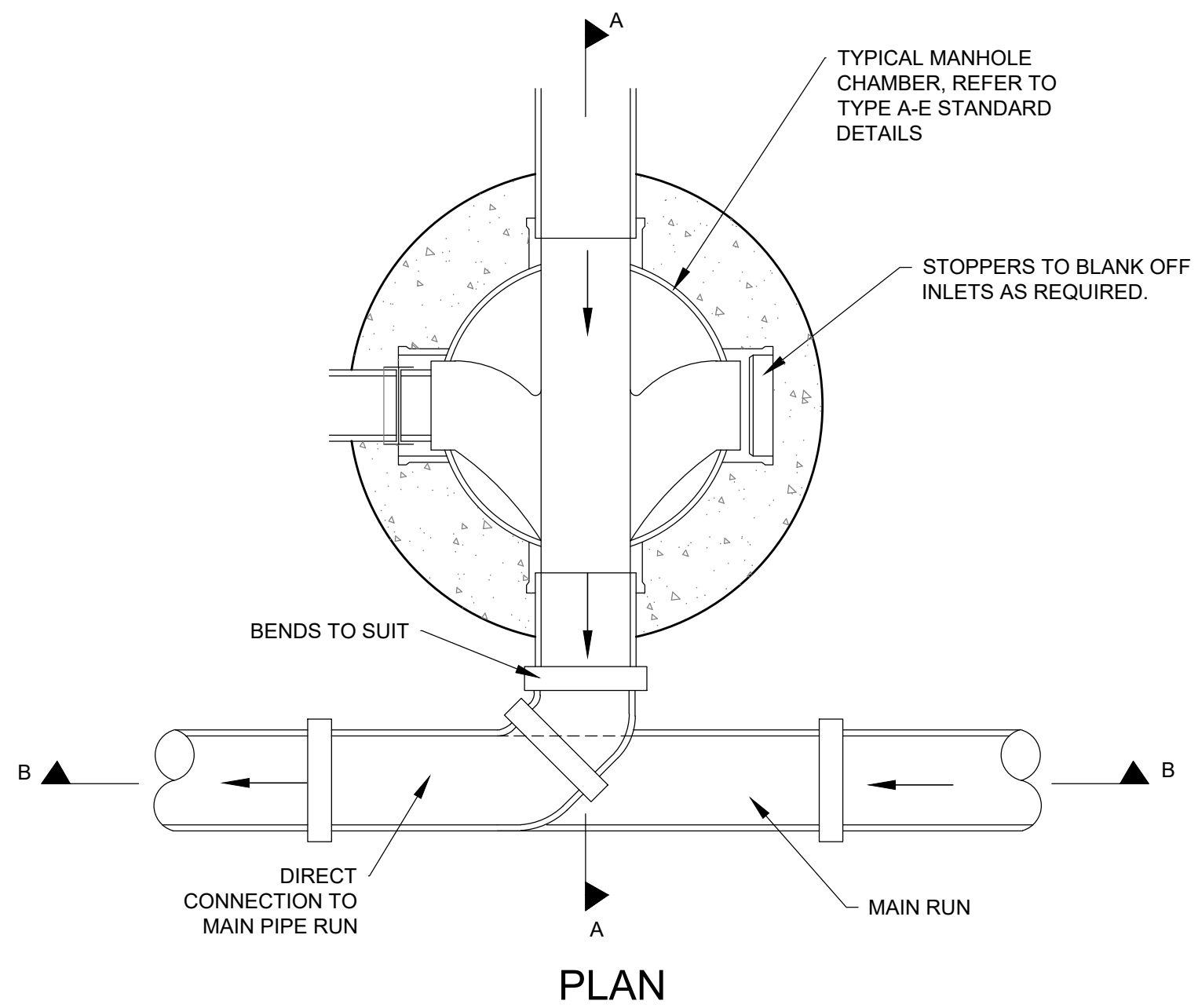


SECTION A-A

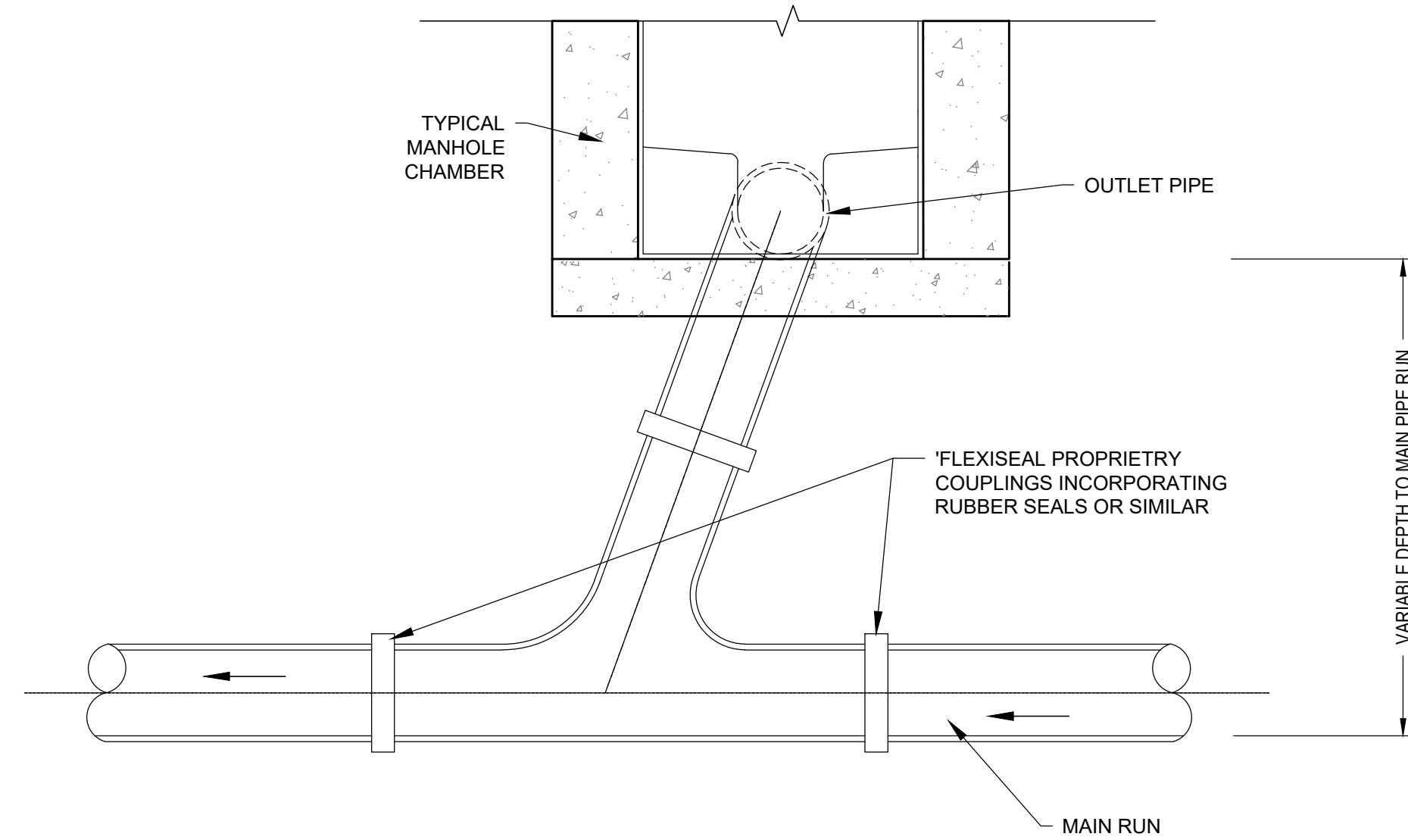


NOMINAL DIA.	MAXIMUM EFFECTIVE LENGTH
150-600	600
601-750	1000
OVER 750	1250

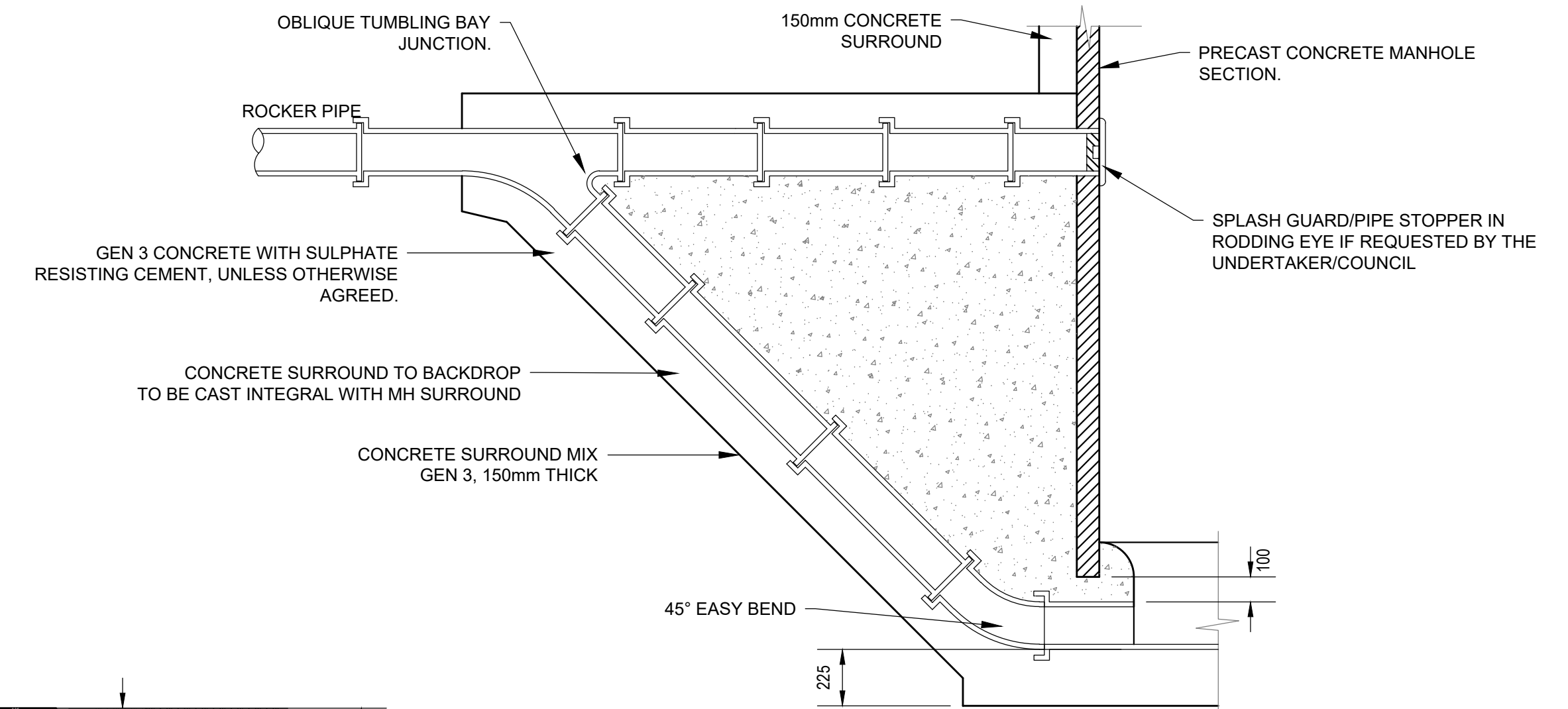
TYPICAL CROSSOVER DETAIL
SCALE 1:25



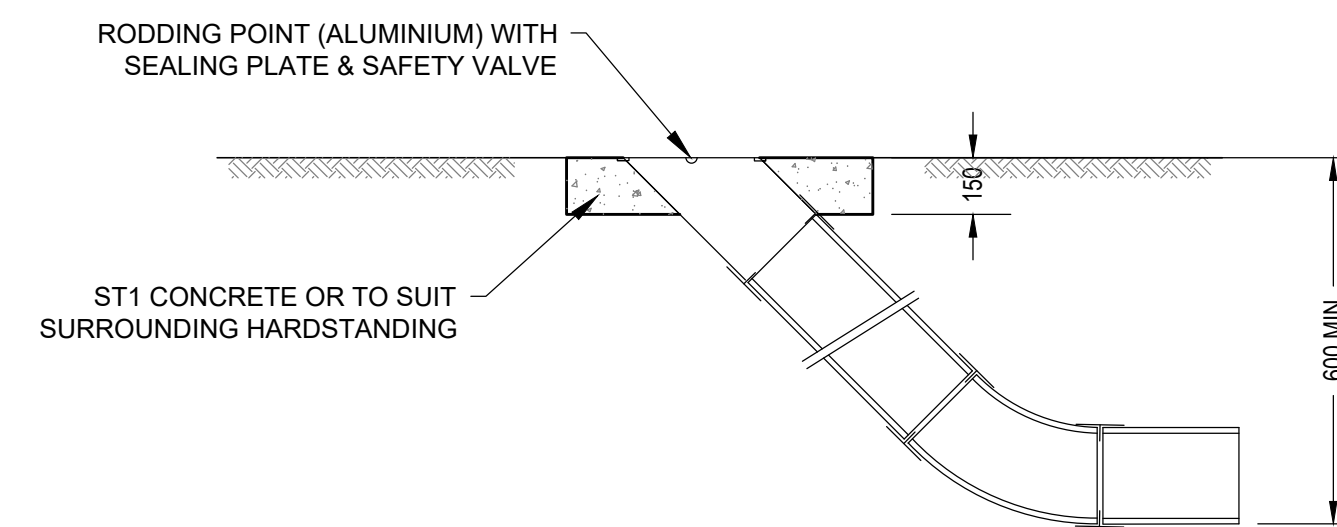
PLAN



FRONT ELEVATION (SECTION B-B)



45° BACKDROP DETAIL
SCALE 1:20



RODDING EYE DETAIL
SCALE 1:20

TYPICAL MANHOLE OUTLET PIPE ARRANGEMENTS
SCALE 1:10

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P01	PLANNING	19/09/24	MC	AB	CK

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PROJECT

PHASE 3, BICESTER
SYMMETRY PARK

TITLE
DRAINAGE STANDARD DETAILS
SHEET 4

HYDROCK PROJECT NO.
22281

SCALE @ A1
AS SHOWN

STATUS DESCRIPTION
SUITABLE FOR REVIEW & COMMENT

STATUS
S3

DRAWING NO.
22281-HYD-XX-XX-DR-C-0553

REVISION
P02

Filename: Z:\00 - Projects\Contractors\22281-5818 Symmetry Park Bicester, Phase 3\01 - WPD\01 - Drawing\022281-HYD-XX-XX-DR-C-0553 - Drainage Std Details.dwg