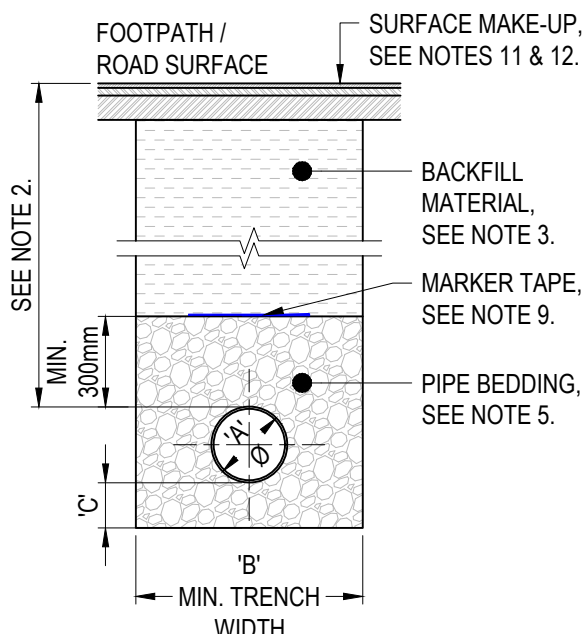
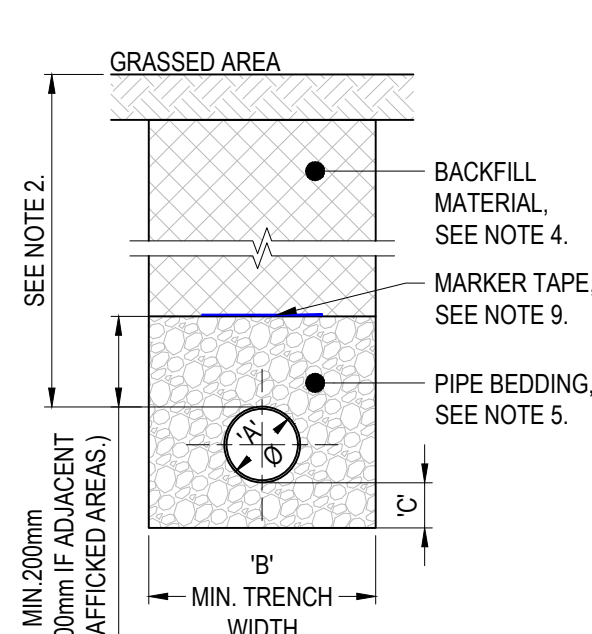




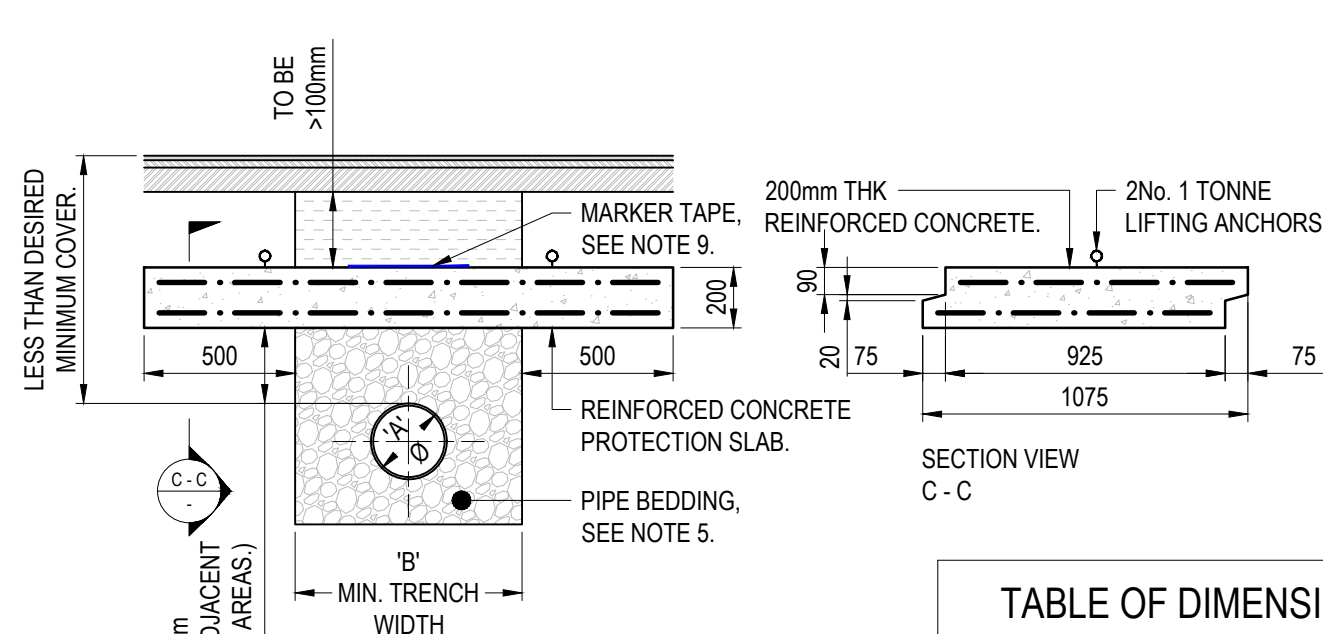
WATERMAIN TRENCH AND BEDDING DETAIL

FOR USE IN TRAFFICKED AREAS, MIN. COVER 1.2m.
SCALE 1 : 25



WATERMAIN TRENCH AND BEDDING DETAIL

FOR USE IN NON-TRAFFICKED AREAS, MIN. COVER 0.9m.
SCALE 1 : 25



WATERMAIN TRENCH CONCRETE PROTECTION

FOR USE IN AREAS WHERE MINIMUM COVER CANT BE ACHIEVED.
SCALE 1 : 25

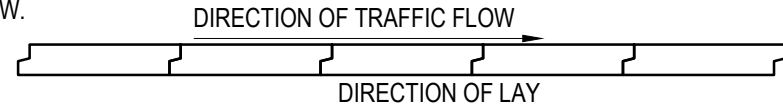
TABLE OF DIMENSIONS FOR STEEPLY INCLINED PIPELINES	
GRADIENT	SPACING (m)
1:2 & STEEPER	5.5
< 1:2 - 1:4	11.0
1:4 - 1:5	16.6
1:5 - 1:6	22.0

WM TABLE 01	
'A' PIPE Ø (mm)	'B' TRENCH WIDTH W (mm)
< 80	SEE NOTE 10.
100	500
150	600
200	600
250	750
300	750
350	750
400	900
450	900

WM TABLE 02	
'A' PIPE Ø (mm)	'C' DEPTH OF BEDDING (mm)
≤ 200	150
≥ 250	200

TRENCH & PIPEBEDDING NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- THE MINIMUM DEPTH OF COVER FROM THE FINISHED GROUND LEVEL TO THE EXTERNAL CROWN OF THE PIPE SHALL BE 900mm WHERE THE PIPE IS TO BE LOCATED IN HOUSING ESTATE ROADS. GREATER DEPTHS OF COVER AND/OR PIPE STRENGTH AND/OR A HIGHER CLASS OF BEDDING MATERIAL MAY BE REQUIRED WHERE HIGH TRAFFIC LOADING IS ANTICIPATED. THE DESIRABLE COVER FOR A WATERMAIN SHOULD BE 1200mm, WHERE PRACTICABLE & SHOULD NOT EXCEED 3.0m.
- CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS IS TO BE USED AS BACKFILL MATERIAL WHERE THE WATER MAIN IS LOCATED IN ROADS, FOOTPATHS OR WHEN THE NEAREST PART OF THE TRENCH IS WITHIN 1m OF THE PAVED EDGE OF THE ROADWAY. CLAUSE 804 / 808 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. CLAUSE 808 IS TO BE USED WITHIN 500mm OF CEMENT BOUND MATERIALS, CONCRETE PAVEMENTS, CONCRETE STRUCTURES OR CONCRETE PRODUCTS. OTHERWISE CLAUSE 804 MAY BE USED. ALTERNATIVE BACKFILL MATERIAL TO THAT DESCRIBED ABOVE (CLAUSE 804 OR CLAUSE 808) OF THE PIPE TRENCH WILL ONLY BE ALLOWED BY UISCÉ EIREANN WHERE THE ROADS AUTHORITY IN WHOSE FUNCTIONAL AREA THE DEVELOPMENT IS LOCATED, PROVIDES WRITTEN APPROVAL TO THE DEVELOPER TO THE USE SUCH ALTERNATIVE MATERIAL.
- SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY UISCÉ EIREANN.
- PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm (d/D 2/14) GRADED AGGREGATE OR 10mm (d/D 4/10) SINGLE SIZED AGGREGATE TO IS EN 13242.
- IN SOFT GROUND CONDITIONS (CBR < 5) THE MATERIAL SHOULD BE EXCAVATED OUT AND DISPOSED OF IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE WRAPPING. ALTERNATIVELY, SPECIAL PIPE SUPPORT ARRANGEMENTS, INCLUDING PILING ETC. MAY BE REQUIRED WHERE THE DEPTH OF SOFT MATERIAL IS EXCESSIVE. SUCH ARRANGEMENTS SHALL BE SUBJECT TO ASSESSMENT BY UISCÉ EIREANN BEFORE ADVANCING WITH THE WORK.
- PIPES SHALL NOT BE SUPPORTED ON STONES OR ROCKS, OR ANY HARD OBJECT AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE ACTUAL DEPTH OF THE TRENCH WITH THE VOID FILLED WITH CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
- SHOULD MINIMUM COVER NOT BE ACHIEVABLE, CONCRETE GRADE C/80 SHALL BE USED AS BACKFILL MATERIAL.
- MARKER TAPE TO BE 400mm WIDE BLUE POLYETHYLENE MATERIAL IN ACCORDANCE WITH EN 12163, PLASTIC PIPES SHALL HAVE WARNING TAPE INCORPORATED A REINFORCED BAND BRACING WIRE. SERVICE PIPES SHALL HAVE 200mm WIDE MESH TAPE. MARKER TAPE TO BE LAID AT TOP OF PIPE BEDDING LAYER.
- TRENCH WIDTHS FOR PIPE SIZES ≤80mm MAY BE <500mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
- EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT.
3. FOR ANY SLABBING WORKS TO BE CARRIED OUT WITHIN THE VICINITY OF THE PIPELINE, A METHOD STATEMENT IS TO BE SUBMITTED FOR APPROVAL BY UISCÉ EIREANN.
- MARKER TAPE TO BE PLACED ABOVE THE PROTECTION SLAB ALONG THE DIRECTION OF THE PIPELINE.
- CONCRETE TO BE GRADE C30/35.
- MINIMUM COVER TO STEEL REINFORCEMENT =40mm.
- SLABS TO BE DESIGNED FOR USE UNDER A HB25 LOAD IN ACCORDANCE WITH BS5400-2. DESIGN TO BE SUBMITTED TO UISCÉ EIREANN FOR ASSESSMENT PRIOR TO INSTALLATION.
- THE SOIL ON WHICH THE SLAB RESTS MUST HAVE A CBR OF 4% OR GREATER.WHERE THE CBR IS LESS THAN 4% THE MATERIAL SHALL BE REMOVED AND REPLACED WITH IMPORTED GRANULAR MATERIAL AS APPROVED BY UISCÉ EIREANN.
- IF DIRECTION OF PIPELINE AND DIRECTION OF TRAFFIC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE AGAINST THE DIRECTION OF TRAFFIC FLOW.



- IF PIPELINE PROTECTION SLAB IS TO BE USED SOLELY FOR IMPACT PROTECTION & OVERALL DEPTH OF COVER IS GREATER THAN 1.2m, THE DISTANCE BETWEEN UNDERSIDE OF SLAB & TOP OF PIPE MAY BE INCREASED AFTER CONSULTATION WITH UISCÉ EIREANN.

THRUST BLOCKS AND SUPPORT NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- CONCRETE THRUST BLOCKS (ANCHORAGE) SHALL BE POSITIONED SYMMETRICALLY WITH RESPECT TO THE CONNECTING PIPE & BENDS.
- TRENCH DIMENSIONS - REFER TO DRAWING No's STD-W-13.
- THRUST BLOCKS SHALL BEAR ON UNDISTURBED SOIL. IF FOR ANY REASON THEY CANNOT THEN THE DEVELOPER SHALL NOTIFY UISCÉ EIREANN IMMEDIATELY WITH A PROPOSED SOLUTION.
- THRUST BLOCK REINFORCEMENT REQUIRES SPECIFIC DESIGN.
- FOR TEST PRESSURES GREATER THAN 18 BAR, THRUST BLOCK DESIGN IS TO BE SUBMITTED TO UISCÉ EIREANN FOR REVIEW.
- THRUST BLOCKS ARE DESIGNED FOR AN AVERAGE BEARING PRESSURE OF 100 kN/m (TYPICAL FOR SOFT CLAY) FOR OTHER CONDITIONS. ACTUAL DIMENSIONS MAY BE ALTERED ON INSTRUCTIONS FROM UISCÉ EIREANN.
- CONCRETE IN THRUST BLOCKS SHALL BE GRADE C20/25.
- COMPRESSIBLE FILLER FOR CONCRETE PROTECTION TO BE IN ACCORDANCE WITH BS EN 622-1 AND BS EN 622-4. BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PLASTIC PIPES. THE THICKNESS OF COMPRESSIBLE FILLER FOR MAINS < 450mm IN DIAMETER IS TO BE 18mm.
- CONCRETE THRUST BLOCKS FOR POLYETHYLENE PIPE TO COMPLY WITH THE MANUFACTURES REQUIREMENTS.
- POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.

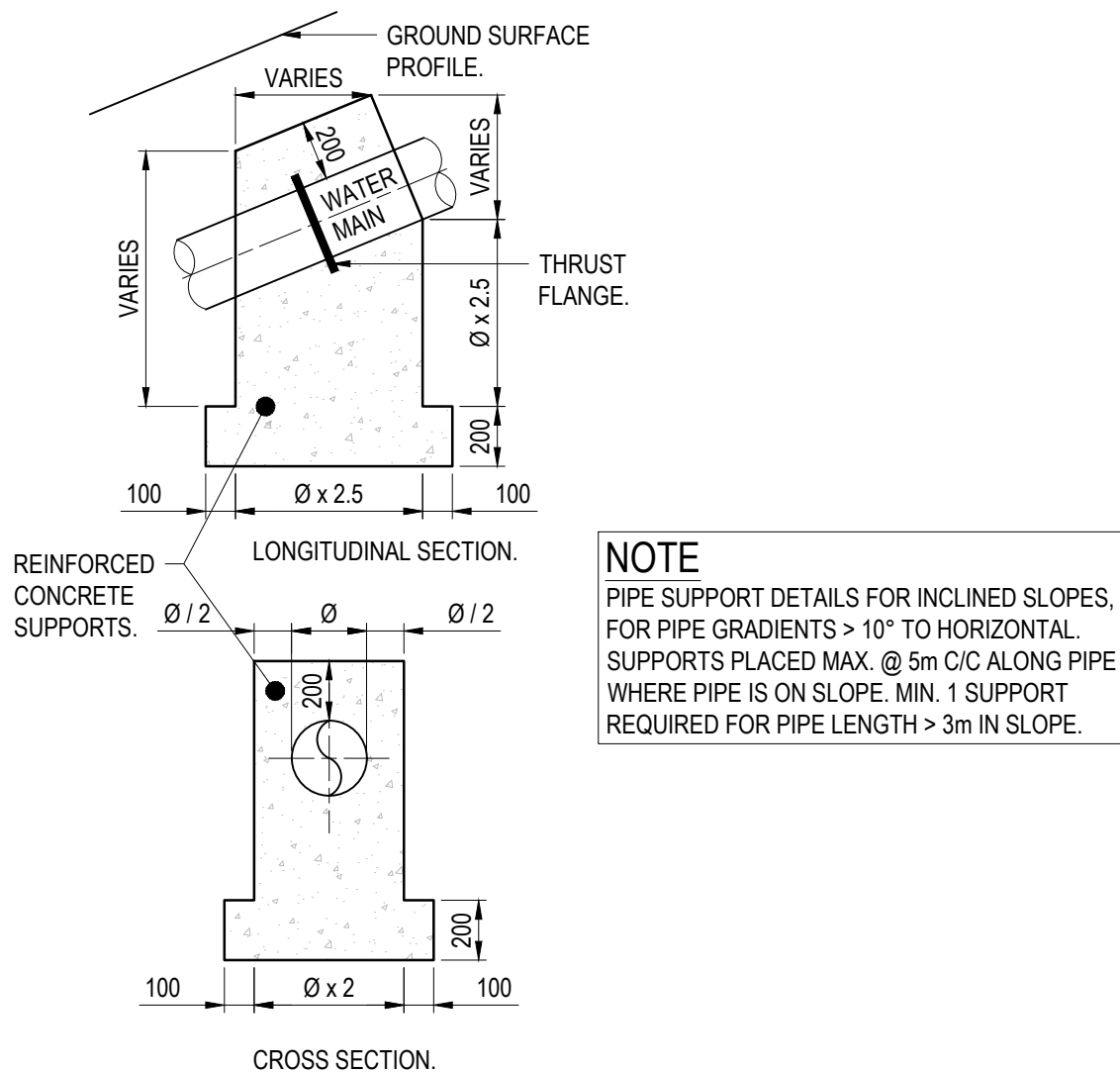
NOTE

DETAILS AND SPECIFICATIONS BASED ON UISCÉ EIREANN'S CURRENT STANDARDS. CONTRACTOR TO ENSURE LATEST STATUTORY BODY GUIDELINES, DETAILS AND SPECIFICATIONS ARE FOLLOWED.

< 12 BAR TEST PRESSURE										
NOM. Ø (mm)	DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K
100	600	330	160	80	200	350	390	700	600	400
150	960	510	260	130	225	450	660	900	750	600
200	1150	600	310	160	300	650	790	1050	900	700
250	1350	750	380	200	300	800	970	1200	1000	750
300	1580	850	450	220	320	950	1110	1300	1100	850
350	2100	1150	570	290	450	1000	1450	1550	1200	900
400	2550	1400	700	350	500	1050	1800	1700	1250	1000
450	3000	1630	830	420	680	1100	2130	1800	1450	1150
500	3590	1950	990	500	800	1200	2540	1950	1600	1250
600	4100	2200	1120	570	850	1400	2880	2100	1700	1300

12 BAR TO 15 BAR TEST PRESSURE										
NOM. Ø (mm)	DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K
100	700	380	190	100	200	350	510	750	600	400
150	1135	620	320	160	225	450	760	950	750	600
200	1400	750	380	190	300	650	980	1150	950	700
250	1730	940	480	240	320	800	1210	1350	1050	850
300	2090	1130	580	300	380	950	1480	1500	1200	950
350	2600	1410	720	360	500	1050	1840	1700	1350	1050
400	2980	1610	820	420	750	1200	2110	1850	1500	1150
450	3400	1840	940	470	900	1300	2330	2000	1600	1250
500	4090	2210	1130	570	1000	1400	2890	2200	1750	1350
600	5010*	2710*	1380	700	1000	1500	3550*	2350	1900	1500

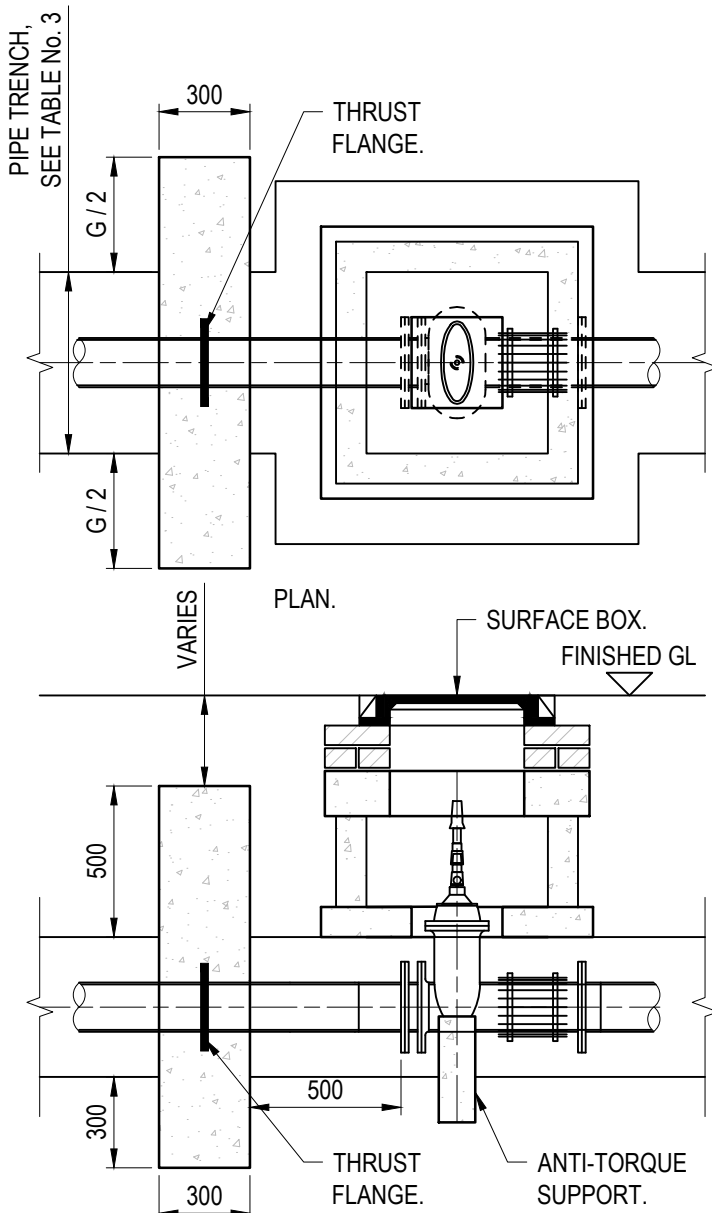
15 BAR TO 18 BAR TEST PRESSURE										
NOM. Ø (mm)	DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K
100	750	400	205	100	220	400	530	800	650	400
150	1250	700	350	180	250	500	890	1000	850	650
200	1650	890	450	230	320	700	1170	1250	1000	800
250	1960	1060	540	270	350	900	1370	1450	1150	900
300	2300	1200	640	320	500	1100	1630	1650	1300	1050
350	2390	1580	830	410	750	1200	2070	1850	1500	1150
400	3510	1900	970	190*	1000	1300	2490	2000	1600	1250
450	3810	2270	1160	590	1000	1350	2970	2150	1700	1350
500	4340*	2380	1210	610	1000	1400	3700	2250	1750	1400
600	6370*	3450*	1760	890	1000	1500	4500*	2400	2050	1650



WATER MAIN - PIPE SUPPORT FOR INCLINED SLOPES DETAIL

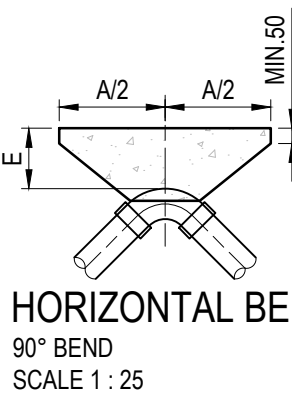
SCALE 1 : 25

NOTE
PIPE SUPPORT DETAILS FOR INCLINED SLOPES, FOR PIPE GRADIENTS > 10° TO HORIZONTAL. SUPPORTS PLACED MAX. @ 5m C/C ALONG PIPE WHERE PIPE IS ON SLOPE. MIN. 1 SUPPORT REQUIRED FOR PIPE LENGTH > 3m IN SLOPE.

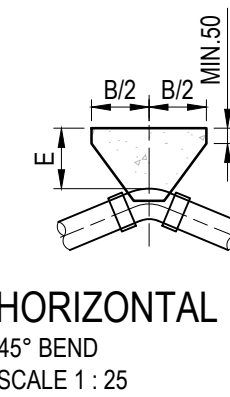


THRUST BLOCK FOR SLUICE VALVE / GATE VALVE DETAIL

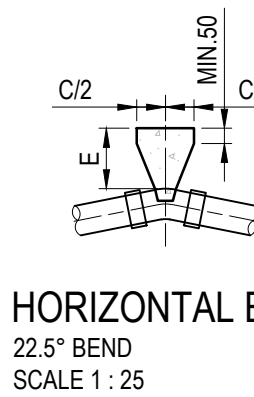
FOR VALVE BOX ARRANGEMENT.
SCALE 1 : 25



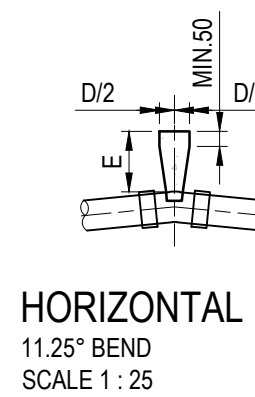
HORIZONTAL BEND
90° BEND
SCALE 1 : 25



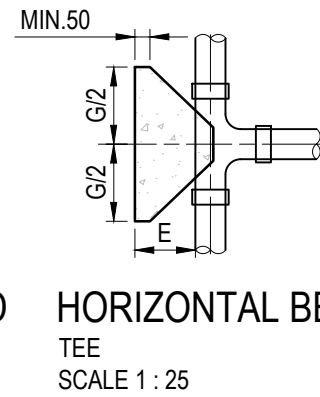
HORIZONTAL BEND
45° BEND
SCALE 1 : 25



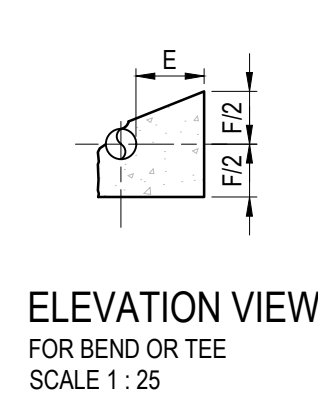
HORIZONTAL BEND
22.5° BEND
SCALE 1 : 25



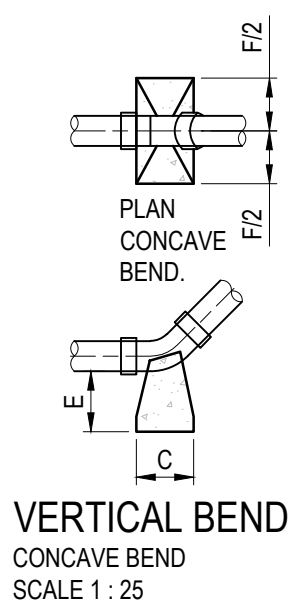
HORIZONTAL BEND
11.25° BEND
SCALE 1 : 25



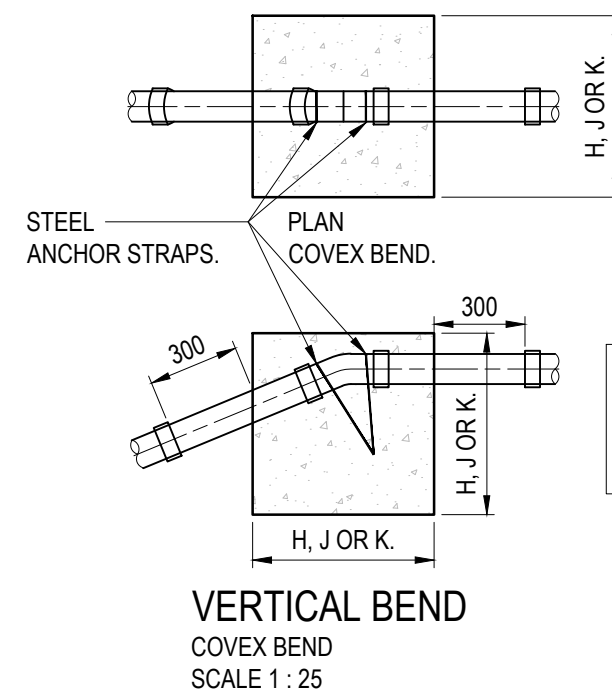
HORIZONTAL BEND
TEE
SCALE 1 : 25



HORIZONTAL BEND
FOR BEND OR TEE
SCALE 1 : 25

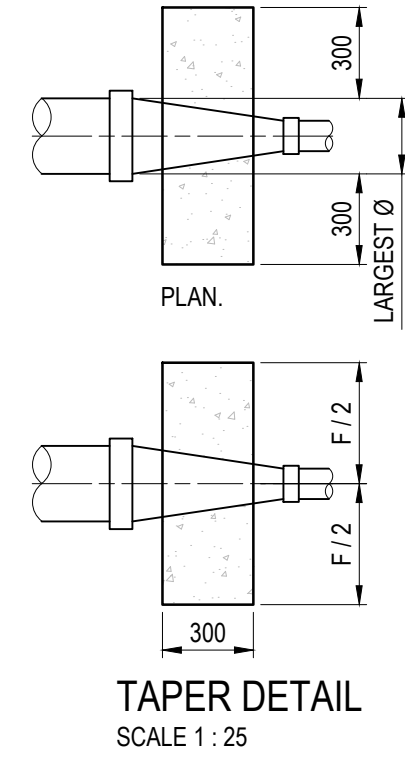


VERTICAL BEND
CONCAVE BEND
SCALE 1 : 25



VERTICAL BEND
CONVEX BEND
SCALE 1 : 25

NOTE
H - FOR 45° BEND
J - FOR 22.5° BEND
K - FOR 11.25° BEND



TAPER DETAIL
SCALE 1 : 25

GENERAL NOTES

- DO NOT SCALE FROM THIS DRAWING - IF IN DOUBT CONTACT PROJECT ENGINEER.
- ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
- ALL LEVELS AND COORDINATES ARE IN METRES REFERENCED TO IRISH TRANSVERSE MERCATOR GRID (ITM)
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, STRUCTURAL AND SERVICES DRAWINGS.
- THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS ON SITE AND IS RESPONSIBLE FOR ACCURATE SETTING OUT.
- THE CONTRACTOR IS TO CONFIRM THE EXISTING BOUNDARY AND SITE STRUCTURES ETC. PRIOR TO COMMENCING THE WORKS AND IMMEDIATELY INFORM THE SUPERVISING OFFICER SHOULD THESE BE AT VARIANCE WITH THE ASSUMPTIONS SHOWN ON THE DRAWING.

ALL DIMENSIONS SHOWN ON THIS DRAWING ARE TO BE VERIFIED BY THE ARCHITECT PRIOR TO FABRICATION / MANUFACTURE / CONSTRUCTION

CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

THE DESIGNS ON THIS DRAWING ARE PREPARED WITH CONSIDERATION OF THE NEED TO IDENTIFY HAZARDS AND GIVE REGARD TO THEIR ELIMINATION OR MINIMISATION. REFERENCE MUST BE MADE TO HEALTH AND SAFETY INFORMATION PREPARED BY THE PRINCIPAL DESIGNER.

P01	Issued for Planning	04/06/26	AO	ES
ISSUE	DETAILS	DATE	BY	CHK

STATUS:

PLANNING

Will Rudd Davidson (Ireland)
Consulting Civil & Structural Engineers
South Point, Herbert House, Harmony Row,
Grand Canal Dock, Dublin D02 H270
T: 01 910 3278
E: dublin@ruddconsult.com
www.ruddconsult.com

CLIENT:
TIPPERARY COUNTY COUNCIL

PROJECT TITLE:
HOUSING DEVELOPMENT AT GLEAN CAOIN,
BORRISOLEIGH CO. TIPPERARY

DRG TITLE:
WATERMAIN DETAILS, SHEET 04

DRAWN BY:	AO	DATE DRAWN:	28/05/2026
CHECKED BY:	ES	DATE CHECKED:	28/05/2026

SCALES:	AS NOTED	SHEET SIZE:	A1
PROJECT - ORIGINATOR - VOLUME - LEVEL - TYPE - ROLE - NUMBER			REV:

G09900 - WRD - EX - ZZ - DR - C - 50038 P01