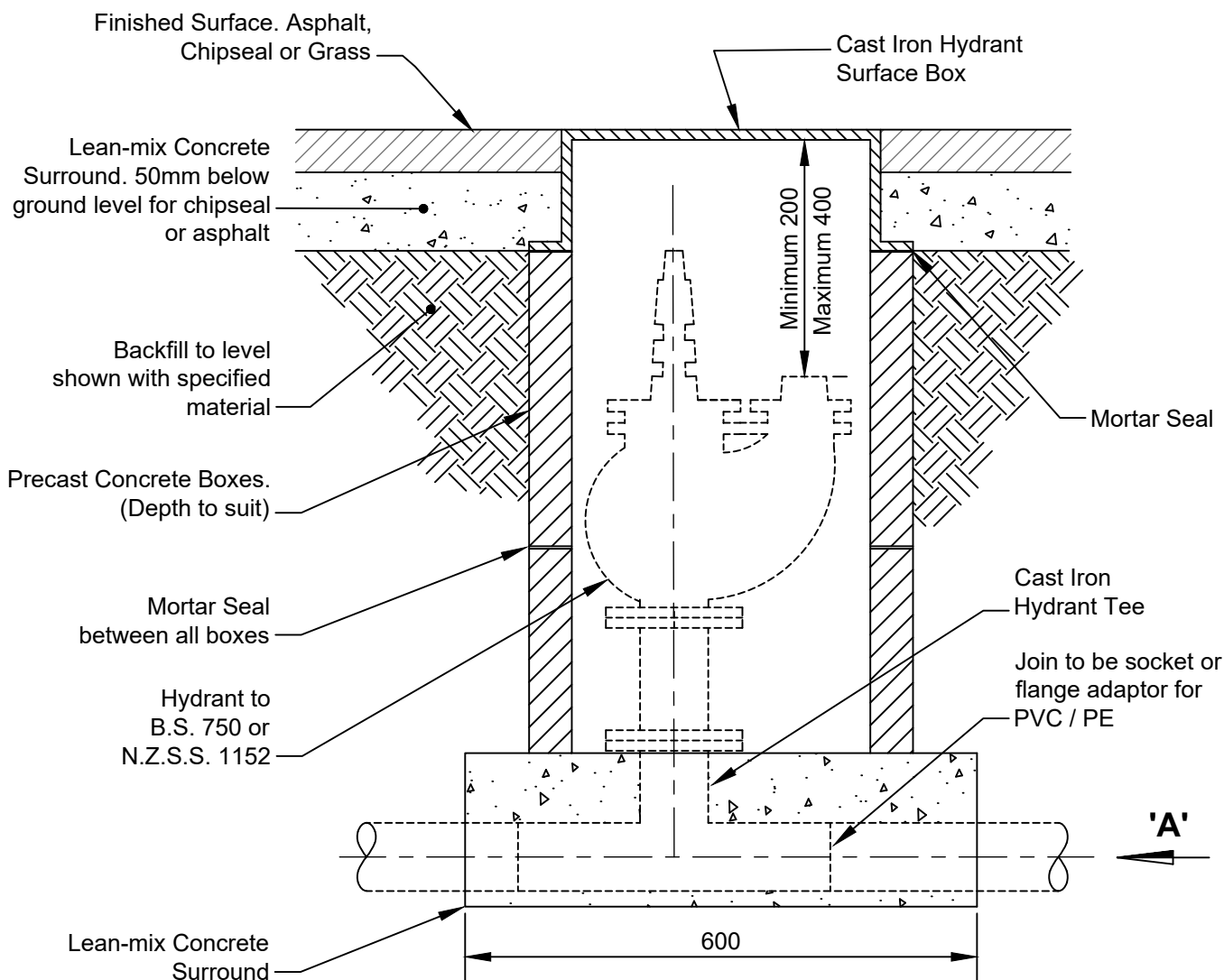
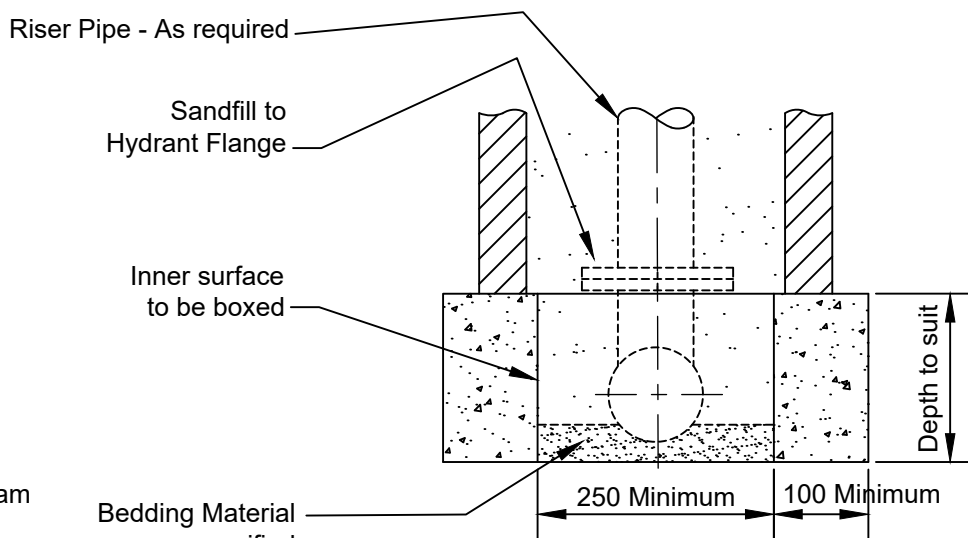




Section along Main

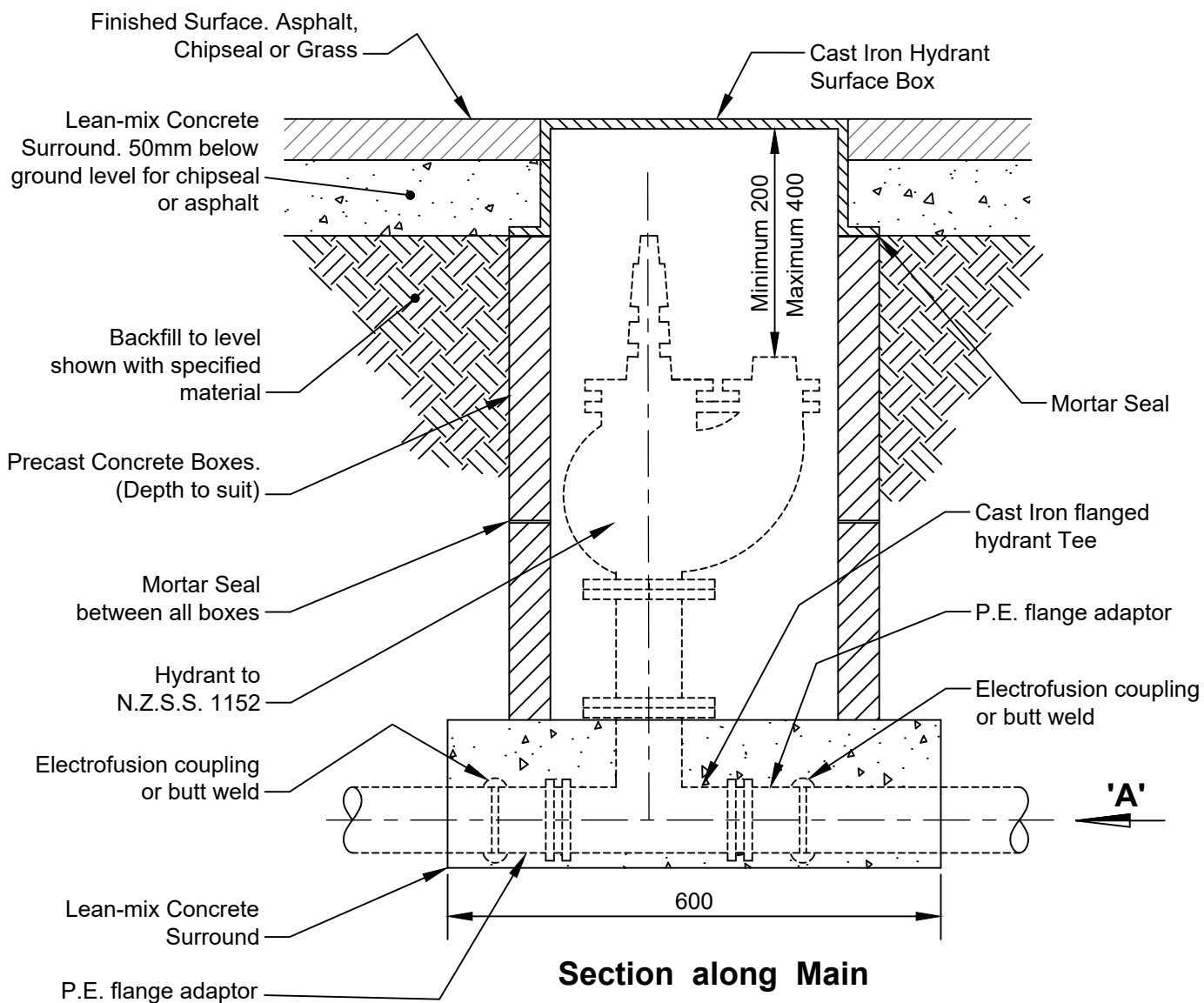


View on 'A'

Notes

1. Unsealed surfaces. Backfill to surface with specified material and ram hard.
2. Lean-mix concrete to be 10 parts aggregate to 1 part cement to be placed fairly dry and rammed hard.

Not to scale



Riser Pipe - As required

Sandfill to Hydrant Flange

Inner surface to be boxed

Bedding Material as specified

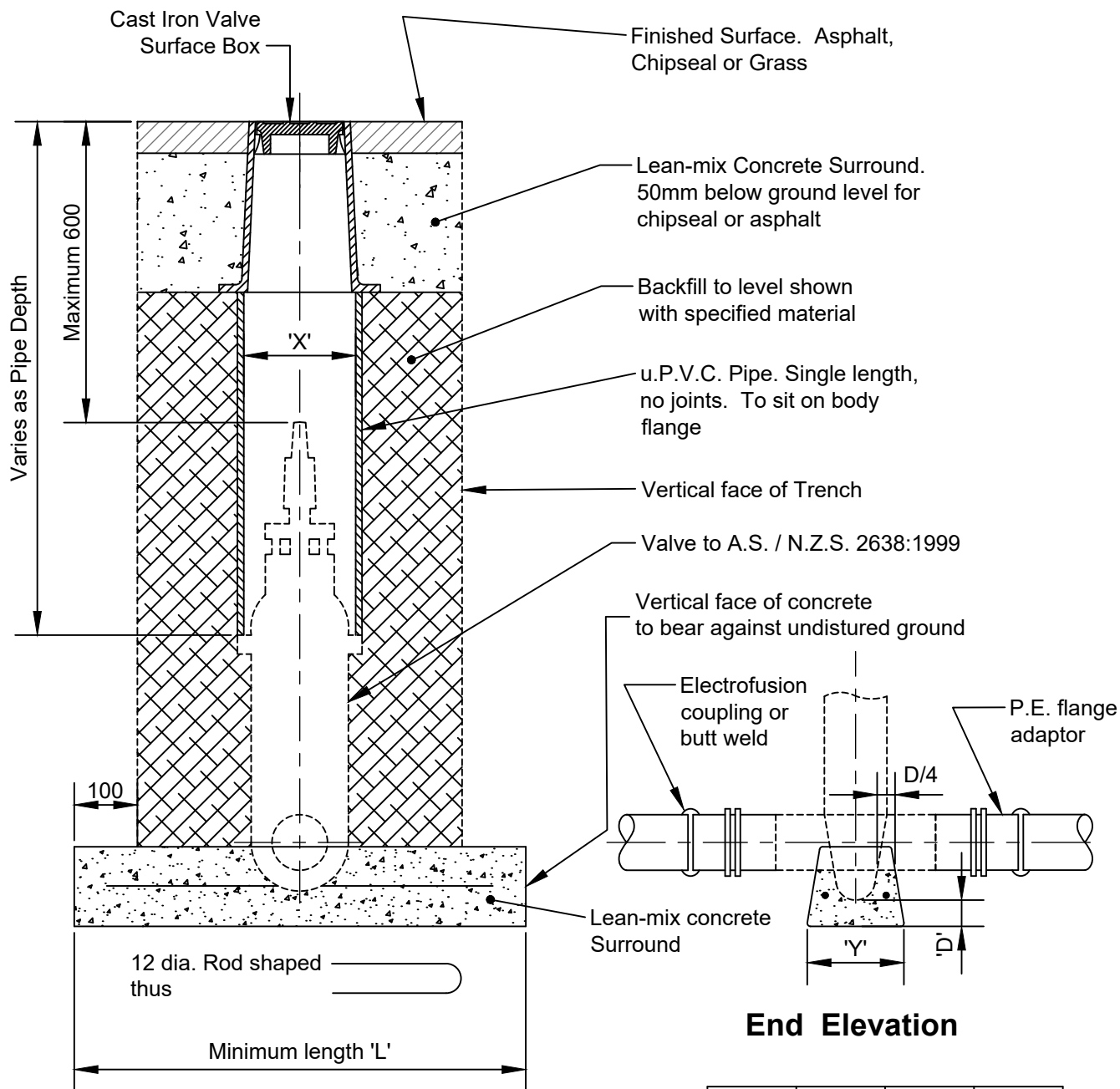
Depth to suit

View on 'A'

Notes

1. Unsealed surfaces. Backfill to surface with specified material and ram hard.
2. Lean-mix concrete to be 10 parts aggregate to 1 part cement to be placed fairly dry and rammed hard.

Not to scale

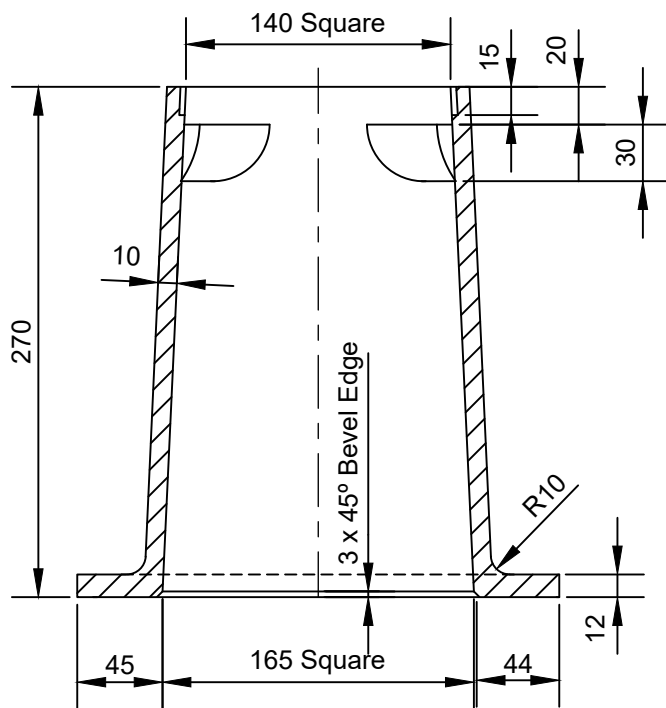


Notes

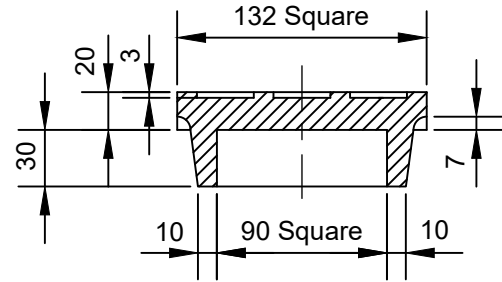
1. Unsealed surfaces. Backfill to surface with specified material and ram hard.
2. Lean-mix concrete to be 10 parts aggregate to 1 part cement to be placed fairly dry and rammed hard.

Valve Dia. 'D'	'X'	'Y'	'Z'
100	250	200	600
150	315	250	600
200	250	300	750
250	315	400	750

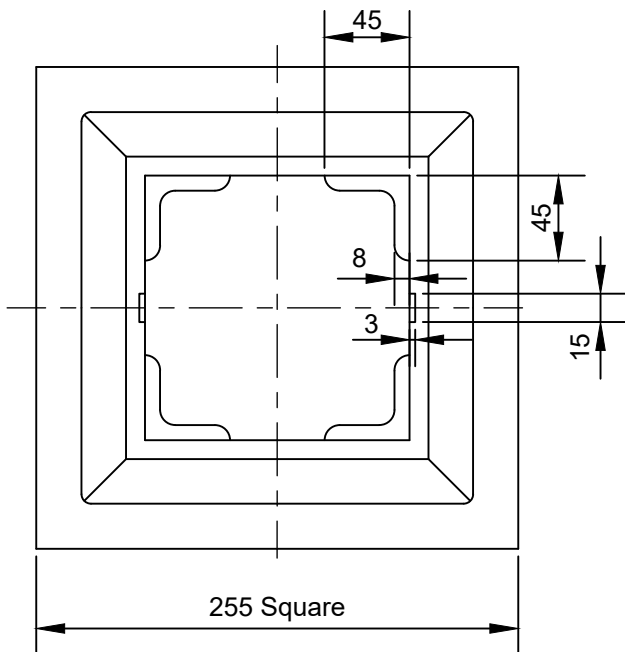
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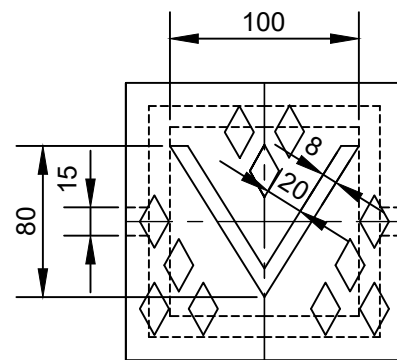
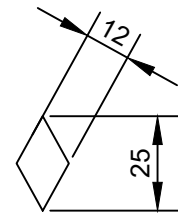
Half Section



Half Section

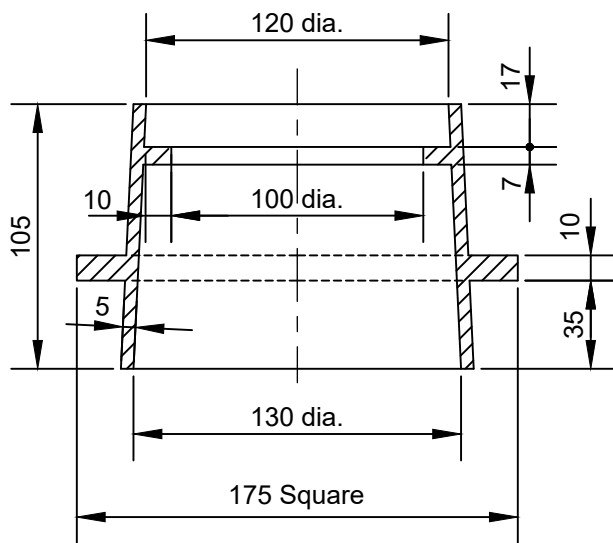


Plan

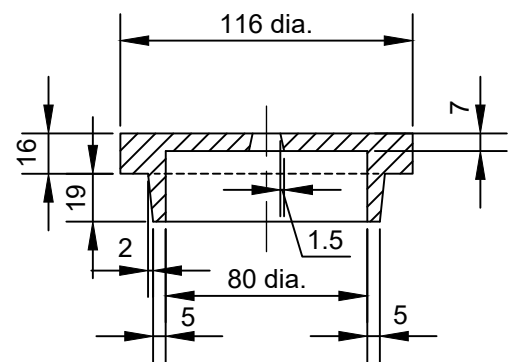


Plan

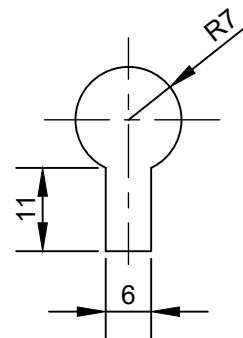
Not to scale



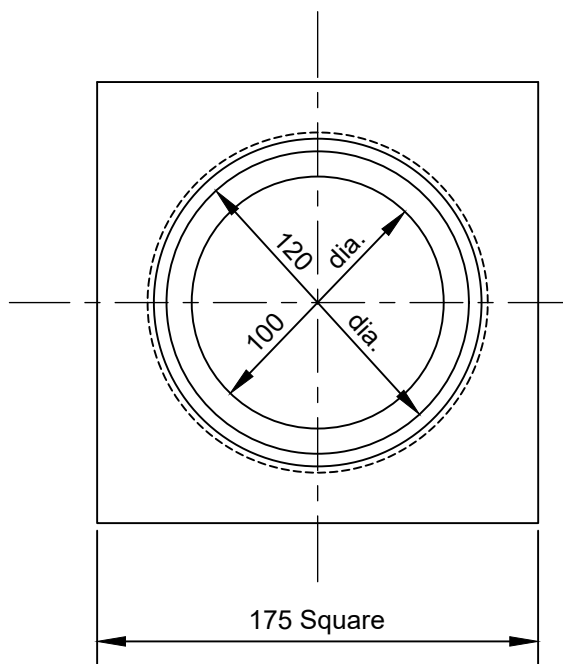
Half Section



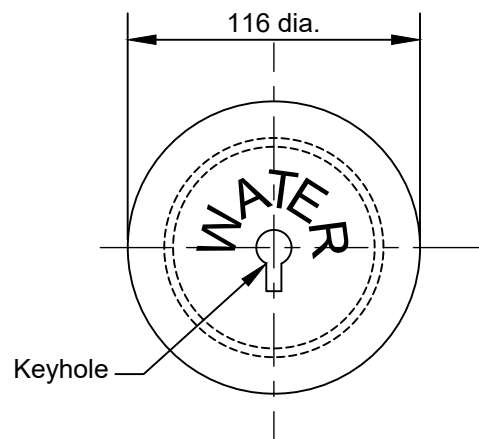
Half Section



Plan of Keyhole



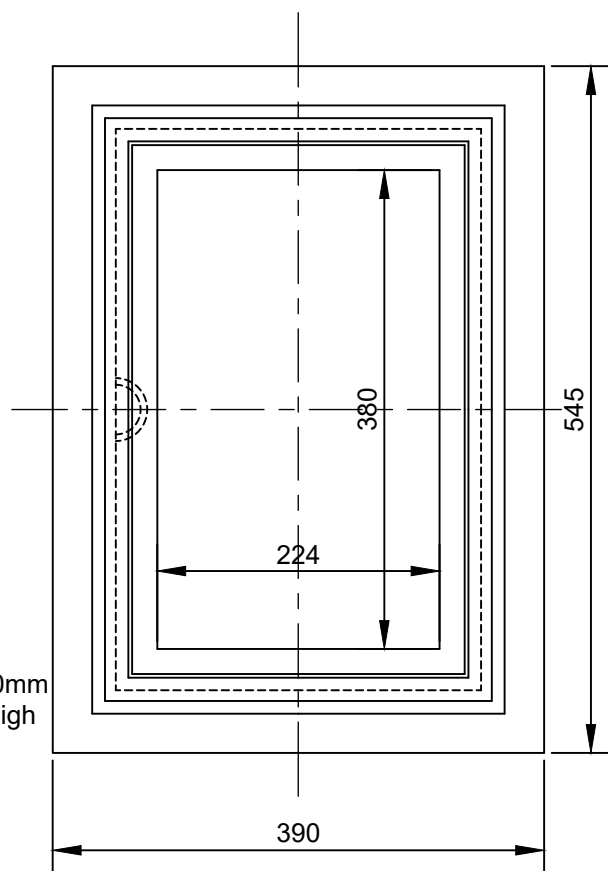
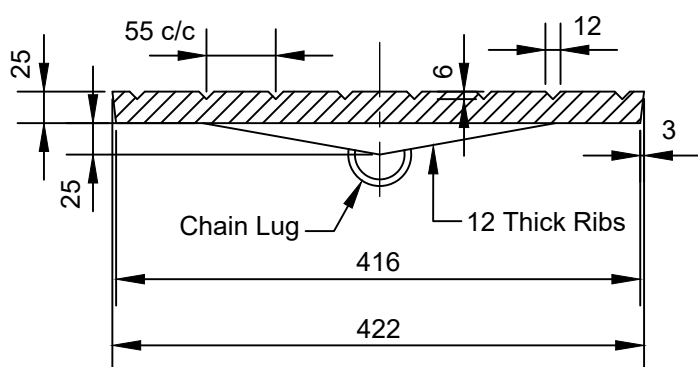
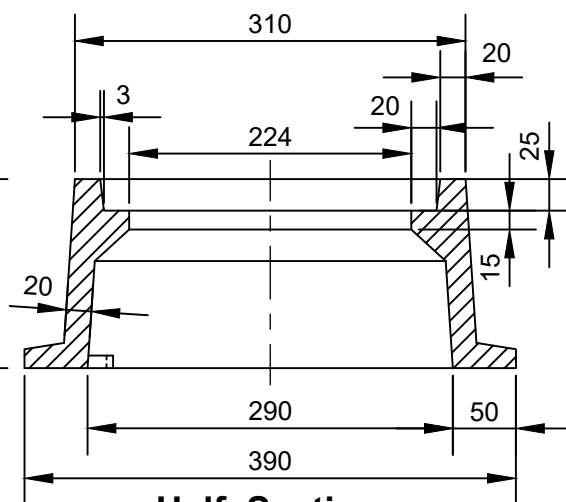
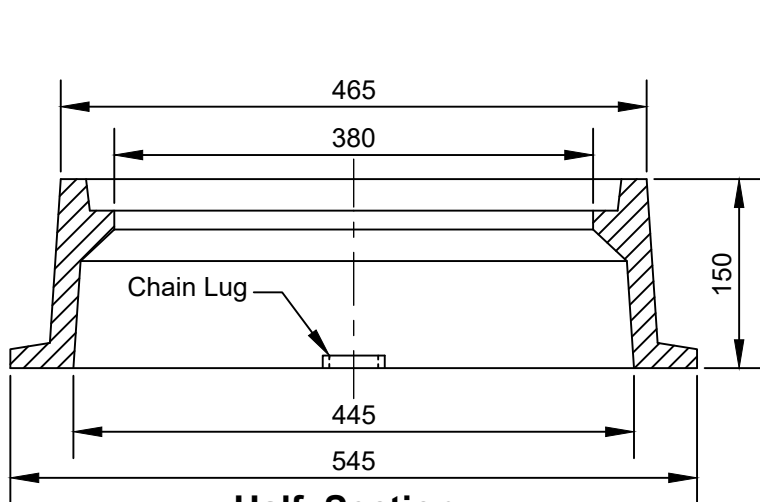
Plan



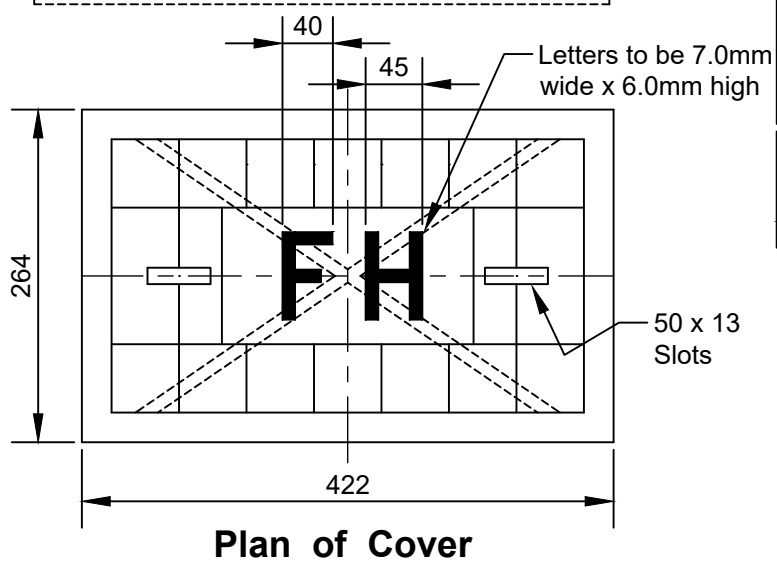
Plan

Note
Letters to be 1.5 wide x
1.0 high x 20 long

Not to scale



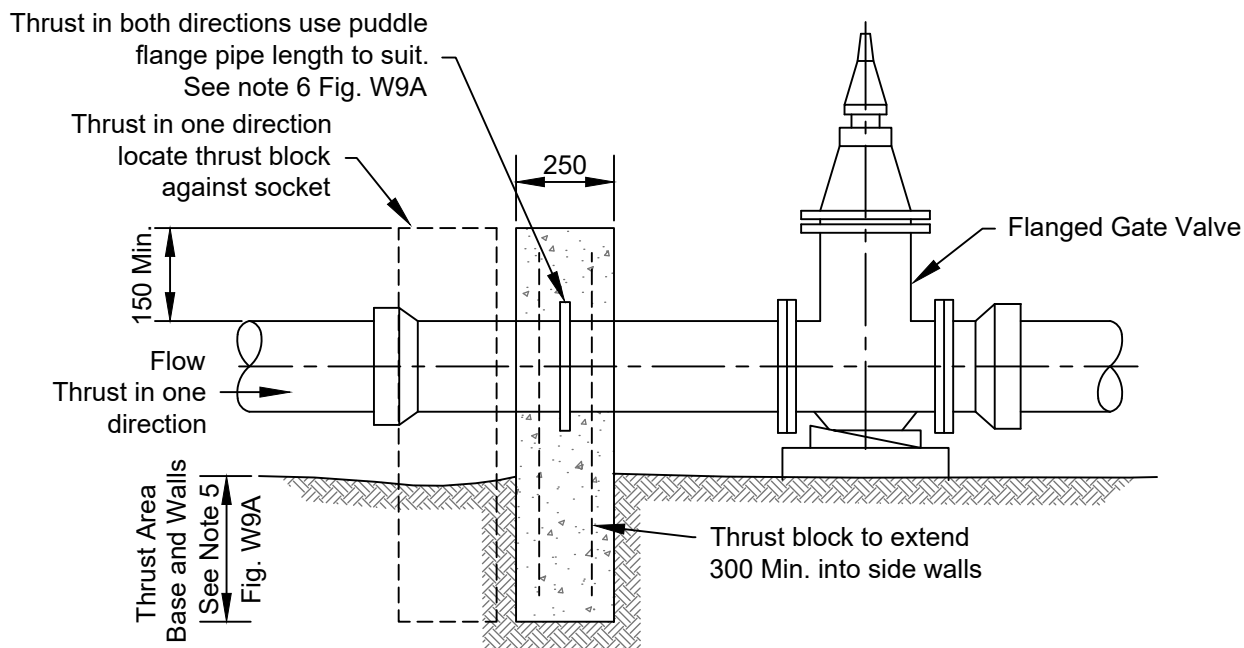
Air Valve Cover same casting with letters A.V.
in place of F.H.



Note

Chain Lugs to be joined
with length of chain to
allow cover to be lifted
clear of opening.

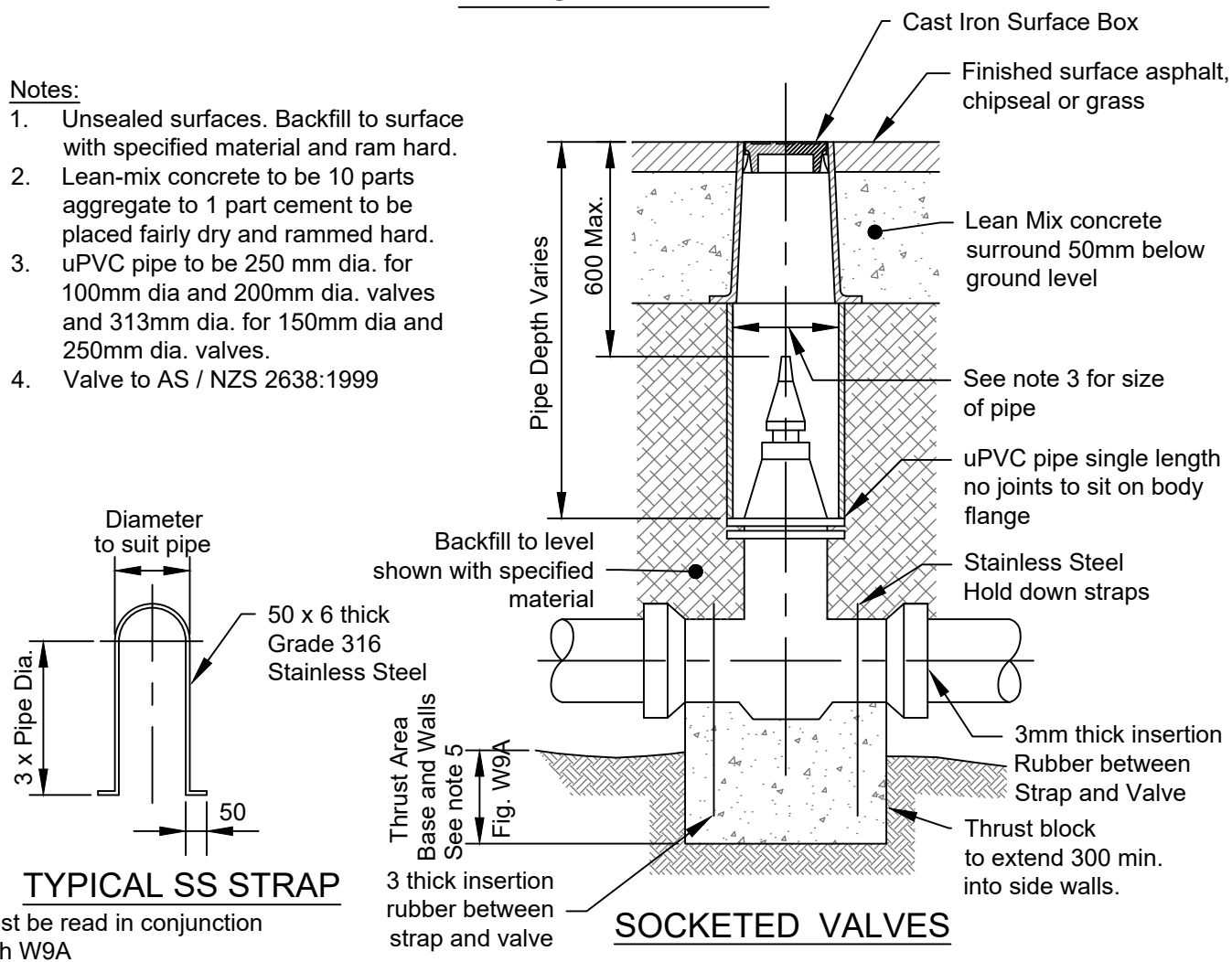
Not to scale



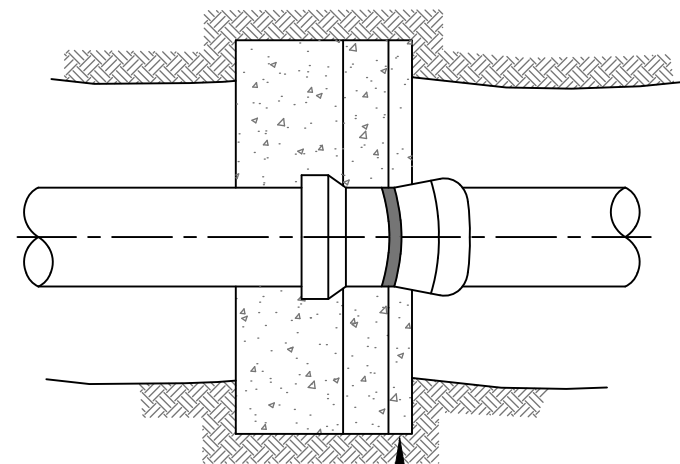
FLANGED VALVES

Notes:

1. Unsealed surfaces. Backfill to surface with specified material and ram hard.
2. Lean-mix concrete to be 10 parts aggregate to 1 part cement to be placed fairly dry and rammed hard.
3. uPVC pipe to be 250 mm dia. for 100mm dia and 200mm dia. valves and 313mm dia. for 150mm dia and 250mm dia. valves.
4. Valve to AS / NZS 2638:1999

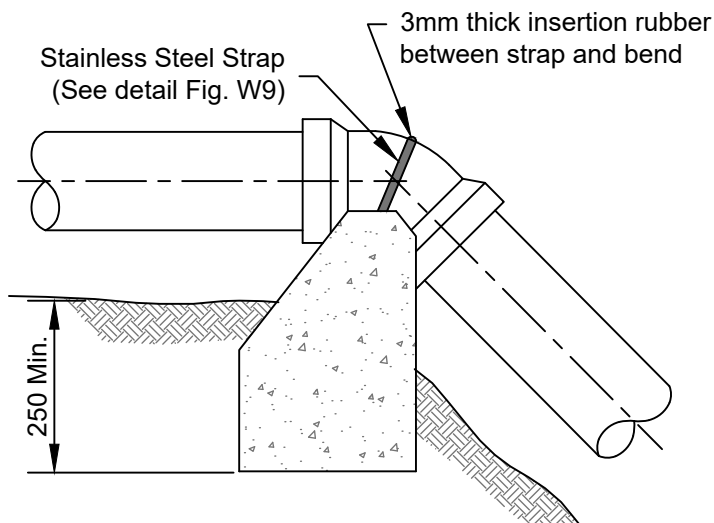


Not to scale



Anchor block minimum volume
as per table See note 2

PLAN



ELEVATION VERTICAL BENDS

Minimum Block Volume for Anchorage

Vertical Bends (For test pressure of
1000 kPa - see note 2)

Pipe Dia.	Concrete Volume m ³		
	11.25° Bend	22.5° Bend	45° Bend
100	N	N	0.3
150	N	0.3	0.6
200	0.2	0.5	1.1
225	0.3	0.6	1.4
250	0.3	0.7	2.5
300	0.4	1.1	3.8
375	0.7	1.8	5.8
450	Detailed design required (Alternative methods to be considered)		
500			
600			
750			

'N' - No additional restraint required
(Compacted Trenchfill sufficient)

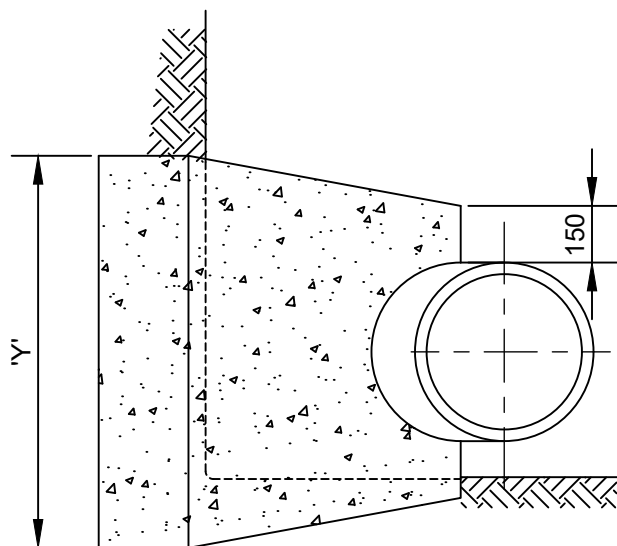
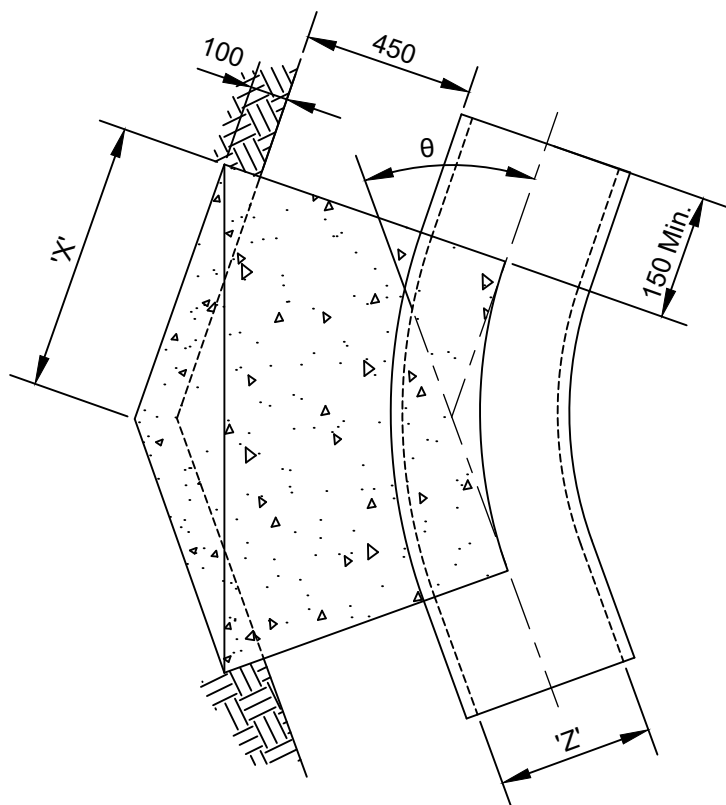
ANCHOR BLOCK CONSTRUCTION NOTES:

- Locate anchor block centrally around bend.
- Key anchor block into base of trench a minimum depth of 250.
- Pour concrete against a solid excavation face.
- Use grade 17.5MPa concrete.
- Keep concrete clear of all bolts, nuts and pipe joints.

Note:

1. All dimensions in millimetres, unless shown otherwise.
2. Anchor blocks in the table are designed for a test pressure of 1000 kPa (100m head) adjust concrete volume to suit actual test pressure.
3. Where DI pipe and fittings with restrained joints are used thrust blocks are not required.
4. Thrust block reinforcement as specified in design drawings.
5. Where specified provide concrete thrust blocks for soc-soc valves, thrust are to be for dead ends as shown in W8
6. Install puddle flanges on class K12 DI CL pipe.

Not to scale

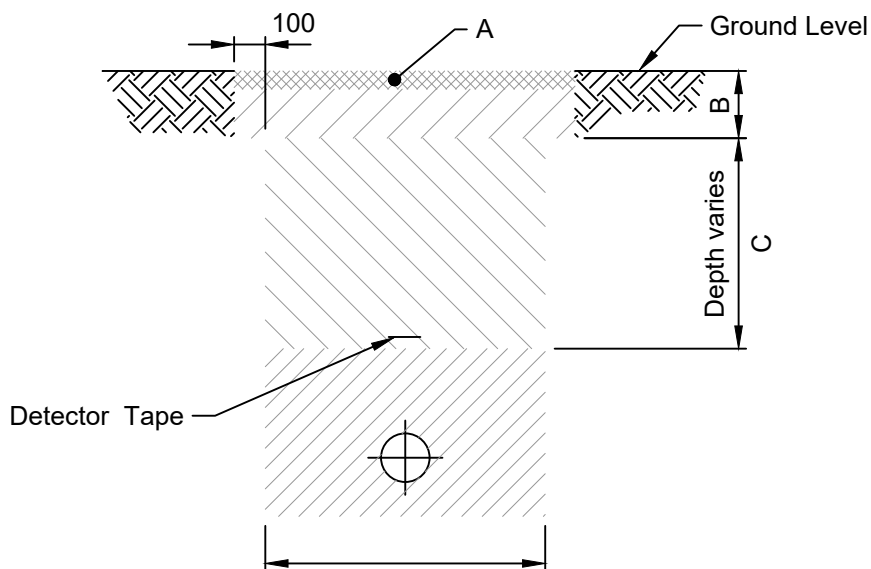


θ	'Z'	'X'	'Y'
90°	100	300	500
90°	150	500	600
45°	100	300	300
45°	150	375	450
22½°	100	150	300
22½°	150	300	300
11¼°	100	100	300
11¼°	150	150	300
22½°	250	450	450
90°	300	1500	900

Note

All concrete to be high grade 25 MPa to N.Z.S. 3109 (1997)

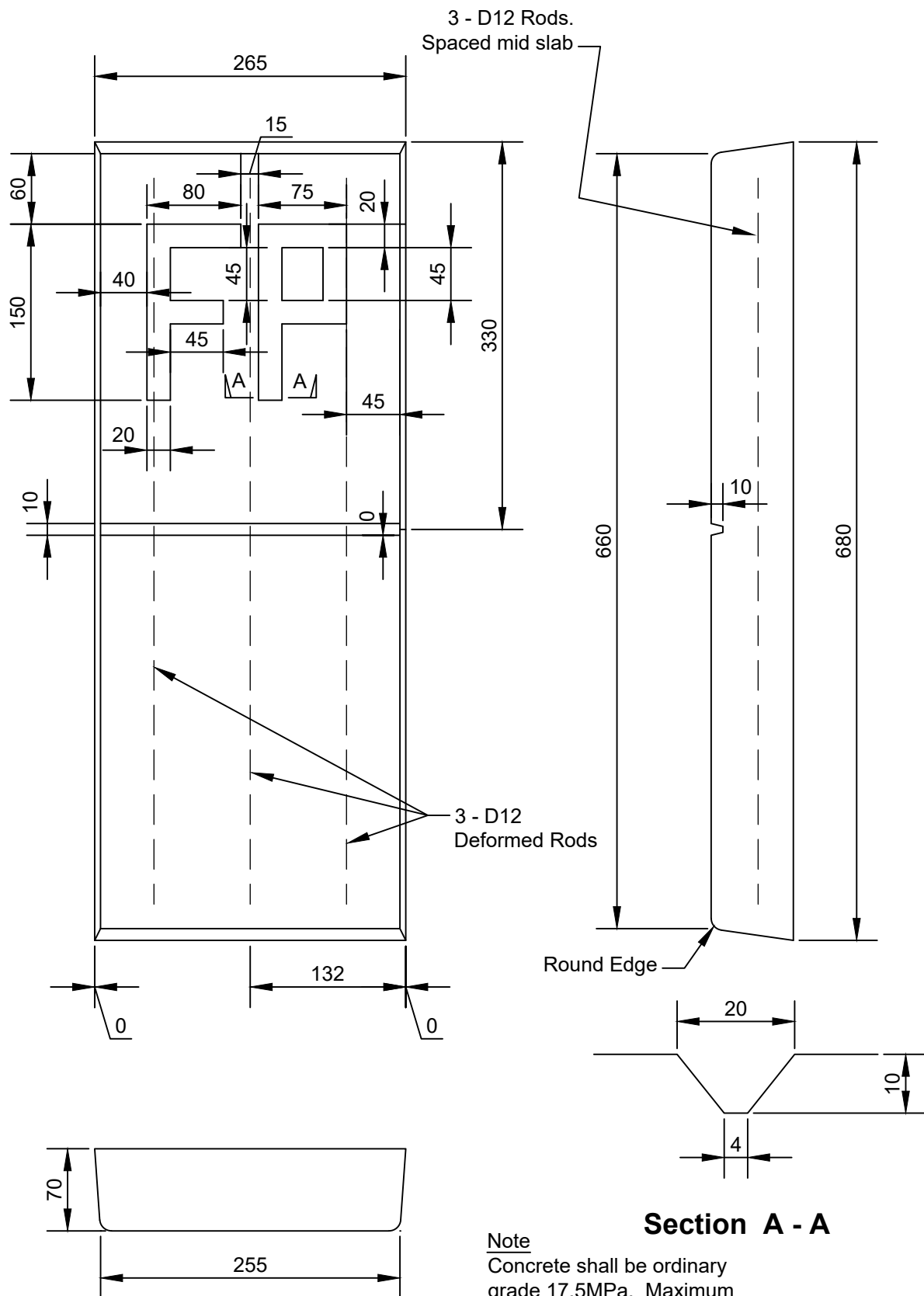
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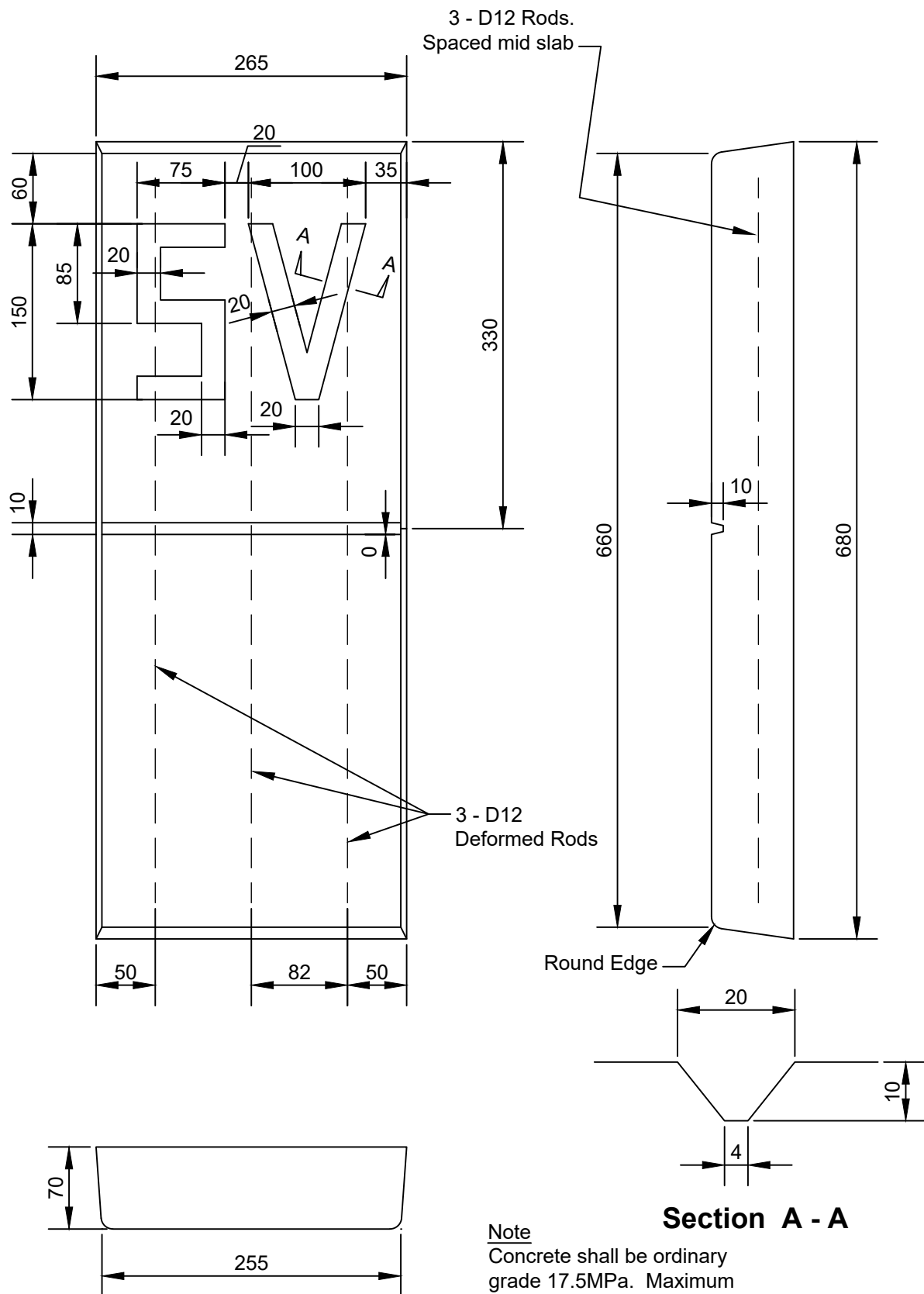
Trench Width as per NZS 4404:2010 Appendix B CM-001 to CM-002

Location	A	B	C
Carriageway Trench	50mm Asphalt on crushed AP 40 basecourse pavement	200	AP 65 Basecourse
Vehicular Crossing / Footpath	30mm Asphalt on crushed AP 40 basecourse pavement	150	AP 65 Basecourse
Grass Berm	Compacted screened top soil or cut turfs ex. berm	75	Compacted excavated material

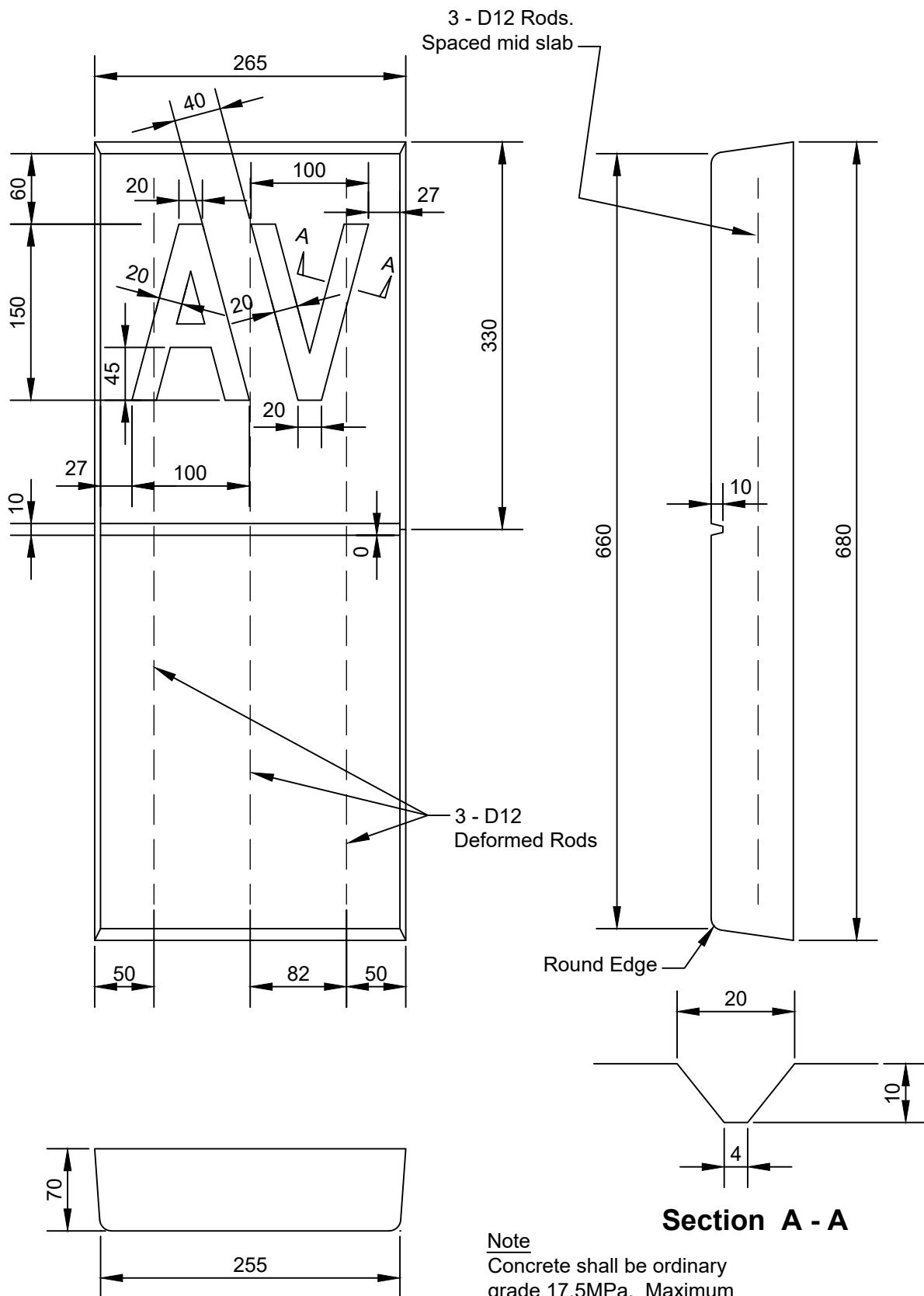
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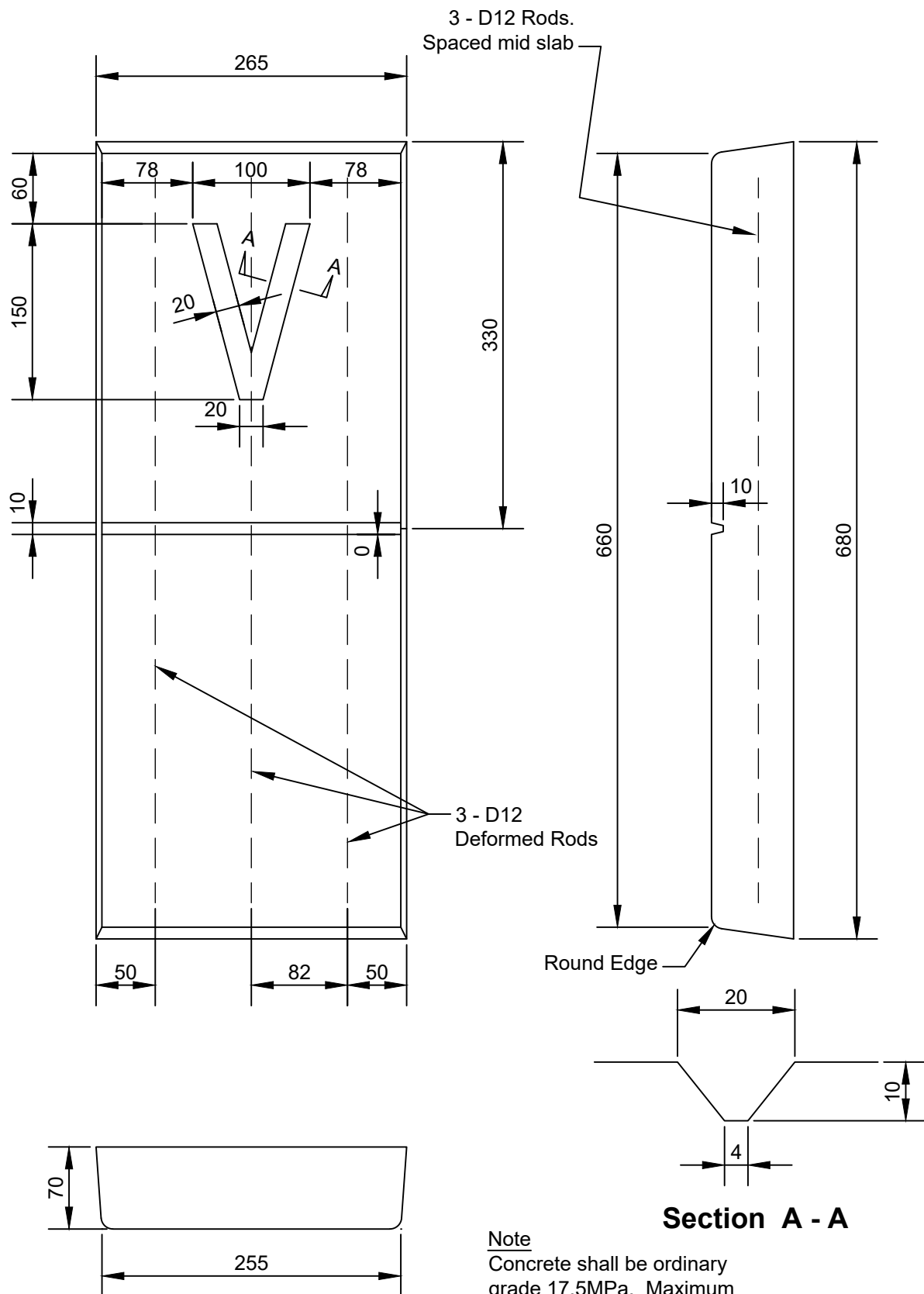
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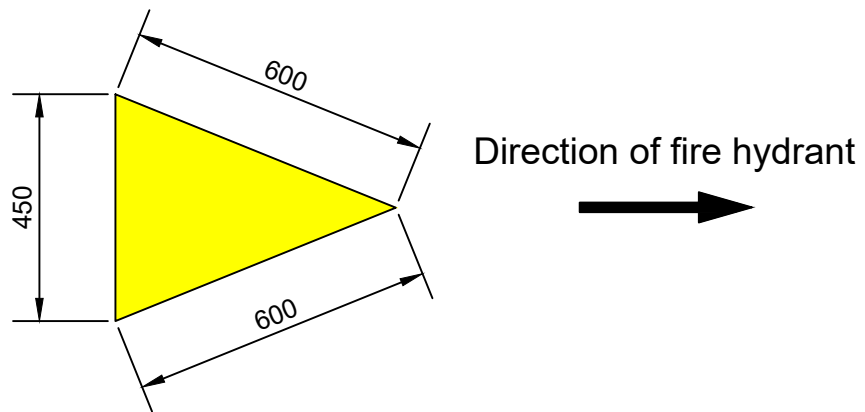
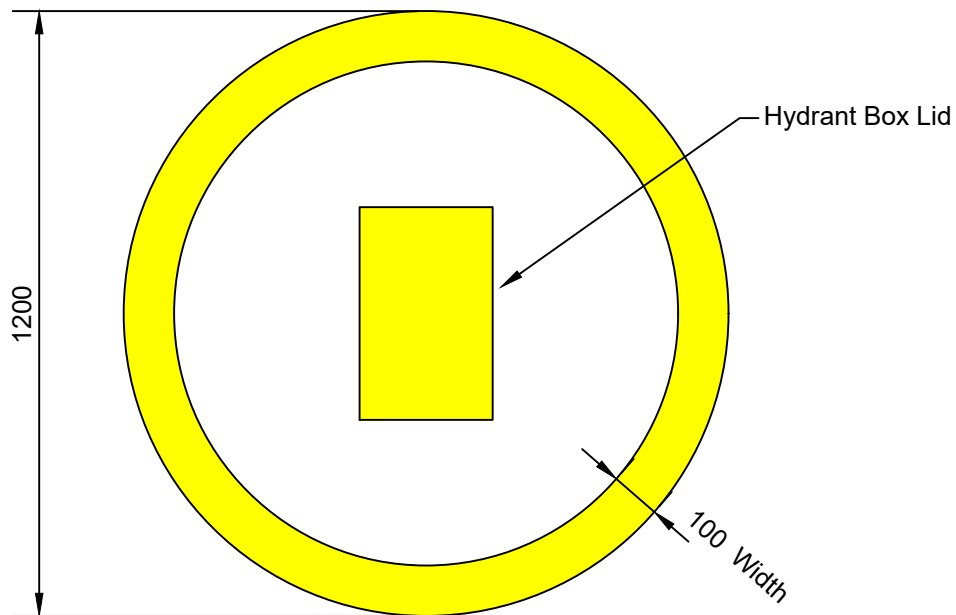
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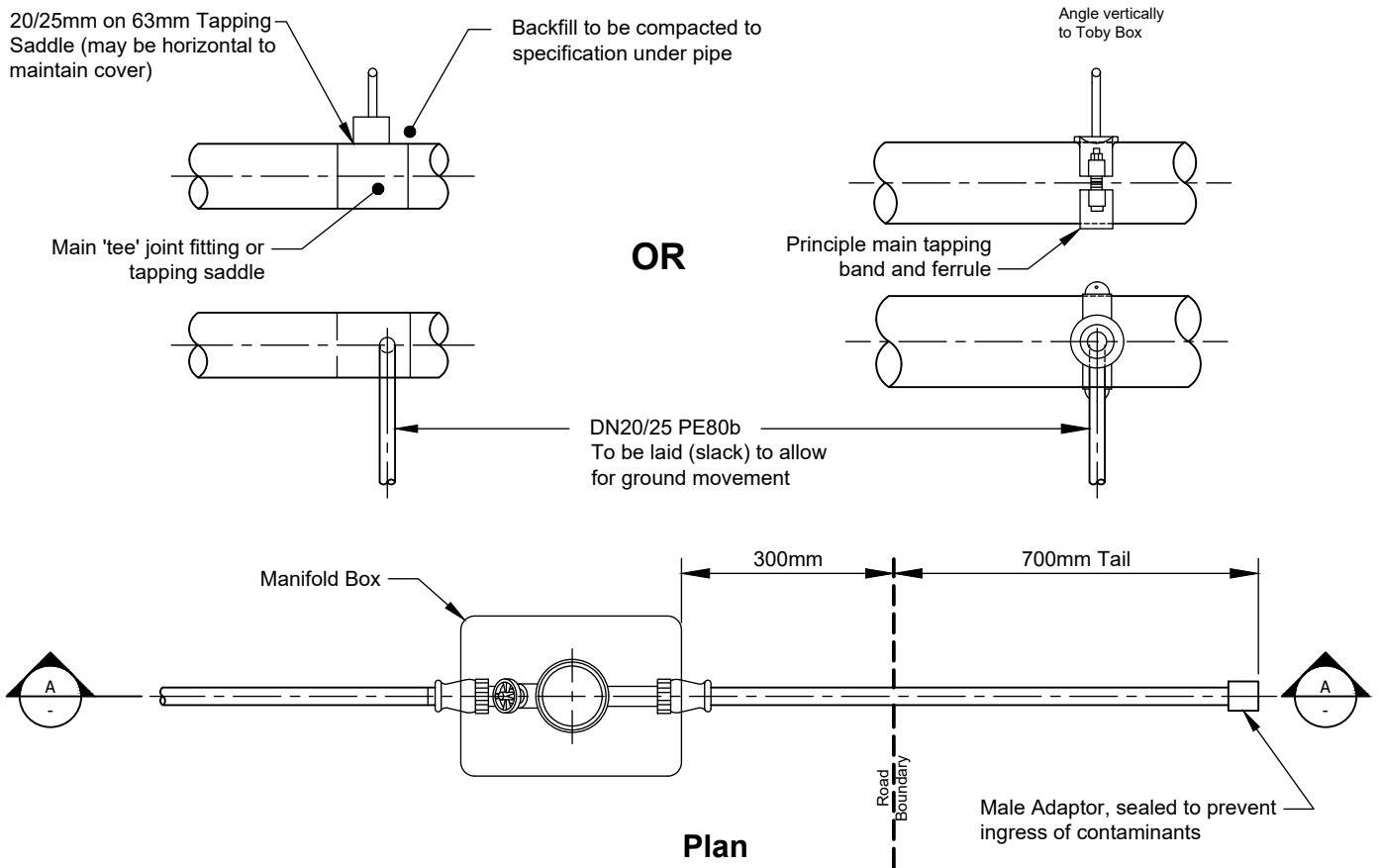
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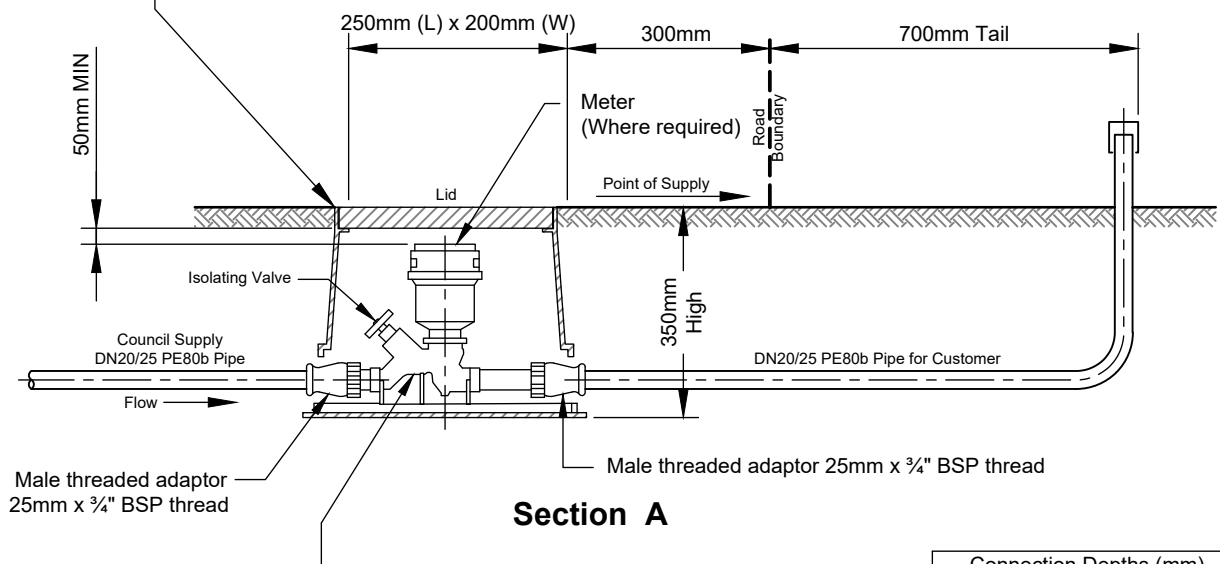
Notes

1. The colour of the location markings must be as prescribed in TNZ M/07.
2. Marking details are from SNZ PAS 4509:2008.
3. All dimensions are in millimetres.

Not to scale



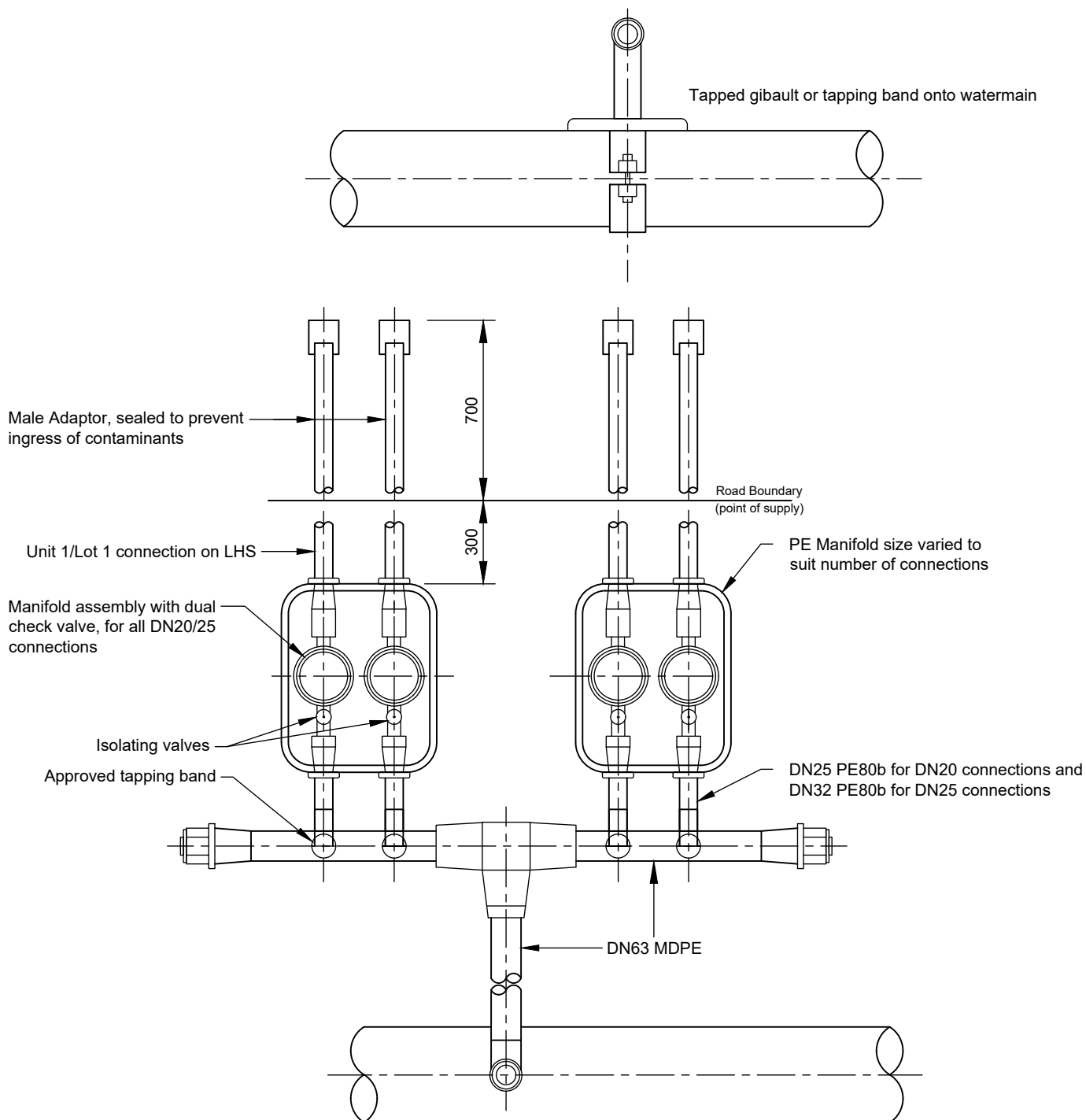
Moulded manifold box with base and mounting lugs with blue mounted lid (with 'WATER' moulded into top) and lid secured to surround via stainless steel flexible coupling



1. 20/25mm manifold assembly with dual check valve, female BSP 3/4" thread both ends (Acuflo) or similar approved by council
2. Kent water meter or similar approved by council

Connection Depths (mm)	
@ Boundary Line	300 to 375
@ Kerb Line	500
@ Road Surface	600

Not to scale



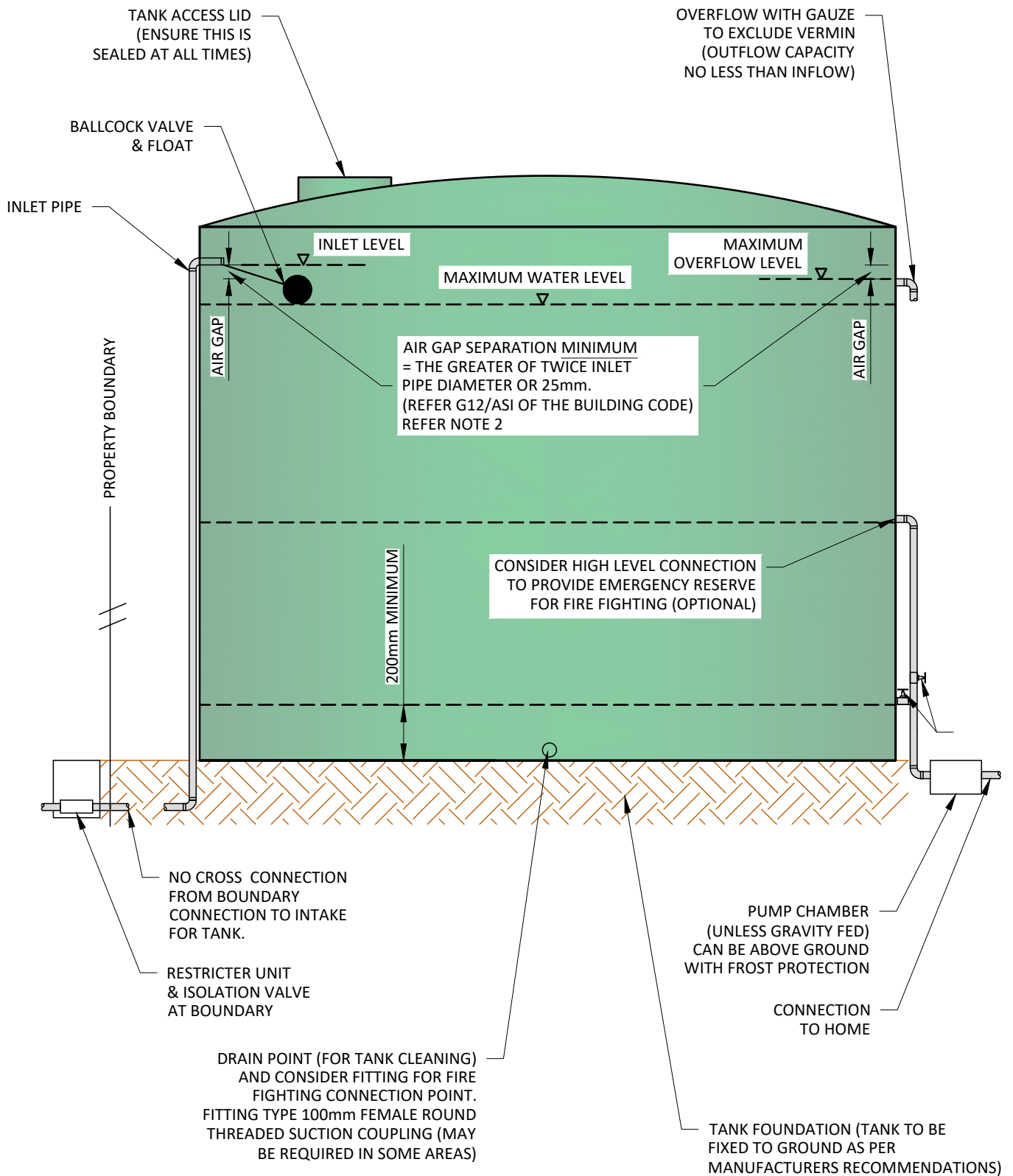
MANIFOLD ASSEMBLY FOR MULTIPLE WATER CONNECTIONS

NOTE:

1. In-Line or one-sided arrangements permitted to suit site conditions
2. Connections to be made using 63 x 63 PE80b tee in place of a tapping band or tapped gibault. Tee to be placed horizontally to maintain standard cover.
3. Manifolds with pressure caps to be installed on all DN20 domestic connections. Meters installed on all connections serving commercial, industrial zoned lots. Residential as and where required by council.

Connection Depths (mm)	
@ Boundary Line	300 to 375
@ Kerb Line	500
@ Road Surface	600

Not to scale



NOTES:

1. TANK TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. AIR GAP IS THE HEIGHT SEPARATION BETWEEN THE INLET LEVEL AND MAXIMUM OVERFLOW LEVEL.

Not to scale