

FIGURE 402B-A: VENT SHAFT (ELEVATION)

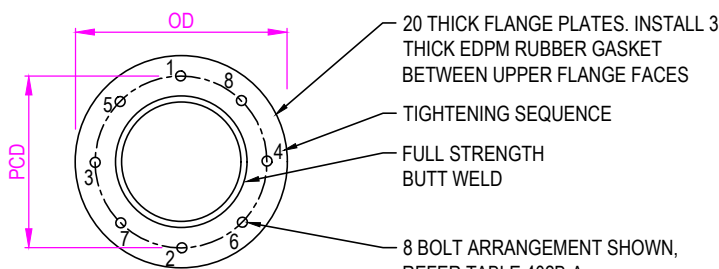


FIGURE 402B-B: TYPICAL UPPER FLANGE DETAIL

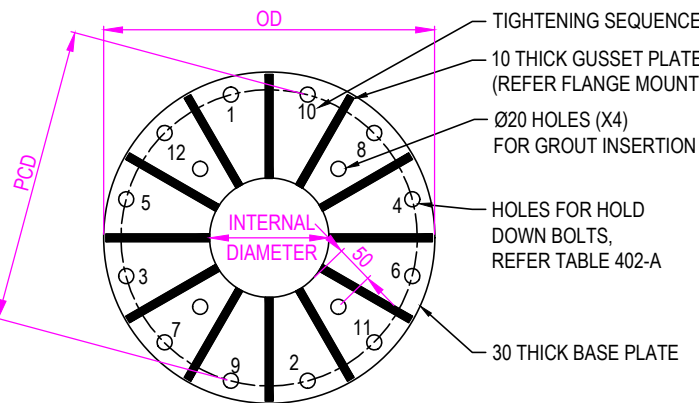


FIGURE 402B-C: VENT TUBE BASE PLATE DETAIL

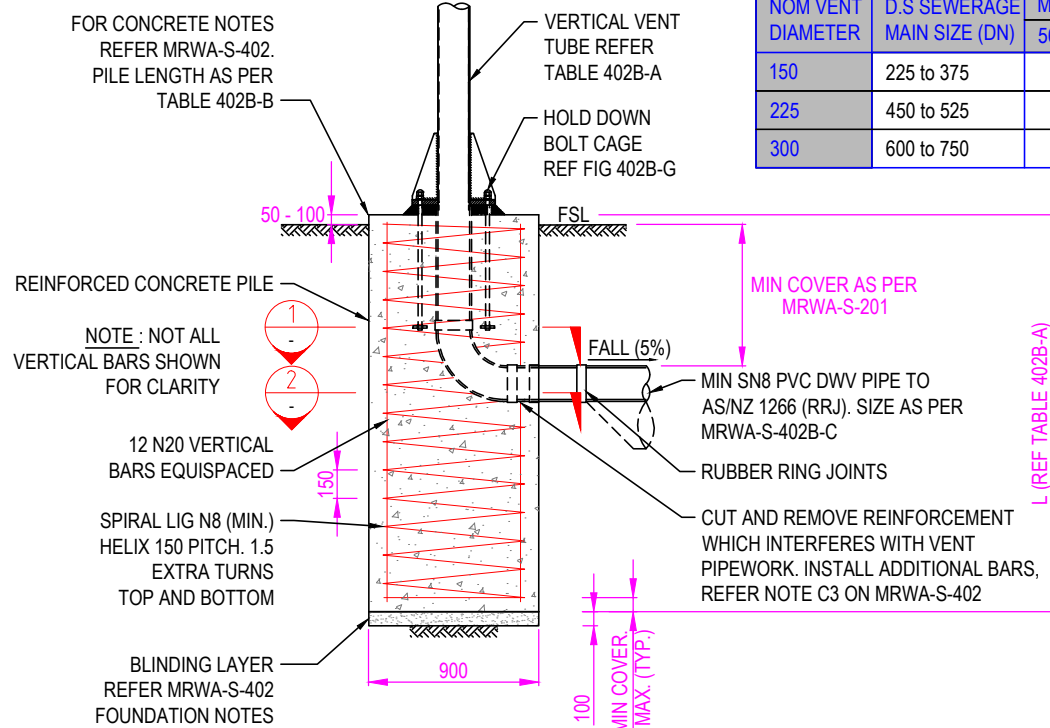


FIGURE 402B-D: VENT SHAFT FOUNDATION DETAILS (ELEVATION)

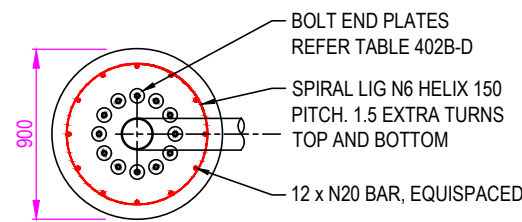


FIGURE 402B-E: SECTION 1

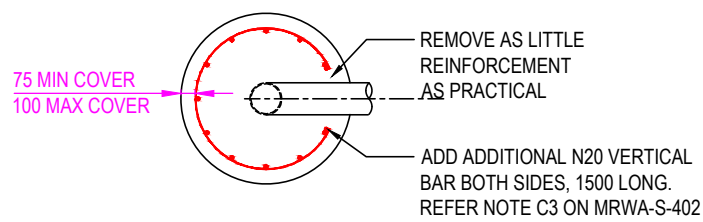


FIGURE 402B-F: SECTION 2

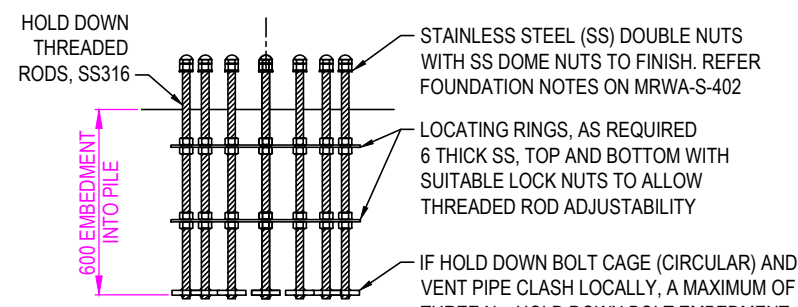


FIGURE 402B-G: HOLD DOWN BOLT CAGE DETAIL (ELEVATION)

TABLE 402B-A: VENT TUBE, BASE PLATE AND UPPER FLANGE DETAILS

NOM VENT DIAMETER	D.S SEWERAGE MAIN SIZE (DN)	MAX HEIGHT (m)		VENT TUBE			BASE PLATE					UPPER FLANGE				
		56 m/s	89 m/s	SCH	O.D	I.D	O.D	PCD	NO. HOLES	HOLE Ø	BOLT	O.D	PCD	NO. HOLES	HOLE Ø	BOLT
150	225 to 375	14	9	S80	168.3	146.4	480	400	12	24	M20	280	235	8	18	M16
225	450 to 525	18	12	S40	273.1	254.6	580	500	12	28	M24	405	356	8	22	M20
300	600 to 750	18	14	S40	323.9	304.8	630	550	16	28	M24	455	406	12	22	M20

TABLE 402B-B: FOUNDATION PILE LENGTH FOR DIFFERENT SOILS (m)

SOIL / ROCK TYPE	DESIGN PARAMETER	CONSISTENCY / STRENGTH	NOMINAL VENT DIAMETER		
			150	225	300
COHESIVE	$C_u = 25$ kPa	FIRM	3.0	4.0	5.0
	$C_u = 50$ kPa	STIFF	2.5	3.2	3.8
	$C_u = 100$ kPa	VERY STIFF	2.0	2.6	3.0
	$C_u = 200$ kPa	HARD	1.8	2.1	2.4
GRANULAR	$\phi' = \text{min } 30^\circ$	LOOSE TO DENSE	3.0	3.5	4.0
WEATHERED ROCK	$USC \leq 0.5$ MPa	VERY LOW	1.8 (0.9*)	2.2 (1.3*)	2.4 (1.5*)
	$USC \leq 2.0$ MPa	LOW	1.5 (0.6*)	1.6 (0.7*)	1.8 (0.9*)

NOTE: * DENOTES MINIMUM SOCKET LENGTH INTO ROCK

TABLE 402B-C: BURIED VENT PIPE DIAMETER

TOTAL LENGTH	BURIED VENT PIPE DIAMETER
< 10m	AS VENT NOMINAL DIAMETER IN TABLE 402B-A
10 to 25m	ON SIZE LARGER THAN NOMINAL VENT DIAMETER
25 to 50m	TWO SIZES LARGER THAN NOMINAL VENT DIAMETER

NOTES Regarding Table 402B-C:

- Total length = vent tube length + buried vent length.
- If buried vent pipe \geq DN450, construct buried vent pipe from PP or GRP.
- Refer MRWA-S-103 for standard sizes and determining what one size or two sizes larger mains.
- Transition to larger sized buried vent pipe &/or different material pipe using approved couplers and adaptors.

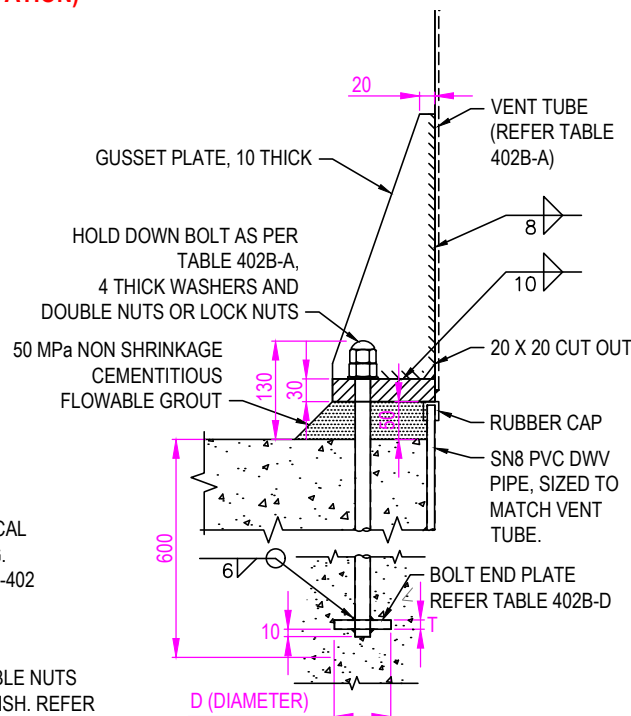


FIGURE 402B-H: FLANGE MOUNTING DETAIL (ELEVATION)

TABLE 402B-D: BOLT CAGE END PLATE DIMENSIONS

BOLT DIAMETER	D	T
M20	75	12
M24	90	16

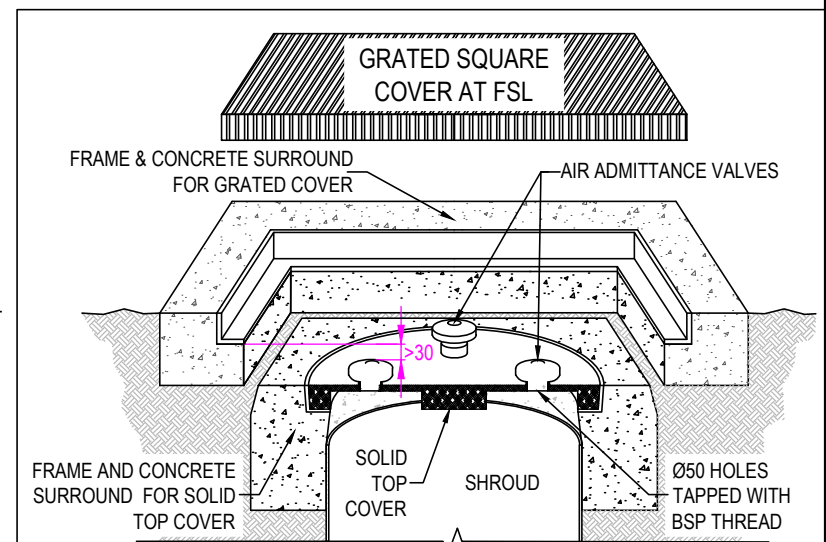


FIGURE 402B-I: GROUND LEVEL VENT ARRANGEMENT (ISOMETRIC CUT THROUGH CENTRE)

- Only place ground level vents in non-trafficable areas.
- Ground level square grate shall be galvanised steel class B.
- Sealed lower level covers and frames as per Figures 301-B (DN150 & DN225) and Figure 305-C (DN300) with DWV cap removed.
- Set level of lower cover and frame to maintain > 30 clearance between the top of the Air Admittance Valve and the underneath of the grated cover.
- Lower cover: solid top class D, bolted down with 50Ø equi-spaced holes drilled through cover midway between load bars (ribs) of cover.
- BSP thread tap the 50Ø cover holes and fit Air Admittance Valves.
- \leq DN225 vents require 4 holes and Air Admittance Valves in the cover.
- DN300 vents require 6 holes and Air Admittance Valves in the cover.
- Cover FSL shall be as per Table 313-E.

ALL DIMENSIONS IN mm UNLESS STATED OTHERWISE

DESIGNED: R. JAGGER	DATE: NOV 2019				
DRAWN: R. JAGGER	DATE: NOV 2019				
CHECKED: NAME	DATE	APPROVED: NAME	DATE		
<input checked="" type="checkbox"/> CWW	G. ANTHONSEN	SEP 20	<input checked="" type="checkbox"/> CWW	S. TRIKHA	SEP 20
<input checked="" type="checkbox"/> SEW	C. PAXMAN	SEP 20	<input checked="" type="checkbox"/> SEW	D. STEWART	SEP 20
<input checked="" type="checkbox"/> YVW	W. SHIMMIELD	SEP 20	<input checked="" type="checkbox"/> YVW	R. LEON	SEP 20
ISSUED 2020	VERSION 1				

MELBOURNE RETAIL WATER AGENCIES



MRWA SEWERAGE STANDARDS

VENT CONSTRUCTION DETAILS

NOT TO SCALE

MRWA-S-402B

Planning	Design	Construction
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>