TABLE 304-A: HYDRANT AND AIR VALVE SELECTION AND ARRANGEMENTS

NON TRAFFICABLE CRITERIA

Main Size	Fitting (1)	Water Company	Other Considerations	Alignment	Fitting Elevation	Offtake Valve	Arrangement MRWA-W-304 or 105	Connection (2) MRWA-W-305	Air Fitting (2) MRWA-W-305	Example MRWA-W-304B
<=DN250	Hydrant	All		In Line	Below Ground	No	i	G	A	A
>DN250	Hydrant	CWW or YVW	Offset Practicable (3)	Offset	Below Ground	Yes	iii or iv (8)	J or I	A	C
>DN250	Hydrant	CWW or YVW	Offset Impracticable (3)	In Line	Below Ground	No	i	G	C	D
>DN250	Hydrant	SEW		In Line	Below Ground	No	i	G	B	B
>DN250 to DN375	Air Valve	CWW or SEW	Offset Practicable & Below Ground Practicable (4)	Offset	Below Ground	Yes	iii or iv (8)	K or J	D	C
>DN250 to DN375	Air Valve	CWW or SEW	Offset Practicable, Below Ground Impracticable & >5m from Rd Pavement (4) (7)	Offset	Above Ground	Yes	iii	K or J	F or E	I
>DN250 to DN375	Air Valve	CWW or SEW	Offset Impracticable & Below Ground Practicable (3) (7)	In Line	Below Ground	No	i	H or G	D	D
>DN250 to DN375	Air Valve	YVW	(5)	Offset	Above Ground	Yes	iii or iv (8)	K or J	F or E	C
>=DN450	Air Valve + Hydrant	CWW or SEW	Below Ground Practicable (4)	Offset	Below Ground	Yes	Fig 304 iii or iv, or Fig 105-A or B + Hydrant (8)	K or J	A + D	E
>=DN450	Air Valve + Hydrant	CWW or SEW	Below Ground Impracticable & >5m from Rd Pavement (4)	Offset	Above Ground	Yes	Fig 304 iii, or Fig 105-A or B + Hydrant	K or J	A + F or E	I
>=DN450	Air Valve + Hydrant	YVW	(5)	Offset	Above Ground	Yes	Fig 304 iii or iv, or Fig 105-A or B + Hydrant (8)	K or J	A + F or E	E

TRAFFICABLE CRITERIA

Main Size	Fitting (1)	Water Company	Other Considerations	Alignment	Fitting Elevation	Offtake Valve	Arrangement MRWA-W-304 or 105	Connection (2) MRWA-W-305	Air Fitting (2) MRWA-W-305	Example MRWA-W-304B
<=DN250	Hydrant	CWW or YVW	Offset Practicable (3)	Offset	Below Ground	No	iv	J or I	A	G
<=DN250	Hydrant	CWW or YVW	Offset Impracticable (3) or (6)	In Line	Below Ground	No	i	G	A	H
<=DN250	Hydrant	SEW		In Line	Below Ground	No	i	G	A	F
>DN250	Hydrant	All	Offset Practicable (3)	Offset	Below Ground	Yes	iii or iv (8)	J	A	J
>DN250	Hydrant	CWW or YVW	Offset Impracticable (3) (6) (9)	In Line	Below Ground	No	i	G	C	K
>DN250	Hydrant	SEW	Offset Impracticable (3) (9)	In Line	Below Ground	No	i	G	B	K
>DN250 to DN375	Air Valve	CWW or SEW	Below Ground Practicable (4)	Offset (10)	Below Ground	Yes	iii	K or J	D	J
>DN250 to DN375	Air Valve	CWW or SEW	Below Ground Impracticable & >5m from Rd Pavement (4)	Offset (10)	Above Ground	Yes	iii	K or J	F or E	I
>DN250 to DN375	Air Valve	YVW	(5)	Offset (10)	Above Ground	Yes	iii or iv (8)	K or J	F or E	J
>=DN450	Air Valve + Hydrant	CWW or SEW	Below Ground Practicable	Offset (10)	Below Ground	Yes	Fig 304 iii, or Fig 105-A or B + Hydrant	K or J	A + D	L or M
>=DN450	Air Valve + Hydrant	CWW or SEW	Below Ground Impracticable & >5m from Rd Pavement (4)	Offset (10)	Above Ground	Yes	Fig 304 iv, or Fig 105-A or B + Hydrant	K or J	A + F or E	I
>=DN450	Air Valve + Hydrant	YVW	(5)	Offset (10)	Above Ground	Yes	Fig 304 iii or iv, or Fig 105-A or B + Hydrant (8)	K or J	A + F or E	L or M

NOTES Regarding Table 304-A:

1. Hydrants typically used alone between DN250 to <=DN375 unless the main has a significant rise or fall or the main is pumped or has a PRV (in which case an air valve will likely be required).
   All air valves shall be combination (dual action) air valves.
   Air valves plus hydrants are typically required on mains >DN375.
   The designer shall undertake hydraulic and air handling analysis to confirm the optimum fitting type, size and location of air fittings.
   Air valve requirements should be determined using water agency approved air valve supplier software (and software settings used by the water agency) and an appropriate surge analysis.
2. Options nominated first are preferred if practical.
3. Offsetting the fitting may be impracticable if there is no space in the non trafficable area and there is no reasonable opportunity to make enough space by altering the location of other assets.
4. Locating the air valve below ground may be impracticable if:
   A- the surface cannot be raised to above the 1 in 100 year flood level, or
   B- there is inadequate cover over the main to locate the surface fitting below ground and it is unreasonable to lower the main to accommodate the surface fitting below ground, or
   C- there is inadequate clearance from other buried assets and those assets cannot be reasonably moved.
5. YVW air valves must be Offset and Above Ground. If this is not possible, contact YVW.
6. Locate hydrant away from areas where vehicles will likely park.
   Locate hydrants >3m from kerb and in front of driveways or within 10m of an intersection.
7. Above ground in line air valves are not acceptable as above ground fittings must have a valve at the offtake (in case they get knocked over)).
8. Select iii or iv according to where the surface fitting could be best located.
   Require min 2m offset of above ground fitting from offtake valve.
   Require 800 separation of below ground air fitting and offtake valve.
9. In line hydrants connected to >DN250 trafficable mains would only be acceptable if there was no alternative.
10. There is no other option than for air valves connected to trafficable mains to be offset and located in a non trafficable location.
11. For above ground air valves, they should be located as far from the road pavement as practical and in such a way as to minimise the chance of accidental collision.

GENERAL NOTES:

1. For definitions of trafficable and non-trafficable refer to MRWA-W-201.
2. Require an air egress fitting between any two valves to facilitate charging of the water mains.
3. Hydrants shall be located adjacent to valves wherever possible (as per Figure 205-K).

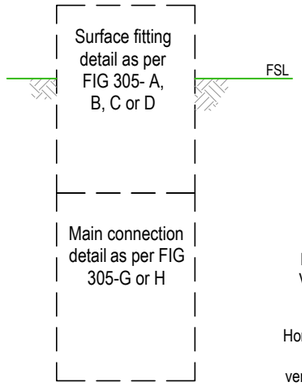

FIGURE 304-i: SECTION VIEW. IN LINE ARRANGEMENT

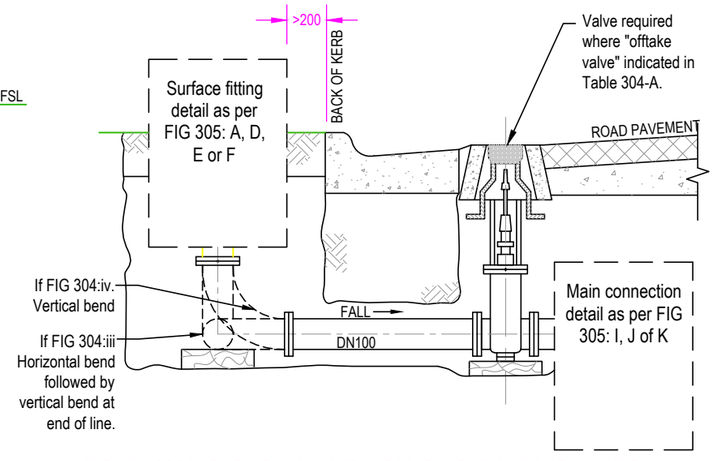

FIGURE 304-ii: SECTION VIEW. TYPICAL OFFSET ARRANGEMENTS

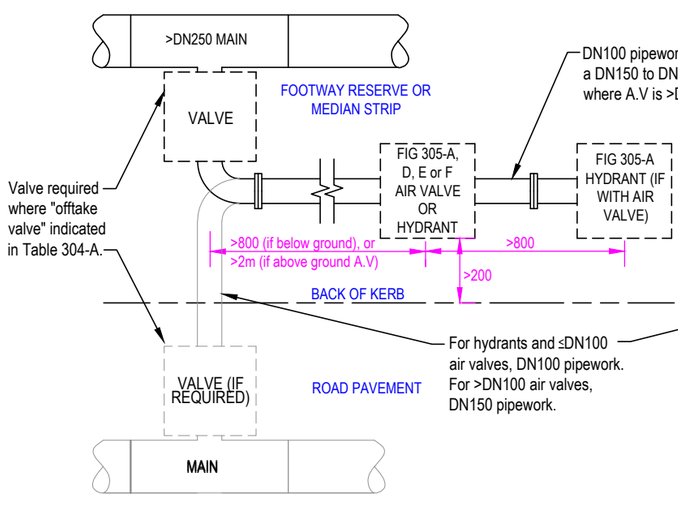

FIGURE 304-iii: DOUBLE OFFSET ARRANGEMENT (PLAN)

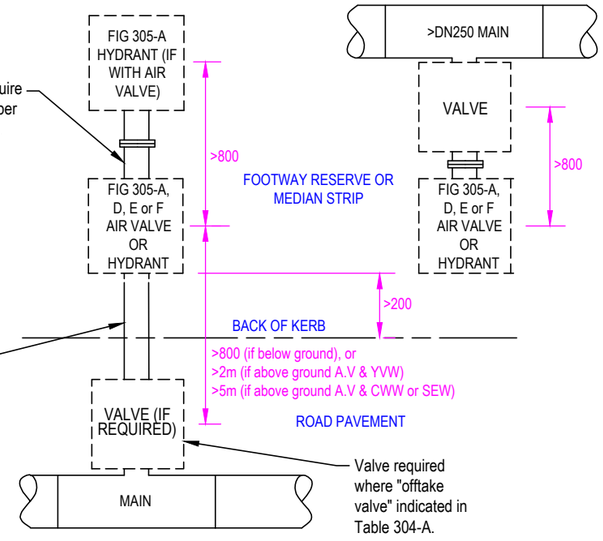

FIGURE 304-iv: STANDARD OFFSET ARRANGEMENT (PLAN)

REV	DESCRIPTION	DATE	APPROVED
3	CLARIFIED PREFERENCES	1/12/16	RJ / CP / JT
2	PUBLISHED FIRST ISSUE	04/04/12	R.JAGGER
1	PRE PUBLISHED DRAFT FOR COMMENT	12/07/11	R.JAGGER

	NAME	DATE		NAME	DATE
DESIGNED:	R. JAGGER	20/02/2011			
DRAWN:	D. TOLENTINO	20/02/2011			
CHECKED:			APPROVED:		
☒ CWW	C. RIVETTE	04/04/12	☒ CWW	R.CARRUTHERS	04/04/12
☒ SEWL	C.PAXMAN	04/04/12	☒ SEWL	G.REYNOLDS	04/04/12
☒ YVW	K.DAWSON	04/04/12	☒ YVW	A.COSHAM	04/04/12

MELBOURNE RETAIL WATER AGENCIES

City West Water™ · South East Water · Yarra Valley Water

MRWA WATER SUPPLY STANDARDS

HYDRANT AND AIR VALVE ARRANGEMENTS

NOT TO SCALE

MRWA-W-304

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