

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

NON TRAFFICABLE CRITERIA				REQUIREMENTS						
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
Small	Hydrant	All		In Line	Below Ground	No	i	G	A	A
Medium	Air Valve	CWW or SEW	Offset Practicable & Below Ground Practicable (4)	Offset	Below Ground	Yes	iii or iv (8)	K or J	D	C
Medium	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
Medium	Air Valve	CWW or SEW	Offset Impracticable & Below Ground Practicable (3) (7)	In Line	Below Ground	No	i	H or G	D	D
Medium	Air Valve	YVW	(5)	Offset	Above Ground	Yes	iii or iv (8)	K or J	F or E	C
Medium or Large	Hydrant	CWW or YVW	Offset Practicable (3)	Offset	Below Ground	Yes	iii or iv (8)	J or I	A	C
Medium or Large	Hydrant	CWW or YVW	Offset Impracticable (3)	In Line	Below Ground	No	i	G	C	D
Medium or Large	Hydrant	SEW		In Line	Below Ground	No	i	G	B	B
Large	Air Valve + Hydrant	CWW or SEW	Below Ground Practicable (4)	Offset	Below Ground	Yes	Fig 304 iii, or Fig 105-A or B + Air Valve	K or J	A + D	E
Large	Air Valve + Hydrant	CWW or SEW	Below Ground Impracticable & >5m from Rd Pavement (4)	Offset	Above Ground	Yes	Fig 304 iv, or Fig 105-A or B + Air Valve	K or J	A + F or E	I
Large	Air Valve + Hydrant	YVW	(5)	Offset	Above Ground	Yes	Fig 304 iii or iv (8), or Fig 105-A or B + Air Valve	K or J	A + F or E	E

TRAFFICABLE CRITERIA				REQUIREMENTS						
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
Small	Hydrant	CWW or YVW	Offset Practicable (3)	Offset	Below Ground	No	iv	J or I	A	G
Small	Hydrant	CWW or YVW	Offset Impracticable (3) or (6)	In Line	Below Ground	No	i	G	A	H
Small	Hydrant	SEW		In Line	Below Ground	No	i	G	A	F
Medium	Air Valve	CWW or SEW	Below Ground Practicable (4)	Offset (10)	Below Ground	Yes	iii	K or J	D	J
Medium	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
Medium	Air Valve	YVW	(5)	Offset (10)	Above Ground	Yes	iii or iv (8)	K or J	F or E	J
Medium or Large	Hydrant	All	Offset Practicable (3)	Offset	Below Ground	Yes	iii or iv (8)	J	A	J
Medium or Large	Hydrant	CWW or YVW	Offset Impracticable (3) (6) (9)	In Line	Below Ground	No	i	G	C	K
Medium or Large	Hydrant	SEW	Offset Impracticable (3) (9)	In Line	Below Ground	No	i	G	B	K
Large	Air Valve + Hydrant	CWW or SEW	Below Ground Practicable	Offset (10)	Below Ground	Yes	Fig 304 iii, or Fig 105-A or B + Air Valve	K or J	A + D	L or M
Large	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 + Air Valve	K or J	A + F or E	I
Large	Air Valve + Hydrant	YVW	(5)	Offset (10)	Above Ground	Yes	Fig 304 iii or iv (8), or Fig 105-A or B + Air Valve	K or J	A + F or E	L or M

TABLE 304-B: MAIN SIZE DEFINITIONS

WATER MAIN NOTATION	WATER MAIN SIZE (DN) CWW and YVW	WATER MAIN SIZE (DN) - SEW
SMALL	DN100, 150 & 225	
MEDIUM	DN300 & 375	DN300, 375 & 450
LARGE	≥DN450	≥DN600

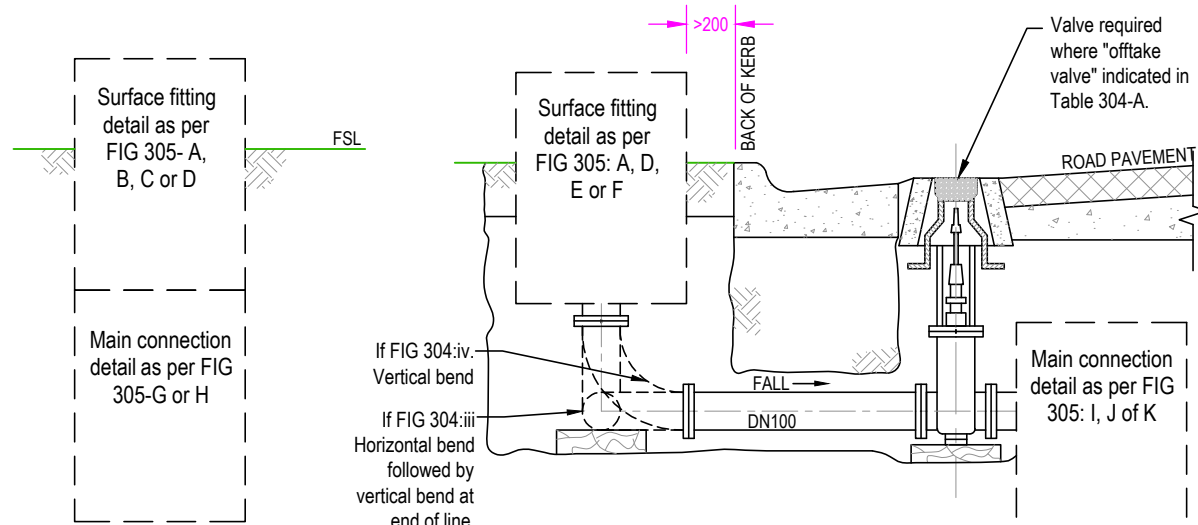


FIGURE 304-i: SECTION VIEW. IN LINE ARRANGEMENT

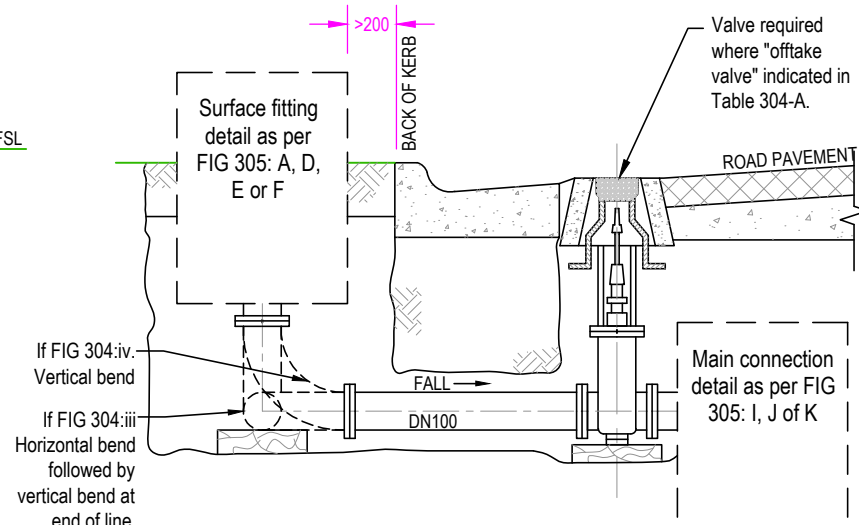


FIGURE 304-ii: SECTION VIEW. TYPICAL OFFSET ARRANGEMENTS

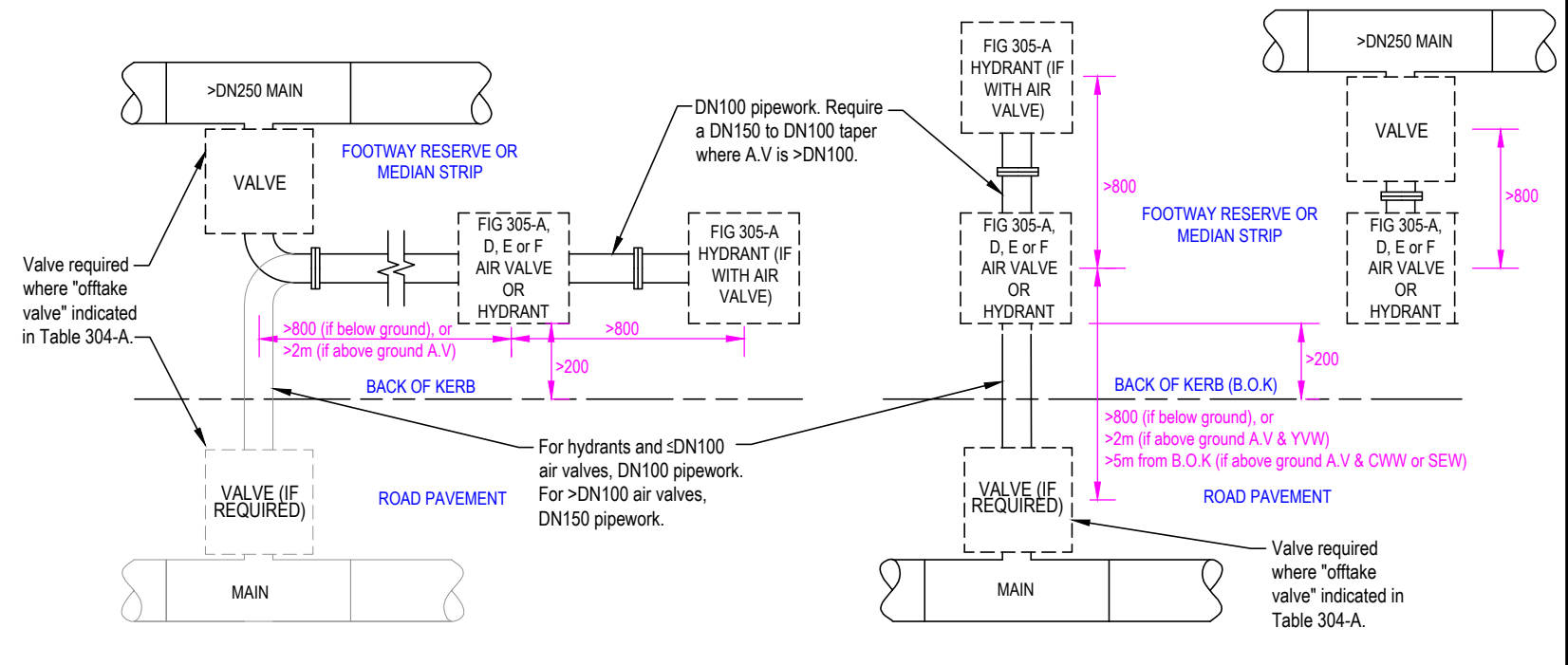


FIGURE 304-iii: DOUBLE OFFSET ARRANGEMENT (PLAN)

FIGURE 304-iv: STANDARD OFFSET ARRANGEMENT (PLAN)

NOTES Regarding Table 304-A:

- Hydrants are typically used alone on Medium mains 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 also be required). All air valves shall be combination (dual action) air valves. Air valves are typically installed with hydrants on mains Large mains. 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.
- Options nominated first are preferred if practical.
- 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.
- 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.
- YVW air valves must be Offset and Above Ground. If this is not possible, contact YVW.
- 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.
- 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).
- 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.
- In line hydrants connected to ≥DN225 trafficable mains would only be acceptable if there was no alternative.
- There is no other option than for air valves connected to trafficable mains to be offset and located in a non trafficable location.
- 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:

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

REV	DESCRIPTION	DATE	APPROVED
4	ADDED MAIN SIZE DEFINITONS (CHANGED)	APR 20	CP / GA / WS
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

DESIGNED:	R. JAGGER	DATE:	20/02/2011		
DRAWN:	D. TOLENTINO	DATE:	20/02/2011		
CHECKED:	NAME	DATE	APPROVED:	NAME	DATE
<input checked="" type="checkbox"/>	C. RIVETTE	04/04/12	<input checked="" type="checkbox"/>	R. CARRUTHERS	04/04/12
<input checked="" type="checkbox"/>	C. PAXMAN	04/04/12	<input checked="" type="checkbox"/>	G. REYNOLDS	04/04/12
<input checked="" type="checkbox"/>	K. DAWSON	04/04/12	<input checked="" type="checkbox"/>	A. COSHAM	04/04/12

MELBOURNE RETAIL WATER AGENCIES

MRWA WATER SUPPLY STANDARDS

NOT TO SCALE

HYDRANT AND AIR VALVE ARRANGEMENTS

MRWA-W-304

ISSUED 2012 REVISION NO. 4