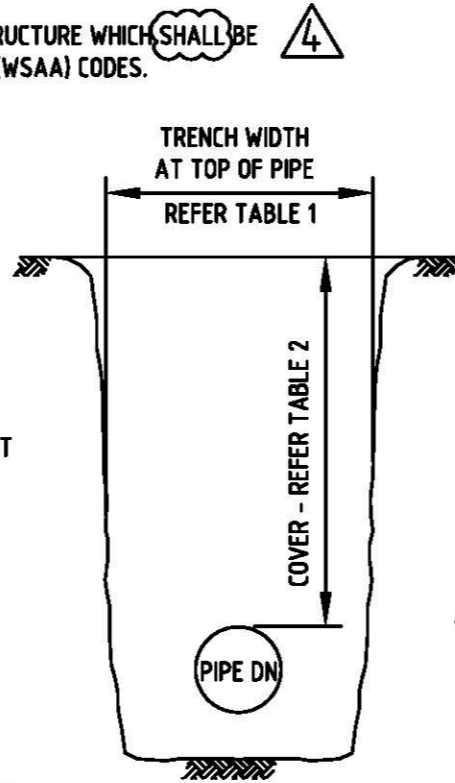


**NOTES:**

- SA WATER HAS SPECIFIC REQUIREMENTS FOR THE DESIGN AND INSTALLATION OF WATER INFRASTRUCTURE WHICH SHALL BE CONSIDERED TOGETHER WITH THE ACCOMPANYING WATER SERVICES ASSOCIATION OF AUSTRALIA (WSAA) CODES.  
SA WATER DOCUMENTATION COMPRISES:
  - THE WSAA WATER SUPPLY CODE OF AUSTRALIA, WSA03-2011,
  - SA WATER SUPPLEMENT TO WSA03-2011,
  - WSCM CONSTRUCTION DRAWINGS,
  - ENGINEERING STANDARDS & GUIDELINES,
  - AUTHORISED PRODUCTS WITHIN THE SA WATER SYSTEMS.
- AUTHORISED ITEMS:
  - ONLY ITEMS DISPLAYED IN TS0503 SHALL BE USED WITHIN THE DRINKING WATER SYSTEMS,
  - ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES,
  - ALL PRODUCTS FOR DRINKING WATER SYSTEMS MUST COMPLY WITH AS/NZS 4020.
  - SHOULD A PROJECT REQUIRE AN ITEM NOT INCLUDED IN TS0503, APPROVAL SHALL BE SOUGHT FROM THE SA WATER REPRESENTATIVE FOR THE USE OF SPECIFIC ITEM.
- SA WATER REPRESENTATIVE:  
THE CONTRACTOR SHALL SEEK APPROVAL FOR:
  - NONCONFORMITY WITH THE WSCM STANDARD DRAWINGS,
  - DEVIATION FROM THE DESIGN DRAWINGS,
  - UNFORESEEN SITE FACTORS IMPACTING THE DESIGNED LOCATION OF THE INFRASTRUCTURE.
- DRINKING WATER AND NON DRINKING WATER SYSTEMS:
  - WSCM CONSTRUCTION DRAWINGS ARE RELEVANT TO BOTH RETICULATION SYSTEMS,
  - TS0503 DETAILS PRODUCTS FOR USE IN BOTH DRINKING WATER AND NON DRINKING WATER SYSTEMS.
- EXCAVATION:
  - ALL EXCAVATION WORK SHALL BE UNDERTAKEN IN SUCH A MANNER AS TO MINIMISE RISK TO WORKERS AND OTHERS. AT ALL TIMES SAFE WORK PRACTICES SHALL BE IMPLEMENTED THAT AS A MINIMUM REQUIREMENT COMPLY WITH THE REQUIREMENTS OF RELEVANT LEGISLATION AND INDUSTRY GUIDELINES INCLUDING BUT NOT LIMITED TO:
    - THE WORK HEALTH AND SAFETY ACT 2012 (SA),
    - THE WORK HEALTH AND SAFETY REGULATIONS 2012 (SA), (SPECIFICALLY CHAPTER 6, DIVISION 3 - EXCAVATION WORK.)
    - SAFE WORK AUSTRALIA'S EXCAVATION WORK CODE OF PRACTICE.
  - SA WATER RESERVES THE RIGHT TO REVIEW SAFE WORK PRACTICES UNDERTAKEN BY ALL CONTRACTORS IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.
- EMBEDMENT & BACKFILL:
  - EXCAVATION OF TRENCH, EMBEDMENT AROUND PIPES, ASSEMBLIES & CONNECTIONS, AND TRENCH BACKFILL SHALL BE IN ACCORDANCE WITH THE WSCM SECTION 3 DRAWINGS,
  - ONLY MATERIALS APPROVED FOR PLACEMENT WITHIN TRENCHES & EXCAVATIONS SHALL BE USED.



- OBSTRUCTIONS & CLEARANCE REQUIREMENTS:
  - FOR MINIMUM HORIZONTAL & VERTICAL CLEARANCE BETWEEN SA WATER INFRASTRUCTURE AND OTHER AUTHORITY PIPES/ CABLES REFER WSA03, TABLE 5.5.
  - FOR MINIMUM CLEARANCE REQUIREMENTS FOR STRUCTURES & OTHER PIPES REFER TABLE 3 WHERE THE CONTRACTOR MAY ENCOUNTER EXISTING UNDERGROUND SERVICES, A 'DIAL BEFORE YOU DIG' INVESTIGATION (DBYD) SHALL BE UNDERTAKEN.
- WATER MAIN IN EASEMENT, EASEMENT WIDTHS AND CLEARANCES  
WATER MAINS SHALL BE LOCATED WITHIN THE ROAD RESERVE IN ACCORDANCE WITH 4005-30004-01. ALSO REFER WSA 03-2011, CLAUSE 5.4.1 AND 4005-30002-04, NOTE 2.  
APPROVAL OF THE SA WATER REPRESENTATIVE IS REQUIRED FOR LOCATING A WATER MAIN WITHIN AN EASEMENT. WHERE THE CONCEPT DESIGN HAS POSITIONED THE WATER MAIN IN PUBLIC ROAD THE DESIGNER SHALL COMPLY WITH THE CONCEPT. SA WATER WILL NOT CONSIDER A CHANGE FROM THE CONCEPT DESIGN TO PLACE A WATER MAIN WITHIN AN EASEMENT WHERE A SATISFACTORY ALIGNMENT IS AVAILABLE IN ROAD RESERVE (FOR COST MINIMISATION).  
  
OTHER EASEMENT CONSIDERATIONS ARE:
  - THE WATER MAIN SHALL BE POSITIONED WITHIN THE EASEMENT ON THE OPPOSITE SIDE TO ANY BUILDING OR STRUCTURE.
  - THE WATER MAIN POSITION SHALL BE ON THE LOW SIDE, GENERALLY 1/3 FROM THE BOUNDARY OR EASEMENT EDGE.
  - WHERE AN EASEMENT CONTAINS DUAL WATER SYSTEM PIPES (DRINKING & NON DRINKING) THERE SHALL BE A MINIMUM SEPARATION OF 1500 mm BETWEEN THE MAINS.
  - OTHER UTILITIES (SAPN, GAS ETC.) SERVICES SHALL NOT BE PERMITTED TO SHARE AN SA WATER EASEMENT ASSIGNED FOR WATER SUPPLY PURPOSES.
  - SERVICES CROSSING AN EASEMENT (APPROXIMATELY PERPENDICULAR TO THE MAIN) MAY BE PERMITTED.
  - FOR AN EASEMENT TO BE SHARED WITH A STORMWATER PIPE, CONSIDERATION WILL BE GIVEN TO THE PIPES DIAMETERS, EASEMENT WIDTH, ANY ADJACENT STRUCTURE AND OTHER INFLUENCING FACTORS. SA WATER IS UNDER NO OBLIGATION TO SHARE A WATER SUPPLY EASEMENT WITH A STORMWATER PIPE.
  - AN EASEMENT CONTAINING DUAL WATER MAINS, OR A WATER MAIN AND A SEWER MAIN, SHALL NOT BE SHARED WITH A STORM WATER PIPE.
  - REFER SA WATER SUPPLEMENT TO WSA 03-2011, CLAUSE 5.4.4. FOR EASEMENT ACQUISITION OBLIGATIONS.

APPROVED EASEMENT WIDTHS AND MINIMUM CLEARANCE REQUIREMENTS ARE PROVIDED IN TABLE 3. BECAUSE OF THE POTENTIAL FOR SUBSTANTIAL DAMAGE IF A WATER MAIN BURSTS, THESE DISTANCES ARE CONSIDERABLY GREATER THAN THOSE REQUIRED FOR SEWERS.

9. FOR ADDITIONAL NOTES REFER 4005-30002-02 AND 4005-30002-04.

- PIPE MINIMUM COVER
  - ALL MAINS AND CONNECTIONS ARE TO BE DESIGNED AND CONSTRUCTED AT MINIMUM COVER UNLESS SPECIFIC APPROVAL IS GIVEN BY AN SA WATER REPRESENTATIVE.
  - ANY VARIATION FROM MINIMUM PIPE COVER IS TO BE LABELLED ON DESIGNS AND AS CONSTRUCTED DRAWINGS WITH A DEPTH AND CHAINAGE, TO ENABLE SA WATER TO ACCURATELY LOCATE ASSETS.
  - THE DESIGNER IS TO DETERMINE PIPE COVER REQUIRED DURING CONSTRUCTION OVER NEW AND EXISTING PIPES IN COUNCIL AND DPTI ROADS.
  - CHANGES TO ROAD DESIGN SURFACE LEVELS IN DESIGNS AND EXISTING ROADS THAT EXCEED OR REDUCE MINIMUM PIPE COVER REQUIRE APPROVAL BY AN SA WATER REPRESENTATIVE.
  - A TYPICAL CROSS SECTION IS REQUIRED FOR NARROW ROADS AND LANEWAYS TO DETAIL THE PAVEMENT DESIGN, FOOTPATH WIDTH AND WATER CONNECTION PIPE COVER TRANSITION FROM THE MAIN TO THE METER. REFER TO 4005-30006 DRAWINGS FOR SAND OVERLAY ON WATER CONNECTIONS.
  - A TYPICAL CROSS SECTION IS REQUIRED FOR WATER CONNECTIONS CROSSING BENEATH STORM WATER DRAINS.
  - THE TOP OF A VALVE SPINDLE OR VALVE SPINDLE EXTENSION SHALL BE MINIMUM 150MM OR MAXIMUM 300MM BELOW THE SURFACE OF THE ROAD.

TABLE 1 TRENCH WIDTH

PIPE DN	TRENCH WIDTH	
	MINIMUM	MAXIMUM
63 - 90	400	700
100 - 150	500	800
200 - 250	600	1000
300 - 375	800	1000

TABLE 2 PIPE COVER (REFER 4005-30006-01 FOR WATER CONNECTIONS DN25 - 63)

PIPE DN	PIPE COVER	
	MINIMUM	MAXIMUM
63 - 200	750	1200
250	800	1200
300	875	1200
375	950	1200

TABLE 3 EASEMENT WIDTHS & CLEARANCES

WATER MAIN DIAMETER	EASEMENT WIDTHS (mm)	MINIMUM CLEARANCE (mm)	
		STRUCTURES	OTHER PIPES
DN 50 TO DN 150	7000	4000	1200
DN 200 TO DN 375	10000	5000	1500

REVISION PANEL			
REV	DATE	DRN	DETAILS
4	17/04/20	JP	NEW NOTES ADDED & EXISTING NOTES UPDATED
3	09/07/18	CD	NOTES ALTERED
2	19/07/16	PC	TABLE 3 AMENDED
1	31/03/16	MS	2016 STANDARDS REVIEW

DESIGN PANEL			
DESIGNED:	28/09/15	AUTHORISED:	31/03/16
RJP		T.GALEK	
DRAWN:	16/11/15	SIGNATURE:	
MS			
REVIEWED:	21/03/16	ORIGINAL SIGNED	
TG			

  
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**SA WATER STANDARD DRAWINGS**  
**WATER SUPPLY CONSTRUCTION MANUAL**  
**GENERAL NOTES**  
**SHEET 1 OF 4**

A3	4
SHT SIZE	REVISION
TOTAL SHEETS:5	
SUPERSEDES:	
DRAWING NUMBER	
4005-30002-01	
PREFIX	NUMBER SHEET



**NOTES:**

CONTINUED FROM 4005-30002-01.

9. PIPE:
- ALL PIPE SHALL BE SERIES 2, PN16 AS A MINIMUM.
  - REFER TS 0503, SECTION 3 FOR AUTHORISED PIPE MATERIALS AND MANUFACTURERS.
  - PVC AND DICL PIPE SHALL BE RRJ SERIES 2, UNLESS STATED OTHERWISE.  
WITHIN ADELAIDE CBD & NORTH ADELAIDE, PVC PIPE SHALL BE PN 20 AS A MINIMUM.
  - PE PIPE SIZE SHALL BE IN ACCORDANCE WITH TS0522 AND TS 0503, CLAUSE 3.3.
  - PIPE COLOUR SHALL BE:
    - DRINKING WATER - BLUE (OR BLACK WITH BLUE STRIPES - PE).
    - NON DRINKING WATER - LILAC (OR BLACK WITH LILAC STRIPES - PE).
  - PE WRAP FOR DICL PIPE SHALL BE COLOURED TO INDICATE THE SYSTEM (DRINKING OR NON DRINKING WATER).
10. PIPE LENGTH
- THE MINIMUM CUT LENGTH OF PVC AND DICL PIPE SHALL BE IN ACCORDANCE WITH TABLE 1.
  - DICL - THE PIPE OD MAY BE VARIABLE WITHIN 1750 mm OF THE SOCKET END. FOR USE OF A PIECE OF PIPE WITHIN THIS SECTION, THE OD SHALL BE MEASURED AND CONFIRMED FOR POSSIBLE USE AND INSERTION INTO A PIPE OR FITTING.

TABLE 1. MINIMUM PIPE CUT LENGTH (MM)

PIPE DN	PVC PIPE	PVC (SOCKET END)	DICL PIPE	DICL (SOCKET END)
100-250	500	500 (EXCL. SOCKET)	500	1750
300-375	2 x DN	2 x DN (EXCL. SOCKET)	2 x DN	1750

11. PIPE INSTALLATION:  
SHALL BE IN ACCORDANCE WITH:
- SA WATER WSCM DRAWINGS & CONSTRUCTION DOCUMENTATION.
  - THE APPROVED DESIGN DRAWINGS,  
APPROVAL OF THE SA WATER REPRESENTATIVE SHALL BE SOUGHT FOR DEVIATION FROM THIS REQUIREMENT.
  - THE INSIDE OF MAINS SHALL BE KEPT CLEAN AND DRY DURING STORAGE AND CONSTRUCTION.
  - AN APPROPRIATE SEAL MUST BE USED TO PREVENT CONTAMINATION OF PIPES. ENDS OF PIPE MUST BE SEALED WHEN PIPES ARE STORED OUTSIDE AND WHEN AN EXPOSED PIPE IS LEFT IN A TRENCH UNATTENDED OR DURING A RAIN EVENT. ANY DIRT, SAND, SEDIMENT MUST BE REMOVED PRIOR TO LINK UP AND DISINFECTION.
  - PIPES ARE NOT TO BE STORED IN ANY LOCATION WHERE POLLUTION DUE TO RAIN RUN-OFF OR ANY OTHER CAUSE CAN OCCUR. STACKING OF PIPES DURING STORAGE, SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

12. PIPE INSTALLATION DURING HIGH TEMPERATURES:  
CONSTRUCTION DURING PERIODS OF HIGH TEMPERATURE WILL REQUIRE SPECIAL PRECAUTIONS TO MINIMISE PIPE EXPANSION ISSUES PRIOR TO BACKFILL. ALL CONTROL TECHNIQUES SHALL BE APPROVED BY THE SA WATER REPRESENTATIVE PRIOR TO IMPLEMENTATION.
- PVC:
- PIPES SHALL NOT BE LAID AND BACKFILLED WHILE THE AMBIENT TEMPERATURE ADJACENT TO THE PIPE IS MORE THAN 35 °C.
  - UPON THE TEMPERATURE FALLING BELOW 35 °C, ALL JOINTS SHALL BE INSPECTED, AND IF NECESSARY, HOMED AGAIN PRIOR TO PLACEMENT OF ANY EMBEDMENT & TRENCH FILL MATERIAL.
- PE:
- PE PIPES SHALL NOT BE LAID AND BACKFILLED IF THE AMBIENT TEMPERATURE ADJACENT TO THE PIPE FALLS OUTSIDE THE RANGE 12 - 27 °C.
  - DUE TO PIPE EXPANSION DURING HOT TEMPERATURES, FOR EVERY METRE OF MEASURED PIPE, THE ADDITIONAL CUT LENGTH SHALL BE A MINIMUM OF 0.18 mm / m / °C ABOVE 12°C.

13. VALVES:
- ALL STOP/ GATE VALVES SHALL HAVE A SQUARE DRIVE AND BE CLOCKWISE CLOSING. THE SPINDLE CAP SHALL HAVE A RED DOT (INDICATING CLOCKWISE CLOSING).
  - WITHIN NON DRINKING WATER SYSTEMS THE SPINDLE CAP AND VALVE DOME SHALL BE COLOURED LILAC.

14. THRUST BLOCKS:
- REFER WSCM SECTION 3 FOR BLOCK SIZE DETAILS.
  - ALL CONCRETE SHALL BE MINIMUM GRADE 25.
  - THE THRUST AREA OF ALL THRUST BLOCKS SHALL BE CAST AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
  - FOR PE THRUST EXTENSION PIECES THE LENGTH BETWEEN THE VALVE AND THRUST BLOCK SHALL BE IN ACCORDANCE WITH TABLE 2 (TO PREVENT PIPE BUCKLING)
  - THRUST BLOCKS SHALL NOT INTERFERE WITH OTHER SERVICES.
  - TIMBER AND PLASTIC BLOCKS ARE NOT AN APPROVED METHOD OF PERMANENT THRUST RESTRAINT. HOWEVER, THEY BE MAY BE USED FOR THE PURPOSE OF TEMPORARY THRUST RESTRAINT.

TABLE 2. PE PIPE LENGTH BETWEEN VALVE AND THRUST BLOCK

PIPE DN	LENGTH OF PIPE (MM)
100	750
>150	MIN. 750; MAX. 1000

15. PROPERTY CONNECTIONS:
- ALL CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH WSCM SECTION 6 DRAWINGS.
  - THE MAXIMUM LENGTH OF A WATER CONNECTION SHALL BE 25 METRES.
  - PE PIPE SHALL NOT BE USED WHERE CONTAMINATED SOIL HAS BEEN IDENTIFIED.
16. PE WELDING:
- WELDING SHALL ONLY BE UNDERTAKEN BY PERSONS WHO HAVE THE APPROPRIATE QUALIFICATION FOR THE TASK:
    - BUTT WELD, PMBWELD301B.
    - ELECTRO FUSION, PMBWELD302B.
  - REFER TS 0503, CLAUSE 9.1.1 FOR APPROVED FACTORY FABRICATION SUPPLIERS.
  - REFER TS 0503, CLAUSE 9.1.2 FOR APPROVED SITE FABRICATION SUPPLIERS.
  - FABRICATION AND DELIVERABLES SHALL BE IN ACCORDANCE WITH 4005-30005-08.
17. REFER 4005-30005-15 TO 4005-30005-17 FOR HORIZONTAL DIRECTIONAL DRILLING REQUIREMENTS.
18. WRAPPING OF BELOW GROUND FITTINGS AND COMPONENTS:
- ALL BELOW GROUND, BARE STEEL FITTINGS, BOLTS AND SCRATCHED PIPES SHALL BE PROTECTED IN ACCORDANCE WITH TS 18, USING SA WATER AUTHORISED PRODUCTS LISTED IN TS 0503.
19. NON DRINKING CONNECTION AND WATER METER INSTALLATIONS
- NON DRINKING WATER MAINS TAPPING AND CONNECTION PIPE SHALL BE LAID IN ACCORDANCE WITH WSCM SECTION 6.
  - ALL MATERIALS SHALL COMPLY WITH TS 0503.
  - FOR ALL NDW PE CONNECTION PIPE, METALLIC LOCATION TAPE SHALL BE PLACED IN THE TRENCH APPROXIMATELY 150 ABOVE THE PIPE.
  - FOR NDW METER INSTALLATION DETAILS REFER WSCM DRAWINGS 4005-30008-09 TO 4005-30008-12.
  - ALL METER INSTALLATIONS (WATER METER AND FITTINGS) SHALL BE PAINTED LILAC P23 (AS2700).
20. FOR EQUIVALENT PE PIPE DIAMETERS REQUIRING A REDUCER TO MATCH STUB FLANGE WITH ADJOINING FITTINGS. REFER TABLE 3.

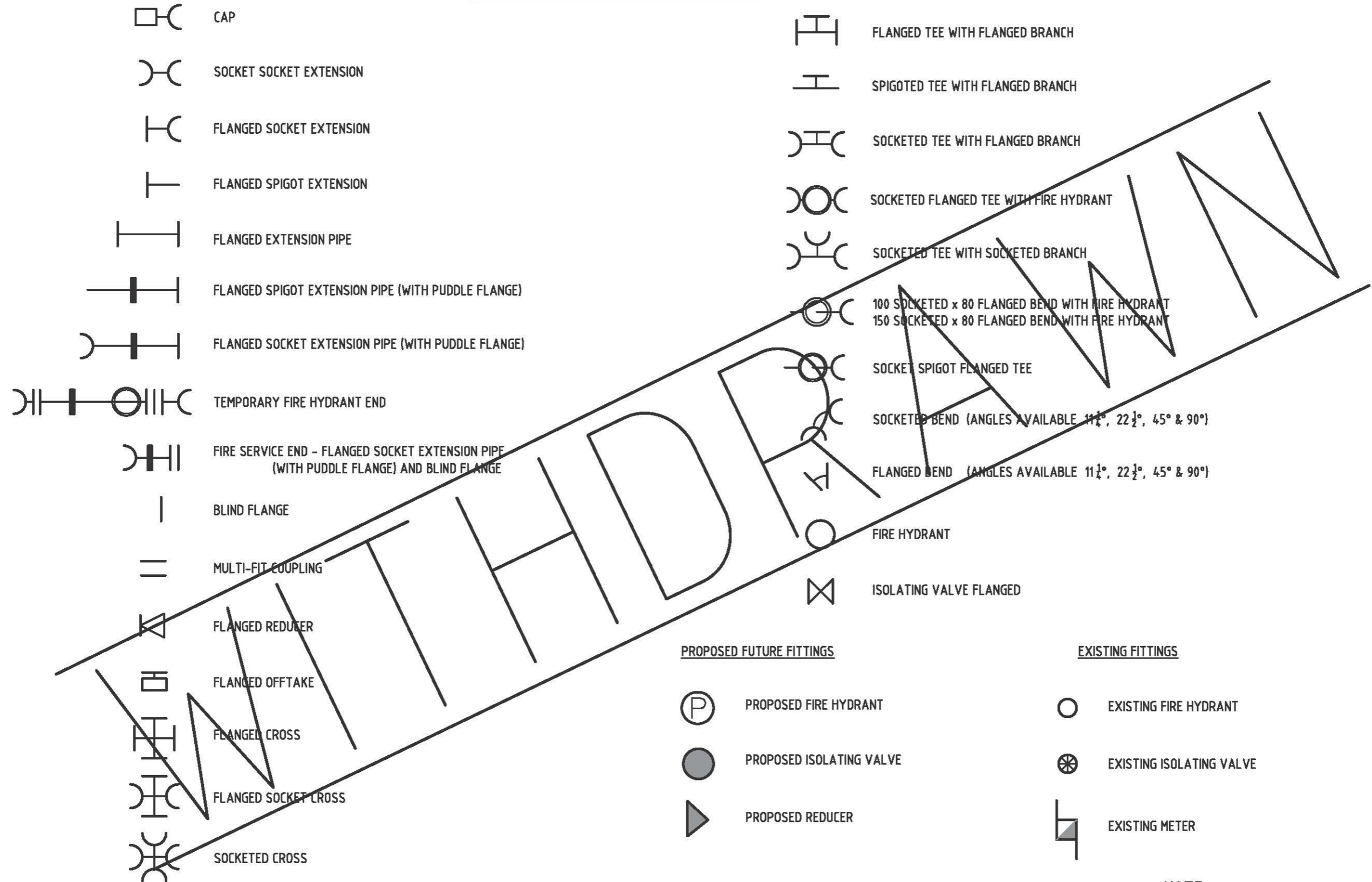
TABLE 3. EQUIVALENT PE PIPE DIAMETERS

PIPE DN	EQUIVALENT PE PIPE OD (REFER TS 05)	REDUCER REQUIRED
100	125	-
150	180	-
200	250	250-225
250	315	315-280

REVISION PANEL				DESIGN PANEL				SA Water		SA WATER STANDARD DRAWINGS		A3		4		
REV	DATE	DRN	DETAILS	APR	CURRENT REV 28/04/20	DESIGNED: 28/09/15	AUTHORISED: 31/06/16	This drawing is the property of the SOUTH AUSTRALIAN WATER CORPORATION and shall not be copied or modified in part or in whole without authorization.		WATER SUPPLY CONSTRUCTION MANUAL		SHT SIZE		REVISION		
4	20/04/20	JP	NOTE ADDED		AUTHORISED: T. GALEK	RJP		T. GALEK		GENERAL NOTES		TOTAL SHEETS: 5				
3	09/05/18	CD	CHANGES WHERE INDICATED	TG	SIGNATURE: <i>T. Galek</i>	16/11/15		SIGNATURE:		SHEET 2 OF 4		SUPERSEDES:				
2	10/11/16	PC	NOTE 18 ADDED	TG		MS		ORIGINAL SIGNED				DRAWING NUMBER				
1	31/03/16	MS	2016 STANDARDS REVIEW	TG		21/03/16						4005-30002-02				
											PREFIX		NUMBER		SHEET	



**DESIGN DRAWINGS FITTINGS SYMBOLS**



**PROPOSED FUTURE FITTINGS**

- PROPOSED FIRE HYDRANT
- PROPOSED ISOLATING VALVE
- PROPOSED REDUCER

**EXISTING FITTINGS**

- EXISTING FIRE HYDRANT
- EXISTING ISOLATING VALVE
- EXISTING METER

**NOTE : FITTING SYMBOLS BASED ON AS 1100.**

REVISION PANEL				DESIGN PANEL				SA WATER STANDARD DRAWINGS		A3		2	
REV	DATE	DRN	DETAILS	APR	CURRENT REV	DESIGNED:	AUTHORISED:	WATER SUPPLY CONSTRUCTION MANUAL		SHT SIZE		REVISION	
					13/08/18	28/09/15	31/03/16	SA Water This drawing is the property of the SOUTH AUSTRALIAN WATER CORPORATION and shall not be copied or modified in part or in whole without authorization.		TOTAL SHEETS: 4 SUPERSEDES: 96-0086-01 (J1) DRAWING NUMBER <b>4005-30002-03</b>		PREFIX NUMBER SHEET	
					RJP	T.GALEK							
					MS	SIGNATURE:							
2	09/05/18	CD	DRAWING WITHDRAWN	MA		16/11/15		GENERAL NOTES SHEET 3 OF 4 DESIGN DRAWINGS FITTING SYMBOLS		4005-30002-03		2	
1	31/03/16	MS	2016 STANDARDS REVIEW	TG		21/06/16	TG						



## WATER INFRASTRUCTURE POSITION TECHNICAL NOTES

### GENERAL

1. THE AUTHORISED CONSULTANT SHALL PREPARE DESIGN DRAWINGS FOR REVIEW BY SA WATER FOR COMPLIANCE WITH SA WATER DESIGN AND CONSTRUCTION STANDARDS. REFER 4005-30002-05.
2. FOR OBSTRUCTIONS AND CLEARANCE REQUIREMENTS REFER 4005-30002-01, NOTE 7.

### WATER MAINS

3. REFER WSCM, SECTION 5 FOR MAINLAYING DETAILS.
4. MAINS SHALL BE LOCATED WITHIN THE ROAD RESERVE. APPROVAL OF THE SA WATER REPRESENTATIVE IS REQUIRED FOR LOCATION WITHIN AN EASEMENT. REFER 4005-30002-01, NOTE 8.
5. WITHIN THE ROAD, THE TYPICAL ALIGNMENT IS 5 METRES FROM THE BOUNDARY OR 1.5 METRES FROM THE KERB.
6. WHERE LOCATED WITHIN EASEMENT, REFER 4005-30002-01, NOTE 8 FOR PERMISSIBLE EASEMENT WIDTHS AND OTHER EASEMENT DETAILS, E.G. THE WATER MAIN POSITION.
7. WHERE AN ALLOTMENT IS SERVICED BY A ROAD AT THE FRONT AND A LANEWAY AT THE REAR THE WATER MAIN SHALL BE POSITIONED IN THE ROAD. FOR CONSIDERATION OF POSITIONING THE WATER MAIN IN THE LANEWAY SPECIFIC SA WATER APPROVAL SHALL BE REQUIRED. THE CONSULTANT WILL BE REQUIRED TO PROVIDE SUBSTANTIAL JUSTIFICATION FOR CONSIDERATION OF THIS OPTION.
8. REFER 4005-30006-01 FOR THE MINIMUM DISTANCE BETWEEN TAPPING FITTINGS.

### SERVICE CROSSINGS

9. THE WATER MAIN IS GENERALLY ABOVE THE STORMWATER AND SEWER PIPES.
10. WHERE A SWD (OR OTHER SERVICE) CROSSES THE WATER MAIN AND RESULTS IN A CLASH OR DOES NOT ACHIEVE ADEQUATE CLEARANCE BETWEEN THE PIPES, A DOGLEG OF THE WATER MAIN MAY BE ALLOWED.
11. DOGLEGS MAY RESULT IN PRESSURE LOSSES AND WATER TURBULENCE AND SHOULD BE AVOIDED WHERE POSSIBLE.
12. REFER 4005-30005-08 AND 4005-30005-09 FOR GUIDELINES AND APPROVED ASSEMBLIES OF DOGLEGS.
13. THE DESIGN DRAWINGS SHALL IDENTIFY AND HIGHLIGHT ALL DOGLEG LOCATIONS. EACH DOGLEG SHALL BE SHOWN AS A DETAIL OR LABELLED IN ACCORDANCE WITH 4005-30005-08.

### VALVES AND HYDRANTS

14. STOP VALVES. FOR RESIDENTIAL AREAS, SHALL BE POSITIONED SUCH THAT THE MAXIMUM NUMBER OF PROPERTIES IMPACTED BY A SHUT DOWN OF THE MAIN IS 50.
15. FOR DETAILS OF BRANCH LOCATIONS WITH MULTIPLE VALVES, REFER 4005-30005-03.
16. HYDRANTS SHALL BE LOCATED AT HIGH POINTS AND LOW POINTS ALONG THE MAIN AND AT A MAXIMUM SPACING IN ACCORDANCE WITH TABLE 1:

TABLE 1 HYDRANT MAXIMUM SPACING (METRES)

RESIDENTIAL	COMMERCIAL/ INDUSTRIAL	CBD	RURAL
150	80	80	400

17. HYDRANTS AND VALVES ARE ALSO REQUIRED FOR DISINFECTION PURPOSES. REFER NOTE 35.

### WATER CONNECTIONS

18. FOR TYPICAL WATER, SEWER AND 'OTHER AUTHORITY' CONNECTION POSITIONS REFER 4005-30004-02.
19. NEW DN 100 & DN 150 MAINS - CONNECTIONS SHALL BE PROVIDED OFF PRETAPPED CONNECTORS.
20. NEW DN 200 TO DN 375 MAINS - CONNECTIONS SHALL BE PROVIDED OFF TAPPING SADDLES, TAPPING BANDS OR TAPPED COLLARS.
21. ALL EXISTING MAINS (DN 100 TO DN375) - CONNECTIONS SHALL BE PROVIDED OFF TAPPING SADDLES, TAPPING BANDS OR TAPPED COLLARS.


22. REFER 4005-30006-03 FOR APPROVED TAPPING METHODS.
23. REFER 4005-30004-03 FOR DETAILS OF THE STANDARD 'DEFAULT' SA WATER CONNECTIONS POSITIONS.
24. CONNECTIONS SHALL BE PERPENDICULAR TO THE WATER MAIN. A CONSTRUCTION TOLERANCE OF ± 5° (87 mm/ METRE) IS PERMITTED.
25. WHERE THE CONNECTION IS NOT CONSTRUCTED PERPENDICULAR TO THE WATER MAIN, DETECTABLE MARKER TAPE SHALL BE PLACED ABOVE THE PIPE. REFER 4005-30006-01.
26. FOR DUAL RETICULATION SYSTEMS, **THE NON DRINKING WATER CONNECTION SHALL BE POSITIONED TO THE LEFT OF DRINKING WATER CONNECTION WHEN VIEWED FROM ROADWAY.**
27. FOR DUAL RETICULATION SYSTEMS, THE CONNECTION PIPES FOR THE DIFFERENT SYSTEMS SHALL NOT CROSS. REFER 4005-30004-04, DETAIL B.
28. REFER TS 0503 FOR AUTHORISED TAPPING FITTINGS, PIPE MATERIALS AND OTHER ITEMS.

### WATER METERS

29. REFER SECTION 6 DRAWINGS FOR WATER METER COMPONENTS AND ARRANGEMENTS.
30. FOR DETAILS OF THE STANDARD 'DEFAULT' WATER METER POSITIONS, REFER 4005-30004-03.
31. THE STANDARD WATER METER ASSEMBLY IS ABOVE GROUND.
32. SPECIFIC SA WATER APPROVAL IS REQUIRED FOR USE OF THE NO. 2 METER BOX IN LIEU OF THE ABOVE GROUND LOCATION.
33. THE CONSULTANT IS REQUIRED TO PROVIDE APPROPRIATE DETAIL ON THE DESIGN DRAWINGS TO ENABLE SA WATER TO ASSESS THE JUSTIFICATION OF THIS OPTION.
34. WHERE A METER IS REQUIRED TO SUPPLY A RESERVE, FOR SAFETY REASONS THE PREFERRED OPTION IS FOR THE METER TO BE BELOW GROUND IN AN APPROVED CAST IRON BOX. SHOULD THE DESIGNER CONSIDER AN ABOVE GROUND METER SUITABLE, A SAFETY ASSESSMENT SHALL BE PROVIDED TO THE SA WATER REPRESENTATIVE FOR CONSIDERATION AND APPROVAL.

### MAINS DISINFECTION

35. REFER 4005-30005-10 AND 4005-30005-19 FOR GUIDANCE AND INFORMATION.
36. FOR EACH STAGE OF A DEVELOPMENT, THE DESIGNER SHOULD CONSIDER DISINFECTION INJECTION AND DISCHARGE REQUIREMENTS FOR THE POSITIONING OF HYDRANTS AND VALVES.

REVISION PANEL					DESIGN PANEL			 SA WATER STANDARD DRAWINGS WATER SUPPLY CONSTRUCTION MANUAL GENERAL NOTES SHEET 4 OF 4 WATER INFRASTRUCTURE POSITION NOTES	A3	1
REV	DATE	DRN	DETAILS	APR	DESIGNED:	AUTHORISED:	SHT SIZE		REVISION	
1	14/07/18	RP	NEW DRAWING	TG	14/02/18 RP	08/08/18 T.GALEK	TOTAL SHEETS: 4 SUPERSEDES: 4005-30002-03-1 DRAWING NUMBER <b>4005-30002-04</b> PREFIX NUMBER SHEET	4	1	
					14/02/18 RP	SIGNATURE: <i>T. Galek</i>				
					REVIEWED: TG					

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