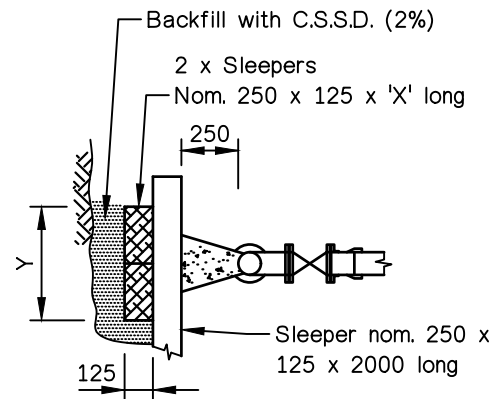
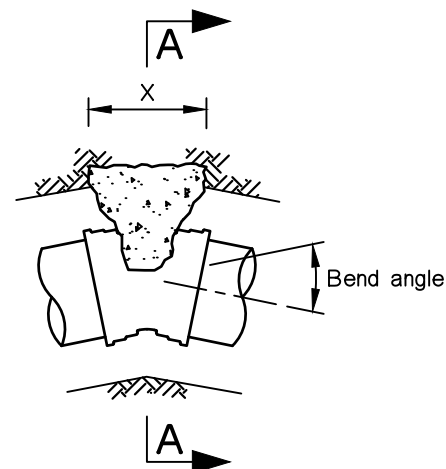


SECTION A-A

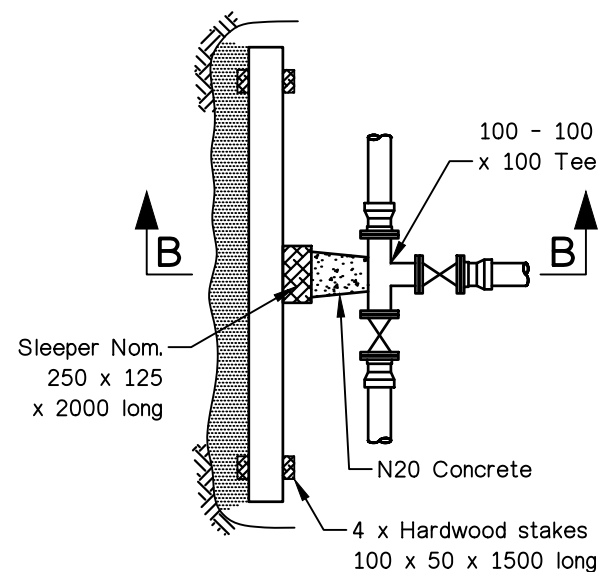


SECTION B-B

Limit height of
 • stakes and
 • vertical sleepers
 150 above horizontal sleepers



CONCRETE THRUST BLOCK
 For Type A, B and C Soils



LIGHTWEIGHT THRUST BLOCK
 For Low Strength Soils (Type D)
 (100, 150 Dia.)

TABLE 1

Soil Type		Safe Horiz. Bearing Pressure (kPa)
A	Rock	300
B	Firm Clay	150
C	Soft Clay	50
D	Silt	25

TABLE 2

Bend Angle	Pipe Dia.	Soil Type	Bearing Area (m ²)	Dimensions		Bend Angle	Pipe Dia.	Soil Type	Bearing Area (m ²)	Dimensions		Bend Angle	Pipe Dia.	Soil Type	Bearing Area (m ²)	Dimensions	
				X	Y					X	Y					X	Y
11¼°	100	A	0.01	300	300	45°	100	A	0.05	300	300	90°	100	A	0.09	450	300
		B	0.02	300	300			B	0.10	400	300			B	0.18	500	400
		C	0.07	300	300			C	0.29	650	500			C	0.53	1000	600
		D	0.15	800	250			D	0.57	1500	500			D	1.06	2000	500
	150	A	0.03	300	350		150	A	0.10	500	300		150	A	0.19	700	400
		B	0.05	300	350			B	0.20	500	500			B	0.37	700	600
		C	0.15	500	350			C	0.60	1000	700			C	1.11	1500	850
		D	0.31	1500	250			D	1.21	2400	500			D	2.23	2400	1000
	225	A	0.06	300	450		225	A	0.22	500	500		225	A	0.40	900	500
		B	0.11	300	450			B	0.43	800	600			B	0.79	1300	700
		C	0.33	750	500			C	1.29	1850	800			C	2.38	2100	1300
		D	0.66	1500	250			D	2.58	2400	500			D	4.80	2400	1000
300	A	0.10	300	500	300	A	0.38	800	600	300	A	0.71	1000	800			
	B	0.20	450	500		B	0.76	1100	800		B	1.41	1350	1200			
	C	0.59	1000	650		C	2.29	1900	1400		C	4.23	2400	1800			
	D	1.17	1500	250		D	4.58	2400	1000		D	8.50	2400	1000			
375	A	0.15	500	600	375	A	0.58	900	700	375	A	1.08	1150	1000			
	B	0.30	500	600		B	1.16	1500	800		B	2.15	1900	1200			
	C	0.89	1400	650		C	3.50	2500	1500		C	6.45	3500	2000			
	D	1.79	1500	250		D	7.00	2500	1500		D	12.90	3500	2000			
22½°	100	A	0.02	300	300	Tee or Closed End	100	A	0.06	300	300	Tee or Closed End	100	A	0.06	300	300
		B	0.05	300	300			B	0.12	400	300			B	0.12	400	300
		C	0.15	450	400			C	0.37	750	500			C	0.37	750	500
		D	0.29	1500	250			D	0.75	1500	500			D	0.75	1500	500
	150	A	0.05	300	300		150	A	0.13	400	350		150	A	0.13	400	350
		B	0.10	400	300			B	0.26	600	450			B	0.26	600	450
		C	0.31	700	500			C	0.79	1000	800			C	0.79	1000	800
		D	0.61	1500	500			D	1.57	2200	750			D	1.57	2200	750
	225	A	0.11	300	500		225	A	0.28	600	500		225	A	0.28	600	500
		B	0.22	500	500			B	0.56	1000	600			B	0.56	1000	600
		C	0.66	1250	600			C	1.69	1700	1000			C	1.69	1700	1000
		D	1.32	1500	250			D	3.37	2200	750			D	3.37	2200	750
300	A	0.19	500	500	300	A	0.50	900	600	300	A	0.50	900	600			
	B	0.39	750	600		B	1.00	1200	900		B	1.00	1200	900			
	C	1.17	1900	700		C	2.99	2500	1200		C	2.99	2500	1200			
	D	2.33	1500	250		D	5.98	2500	1200		D	5.98	2500	1200			
375	A	0.30	500	600	375	A	0.76	1000	800	375	A	0.76	1000	800			
	B	0.59	900	700		B	1.52	1600	1000		B	1.52	1600	1000			
	C	1.78	1900	1000		C	4.56	3000	1600		C	4.56	3000	1600			
	D	3.56	1500	250		D	9.12	3000	1600		D	9.12	3000	1600			

NOTES

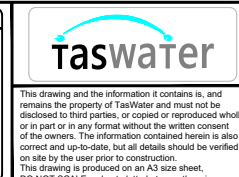
- Dimensions in 'Table 2' are based on 1600 kPa. test pressure. Design is required if test pressure exceeds this value.
- Ensure flexible joints remain free of concrete.
- Width (X) x height (Y) in millimetres may be varied to meet minimum Bearing Area requirements.
- Superintendent to confirm safe bearing pressure in low strength soil conditions.
- Obtain an Engineer's design (for situations not covered) especially where Safe Bearing Strength is <25kPa.

Revision Notes				Rqst	Rvwr	Date
1 - UPDATED TO TW TITLEBLOCK WITH MINOR REVISIONS				G.H	G.H	28/06/23
Rev.	1	Date	28/06/2023	Approved	MANAGER ASSET MANAGEMENT	

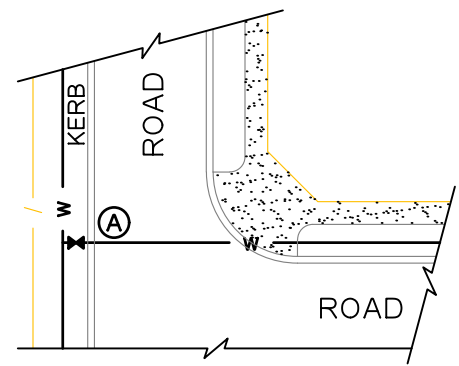


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Sheet Size	A3
SUPERSEDES TW-W-300	
References	

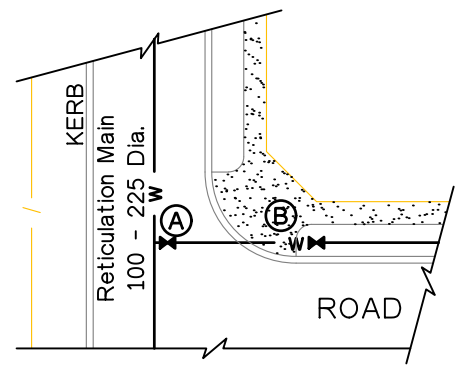
Drawn	R. HAWLEY	30/01/2015
Designed	-	-
Verified	G. HENDERSON	30/01/2015
Project No.	-	Discipline W
Vault Folder	-	© 2023
HPRM File Ref.	-	-



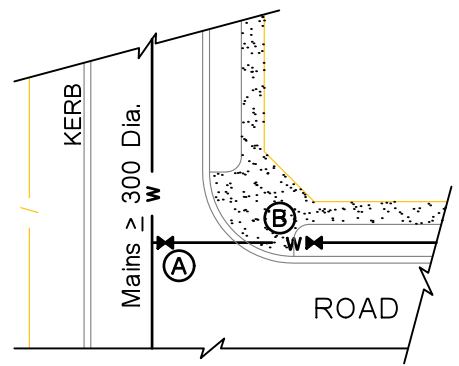
TASWATER STANDARD DRAWING PIPE INSTALLATION THRUST BLOCKS			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Sheet Number TWS-W-0017	REVISION 1



DETAIL 1
MINOR ROADS



DETAIL 2
MINOR ROADS

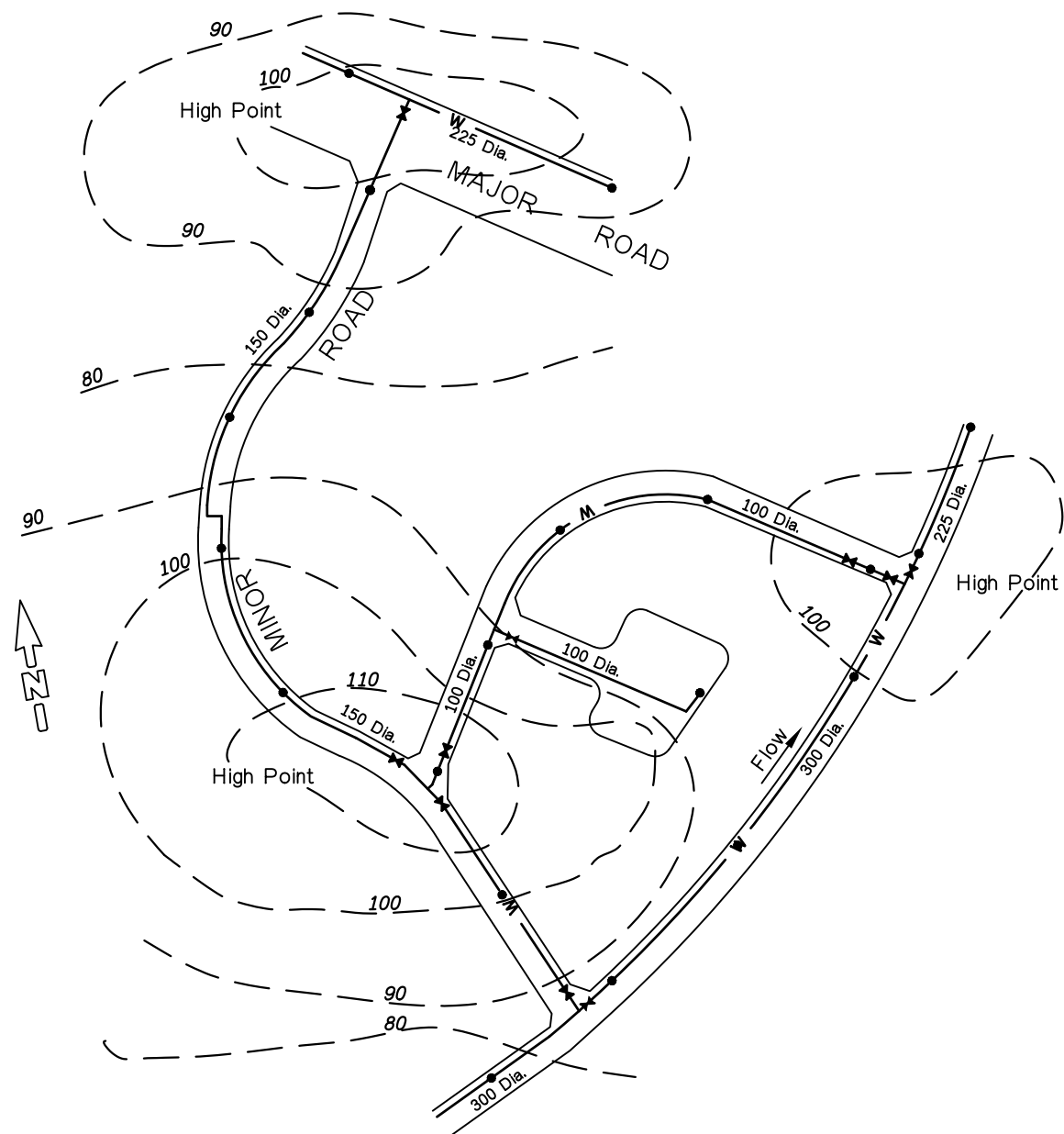


DETAIL 3
ARTERIAL ROADS

POSITIONING OF VALVES

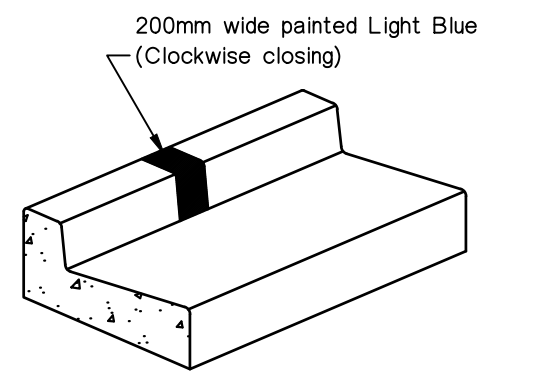
PRIORITY LOCATION OF WATER MAINS AND FIRE PLUGS	
WATER MAINS	FIRE PLUGS
1. Footpath / Nature Strips	1. Online (Avoid driveways where possible)
2. Kerbside Parking Lanes	1. Online (If clear of legal parking areas) 2. Offset Elsewhere (Footpath / Nature Strip) 3. Online (Opposite driveways)
3. Traffic Lanes	1. Offset (Footpath / Nature Strip) 2. Online

* Refer to the Traffic (Road Rules) Amendment (Miscellaneous) Regulations 1999 for parking and stopping regulations.



TYPICAL LAYOUT

(Location of valves and fire plugs with respect to high points)



STOP VALVE KERB MARKING

NOTES

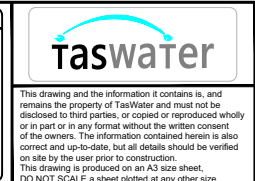
- Preferred position of valve - location (A), otherwise position at location (B).
- Where a branch connection is in an arterial road and a valve is required as shown in 'Detail 3' (A) consider placing an additional valve at location (B).
- Locate fire plugs adjacent to valves to facilitate air bleeding and main scouring.
- Provide air gap on all scour pipe outlets.
- Cross Connection/Zone Valve:
 - Place 'Cross Cut' in lid surround and paint lid White to denote a zone area cross connection.

Revision Notes		Rqst	Rvwr	Date	
1 - UPDATED TO TW TITLEBLOCK WITH MINOR REVISIONS		G.H	G.H	28/06/23	
Rev.	1	Date	28/06/2023	Approved	MANAGER ASSET MANAGEMENT



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Datum	NA
Sheet Size	A3
SUPERSEDES TW-W-305	
References	

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Verified	G. HENDERSON	30/01/2015
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HPRM File Ref.	-	-

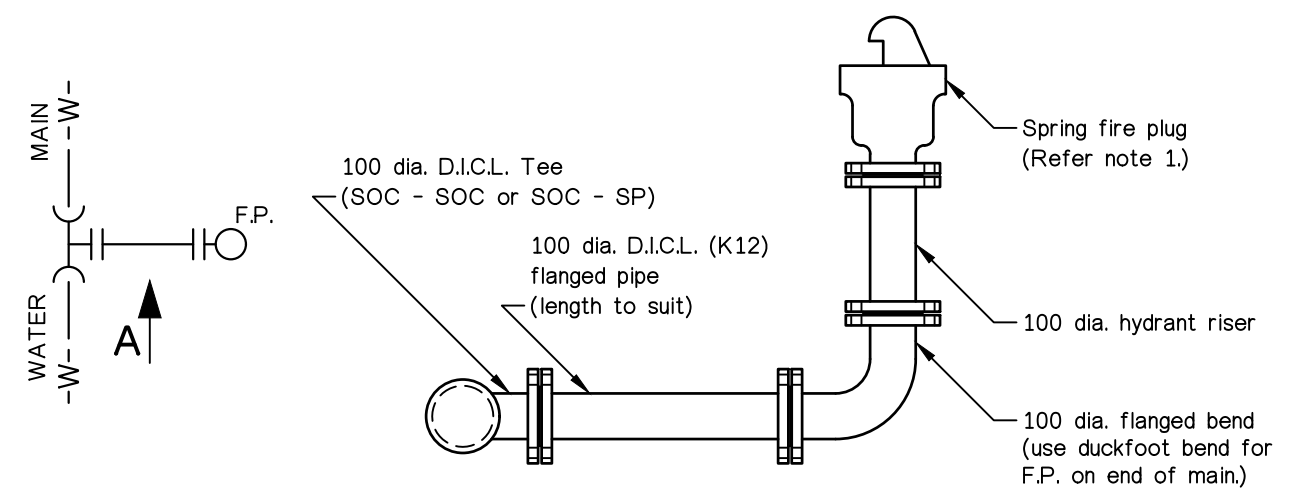


TASWATER STANDARD DRAWING STOP VALVES/FIREPLUGS TYPICAL LAYOUT		
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653	Sheet Number TWS-W-0018	REVISION 1 of 2 1

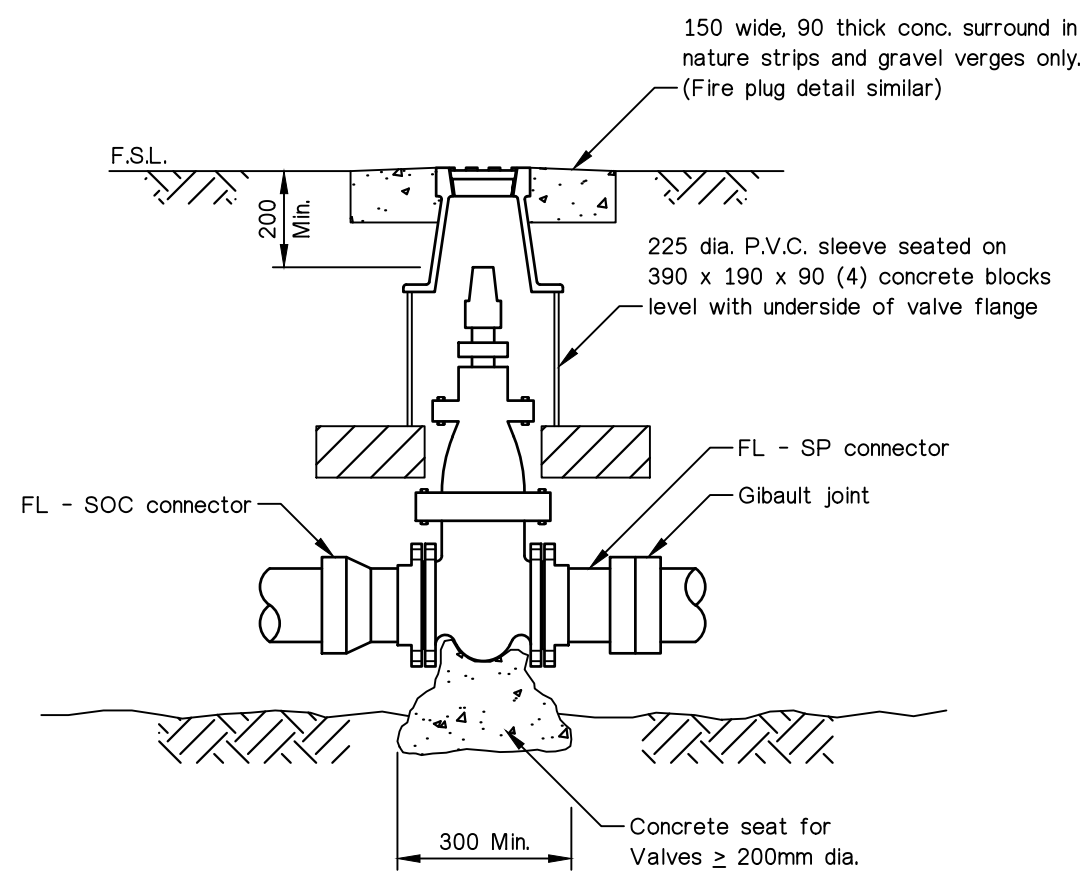
BOX	LID TYPE	LID COLOUR	COMMENTS
Stop Valve	Drop-In (Unsecured)	Blue	Box stamped 'CC' for clockwise closing
Zone Valve	Drop-In (Unsecured)	White	
Fire Plug	Drop-In (Unsecured)	Yellow	

Lids are epoxy coated cast iron or ductile iron.
Colour to AS.2700:

- Blue (B41 - Bluebell)
- White (N14 - White)
- Yellow (Y14 - Golden Yellow)



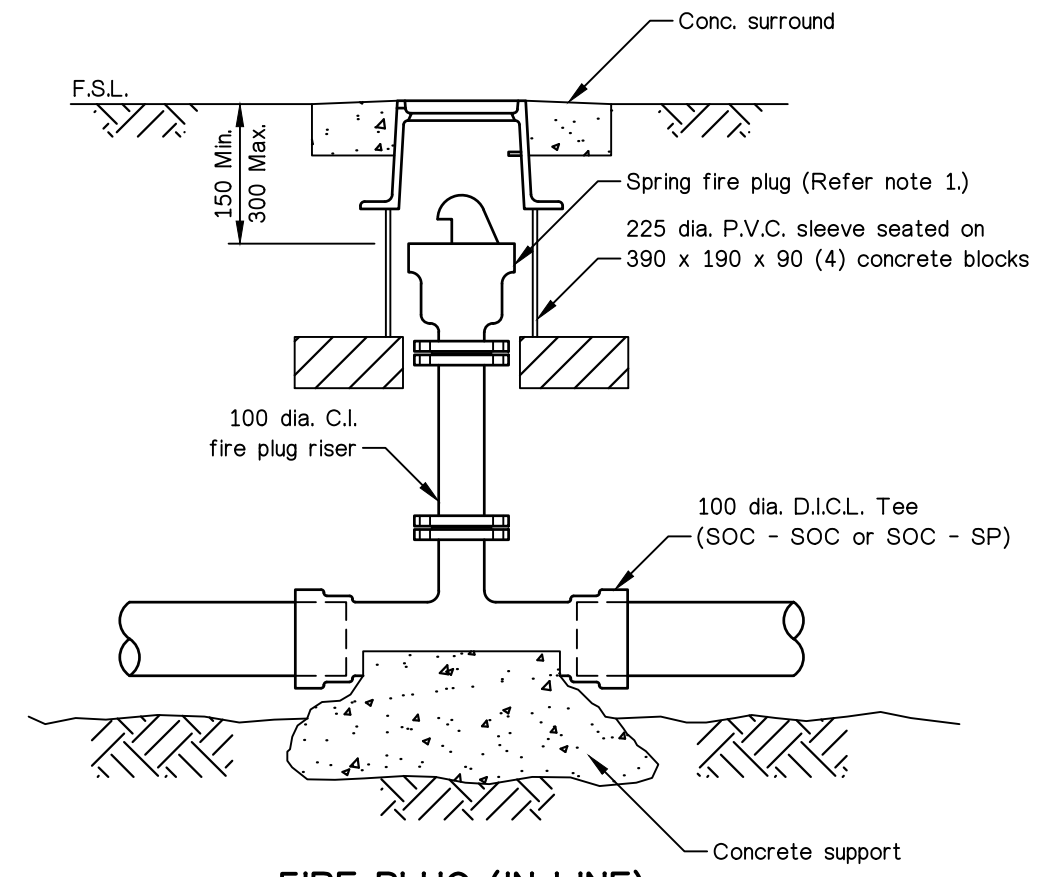
VIEW A - OFFSET FIRE PLUG



STOP VALVE

NOTES (STOP VALVES)

- Stop valves shall:
 - Comply with 'AS.2638'
 - Be clockwise closing only
 - Be resilient seated and epoxy coated (excluding scour valves).
- Scour valves - Solid wedge type, coated and wrapped with 'Denso' or approved equivalent.



FIRE PLUG (IN-LINE)

NOTES (FIRE PLUGS)

- Fire plugs shall be epoxy coated.

NOTES (GENERAL)

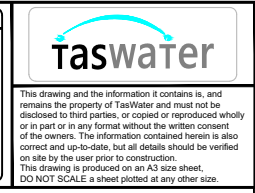
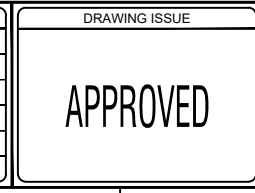
- Flange type - Class 16 'AS.4087' unless noted. (Compatible 'AS.2129' - Table C)

Rev.	1	Date	28/06/2023	Approved	MANAGER ASSET MANAGEMENT
Revision Notes	1 - UPDATED TO TW TITLEBLOCK WITH MINOR REVISIONS				
Rqst	G.H	Rvwr	G.H	Date	28/06/23

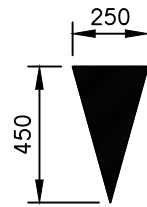


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Sheet Size	A3
SUPERSEDES TW-W-306	
References	

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Designed	-	-
Verified	G. HENDERSON	30/01/2015
Project No.	-	Discipline W
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HPRM File Ref.	-	-

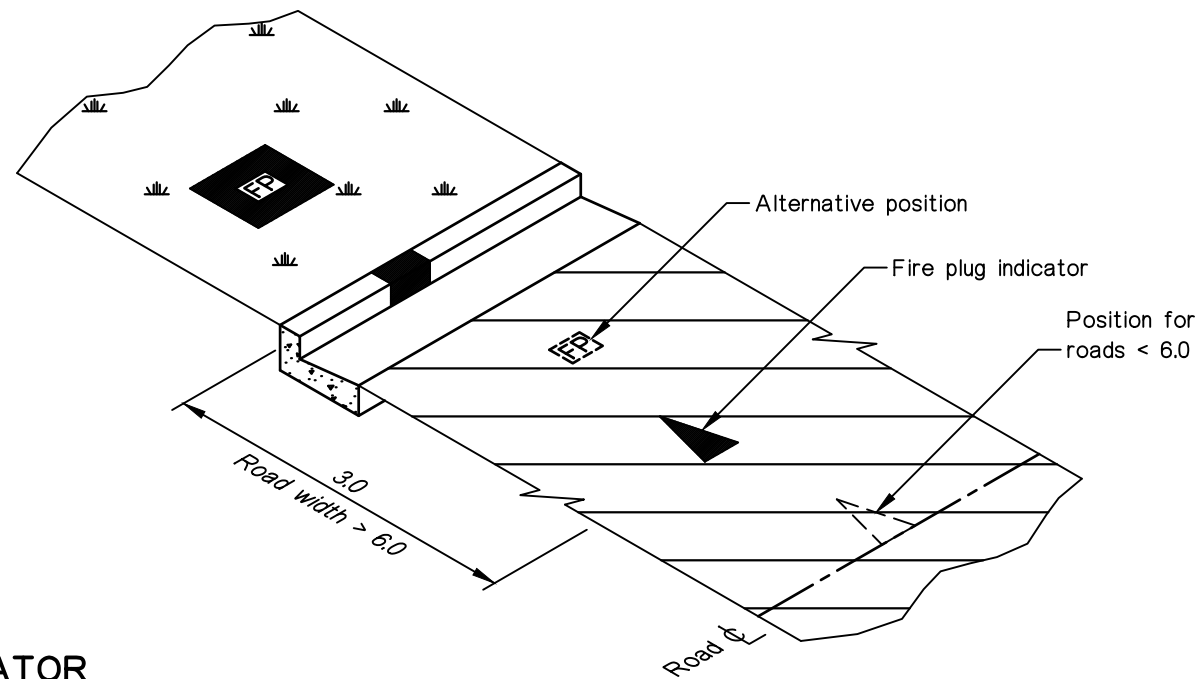


TASWATER STANDARD DRAWING STOP VALVES/FIREPLUGS TYPICAL INSTALLATION		
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653	TWS-W-0018	2 of 2
Revision	1	

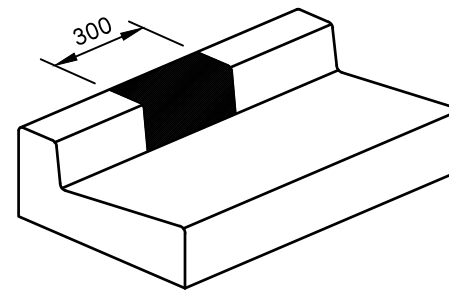


FIRE PLUG INDICATOR

Yellow thermoplastic 'Hot Tape' impregnated with glass beads

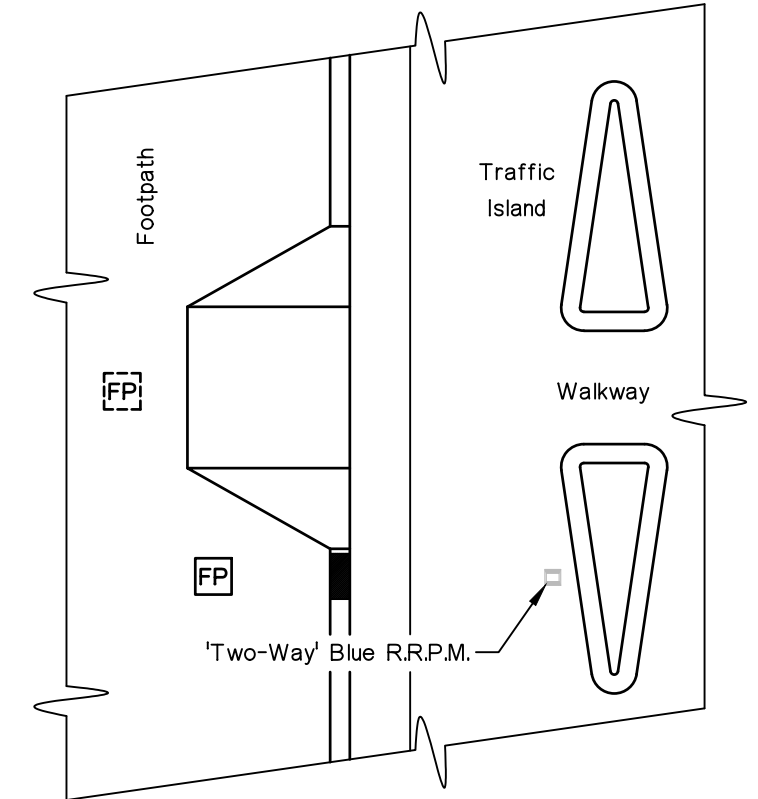


SEALED PAVEMENT WITHOUT LINEMARKING

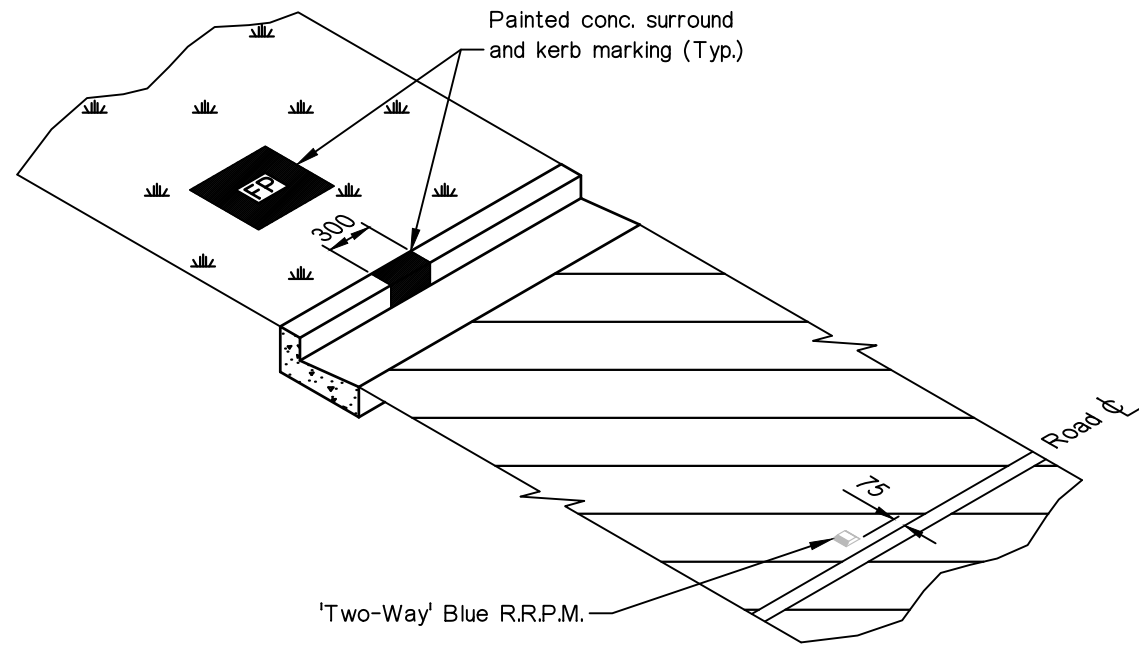


FIRE PLUG KERB MARKING

Colour: Yellow



AT TRAFFIC ISLANDS



SEALED PAVEMENT WITH LANE MARKING (CONTINUOUS SHOWN)

NOTES

1. Paint fire plug cover and surround (400 x 400) and kerb marking with 'Dulux' Roadmaster A1, or equivalent (Colour 'Golden Yellow' to 'AS.2700 - Y14') and apply as per manufacturer's specifications.
2. 'Two-Way' Blue retroreflective raised pavement markers (R.R.P.M.) to comply with 'AS.1906.3 - 1992'.
3. Fix 'Two-Way' Blue R.R.P.M. with bituminous adhesive marker pad, or similar.

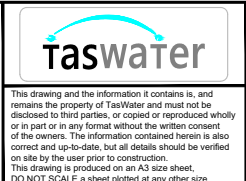
Revision Notes		Rqst	Rvwr	Date
1 - UPDATED TO TW TITLEBLOCK WITH MINOR REVISIONS		G.H	G.H	28/06/23

Rev.	Date	Approved	MANAGER ASSET MANAGEMENT
1	28/06/2023		

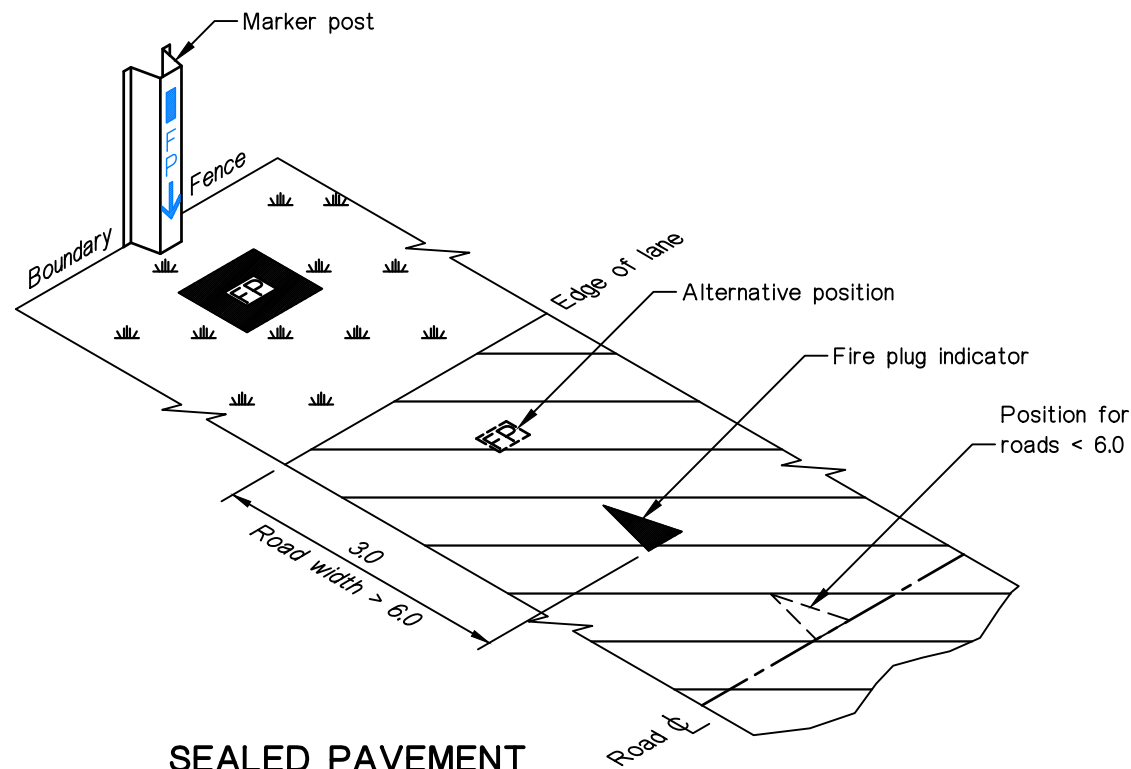


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Sheet Size	A3
SUPERSEDES TW-W-311	
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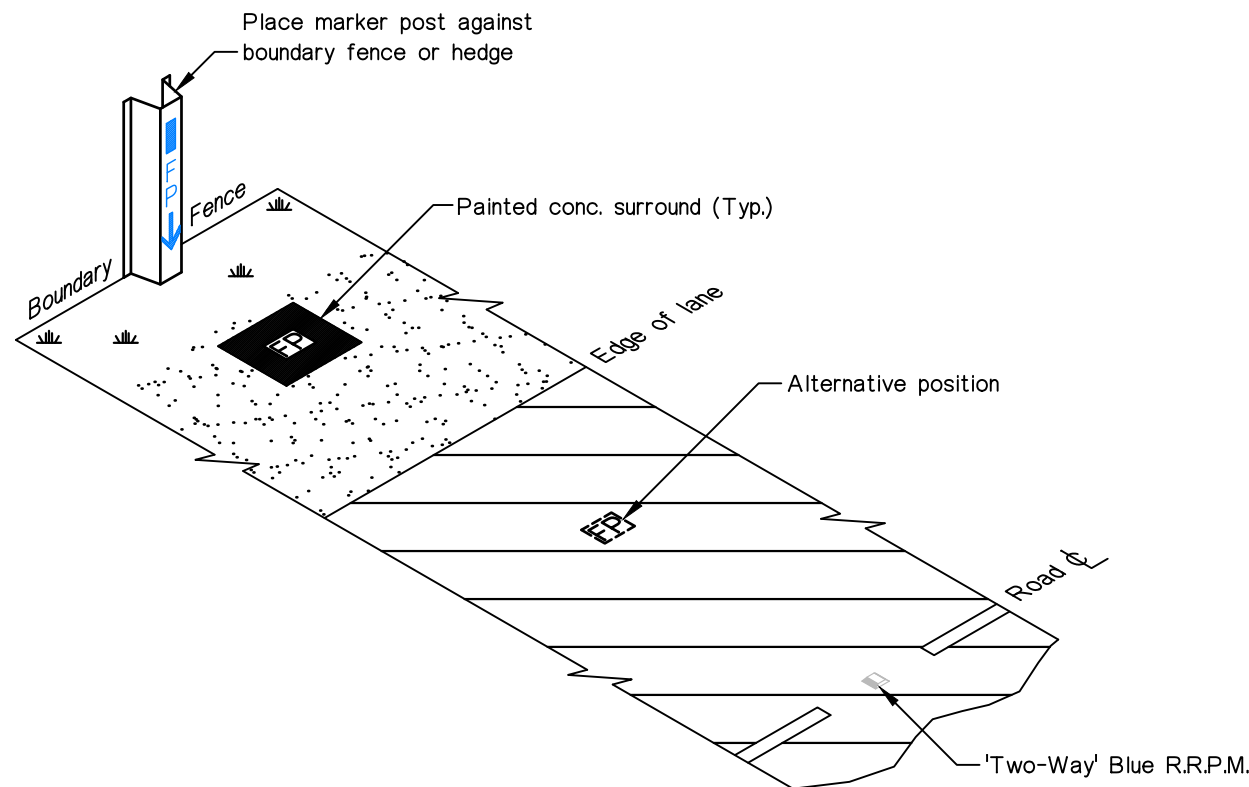
Drawn	R. HAWLEY	30/01/2015
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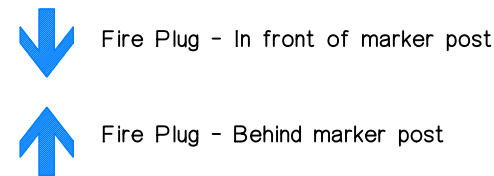
TASWATER STANDARD DRAWING							
FIRE PLUGS MARKING - WITH KERB(S)							
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653	<table border="1"> <tr> <td>Sheet Number</td> <td>REVISION</td> </tr> <tr> <td>TWS-W-0019</td> <td>1 of 3</td> </tr> <tr> <td></td> <td>1</td> </tr> </table>	Sheet Number	REVISION	TWS-W-0019	1 of 3		1
Sheet Number	REVISION						
TWS-W-0019	1 of 3						
	1						



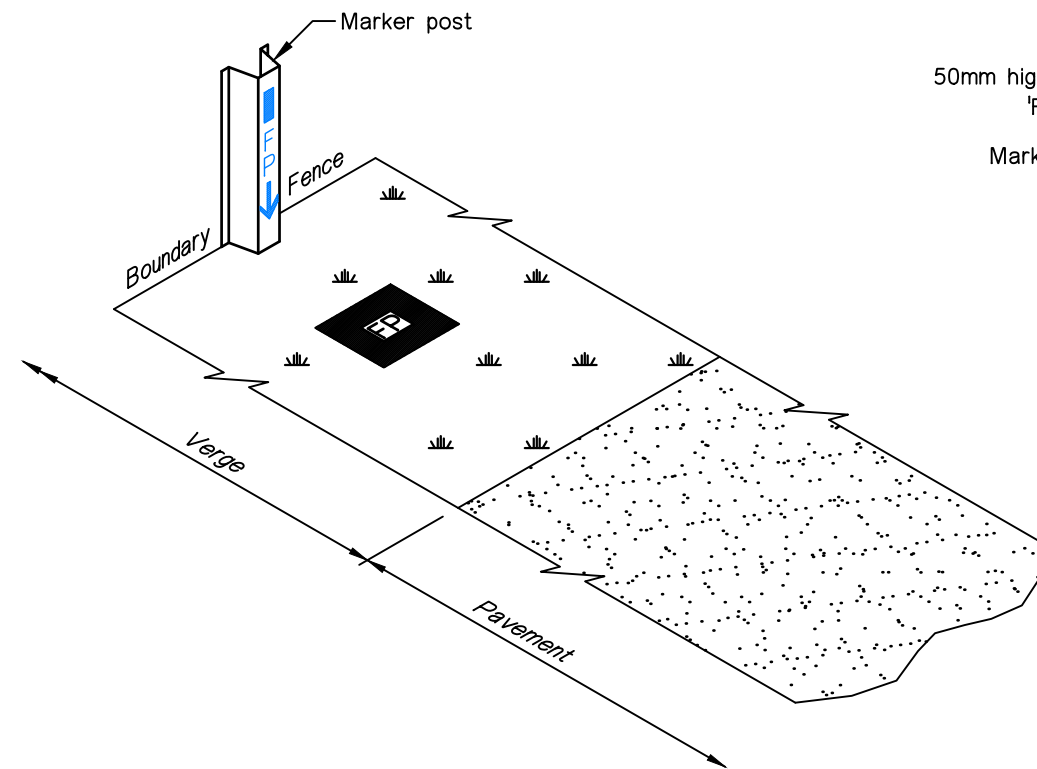
SEALED PAVEMENT WITHOUT LINEMARKING



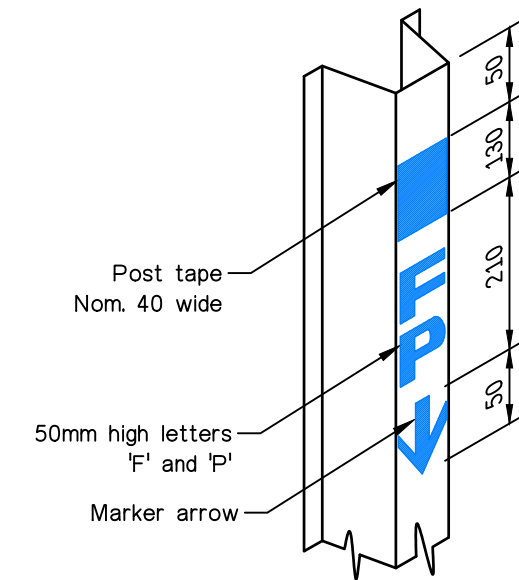
SEALED PAVEMENT WITH LANE MARKING (BROKEN SHOWN)



MARKER ARROW



UNSEALED PAVEMENT



MARKER POST

NOTES

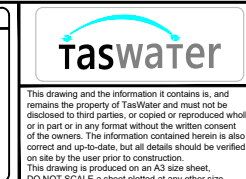
1. Marker posts - 'Safety' Yellow powder coated steel 'Dura-Post', or similar, 1400mm long set 500mm into ground.
2. Fix 'Two-Way' Blue R.R.P.M. as per manufacturer instructions.
3. Use 'Stimsonite' yellow thermoplastic 'Hot Tape' for fire plug indicator.
4. Use Blue 'Cast Vinyl' computer cut self adhesive material for letters and marker arrow.
5. Use blue self adhesive 'Class 1A' - 'AS.1906.1' reflective material for post tape.
6. Refer TWS-W-0018 Sheet 2 for paint specifications.

Revision Notes				Rqst	Rvwr	Date
1 - UPDATED TO TW TITLEBLOCK WITH MINOR REVISIONS				G.H	G.H	28/06/23
Rev.	1	Date	28/06/2023	Approved	MANAGER ASSET MANAGEMENT	

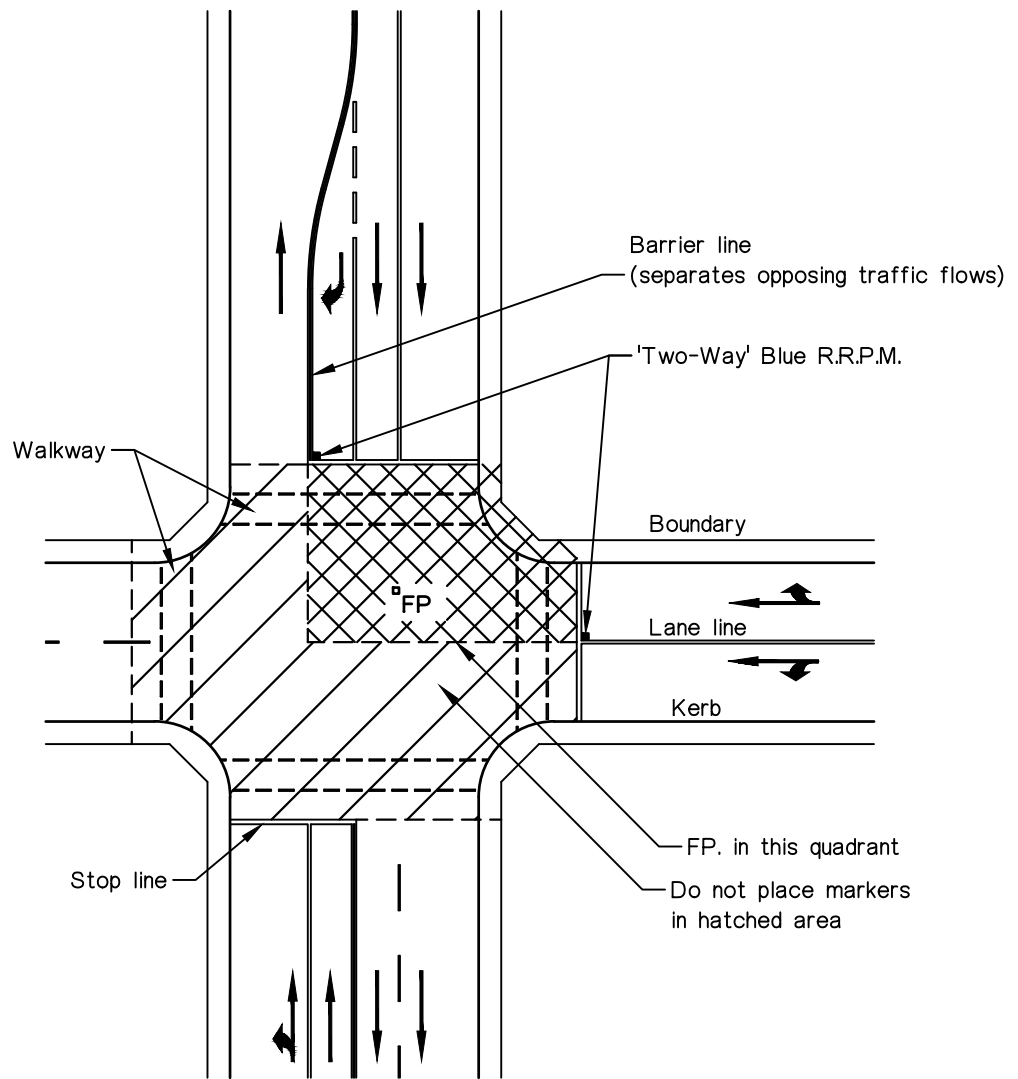


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SUPERSEDES TW-W-312	
References	

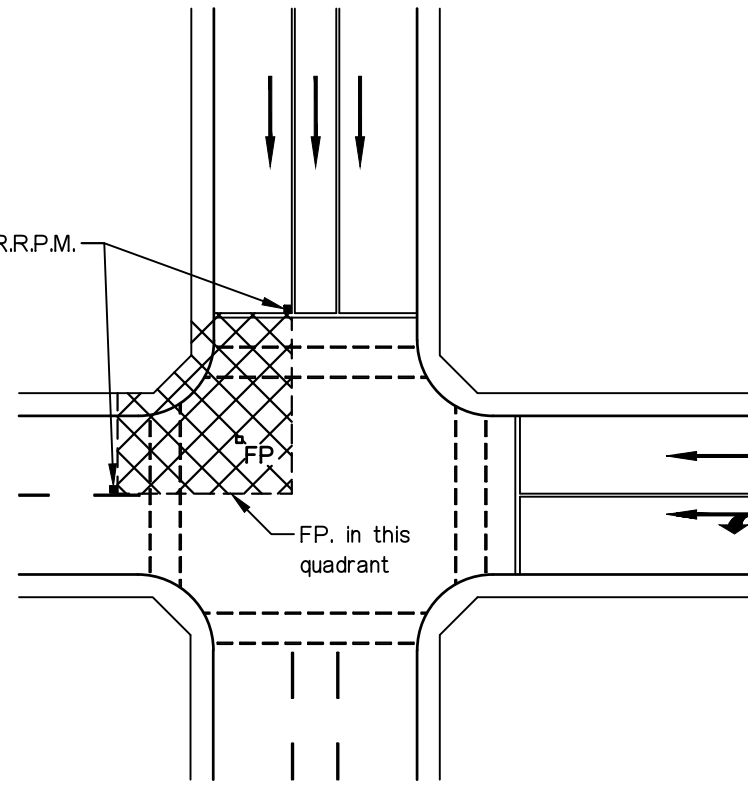
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Designed	-	-
Verified	G. HENDERSON	30/01/2015
Project No.	-	Discipline W
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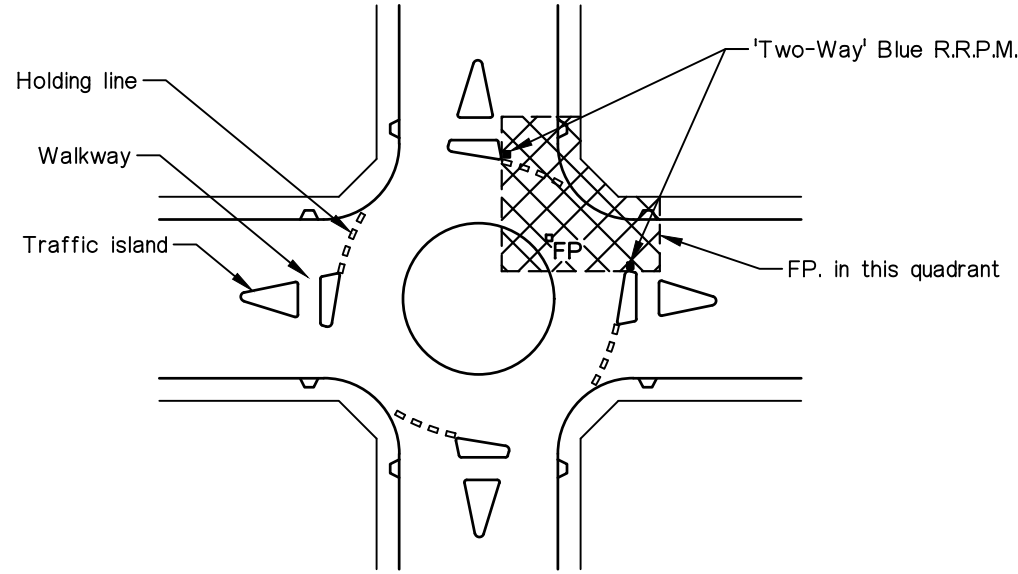
TASWATER STANDARD DRAWING		
FIRE PLUGS		
MARKING - WITHOUT KERB(S)		
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653	TWS-W-0019	Sheet Number 2 of 3 REVISION 1



**SIGNALISED INTERSECTION
TWO WAY TRAFFIC
(TYPICAL DETAILS SHOWN)**



**SIGNALISED INTERSECTION
ONE WAY TRAFFIC**



ROUNDBABOUTS

STRATEGIC OBJECTIVES

- To provide direct delineation for the location of the fire plugs at intersections.
- Minimise risks to pedestrians and road traffic.

NOTES

1. Keep fire plug markers clear of pedestrian walkways and vehicle turning paths, (particularly for motor cyclists and cyclists).
2. Marker location:
 - Two Way Traffic
 - Fix on the fire plug side of the barrier line
 - One Way - Multi Lane
 - Fix on the fire plug side of the nearest lane line
 - At Roundabouts
 - Fix on the fire plug side of the adjacent islands
3. Fix R.R.P.M. to road as per TWS-W-0019 Sheet 1

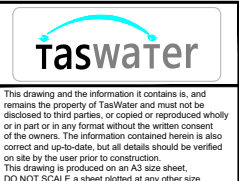
Rev.	Date	Approved	MANAGER ASSET MANAGEMENT
1	28/06/2023	G.H	G.H



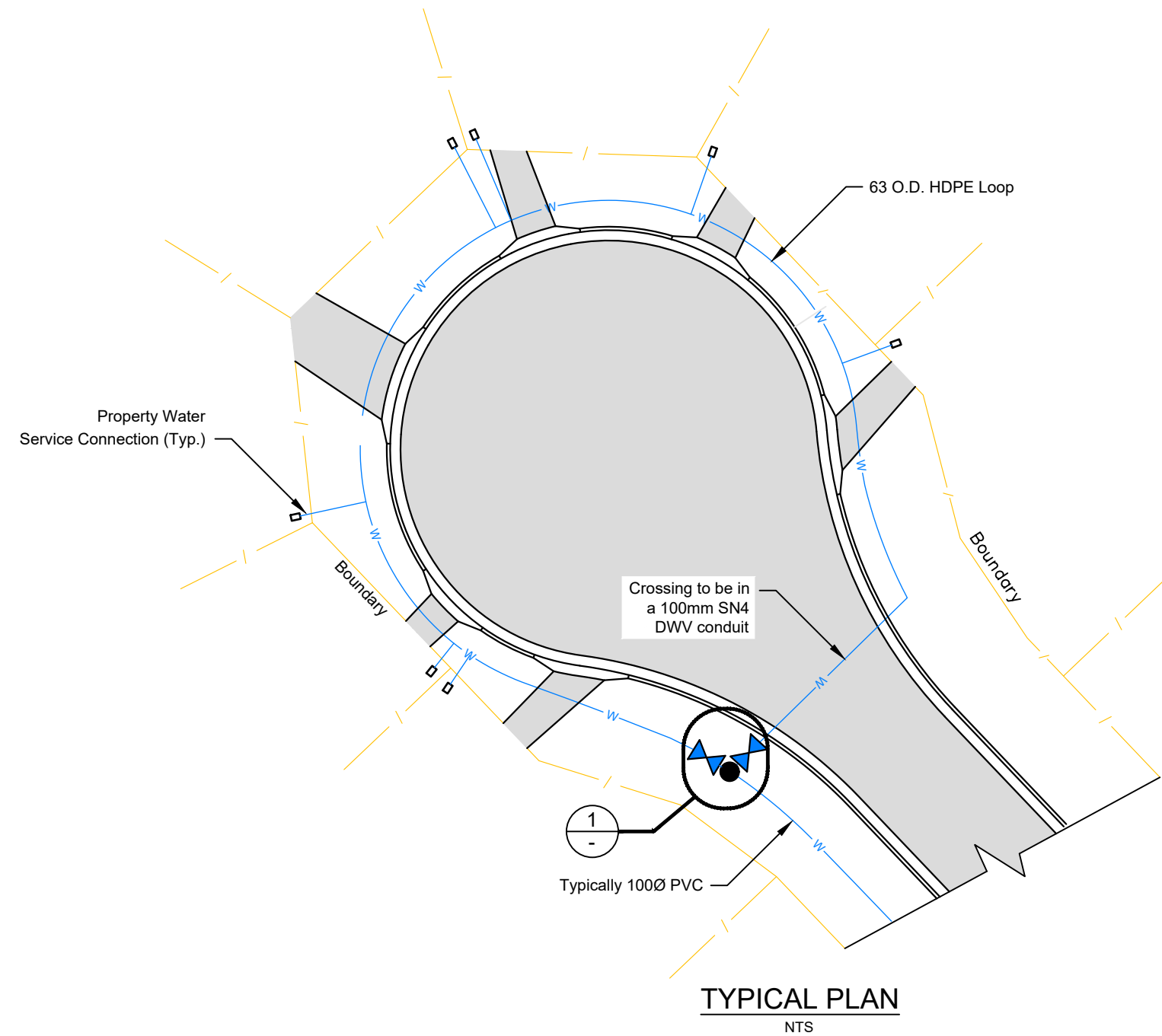
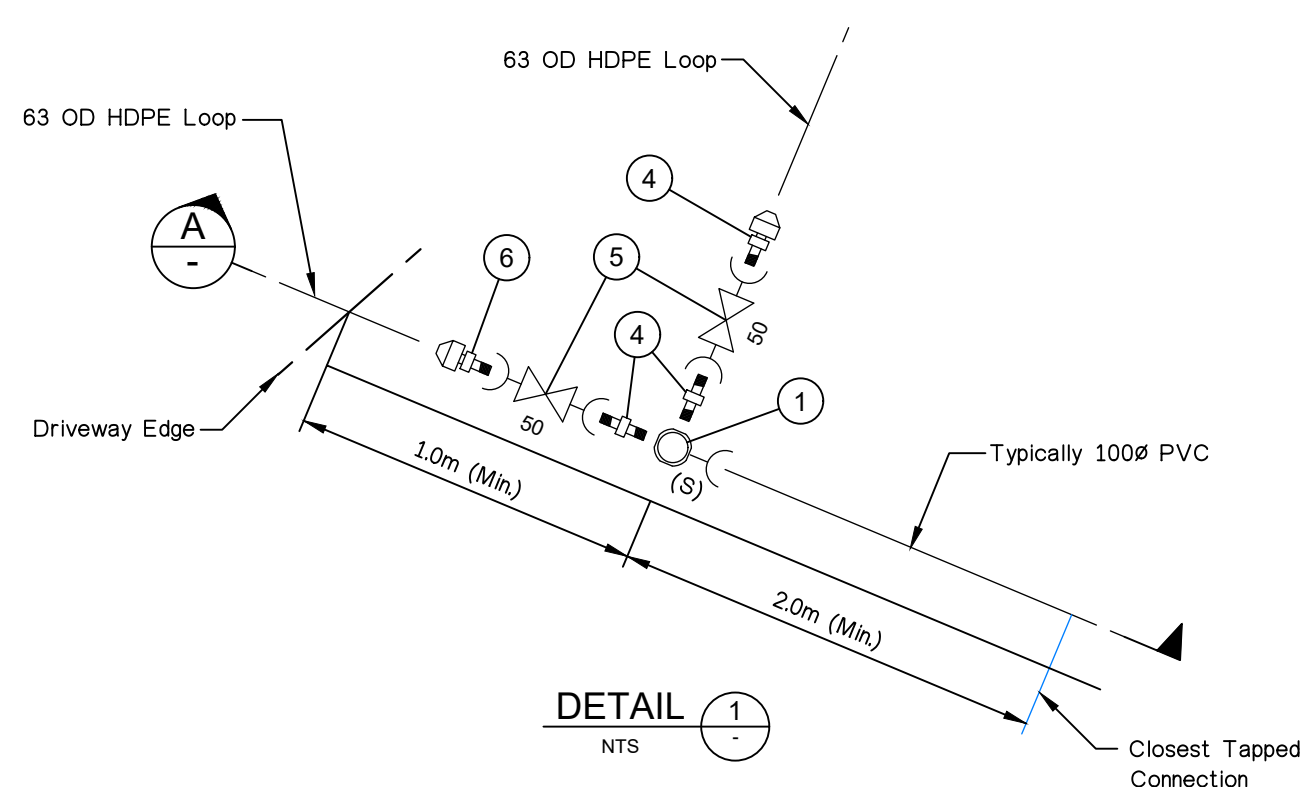
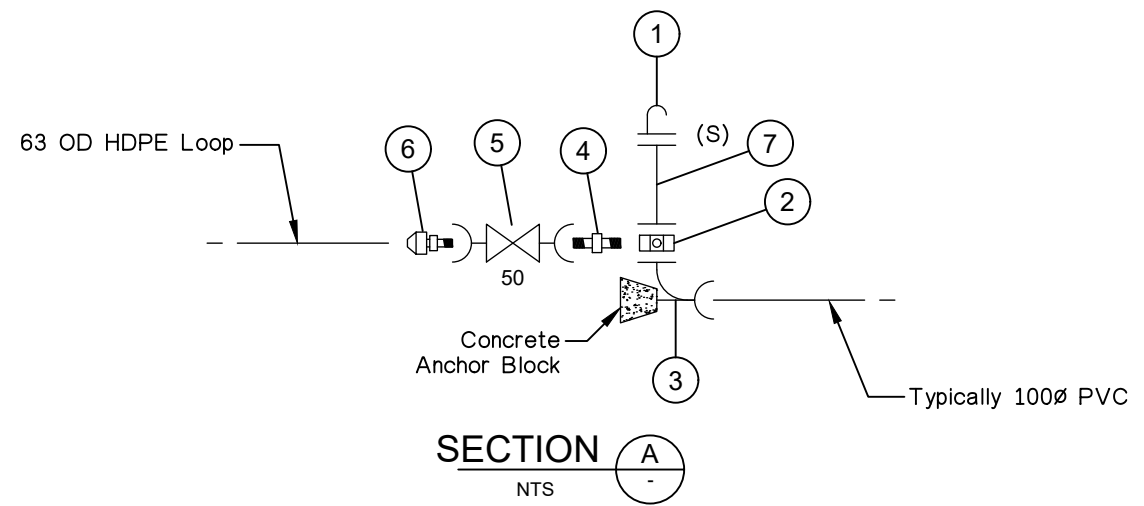
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Verified	G. HENDERSON	30/01/2015
Project No.	-	Discipline W
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DRAWING ISSUE
APPROVED



TASWATER STANDARD DRAWING FIRE PLUGS MARKING - AT INTERSECTIONS		
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653	TWS-W-0019	Sheet Number 3 of 3 REVISION 1



FITTINGS SCHEDULE		
Item	Description	Symbol
①	Fire Plug	
②	Tapped Hydrant Block	
③	100mm FL-SC Duckfoot bend	
④	50 dia. Hexagonal Brass Nipple	
⑤	50 dia. FEM - FEM Gate Valve	
⑥	63/50 PE/Brass Male BSP Threaded Compression Adaptor	
⑦	DN100 Hydrant Riser	

- NOTES:**
- Basic Requirements:
 - Terminate end of PVC main with fire plug and tapped hydrant block.
 - 63 OD Polyethylene loop main, both ends terminating at hydrant block.
 - Gate valves each end of polyethylene loop.
 - Locate property connections on polyethylene loop, perpendicular to meter location.
 - Property Connection to be located adjacent to property boundaries or 500mm off driveways to centre of lot.
 - Maximum number of property connections on polyethylene loop - 10.
 - Minimum offset between fire plug and driveway edge - 1.0m.
 - Minimum offset between fire plug and nearest domestic connection - 2.0m.

Revision Notes		Rqst	Rvwr	Date	
2 - REVISED LAYOUT		G.H	G.H	13/06/23	
1 - APPROVED					
Rev.	2	Date	13/06/23	Approved	G. Henderson

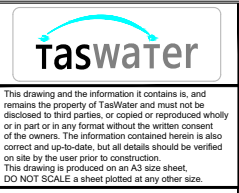


Scale	NTS
Datum	AHD (Tas)
Sheet Size	A3
PRODUCED FROM TW-W-360	
References	

Drawn	G. Chugg	03/12/2020
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Verified	G. Henderson	03/12/2020
Project No.	-	Discipline
Vault Folder	STANDARDS	© 2023
HPRM File Ref.	-	

DRAWING ISSUE

APPROVED



TASWATER STANDARD DRAWING	
CUL-DE-SAC END OF WATER MAIN - POLY LOOP	
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653	Sheet Number TWS-W-0015
Revision 2	