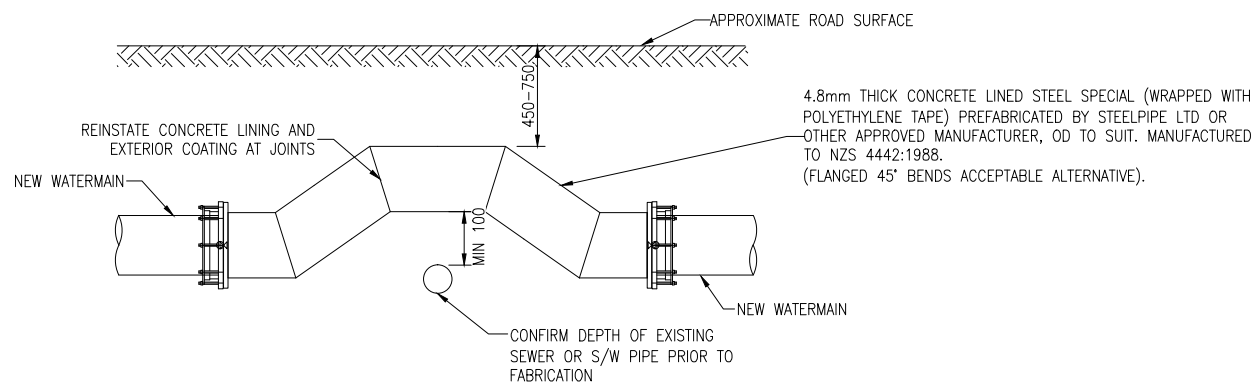
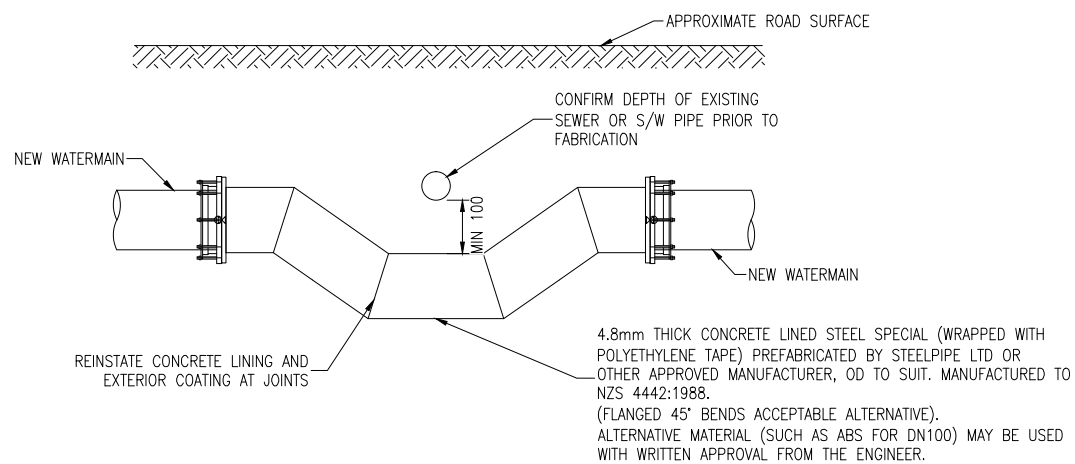


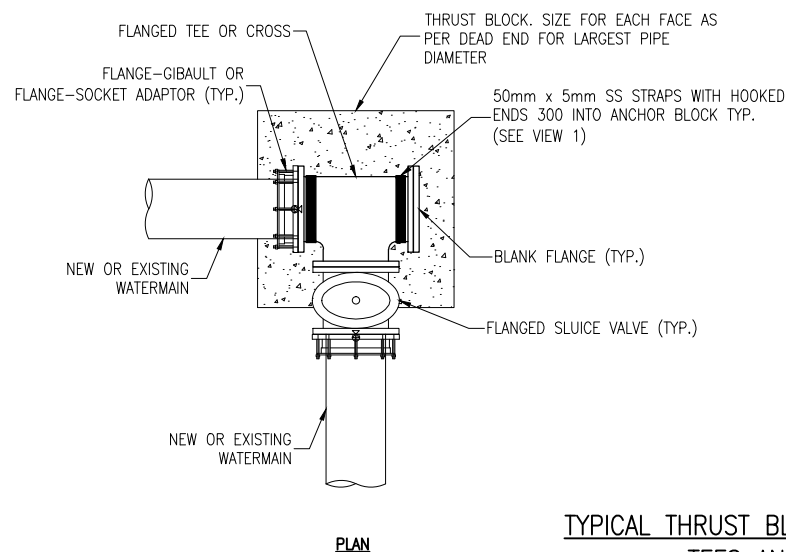
NOTE: AIR VALVE REQUIRED ONLY ON TRUNK MAINS
(SEE DETAIL 3A SHEET 3)



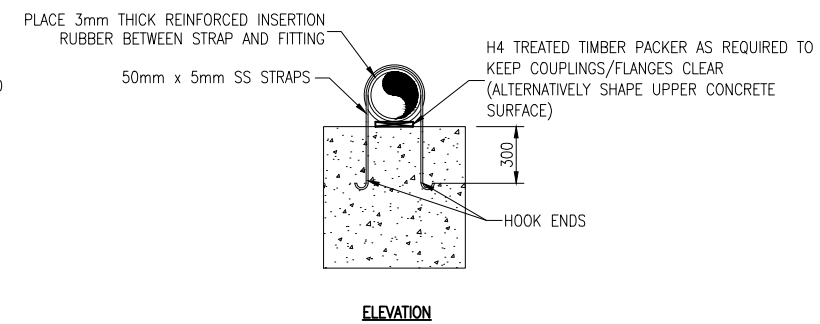
DETAIL 1A
DEVIATION FOR NEW PVC-U WATERMAIN OVER EXISTING SEWER OR STORMWATER
FOR DN 150 - DN 300 WHERE COVER IS < 750mm IN ROAD
(ONLY TO BE USED WHEN DIRECTED BY THE ENGINEER.)



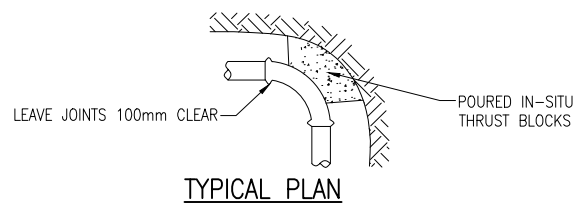
DETAIL 1B
DEVIATION FOR NEW PVC-U WATERMAIN UNDER EXISTING SEWER OR STORMWATER
FOR > DN 100
(ONLY TO BE USED WHEN DIRECTED BY THE ENGINEER.)



DETAIL 1C
TYPICAL THRUST BLOCK FOR VALVES BOLTED TO
TEES AND CROSSES (PLAN)



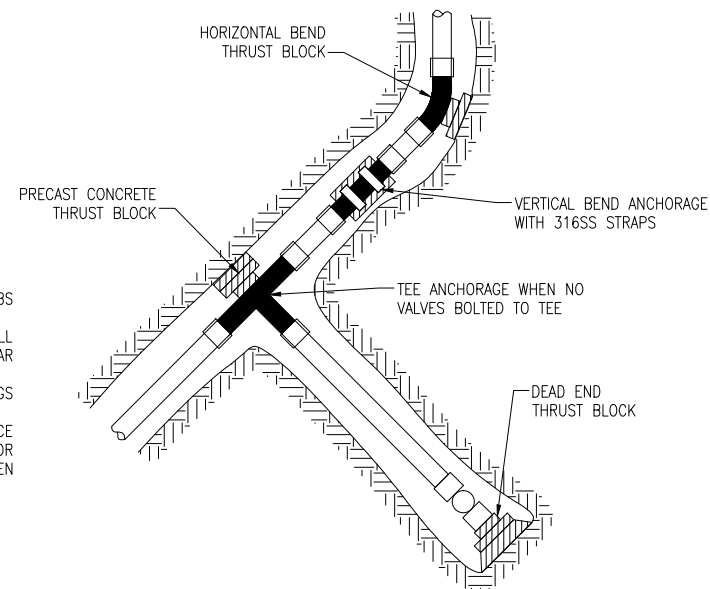
DETAIL 1F
ALTERNATIVE: BOLTED BOMAC STRAP TO FLANGE
NTS



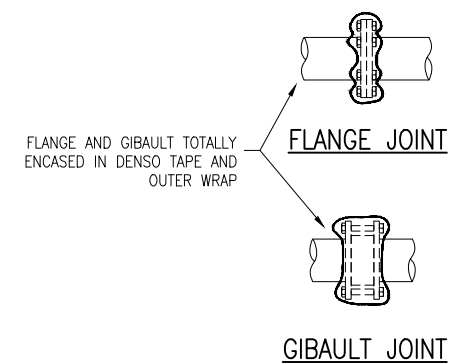
TYPICAL CROSS-SECTION

THRUST BLOCK NOTES:

1. EITHER MASS CONCRETE OR PRECAST CONCRETE SLABS MAY BE USED.
2. IF PRECAST SLABS ARE USED THEY SHALL BE WELL BACKFILLED AND COMPACTED AND HAVE EPOXY MORTAR FILLER BETWEEN THE SLAB AND THE FITTING.
3. WHERE SPECIFIC SIZES ARE SHOWN ON THE DRAWINGS THESE TAKE PRECEDENCE.
4. REFER TO DRAINAGE AND WATER CODES OF PRACTICE 3.5.13 AND NETWORK WATER SPECIFICATION W3.12 FOR STANDARD TEST PRESSURE REQUIREMENT WHEN DESIGNING THRUST BLOCKS.



DETAIL 1D
TYPICAL THRUST BLOCKS
(PLAN)



DETAIL 1E
JOINT WRAPPING

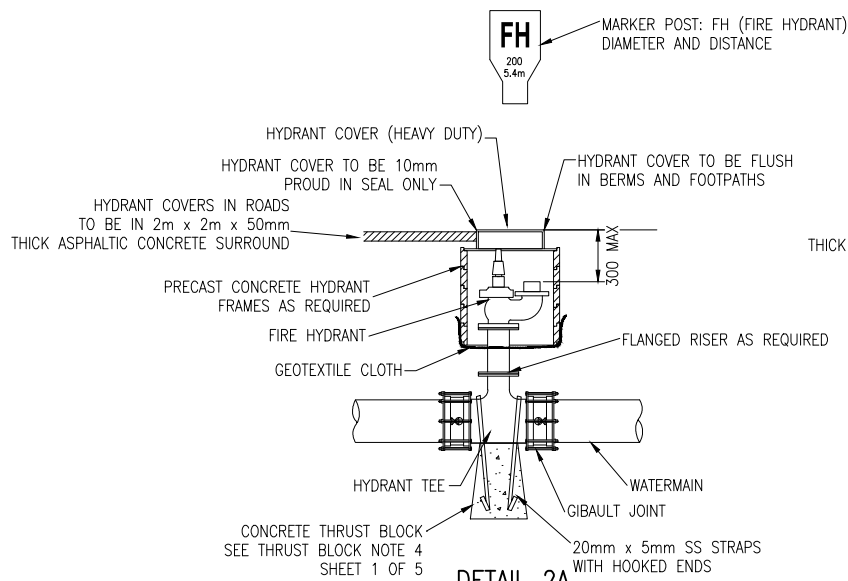
E CHANGES TO MANHOLE DETAIL		S.C.	12/15	DATA SOURCE:	WATER	INITIAL	DATE	NAME	DATE	ORIGINAL SCALE (A1):	1:20
D THRUST BLOCK DETAIL		L.S.	08/15	LEVEL DATUM	ROADING			DESIGNED	RRP	REDUCED SCALE (A3):	1:40
C TANK AIR GAP DETAIL		G.G.	10/13		PARKS			DESIGN CHECK	ANW	PRODUCED BY:	
B RURAL TANK DETAIL		G.C.	02/13		ELEC.PWR			DRAWN	RRP	FOR:	
1 DRAFT ISSUE		BMC	05/11		TELECOM			DRG CHECK	AD	THIS DOCUMENT IS THE PROPERTY OF THE TIMARU DISTRICT COUNCIL. IT IS NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF THE TIMARU DISTRICT COUNCIL.	
No. REVISION		BY	CHK	APP	DATE			PLANNING	APPROVED		

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2 King George Place
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Timaru 7940
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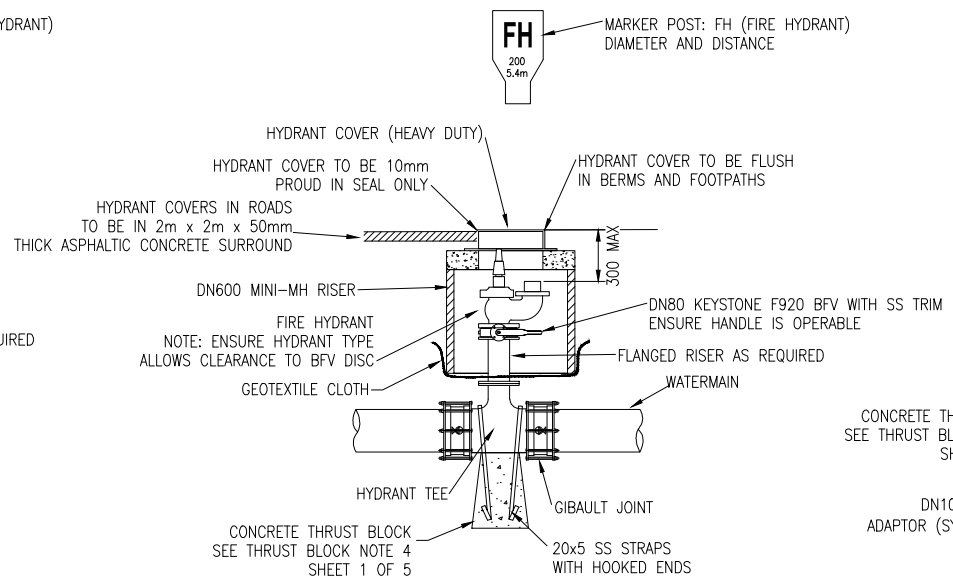
DRAINAGE AND WATER
CODE OF PRACTICE
STANDARD DETAILS

WATER SUPPLY
DEVIATIONS, ANCHORAGE, THRUST
BLOCKS & JOINT WRAPPING DETAILS

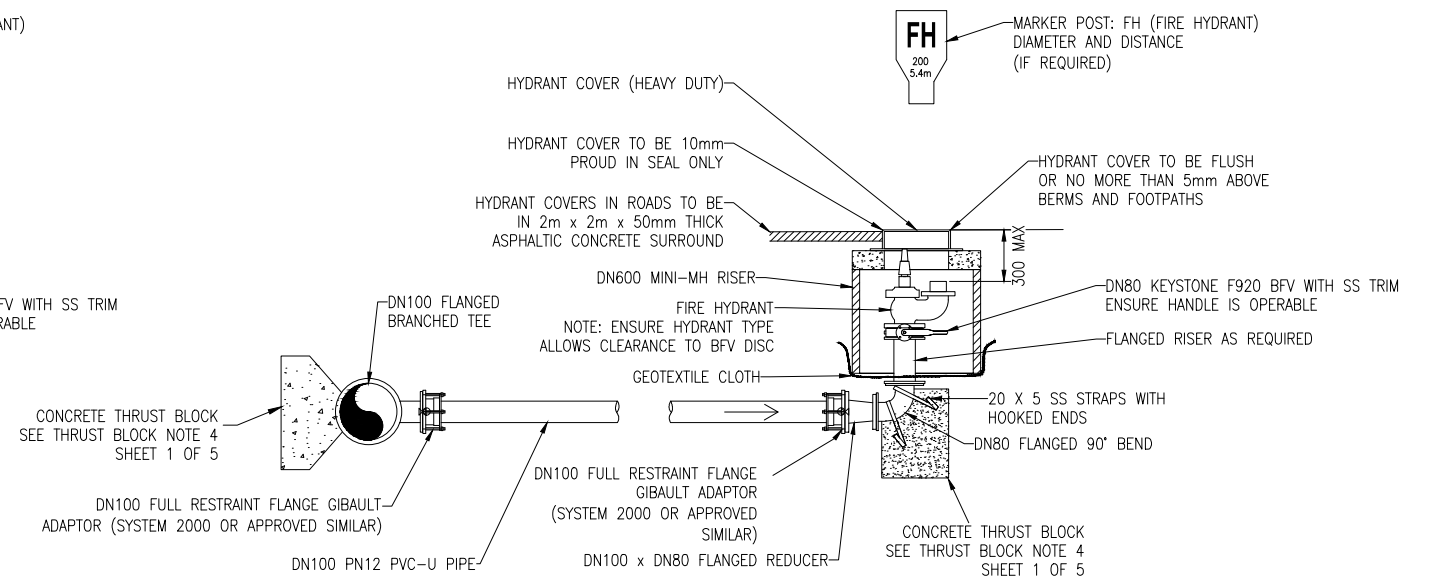
CONTRACT NUMBER:
DRAWING NUMBER:
5304
1 OF 5
REVISION:
E



DETAIL 2A
FIRE HYDRANT INSTALLATION
 (RETICULATION MAIN ≤ DN200)
 NTS



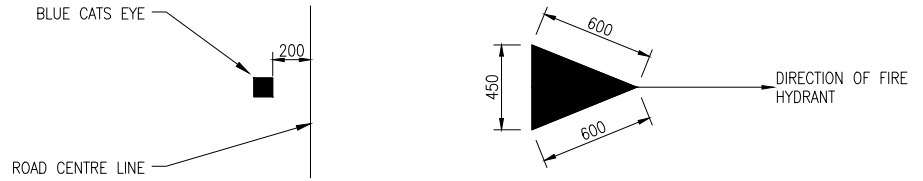
DETAIL 2B
FIRE HYDRANT INSTALLATION
 (TRUNK MAIN DN200 - DN375)
 NTS



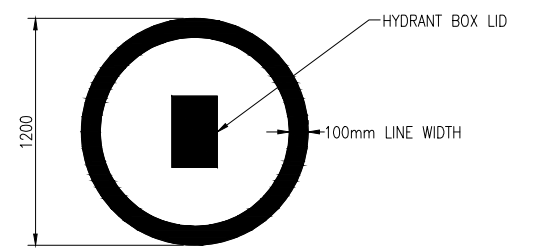
DETAIL 2C
FIRE HYDRANT OFFSET INSTALLATION
 NTS

FIRE HYDRANT MARKING NOTES:

- THE RELEVANT STANDARD FOR FIRE HYDRANT MARKINGS IS NZS 4501:1972.
- UNDERGROUND FIRE HYDRANTS LOCATED ON OR ADJACENT TO SEALED ROADS MUST BE IDENTIFIED BY:
 - THE LID OF THE FIRE HYDRANT BOX PAINTED WITH YELLOW PAINT; AND
 - AN ISOSCELES TRIANGLE OF SOLID COLOUR AS SHOWN, PAINTED YELLOW, ON OR NEAR THE CENTRE OF THE CARRIAGEWAY, WITH THE APEX POINTING TOWARDS THE UNDERGROUND FIRE HYDRANT; AND
 - A BLUE RAISED REFLECTIVE PAVEMENT MARKER SHALL BE LOCATED CLOSE TO, AND ON THE FIRE HYDRANT SIDE OF, THE CENTRE OF THE ROADWAY AT OR NEAR THE BASE OF ANY YELLOW TRIANGLE MARKED ON THE SURFACE, AND
 - A CIRCLE AS SHOWN, PAINTED YELLOW AS CONCENTRICALLY AS POSSIBLE AROUND THE UNDERGROUND FIRE HYDRANT, WHERE, IN THE OPINION OF TIMARU DISTRICT COUNCIL, ACCESS TO THE FIRE HYDRANT MAY BE OBSTRUCTED BY PARKED VEHICLES.
- UNDERGROUND FIRE HYDRANTS LOCATED ON OR ADJACENT TO UNSEALED ROADS MUST BE IDENTIFIED BY:
 - THE LID OF THE FIRE HYDRANT BOX PAINTED WITH YELLOW PAINT
 - A MARKER POST IN ACCORDANCE WITH NOTE 4.
- WHERE THE FIRE HYDRANT LOCATION MAY BE DIFFICULT TO IDENTIFY, OR WHERE IT MAY BE OBSCURED BY SNOW OR VEGETATION, A MARKER POST SHALL BE USED. THE CONTRACTOR IS TO CONFIRM WITH THE ENGINEER WHETHER MARKER POSTS ARE REQUIRED FOR EACH INDIVIDUAL HYDRANT.



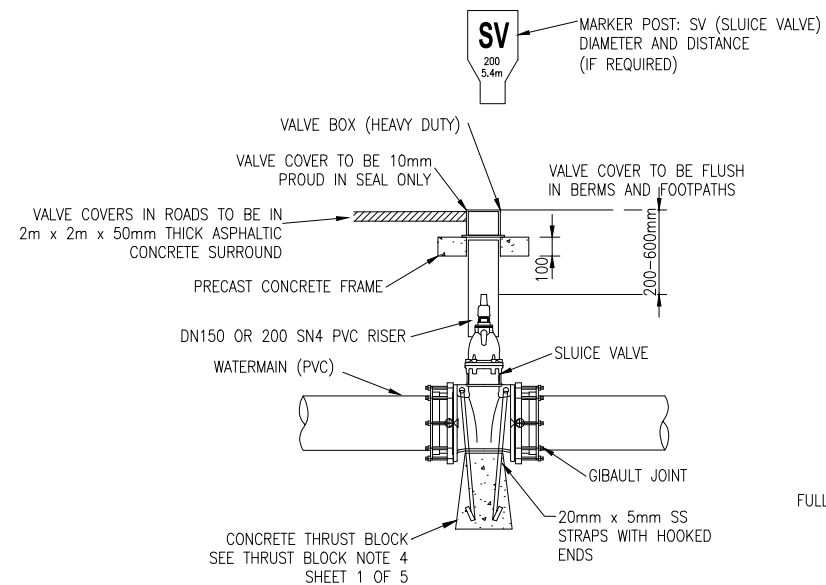
DETAIL 2D
TRIANGLE AND CATS EYE MARKING FOR FIRE HYDRANTS
 NTS



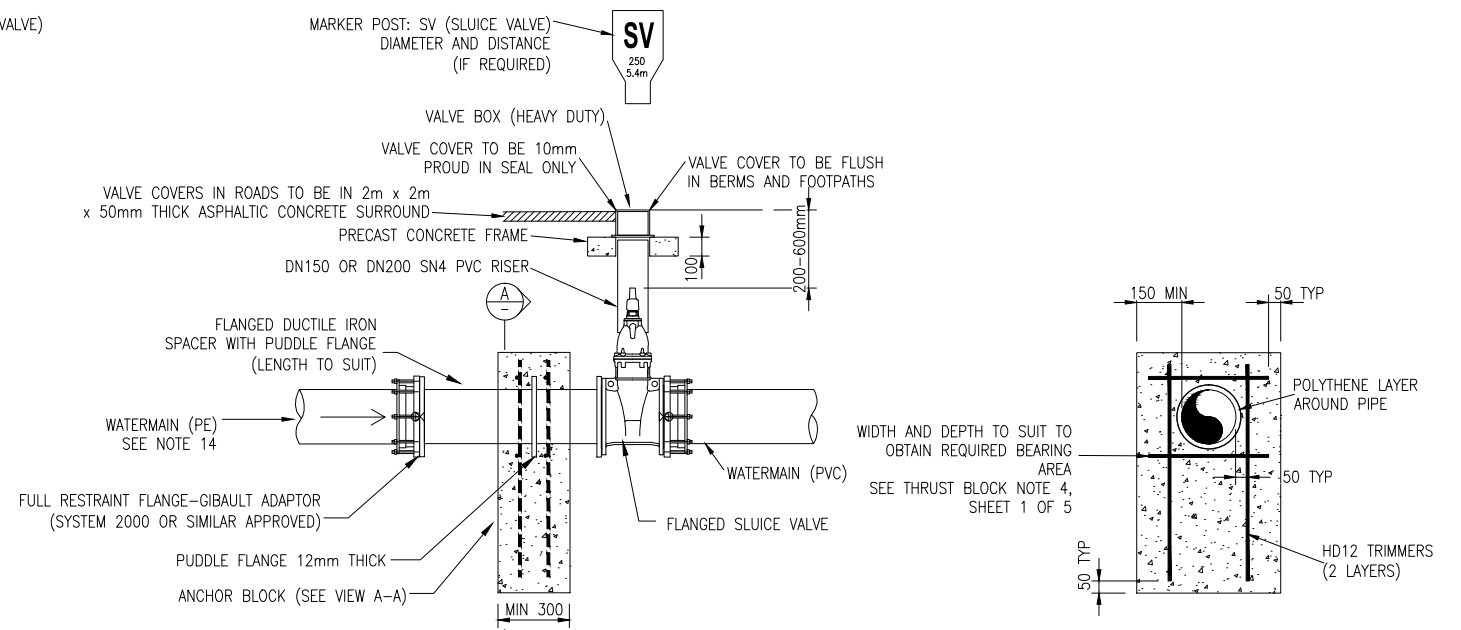
DETAIL 2E
CIRCLE MARKING FOR FIRE HYDRANTS
 NTS

GENERAL NOTES:

- ALL GIBAULTS, SLUICE VALVES, FIRE HYDRANTS AND DUCTILE IRON FITTINGS TO BE SUPPLIED WITH FACTORY APPLIED THERMALLY BONDED PROTECTIVE COATING TO AS/NZS 4158, RILSAN NYLON II OR SIMILAR APPROVED BY ENGINEER, UNLESS OTHERWISE SPECIFIED.
- JOINT WRAPPING IS REQUIRED ON ALL JOINTS.
- GEOTEXTILE CLOTH TO BE BIDIM A19 OR SIMILAR APPROVED. MINIMUM OVERLAP 300mm. TEXTILE TO EXTEND 300mm UP SIDES OF CHAMBERS UNLESS OTHERWISE SPECIFIED.
- FLANGED RISERS AND HYDRANT TEES TO BE DUCTILE IRON (MIN 16 BAR) TO AS/NZS 2280 OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED.
- ALL SLUICE VALVES ARE TO BE RESILIENT SEATED (MIN 16 BAR) TO NZS/AS 2638.2 OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED. DN50 SLUICE VALVES HAVE TYPICALLY BEEN SPECIFIED FOR CONNECTIONS TO RIDER MAINS.
- AIR VALVES TO BE DUAL PURPOSE BERMAD/ARI OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED.
- FIRE HYDRANTS TO BE TALL PATTERN TO NZS/BS 750 UNLESS OTHERWISE SPECIFIED.
- PRECAST CONCRETE HYDRANT RISERS AS SUPPLIED BY HUMES OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED.
- HYDRANT, AIR VALVE AND SLUICE VALVE COVERS ARE HEAVY DUTY OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED.
- MARKER POSTS ARE REQUIRED OUTSIDE TOWN LIMITS WHERE THE LOCATION MAY BE DIFFICULT TO IDENTIFY, OR WHERE IT MAY BE OBSCURED BY SNOW OR VEGETATION. CONTRACTOR TO CONFIRM WITH ENGINEER WHERE MARKER POSTS ARE REQUIRED.
- AN ACCEPTABLE ALTERNATIVE FOR A HYDRANT TEE IS A NORITITE TEE (COMPATIBLE WITH SERIES 1 PVC) WITH FLANGED BRANCH.
- TRAFFICABLE BOXES SHALL HAVE AN OPENING OF 225mm x 175mm.
- ALL VALVE BOX COVERS TO BE ORIENTED SO THE LONGEST SIDE IS PARALLEL TO THE LINE OF THE WATERMAIN THE VALVE IS ATTACHED TO.
- PE WATERMANS, AT SV, HYDRANTS ETC. THE PE PIPELINE REQUIRES ANCHORING. SEE DETAIL 2G FOR TYPICAL DETAIL.



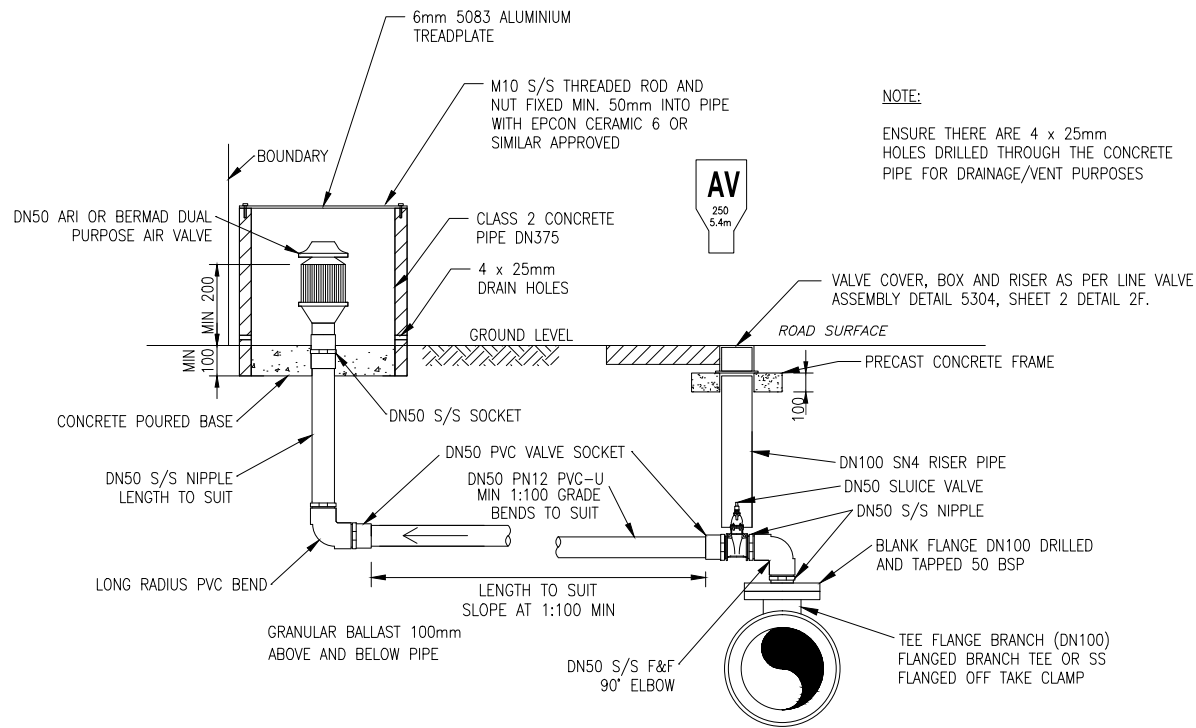
DETAIL 2F
TYPICAL SLUICE VALVE INSTALLATION
 NTS



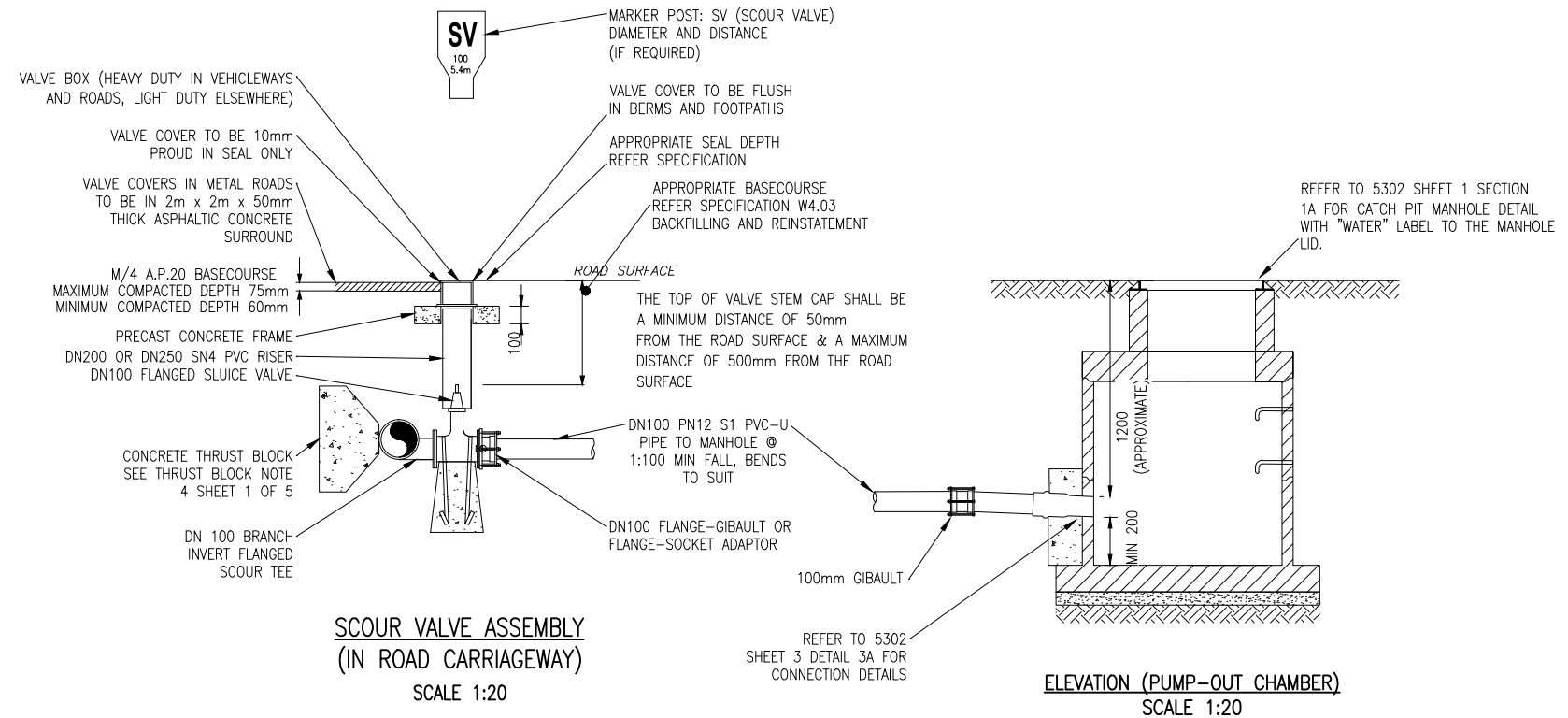
DETAIL 2G
TYPICAL SLUICE VALVE INSTALLATION
FOR A PE WATERMAIN
 NTS

CROSS SECTION A-A

SURVEY FILE: DATA SOURCE: WATER INITIAL DATE: 12/15 NAME: SURVEYED DATE: 04/09 ORIGINAL SCALE (A1): REDUCED SCALE (A3): DESIGNED: RRP DESIGN CHECK: ANW DRAWN: RRP DRG CHECK: AD APPROVED:		AS SHOWN THIS DOCUMENT IS THE PROPERTY OF THE TIMARU DISTRICT COUNCIL. IT IS NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF THE TIMARU DISTRICT COUNCIL.		TIMARU DISTRICT COUNCIL 2 King George Place P.O. Box 522 Timaru 7940 Telephone: 03 687 7200 Website: www.timaru.govt.nz		PROJECT: DRAINAGE AND WATER CODE OF PRACTICE STANDARD DETAILS		TITLE: WATER SUPPLY HYDRANT & LINE VALVE INSTALLATION DETAILS		CONTRACT NUMBER: 5304 DRAWING NUMBER: 2 OF 5 REVISION: E	
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DETAIL 3A
TYPICAL OFFSET AIR VALVE INSTALLATION
(RETICULATION MAIN DN100 - DN200)
SCALE 1:10

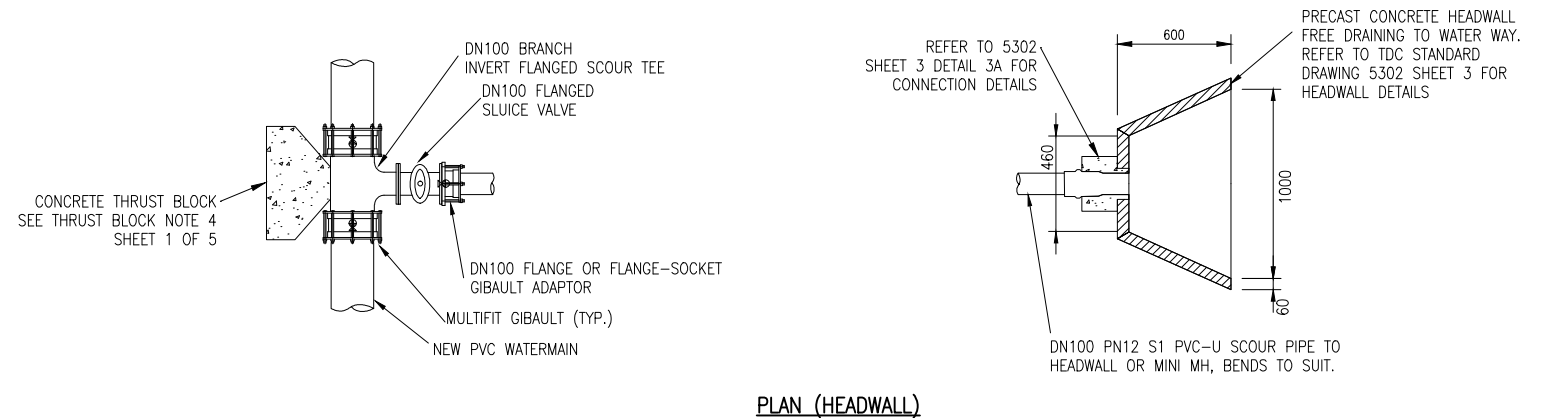


SCOUR VALVE ASSEMBLY
(IN ROAD CARRIAGEWAY)
SCALE 1:20

ELEVATION (PUMP-OUT CHAMBER)
SCALE 1:20

GENERAL NOTES:

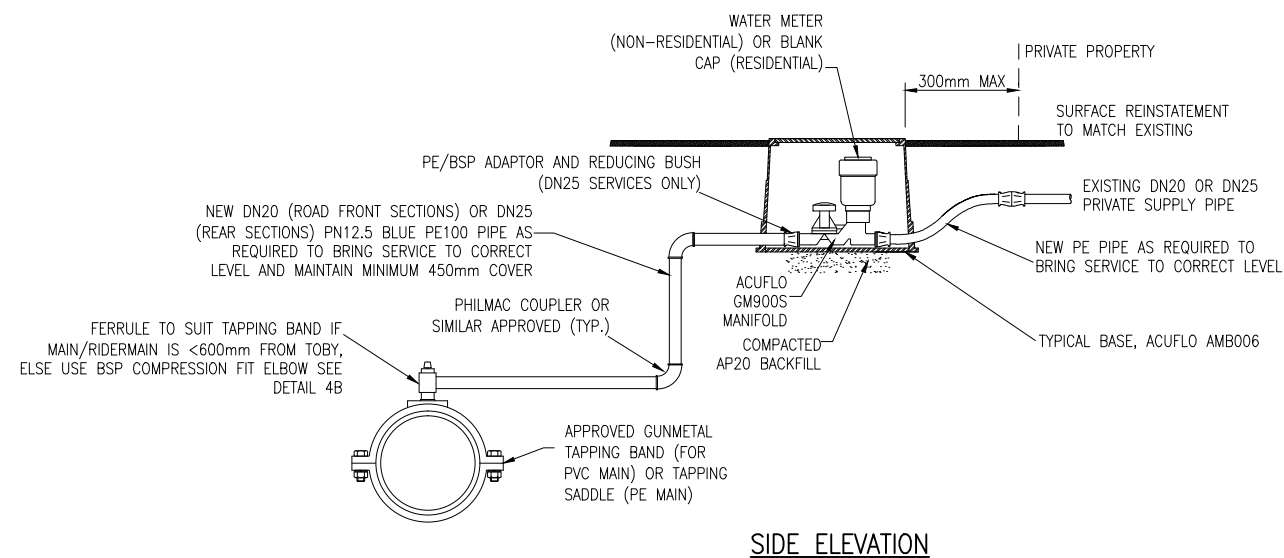
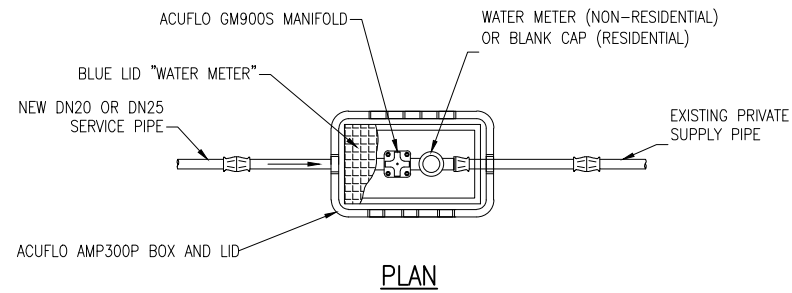
- ALL GIBALTS, SLUICE VALVES, FIRE HYDRANTS AND DUCTILE IRON FITTINGS TO BE SUPPLIED WITH FACTORY APPLIED THERMALLY BONDED PROTECTIVE COATING TO AS/NZS 4158, RILSAN NYLON II OR SIMILAR APPROVED BY ENGINEER, UNLESS OTHERWISE SPECIFIED.
- JOINT WRAPPING IS REQUIRED ON ALL JOINTS.
- GEOTEXTILE CLOTH TO BE BIDIM A19 OR SIMILAR APPROVED. MINIMUM OVERLAP 300mm. TEXTILE TO EXTEND 300mm UP SIDES OF CHAMBERS UNLESS OTHERWISE SPECIFIED.
- FLANGED RISERS AND HYDRANT TEES TO BE DUCTILE IRON (MIN 16 BAR) TO AS/NZS 2280 OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED.
- ALL SLUICE VALVES ARE TO BE RESILIENT SEAL (MIN 16 BAR) TO NZS/AS 2638.2 OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED. DN50 SLUICE VALVES HAVE TYPICALLY BEEN SPECIFIED FOR CONNECTIONS TO RIDER MAINS.
- AIR VALVES TO BE DUAL PURPOSE BERMAD/ARI OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED.
- FIRE HYDRANTS TO BE TALL PATTERN TO NZS/BS 750 UNLESS OTHERWISE SPECIFIED.
- PRECAST CONCRETE HYDRANT RISERS AS SUPPLIED BY HUMES OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED.
- HYDRANT, AIR VALVE AND LINE VALVE COVERS ARE HEAVY DUTY OR SIMILAR APPROVED UNLESS OTHERWISE SPECIFIED.
- MARKER POSTS ARE REQUIRED OUTSIDE TOWN LIMITS WHERE THE LOCATION MAY BE DIFFICULT TO IDENTIFY, OR WHERE IT MAY BE OBSCURED BY SNOW OR VEGETATION. CONTRACTOR TO CONFIRM WITH ENGINEER WHERE MARKER POSTS ARE REQUIRED.
- AN ACCEPTABLE ALTERNATIVE FOR A HYDRANT TEE IS A NORTITE TEE (COMPATIBLE WITH SERIES 1 PVC) WITH FLANGED BRANCH.
- TRAFFICABLE BOXES SHALL HAVE AN OPENING OF 225mm x 175mm.
- ALL VALVE BOX COVERS TO BE ORIENTED SO THE LONGEST SIDE IS PARALLEL TO THE LINE OF THE WATERMAIN THE VALVE IS ATTACHED TO.



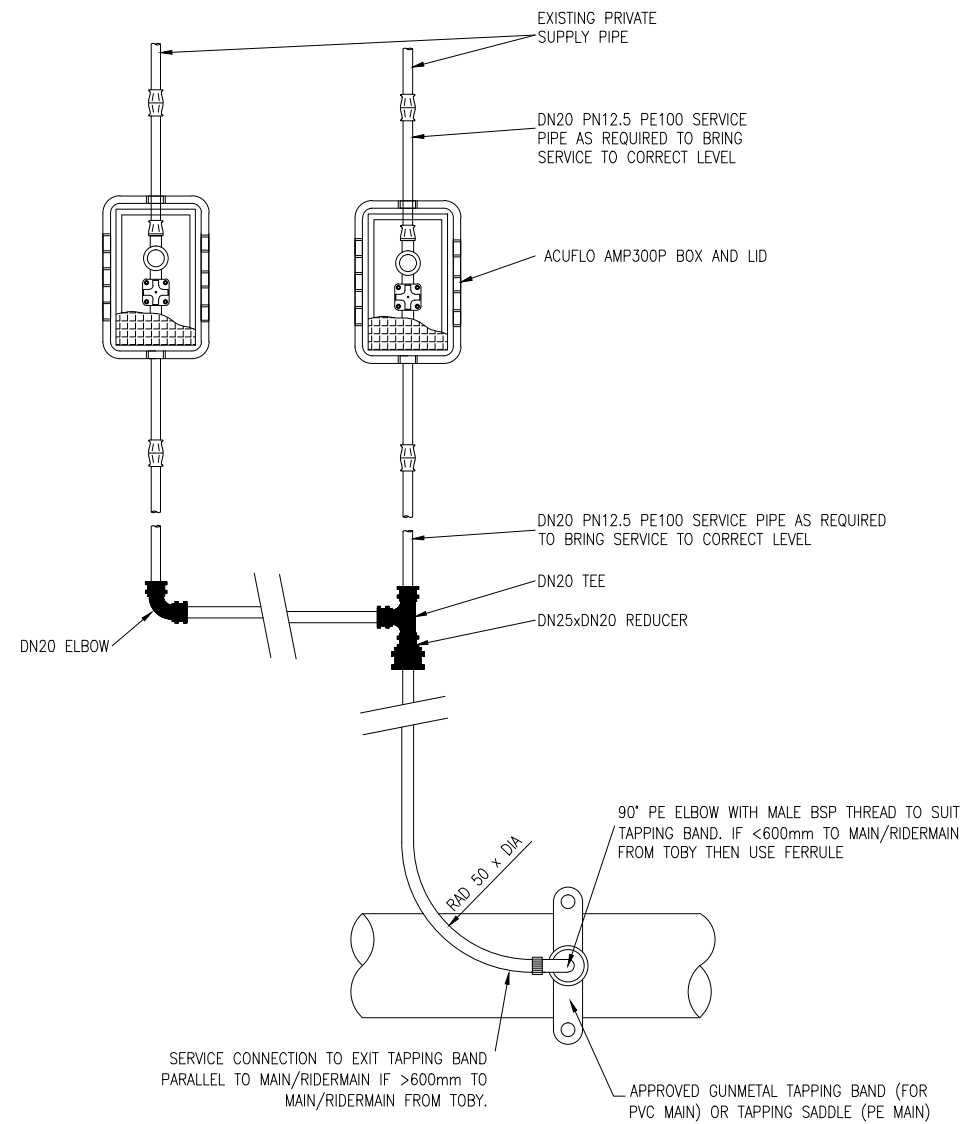
PLAN (HEADWALL)

DETAIL 3B TYPICAL SCOUR VALVE DETAILS
SCALE 1:20

SURVEY FILE:		INITIAL	DATE	NAME	DATE	ORIGINAL SCALE (A1):	AS SHOWN	TIMARU DISTRICT COUNCIL 2 King George Place P.O. Box 522 Timaru 7940 Telephone: 03 687 7200 Website: www.timaru.govt.nz		PROJECT: DRAINAGE AND WATER CODE OF PRACTICE STANDARD DETAILS		TITLE: WATER SUPPLY SCOUR & AIR VALVE INSTALLATION DETAILS		CONTRACT NUMBER: 5304	
DATA SOURCE:		WATER		SURVEYED	-	REDUCED SCALE (A3):		FOR:		DRAWING NUMBER:		REVISION:		SHEET: 3 OF 5	
LEVEL DATUM:		DRAINAGE		DESIGNED	RRP	PRODUCED BY:		THIS DOCUMENT IS THE PROPERTY OF THE TIMARU DISTRICT COUNCIL. IT IS NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF THE TIMARU DISTRICT COUNCIL.		E					
REVISION:		ROADING		DESIGN CHECK	ANW	DATE:									
		PARKS		DRAWN	RRP	04/09									
		ELEC.PWR		DRG CHECK	AD	04/09									
		TELECOM		APPROVED											
		PLANNING													



DETAIL 4A
TYPICAL SERVICE INSTALLATION
N.T.S.



SERVICE CONNECTION TO EXIT TAPPING BAND PARALLEL TO MAIN/RIDERMAIN IF >600mm TO MAIN/RIDERMAIN FROM TOBY.
APPROVED GUNMETAL TAPPING BAND (FOR PVC MAIN) OR TAPPING SADDLE (PE MAIN)

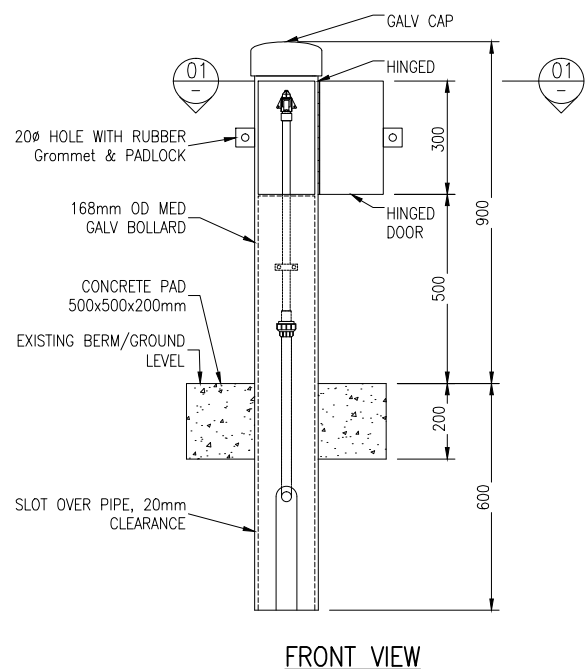
NOTE:
SERVICE CONNECTION TO EXIT TAPPING BAND PERPENDICULAR TO MAIN/RIDERMAIN IF <600mm TO MAIN/RIDERMAIN FROM TOBY.

DETAIL 4B
TYPICAL DUAL SERVICE INSTALLATION
N.T.S.

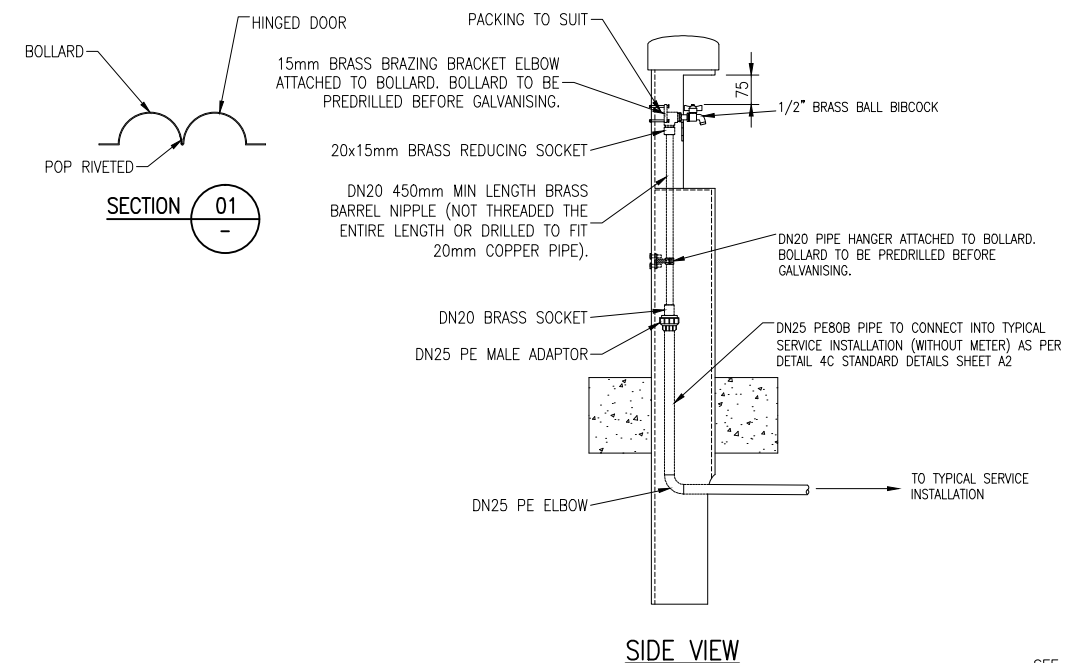
GENERAL NOTES:

- USE 90° PE ELBOWS (PHILMAC OR SIMILAR APPROVED) AS REQUIRED TO BRING SERVICE TO CORRECT LEVEL AND MAINTAIN MINIMUM 450mm COVER UNDER FOOTPATHS.
- TOBYS ARE TO BE INSTALLED OUTSIDE PRIVATE PROPERTY, BUT WITHIN 300mm OF THE PROPERTY BOUNDARY.
- WHERE A METER IS REQUIRED, CONTRACTOR TO CONFIRM SIZE OF CONNECTION AND CONFIRM SIZE OF METER WITH ENGINEER.
- DETAILS SHOWN ARE ACCEPTABLE SOLUTIONS. FUNCTIONALLY EQUIVALENT SOLUTIONS MAY BE PERMITTED SUBJECT TO ENGINEER'S WRITTEN APPROVAL.

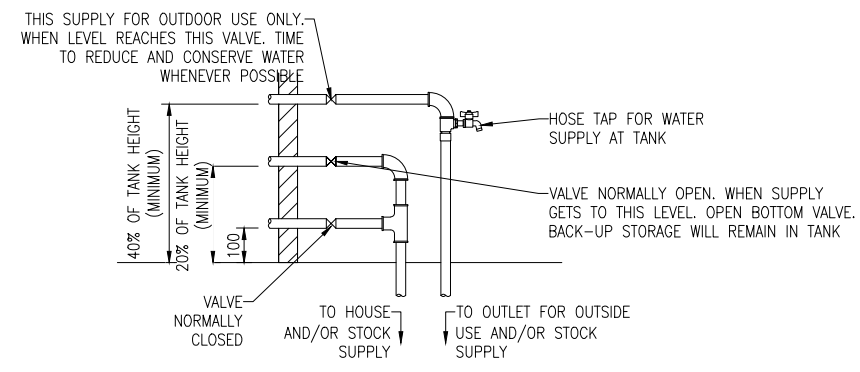
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FRONT VIEW

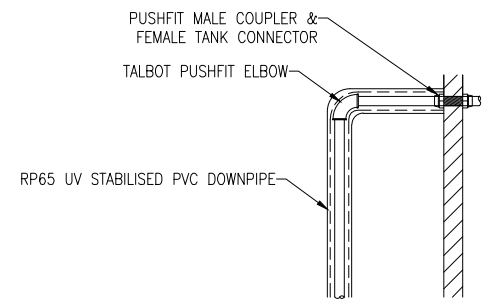


SIDE VIEW

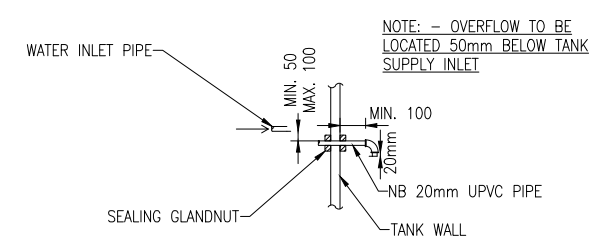


DETAIL 5D
WATER TANK DETAIL
SCALE 1:10

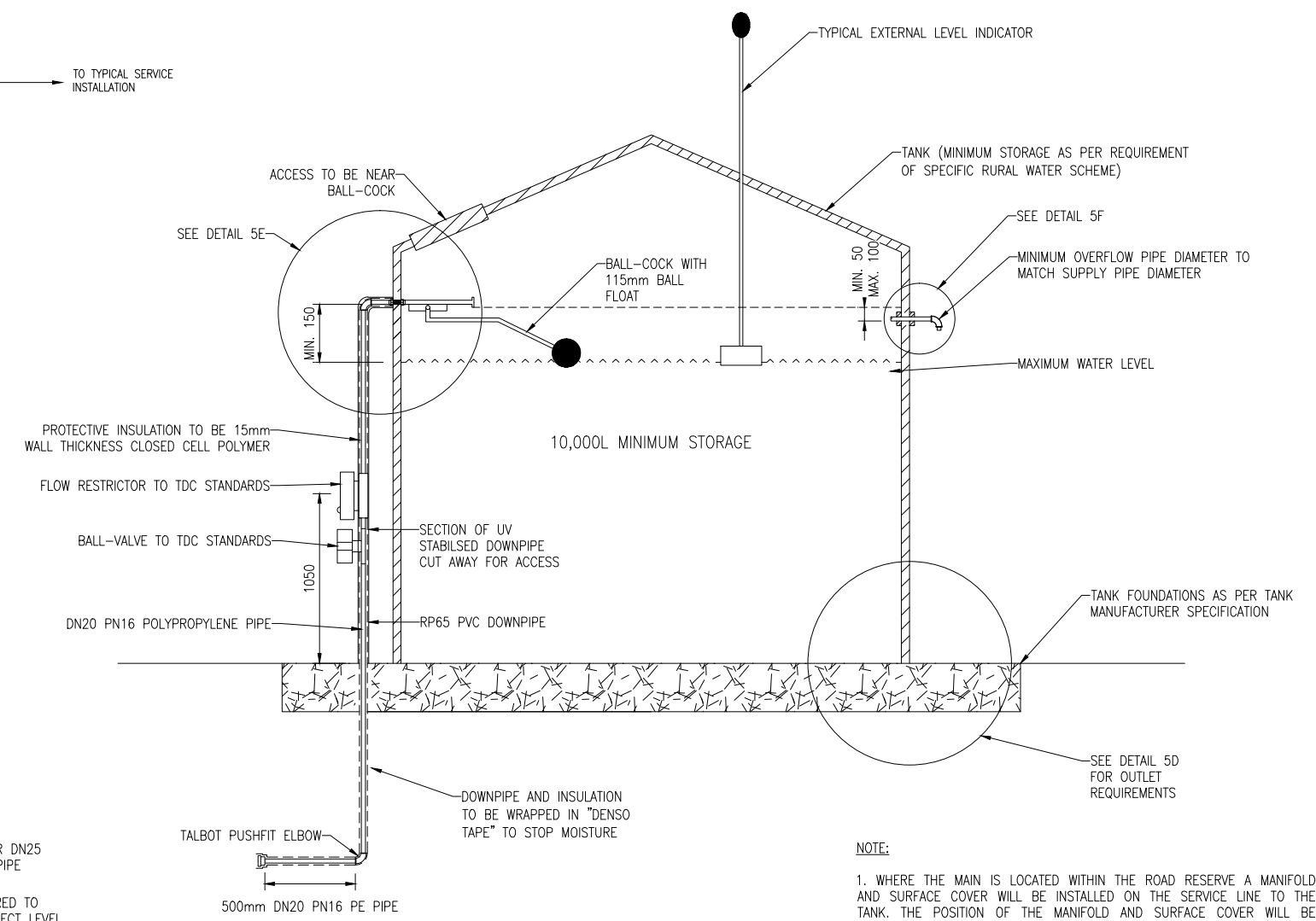
DETAIL 5B
TYPICAL RETICULATION SAMPLE TAP
SCALE 1:10



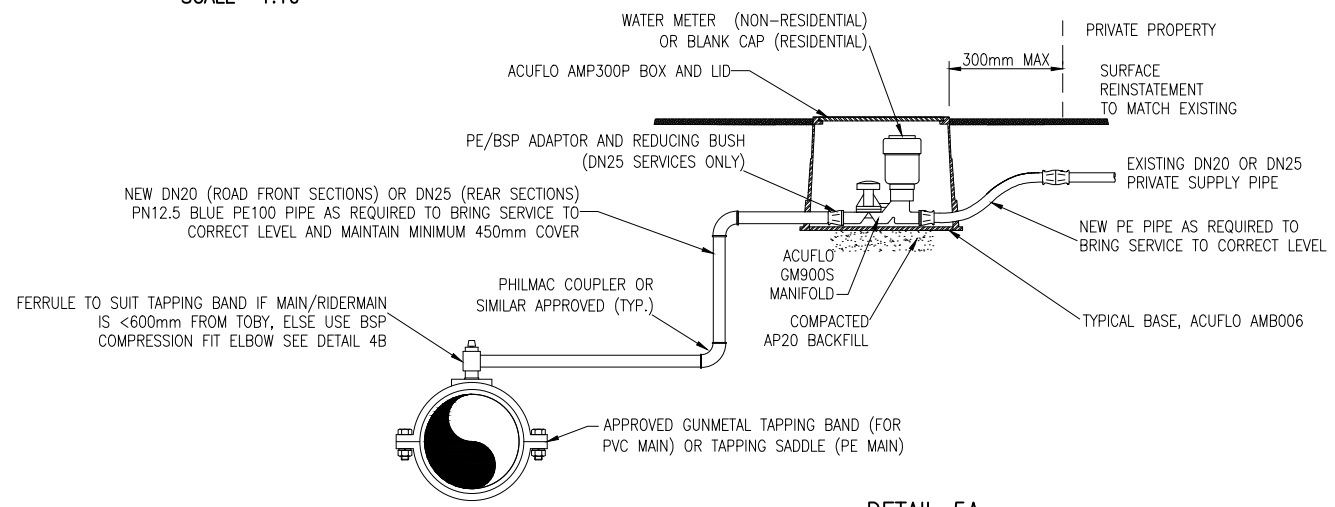
DETAIL 5E
TANK WALL DETAIL
SCALE 1:10



DETAIL 5F
RURAL TANK OVER FLOW OUTLET
SCALE 1:10



DETAIL 5C
WATER TANK DETAIL
SCALE 1:20



DETAIL 5A
WATER TANK CONNECTION
SCALE 1:10

NOTE:
NO VALVE HAS BEEN PROVIDED AT THE CONNECTION TO THE MAIN AS THE LIKELIHOOD THE VALVE SHALL BE REQUIRED IS VERY LOW, AND IF IT IS REQUIRED IT MAY BE TOO DIFFICULT TO LOCATE AND WILL NOT BE USED.

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DATA SOURCE:		WATER					REDUCED SCALE (A3):							
E	CHANGES TO MANHOLE DETAIL	S.C.		12/15	SURVEYED	-			THIS DOCUMENT IS THE PROPERTY OF THE TIMARU DISTRICT COUNCIL. IT IS NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF THE TIMARU DISTRICT COUNCIL.					
D	THRUST BLOCK DETAIL	L.S.		08/15	DESIGNED	RRP	04/09	PRODUCED BY:						
C	TANK AIR GAP DETAIL	G.C.		10/13	DESIGN CHECK	ANW	04/09	FOR:						
B	RURAL TANK DETAIL	G.C.		02/13	DRAWN	RRP	04/09							
1	DRAFT ISSUE	BMC		05/11	DRG CHECK	AD	04/09							
	REVISION	BY	CHK	APP	DATE									