

WATER SUPPLY DRAWINGS

DRAWING INDEX - SHEET 1 OF 2

DRAWING No.	DRAWING TITLE			REV No.
SEQ-WAT-INDEX	WATER SUPPLY	DRAWING INDEX	SHEET 1 OF 2	E
SEQ-WAT-INDEX	WATER SUPPLY	DRAWING INDEX	SHEET 2 OF 2	E
SEQ-WAT-1100-1	TYPICAL WATER RETICULATION	LOCALITY PLAN	SHEET 1	C
SEQ-WAT-1100-2	TYPICAL WATER RETICULATION	LOCALITY PLAN AND DETAILS	SHEET 1	C
SEQ-WAT-1101-2	TYPICAL WATER RETICULATION	DESIGN PLAN AND DETAILS	SHEET 2	D
SEQ-WAT-1101-3	TYPICAL WATER RETICULATION	DESIGN PLAN NOTES	SHEET 3	B
SEQ-WAT-1101-4	TYPICAL WATER RETICULATION	FIRE HYDRANT LOCATION DETAILS	SHEET 4	A
SEQ-WAT-1102-1	TYPICAL MAINS CONSTRUCTION	RETICULATION MAIN ARRANGEMENTS		C
SEQ-WAT-1103-1	TYPICAL MAINS CONSTRUCTION	DISTRIBUTION AND TRANSFER MAIN	ARRANGEMENTS	B
SEQ-WAT-1104-1	TYPICAL	DN63 PE CUL-DE-SAC ARRANGEMENT		C
SEQ-WAT-1104-2	TYPICAL	FLUSHING DETAILS FOR	DN63 PE MAINS	C
SEQ-WAT-1105-1	TYPICAL	CONNECTION TO EXISTING MAINS	SHEET 1 OF 2	D
SEQ-WAT-1105-2	TYPICAL	CONNECTION TO EXISTING MAINS	SHEET 2 OF 2	E
SEQ-WAT-1105-3	TYPICAL	CONNECTION TO EXISTING	STEEL MAINS	B
SEQ-WAT-1106-1	TYPICAL PROPERTY SERVICE	CONNECTION	MAIN TO METER	E
SEQ-WAT-1106-2	TYPICAL PROPERTY SERVICE	CONNECTION	MAIN TO METER	D
SEQ-WAT-1107-1	TYPICAL PE PROPERTY SERVICES	PE MAIN TO METER AND	CONDUIT DETAILS	D
SEQ-WAT-1107-2	TYPICAL COPPER PROPERTY SERVICES	MAIN TO METER AND	CONDUIT DETAILS	D
SEQ-WAT-1107-3	TYPICAL PROPERTY SERVICES	GENERAL ARRANGEMENT	20mm OR 25MM METERS	D
SEQ-WAT-1108-1	PROPERTY SERVICES	POTABLE SERVICE CONNECTION	CONDUIT DETAILS	C
SEQ-WAT-1108-2	PROPERTY SERVICES	POTABLE SERVICE CONNECTION	TYPICAL MAIN TO METER	E
SEQ-WAT-1108-3	PROPERTY SERVICES	POTABLE SERVICE CONNECTION	20mm DOMESTIC SERVICE METER BOX DETAILS	E
SEQ-WAT-1109-1	PROPERTY SERVICES	LONG SIDE CONNECTIONS	ABOVE GROUND METER	B
SEQ-WAT-1109-2	PROPERTY SERVICES	SHORT SIDE CONNECTIONS	ABOVE GROUND METER	B
SEQ-WAT-1109-3	TYPICAL PROPERTY SERVICES	MAIN TO METER AND	CONDUIT DETAILS	A
SEQ-WAT-1110-1	PROPERTY SERVICES	GENERAL ARRANGEMENT AND	CONDUIT DETAILS	B
SEQ-WAT-1110-2	20mm/25mm DOMESTIC PROPERTY	WATER SERVICE INSTALLATION	ASSEMBLY	B
SEQ-WAT-1111-1	LARGE METER ARRANGEMENT	DESIGN PLAN NOTES		A
SEQ-WAT-1111-2	LARGE METER ARRANGEMENT	DN32 AND LARGER DOMESTIC SERVICE	WITH MECHANICAL METER	A
SEQ-WAT-1111-3	LARGE METER ARRANGEMENT	DN32 AND LARGER DOMESTIC SERVICE	FOR BASEMENT INSTALLATION WITH MECHANICAL METER	A
SEQ-WAT-1111-4	LARGE METER ARRANGEMENT	DN32 AND LARGER DOMESTIC SERVICE	WITH ULTRASONIC/ELECTRO MAGNETIC METER	A
SEQ-WAT-1111-5	LARGE METER ARRANGEMENT	DN32 AND LARGER DOMESTIC SERVICE	FOR BASEMENT INSTALLATION WITH ULTRASONIC/ELECTRO MAGNETIC METER	A
SEQ-WAT-1111-6	LARGE METER ARRANGEMENT	DN32 AND LARGER DOMESTIC SERVICE	WITH DN100 AND LARGER FIRE SERVICE	A
SEQ-WAT-1111-7	LARGE METER ARRANGEMENT	DN32 AND LARGER DOMESTIC SERVICE	WITH DN100 AND LARGER FIRE SERVICE FOR BASEMENT INSTALLATION	A
SEQ-WAT-1111-8	LARGE METER ARRANGEMENT	DN50 AND LARGER FIRE SERVICE	OR TOWNHOUSE STYLE C.T.S. COMBINED FIRE AND DOMESTIC SERVICE	A
SEQ-WAT-1111-9	LARGE METER ARRANGEMENT	DN50 AND LARGER FIRE SERVICE	FOR BASEMENT INSTALLATION	A
SEQ-WAT-1111-10	LARGE METER ARRANGEMENT	DN25 AND LARGER COMMERCIAL	WATER SERVICE AND DN80 AND LARGER FIRE SERVICE	A
SEQ-WAT-1111-11	LARGE METER ARRANGEMENT	COMMERCIAL WATER SERVICE AND FIRE	SERVICE BRACE DETAILS AND NOTES	A
SEQ-WAT-1200-1	TYPICAL SOIL CLASSIFICATION GUIDELINES	AND ALLOWABLE BEARING PRESSURES	FOR ANCHORS & THRUST BLOCKS	B
SEQ-WAT-1200-2	EMBEDMENT & TRENCHFILL	TYPICAL ARRANGEMENT		D
SEQ-WAT-1201-1	STANDARD EMBEDMENT	TYPICAL FLEXIBLE & RIGID PIPES		B
SEQ-WAT-1202-1	TYPICAL SPECIAL EMBEDMENT	INADEQUATE FOUNDATIONS REQUIRING	OVER EXCAVATION & REPLACEMENT	B
SEQ-WAT-1203-1	TYPICAL SPECIAL EMBEDMENT	CONCRETE & STABILISED EMBEDMENT	AND FLEXIBLE JOINT DETAILS	C
SEQ-WAT-1204-1	TYPICAL TRENCH AND BEDDING DETAILS	WITHIN EXISTING ROADS	TYPE K TO N	C
SEQ-WAT-1205-1	TYPICAL THRUST BLOCK DETAILS	MASS CONCRETE		C
SEQ-WAT-1206-1	TYPICAL THRUST AND ANCHOR BLOCKS	FOR VALVES	AND PE - RRJ TRANSITION	D
SEQ-WAT-1207-1	TYPICAL THRUST AND ANCHOR BLOCKS	FOR VERTICAL BENDS		B
SEQ-WAT-1208-1	TYPICAL RESTRAINED JOINT SYSTEM	DN 100 TO DN 375 DI MAINS		C
SEQ-WAT-1209-1	TYPICAL TRENCH DRAINAGE	BULKHEADS AND TRENCHSTOP		B
SEQ-WAT-1210-1	TYPICAL TRENCH DRAINAGE	TRENCH SYSTEMS		B
SEQ-WAT-1211-1	TYPICAL BURIED CROSSINGS	UNDER OBSTRUCTIONS		D
SEQ-WAT-1212-1	TYPICAL BURIED CROSSINGS	MAJOR ROADWAYS		D
SEQ-WAT-1213-1	TYPICAL BURIED CROSSINGS	RAILWAYS		D
SEQ-WAT-1214-1	TYPICAL BURIED CROSSINGS	BORED AND JACKED ENCASING	PIPE DETAILS	D
SEQ-WAT-1300-1	TYPICAL VALVE, HYDRANT AND	WATER MAIN ROAD CROSSING	ROAD AND PAVEMENT MARKERS	E
SEQ-WAT-1300-2	TYPICAL VALVE AND HYDRANT	IDENTIFICATION MARKER POSTS		D
SEQ-WAT-1301-1	TYPICAL VALVE INSTALLATION	GENERAL ARRANGEMENT		E

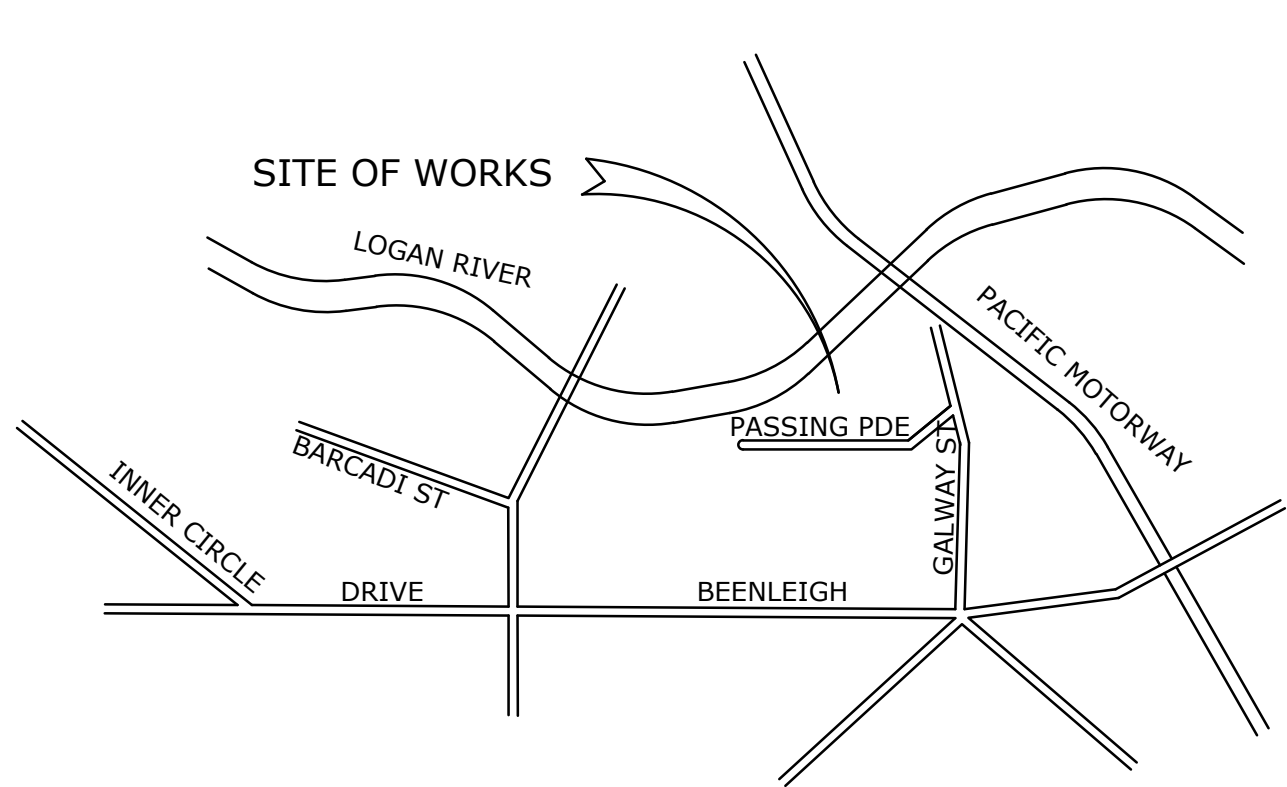
REV. No.	DATE	DESCRIPTION	AUTH.	SEQ WATER SERVICE PROVIDERS	WATER SUPPLY STANDARD DRAWING	CoGC	LCC	RCC	UU	UW
				SEQ WATER SERVICE PROVIDERS <small>WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION</small>	WATER SUPPLY STANDARD DRAWING WATER SUPPLY DRAWING INDEX SHEET 1 OF 2					
E	01/02/24	NEW DRAWINGS ADDED, VERSION NUMBERS UPDATED AND TITLE BLOCK		NOT FOR CONSTRUCTION <small>SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ</small>						
D	30/08/19	VERSION NUMBERS UPDATED								
C	20/12/18	VERSION NUMBERS UPDATED								
B	31/03/15	VERSION NUMBER UPDATED								
						DRAWING No.		VERSION		
						SEQ-WAT-INDEX		E		
						NOT TO SCALE				ORG DATE: 1/1/2013

WATER SUPPLY DRAWINGS

DRAWING INDEX - SHEET 2 OF 2

DRAWING No.	DRAWING TITLE			REV NO.
SEQ-WAT-1302-1	TYPICAL HYDRANT INSTALLATION	GENERAL ARRANGEMENT		E
SEQ-WAT-1303-1	TYPICAL VALVE AND	HYDRANT INSTALLATION	FUTURE EXTENSION INSTALLATION	C
SEQ-WAT-1303-2	TYPICAL VALVE AND	HYDRANT INSTALLATION	FUTURE EXTENSION INSTALLATION	C
SEQ-WAT-1304-1	TYPICAL AIR VALVE INSTALLATION	FOR TRUNK MAIN		C
SEQ-WAT-1305-1	TYPICAL SURFACE FITTING INSTALLATION	VALVE AND HYDRANT SURFACE BOXES	TRAFFICABLE AND NON-TRAFFICABLE	C
SEQ-WAT-1306-1	TYPICAL SURFACE FITTING INSTALLATION	VALVE AND HYDRANT SURFACE BOXES	SUPPORT AND SURROUND DETAILS	D
SEQ-WAT-1307-2	PE WATER MAINS	TYPICAL DETAILS	SCOURS	D
SEQ-WAT-1307-3	TYPICAL APPURTENANCE INSTALLATION	SCOUR ARRANGEMENTS		C
SEQ-WAT-1308-1	TYPICAL APPURTENANCE INSTALLATION	LARGE VALVE CHAMBERS		C
SEQ-WAT-1308-2	TYPICAL APPURTENANCE INSTALLATION	LARGE VALVE - BURIED INSTALLATION		B
SEQ-WAT-1309-1	TYPICAL APPURTENANCE INSTALLATION	PASSIVE PRESSURE REDUCING VALVES (PRV)		B
SEQ-WAT-1309-2	TYPICAL APPURTENANCE INSTALLATION	ACTIVE PRESSURE REDUCING VALVES (PRV)	DN100 TO DN300	B
SEQ-WAT-1309-3	TYPICAL APPURTENANCE INSTALLATION	ACTIVE PRESSURE REDUCING VALVES (PRV)	DN100 AND DN150	B
SEQ-WAT-1309-4	TYPICAL APPURTENANCE INSTALLATION	ACTIVE PRESSURE REDUCING VALVES (PRV)	DN200 TO DN300	B
SEQ-WAT-1310-1	TYPICAL APPURTENANCE INSTALLATION	ACTIVE PRESSURE REDUCING VALVES (PRV)	ABOVE GROUND	C
SEQ-WAT-1310-2	TYPICAL APPURTENANCE INSTALLATION	ACTIVE PRESSURE REDUCING VALVES (PRV)	ABOVE GROUND	C
SEQ-WAT-1310-3	TYPICAL APPURTENANCE INSTALLATION	ACTIVE PRESSURE REDUCING VALVES (PRV)	ABOVE GROUND CABINET DETAILS	C
SEQ-WAT-1310-4	TYPICAL APPURTENANCE INSTALLATION	FLOWMETER DETAILS	BELOW GROUND INSTALLATION	B
SEQ-WAT-1310-5	PRV AND FLOW METER	CABINET INSTALLATION	DN80 AND DN100 PLAN AND DETAILS	A
SEQ-WAT-1310-6	FLOW METER CABINET INSTALLATION	TYPE A PLINTH DETAILS AND	TYPICAL CONDUIT INSTALLATION DETAILS	A
SEQ-WAT-1310-7	PRV AND FLOW METER	CABINET INSTALLATION	GENERAL ARRANGEMENT SHEET 1 OF 2	A
SEQ-WAT-1310-8	PRV AND FLOW METER	CABINET INSTALLATION	GENERAL ARRANGEMENT SHEET 2 OF 2	A
SEQ-WAT-1310-9	PRV AND FLOW METER	CABINET INSTALLATION	VIEWS AND SECTIONS	A
SEQ-WAT-1310-10	PRV AND FLOW METER	CABINET INSTALLATION	CONSTRUCTION DETAILS	A
SEQ-WAT-1310-11	TYPICAL APPURTENANCE INSTALLATION	DN100 TO DN200 ABOVE GROUND	PRESSURE REDUCING VALVES (PRV)	A
SEQ-WAT-1311-1	AERIAL CROSSINGS	TYPICAL AQUEDUCT		B
SEQ-WAT-1311-2	TYPICAL AERIAL CROSSINGS	AQUEDUCT PROTECTION GRILLE		B
SEQ-WAT-1312-1	AERIAL CROSSINGS	TYPICAL BRIDGE CROSSING CONCEPTS		C
SEQ-WAT-1313-1	FLANGED JOINTS	TYPICAL BOLTING DETAILS		B
SEQ-WAT-1314-1	TYPICAL SMALL WATER SUPPLY	PUMP STATION OR RESERVOIR	DRAWING 1 OF 4	C
SEQ-WAT-1315-1	TYPICAL SMALL WATER SUPPLY	PUMP STATION OR RESERVOIR	DRAWING 2 OF 4	C
SEQ-WAT-1316-1	TYPICAL SMALL WATER SUPPLY	PUMP STATION OR RESERVOIR	DRAWING 3 OF 4	C
SEQ-WAT-1317-1	TYPICAL SMALL WATER SUPPLY	PUMP STATION OR RESERVOIR	DRAWING 4 OF 4	C
SEQ-WAT-1318-1	TYPICAL ARRANGEMENT	MAIN SWABBING CHAMBER		B
SEQ-WAT-1319-1	FALL PREVENTION COVERS AND GRATES	AT WATER PUMPING STATIONS	DRAWING INDEX, NOTES AND LEGEND	B
SEQ-WAT-1319-2	FALL PREVENTION COVERS AND GRATES	AT WATER PUMPING STATIONS	GENERAL ARRANGEMENT AND OPENING/CLOSING SEQUENCE	B
SEQ-WAT-1319-3	FALL PREVENTION COVERS AND GRATES	AT WATER PUMPING STATIONS	CROSS SECTIONS AND DETAILS SHEET 1 OF 2	B
SEQ-WAT-1319-4	FALL PREVENTION COVERS AND GRATES	AT WATER PUMPING STATIONS	CROSS SECTIONS AND DETAILS SHEET 2 OF 2	B
SEQ-WAT-1400-1	TYPICAL STEEL PIPE JOINTING	BUTT WELDING OF JOINTS		C
SEQ-WAT-1401-1	TYPICAL STEEL PIPE JOINTING	RUBBER RING JOINT SPIGOT	BAND SPECIALS	C
SEQ-WAT-1402-1	TYPICAL STEEL PIPE JOINTING	WELDED PIPE COLLARS		C
SEQ-WAT-1403-1	TYPICAL STEEL PIPE JOINTING	BENDS		B
SEQ-WAT-1404-1	TYPICAL STEEL FABRICATION	ACCESS OPENING FOR PIPES ≥ DN 750		B
SEQ-WAT-1405-1	TYPICAL STEEL FABRICATION	DISMANTLING AND FLEXIBLE JOINTS		B
SEQ-WAT-1406-1	TYPICAL STEEL FABRICATION	VALVE CONNECTION AND BYPASS		B
SEQ-WAT-1407-1	DI INSTALLATION	VALVE BYPASS ARRANGEMENT	TYPICAL DI PIPE FITTINGS	B
SEQ-WAT-1408-1	TYPICAL JOINT CORROSION PROTECTION	CEMENT MORTAR LINED STEEL PIPE	> DN750 TO DN1200	B
SEQ-WAT-1409-1	HYDRANT INSTALLATION FITTINGS	TYPICAL PE ASSEMBLIES NOMENCLATURE		B
SEQ-WAT-1410-1	TYPICAL CHLORINATION TEST POINT	DETAILS		B

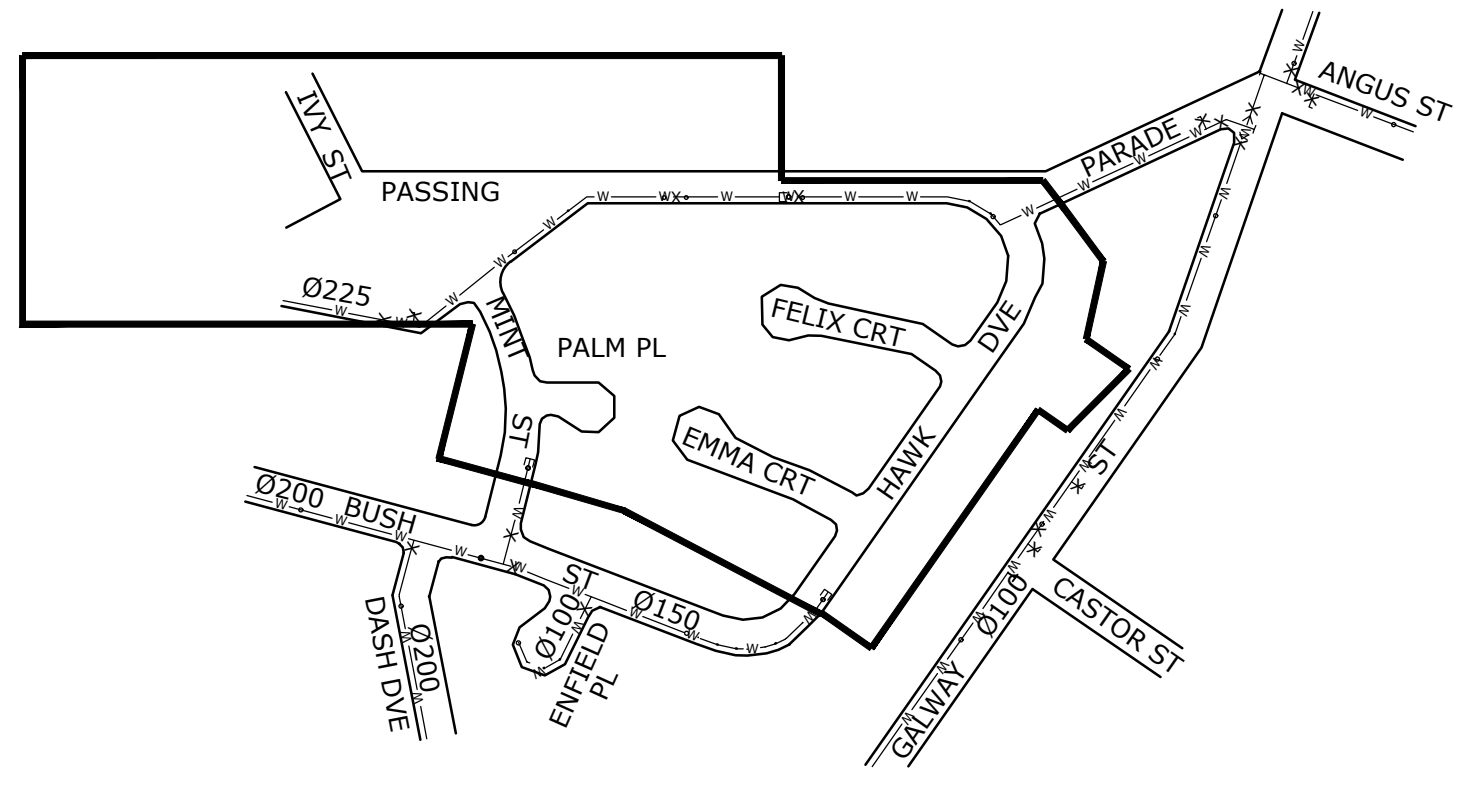
REV. No.	DATE	DESCRIPTION	AUTH.	SEQ WATER SERVICE PROVIDERS	WATER SUPPLY STANDARD DRAWING	CoGC	LCC	RCC	UU	UW
				SEQ WATER SERVICE PROVIDERS <small>WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION</small>	WATER SUPPLY STANDARD DRAWING WATER SUPPLY DRAWING INDEX SHEET 2 OF 2	DRAWING No.				VERSION
E	01/02/24	NEW DRAWINGS ADDED, VERSION NUMBERS UPDATED AND TITLE BLOCK		NOT FOR CONSTRUCTION		SEQ-WAT-INDEX				E
D	30/08/19	VERSION NUMBERS UPDATED		<small>SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ</small>		NOT TO SCALE				ORG DATE: 1/1/2013
C	20/12/18	VERSION NUMBERS UPDATED								
B	31/03/15	NEW DRAWINGS ADDED, VERSION NUMBER UPDATED								



REGIONAL PLAN
NTS



DEVELOPMENT STAGE/AREA



LOCALITY PLAN
SCALE 1 : 2500
UBD MAP REFERENCE NO

NOTE:
FOR EACH DRAWING, A CROSS ON A SERVICE PROVIDER'S NAME IN THE TITLE BLOCK BELOW MEANS THAT THE DRAWING IS **NOT** APPLICABLE TO THAT SERVICE PROVIDER

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	01/09/15	ADDED NOTE REGARDING CROSSES ON SP	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

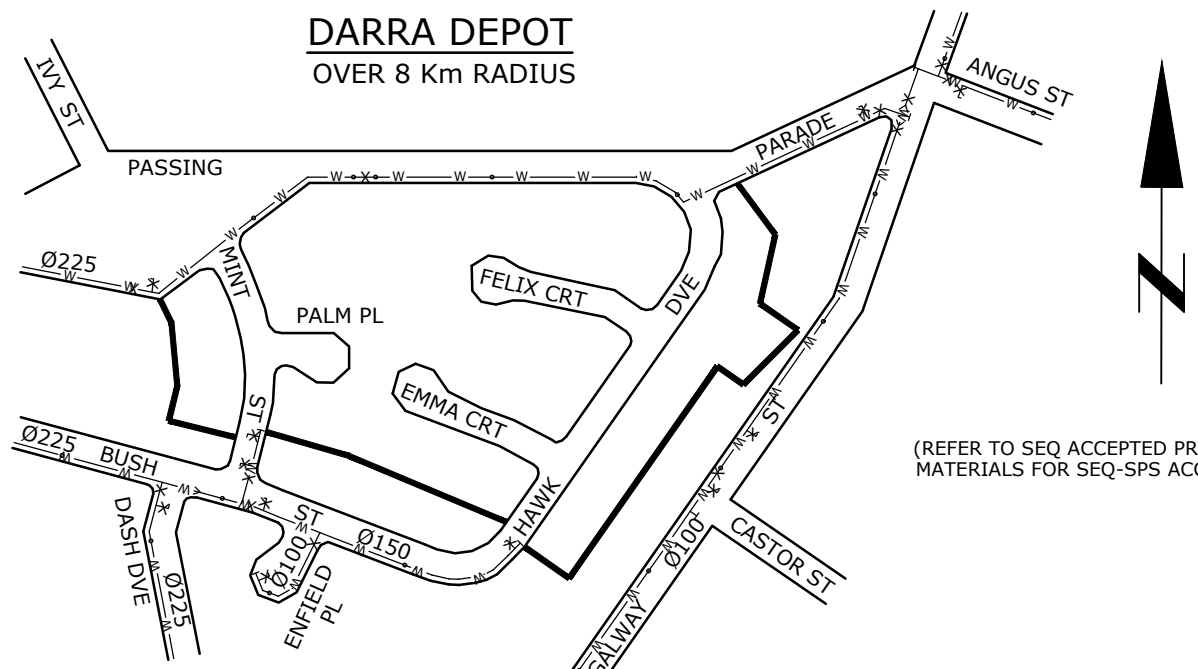
WATER SUPPLY STANDARD DRAWING

TYPICAL WATER RETICULATION

LOCALITY PLAN

SHEET 1

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1100-1				C
NOT TO SCALE			ORG DATE: 1/1/2013	



EXAMPLE LOCALITY PLAN
SCALE 1 : 2500
UBD MAP REFERENCE NO

ALL WATER AND SEWER CONSTRUCTION WORK UNDERTAKEN BY THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE WORKPLACE HEALTH AND SAFETY LEGISLATION

(REFER TO SEQ ACCEPTED PRODUCTS & MATERIALS FOR SEQ-SPS ACCEPTED MATERIALS).

AS CONSTRUCTED DETAILS

I CERTIFY THAT THE "AS CONSTRUCTED" DETAILS SHOWN ON THIS PLAN ARE A TRUE AND ACCURATE RECORD OF THE WORKS.

SIGNED _____ DATE _____
 NAME OF SIGNATORY (PRINT) _____
 RPEQ NO. _____
 COMPANY NAME _____

ASSET REGISTER WATER RETICULATION			
ESTATE/STAGE		UPSON DOWNS	
SITE ADDRESS		PASSING PDE, DURACK	
FILE/APPLICATION		253/30/5-4321/97	
UU DELEGATES APP. DATE		12.3.96	
CLIENT			
DRAWING/PLAN No.			
MAINS	DIAMETER	MATERIAL DESIGN CONST	LENGTH DESIGN CONST
	DN63	PE100	100.000
	DN100	MPVC DICL	304.000 5.000
	DN150	MPVC	230.000
	DN180	PE100	1.000
	DN200	DICL	30.000
SERVICES	DIAMETER	MATERIAL DESIGN CONST	LENGTH DESIGN CONST
	20	CU	81.000
	25	CU	65.000
	32	CU	72.000
METERS	DIAMETER	NUMBER	
	20	44	
	25	1	
	32		

SERVICE DETAILS		
NO	SIZE	LOT NUMBERS
1	32 mm	LOT 31 Δ
12	25 mm	LOTS 1-4,15-18,23-25,30. \circ
32	20 mm	LOTS 5-14,20-22,26-29,32-44,46,47.
OTHER		LOT 45 SERVICE SIZE AND POSITION TO BE DETERMINED ON APPLICATION BY INDIVIDUAL OWNER
		METER TO LOT 19 TO BE SUPPLIED ON APPLICATION (AT APPLICANTS EXPENSE)
32 mm		IRRIGATION SERVICE WITH 25 mm METER IN PARK NEAR LOT 44

NOTE : SERVICES & METERS TO LOTS 6-14 WILL CONNECT TO EXISTING WATER MAIN AND SHALL BE INSTALLED BY URBAN UTILITIES.

SERVICE DETAILS - FELIX COURT

TYPE/DIA. OF SERVICE _____ 100 DOM.

PIPE TYPE _____ 100 DICL

LENGTH OF SERVICE _____ 2.300 m

DATE COMMENCED _____

DATE COMPLETED _____

SIGNATURE: _____

SER. APPL. NO. _____ T45689

CHARGE: _____

LEVELS - MIN COVER 600 mm BELOW

REMARKS FOR "WSI" RECORD
METER INSTALLATION BY CONTRACTOR
SUPPLY BY URBAN UTILITIES.

- EACH DRAWING OF THE DESIGN SHALL CONTAIN THE CONSULTING ENGINEERS TITLE BLOCK, SIGNATURE AND RPEQ NUMBER.
- REFER SHEET 3 FOR NOTES AND ENVIRONMENTAL CONDITIONS.
- TEXT SHOWN IN ITALICS IS FOR INFORMATION ONLY.

CONNECTIONS & SUBSTITUTION

STREET <u>HAWK DRIVE</u> <u>AT PASSING PARADE</u>	STREET <u>PASSING PARADE</u> <u>AT MINT STREET</u>
LENGTH _____ TYPE OF MAIN <u>150 MPVC</u>	SUBSTITUTE <u>200 DICL</u>
DATE COMMENCED _____ DATE COMPLETED _____	FOR <u>225 AC</u>
SIGNATURE _____	LENGTH <u>30.000</u> TYPE OF MAIN <u>225 DICL</u>
	DATE COMMENCED _____ DATE COMPLETED _____
STREET <u>HAWK DRIVE</u> <u>AT BUSH STREET</u>	SIGNATURE _____
LENGTH <u>5.000</u> TYPE OF MAIN <u>150 MPVC</u>	STREET <u>MINT STREET</u> <u>NEAR BUSH STREET</u>
DATE COMMENCED _____ DATE COMPLETED _____	LENGTH <u>5.000</u> TYPE OF MAIN <u>100 MPVC</u>
SIGNATURE _____	DATE COMMENCED _____ DATE COMPLETED _____
	SIGNATURE _____

AS CONSTRUCTED RECEIVED	
BY	
UTILITY/DELEGATE	
DATE	/ /
ON MAINTENANCE DETAILS	
START	/ /
FINISH	/ /
UTILITY/DELEGATE'S COMMENTS	
FUNDING	
PRIVATE BOOSTER REQUIRED?	YES/NO
FUNDED BY UTILITY () COUNCIL ()	
FED GOV'T () STATE ()	
DEVELOPER () OTHER ()	
OFFICER	
DATE RELEASED	/ /
PLAN CUSTODIAN	
OFFICER/REC'D	/ /
DATE RELEASED	/ /
LIVE CONNECTION(S)/PASSED(W)	
REFERENCE	
DATE	/ /
GIS CAPTURE	
JOB NUMBER	
OFFICER	
DATE	/ /
GIS COMMENTS	

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	14/07/15	ALTERED UPVC TO MPVC. CHANGED LOCALITY PLAN DESCRIPTION. REFERENCE TO SEQ ACCEPTED MATERIALS ADDED.	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

TYPICAL WATER RETICULATION LOCALITY PLAN AND DETAILS

SHEET 1

CoC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1100-2				C
NOT TO SCALE				ORG DATE: 1/1/2013

SEQ-SPS CONNECTION
 225 X 150 F & F SKEW (15.8KN)
 2-225 F & S CONNECTORS
 150 F & S VALVE
 225 APPROVED CONNECTOR

150 X 22 1/2° BEND (8.6KN)
 150 X 11 1/4° BEND (4.4KN)
 TEST POINT

- LEGEND REFER SEQ-GEN-1100-1
- ALL SCOURS SHOWN ARE TYPICALLY TO THE REQUIREMENTS OF UU.
- FOR SPECIFIC SEQ-SP CUL-DE-SAC END FORMATS FOR SCOURING OR FLUSHING REFER SEQ-WAT-1104-1 AND SEQ-WAT-1104-2.
- FOR SPECIFIC SEQ-SP MAIN LINE FORMATS FOR SCOURING REFER SEQ-WAT-1307-2 AND SEQ-WAT-1307-3
- FOR SPECIFIC SEQ-SP WATER SERVICE AND CONDUIT FORMATS REFER SEQ-WAT-1106, 1107, 1108 AND 1109 SET.

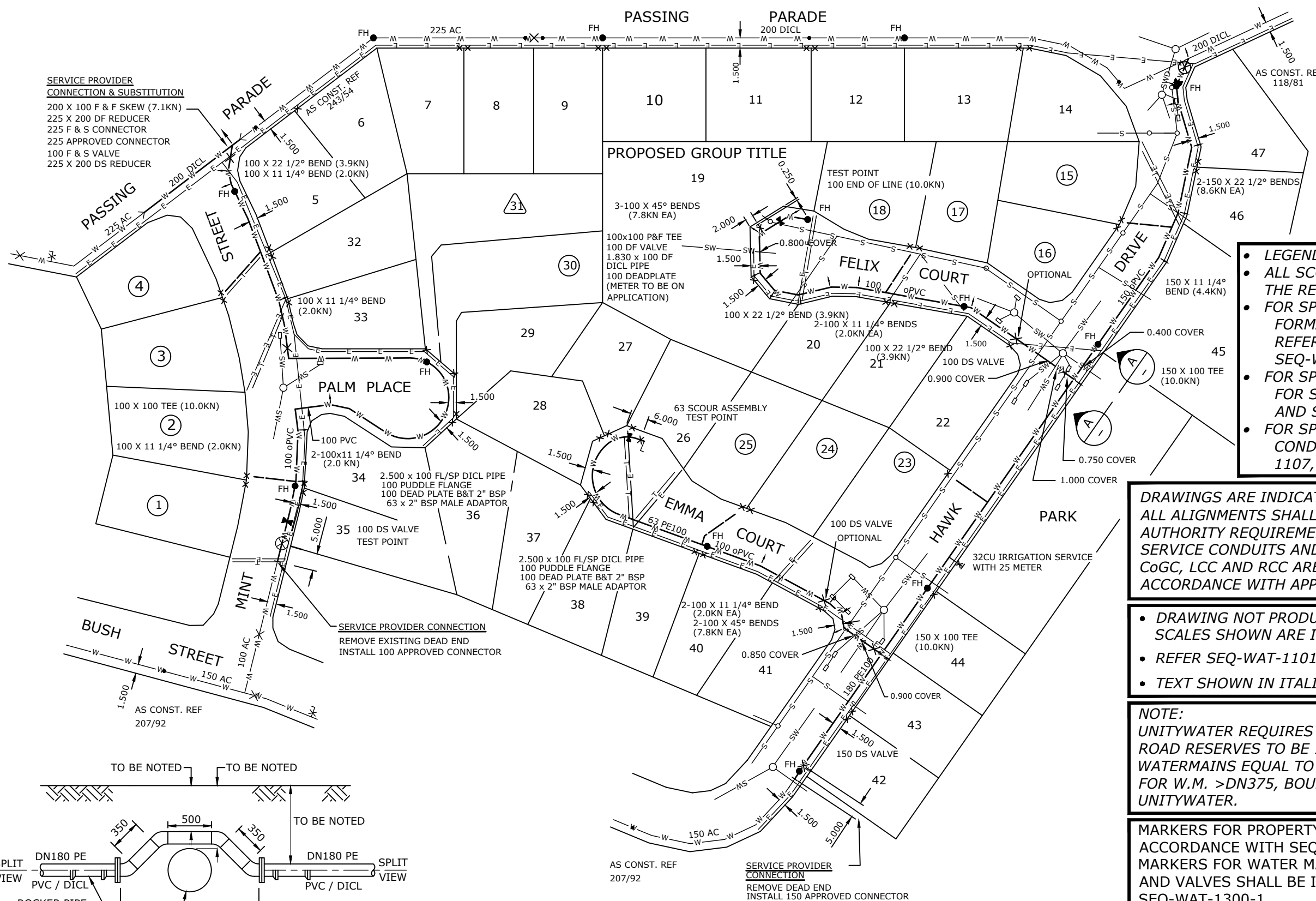
DRAWINGS ARE INDICATIVE ONLY. ALL ALIGNMENTS SHALL BE AS PER COUNCIL/ROAD AUTHORITY REQUIREMENTS. SERVICE CONDUITS AND PROPERTY SERVICES FOR UW, CoGC, LCC AND RCC AREAS TO BE PROVIDED IN ACCORDANCE WITH APPLICABLE STANDARD DRAWINGS.

- DRAWING NOT PRODUCED TO SCALE, HOWEVER SCALES SHOWN ARE INDICATIVE OF THOSE REQUIRED.
- REFER SEQ-WAT-1101-3 FOR NOTES AND CONDITIONS.
- TEXT SHOWN IN ITALICS IS FOR INFORMATION ONLY.

NOTE:
 UNITYWATER REQUIRES ALIGNMENTS OF WATER MAINS IN ROAD RESERVES TO BE 1.5 m BOUNDARY OFFSET FOR WATERMANS EQUAL TO OR <DN375. FOR W.M. >DN375, BOUNDARY OFFSET TO BE ADVISED BY UNITYWATER.

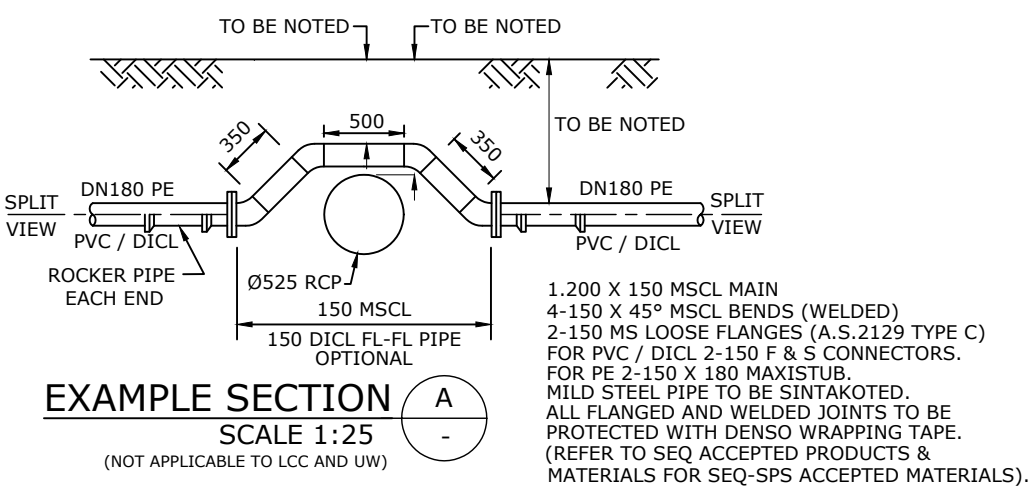
MARKERS FOR PROPERTY SERVICES SHALL BE IN ACCORDANCE WITH SEQ-WAT-1106 TO 1108. MARKERS FOR WATER MAIN ROAD CROSSINGS, HYDRANTS AND VALVES SHALL BE IN ACCORDANCE WITH SEQ-WAT-1300-1.

DESIGN DRAWINGS TO CLEARLY SHOW CLEARANCES BETWEEN PROPOSED & EXISTING SERVICES. STRUCTURES AND OBSTRUCTIONS.



SITE PLAN
 SCALE 1:500
MAIN TO BE DISUSED

STREET	DIA	TYPE	LENGTH	FOLIO/YEAR	F.H.
PASSING PARADE	225	AC	30.000	193/1954	



REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	HYDRANT LOCATIONS, SECTION A NOTES, NOT FOR CONSTRUCTION AND UU	
C	21/09/18	ADDED NOTE TO EXAMPLE SECTION FOR UW AND MINOR CHANGES	
B	09/11/15	CORRECTED MINOR DRAFTING ISSUES IN SECTION A	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

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WATER SUPPLY STANDARD DRAWING
TYPICAL WATER RETICULATION
DESIGN PLAN AND DETAILS
SHEET 2

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1101-2				D
NOT TO SCALE				ORG DATE: 1/1/2013

TYPICAL NOTES TO BE INCLUDED WITH DRAWING SET

ENVIRONMENTAL CONDITIONS

PLACE ON YOUR DRAWING NOTES AS RECEIVED IN YOUR APPROVAL LETTER FROM THE ENVIRONMENTAL REGULATOR OR MANAGER. IF NOTES RELEVANT TO THIS ESTATE ARE NOT SPECIFIED IN YOUR APPROVAL LETTER, TYPICAL NOTES AS FOLLOWS SHALL BE PLACED ON ALL DRAWINGS.

VEGETATION PROTECTION

- A. TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
- B. WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8 m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
- C. TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
- D. ANY TREE LOPPING REQUIRED SHALL BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL

- E. TOPSOIL AND SUBSOIL SHALL BE STOCKPILED SEPARATELY.
- F. CARE SHALL BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.
- G. ACID SULPHATE SOILS EXIST IN THE WORKS AREA. THE OUTPUTS FROM THE RISK ASSESSMENT BASED ON THE QUEENSLAND ACID SULPHATE SOIL TECHNICAL MANUAL REQUIRES THAT ACID SULPHATE SOILS BE MANAGED AS FOLLOWS:

CREEK CROSSINGS

- H. SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
- I. APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
- J. NO SOIL SHALL BE STOCKPILED WITHIN 5 m OF THE CREEK.

REHABILITATION

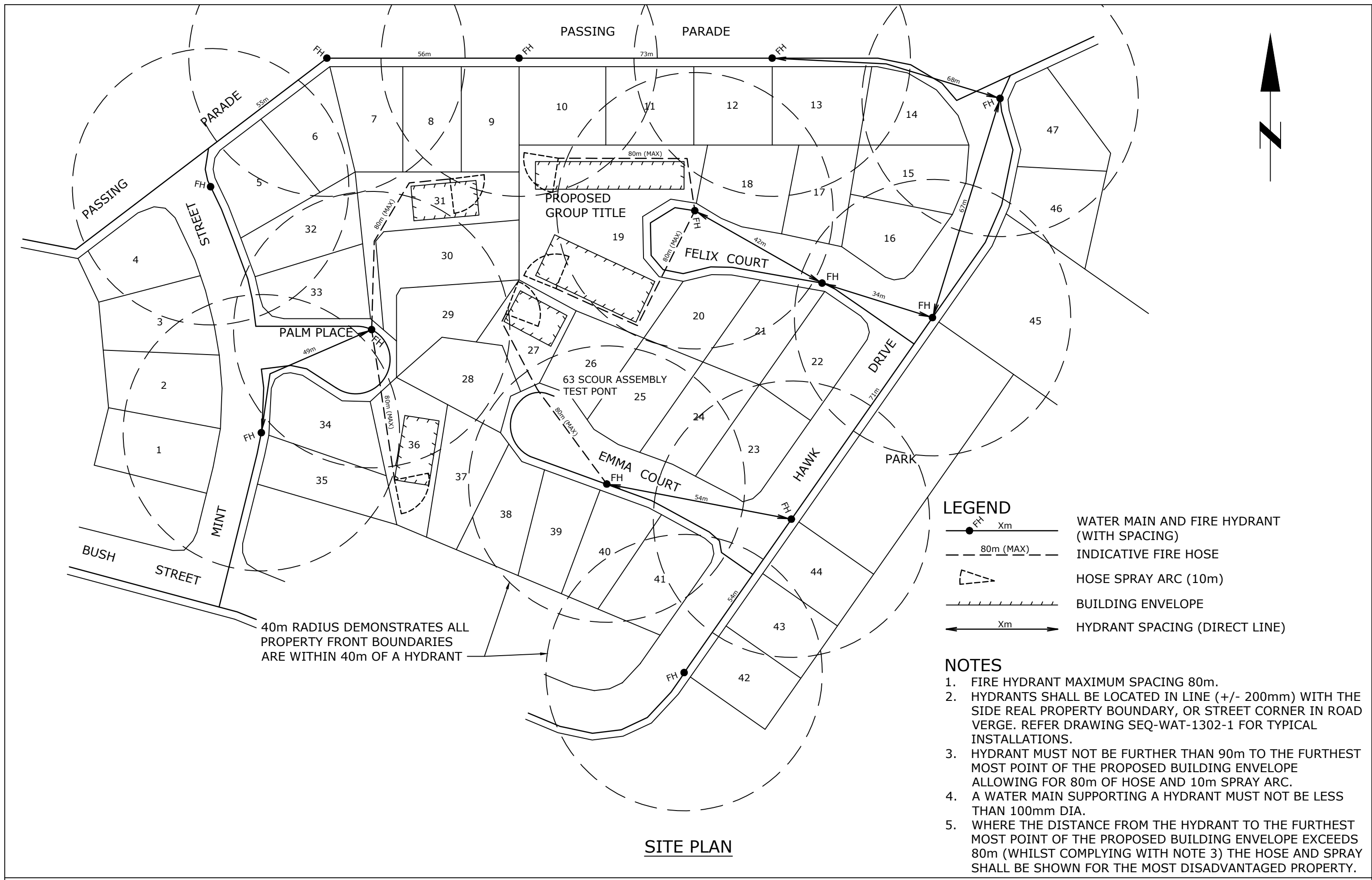
- K. PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS SHALL BE REINSTATED.
- L. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND WATER SUPPLY CODE SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. ADOPT LIP OF KERB OR SHOULDER OF ROAD AS PERMANENT LEVEL.
4. COVER ON MAINS FROM PERMANENT LEVEL TO BE AS SHOWN IN SEQ-WAT-1200-2.
5. CONDUITS TO BE INSTALLED IN ACCORDANCE WITH THE STANDARD DRAWINGS.
6. A WATER METER SUPPLIED AT THE DEVELOPER'S COST, IS TO BE INSTALLED AT THE SERVICE POINT OF EACH LOT IN ACCORDANCE WITH THE STANDARD DRAWING FOR THE SEQ-SP.
7. ALL MATERIALS USED IN THE WORKS SHALL COMPLY WITH THE SEQ-SP's ACCEPTED PRODUCTS AND MATERIALS LIST OR BE APPROPRIATELY SHOWN, LISTED AND DEFINED IN THE ENGINEERING SUBMISSION SO THAT THE ALTERNATIVE PRODUCT OR MATERIAL CAN BE ASSESSED AND IF APPROPRIATE, APPROVED BY THE SEQ-SP.
8. ALL CONCRETE FOOTPATHS TO BE CLEAR OF WATER MAINS.
9. TEST/CHLORINATION POINTS TO BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING NO.SEQ-WAT-1410-1.
10. THE CONSTRUCTION OF THE WATER RETICULATION WORK SHOWN ON THIS DRAWING MUST BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT TO THE RETICULATION SYSTEM.

ALL ENVIRONMENT PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.

REV. No.	DATE	DESCRIPTION	AUTH.	SEQ WATER SERVICE PROVIDERS <small>WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION</small>	WATER SUPPLY STANDARD DRAWING	CoGC	LCC	RCC	UU	UW
				NOT FOR CONSTRUCTION	TYPICAL WATER RETICULATION DESIGN PLAN NOTES SHEET 3	DRAWING No. SEQ-WAT-1101-3				VERSION B
B	01/02/24	NOTE D. NOTES RENUMBERED. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.		<small>SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ</small>		NOT TO SCALE				<small>ORG DATE: 1/1/2013</small>



SITE PLAN

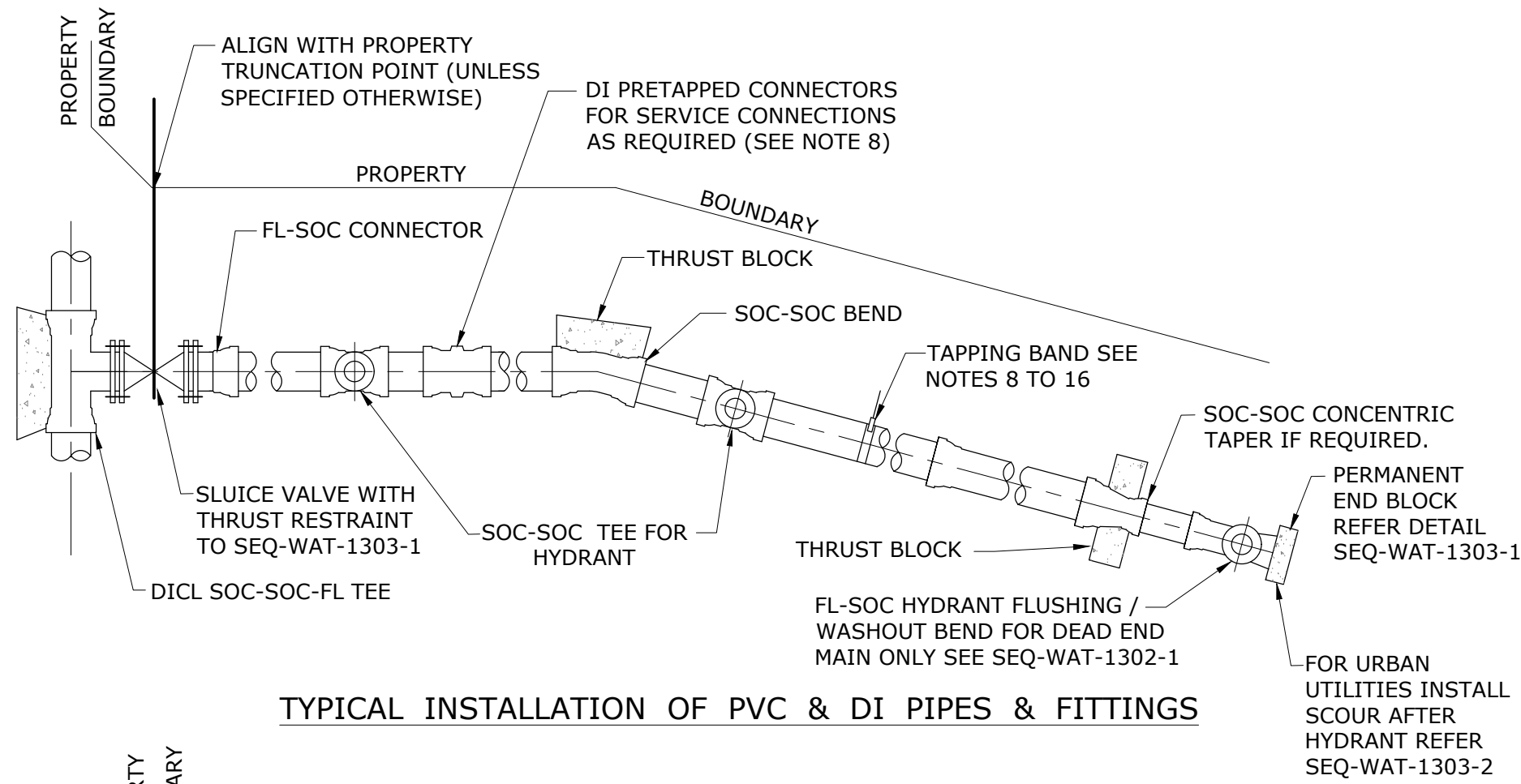
REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

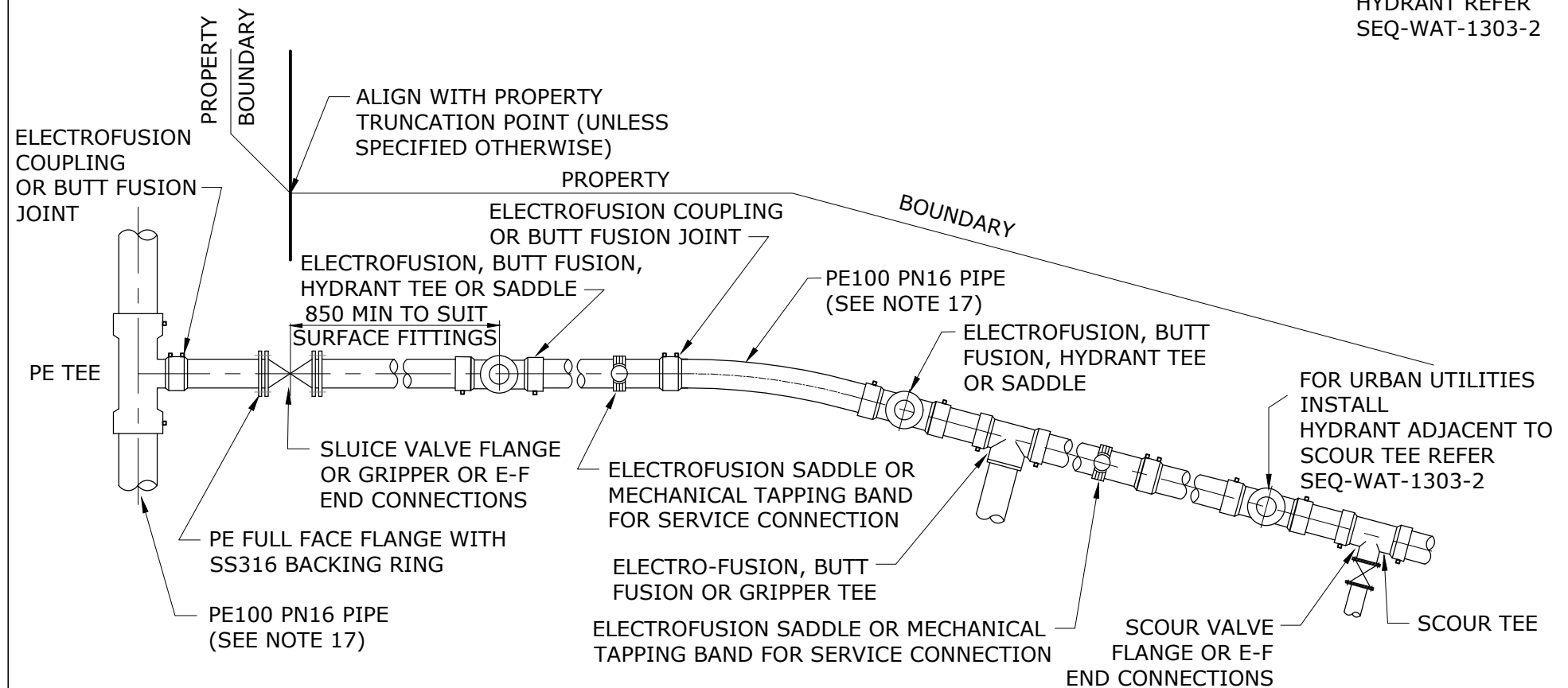
NOT FOR CONSTRUCTION
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WATER STANDARD DRAWING
TYPICAL WATER RETICULATION
FIRE HYDRANT LOCATION DETAILS
SHEET 4

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1101-4				A
NOT TO SCALE				ORG DATE: 01/02/24



TYPICAL INSTALLATION OF PVC & DI PIPES & FITTINGS



TYPICAL INSTALLATION OF PE PIPES & FITTINGS

(FOR CUT-IN DETAILS SEE SEQ-WAT-1105-1)

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. INSTALL PIPEWORK PARALLEL TO PROPERTY BOUNDARIES.
3. MAIN, SERVICE AND METER SHALL BE INSTALLED BY THE DEVELOPER.
4. WRAP FLANGES AND BOLTS, WITH A PETROLATUM TAPE SYSTEM IN ACCORDANCE WITH SEQ-WAT-1313.
5. DEFLECTION DETAILS I.E. PIPE LENGTH AND OFFSET SHALL BE DETAILED ON DESIGN DRAWING.

DI & PVC PIPE

6. DUCTILE IRON FITTINGS MAY BE USED WITH DI & PVC PIPE. FITTINGS SHALL BE FBE COATED AND LINED. CEMENT LINED WITH A BITUMINOUS EXTERNAL COATING MAY BE USED WITH APPROVAL. DO NOT USE PVC FITTINGS.
7. PE SLEEVING, COLOURED FOR THE PRODUCT IS REQUIRED ON ALL DI PIPE AND FITTINGS APPLIED IN ACCORDANCE WITH AS 3681. TWO THICKNESS REQUIRED BETWEEN FITTINGS AND THRUST BLOCK. REINSTATE ANY DAMAGED SLEEVING AS PER MANUFACTURER'S SPECIFICATIONS.
8. USE PRE-TAPPED CONNECTORS ON DN100 TO DN300 NEW MAIN INSTALLATIONS.
9. USE TAPPING BANDS FOR CONNECTIONS TO EXISTING MAINS.

PVC PIPE

10. USE PRE-TAPPED CONNECTORS, REFER NOTE 8.
11. PVC PIPE SHALL NOT BE IN CONTACT WITH THRUST BLOCK CONCRETE.
12. MAXIMUM SIZE OF DRILLED HOLES FOR SERVICE CONNECTIONS IN PVC PIPE TO BE 30% OF DN OR 50 (LOWER VALUE TO BE USED).
13. DI SPIGOTS SHALL NOT BE FITTED INTO PVC SOCKETS.
14. PVC PIPE SHALL NOT BE BENT OR CURVED.

DI PIPE

15. DIRECT TAPPING OF DICL PIPE IS PROHIBITED.
16. ELECTRICALLY ISOLATE COPPER SERVICES FROM DI PIPE.

PE PIPE

17. PE PIPE MAY BE COLD BENT TO MAXIMUM RADIUS AS PER POP 202, STAKES OR OTHER SOURCES OF POINT LOADS SHALL NOT BE USED TO ASSIST IN BENDING THE PIPE.
18. MAKE ALLOWANCE DURING CONSTRUCTION FOR EXPANSION AND CONTRACTION OF PE PIPE DUE TO TEMPERATURE CHANGES.
19. ELECTROFUSION AND BUTT WELDING TO BE IN ACCORDANCE WITH WSA-01 (POLYETHYLENE CODE), BUTT WELDING IN TRENCHES IS NOT PERMITTED.
20. ALL MECHANICAL COUPLINGS TO BE SELF-RESTRAINING.
21. REFER SEQ-WAT-1409-1 FOR TYPICAL PE ARRANGEMENTS.

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	16/09/15	NEW NOTES 5 & 14 ADDED, 9 MOVED UNDER 'DI PIPE'. DRG REF FOR SCOUR AFTER HYDRANT DETAIL AMENDED.	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

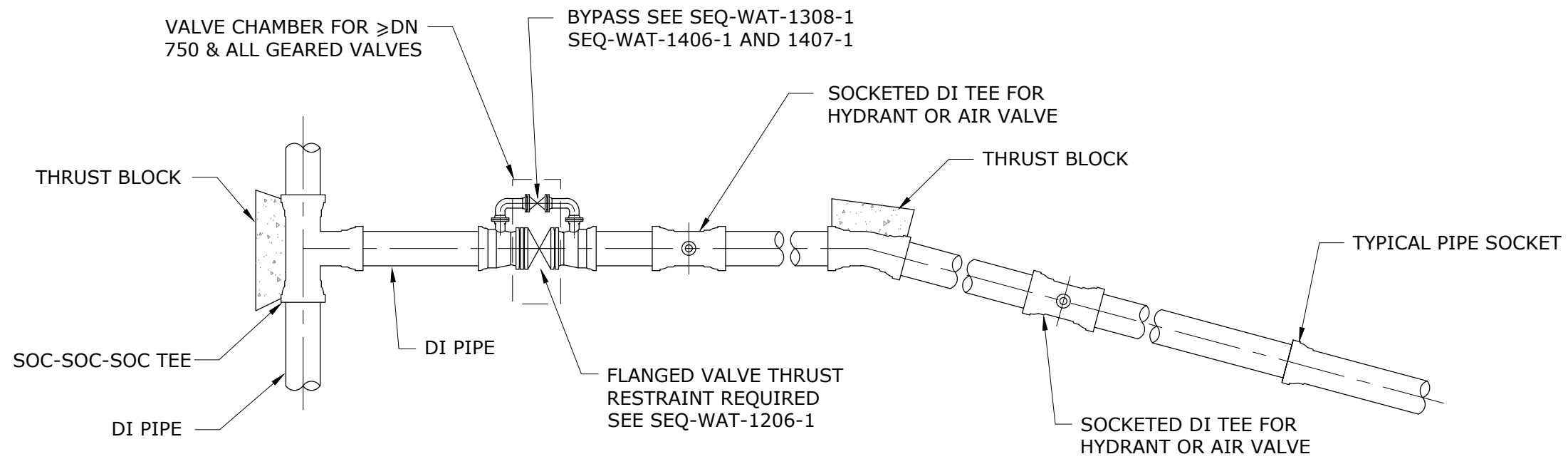
NOT FOR CONSTRUCTION

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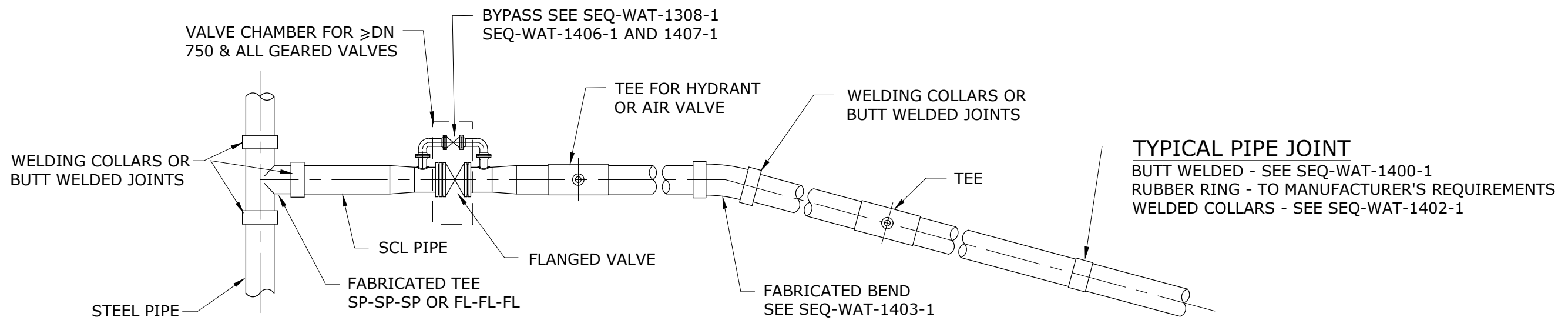
WATER SUPPLY STANDARD DRAWING

TYPICAL MAINS CONSTRUCTION
 RETICULATION MAIN ARRANGEMENTS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1102-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



TYPICAL INSTALLATION OF DI MAINS



TYPICAL INSTALLATION OF STEEL MAINS

(THRUST BLOCKS REQUIRED WHERE NON-RESTRAINING RUBBER RING JOINTS USED)

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. PROVIDE CORROSION PROTECTION FOR ALL MAINS AND FITTINGS IN ACCORDANCE WITH CODE.
3. SERVICE CONNECTIONS NOT PERMITTED ON DN375 AND LARGER MAINS. (REFER SEQ-SP CONNECTIONS POLICY).
4. CONTACT SEQ-SP FOR PREFERRED TRUNK MAIN AND VALVE LAYOUT AND DESIGN

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

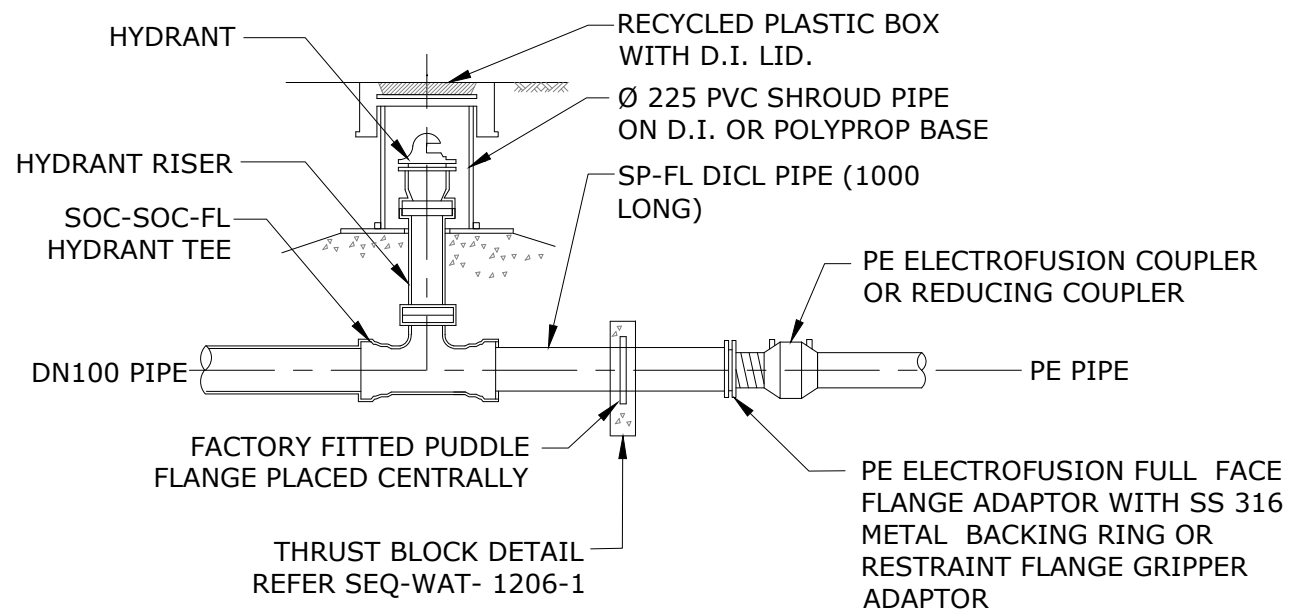
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WATER SUPPLY STANDARD DRAWING

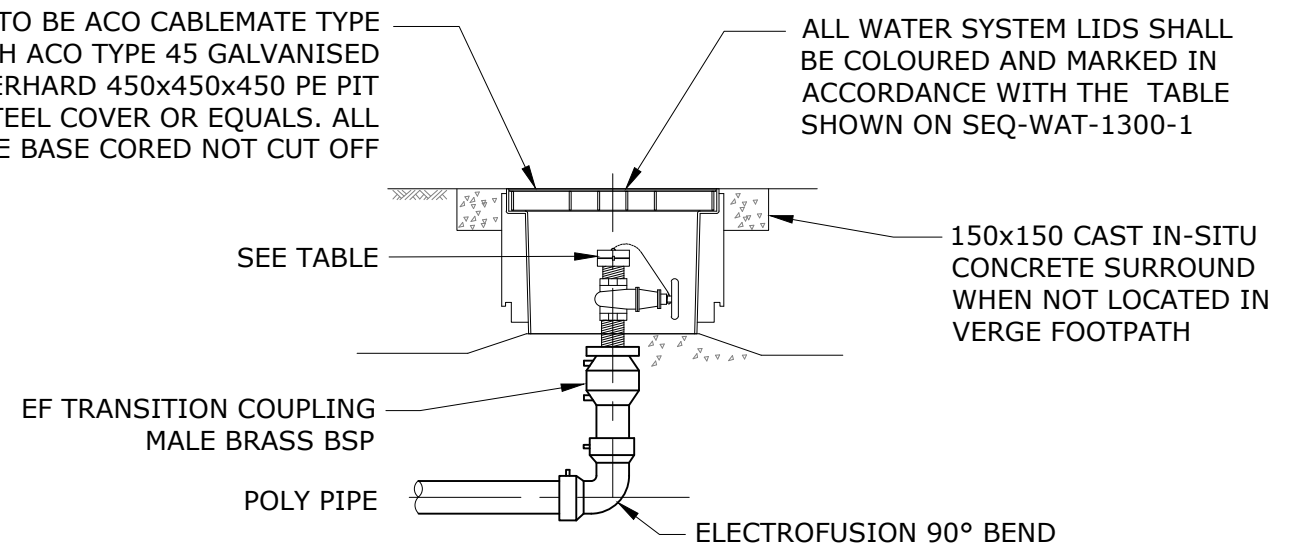
TYPICAL MAINS CONSTRUCTION
DISTRIBUTION AND TRANSFER MAIN
ARRANGEMENTS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1103-1				B
NOT TO SCALE				ORG DATE: 1/1/2013



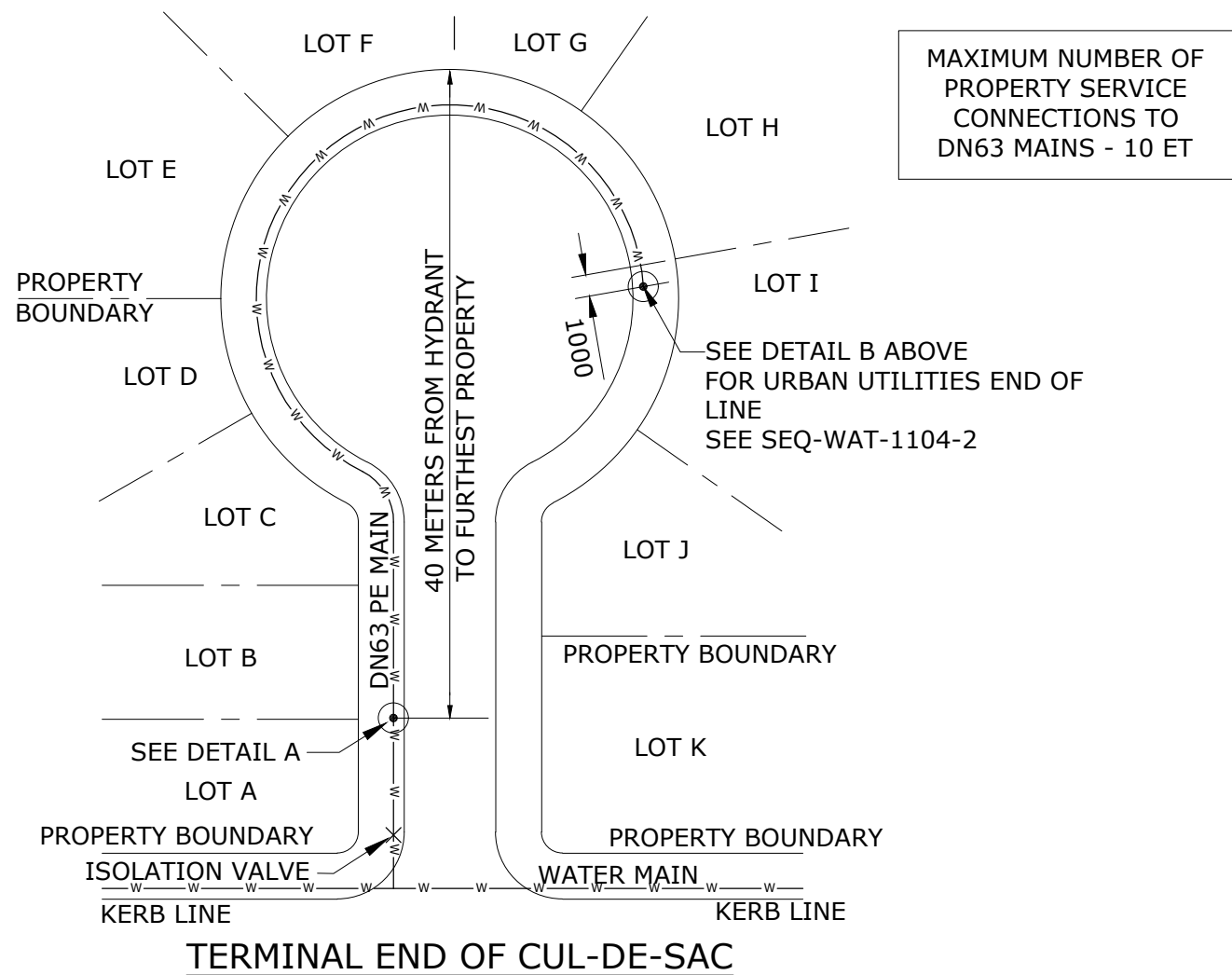
DETAIL A
IN-LINE CONNECTION

FLUSHING POINT BOX TO BE ACO CABLEMATE TYPE 45 POLYCRETE PIT WITH ACO TYPE 45 GALVANISED STEEL COVER OR EVERHARD 450x450x450 PE PIT WITH GALVANISED STEEL COVER OR EQUALS. ALL PITS ARE TO HAVE THE BASE CORED NOT CUT OFF



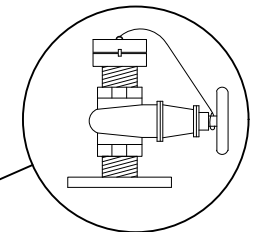
DETAIL B
FLUSHING POINT AT END OF LINE
AND HEAD OF CUL-DE-SAC

(FOR URBAN UTILITIES END OF LINE SEE SEQ-WAT-1104-2)



TERMINAL END OF CUL-DE-SAC

FLUSHING POINT FITTINGS TABLE			
	VALVE F-F	COUPLING-M	DUST CAP
POTABLE	1 1/2" BRASS GATE VALVE WITH BRASS HAND WHEEL (SEE NOTE 13)	38 mm BRASS STORZ X 1 1/2" BSP (SEE NOTE 13)	YES



NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
- PIPE MATERIAL TO BE IN ACCORDANCE WITH ACCEPTED PRODUCTS AND MATERIALS LIST.
- PE ELECTROFUSION (EF) FITTINGS TO BE CLASS PN16.
- WHERE POSSIBLE USE A SINGLE LENGTH OF PE PIPE.
- DO NOT CURVE PE PIPES TO A RADIUS OF LESS THAN 25 TIMES PIPE OD.
- BACKING FLANGES, NUTS, BOLTS AND WASHERS TO BE MANUFACTURED FROM GRADE 316 STAINLESS STEEL.
- THRUST BLOCKS TO BE IN ACCORDANCE WITH SEQ-WAT-1205-1.
- PVC PIPE MAY BE USED AS SHROUD PIPE, CUT AS REQUIRED TO CLEAR HYDRANT FLANGE.
- FOR HYDRANT COVERS AND SURROUNDS DETAILS SEE SEQ-WAT-1302.
- FIT THE FLUSHING POINT VALVE IN SUCH A WAY AS TO PREVENT MOVEMENT OR ROTATION OF THE VALVE BODY. PROVIDE A SUITABLE DUST CAP TO KEEP OUT DIRT AND GRAVEL. DRILL DUST CAP WITH 4 DIA DRILL.
- FOR CONNECTION TO EXISTING MAINS SEE ALSO SEQ-WAT-1105-1.
- TYPICAL HYDRANT PIPEWORK ASSEMBLIES ARE DETAILED IN SEQ-WAT-1302-1.
- UNITYWATER REQUIRES STAINLESS STEEL BALL VALVE AND STAINLESS STEEL STORZ FITTING

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	25/06/18	NOTE ADDED FOR UNITYWATER CUL-DE-SAC UPDATED	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

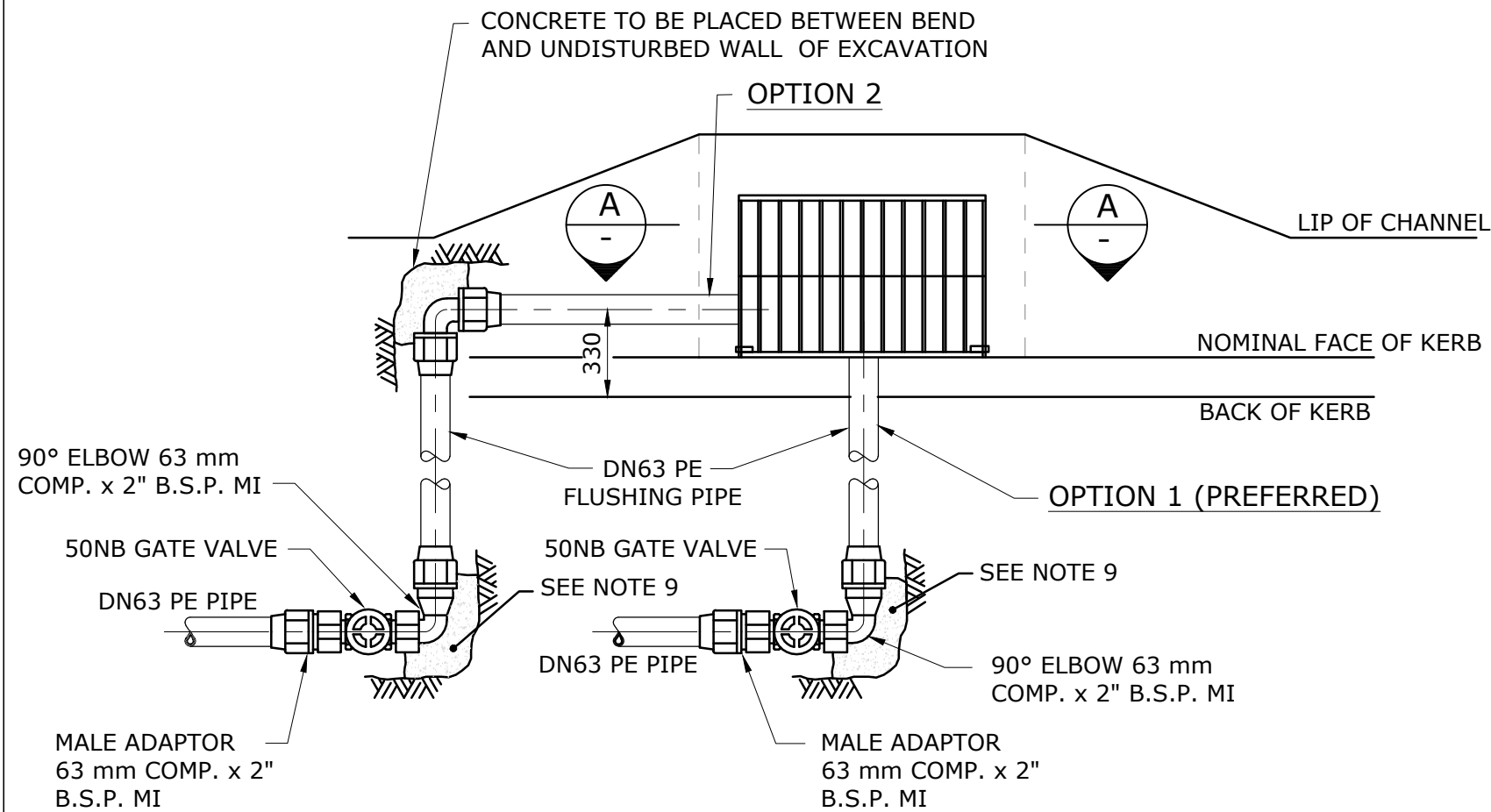
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WATER SUPPLY STANDARD DRAWING

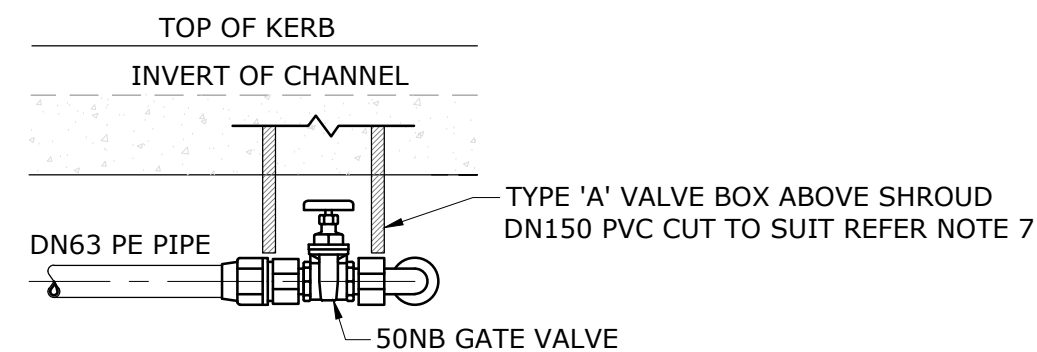
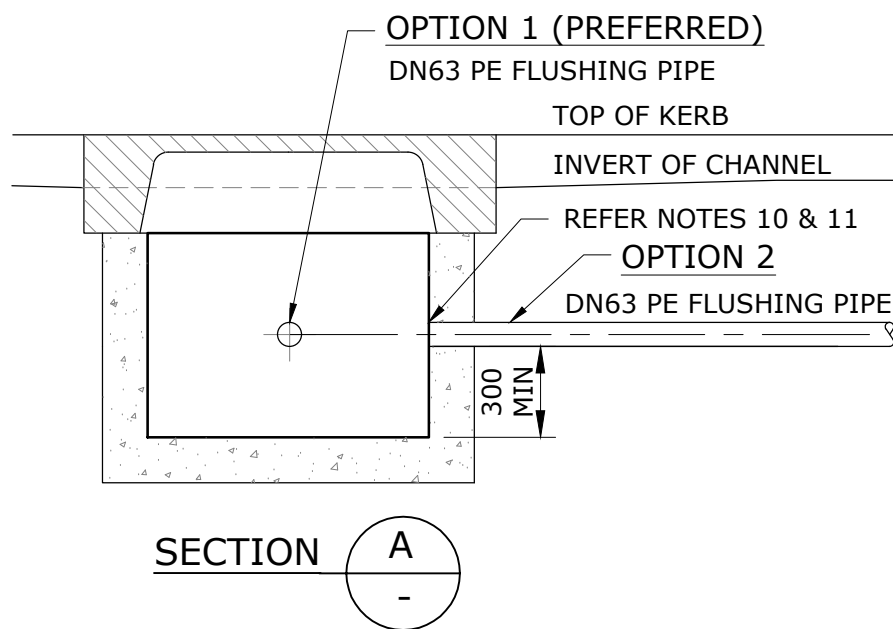
TYPICAL

DN63 PE CUL-DE-SAC ARRANGEMENT

CoGC	LCC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1104-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



PLAN
FLUSHING PIPE INTO GULLY PIT



ELEVATION
GATE VALVE ARRANGEMENT

NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND WATER SUPPLY CODE SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. DN63 POLYETHYLENE PIPES SHALL BE CLASS PN16 PE100 AND COMPLY WITH A.S. 4130. FITTINGS SHALL COMPLY WITH A.S. 4129.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. FLUSHING PIPE SHALL ONLY DISCHARGE INTO OPEN GRATED TYPE GULLY PITS.
6. FLUSHING PIPE SHALL BE NOMINALLY ≤ 6.0 METRES LONG.
7. PROVIDE CHAMBER OVER 50NB GATE VALVE IN ACCORDANCE WITH STANDARD DRAWING SEQ-WAT-1301-1.
8. CONCRETE SHALL BE CLASS N20.
9. PROVIDE A 10 kg BAG OF CONCRETE FOR PIPE SUPPORT AS SHOWN.
10. FLUSHING PIPE SHALL BE GROUTED IN TO GULLY PIT WALL AND FINISH FLUSH WITH THE INSIDE FACE OF THE GULLY PIT.
11. THE END OF THE FLUSHING PIPE THAT DISCHARGES INTO THE GULLY PIT SHALL PAINTED BLUE WITH A SUITABLE HEAVY DUTY PAINT TO ASSIST IN VISUALLY IDENTIFYING THAT THIS PIPE RELATES TO WATER RETICULATION INFRASTRUCTURE, RATHER THAN STORMWATER DRAINAGE INFRASTRUCTURE.
12. FOR GREENFIELD INSTALLATIONS, END OF LINES SHALL BE DESIGNED TO ENABLE MAIN TO DISCHARGE INTO EXISTING OR PROPOSED GULLY PIT, WHERE PRACTICABLE.
13. FOR BROWNFIELD INSTALLATIONS, END OF LINES SHALL BE DESIGNED TO DISCHARGE INTO EXISTING GULLY PITS WHERE PRACTICABLE.
14. DISCHARGE TO KERB OR CHANNEL MAY NOT BE ALLOWED BY SOME ROAD OWNERS.
15. WHERE IT IS NOT POSSIBLE FOR THE FLUSHING PIPE TO DISCHARGE INTO A GULLY PIT, A DESIGN THAT IS ACCEPTABLE TO THE ROAD OWNER AND THE SEQ-SP SHALL BE PROVIDED.
16. IN SITUATIONS WHERE THERE IS NO KERB AND CHANNEL, THE FLUSHING PIPE MAY DISCHARGE ON TO A 500 (L) X 250 (W) X 250 (D) CONCRETE APRON CONSTRUCTED IN A GRASSED AREA, OR OTHERWISE DISCHARGE INTO A WATER COURSE, PROVIDED THAT THE ARRANGEMENT IS APPROPRIATELY DESIGNED TO ENSURE EROSION OF THE SURROUNDING ENVIRONMENT DOES NOT OCCUR AND THE PROPOSED ARRANGEMENT IS ACCEPTABLE TO THE RELEVANT ROAD OWNER AND IMPACTED LAND OWNERS.
17. ALL POLY TO METAL CONNECTIONS SHALL BE EITHER MALE TO FEMALE CONFIGURATION. ie. METAL FEMALE FITTINGS AND POLY MALE FITTINGS, OR E.F. TRANSITION COUPLERS.
18. GATE VALVES SHALL BE FITTED WITH BRASS HAND WHEELS.

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	17/12/18	AMENDED DETAILS AND DRAWING NO LONGER APPLIES TO RCC	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

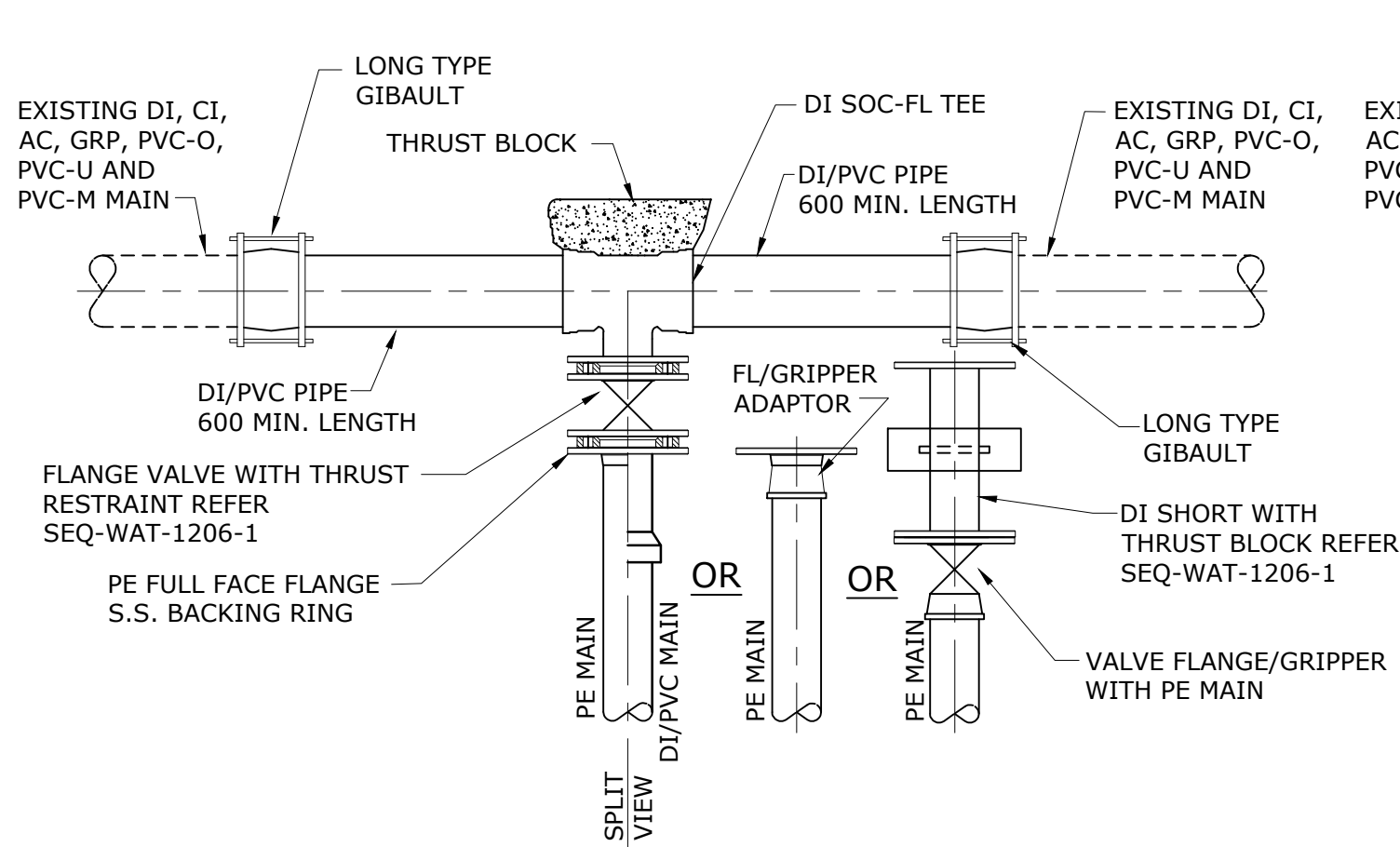
NOT FOR CONSTRUCTION

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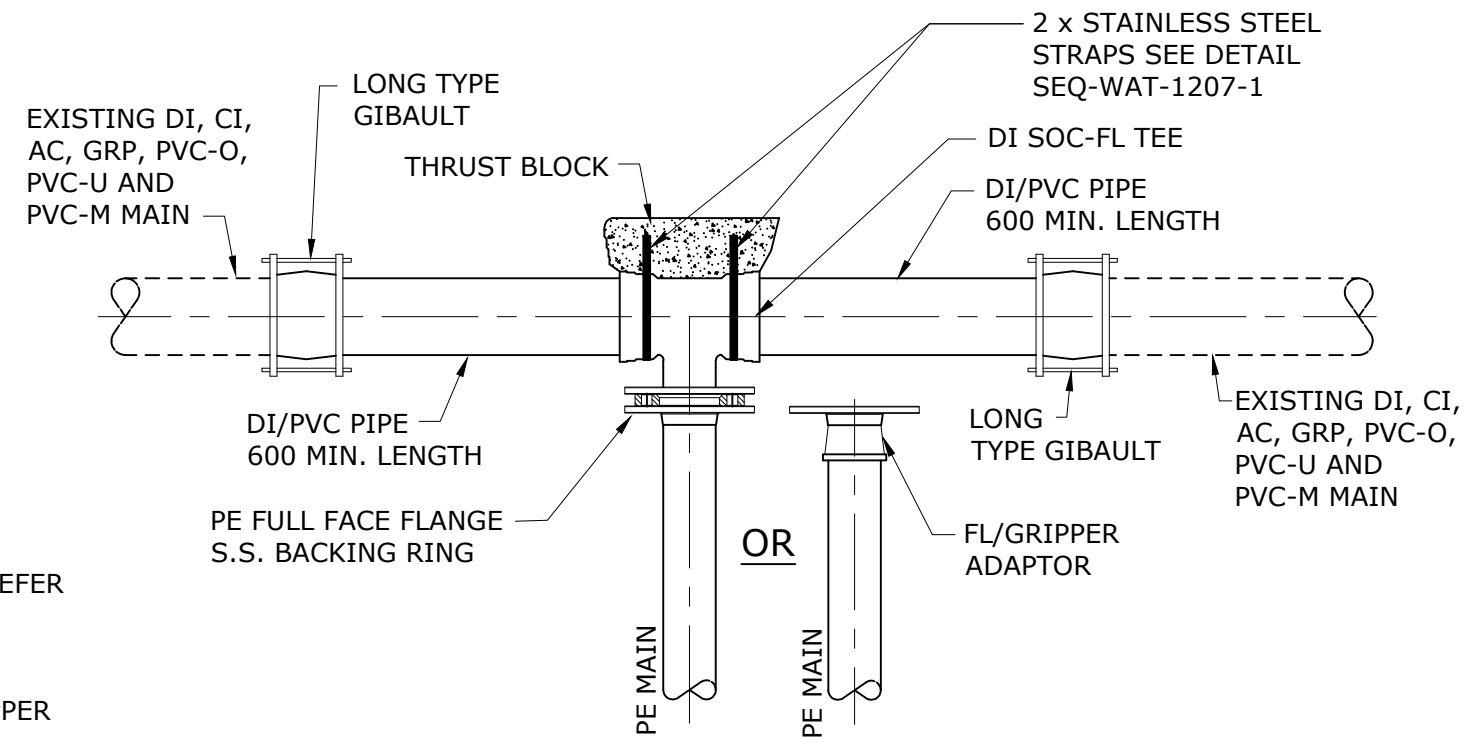
WATER SUPPLY STANDARD DRAWING

TYPICAL
FLUSHING DETAILS FOR
DN63 PE MAINS

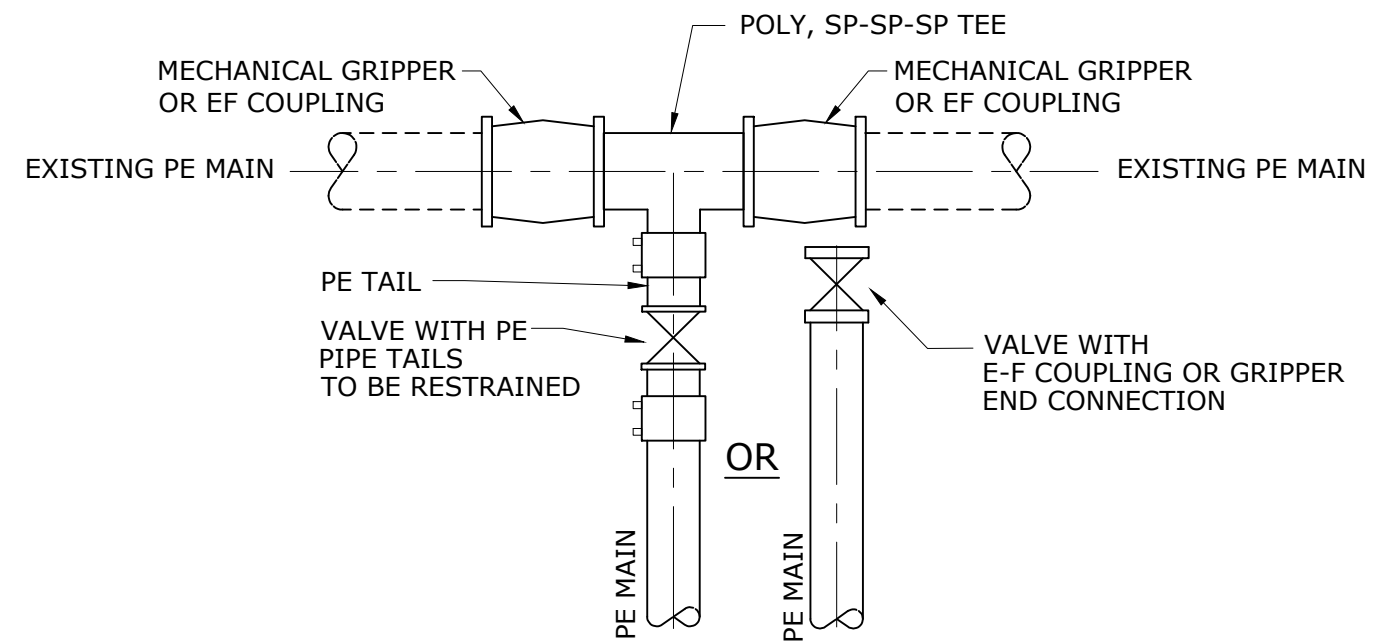
CQC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1104-2				C
NOT TO SCALE				ORG DATE: 1/1/2013



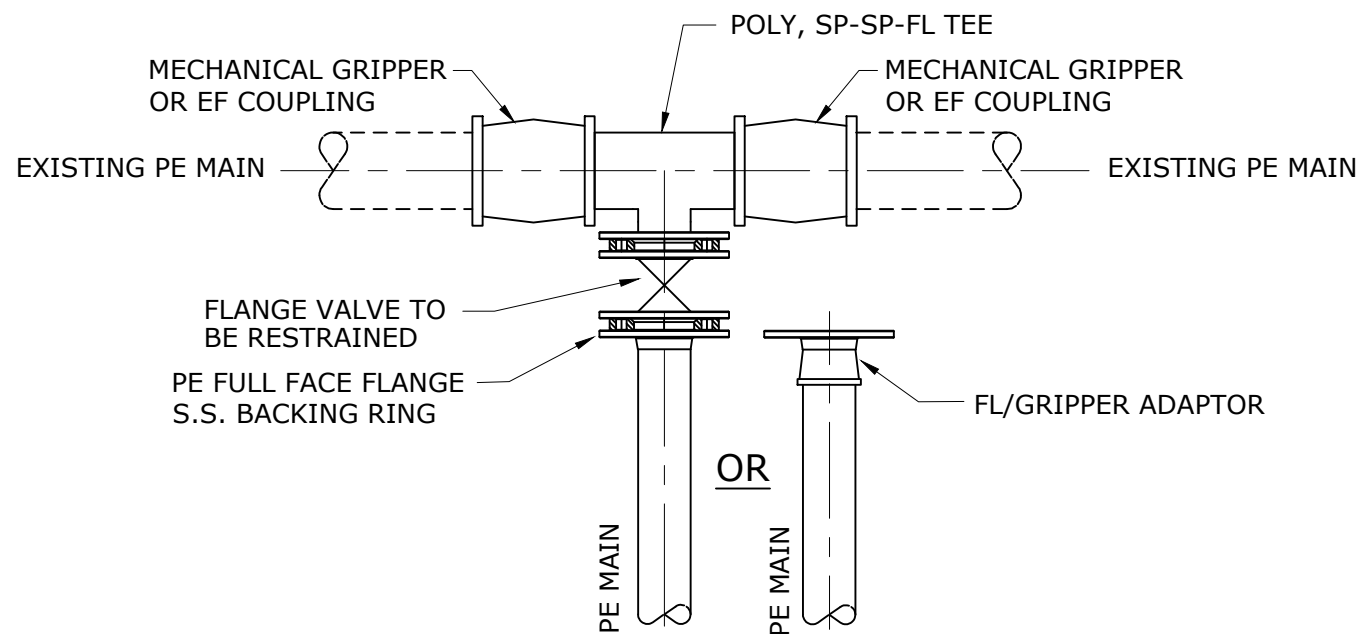
CUT-IN WITH VALVE INTO EXISTING MAIN
(CoGC PREFERRED METHOD SEE NOTE 5)



CUT-IN TO EXISTING MAIN



CUT-IN TO EXISTING PE MAIN WITH VALVE WITH PE TAIL, E-F OR GRIPPER CONNECTION



CUT-IN TO EXISTING PE MAIN WITH FLANGE VALVE

NOTES

1. REFER TO DRAWINGS SEQ-WAT-1102-1 AND SEQ-WAT-1105-2 FOR NOTES.
2. HYDRANT CONNECTIONS AND DI TO PE FLANGE CONNECTIONS SHALL COMPRISE PE FULL FACE FLANGE WITH 316 S.S BACKING RING.

3. EF FITTINGS SHALL ONLY BE USED IF EXISTING PE MAIN IS COMPLETELY DRY.
4. PE MAIN SHALL HAVE APPROPRIATE THRUST RESTRAINTS / LINE ANCHORS WHERE PIPE MATERIAL CHANGES.
5. CoGC PREFERS SOC-SOC TEE CUT-IN WITH TWO SHORT PIPES FOR CUTTING INTO EXISTING DI/PVC PIPES. USE OF SP-SP TEE WITHOUT SHORT PIPES NEEDS CoGC'S APPROVAL.

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	TYPO SPLIT. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	23/05/19	ADDED SPLIT VIEW, NOTE 5. DRAFTING IMPROVEMENT. MINOR CHANGES.	
B	3/12/18	UPDATED NOTES AND DETAILS	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

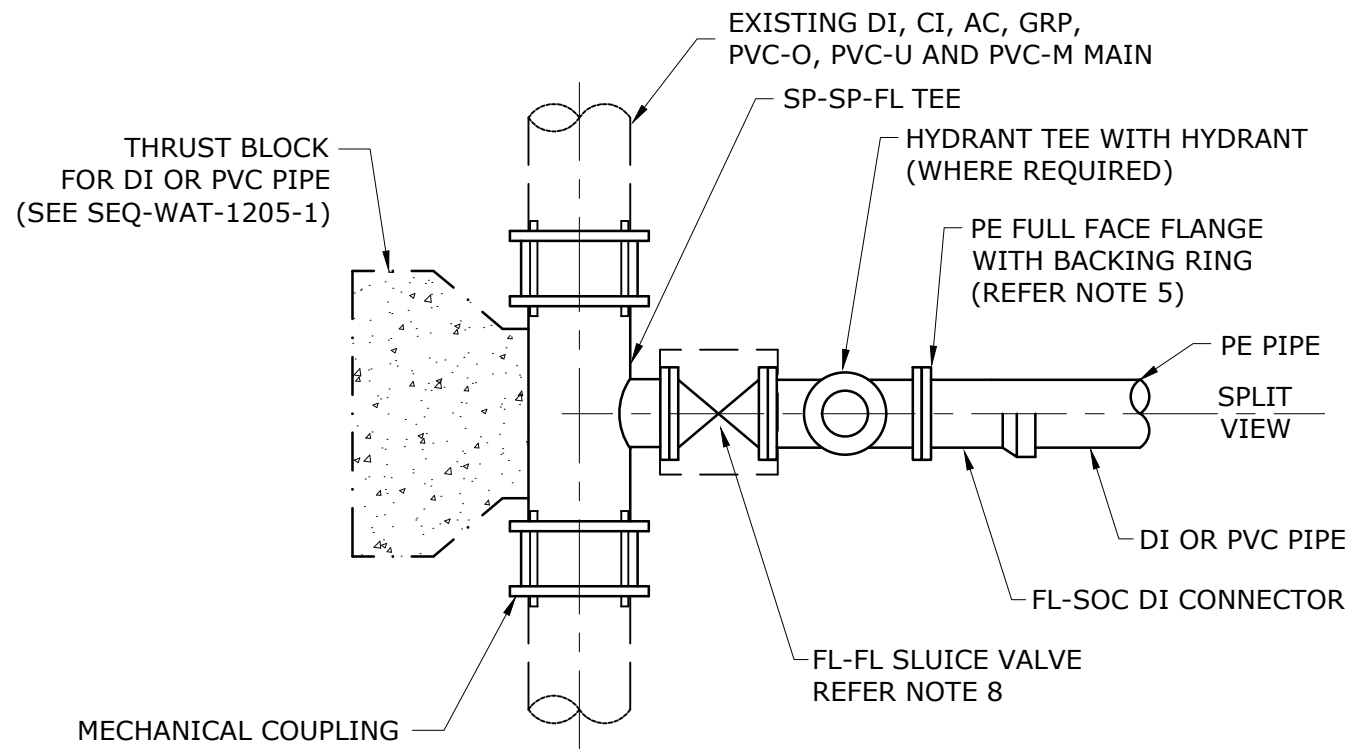
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WATER SUPPLY STANDARD DRAWING

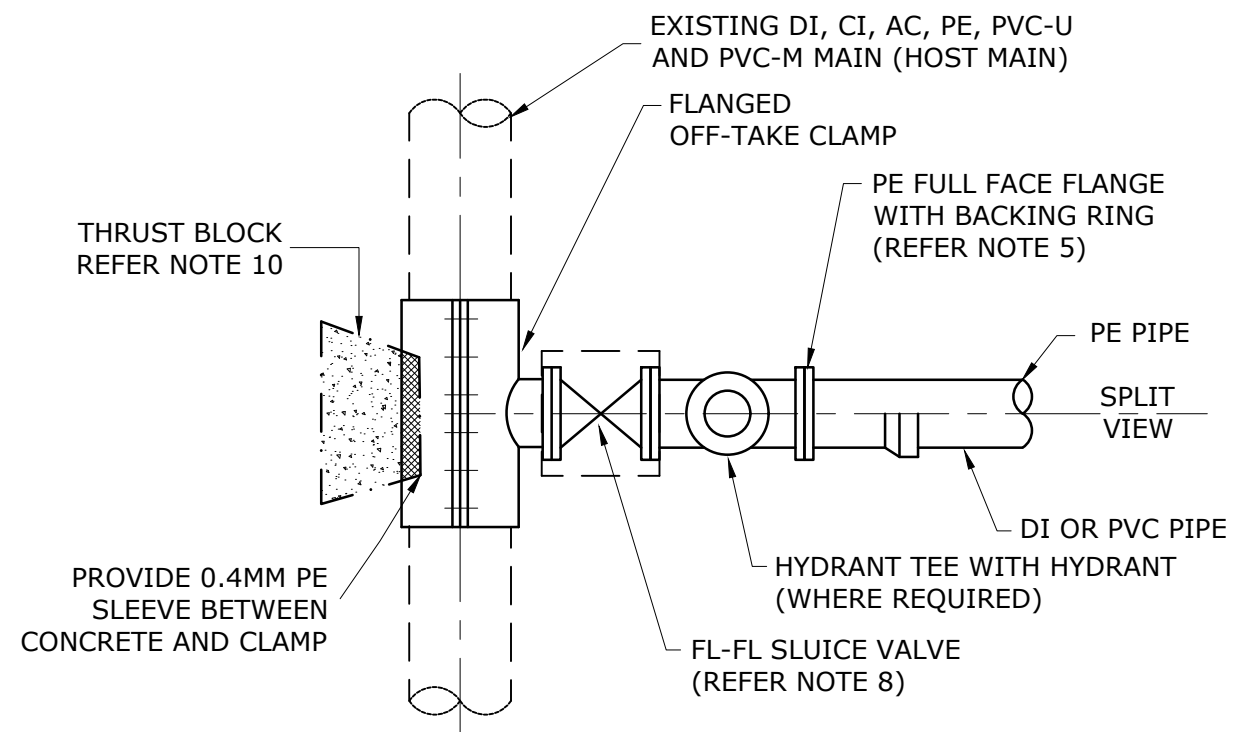
TYPICAL CONNECTION TO EXISTING MAINS

SHEET 1 OF 2

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1105-1				D
NOT TO SCALE				ORG DATE: 1/1/2013

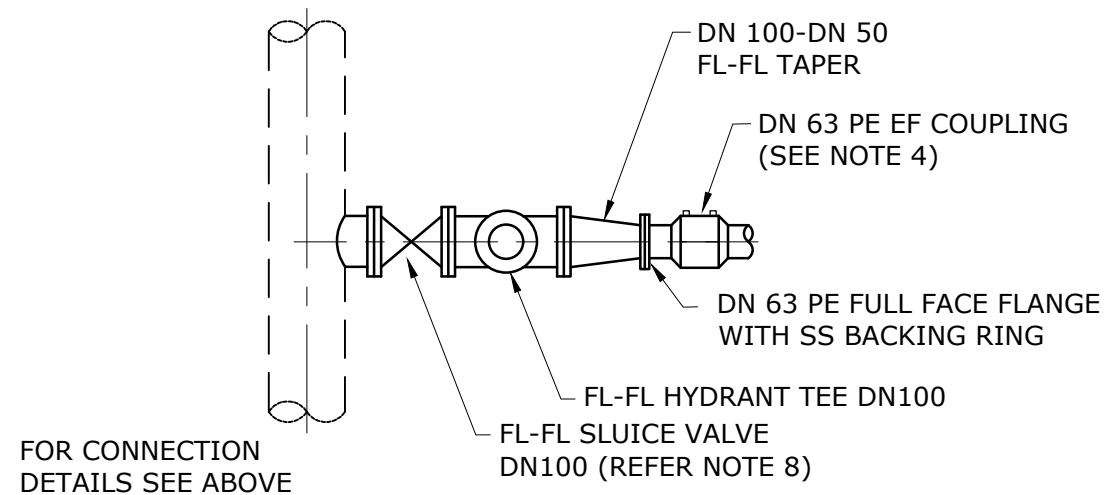


CUT-IN CONNECTION METHOD
(SEE NOTE 5 OF SEQ-WAT-1105-1)



UNDER PRESSURE CONNECTION METHOD
(REFER WSA03 APPENDIX 'C' UPCIC)
(USING FULL WRAP FLANGED OFFTAKE)
USE OF THIS METHOD IN LCC AREAS SUBJECT TO PRIOR APPROVAL

CONNECTION METHODS FOR OFFTAKE ≥ DN 100 DI, PVC AND PE PIPE



CONNECTION METHOD FOR DN 63 PE PIPE
(WHERE VALVE & HYDRANT REQUIRED)

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. S.S. OFF-TAKE CLAMP TO BE GRADE 316 S.S. AND OF FULL WRAP CONFIGURATION.
3. ALL DI/CL PIPE AND FITTINGS TO BE SLEEVED OR RE-SLEEVED WITH POLYETHYLENE SLEEVING OR PETROLATUM TAPE SYSTEM.
4. PE ELECTROFUSION (EF) FITTINGS TO BE CLASS PN 16 ALTERNATIVE PE CONNECTIONS SHOWN IN SEQ-WAT-1313-1.
5. BACKING RINGS FOR PE FLANGES TO BE MANUFACTURED FROM 316 S.S. ALL BOLTS, NUTS & WASHERS TO BE 316 GRADE S.S.
6. USE GASKETS IN ACCORDANCE WITH CODE FOR ALL FLANGED CONNECTIONS.
7. DO NOT USE 'UNDER PRESSURE CONNECTIONS' ON GRP PIPE.
8. ALL VALVES SHALL BE THRUST RESTRAINED BY EITHER FORMAT SHOWN IN SEQ-WAT-1206-1.
9. WHERE A CUT-IN CONNECTION IS REQUIRED INTO AN EXISTING AC MAIN, THE AC MAIN SHALL BE REPLACED FROM COLLAR TO COLLAR WITH AN APPROVED PIPE MATERIAL.
10. FOR UNDER PRESSURE CONNECTIONS, THRUST BLOCKS ARE NOT REQUIRED FOR EXISTING HOST MAINS SMALLER THAN DN300. THRUST BLOCKS ARE REQUIRED FOR DN300 AND LARGER BRANCHES, IN WHICH CASE THE THRUST BLOCK MAY BE REDUCED IN SIZE BY 50%.
11. REFER TO DRAWINGS SEQ-WAT-1102-1 AND SEQ-WAT-1105-1 FOR NOTES.

REV. No.	DATE	DESCRIPTION	AUTH.
E	01/02/24	NOTES 10&11. NEW LCC REQUIREMENT. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
D	23/05/19	NOTE 11, DRAWING REFERENCES AND DRAWING TITLE AMENDED.	
C	21/09/18	UPDATED CONNECTION METHOD DETAILS AND NOTES	
B	22/07/15	AMENDED UNDER PRESSURE CONNECTION METHOD. ADDED NOTE 9.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

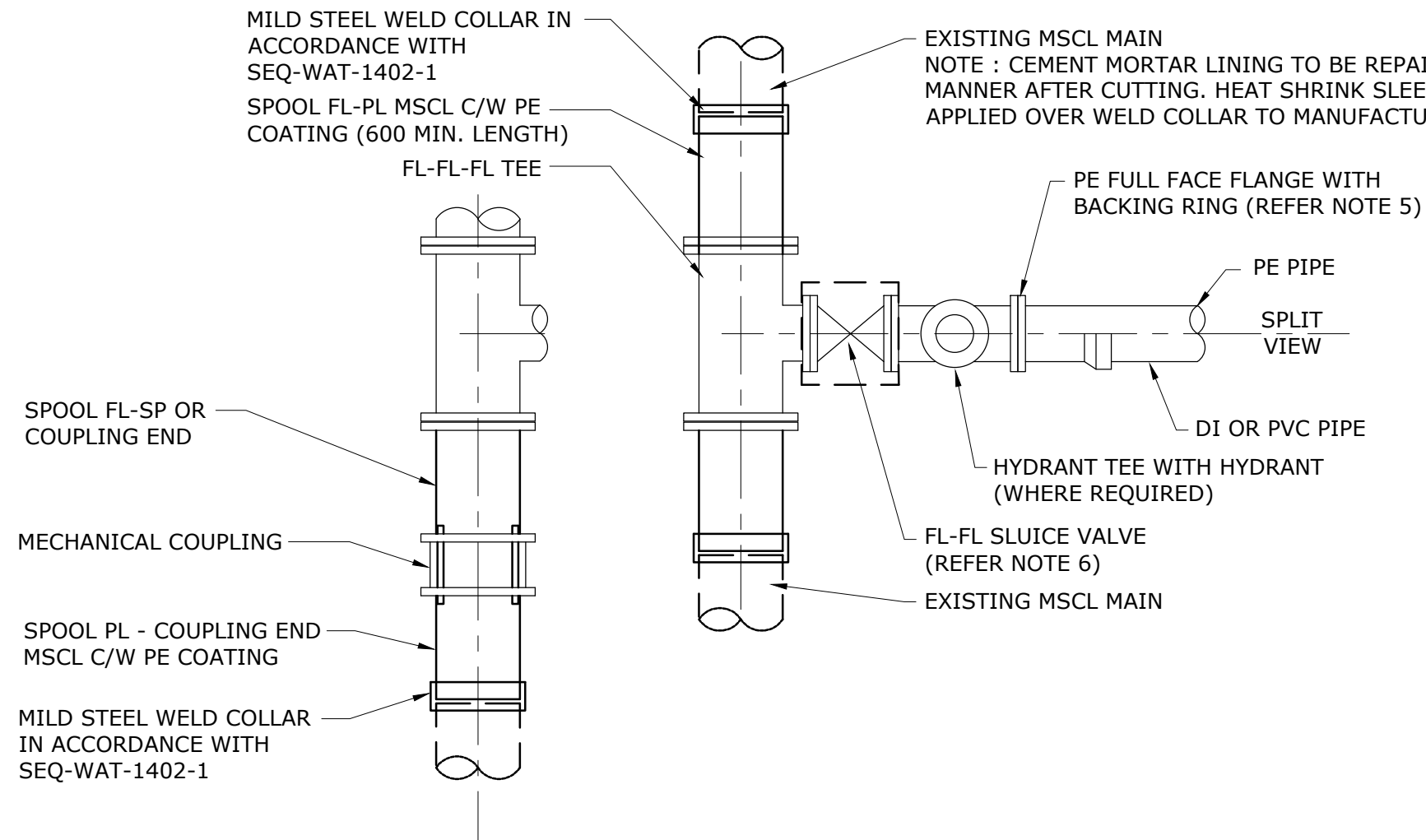
WATER SUPPLY STANDARD DRAWING

TYPICAL

CONNECTION TO EXISTING MAINS

SHEET 2 OF 2

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1105-2				E
NOT TO SCALE				ORG DATE: 1/1/2013



**ALTERNATIVE MECHANICAL COUPLING
STEEL MAIN CONNECTION**
(ACCEPTED BY UW ONLY)

**CUT-IN CONNECTION METHOD
(USING FLANGED FITTING)**

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. ALL DI/CL PIPE AND FITTINGS TO BE SLEEVED OR RE-SLEEVED WITH POLYETHYLENE SLEEVING OR PETROLATUM TAPE SYSTEM.
3. PE ELECTROFUSION (EF) FITTINGS TO BE CLASS PN 16; ALTERNATIVE PE CONNECTIONS (FLANGED) SHOWN IN SEQ-WAT-1313-1.
4. BACKING RINGS FOR PE FLANGES TO BE MANUFACTURED FROM 316 S.S. ALL BOLTS, NUTS & WASHERS TO BE 316 GRADE S.S.
5. USE GASKETS IN ACCORDANCE WITH CODE FOR ALL FLANGED CONNECTIONS.
6. ALL VALVES SHALL BE THRUST RESTRAINED BY EITHER FORMAT SHOWN IN SEQ-WAT-1206-1.
7. PE MAIN SHALL HAVE APPROPRIATE THRUST RESTRAINTS / LINE ANCHORS WHERE PIPE MATERIAL CHANGES.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

**TYPICAL
CONNECTION TO EXISTING
STEEL MAINS**

CoGC	LEC	REC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1105-3				B
NOT TO SCALE				ORG DATE: 1/1/2013

LOCATE MARKER DISCS DIRECTLY OVER SERVICE CONDUITS

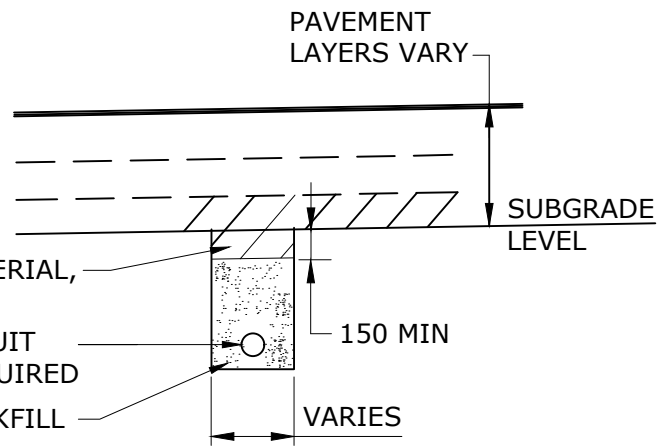
LOCATION OF MARKERS

(SEE SEQ-WAT-1300-1 FOR MARKER LOCATION DETAIL)

COMPACTED PAVEMENT MATERIAL, REFER SEQ-WAT-1200-2

UTILITY SERVICE CONDUIT COMBINATIONS AS REQUIRED

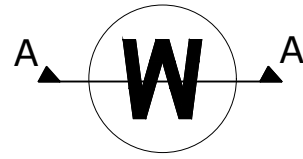
APPROVED TRENCH BACKFILL MATERIAL, REFER CODE SPECIFICATION



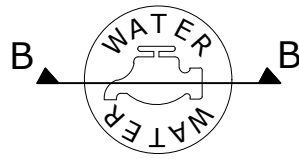
TYPICAL SECTION C-C - SERVICE CONDUIT



• DRINKING WATER SERVICE PIPE (STAINLESS STEEL)



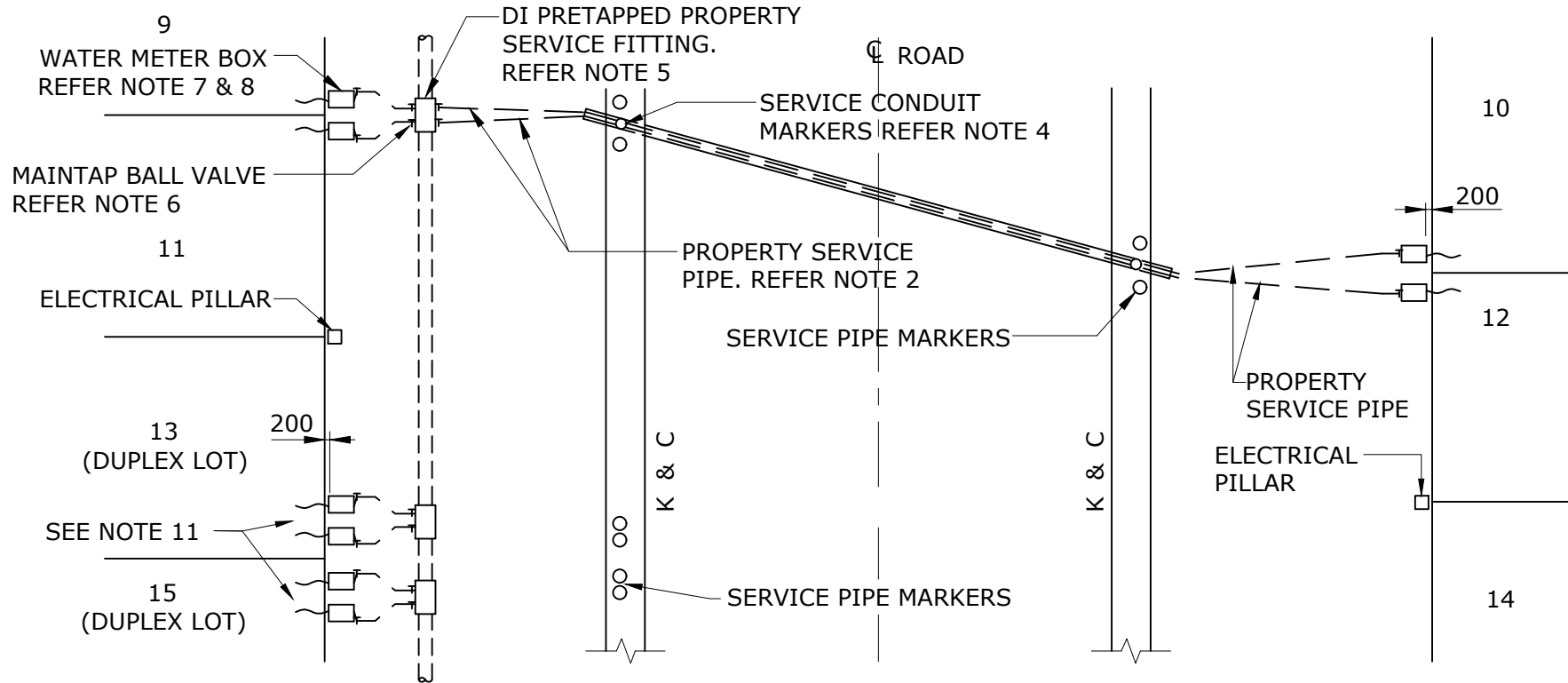
• SERVICE CONDUIT (BRASS)



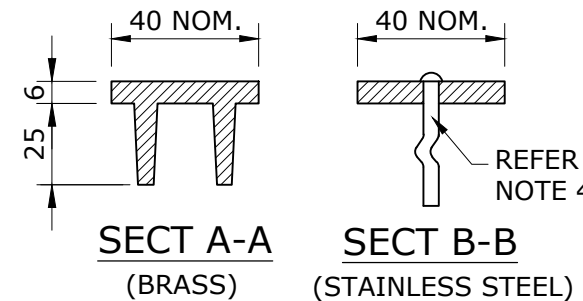
• DRINKING WATER SERVICE PIPE (STAINLESS STEEL)

WATER SERVICE PIPE AND CONDUIT MARKERS

(SERVICE PIPE MARKER ONLY ON KERB OF VERGE WITH METERS)

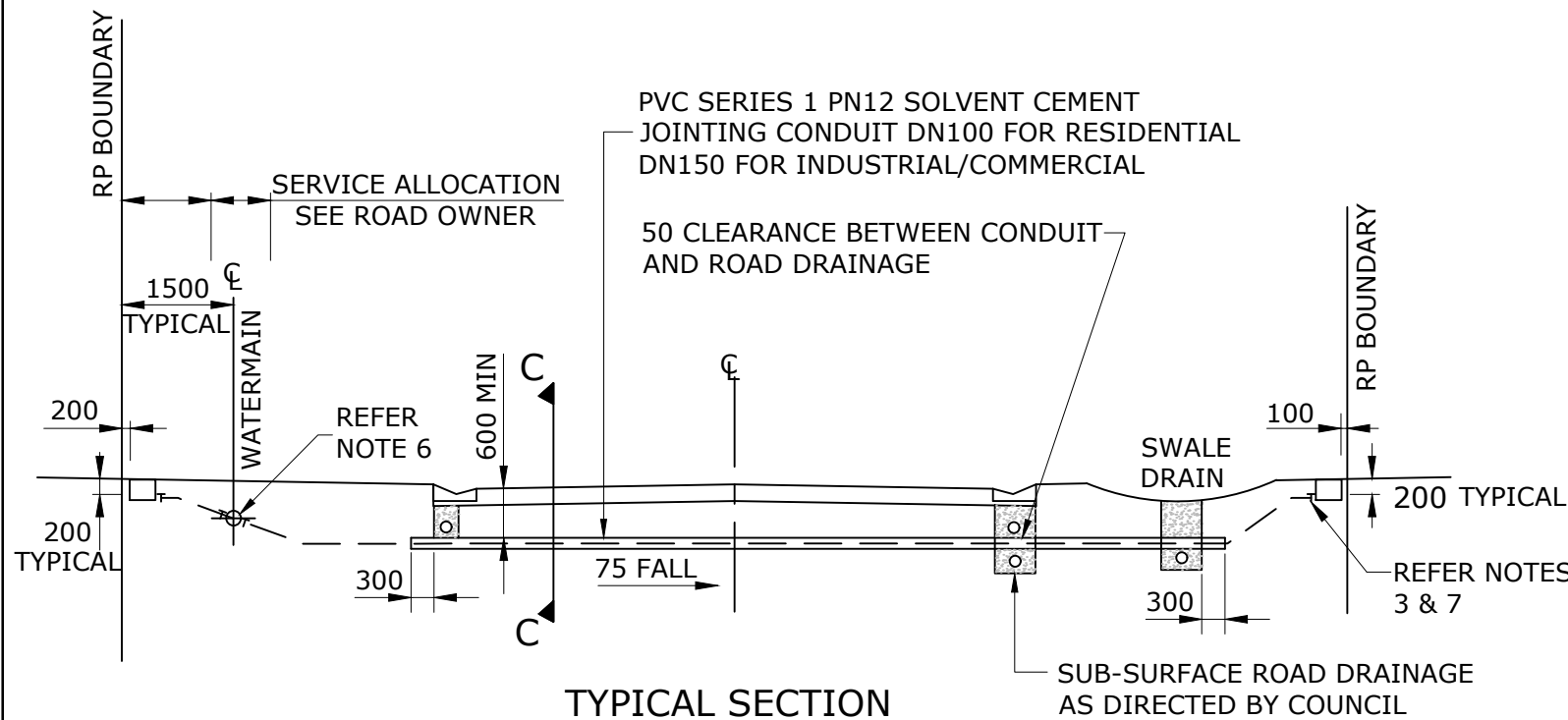


PLAN



NOTES

- PROPERTY SERVICE PIPE SHALL BE POLYETHYLENE PIPE TO AS/NZS4130 SERIES1 PN16 SDR11 PE100 COLOURED BLACK WITH BLUE STRIPES.
- SINGLE PROPERTY SERVICE PIPE TO 20 m IN LENGTH IS DN25. SINGLE PROPERTY SERVICE PIPE OVER 20 m IN LENGTH IS DN32. TWIN PROPERTY SERVICE PIPE TO 20 m IN LENGTH SHALL BE DN32.
- METER BOX INSTALLATION REFER TO SEQ-WAT-1106-2. METER INSTALLATION APPLICATION TO BE PROVIDED TO COUNCIL BY THE CONTRACTOR AFTER THE CONTRACTOR INSTALLS METER BOX.
- PROPERTY SERVICE PIPE MARKERS (35 MIN DIA) SHALL BE STAINLESS STEEL RETAINED BY A STAINLESS STEEL PIN WHEREAS SERVICE CONDUIT MARKERS SHALL BE BRASS, AS SHOWN.
- PROPERTY SERVICE PIPE, BALL VALVES, DUCTILE IRON PRE-TAPPED PROPERTY SERVICE FITTING AND ASSOCIATED FITTINGS SHALL BE JOINTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- THE MAIN TAP BALL VALVE SHALL BE LEFT IN THE FULLY OPEN POSITION.
- THE WATER METER BALL VALVES WITHIN BOX SHALL BE LEFT IN THE FULLY CLOSED POSITION.
- THE PROPERTY SERVICE PIPE SHALL BE PERPENDICULAR TO THE FRONT RP BOUNDARY FOR THE LAST 300 OF THE PIPE.
- PROVIDE PROPERTY SERVICE MARKER TAPE FOR BURIED PIPE.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
- REFER METERING TECHNICAL SPECIFICATIONS FOR DETAILED LOCATIONS OF METER BOX SERVICING DUPLEX LOT.
- SERVICE CONDUITS TO BE FROM BOUNDARY TO BOUNDARY ACROSS ROADWAY AS SHOWN.



TYPICAL SECTION

REV. No.	DATE	DESCRIPTION	AUTH.
E	01/02/24	NEW NOTE 12. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
D	30/04/19	CLARIFIED CONDUIT JOINTS	
C	30/11/18	AMENDED METER BOX & NOTES 1&2. ADDED NOTE 11. MINOR CHANGES	
B	31/03/15	ALTERED MARKER DISC LOCATION	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

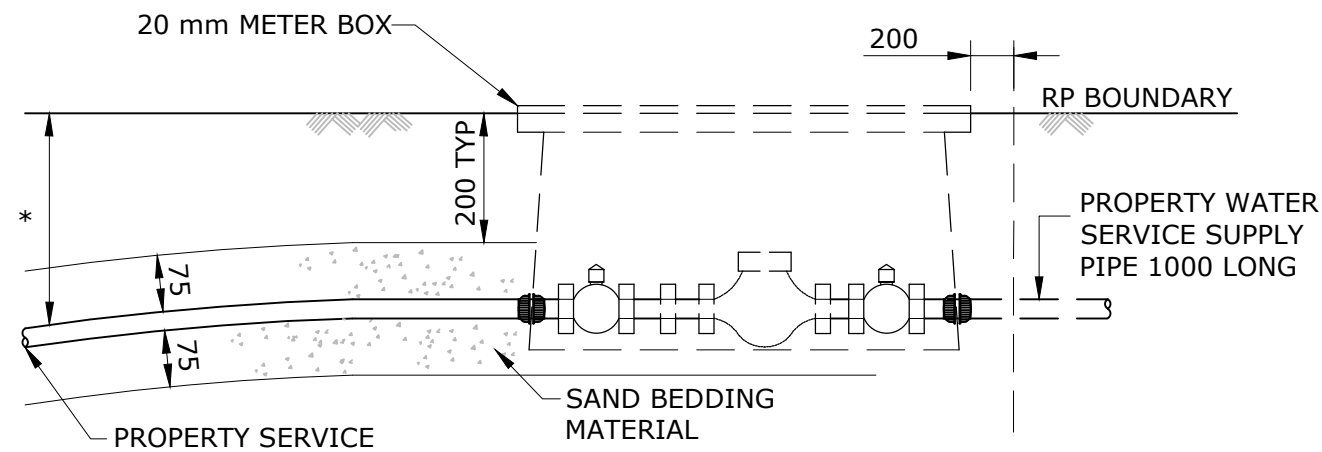
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

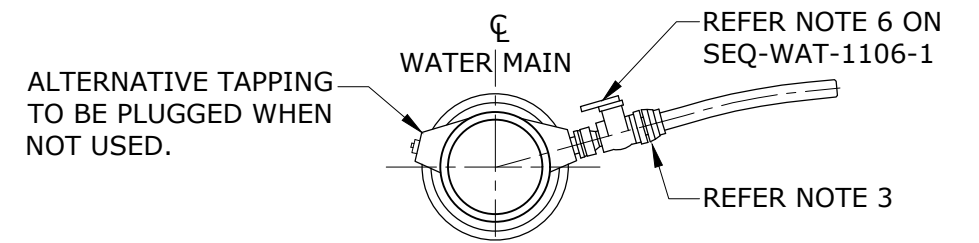
TYPICAL PROPERTY SERVICE CONNECTION MAIN TO METER

CoGC	<input checked="" type="checkbox"/> LEC	<input checked="" type="checkbox"/> REC	<input checked="" type="checkbox"/> UU	<input checked="" type="checkbox"/> UW
DRAWING No.				VERSION
SEQ-WAT-1106-1				E
NOT TO SCALE				ORG DATE: 1/1/2013



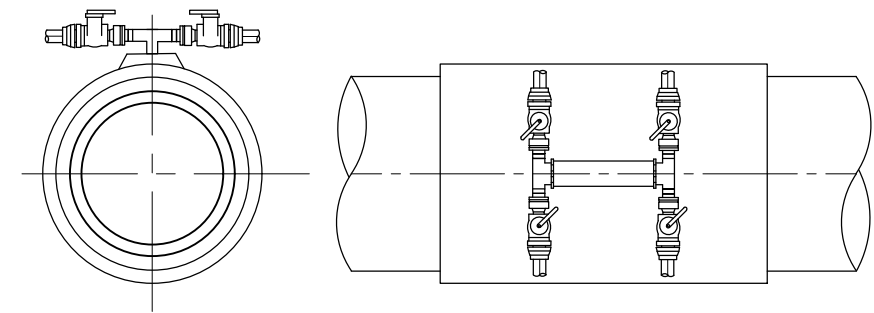
TYPICAL 20 mm WATER METER

* GRADE DOWN TO MAIN



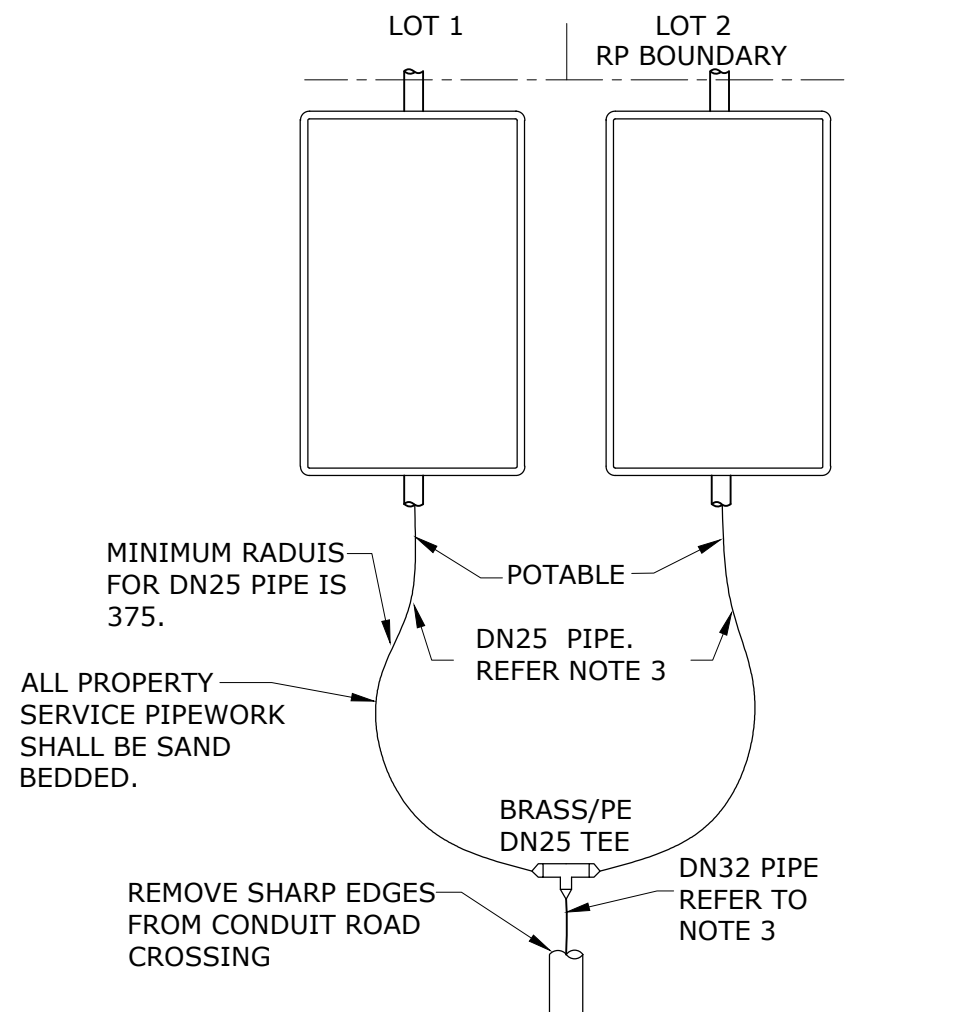
PRETAPPED CONNECTOR (DI)

(FOR DN100 - DN150 PVC & DI PIPES)



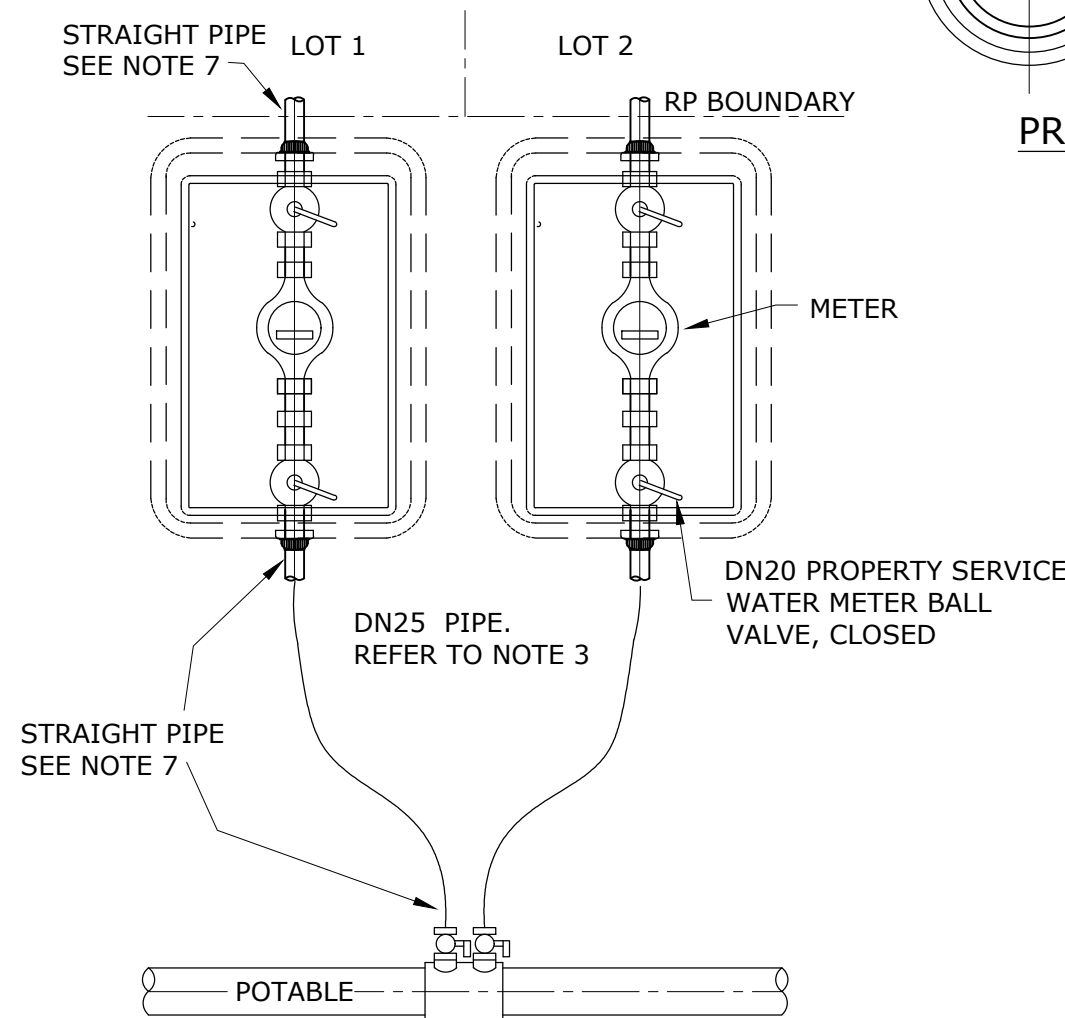
PRETAPPED TWIN CONNECTOR (DI)

(FOR DN 200+ PIPES SINGLE PORT)



LONG SERVICES - COMBINED OR SEPARATE

(COMBINED LONG SERVICES SHOWN)



SHORT SERVICES - SEPARATE PREFERRED

NOTES

1. FOR SINGLE PROPERTY SERVICE AND GENERAL PROPERTY SERVICE INSTALLATION DETAILS REFER TO SEQ-WAT-1106-1.
2. FOR DUAL RETICULATION WATER SERVICE TYPICAL INSTALLATION DETAILS REFER TO SEQ-NDW-23## DRAWING SET.
3. FOR PROPERTY SERVICE PIPE DETAILS REFER TO NOTE 2 & 5 AND THE GENERAL DETAILS ON SEQ-WAT-1106-1.
4. FOR POTABLE WATER SERVICE PRESSURE PIPE COLOURS AND MARKING DETAILS REFER TO SEQ-WAT-1106-1.
5. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
6. REFER METERING TECHNICAL SPECIFICATIONS FOR DETAILS OF METER BOX AND COMPONENTS ARRANGEMENT.
7. A LENGTH OF MINIMUM 100MM SERVICE PIPES IMMEDIATELY OUTSIDE METER BOXES AS WELL AS NEXT TO MAINTAP BALL VALVES SHALL BE INSTALLED STRAIGHT FOR EITHER SIDE OF A BOX.

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	200 TYP DEPTH. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	30/11/18	ADDED NOTES 6 & 7, CHANGED METER BOX. OTHER MINOR CHANGES	
B	14/07/15	REMOVED LCC FROM DRAWING	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

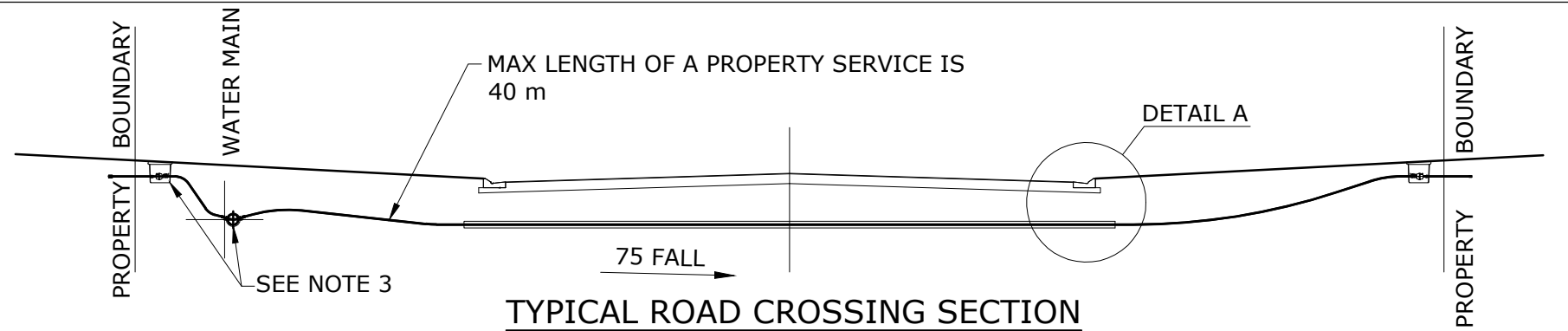
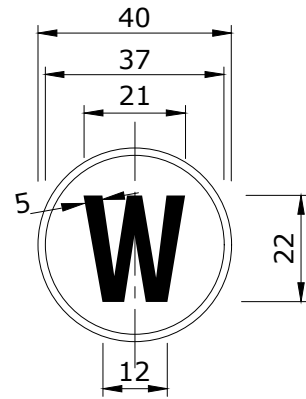
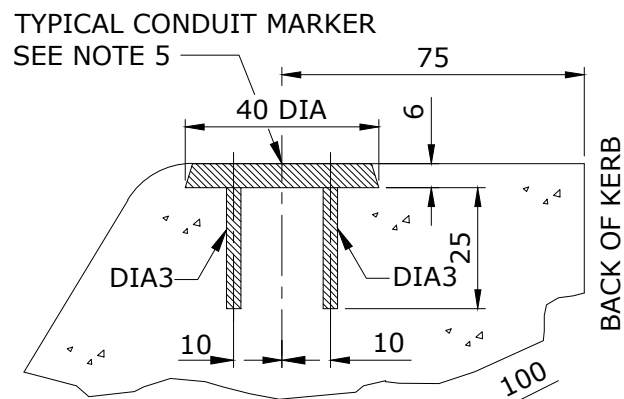
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

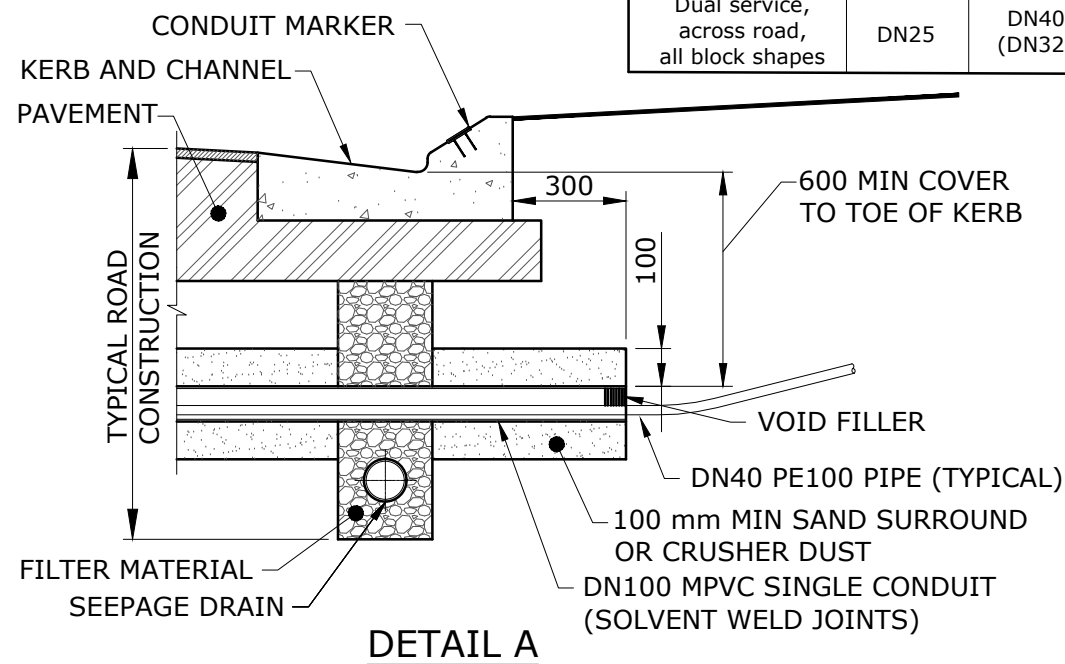
TYPICAL PROPERTY SERVICE CONNECTION MAIN TO METER

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1106-2				D
NOT TO SCALE				ORG DATE: 1/1/2013

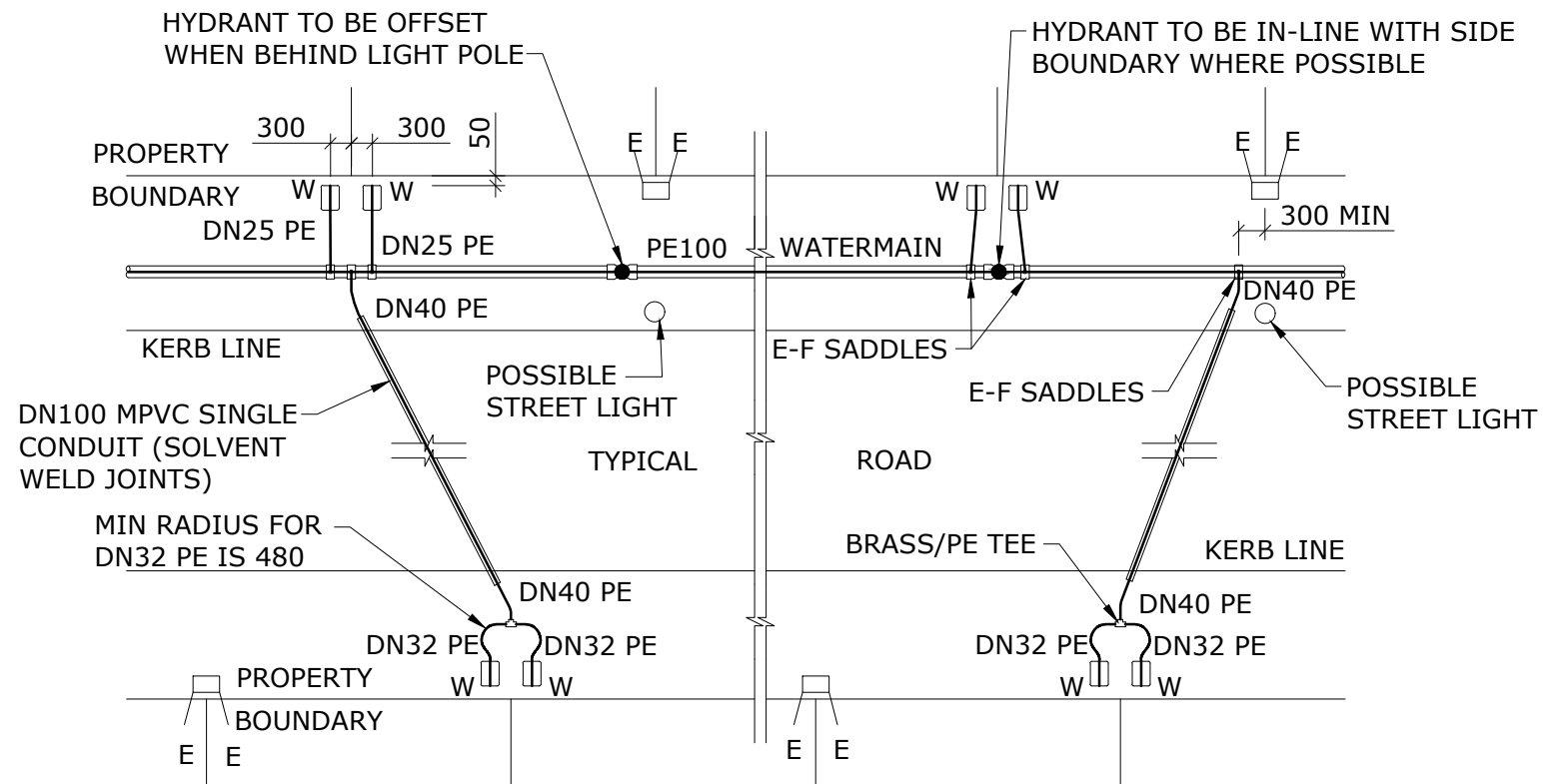


CONDUIT MARKER DETAILS

SERVICE CONFIGURATION	NOMINAL SERVICE SIZE	ROAD CROSSING PIPE SIZE	INDIVIDUAL SERVICE PIPE SIZE	METER SIZE
Single service, no road crossing, non-hatchet block	DN20	Not applicable	DN25 PE (DN20 Cu)	DN20
Single service, no road crossing, hatchet block	DN25	Not applicable	DN32 PE (DN25 Cu)	DN20
Single service, across road, all block shapes	DN25	DN32 PE (DN25 Cu)	DN32 PE (DN25 Cu)	DN20
Dual service, across road, all block shapes	DN25	DN40 PE (DN32 Cu)	DN32 PE (DN25 Cu)	DN20



DETAIL A



TYPICAL MAIN CONNECTIONS

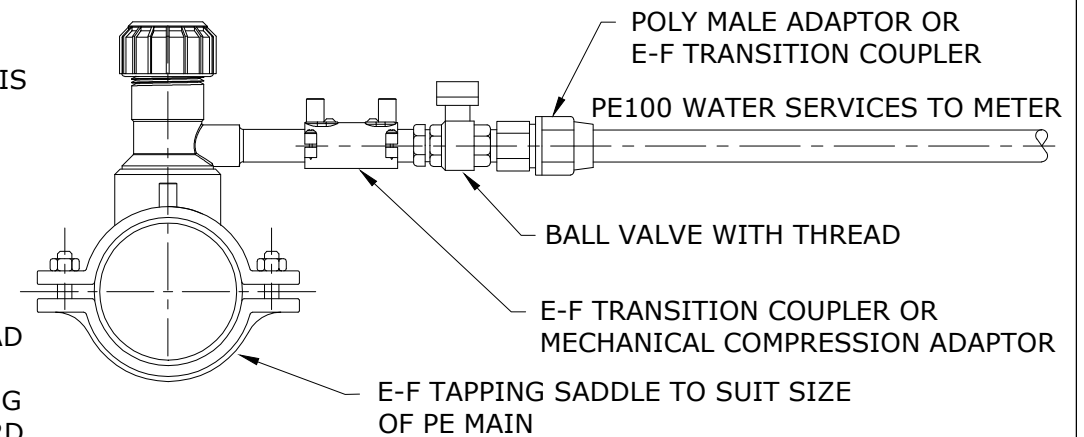
LEGEND

E - ELECTRICITY CONNECTION POINT
W - WATER CONNECTION & METER POINT

NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH QUEENSLAND CODES, SPECIFICATIONS AND STANDARDS.
- UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARD.
- THE MAIN TAP BALL VALVE SHALL BE LEFT IN THE FULLY OPEN POSITION. THE WATER METER BALL VALVE WITHIN METER BOX SHALL BE LEFT IN THE FULLY CLOSED POSITION.
- WATER CONNECTION AND CONDUIT LAYOUT TO BE DESIGNED SO THAT WATER METERS ARE NOT ADJACENT TO ELECTRICITY CONNECTION POINTS.
- CONDUIT MARKERS SHALL BE INSTALLED AS DETAILED WITH "W" MARKING FOR WATER SERVICES AND "I" MARKING FOR IRRIGATION SYSTEMS. KERB MARKERS TO BE INSTALLED ON TOP OF KERB WHERE POSSIBLE.

- E-F TAPPING SADDLES SHALL BE USED FOR ALL NEW PE MAINS. FOR EXISTING PE PIPE, E-F FITTINGS SHALL BE USED UNLESS THIS IS IMPRACTICABLE, IN WHICH CASE MECHANICAL TAPPING SADDLES/BANDS MAY BE USED.
- PE SERVICES SHALL HAVE APPROVED DETECTABLE MARKER TAPE LAID ON TOP OF THE BEDDING, EXTENDING FROM THE WATER MAIN TO THE METER. WHERE CONDUITS ARE USED THE MARKER TAPE SHALL BE ATTACHED TO THE WATER SERVICES AND PASS THROUGH THE CONDUIT.
- BACKFILLING IN ROADWAYS SHALL COMPLY WITH RELEVANT ROAD AUTHORITY REQUIREMENTS.
- SERVICE CONDUITS SHALL EXTEND 300mm BEYOND ALL EXISTING OR PLANNED CONCRETE FOOTPATHS, BIKEWAYS AND OTHER HARD STANDING AREAS.
- ALL DIMENSIONS ARE IN MILLIMETRES.
- ALSO SEE NOTES ON SEQ-WAT-1107-3.



E-F SADDLE DETAILS (SEE NOTE 6)

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	19/06/18	ADDED TABLE AND AMENDED NOTES, MAIN CONNECTIONS DETAIL & COVER	
B	05/08/15	CHANGED UPVC TO MPVC	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

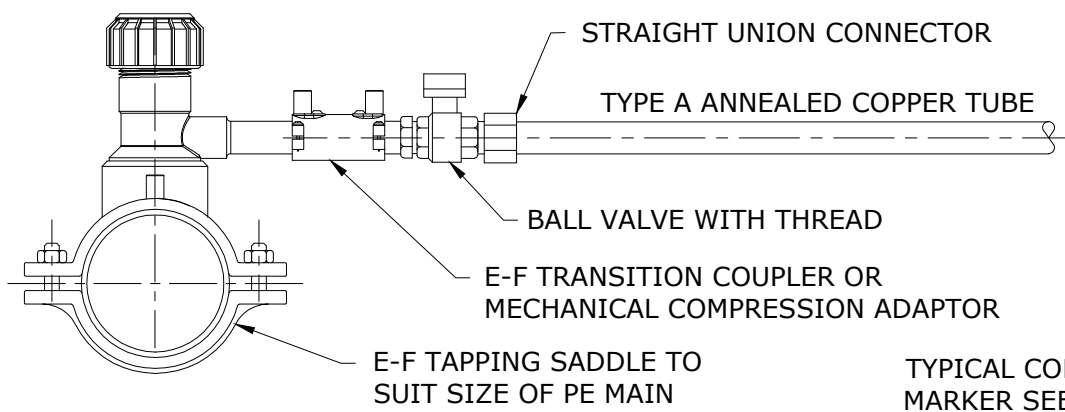
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

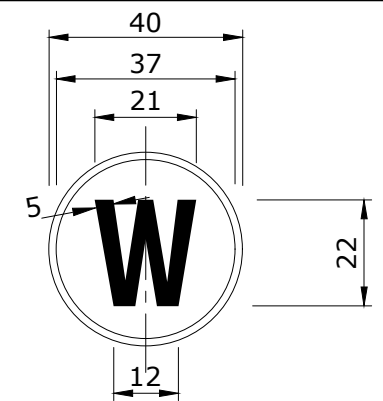
WATER SUPPLY STANDARD DRAWING

**TYPICAL PE PROPERTY SERVICES
PE MAIN TO METER AND
CONDUIT DETAILS**

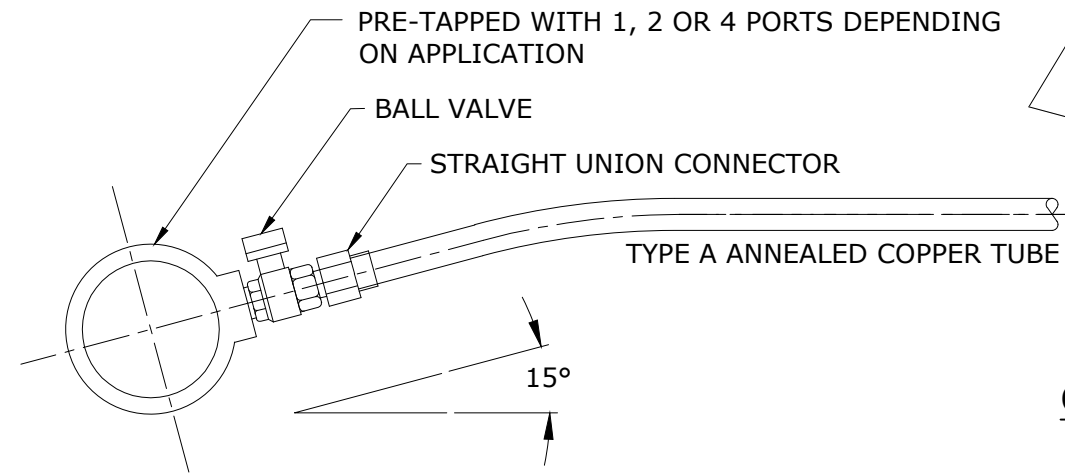
CoGC	LSC	RSC	UU	DW
DRAWING No.				VERSION
SEQ-WAT-1107-1				D
NOT TO SCALE				ORG DATE: 1/1/2013



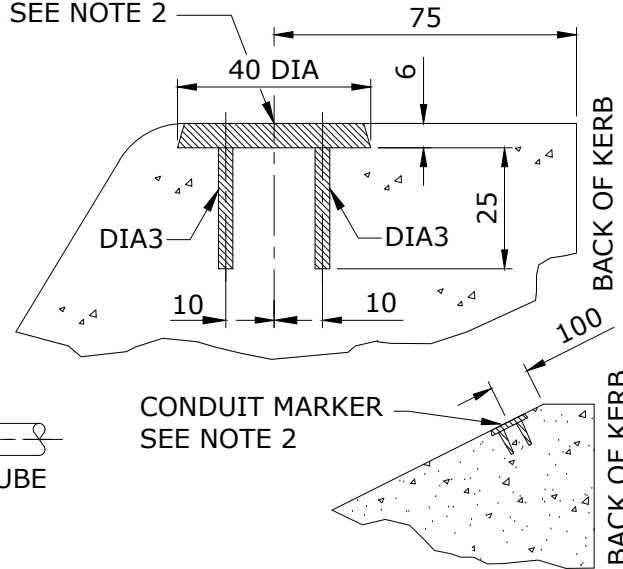
E-F TAPPING SADDLE - PE MAINS
(SEE NOTE 1)



TYPICAL CONDUIT MARKER SEE NOTE 2



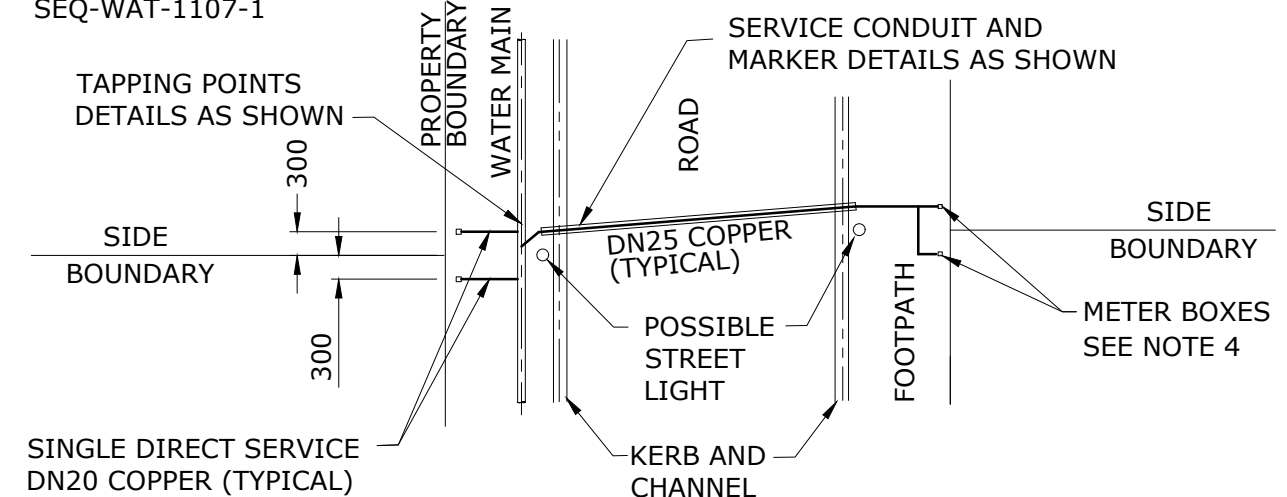
PRE-TAPPED ARRANGEMENT - DI/CL OR PVC MAINS



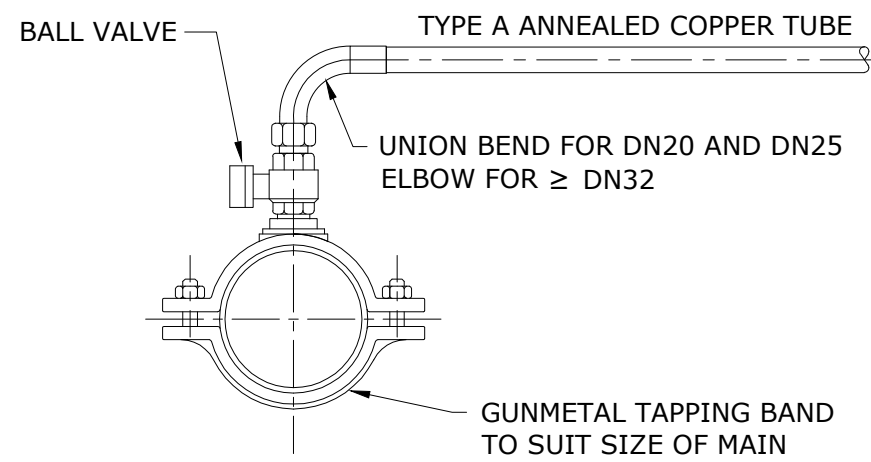
CONDUIT MARKER DETAILS

NOTES

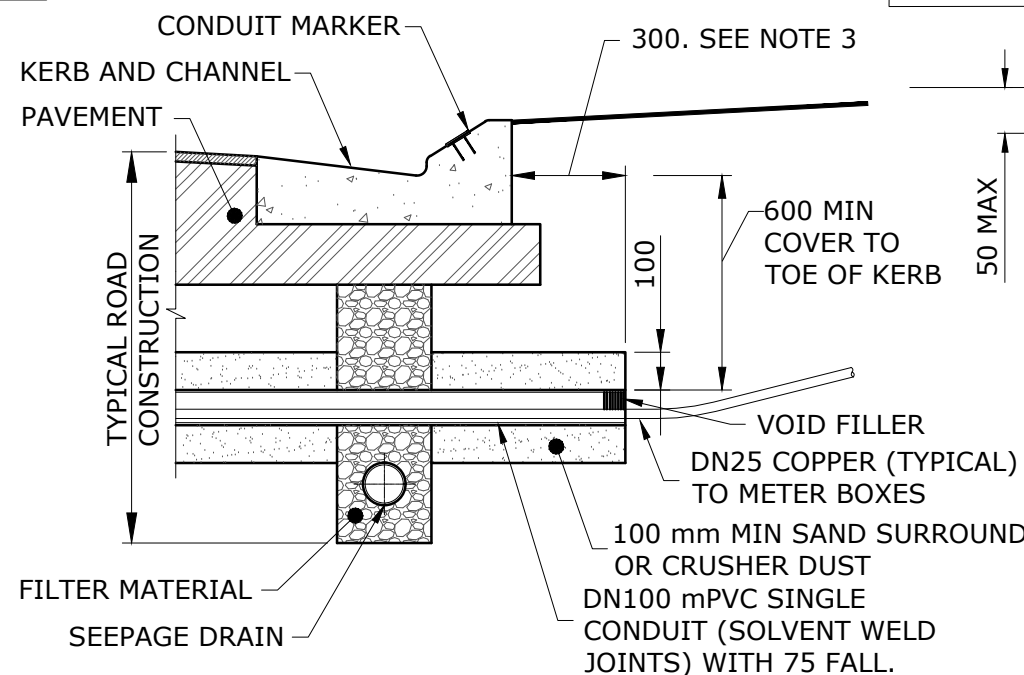
1. E-F TAPPING SADDLES SHALL BE USED FOR ALL NEW PE MAINS. FOR EXISTING PE PIPE, E-F FITTINGS SHALL BE USED UNLESS THIS IS IMPRACTICABLE, IN WHICH CASE MECHANICAL TAPPING BANDS/SADDLES (ONLY BANDS IN LCC) MAY BE USED.
2. CONDUIT MARKERS SHALL BE INSTALLED AS DETAILED WITH "W" MARKING FOR WATER SERVICES AND "I" MARKING FOR IRRIGATION SYSTEMS.
3. SERVICE CONDUITS SHALL EXTEND 300mm BEYOND ALL EXISTING FOOTPATHS, BIKEWAYS AND OTHER HARD STANDING AREAS.
4. FOR URBAN UTILITIES METER ARRANGEMENTS REFER SEQ-WAT-1107-3 AND FOR RCC METER ARRANGEMENTS REFER SEQ-WAT-1109-1 AND SEQ-WAT-1109-2.
5. ALSO REFER NOTES ON SEQ-WAT-1107-3 FOR URBAN UTILITIES AND SEQ-WAT-1109-1 AND SEQ-WAT-1109-2 FOR RCC.
6. THE MAIN TAP BALL VALVE SHALL BE LEFT IN THE FULLY OPEN POSITION. THE WATER METER BALL VALVE WITHIN METER BOX SHALL BE LEFT IN THE FULLY CLOSED POSITION.
7. URBAN UTILITIES REQUIRES PROPERTY SERVICES TO BE SIZED IN ACCORDANCE WITH SEQ-WAT-1107-1



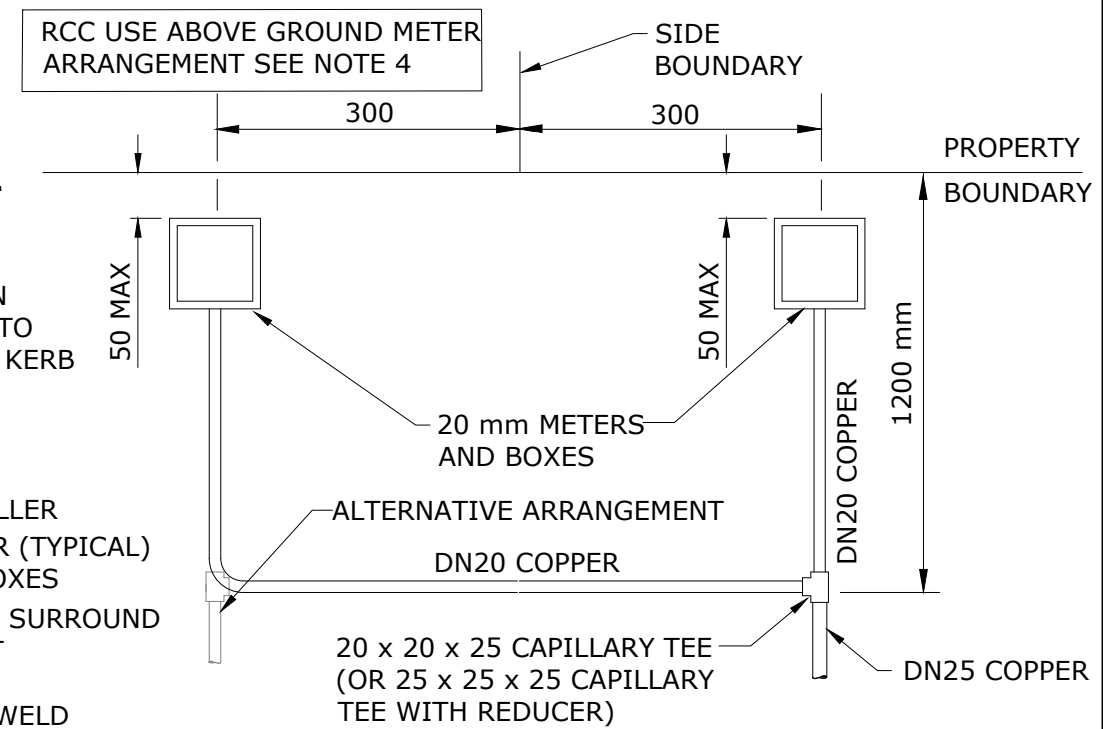
COPPER SERVICES



TAPPING BAND ARRANGEMENT



CONDUITS DETAILS



MULTIPLE SERVICE DETAILS AT PROPERTY BOUNDARY

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	4/06/18	AMENDED NOTE 1, NOTE 3, MARKER DETAIL HEADINGS AND ADDED NOTE 7.	
B	14/07/15	REMOVED LCC FROM DRAWING. CHANGED UPVC TO MPVC.	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

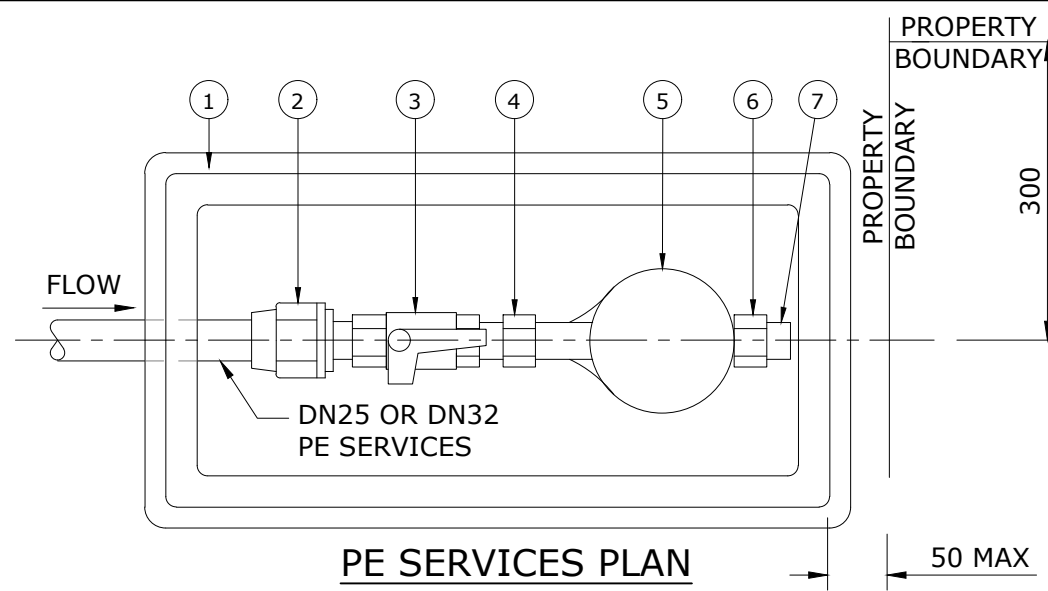
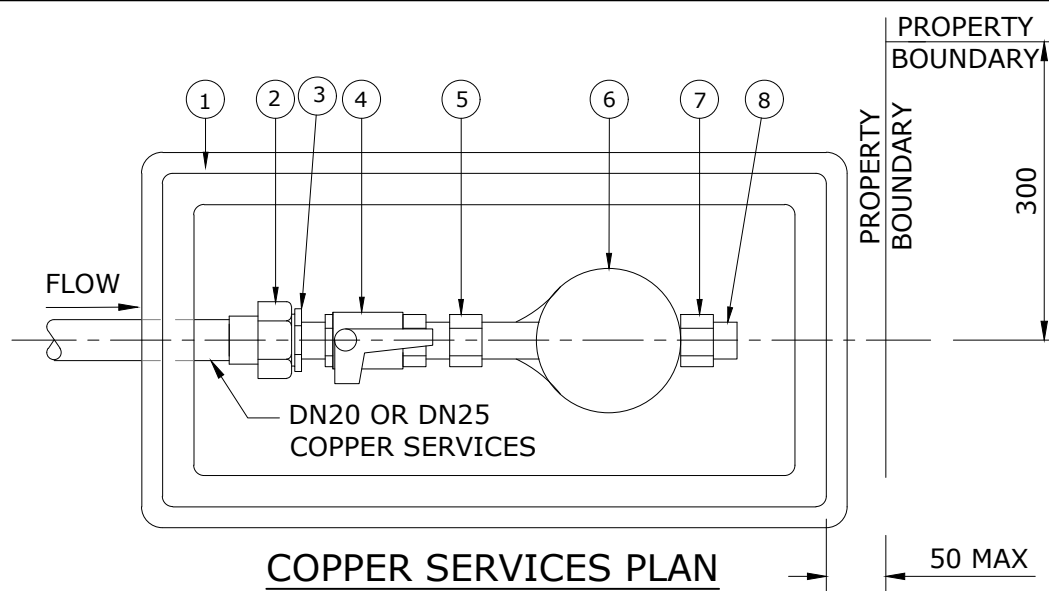
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

**TYPICAL COPPER PROPERTY SERVICES
MAIN TO METER AND
CONDUIT DETAILS**

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1107-2				D
NOT TO SCALE				ORG DATE: 1/1/2013



NOTES

GENERAL

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT QUEENSLAND CODES, SPECIFICATIONS AND STANDARDS.
- UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- ALL DIMENSIONS ARE IN MILLIMETERS.
- 20 mm METERS SHALL BE INSTALLED ON ALL DN25 PE AND DN32 PE SERVICES UNLESS OTHERWISE SPECIFIED.
- 25 mm METERS SHALL ONLY BE INSTALLED WHERE REQUIRED BY THE OWNER AND AGREED BY SEQ-SPS.
- SERVICES LARGER THAN DN32 PE ARE SUBJECT TO APPROVAL BY SEQ-SPS.
- SERVICES SHALL BE LAID ACROSS FOOTPATHS PERPENDICULAR TO THE FRONT PROPERTY BOUNDARY OF THE PROPERTY BEING SERVED.
- MULTIPLE SERVICES MAY ONLY BE USED WHERE THE SERVICE CROSSES A ROADWAY AND THE SERVICE SHALL BE ONE SIZE UP WHERE CROSSES A ROADWAY.
- BACKFILLING IN ROADWAYS SHALL COMPLY WITH RELEVANT ROAD AUTHORITIES REQUIREMENTS.

TAPPING

- INDIVIDUAL TAPPING POINTS SHALL BE USED FOR SERVICES WHERE THE MAIN IS ON THE SAME SIDE OF THE ROADWAY AS THE PROPERTIES BEING SERVED.
- APPROVED PRE-TAPPED DI FITTINGS SHALL BE USED TO ON ALL NEW DI CL OR PVC MAINS PROVIDED THEY COMPLY WITH THE REQUIREMENTS ON THIS WATER CODE AND AS/NZ 2280.
- WHERE REQUIRED APPROVED TAPPING BANDS WITH POSITIVE STOPS SHALL BE USED ON ALL PVC AND PE PIPES.
- WHERE TAPPING BANDS ARE INSTALLED ON DI CL PIPE, THE SECTION OF THE MAIN AT THE PROPOSED TAPPING POINT, SHALL BE FIRST CLEANED AND WRAPPED WITH A MINIMUM OF TWO LAYERS OF SELF-ADHESIVE POLYVINYLCHLORIDE WRAPPING. POLYETHYLENE SLEEVING SHALL BE REPLACED AROUND PIPE AND TAPPING BAND.

MATERIAL

- COPPER SERVICES SHALL BE ANNEALED TYPE "A" AND CONFORM WITH AS 1432. POLYETHYLENE SERVICES SHALL BE CLASS PN16 PE100 AND CONFORM WITH AS 4130.
- POLYETHYLENE SERVICES SHALL BE CONTINUOUS WITHOUT JOINTS.
- ALL COPPER ALLOY FITTINGS SHALL BE DEZINCIFICATION RESISTANT AND COMPLY WITH AS 3688.
- ALL BALL VALVES INCLUDING HANDLES SHALL BE EITHER STAINLESS STEEL OR DEZINCIFICATION RESISTANT COPPER ALLOY.
- ALL FITTINGS FOR POLYETHYLENE PIPE SHALL COMPLY WITH AS 4129.

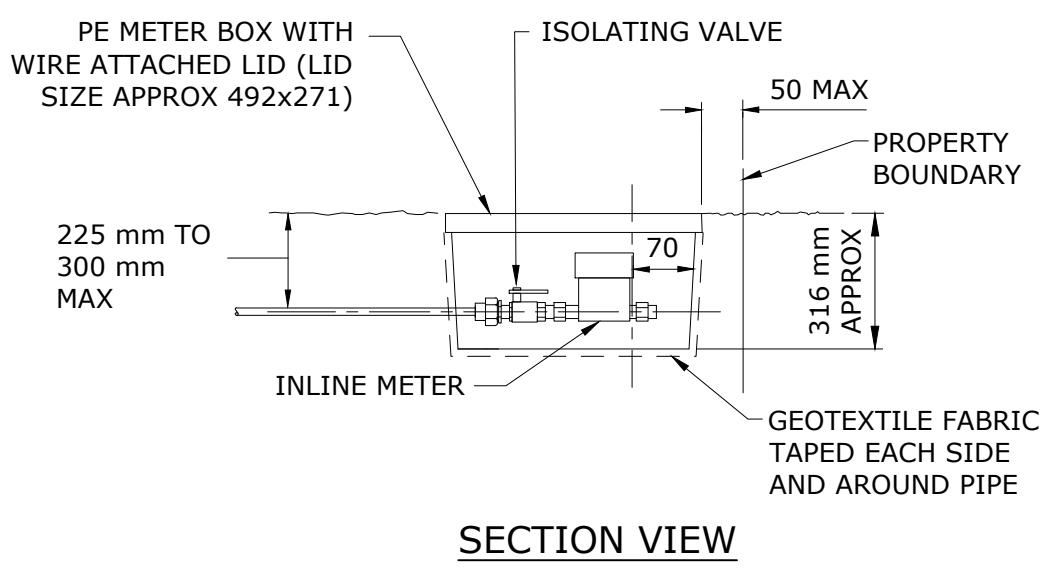
FITTINGS REQUIRED FOR DN20 COPPER SERVICES	
ITEM No	DESCRIPTION
1	PE METER BOX WITH LID (APPROVED HDPE TYPE)
2	STRAIGHT CONNECTOR - 20mm CAPILLARY TO 3/4" BSP, F
3	NOT USED
4	DN20 BALL VALVE 3/4" BSP, M-F
5	DN20 WATER METER COUPLING 3/4" BSP, M TO 3/4" METER THREAD x 14 TPI, F
6	20mm INLINE WATER METER (APPROVED)
7	DN20 WATER METER COUPLING - 3/4" METER THREAD x 14 TPI, F TO 3/4" BSP, M
8	PLASTIC CAP

FITTINGS REQUIRED FOR DN25 PE SERVICES	
ITEM No	DESCRIPTION
1	PE METER BOX WITH LID (APPROVED HDPE TYPE)
2	PE ADAPTOR - DN25 COMPRESSION TO 3/4" BSP, M
3	DN20 BALL VALVE - 3/4" BSP, F-F
4	DN20 WATER METER COUPLING - 3/4" BSP, M TO 3/4" METER THREAD x 14 TPI, F
5	20mm INLINE WATER METER (APPROVED)
6	DN20 WATER METER COUPLING - 3/4" METER THREAD x 14 TPI, F TO 3/4" BSP, M
7	PLASTIC CAP

FITTINGS REQUIRED FOR DN25 COPPER SERVICES	
ITEM No	DESCRIPTION
1	PE METER BOX WITH LID (APPROVED HDPE TYPE)
2	STRAIGHT CONNECTOR - 25mm CAPILLARY TO 1" BSP, F
3	ADAPTOR - 1" BSP, M TO 3/4" BSP, F
4	DN20 BALL VALVE - 3/4" BSP, M-F
5	DN20 WATER METER COUPLING - 3/4" BSP, M TO 3/4" METER THREAD x 14 TPI, F
6	20mm INLINE WATER METER (APPROVED)
7	DN20 WATER METER COUPLING - 3/4" METER THREAD x 14 TPI, F TO 3/4" BSP, M
8	PLASTIC CAP

FITTINGS REQUIRED FOR DN32 PE SERVICES	
ITEM No	DESCRIPTION
1	PE METER BOX WITH LID (APPROVED HDPE TYPE)
2	PE ADAPTOR - DN32 COMPRESSION TO 3/4" BSP, M
3	DN20 BALL VALVE - 3/4" BSP, F-F
4	DN20 WATER METER COUPLING - 3/4" BSP, M TO 3/4" METER THREAD x 14 TPI, F
5	20mm INLINE WATER METER (APPROVED)
6	DN20 WATER METER COUPLING - 3/4" METER THREAD x 14 TPI, F TO 3/4" BSP, M
7	PLASTIC CAP

- ALL POLY TO METAL CONNECTIONS SHALL BE EITHER MALE TO FEMALE CONFIGURATION ie. METAL FEMALE FITTINGS WITH POLY MALE FITTINGS, OR E-F TRANSITION COUPLERS.
 - DN25 AND DN32 PE SERVICES ARE EQUIVALENT TO DN20 AND DN25 COPPER SERVICES.
 - PE PIPE SHALL BE LAID WITH 100 mm MINIMUM SURROUND OF SAND.
 - ALL CAPILLARY JOINTED FITTINGS SHALL BE LONG ENGAGEMENT SOCKET TYPE.
 - ALL CAPILLARY JOINTS SHALL BE SOLDERED WITH 15% SILVER SOLDER TO AS 1515.3.
 - BRASS SEATED BARRELL UNIONS SHALL BE USED IN ALL INSTANCES EXCEPT FOR UNION CONNECTORS AT 25 mm METERS, WHICH SHALL BE FLAT SEATED WITH A 3 mm x 25 mm RUBBER GASKET.
 - COMPRESSION FITTINGS SHALL NOT BE USED WITH COPPER SERVICES. MARKER TAPE
 - PE SERVICES SHALL HAVE APPROVED DETECTABLE MARKER TAPE LAID ON TOP OF THE BEDDING, EXTENDING FROM THE WATER MAIN TO THE METER. WHERE CONDUITS ARE USED THE MARKER TAPE SHALL PASS THROUGH THE CONDUIT WITH THE WATER SERVICE.
- METER BOX**
- METER BOX LIDS SHALL HAVE A NON SLIP PATTERN.
 - LETTERING INDICATING "WATER METER" SHALL BE CAST INTO LIDS OF METER BOXES.



REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	4/06/18	AMENDED FITTING TABLES.	
B	14/07/15	AMENDED NOTE 12. FIXED TYPOS IN NOTE 17. REMOVED LCC FROM DRAWING.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

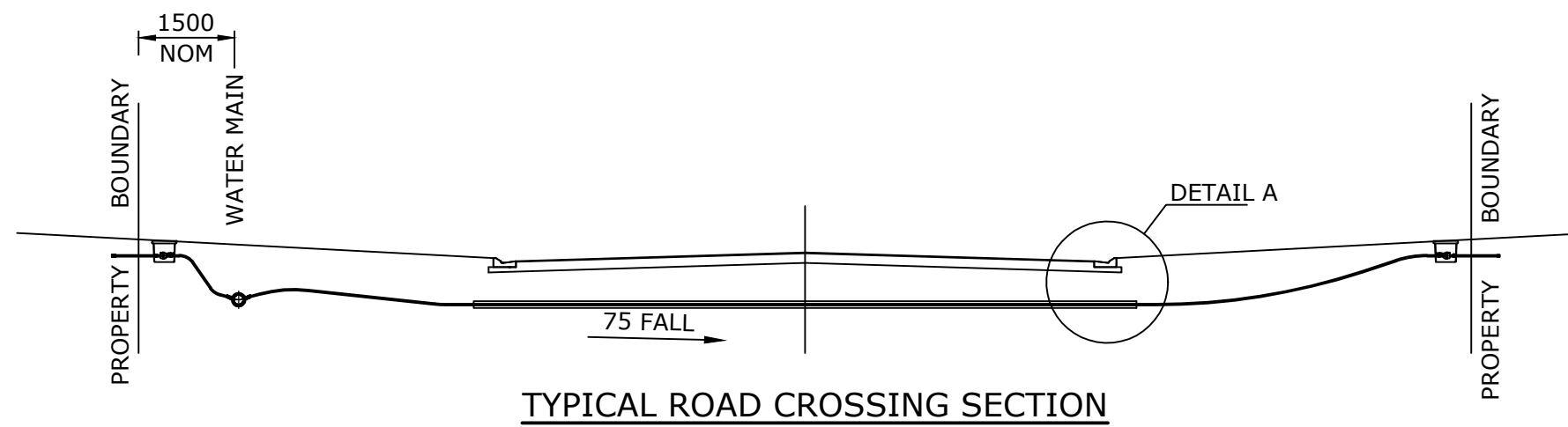
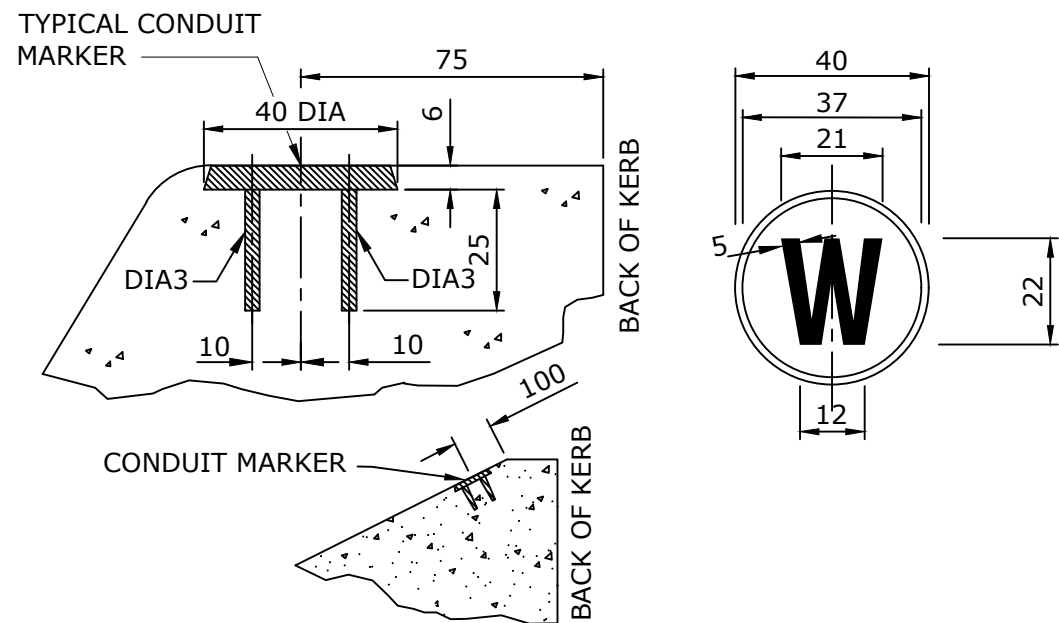
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

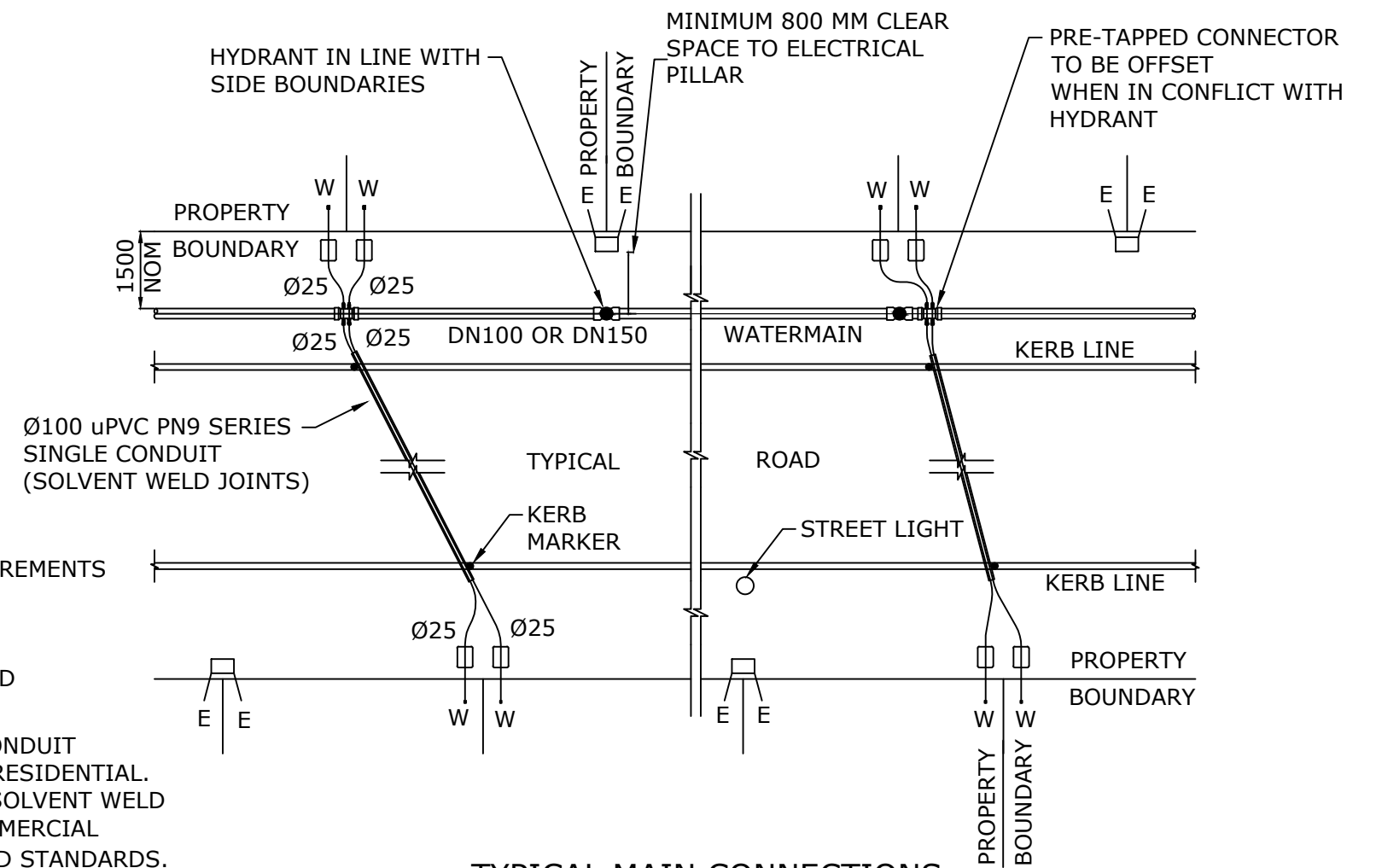
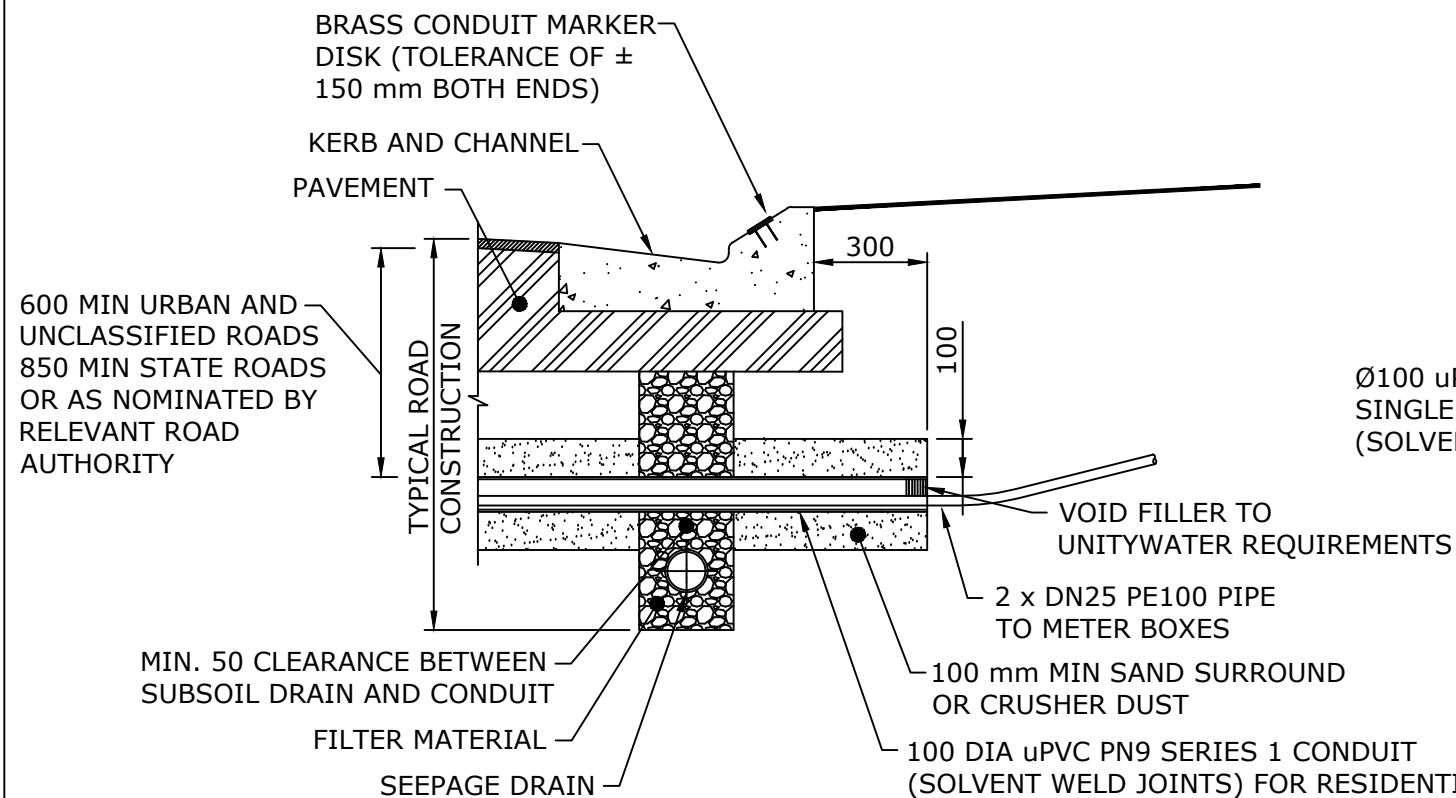
WATER SUPPLY STANDARD DRAWING

TYPICAL PROPERTY SERVICES
 GENERAL ARRANGEMENT
 20mm OR 25mm METERS

CQC	LSC	RSC	UU	DW
DRAWING No.				VERSION
SEQ-WAT-1107-3				D
NOT TO SCALE				ORG DATE: 1/1/2013



BRASS SERVICE CONDUIT MARKER



TYPICAL MAIN CONNECTIONS

LEGEND

- E - ELECTRICITY CONNECTION POINT
- W - WATER CONNECTION & METER POINT

NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH QUEENSLAND CODES, SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARD.
3. BACKFILLING IN ROADWAYS SHALL COMPLY WITH RELEVANT ROAD AUTHORITY REQUIREMENTS.
4. WATER CONNECTION AND CONDUIT LAYOUT TO BE DESIGNED SO THAT WATER METERS ARE NOT ADJACENT TO ELECTRICITY CONNECTION POINT.
5. ALL DIMENSIONS ARE IN MILLIMETRES.
6. SERVICE CONDUITS TO BE ANGLED ACROSS ROADWAY WITH KERB MARKERS PERPENDICULAR TO COMMON PROPERTY BOUNDARY.
7. HYDRANTS MUST BE 10 M CLEAR OF PAD MOUNT TRANSFORMERS AND RMU'S.
8. DN100 CONDUIT ROAD CROSSING TO BE INSTALLED FOR WATER SERVICE.

DETAIL A

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOTE 8 ADDED, NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	
B	25/08/15	TYPICAL MAIN CONNECTIONS DETAIL AMENDED . NOTE 7 ADDED.	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

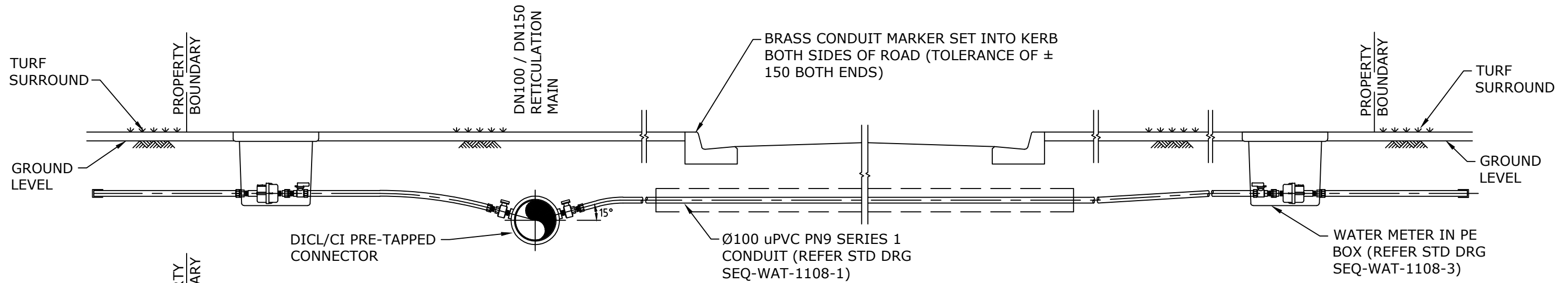
NOT FOR CONSTRUCTION

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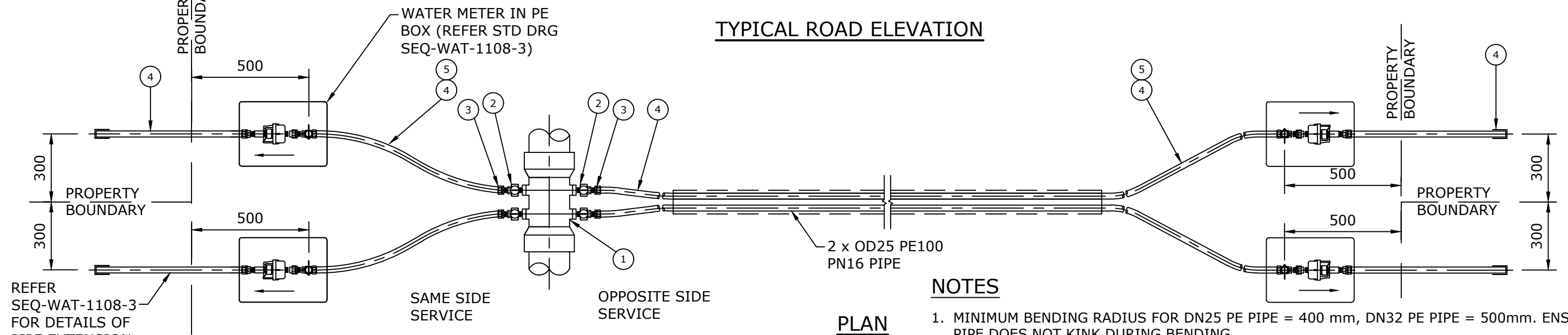
WATER SUPPLY STANDARD DRAWING

**PROPERTY SERVICES
POTABLE SERVICE CONNECTION
CONDUIT DETAILS**

CoGC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1108-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



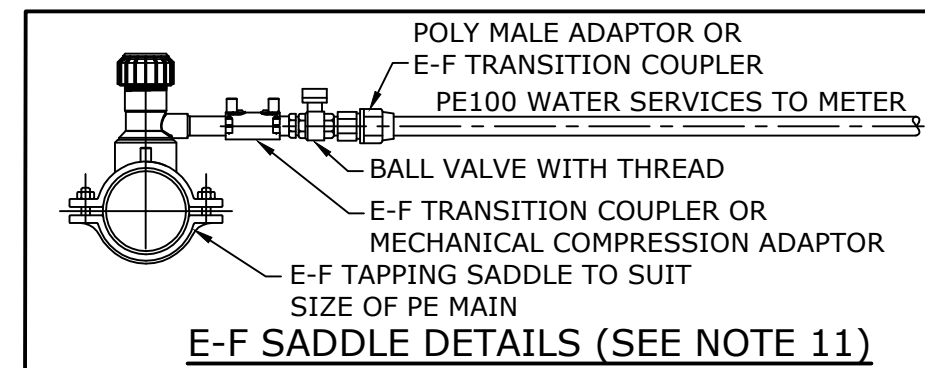
TYPICAL ROAD ELEVATION



PLAN

NOTES

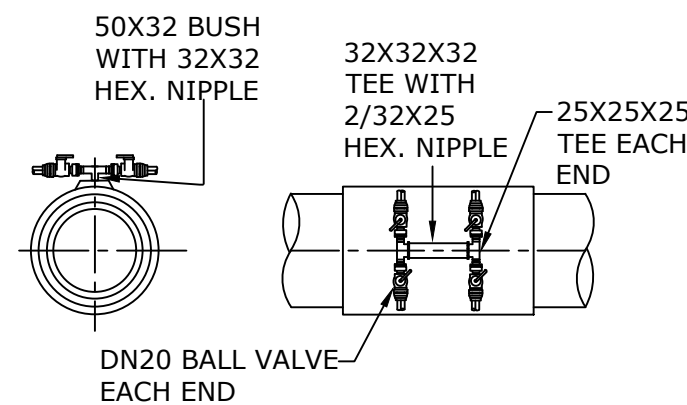
1. MINIMUM BENDING RADIUS FOR DN25 PE PIPE = 400 mm, DN32 PE PIPE = 500mm. ENSURE PIPE DOES NOT KINK DURING BENDING.
2. ANY PIPEWORK SHOWING SIGNS OF KINKING OR STRAIN FROM OVER BENDING WILL BE REJECTED.
3. SERVICE PIPEWORK SHALL BE PN16 PE100 BLACK POLYETHYLENE PIPE WITH BLUE STRIPE IN ACCORDANCE WITH AS/NZS 4130.
4. ALL CONNECTIONS TO POLYETHYLENE PIPE TO BE APPROVED BRASS OR PLASTIC MECHANICAL FITTINGS.
5. PE PIPE SHALL BE LAID WITH 100 mm MINIMUM SURROUND OF SAND OR APPROVED GRANULAR MATERIAL.
6. PE PIPE SHALL BE CONTINUOUS WITHOUT JOINTS. INSTALLATION OF BENDS OR JOINTS REQUIRE SP APPROVAL.
7. PRE-TAPPED WATER SERVICE FITTING SHALL BE DI CL MIN PN16 POLYMERIC COATED AND CONFORM WITH A.S. 2280.
8. PE SERVICES SHALL HAVE APPROVED DETECTABLE MARKER TAPE LAID ON TOP OF THE BEDDING, EXTENDING FROM THE WATER MAIN TO THE METER. WHERE CONDUITS ARE USED THE MARKER TAPE SHALL BE ATTACHED TO THE WATER SERVICES AND PASS THROUGH THE CONDUIT.
9. BALL VALVES AT THE MAIN ARE TO BE LEFT IN THE OPEN POSITION AFTER CONSTRUCTION.
10. VALVES AT THE METER ARE TO BE LEFT IN THE CLOSED POSITION AFTER CONSTRUCTION.
11. E-F TAPPING SADDLES SHALL BE USED FOR ALL NEW PE MAINS. MECHANICAL TAPPINGS MAY BE USED FOR EXISTING/RENEWAL INSTALLATIONS, WHERE APPROVED BY SP.
12. DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.



E-F SADDLE DETAILS (SEE NOTE 11)

FITTING SCHEDULE

ITEM	DESCRIPTION
1	DN100 or DN150 DI/CI PRE-TAPPED CONNECTOR
2	20 mm BRASS BALL VALVE M/F
3	OD25 PE TO DN20 BSP MALE BRASS OR PLASTIC MECHANICAL CONNECTORS.
4	DN25 PE100 PN16 PIPE WITH BLUE STRIPE FOR SERVICE ≤ 20 m LONG
5	DN32 PE100 PN16 PIPE WITH BLUE STRIPE FOR SERVICE > 20 m LONG



PRETAPPED TWIN CONNECTOR (DI)

FOR DN200+ PIPES SINGLE PORT

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

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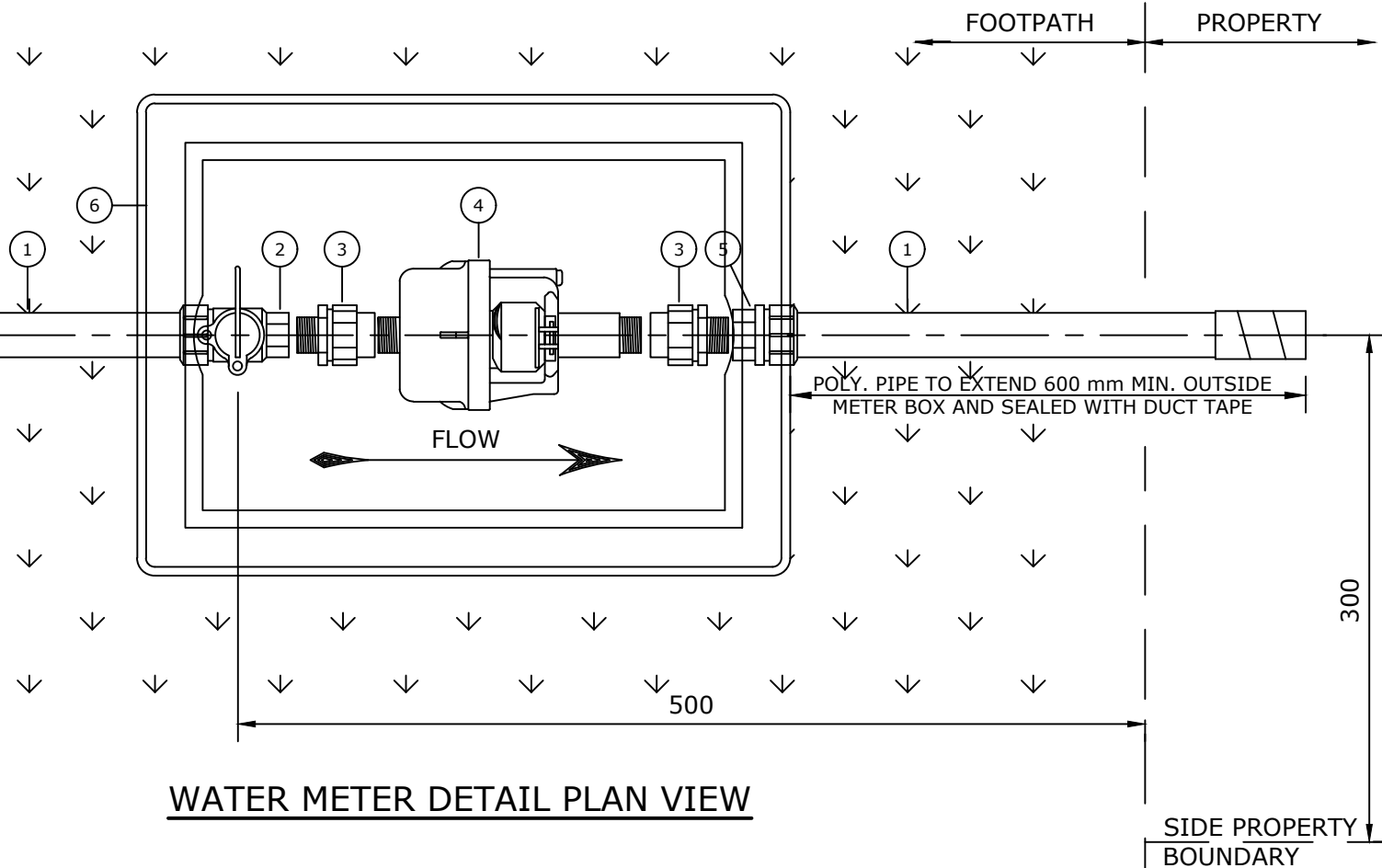
WATER SUPPLY STANDARD DRAWING

**PROPERTY SERVICES
POTABLE SERVICE CONNECTION
TYPICAL MAIN TO METER**

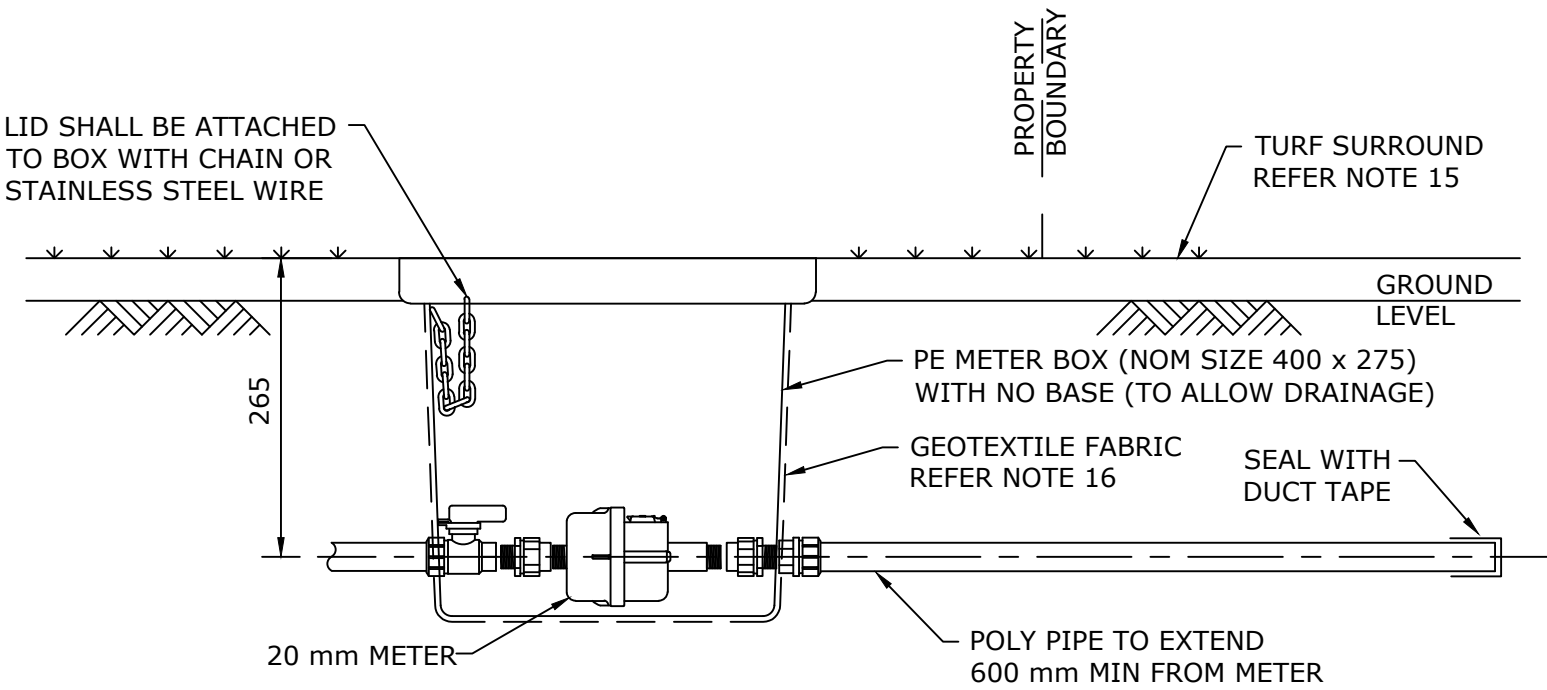
CoGC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1108-2				E
NOT TO SCALE				ORG DATE: 1/1/2013

REV. No.	DATE	DESCRIPTION	AUTH.
E	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK	
D	10/06/19	NOTE 1 AND 6 UPDATED	
C	25/06/18	NOTE 11 UPDATED	
B	24/05/15	ITEM 3 AND PRETAPPED TWIN CONNECTOR DETAIL AMENDED. E-F SADDLE DETAIL ADDED AND NOTE 4 REWORDED	

REFER STD. DWG.
SEQ-WAT-1108-2 FOR
CONTINUATION



WATER METER DETAIL PLAN VIEW



WATER METER DETAIL SECTIONAL VIEW

NOTES

- METERS SHALL BE APPROVED BY UNITYWATER AND MEET THE REQUIREMENTS AND PERFORMANCE REQUIREMENTS OF AS 3565.1 METERS FOR WATER SUPPLY PART 1: COLD WATER METERS.
- METERS SHALL BE FACTORY FITTED WITH 2 INDEPENDENTLY ACTING NON-RETURN VALVES IN SERIES AT THE DOWNSTREAM END OF THE METER IN COMPLIANCE WITH AS 3565.3 METERS FOR WATER SUPPLY PART 3: WATER METERS WITH INTEGRAL DUAL CHECK VALVES.
- METERS CONSTRUCTED FROM COPPER ALLOYS SHALL BE DEZINCIFICATION RESISTANT AND COMPLY WITH AS 2345.
- ALL MATERIALS IN CONTACT WITH POTABLE WATER SHALL COMPLY WITH AS/NZS 4020.
- SERVICE PIPEWORK SHALL BE DN25 PE100 PN16 BLACK POLYETHYLENE PIPE WITH BLUE STRIPE IN ACCORDANCE WITH AS/NZS 4130.
- ALL CONNECTIONS TO POLYETHYLENE PIPE SHALL BE APPROVED BRASS OR PLASTIC MECHANICAL FITTINGS.
- ALL WATER INSTALLATIONS SHALL BE CARRIED OUT BY A LICENSED PLUMBER AND SHALL BE IN ACCORDANCE WITH RELEVANT BY-LAWS OF PLUMBING AND DRAINAGE ACT.
- ALL PLUMBING FITTINGS SHALL BE GUNMETAL OR BRASS - DEZINCIFIED RESISTANT "DR" AND APPROVED TO AS 3855.
- ALL BRASS FITTINGS SHALL HAVE MAKERS NAME OR MARK AND WATERMARK IMPRINTED ON SURFACE OF FITTING TO PROVE COMPLIANCE WITH AS 3855.
- VALVES AT THE METER SHALL BE LEFT IN THE CLOSED POSITION AFTER CONSTRUCTION.
- WATER SERVICES SHALL BE INSPECTED BY UNITYWATER INSPECTOR PRIOR TO BACKFILL.
- BALL VALVE, WATER METER AND METER BOX SHALL BE IPAM APPROVED.
- METER BOX LID SHALL HAVE NON SLIP PATTERN, LETTERING CAST INTO LID INDICATING "WATER METER" AND BE BLACK OR GREEN IN COLOUR.
- METER BOX LID SHALL BE LEFT SO THAT IT SITS FLUSH WITH TURF SURROUND.
- FOR NEW INSTALLATIONS, TURF SURROUND SHALL EXTEND A MINIMUM OF 600 mm AROUND SIDES OF METER BOX.
- GEOTEXTILE FABRIC SHALL BE LAID UNDERNEATH METER BOX TAPED EACH SIDE AND AROUND PIPE TO PREVENT INGRESS OF SAND AND SOIL.

FITTINGS SCHEDULE

ITEM	DESCRIPTION	No OFF
1	DN25 PE100 PN16 PIPE WITH BLUE STRIPE	AS REQ.
2	20 mm x 25 mm FEMALE/PE BRASS LOCKABLE BALL VALVE WITH HANDLE (REFER NOTE 9)	1
3	CONNECTION KIT (COMPRISES OF 2xDN20 BSP M/F BRASS UNIONS)	1
4	DN20 METER WITH DUAL CHECK VALVES (REFER NOTE 1)	1
5	OD25 PE TO DN20 MALE BRASS OR PLASTIC MECHANICAL CONNECTOR	1
6	PE METER BOX WITH LID (REFER NOTES 12 & 13)	1

REV. No.	DATE	DESCRIPTION	AUTH.
E	01/02/24	NOTES 8&12 AMENDED, NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK	
D	06/06/19	NOTES 8, 13, & 15 AMENDED	
C	25/06/18	REPLACED 'TO BE' WITH 'SHALL' IN NOTES	
B	21/07/15	ITEM 5 IN FITTINGS SCHEDULE AND NOTE 3 AMENDED	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

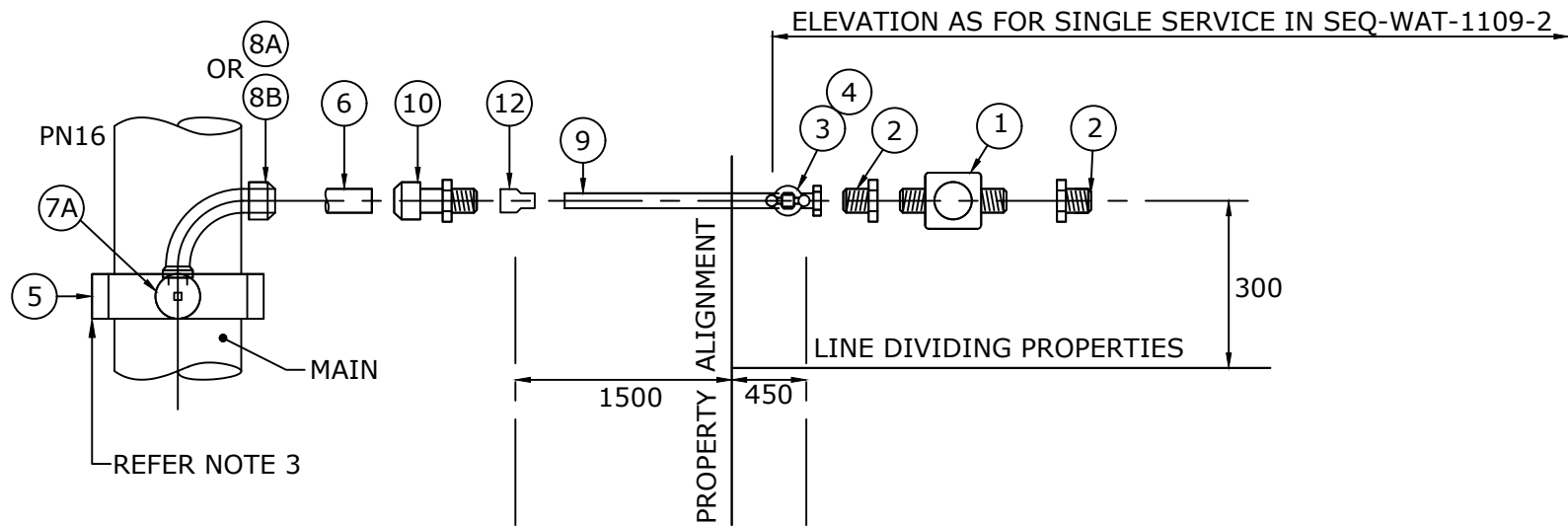
NOT FOR CONSTRUCTION

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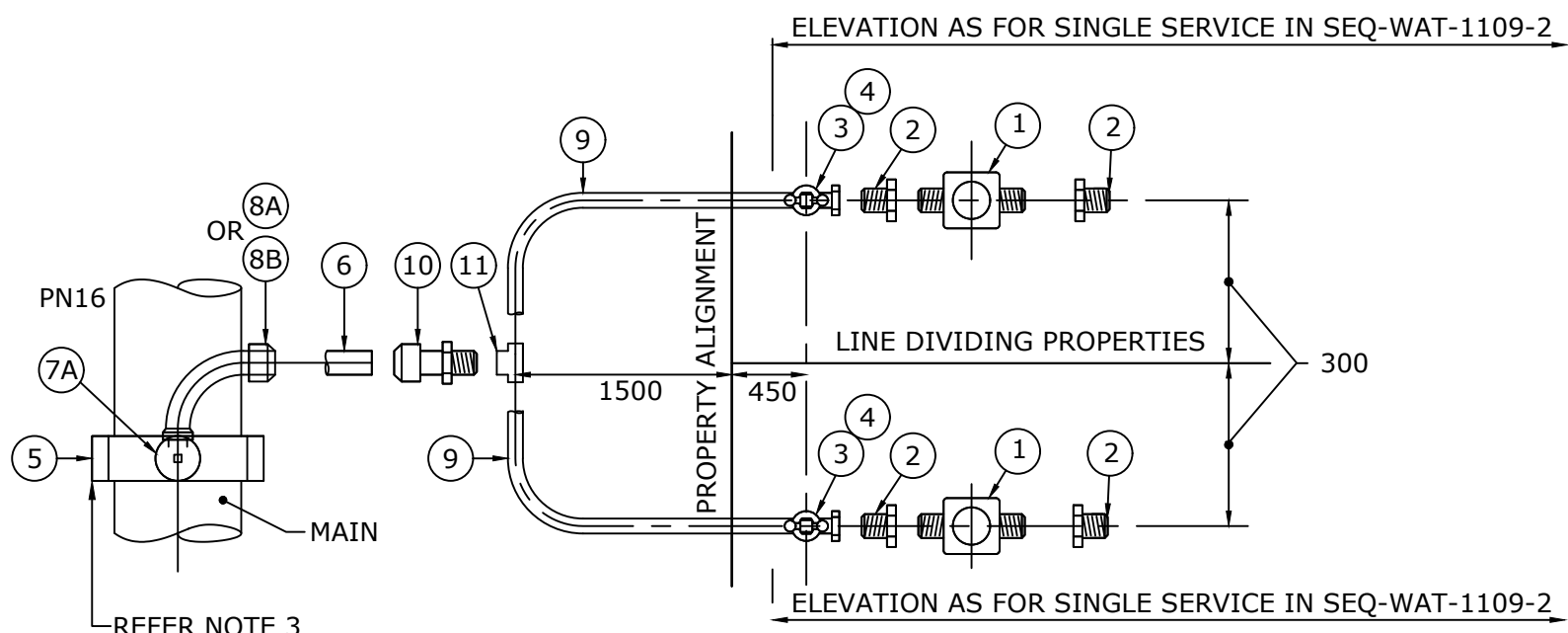
WATER SUPPLY STANDARD DRAWING

PROPERTY SERVICES
POTABLE SERVICE CONNECTION
20mm DOMESTIC SERVICE
METER BOX DETAILS

CoC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1108-3				E
NOT TO SCALE				ORG DATE: 1/1/2013

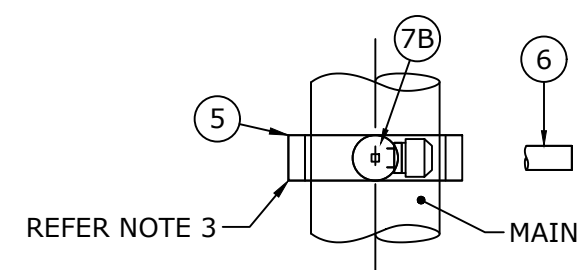


NEW NOM Ø20 SINGLE SERVICE - PLAN
LONG SIDE CONNECTION



NEW NOM Ø20 DOUBLE SERVICE - PLAN
LONG SIDE CONNECTION

FITTING SCHEDULE	
ITEM	DESCRIPTION
1.	20mm WATER METER. DIMENSIONS TO AS 3565 TABLE 2.1
2.	20mm WATER METER COUPLING
3.	RIGHT ANGLED 20mm LOCKABLE F & F WATER SERVICE BALL VALVE
4.	20mm MALE MI TO 20mm OD CAPILLARY ADAPTOR
5.	GUNMETAL TAPPING BAND
6.	32mm OD POLYETHYLENE PE100 PN16 PIPE
7A.	25mm TPFNR WITH MALE SERIES GB OUTLET (FOR FERRULE BEND)
7B.	25mm TPFNR WITH 32mm OD PE COMPATIBLE OUTLET.
8A.	25mm FERRULE BEND WITH 25mm BSP MALE OUTLET AND 25mm FI BSP TO 32mm OD PE CONNECTOR.
8B.	25mm FERRULE BEND WITH 32mm OD PE COMPATIBLE OUTLET
9.	20mm OD TYPE A ANNEALED COPPER TUBE
10.	32mm OD PE X 20 MI BSP CONNECTOR
11.	20mm FI TO 20mm OD X 20mm OD CAPILLARY TEE
12.	20mm FI TO 20mm OD CAPILLARY ADAPTOR



OPTION USING TPFNR WITH 32mm OD PE COMPATIBLE OUTLET

NOTES

- COPPER TUBING AND CONNECTORS
 - (A) ALL COPPER TUBING SHALL BE IN ACCORDANCE WITH AS 1432.
 - (B) ALL CAPILLARY AND COMPRESSION FITTINGS SHALL BE IN ACCORDANCE WITH AS 3688.
 - (C) ALL CAPILLARY FITTINGS SHALL HAVE LONG ENGAGEMENT SOCKETS.
- POLYETHYLENE PIPE AND CONNECTORS
 - (A) ALL POLYETHYLENE PIPE SHALL BE PE100 PN16 IN ACCORDANCE WITH AS 4130
 - (B) ALL MECHANICAL JOINT FITTINGS SHALL BE IN ACCORDANCE WITH AS 4129.
- PROPERTY CONNECTIONS ON NEW AND EXISTING MAINS ARE TO HAVE TPFNR FERRULE COCKS (CAP CONFIGURATION) AND GUNMETAL TAPPING BANDS.
- ALL DIMENSIONS IN MILLIMETRES.
- SERVICES CROSSING ROADS TO BE INSTALLED WITHIN 100mm m-PVC CONDUITS.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	ARRANGEMENT REVISED. NOT FOR CONSTRUCTION, CoGC AND UU IN TITLEBLOCK	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

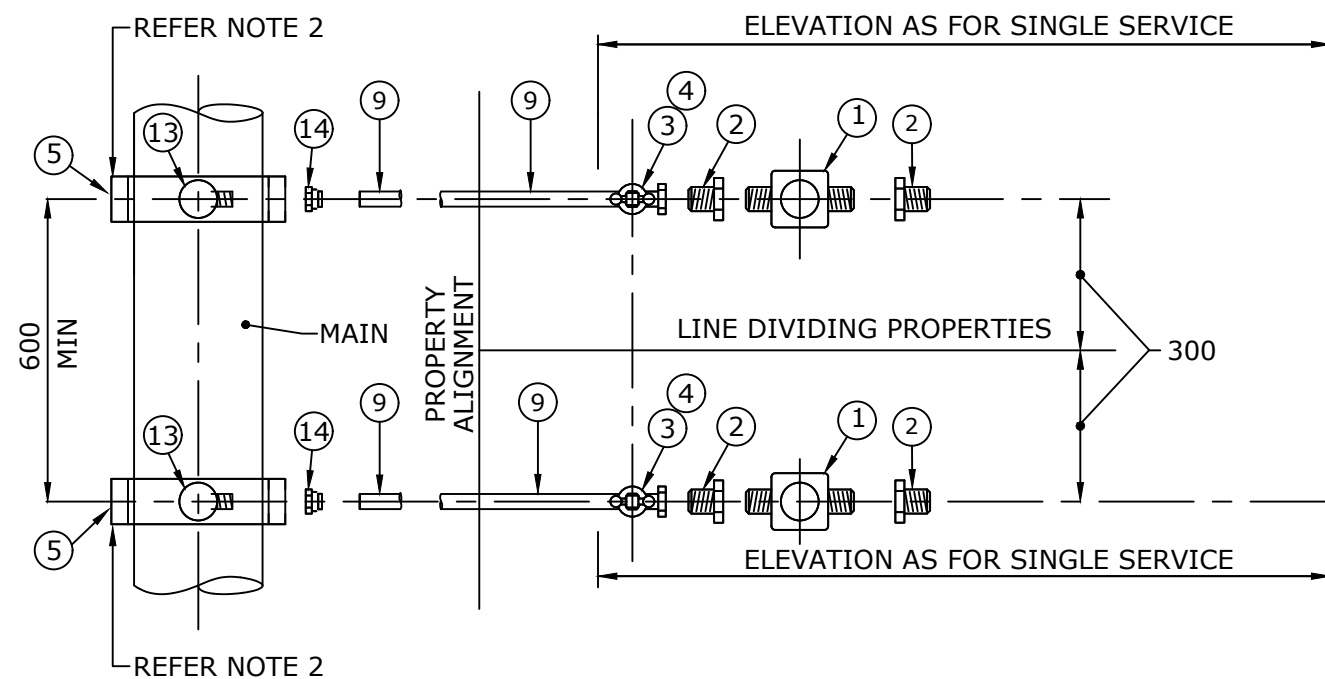
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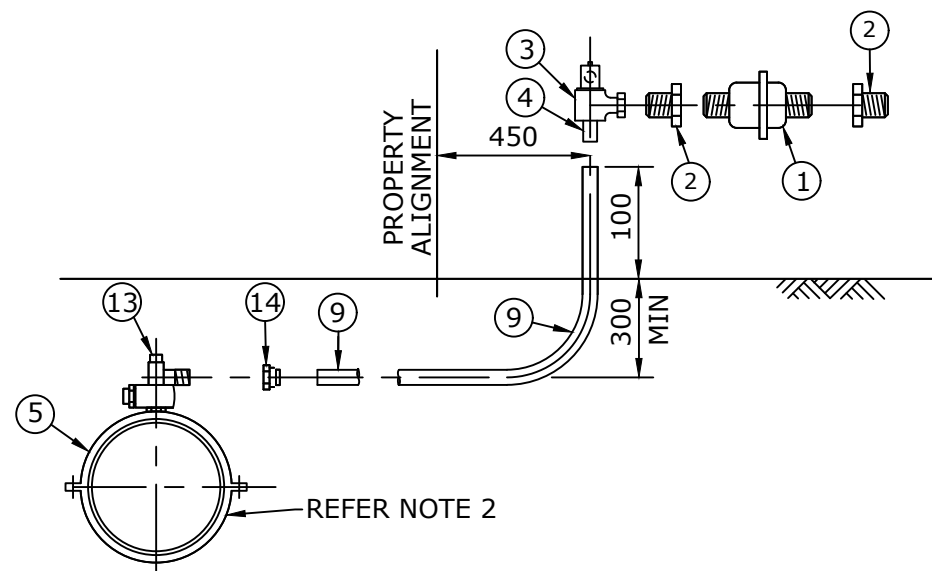
WATER SUPPLY STANDARD DRAWING

PROPERTY SERVICES
LONG SIDE CONNECTIONS
ABOVE GROUND METER

CoGC	LSC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1109-1				B
NOT TO SCALE				ORG DATE: 1/1/2013



NEW NOM Ø20 DOUBLE SERVICE - PLAN
SHORT SIDE CONNECTION



NEW NOM Ø20 SINGLE SERVICE - ELEVATION
SHORT SIDE CONNECTION

FITTING SCHEDULE	
ITEM	DESCRIPTION
1.	20mm WATER METER. DIMENSIONS TO AS 3565 TABLE 2.1
2.	20mm WATER METER COUPLING
3.	RIGHT ANGLED 20mm LOCKABLE F & F WATER SERVICE BALL VALVE
4.	20mm MALE MI TO 20mm OD CAPILLARY ADAPTOR
5.	GUNMETAL TAPPING BAND
9.	20mm OD TYPE A ANNEALED COPPER TUBE
13.	20mm TPFNR WITH MALE SERIES GB OUTLET
14.	20mm FERRULE CAPILLARY ADAPTOR

NOTES

- COPPER TUBING AND CONNECTORS
(A) ALL COPPER TUBING SHALL BE IN ACCORDANCE WITH AS 1432.
(B) ALL CAPILLARY AND COMPRESSION FITTINGS SHALL BE IN ACCORDANCE WITH AS 3688.
(C) ALL CAPILLARY FITTINGS SHALL HAVE LONG ENGAGEMENT SOCKETS.
- PROPERTY CONNECTIONS ON NEW AND EXISTING MAINS ARE TO HAVE TPFNR FERRULE COCKS (CAP CONFIGURATION) AND GUNMETAL TAPPING BANDS.
- ALL DIMENSIONS IN MILLIMETRES.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	ARRANGEMENT REVISED. NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

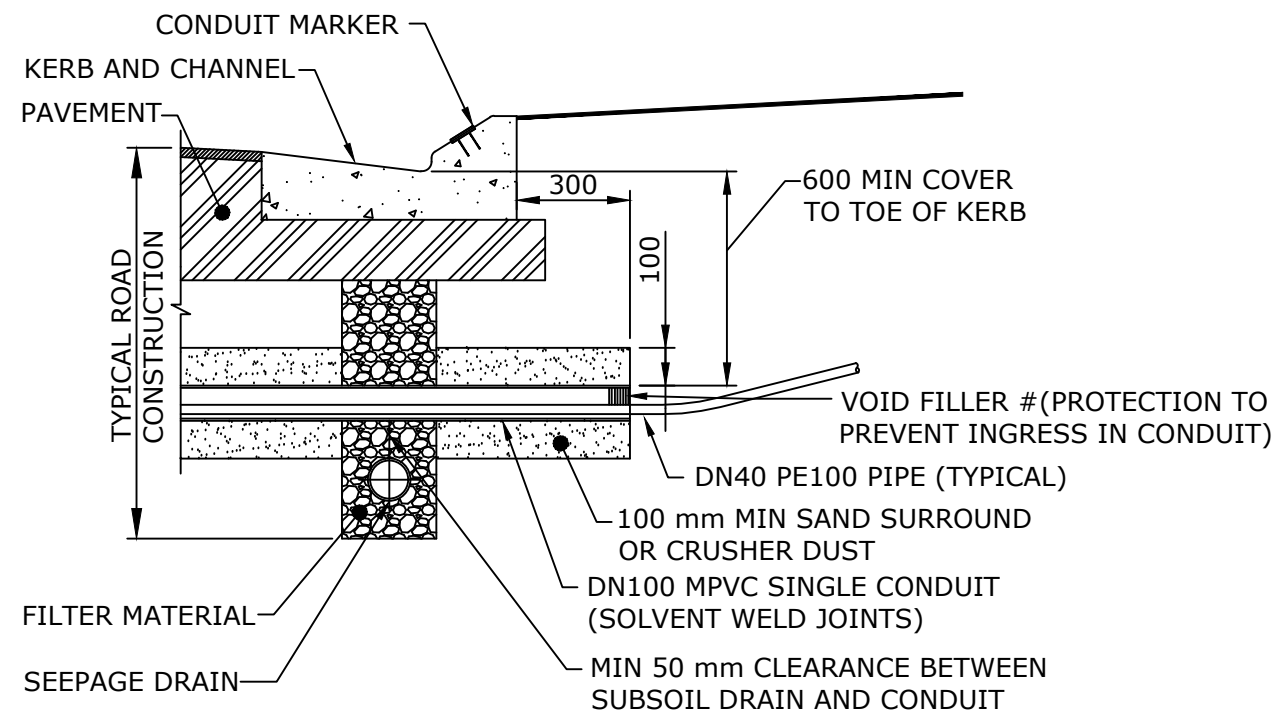
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SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

PROPERTY SERVICES
SHORT SIDE CONNECTIONS
ABOVE GROUND METER

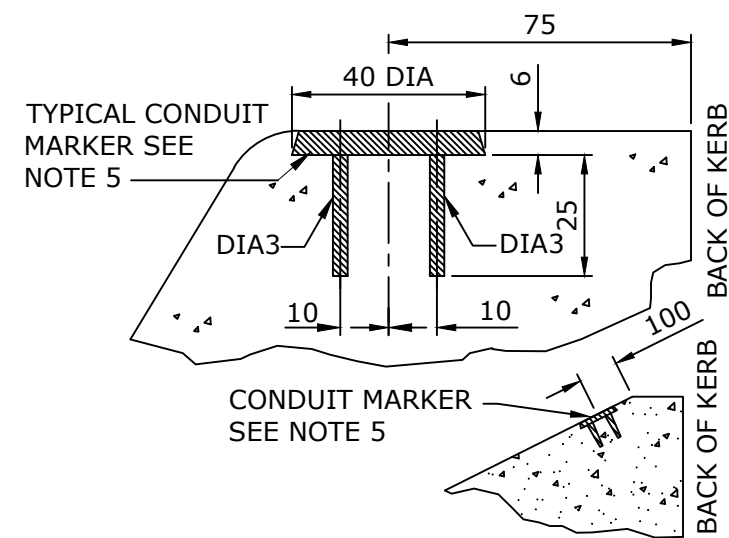
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DRAWING No.				VERSION
SEQ-WAT-1109-2				B
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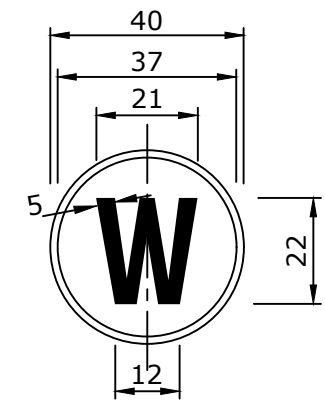
DETAIL A

NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH QUEENSLAND CODES, SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARD.
3. THE MAIN TPFNR SHALL BE LEFT IN THE FULLY OPEN POSITION. THE WATER METER BALL VALVE SHALL BE LEFT IN THE FULLY CLOSED POSITION.
4. WATER CONNECTION AND CONDUIT LAYOUT TO BE DESIGNED SO THAT WATER METERS ARE NOT ADJACENT TO ELECTRICITY CONNECTION POINTS.
5. CONDUIT MARKERS SHALL BE INSTALLED AS DETAILED WITH "W" MARKING FOR WATER SERVICES AND "I" MARKING FOR IRRIGATION SYSTEMS. KERB MARKERS TO BE INSTALLED ON TOP OF KERB WHERE POSSIBLE.
6. DN63 SDR13.6 PE OR DN50 PVC CONDUIT MAY BE CONSIDERED ON A CASE BY CASE BASIS FOR EXISTING ROAD CROSSINGS.
7. PE SERVICES SHALL HAVE APPROVED DETECTABLE MARKER TAPE LAID ON TOP OF THE BEDDING, EXTENDING FROM THE WATER MAIN TO THE METER. WHERE CONDUITS ARE USED THE MARKER TAPE SHALL BE ATTACHED TO THE WATER SERVICES AND PASS THROUGH THE CONDUIT.
8. BACKFILLING IN ROADWAYS SHALL COMPLY WITH RELEVANT ROAD AUTHORITY REQUIREMENTS.
9. SERVICE CONDUITS SHALL EXTEND 300mm BEYOND ALL EXISTING OR PLANNED CONCRETE FOOTPATHS, BIKEWAYS AND OTHER HARD STANDING AREAS.
10. ALL DIMENSIONS ARE IN MILLIMETRES.
11. ALSO SEE NOTES ON SEQ-WAT-1109-1.

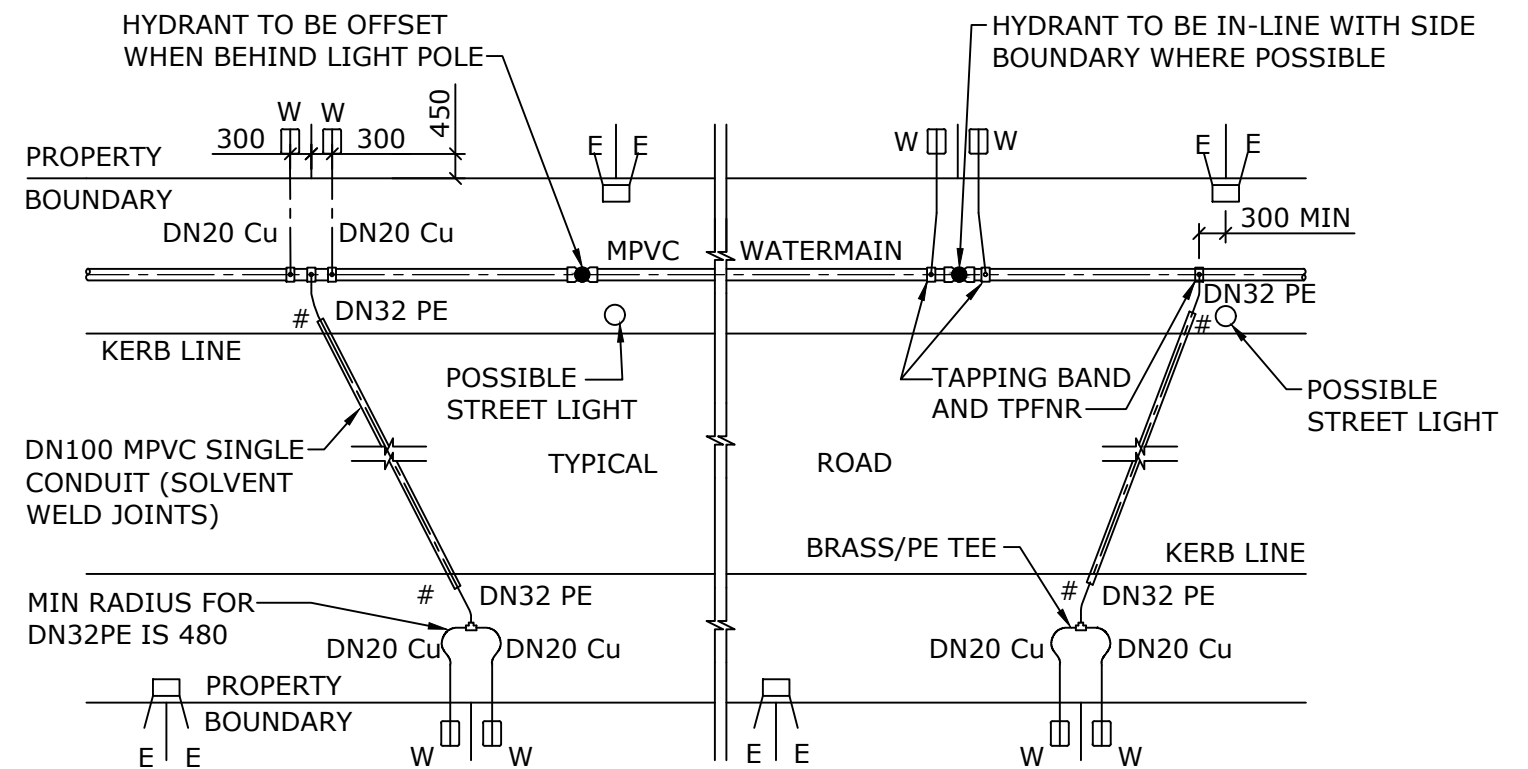


CONDUIT MARKER DETAILS

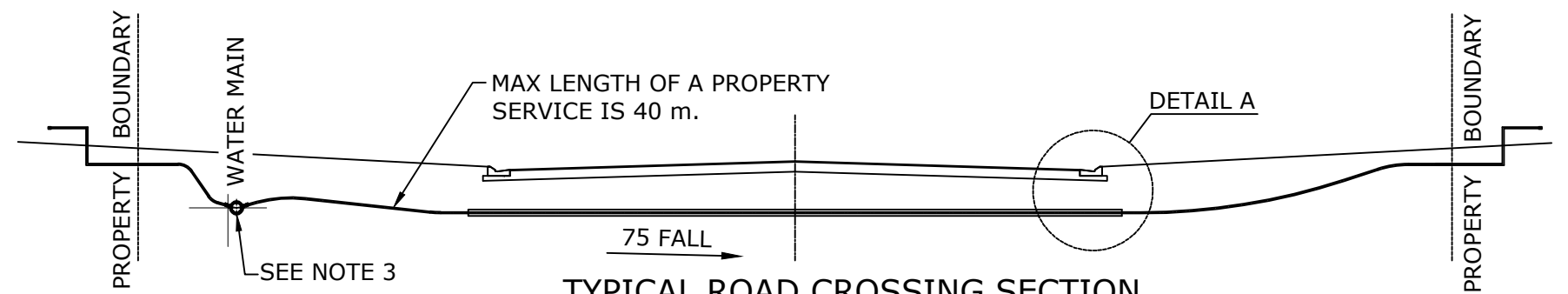


LEGEND

- E - ELECTRICITY CONNECTION POINT
- W - WATER CONNECTION & METER POINT



TYPICAL MAIN CONNECTIONS



TYPICAL ROAD CROSSING SECTION

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

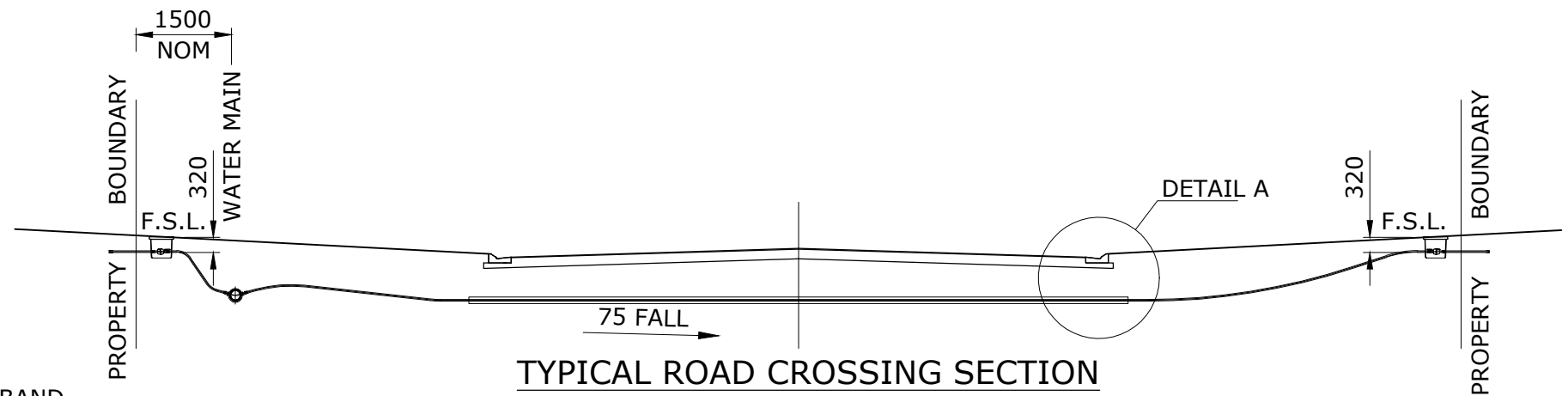
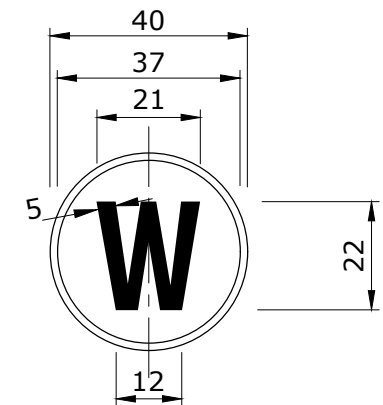
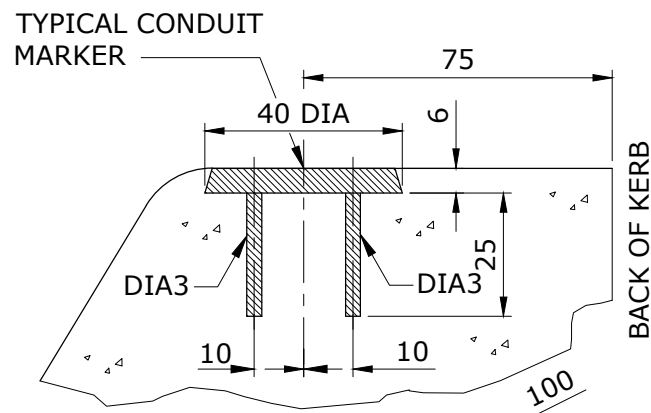
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WATER SUPPLY STANDARD DRAWING

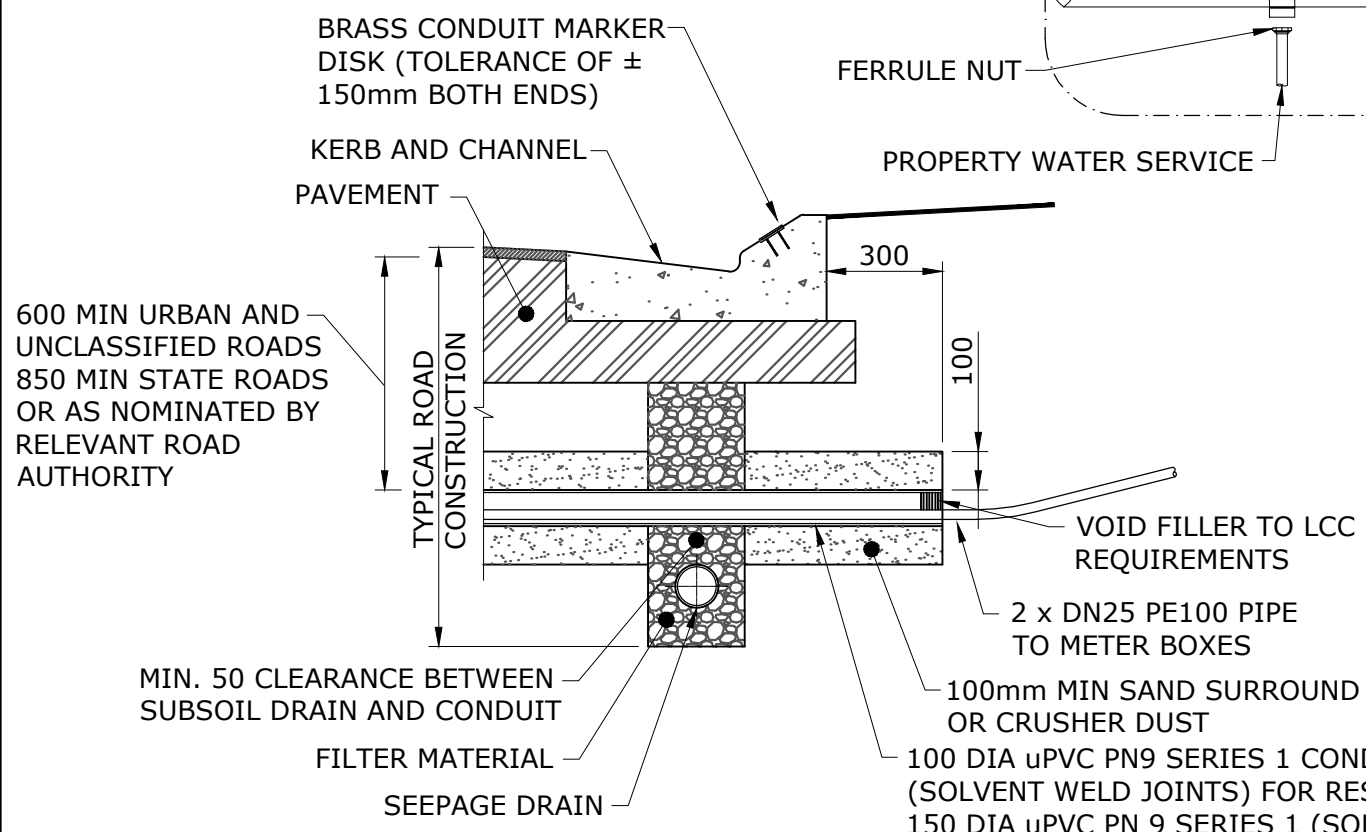
**TYPICAL PROPERTY SERVICES
MAIN TO METER AND
CONDUIT DETAILS**

CoGC	LSC	RCC	DU	UW
DRAWING No.				VERSION
SEQ-WAT-1109-3				A
NOT TO SCALE				ORG DATE: 1/2/2024

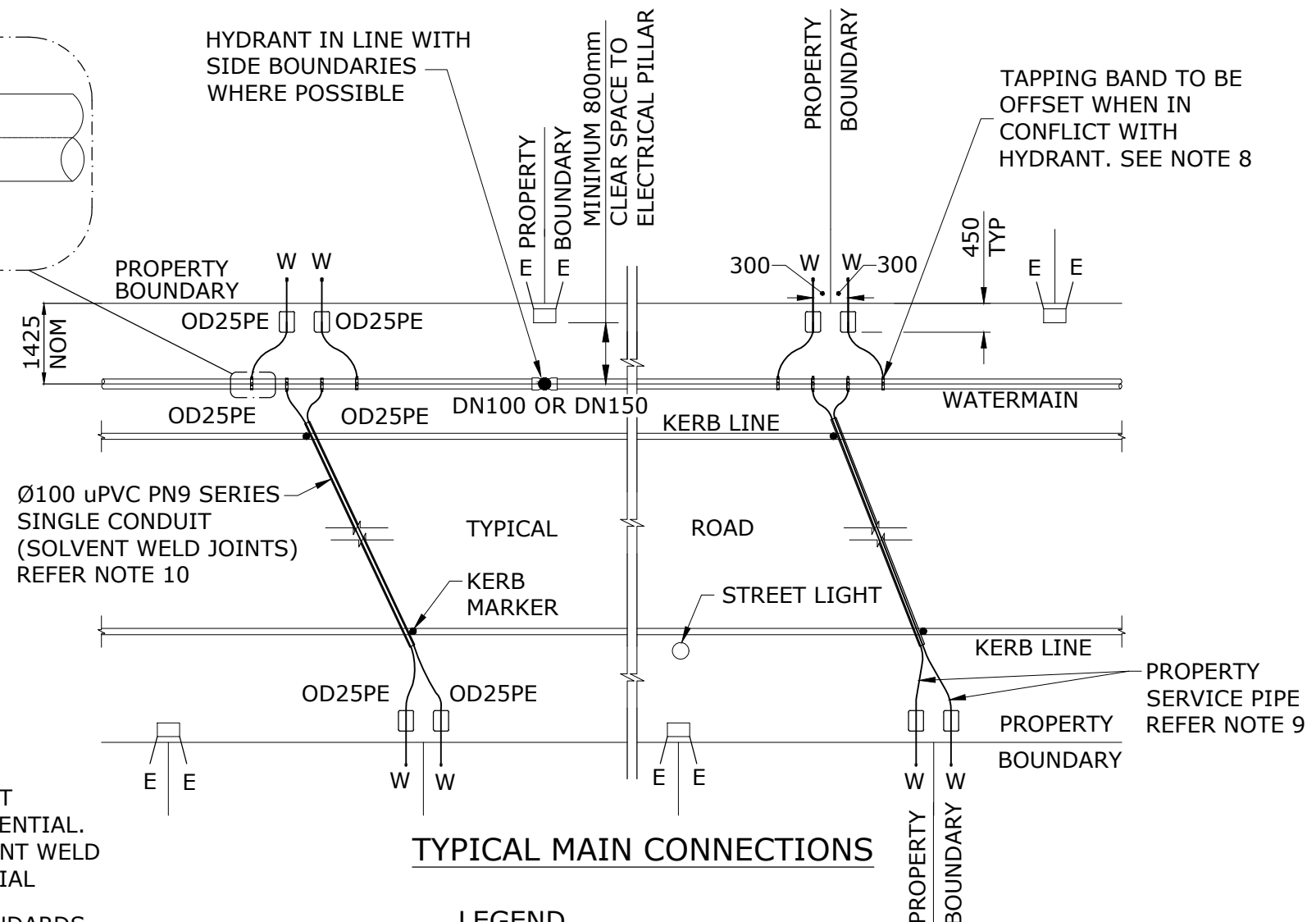
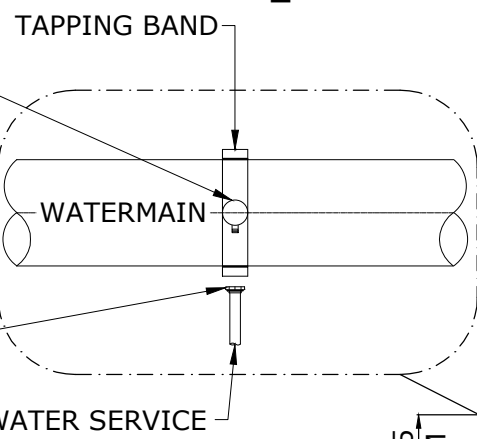


TYPICAL ROAD CROSSING SECTION

BRASS SERVICE CONDUIT MARKER



DETAIL A



TYPICAL MAIN CONNECTIONS

LEGEND

- E - ELECTRICITY CONNECTION POINT
- W - WATER CONNECTION & METER POINT

NOTES:

1. ALL WORKS SHALL BE IN ACCORDANCE WITH QUEENSLAND CODES, SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORKS SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. BACKFILLING IN ROADWAYS SHALL COMPLY WITH THE RELEVANT ROAD AUTHORITY REQUIREMENTS.
4. WATER CONNECTION AND CONDUIT LAYOUT TO BE DESIGNED SO THAT WATER METERS ARE NOT ADJACENT TO ELECTRICITY CONNECTION POINT.
5. ALL DIMENSIONS ARE IN MILLIMETRES.
6. ALL PROPERTIES TO BE SERVED BY INDIVIDUAL WATER SERVICES.
7. WATER PROPERTY SERVICES, CONDUITS AND WATER METER BOXES ARE TO BE PROVIDED AT THE TIME OF LAND SUBDIVISION. WATER METERS MUST BE INSTALLED BY LCC.
8. PRETAPPED WATER CONNECTIONS ARE NOT ACCEPTED. ONLY TAPPING BANDS ARE PERMITTED TO BE USED.

9. SINGLE PROPERTY SERVICE PE PIPE UP TO 20 M IN LENGTH IS OD25. SINGLE PROPERTY SERVICE PE PIPE OVER 20 M IN LENGTH IS OD32.
10. THREE OR MORE PROPERTY SERVICES WITH MAXIMUM OF SIX PROPERTY SERVICES IN A DN150 CONDUIT.
11. HYDRANTS MUST BE 10m CLEAR OF PAD MOUNT TRANSFORMER AND RMU'S.
12. VALVES/HYDRANTS SHALL BE LOCATED OUTSIDE THE POWER POLE ZONE OF INFLUENCE.

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	NOTES 7 TO 12 & TAPPING BAND ADDED, NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

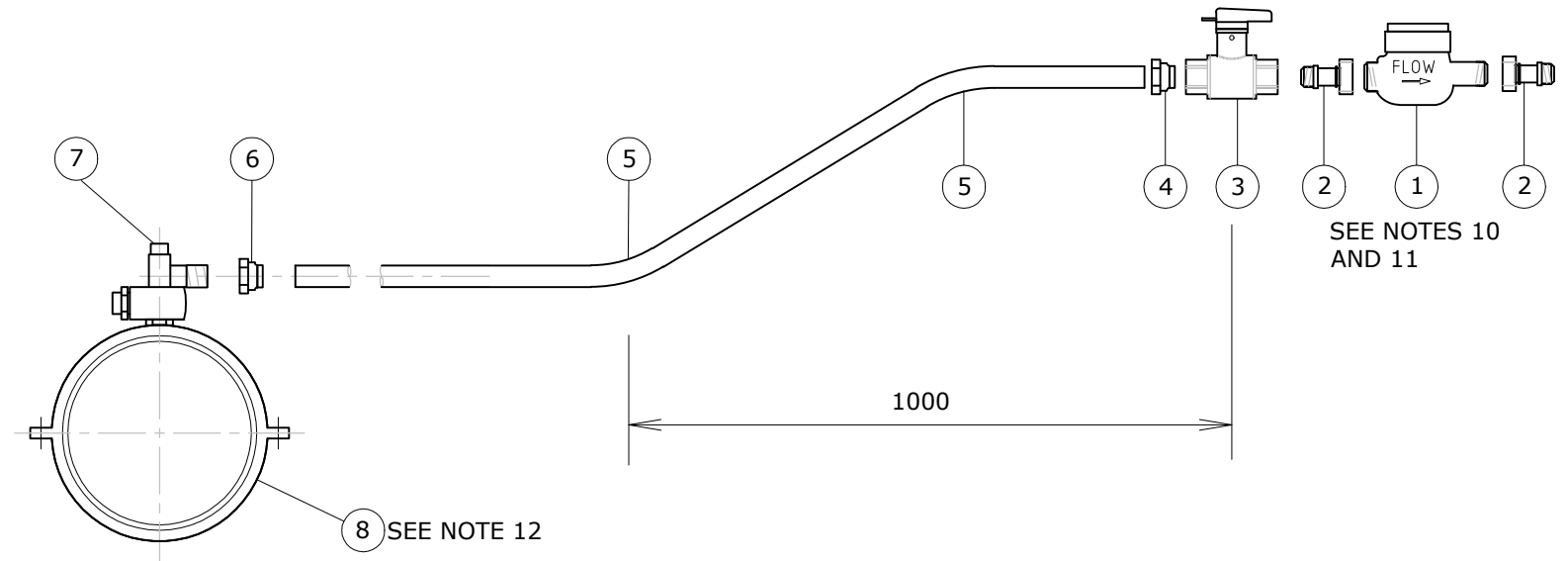
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

PROPERTY SERVICES
 GENERAL ARRANGEMENT AND
 CONDUIT DETAILS

CoGC	LCC	RCC	UU	DW
DRAWING No.				VERSION
SEQ-WAT-1110-1				B
NOT TO SCALE				ORG DATE: 1/11/2015

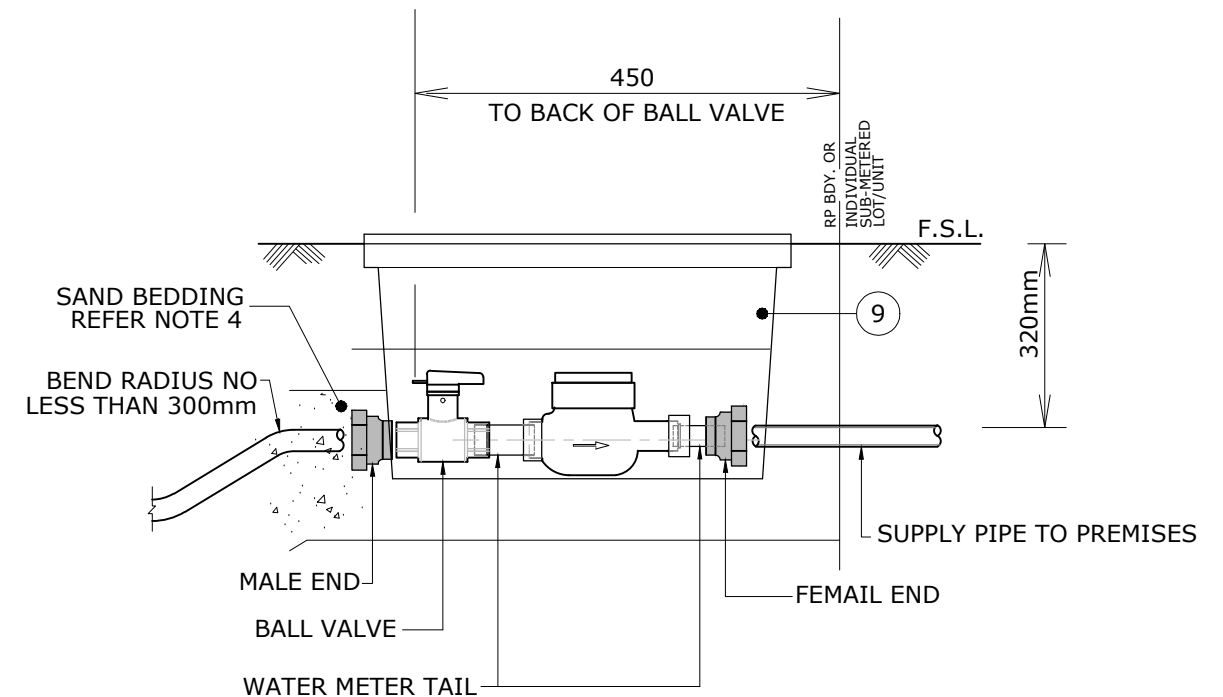
#	PART DESCRIPTION AND REQUIREMENTS
1.	20mm APPROVED WATER METER
2.	20mm WATER METER TAIL WITH QLD METER THREAD
3.	APPROVED IN-LINE 20mm BRASS LOCKABLE BALL VALVES WITH HANDLE (SEE IPAM LIST) TO BE LEFT IN FULLY CLOSED POSITION.
4.	MALE END PUSHFIT-FITTING. 20mm MALE END PE COMPRESSION FITTING
5.	DN25 PE PIPE TO AS4130 PN16 BEND AS REQUIRED TO A RADIUS OF CURVATURE GREATER THAN 300 mm AND COLOURED OR STRIPED APPROPRIATELY (BLUE FOR DRINKING WATER OR PURPLE FOR RECYCLED WATER).
6.	20mm FERRULE NUT.
7.	APPROVED 20mm TPNFR FERRULE COCK TO BE LEFT IN FULLY OPEN POSITION.
8.	APPROVED TAPPING BAND (SEE IPAM LIST)
9.	APPROVED METER BOX (SEE IPAM LIST)



20MM WATER SERVICE INSTALLATION ASSEMBLY

NOTES:

- ALL WORKS SHALL BE IN ACCORDANCE WITH QUEENSLAND CODES, SPECIFICATIONS AND STANDARDS.
- UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORKS SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- ALL FITTINGS AND PIPES SHALL BE JOINTED IN ACCORDANCE WITH THEIR MANUFACTURER'S REQUIREMENTS.
- SERVICE PIPE OUTSIDE CONDUIT MUST HAVE 100mm BEDDING AND SURROUND OF IMPORTED SAND CONFORMING TO TABLE G3 OF AS2566.2.
- A MINIMUM OF 300mm OF THE SERVICE PIPE IMMEDIATELY BEFORE THE BALL VALVE MUST BE PERPENDICULAR TO THE FRONT LOT BOUNDARY OF THE LOT IT SERVES.
- DIMENSIONS ARE IN MILLIMETRES, UNLESS SHOWN OTHERWISE.
- THIS DRAWING TO BE READ TOGETHER WITH DRAWING SEQ-WAT-1110-1.
- WITH APPROPRIATE UPSIZING OF PARTS THIS DRAWING IS APPLICABLE ALSO TO 25mm INTERNAL DIAMETER CONNECTIONS USING DN32 PE PIPE.
- WATER PROPERTY SERVICE PIPES, CONDUITS AND WATER METER BOXES ARE TO BE PROVIDED AT THE TIME OF LAND SUBDIVISION.
- A METER BOX SHALL INCLUDE A SINGLE BALL VALVE BEFORE THE METER WITH TAILS AND A BLANK PERFORATED BRIDGING PIECE IN PLACE OF THE WATER METER.
- WATER METERS MUST BE INSTALLED BY LCC.
- PRETAPPED CONNECTORS ARE NOT ACCEPTED. ONLY TAPPING BANDS ARE PERMITTED TO BE USED



20MM WATER METER SET-UP

SEE NOTES 9 TO 11

REV. No.	DATE	DESCRIPTION	AUTH.	SEQ WATER SERVICE PROVIDERS		WATER SUPPLY STANDARD DRAWING		CoGC	LCC	RCC	UU	UW
				WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION		20mm/25mm DOMESTIC PROPERTY WATER SERVICE INSTALLATION ASSEMBLY		DRAWING No.		VERSION		
				NOT FOR CONSTRUCTION				SEQ-WAT-1110-2		B		
B	1/02/24	UPDATED METER COUPLING, F/F BALL VALVE, REFERENCES AND TITLE OF DRAWING, NOTES 10 & 13 ADDED, NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK		SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ				NOT TO SCALE		ORG DATE:		1/11/2015

Drawings SEQ-WAT-1111-1 to SEQ-WAT-1111-11 purposely excluded from this PDF document.

For Drawings SEQ-WAT-1111-1 to SEQ-WAT-1111-11, refer to Large Meter Arrangement Drawing Set available on the SEQ Code website:
<https://www.seqcode.com.au/seq-water-supply-code>

PREPARING THE TEST AREA:

CONDUCT ALL NATIVE SOIL IDENTIFICATION TESTS ON A FRESHLY EXPOSED, DAMP, HAND TRIMMED AREA OF THE TRENCH WALL IN THE PIPE ZONE. TAKE CARE THAT THE SOIL IN THE EXPOSED TEST AREA IS NOT COMPACTED OR LOOSENED DURING TRENCH EXCAVATION. IF THE SOIL IN THE TRENCH FLOOR AND WALL IS VERY DRY AT THE TIME THE TRENCH IS OPENED THEN FLOOD THE TEST AREA AND ALLOW TIME FOR THE WATER TO BE ABSORBED BY THE SOIL BEFORE IT IS TRIMMED AND TESTED.

IDENTIFYING CLAY SOILS:

A LUMP OF CLAY SOIL WILL BE DIFFICULT TO BREAK WHEN DRY. IT WILL BE STICKY AND NEED SOME EFFORT TO MOULD WITH THE FINGERS WHEN WET. CLAY WILL NOT WASH OFF EASILY. INDIVIDUAL CLAY PARTICLES ARE HARD TO SEE.

TESTING CLAY SOILS:

CLAY SOILS ARE BEST TESTED IN THE WALL OF THE TRENCH. THE FIST, THE THUMB OR THE THUMBNAIL ARE USED TO DETERMINE THE CONSISTENCY (STRENGTH) OF THE CLAY (SEE TABLE.)

IDENTIFYING CLEAN SAND SOILS:

THE INDIVIDUAL GRAINS OF SAND WILL BE VISIBLE TO THE EYE. A LUMP OF CLEAN SAND, IF IT CAN BE PICKED UP AT ALL, WILL CRUMBLE WITH VERY LITTLE EFFORT. CLEAN SAND WASHES OFF EASILY.

TESTING CLEAN SAND SOILS:

CLEAN SAND SOILS ARE BEST TESTED IN THE FLOOR OF THE TRENCH BY PUSHING WITH THE WHOLE BODY WEIGHT ON ONE FOOT. THE DEPTH OF THE DEPRESSION LEFT BY THE BOOT IS RELATED TO THE DENSITY OF THE SAND (SEE TABLE). TAKE CARE TO ENSURE THAT THE SAND IN THE TRENCH FLOOR WAS NOT COMPACTED OR LOOSENED DURING THE EXCAVATION OF THE TRENCH OR THE TRIMMING OF THE TEST AREA.

TESTING ROCK:

THE RECOMMENDED FIELD IDENTIFICATION TESTS FOR ROCK RELY ON OBSERVING THE EASE WITH WHICH THE ROCK CAN BE DUG WITH A PICK, AND ESTIMATING THE SPACING OF THE JOINTS IN THE ROCK. (JOINTS ARE COMMONLY CALLED CRACKS OR BREAKS). THE SPACING BETWEEN JOINTS IS IMPORTANT BECAUSE THE ALLOWABLE BEARING PRESSURE ON ROCK IS USUALLY CONTROLLED BY THE JOINTS IN IT, RATHER THAN THE INHERENT STRENGTH OF THE BLOCK OF ROCK. JOINTS MAY BE TIGHTLY CLOSED (LIKE HAIRLINE CRACKS), BUT CAN ALSO BE OPEN (FILLED WITH AIR) OR FILLED WITH SOFT CLAY OR OTHER SOIL.

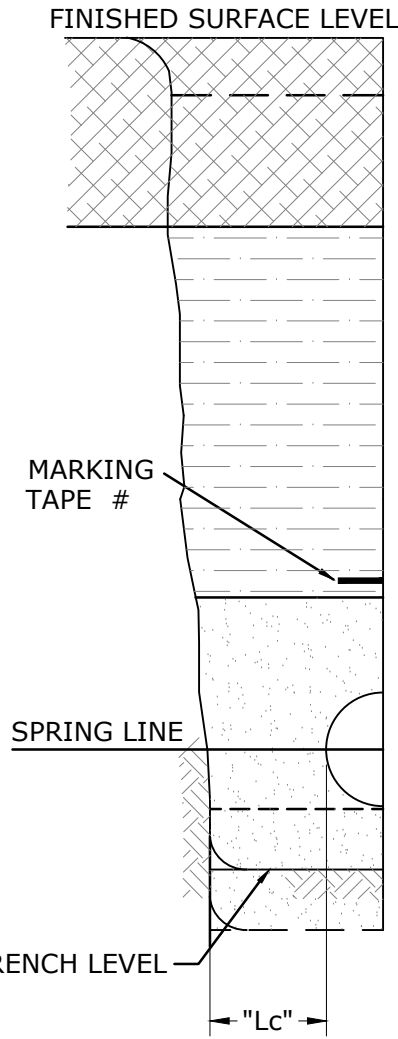
SOIL CLASSIFICATION		FIELD IDENTIFICATION TEST	▲ AHBP kPa
CLAY SOILS	VERY SOFT	EASILY PENETRATED 40 mm WITH FIST.	< 50 *
	SOFT	EASILY PENETRATED 40 mm WITH THUMB.	< 50 *
	FIRM	MODERATE EFFORT NEEDED TO PENETRATE 30 mm WITH THUMB.	< 50 *
	STIFF	READILY INDENTED WITH THUMB BUT PENETRATED ONLY WITH GREAT EFFORT.	50
	VERY STIFF	READILY INDENTED WITH THUMBNAIL.	100
	HARD	INDENTED WITH DIFFICULTY BY THUMBNAIL.	200
SAND & GRAVEL	LOOSE CLEAN SAND	TAKES FOOTPRINT MORE THAN 10 mm DEEP.	< 50 *
	MEDIUM-DENSE CLEAN SAND	TAKES FOOTPRINT 3 mm TO 10 mm DEEP.	50
	DENSE CLEAN SAND OR GRAVEL	TAKES FOOTPRINT LESS THAN 3 mm DEEP.	100
ROCK	BROKEN OR DECOMPOSED ROCK	DIGGABLE. HAMMER BLOW "THUDS". JOINTS (BREAKS IN ROCK) SPACED AT LESS THAN 300 mm APART.	100
	SOUND ROCK	DIGGABLE. HAMMER BLOW "THUDS". JOINTS (BREAK IN ROCK) SPACED AT MORE THAN 300 mm APART.	200
UNCOMPACTED FILL DOMESTIC REFUSE		OBSERVATION AND KNOWLEDGE OF THE SITE HISTORY.	< 50 *

LEGEND

- ▲ AHBP ALLOWABLE HORIZONTAL BEARING PRESSURE FOR:
 - 10 mm MOVEMENT.
 - CENTRE OF THRUST 800 mm BELOW THE NATURAL SURFACE LEVEL. (EXCLUDES ENGINEERED FILL AND DISTURBED GROUND)
 - EXCLUDES HIGH WATER TABLE.
- * SPECIAL GEOTECHNICAL ASSESSMENT REQUIRED

REV. No.	DATE	DESCRIPTION	AUTH.	<p align="center">SEQ WATER SERVICE PROVIDERS <small>WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION</small></p> <p align="center">NOT FOR CONSTRUCTION</p> <p align="center"><small>SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ</small></p>	<p align="center">WATER SUPPLY STANDARD DRAWING</p> <p align="center">TYPICAL SOIL CLASSIFICATION GUIDELINES AND ALLOWABLE BEARING PRESSURES FOR ANCHORS & THRUST BLOCKS</p>	CoGC	LCC	RCC	UU	UW	DRAWING No. SEQ-WAT-1200-1	VERSION B	
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.				NOT TO SCALE							ORG DATE: 1/1/2013

MATERIAL		ZONE
ROAD SURFACE	VERGE & TRACK	
ROAD SURFACE LAYER	TO MATCH EXISTING	SURFACE COURSE
TO MATCH EXISTING ROAD BASE OR TO ROAD OWNER'S REQUIREMENTS	TO ROAD OWNER'S REQUIREMENTS OR INORGANIC FILL WITH 75 MAXIMUM STONE SIZE	ROAD BASE
TO ROAD OWNER'S REQUIREMENTS (SEE NOTE 5) OR INORGANIC FILL WITH 75 MAXIMUM STONE SIZE		TRENCH FILL
EMBEDMENT MATERIAL IN ACCORDANCE WITH DESIGN DRAWINGS AND SEQ-SP REQUIREMENTS. WHERE APPROVED BY SEQ-SP, BEDDING MAY BE OMITTED IF TRENCH BASE IS GRANULAR SAND		OVERLAY
		SIDE SUPPORT
		BEDDING
		OVER-EXCAVATION



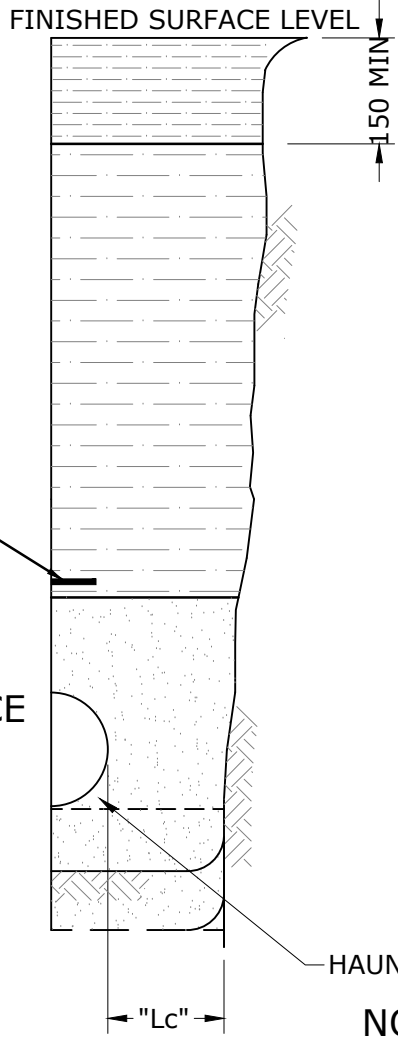
MINIMUM PIPE COVER

LOCATION	NOMINAL BORE (NB)	
	≤200	>200
NON ROADWAYS	600	1000
SEALED ROADS	600	1000
MAJOR ROADWAYS/ EMBANKMENTS/ COMMERCIAL/ INDUSTRIAL AREAS	750	1000
FREEWAYS	1200	1200

SPRING LINE TRENCH CLEARANCE

NOMINAL BORE (NB)	MINIMUM CLEARANCE "Lc" TO AS/NZS 2566.1
≤300	150
>300-≤450	200
>450-≤900	300
>900-≤1500	350

TRENCH WIDTH TO BE SUFFICIENT TO SAFELY LAY THE PIPE AND COMPACT THE SIDE SUPPORT ZONE.



ZONE		MATERIAL
TOPSOIL OR FOOTWAY SURFACE		ORIGINAL MATERIAL OR IMPORTED MATERIAL OF EQUAL QUALITY
TRENCH FILL		INORGANIC FILL WITH 75 MAXIMUM STONE SIZE
EMBEDMENT	OVERLAY	EMBEDMENT MATERIAL IN ACCORDANCE WITH DESIGN DRAWINGS AND SEQ-SP REQUIREMENTS. WHERE APPROVED BY SEQ-SP, BEDDING MAY BE OMITTED IF TRENCH BASE IS GRANULAR SAND
	SIDE SUPPORT	
	BEDDING	
	OVER-EXCAVATION	

NO VEHICULAR LOADING

(INCLUDES LOCATIONS WHERE OCCASIONAL VEHICLES LOADINGS OCCUR EG. PARKLANDS, FOOTWAYS)

VEHICULAR LOADING

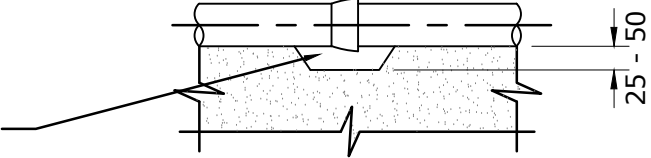
LEGEND

SPECIFIED BY THE DESIGNER IN DESIGN DRAWINGS

NOTES

- ALL DIMENSIONS IN MILLIMETRES.
- BEDDING - SPECIAL BEDDING SHALL BE SPECIFIED TO SUIT THE CONDITIONS IF THE TRENCH FLOOR HAS:
 - IRREGULAR OUTCROPS OF ROCK.
 - AHBP OF < 50 kPa (SEE SEQ-WAT-1200-1), OR
 - UNCONTROLLED GROUND WATER HAS DISTURBED THE FLOOR OF THE TRENCH.
- EMBEDMENT, TRENCH FILL AND COMPACTION TO MEET THE 3. REQUIREMENTS OF WSA-03 PART 3 AND THE RELEVANT SEQ-SP.
- SIDES OF EXCAVATION TO BE KEPT VERTICAL TO AT LEAST 150 ABOVE THE PIPE.
- DESIGNER TO CHECK ON RELEVANT ROAD AUTHORITIES REQUIREMENTS.
- ADDITIONAL INFORMATION PROVIDED IN SEQ-WAT-1200 SERIES COMMENTARY.

PROVIDE POCKETS IN BEDDING, AT JOINTS PRIOR TO LAYING PIPES. FILL VOID DURING PLACEMENT OF EMBEDMENT.



PIPE JOINT BEDDING POCKETS
FOR JOINT PROJECTIONS (SOCKETS, FLANGES ETC)

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	4/06/18	AMENDED MINIMUM PIPE COVER TABLE AND TRENCH CLEARANCE TABLES.	
B	20/08/15	MINIMUM PIPE COVER TABLE AMENDED.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

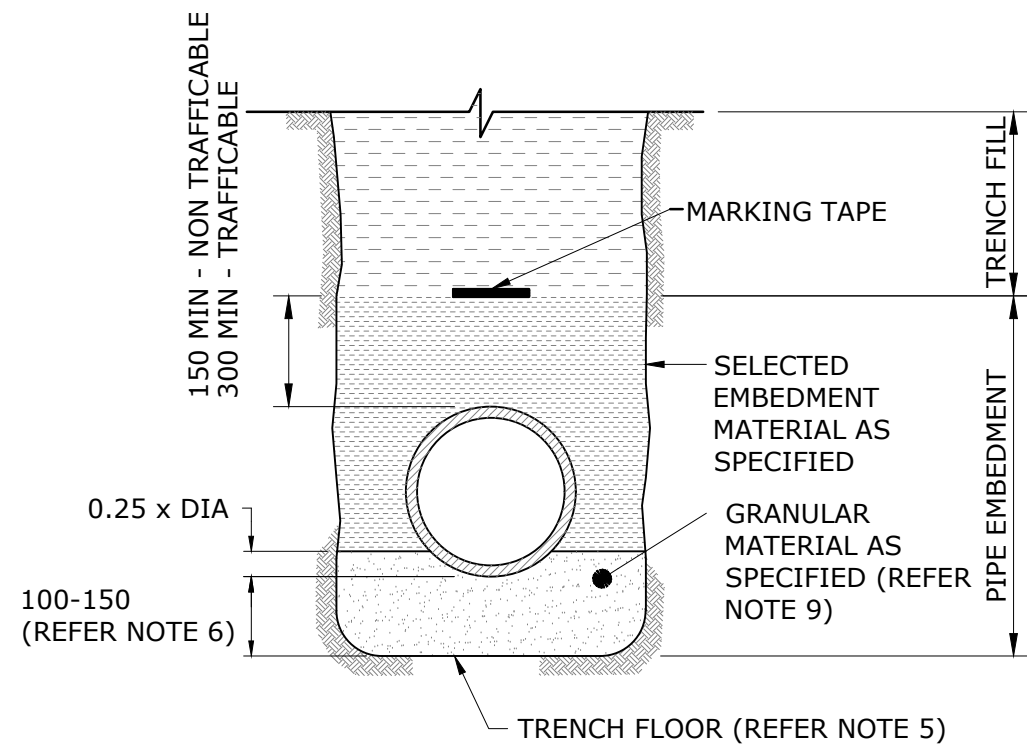
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

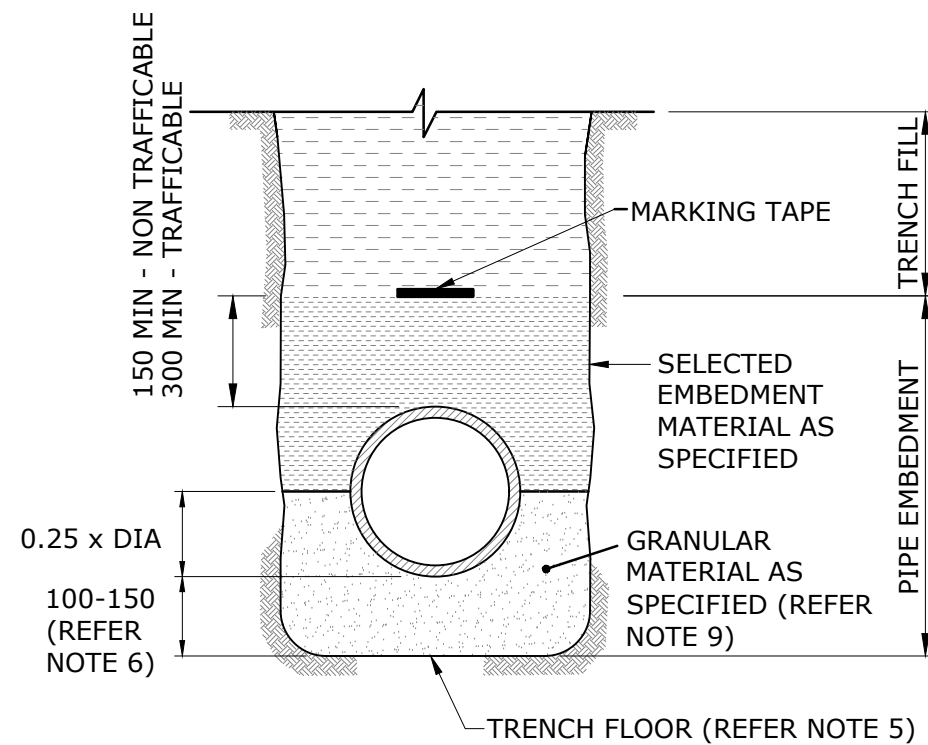
WATER SUPPLY STANDARD DRAWING

EMBEDMENT & TRENCHFILL
TYPICAL ARRANGEMENT

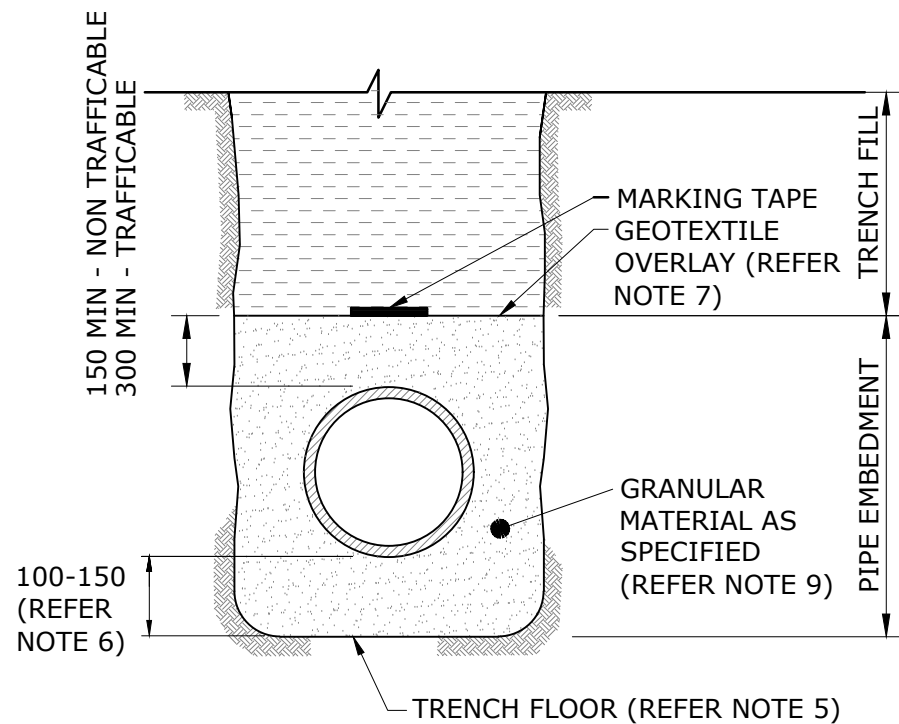
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1200-2				D
NOT TO SCALE				ORG DATE: 1/1/2013



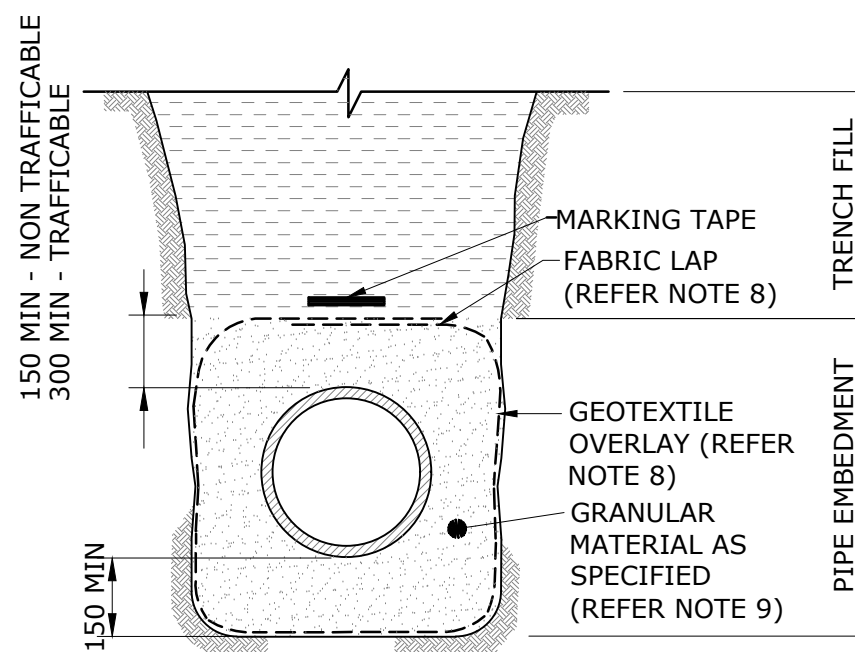
TYPE A SUPPORT
FOR RIGID PIPES ONLY (REFER NOTE 3)



TYPE B SUPPORT
FOR RIGID PIPES ONLY (REFER NOTE 3)



TYPE C SUPPORT
FOR FLEXIBLE & RIGID PIPES (REFER NOTE 3)



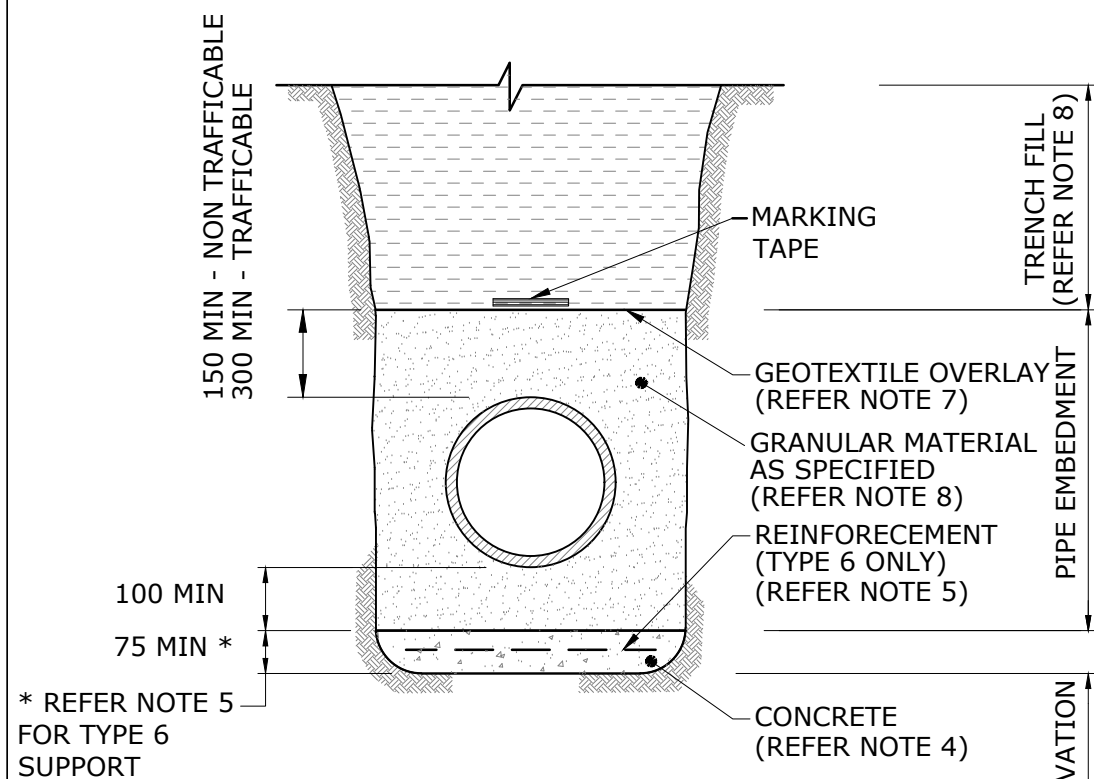
TYPE D SUPPORT - WITH GEOTEXTILE
FOR FLEXIBLE & RIGID PIPES (REFER NOTE 3)

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH SEQ-WAT-1200.
3. PIPE CLASSIFICATION
 - (a) RIGID PIPES: VC AND RC
 - (b) FLEXIBLE PIPES: PVC, GRP, STEEL, DI AND PE.
4. PLACEMENT OF EMBEDMENT, TRENCHFILL & COMPACTION TO MEET THE REQUIREMENTS OF THE CODE.
5. EXCAVATE OR COMPACT TRENCH FLOOR TO PROVIDE A FLAT FIRM BASE TO SUPPORT BEDDING MATERIAL AND MINIMISE PIPELINE SETTLEMENT. WHEN EXCAVATED, REPLACE WITH GRANULAR MATERIAL AS SPECIFIED FOR BEDDING OR ADOPT TYPE E,F,G OR H SUPPORT AS REQUIRED.
6. ENSURE BEDDING IS DEEP ENOUGH THAT PIPE JOINT PROJECTIONS (SOCKETS, FLANGES) DO NOT TOUCH TRENCH FLOOR.
- 7A. GEOTEXTILE TO BE USED WHERE TRENCH FILL IS A SAND OR FINE CLAY MATERIAL.
- 7B. TYPE D SUPPORT TO BE USED WHERE MIGRATORY NATIVE SOILS. (SANDS & CLAYS) ARE ENCOUNTERED ADJACENT TO THE EMBEDMENT ZONE AND SINGLE SIZE AGGREGATE IS USED.
8. LAY GEOTEXTILE FILTER FABRIC AGAINST TRENCH FLOOR AND WALLS SUCH THAT IT FULLY ENCASES THE EMBEDMENT.
 - PRESS FABRIC INTO THE VOIDS BEFORE INSTALLING EMBEDMENT TO PREVENT FABRIC TEARING.
 - PROVIDE A MINIMUM OF 250 OVERLAP AT ALL FABRIC JOINTS.
9. PURCHASE SPECIFICATIONS FOR TRENCH FILL AND EMBEDMENT MATERIAL ARE DETAILED IN THE CODE.

WHERE THIS DRAWING IS USED FOR THE VACUUM CODE, ADDITIONAL INFORMATION IS PROVIDED IN SEQ-VAC-1400 SERIES COMMENTARY

REV. No.	DATE	DESCRIPTION	AUTH.	SEQ WATER SERVICE PROVIDERS		WATER SUPPLY STANDARD DRAWING				CoGC	LCC	RCC	UU	UW
				WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION NOT FOR CONSTRUCTION SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ		STANDARD EMBEDMENT TYPICAL FLEXIBLE & RIGID PIPES				DRAWING No.				VERSION
										SEQ-WAT-1201-1				B
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.								NOT TO SCALE				ORG DATE: 1/1/2013

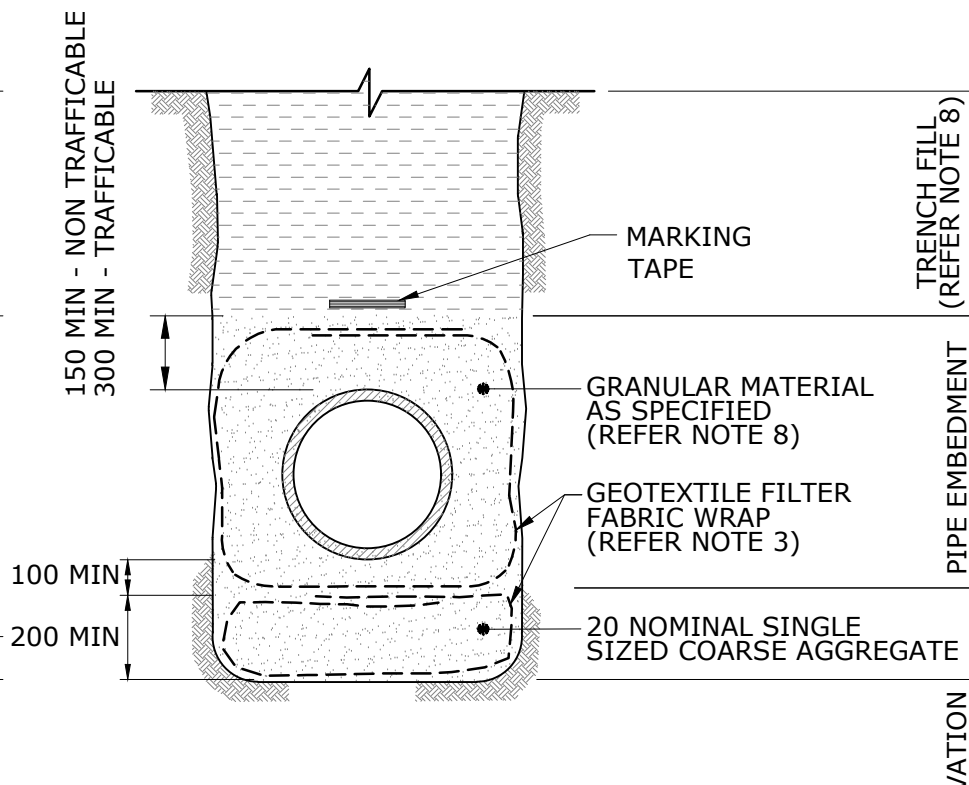


TYPES E & F SUPPORT

UTILISING CONCRETE FOUNDATION
 NON-REINFORCED (TYPE E)
 REINFORCED (TYPE F)
 (RIGID & FLEXIBLE PIPES)
 USE LIMITED TO 1 000 SPANS OF LOW
 BEARING CAPACITY GROUND. (SOFT CLAYS
 AND LOOSE SAND) LONGER LENGTHS
 SUBJECT TO INDIVIDUAL ASSESSMENT.

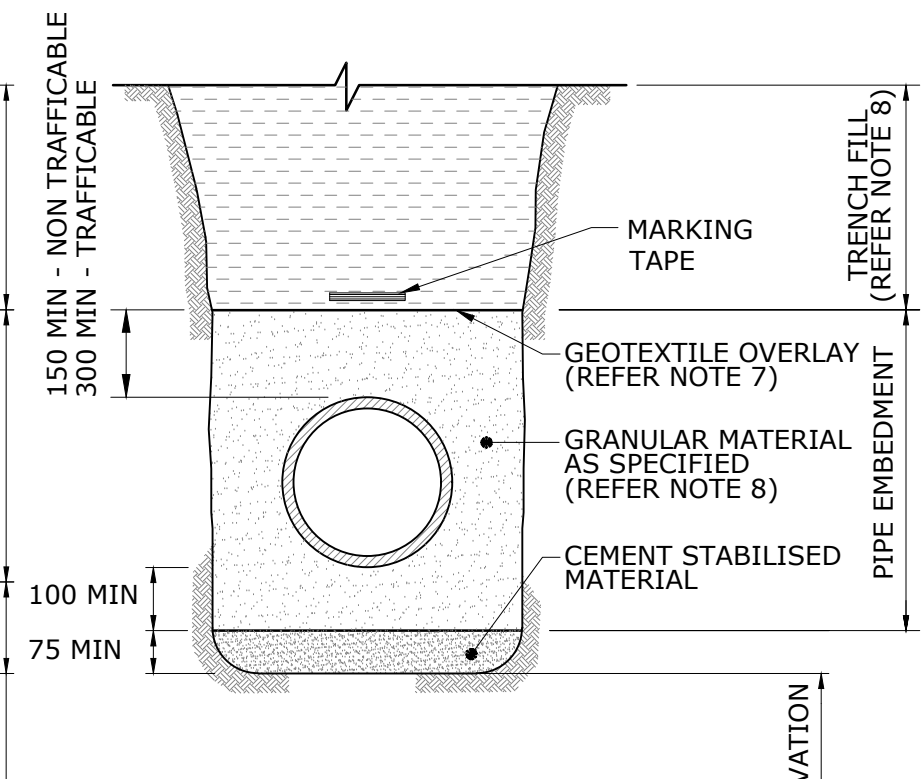
* REFER NOTE 5
 FOR TYPE 6
 SUPPORT

**EMBEDMENT TYPES TO BE SPECIFIED
 IN DESIGN DRAWINGS**



TYPE G SUPPORT

UTILISING GEOTEXTILE PILLOW FOUNDATION
 (RIGID & FLEXIBLE PIPES)



TYPE H SUPPORT

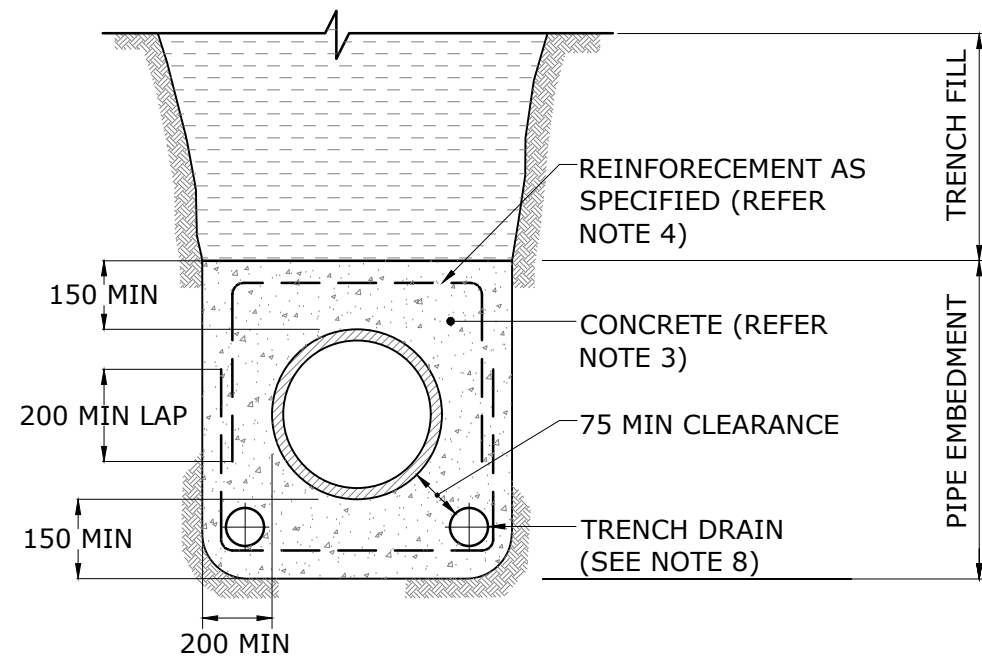
UTILISING CEMENT STABILISED FOUNDATION
 (RIGID & FLEXIBLE PIPES)

NOTES

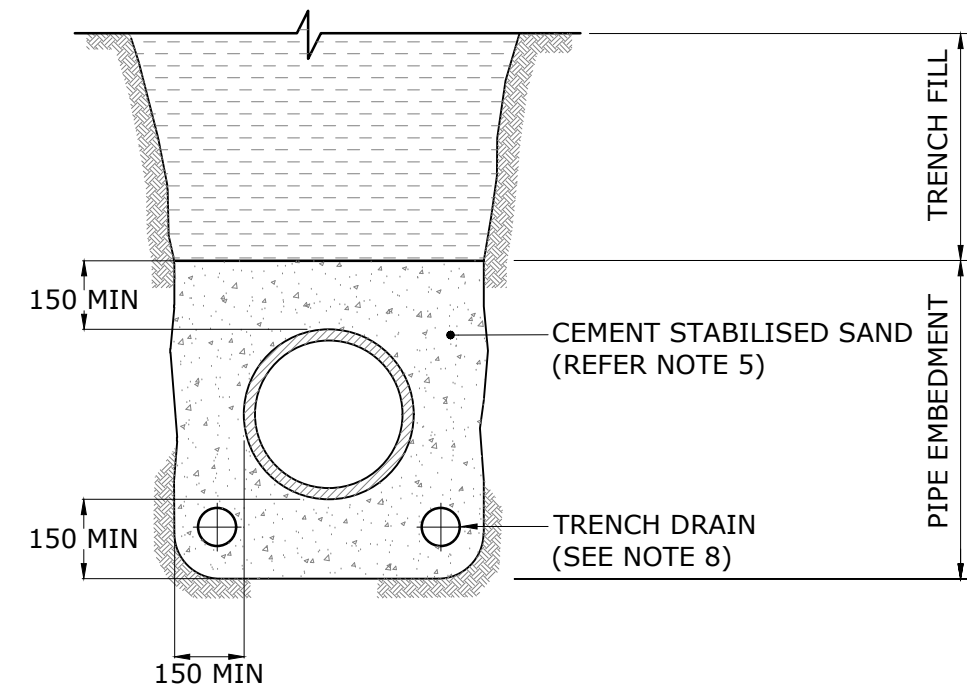
1. ALL DIMENSIONS IN MILLIMETRES.
2. USE THESE SUPPORT TYPES ONLY WHERE SPECIFIED BY THE DESIGNER. DETAILS TO BE PROVIDED IN DESIGN DRAWINGS.
3. LAY GEOTEXTILE FILTER FABRIC AGAINST THE TRENCH FLOOR AND WALL SUCH THAT IT FULLY ENCASES THE FOUNDATION MATERIAL IN THE OVER EXCAVATION. EMBEDMENT (IF REQUIRED) ENCASE SEPARATELY. PROVIDE A MINIMUM OF 250 LAP AT ALL FILTER FABRIC JOINTS. REFER SEQ-SEW-1201-1 FOR GEOTEXTILE SYSTEM DETAILS.
4. UNREINFORCED CONCRETE TO BE CLASS N20, AND REINFORCED CONCRETE N25. FOR AGGRESSIVE CONDITIONS USE SPECIAL CLASS CONCRETE.
5. MINIMUM STEEL REINFORCEMENT OF 0.4%% OF CONCRETE CROSS SECTION PLACED CENTRALLY AND WITH 65 MINIMUM COVER TO EXTERNAL FACE. REINFORCEMENT DETAILS FOR THE APPLICABLE LOADING TO BE INCLUDED IN THE DESIGN DRAWINGS.
6. BEDDING TO BE DEEP ENOUGH TO ENSURE PIPE JOINT PROJECTIONS (SOCKETS, FLANGES) DO NOT TOUCH FOUNDATION.
7. GEOTEXTILE OVERLAY IS REQUIRED FOR AGGREGATE EMBEDMENT. (IE SINGLE SIZED GRANULAR FILL > 5 mm).
8. PURCHASE SPECIFICATIONS FOR TRENCH FILL & EMBEDMENT MATERIAL ARE DETAILED IN THE CODES ACCEPTED PRODUCTS AND MATERIALS LIST.

WHERE THIS DRAWING IS USED FOR THE VACUUM CODE,
 ADDITIONAL INFORMATION IS PROVIDED IN SEQ-VAC-1400 SERIES COMMENTARY

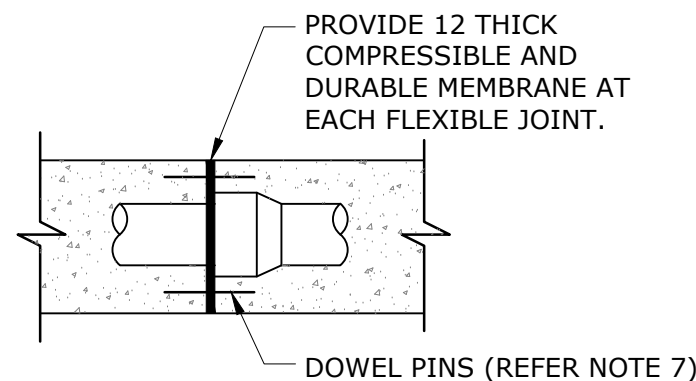
REV. No.	DATE	DESCRIPTION	AUTH.	SEQ WATER SERVICE PROVIDERS				WATER SUPPLY STANDARD DRAWING				CoGC	LCC	RCC	UU	UW
				WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION				TYPICAL SPECIAL EMBEDMENT				DRAWING No.				
				NOT FOR CONSTRUCTION				INADEQUATE FOUNDATIONS REQUIRING OVER EXCAVATION & REPLACEMENT				SEQ-WAT-1202-1				
				SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ								NOT TO SCALE				
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.										VERSION B				
																ORG DATE: 1/1/2013



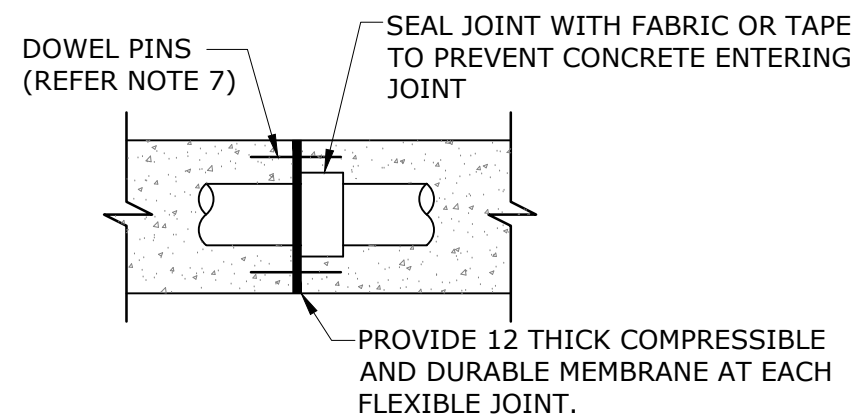
TYPE I SUPPORT
UTILISING CONCRETE EMBEDMENT
 (RIGID & FLEXIBLE PIPES)



TYPE J SUPPORT
UTILISING CEMENT STABILISED EMBEDMENT
 (RIGID & FLEXIBLE PIPES)



SPIGOT/SOCKET JOINT



SLEEVED COUPLING

CONCRETE ENCASEMENT JOINT DETAILS

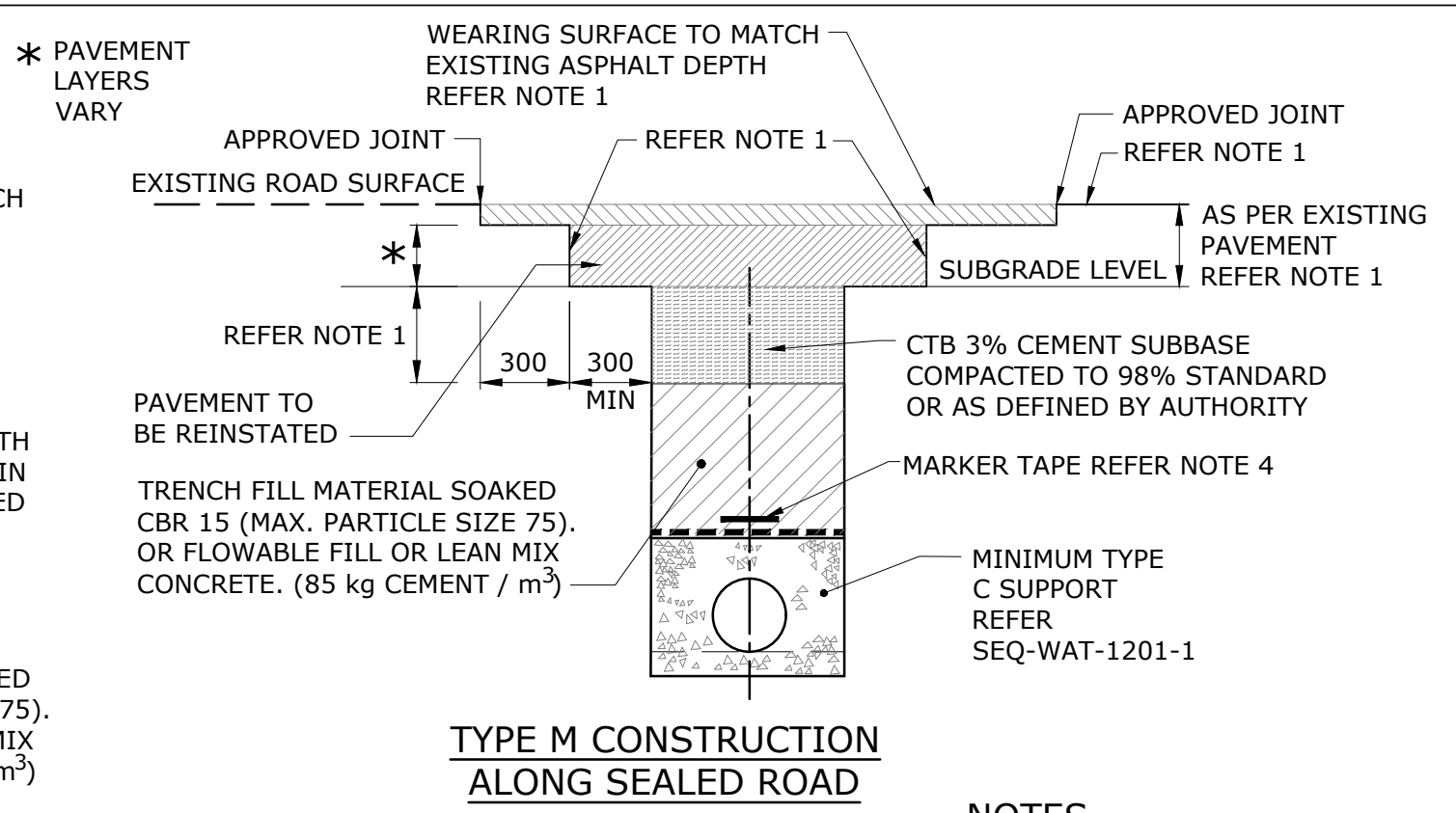
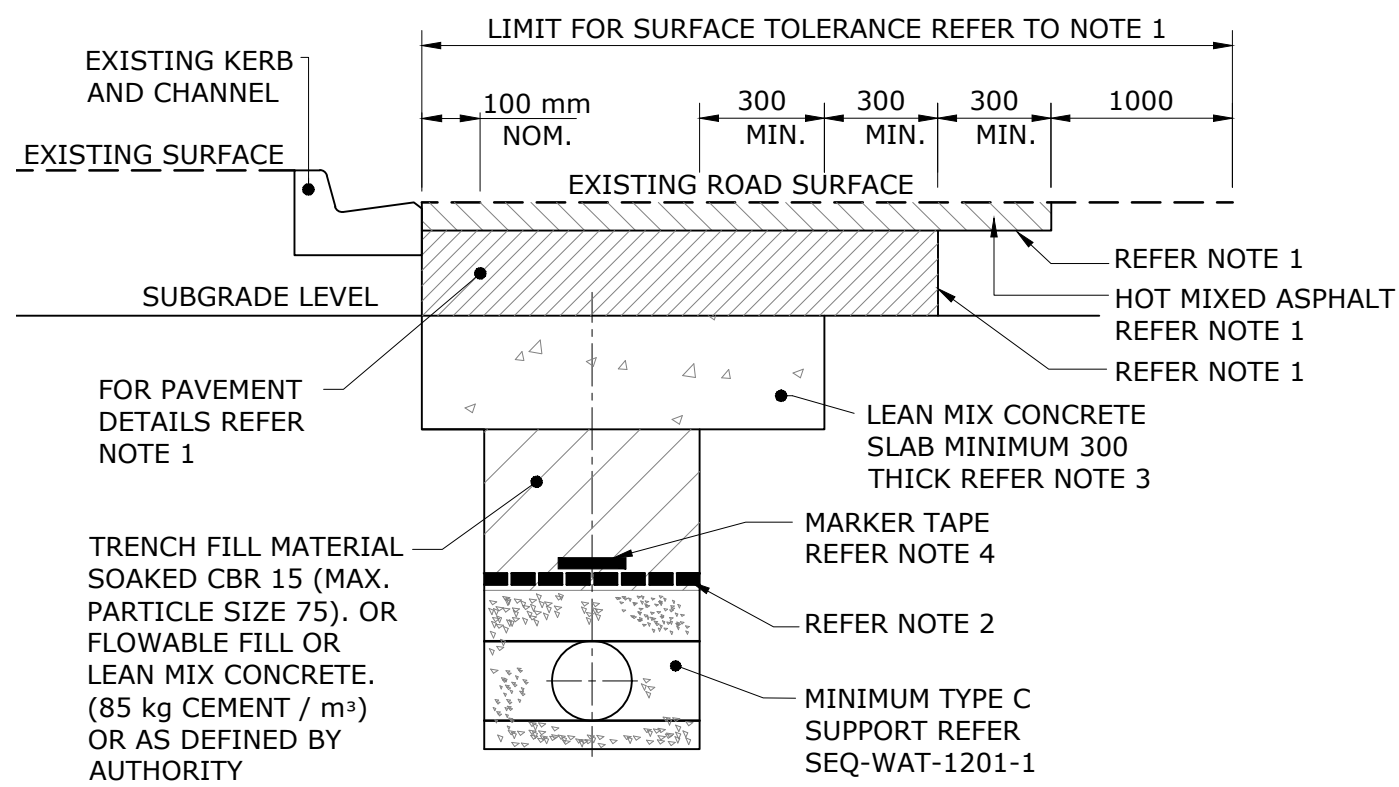
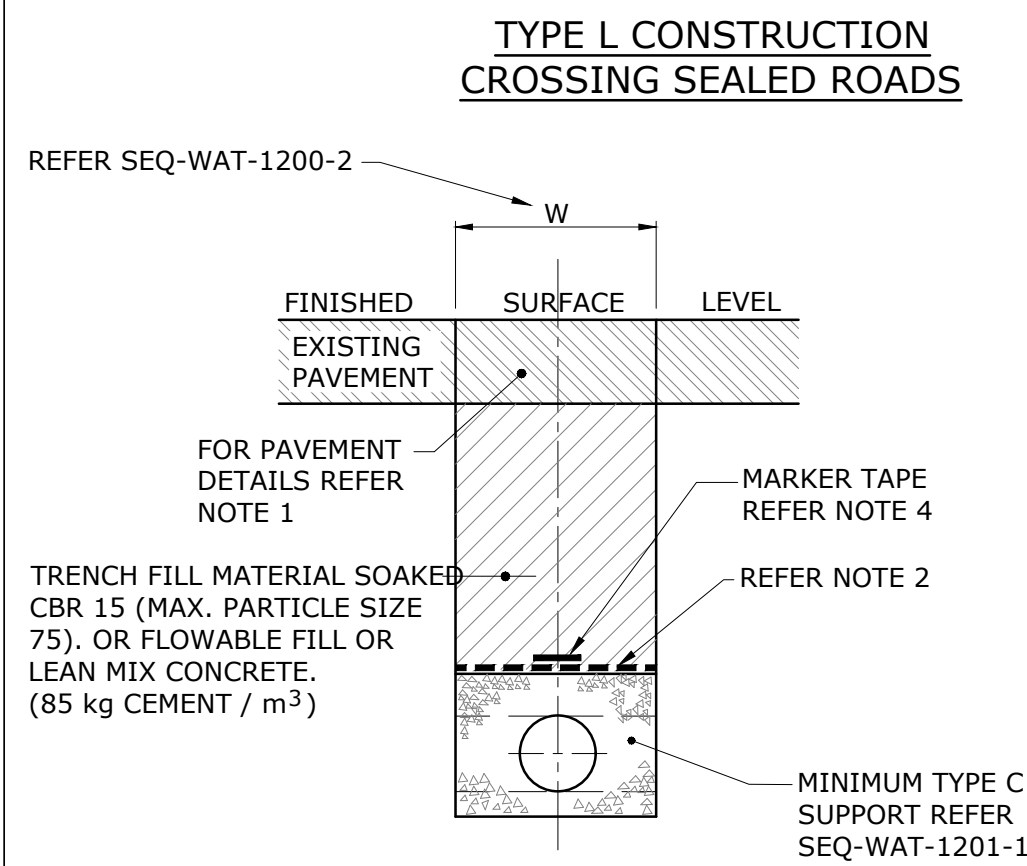
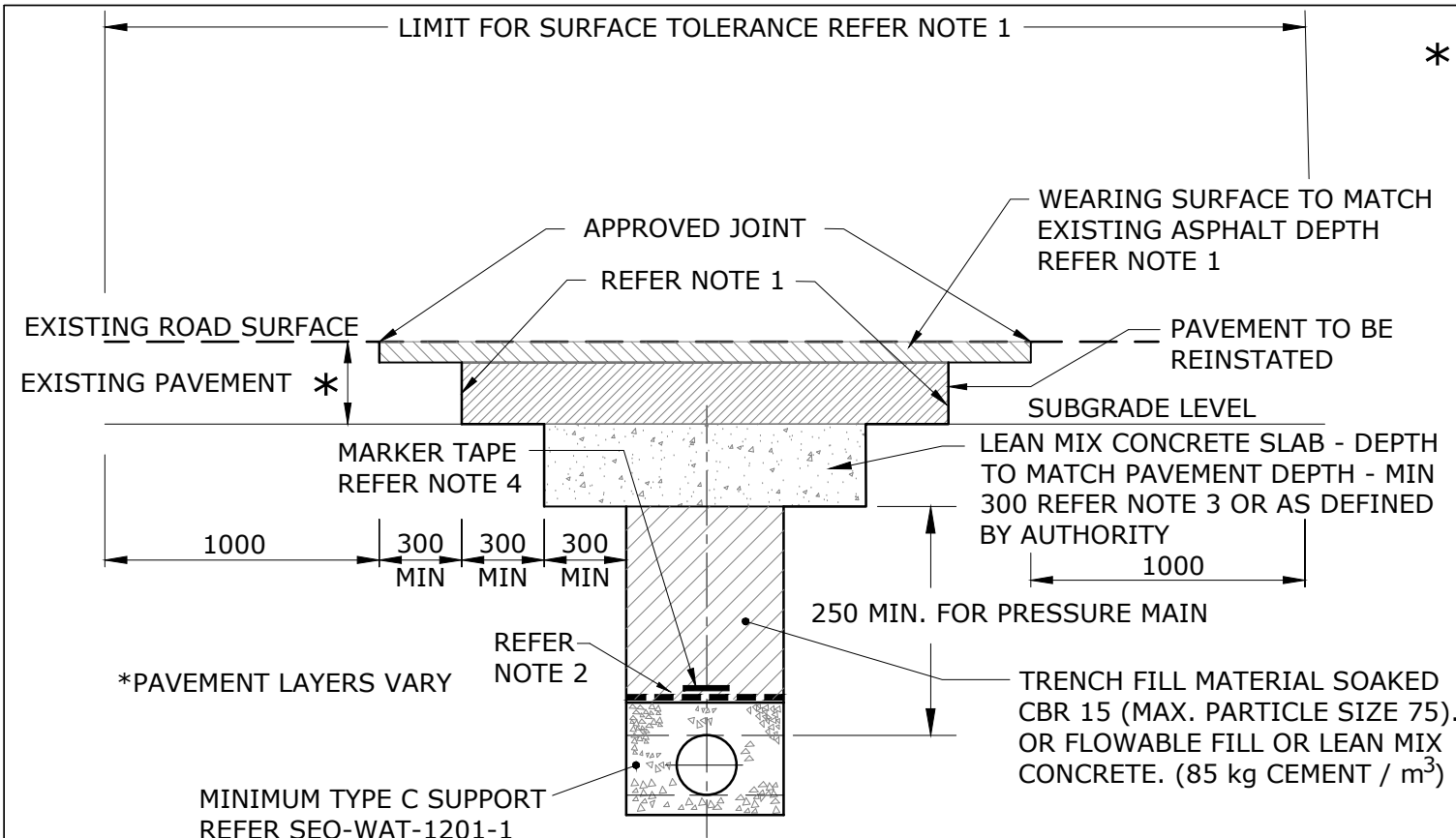
NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. USE THESE SUPPORT SYSTEMS WHERE SPECIFIED BY DESIGNER. DETAILS TO BE PROVIDED IN DESIGN DRAWINGS. REFER NOTE 9.
3. USE UNREINFORCED CONCRETE CLASS N20 MIN, AND REINFORCED CONCRETE N25 MIN. FOR AGGRESSIVE CONDITIONS USE SPECIAL CLASS CONCRETE. PLASTIC PIPES SHALL BE MARKED FOR THERMAL REVERSION.
4. WHERE SPECIFIED MINIMUM STEEL REINFORCEMENT OF 0.4 CONCRETE CROSS SECTION PLACED CENTRALLY AND WITH 65 MINIMUM COVER TO EXTERNAL FACE. SPECIFY REINFORCEMENT FOR THE APPLICABLE LOADING IN DESIGN DRAWINGS.
5. CEMENT STABILISED SAND OR WELL GRADED CRUSHED ROCK TO BE 25:1 SAND:CEMENT (PLACED DRY).
6. DURING THE ENCASEMENT PROCESS PIPES WILL REQUIRE A RESTRAINT SYSTEM TO PREVENT PIPE MOVEMENT AND/OR FLOTATION AND/OR THERMAL REVERSION.
7. PROVIDE GALVANISED DOWEL PINS, AS DETAILED IN DESIGN DRAWINGS AT EACH CONCRETE ENCASEMENT JOINT TO PREVENT PIPE DAMAGE.
8. SEE SEQ-WAT-1210-1 FOR TRENCH DRAINAGE DETAILS.
9. THE USE OF TYPE I & J TO BE APPROVED BY SEQ-SP.

**EMBEDMENT TYPES TO BE SPECIFIED
 IN DESIGN DRAWINGS**

WHERE THIS DRAWING IS USED FOR THE VACUUM CODE,
 ADDITIONAL INFORMATION IS PROVIDED IN SEQ-VAC-1400 SERIES COMMENTARY

REV. No.	DATE	DESCRIPTION	AUTH.	SEQ WATER SERVICE PROVIDERS				WATER SUPPLY STANDARD DRAWING				CoGC	LCC	RCC	UU	UW
				WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION NOT FOR CONSTRUCTION SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ				TYPICAL SPECIAL EMBEDMENT CONCRETE & STABILISED EMBEDMENT AND FLEXIBLE JOINT DETAILS				DRAWING No.				VERSION
												SEQ-WAT-1203-1				C
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.						NOT TO SCALE				ORG DATE:				
B	14/07/15	AMENDED NOTE 7										1/1/2013				



- NOTES**
1. FOR EXCAVATION, BEDDING AND BACKFILL REQUIREMENTS REFER CODES. FOR PAVEMENT AND WEARING SURFACE AND SUB-BASE OR SUBGRADE DETAILS REFER AUTHORITIES SPECIFICATION.
 2. A GEOTEXTILE BARRIER SHALL BE PROVIDED AT THE INTERFACE OF EMBEDMENT ZONE AND THE TRENCH FILL ZONE.
 3. THE SLAB USED IN TYPE L CONSTRUCTION SHALL BE GRADE N15 CONCRETE WITH ZERO SLUMP AND PLACED AND COMPACTED IN 100 THICK LAYERS.
 4. THE ALIGNMENT OF ALL PIPES SHALL BE DEFINED BY A MARKER TAPE PLACED AS SHOWN AT TOP OF EMBEDMENT. THE TAPE SHALL CONTAIN A CONTINUOUS METAL STRIP AND BE COLOURED AND PROVIDED WITH A DESCRIPTION OF THE WATER PRODUCT WITHIN.
 5. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	22/07/15	FLOWABLE FILL'S UNITS AMENDED TO SHOW KG PER CUBIC METER	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
TYPICAL TRENCH AND BEDDING DETAILS WITHIN EXISTING ROADS TYPE K TO N

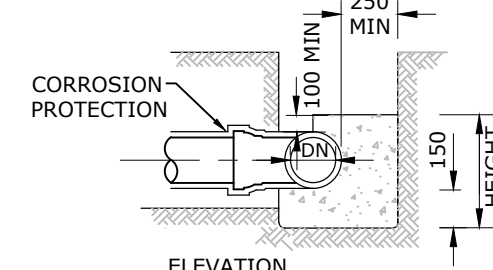
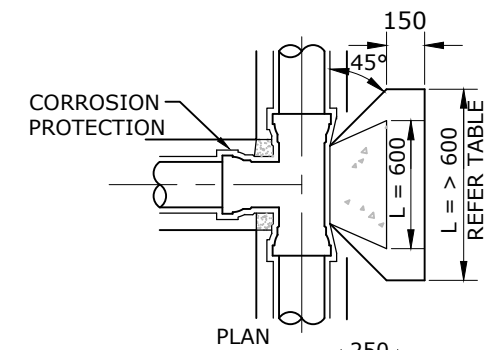
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1204-1				C
NOT TO SCALE				ORG DATE: 1/1/2013

THRUST BLOCK LENGTH

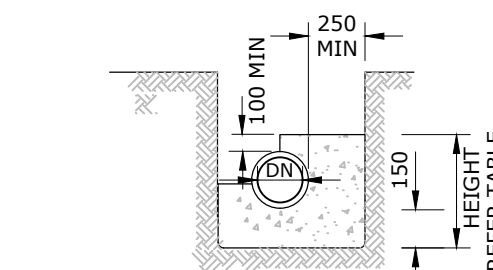
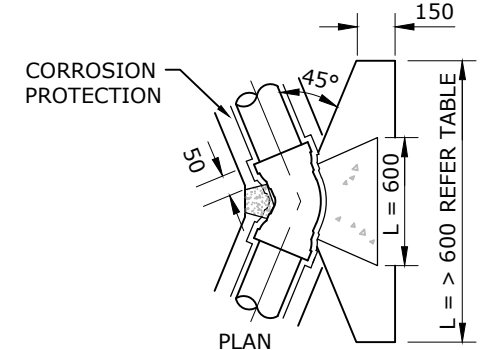
PIPE DN.	FITTING	MAX. THRUST IN KN	THRUST BLOCK HEIGHT	STIFF CLAY 50 kPa.	VERY STIFF CLAY SANDY LOAM 100kPa.	SAND & GRAVEL HARDCLAY 150kPa.	SAND & GRAVEL CEMENTED WITH CLAY 200kPa.	ROCK 240kPa
100	90° BEND	19.8	400	1000	●	●	●	●
	60° BEND	14.0		700	●	●	●	●
	45° BEND	10.7		●	●	●	●	●
	22.5° BEND	5.5		●	●	●	●	●
	11.25° BEND	2.7		●	●	●	●	●
	TEE OR CLOSED END	14.0		700	●	●	●	●
150	90° BEND	41.7	450	1860	930	●	●	●
	60° BEND	29.5		1320	660	●	●	●
	45° BEND	22.6		1000	●	●	●	●
	22.5° BEND	11.5		●	●	●	●	●
	11.25° BEND	5.8		●	●	●	●	●
	TEE OR CLOSED END	29.5		1320	660	●	●	●
200	90° BEND	71.7	550	*	1300	870	650	●
	60° BEND	50.7		1850	920	●	●	●
	45° BEND	38.8		1410	700	●	●	●
	22.5° BEND	19.8		720	●	●	●	●
	11.25° BEND	9.9		●	●	●	●	●
	TEE OR CLOSED END	50.7		1850	920	●	●	●
225	90° BEND	89.4	600	*	1500	1000	750	●
	60° BEND	63.2		2110	1060	700	●	●
	45° BEND	48.4		1620	810	●	●	●
	22.5° BEND	24.6		830	●	●	●	●
	11.25° BEND	12.4		●	●	●	●	●
	TEE OR CLOSED END	63.2		2110	1060	700	●	●
250	90° BEND	109.0	650	*	1700	1120	840	700
	60° BEND	77.1		2400	1200	800	●	●
	45° BEND	59.0		1820	910	●	●	●
	22.5° BEND	30.1		930	●	●	●	●
	11.25° BEND	15.1		●	●	●	●	●
	TEE OR CLOSED END	77.1		2400	1200	800	●	●
300	90° BEND	158.6	700	*	2270	1510	1140	950
	60° BEND	112.2		*	1600	1070	800	670
	45° BEND	85.9		2453	1230	820	●	●
	22.5° BEND	43.8		1250	630	●	●	●
	11.25° BEND	22.0		630	●	●	●	●
	TEE OR CLOSED END	112.2		*	1600	1070	800	750

THRUST BLOCK LENGTH

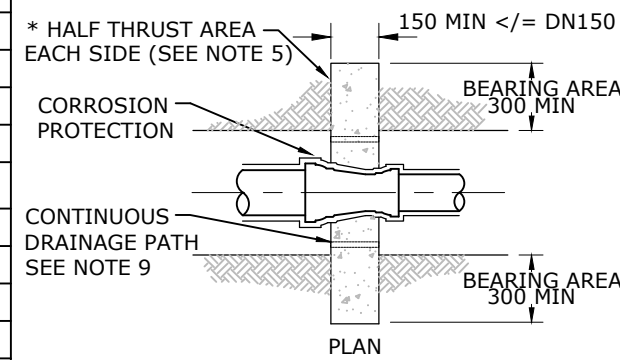
PIPE DN.	FITTING	MAX. THRUST IN KN	THRUST BLOCK HEIGHT	STIFF CLAY 50 kPa.	VERY STIFF CLAY SANDY LOAM 100kPa.	SAND & GRAVEL HARDCLAY 150kPa.	SAND & GRAVEL CEMENTED WITH CLAY 200kPa.	ROCK 240kPa
375	90° BEND	241.9	800	*	*	2220	1510	1260
	60° BEND	171.0		*	2140	1430	1070	890
	45° BEND	130.9		*	1640	1090	820	680
	22.5° BEND	66.7		1670	840	●	●	●
	11.25° BEND	33.5		840	●	●	●	●
	TEE OR CLOSED END	171.0		*	2140	1430	1070	890
450	90° BEND	342.6	900	*	*	2540	1900	1590
	60° BEND	242.3		*	2690	1800	1350	1120
	45° BEND	185.4		*	2060	1375	1030	860
	22.5° BEND	94.5		2100	1050	700	●	●
	11.25° BEND	47.5		1060	●	●	●	●
	TEE OR CLOSED END	242.3		*	2690	1800	1350	1120
500	90° BEND	418	1000	*	*	2790	2090	1740
	60° BEND	295.6		*	*	1970	1480	1230
	45° BEND	226.2		*	2260	1510	1130	940
	22.5° BEND	115.3		2310	1150	770	●	●
	11.25° BEND	58.0		1160	●	●	●	●
	TEE OR CLOSED END	295.5		*	*	1970	1480	1230
600	90° BEND	593	1100	*	*	*	2700	2250
	60° BEND	419		*	*	2540	1910	1590
	45° BEND	320		*	2920	1950	1460	1220
	22.5° BEND	164		2980	1490	990	750	620
	11.25° BEND	82.2		1500	750	●	●	●
	TEE OR CLOSED END	419		*	*	2540	1910	1590
750	90° BEND	909	1300	*	*	*	*	2920
	60° BEND	643		*	*	*	2480	2060
	45° BEND	492		*	*	2530	1890	1580
	22.5° BEND	251		*	1930	1290	970	810
	11.25° BEND	126.1		1940	970	650	●	●
	TEE OR CLOSED END	643		*	*	*	2480	2060
900 (Ø960 MSCL)	90° BEND	1,228	1500	*	*	*	*	3420
	60° BEND	868		*	*	*	2900	2420
	45° BEND	664		*	*	2960	2220	1850
	22.5° BEND	339		*	2260	1510	1130	940
	11.25° BEND	170		2270	1140	760	●	●
	TEE OR CLOSED END	868		*	*	*	3300	2650



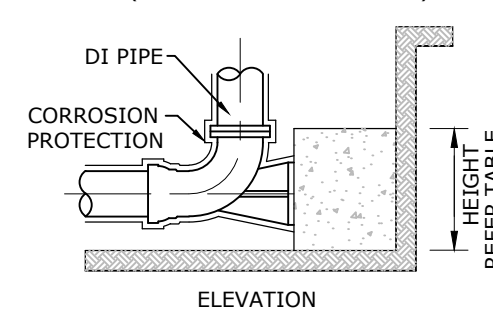
THRUST BLOCK FOR TEES
(FOR HORIZONTAL THRUST)



THRUST BLOCK FOR BENDS
(FOR HORIZONTAL THRUST)



TAPER THRUST BLOCK
(FOR HORIZONTAL THRUST)



FLUSHING/WASHOUT BEND THRUST BLOCK

(FOR HORIZONTAL THRUST) (MINIMUM REQUIRED THRUST AREA AS PER TEE OR CLOSED END)

NOTES

- ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
- CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. SOIL CLASSIFICATIONS USED ON THIS DRAWING ARE EXPLAINED IN SEQ-WAT-1200-1. DO NOT USE STANDARD THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WITH < 50 kPa BEARING CAPACITY EG;
 - VERY SOFT, SOFT OR FIRM CLAY.
 - LOOSE CLEAN SAND.
 - UNCOMPACTED FILL OR REFUSE.
 A GEOTECHNICAL ASSESSMENT AND INDIVIDUAL DESIGN IS REQUIRED FOR THESE SOILS.
- THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES OR BE LOCATED OUTSIDE THE WATER MAIN ALLOCATION WITHOUT WATER AGENCY APPROVAL.
- ALL CONCRETE GRADE N20. TABLE OF DIMENSIONS BASED ON REQUIRED TEST PRESSURE OF 1200 kPa AND ACTUAL DI CL PIPE DIAMETERS.
- THE MINIMUM THRUST AREA FOR TAPER THRUST BLOCKS TO BE EQUAL TO THE DIFFERENCE BETWEEN THE THRUST AREAS FOR TEES OR CLOSED ENDS OF EQUIVALENT DIAMETER TO THOSE EACH SIDE OF TAPER. THE DETAIL SHOWN IS FOR < OR = DN150 MAINS. FOR LARGER MAINS, THE TAPER THRUST BLOCK SHALL BE REINFORCED AND OF A SIZE AS SHOWN IN SEQ-WAT-1206-1.
- FOR DOWNWARD VERTICAL THRUST, THE ALLOWABLE BEARING PRESSURES FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST SHOWN.
- WHEN POURING CONCRETE AGAINST FITTINGS PLACE A MEMBRANE OF POLYETHYLENE, PVC OR FELT BETWEEN THE FITTING AND CONCRETE TO PREVENT DAMAGE TO THE FITTING. PIPE JOINTS TO BE CLEAR OF CONCRETE.
- CONCRETE THRUST BLOCK ANCHORS FOR VALVES TO BE AS DETAILED ON SEQ-WAT-1206-1.
- SEE SEQ-WAT-1209-1 AND SEQ-WAT-1210-1 FOR TRENCH DRAINAGE DETAILS.

THRUST BLOCK DIMENSIONS - 1200kPa

- INDICATES BLOCK LENGTH OF 600
- * = SPECIAL DESIGN

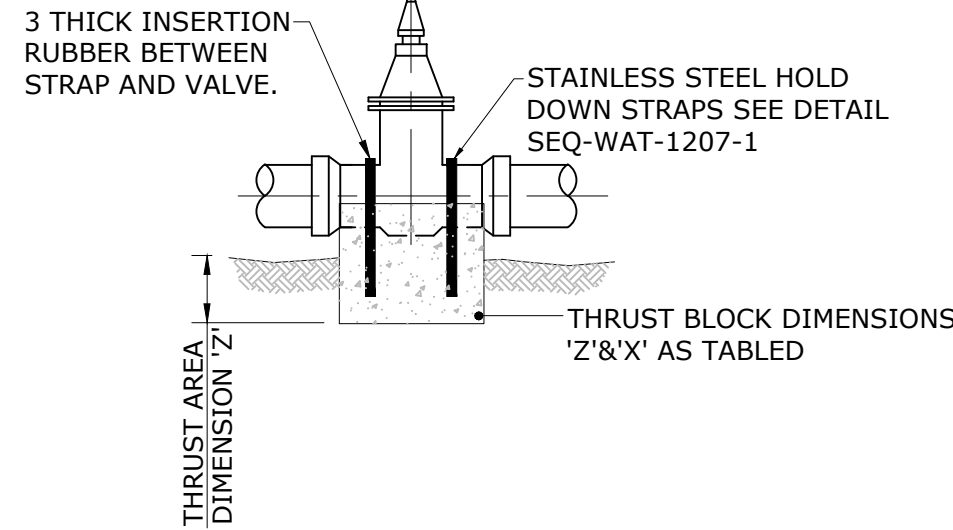
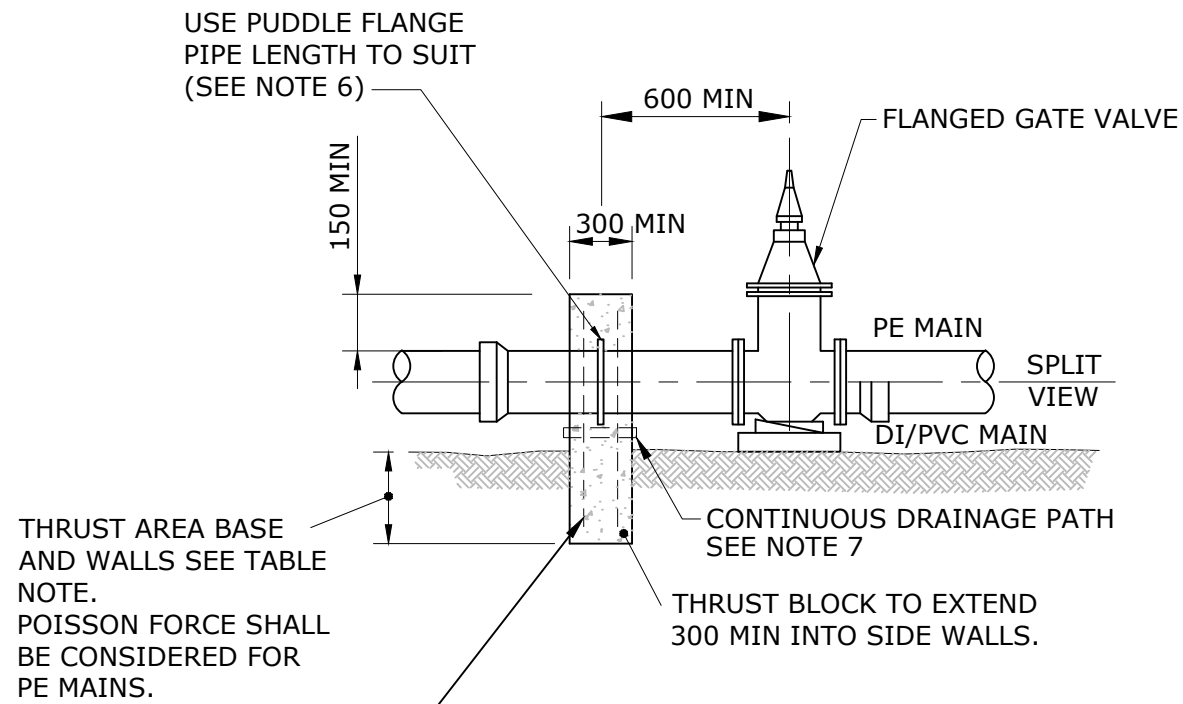
REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	VALUE TYPO IN TABLE. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	23/05/19	NEW NOTE 9 AND REFERENCE OF DRAINAGE	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS

WATER SUPPLY STANDARD DRAWING
TYPICAL THRUST BLOCK DETAILS
MASS CONCRETE

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1205-1				C
NOT TO SCALE				ORG DATE: 1/1/2013

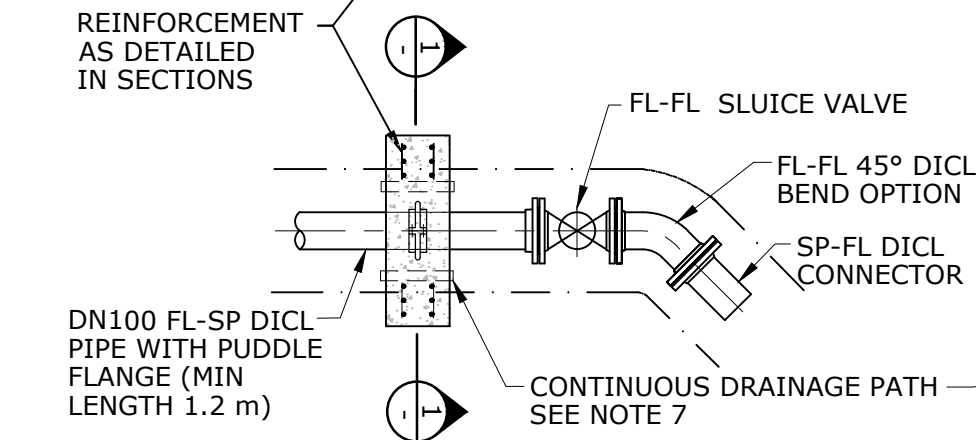


THRUST AREA BASE AND WALLS SEE TABLE NOTE. POISSON FORCE SHALL BE CONSIDERED FOR PE MAINS.

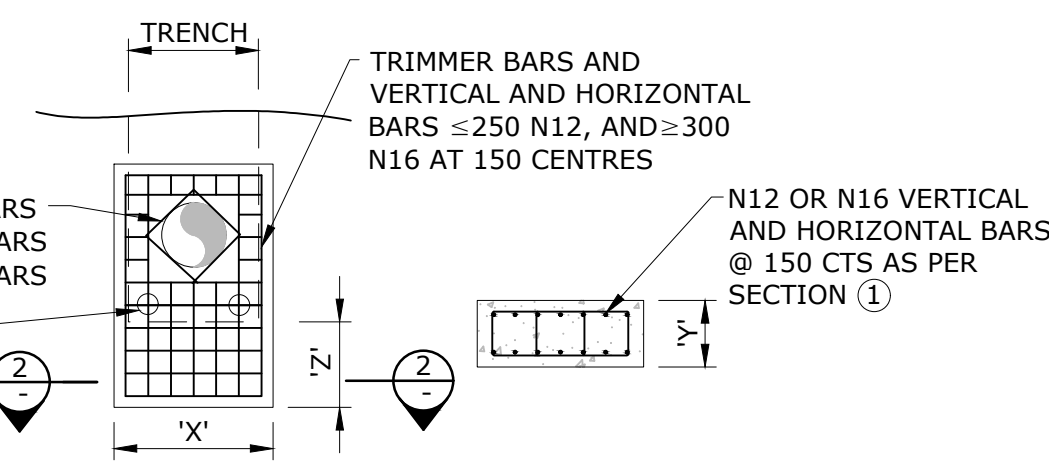
FLANGED VALVES ALL SIZES

SOCKETED VALVES <= DN375

(ALTERNATIVE TYCO ANCHOR LEGS x 2 ACCEPTED FOR USE)



FLANGED VALVE AND BEND FOR ALL PIPE SIZES



SECTION 1

SECTION 2

NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. ANCHOR BLOCKS IN THE TABLE ARE DESIGNED FOR A TEST PRESSURE OF 1200 kPa (122 m HEAD).
3. WHERE DI PIPES AND FITTINGS WITH RESTRAINED JOINTS ARE USED THRUST BLOCKS MAY NOT BE REQUIRED. SEE SEQ-WAT-1208.
4. THRUST BLOCK REINFORCEMENT AS SPECIFIED ABOVE OR AS IN DESIGN DRAWINGS.
5. PROVIDE CONCRETE THRUST BLOCKS FOR VALVES. THRUST AREA TO BE AS SHOWN WITH NUTS AND BOLTS TO BE ACCESSIBLE ON FLANGES.
6. INSTALL PUDDLE FLANGES ON FLANGE CLASS DICL PIPE BY A MACHINED GROOVE.
7. SEE SEQ-WAT-1209-1 AND SEQ-WAT-1210-1 FOR TRENCH DRAINAGE DETAILS.
8. ALL VALVES SHALL BE RESTRAINED.

MINIMUM BLOCK DIMENSIONS FOR THE ANCHORAGE OF THE IN-LINE THRUST				
IN LINE BLOCK FOR TEST PRESSURE OF 1200 kPa SOIL ALLOWABLE HORIZONTAL BEARING PRESSURE IN kPa OF 50, 100 OR 150 LISTED (SEE NOTES)				
PIPE DN	BEARING AREA M ²			THRUST
	SOFT CLAY 50kPa	MEDIUM CLAY SANDY LOAM 100kPa	SAND & GRAVEL HARD CLAY 150kPa	
100	15.8 KN THRUST			
X	450	450	450	
Y	300	300	300	
Z	700	500	500	
150	33.3 KN THRUST			
X	800	500	450	
Y	300	300	300	
Z	850	700	500	
200	57.1 KN THRUST			
X	800	700	600	
Y	300	300	300	
Z	1400	800	650	
225	71.2 KN THRUST			
X	900	800	700	
Y	400	400	400	
Z	1600	900	700	
250	86.7 KN THRUST			
X	1000	850	700	
Y	400	400	400	
Z	1750	1000	800	
300	124.0 KN THRUST			
X	1400	900	800	
Y	500	500	500	
Z	1800	1400	1000	
375	189.0 KN THRUST			
X	1600	1100	900	
Y	600	600	600	
Z	2350	1750	1400	

- LARGER THAN DN375 INDIVIDUAL DETAILED DESIGN IS REQUIRED. DESIGNER TO NOMINATE X, Y, Z DIMENSIONS TO SUIT LOCATION.
- BLOCK WIDTHS 'X' SHOULD BE WITHIN THE ALLOCATION, GENERALLY 800 mm WIDE. WIDER BLOCKS WILL REQUIRE REDESIGN OF ADJOINING SERVICES.
- BEARING AREA TO BE PREDOMINANTLY BELOW BEDDING ZONE

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NEW SPLIT VIEW AND NOTE 8, REFERENCE AND TITLE. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	24/05/19	NEW NOTE 7 AND REFERENCE OF DRAINAGE. OTHER MINOR CHANGES.	
B	14/07/15	NOTES 5 AND 6 AMENDED. PIPE SIZES IN THE TABLE AMENDED.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

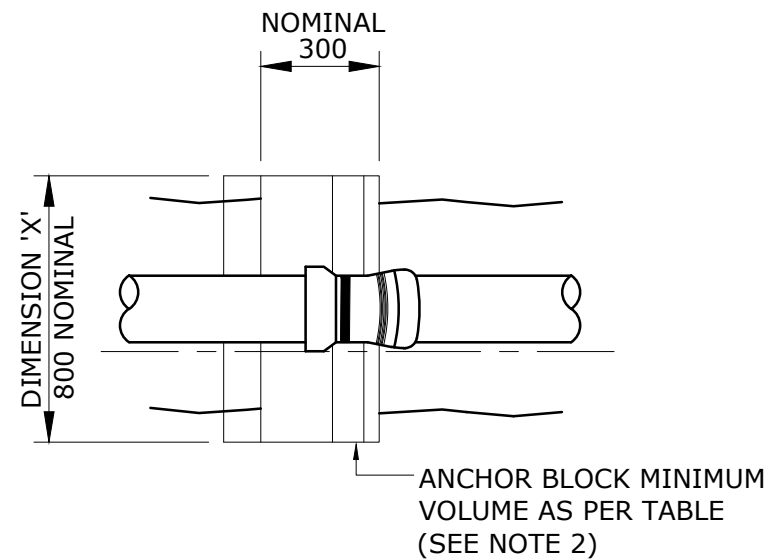
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

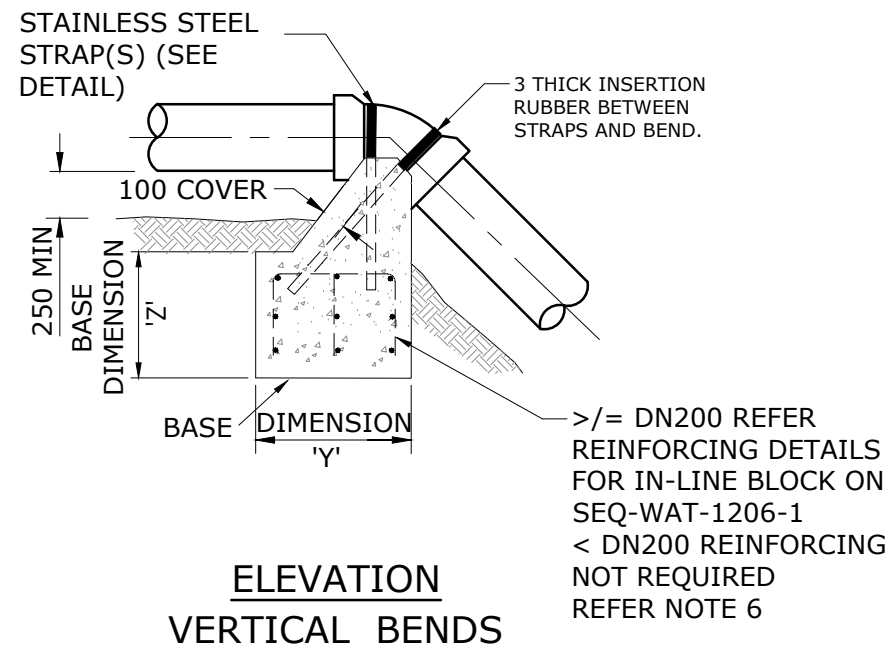
WATER SUPPLY STANDARD DRAWING

TYPICAL THRUST AND ANCHOR BLOCKS FOR VALVES AND PE - RRJ TRANSITION

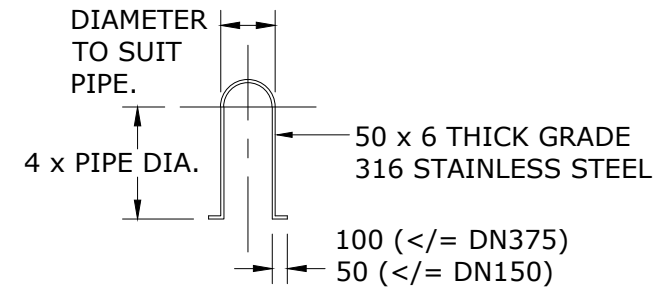
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1206-1				D
NOT TO SCALE				ORG DATE: 1/1/2013



PLAN



MINIMUM BLOCK VOLUME FOR ANCHORAGE OF VERTICAL COMPONENT OF THRUST				
VERTICAL BENDS				
FOR TEST PRESSURE OF 1200 kPa AND MINIMUM SOIL ALLOWABLE HORIZONTAL BEARING PRESSURE OF 50kPa (SEE NOTES)				
PIPE DN	TYPICAL PIPE OD	CONCRETE MASS/VOLUME M ³		
		11.25° BEND	22.5° BEND	45° BEND
100	122	0.13	0.26	0.47
DIMENSIONS X, Y, Z,		800	800	800
		400	400	600
		450	800	1000
150	177	0.28	0.54	1.00
X		800	800	800
Y		400	800	1000
Z		800	850	1250
200	232	0.47	0.93	1.72
X				
Y				
Z				
225	259	0.59	1.16	2.14
X				
Y				
Z				
250	286	0.72	1.41	2.61
X				
Y				
Z				
300	345	1.05	2.05	3.79
X				
Y				
Z				
375	426	1.60	3.13	5.78
X				
Y				
Z				
<ul style="list-style-type: none"> LARGER THAN DN375, INDIVIDUAL DETAILED DESIGN IS REQUIRED. LARGER THAN DN150, DESIGNER TO NOMINATE X, Y, Z DIMENSIONS TO SUIT LOCATION 				
CALCULATION FOR BLOCK MASS IS :-				
$M^3 = (Sf \times P \times A \times \sin\theta \times 1000) \div (Wm \times 9.8)$				
<p>Sf = SAFETY FACTOR OF 1.0 P = TEST PRESSURE 1200kPa A = AREA OF PIPE ACTUAL OD (m²) θ = BEND ANGLE Wm = DENSITY OF CONCRETE (2400kg + m³)</p>				
<p>IN CALCULATING THE CONCRETE MASS, NO CONTRIBUTION FROM THE PIPELINE SELF WEIGHT OR BACKFILL OR EMBEDMENT HAS BEEN INCLUDED.</p>				
<p>BLOCK WIDTHS " X " SHOULD BE WITHIN THE ALLOCATION, GENERALLY 800mm WIDE</p>				



TYPICAL SS STRAP

VERTICAL BEND ANCHOR BLOCK CONSTRUCTION NOTES

1. LOCATE ANCHOR BLOCK CENTRALLY AROUND BEND AND KEY ANCHOR BLOCK INTO BASE OF TRENCH A MINIMUM DEPTH OF 250 mm (DIMENSION Z).
2. POUR BASE CONCRETE AGAINST A SOLID EXCAVATION FACE.
3. USE GRADE N20 CONCRETE.
4. KEEP CONCRETE CLEAR OF ALL BOLTS, NUTS AND PIPE JOINTS.
5. DESIGN OF ANCHOR BLOCKS AT VERTICAL BENDS INCLUDE ALLOWANCE FOR THE HORIZONTAL COMPONENT OF THRUST
6. DESIGN PLANS TO DETAIL REINFORCING STEEL.
7. ANCHOR BLOCKS IN THE TABLE ARE DESIGNED FOR A TEST PRESSURE OF 1200 kPa (122 m HEAD).
8. FOR DOWNWARD VERTICAL THRUST, THE ALLOWABLE BEARING PRESSURE FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST AS SHOWN IN SEQ-WAT-1205-1

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

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WATER SUPPLY STANDARD DRAWING

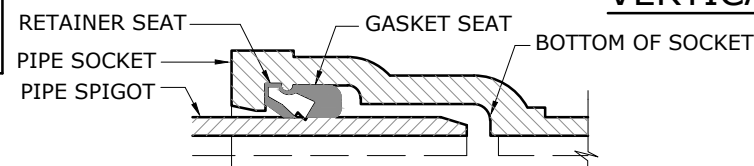
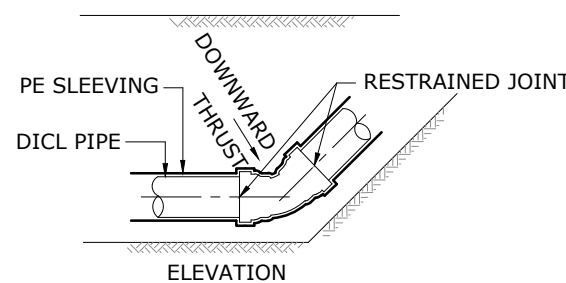
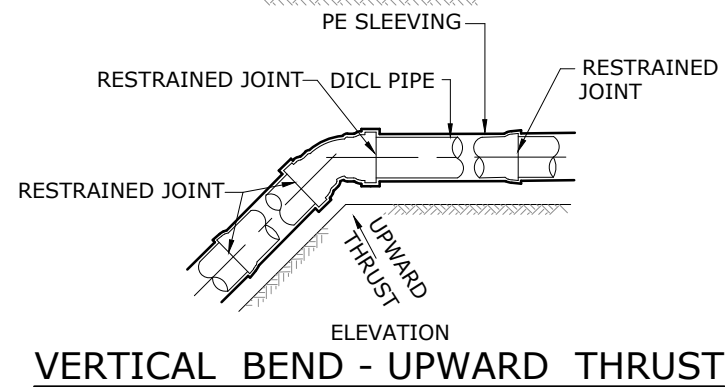
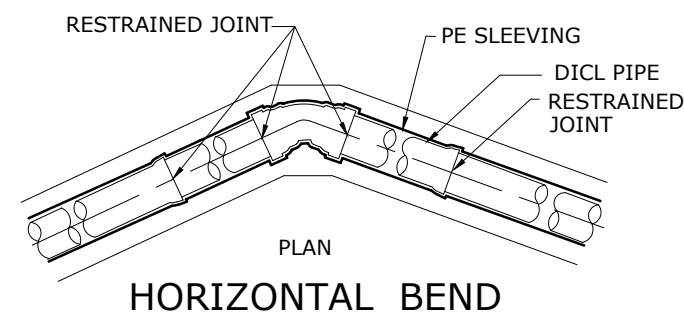
TYPICAL THRUST AND ANCHOR BLOCKS FOR VERTICAL BENDS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1207-1				B
NOT TO SCALE				ORG DATE: 1/1/2013

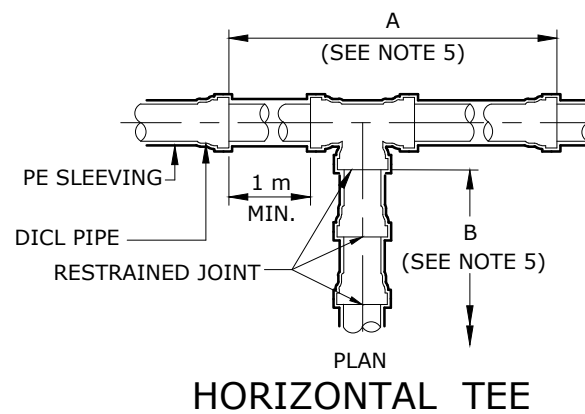
DN	BENDS (SEE NOTE 3)										DEAD ENDS (m)
	HORIZONTAL				VERTICAL						
	11 1/4° (m)	22 1/2° (m)	45° (m)	90° (m)	UPWARD THRUST			DOWNWARD THRUST			
100	0.8	1.6	3.4	8.1	2.4	4.9	10.2	0.8	1.6	3.4	24.7
150	1.1	2.2	4.6	11.2	3.4	6.9	14.4	1.1	2.2	4.6	34.7
200	1.4	2.8	5.9	14.2	4.4	8.8	18.4	1.4	2.8	5.9	44.4
250	1.6	3.1	6.5	15.8	4.9	9.8	20.5	1.6	3.1	6.5	49.4
300	1.8	3.7	7.7	18.5	5.8	11.7	24.4	1.8	3.7	7.7	58.9

TEES (SEE NOTE 5)				
MAIN PIPE DN	BRANCH PIPE DN	MIN. DISTANCE BETWEEN JOINTS 'A'		
		2 m RESTRAINED LENGTH 'B' (m)	5.5 m RESTRAINED LENGTH 'B' (m)	11 m RESTRAINED LENGTH 'B' (m)
100	100	20.6	13.4	2.2
	150	17.4	7.0	0.2
150	150	30.5	23.2	11.6
	200	14.8	1.1	0.2
200	150	28.0	18.4	3.3
	200	40.2	32.8	21.1
250	100	10.6	0.2	0.2
	150	23.1	11.3	0.2
250	200	34.5	25.3	10.9
	250	45.1	37.6	25.8
300	100	8.0	0.2	0.2
	150	20.9	6.6	0.2
300	200	32.2	21.2	3.8
	250	42.8	33.7	19.5
300	300	54.6	46.9	34.9
	375	REFER TO MANUFACTURER		

TAPERS (SEE NOTE 6)			
LARGE PIPE DN	SMALL PIPE DN	MIN. LENGTH OF SMALL PIPE FOR ONE RESTRAINT (m)	MIN. LENGTH OF LARGE PIPE FOR FULL RESTRAINT (m)
150	100	25.8	18.2
200	100	59.1	32.2
200	150	24.0	18.6
250	100	91.0	40.4
250	150	48.2	30.5
250	200	20.6	16.9
300	100	137.6	51.6
300	150	81.3	43.4
300	200	46.7	32.3
300	250	21.8	18.4
375	100	REFER TO MANUFACTURER	
375	150	REFER TO MANUFACTURER	
375	200	REFER TO MANUFACTURER	
375	250	REFER TO MANUFACTURER	
375	300	REFER TO MANUFACTURER	

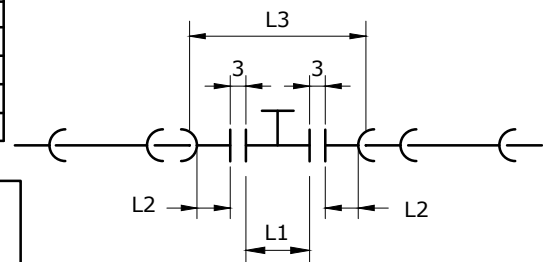


RESTRAINED JOINT SYSTEM



HORIZONTAL TEE

DN	RESTRAINED CUT-IN		
	INSERT L1	CONNECTOR L2	OVERALL L3
100	356	110	582
150	406	135	682
200	484	135	760
250	534	155	850
300	610	170	956
375	REFER MANUFACTURER		



RESTRAINED CUT-IN

THE TABLES ARE PROVIDED FOR GUIDANCE. FOR SPECIFIC RESTRAINED JOINT SYSTEM e.g. "TYTON-LOK", REFER TO MANUFACTURER'S PRODUCT LIMITATIONS.

NOTES

- ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.
- ALL RESTRAINED LENGTHS ARE APPLICABLE FOR BURIED PIPELINES ONLY. THE MINIMUM LENGTH OF PIPELINE REQUIRED TO BE RESTRAINED IS CALCULATED FROM THE PIPE DIAMETER, FITTING TYPE, STANDARD TRENCH CONDITIONS AND A PIPELINE PRESSURE OF 122 m. WHERE RESTRAINED JOINTS ARE USED, REDUCE TEST PRESSURE TO 1196kPa.
- THE LENGTH OF RESTRAINT REQUIRED IS THE AMOUNT OF PIPELINE THAT MUST BE RESTRAINED EITHER SIDE OF THE FITTING, INCLUDING THE FITTING JOINTS.
- SPECIAL CONSIDERATION IS REQUIRED IF THE DESIGNATED RESTRAINED LENGTH FOR A FITTING ENCLOSES, OR OVERLAPS THE DESIGNATED RESTRAINED LENGTH FOR ANOTHER FITTING. SEEK MANUFACTURER'S OR DESIGNER'S GUIDANCE.
- THE LENGTH OF RESTRAINT REQUIRED FOR TEES APPLIES TO 'B' (BRANCH) ONLY. THE 'MINIMUM DISTANCE 'A' BETWEEN JOINTS IS THE MINIMUM DISTANCE BETWEEN THE NEAREST UNRESTRAINED JOINT EITHER SIDE OF THE TEE, NOT INCLUDING THE TEE. RESTRAINT IS NOT REQUIRED IN THE MAIN LINE SOCKETS OR MECHANICAL COUPLINGS, UNLESS ENCLOSED (SEE NOTE 4). HYDRANT TEES AND OTHER NON-THRUST BEARING FITTINGS DO NOT REQUIRE RESTRAINT.
- FOR TAPERS, IF THE MINIMUM LENGTH OF THE ADJACENT SMALL PIPE SIZE OCCURS, WITHOUT ENCLOSED ANOTHER FITTING'S RESTRAINT, THEN ONLY ONE RESTRAINED JOINT IS REQUIRED IN THE LARGE SOCKET OF THE TAPER. IF THE MINIMUM LENGTH OF SMALL PIPE DOES NOT OCCUR THEN, FULL RESTRAINT IS REQUIRED.
- TREAT FLUSHING BENDS AS A DEAD END.
- SPECIAL DESIGN REQUIRED FOR 90 DEGREE VERTICAL BENDS.
- PLACE MARKING TAPE FOR IDENTIFICATION OF RESTRAINED SECTIONS OF THE PIPELINE ALONG THE TOP OF THE RESTRAINED PIPE LENGTHS AND FASTEN TO THE PIPE AT NOT LESS THAN 3 m CENTRES. MARKING TAPE TO BE PINK COLOURED POLYETHYLENE TAPE APPROXIMATELY 100 WIDE, WITH THE INSCRIPTION: 'WARNING - RESTRAINED PIPELINE - USE RESTRAINED FITTINGS ONLY'.
- WHEN MAINTAINING OR CUTTING RESTRAINED SECTIONS OF PIPELINE IT IS ADVISABLE THAT EFFECTIVE LENGTHS OF FITTINGS BE MEASURED ON SITE TO CONFIRM THEIR COMPLIANCE WITH THIS DRAWING.
- RESTRAINED JOINTS MAY BE ASSUMED TO ACT THE SAME AS A FLANGED JOINT.
- ONLY USE PIPE AND FITTINGS APPROVED FOR USE WITH RESTRAINT GASKET.

ASSEMBLY

- JOINTING TO BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- RESTRAINT VIA LOCKING GASKETS IS ONLY TO BE USED WITH DI PIPES AND FITTINGS FEATURING THE AUTHORISED SOCKET PROFILE. DO NOT USE WITH OTHER DI SOCKET PROFILES OR OTHER PIPE MATERIALS.
- IF MAXIMUM JOINT DEFLECTION IS DESIRED, PUSH THE SPIGOT TO THE FIRST WITNESS MARK ONLY AND THEN DEFLECT THE JOINT. THE JOINT WILL NOT DEFLECT AFTER INSERTING THE SPIGOT ALL THE WAY HOME.

DISASSEMBLY

- JOINTS TO BE DISASSEMBLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- DO NOT REUSE RESTRAINED JOINT GASKETS.

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	24/05/19	BOX NOTE AMENDED	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

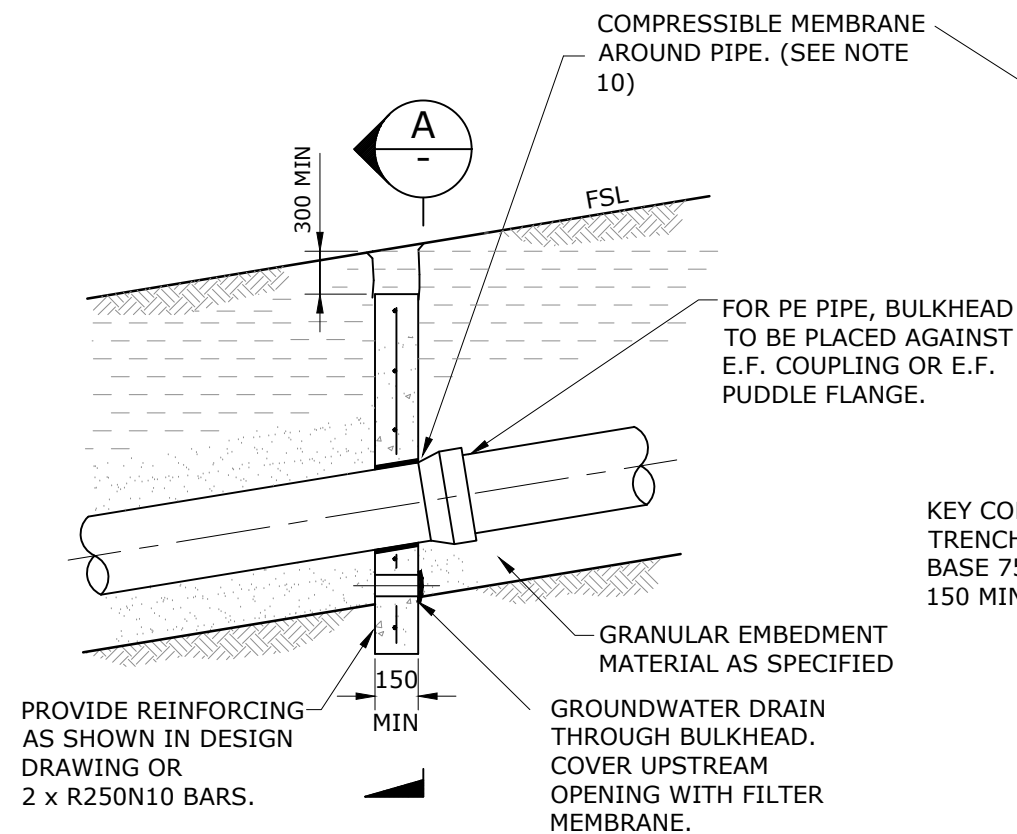
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

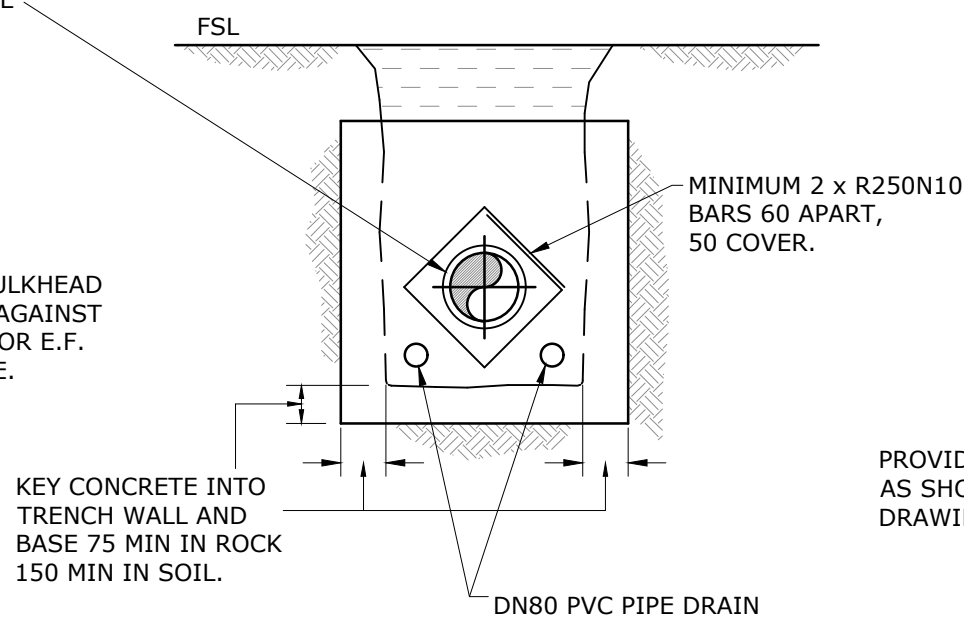
TYPICAL RESTRAINED JOINT SYSTEM

DN 100 TO DN 375 DI MAINS

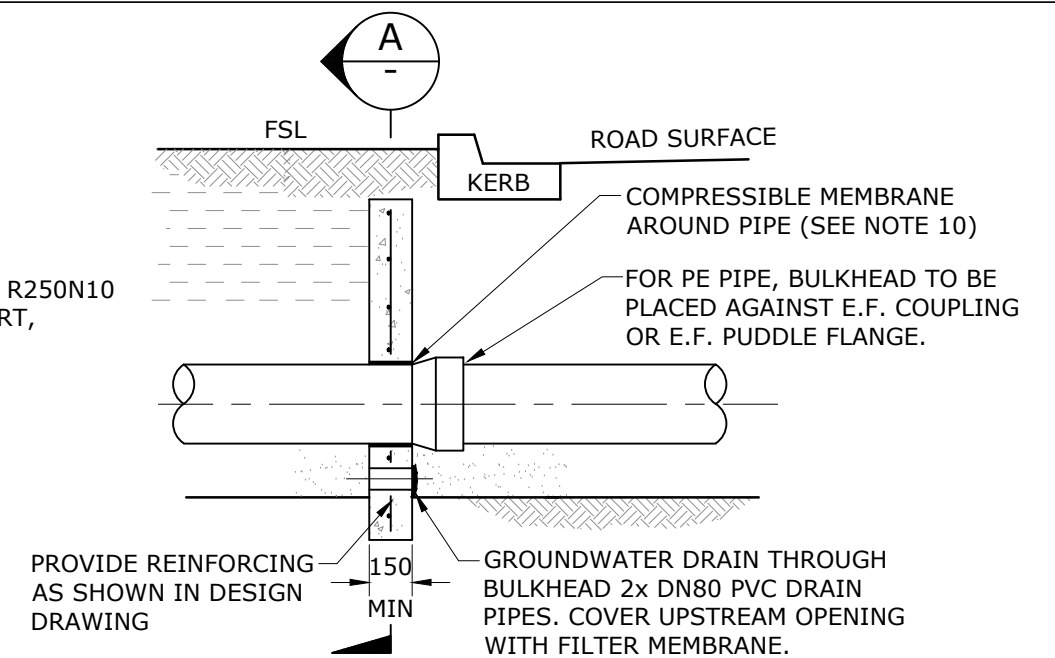
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DRAWING No.				VERSION
SEQ-WAT-1208-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



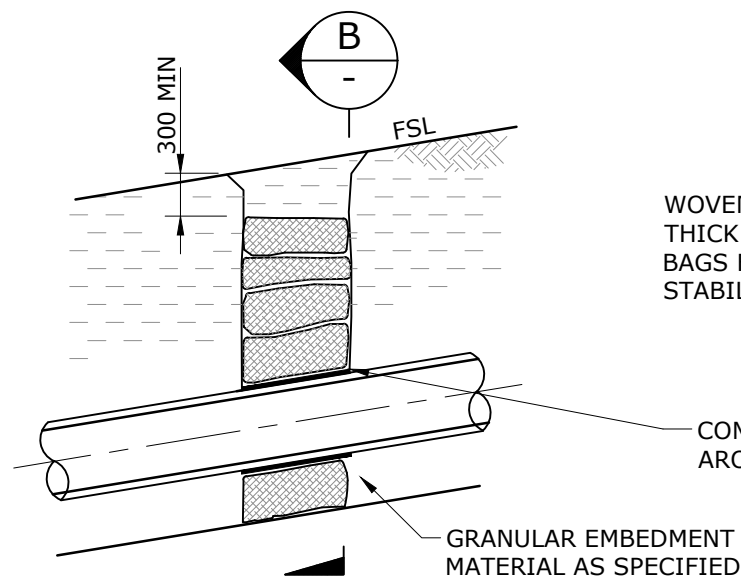
CONCRETE BULKHEAD DETAIL



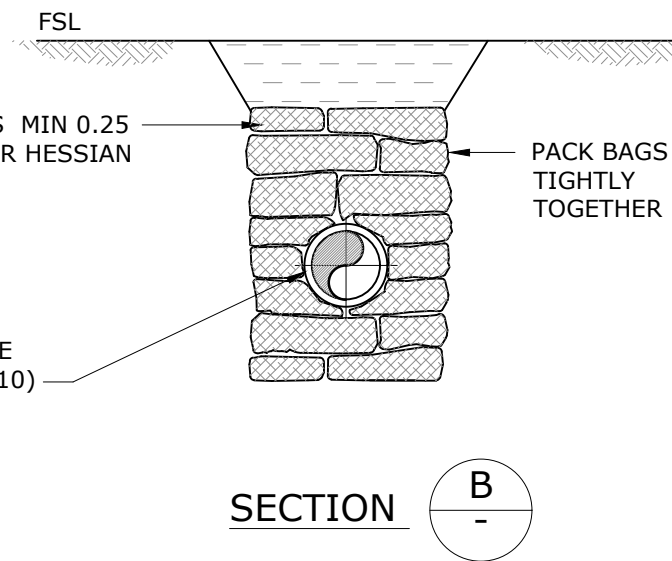
SECTION A



TYPICAL ROAD CROSSING BULKHEAD



TRENCH STOP DETAIL



SECTION B

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. CONSTRUCT CONCRETE BULKHEADS AND TRENCH STOPS AT LOCATIONS SPECIFIED IN DESIGN DRAWINGS AND BASED ON THE SPACINGS IN THE TABLE 7.5 OF THE SEQ-SP WATER SUPPLY CODE.
3. CONSTRUCT BULKHEAD ADJACENT TO KERB AND GUTTER SHOULDER OF SEALED ROADS.
4. LOCATE BULKHEAD AT A DEVELOPMENTS RETAINING WALL UNDER THE WALL.
5. KEY CONCRETE BULKHEADS INTO SIDES AND BOTTOM OF TRENCH AGAINST A BEARING SURFACE OF UNDISTURBED SOIL.
6. CONCRETE TO BE CLASS N25.
7. DO NOT DEFORM PIPES DURING PLACEMENT OF CONCRETE.
8. SEAL BAGS TO PREVENT LEAKAGE OF CONTAINED MATERIAL.
9. PROVIDE CONTINUOUS DRAINAGE PATH
 - THROUGH BULKHEADS AND TRENCHSTOPS
 - AROUND MAINTENANCE HOLES
 - IN TRENCH EXCAVATIONS ACROSS ROADWAYS.
10. COMPRESSIBLE MEMBRANE AROUND PIPE TO BE 10 THICK POLYSTYRENE FOR BULKHEADS ADJACENT TO KERBS AND 3 MIN THICK EPDM RUBBER FOR BULKHEADS AND TRENCHSTOPS ON SLOPES.
11. TRENCH STOPS AND BULKHEADS ARE TO BE USED TO PREVENT OR IMPEDE THE MOVEMENT OF SURFACE AND GROUND WATER THAT WILL DAMAGE THE PIPE TRENCH OR THE PIPE EMBEDMENT.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

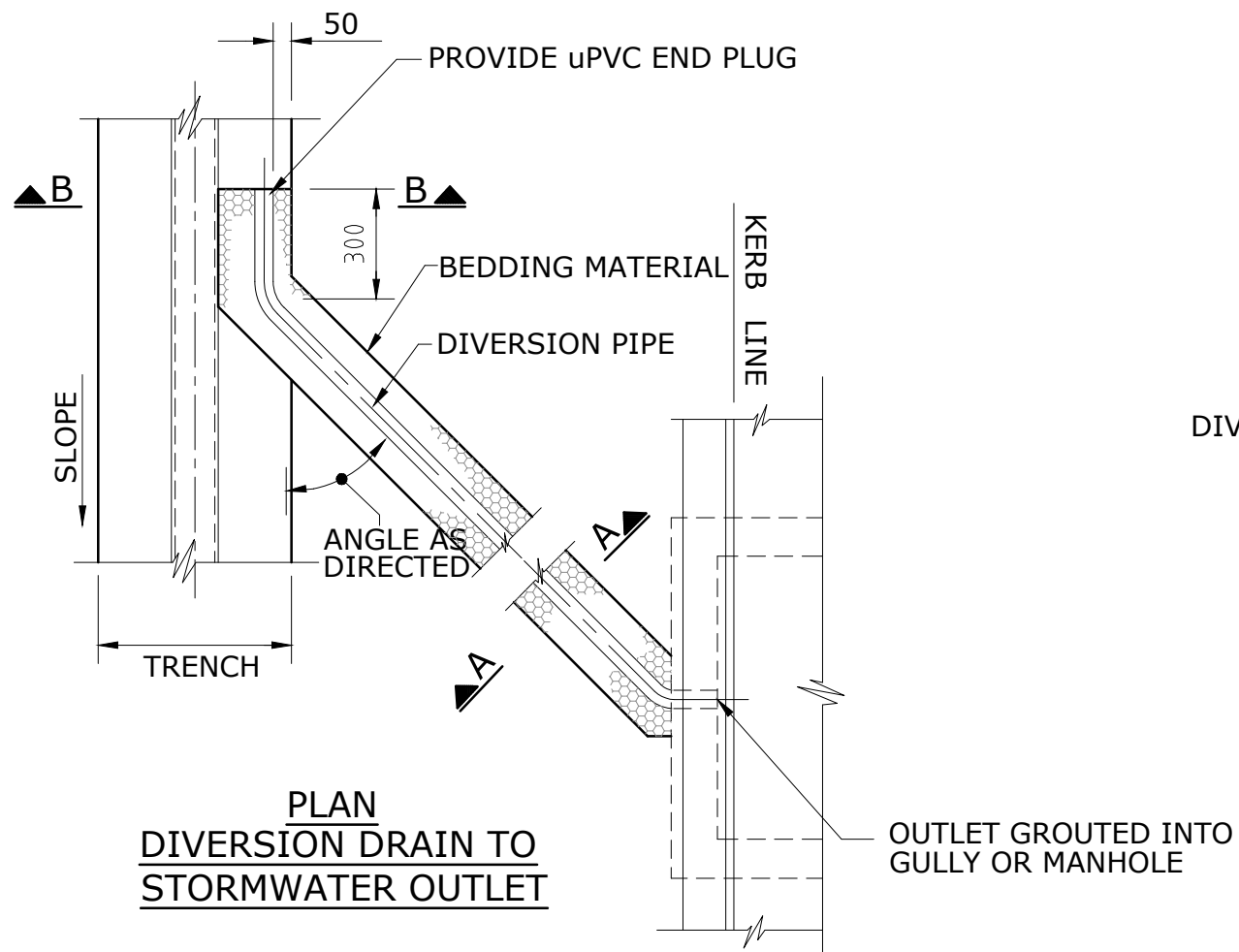
NOT FOR CONSTRUCTION

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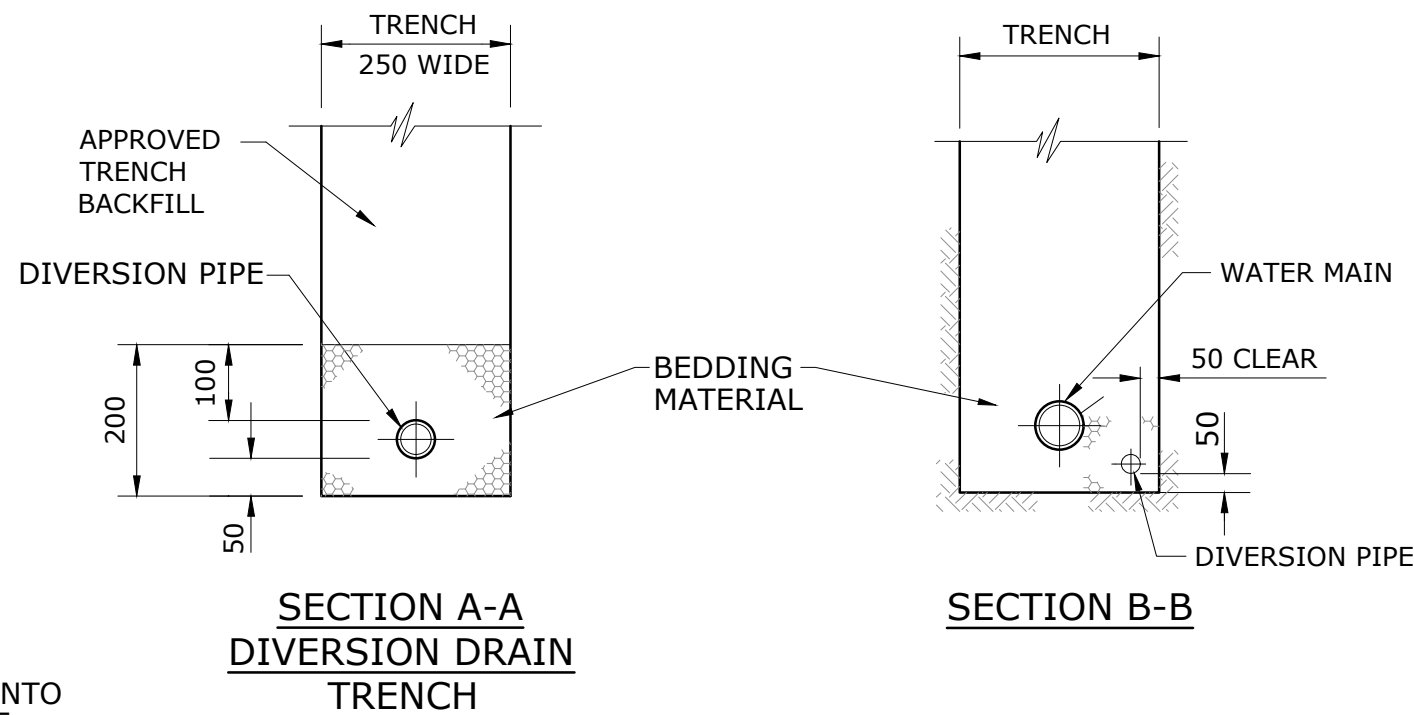
WATER SUPPLY STANDARD DRAWING

TYPICAL TRENCH DRAINAGE BULKHEADS AND TRENCHSTOP

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DRAWING No.				VERSION
SEQ-WAT-1209-1				B
NOT TO SCALE				ORG DATE: 1/1/2013



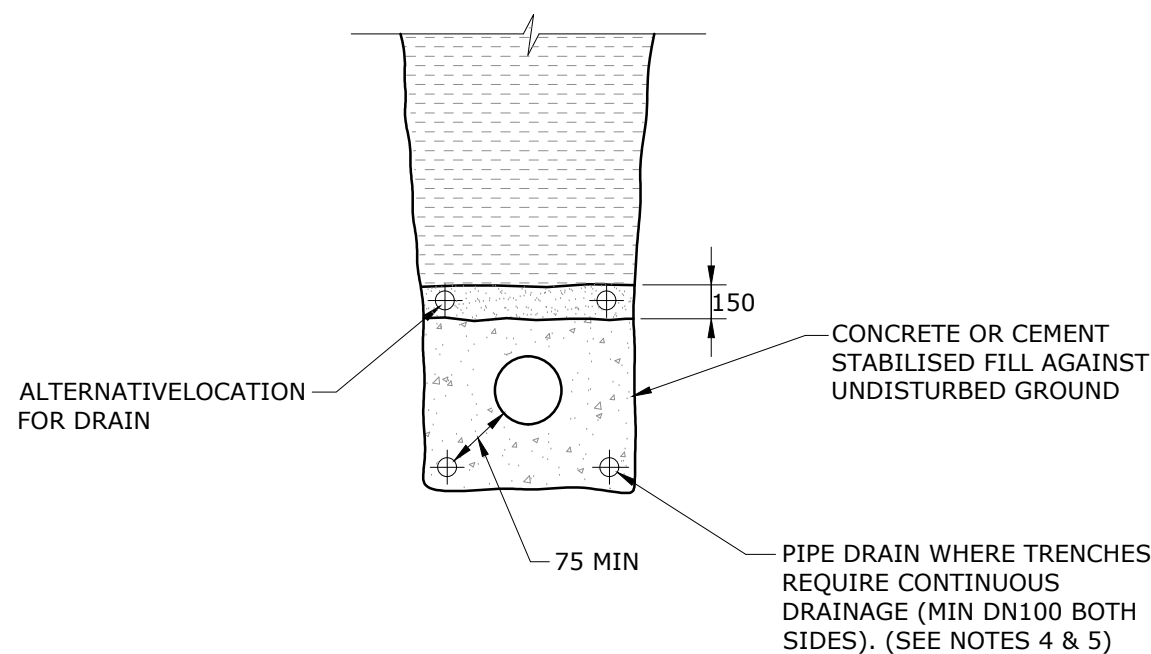
**PLAN
DIVERSION DRAIN TO
STORMWATER OUTLET**



**SECTION A-A
DIVERSION DRAIN
TRENCH**

SECTION B-B

TYPICAL DISCHARGE SYSTEMS FOR PIPE TRENCHES



TRENCH DRAINAGE FOR CONCRETE ENCASMENT/STABILISATION

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. DRAINAGE PIPES TO DISCHARGE INTO AUTHORISED STORMWATER DISCHARGE AREAS (AS SHOWN IN DESIGN DRAWINGS).
3. LAY GEOTEXTILE FILTER FABRIC IN TRENCH SUCH THAT IT FULLY ENCAPSULATES THE DRAINAGE MATERIAL (5/7 AGGREGATE). PROVIDE MINIMUM OF 250 LAP AT ALL FILTER FABRIC JOINTS.
4. PROVIDE CONTINUOUS DRAINAGE PATH:
 - THROUGH BULKHEADS.
 - IN TRENCH EXCAVATIONS ACROSS ROADWAY.
5. WHERE REINFORCING IS USED LOCATE DRAIN INSIDE THE REINFORCING.
6. DEPTH MAY NEED TO BE INCREASED TO COMPENSATE. DIVERSION PIPE AND FITTINGS TO BE DN50 SLOTTED POLYETHYLENE 6. CLASS 400 TO AS 2439.1..
7. DIVERSION PIPES ARE TO BE FITTED WITH A FILTER SOCK/SLEEVE.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

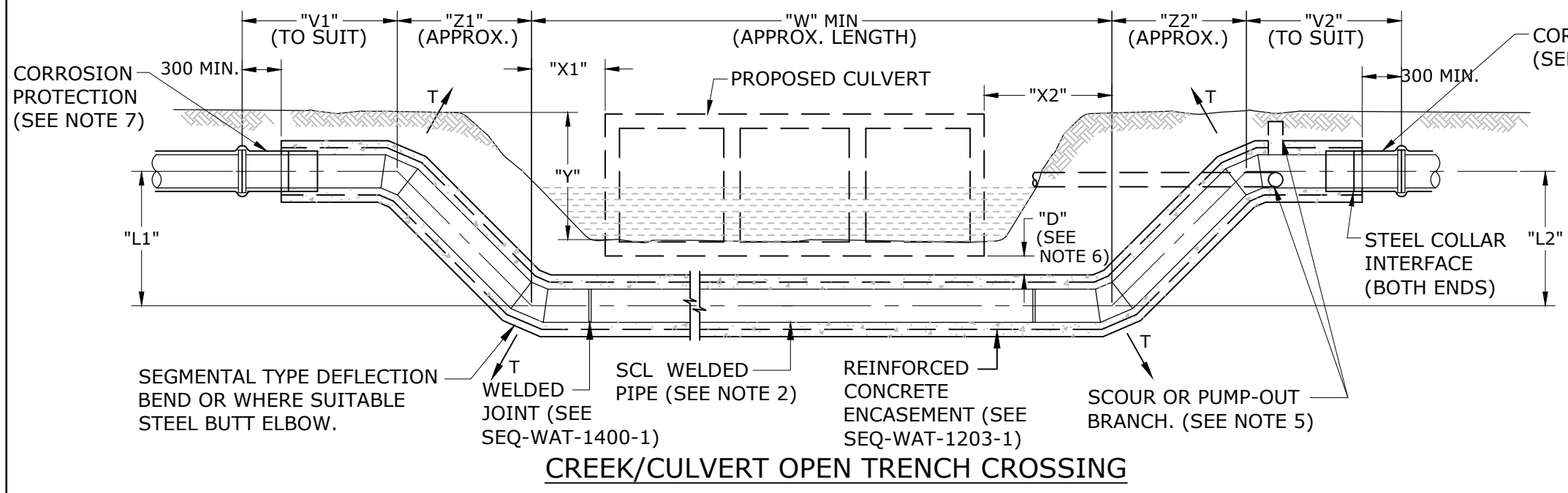
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

**TYPICAL TRENCH DRAINAGE
TRENCH SYSTEMS**

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DRAWING No.				VERSION
SEQ-WAT-1210-1				B
NOT TO SCALE				ORG DATE: 1/1/2013

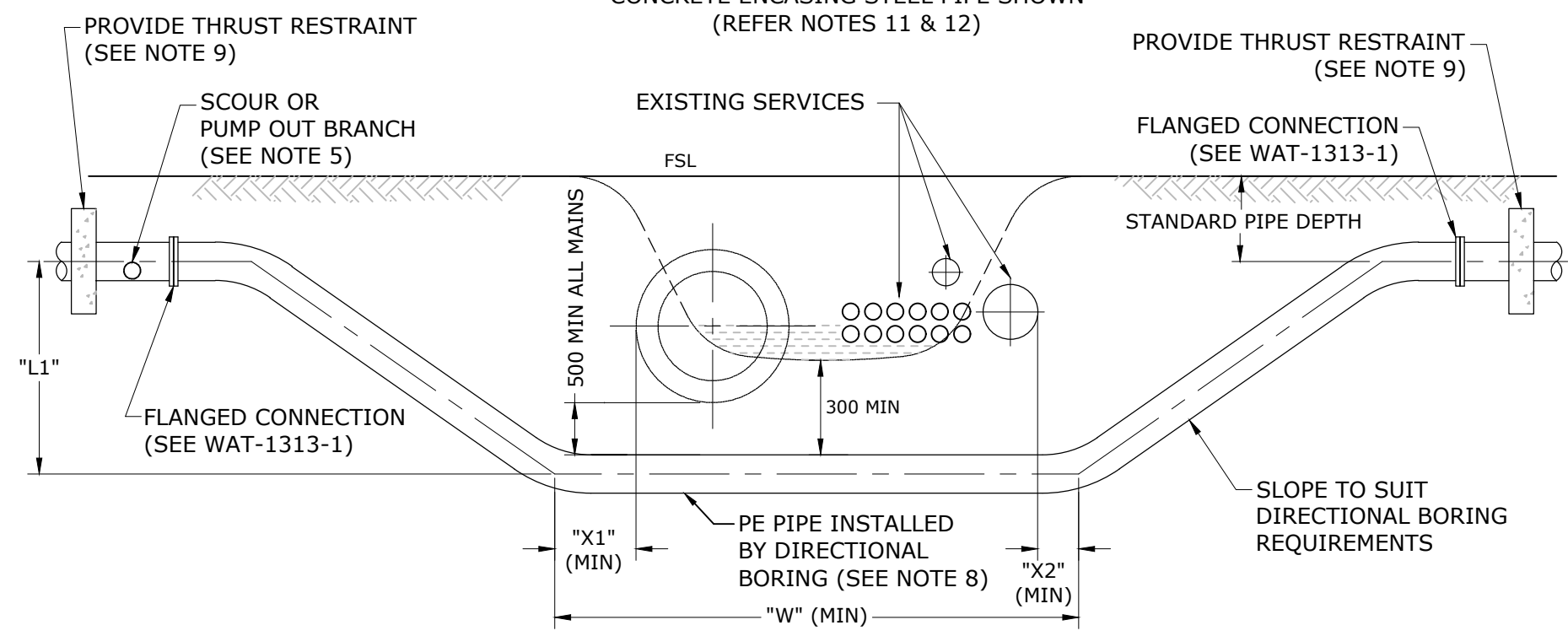


CREEK/CULVERT OPEN TRENCH CROSSING

CONCRETE ENCASEMENT STEEL PIPE SHOWN
(REFER NOTES 11 & 12)

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. STEEL PIPE JOINTS TO BE EITHER PLAIN ENDS WITH WELDED COLLAR, BUTT WELDED OR SLIP-IN TYPE WELDED JOINT.
3. DIMENSIONS D, L1, L2, V1, V2, W, X1, X2, Y, Z1, Z2, THRUST "T" 3. AND REINFORCEMENT DETAILS TO BE AS SHOWN IN DESIGN DRAWINGS. "W" SHALL BE ULTIMATE CREEK, CULVERT OR SERVICES WIDTH.
4. POUR UNDERSIDE OF CONCRETE ENCASEMENT AGAINST UNDISTURBED GROUND.
5. WHERE REQUIRED PROVIDE SCOUR OR PUMP-OUT BRANCH AS DETAILED IN DESIGN DRAWINGS. (SEQ-WAT-1307 SET.)
6. 500 MIN COVER (DIMENSION "D") TO APPLY EXCEPT FOR MAJOR STREAM CROSSINGS OR WHERE CONDITIONS SUCH AS DREDGING OR NAVIGATION REQUIREMENTS MIGHT APPLY. FOR SUCH APPLICATIONS INCREASED DEPTH OF COVER TO BE DECIDED AFTER CONSULTATION WITH AUTHORITY RESPONSIBLE FOR WATERWAY.
7. FULLY WRAP PE COATED STEEL PIPE USING BITUMASTIC WRAPPING TAPE SYSTEM THAT EXTENDS AT LEAST 300 mm WITHIN CONCRETE ENCASEMENT AND ENSURING TAPE OVERLAPS THE UNDAMAGED PE COATING BY AT LEAST 150 mm.
8. NO JOINTS PERMITTED IN THE PIPE SECTION UNDER THE OBSTRUCTION.
9. PROVIDE THRUST RESTRAINTS WHERE PE PIPEWORK IS CONNECTED TO RRJ PIPEWORK (SEE SEQ-WAT-1206-1), TRANSITION MAY BE ON SLOPED PIPE LENGTHS.
10. AIR RELIEF AND ISOLATION VALVES TO BE INSTALLED WHERE SHOWN IN DESIGN DRAWINGS.
11. LCC PREFERRED THE USE OF BRIDGING SLAB OR OTHER APPROVED EQUIVALENTS. CONCRETE ENCASEMENT WILL ONLY BE PERMITTED IN SPECIAL CIRCUMSTANCES WHERE IT IS DEMONSTRATED THE OTHER METHOD IS UNFEASIBLE. FULLY FLANGED DICL PIPE IS ALSO ACCEPTABLE AS AN ALTERNATE TO THE RRJ PIPE. FOR CoGC USE OF CONCRETE ENCASED PIPE NEEDS TO BE APPROVED.
12. REFER TO CLAUSE 7.6 OF THIS CODE FOR THE ADDITIONAL CONCRETE ENCASEMENT REQUIREMENTS.



CREEK, STORMWATER AND BURIED SERVICES USING TRENCHLESS TECHNOLOGY

PE PIPE SHOWN

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOTES 9, 11, 12. NOTES RE-NUMBERED. DETAIL TITLE CHANGED. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	21/05/19	AMENDED NOTE 7, MINOR CHANGES TO CORROSION PROTECTION DETAILS.	
B	14/07/15	NOTE 12 - DRAWING REFERENCE CHANGED	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

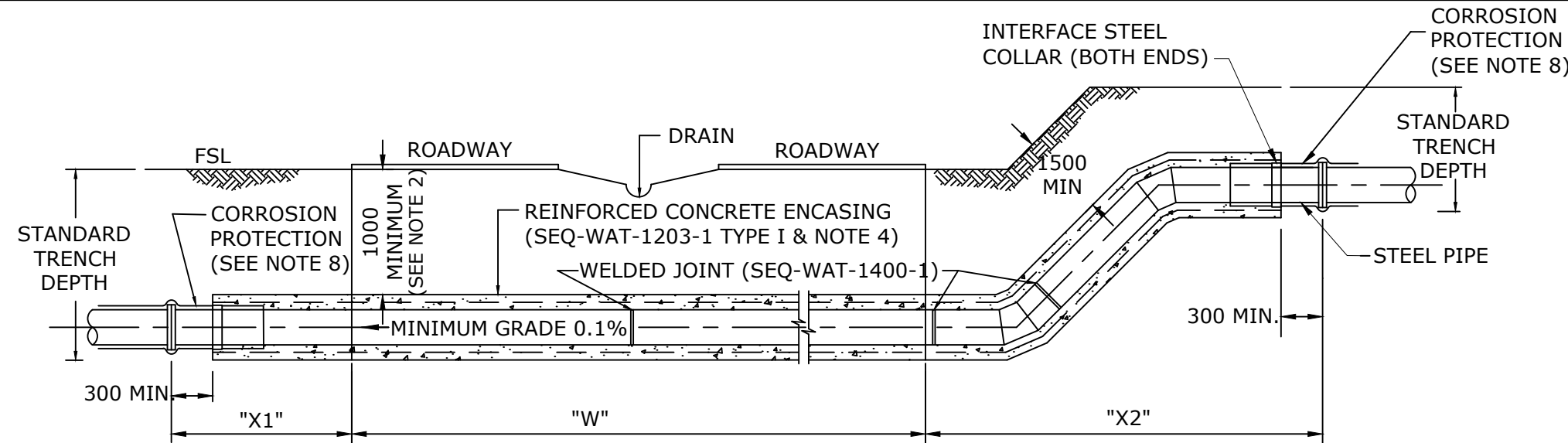
NOT FOR CONSTRUCTION

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WATER SUPPLY STANDARD DRAWING

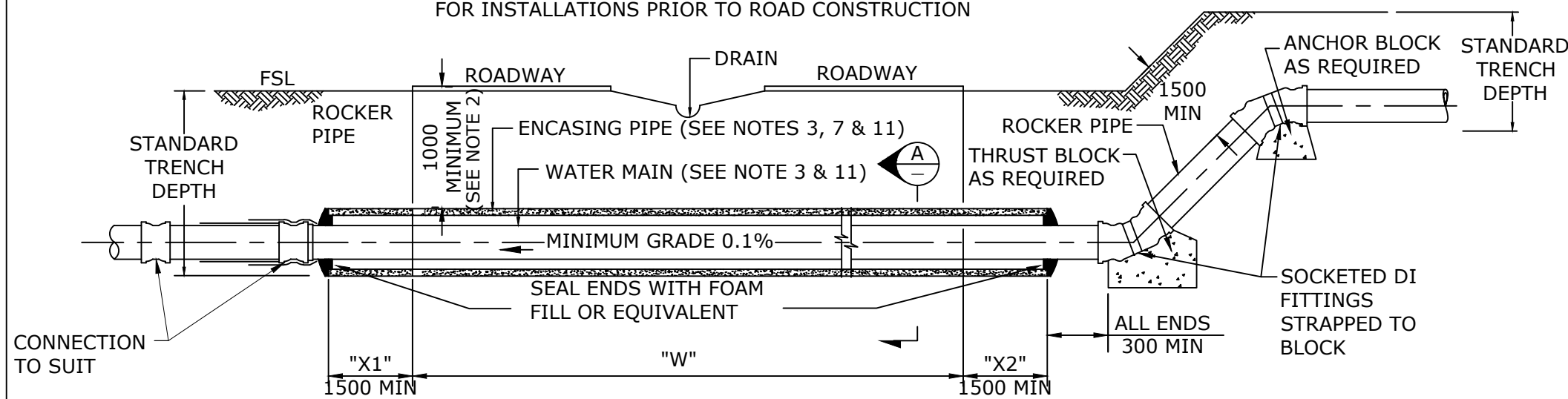
TYPICAL BURIED CROSSINGS UNDER OBSTRUCTIONS

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DRAWING No.				VERSION
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NOT TO SCALE				ORG DATE: 1/1/2013



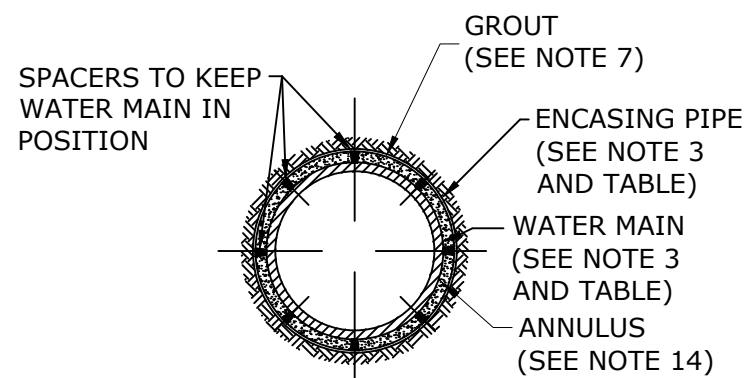
MAJOR ROAD OPEN TRENCH CROSSING

(DN610 AND LARGER CONCRETE ENCASING STEEL PIPE SHOWN - REFER NOTE 13)
FOR INSTALLATIONS PRIOR TO ROAD CONSTRUCTION



BORED AND JACKED ENCASING PIPE METHOD

FOR INSTALLATIONS AFTER ROAD CONSTRUCTION (SEE SEQ-WAT-1214-1)



TYPICAL SECTION **A**

ENCASING PIPE & WATER MAIN

(PREFERRED INSTALLATION OPTION)

WATER MAIN PIPE (DN)	100	150	200	250	300	400	500	550	650	800
STEEL ENCASING PIPE (DN) MIN	300	375	375	450	525	600	700	750	825	1000

UNITYWATER REQUIRES ALL PIPELINES WITH SOC-SP JOINTS, THE SOCKET/SPIGOT WITNESS MARK TO BE MAINTAINED AT ALL TIMES DURING PIPE INSERTION INTO THE ENCASING PIPE. AN APPROPRIATE SOLUTION IS TO USE A THRUST RING LOCATED ON THE SPIGOT ADJACENT TO THE WITNESS MARK (THE HEIGHT OF THIS RING SHALL NOT RESTRICT THE FLOW OF THE GROUT).

NOTES

- ALL DIMENSIONS IN MILLIMETRES.
- DETAILS SHOWN ARE TYPICAL. THE DESIGNER SHALL PROVIDE A SPECIFIC DESIGN FOR THE INSTALLATION AND OBTAIN APPROVAL FROM THE RELEVANT AUTHORITY FOR THE DESIGN. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE RELEVANT AUTHORITY TO ACCESS THE SITE.
- BORED AND JACKED ENCASING PIPE METHOD.
ENCASING PIPE
- REINFORCING CONCRETE CLASS 4 BUTT JOINED WITH STEEL LOCATING BANDS, OR WELDED STEEL JACKING PIPE.
WATER MAIN (SEE NOTE 15)
- STEEL PIPE.
- DI PIPE FLANGE CLASS
- PE PIPE (SEE NOTE 14)
- CONCRETE ENCASED METHOD.
- PIPE MATERIAL TO BE STEEL OR DI SOC-SP PIPE (REFER BOXED NOTE AND NOTE 15)
- EXTERNAL COATING REQUIRED ON STEEL PIPE.
- STEEL JOINTS TO BE FULLY WELDED.
- NO SERVICE CONNECTIONS TO BE MADE TO ENCASED SECTION OF PIPELINE.
- STEEL PIPE JOINTS TO BE EITHER PLAIN ENDS WITH WELDED COLLAR, BUTT WELDED OR SLIP-IN TYPE WELDED JOINTS.
- DIMENSIONS "W", "X1" & "X2" AND LOCATION OF BULKHEADS & REINFORCING TO BE SHOWN IN DESIGN DRAWINGS. "W" SHALL BE ULTIMATE ROAD WIDTH.
- FILL VOIDS OUTSIDE ENCASING PIPE WITH GROUT DURING THE INSTALLATION, REFER SEQ-WAT-1214-1 FOR NOTE 4.
- FULLY WRAP PE COATED STEEL PIPE USING BITUMASTIC WRAPPING TAPE SYSTEM THAT EXTENDS AT LEAST 300 mm WITHIN CONCRETE ENCASEMENT TO AT LEAST 300 mm BEYOND CONCRETE ENCASEMENT AND ENSURING TAPE OVERLAPS THE UNDAMAGED PE COATING BY AT LEAST 150 mm.
- INSTALL AIR RELIEF AND ISOLATION VALVES WHERE SHOWN IN DESIGN DRAWINGS.
- CONSTRUCTION TO BE IN ACCORDANCE WITH DESIGN DRAWINGS.
- SEE SEQ-WAT-1214-1 FOR DETAILS OF ENCASING AND WATER MAIN INSTALLATION AND GROUTING DETAILS.
- DIRECTIONAL BORING TO INSTALL PE PIPE IS ALSO ACCEPTABLE.
- SMALLER DIAMETER MAINS SHALL BE DI SOC-SP PIPE WITH TYPE I EMBEDMENT SUPPORT(SEQ-WAT-1203-1) AND THRUST MANAGEMENT TO SEQ-WAT-1207-1.
- PLASTIC PIPE MATERIALS WHERE APPROVED SHALL BE MANAGED FOR FLOTATION AND THERMAL REVERSION DURING THE GROUTING PROCESS, REFER SEQ-WAT-1214-1 FOR GROUT.
- LCC PREFERENCE FOR WATER MAIN INSIDE ENCASING PIPE IS DI CL.
- REFER TO CLAUSE 7.6 OF THIS CODE FOR THE ADDITIONAL CONCRETE ENCASEMENT REQUIREMENTS

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOTES 3,4,15,16. DETAIL TITLE CHANGED. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	21/05/19	MINOR CHANGES TO NOTE 14 AND DRAWING REFERENCES	
B	25/06/18	AMENDED CONC ENC DETAIL, NOTES 4, 8 AND 13. UPDATED UW BOXED NOTE	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

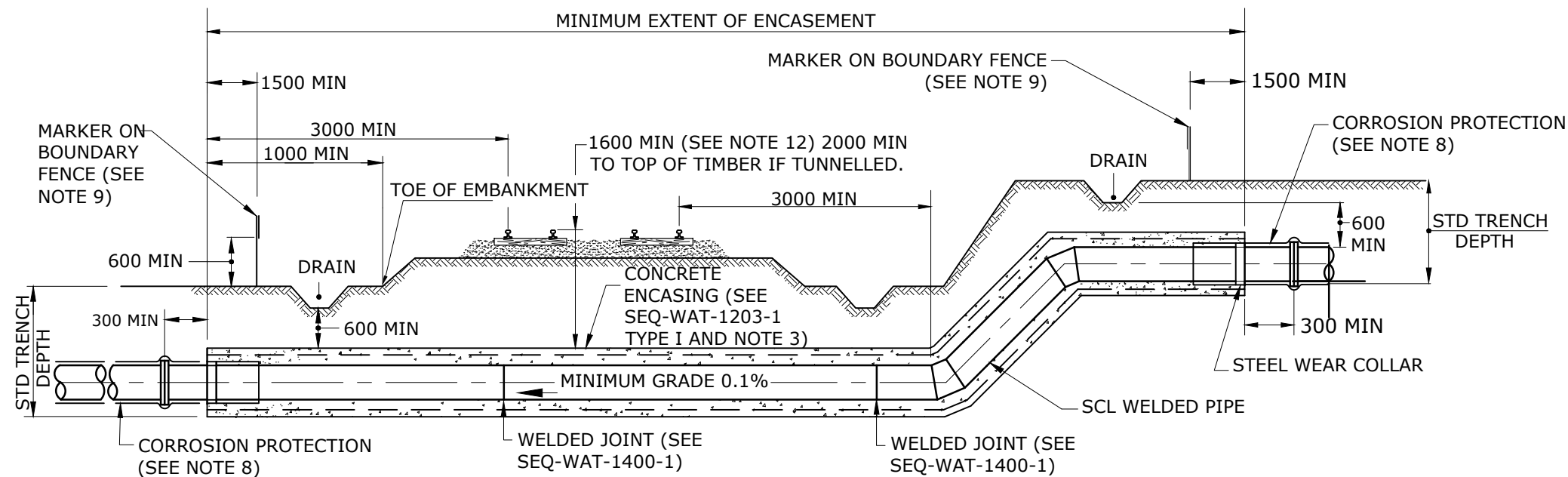
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WATER SUPPLY STANDARD DRAWING

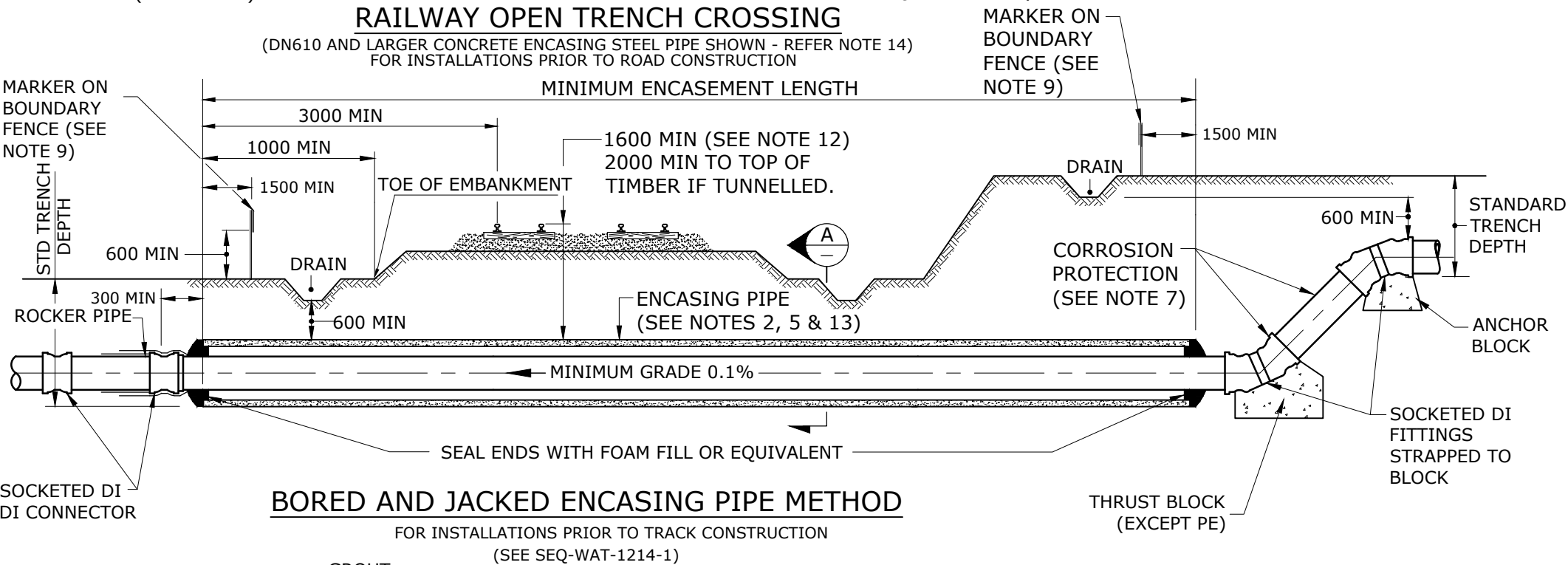
**TYPICAL BURIED CROSSINGS
MAJOR ROADWAYS**

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1212-1				D
NOT TO SCALE				ORG DATE: 1/1/2013



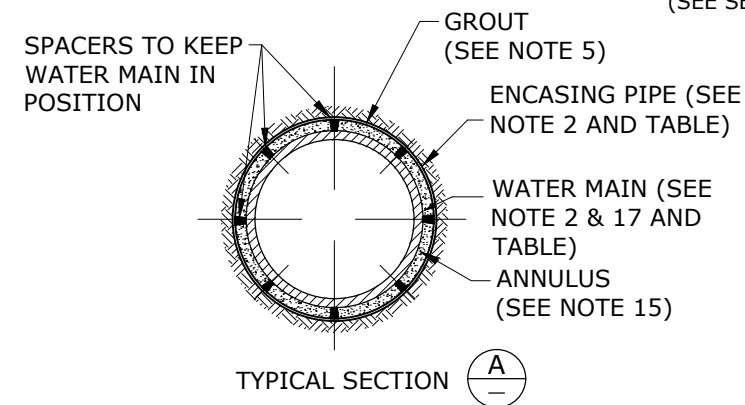
RAILWAY OPEN TRENCH CROSSING

(DN610 AND LARGER CONCRETE ENCASING STEEL PIPE SHOWN - REFER NOTE 14) FOR INSTALLATIONS PRIOR TO ROAD CONSTRUCTION



BORED AND JACKED ENCASING PIPE METHOD

FOR INSTALLATIONS PRIOR TO TRACK CONSTRUCTION (SEE SEQ-WAT-1214-1)



ENCASING PIPE & WATER MAIN

(PREFERRED INSTALLATION OPTION)

WATER MAIN PIPE (DN)	100	150	200	250	300	400	500	550	650	800
STEEL ENCASING PIPE (DN) MIN	300	375	375	450	525	600	700	750	825	1000

UNITYWATER REQUIRES ALL PIPELINES WITH SOC-SP JOINTS, THE SOCKET/SPIGOT WITNESS MARK TO BE MAINTAINED AT ALL TIMES DURING PIPE INSERTION INTO THE ENCASING PIPE. AN APPROPRIATE SOLUTION IS TO USE A THRUST RING LOCATED ON THE SPIGOT ADJACENT TO THE WITNESS MARK (THE HEIGHT OF THIS RING SHALL NOT RESTRICT THE FLOW OF THE GROUT).

NOTES

- ALL DIMENSIONS IN MILLIMETRES.
- BORED AND JACKED ENCASING PIPE METHOD.
ENCASING PIPE
- REINFORCING CONCRETE CLASS 4 BUTT JOINED WITH STEEL LOCATING BANDS, OR WELDED STEEL OR GRP JACKING PIPE.
WATER MAIN (SEE NOTE 17)
- STEEL PIPE
- DI PIPE FLANGE CLASS
- PE PIPE (SEE NOTE 15)
- CONCRETE ENCASING
- THE PIPE MATERIAL TO BE STEEL OR DI SC-SP PIPE (REFER BOXED NOTE AND NOTE 17).
- EXTERNAL COATING REQUIRED ON STEEL PIPE.
- STEEL JOINTS TO BE FULLY WELDED.
- NO SERVICE CONNECTIONS TO BE MADE TO ENCASED SECTION OF PIPELINE
- STEEL PIPE JOINTS TO BE EITHER PLAIN OR PLAIN ENDS WITH WELDED COLLAR OR BUTT WELDED OR SLIP-IN TYPE WELDED JOINT. EXTERNAL COATING REQUIRED (SEE SEQ-WAT-1400-1).
- FILL VOIDS OUTSIDE OF ENCASING PIPE WITH PRESSURE GROUT DURING INSTALLATION, REFER SEQ-WAT-1214-1 FOR NOTE 4.
- LOCATE VALVE ACCESS CHAMBERS (IF REQUIRED) AT LEAST 6000 FROM TOE OF EMBANKMENT OR TOP OF CUT.
- FOR DI CL MAINS, PROTECT ALL PIPES AND FITTINGS WITH PE SLEEVING.
- FULLY WRAP PE COATED STEEL PIPE USING BITUMASTIC WRAPPING TAPE SYSTEM THAT EXTENDS AT LEAST 300 mm WITHIN CONCRETE ENCASMENT AND ENSURING TAPE OVERLAPS THE UNDAMAGED PE COATING BY AT LEAST 150 mm.
- PLACE MARKERS ABOVE BURIED PIPELINE AT THE POINTS WHERE IT ENTERS AND LEAVES THE PROPERTY.
- PROVIDE ADDITIONAL STRAY CURRENT PROTECTION AS DIRECTED BY RAILWAY AUTHORITY. ELECTRICAL CONTINUITY AND INSULATION TO BE AS SPECIFIED IN DESIGN DRAWINGS.
- DESIGN TO BE IN ACCORDANCE WITH AS 4799.
- MINIMUM COVER FOR ALL PIPELINES BELOW RAILWAY LINES
- NOT LESS THAN 1600 BELOW RAIL LEVEL;
- NOT LESS THAN 600 BELOW FORMATION LEVEL, i.e. THE GROUND LEVEL IMMEDIATELY BELOW THE RAILWAY BALLAST.
- NOT LESS THAN 2000 BELOW RAIL LEVEL TO TOP OF TIMBER FOR TUNNELS.
- SEE SEQ-WAT-1214-1 FOR DETAILS OF ENCASING AND WATER MAIN INSTALLATION AND GROUTING DETAILS.
- SMALLER DIAMETER MAINS SHALL BE DI SOC-SP PIPE WITH TYPE I EMBEDMENT SUPPORT (SEQ-WAT-1203-1) AND THRUST MANAGEMENT TO SEQ-WAT-1207-1.
- PLASTIC PIPE MATERIALS WHERE APPROVED SHALL BE MANAGED FOR FLOATATION AND THERMAL REVERSION DURING THE GROUTING PROCESS, REFER SEQ-WAT-1214-1 FOR GROUT.
- DETAILS SHOWN ARE TYPICAL. THE DESIGNER SHALL PROVIDE A SPECIFIC DESIGN FOR THE INSTALLATION AND OBTAIN APPROVAL FROM THE RELEVANT AUTHORITY FOR THE DESIGN. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE RELEVANT AUTHORITY TO ACCESS THE SITE.
- LCC PREFERENCE FOR WATER MAIN INSIDE ENCASING PIPE IS DI CL.
- REFER TO CLAUSE 7.6 OF THIS CODE FOR THE ADDITIONAL CONCRETE ENCASMENT REQUIREMENTS

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOTE 2,3,17,18. DETAIL TITLE CHANGED. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	22/05/19	MINOR CHANGES TO NOTE 15 AND DRAWING REFERENCES	
B	4/06/18	AMENDED CONC ENC DETAIL, NOTES 3, 8 AND 14. UPDATED UW BOXED NOTE	

SEQ WATER SERVICE PROVIDERS

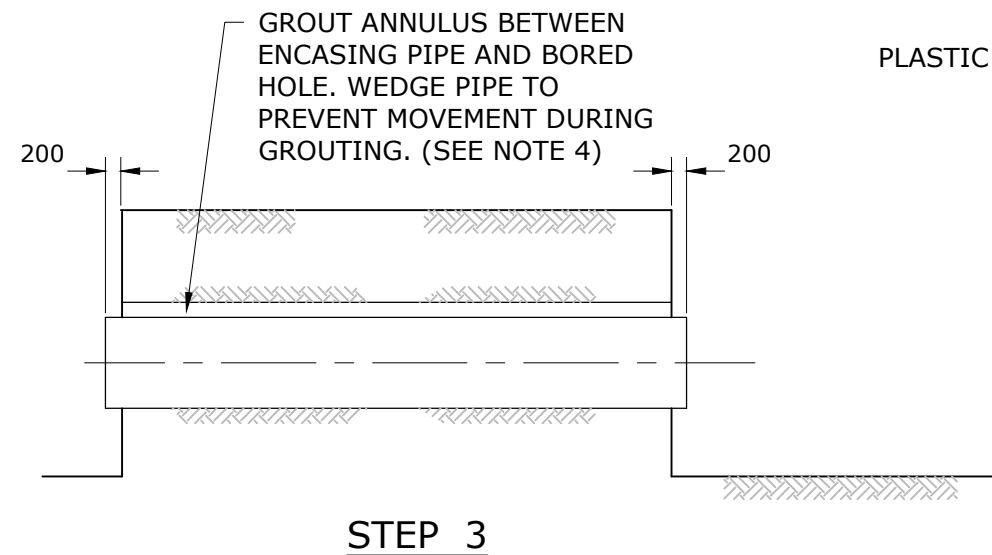
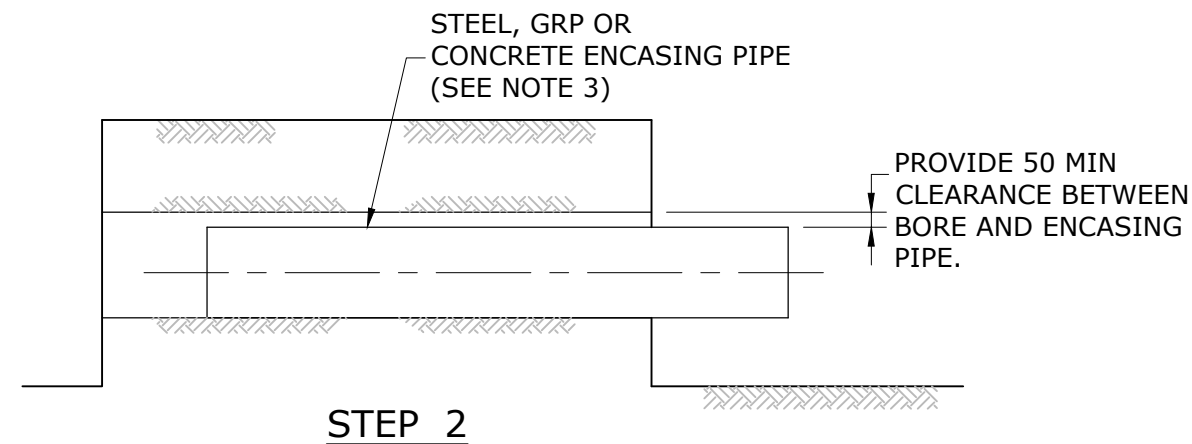
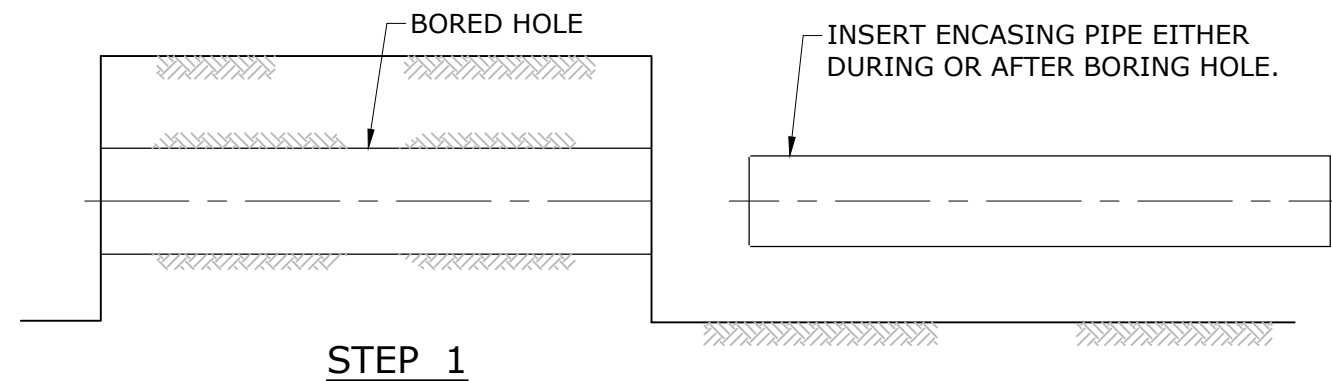
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

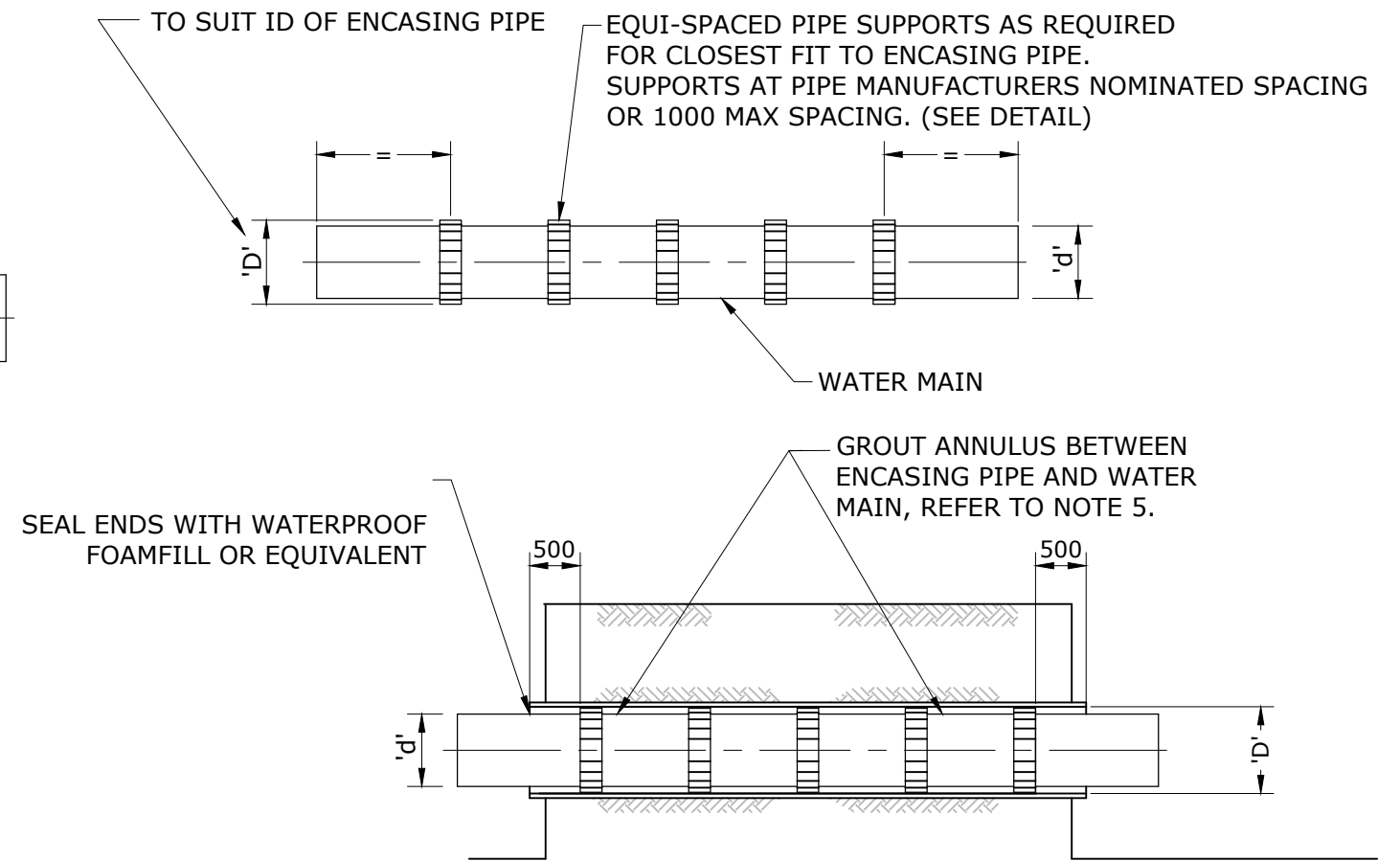
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
TYPICAL BURIED CROSSINGS RAILWAYS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1213-1				D
NOT TO SCALE				ORG DATE: 1/1/2013



INSTALLATION OF BORED ENCASING PIPE



BORED ENCASING PIPE SYSTEM
STEPS 1, 2 & 3 AS SHOWN.

JACKED ENCASING PIPE SYSTEM
INSTALLATION OF JACKED ENCASING PIPE TO BE CARRIED OUT BY SPECIALIST PIPE JACKING COMPANY AUTHORISED BY THE WATER AGENCY.

NOTES

- ALL DIMENSIONS IN MILLIMETRES.
- PIPE MATERIALS AND 'D' & 'd' TO BE AS SPECIFIED IN DESIGN DRAWING.
- FULL BUTT WELDED STEEL ENCASING PIPES PREFERRED.
- BORED HOLE TO ENCASING PIPE GROUT MIX BY WEIGHT IS 0.67 WATER : 1.0 CEMENT : 1.0 SAND WITH THE SAND TO BE WELL ROUNDED SAND AND SEQ-SP APPROVED PLASTICISERS MAY BE USED.
- ENCASING PIPE TO WATER PIPE GROUT MIX IS A FLOWABLE 1MPa MINIMUM GROUT WITH A LOW HEAT OF HYDRATION WITH AGGREGATE BEING A FINE WELL ROUNDED SAND AND PLASTICISERS MAY BE USED. THE MIX DESIGN SHALL BE APPROPRIATE FOR THE SPECIFIC PIPE MATERIALS AND SITE CONDITIONS AND SHALL BE APPROVED BY THE SUPERINTENDENT. FOR CoGC AND RCC, CONSIDERING THE IMPACT OF FUTURE WATER MAIN MAINTENANCE OR REPLACEMENT, THE ANNULUS GROUTING BETWEEN ENCASING PIPES AND WATER MAINS MAY NOT BE ALWAYS REQUIRED (SEE CoGC FOR GROUTING REQUIREMENT).

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOTE 5 REWORDED. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	22/05/19	NOTE 5 AMENDED	
B	14/07/15	AMENDED TEXT FOR "STEP 2" AND "TYPICAL FINISHED INSTALLATION" DETAILS	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

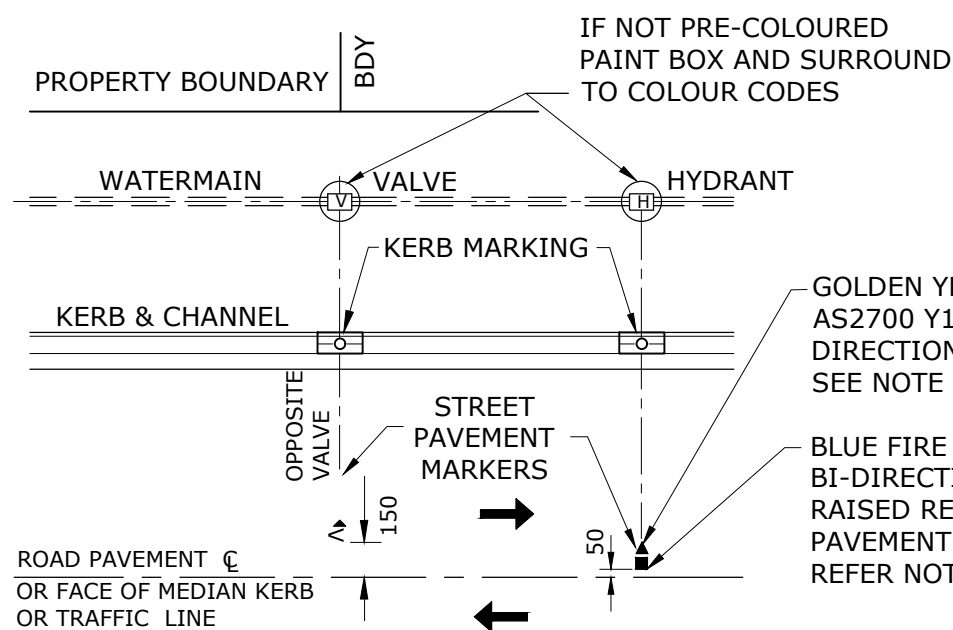
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

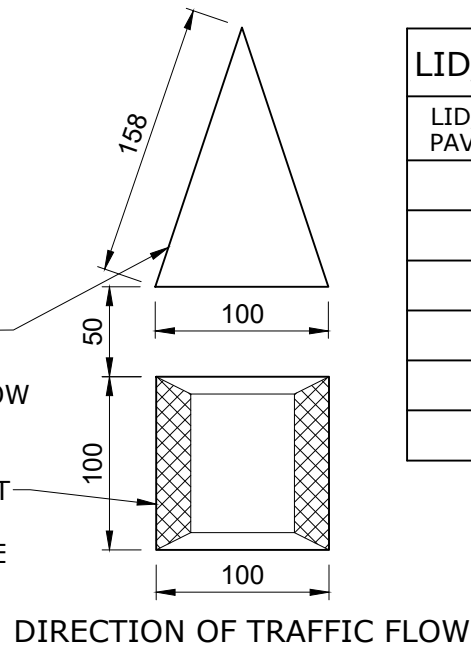
WATER SUPPLY STANDARD DRAWING

TYPICAL BURIED CROSSINGS
BORED AND JACKED ENCASING
PIPE DETAILS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1214-1				D
NOT TO SCALE				ORG DATE: 1/1/2013



**KERBED STREETS/ROADS
TYPICAL PAVEMENT MARKING PLAN**
(SEE NOTE 13 & 14)



**PAVEMENT MARKING
FOR HYDRANTS**

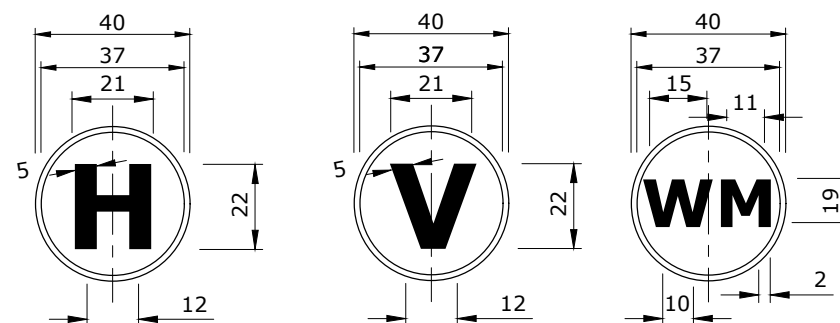
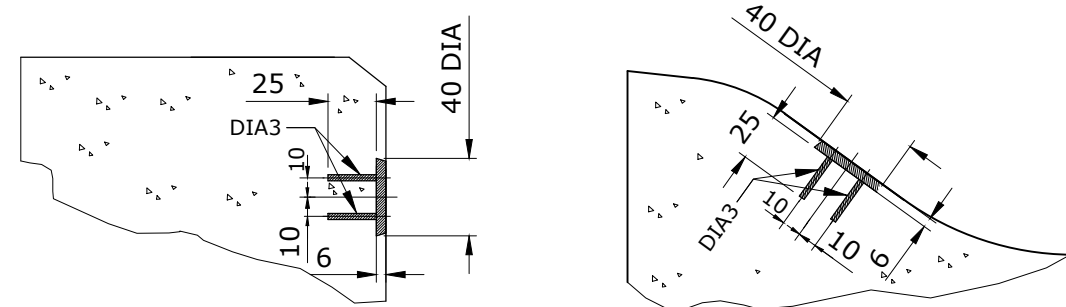
LID/PAVEMENT MARKING/DISC CODES			
LID/KERB/PAVEMENT	FACILITY	LID/KERB/PAVEMENT	FACILITY
H	HYDRANT	V	VALVE
F	FLUSHING POINT	SC	SWABBING CHAMBER
AV	AIR VALVE	HL	HIGH LEVEL MAIN
SV	SCOUR VALVE	ML	MID LEVEL MAIN
SH	SWABBING HYDRANT	LL	LOW LEVEL MAIN
VB	VALVE BOX/PIT	WM	WATER MAIN*

* KERB MARKERS ONLY REQUIRED FOR WATER MAIN ROAD CROSSINGS

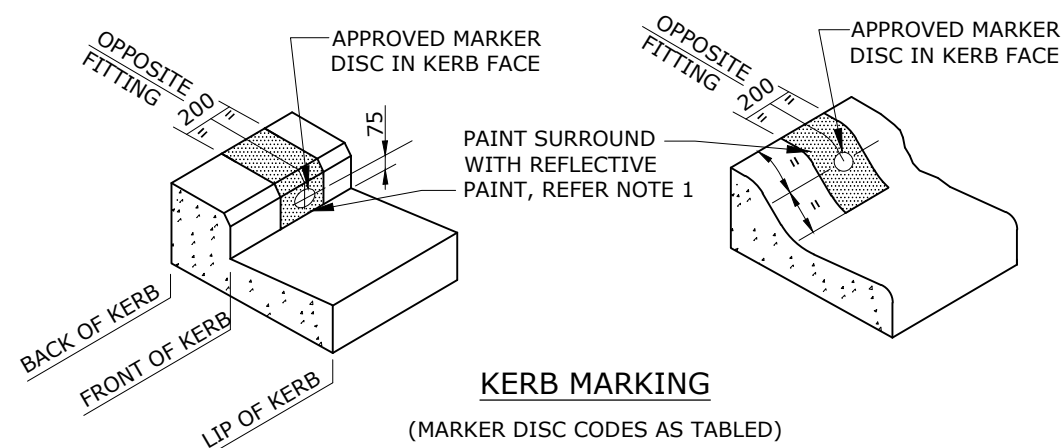
COLOUR CODES	
WHITE	VALVES, SCOUR VALVES, SWABBING CHAMBERS, AIR VALVES, FLUSHING POINTS
GOLDEN YELLOW AS2700 Y14	HYDRANTS
RED	CLOSED ZONE / BOUNDARY VALVES
BLUE	DIALYSIS VALVES
ADDITIONAL CODES FOR CoGC	
GREEN	SMALL DN BY-PASS VALVE
RED/WHITE	BOUNDARY VALVE PMA / DMA

NOTES

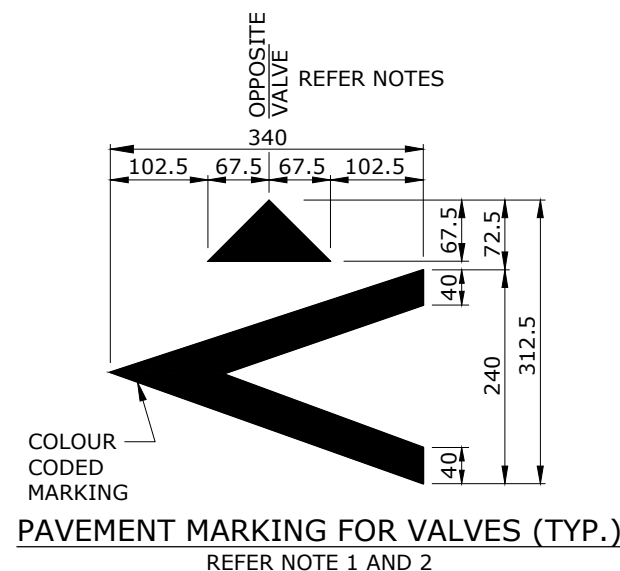
- PAVEMENT MARKING PAINT SHALL BE OF AN APPROVED REFLECTIVE PAINT, INCORPORATING APPLIED GLASS BEADS, MANUFACTURED TO THE REQUIREMENTS OF MAIN ROADS. THE PAINT COLOUR SHALL BE AS DETAILED.
- PAVEMENT MARKINGS SHALL BE LOCATED CLEAR OF THE PARKING LANE SO THAT TYRE WEAR IS MINIMISED. THE EXACT LOCATION SHALL BE DETERMINED BY THE SUPERINTENDENT FOLLOWING SITE INSPECTIONS.
- FOR COUNCIL CONTROLLED ROADS, BLUE RAISED REFLECTIVE FIRE HYDRANT MARKERS SHALL BE IN ACCORDANCE WITH AS1906.3. THE BLUE REFLECTOR SHALL FACE THE DIRECTION OF APPROACHING TRAFFIC.
- FOR STATE CONTROLLED ROADS, BLUE RAISED REFLECTIVE FIRE HYDRANT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- ALL KERB AND PAVEMENT MARKINGS AND SURFACE FITTINGS SHALL BE COLOUR CODED AS PER COLOUR CODES TABLE.
- INSTALL THE SECOND BLUE REFLECTIVE FIRE HYDRANT MARKER AND THE YELLOW REFLECTIVE DIRECTIONAL ARROW ON OTHER SIDE OF ROAD WHERE CENTRE MEDIAN OBSCURES VIEW OF EITHER OF THEM FROM OTHER SIDE.
- SURFACE OF ROAD PAVEMENT SHALL BE THOROUGHLY CLEANED OF DUST, DIRT & EXTRANEOUS MATTER WITH A WIRE BRUSH.
- BLUE FIRE HYDRANT REFLECTIVE MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THEIR MANUFACTURER'S RECOMMENDATIONS OR WHERE THERE ARE NO SPECIFIC MANUFACTURER'S INSTRUCTIONS BY HEATING WITH A GAS FLAME FOLLOWED BY PRESSING INTO THE ROAD SURFACE WITH SUFFICIENT FORCE TO ENSURE ADHESION ACROSS THE ENTIRE BASE PLATE OR THE APPLICATION OF THE RECOMMENDED PROPRIETARY ADHESIVE ACROSS THE ENTIRE BASE PLATE.
- MARKER SHALL BE ALIGNED SQUARE TO THE ROAD CENTRELINE IN THE DIRECTION.
- RAISED BLUE FIRE HYDRANT MARKERS, BRASS KERB MARKER, KERB PAINT AND MARKER POST ARE TO BE INSTALLED IN LINE WITH THE HYDRANT AND EACH OTHER.
- VALVE AND HYDRANT BOXES AND LIDS SHALL BE PAINTED OR COLOURED, REFER NOTES 1 & 5.
- KERB AND PAVEMENT MARKERS ARE BOTH REQUIRED WHERE IT IS POSSIBLE TO INSTALL THEM. WHERE IT IS NOT POSSIBLE TO MARK THE POSITION OF A VALVE OR HYDRANT WITH BOTH A KERB MARKER (BECAUSE THERE IS NO KERB) AND A PAVEMENT MARKER (BECAUSE THERE IS NO PAVEMENT OR ONLY A SPRAY SEAL) A MARKER POST MUST BE INSTALLED IN ACCORDANCE WITH DRAWING SEQ-WAT-1300-2.
- PLACEMENT OF ALL STREET FURNITURE SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- KERB MARKERS FOR WATER MAIN ROAD CROSSINGS SHALL BE LOCATED VERTICALLY OVER THE CENTRE-LINE OF THE WATER MAIN.
- FOR UU AND LCC, KERB MARKERS MAY BE INSTALLED CENTRALLY ON TOP OF EXISTING KERB IN BROWNFIELD LOCATIONS, RATHER THAN IN THE FACE OF KERB.



**HYDRANT, VALVE & WATER MAIN ROAD
CROSSING MARKERS (TYP.)**



KERB MARKING
(MARKER DISC CODES AS TABLED)



PAVEMENT MARKING FOR VALVES (TYP.)
REFER NOTE 1 AND 2

REV. No.	DATE	DESCRIPTION	AUTH.
E	01/02/24	NOTES 5 & 15 UPDATED. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
D	22/05/19	COLOUR CODES TABLE AMENDED	
C	4/06/18	AMENDED LID CODE TABLE AND UPDATED MARKER REQUIREMENTS	
B	31/03/15	NOTES AMENDED. MORE DETAILS ADDED TO THE DRAWING.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

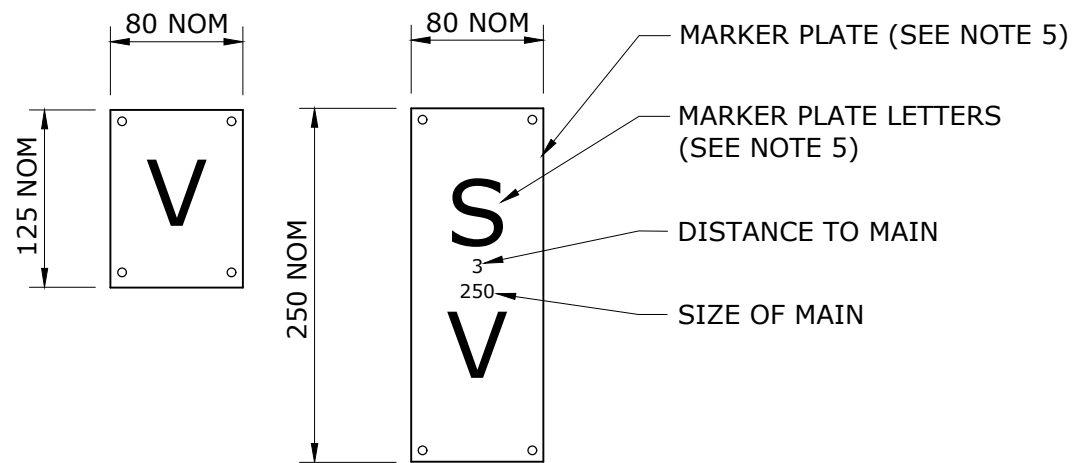
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

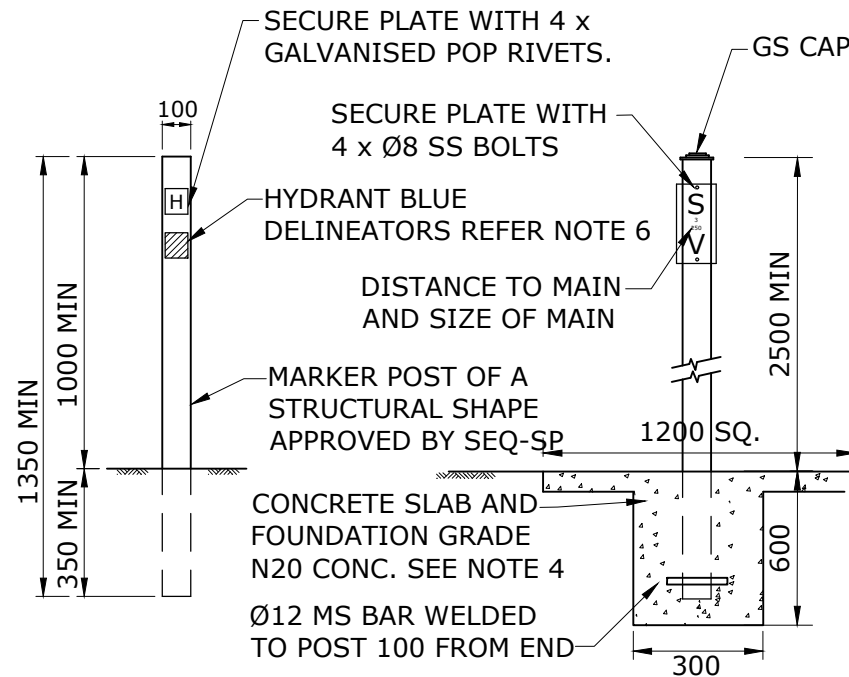
WATER SUPPLY STANDARD DRAWING

TYPICAL VALVE, HYDRANT AND WATER MAIN ROAD CROSSING ROAD AND PAVEMENT MARKERS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1300-1				E
NOT TO SCALE				ORG DATE: 1/1/2013



TYPICAL PLATE ARRANGEMENT
FIXED TO POST



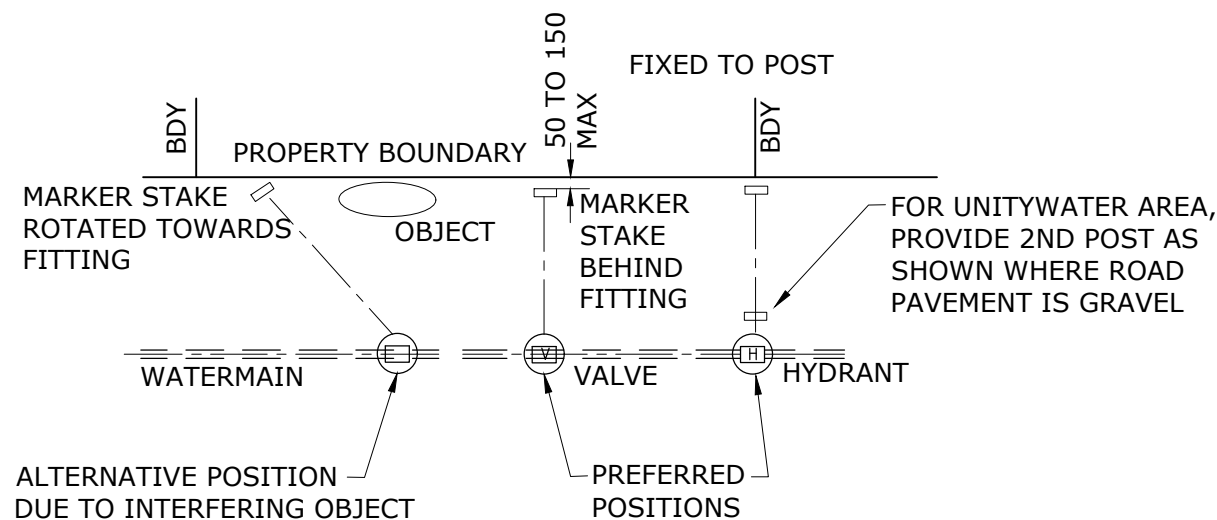
MARKER POST

REMOTE AREA POST

GALVANISED 50NB MILD STEEL TUBE C350LO
(60.3 OD x 2.3 WALL THICKNESS)

LID/MARKER PLATE/DISC CODES			
LID/KERB	FACILITY	LID/KERB	FACILITY
H	HYDRANT	V	VALVE
F	FLUSHING POINT	SC	SWABBING CHAMBER
AV	AIR VALVE	HL	HIGH LEVEL MAIN
SV	SCOUR VALVE	ML	MID LEVEL MAIN
SH	SWABBING HYDRANT	LL	LOW LEVEL MAIN
VB	VALVE BOX/PIT		

COLOUR CODES	
WHITE	VALVES, SCOUR VALVES, SWABBING CHAMBERS, AIR VALVES, FLUSHING POINTS
YELLOW	HYDRANTS
RED	CLOSED ZONE / BOUNDARY VALVES
BLUE	DIALYSIS VALVES
ADDITIONAL CODES FOR CoGC	
GREEN	SMALL DN BY-PASS VALVE
RED/WHITE	BOUNDARY VALVE PMA / DMA



MARKER POST POSITION AND ORIENTATION
(PAVEMENT MARKINGS, REFER SEQ-WAT-1300-1)

NOTES

1. VALVE AND HYDRANT BOXES SHALL BE PAINTED OR COLOURED, REFER NOTES 1 AND 5 ON SEQ-WAT-1300-1.
2. MARKER POSTS ARE REQUIRED WHERE DIFFERENT PRESSURE ZONE WATER RETICULATION EXISTS WITH THE MARKER PLATE DESIGNATING THE DIFFERENT PRESSURE ZONES.
3. KERB AND PAVEMENT MARKERS ARE BOTH REQUIRED WHERE IT IS POSSIBLE TO INSTALL THEM IN ACCORDANCE WITH DRAWING SEQ-WAT-1300-1. WHERE IT IS NOT POSSIBLE TO MARK THE POSITION OF A VALVE OR HYDRANT WITH BOTH A KERB MARKER (BECAUSE THERE IS NO KERB) AND A PAVEMENT MARKER (BECAUSE THERE IS NO PAVEMENT OR ONLY A SPRAY SEAL) A MARKER POST MUST BE INSTALLED.
4. REMOTE AREA POSTS SHALL BE USED WHERE NO STREET EXISTS AND SHALL BE PROVIDED WITH A 1200 X 1200 X 100 THICK CONCRETE SLAB AROUND THE FACILITY BOX.
5. NOTICE PLATES SHALL BE REFLECTORISED ALUMINIUM WITH BLACK LETTERING ON A WHITE BACKGROUND NOMINALLY 80 X 125.
6. IN ADDITION TO THE NOTICE PLATE MARKER, A BLUE DELINEATOR MARKER COMPLYING WITH MAIN ROADS SPECIFICATION ES126 SHALL BE INSTALLED AS DETAILED.
7. PLACEMENT OF ALL STREET FURNITURE SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

REV. No.	DATE	DESCRIPTION	AUTH.
D	1/02/24	CoGC, REMOVED SUPPLIER. NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	
C	22/05/19	COLOUR CODES TABLE AMENDED	
B	31/03/15	NOTE 3 AND TYPICAL PLATE ARRANGEMENT DETAIL AMENDED.	

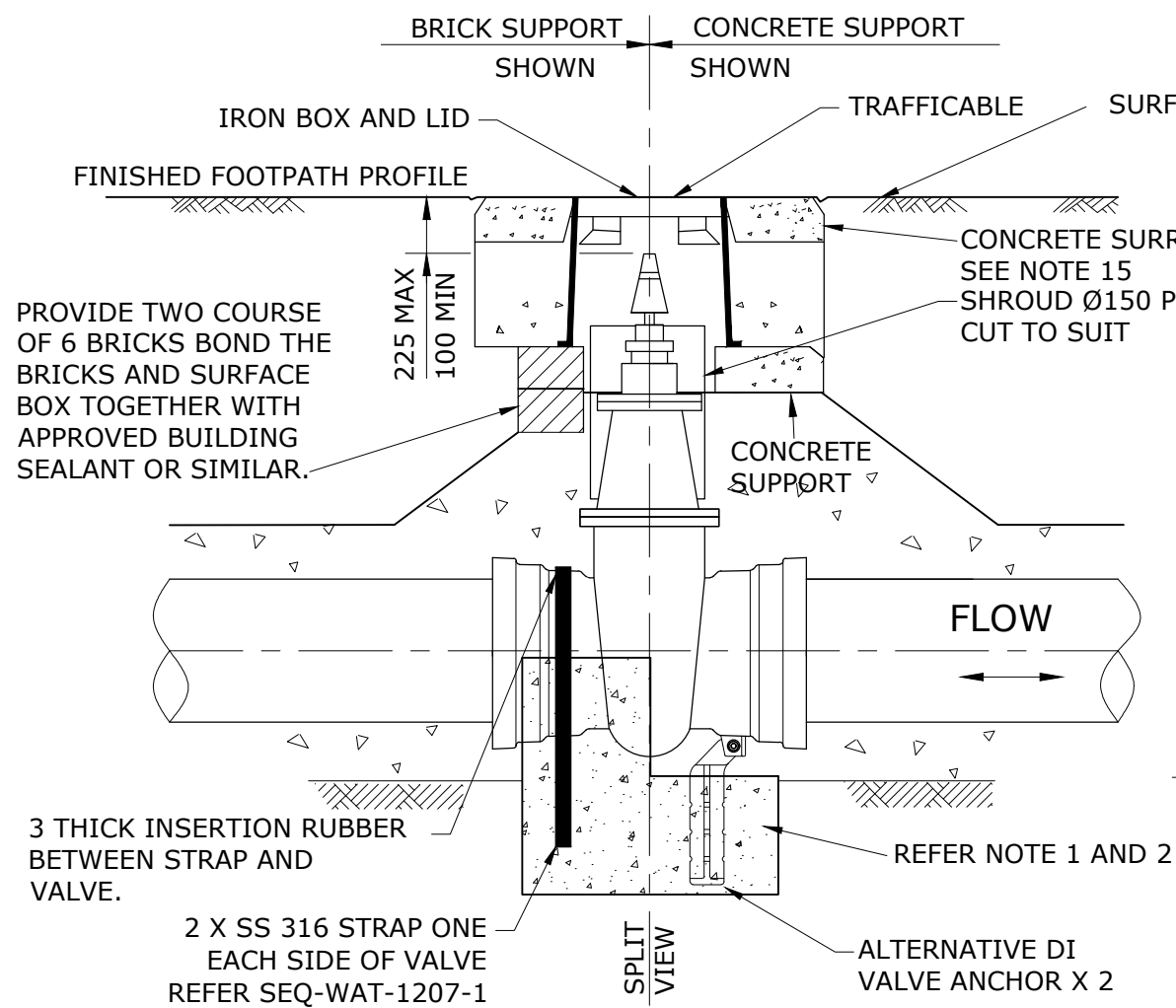
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

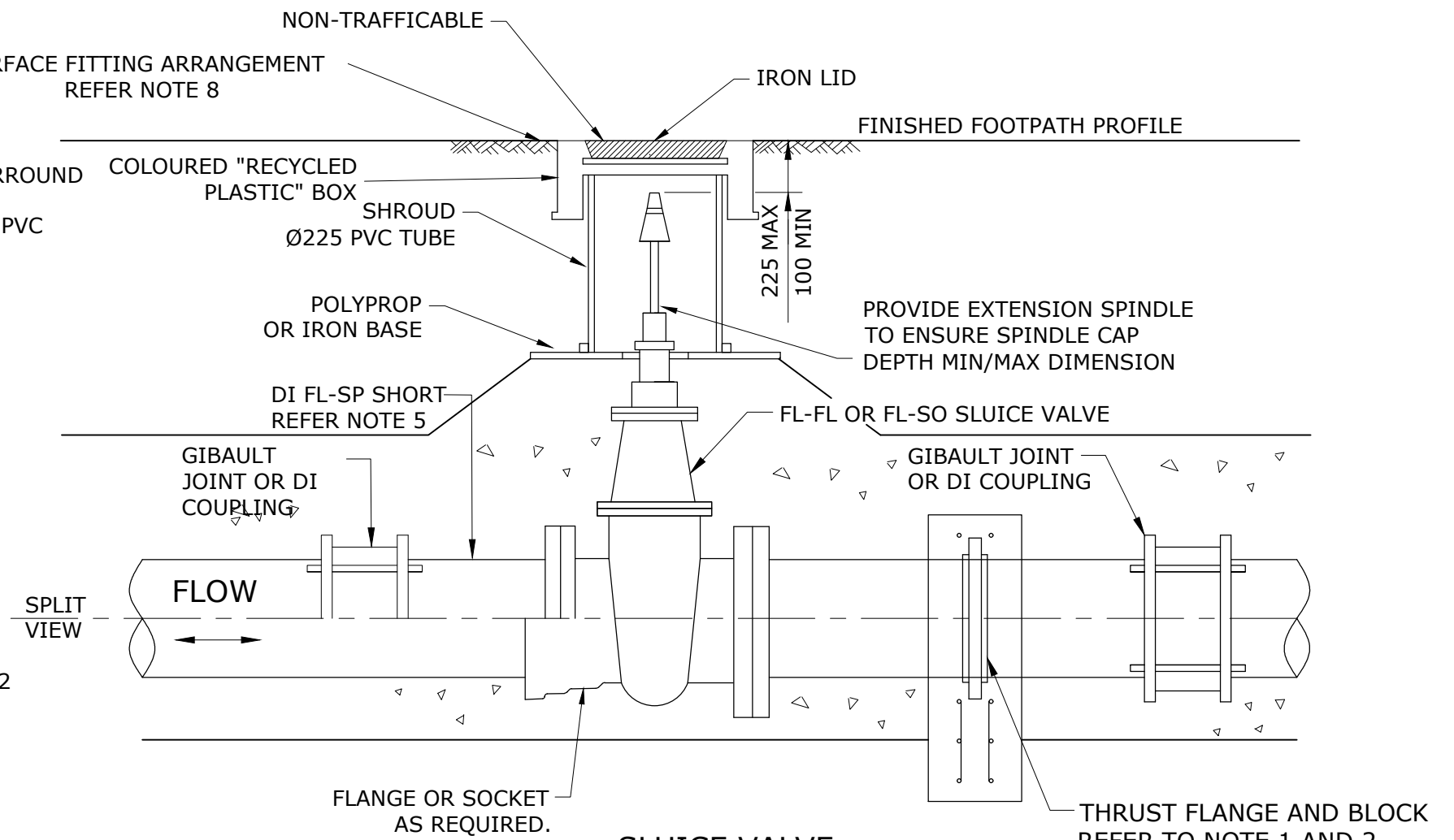
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
TYPICAL VALVE AND HYDRANT IDENTIFICATION MARKER POSTS

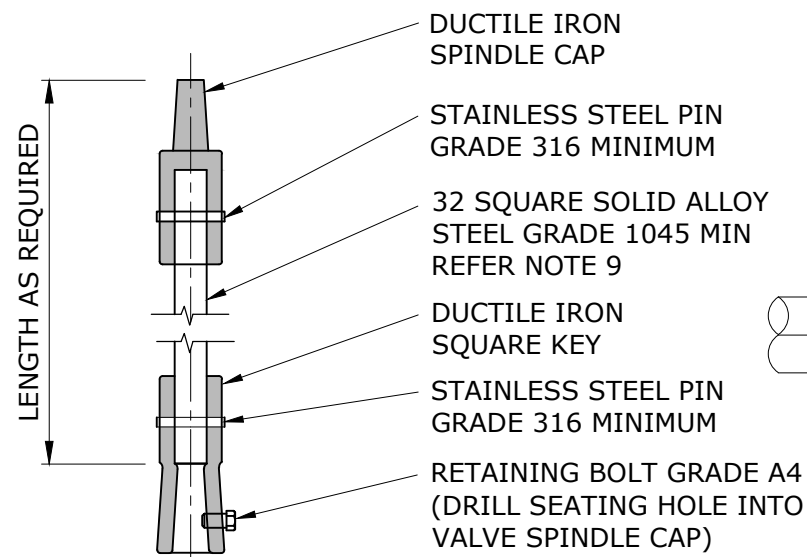
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1300-2				D
NOT TO SCALE				ORG DATE: 1/1/2013



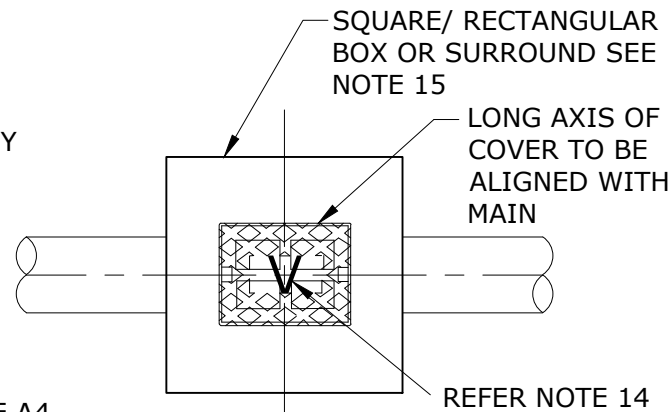
SOCKETED SLUICE VALVES
(TRAFFICABLE VALVE BOX SHOWN)



SLUICE VALVE
(NON TRAFFICABLE VALVE BOX SHOWN)



VALVE SPINDLE EXTENSION
REFER NOTE 10



VALVE BOX ALIGNMENT

NOTES

1. THRUST BLOCK DETAILS REFER SEQ-WAT-1206-1.
2. THRUST BLOCK REINFORCEMENT AS SPECIFIED IN SEQ-WAT-1206-1 OR WITHIN DESIGN DRAWINGS.
3. INSTALL PUDDLE FLANGES ON FLANGE CLASS DI CL PIPE.
4. SOC-SOC VALVES THRUST AREA TO BE AS SHOWN IN SEQ-WAT-1206-1.
5. FLANGED SHORTS MAY BE SPIGOTED OR SOCKETED.
6. WHERE DI PIPES AND FITTINGS WITH RESTRAINED JOINTS AND PIPE SYSTEM IS USED, THRUST BLOCKS MAY NOT BE REQUIRED, SEE SEQ-WAT-1208-1.
7. VALVE ANCHOR BLOCKS TO BE SIZED FOR A TEST PRESSURE OF 1200 kPa
8. FOR SURFACE BOX DETAILS REFER SEQ-WAT-1305-1 AND SEQ-WAT-1306-1.
9. SOLID CAST DUCTILE IRON ACCEPTABLE. WELDED EXTENSION SPINDLES NOT ACCEPTABLE.
10. EXTENSION SPINDLES WITHIN CONCRETE VALVE PITS SHALL BE SUPPORTED AT THE SPINDLE CAP AND EVERY 1800.
11. VALVES LARGER THAN DN 375 MAY BE DIRECTLY BURIED WITH INSTALLATION ASSEMBLY AND THRUST RESTRAINT SHOWN IN DESIGN DRAWINGS, REFER SEQ-WAT-1206-1 FOR THRUST RESTRAINT GUIDANCE.
12. DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.
13. VALVE BOX DETAIL FOR TRAFFICABLE INSTALLATIONS TO BE APPROVED BY SEQ-SP.
14. BOX COVERS FOR VALVES SHALL BE MARKED AS PER SEQ-WAT-1300-1.
15. CONCRETE SURROUND MAY NOT BE REQUIRED IN ROAD PAVEMENT INCLUDING ASPHALT AND BITUMEN.
16. ALL VALVES SHALL BE RESTRAINED.

REV. No.	DATE	DESCRIPTION	AUTH.
E	01/02/24	NEW NOTES 15&16. SPINDLE TOP CLEARANCE. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
D	21/05/19	ADDED VALVE BOX ALIGNMENT, AMENDED NOTE 14 AND TITLE.	
C	14/05/18	IMPROVED BOX SUPPORT DETAILS, ADDED NOTE 14, OTHER MINOR CHANGES	
B	15/07/15	SLUICE VALVES INSTALLATION DETAILS AMENDED.	

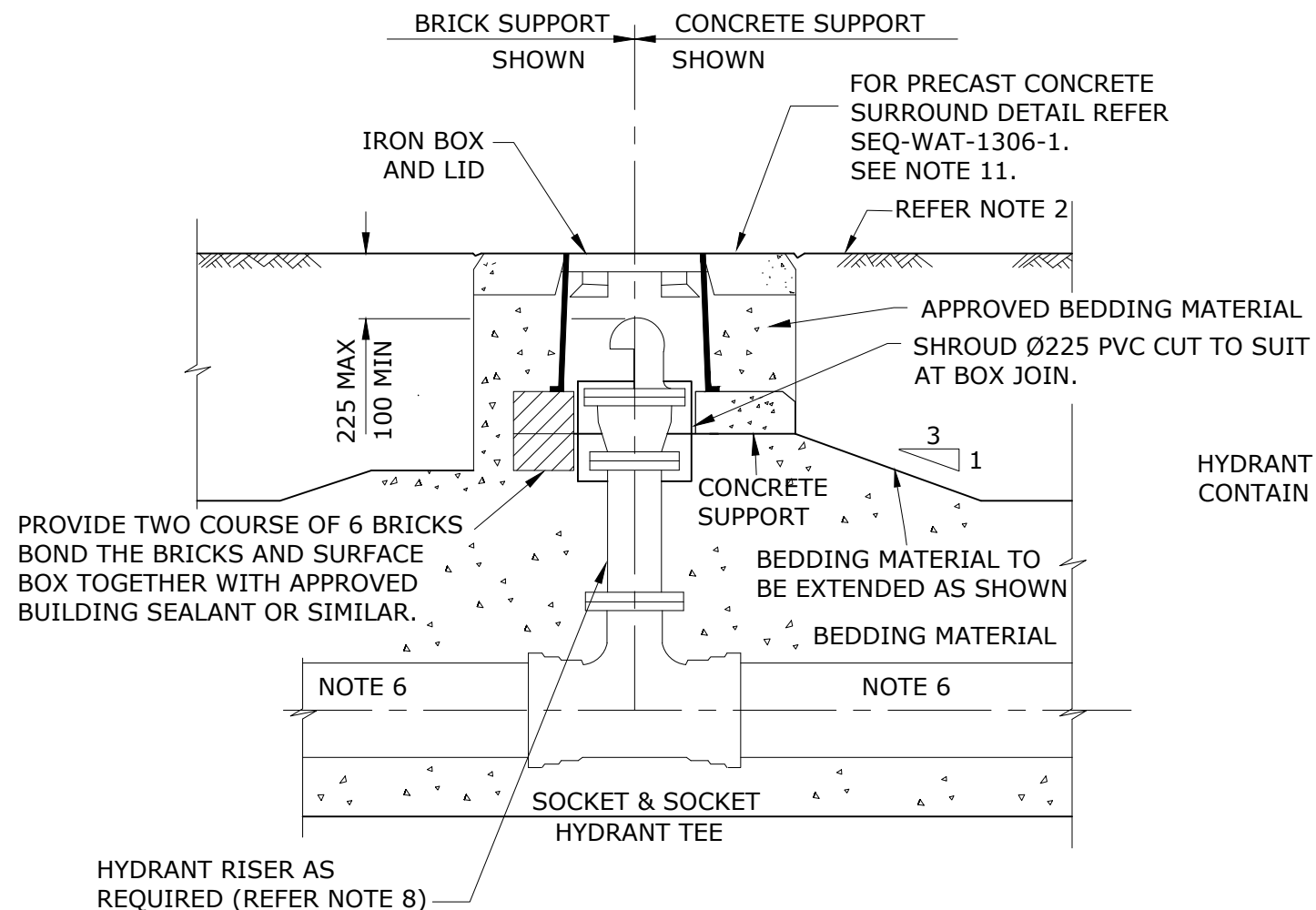
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

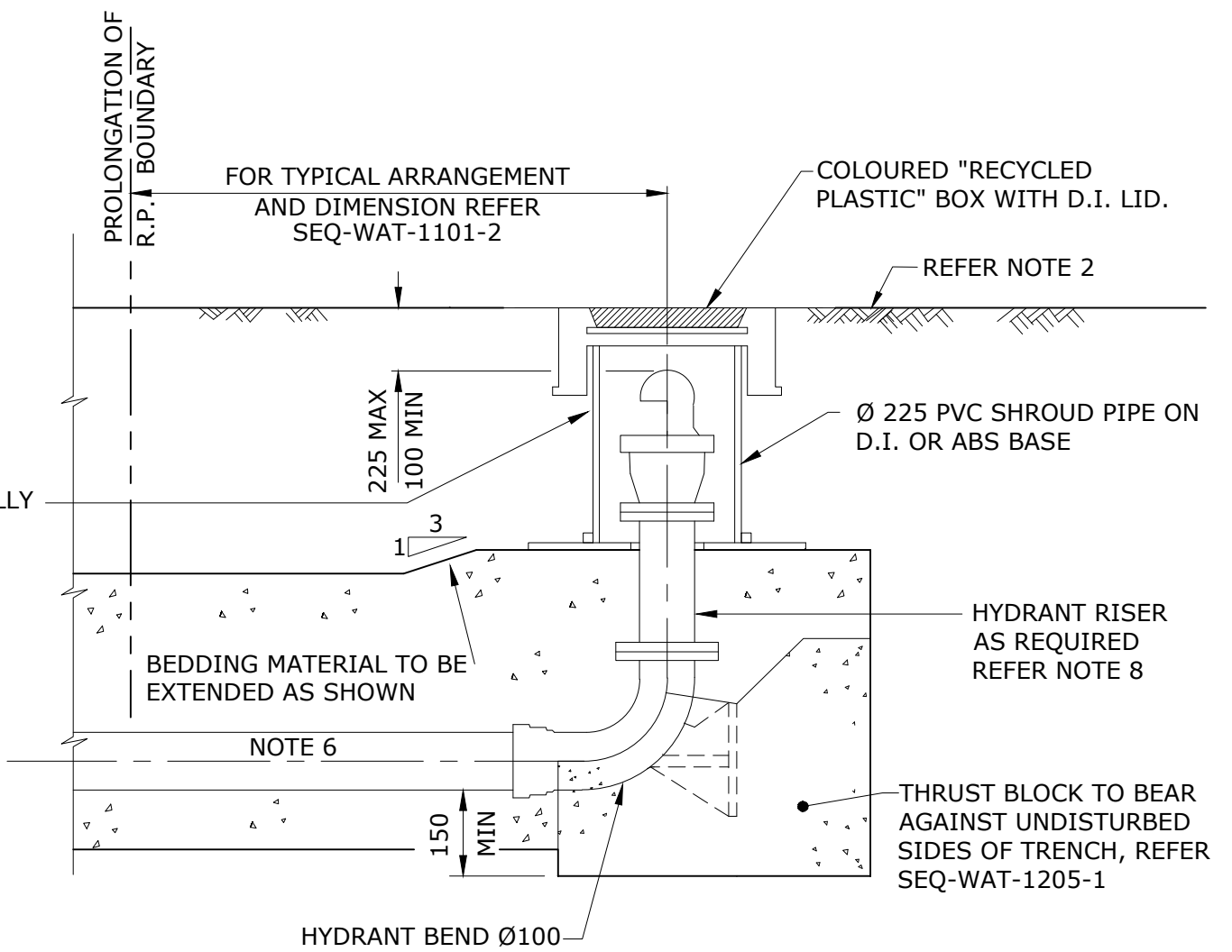
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
TYPICAL VALVE INSTALLATION
GENERAL ARRANGEMENT

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1301-1				E
NOT TO SCALE				ORG DATE: 1/1/2013



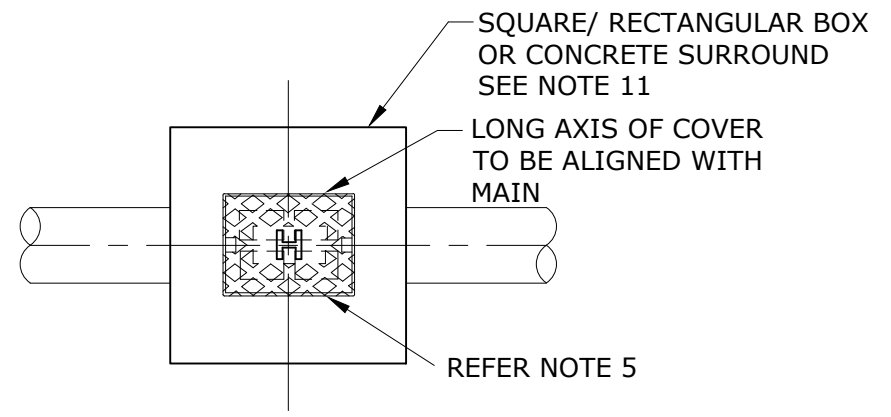
STANDARD HYDRANT ON LINE
(TRAFFICABLE HYDRANT BOX SHOWN)



HYDRANT AT END OF LINE AND HEAD OF CUL-DE-SAC
(NON-TRAFFICABLE HYDRANT BOX SHOWN)

NOTES

1. EITHER PRECAST CONCRETE SURROUNDS/SUPPORTS AND/OR BRICK SUPPORT OR RECYCLED PLASTIC BOX ARE ACCEPTABLE.
2. ALL CONCRETE SURROUNDS AND PLASTIC BOXES SHALL BE LAID TO THE FINISHED PROFILE OF THE FOOTPATH VERGE.
3. FOR PRECAST CONCRETE SURROUND/SUPPORT AND BRICK SUPPORT DETAILS REFER SEQ-WAT-1305-1 AND 1306-1.
4. FOR TYPICAL HYDRANT MARKING ARRANGEMENT REFER SEQ-WAT-1300 SET.
5. BOX COVERS FOR HYDRANTS SHALL BE MARKED AS PER SEQ-WAT-1300-1.
6. FOR UU AREAS PROVIDE HYDRANT ADJACENT TO SCOUR AS SHOWN IN SEQ-WAT-1307-2.
7. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. ALL HYDRANT RISERS TO BE DN100.
9. CoGC REQUIRES SWABBING HYDRANTS FOR END OF LINES AND CUL-DE-SAC HEAD WITH LID TO STATE "SH".
10. HYDRANT TO BE PLACED ON RISER OR FITTING SO THAT THE LUGS/CLAWS ARE ON EITHER SIDE OF THE MAIN.
11. CONCRETE SURROUND MAY NOT BE REQUIRED IN ROAD PAVEMENT INCLUDING ASPHALT AND BITUMEN.



HYDRANT BOX ALIGNMENT

REV. No.	DATE	DESCRIPTION	AUTH.
E	01/02/24	NEW NOTE 11, HYDRANT TOP CLEARANCE, DRAWING TITLE. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
D	21/05/19	AMENDED DRAWING TITLE, OTHER MINOR CHANGES.	
C	14/05/18	REMOVED DN80, ADDED CONCRETE SUPPORT, OTHER MINOR CHANGES	
B	15/07/15	HYDRANT INSTALLATION DETAILS AND NOTE 8 AMENDED.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

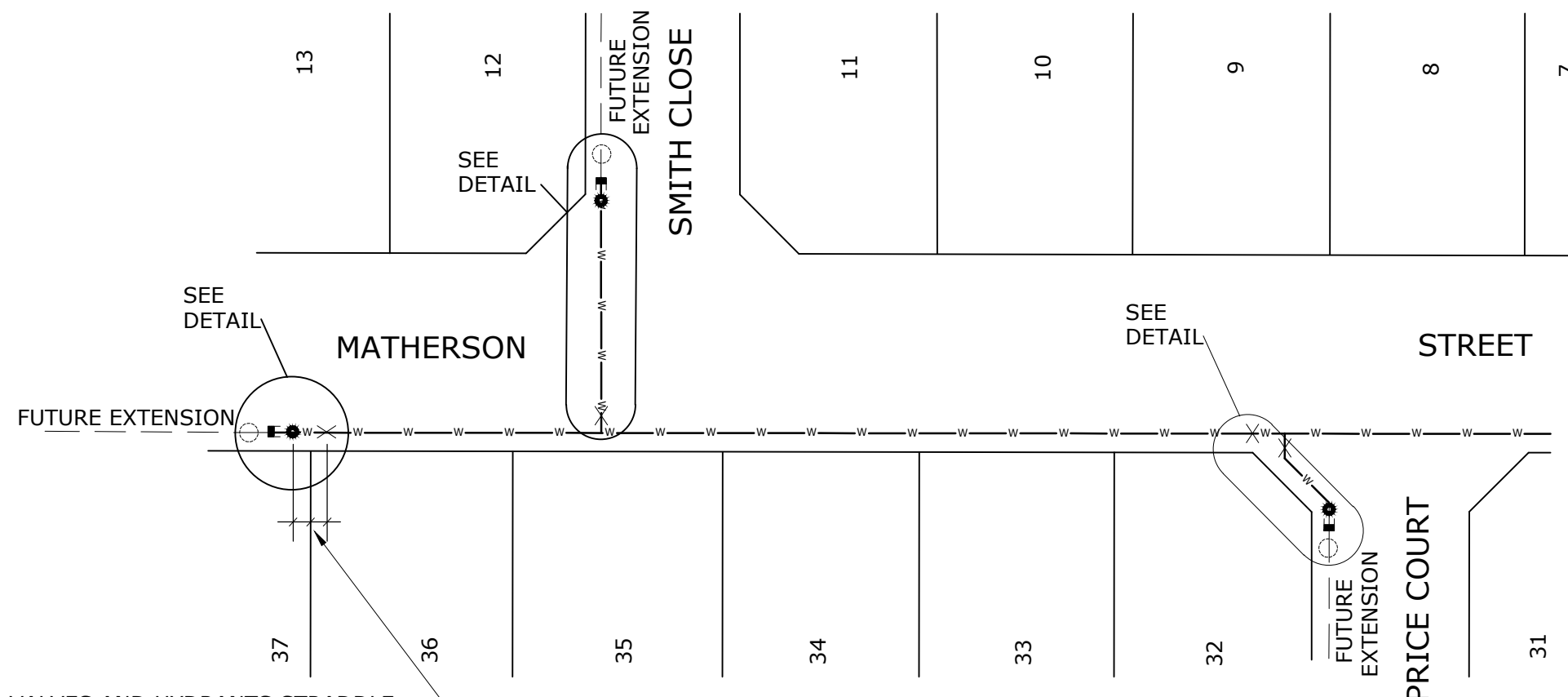
TYPICAL HYDRANT INSTALLATION

GENERAL ARRANGEMENT

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1302-1				E
NOT TO SCALE				ORG DATE: 1/1/2013

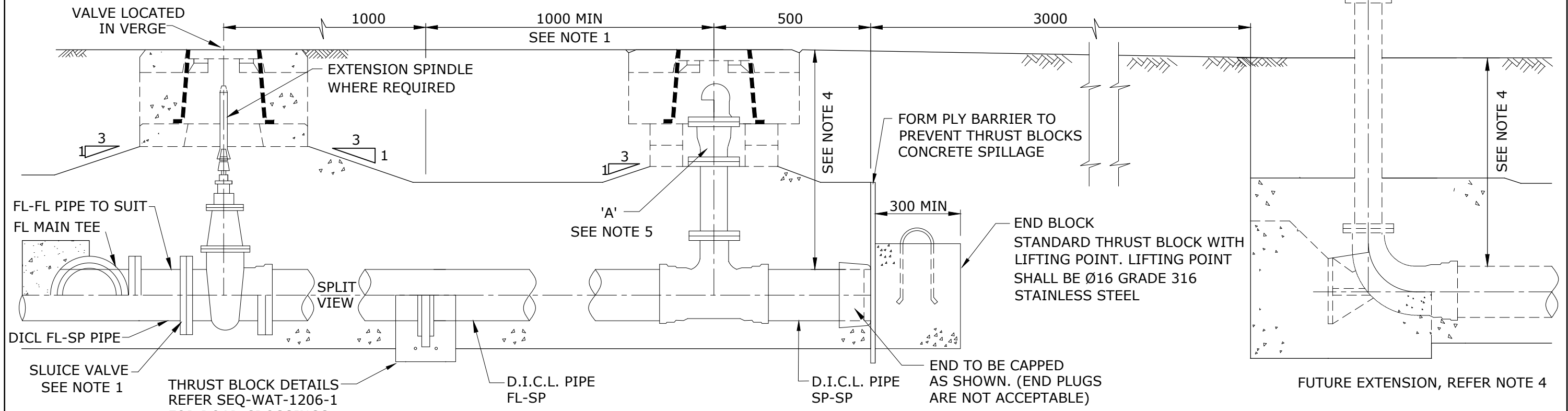
NOTES

1. FUTURE EXTENSIONS THAT CROSS A ROADWAY SHALL PROVIDE THE FL-FL VALVE TO THE FL MAIN TEE AND SHALL THRUST RESTRAIN THE VALVE AS SHOWN FOR A SOC-SOC VALVE IN SEQ-WAT-1206-1.
2. FOR PE PIPES REFER TO SEQ-WAT-1102-1 AND 1105-1.
3. HYDRANT DETAILS REFER TO SEQ-WAT-1302-1.
4. INSTALLATION TOLERANCE FOR FUTURE EXTENSION MAIN IS 200 HORIZONTAL AND 150 VERTICAL.
5. HYDRANT SPACING SHALL COMMENCE FROM HYDRANT 'A'.
6. FOR TRUNK MAINS WITHOUT PERMANENT HYDRANTS, THE DESIGN SHALL NOMINATE THE FITTING ASSEMBLIES REQUIRED FOR COMMISSIONING OF THE FUTURE EXTENSION AND THEIR STATUS FOLLOWING LIVE CONNECTION.
7. FOR QUU AREAS REFER SEQ-WAT-1303-2.
8. FOR UNITYWATER, HYDRANT SHALL BE LOCATED INLINE WITH SIDE BOUNDARY. FOR PERMANENT HYDRANT A HYDRANT TEE SHALL BE USED AND FOR TEMPORARY HYDRANT (REMOVED WITH NEXT STAGE EXTENSION OR WATER MAIN) A DUCKS FOOT HYDRANT SHALL BE USED. ANY VALVE REQUIRED ON THIS LEG OF WATER MAIN SHALL HAVE THE VALVE LOCATED BACK ADJACENT TO THE PREVIOUS TEE BRANCH OF THE WATER MAIN.
9. ALL VALVES SHALL BE RESTRAINED AS SHOWN IN SEQ-WAT-1206-1 AND SEQ-WAT-1301-1.



TYPICAL ARRANGEMENT
(REFER NOTE 7)

CONSTRUCTION HYDRANT 'B', RISER AND BEND FOR CONTRACTOR COLLECTION FOLLOWING LIVE CONNECTION



STANDARD ARRANGEMENT DETAIL FOR ALL FUTURE EXTENSIONS

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NEW NOTE 9. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	13/08/18	REMOVED TAPPING POINT ON HYDRANT. ADDED END OF LINE REQUIREMENT	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

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WATER SUPPLY STANDARD DRAWING

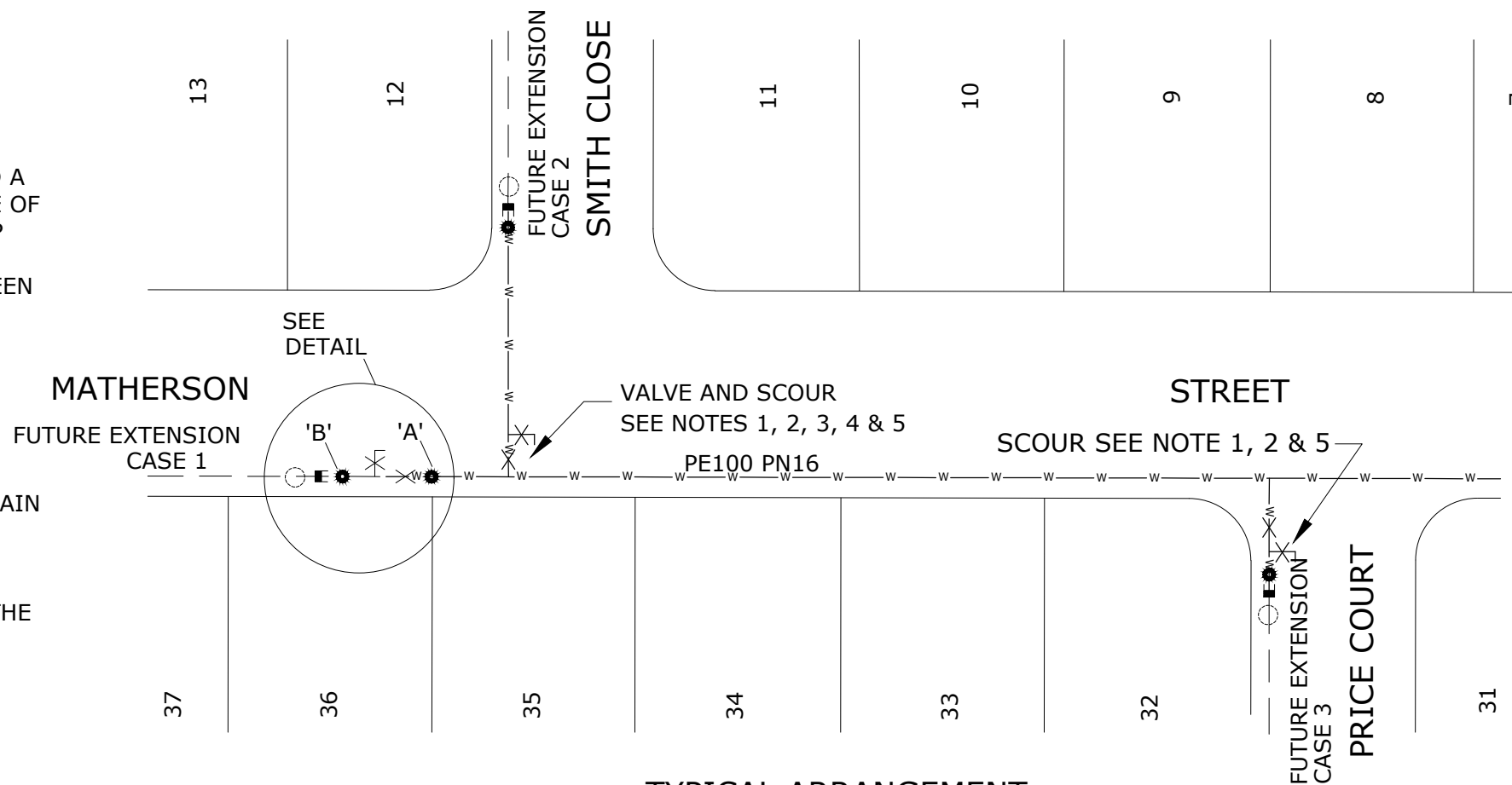
TYPICAL VALVE AND HYDRANT INSTALLATION

FUTURE EXTENSION INSTALLATION

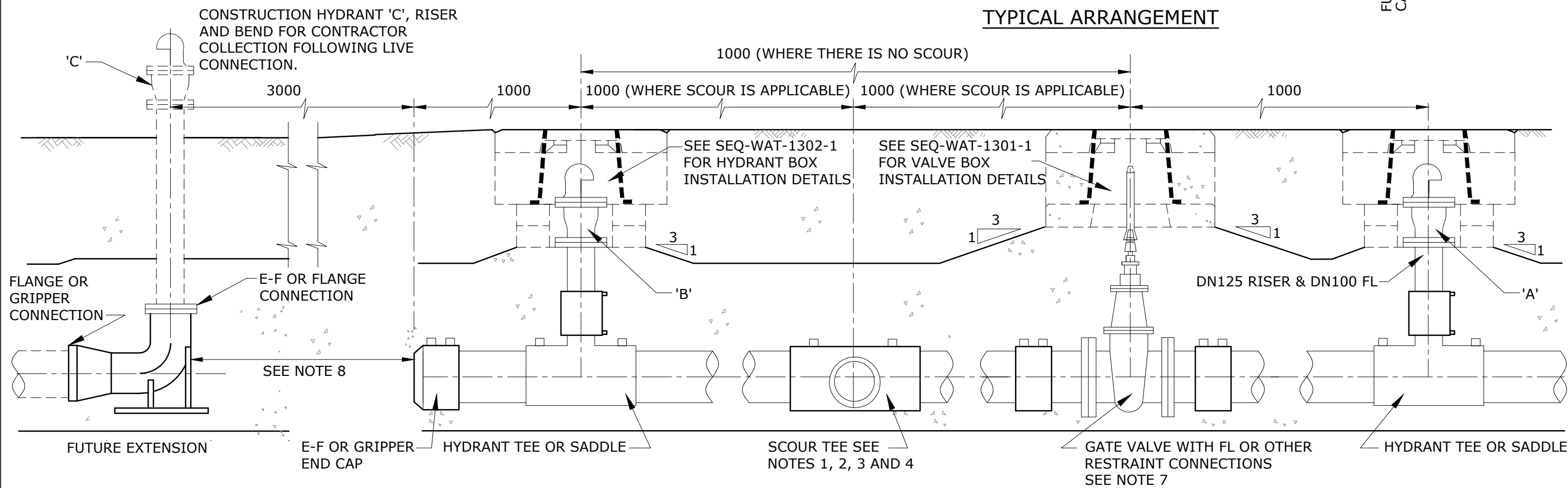
CoGC	LCC	RCC	UU	UW
			UU	
DRAWING No.				VERSION
SEQ-WAT-1303-1				C
NOT TO SCALE				ORG DATE: 1/1/2013

NOTES

1. SCOURS SHALL NOT BE INSTALLED ON WATER MAINS \leq DN200 (DN250 PE).
2. SCOURS SHALL BE INSTALLED AT LOW POINTS OF THE WATER MAIN. SEE SEQ-WAT-1307-2 FOR SCOUR DETAILS.
3. WHERE A ROAD CROSSING IS IMMEDIATELY AFTER THE TEE BRANCH AND THERE IS NO SPACE AVAILABLE ADJACENT TO THE TEE, A STOP VALVE AND A SCOUR (WHERE APPLICABLE) SHALL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD. IN THIS CASE, ALL JOINTS BETWEEN THE TEE AND THE END CAP INCLUSIVE SHALL BE RESTRAINED.
4. FOR CASE 1, THE SCOUR (WHERE APPLICABLE) SHALL BE INSTALLED BETWEEN VALVE AND HYDRANT ON THE HIGH SIDE OF THE VALVE AS SHOWN.
5. FOR CASES 2 AND 3, A SCOUR IS NOT REQUIRED WHERE THE FUTURE EXTENSION IS FALLING.
6. HYDRANT 'A' IS REQUIRED FOR CASE 1, BUT NOT NECESSARY FOR CASES 2 AND 3.
7. FOR ALL CASES, VALVES SHALL BE RESTRAINED USING SS316 STRAPS OR VALVE ANCHORS AS SHOWN IN SEQ-WAT-1301-1.
8. INSTALLATION TOLERANCE OF ALIGNMENT BETWEEN FUTURE EXTENSION MAIN AND EXISTING WATER MAIN END OF LINE SHALL BE 200 HORIZONTAL AND 150 VERTICAL.
9. FOR TRUNK MAINS WITHOUT PERMANENT HYDRANTS, THE DESIGN SHALL NOMINATE THE FITTING ASSEMBLIES REQUIRED FOR COMMISSIONING OF THE FUTURE EXTENSION AND THEIR STATUS FOLLOWING LIVE CONNECTION.
10. ALL PE FLANGES SHALL BE FULL FACE WITH SS316 BACKING RING.
11. FOR PVC/DICL SYSTEMS SEE SEQ-WAT-1102-1.



TYPICAL ARRANGEMENT



FUTURE EXTENSIONS DETAILS (CASE 1 SHOWN)

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	17/12/18	UPDATED SCOUR NOTES, DETAILS AND HYDRANT RISER REQUIREMENTS	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

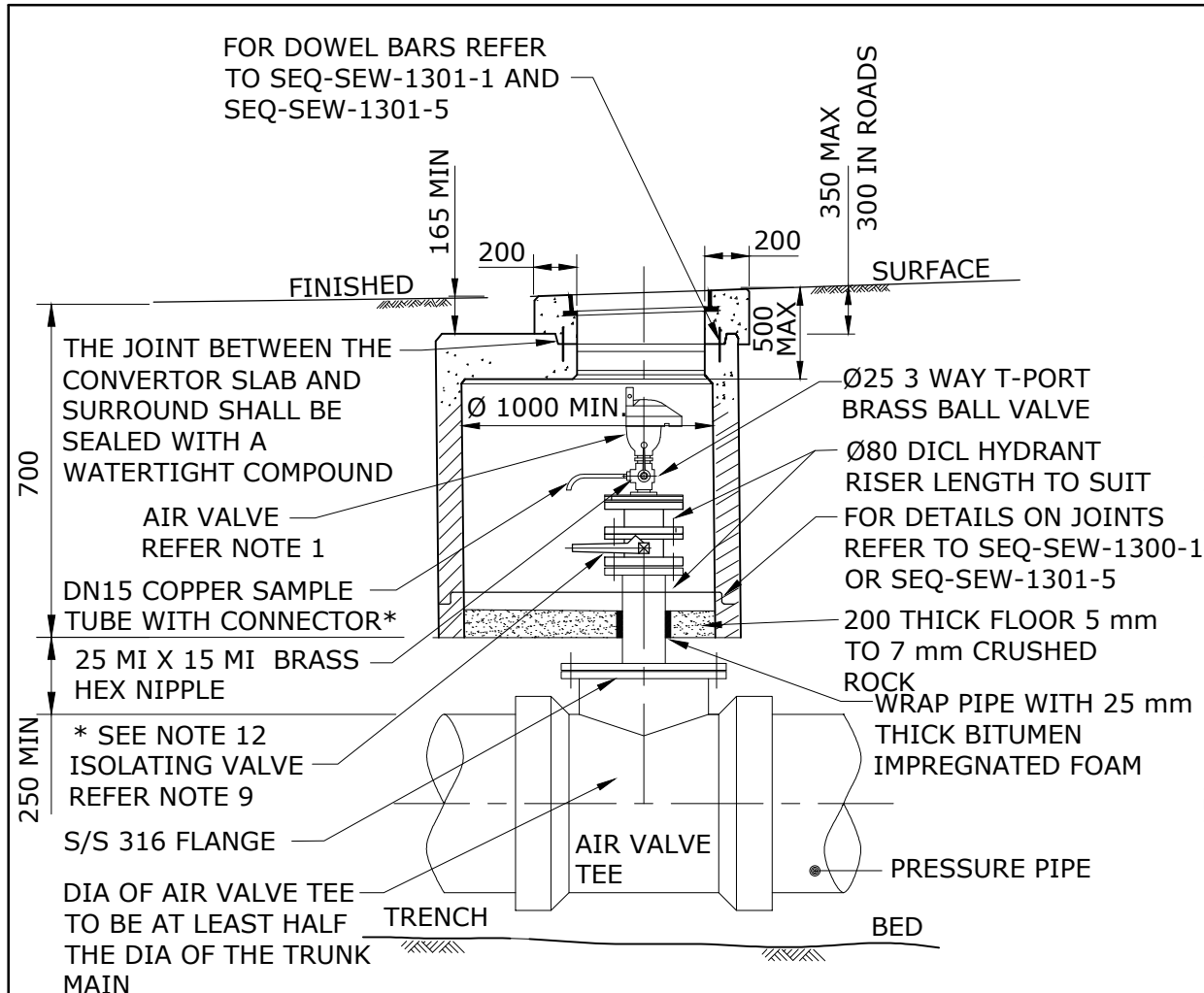
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

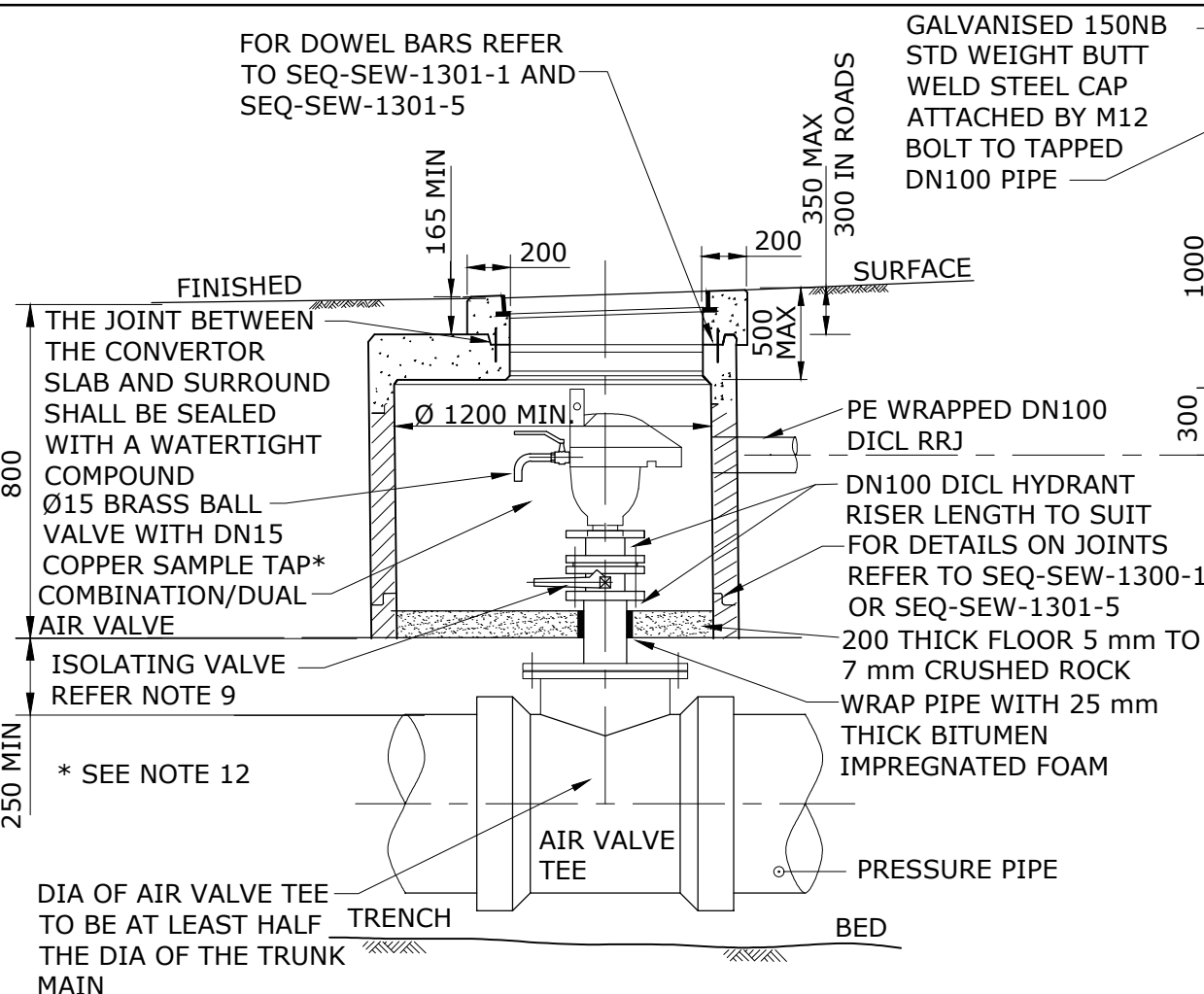
TYPICAL VALVE AND HYDRANT INSTALLATION

FUTURE EXTENSION INSTALLATION

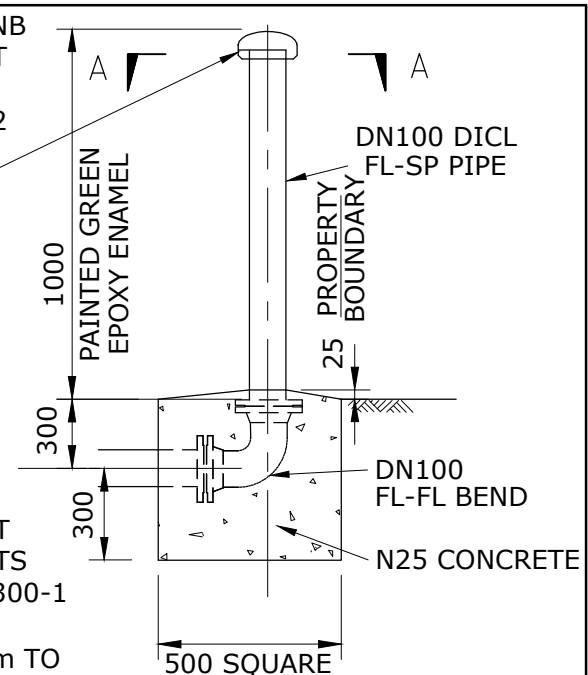
CoC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1303-2				C
NOT TO SCALE				ORG DATE: 1/1/2013



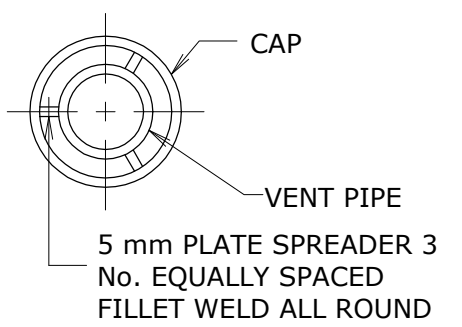
Ø25 TO Ø40 AIR VALVE INSTALLATION



Ø50 AND LARGER AIR VALVE INSTALLATION



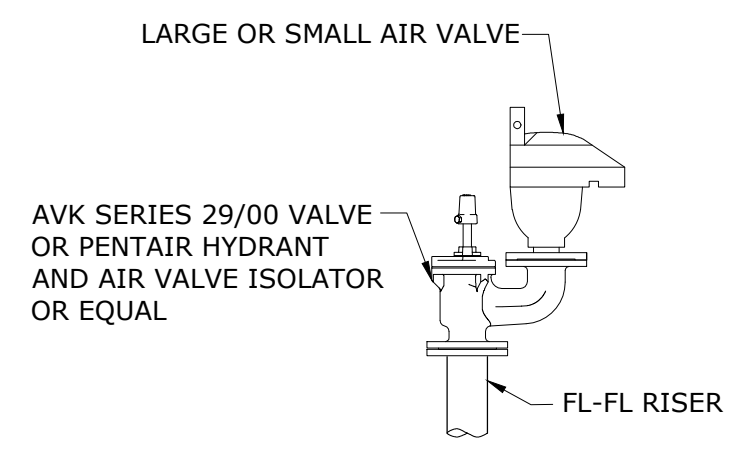
VENT (SEE NOTE 13)



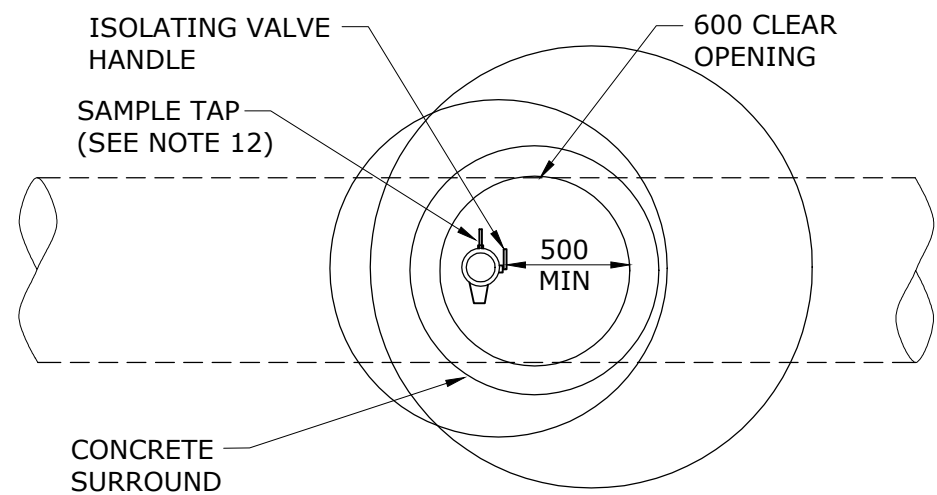
SECTION A-A

NOTES

- AIR VALVES SHALL COMPLY WITH THE CODES SPECIFICATION.
- THE FULL LENGTH OF THE DICI RISER PIPE INCLUDING FLANGES SHALL BE EPOXY COATED APPLIED IN ACCORDANCE WITH THE CODE.
- ALL CONCRETE SHALL BE CLASS N25 IN ACCORDANCE WITH AS 3600.
- PROVIDE A FINE NON-SLIP SURFACE WITH A WOOD FLOAT TO THE TOP SURFACE OF ALL CONCRETE.
- COMPACTED BEDDING MATERIAL SHALL BE BROUGHT UP TO THE UNDERSIDE OF THE AIR VALVE PIT.
- AIR VALVES SHALL BE PLACED ON THE HIGH POINT OF ALL TRUNK MAINS.
- VENT PIPE LOCATION SHALL BE IN ACCORDANCE WITH THE DESIGN PLACEMENT OR DETERMINED ON SITE BY THE SUPERINTENDENT.
- ALL FLANGES SHALL BE IN ACCORDANCE WITH AS 4087 - FIG B5, UNLESS NOTED OTHERWISE ON THE JOB DRAWINGS.
- BUTTERFLY VALVES SHALL BE LUGGED AND THREADED SIMILAR TO KEYSTONE FIG F22 TYPE OR EQUAL ALTERNATIVE ISOLATION VALVES AS SHOWN ARE ACCEPTABLE.
- INSTALLATIONS SHOWN ARE FOR NON-TRAFFICABLE LOCATIONS. WHERE AGREED BY SEQ-SP, ALUMINIUM WATER PUMP STATION PIT LIDS MAY BE USED FOR VERGE OR ON-LOT LOCATIONS.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
- UNITYWATER DOES NOT REQUIRE DN15 BRASS BALL VALVE WITH DN 15 COPPER SAMPLE TAP.
- ALTERNATIVE VENT FORMAT MAY BE USED SUBJECT TO APPROVAL.



ALTERNATIVE ISOLATING VALVE



AIR VALVE PRESENTATION

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NEW NOTE 13. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	25/06/18	AMENDED AIR VALVE TEE, PIT LOCATION MOVED, NOTE 12 ADDED	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

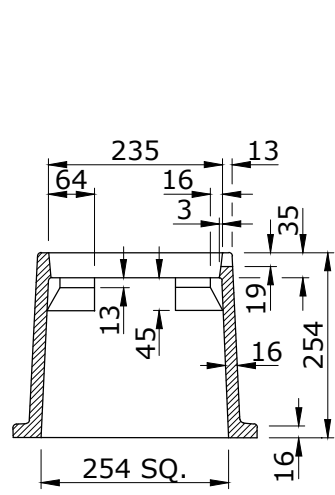
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

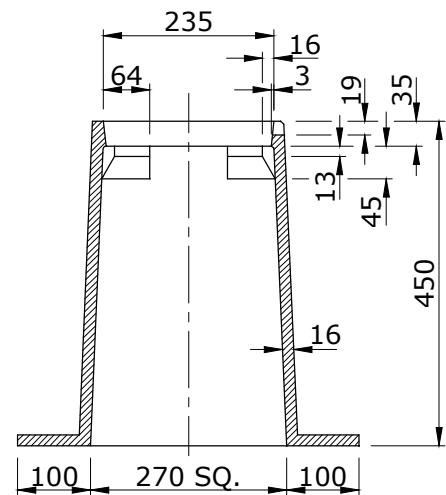
WATER SUPPLY STANDARD DRAWING

TYPICAL AIR VALVE INSTALLATION FOR TRUNK MAIN

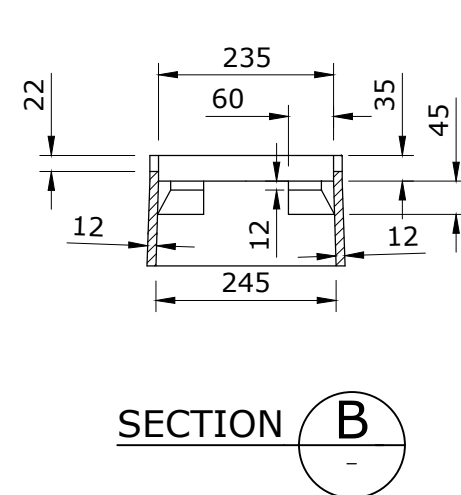
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1304-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



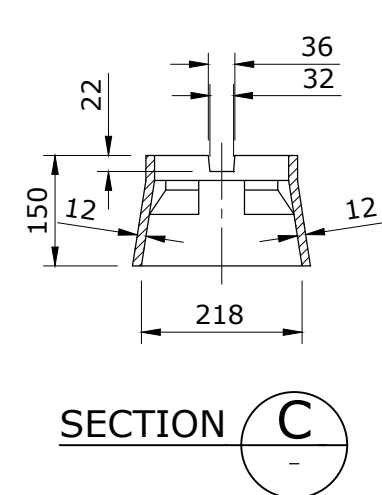
SECTIONAL ELEVATION



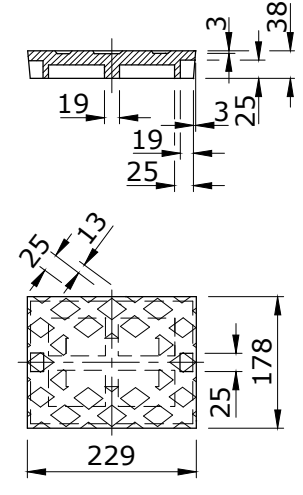
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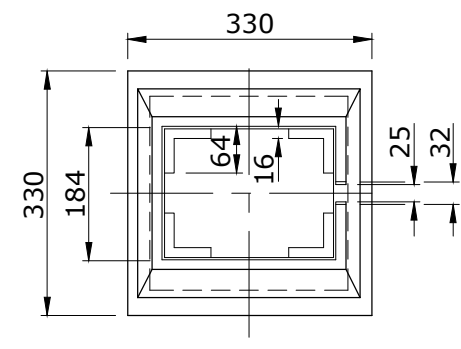
SECTION B



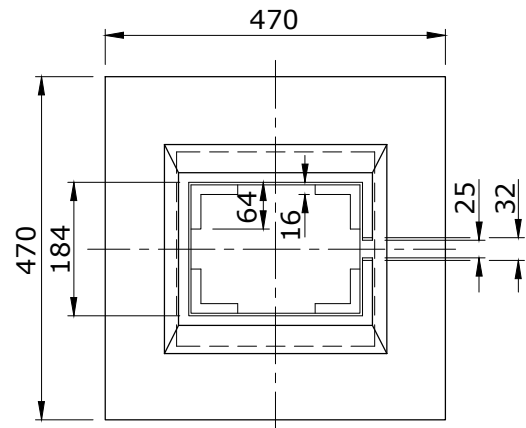
SECTION C



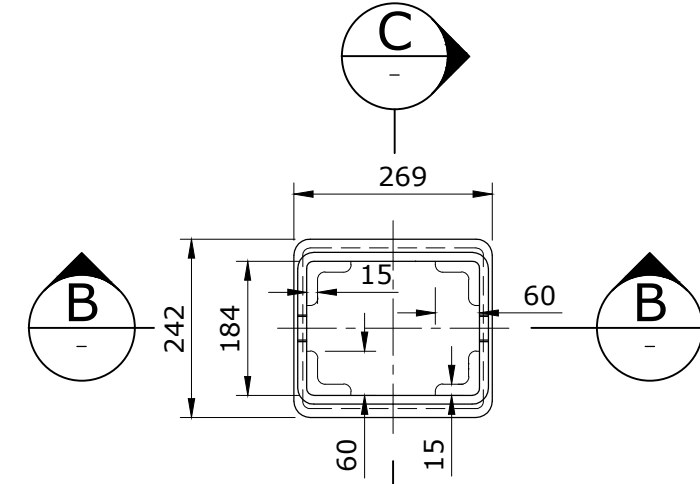
COVERS



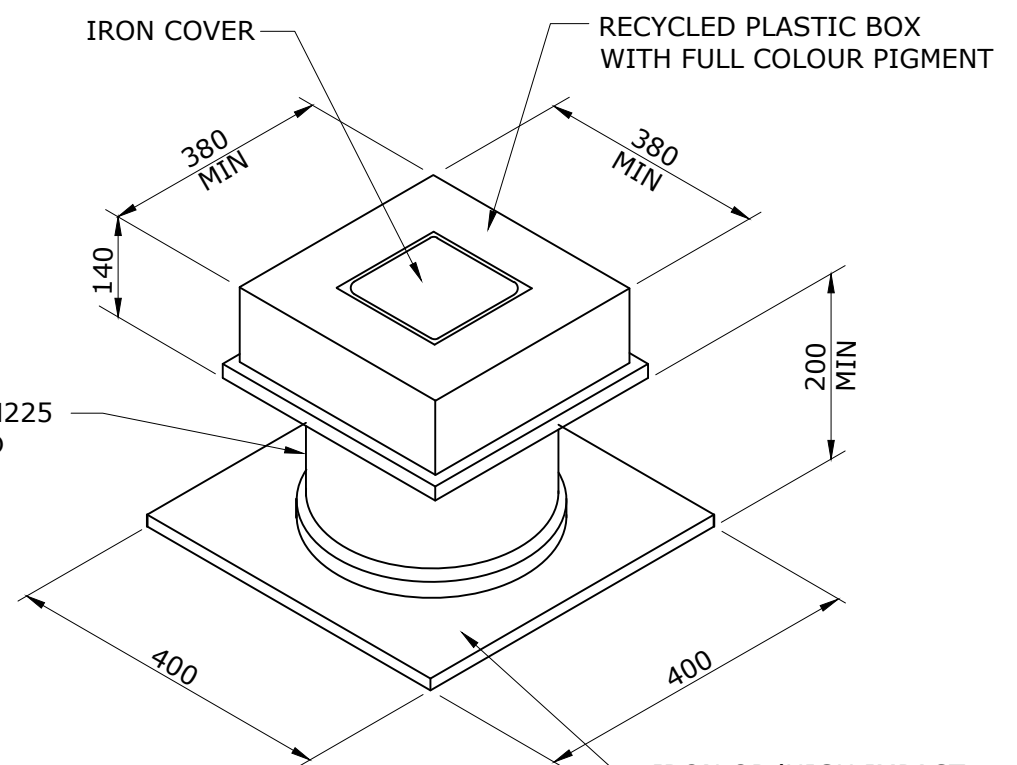
PLAN TYPE 'B' (TRAFFICABLE)



PLAN TYPE 'C' (TRAFFICABLE)



PLAN TYPE 'D' (NON-TRAFFICABLE)



TYPE 'A' (NON-TRAFFICABLE)

VALVE/HYDRANT BOX NOTES

- ALL CAST IRON COMPONENTS SHALL COMPLY WITH AS.1830 AND SHALL BE GRADE T220.
- ALL DUCTILE IRON COMPONENTS SHALL COMPLY WITH AS.1831 GRADE 400/12.
- BOXES SHALL BE MANUFACTURED WITH A TOTAL MAXIMUM WEIGHT OF 50 kg.
- FOR LID LETTERING CODE REFER SEQ-WAT-1300-1.
- A BITUMASTIC BASE MATERIAL SHALL BE APPLIED TO ALL IRON BOXES AND COVERS WHEN THEY ARE IN CLEAN, DRY AND RUST FREE CONDITION.
- WHEN INSTALLED THE LID AND SURROUND OF THE BOX SHALL BE PAINTED TO THE DETAILS SHOWN IN THE SEQ-WAT-1300 SET.
- COVER, FRAME, SHROUD & SHROUD SUPPORT TO BE INSTALLED SO THAT NO LOADING IS TRANSMITTED TO THE VALVE OR PIPE, REFER SEQ-WAT-1301-1 AND SEQ-WAT-1302-1.
- FOR NON TRAFFICABLE APPLICATIONS ELEVATE COVER UP TO 20 ABOVE FINISHED SURFACE LEVEL AND GRADE SOIL AWAY TO PREVENT WATER ENTRY. FOR FOOTPATH LOCATIONS, REFER TO SEQ-WAT-1302-1 NOTE 2 AND AS SHOWN IN SEQ-WAT-1302-1.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	NOTE 8 FOOTPATH LOCATIONS. NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	
B	15/07/15	AMENDED NOTE 4	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

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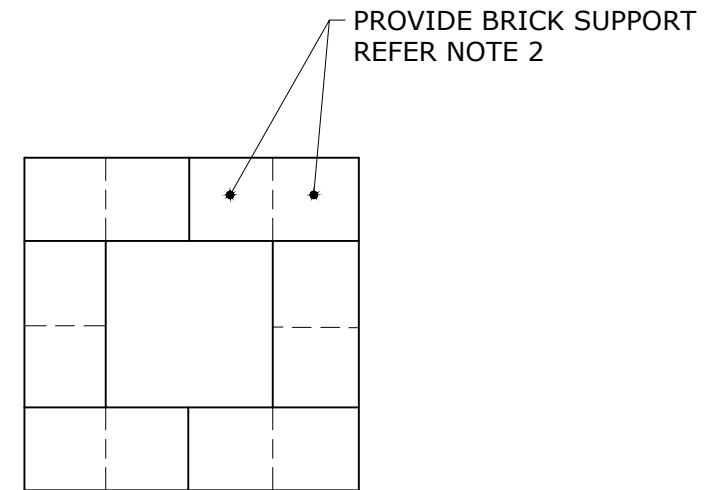
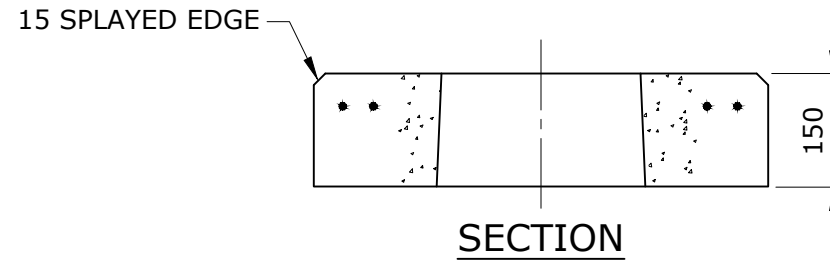
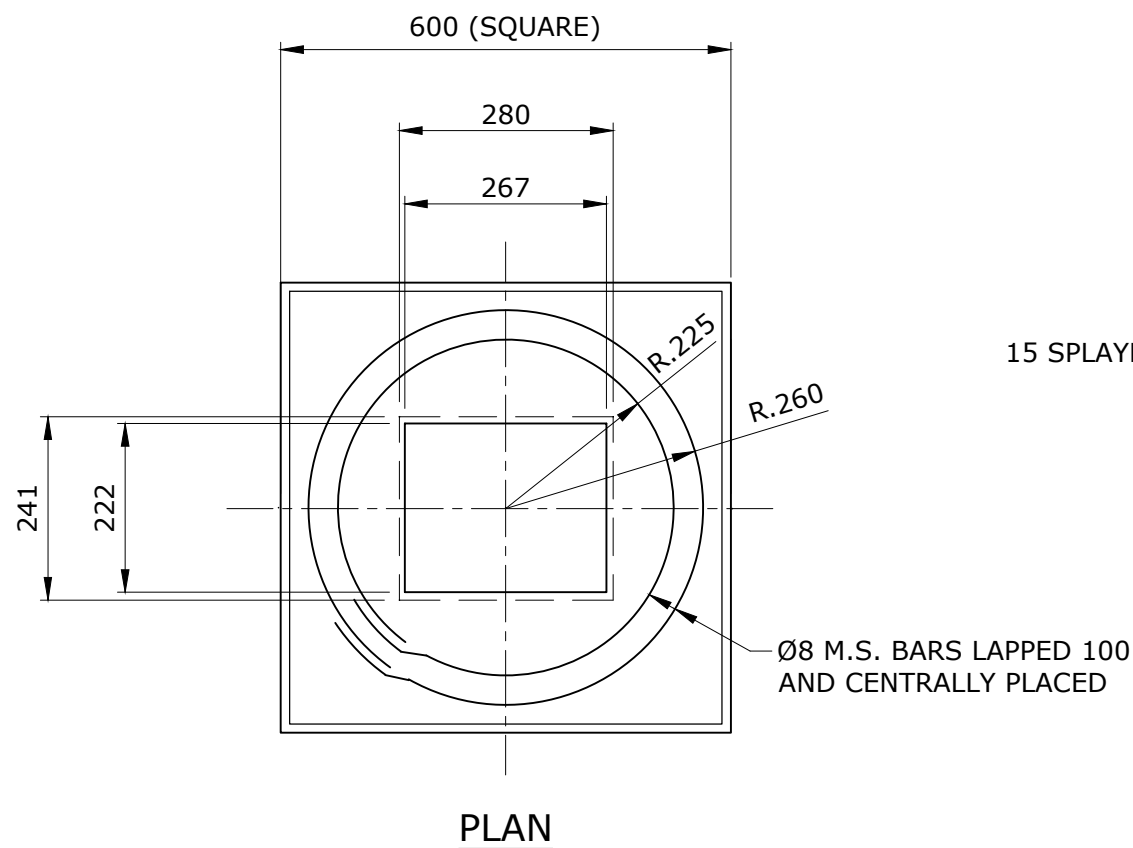
WATER SUPPLY STANDARD DRAWING

TYPICAL SURFACE FITTING INSTALLATION

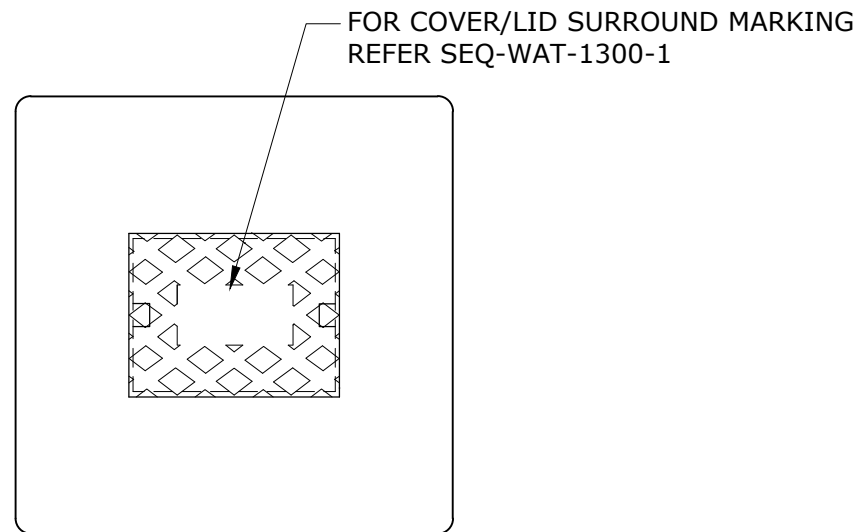
VALVE AND HYDRANT SURFACE BOXES

TRAFFICABLE AND NON-TRAFFICABLE

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1305-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



**PRECAST CONCRETE SURROUND
AND SUPPORT DETAILS**



SURFACE FITTING ARRANGEMENT

NOTES

1. BOTH PRECAST CONCRETE SURROUND AND BRICK SUPPORT DETAILS SHOWN ARE ACCEPTABLE.
2. BRICK SUPPORTS SHALL BE A MINIMUM TWO COURSES AND LAID DRY OVER THE BEDDING MATERIAL. APPLY BUILDING SEALANT OR SIMILAR TO BOND BRICKS TOGETHER AND TO THE VALVE/HYDRANT BOX.
3. FOR HYDRANTS AND FLUSHING POINTS THE CONCRETE SURROUND AND LID SHALL BE PAINTED IN ACCORDANCE WITH THE COLOUR CODE SHOWN ON SEQ-WAT-1300-1.
4. FOR VALVES AND OTHER FITTINGS THE CONCRETE SURROUND AND LID SHALL BE PAINTED WITH APPROVED REFLECTIVE PAINT IN ACCORDANCE WITH THE COLOUR CODE SHOWN ON SEQ-WAT-1300-1.
5. CONCRETE TO BE GRADE N25.
6. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
7. HYDRANT BOXES WITH HINGED LIDS NOT ALLOWED.

REV. No.	DATE	DESCRIPTION	AUTH.
D	1/02/24	NEW NOTE 7. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK	
C	17/12/18	AMENDED PLAN AND SURFACE FITTING ARRANGEMENT DETAIL.	
B	16/07/15	AMENDED CONCRETE VALVE/HYDRANT LID DETAILS.	

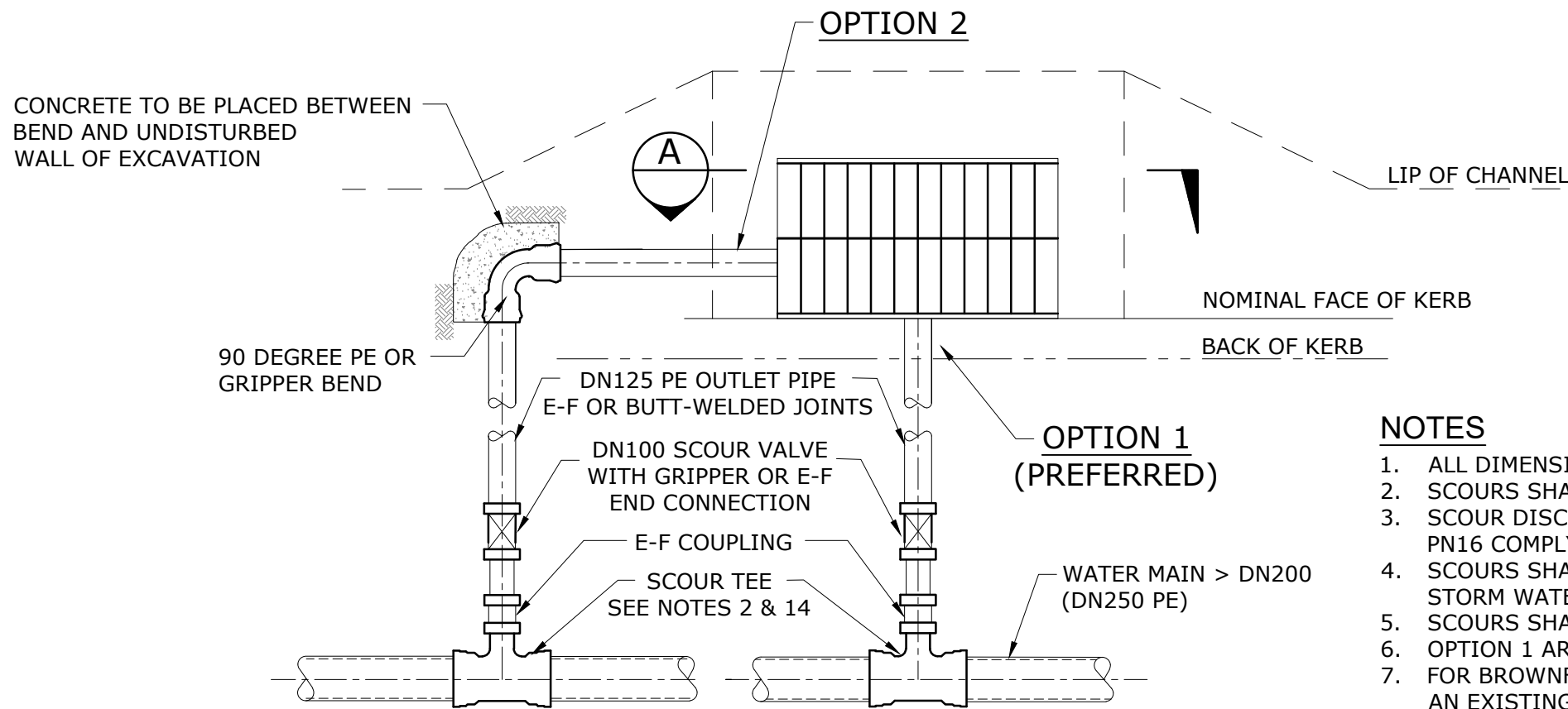
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

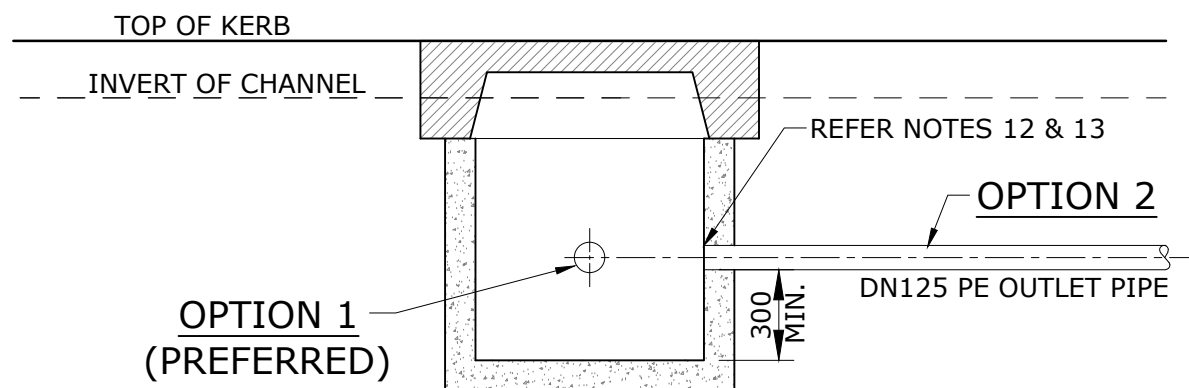
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
**TYPICAL SURFACE FITTING INSTALLATION
 VALVE AND HYDRANT SURFACE BOXES
 SUPPORT AND SURROUND DETAILS**

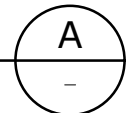
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1306-1				D
NOT TO SCALE				ORG DATE: 1/1/2013



PLAN
SCOUR INTO GULLY PIT



SECTION
NTS



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. SCOURS SHALL NOT BE INSTALLED ON WATER MAINS \leq DN200 (DN250 PE)
3. SCOUR DISCHARGE OUTLET PIPE AND FITTINGS SHALL BE PE100 MATERIAL PN16 COMPLYING WITH ASNZ 4130.
4. SCOURS SHALL DISCHARGE INTO EXISTING OR PROPOSED OPEN GRATED STORM WATER GULLY PITS.
5. SCOURS SHALL NOT DISCHARGE DIRECTLY TO KERB AND CHANNEL.
6. OPTION 1 ARRANGEMENT SHALL BE INSTALLED WHERE POSSIBLE.
7. FOR BROWNFIELD SITUATIONS WHERE A WATER MAIN CANNOT SCOUR INTO AN EXISTING OR PROPOSED STORMWATER GULLY PIT, THE DESIGNER SHALL DESIGN A SUITABLE ARRANGEMENT ACCEPTABLE TO THE ROAD OWNER, FOR WATER AGENCY CONSIDERATION.
8. IN SITUATIONS WHERE THERE IS NO KERB AND CHANNEL, THE SCOUR MAY DISCHARGE ONTO A 750 (L) X 300 (W) X 300 (D) CONCRETE APRON CONSTRUCTED IN A GRASSED AREA, OR OTHERWISE DISCHARGE INTO A WATER COURSE, PROVIDED THE ARRANGEMENT IS APPROPRIATELY DESIGNED TO ENSURE SCOURING/EROSION OF THE SURROUNDING ENVIRONMENT DOES NOT OCCUR AND THE PROPOSED ARRANGEMENT IS ACCEPTABLE TO THE RELEVANT ROAD OWNER AND IMPACTED LAND OWNERS.
9. SCOUR DISCHARGE OUTLET PIPE SHALL BE NOMINALLY \leq 6 m LONG.
10. PROVIDE CHAMBER COVER OVER VALVES TO STANDARD DRG. SEQ-WAT-1305-1.
11. CONCRETE SHALL BE CLASS N20.
12. SCOUR PIPE SHALL BE GROUTED INTO THE GULLY PIT WALL AND FINISH FLUSH WITH THE INSIDE FACE OF THE GULLY PIT.
13. THE END OF THE SCOUR PIPE THAT DISCHARGES INTO THE GULLY PIT SHALL BE PAINTED BLUE WITH A SUITABLE HEAVY DUTY PAINT TO ASSIST IN VISUALLY IDENTIFYING THAT THIS PIPE RELATES TO WATER RETICULATION INFRASTRUCTURE, RATHER THAN STORMWATER DRAINAGE INFRASTRUCTURE.
14. WELDED PE SCOUR TEE TO BE VINIDEX/RODNEY SCOUR TEE OR SIMILAR APPROVED. A COMBINATION OF STANDARD PE TEE AND ECCENTRIC REDUCER MAY BE USED AS SCOUR TEE.

REV. No.	DATE	DESCRIPTION	AUTH.
D	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
C	17/12/18	AMENDED NOTES AND SCOUR DETAILS	
B	15/07/15	AMENDED NOTE 10	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

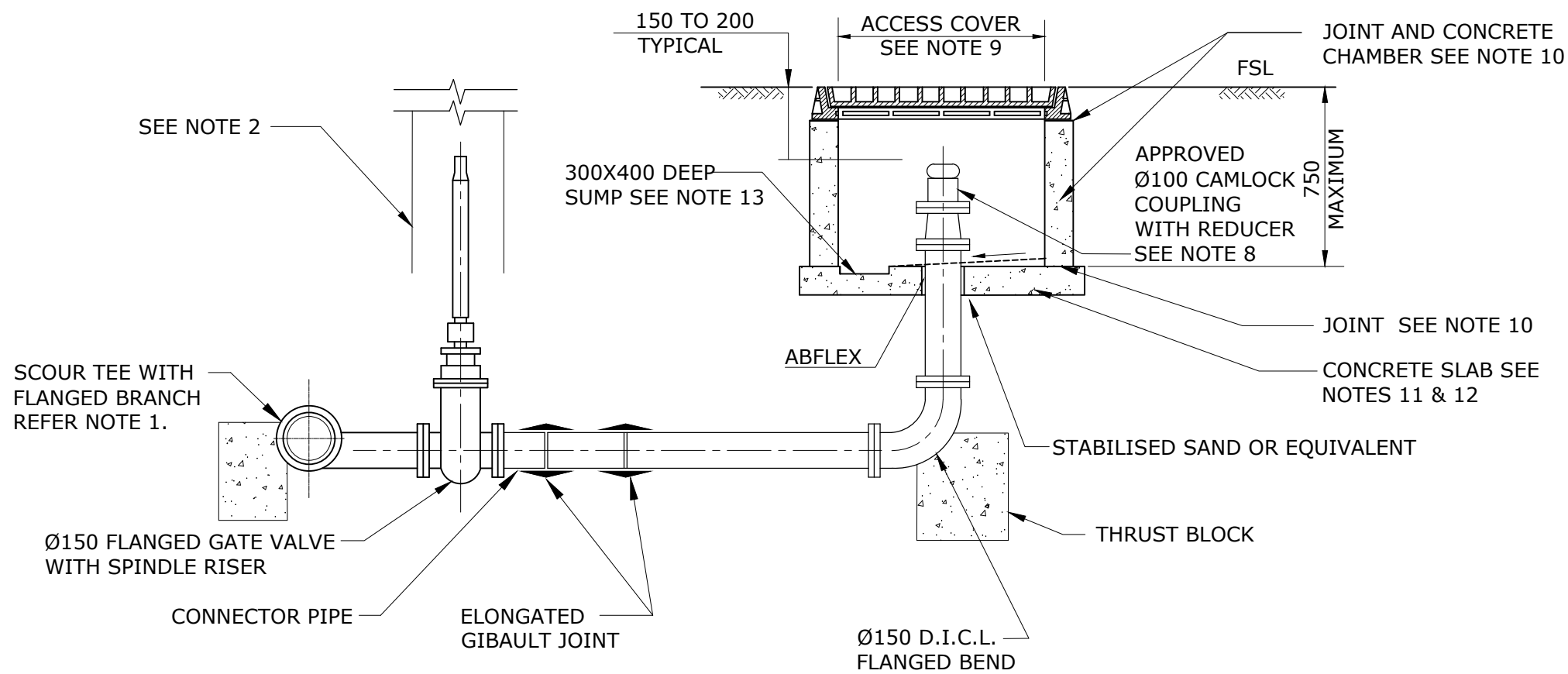
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

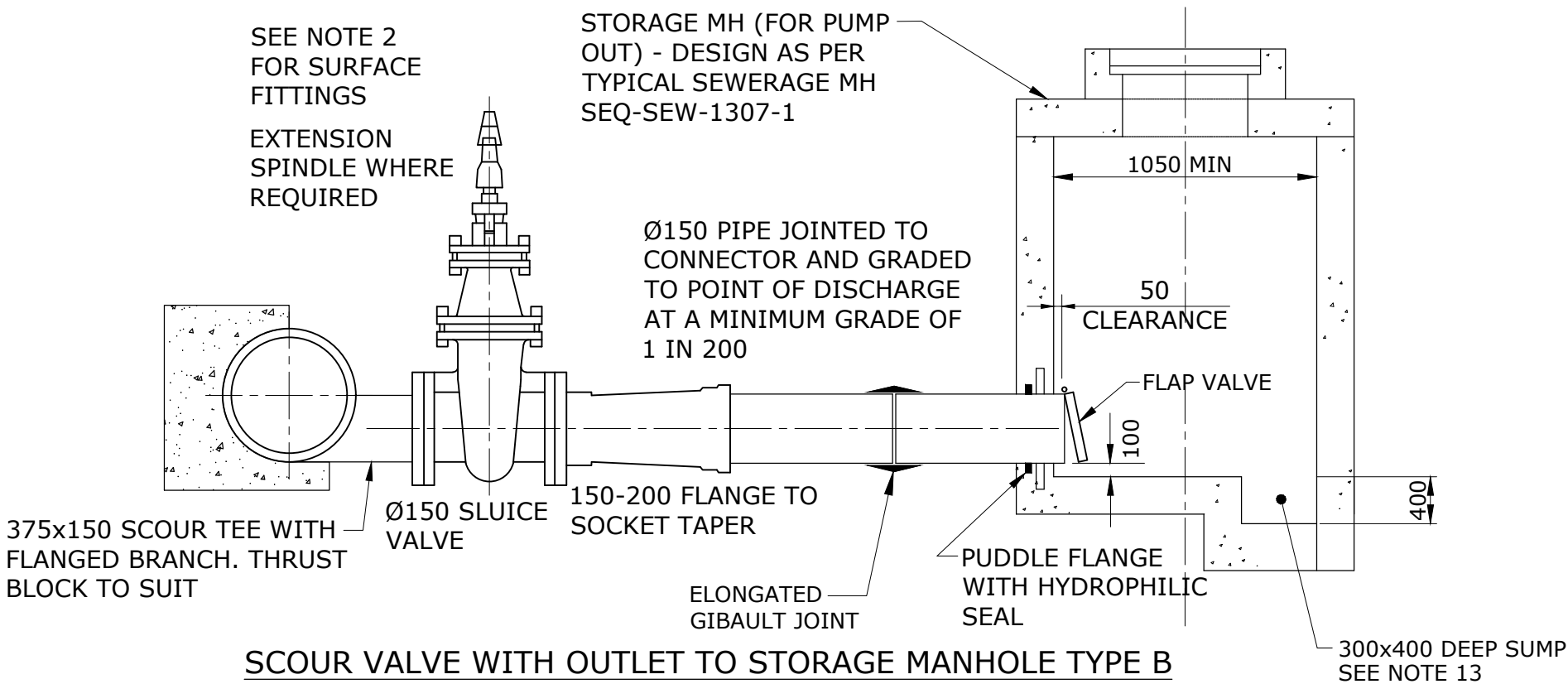
WATER SUPPLY STANDARD DRAWING

PE WATER MAINS
 TYPICAL DETAILS
 SCOURS

CoG	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1307-2				D
NOT TO SCALE				ORG DATE: 1/1/2013



SCOUR VALVE WITH TANKER CONNECTION TYPE A



SCOUR VALVE WITH OUTLET TO STORAGE MANHOLE TYPE B

(ONLY USE WHERE DIRECTED BY SEQ-SP)

NOTES

1. THE WATERMAIN DETAILS ON THIS DRAWING ARE OF A Ø375. FOR OTHER MAIN SIZES REFER TO THE SCOUR TABLE.
2. FOR SURFACE FITTING DETAILS REFER TO SEQ-WAT-1301-1.
3. TYPE B STORAGE MANHOLE DISCHARGES SHALL BE USED WHERE SPECIFIED BY S.P.
4. GRADED DISCHARGE PIPE TO HAVE AT LEAST TWO RUBBER RING JOINTS, FOR DIFFERENTIAL SETTLEMENT.
5. WHERE DIRECTED BY SEQ-SP, LOCATE CAMLOCK COUPLING AT TOP OF 90 DEGREE BEND FLANGE.
6. FLAP VALVES TO BE MARINE GRADE ALUMINIUM OR GRP.
7. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. WHERE THERE IS A SITUATION THAT SYSTEMS NEED TO DRAIN THE LINE QUICKER AND THE Ø100 TANKER LINE RESTRICTS FLOWS, THIS Ø100 CAMLOCK MAY BE REMOVED AND EITHER A LARGER CAMLOCK OR A BIFURCATE 2xØ100 CAMLOCK WITH DUAL TANKERS CAN BE USED.
9. ALUMINIUM OR COMPOSITE ACCESS COVERS SHALL BE 900x600: CLASS "B" FOR FOOTWAYS CLASS "D" FOR ROADWAYS. ACCESS COVERS FOR SCOUR CHAMBERS SHALL BE MARKED "WATER". CoGC REQUIRES HINGED GRATES TO BE INSTALLED UNDER COVERS SEE SEQ-WAT-1319 DRAWING SET.
10. PRECAST CHAMBERS MAY BE USED IN NON-TRAFFICABLE AREAS. JOINTS SHALL BE 20 TO 50 THICK FOR CEMENT MORTAR. ALTERNATIVELY, A 6 THICK BED OF BUTYL MASTIC MAY BE USED.
11. CONCRETE FOR SLAB SHALL BE N20.
12. REINFORCING FABRIC FOR CONCRETE SLAB SHALL BE TO AS 1304. EQUIVALENT REINFORCEMENT IN DEFORMED BARS MAY BE USED IN PLACE OF REINFORCEMENT FABRIC.
13. WHERE THE SUMP CAN BE FREE DRAINING AND THE NOMINATED SUMP DEPTH CANNOT BE ACHIEVED A REDUCED SUMP DEPTH MAY BE CONSIDERED ON A CASE BY CASE BASIS.

SCOUR TABLE

MAIN	SCOUR	OUTLET (TYPE B)
375	150	200
450	150	200
525	150	200
600	150	200
750	150	200
>750	200	250

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOTE 9, STORAGE MH, NEW NOTE 13. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	06/02/18	AMENDED SCOUR TABLE, TYPE A. ADDED NOTES 8, 9, 10, 11 & 12.	

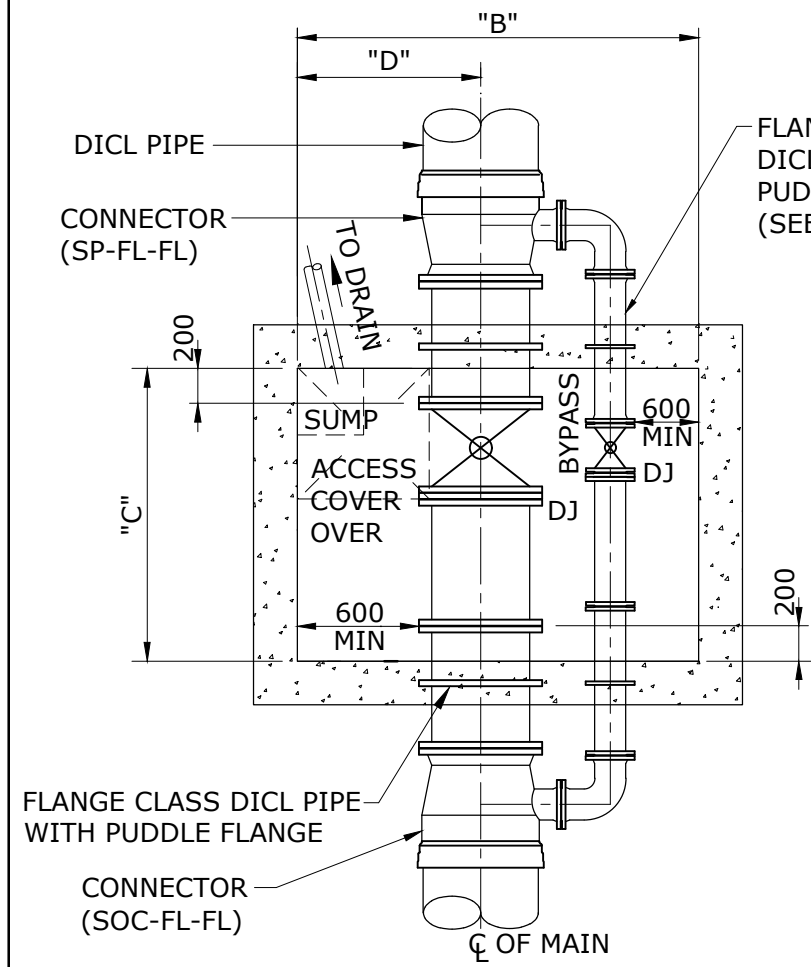
SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

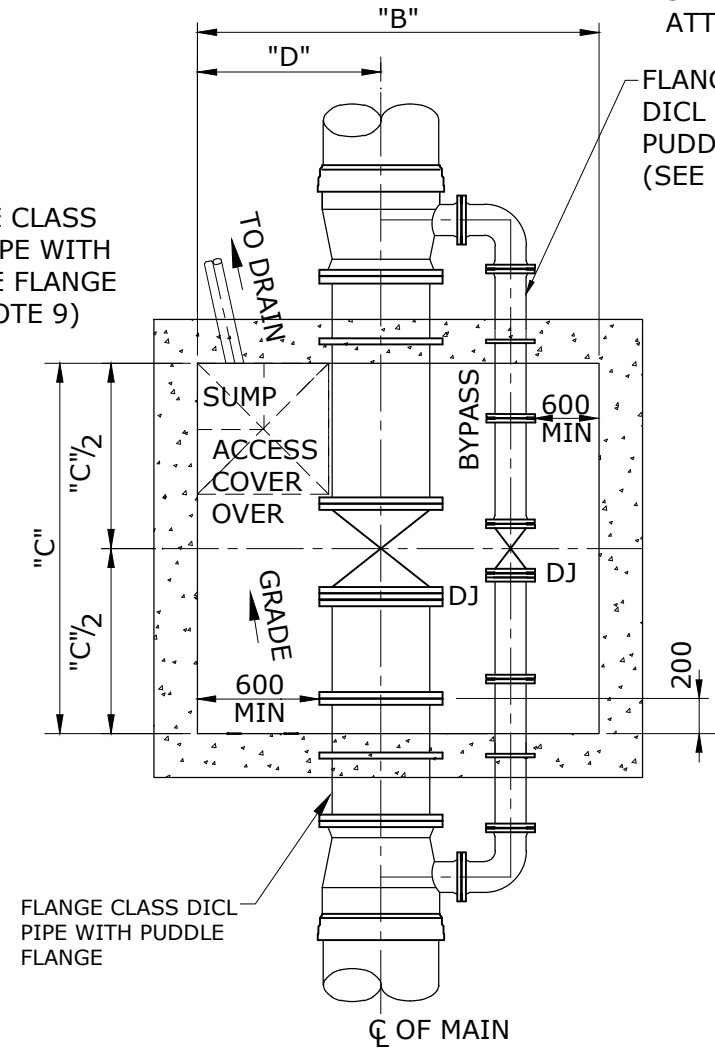
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
 TYPICAL APPURTENANCE INSTALLATION
 SCOUR ARRANGEMENTS

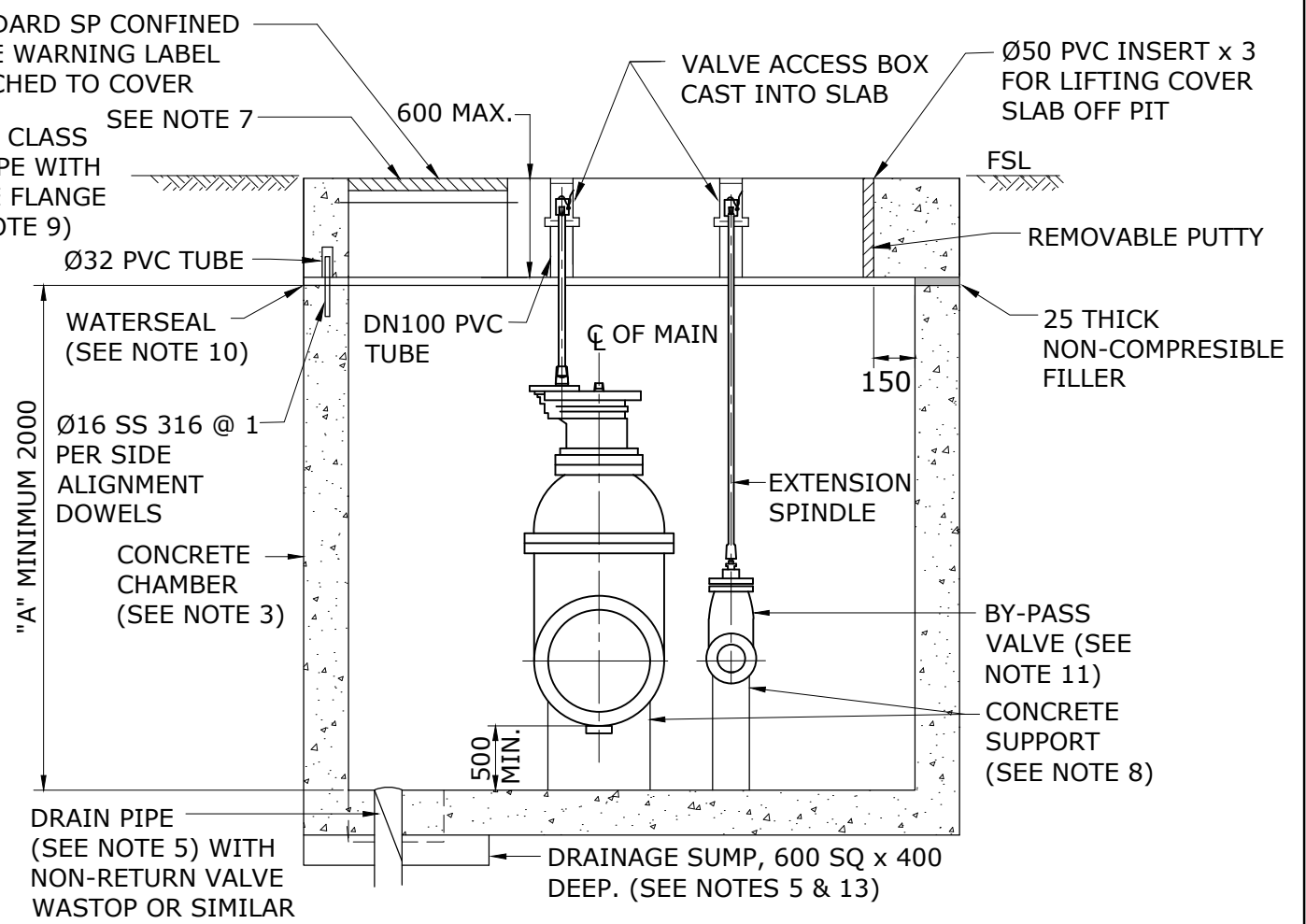
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1307-3				C
NOT TO SCALE				ORG DATE: 1/1/2013



PLAN FOR DN 600 MAINS
(SEE TABLE FOR DIMENSIONS)



PLAN FOR DN 750 MAIN
(SEE TABLE FOR DIMENSIONS)



TYPICAL CROSS SECTION DN 750 MAIN

INSTALLATION (SEE NOTE 7)					
NOMINA SIZE DN	MAIN	-	600	750	750
	VALVE ON MAIN (MIN SIZE)	-	500	500	600
	BYPASS VALVE	-	100	150	150
	A	DEPTH TO SUIT			
	B		2 500	2 850	
	C		1 700	2 150	
	D		1 300	1 600	

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. INSTALLATION OF SIZE OF VALVE CHAMBER TO BE SPECIFIED IN DESIGN DRAWINGS.
3. WALL & FLOOR THICKNESS AND REINFORCEMENT DETAILS FOR VALVE CHAMBER AS SHOWN IN DESIGN DRAWINGS. DESIGN TO ENSURE THRUST AT 1200 kPa TEST PRESSURE FOR A CLOSED END IS RESTRAINED AT PUDDLE FLANGES WITH COVER SLAB REMOVED. THE REMOVABLE COVER SLAB SHALL BE DESIGNED TO AS3600 AND THE TRAFFIC LOADS APPLICABLE AT A MAXIMUM INDIVIDUAL SLAB WEIGHT AS DIRECTED BY WATER AGENCY.
4. CONCRETE TO BE CLASS N32.
5. DRAIN PIPE TO BE DN 100 MIN PVC DWV PIPE CLASS SN 8 TO AS/NZS 1260. NON-RETURN VALVE TO BE WASTOP OR SIMILAR WITHIN DRAIN PIPE. USE GRAVITY DRAIN WHERE FEASIBLE, OTHERWISE A 600 SQ x 400 SUMP AND SUMP PUMP SHALL BE PROVIDED. VALVE CHAMBER FLOOR TO BE GRADED TOWARDS SUMP OR DRAIN PIPE. DIRECTION, GRADE AND CONNECTION LOCATION AND FORM OF DRAIN PIPE TO SW MANHOLE TO BE AS SHOWN IN DESIGN DRAWINGS.

6. MAIN VALVE OPERATING GEARBOX TO SUIT TYPE OF OPERATION AND PRESSURE HEAD AS SPECIFIED IN DESIGN DRAWINGS.
7. DETAIL AND DIMENSIONS OF REMOVABLE COVER AND THE CAST-IN ACCESS COVER SHALL BE SPECIFIED IN THE DESIGN PLANS. 600 x 900 HINGED ALUMINIUM OR COMPOSITE ACCESS COVERS AND FRAMES SHALL CONFORM TO AS 3996: - CLASS "B" FOR NON TRAFFICABLE AREAS. - CLASS "D" FOR TRAFFICABLE AREAS. (UW ONLY ACCEPTS UNHINGED ACCESS COVER. CoGC REQUIRES HINGED GRATES TO BE INSTALLED UNDER COVERS SEE SEQ-WAT-1319 DRAWING SET.)
8. CONSTRUCT CONCRETE SUPPORT SO AS NOT TO HINDER BOLT ACCESS AND OPERATION.
9. FOR DETAILS OF FABRICATION SYSTEM SEE SEQ-WAT-1405-1, SEQ-WAT-1406-1 & SEQ-WAT-1407-1.
10. PROVIDE URETHANE WATERSEAL TO JOINT IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
11. RESILIENT SEATED VALVES WITH INTEGRAL BYPASS VALVES SUCH AS THE TYCO FIGURE 500 OR THE AVK SERIES 55 OR SERIES 54 VALVES ARE ACCEPTABLE OPTIONS.
12. UNITYWATER - LARGE VALVES NORMALLY BURIED HENCE USE OF LARGE VALVE CHAMBERS SUBJECT TO ACCEPTANCE.
13. WHERE THE SUMP CAN BE FREE DRAINING AND THE NOMINATED SUMP DEPTH CANNOT BE ACHIEVED A REDUCED SUMP DEPTH MAY BE CONSIDERED ON A CASE BY CASE BASIS.

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOTE 7, NEW NOTE 13. 600 CLEARANCE. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	25/06/18	NOTES 5 AND 7 UPDATED, AMENDED DRAIN PIPE, NOTE 12 ADDED FOR UW	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

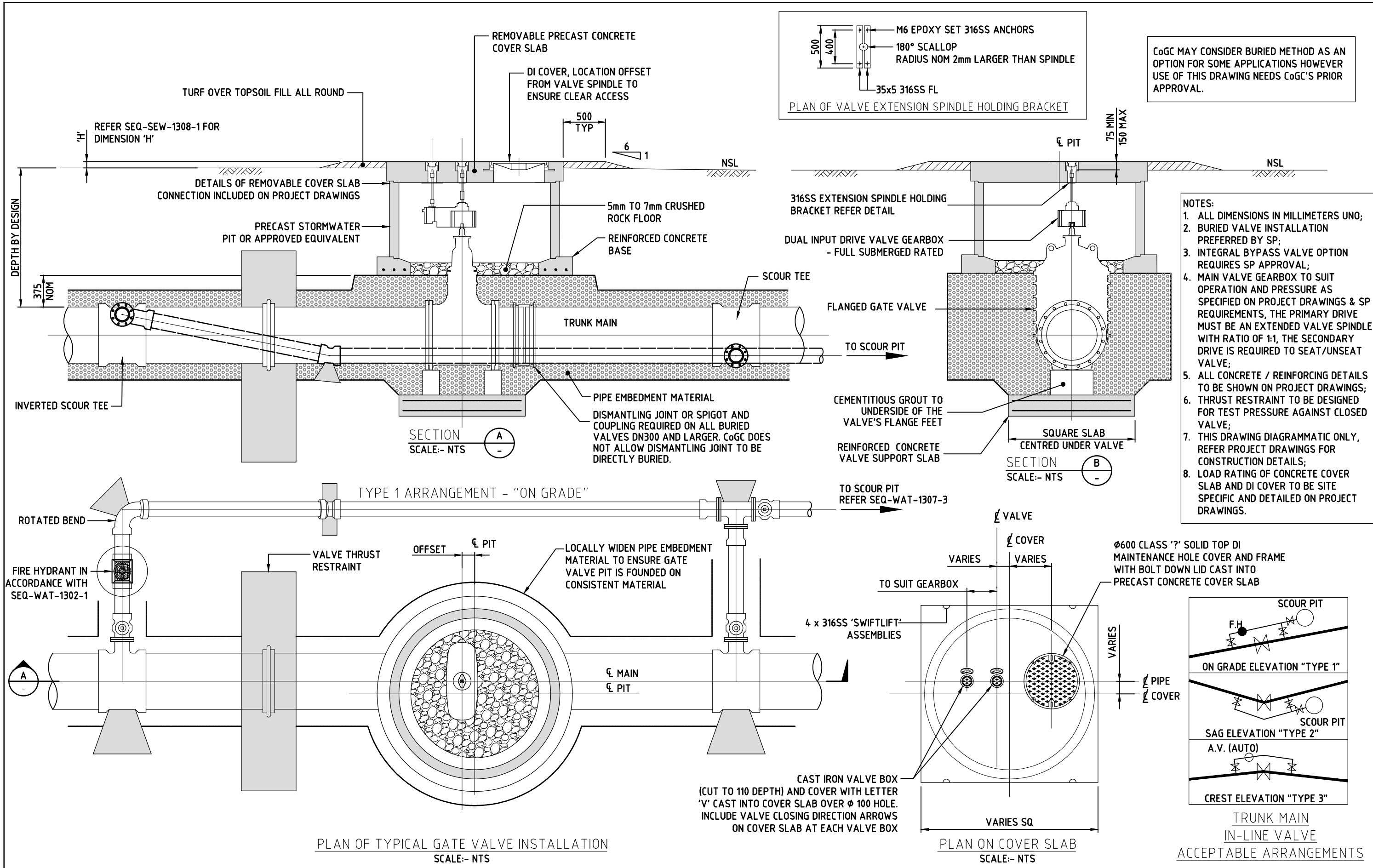
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

TYPICAL APPURTENANCE INSTALLATION

LARGE VALVE CHAMBERS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1308-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NEW BOXED NOTE, DISMANTLING JOINT REQUIREMENT. NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
A	21/07/16	ORIGINAL ISSUE	

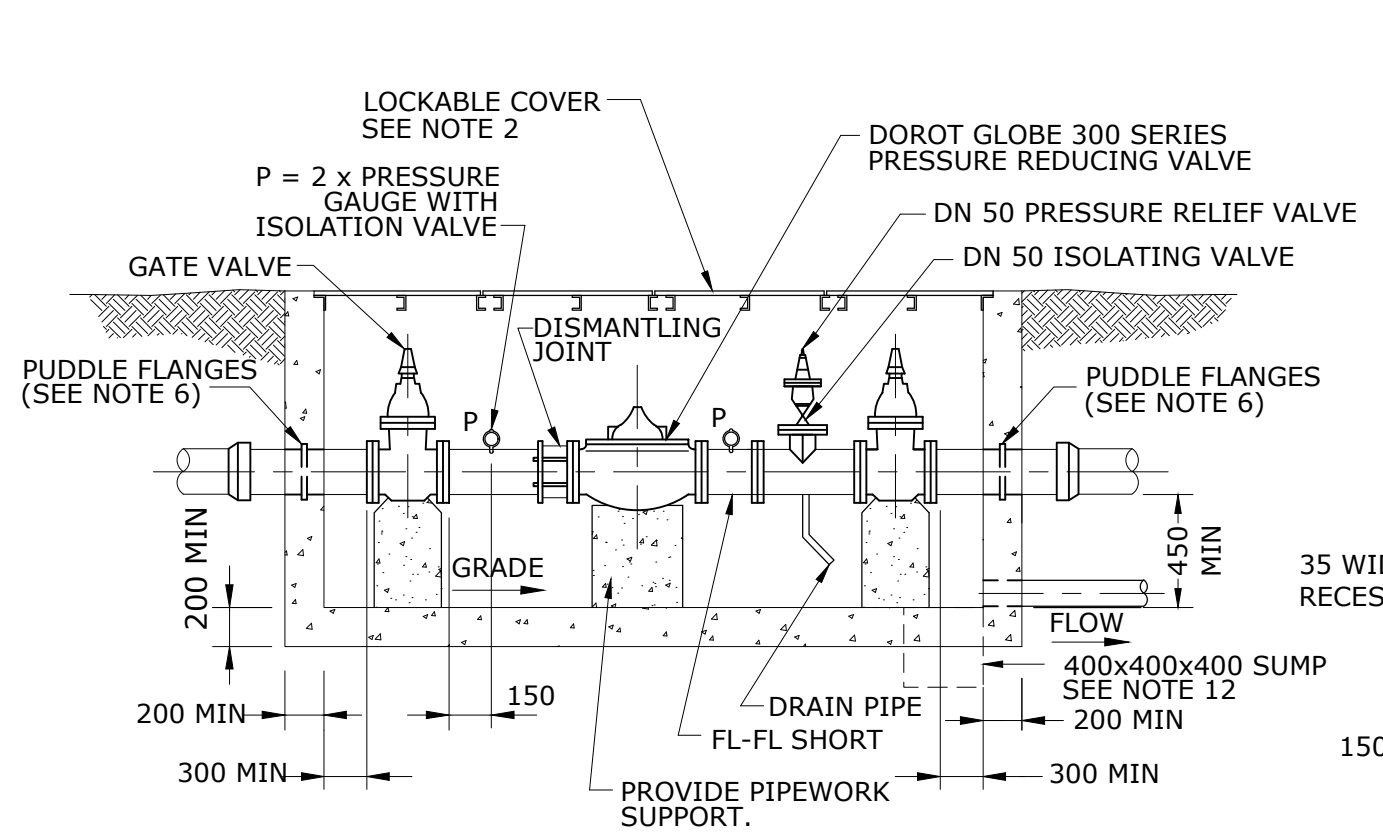
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

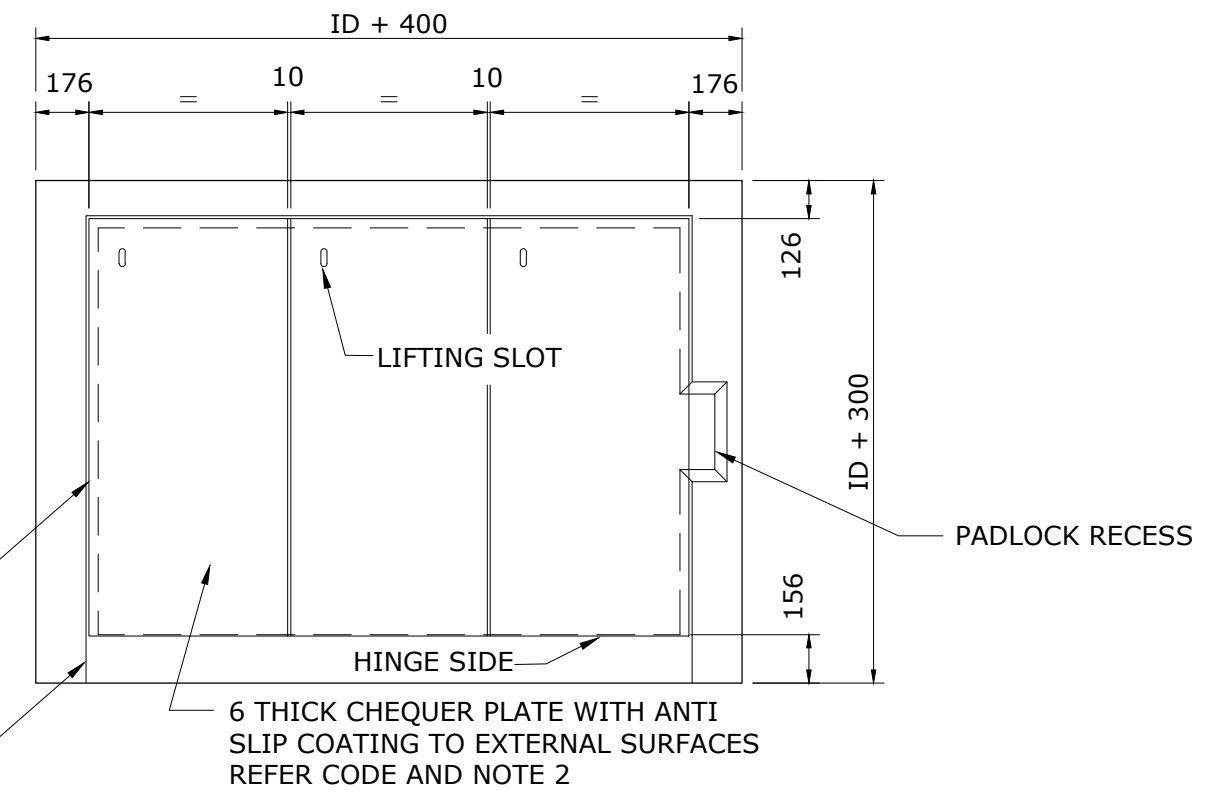
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
TYPICAL APPURTENANCE INSTALLATION
LARGE VALVE - BURIED INSTALLATION

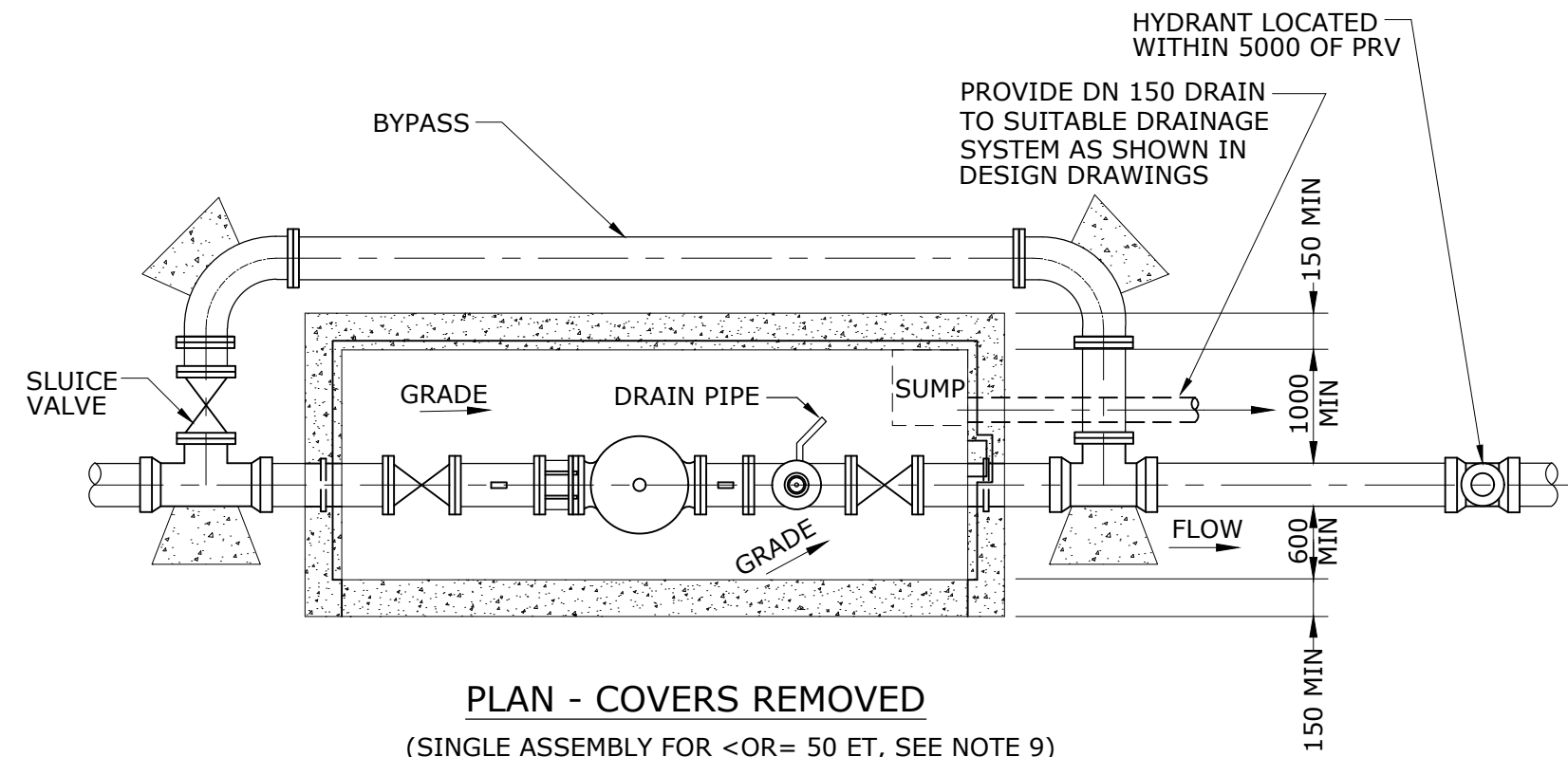
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DRAWING No.				VERSION
SEQ-WAT-1308-2				B
NOT TO SCALE				ORG DATE: 1/06/2016



SECTIONAL ELEVATION



PLAN - COVERS IN PLACE



PLAN - COVERS REMOVED
(SINGLE ASSEMBLY FOR <OR= 50 ET, SEE NOTE 9)

NOTES

1. DETAILS SHOWN ARE FOR DN100 ASSEMBLY. UPSIZE PRESSURE RELIEF VALVE FOR DN 150 INSTALLATIONS.
2. COVERS SHOWN ARE FOR FOOTWAY VERGE INSTALLATIONS WHERE KERB AND CHANNEL EXISTS. COVER DETAILS ARE SHOWN WITHIN STANDARD DRAWINGS SEQ-WAT-1315-1, SEQ-WAT-1316-1, SEQ-WAT-1317-1 AND SEQ-WAT-1319 DRAWING SET.
3. ALL COMPONENTS SHALL BE FBE COATED AND JOINED WITH 316 STAINLESS STEEL BOLTS NUTS AND WASHERS. FBE FL-SP FITTINGS SHALL NOT BE FIELD CUT. SUPPORT CONCRETE TO BE N20.
4. REINFORCED CONCRETE CHAMBER & VALVE RESTRAINT TO BE N25 MIN.
5. GRADE CHAMBER FLOOR AT 1 IN 20 TOWARDS DRAIN OR SUMP. DRAIN PREFERRED.
6. ATTACH PUDDLE FLANGES TO FLANGE CLASS DI PIPES. CONCRETE WALLS TO BE DESIGNED TO ENSURE THRUST IS RESTRAINED AT PUDDLE FLANGES.
7. PROVIDE SUFFICIENT ACCESS FOR OPERATION & MAINTENANCE OF VALVES.
8. WALL AND FLOOR THICKNESS AND REINFORCEMENT DETAILS AND ALL DIMENSIONS FOR CHAMBERS TO BE AS SHOWN IN DESIGN DRAWINGS
9. FOR POPULATIONS GREATER THAN 50 ET, A DUTY/STANDBY PRV INSTALLATION SHALL BE PROVIDED, DESIGN REQUIRED.
10. WHERE APPROVED BY THE WATER AGENCY, PRV ASSEMBLIES MAY BE REDUCED TO DN80 SIZED COMPONENTS VIA AN EXTERNAL TAPER ONLY WHERE DESIGN CRITERIA FOR FLOW AND PRESSURE ARE MET.
11. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
12. WHERE THE SUMP CAN BE FREE DRAINING AND THE NOMINATED SUMP DEPTH CANNOT BE ACHIEVED A REDUCED SUMP DEPTH MAY BE CONSIDERED ON A CASE BY CASE BASIS.
13. RCC: BELOW GROUND PRV ARRANGEMENTS MAY BE CONSIDERED ON A CASE BY CASE BASIS.

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	NEW NOTES 12,13. NOTE 2. CROSS ON LCC. NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

TYPICAL APPURTENANCE INSTALLATION

PASSIVE PRESSURE REDUCING VALVES (PRV)

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1309-1				B
NOT TO SCALE				ORG DATE: 1/1/2013

GENERAL NOTES

- G1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER CONTRACT DOCUMENTATION AND DRAWINGS.
- G2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT STANDARDS, AUSTRALIA SPECIFICATIONS AND CODES AND THE BY-LAWS OF THE RELEVANT BUILDING AUTHORITY.
- G3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE PRIOR TO ANY CONSTRUCTION. DRAWINGS SHALL NOT BE SCALED.
- G4. ANY DISCREPANCY SHALL BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING WITH WORK.
- G5. NO SUBSTITUTE MATERIALS SHALL BE USED WITHOUT THE WRITTEN APPROVAL OF THE SUPERINTENDENT.
- G6. THE POSITIONS OF SERVICES BELIEVED TO EXIST ON THE SITE ARE INDICATED.
NO GUARANTEE IS GIVEN OR IMPLIED TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION.
THE CONTRACTOR SHALL MAKE HIMSELF FULLY CONVERSANT WITH ALL EXISTING SERVICES AND STRUCTURES WITHIN AND ADJACENT TO THE SITE OF THE WORK AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THESE SERVICES AND STRUCTURES DURING THE COURSE OF THE CONTRACT.
- G7. ALL WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH THE QUEENSLAND ELECTRICITY ACT AND WORKPLACE HEALTH AND SAFETY ACT, REGULATIONS AND GUIDELINES.
- G8. WORKS TO BE EXECUTED IN ACCORDANCE WITH THE LOCAL AUTHORITIES EARTHWORKS SPECIFICATION AND THE SEQ WATER SUPPLY CODE.
- G9. CONNECTION OF THE WORKS TO THE LIVE SYSTEM SHALL BE DONE ONLY BY THE SEQ-SP, REFER INDIVIDUAL SEQ-SP WEB PAGES FOR CONTACT DETAILS.
- G10. CONTRACTOR TO TAKE APPROPRIATE ACTION AS NECESSARY TO PROTECT AND MAINTAIN EXISTING SERVICES.
- G11. RESTORE ALL SURFACES TO MATCH EXISTING SURFACES.
- G12. TUNNEL BORE OR DIRECTIONAL DRILL UNDER EXISTING REINFORCED CONCRETE DRIVEWAYS WHERE THE EXISTING SURFACE CANNOT BE MATCHED.
- G13. WORKS CONSTRUCTED BY PRIVATE CONTRACTORS MUST BE INSPECTED BY WORK SUPERINTENDENT
- G14. WATER SERVICES:
(A) TO BE BYPASSED WHERE NECESSARY.
(B) TO BE RECONNECTED TO NEW MAIN UPON CLEARANCE SEQ-SP
(C) ALL 15 mm DIA. SERVICES TO BE RELAID IN 20 mm.
(D) TO BE INDICATED ON 'AS CONSTRUCTED' DRAWINGS.
- G15. SEQ-SP PERSONNEL ONLY TO OPERATE THE EXISTING WATER OR SEWERAGE SYSTEM.
- G16. ALL FITTINGS ON ABANDONED PIPELINE TO BE REMOVED.
- G17. FIRE HYDRANT/WASHOUT BEND TO BE INSTALLED IN ACCORDANCE WITH DRAWINGS.
- G18. WHERE A METALLIC WATER MAIN IS TO BE REPLACED WITH A PLASTIC MAIN A LICENSED ELECTRICIAN SHALL MAKE AN ASSESSMENT OF POTENTIALLY AFFECTED PROPERTY EARTHING SYSTEMS. WORK SHALL NOT COMMENCE UNTIL THE ELECTRICIAN DECLARES IN WRITING THAT IT IS SAFE TO PROCEED.
- G19. FOR UU TEST AND CHLORINATION POINTS TO BE INSTALLED IN ACCORDANCE WITH DRAWINGS.
- G20. ALL DIMENSIONS GIVEN ARE NOMINAL ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS PRIOR TO FABRICATION.

DESIGN NOTES

- D1. PRECAST CONCRETE PITS DESIGNED AND CERTIFIED (RPEQ) BY MANUFACTURER. END WALLS TO BE CAST ON SITE. DESIGN AND CONSTRUCTION DETAILS OF END WALLS TO BE PROVIDED BY PRECAST CONCRETE PIT DESIGNER.
- D2. THE DESIGN SHALL ALLOW FOR THRUST LOADS, BOTH DURING OPERATING CONDITIONS AND DURING MAINTENANCE PERIODS.
- D3. BACK FILLING AROUND STRUCTURES TO BE CARRIED OUT TO SOUND ENGINEERING STANDARDS.
- D4. ANY AREAS OF SOFT OR UNSUITABLE MATERIAL ARE TO BE REMOVED DOWN TO AN ACCEPTABLE FOUNDING MATERIAL AND REPLACED WITH FILL.
- D5. SELECT FILL TO BE AN APPROVED GRANULAR SAND OR GRAVEL MATERIAL HAVING A PLASTICITY INDEX NOT EXCEEDING 15 AND TO BE FREE OF ALL ORGANIC AND DELETERIOUS MATTER. 100% SHALL PASS No. 37.5 mm SIEVE.

NOTES

- 1. ALL FLOW METER INSTALLATIONS MUST HAVE MIN 10 x DIAMETER STRAIGHT PIPE UPSTREAM OF FLOWMETER AND 5 x DIAMETER DOWNSTREAM. THE DESIGN SHOULD AVOID THE USE OF COMPOUND BENDS (REFER TO NOTE 4). WHERE COMPOUND BENDS ARE USED, A MINIMUM OF 15 DIAMETER SHALL BE REQUIRED UPSTREAM OF THE FLOWMETER.
- 2. ALL PIPE FLANGES SHALL CONFORM TO AS 4087 PN16.
- 3. ELECTRICAL CONDUIT AND PRESSURE PIPE PENETRATIONS SHALL BE CAST INTO THE CONCRETE END WALLS.
- 4. LEVEL ADJUSTMENT FROM BRANCH CONNECTIONS TO EXISTING MAINS SHALL UTILISE A 45° BEND AND A STRAIGHT PIPE LENGTH TO A 45° BEND AT THE REQUIRED DEPTH.
- 5. LEVEL MULTI TRODE TO BE INSTALLED FOR SUMP PUMP CONTROL.
- 6. RCC: BELOW GROUND PRV ARRANGEMENTS MAY BE CONSIDERED ON A CASE BY CASE BASIS.

100Ø PRV PIT ARRANGEMENT

ITEM	DESCRIPTION	LENGTH (mm)
A1	DN100 SPRING FIRE HYDRANT WITH TEE, FLANGED RISER, STANDARD HYDRANT CHAMBER AND COVER -REFER TO STANDARD DRAWING SEQ-WAT-1302-1	REFER PRODUCT DATA
A2	FLANGE TO FLANGE PIPE	900 MIN.
A3	PRV	381
A4	DISMANTLING JOINT THRUST TYPE	412
A5	FLANGE TO FLANGE PIPE	757
A6	FLOW METER COMPLETE WITH EARTH RING	250
A7	FLANGE TO FLANGE PIPE	1000 MIN.

250Ø PRV PIT ARRANGEMENT

ITEM	DESCRIPTION	LENGTH (mm)
B1	DN100 SPRING FIRE HYDRANT WITH TEE, FLANGED RISER, STANDARD HYDRANT CHAMBER AND COVER -REFER TO STANDARD DRAWING SEQ-WAT-1302-1	REFER PRODUCT DATA
B2	FLANGE TO FLANGE PIPE	1200 MIN.
B3	PRV	756
B4	DISMANTLING JOINT THRUST TYPE	412
B5	FLANGE TO FLANGE PIPE	1760
B6	FLOW METER COMPLETE WITH EARTH RING	450
B7	FLANGE TO FLANGE PIPE	2500 MIN.

150Ø PRV PIT ARRANGEMENT

ITEM	DESCRIPTION	LENGTH (mm)
A1	DN100 SPRING FIRE HYDRANT WITH TEE, FLANGED RISER, STANDARD HYDRANT CHAMBER AND COVER -REFER TO STANDARD DRAWING SEQ-WAT-1302-1	REFER PRODUCT DATA
A2	FLANGE TO FLANGE PIPE	900 MIN.
A3	PRV	508
A4	DISMANTLING JOINT THRUST TYPE	412
A5	FLANGE TO FLANGE PIPE	580
A6	FLOW METER COMPLETE WITH EARTH RING	300
A7	FLANGE TO FLANGE PIPE	1500 MIN.

300Ø PRV PIT ARRANGEMENT

ITEM	DESCRIPTION	LENGTH (mm)
B1	DN100 SPRING FIRE HYDRANT WITH TEE, FLANGED RISER, STANDARD HYDRANT CHAMBER AND COVER -REFER TO STANDARD DRAWING SEQ-WAT-1302-1	REFER PRODUCT DATA
B2	FLANGE TO FLANGE PIPE	1200 MIN.
B3	PRV	864
B4	DISMANTLING JOINT THRUST TYPE	412
B5	FLANGE TO FLANGE PIPE	1600
B6	FLOW METER COMPLETE WITH EARTH RING	500
B7	FLANGE TO FLANGE PIPE	3000 MIN.

200Ø PRV PIT ARRANGEMENT

ITEM	DESCRIPTION	LENGTH (mm)
B1	DN100 SPRING FIRE HYDRANT WITH TEE, FLANGED RISER, STANDARD HYDRANT CHAMBER AND COVER -REFER TO STANDARD DRAWING SEQ-WAT-1302-1	REFER PRODUCT DATA
B2	FLANGE TO FLANGE PIPE	1200 MIN.
B3	PRV	645
B4	DISMANTLING JOINT THRUST TYPE	412
B5	FLANGE TO FLANGE PIPE	1970
B6	FLOW METER COMPLETE WITH EARTH RING	350
B7	FLANGE TO FLANGE PIPE	2000 MIN.

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	NOTES D. NEW NOTE 6. CROSS ON LCC. NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	

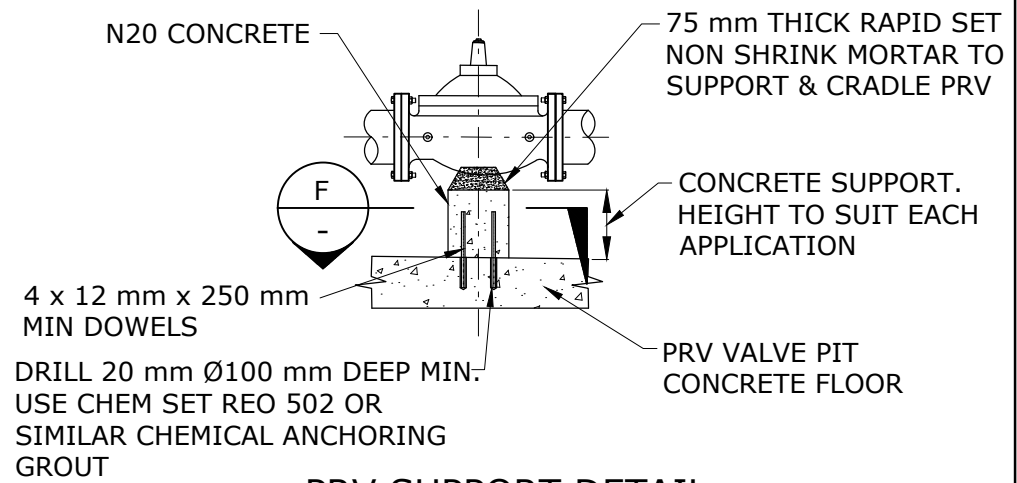
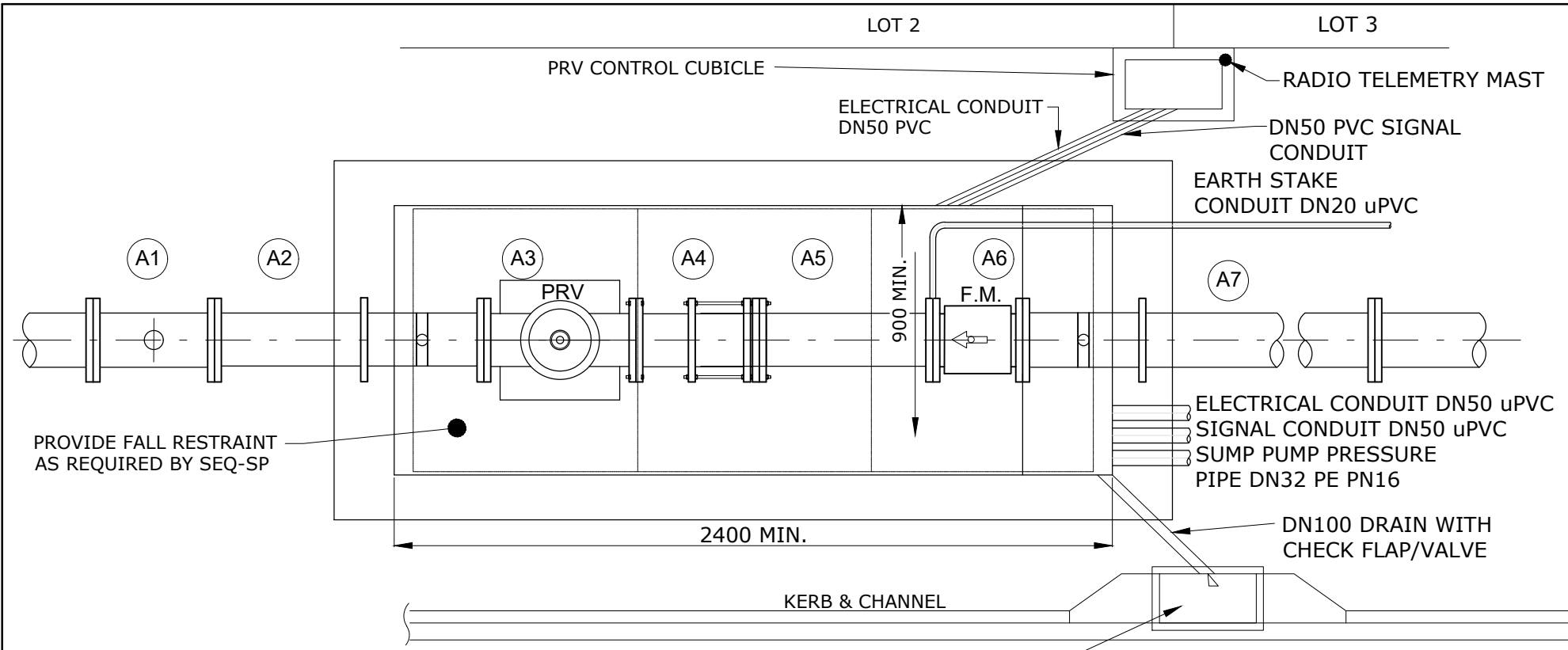
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

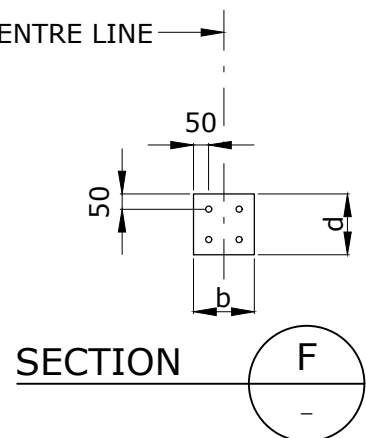
WATER SUPPLY STANDARD DRAWING
 TYPICAL APPURTENANCE INSTALLATION
 ACTIVE PRESSURE REDUCING VALVES (PRV)
 DN100 TO DN300

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1309-2				B
NOT TO SCALE				ORG DATE: 1/1/2013



PRV SUPPORT DETAIL

PRV DN	b	d
100	200	200
150	200	250



OPTION 1

PRECAST TOP SLAB WITH 914x2275 OPENING AND CAST IRON / CONCRETE FILL LIDS. THE LID SHALL CONFORM TO AS3996-2006 LOAD CLASS B OR D, DEPENDING ON SITE ACCESS CONDITIONS.

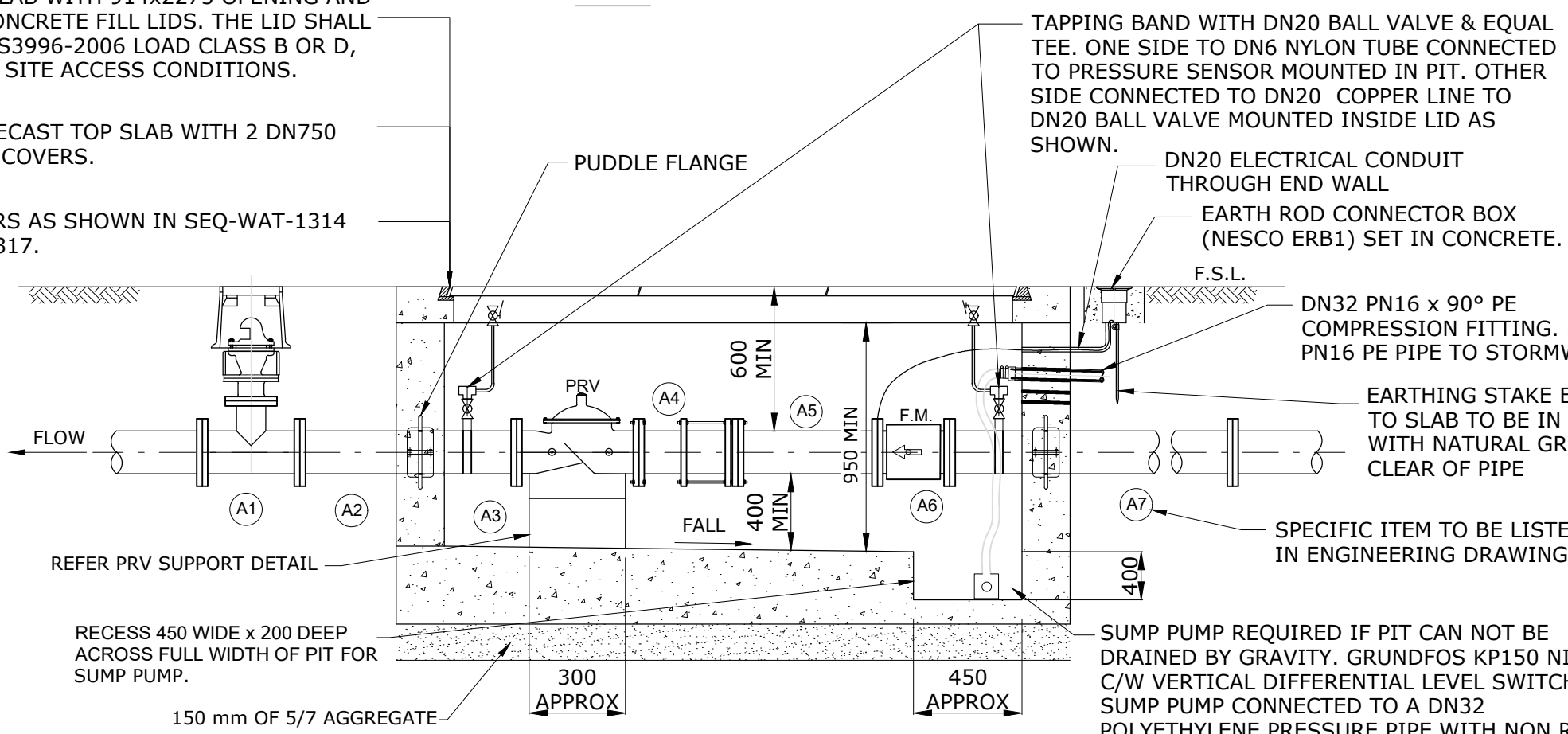
OPTION 2

REMOVABLE PRECAST TOP SLAB WITH 2 DN750 CAST-IN DI MH COVERS.

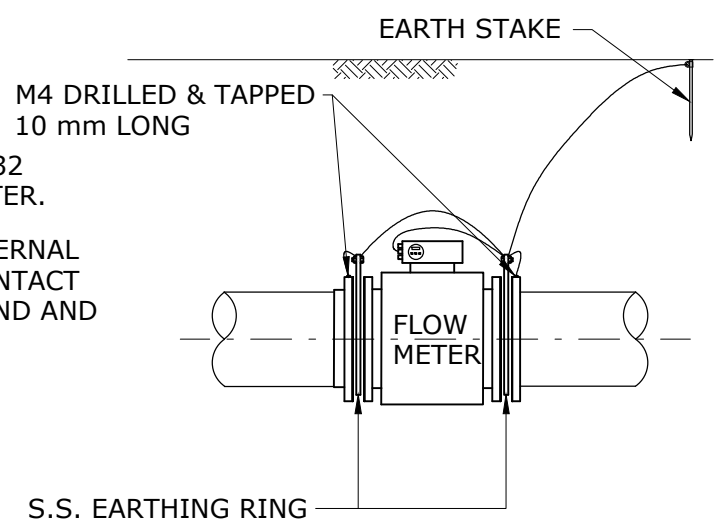
OPTION 3

PROVIDE COVERS AS SHOWN IN SEQ-WAT-1314 TO SEQ-WAT-1317.

PLAN



SECTION DN100-150 MAINS



FLOW METER EARTHING DETAIL

NOTE

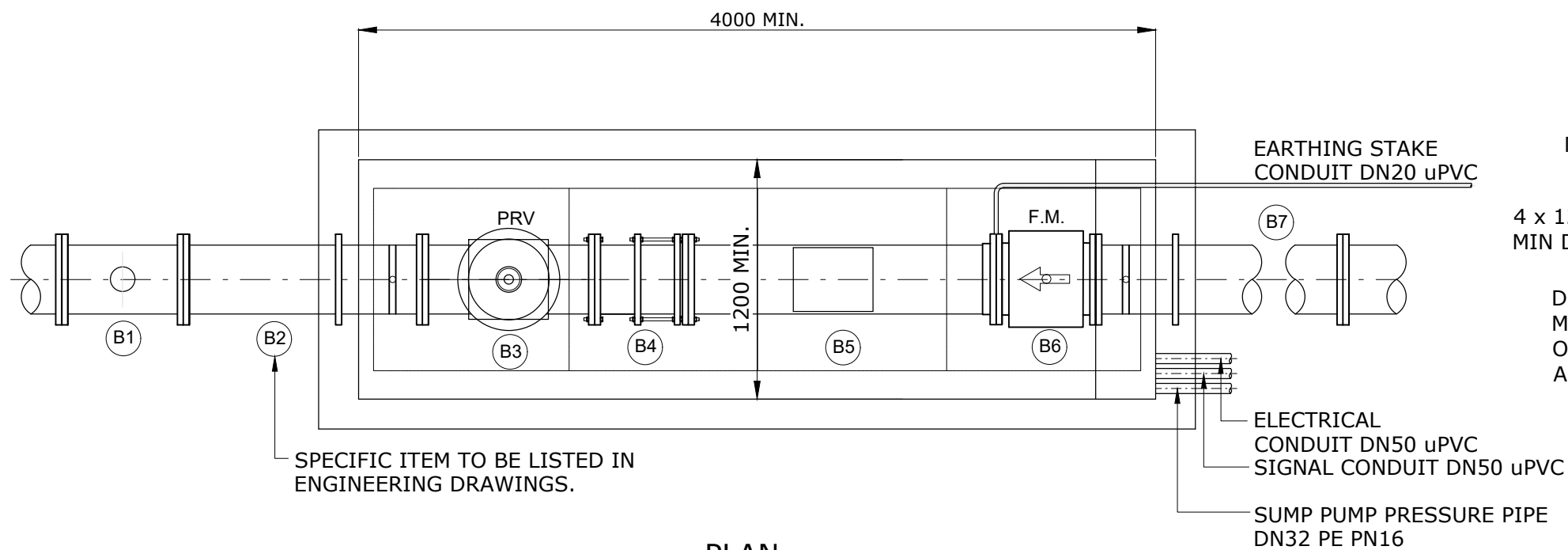
1. ALL DIMENSIONS IN MILLIMETRES

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	SUMP REFERENCE, SIZE. CROSS ON LCC. NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	

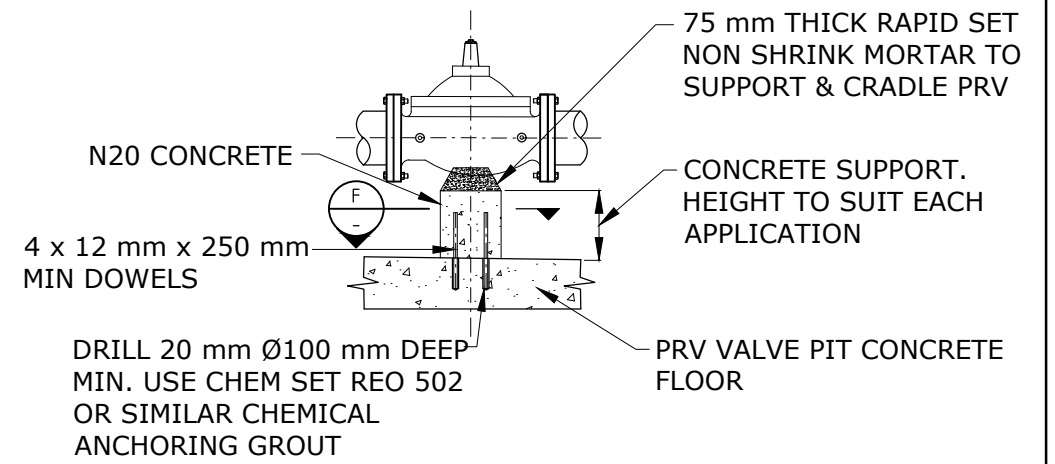
SEQ WATER SERVICE PROVIDERS
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NOT FOR CONSTRUCTION
 SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
TYPICAL APPURTENANCE INSTALLATION
ACTIVE PRESSURE REDUCING VALVES (PRV)
DN100 AND DN150

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1309-3				B
NOT TO SCALE				ORG DATE: 1/1/2013



PLAN



PRV SUPPORT DETAIL

PIPE CENTRE LINE

PRV DN	b	d
200	250	300
250	300	300
300	300	350

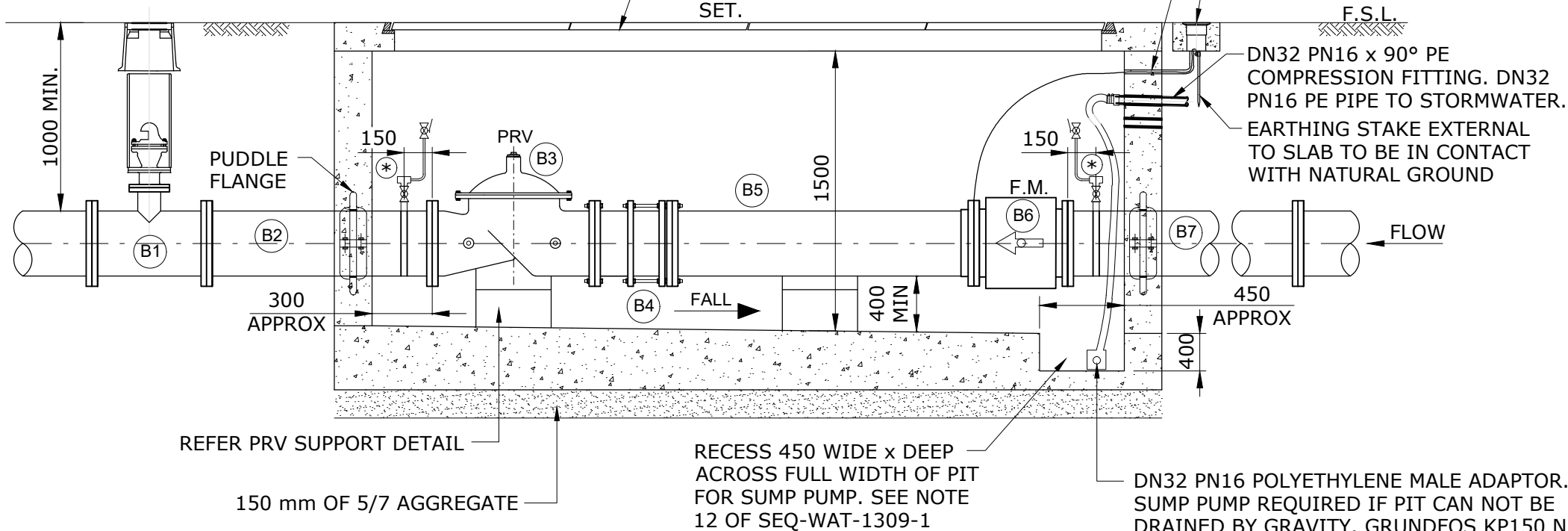
SECTION F

* TAPPING BAND WITH DN20 BALL VALVE & EQUAL TEE. ONE SIDE TO DN6 NYLON TUBE CONNECTED TO PRESSURE SENSOR MOUNTED IN PIT. OTHER SIDE CONNECTED TO DN20 COPPER LINE TO DN20 BALL VALVE MOUNTED INSIDE LID AS SHOWN.

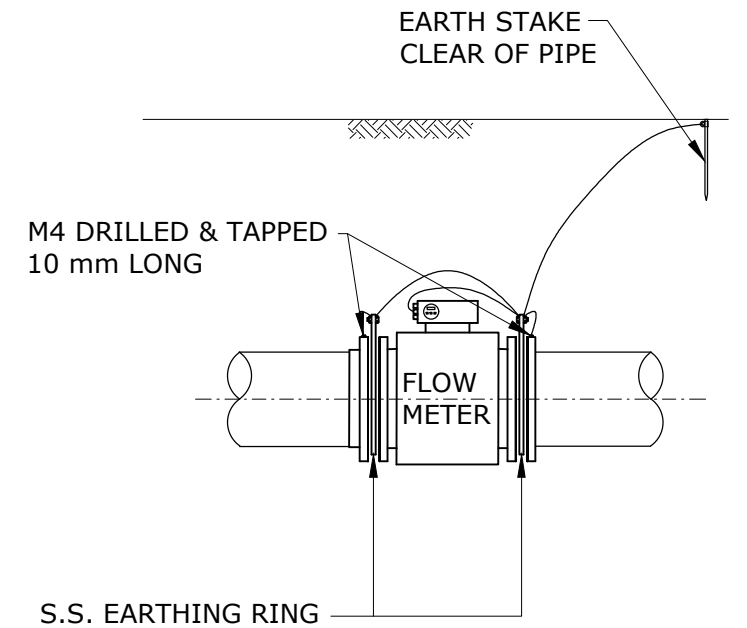
PRECAST TOP SLAB WITH 914x3850 OPENING & CAST IRON / CONCRETE FILL LIDS. THE LID SHALL CONFORM TO AS3996-2006 LOAD CLASS B OR D DEPENDING ON SITE ACCESS CONDITIONS OR REFER OPTIONS 2 & 3 ON SEQ-WAT-1309-3. CoGC: SEE SEQ-WAT-1319 SET.

DN20 ELECTRICAL CONDUIT THROUGH END WALL

EARTH ROD CONNECTOR BOX (NESCO ERB1) SET IN CONCRETE.



**SECTION
DN200-300 MAINS**



FLOW METER EARTHING DETAIL

NOTE

1. ALL DIMENSIONS IN MILLIMETRES

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	SUMP REFERENCE, SIZE. LID REFERENCE. CROSS ON LCC. NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

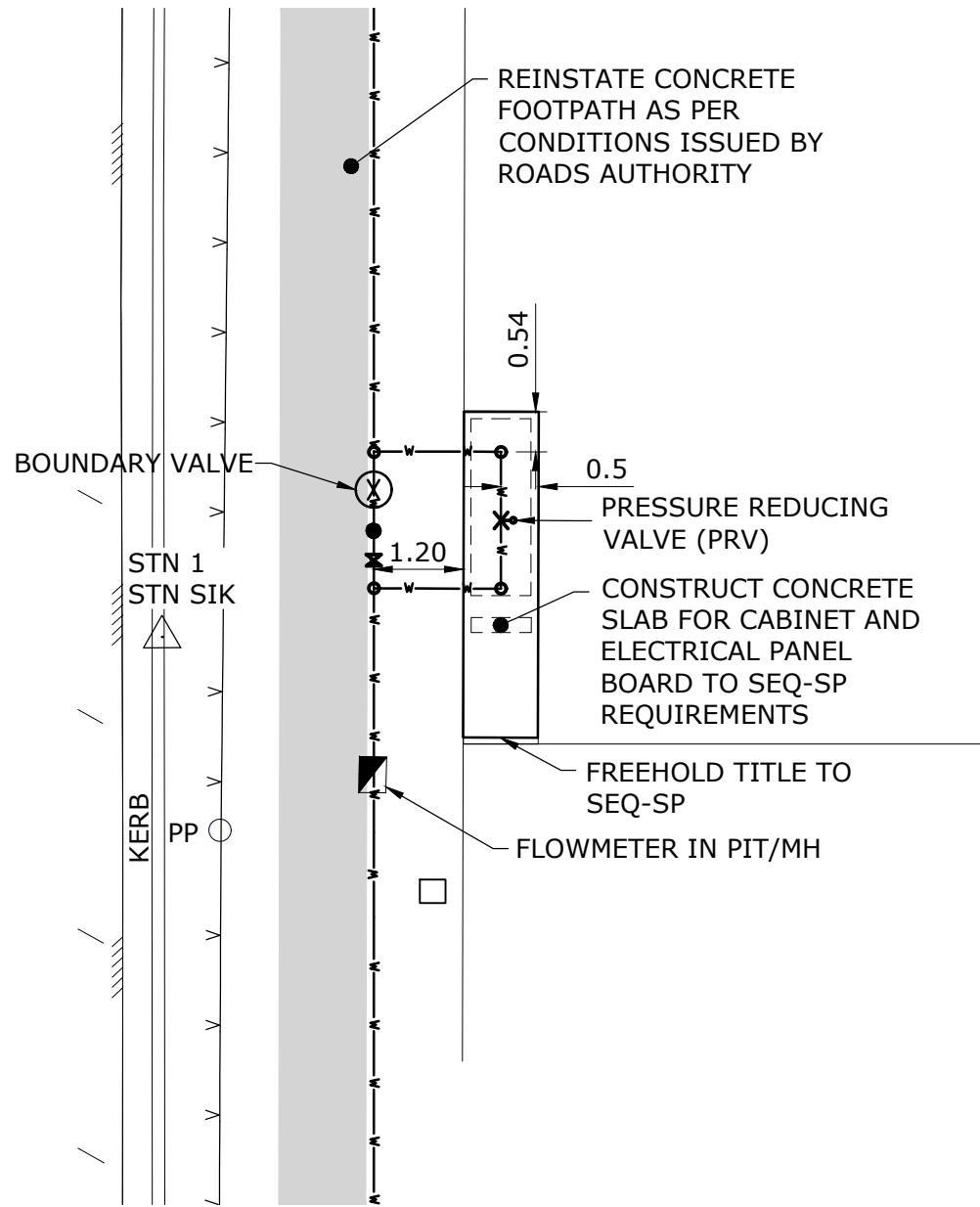
NOT FOR CONSTRUCTION

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WATER SUPPLY STANDARD DRAWING

TYPICAL APPURTENANCE INSTALLATION
ACTIVE PRESSURE REDUCING VALVES (PRV)
DN200 TO DN300

CoGC	LSC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1309-4				B
NOT TO SCALE				ORG DATE: 1/1/2013



LAYOUT PLAN
NTS

BOUNDARY VALVE

REFER DETAIL ON SEQ-WAT-1310-4 FOR FLOW METER INSTALLATION DETAILS

PIPEWORK PLAN
NTS

NOTES

1. ALL DIMENSIONS IN METRES
2. LAND AREA BY DESIGN WITH 6.75 m² MINIMUM

REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	NOT APPLICABLE TO LCC, NOT FOR CONSTRUCTION AND CoGC AND UU IN TITLE BLOCK	
B	16/07/15	REMOVED SUMP LABEL, AMENDED REFERENCED DRAWING NUMBER.	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

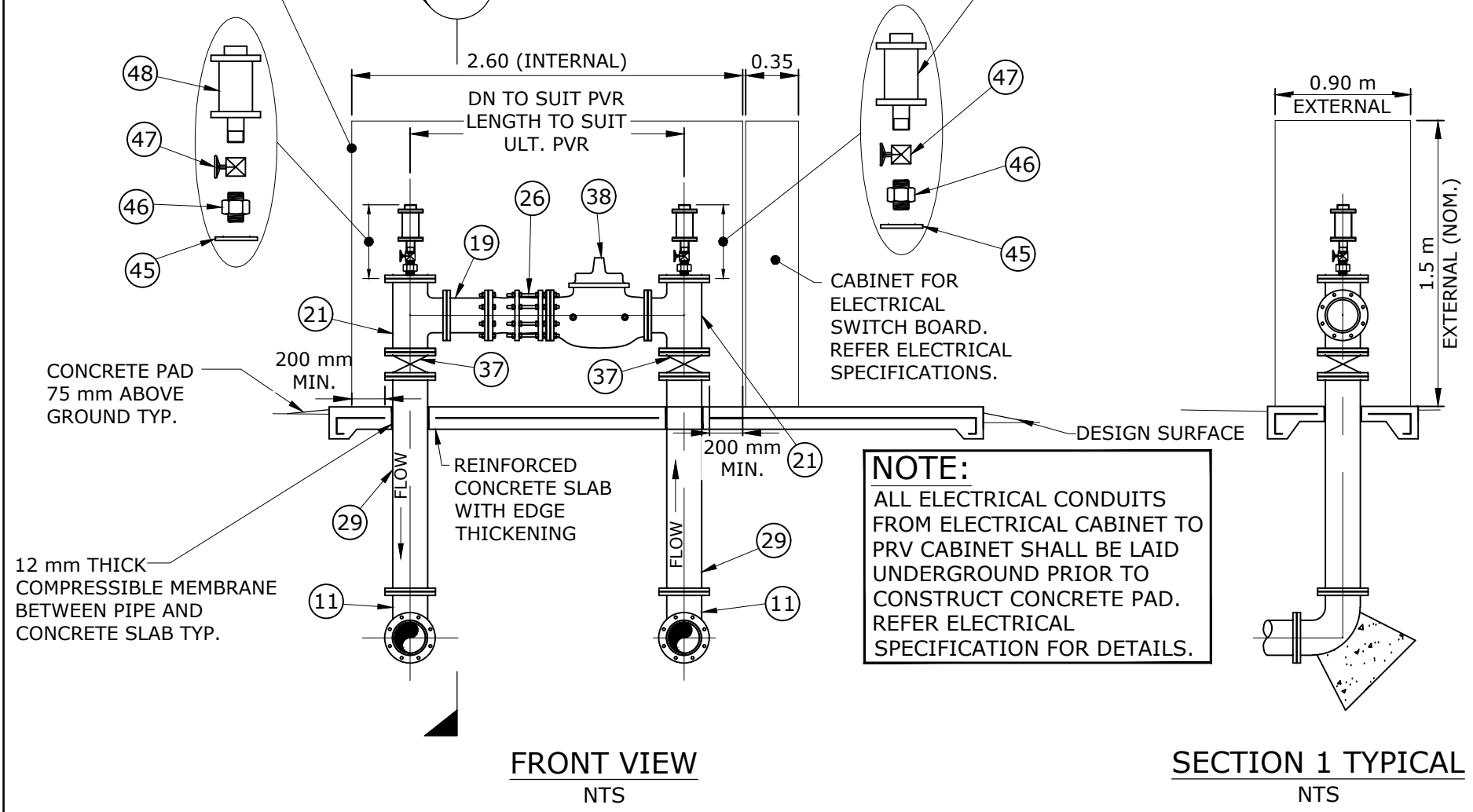
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WATER SUPPLY STANDARD DRAWING

**TYPICAL APPURTENANCE INSTALLATION
ACTIVE PRESSURE REDUCING VALVES (PRV)
ABOVE GROUND**

CoGC	<input checked="" type="checkbox"/> LCC	<input checked="" type="checkbox"/> RCC	<input checked="" type="checkbox"/> UU	<input checked="" type="checkbox"/> UW
DRAWING No.				VERSION
SEQ-WAT-1310-1				C
NOT TO SCALE				ORG DATE: 1/1/2013

FOR PRV CABINET
REFER SEQ-WAT-1310-3



NOTE:
ALL ELECTRICAL CONDUITS FROM ELECTRICAL CABINET TO PRV CABINET SHALL BE LAID UNDERGROUND PRIOR TO CONSTRUCT CONCRETE PAD. REFER ELECTRICAL SPECIFICATION FOR DETAILS.

- PRV SPEC:**
- PN16 MIN.
 - PRV TO BE FAIL OPEN
 - UPSTREAM PRESSURE =m HEAD
 - DOWNSTREAM PRESSURE EITHER SET POINT =m HEAD (FIXED PRESSURE APPLICATION)
 - OR FLOW MODULATED RANGE FROMm TO IN HEAD.
 - FLOW RATE THRU PRV. 5 - 10 YR
 - Δ.....l/s MIN.
 - Δ.....l/s AV.
 - Δ.....l/s MAX.
 - **ULTIMATE**
 - Δ.....l/s MIN.
 - Δ.....l/s AVE.
 - Δ.....l/s MAX.

- NOTES:**
- FLOW METER SIZES FOR VLT FLOW @ <5 m/s AND MNF @ >50 mm/S
 - FLOWMETER ELECTROMAGNETIC Ø150 FL-FL DI Class 16 (Flange drilled to AS4087 Class 16) Cable Length to suit c/w Fluid Contact Rings

EXAMPLE MATERIAL LIST			
ITEM No	DESCRIPTION	UNIT	QTY
PIPES			
1	PIPE Ø150 SC-SP DI CL PN35 c/w blue plastic sleeve (Water)	m	5.5
FITTINGS			
11	BEND Ø200 x 90° FL-FL DI Class 16 FBE COATED	ea	2
12	CONNECTOR Ø150 FL-SC DI Class 16 (STD) FBE COATED	ea	1
13	GIBAULT "Vari-Gib" Ø150 ELONGATED Class 16 FBE/nylon coated c/w 316ss Nuts & Bolts	ea	1
16	CONNECTOR - HYDRANT RISER Ø100 FL-FL DI Class 16 - FBE COATED LENGTH TO SUIT	ea	1
17	CONNECTOR Ø150 FL-SC DI Class 16 - 1150 mm long FBE COATED	ea	1
18	TAPER CONCENTRIC Ø200-Ø150 FL-FL DI Class 16 FBE COATED	ea	1
19	CONNECTOR Ø200 FL-FL DI Class 16 - 275 mm long FBE COATED	ea	1
21	TEE Ø200 x Ø200 FL-FLxFL DI Class 16 FBE COATED	ea	4
22	TEE Ø200 x Ø100 FL-FLxFL DI Class 16 FBE COATED	ea	1
26	DISMANTLING JOINT Ø200 - THRUST TYPE DI Class 16 FBE/nylon coated	ea	1
27	CONNECTOR Ø200 FL-FL DI Class 16 - 250 mm long FBE COATED	ea	1
28	CONNECTOR Ø200 FL-FL DI Class 16 - 1150 mm long FBE COATED	ea	2
29	CONNECTOR Ø200 FL-FL DI Class 16 - 1430 mm long FBE COATED	ea	2
36	VALVE SLUICE Ø200 FL-FL DI Class 16 resilient seated, FBE/nylon coated, Clockwise opening	ea	2
37	VALVE BUTTERFLY Ø200 FL-FL DI Class 16 resilient seated, FBE/nylon coated, (Manual Handle or Wheel & Gearbox) Clockwise opening	ea	2
38	VALVE "PRESSURE REDUCING" Ø200 Flanged Class 16 (Flange drilled to AS4087 Class 16) (REFER TO SEQ ACCEPTED PRODUCTS & MATERIALS LIST)	ea	1

MATERIAL LIST CONT.			
ITEM No	DESCRIPTION	UNIT	TOT. LENGTH
MISCELLANEOUS			
45	FLANGE BLANK Ø200 316 S/S Class 16 C/W 50 mm BSP Tapping	ea	2
46	HEX NIPPLE NUT Ø50 316 S/S	ea	2
47	VALVE BALL Ø50 BSP FEMALE Class 16 - BSP 316ss	ea	2
48	VALVE AIR Ø50 BSP MALE Class 16 "Vent-o-mat RPS" or approved similar	ea	2
49	HYDRANT SWASH TYPE Ø100 FL DI Class 16.	ea	2
50	CAST IRON BOX & ACCESSORIES incl. MARKER POST- HYDRANT	ea	2
51	CAST IRON BOX & ACCESSORIES incl. MARKER POST - VALVE	ea	7
54	GASKET, BOLT, NUT & WASHER SET Ø100 316ss Class 16 4/M16x65 316ss BOLTS c/w NUTS & WASHERS	ea	4
55	GASKET, BOLT, NUT & WASHER SET Ø150 316ss Class 16 8/M16x75 316ss BOLTS c/w NUTS & WASHERS	ea	4
56	GASKET, BOLT, NUT & WASHER SET Ø200 316ss Class 16 8/M16x75 316ss BOLTS c/w NUTS & WASHERS	ea	10
57	GASKET, BOLT, NUT & WASHER SET SET Ø225 316ss Class 16 8/M16x75 316ss BOLTS c/w NUTS & WASHERS	ea	4

- NOTES:**
1. PRINCIPAL CONTRACTOR SHALL CONFIRM ACCURACY OF THE MATERIAL LIST PRIOR TO ORDER MATERIALS.
 2. MATERIAL LIST SHALL BE READ IN CONJUNCTION WITH OTHER PLANS.
 3. PIPES / FITTINGS INDICATIVE ONLY.
 4. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.

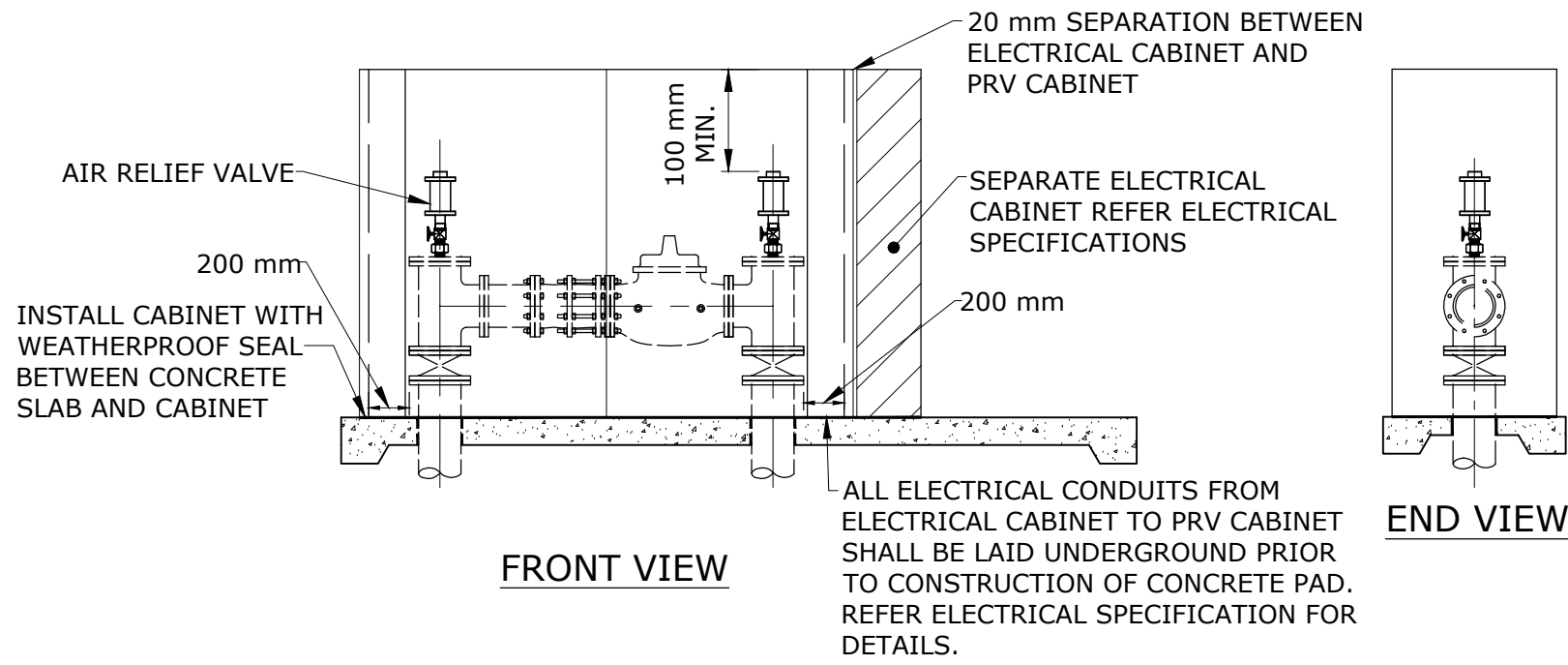
REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	NOT APPLICABLE TO LCC, NOT FOR CONSTRUCTION AND CoGC AND UU IN TITLE BLOCK	
B	31/03/15	PLAN AND SECTION 2 DELETED. ITEM NOS 32, 65 & 66 DELETED. ITEM 39 MOVED TO NOTES	

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NOT FOR CONSTRUCTION
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WATER SUPPLY STANDARD DRAWING
TYPICAL APPURTENANCE INSTALLATION
ACTIVE PRESSURE REDUCING VALVES (PRV)
ABOVE GROUND

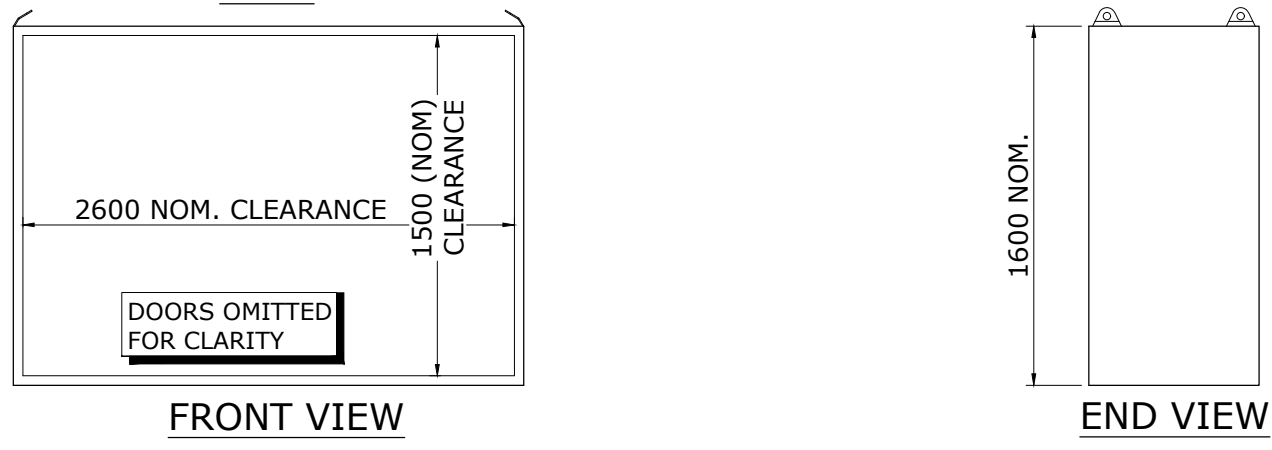
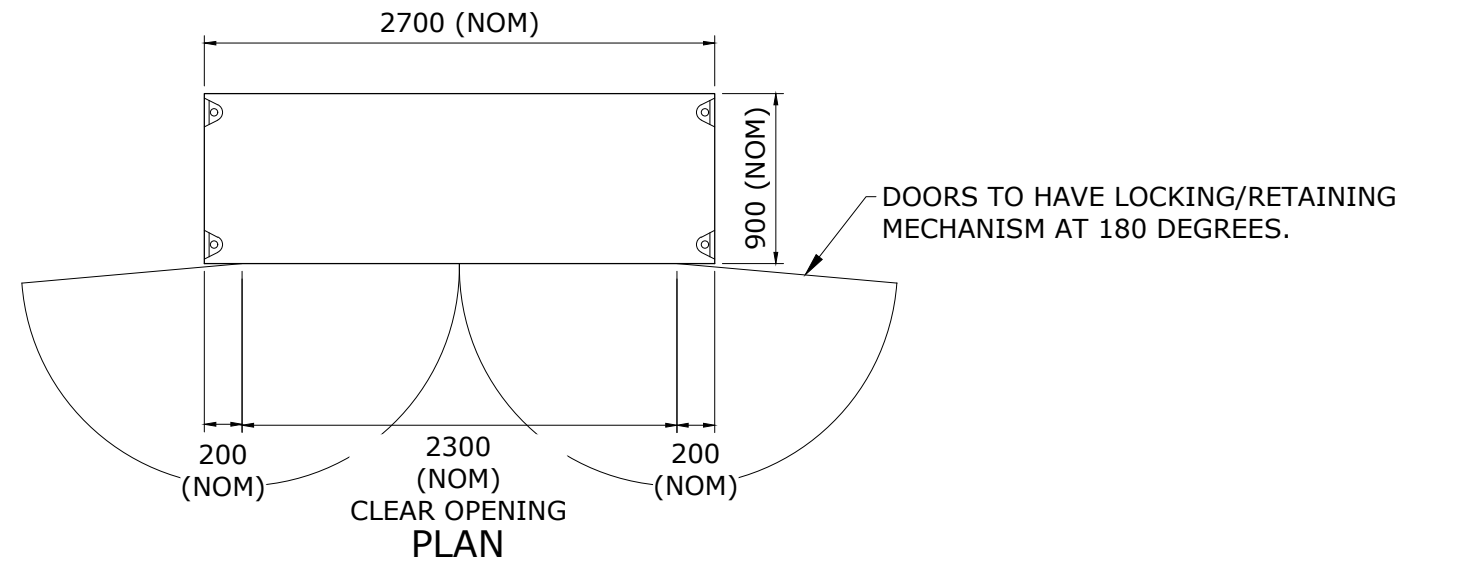
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DRAWING No.				VERSION
SEQ-WAT-1310-2				C
NOT TO SCALE				ORG DATE: 1/1/2013



CABINET ASSEMBLY INSTRUCTION

REQUIREMENTS FOR FABRICATION OF CABINET:

1. ALL DIMENSIONS IN MILLIMETRES
2. ALL DIMENSIONS SHOWN ON THIS PLAN SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCE FABRICATION.
3. CABINET TO BE FABRICATED AS PER AUSTRALIAN STANDARD STRUCTURAL DESIGN REQUIREMENTS.
4. 3mm THICK ALUMINUM (MARINE GRADE) TO BE USED FOR FABRICATION.
5. ALL FIXINGS TO BE GRADE 316 STAINLESS STEEL.
6. ALL DOORS SHALL BE WEATHERPROOF, LOCKABLE (VANDAL-PROOF) AND CONFIRM WITH SEQ-SP KEYING REQUIREMENTS.
7. CABINET SHALL BE VANDAL PROOF.
8. LOCKS TO HAVE SEQ-SP COMMON KEYS.
9. ALL DOORS TO HAVE RETAINING MECHANISM TO ENABLE DOORS TO REMAIN OPEN AT 180 DEGREES.
10. ANTIPONDING ROOF.
11. PROVIDE APPROPRIATE VENTILATION.
12. LIFTING LUGS AS NECESSARY.
13. POWDER COATED EXTERIOR (MIST GREEN).
14. CABINET TO BE INSTALL ON CONCRETE WITH A WEATHERPROOF SEAL BETWEEN CONCRETE SLAB AND CABINET.
15. ALL MOUNTING BRACKETS TO BE INSTALLED INTERNALLY.
16. CABINET SHALL BE REMOVABLE.
17. MANUFACTURER TO TRANSPORT AND INSTALL ENCLOSURE UNDER DIRECTION OF SUPERINTENDENT.



CABINET - FABRICATING DETAILS

STAINLESS STEELWORK:

- SS1. ALL FASTENERS SET OR FIXED INTO CONCRETE SHALL BE GRADE 316 STAINLESS STEEL UNO.
- SS2. ALL STAINLESS STEEL BOLT ASSEMBLIES SHALL BE COATED WITH AN APPROVED ANTI-GALLING PASTE.
- SS3. ALL STAINLESS STEEL SHALL BE GRADE 316 IN ACCORDANCE WITH AS 1769 OR AS 2837 UNLESS SHOWN OTHERWISE.
- SS4. STAINLESS STEEL SURFACES SHALL HAVE THE SCALE REMOVED BY PICKLING AND SHALL BE PASSIVATED OR SURFACE TREATED TO PLACE THE ALLOY NEAR THE CATHODIC END OF THE GALVANIC SERIES. ALL AREAS OF STAINLESS STEEL WHICH ARE SUBSEQUENTLY MACHINED, GROUND OR WORKED IN ANY MANNER WHICH TENDS TO DESTROY THE ORIGINAL PASSIVATED CONDITION SHALL AGAIN BE PASSIVATED AS A FINAL CLEANING OPERATION. AFTER PASSIVATING, THE SURFACES SHALL BE FREE FROM PITTING OR SURFACE DEFECTS.

REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	NOT APPLICABLE TO LCC, NOT FOR CONSTRUCTION AND CoGC AND UU IN TITLE BLOCK	
B	17/07/19	DOORS CLEAR OPENING NOTED	B.M.

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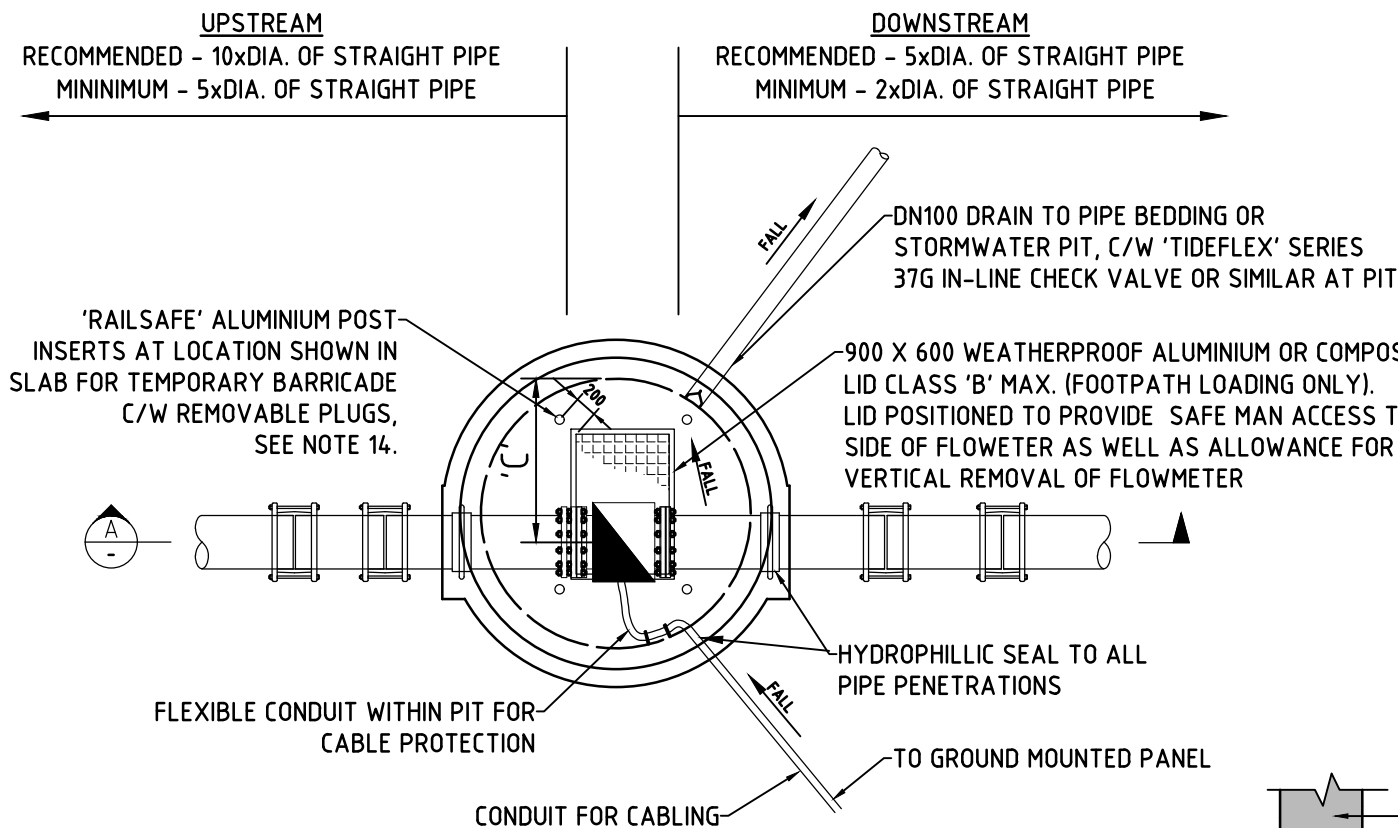
WATER SUPPLY STANDARD DRAWING

TYPICAL APPURTENANCE INSTALLATION

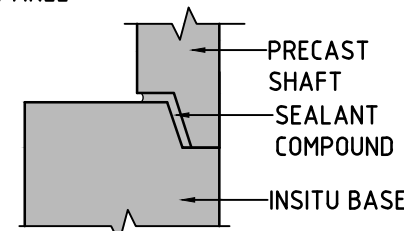
ACTIVE PRESSURE REDUCING VALVES (PRV)

ABOVE GROUND CABINET DETAILS

CoGC	LCC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1310-3				C
NOT TO SCALE				ORG DATE: 1/1/2013



GENERAL ARRANGEMENT PLAN
NOT TO SCALE

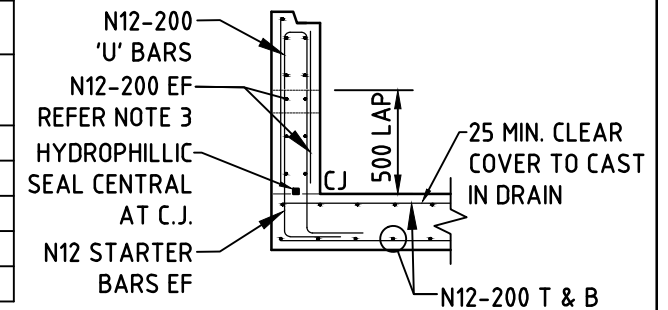


TYPICAL JOINT DETAIL
NOT TO SCALE
(APPLY SEALANT TO SLOPING EDGE ONCE JOINT SURFACES ARE CLEANED)

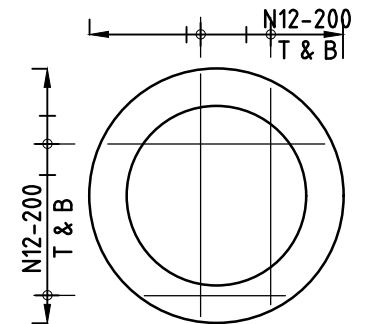
NOTES:

1. FLOWMETER SHALL NOT BE INSTALLED IN TRAFFICABLE AREAS WHERE AN ALTERNATIVE LOCATION IS AVAILABLE. CLASS OF CHAMBER TO SUIT PROPOSED LOCATION (MIN CLASS B).
2. CONCRETE FOR BASE SHALL BE N32 GRADE.
3. ALL STEEL REINFORCING TO COMPLY WITH REQUIREMENTS OF AS 4671.
4. REINFORCEMENT TO BE CUT OR SPACED TO CLEAR PIPEWORK WHERE NECESSARY. WHERE REINFORCEMENT IS CUT, ADDITIONAL TRIMMER BARS SHALL BE PLACED EITHER SIDE OF THE CUT BAR. THESE TRIMMER BARS SHALL BE DEVELOPED A MINIMUM OF 300 mm EITHER SIDE OF THE PENETRATION.
5. 40 MIN. COVER TO REINFORCEMENT TYPICAL, 60 MIN. COVER CAST AGAINST GROUND.
6. INTERNAL DIAMETERS OF FLOWMETER AND ADJOINING PIPEWORK TO MATCH.
7. FLOWMETER LOGGER/CABLE & CONDUIT LOCATION TO BE ADVISED BY SEQ-SP, PRIOR TO CONSTRUCTION.
8. EARTHING RINGS SHALL BE PROVIDED AS PER MANUFACTURERS INSTRUCTIONS.
9. ALL FLOWMETER INSTALLATIONS TO BE COMPLETED BY PERSONNEL ACCREDITED WITH FLOWMETER INSTALLERS CERTIFICATE.
10. TO PROVIDE SUBMERGENCE PROTECTION, FLOWMETER TO BE PACKED WITH 'DENSO MASTIC' AND WRAPPED WITH 'DENSO TAPE' OR SIMILAR ENSURING FLOWMETER BODY, FLANGES AND BOLTS ARE COMPLETELY COVERED, IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS. THIS REQUIREMENT CAN BE WAIVED SUBJECT TO CONFIRMATION FROM THE MANUFACTURER THAT THERE IS NO NEED FOR SUBMERGENCE PROTECTION.
11. ALL JUNCTION BOXES TO BE S/STEEL 316 IP68 CERTIFIED.
12. FLOWMETER CABLE LENGTH TO BE SPECIFIED.
13. REFER TO FLOWMETER MANUFACTURER FOR GASKET TYPE.
14. COGC AND LCC - NO DAVIT BASE, 'RAILSAFE' OR SIMILAR TEMPORARY BARRICADE INSERTS, AND FALL ARREST ANCHOR POINTS ARE REQUIRED. COGC REQUIRES HINGED GRATES ARE TO BE INSTALLED UNDER COVERS SEE SEQ-WAT-1319 DRAWING SET.

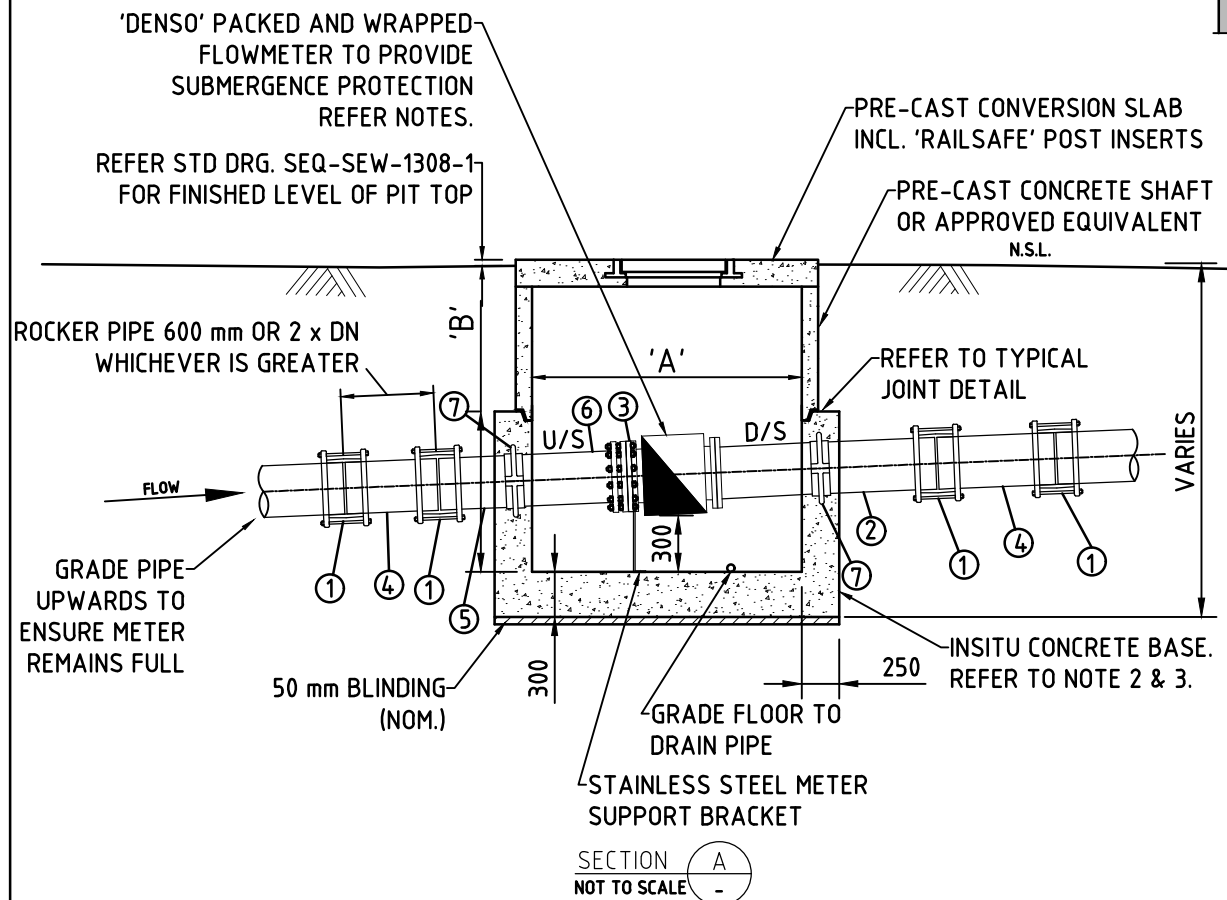
SHAFT/PIT/PIPE SETOUT			
PIPE DN (mm)	'A' (mm)	'B' (mm)	'C' (mm)
100	1200	900	800
150	1200	900	800
200	1500	1000	1000
250	1500	1200	1000
300	1800	1300	1200



BASE TO WALL REINFORCEMENT DETAIL
NOT TO SCALE



CONCRETE BASE REINFORCEMENT PLAN
NOT TO SCALE



SCHEDULE OF FITTINGS					
ITEM	QTY	DESCRIPTION	MATERIAL	STANDARD	PN RATING (MIN.)
1	4	DN?? ELONGATED GIBALT JOINT	DI FBE	AS4998	PN16
2	1	DN?? PIPE (FL-SP) SPOOL PIECE (LENGTH 2xDN MIN. DOWNSTREAM)	DI FBE	AS2280	PN16
3	1	DN?? SEQ SP APPROVED FLOWMETER (FL-FL) IP68 C/W 316 S/STEEL JUNCTION BOX			PN16
4	2	DN?? PIPE (SP-SP) ROCKER PIPE			PN16
5	1	DN?? PIPE (SP-SP) SPOOL PIECE (LENGTH 5xDN MIN. UPSTREAM)	DI FBE	AS2280	PN16
6	1	DN?? NON-THRUST DISMANTLING JOINT	DI FBE	AS2998	PN16
7	2	DN?? THRUST FLANGE	DI FBE	AS4998	PN16

FBE: FUSION BONDED EPOXY COATING

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	NOTES 1 & 10. NEW NOTE 14. NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	

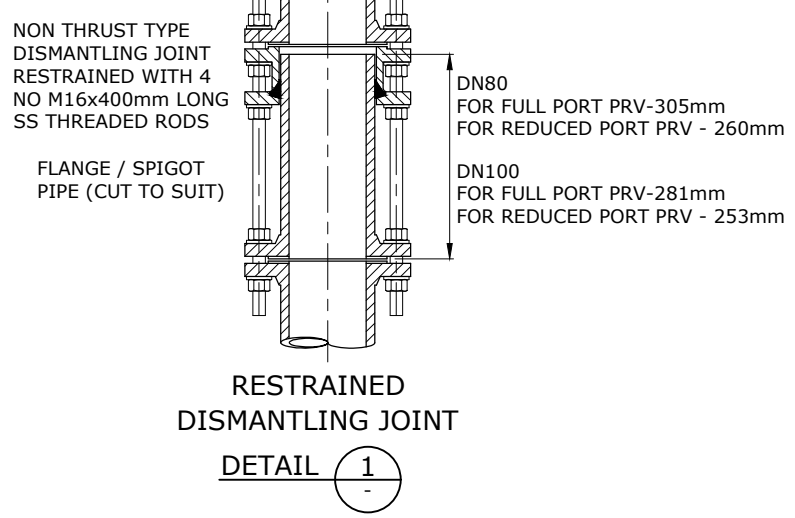
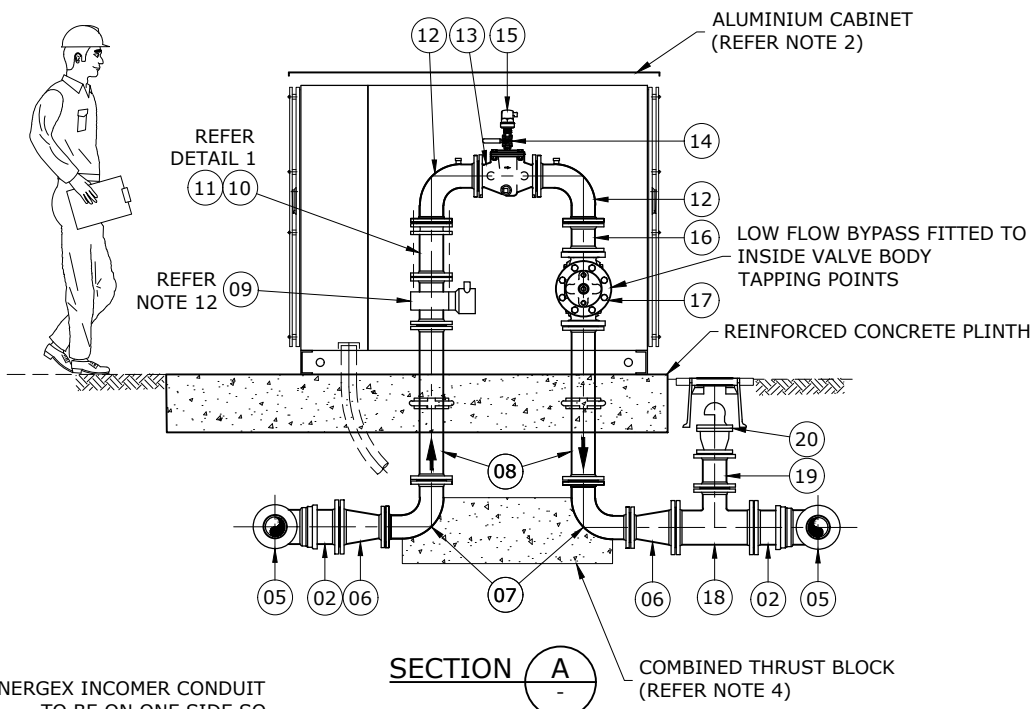
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WATER SUPPLY STANDARD DRAWING
TYPICAL APPURTENANCE INSTALLATION
FLOWMETER DETAILS
BELOW GROUND INSTALLATION

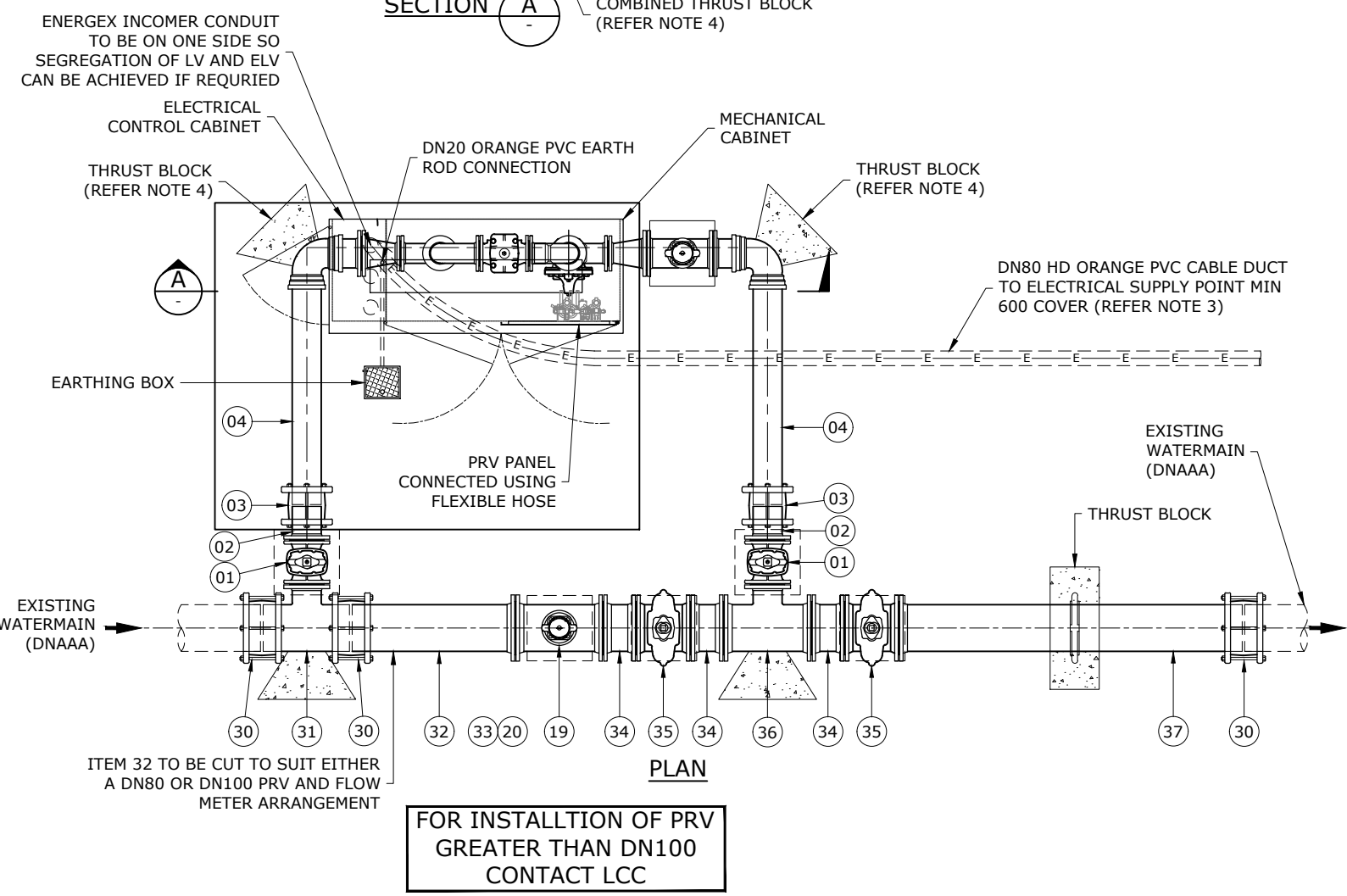
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1310-4				B
NOT TO SCALE				ORG DATE: 27/02/2014

SINGLE PRV, FLOW METER AND TELEMETRY CABINET

(TO BE INSTALLED BY ELECTRICAL SUBCONTRACTOR) REFER NOTE 2



PIPE AND FITTINGS SCHEDULE					
ITEM	DESCRIPTION	SIZE DN80 PRV	SIZE DN100 PRV	MATERIAL	QTY
01	FL-FL SLUICE VALVE c/w EXTENSION SPINDLE AND SURFACE BOX	DN150	DN150	DIFBE	2
02	FL-SP CONNECTOR	DN150	DN150	DIFBE	4
03	VARI-GIB COUPLING	DN150	DN150	SS/DI	2
04	SP-SP PIPE (OPTIONAL - LENGTH TO SUIT SITE CONDITIONS)	DN150	DN150	DICL	2
05	SO-SO 90° BEND	DN150	DN150	DIFBE	2
06	FL-FL CONCENTRIC REDUCER	DN150xDN80	DN150xDN100	DIFBE	2
07	FL-FL 90° BEND	DN80	DN100	DIFBE	2
08	FL-FL PIPE 750mm LONG WITH THRUST FLANGE 400mm FROM ONE END (LENGTH TO SUIT SITE CONDITIONS)	DN80	DN100	DIFBE	2
09	FLOW METER COMPLETE WITH EARTHING RINGS	DN80	DN100	DIFBE	1
10	FL-SP PIPE LENGTH TO SUIT (SEE DETAIL 1)	DN80	DN100	DIFBE	1
11	NON THRUST DISMANTLING JOINT c/w 4 x M16 STUD BAR 400mm LONG	DN80	DN100	DIFBE	1
12	FL-FL 90° BEND C/W 1" FEMALE THREADED TAPPING WITH PLUG	DN80	DN100	DIFBE	2
13	CLA-VAL X43H STRAINER	DN80	DN100	DIFBE	1
14	ISOLATION BALL VALVE	DN20	DN20	SS	1
15	ARI S50-B AUTO AIR RELEASE VALVE	DN20	DN20	CI/NYLON	1
16	FL-FL PIPE 150mm LONG	DN80	DN100	DIFBE	1
17	CLA-VAL PRV (REFER NOTE 14 & 15)	DN80	DN100	DIFBE	1
18	FL-FLxFL REDUCING TEE	DN150xDN100	DN150xDN100	DIFBE	1
19	FL-FL RISER PIPE 200mm LONG (LENGTH TO SUIT SITE CONDITIONS)	DN100	DN100	DIFBE	2
20	HYDRANT c/w SURFACE BOX (REFER NOTE 1)	DN100	DN100	DIFBE	2
30	VARI-GIB COUPLING	DNAAA	DNAAA	SS/DI	3
31	REDUCING TEE SP-SPxFL	DNAAAxDN150	DNAAAxDN150	DIFBE	1
32	FL-SP PIPE 1000 LONG (CUT TO SUIT ON SITE)	DNAAA	DNAAA	DICL	1
33	FL-FLxFL REDUCING TEE	DNAAAxDN100	DNAAAxDN100	DIFBE	1
34	PIPE FL-FL 150 LONG	DNAAA	DNAAA	DIFBE	3
35	FL-FL SLUICE VALVE c/w EXTENSION SPINDLE AND SURFACE BOX	DNAAA	DNAAA	DIFBE	2
36	FL-FLxFL TEE (REFER NOTE 16)	DNAAAxDN150	DNAAAxDN150	DIFBE	1
37	FL-SP PIPE 2000 LONG (CUT TO SUIT ON SITE) WITH THRUST FLANGE CENTRALLY LOCATED	DNAAA	DNAAA	DICL	1



- NOTES**
- FOR TYPICAL VALVE AND HYDRANT INSTALLATION DETAILS, REFER TO SEQ CODE DWG SEQ-WAT-1301-1 AND 1302-1 .
 - FOR CABINET CONSTRUCTION DETAILS, REFER TO SEQ CODE DWG SEQ-WAT-1310-8 TO 10.
 - PVC ELECTRICAL CONDUITS TO BE TEMPORARILY CAPPED AT EACH END FOR ELECTRICAL CONNECTION.
 - FOR TYPICAL THRUST BLOCK DETAILS REFER TO SEQ CODE DWG SEQ-WAT-1205-1 AND SEQ-WAT-1206-1.
 - FOR CONSTRUCTION OF CABINET PLINTH DETAILS REFER TO SEQ CODE DWG SEQ-WAT-1310-7.
 - LOCATION OF CONCRETE PLINTH TO BE DETERMINED ON SITE BY THE ENGINEER.
 - DN80 ENERGEX SUPPLY CONDUIT SHALL CONFORM TO THE REQUIREMENTS OF THE ENERGEX UNDERGROUND DISTRIBUTION CONSTRUCTION MANUAL. CONDUIT TO CONNECT TO THE POWER POLE ON THE NON TRAFFIC SIDE.
 - CONDUIT LOCATION SHOWN ON THE SITE LAYOUT DRAWINGS ARE INDICATIVE ONLY AND WILL BE CONFIRMED ON SITE BY THE ENGINEER.
 - HEAVY DUTY PVC CONDUIT TO BE CAST INTO CONCRETE PLINTH.
 - ALL CONDUIT STUBS FITTED WITH END CAPS TO PREVENT INGRESS OF MOISTURE AND SOIL. SUB CONTRACTOR TO INSTALL DRAW WIRES IN POWER CONDUITS.
 - CABINET TELEMETRY SECTION TO BE CONSTRUCTED AS DETAILED ON INDIVIDUAL SITE DRAWINGS.
 - FLOW METER TO BE INSTALLED WITH EARTHING RINGS. SEQ CODE D&C STD DWG SEQ WAT-1309-3.
 - LOCATION, DEPTH, SIZE AND MATERIAL OF EXISTING MAINS TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 - PRV CLAVAL MODEL 3690-11(FULL PORT) OR 390-11 (REDUCED PORT) AS REQUIRED BY THE PERFORMANCE OF THE DMA AND APPROVED BY THE WATER AUTHORITY. THE SIZING OF PRV SHALL BE SELECTED BASED ON PREDICTED FLOW REGIME.
 - PRV CLAVAL MODEL AND SIZE TO BE CONFIRMED PRIOR TO DELIVERY/ INSTALLATION.
 - COMBI VALVE FITTINGS CAN BE USED IN PLACE OF A TEE AND VALVES WHERE FEASIBLE.
 - ALL ELECTRICAL AND TELEMETRY CONTROLS TO BE PROVIDED AS PART OF THE PRV INSTALLATION. REFER TO THE RELEVANT WATER AUTHORITY FOR ELECTRICAL AND TELEMETRY SPECIFICATIONS.
 - TELEMETRY TO INTEGRATED INTO WATER AUTHORITY SCADA BY APPROVED SUBCONTRACTOR.
 - ANTENNA IF REQUIRED TO BE AS PER SEQ-WAT-1310-7.
 - FOR INSTALLATIONS NOT IN ROAD RESERVES, INFRASTRUCTURE TO BE LOCATED ON FREEHOLD TITLE TO SEQ-SP.
 - MINIMUM OFFSETS TO PROPERTY BOUNDARIES TO BE 50MM FOR ALL INFRASTRUCTURE AND ANCILLARIES.
 - THE LOCATION AND ELEVATION OF PRESSURE SENSORS AT EVERY PRV SHALL BE SHOWN ON THE DESIGN AND AS-CONSTRUCTED DRAWING.
 - INSTALLATION LOCATION TO PROVIDE SUFFICIENT ACCESS FOR OPERATION & MAINTENANCE OF VALVES.
 - THE CURRENT ACCEPTABLE METER, PRV/CONTROLLER/LOGGER/ SENSOR SPECIFICATION SHALL BE CONFIRMED WITH THE RELEVANT SEQ-SP AT THE DESIGN STAGE.

REV. No.	DATE	DESCRIPTION	AUTH.

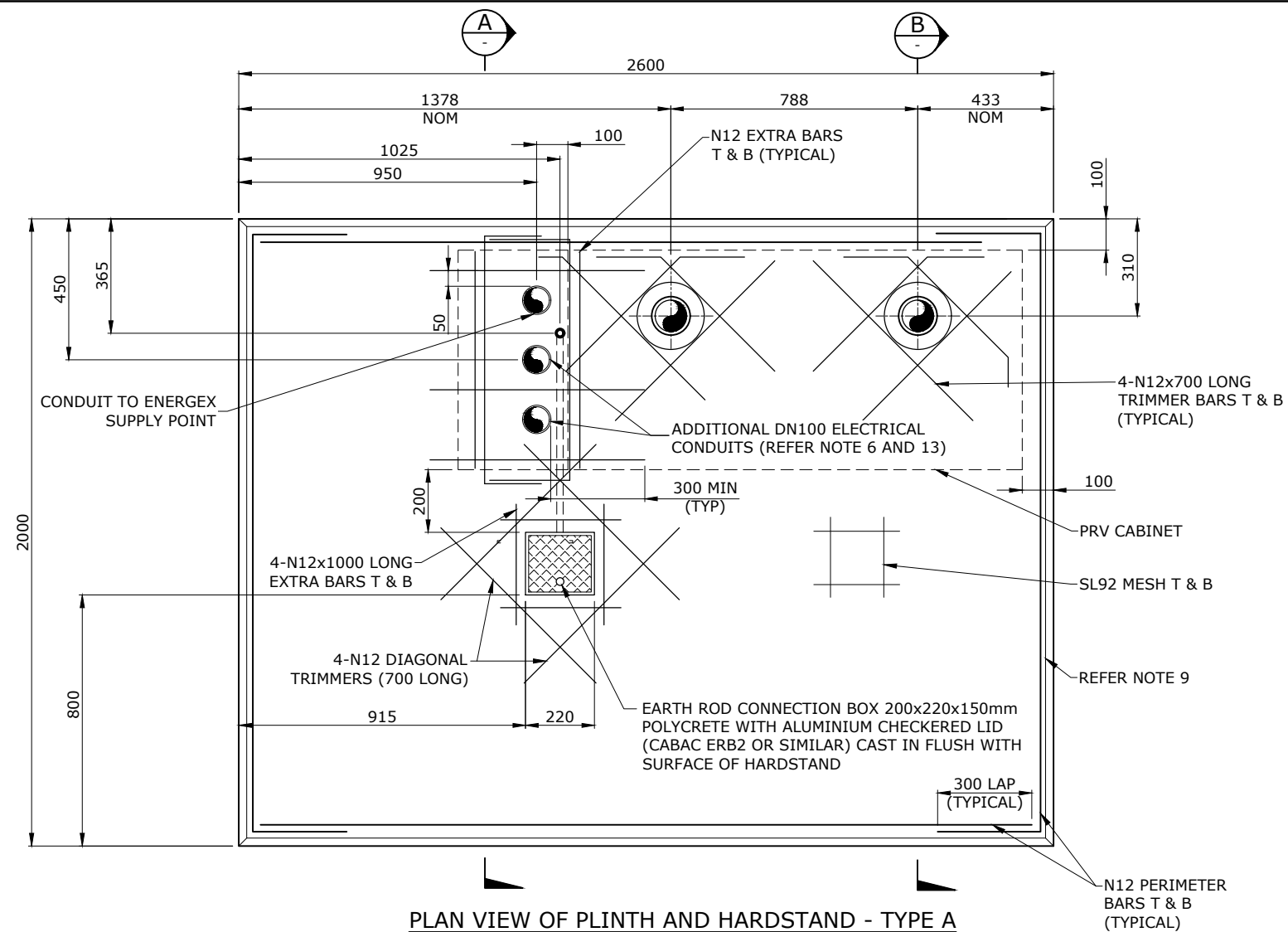
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WATER SUPPLY STANDARD DRAWING

PRV AND FLOW METER CABINET INSTALLATION
 DN80 AND DN100 PLAN AND DETAILS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1310-5				A
NOT TO SCALE				ORG DATE: 1/02/24



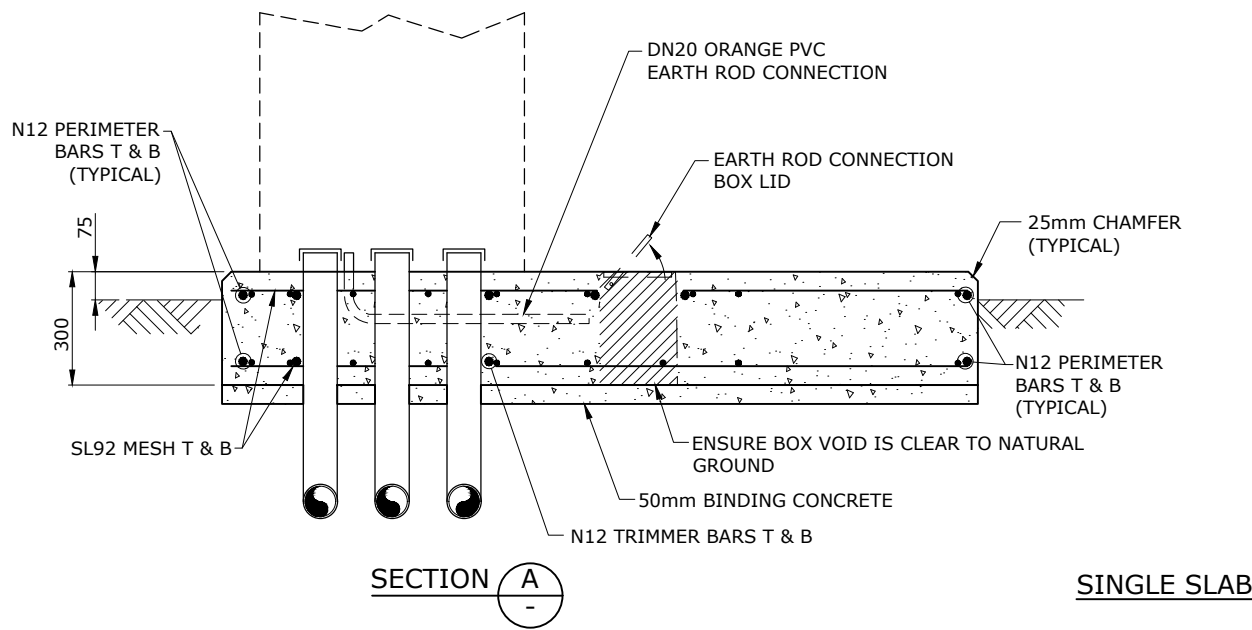
PLAN VIEW OF PLINTH AND HARDSTAND - TYPE A

NOTES

1. FOR PIPE AND CONDUIT DETAILS, REFER TO PIPEWORK DETAIL DRAWINGS.
2. ALL CONCRETE SHALL BE A MINIMUM GRADE N32/20. COVER TO REINFORCING SHALL BE 50mm U.N.O.
3. LOCATION OF CONCRETE PLINTH TO BE DETERMINED ON SITE BY THE ENGINEER.
4. CONDUIT LOCATION SHOWN ON THE SITE LAYOUT DRAWINGS ARE INDICATIVE ONLY AND WILL BE CONFIRMED ON SITE BY THE ENGINEER.
5. PVC CONDUITS TO BE CAST INTO CONCRETE PLINTH.
6. CONDUITS SHOWN IN CONCRETE PLINTH ARE INDICATIVE ONLY AND NEED TO BE CONFIRMED ON SITE. ALL CONDUITS STUBS FITTED WITH END CAPS TO PREVENT INGRESS OF MOISTURE AND SOIL.
7. MINIMUM ALLOWABLE BEARING CAPACITY OF 50kPa SHALL BE CONFIRMED ON SITE BY A GEOTECHNICAL ENGINEER.
8. SUBCONTRACTOR TO INSTALL DRAW WIRES IN ALL SIGNAL AND POWER CONDUITS.
9. 25mm CHAMFER TO TOP EDGE OF CONCRETE PLINTH.
10. CABINET TELEMETRY SECTION TO BE CONSTRUCTED ON LEFT HAND END OR RIGHT HAND END OF CABINET DEPENDING ON PIPE WORK ARRANGEMENT AS DETAILED IN INDIVIDUAL SITE DRAWINGS.
11. CONCRETE DESIGN IS BASED ON EXPOSURE CLASSIFICATION B1 ABOVE GROUND AND A2 BELOW GROUND.
12. EDGE DISTANCE OF ALUMINUM CABINET BASE ANCHOR SHOULD NOT BE LESS THAN 100mm.
13. ADDITIONAL CONDUITS TO BE CAPPED AND EXTEND 500MM BEYOND EDGE OF CONCRETE SLAB. CONDUITS TO EXTEND EITHER IN FRONT OF THE TELEMETRY CABINET OR TO THE FRONT OF THE PIPEWORK CABINET.
14. GALVANIC CORROSION INSULATION WASHERS/FERRULES REQUIRED TO ELIMINATE GALVANIC CORROSION BETWEEN DISSIMILAR METALS.
15. CONTROL CABINET TO HAVE MINIMUM FORM OF SEGREGATION AS REQUIRED BY THE WATER AUTHORITY.

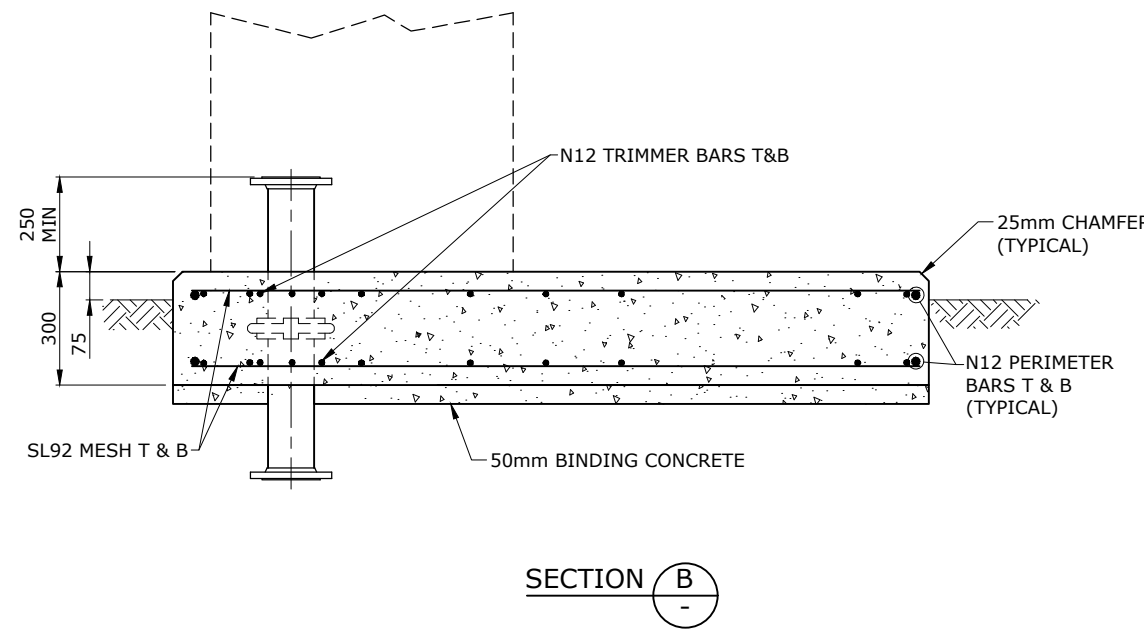
DESIGN WIND SPEED:

1. $V_{500} = 57\text{m/s}$
2. $V_{25} = 39\text{m/s}$
3. LIVE LOAD = 3kPa (NON-TRAFFICABLE)



SECTION A

SINGLE SLAB



SECTION B

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

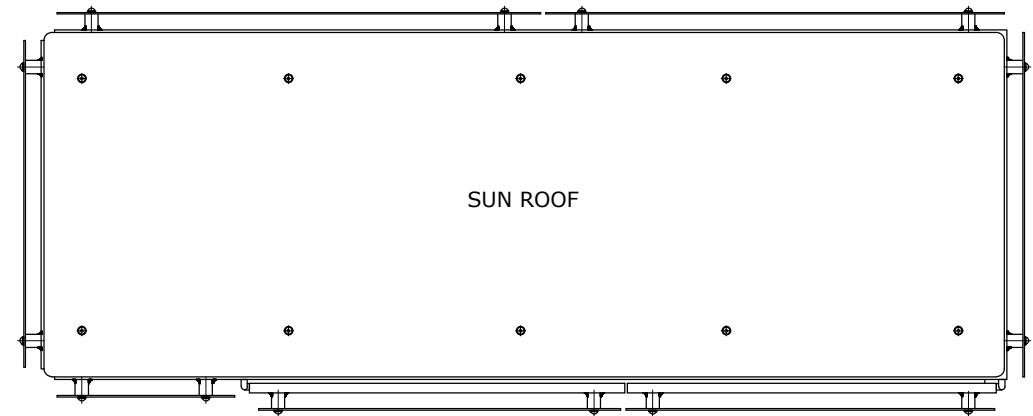
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WATER SUPPLY STANDARD DRAWING

FLOW METER CABINET INSTALLATION
TYPE A PLINTH DETAILS AND
TYPICAL CONDUIT INSTALLATION DETAILS

CoGC	LCC	RCC	UJ	DW
DRAWING No.				VERSION
SEQ-WAT-1310-6				A
NOT TO SCALE				ORG DATE: 01/02/24



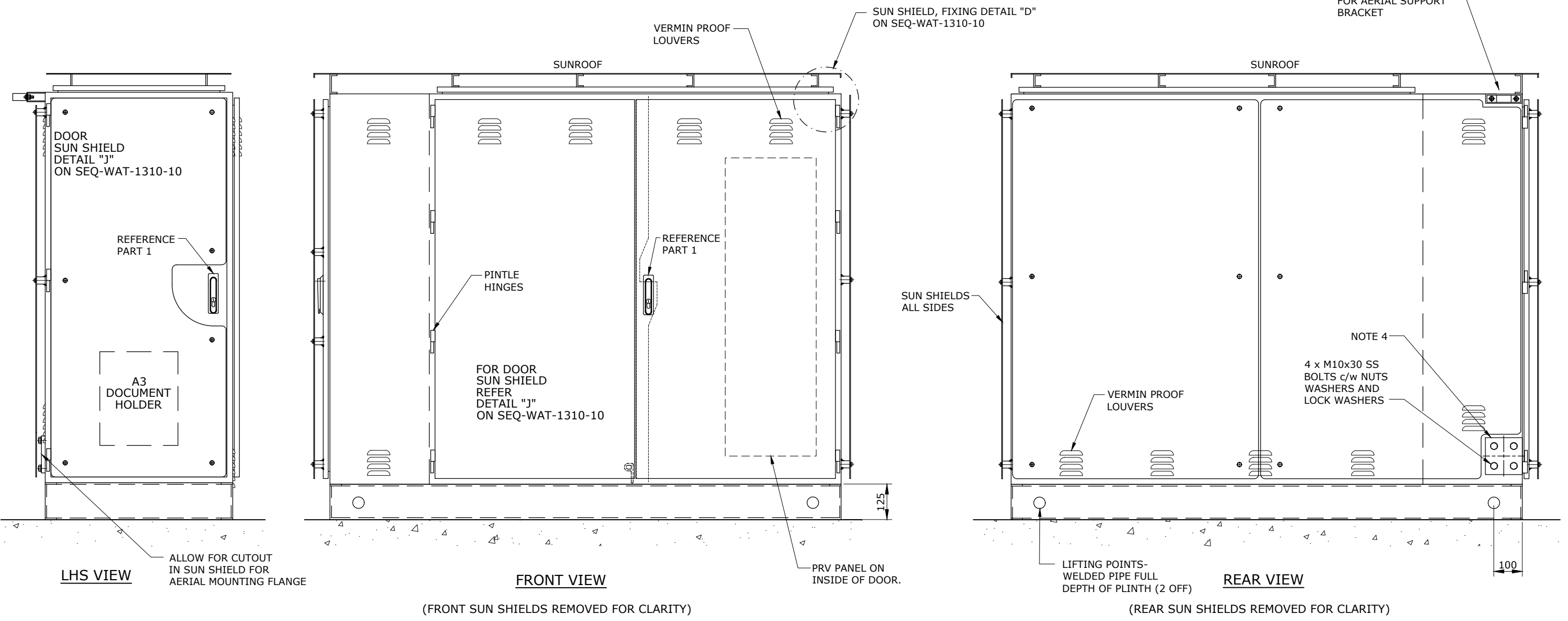
PLAN VIEW

C
1310-8

NOTES:

1. PLINTH TO BE 125mm x 40mm x 4mm ALUMINIUM.
2. ANTENNA PIPE AND PVC CONDUIT SHALL BE PAINTED TO SAME COLOUR AS CABINET.
3. ALLOW FOR CUTOUTS IN REAR SUN SHIELD FOR AERIAL MOUNTING FLANGE AND SUPPORT BRACKET.
4. BLANKING PLATE INSTALLED COVERING FUTURE AERIAL MOUNTING PENETRATION.

REF	PART	DESCRIPTION	QTY
1	SELECTRIX	1107SSU3-45 WITH DIRAK CYLINDER 211-9101-CL003	1



LHS VIEW

FRONT VIEW

REAR VIEW

(FRONT SUN SHIELDS REMOVED FOR CLARITY)

(REAR SUN SHIELDS REMOVED FOR CLARITY)

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

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WATER SUPPLY STANDARD DRAWING

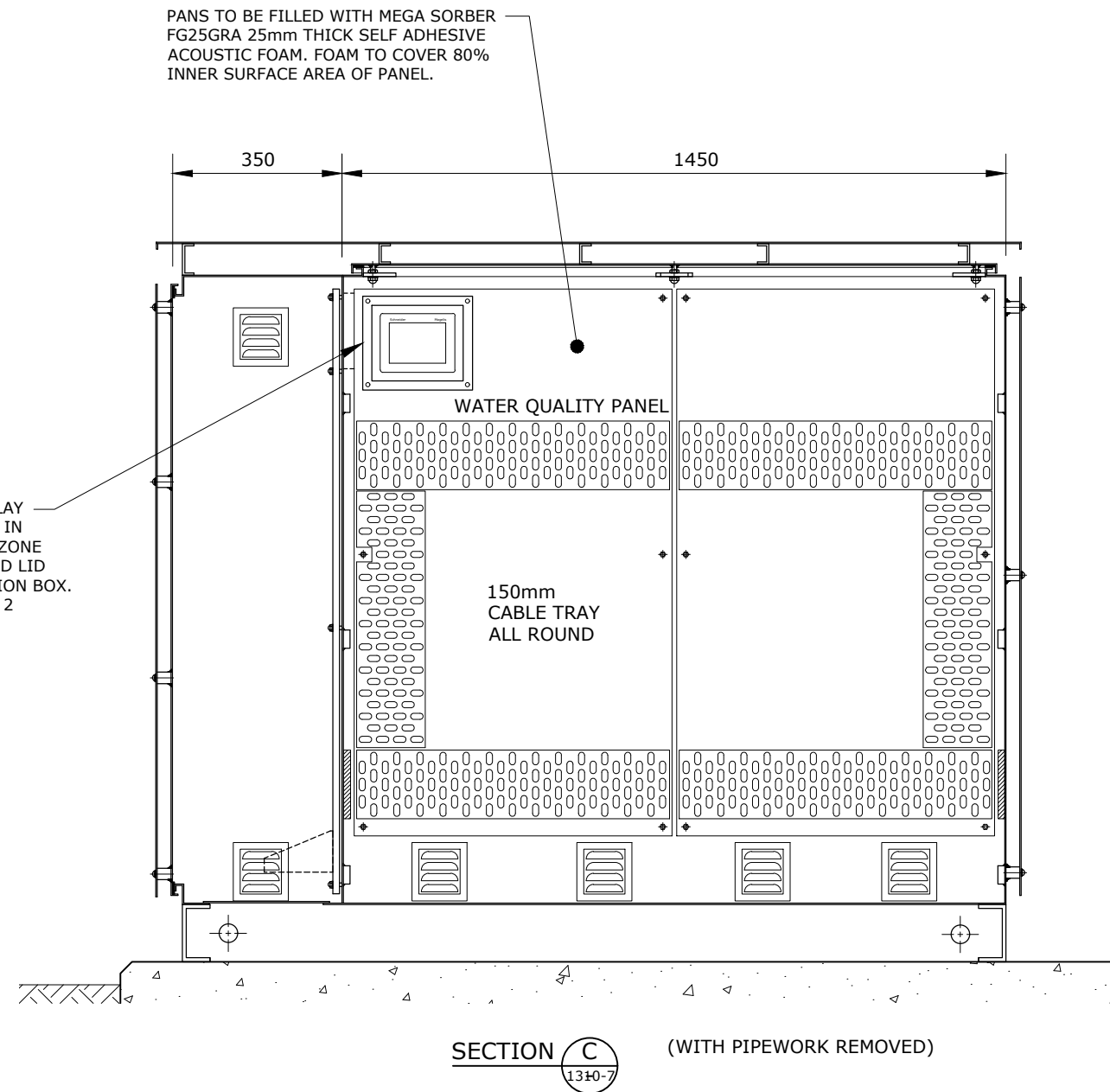
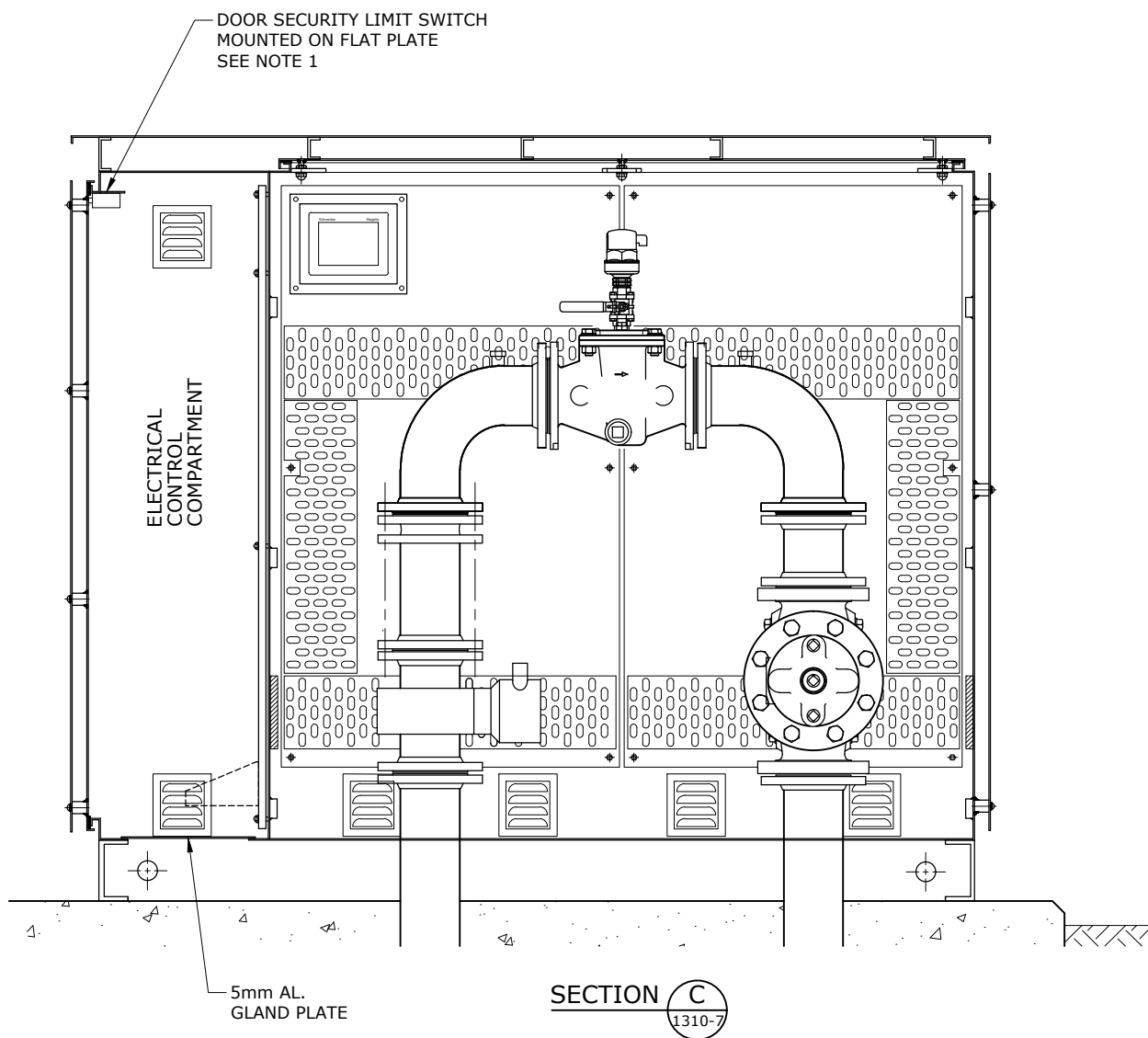
PRV AND FLOW METER CABINET INSTALLATION GENERAL ARRANGEMENT

SHEET 1 OF 2

CoGC	LCC	RCC	UJ	UW
DRAWING No.				VERSION
SEQ-WAT-1310-7				A
NOT TO SCALE				ORG DATE: 1/02/24

NOTES:

1. DOOR SECURITY SWITCH MOUNTED ON 50 x 50mm FLAT PLATE WELDED TO CUBICLE MULLION.
2. AN IP66 RATED BOX SECTION IS TO BE FABRICATED AND INSTALLED TO FACILITATE THE INSTALLATION OF THE HMI GRAPHIC UNIT WITHIN THE WET ZONE.



REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

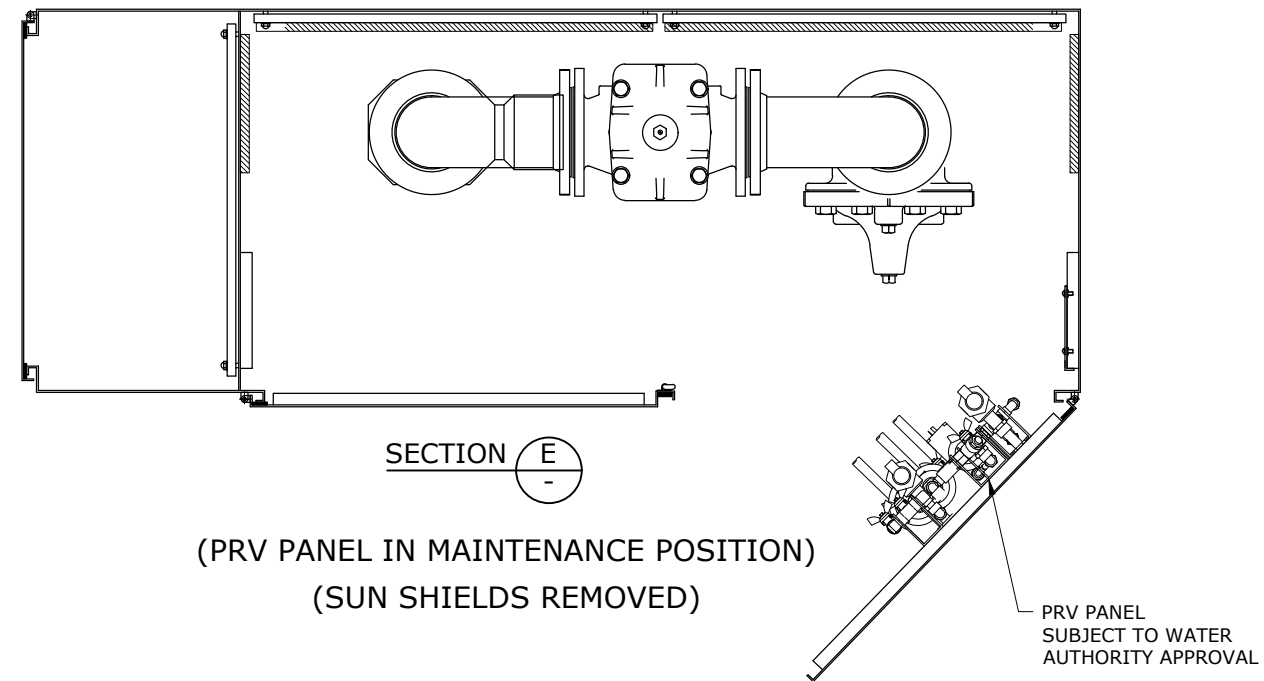
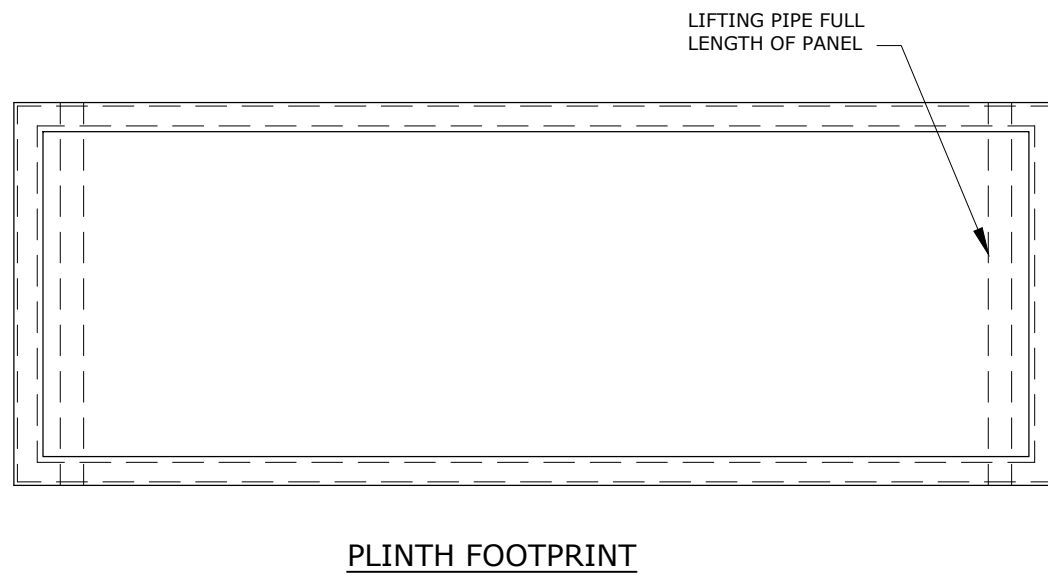
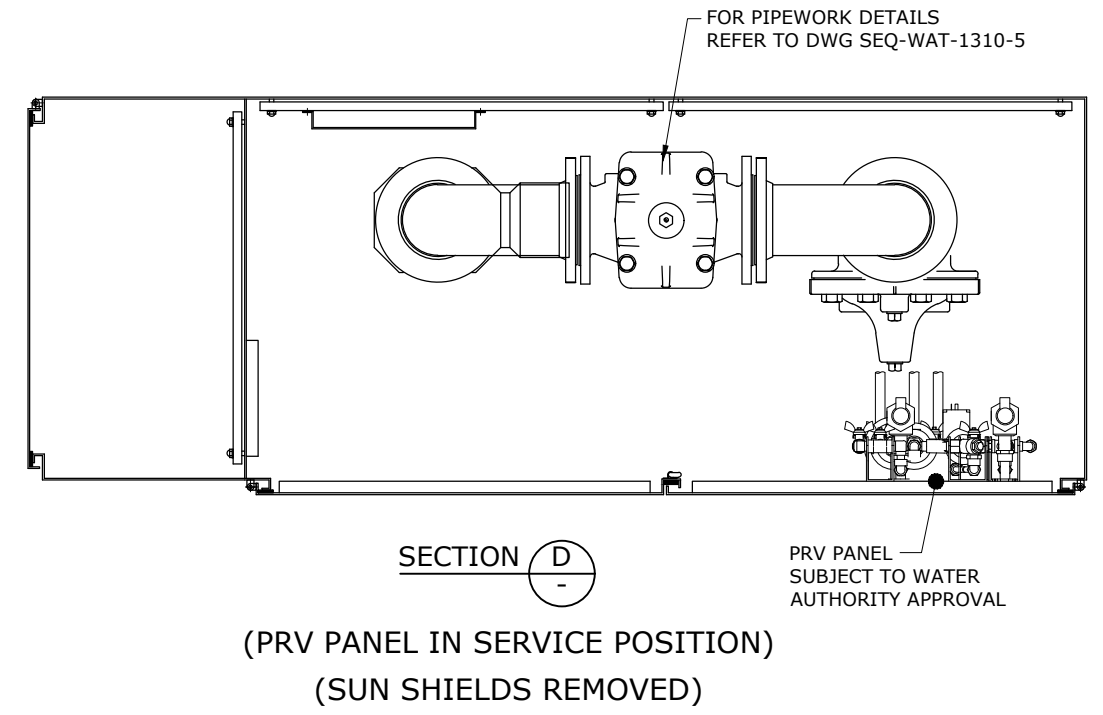
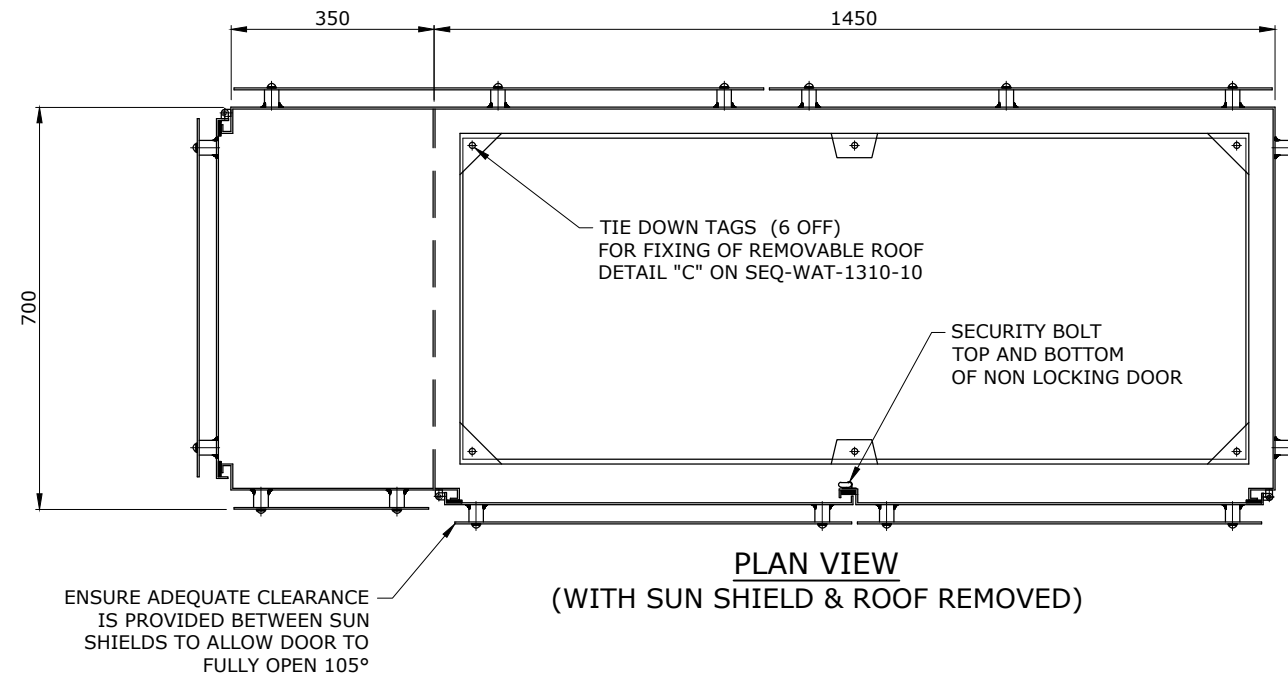
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 SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

PRV AND FLOW METER CABINET INSTALLATION GENERAL ARRANGEMENT

SHEET 2 OF 2

CoGC	LCC	RCC	UJ	DW
DRAWING No.				VERSION
SEQ-WAT-1310-8				A
NOT TO SCALE				ORG DATE: 1/02/24



REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL
 HEALTH & SAFETY LEGISLATION

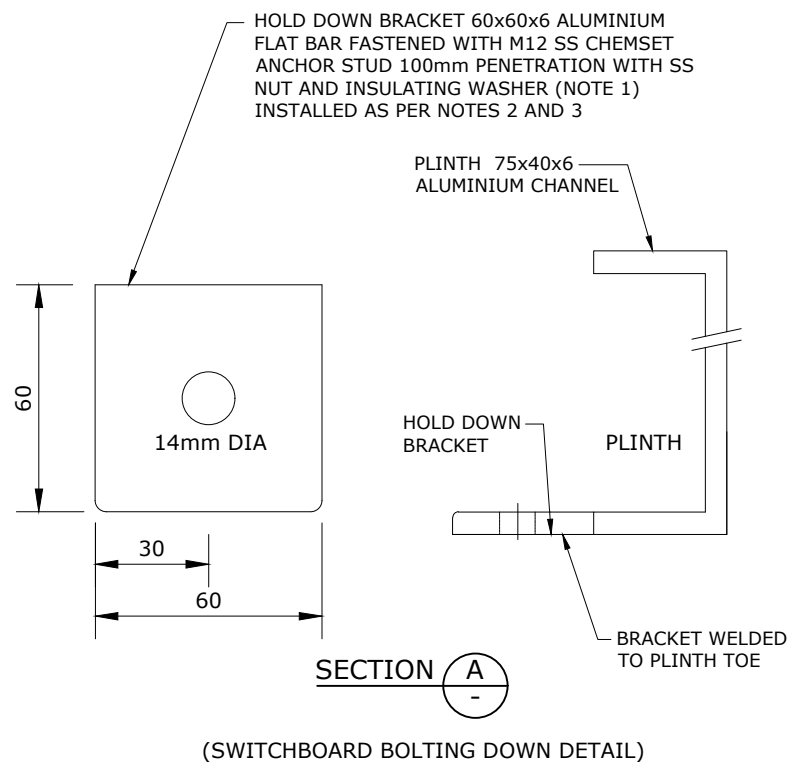
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 AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

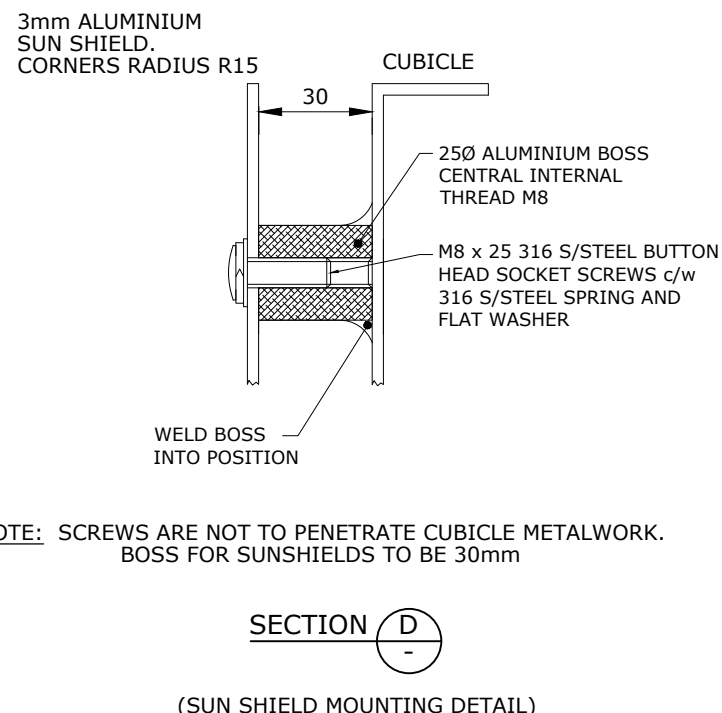
WATER SUPPLY STANDARD DRAWING

**PRV AND FLOW METER
 CABINET INSTALLATION
 VIEWS AND SECTIONS**

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1310-9				A
NOT TO SCALE				ORG DATE: 1/02/24

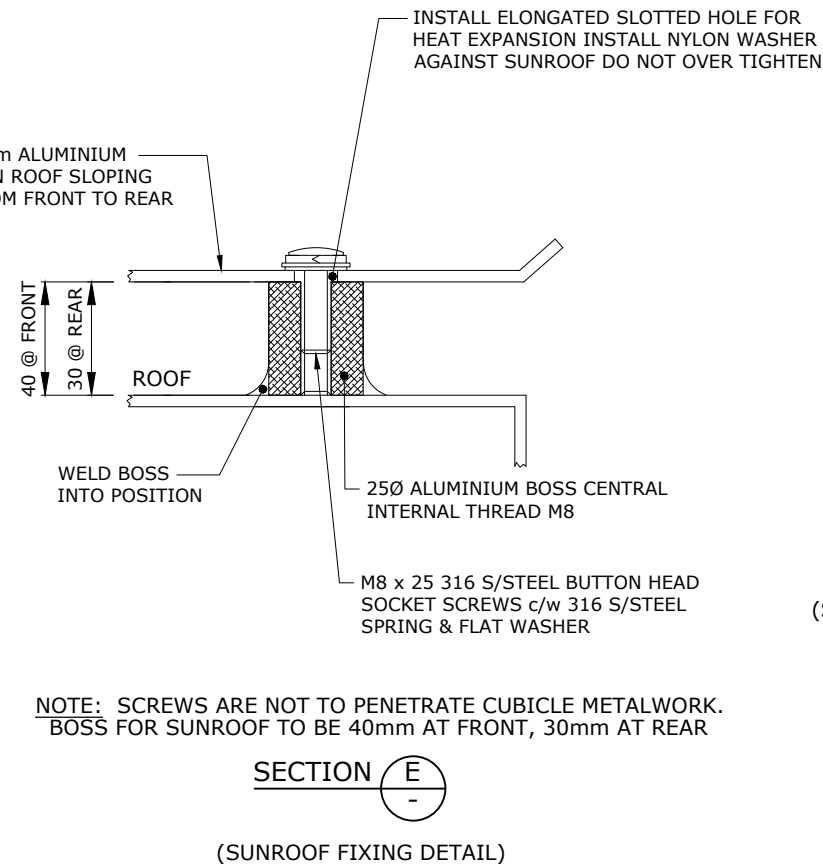


(SWITCHBOARD BOLTING DOWN DETAIL)



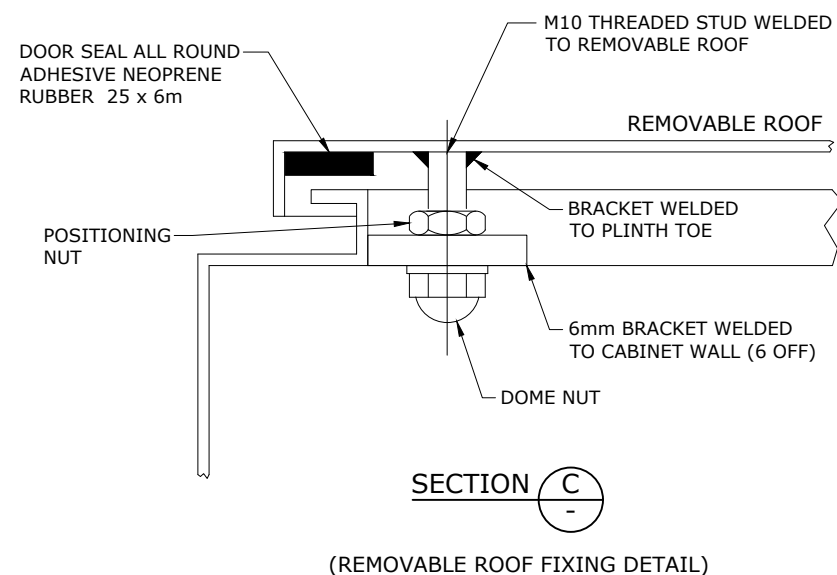
NOTE: SCREWS ARE NOT TO PENETRATE CUBICLE METALWORK. BOSS FOR SUNSHIELDS TO BE 30mm

(SUN SHIELD MOUNTING DETAIL)

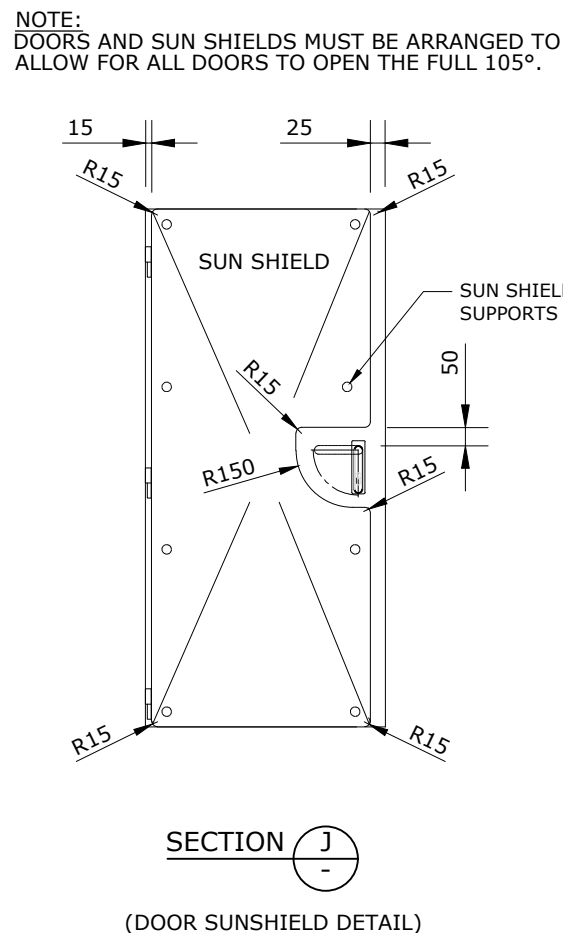


NOTE: SCREWS ARE NOT TO PENETRATE CUBICLE METALWORK. BOSS FOR SUNROOF TO BE 40mm AT FRONT, 30mm AT REAR

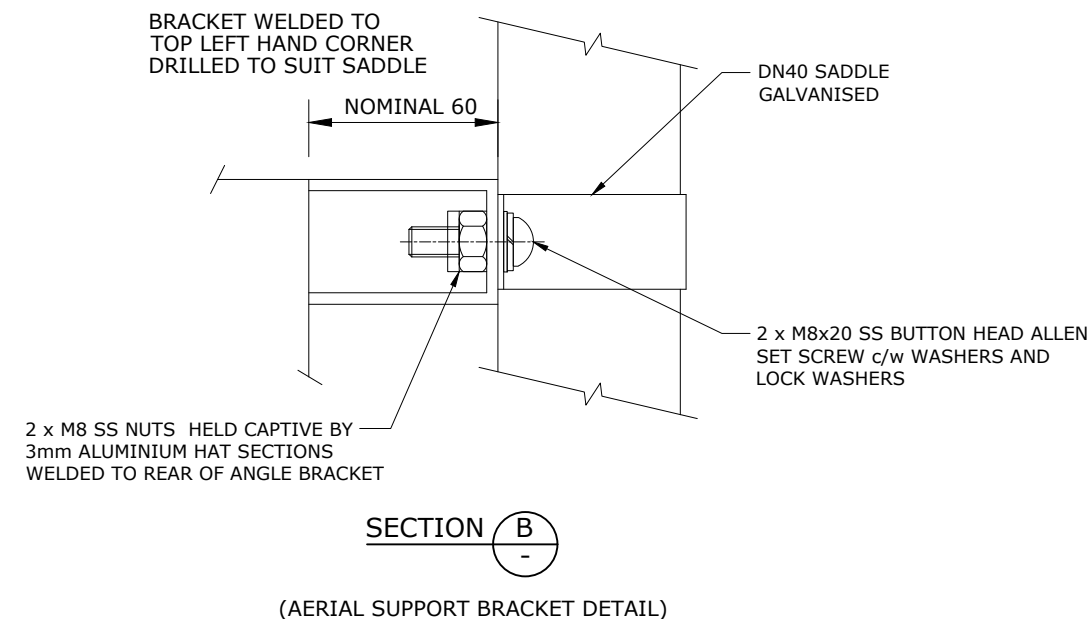
(SUNROOF FIXING DETAIL)



(REMOVABLE ROOF FIXING DETAIL)



(DOOR SUNSHIELD DETAIL)



(AERIAL SUPPORT BRACKET DETAIL)

- NOTES
1. INSULATING WASHERS MUST BE USED TO PREVENT GALVANIC CORROSION BETWEEN DISSIMILAR METAL.
 2. EPOXY ANCHORS/BOLTS SHALL BE AS PER THAT SPECIFIED ON THE DESIGN DRAWINGS AND INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
 3. REINFORCEMENT WITHIN THE CONCRETE SUBTRATE SHALL BE LOCATED USING A COVERMETER PRIOR TO DRILLING TO ENSURE THAT THE REINFORCING STEEL IS AVOIDED, CORING IS NOT PERMITTED UNDER ANY CIRCUMSTANCES.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

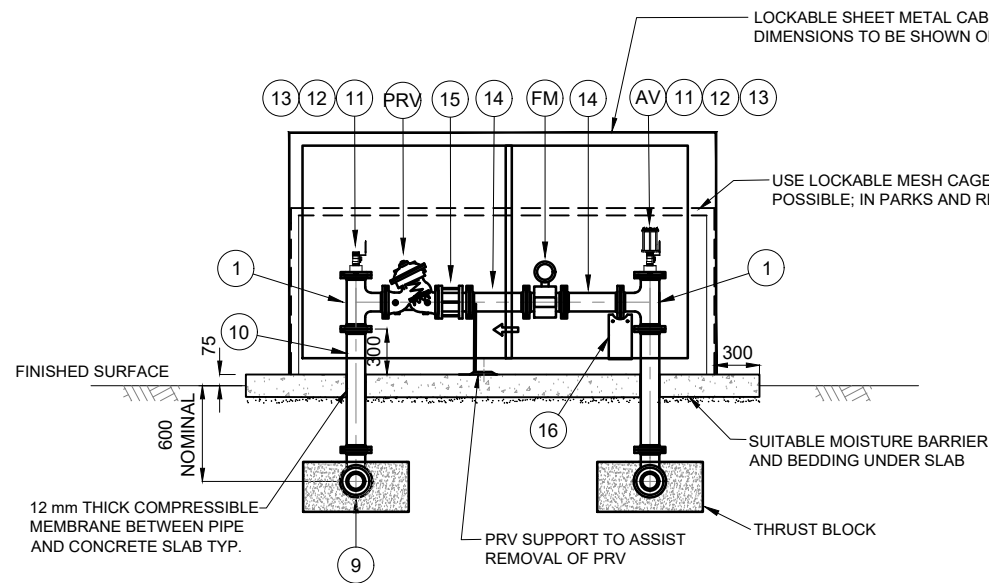
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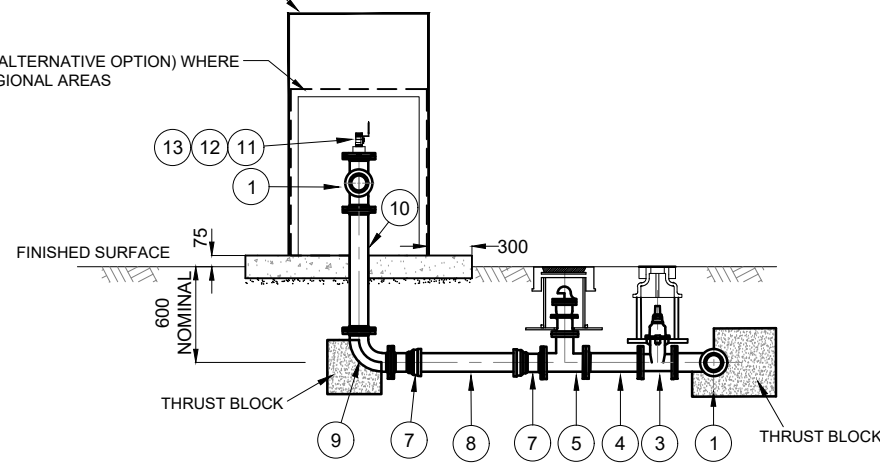
WATER SUPPLY STANDARD DRAWING

PRV AND FLOW METER CABINET INSTALLATION CONSTRUCTION DETAILS

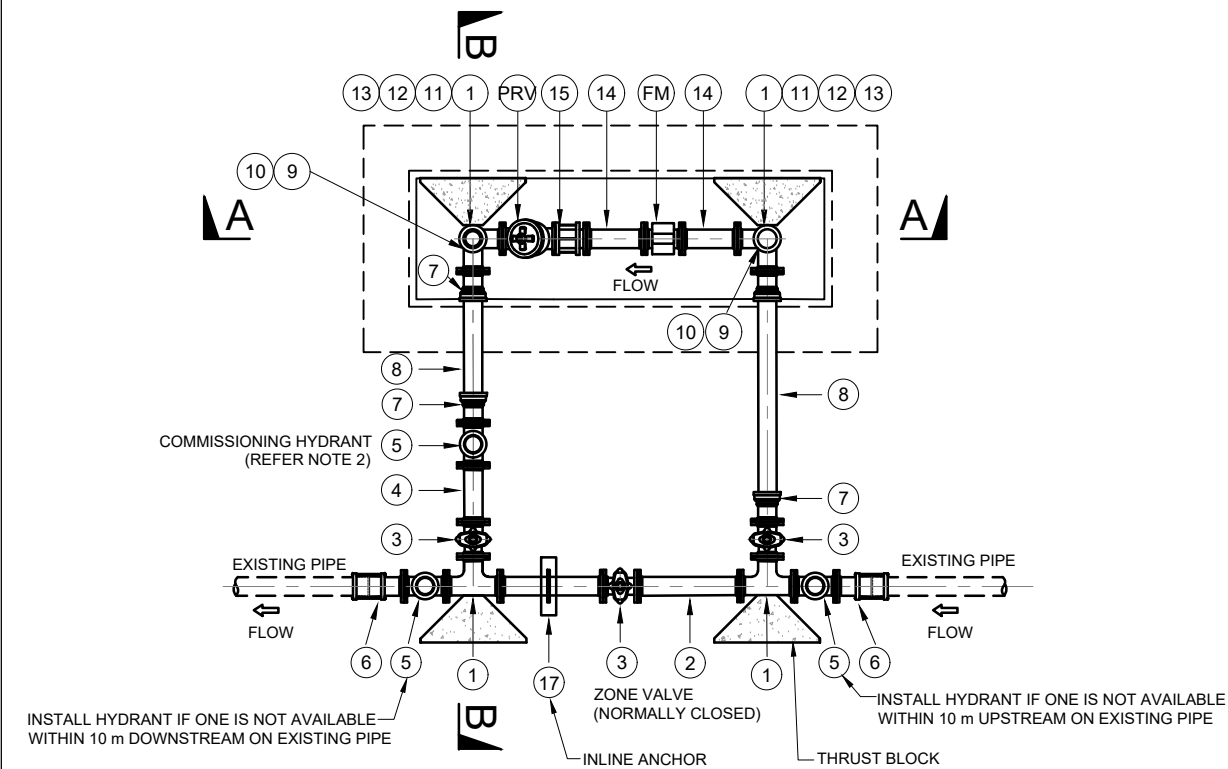
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DRAWING No.				VERSION
SEQ-WAT-1310-10				A
NOT TO SCALE				ORG DATE: 1/02/24



SECTION A-A
SCALE 1:50 (A3)

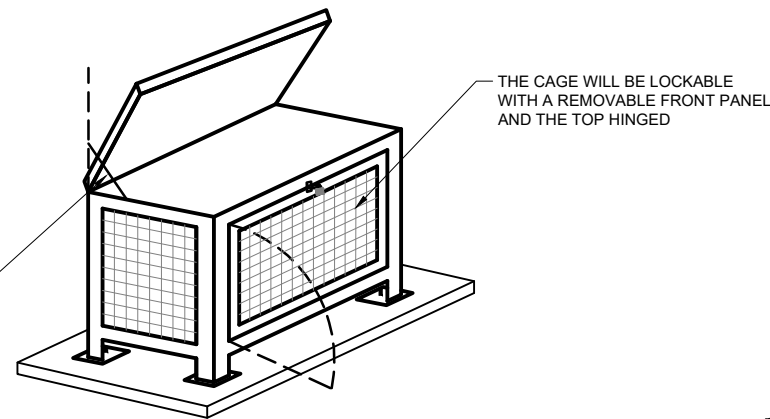


SECTION B-B
SCALE 1:50 (A3)

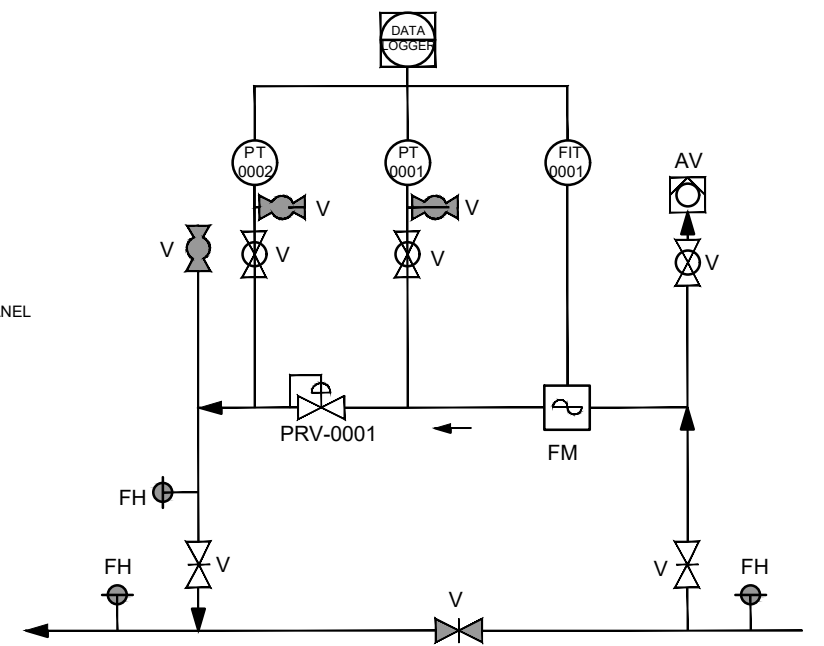


GENERAL ARRANGEMENT - PLAN VIEW
SCALE 1:50 (A3)

PRV/FM GENERAL ARRANGEMENT SCHEDULE	
No.	MATERIAL / DESCRIPTION
1	FL-FLxFL DI TEE
2	FL-FL DI PIPE (LENGTH TO SUIT)
3	FL-FL DI SLUICE VALVE
4	FL-FL DI PIPE 300 LONG
5	FL-FLxFL DI HYDRANT TEE
6	APPROVED CONNECTORS TO BE DESIGNED BASED ON EXISTING PIPE MATERIAL
7	FL-SOC DI CONNECTOR
8	SP-SP DI PIPE (LENGTH TO SUIT)
9	FL-FL DI 90° BEND
10	FL-FL PIPE 0.800 m LONG NOMINAL
11	GRADE 316 SS FLANGE c/w DN50 BSP TAPPING (KEE 050)
12	DN50 BSP GRADE 316 SS HEX NIPPLE NUT
13	DN50 BSP GRADE 316 SS BALL VALVE (BSP FEMALE)
14	FL-FL DI PIPE (MINIMUM LENGTH 2 X PIPE DIAMETER)
AV	DN50 VENT-O-MAT AIR VALVE (BSP MALE) OR AN APPROVED EQUIVALENT
FM	BATTERY POWERED OCTAVE FLOW METER OR AN APPROVED EQUIVALENT CONNECTED TO BATTERY POWERED NB-IoT DEVICE 4-20mA.
15	DISMANTLING JOINT (RESTRAINED TYPE)
PRV	SINGER 106-PR PRESSURE REDUCING VALVE (SUPPLIED WITH 1/4" BSP BALL VALVES, TEE PIECES, MECHANICAL PRESSURE GAUGES AND STAGNATION TUBES. (USE OF ALTERNATIVE PRV BRANDS SHALL BE CONFIRMED WITH SEQ SP.)
16	SEQ SP APPROVED DATA LOGGER (e.g. METASPHERE)
17	DI FL-FL PIPE WITH FACTORY FITTED PUDDLE FLANGE



GALVANISED PRV MESH CAGE
(INDICATIVE ONLY)



P&ID DIAGRAM

NOTES:

- RPEQ CERTIFIED DRAWINGS ARE REQUIRED BASED ON THIS CONCEPT DRAWING FOR SEQ SP'S APPROVAL PRIOR TO INSTALLATION OF THE PRV AND PIPEWORK ASSEMBLY.
- THE COMMISSIONING HYDRANT IS ONLY REQUIRED FOR DN150 PRVs AND ABOVE.
- INSTALL TWO (4-20mA) PRESSURE SENSORS/TRANSMITTERS ON THE PRV.
- ALL PRODUCTS NEED TO BE APPROVED BY SEQ SP ON THE CIVIL IPAM LIST.
- THE FOUNDATION SLAB AROUND THE PRV SHALL BE N32 MINIMUM CONCRETE GRADE AND MINIMUM 200mm THICK WITH REINFORCEMENT AND EDGE EMBEDMENT DEPTH TO BE DETERMINED BY THE RPEQ.
- SHEET METAL CABINET HOUSING FOR THE PRV WILL GENERALLY BE REQUIRED IN URBAN AREAS. WHERE POSSIBLE, IN PARKS AND REGIONAL AREAS, USE A GALVANISED STEEL MESH CAGE PROTECTION FOR THE PRV. THE OPTION CHOICE SHALL BE CONFIRMED WITH SEQ SP.

REQUIREMENTS FOR A GALVANISED STEEL MESH CAGE:

- THE MESH CAGE SHALL BE DESIGNED TO BE REMOVABLE. THE DESIGN SHALL ALLOW EASE OF MAINTENANCE WITH THE TOP PANEL OF THE CAGE TO BE HINGED AND THE FRONT PANEL REMOVABLE.
- THE MESH CAGE SHALL BE BOLTED TO THE CONCRETE WITH BASE PLATES; WITH A BITUMINOUS SHIM BETWEEN THE SLAB AND BASE PLATES TO MINIMISE CORROSION.
- A PRELIMINARY DESIGN OF THE MESH CAGE SHALL BE PROVIDED TO SEQ SP FOR APPROVAL PRIOR TO ITS FINAL DESIGN AND FABRICATION.

REQUIREMENTS FOR A SHEET METAL CABINET:

- THE CABINET SHALL BE FABRICATED USING 3mm THICK (MINIMUM), MARINE GRADE, ALUMINUM SHEETS. FABRICATION, LIFTING LUGS AND FIXINGS DESIGN SHALL BE TO AUSTRALIAN STANDARDS FOR STRUCTURAL DESIGN LOADS.
- THE CABINET SHALL BE REMOVABLE; WITH LIFTING LUGS PROVIDED.
- THE CABINET MOUNTING BRACKETS SHALL BE INSTALLED INTERNALLY.
- ALL FIXINGS TO BE GRADE 316 STAINLESS STEEL. STAINLESS STEEL BOLT ASSEMBLIES SHALL BE COATED WITH AN APPROVED ANTI-GALLING PASTE.
- THE SIZE OF THE CABINET TO BE NORMINALLY 0.8m WIDE x 2.8m LONG x 1.6m HIGH.
- THE CABINET DOORS SHALL OPEN TO ALLOW FULL ACCESS TO THE INTERNAL PIPEWORK, BE WEATHERPROOF AND LOCKABLE (VANDAL-PROOF) WITH SEQ SP'S KEYING SYSTEM.
- PROVIDE RETAINING MECHANISMS ON DOORS TO ENABLE THEM TO REMAIN OPEN AT 180 DEGREES.
- THE CABINET ROOF SHALL BE SLOPED TO SHED WATER BEHIND THE CABINET.
- THE CABINET EXTERIOR SHALL BE POWDER COATED, MIST GREEN.
- THE CABINET SHALL HAVE APPROPRIATE VENTILATION.
- THE CABINET SHALL BE INSTALLED USING A 50mm x 6mm THICK NEOPRENE SEAL BETWEEN THE CABINET BOTTOM LIP AND THE CONCRETE SLAB; ALLOWING TWO 100mm LONG GAPS IN THE SEAL TO DISPERSE WATER FROM INSIDE THE CABINET TO THE REAR OF THE CABINET.
- PROVIDE FALLS ON THE FOUNDATION SLAB SURFACE TO AVOID WATER PONDING ON THE SLAB.
- THE MANUFACTURER SHALL PROVIDE CONCEPT DRAWINGS FOR SEQ SP'S INITIAL APPROVAL; FOLLOWED BY RPEQ CERTIFIED DESIGN DRAWINGS OF THE CABINET AND FIXING DETAILS PRIOR TO ITS INSTALLATION.

REV. No.	DATE	DESCRIPTION	AUTH.
A	01/02/24	ORIGINAL ISSUE	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

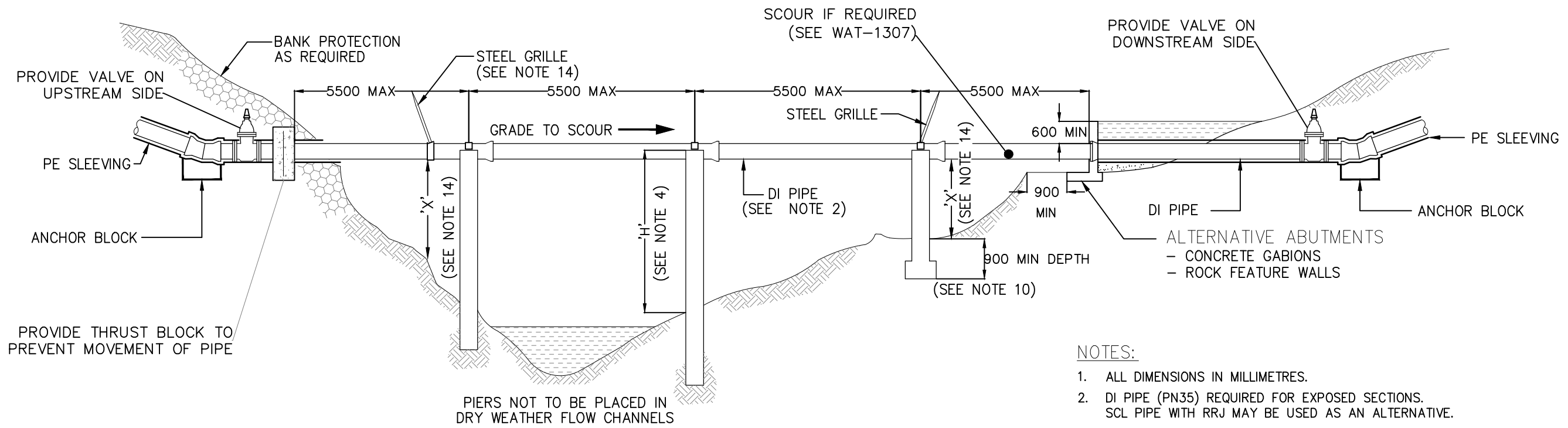
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WATER SUPPLY STANDARD DRAWING

TYPICAL APPURTENANCE INSTALLATION
DN100 TO DN200 ABOVE GROUND
PRESSURE REDUCING VALVES (PRV)

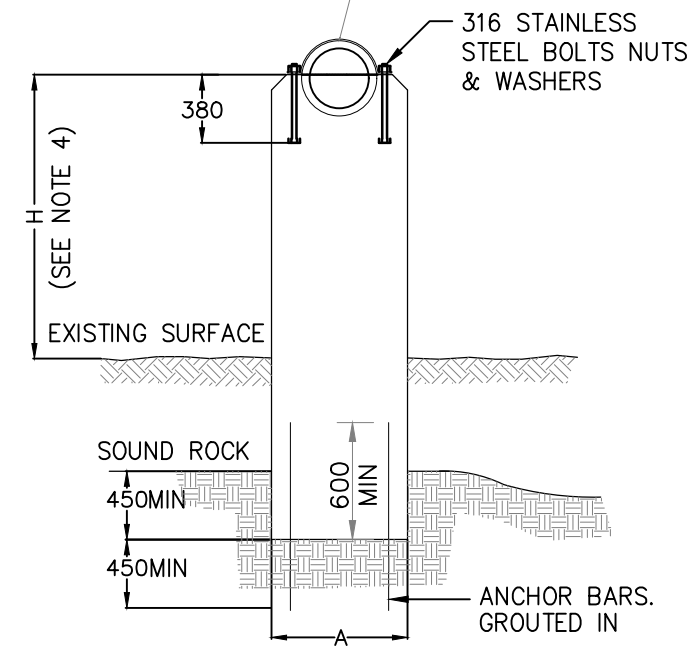
CoGC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1310-11				A
NOT TO SCALE				ORG DATE: 01/02/24



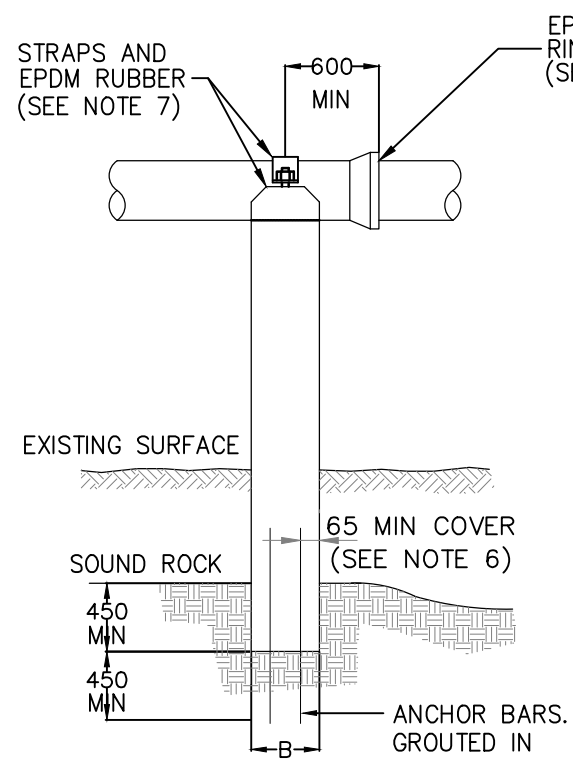
TYPICAL (DI) AQUEDUCT

- NOTES:**
- ALL DIMENSIONS IN MILLIMETRES.
 - DI PIPE (PN35) REQUIRED FOR EXPOSED SECTIONS. SCL PIPE WITH RRJ MAY BE USED AS AN ALTERNATIVE.
 - MINIMUM SIZE OF PIPE AS AQUEDUCT SHALL BE DN 150.
 - MAXIMUM HEIGHT "H" OF CONCRETE PIER:
 - IN FLOOD CONDITIONS, SEE TABLE FOR MAXIMUM HEIGHT.
 - IN NO FLOOD CONDITIONS, 5 000 MAX.
 - WHERE AQUEDUCT NEEDS TO BE HIGHER, SPECIFIC DESIGN CALCULATIONS TO BE CARRIED OUT.
 - CONCRETE TO BE CLASS S25.
 - REINFORCEMENT DETAILS TO BE AS SPECIFIED IN DESIGN DRAWINGS. COVER TO REINFORCEMENT 65 MIN.
 - STRAPS TO BE GRADE 316 STAINLESS STEEL. PLACE 3 THICK x 100 WIDE EPDM RUBBER INSERTION AROUND PIPE TO PROTECT PIPE FROM DAMAGE BY CONCRETE OR STRAP. USE NEOPRENE PADS AND NYLON WASHERS ON ALL DISSIMILAR METAL CONTACTS.
 - AS SPECIFIED IN DESIGN DRAWINGS, ADDITIONAL PROTECTION/COATING TO BE PROVIDED TO MAKE AQUEDUCT PIPES MORE ENVIRONMENTALLY ACCEPTABLE, REFER NOTE 8A ON SEQ-WAT-1312-1.
 - CYLINDRICAL PIERS (Ø 600 MIN) OR EQUIVALENT ARE AN ACCEPTABLE ALTERNATIVE.
 - DEPTH OF PIERS IN SOIL TO BE SPECIFIED IN THE DESIGN DRAWINGS. BUT NOT LESS THAN 900.
 - TYPE AND SIZE OF PIER TO BE SPECIFIED IN DESIGN DRAWINGS.
 - PIERS WITHOUT FOOTINGS TO BE CONSTRUCTED IN ACCORDANCE WITH METHODS SPECIFIED IN DESIGN DRAWINGS.
 - ASSEMBLE JOINTS WITH SPIGOT END WITHDRAWN 5 TO 10 FROM BACK OF SOCKET TO ACCOMMODATE EXPANSION AND CONTRACTION RESULTING FROM TEMPERATURE FLUCTUATIONS.
 - PROVIDE STEEL GRILLES WHERE THE VERTICAL DISTANCE 'X' EXCEEDS 1800. GRILLE TO BE CLAMPED ON TIGHTLY TO PREVENT MOVEMENT. SEE SEQ-WAT-1311-2.

STRAPS 3 THICK x 100 WIDE MIN FORMED TO SUIT. (SEE NOTE 7)



DETAIL OF CONCRETE PIER
(SEE NOTE 9)



NOMINAL SIZE DN	PIER		
	A	B	HEIGHT 'H' MAX
150	450	300	2700
200	600	300	2100
250	600	300	2100
300	750	300	1800
375	750	450	1800
450	915	450	1800
500	915	450	1800
600	1070	450	1800
750	1200	450	1800

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

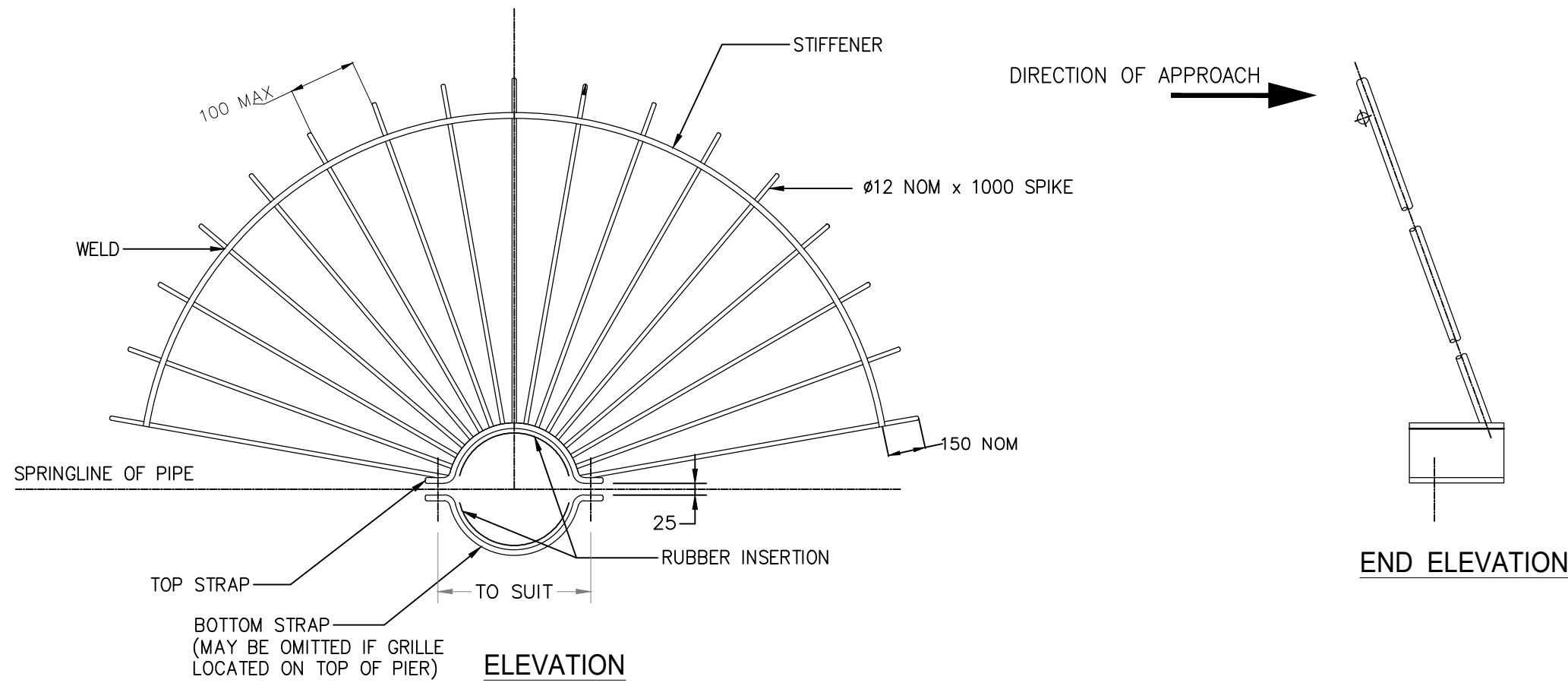
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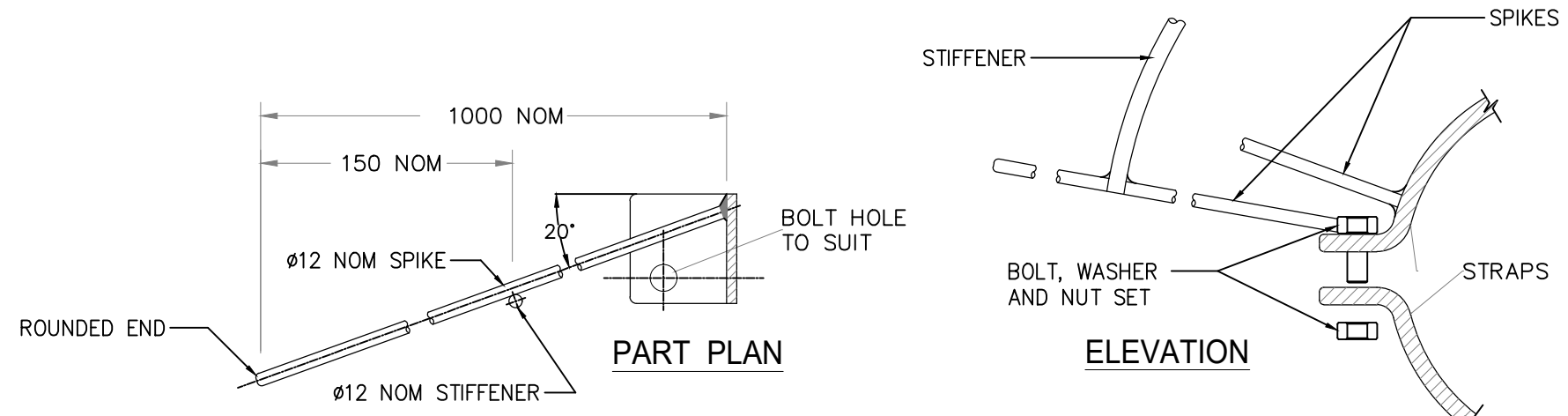
WATER SUPPLY STANDARD DRAWING

AERIAL CROSSINGS
TYPICAL AQUEDUCT

CQC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1311-1				B
NOT TO SCALE				ORG DATE: 31/03/2015



STEEL PROTECTION GRILLE



COMPONENT & FABRICATION DETAILS

- NOTES:**
1. ALL DIMENSIONS IN MILLIMETRES.
 2. ALL ITEMS TO BE STEEL AND HOT DIP GALVANISED AFTER FABRICATION.
 3. PLACE 3 THICK RUBBER INSERTION BETWEEN CLAMPS AND PIPELINE.
 4. INCLUDE SIGN "DANGER KEEP OFF" WHERE SPECIFIED BY WATER AGENCY.
 5. STEEL TO BE GRADE 250 TO AS 3679.1.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

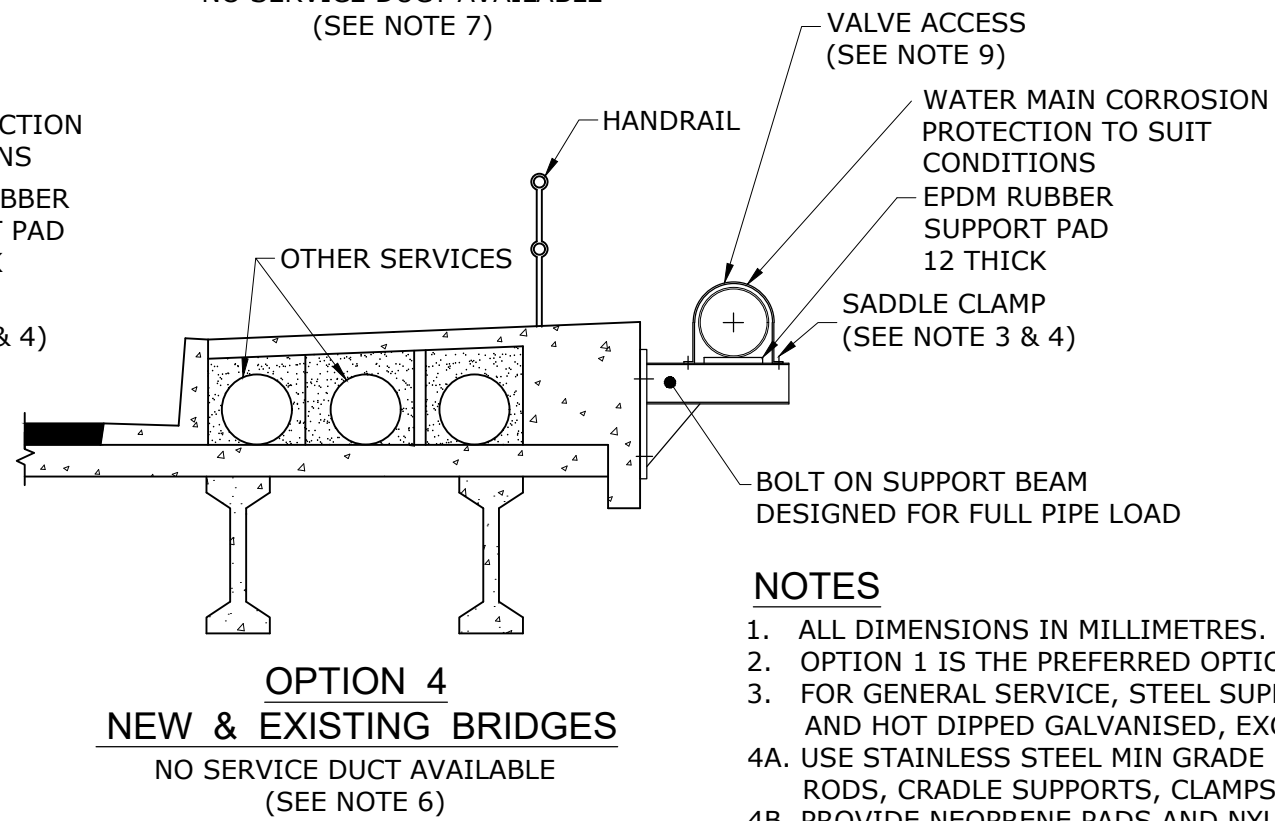
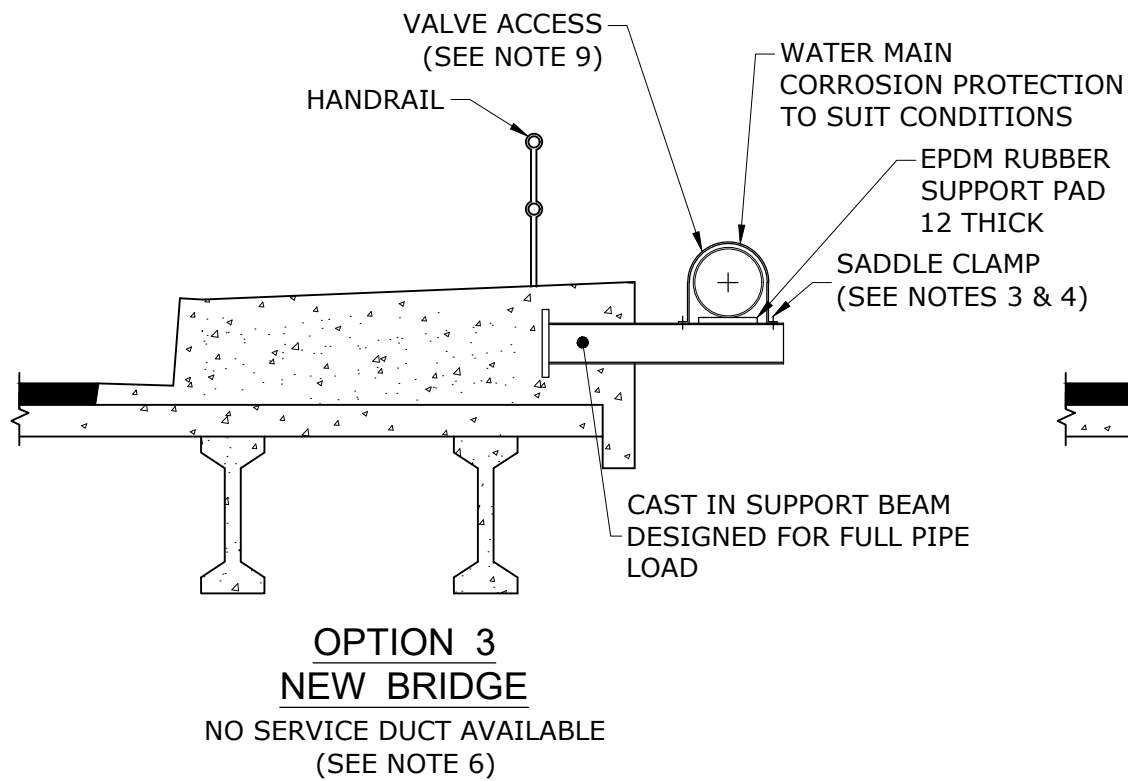
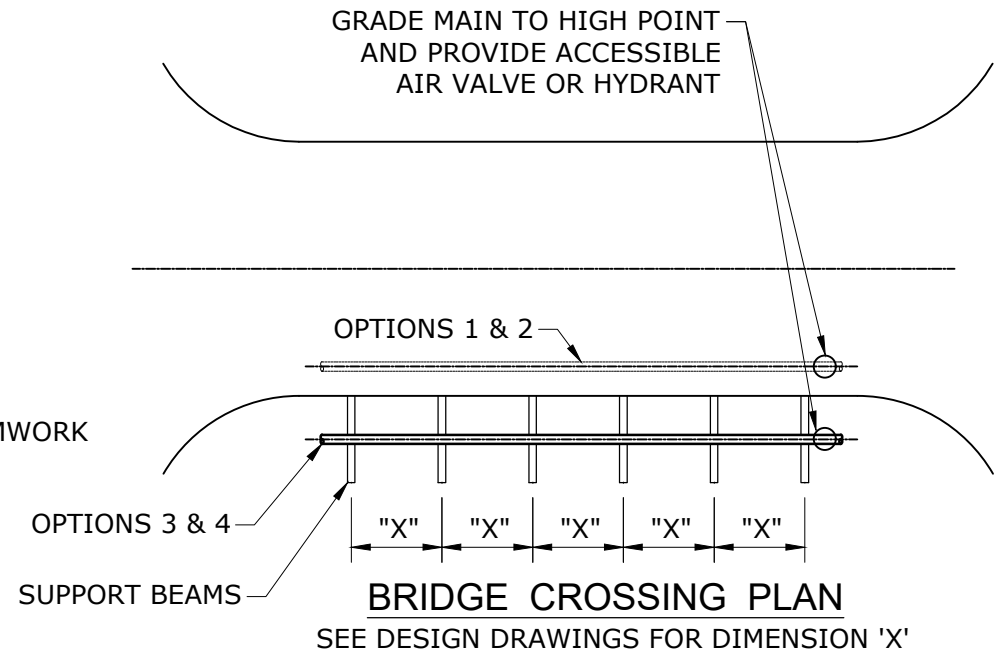
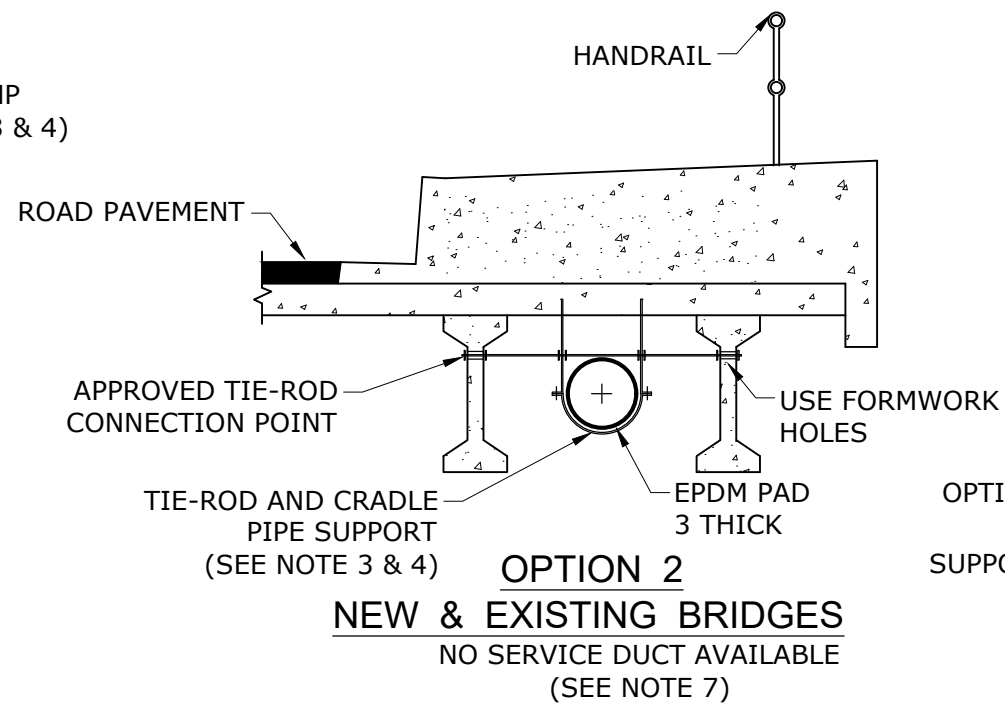
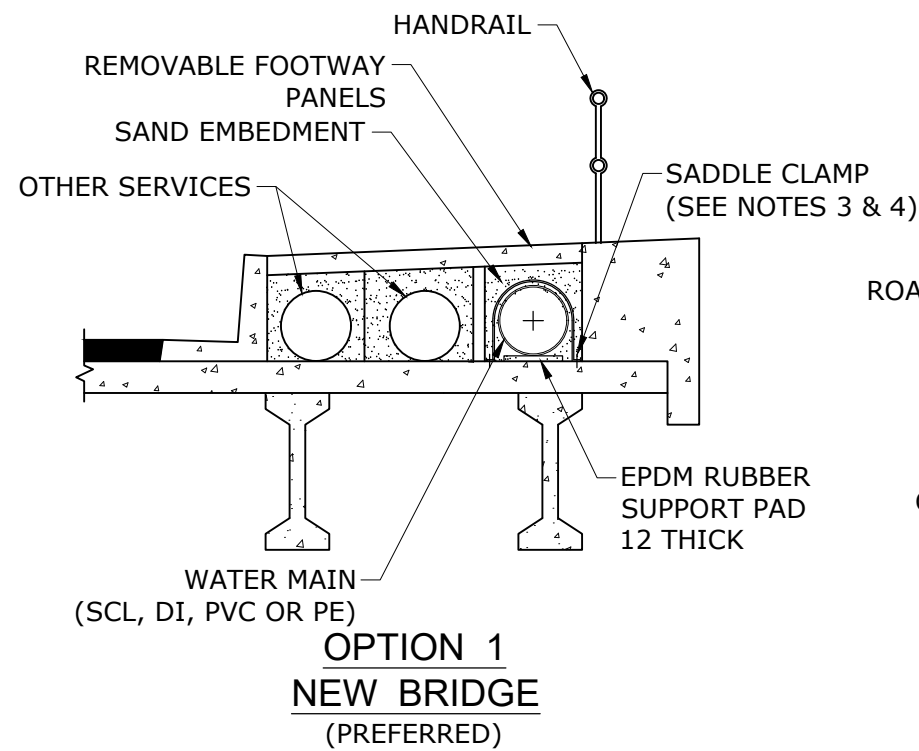
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WATER SUPPLY STANDARD DRAWING

TYPICAL AERIAL CROSSINGS
AQUEDUCT PROTECTION GRILLE

CoC	LSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1311-2				B
NOT TO SCALE				ORG DATE: 31/03/2015



NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. OPTION 1 IS THE PREFERRED OPTION. OPTION 2 IS FOR DRY CREEKS.
3. FOR GENERAL SERVICE, STEEL SUPPORTS TO AS 3679.1 GRADE 250 AND HOT DIPPED GALVANISED, EXCLUDED FOR OPTION 2.
- 4A. USE STAINLESS STEEL MIN GRADE 316 FOR SUPPORT BEAMS, TIE RODS, CRADLE SUPPORTS, CLAMPS, BOLTS, NUTS AND WASHERS.
- 4B. PROVIDE NEOPRENE PADS AND NYLON WASHER ON ALL DISSIMILAR METAL CONTACTS.
5. PROVIDE PIPE EXPANSION JOINTS AT EACH END OF BRIDGE.
6. SCL PIPE ONLY FOR OPTION 1, JUSTIFY FOR OPTIONS 3 & 4.
7. DI TO BE USED FOR OPTION 2. MATERIAL TYPE DEPENDS ON ENVIRONMENTAL CONDITIONS.
- 8A. ALL DI PIPES SHALL BE PROVIDED WITH A WEATHER RESISTANT COATING e.g. UV STABILISATION OR APPROVED EQUIVALENT ALTERNATIVES WITH PRODUCT MARKERS AT EACH SOCKET.

THIS IS NOT A DETAIL DRAWING
CONCEPT ONLY

- 8B. ALL FLANGE JOINTS SHALL BE PROTECTED AS PER SEQ-WAT-1313-1.
9. ALL APPURTENANCES SHALL BE ACCESSIBLE VIA PLATFORMS AND HANDRAILS TO AS 1657.
10. ALL SUPPORTS SHALL MANAGE ALL TEST AND OPERATIONAL THRUSTS AT FULL LOADS.

REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	NOTES 2 & 8A. NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	
B	31/03/15	ADDED AND AMENDED NOTES. DETAILS AMENDED.	

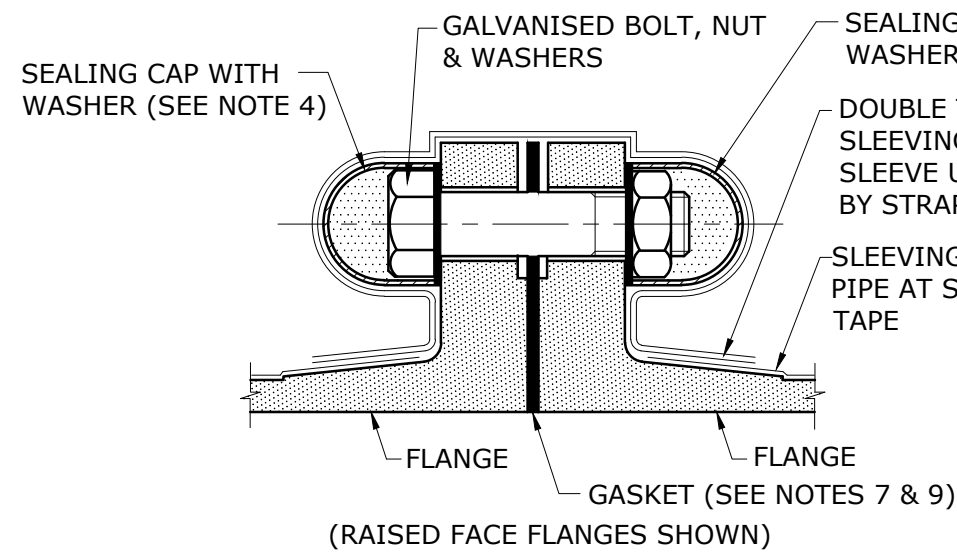
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

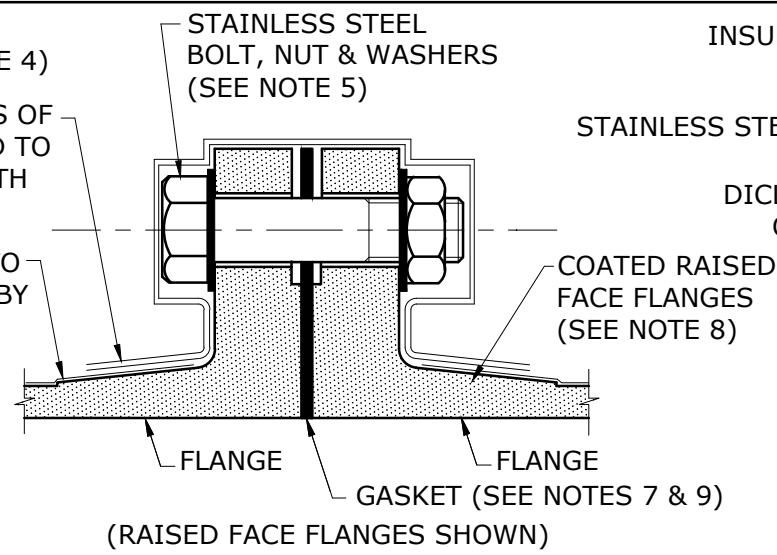
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
AERIAL CROSSINGS
TYPICAL BRIDGE CROSSING CONCEPTS

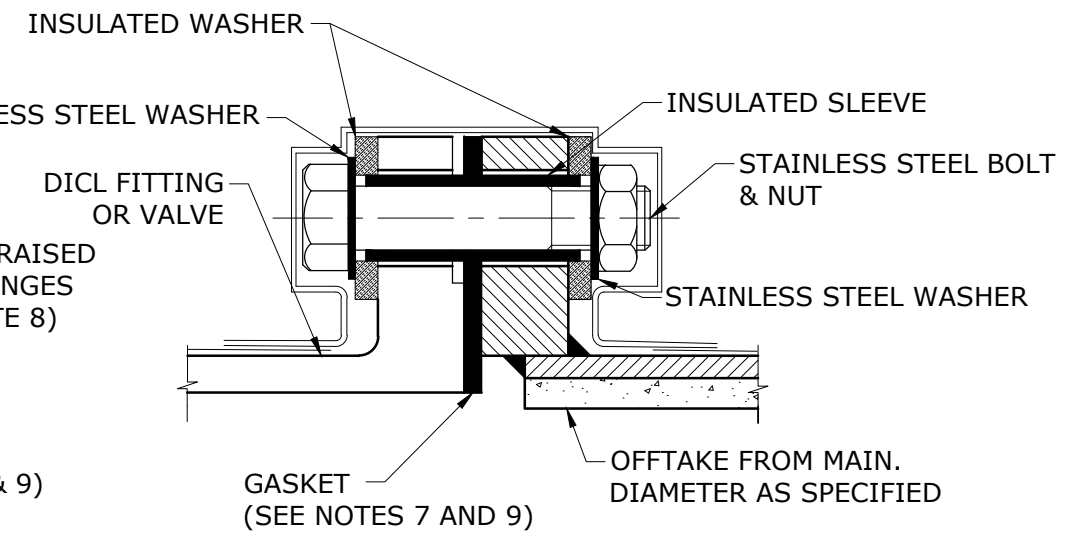
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1312-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



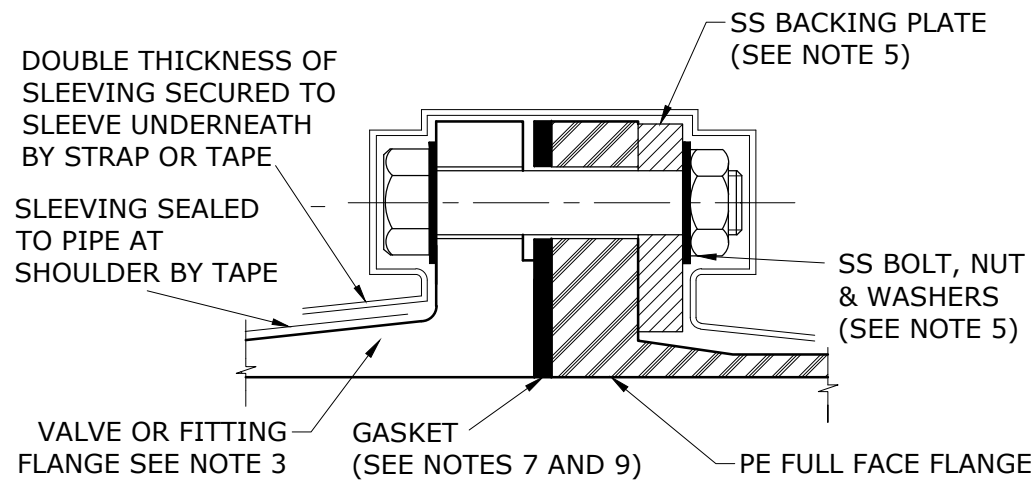
CORROSION PROTECTION PROCEDURE FOR DUCTILE IRON FLANGES WITH GALVANISED BOLTS
DETAIL A
 (SEE NOTES 2 AND 11)



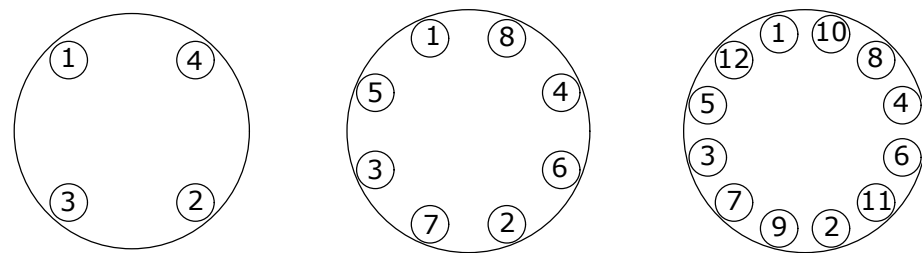
CORROSION PROTECTION PROCEDURE FOR POLYMERIC COATED DUCTILE IRON FLANGES WITH STAINLESS STEEL BOLTS
DETAIL B
 (SEE NOTE 3)



INSULATED FLANGED JOINT FOR STEEL MAINS
DETAIL C
 (SEE NOTES 3 & 6)



PE BOLTED CONNECTION DETAIL
DETAIL D



4 BOLTS 8 BOLTS 12 BOLTS

TIGHTENING SEQUENCE

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. SLEEVE UNCOATED DUCTILE IRON FLANGES. USE GALVANISED BOLTS (SEE NOTE 4). APPLY TWO LAYERS OF SLEEVING OVER ALL BURIED BITUMEN COATED DUCTILE IRON FLANGES.
3. ALL BURIED PE, SS, COPPER OR POLYMERIC COATED METALLIC FLANGES REQUIRE SLEEVING .
4. GALVANISED BOLT SYSTEM.
 - (i) ALL BOLTS, NUTS AND WASHERS TO BE HOT DIPPED GALVANISED. AFTER GALVANISING, AND PRIOR TO ASSEMBLY, LIBERALLY COAT ALL NUTS, BOLTS & WASHERS WITH A CORROSION PREVENTION PRIMING PASTE.
 - (ii) AFTER ASSEMBLY, COVER ALL BOLT HEADS AND NUTS WITH SEALING CAPS FILLED WITH CORROSION PREVENTION PRIMING PASTE.
 - (iii) WRAP THE ASSEMBLY WITH PETROLATUM TAPE OR WITH PE SLEEVING AND TAPED.
 - (iv) TAKE SPECIAL CARE WHEN BACKFILLING, TO ENSURE THAT CAPS ARE NOT DISLODGED.
5. STAINLESS STEEL BOLT SYSTEM. ALL STAINLESS STEEL BOLTS, NUTS, WASHERS AND BACKING PLATES TO BE MANUFACTURED FROM 316 GRADE MATERIAL. COAT THE THREADED SECTIONS OF ALL STAINLESS STEEL BOLTS WITH AN ANTI-SIEZE LUBRICANT RECOMMENDED BY THE BOLT MANUFACTURER. CoGC REQUIRES ALL M16 AND LARGER BOLT SYSTEMS TO BE STAINLESS STEEL.
6. VERIFY THE INTEGRITY OF EACH INSULATED FLANGED JOINT AFTER ASSEMBLY.
7. USE SPECIAL HIGH RESISTIVITY (LOW CONDUCTIVITY) GASKET MATERIAL. NOT ALL ELASTOMERS ARE NON CONDUCTIVE
8. ROUGHEN COATED RAISED FACE FLANGE SURFACES BEFORE ASSEMBLY. PERFORATION OF THE COATING DOES NOT MATTER ON THE CONTACT FLANGE FACES.
9. GASKET MATERIALS TO COMPLY WITH WSA 109.
10. TIGHTENING SEQUENCE SHOWN FOR AS 4087 FLANGES <DN450, LARGER SIZES TO FOLLOW SIMILAR PRINCIPLE.
11. USE OF DETAIL A SUBJECT TO THE APPROVAL OF SEQ-SPs.
12. CoGC WILL ALLOW THE REPLACEMENT OF THE GALVANISED BOLTS SYSTEM FOR M20 AND M24 BOLTS WITH A GRADE 8.8 STEEL BOLT SYSTEM THAT HAS HAD A 2 LAYER PTFE COATING SYSTEM APPLIED. WHERE USED, THE REQUIREMENTS OF NOTE 4 ARE NOT REQUIRED AND STANDARD PE SLEEVING SHALL BE USED. FOR BOLT SYSTEMS OF M27 OR LARGER, INDIVIDUAL DESIGN IS REQUIRED.

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	DETAILS B, C & D, NOTES 3 & 5. NOT FOR CONSTRUCTION, CoGC & UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

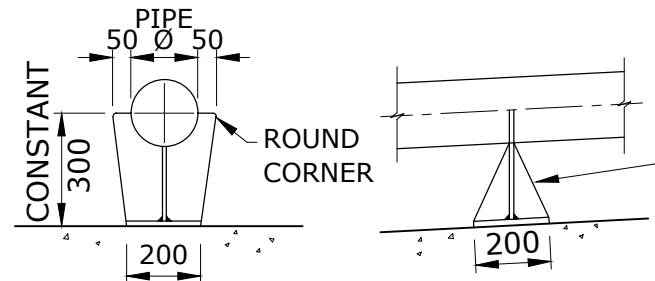
WATER SUPPLY STANDARD DRAWING

FLANGED JOINTS
 TYPICAL BOLTING DETAILS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1313-1				B
NOT TO SCALE				ORG DATE: 1/1/2013

MARK	DESCRIPTION	DIA	NO OF
1	FLANGE - FLANGE - FLANGE TEE PIECE		2
2	FLANGE - FLANGE 90° BEND		2
3	FLANGED ASSEMBLY JOINT		2
4	FLANGE PLAIN PIPE OF LENGTH TO SUIT		1
5	FLANGE & PLAIN PIPE 1200 LONG		1
6	FLANGE - FLANGE CONCENTRIC TAPERØ-.....Ø		4
7	FLANGE & PLAIN PIPE 700 LONG		2
8	THRUST FLANGE		2
9	FLANGE - FLANGE REFLUX VALVE *		2
10	FLANGE - FLANGE SLUICE VALVE		4
11	PUMP AS DETAILED WITHIN ENCLOSURE TUBE		2
12	PRESSURE GAUGE (SEE NOTE 10)		2
13	25Ø AIR VALVE ATOP 25Ø BALL/GATE VALVE		2

* REFLUX VALVE TO INCORPORATE COUNTERWEIGHT AND EXTENDED SPINDLE



PUMP CRADLE SUPPORT DETAIL

FOR CoGC REFER SEQ-WAT-1319-1 TO 4 FOR COVER AND FRAME DETAILS

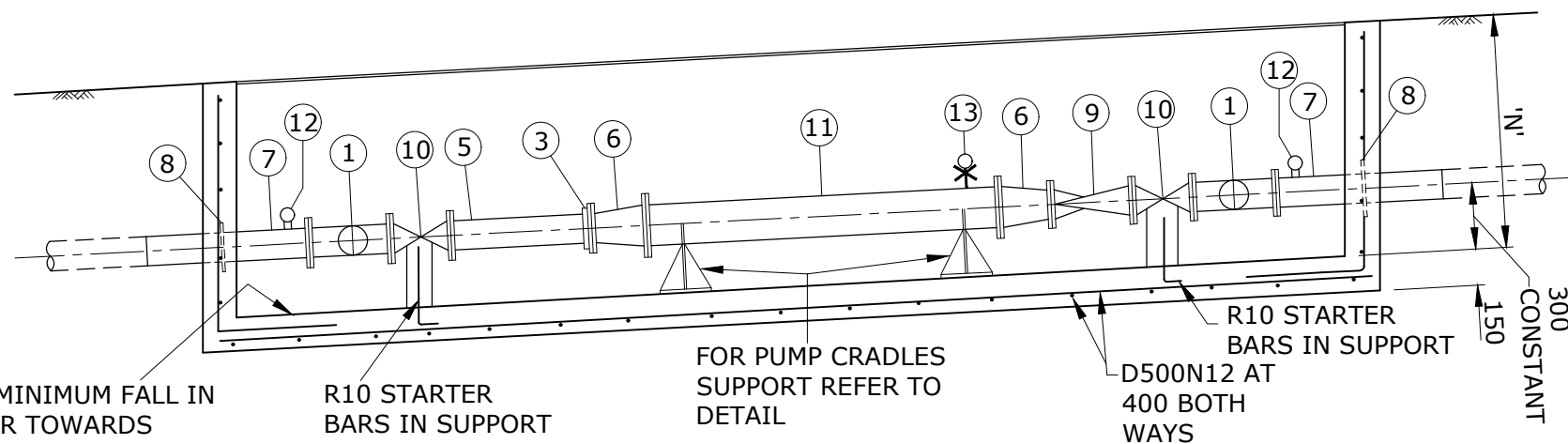
FABRICATED SUPPORT CRADLE FROM 10 R. CONTINUOUS FILLET WELD. ALL COMPONENTS TO BE HOT DIP GALVANISED AFTER FABRICATION. 3 REINFORCED RUBBER BEARING PAD TO CRADLE SURFACE.



LOCALITY PLAN

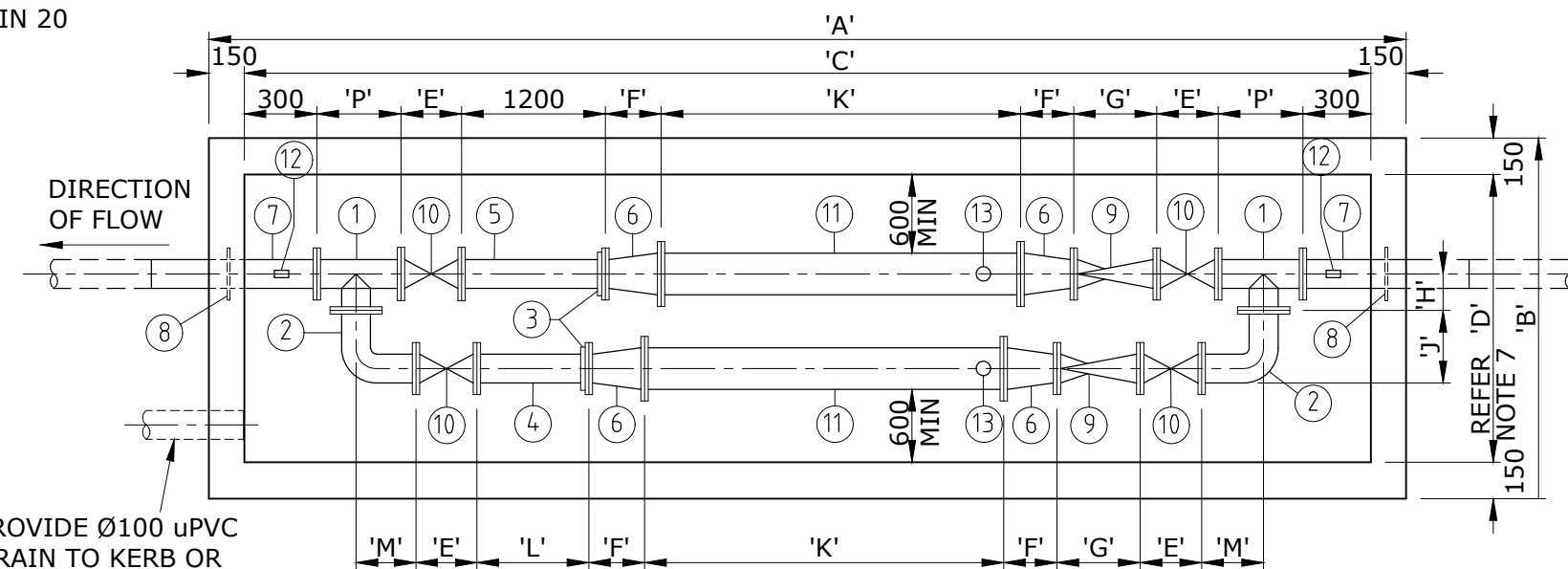
PUMP DESCRIPTION

PUMP STATION _____
PUMP TYPE & MODEL _____
MOTOR RATING _____
ENCLOSURE TUBE DIAMETER _____
ENCLOSURE TUBE LENGTH _____
DUTY POINT.....l/s. ATm HEAD _____
WATER SUPPLY PUMP STATION NO. _____
ADDRESS : _____
FILE No. : _____



SECTIONAL ELEVATION

THE MINIMUM FALL IN FLOOR TOWARDS DRAIN FROM ALL DIRECTIONS SHALL BE 1 IN 20



PLAN

NOTES

MARK	DIMENSION
'A'	
'B'	
'C'	
'D'	
'E'	
'F'	
'G'	
'H'	
'J'	
'K'	
'L'	
'M'	
'N'	
'P'	

- THIS ASSEMBLY IS LIMITED TO DN225 AND SMALLER.
- THE CONSULTANT SHALL COMPLETE AND SUBMIT FOR APPROVAL ALL TABLES AND DIMENSIONS.
- ALL CAST INSITU CONCRETE TO BE GRADE N25.
- FOR LOCATION OF PUMP STATION CONTROL CUBICLE REFER STANDARD DRAWING No. SEQ-WAT-1316-1.
- FOR PUMP STATION COVER DETAILS REFER STANDARD DRAWING Nos. SEQ-WAT-1315 TO SEQ-WAT-1317.
- ALL FLANGES TO BE DRILLED IN ACCORDANCE WITH THE CODE.
- MAXIMUM DIMENSION OF 1300 FOR 'D'.
- AIR VALVE TO BE AT HIGH POINT.
- FOR RESERVOIR DETAILS REFER APPROVED DESIGN DRAWINGS.
- PROVIDE 25Ø BALL VALVE, PRESSURE GAUGE AND PRESSURE SWITCH.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE CODES.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	CLEARANCES OF 600. CROSS ON LCC. NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	
B	22/05/19	NEW BOX NOTE	

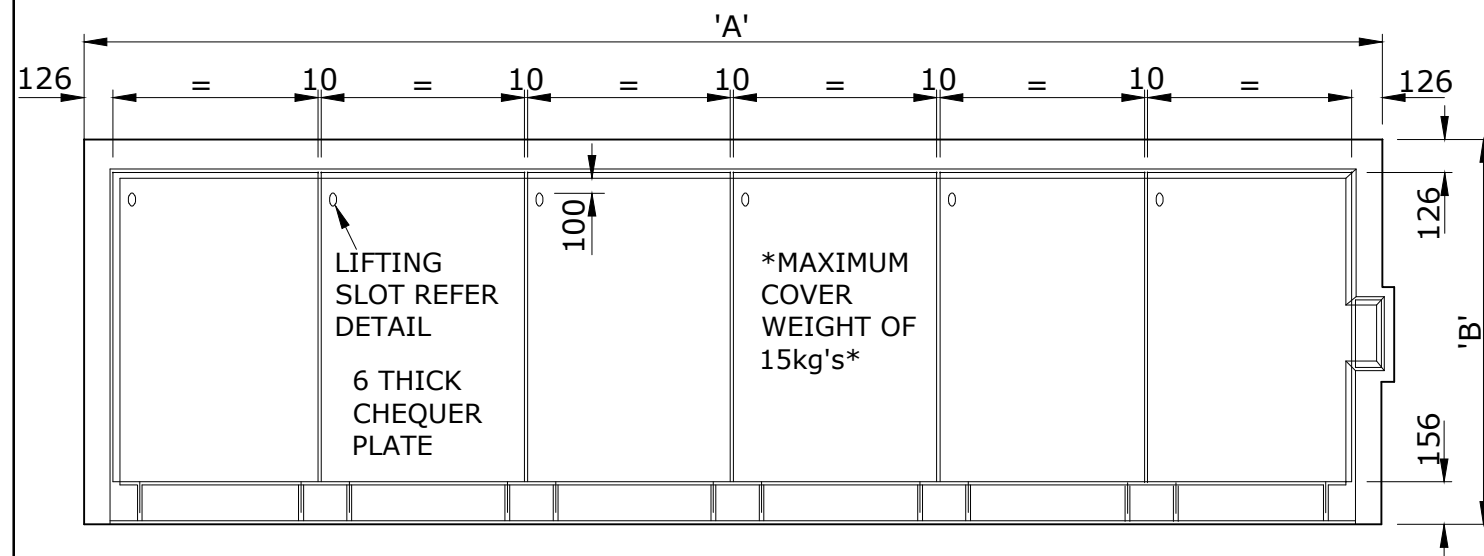
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

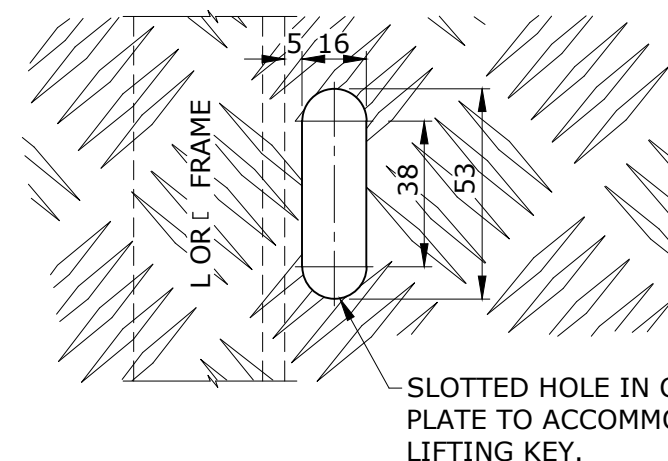
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
TYPICAL SMALL WATER SUPPLY PUMP STATION OR RESERVOIR
DRAWING 1 OF 4

CoGC	<input checked="" type="checkbox"/> LCC	RCC	<input checked="" type="checkbox"/> UU	<input checked="" type="checkbox"/> UW
DRAWING No.				VERSION
SEQ-WAT-1314-1				C
NOT TO SCALE				ORG DATE: 1/1/2013

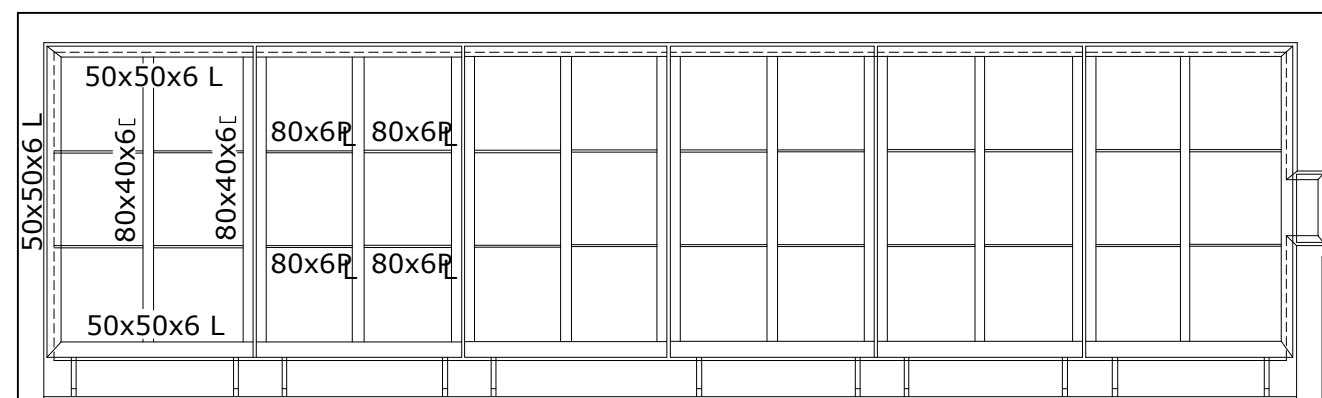


PLAN - COVERS IN PLACE



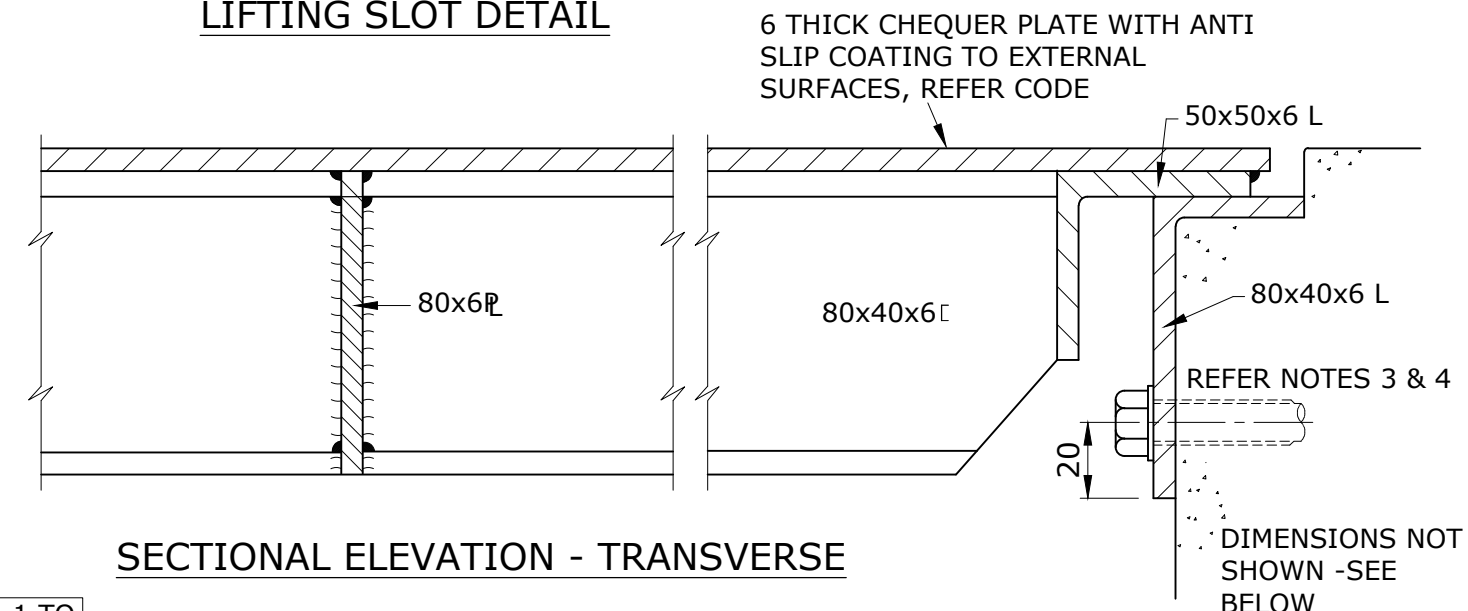
LIFTING SLOT DETAIL

- NOTES**
1. ALL COMPONENTS SHALL BE ALLUMINIUM ALLOY 6061-T1 UNLESS SHOWN OTHERWISE
 2. ALL CONNECTIONS SHALL BE WELDED WITH 6mm CONTINUOUS FILLET OR FULL STRENGTH BUTT WELDS UNLESS SHOWN OTHERWISE
 3. ISOLATE FASTENERS FROM FRAME AND CONCRETE STRUCTURE WITH A BITUMINOUS PAINT TO BOLT SHANK AND TO FRAME.
 4. M10 STAINLESS STEEL DROP IN FLUSH ANCHOR MASONRY FASTENERS TO BE POSITIONED AS DETAILED
 5. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.



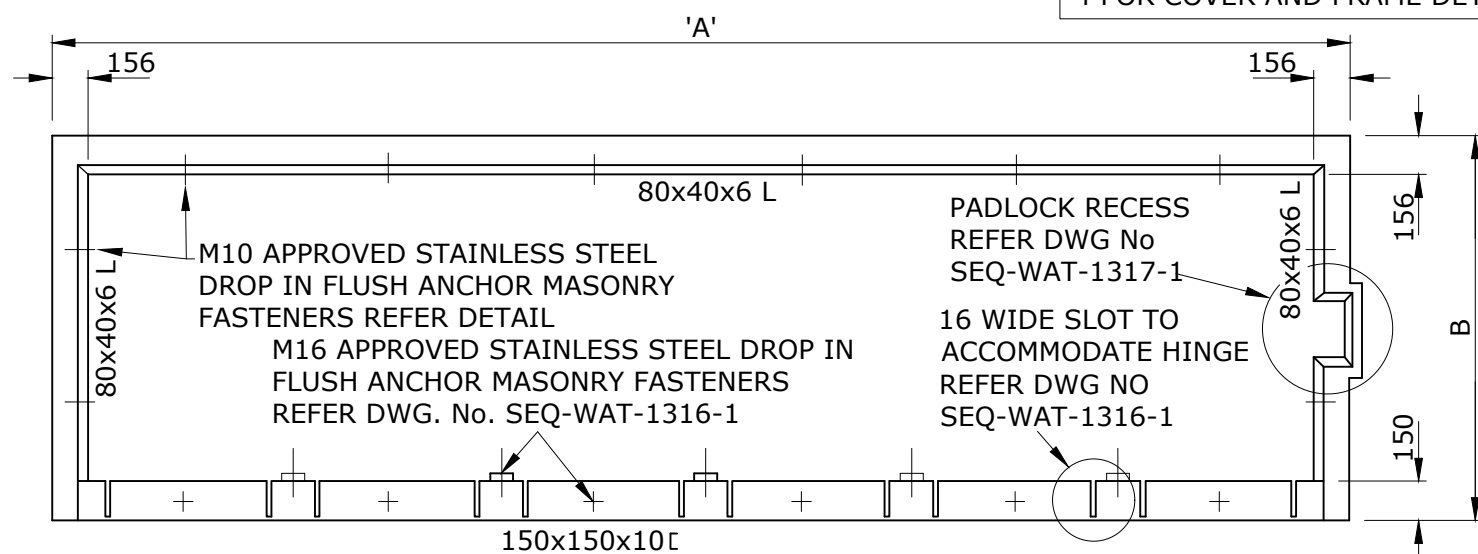
TYPICAL

PLAN - COVER FRAMES

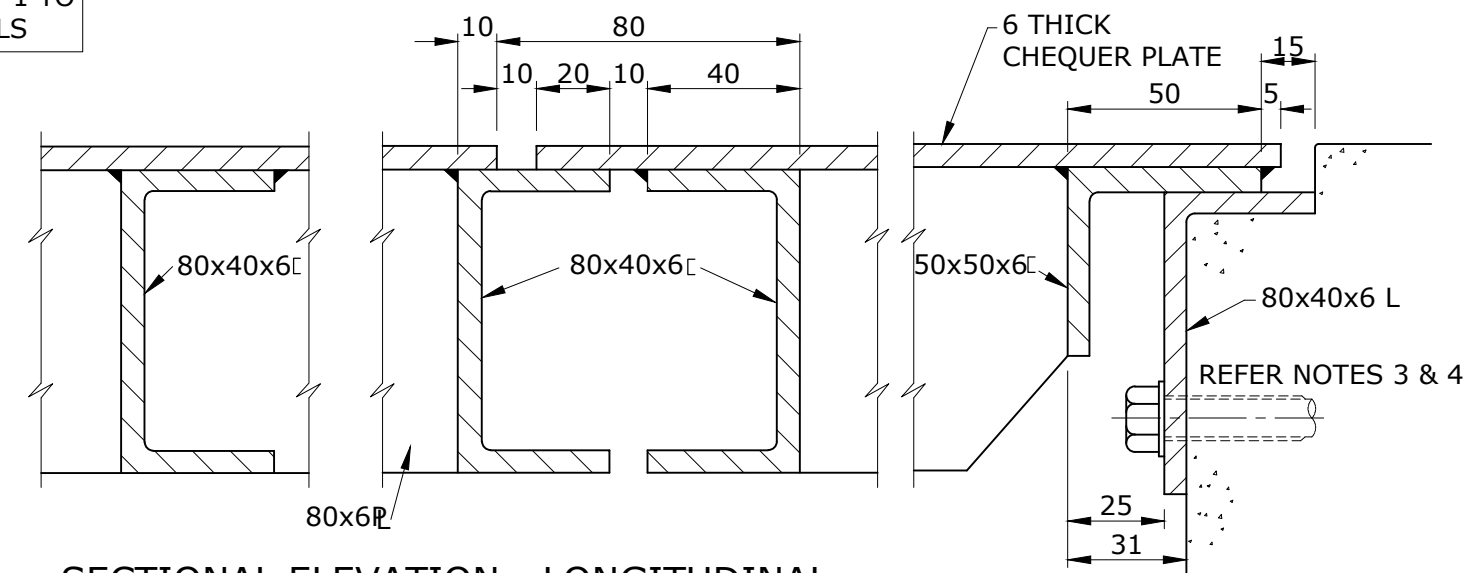


SECTIONAL ELEVATION - TRANSVERSE

FOR CoGC REFER SEQ-WAT-1319-1 TO 4 FOR COVER AND FRAME DETAILS



EXTERNAL FRAME



SECTIONAL ELEVATION - LONGITUDINAL
COVER DETAILS

REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	LCC BOX CROSSED, NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	
B	22/05/19	NEW BOX NOTE	

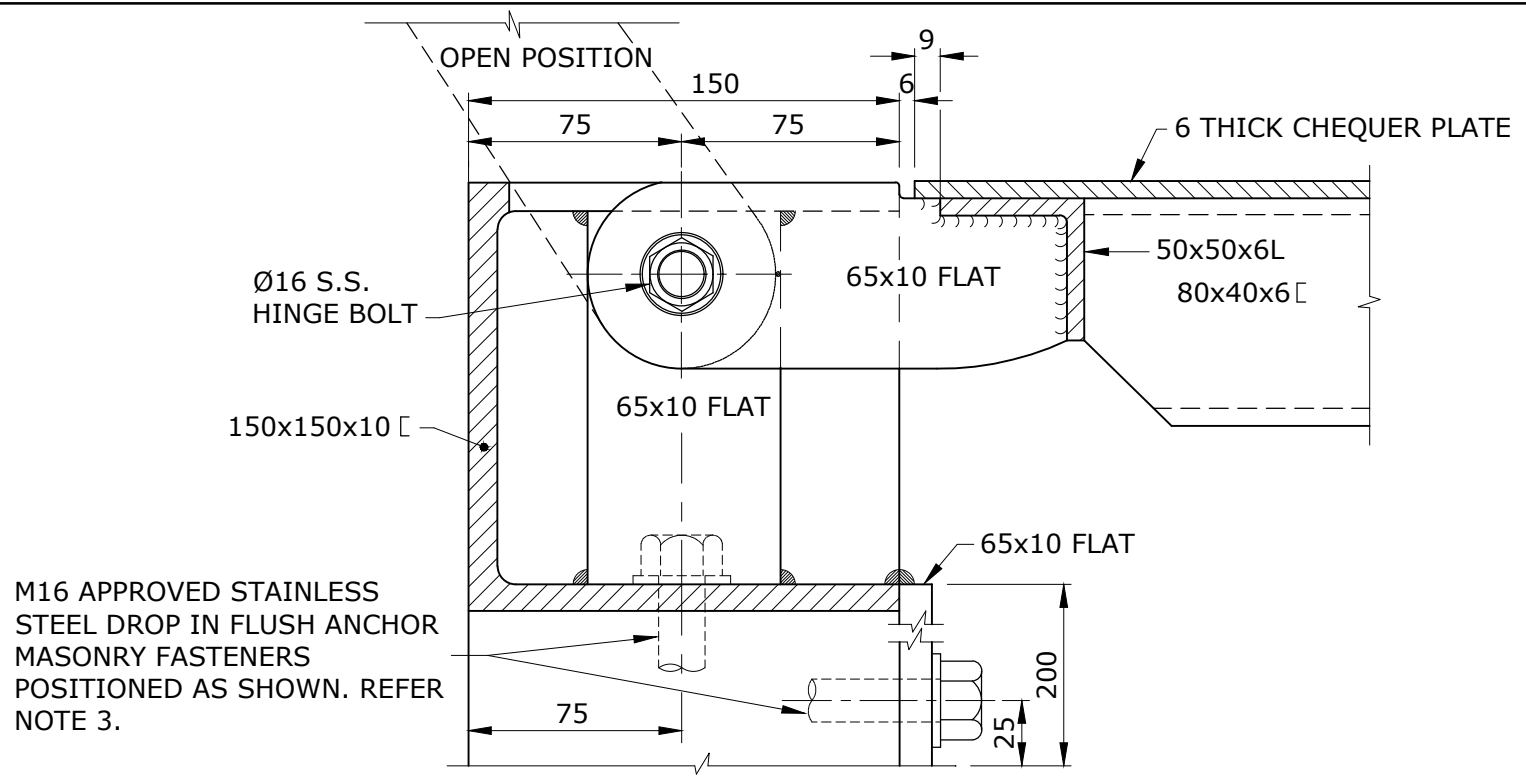
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

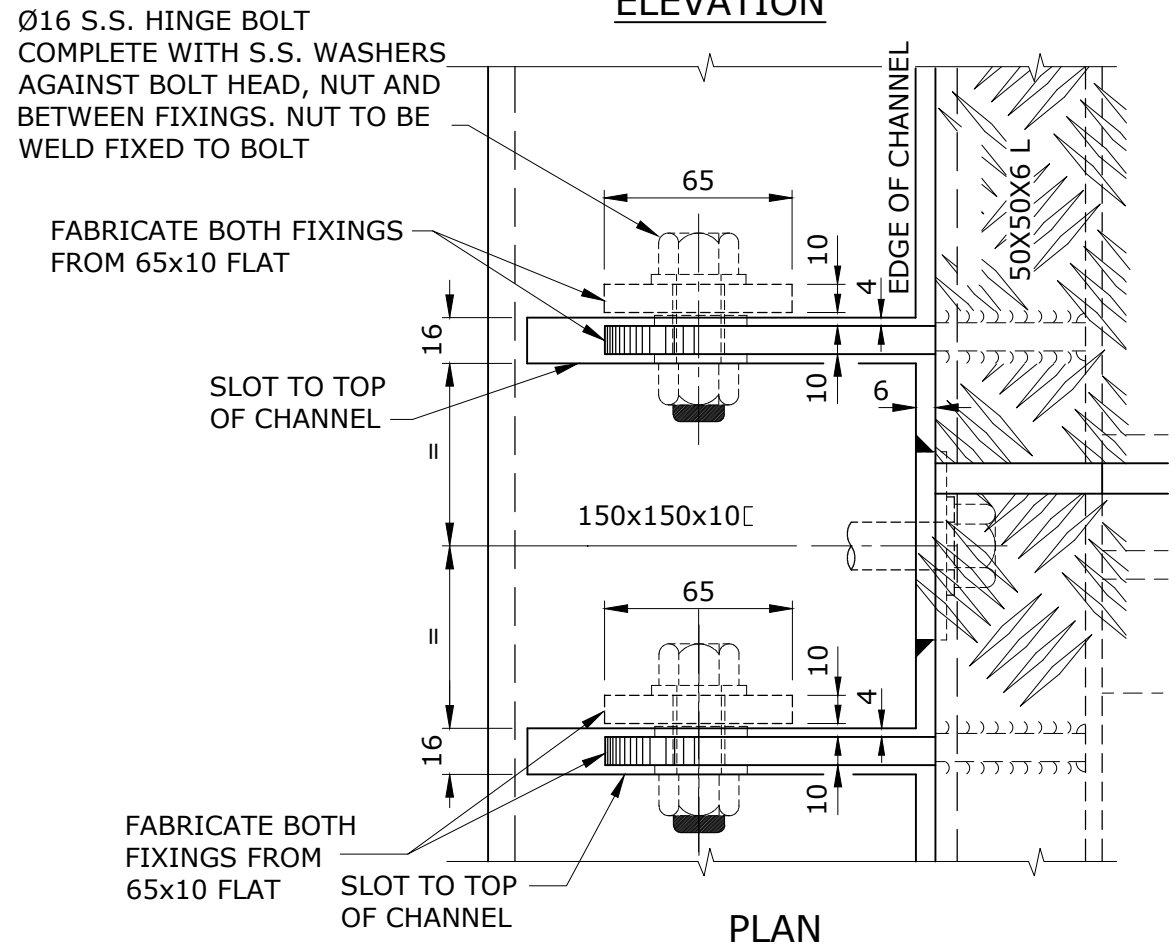
WATER SUPPLY STANDARD DRAWING
TYPICAL SMALL WATER SUPPLY
PUMP STATION OR RESERVOIR
DRAWING 2 OF 4

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1315-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



M16 APPROVED STAINLESS STEEL DROP IN FLUSH ANCHOR MASONRY FASTENERS POSITIONED AS SHOWN. REFER NOTE 3.

ELEVATION

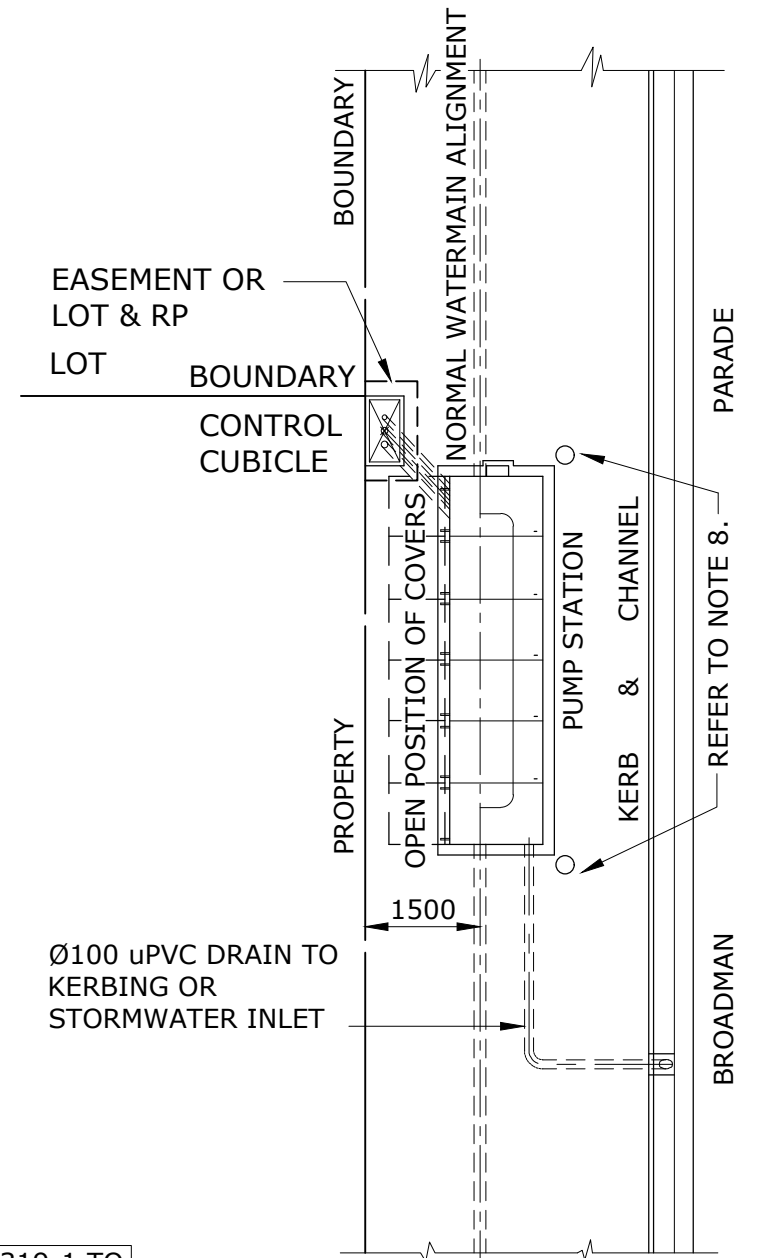


**PLAN
RECESSED HINGE DETAIL**

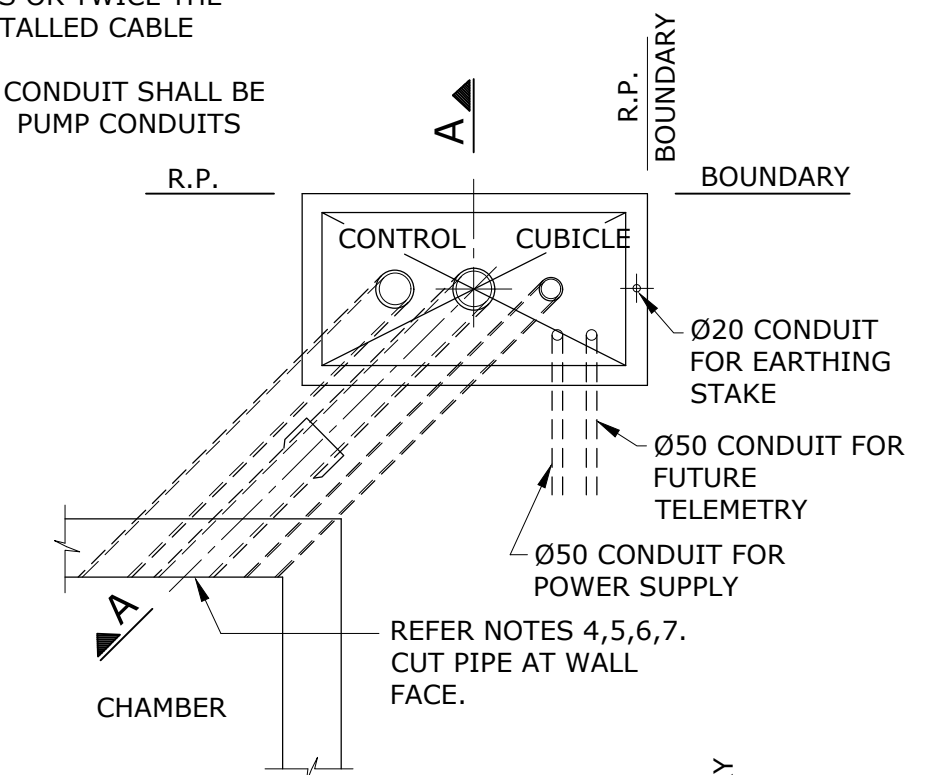
FOR CoGC REFER SEQ-WAT-1319-1 TO 4 FOR COVER AND FRAME DETAILS

NOTES:

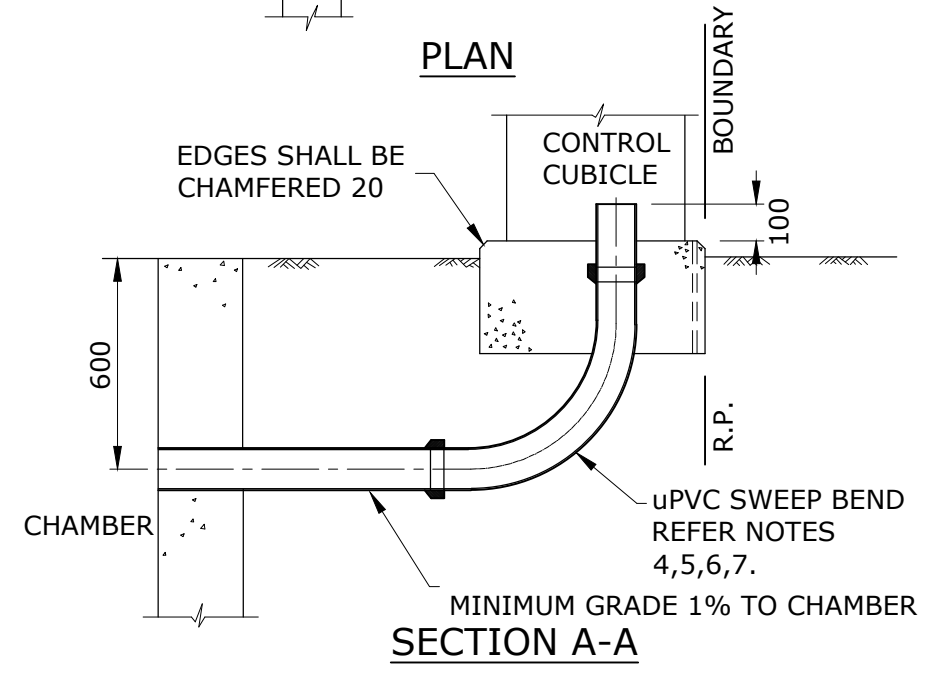
1. LOCATION OF PUMP STATION AND CONTROL CUBICLE SHALL BE AS SHOWN ON THE APPROVED ENGINEERING DRAWINGS.
2. PROVIDE ELECTRICAL CONDUIT TO PUMP STATION CUBICLE IN ACCORDANCE WITH ENERGEX REQUIREMENTS.
3. ALL ALLOY FACES IN CONTACT WITH CONCRETE SURFACES SHALL BE PAINTED WITH BITUMINOUS PAINT.
4. CONDUITS TO BE MINIMUM 63 NOMINAL DIAMETER FOR EACH PUMP AND MINIMUM 50 NOMINAL DIAMETER FOR CONTROL CABLES OR TWICE THE OUTSIDE DIAMETER OF THE INSTALLED CABLE WHICHEVER IS THE GREATER.
5. PUMP CONDUITS AND CONTROL CONDUIT SHALL BE SEPARATED BY A MINIMUM 300. PUMP CONDUITS SHALL BE SEPARATED BY 30.
6. CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH AS/NZS 3000.
7. CONDUITS SHALL BE IN ACCORDANCE WITH AS.2053.
8. PROVIDE CoGC TYPE D BOLLARD, REFER TO COUNCIL STANDARD DRAWING.
9. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.



TYPICAL ARRANGEMENT PLAN



PLAN



SECTION A-A

CONTROL CUBICLE DETAILS

REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	LCC BOX CROSSED, NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	
B	22/05/19	NEW BOX NOTE	

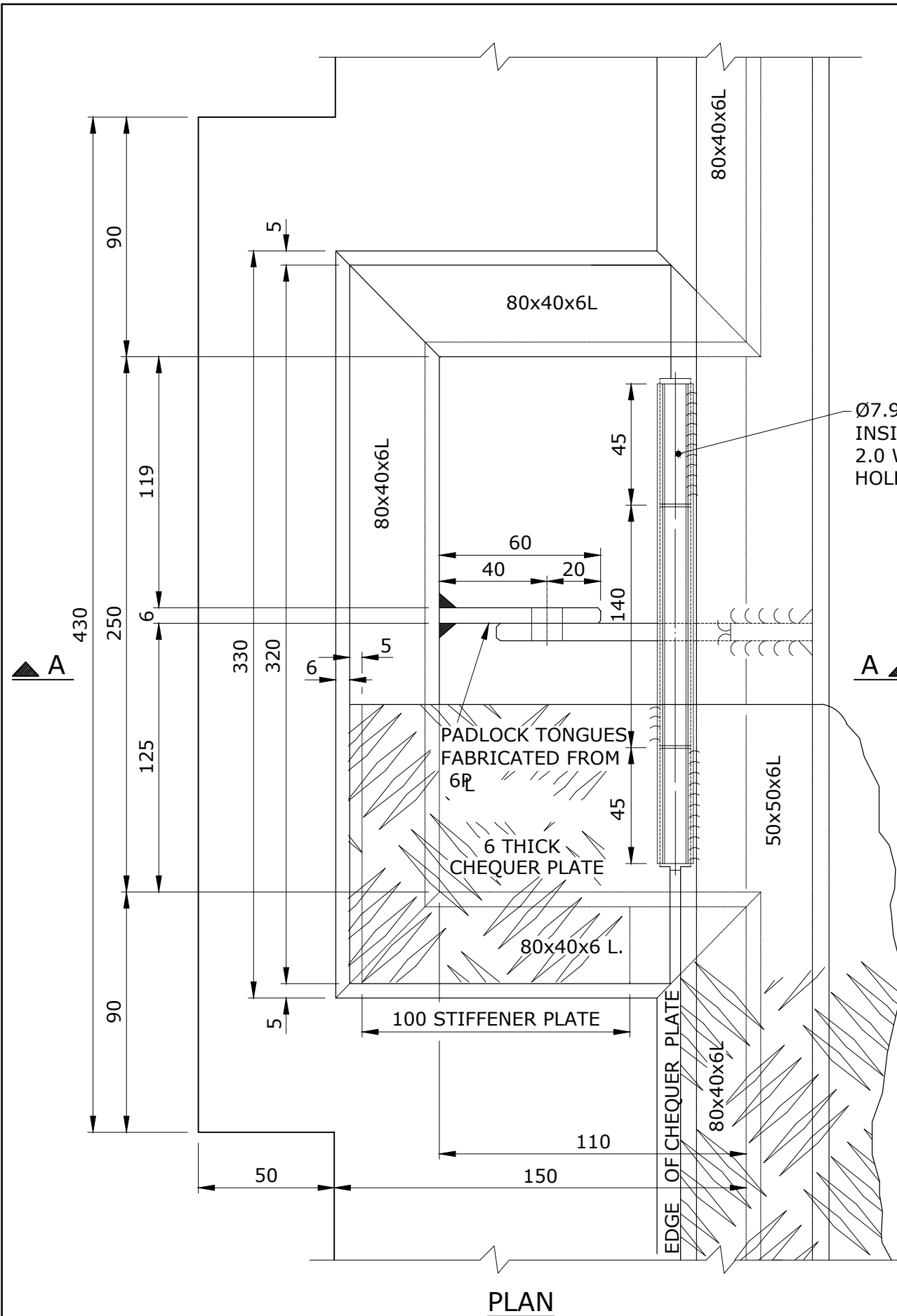
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION
SEQ-Sps ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

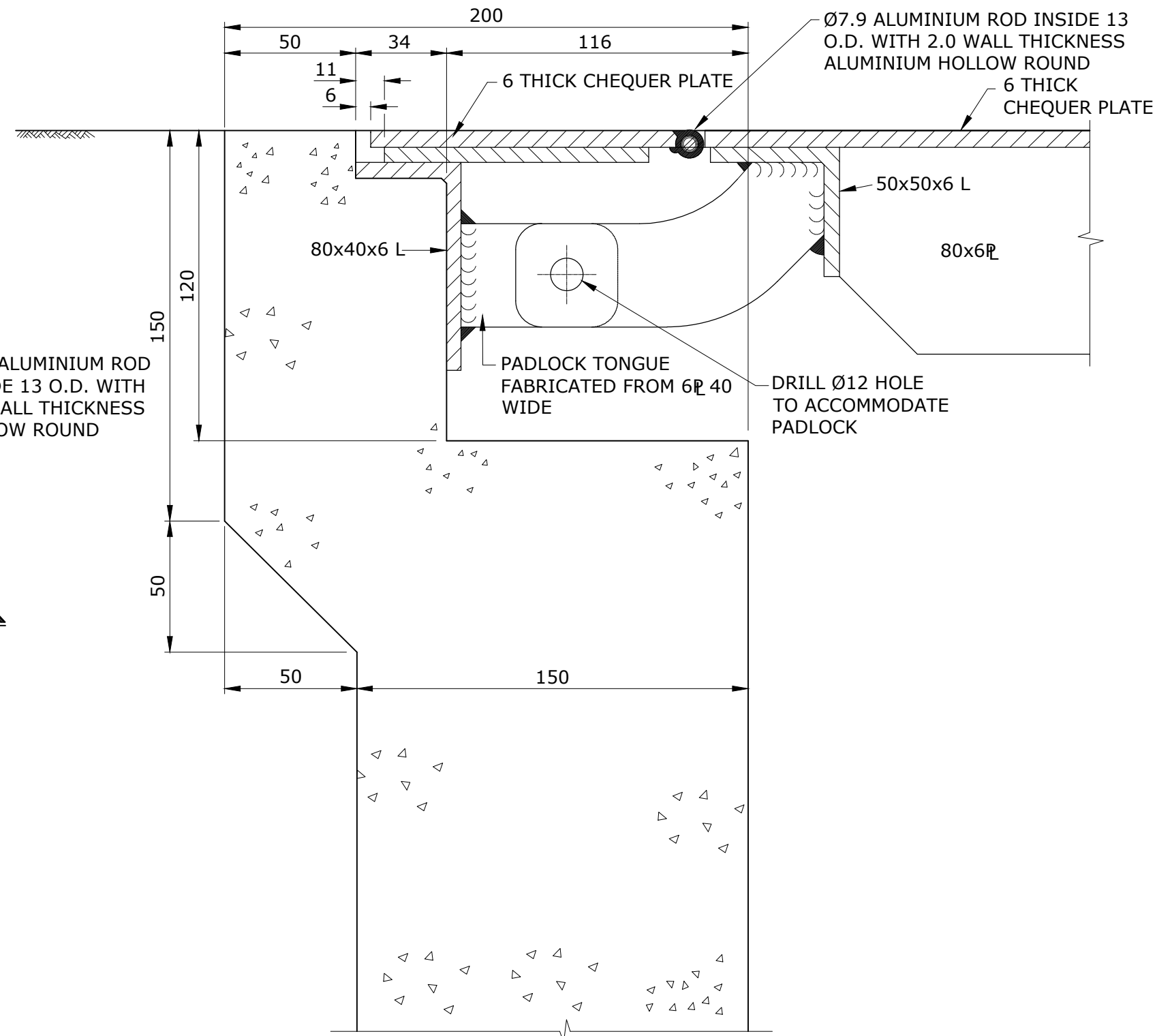
WATER SUPPLY STANDARD DRAWING

TYPICAL SMALL WATER SUPPLY PUMP STATION OR RESERVOIR DRAWING 3 OF 4

CoGC	<input checked="" type="checkbox"/> LCC	<input type="checkbox"/> RCC	<input type="checkbox"/> UU	<input type="checkbox"/> UW
DRAWING No.				VERSION
SEQ-WAT-1316-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



PLAN



SECTION A-A

FOR CoGC REFER SEQ-WAT-1319-1 TO 4 FOR COVER AND FRAME DETAILS

PADLOCK RECESS DETAIL

NOTES

1. ALL ALLOY FACES IN CONTACT WITH CONCRETE SURFACES SHALL BE PAINTED WITH BITUMINOUS PAINT.
2. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
C	1/02/24	LCC BOX CROSSED, NOT FOR CONSTRUCTION, CoGC AND UU IN TITLE BLOCK	
B	22/05/19	NEW BOX NOTE	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

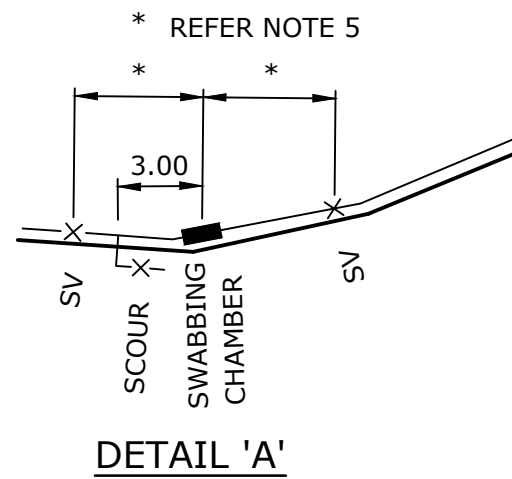
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

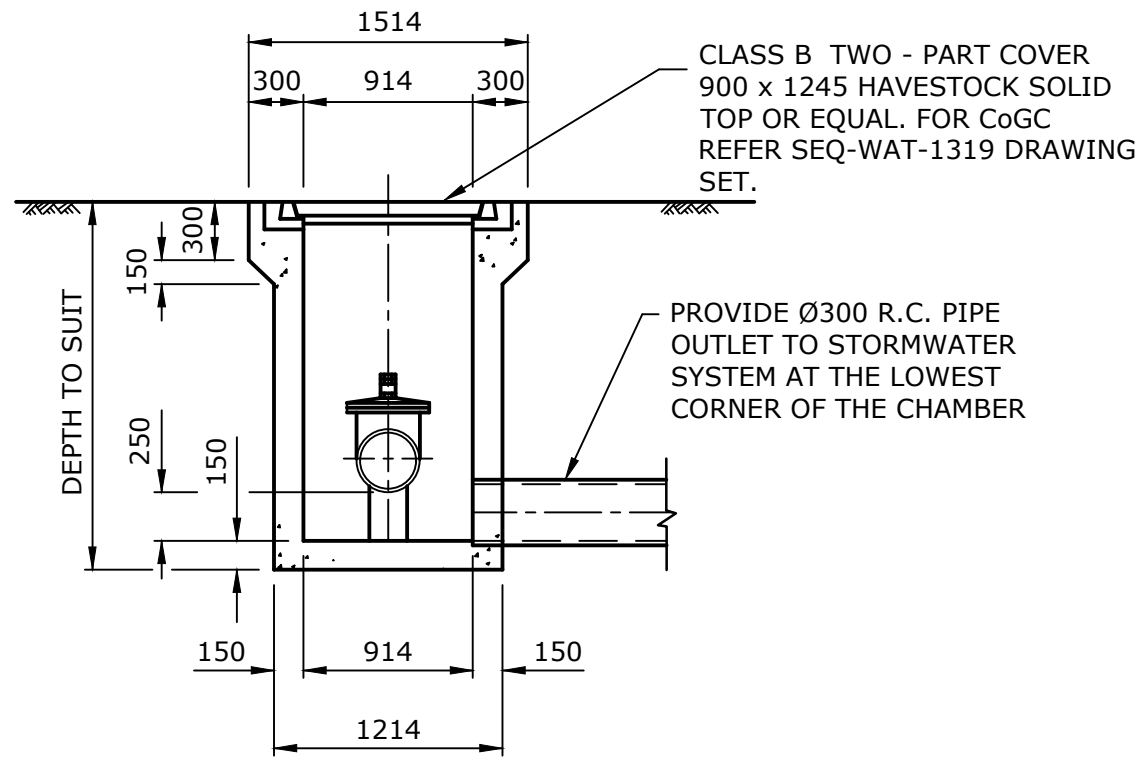
TYPICAL SMALL WATER SUPPLY PUMP STATION OR RESERVOIR DRAWING 4 OF 4

CoGC	LCC	RCC	UU	JW
DRAWING No.				VERSION
SEQ-WAT-1317-1				C
NOT TO SCALE				ORG DATE: 1/1/2013

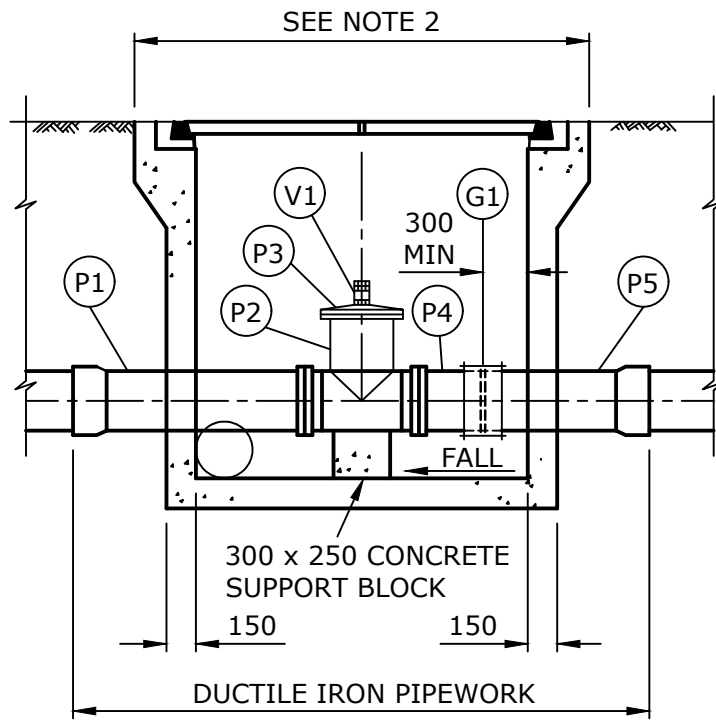


PIPEWORK SCHEDULE

ITEM	DESCRIPTION
P1	SOCKET/FLANGE PIPE x 1000 LONG
P2	FLANGE/FLANGE TEE WITH FLANGED BRANCH
P3	BLANK FLANGE TAPPED CENTRALLY Ø50 B.S.P.
P4	FLANGE/SPIGOT PIPE x 500 LONG
P5	SPIGOT/SOCKET PIPE
V1	SCREWED BALL VALVE WITH HEXAGONAL NIPPLES
G1	GIBALUT JOINT ELONGATED



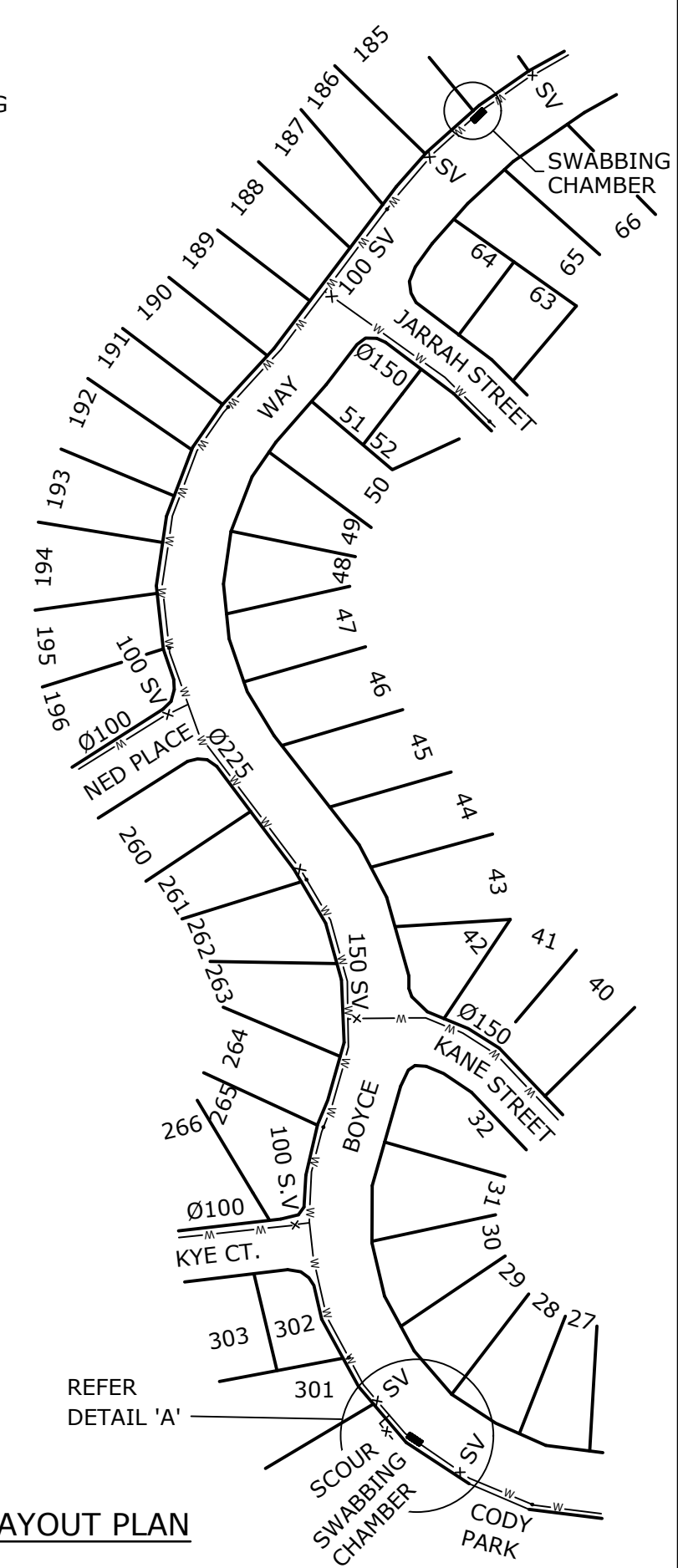
TYPICAL SECTION THROUGH CHAMBER



SECTION ALONG CHAMBER DETAIL

NOTES:

1. CONCRETE TO BE GRADE N25.
2. THE PIT LENGTH SHALL SUIT THE REQUIRED COMPONENTS AND PROVIDE ADEQUATE AREA FOR MAINTENANCE AS DIRECTED BY THE SUPERINTENDENT.
3. WHERE SWABBING CHAMBERS AND SCOURS ADJOIN EACH OTHER (ie AT LOW POINTS) A COMMON PIPE OUTLET MAY BE PROVIDED AS DETAILED ON THE APPROVED ENGINEERING DRAWINGS OR AS DIRECTED BY THE SUPERINTENDENT.
4. WHERE THE MAIN IS LAID DEEPER THAN THE STANDARD DEPTH, THE SWABBING CHAMBER STRUCTURAL CONSTRUCTION SHALL BE AS DETAILED ON THE APPROVED ENGINEERING DRAWINGS.
5. SLUICE VALVES SHALL GENERALLY BE LOCATED OPPOSITE COMMON PROPERTY BOUNDARIES BETWEEN 5 m TO 25 m EITHER SIDE OF THE SWABBING CHAMBER.
6. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.



LAYOUT PLAN

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION, CoGC AND UU IN THE TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

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WATER SUPPLY STANDARD DRAWING

**TYPICAL ARRANGEMENT
MAIN SWABBING CHAMBER**

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1318-1				B
NOT TO SCALE				ORG DATE: 1/1/2013

GENERAL NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
2. THIS SET OF STANDARD ALUMINIUM ACCESS COVER DRAWINGS ARE TO BE USED AS A GUIDE ONLY FOR THE MANUFACTURE AND FABRICATION OF ALUMINIUM COVERS AND FRAMES OVER WATER PUMP STATIONS WHERE APPLICABLE. THESE DRAWINGS SHALL COMMUNICATE THE INTENT AND FUNCTION, AND ARE NOT FABRICATION OR CONSTRUCTION DRAWINGS. ALL MEASUREMENTS ARE INDICATIVE ONLY. THE MANUFACTURER IS RESPONSIBLE FOR THE FULL STRUCTURAL DESIGN OF ALL COMPONENTS WITH FULL RPEQ CERTIFICATION.
3. EACH COVER AND FRAME SHALL BE DESIGNED TO SUIT INDIVIDUAL SITE CONDITIONS AND STRUCTURAL COMPONENTS. COVER ARRANGEMENTS MAY VARY TO SUIT THE DESIGN OF THE MANUFACTURER / FABRICATOR, HOWEVER THE GENERAL PRINCIPLES AND FUNCTION SHALL BE AS DETAILED IN THESE DRAWINGS.
4. THE STRUCTURAL COMPONENTS ON THESE DRAWINGS SHALL BE DESIGNED IN ACCORDANCE WITH THE STRUCTURAL DESIGN ACTIONS OF THE AS/NZS1170 SET.
5. ACCESS COVERS IN NON-TRAFFICABLE LOCATIONS AND SUBJECT TO PEDESTRIAN LOADS ONLY, SHALL BE DESIGNED FOR CLASS A LOADINGS AS SPECIFIED IN AS3996 SECTION 3.
6. SAFETY GRATES SHALL BE DESIGNED FOR PLATFORM LOADINGS IN ACCORDANCE WITH AS1657.
7. COVERS MUST BE DESIGNED SUCH THAT THEIR TOTAL LIFTING WEIGHT (W_l) DOES NOT EXCEED 16kg, UNLESS APPROVED OTHERWISE BY THE PRINCIPAL.
8. FOR A HINGED GRATE THE MAXIMUM LIFTING WEIGHT AT EACH LIFTING POINT SHALL NOT BE GREATER THAN 16kg.
9. COVERS WITH A TOTAL LIFTING WEIGHT (W_l) GREATER THAN 16kg, SHALL BE DESIGNED FOR A TWO PERSON LIFT WITH DUAL KEYWAY BOXES AND THE TOP OF THE COVER SHALL BE MARKED WITH AN ETCHED PLATE STATING 'OVER 16kg'.
10. FOR A HINGED COVER LOCATED ABOVE A GRATE THE MAXIMUM LIFTING WEIGHT AT EACH LIFTING POINT SHALL NOT BE GREATER THAN 16kg.
11. FOR A HINGED STAND ALONE COVER (i.e. WITHOUT GRATE BELOW) THE MAXIMUM LIFTING WEIGHT AT EACH LIFTING POINT SHALL NOT BE GREATER THAN 20kg.
12. MINIMUM THICKNESS OF ALUMINIUM CHEQUER PLATE MUST BE 4mm.
13. THE TOP OF EACH STAND ALONE COVER (i.e. WITHOUT GRATE BELOW) SHALL BE MARKED WITH AN ETCHED PLATE STATING 'NO GRATE UNDERNEATH'.
14. THE UNDERSIDE OF THE COVERS SHALL BE MARKED WITH AN ETCHED PLATE, STATING THE MANUFACTURER'S NAME OR REGISTERED TRADEMARK, MONTH AND YEAR OF MANUFACTURE, AND LOAD CLASS.
15. THE ACCESS COVER OPENING DIMENSIONS AND BOLLARD ARRANGEMENT (IF REQUIRED) SHALL BE SPECIFIED IN THE PROJECT DRAWING.
16. ACCESS COVERS LOCATED WITHIN PEDESTRIAN WALKWAYS (e.g. FOOTPATHS) SHALL BE DESIGNED WITH A 2mm MAXIMUM HEIGHT DIFFERENCE BETWEEN TOP EDGE OF COVERS (EXCLUDING ANY PATTERN) AND TOP OF FRAME IN ACCORDANCE WITH AS3996 SECTION 3.3. THIS MAXIMUM HEIGHT DIFFERENCE IS NOT SHOWN IN THESE STANDARD DRAWINGS.

MATERIAL NOTES

1. ALL ALUMINIUM COMPONENTS SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH THE AS/NZS 1664 SET.
2. ALL ALUMINIUM SHALL BE MARINE GRADE TO AS1734.
3. ALUMINIUM SHALL ONLY BE ANODIZED IF SPECIFIED BY THE PRINCIPAL.
4. ALL STAINLESS STEEL USED SHALL BE GRADE 316.
5. ALL STAINLESS STEEL NUTS AND BOLTS TO BE ASSEMBLED WITH AN ANTI-GALLING COMPOUND 'DURALAC' OR APPROVED EQUIVALENT.
6. ALUMINIUM AND STAINLESS STEEL SHALL NOT BE ALLOWED TO COME IN CONTACT WITH EACH OTHER UNLESS ADEQUATELY INSULATED WITH APPROVED SEALANTS, GASKETS, WASHERS AND SLEEVES.
7. ALL ACCESS COVERS SHALL HAVE THEIR TOP SURFACES COVERED WITH A GREEN COLOURED 'EPIREZ SAFE STEP 550' EXPOXY ANTI-SLIP COATING OR APPROVED EQUIVALENT AFTER THE APPLICATION OF THE EPIREZ EPOXY PRIMER/SEALER (123).
8. WHERE ALUMINIUM IS IN CONTACT WITH CONCRETE, THE ALUMINIUM SHALL BE PAINTED WITH A MINIMUM TWO COATS OF BITUMINOUS PAINT OR APPROVED EQUIVALENT.
9. ALL ALUMINIUM WELDING TO COMPLY WITH AS/NZS1665 AND ISO18273.

DRAWING INDEX

DRAWING No.	DRAWING TITLE
SEQ-WAT-1319-1	DRAWING INDEX, NOTES AND LEGEND
SEQ-WAT-1319-2	GENERAL ARRANGEMENT AND OPENING/CLOSING SEQUENCE
SEQ-WAT-1319-3	CROSS SECTIONS & DETAILS - SHEET 1 OF 2
SEQ-WAT-1319-4	CROSS SECTIONS & DETAILS - SHEET 2 OF 2

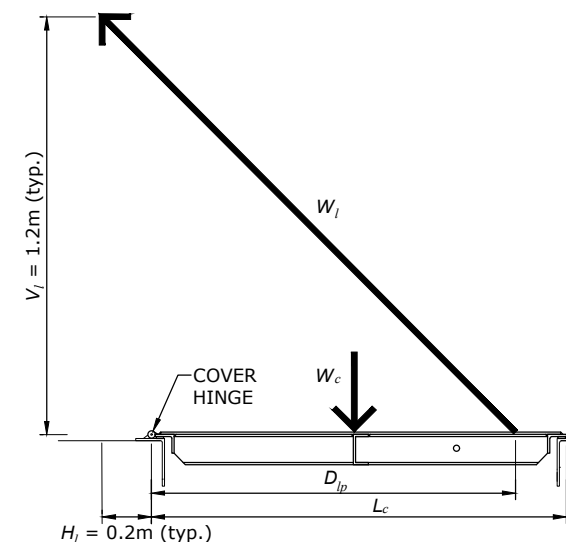
LIFTING WEIGHT CALCULATION

THE TOTAL LIFTING WEIGHT FOR A HINGED COVER SHALL BE DETERMINED AS FOLLOWS:

$$W_l = \frac{W_c \cdot L_c}{2 \cdot D_{lp} \cdot \sin\left(\tan^{-1}\left(\frac{V_l}{D_{lp} + H_l}\right)\right)}$$

WHERE

- W_l = THE TOTAL COVER LIFTING WEIGHT (kg)
(REFER GENERAL NOTES 8, 9 & 10)
- W_c = THE TOTAL COVER WEIGHT (DEAD WEIGHT) (kg)
- L_c = THE LENGTH OF THE COVER (m)
- D_{lp} = THE DISTANCE TO THE LIFTING POINT (m)
- V_l = THE LIFT VERTICAL HEIGHT, 1.2m TYPICAL
- H_l = THE LIFT HORIZONTAL OFFSET FROM THE HINGE, 0.2m TYPICAL



LEGEND

- DETAIL** **A**/**3** DETAIL LETTER SHEET WHERE SHOWN *
 - DETAIL** **A**/**2** DETAIL LETTER SHEET WHERE TAKEN *
 - SECTION** **1**/**3** SECTION NUMBER SHEET WHERE SHOWN *
 - SECTION** **1**/**2** SECTION NUMBER SHEET WHERE TAKEN *
- * DASH INDICATES SHOWN ON SAME SHEET

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

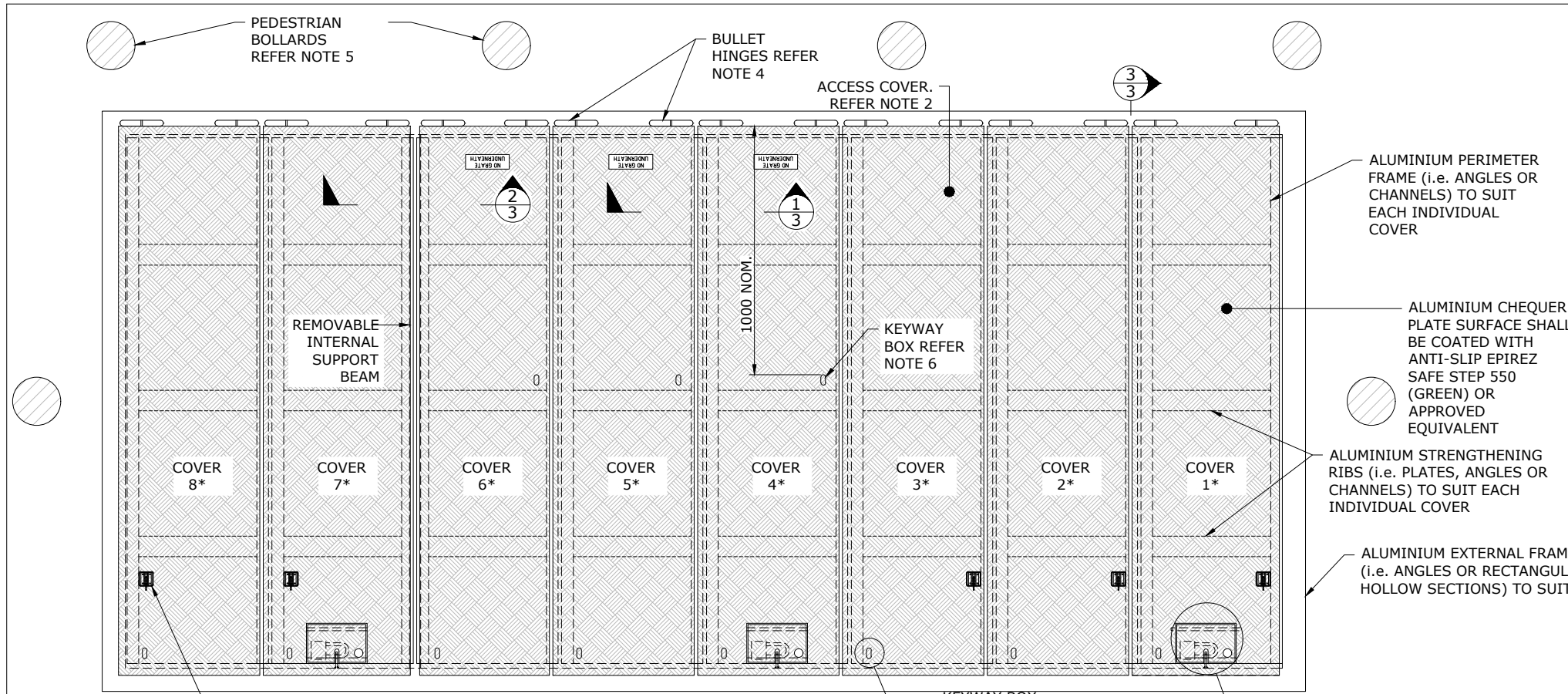
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

FALL PREVENTION COVERS AND GRATES AT WATER PUMPING STATIONS

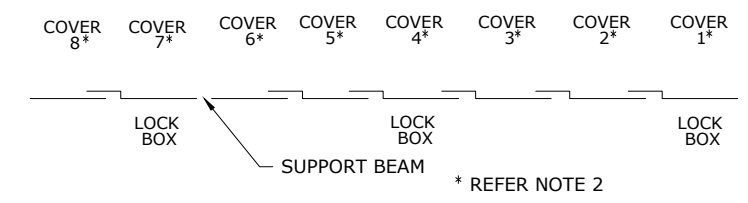
DRAWING INDEX, NOTES AND LEGEND

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1319-1				B
NOT TO SCALE				ORG DATE: 1/4/2017

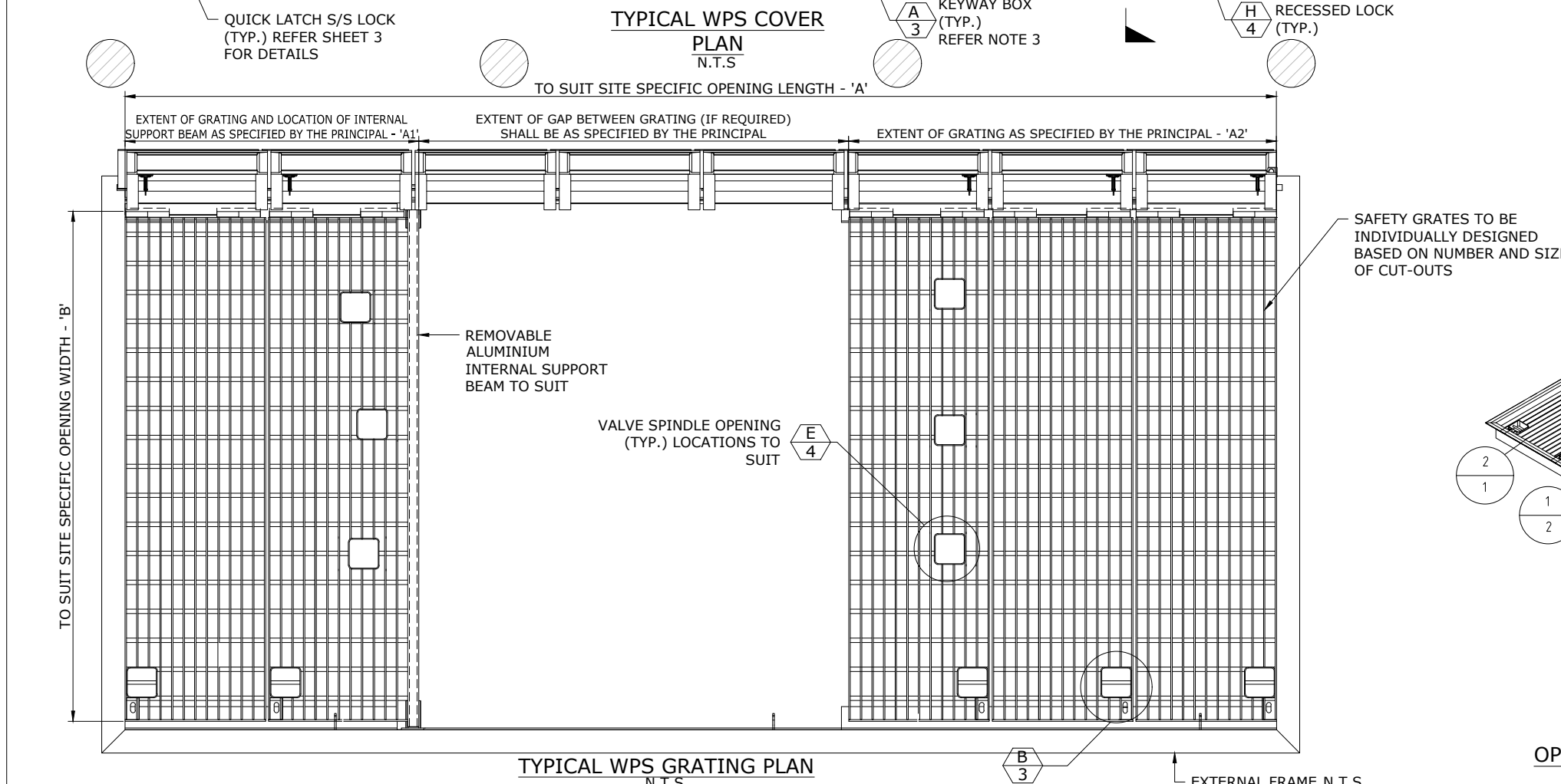


NOTES

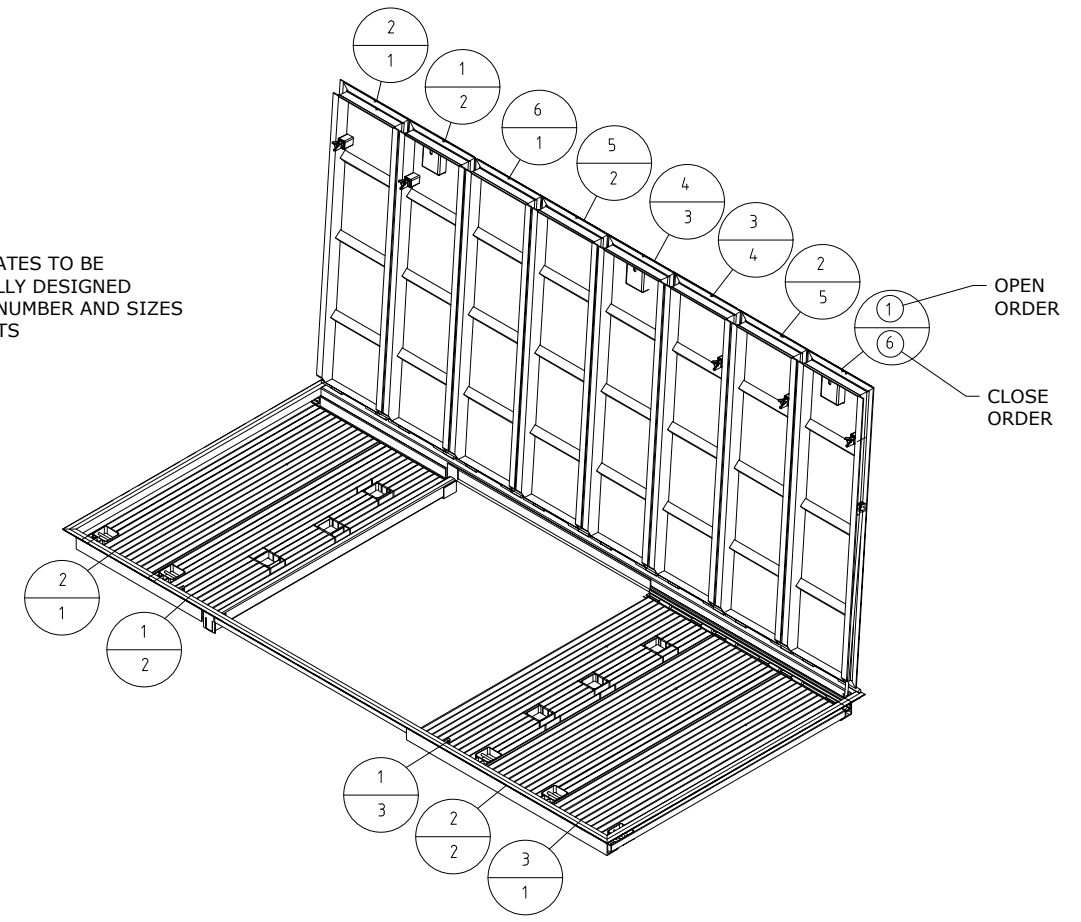
1. REFER DRG NO. SEQ-WPS-1319-1 FOR GENERAL AND MATERIAL NOTES.
2. THE NUMBER OF COVERS AND GRATES SHOWN IN THESE DRAWINGS ARE INDICATIVE ONLY. THE COVERS AND GRATES (INCLUDING SIZE AND NUMBER) SHALL BE DESIGNED TO SUIT INDIVIDUAL SITE CONDITIONS.
3. FOR COVERS WITH A TOTAL LIFTING WEIGHT LESS THAN 16kg, A SINGLE KEYWAY BOX SHALL BE PROVIDED. FOR COVERS WITH A TOTAL LIFTING WEIGHT GREATER THAN 16kg, DUAL KEYWAY BOXES AND AN ETCHED WARNING PLATE SHALL BE PROVIDED.
4. BULLET HINGES SHALL BE ORIENTATED IN OPPOSITE DIRECTIONS TO RESTRICT THE REMOVAL OF THE COVER.
5. THE LOCATION AND NUMBER OF BOLLARDS ARE INDICATIVE ONLY AND SHALL BE AS SPECIFIED BY THE PRINCIPAL. UNLESS SPECIFIED OTHERWISE, BOLLARDS SHALL BE TYPE 4 IN ACCORDANCE WITH CoGC STD DRG 13-05-617 WITH THE FOLLOWING AMENDMENTS:
 - 5.1. BOLLARDS TO BE PAINTED WITH TWO COATS OF TWO PACK 125 MICRON IN TOTAL THICKNESS OF AS2700 GOLDEN YELLOW Y14 (SAFETY YELLOW PAINT).
 - 5.2. PROVIDE TWO RED CLASS 1 RETROREFLECTIVE TAPE SPACED APART AS PER CoGC STD DRG 13-05-616.
6. AN ADDITIONAL KEYWAY BOX SHOULD BE PROVIDED FOR ALL COVERS WITHOUT A GRATE BELOW.



TYPICAL WPS COVER PLAN
N.T.S



TYPICAL WPS GRATING PLAN
N.T.S



OPENING AND CLOSING SEQUENCE OF COVERS AND GRATES
N.T.S

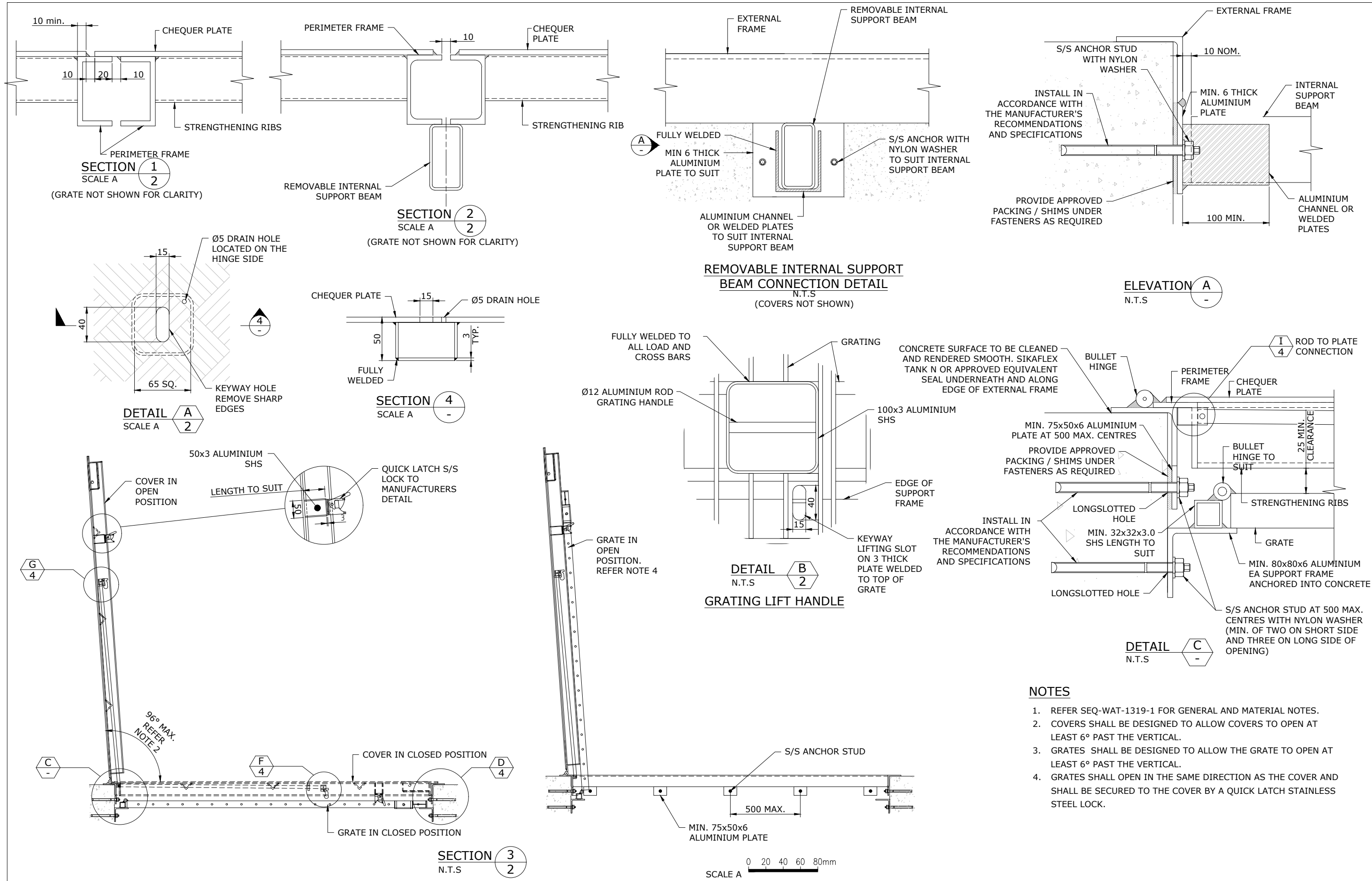
REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	GCCC TO CoGC. NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION
 SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
FALL PREVENTION COVERS AND GRATES
AT WATER PUMPING STATIONS
GENERAL ARRANGEMENT
AND OPENING/CLOSING SEQUENCE

CoGC	LEC	REC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1319-2				B
NOT TO SCALE				ORG DATE: 1/4/2017



- NOTES**
1. REFER SEQ-WAT-1319-1 FOR GENERAL AND MATERIAL NOTES.
 2. COVERS SHALL BE DESIGNED TO ALLOW COVERS TO OPEN AT LEAST 6° PAST THE VERTICAL.
 3. GRATES SHALL BE DESIGNED TO ALLOW THE GRATE TO OPEN AT LEAST 6° PAST THE VERTICAL.
 4. GRATES SHALL OPEN IN THE SAME DIRECTION AS THE COVER AND SHALL BE SECURED TO THE COVER BY A QUICK LATCH STAINLESS STEEL LOCK.

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	NOTE 1. NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
 WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

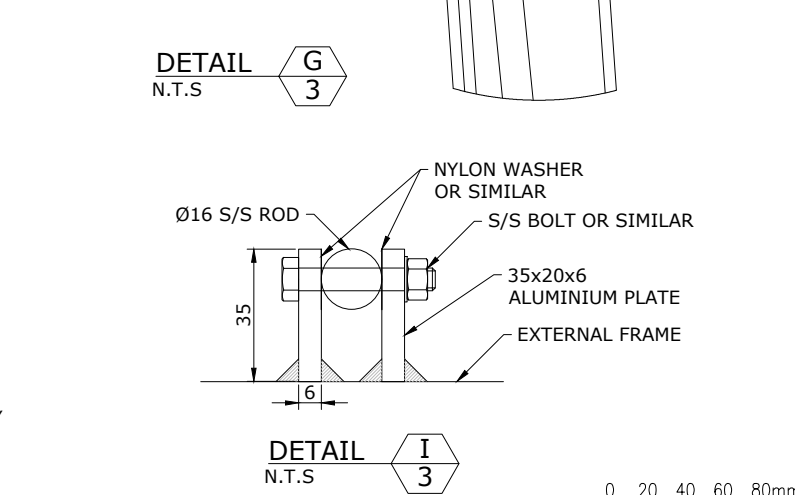
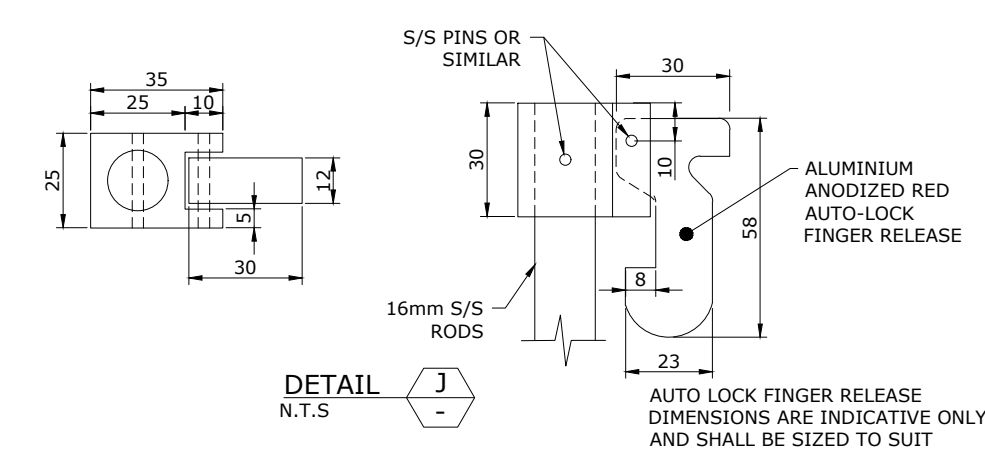
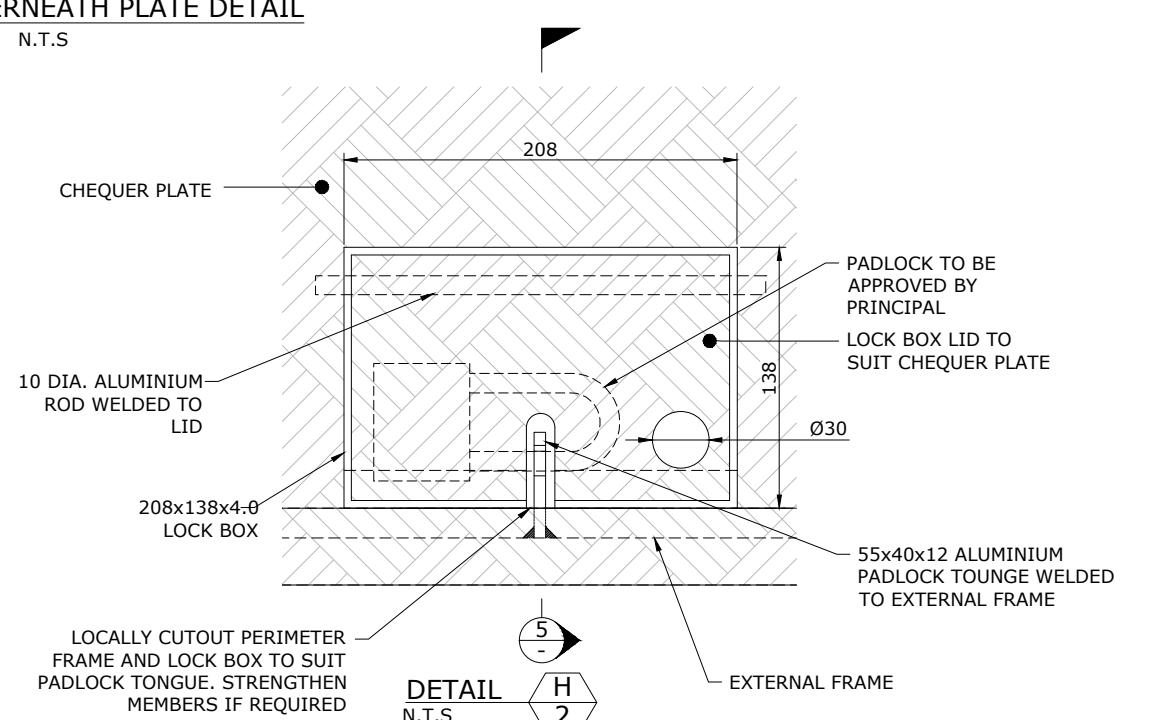
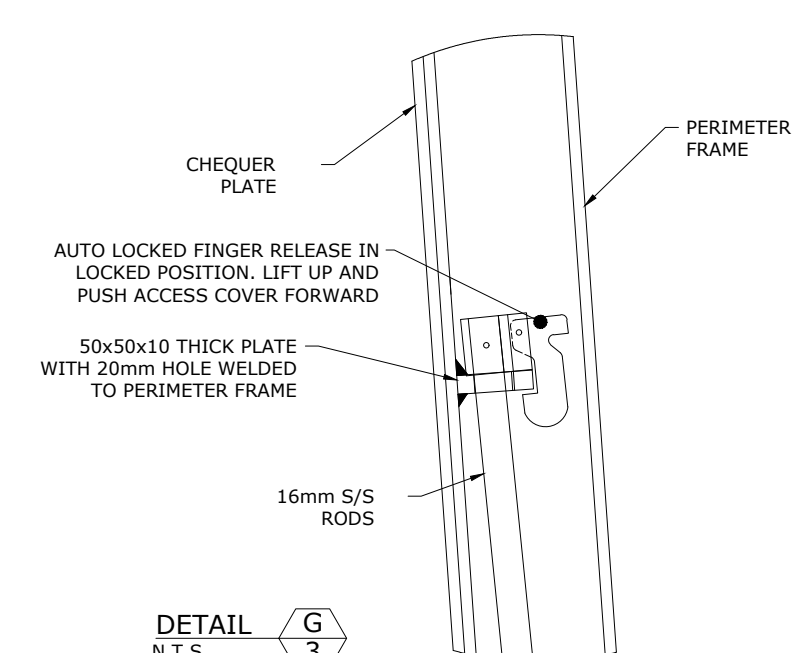
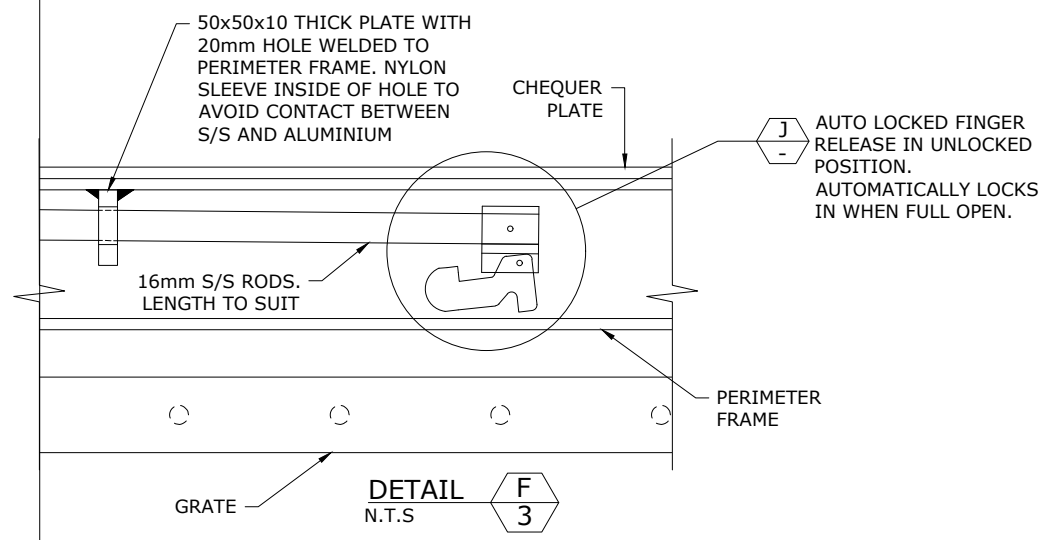
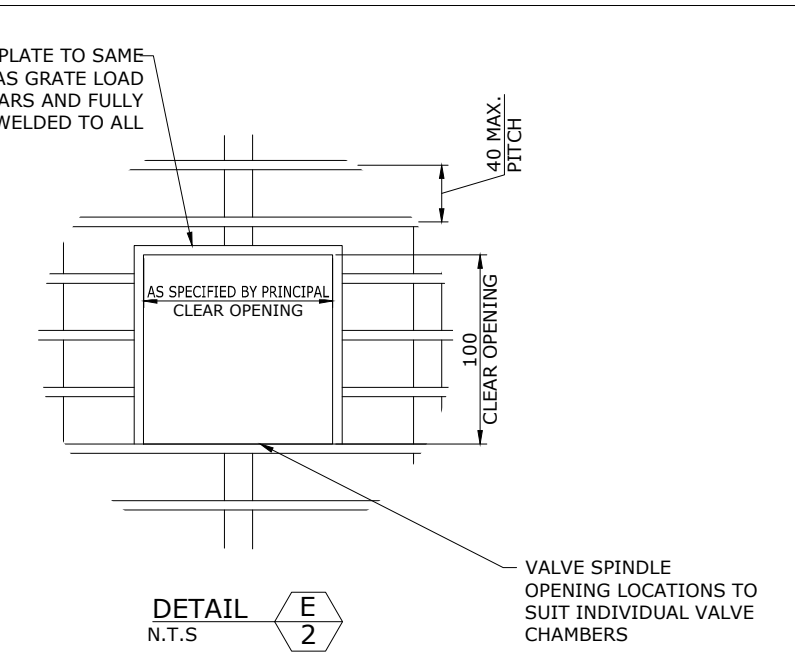
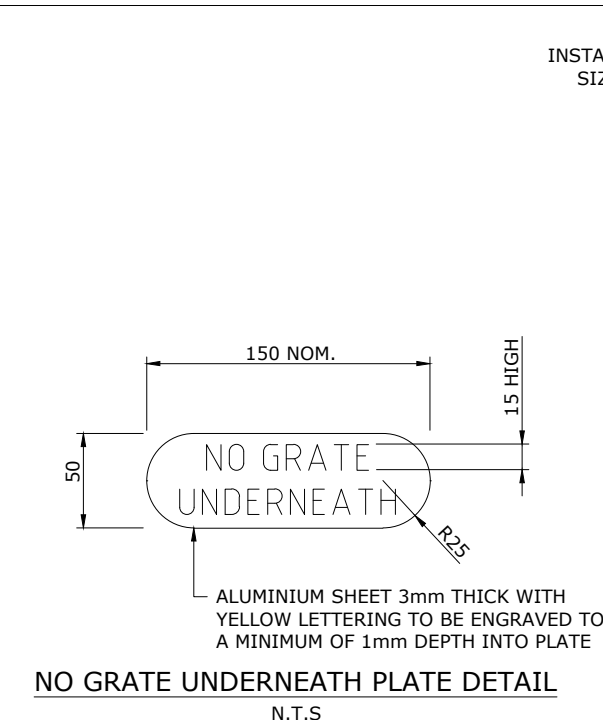
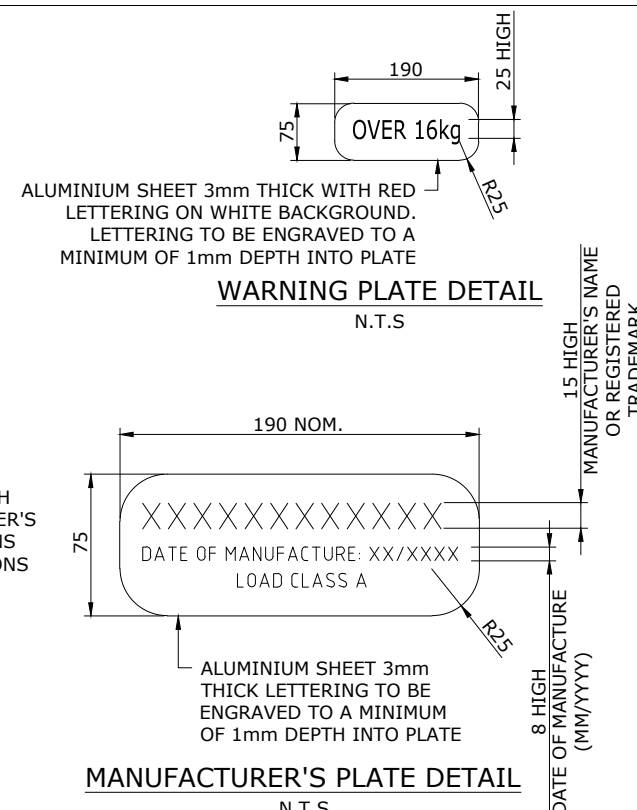
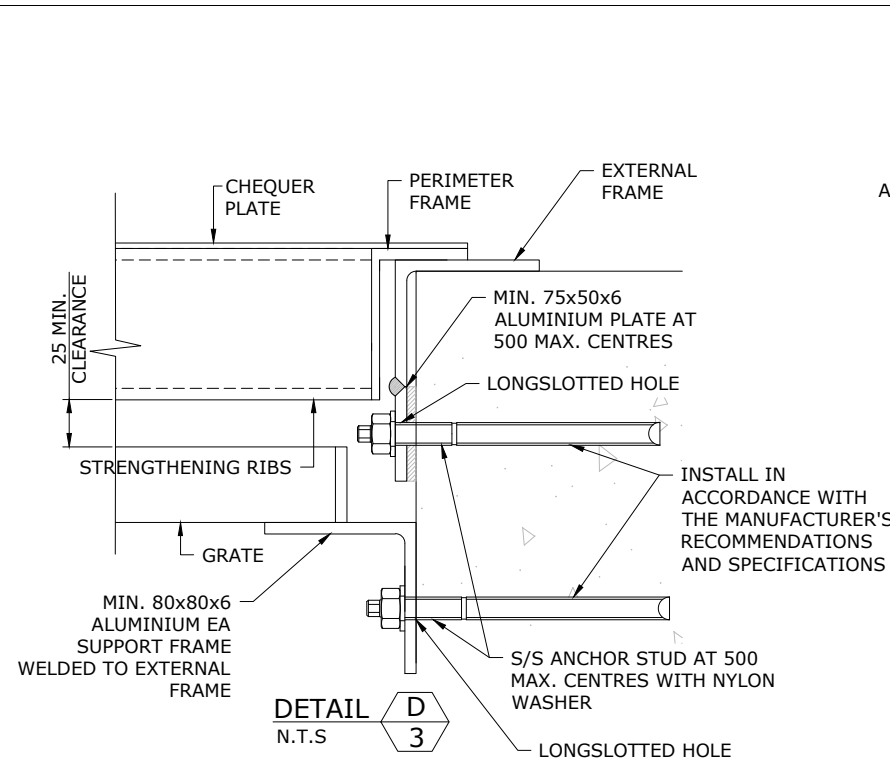
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

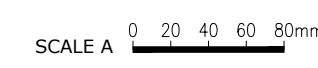
WATER SUPPLY STANDARD DRAWING

FALL PREVENTION COVERS AND GRATES
 AT WATER PUMPING STATIONS
 CROSS SECTIONS AND DETAILS
 SHEET 1 OF 2

CoGC	LEC	REC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1319-3				B
NOT TO SCALE				ORG DATE: 1/4/2017



NOTES
1. REFER DRG NO. 79887.013 FOR GENERAL AND MATERIAL NOTES.



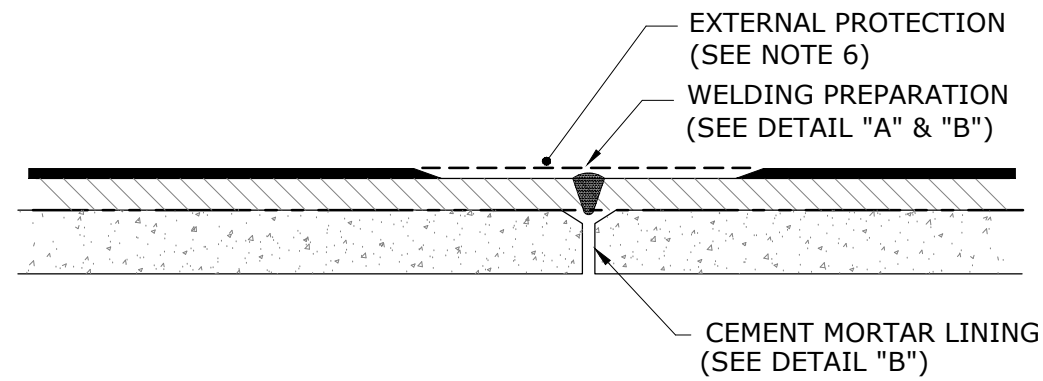
REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

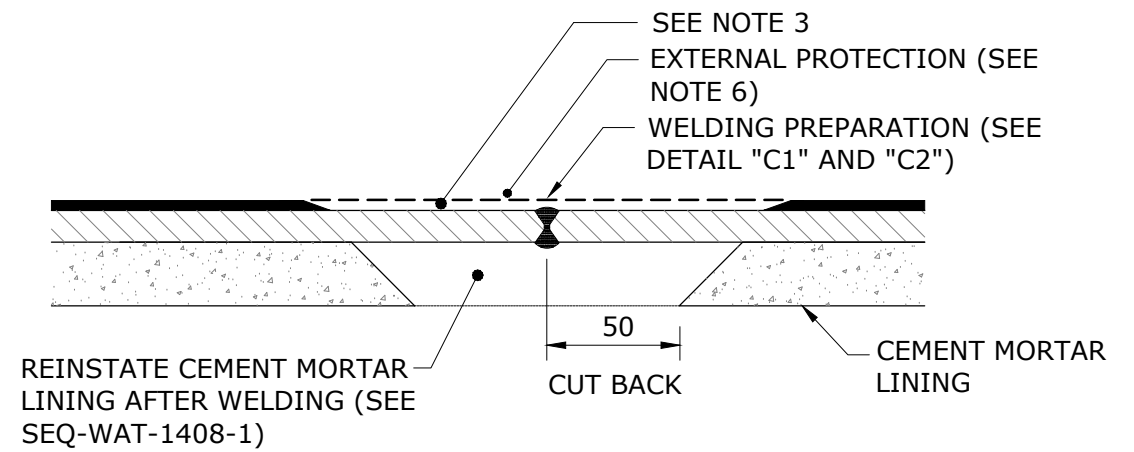
NOT FOR CONSTRUCTION
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
FALL PREVENTION COVERS AND GRATES
AT WATER PUMPING STATIONS
CROSS SECTIONS AND DETAILS
SHEET 2 OF 2

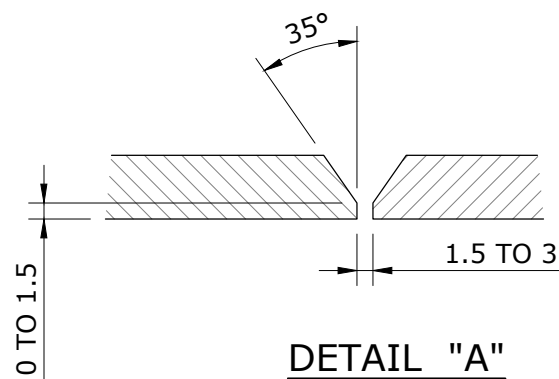
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DRAWING No.				VERSION
SEQ-WAT-1319-4				B
NOT TO SCALE				ORG DATE: 1/4/2017



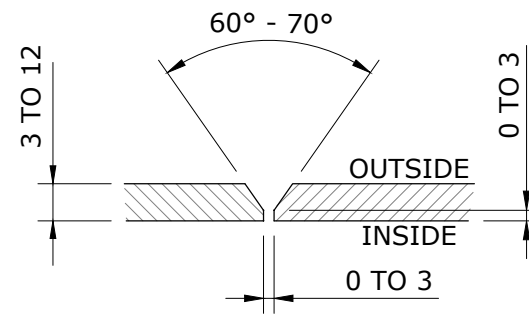
BUTT WELD FOR PIPES < DN750
(WELDED FROM OUTSIDE ONLY)



BUTT WELD FOR PIPES >OR= DN750 TO DN1200
(WELDED FROM BOTH SIDES)

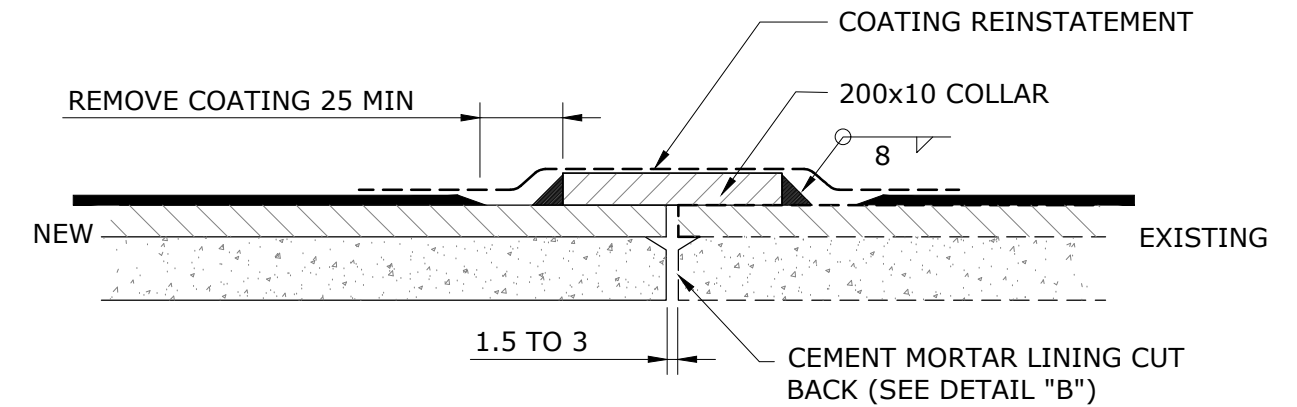


DETAIL "A"
WELD PREPARATION FOR PIPES < DN750



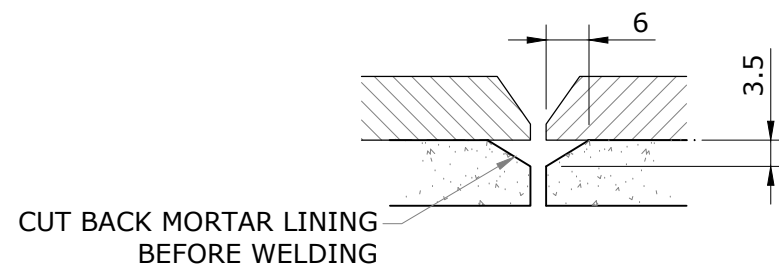
(FOR BARREL THICKNESS <OR= 12)
(SEE NOTES 4 & 5)

DETAIL "C1"

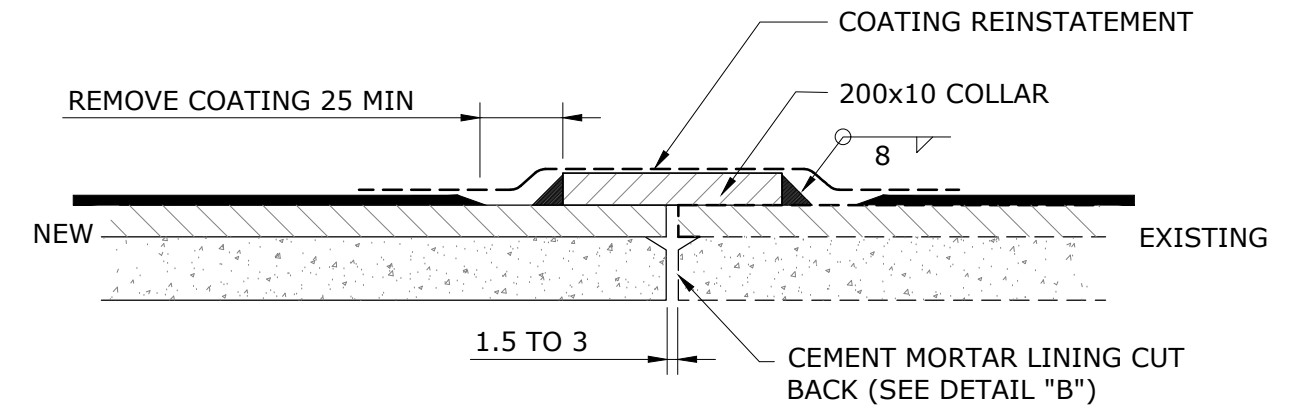


(FOR BARREL THICKNESS > 12)
(SEE NOTE 4)

DETAIL "C2"



DETAIL "B"
MORTAR PREPARATION CEMENT LINED PIPES < DN750



CLOSING JOINT FOR EXISTING MAINS

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. NO JOINT DEFLECTION ALLOWED WHERE BUTT WELDING IS CARRIED OUT.
3. CUT BACK COATINGS AT LEAST 100 FROM NEAREST ASSEMBLY WELD.
4. ALL WELDING TO BE FULL PENETRATION BUTT WELDS CARRIED OUT AND TESTED IN ACCORDANCE WITH AS/NZS 1554.1 CATEGORY SP.
5. IN DETAIL "C1", FOR THICKNESS <OR= 12, WELD OUTSIDE FIRST, THEN BACK GOUGE TO SOUND METAL BEFORE WELDING INSIDE.
6. REINSTATE EXTERNAL PROTECTION IN ACCORDANCE WITH THE CODE AND THEN MANUFACTURER'S SPECIFICATIONS.
7. CONFINED SPACES TRAINING AND SAFETY MANAGEMENT PLAN ESSENTIAL BEFORE ENTERING PIPE.
8. EXTERNAL PROTECTION SHALL BE TESTED WITH A HIGH VOLTAGE DETECTOR AT 15 KV IN ACCORDANCE WITH AS3894.1

CAUTION
AXIAL DEFLECTION OF PIPES TO BE JOINED IS NOT PERMITTED

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	25/06/18	NOTE 8 ADDED	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

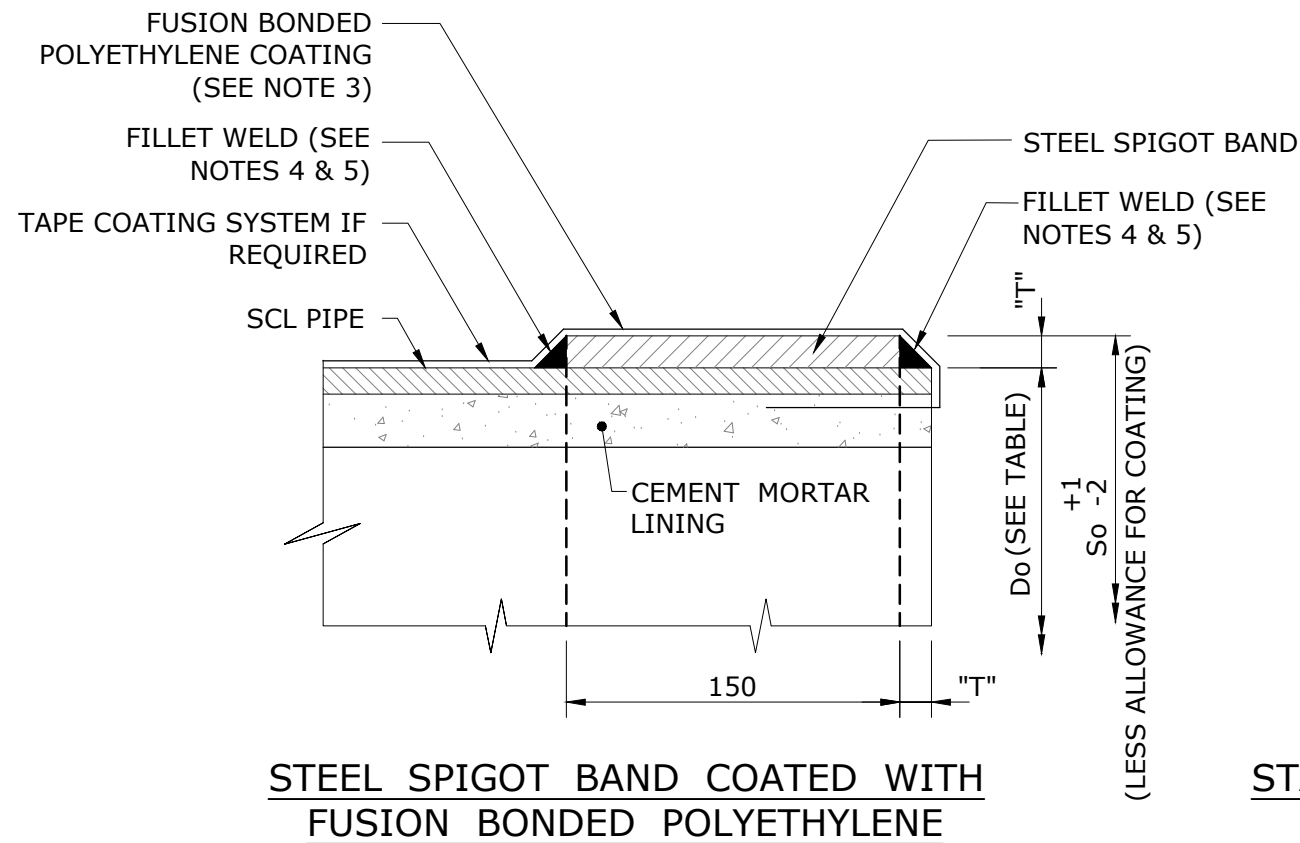
NOT FOR CONSTRUCTION

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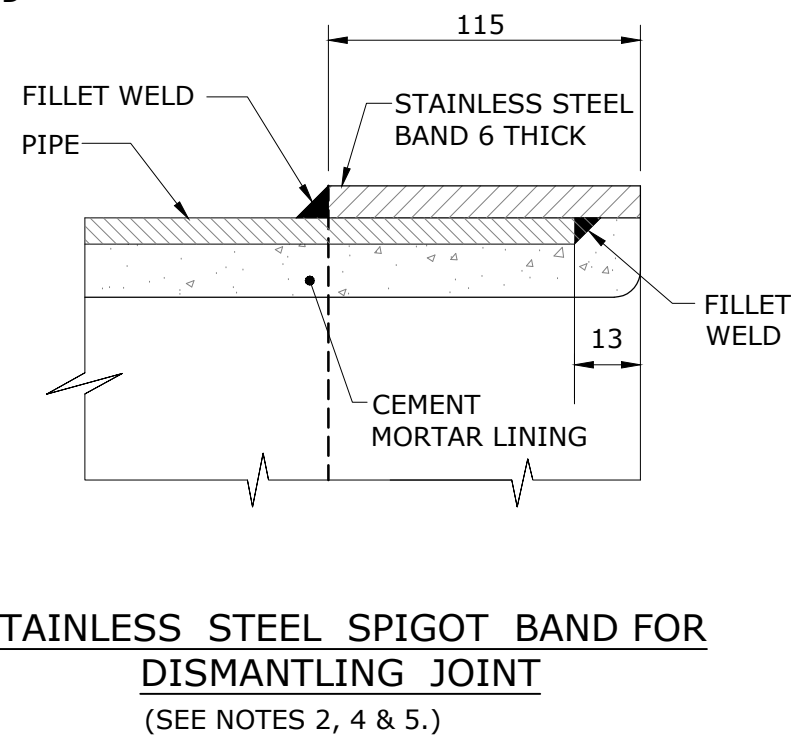
WATER SUPPLY STANDARD DRAWING

TYPICAL STEEL PIPE JOINTING
BUTT WELDING OF JOINTS

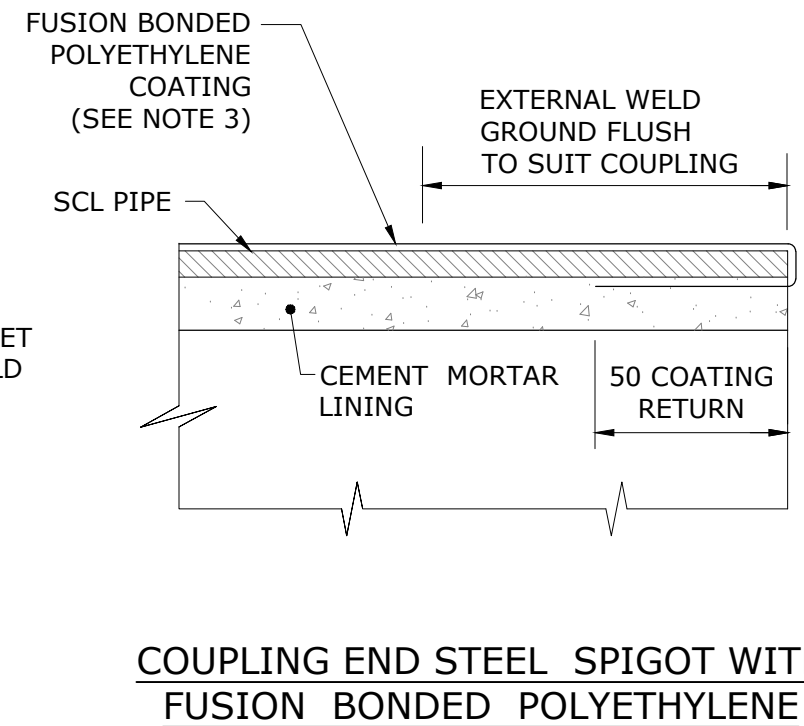
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1400-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



STEEL SPIGOT BAND COATED WITH FUSION BONDED POLYETHYLENE

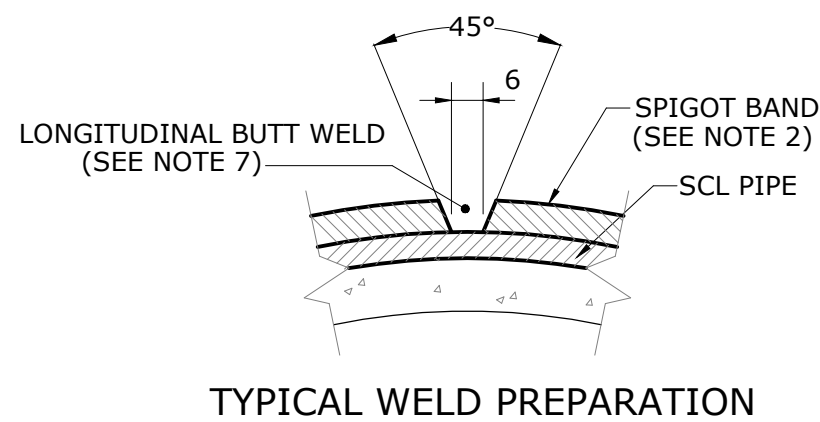


STAINLESS STEEL SPIGOT BAND FOR DISMANTLING JOINT
(SEE NOTES 2, 4 & 5.)



COUPLING END STEEL SPIGOT WITH FUSION BONDED POLYETHYLENE

SPIGOT BAND DIMENSIONS FOR CONNECTION TO DICL SOCKET (SEE NOTES 3 & 6)		
DICL PIPE SIZE DN	STEEL PIPE	SPIGOT BAND
	OUTSIDE DIAMETER Do	OUTSIDE DIAMETER So (SEE NOTE 5)
200	219	232
250	273	286
300	324 337	345
375	406 419	426
450	508	508
500	559	560
600	648 660	667
750	807 813	826



TYPICAL WELD PREPARATION

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. STEEL SPIGOT BANDS TO BE MANUFACTURED FROM MATERIALS AS FOLLOWS - STEEL IN ACCORDANCE WITH AS/NZS 3678 - STAINLESS STEEL TO BE TYPE 316L.
3. EXTERNAL PROTECTIVE COATING TO BE FACTORY APPLIED IN ACCORDANCE WITH AS 4321. ALLOWANCE TO BE MADE FOR 2 mm/SIDE THICKNESS OF COATING. FACTORY APPLIED METALISING MAYBE USED AS AN ALTERNATIVE COATING.
4. BANDS TO BE WELDED TO PIPE WITH CONTINUOUS FILLET WELDS. MINIMUM LEG LENGTH 5.
5. GRIND ALL WELDS FLUSH WITH EXTERNAL SURFACE. REMOVE ANY SHARP CORNERS TO PREVENT DAMAGE TO RUBBER RING.
6. TABLE APPLIES ONLY TO STEEL SPIGOT BANDS FOR JOINING TO DICL SOCKETS TO AS/NZS 2280 DIMENSIONS. FOR OTHER MATERIALS REFER TO MANUFACTURER FOR SPIGOT SIZES.
7. WELDING TO BE IN ACCORDANCE WITH AS/NZS 1554.1 CATEGORY SP AND AS/NZS 1554.6 FOR WELDING OF STAINLESS STEEL TO STEEL.
8. THE PREFERENCE IS FOR FLANGE TO FLANGE JOINTING BETWEEN STEEL AND DICL MAINS.

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	31/07/17	ADDED DETAIL FOR COUPLING END STEEL SPIGOT	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

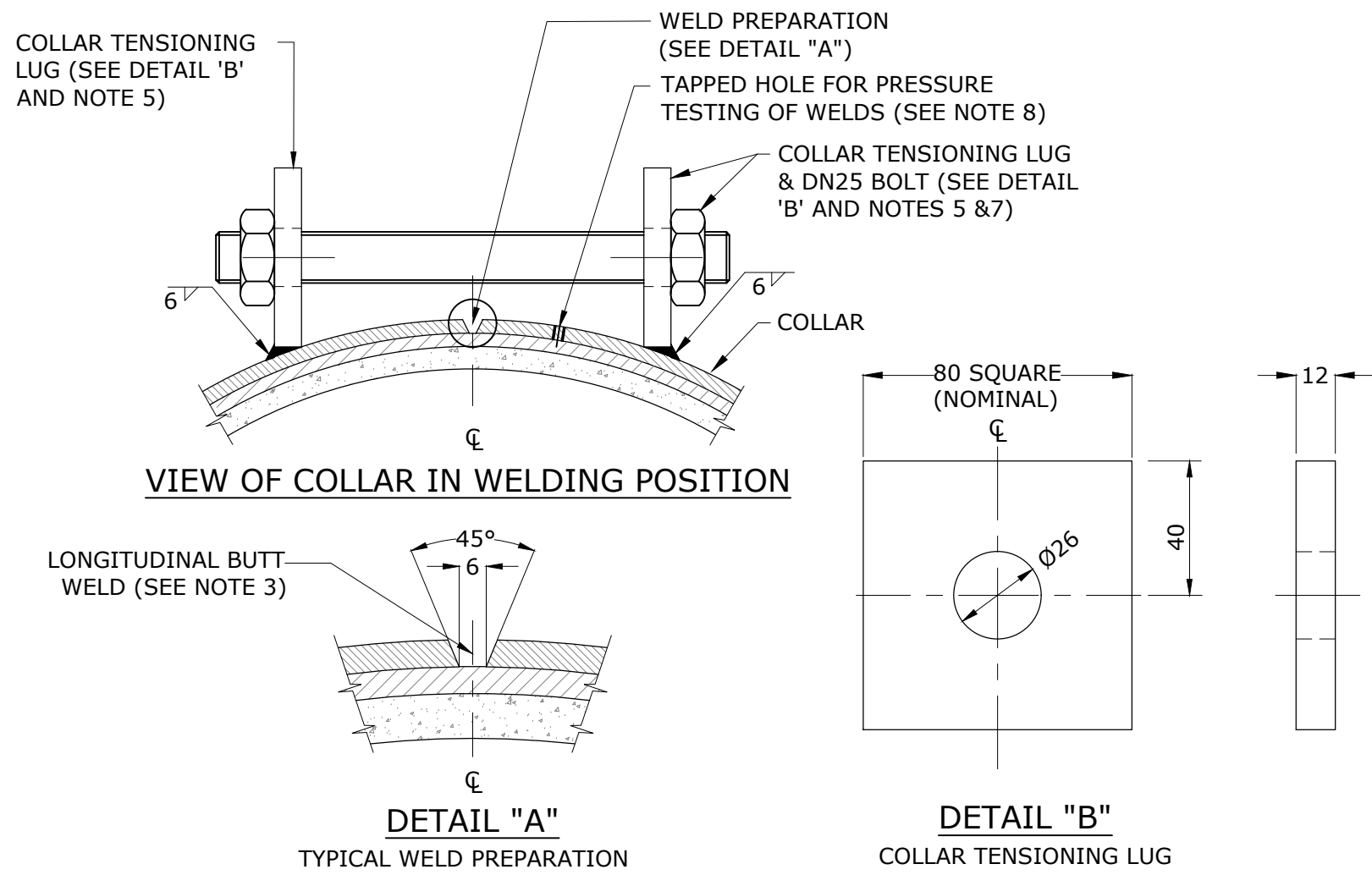
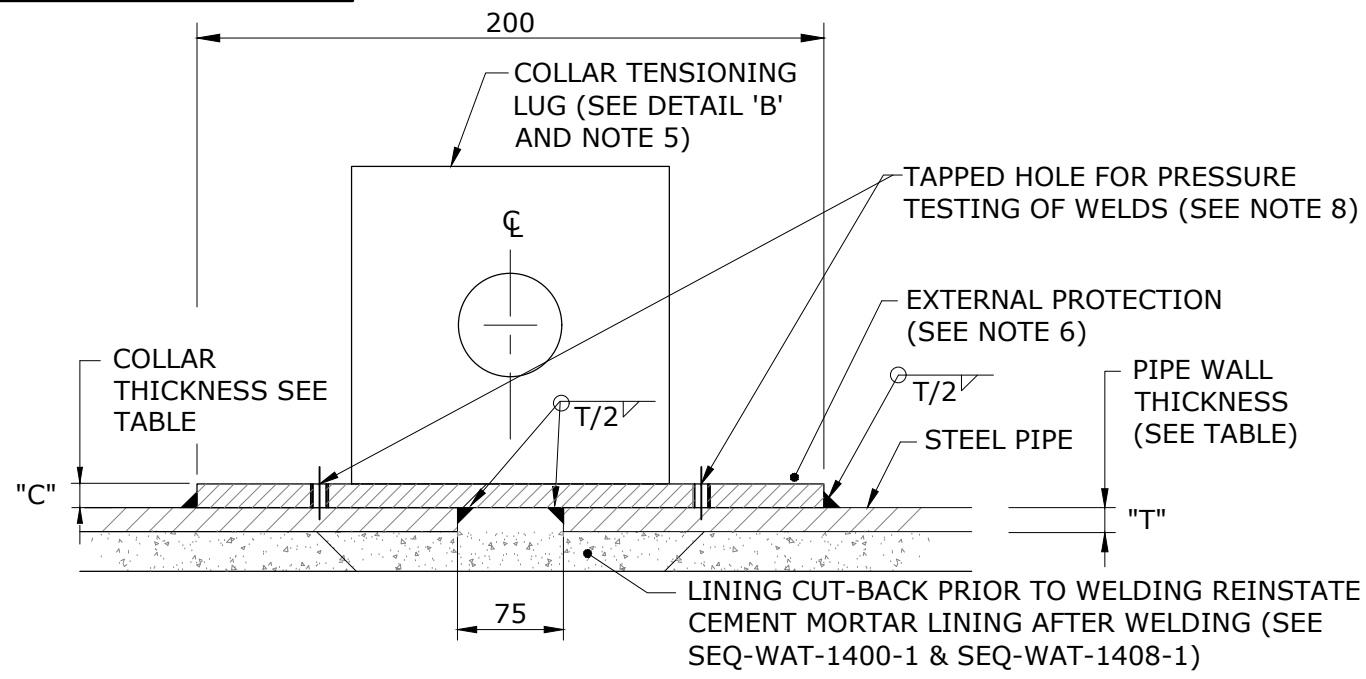
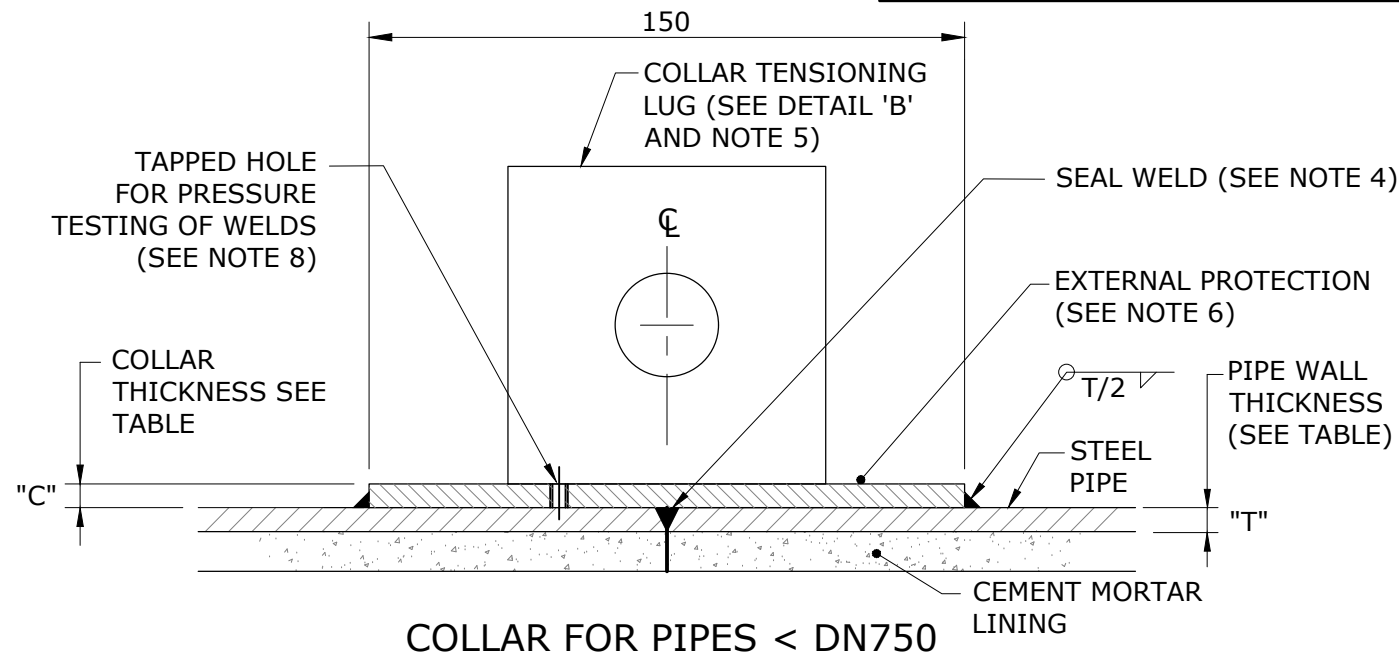
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

TYPICAL STEEL PIPE JOINTING
RUBBER RING JOINT SPIGOT
BAND SPECIALS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1401-1				C
NOT TO SCALE				ORG DATE: 1/1/2013

**CAUTION AXIAL DEFLECTION OF PIPES
TO BE JOINED IS NOT PERMITTED.**



COLLAR FOR PIPES >OR= DN750 TO 1200

COLLAR DETAILS		
PIPE SIZE DN	PIPE WALL THICKNESS <OR= "T"	COLLAR THICKNESS "C"
100 TO 225	5	6
250 TO 350	5 6	6 8
400 TO 750	5 8 10	6 10 12
800 & OVER	6 8 10 12 16 20 25	8 10 12 16 20 25 32

- NOTES**
- ALL DIMENSIONS IN MILLIMETRES.
 - STEEL USED FOR COLLARS TO BE IN ACCORDANCE WITH AS/NZS 3678.
 - WELDING TO BE IN ACCORDANCE WITH AS/NZS 1554.1 CATEGORY SP.
 - SEAL WELD TO CONSIST OF A SINGLE CONTINUOUS WELD BEAD AROUND PIPE AND TO BE GROUND FLUSH WITH PIPE OD PRIOR TO FITTING COLLAR.
 - REMOVE BOLTS & WELDING LUGS AFTER COLLAR HAS BEEN WELDED. GRIND FINISHED SURFACES FLUSH.
 - WRAP EXTERNAL SURFACE USING A HDPE HEAT SHRINK WRAPPING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - WRAP AROUND CHAIN TENSIONING MAY BE USED AS AN ALTERNATIVE TO COLLAR TENSIONING LUGS.
 - PROVIDE A TAPPED HOLE TO ALLOW THE GAP UNDER THE COLLAR TO BE PRESSURISED TO CONFIRM COMPLETE WELDING INTEGRITY. HOLE TO BE PLUGGED ON COMPLETION OF TEST.
 - WHERE SAFETY REASONS PREVENT ENTRY TO PIPE, ONE SIDED WELDING MAY BE AUTHORISED FOR PIPE >DN750 PROVIDED WELD SIZE IS INCREASED TO "T" AND DETAIL "B" FROM SEQ-WAT-1400-1 IS USED.

REV. No.	DATE	DESCRIPTION	AUTH.
C	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	
B	25/06/18	NOTE 6 UPDATED	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

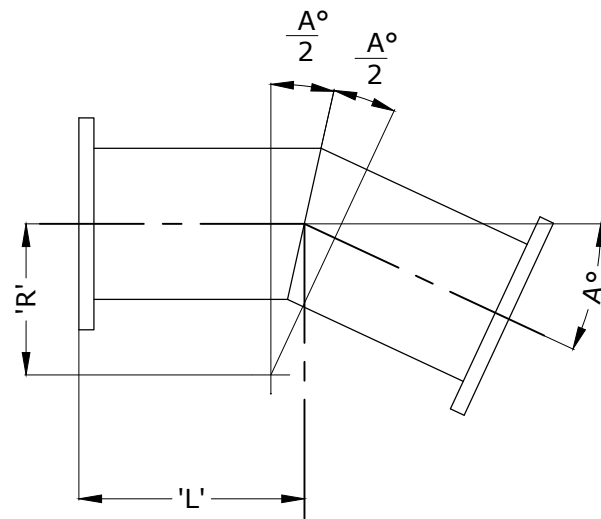
NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

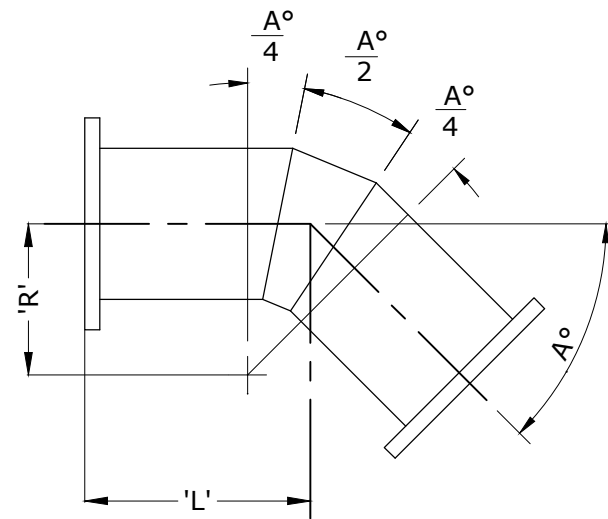
WATER SUPPLY STANDARD DRAWING

TYPICAL STEEL PIPE JOINTING
WELDED PIPE COLLARS

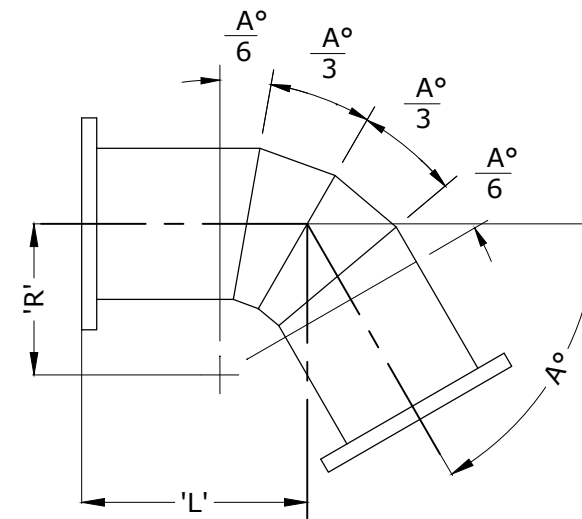
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1402-1				C
NOT TO SCALE				ORG DATE: 1/1/2013



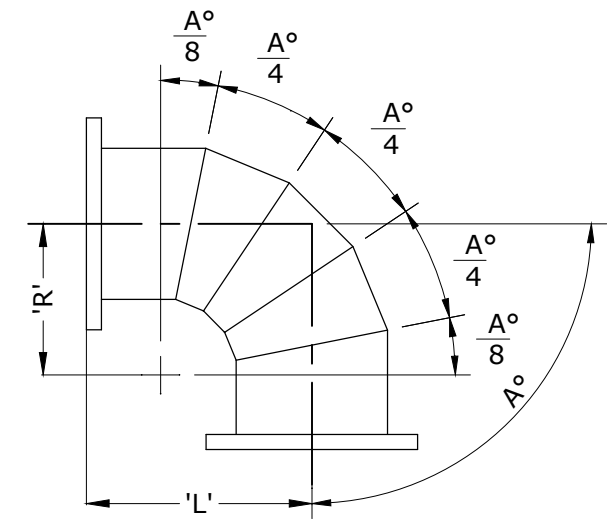
1 - CUT BEND
A° = 0° TO 22.5°



2 - CUT BEND
A° = >22.5° TO 45°



3 - CUT BEND
A° = >45° TO 67.5°



4 - CUT BEND
A° = >67.5° TO 90°

PIPE SIZE DN	BEND RADIUS 'R'	'L'	
		PLAIN	FLANGE
150	150	350	250
200	200	400	300
250	250	450	350
300	300	500	400
350	350	550	450
400	400	600	500
450	450	650	550
500	500	700	600
550	550	750	650
600	600	800	700
650	650	850	750
700	650	900	800
750	700	950	850
800	750	1000	900
850	800	1000	900
900	850	1050	950
950	850	1050	950
1000	850	1050	950
1050	900	1100	1000
1100	950	1150	1050
1200	1000	1200	1100
1300	1050	1250	1150
1400	1100	1300	1200
1500	1150	1350	1250
1600	1200	1400	1300
1700	1250	1450	1350
1800	1300	1500	1400
2000	1350	1600	1450
2200	1450	1650	1550
2400	1500	1750	1600

DESIGN GUIDE

1. ANGLE OF BEND TO BE ROUNDED OFF TO THE NEAREST 15 MINUTES AND BENDS MANUFACTURED TO ±1 DEGREE.
2. BOTH DIMENSIONS FOR 'L' ARE PRACTICAL, BUT ARE CONSIDERED TO BE MINIMUM LENGTHS AND MAY BE INCREASED AS REQUIRED.

DIMENSIONS SHOWN ARE CONSIDERED TO BE THE MINIMUM ACCEPTABLE FOR NORMAL APPLICATIONS

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. SEE AS 1579 FOR ALTERNATIVE BEND DETAILS AND FABRICATION REQUIREMENTS.
3. ALL WELDING TO BE IN ACCORDANCE WITH AS/NZS 1544.1 CATEGORY SP.
4. FLANGE DRILLING TO COMPLY WITH AS 4087.
5. PIPES >OR= DN600 GENERALLY 'O' RING GROOVED.
6. GASKETS AND 'O' RING TO COMPLY WITH CODE.
7. PIPE TO BE IN ACCORDANCE WITH AS 1579 AND CEMENT LINING IN ACCORDANCE WITH AS 1281 TO SUIT DESIGN PRESSURES.
8. FITTINGS TO BE LINED AND COATED WITH MEDIUM DENSITY PE TO AS 4321.
9. FOR FLANGE BOLTING DETAILS SEE SEQ-WAT-1313-1.
10. REINFORCING COLLARS MAY BE REQUIRED FOR HIGH PRESSURE APPLICATIONS.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

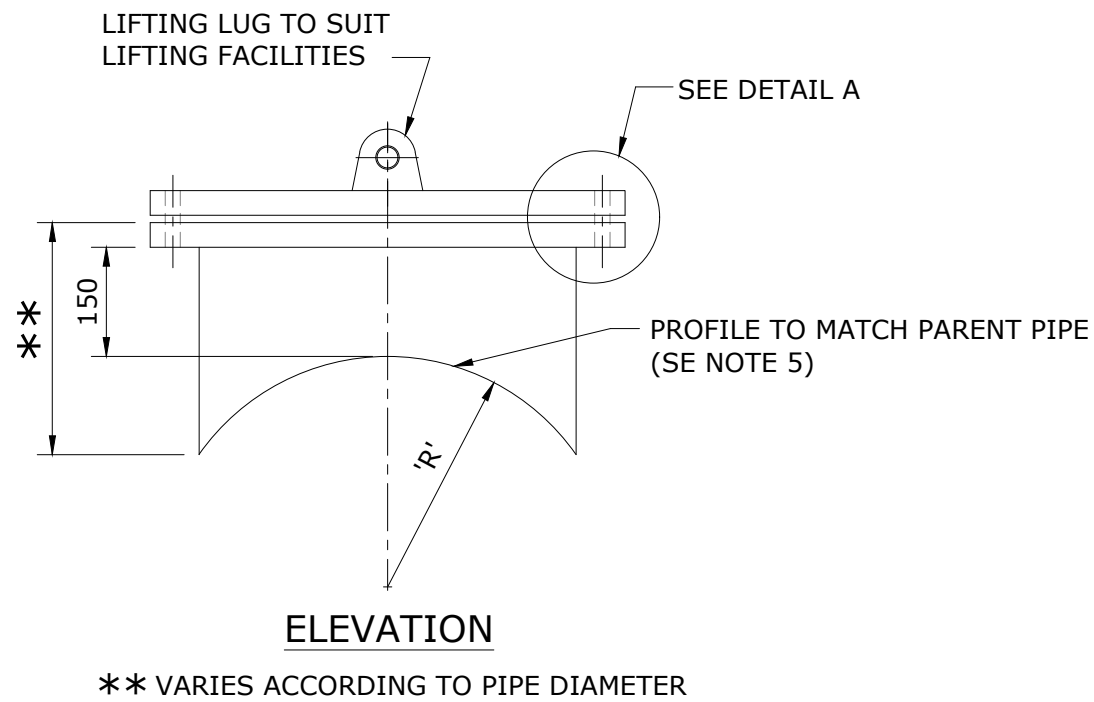
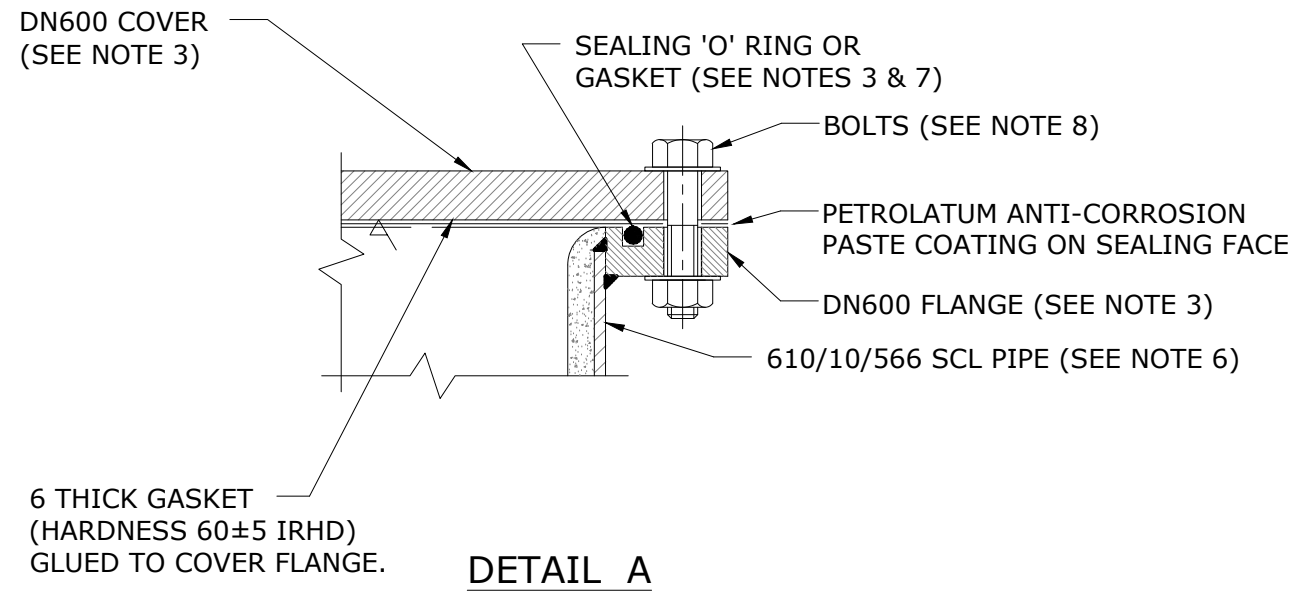
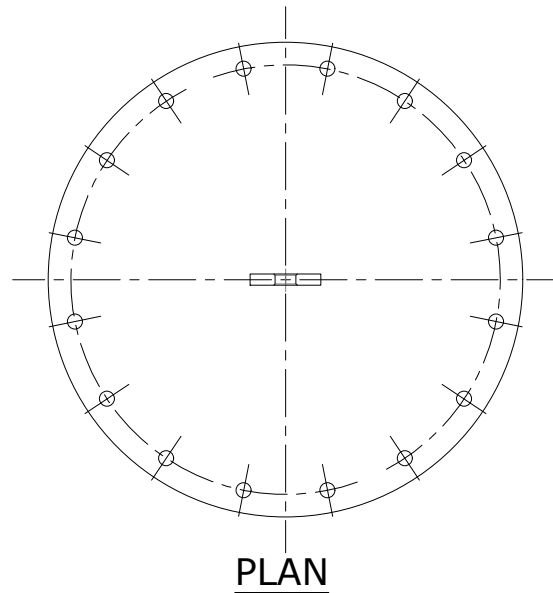
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
TYPICAL STEEL PIPE JOINTING BENDS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1403-1				B
NOT TO SCALE				ORG DATE: 1/1/2013



NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. WELDING TO BE IN ACCORDANCE WITH AS/NZS 1544.1 CATEGORY SP.
3. FLANGES AND DRILLING TO IN ACCORDANCE WITH AS 4087 FIGURES B7, B8, B9.
4. CEMENT LINED STEEL PIPES TO AS 1579 & AS 1281 TO SUIT DESIGN PRESSURE.
5. REINFORCING COLLARS MAY BE REQUIRED. TO BE INSTALLED AS SHOWN IN DETAIL DRAWING.
6. CEMENT MORTAR LINING TO BE IN ACCORDANCE WITH AS 1281.
7. GASKETS AND 'O' RINGS TO COMPLY WITH WSA 109.
8. BOLTING DETAILS TO BE AS SHOWN ON SEQ-WAT-1313-1.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

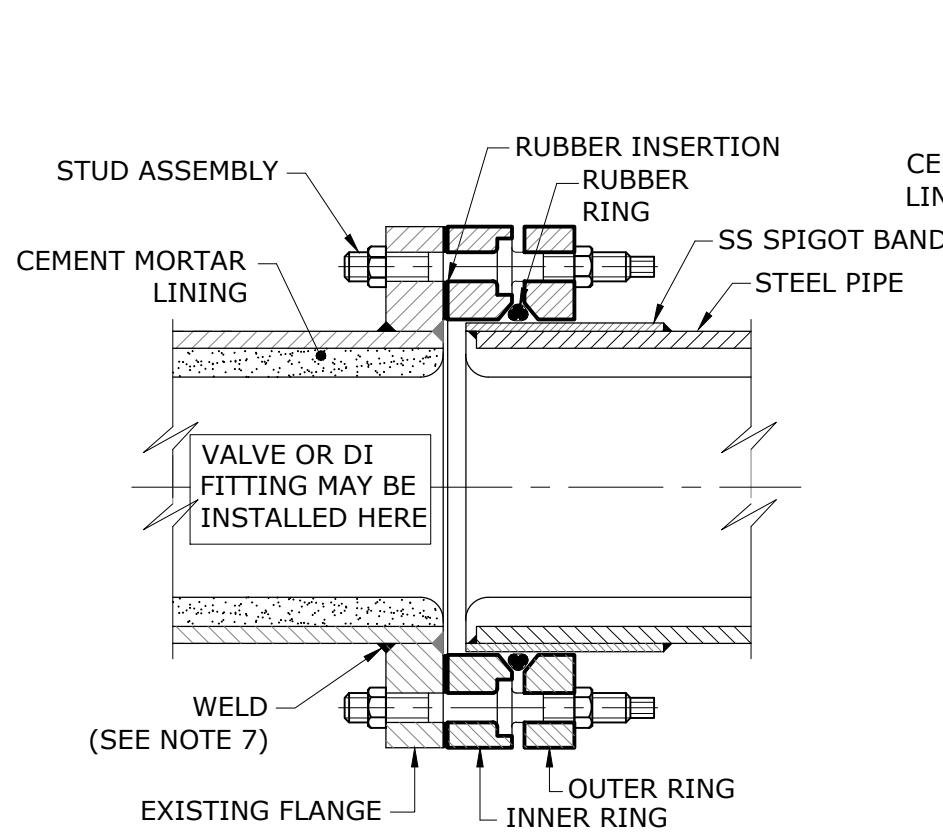
SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

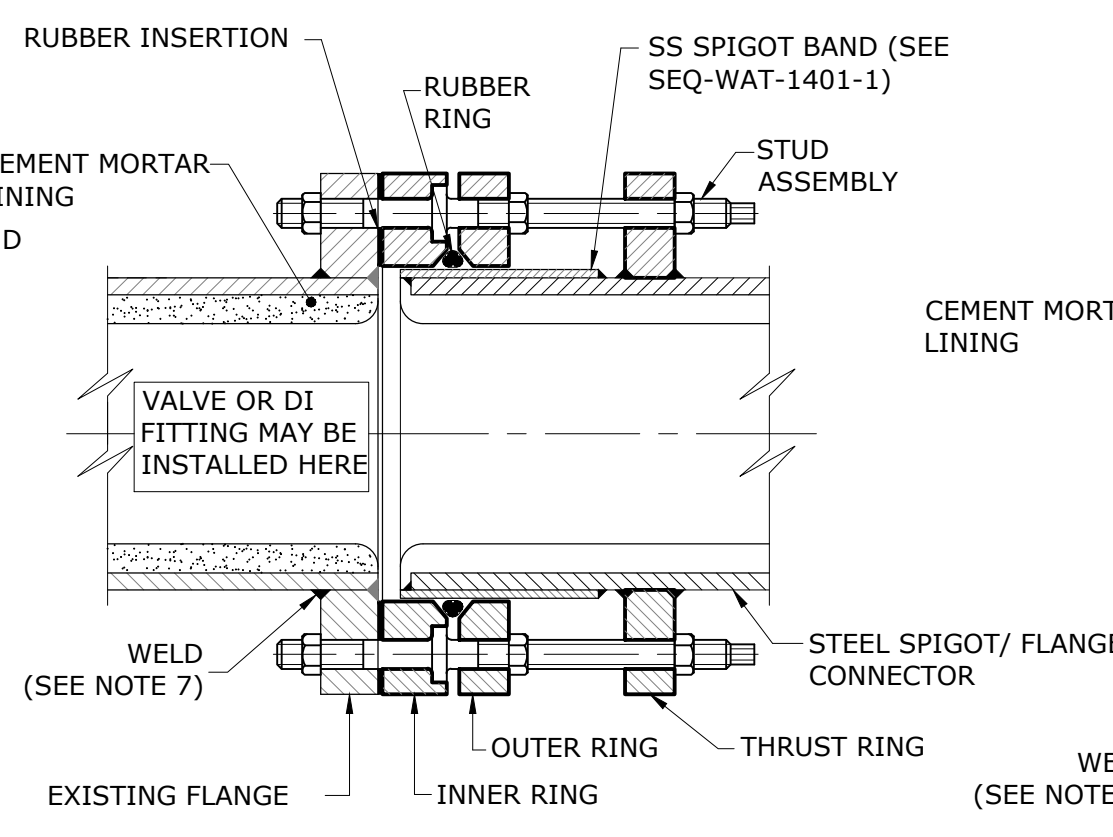
TYPICAL STEEL FABRICATION
ACCESS OPENING FOR PIPES ≥ DN750

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1404-1				B
NOT TO SCALE				ORG DATE: 1/2/2013

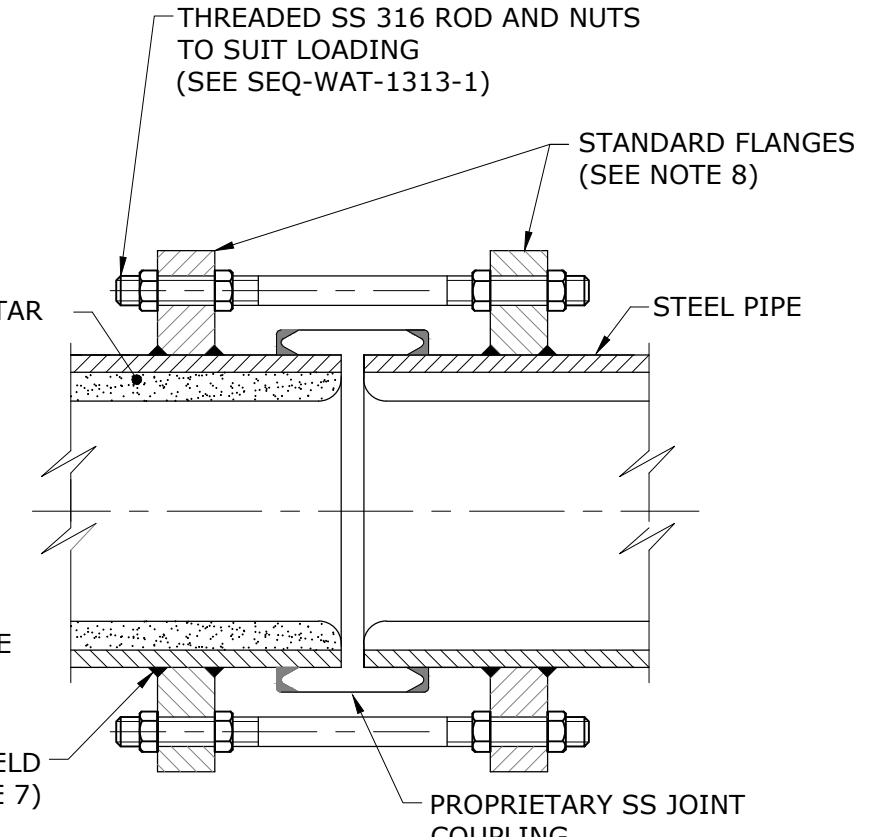
SUITABLE CORROSION PROTECTION TO BE APPLIED



SECTION OF ASSEMBLED DISMANTLING JOINT/NON-THRUST TYPE
(SEE NOTE 2)



SECTION OF ASSEMBLED DISMANTLING JOINT/THRUST TYPE
(SEE NOTE 3)



SECTION OF ASSEMBLED RESTRAINED JOINT IN-LINE RESTRAINED JOINT
(SEE NOTE 4)

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. NON-THRUST DISMANTLING JOINT TO CONSIST OF:
ONE INNER RING
ONE OUTER RING
ONE RUBBER INSERTION, SPECIAL
ONE RUBBER RING
THE REQUIRED NUMBER OF STUDS AND NUTS
ONE SPIGOT/FLANGE CONNECTOR (OPTIONAL).
3. THRUST TYPE DISMANTLING JOINT TO CONSIST OF:
ONE INNER RING
ONE OUTER RING
ONE THRUST RING
ONE RUBBER INSERTION, SPECIAL
ONE RUBBER RING
THE REQUIRED NUMBER OF LONG STUDS AND NUTS
ONE SPIGOT/FLANGE CONNECTOR.
4. IN-LINE LINE RESTRAINED JOINT CAN BE ADJUSTED IN-SITU TO ALLOW FOR MINOR ANGULAR DEFLECTION.
5. ALL STEEL USED IN FABRICATION TO BE IN ACCORDANCE WITH AS/NZS 3678. ALL STAINLESS STEEL TO BE GRADE 316 MINIMUM.
6. SUITABLE CORROSION PROTECTION TO BE APPLIED TO ALL EXPOSED STEEL SURFACES. SEE SEQ-WAT-1402-1 OR AS SPECIFIED IN DESIGN DRAWINGS.
7. WELDING OF FLANGES TO BE IN ACCORDANCE WITH AS/NZS 1544.1 CATEGORY SP.
8. STANDARD FLANGES TO BE IN ACCORDANCE WITH AS 4087, FIGURES B7, B8 & B9 TO SUIT PRESSURE APPLICATION.

PIPE SIZE DN	SAFE HEAD (m)	FLANGE PCD	NUMBER OF STUDS	STUD DIAMETER	STUD LENGTH	
					NON THRUST	THRUST
375	122	495	12	M24	194	329
	215	521	16	M27	213	365
450	122	584	12	M24	206	349
	215	610	20	M30	235	407
500	122	641	16	M24	219	377
	215	673	24	M30	245	424
600	122	756	16	M27	232	394
	215	781	24	M33	263	454
750	122	927	20	M30	248	424
	215	940	28	M33	254	434
900	122	1092	24	M33	257	442
	215	1105	32	M36	276	470
1050	122	1250	28	M33	263	457
	215	1270	36	M36	289	497
1200	122	1410	32	M33	270	468
	215	1441	40	M39	323	557

REV. No.	DATE	DESCRIPTION	AUTH.
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SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

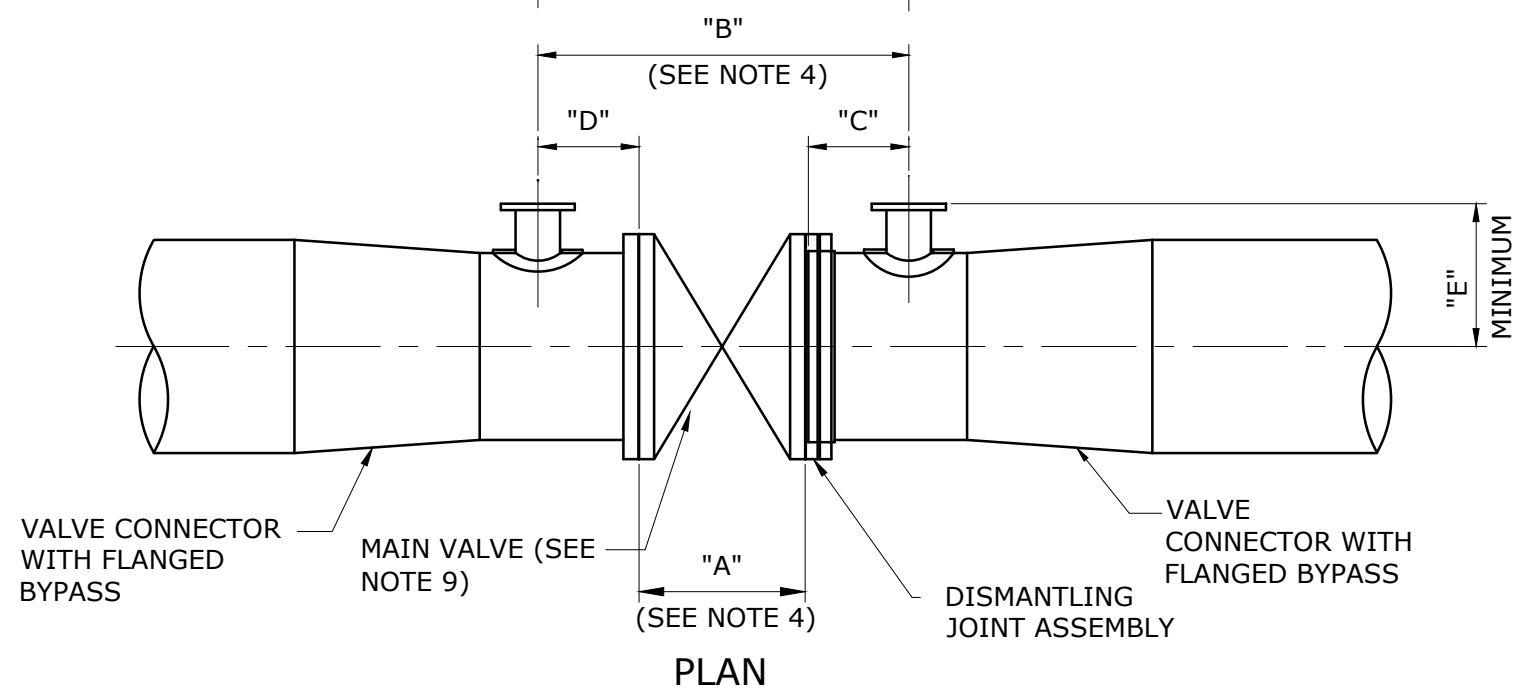
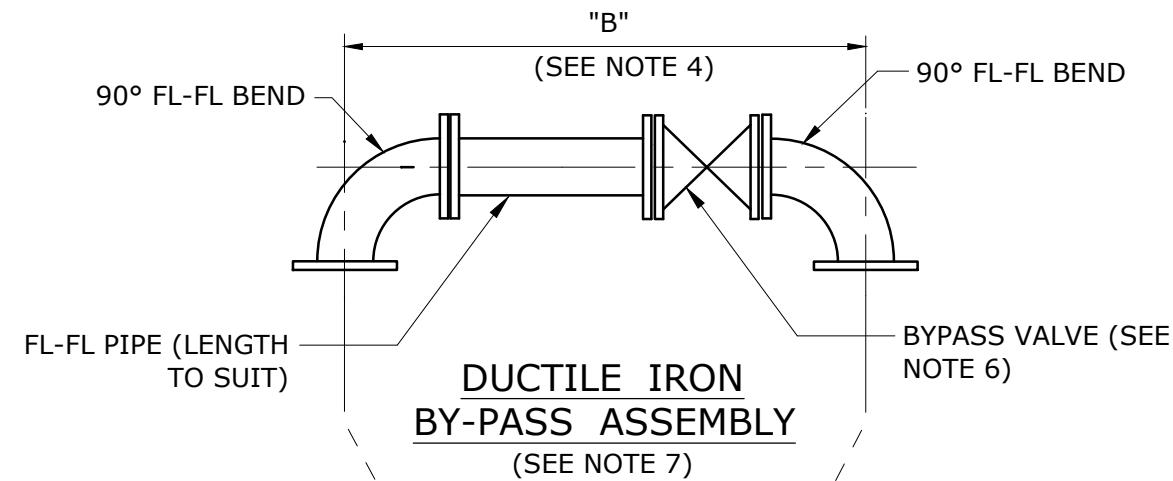
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WATER SUPPLY STANDARD DRAWING

TYPICAL STEEL FABRICATION
DISMANTLING AND FLEXIBLE JOINTS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1405-1				B
NOT TO SCALE				ORG DATE: 1/1/2013



TYPICAL VALVE CONNECTION ASSEMBLY
 PROVIDE VALVE ANCHORAGE USING REINFORCED CONCRETE THRUST BLOCKS
 OR ANCHORAGE IN CHAMBER WALL AS REQUIRED (SEE NOTE 8)

MAIN SIZE (DN)	600-700	750-800	900-1000	1050	1200
MAIN VALVE (DN) MINIMUM SIZE	500	600	750	900	1050
BYPASS VALVE (DN)	150	150	150	150	200
A	510	570	1210 *	725 *	815 *
B	1360	1420	2110 *	1620*	1710*
C	450	450	500	500	500
D	380	380	380	380	380
E (MIN)	460	540	600	680	750

* SEE NOTE 4

NOTES:

- ALL DIMENSIONS IN MILLIMETRES.
- ALL BY-PASS FITTINGS TO BE IN ACCORDANCE WITH AS/NZS 2280.
- EACH MAIN VALVE CONNECTION ASSEMBLY TO CONSIST OF:
 - 1 x CONNECTOR PL-SP WITH FL BYPASS
 - 1 x CONNECTOR PL-FL WITH FL BYPASS
 - 1 x MAIN VALVE (GATE OR BUTTERFLY)
 - 1 x DISMANTLING JOINT ASSEMBLY
 - 2 x RUBBER INSERTIONS.
 EACH BYPASS ASSEMBLY TO CONSIST OF:
 - 2 x 90° BENDS FL-FL - STANDARD SIZE
 - 1 x FL-FL PIPE (LENGTH TO SUIT)
 - 5 x RUBBER INSERTIONS
 - 1 x GATE VALVE.
- DUE TO VARYING DIMENSIONS OF LARGE DIAMETER VALVES (DN750 TO DN1050) DIMENSIONS OF FACE TO FACE DISTANCES (A) AND LENGTH OF BY-PASS (B) ARE INDICATIVE ONLY.
- DIMENSIONS DO NOT INCLUDE GASKETS.
- BYPASS VALVE TO BE A GATE VALVE IN ACCORDANCE WITH AS 2638.2 AND TO BE THE SAME NOMINAL DIAMETER AS THE BYPASS PIPE.
- BYPASS PIPEWORK MAY ALSO BE FABRICATED USING SCL. ORIENTATION TO BE AS SHOWN IN DESIGN DRAWINGS.
- ADDITIONAL FLANGED FITTINGS, OR RESTRAINTS WELDED TO PIPEWORK, ARE REQUIRED TO BE USED IN PROVIDING VALVE ANCHORAGE.
- ARRANGEMENT SHOWN HAS A MAXIMUM PRESSURE RATING OF 1.6 MPa (160 m HEAD).
- MAIN VALVES WITH INBUILT BYPASS ARE COMMERCIALY AVAILABLE AND ARE PREFERRED. BYPASS VALVE ASSEMBLIES SHALL COMPLY WITH THE CODE.

REV. No.	DATE	DESCRIPTION	AUTH.
B	1/02/24	NOTE 3. NOT FOR CONSTRUCTION & UU IN TITLE BLOCK	

SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL
 HEALTH & SAFETY LEGISLATION

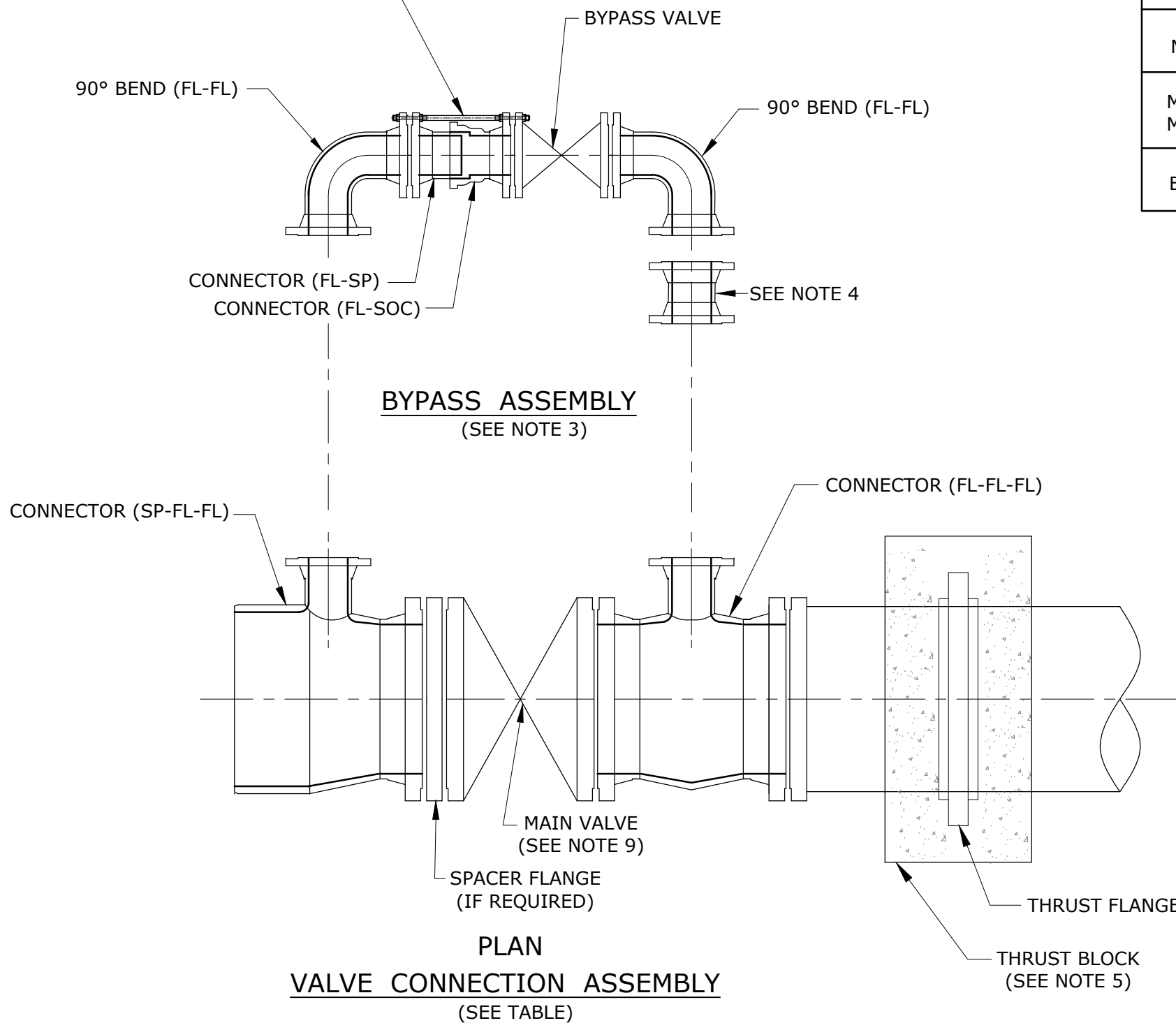
NOT FOR CONSTRUCTION

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 BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK
 AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING
 TYPICAL STEEL FABRICATION
 VALVE CONNECTION AND BYPASS

CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1406-1				B
NOT TO SCALE				ORG DATE: 1/1/2013

PROVIDE STABILISATION THRUST BOLTS 4 OFF ACROSS FLANGES



POSSIBLE ARRANGEMENT WHERE VALVE CHAMBER IS NOT REQUIRED

VALVE SIZES						
MAIN SIZE (DN)	450	500	500	600	750	750
MAIN VALVE (DN) MINIMUM SIZE	375	375	450	500	500	600
BYPASS VALVE (DN)	100	100	100	150	150	150

NOTES:

- ALL DIMENSIONS IN MILLIMETRES.
- ALL BY-PASS FITTINGS TO BE IN ACCORDANCE WITH AS/NZS 2280.
- EACH VALVE CONNECTION ASSEMBLY TO CONSIST OF:
 - 1 x CONNECTOR (SP-FL-FL) - STOP VALVE WITH BYPASS
 - 1 x CONNECTOR (FL-FL-FL) - STOP VALVE WITH BYPASS
 - 1 x MAIN VALVE (GATE OR BUTTERFLY)
 - 1 x SPACER FLANGE
 - 3 x RUBBER INSERTIONS.
 EACH BYPASS ASSEMBLY TO CONSIST OF:
 - 2 x 90° BENDS FL-FL - STANDARD SIZE
 - 1 x CONNECTOR FL-SP - BYPASS (LENGTH TO SUIT)
 - 1 x CONNECTOR FL-SOC - BYPASS
 - 5 x RUBBER INSERTIONS
 - 1 x GATE VALVE.
 FOR SIZES OF THE ABOVE FITTINGS, SEE TABLE.
- EXTENSION FITTINGS (FL-FL) MAY BE REQUIRED TO SUIT VALVE/BYPASS/CHAMBER ARRANGEMENTS.
- ADDITIONAL FLANGED FITTINGS REQUIRED TO BE USED IN PROVIDING VALVE ANCHORAGE, REFER SEQ-WAT-1206-1 FOR GUIDANCE ON THRUST MANAGEMENT.
- BYPASS VALVE TO BE A GATE VALVE IN ACCORDANCE WITH AS 2638.2 AND TO BE THE SAME NOMINAL DIAMETER AS THE BYPASS PIPE.
- WATER AGENCY TO DETERMINE BYPASS ORIENTATION.
- ARRANGEMENT AS SHOWN HAS MAXIMUM PRESSURE RATING OF 1.6 MPa (160 m HEAD).
- MAIN VALVES WITH INBUILT BYPASS ARE COMMERCIALY AVAILABLE AND ARE PREFERRED. BYPASS VALVE ASSEMBLIES SHALL COMPLY WITH THE CODE.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

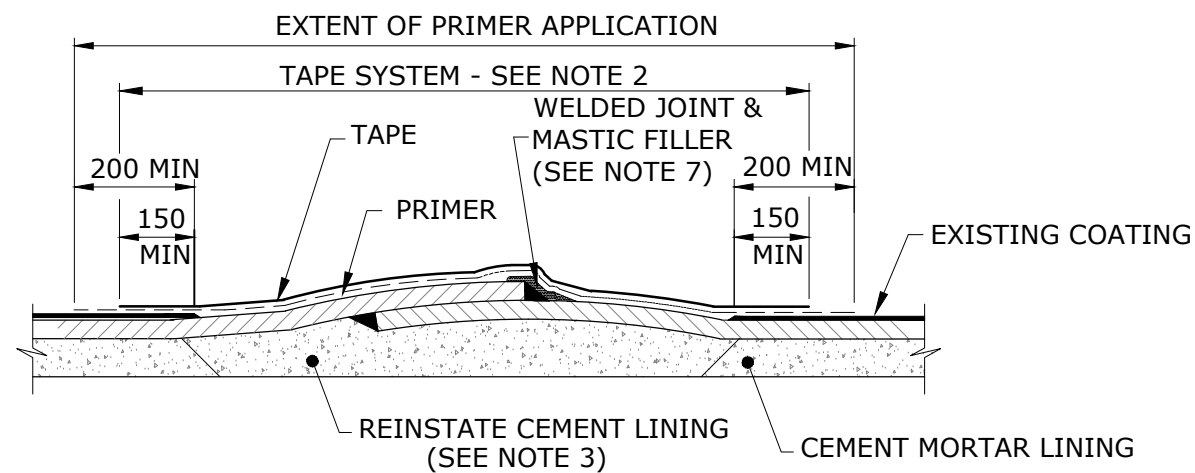
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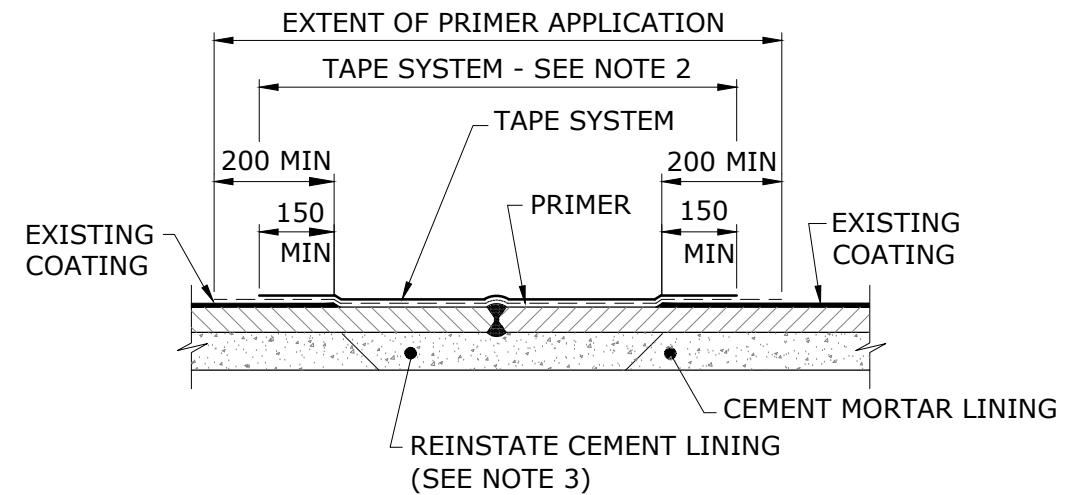
WATER SUPPLY STANDARD DRAWING

DI INSTALLATION
VALVE BYPASS ARRANGEMENT
TYPICAL DI PIPE FITTINGS

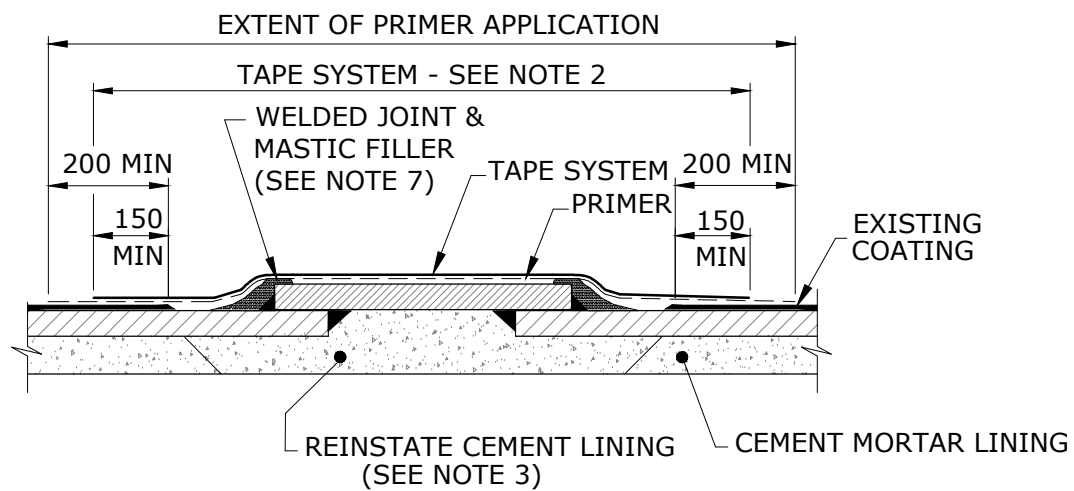
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1407-1				B
NOT TO SCALE				ORG DATE: 1/1/2013



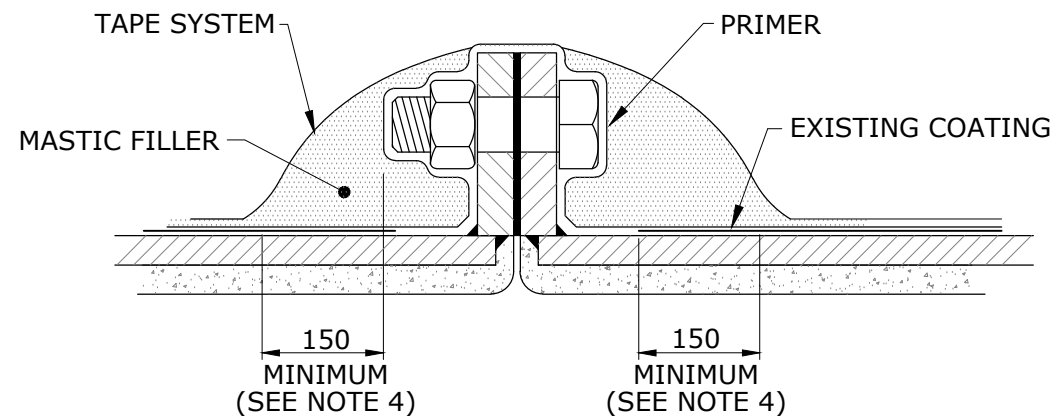
BALL & SOCKET JOINT
(FOR PIPEWORK >DN750)



PLAIN END BUTT WELDED JOINT
(FOR PIPEWORK >DN750)



PLAIN END WELDED COLLAR JOINT
(FOR PIPEWORK >DN750)



FLANGED JOINT

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. EXTERNAL CORROSION PROTECTION AT JOINTS - TAPE SYSTEMS
 - (i) SURFACE PREPARATION:
 - REMOVE ALL WELD SPLATTER
 - GRIND SMOOTH ANY RAISED AREAS
 - SMOOTH ANY ROUGH CUT EDGES OF EXISTING COATING
 - WIRE BRUSH ALL SURFACES TO BE WRAPPED REMOVING LOOSE DIRT AND RUST
 - ENSURE NO FREE MOISTURE IS PRESENT.
 - (ii) PRIMER:
 - APPLY A THIN EVEN COAT OF PRIMER IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTION.
 - NOTE: ONLY USE THE PRIMER SUPPLIED BY THE TAPE MANUFACTURER.
 - (iii) MASTIC FILLER:
 - WHERE NECESSARY CONTOUR ANY IRREGULAR PROFILES WITH FILLER TO ENSURE TAPE WILL NOT BRIDGE IN SERVICE.
 - NOTE: ONLY USE FILLER MATERIAL SUPPLIED BY THE TAPE MANUFACTURER.
 - (iv) TAPE APPLICATION:
 - SPIRALLY APPLY TAPE ENSURING A 55% OVERLAP BETWEEN SUCCESSIVE LAYERS IS ACHIEVED
 - ENSURE TAPE IS FREE OF WRINKLES AND VOIDS.
3. REINSTATE/COMPLETE CEMENT LINING USING AN APPROVED PRIMER AND A MORTAR MIX CONSISTING OF 2:1 (CLEAN SHARP SAND/CEMENT)
4. PRIMER AND MASTIC TO OVERLAP EXISTING COATING BY 150 MIN.

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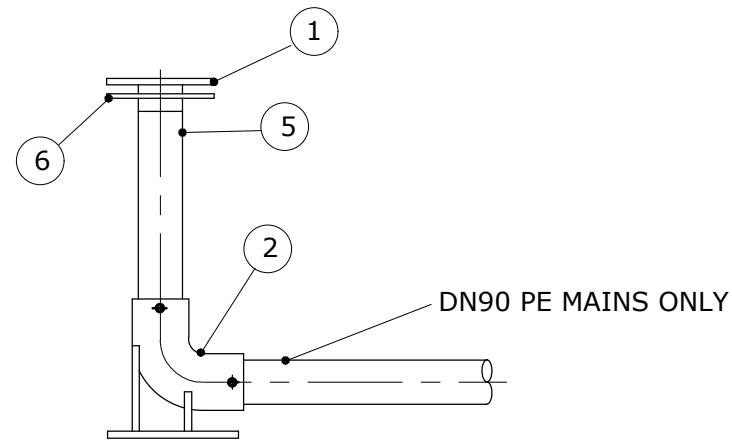
WATER SUPPLY STANDARD DRAWING

TYPICAL JOINT CORROSION PROTECTION

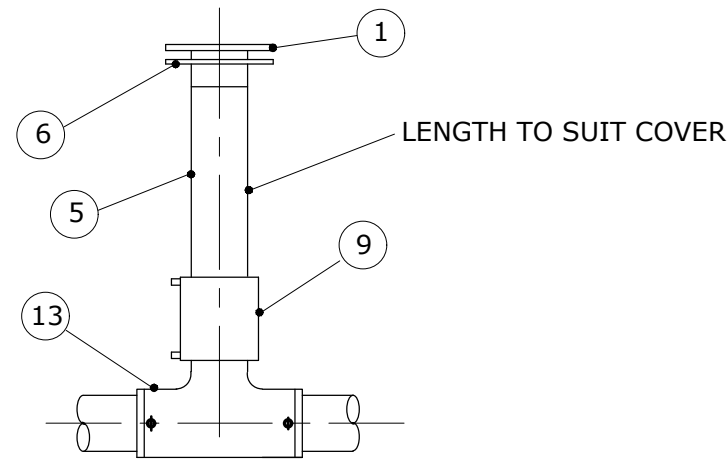
CEMENT MORTAR LINED STEEL PIPE

> DN750 TO DN1200

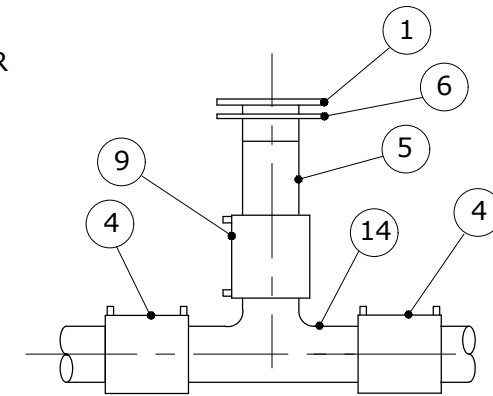
CoGC	LCC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1408-1				B
NOT TO SCALE				ORG DATE: 1/1/2013



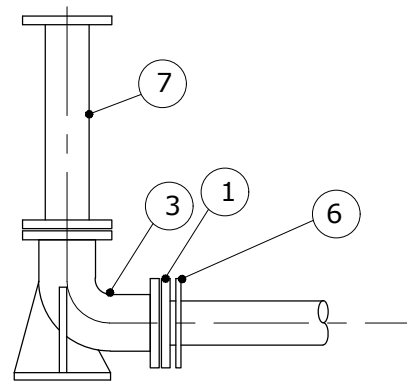
ELECTROFUSED OR BUTT WELDED



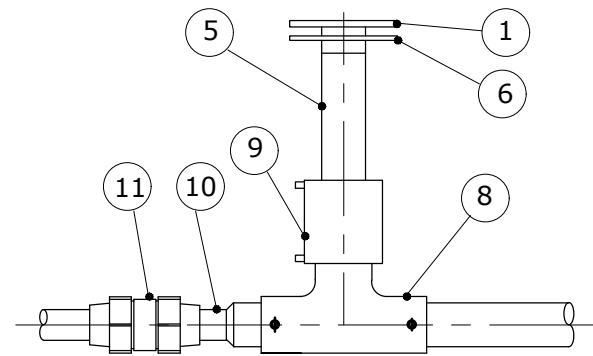
ELECTROFUSION SOCKETED TEE
(SUITS 600 + COVER)



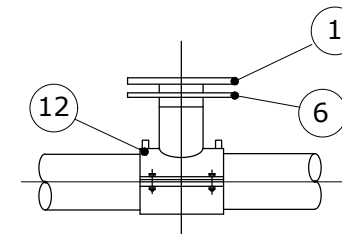
ELECTROFUSED SPIGOT TEE



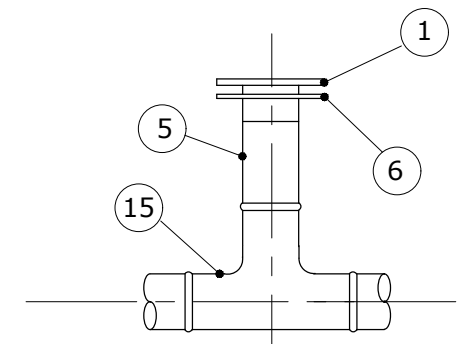
?(ELECTROFUSED WITH SUB MAIN BRANCH)?



ELECTROFUSED WITH STRAIGHT THROUGH SUBMAIN CONNECTION



ELECTROFUSION SADDLE TEE
(SUITS 500 COVER)



BUTT WELDED SPIGOT TEE

LEGEND

- 1 FULL FACE FLANGE ADAPTOR
DRILL TO DN100
- 2 90 EF DUCK FOOT BEND
- 3 DN100 DI DUCK FOOT BEND
- 4 EF COUPLER
- 5 EXTENDED FULL FACE FLANGE ADAPTOR
- 6 BACKING RING DRILL TO DN100
- 7 DN100 DI HYDRANT RISER
- 8 90 EF TEE
- 9 90 OR 125 EF COUPLER
- 10 REDUCER, ELONGATED SPIGOT
- 11 63 COMPRESSION OR EF COUPLING
- 12 EF SADDLE TEE
- 13 EF TEE
- 14 TEE, ELONGATED SPIGOT
- 15 TEE, BUTT WELDED

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.
2. REFER TO SEQ PRODUCTS AND MATERIALS LIST OR PE CODE SECTION 2 FOR DETAILS OF SIZE, COMPOUND, PRESSURE CLASS AND COLOUR.
3. FOR SURFACE FITTING INSTALLATIONS REFER TO SEQ STANDARD DRAWINGS.
4. FOR JOINTING DETAILS REFER TO PE CODE WSA-01 SECTION 2.11.3.
5. ALL BACKING PLATES, NUTS, BOLTS AND WASHERS TO BE MINIMUM GRADE 316 STAINLESS STEEL.
6. GASKETS COMPLYING WITH AS 4087 TO BE USED FOR ALL FLANGED CONNECTIONS.
7. DETAILS SHOW 125 OD MAIN AT PE100 = ID OF 101 mm.
8. HYDRANT RISER SHALL BE DN125 PE. DN90 RISER MAY BE USED WITH PLASSON SLOTTED ADAPTOR OR APPROVED EQUAL.

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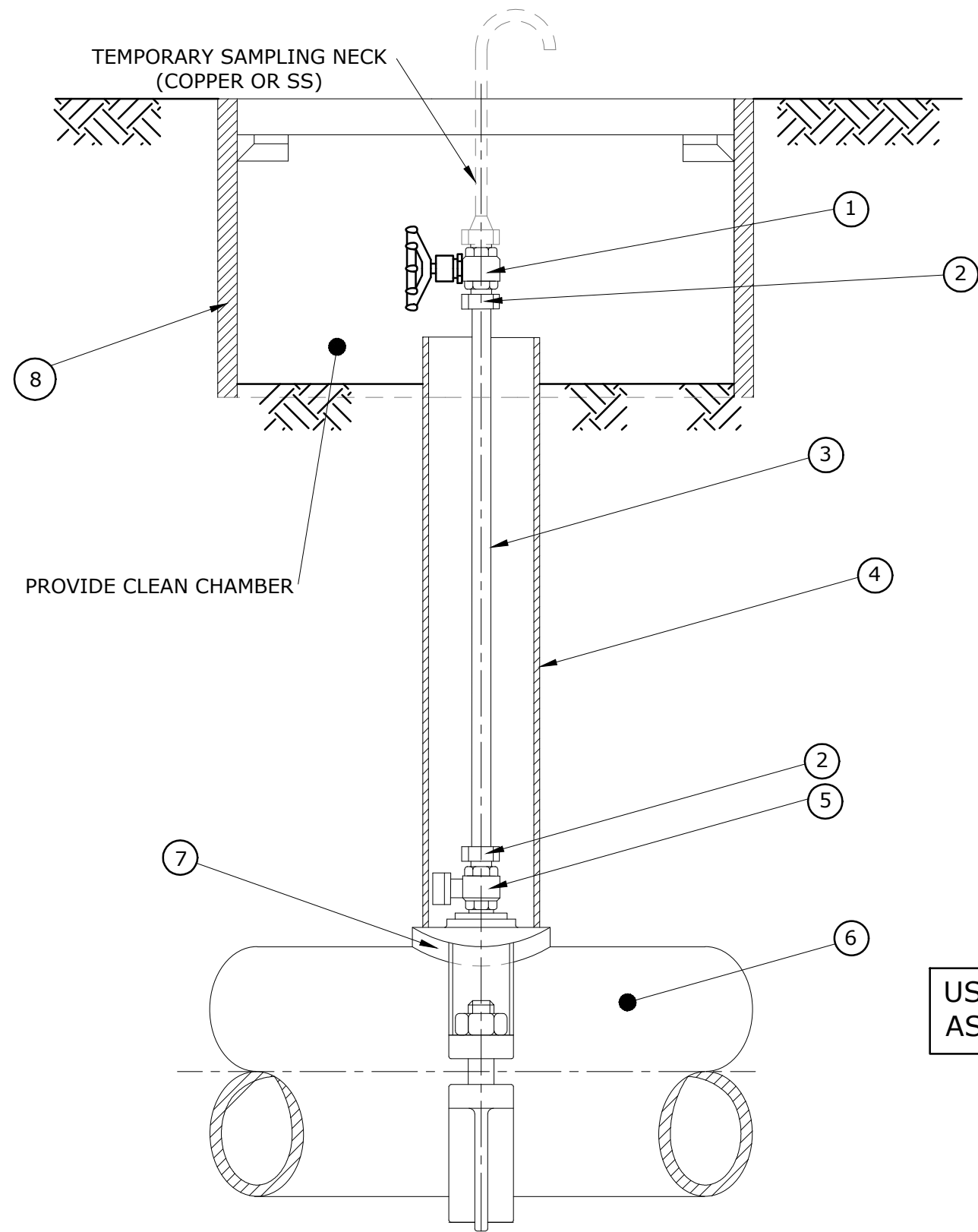
SEQ WATER SERVICE PROVIDERS
WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

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WATER SUPPLY STANDARD DRAWING
 HYDRANT INSTALLATION FITTINGS
 TYPICAL PE ASSEMBLIES NOMENCLATURE

CoC	LSC	RCC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1409-1				B
NOT TO SCALE				ORG DATE: 1/1/2013



No	DESCRIPTION
1	DN25 GATE VALVE (DR BRASS OR SS) WITH 25 FI x 25 MI
2	DN25 STRAIGHT UNION CONNECTOR
3	DN25 COPPER OR SS TUBE RISER
4	DN150 PVC SHIELD PIPE CUT TO SUIT
5	DN25 BALL VALVE (DR BRASS OR SS) WITH 25 MI x 25 MI
6	WATER MAIN
7	DN25 OUTLET APPROVED TAPPING BAND
8	SMALL WATER METER BOX

NOTES

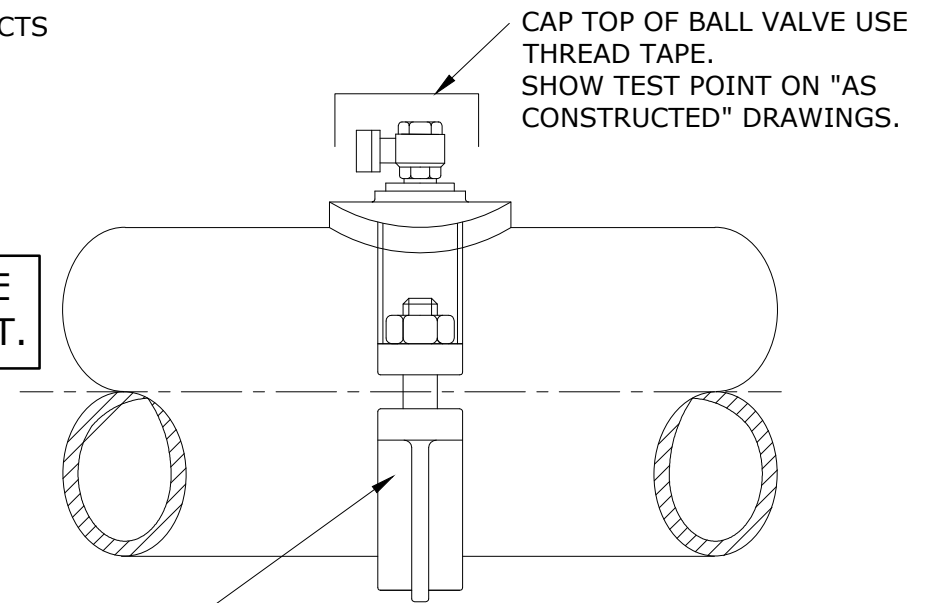
1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SEQ CODE SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. TAPPING BANDS ON DICL PIPE SHALL BE SLEEVED WITH POLYETHYLENE.
4. ON DICL MAINS THE SECTION AT THE PROPOSED TAPPING POINT SHALL BE CLEANED AND WRAPPED WITH A MINIMUM OF TWO LAYERS OF SELF ADHESIVE POLYVINYL CHLORIDE WRAPPING BEFORE APPLYING TAPPING BAND.
5. HOLES DRILLED IN WATER MAIN SHALL BE 16 mm DIAMETER FOR ALL MAINS.
6. REFER SEQ CODE AUTHORISED PRODUCTS LIST FOR APPROVED FITTINGS.

REMOVAL BY CONTRACTOR

(AFTER SATISFACTORY COMPLETION OF WATER QUALITY TESTS)

1. REMOVE SURROUND BOX AND SOIL AROUND SHIELD PIPE.
2. REMOVE SHIELD PIPE AND MAKE SURE IT IS CLEAN AROUND BALL VALVE.
3. CLOSE BALL VALVES AND CHECK FOR LEAK.
4. REMOVE RISER PIPE AND GATE VALVE.
5. PUT THREAD TAPE ON BALL VALVE THREAD.
6. SCREW CAP ON BALL VALVE AND CHECK FOR LEAK AGAIN.
7. COVER CAPPED BALL VALVE WITH 100MM OF BEDDING MATERIAL.
8. MARK POSITION OF CAPPED BALL VALVE SHOWN AS CAPPED TEST POINT ON "AS CONSTRUCTED" DRAWINGS.

USE TEST POINT WHERE POSSIBLE AS A SERVICE CONNECTION POINT.



TAPPING BAND TO BE APPROPRIATE TYPE FOR PIPE MATERIAL

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/02/24	NOT FOR CONSTRUCTION AND UU IN TITLE BLOCK.	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

NOT FOR CONSTRUCTION

SEQ-SPs ACCEPT NO LIABILITY FOR THE USE OF TYPICAL DRAWINGS, WHICH MUST BE ADAPTED TO THE REQUIREMENTS OF THE PARTICULAR SYSTEM OR NETWORK AND ACCOMPANIED BY DETAILED DESIGNS CERTIFIED BY AN RPEQ

WATER SUPPLY STANDARD DRAWING

TYPICAL CHLORINATION TEST POINT DETAILS

CoG	DSC	RSC	UU	UW
DRAWING No.				VERSION
SEQ-WAT-1410-1				B
NOT TO SCALE				ORG DATE: 1/1/2013