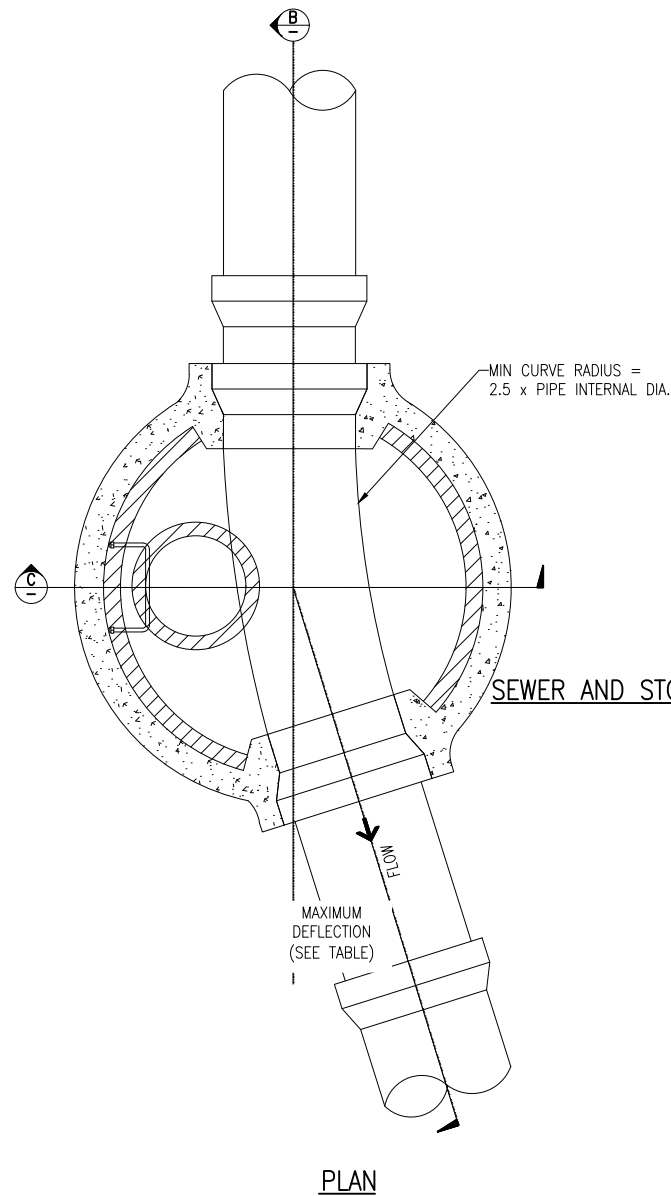


DETAIL 1A PLAN
SEWER AND STORMWATER MANHOLE FOR < DN 375

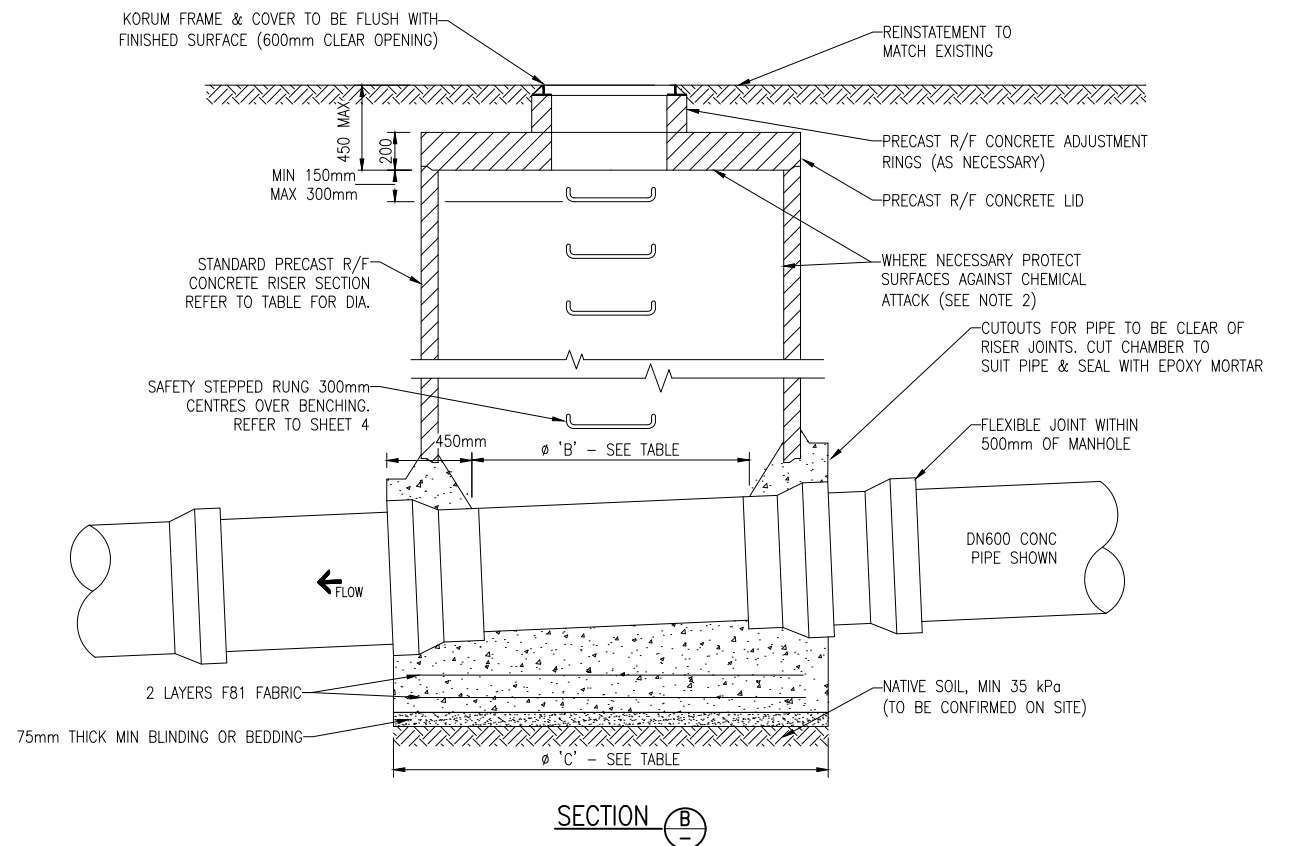
DETAIL 1 NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. INSIDE SURFACE OF MH AND UNDERSIDE OF ROOF TO HAVE EPOXY COATING, PVC LINING OR PE LINING TO TDC REQUIREMENTS WHERE DIRECTED BY THE ENGINEER.
3. DESIGNER TO ENSURE NATIVE SOIL HAS ACCEPTABLE GROUND BEARING CAPACITY.
4. REFER TO TDC CODE OF PRACTICE REGARDING FLOATATION/SINKAGE DESIGN CRITERIA.
5. ALL KORUM LIDS OR APPROVED SIMILAR. ALL LIDS TO HAVE UTILITY NAME

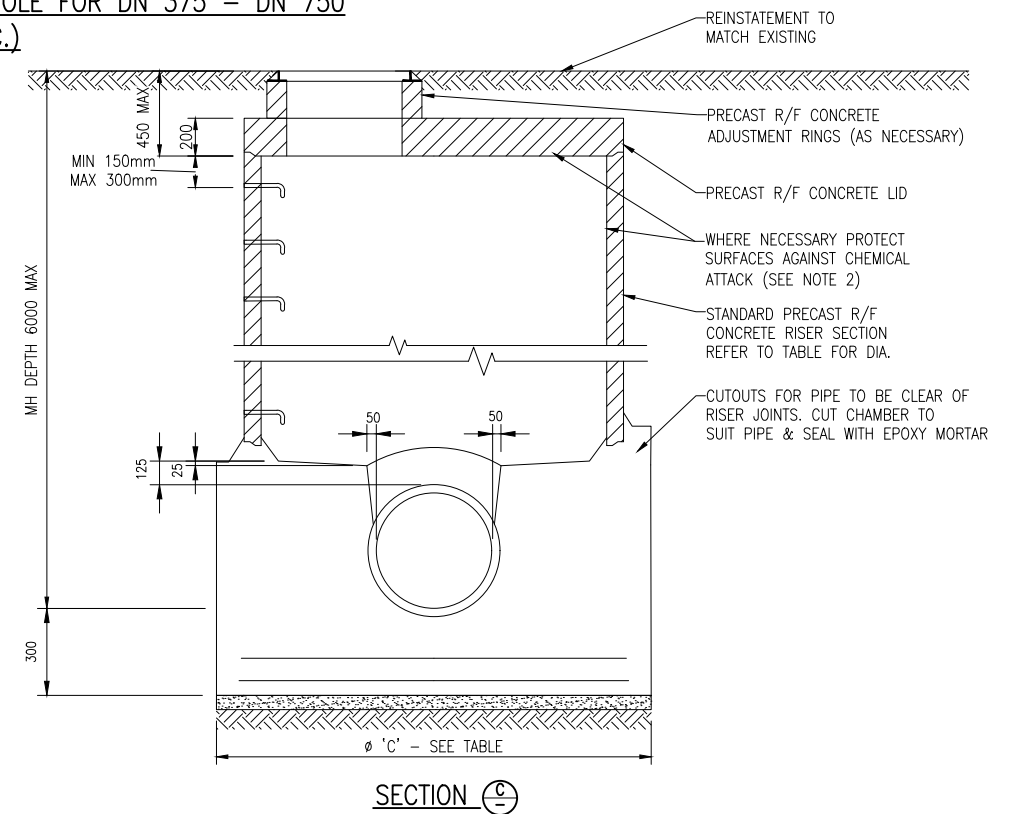


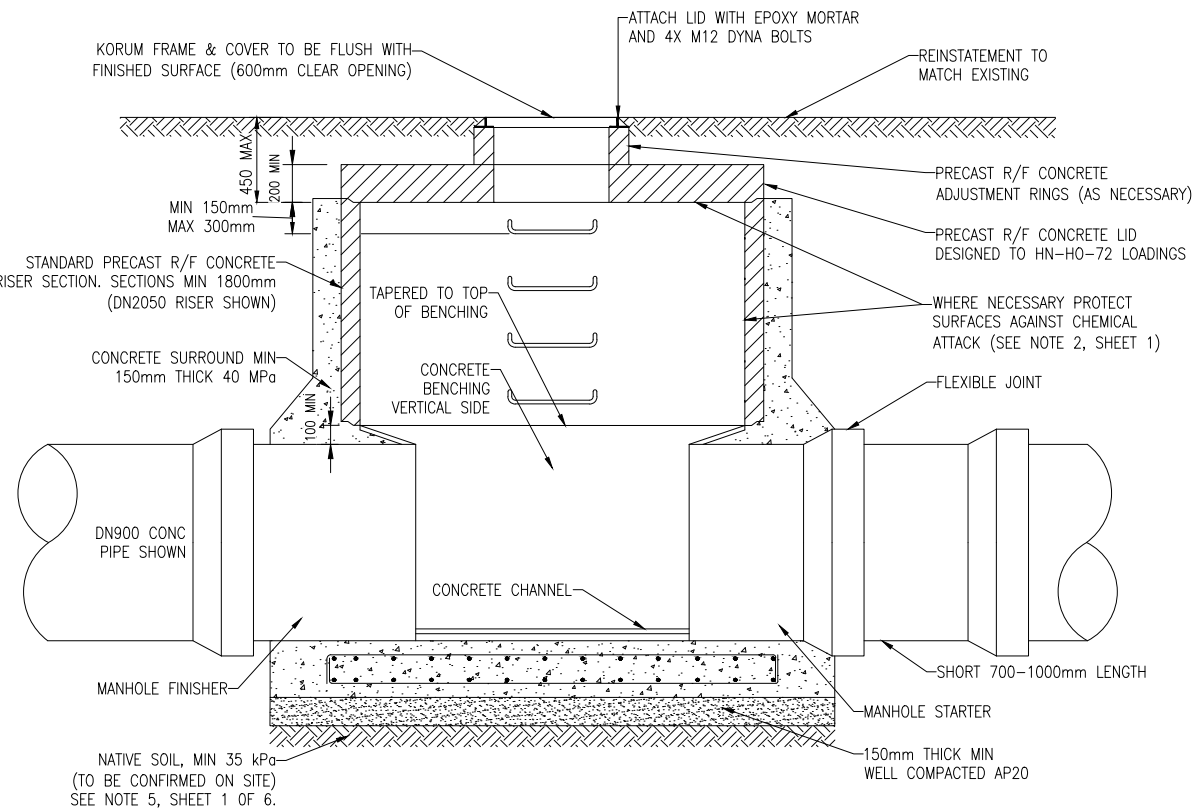
PIPE SIZE	MAXIMUM HORIZONTAL DEFLECTION AT CHAMBER*	NOMINAL MH DIAMETER	ø 'B'	ø 'C'
DN 375 TO 450	45°	DN 1200	800	1700
DN 500	45°	DN 1800	1400	2300
DN 750	40°	DN 1800	1400	2300

* SHOULD HORIZONTAL DEFLECTION BE GREATER THAN THE MAXIMUM, SPECIALISED DESIGN IS REQUIRED. THIS IS TO BE SUBMITTED TO TDC FOR CONSIDERATION.



DETAIL 1B
SEWER AND STORMWATER MANHOLE FOR DN 375 – DN 750
(INC.)

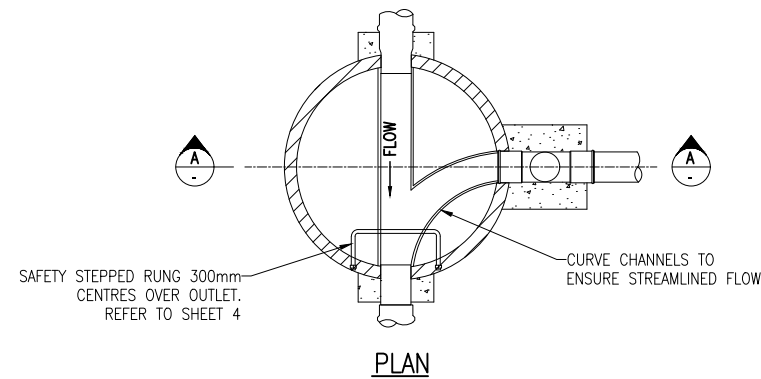




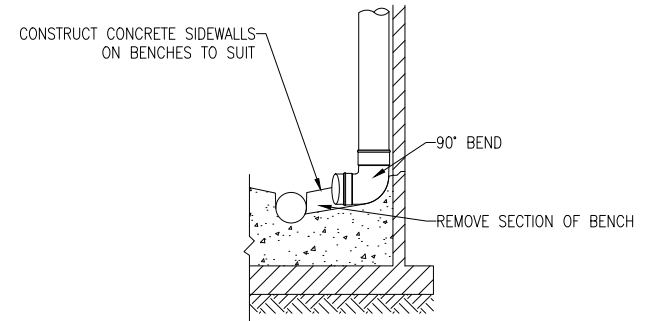
DETAIL 1C
SEWER & STORMWATER MANHOLE FOR > DN 750

NOTES:

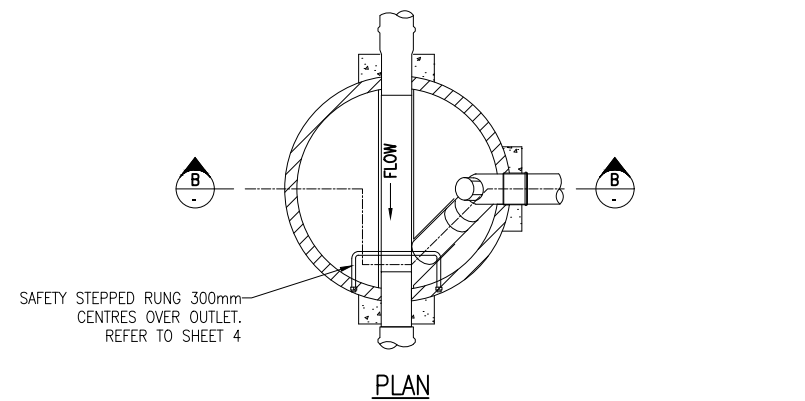
1. DRAWING BASED ON NZS 4404:2004. WHERE DRAWING DIFFERS FROM STANDARD THIS DRAWING TAKES PRECEDENCE.
2. DIMENSION IN MILLIMETRES.
3. ALL STEEL FITTINGS (INCLUDING BOLTS) TO BE GRADE 316 STAINLESS STEEL.
4. DN1200 MH TO BE USED WHERE DROP PIPE > DN150 OR MORE THAN ONE DN150 INTERNAL DROP IS USED.
5. INTERNAL DROP ONLY TO BE USED WHEN DIRECTED BY ENGINEER.
6. HAUNCHING OF INTERSECTION PIPES TO PROVIDE CURVED CHANNELS TO ENSURE STREAMLINED FLOW.
7. STANDARD PRECAST MANHOLE COMPONENTS TO BE USED UNLESS APPROVED OTHERWISE.
8. NO INFILTRATION PERMITTED - WATER OR AIR TEST MAY BE REQUIRED.
9. DETAIL 1C ONLY - DESIGNER TO CONFIRM NATIVE SOIL BEARING CAPACITY & ENSURE FOUNDATION IS SUITABLE TO SUPPORT MANHOLE.
10. ALL KORUM LIDS OR APPROVED SIMILAR. ALL LIDS TO HAVE UTILITY NAME



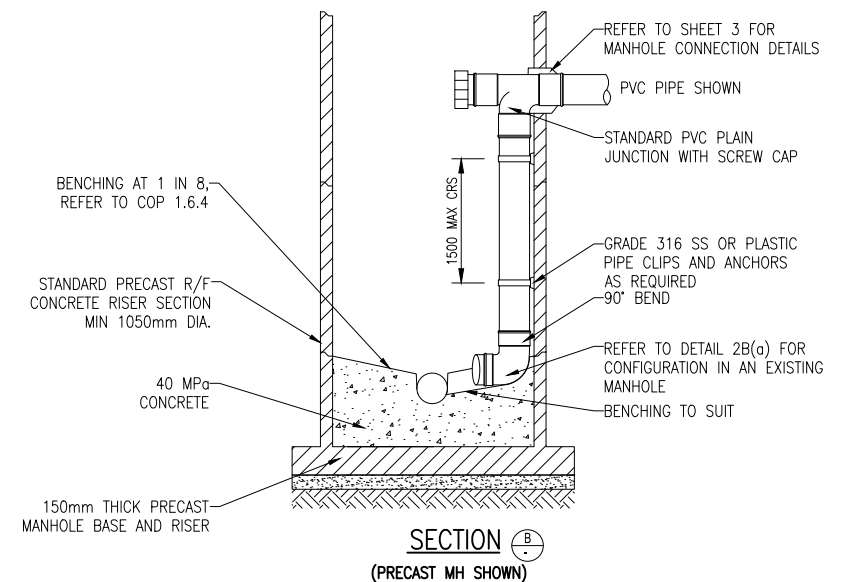
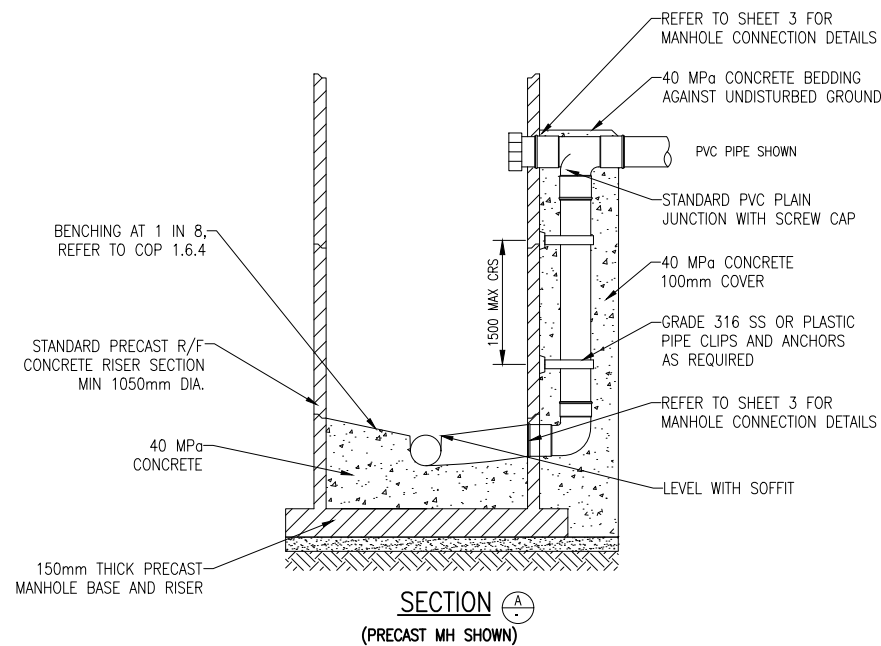
DETAIL 2A
TYPICAL EXTERNAL DROP MANHOLE
SUITABLE FOR INSITU AND PRECAST MH
(ONLY TO BE USED WHEN DIRECTED BY ENGINEER)



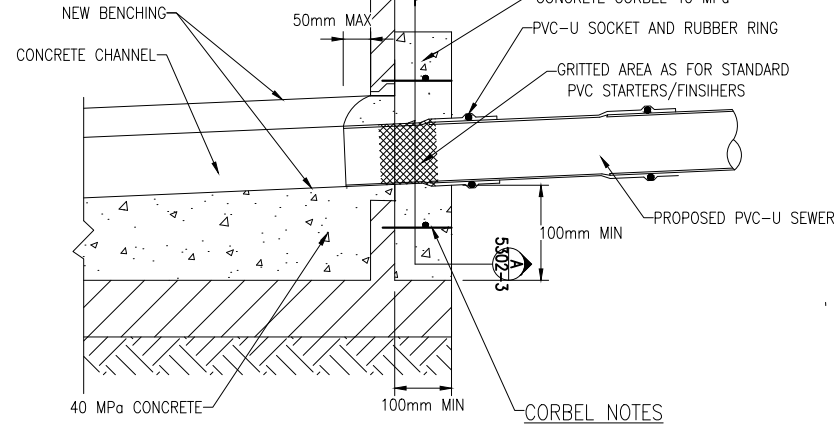
DETAIL 2B(a)
TYPICAL INTERNAL DROP MANHOLE - POST CONSTRUCTION
INSTALLATION DETAIL
(ONLY TO BE USED WHEN DIRECTED BY ENGINEER)



DETAIL 2B
TYPICAL INTERNAL DROP MANHOLE
SUITABLE FOR IN-SITU AND PRECAST MH
(ONLY TO BE USED WHEN DIRECTED BY ENGINEER)



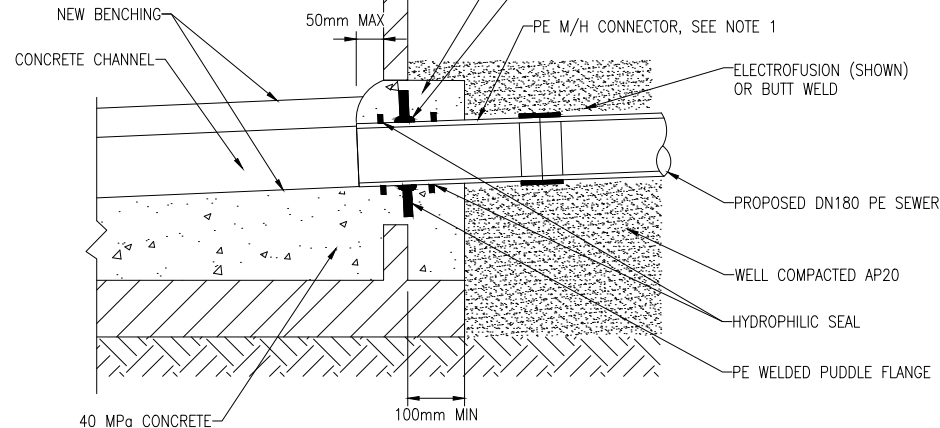
DETAIL 3A



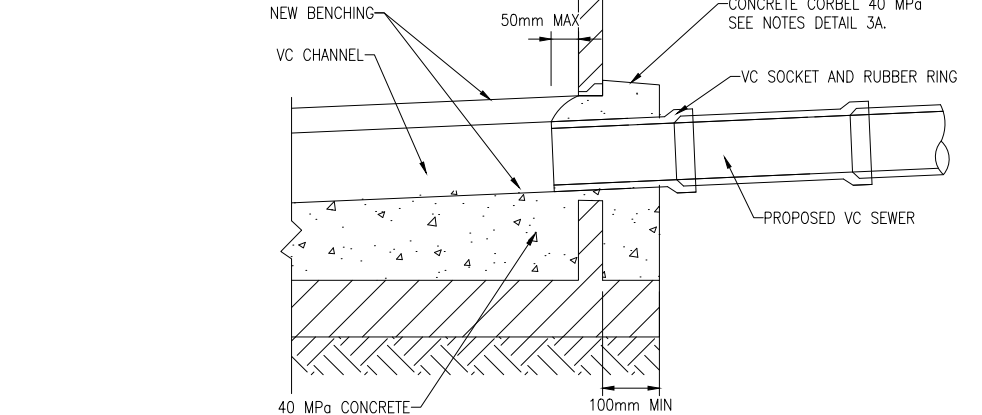
PVC-U SOCKET METHOD
* SEE TABLE BELOW

- D10 STARTERS AND D10 CAGE FOR ALL MANHOLES AND CONNECTORS
- STARTERS TO BE CHEMSET INTO MANHOLE WALL
- 50MM OVERLAP OF STEEL CAGE
- 50MM COVER ON ALL STEEL REINFORCING
- HOLE TO BE CORE DRILLED OR CUT 50mm MAX OVER SIZE OF THE PIPE DIAMETER
- HUMES BOND SEAL AROUND GRITTED STARTER BETWEEN WALL AND PIPE.

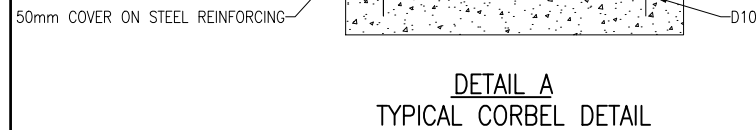
DETAIL 3B



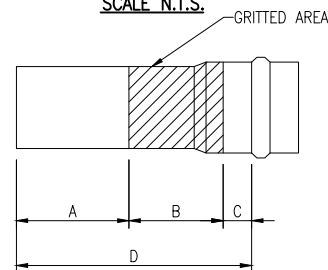
DETAIL 3B NOTES:
1. PE M/H CONNECTOR TO BE FABRICATED OFF-SITE.



GRITTED AREA TABLES



MANHOLE STARTERS
SCALE N.T.S.



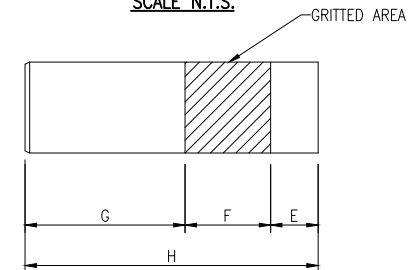
PIPE DN	A*	B	C	D
100	144	150	50	344
150	129	150	50	329
175	113	150	50	313
225	95	150	50	295
300	82	150	50	282

* SEE NOTE 3

PIPE DN	A*	B	C	D
100	130	200	150	430
150	130	200	150	430
175	100	200	150	450
225	130	200	150	480
300	170	200	150	520

* SEE NOTE 3

MANHOLE FINISHERS
SCALE N.T.S.



	PIPE DN	E	F	G*	H
ID	100	80	150	265	495
	150	80	150	268	498
	175	80	150	272	502
	225	80	150	276	506
	300	80	150	290	520

* SEE NOTE 3

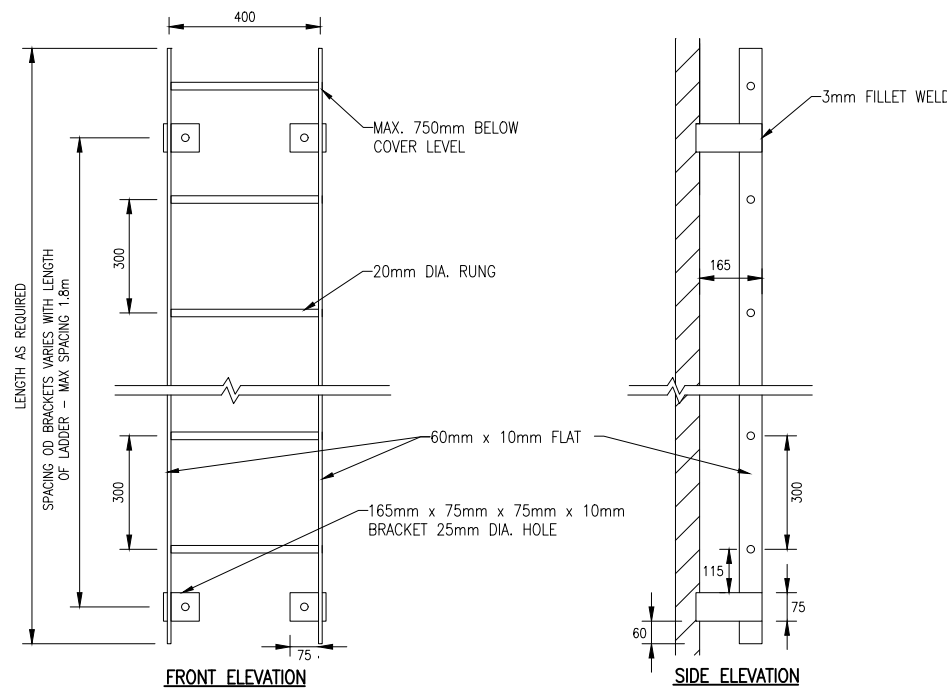
PIPE DN	E	F	G*	H
100	110	250	230	590
150	120	250	230	600
175	140	250	260	650
225	120	250	280	700
300	150	250	310	770

* SEE NOTE 3

GRITTED AREA NOTES

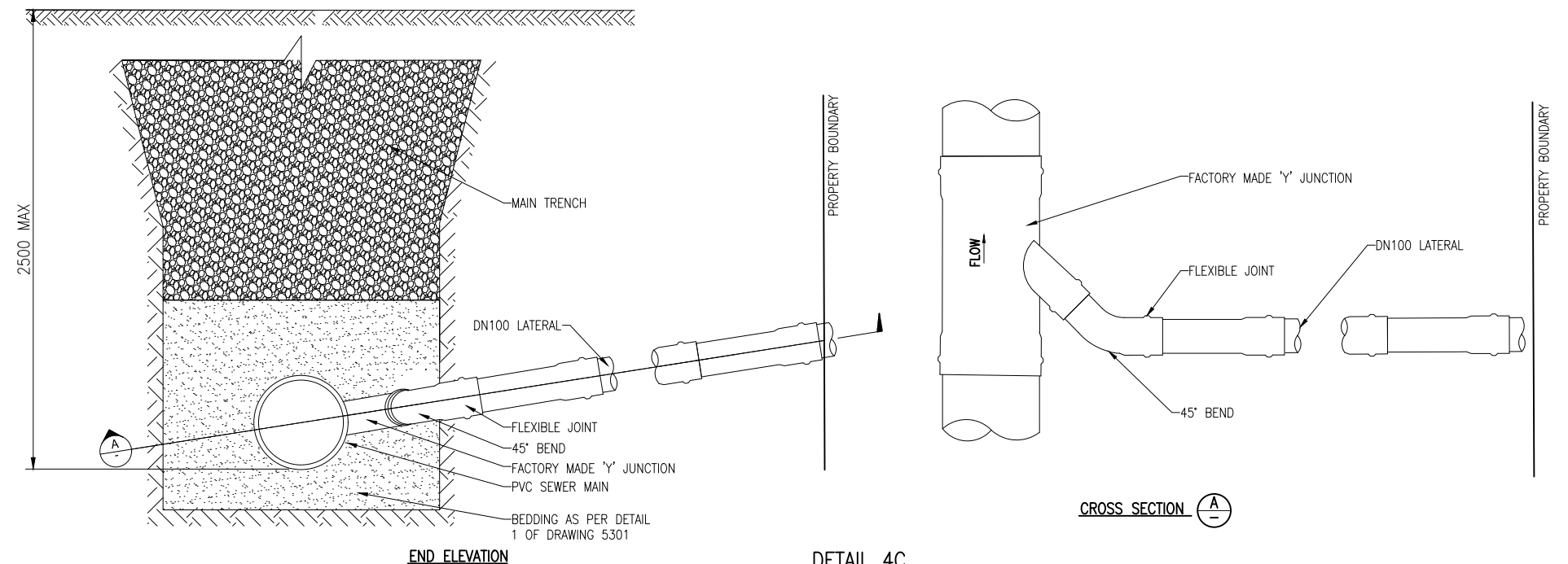
1. PIPE SIZES EXCEEDING DN300
SEE ENGINEER FOR APPROVED DETAIL
2. PVC-U SOCKETS WITH GRITTED AREAS
ARE TO BE PURCHASED FROM AN
APPROVED SUPPLIER. GRITTED AREAS ARE
NOT TO BE MADE ONSITE.
3. DIMENSIONS A & G MAY BE CUT TO SUIT WITH WRITTEN APPROVAL
FROM THE ENGINEER

					SURVEY FILE:		INITIAL		DATE		NAME		DATE		ORIGINAL SCALE (A1): - REDUCED SCALE (A3): -		NOT TO SCALE				TIMARU DISTRICT COUNCIL 2 King George Place P.O. Box 522 Timaru 7940 Telephone: 03 687 7200 Website: www.timaru.govt.nz		PROJECT:		DRAINAGE AND WATER CODE OF PRACTICE STANDARD DETAILS		TITLE:		ACCESS REFURBISHMENT & CONNECTION DETAILS TO CONCRETE MANHOLE		CONTRACT NUMBER:	
					DATA SOURCE:																						DRAWING NUMBER:		REVISION:			
I SUMP/CATCH PIT UPDATE & PAGE 9 REINSTATED					WC				7/21		LEVEL DATUM.....																					
H TYPICAL POSITION OF POLE VENT DETAIL AND SHEET 9 SS					MCB				1/20																							
G CHANGES TO DETAIL - ENGINEERS APPROVAL ADDED					WC				4/18																							
F CHANGES TO CORBEL DETAIL					WC				2/18																							
No.					REVISION		BY		CHK		APP		DATE																			
Original Sheet Size A1 (841 x 594)					5302.dwg					711696					DO NOT SCALE - IF IN DOUBT ASK																	

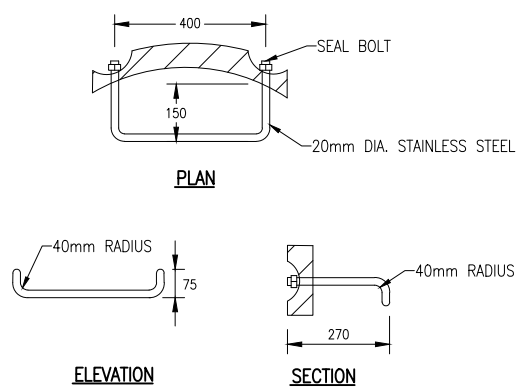


DETAIL 4A
MANHOLE LADDER
SCALE 1:10

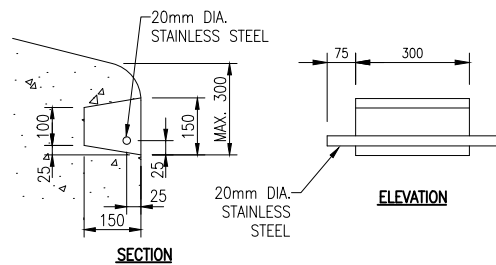
- NOTE:**
1. MANHOLE LADDER TO BE USED WHERE MANHOLE EXCEEDS 3m IN DEPTH.
 2. MANHOLE LADDERS TO BE 316 STAINLESS STEEL



DETAIL 4C
STANDARD CONNECTION FOR SEWER AND STORMWATER
WITH A DEPTH TO INVERT < 2.50m
SCALE 1:10



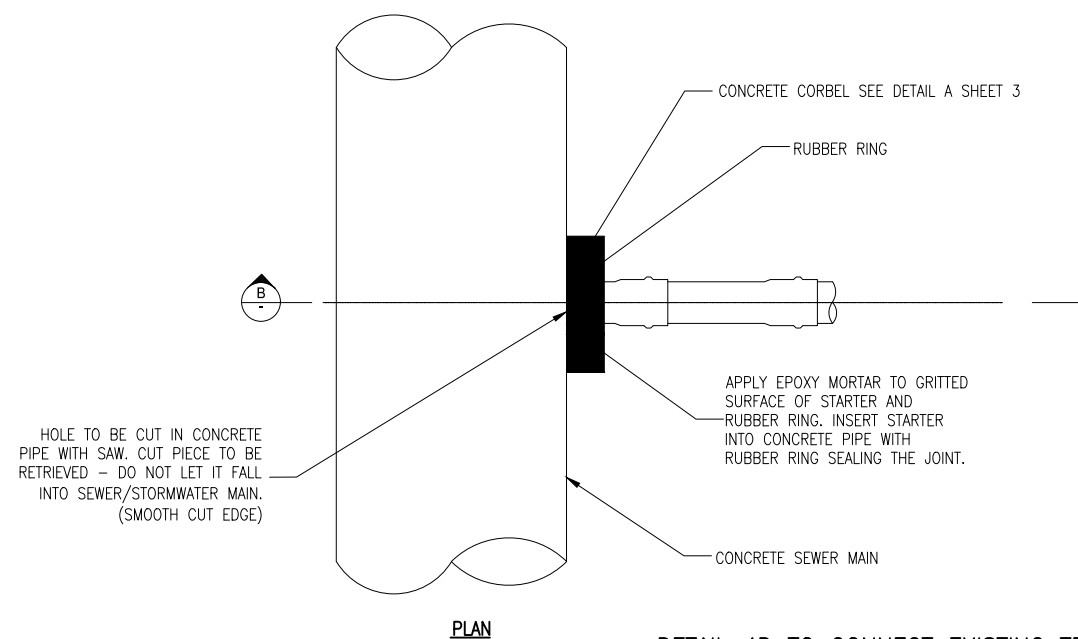
DETAILS OF STEPPED RUNG



RECESSED STEP DETAILS

DETAIL 4B
MANHOLE STEPS
SCALE 1:10

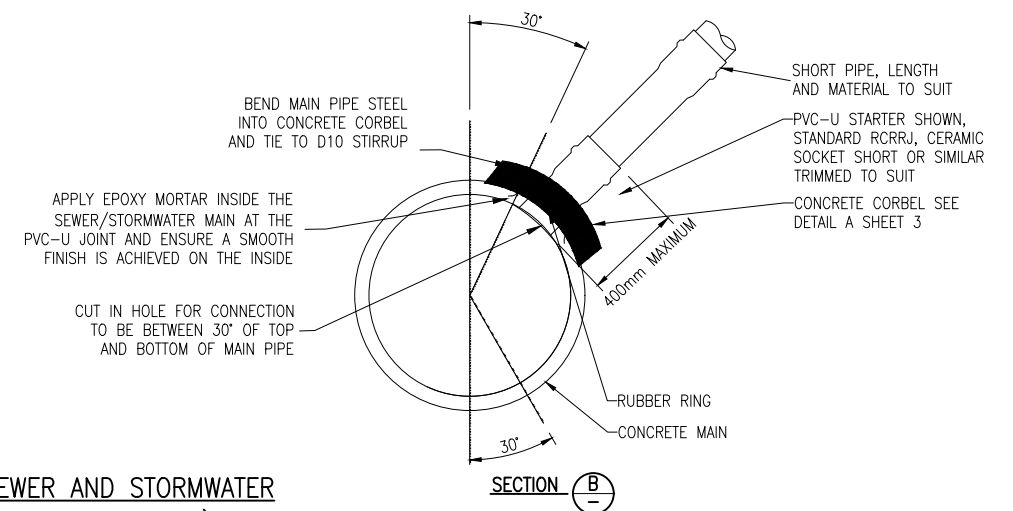
- NOTE:**
1. STEP RUNGS TO BE 316 STAINLESS STEEL OR AN APPROVED ALTERNATIVE



DETAIL 4D TO CONNECT EXISTING TRUNK SEWER AND STORMWATER
(ONLY TO BE USED WHEN DIRECTED BY THE ENGINEER)
SCALE 1:20

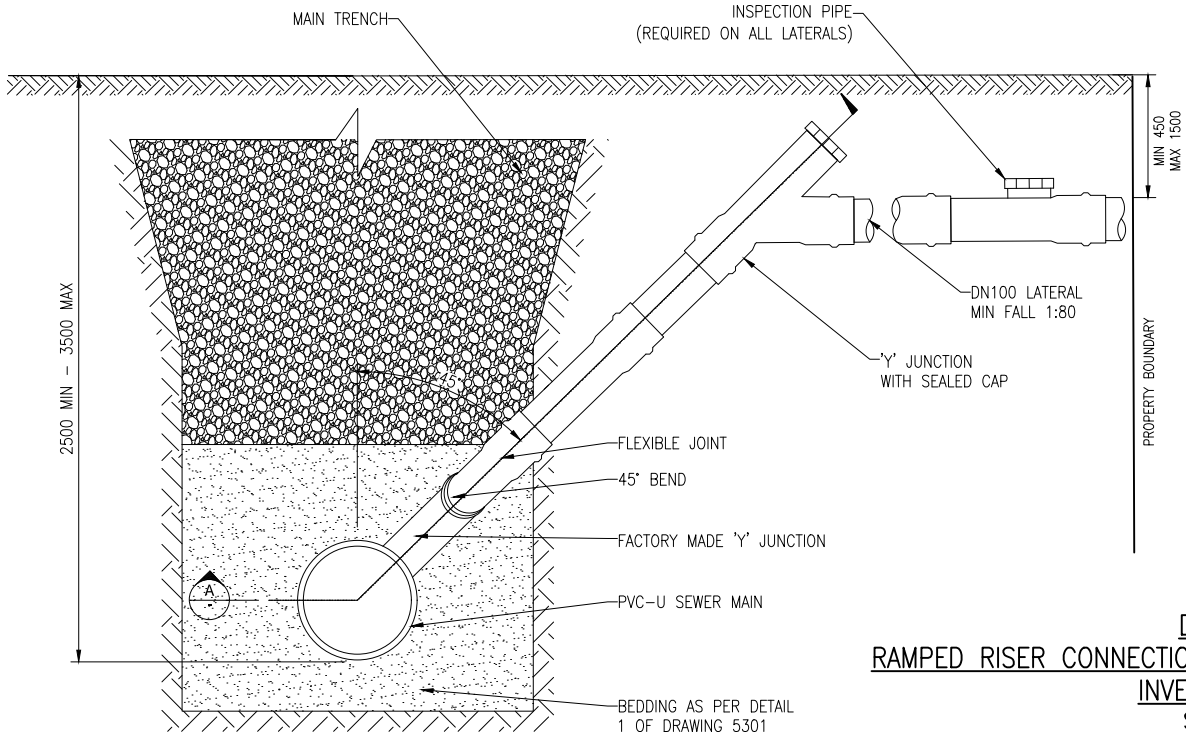
NOTES:

1. DRAWING BASED ON NZS 4404:2004. WHERE DRAWING DIFFERS FROM STANDARD THIS DRAWING TAKES PRECEDENCE
2. MINIMUM LATERAL GRADIENT 1:80. MAXIMUM GRADIENT DESIRABLE 1:1. STEEPER GRADIENT WILL BE PERMITTED TO MAINTAIN BUILDING AREA. PIPE TO BE SUPPORTED BY NATURAL GROUND WHERE POSSIBLE.
3. ALL LATERALS (FROM THE SEWER MAIN OR MANHOLES) TO BE FITTED WITH AN INSPECTION PIPE AT THE PROPERTY BOUNDARY.
4. DN1050 SEWER MAIN AND DN300 CONNECTION SHOWN
5. THE DEFINITION OF A TRUNK SEWER IS DETAILED IN THE TDC COP SECTION 1, CLAUSE 1.3

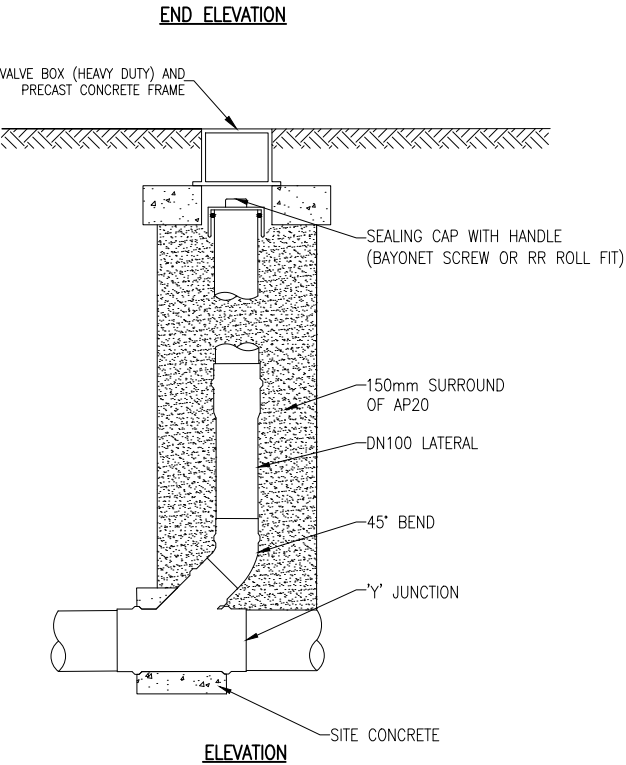
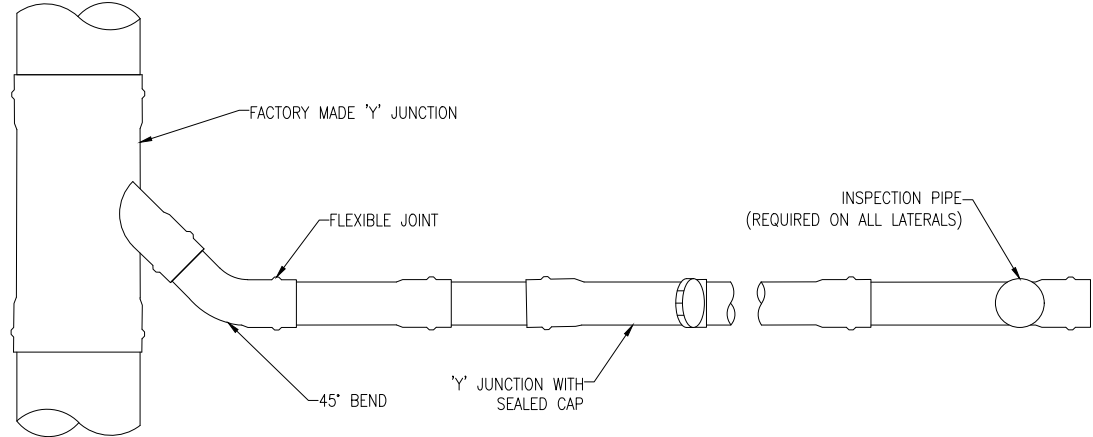


				SURVEY FILE:				AS SHOWN				TIMARU DISTRICT COUNCIL				DRAINAGE AND WATER				MANHOLE LADDER, STEP RUNG & LATERAL CONNECTIONS				CONTRACT NUMBER:			
				DATA SOURCE:				LTU				2 King George Place				CODE OF PRACTICE				5302				DRAWING NUMBER:			
				LEVEL DATUM:				D & W				P.O. Box 522				STANDARD DETAILS				4				REVISION:			
												Timaru 7940								13							
												Telephone: 03 687 7200															
												Website: www.timaru.govt.nz															

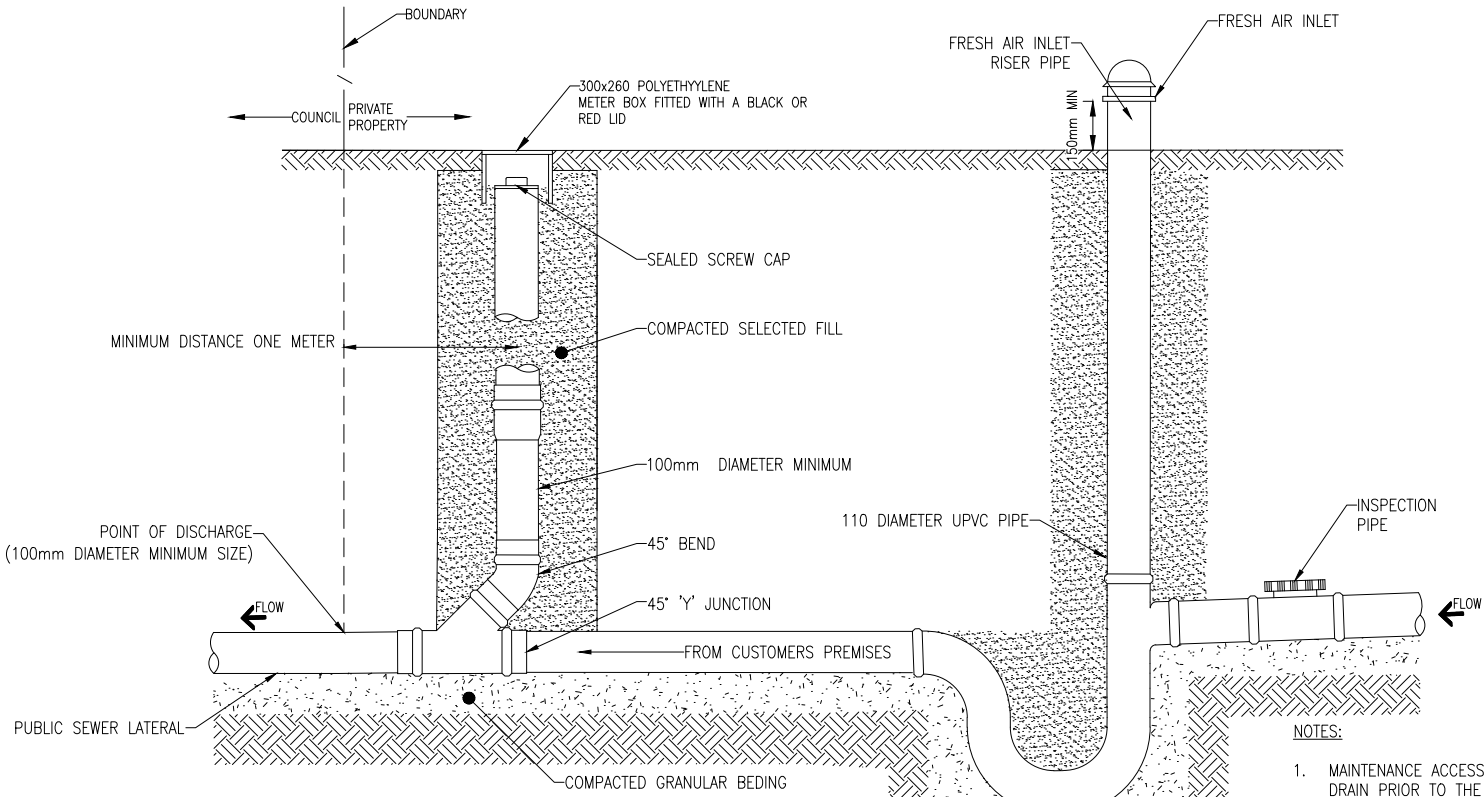
NOTE:
TOP OF RAMP RISER TO BE
CLEARLY IDENTIFIED ON
AS-BUILT PLANS



DETAIL 5A
RAMPED RISER CONNECTION FOR SEWERS WITH A DEPTH TO
INVERT > 2.50m
SCALE 1:10



DETAIL 5B
CLEANING EYE
SCALE 1:10

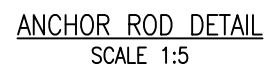


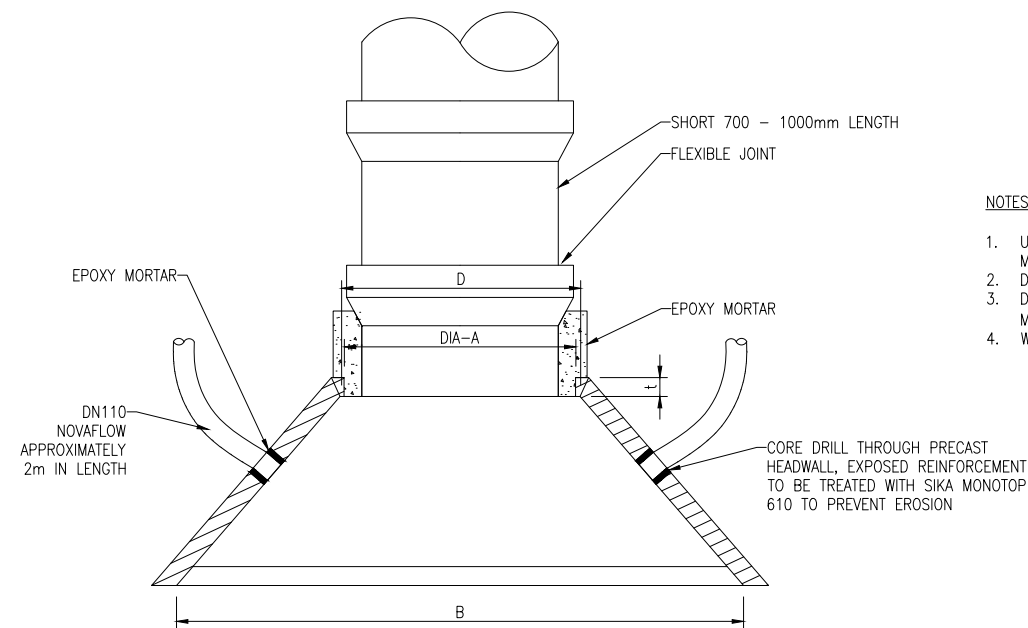
MAINTENANCE ACCESS POINT
DISTRICT WIDE
N.T.S

PRIVATE ASSET

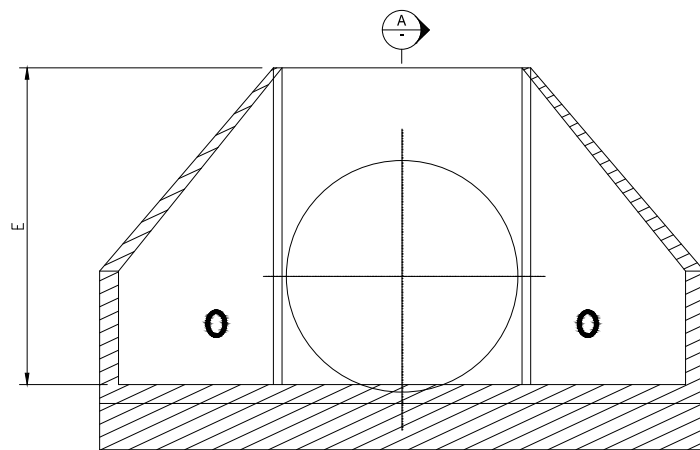
BOUNDARY TRAP / BUCHAN TRAP
TIMARU ONLY
N.T.S

- NOTES:
1. MAINTENANCE ACCESS POINT TO BE INSTALLED ON THE PRIVATE SEWER DRAIN PRIOR TO THE BOUNDARY
 2. WHERE A BUCHAN TRAP IS INSTALLED THE ACCESS POINT IS TO BE INSTALLED AFTER THE BUCHAN AND PRIOR TO THE BOUNDARY
 3. WHERE THE ACCESS POINT IS LOCATED INSIDE A BUILDING THE COVER SHALL BE SEALED AT FLOOR LEVEL
 4. THIS IS A REQUIREMENT FOR CONNECTION AND DISCHARGE TO COUNCILS SEWER NETWORK INFRASTRUCTURE AS PER TDC BY LAW CHAPTER 15
 5. OTHER METHODS OF BUCHAN INSTALLATION MAY BE USED PROVIDED A WATER SEAL CAN BE ACHIEVED
 6. WHERE A BUCHAN TRAP IS TO BE INSTALLED IN A BUILDING THE FAI ACCESS POINT IS TO BE SEALED USING A SCREW CAP AND THE FAI DIRECTED EXTERNALLY

DO NOT SCALE - IF IN DOUBT ASK



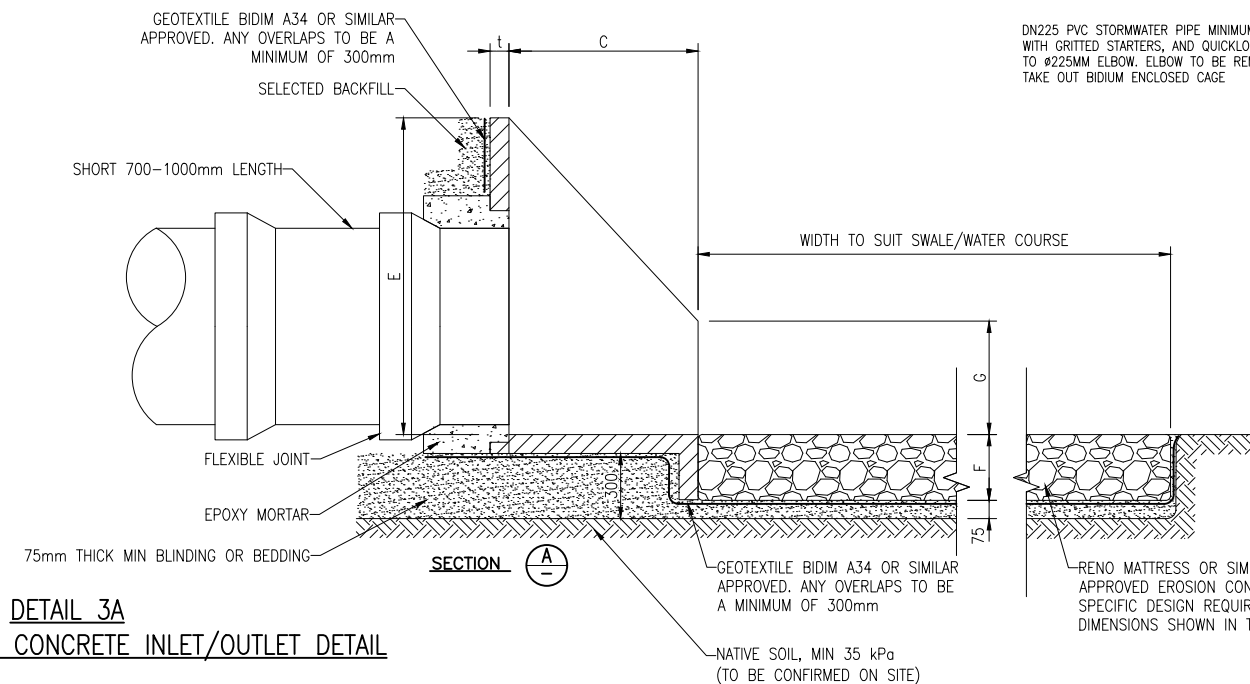
PLAN



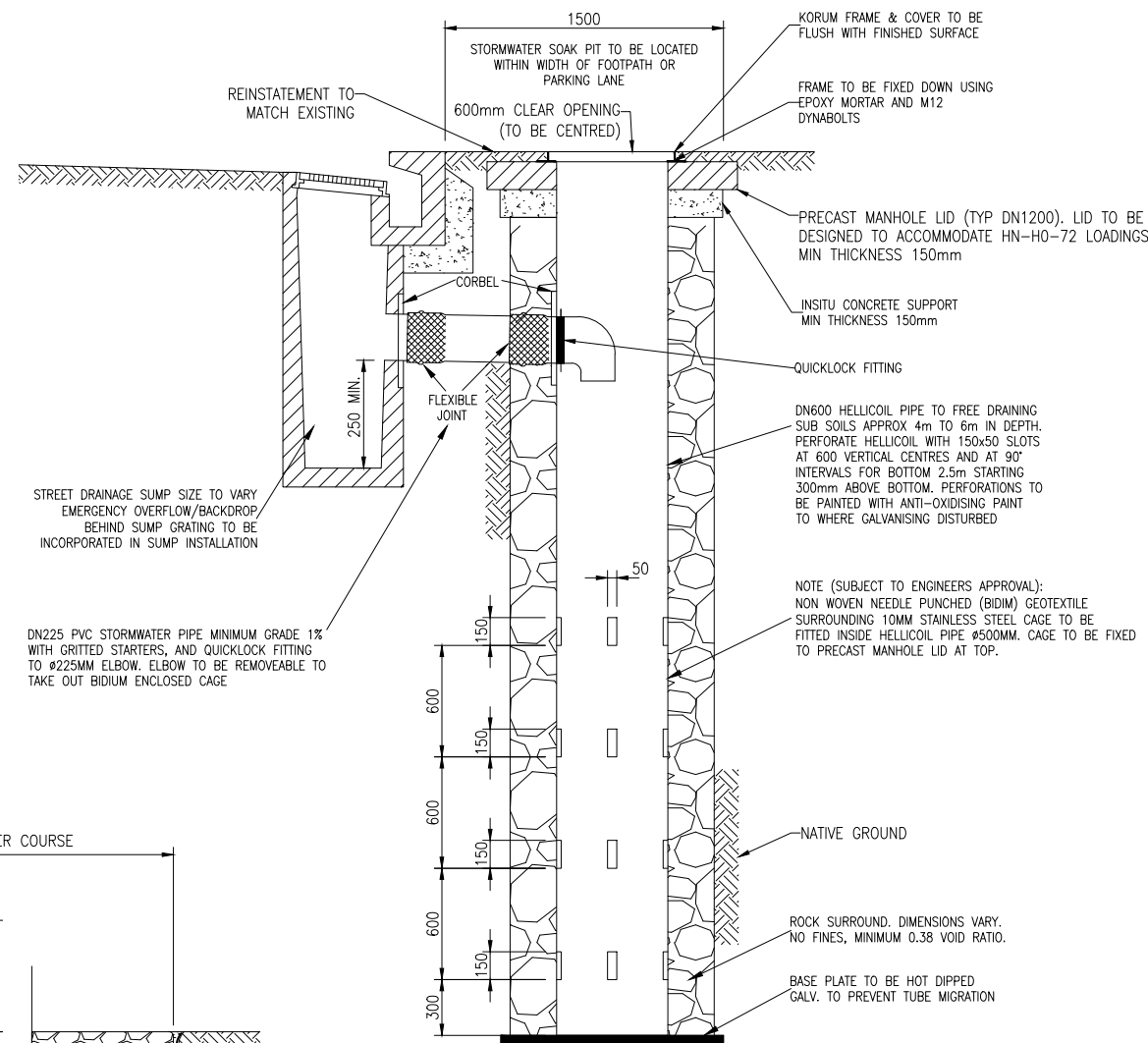
ELEVATION

NOTES:

1. USE HYNDS PRECAST UNITS (OR SIMILAR APPROVED) IN CONJUNCTION WITH MANUFACTURERS INSTRUCTIONS
2. DIMENSIONS IN MILLIMETRES
3. DESIGNER TO PROVIDE ADEQUATE SCOUR PROTECTION USING GABION MATTRESSES (OR SIMILAR APPROVED)
4. WW1050 WITH DN900 CONC PIPE SHOWN



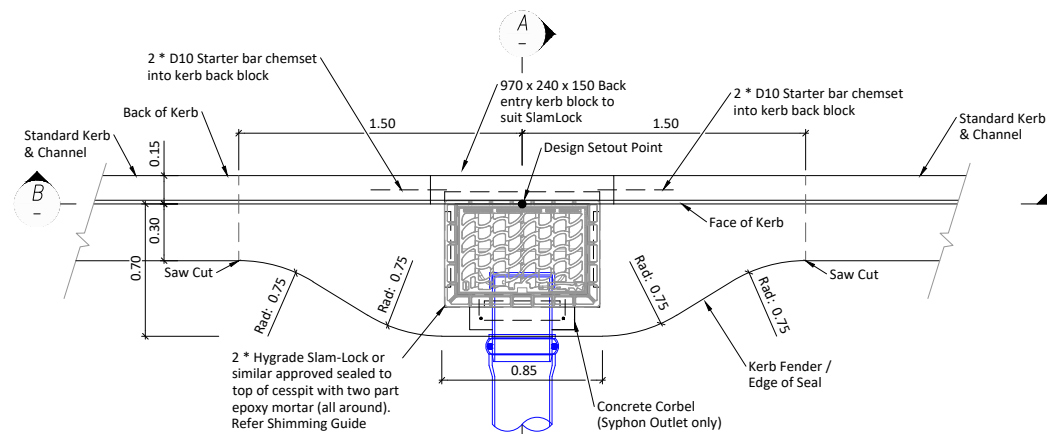
DETAIL 3A
PRECAST REINFORCED CONCRETE INLET/OUTLET DETAIL



DETAIL 3B
STORMWATER SOAKAGE PIT

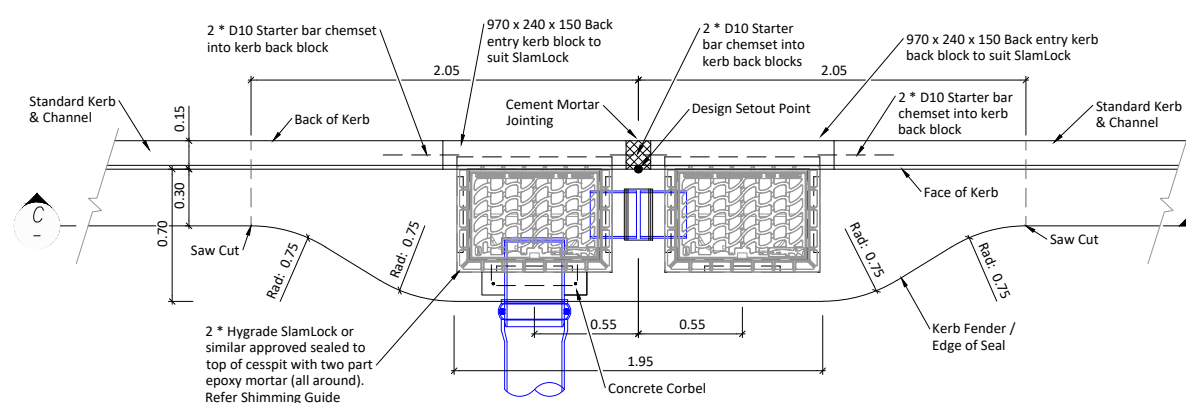
PRODUCT CODE	NOMINAL PIPE DIAMETER	WINGWALL TYPE	A	B	C	D	E	F	G	t	WEIGHT
WW0300	100 to 300	STANDARD	190/390	1000	600	460	520	200	160	60	205kg
WW0600	300 to 675	STANDARD	390/790	2150	745	810	1000	250	390	90	755kg
WW0600L	300 to 600	LONG THROAT	370/700	1950	1100	750	900	280	500	80	925kg
WW1050	600 to 1050	STANDARD	720/1225	3000	1000	1270	1675	345	600	100	1800kg
WW1350	1200 to 1350	STANDARD	1380/1540	4100	2400	1600	1975	425	750	125	5610kg
WW1800	1600 to 1800	STANDARD	1727/2040	4900	2400	2150	2265	450	750	135	7700kg
	2050 and above	SPECIAL									

STANDARD RENO MATTRESS SIZES		
LENGTH	WIDTH	HEIGHT
6000	2000	170
6000	2000	230
6000	2000	300



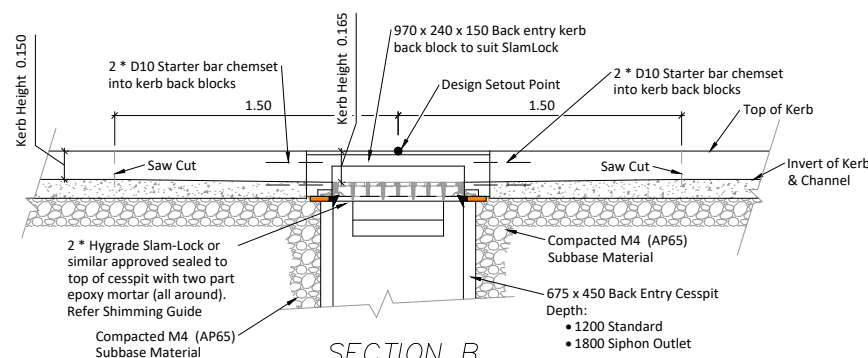
TYPICAL SINGLE SUMP - PLAN

Scale 1:20 @ A1



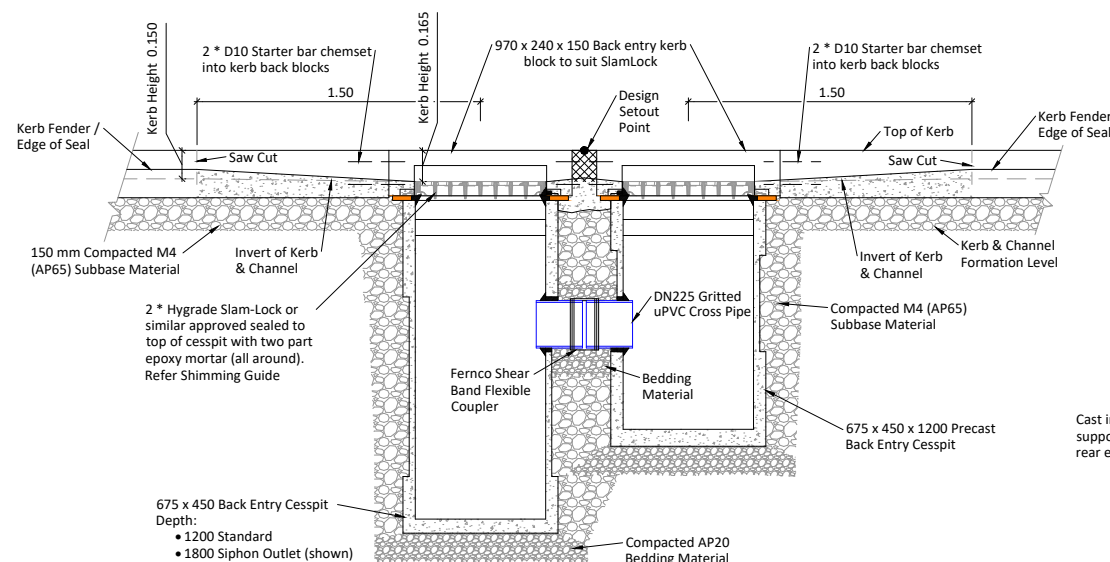
TYPICAL DOUBLE SUMP - PLAN

Scale 1:20 @ A1



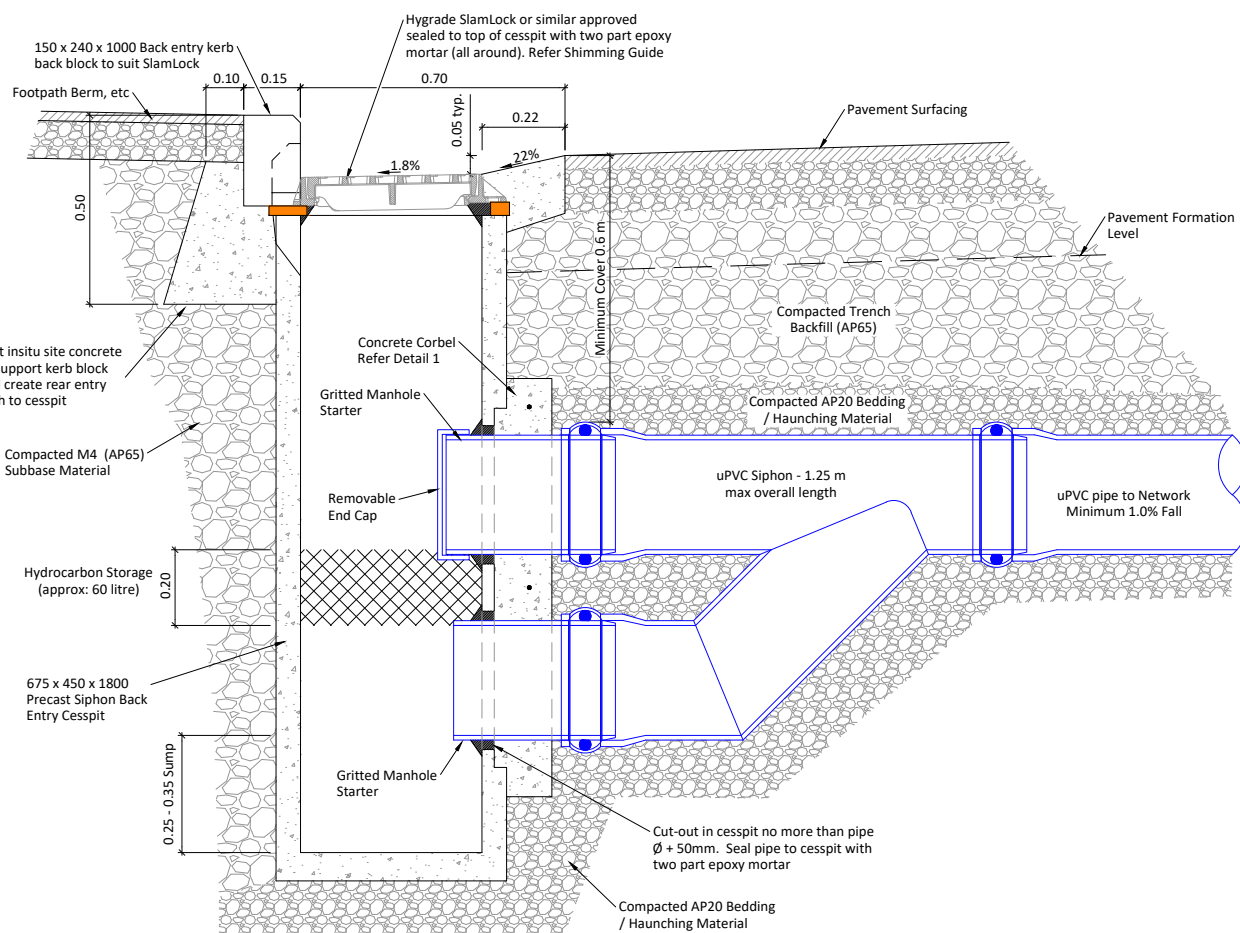
SECTION B

Scale 1:20 @ A1



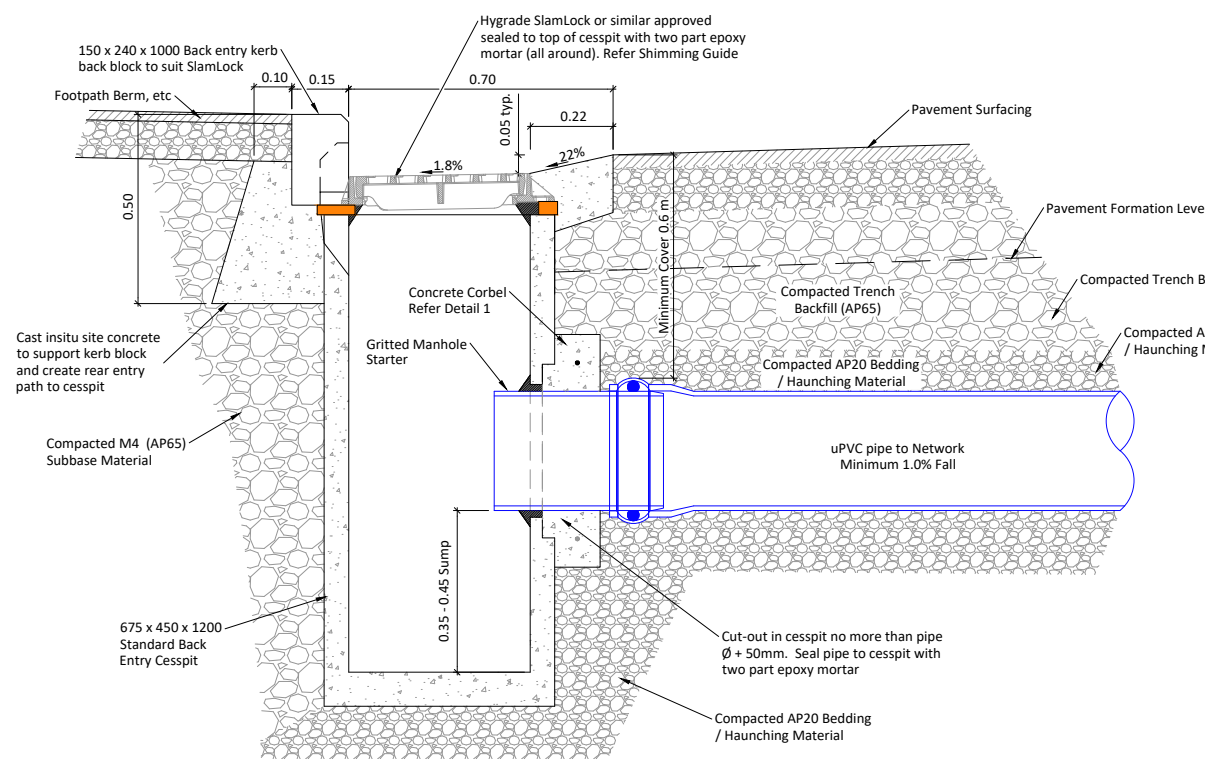
SECTION C

Scale 1:20 @ A1



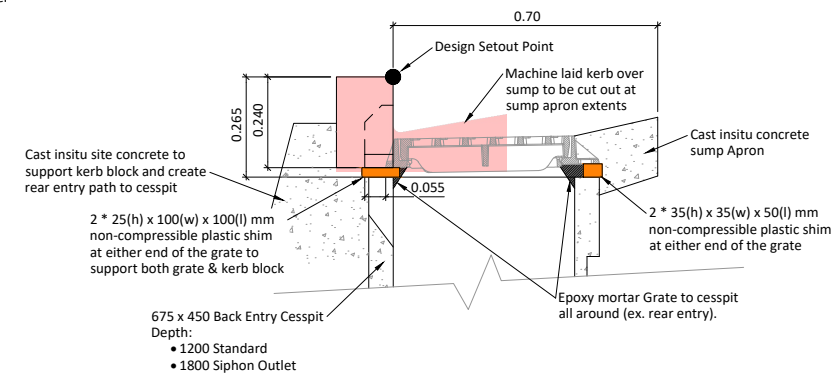
SECTION A - WITH SIPHON

Scale 1:10 @ A1



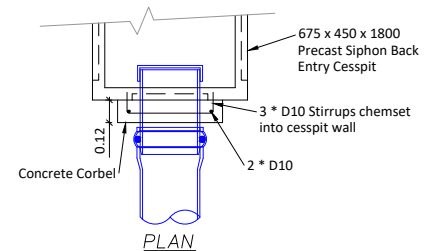
SECTION A - STANDARD

Scale 1:10 @ A1

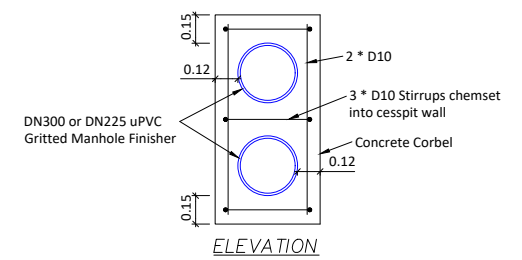


FRAME SHIMMING GUIDE

Scale 1:7.5 @ A1



PLAN



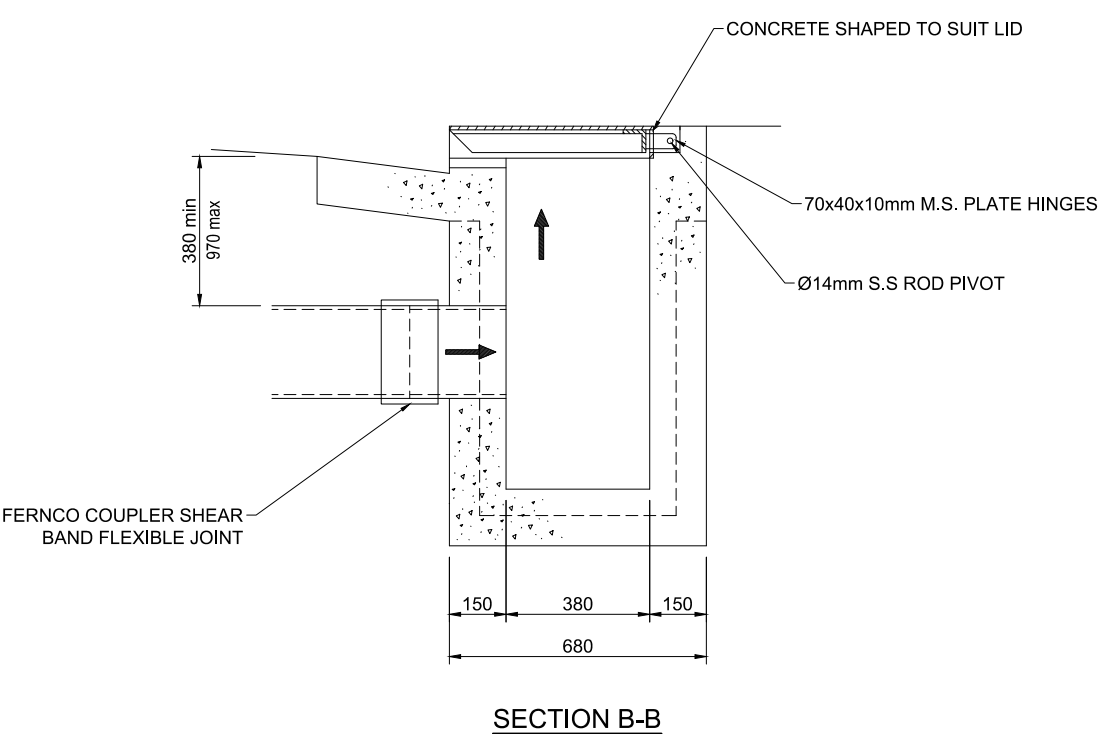
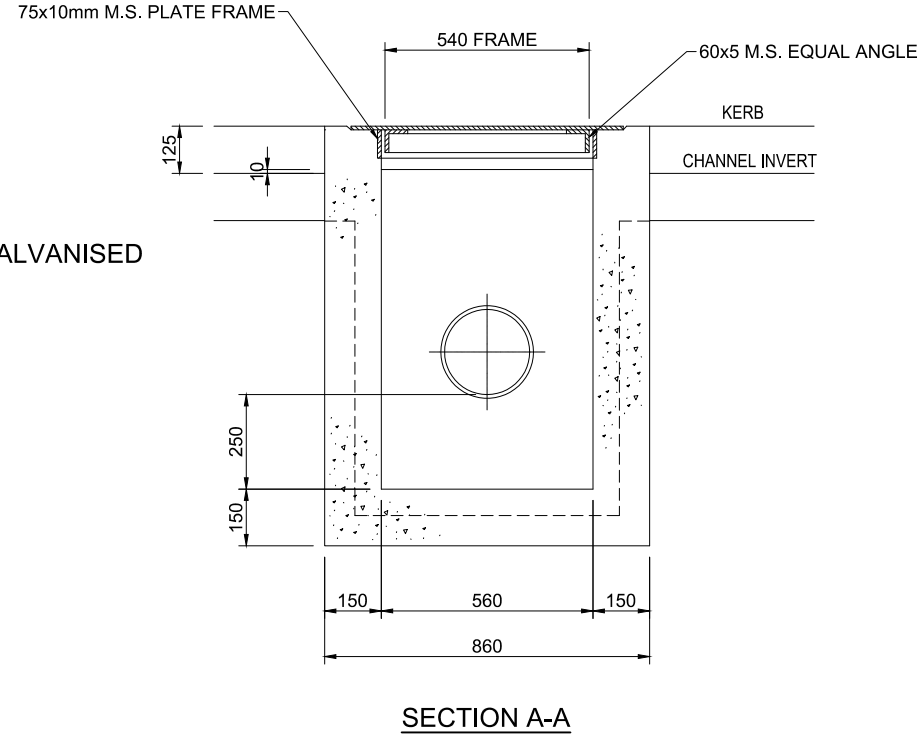
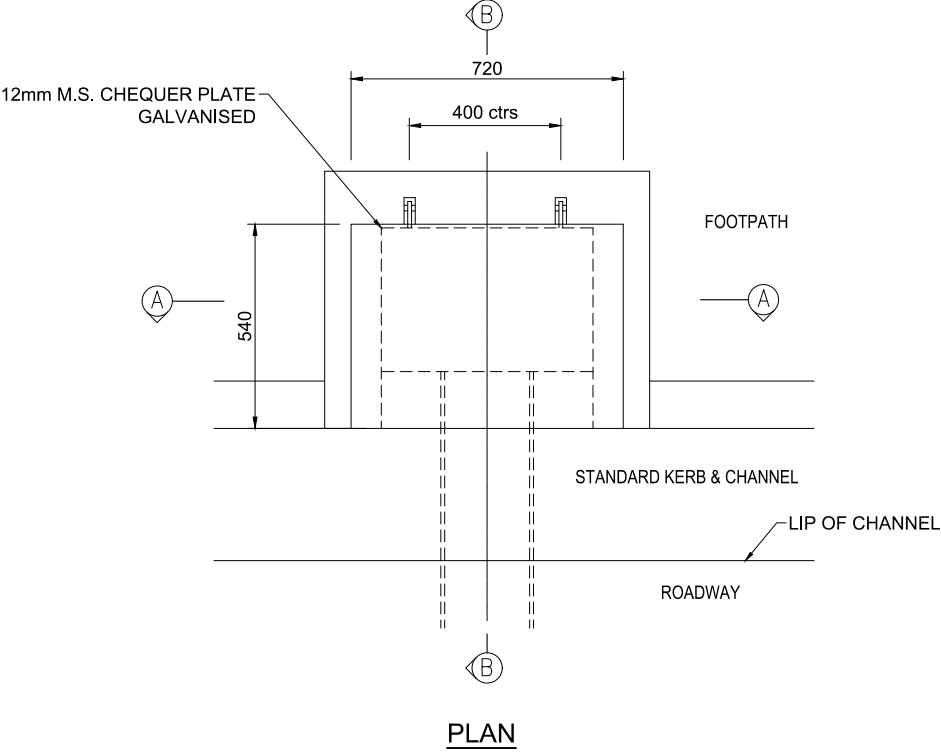
ELEVATION

DETAIL 1 - CORBEL

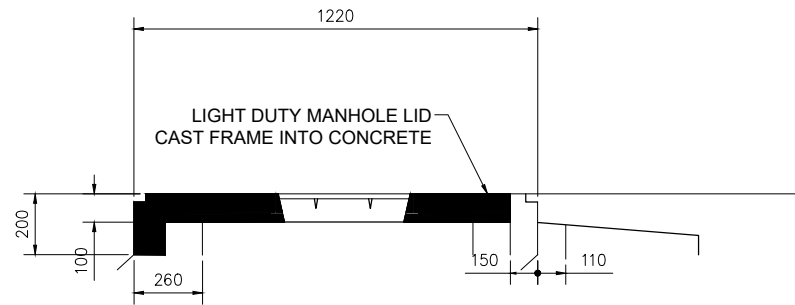
Scale 1:20 @ A1

- Notes:
1. All dimensions in metres unless shown otherwise;
 2. All materials and pipework to comply with TDC Contract Water & Drainage Standard Specification
 3. Syphon option is to be used on State Highways and on streets classified as arterial and above, or as directed by TDC;
 4. All insitu concrete to have minimum compressive strength of 25 MPa;
 5. Reinforcement to minimum 50 mm cover;
 6. Jointing of / to precast blocks to be neatly pointed with minimum 10 mm cement mortar;
 7. Saw cuts to be 30 mm deep max;
 8. Stormwater laterals from sumps to have minimum grade of -1.0 %;
 9. Frame & grate to be Hygrade SlamLock or other product approved by Timaru District Council;
 10. In high traffic areas (collector roads) the frame and grate shall be attached to the concrete cesspit with threaded rod, nuts and washers drilled and chemset into top of cesspit;
 11. Precast units shown are Hynds standard products - other units may be used subject to Timaru District Council approvals provided frame and grate requirements are met;
 12. Precast rear entry kerb blocks must be included;
 13. Kerb height transitions from 150 mm to 165 mm;
 14. All work in road reserve shall have an approved Corridor Access Request (CAR) and Works Approval Permit (WAP) prior to commencement.
 15. Sump location selection to be designed to receive the intended catchments flows as required by the TDC Infrastructure Design Standard(IDS)

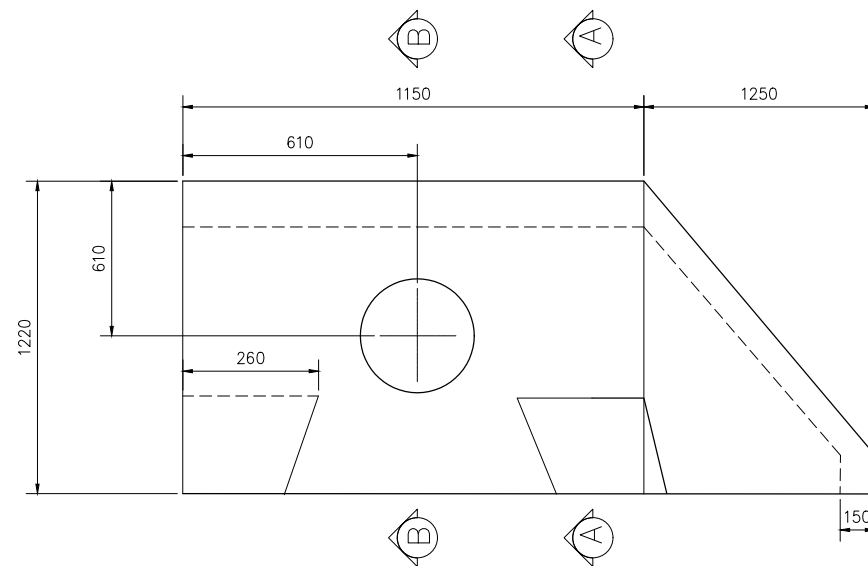
										SURVEY FILE:		INITIAL		DATE		NAME		DATE		ORIGINAL SCALE (A1): 1:20		 <div>TIMARU DISTRICT COUNCIL 2 King George Place P.O. Box 522 Timaru 7940 Telephone: 03 687 7200 Website: www.timaru.govt.nz</div>		PROJECT: DRAINAGE AND WATER CODE OF PRACTICE STANDARD DETAILS		TITLE: TYPICAL SUMP / CATCH-PIT DETAILS		CONTRACT NUMBER:		DRAWING NUMBER: <div>5302</div>		REVISION: <div>I</div>	
										DATA SOURCE:		WATER		SURVEYED		-		REDUCED SCALE (A3): 1:40															
										LEVEL DATUM:		DRAINAGE		DESIGNED		GS		-															
										ROADING		DESIGN CHECK		GC		2/16		PRODUCED BY: LTU															
I SUMP/CATCH PIT UPDATE & PAGE 9 REINSTATED										WC		7/21		PARKS		DRAWN		WC		2/16		FOR: D & W		THIS DOCUMENT IS THE PROPERTY OF THE TIMARU DISTRICT COUNCIL. IT IS NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF THE TIMARU DISTRICT COUNCIL.									
H TYPICAL POSITION OF POLE VENT DETAIL AND SHEET 9 SS										MCB		1/20		ELEC.PWR		DRG CHECK		GC		2/16													
G CHANGES TO DETAIL 3B - ENGINEERS APPROVAL ADDED										WC		4/19		TELECOM		APPROVED		GH		2/16													
F CHANGES TO CORBEL DETAIL										WC		2/16																					
No. REVISION										BY		CHK		APP		DATE														SHEET: 8 OF 13			



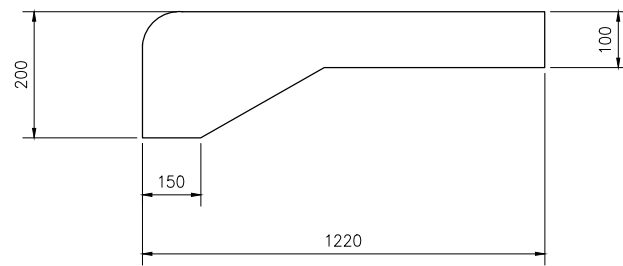
NOTE: ALL STEEL TO BE HOT DIPPED GALVANISED



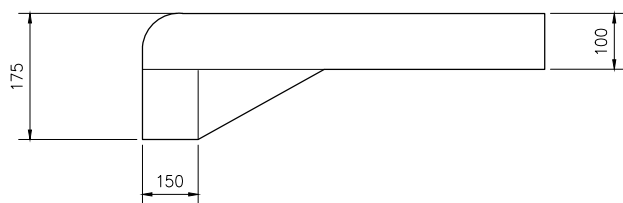
LID FRONT ELEVATION



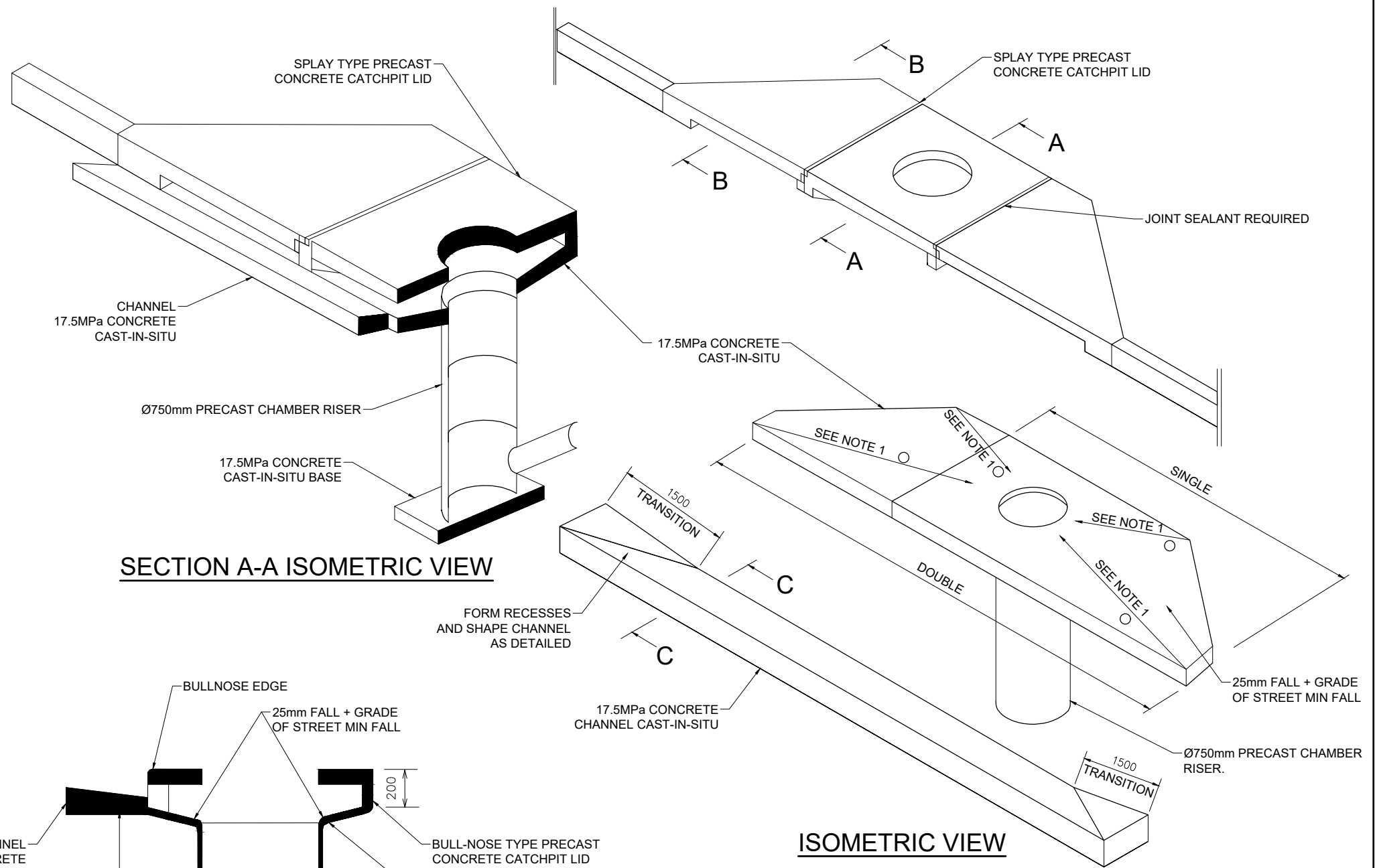
PLAN - CATCHPIT LID SINGLE SPLAY



SECTION A-A

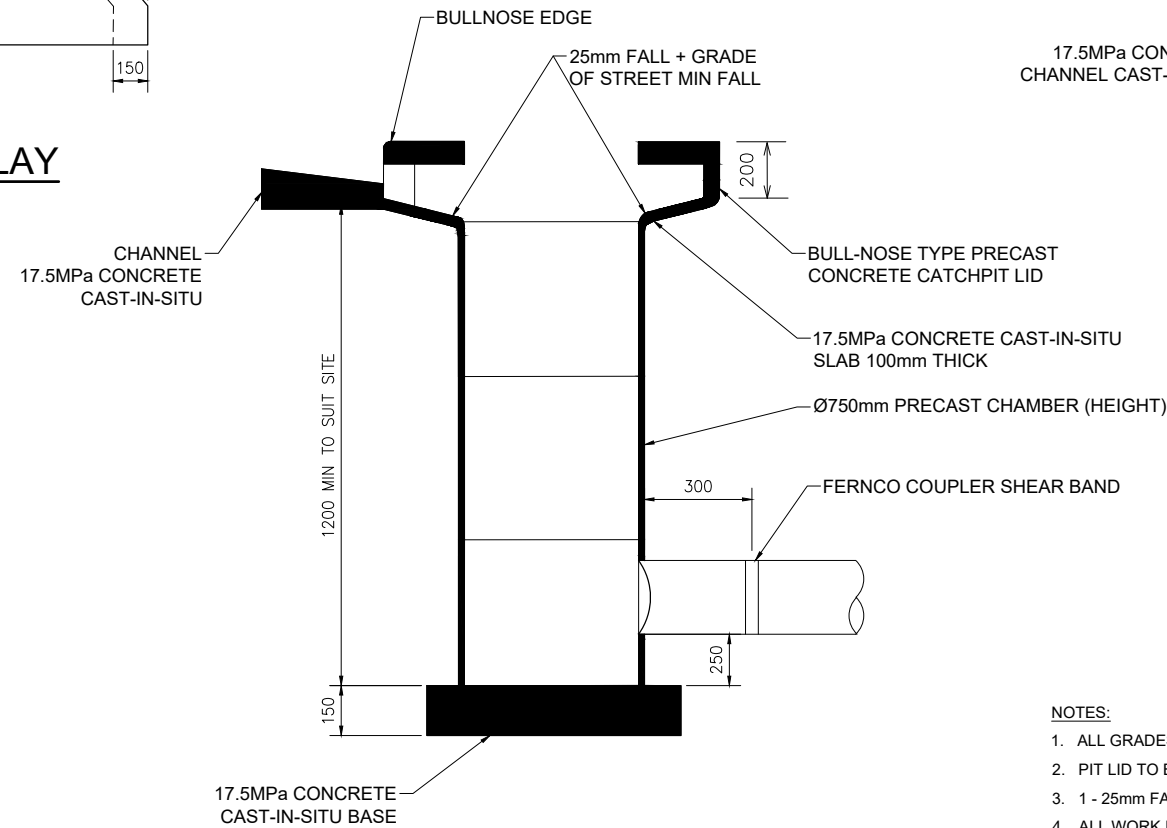


SECTION B-B



SECTION A-A ISOMETRIC VIEW

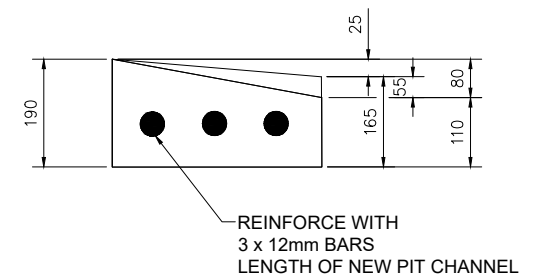
ISOMETRIC VIEW



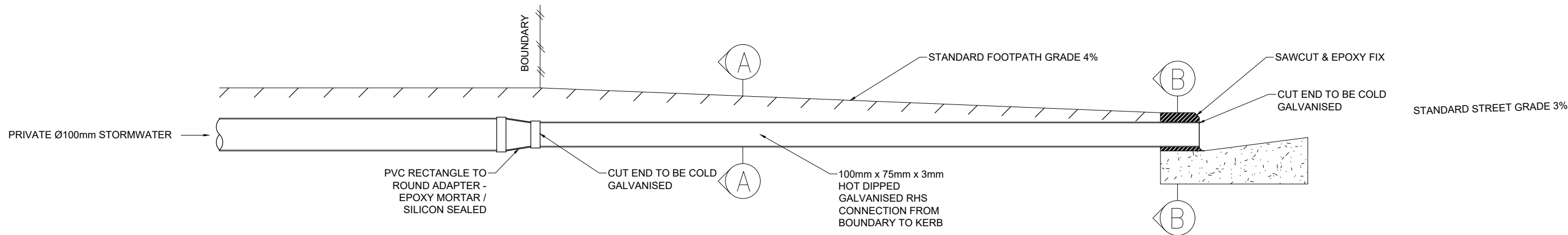
SECTION A-A SIDE ELEVATION

NOTES:

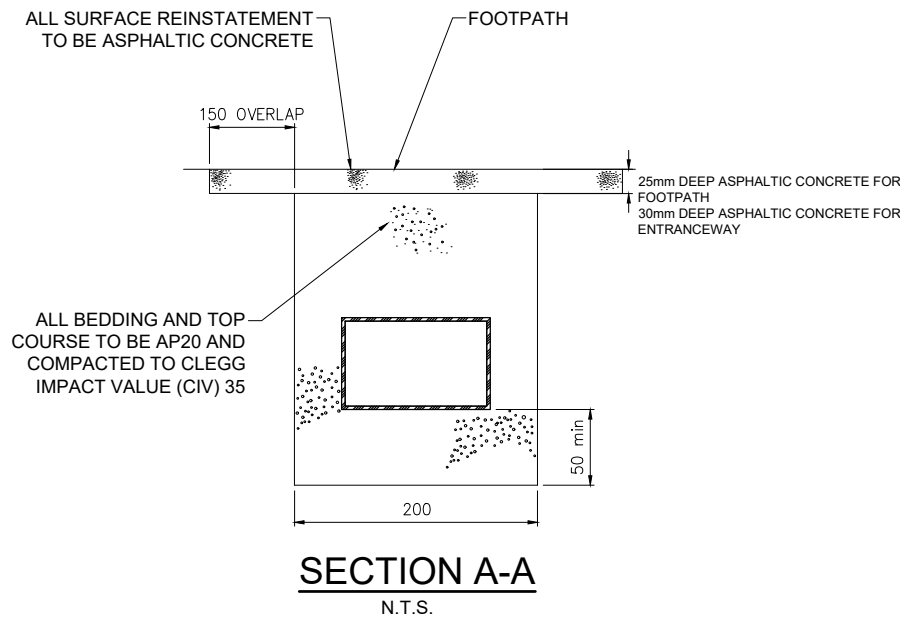
1. ALL GRADES AND FALL INDICATED ARE CRITICAL
2. PIT LID TO BE FLUSH WITH SURROUNDING SURFACES
3. 1 - 25mm FALL + GRADE OF STREET MIN. FALL.
4. ALL WORK IN THE ROAD RESERVE SHALL HAVE AN APPROVED CORRIDOR ACCESS REQUEST (C.A.R.) AND WORKS APPROVAL PERMIT (W.A.P.) PRIOR TO COMMENCEMENT OF WORK.



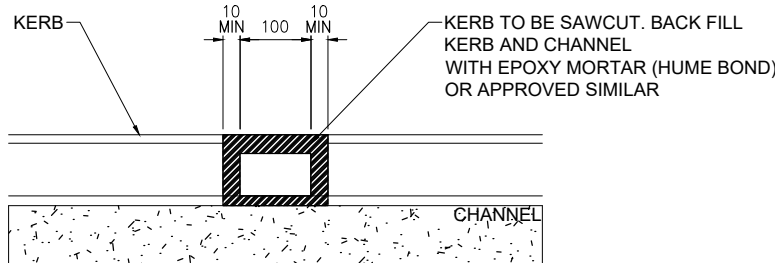
SECTION C-C



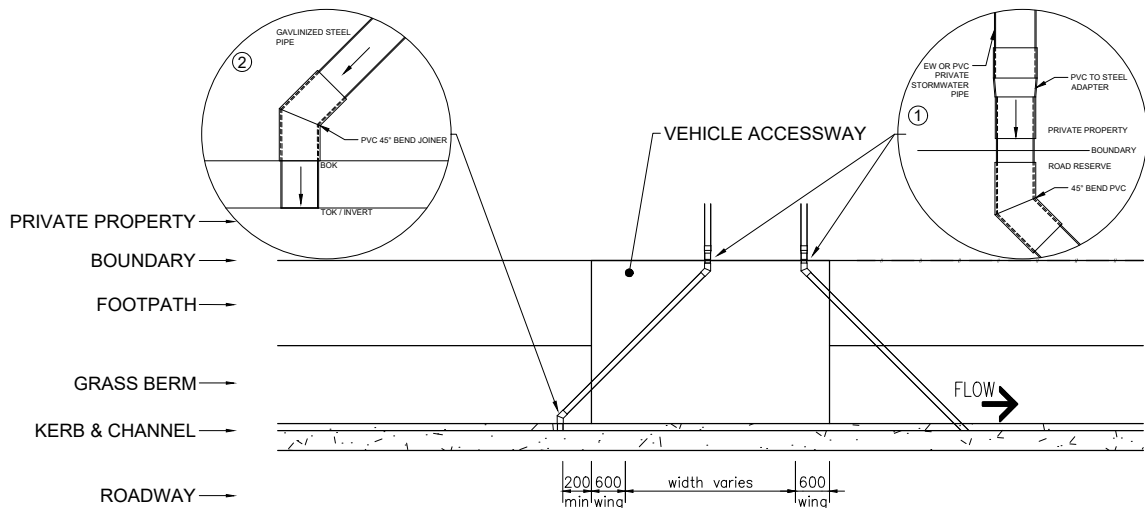
TYPICAL STORMWATER ACROSS FOOTPATH
N.T.S.



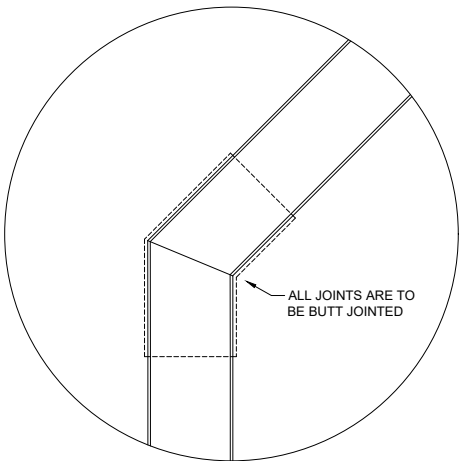
SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



PLAN OF CROSSING DETAIL

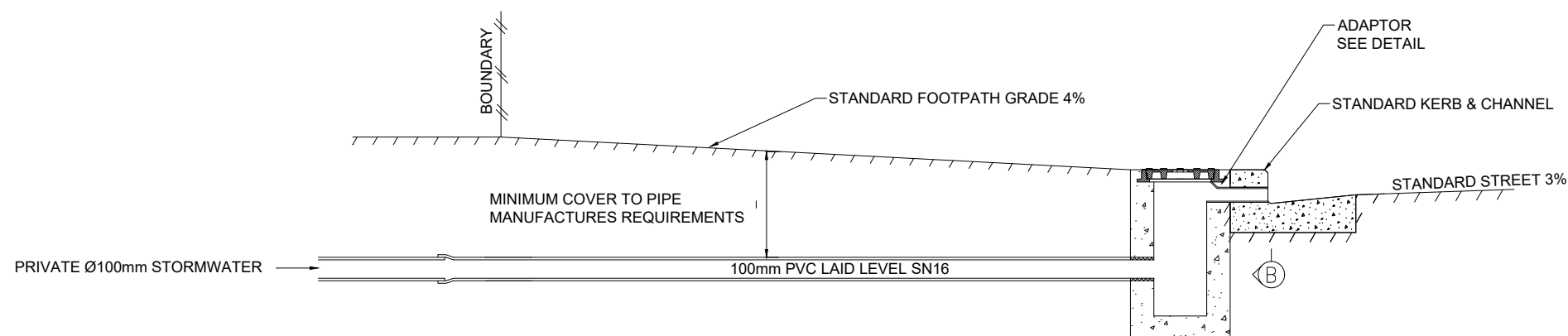


JOINT DETAIL

NOTES:

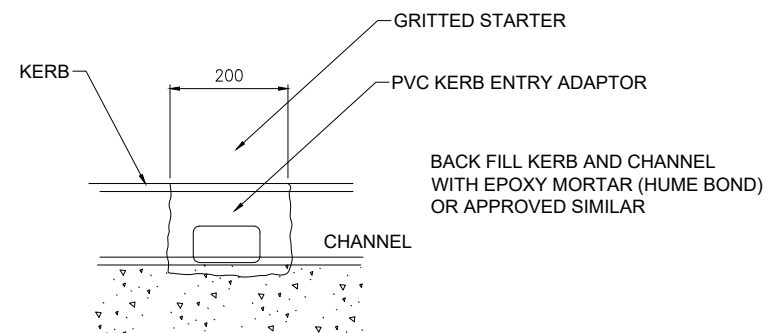
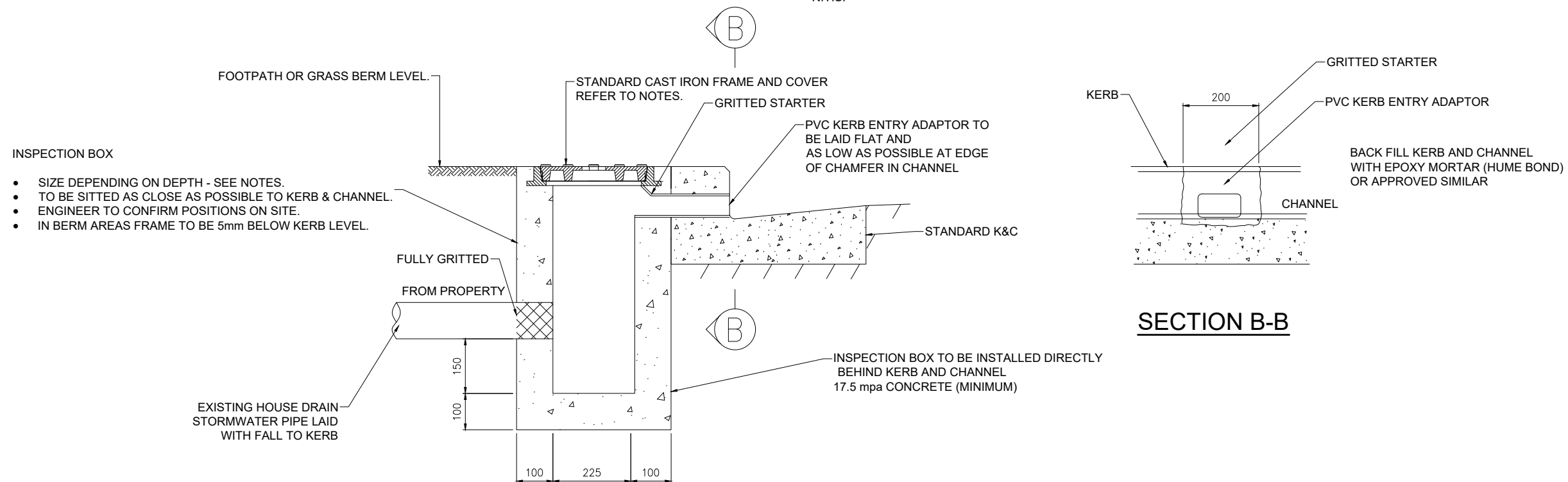
- ALL WORK IN THE ROAD RESERVE SHALL HAVE AN APPROVED CORRIDOR ACCESS REQUEST (C.A.R.) AND WORKS APPROVAL PERMIT (W.A.P.) PRIOR TO COMMENCEMENT OF WORK.
- STORMWATER OUTLETS ARE TO BE PLACED AT LEAST 0.2m FROM THE WING OF VEHICLE CROSSING
- OPTION 1 IS THE PREFERRED INSTALLATION OPTION

- ① PREFERRED SOLUTION - ONE COMPLETE SECTION OF GALVANISED STEEL PIPE FROM BOUNDARY TO KERB AND CHANNEL.
- ② ACCEPTABLE SOLUTION USING PVC 45° BEND/JOINER IF OPTION 1 IS NOT ACHIEVABLE
- 45° PVC BEND CAN BE USED TO NEGOTIATE OBSTACLES IN THE FOOTPATH.
- IT IS PREFERRED THAT ADAPTER AND CHANGE OF DIRECTIONS ARE COMPLETED OUTSIDE THE FOOTPATH BOUNDARY.
- ALL JOINTS ARE TO BE BUTT JOINTED.
- ALL JOINTS TO BE SEALED USING SILICONE SEALANT



TYPICAL STORMWATER ACROSS FOOTPATH (REQUIRING LOCAL AUTHORITY APPROVAL)

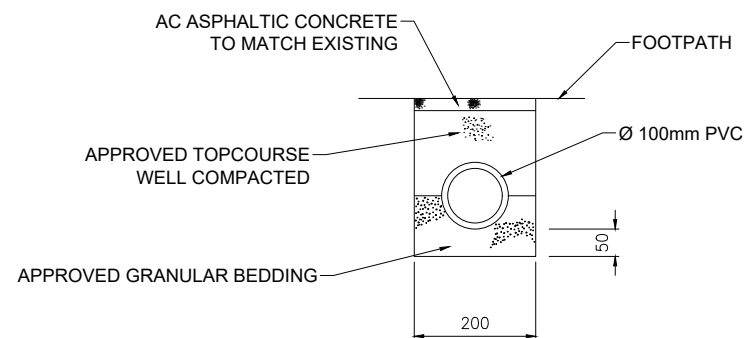
N.T.S.



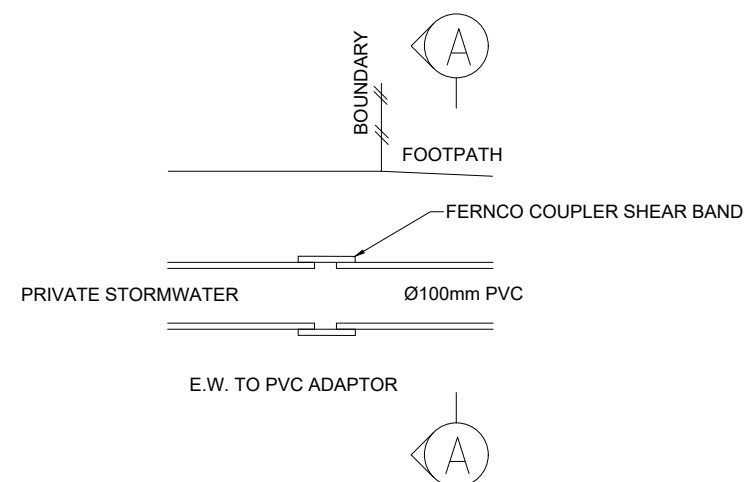
SECTION B-B

DETAILS FOR STORMWATER INSPECTION BOX ACROSS FOOTPATH

N.T.S.



SECTION A-A



NOTES:

- ALL WORK IN THE ROAD RESERVE SHALL HAVE AN APPROVED CORRIDOR ACCESS REQUEST (C.A.R.) AND WORKS APPROVAL PERMIT (W.A.P.) PRIOR TO COMMENCEMENT OF WORK.
- USE 225mm x 175mm INSPECTION BOX UP TO 300 DEPTH TO INVERT (LOWEST PIPE)
- BASED ON CHRISTCHURCH CITY COUNCIL "TRAFFICABLE HOUSE DRAIN SUMP FRAMES AND COVERS" STANDARD DRAWING
- BASED ON CHRISTCHURCH CITY COUNCIL "TRAFFICABLE HOUSE DRAIN INSPECTION BOX " STANDARD DRAWING
- OPTION 2 REQUIRES ENGINEERING APPROVAL

										SURVEY FILE:		INITIAL		DATE		NAME		DATE		ORIGINAL SCALE (A1): 1:20		 <div>TIMARU DISTRICT COUNCIL 2 King George Place P.O. Box 522 Timaru 7940 Telephone: 03 687 7200 Website: www.timaru.govt.nz</div>	PROJECT:	DRAINAGE AND WATER CODE OF PRACTICE STANDARD DETAILS	TITLE: PIPED STORMWATER FOOTPATH CROSSING DETAILS OPTION 2	CONTRACT NUMBER:		DRAWING NUMBER: <div>5302</div>		REVISION: <div>I</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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