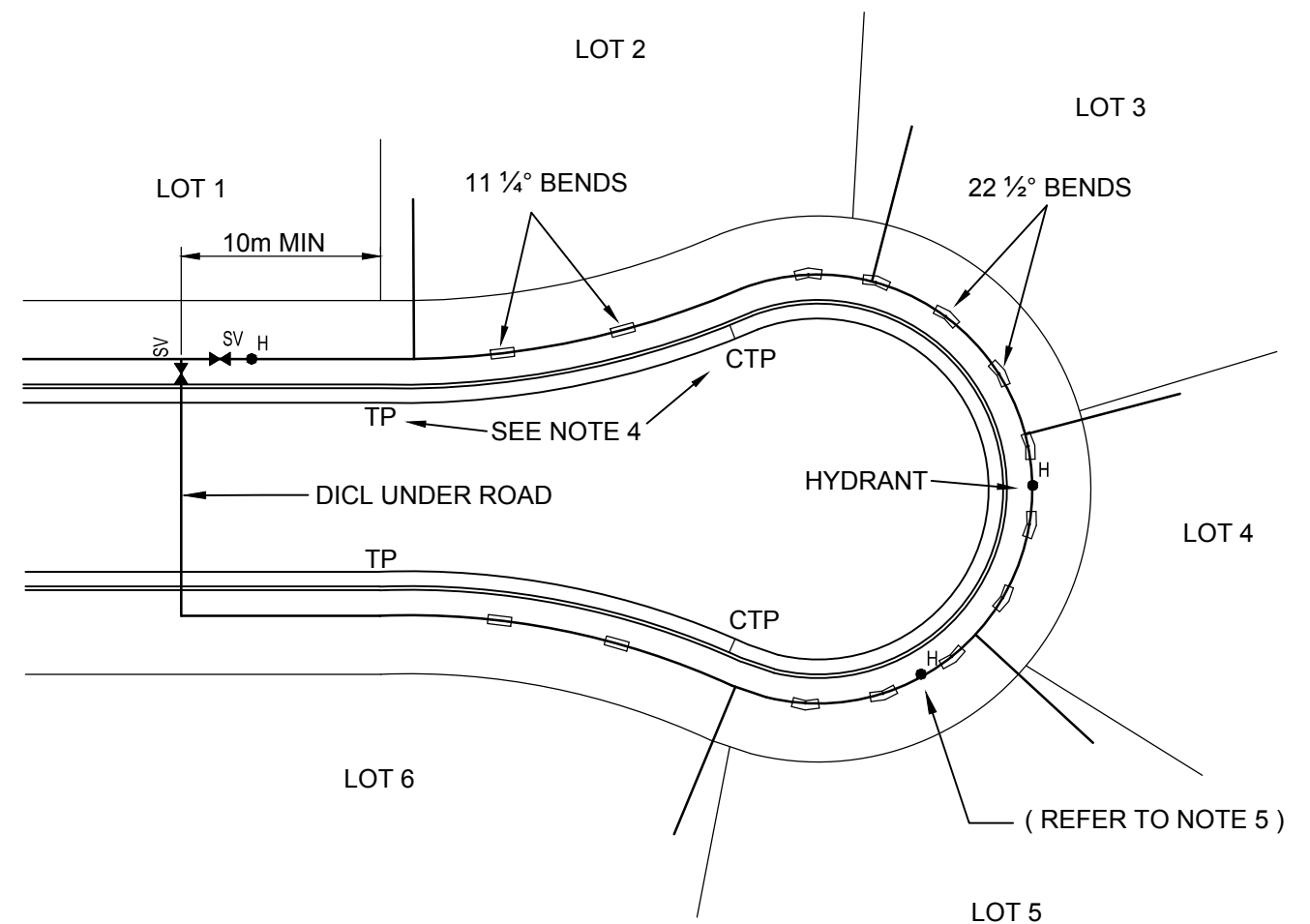


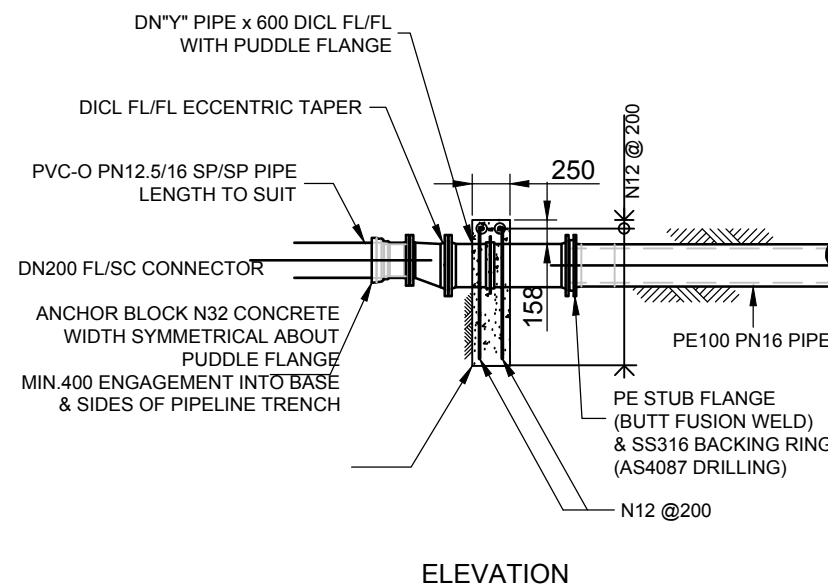
USING MANUFACTURED CURVED OPVC OR PE PIPES



USING STRAIGHTS AND BENDS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED
2. PIPES AROUND A CUL-DE-SAC END, BENDS IN THE ROAD AND AROUND BULBS AT BENDS IN ROADS ARE TO BE LAYED GENERALLY WITHOUT BENDING THE PIPE OR USING DEFLECTION AT JOINTS. TO THIS END, EITHER MANUFACTURED CURVED PIPE LENGTHS ARE TO BE USED OR STRAIGHT PIPE SECTIONS WITH DUCTILE IRON OR PE BENDS WILL BE REQUIRED.
3. WHERE CURVED OPVC SERIES 2 PIPE IS TO BE USED, BACKFILLING IS TO BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS WITH REGARD TO THRUST RESISTANCE
4. WHERE STRAIGHT PIPES ARE USED, PIPE LENGTHS ARE TO BE SET SO AS TO HAVE NO DEFLECTION AT THE DUCTILE IRON BENDS. For PIPES CENTERLINE RADII UP TO 15 METERS USE 22.5° BENDS, FROM 15M TO 30M USE 11.25° BENDS. NORMALLY A DEFLECTION OF UP TO 6° CAN BE EXPECTED AT BOTH THE INITIAL TP AND THE COMMON TP. IN THESE LOCATIONS, DEFLECT THE PIPE OVER JOINTS (PIPE LENGTHS = GREATER OF HALF LENGTH OR 2.0M). PIPE SECTION LENGTHS AND THE NUMBER OF FITTINGS REQUIRED ARE TO BE SHOWN IN A SCHEDULE ON THE CONSTRUCTION PLANS. NOTE THAT SOME ODD PIPE LENGTHS COULD BE REQUIRED AT THE TP AND THE CTP.
5. WHERE PE PIPE IS USED INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS WITH REGARD TO THRUST RESTRAINT. IT IS CRITICAL TO ENSURE APPROPRIATE RESTRAINT IS PROVIDED AT THE POINT OF CHANGE OF MATERIAL. NOTE THAT MECHANICAL COUPLINGS OR WELDED FLANGE CONNECTIONS ARE PERMITTED. REFER TO THRUST RESTRAINT DETAIL.
6. IN SPECIAL CIRCUMSTANCES WHERE APPROVAL IS GIVEN TO TERMINATE THE WATER MAIN IN A DEAD END, A HYDRANT FLUSHING POINT IS TO BE PROVIDED.



TYPICAL THRUST RESTRAINT DETAIL FOR PE INSTALLATION

FOR STANDARD RESIDENTIAL CUL-DE-SAC LAYOUT WITH 10.5m KERB RADIUS ON THE BULB AND 30.0m KERB RADIUS ON THE LEAD IN SECTIONS, THE FOLLOWING ARE USED

RADIUS AT KERB	AVERAGE RADIUS AT PIPE	BEND DEFLECTION DEGREES	FITTINGS TO FITTINGS LENGTH (M)	FITTING LEG LENGTH (M)	CUT LENGTH OF PIPE (M)
10.5m	11.6m	22 1/2°	4.27	0.15	3.6
30.0m	29.0m	11 1/4°	5.70	0.15	5.4

FOR OTHER RADII, THE CUT PIPE LENGTH MAY BE CALCULATED FROM THE FOLLOWING :-

FOR 11.25° DEFLECTIONS :- CUT LENGTH = 0.1965 x R - 2 x F

FOR 22.50° DEFLECTIONS :- CUT LENGTH = 0.3940 x R - 2 x F

WHERE :-

R = THE AVERAGE RADIUS OF THE PIPE LINE
F = THE LEG LENGTH OF THE DEFLECTION BEND FITTING

Armidale Dept of Public Regional Council Infrastructure	SCALES	APPROVED	M. WILSON	20/12/2017	SHEET 1 OF 1
	NTS	MANAGER ENGINEERING AND STANDARDS SUPPORT		DATE	
WATERMAIN CONSTRUCTION AT CUL-DE-SAC HEAD TYPICAL TREATMENT		SURV	AS SHEET SIZE	DRAWING No	AMDT No
		DRWN PD/MB	A3	020-043	A
		DES			
		CHKD MW	CADFILE 020-043.dwg	DATE 20/12/2017	