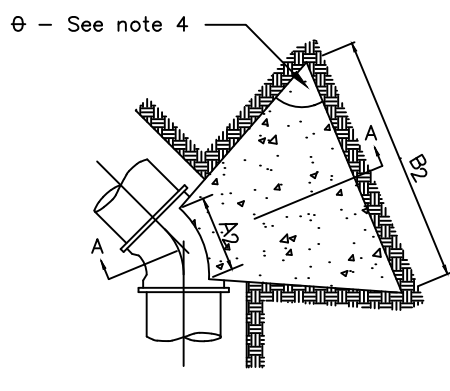
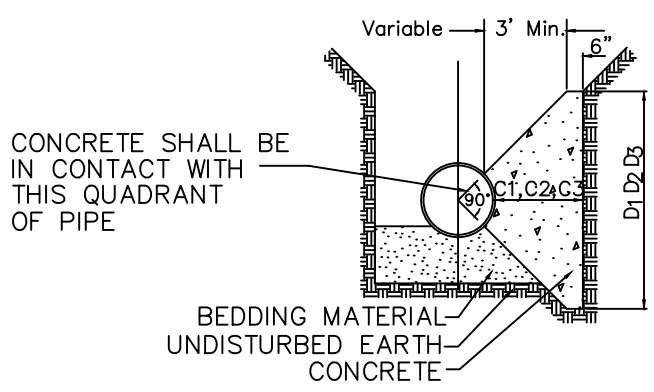


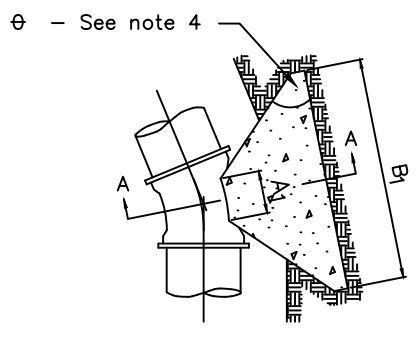
PLAN 90° BENDS



PLAN 45° BENDS



SECTION A-A



PLAN 22 1/2° BENDS

BUTTRESS DIMENSIONS						
PIPE SIZE	22 1/2° BEND		45° BEND		90° BEND/TEE	
	B ₁	D ₁	B ₂	D ₂	B ₃	D ₃
6"	1'-5"	1'-5"	1'-5"	1'-5"	2'-1"	1'-6"
8"	1'-5"	1'-5"	2'-1"	1'-6"	2'-8"	2'-0"
12"	1'-10"	1'-10"	3'-4"	2'-0"	4'-9"	2'-6"
16"	3'-0"	2'-0"	3'-10"	3'-0"	6'-2"	3'-6"
20"	3'-6"	2'-8"	5'-6"	3'-4"	8'-4"	4'-0"
24"	4'-4"	3'-0"	6'-10"	3'-10"	9'-8"	5'-0"
30"	-	-	9'-3"	6'-0"	17'-0"	6'-0"

Notes:

1. Shape of back of buttress may vary as long as poured concrete is against firm undisturbed soils.
2. Dimension C₁, C₂, C₃ should be large enough to make angle θ equal to or larger than 45°.
3. Dimension A₁, A₂, A₃ should be as large as possible without interfering with MJ bolts.
4. $\theta = 45^\circ$ Minimum.
5. Place polyethylene between concrete and piping.
6. All bends and fittings shall be restrained with Megalug thrust restraints or equal.
7. All blocking shall be placed against solid and undisturbed soils



**CITY OF
CHANHASSEN**

CONCRETE
THRUST
BLOCKING

REVISED: 3-23

FILE NAME: G:\ENG\SPECS\1002

ENGINEERING DEPARTMENT

PLATE NO.: 1002