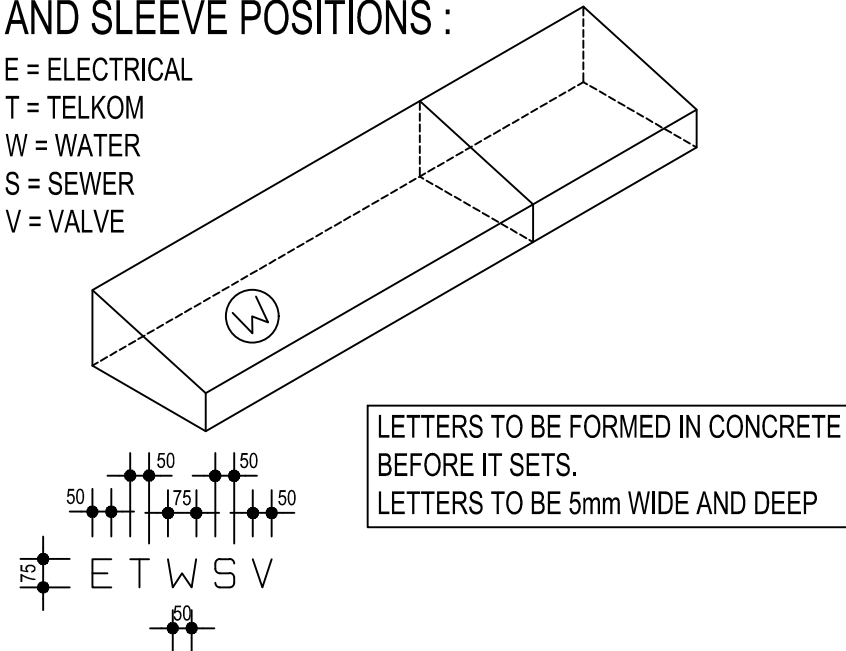
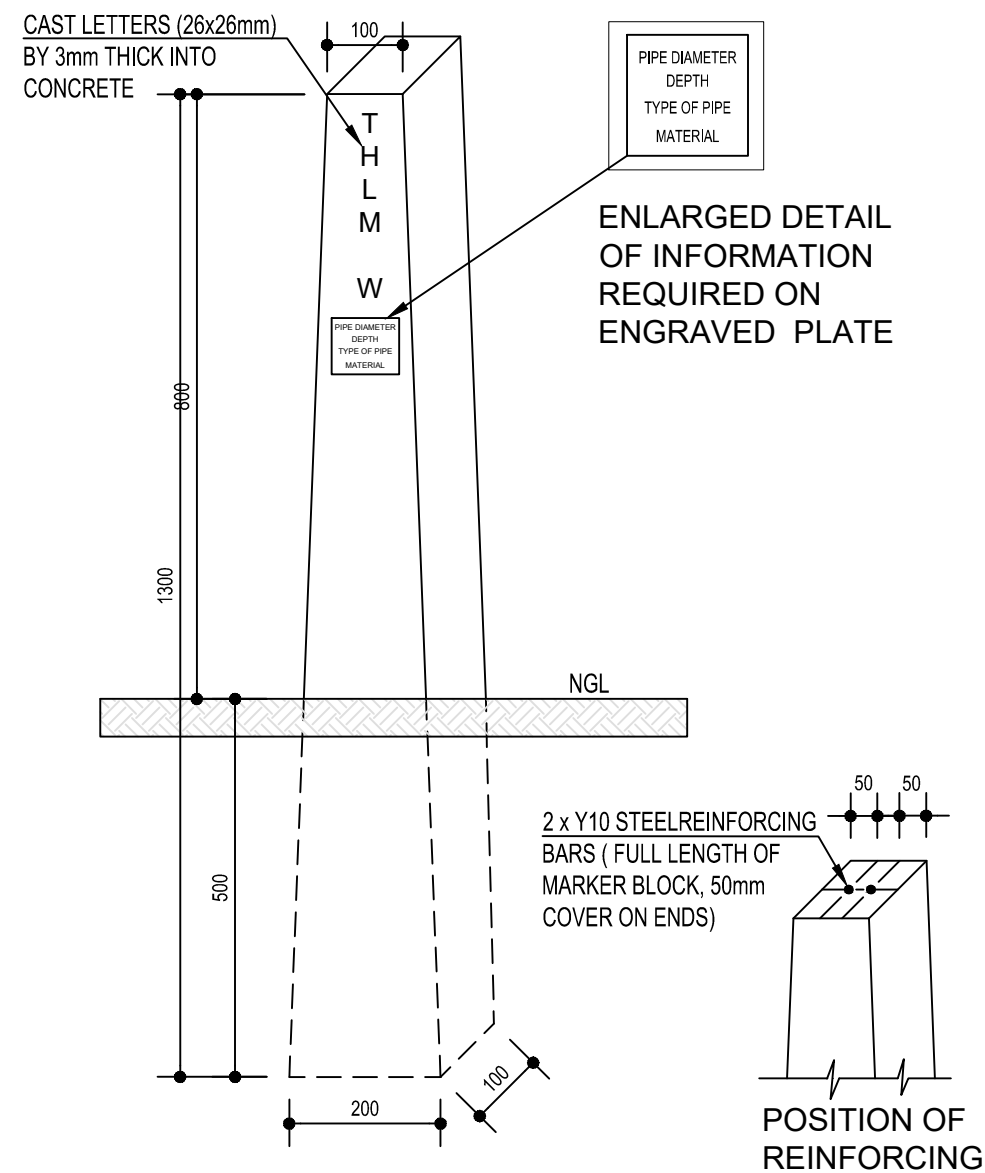


E = ELECTRICAL  
T = TELKOM  
W = WATER  
S = SEWER  
V = VALVE

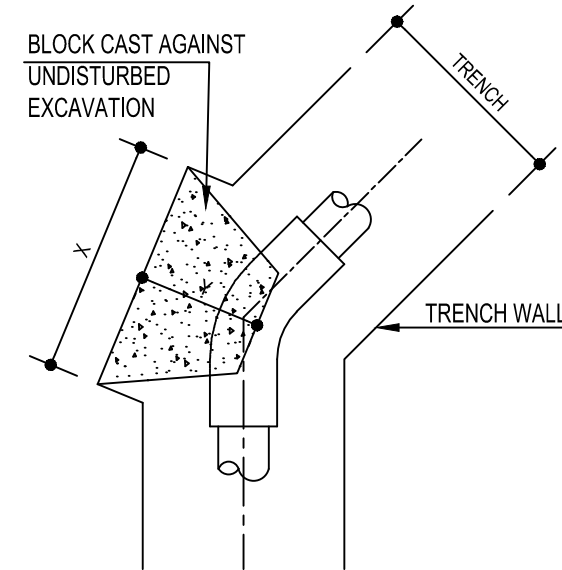


## MARKERS ON CONCRETE KERBS



## CONCRETE MARKER BLOCK

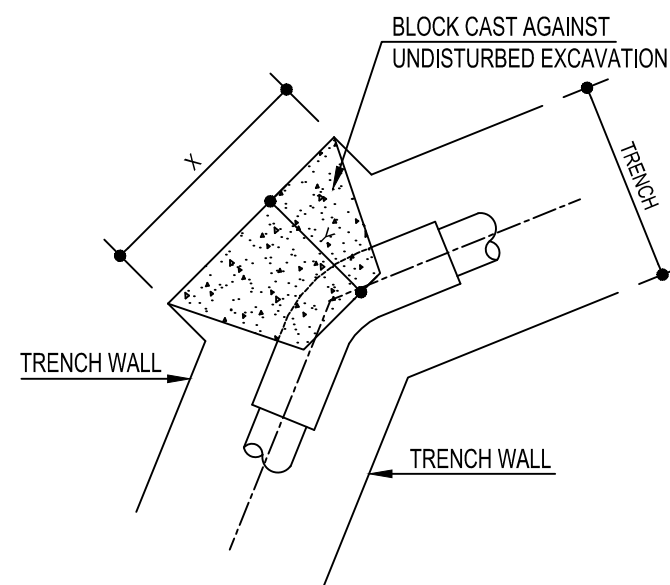
SCALE 1:10



THRUST BLOCK FOR 45° BEND

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SCALE 1:30

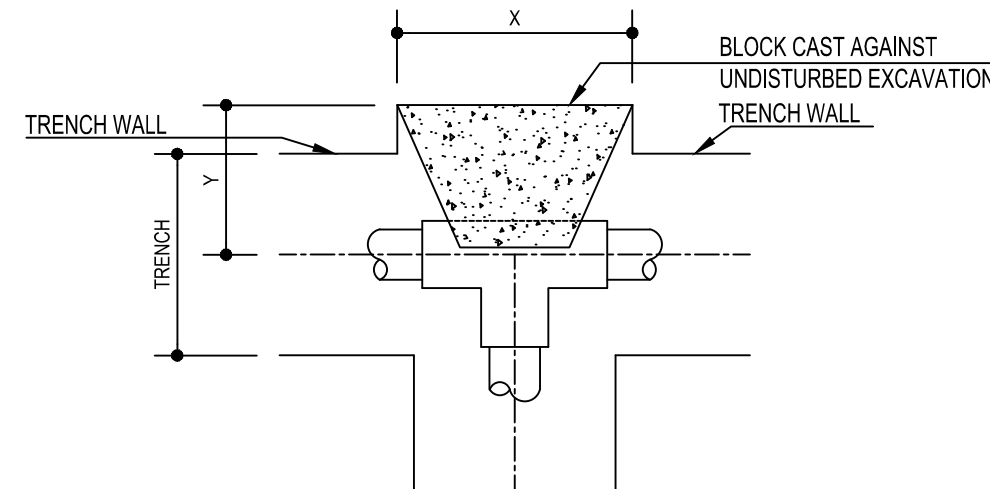
[illegible]

THRUST BLOCK FOR 22½° BEND

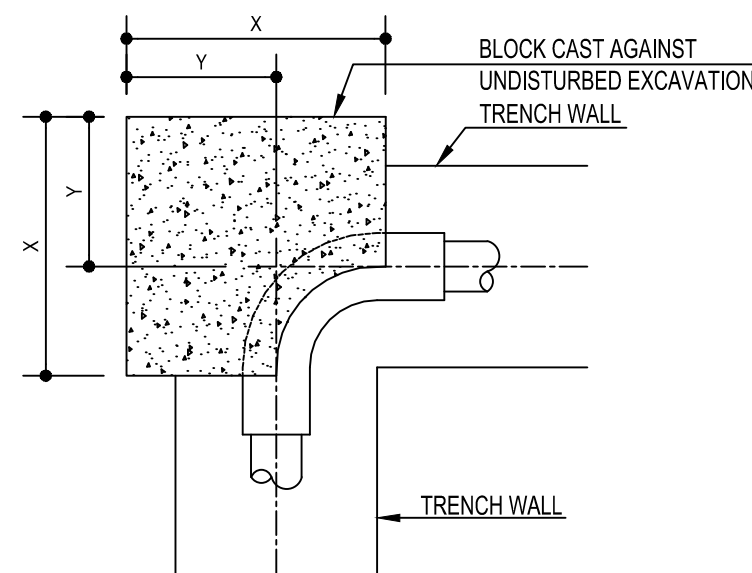
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SCALE 1:10

NOMINAL PIPE DIAMETER $\varnothing$ (mm)	AREA REQUIRED m <sup>2</sup>	DIMENSIONS (mm)				AREA PROVIDED m <sup>2</sup>	VOL (m <sup>3</sup> )
		D	Z	X	Y		
75	0.031	800	400	400	200	0.1600	0.032
100	0.055	1 000	500	500	250	0.2500	0.063
150	0.124	1 000	500	500	250	0.2500	0.063
200	0.220	1 200	600	600	300	0.3600	0.108
250	0.344	1 300	650	650	325	0.4225	0.137
300	0.496	1 400	700	800	400	0.5600	0.224
300+		SEE NOTE 5					



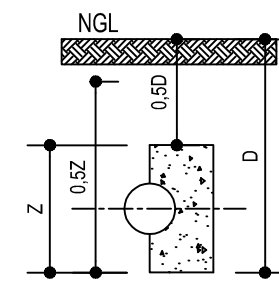
## THRUST BLOCK FOR TEE-PIECE

[illegible]

THRUST BLOCK FOR 90° BEND

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SCALE 1:30

[illegible]

**TYPICAL SECTION**  
**SCALE 1:30**

1. THRUST BLOCK DIMENSIONS ON THIS DRAWING ARE ONLY APPLICABLE UNDER THE FOLLOWING CONDITIONS:
  - \* UNDISTURBED SAND-GROUND MIXTURES OR DENSE UNIFORM SAND WITH A BEARING CAPACITY OF AT LEAST 150kPa.
  - \* UNSUBMERGED CONDITIONS.
  - \* MAXIMUM INTERNAL PIPE PRESSURE OF 18 Bar.
- IF THE CONTRACTOR IS NOT IN A POSITION TO IDENTIFY THE ABOVE CONDITIONS, USE SHALL BE MADE OF AN ENGINEERING GEOLOGIST OR ENGINEER.
- IN ALL OTHER CONDITIONS THE ACTUAL INSITU BEARING PRESSURE SHALL BE CALCULATED AND THE THRUST BLOCK DESIGNED BY THE ENGINEER.
2. USE 10 MPa CONCRETE.
3. HALF THE DEPTH OF THE THRUST BLOCK TO BE PLACED BELOW THE PIPE AXIS.
4. KEEP CONCRETE AWAY FROM THE COUPLINGS & THE PIPE JOINTS.
5. THRUST BLOCKS FOR PIPE Ø LARGER THAN 300mm & HIGHER TEST PRESSURES THAN 18 BAR SHALL BE DESIGNED BY THE ENGINEER.
6. THRUST BLOCKS AT PUDDLE FLANGES SHALL BE REINFORCED & DESIGNED BY THE ENGINEER.

## CONCRETE MARKER BLOCKS

1. PLATE TYPE AND SIZE TO BE USED:  
80 x 80 x 2mm ALUMINIUM PLATE.
2. CONCRETE STRENGTH TO BE 20 MPa.

**FOR TENDER**

[illegible]