

TYPICAL FIRE HYDRANT INSTALLATION

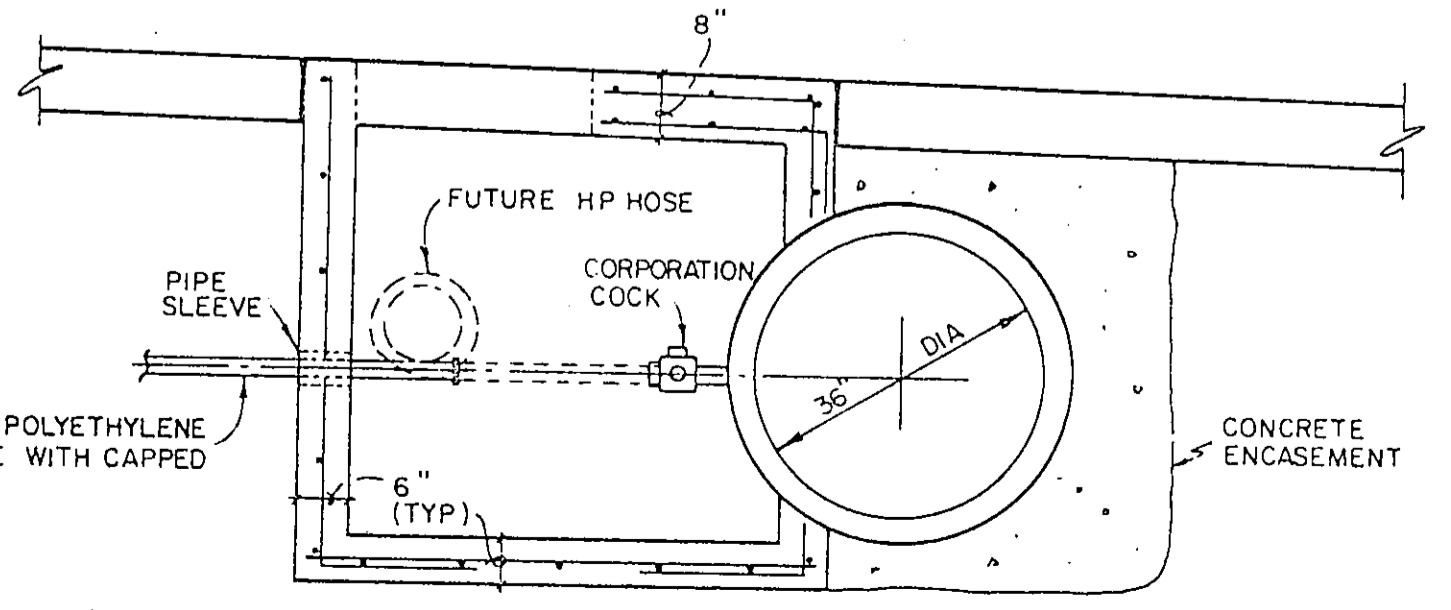


TYPICAL SERVICE CONNECTION WITH METER BOX

PIPE SIZE	MIN. COVER	MIN. DEPTH	MIN. WIDTH	MIN. HEIGHT
1/2"	18"	24"	18"	24"
3/4"	18"	24"	18"	24"
1"	18"	24"	18"	24"
1 1/4"	18"	24"	18"	24"
1 1/2"	18"	24"	18"	24"
2"	18"	24"	18"	24"
2 1/2"	18"	24"	18"	24"
3"	18"	24"	18"	24"
3 1/2"	18"	24"	18"	24"
4"	18"	24"	18"	24"
4 1/2"	18"	24"	18"	24"
5"	18"	24"	18"	24"
5 1/2"	18"	24"	18"	24"
6"	18"	24"	18"	24"
6 1/2"	18"	24"	18"	24"
7"	18"	24"	18"	24"
7 1/2"	18"	24"	18"	24"
8"	18"	24"	18"	24"
8 1/2"	18"	24"	18"	24"
9"	18"	24"	18"	24"
9 1/2"	18"	24"	18"	24"
10"	18"	24"	18"	24"
10 1/2"	18"	24"	18"	24"
11"	18"	24"	18"	24"
11 1/2"	18"	24"	18"	24"
12"	18"	24"	18"	24"
12 1/2"	18"	24"	18"	24"
13"	18"	24"	18"	24"
13 1/2"	18"	24"	18"	24"
14"	18"	24"	18"	24"
14 1/2"	18"	24"	18"	24"
15"	18"	24"	18"	24"
15 1/2"	18"	24"	18"	24"
16"	18"	24"	18"	24"
16 1/2"	18"	24"	18"	24"
17"	18"	24"	18"	24"
17 1/2"	18"	24"	18"	24"
18"	18"	24"	18"	24"
18 1/2"	18"	24"	18"	24"
19"	18"	24"	18"	24"
19 1/2"	18"	24"	18"	24"
20"	18"	24"	18"	24"
20 1/2"	18"	24"	18"	24"
21"	18"	24"	18"	24"
21 1/2"	18"	24"	18"	24"
22"	18"	24"	18"	24"
22 1/2"	18"	24"	18"	24"
23"	18"	24"	18"	24"
23 1/2"	18"	24"	18"	24"
24"	18"	24"	18"	24"
24 1/2"	18"	24"	18"	24"
25"	18"	24"	18"	24"
25 1/2"	18"	24"	18"	24"
26"	18"	24"	18"	24"
26 1/2"	18"	24"	18"	24"
27"	18"	24"	18"	24"
27 1/2"	18"	24"	18"	24"
28"	18"	24"	18"	24"
28 1/2"	18"	24"	18"	24"
29"	18"	24"	18"	24"
29 1/2"	18"	24"	18"	24"
30"	18"	24"	18"	24"

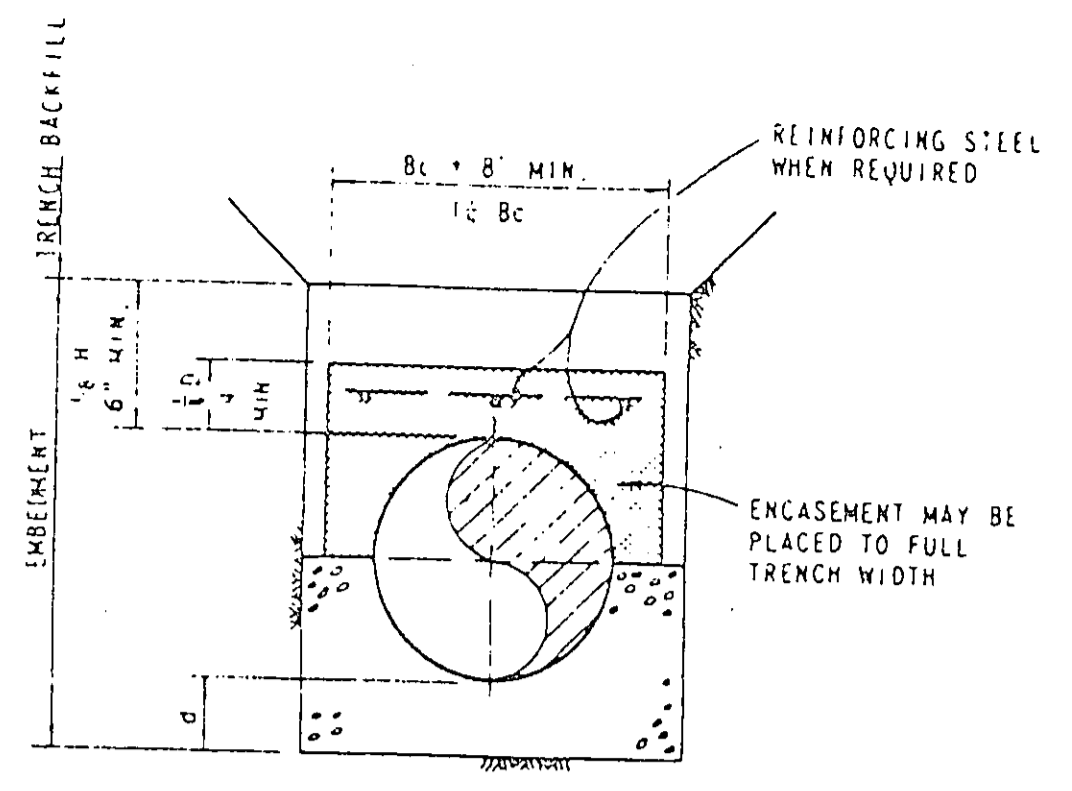
PLAN - CHLORINE M.H.

SCALE - 1/2" = 1'-0"



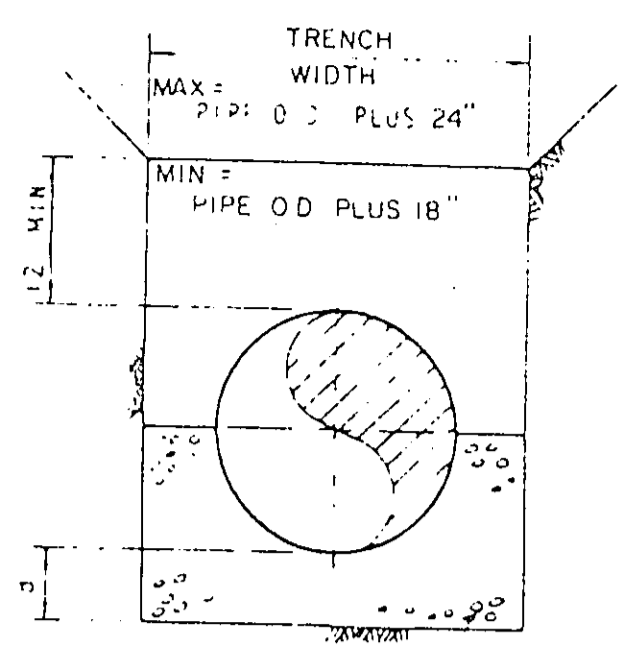
SECTION

SCALE - 1/2" = 1'-0"



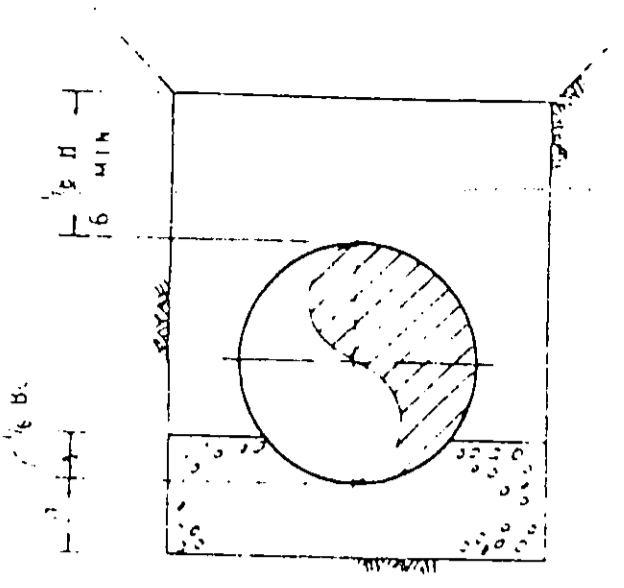
CLASS A

REINFORCED $A_s = 1.0\%$ $L = 4.8$
 REINFORCED $A_s = 0.4\%$ $L = 3.4$
 PLAIN $L = 2.8$



CLASS B

$L = 1.9$



CLASS C

$L = 1.5$

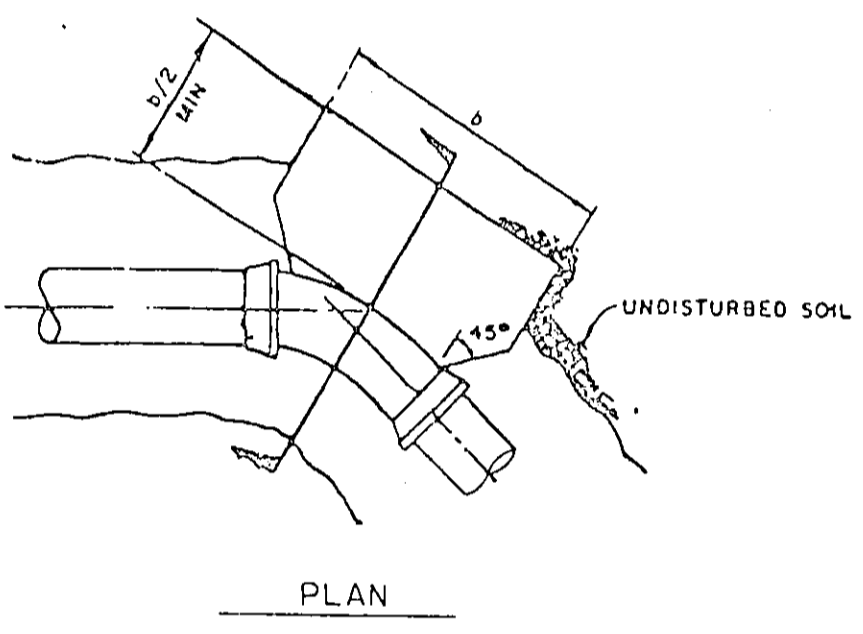
EMBEDMENT NOTES

1. GRANULAR EMBEDMENT SHALL BE CRUSHED 40% OR PER GRAVEL WITH NOT LESS THAN 95% PASSING #10 FOR 30" & LARGER PIPE & NOT LESS THAN 95% RETAINED ON #20. EMBEDMENT SHALL BE PLACED IN NOT MORE THAN 3 THICK LAYERS & COMPACTED BY SLICING WITH A SHOVEL OR

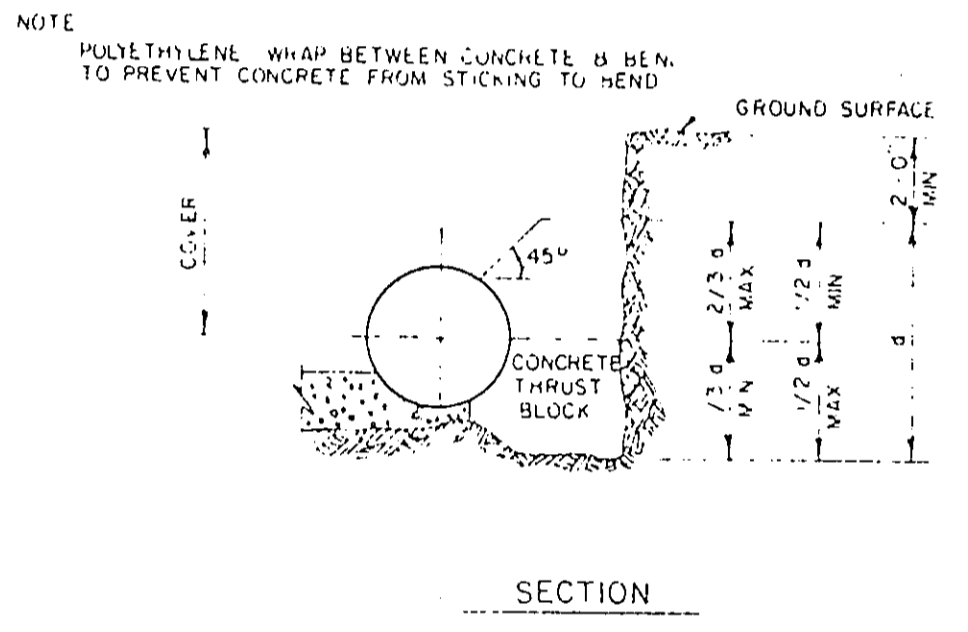
2. COMPACTED EMBEDMENT SHALL BE FINELY DIVIDED JOB EXCAVATION MATERIALS FREE FROM DEBRIS, ORGANIC MATERIALS & ROCKS PLACED IN UNIFORM LAYERS NOT MORE THAN 8" THICK & COMPACT TO 95% MAXIMUM DENSITY AS DETERMINED BY ASTM D698

3. TRENCH WIDTH, IF ACTUAL TRENCH WIDTH IS GREATER THAN MAXIMUM PERMITTED, THEN CONTRACTOR SHALL PROVIDE NEXT HIGHER CLASS OF EMBEDMENT AS APPROVED BY ENGINEER

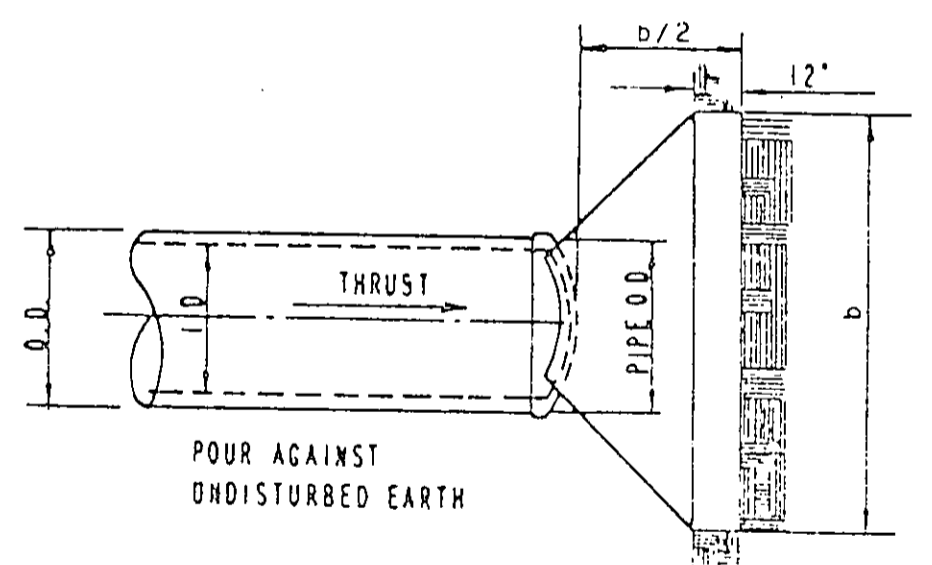
EMBEDMENT FOR P.C.C.P. PIPE



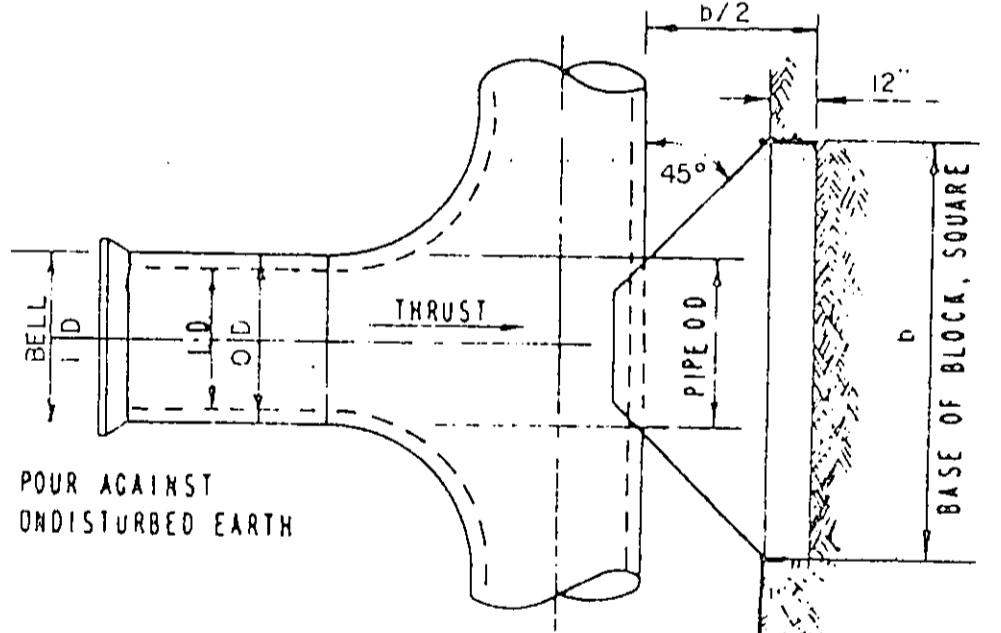
PLAN



SECTION



PLAN OF PLUG THRUST BLOCK



PLAN OF TEE THRUST BLOCK

NOTES:

- Thrust shall be computed as follows:
 $T = 0.79 D^2 P \sin \frac{\theta}{2}$
 $T = 1.57 D^2 P \sin \frac{\theta}{2}$

θ (Degrees)	T (Pounds)
11 1/4	0.15 $D^2 P$
22 1/2	0.31 $D^2 P$
30	0.41 $D^2 P$
45	0.60 $D^2 P$
90	1.11 $D^2 P$

Where:
 T = Thrust, pounds
 D = I.D. of bell, in
 P = Test pressure of pipeline, PSI
 θ = Deflection of bend, degrees

- Block area shall be computed as follows:
 $A = \frac{T \text{ lbs}}{25,000 \text{ psf}}$

Where:
 T = calculated thrust, pounds
 A = Area of block against undisturbed soil, square feet

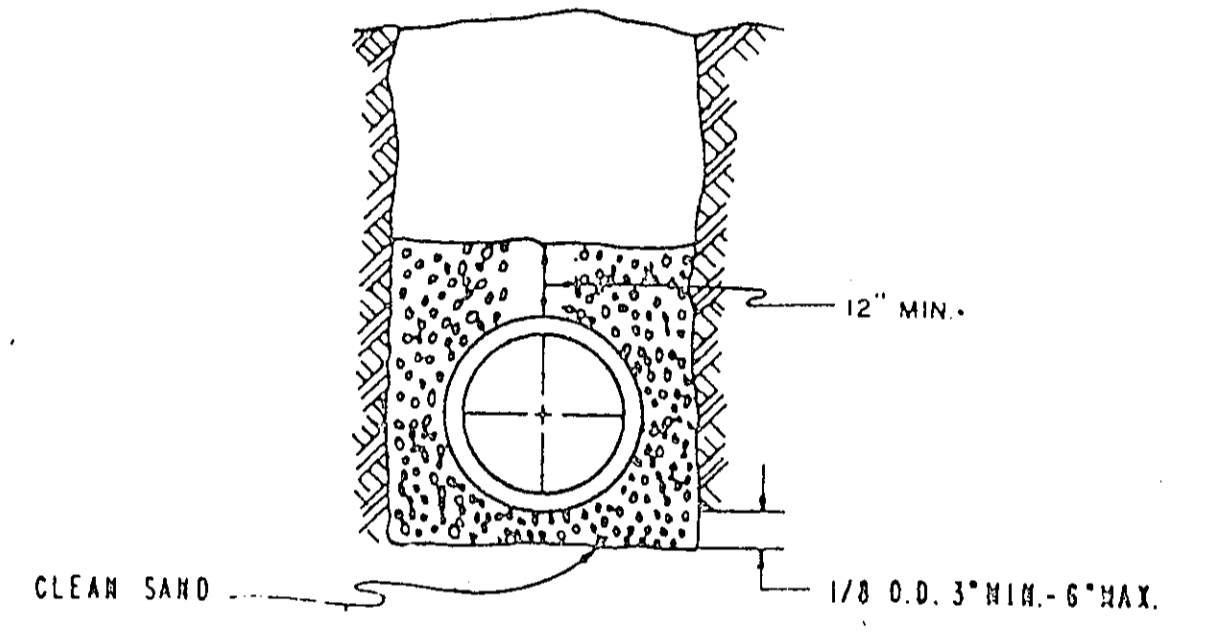
* 25,000 is the maximum end bearing pressure for Austin chalk limestone taken from the soils investigation report.

- Block dimensions shall be $b = d - \sqrt{A}$ except where top of block is within 2 feet of ground surface then $b = \sqrt{A}$. Minimum block dimensions (b & d) shall be at least O.D. of pipe or 1 foot for pipe O.D. 12 inches or less.
- The bottom of block shall extend at least to the bottom of trench in all cases.
- Concrete blocking shall be 2000 PSI concrete.
- Pipe laid in compacted fill shall have restrained joints. Pipe bends in Areas Of Compacted Backfill Such As Excavated Area For Suction Piping, Or Where Thrust Blocks Cannot Be Placed Against Undisturbed Rock, Then Pipe Shall Have Restrained Joints To Anchor Pipe

D	DEPTH OF BEDDING MATERIAL BELOW PIPE	
	MIN. SOIL	MIN. ROCK
3" & SMALLER	3"	4"
3.5" TO 10"	4"	6"
10" & LARGER	6"	8"

LEGEND

- CONCRETE 2000 PSI MIN
- GRANULAR EMBEDMENT
- COMPACTED EMBEDMENT
- Bc OUTSIDE DIAMETER OF PIPE
- H BACKFILL COVER ABOVE TOP OF PIPE
- D INSIDE PIPE DIAMETER
- d DEPTH OF BEDDING MATERIAL BELOW PIPE
- A_s AREA OF TRANSVERSE STEEL IN THE ARCH EXPRESSED AS A PERCENTAGE OF AREA OF CONCRETE AT INVERT OF CROWN
- L LOAD FACTOR



EMBEDMENT FOR PVC PIPE

No.	Revision	By	Date
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
CELESTIAL ROAD PUMP STATION			
MISC. DETAILS - WATER			
GINN, INC. Consulting Engineers Dallas, Texas			
Designed - R.C.H.	Drawn - B.S.	Date - JAN., 1987	Job No. - 217
Approved - HWG	Checked - G.A.F.	Scale - AS SHOWN	Sheet - C-10

Randall C. Hill
2-19-87