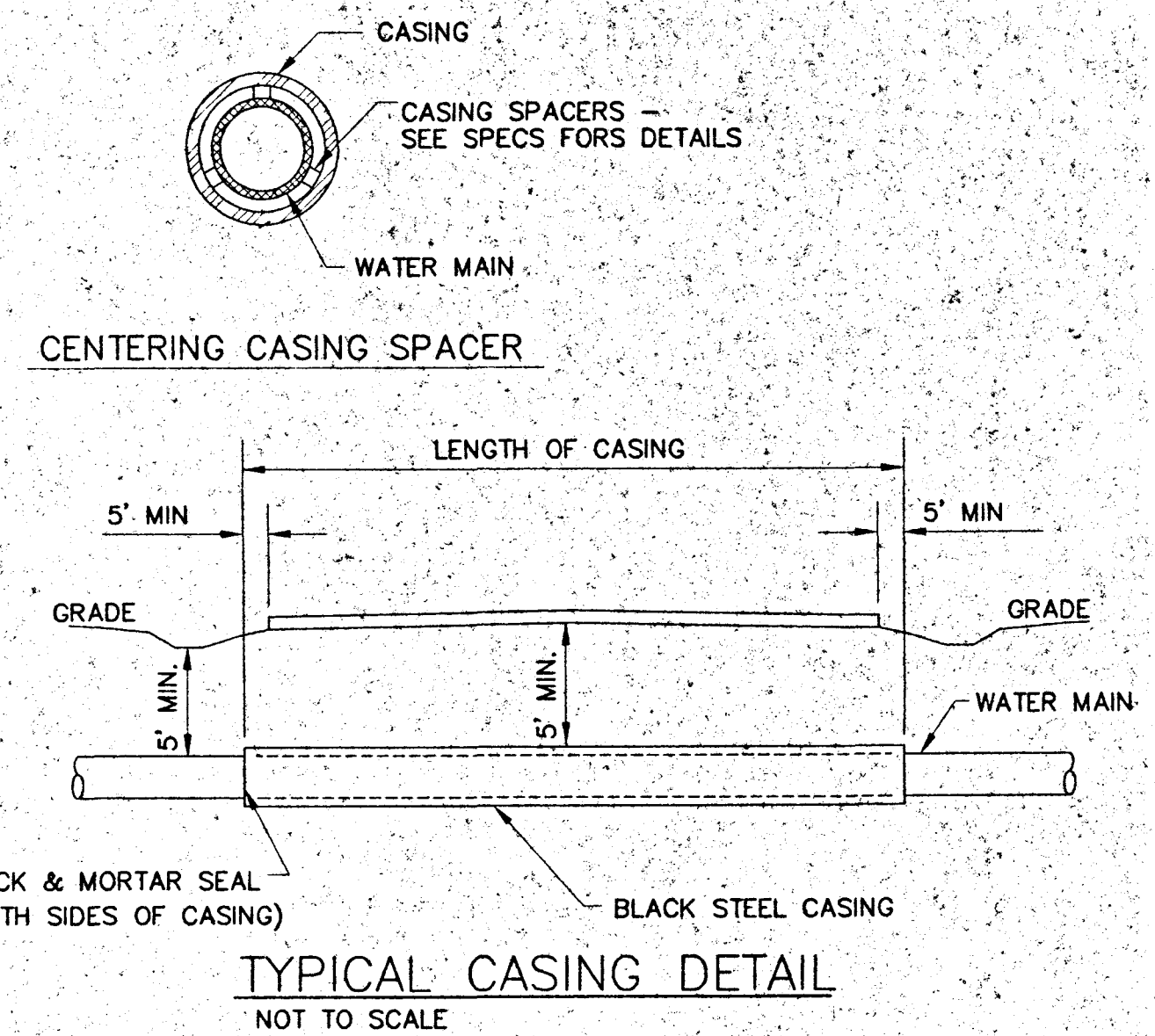
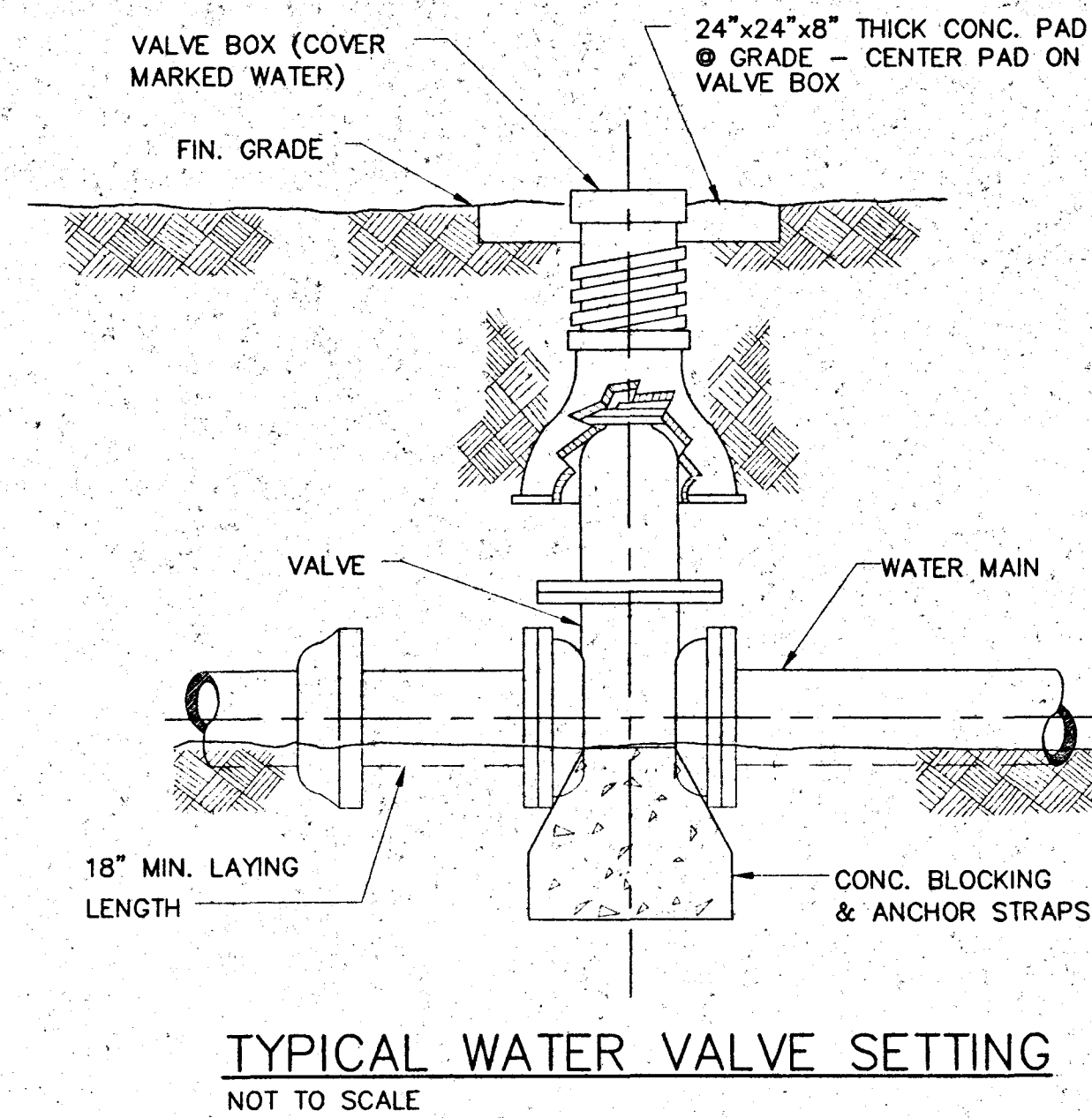
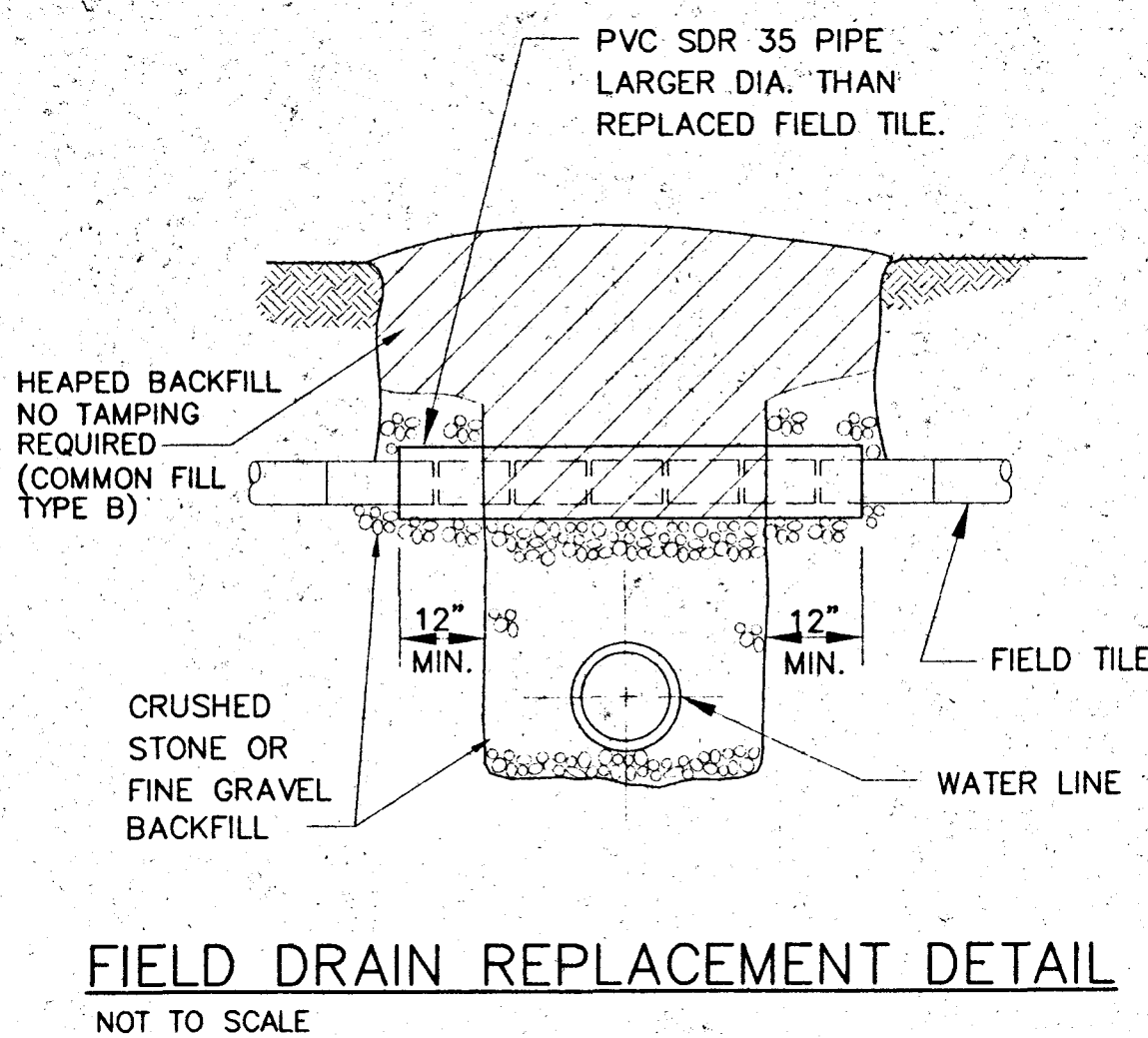
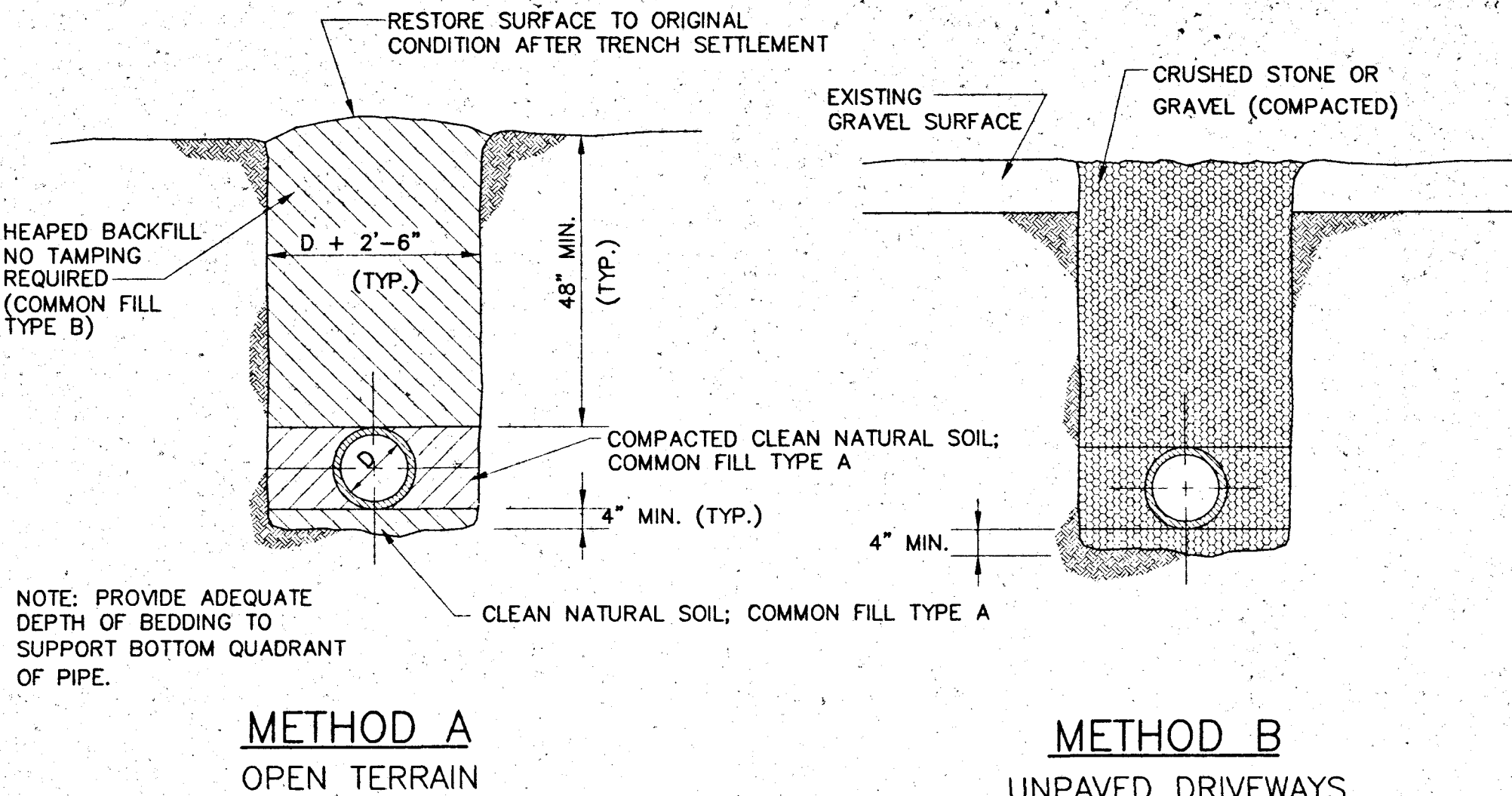
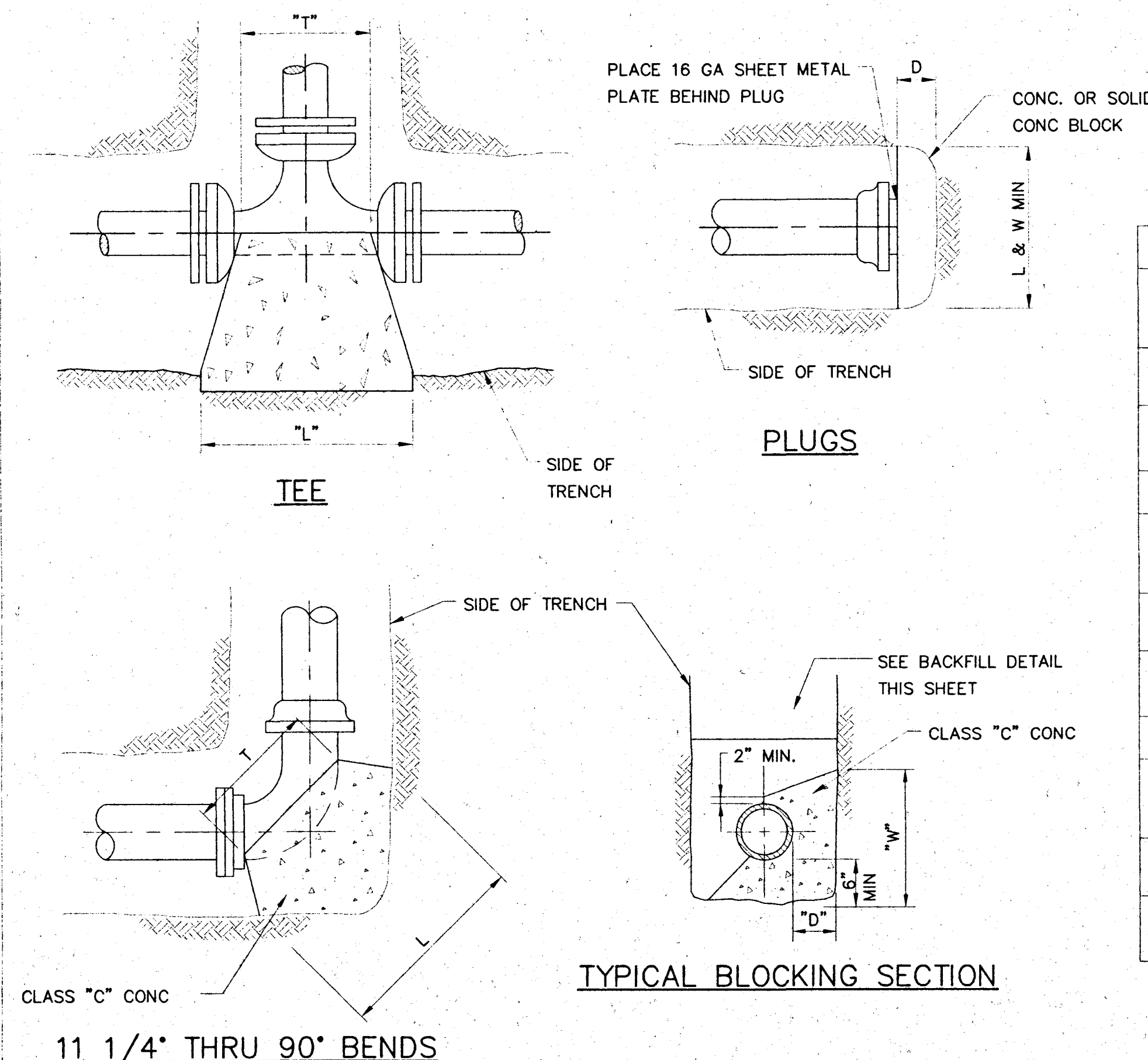




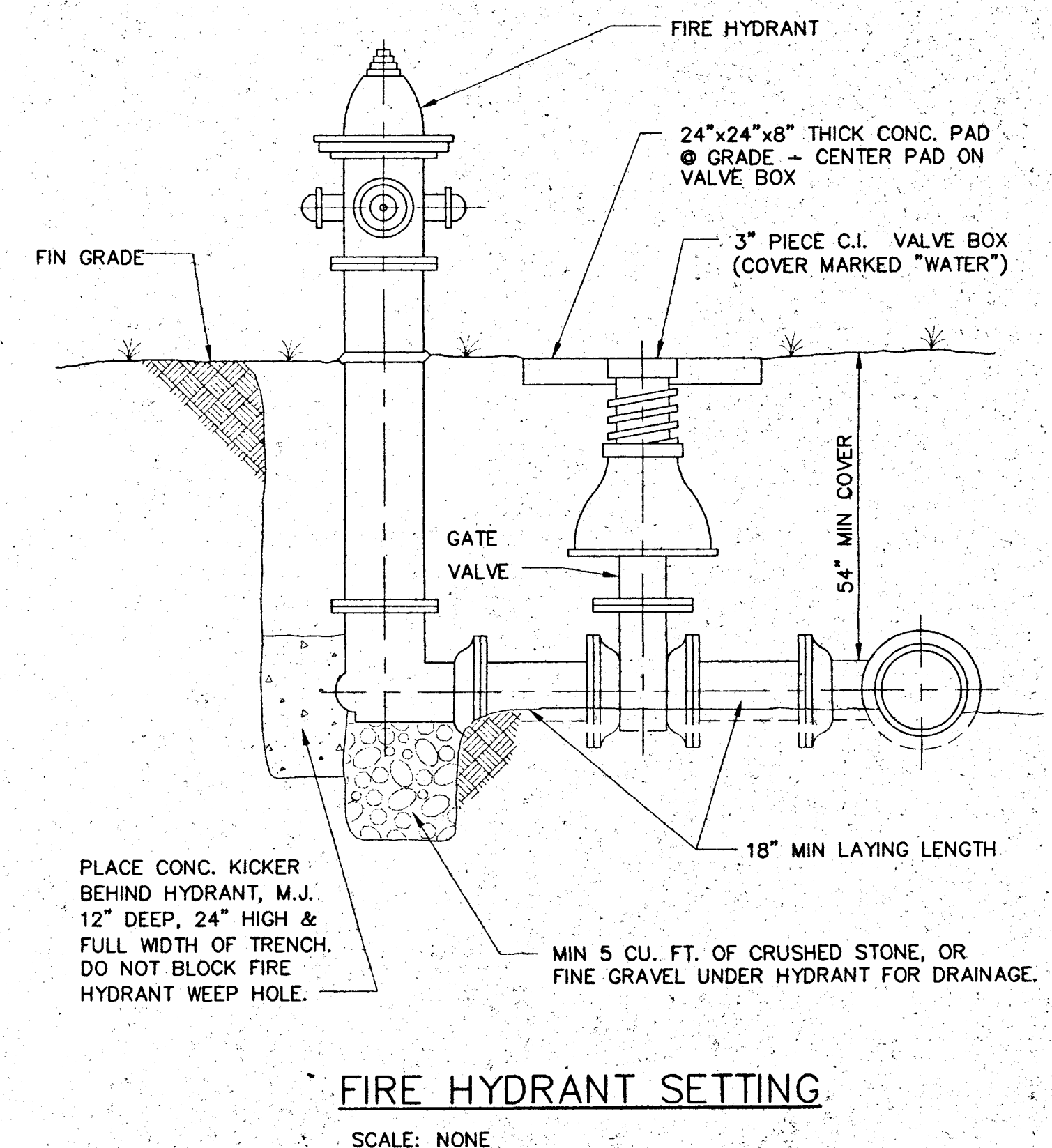
PLUGS								
SIZE	4"	6"	8"	12"	16"	18"	20"	24"
D	16"	18"	18"	24"	24"	30"	30"	30"
L	16"	18"	22"	30"	48"	48"	48"	48"
T	10"	12"	12"	12"	12"	18"	24"	24"
W	16"	18"	22"	24"	30"	30"	48"	48"
11 1/4", 22 1/2" & 45" BENDS								
SIZE	4"	6"	8"	12"	16"	18"	20"	24"
D	6"	6"	6"	6"	6"	8"	16"	16"
L	12"	14"	16"	20"	34"	40"	45"	52"
T	12"	14"	14"	16"	28"	33"	37"	46"
W	10"	12"	14"	18"	22"	25"	28"	32"
90° BENDS								
SIZE	4"	6"	8"	12"	16"	18"	20"	24"
D	8"	8"	10"	12"	12"	16"	20"	20"
L	20"	24"	27"	34"	48"	51"	54"	70"
T	10"	16"	18"	22"	36"	40"	44"	50"
W	12"	12"	16"	24"	28"	34"	40"	44"
TEES								
SIZE	4"	6"	8"	12"	16"	18"	20"	24"
D	8"	8"	12"	12"	12"	16"	38"	38"
L	10"	18"	24"	27"	28"	30"	48"	48"
W	16"	12"	18"	24"	28"	34"	48"	48"
T	12"	12"	15"	18"	20"	22"	24"	24"
VERTICAL BEND & STRAIGHT PIPE								
SIZE	4"	6"	8"	12"	16"	18"	20"	24"
D	12"	15"	15"	18"	21"	21"	24"	24"
L	18"	24"	24"	30"	36"	36"	36"	42"



RESTRAINED JOINT CALCULATIONS						
LENGTH IN FEET TO BE RESTRAINED ON EACH SIDE OF FITTINGS FOR 8" PVC PIPE						
TYPE OF BEND	TEE W/ 4" BRANCH	TEE W/ 6" BRANCH	90° BEND	45° BEND	22.5° BEND	11.25° BEND
HORIZ. BEND	15	35	32	13	10	10
VERT. BEND	----- -----	----- -----	N/A	38-UPPER 31-LOWER	18-UPPER 15-LOWER	10-UPPER 10-LOWER
LENGTH IN FEET TO BE RESTRAINED ON EACH SIDE OF FITTINGS FOR 6" PVC PIPE						
TYPE OF BEND	TEE W/ 4" BRANCH	TEE W/ 6" BRANCH	90° BEND	45° BEND	22.5° BEND	11.25° BEND
HORIZ. BEND	10	23	25	10	10	10
VERT. BEND	----- -----	----- -----	N/A	28-UPPER 13-LOWER	14-UPPER 10-LOWER	10-UPPER 10-LOWER
LENGTH IN FEET TO BE RESTRAINED ON EACH SIDE OF FITTINGS FOR 4" PVC PIPE						
TYPE OF BEND	TEE W/ 4" BRANCH	TEE W/ 6" BRANCH	90° BEND	45° BEND	22.5° BEND	11.25° BEND
HORIZ. BEND	10	N/A	17	10	10	10
VERT. BEND	----- -----	N/A	N/A	20-UPPER 10-LOWER	10-UPPER 10-LOWER	10-UPPER 10-LOWER

- ### RESTRAINED JOINT NOTES

1. CONTRACTOR SHALL INSTALL RJDI FITTINGS FOR ALL HORIZ. & VERT. BENDS. FOR HORIZ. BENDS THE CONTRACTOR MAY USE CONCRETE THRUST BLOCKING IN LIEU OF RJDI FITTINGS WITH APPROVAL OF THE ENGINEER.
2. RESTRAINED LENGTHS WERE CALCULATED ASSUMING A 2.0 FACTOR OF SAFETY, TYPE 3 TRENCH CONDITIONS, "CL" SOIL CLASSIFICATION, AND 150 PSI HYDROSTATIC TEST PRESSURES.
3. ALL WATER MAIN APPURTENANCES WITHIN RJDI LIMITS MUST BE RESTRAINED AT EACH JOINT.
4. RESTRAINED LENGTH FOR 6"x4" REDUCER SHALL BE 25 FEET EACH SIDE OF FITTING.



NOTES:

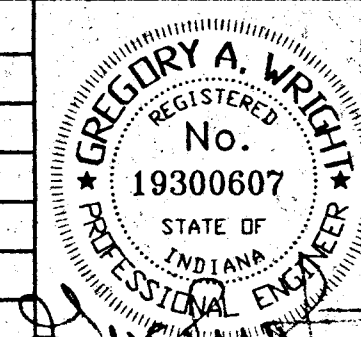
1. DEPTH "D" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE. BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH.

CONCRETE THRUST BLOCKS

HOOSIER HILLS REGIONAL WATER DISTRICT MILAN & VINICITY WATER MAIN IMPROVEMENTS STANDARD DETAILS

GRW PROJECT NO. 2543

NO.	DESCRIPTION	DATE	BY
	REVISIONS		



GRW
GRW Engineers, Inc.
Engineers, Architects, Planners
INDIANAPOLIS, INDIANA
LOUISVILLE & LEICESTER, KENTUCKY
CINCINNATI, OHIO
NASHVILLE, TENNESSEE

DRAWN: KAY	DATE: 3/17/98
FILE NAME: SHT5.DWG	SCALE: N.T.S.
CHECKED:	SHEET NO.
APPROVED: <i>[Signature]</i>	5