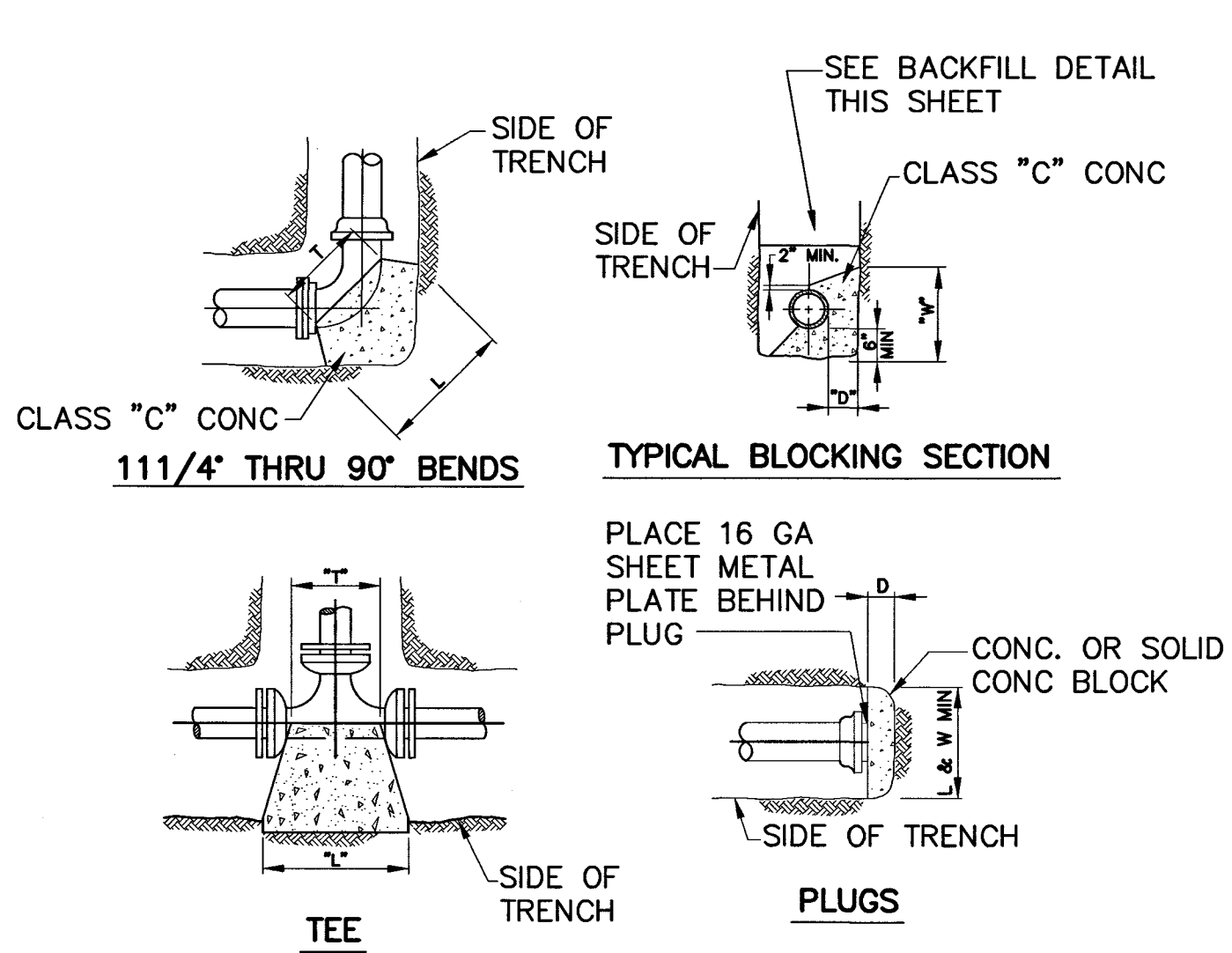




CONCRETE THRUST BLOCKS
NTS

NOTES:

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

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"

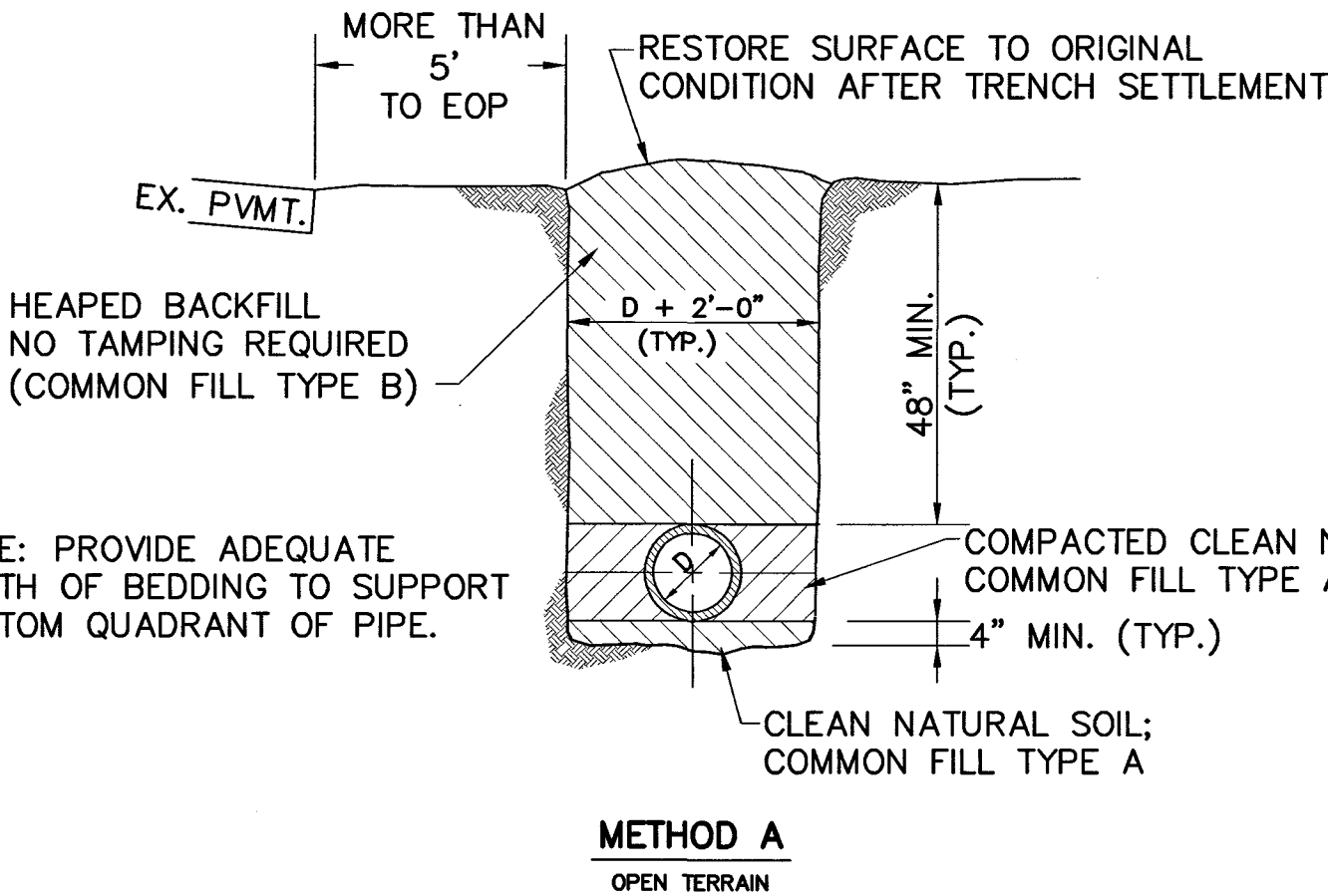
11 1/4", 22 1/2" & 45° BENDS								
SIZE	4"	6"	8"	12"	16"	18"	20"	24"
D	6"	6"	6"	6"	6"	6"	16"	16"
L	12"	14"	16"	20"	34"	40"	45"	52"
T	12"	14"	14"	16"	28"	33"	37"	46"
W	10"	12"	14"	18"	22"	25"	28"	32"

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"

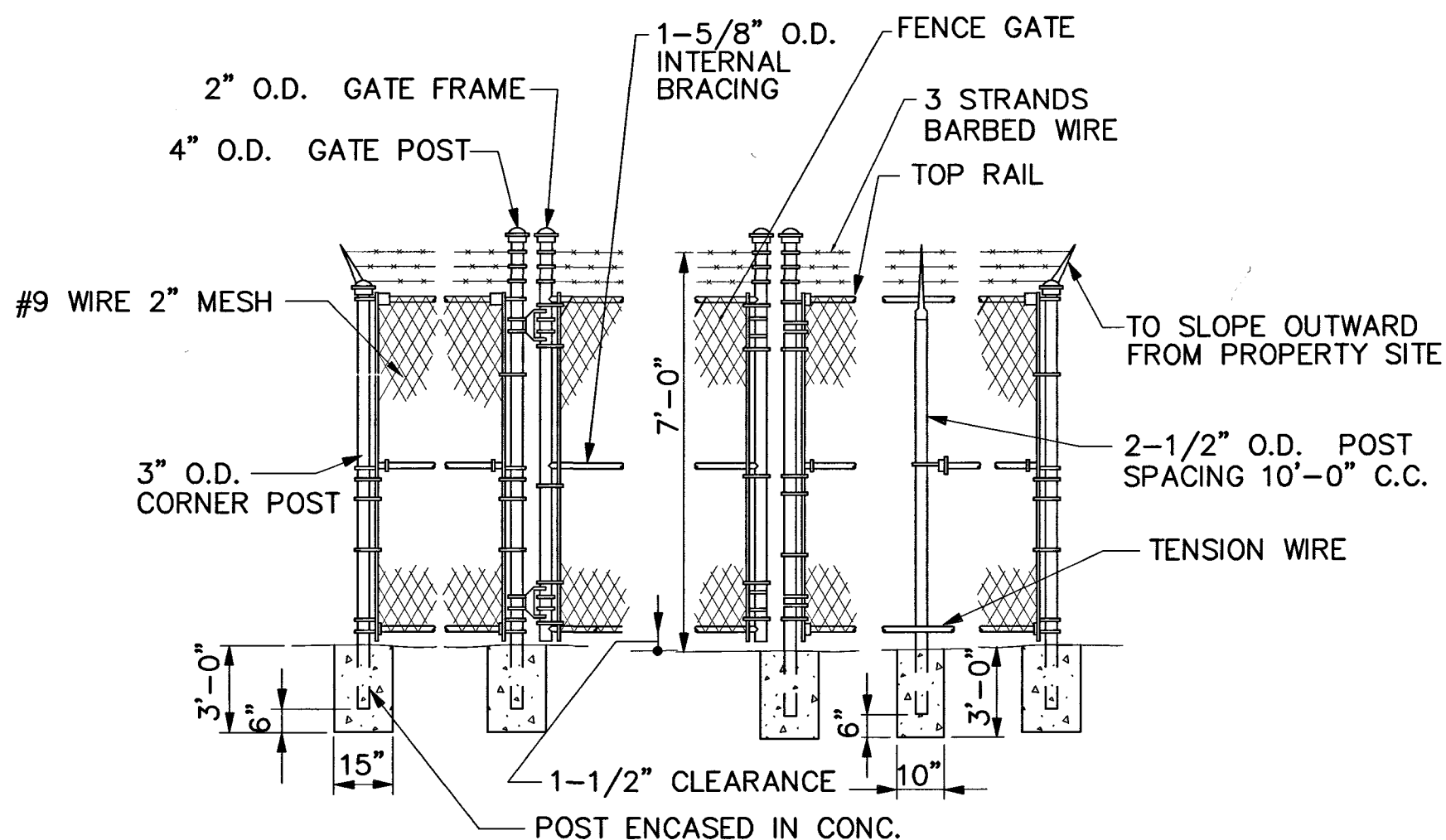
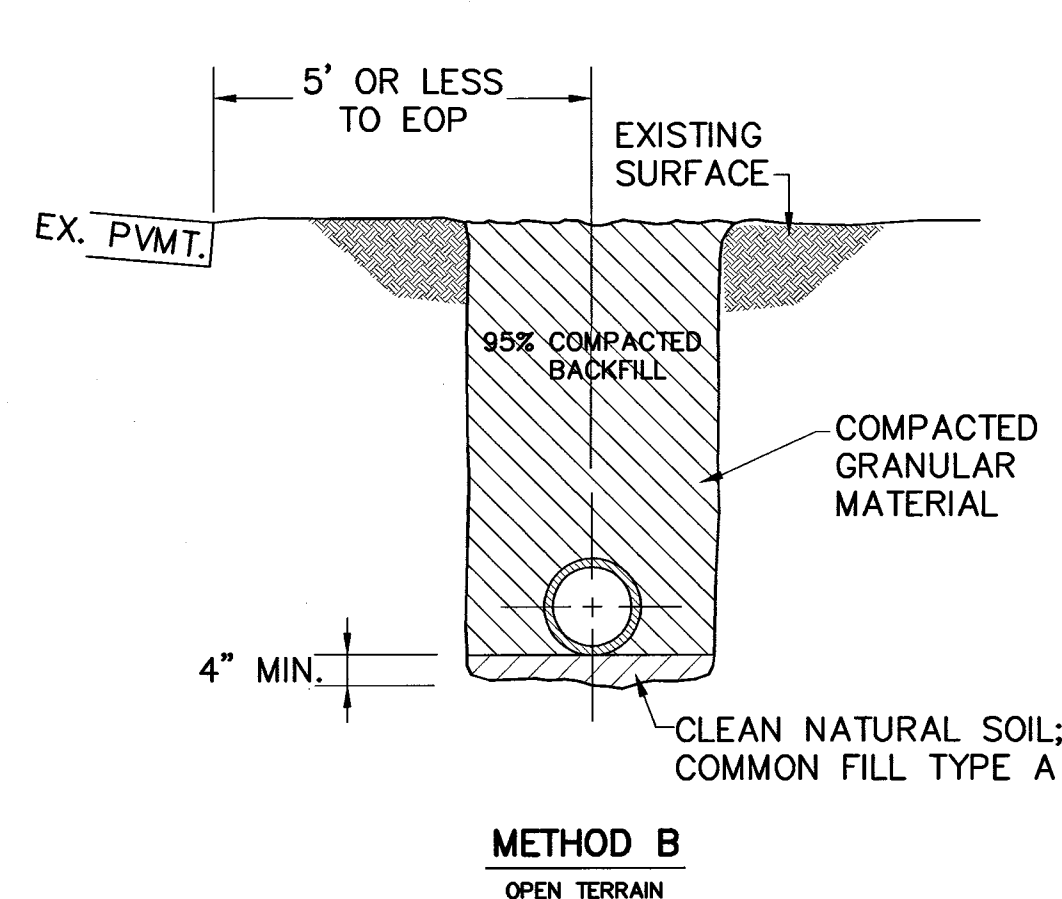
TEES								
SIZE	4"	6"	8"	12"	16"	18"	20"	24"
D	8"	8"	12"	12"	16"	18"	38"	38"
L	10"	18"	24"	27"	28"	30"	48"	48"
W	16"	12"	18"	24"	28"	34"	48"	48"
T	12"	12"	15"	18"	20"	22"	24"	24"

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"

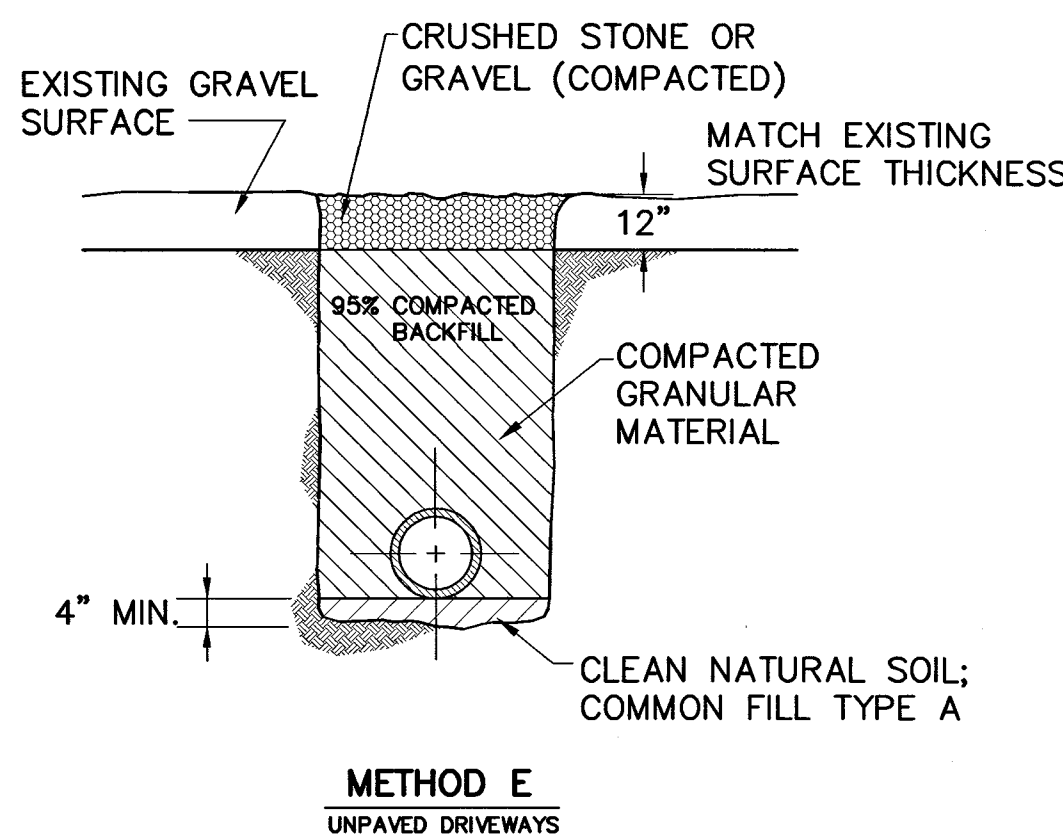
LENGTH IN FT. TO BE REST. ON EACH SIDE OF FITTING FOR 12" D.I. PIPE								
TYPE OF BEND	TEE W/ 4" BRANCH	TEE W/ 6" BRANCH	TEE W/ 8" BRANCH	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	DEADENDS
HORIZ. BEND	5	14	36	35	14	10	10	12": 50'
VERT. BEND	—	—	—	—	28-UPPER 17-LOWER	13-UPPER 10-LOWER	10-UPPER 10-LOWER	—



NOTE: PROVIDE ADEQUATE DEPTH OF BEDDING TO SUPPORT BOTTOM QUADRANT OF PIPE.



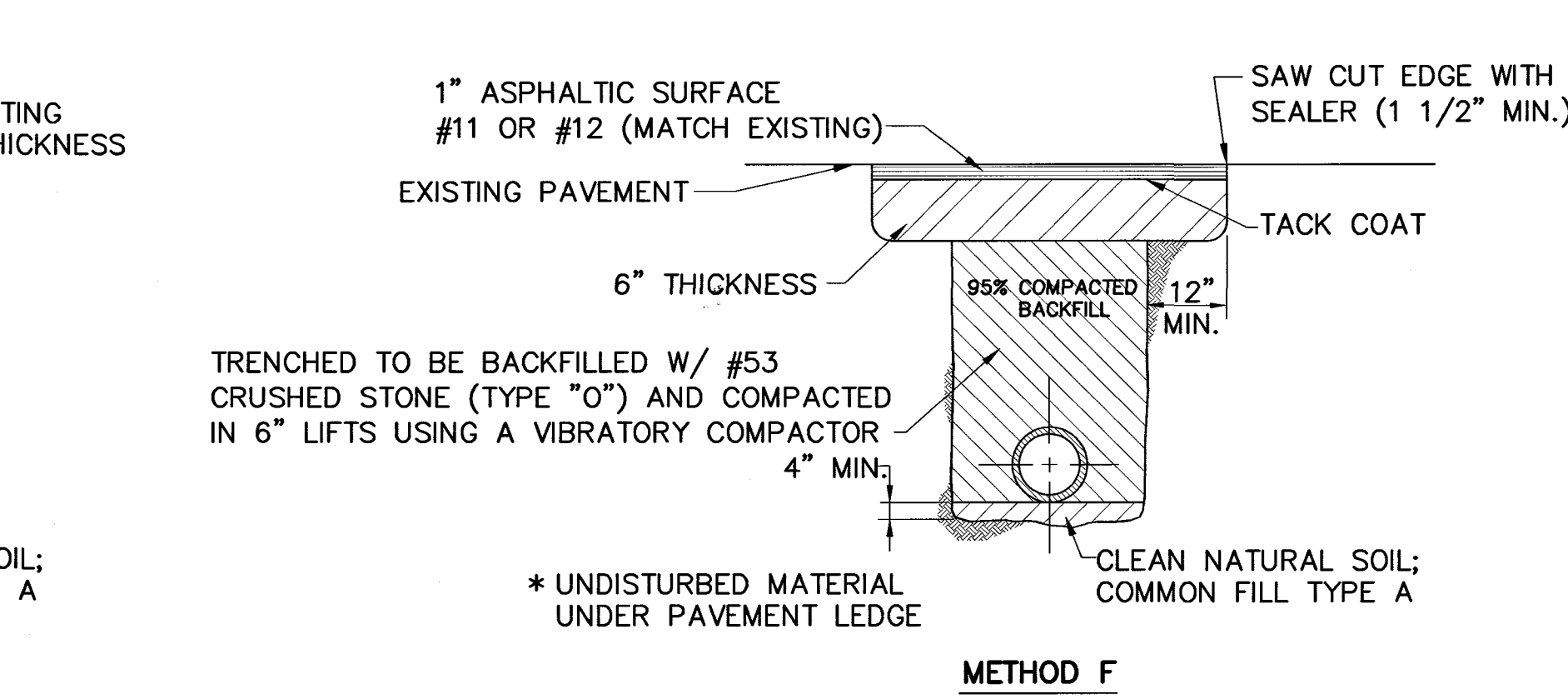
CHAIN LINK SECURITY FENCE & GATE DETAIL
SCALE: N.T.S.



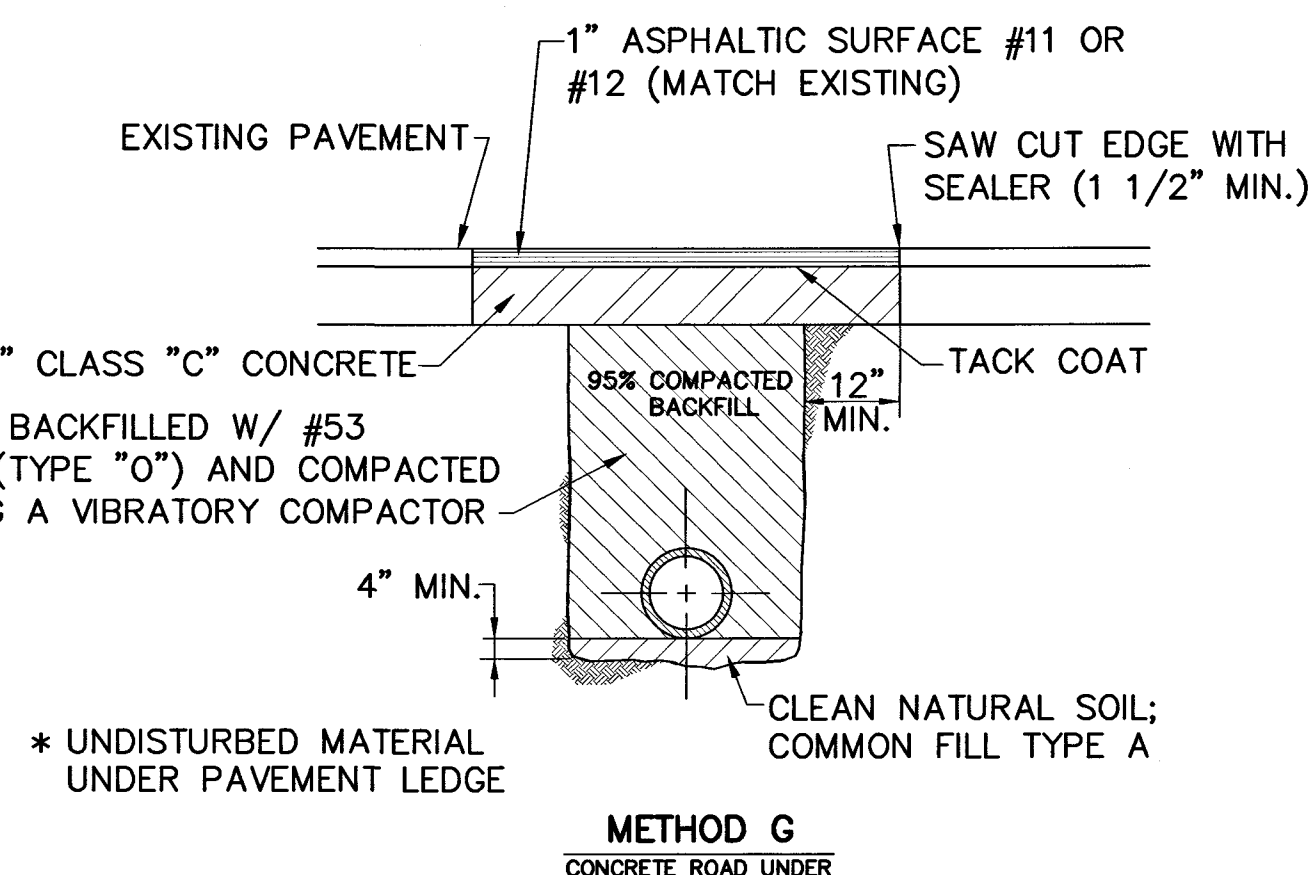
BEDDING / BACKFILL / PAVEMENT REPLACEMENT DETAILS
NTS

RESTRAINED JOINT NOTES

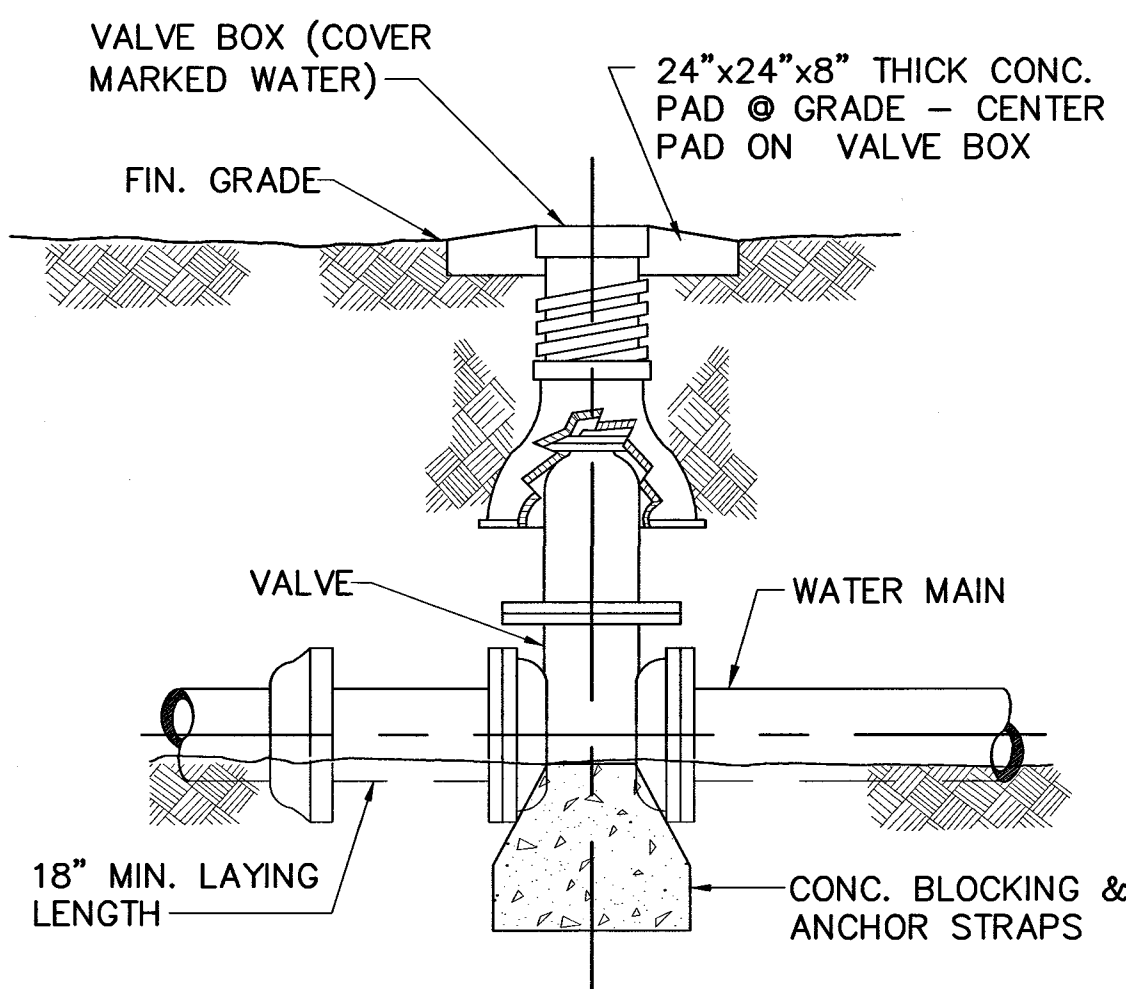
- CONTRACTOR SHALL INSTALL RJDI FITTINGS FOR ALL VERTICAL BENDS. FOR HORIZONTAL BENDS, CONTRACTOR MAY INSTALL EITHER CONCRETE THRUST BLOCKING OR THRUST RESTRAINT SYSTEMS. UNLESS NOTED OTHERWISE.
- RESTRAINED LENGTHS WERE CALCULATED ASSUMING A 2.0 FACTOR OF SAFETY, TYPE 3 TRENCH CONDITIONS, "CL" SOIL CLASSIFICATION, AND 150 PSI HYDROSTATIC TEST PRESSURES.
- ALL WATER MAIN APPURTENANCES WITHIN RJDI LIMITS MUST BE RESTRAINED AT EACH JOINT.
- FOR REDUCERS THE FOLLOWING SHALL BE RESTRAINED ON THE LARGER SIZE: 20"x16" REDUCER - 28' 12"x8" REDUCER - 28'



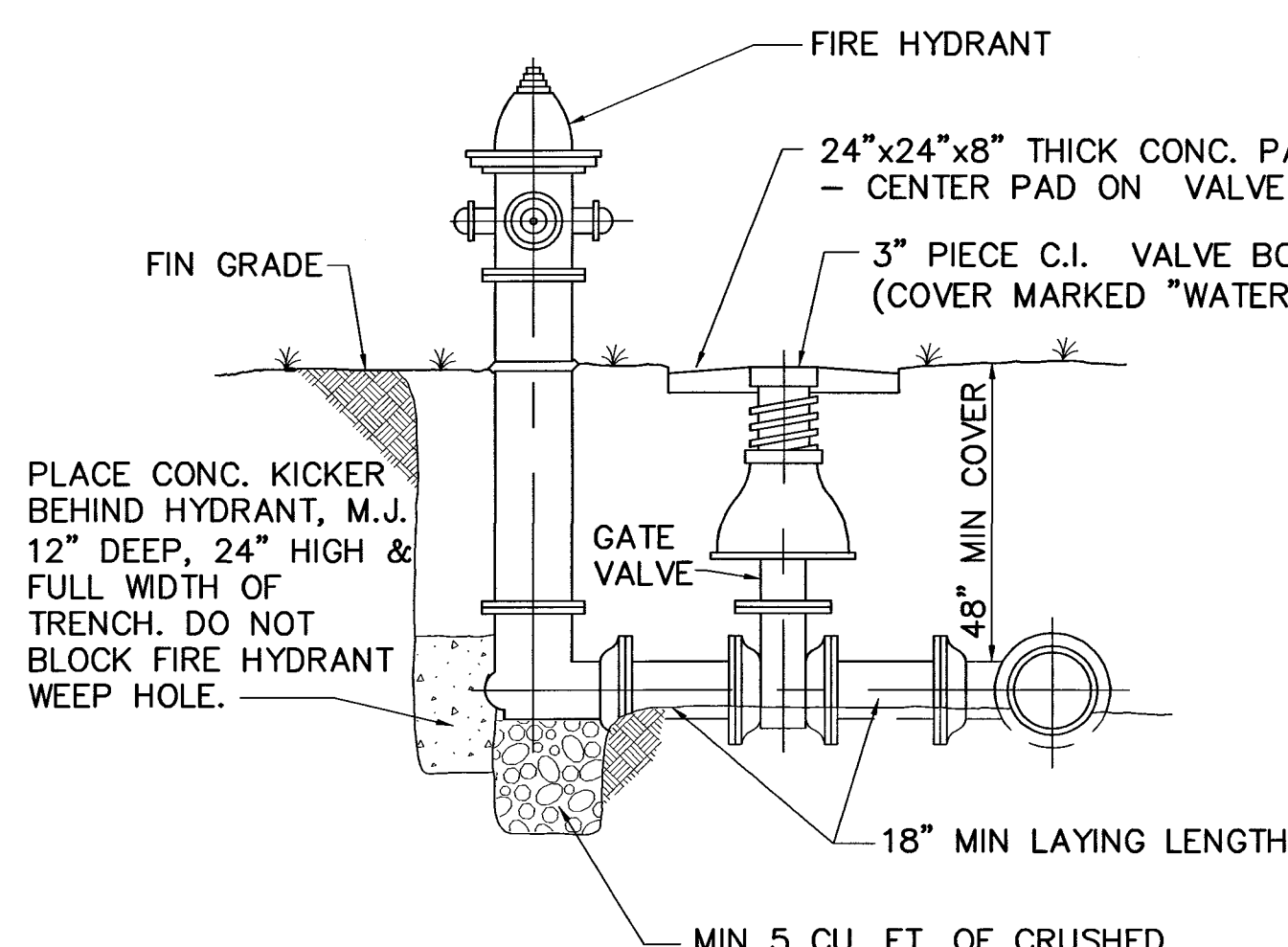
BEDDING / BACKFILL / PAVEMENT REPLACEMENT DETAILS
NTS



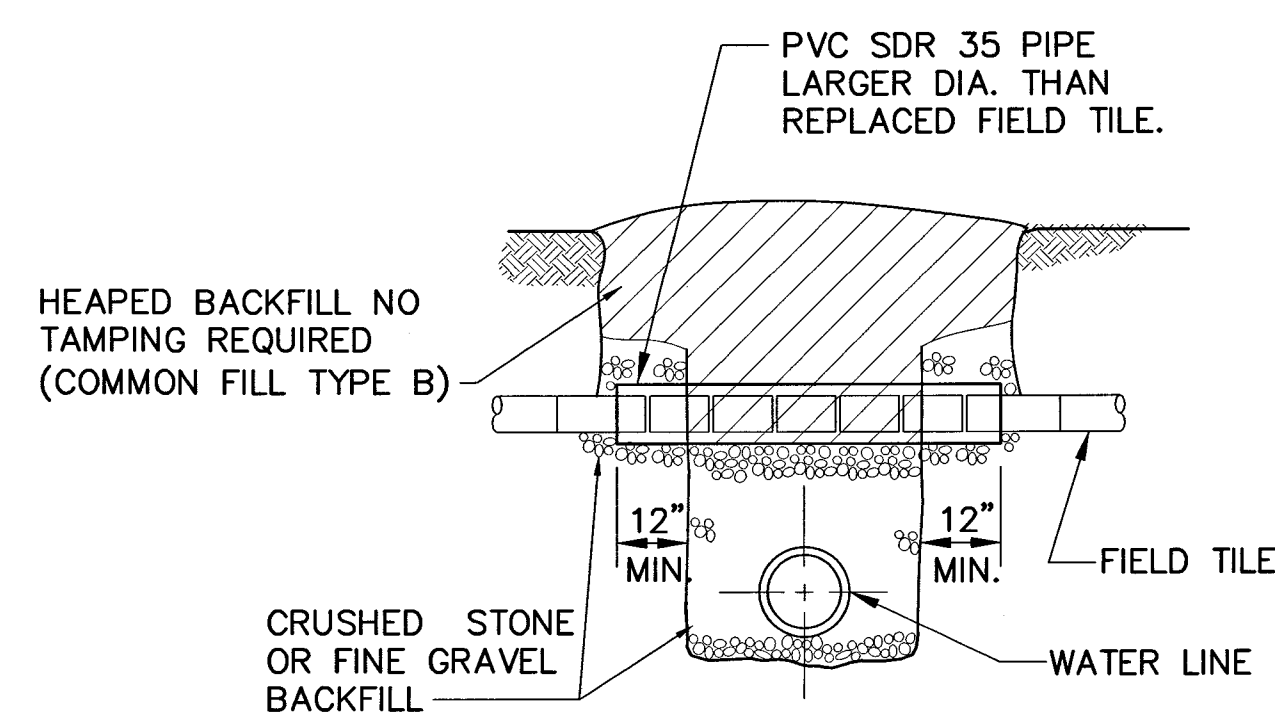
METHOD G
CONCRETE ROAD UNDER ASPHALT SURFACE



TYPICAL WATER VALVE SETTING
NTS



FIRE HYDRANT SETTING
NTS

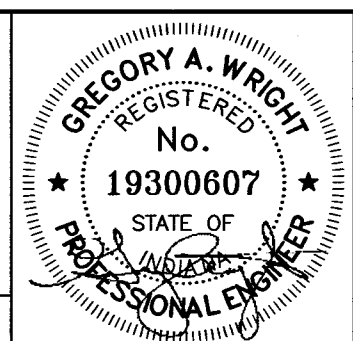


FIELD DRAIN REPLACEMENT DETAIL
NTS

NOTES:

NO.	DESCRIPTION	DATE	BY
1	AS-BUILT REVISIONS	5/2004	MSB
REVISIONS			

HOOSIER HILLS REGIONAL WATER DISTRICT	
DIVISION "F" WATERWORKS SYSTEM IMPROVEMENTS	
CONTRACT F-3	
DETAILS	
GRW PROJECT NO. 2745-04	



DRAWN: BJD	DATE: JULY 2002
FILE NAME: SHT.598	SCALE: AS NOTED
CHECKED:	SHEET NO. 598
APPROVED:	