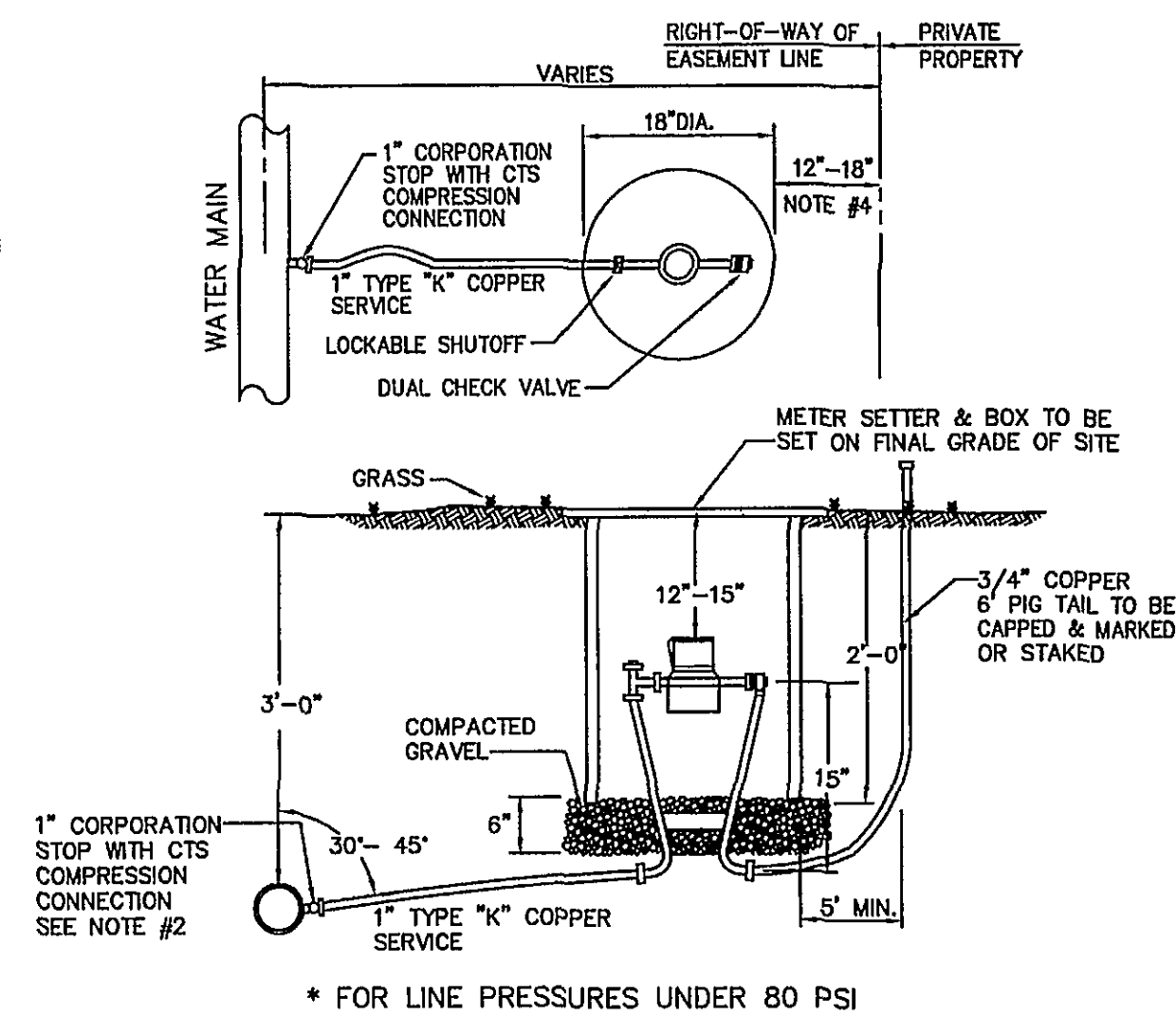
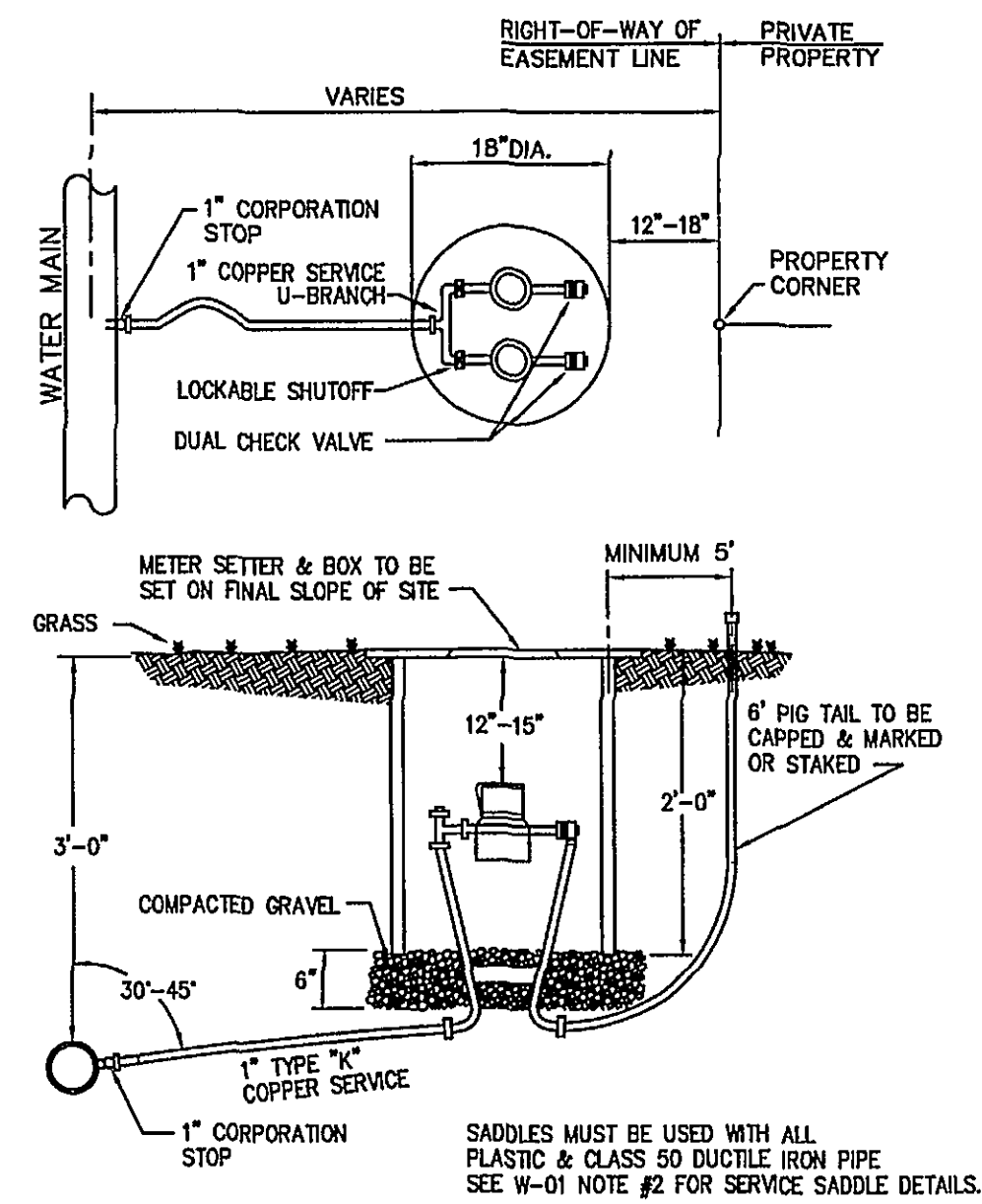


1. SETTER TO BE A.Y. McDONALD #20-215 WOLL33 , FORD VBHH72-15W-1133 OR APPROVED EQUAL.
2. SADDLES MUST BE USED WITH ALL PLASTIC & CLASS 50 DUCTILE IRON PIPE. SERVICE SADDLES SHALL BE USED IN ACCORDANCE WITH SECTION 2665 OF THE WATER STANDARDS. SERVICE SADDLES FOR PLASTIC PIPE SHALL BE: POWERSEAL 3417, OR 3412AS, ROMAC 202S, OR 306S, OR FORTER F202 OR F230S. FOR DUCTILE IRON PIPE USE THE ABOVE OR POWERSEAL 3413, ROMAC 202 OR FORTER METER F202.
3. METER BOX MUST BE MID-STATES PLASTICS, INC. PLASTIC BOX WITH FORD A32-T (ELECTRONIC READER LID) OR A. Y. McDONALD MODEL 74M32C-TC CAST IRON BASE & COVER OR APPROVED EQUAL.
4. WHENEVER SIDEWALK EXISTS OR IS PROPOSED, MODIFY METER LOCATION AS DIRECTED.
5. CORPORATION STOP MUST BE FORD F1000-4-6 OR APPROVED EQUAL.

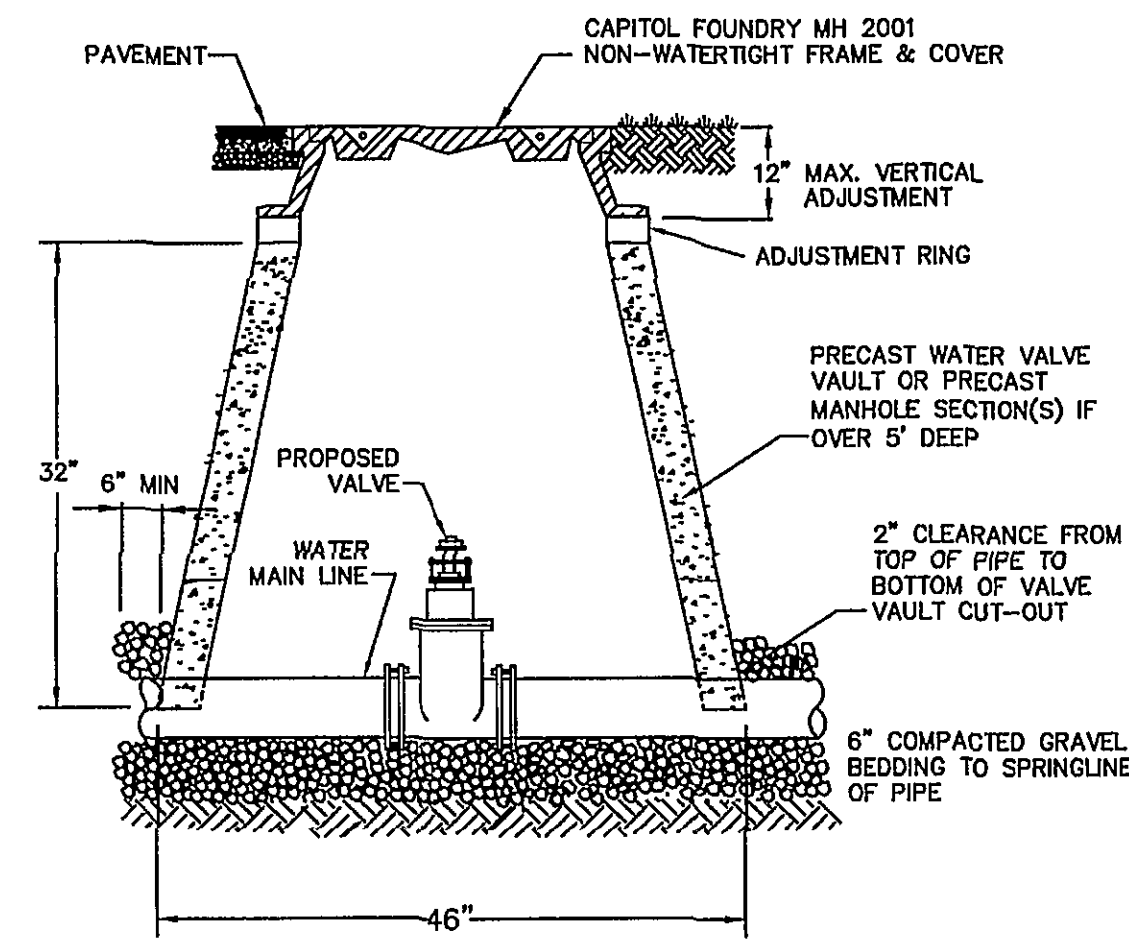


W-01

1. SETTER TO BE A.Y. McDONALD #20-215 WDL33, FORD VBH72-15W-1133 OR APPROVED EQUAL.
2. METER BOX MUST BE MID-STATES PLASTICS, INC. PLASTIC BOX WITH FORD A32-T (ELECTRONIC READ LID) OR A.Y. McDONALD MODEL 74M32C-TC CAST IRON BASE & COVER OR APPROVED EQUAL.
3. CORPORATION STOP MUST BE FORD F1000-4-6 OR APPROVED EQUAL.

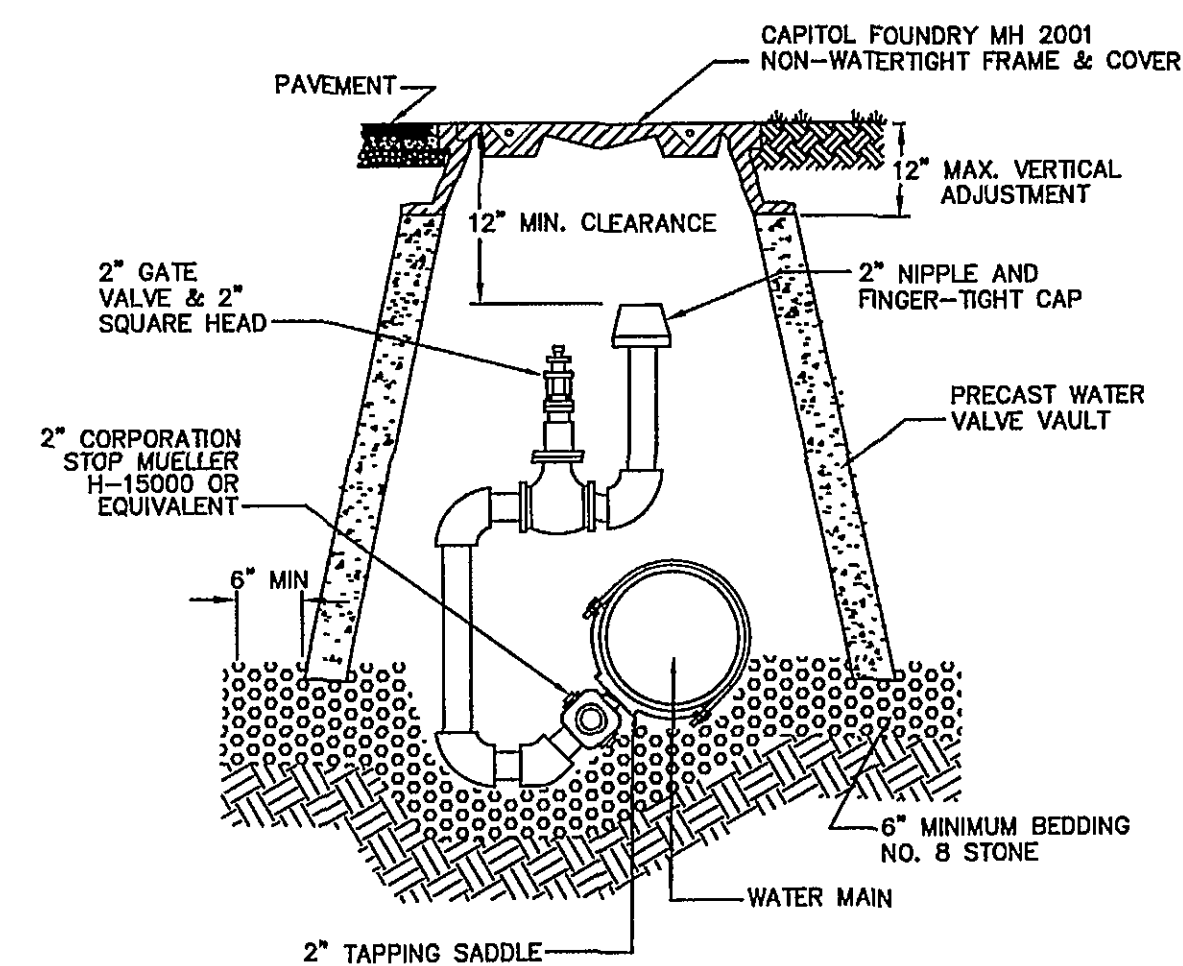


## W-04

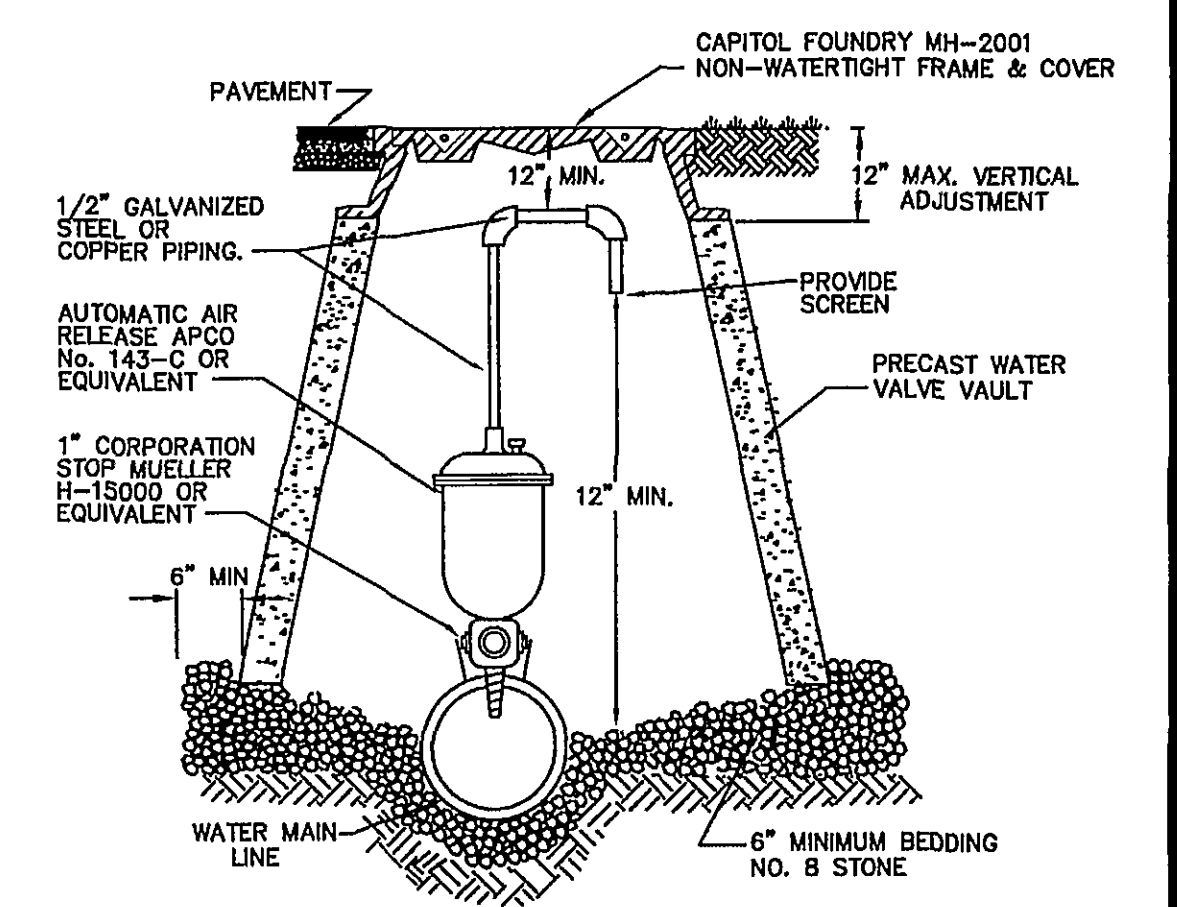


## W-08

1. FIRE HYDRANTS MAY BE USED AT LOWPOINTS IN PLACE OF BLOW-OFFS WHERE IT IS DEMONSTRATED THAT A MINIMUM FLUSHING VELOCITY OF 4 FT/S IS PROVIDED.

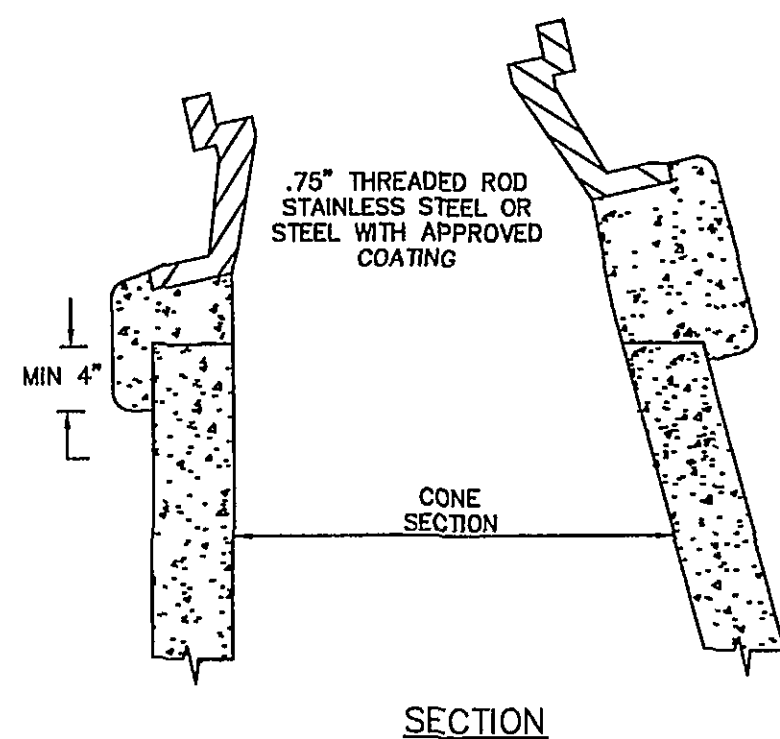


## W-11

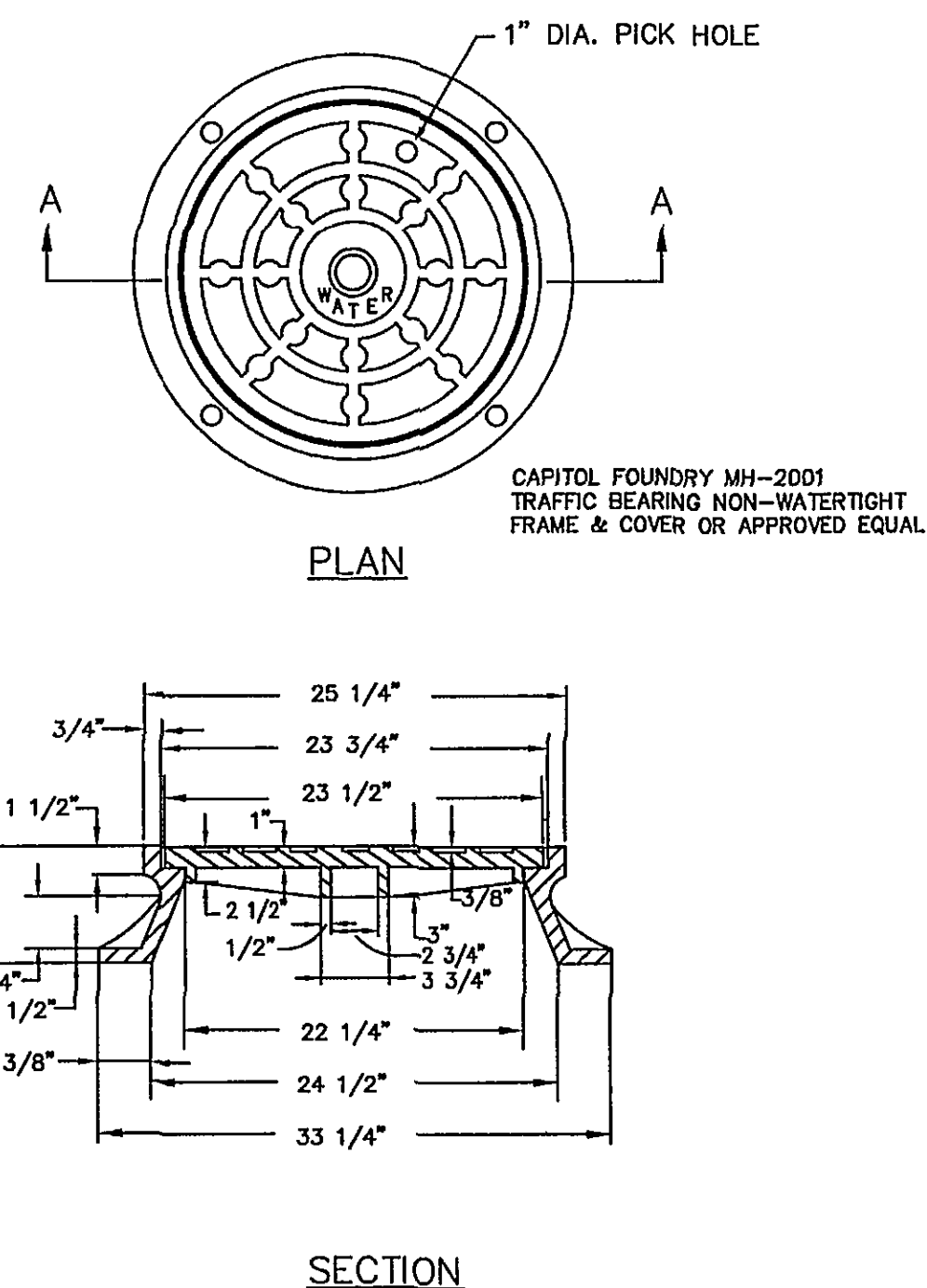


N-12

1. USE MODERATELY STIFF MIX OF NON SHRINK CEMENT, SAND AND 1/2" AND LESS DIAMETER GRAVEL WITH 28 DAYS, STRENGTH AT 3,000 P.S.I.
2. MIX IS TO BE FORCED INTO ALL GROOVES AND UNDER FLANGE OF FRAME AND LEFT AT OR ABOVE TOP OF FLANGE.
3. MAX. OF 4 BRICK OR CONCRETE BLOCKS TO BE USED FOR GRADE CONTROL.
4. DO NOT BACKFILL AROUND FRAME AND COVER, FOR 48 HOURS AFTER CON. IS PLACED. THE USE OF HIGH EARLY STRENGTH CONCRETE WOULD REDUCE TIME TO (24HRS).
5. RESTRICT TRAFFIC LOAD FOR MIN. 24 HOURS.

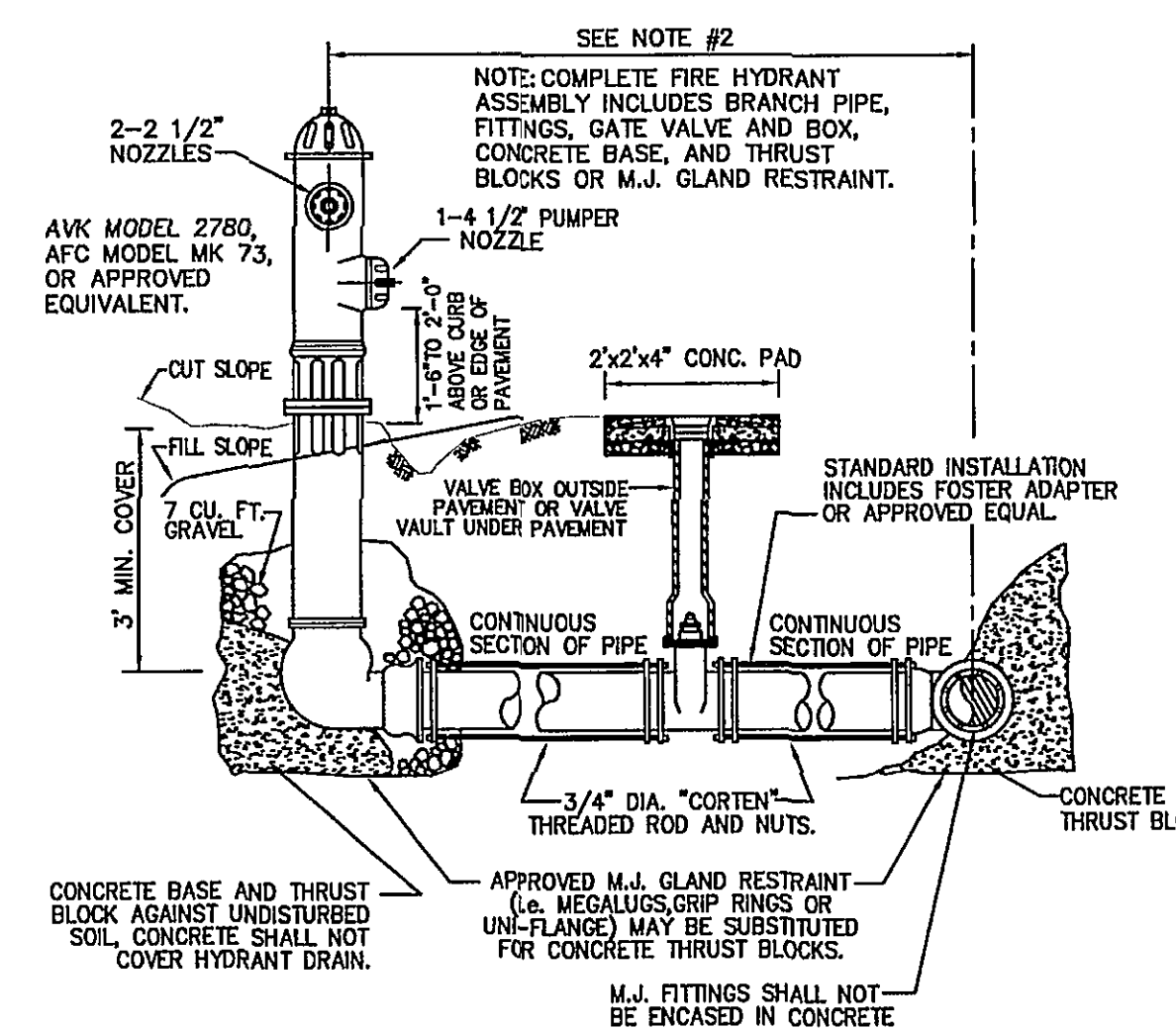


## W-16



## W-17

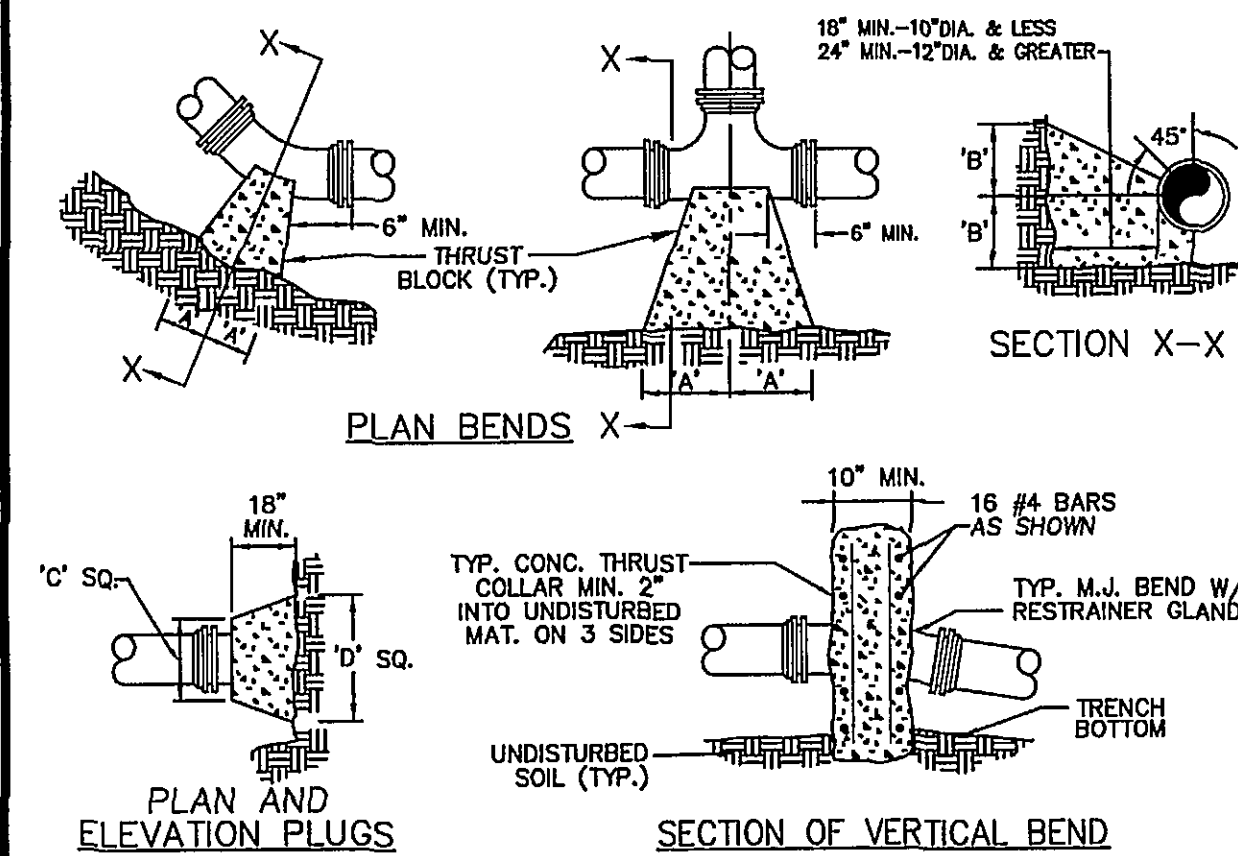
1. MAIN BODY OF HYDRANT MUST BE PAINTED SILVER WITH RED REFLECTIVE CAPS AND BONNET.
2. FIRE HYDRANT SHALL BE INSTALLED 2' MIN. AND 4' MAX. FROM BACK OF CURB OR 6' MIN. AND 12' MAX. WHEN CURB IS NOT PRESENT. FIRE HYDRANT TO BE INSTALLED WITHIN RIGHT-OF-WAY OR EASEMENT LINE.
3. AREA AROUND HYDRANT AT A RADIUS OF 4' TO BE LEVEL AND UNOBSTRUCTED.
4. WATERPROOF BAGS SHALL BE PLACED OVER ALL NEWLY INSTALLED FIRE HYDRANTS.
5. HIGH PRESSURE (OVER 120 PSI) REQUIRES THE USE ALL 3 RESTRAINTS.



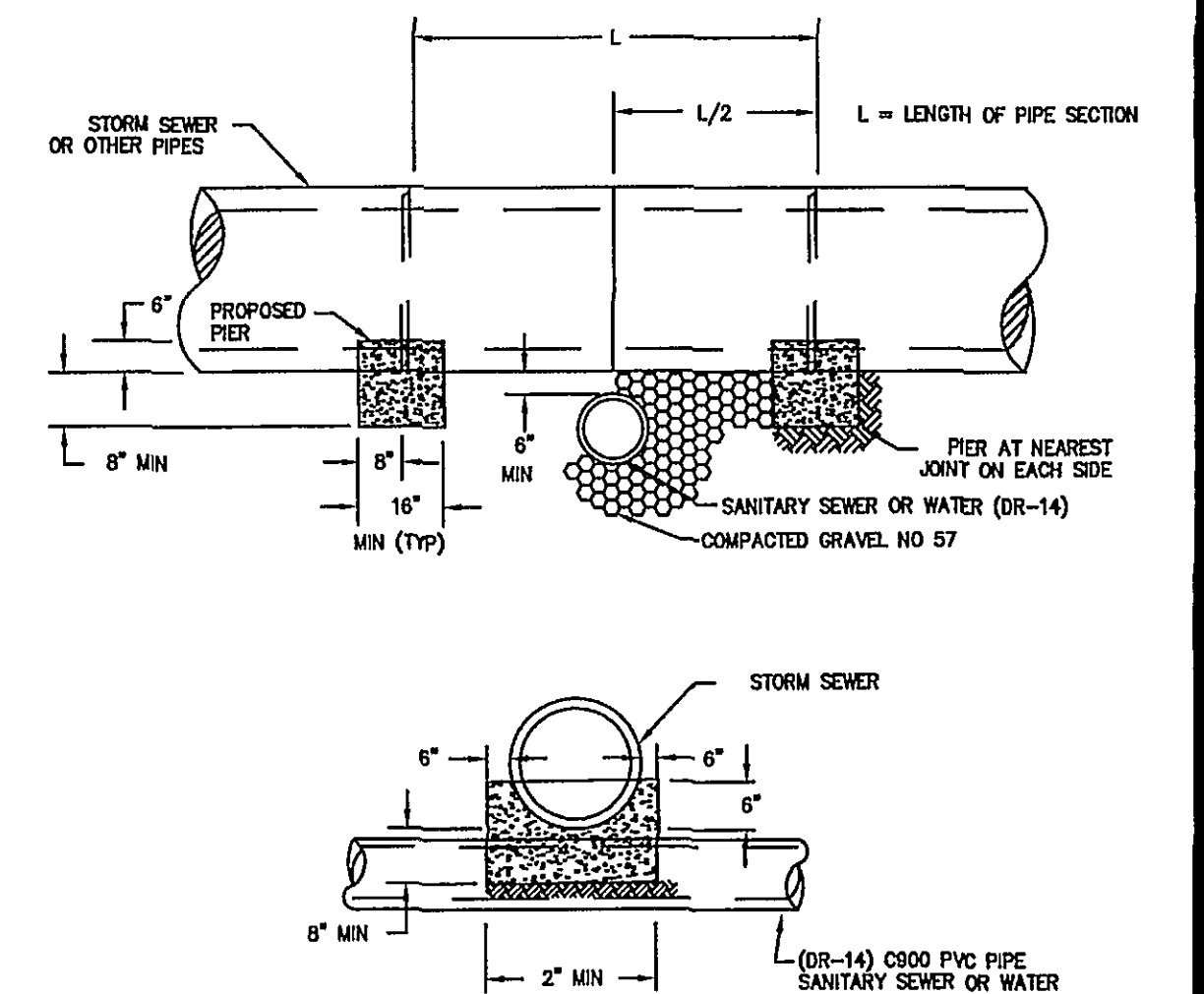
## W-18

1. FOR VERT. BEND DOWN IN EXCESS OF 11 1/4" BEND, ANCHORAGE SHALL BE DESIGNED BY ENGINEER.
2. FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND.
3. CLANDS & BOLTS SHALL BE PROTECTED FROM CONC. BY PLASTIC SHEETING WHEN POURING THRUST BLOCKS.
4. ALL THRUST BLOCK & SUPPORT CONC. SHALL BE 3000 PSI READY MIX CONC.
5. THRUST BLOCKS WITH "6" DIMENSION GREATER THAN 30" SHALL HAVE THE RESTRAINED PIPE INSTALLED WITH A MINIMUM OF 4" OF COVER.

| PIPE<br>SIZE | 90° BEND |    | 45° BEND |    | 22 1/2° BEND |    | 11 1/4° BEND |    | TEE |    | PLUG |    |
|--------------|----------|----|----------|----|--------------|----|--------------|----|-----|----|------|----|
|              | A        | B  | A        | B  | A            | B  | A            | B  | A   | B  | C    | D  |
| 4"           | 8        | 12 | 8        | 8  | 6            | 6  | 6            | 6  | 11  | 9  | 10   | 6  |
| 6"           | 18       | 12 | 8        | 10 | 8            | 8  | 8            | 8  | 11  | 10 | 12   | 12 |
| 8"           | 18       | 13 | 10       | 10 | 8            | 8  | 8            | 8  | 11  | 10 | 12   | 14 |
| 10"          | 19       | 15 | 12       | 14 | 12           | 8  | 8            | 8  | 14  | 16 | 18   | 16 |
| 12"          | 20       | 16 | 12       | 14 | 8            | 12 | 8            | 12 | 14  | 16 | 18   | 20 |
| 16"          | 26       | 20 | 16       | 18 | 11           | 13 | 11           | 13 | 18  | 20 | 20   | 36 |
| 24"          | 82       | 42 | 62       | 30 | 44           | 22 | 22           | 16 | 82  | 42 | 82   | 42 |
| 30"          | 165      | 42 | 100      | 42 | 52           | 42 | 40           | 30 | 165 | 42 | 165  | 42 |



## W-19



## S-17 |

1. PIER REQUIRED WHEN STORM DRAIN OR OTHER PIPES  
CROSSES OVER THE OTHER UTILITY WITH A VERTICAL  
CLEARANCE OF LESS THAN 18".
2. PIER TO BE BUILT ON UNDISTURBED EARTH.
3. CONCRETE TO BE READY MIX, CLASS A3.