

1. BOLT-DOWN MANHOLE COVER MODEL #1040AC

BOLT-DOWN MANHOLE COVER

PAVEMENT

CAPITOL FOUNDRY MH-2001
NON-WATERTIGHT FRAME & COVER

12" MAX. VERTICAL
ADJUSTMENT

12" MIN. CLEARANCE
2" NIPPLE AND
FINGER-TIGHT GAP

2" GATE
VALVE & 2"
SQUARE HEAD

2" CORPORATION
STOP MUELLER
H-15000 OR
EQUIVALENT

6" MIN

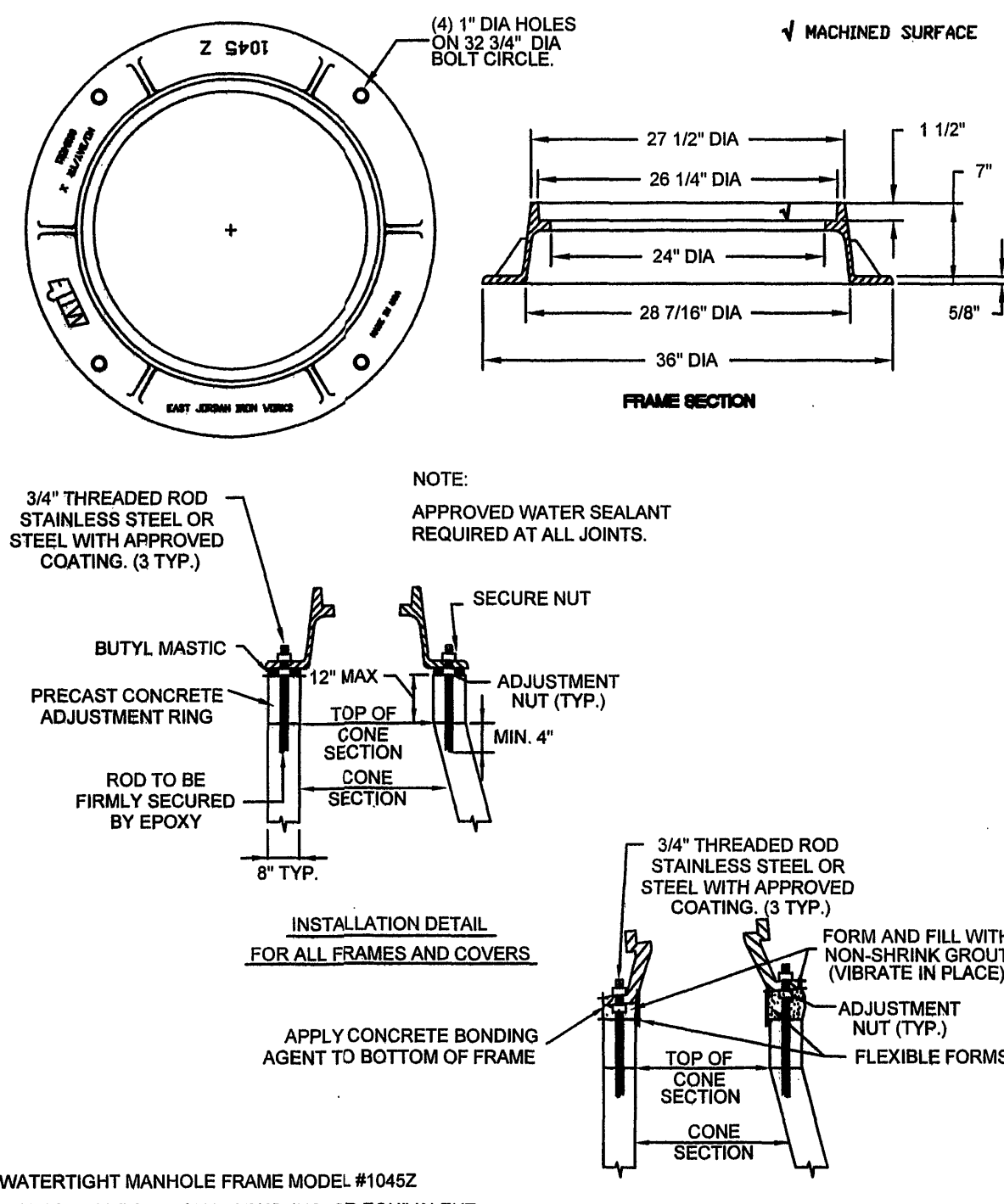
PRECAST WATER
VALVE VAULT

6" MINIMUM BEDDING
NO. 8 STONE

WATER MAIN

2" TAPPING SADDLE

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.



WATERTIGHT MANHOLE FRAME MODEL #1045Z
BY EAST JORDAN IRON WORKS, INC. OR EQUIVALENT

NOTES:

1. ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT MANHOLE FRAME MODEL #10402, WATERTIGHT COVER MODEL #10404GS AND BOLT-DOWN MANHOLE COVER MODEL #10404CS, OR APPROVED EQUAL. BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECT TO FLOODING OR AS DIRECTED BY THE AUTHORITY.
2. STEPS TO BE VERTICALLY ALIGNED.
3. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLT DOWN IN THE CENTER.
4. FLAT TOP MANHOLES MAY ONLY BE SUBSTITUTED WITH THE PERMISSION OF THE UTILITY DIRECTOR WHEN USED. THE ECCENTRIC OPENING MUST LINE UP WITH THE STEPS.
5. SAVING MANHOLES IN TRAFFIC AREAS SHALL BE CONSTRUCTED AS PER MANHOLE DETAILS.
6. FLEXIBLE JOINT MANHOLE CONNECTION SHALL BE AS MANUFACTURED BY PRES-SEAL GASKET CORPORATION OR EQUAL.
7. GROUT ANNULAR SPACE BETWEEN PIPE AND PRECAST MANHOLE IN INSIDE OF MANHOLE.

INVERTS WILL BE THE SAME SIZE AS THE PIPE AND SAME SIZE FOR PLUGS AND TESTING EQUIPMENT.

STAINLESS STEEL BAND
FLEXIBLE BOOT

4" 0"

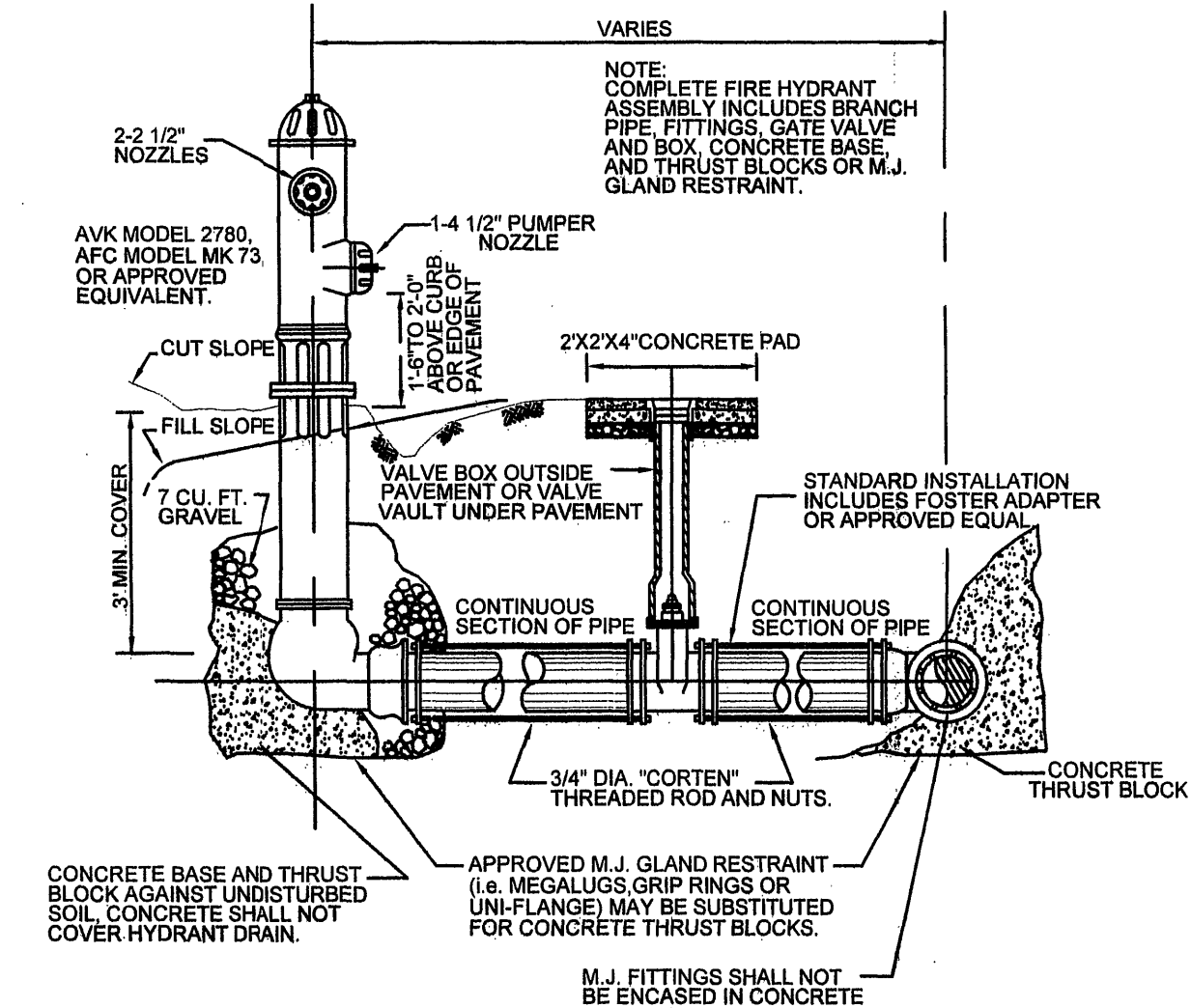
FLEXIBLE BOOT
STAINLESS STEEL BAND

SECTION A-A

[illegible]

NOTES:

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.



The technical drawings illustrate the construction of thrust blocks for pipe bends and vertical bends. The top row shows 'PLAN BENDS' and 'PLAN AND ELEVATION PLUGS'. The bottom row shows 'SECTION X-X' and 'SECTION OF VERTICAL BEND'.

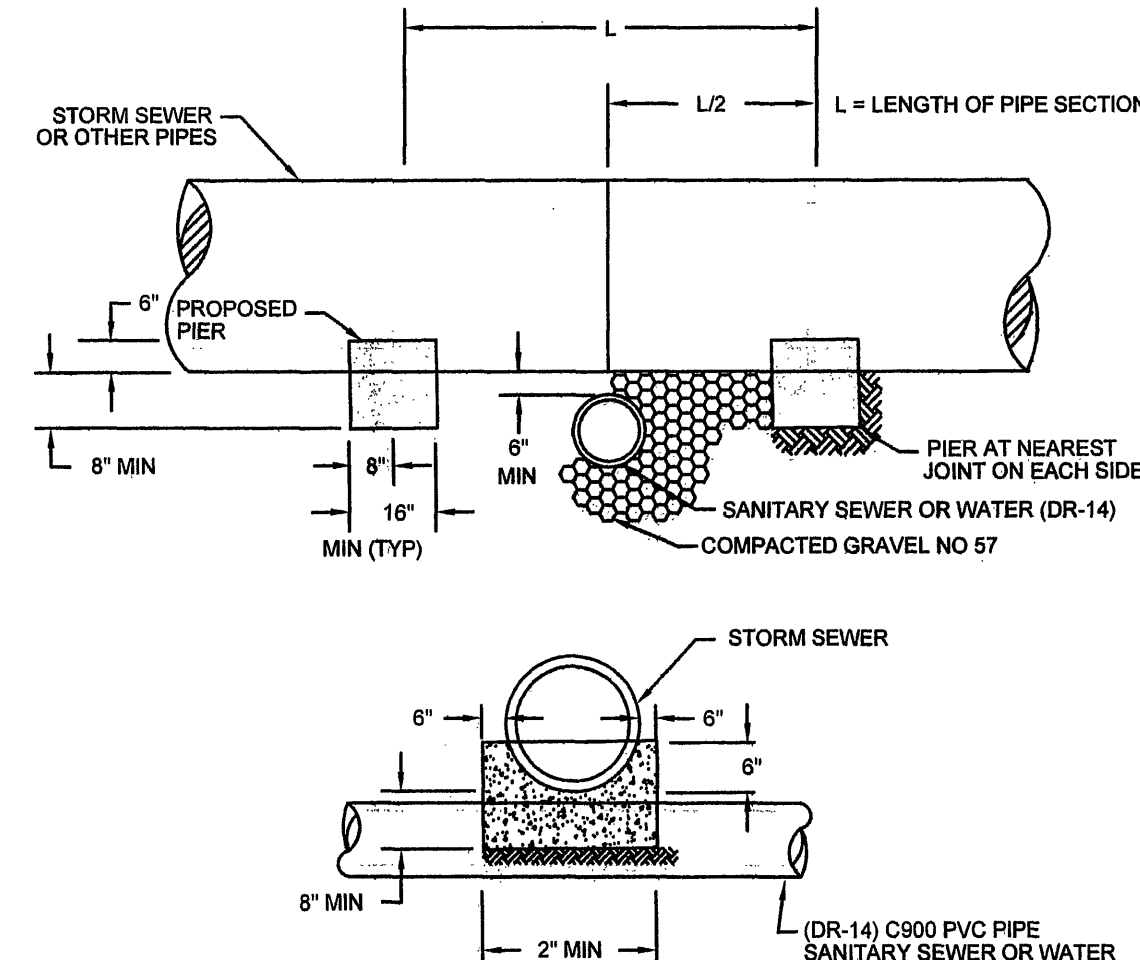
PLAN BENDS: This diagram shows a cross-section of a pipe bend. The thrust block is a trapezoidal shape made of concrete, with a minimum width of 6 inches. It is surrounded by undisturbed soil. The drawing includes labels for 'X' (section line), '6" MIN.', 'THRUST BLOCK (TYP.)', and 'UNDISTURBED SOIL (TYP.)'.

PLAN AND ELEVATION PLUGS: This diagram shows a cross-section of a pipe plug. The plug is a trapezoidal shape made of concrete, with a minimum width of 6 inches. It is surrounded by undisturbed soil. The drawing includes labels for 'X', '6" MIN.', 'C SQ.', '18" MIN.', 'D SQ.', and 'UNDISTURBED SOIL (TYP.)'.

SECTION X-X: This diagram shows a cross-section of a pipe bend. The thrust block is a trapezoidal shape made of concrete, with a minimum width of 6 inches. It is surrounded by undisturbed soil. The drawing includes labels for '18" MIN.-10" DIA. & LESS', '24" MIN.-12" DIA. & GREATER', '55°', 'TYP. CONC. THRUST COLLAR MIN. 2" INTO UNDISTURBED MAT. ON 3 SIDES', 'SECTION X-X', and 'UNDISTURBED SOIL (TYP.)'.

SECTION OF VERTICAL BEND: This diagram shows a cross-section of a vertical pipe bend. The thrust block is a trapezoidal shape made of concrete, with a minimum width of 6 inches. It is surrounded by undisturbed soil. The drawing includes labels for '10" MIN.', '16 #4 BARS AS SHOWN', 'TYP. M.J. BEND W/ RESTRAINER LWD', 'TRENCH BOTTOM', and 'UNDISTURBED SOIL (TYP.)'.

| PIPE 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" | 8" | 6" | 8" | 6" | 1 1/4" | 9" | 10" | 8" |
| 6" | 12" | 18" | 8" | 10" | 8" | 8" | 8" | 8" | 1 1/4" | 10" | 12" | 18" |
| 8" | 18" | 13" | 10" | 10" | 8" | 8" | 8" | 8" | 1 1/4" | 12" | 12" | 24" |
| 10" | 20" | 16" | 12" | 14" | 8" | 12" | 8" | 12" | 1 1/4" | 16" | 16" | 36" |
| 12" | 20" | 16" | 12" | 14" | 8" | 12" | 8" | 12" | 1 1/4" | 16" | 16" | 36" |
| 16" | 26" | 20" | 16" | 18" | 11" | 13" | 11" | 13" | 1 1/4" | 20" | 20" | 36" |
| 24" | 82" | 42" | 82" | 30" | 44" | 22" | 22" | 16" | 82" | 42" | 82" | 42" |
| 30" | 185" | 42" | 100" | 42" | 52" | 42" | 40" | 30" | 185" | 42" | 185" | 42" |



CONCRETE PIER