

CITY OF NEWARK

Delaware

Water and Waste Water Department

SUMMARY OF SPECIFICATIONS

January 11, 2008

WATER MAINS & FITTINGS:

1. All water mains shall be Ductile Iron push on, Class 52, with locking gaskets, unless otherwise specified. Minimum cover of 42 inches.
2. Tapping sleeves shall be Mueller H-615, Mueller Stainless H-304.
3. Tapping valves shall be Mueller T-2360-19, open left.
4. Main gate valves shall be Mueller A-2360 or H-2370-20, open left.
5. Valve boxes shall be Mueller H-10360, or equal.
6. A blow off shall be installed on all dead-end water mains; size of blow off will be determined by the Water Department.
7. All bends shall be buttressed with 3500 psi concrete and wrapped with plastic.

FIRE HYDRANTS:

1. Hydrant laterals shall be restraining tee, 6 inch resilient gate valve and box with 6 inch Ductile Iron Pipe.
2. Hydrants shall be Mueller A-423, buttressed and rodded.
3. Size Valve Opening – 5 ¼ inch, open left.
4. Nozzle Arrangement – 2 – 2 ½ inch Hose Connections, National Standard Thread.
1 – 4 ½ inch Pumper Connections, National Standard Thread.
5. Lateral Connection – 6 inch Mechanical Joint.
6. Operating Nuts – All 1 ½ inch Pentagon.

HOUSE SERVICES:

1. Corporation stops shall be ¾ inch Mueller H-15010, tapped on upper 1/3 (45 degree).
2. Saddle taps shall be Mueller BR2B Brass.
3. Curb stops shall be Mueller H-15201 or H-15209.
4. Curb boxes shall be Mueller H-10350, or equal.
5. House services shall be ¾ inch soft copper tubing type "K".
6. Minimum depth of cover is 42 inches.
7. Meter yokes shall be Mueller H-1412 or Ford # PB-1.
8. Long services over 90 feet from curb stop valve shall be required to install a meter pit 2 feet behind right way line on roadway. This pit shall be owned and maintained by property owner.
9. Water meters for all new services shall be purchased from the Water Department.
10. The developer will be responsible for installing a remote wire, in conduit if necessary, leaving enough slack on either end for the connection to the water meter, and remote reader. The Water Department will supply the remote wire.

SANITARY SEWER MAINS:

1. Minimum main size is an 8 inch.
2. All sanitary sewer mains and fittings shall be Johns-Manville & HARCO O-ring SDR 35 type. Maximum depth is 20 feet and minimum depth is 5 feet.
3. Encase main when it goes under or over another utility with 6 inches, 3,500 psi concrete.
4. Sewer mains and materials shall be installed on a 4 inch bed of Delaware #57 stone to grade and backfilled with stone to approximately 4 inches over pipe.
5. Force mains shall be pressure rated, buttressed at bends and marked with 12 gauge tracer wire. Place metallic sewer tape on first lift of material over pipe.

MANHOLES:

1. All manholes shall be precast and all channels inside manholes shall be poured concrete, 4,000 # mix.
2. Use concrete riser rings and poured concrete collar around outside between the manhole frame and the precast manhole. All off site frame and collars to be bolted down to the manhole with sealant at each interface with bolt down lids.
3. All manhole frames and covers shall be watertight, as per City of Newark Water and Waste Water specifications. An approved bituminous seal coating shall be applied to the exterior of all manholes.
4. When a contractor ties into an existing manhole, he shall be responsible to bring that manhole up to present codes and specifications.
5. A six inch bed of Stone (Delaware #57) shall be laid under the manhole base prior to installation, including stone around and over the inlet and discharge pipes. Wet or unstable ground conditions will require undercutting and additional stone depth.

LATERALS:

1. All sanitary sewer laterals shall be minimum O-ring SDR-35 or Schedule 40. Maximum depth is 20 foot and minimum depth 5 feet. Less than 5 foot or greater than 20 foot shall be class 50 D.I.P.
2. Minimum lateral size is 4 inches.
3. Cleanout screw caps flush to 1 inch below finished grade in grass area.
4. All combination cleanouts shall be of the John Manville or Harco type (consisting of 45 degree wye and 45 degree bend) are to be installed on the property line. **Tee-Wyes will not be accepted.** If the cleanout is in the driveway or the sidewalk a genco or equal screw cap with brass lid must be flush with concrete or hot mix (see clean out detail).
5. Back water valve/check to be installed as per international plumbing code #715. This valve shall be valve clean/check inc #EBV-401B or equal.

BACKFILL FOR WATER & SEWER TRENCHES:

Backfill for all pipe trenches, unless otherwise specified, shall be as follows:

1. CITY OF NEWARK STREETS:

Sewer Pipe: as stated in item #4 under sanitary sewer mains.

Water Pipe: Select borrow from the bottom of the trench to one foot above the top of pipe.

The balance of the trench for both water and sewer shall be backfilled with crusher run compacted in 6 inch layers. The trench shall be cut back one foot on each side and capped with 6 inches of 3500# A/E concrete to 1 ½ inch below existing surface. A 1 ½ inch mat of "TYPE C" hot mix shall be placed on the concrete flush with existing roadway.

2. STATE MAINTAINED STREETS:

Backfill for pipe trenches, Delaware State Highway specifications, call for a 10 inch concrete base, with a 2 inch over-lay of hot-mix to finished grade, above the stone base.

TESTING WATER MAINS:

1. Water mains shall be tested with services installed and curb stops in place.
2. Test shall be for four (4) hours of 150 psi hydrostatic pressure.
3. Allowable leakage is AWWA Standards and CIPRA recommendations.
4. Fire hydrants shall be included in all tests.

TESTING SANITARY SEWER MAINS:

1. Sanitary mains shall be tested with all laterals tied in and complete cleanouts in place.
2. Test shall be 5 pounds for 15 minutes with no allowable leakage.
3. Forced mains shall be 50 pounds for 5 minutes. All bends in forced main system shall be buttressed and treated as a water line. Tracer wire 12 gauge and metallic sewer tape place on first lift of material over pipe.

FIRE SUPPRESSION SYSTEM SHUT OFF:

1. All fire suppression systems shall have a shut-off valve installed on the supply line located on the exterior of the building with large valve box with fire on lid.
2. Should the fire system be supplied from the existing domestic water lateral, or vice versa, the valves for each system shall be positioned so that either valve can be opened or closed without terminating the water supply to the opposite service.
3. The valve boxes shall be installed with lids reading "FIRE" for the fire suppression system and "WATER" for the domestic system.

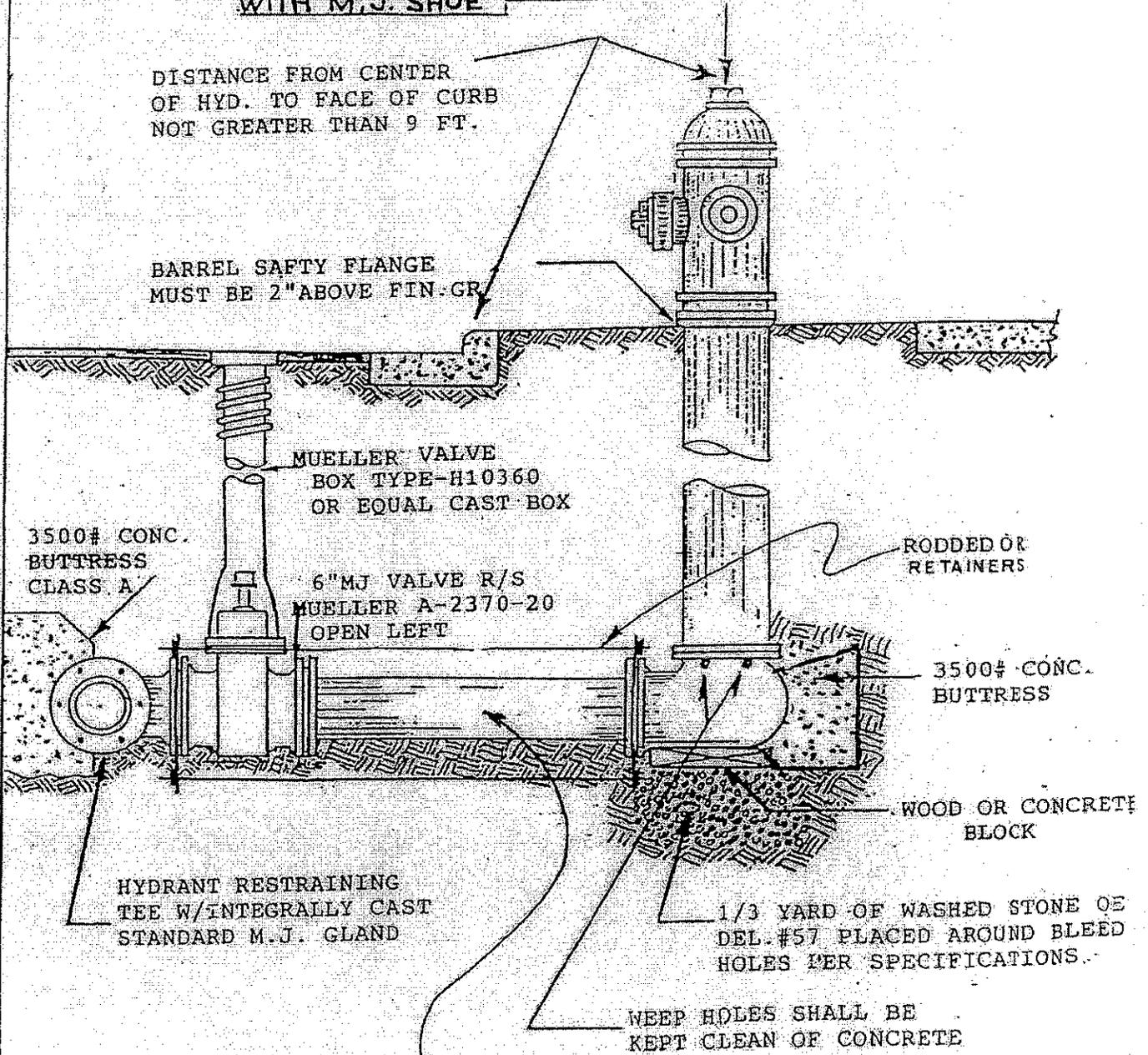
WATER RENT TO BE PAID BY BUILDERS:

Builders shall pay water rent from time the tap is made until the building is completed. Upon application for a building permit, the applicant shall pay a fee for the use of water during construction as the rate of ten dollars (\$15.00) for each twenty-five thousand dollars (\$25,000) building value as reflected on the building permit.

MUELLER HYDRANT A-423 CENTURIAN 5 1/4" N/S
 WITH M.J. SHOE

DISTANCE FROM CENTER
 OF HYD. TO FACE OF CURB
 NOT GREATER THAN 9 FT.

BARREL SAFTY FLANGE
 MUST BE 2" ABOVE FIN. GR.



3500# CONC.
 BUTTRESS
 CLASS A

MUELLER VALVE
 BOX TYPE-H10360
 OR EQUAL CAST BOX

6" MJ VALVE R/S
 MUELLER A-2370-20
 OPEN LEFT

RODDED OR
 RETAINERS

3500# CONC.
 BUTTRESS

WOOD OR CONCRETE
 BLOCK

HYDRANT RESTRAINING
 TEE W/INTEGRALLY CAST
 STANDARD M.J. GLAND

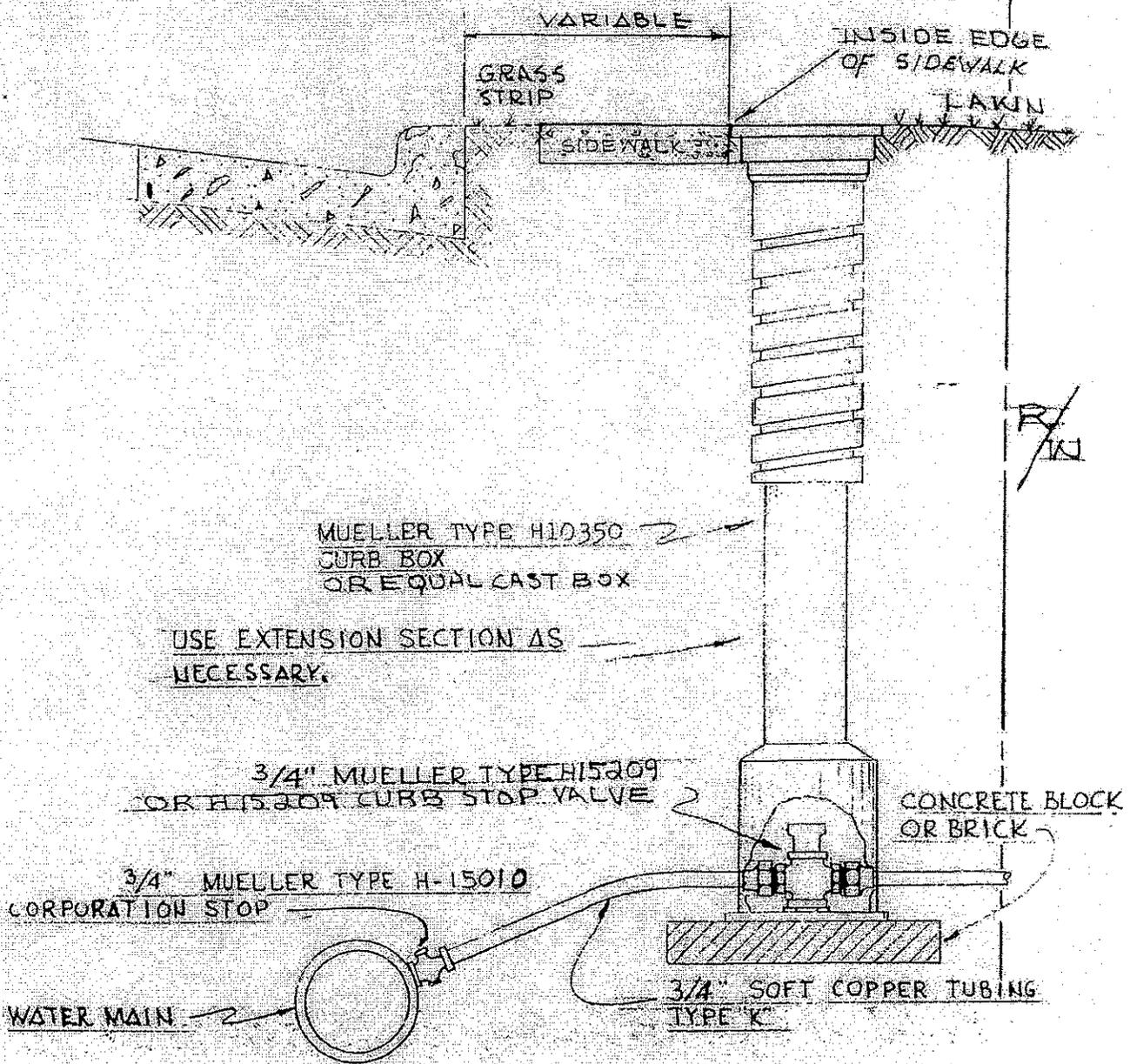
1/3 YARD OF WASHED STONE OR
 DEL. #57 PLACED AROUND BLEED
 HOLES PER SPECIFICATIONS.

WEEP HOLES SHALL BE
 KEPT CLEAN OF CONCRETE

6" D.I.P. CLASS 52 PIPE

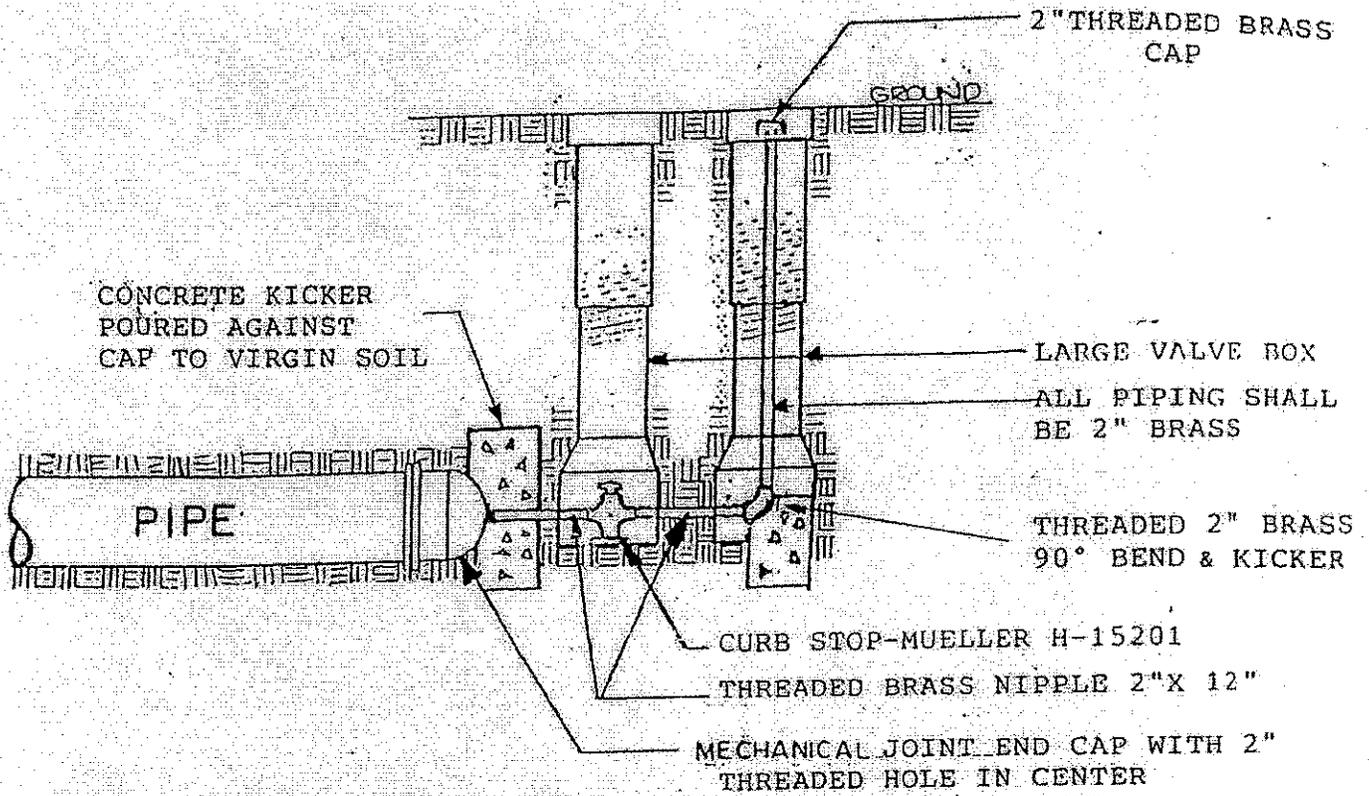
NOTE:
 ALL ITEMS TO BE AS
 SHOWN OR APPROVED EQUAL

CITY OF NEWARK
 STANDARD FIRE HYDRANT



NO SCALE

NOTE: ALL ITEMS AS SHOWN, OR APPROVED EQUAL TO THOSE INDICATED.

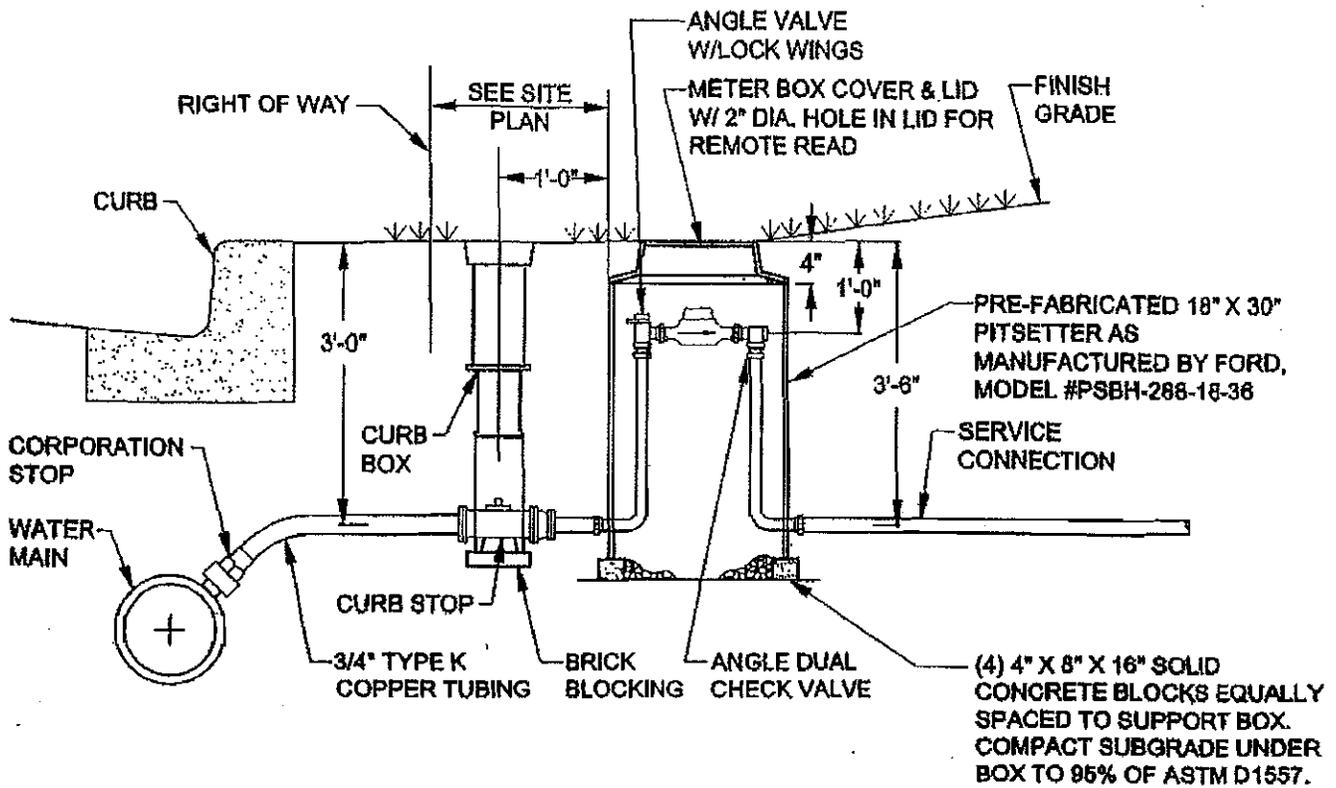


BLOW OFF DETAIL (NO SCALE)

CITY OF NEWARK

STANDARD BLOW OFF DETAIL

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1. ADJUSTABLE CURB BOX; SERIES 6500-92; BUFFALO TYPE, COMPLETE
2. 1" COPPER PIPE OUTLET; MUELLER H-15000; CORPORATION STOP ASSEMBLY
3. MUELLER ORI SEAL CURBSTOP; H-10291 I.P.I.P.; H-15176 C.T.I.P.; H-15201 C.T.C.T.
4. 1" SERVICE CONNECTION IS MINIMUM SIZE AS PER CITY OF NEWARK
5. ALL WATER SERVICES FROM MAIN TO CURB STOP SHALL BE COPPER.
6. 5/8" METER, SUPPLIED BY THE CITY OF NEWARK. (METER SHALL BE TOUCHREAD)

WATER METER DETAIL

NO SCALE