

DETAILS FOR COMPONENT BAR PRODUCTS BUILDING EXPANSION

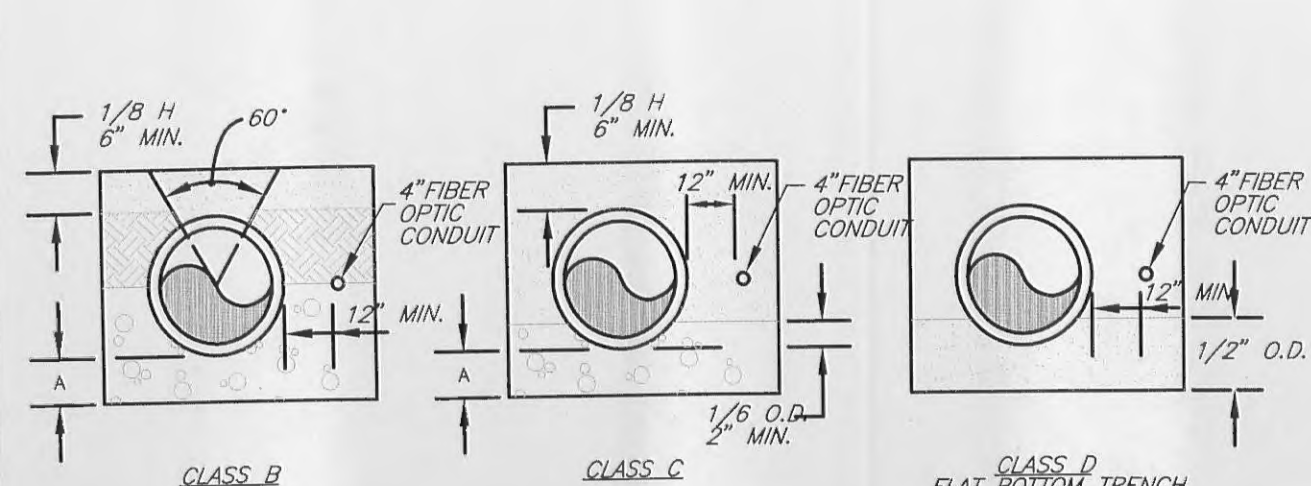
GBA
GEORGE BUTLER ASSOCIATES, INC.
Engineers / Architects
Kansas City, Mo. / Lenexa, Ks. / O'Fallon, Mo. / Wichita, Ks.

DATE: SEPTEMBER 2007
DESIGN BY: JJC
DRAWN BY: MSA
PROJECT NO.: 11333

SHEET NO. 8 TOTAL SHEETS 11

COMPONENT BAR BUILDING EXPANSION

NO.	DATE	DESCRIPTION	BY
1	8/22/07	160 LB KEYSTONE RETAINING WALL AT THE BACK OF CURB	MSA
2	8/22/07	CHANGED PROPOSED TREES NORTH OF THE PARKING LOT	MSA
3	8/22/07	REMOVED PROPOSED FENCE ALONG ON NORTH PROPERTY LINE	MSA
4	8/22/07	ADDED SITEPROOF FENCING	MSA
5	9/17/07	MODIFIED PARKING LOT LAYOUT AND INLET	MSA
6	11/5/07	ADDED RETAINING WALL FENCE AND FENCE DETAIL	MSA



LEGEND
I.D. - NOMINAL PIPE SIZE
O.D. - OUTSIDE DIAMETER OF PIPE
H - COVER ABOVE TOP OF PIPE
A - EMBEDMENT BELOW PIPE (SEE TABLE)

TAMPED BACKFILL
COMPACTED BACKFILL
GRANULAR BEDDING

GRANULAR BEDDING SHALL BE CRUSHED ROCK OR PEA GRAVEL WITH NOT LESS THAN 95% PASSING 1/2" (95% PASSING 3/4" FOR 30" AND LARGER PIPE) AND NOT LESS THAN 95% RETAINED ON #4; TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLICING WITH A SHOVEL OR VIBRATING.

COMPACTED BACKFILL SHALL BE FINELY DIVIDED JOB EXCAVATED MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, PLACED IN UNIFORM LAYERS NOT MORE THAN 6" THICK, COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY A.S.T. DE99, OR GRADED AGGREGATE. GRANULAR BACKFILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF COMPACTED BACKFILL.

TAMPED BACKFILL SHALL BE FINELY DIVIDED JOB EXCAVATED MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, HAND PLACED IN UNIFORM LAYERS NOT MORE THAN 8" THICK AND TAMPED AROUND CONDUIT PIPE. GRANULAR BACKFILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF TAMPED BACKFILL.

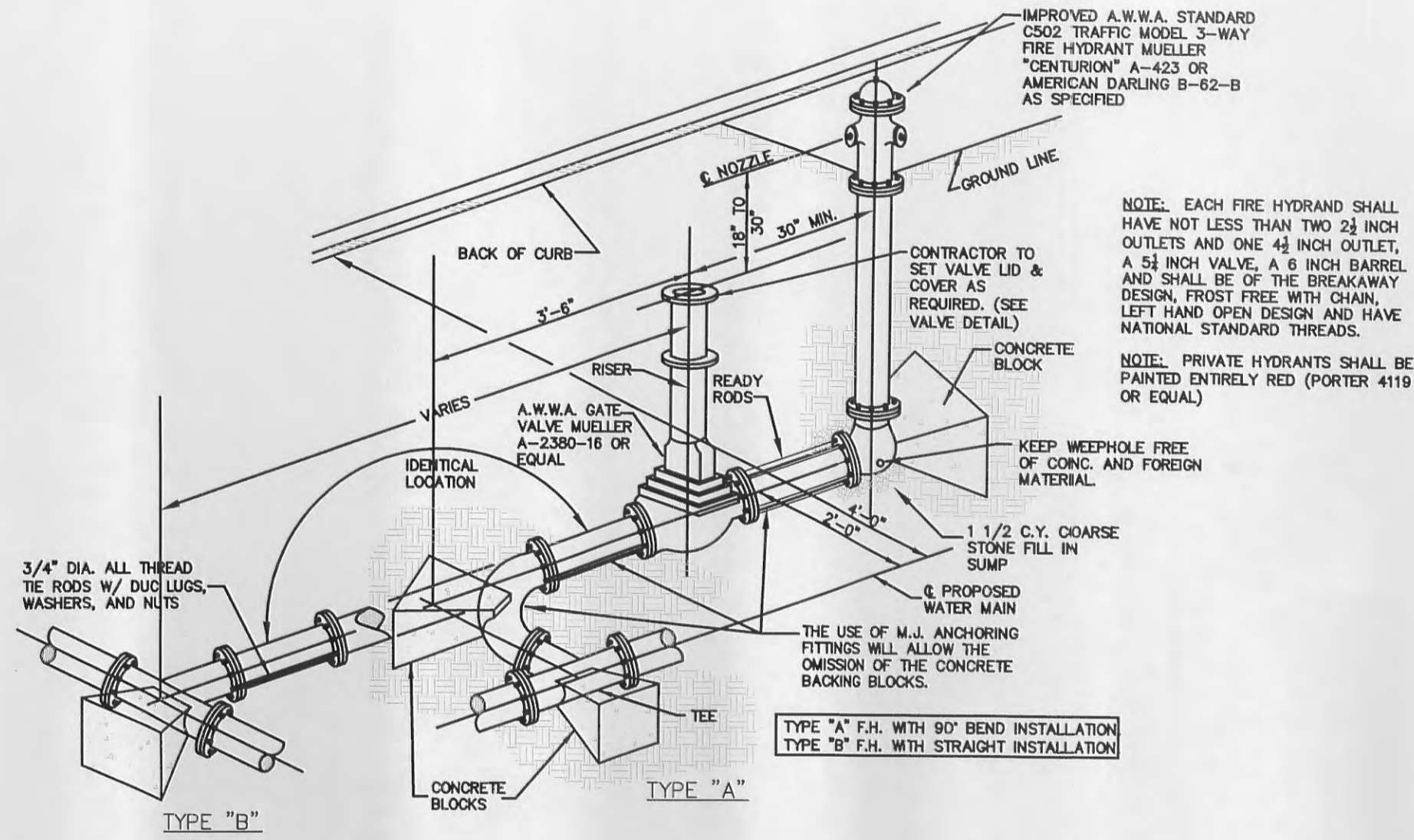
TRENCH BACKFILL SHALL BE AS REQUIRED IN THE "LAYING AND BACKFILL" SECTION OF THE DETAILED SPECIFICATIONS.

EMBEDMENT THE TYPE OF EMBEDMENT TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND SPECIFICATIONS.

TRACER WIRE REQUIRED ON ALL WATER MAINS

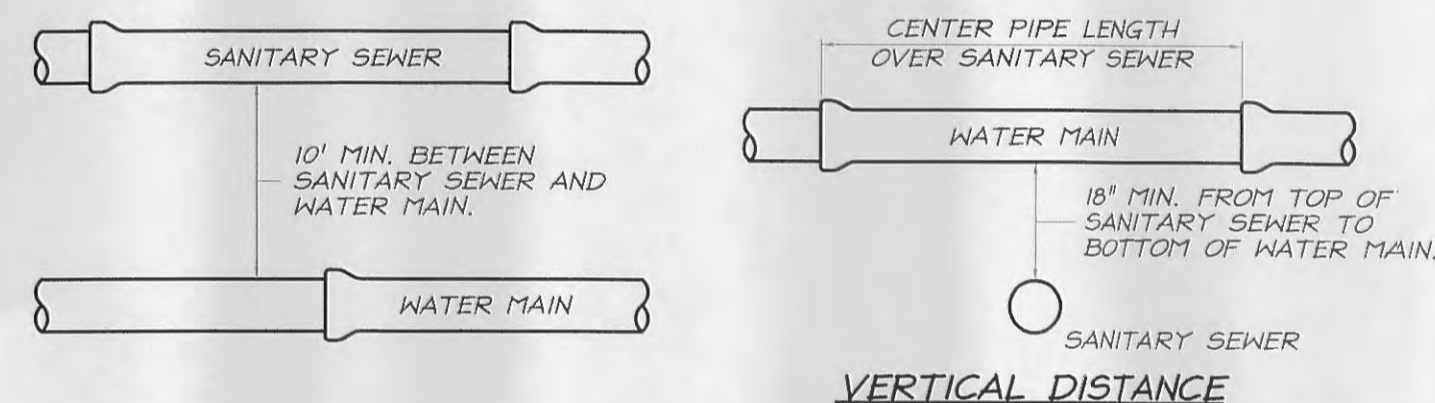
WATER LINE EMBEDMENT DETAIL

N.T.S.



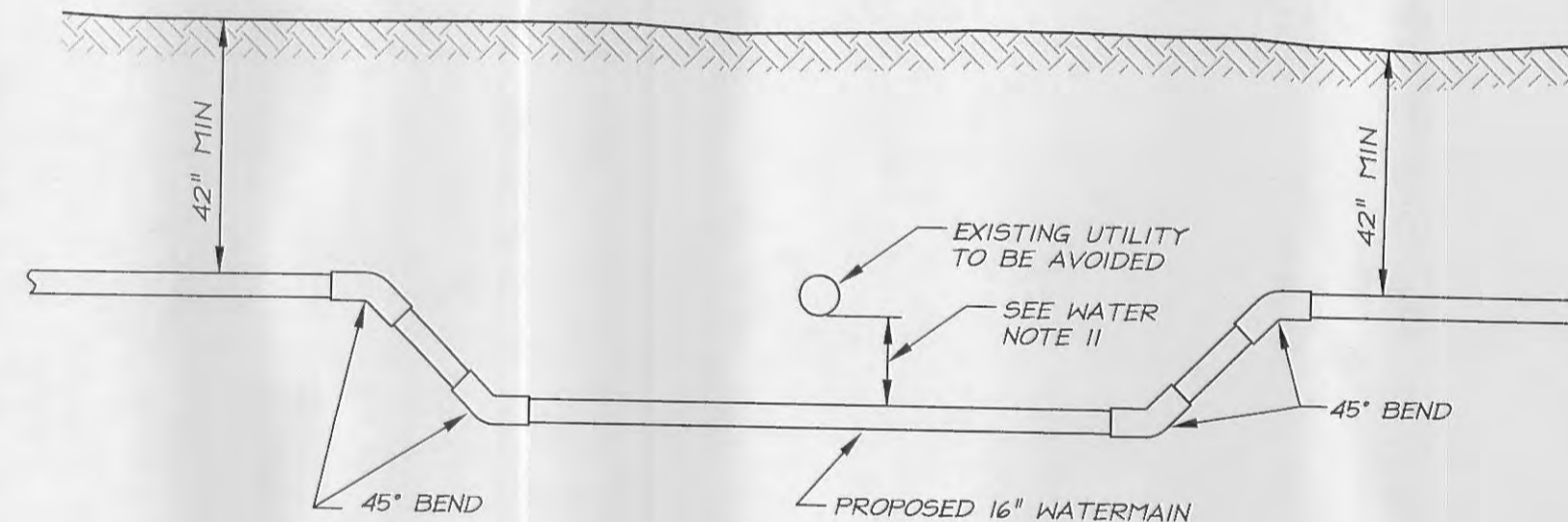
FIRE HYDRANT DETAIL

SCALE: N.T.S.



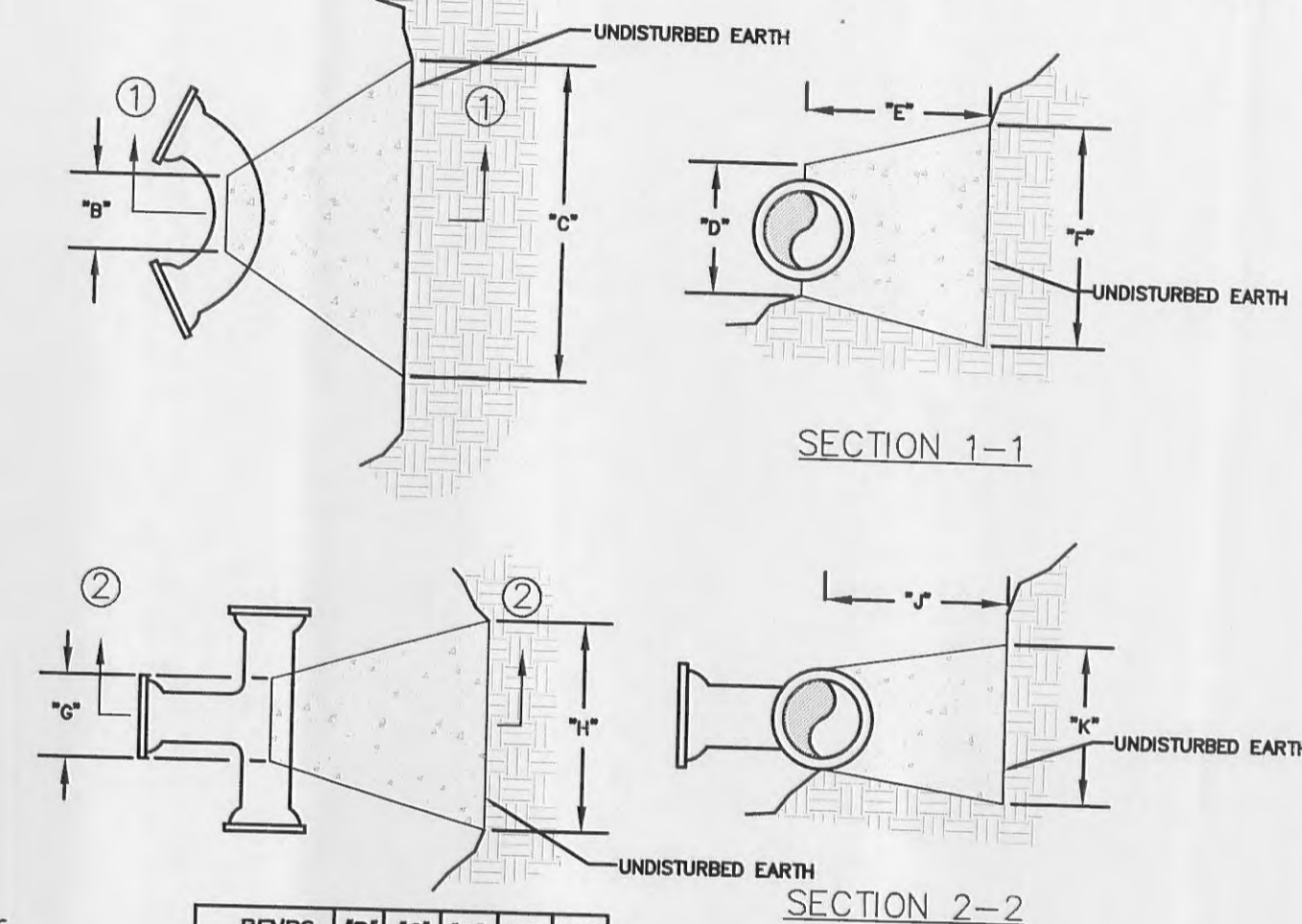
TYPICAL WATER & SEWER SEPARATION

SCALE: N.T.S.



WATERLINE ADJUSTMENT TO AVOID EXISTING UTILITIES

SCALE: N.T.S.



TYPICAL TAPPING SLEEVE

SCALE: N.T.S.

BENDS	1/2"	3/4"	1"	1 1/4"	1 1/2"
6"-11 1/4"	8"	15"	12"	24"	10"
6"-22 1/2"	8"	19"	12"	24"	15"
6"-45"	8"	30"	12"	24"	15"
6"-90"	8"	30"	12"	24"	28"
8"-11 1/4"	8"	20"	12"	24"	10"
8"-22 1/2"	8"	29"	12"	24"	15"
8"-45"	8"	31"	12"	24"	15"
8"-90"	8"	30"	12"	24"	36"
12"-11 1/4"	8"	30"	12"	24"	15"
12"-22 1/2"	8"	35"	12"	24"	25"
12"-45"	8"	40"	12"	24"	40"
12"-90"	8"	60"	12"	24"	52"
16"-11 1/4"	TL	28"	20"	24"	28"
16"-22 1/2"	TL	39"	20"	24"	39"
16"-45"	TL	55"	20"	24"	55"
16"-90"	TL	91"	20"	24"	60"
20"-11 1/4"	TL	34"	24"	26"	34"
20"-22 1/2"	TL	49"	24"	26"	49"
20"-45"	TL	74"	24"	26"	60"
20"-90"	TL	136"	24"	26"	60"
24"-11 1/4"	TL	40"	28"	28"	40"
24"-22 1/2"	TL	56"	28"	28"	56"
24"-45"	TL	101"	28"	28"	60"
24"-90"	TL	166"	28"	28"	60"
30"-11 1/4"	TL	49"	34"	30"	49"
30"-22 1/2"	TL	79"	34"	30"	60"
30"-45"	TL	154"	34"	30"	60"
30"-90"	TL	285"	34"	30"	60"

TEES	1/2"	3/4"	1"	1 1/4"	1 1/2"
6"x6"x6"	12"	24"	24"	18"	18"
8"x8"x8"	12"	24"	24"	18"	18"
12"x12"x12"	12"	27"	24"	27"	27"
12"x12"x12"	12"	38"	24"	38"	38"
24"x24"x24"	16"	53"	24"	53"	53"

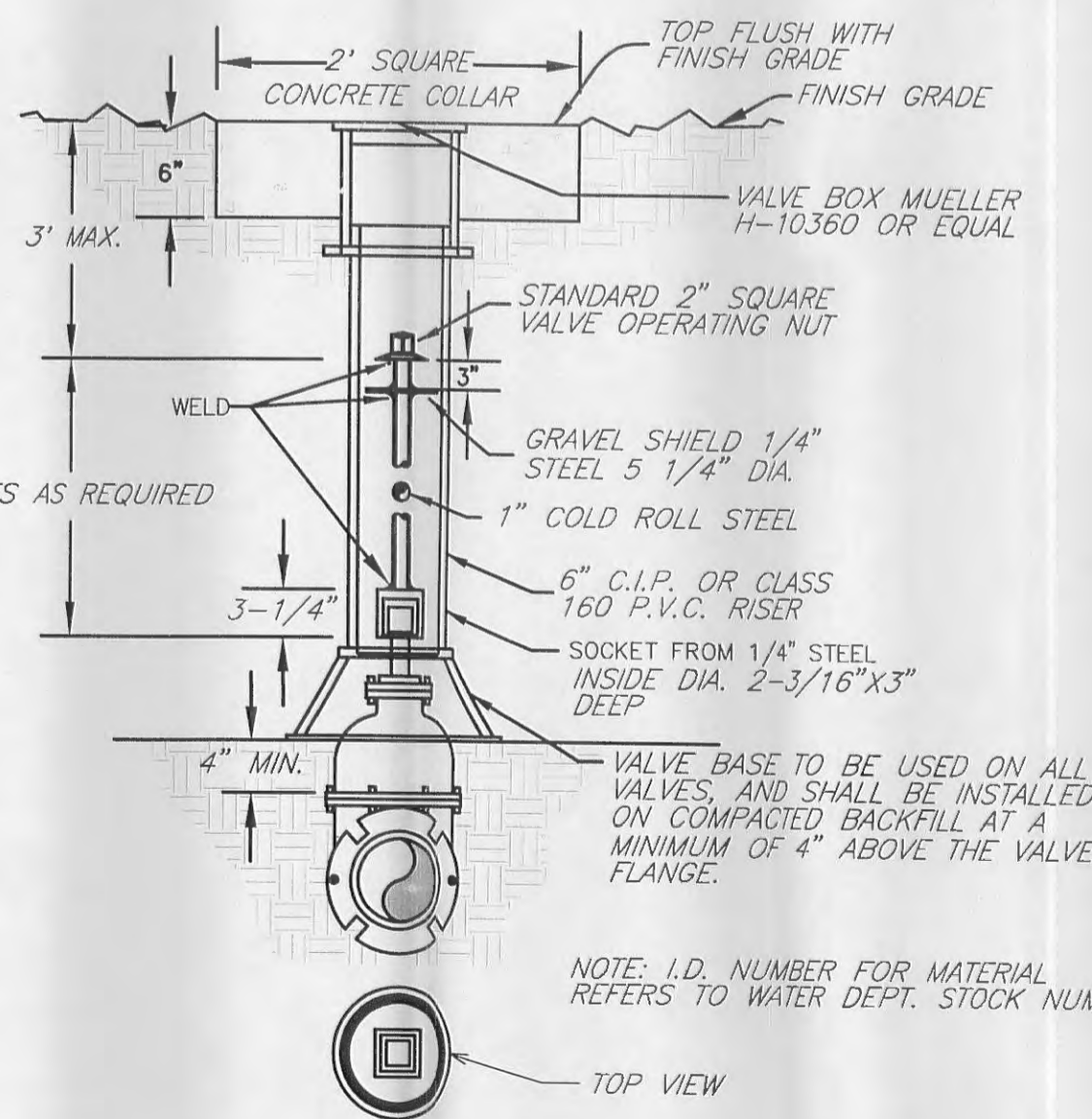
NOTES:
1. 2 1/4" FITTINGS EQUIVALENT TO 6" FITTINGS.
2. TAPPING SLEEVES TO HAVE BACKING BLOCKS SAME SIZE AS REQUIRED FOR TEES.
3. TL = TOTAL LENGTH OF FITTING MINUS CLEARANCE FOR BELLS.

WATER NOTES:

- Pipes shall be laid with class b bedding, unless otherwise noted.
- All water lines shall be laid at least 10 feet horizontally, from any sanitary sewer, storm sewer, or manhole. 18" vertical clearance from outside of pipe to outside of pipe shall be maintained wherever water lines must cross sanitary sewers or laterals. The water line shall be laid at such an elevation that the bottom of the water line is above the top of the drain or sewer unless otherwise noted. A full length of water pipe shall be centered over the sewer line to be crossed so that the joints will be equally distant from the sewer and as remote therefrom as possible. This vertical separation shall be maintained for that portion of the water line located within 10 feet horizontally, of any sewer or drain it crosses.
- Water lines, valves, sleeves, meters, and fittings shall meet all specifications and installation requirements of the City of O'Fallon.
- All water hydrants and valves shall be ductile iron and installed in accordance with the plans and details. All waterline pipe shall conform to A.W.W.A. specifications for C900 PVC or Ductile Iron. The ductile iron fittings shall conform to A.W.W.A. specification C-110. All rubber gasket joints for water ductile iron pressure pipe and fittings shall conform to A.W.W.A. specification C-111.
- The Cottleville Fire Protection District shall be notified 48 hours prior to construction for coordination and inspection.
- Proposed water line shall not conflict with the depth or horizontal location of existing or proposed sanitary or storm sewers, including house laterals.
- Contractor shall not exceed 3 degree deflection angle within joint.
- The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing water system. Contractor shall be responsible for cleaning and removal of all debris within pipe.
- 42" minimum cover shall be maintained over all water lines.
- All pipe deflection angles of 11.25 deg. or greater shall have thrust blocking or restrained joints.
- Minimum 18" clearance shall be maintained at all sanitary sewer crossings, and a minimum of 12" clearance shall be maintained at all storm sewer crossings and all other utility crossings (including telephone, water, gas, and cable).
- There shall be no obstruction, i.e., plantings, bushes, trees, signs, light standards, mailboxes, etc. within six (6) feet of any fire hydrant, and/or fire department connection to an automatic sprinkler system.
- Underground piping for private fire service mains shall be listed for fire protection service and shall comply with AWWA Standards.
- A permit will be required through the Cottleville Fire Protection District for the installation of the private fire service mains.

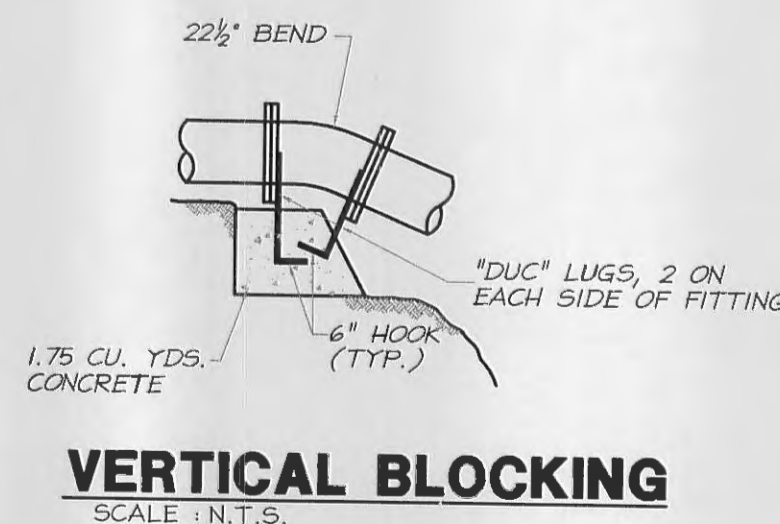
TOP VIEW CONCRETE COLLAR

SCALE: N.T.S.



WATER VALVE DETAIL

SCALE: N.T.S.



VERTICAL BLOCKING

SCALE: N.T.S.

INTERNAL WATER PRESSURE 6" THRU 12"=200 psi
BEARING PRESSURE OF SOIL=2000 psi

BACKING BLOCKS

SCALE: N.T.S.