

BENDS	"B"	"C"	"E"	"F"
8"-11 1/4"	8"	10"	12"	10"
8"-22 1/2"	8"	15"	12"	15"
8"-45"	8"	30"	12"	15"
8"-90"	8"	30"	12"	28"
12"-11 1/4"	8"	20"	12"	24"
12"-22 1/2"	8"	22"	12"	16"
12"-45"	8"	31"	12"	24"
12"-90"	8"	60"	12"	24"
16"-11 1/4"	12"	28"	24"	28"
16"-22 1/2"	12"	39"	24"	39"
16"-45"	12"	55"	24"	55"
16"-90"	12"	91"	24"	60"
20"-11 1/4"	14"	34"	28"	28"
20"-22 1/2"	14"	48"	24"	39"
20"-45"	14"	74"	24"	55"
20"-90"	14"	138"	24"	60"
24"-11 1/4"	14"	40"	28"	40"
24"-22 1/2"	14"	56"	28"	56"
24"-45"	14"	101"	28"	60"
24"-90"	14"	186"	28"	60"
30"-11 1/4"	14"	49"	34"	49"
30"-22 1/2"	14"	79"	34"	60"
30"-45"	14"	154"	34"	60"
30"-90"	14"	285"	34"	60"

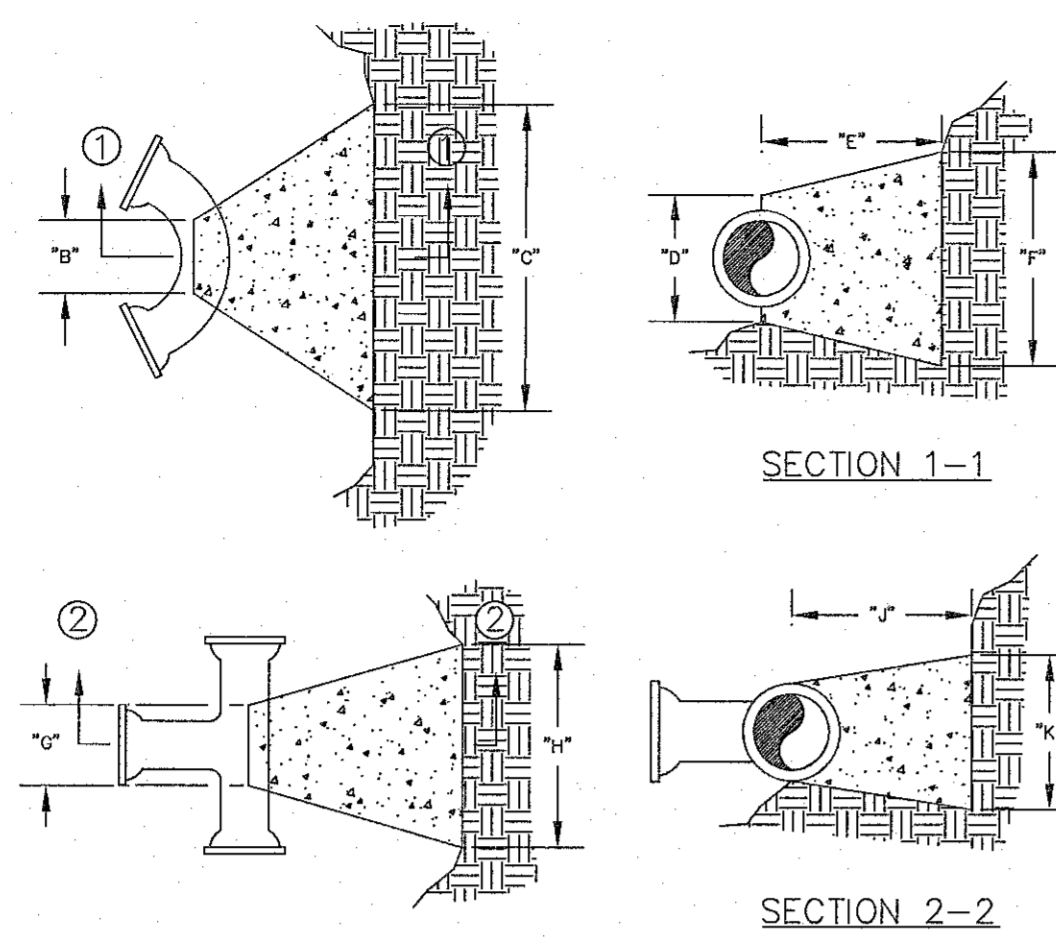
TEES	"A"	"B"	"C"	"D"
6"x6"x6"	12"	24"	24"	18"
6"x8"x6"	12"	24"	24"	18"
6"x8"x8"	12"	27"	24"	27"
8"x8"x8"	12"	24"	24"	27"
12"x12"x6"	12"	24"	24"	18"
12"x12"x8"	12"	27"	24"	27"
12"x12"x12"	12"	38"	24"	38"
24"x24"x18"	18"	55"	28"	55"

NOTES:
 1. 2" & 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.

INTERNAL WATER PRESSURE 6" through 12" = 200 psi
 INTERNAL WATER PRESSURE 16" through 30" = 210 psi
 BEARING PRESSURE OF SOIL = 2000 psi

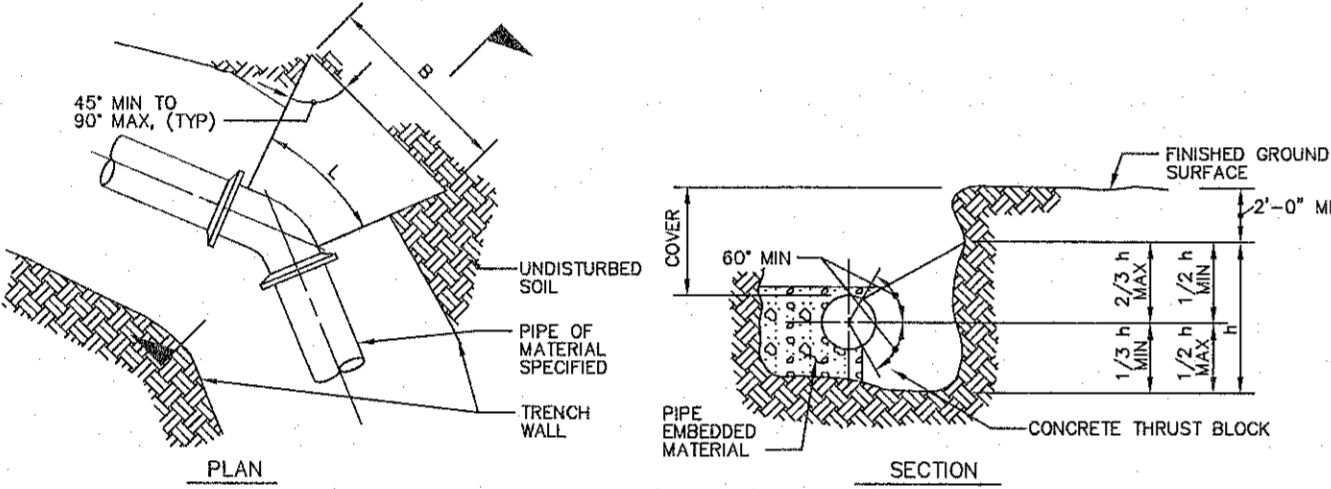
BACKING BLOCKS

NOT TO SCALE



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 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI

**BACKING BLOCK
 DETAILS AND LOCATIONS**



NOTES:
 1. AREA OF BLOCK, A = BxH. BLOCK AREAS ARE SHOWN ON GENERAL LAYOUT OR TABLE.
 2. B = h = 7/8", EXCEPT WHERE TOP OF BLOCK IS WITHIN 2 FEET FROM GROUND SURFACE, THEN B = A/h.
 3. MINIMUM BLOCK DIMENSION (B & h) SHALL BE AT LEAST 3/4" OF PIPE OD 1 FOOT FOR PIPE OD 12" OR LESS.
 4. THE BOTTOM OF THE BLOCK SHALL EXTEND AT LEAST TO THE BOTTOM OF THE TRENCH IN ALL CASES.
 5. L = FITTING LENGTH MINUS CLEARANCE FOR BELLS.
 6. DETAIL IS SHOWN FOR CAST IRON PIPE; DETAIL IS SIMILAR FOR OTHER TYPES OF PIPE.
 7. DIMENSIONS FOR THRUST BLOCKS FOR FIRE HYDRANT ASSEMBLY ARE SHOWN FIRE HYDRANT ASSEMBLY DETAIL.

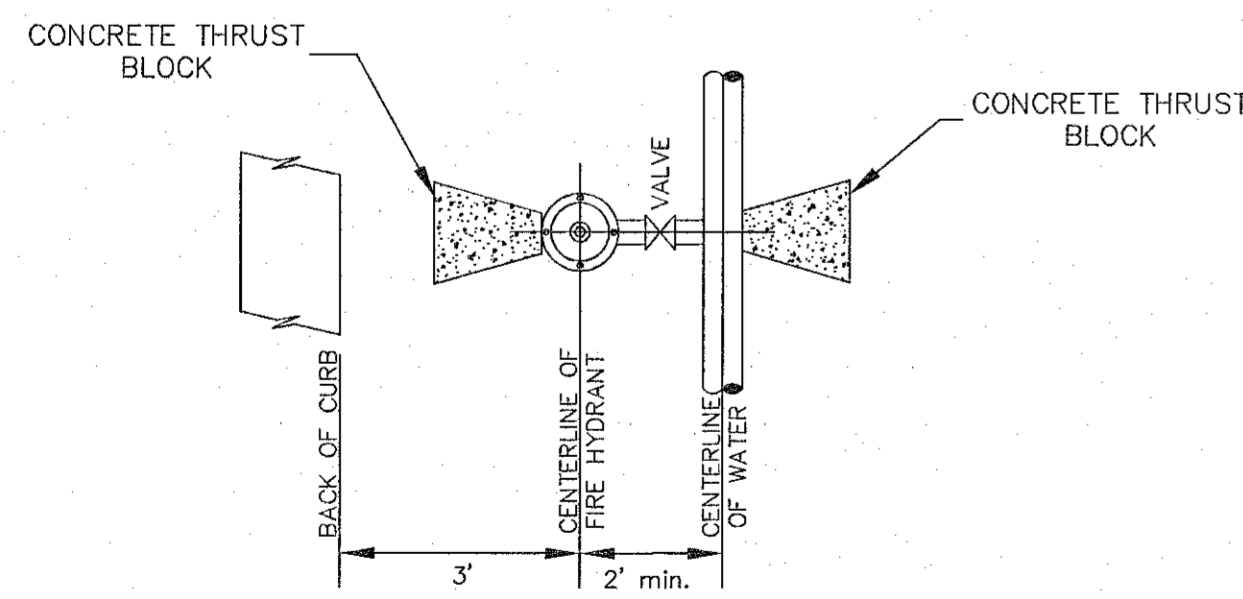
SIZE	BEND	THRUST AREA	B	H
16"	22 1/2"	4 SF	2'	2'
16"	45"	8 SF	2.8'	2.8'

CONCRETE THRUST BLOCKING

NOT TO SCALE

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**CONCRETE THRUST
 BLOCKING DETAILS**



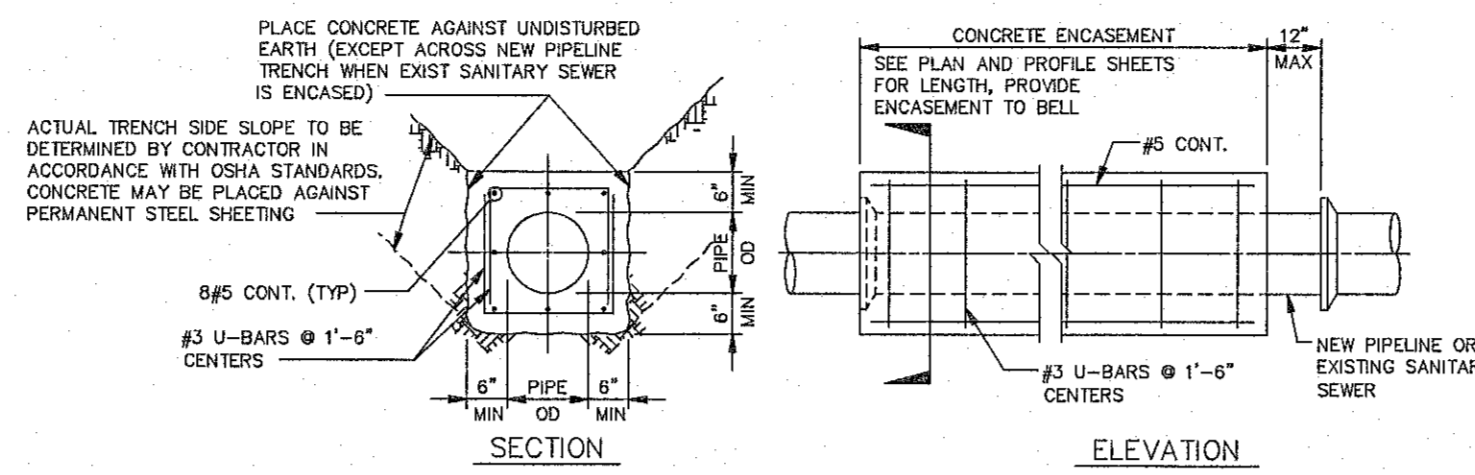
ALL FIRE HYDRANTS SHALL BE 3' OFF BACK OF CURB
 ALL WATER MAINS SHALL BE A MIN. OF 5' OFF BACK OF CURB

**TYPICAL WATER MAIN AND FIRE
 HYDRANT LOCATIONS**

NOT TO SCALE

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**WATER MAIN
 FIRE HYDRANT DETAIL**



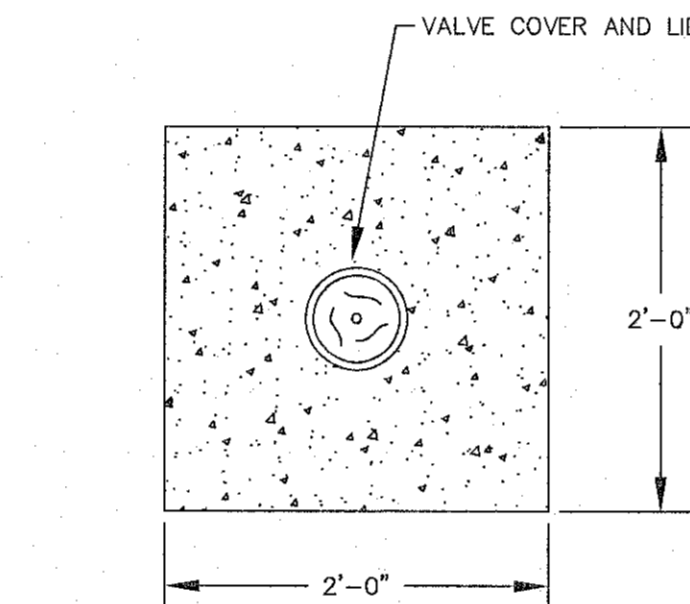
NOTES:
 1. AT LOCATIONS WHERE THE TRANSMISSION MAIN CROSSES AN EXISTING SANITARY SEWER, SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 2. WHEN THE PIPELINE IS PROTECTED WITH POLYETHYLENE TUBE ENCASEMENT, THE CONCRETE ENCASEMENT IS TO COVER THE POLYETHYLENE ENCASEMENT.

CONCRETE ENCASEMENT

NO SCALE

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**CONCRETE ENCASEMENT
 DETAILS**



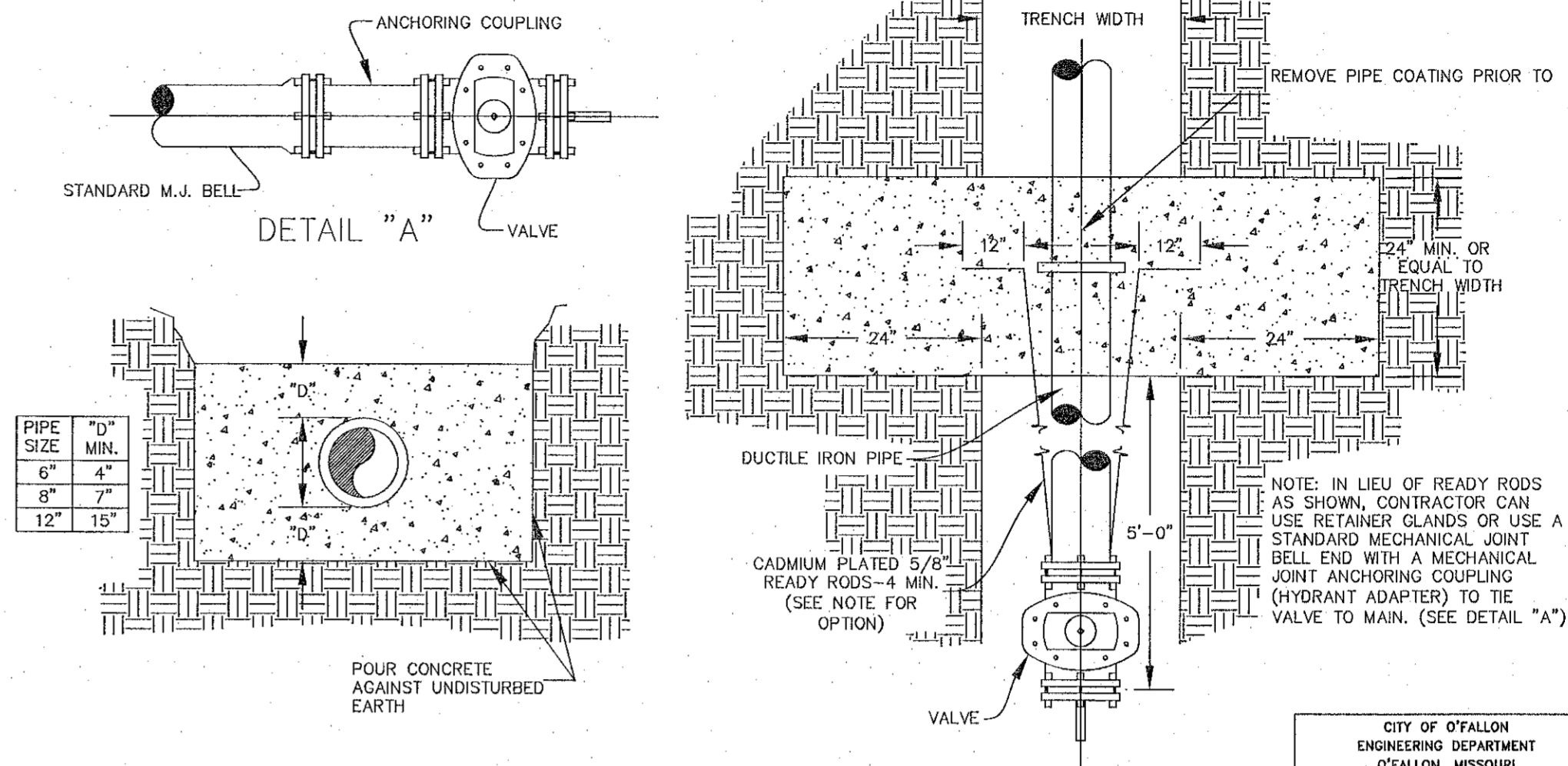
**TOP VIEW
 CONCRETE COLLAR**

NOT TO SCALE

NOTE: 1. Concrete collar joint pattern is required in paved areas such as roadways, driveways, sidewalks or other areas of paved surfaces.
 2. Concrete collars are optional in other non-paved areas.

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**CONCRETE
 COLLAR DETAIL**



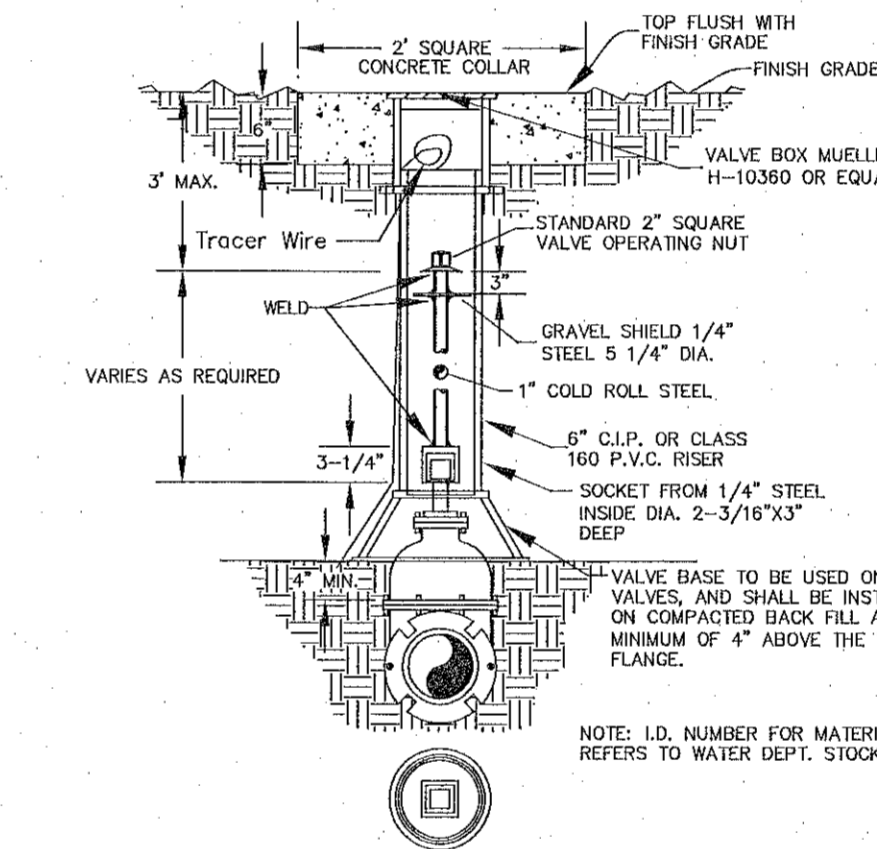
STRADDLE BLOCK DETAIL

NOT TO SCALE

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 O'FALLON, MISSOURI

**STRADDLE BLOCK
 DETAILS**

Concrete collar will be in accordance with the Concrete collar detail.

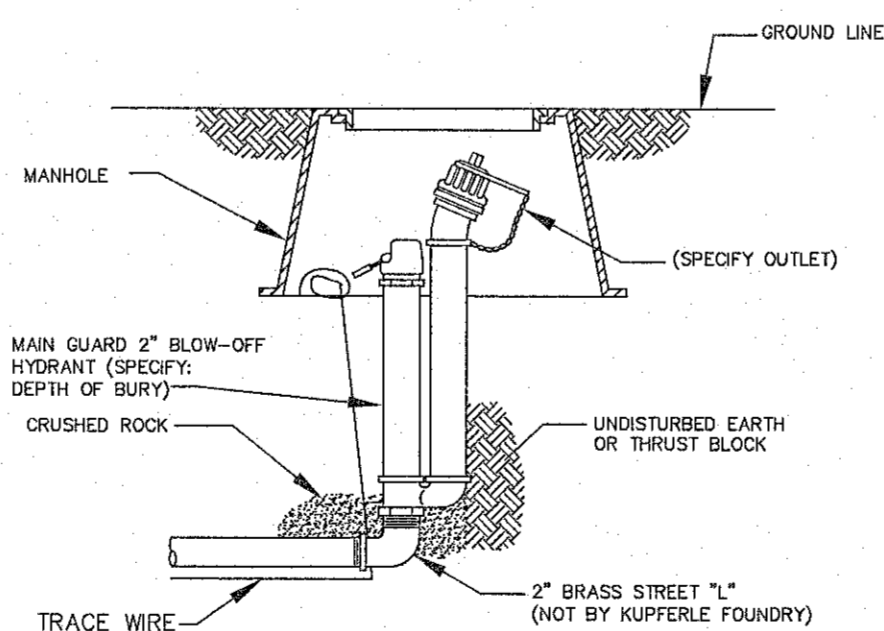


WATER VALVE DETAIL

NOT TO SCALE

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**WATER
 VALVE DETAIL**



BLOW-OFF HYDRANT

NOT TO SCALE

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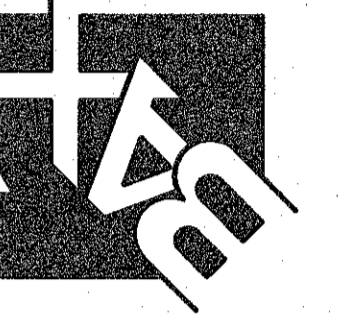
**BLOW-OFF
 HYDRANT DETAIL**

**ENGINEERS SEAL DOES NOT
 APPLY TO CITY OF O'FALLON
 DETAILS ON THIS SHEET.**

PROJECT TITLE:

**KEYSTONE
 RIDGE**

ENGINEERING
 PLANNING
 SURVEYING
 221 Point. View Blvd.
 St. Charles, MO 63501
 636-928-5656
 FAX 636-928-1718



DISCLAIMER OF RESPONSIBILITY
 I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

REVISIONS

DATE	CITY COMMENTS
05/01/17	CITY COMMENTS
07/20/17	CITY COMMENTS
08/07/17	CITY COMMENTS
08/21/17	CITY COMMENTS
08/31/17	CITY COMMENTS
10/02/17	CITY COMMENTS

Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

REFERENCE DETAILS

P+Z No. #32-16

City No. #

Page No.

28 of 33