

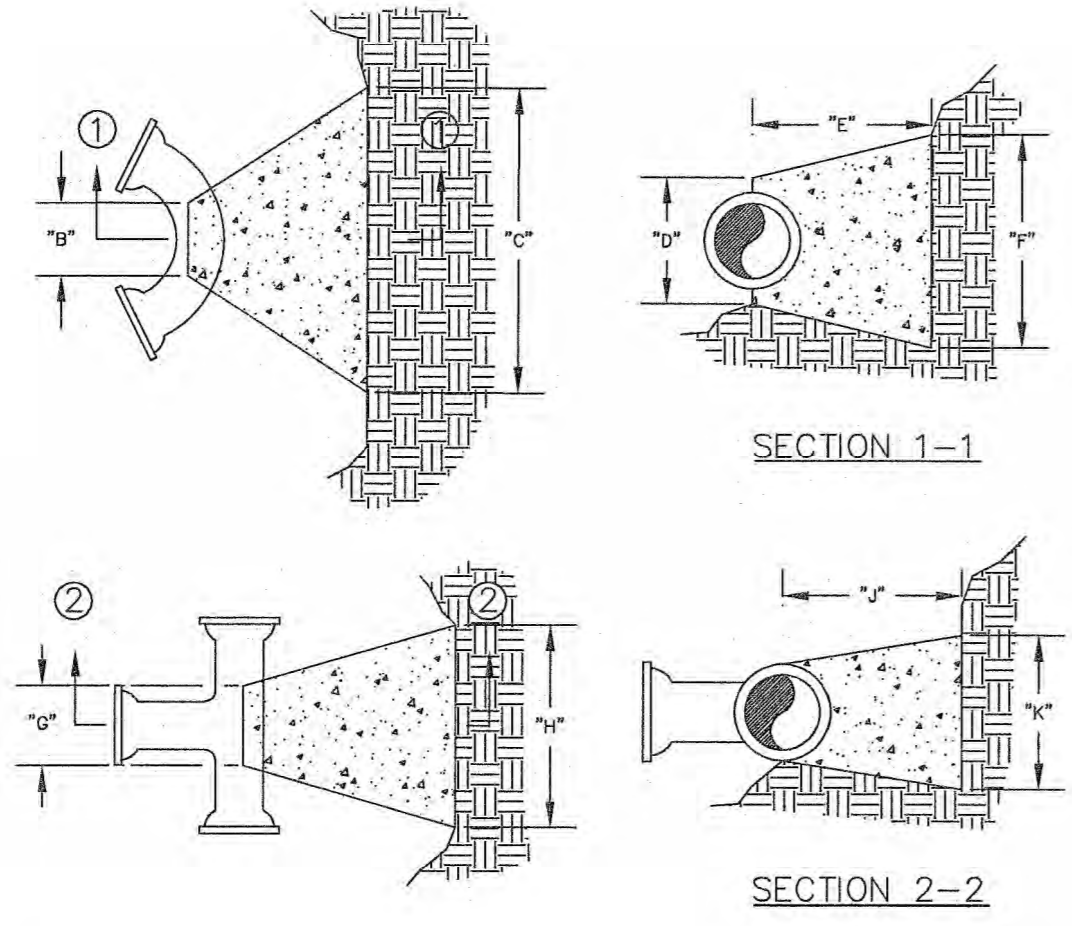
CITY OF O'FALLON  
ENGINEERING DEPARTMENT  
O'FALLON, MISSOURI

**TRENCH  
DETAIL**

BENDS	"b"	"c"	"d"	"e"	"f"
6"-11 1/4"	8"	15"	12"	24"	10"
6"-22 1/2"	8"	15"	12"	24"	13"
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"	22"	12"	24"	16"
8"-45"	8"	31"	12"	24"	24"
8"-90"	8"	38"	12"	24"	38"
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"	80"
20"-11 1/4"	TL	34"	24"	28"	28"
20"-22 1/2"	TL	48"	24"	28"	39"
20"-45"	TL	74"	24"	28"	55"
20"-90"	TL	136"	24"	28"	80"
24"-11 1/4"	TL	40"	28"	28"	40"
24"-22 1/2"	TL	56"	28"	28"	56"
24"-45"	TL	101"	28"	28"	80"
24"-90"	TL	186"	28"	28"	80"
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	"a"	"b"	"c"	"d"	"e"	"f"
6"x6"x6"	12"	24"	24"	18"		
8"x8"x8"	12"	24"	24"	18"		
8"x8"x8"	12"	24"	24"	18"		
12"x12"x12"	12"	24"	24"	18"		
12"x12"x12"	12"	24"	24"	18"		
12"x12"x12"	12"	24"	24"	18"		
24"x24"x18"	18"	36"	24"	18"		
24"x24"x18"	18"	36"	24"	18"		

NOTES:  
1. 2" x 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.

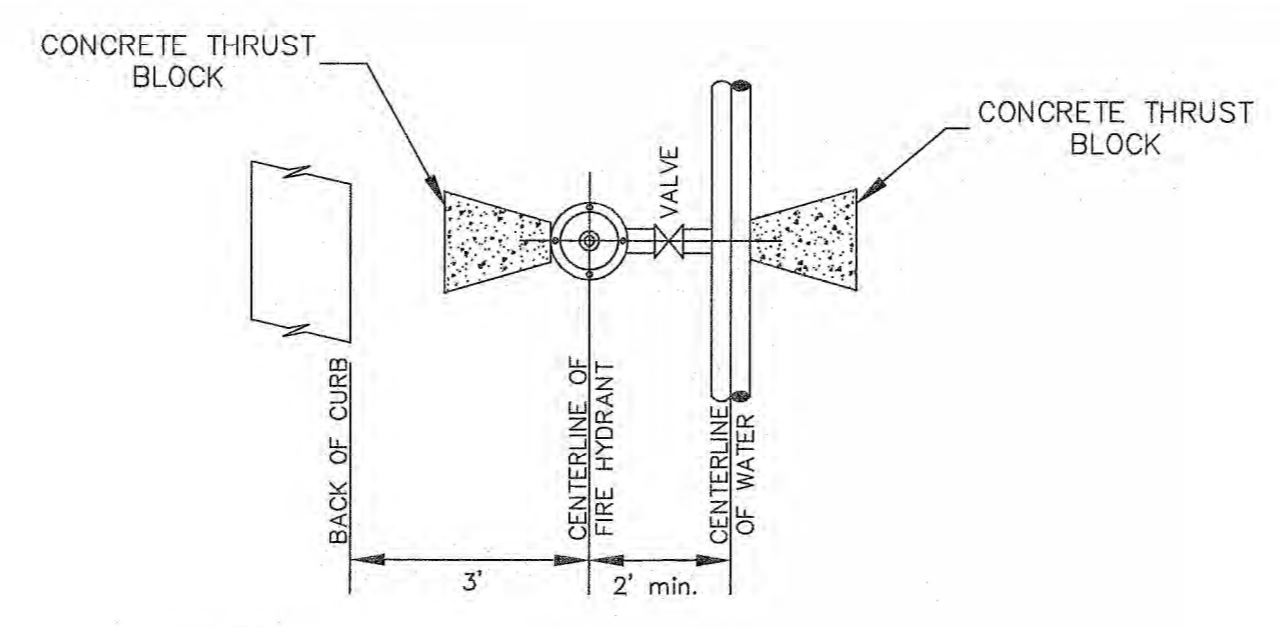


INTERNAL WATER PRESSURE 6" through 12"=200 psi  
INTERNAL WATER PRESSURE 16" through 30"=210 psi  
BEARING PRESSURE OF SOIL=2000 psi

**BACKING BLOCKS**  
NOT TO SCALE

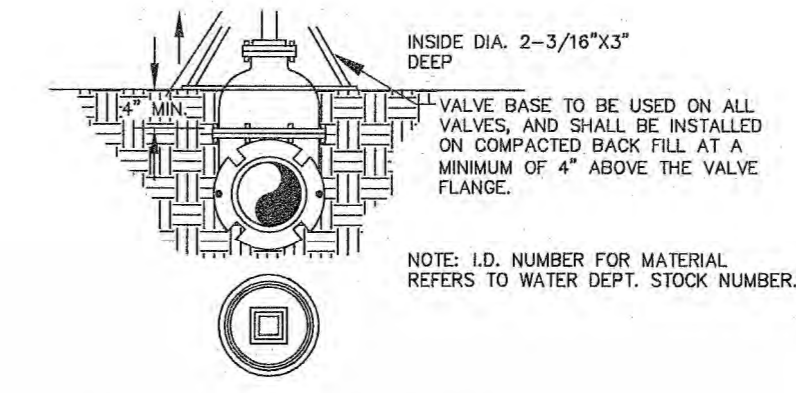
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**BACKING BLOCK  
DETAILS AND LOCATIONS**



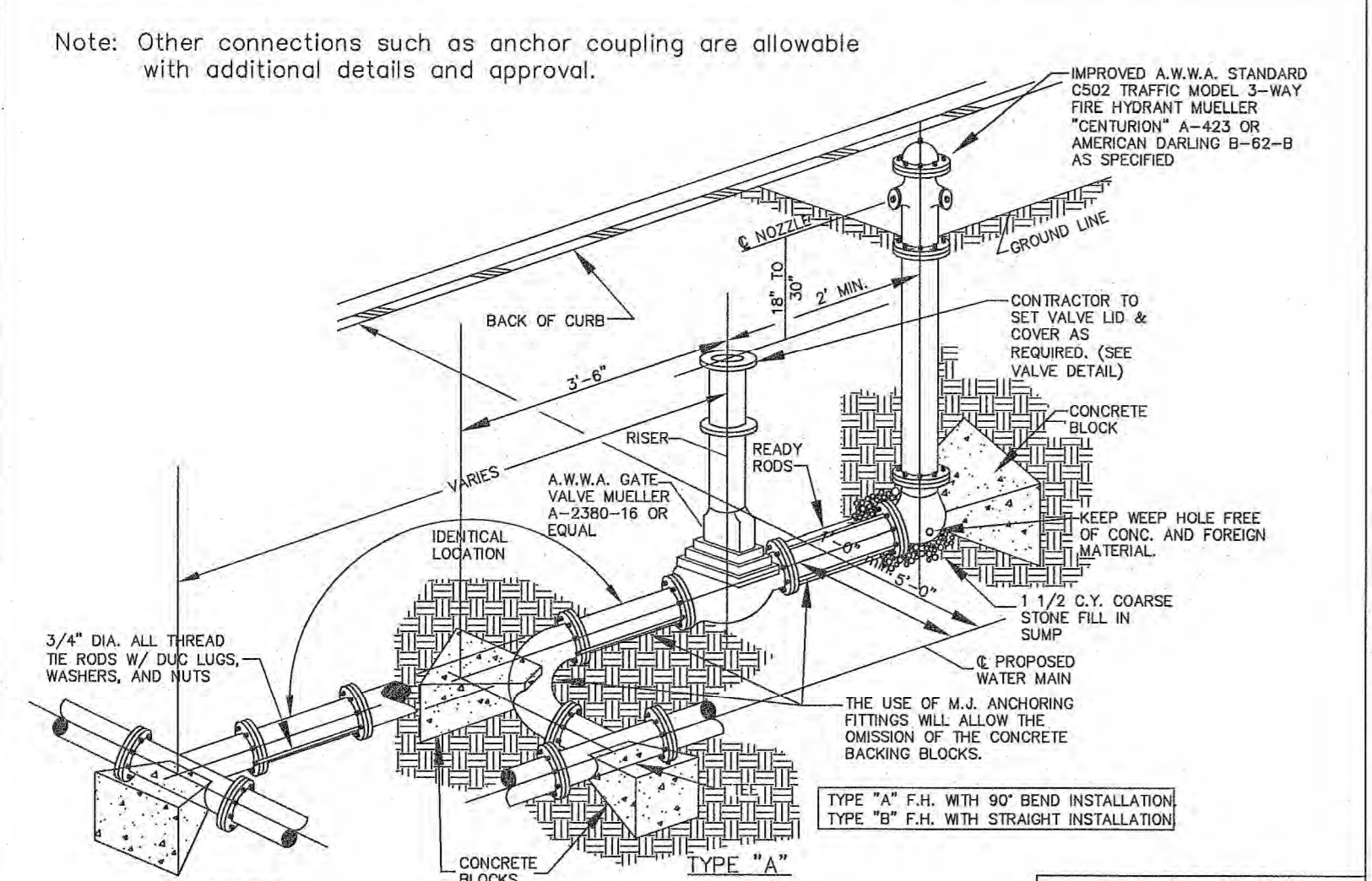
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**WATER MAIN  
FIRE HYDRANT DETAIL**



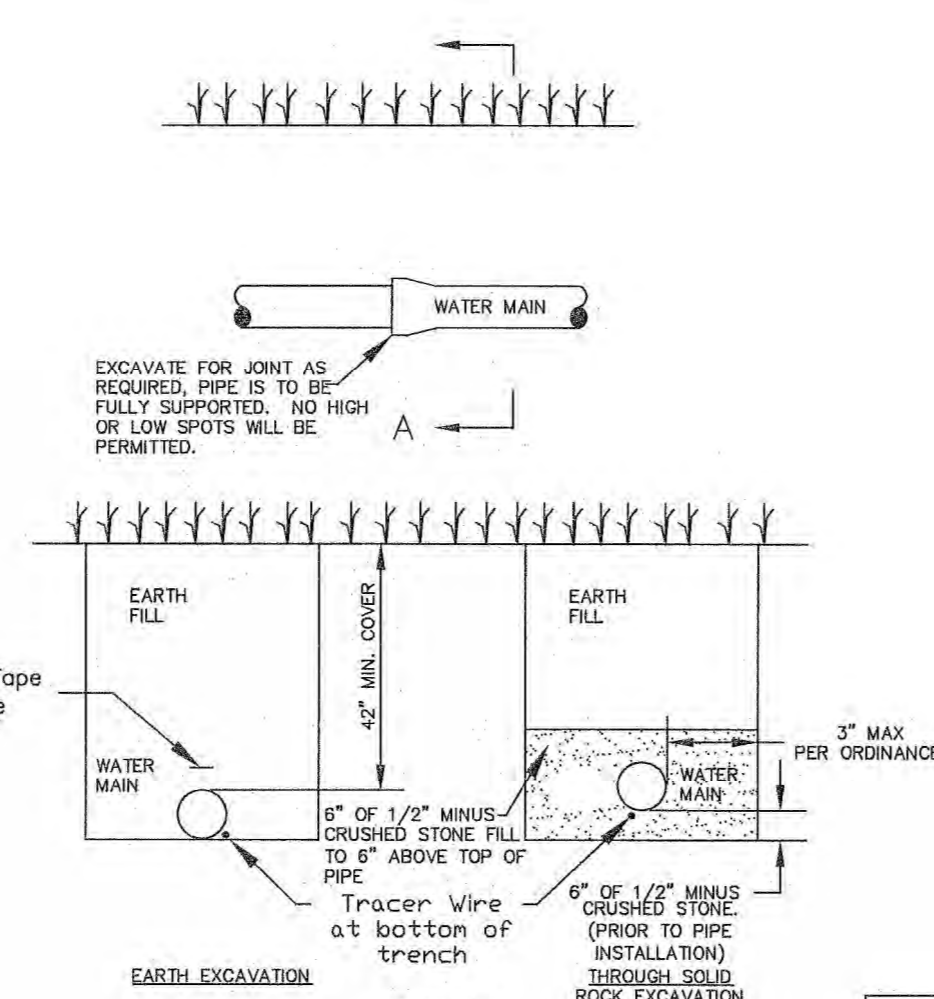
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**WATER  
VALVE DETAIL**



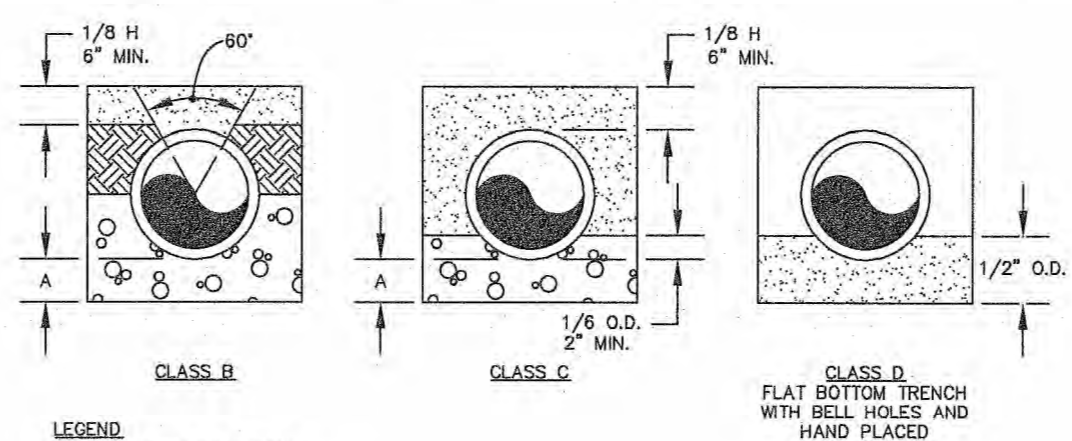
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**FIRE HYDRANT  
DETAILS**



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**WATER MAIN  
INSTALLATION DETAIL**



LEGEND:  
L.D. = NOMINAL PIPE SIZE  
O.D. = OUTSIDE DIAMETER OF PIPE  
H = COVER ABOVE TOP OF PIPE  
A = EMBEDDED BELOW PIPE (SEE TABLE)

TAMPED BACK FILL  
COMPACTED BACK FILL  
GRANULAR BEDDING

TABLE OF EMBEDDED DEPTHS BELOW PIPE

L.D.	A MIN. SOIL	A MIN. ROCK
27" & SMALLER	3"	6"

GRANULAR BEDDING SHALL BE CRUSHED ROCK OR PEA GRAVEL WITH NOT LESS THAN 85% PASSING 1/2" (95% PASSING 3/4" FOR 30" AND LARGER PIPE) AND NOT LESS THAN 80% RETAINED ON A #4. TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLUING WITH A SHOVEL OR VIBRATING.

COMPACTED BACK FILL 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.M. D698, OR GRADED AGGREGATE. GRANULAR BACK FILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF COMPACTED BACK FILL.

TAMPED BACK FILL SHALL BE FINELY DIVIDED JOB EXCAVATED MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, HAND PLACED IN UNIFORM LAYERS NOT MORE THAN 6" THICK AND TAMPED AROUND CONDUIT PIPE. GRANULAR BACK FILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF TAMPED BACK FILL.

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

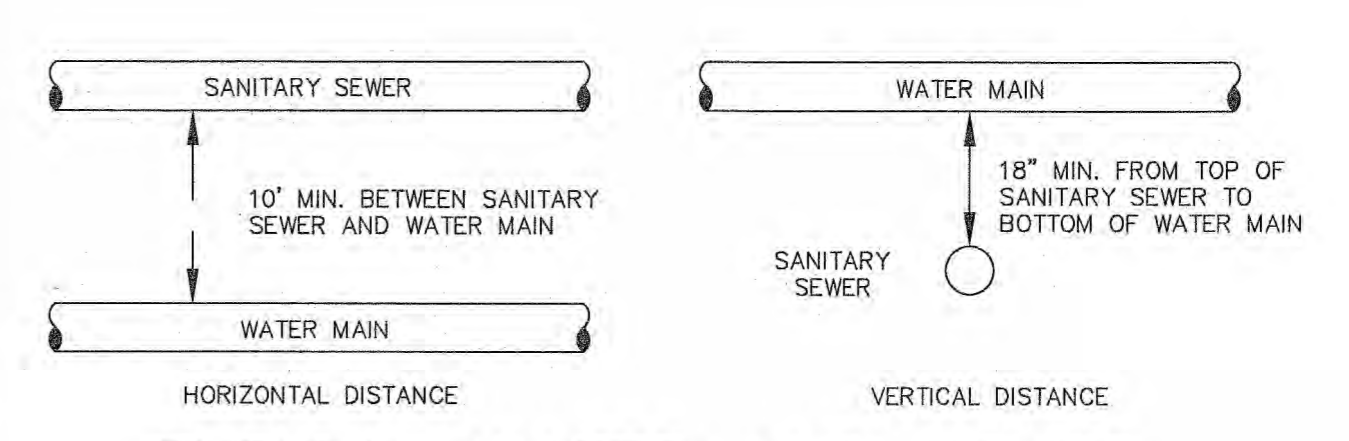
EMBEDDED THE TYPE OF EMBEDDED TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND SPECIFICATIONS.

TRACER WIRE REQUIRED ON ALL WATER MAINS

**WATER MAIN EMBEDDED**  
NOT TO SCALE

CITY OF O'FALLON  
ENGINEERING DEPARTMENT  
O'FALLON, MISSOURI

**WATER MAIN  
EMBEDDED**



**TYPICAL WATER AND SEWER SEPARATION**  
NOT TO SCALE

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O'FALLON, MISSOURI

**WATER AND SEWER  
SEPARATION DETAIL**

Ductile Iron Pipe installation shall follow the Ductile Iron Research Association (DIPRA) guide line.  
The Installation of PVC Pipe shall follow the Uni-Bell PVC Pipe Association Handbook of PVC Design and Construction.

Developer / Owner:  
MJS&M, L.L.C.  
2209 DROSTE ROAD  
ST. CHARLES, MO 63301  
636-949-0680

P-Z No. #1407.06.01  
Approved April 8, 2017  
City No. #

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PROJECT TITLE:  
**GRANT WAREHOUSE & STORAGE PHASE ONE**

ENGINEERING PLANNING SURVEYING  
221 Point West Blvd.  
St. Charles, MO 63301  
636-938-5562  
FAX 938-1718

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

NO.	DATE	REVISION
10-13-17		CITY COMMENTS
11-21-17		CITY COMMENTS
12-12-17		ADD STORAGE LOT
01-17-18		COMMENTS
02-09-18		CITY COMMENTS
03-12-18		CITY COMMENTS