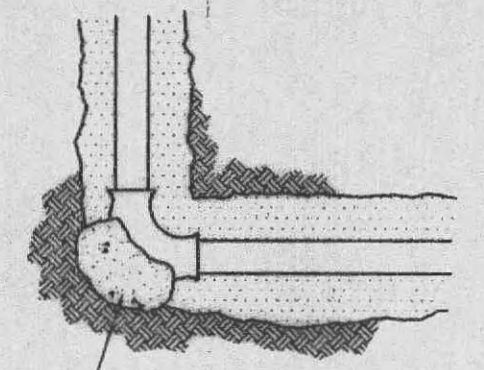
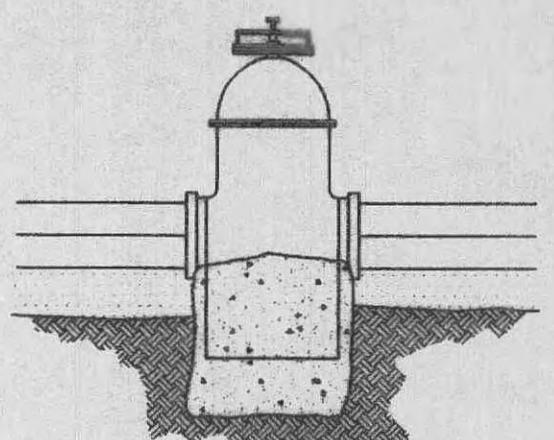


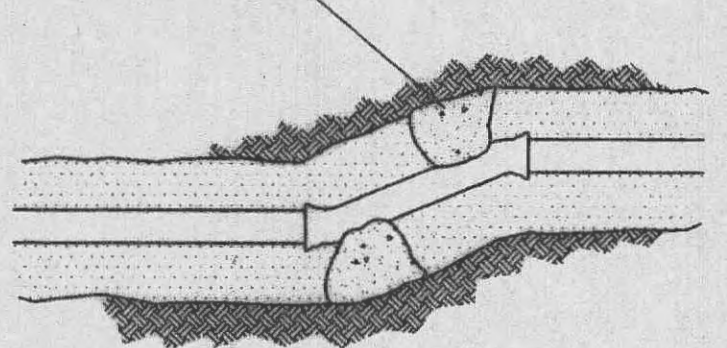
TEE



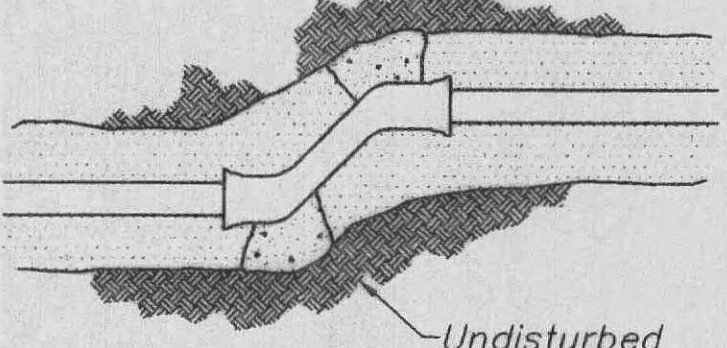
90° Bend



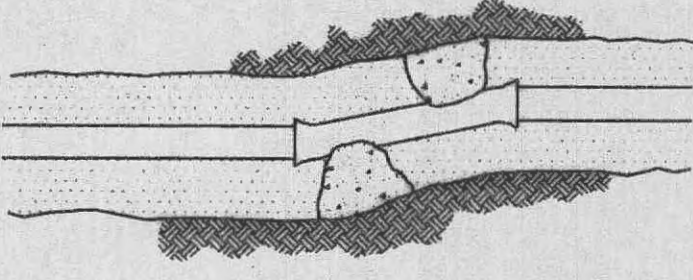
VALVE



22 1/2° Bend



45° Bend



11 1/4° Bend

THRUST RESTRAINT:
REACTION BLOCKING SHALL BE DESIGNED FOR A MINIMUM INTERNAL PIPE PRESSURE OF 300 POUNDS PER SQUARE INCH. THE BLOCKING SHALL BE KEPT CLEAR OF THE ENTIRE BELL CONFIGURATION OF ANY ADJACENT JOINT AND SHALL BE AT LEAST AS LARGE AS IS NECESSARY TO RESTRAIN THE FITTINGS FROM MOVEMENT.

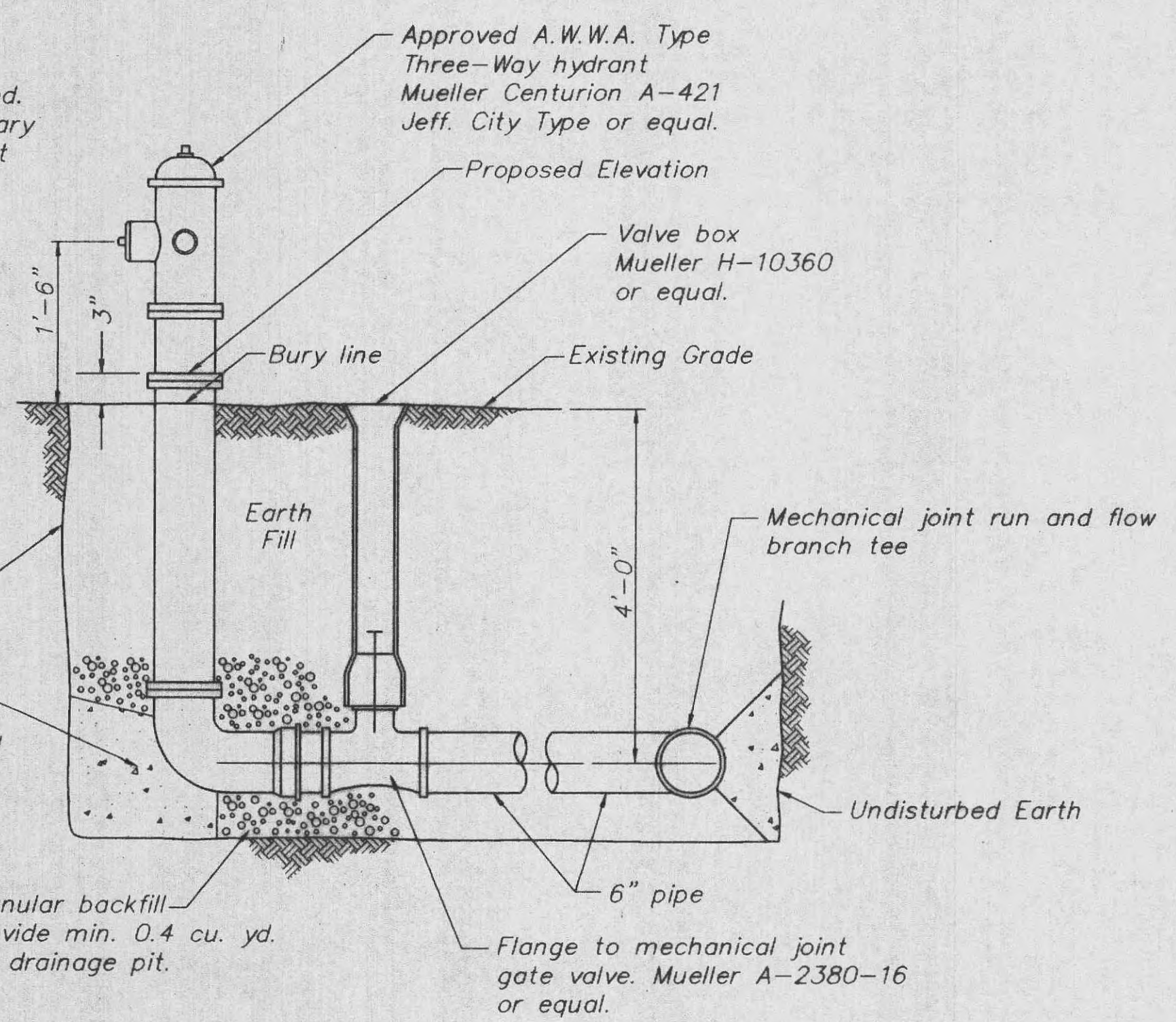
MINIMUM BEARING AREA IN SQUARE FEET

PIPE SIZE	BENDS					TEE	DEAD END
	11 1/4°	22 1/2°	45°	90°	TEE		
6"	1	2	3.5	6.5	4.5	4.5	4.5
8"	1.5	3.25	6.5	12	8.5	8.5	8.5
10"	2.5	5	9.5	17.55	12.5	12.5	12.5
12"	3.62	7.2	14.13	26	18	18	18

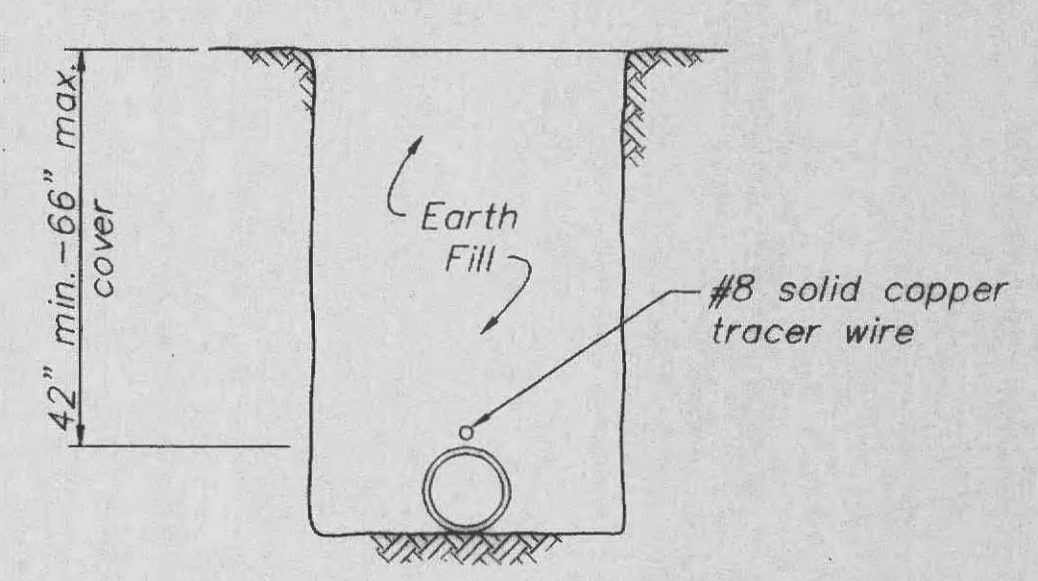
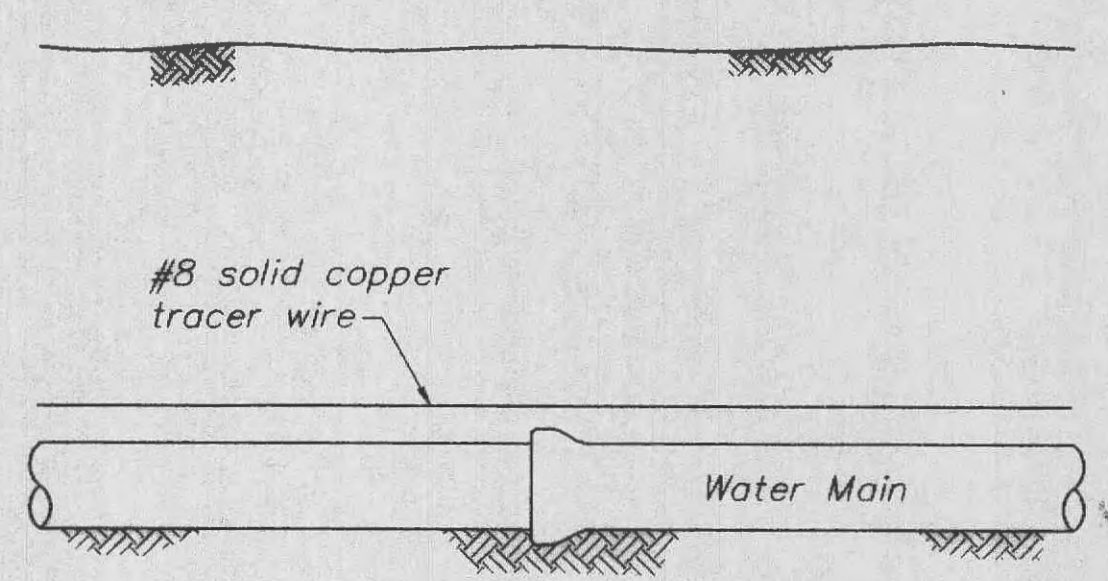
BEARING AREAS ARE BASED ON SOIL HAVING AN ALLOWABLE SAFE LATERAL BEARING OF 1 TON PER SQUARE FOOT. AREA MUST BE REVISED FOR SOILS WITH A LOWER OR HIGHER BEARING CAPACITY.

THRUST BLOCK DETAIL
Not to Scale

Note:
For 6" water main and larger 6" 3-way hydrants are to be used. Contractor must take all necessary precautions to insure that hydrant drain (weep hole) remains open.



FIRE HYDRANT INSTALLTION DETAIL
Not to Scale



Excavate for joint as required. Pipe is to be fully supported. No high or low spots will be permitted.

EARTH EXCAVATION

SECTION A-A

TYPICAL WATER MAIN INSTALLATION
Not to Scale

GENERAL NOTES:

- PIPE AND FITTINGS: General - The minimum pipe size to be permitted within the distribution system is 6" and shall have a 42" minimum depth cover. All water main piping shall be new integral bell and spigot and conform with the following:
- Polyvinyl Chloride Pipe - 6 to 12 Inch:**
 - PVC: PVC pipe shall meet the requirements of ASTM D-1784 and have a minimum pressure rating of 200 with a SDR of 21. Materials from which the pipe is manufactured shall have been tested and approved for conveying potable water by the National Sanitation Foundation and the Underwriter's Laboratories, and shall be marked with the U/L logo. Where fittings are required, ductile iron fittings shall be used.
 - Ductile Iron Fittings: The ductile complete with all accessories conforming to AWWA C110, 250 psi pressure rating. The joints shall be of the standard mechanical joint type conforming to AWWA C111. All fittings shall be cement mortar lined conforming to AWWA C-104 and shall be coated inside and out with a bituminous coating. Fittings shall have distinctly cast upon them the pressure rating and letters "DI" or "DUCTILE".
 - Wall Thickness: Pipe wall thickness shall be as required to provide a minimum wall thickness with a DR of 21 for a pressure class of 200.
 - Joints: Joints for PVC pipe shall be slip-on type with integral bell and spigot pipe, meeting the requirements of ASTM D-3139, except flexible elastomeric gaskets meeting the requirements of ASTM F 477, shall be synthetic rubber. Natural rubber will not be accepted.

NOTES

DIVISION 2	02200 EARTHWORK
02282 TERRACE CONTROL	02310 ASPHALTIC CONCRETE PAVING
02520 PORTLAND CEMENT CONCRETE PAVING	02521 IMPRINTED CONCRETE PAVING
02581 CHAIN LINK FENCES AND GATE	02910 NATURAL TURF PLAYING FIELD SYSTEM
DIVISION 3	03300 CAST IN PLACE CONCRETE
03350 CONCRETE TOPPING	03450 ARCHITECTURAL PRECAST CONCRETE
DIVISION 4	04200A UNIT MASONRY
04200B UNIT MASONRY	04200C UNIT MASONRY
DIVISION 5	05120 STRUCTURAL STEEL
05210 STEEL JOIST	05310 METAL BEACING
05400 COLD-FORMED METAL FRAMING	05500 METAL FABRICATION
05521 PIPE RAILINGS	05530 GRATINGS
05700 ORNAMENTAL METALWORK	05720 ORNAMENTAL HANDRAILS AND RAILINGS
05810 EXPANSION JOINT COVER ASSEMBLIES	
DIVISION 6	06105 MISC. CARPENTRY
06400 ARCHITECTURAL WOODWORK	
DIVISION 7	07180 BITUMINOUS DAMPROOFING
07180 WATER REPELLENTS	07210 BUILDING INSULATION
07531 EPDM SINGLE PLY MEMBRANE ROOFING	07533 THERMOPLASTIC (PVC) SINGLE PLY MEMBRANE ROOFING
07620 SHEET METAL FLASHING AND TRIM	07710 MANUFACTURED ROOF SPECIALTIES
07720 ROOF ACCESSORIES	07901 JOINT SEALANTS
DIVISION 8	08110 STEEL DOORS AND FRAMES
08111 FLUSH WOOD DOORS	08305 ACCESS DOORS
08330 OVERHEAD COILING DOORS	08333 OVERHEAD COILING SHUTTERS
08410 ALUMINUM ENTRANCES AND STOREFRONT	08520 ALUMINUM WINDOWS
08550 WOOD WINDOWS	0865 SECURITY WINDOWS
08710 FINISH HARDWARE	08800 GLAZING
08830 MIRRORED GLASS	
DIVISION 9	09255 GYPSUM BOARD ASSEMBLIES
09310 CERAMIC TILE	09510 ACoustICAL CEILING
09635 RESILIENT WALL BASE AND ACCESSORIES	09680 CARPET
09780 FLOOR SEALERS	09800 SPECIAL COATINGS
09810 FERROUS METAL SPECIAL COATINGS	09815 HAZARD STRIPING
09900 PAINTING	
DIVISION 10	10155 TOILET COMPARTMENTS
10350 FLAGPOLES	10522 FIRE EXTINGUISHERS, CABINETS & ACCESSORIES
10800 TOILET ACCESSORIES	
DIVISION 11	11452 RESIDENTIAL EQUIPMENT
11480 STADIUM GAME EQUIPMENT	11481 FIELDWALL PADS
11485 SCOREBOARDS	11488 VIDEO BOARDS
DIVISION 12	12610 STADIUM CHAIRS
12620 BENCH SEATING	
DIVISION 13	NONE INCLUDED
DIVISION 14	14420 WHEELCHAIR LIFTS



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Interior, Facility Programming
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MECHANICAL/ELECTRICAL/PLUMBING
Buckman & Associates
6420 Chest Street - Suite 214
Raytown, Missouri 64133

CIVIL ENGINEER
George Butler Associates, Inc.
235 South Main Street - Suite 200
O'Fallon, Missouri 63366-2922

T. R. HUGHES BALLPARK
AT THE OZZIE SMITH SPORTS COMPLEX
for the River City Rascals
OF FALLON, MO.

BID PACKAGE #1

PACKAGE REVISIONS	NO.	DATE	DESCRIPTION

PROJECT NO.	ISSUED BY:
97-0761-00	HOK SPORT
DRAWN BY:	REVIEWED BY:
RJR	JJC
ISSUED:	07-07-98
SHEET TITLE	DETAILS
CATEGORY - SUB-CATEGORY - SHEET	C1.05