

CITY OF WICHITA

WATER LINE RELOCATION

(GEORGE WASHINGTON BOULEVARD)

INDEX TO DRAWINGS

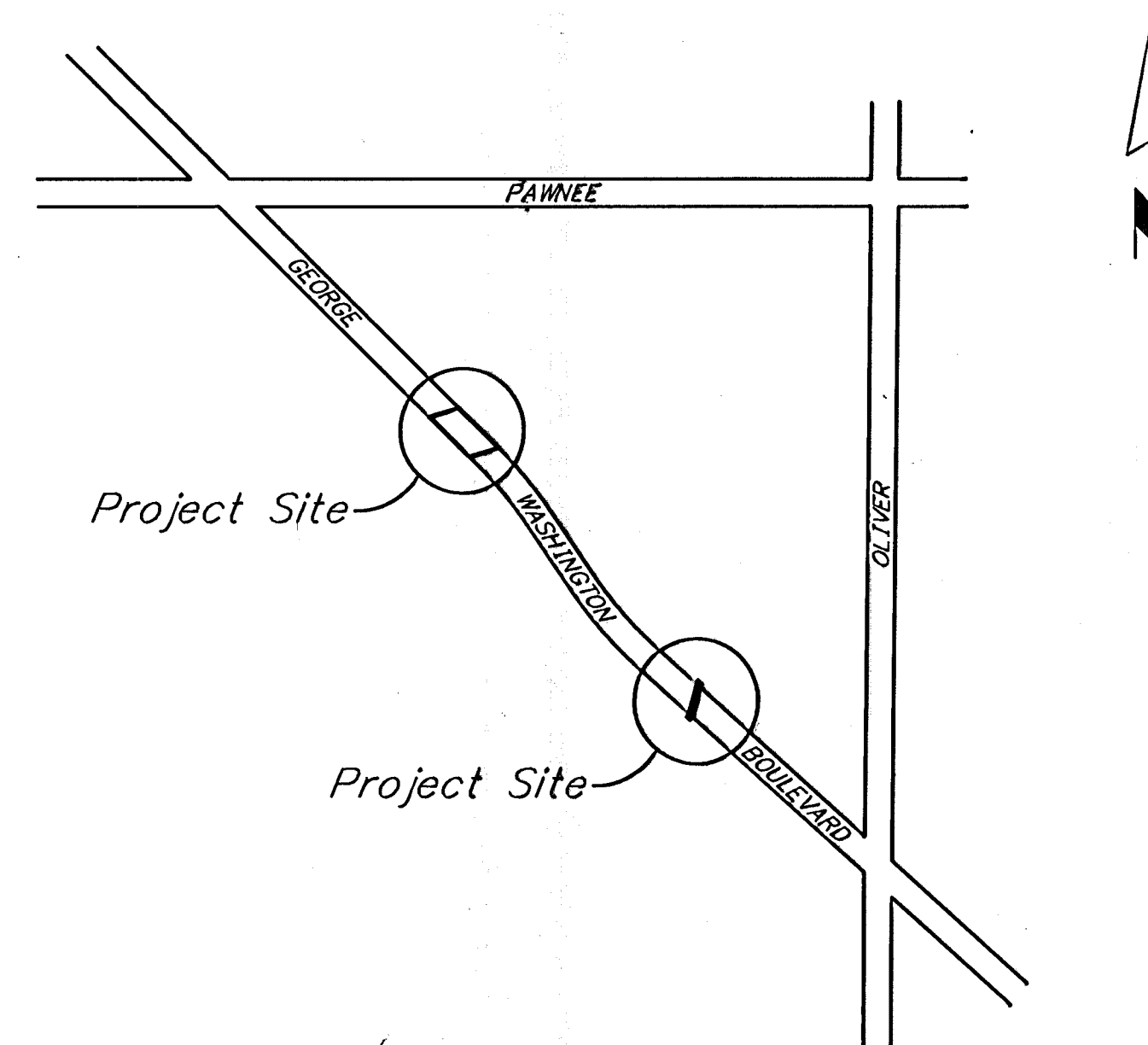
1. TITLE SHEET
2. PLAN & PROFILE AT BRIDGE
3. PLAN & PROFILE AT BOX CULVERT
4. STANDARD WATER ASSEMBLY DETAILS
5. GENERAL NOTES

MICHAEL E. LINDEBAK, CITY ENGINEER

MARCH, 1992

PROJECT NUMBER 448-88593

INDEX CODE 631721



Prepared By

Booker ASSOCIATES INC.
OF KANSAS
Wichita Kansas



B = Proposed George Washington Blvd. Paving Project
 BM City Std. Disc. Sta 3+72.3, 55.4' Rt. Elev. 130.99 (USGS)
 (City Datm = USGS - 1187.9)
 BM "t" Cut on center of Hubguard at Sta 11+62.3, 32.4' Rt.
 Elev. 1303.89 (USGS)

Note: Valve numbers 2367, 16756, and 24991, shall be closed to isolate the existing 16" water line to facilitate water line construction around the box culvert. Upon completion of the new 16" water line and the new 16" valve, the line shall be flushed, tested, and placed in service. Valve number 16756 shall be opened to provide feed to the area.

Scale: 1" = 20' Hor.
 1" = 5' Vert.

NOTE: Pipe joints are to be restrained using Megalug Series 1116 Joint Restraints for Ductile Iron Pipe. Fittings are to be restrained using Megalug Series 1116 Joint Restraints and concrete thrust blocks located below the pipe. Fittings shall be "strapped" down using steel rebar of adequate size and strength inserted into the concrete blocks.

NOTE: Contractor shall use a 5' bury fire hydrant and extensions to bring the hydrant to grade.

NOTE: At W.L. Sta 0+00 and W.L. Sta 1+27.07, the Contractor shall cut the existing 16" water line and install 16" CIMPJ 45° Bends. Contractor shall verify pipe diameter prior to ordering material. Cutting existing water line and removal of existing pipe to facilitate water line construction shall be considered subsidiary to the project and not paid for separately. (Place bell at Sta 12+25.25, 67' Rt.)

NOTE: At Sta 10+80, the Contractor shall excavate to verify water line location and pipe diameter prior to ordering material. Existing water line shall be cut and pipe removed to facilitate water valve and fire hydrant installation. Top of pipe elevation at the proposed fire hydrant location is approximately 1296.50. A pipe bell was located at approximately Sta 10+86.75, 92.8' Rt.

B Sta 10+80, 43' Rt.
 1- Fire Hydrant Assembly
 L = 4
 Bury Line Elev. 1305.6
 Valve Box Elev. 1305.6
 1- 16" Valve Assembly (SE)
 CIMPJ Butterfly Valve
 Valve Box Elev. 1305.6
 2'- 16" DICT SJ Pipe
 2'- 16" CIMPJ Sleeves (Long)
 Au 6" Spacer

B Sta 11+97, 98' Rt. =
 W.L. Sta 0+00
 1- 16" CIMPJ 45° Bend
 Rotate 15° 51' 56" Down

B Sta 11+97, 98' Rt. to
 B Sta 11+63.75, 67' Rt. =
 W.L. Sta 0+00 to
 W.L. Sta 0+27.41
 27.93' - 16" DICT SJ Pipe

B Sta 11+63.75, 67' Rt. =
 W.L. Sta 0+27.41
 1- 16" CIMPJ 45° Bend
 Rotate 15° 51' 56" Up

B Sta 12+51.86, 93' Rt. =
 W.L. Sta 1+27.07
 1- 16" CIMPJ 45° Bend
 Rotate 25° 36' 08" Down

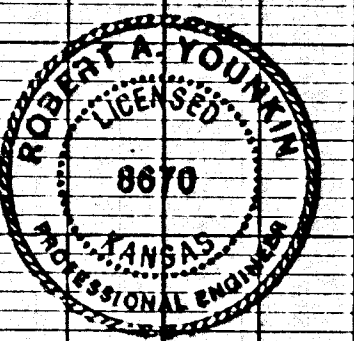
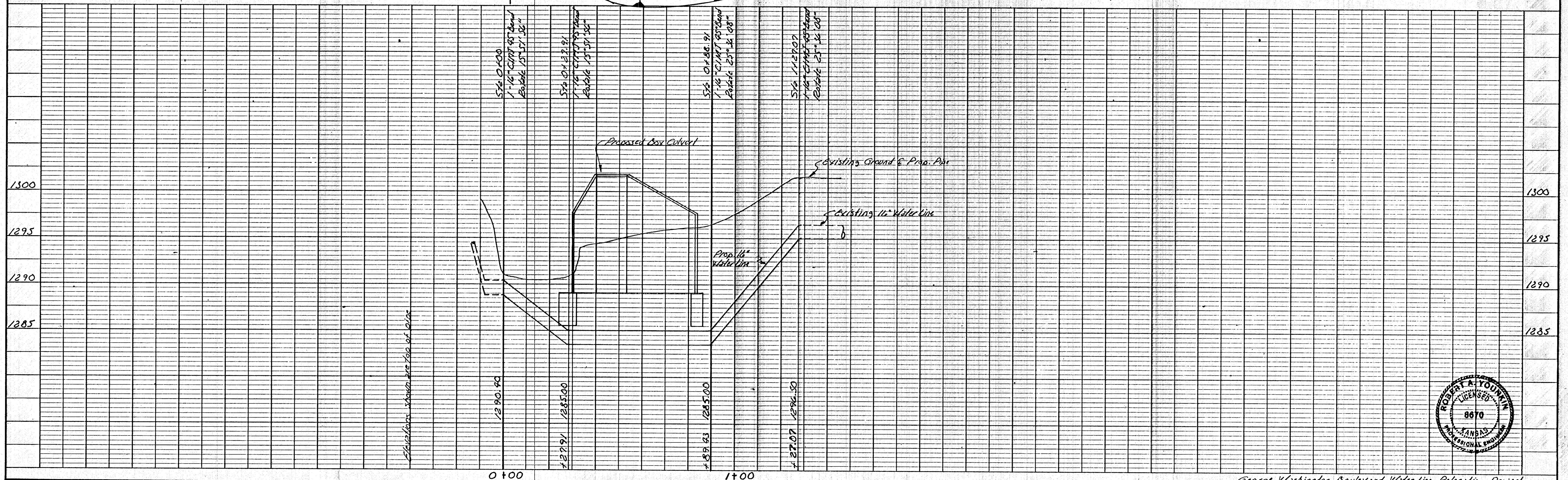
B Sta 12+25.25, 67' Rt. to
 B Sta 12+51.86, 93' Rt. =
 W.L. Sta 0+88.91 to
 W.L. Sta 1+27.41
 37.64' - 16" DICT SJ Pipe

B Sta 12+25.25, 67' Rt. =
 W.L. Sta 0+88.91
 1- 16" CIMPJ 45° Bend
 Rotate 25° 36' 08" Up

B Sta 11+63.75, 67' Rt. to
 B Sta 12+25.25, 67' Rt. =
 W.L. Sta 0+27.41 to
 W.L. Sta 0+88.91
 61.5' - 16" DICT SJ Pipe

PLAN
 SURVEYED
 PLOTTED
 NOTE BOOK
 NO.

PROFILE
 SURVEYED
 PLOTTED
 NOTE BOOK
 NO.



P.C. Sta. 20+63.31
Steel Nail & Washer @ P.C.
39.68' ENE to Nail & Tin in 100" Tree
72.85' SE to Nail & Tin in 70" Tree
73.50' WSW to Nail & Tin in 60" Tree

Install Water Line from Sta. 9+07.05 to Sta. 9+88.31 after Bridge Contractor has filled channel. Abandon existing Water Line in place. Contractor to use clean swabbed pipe and flush to north through manual air release assembly.

P.I. Sta. 22+03.13 Bk. =
Sta. 22+02.25 Ahd.
Steel Nail & Washer @ P.I.
Pin w/ "Booker" cap 250.00' back of P.I. on Forward Tangent Line extended back.

P.O.T. Sta. 30+00.00
Steel Nail & Washer @ P.O.T.
127.75' NNW to Nail & Tin in 90" Tree
129.25' NW to Top of Fire Hydrant
36.37' NE to Nail & Tin in 110" Tree

Sta. 9+07.05 =
Pav. Sta. 23+41.89, 36.49' Rt.
Connect to Exist 16" Water Line.

Sta. 9+88.31 =
Pav. Sta. 24+23.02, 40.0' Rt.
Connect to Exist 16" Water Line.
Install 1-16" Valve
1-Air Release Assy.
(Manual)

Sta. 10+00.00 =
Pav. Sta. 24+34.70, 39.6' Rt.
Install 45° Horizontal Elbow.
(Rotation 3°34')

Sta. 10+21.86 =
Pav. Sta. 24+50.16, 55.0' Rt.
1-16" 45° Elbow
(Rotation 3°34')
1-16" 22.5° Vert. Elbow.

Sta. 10+72.86 =
Pav. Sta. 24+99.93, 55.0' Rt.
1-16" 22.5° Vertical Elbow
Sta. 10+23.52 =
Pav. Sta. 24+51.82, 55.0' Rt.
22.5° Vert. Elbow.

Install 194 L.F. 16" Water Pipe w/Restrained Joints

Sta. 11+53.28 =
Pav. Sta. 25+80.35, 55.0' Rt.
1-16" P.C.S.C. 22.5° Vert. Elbow.

Sta. 12+33.09 =
Pav. Sta. 26+56.13, 55.0' Rt.
Install 45° Elbow.
(Rotation 5°19'08")

Sta. 12+14.41 =
Pav. Sta. 26+37.45, 55.0' Rt.
1-16" 22.5° Vertical Elbow

Sta. 12+59.20 =
Pav. Sta. 26+74.59, 36.84' Rt.
Install 45° Elbow.
(Rotation 5°19'08")

Sta. 12+69.19 =
Pav. Sta. 26+84.58, 36.7' Lt.
Connect to Exist. 16" Water Line.
Install 1-16" Valve
1-Air Release Assy.
(Manual)

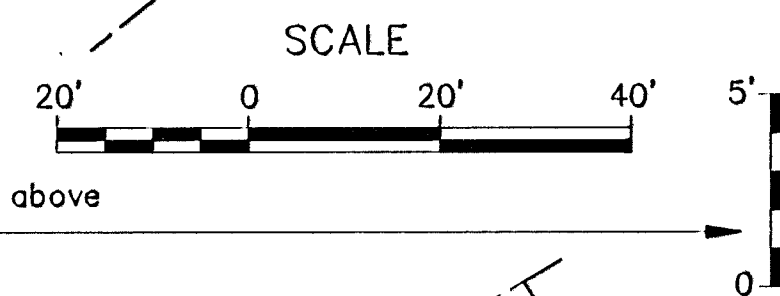
UTILITIES
Kansas Gas & Electric Co.
P.O.Box 208
Wichita, KS 67201
261-6611
Wichita Storm Sewer Dep't.
455 N. Main
Wichita, KS 67202
268-4461

Wichita Water Dep't.
455 N. Main
Wichita, KS 67202
268-4501

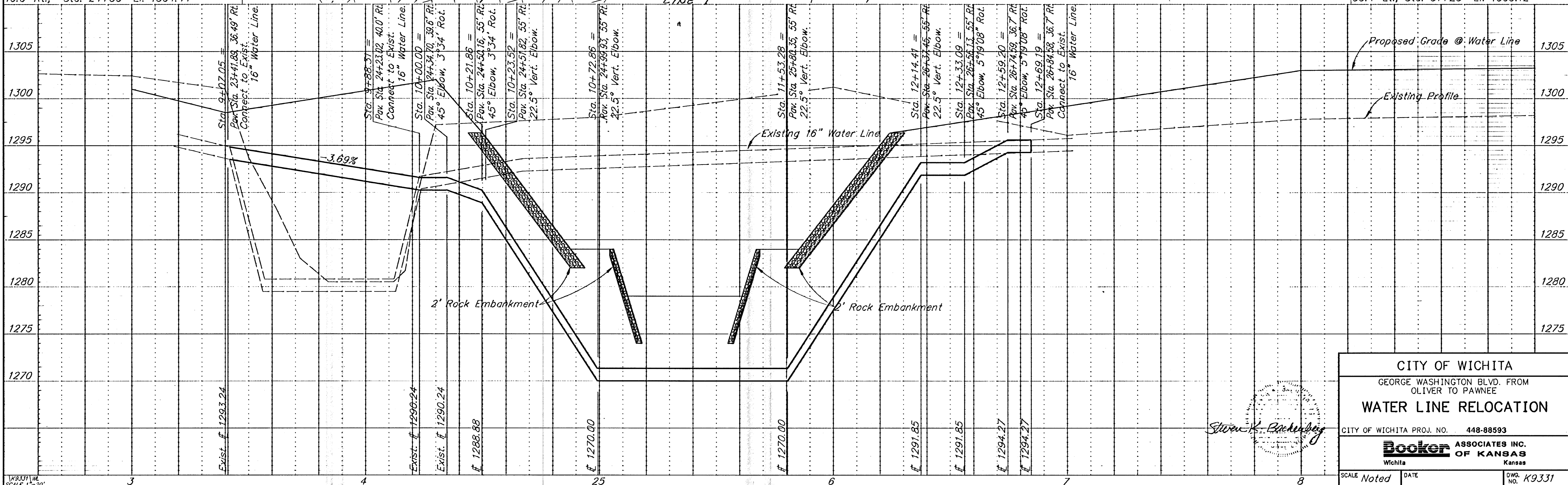
Kansas One-Call Inc.
8100 E. 22nd., Bldg. 1700
Wichita, KS 67226
687-2470

B.M.#4 - "M" in Mueller on Fire Hydrant
35.4' Lt., Sta. 31+23 El. 1305.12

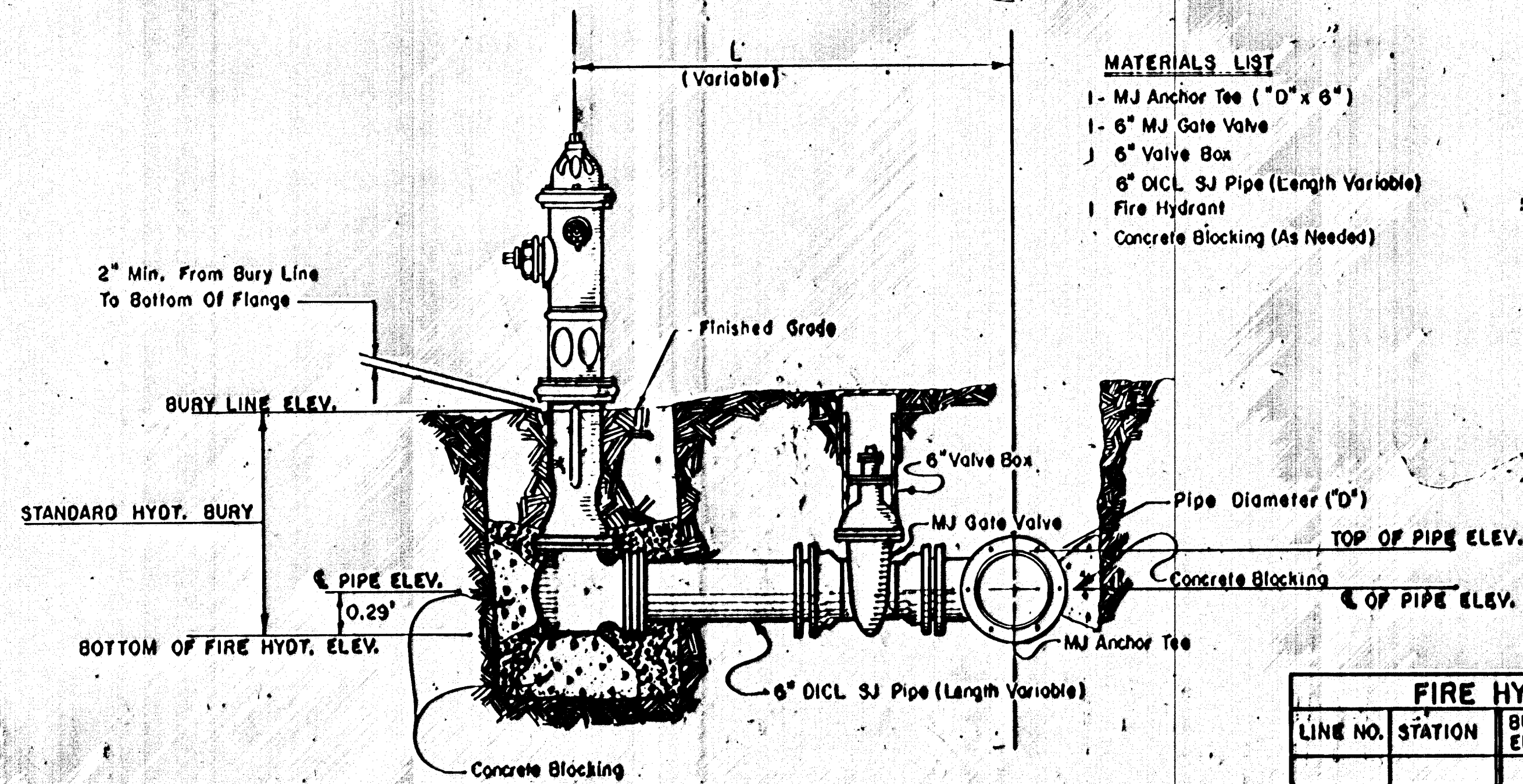
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert.



B.M.#3 - City Standard Disc NE Cor. Bridge
16.0' Rt., Sta. 24+30 El. 1304.44



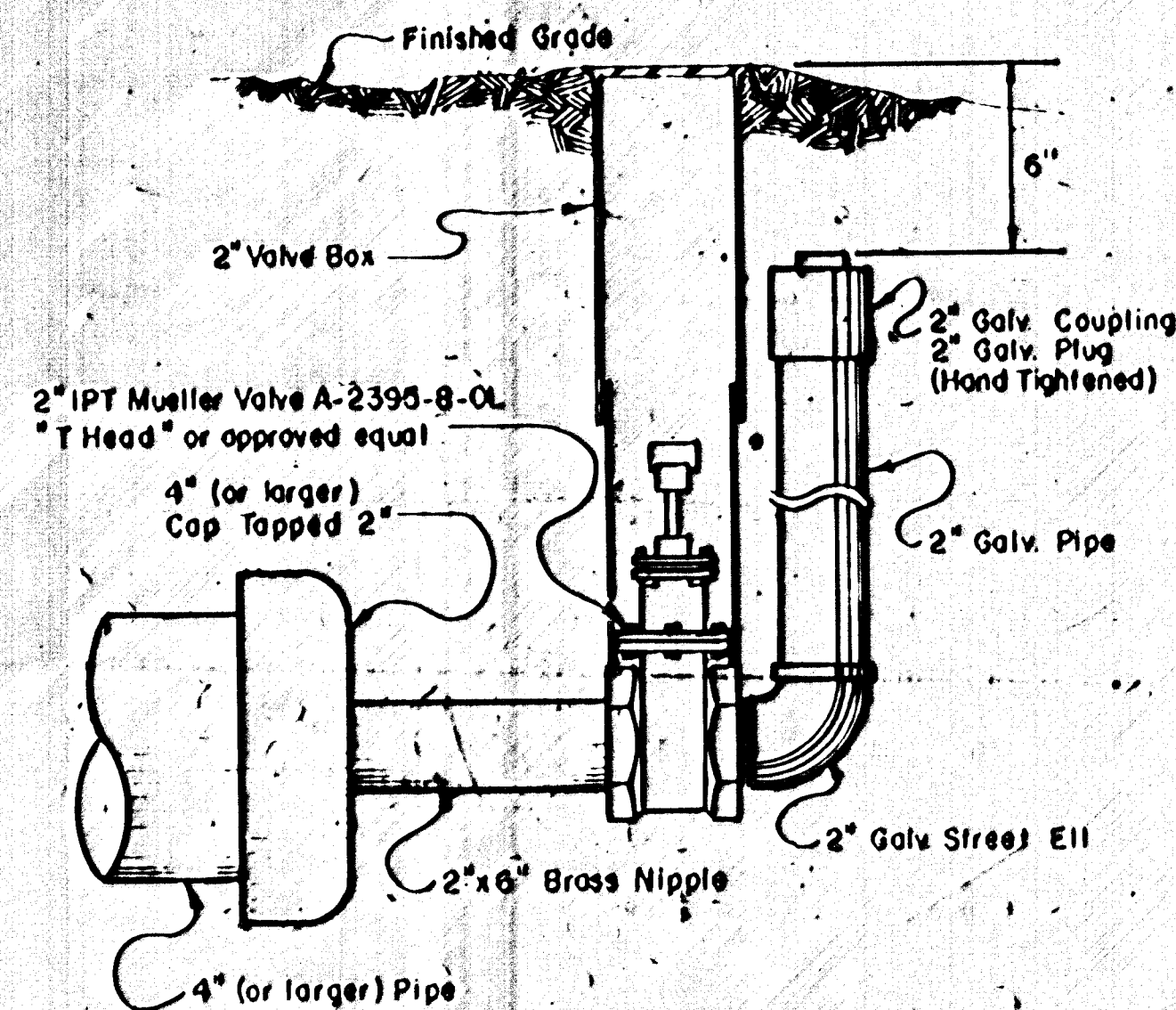
CITY OF WICHITA	
GEORGE WASHINGTON BLVD. FROM OLIVER TO PAWNEE	
WATER LINE RELOCATION	
CITY OF WICHITA PROJ. NO.	448-88593
SCALE	Noted
DATE	
DWG. NO.	K9331



FIRE HYDRANT ASSEMBLY

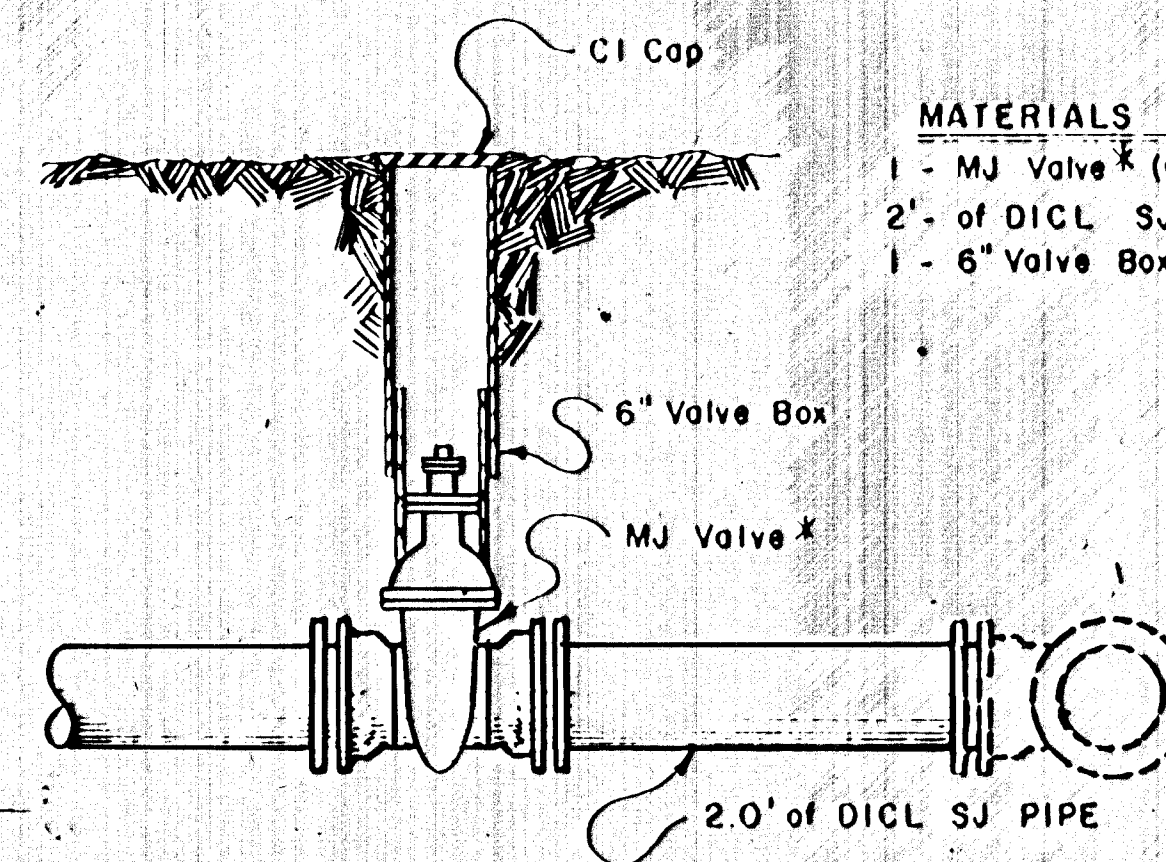
- MATERIALS LIST**
- 1 - MJ Anchor Tee ("D" x 6")
 - 1 - 6" MJ Gate Valve
 - 1 - 6" Valve Box
 - 6" DICTL SJ Pipe (Length Variable)
 - 1 Fire Hydrant
 - Concrete Blocking (As Needed)

FIRE HYDRANTS REQUIRED				
LINE NO.	STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED



2" BLOWOFF ASSEMBLY

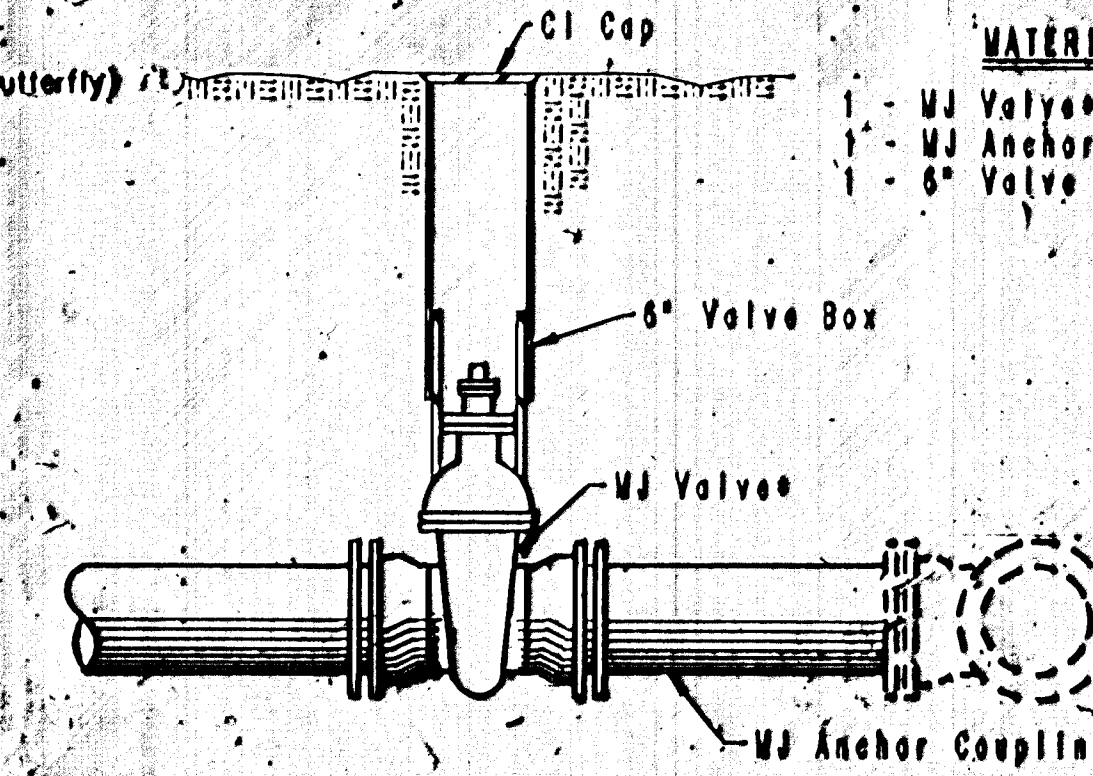
- MATERIALS LIST**
- 1 - 2" Valve Box
 - 1 - CIMJ Cap
 - 1 - 2"x6" Brass Nipple
 - 1 - 2" IPT Mueller Valve A-2395-B-OL
 - "T Head" or approved equal
 - 1 - 2" Galv. Street Ell
 - 2" Galv. Pipe (as required)
 - 1 - 2" Galv. Coupling
 - 1 - 2" Galv. Plug (Hand Tightened)



VALVE ASSEMBLY

* See plans for the type of valve to be used

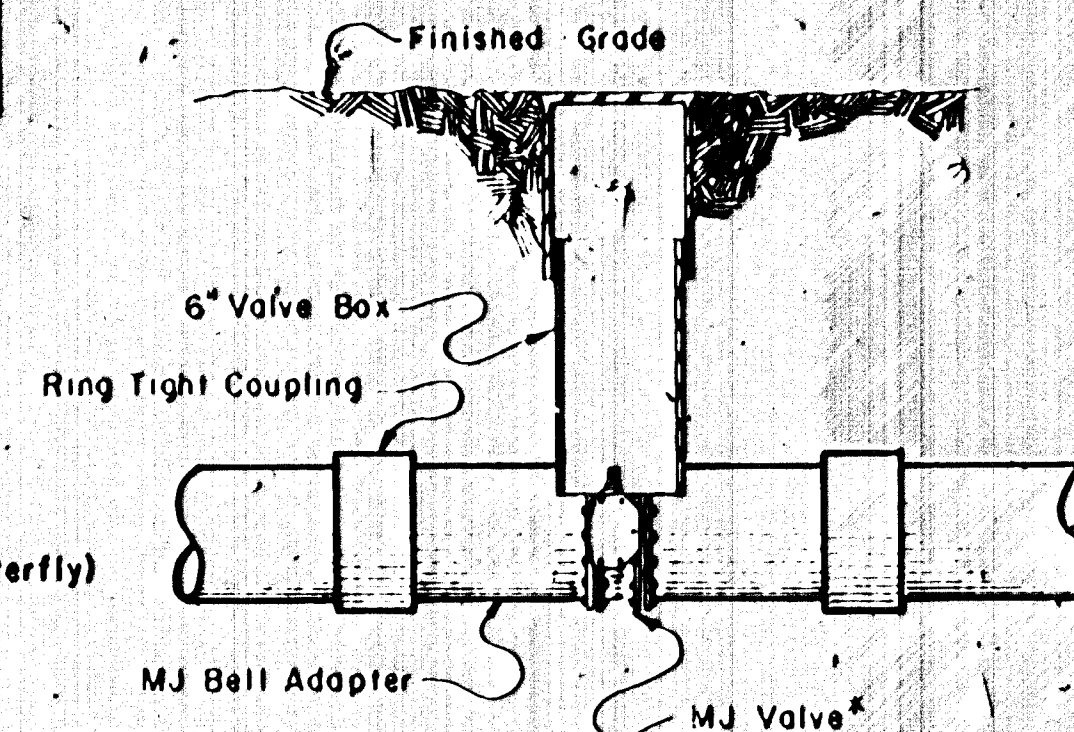
- MATERIALS LIST**
- 1 - MJ Valve (Gate or Butterfly)
 - 2' of DICTL SJ Pipe
 - 1 - 6" Valve Box



ANCHORED VALVE ASSEMBLY

* See plans for the type of valve to be used

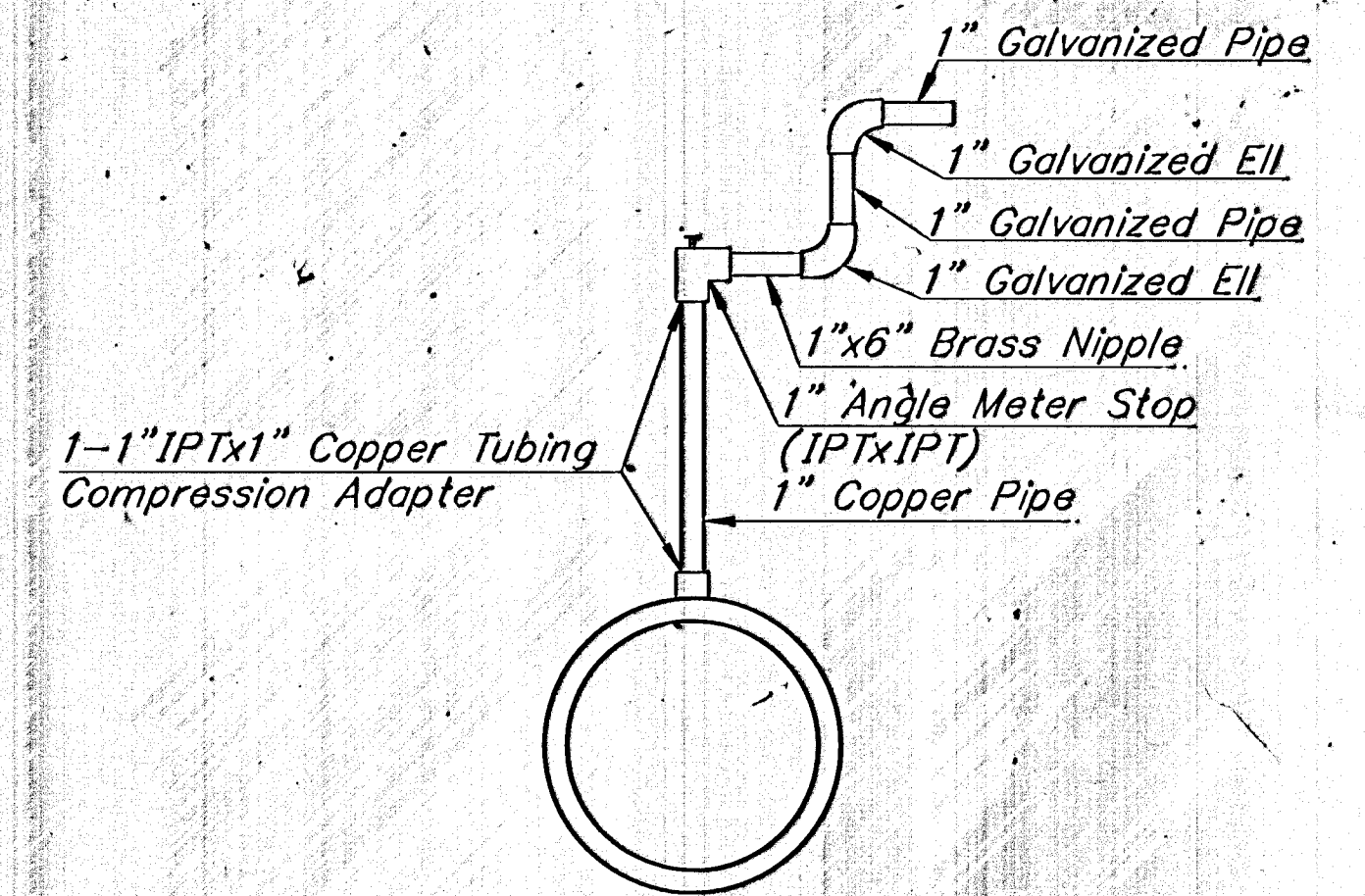
- MATERIALS LIST**
- 1 - MJ Valve (Gate or Butterfly)
 - 1 - MJ Anchor Coupling (12" or smaller)
 - 1 - 6" Valve Box



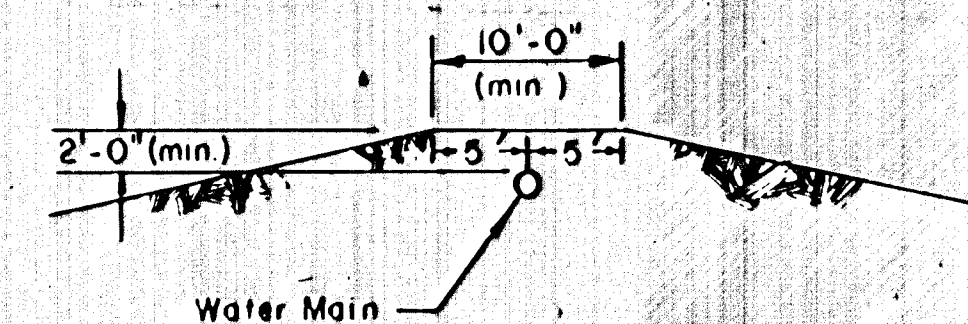
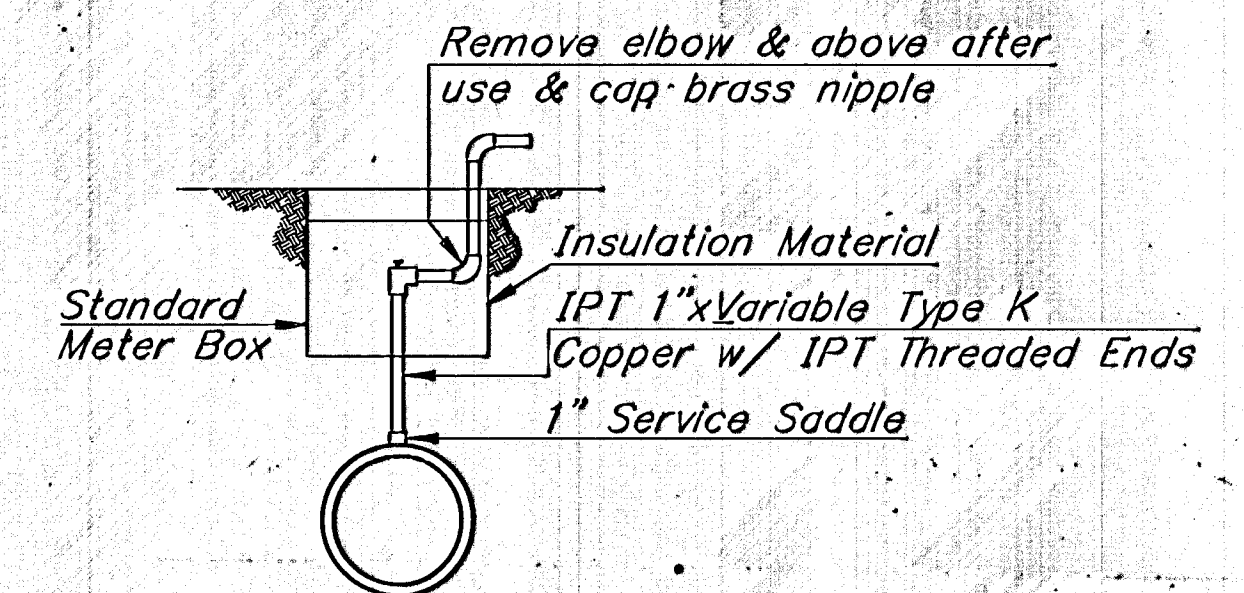
LINE VALVE ASSEMBLY

* See plans for the type of valve to be used.

- MATERIALS LIST**
- 1 - MJ Valve (Gate or Butterfly)
 - 1 - 6" Valve Box
 - 2 - Ring Tight Couplings
 - 2 - MJ Bell Adaptors



MANUAL AIR RELEASE DETAIL



PROTECTIVE FILL DETAIL

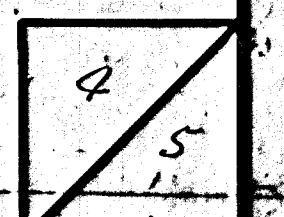
MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROPOSED WATER LINE IS LESS THAN TWO (2) FEET. (COST SUBSIDIARY TO PIPE INSTALLATION.)

Revised 2-17-1988

STANDARD WATER ASSEMBLY DETAILS
CITY OF WICHITA, KANSAS

448-88833

JANUARY, 1987



FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87U-1318-01	1992	180	79

- Maintenance Bond.** Contractor will be required to furnish to the City of Wichita a Maintenance Bond for the amount of the Lump Sum "16" Water Line System" to guarantee the materials furnished and used, and the workmanship employed in the construction of the 16" Water Line included in the contract conforms to specifications and is of such character and quality to insure the work to be free of latent defects and that the work will be in continuous good order and in a condition satisfactory to the City Council for a period of two (2) years from the date of the final payment to the Contractor for the work included in the contract. Where this provision conflicts with the Maintenance Bond requirements contained in Standard Specifications, this provision shall govern.
- Pipe Certification.** All pipe furnished on this project shall be certified by the manufacturer, in writing. The certification shall certify that the pipe meets or exceeds the specified project material specifications for the type of pipe furnished. Such certification shall be prepared by the pipe manufacturer and signed by an authorized official of the company. The company title of the signer must also be clearly shown immediately below the signature. The Contractor shall be responsible for obtaining necessary certifications and arranging for their delivery to the Construction Engineer. Material certification must be delivered to the Construction Engineer before payments will be made to the Contractor for the materials or the installation of such materials. Pipe material certifications shall identify name of Contractor, name of material manufacturer, project title, project number, shipping destination, shipping identification markings, type of material, and quantity of material. All material furnished under certification shall be tagged, stenciled, stamped, or otherwise marked with a heat number, lot number, order number, or other appropriate identification which can be readily recognized and checked against such identification markings shown on the certification. The City reserves the right to sample and test any material even though such material may be covered by certification.
- Items Incidental to Project.** Sand encasement of water transmission pipe in place, sand for encasement of backfill, and compaction of sand encasement or backfill material, shall be considered incidental to Project and will not be paid for separately.
- Section 22 Revisions.** Section 22 on page 16 of Standard Specifications for Installation of Water Pipe shall be considered as deleted. Contractor will not be required to reimburse the City overtime costs of City employees involved in the Project.
- Wichita Water Department.** All references to Wichita Water Department, director or department, shall be construed to indicate the City Engineer, the Assistant City Engineer, or their authorized representative, as is appropriate in the language where such terms are used.
- Shutting Down Existing Water Mains.** Contractor will be required to give the Area Construction Engineer notice 24 hours in advance of shutting off existing water lines to facilitate connection of new lines. Contractor will be required to close existing valves as approved by the Engineer only when the Project Inspector is present on the Project. Such valves must be closed slowly to prevent damage from water hammer.
- Clearing and Testing Water Mains.** Contractor will be required to furnish all equipment, material, labor and other necessary incidentals to flush new lines with water, pressure test new lines, leakage test new lines, and disinfect new lines. These items of work will not be paid for directly and shall be considered as subsidiary to the contract pay items. Flushing, filling, pressure testing, leakage testing, and disinfecting new lines shall be completed only when the Project Inspector is present on the Project.

- Out of Service Notification.** The Contractor is to immediately notify the Water Department Dispatcher (268-4908) of any water mains or fire hydrants that are out of service due to the construction of the Project. Notification to the Water Department Dispatcher must also be made immediately when those same mains and hydrants are returned to service.
- Notice of Waterline Construction.** The Contractor shall give all property owners and/or tenants of developed property directly affected by the construction of this Project a minimum of twenty-four (24) hours advance notice prior to start of construction or changes in local access routes. Such notification shall include specific detailed information on changes in local access routes to individual properties and calendar dates identifying when such changes are scheduled to occur.
- CICL Fittings.** CICL Fittings shall not be paid for separately but shall be considered incidental to the water pipe. The Contractor may use either AWWA Standard CICL fittings or AWWA approved ductile-iron compact fittings. If ductile-iron compact fittings are selected, they shall meet AWWA Standard C-153, rated for a working pressure of 350 psi, of grade 70-50-05, and have a cement-mortar lining with an inside petroleum-asphaltic coating.
- DICL SJ Pipe Payment.** DICL SJ Pipe called out separately is included in the lump sum bid item "16" Water Line System." The pieces of DICL SJ pipe between Tees and Valves shall not be paid as DICL SJ pipe as this quantity is included in the pipe lengths between fittings.
- Water for Construction from Fire Hydrants.** Application must be made at the Mains and Services Building, 1701 Sim Park Drive, 268-4908 for a permit to authorize usage of water from public fire hydrants. There will be no charge for the water used for flushing and settlement of backfill on this Project.
- Disinfection Procedures for Water Mains.** The sheet providing chlorine requirements contains an error. The time requirement for the 50 mg/l chlorine solution to remain in the line shall be a minimum of twenty-four (24) hours after which there should be a residual of at least 10 mg/l. All other information contained in the "Disinfection Procedures" specification is correct.
- DETECTION, PROTECTION, AND IDENTIFICATION:** For detection, protection, and identification of water mains, the Contractor shall install a detectable metallic marking in the trench over the water main at the time of backfilling. The marking tape shall be placed in the trench at a depth of one foot, but not exceeding three feet below the proposed final grade of the ground over the centerline of the water main.

The detectable metallic underground marking tape shall meet the following specifications:

Material	The tape shall be aluminum foil encased in an impervious mylar plastic coating on both sides.
Thickness	The tape shall be 5 mils thick.
Width of Tape	The tape shall be three inches (3") in width.
Printing	The color and printing shall be under the impervious mylar plastic coating. The printing shall be black in color.
Coloring	The color used on the tape shall be blue.
Warning Message	The following warning message shall be repeated on the tape, "CAUTION-BURIED WATER LINE BELOW"

The cost of installing the underground marking tape shall be considered Subsidiary to the installation of the water main and not paid for separately.

- Allowable Leakage.** The table in section 17-7 of these Standard Specifications is in error. The following table shall be used to determine allowable leakage on water main installations.

Allowable leakage per 1000 feet of pipeline in gal./hr. (GPH).

Avg. Test Pressure PSI	Normal Pipe Diameter							
	4	6	8	12	16	20	24	36
150	0.37	0.55	0.74	1.10	1.47	1.84	2.21	3.31
125	0.34	0.50	0.67	1.01	1.34	1.68	2.01	3.02
100	0.30	0.45	0.60	0.90	1.20	1.50	1.80	2.70
75	0.26	0.39	0.52	0.78	1.04	1.30	1.56	2.34
50	0.21	0.32	0.42	0.64	0.85	1.06	1.27	1.91

- The technical specifications of the City of Wichita's Standard Specificatin #14533 for the installation of Water Distribution System/Water Supply Line Specifications** (on file and available in the City Engineers Office) are required provisions for the furnishing of all materials and doing all work to complete the above referenced work, and are hereby made a part of these provisions as if fully set forth herein. The general clauses and covenants included in such standard specifications shall not apply. Said Standard Specifications shall control except as modified by the above specifications.
- Concrete Thrust Blocks.** Concrete Thrust Blocks shall not be paid for separately, but shall be included in installation of the CICL Fittings, and as such, shall be incidental to the water line pipe. Thrust blocking shall conform to Standard Engineering Procedure No. 103.5 included in Water Main Standard Specification No. 14533. Surface area of thrust block bearing on undisturbed earth to counteract thrust shall be equal in square feet to thrust shown in the table expressed in tons divided by 0.5 tons per square foot for clay soils and 1.0 tons for sand-gravel soils. Upward thrusts from vertical bends shall be counteracted by an equal weight of concrete.
- PCSC Fittings:** If used, PCSC Fittings shall not be paid separately but shall be considered subsidiary to the water pipes.
- Subcontractors.** When more than one Contractor is performing work in any one Project area, each Contractor shall conduct his work so as not to interfere with or hinder the timely progress or completion of the work being performed by other Contractors. In this regard, Contractors working within the same Project area shall cooperate with each other to the maximum extent possible, in accordance with the spirit of the plans and specifications, and shall arrange their work, perform their work in proper sequence, and place or dispose of materials being used in order to avoid delaying each other in the performance of their respective work responsibilities.

CITY OF WICHITA

GEORGE WASHINGTON BOULEVARD FROM
OLIVER TO PAWNEE

GENERAL NOTES

CITY OF WICHITA PROJ. NO. 472-82155

Booker ASSOCIATES INC.
OF KANSAS
Wichita Kansas

SCALE N.T.S. DATE June, 1992 DWG. NO. K9419

APP. SKB

CKD. KM

TR.

DR. BR/MCC

DES.

PLOT CADDO

SURV. ———
K9419\GWB\TEXT
SCALE 1"=10'

GENERAL NOTES

1. Contractor will be required to provide a minimum advance notice of twenty-four (24) hours to utility companies prior to starting excavation as follows:

Kansas One-Call 687-2470

The Contractor must notify the following in case of an emergency:

Cablevision 687-2470 or 263-2061
K.P. & L. Gas Service Company 263-7511
Kansas Gas & Electric 264-1141
Arkla Gas Company 942-8350 or 263-8161
Southwest Bell Telephone Co. 1-571-2611
City of Wichita Water Dept. 268-4908
City of Wichita Sewer Maint. 268-4071

2. All water mains and appurtenances shall be installed in accordance with City of Wichita, Kansas Standard Specifications for Water Main Installations No. 14533.
3. The water main shall be constructed on the alignment shown by the plans. Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with proposed new construction shall be saved and protected from damage. The cost for any necessary tree trimming, clearing and/or grubbing shall be included in the price bid for the installed water main pipe. Trees indicated by  to be paid for by unit price.
4. Opening and closing water valves shall be done slowly to prevent damage to the water distribution system from water hammer. All valves closed by the contractor must be reopened as new construction permits. Project inspector must ascertain that any valve closed by the contractor is reopened. Contractor will be permitted to operate water valves only when the project inspector assigned to the project is present.
5. Contractor shall not start work on the project until the project inspector is assigned to the project and is present on the site. Any work done without inspection will be required to be uncovered for inspection.
6. Underground utility service lines and overhead utility pole lines are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. Location information has been obtained from various utility companies and is either from company record drawings or company provided field locations. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.
7. Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved.

8. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are damaged or destroyed by his construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws.

9. Contractor shall work full crews from 1/2 hour after sun-up to completion while main is out of service. Mains may only be taken out of service as coordinated with Boeing.

10. Closing of valves 24941, 3952, and 6801 will isolate system at Bridge. Closing of valves 24941, 16756, and 2367 will isolate system at Box Culvert.

11. Shoring and trenching to be in accordance with OSHA standards. The Engineer reserves the right to add additional safety requirements as deemed advisable for the safe installation of the project. Cost to be subsidiary to project, not to be paid separately.

12. Dewatering may be necessary. Cost of such dewatering shall be subsidiary to the project and not paid separately.

13. Installation of the water line will be in 3 phases. The second phase will be in conjunction with earthwork, demolition, or construction of the bridge and will consist of water line from Station 9+88.31 to Station 12+69.19. The remainder of the water line will be installed in the third phase. This installation will begin once the new channel has been cut and the old channel filled. The first phase will be the water line relocation at the Box Culvert.

14. Water line removed (Sta. 9+88.31 to Sta. 12+69.19) shall be returned to the Wichita Water Department Material Equipment Yard at 1701 Sim Park Drive.

15. Pipe Options-

1. P.C.S.C. Snap ring restraining joint.
2. D.I. Cl. 53 polywrapped manufactured restraining joint integral to the pipe. (Example: TR Flex, USIFLEX).
3. D.I.C.L. S.J. Pipe using Megalug Series 1116 Joint Restraint at all joints and fittings, and concrete thrust blocking to resist thrust. All pipe and fittings are to be 8 Mil Polywrapped.

SURV. — PLOT CADD — DES. K.M. — DR. M.G.C. — TR. — CKD. K.M. — APP. S.K.B.

1/2"=30'
SCALE 1"=30'



CITY OF WICHITA	
GEORGE WASHINGTON BOULEVARD FROM OLIVER TO PAWNEE	
GENERAL NOTES	
CITY OF WICHITA PROJ. NO. 448-88593	
Booker ASSOCIATES INC. OF KANSAS Wichita Kansas	
SCALE N.T.S.	DATE —
DWG. NO. K9419	