

FIRE SERVICE LINE TO SERVE FED EX FACILITY SKYWAY INDUSTRIAL PARK 2ND PRIVATE PROJECT NO. 1512 PPW (607853)

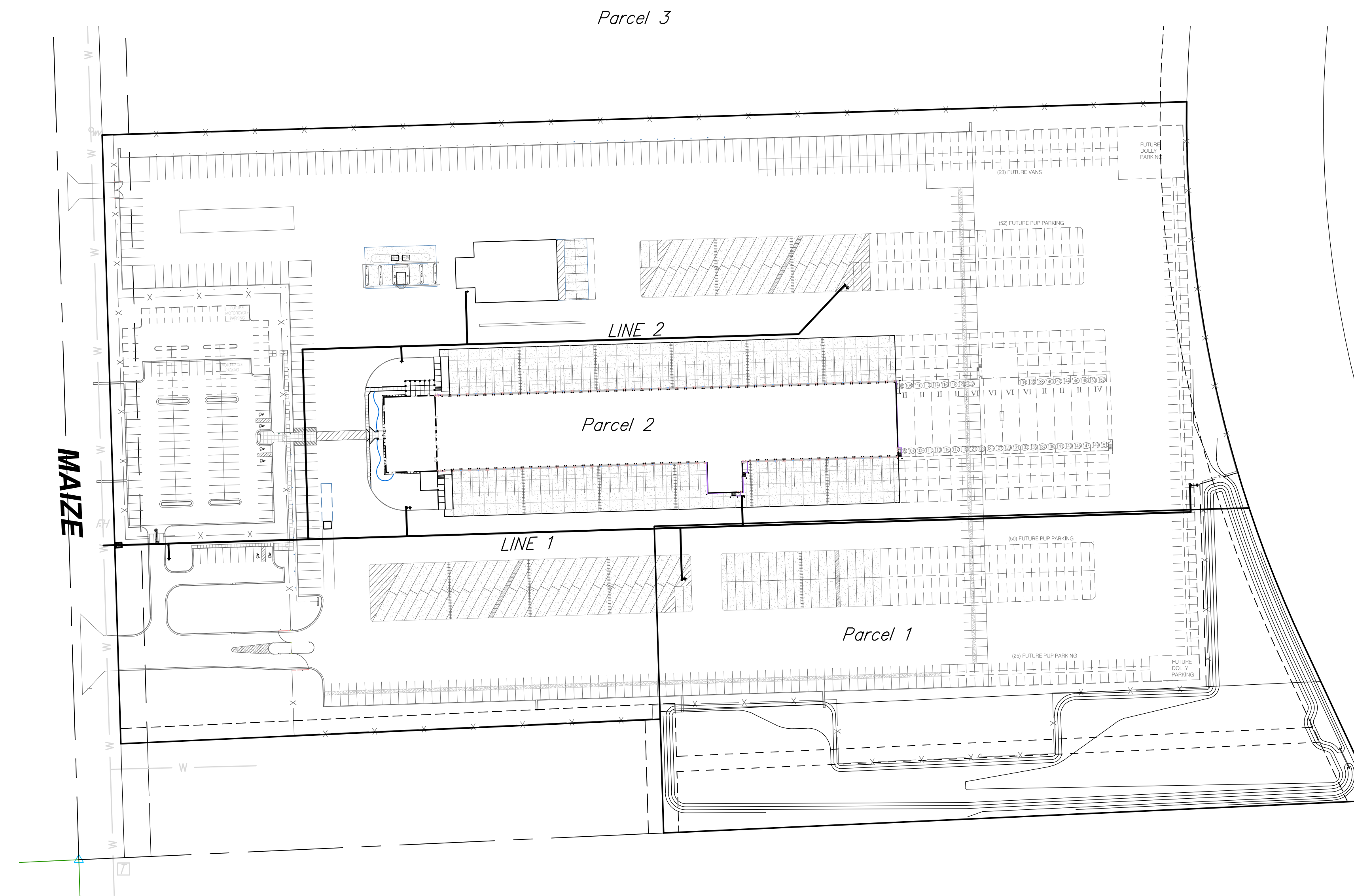
AS-BUILT PLANS
CONTRACTOR: MIES CONSTRUCTION
INSPECTOR: SCHWAB-EATON, P.A.
PDF BY: BDB 7-21-10
PROJECT WAS CONSTRUCTED PER PLANS
EXCEPT WHERE NOTED ON AS-BUILTS.

GENERAL NOTES

- Contractor will be required to provide a minimum advance notice of seventy-two (72) hours to utility companies prior to starting any excavation as follows:
Kansas One-Call 687-2470 or 811
- The Contractor must notify the following in case of an emergency:
Cox Communications 260-7204
Kansas Gas Service 832-3126
Westar 383-8600
Aquila Net 1-800-303-0357
AT&T 1-800-286-8313
City of Wichita Water Utilities 262-6000
- All water mains and appurtenances shall be installed in accordance with City of Wichita, Kansas, Standard Specifications for the Construction of City Projects, and current policy on construction of public works improvements by private contract.
- 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.
- The Contractor shall give all property owners and/or tenants of developed property directly abutting the construction of this project a minimum of ten (10) days advance notice prior to start of construction.
- 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.
- No work shall begin on this project before required bonds are submitted to the City of Wichita, and the project inspector has been notified.
- All areas of public R/W disturbed by construction of this project are to be restored in accordance with Administrative Regulation AR6.5 of the City of Wichita.
- Two-way traffic to be maintained on Maize Road at all times.
- Construction of this project will be subject to all provisions and requirements of the "Construction of Infrastructure by Private Contract" available from the City of Wichita Public Works Department.
- Fire Hydrants shall have Storz Connection Pumper Nozzles. Nozzles shall be integral to the hydrant with no adapters and shall be unpainted with securing wire.

INDEX OF SHEETS

- C3.1 FIRE SERVICE LINE COVER
- C3.2 FIRE SERVICE DETAILS
- C3.3 FIRE SERVICE PLAN/PROFILE LINE 1
- C3.4 FIRE SERVICE PLAN/PROFILE LINE 1
- C3.5 FIRE SERVICE PLAN/PROFILE LINE 2
- C3.6 FIRE SERVICE PLAN/PROFILE LINE 1A, 1B, 1C, 1D, 2A
- C3.7 VAULT DETAILS



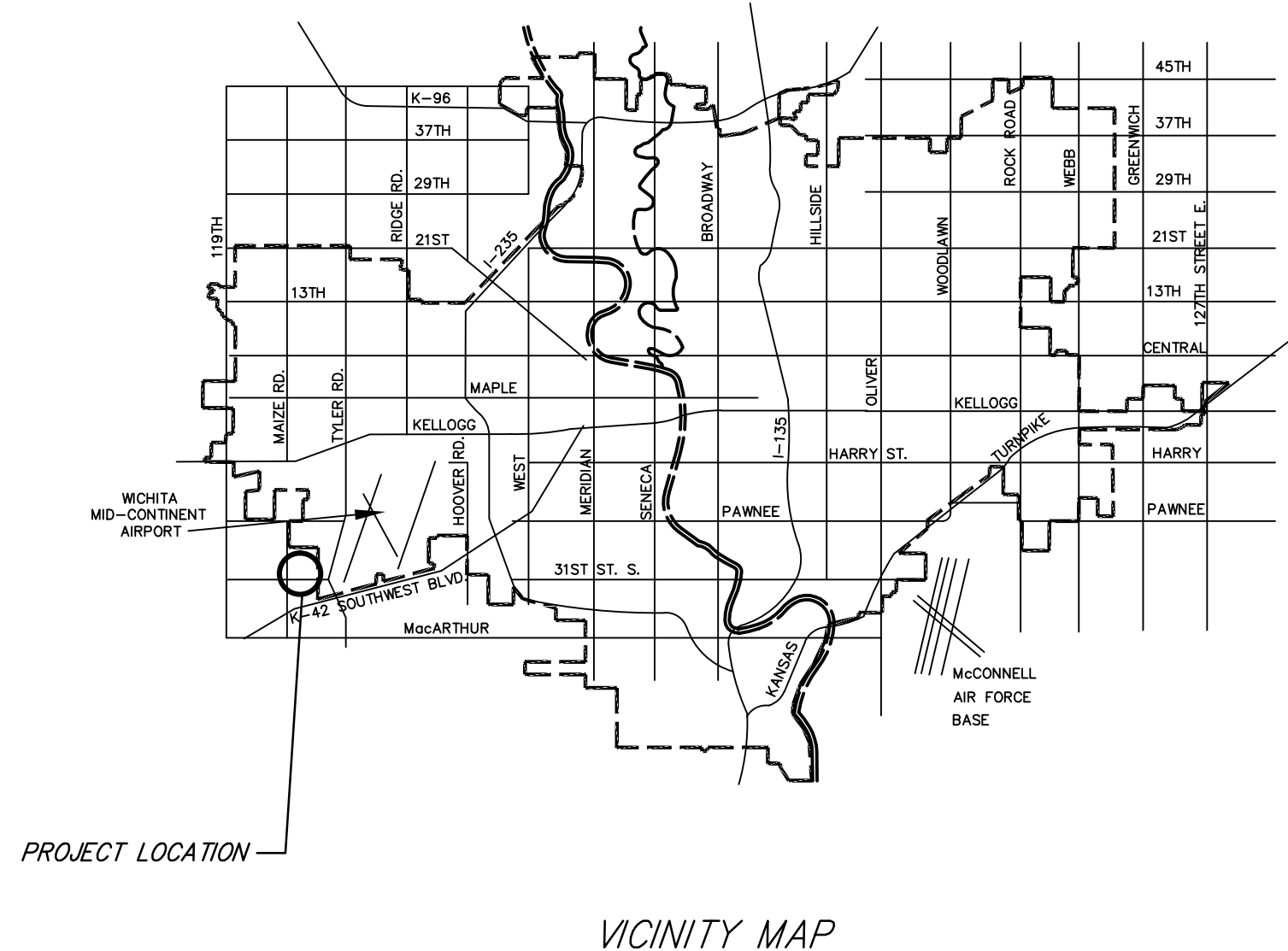
APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA
BY WICHITA FIRE DEPARTMENT

Public Works *[Signature]* 2/1/10
Water & Sewer *[Signature]* 2/3/2010
Fire Prot. Line *[Signature]* 2-09/2010

NOTE TO CONTRACTORS

Public Property:
Inspection and testing for the waterline is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall any work be commenced without written authorization by the City Engineer. All Construction and Materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).

Private Property:
Inspection and testing for the fire protection line is to be performed by a City of Wichita certified fire protection contractor in accordance with the fire codes as adopted by the City of Wichita. All materials and construction practices for the fire protection line shall comply with the fire codes as adopted by the City of Wichita (available from the City of Wichita Fire Department). The Contractor shall not commence work without notification to and approval of the Wichita Fire Department.



CITY OF WICHITA, KANSAS
JAMES L. ARMOUR, P.E. - CITY ENGINEER

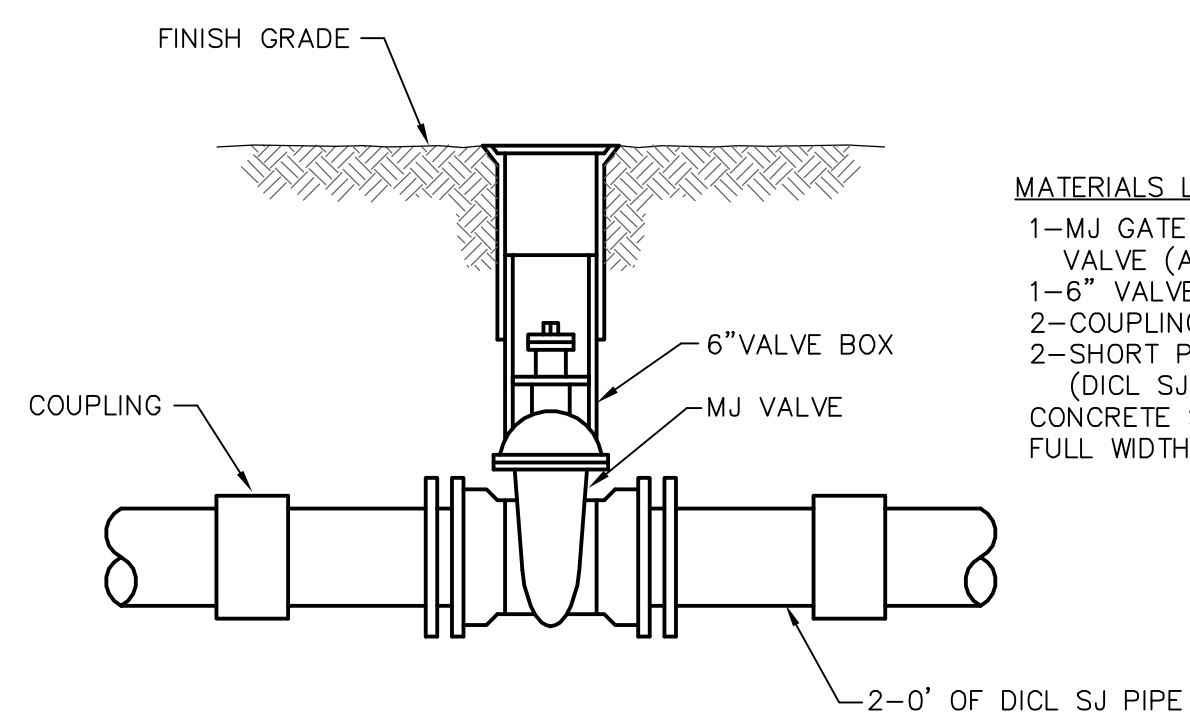


Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning

924 North Main (316) 264-8008
Wichita, Kansas 67203 (316) 264-4621 fax
www.rbkansas.com E-mail: info@rbkansas.com

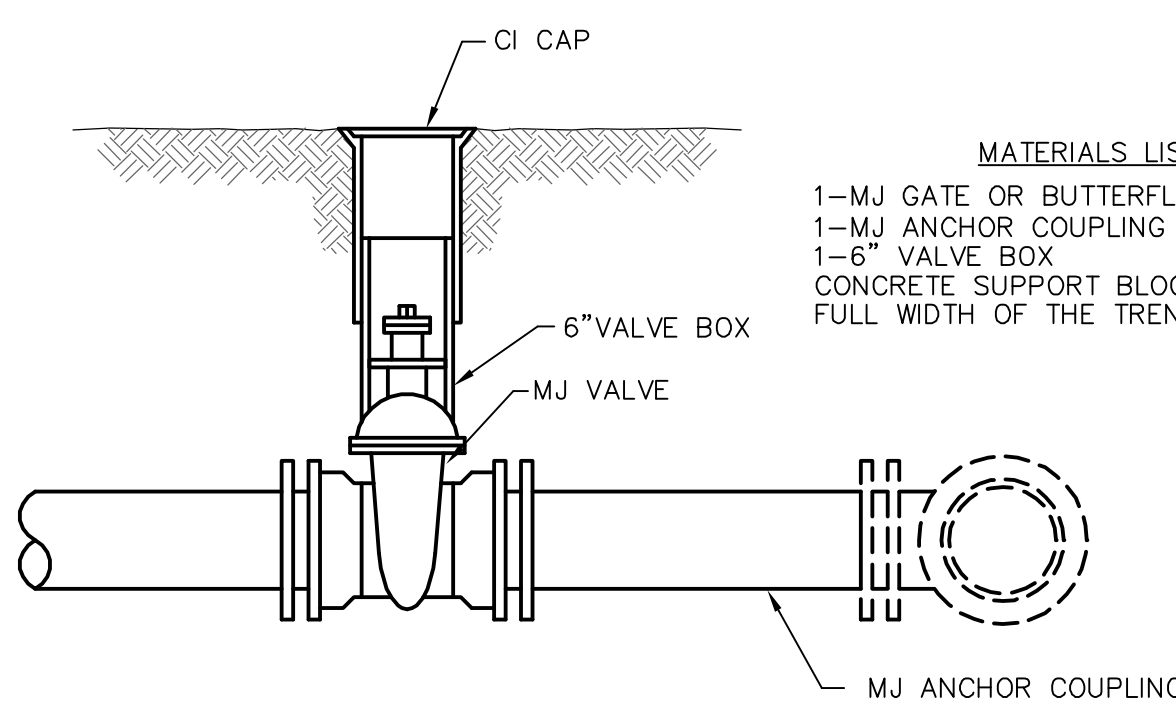
Revised: 1-4-10

SHEET C3.1



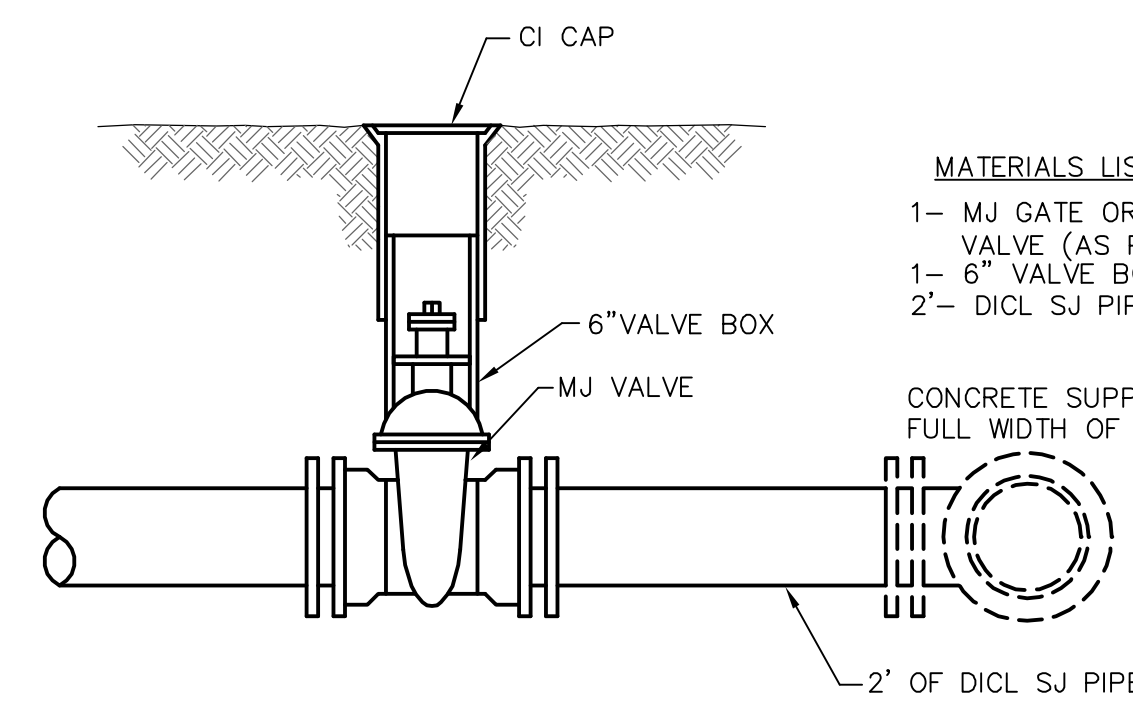
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-6" VALVE BOX
 - 2-COUPPLINGS
 - 2-SHORT PCS. (DICTL SJ PIPE)
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

LINE VALVE ASSEMBLY



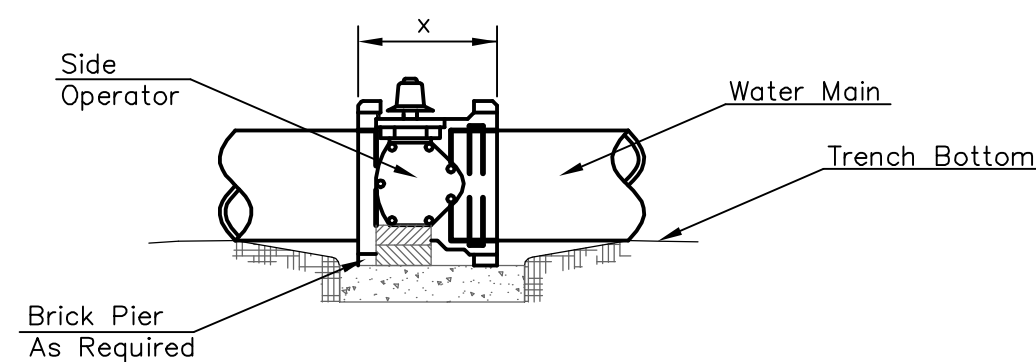
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-MJ ANCHOR COUPLING (12" OR SMALLER)
 - 1-6" VALVE BOX
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

ANCHORED VALVE ASSEMBLY



- MATERIALS LIST**
- 1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1- 6" VALVE BOX
 - 2- DICTL SJ PIPE
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

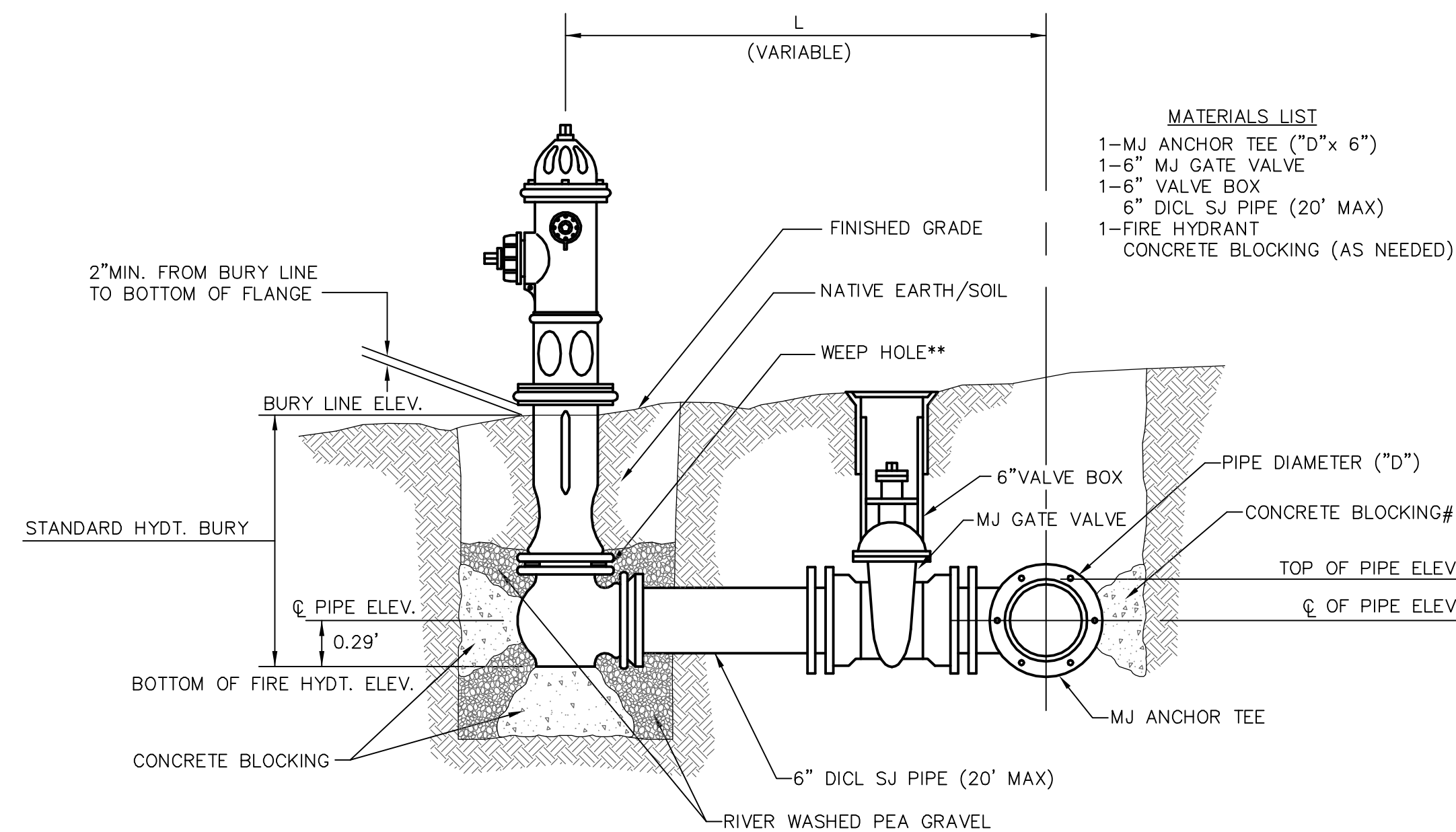
VALVE ASSEMBLY



NOTES

- This detail covers Butterfly Valve installation, inclusive, regardless of type of pipe or joint used. Larger lines to be detailed on plans.
- 6" Valve Box and Cover required per City of Wichita Std. Specifications.
- Conc. Support Block to be full width of trench.

CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION



- MATERIALS LIST**
- 1-MJ ANCHOR TEE ("D"x 6")
 - 1-6" MJ GATE VALVE
 - 1-6" VALVE BOX
 - 6" DICTL SJ PIPE (20" MAX)
 - 1-FIRE HYDRANT
 - CONCRETE BLOCKING (AS NEEDED)

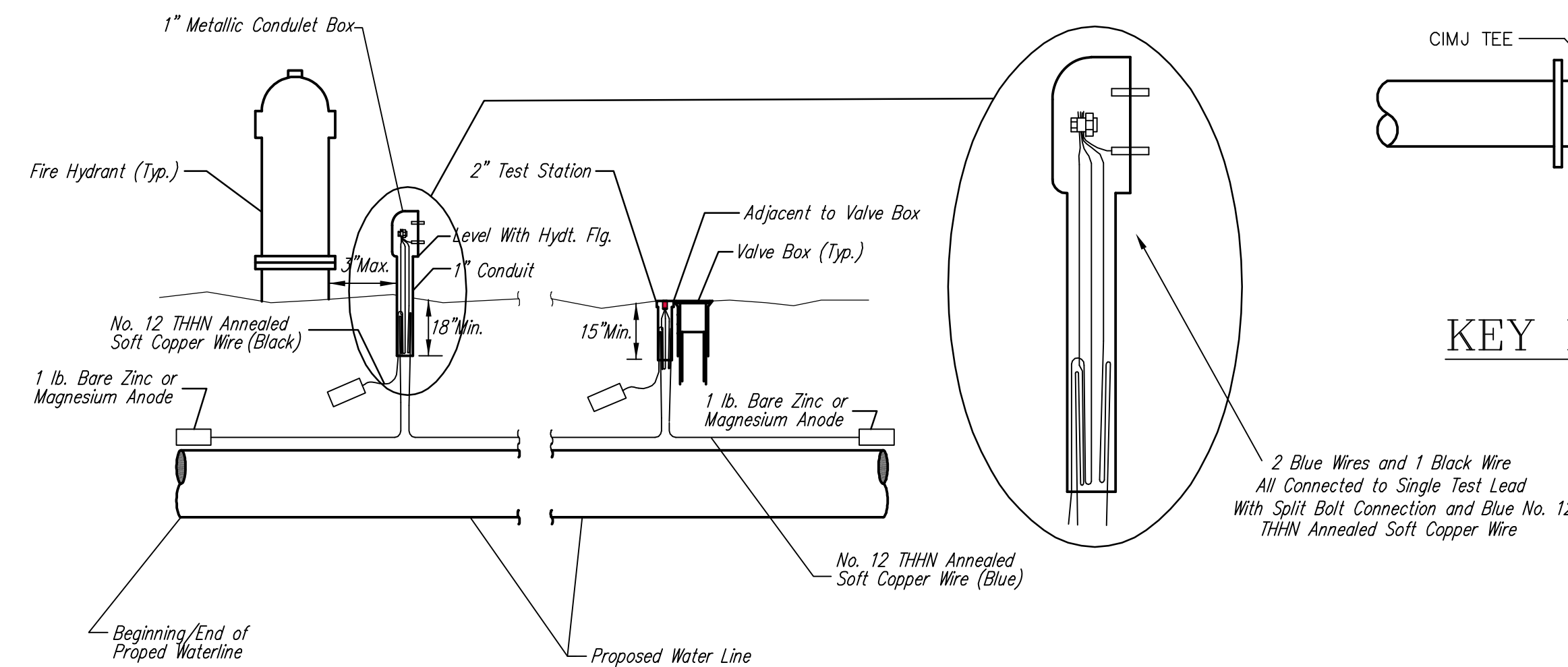
** CAUTION! WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES.

CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.

* IF HYDRANT BURY IS IN EXCESS OF 5', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY.

FIRE HYDRANTS REQUIRED			
STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*
0+85.55 LINE 1	1334.17	1329.85	5'
14+67.45 LINE 1	1330.41	1326.10	5'
3+80.12 LINE 2	1334.28	1329.97	5'
9+91.81 LINE 2	1332.64	1328.83	4.5'
0+37.34 LINE 1A	1335.16	1331.35	4.5'
0+67.38 LINE 1C	1332.50	1328.69	4.5'

FIRE HYDRANT ASSEMBLY
PER CITY OF WICHITA SPECIFICATIONS



TRACER WIRE

Conductive type pipe locator/tracer wire shall be installed to locate Polyvinyl Chloride (PVC) or any nonmetallic waterline pipes. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. Split-bolt connectors shall be used at splice locations. Electrical tape shall cover all splices so no bare wire is exposed. Test stations shall be installed adjacent to all fire hydrants along the waterline and at blowoffs or valves near the ends of the waterlines. Any exceptions to the location of test stations shall be approved by the engineer. At each test station, the tracer wire shall be connected to a 1 lb. Zinc or magnesium anode. Anodes shall also be attached to the tracer wire at both the beginning and the end of the proposed waterline. A typical layout of the tracer wire and test station is provided in the above figure.

The tracer wire shall be Blue No. 12 THHN annealed soft copper wire with thermal plastic insulation. The insulation shall be heat, oil, and gasoline resistant as manufactured by Temple Electric or approved equal. To allow for grade adjustment, a minimum of 12" of excess wire shall be coiled at the bottom of the test station for all wires. The insulation sheathing shall be removed such that 1" bare copper wire is exposed at all points of connection. Contractor shall attach wire being installed with proposed water main to any tracer wire installed with adjacent waterline projects.

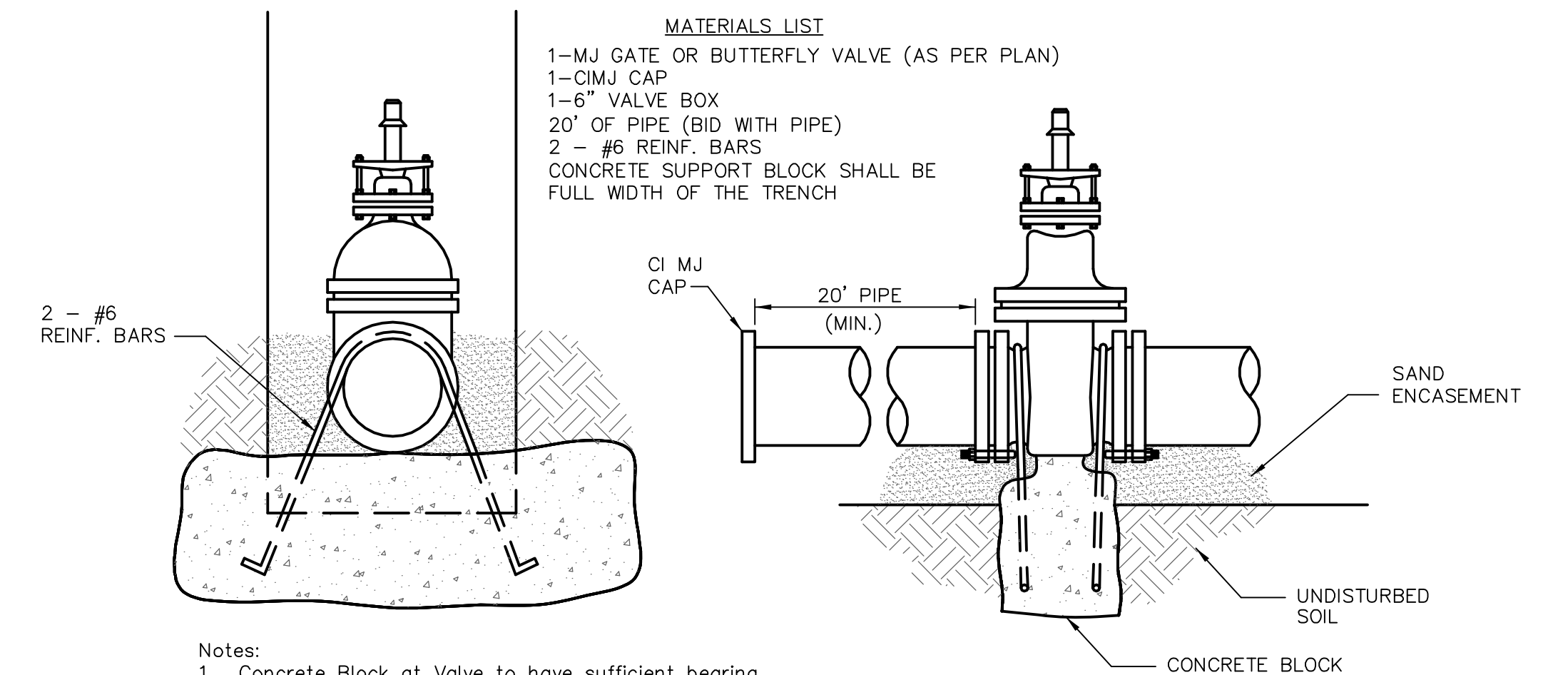
TEST STATIONS

The test station for fire hydrant applications shall be a 1 inch galvanized conduit style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for valve applications shall be 2 inch flush style test station T2PS.3B as manufactured by HANDLEY Industries or approved equal. The conduit style shall be attached to a 1 inch rigid galvanized conduit with a minimum length of 36" and plastic end bushing. The flush style shall have the word "WATER" stamped or molded into the lid. All test stations shall be manufactured using molded blue tops or sufficiently coated with blue enamel paint. The tracer wire and the anode wire shall be installed to allow 10 inches of wire within the test station. In concrete environments such as sidewalks or in the downtown area the contractor shall use the flush style test station. The location of all test stations shall be approved by the engineer, recorded, and shown in the as-built drawings.

ANODES

The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

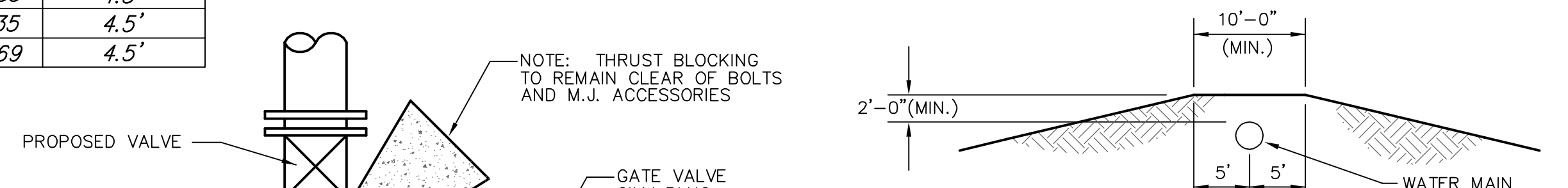
TRACER WIRE DETAIL
COST IS SUBSIDIARY TO PIPE INSTALLATION



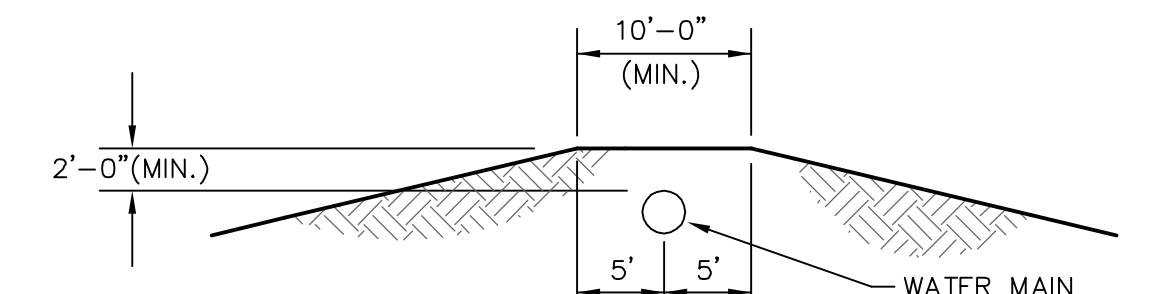
- Notes:**
- Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.
 - The thrust block shall be constructed such that bolts, nuts, and other MJ accessories are kept clear of concrete.
 - All valves at dead ends and at other locations as called out on the plans shall be blocked as shown here.

THRUST AT VALVES	
VALVE	THRUST AT 150 #/sq
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

ANCHORED VALVE ASSEMBLY, SPECIAL

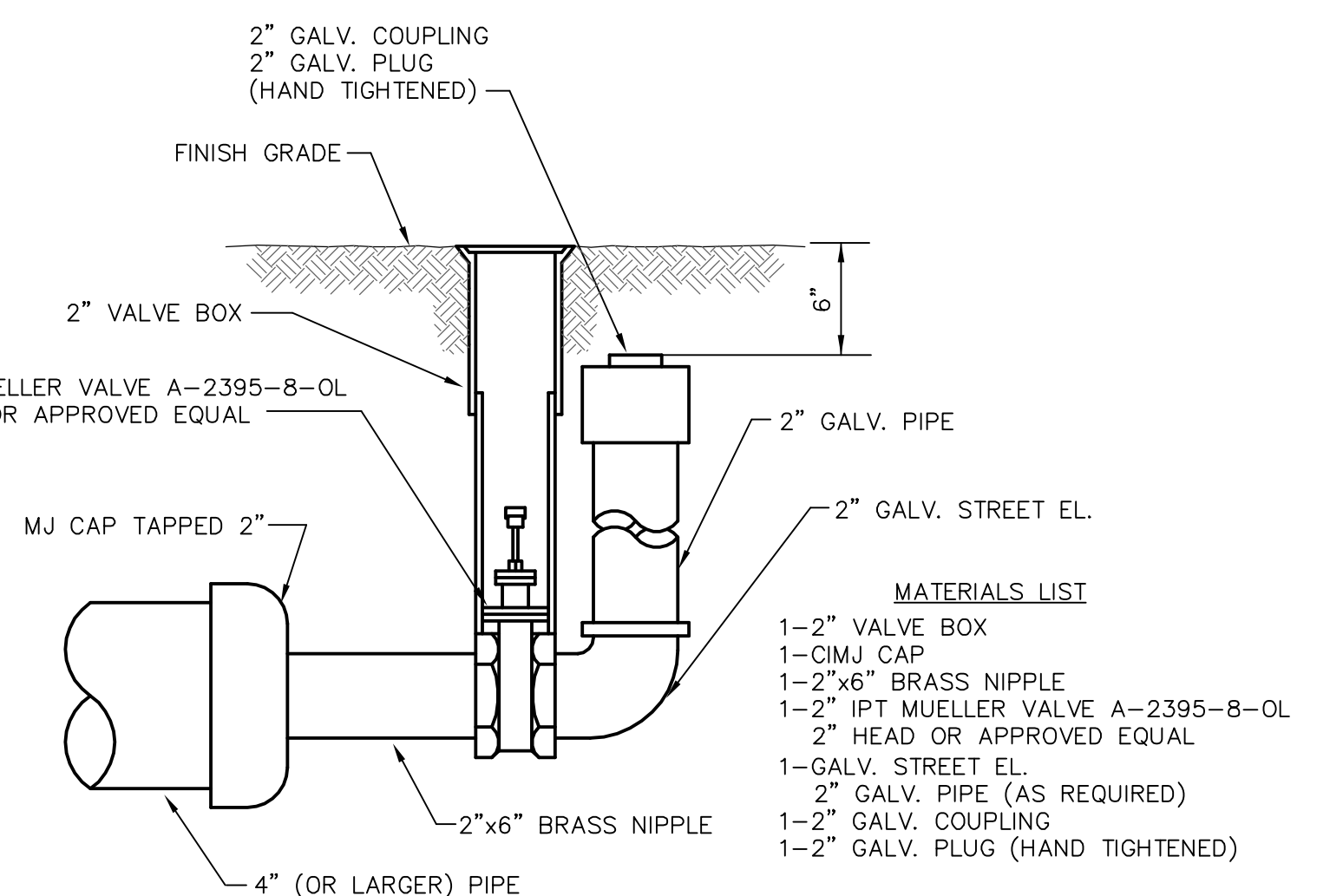


KEY BLOCK DETAIL



PROTECTIVE FILL DETAIL

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



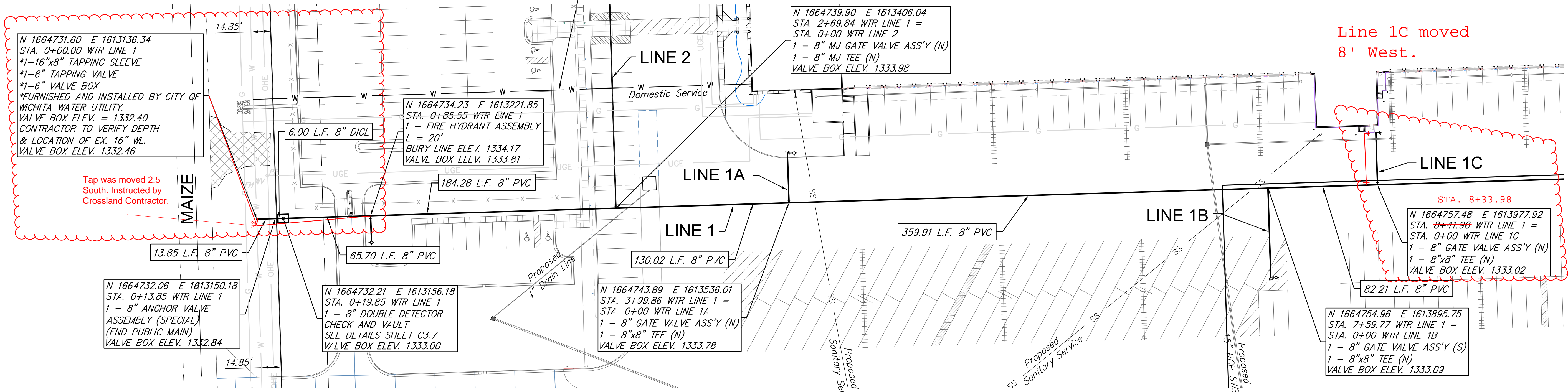
- MATERIALS LIST**
- 1-2" VALVE BOX
 - 1-CIMJ CAP
 - 1-2"x6" BRASS NIPPLE
 - 1-2" IPT MUELLER VALVE A-2395-8-OL
 - 2" HEAD OR APPROVED EQUAL
 - 1-GALV. STREET EL.
 - 2" GALV. PIPE (AS REQUIRED)
 - 1-2" GALV. COUPLING
 - 1-2" GALV. PLUG (HAND TIGHTENED)

2" BLOWOFF ASSEMBLY

<p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 425 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4501 (316) 268-4114 FAX</p>	<p>STANDARD WATER ASSEMBLY DETAILS</p>	
	<p>JAMES L. ARMOUR, P.E. - CITY ENGINEER</p>	
	PROJECT NUMBER	OCA #
DATE	SHEET C3.2 OF	

Revised: 6-7-00, MCG

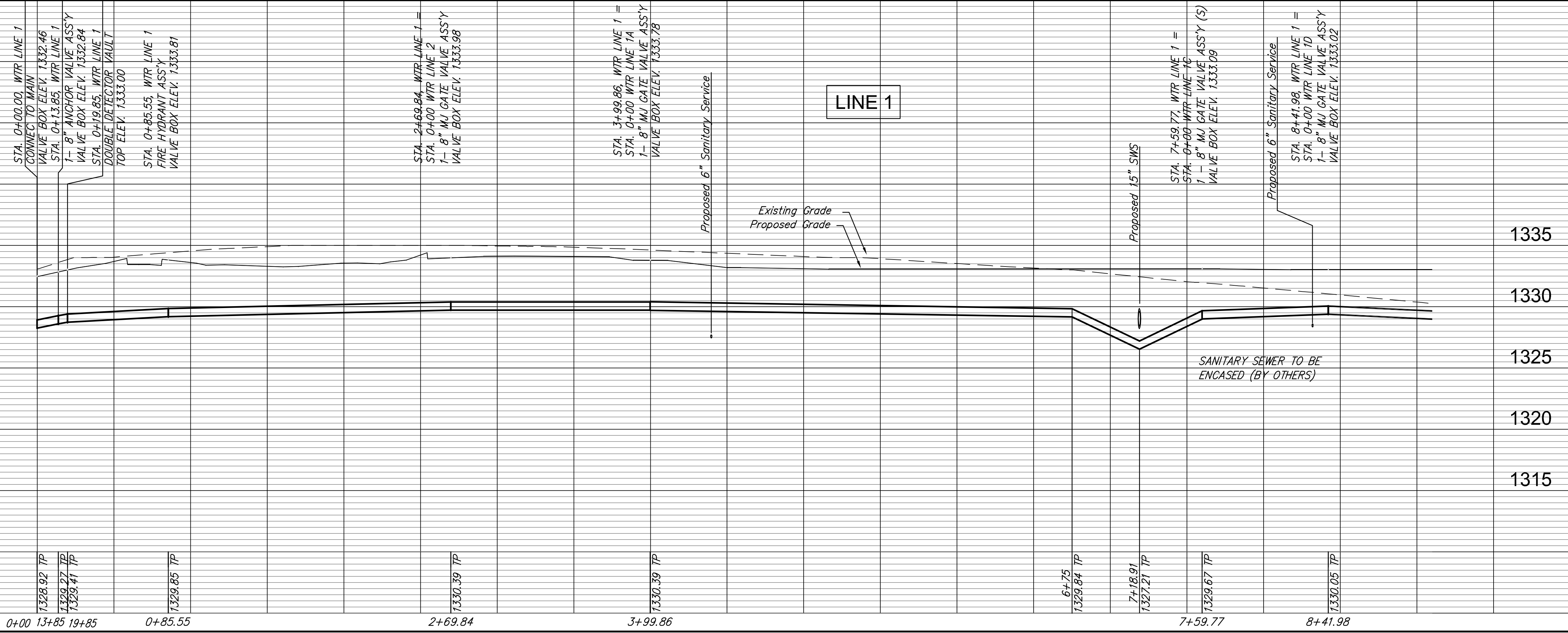
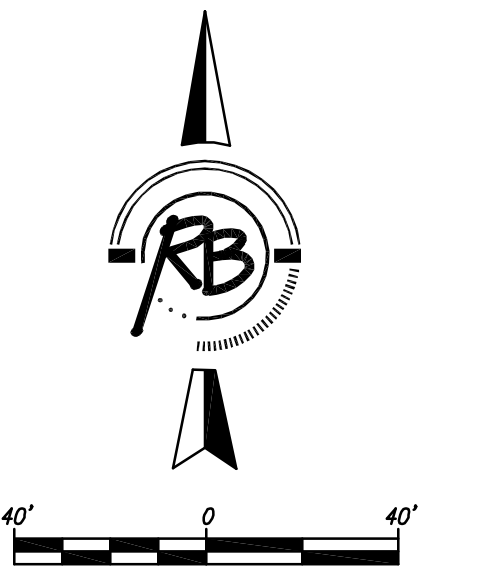
NOTES:
 * THESE ITEMS TO BE FURNISHED AND INSTALLED BY THE DEPT. OF WATER AND SEWER. THE CONTRACTOR SHALL REIMBURSE THE DEPT. FOR ALL COSTS OF THE TAP.



Line 1C moved 8' West.

Tap was moved 2.5' South. Instructed by Crossland Contractor.

NOTE:
 CONTACT RICHARD SUNIGA AT 219-8929 OR CURTIS CUMMINGS AT 219-8928 24 HOURS BEFORE THE VAULT IS SET FOR SITE INSPECTION.

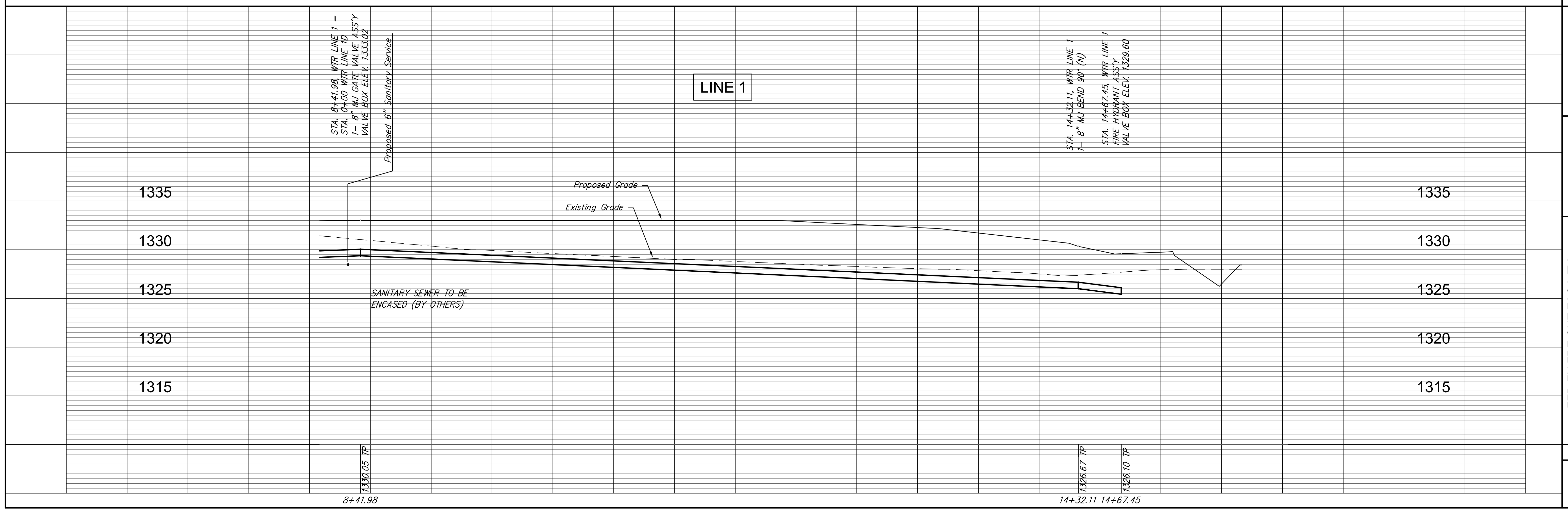
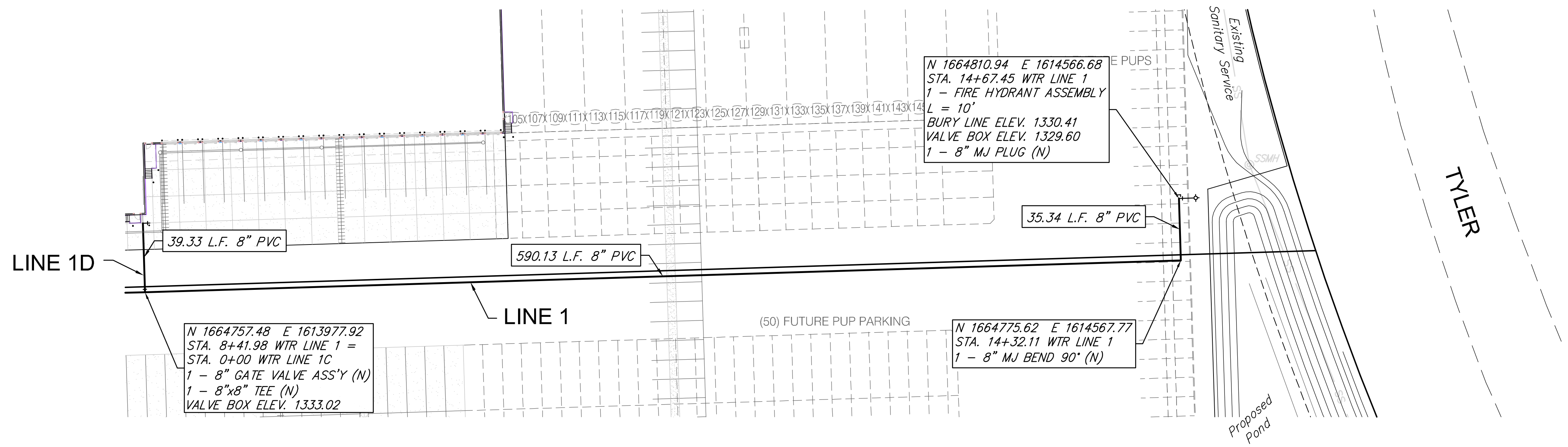
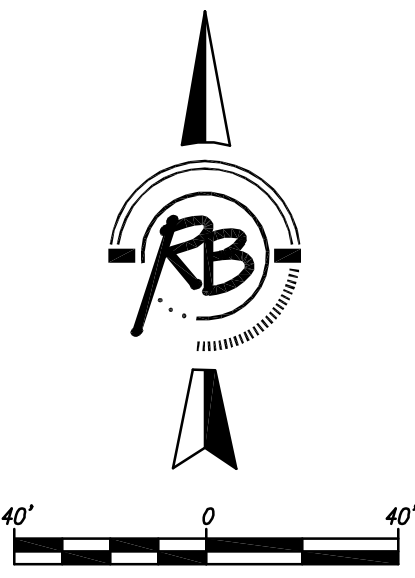


Russell & Bohm, P.A.
 Engineering, Surveying, Land Planning
 100 West Main Street, Suite 200
 Wichita, Kansas 67202
 Phone: 316.261.1111
 Fax: 316.261.1112
 www.russellandbohm.com

PROJECT NUMBER	DESIGN	DRAWN	REVIEW
..	KWL	RA	..
DRAWING FILE	UTILITY	DATE	..
..

FED EX FREIGHT FACILITY
 FIRE SERVICE LINE
 WICHITA, KANSAS

RB JOB
 3517E
 SHEET
 C3.3



Russel & Bohm, P.A.
 Engineering, Surveying, Land Planning
 100 West Main
 Wichita, Kansas 67203
 Phone: 316.264.8000
 Fax: 316.264.8001
 www.russel-bohm.com

RB JOB
 3517E
 SHEET
 C3.4
 OF
 4

PROJECT NUMBER
 ..
 DRAWING FILE
 ..

DESIGN
 KWL
 UTILITY

DRAWN
 RA
 DATE
 ..

REVIEW
 ..
 REVIEW
 ..

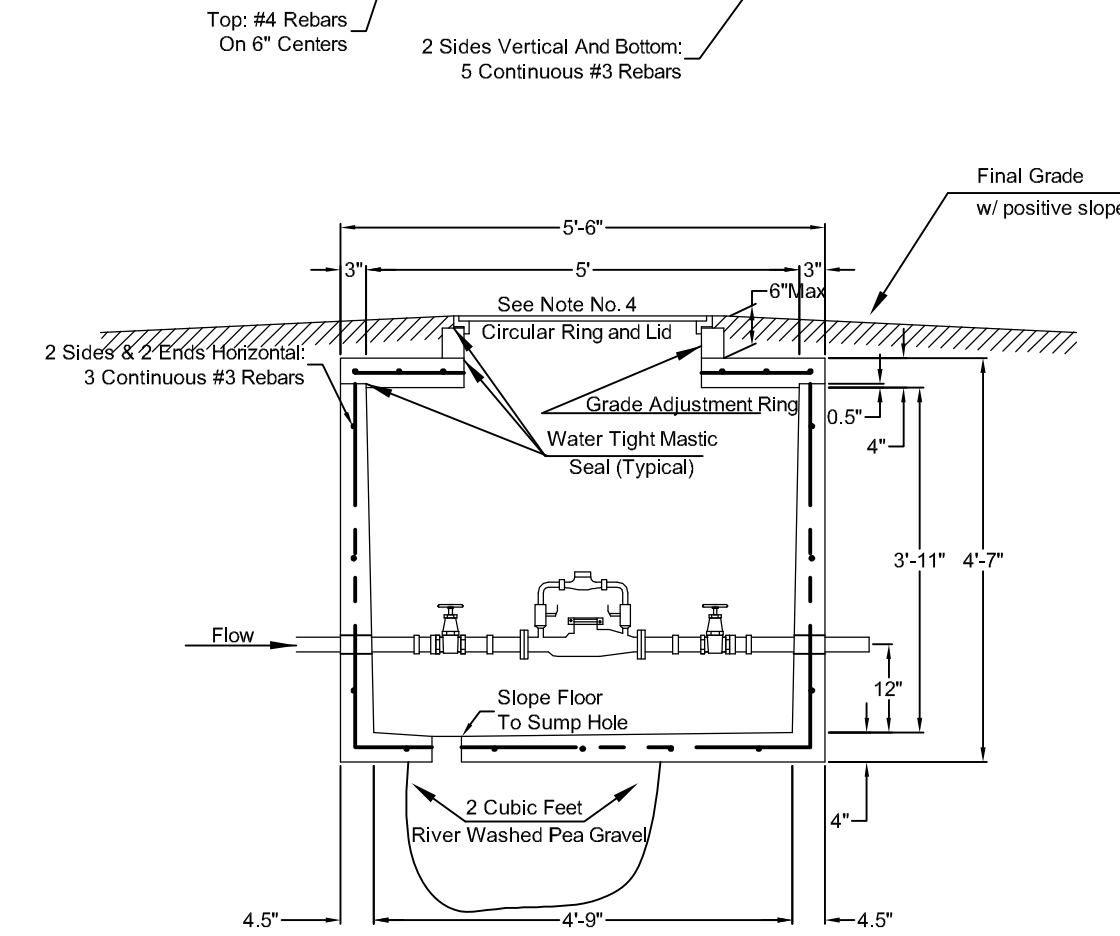
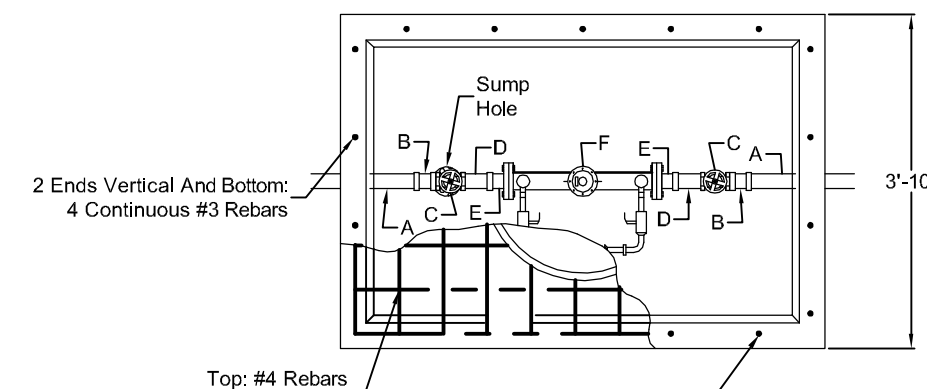
FED EX FREIGHT FACILITY
 FIRE SERVICE LINE
 WICHITA, KANSAS

Notes For All Services - 2" thru 12":

- When the standard vault dimensions are not applicable, such as when additional space is required for special pipe, fittings, additional meters, etc. the design engineer shall design a vault with the required dimensions for Water & Sewer Dept. approval and Public Works approval.
- The vault shall be poured concrete, cement blocks (voids to be completely filled with 2500 P.S.I. concrete) or approved precast structure (such as Clutter Inc. vaults approved 8/1/2000). The intent of these details shall not be limited by drawings or standards of precast structures.
- Vault location to be determined by Wichita Water & Sewer prior to construction and approved by Department's field supervisor prior to installation. A final inspection will be required for acceptance. Vault location standards include but not limited to: not to be located where subjected to vehicular loads, not to be located in any right-of-way or utility easement, and must be located on the property being served.
- The manhole ring and lid shall be Neenah R-6034 Frame with Type "C" Solid Lid and Drop Down Handle or US Foundry APS-30x30 (Aluminum). Where applicable the standard 10" Wichita Water & Sewer pattern meter reading lid and ring shall be located directly above water meter register. All meter registers shall have an approved lid directly vertical above. All joints of concrete to concrete or metal to concrete in the construction of the vault shall have an approved water tight mastic joint seal.
- Any fittings or appurtenances required to achieve proper elevation of pipe through the vault shall be provided by the contractor and appropriately noted on as-builts submitted by the inspecting engineer. Such fittings shall be a minimum of 2" from the exterior wall of vault.
- For all services larger than 2" the contractor shall provide an outlet flange connection as shown 12-inches from the inside wall. Inlet and outlet wall sleeves shall be provided and installed by the contractor and shall be in alignment with one another. The inlet and outlet pipe shall be ductile iron pipe, cement lined, Class 150 per Standard Specifications and shall be continuous through vault wall and joint no less than two(2) feet from the exterior wall of vault. Flanges of inlet and outlet pipes shall be in proper alignment and bolt pattern shall be rotated in such a way that valves and other fittings shall be in their proper vertical alignment when installed.
- For all services 4" and larger the contractor shall install a mega lug, restrained joint, or approved equal on the exterior walls of the vault, which shall be manufactured of ductile iron conforming to ASTM A 536-80, heat treated to a minimum hardness of 370 BHN and have a working pressure of at least 250 P.S.I. For all services smaller than 4" the contractor shall install an approved vault clamp on the exterior walls of the vault.
- All valves, meters, assemblies, and fittings shall be provided with sufficient concrete or other approved supports to the vault floor.
- The "Confined Space Warning" sign shall be fastened to the top of all vaults. If necessary for landscaping or site considerations, the sign may be fastened to the vault lid if it does not impede access to the handle. Acceptable materials: Aluminum 73415HH, Plastic 73439HH, or S.A. Vinyl 73463HH.
- All meters shall have an electronic read register compatible with the current City of Wichita meter reading system. All detector meters shall be an 5/8 cubic foot Badger meter with ERT register or approved equal. Gallon meters shall not be accepted.

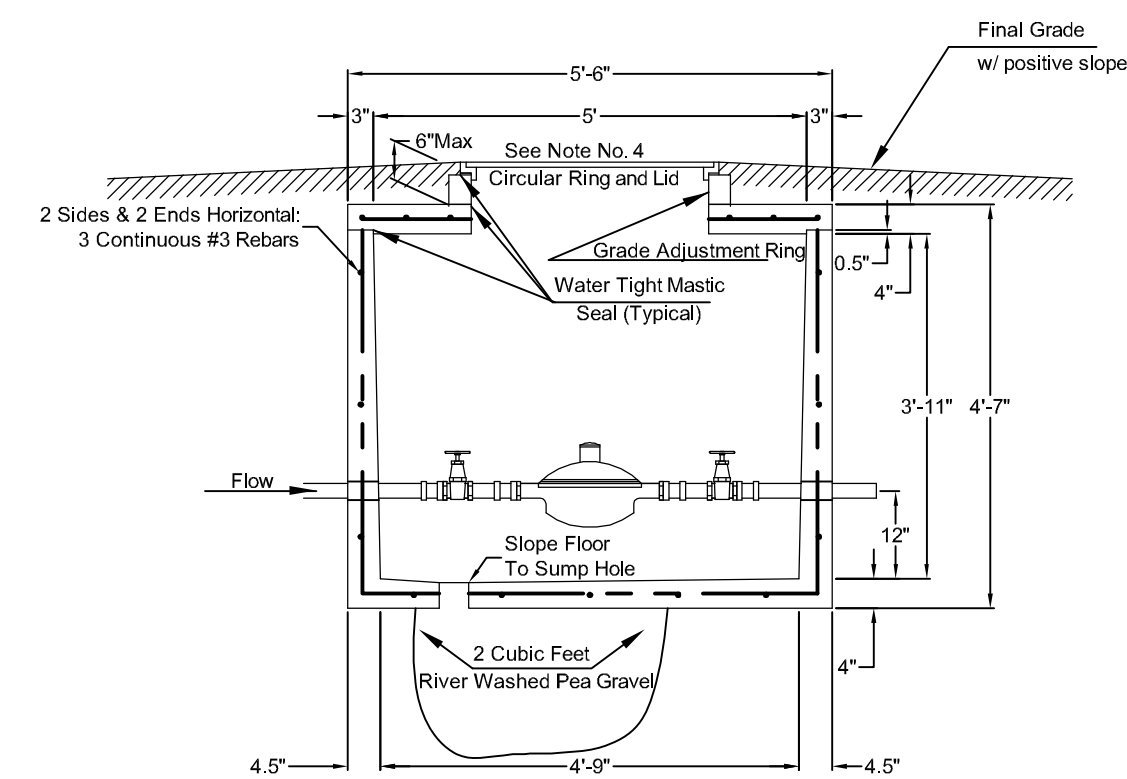
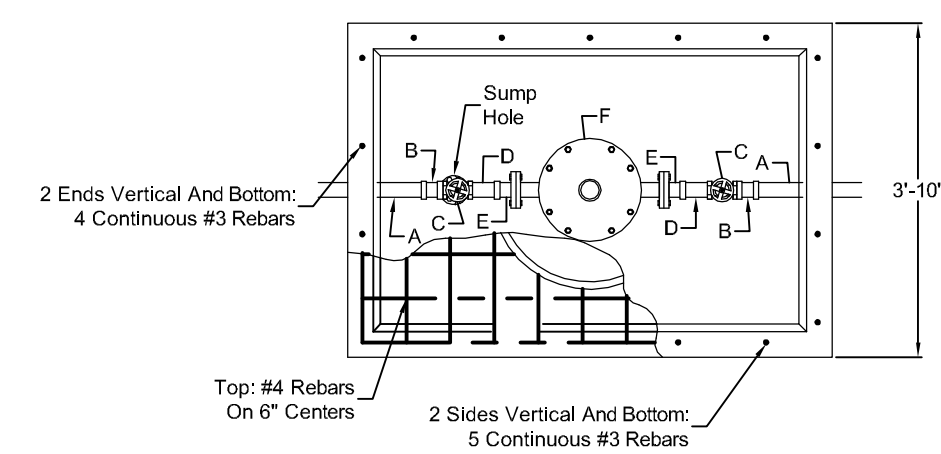
11. Additional Notes For Fire Services:

- A post indicator valve (PIV) is an option for the outlet valve and may be requested by the architect or owner. The PIV is not required by City of Wichita ordinance.
- When Siamese connections are required by the Wichita Fire Department, refer to the current City Code Section 15.
- If due to any reason the completed vault retains ground or drainage water in excess of 4" in depth from the floor of the vault, the property owner shall be responsible for providing and installing an appropriate automatic sump pump or approved equal, as well as any other appurtenances required to make such system function as intended.
- The property owner is responsible for completing an "Application for Private Fire Protection" prior to final acceptance of the project.



- A - 2" PVC or Copper
- B - 2" F PVC to M Iron or 2" F Copper to M Iron
- C - 2" Bronze IPT Gate Valve, Wheel Operated
- D - 2" x 4" or 2" x 6" Brass Nipple
- E - Lok-Pak Meter Couplings
- F - 2" Febco Model 406 Detector Check or approved equal with metered bypass assembly

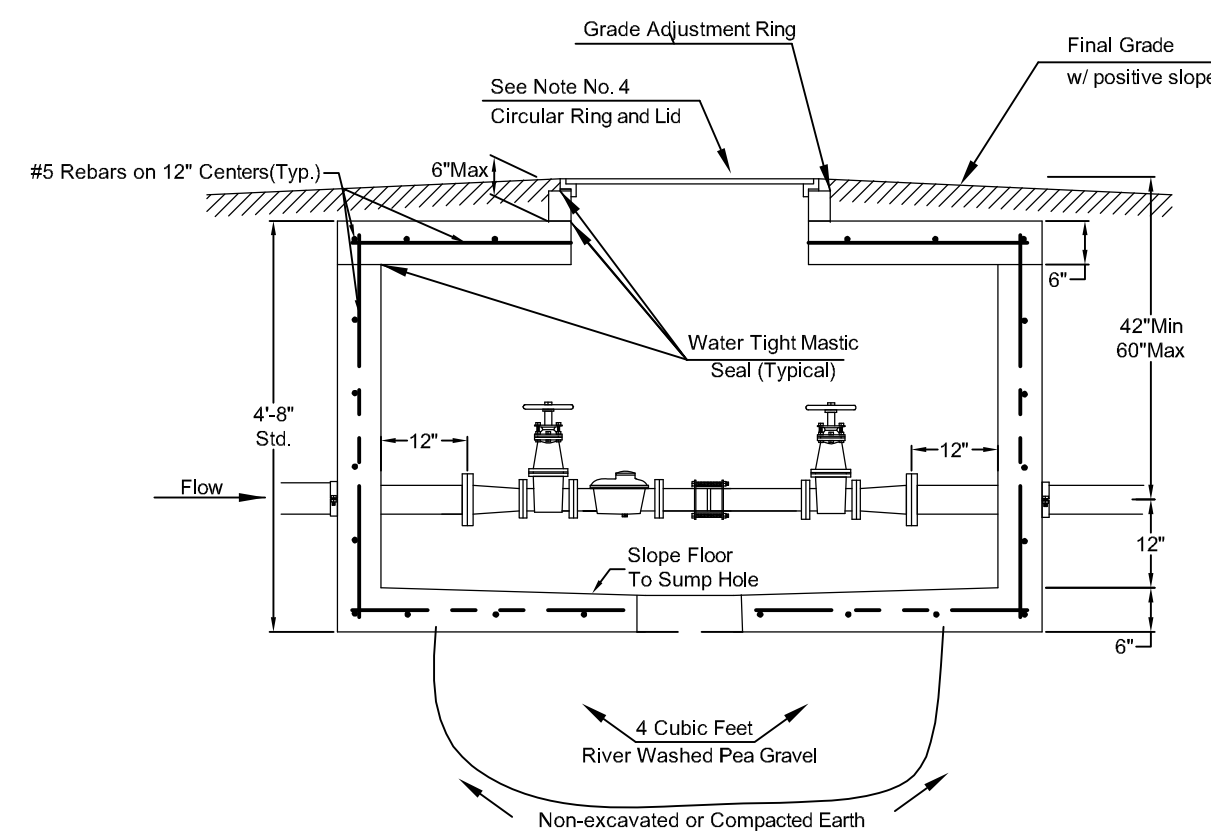
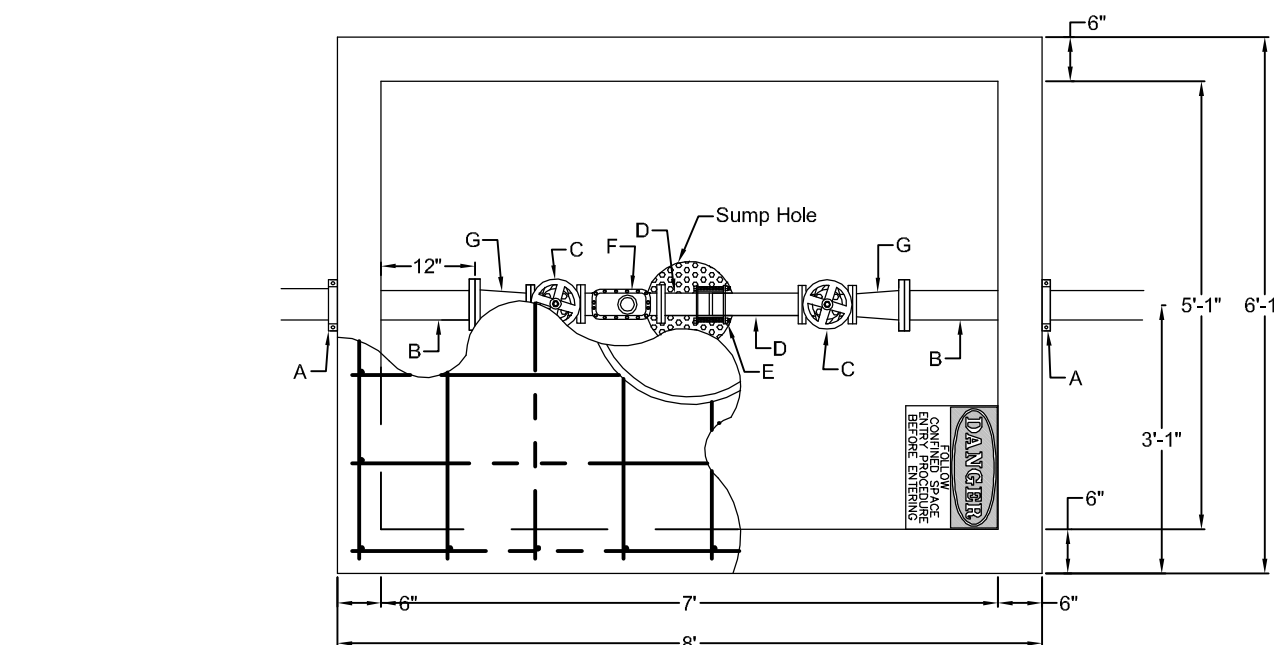
2" Fire Service



- A - 2" PVC or Copper (to be extended completely through vault to ensure proper alignment)**
- B - 2" F PVC to M Iron or 2" F Copper to M Iron**
- C - 2" Bronze IPT Gate Valve, Wheel Operated**
- D - 2" x 4" or 2" x 6" Brass Nipple**
- E - Lok-Pak Meter Couplings**
- F - 2" Meter**

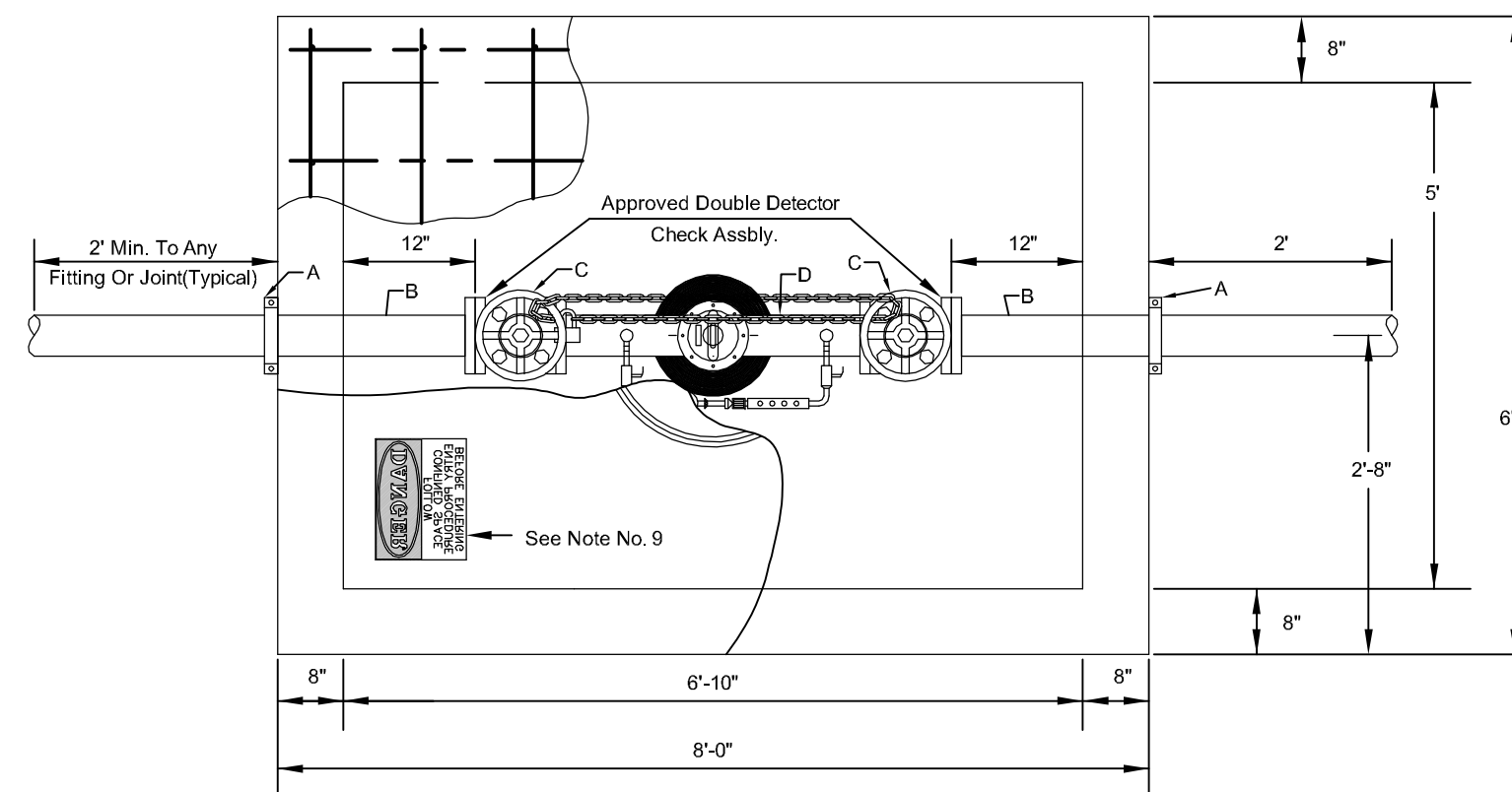
* = Contractor Installed
 ** = Installed By Wichita Water & Sewer

2"DS



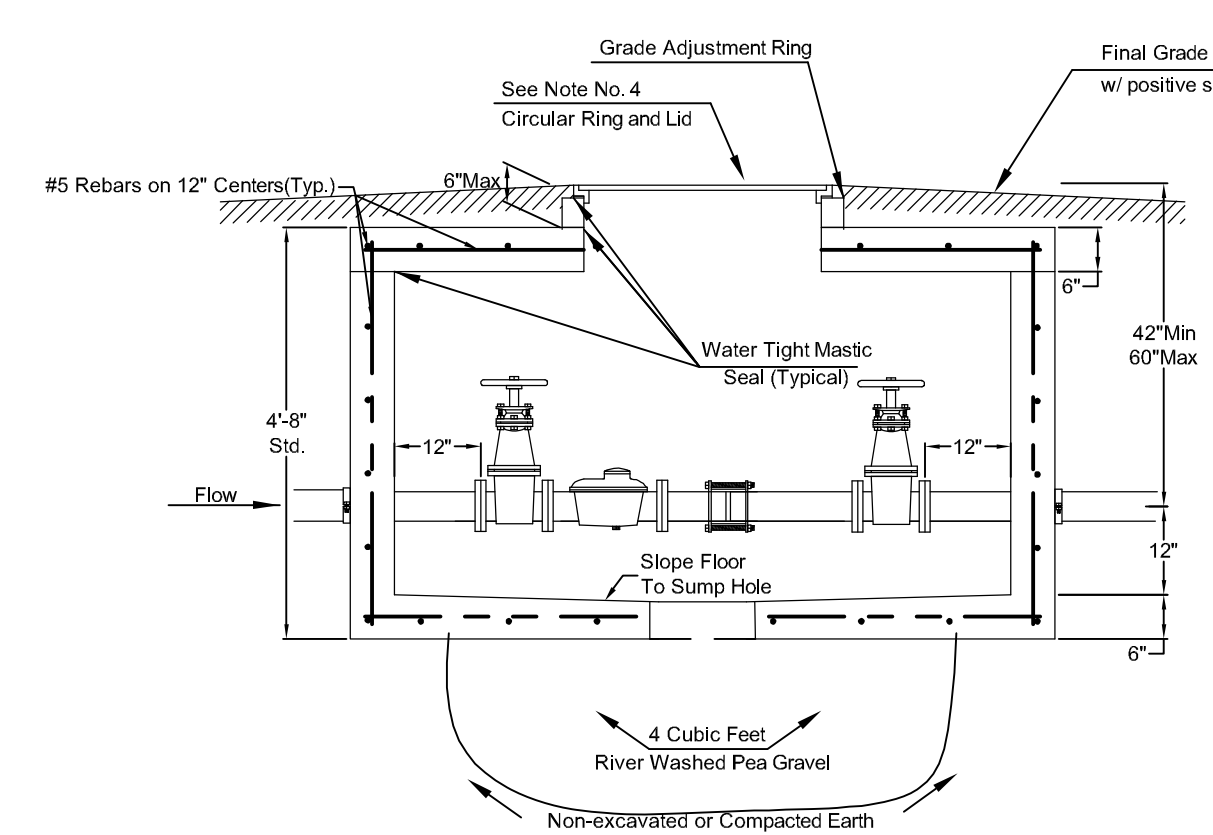
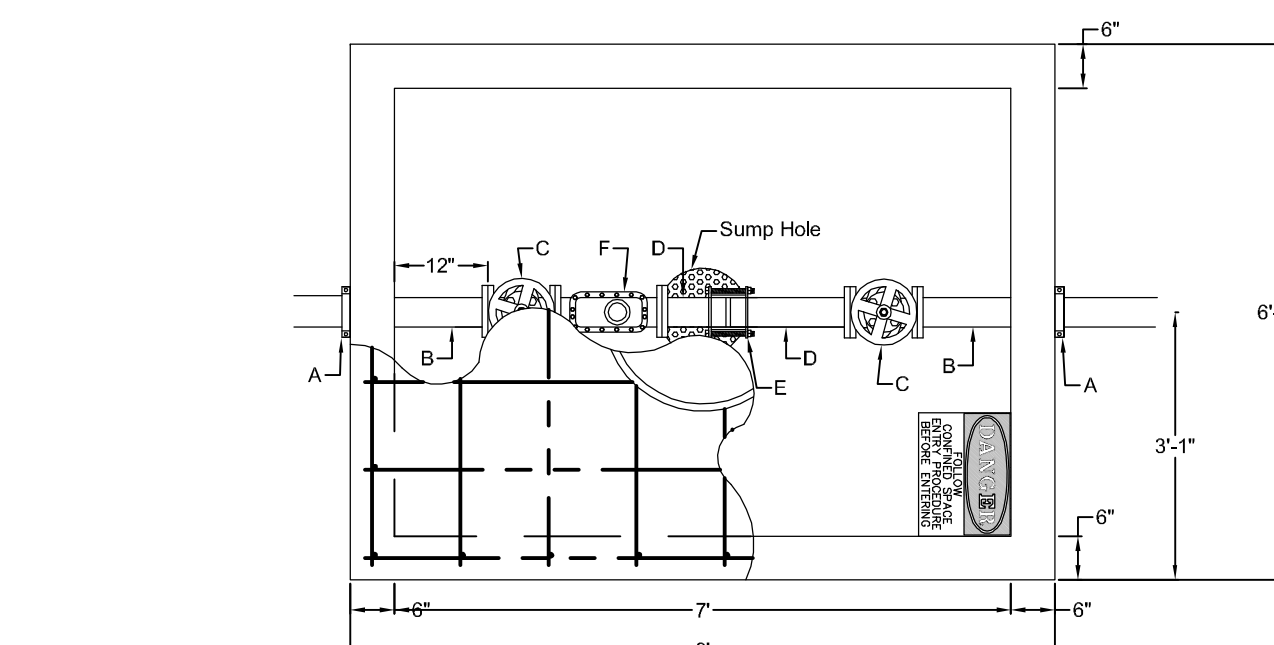
- A - 4" Vault Clamp
- B - Min. 3" Piece of 4" FL x PE DICL Pipe
- C - 3" Flange Non-rising Stem Gate Wheel Valve
- D - 3" FL x PE Pipe
- E - 3" Flex Coupling
- F - 3" Badger Recordall II Turbo Cubic Foot Meter with ERT Register or Sensus W-350DR Cubic Foot Meter with AMR Register.
- G - 3" x 4" FL Reducer

3"DS



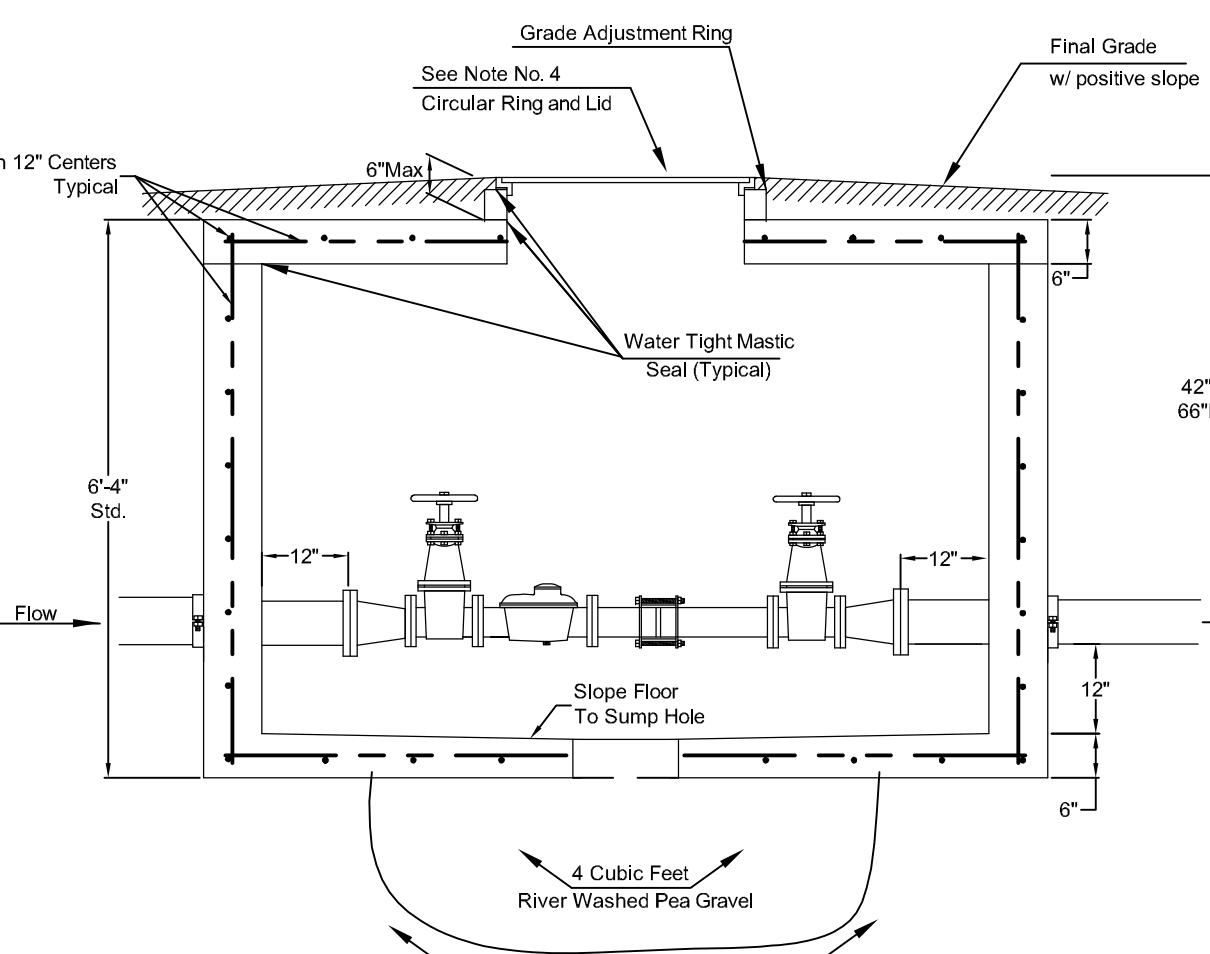
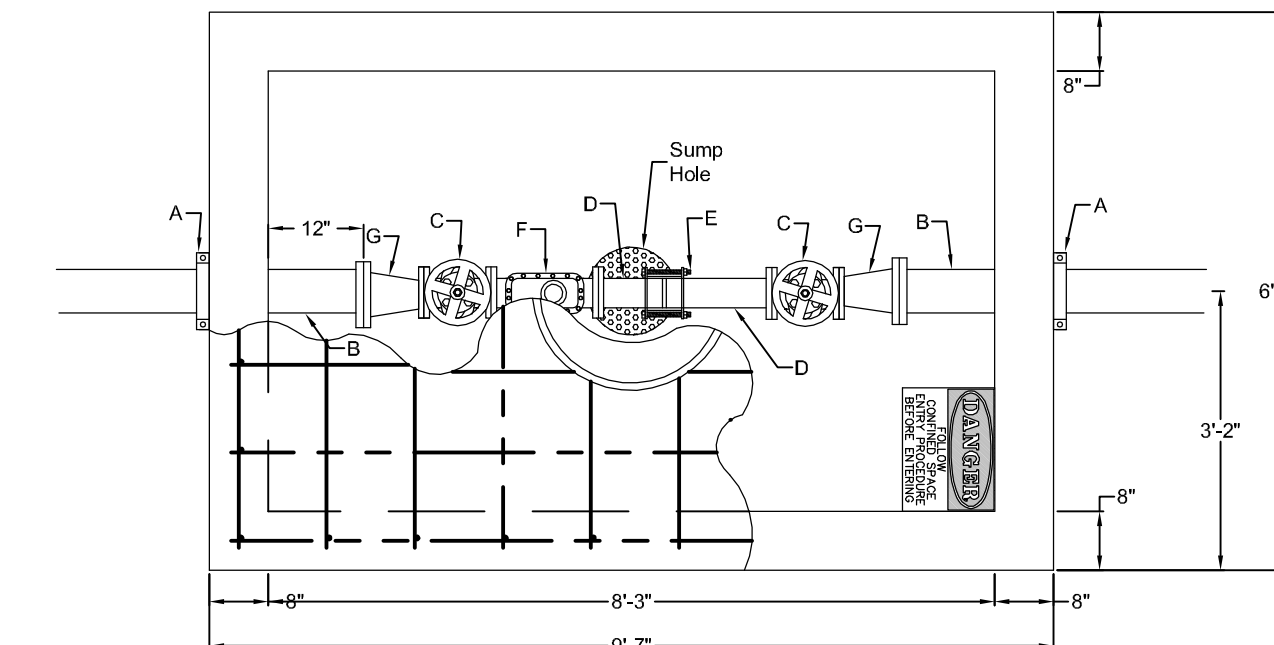
- A - Mega Lug (See Note 7)
- B - Min. 3'-8" Piece of FL x PE DICL Pipe
- C - Flange Gate Valve, Wheel Operated
- D - Ames Model 5001SS or approved equal with metered(cubic foot) by-pass assembly

4" thru 8" Fire Service



- A - 4" Vault Clamp
- B - Min. 3" Piece of 4" FL x PE DICL Pipe
- C - 4" Flange Non-rising Stem Gate Wheel Valve
- D - 4" FL x PE Pipe
- E - 4" Flex Coupling
- F - 4" Badger Recordall II Turbo Cubic Foot Meter with ERT Register or Sensus W-1000DR Cubic Foot Meter with AMR Register.

4"DS



- A - 6" Mega Lug (See Note 7)
- B - Min. 3" Piece of 6" FL x PE DICL Pipe
- C - 4" Flange Non-rising Stem Gate Wheel Valve
- D - 4" FL x PE Pipe
- E - 4" Flex Coupling
- F - 4" Badger Recordall II Turbo Cubic Foot Meter with ERT Register or Sensus W-1000DR Cubic Foot Meter with AMR Register.
- G - 6" x 4" Flange Reducer

6" DS w/ 4" meter



STANDARD VAULT DETAILS AND METER ASSEMBLIES			
CITY ENGINEER			
JAMES L. ARMOUR, P.E., L.S.			
PROJECT NUMBER	DATE	DESIGN	DRAWN
CITY ENGINEER'S OFFICE	CITY HALL - SEVENTH FLOOR		
485 NORTH MAIN STREET			
WICHITA, KANSAS 67202-1620			
(316) 265-4501			
(316) 265-4114 FAX			
			SHEET
			C3.7