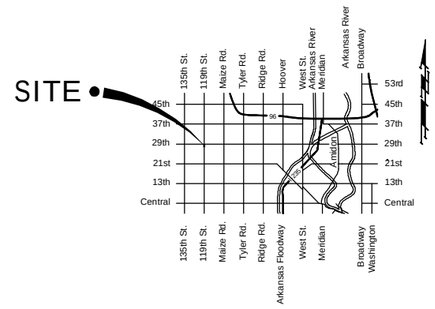
119th STREET WEST
16" WATER MAIN EXTENSION
NORTH LINE of WEST RIDGE ESTATES to 29th STREET NORTH

Project No.'s 448-89546

O.C.A. No. 735175

CITY OF WICHITA, KANSAS
James L. Armour, P.E. City Engineer



VICINITY MAP

GENERAL NOTES

1. The Contractor shall be made aware of the fact that construction will take place in close proximity of existing and proposed utilities. Any conflicts with these utilities shall be reported to the Engineer. The Contractor shall coordinate the construction of this project with the relocation of any existing or proposed utilities by the utility companies.

2. Contractor shall be required to provide notice to utility companies a minimum of seventy-two (72) hours prior to any work being done on top or and/or adjacent to their facilities .

LIST OF UTILITY COMPANIES

Contractor shall be required to provide notice to Kansas One Call at 687-2470 a minimum of two (2) working days prior to any excavation or work adjacent to utilities.

TYPE	OWNER	CONTACT	TELEPHONE	(ALT.)
Locator Service	Kansas One-Call		687-2470	800-344-7233
TV	Cox Communications (Cable)	Marc Henderson	262-4270	
Electric	Westar Energy (K.G.E.)	Miles Capps	261-6824	
Electric	Sedgwick County Electric Co-op	Scott Ayres	542-3131	866-542-4732
Gas	Kansas Gas Service	Matt Fulghum	831-3165	
Gas	Aquila Energy Co.	Calvin Briggs	941-1608	
Telephone	AT&T Telephone (formerly SBC)	Jim Tobin	268-2759	800-286-8313
Water	Wichita Water Department	Bill Perkins	268-4563	268-4555
Storm Water Sewer	Wichita SWS Maintenance	Doug Arvivson	268-4095	
Sanitary Sewer	Wichita Sewer Maintenance	Calvin Fugit	268-4024	262-6000
Tornado Warning Device	Sedgwick Co. Emergency Mgmt.	Jack Keigly	660-5968	

3. All water mains and appurtenances shall be installed in accordance with City of Wichita, Kansas Standard Specifications for Water Main Installations.

4. The Water Department shall field locate water valves one time during construction when requested by the Contractor. It shall be the responsibility of the Contractor to preserve such field locations during the construction process. Water valves, water valve boxes, or fire hydrants damaged during construction shall be repaired at the Contractor's expense. Contact Bill Perkins with the Wichita Water Department for water service information.

5. Opening and closing of water valves shall be done slowly to prevent damage to the distribution system by a water hammer. All valves that are closed by the Contractor must be reopened as new construction permits. The Project Inspector must ascertain that any valve closed by the Contractor is reopened. The Contractor will be permitted to operate a water valve only when the Project Inspector assigned to the project is present.

6. Valves are to be marked with lengths of 2 x 4's, painted blue, and extended 5' above the ground at all locations. Cost to be INCIDENTAL to valve installation.

7. The Contractor shall not start work on the project until the Project Inspector assigned to the project is present. Any work done without inspection will be required to be uncovered for inspection.

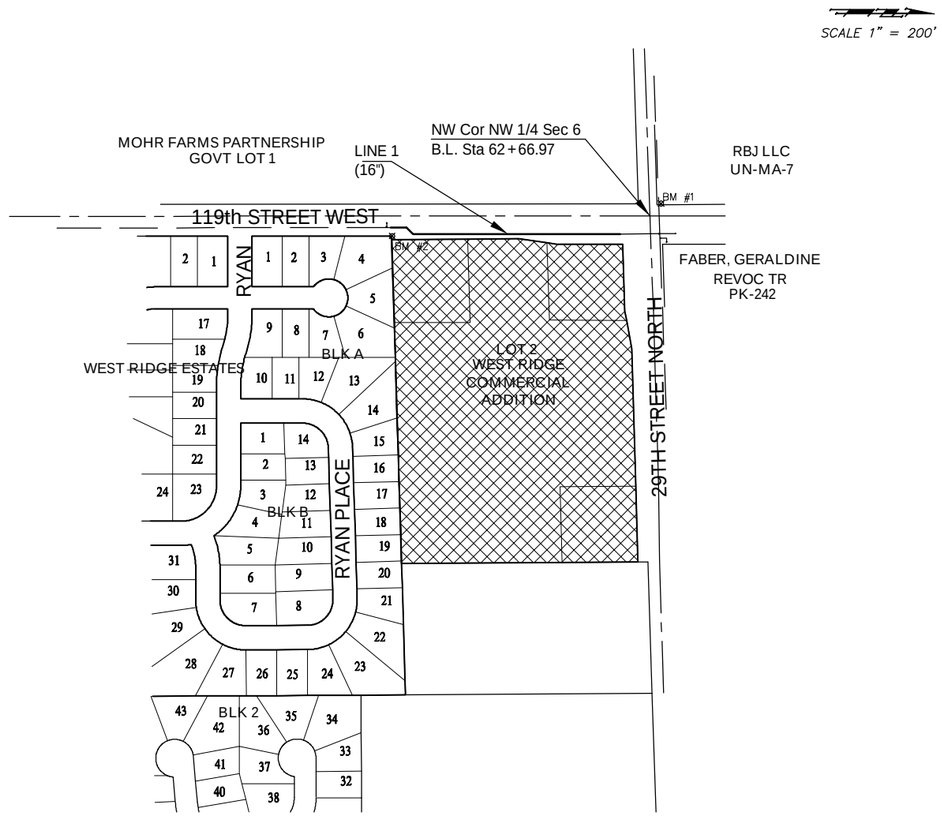
8. All traffic signs that are located in direct conflict with the proposed construction shall be removed by the Contractor. All signs that are removed or damaged during construction shall be replaced or reset by the Contractor as soon as construction permits. The cost for any removal, replacement and/or resetting of traffic signs shall be INCIDENTAL to "Site Clearing and Restoration".

9. Contractor shall be responsible for implementing erosion control methods during construction to prevent unnecessary silt/sediment discharge through downstream properties and/or storm sewer systems. Contractor shall install and maintain erosion controls as directed by the Engineer These controls may include but not limited to: hay bales; silt fences, temporary mulching or other controls necessary to inhibit sediment runoff during construction.

10. All project waste, including trees, rubble, abandoned pipes, excess excavation, etc. shall be disposed of on sites provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance, and location. Locations that, in the opinion of the Engineer, leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain will require a Kansas State Board of Agriculture permit. Any material dumped into the waters or wetlands of the United States is subject to the U S Army Corp of Engineers permitting regulations. Any material stockpiled beyond the approved construction limits may require an archaeological investigation unless buried in a previously approved disposal site. All cost for erosion control shall be considered INCIDENTAL to the Lump Sum Bid Item "Soil Erosion BMP's"

11. The developer for this project is John & Marilin Dugan 721-2416.

SCALE 1" = 200'



BENEFIT DISTRICT

Benchmarks

BM #1 – City of Wichita Bench Mark Disc, NW Corner of Intersection of 119th St. West and 29th St. North, 43.82' NW of Section Corner Iron, 5.10' West of Power Pole.
Elev. = 173.53 City Datum (1360.93 MSL)

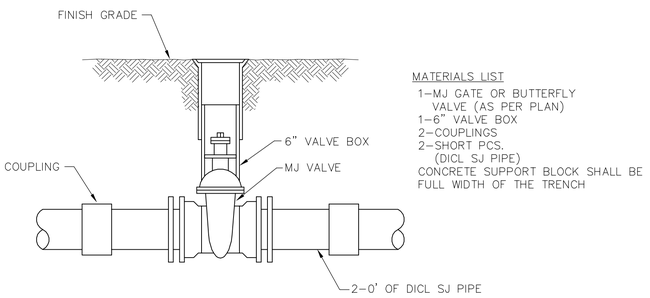
BM #2 – BM #2 – Small RR Spike, N Face of Power Pole, 12.00' West of Southwest Corner of West Ridge Commercial Addition.
Elev. = 179.61 City Datum (1367.01 MSL)

Index

April, 2006

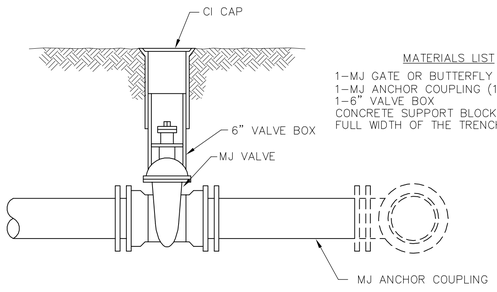
eng\119th Wtr west ridge-29th\Cover.dwg

BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
315 2ND 7271 * 315 ELLIS * WICHITA KANSAS 67211



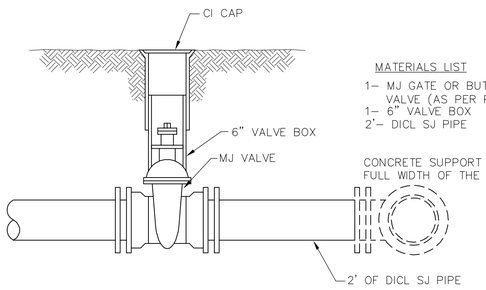
MATERIALS LIST
1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1-6" VALVE BOX
2-COUPLINGS
2-SHORT PCS. (DICL SJ PIPE)
CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

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

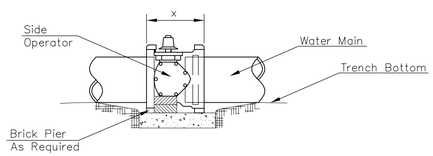
ANCHORED VALVE ASSEMBLY



MATERIALS LIST
1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1- 6" VALVE BOX
2'- DICL SJ PIPE

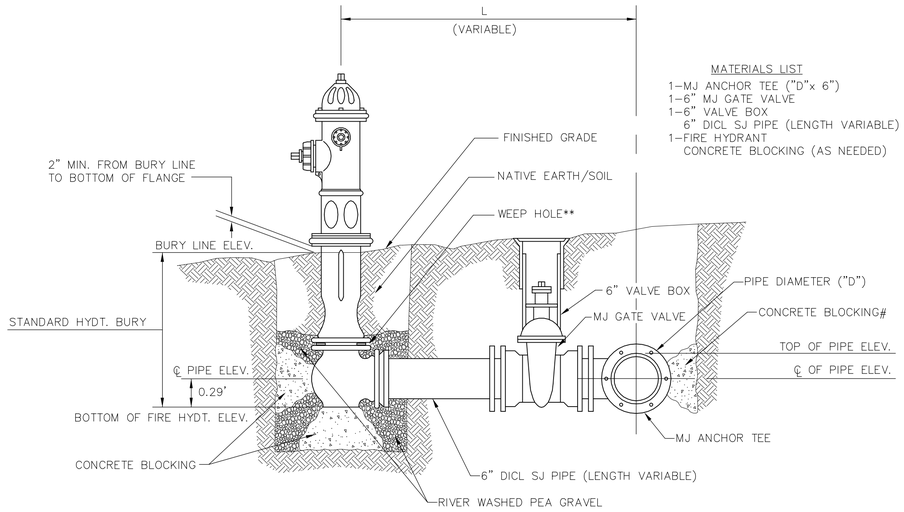
CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

VALVE ASSEMBLY



NOTES
1. This detail covers Butterfly Valve installation, inclusive, regard-less of type of pipe or joint used. Larger lines to be detailed on plans.
2. 6" Valve Box and Cover required per City of Wichita Std. Specifications.
3. 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" DICL SJ PIPE (LENGTH VARIABLE)
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.

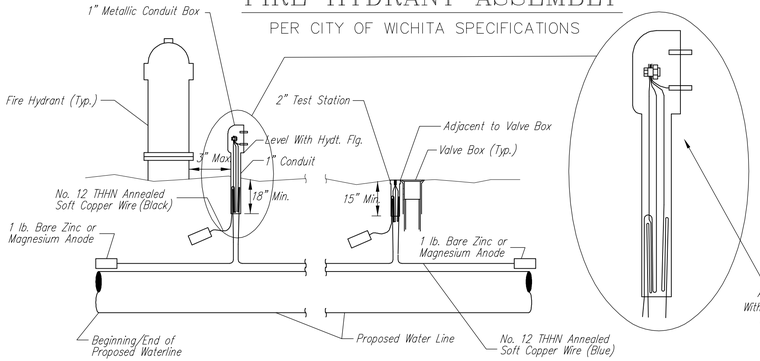
* IF HYDRANT BURY IS IN EXCESS OF 5', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY.

FIRE HYDRANTS REQUIRED

STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*

FIRE HYDRANT ASSEMBLY

PER CITY OF WICHITA SPECIFICATIONS



TRACER WIRE

Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. 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.

WIRE

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

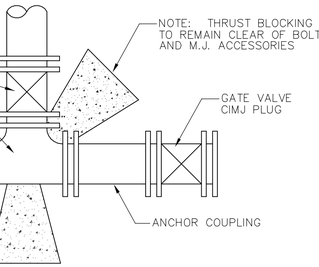
The test station for fire hydrant applications shall be a 1 inch galvanized conduit style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for valve applications shall be 2 inch flush style test station T2PSJB 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

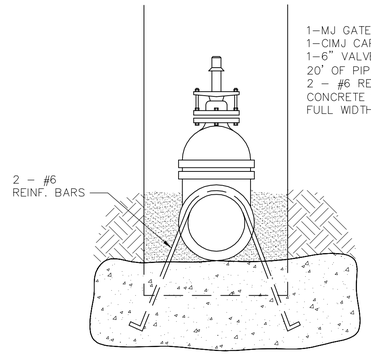
The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

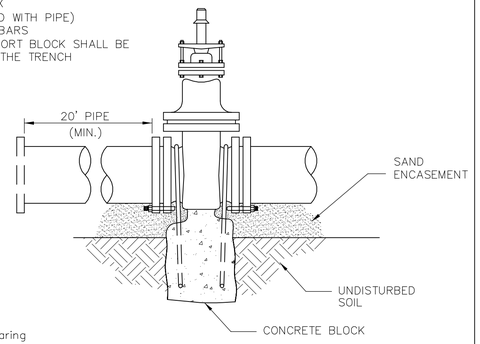
TRACER WIRE DETAIL

COST IS SUBSIDIARY TO PIPE INSTALLATION



KEY BLOCK DETAIL





MATERIALS LIST
1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1-CIMJ CAP WHEN NECESSARY
1-6" VALVE BOX
20' OF PIPE (BID WITH PIPE)
2 - #6 REINF. BARS
CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

Notes:
1. 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.

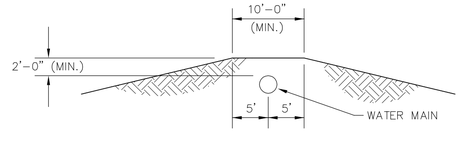
2. The thrust block shall be constructed such that bolts, nuts, and other MJ accessories are kept clear of concrete.

3. All valves at dead ends and at other locations as called out on the plans shall be blocked as shown here.

THRUST AT VALVES

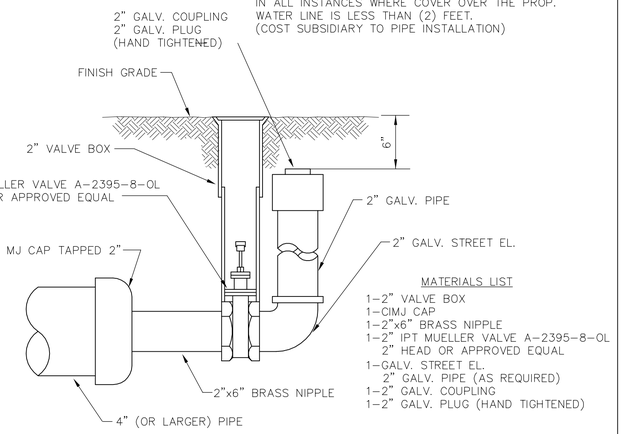
VALVE	THRUST AT 150 #/in²
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

ANCHORED VALVE ASSEMBLY, SPECIAL



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

Revised: 6-7-00, MCG

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4114 FAX

STANDARD WATER ASSEMBLY DETAILS

M. E. LINDEBAK P.E. - CITY ENGINEER

PROJECT NUMBER	INDEX CODE
448-89546	

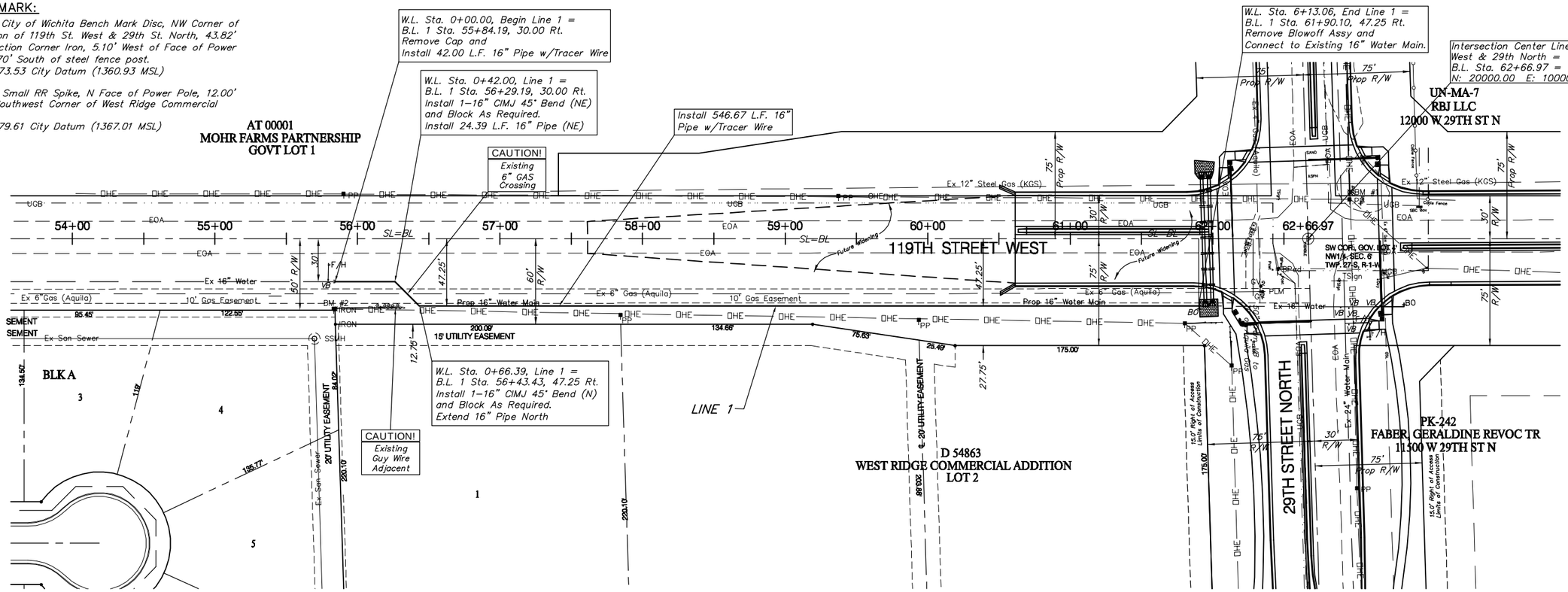
DATE	SHEET 2 OF 4
April 2006	

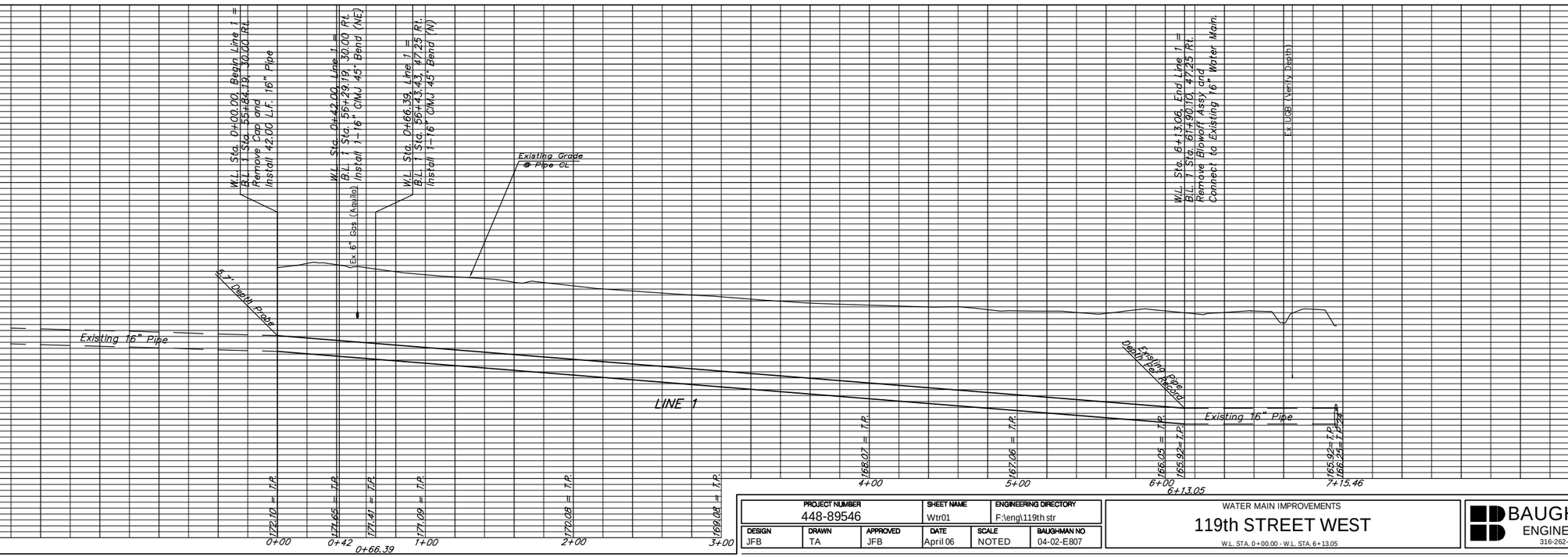
BENCHMARK:

BM #1 – City of Wichita Bench Mark Disc, NW Corner of Intersection of 119th St. West & 29th St. North, 43.82' NW of Section Corner Iron, 5.10' West of Face of Power Pole, 48.70' South of steel fence post.
Elev. = 173.53 City Datum (1360.93 MSL)

BM #2 – Small RR Spike, N Face of Power Pole, 12.00' West of Southwest Corner of West Ridge Commercial Addition.
Elev. = 179.61 City Datum (1367.01 MSL)

SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL



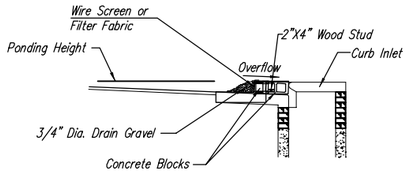


PROJECT NUMBER			SHEET NAME	ENGINEERING DIRECTORY	
448-89546			Wtr01	F:\eng\119th str	
DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	TA	JFB	April 06	NOTED	04-02-E807

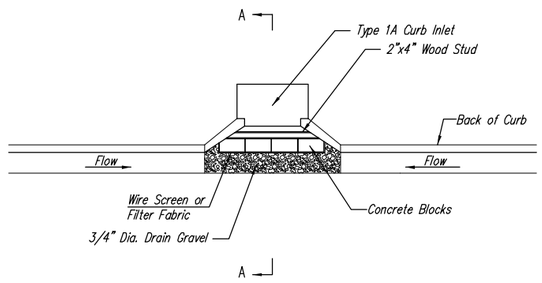
WATER MAIN IMPROVEMENTS
119th STREET WEST
W.L. STA. 0 + 00.00 - W.L. STA. 6 + 13.05

BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

SHEET 3 OF 4



SECTION A–A



CURB INLET GRAVEL FILTERS
(INLET PROTECTION–RESIDENTIAL STREETS ONLY)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

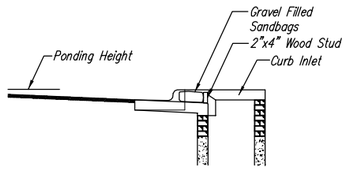
Instructions for Installing:

STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1–1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary. An alternative installation is the use of gravel bags supported by a 2"x4" board to prevent collapsing.

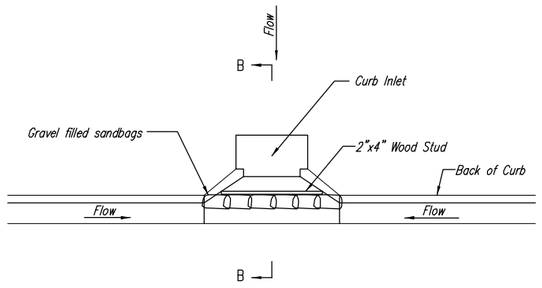
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within 8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

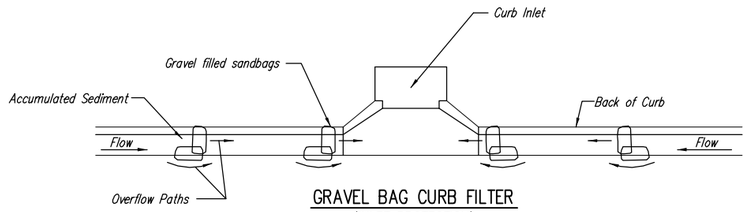


SECTION B–B



CURB INLET SANDBAG FILTERS
(INLET PROTECTION)

NOTE: Other types of curb inlet protection may be approved by the City so long as equal protection is provided.



GRAVEL BAG CURB FILTER
(INLET PROTECTION)

NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

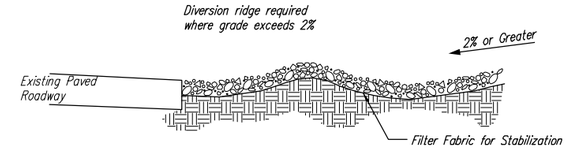
Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

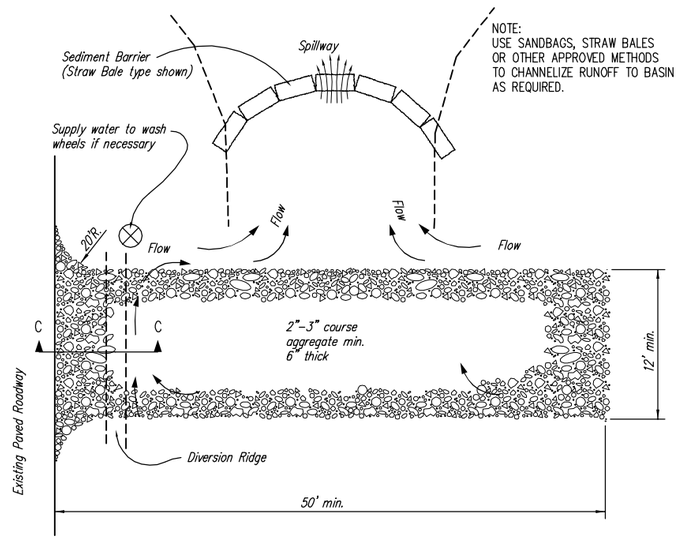
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.



SECTION C–C



STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABLIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER 448–89546
OCA NO.
DATE April 2006