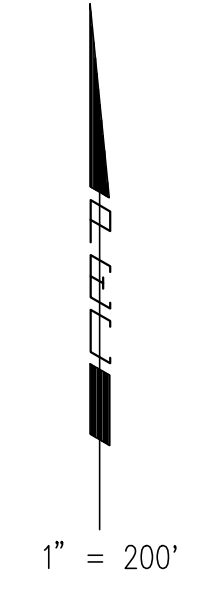
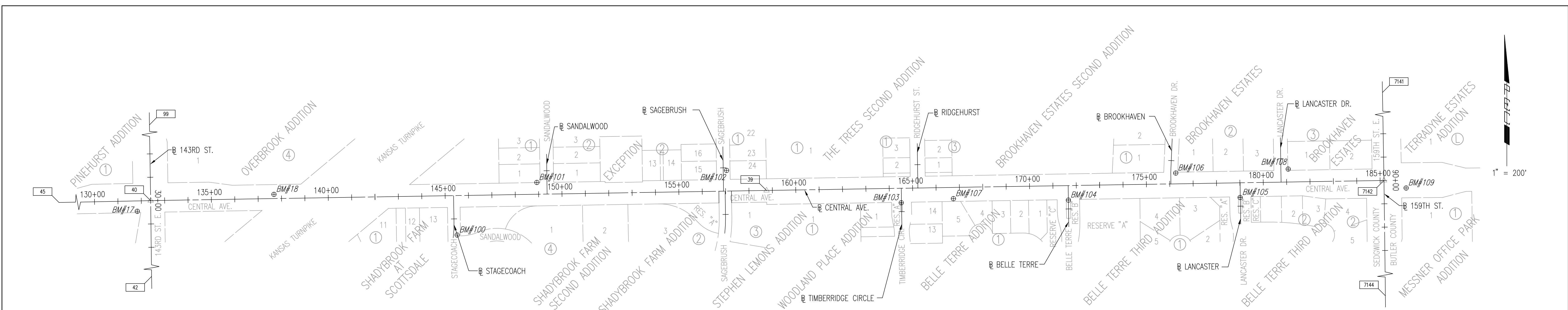


DSNR: MDK OPER: DAW SCALE: 1"=200.00
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BENCH MARKS

Datum B.M.- Chis. "d" on Top S. End Conc. Guardrail, W. Side RCB under 143rd St. E. 300' ± N. of Stonebridge Cir.	Elev. = 1317.03
B.M.#17- Chis. "d" on N.E. Cor. Conc. Pad Traffic Signal Box at S.W. Cor. Central Ave. & 143rd St. E. (44' Rt. @ Central Sta. 131+82)	Elev. = 1318.09
B.M.#18- Chis. "d" E. end N. Conc. Headwall RCB under Central Ave. between 143rd St. & Kansas Turnpike (18' Lt. @ Central Sta. 137+68)	Elev. = 1314.30
B.M.#100- Chis. "d" N. end Return E. side Stagecoach at Sandalwood One Block S. Central Ave. (13' Lt. @ Stagecoach Sta. 6+69)	Elev. = 1326.38
B.M.#101- Chis. "d" S. Cor. Conc. Slab Brick Sign N.W. Cor. Sandalwood and Central Ave. (51' Lt. @ Central Sta. 148+93)	Elev. = 1329.84
B.M.#102- Chis. "d" E. Back Curb Sagebrush S. edge Drive 90' N. @ Central Ave. (14' Lt. @ Sagebrush Sta. 9+11)	Elev. = 1329.80
B.M.#103- Chis. "d" @ N. end Median on Timber Ridge Cir. 60' ± S. Central Ave. (@ Timber Ridge Cir. Sta. 5+62)	Elev. = 1330.06
B.M.#104- Chis. "d" @ N. end Median on Belle Terre 60' ± S. Central Ave. (9' Rt. @ Belle Terre Sta. 5+62)	Elev. = 1318.39
B.M.#105- Chis. "d" @ N. end Median on Lancaster 60' ± S. of Central Ave. (14' Rt. @ Lancaster Sta. 6+63)	Elev. = 1322.91
B.M.#106- R.R. Spike N. face Light Pole at N.E. Cor. Central Ave. & Brookhaven (46' Lt. @ Central Ave. Sta. 176+26)	Elev. = 1318.10

BASELINE 143RD ST. E.

PT No. 42 W 1/4 Cor. Sec. 24, T27S, R2E @ 143rd St. E. Sta. 56+55.10	1. Found 5/8" Rebar	58.82' NW
	2. Nail & Washer in Top of Gate Post	55.15' ESE
	3. 3 Nails in S face Power Pole	51.38' W
	4. KDOT Spike in Top Fence Post	
PT No. 40 SW Cor. Sec. 13, T27S, R2E @ Central Ave. Sta. 132+40.10= @ 143rd St. E. Sta. 30+00.00	1. Found 3/4" Bar in Thimble	66.39' SE
	2. Chis. "+" Conc. Base Signal Pole	67.39' NE
	3. Chis. "+" Conc. Base Signal Pole	74.46' NW
	4. Chis. "+" Conc. Base Signal Pole	62.82' SW
	5. Chis. "+" Conc. Base Signal Pole	64.48' SW
	6. 3 Nails in NW face Power Pole	63.82' SE
	7. 3 Nails in NE face Power Pole	81.19' SE
	8. 1/2" Rebar	
PT No. 99 W 1/4 Cor. Sec. 13, T27S, R2E @ 143rd St. E. Sta. 3+48.03	1. Found 3/4" Rebar	41.11' E
	2. 3 Nails in N face Power Pole	59.55' SW
	3. PK Nail NW face 10" Russian Olive Tree	118.09' SSE
	4. Top Center Nut Fire Hydrant	57.30' WSW
	5. Top Center Telephone Box	

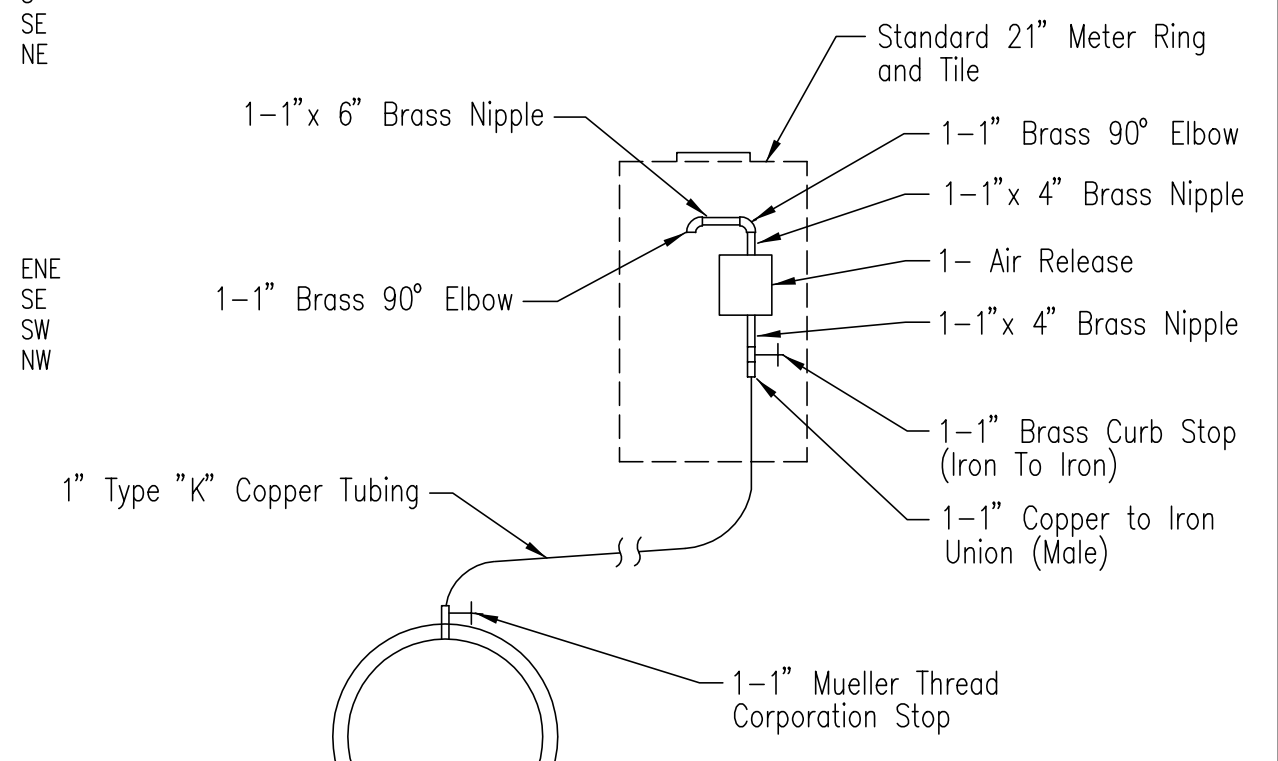
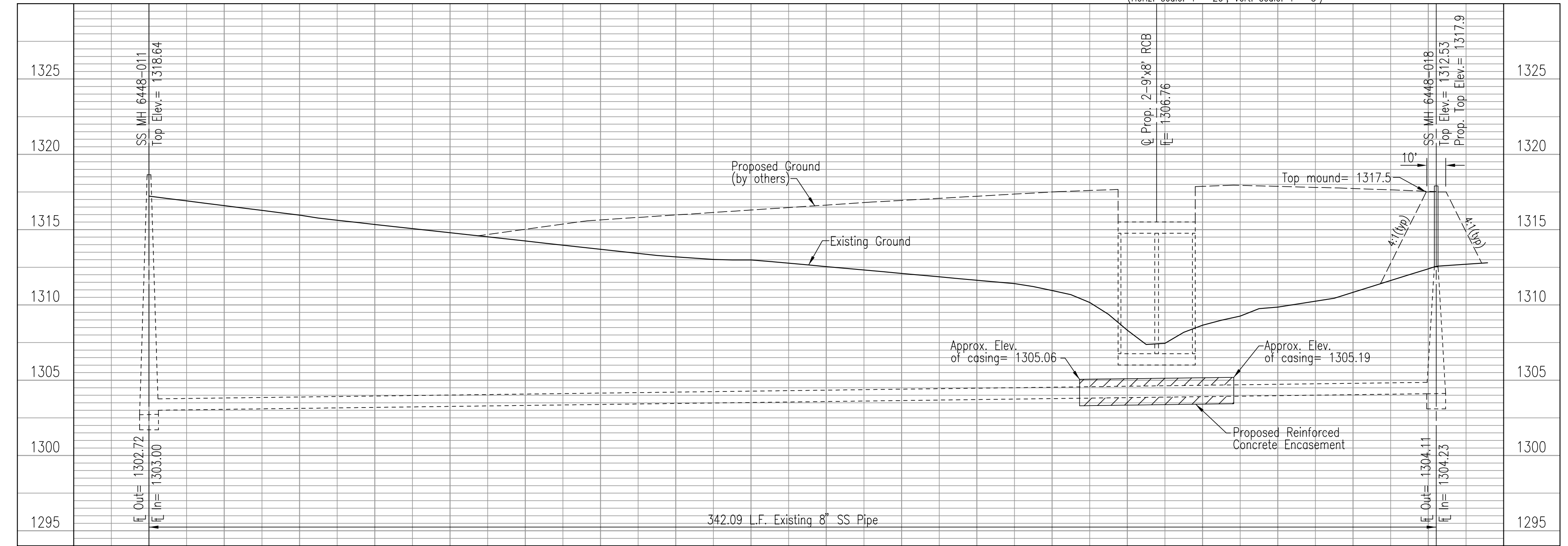
BASELINE 159TH ST. E.

PT No. 7141 E 1/4 Cor. Sec. 13, T27S, R2E @ 159th St. Sta. 63+37.21	1. Found 1/2" Bar with Anderson Cap	48.50' NNW
	2. Chiseled "x" on RCB Hubguard	62.26' NNE
	3. Chiseled "x" on RCB Hubguard	67.88' SSE
	4. PK Nail in W face 8" Elm	
PT No. 7142 SE Cor. Sec. 13, T27S, R2E @ Central Ave. Sta. 185+16.35= @ 159th Street E. Sta. 90+00.00	1. Found Brass Cap	71.01' ENE
	2. Chis. "+" on Top of Curb	85.38' SE
	3. PK Nail in NE face Light Pole	82.18' SW
	4. PK Nail in SE face Light Pole	64.46' NW
	5. Top @ Fire Hydrant	
PT No. 7144 E Cor. Sec. 24, T27S, R2E @ 159th St. Sta. 116+57.86	1. Found RR Spike in @ 159th St.	30.60' ENE
	2. Nail & Shiner in NW face Power Pole	57.85' ENE
	3. Nail & Shiner in S face Power Pole	35.25' NW
	4. PK Nail in NE face Osage Orange Tree	47.55' SW
	5. PK Nail in NE face 5" Osage Orange Tree	

BASELINE CENTRAL AVE.

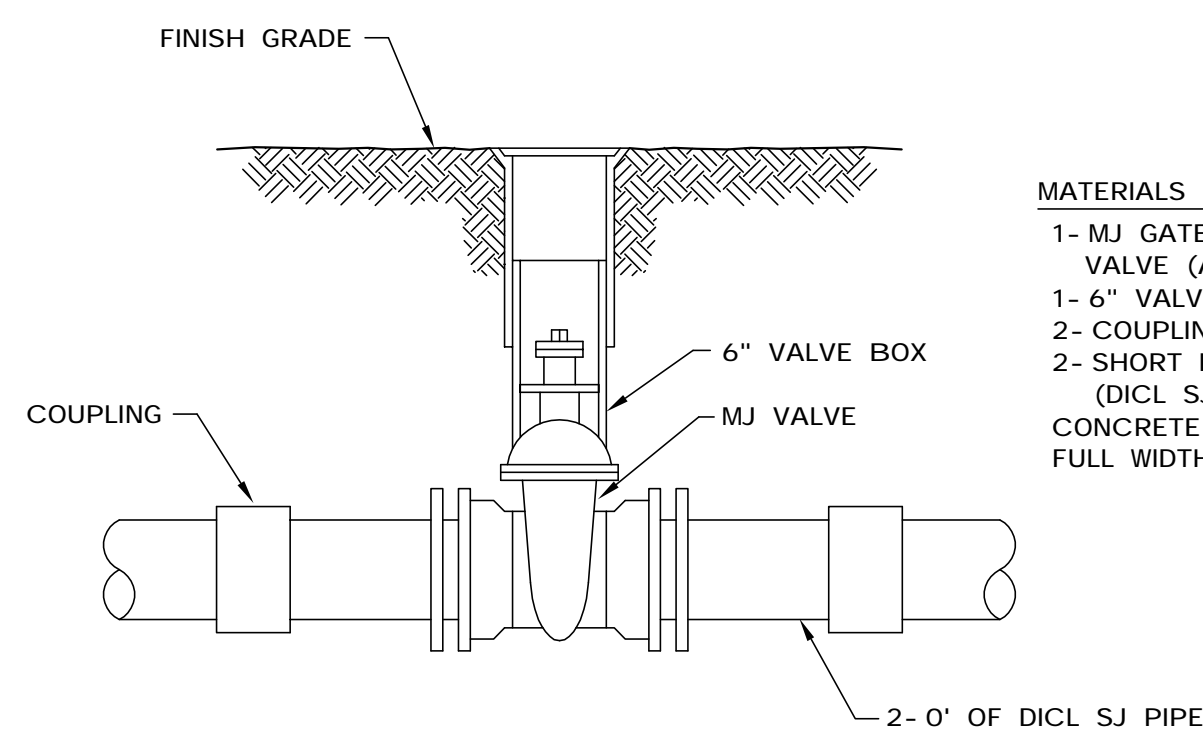
PT No. 39 S 1/4 Cor. Sec. 13, T27S, R2E @ Central Ave. Sta. 158+75.06	1. Found 1/2" Iron Pipe	49.74' S
	2. 3 Nails in W face Fence Post	60.26' SW
	3. Nail & Bottle cap in NW face Power Pole	45.61' NNW
	4. PK Nail W face Sawed off Power Pole	112.40' WNW
	5. PK Nail NE face 15" Cedar Tree, E of 2	
PT No. 40 SW Cor. Sec. 13, T27S, R2E @ Central Ave. Sta. 132+40.10= @ 143rd St. E. Sta. 30+00.00	1. Found 3/4" Bar in Thimble	66.39' SE
	2. Chis. "+" Conc. Base Signal Pole	67.39' NE
	3. Chis. "+" Conc. Base Signal Pole	74.46' NW
	4. Chis. "+" Conc. Base Signal Pole	62.82' SW
	5. Chis. "+" Conc. Base Signal Pole	64.48' SW
	6. 3 Nails in NW face Power Pole	63.82' SE
	7. 3 Nails in NE face Power Pole	81.19' SE
	8. 1/2" Rebar	
PT No. 45 S 1/4 Cor. Sec. 14, T27S, R2E @ Central Ave. Sta. 105+94.99	1. Found 3/4" Iron Pipe in Thimble	48.33' S
	2. Nail & Shiner in W face Power Pole	49.19' N
	3. KDOT Spike & Washer in Power Pole	50.40' S
	4. KDOT Spike & Washer in top Fence Post	48.00' S
	5. Line of Poles E-W	74.35' SE
	6. PK Nail in W face 12" Elm	57.88' NE
	7. KDOT Spike & Washer in SE face Power Pole	
PT No. 7142 SE Cor. Sec. 13, T27S, R2E @ Central Ave. Sta. 185+16.35= @ 159th Street E. Sta. 90+00.00	1. Found Brass Cap	71.01' ENE
	2. Chis. "+" on Top of Curb	85.38' SE
	3. PK Nail in NE face Light Pole	82.18' SW
	4. PK Nail in SE face Light Pole	64.46' NW
	5. Top @ Fire Hydrant	

PROPOSED REINFORCED CONCRETE ENCASEMENT ON EXISTING S.S. (Horiz. scale: 1" = 20'; Vert. scale: 1" = 5')



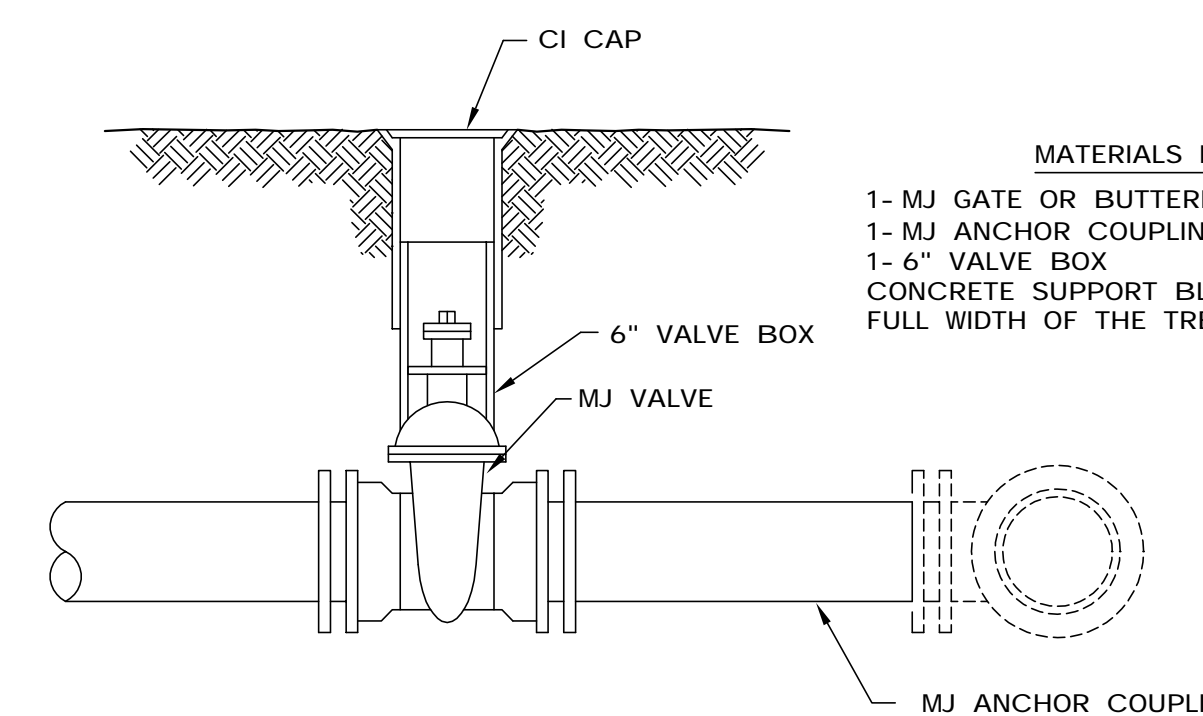
AIR RELEASE ASSEMBLY DETAIL

No.	Revision	By	Date
CITY OF WICHITA, KANSAS MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER 20" WATERLINE IMPROVEMENTS IN CENTRAL 143RD STREET EAST TO 159TH STREET EAST HORIZONTAL AND VERTICAL CONTROL MAP CITY OF WICHITA PROJECT NO. 448-89551 Professional Engineering Consultants, P.A. 303 S. TOPEKA • WICHITA, KANSAS 67202 316-262-2691 • FAX 316-262-3003			
Designed by	MDK	Job No.	34-01257
Drawn by	DAW	Date	June 2001
			Sht. 3 of 27



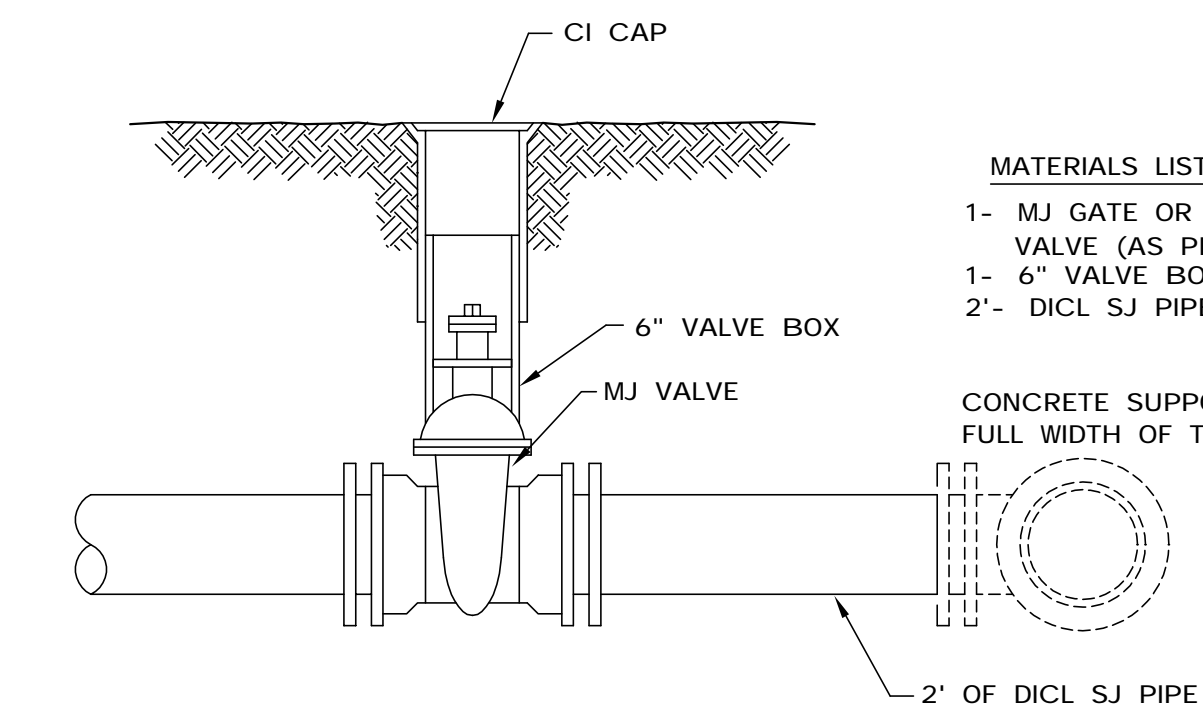
- MATERIALS LIST**
- 1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1- 6" VALVE BOX
 - 2- COUPLINGS
 - 2- SHORT PCS. (DICT. SJ PIPE)
- CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

LINE VALVE ASSEMBLY



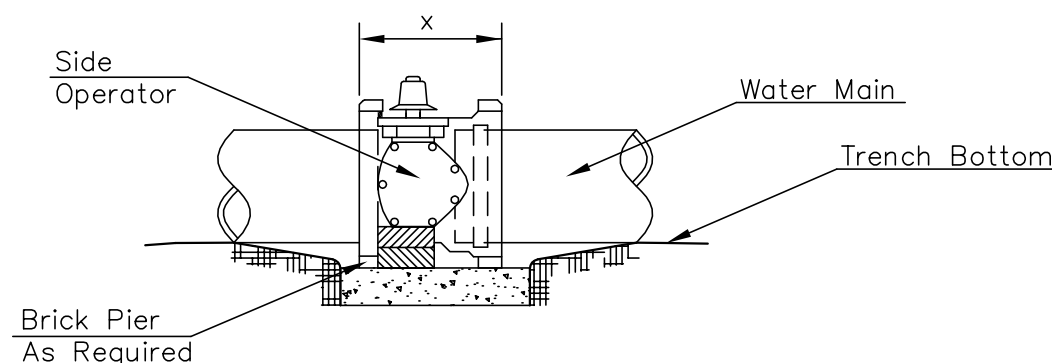
- MATERIALS LIST**
- 1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1- MJ ANCHOR COUPLING (12" OR SMALLER)
 - 1- 6" VALVE BOX
- CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

ANCHORED VALVE ASSEMBLY



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

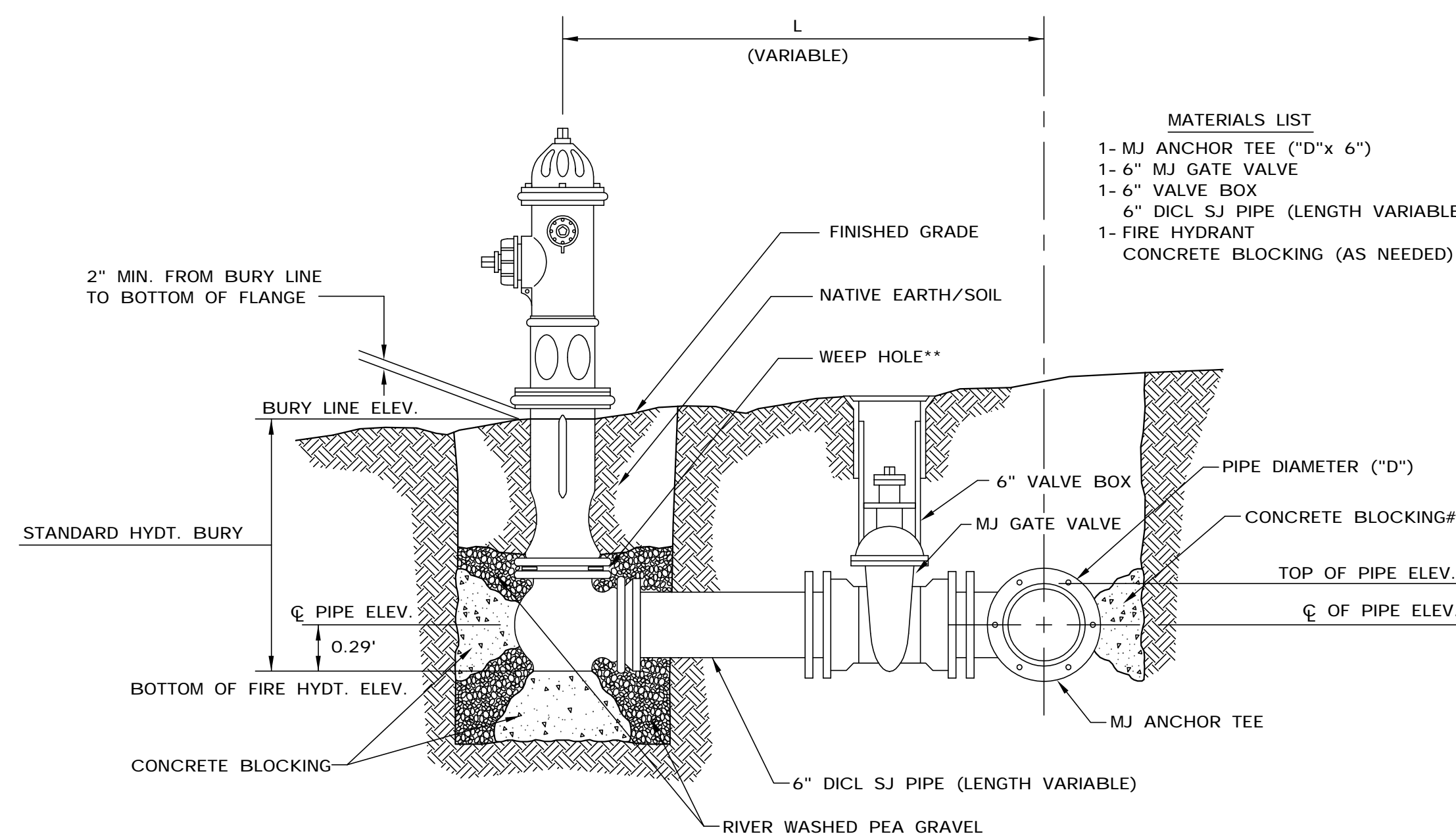
VALVE ASSEMBLY



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" DICT. 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.

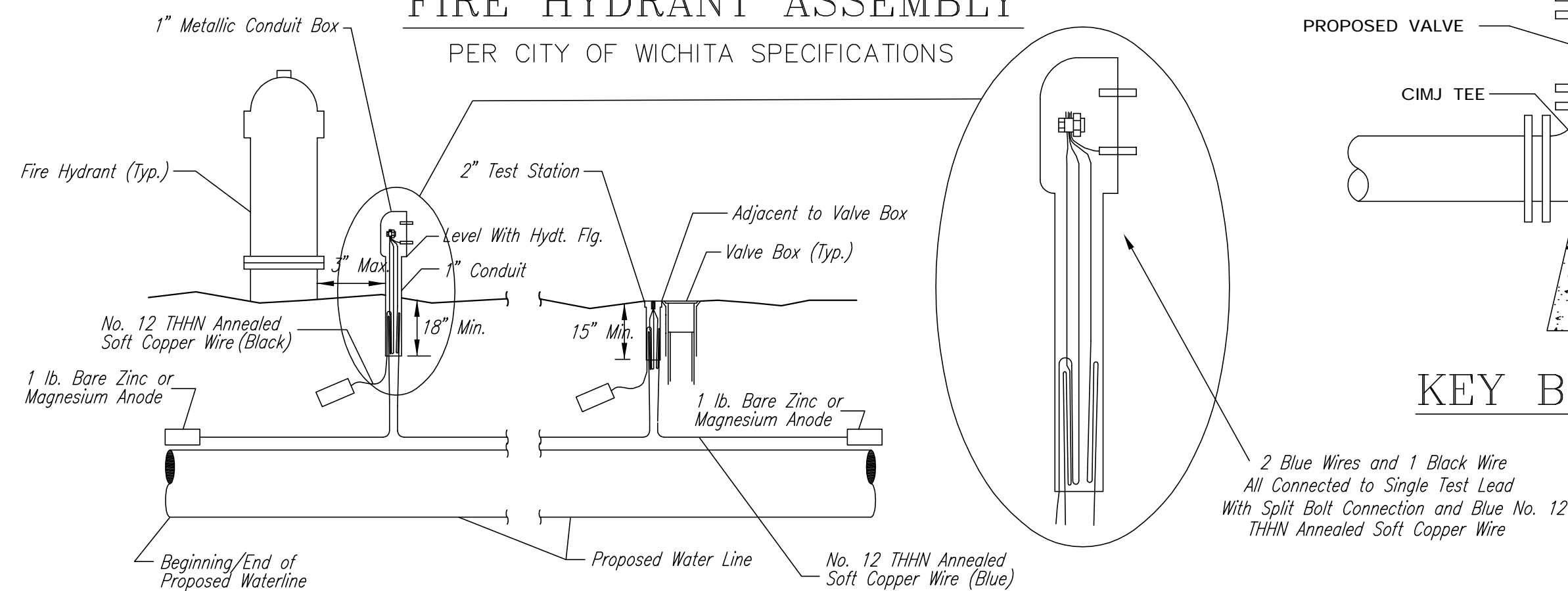
CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.

* 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*
WL 1, Sta. 29+34.46	1328.6	1323.29	6.5'
WL 1, Sta. 40+84.13	1317.1	1308.79	9.5'
WL 1, Sta. 54+44.58	1326.4	1321.59	6.0'
WL 3, Sta. 0+23.21	1330.1	1322.77	8.0'

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

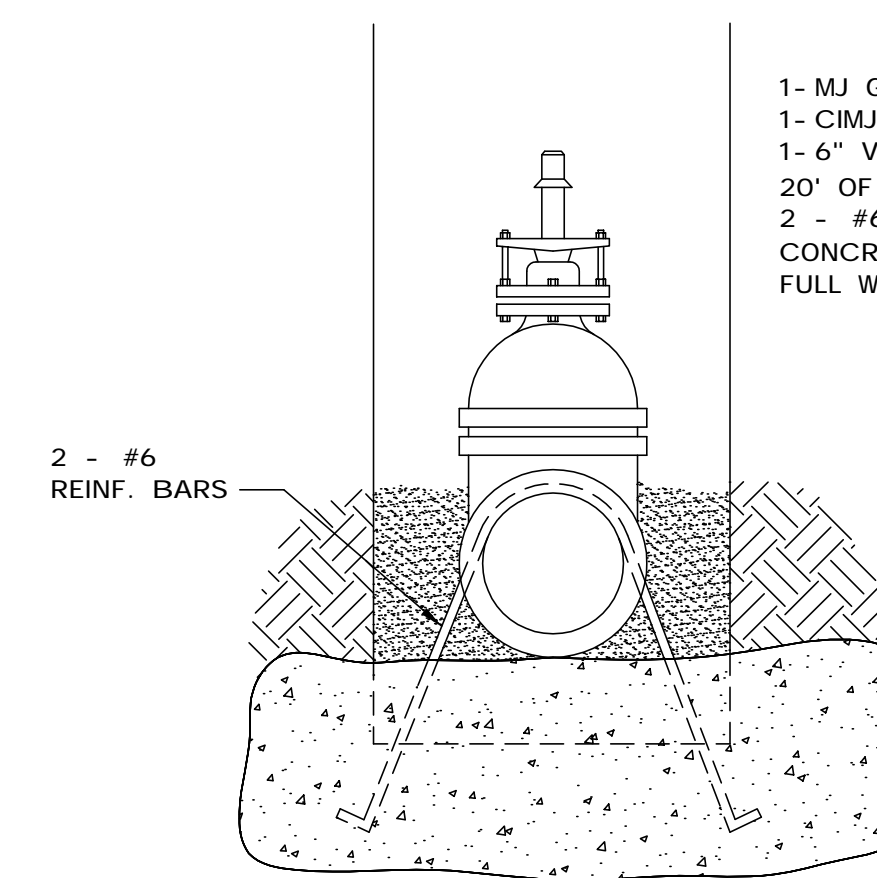
The test station for fire hydrant applications shall be a 1 inch galvanized conduit style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for valve applications shall be 2 inch flush style test station T2PS3B 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 malded into the lid. All test stations shall be manufactured using malded 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

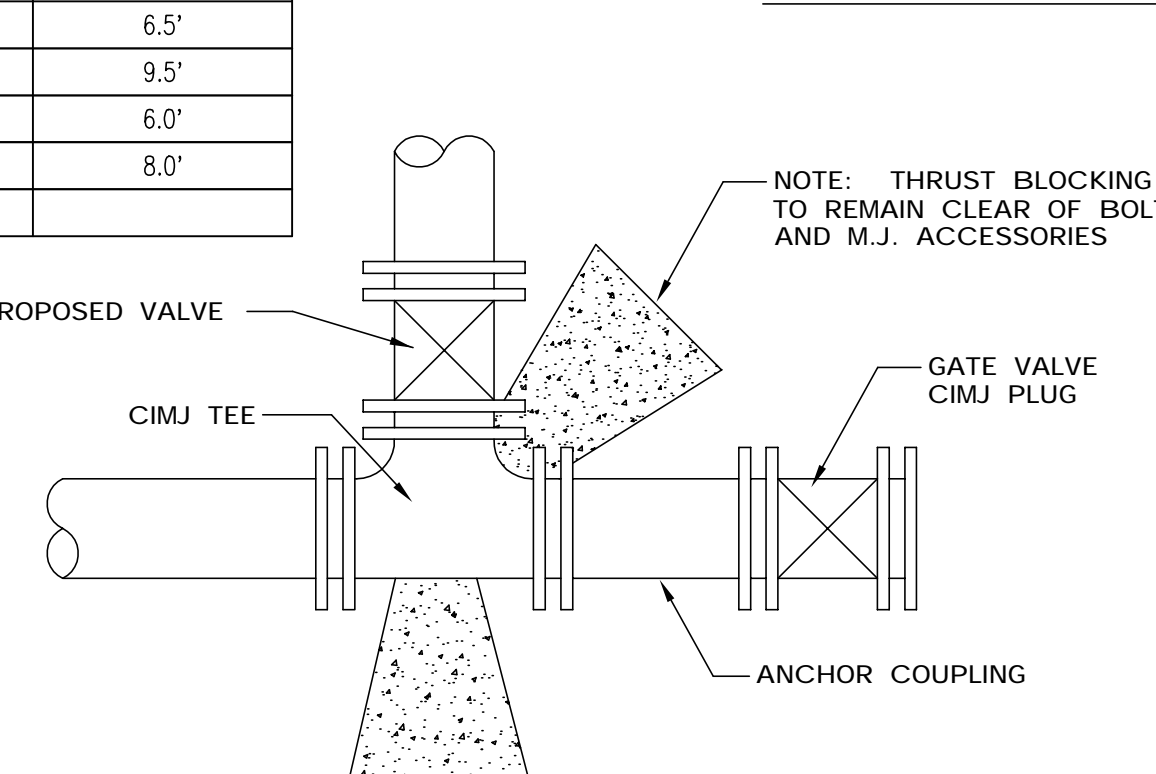


- Notes:**
- Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.
 - The thrust block shall be constructed such that bolts, nuts, and 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

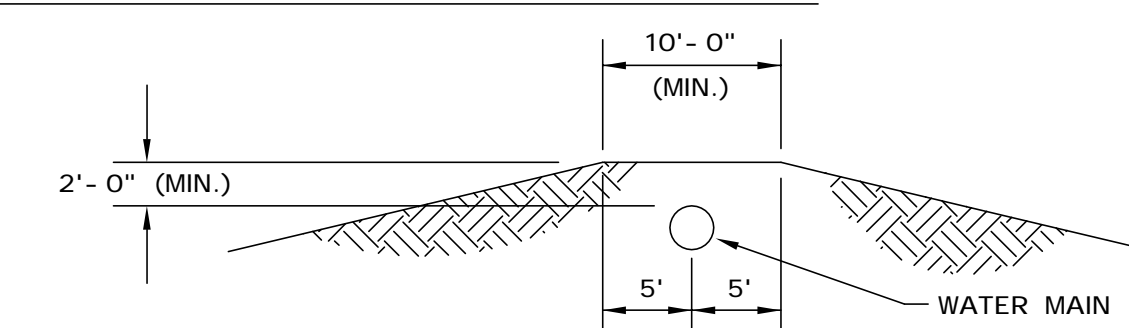
VALVE	THRUST AT 150 $\frac{1}{2}$ in ²
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

ANCHORED VALVE ASSEMBLY, SPECIAL



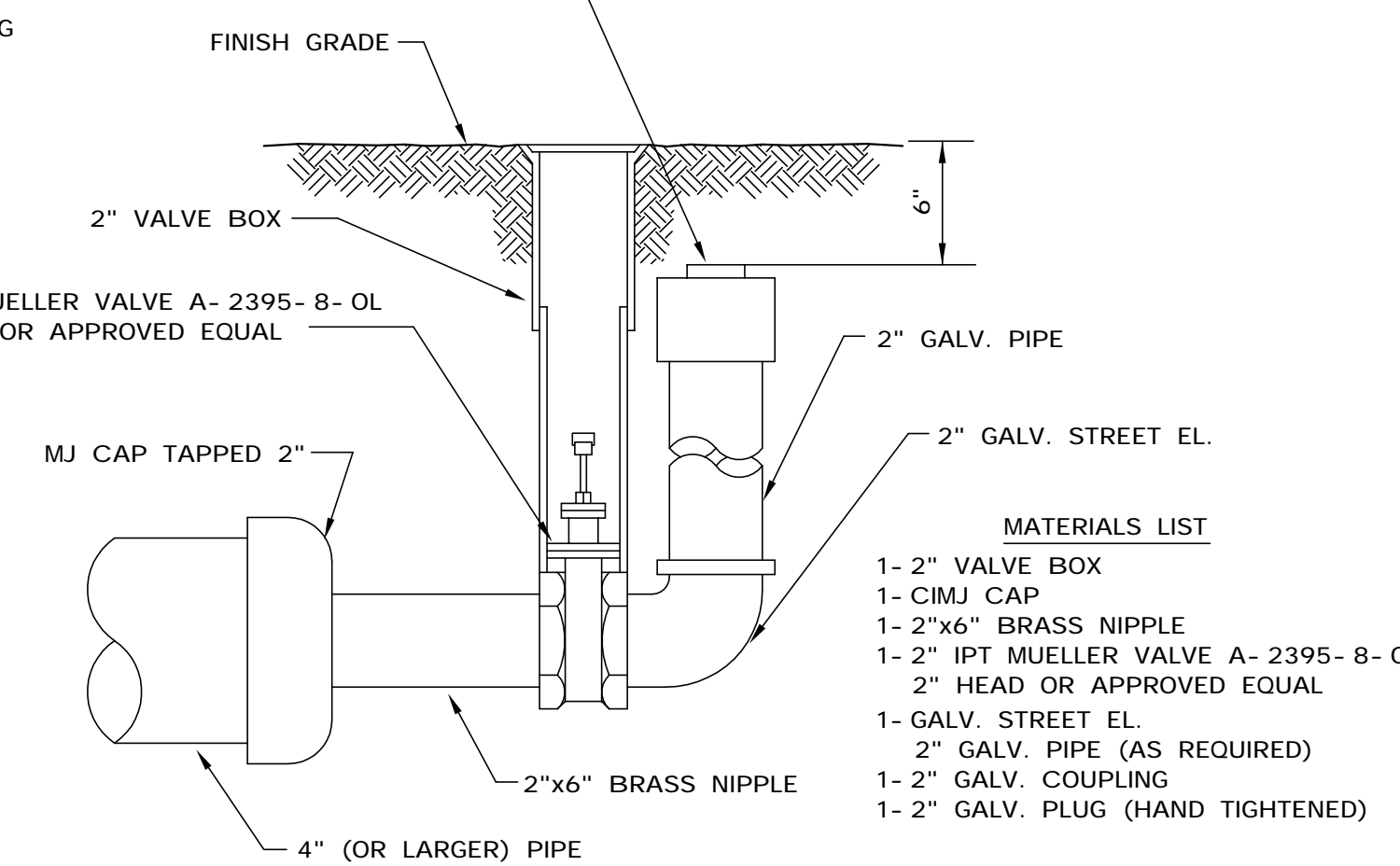
KEY BLOCK DETAIL

2 Blue Wires and 1 Black Wire All Connected to Single Test Lead With Split Bolt Connection and Blue No. 12 THHN Annealed Soft Copper Wire



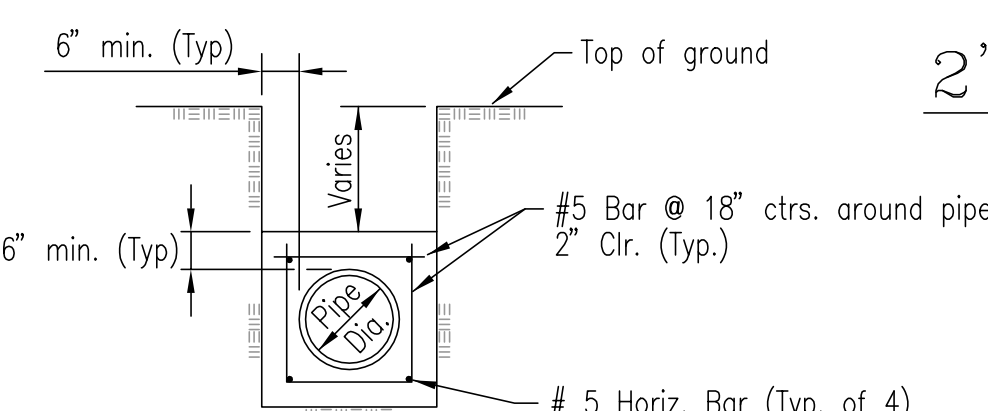
PROTECTIVE FILL DETAIL

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)



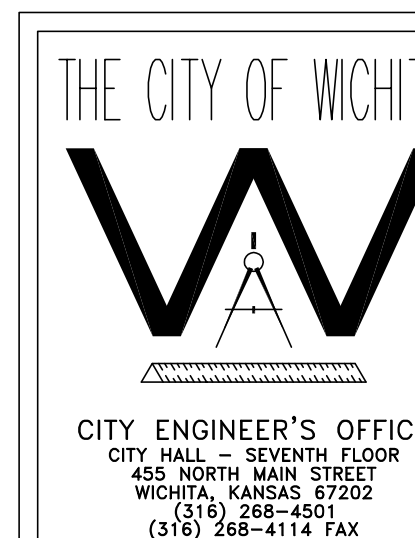
- MATERIALS LIST**
- 1- 2" VALVE BOX
 - 1- CIMJ CAP
 - 1- 2"x6" BRASS NIPPLE
 - 1- 2" IPT MUELLER VALVE A-2395-8-OL
 - 2" HEAD OR APPROVED EQUAL
 - 1- GALV. STREET EL.
 - 2" GALV. PIPE (AS REQUIRED)
 - 1- 2" GALV. COUPLING
 - 1- 2" GALV. PLUG (HAND TIGHTENED)

2" BLOWOFF ASSEMBLY



CONCRETE ENCASEMENT DETAIL

Revised: 6- 7- 00, MCG



STANDARD WATER ASSEMBLY DETAILS

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

PROJECT NUMBER: 448-89551 OCA NO.: 633734

DATE: DEC 98 SHEET 4 OF 27