

DOCUMENT 004000

BID FORM

Date: 3/30/2022

PROPOSAL of J.R. Fox Company, Inc.

(hereinafter called "Bidder"), organized and existing under the laws of the State of Arkansas,

Doing business as *

*Insert "a Corporation", "a Partnership", or "an Individual", as applicable

To the **CITY OF BRYANT, ARKANSAS**, (hereinafter called "Owner"):

Bidder hereby proposes to perform all Work for the construction of **KATRINA DRIVE AND REYNOLDS ROAD WATER LINE EXTENSION**, in strict accordance with the Contract Documents, within the time set forth therein, and at the prices stated below.

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid, each party thereto certifies as to its own organization, that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder, having examined the Drawings and Specifications with related documents and the site of the proposed work and being familiar with the conditions surrounding the construction of the proposed project, the legal requirements (Federal, State, and Local Laws, Ordinances, Rules and Regulations), and availability of materials and labor, hereby proposes to furnish all materials, labor equipment, and supplies to construct the Project in full accordance with the Contract Documents for the Prices stated herein below. The prices are to cover all expenses incurred in performing the Work of the several kinds called for in the Contract Documents, of which this Proposal is a part.

Bidder hereby agrees to perform all the Work described in the Specifications, called for in the Contract Documents, and shown on the Drawings for the following Prices:

<u>Item Description</u>	<u>Unit Price*</u>	<u>Total for Item</u>
1. 8" C900 (DR 25, 165 PSI) PVC Water Line 185 l.f.	\$ <u>117.00</u> per l.f.	\$ <u>21,645.00</u>
2. 8" C900 Restrained Joint Water Line 186 l.f.	\$ <u>95.00</u> per l.f.	\$ <u>17,670.00</u>
3. 16" Bore and Steel Encasement 150 l.f.	\$ <u>295.00</u> per l.f.	\$ <u>44,250.00</u>
4. Fire Hydrant Assembly 1 each	\$ <u>7392.00</u> each	\$ <u>7392.00</u>
5. 8" MJ Gate Valve 1 each	\$ <u>2551.00</u> each	\$ <u>2551.00</u>
6. 8" Tapping Sleeve and Valve 2 each	\$ <u>5011.00</u> each	\$ <u>10,022.00</u>
7. Cut and Cap Existing Water Line 2 each	\$ <u>2142.00</u> each	\$ <u>4284.00</u>
8. Asphalt/Concrete Surface Replacement 20 s.y.	\$ <u>108.00</u> per s.y.	\$ <u>2160.00</u>
9. Acceptance Testing Lump Sum	Lump Sum	\$ <u>1407.00</u>
10. Traffic Control Lump Sum	Lump Sum	\$ <u>644.00</u>
11. Seeding, Sodding and Final Cleanup Lump Sum	Lump Sum	\$ <u>3653.00</u>

12. Storm Water Pollution Prevention and Siltation Control
Lump Sum Lump Sum \$ 1296.⁰⁰
13. Trench and Excavation Safety
Lump Sum Lump Sum \$ 1787.⁰⁰
- TOTAL BID.....\$ 118,761.⁰⁰

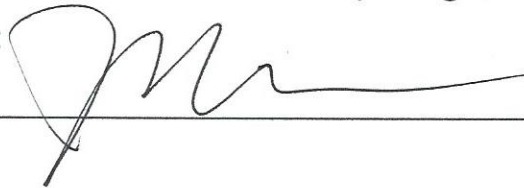
The above-stated Total Bid shall include all labor, materials, equipment, overhead, profit, insurance, taxes, and incidentals to cover the cost of the finished work of the various kinds called for to complete the Project in a manner in full accordance with the Specifications and Contract Documents; so as to be fully acceptable to the Owner.

Respectfully Submitted,

Bidder:

J.R. Fox Company, Inc.

Signature:



Printed Name:

Joseph R. Fox

Title:

President

Address:

P.O. Box 7382

Little Rock, AR 72217

Telephone Number:

501-9445240

Fax Number:

Arkansas Contractor's License Number:

0144410322

Seal (If Bidder is a Corporation)

Redstone Construction Group, Inc.
 505 West Dixon Road
 Little Rock, Arkansas 72206
 501-374-1557
 WATS 1-800-264-1557
 FAX 501-374-8314
 www.redstone-cg.com



To: City Of Bryant	Contact: Ted Taylor
Address: 210 SW 3rd St. Bryant, AR 72022	Phone: 501-847-1664
Project Name: Bryant Waterline Extension	Bid Number:
Project Location: Katrina Drive And S Reynolds, Bryant, AR	Bid Date: 4/20/2022

We at Redstone Construction Group, Inc. are pleased to submit the following proposal.

Line #	Item #	Item Description	Estimated Quantity	Unit	Unit Price	Total Price
	1	8" C900 Waterline	185.00	LF	\$128.00	\$23,680.00
	2	8" C900 Restrained Joint Waterline	186.00	LF	\$135.00	\$25,110.00
	3	16" Bore And Steel Encasement	150.00	LF	\$375.00	\$56,250.00
	4	Fire Hydrant	1.00	EACH	\$7,450.00	\$7,450.00
	5	8" MJ Gate Valve	1.00	EACH	\$4,500.00	\$4,500.00
	6	8" Tapping Sleeve And Valve	2.00	EACH	\$5,250.00	\$10,500.00
	7	Cut And Cap Existing Waterline	2.00	EACH	\$8,750.00	\$17,500.00
	8	Asphalt / Concrete Repair	20.00	SY	\$390.00	\$7,800.00
	9	Acceptance Testing	1.00	LS	\$7,500.00	\$7,500.00
	10	Traffic Control	1.00	LS	\$6,300.00	\$6,300.00
	11	Seeding, Sodding, Cleanup	1.00	LS	\$7,000.00	\$7,000.00
	12	SWPPP	1.00	LS	\$4,900.00	\$4,900.00
	13	Trench Safety	1.00	LS	\$9,280.00	\$9,280.00
Total Price for above Items:						\$187,770.00

Total Bid Price: \$187,770.00

Notes:

- If you have any questions call Kurt Cosse at (501)374-1557 or (501) 539-8075.
- Our Quote is based on Civil Drawings unless otherwise specified.
- Trench Rock is not included.
- All Redstone work is backed by the industry standard one year warranty

Payment Terms:

We propose to furnish all material and labor to complete the job in a professional manner. Payment is to be made upon completion unless other arrangements are specified in writing.

Periodic requests for payment will be made as the work progresses and invoiced at the above listed prices including any additional work approved by the owner or owner representative of this project. All payments will be due within 10 business days from receipt of request for payment from . Any outstanding balance due RedStone Construction Group will be charged interest at the highest rate allowed under Arkansas law. If you use a credit card to pay for services provided by Redstone Construction any credit card charges will be added to your bill and these costs will be subject to same terms listed above unless other arrangements have been made in writing by Redstone.

Any controversy arising from or relating to this Agreement in excess of \$5,000.00 shall be settled by arbitration to be held in Little Rock, Arkansas, in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. The decision of the arbitrator and any relief granted shall be binding on the parties to this Agreement.

ACCEPTED:

The above prices, specifications and conditions are satisfactory and are hereby accepted.

Buyer: _____

Signature: _____

Date of Acceptance: _____

CONFIRMED:

REDSTONE CONSTRUCTION GROUP, INC.

Authorized Signature: _____

Estimator: Kurt Cosse
501-539-8075 kurt.cosse@redstone-cg.com

Project: **Katrina Drive Water Main Extension**

Owner: **Bryant Water Utilities**

Bid Date: **Sat, Jan 0, 00**

Bid Time:

Engineer:

BID TOTAL: \$136,880.00

Item	Description	Quantity	Unit	Bid	Extended
1	8" C900	365	LF	\$62.00	\$22,630.00
2	16" Steel Encasement Bore	150	LF	\$375.00	\$56,250.00
3	8" MJ Spool Piece	1	EA	\$2,000.00	\$2,000.00
4	8" Tapping Sleeve and Valve	2	EA	\$5,000.00	\$10,000.00
5	8" Fittings	10	EA	\$1,600.00	\$16,000.00
6	8" Anchor Collar	1	EA	\$4,000.00	\$4,000.00
7	8" Gate Valve	1	EA	\$2,000.00	\$2,000.00
8	Fire Hydrant Assembly	1	EA	\$6,000.00	\$6,000.00
9	Cut and Cap	1	EA	\$5,000.00	\$5,000.00
10	Solid Sod	150	SY	\$20.00	\$3,000.00
11	Mobilization	1	LS	\$10,000.00	\$10,000.00

Exclusions and Disclosures

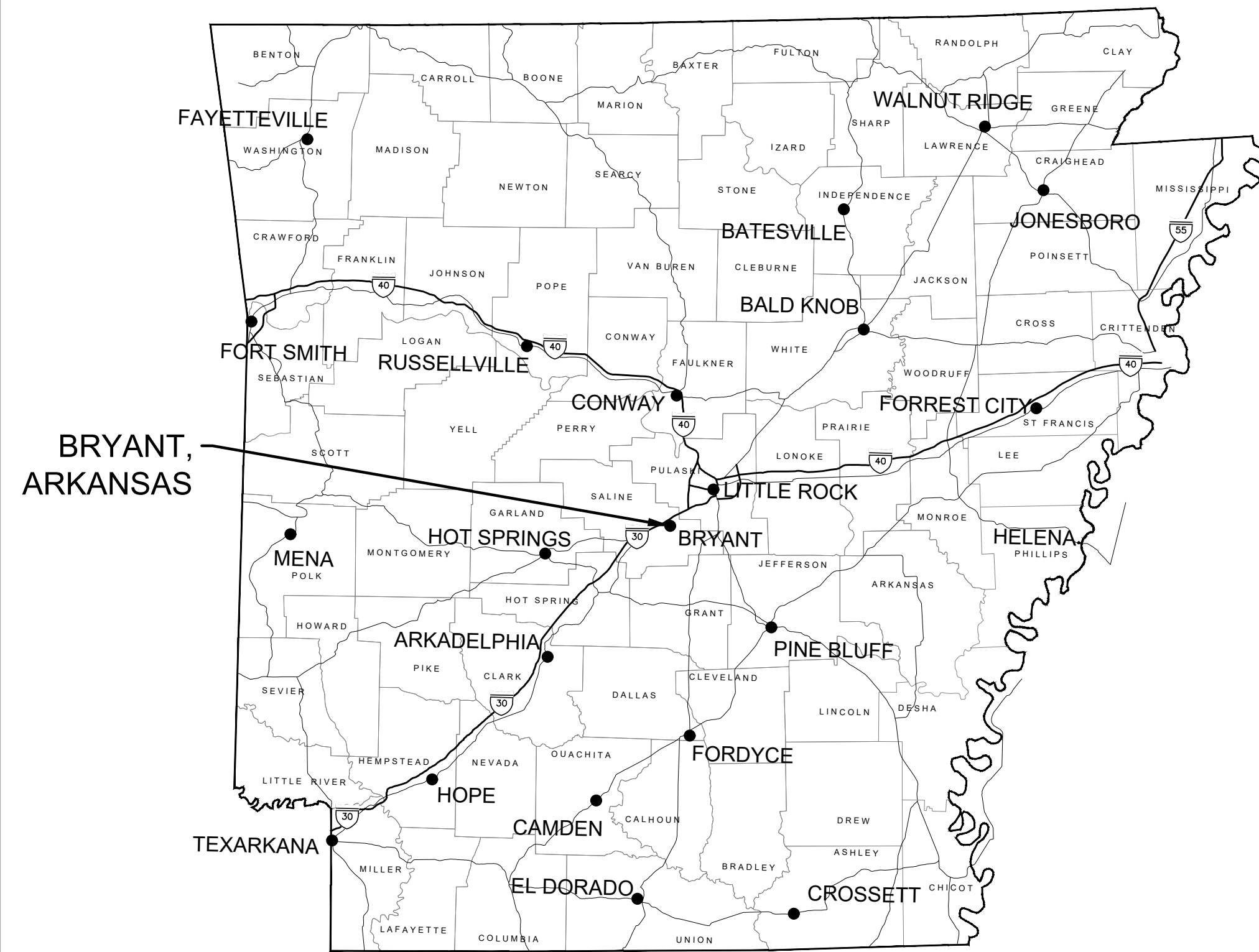
Item	Description
1	Not Responsible for Unmarked Utilities, Private or Public.
2	Permits or Bond Cost Not Included.
3	No Trench Rock
4	Erosion control or construction fencing is not included
5	Any relocating of utilities is not included unless specific

Acceptance

Date	Date
Signed: //ORIGINAL SIGNED//	Signed:
Roger Barker President Barker Excavation Inc.	Client

KATRINA DRIVE & REYNOLDS ROAD WATER LINE EXTENSION

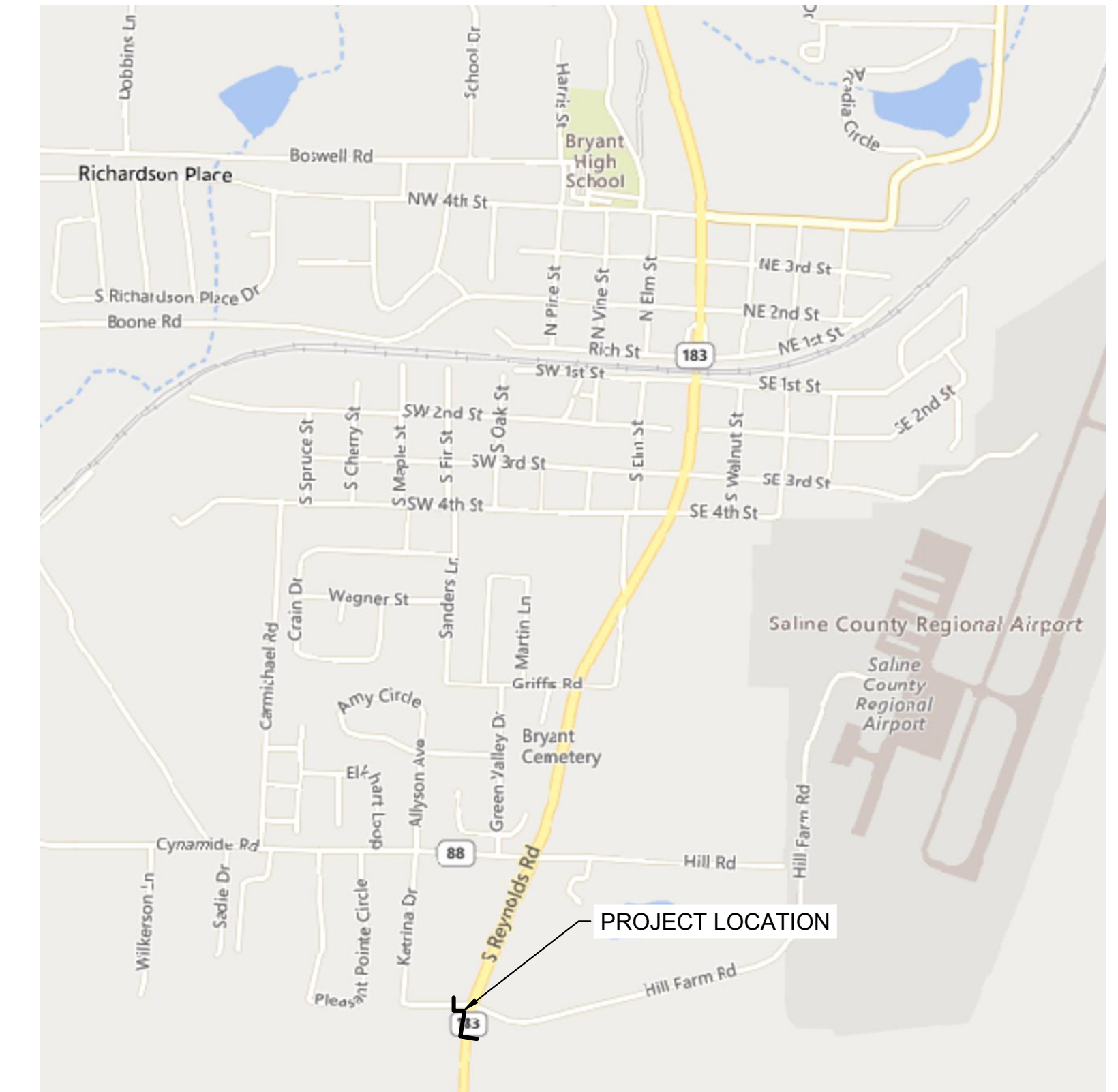
CITY OF BRYANT, ARKANSAS



LOCATION MAP
N.T.S.



MARCH 2022



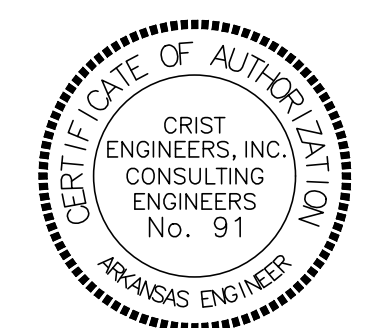
VICINITY MAP
N.T.S.

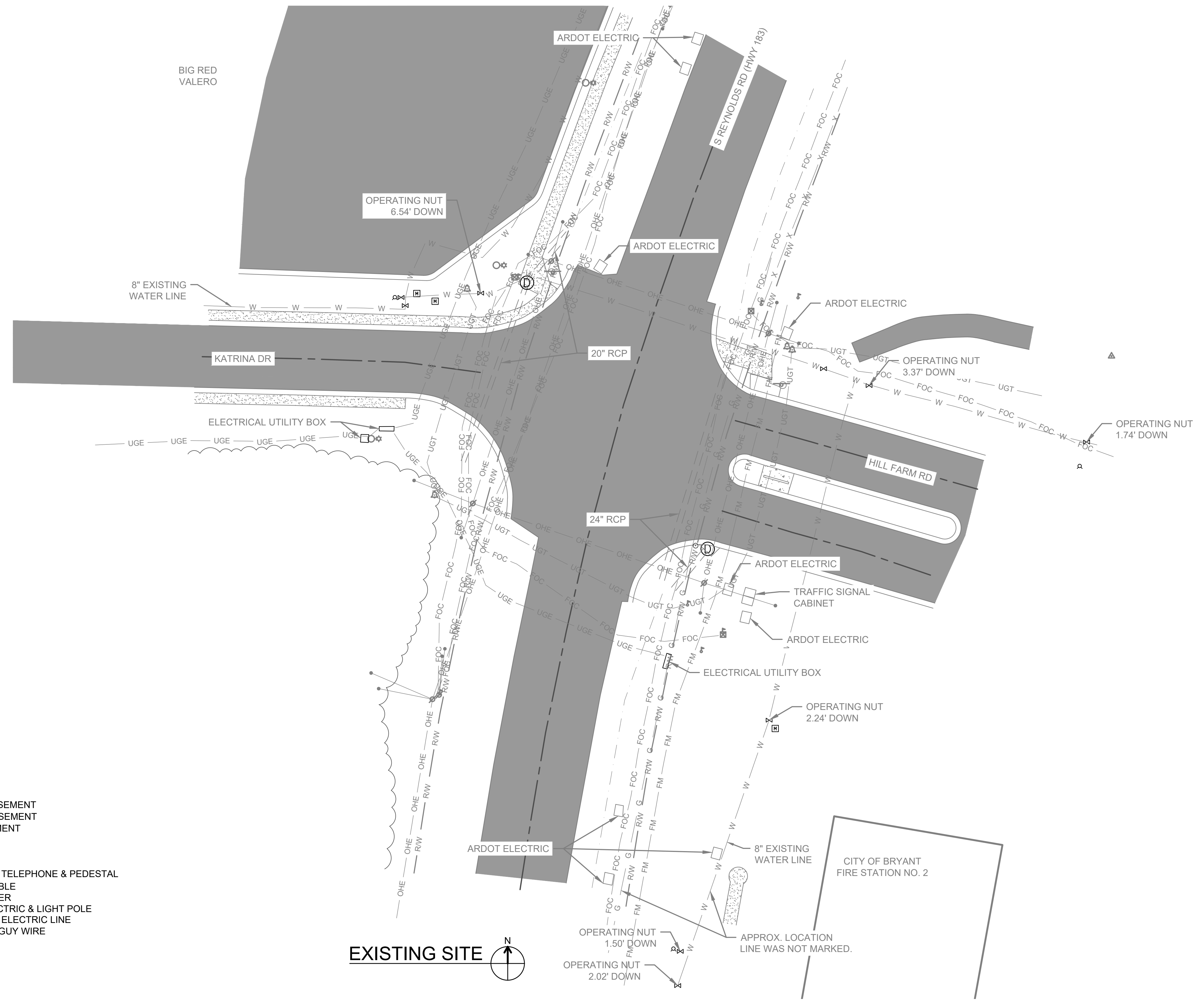
SHEET INDEX	
SH. NO.	DESCRIPTION
--	COVER SHEET
1	EXISTING SITE
2	WATER LINE EXTENSION PLAN
3	KATRINA DR PLAN & PROFILE
4	REYNOLDS RD PLAN & PROFILE
5	DETAILS I
6	DETAILS II
7	DETAILS III

CRIST PROJECT NO. 2154



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
LITTLE ROCK, ARKANSAS





LEGEND

	PROPOSED FIRE HYDRANT		PERMANENT EASEMENT
	PROPOSED WATER LINE		TEMPORARY EASEMENT
	PROPOSED VALVE		EXISTING EASEMENT
	PROPOSED ENCASEMENT		PROPERTY LINE
	RIGHT OF WAY		WIRE FENCE
	FIRE HYDRANT		FENCE (WOOD)
	WATER METER		UNDERGROUND TELEPHONE & PEDESTAL
	WATER LINE & VALVE		FIBER OPTIC CABLE
	POWER METER		GAS LINE & METER
	STORM SEWER & MANHOLE		OVERHEAD ELECTRIC & LIGHT POLE
	SEWER LINE		UNDERGROUND ELECTRIC LINE
	SEWER FORCE MAIN		POWER POLE & GUY WIRE

EXISTING SITE

REV. NO.	DATE	DRWN	CHKD	REMARKS

1" = 20'
THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

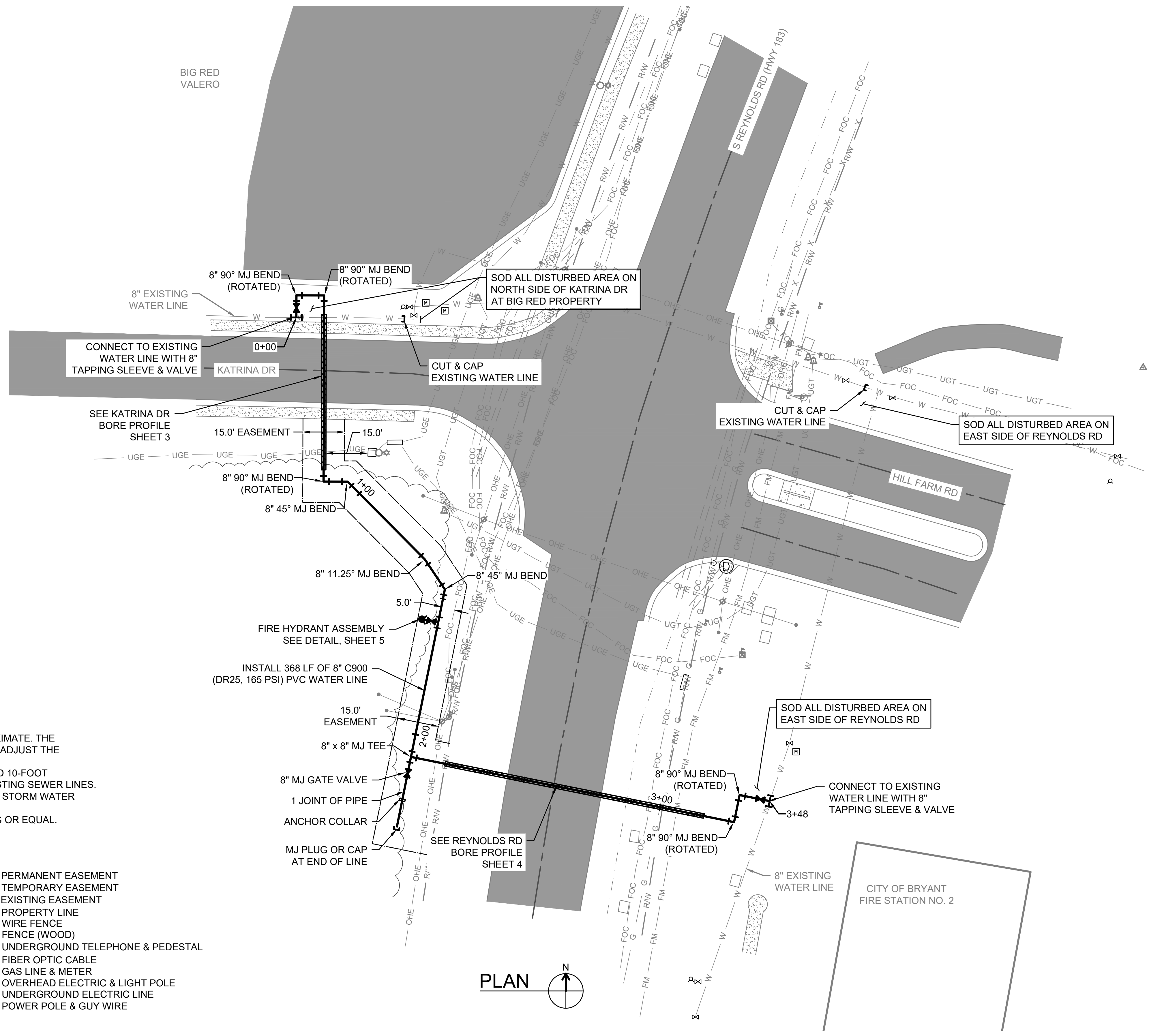
DESIGNED: LBP
DRAFTED: WRC
CHECKED: LBP
DATE: MAR 2022



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
205 EXECUTIVE COURT
LITTLE ROCK, ARKANSAS 72205
TELEPHONE: (501) 664-1552
FAX: (501) 664-8579
WWW.CRISTENGINEERS.COM

BRYANT, ARKANSAS
WATER LINE EXTENSION
CITY OF BRYANT, ARKANSAS
EXISTING SITE

JOB NO. 2154
SHEET NO. 1



- NOTES:**
1. THE LOCATION OF EXISTING UTILITIES ON THESE DRAWINGS IS APPROXIMATE. THE CONTRACTOR SHALL VERIFY DEPTH & LOCATION OF ALL UTILITIES AND ADJUST THE WATER LINE ACCORDINGLY.
 2. MAINTAIN 18-INCHES VERTICAL SEPARATION (WATER OVER SEWER) AND 10-FOOT HORIZONTAL SEPARATION BETWEEN PROPOSED WATER MAIN AND EXISTING SEWER LINES.
 3. CONTRACTOR SHALL OBTAIN A STORM WATER PERMIT AND PREPARE A STORM WATER POLLUTION PREVENTION PLAN. SEE SPECIFICATIONS.
 4. RETAINER GLANDS REQUIRED ON ALL MJ FITTINGS & VALVES, MEGALUG OR EQUAL.

LEGEND	
	PROPOSED FIRE HYDRANT
	PROPOSED WATER LINE
	PROPOSED VALVE
	PROPOSED ENCASEMENT
	RIGHT OF WAY
	FIRE HYDRANT
	WATER METER
	WATER LINE & VALVE
	POWER METER
	STORM SEWER & MANHOLE
	SEWER LINE
	SEWER FORCE MAIN
	PERMANENT EASEMENT
	TEMPORARY EASEMENT
	EXISTING EASEMENT
	PROPERTY LINE
	WIRE FENCE
	FENCE (WOOD)
	UNDERGROUND TELEPHONE & PEDESTAL
	FIBER OPTIC CABLE
	GAS LINE & METER
	OVERHEAD ELECTRIC & LIGHT POLE
	UNDERGROUND ELECTRIC LINE
	POWER POLE & GUY WIRE

REV. NO.	DATE	DRWN	CHKD	REMARKS

LESIE B. PRICE
3/21/22

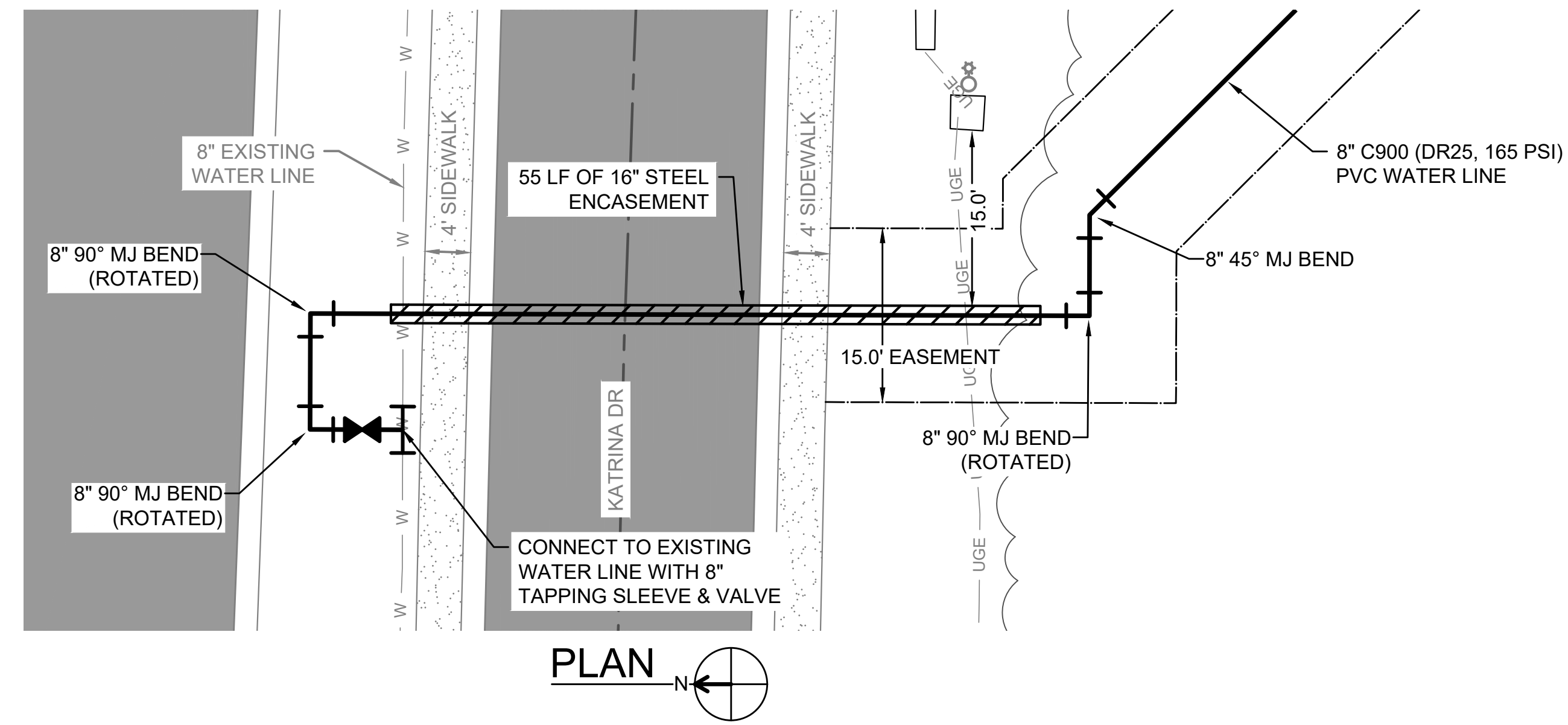
THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	LBP
DRAFTED:	WRC
CHECKED:	LBP
DATE:	MAR 2022

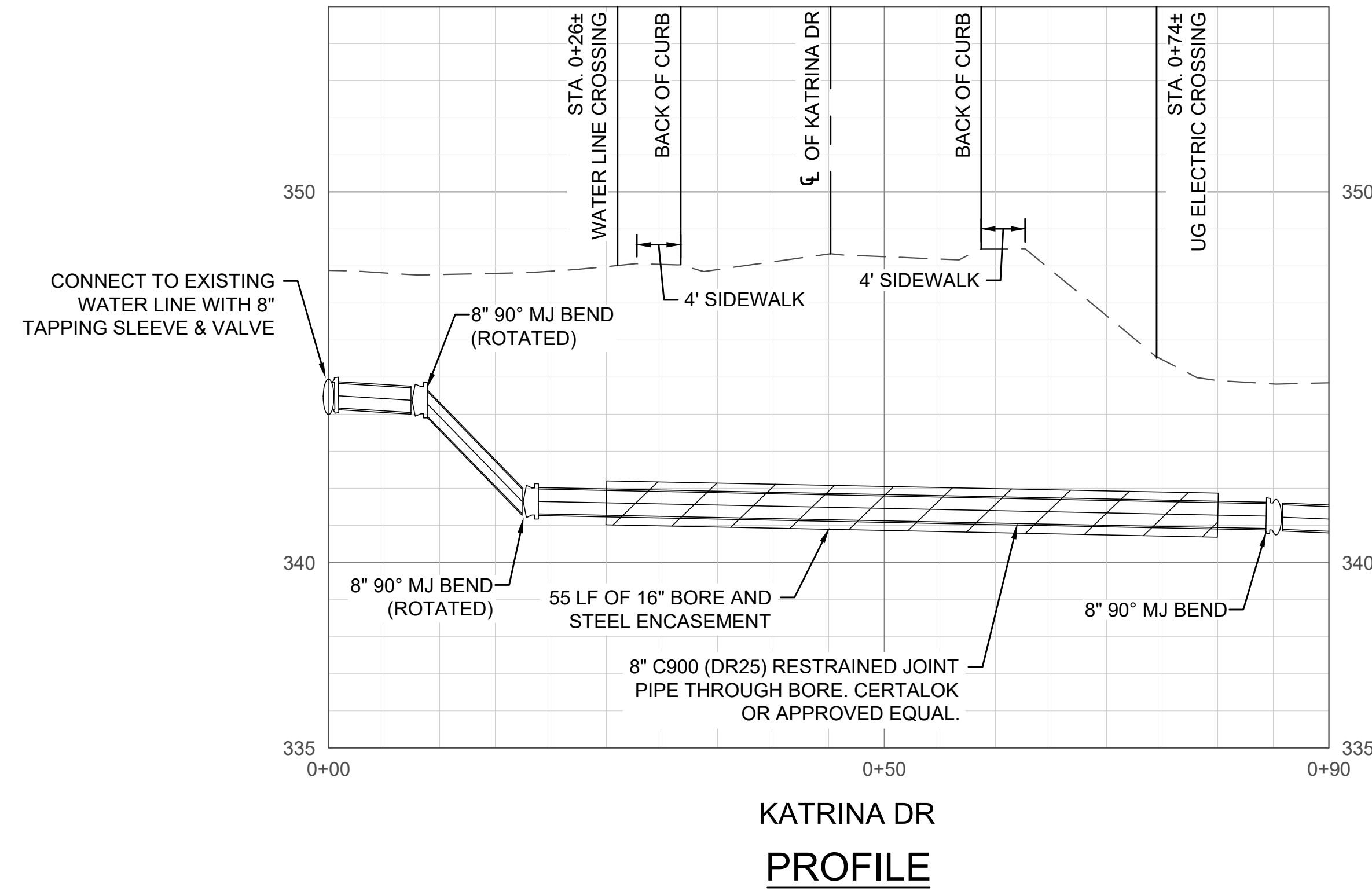
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BRYANT, ARKANSAS WATER LINE EXTENSION CITY OF BRYANT, ARKANSAS	JOB NO. 2154 SHEET NO. 2
WATER LINE EXTENSION PLAN	



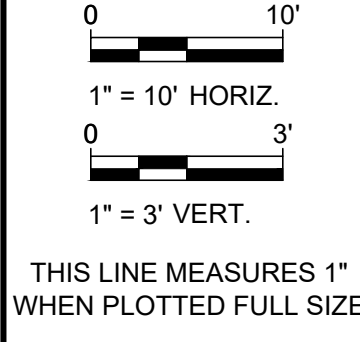
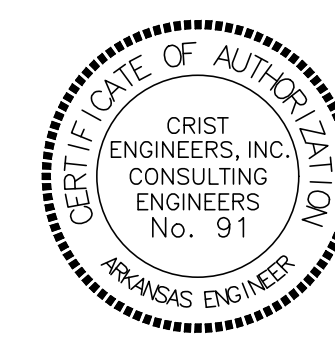
CONTRACTOR SHALL VERIFY DEPTH & LOCATION OF ALL UTILITIES AND ADJUST DEPTH OF ENCASUREMENT IF NECESSARY.



- NOTES:**
1. THE LOCATION OF EXISTING UTILITIES ON THESE DRAWINGS IS APPROXIMATE. THE CONTRACTOR SHALL VERIFY DEPTH & LOCATION OF ALL UTILITIES AND ADJUST THE WATER LINE ACCORDINGLY.
 2. MAINTAIN 18-INCHES VERTICAL SEPARATION (WATER OVER SEWER) AND 10-FOOT HORIZONTAL SEPARATION BETWEEN PROPOSED WATER MAIN AND EXISTING SEWER LINES.
 3. CONTRACTOR SHALL OBTAIN A STORM WATER PERMIT AND PREPARE A STORM WATER POLLUTION PREVENTION PLAN. SEE SPECIFICATIONS.
 4. RETAINER GLANDS REQUIRED ON ALL MJ FITTINGS & VALVES, MEGALUG OR EQUAL.

LEGEND	
	PROPOSED FIRE HYDRANT
	PROPOSED WATER LINE
	PROPOSED VALVE
	PROPOSED ENCASUREMENT
	RIGHT OF WAY
	FIRE HYDRANT
	WATER METER
	WATER LINE & VALVE
	POWER METER
	STORM SEWER & MANHOLE
	SEWER LINE
	SEWER FORCE MAIN
	PERMANENT EASEMENT
	TEMPORARY EASEMENT
	EXISTING EASEMENT
	PROPERTY LINE
	WIRE FENCE
	FENCE (WOOD)
	UNDERGROUND TELEPHONE & PEDESTAL
	FIBER OPTIC CABLE
	GAS LINE & METER
	OVERHEAD ELECTRIC & LIGHT POLE
	UNDERGROUND ELECTRIC LINE
	POWER POLE & GUY WIRE

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED:	LBP
DRAFTED:	WRC
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DATE:	MAR 2022



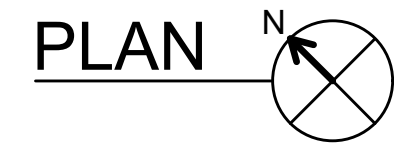
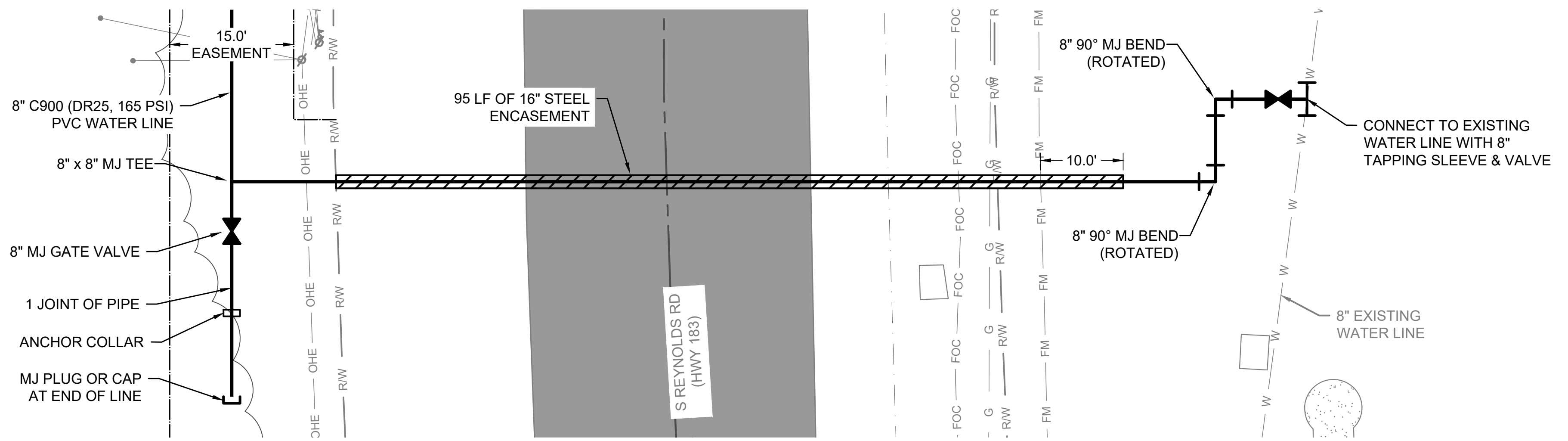
CRIST ENGINEERS, INC.
CONSULTING ENGINEERS

205 EXECUTIVE COURT
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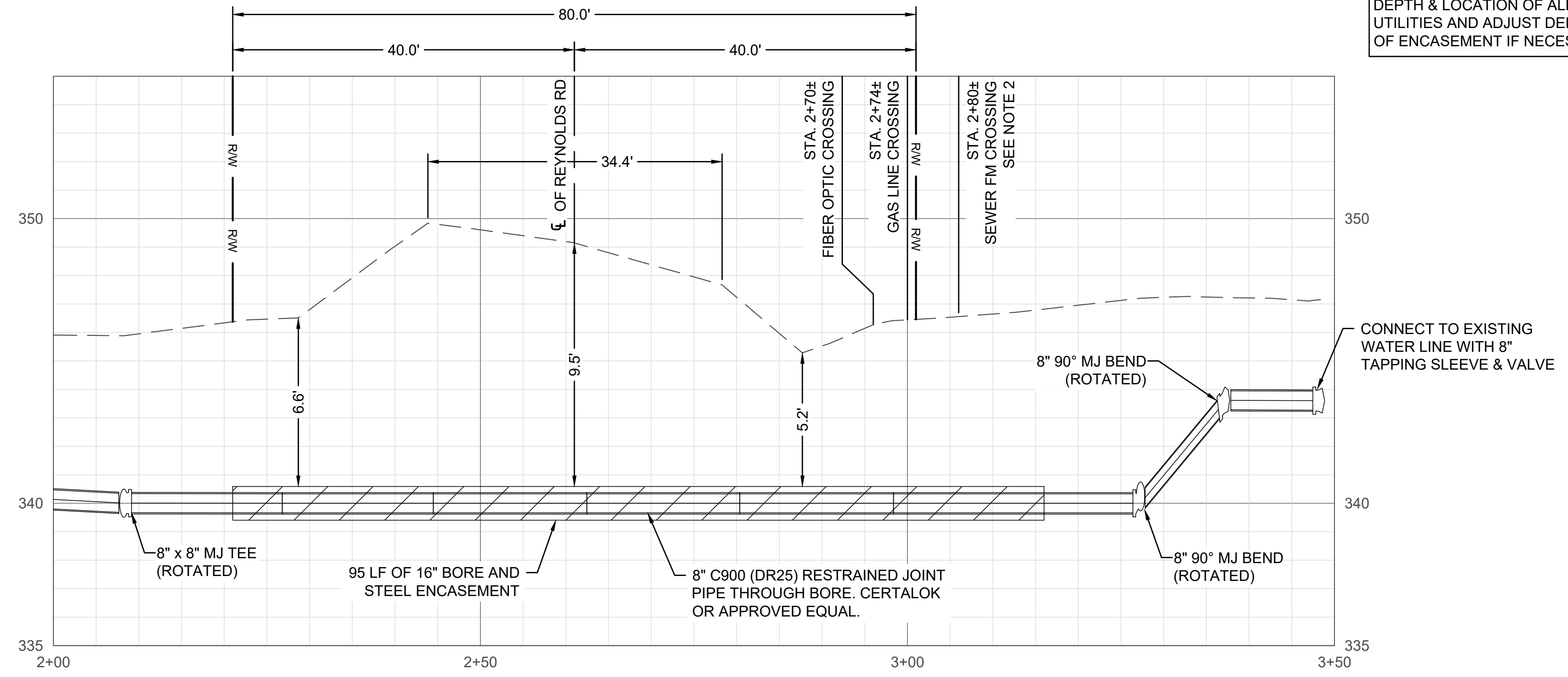
BRYANT, ARKANSAS
WATER LINE EXTENSION
CITY OF BRYANT, ARKANSAS

KATRINA DR
PLAN & PROFILE

JOB NO.	2154
SHEET NO.	3



CONTRACTOR SHALL VERIFY DEPTH & LOCATION OF ALL UTILITIES AND ADJUST DEPTH OF ENCASEMENT IF NECESSARY.

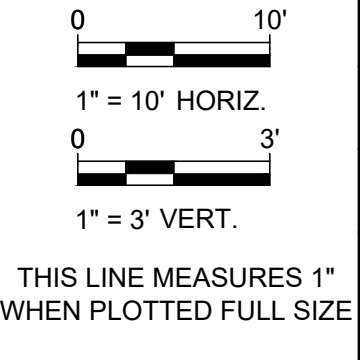
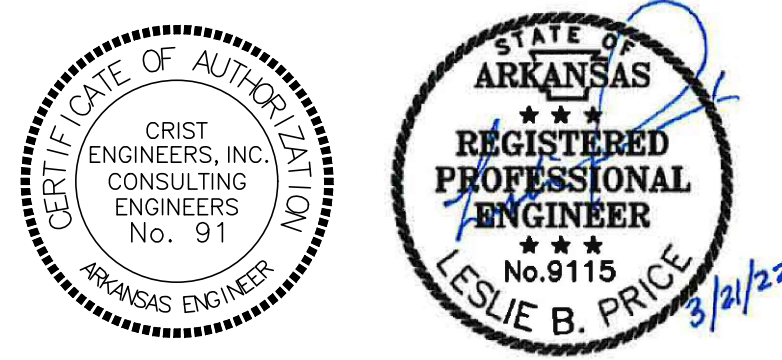


REYNOLDS RD
PROFILE

- NOTES:**
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 3. CONTRACTOR SHALL OBTAIN A STORM WATER PERMIT AND PREPARE A STORM WATER POLLUTION PREVENTION PLAN. SEE SPECIFICATIONS.
 4. RETAINER GLANDS REQUIRED ON ALL MJ FITTINGS & VALVES, MEGALUG OR EQUAL.

LEGEND	
	PROPOSED FIRE HYDRANT
	PROPOSED WATER LINE
	PROPOSED VALVE
	PROPOSED ENCASEMENT
	RIGHT OF WAY
	FIRE HYDRANT
	WATER METER
	WATER LINE & VALVE
	POWER METER
	STORM SEWER & MANHOLE
	SEWER LINE
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	TEMPORARY EASEMENT
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	PROPERTY LINE
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	FIBER OPTIC CABLE
	GAS LINE & METER
	OVERHEAD ELECTRIC & LIGHT POLE
	UNDERGROUND ELECTRIC LINE
	POWER POLE & GUY WIRE

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED:	LBP
DRAFTED:	WRC
CHECKED:	LBP
DATE:	MAR 2022



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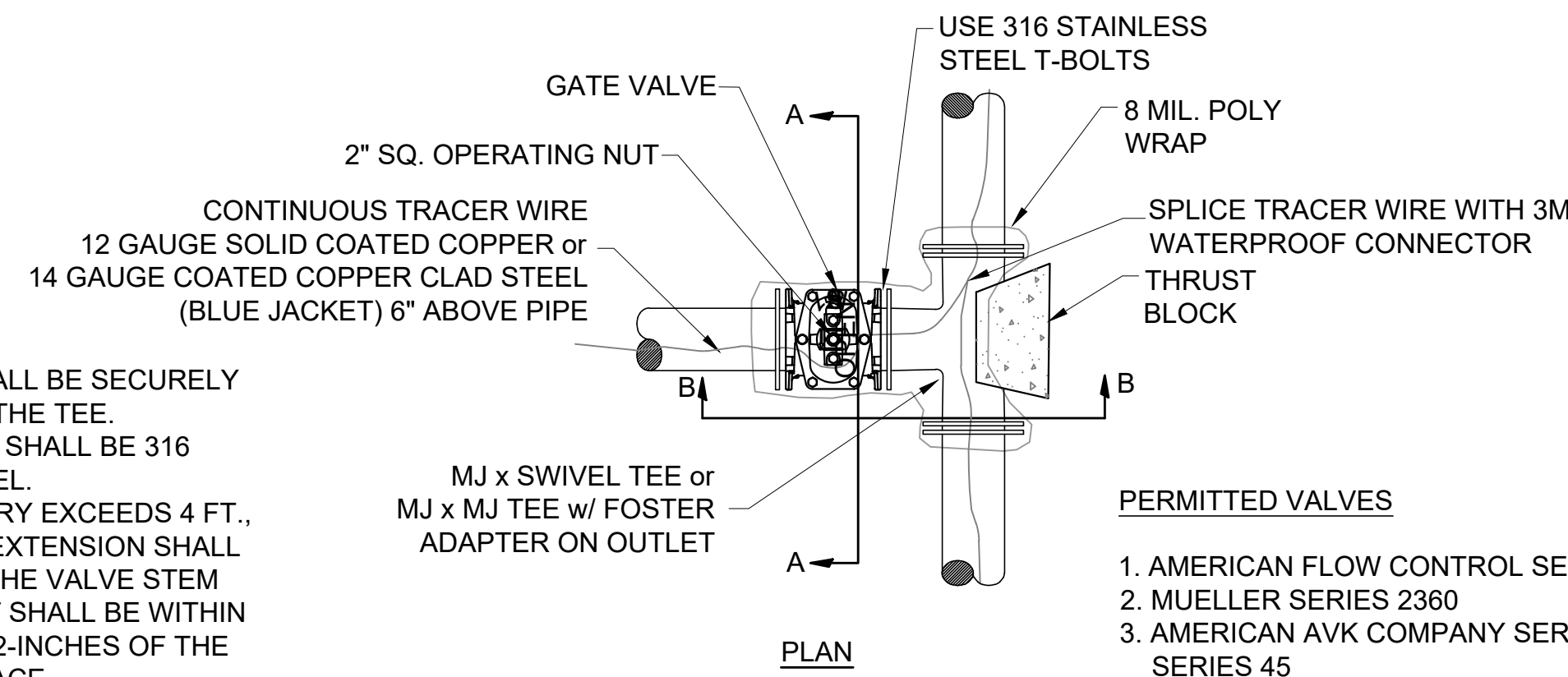
BRYANT, ARKANSAS
WATER LINE EXTENSION
CITY OF BRYANT, ARKANSAS

REYNOLDS RD
PLAN & PROFILE

JOB NO.	2154
SHEET NO.	4

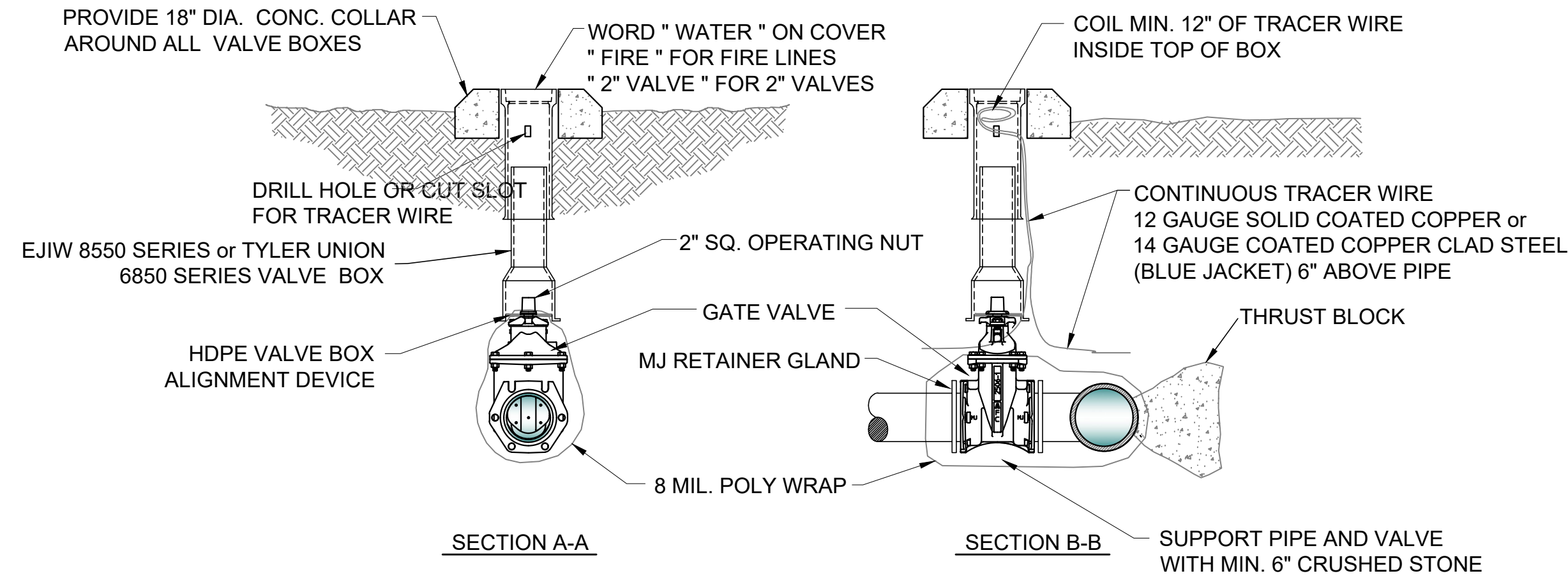
NOTES:

1. ALL VALVES SHALL BE SECURELY ANCHORED TO THE TEE.
2. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
3. IF DEPTH OF BURY EXCEEDS 4 FT., A VALVE STEM EXTENSION SHALL BE REQUIRED. THE VALVE STEM EXTENSION NUT SHALL BE WITHIN 24-INCHES TO 12-INCHES OF THE FINISHED SURFACE.

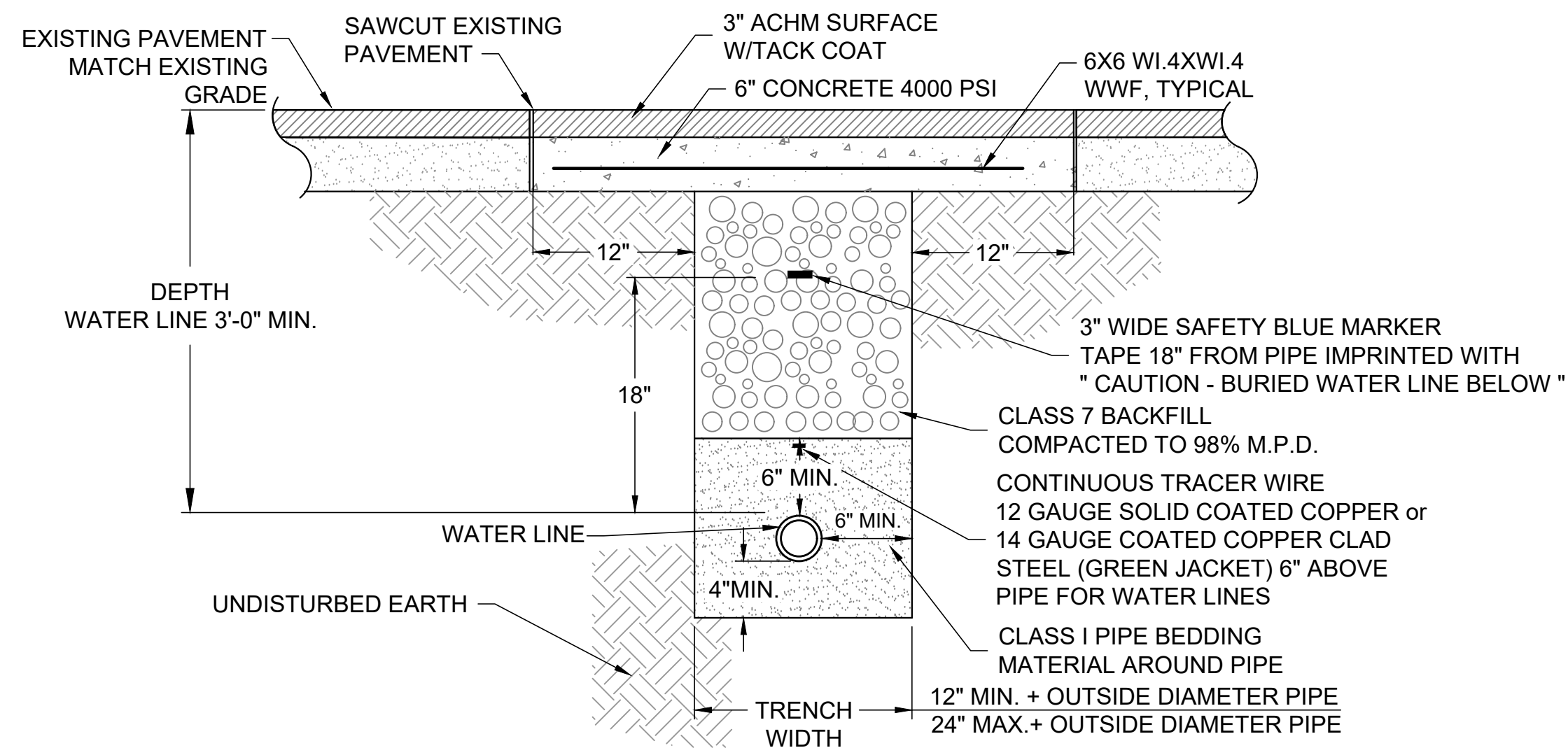


PERMITTED VALVES

1. AMERICAN FLOW CONTROL SERIES 2500
2. MUELLER SERIES 2360
3. AMERICAN AVK COMPANY SERIES 25 OR SERIES 45



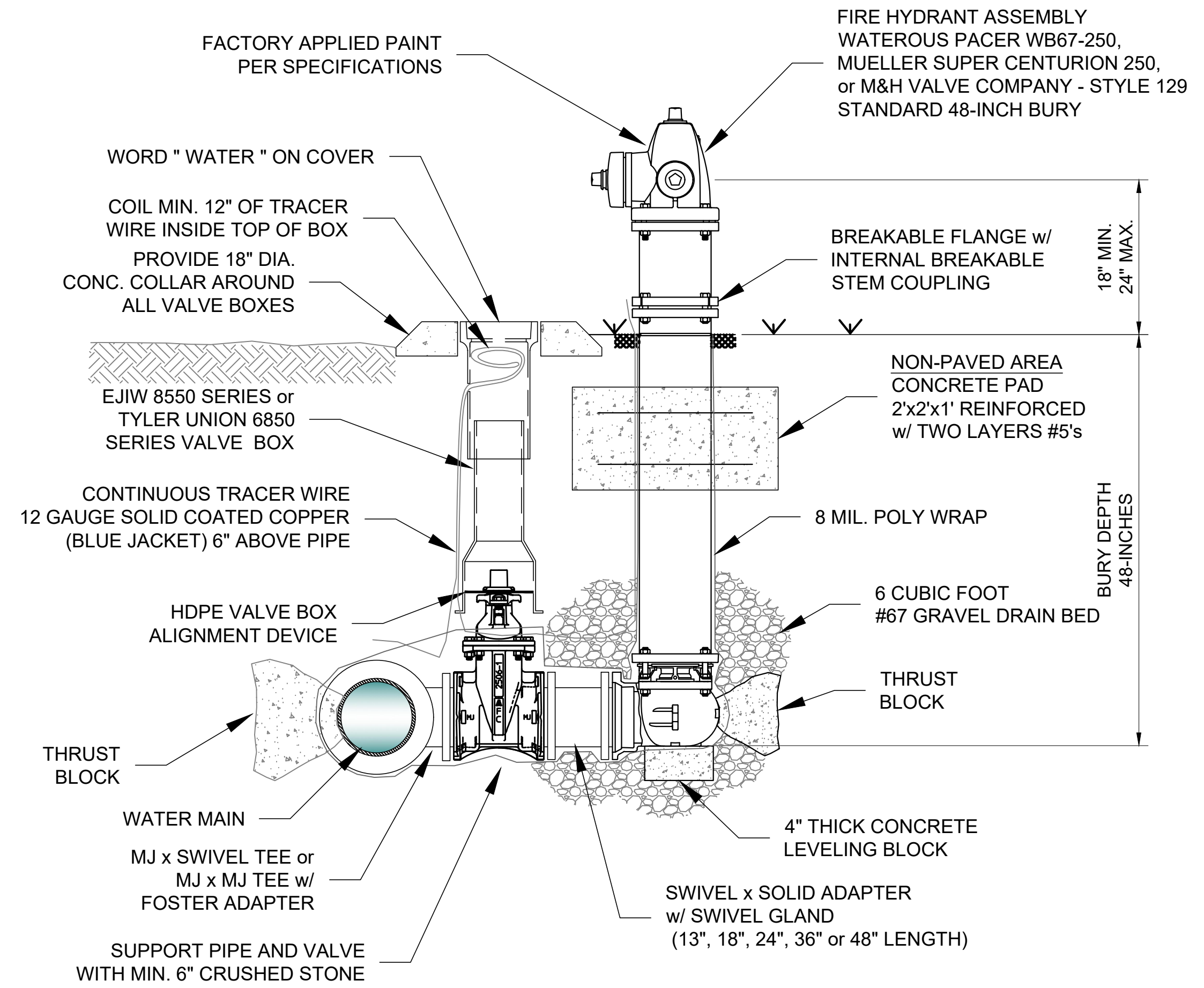
**GATE VALVE
DETAIL**
N.T.S. (A)



**ASPHALT REPAIR
DETAIL**
N.T.S. (B)

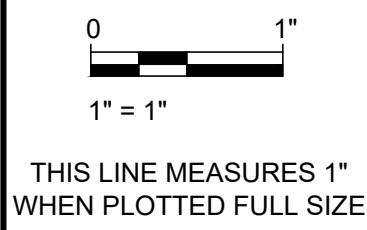
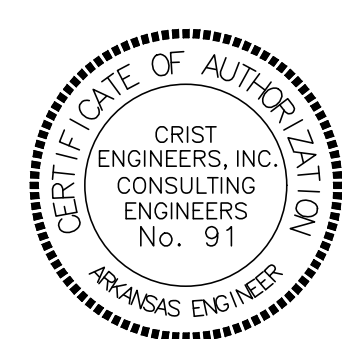
NOTES:

1. THE 6" GATE VALVE SHALL BE POSITIVELY RESTRAINED TO THE MAIN BY THE USE OF EITHER A SWIVEL TEE OR FOSTER ADAPTER.
2. FIRE HYDRANTS SHALL BE DESIGNED FOR A MINIMUM 48" BURY.
3. BURY LINE OF HYDRANT SHALL BE NO LESS THAN THE PROPOSED FINISHED ELEVATION OF BACK OF CURB, OR SIDEWALK, WHICHEVER IS GREATER.
4. EXTENSIONS SHALL BE WATEROUS K562 OR MUELLER A-320 WITH NO MORE THAN ONE EXTENSION PER HYDRANT.
5. IF SIDEWALK IS PRESENT, HYDRANT SHALL BE INSTALLED 2' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB. VALVES SHALL BE INSTALLED 1' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB.
6. DO NOT COVER UP WEEP HOLE WITH CONCRETE.
7. MJ RETAINER GLANDS ARE REQUIRED FOR ALL FITTINGS.
7. 6" DUCTILE IRON PIPE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 48-INCHES FROM THE MAIN VALVE.
8. AN ADDITIONAL GUARDIAN VALVE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 30 FEET IN LENGTH.



**FIRE HYDRANT & VALVE CONNECTION
DETAIL**
N.T.S. (C)

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED:	LBP
DRAFTED:	WRC
CHECKED:	LBP
DATE:	MAR 2022

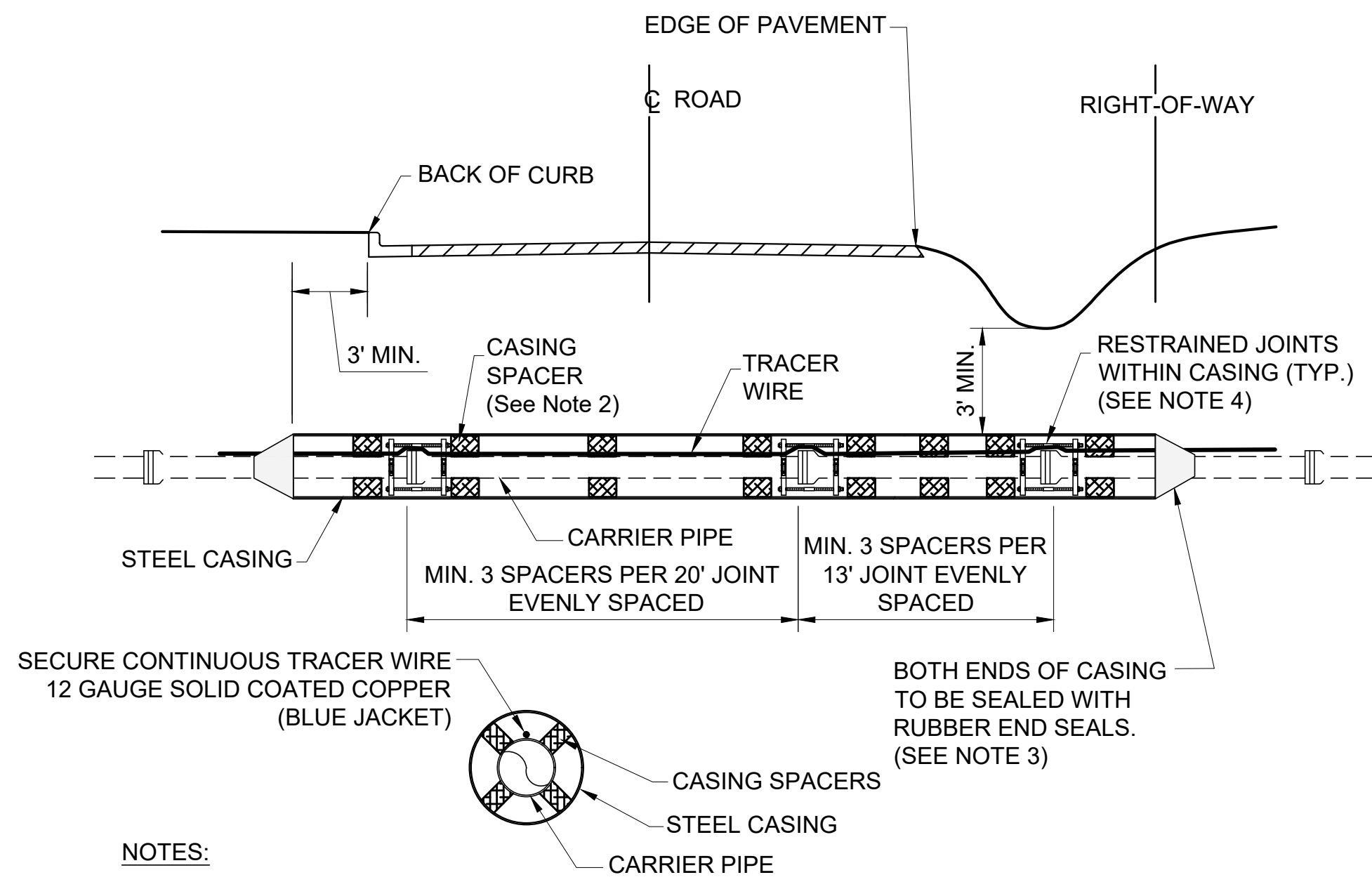


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BRYANT, ARKANSAS
WATER LINE EXTENSION
CITY OF BRYANT, ARKANSAS

DETAILS I

JOB NO.	2154
SHEET NO.	5



NOTES:

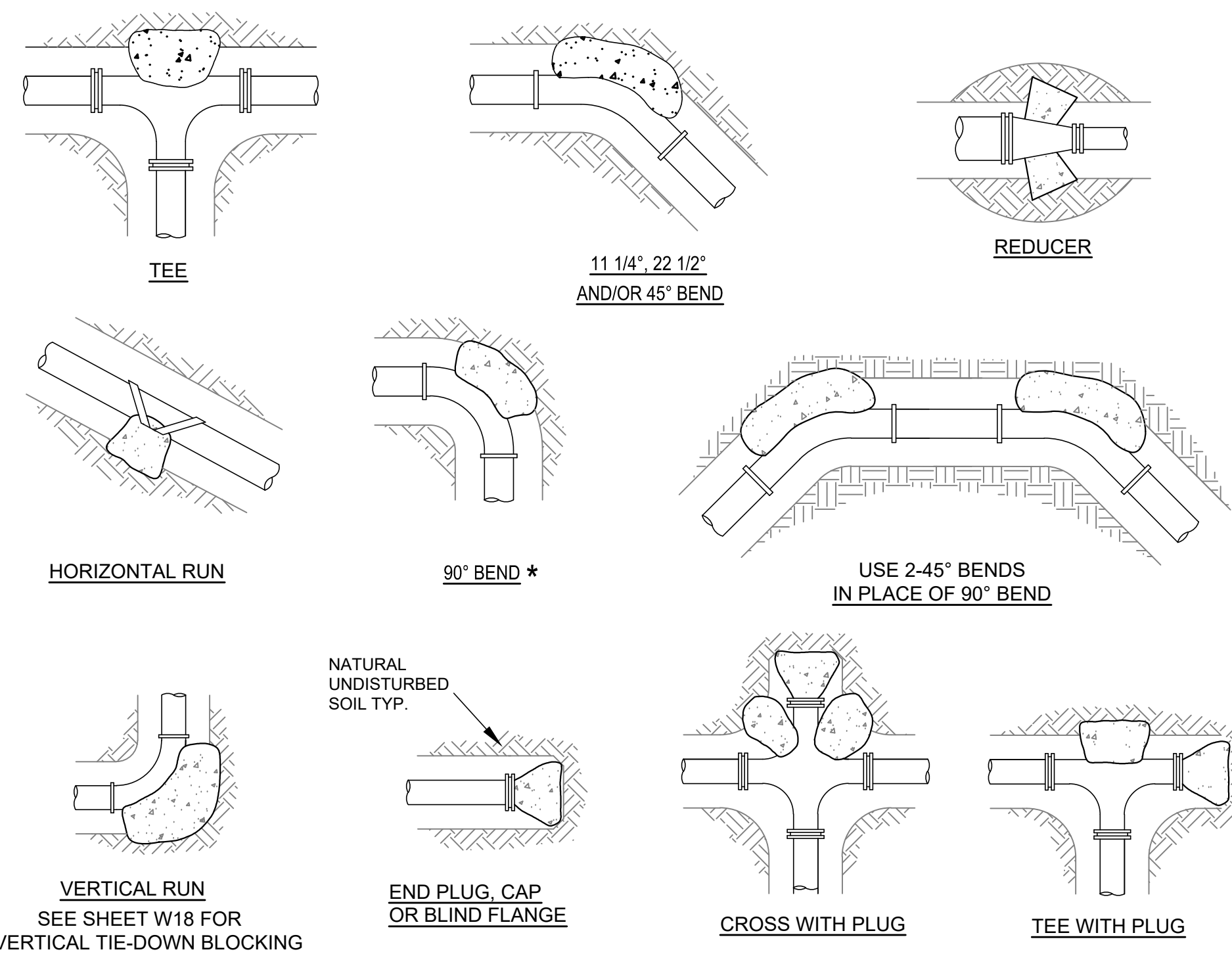
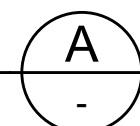
1. STEEL CASING SHALL BE CONSTRUCTED OF SPIRAL OR STRAIGHT WELDED STEEL WITH A MINIMUM DIAMETER AND THICKNESS AS SHOWN BELOW (SEE TABLE).
2. PROVIDE CASING SPACERS BY CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MFG. CO., OR APPROVED EQUAL.
3. PROVIDE END SEALS BY CASCADE MODEL CCES AS MANUFACTURED BY CASCADE WATERWORKS MFG. CO., OR APPROVED EQUAL.
4. WHERE ENCASEMENTS ARE GREATER THAN 25 FEET IN LENGTH, SELF-RESTRAINING GASKETS OR BELL RESTRAINTS SHALL BE USED FOR ALL JOINTS INSIDE THE ENCASEMENT PIPE AND FOR THE FIRST JOINT IN EACH DIRECTION OUTSIDE THE ENCASEMENT PIPE.
5. BELL RESTRAINTS FOR PVC SHALL BE SERIES 1900 RESTRAINT HARNESS AND BELL RESTRAINTS FOR DIP SHALL BE SERIES 1700 RESTRAINT HARNESS BY EBAA IRON INC., OR APPROVED EQUAL.
6. DIRECT BURY STEEL ENCASEMENT SHALL BE POLY WRAPPED.
7. JACK AND BORE STEEL ENCASEMENT SHALL HAVE 17# HP MAGNESIUM ANODES CAD WELDED TO THE END OF THE ENCASEMENT PIPE.

CARRIER AND CASING SIZES							
CARRIER (ID)	2"	3"	4"	6"	8"	10"	12"
CASING (ID)	5"	6"	8"	12"	16"	20"	24"
CASING WALL THICKNESS	0.250	0.250	0.250	0.250	0.250	0.250	0.375
CARRIER (ID)	14" - 16"	18" - 20"	24"	30"	36"	42"	48"
CASING (ID)	30"	36"	42"	48"	54"	60"	72"
CASING WALL THICKNESS	0.375	0.500	0.625	0.625	0.625	0.625	0.750

STEEL ENCASEMENT

DETAIL

N.T.S.



THRUST BLOCK SCHEDULE												
(2000 PSF SOIL, 200 PSI WATER PRESSURE, 100 PSI WATER HAMMER)												
BEARING AREA OF THRUST BLOCKS IN SQ. FT. (HORIZONTAL BENDS)						VOLUME OF THRUST BLOCK IN CU. FEET (VERTICAL BENDS)						
FITTING SIZE	PLUG TEE OR CAP	BEND ANGLE				FITTING SIZE	BEND ANGLE				ROD DIAM.	EMBED-MENT
		90° *	45°	22 1/2°	11 1/4°		90° *	45°	22 1/2°	11 1/4°		
2, 3, & 4	1.9	2.7	1.4	0.7	0.4	2, 3, & 4	35.5	19.2	9.8	4.9	.50"	30"
6	5.6	7.9	4.3	2.2	1.1	6	105.8	57.2	29.2	14.7	.75"	30"
8	9.6	13.6	7.4	3.8	1.9	8	181.9	98.5	50.2	25.2	.75"	30"
12	20.5	29.0	15.7	8.0	4.0	12	387.1	209.5	106.8	53.7	1.0"	30"
16	35.7	50.4	27.3	13.9	7.0	16	672.6	364.0	185.6	93.2	1.0"	36"
18	44.8	63.4	34.3	17.5	18.8	18	844.7	457.2	233.1	117.1	1.0"	36"
24	78.4	110.9	60.0	30.6	15.4	24	1478.7	800.3	408.0	205.0	1.5"	36"

90 DEGREE BENDS SHALL ONLY BE USED ON A BY-EXCEPTION BASIS, AND MUST EACH BE SPECIFICALLY APPROVED BY CITY.

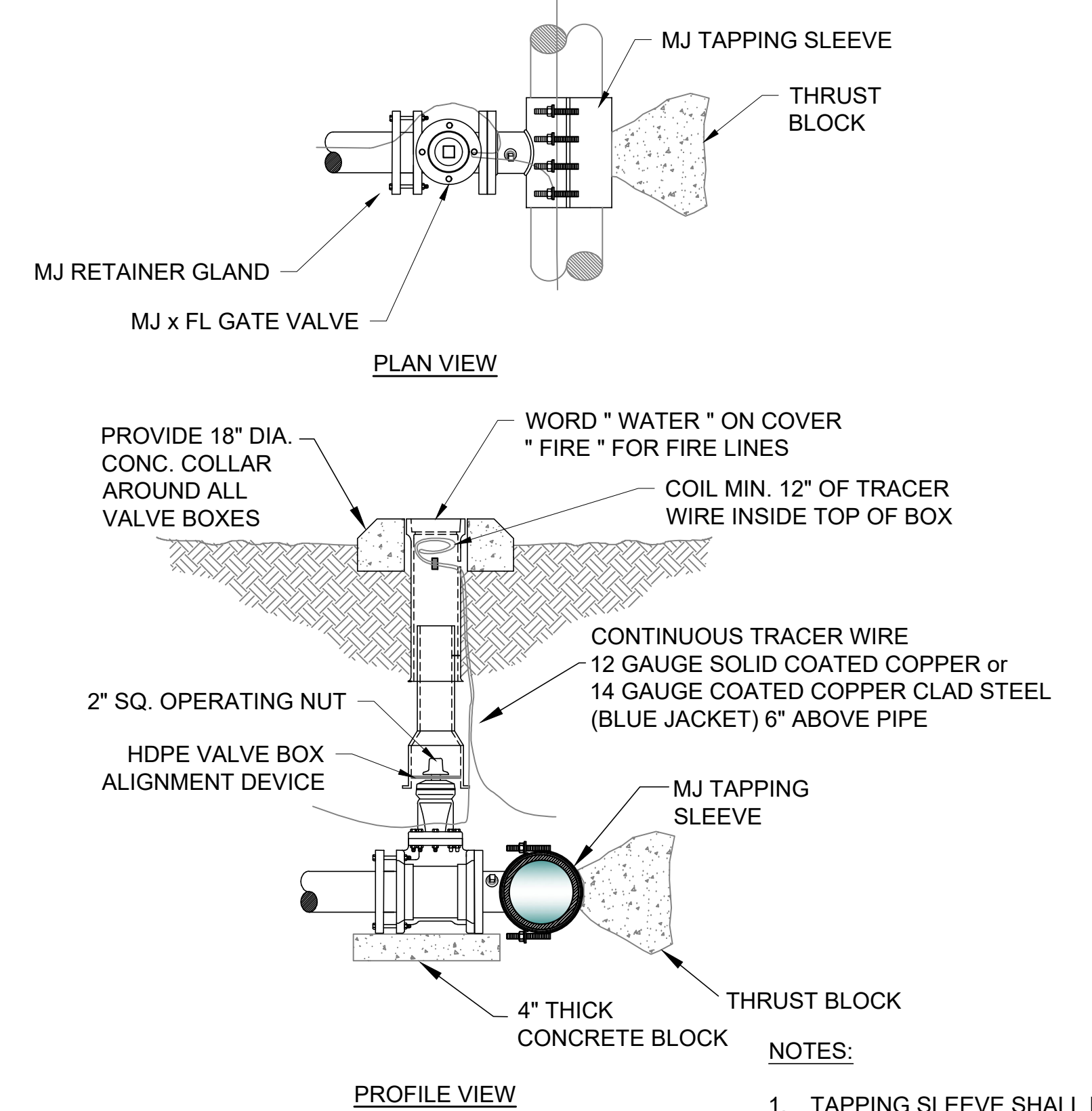
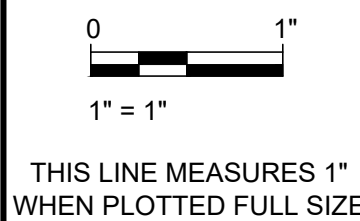
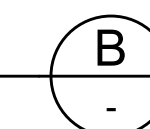
THRUST BLOCK NOTES:

1. CONCRETE FOR THRUST BLOCKS - CLASS A CONCRETE SHALL DEVELOP NOT LESS THAN 3000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS AND BE PLACED AGAINST UNDISTURBED SOIL.
2. ALL BENDS, BOTH HORIZONTAL AND VERTICAL, SHALL BE BACKED WITH CONCRETE. VERTICAL BENDS SHALL BE PLACED ON CONCRETE PADS WHERE BENDS TURN UP, OR LOADED WHERE BENDS TURN DOWN.
3. WRAP PIPE JOINTS IN 8 MIL "POLYETHYLENE" BEFORE PLACING CONCRETE.
4. BEARING AREA SHOWN IN TABLE, IS BASED UPON A 2000 LB/SF. SOIL BEARING, AND UPON A PIPELINE PRESSURE OF 200 psi. PLUS 100 psi. WATER HAMMER. AREAS SHOWN SHALL BE ADJUSTED, SHOULD FIELD CONDITIONS VARY.
5. MJ RESTRAINTS ARE REQUIRED FOR ALL FITTINGS.
6. USE LONG-RADIUS FITTINGS WHEREVER POSSIBLE.
7. ALL BOLTS FOR FITTINGS SHALL BE 316 STAINLESS STEEL.
8. ALL DUCTILE IRON FITTINGS SHALL BE FUSION-BONDED EPOXY COATED INSIDE AND OUTSIDE IN ACCORDANCE WITH ANSI/AWWA C116/A21.16.
9. UNIT WEIGHT OF CONCRETE FOR VERTICAL THRUST BLOCKS IS 150 LBS/CU. FT.

THRUST BLOCKING

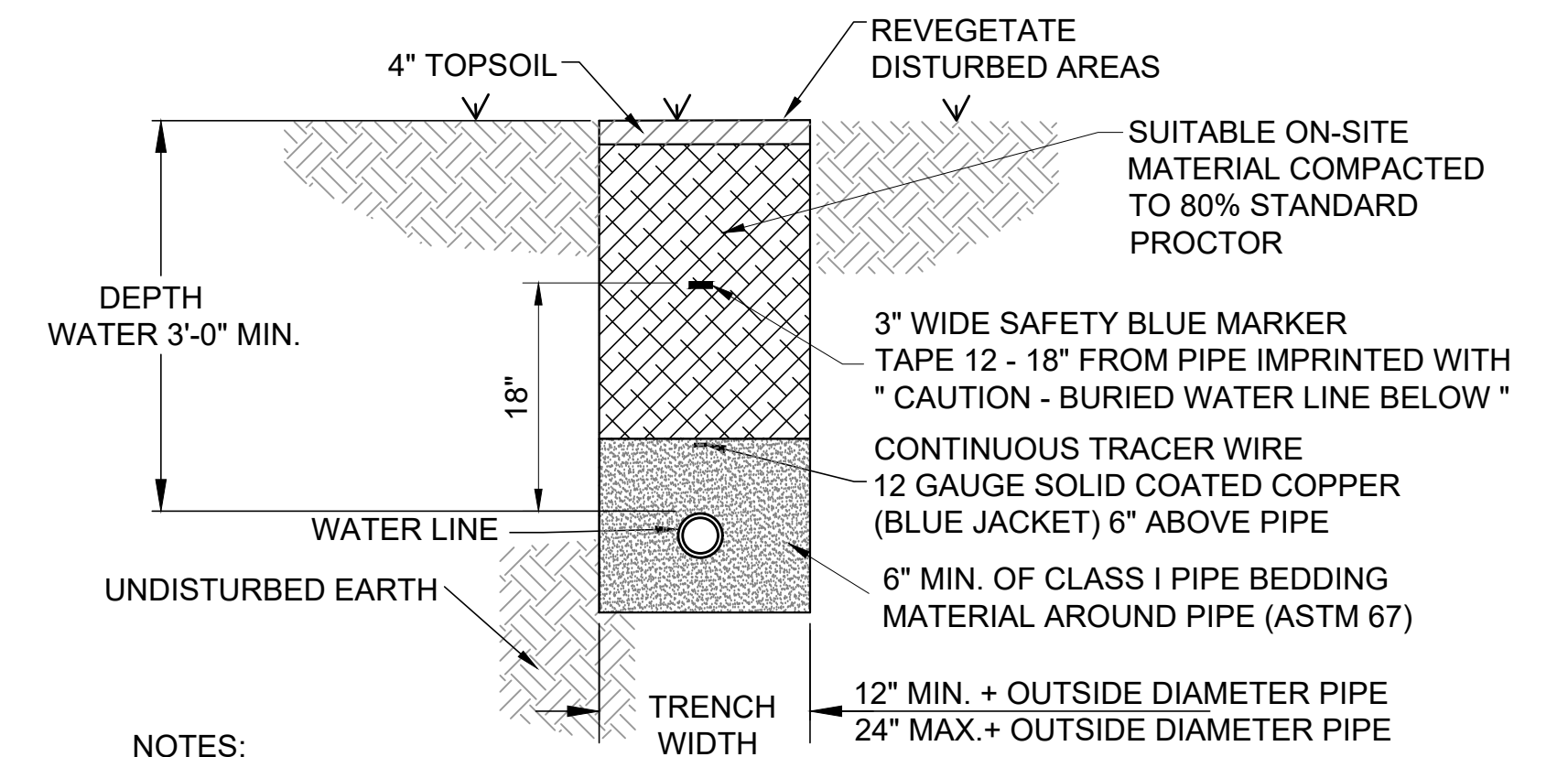
DETAIL

N.T.S.



NOTES:

1. TAPPING SLEEVE SHALL BE SMITH-BLAIR 662 OR FORD FAST.
2. AFTER THE TAP IS MADE, RE-TORQUE BOLTS ON SLEEVE TO SEAL TO FINAL SHAPE OF PIPE.
3. TAPPING SLEEVE AND VALVE SHALL BE WRAPPED WITH 8 MIL POLY WRAP.



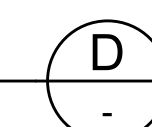
NOTES:

1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART B)
4. TRENCH SHALL BE EXCAVATED BELOW GRADE REQUIRED TO PROVIDE A MINIMUM 36" OF PIPE COVER.
5. MAXIMUM PIPE COVER SHALL BE 60" UNDER NORMAL CONDITIONS. COVER GREATER THAN 60" MAY BE ALLOWED FOR SHORT DISTANCES WHERE REQUIRED BY FIELD CONDITIONS. NO HYDRANT SHALL BE ALLOWED WHERE LINES ARE GREATER THAN 60" DEEP.

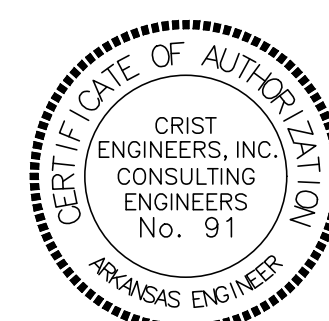
WATER LINE TRENCHING

DETAIL

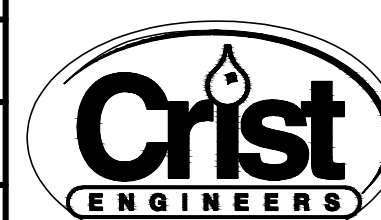
N.T.S.



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED: LBP
 DRAFTED: WRC
 CHECKED: LBP
 DATE: MAR 2022



CRIST ENGINEERS, INC.
 CONSULTING ENGINEERS

205 EXECUTIVE COURT
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BRYANT, ARKANSAS
WATER LINE EXTENSION
 CITY OF BRYANT, ARKANSAS

DETAILS II

JOB NO. 2154
 SHEET NO. 6

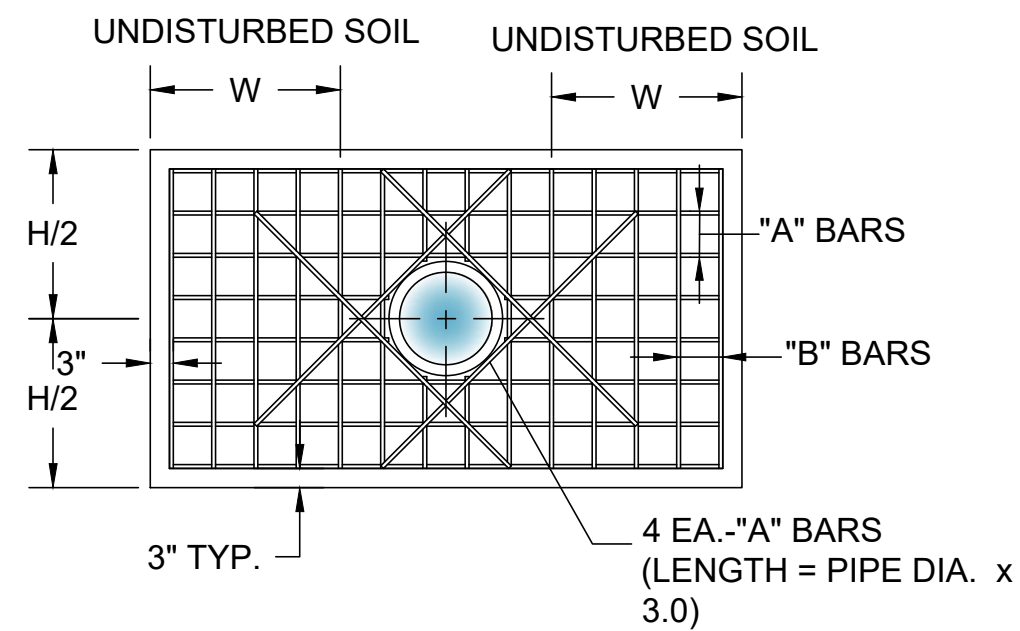
BLOCKING SCHEDULE					
PIPE SIZE	BENDS			ROD DIA.	
	45°	22 1/2°	11 1/4°		
8"	VOLUME REQ'D (CU. FT.)	98.5	50.2	25.2	3/4 IN.
	A (FT.)	5.00'	4.00'	3.00'	
	B (FT.)	4.00'	3.20'	2.80'	
	C (FT.)	5.00'	4.00'	3.00'	
MIN. CLAMP (2 EA.)		3/8 IN. x 2 IN.			
12"	VOLUME REQ'D (CU. FT.)	209.5	106.8	53.7	3/4 IN.
	A (FT.)	6.00'	5.00'	4.00'	
	B (FT.)	6.00'	4.25'	3.50'	
	C (FT.)	6.00'	5.00'	4.00'	
MIN. CLAMP (2 EA.)		1/2 IN. x 2 IN.			
18"	VOLUME REQ'D (CU. FT.)	457.2	233.1	117.1	1 IN.
	A (FT.)	8.00'	6.50'	5.00'	
	B (FT.)	7.25'	5.50'	4.75'	
	C (FT.)	8.00'	6.50'	5.00'	
MIN. CLAMP (2 EA.)		5/8 IN. x 3 IN.			
24"	VOLUME REQ'D (CU. FT.)	800.3	408.0	205.0	1 1/4 IN.
	A (FT.)	9.50'	7.50'	6.00'	
	B (FT.)	9.00'	7.25'	5.75'	
	C (FT.)	9.50'	7.50'	6.00'	
MIN. CLAMP (2 EA.)		5/8 IN. x 3 IN.			

VOLUME CALCULATED ON THE BASIS OF CONCRETE REACTING THRUST ON THE RESPECTIVE BENDS UNDER AN INTERNAL PRESSURE OF 250 PSI, 50 PSI SURGE AND THE WEIGHT OF CONCRETE IS 150 POUNDS PER CU. FT.

ANCHOR COLLAR SCHEDULE					
PIPE SIZE	* MINIMUM DIMENSIONS *			REINFORCING BARS	
	W	H	T	"A" BARS	"B" BARS
6"	1.5'	2.0'	1.0'	#6 @ 6"	#6 @ 6"
8"	2.0'	2.5'	1.0'	#6 @ 6"	#6 @ 6"
12"	2.5'	4.0'	1.5'	#6 @ 6"	#6 @ 6"
16"	3.5'	5.0'	1.5'	#6 @ 6"	#6 @ 6"
20"	5.0'	5.5'	2.0'	#6 @ 6"	#6 @ 6"
24"	6.5'	6.0'	2.0'	#7 @ 6"	#7 @ 10"

NOTES:

- DESIGN PRESSURE IS 200 PSI PLUS 100 PSI SURGE AND 2,000 PSI SOIL BEARING.
- ALL DIMENSIONS ARE MINIMUM REQUIREMENTS. ACTUAL FIELD CONDITIONS MAY REQUIRE LARGER DIMENSIONS.
- ALL RETAINER GLANDS SHALL BE MEGA-LUG BY EBAA IRON.

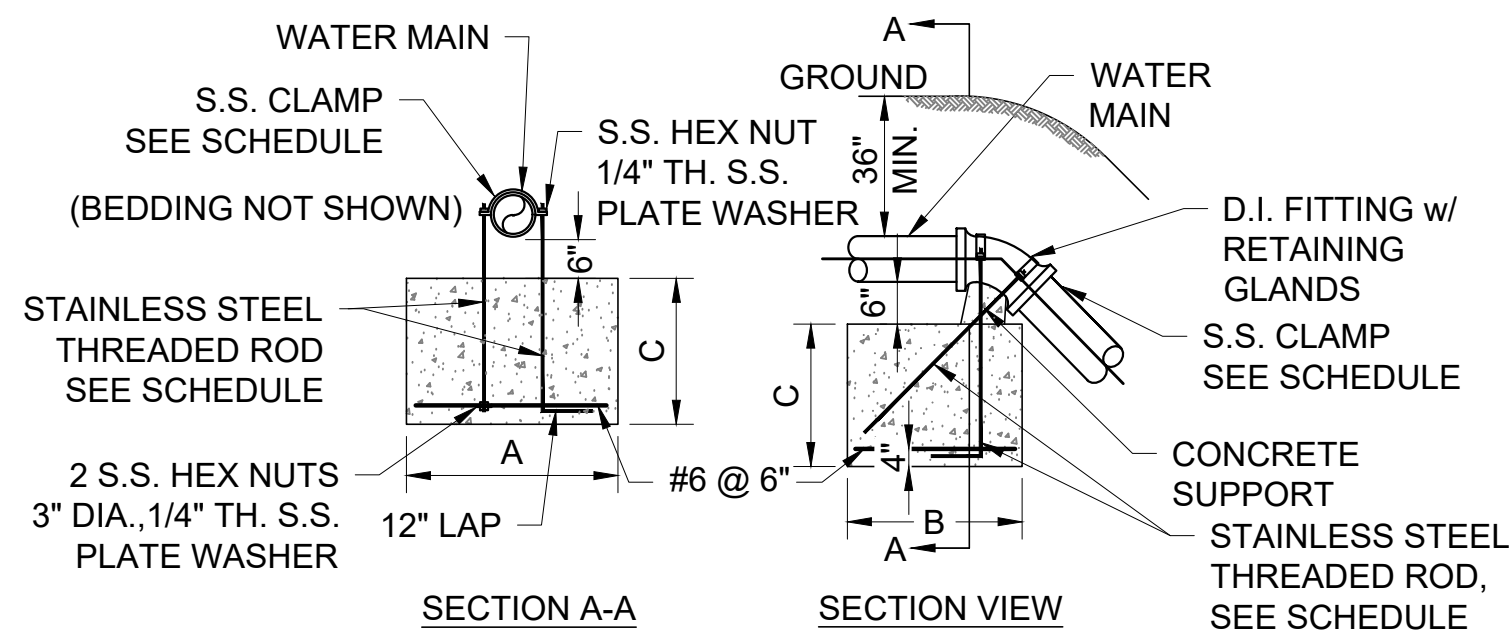


NOTES:

- SWING CONNECTIONS USING 90° BENDS SHALL BE PERMITTED BY THE CITY ON A CASE BY CASE BASIS.
- CONTRACTOR SHALL LOCATE EXISTING MAIN IN ADVANCE OF LAYING NEW LINE IN ORDER TO ASSURE ADEQUATE LENGTH TO ADJUST DEPTH OF NEW MAIN.
- DIMENSIONS SHOWN ARE RECOMMENDED MINIMUMS TO PROVIDE ADEQUATE ROOM FOR TIGHTENING BOLTS ON JOINTS (OTHER DIMENSIONS MAY BE USED).
- PROVIDE ALL THREAD STAINLESS STEEL TIE RODS WITH DUCTILE LUGS FOR ANCHORING ALL JOINTS.
- ROTATE TEE UP & ELBOW DOWN AS REQUIRED TO MATCH.
- TRACER WIRE SHALL BE INSTALLED ON ALL NEW WATER LINES.
- ALL FITTINGS, VALVES, AND DIP SHALL BE POLY WRAPPED.

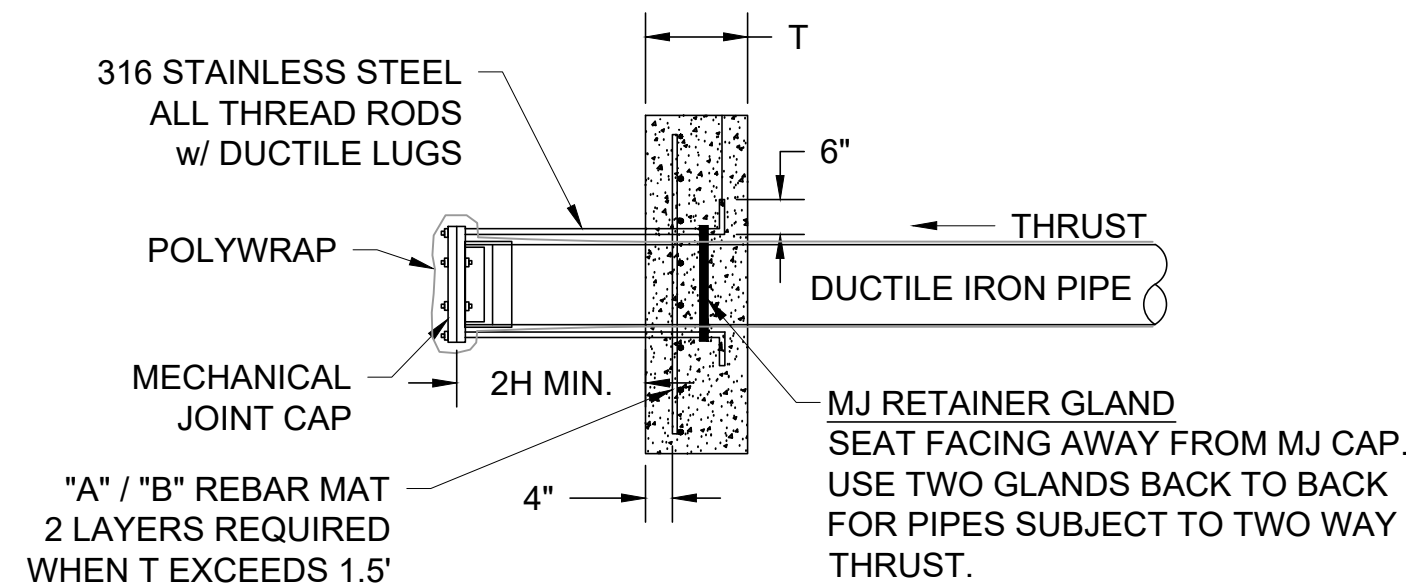
SCHEDULE OF THE TIE RODS		
SIZE	NUMBER OF ROD PER FITTING	DIAMETER OF S.S. RODS
8"	4	3/4"
12"	4	3/4"

ALL FITTINGS SHALL BE MECHANICAL JOINTS WITH RETAINING GLANDS. BEDDING NOT SHOWN



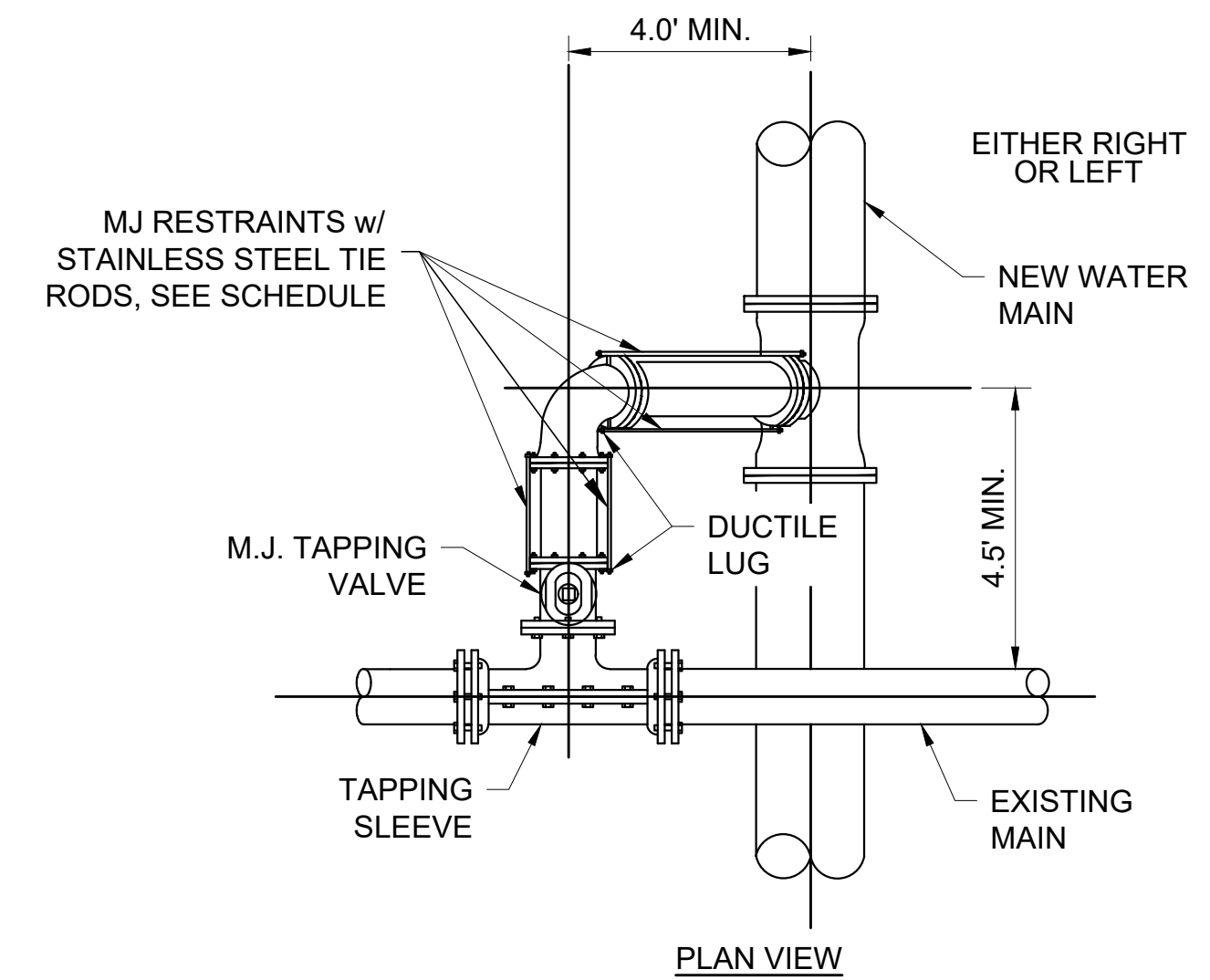
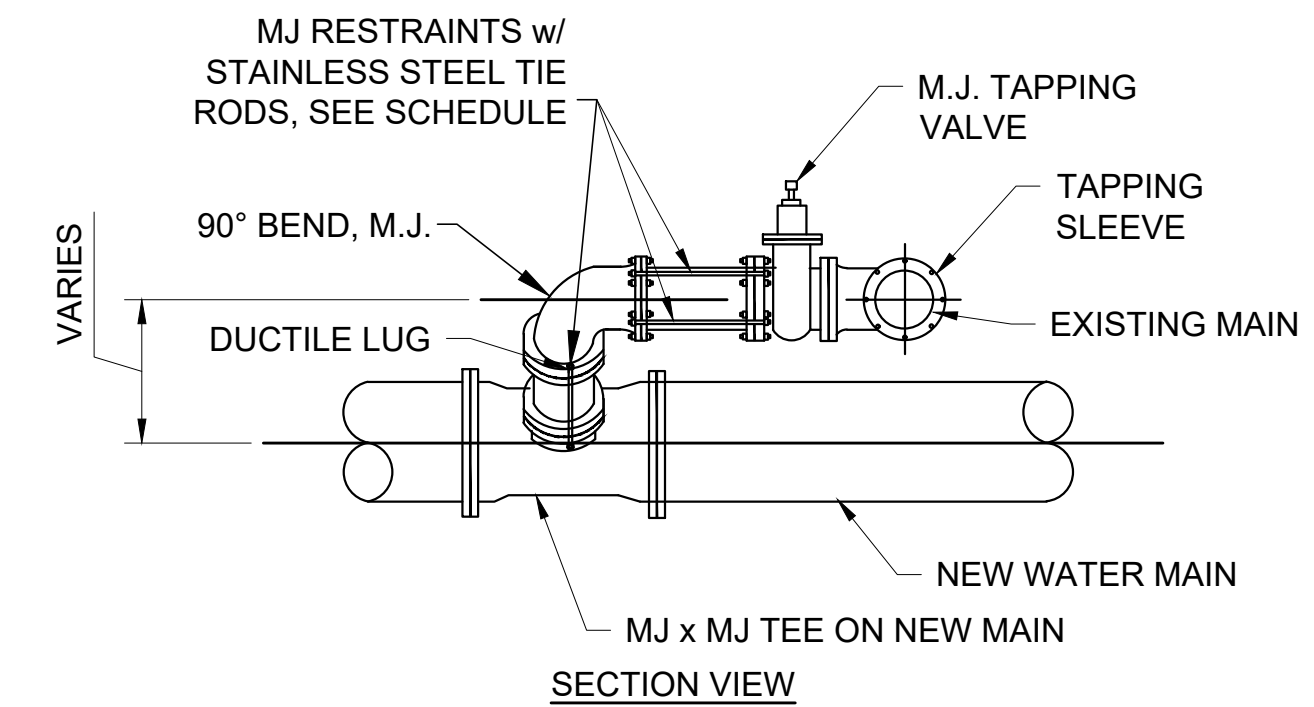
VERTICAL TIE DOWN BLOCKING

DETAIL A
N.T.S.



ANCHOR COLLAR

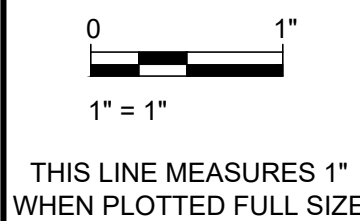
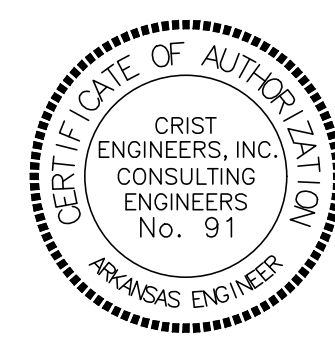
DETAIL B
N.T.S.



SWING CONNECTION

DETAIL C
N.T.S.

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED:	LBP
DRAFTED:	WRC
CHECKED:	LBP
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BRYANT, ARKANSAS
WATER LINE EXTENSION
CITY OF BRYANT, ARKANSAS

DETAILS III

JOB NO.	2154
SHEET NO.	7