



# OKLAHOMA ORDNANCE WORKS AUTHORITY ZARROW ROAD WATERLINE RELOCATION PROJECT NUMBER 022-06912

**OWNER**

OKLAHOMA ORDNANCE WORKS AUTHORITY  
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**ELECTRIC - GRDA**

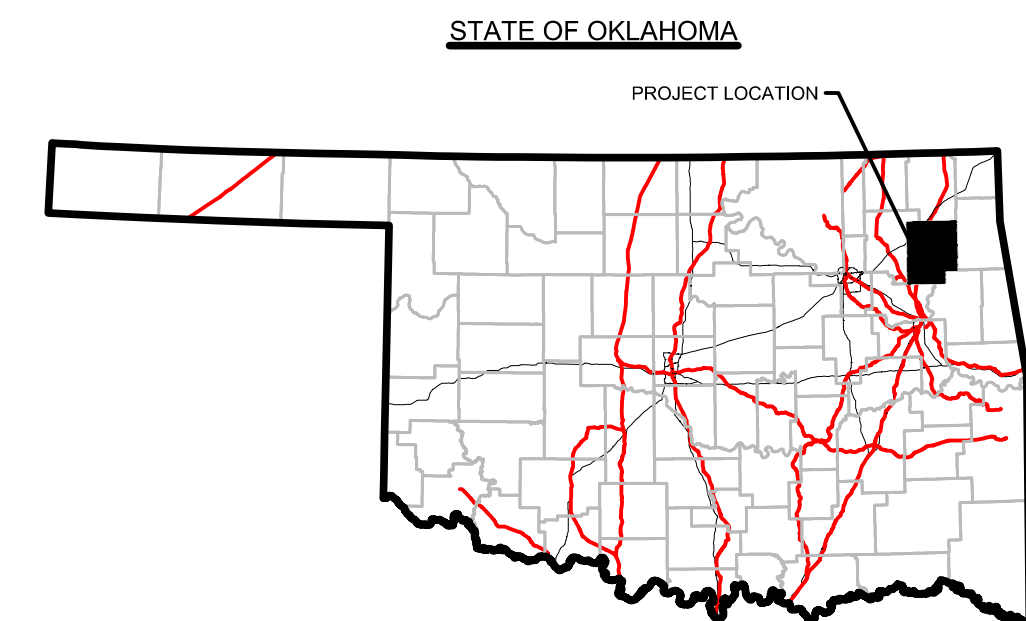
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**ISSUED FOR BID  
13NOV2023**

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**ENGINEER'S STATEMENT:**

BY MY SIGNATURE ON THESE CONSTRUCTION DOCUMENTS, I HEREBY CERTIFY THAT I AM FAMILIAR WITH THE ADOPTED ORDINANCES AND REGULATIONS OF THE OKLAHOMA ORDNANCE WORKS AUTHORITY GOVERNING THE WORK IN THIS PROJECT; THAT THESE PLANS HAVE BEEN PREPARED UNDER MY DIRECT SUPERVISION; THE ABOVE AND FOREGOING PLANS COMPLY WITH ALL GOVERNING ORDINANCES AND THE ADOPTED STANDARDS OF THE OKLAHOMA ORDNANCE WORKS AUTHORITY TO THE BEST OF MY KNOWLEDGE AND BELIEF.

THIS PROJECT COMPLIES WITH ALL OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ) REQUIREMENTS.

PREPARED BY:  
  
 JOE F. PACE, P.E.  
 OLSSON, INC.



13NOV2023  
DATE



drawn by:	AMA
checked by:	JAT
approved by:	JEP
QA/QC by:	
project no.:	022-06912
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Oklahoma Certificate of Authorization  
#CZ2963 Renewal Date: 06-30-2025  
1717 South Boulder Ave  
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BY	REVISIONS DESCRIPTION	DATE	REV. NO.

REVISIONS

TITLE SHEET	2023
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION	PRYOR, OKLAHOMA



GENERAL CONSTRUCTION NOTES

1. ALL WORK SHALL BE DONE FOLLOWING THE LINES AND GRADES SHOWN ON THE DRAWINGS. ALL ADDITIONAL SURVEY, LAYOUT AND MEASUREMENT WORK SHALL BE PERFORMED BY THE CONTRACTOR AS A PART OF THE WORK UNDER THIS CONTRACT.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING PUBLIC AND PRIVATE PROPERTY AFFECTED BY HIS CONSTRUCTION OPERATIONS. RESTORATION OF ALL DAMAGED PROPERTY, BOTH PUBLIC AND PRIVATE, TO ITS ORIGINAL CONDITION SHALL BE PERFORMED BY AND AT THE EXPENSE OF THE CONTRACTOR. CONTRACTOR SHALL NOTIFY THE "OKIE ONE CALL SYSTEM" WELL IN ADVANCE OF CONSTRUCTION AS TO ITS INTENT AND SHALL HAVE THE UTILITIES LOCATED IN THE FIELD.
3. ALL OPEN TRENCHES AND OTHER EXCAVATIONS SHALL BE PROTECTED WITH SUITABLE BARRIERS, SIGNS AND LIGHTS. OBSTRUCTIONS, SUCH AS MATERIAL PILES AND EQUIPMENT, SHALL BE PROTECTED WITH SIMILAR WARNING SIGNS AND LIGHTS. ALL BARRICADES, SIGNS, LIGHTS AND OTHER PROTECTIVE DEVICES SHALL BE INSTALLED AND MAINTAINED IN A MANNER ACCEPTABLE TO THE ENGINEER.
4. ALL DUCTILE IRON PIPE SHALL BE WRAPPED WITH A LOOSE FITTING, SLIP OR POLYETHYLENE FILM IN ACCORDANCE WITH THE SPECIFICATIONS.
5. ANY NON-METALLIC WATER LINES INSTALLED UNDER THIS CONTRACT SHALL INCLUDE A 14 GAUGE METALLIC DETECTABLE WIRE INSTALLED EIGHTEEN INCHES ABOVE THE WATER LINE. COSTS FOR PROVIDING THE METALLIC DETECTABLE WIRE WILL BE INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT.
6. BLASTING WILL NOT BE ALLOWED.
7. FENCING, PAVEMENTS OR OTHER IMPROVEMENTS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO AN EQUAL OR BETTER CONDITION BY THE CONTRACTOR.
8. ALL ROADWAY AND DRIVEWAY CROSSINGS ARE TO BE "OPEN CUT" UNLESS INDICATED OTHERWISE ON THE PLANS.
9. STUB-OUT PIPES FOR FUTURE CONSTRUCTION SHALL BE PROVIDED WITH A PLUG, MECHANICAL RESTRAINT AND THRUST BLOCKING. MECHANICAL RESTRAINT SYSTEM SHALL BE MEGALUG 1100 OR APPROVED EQUAL. THRUST BLOCKING FOR PLUG SHALL BE IDENTICAL TO THRUST BLOCKING FOR A "T" FITTING.
10. ALL EXISTING ROADS SHALL REMAIN OPEN DURING CONSTRUCTION. ROAD CLOSURE WILL BE ALLOWED FOR OPEN UTILITY CROSSING CUTS AS LONG AS TRAFFIC ON EITHER SIDE OF THE CLOSURE REMAINS ACCESSIBLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BARRICADES, LIGHTS AND SIGNS WITHIN THE LIMITS OF CONSTRUCTION. ALL CONSTRUCTION SIGNING SHALL BE DONE ACCORDING TO STANDARDS SET FORTH IN THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
11. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL BUILDINGS DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN WATER AND SEWER SERVICE TO ALL BUILDINGS AND FEATURES DURING CONSTRUCTION.
12. THE LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD. LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE BEST AVAILABLE BUT NOT GUARANTEED. CONTACT UTILITIES TO VERIFY IN ADDITION TO 811 LOCATE SERVICE.
13. CONTRACTOR SHALL DETERMINE THE LOCATION AND ELEVATION OF EXISTING WATER LINES, TO BE CROSSED, TAPPED AND CONNECTED TO, WELL IN ADVANCE OF CONSTRUCTION TO ALLOW FOR ALIGNMENT OF WATER LINE AND FITTINGS AS INDICATED ON THE DRAWINGS. PAYMENT FOR ADDITIONAL FITTINGS, FITTINGS IN ADDITION TO WHAT IS INDICATED ON THE DRAWINGS, WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT.
14. THRUST BLOCKS SHALL BE INSTALLED ON ALL FITTINGS ("T'S" AND BENDS). CONSTRUCTION OF THRUST BLOCKING SHALL BE INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT. CONTRACTOR SHALL PROVIDE MECHANICAL THRUST RESTRAINT (MEGALUG 1100 OR APPROVED EQUAL) FOR ALL FITTINGS. IN LOCATIONS WHERE CONCRETE THRUST BLOCK CAN NOT BE INSTALLED, THE MEGALUG RESTRAINS SHALL BE EXTENDED ON THE PIPE JOINTS BEYOND EACH SIDE OF BEND AS DEPICTED ON SHEET C10.00.
15. TESTING SHALL BE IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
16. OWNER: MIDAMERICA INDUSTRIAL PARK OKLAHOMA ORDNANCE WORKS AUTHORITY  
CONTACT: MATT BUCK  
PHONE: 918.825.3500
17. ENGINEER: OLSSON, INC.  
1717 SOUTH BOULDER, SUITE 600  
TULSA, OKLAHOMA 74119-3216  
PHONE: 918.376.4294
18. THE CONTRACTOR SHALL COORDINATE WITH THE MIDAMERICA INDUSTRIAL PARK STAFF FOR THE OPENING AND CLOSING OF WATER VALVES AND FOR SCHEDULING SHUT-DOWNS TO MAKE THE NECESSARY IMPROVEMENTS. THE CONTRACTOR SHALL NOT MANIPULATE ANY VALVES WITHOUT THE CONSENT OR PRESENCE OF MIDAMERICA INDUSTRIAL PARK FORCES.
19. THE CONTRACTOR SHALL MAINTAIN A CONSTRUCTION OFFICE, ON SITE, DURING THE ENTIRE CONSTRUCTION PERIOD UNLESS OTHERWISE DIRECTED IN GENERAL FRONT END DOCUMENTS. CONSTRUCTION TRAILER SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT AND WILL NOT BE PAID FOR SEPARATELY.
20. ALL DRAINAGE FLOWLINES SHALL BE RE-ESTABLISHED AFTER CONSTRUCTION OF THE WATER LINE IMPROVEMENTS. ALL DRAINAGE STRUCTURES SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION OF THE IMPROVEMENTS.
21. THE CONTRACTOR SHALL EXERCISE CAUTION IN THE PROGRESS OF THE WORK IN ORDER TO PREVENT INTERRUPTION OF EXISTING UTILITIES.
22. ALL BENDS IN THE NEW WATER LINE, BOTH HORIZONTAL BEND AND VERTICAL BEND, SHALL BE MECHANICALLY RESTRAINED ACCORDING TO THE DETAIL/TABLE ON SHEET C10.00. MECHANICAL RESTRAINING DEVICE SHALL BE MEGALUG 1100 OR APPROVED EQUAL.

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION & SEDIMENT CONTROL MEASURES AND PRACTICES THROUGHOUT THE PROJECT. ANY AND ALL FINES ASSOCIATED WITH EROSION CONTROL VIOLATIONS WILL BE THE CONTRACTOR'S RESPONSIBILITY.
2. EROSION CONTROL IS THE CONTRACTOR'S RESPONSIBILITY. THIS PLAN SHOULD BE USED AS A GUIDE AND REPRESENTS THE MINIMUM EROSION CONTROL DEVICES REQUIRED.
3. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION & SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL EROSION & SEDIMENT CONTROL DEVICES AFTER EACH RAINFALL EVENT.
5. THE CONTRACTOR SHALL PROVIDE ANY FURTHER EROSION CONTROL MEASURES IN ADDITION TO THOSE LISTED TO ENSURE THAT SILT WILL NOT LEAVE THE PROJECT CONFINES.
6. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION & SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED WITH A HEALTHY STAND OF PERMANENT VEGETATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AT COMPLETION OF CONSTRUCTION.
8. THE CONTRACTOR SHALL ENSURE THAT ALL DRAINAGE STRUCTURES, FLUMES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
9. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY STABILIZATION AS REQUIRED.
10. THE CONTRACTOR SHALL PROVIDE A TEMPORARY CONSTRUCTION ENTRANCE FOR VEHICULAR TRAFFIC AT LOCATION SHOWN.
11. ALL EROSION CONTROL DEVICES SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS AND DESIGN CRITERIA OF THE VA.
12. REFERENCE DETAILS ON SHEET C10.02 FOR TYPICAL EROSION CONTROL DEVICE INSTALLATION.
13. THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE STREETS OF DEPOSITED MUD AS FREQUENTLY AS NEEDED PER APPLICABLE CITY BEST MANAGEMENT PRACTICES.
14. SEE TEMPORARY VEGETATION REQUIREMENT NOTES ON THIS SHEET FOR EXPOSED SOIL WHERE NO ACTIVITY WILL OCCUR FOR MORE THAN 14 DAYS.
15. CONTRACTOR IS RESPONSIBLE FOR PHASED INSTALLATION OF EROSION CONTROL BMP'S IN ORDER TO PREVENT SEDIMENT FROM BREACHING THE LIMITS OF DISTURBANCE.



Know what's below.  
Call before you dig.

drawn by:	AMA
checked by:	JAT
approved by:	JEP
QA/QC by:	
project no.:	022-06912
drawing no.:	
date:	13NOV2023

SHEET  
C2.00

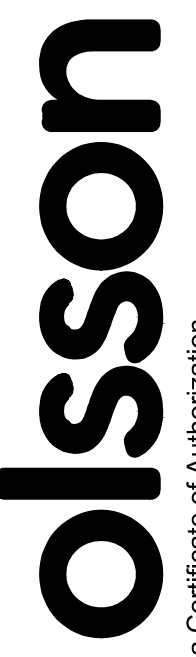
GENERAL CONSTRUCTION NOTES
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION
PRYOR, OKLAHOMA
2023

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS



Okahoma Certificate of Authorization  
#CZ2983 Renewal Date: 06-30-2025  
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Tulsa, OK 74119



TEL 918.376.4294      www.olsson.com



**PAY ITEM NOTES - WATERLINE**

1. TESTING AND CHLORINATION OF WATER MAINS SHALL BE PERFORMED BY THE CONTRACTOR. TESTING, CHLORINATION, AND FLUSHING SHALL BE DONE IN ACCORDANCE WITH AWWA C-600 AND C651 GENERAL SPECIFICATIONS.

CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY PLUGS WITH ADEQUATE BLOCKING OR RESTRAINTS, PLUS CORPORATION STOPS, ONCE TESTING, CHLORINATION AND FLUSHING BY CONTRACTOR IS COMPLETED, REMOVE TEMPORARY BLOCKING AND TIE INTO EXISTING SYSTEM, USING FITTINGS SWABBED INTERNALLY WITH 2% BLEACH SOLUTION.

TESTING, CHLORINATION, AND FLUSHING OF NEW WATER MAIN SHALL BE PERFORMED BY CONTRACTOR ON MAINS WHICH ARE PHYSICALLY DISCONNECTED FROM THE EXISTING WATER SYSTEM. TESTING, CHLORINATION, AND FLUSHING OF NEW WATER MAINS SHALL NOT BE PERFORMED AGAINST VALVES WHICH ARE PHYSICALLY CONNECTED TO EXISTING SYSTEM.

ALL COSTS FOR TEMPORARY PLUGS, BLOCKING, RESTRAINING, CORPORATION STOPS, TUBING, THREADED CONNECTIONS, BLEACH AND OTHER INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE.

2. CONTRACTOR TO EXCAVATE ALL UTILITY CROSSINGS AHEAD OF PIPE LAYING SO THAT THE GRADES CAN BE ADJUSTED ON THE PROPOSED WATER MAIN TO AVOID UTILITY CONFLICTS. FAILURE TO DO SO SHALL NOT ENTITLE THE CONTRACTOR TO CLAIM EXTRA COMPENSATION FOR ADJUSTMENTS TO THE PROPOSED WATER MAIN. COST FOR EXCAVATING UTILITY CROSSINGS SHALL BE INCLUDED IN UNIT PRICE BID FOR PIPE.

3. CONTRACTOR SHALL INSURE ALL POLES WHICH ARE AFFECTED BY TRENCHING CONDITIONS ARE BRACED BY OWNERS. PAYMENT SHALL BE INCLUDED IN "RIGHT-OF-WAY CLEARING AND RESTORING". NO ADDITIONAL PAYMENT SHALL BE MADE.

4. CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS, ROOF DRAINS, AND FENCING DAMAGED IN THE ZONE OF CONSTRUCTION DURING THE COURSE OF CONSTRUCTION TO SATISFACTION OF THE PROPERTY OWNER. PAYMENT SHALL BE INCLUDED IN "RIGHT-OF-WAY CLEARING AND RESTORING". NO ADDITIONAL PAYMENT SHALL BE MADE.

5. ALL FENCE TO BE REMOVED AND REPLACED IS INCLUDED IN RIGHT OF WAY AND CLEARING AND GRUBBING. NO ADDITIONAL PAYMENT IS TO BE MADE.

6. ALL COSTS FOR COMPONENTS NECESSARY TO RESTRAIN JOINTS FOR PIPE AND FITTINGS DESIGNATED RESTRAINED JOINT ("RJ") SHALL BE INCLUDED IN UNIT PRICE BID FOR PIPE OR FITTINGS. US PIPE TRIFLEX, GRIFFIN SNAPLOK, MCWANE THRUSTLOCK, AMERICAN FLEXRING; OR EBAA MEGALUG, SMITH-BLAIR CAMLOCK, CLOW TUFGRIP OR EQUAL SHALL BE USED ON THIS PROJECT. LOCKING GASKETS NOT ALLOWED. SHOULD RJ PIPE BE SPECIFIED THRU UNCASSED BORES, ONLY US PIPE TRIFLEX, GRIFFIN SNAPLOK, MCWANE THRUSTLOCK, OR AMERICAN FLEXRING IS TO BE USED. NO ADDITIONAL PAYMENT SHALL BE MADE.

7. WHERE NON-METALLIC PIPE IS SPECIFIED, TRACER WIRE AND DETECTABLE MARKING TAPE SHALL BE INSTALLED ABOVE ALL PVC AND HDPE PIPE, TERMINATING ONLY ONTO HYDRANTS JUST ABOVE GROUND LEVEL. COST OF TRACER WIRE AND DETECTABLE MYLAR TAPE SHALL BE INCLUDED IN UNIT PRICE BID FOR PVC AND HDPE PIPE. TRACER WIRE SHALL BE #8 COPPER WIRE AS TRACER WIRE ATOP PVC AND HDPE PIPE.

8. DETECTABLE MARKING TAPE SHALL BE INSTALLED OVER DUCTILE IRON PIPE. COST WILL BE INCLUDED IN COST OF DUCTILE IRON PIPE.

9. BURIED BOLTS, HARNESS LUGS, AND COUPLINGS SHALL BE GIVEN TWO COATS OF KOPPER'S BITUMASTIC 300-M (DRY MIL THICKNESS OF 16 MILS) OR EQUAL. COST TO BE INCLUDED IN UNIT PRICE BID FOR PIPE AND FITTINGS.

10. ALL LABOR, MATERIALS, AND EQUIPMENT TO CONNECT PROPOSED WATER MAINS TO EXISTING WATER MAINS ARE INCLUDED IN COST OF SLEEVES AND/OR TAPPING. NO ADDITIONAL PAYMENT SHALL BE MADE.

11. CONTRACTOR IS REMINDED TO BED AND BACKFILL ALL TRENCHES EXCAVATED ACROSS ANY EXISTING OR PROPOSED DRIVING OR PARKING SURFACE WITH 1-1/2" TYPE A AGGREGATE BASE, PLACED IN 8-INCH MAXIMUM LIFTS AND COMPACTED TO 98% MODIFIED PROCTOR DENSITY. COST TO BE INCLUDED IN COST OF THE UNIT BID FOR PIPE. NO ADDITIONAL PAYMENT SHALL BE MADE.

12. CONTRACTOR IS REMINDED THAT COSTS ASSOCIATED WITH ALL TRENCH EXCAVATION FOR THE WATER LINE SHALL BE INCLUDED IN THE COST OF THE UNIT PRICE BID FOR PIPE. NO ADDITIONAL PAYMENT SHALL BE MADE. CONTRACTOR IS REMINDED THAT COSTS ASSOCIATED WITH ALL TRENCH EXCAVATION FOR THE WATER LINE SHALL BE INCLUDED IN THE COST OF THE UNIT PRICE BID FOR PIPE. NO ADDITIONAL PAYMENT SHALL BE MADE.

13. THE "CONSTRUCTION CONTINGENCY ALLOWANCE" CAN BE USED FOR VARIOUS WORK AND MISCELLANEOUS ITEMS NOT IDENTIFIED IN THE CONTRACT DOCUMENTS WITH THE FOLLOWING PROVISIONS:  
 I. THE ALLOWANCE SHALL BE USED FOR COST OF MATERIALS, LABOR, INSTALLATION AND OVERHEAD AND PROFIT FOR ADDITIONAL WORK AND MISCELLANEOUS ITEMS THAT ARE NOT IDENTIFIED IN THE CONSTRUCTION DOCUMENTS AND PLANS, AND NOT INCLUDED IN THE BID ITEMS OF THE CONTRACT.

II. THE ALLOWANCE SHALL BE USED ONLY AT THE DISCRETION OF THE OWNER. ANY ALLOWANCE BALANCE REMAINING AT THE COMPLETION OF THE PROJECT WILL BE CREDITED BACK TO OOWA ON THE FINAL APPLICATION FOR PAYMENT SUBMITTED BY THE CONTRACTOR.

III. THE CONTRACTOR SHALL PROVIDE, TO THE OWNER, A WRITTEN REQUEST FOR THE USE OF ANY ALLOWANCE, WITH A SCHEDULE OF VALUES, AND ALL ASSOCIATED BACKUP INFORMATION, INCLUDING ANY TIME EXTENSIONS REQUIRED TO PERFORM THE WORK.

IV. THE CONTRACTOR SHALL PROCEED WITH THE WORK INCLUDED IN THE ALLOWANCE ONLY AFTER RECEIVING A WRITTEN ORDER, FROM THE ENGINEER AND OWNER AUTHORIZING SUCH WORK. PROCEEDING WITH WORK IN THE ALLOWANCE WITHOUT A WRITTEN ORDER FROM THE OWNER WILL BE AT THE CONTRACTOR'S EXPENSE.

Item No.	Spec. #	ITEM	UNIT	QTY.
<b>GENERAL</b>				
1	641	MOBILIZATION	LS	1
2	642(B)	CONSTRUCTION STAKING LEVEL 2	LS	1
3	616(V)	HYDROSTATIC PRESSURE TESTING AND DISINFECT	LS	1
4		8-INCH METER VAULT (BERRY GLOBAL)	EA	1
5		OWNER ALLOWANCE	LS	1

Item No.	Spec. #	ITEM	UNIT	QTY.
<b>WATER LINE 'A'</b>				
1	221(B)	EROSION CONTROL, SILT FENCE-IN-PLACE	LF	4500
2	221113	8" GASKETED PVC C200 SDR-21	LF	2250
3	221113	6" GASKETED PVC C200 SDR-21	LF	30
4		10" BLIND FLANGE	EA	1
5	616(O)	8" 11.25 DEGREE BEND (MJ) (RJ)	EA	4
6	616(O)	8" 45 DEGREE BEND (MJ) (RJ)	EA	14
7	616(O)	8" 90 DEGREE BEND (MJ) (RJ)	EA	1
8	616(T)	10"X10"X8" TEE (MJ) (RJ)	EA	1
9	616(T)	8"X8"X8" TEE (MJ) (RJ)	EA	7
10	616(T)	8"X8"X8" TEE (MJ) (RJ)	EA	5
11	616(T)	8"X8" CROSS (MJ) (RJ)	EA	2
12	616(D)	8" GATE VALVE (FLGXMJ) (RJ)	EA	37
13	616(D)	6" GATE VALVE (FLGXMJ) (RJ)	EA	5
14	616(D)	STANDARD VALVE BOX	EA	42
15	616(G)	FIRE HYDRANT ASSEMBLY	EA	5
16		CONCRETE PLUG	EA	4
17		REMOVE AND REPLACE EXISTING PAVEMENT	LF	232
18	616(J)	JACK AND BORE	LF	60
19	616(J)	16" CASING	LF	387

Item No.	Spec. #	ITEM	UNIT	QTY.
<b>WATER LINE 'B'</b>				
1	221(B)	EROSION CONTROL, SILT FENCE-IN-PLACE	LF	1,324
2	221113	8" GASKETED PVC C200 SDR-21	LF	662
3	616(O)	8" 45 DEGREE BEND (MJ) (RJ)	EA	2
4	616(T)	8"X8"X8" TEE (MJ) (RJ)	EA	2
5	616(T)	8"X8"X2" TEE (MJ) (RJ)	EA	1
6	616(R)	10"X8" REDUCER (MJ) (RJ)	EA	2
7	616(D)	10" GATE VALVE (FLGXMJ) (RJ)	EA	3
8	616(D)	8" GATE VALVE (FLGXMJ) (RJ)	EA	10
9	616(D)	2" GATE VALVE (FLGXMJ) (RJ)	EA	1
10	616(D)	STANDARD VALVE BOX	EA	14
11		8-INCH METER VAULT	EA	1
12		2-INCH METER CAN	EA	1
13		CONCRETE PLUG	EA	2
14		REMOVE AND REPLACE EXISTING PAVEMENT	LF	291
15	616(J)	16" CASING	LF	68
16		8" SERVICE CONNECTION WITH APPROPRIATE APPERTENANCES	LF	50
17		2" SERVICE CONNECTION WITH APPROPRIATE APPERTENANCES	LF	50

Item No.	Spec. #	ITEM	UNIT	QTY.
<b>WATER LINE 'C'</b>				
1	221(B)	EROSION CONTROL, SILT FENCE-IN-PLACE	LF	2920
2	221113	8" GASKETED PVC C200 SDR-21	LF	1460
3	221113	6" GASKETED PVC C200 SDR-21	LF	18
4	616(T)	8"X8"X8" TEE (MJ) (RJ)	EA	3
5	616(T)	8"X8"X6" TEE (MJ) (RJ)	EA	3
6	616(T)	8"X8"X2" TEE (MJ) (RJ)	EA	1
7	616(D)	8" GATE VALVE (FLGXMJ) (RJ)	EA	17
8	616(D)	6" GATE VALVE (FLGXMJ) (RJ)	EA	3
9	616(D)	2" GATE VALVE (FLGXMJ) (RJ)	EA	1
10	616(D)	STANDARD VALVE BOX	EA	21
11		8-INCH METER VAULT	EA	1
12		2-INCH METER CAN	EA	1
13	616(G)	FIRE HYDRANT ASSEMBLY	EA	3
14		REMOVE AND REPLACE EXISTING PAVEMENT	LF	34
15		CONCRETE PLUG	EA	2
16		16" CASING	LF	89
17		8" SERVICE CONNECTION WITH APPROPRIATE APPERTENANCES	LF	50
18		2" SERVICE CONNECTION WITH APPROPRIATE APPERTENANCES	LF	50

Item No.	Spec. #	ITEM	UNIT	QTY.
<b>WATER LINE 'D'</b>				
1	221(B)	EROSION CONTROL, SILT FENCE-IN-PLACE	LF	1436
2	221113	8" GASKETED PVC C200 SDR-21	LF	718
3		6" GASKETED PVC C200 SDR-21	LF	12
4	616(T)	8"X8"X6" TEE (MJ) (RJ)	EA	2
5		8" PLATE	EA	1
6	616(D)	8" GATE VALVE (FLGXMJ) (RJ)	EA	6
7	616(D)	6" GATE VALVE (FLGXMJ) (RJ)	EA	2
8	616(D)	STANDARD VALVE BOX	EA	8
9	616(G)	FIRE HYDRANT ASSEMBLY	EA	2
10		REMOVE AND REPLACE EXISTING PAVEMENT	LF	45
11		16" CASING	LF	45

Item No.	Spec. #	ITEM	UNIT	QTY.
<b>WATER LINE 'E'</b>				
1	221(B)	EROSION CONTROL, SILT FENCE-IN-PLACE	LF	172
2	221113	8" GASKETED PVC C200 SDR-21	LF	86
3	616(T)	8"X8"X8" TEE (MJ) (RJ)	EA	1
4	616(R)	8"X8" REDUCER (MJ) (RJ)	EA	2
5	616(R)	6"X2" REDUCER (MJ) (RJ)	EA	1
6	616(D)	8" GATE VALVE (FLGXMJ) (RJ)	EA	3
7	616(D)	STANDARD VALVE BOX	EA	3
8		2-INCH METER CAN	EA	1
9		REMOVE AND REPLACE EXISTING PAVEMENT	LF	27
10		CONCRETE PLUG	EA	2
11		16" CASING	LF	65
12		2" SERVICE CONNECTION WITH APPROPRIATE APPERTENANCES	LF	50

USER: jpcce

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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE NOTES & QUANTITIES

MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION

PRYOR, OKLAHOMA

2023

REVISIONS

drawn by: \_\_\_\_\_ AMA  
 checked by: \_\_\_\_\_ JAT  
 approved by: \_\_\_\_\_ JEP  
 QA/QC by: \_\_\_\_\_  
 project no.: 022-06912  
 drawing no.: \_\_\_\_\_  
 date: 13NOV2023

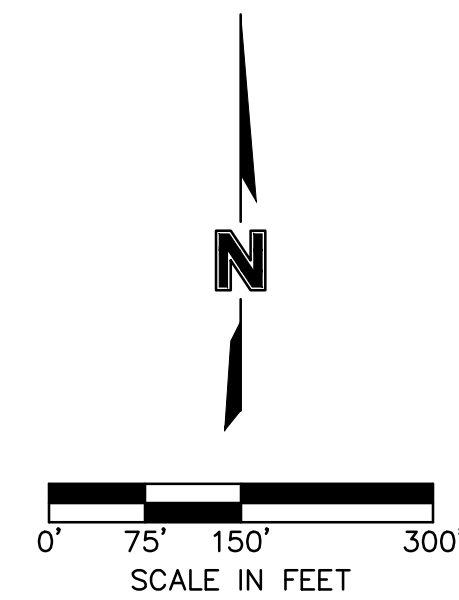
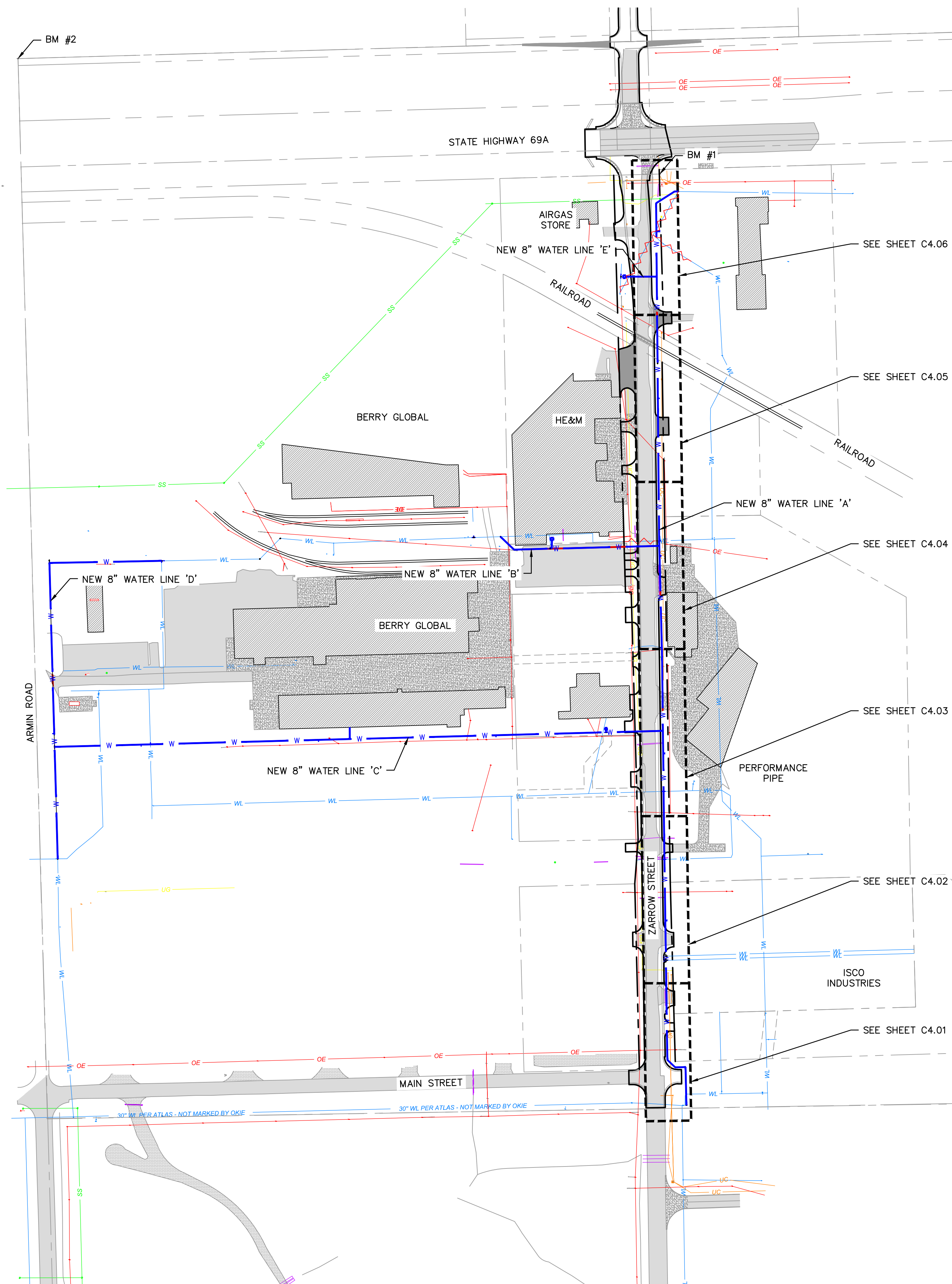
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**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- - - EXISTING EASEMENT
- WL --- EXISTING WATER LINE
- WL --- WATER LINE REMOVED FROM SERVICE
- SS --- EXISTING SANITARY SEWER
- SD --- EXISTING STORM SEWER
- OE --- EXISTING OVERHEAD ELECTRIC
- UG --- EXISTING NATURAL GAS LINE
- UC --- EXISTING COMMUNICATION LINE
- W --- PROPOSED WATER LINE
- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BUILDING

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL CONSTRUCT ALL WATER LINES AND CONNECTIONS IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS OF THE LOCAL UTILITY PROVIDER.
2. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY SERVICE CONNECTIONS WITH THE APPROPRIATE UTILITY COMPANY/OWNER.
3. ALL WATER SERVICE CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES AWWA SPECIFICATIONS. CONTRACT OKLAHOMA ORDINANCE WORKS AUTHORITY (OOWA) TO PROVIDE OPPORTUNITY TO INSPECT.
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3. ALL DUCTILE IRON FITTINGS AND PIPE MUST BE CEMENT LINED IN ACCORDANCE WITH AWWA C104/A21 4-80.
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5. IF THE CONTRACTOR OVER-CUTS THE TRENCH, THE ADDITIONAL BACKFILL MATERIAL WILL BE CONSIDERED INCIDENTAL AND WILL BE AT CONTRACTORS EXPENSE.
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7. THE CONTRACTOR SHALL DISPOSE OF WATER FLUSHED FROM THE LINES TO A LOCATION APPROVED BY THE CITY ENGINEER OR DESIGNATED REPRESENTATIVE. IN NO CASE SHALL THE WATER BE FLUSHED INTO THE PAVING SUBGRADE.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL EROSION CONTROL DEVICES DAMAGED DUE TO CONSTRUCTION.

**SURVEY CONTROL DATA**

HORIZONTAL DATUM: OKLAHOMA STATE PLANE COORDINATE SYSTEM  
 NAD 83 (NORTH ZONE 3501) VERTICAL DATUM: NAVD 88

- BM #1**  
 3/8" IRON PIN  
 N: 465457.1970  
 E: 2761655.8230  
 ELEV=613.19'
- BM #2**  
 1" PIPE WITH CONCRETE  
 NW SECTION CORNER  
 N: 465733.6910  
 E: 2760119.0240  
 ELEV=603.28'
- BM #3**  
 3/8" IRON PIN W/PINK CAP  
 N: 461138.4020  
 E: 2761617.5240  
 ELEV=640.82'



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**MidAmerica INDUSTRIAL PARK**

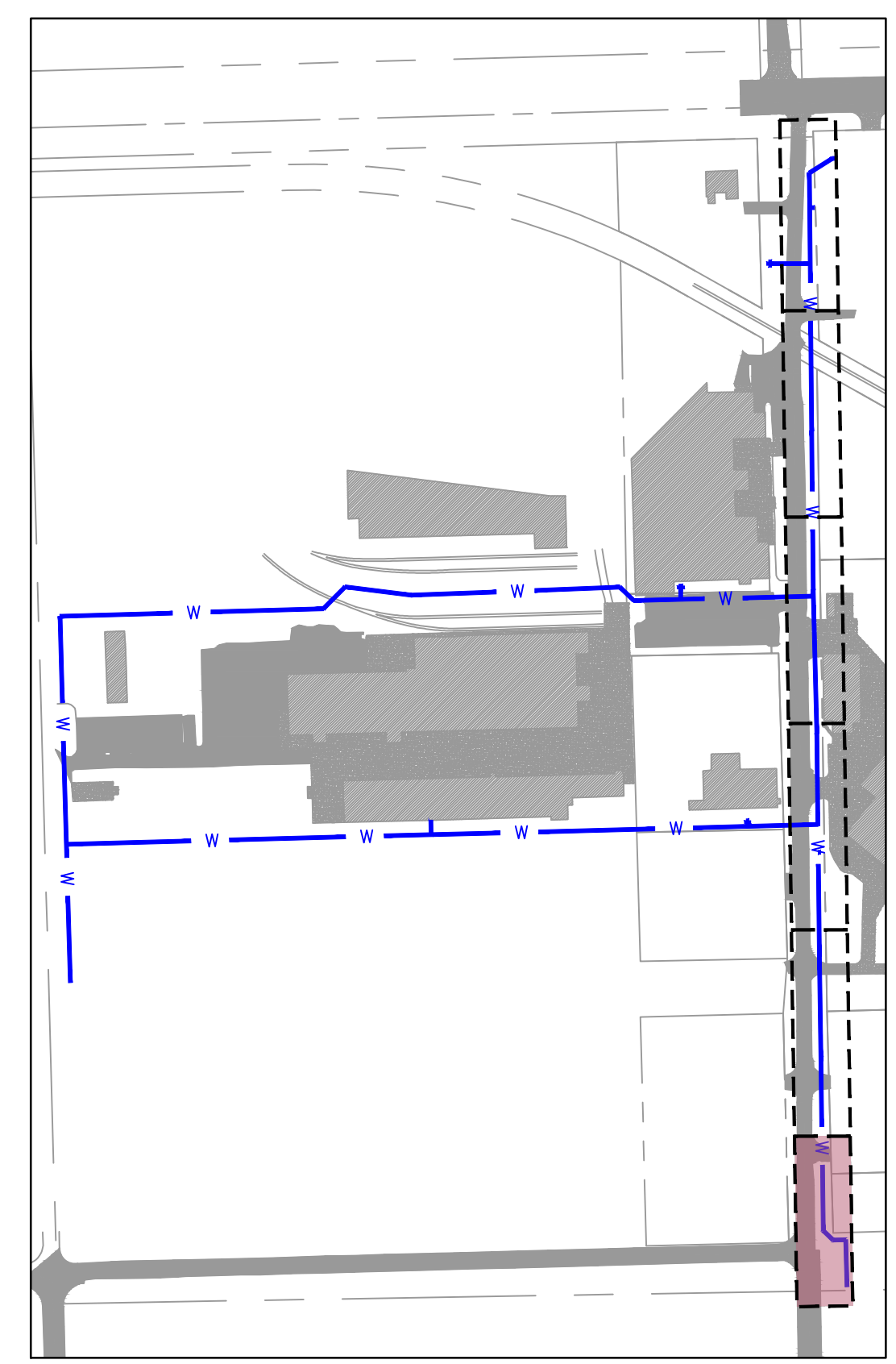
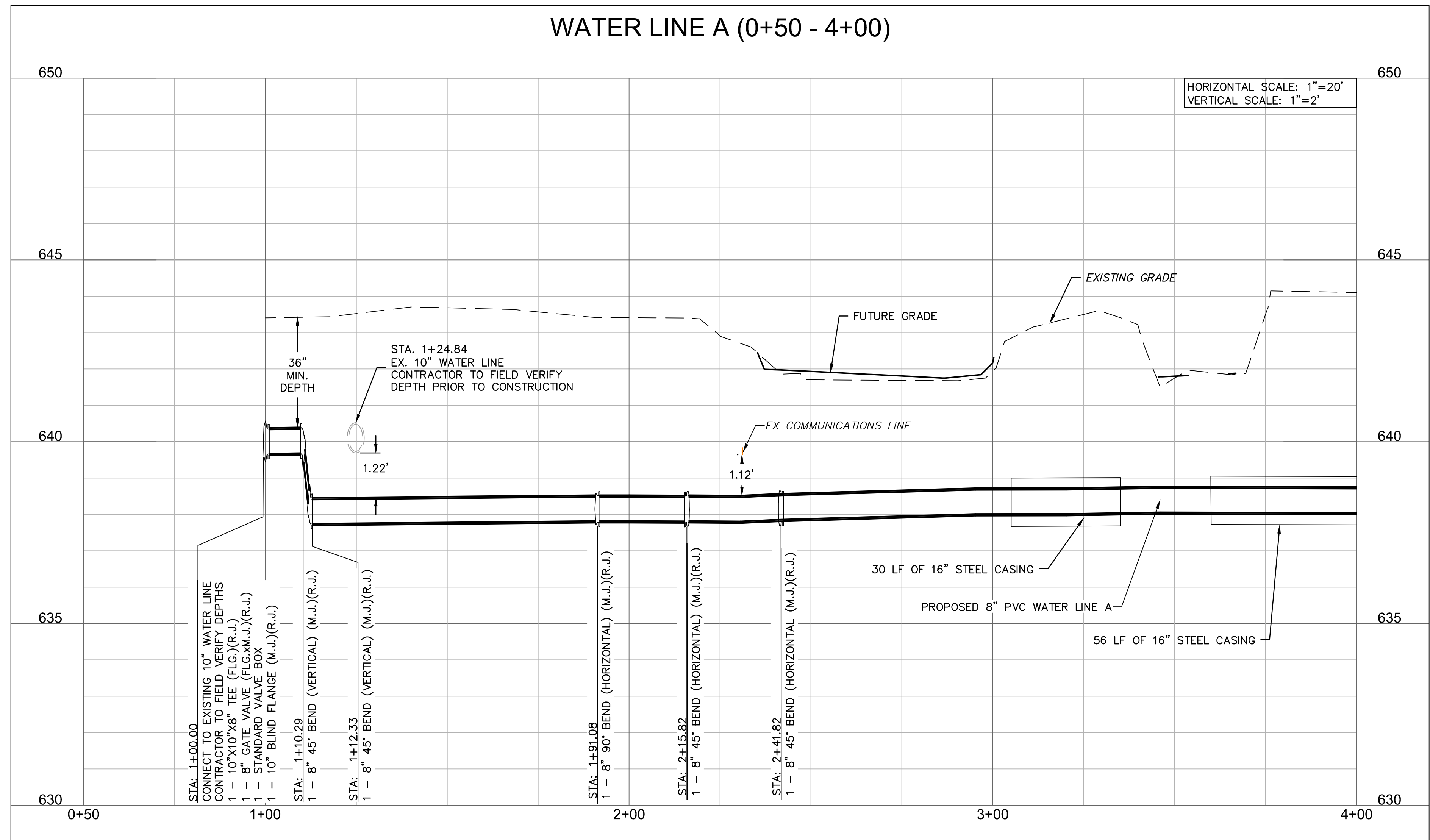
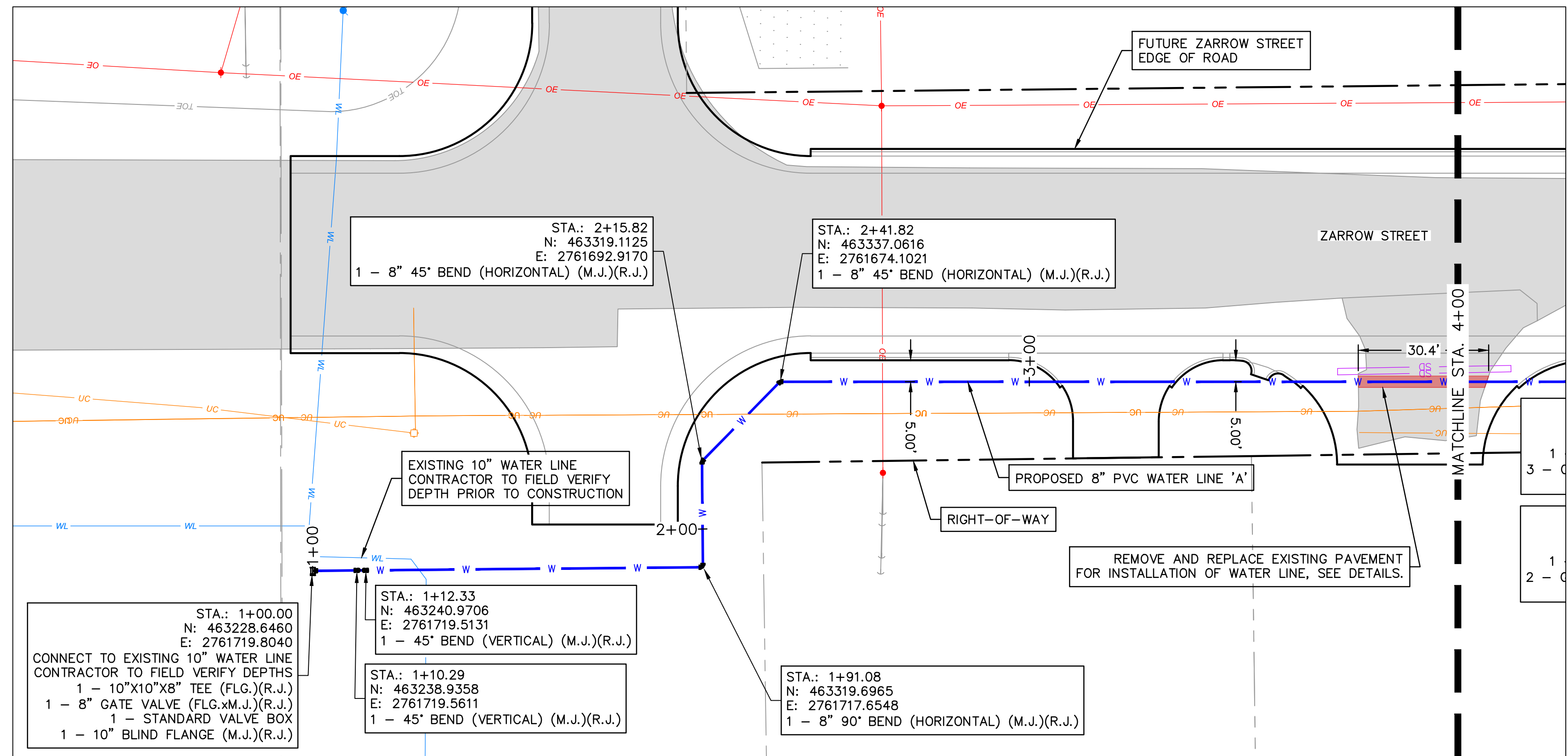
REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE 'A' KEYMAP  
 MIDAMERICA INDUSTRIAL PARK  
 ZARROW ROAD WATER LINE RELOCATION  
 PRYOR, OKLAHOMA  
 2023

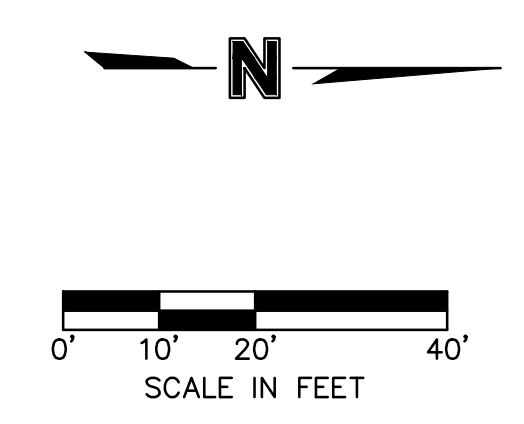
drawn by:	AMA
checked by:	JAT
approved by:	JEP
QA/QC by:	
project no.:	022-06912
drawing no.:	
date:	13NOV2023

SHEET  
 C4.00





NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.



#### LEGEND

	SECTION LINE
	RIGHT OF WAY
	ROADWAY CENTERLINE
	PROPERTY LOT LINE
	EDGE OF ROAD
	EXISTING EASEMENT
	EXISTING WATER LINE
	WATER LINE REMOVED FROM SERVICE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING OVERHEAD ELECTRIC
	EXISTING NATURAL GAS LINE
	EXISTING COMMUNICATION LINE
	PROPOSED WATER LINE
	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE PAVEMENT
	EXISTING BUILDING

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WATER LINE 'A' PLAN & PROFILE

MIDAMERICA INDUSTRIAL PARK

ZARROW ROAD WATER LINE RELOCATION

PRYOR, OKLAHOMA

2023

REVISIONS

drawn by: \_\_\_\_\_

checked by: \_\_\_\_\_

approved by: \_\_\_\_\_

QA/QC by: \_\_\_\_\_

project no.: 022-06912

drawing no.: \_\_\_\_\_

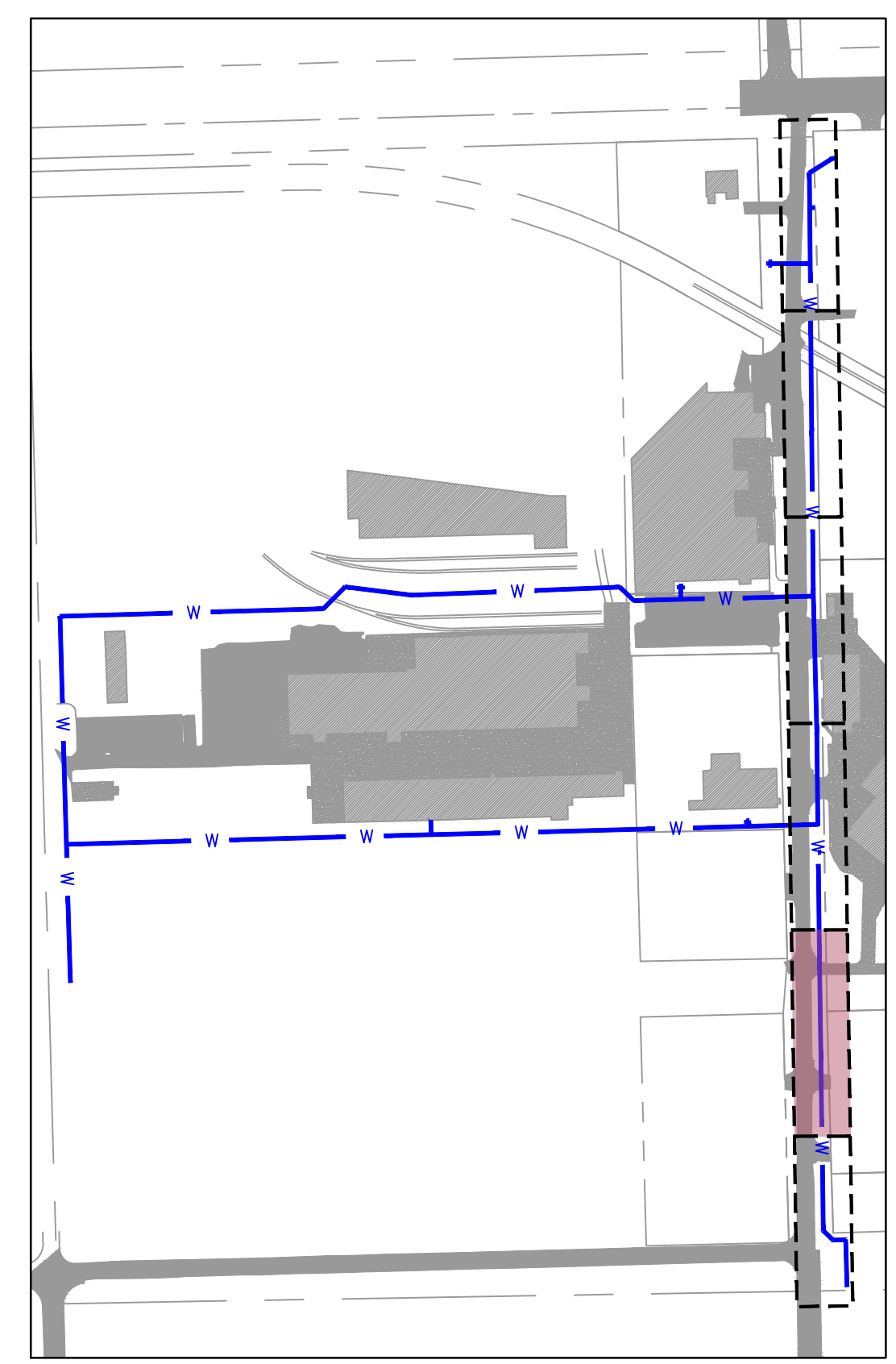
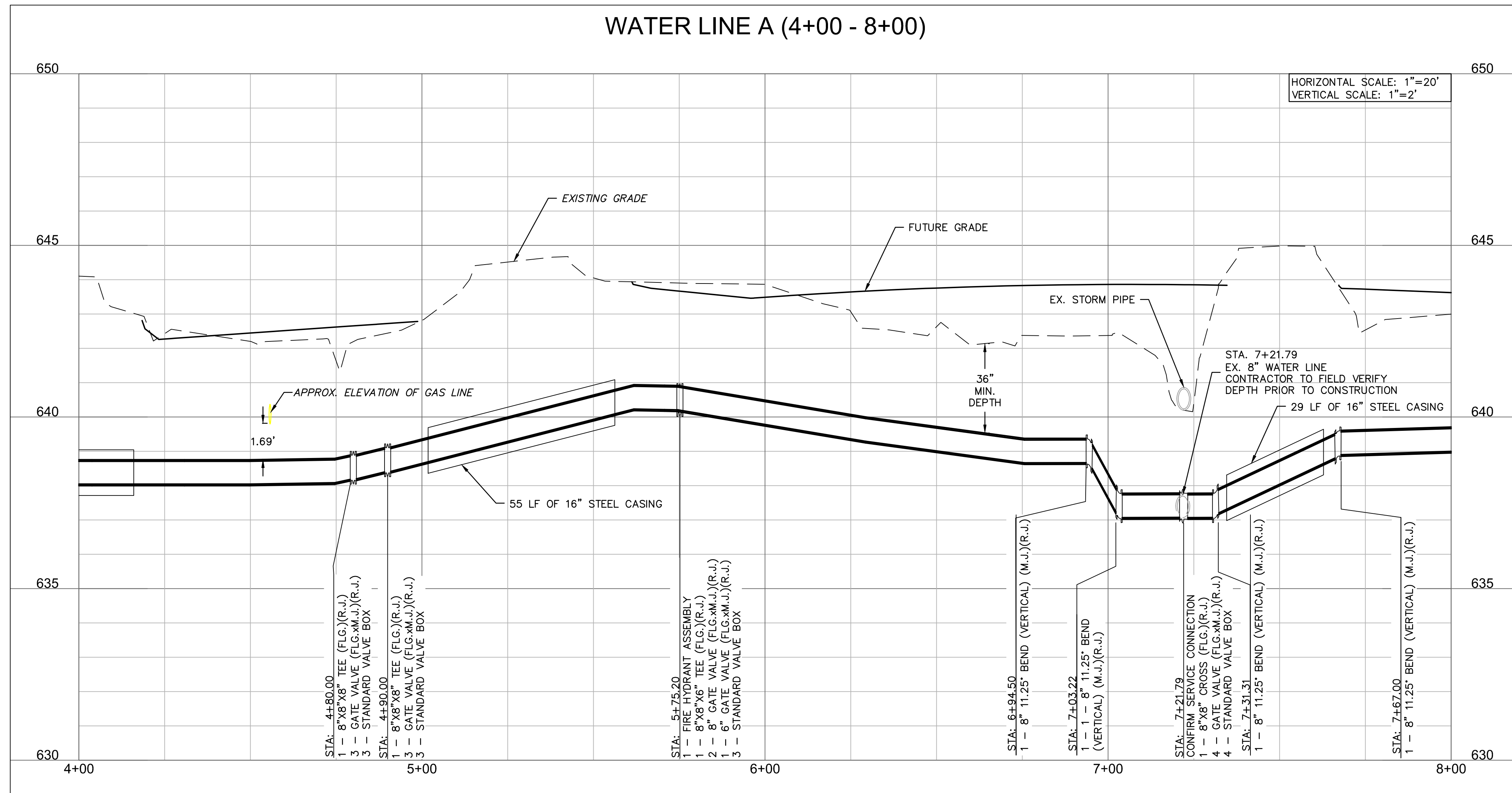
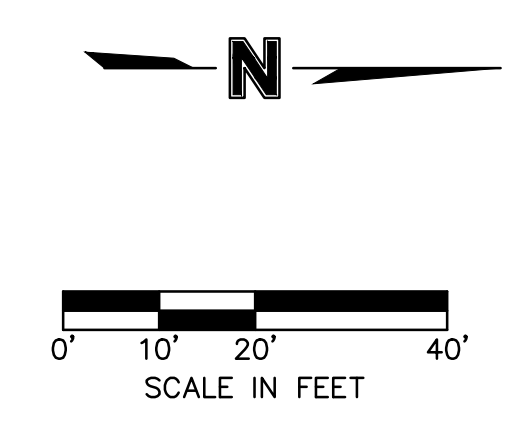
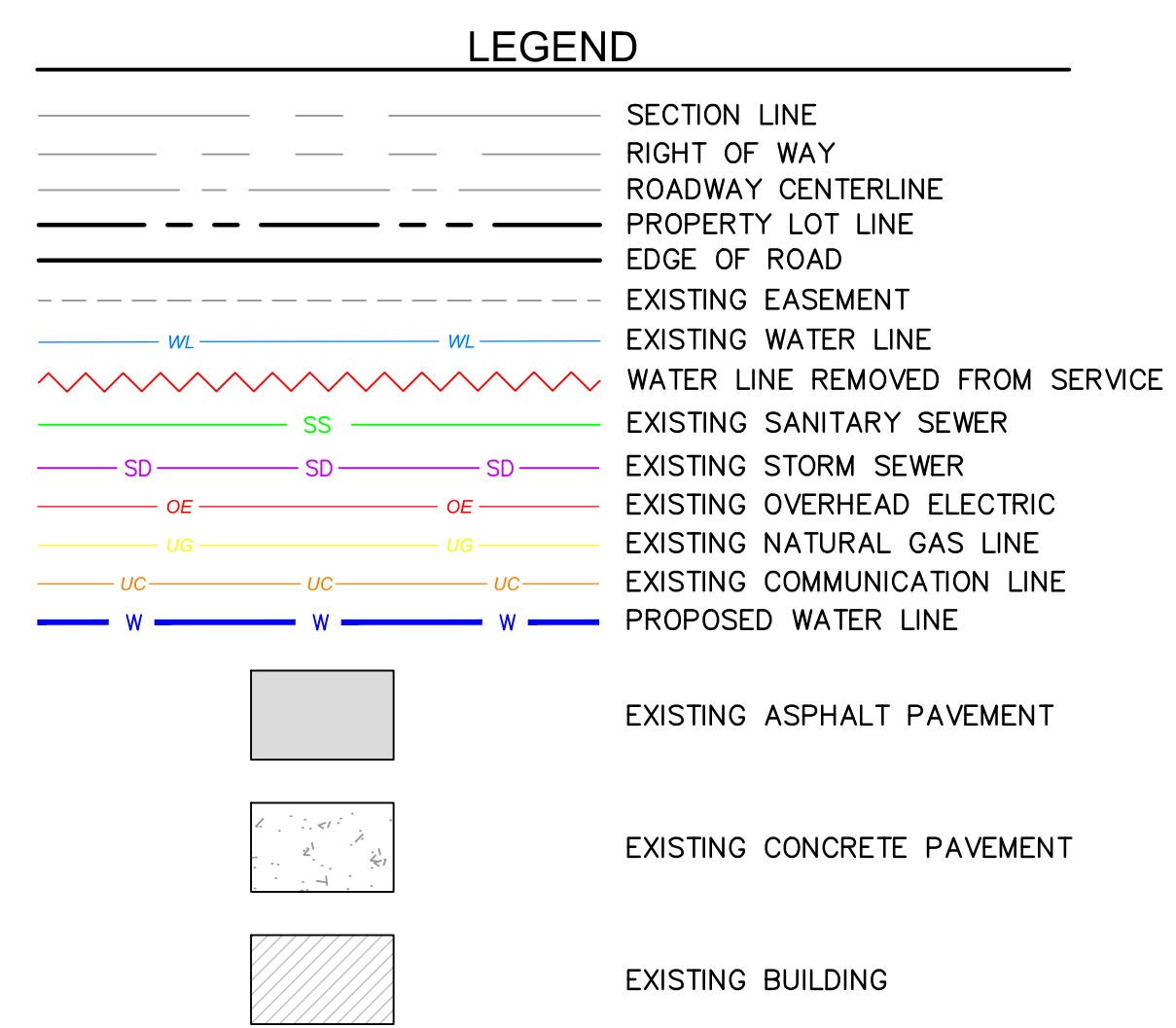
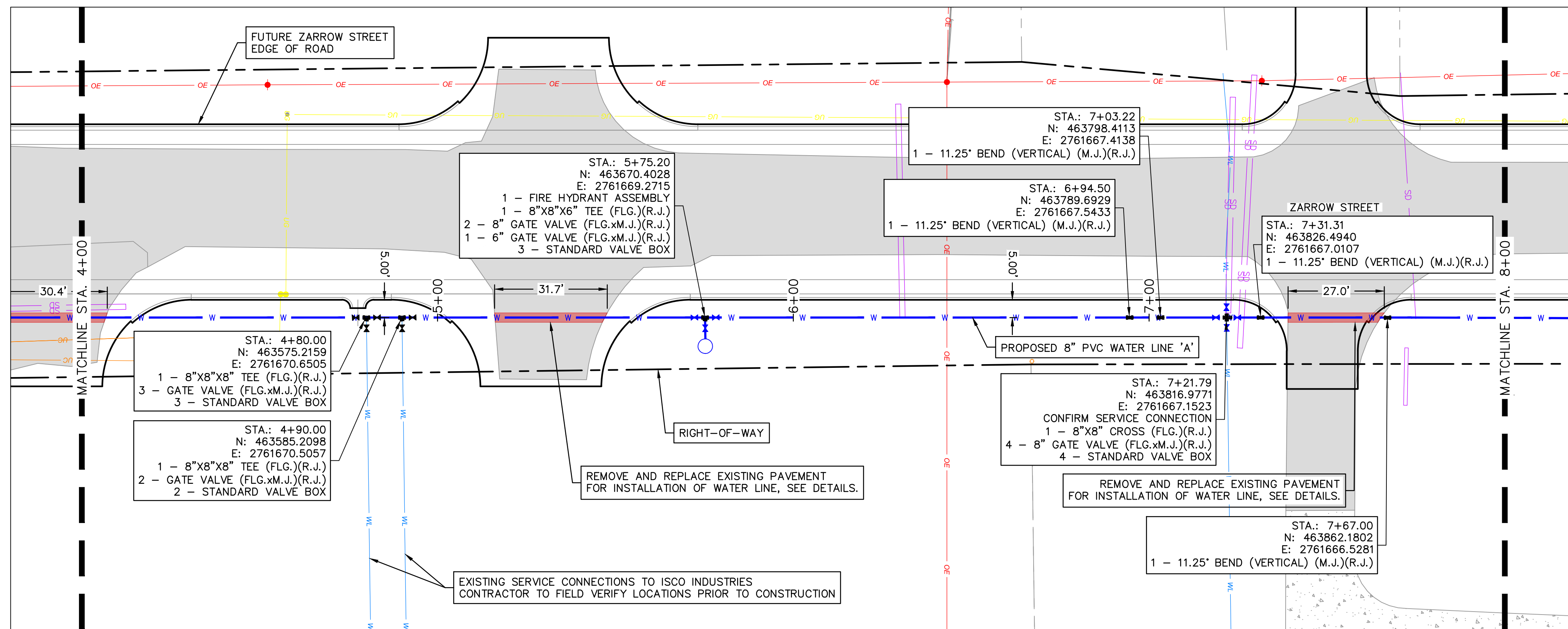
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**NOTE:**  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.



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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE 'A' PLAN & PROFILE 2

MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION

PRYOR, OKLAHOMA

2023

REVISIONS

drawn by: \_\_\_\_\_ JAT

checked by: \_\_\_\_\_ JEP

QA/QC by: \_\_\_\_\_

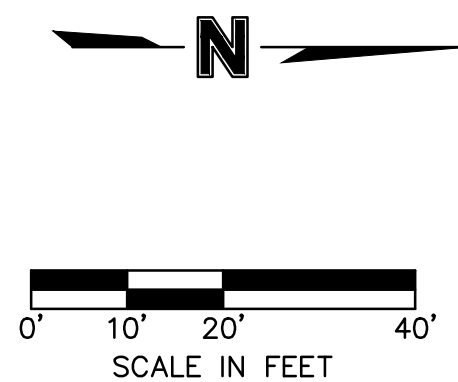
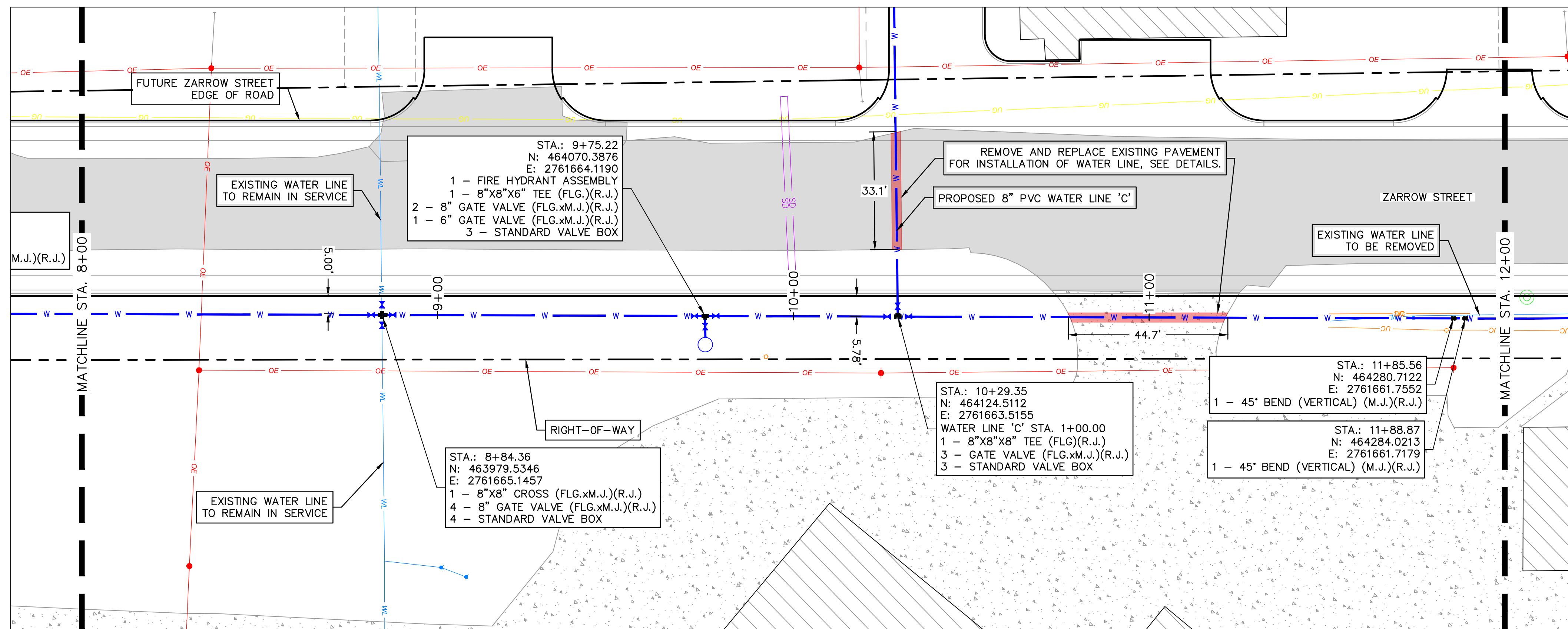
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drawing no.: \_\_\_\_\_

date: 13NOV2023

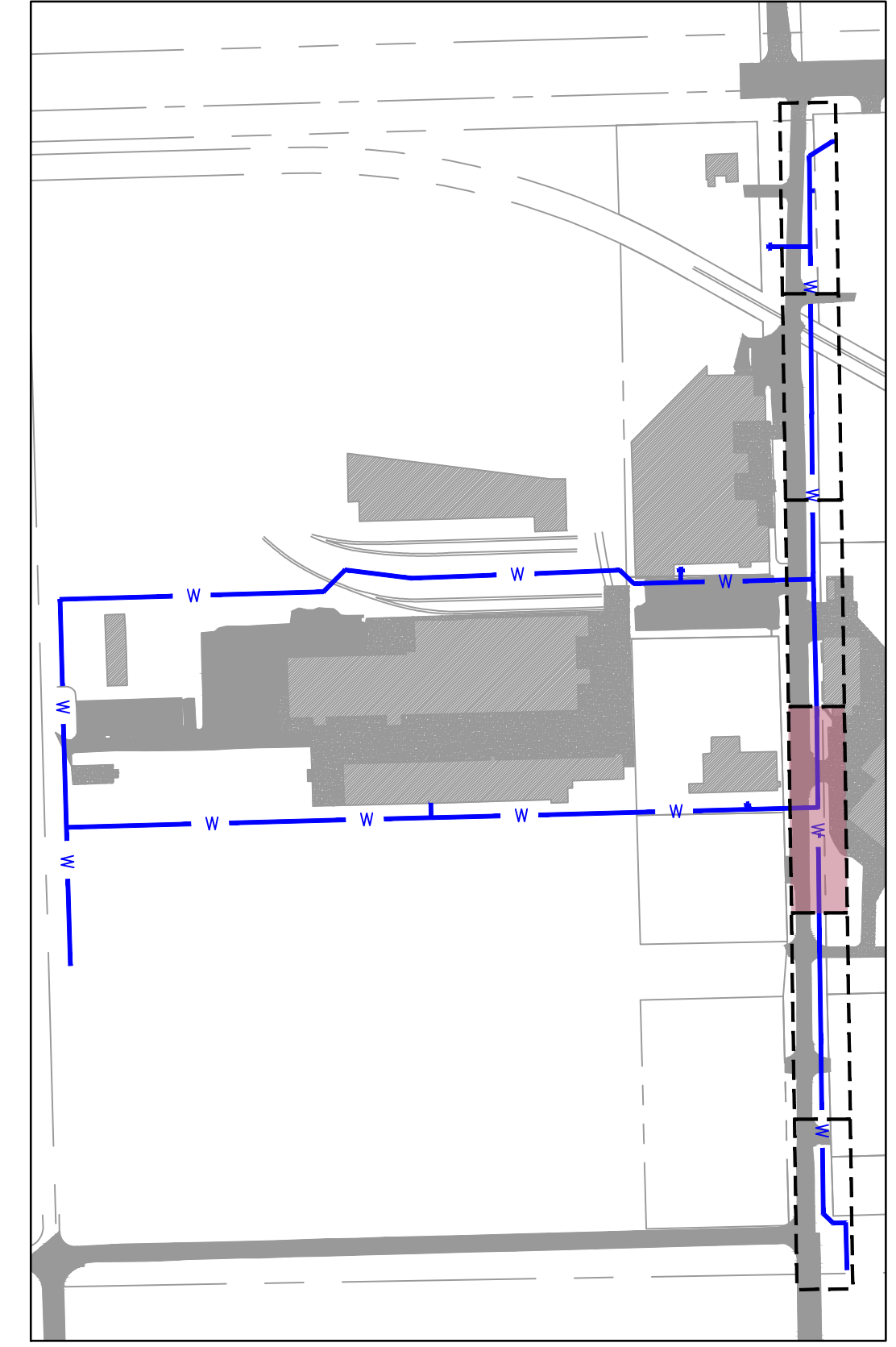
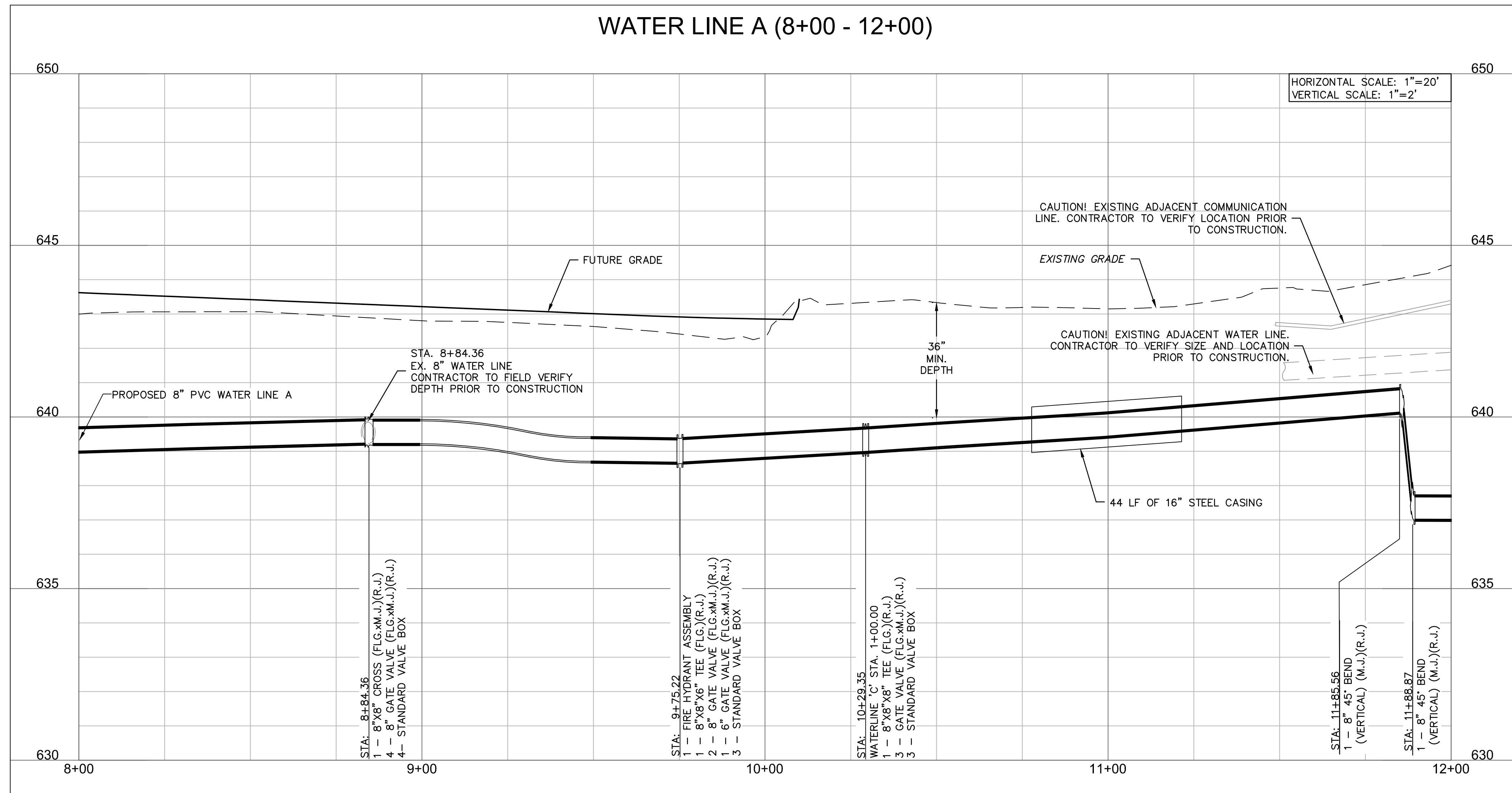
SHEET  
C4.02





**LEGEND**

	SECTION LINE
	RIGHT OF WAY
	ROADWAY CENTERLINE
	PROPERTY LOT LINE
	EDGE OF ROAD
	EXISTING EASEMENT
	EXISTING WATER LINE
	WATER LINE REMOVED FROM SERVICE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING OVERHEAD ELECTRIC
	EXISTING NATURAL GAS LINE
	EXISTING COMMUNICATION LINE
	PROPOSED WATER LINE
	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE PAVEMENT
	EXISTING BUILDING



NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.



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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE 'A' PLAN & PROFILE 3	2023	REVISIONS
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION		
PRYOR, OKLAHOMA		

**MidAmerica INDUSTRIAL PARK**

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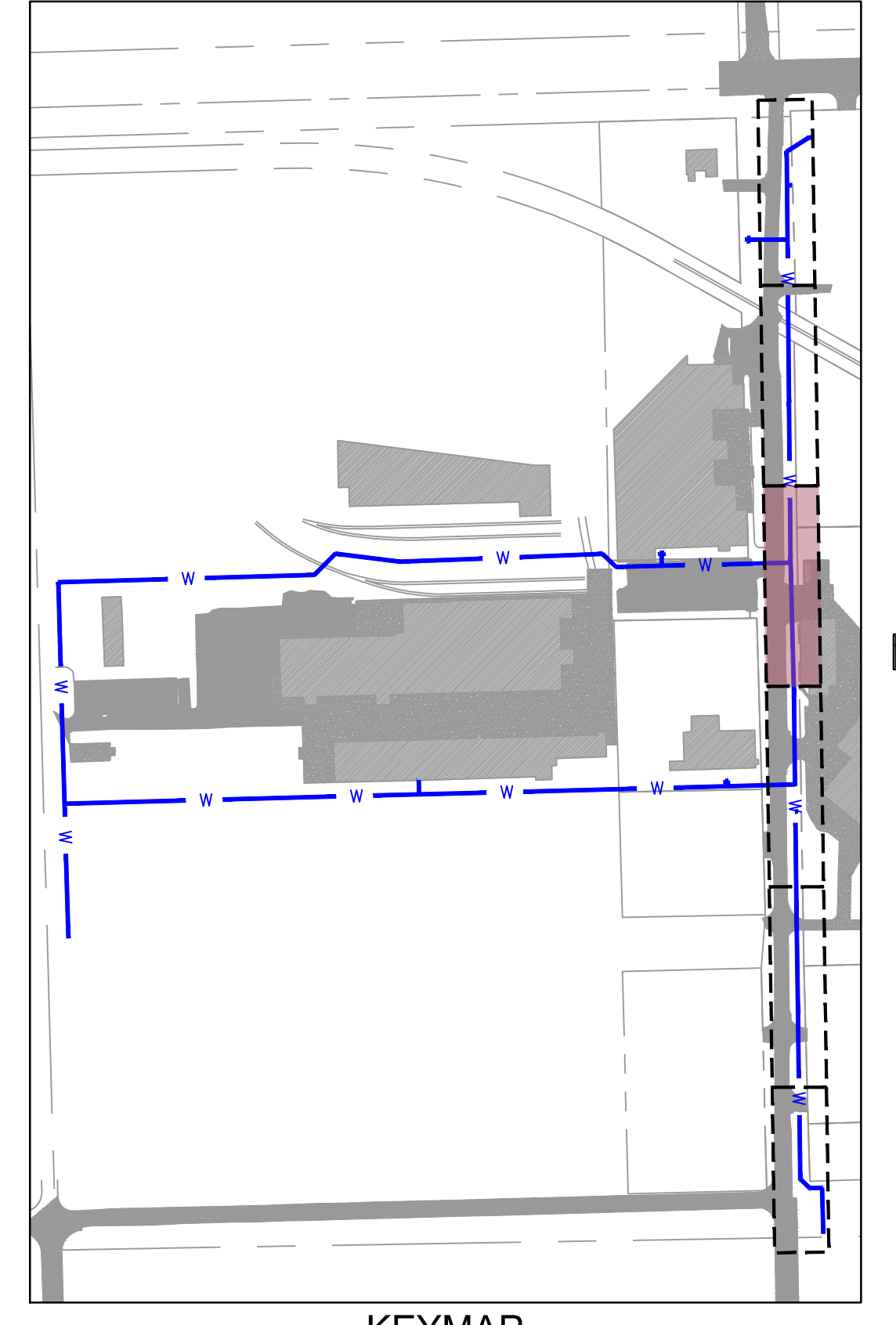
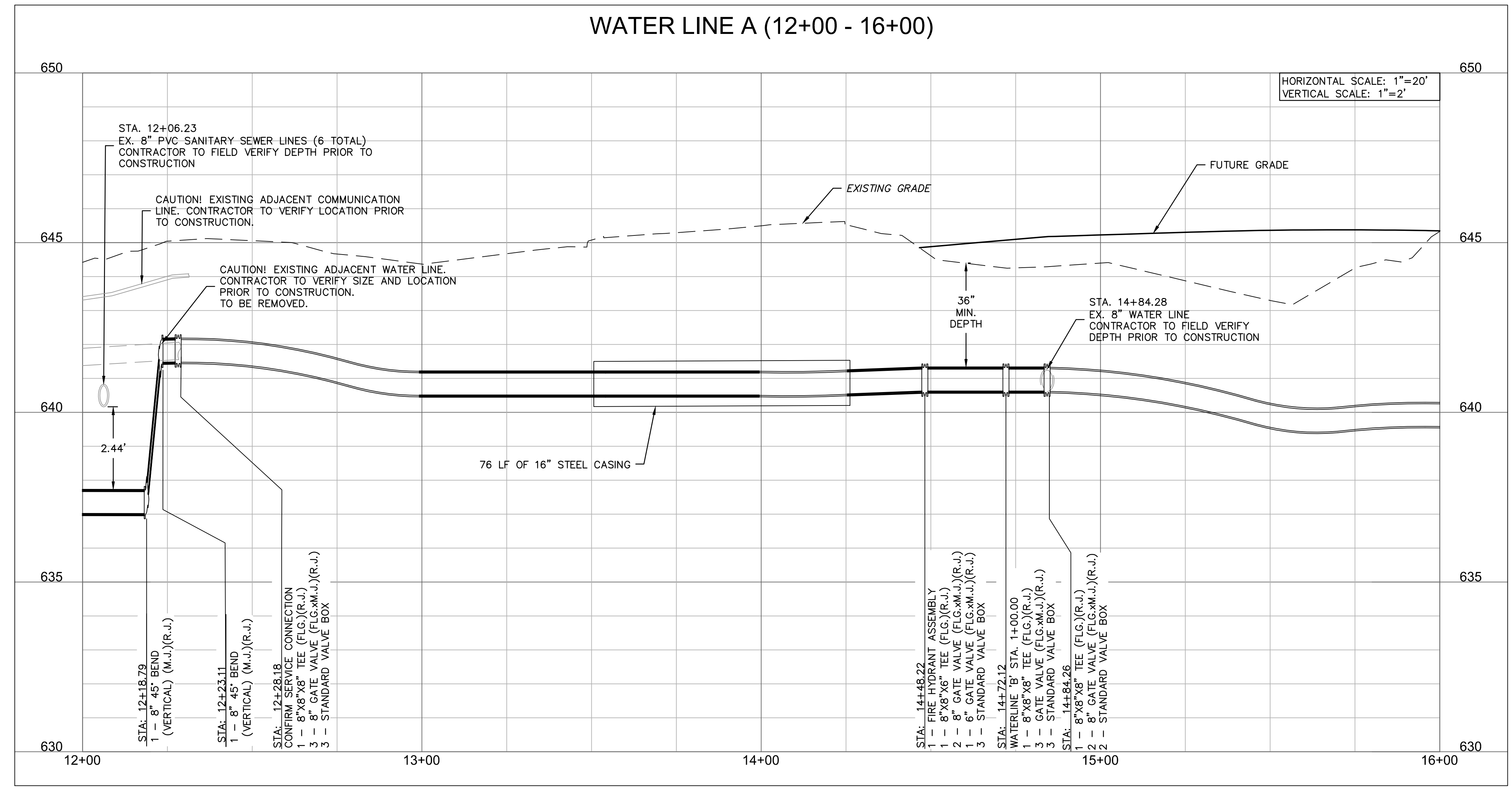
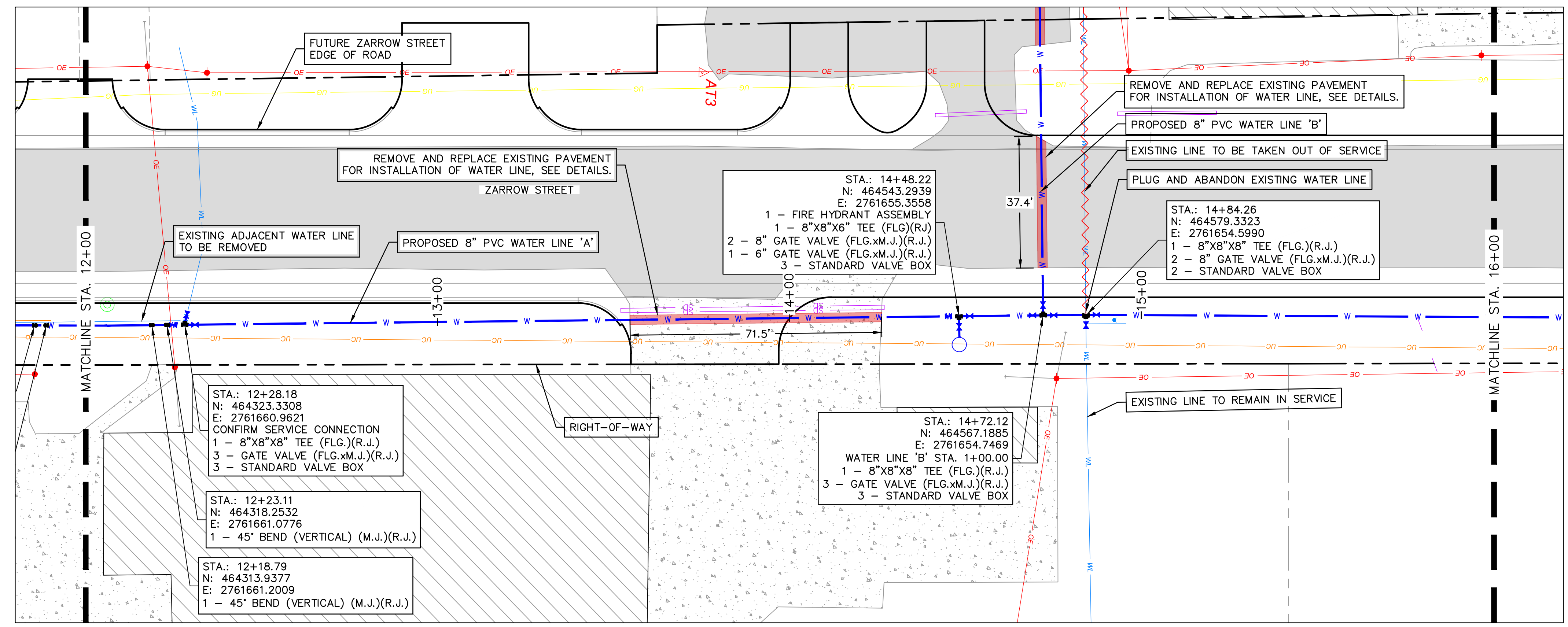
Oklahoma Certificate of Authorization #CZ2683 Renewal Date: 06-30-2025  
1717 South Boulder Ave  
Tulsa, OK 74119  
TEL 918.376.4294 www.olsson.com

drawn by: AMA  
checked by: JAT  
approved by: JEP  
QA/QC by: JEP  
project no.: 022-06912  
date: 13NOV2023

**SHEET C4.03**



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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

**WATER LINE 'A' PLAN & PROFILE**  
4

**MIDAMERICA INDUSTRIAL PARK**  
**ZARROW ROAD WATER LINE RELOCATION**  
PRYOR, OKLAHOMA

2023

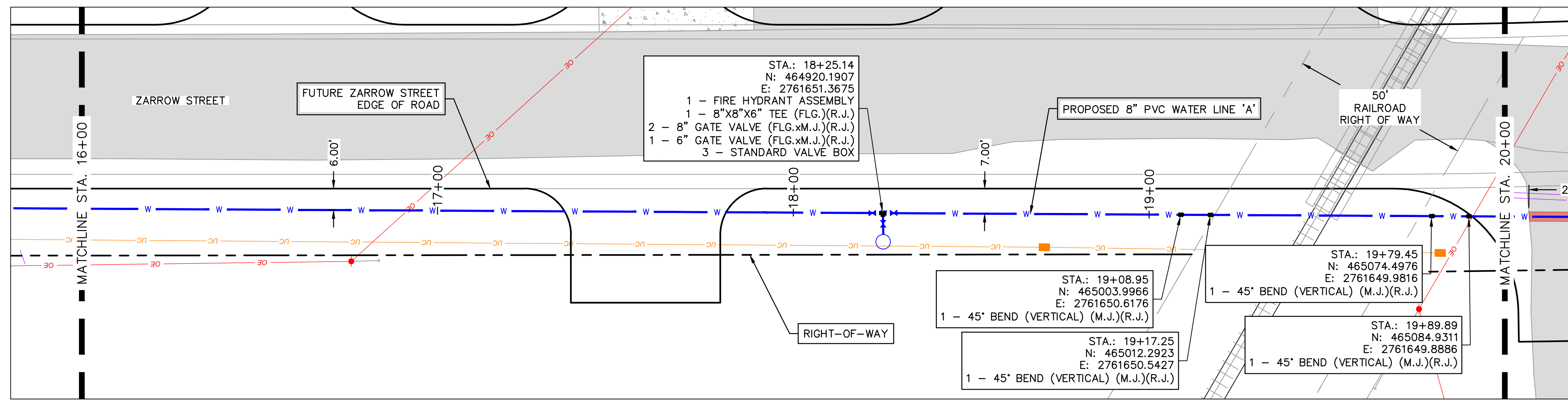
REVISIONS

drawn by: \_\_\_\_\_ JAT  
checked by: \_\_\_\_\_ JER  
approved by: \_\_\_\_\_ JER  
QA/QC by: \_\_\_\_\_  
project no.: 022-06912  
drawing no.: \_\_\_\_\_  
date: 13NOV2023

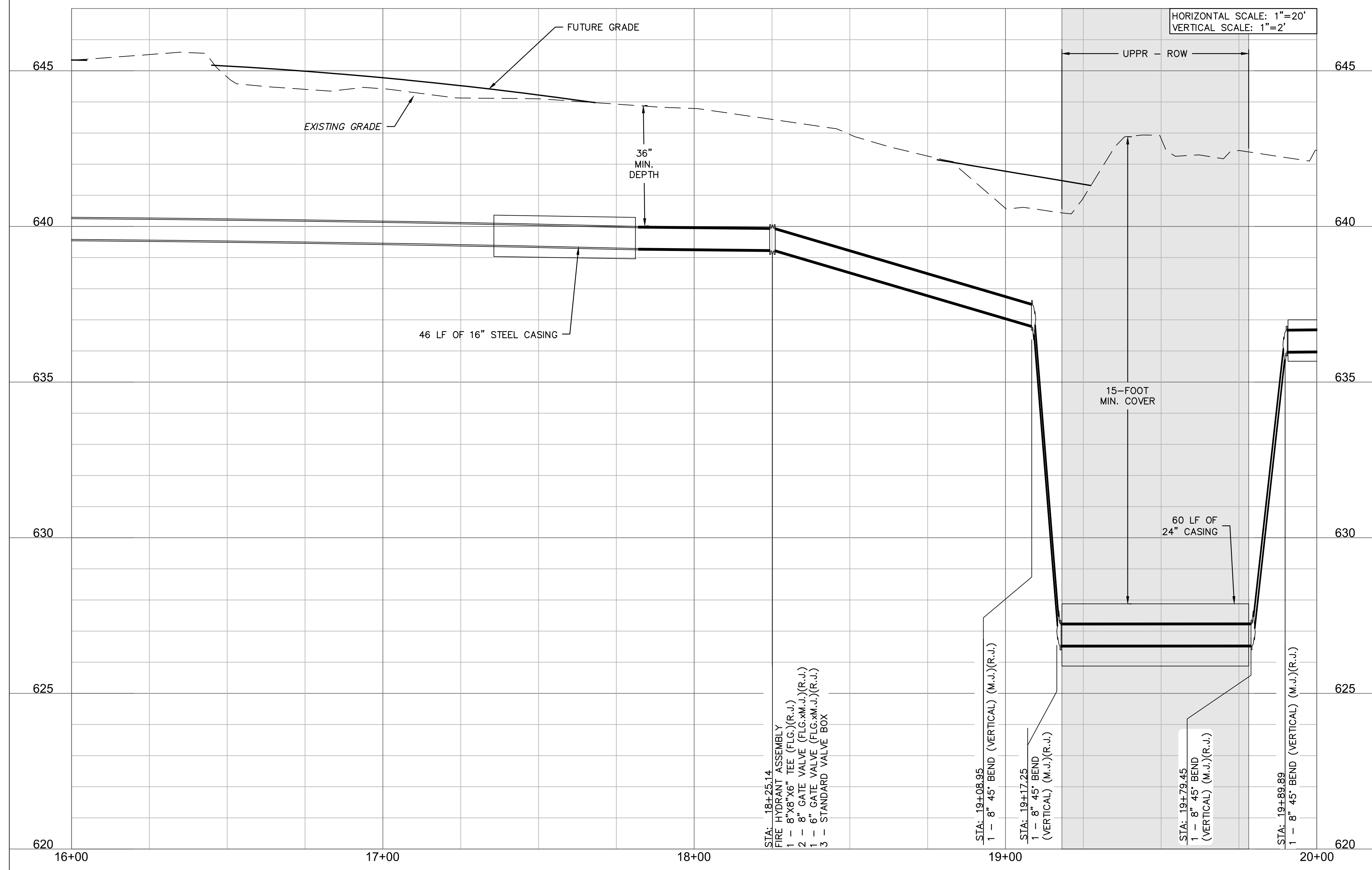
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**WATER LINE A (16+00 - 20+00)**

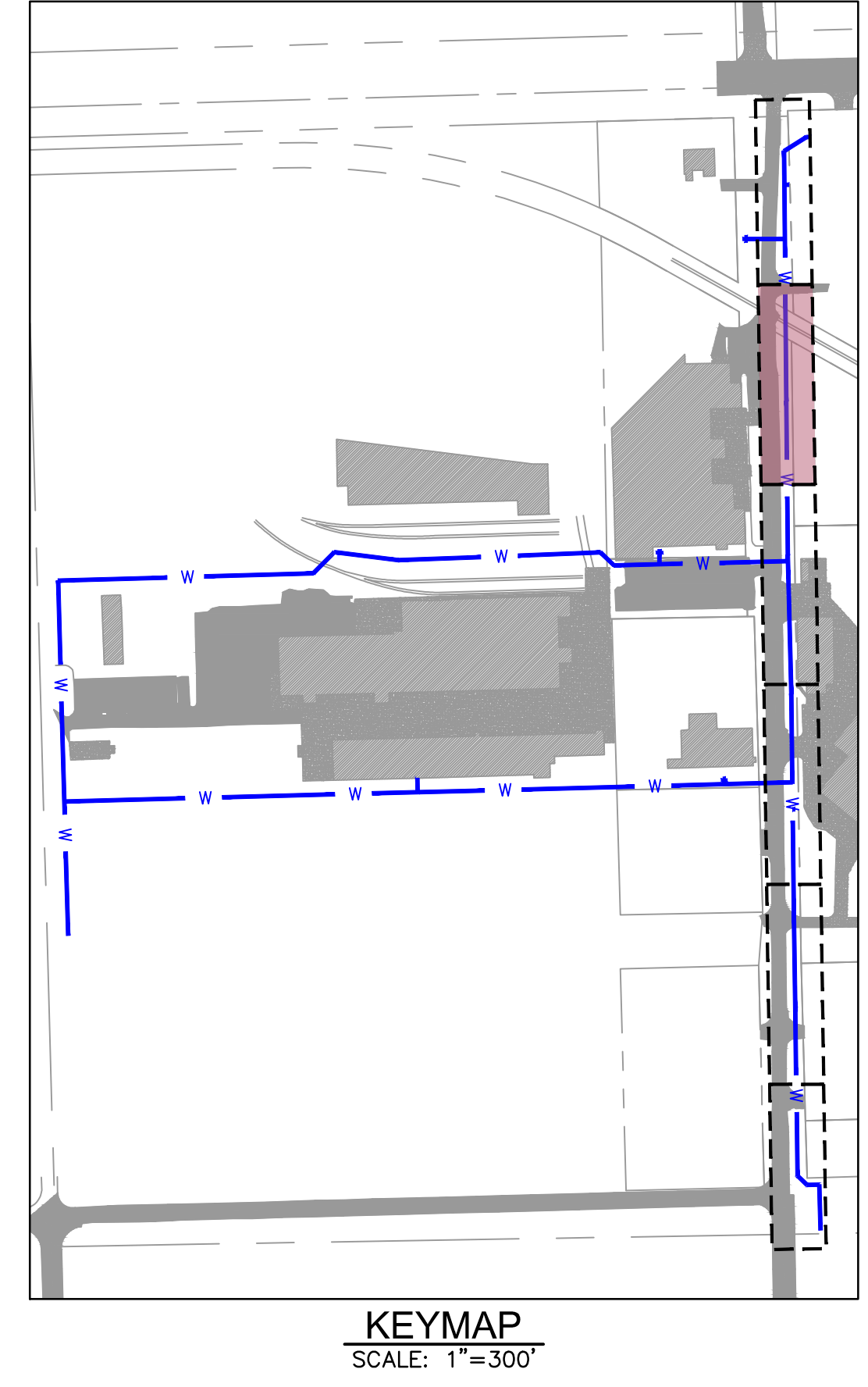


SCALE IN FEET

**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- EXISTING EASEMENT
- EXISTING WATER LINE
- WATER LINE REMOVED FROM SERVICE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING NATURAL GAS LINE
- EXISTING COMMUNICATION LINE
- PROPOSED WATER LINE

- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BUILDING



NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.

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WATER LINE 'A' PLAN & PROFILE 5

MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION

PRYOR, OKLAHOMA

2023

REVISIONS

drawn by: \_\_\_\_\_ AMA

checked by: \_\_\_\_\_ JAT

approved by: \_\_\_\_\_ JEP

QA/QC by: \_\_\_\_\_

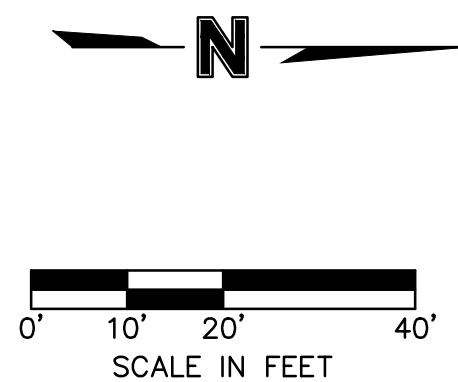
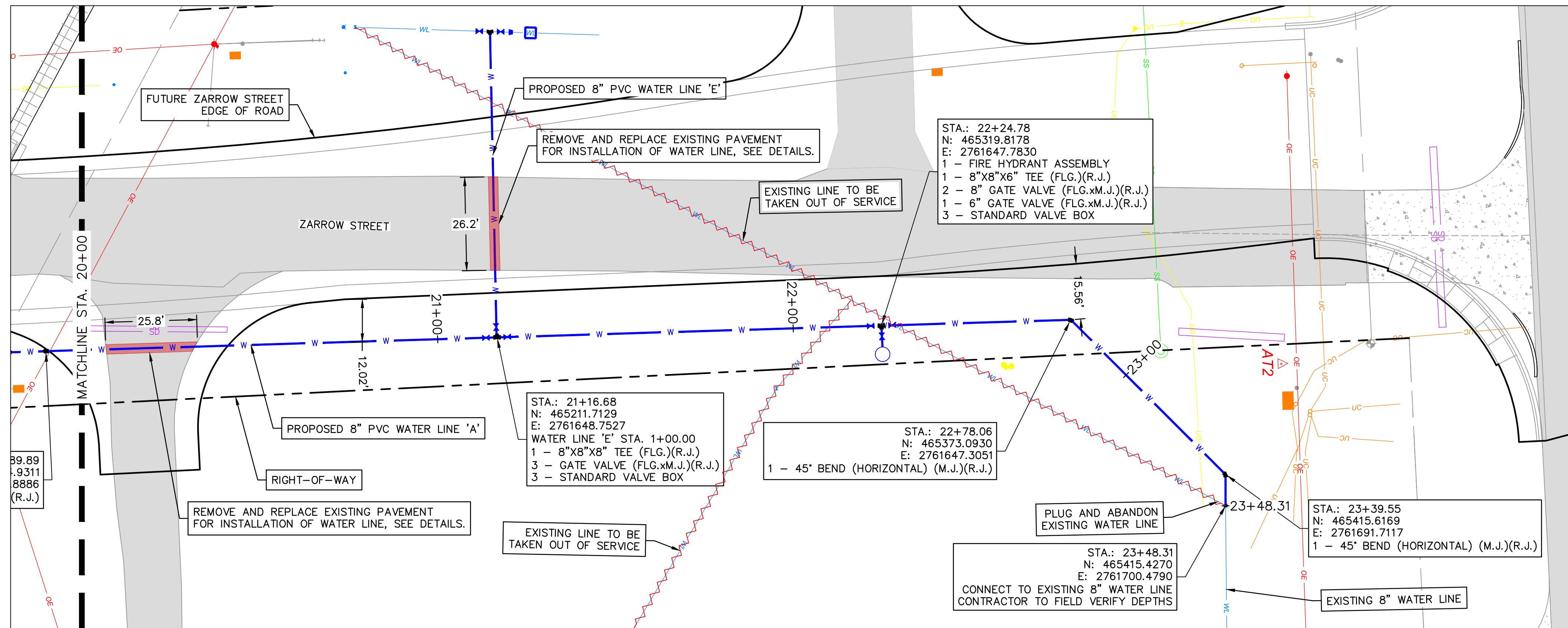
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date: 13NOV2023

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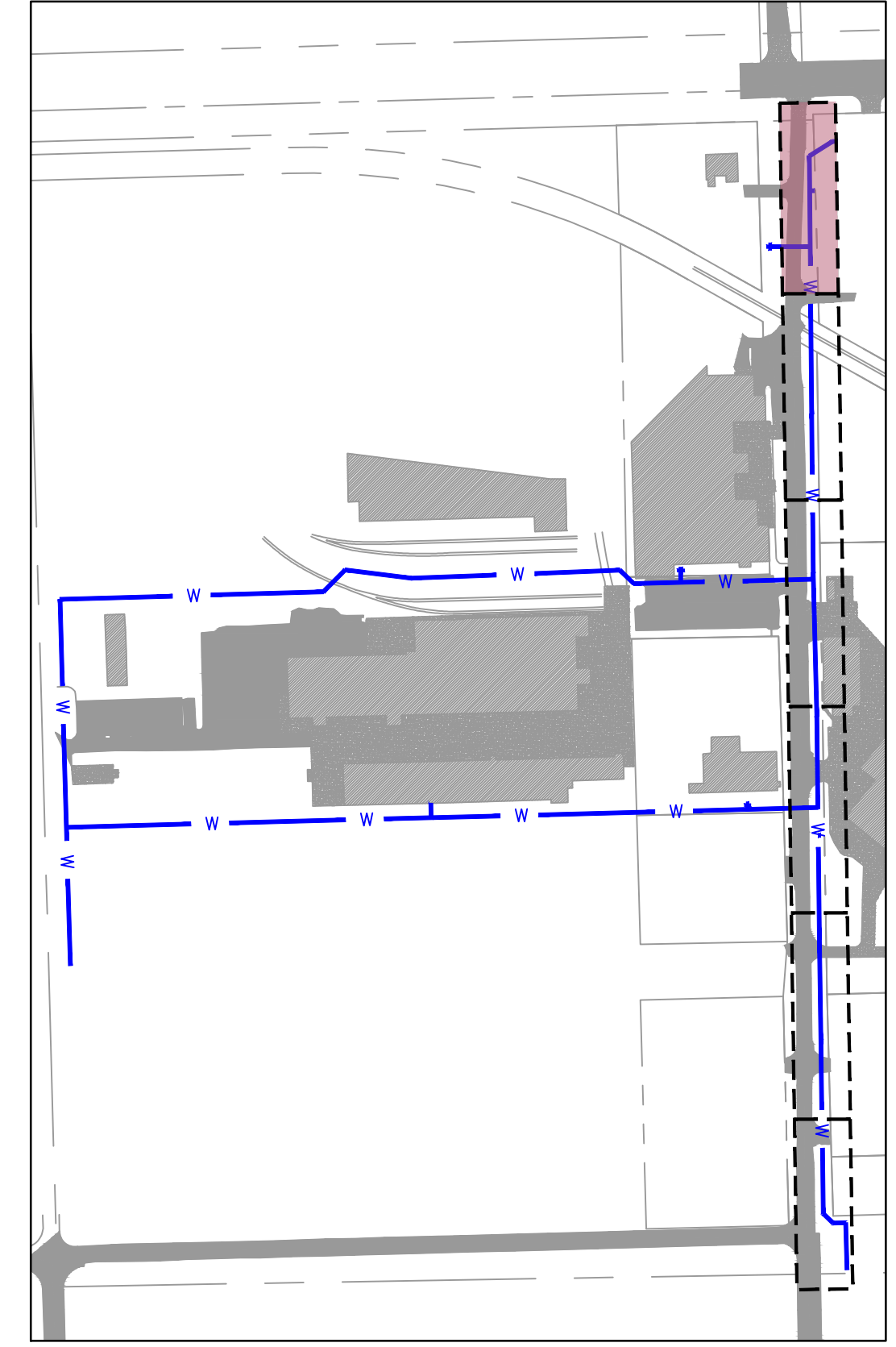
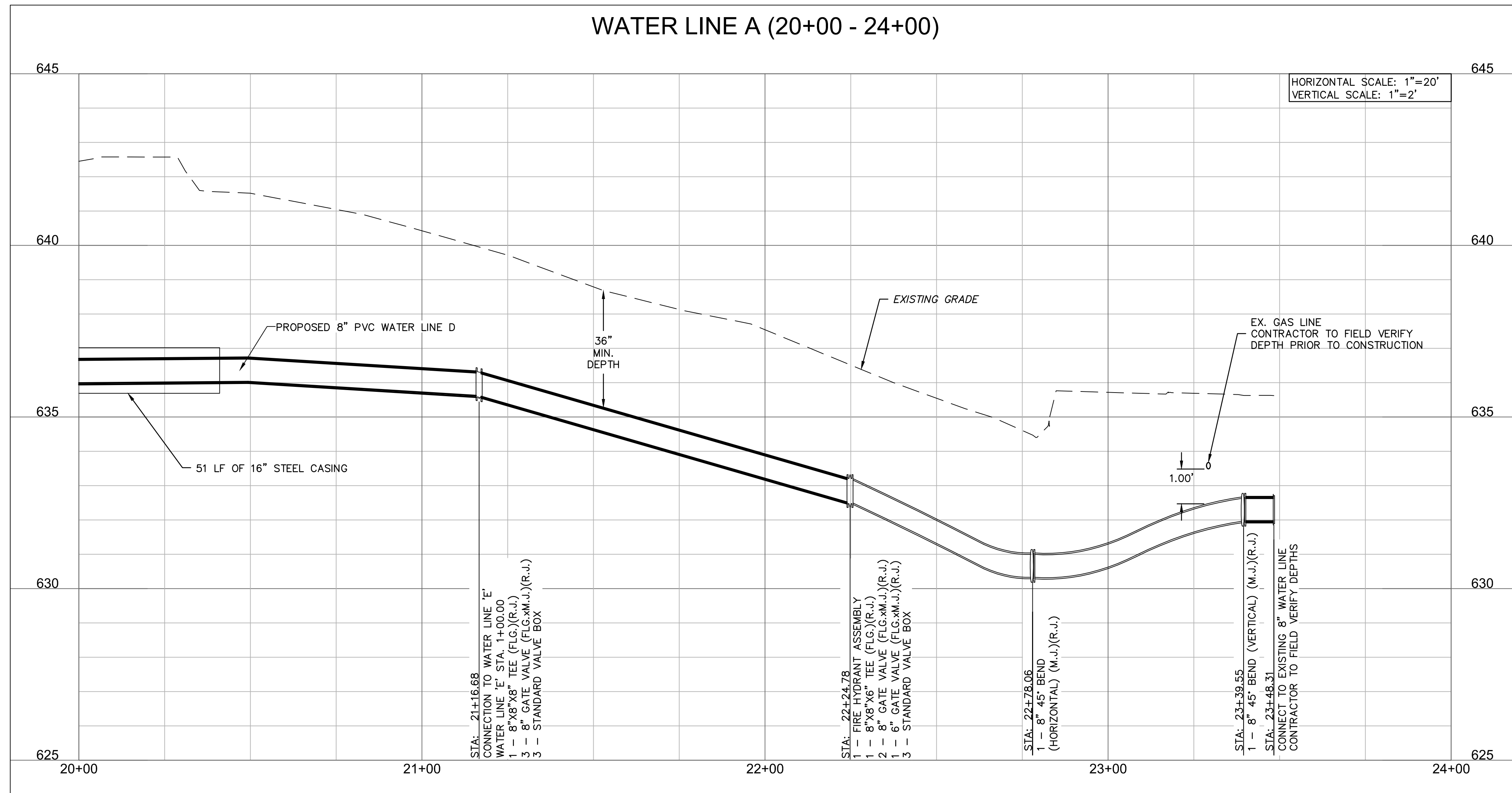


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**LEGEND**

	SECTION LINE
	RIGHT OF WAY
	ROADWAY CENTERLINE
	PROPERTY LOT LINE
	EDGE OF ROAD
	EXISTING EASEMENT
	EXISTING WATER LINE
	WATER LINE REMOVED FROM SERVICE
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	PROPOSED WATER LINE
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	EXISTING CONCRETE PAVEMENT
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**KEYMAP**  
SCALE: 1"=300'

**NOTE:**  
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WATER LINE 'A' PLAN & PROFILE 6

MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION

PRYOR, OKLAHOMA

2023

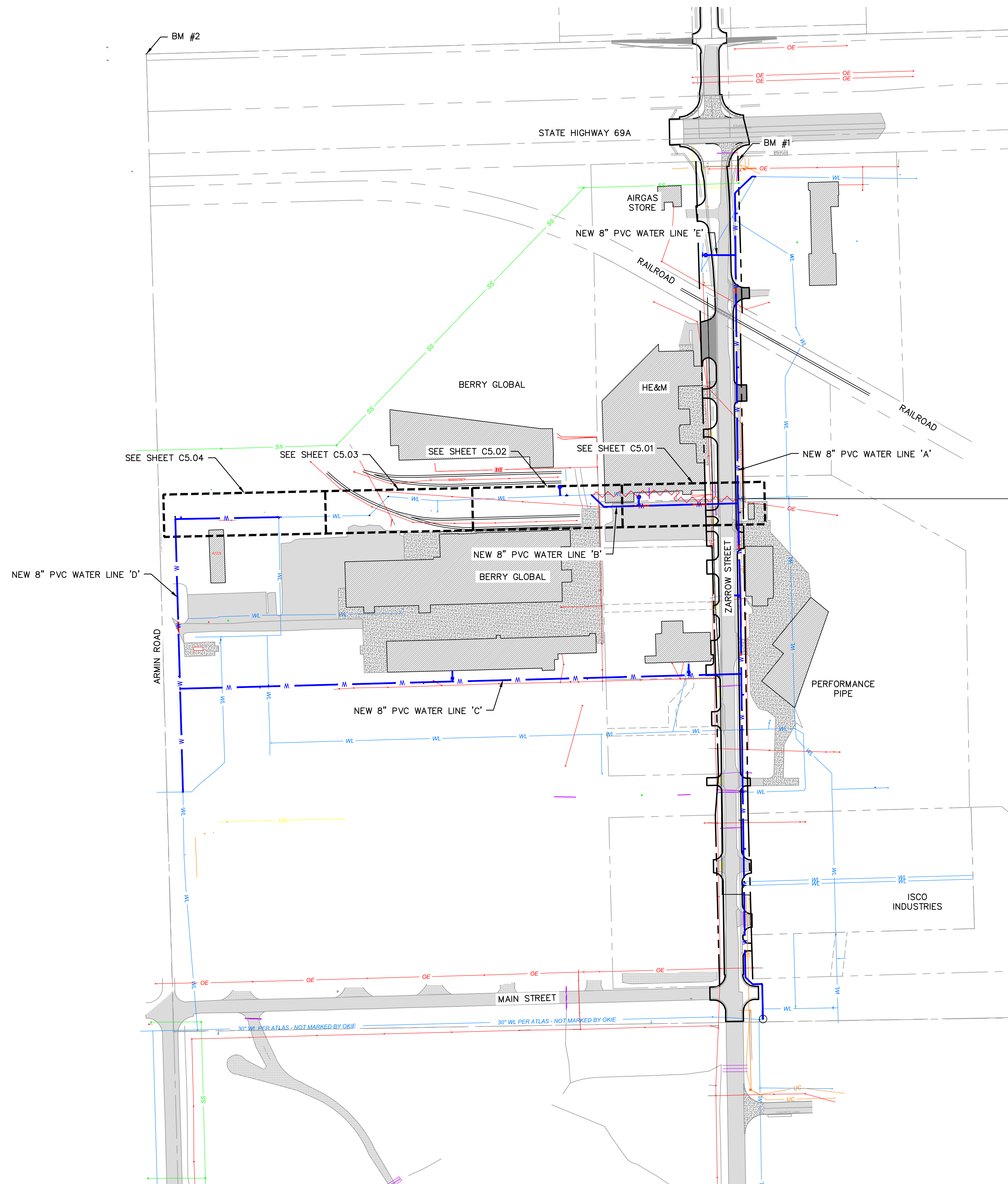
REVISIONS

drawn by:	AMA
checked by:	JAT
approved by:	JEP
QA/QC by:	
project no.:	022-06912
drawing no.:	
date:	13NOV2023

**SHEET**  
C4.06



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**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- EXISTING EASEMENT
- EXISTING WATER LINE
- WATER LINE REMOVED FROM SERVICE
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 NAD 83 (NORTH ZONE 3501) VERTICAL DATUM: NAVD 88

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 E: 2761655.8230  
 ELEV=613.19'
- BM #2**  
 1" PIPE WITH CONCRETE  
 NW SECTION CORNER  
 N: 465733.6910  
 E: 2760119.0240  
 ELEV=603.28'
- BM #3**  
 3/8" IRON PIN W/PINK CAP  
 N: 461138.4020  
 E: 2761617.5240  
 ELEV=640.82'



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**MidAmerica**  
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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

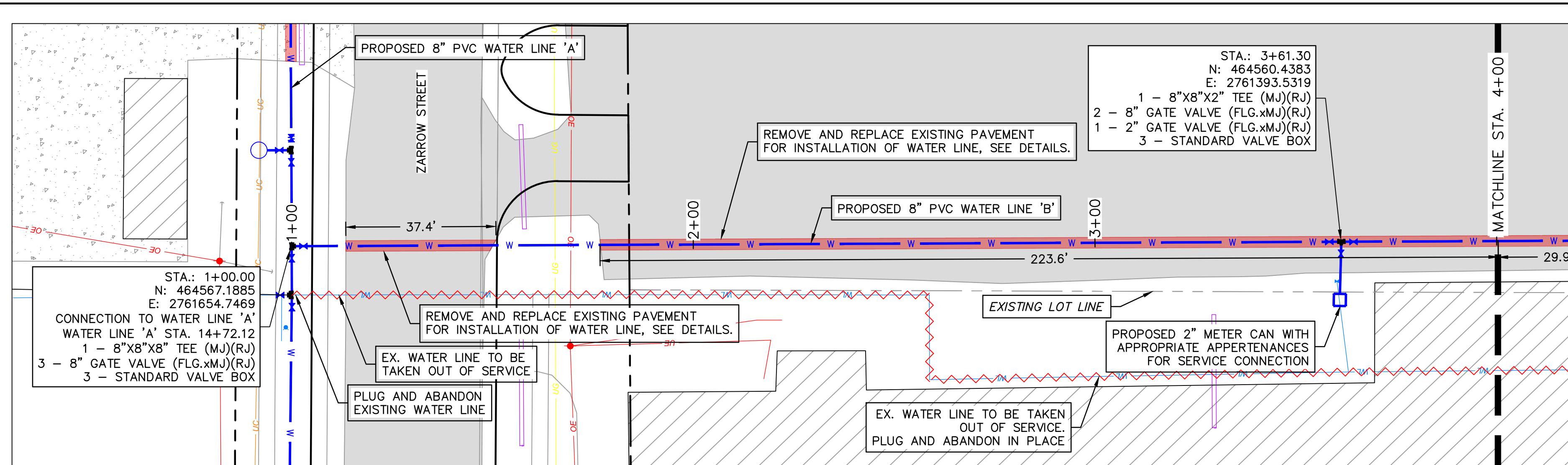
WATER LINE 'B' KEYMAP  
 MIDAMERICA INDUSTRIAL PARK  
 ZARROW ROAD WATER LINE RELOCATION  
 PRYOR, OKLAHOMA  
 2023

drawn by: \_\_\_\_\_ AMA  
 checked by: \_\_\_\_\_ JAT  
 approved by: \_\_\_\_\_ JEP  
 QA/QC by: \_\_\_\_\_  
 project no.: 022-06912  
 drawing no.: \_\_\_\_\_  
 date: 13NOV2023

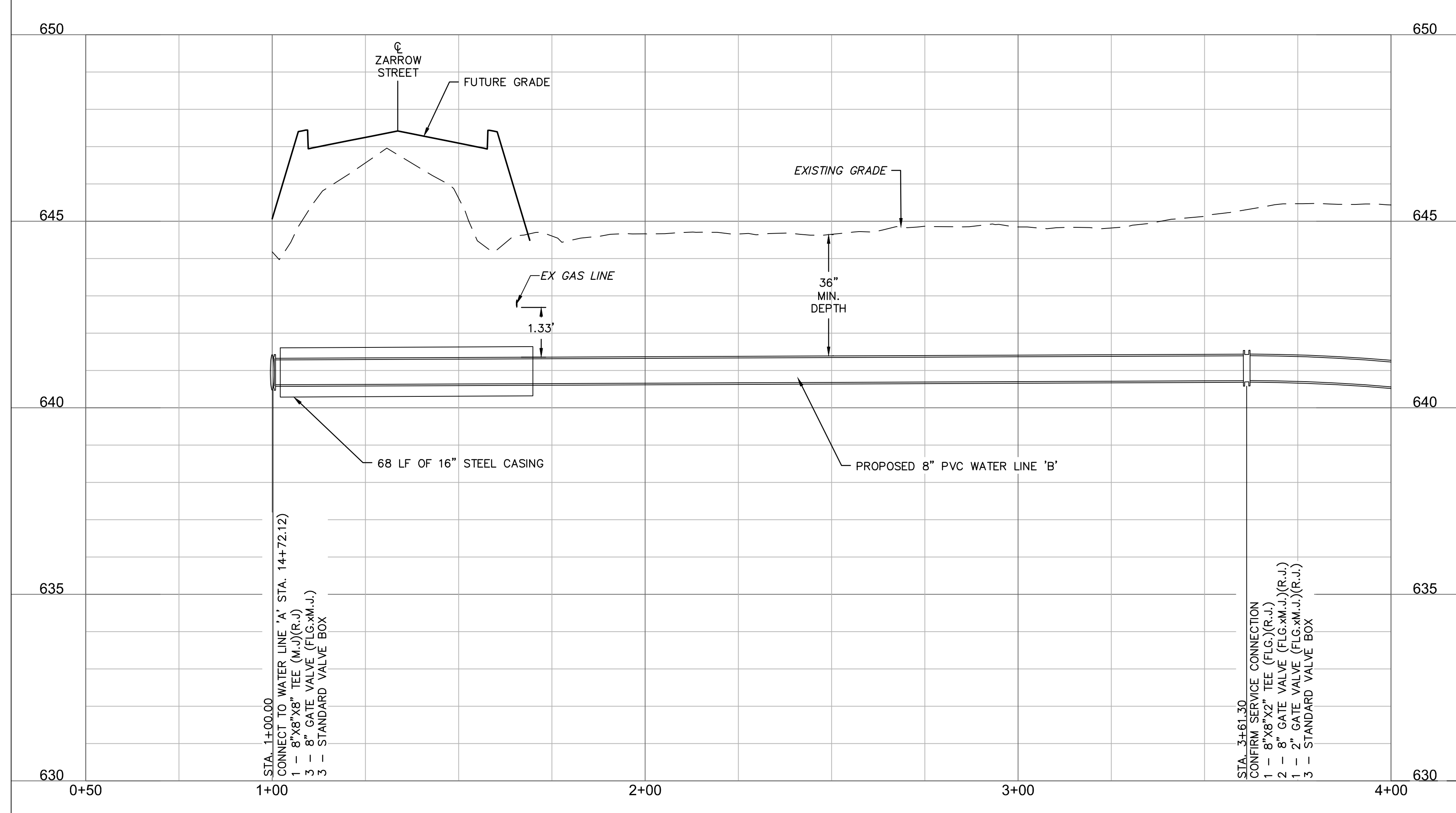
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 C5.00



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**WATER LINE B (0+50 - 4+00)**



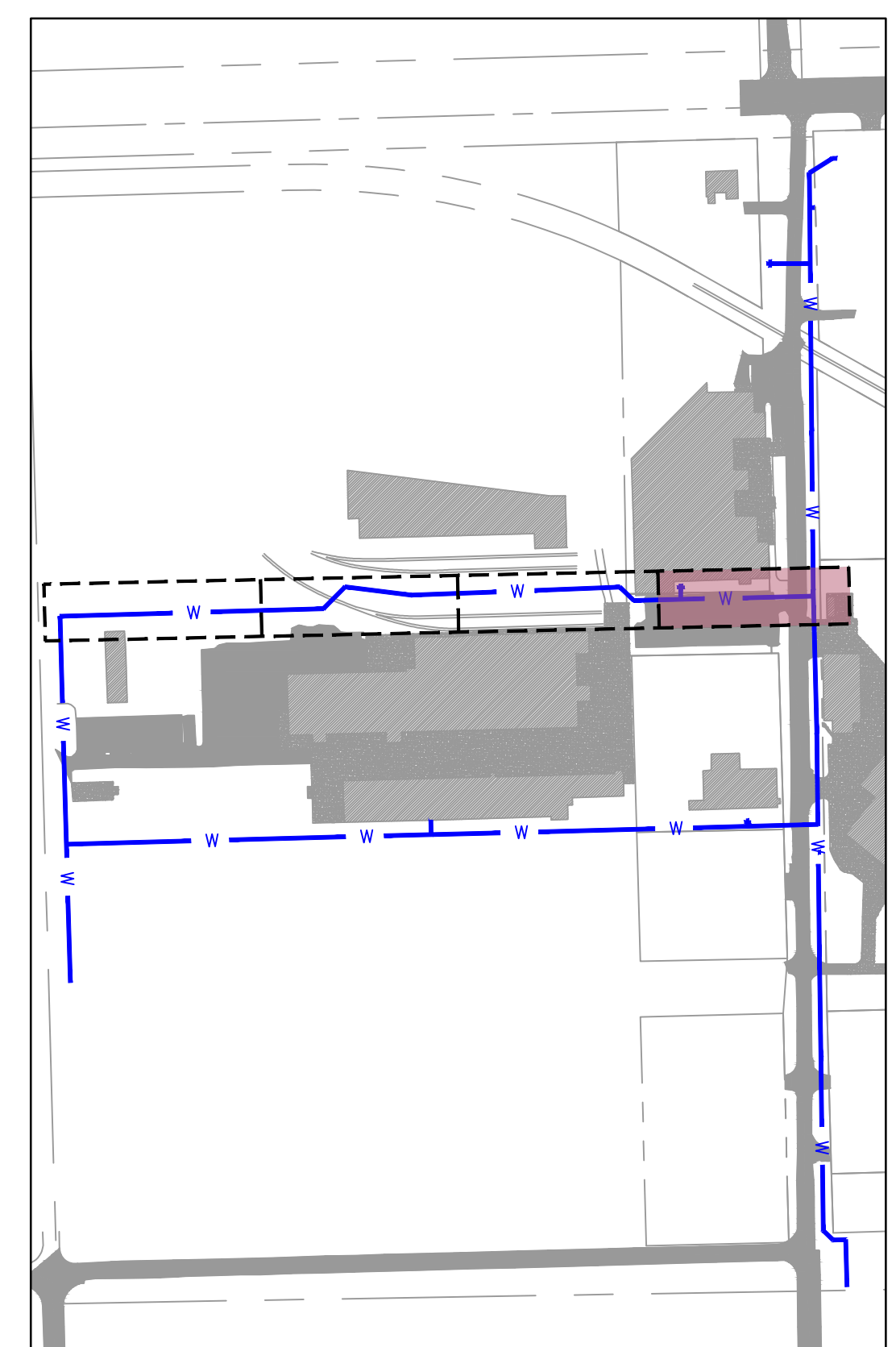
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

SCALE IN FEET

**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- EXISTING EASEMENT
- EXISTING WATER LINE
- WATER LINE REMOVED FROM SERVICE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING NATURAL GAS LINE
- EXISTING COMMUNICATION LINE
- PROPOSED WATER LINE

- [Hatched Box] EXISTING ASPHALT PAVEMENT
- [Dotted Box] EXISTING CONCRETE PAVEMENT
- [Diagonal Lines Box] EXISTING BUILDING



NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.



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MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION  
PRYOR, OKLAHOMA

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

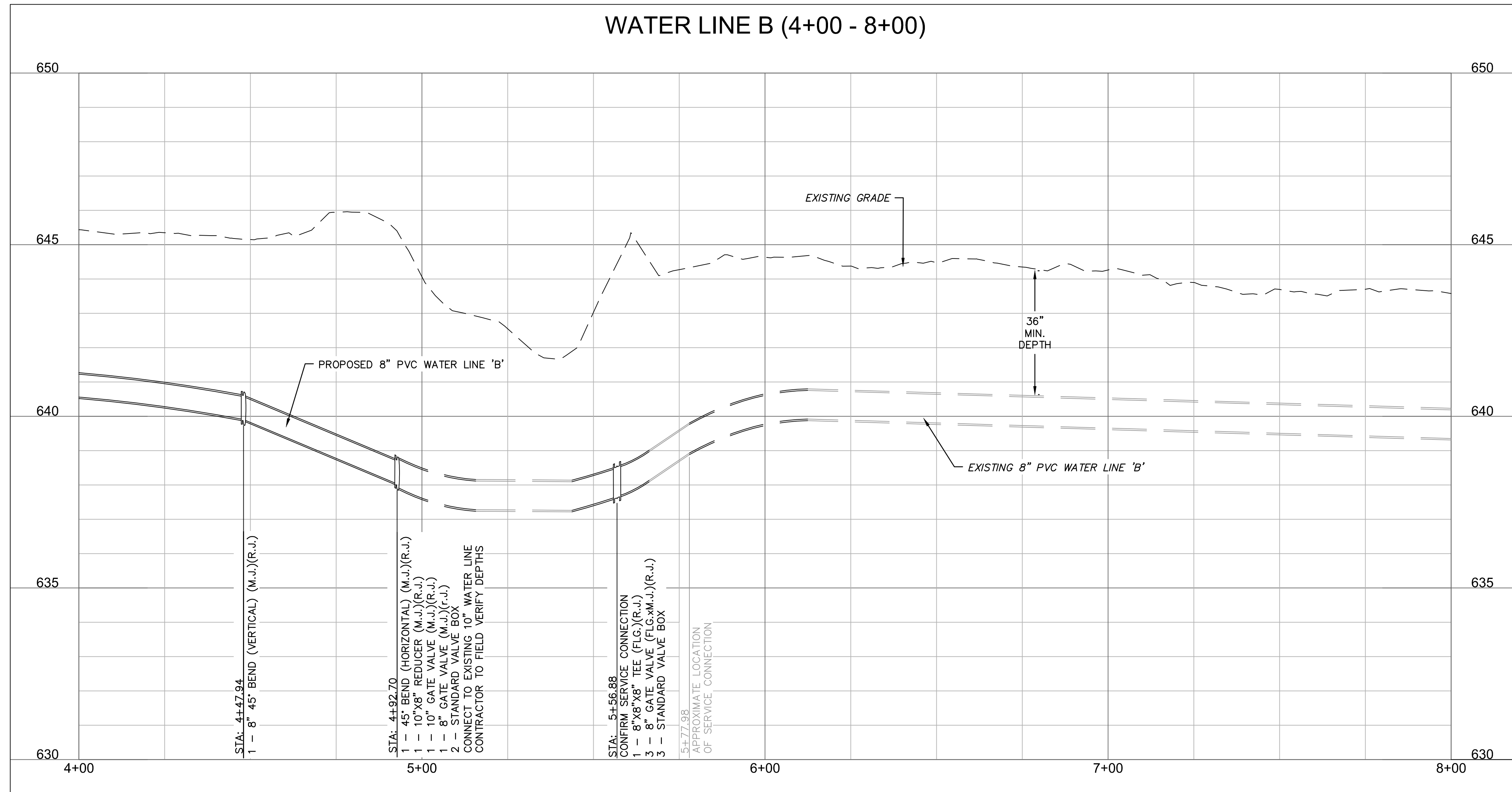
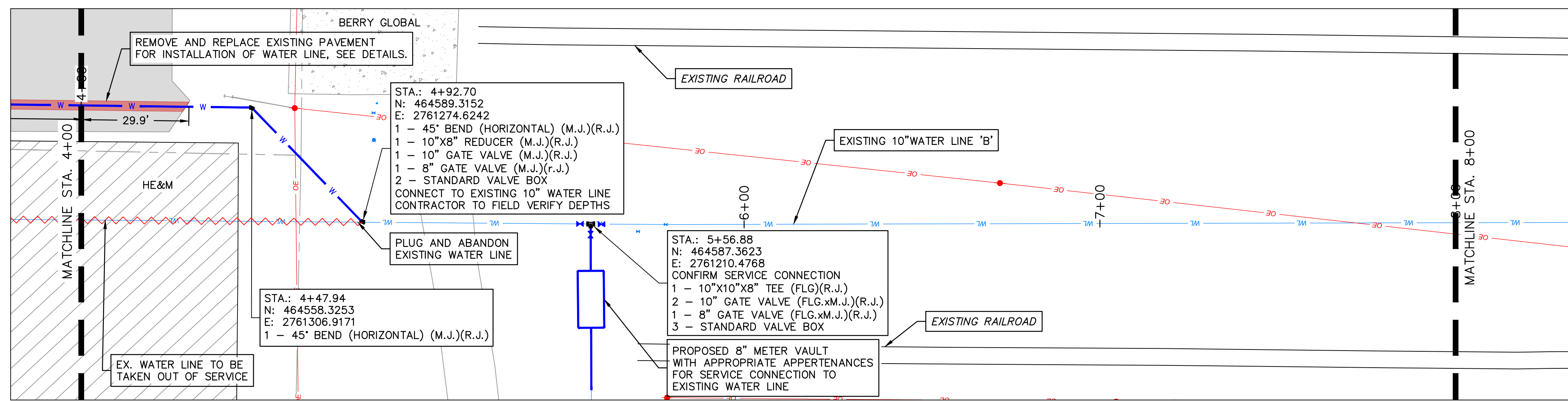
WATER LINE 'B' PLAN AND PROFILE 1	2023	REVISIONS
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drawn by: \_\_\_\_\_ AMA  
checked by: \_\_\_\_\_ JAT  
approved by: \_\_\_\_\_ JEP  
QA/QC by: \_\_\_\_\_  
project no.: 022-06912  
drawing no.: \_\_\_\_\_  
date: 13NOV2023

**SHEET**  
C5.01



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VERTICAL SCALE: 1"=2'

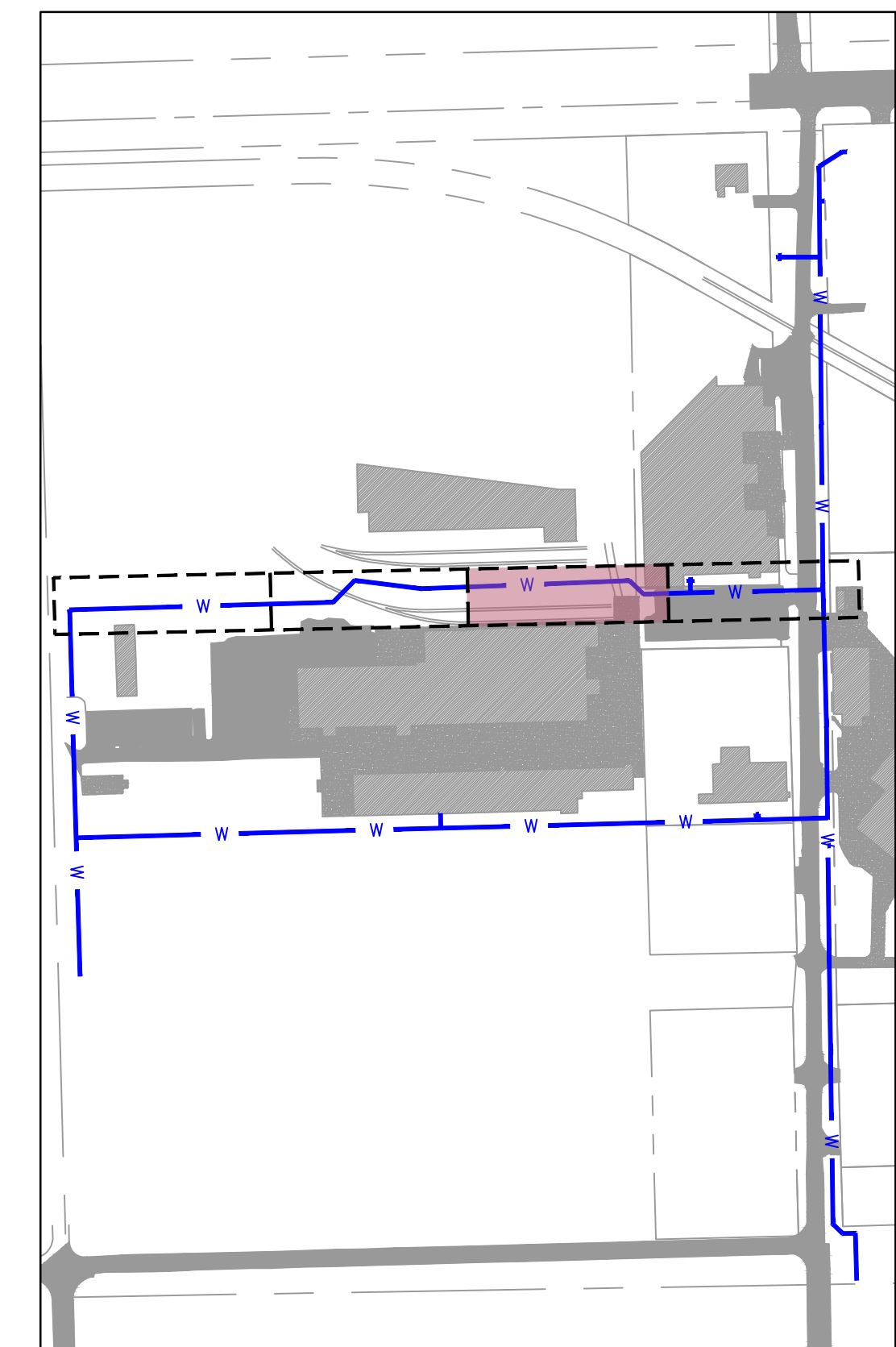
SCALE IN FEET

**LEGEND**

	SECTION LINE
	RIGHT OF WAY
	ROADWAY CENTERLINE
	PROPERTY LOT LINE
	EDGE OF ROAD
	EXISTING EASEMENT
	EXISTING WATER LINE
	WATER LINE REMOVED FROM SERVICE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING OVERHEAD ELECTRIC
	EXISTING NATURAL GAS LINE
	EXISTING COMMUNICATION LINE
	PROPOSED WATER LINE

	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE PAVEMENT
	EXISTING BUILDING



**KEYMAP**  
SCALE: 1"=300'

NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER  
LINE PIPE LOCATIONS, MATERIALS AND  
DEPTH PRIOR TO CONSTRUCTION.



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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

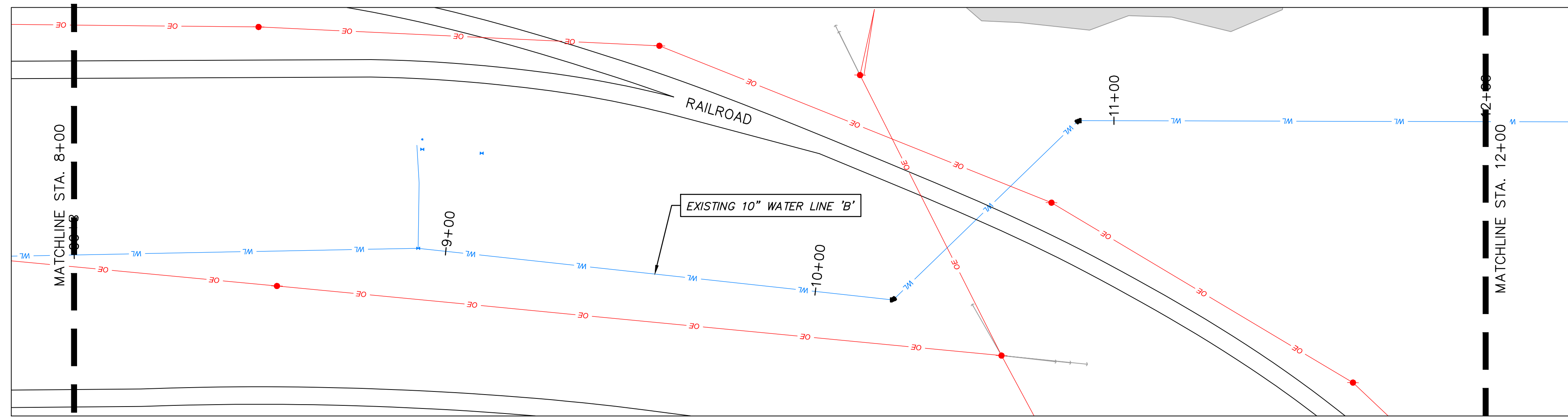
WATER LINE 'B' PLAN AND PROFILE 2	2023	REVISIONS
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION		
PRYOR, OKLAHOMA		

drawn by: AMA
checked by: JAT
approved by: JEP
QA/QC by:
project no.: 022-06912
drawing no.:
date: 13NOV2023

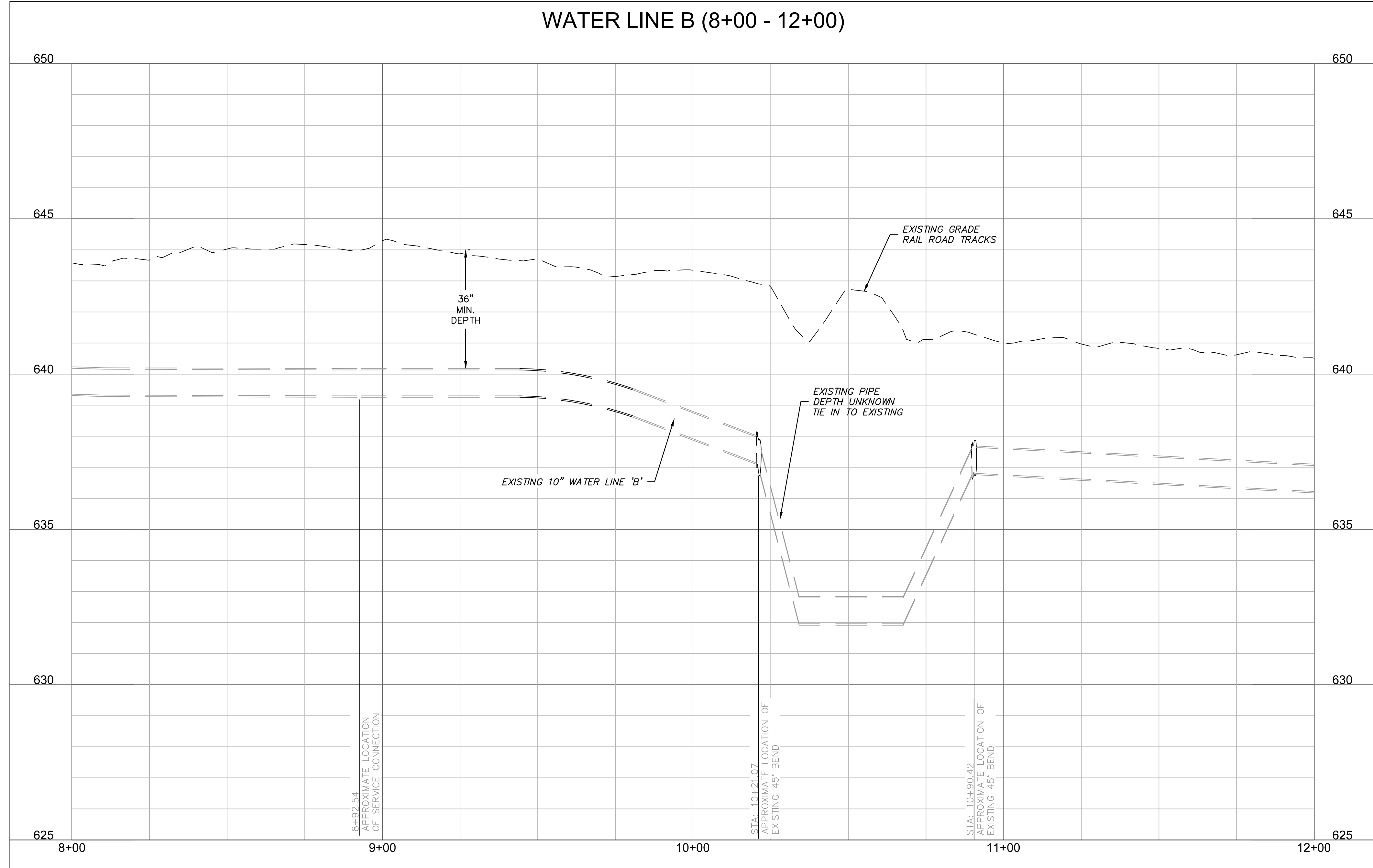
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C5.02



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**WATER LINE B (8+00 - 12+00)**

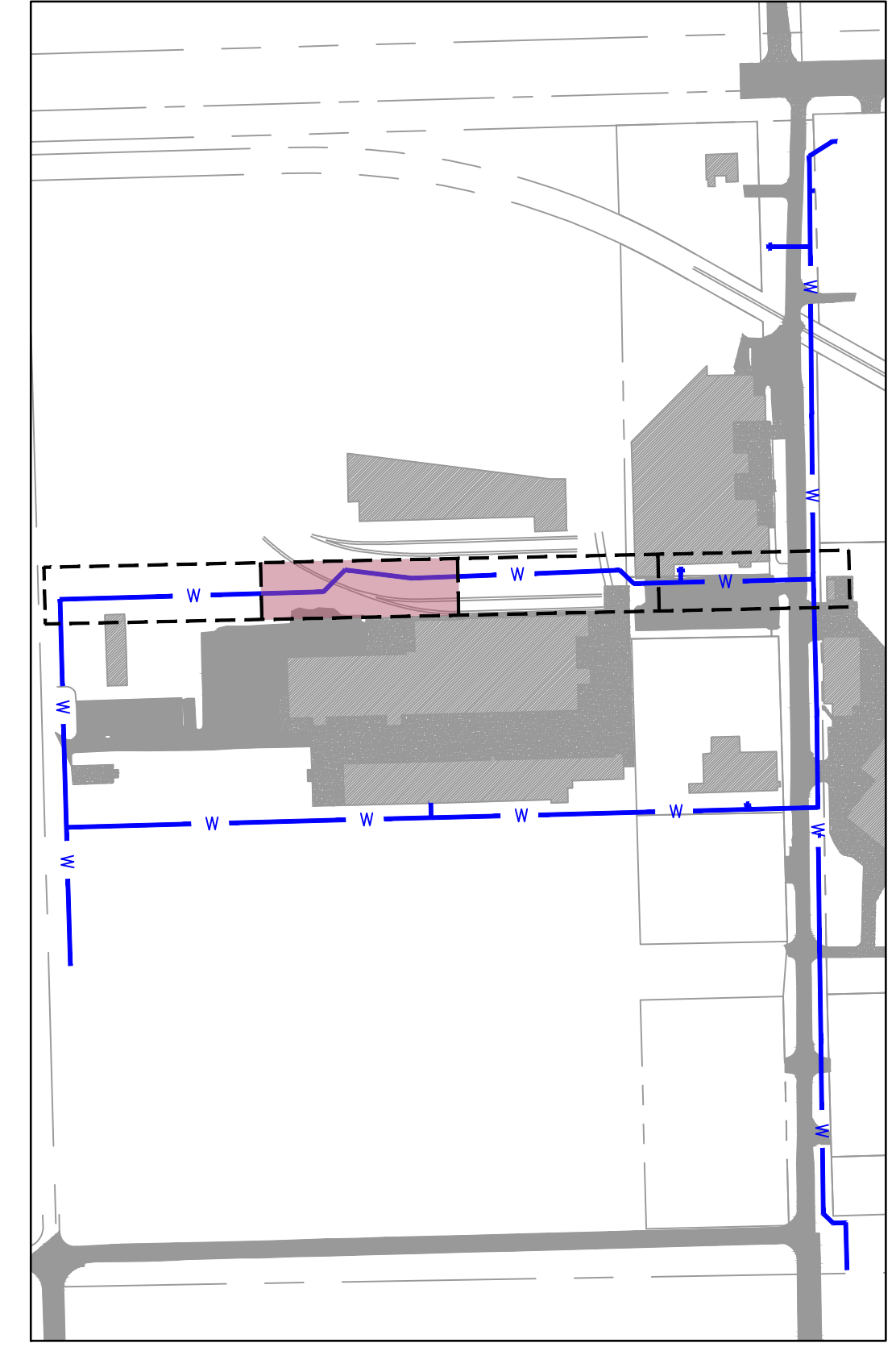


HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- EXISTING EASEMENT
- WL --- EXISTING WATER LINE
- WL --- WATER LINE REMOVED FROM SERVICE
- SS --- EXISTING SANITARY SEWER
- SD --- EXISTING STORM SEWER
- OE --- EXISTING OVERHEAD ELECTRIC
- UG --- EXISTING NATURAL GAS LINE
- UC --- EXISTING COMMUNICATION LINE
- W --- PROPOSED WATER LINE

- █ EXISTING ASPHALT PAVEMENT
- █ EXISTING CONCRETE PAVEMENT
- █ EXISTING BUILDING



NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.



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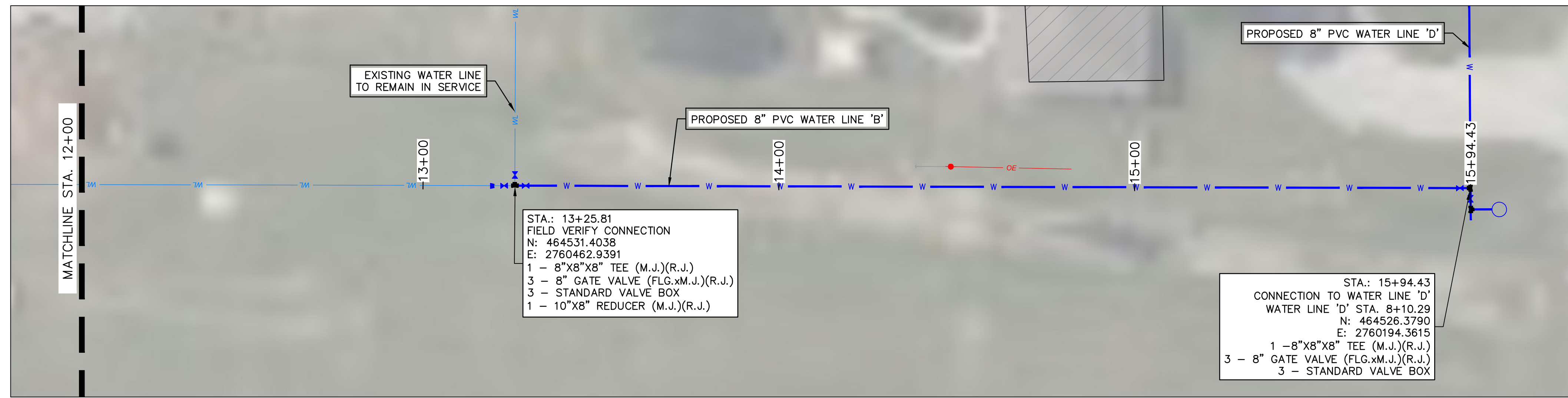
REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE 'B' PLAN AND PROFILE 3  
MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION  
PRYOR, OKLAHOMA  
2023

drawn by: \_\_\_\_\_ AMA  
checked by: \_\_\_\_\_ JAT  
approved by: \_\_\_\_\_ JEP  
QA/QC by: \_\_\_\_\_  
project no.: 022-06912  
drawing no.: \_\_\_\_\_  
date: 13NOV2023

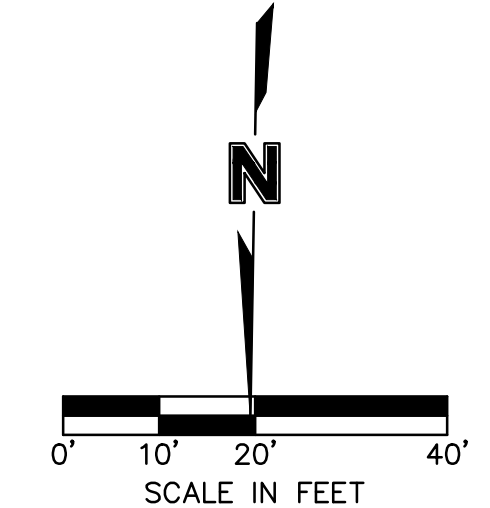
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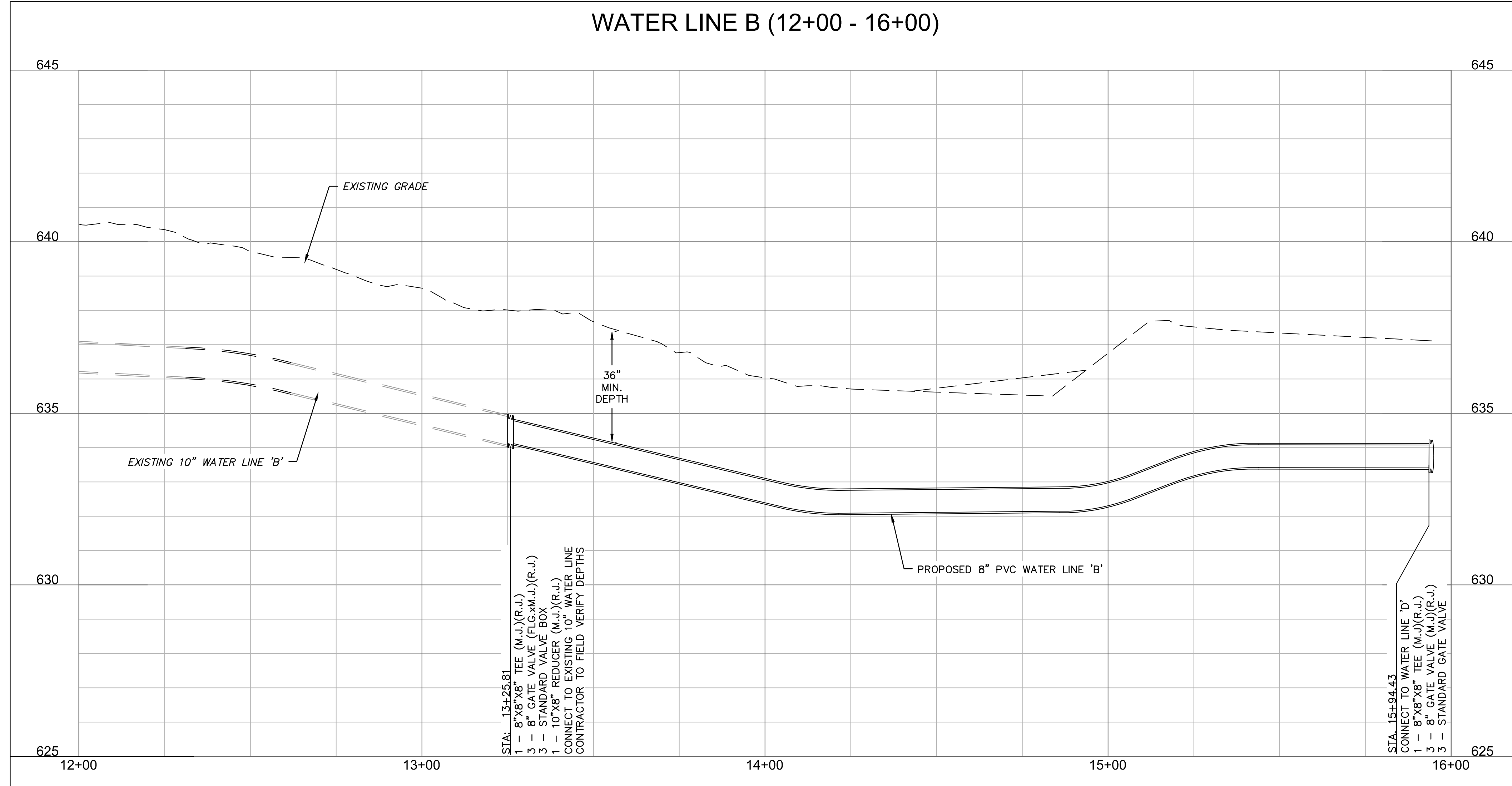
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 FIELD VERIFY CONNECTION  
 N: 464531.4038  
 E: 2760462.9391  
 1 - 8"x8"x8" TEE (M.J.)(R.J.)  
 3 - 8" GATE VALVE (FLG.xM.J.)(R.J.)  
 3 - STANDARD VALVE BOX  
 1 - 10"x8" REDUCER (M.J.)(R.J.)

STA.: 15+94.43  
 CONNECTION TO WATER LINE 'D'  
 WATER LINE 'D' STA. 8+10.29  
 N: 464526.3790  
 E: 2760194.3615  
 1 - 8"x8"x8" TEE (M.J.)(R.J.)  
 3 - 8" GATE VALVE (FLG.xM.J.)(R.J.)  
 3 - STANDARD VALVE BOX



- LEGEND**
- SECTION LINE
  - RIGHT OF WAY
  - ROADWAY CENTERLINE
  - PROPERTY LOT LINE
  - EDGE OF ROAD
  - EXISTING EASEMENT
  - EXISTING WATER LINE
  - WATER LINE REMOVED FROM SERVICE
  - EXISTING SANITARY SEWER
  - EXISTING STORM SEWER
  - EXISTING OVERHEAD ELECTRIC
  - EXISTING NATURAL GAS LINE
  - EXISTING COMMUNICATION LINE
  - PROPOSED WATER LINE

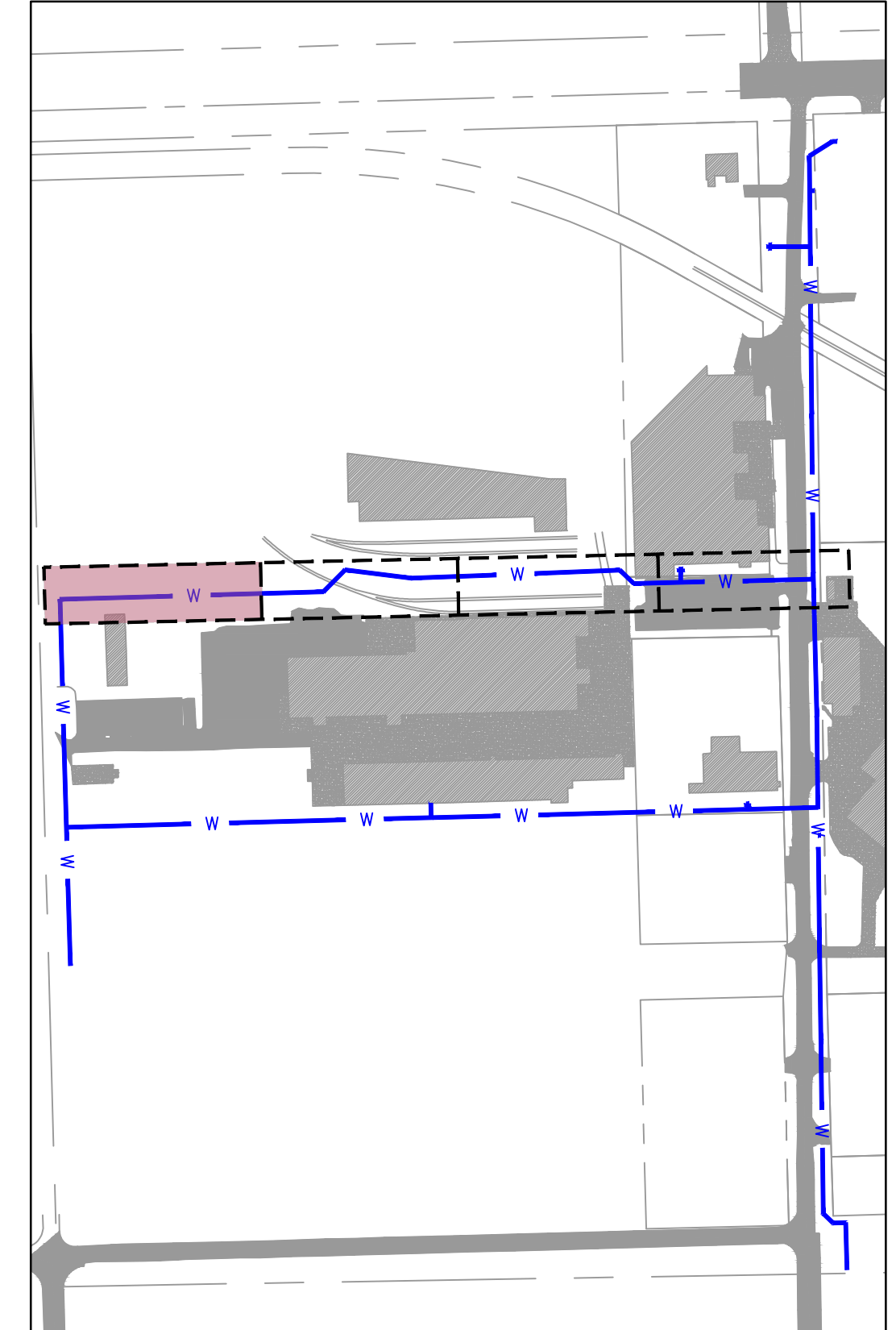
- [Hatched Box] EXISTING ASPHALT PAVEMENT
- [Dotted Box] EXISTING CONCRETE PAVEMENT
- [Diagonal Lines Box] EXISTING BUILDING



STA.: 13+25.81  
 1 - 8"x8"x8" TEE (M.J.)(R.J.)  
 3 - 8" GATE VALVE (FLG.xM.J.)(R.J.)  
 3 - STANDARD VALVE BOX  
 1 - 10"x8" REDUCER (M.J.)(R.J.)  
 CONNECT TO EXISTING 10" WATER LINE  
 CONTRACTOR TO FIELD VERIFY DEPTHS

STA.: 15+94.43  
 CONNECT TO WATER LINE 'D'  
 1 - 8"x8"x8" TEE (M.J.)(R.J.)  
 3 - 8" GATE VALVE (M.J.)(R.J.)  
 3 - STANDARD GATE VALVE

HORIZONTAL SCALE: 1"=20'  
 VERTICAL SCALE: 1"=2'



**KEYMAP**  
 SCALE: 1"=300'

NOTE:  
 CONTRACTOR TO VERIFY EXISTING WATER  
 LINE PIPE LOCATIONS, MATERIALS AND  
 DEPTH PRIOR TO CONSTRUCTION.



REV. NO.	DATE	REVISIONS DESCRIPTION	BY

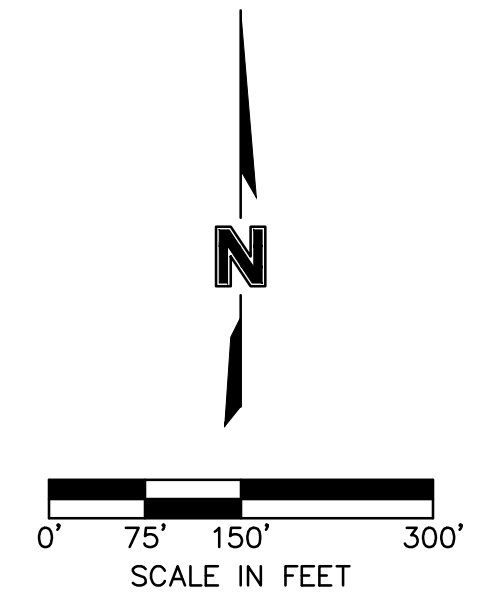
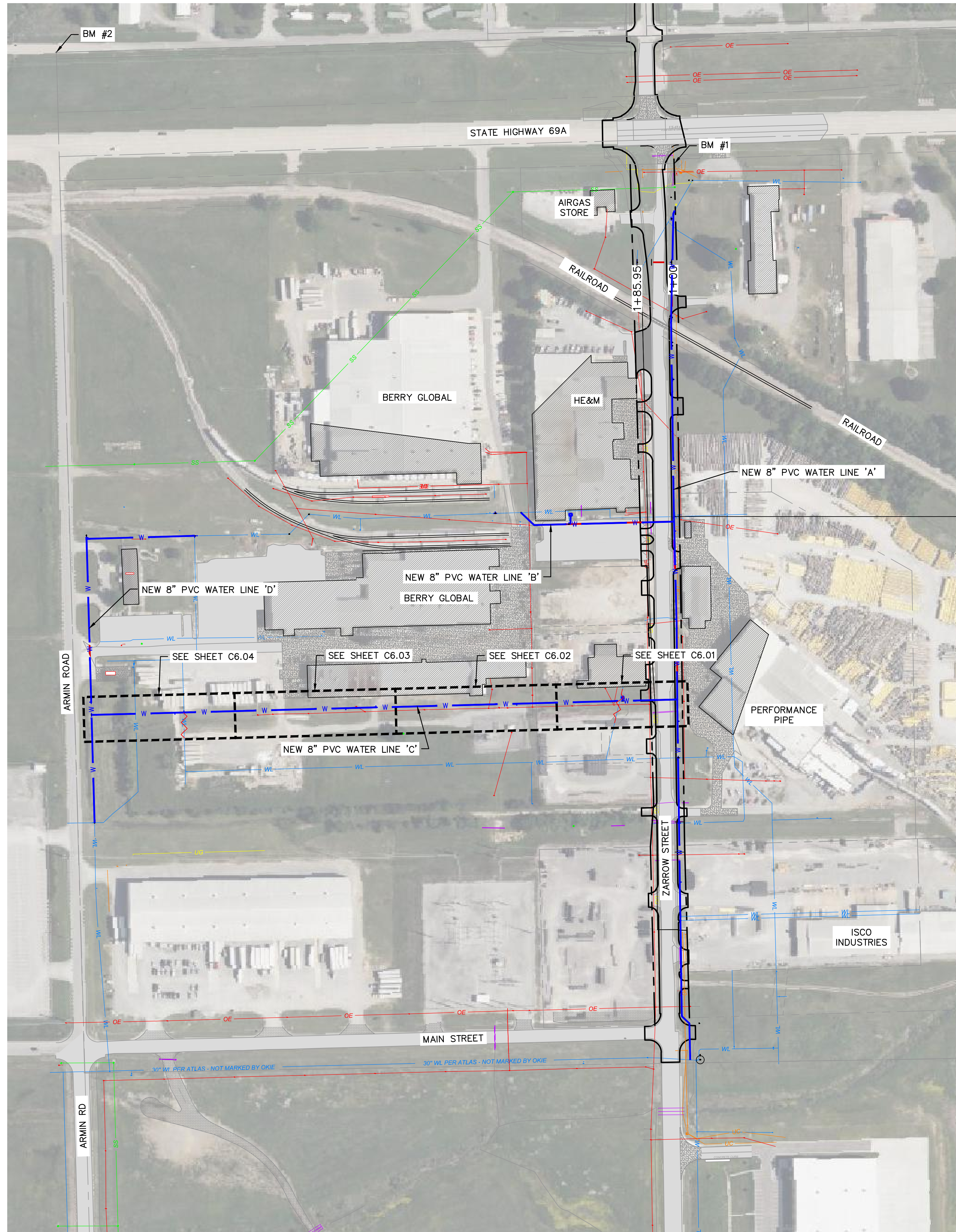
WATER LINE 'B' PLAN AND PROFILE 4	2023
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION	
PRYOR, OKLAHOMA	

drawn by:	AMA
checked by:	JAT
approved by:	JEP
QA/QC by:	
project no.:	022-06912
drawing no.:	
date:	13NOV2023





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**LEGEND**

	SECTION LINE
	RIGHT OF WAY
	ROADWAY CENTERLINE
	PROPERTY LOT LINE
	EDGE OF ROAD
	EXISTING EASEMENT
	EXISTING WATER LINE
	WATER LINE REMOVED FROM SERVICE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING OVERHEAD ELECTRIC
	EXISTING NATURAL GAS LINE
	EXISTING COMMUNICATION LINE
	PROPOSED WATER LINE
	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE PAVEMENT
	EXISTING BUILDING

**GENERAL NOTES:**

- THE CONTRACTOR SHALL CONSTRUCT ALL WATER LINES AND CONNECTIONS IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS OF THE LOCAL UTILITY PROVIDER.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY SERVICE CONNECTIONS WITH THE APPROPRIATE UTILITY COMPANY/OWNER.
- ALL WATER SERVICE CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES AWWA SPECIFICATIONS. CONTRACT OKLAHOMA ORDINANCE WORKS AUTHORITY (OOWA) TO PROVIDE OPPORTUNITY TO INSPECT.
- COORDINATE WITH KEITH HARRIS FROM MIDAMERICA INDUSTRIAL PARK FOR NEARBY VALVE LOCATIONS FOR PIPE ISOLATION AND WATER SERVICE SHUTDOWN TIMETABLE.
- ALL DUCTILE IRON FITTINGS AND PIPE MUST BE CEMENT LINED IN ACCORDANCE WITH AWWA C104/A21 4-80.
- WATER LINES SHALL BE PRESSURE TESTED FOR LEAKS AND DISINFECTED IN ACCORDANCE WITH OKLAHOMA DEPT. OF ENVIRONMENTAL QUALITY STANDARDS SECTION 252:626-19-1(e)(f)
- IF THE CONTRACTOR OVER-CUTS THE TRENCH, THE ADDITIONAL BACKFILL MATERIAL WILL BE CONSIDERED INCIDENTAL AND WILL BE AT CONTRACTORS EXPENSE.
- THE CONTRACTOR MAY BE REQUIRED TO INSTALL ADDITIONAL EROSION CONTROL DEVICES BEFORE FLUSHING WATER LINE TO MINIMIZE EROSION & TO REMAIN IN COMPLIANCE WITH LOCAL AND FEDERAL N.P.D.E.S. PERMIT REQUIREMENTS.
- THE CONTRACTOR SHALL DISPOSE OF WATER FLUSHED FROM THE LINES TO A LOCATION APPROVED BY THE CITY ENGINEER OR DESIGNATED REPRESENTATIVE. IN NO CASE SHALL THE WATER BE FLUSHED INTO THE PAVING SUBGRADE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL EROSION CONTROL DEVICES DAMAGED DUE TO CONSTRUCTION.

**SURVEY CONTROL DATA**

HORIZONTAL DATUM: OKLAHOMA STATE PLANE COORDINATE SYSTEM  
 NAD 83 (NORTH ZONE 3501) VERTICAL DATUM: NAVD 88

<b>BM #1</b> 3/8" IRON PIN N: 465457.1970 E: 2761655.8230 ELEV=613.19'
<b>BM #2</b> 1" PIPE WITH CONCRETE NW SECTION CORNER N: 465733.6910 E: 2760119.0240 ELEV=603.28'
<b>BM #3</b> 3/8" IRON PIN W/PINK CAP N: 461138.4020 E: 2761617.5240 ELEV=640.82'



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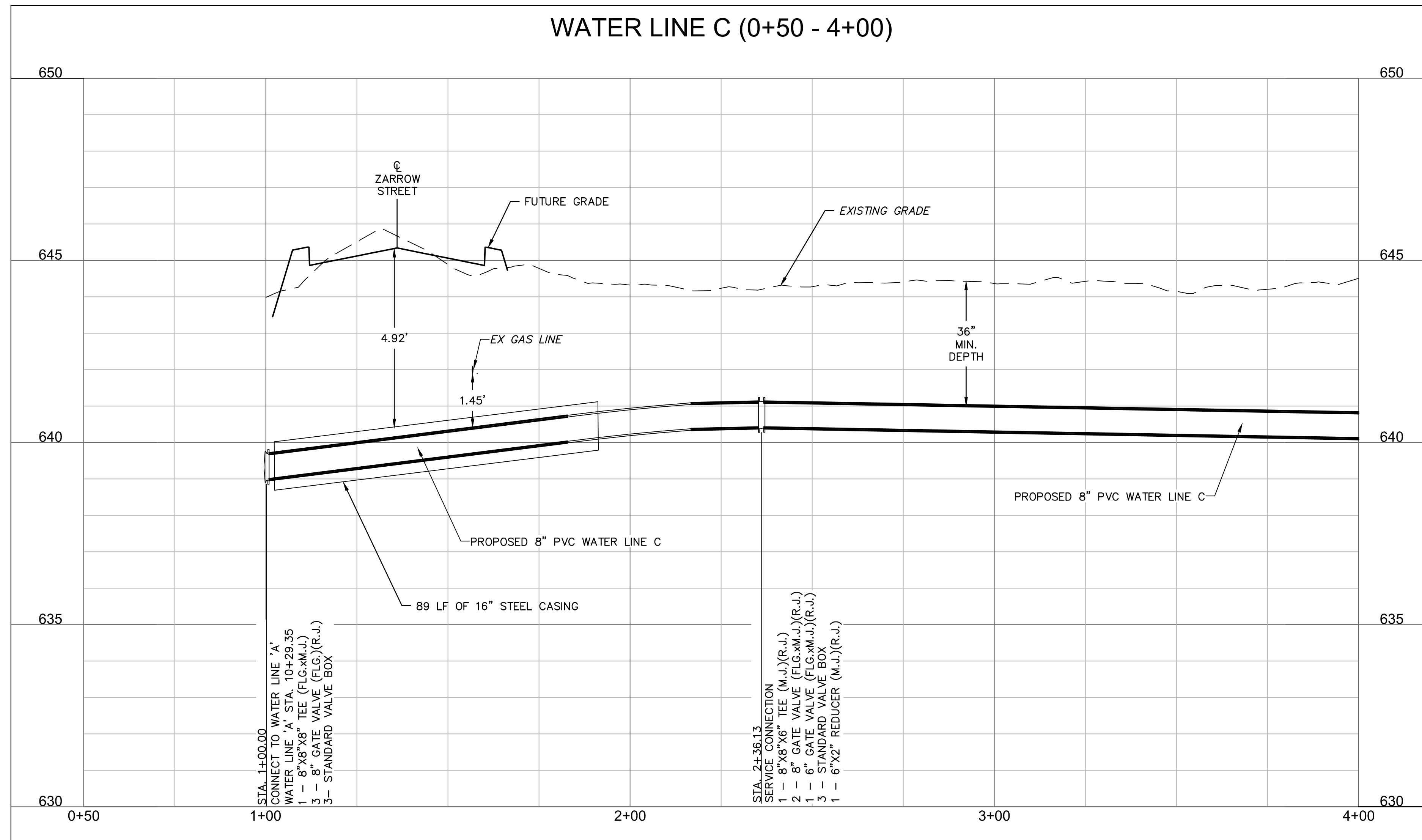
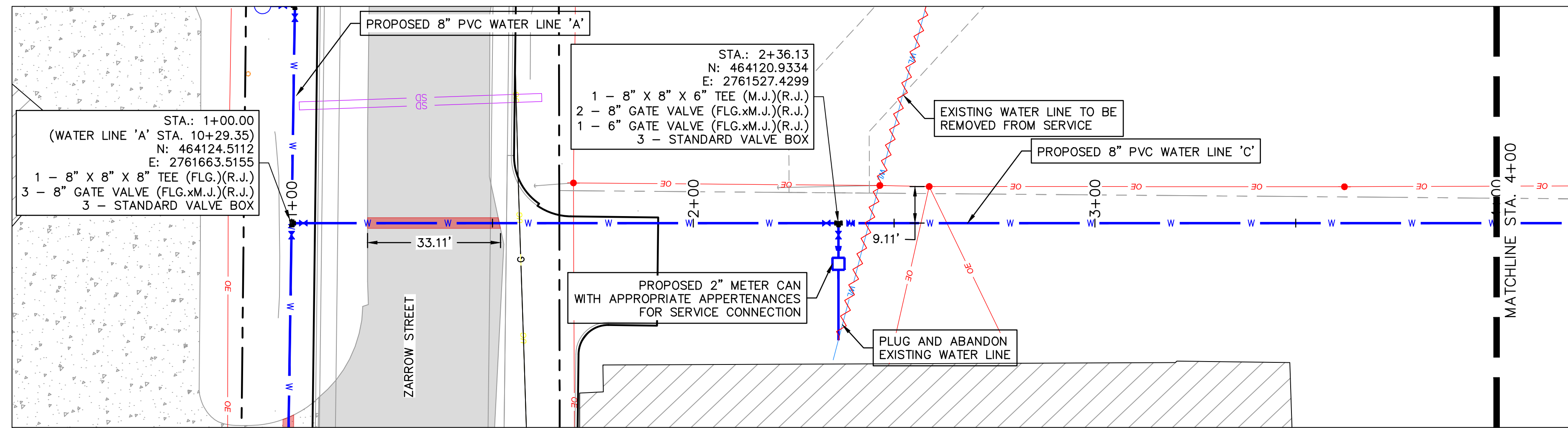
**MidAmerica**  
**INDUSTRIAL PARK**

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE 'C' KEYMAP  
 MIDAMERICA INDUSTRIAL PARK  
 ZARROW ROAD WATER LINE RELOCATION  
 PRYOR, OKLAHOMA  
 2023  
 drawn by: AMA  
 checked by: JAT  
 approved by: JEP  
 QA/QC by: JEP  
 project no.: 022-06912  
 drawing no.:  
 date: 13NOV2023  
**SHEET**  
 C6.00



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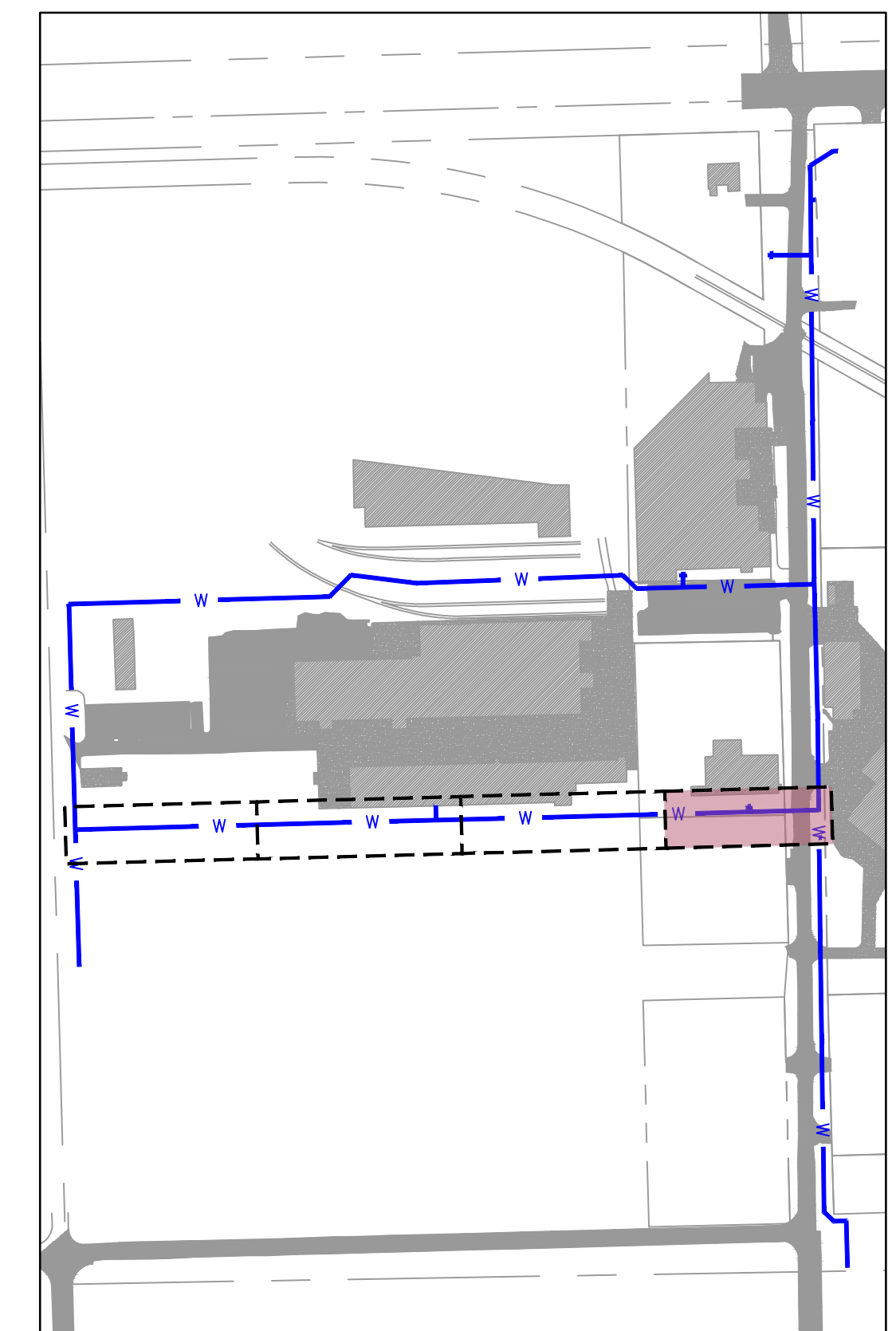


HORIZONTAL SCALE: 1"=20'  
 VERTICAL SCALE: 1"=2'

**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- EXISTING EASEMENT
- EXISTING WATER LINE
- WATER LINE REMOVED FROM SERVICE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING NATURAL GAS LINE
- EXISTING COMMUNICATION LINE
- PROPOSED WATER LINE

- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BUILDING



NOTE:  
 CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.

**811**  
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WATER LINE 'C' PLAN AND PROFILE 1

MIDAMERICA INDUSTRIAL PARK  
 ZARROW ROAD WATER LINE RELOCATION  
 PRYOR, OKLAHOMA

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

2023

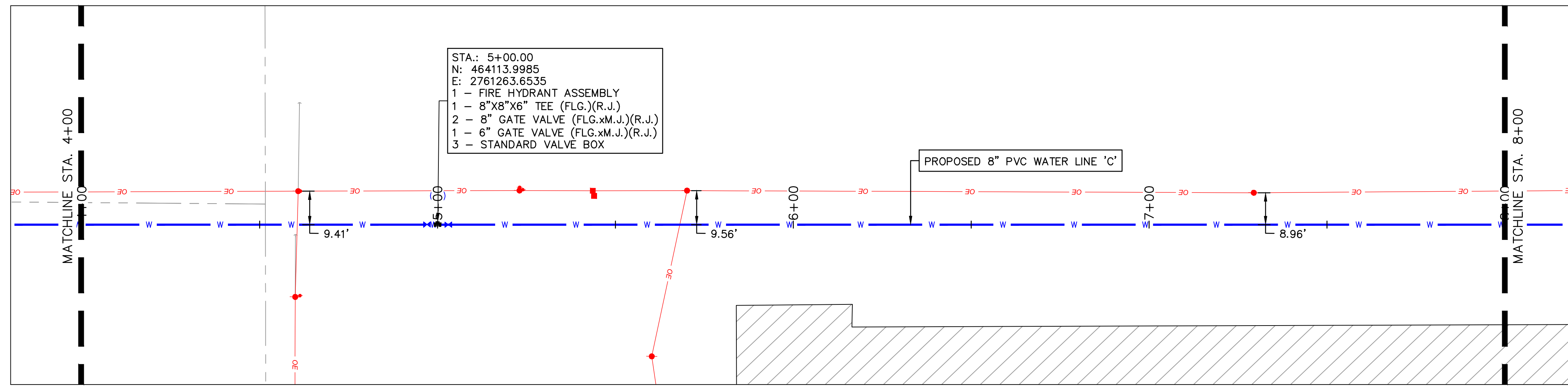
REVISIONS

drawn by: AMA  
 checked by: JAT  
 approved by: JEP  
 QA/QC by: JEP  
 project no.: 022-06912  
 drawing no.:  
 date: 13NOV2023

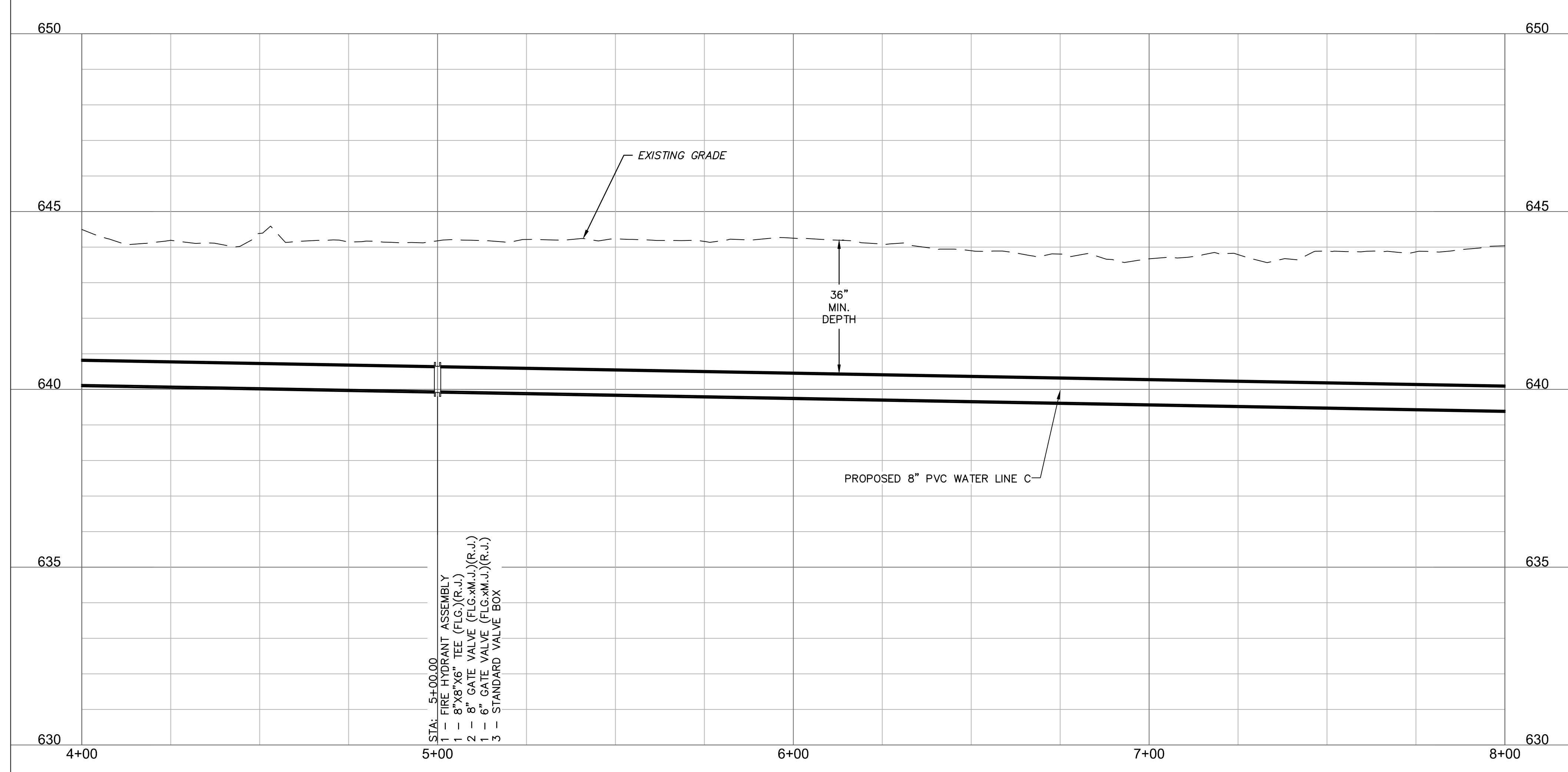
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**WATER LINE C (4+00 - 8+00)**



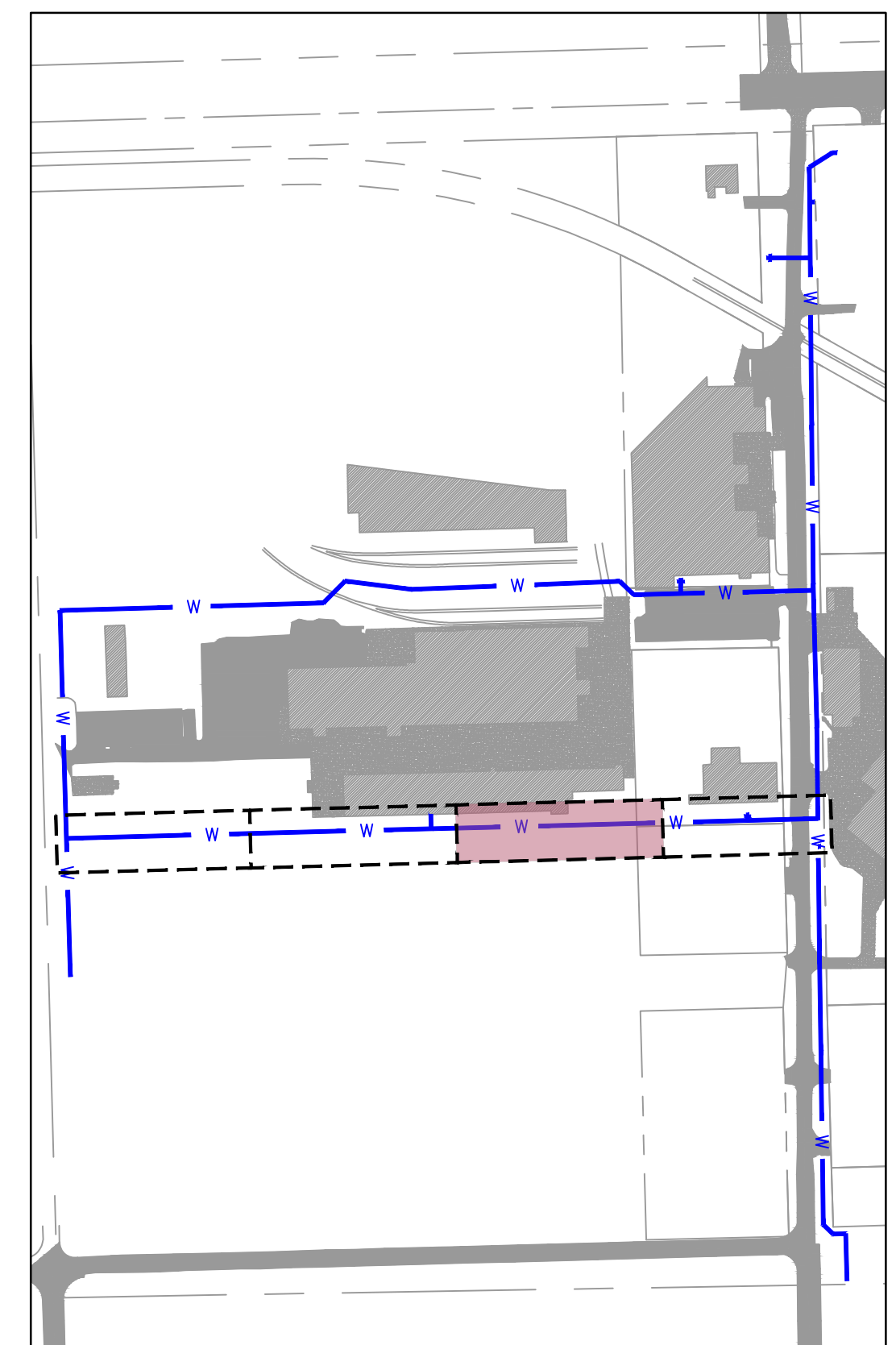
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

SCALE IN FEET

**LEGEND**

- SECTION LINE
- - - RIGHT OF WAY
- - - ROADWAY CENTERLINE
- - - PROPERTY LOT LINE
- - - EDGE OF ROAD
- - - EXISTING EASEMENT
- WL --- EXISTING WATER LINE
- WL --- WATER LINE REMOVED FROM SERVICE
- SS --- EXISTING SANITARY SEWER
- SD --- EXISTING STORM SEWER
- OE --- EXISTING OVERHEAD ELECTRIC
- UG --- EXISTING NATURAL GAS LINE
- UC --- EXISTING COMMUNICATION LINE
- W --- PROPOSED WATER LINE

- █ EXISTING ASPHALT PAVEMENT
- █ EXISTING CONCRETE PAVEMENT
- █ EXISTING BUILDING



**KEYMAP**  
SCALE: 1"=300'

NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER  
LINE PIPE LOCATIONS, MATERIALS AND  
DEPTH PRIOR TO CONSTRUCTION.



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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

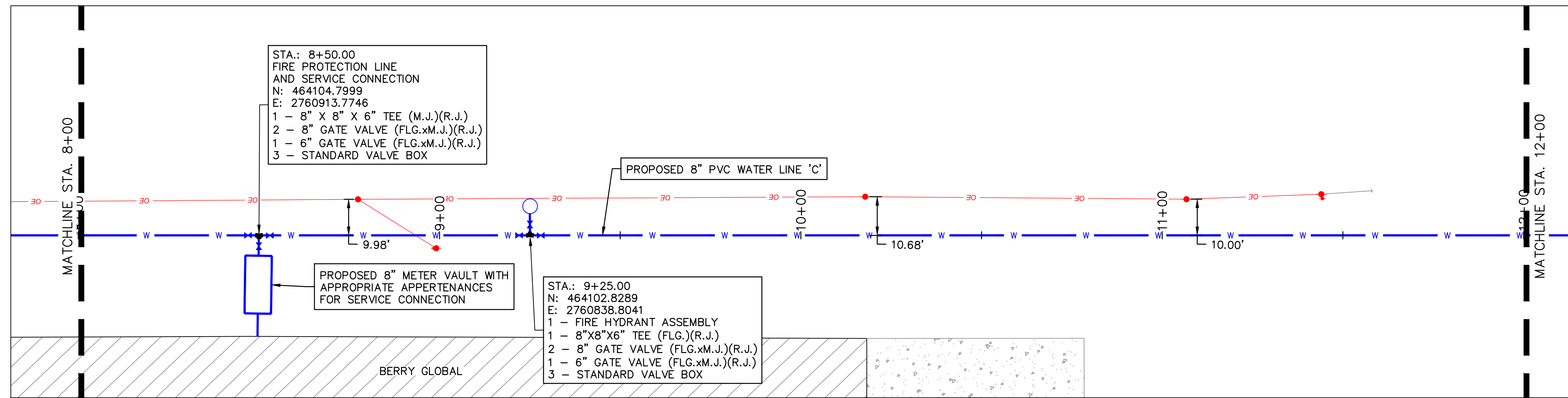
WATER LINE 'C' PLAN AND PROFILE 2	2023
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION	
PRYOR, OKLAHOMA	

drawn by: AMA
checked by: JAT
approved by: JEP
QA/QC by:
project no.: 022-06912
drawing no.:
date: 13NOV2023

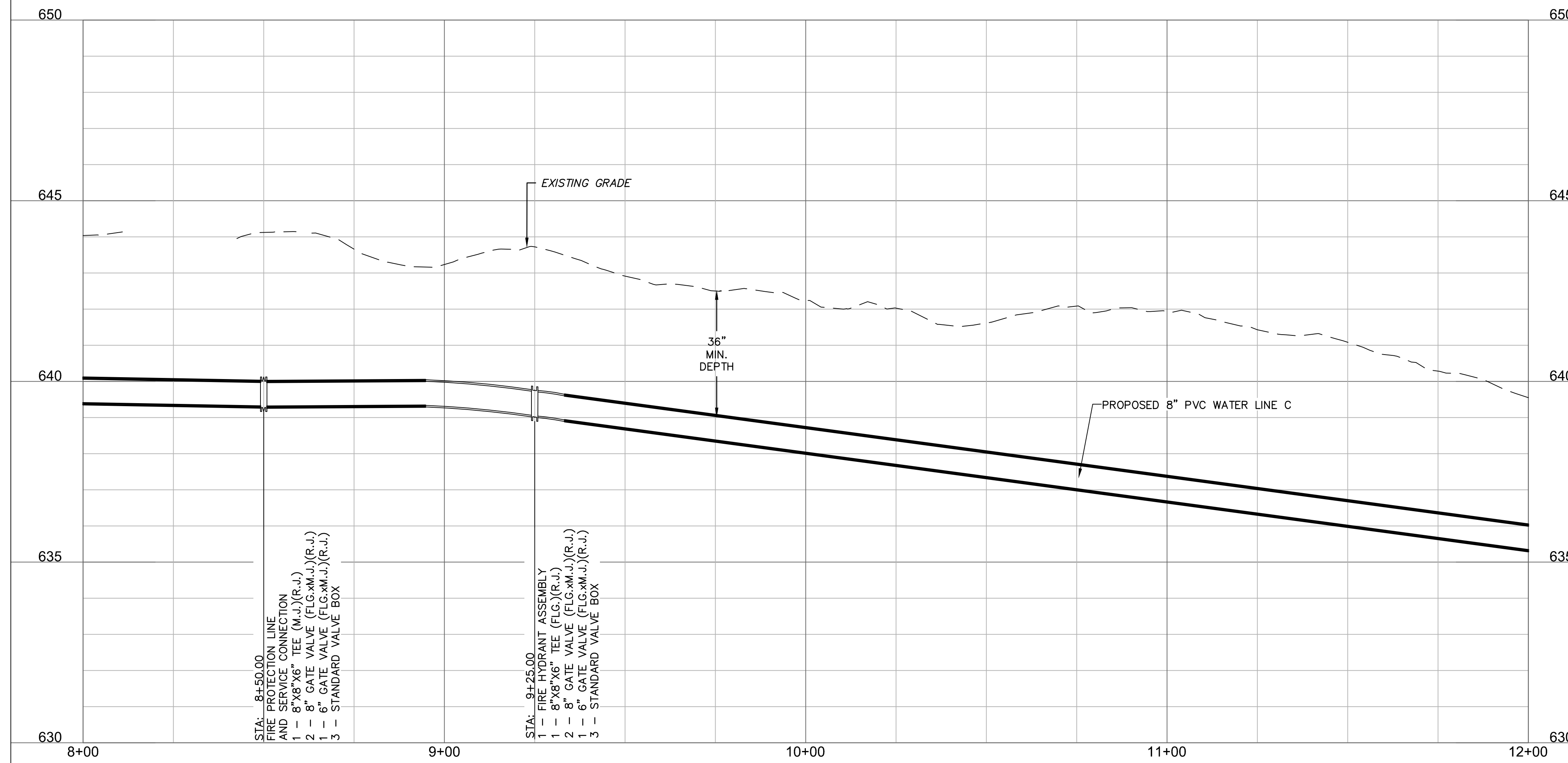
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C6.02



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WATER LINE C (8+00 - 12+00)



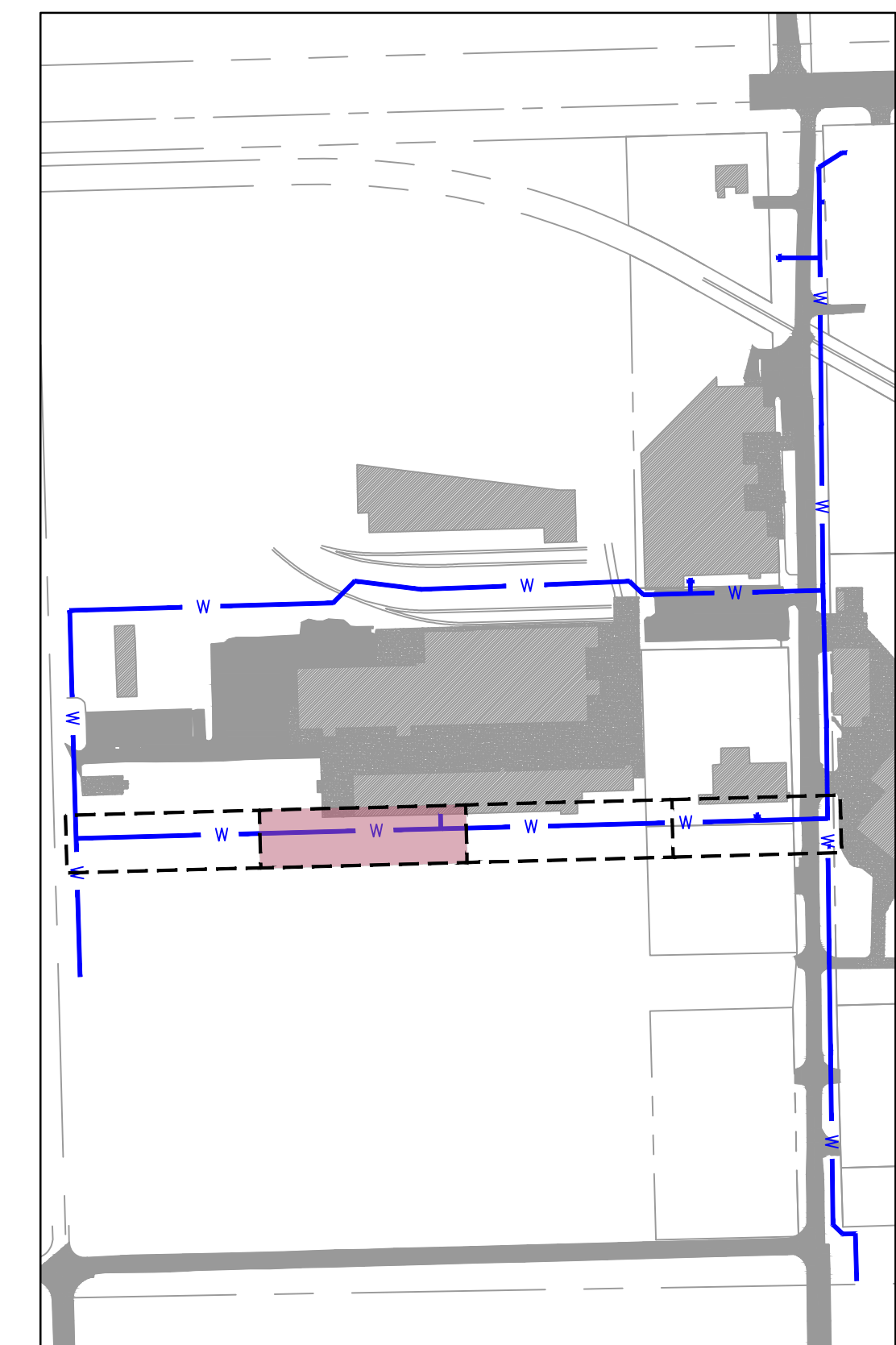
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

0' 10' 20' 40'  
SCALE IN FEET

**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- EXISTING EASEMENT
- EXISTING WATER LINE
- WATER LINE REMOVED FROM SERVICE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING NATURAL GAS LINE
- EXISTING COMMUNICATION LINE
- PROPOSED WATER LINE

- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BUILDING



NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.



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WATER LINE 'C' PLAN AND PROFILE 3

MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION  
PRYOR, OKLAHOMA

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

2023

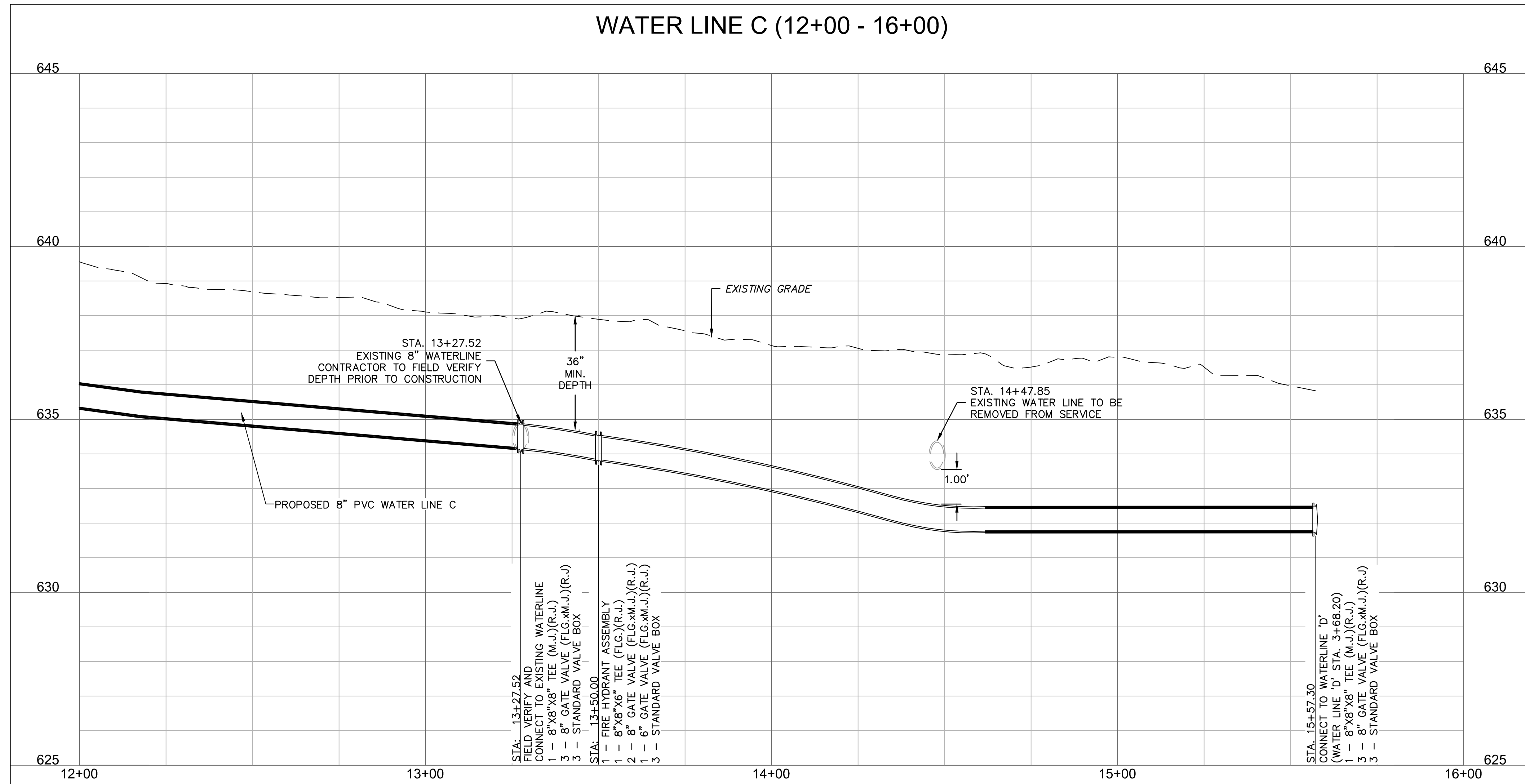
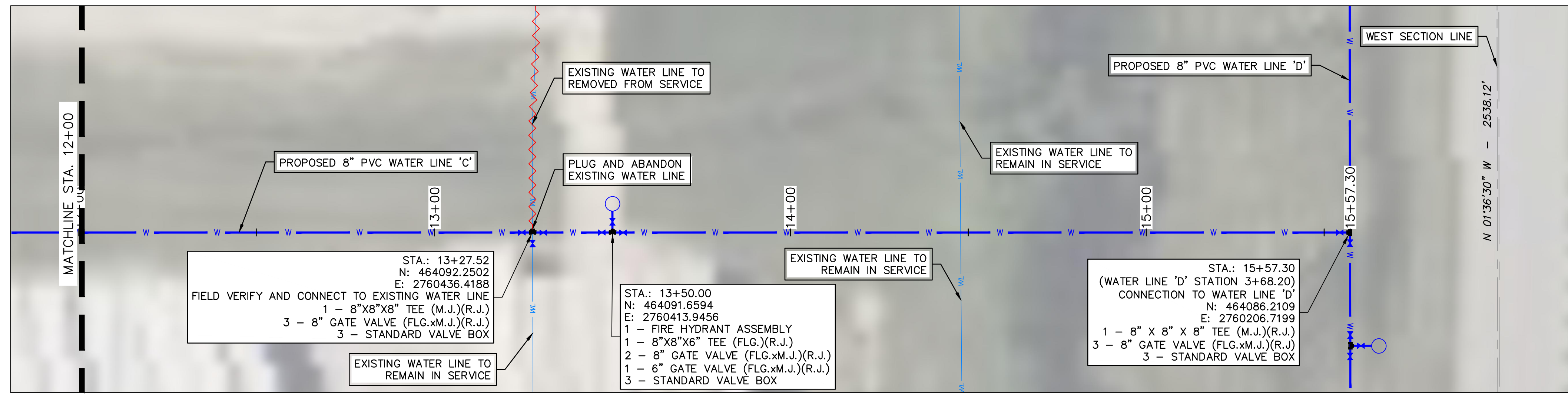
REVISIONS

drawn by: AMA  
checked by: JAT  
approved by: JEP  
QA/QC by: JEP  
project no.: 022-06912  
drawing no.:  
date: 13NOV2023

SHEET C6.03



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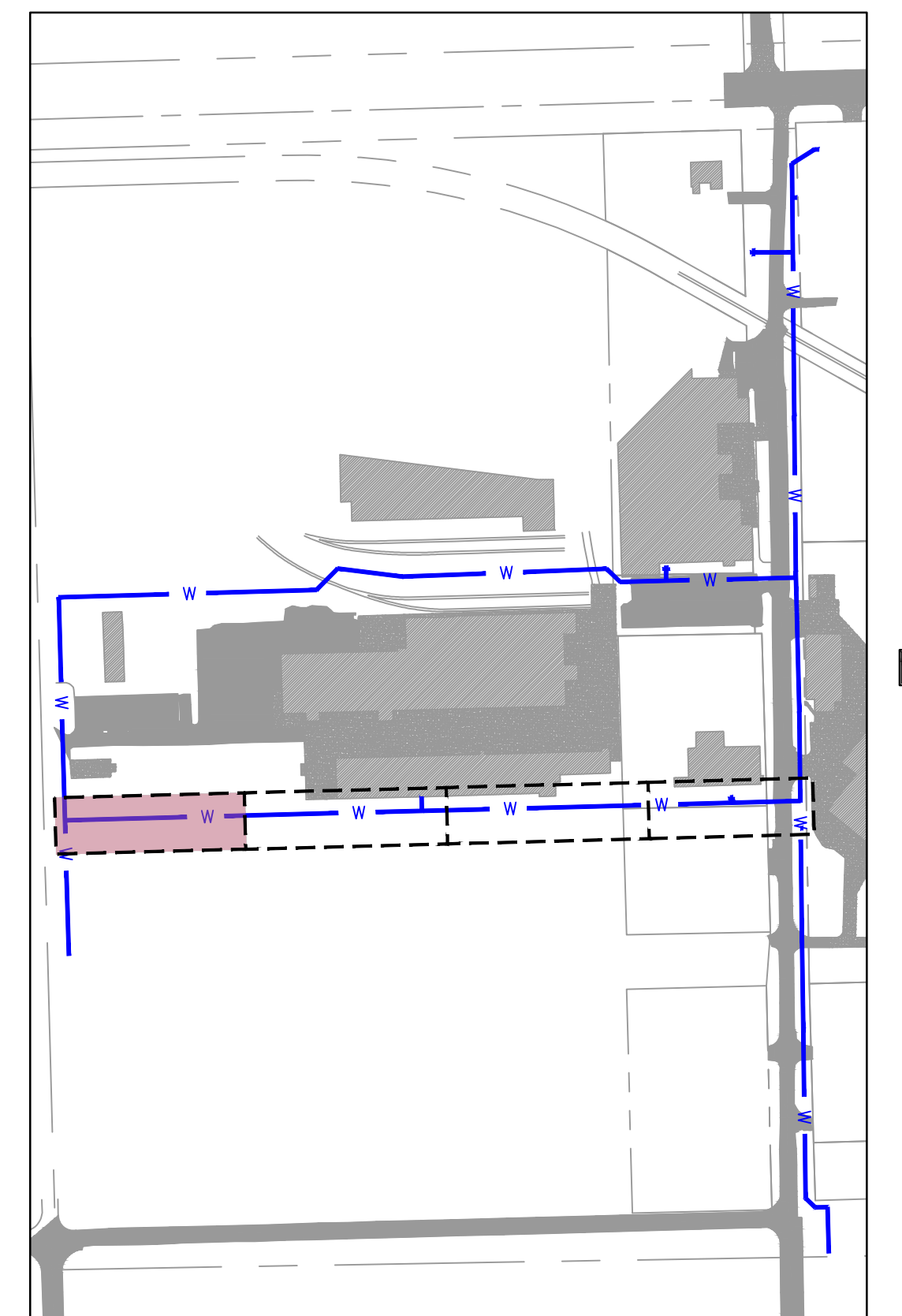


HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- - - EXISTING EASEMENT
- EXISTING WATER LINE
- WATER LINE REMOVED FROM SERVICE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING NATURAL GAS LINE
- EXISTING COMMUNICATION LINE
- PROPOSED WATER LINE

- [Pattern] EXISTING ASPHALT PAVEMENT
- [Pattern] EXISTING CONCRETE PAVEMENT
- [Pattern] EXISTING BUILDING



**KEYMAP**  
SCALE: 1"=300'

NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.



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**MidAmerica INDUSTRIAL PARK**

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE 'C' PLAN AND PROFILE 4

MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION

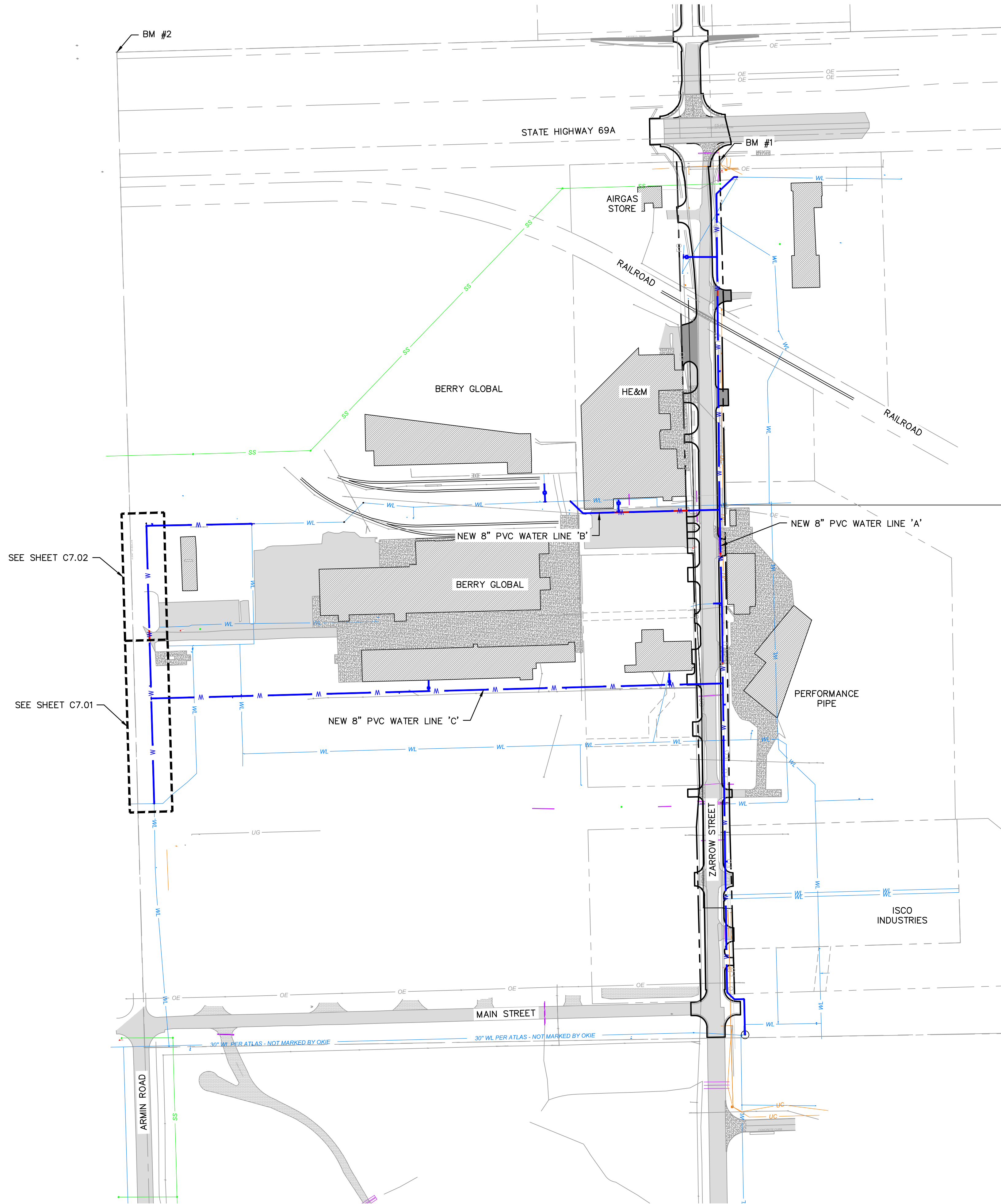
PRYOR, OKLAHOMA 2023

drawn by:	AMA
checked by:	JAT
approved by:	JEP
QA/QC by:	
project no.:	022-06912
date:	13NOV2023

SHEET C6.04



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**LEGEND**

	SECTION LINE
	RIGHT OF WAY
	ROADWAY CENTERLINE
	PROPERTY LOT LINE
	EDGE OF ROAD
	EXISTING EASEMENT
	EXISTING WATER LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING OVERHEAD ELECTRIC
	EXISTING NATURAL GAS LINE
	EXISTING COMMUNICATION LINE
	PROPOSED WATER LINE
	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE PAVEMENT
	EXISTING BUILDING

**GENERAL NOTES:**

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2. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY SERVICE CONNECTIONS WITH THE APPROPRIATE UTILITY COMPANY/OWNER.
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5. IF THE CONTRACTOR OVER-CUTS THE TRENCH, THE ADDITIONAL BACKFILL MATERIAL WILL BE CONSIDERED INCIDENTAL AND WILL BE AT CONTRACTORS EXPENSE.
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8. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL EROSION CONTROL DEVICES DAMAGED DUE TO CONSTRUCTION.

**SURVEY CONTROL DATA**

HORIZONTAL DATUM: OKLAHOMA STATE PLANE COORDINATE SYSTEM  
 NAD 83 (NORTH ZONE 3501) VERTICAL DATUM: NAVD 88

<b>BM #1</b> 3/8" IRON PIN N: 465457.1970 E: 2761655.8230 ELEV=613.19'
<b>BM #2</b> 1" PIPE WITH CONCRETE NW SECTION CORNER N: 465733.6910 E: 2760119.0240 ELEV=603.28'
<b>BM #3</b> 3/8" IRON PIN W/PINK CAP N: 461138.4020 E: 2761617.5240 ELEV=640.82'



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**MidAmerica INDUSTRIAL PARK**

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

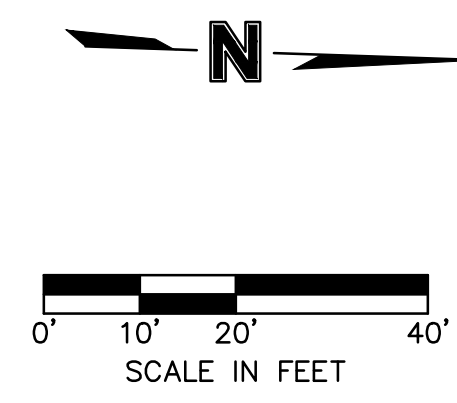
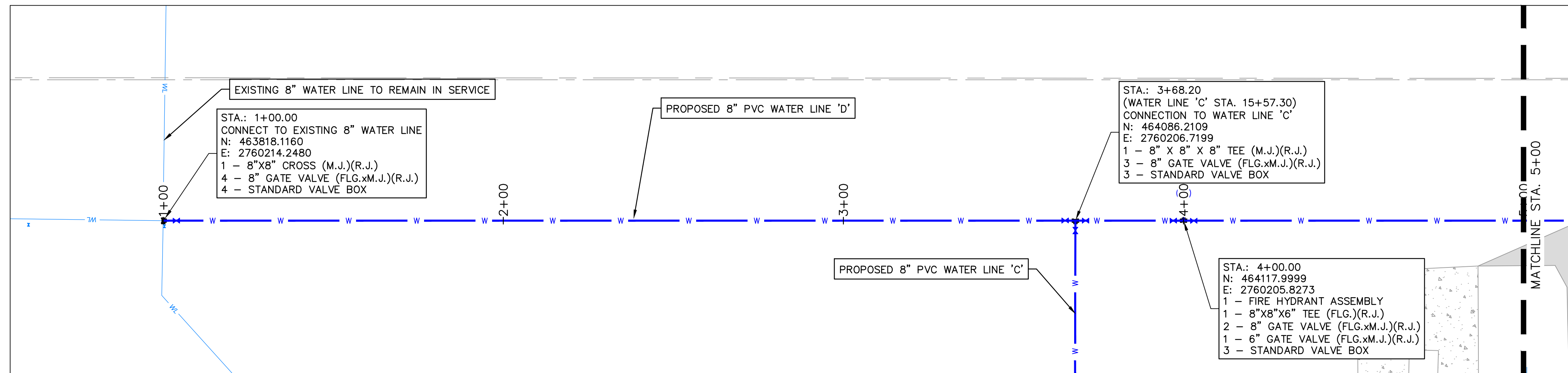
WATER LINE 'D' KEYMAP  
 MIDAMERICA INDUSTRIAL PARK  
 ZARROW ROAD WATER LINE RELOCATION  
 PRYOR, OKLAHOMA  
 2023

drawn by:	AMA
checked by:	JAT
approved by:	JEP
QA/QC by:	
project no.:	022-06912
drawing no.:	
date:	13NOV2023

SHEET  
C7.00



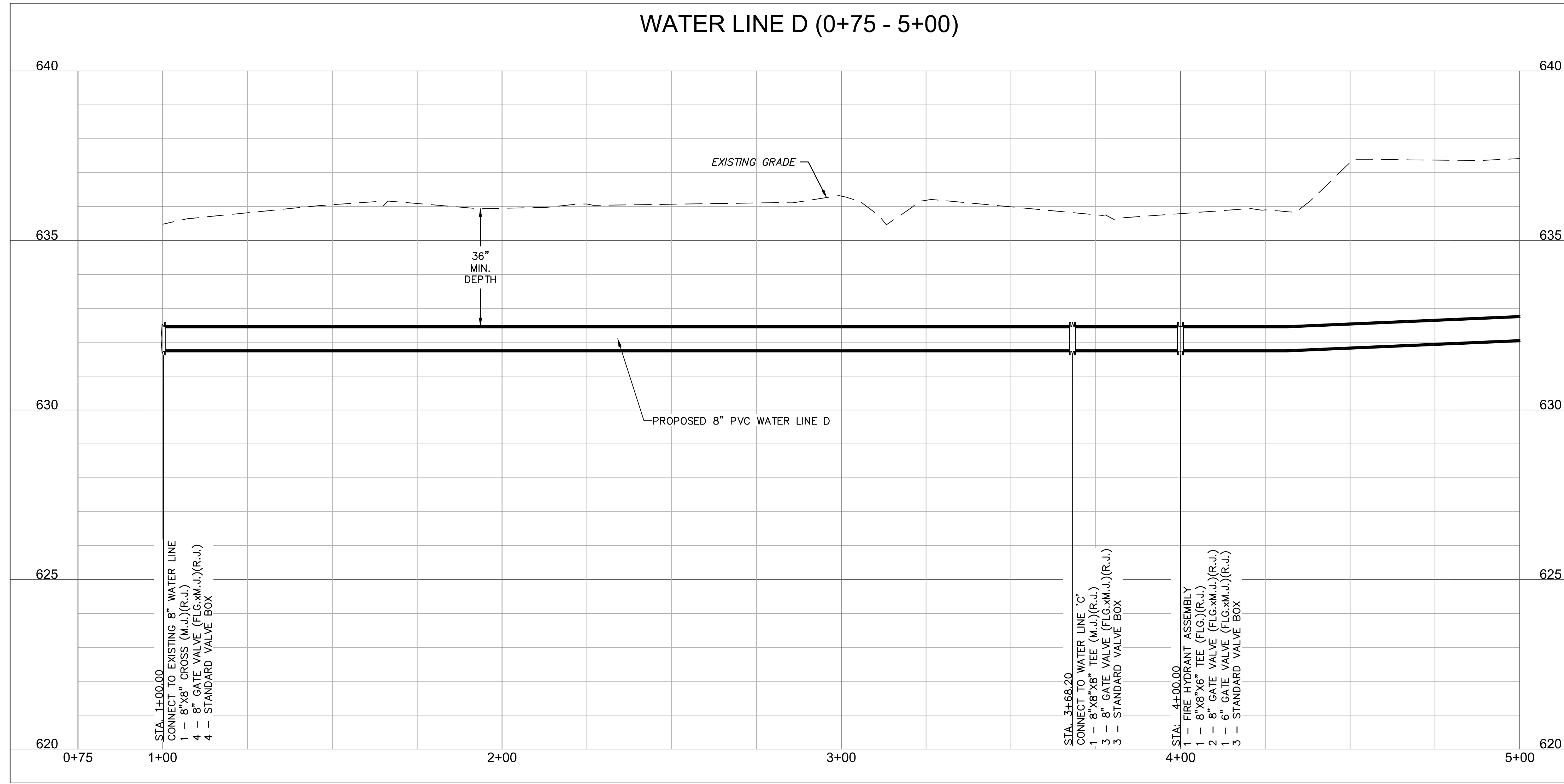
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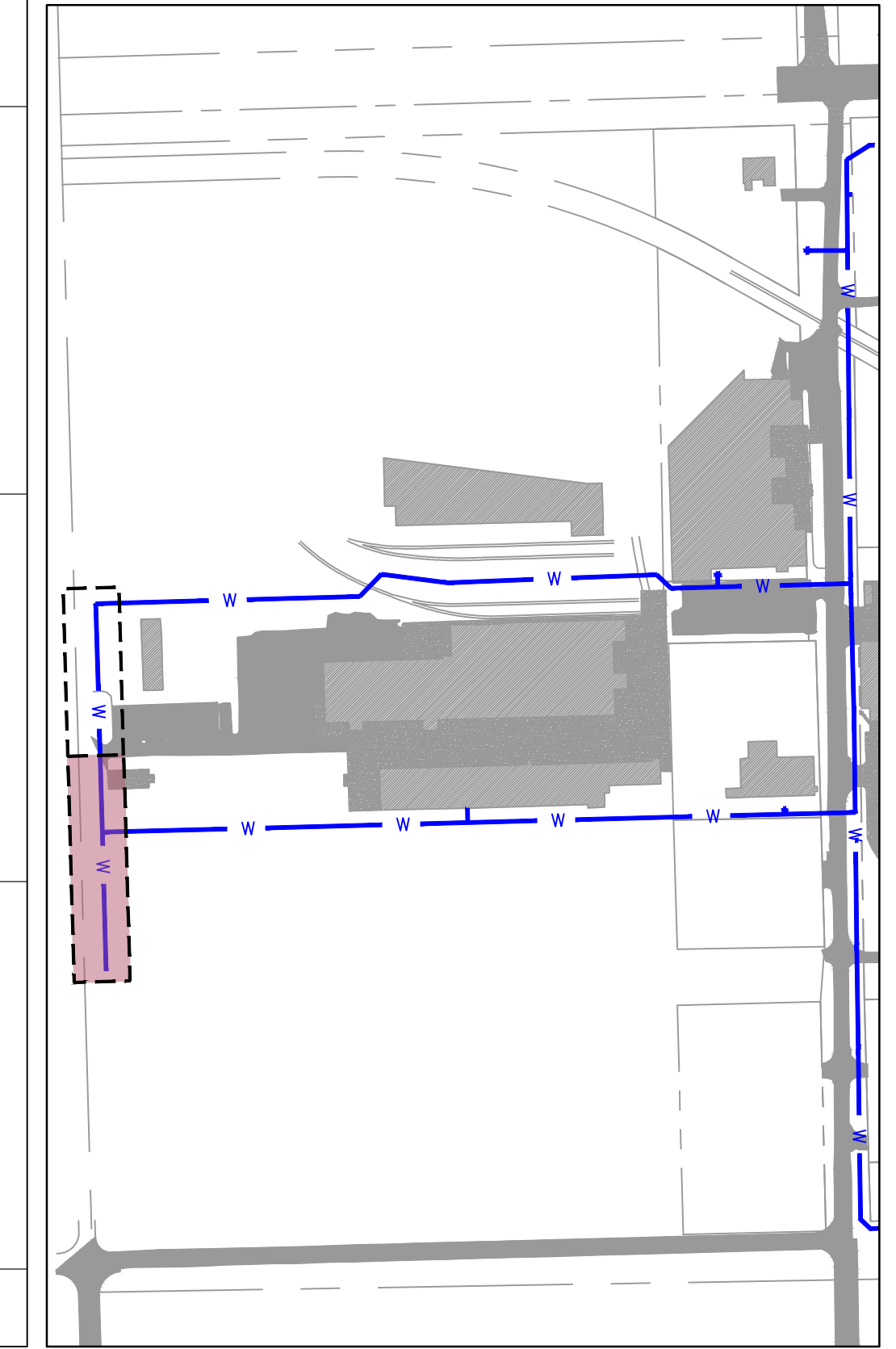
**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- EXISTING EASEMENT
- EXISTING WATER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING NATURAL GAS LINE
- EXISTING COMMUNICATION LINE
- PROPOSED WATER LINE

- [Pattern] EXISTING ASPHALT PAVEMENT
- [Pattern] EXISTING CONCRETE PAVEMENT
- [Pattern] EXISTING BUILDING



HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'



**KEYMAP**  
SCALE: 1"=300'

NOTE:  
CONTRACTOR TO VERIFY EXISTING WATER LINE PIPE LOCATIONS, MATERIALS AND DEPTH PRIOR TO CONSTRUCTION.



REV. NO.	DATE	REVISIONS DESCRIPTION	BY

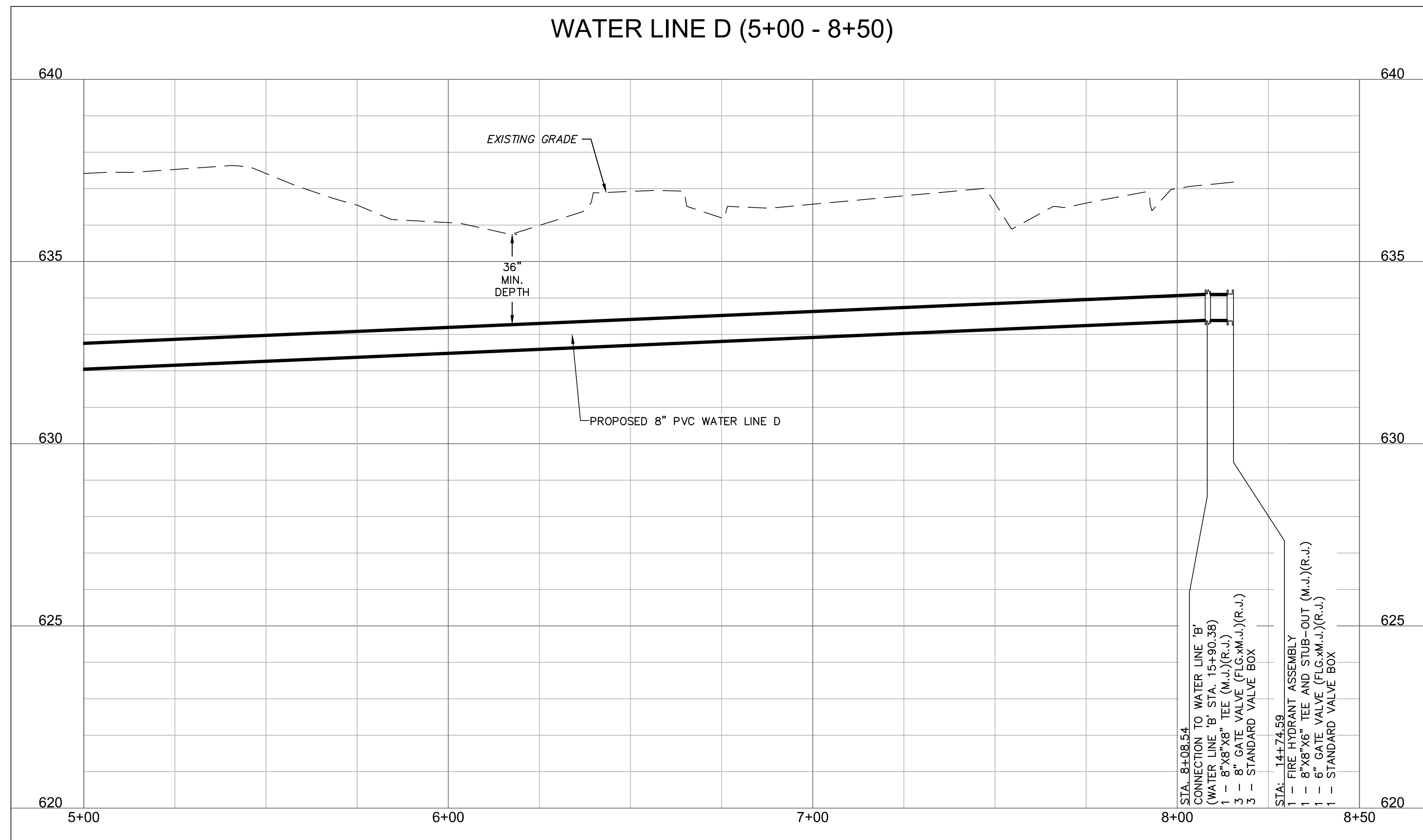
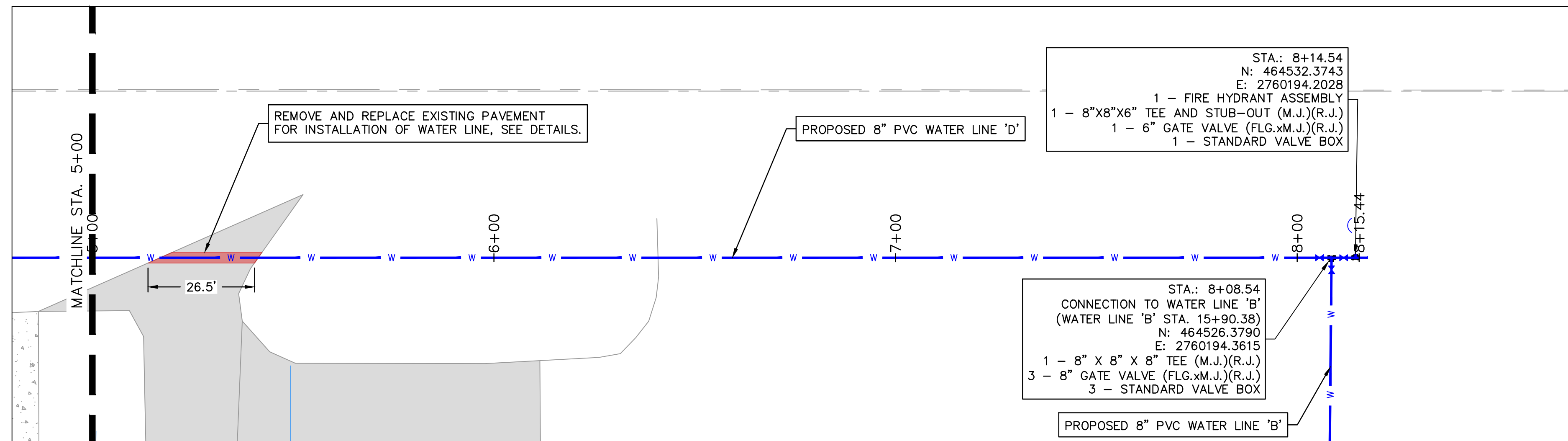
WATER LINE 'D' PLAN AND PROFILE 1	2023	REVISIONS
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION		
PRYOR, OKLAHOMA		

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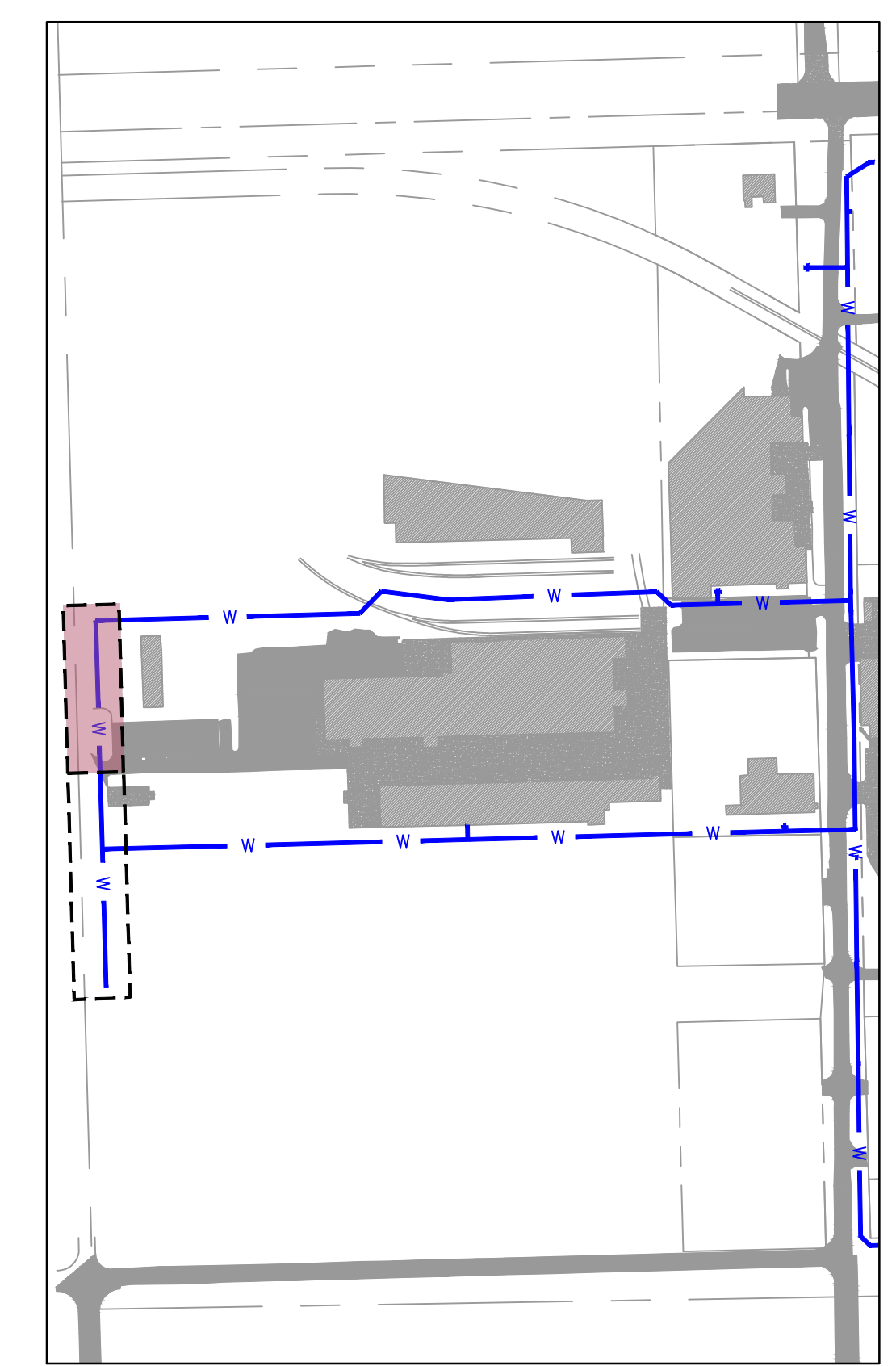


HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- EXISTING EASEMENT
- EXISTING WATER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING NATURAL GAS LINE
- EXISTING COMMUNICATION LINE
- PROPOSED WATER LINE

- [Pattern] EXISTING ASPHALT PAVEMENT
- [Pattern] EXISTING CONCRETE PAVEMENT
- [Pattern] EXISTING BUILDING



NOTE:  
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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE 'D' PLAN AND PROFILE 2

MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION

PRYOR, OKLAHOMA

2023

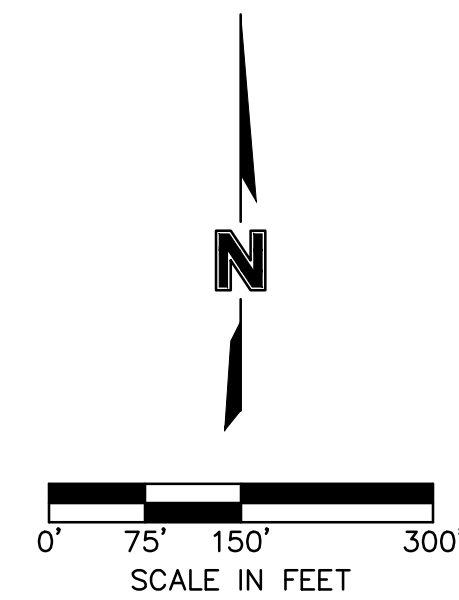
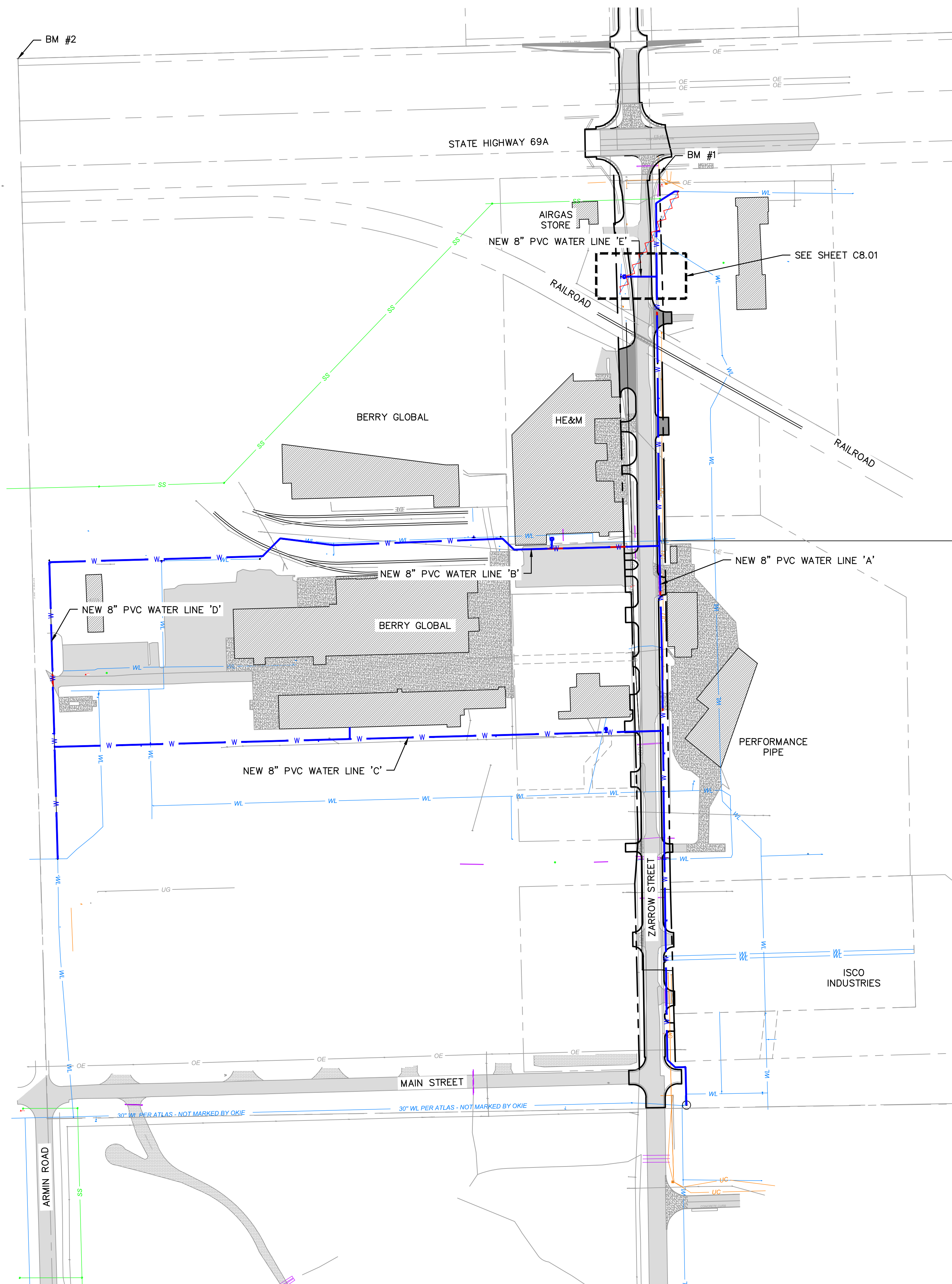
REVISIONS

drawn by: _____	AMA
checked by: _____	JAT
approved by: _____	JEP
QA/QC by: _____	
project no.: _____	022-06912
drawing no.: _____	
date: _____	13NOV2023

**SHEET**  
C7.02



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**LEGEND**

- SECTION LINE
- RIGHT OF WAY
- ROADWAY CENTERLINE
- PROPERTY LOT LINE
- EDGE OF ROAD
- - - - - EXISTING EASEMENT
- EXISTING WATER LINE
- WATER LINE REMOVED FROM SERVICE
- SS EXISTING SANITARY SEWER
- SD EXISTING STORM SEWER
- OE EXISTING OVERHEAD ELECTRIC
- UG EXISTING NATURAL GAS LINE
- UC EXISTING COMMUNICATION LINE
- W PROPOSED WATER LINE
- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BUILDING

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 NAD 83 (NORTH ZONE 3501) VERTICAL DATUM: NAVD 88

- BM #1**  
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 E: 2761655.8230  
 ELEV=613.19'
- BM #2**  
 1" PIPE WITH CONCRETE  
 NW SECTION CORNER  
 N: 465733.6910  
 E: 2760119.0240  
 ELEV=603.28'
- BM #3**  
 3/8" IRON PIN W/PINK CAP  
 N: 461138.4020  
 E: 2761617.5240  
 ELEV=640.82'



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**MidAmerica INDUSTRIAL PARK**

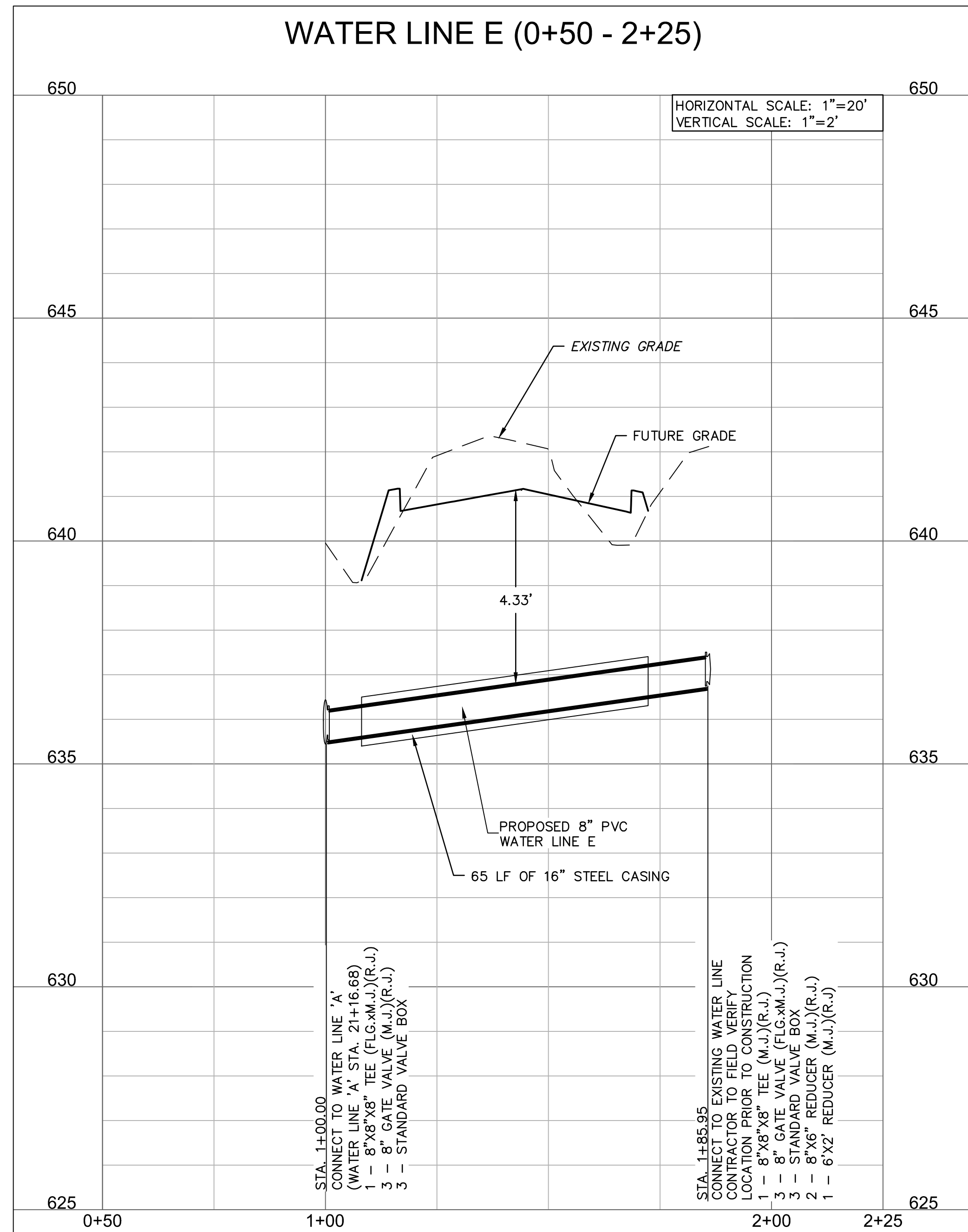
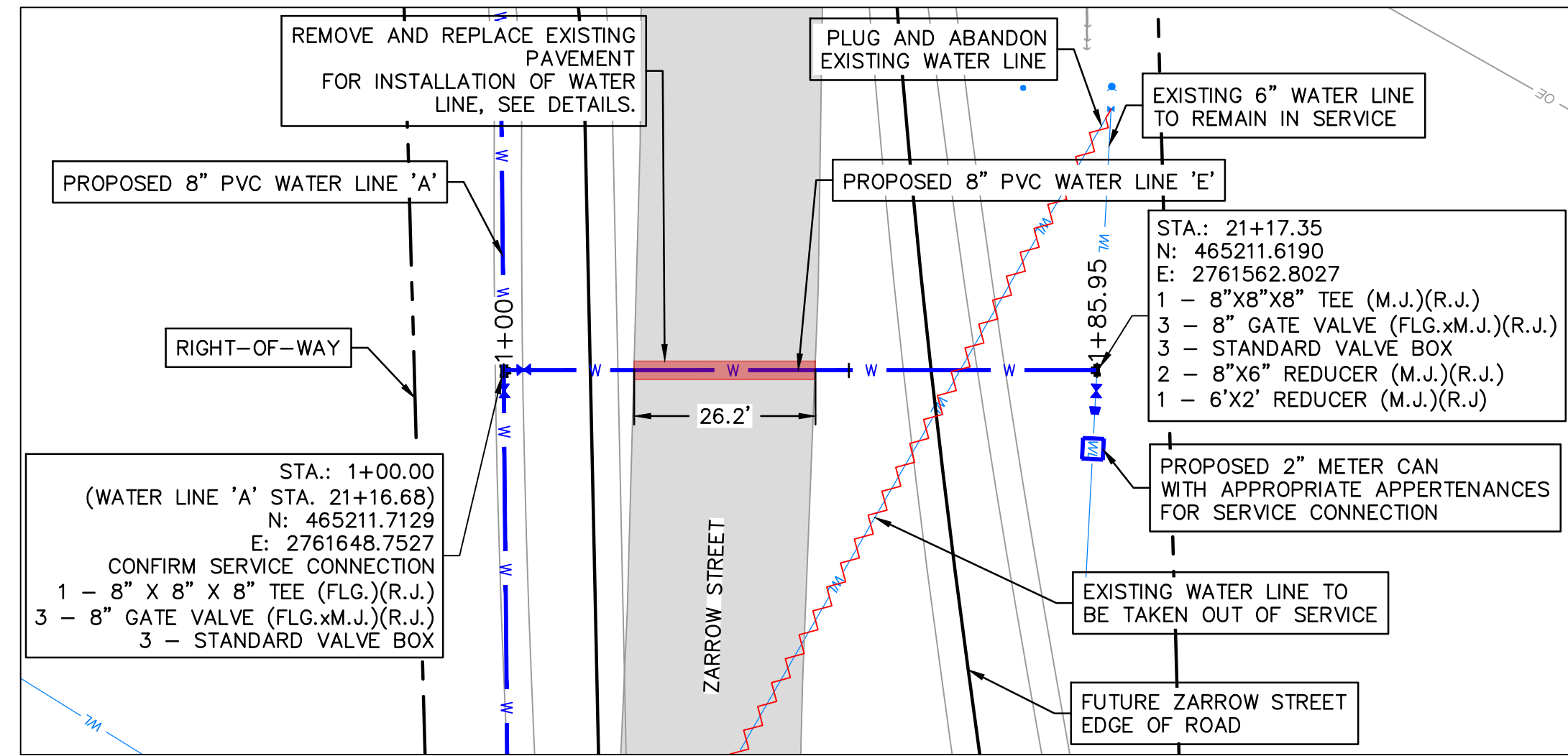
REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER LINE 'E' KEYMAP  
 MIDAMERICA INDUSTRIAL PARK  
 ZARROW ROAD WATER LINE RELOCATION  
 PRYOR, OKLAHOMA  
 2023

drawn by:	AMA
checked by:	JAT
approved by:	JEP
QA/QC by:	
project no.:	022-06912
drawing no.:	
date:	13NOV2023



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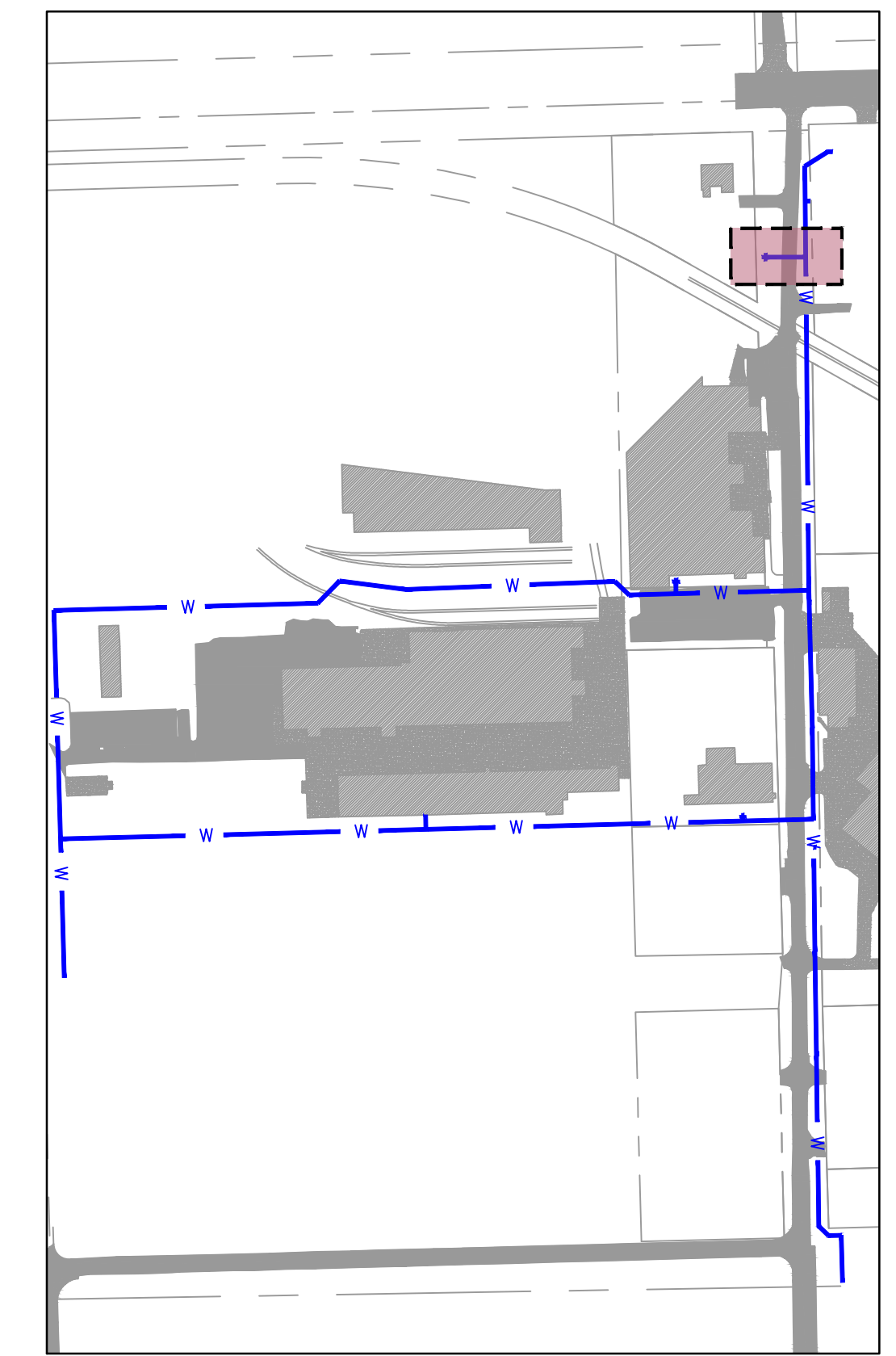
SCALE IN FEET

**LEGEND**

	SECTION LINE
	RIGHT OF WAY
	ROADWAY CENTERLINE
	PROPERTY LOT LINE
	EDGE OF ROAD
	EXISTING EASEMENT
	EXISTING WATER LINE
	WATER LINE REMOVED FROM SERVICE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING OVERHEAD ELECTRIC
	EXISTING NATURAL GAS LINE
	EXISTING COMMUNICATION LINE
	PROPOSED WATER LINE

	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE PAVEMENT
	EXISTING BUILDING



NOTE:  
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MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION  
PRYOR, OKLAHOMA

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

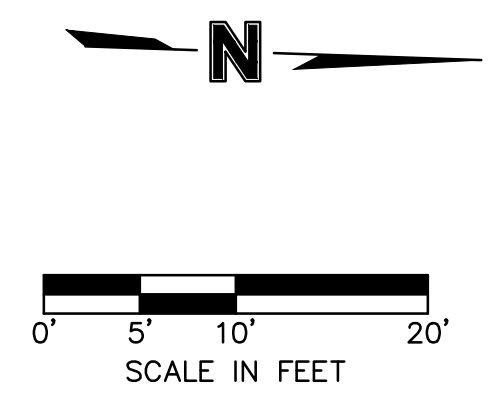
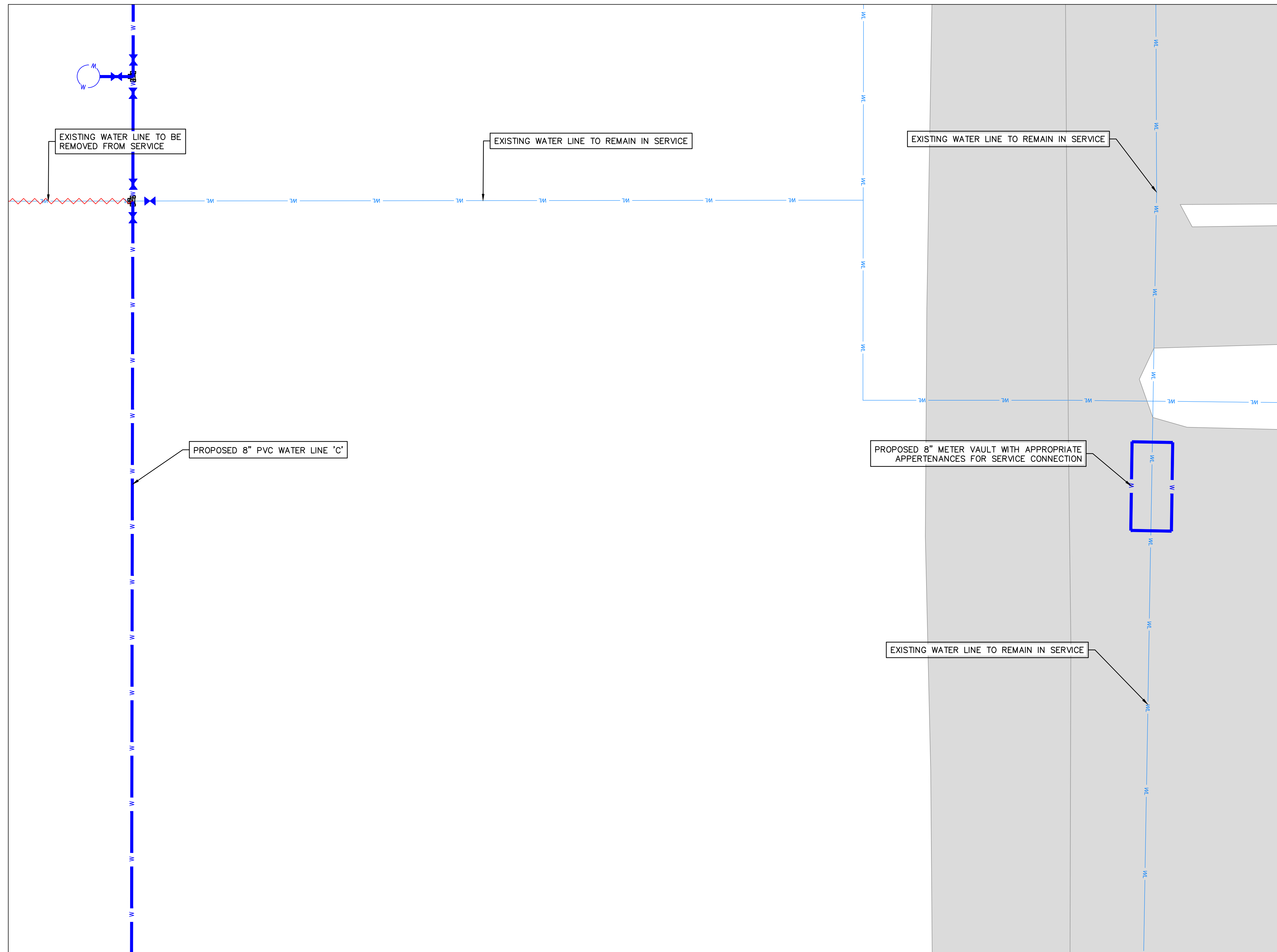
WATER LINE 'E' PLAN AND PROFILE  
STA. 0+50 - 2+25

2023

drawn by: \_\_\_\_\_ AMA  
checked by: \_\_\_\_\_ JAT  
approved by: \_\_\_\_\_ JEP  
QA/QC by: \_\_\_\_\_  
project no.: 022-06912  
drawing no.: \_\_\_\_\_  
date: 13NOV2023

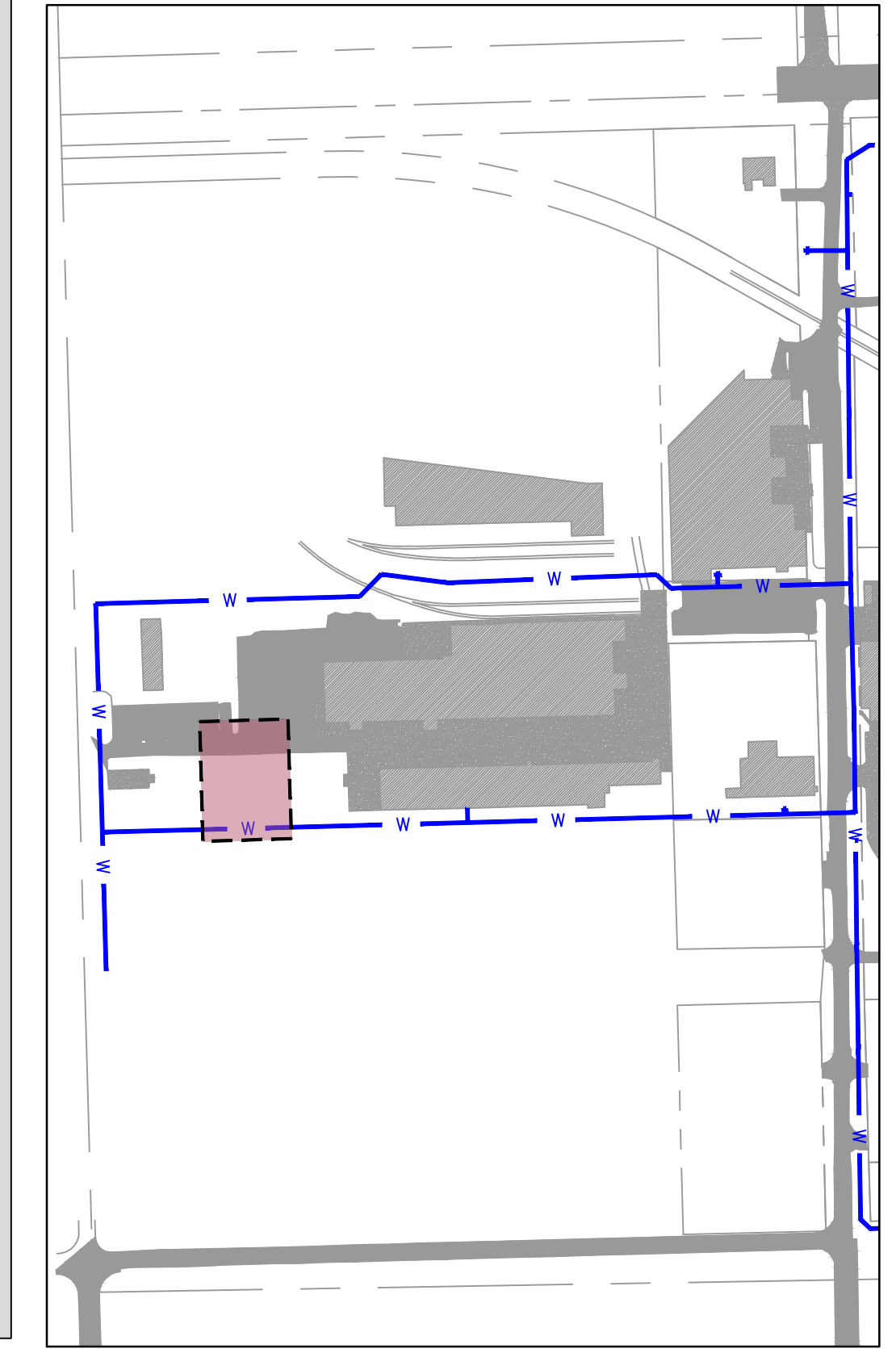
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C8.01





**LEGEND**

	SECTION LINE
	RIGHT OF WAY
	ROADWAY CENTERLINE
	PROPERTY LOT LINE
	EDGE OF ROAD
	EXISTING EASEMENT
	EXISTING WATER LINE
	WATER LINE REMOVED FROM SERVICE
	EXISTING SANITARY SEWER
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LINE PIPE LOCATIONS, MATERIALS AND  
DEPTH PRIOR TO CONSTRUCTION.



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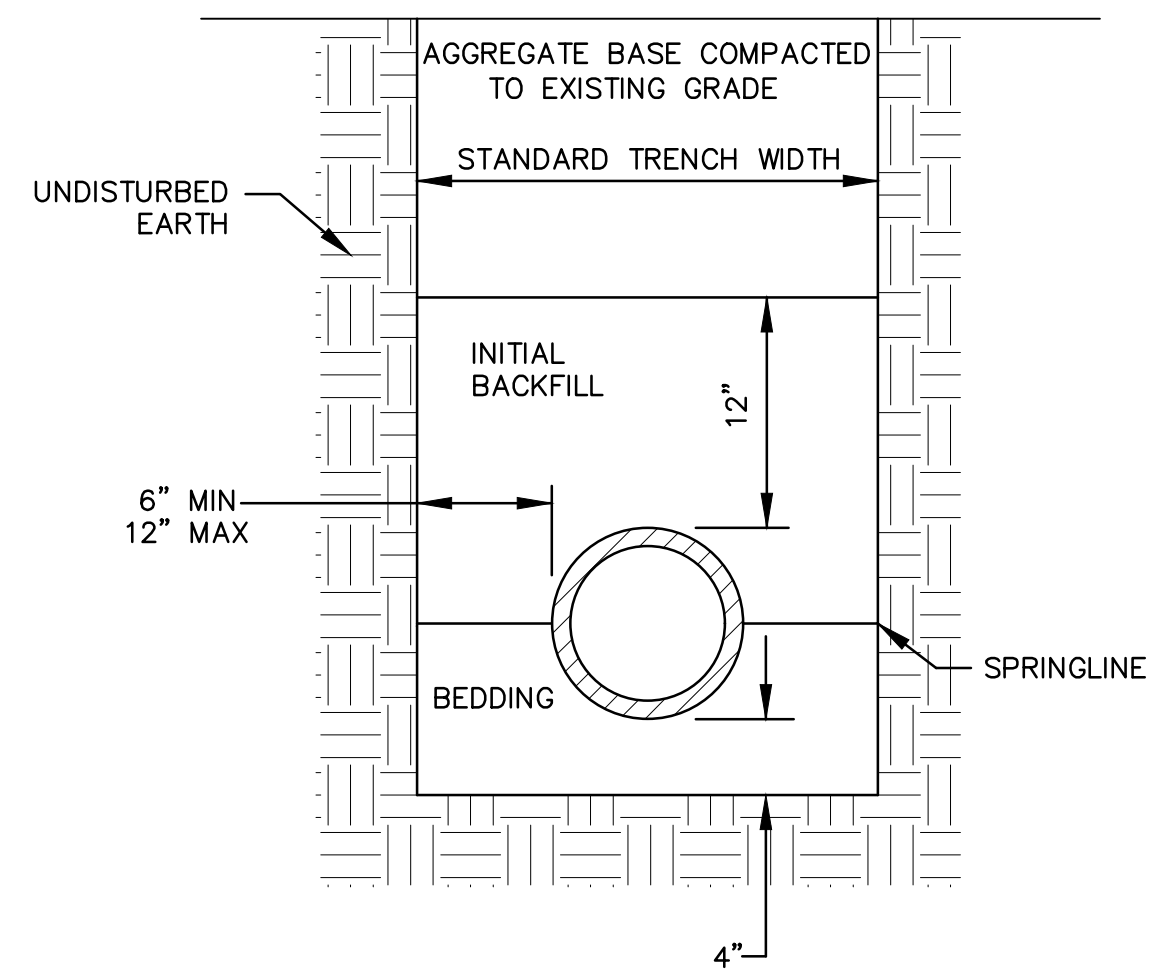
ADDITIONAL 8-INCH METER VAULT	2023	REVISIONS
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION		
PRYOR, OKLAHOMA		

drawn by: AMA
checked by: JAT
approved by: JEP
QA/QC by:
project no.: 022-06912
drawing no.:
date: 13NOV2023

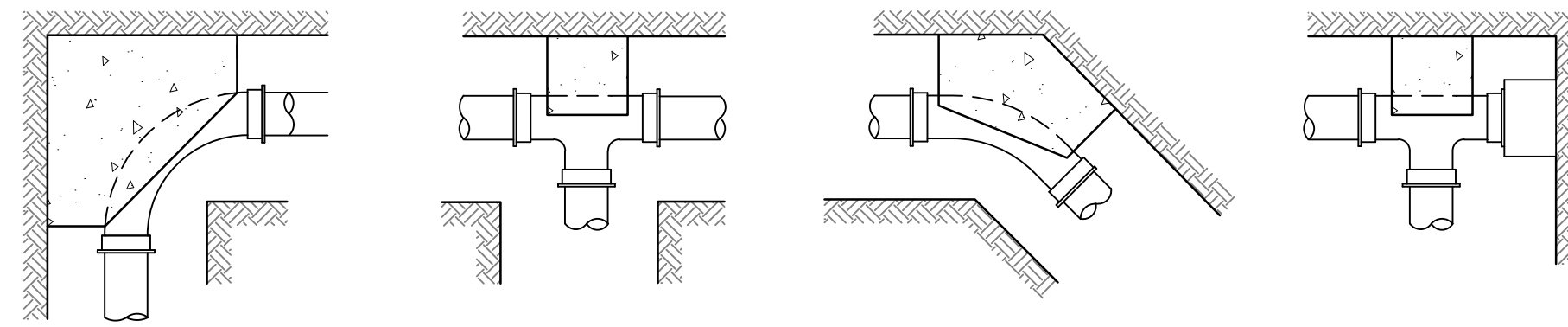
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C9.00



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1 PIPE BEDDING DETAIL  
SCALE: NTS



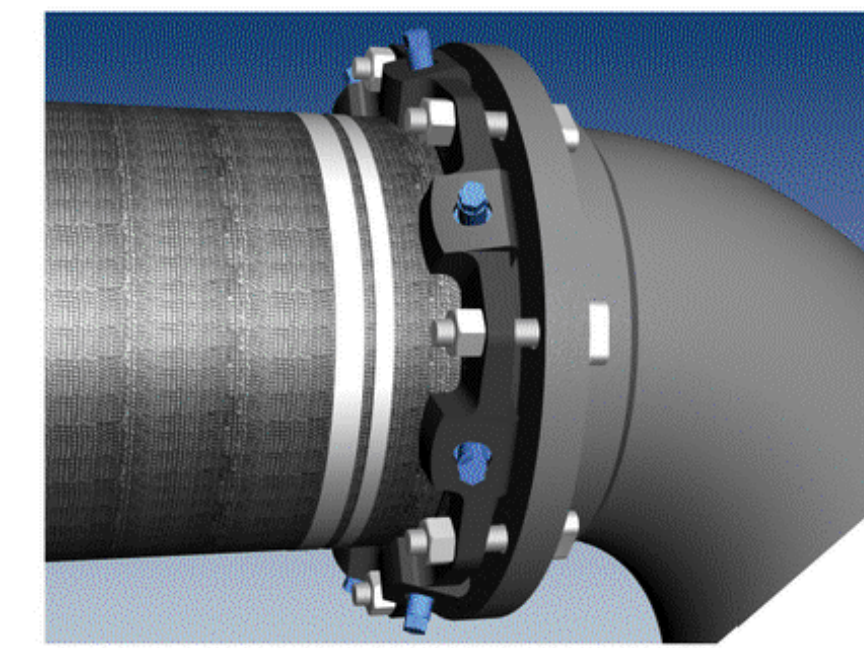
2 THRUST BLOCKS  
SCALE: NTS

PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	11 1/4° OR 22 1/2° BEND
4"	1.0	1.0	1.0	1.0
6"	1.5	1.0	1.0	1.0
8"	2.5	2.0	2.0	1.0
10"	3.5	3.0	3.0	1.5
12"	5.0	4.0	4.0	2.0
14"	7.0	5.5	5.5	2.5
16"	9.0	7.0	7.0	3.5
18"	12.0	9.0	9.0	4.5
20"	14.5	11.0	11.0	5.5
24"	21.0	16.0	16.0	8.0



# MEGALUG<sup>®</sup> Series 1100

Mechanical Joint Restraint for Ductile Iron



### Features and Applications:

- Sizes 3 inch through 54 inch
- Constructed of ASTM A536 Ductile Iron
- Torque Limiting Twist-Off Nuts
- MEGA-BOND<sup>®</sup> Restraint Coating System  
For more information on MEGA-BOND, refer to www.ebaa.com
- The Mechanical Joint Follower Gland is incorporated into the restraint
- Heavy Duty thick wall design

Nominal Pipe Size	Series Number	Shipping Weights	Post Assembly Deflection	Pressure Rating (PSI)
3	1103	6.1	3°	350
4	1104	7.7	3°	350
6	1106	11.9	3°	350
8	1108	14.8	3°	350
10	1110	23.9	3°	350
12	1112	31.2	3°	350
14	1114	48.5	2°	350
16	1116	56.4	2°	350
18	1118	63.1	1½°	250
20	1120	72.3	1½°	250
24	1124	133.1	1½°	250
30	1130	194.6	1°	250
36	1136	234.0	1°	250
42	1142	536.0	1°	250
48	1148	653.0	1°	250
54	1154	700.2	0.5°	200



U.S. Patent Nos.  
4092036, 4627774, 4779900, 4896903, 5544922

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REVISIONS

2023

STANDARD DETAILS SHEET

MIDAMERICA INDUSTRIAL PARK  
ZARROW ROAD WATER LINE RELOCATION

PRYOR, OKLAHOMA

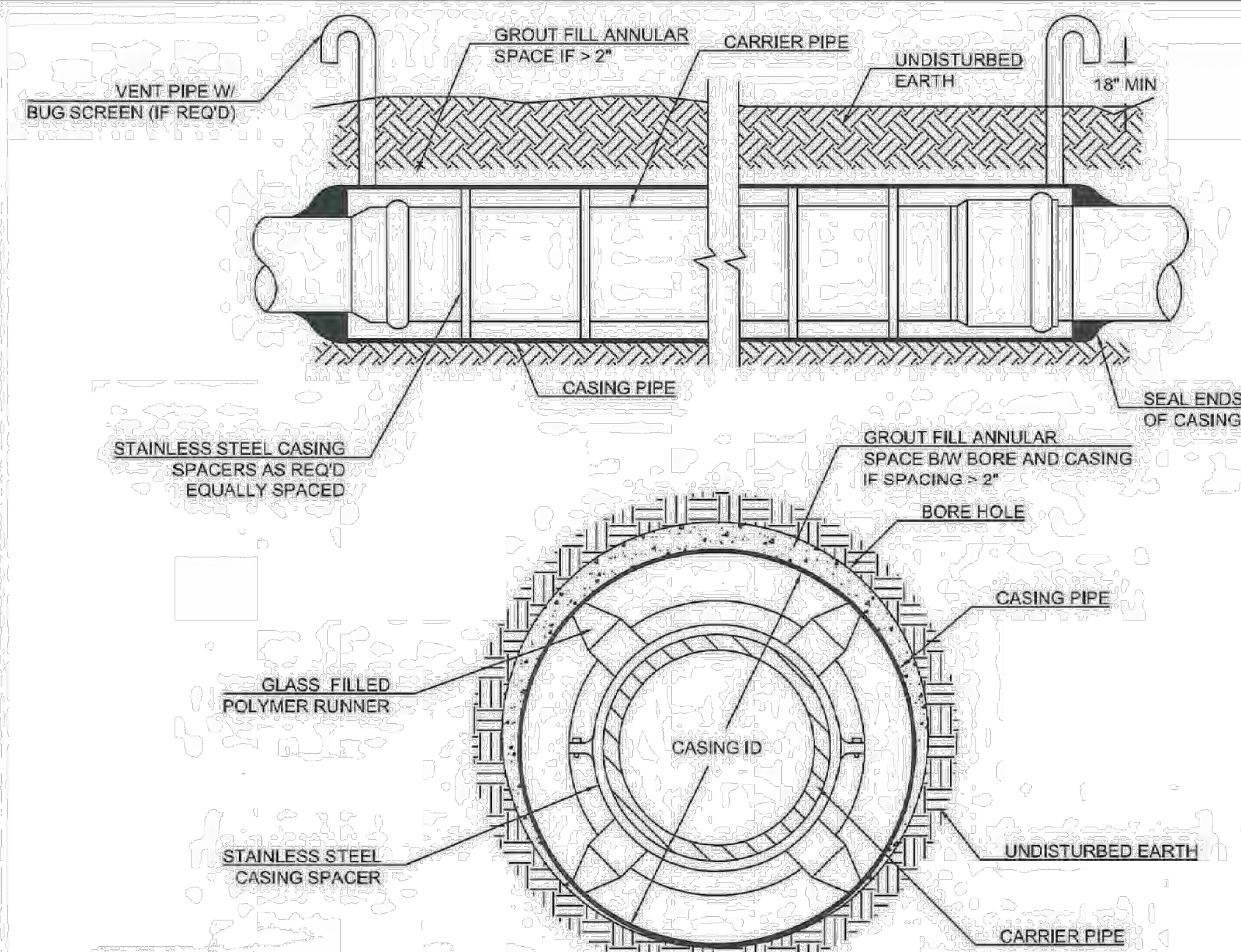
drawn by: \_\_\_\_\_  
checked by: \_\_\_\_\_  
approved by: \_\_\_\_\_  
QA/QC by: \_\_\_\_\_  
project no.: 022-06912  
date: 13NOV2023

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## WATER STANDARD DETAIL



DATE: 06/13/14  
APPROVED BY: ERIC J. WENGER, P.E., CITY ENGINEER  
DATE: 8/11/14  
DATE: 8/11/14  
W-18  
1 OF 2

## WATER STANDARD DETAIL

NOTE:  
**SEALED CASING ENDS** - NEOPRENE RUBBER END SEALS SECURED WITH 316 STAINLESS STEEL BANDING REQUIRED.  
**PLUGGED PIPE ENDS** - BOTH ENDS OF THE CASING PIPE SHALL BE PLUGGED WITH A NON-SHRINK GROUT OR CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI OR GROUTED MASONRY. EACH PLUG SHALL BE A MINIMUM LENGTH OF 18". GROUTING PRESSURE SHALL NOT EXCEED THE PIPE MANUFACTURER'S RECOMMENDATIONS.  
**VENT PIPES** - VENT PIPES SHALL BE INSTALLED ON BOTH ENDS OF CASING FOR BORINGS THAT CROSS ODOT ROADS AND RAILROAD CROSSINGS. VENTS SHALL BE 2" DIA FOR CASING SIZES ≤ 30-IN. VENTS SHALL BE 4" DIA FOR CASING SIZES > 30-IN. VENTS SHALL HAVE A 90 DEG BEND TO POINT TOWARDS THE GROUND AND SHALL BE PAINTED INTERNATIONAL ORANGE. BUG SCREEN SHALL BE INCLUDED ON THE OPEN END OF VENT PIPE.  
**CASING PIPE SIZE** - STEEL CASING PIPE SHALL HAVE THE FOLLOWING MINIMUM DIAMETERS: SEE TABLE 1  
**CASING PIPE THICKNESS** - STEEL CASING PIPE SHALL HAVE THE FOLLOWING MINIMUM THICKNESSES), IN INCHES. FOR THE INDICATED MAXIMUM DEPTH OF COVER(S), IN FEET: SEE TABLE 2  
**CASING MATERIAL** - STEEL CASING PIPE SHALL CONFORM WITH ASTM A-139, STANDARD SPECIFICATION FOR ELECTRIC-FUSION (ARC) - WELDED STEEL PIPE (NPS4 AND OVER). THE STEEL MATERIAL SHALL BE NEW, SMOOTH WALL, CARBON STEEL, GRADE B, WITH A MINIMUM TENSILE STRENGTH AND MINIMUM THIRTY-FIVE-THOUSAND (35,000 PSI) POUNDS PER SQUARE INCH YIELD STRENGTH

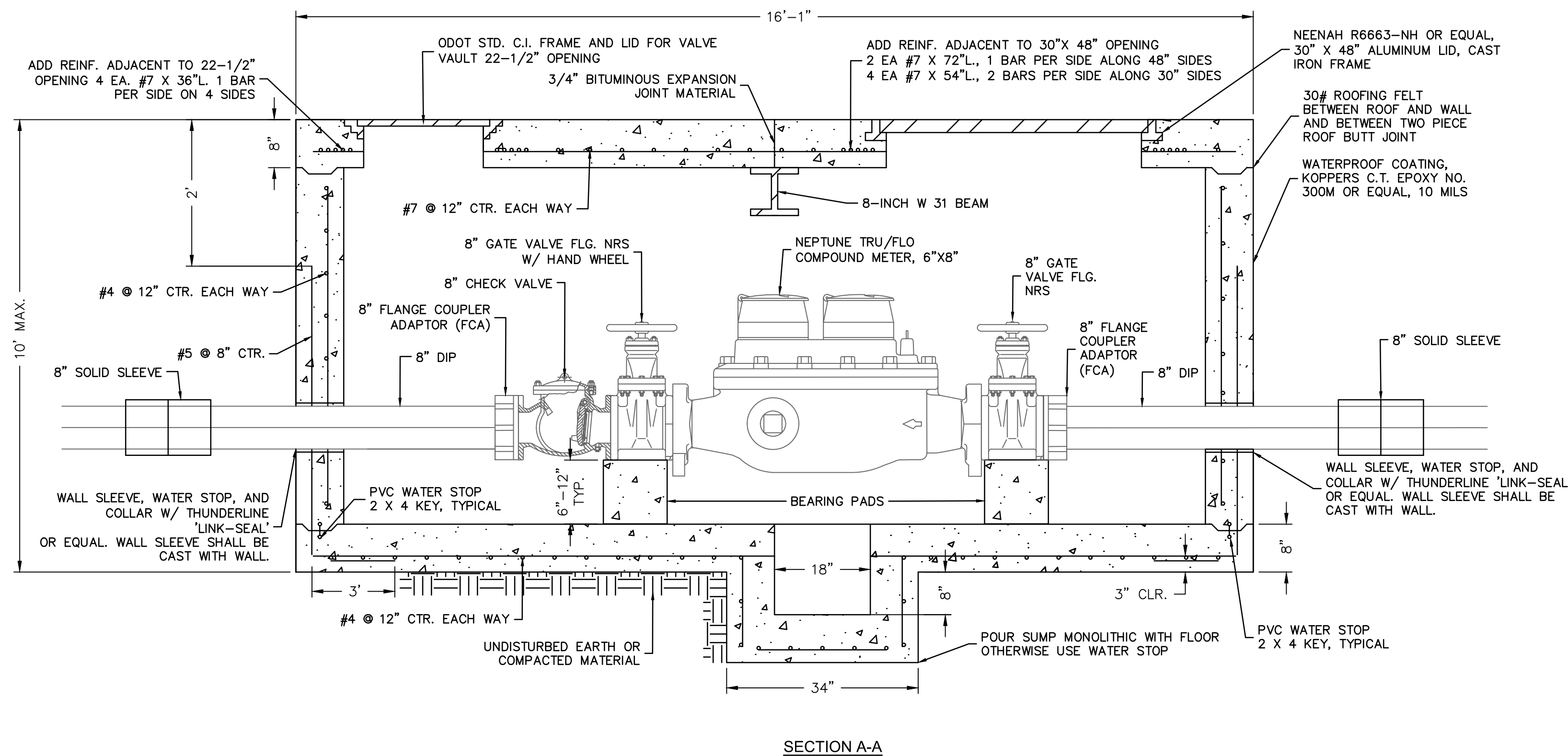
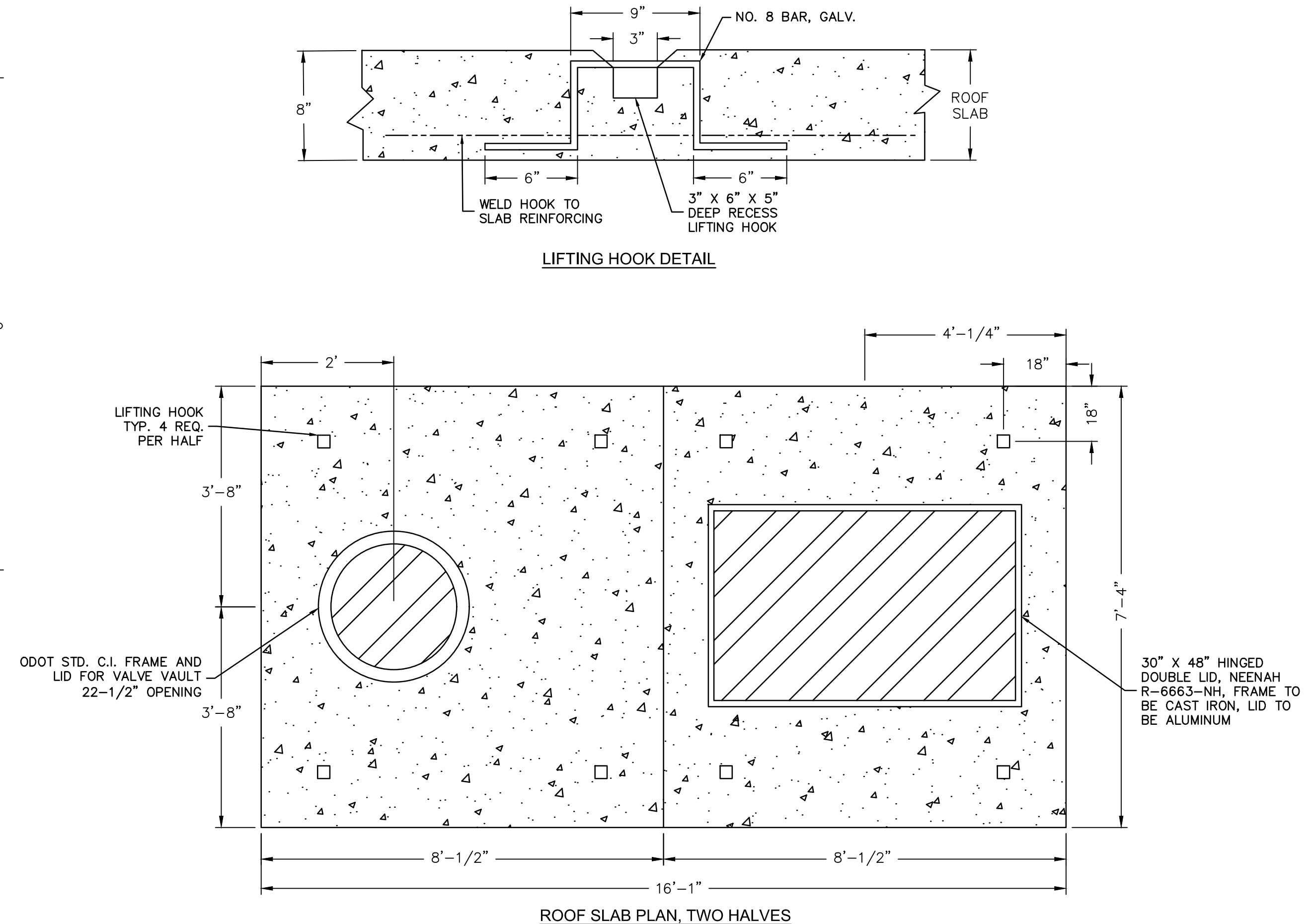
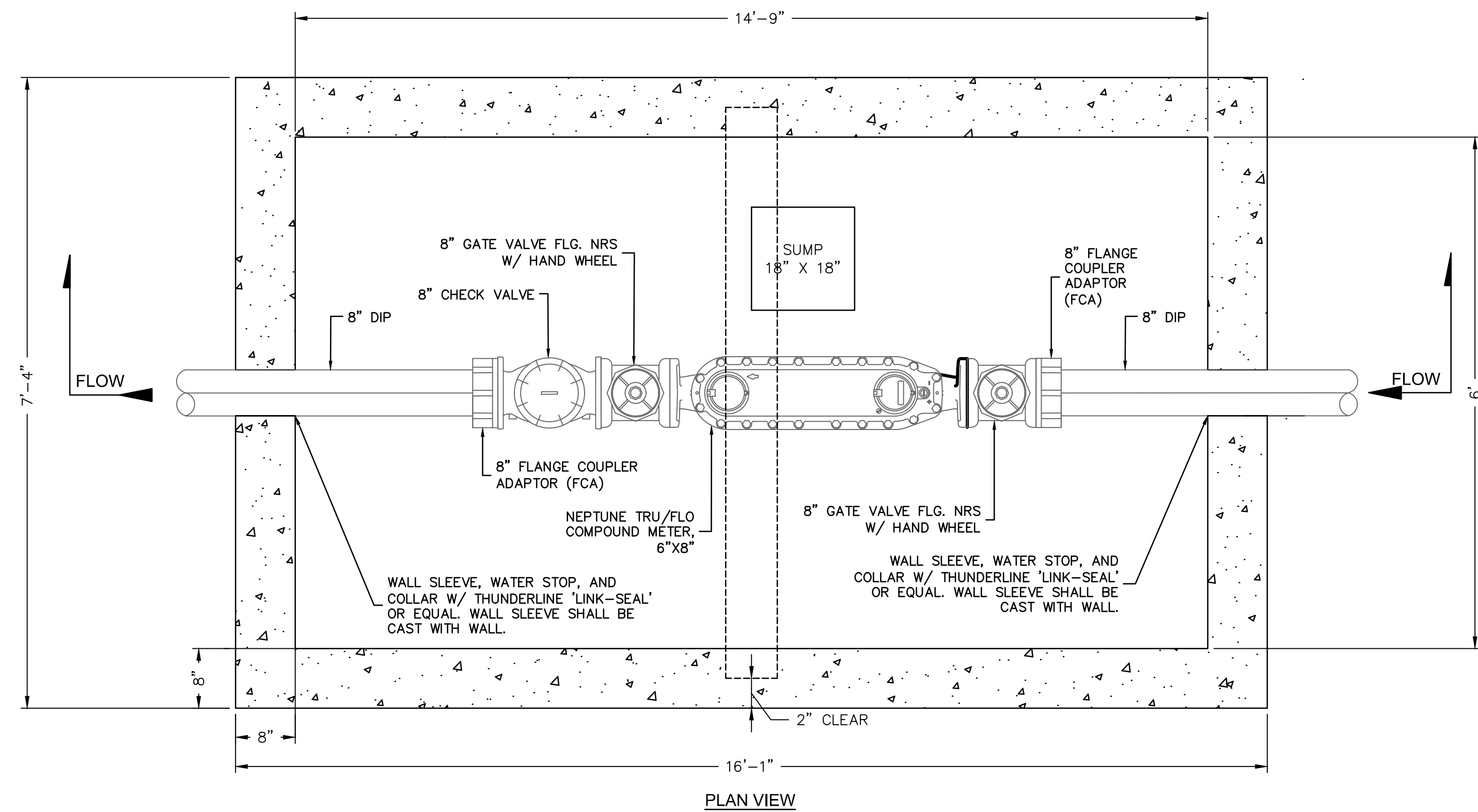
PIPE NOMINAL SIZE (INCHES)	SUGGESTED CASING PIPE INSIDE DIAMETER (INCHES)	PIPE NOMINAL SIZE (INCHES)	SUGGESTED CASING PIPE INSIDE DIAMETER (INCHES)
4	8 TO 10	20	28 TO 30
6	10 TO 12	24	31 TO 33
8	14 TO 16	30	36 TO 42
10	16 TO 18	36	42 TO 48
12	18 TO 20	42	54 TO 60
16	20 TO 22	48	60 TO 66
18	24 TO 26		

Outside Diameter (Inches)	Under Highway		Under Railroad		Maximum Cover (Feet)
	Wall Thickness (Inches)	Maximum Cover (Feet)	BNSF (Uncoated) Wall Thickness (Inches)	Union Pacific Wall Thickness (Inches)	
≤ 12	0.1880	30	0.2500	0.2500	30
16	0.2500	30	0.3125	0.3125	30
18	0.2500	30	0.3125	0.3125	30
20	0.2500	30	0.3750	0.3750	30
24	0.2500	30	0.4375	0.4375	30
30	0.3220	30	0.5000	0.5000	30
36	0.3750	30	0.5625	0.5625	30
42	0.3750	25	0.5625	0.5625	30
48	0.4380	25	0.6250	0.6250	25

DATE: 06/13/14  
APPROVED BY: ERIC J. WENGER, P.E., CITY ENGINEER  
DATE: 8/11/14  
DATE: 8/11/14  
W-19  
2 OF 2



DWG: F:\2022\06501-07000\022-06912-40-Design\AutoCAD\Final Plans\Sheets\GNVC\C\_DTL01\_02206912.dwg USER: jpace



- NOTE:**
1. NOTICE SHALL BE GIVEN TO THE OOWA FACILITIES MANAGER 48 HOURS IN ADVANCE SO THAT A OOWA MAY WITNESS THE POURING OF THE VAULT AND INSPECT THE MATERIALS. A REPORT SHALL BE FURNISHED ON THE 7 DAY AND 28 DAY STRENGTH OF THE CONCRETE WHICH SHALL BE AT LEAST 4000 PSI. REINFORCING STEEL SHALL BE GR. 60.
  2. WHERE RESTRAINED JOINTS ARE REQUIRED, THEY SHALL EBBA MEGALUG SERIES 1100 OR EQUAL.
  3. METER AND FITTINGS FROM VALVE TO VALVE SHALL BE ASSEMBLED IN A SHOP ENVIRONMENT APPROVED BY A REPRESENTATIVE OF THE OOWA. METER AND FITTINGS SHALL BE DELIVERED TO THE JOB SITE WITH THE VALVES CLOSED IN ORDER TO PROTECT THE METER AND STRAINER.
  4. USE DUCTILE IRON PIPING AND DI/OI FITTINGS FROM THE MAIN LINE TAPPING SLEEVE TO DOWNSTREAM FROM THE METER CHECK VALVE AT THE CONNECTING SLEEVE. PIPE SHALL BE WRAPPED WITH POLYETHYLENE FILM AND TAPED.
  5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH FITTINGS COMPATIBLE WITH THE TYPE OF PIPE FURNISHED.
  6. BOLTS AND NUTS SHALL CONFORM TO ASTM A-307 GR. B, AND ASTM A-563 GR. A RESPECTIVELY. STRUCTURAL STEEL SHALL BE ASTM A-36.
  7. CHAMFER EXPOSED CORNERS. EDGE AROUND OPENINGS IN TOP.
  8. BEARING PADS HAVE NO REBAR.

**METER VAULT DETAIL**  
SCALE: NTS

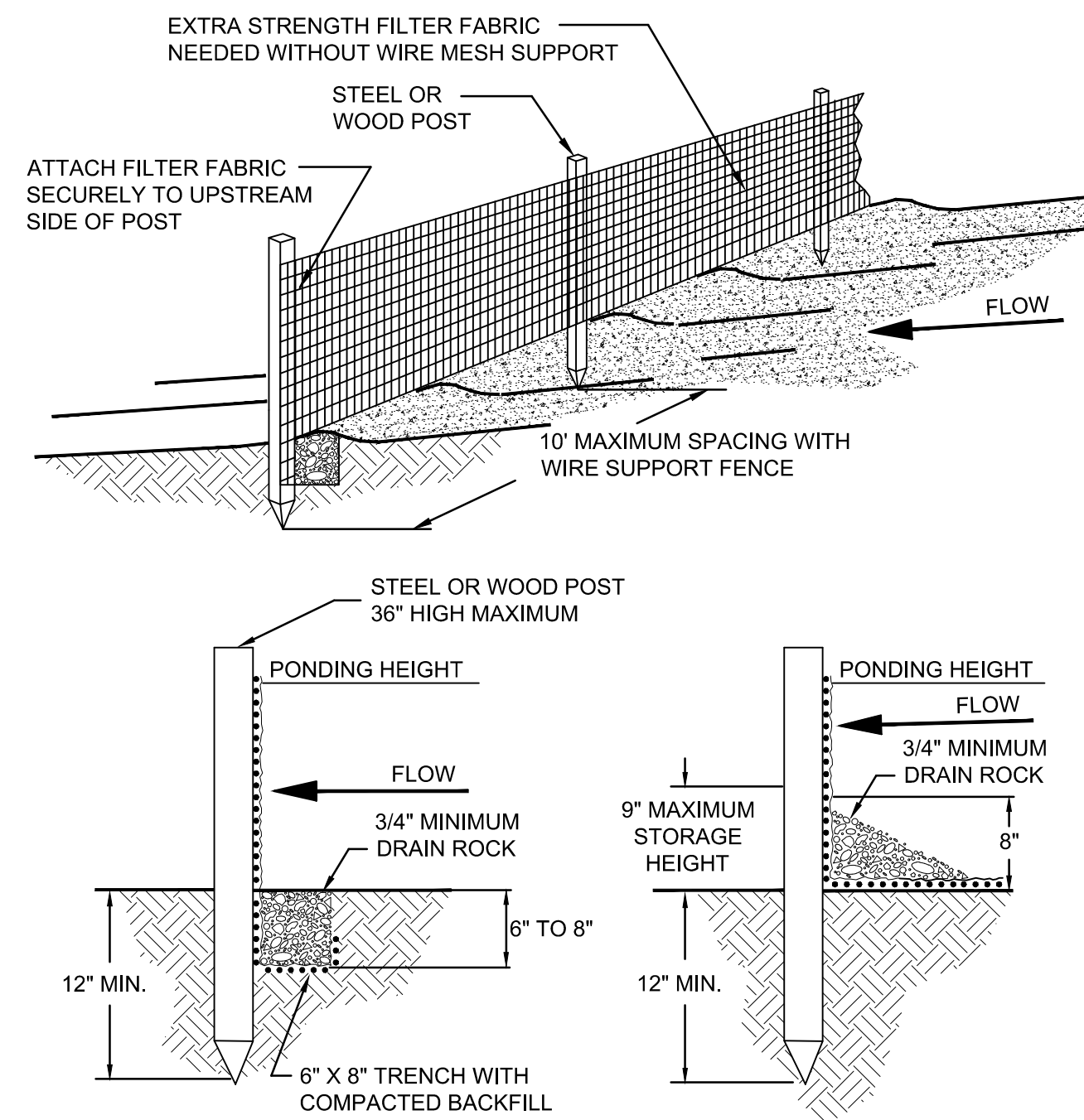
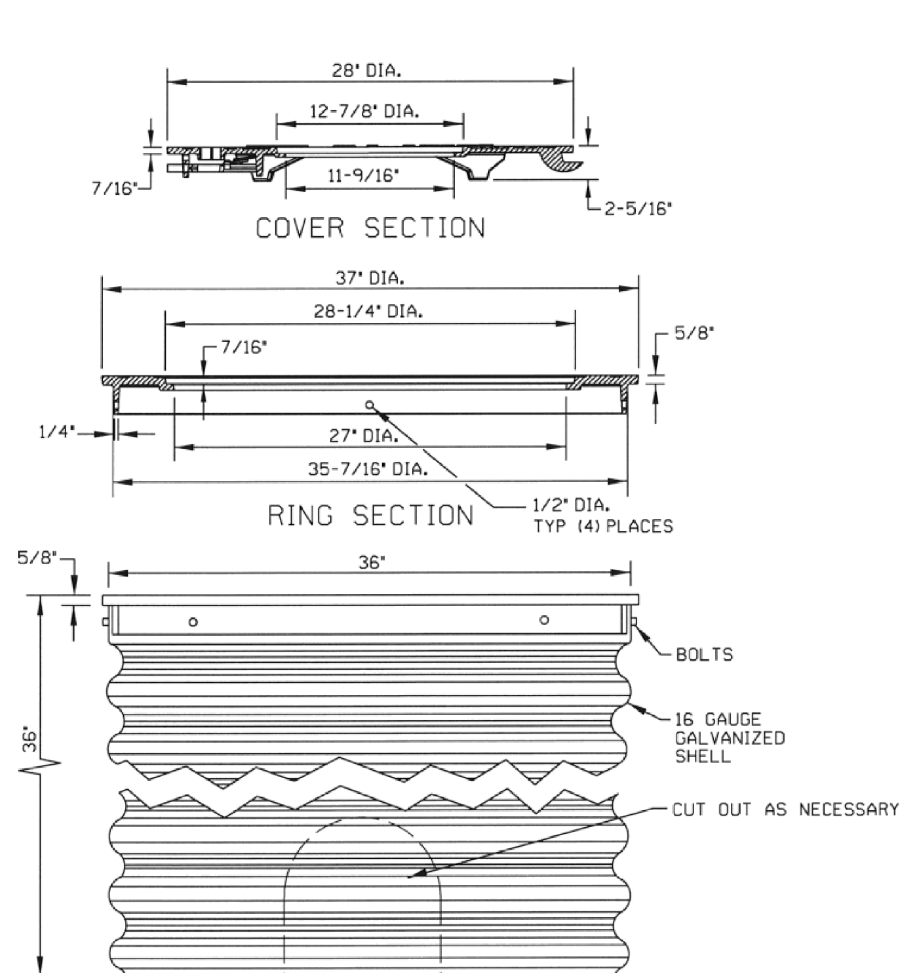
REV. NO.	DATE	REVISIONS DESCRIPTION	BY

MISCELLANEOUS DETAILS	2023
MIDAMERICA INDUSTRIAL PARK ZARROW ROAD WATER LINE RELOCATION PRYOR, OKLAHOMA	
drawn by: AMA	
checked by: JAT	
approved by: JEP	
QA/QC by:	
project no.: 022-06912	
drawing no.:	
date: 13NOV2023	
<b>SHEET</b> C10.01	



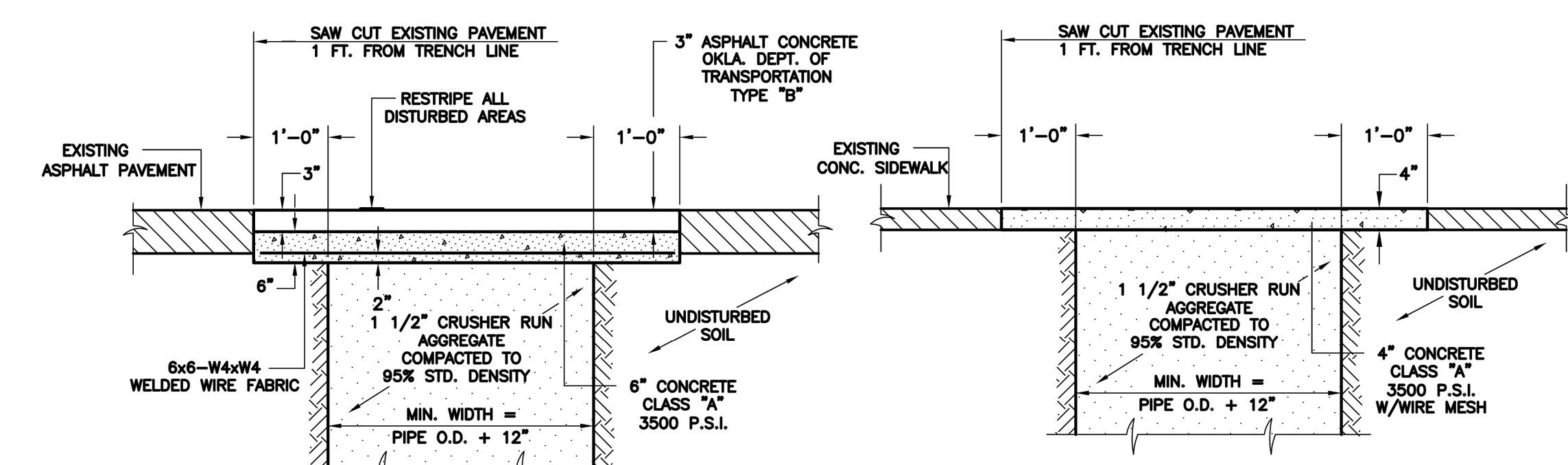
Know what's below.  
Call before you dig.



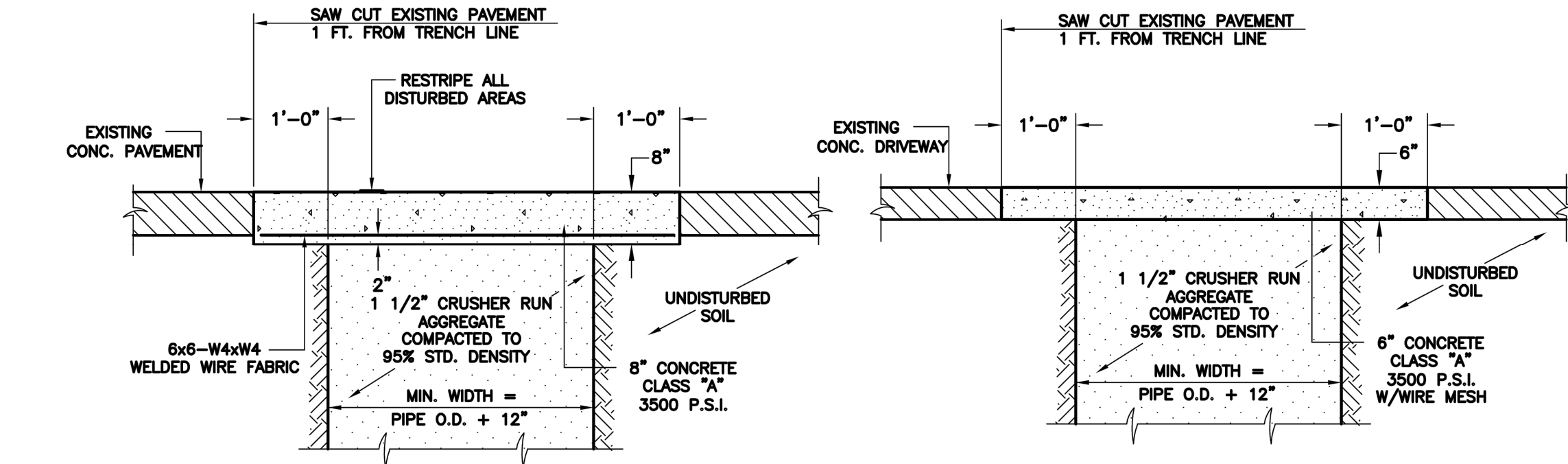


- TRENCH DETAIL**
- NOTES:
- MUST BE INSTALLED PROPERLY TO AVOID NOTICE OF VIOLATION.
  - SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
  - INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9' MAXIMUM RECOMMENDED STORAGE HEIGHT.
  - REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

**SILT FENCE**  
SCALE: NTS

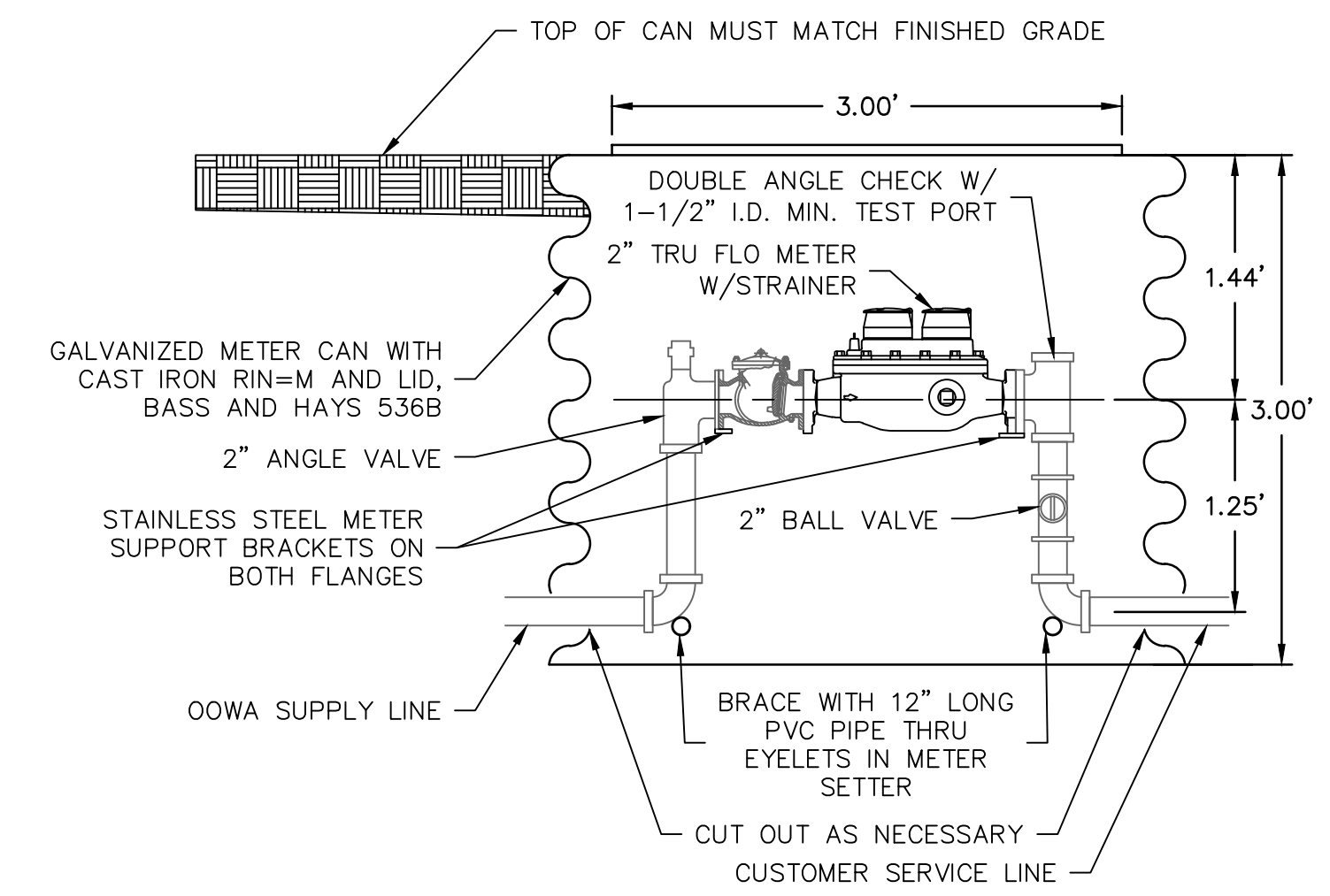


**ASPHALT STREET REMOVAL AND REPLACEMENT DETAIL**      **CONCRETE SIDEWALK REMOVAL AND REPLACEMENT DETAIL**



**CONCRETE STREET REMOVAL AND REPLACEMENT DETAIL**      **CONCRETE DRIVEWAY REMOVAL AND REPLACEMENT DETAIL**

**COLLECTION SYSTEM REHABILITATION  
PAVED SURFACE REPAIR DETAILS**



- METER CAN SETTING - 2"**  
SCALE: NTS
- NOTE:
- NOTICE SHALL BE GIVEN TO THE OOWA FACILITIES MANAGER 48 HOURS IN ADVANCE SO THAT A OOWA MAY WITNESS THE INSTALLATION AND INSPECT THE MATERIALS.
  - WHERE RESTRAINED JOINTS ARE REQUIRED, THEY SHALL EBBA MEGALUG SERIES 1100 OR EQUAL.
  - METER AND FITTINGS FROM VALVE TO VALVE SHALL BE ASSEMBLED IN A SHOP ENVIRONMENT APPROVED BY A REPRESENTATIVE OF THE OOWA. METER AND FITTINGS SHALL BE DELIVERED TO THE JOB SITE WITH THE VALVES CLOSED IN ORDER TO PROTECT THE METER AND STRAINER.
  - IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH FITTINGS COMPATIBLE WITH THE TYPE OF PIPE FURNISHED.
  - THE METER MUST BE PROTECTED BY CHECK VALVE MOUNTED VERTICALLY OR HORIZONTALLY WITH IN THE LAYING LENGTH OF THE SETTER.
  - COMPRESSION FITTINGS NOT ALLOWED
  - CONTRACTOR TO COORDINATE WITH OOWA FOR LETTERING FOR WATER CAN LID.

**METER CAN SETTING - 2"**  
SCALE: NTS

Okla. Certificate of Authorization #CZ2683 Renewal Date: 06-30-2025  
1717 South Boulder Ave  
Tulsa, OK 74119  
TEL 918.376.4264 www.olsson.com

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

MISCELLANEOUS DETAILS

MIDAMERICA INDUSTRIAL PARK

ZARROW ROAD WATER LINE RELOCATION

PRYOR, OKLAHOMA

2023

REVISIONS

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