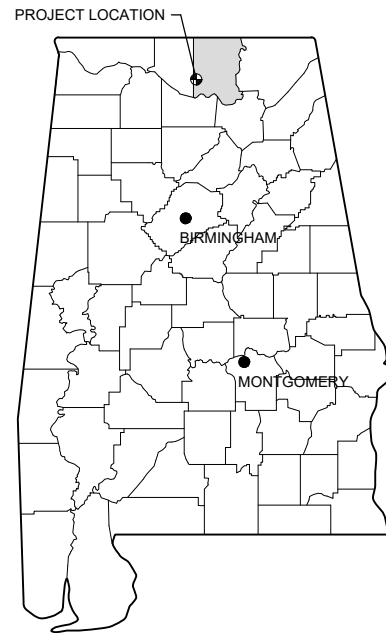


WESTERN WATER TRANSMISSION MAIN PHASE 1

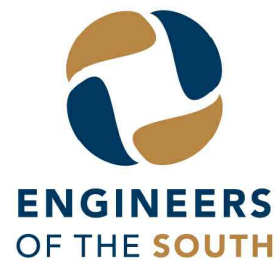
MADISON UTILITIES



LOCATION MAP



MAY 2020

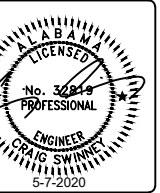


VICINITY MAP

WASTEWATER COLLECTION/WATER DISTRIBUTION SYSTEM
REQUIRED SIGNATURES FOR CONSTRUCTION PLANS:

	SUBMITTED FOR APPROVAL:	MADISON UTILITIES:
	 ENGINEER	 MADISON UTILITIES ENGINEER
	N/A	 GENERAL MANAGER
	DEVELOPER	

"CONSTRUCTION SPECIFICATIONS FOR WATER AND SANITARY SEWER" LATEST EDITION AS ADOPTED BY MADISON UTILITIES (MU), IS HEREBY MADE A PART OF THESE PLANS. CONTRACTOR SHALL CONTACT MU TO SCHEDULE A PRE-CONSTRUCTION MEETING PRIOR TO THE START OF ANY WATER OR SEWER CONSTRUCTION.



NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BID	CONSTRUCTION REVISIONS	AS-BUILT
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

COVER SHEET,
LOCATION MAP, &
VICINITY MAP

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

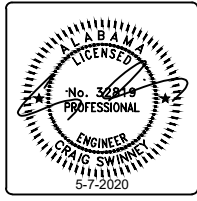
DATE: MAY 2020

DESIGNED BY: CDS

DRAWN BY: JFL

DWG: 00-C-01

SHEET NUMBER 1



NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BID	CONSTRUCTION REVISIONS	AS-BUILT
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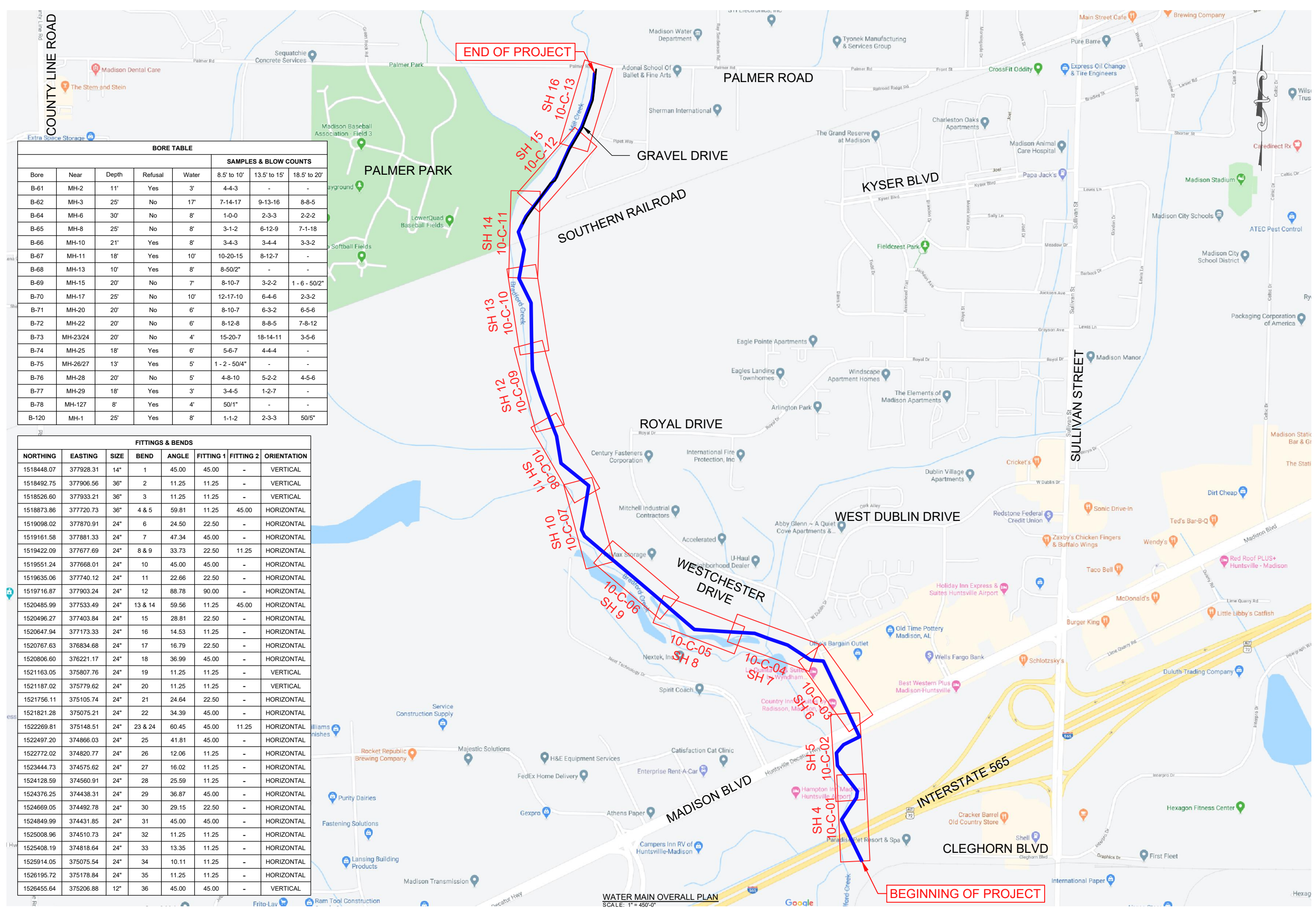
MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN OVERALL PLAN

BOX IS 2 IN WIDE AT FULL SCALE

JOB NO: MU-1960
DATE: MAY 2020
DESIGNED BY: CDS
DRAWN BY: JFL
DWG: 05-C-01

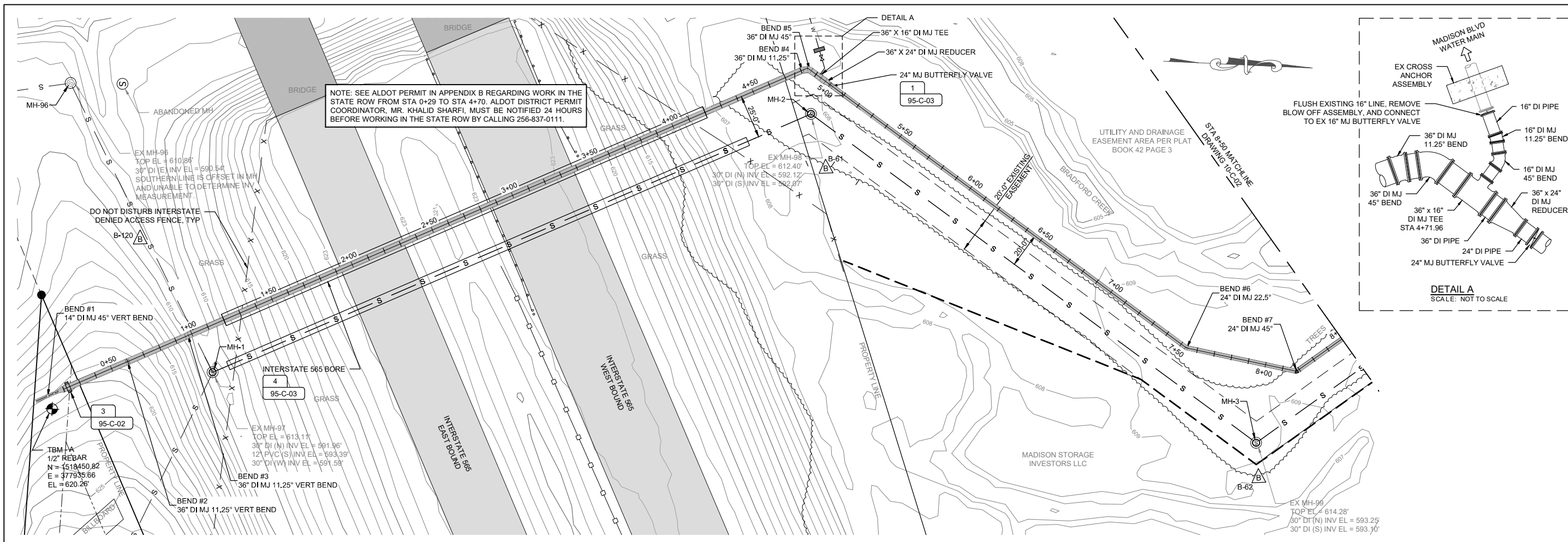
SHEET NUMBER **3**



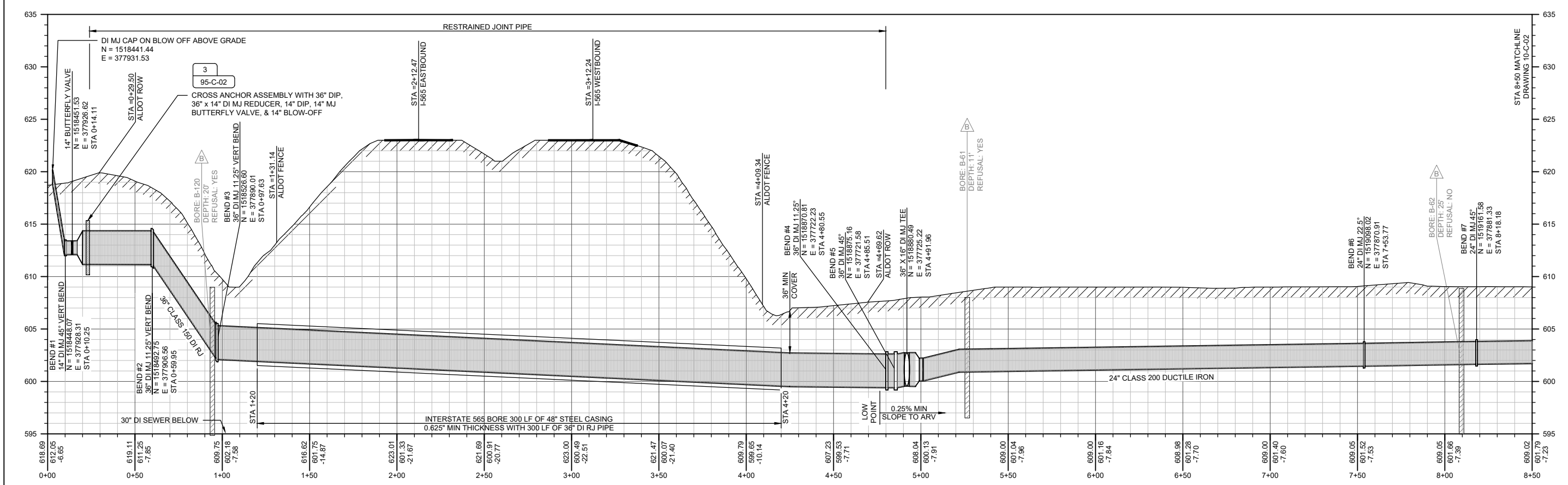
BORE TABLE					SAMPLES & BLOW COUNTS		
Bore	Near	Depth	Refusal	Water	8.5' to 10'	13.5' to 15'	18.5' to 20'
B-61	MH-2	11'	Yes	3'	4-4-3	-	-
B-62	MH-3	25'	No	17'	7-14-17	9-13-16	8-8-5
B-64	MH-6	30'	No	8'	1-0-0	2-3-3	2-2-2
B-65	MH-8	25'	No	8'	3-1-2	6-12-9	7-1-18
B-66	MH-10	21'	Yes	8'	3-4-3	3-4-4	3-3-2
B-67	MH-11	18'	Yes	10'	10-20-15	8-12-7	-
B-68	MH-13	10'	Yes	8'	8-50/2"	-	-
B-69	MH-15	20'	No	7'	8-10-7	3-2-2	1 - 6 - 50/2"
B-70	MH-17	25'	No	10'	12-17-10	6-4-6	2-3-2
B-71	MH-20	20'	No	6'	8-10-7	6-3-2	6-5-6
B-72	MH-22	20'	No	6'	8-12-8	8-8-5	7-8-12
B-73	MH-23/24	20'	No	4'	15-20-7	18-14-11	3-5-6
B-74	MH-25	18'	Yes	6'	5-6-7	4-4-4	-
B-75	MH-26/27	13'	Yes	5'	1 - 2 - 50/4"	-	-
B-76	MH-28	20'	No	5'	4-8-10	5-2-2	4-5-6
B-77	MH-29	18'	Yes	3'	3-4-5	1-2-7	-
B-78	MH-127	8'	Yes	4'	50/1"	-	-
B-120	MH-1	25'	Yes	8'	1-1-2	2-3-3	50/5"

FITTINGS & BENDS							
NORTHING	EASTING	SIZE	BEND	ANGLE	FITTING 1	FITTING 2	ORIENTATION
1518448.07	377928.31	14"	1	45.00	45.00	-	VERTICAL
1518492.75	377906.56	36"	2	11.25	11.25	-	VERTICAL
1518526.60	377933.21	36"	3	11.25	11.25	-	VERTICAL
1518873.86	377720.73	36"	4 & 5	59.81	11.25	45.00	HORIZONTAL
1519098.02	377870.91	24"	6	24.50	22.50	-	HORIZONTAL
1519161.58	377881.33	24"	7	47.34	45.00	-	HORIZONTAL
1519422.09	377677.69	24"	8 & 9	33.73	22.50	11.25	HORIZONTAL
1519551.24	377668.01	24"	10	45.00	45.00	-	HORIZONTAL
1519635.06	377740.12	24"	11	22.66	22.50	-	HORIZONTAL
1519716.87	377903.24	24"	12	88.78	90.00	-	HORIZONTAL
1520485.99	377533.49	24"	13 & 14	59.56	11.25	45.00	HORIZONTAL
1520496.27	377403.84	24"	15	28.81	22.50	-	HORIZONTAL
1520647.94	377173.33	24"	16	14.53	11.25	-	HORIZONTAL
1520767.63	376834.68	24"	17	16.79	22.50	-	HORIZONTAL
1520806.60	376221.17	24"	18	36.99	45.00	-	HORIZONTAL
1521163.05	375807.76	24"	19	11.25	11.25	-	VERTICAL
1521187.02	375779.62	24"	20	11.25	11.25	-	VERTICAL
1521756.11	375105.74	24"	21	24.64	22.50	-	HORIZONTAL
1521821.28	375075.21	24"	22	34.39	45.00	-	HORIZONTAL
1522269.81	375148.51	24"	23 & 24	60.45	45.00	11.25	HORIZONTAL
1522497.20	374866.03	24"	25	41.81	45.00	-	HORIZONTAL
1522772.02	374820.77	24"	26	12.06	11.25	-	HORIZONTAL
1523444.73	374575.62	24"	27	16.02	11.25	-	HORIZONTAL
1524128.59	374560.91	24"	28	25.59	11.25	-	HORIZONTAL
1524376.25	374438.31	24"	29	36.87	45.00	-	HORIZONTAL
1524669.05	374492.78	24"	30	29.15	22.50	-	HORIZONTAL
1524849.99	374431.85	24"	31	45.00	45.00	-	HORIZONTAL
1525008.96	374510.73	24"	32	11.25	11.25	-	HORIZONTAL
1525408.19	374818.64	24"	33	13.35	11.25	-	HORIZONTAL
1525914.05	375075.54	24"	34	10.11	11.25	-	HORIZONTAL
1526195.72	375178.84	24"	35	11.25	11.25	-	HORIZONTAL
1526455.64	375206.88	12"	36	45.00	45.00	-	VERTICAL

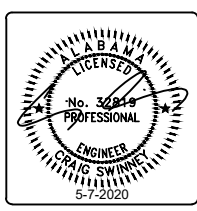
WATER MAIN OVERALL PLAN
SCALE: 1" = 450'-0"



WATER MAIN PLAN VIEW
SCALE: 1" = 30'-0"



WATER MAIN PROFILE VIEW
SCALE: H: 1" = 30'-0" / V: 1" = 5'-0"



NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	CONSTRUCTION REVISIONS	AS-BUILT
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN PLAN & PROFILE FROM STA 0+00 TO STA 8+50

BOX IS 2 IN WIDE AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

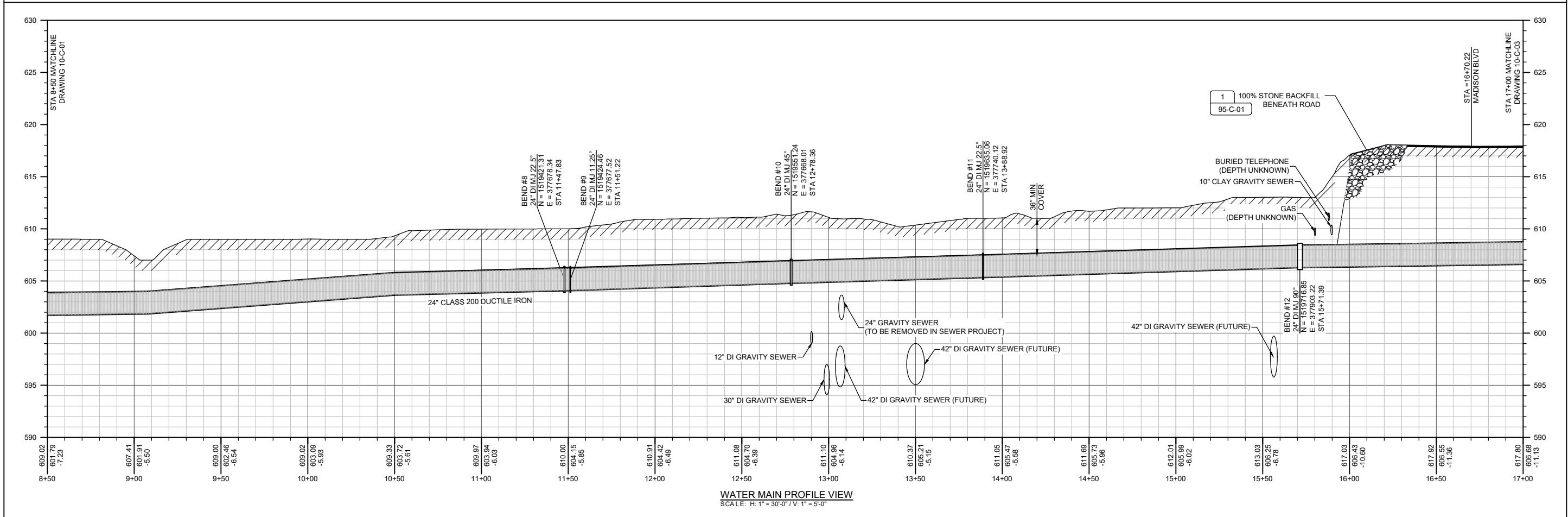
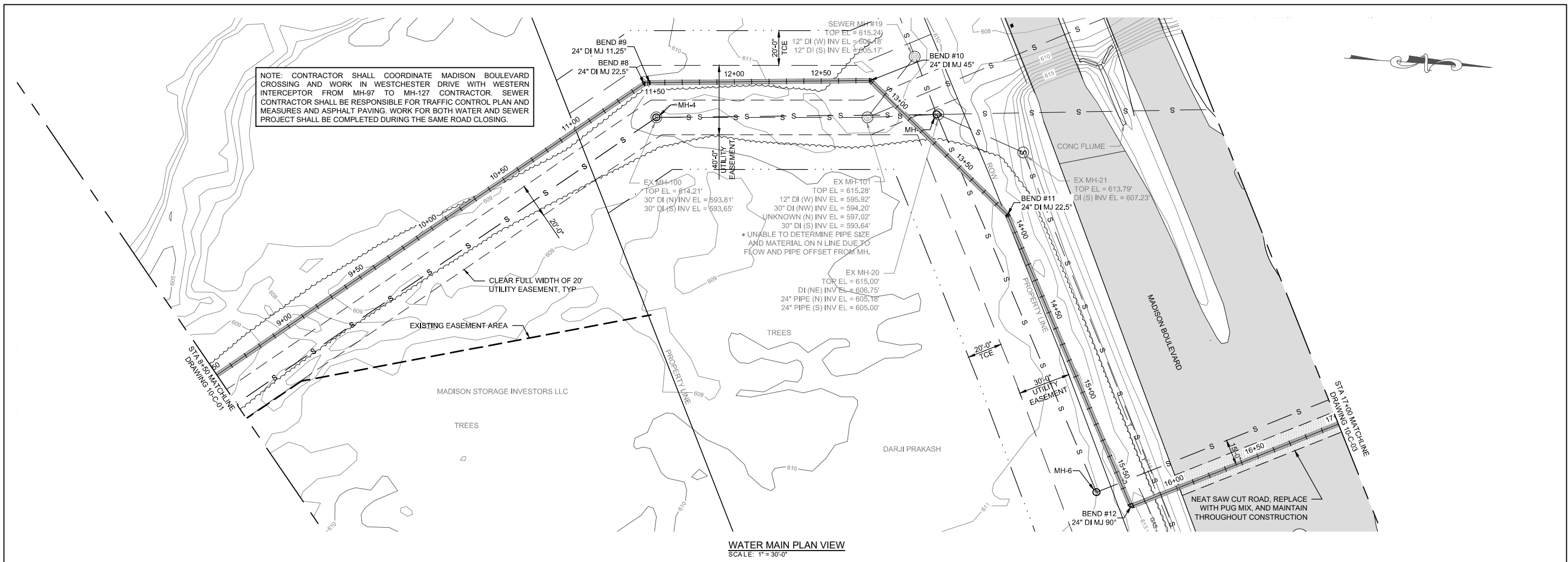
DESIGNED BY: CDS

DRAWN BY: JFL

DWG: 10-C-01

SHEET NUMBER **4**

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	CONSTRUCTION REVISIONS	AS-BUILT
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN
PLAN & PROFILE
FROM STA 8+50
TO STA 17+00

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

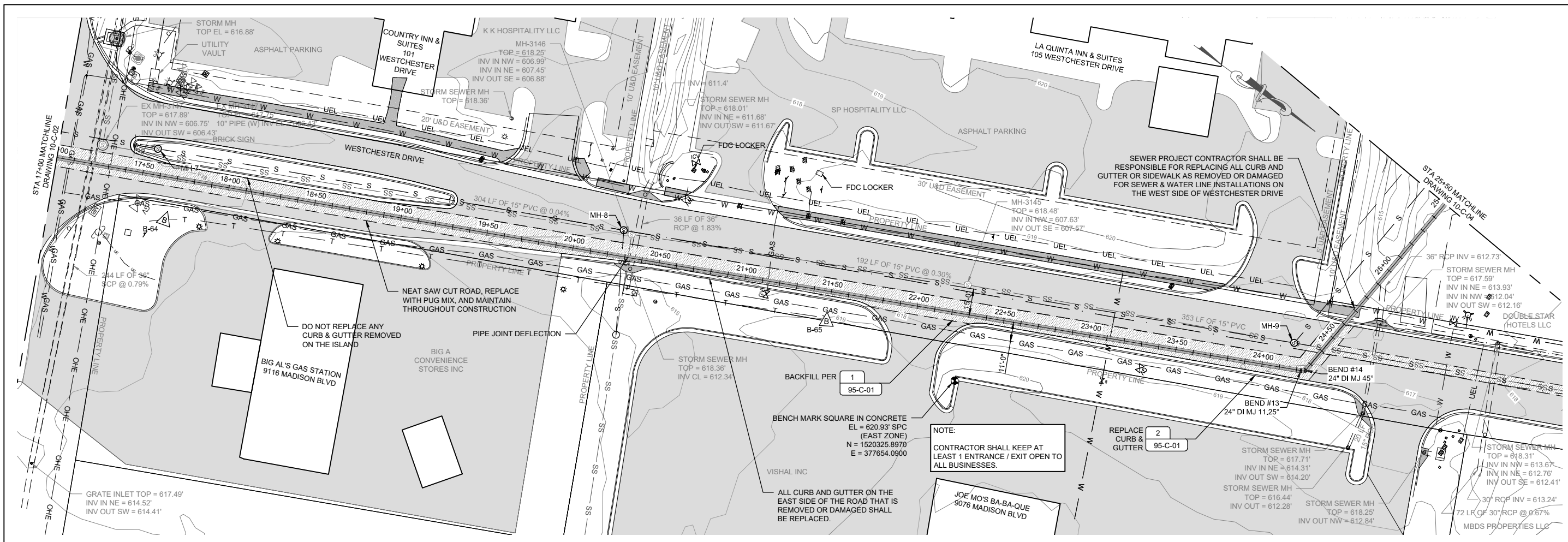
DESIGNED BY: CDS

DRAWN BY: JFL

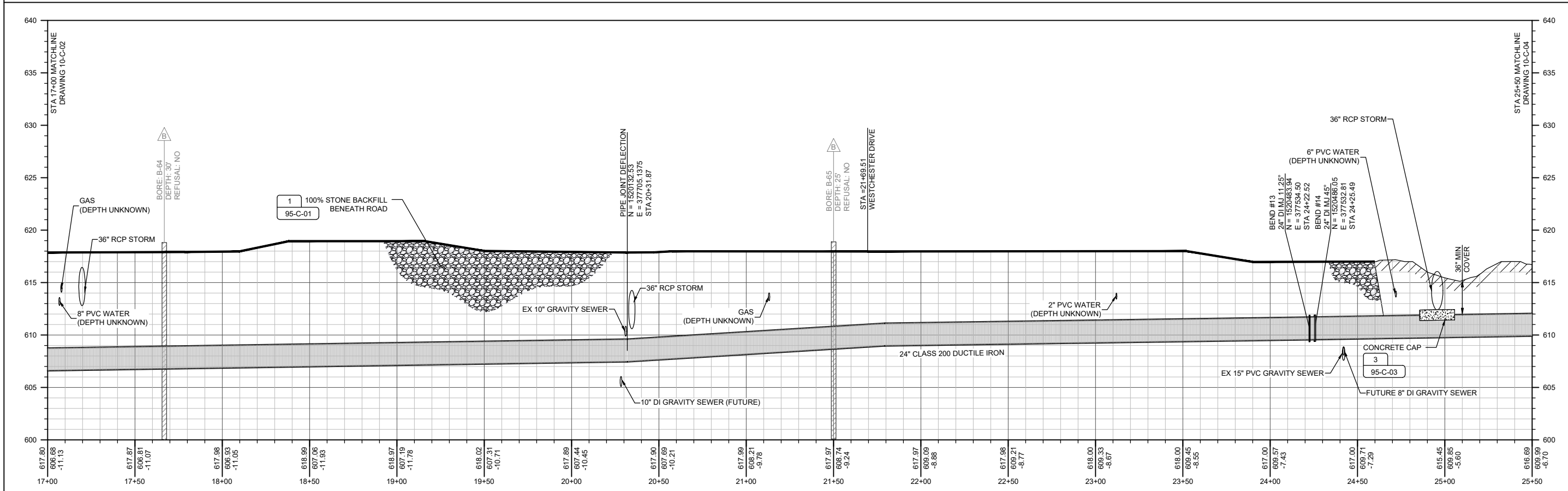
DWG: 10-C-02

SHEET NUMBER **5**

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	CONSTRUCTION REVISIONS	AS-BUILT
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WATER MAIN PLAN VIEW
SCALE: 1" = 30'-0"



WATER MAIN PROFILE VIEW
SCALE: H: 1" = 30'-0" / V: 1" = 5'-0"

MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

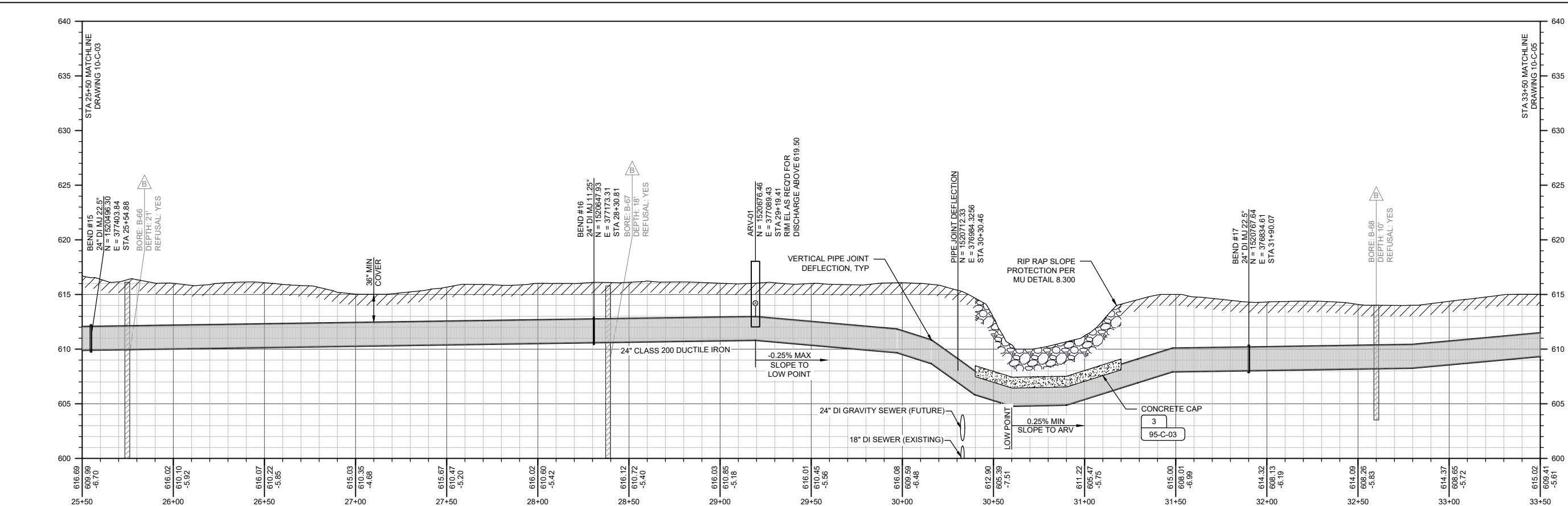
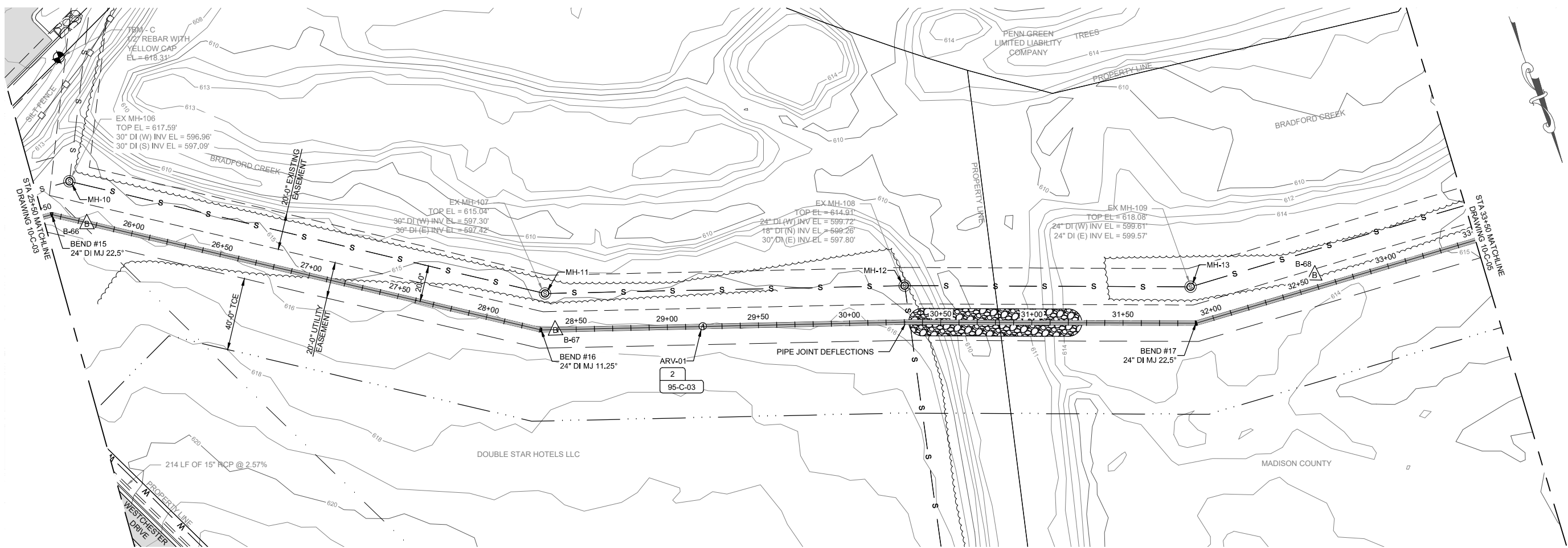
WATER MAIN
PLAN & PROFILE
FROM STA 17+00
TO STA 25+50

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960
DATE: MAY 2020
DESIGNED BY: CDS
DRAWN BY: JFL
DWG: 10-C-03

SHEET NUMBER **6**

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BUILT
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			<input type="checkbox"/>	<input type="checkbox"/>



MADISON UTILITIES
MADISON, AL
**WESTERN WATER TRANSMISSION MAIN
PHASE 1**

WATER MAIN
PLAN & PROFILE
FROM STA 25+50
TO STA 33+50

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

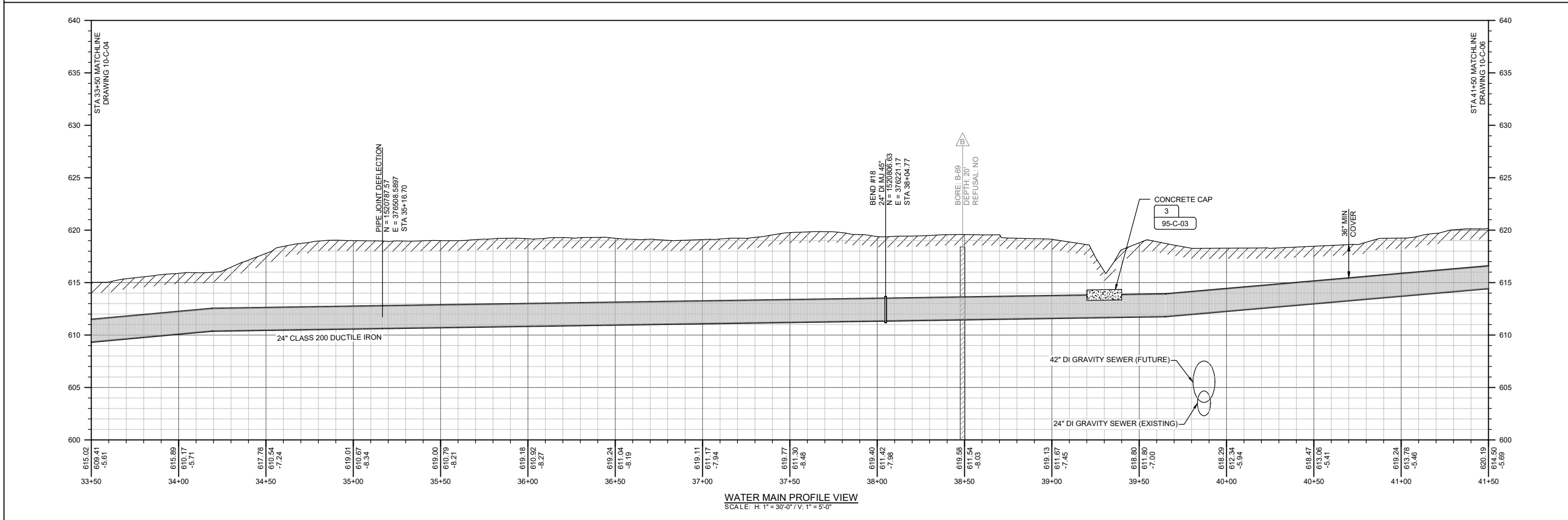
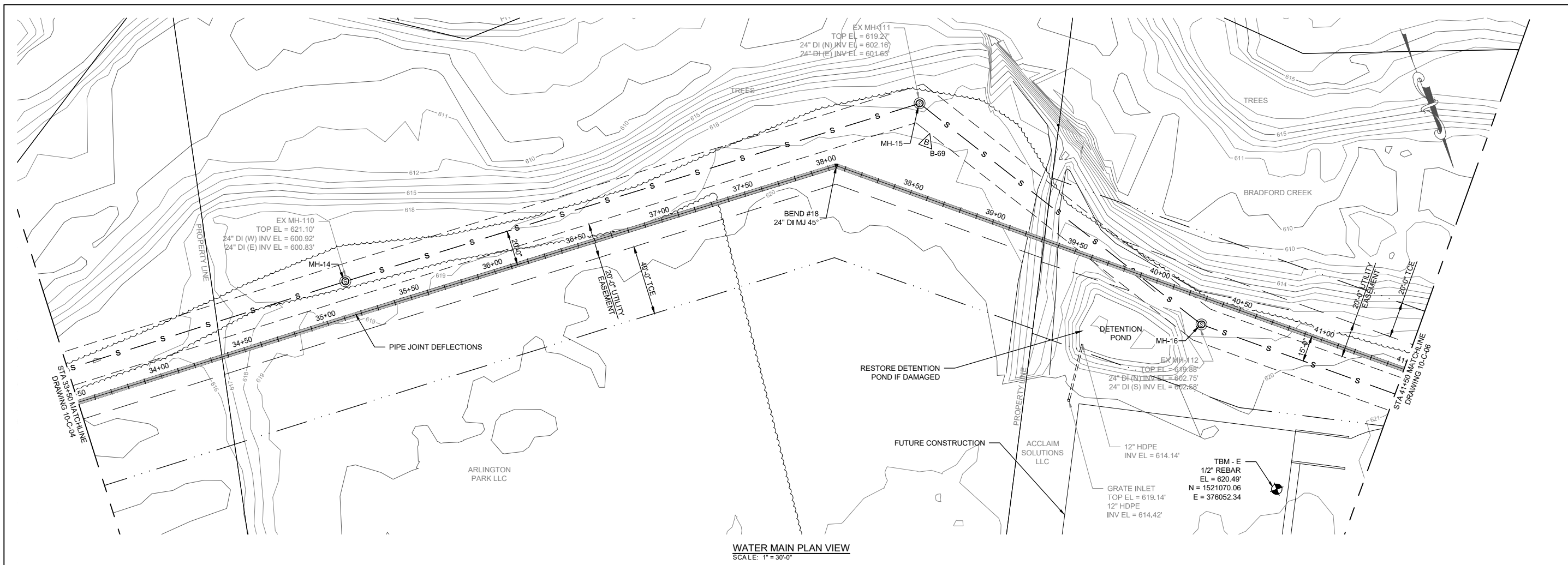
DESIGNED BY: CDS

DRAWN BY: JFL

DWG: 10-C-04

SHEET
NUMBER **7**

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BID	CONSTRUCTION REVISIONS	AS-BUILT
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MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN
PLAN & PROFILE
FROM STA 33+50
TO STA 41+50

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

DESIGNED BY: CDS

DRAWN BY: JFL

DWG: 10-C-05

SHEET NUMBER **8**

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BUILT
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			<input type="checkbox"/>	<input type="checkbox"/>

MADISON UTILITIES
MADISON, AL
**WESTERN WATER TRANSMISSION MAIN
PHASE 1**

WATER MAIN
PLAN & PROFILE
FROM STA 41+50
TO STA 50+00

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

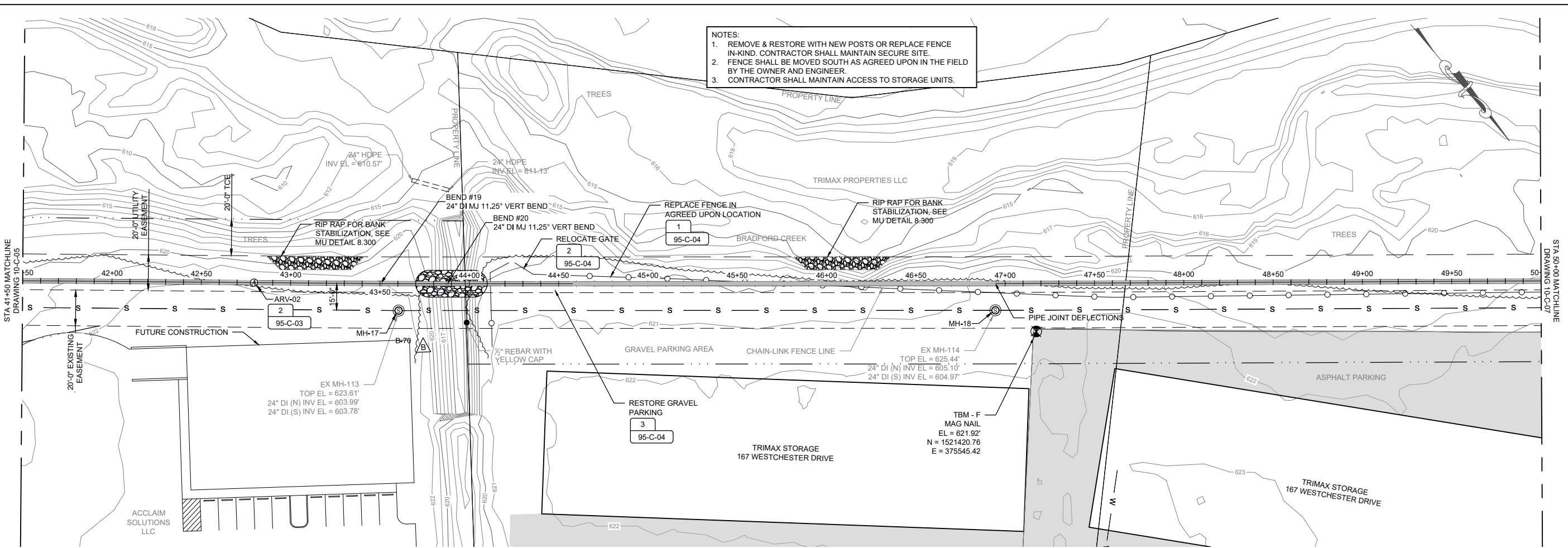
DESIGNED BY: CDS

DRAWN BY: JFL

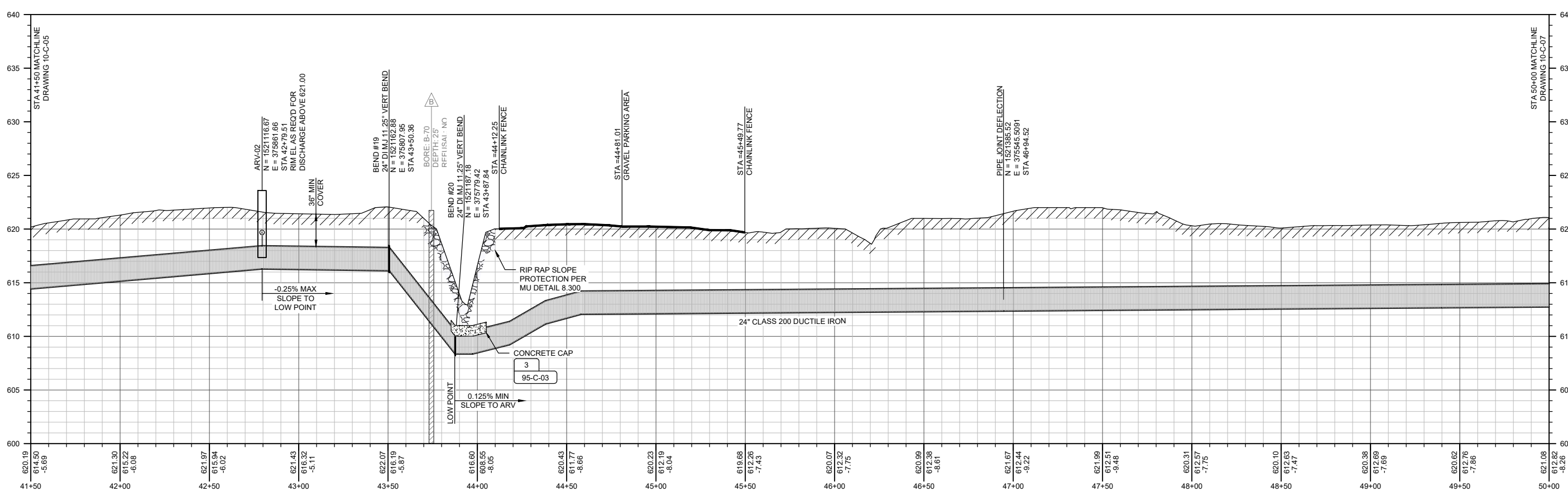
DWG: 10-C-06

SHEET NUMBER **9**

- NOTES:
- REMOVE & RESTORE WITH NEW POSTS OR REPLACE FENCE IN-KIND. CONTRACTOR SHALL MAINTAIN SECURE SITE.
 - FENCE SHALL BE MOVED SOUTH AS AGREED UPON IN THE FIELD BY THE OWNER AND ENGINEER.
 - CONTRACTOR SHALL MAINTAIN ACCESS TO STORAGE UNITS.

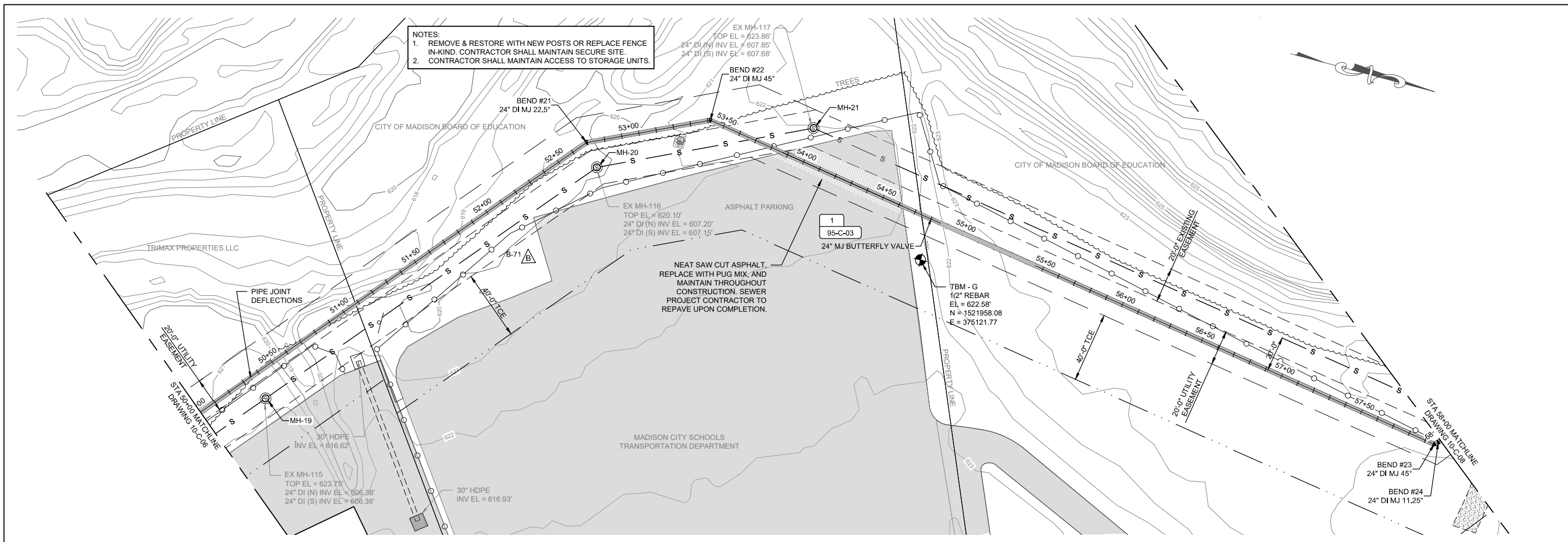


WATER MAIN PLAN VIEW
SCALE: 1" = 30'-0"

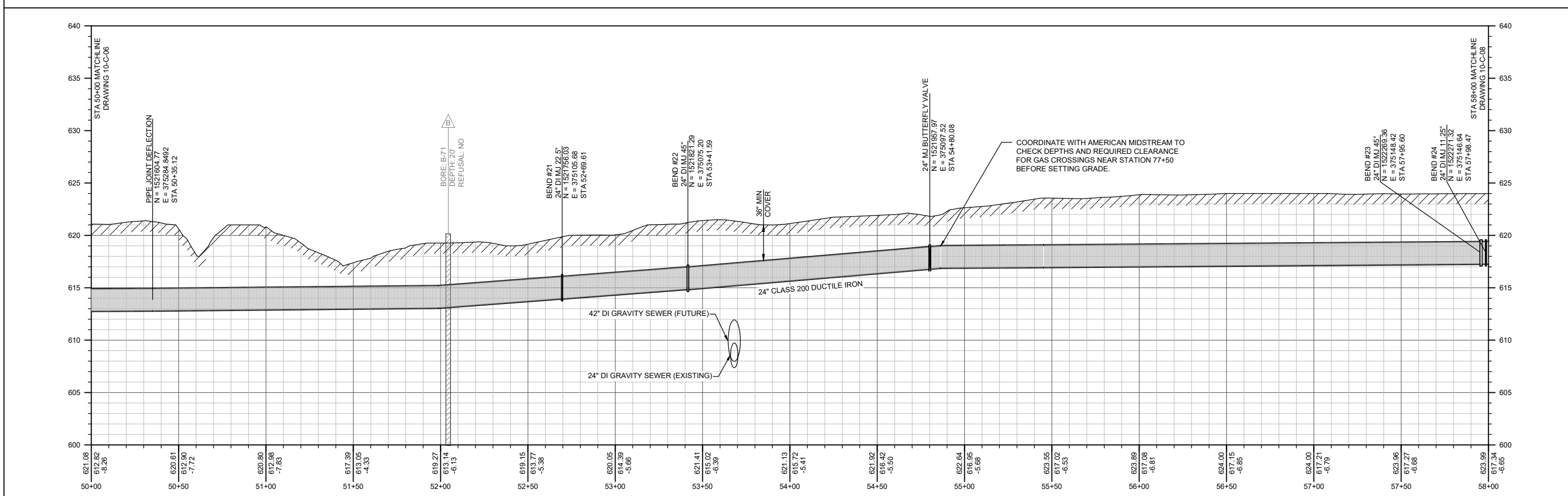


WATER MAIN PROFILE VIEW
SCALE: H: 1" = 30'-0" / V: 1" = 5'-0"

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BUILT
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			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>



WATER MAIN PLAN VIEW
SCALE: 1" = 30'-0"



WATER MAIN PROFILE VIEW
SCALE: H: 1" = 30'-0" / V: 1" = 5'-0"

MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN
PLAN & PROFILE
FROM STA 50+00
TO STA 58+00

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

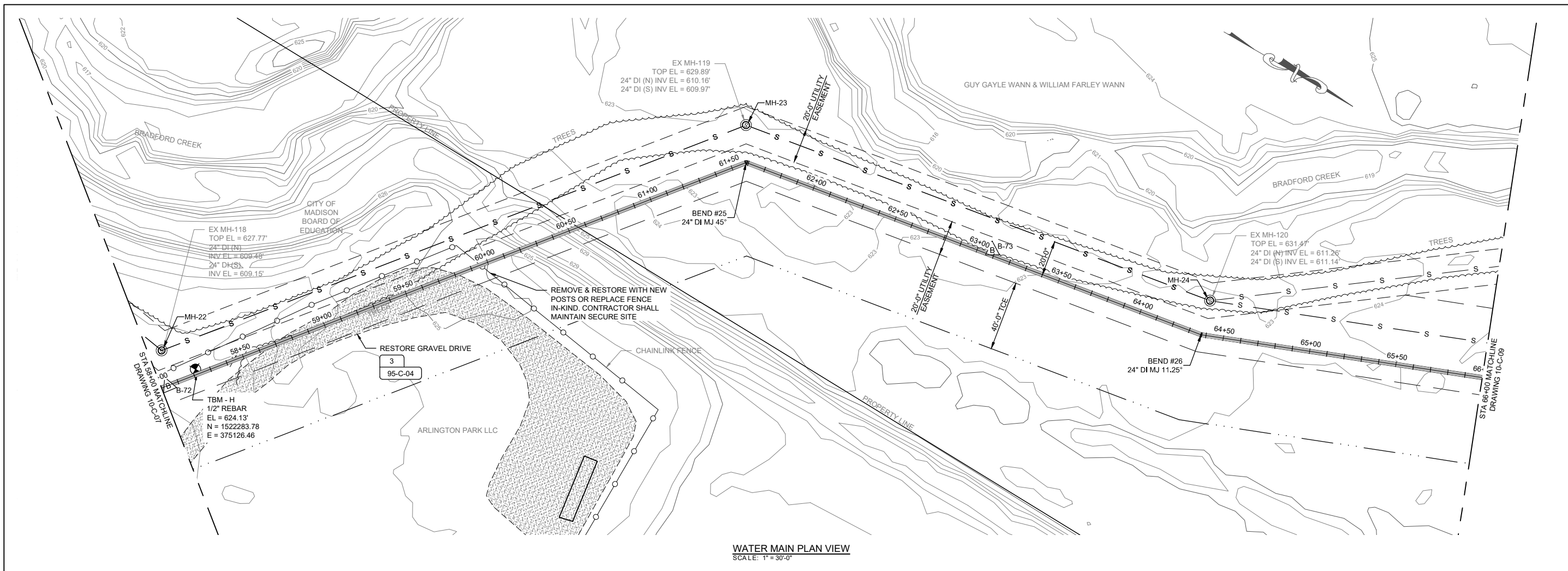
DESIGNED BY: CDS

DRAWN BY: JFL

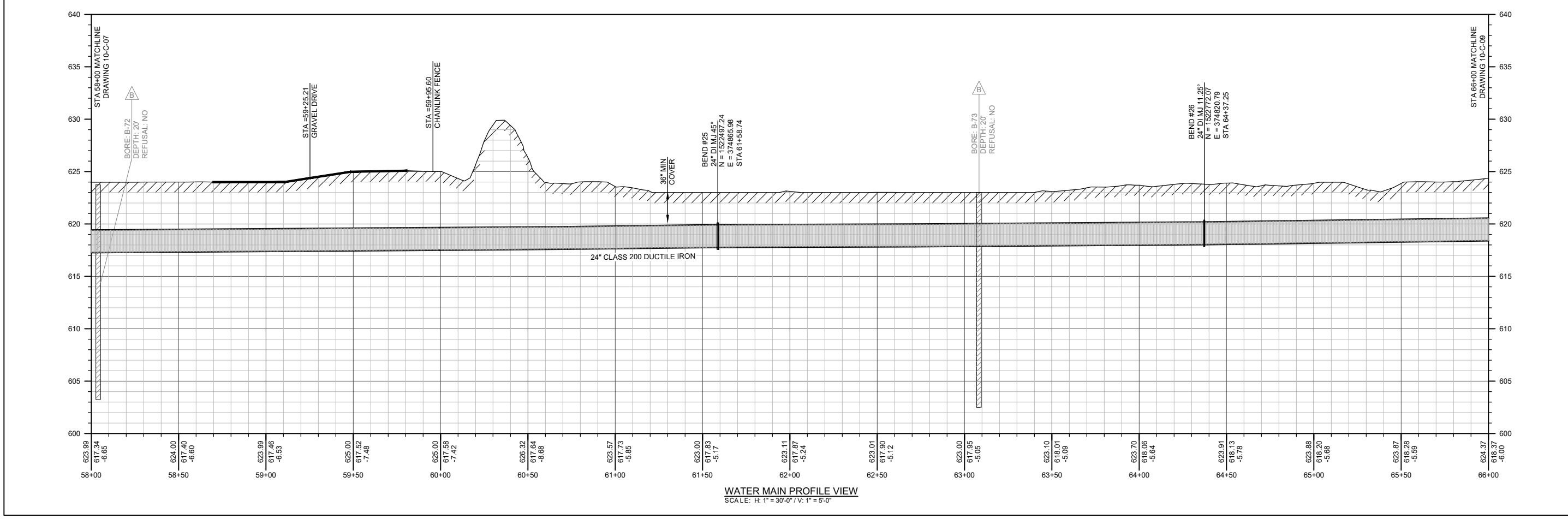
DWG: 10-C-07

SHEET NUMBER **10**

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WATER MAIN PLAN VIEW
SCALE: 1" = 30'-0"



WATER MAIN PROFILE VIEW
SCALE: H: 1" = 30'-0" / V: 1" = 5'-0"

MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN
PLAN & PROFILE
FROM STA 58+00
TO STA 66+00

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

DESIGNED BY: CDS

DRAWN BY: JFL

DWG: 10-C-08

SHEET NUMBER **11**

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BUILT
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			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

MADISON UTILITIES
MADISON, AL

**WESTERN WATER TRANSMISSION MAIN
PHASE 1**

WATER MAIN
PLAN & PROFILE
FROM STA 66+00
TO STA 73+50

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

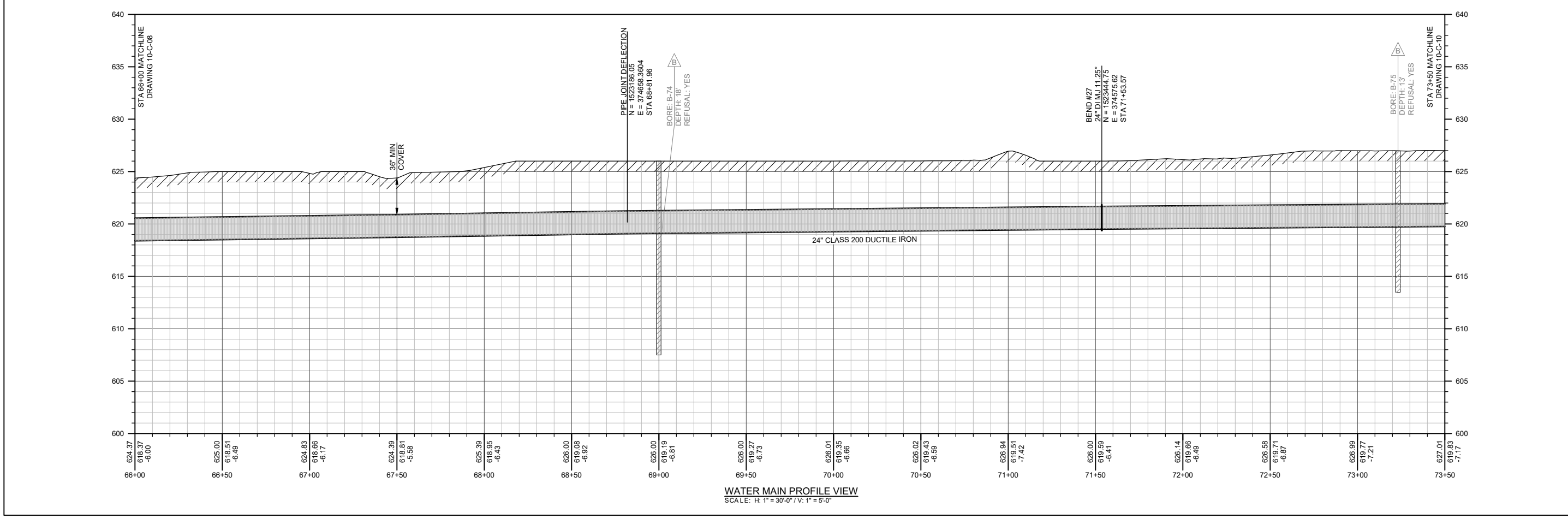
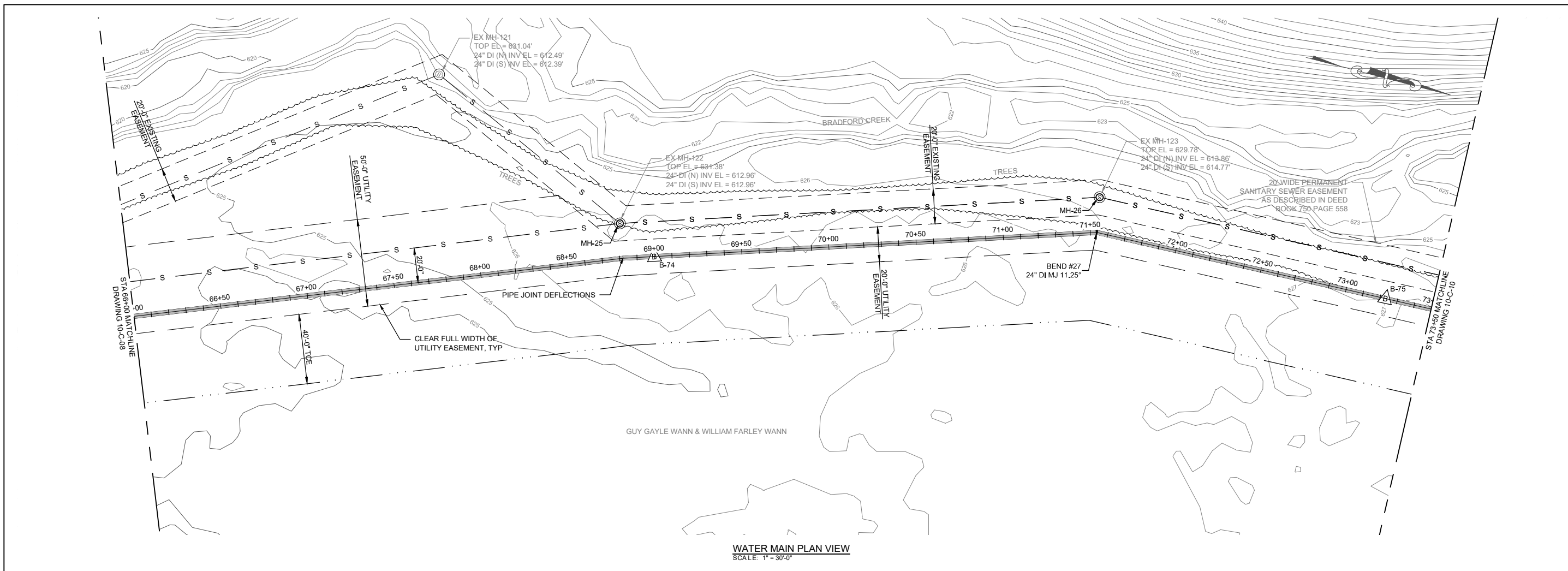
DATE: MAY 2020

DESIGNED BY: CDS

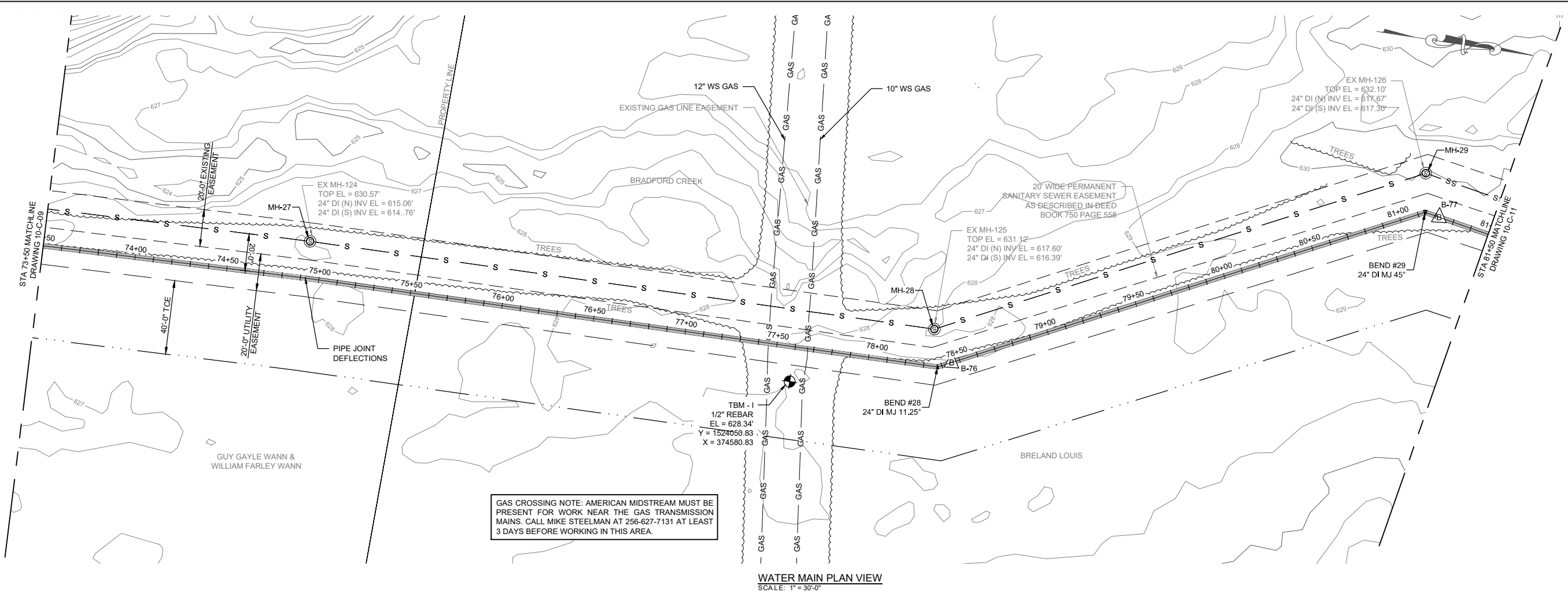
DRAWN BY: JFL

DWG: 10-C-09

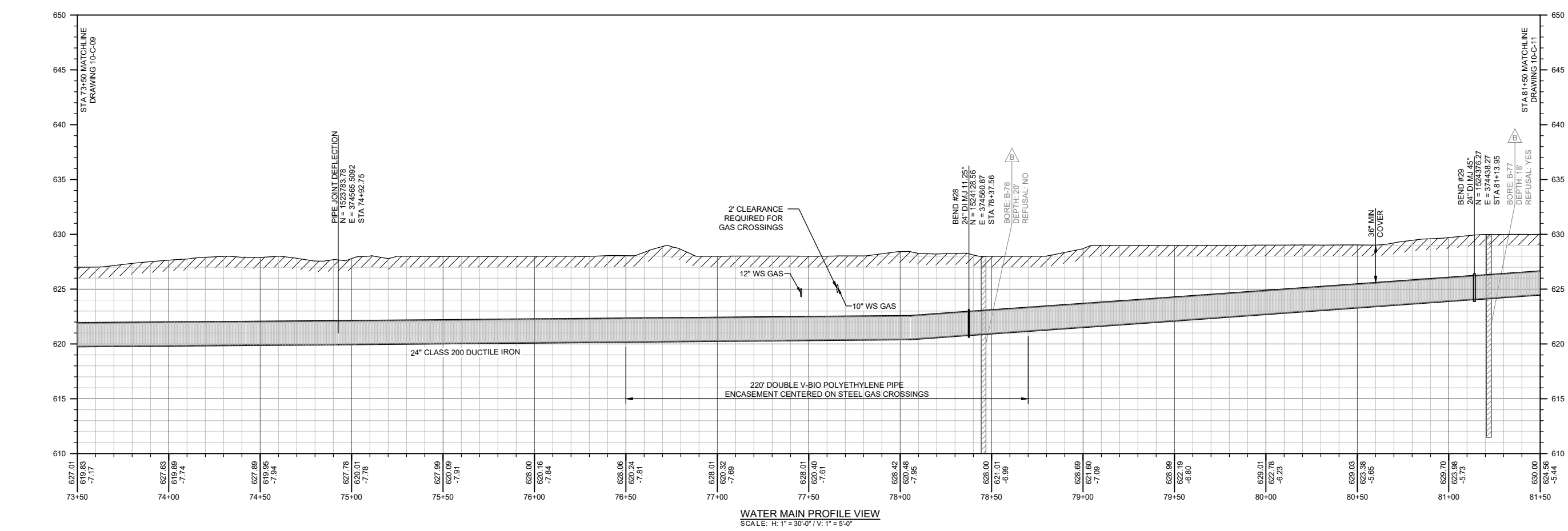
SHEET NUMBER **12**



NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BUILT
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			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>



GAS CROSSING NOTE: AMERICAN MIDSTREAM MUST BE PRESENT FOR WORK NEAR THE GAS TRANSMISSION MAINS. CALL MIKE STEELMAN AT 256-627-7131 AT LEAST 3 DAYS BEFORE WORKING IN THIS AREA.



MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN
PLAN & PROFILE
FROM STA 73+50
TO STA 81+50

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960
DATE: MAY 2020
DESIGNED BY: CDS
DRAWN BY: JFL
DWG: 10-C-10

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	CONSTRUCTION	AS-BUILT
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN
PLAN & PROFILE
FROM STA 81+50
TO STA 89+50

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

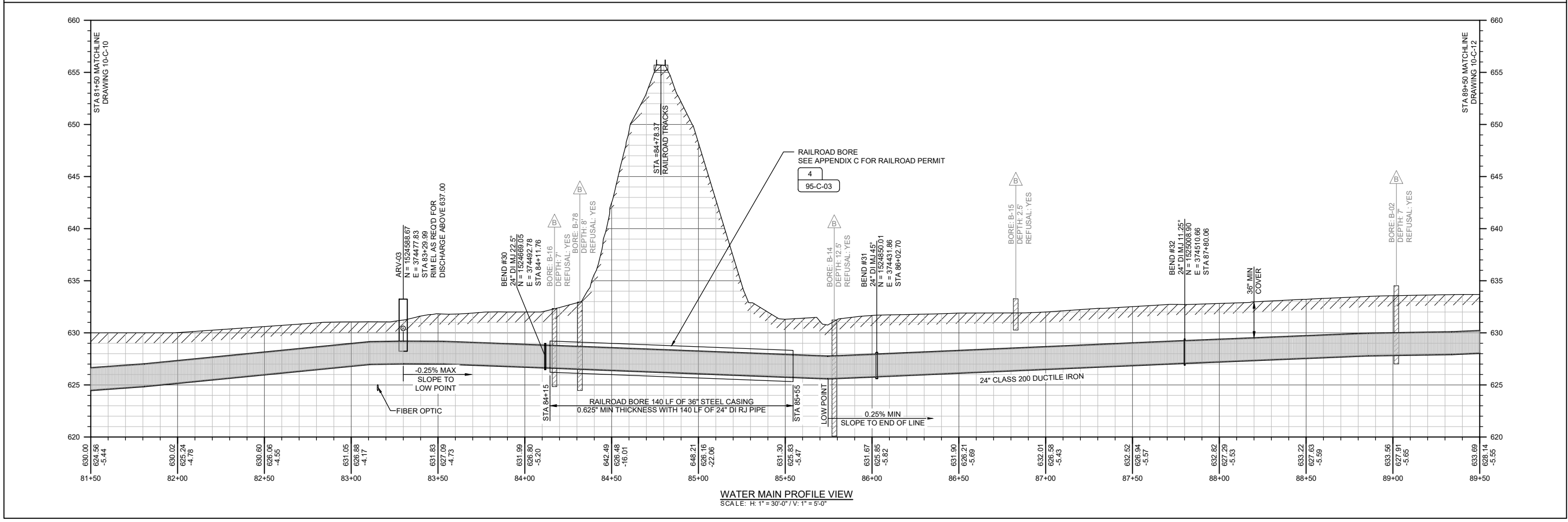
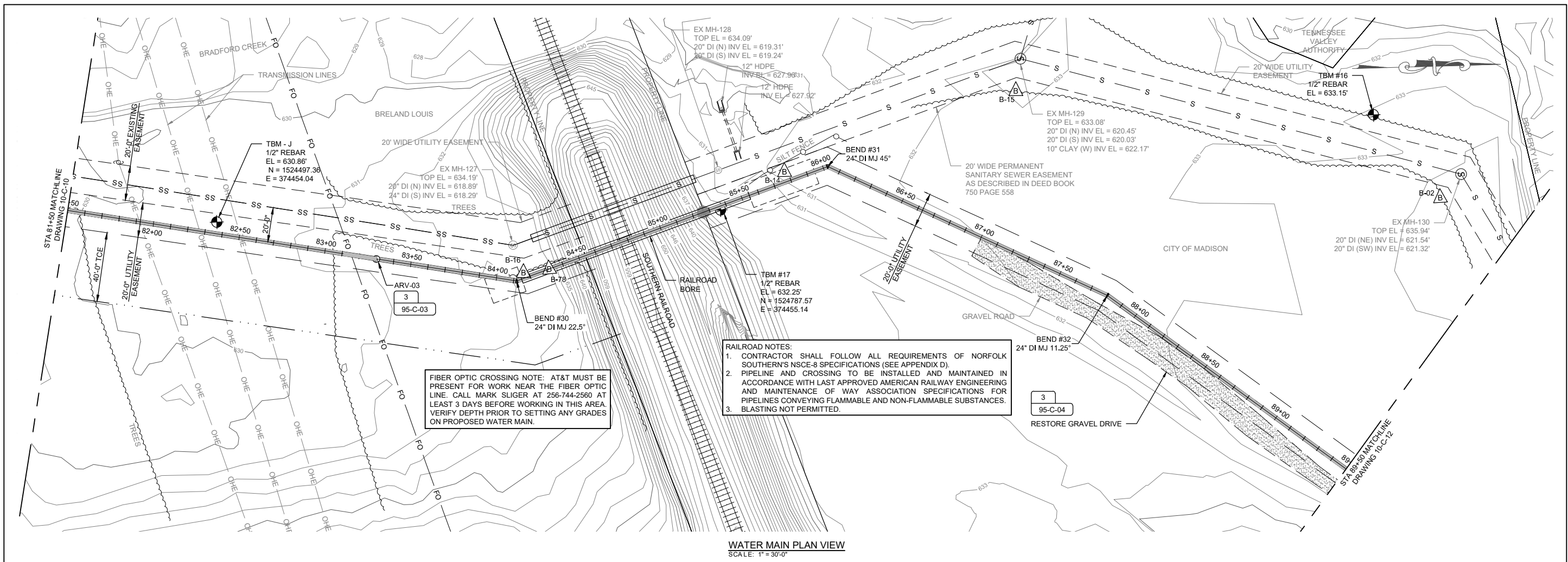
DATE: MAY 2020

DESIGNED BY: CDS

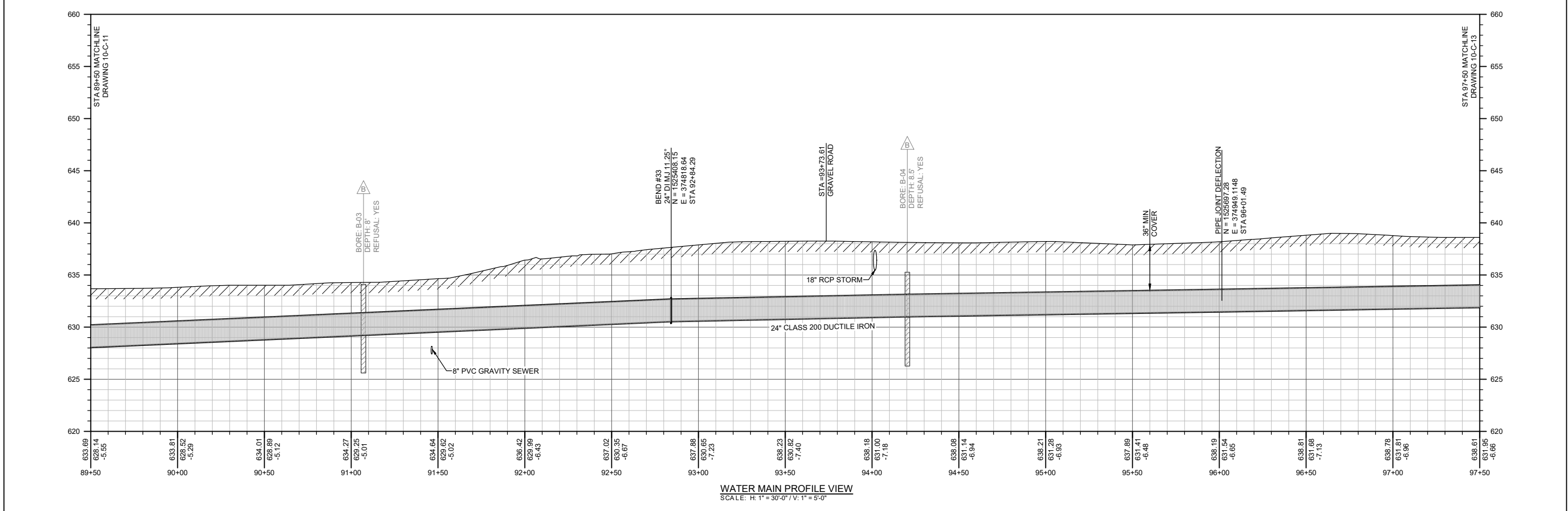
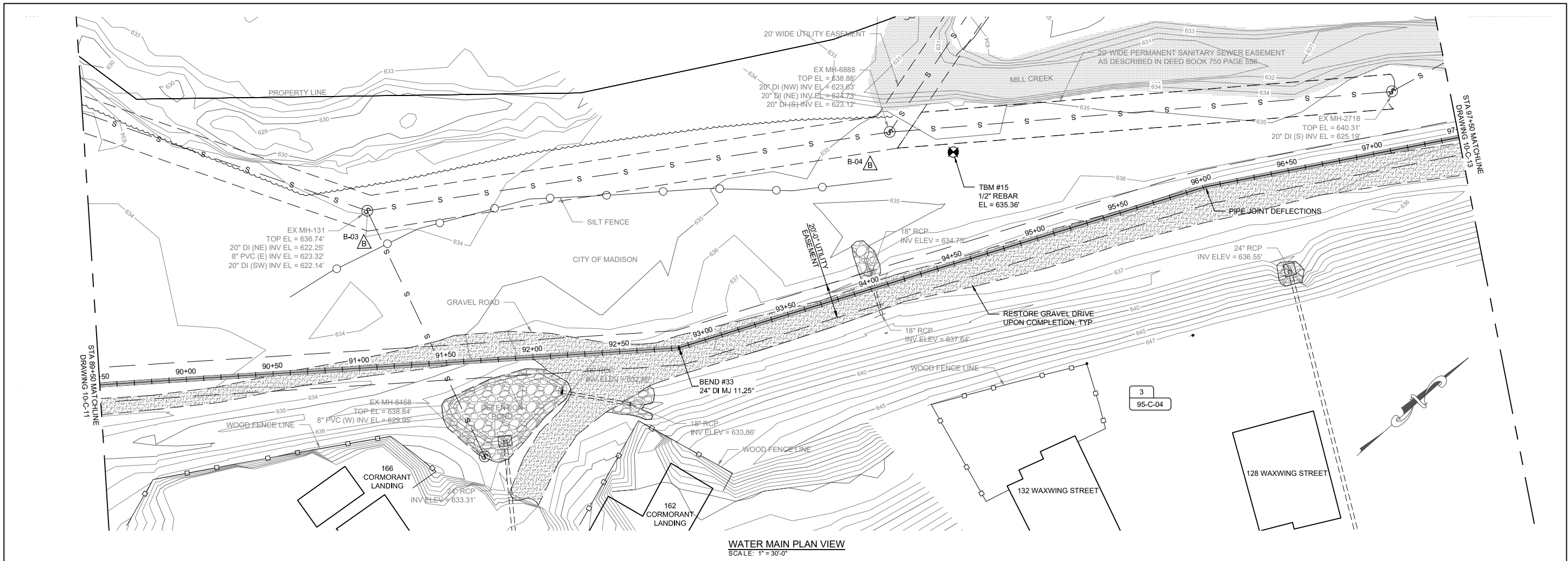
DRAWN BY: JFL

DWG: 10-C-11

SHEET NUMBER **14**



NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BID	CONSTRUCTION REVISIONS	AS-BUILT
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MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

WATER MAIN
PLAN & PROFILE
FROM STA 89+50
TO STA 97+50

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

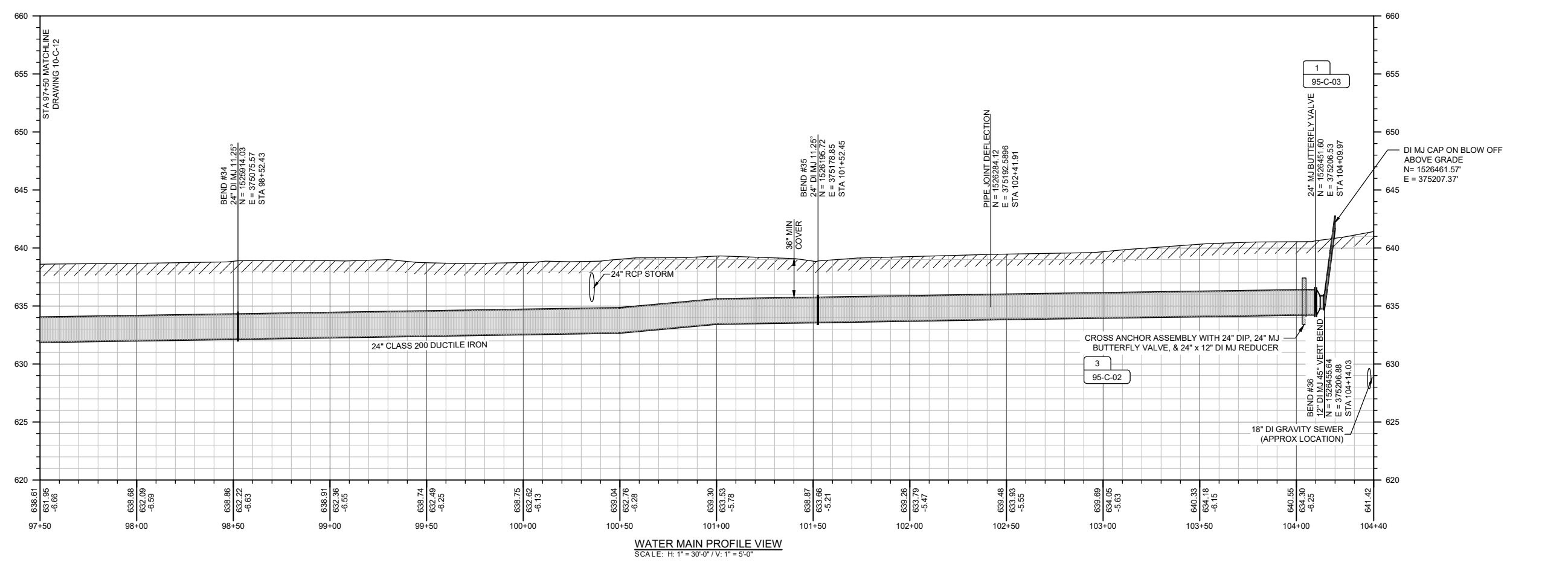
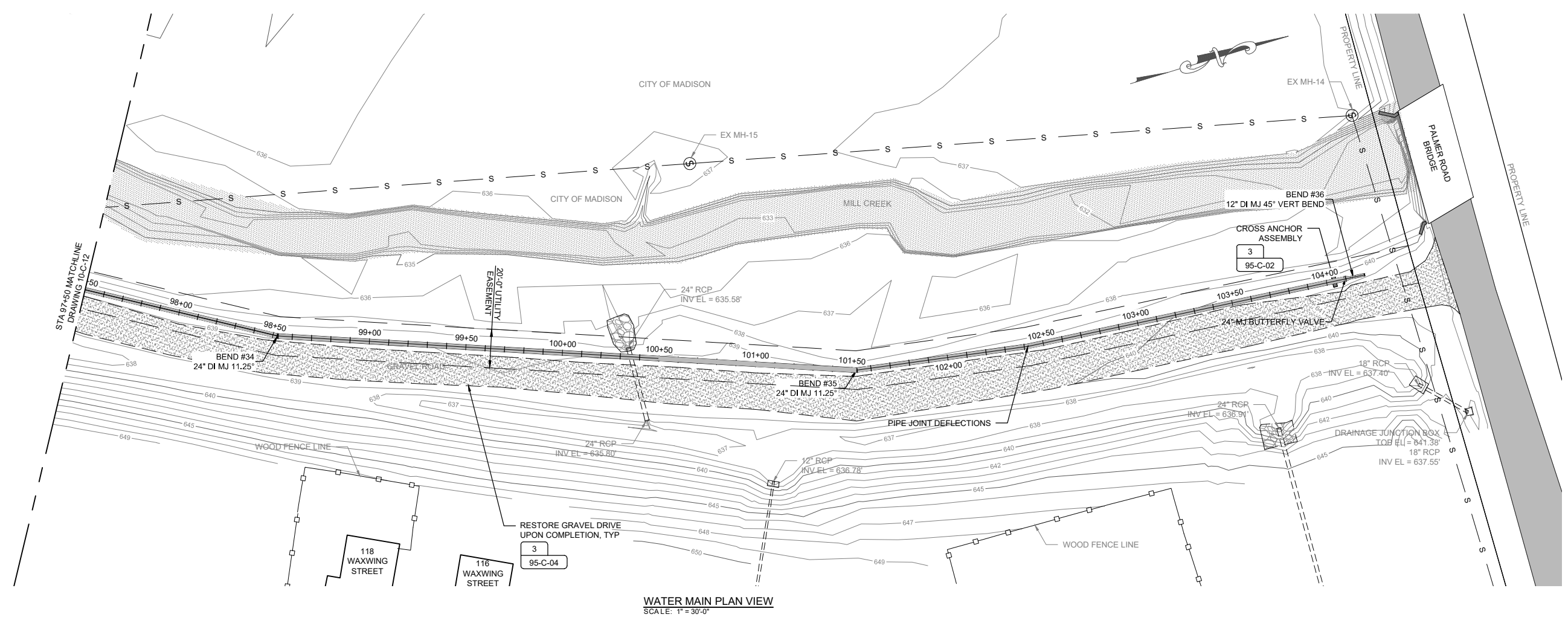
DESIGNED BY: CDS

DRAWN BY: JFL

DWG: 10-C-12

SHEET NUMBER **15**

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BUILT
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MADISON UTILITIES
MADISON, AL

**WESTERN WATER TRANSMISSION MAIN
PHASE 1**

WATER MAIN
PLAN & PROFILE
FROM STA 97+50
TO STA 104+40

BOX IS 2 IN WIDE
AT FULL SCALE

JOB NO: MU-1960
DATE: MAY 2020
DESIGNED BY: CDS
DRAWN BY: JFL
DWG: 10-C-13
SHEET NUMBER 16

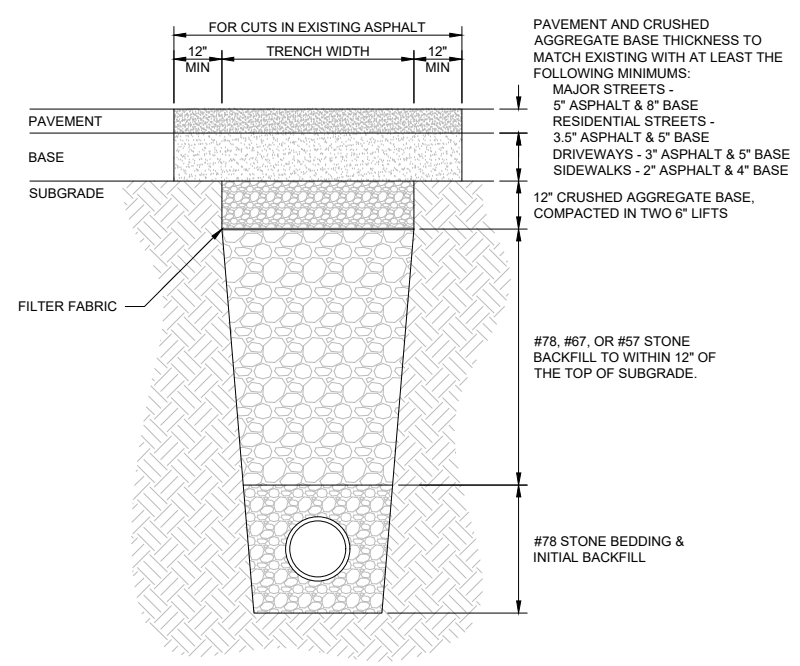
NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BID	CONSTRUCTION	AS-BUILT
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TYPICAL DETAILS

BOX IS 2 IN WIDE AT FULL SCALE

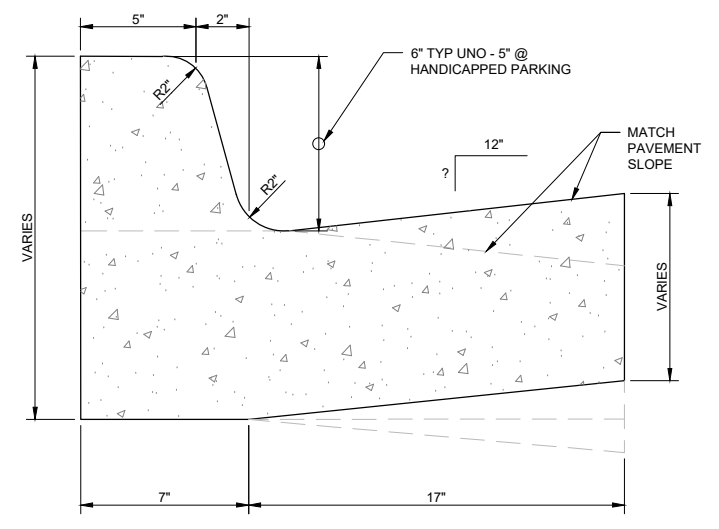
JOB NO: MU-1960
 DATE: MAY 2020
 DESIGNED BY: CDS
 DRAWN BY: JFL
 DWG: 95-C-01
 SHEET NUMBER **17**

- NOTES:**
- THIS DETAIL SHALL SUPERCEDE STANDARD DRAWING NO. 8.120 IN "CONSTRUCTION SPECIFICATIONS FOR WATER AND SANITARY SEWER" BY MADISON UTILITIES.
 - IN EXISTING ROADS: SAWCUT PERIMETER OF PAVEMENT TO BE REPLACED.
 - ASPHALT SURFACE BY SEWER PROJECT CONTRACTOR. PROVIDE AND MAINTAIN TEMPORARY PUG-MIX SURFACE.



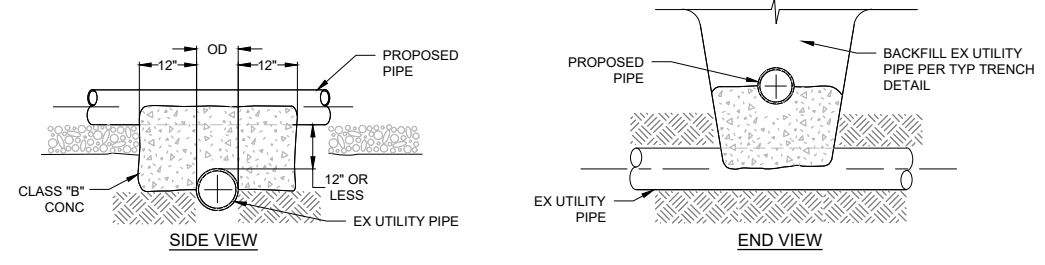
1 UTILITY TRENCH REPAIRS UNDER EXISTING ASPHALT SURFACES
 95-C-01 SCALE: NOT TO SCALE

- NOTES:**
- PROVIDE 1/2" EXPANSION JOINTS WITH BITUMINOUS JOINT MATERIAL AT 60' OC, AT WALKS, STEPS, BUILDINGS, ETC.
 - PROVIDE CONTRACTION JOINTS AT 15' OC.
 - USE FIBER REINFORCED CONCRETE.
 - MATCH EXISTING CURB & GUTTER WHEN REMOVAL AND REPLACEMENT IS REQUIRED.

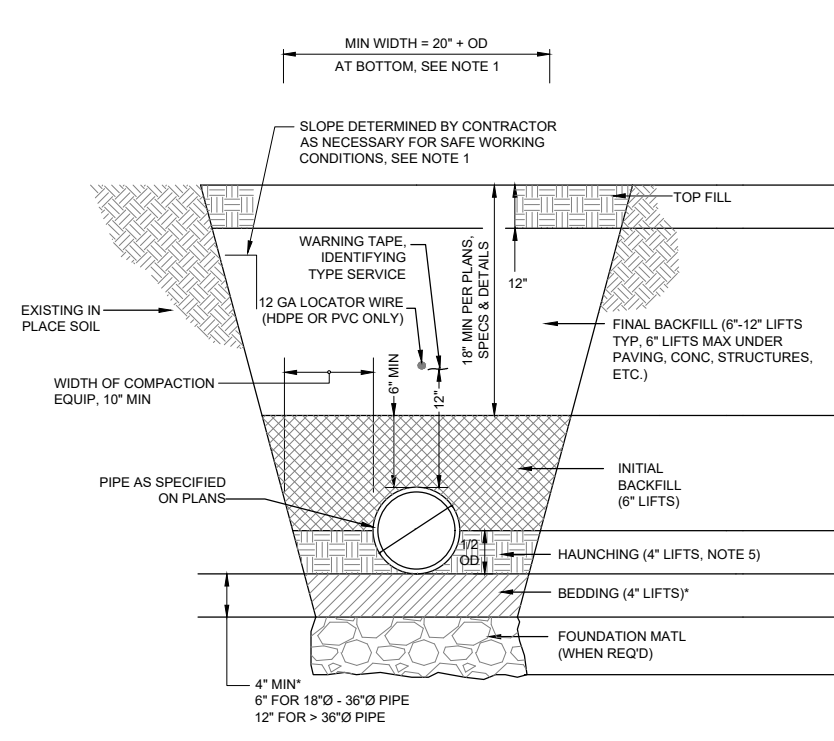


2 INTEGRAL CURB & GUTTER
 95-C-01 SCALE: NOT TO SCALE

- NOTES:**
- SHALL BE USED WHEN CLEARANCE BETWEEN PROPOSED LINE AND UTILITY PIPE IS 12" OR LESS.
 - "UTILITY PIPE" INCLUDES UNDERGROUND WATER, GAS, TELEPHONE AND ELECTRICAL CONDUITS, STORM AND SANITARY SEWERS, ETC.
 - CONTRACTOR SHALL COORDINATE WITH OTHER UTILITIES.



4 UTILITY CROSSING WITH 12" OR LESS CLEARANCE
 95-C-01 SCALE: NOT TO SCALE



BEDDING/BACKFILL REQUIREMENTS & MATL DESIGNATIONS (SEE MATERIAL DESIGNATION / DESCRIPTIONS TABLE)								
PRESSURE MAINS			GRAVITY LINES			PAVED AREAS		
DI	CONC	HDPE/PVC	DI	CONC	HDPE/PVC	DI	CONC	HDPE/PVC
5	5	5	5	5	5	6**	6**	6**
4	4	4	4	4	4	1	1	2
3	3	2	3	3	2	1	1	2
2	3	2	1	1	2	1	1	2
2	1	2	1	1	2	1	1	2

RIP-RAP OR CRUSHED STONE CLASS 1B (USCS IN ASTM D2487)

* SEE NOTE 2
 ** SEE NOTE 4

3 BEDDING & BACKFILL FOR TRENCHES
 95-C-01 SCALE: NOT TO SCALE

- NOTES:**
- SLOPE, BENCHING, SHORING, ETC. AS DETERMINED AND DESIGNED BY THE CONTRACTOR. CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE OSHA REGULATIONS FOR "OPEN TRENCH EXCAVATIONS".
 - BEDDING REQ'D FOR ALL GRAVITY LINES, ALL PVC LINES AND ALL CONCRETE LINES. BEDDING REQUIRED IN ALL AREAS OF ROCK EXCAVATION OR UNSUITABLE SOILS. BELL HOLES REQ'D FOR PIPES > 4" DIA. FOR DUCTILE IRON PRESSURE MAINS, SELECT EARTH MAY BE USED FOR BEDDING IN AREAS OF ROCK EXCAVATION.
 - ALL MATERIALS SHALL BE COMPACTED TO MINIMUM 95% STANDARD PROCTOR DENSITY AT 2%± OPTIMUM MOISTURE CONTENT. MATERIALS UNDER PAVING, CONCRETE, STRUCTURES, ETC. SHALL BE COMPACTED TO TO MIN 98%-100% STANDARD PROCTOR. MECHANICAL COMPACTION SHALL BE BY VIBRATORY SHEEPSFOOT OR OTHER EQUIP. SPECIFICALLY DESIGNED FOR THE COMPACTION OF EARTH. COMPACTION EQUIP. SHALL BE ON-SITE PRIOR TO BEGINNING OF WORK. MECHANICAL COMPACTION SHALL BE COMPLETED IN LOOSE LIFTS AS SHOWN ON THE DETAIL.
 - TEMPORARY COMPACTED PUG-MIX BACKFILL REQ'D UNTIL PAVEMENT PLACEMENT IS COMPLETE. THE CONTRACTOR SHALL CONTINUOUSLY MAINTAIN THIS PUGMIX TO KEEP IT FLUSH WITH THE ADJACENT PAVING, ETC. UNTIL THE FINAL PAVING IS PLACED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ASPHALT OR CONCRETE PATCHES WHEN NEEDED FOR PUBLIC SAFETY AND/OR CONVENIENCE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING AND UTILIZE APPROPRIATE MEANS AND METHODS OF CONSTRUCTION TO ENSURE THAT THE ENTIRE AREAS UNDER THE HAUNCHES OF THE PIPE ARE FILLED WITH THE REQUIRED MATERIALS AND COMPACTED APPROPRIATELY.
 - ADDITIONAL AND/OR SPECIAL REQUIREMENTS MAY BE REQ'D BY THE PLANS, SPECIFICATIONS AND/OR CONTRACT DOCUMENTS.
 - TO THE EXTENT POSSIBLE, AS DETERMINED BY THE CONTRACTOR, TRENCH WALL SHORING METHODS SHALL BE USED IN PAVED AREAS TO MINIMIZE PAVING REPAIR REQUIREMENTS.

MATERIAL DESIGNATION / DESCRIPTIONS TABLE	
DESIGNATION/ MATERIALS	DESCRIPTION
1	CRUSHED STONE, ASTM-448 NO. 57 GRADATION
2	CRUSHED STONE, ASTM-448 NO. 67 GRADATION. SAND SHALL BE USED AS SUBSTITUTE IN RESIDENTIAL LAWNS, YARDS, AND LANDSCAPED AREAS.
3	SELECT EXCAVATED MATL REASONABLY DRY (WITHIN LIMITS REQ'D FOR COMPACTION) NO STONES > 1" DIA.
4	EXCAVATED MATL REASONABLY DRY (WITHIN LIMITS REQ'D FOR COMPACTION) NO STONES > 12" DIA.
5	SELECT TOPSOIL MATL TO SUPPORT VEGETATION, NO STONES OR ROCK ALLOWED
6	CRUSHED STONE, MOIST "PUG-MIX" PER ALDOT SECTION 825

NO	DATE	DESCRIPTION	AS-BUILT

TYPICAL CONCRETE BRACING FOR TEES

PIPE DIA.	A	B	C	MIN COVER
4"	5"	5"	6"	2'-6"
6"	6"	8"	9"	2'-6"
8"	7"	1'-1"	1'-0"	2'-6"
10"	9"	1'-6"	1'-3"	3'-0"
12"	10"	1'-10"	1'-6"	3'-0"
14"	11 1/2"	1'-9"	1'-9"	3'-0"
16"	1'-0 1/2"	2'-0"	2'-0"	3'-0"
18"	1'-2"	2'-4"	2'-3"	3'-0"
20"	1'-3 1/2"	2'-6"	2'-6"	3'-6"
24"	1'-7 1/2"	3'-0"	3'-0"	3'-6"
30"	1'-10"	3'-4"	3'-9"	4'-0"
36"	2'-1"	3'-6"	4'-6"	4'-6"
48"	2'-7"	4'-0"	5'-0"	4'-6"
54"	3'-3"	4'-3"	5'-4"	5'-0"

DO NOT PLACE ANY CONCRETE UNDER PIPE

TYPICAL CONCRETE BRACING FOR 45° BENDS

PIPE DIA.	A	B	C	D	E	MIN COVER
4"	4 1/2"	3 1/2"	1'-0"	6"	1'-1"	2'-6"
6"	4 1/2"	6 1/2"	9"	9"	1'-2"	2'-6"
8"	4 1/2"	10"	3"	1'-0"	1'-2"	2'-6"
10"	4 1/2"	1'-1 1/2"	-	1'-3"	1'-4"	3'-0"
12"	6"	1'-4 1/2"	-	1'-6"	1'-8"	3'-0"
14"	6"	1'-4 1/2"	-	1'-9"	1'-8"	3'-0"
16"	6"	1'-7"	-	2'-0"	1'-10"	3'-0"
18"	6"	1'-9 1/2"	-	2'-3"	2'-4"	3'-0"
20"	6"	1'-11"	-	2'-6"	2'-4"	3'-6"
24"	7"	2'-3"	-	3'-0"	2'-10"	3'-6"
30"	8"	2'-6"	-	3'-3"	2'-10"	4'-0"
36"	8"	2'-10"	-	3'-6"	3'-3"	4'-6"
48"	8"	3'-1"	-	3'-9"	3'-6"	4'-6"
54"	9"	3'-4"	-	4'-0"	4'-0"	5'-0"

NOTE: CONCRETE MUST BE POURED AGAINST UNDISTURBED SOIL

DO NOT PLACE ANY CONCRETE UNDER PIPE

TYPICAL CONCRETE BRACING FOR 11 1/4° & 22 1/2° BENDS

PIPE DIA.	22 1/2° BENDS				11 1/4° BENDS			
	A	B	C	MIN COVER	A	B	C	MIN COVER
4"	2"	1'-1"	4"	2'-6"	2"	1'-0"	3"	2'-6"
6"	4"	1'-0"	6"	2'-6"	2"	1'-0"	4"	2'-6"
8"	6"	1'-0"	8"	3'-0"	4"	1'-0"	5"	3'-0"
10"	8"	1'-1"	10"	3'-0"	5"	1'-0"	6"	3'-0"
12"	11"	1'-7"	1'-0"	5'-0"	6"	1'-0"	7"	3'-0"
14"	12"	2'-1"	1'-2"	5'-0"	8"	1'-0"	8"	3'-0"
16"	1'-1"	2'-5"	1'-8"	5'-0"	10"	1'-0"	9"	3'-0"
18"	1'-0"	2'-1"	1'-10"	5'-0"	1'-0"	1'-0"	10"	3'-6"
20"	1'-2"	2'-1"	2'-1"	5'-0"	1'-1"	1'-0"	1'-0"	3'-6"
24"	1'-5"	2'-10"	2'-6"	5'-0"	1'-3"	1'-0"	1'-3"	4'-0"
30"	1'-9"	2'-10"	2'-8"	5'-0"	1'-7"	1'-3"	1'-5"	4'-6"
36"	2'-0"	3'-2"	3'-1"	5'-0"	1'-10"	1'-3"	1'-9"	4'-6"
48"	2'-6"	3'-10"	3'-6"	5'-0"	2'-4"	1'-6"	2'-2"	5'-0"
54"	2'-10"	4'-0"	3'-10"	5'-0"	2'-8"	1'-6"	2'-5"	5'-0"

DO NOT PLACE CONCRETE UNDER PIPE

TYPICAL CONCRETE BRACING FOR 90° BENDS

PIPE DIA.	A	B	C	D	E	MIN COVER
4"	4 1/2"	6"	1'-8"	6"	1'-10"	2'-6"
6"	4 1/2"	1'-0"	1'-7"	9"	1'-9"	2'-6"
8"	4 1/2"	1'-3"	1'-6"	1'-0"	1'-9"	2'-6"
10"	4 1/2"	2'-1"	1'-1"	1'-3"	1'-11"	3'-0"
12"	4 1/2"	2'-6"	1'-0"	1'-6"	1'-11"	3'-0"
14"	6"	2'-6"	1'-2"	1'-9"	2'-0"	3'-0"
16"	6"	2'-11"	1'-0"	2'-0"	2'-1"	3'-0"
18"	6"	3'-4"	1'-0"	2'-3"	2'-2"	3'-0"
20"	6"	3'-6"	1'-1"	2'-6"	2'-3"	3'-6"
24"	7"	4'-3"	8"	3'-0"	2'-5"	3'-6"
30"	8"	4'-7"	6"	3'-3"	2'-5"	4'-0"
36"	8"	5'-0"	6"	3'-6"	2'-10"	4'-6"
48"	8"	5'-4"	4"	3'-9"	3'-1"	4'-6"
54"	9"	5'-6"	4"	4'-0"	3'-7"	5'-0"

DO NOT PLACE ANY CONCRETE UNDER PIPE

GENERAL NOTES:

- GENERAL DIMENSIONS SHALL BE CONSIDERED AS MINIMUMS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADDITIONAL AS REQUIRED FOR ACTUAL FIELD CONDITIONS ENCOUNTERED. CONTRACTOR TO ENSURE ALL THRUST RESTRAINT IS ADEQUATE.
- ALL CONCRETE FOR THRUST RESTRAINT SHALL BEAR AGAINST FIRM UNDISTURBED SOILS.
- CONTRACTOR SHALL WRAP ALL ACCESSORIES BOLTS, NUTS, CONNECTIONS, ETC. IN PLASTIC SUCH THAT THEY CAN BE REMOVED WITHOUT THE NEED FOR CONCRETE REMOVAL.
- UNLESS IND. OTHERWISE IN PLANS, ALL FITTINGS SHALL BE RJ OR MJ WITH RETRAINING FOLLOWER GLANDS. RESTRAINING FOLLOWER GLANDS SHALL BE MEGA-LUG, ROMAC, OR EQUAL. RETAINER GLANDS NOT ALLOWED.
- PIPE BEYOND ALL FITTINGS SHALL BE RJ FOR LENGTHS REQUIRED BY DUCTILE IRON NOTE 6 ON SHEET 2.

COMPACT BACKFILL

PER DETAILS FOR HORIZ BENDS

RODS FOR MJ FITTINGS

HAND EXCAVATE AREA OCCUPIED BY CONCRETE

TYPICAL CONCRETE THRUST COLLAR. SEE DETAILS ENSURE COLLAR EXTENDS PREV UNEXCAVATED SOILS

UNDISTURBED SOIL

CONCRETE BRACING FOR VERTICAL BENDS

1 TYPICAL THRUST RESTRAINT FOR FITTINGS ON PRESSURE MAINS
95-C-02 SCALE: NOT TO SCALE

PIPE SIZE	ROD DIA	#RODS REQ'
8"	3/4"	2
10"-16"	3/4"	4
18"	3/4"	6
20"	3/4"	8
24"-30"	3/4"	10
30"-36"	1"	10

*FOR 150 PSI MAX PRESSURE

RJ PER DUCTILE IRON NOTE 6, SHEET 2

DUCTILE IRON PIPE LENGTH AS REQUIRED

MJ DI FITTINGS WITH RFGs OR MJ EYE BOLTS AND SS RODS PER TABLE BETWEEN FITTINGS

2 MULTIPLE DI BENDS
95-C-02 SCALE: NOT TO SCALE

CONCRETE CROSS ANCHOR

MID SPAN RESTRAINT, EBAA IRON SERIES 1100SDB OR SMITH BLAIR SERIES 981

#5 BARS @ 8" OC (VERT)

#5 BARS @ 6" OC (HORIZ)

SS ROD, SEE TABLE

BUTTERFLY VALVE

45° VERT BEND ROD TO MJ CAP

MJ CAP OR PLUG ROD TO VERT BEND (SEE PLANS FOR SIZE)

24" MIN. TYP BOTH SIDES

UNDISTURBED SOIL

3" CLEAR

2'-0"

RJ PER DUCTILE IRON NOTE 6, SHEET 2

45° VERT BEND ROD TO MJ CAP

BUTTERFLY VALVE

MJ CAP OR PLUG, ROD TO VERT BEND (SEE PLANS FOR SIZE)

PIPE SIZE	ROD DIA	#RODS REQ'
8"	3/4"	2
10"-16"	3/4"	4
18"	3/4"	6
20"	3/4"	8
24"-30"	3/4"	10
30"-36"	1"	10

*FOR 150 PSI MAX PRESSURE

#5 BARS @ 8" OC (VERT)

#5 FAN BARS EF

FINISHED GRADE

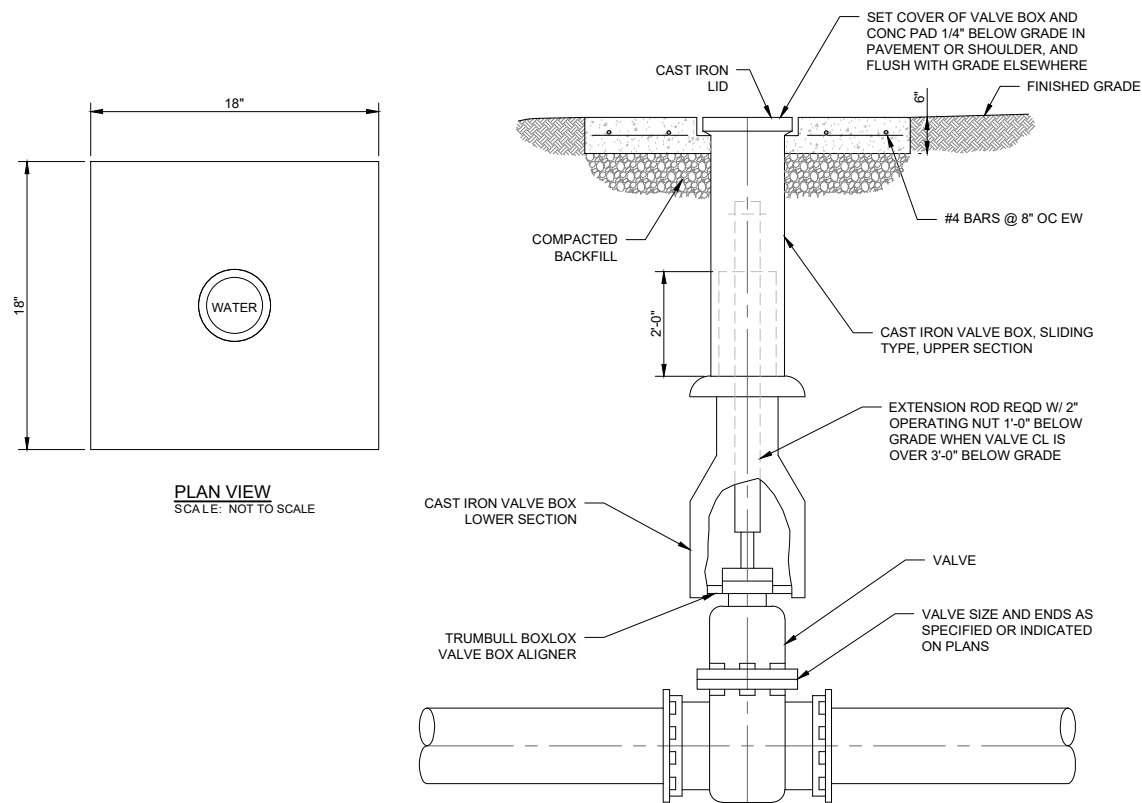
#5 BARS @ 6" OC (HORIZ)

4'-0"

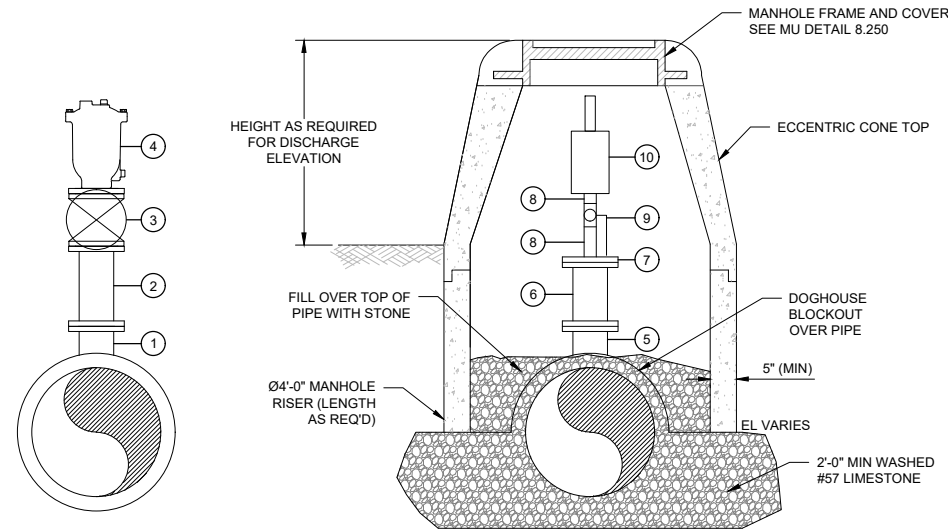
6'-0" OR 2' BEYOND DITCH EACH SIDE WHICHEVER IS GREATER

SECTION

3 CROSS ANCHOR & BLOW OFF ASSEMBLY
95-C-02 SCALE: NOT TO SCALE

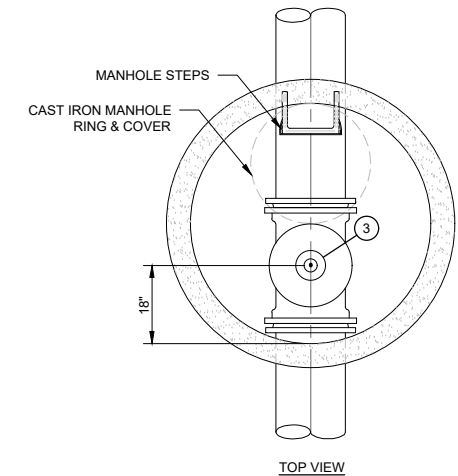


1 BURIED VALVE BOX
95-C-03 SCALE: NOT TO SCALE



2 AIR RELEASE VALVE
95-C-03 SCALE: NOT TO SCALE

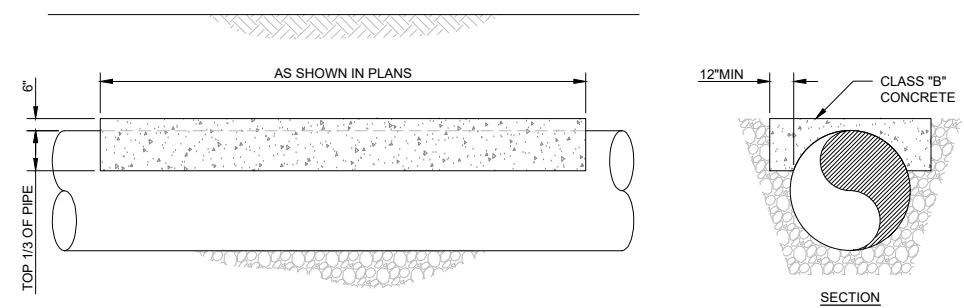
- EXPOSED NON-SS PIPE, FITTINGS, AND VALVES COATINGS:
1. SURFACE SHALL BE CLEAN AND DRY.
 2. SURFACE PREP IN ACCORDANCE WITH NAPF 500-03.
 3. INDURON
A. SHOP PRIME - PERMACLEAN II EPOXY AT 4 - 6 MILS DFT
B. FINISH - PERMACLEAN II EPOXY AT 4 - 6 MILS DFT
 4. SHERWIN-WILLIAMS
A. SHOP PRIME - MACROPOXY 646, B56-600 AT 4 - 6 MILS DFT
B. FINISH - MACROPOXY 646, B56-600 AT 4 - 6 MILS DFT
 5. TNE MEC
A. SHOP PRIME - SERIES N140 AT 4 - 6 MILS DFT
B. FINISH - SERIES 66 AT 4 - 6 MILS DFT
 6. COLOR SHALL BE BLUE



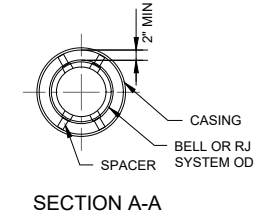
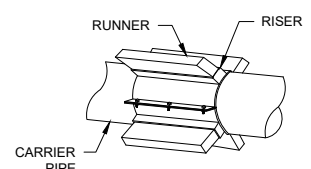
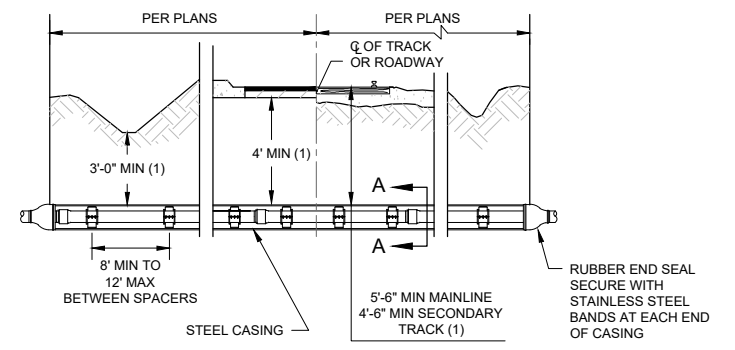
TOP VIEW

- CRISPIN OPTION FITTINGS LIST
- 1 WELDED ON 6" FLANGE OUTLET
 - 2 6" FLG x FLG PIPE LENGTH AS REQUIRED FOR DISCHARGE ELEVATION
 - 3 6" FLG GATE VALVE
 - 4 6" AIR RELEASE VALVE CRISPIN AL61/SC/PL10-HD

- VENT-TECH OPTION FITTINGS LIST
- 5 WELDED ON 6" FLANGE OUTLET
 - 6 6" FLG x FLG PIPE LENGTH AS REQUIRED FOR DISCHARGE ELEVATION
 - 7 6" DI TAPPED FLANGE
 - 8 3" SS NIPPLE
 - 9 3" SS THREADED BALL VALVE
 - 10 3" AIR RELEASE VALVE VENT-TECH 03WTW25SCS-4

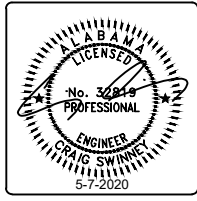
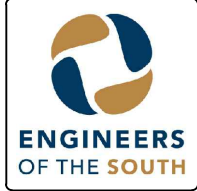


3 CONCRETE CAP
95-C-03 SCALE: NOT TO SCALE



- NOTES:
1. VERTICAL DIMENSIONS TYPICAL FOR CASINGS UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE PERMIT(S).
 2. STEEL CASING PIPE SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-200 AND ASTM A-139, GRADE B.
 3. CONTRACTOR SHALL VERIFY RJ PIPE OD WITH CASING SIZES CALLED OUT IN PLANS. CONTRACTOR SHALL PROVIDE LARGER CASING AT HIS OPTION AND COST TO ACCOMMODATE LARGER OD PIPE RESTRAINT SYSTEMS.
 4. ALL LINES SHALL BE PROVIDED WITH RESTRAINED JOINTS THROUGH CASING.

4 HORIZONTAL JACK & BORE CROSSING
95-C-03 SCALE: NOT TO SCALE



NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BUILT

MADISON UTILITIES
MADISON, AL
WESTERN WATER TRANSMISSION MAIN
PHASE 1

TYPICAL DETAILS

BOX IS 2 IN WIDE AT FULL SCALE

JOB NO: MU-1960

DATE: MAY 2020

DESIGNED BY: CDS

DRAWN BY: JFL

DWG: 95-C-03

SHEET NUMBER **19**

NO	DATE	DESCRIPTION	FOR REVIEW AND COMMENT	AS-BID	CONSTRUCTION REVISIONS	AS-BUILT
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MADISON UTILITIES
 MADISON, AL
WESTERN WATER TRANSMISSION MAIN
 PHASE 1

TYPICAL DETAILS

BOX IS 2 IN WIDE AT FULL SCALE

JOB NO: MU-1960

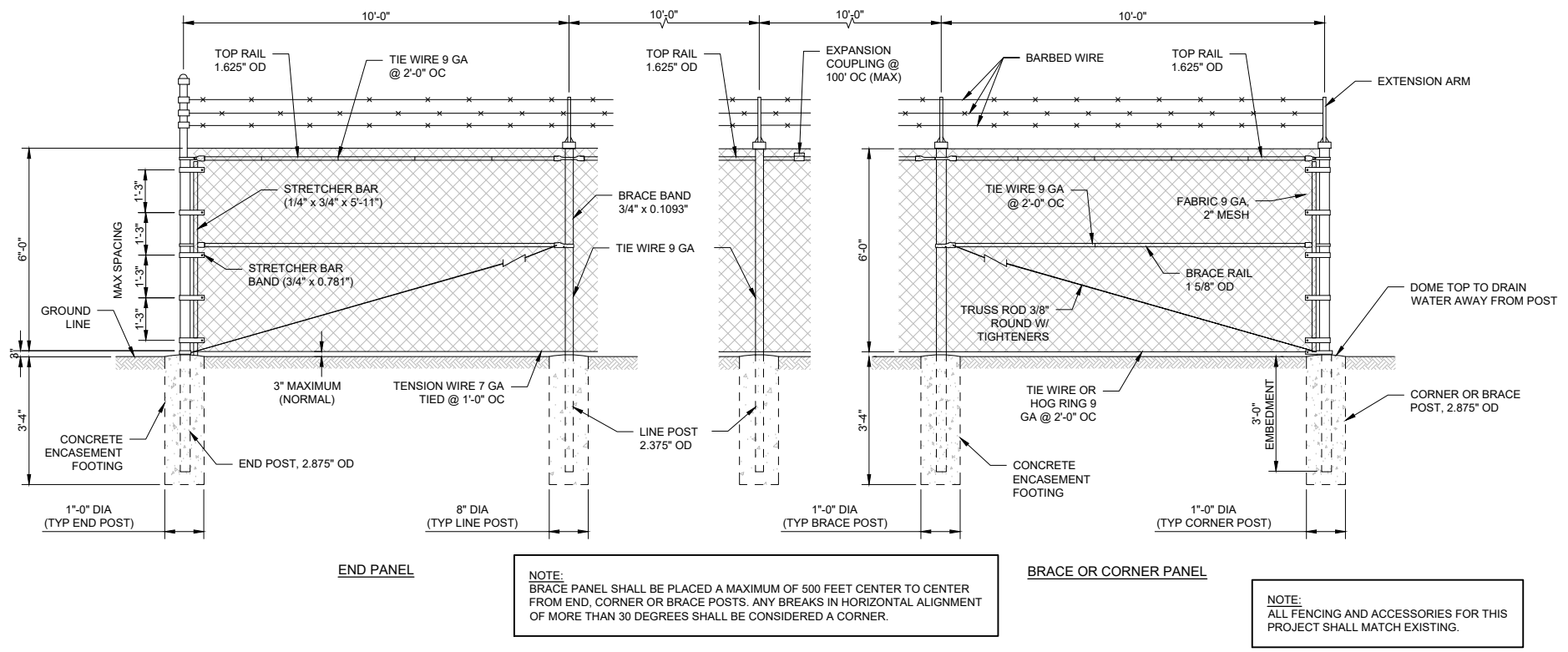
DATE: MAY 2020

DESIGNED BY: CDS

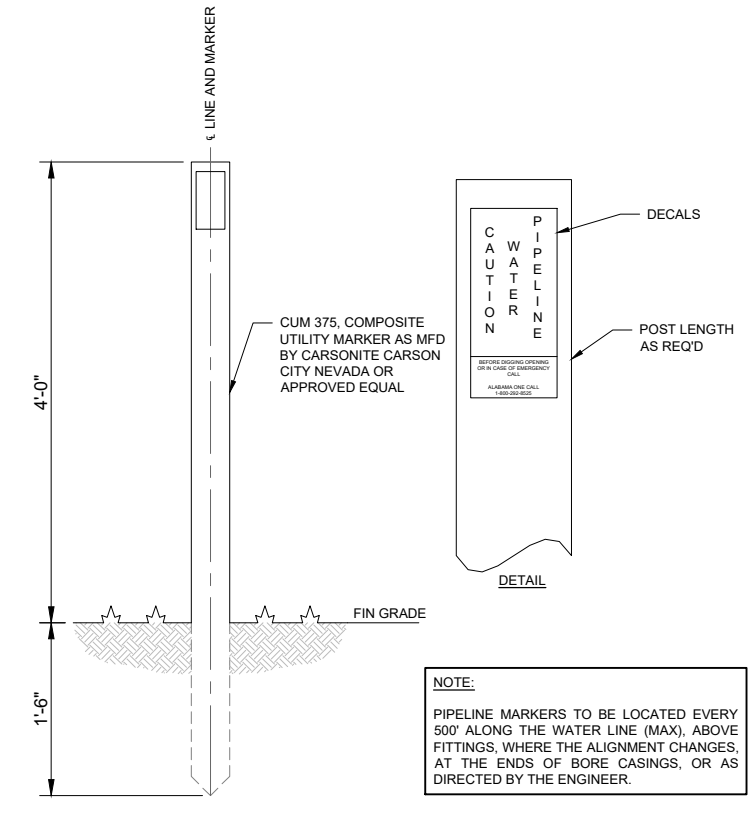
DRAWN BY: JFL

DWG: 95-C-04

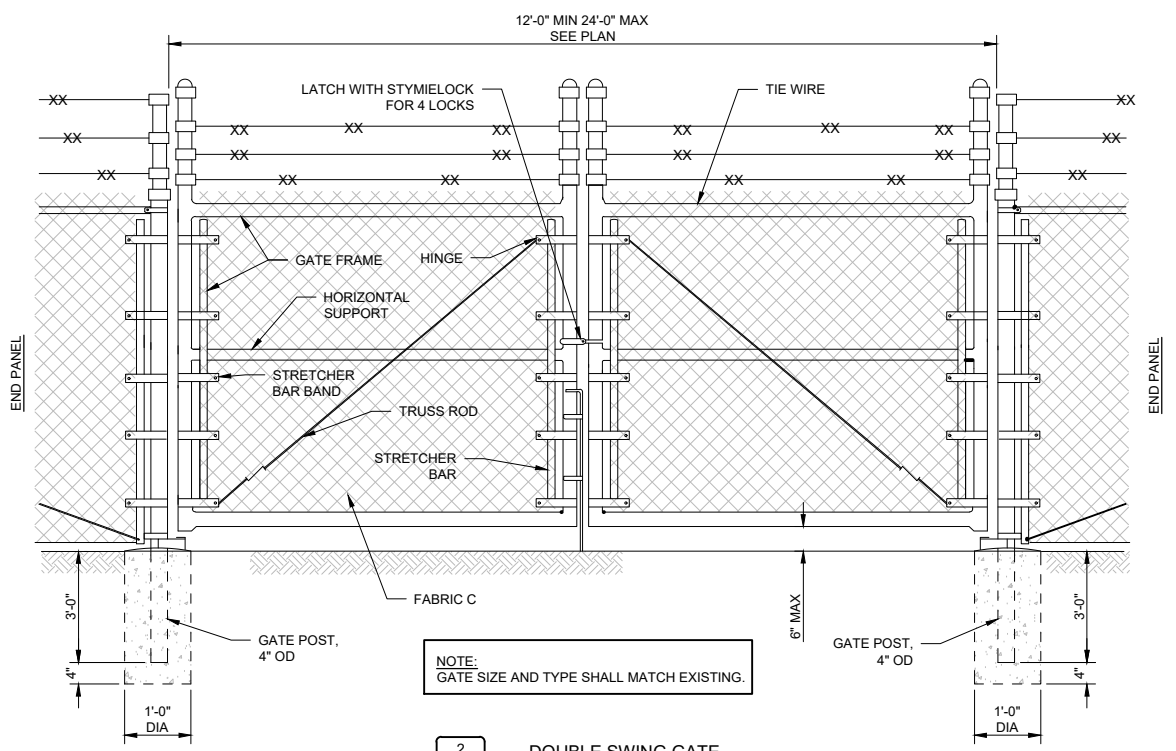
SHEET NUMBER **20**



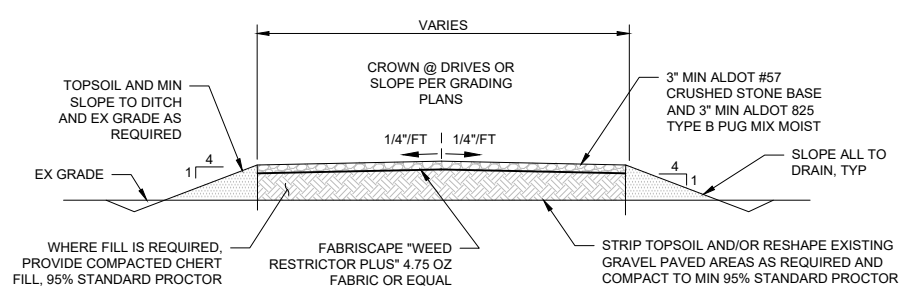
1 TYPICAL FENCE DETAIL
95-C-04 SCALE: NOT TO SCALE



4 LINE MARKER
95-C-04 SCALE: NOT TO SCALE



2 DOUBLE SWING GATE
95-C-04 SCALE: NOT TO SCALE



3 GRAVEL PAVING
95-C-04 SCALE: NOT TO SCALE