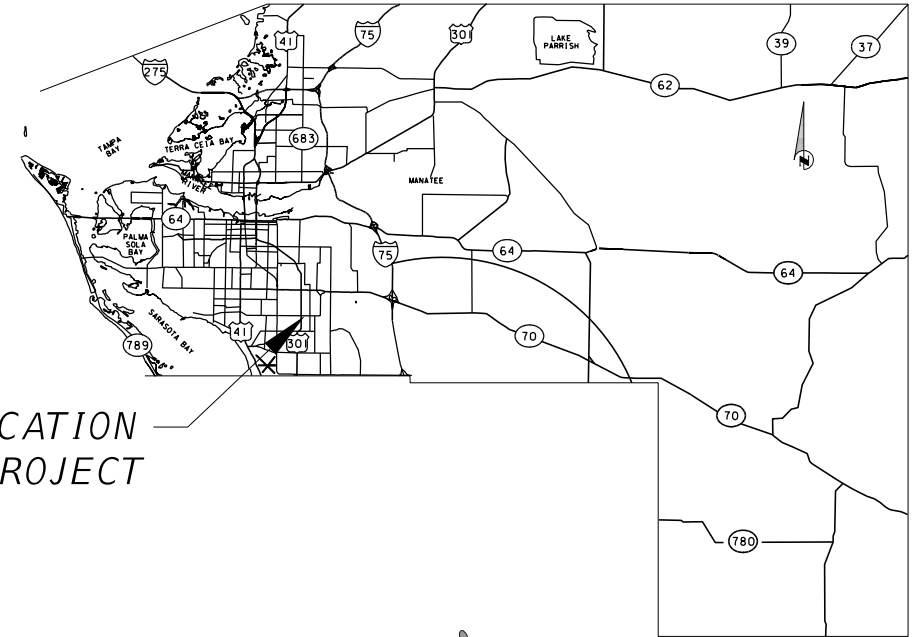


STATE OF FLORIDA
MANATEE COUNTY



INDEX OF UTILITY RELOCATION PLANS

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UTILITY RELOCATION PLANS FOR
63RD AVENUE EAST
FROM US 301 TO TUTTLE AVE.
BRADENTON, FLORIDA

MANATEE COUNTY PROJECT No: 6107860

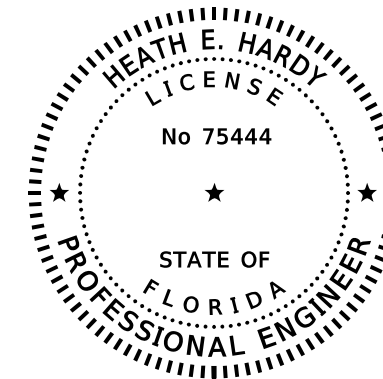
PERMIT SUBMITTAL
DECEMBER 2023



ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ENLARGED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

MANATEE COUNTY PROJECT MANAGER:
ANTHONY RUSSO, P.E.

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY



ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

UTILITY RELOCATION PLANS
PROFESSIONAL OF RECORD: HEATH E. HARDY, P.E.

FLORIDA P.E. # 75444

HDR ENGINEERING, INC.
401 N. CATTLEMEN ROAD, SUITE 210
SARASOTA, FL 34232

SHEET
NO.

U-1

UTILITY PLANS (POTABLE WATER MAIN)																				
ITEM NO.	ITEM	UNIT	U-7	U-9	U-11	U-12	U-15	U-17	U-20	U-22	U-25	U-28	U-30	U-33	U-34	U-35	U-36	U-37	U-38	TOTAL
MC-01-01	MOBILIZATION, POTABLE WATER	LS																		1
MC-01-02	6" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF	19	121	73	92		151	33		6		15		179					689
MC-01-03	8" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF		49	53					23	180		425					398	455	1583
MC-01-04	10" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF	45	518	554	622	560	335						45						2679
MC-01-05	16" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF						193	529	428	686	566	342							2744
MC-01-06	24" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF						137									391			528
MC-01-07	REMOVE 6" PIPE, POTABLE WATER	LF		106	85	45		150	10				20		190	395				1001
MC-01-08	REMOVE 8" PIPE, POTABLE WATER	LF		42	44				280	4	181		320			395		310	455	2031
MC-01-09	REMOVE 10" PIPE, POTABLE WATER	LF	50	562	560	658	560	560						46						2996
MC-01-10	REMOVE 16" PIPE, POTABLE WATER	LF							265	430	580	560	393							2228
MC-01-11	REMOVE 24" PIPE, POTABLE WATER	LF						114									397			511
MC-01-12	6" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA		4	2	2		4							4					16
MC-01-13	8" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA		2	2						8		6					2	2	22
MC-01-14	10" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA	2	8	2	4								4						20
MC-01-15	16" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA						6	6	4		2	6							24
MC-01-16	24" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA						2								2				4
MC-01-17	6" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA		1	1	1									2					5
MC-01-18	8" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA		1	1						1							1	1	5
MC-01-19	10" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA	1			1								2						4
MC-01-20	16" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA							1	1			1							3
MC-01-21	24" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA														1				1
MC-01-22	6" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA	1	1	1	2		2	1		1		1		1					11
MC-01-23	8" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA		1	1						1		2					3		8
MC-01-24	10" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA	1	1		2														4
MC-01-25	16" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA											1							1
MC-01-26	24" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA						1												1
MC-01-27	6" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA						1							1					2
MC-01-28	8" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA									1							1		2
MC-01-29	10" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA	1	1	1	2														5
MC-01-30	10" X 8" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA		1	1															2
MC-01-31	10" X 10" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA				1														1
MC-01-32	16" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA							1				1							2
MC-01-33	16" X 8" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA								1	2		2							5
MC-01-34	24" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA						1												1
MC-01-35	24" X 24" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA						1												1
MC-01-36	24" X 10" DUCTILE IRON REDUCER (RESTRAINED JOINT), POTABLE WATER	EA						1												1
MC-01-37	24" X 16" DUCTILE IRON REDUCER (RESTRAINED JOINT), POTABLE WATER	EA						1												1
MC-01-38	SAMPLE POINT, 6", POTABLE WATER	EA		1	1	1									2					5
MC-01-39	SAMPLE POINT, 8", POTABLE WATER	EA		1	1						2		1					1	1	7
MC-01-40	SAMPLE POINT, 10", POTABLE WATER	EA	1		1	1								2						5
MC-01-41	SAMPLE POINT, 16", POTABLE WATER	EA						1	1	1	1		1							5
MC-01-42	SAMPLE POINT, 24", POTABLE WATER	EA														1				1
MC-01-43	ARV WITH ENCLOSURE, POTABLE WATER	EA		1	1			1	1					1						5
MC-01-44	EXIST. ARV (VAULT / ABOVE GRADE), RELOCATE/ADJ TO GRADE, POTABLE WATER	EA								1										1
MC-01-45	EXIST. VALVE ADJ TO GRADE, POTABLE WATER	EA								1	1		1							3
MC-01-46	FIRE HYDRANT ASSEMBLY, POTABLE WATER	EA		1		1		1	1		1		1							6
MC-01-47	FIRE HYDRANT ASSEMBLY, REMOVAL, POTABLE WATER	EA				1		1	1		1		1							5
MC-01-48	FIRE HYDRANT ASSEMBLY, RELOCATE/ADJUST, POTABLE WATER	EA	1																	1
MC-01-49	BLOWOFF ADJ/RELOCATE, POTABLE WATER	EA																1		1
MC-01-50	METER / BACKFLOW PREVENTER (ADJ), POTABLE WATER	EA																		35
MC-01-51	WATER SERVICE REPLACEMENT AND METER / BACKFLOW PREVENTER (ADJ), POTABLE WATER	EA																		35
MC-01-52	RECORD DRAWINGS, POTABLE WATER	LS																		1

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



Heath E. Hardy, P.E.
License Number 75444
HDR Engineering, Inc.
401 N. Cattlemen Road
Suite 210
Sarasota, FL 34232



PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

**TABULATION
OF QUANTITIES (1)**

SHEET NO.
U-2

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

UTILITY PLANS (WASTEWATER FORCE MAIN)

ITEM NO.	ITEM	UNIT	U-8	U-10	U-11	U-13	U-23	U-26	U-28	U-31	U-38	TOTAL
MC-02-01	MOBILIZATION, WASTEWATER	LS										1
MC-02-02	2" HDPE PIPE AND FITTINGS (FUSED JOINT), WASTEWATER	LF		104								104
MC-02-03	3" PVC PIPE AND FITTINGS (RESTRAINED JOINT), WASTEWATER	LF								70		70
MC-02-04	4" POLYVINYL CHLORIDE (PVC) PIPE (RESTRAINED JOINT), WASTEWATER	LF			39							39
MC-02-05	8" POLYVINYL CHLORIDE (PVC) PIPE (RESTRAINED JOINT), WASTEWATER	LF					434	582	560	180		1756
MC-02-06	10" POLYVINYL CHLORIDE (PVC) PIPE (RESTRAINED JOINT), WASTEWATER	LF								102		102
MC-02-07	12" POLYVINYL CHLORIDE (PVC) PIPE (RESTRAINED JOINT), WASTEWATER	LF	102	558	557	439		119				1775
MC-02-08	16" POLYVINYL CHLORIDE (PVC) PIPE (RESTRAINED JOINT), WASTEWATER	LF								157		157
MC-02-09	24" POLYVINYL CHLORIDE (PVC) PIPE (RESTRAINED JOINT), WASTEWATER	LF								157	440	597
MC-02-10	6" DUCTILE IRON PIPE (RESTRAINED JOINT), WASTEWATER	LF						20				20
MC-02-11	REMOVE 3" PVC PIPE, WASTEWATER	LF								70		70
MC-02-12	REMOVE 4" PVC PIPE, WASTEWATER	LF			62							62
MC-02-13	REMOVE 6" DI PIPE, WASTEWATER	LF						20				20
MC-02-14	REMOVE 8" DI PIPE, WASTEWATER	LF					447	580	560	193		1780
MC-02-15	REMOVE 12" PVC/DI/HDPE PIPE, WASTEWATER	LF	32	560	560			120				1272
MC-02-16	REMOVE 16" PVC PIPE, WASTEWATER	LF			560					174		734
MC-02-17	REMOVE 24" PVC PIPE, WASTEWATER	LF								172	446	618
MC-02-18	4" DUCTILE IRON ELBOW (RESTRAINED JOINT), WASTEWATER	EA			2							2
MC-02-19	6" DUCTILE IRON ELBOW (RESTRAINED JOINT), WASTEWATER	EA						4				4
MC-02-20	8" DUCTILE IRON ELBOW (RESTRAINED JOINT), WASTEWATER	EA					6	4				10
MC-02-21	10" DUCTILE IRON ELBOW (RESTRAINED JOINT), WASTEWATER	EA								3		3
MC-02-22	12" DUCTILE IRON ELBOW (RESTRAINED JOINT), WASTEWATER	EA	4	4		4		2				14
MC-02-23	16" DUCTILE IRON ELBOW (RESTRAINED JOINT), WASTEWATER	EA								2		2
MC-02-24	24" DUCTILE IRON ELBOW (RESTRAINED JOINT), WASTEWATER	EA								2	4	6
MC-02-25	4" DUCTILE IRON UNION (RESTRAINED JOINT), WASTEWATER	EA			1							1
MC-02-26	8" DUCTILE IRON UNION (RESTRAINED JOINT), WASTEWATER	EA					1					1
MC-02-27	12" DUCTILE IRON UNION (RESTRAINED JOINT), WASTEWATER	EA	1			1		2				4
MC-02-28	24" DUCTILE IRON UNION (RESTRAINED JOINT), WASTEWATER	EA									1	1
MC-02-29	10"X3" TAPPING SADDLE AND VALVE, WASTEWATER	EA								1		1
MC-02-30	12"X2" TAPPING SADDLE AND VALVE, WASTEWATER	EA		1								1
MC-02-31	4" PLUG VALVE (RESTRAINED JOINT), WASTEWATER	EA			1							1
MC-02-32	12" PLUG VALVE (RESTRAINED JOINT), WASTEWATER	EA		1								1
MC-02-33	16" PLUG VALVE (RESTRAINED JOINT), WASTEWATER	EA								1		1
MC-02-34	24" PLUG VALVE (RESTRAINED JOINT), WASTEWATER	EA								1		1
MC-02-35	12" X 4" DUCTILE IRON TEE (RESTRAINED JOINT), WASTEWATER	EA			1					1		2
MC-02-36	10" X 8" DUCTILE IRON REDUCER (RESTRAINED JOINT), WASTEWATER	EA								1		1
MC-02-37	24" X 16" DUCTILE IRON REDUCER (RESTRAINED JOINT), WASTEWATER	EA								1		1
MC-02-38	EXIST. ARV WITHIN VAULT, ADJ TO GRADE, WASTEWATER	EA								1		1
MC-02-39	EXIST. VALVE ADJ TO GRADE, WASTEWATER	EA					4	2		1		7
MC-02-40	RECORD DRAWINGS, WASTEWATER	LS										1

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			CHECKED BY	JCH	6107860



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PUBLIC WORKS DEPARTMENT
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1022 26th Avenue East
Bradenton, FL 34208

**TABULATION
OF QUANTITIES (2)**

SHEET NO.
U-3

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UTILITY PLANS (GRAVITY SEWER)												
ITEM NO.	ITEM	UNIT	U-11	U-14	U-16	U-18	U-21	U-24	U-27	U-29	U-32	TOTAL
MC-02B-01	MOBILIZATION, GRAVITY SEWER	LS										1
MC-02B-02	8" POLYVINYL CHLORIDE (PVC) PIPE, GRAVITY SEWER	LF							56			56
MC-02B-03	10" POLYVINYL CHLORIDE (PVC) PIPE, GRAVITY SEWER	LF		517	556	356						1429
MC-02B-04	12" POLYVINYL CHLORIDE (PVC) PIPE, GRAVITY SEWER	LF							235	408		643
MC-02B-05	REMOVE 8" PVC PIPE, GRAVITY SEWER	LF							62			62
MC-02B-06	REMOVE 10" PVC PIPE, GRAVITY SEWER	LF		508	555	360						1423
MC-02B-07	REMOVE 12" PVC PIPE, GRAVITY SEWER	LF							233	408		641
MC-02B-08	EXIST. MANHOLE, ADJUST/MODIFY, GRAVITY SEWER	EA	2			1	2	1	1	1	1	9
MC-02B-09	EXIST. MANHOLE, ADJUST/REHABILITATE/LINE, GRAVITY SEWER	EA						1			1	2
MC-02B-10	EXIST. MANHOLE, REMOVE, GRAVITY SEWER	EA		2	2	1			2	1	1	9
MC-02B-11	MANHOLE, GRAVITY SEWER	EA		5	1	2			2	2		12
MC-02B-12	MANHOLE, LINED, GRAVITY SEWER	EA							1		1	2
MC-02B-13	EXIST. CLEANOUT, ADJUST/MODIFY, GRAVITY SEWER	EA										20
MC-02B-14	SEWER SERVICE REPLACEMENT AND CLEANOUT (ADJ.), GRAVITY SEWER	EA			2	2	2	4	6	5	2	23
MC-02B-15	MANHOLE BYPASS, GRAVITY SEWER	LS										1
MC-02B-16	RECORD DRAWINGS, GRAVITY SEWER	LS										1

UTILITY PLANS (RECLAIMED WATER MAIN)												
ITEM NO.	ITEM	UNIT	U-19	U-20	U-23	U-26	U-28	U-30	U-35	U-37	TOTAL	
MC-03-01	MOBILIZATION, GRAVITY SEWER	LS									1	
MC-03-02	2" HDPE PIPE AND FITTINGS (FUSED JOINT), RECLAIMED WATER	LF			68						68	
MC-03-03	4" DUCTILE IRON PIPE (RESTRAINED JOINT), RECLAIMED WATER	LF						119		214	333	
MC-03-04	6" DUCTILE IRON PIPE (RESTRAINED JOINT), RECLAIMED WATER	LF			123	40					163	
MC-03-05	30" DUCTILE IRON PIPE (RESTRAINED JOINT), RECLAIMED WATER	LF	132		172	39	62		8		413	
MC-03-06	REMOVE 4" PIPE, RECLAIMED WATER	LF						117		214	331	
MC-03-07	REMOVE 6" PIPE, RECLAIMED WATER	LF			103	43					146	
MC-03-08	REMOVE 30" PIPE, RECLAIMED WATER	EA	136		161	49	71		12		429	
MC-03-09	4" DUCTILE IRON ELBOW (RESTRAINED JOINT), RECLAIMED WATER	EA						2			2	
MC-03-10	6" DUCTILE IRON ELBOW (RESTRAINED JOINT), RECLAIMED WATER	EA			5	4					9	
MC-03-11	30" DUCTILE IRON ELBOW (RESTRAINED JOINT), RECLAIMED WATER	EA	4		12	4	4		2		26	
MC-03-12	4" DUCTILE IRON UNION (RESTRAINED JOINT), RECLAIMED WATER	EA						1		1	2	
MC-03-13	6" DUCTILE IRON UNION (RESTRAINED JOINT), RECLAIMED WATER	EA			1	2					3	
MC-03-14	30" DUCTILE IRON UNION (RESTRAINED JOINT), RECLAIMED WATER	EA	1		6	2	2		1		12	
MC-03-15	6" GATE VALVE (RESTRAINED JOINT), RECLAIMED WATER	EA			1						1	
MC-03-16	30" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), RECLAIMED WATER	EA			1						1	
MC-03-17	EXIST. ARV (VAULT / ABOVE GRADE), RELOCATE/ADJ TO GRADE, RECLAIMED WATER	EA			1						1	
MC-03-18	EXIST. VALVE ADJ TO GRADE, RECLAIMED WATER	EA		1	4	2		3			10	
MC-03-19	RECORD DRAWINGS, GRAVITY SEWER	LS									1	

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			CHECKED BY	JCH	6107860



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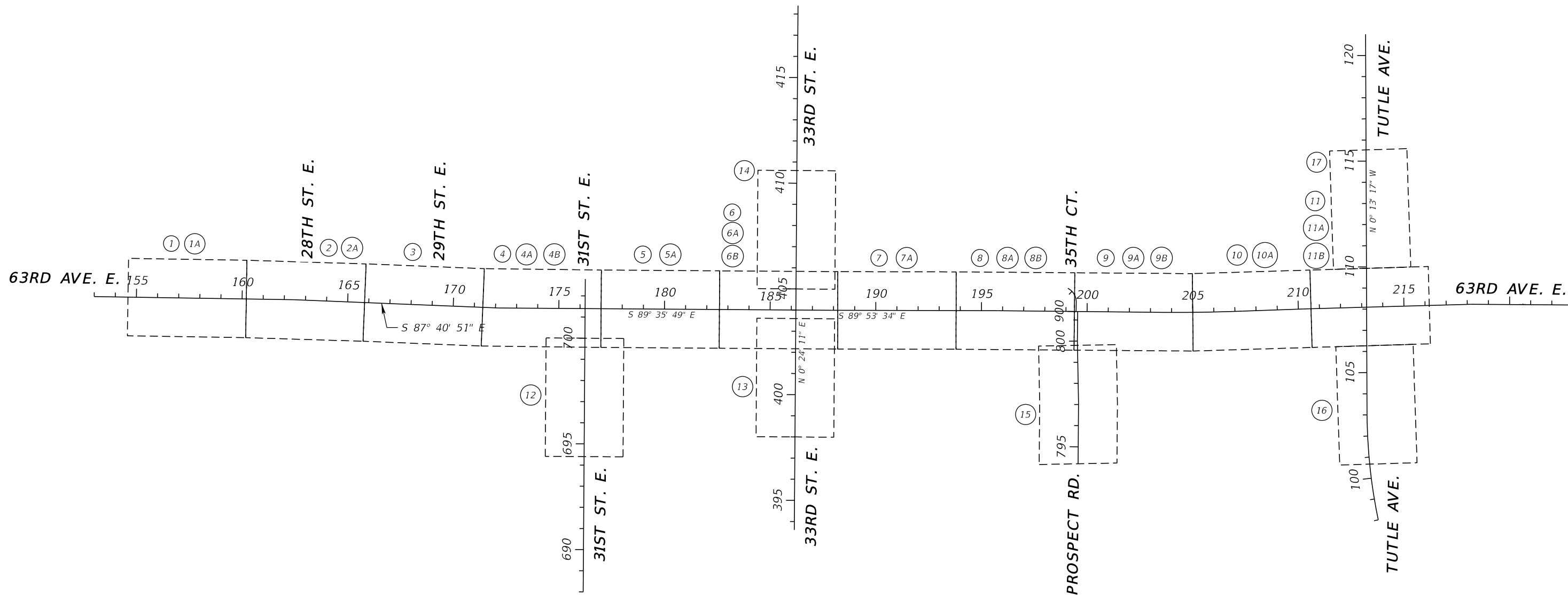
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

**TABULATION
OF QUANTITIES (3)**

SHEET NO.

U-4

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UTILITY RELOCATIONS PLAN SHEET

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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			CHECKED BY	JCH	6107860



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PUBLIC WORKS DEPARTMENT
 ENGINEERING SERVICES
 1022 26th Avenue East
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PROJECT LAYOUT

SHEET NO.
 U-6

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NOTES:
 1) EXIST. FIRE HYDRANT ASSEMBLY (ADJ. TO GRADE) AND CONST. 6" GATE VALVE (RJ) STA. 200+17.76, 20.83' LT. N: 1125597.18 E: 484248.07

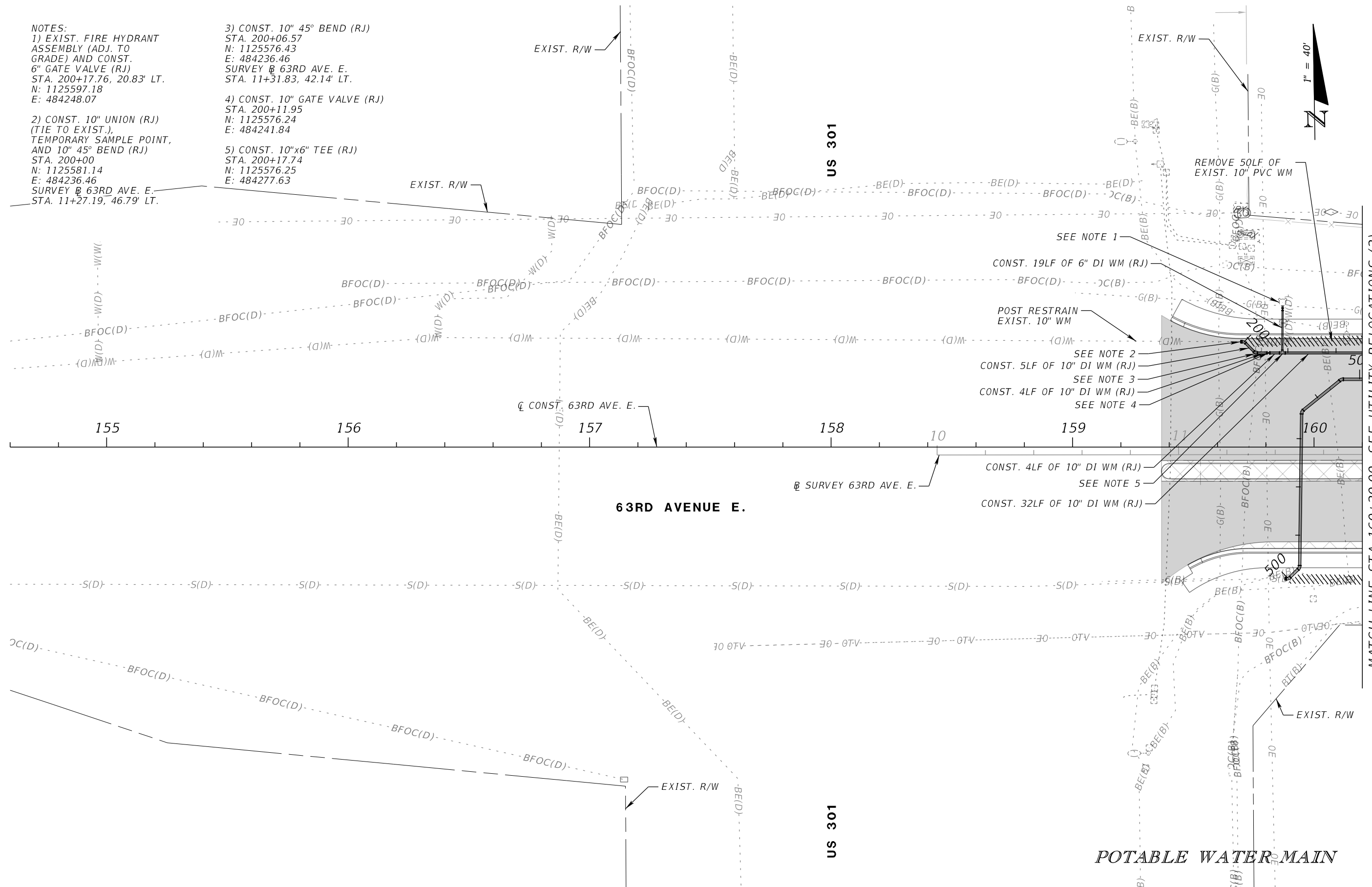
2) CONST. 10" UNION (RJ) (TIE TO EXIST.), TEMPORARY SAMPLE POINT, AND 10" 45° BEND (RJ) STA. 200+00 N: 1125581.14 E: 484236.46 SURVEY @ 63RD AVE. E. STA. 11+27.19, 46.79' LT.

3) CONST. 10" 45° BEND (RJ) STA. 200+06.57 N: 1125576.43 E: 484236.46

SURVEY @ 63RD AVE. E. STA. 11+31.83, 42.14' LT.

4) CONST. 10" GATE VALVE (RJ) STA. 200+11.95 N: 1125576.24 E: 484241.84

5) CONST. 10"x6" TEE (RJ) STA. 200+17.74 N: 1125576.25 E: 484277.63



MATCH LINE STA 160+20.00, SEE UTILITY RELOCATIONS (2)

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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			CHECKED BY	JCH	6107860



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 ENGINEERING SERVICES
 1022 26th Avenue East
 Bradenton, FL 34208

UTILITY RELOCATIONS (1)

SHEET NO.
 U-7

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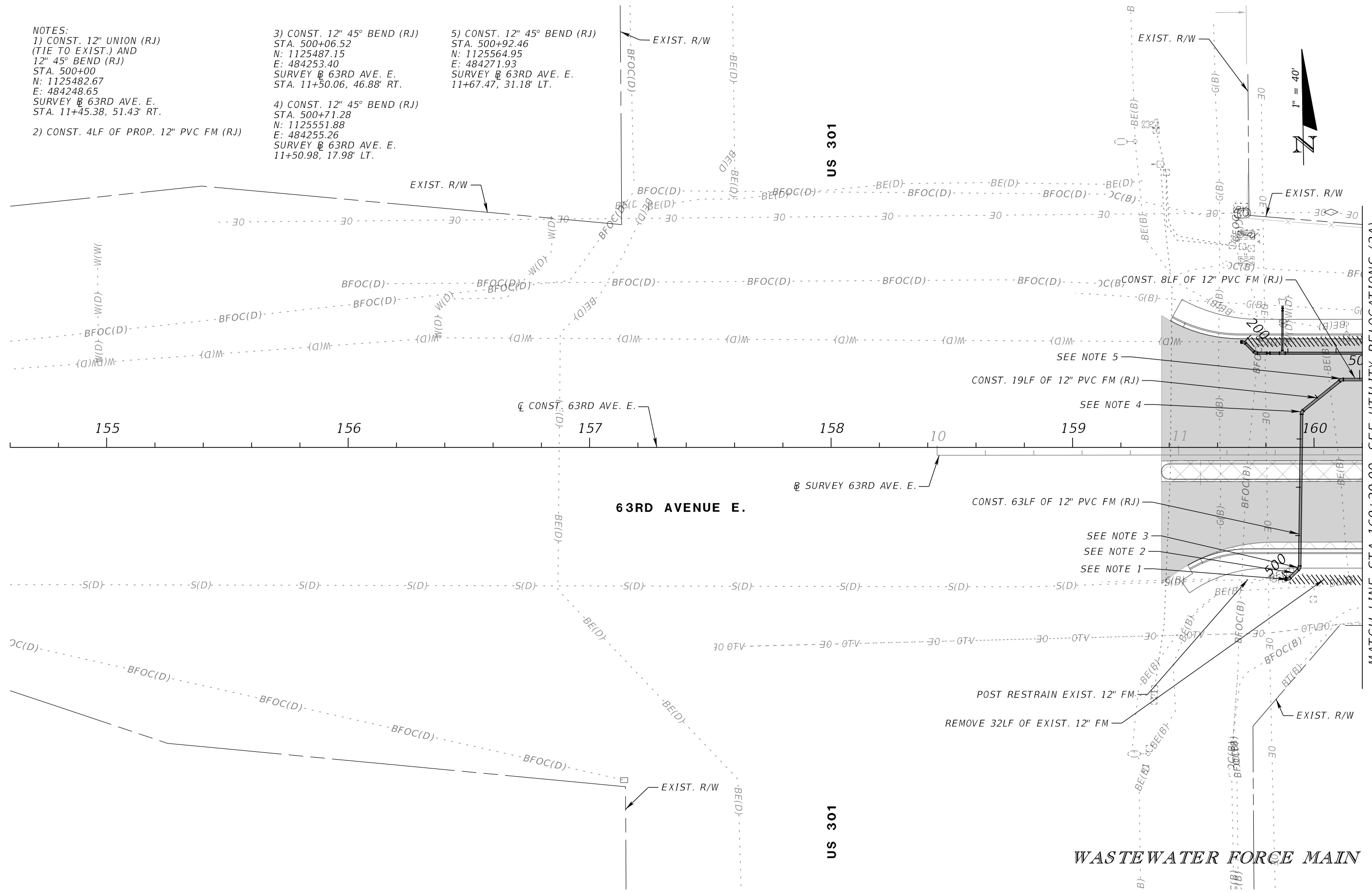
NOTES:
 1) CONST. 12" UNION (RJ)
 (TIE TO EXIST.) AND
 12" 45° BEND (RJ)
 STA. 500+00
 N: 1125482.67
 E: 484248.65
 SURVEY # 63RD AVE. E.
 STA. 11+45.38, 51.43' RT.

2) CONST. 4LF OF PROP. 12" PVC FM (RJ)

3) CONST. 12" 45° BEND (RJ)
 STA. 500+06.52
 N: 1125487.15
 E: 484253.40
 SURVEY # 63RD AVE. E.
 STA. 11+50.06, 46.88' RT.

4) CONST. 12" 45° BEND (RJ)
 STA. 500+71.28
 N: 1125551.88
 E: 484255.26
 SURVEY # 63RD AVE. E.
 11+50.98, 17.98' LT.

5) CONST. 12" 45° BEND (RJ)
 STA. 500+92.46
 N: 1125564.95
 E: 484271.93
 SURVEY # 63RD AVE. E.
 11+67.47, 31.18' LT.



MATCH LINE STA 160+20.00, SEE UTILITY RELOCATIONS (2A)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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 1022 26th Avenue East
 Bradenton, FL 34208

UTILITY RELOCATIONS (1A)

SHEET NO.
 U-8

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NOTES:
 1) CONST. 10" 45° BEND (RJ)
 STA. 201+65.27
 N: 1125573.93
 E: 484395.14
 SURVEY @ 63RD AVE. E.
 STA. 12+90.53, 41.94' LT.

2) CONST. 10" 45° BEND (RJ)
 STA. 201+80.49
 N: 1125562.53
 E: 484405.22
 SURVEY @ 63RD AVE. E.
 STA. 13+00.78, 30.68' LT.

3) CONST. 10" 45° BEND (RJ)
 (ROTATED UP)
 STA. 202+02.28
 N: 1125561.95
 E: 484427.01

4) CONST. 10" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 202+04.85
 N: 1125561.88
 E: 484429.57

5) CONST. 10"x1.5" TAP
 STA. 202+12.38
 N: 1125561.27
 E: 484437.09

6) CONST. 10" GATE VALVE (RJ)
 STA. 203+26.04
 N: 1125558.69
 E: 484550.72

7) CONST. 10"x6" TEE (RJ)
 STA. 203+31.02
 N: 112558.54
 E: 484555.71

8) CONST. 10"x8" TEE (RJ)
 STA. 203+82.73
 N: 11255570.20
 E: 484607.36

9) CONST. 10" 45° BEND (RJ)
 STA. 203+92.63
 N: 1125556.93
 E: 484617.29
 SURVEY @ 63RD AVE. E.
 STA. 15+12.91, 28.15' LT.

10) CONST. 10" 45° BEND (RJ)
 STA. 204+06.79
 N: 1125546.88
 E: 484627.25
 SURVEY @ 63RD AVE. E.
 STA. 15+23.01, 18.29' LT.

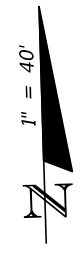
11) CONST. 8" WM UNDER PROP.
 RCP SD WITH 12" MIN.
 CLEARANCE, PER DETAIL
 UG-18

11) CONST. 10" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 204+97.87
 N: 1125643.20
 E: 484718.25

12) CONST. 10" 45° BEND (RJ)
 (ROTATED UP)
 STA. 205+00.43
 N: 1125543.10
 E: 484720.81

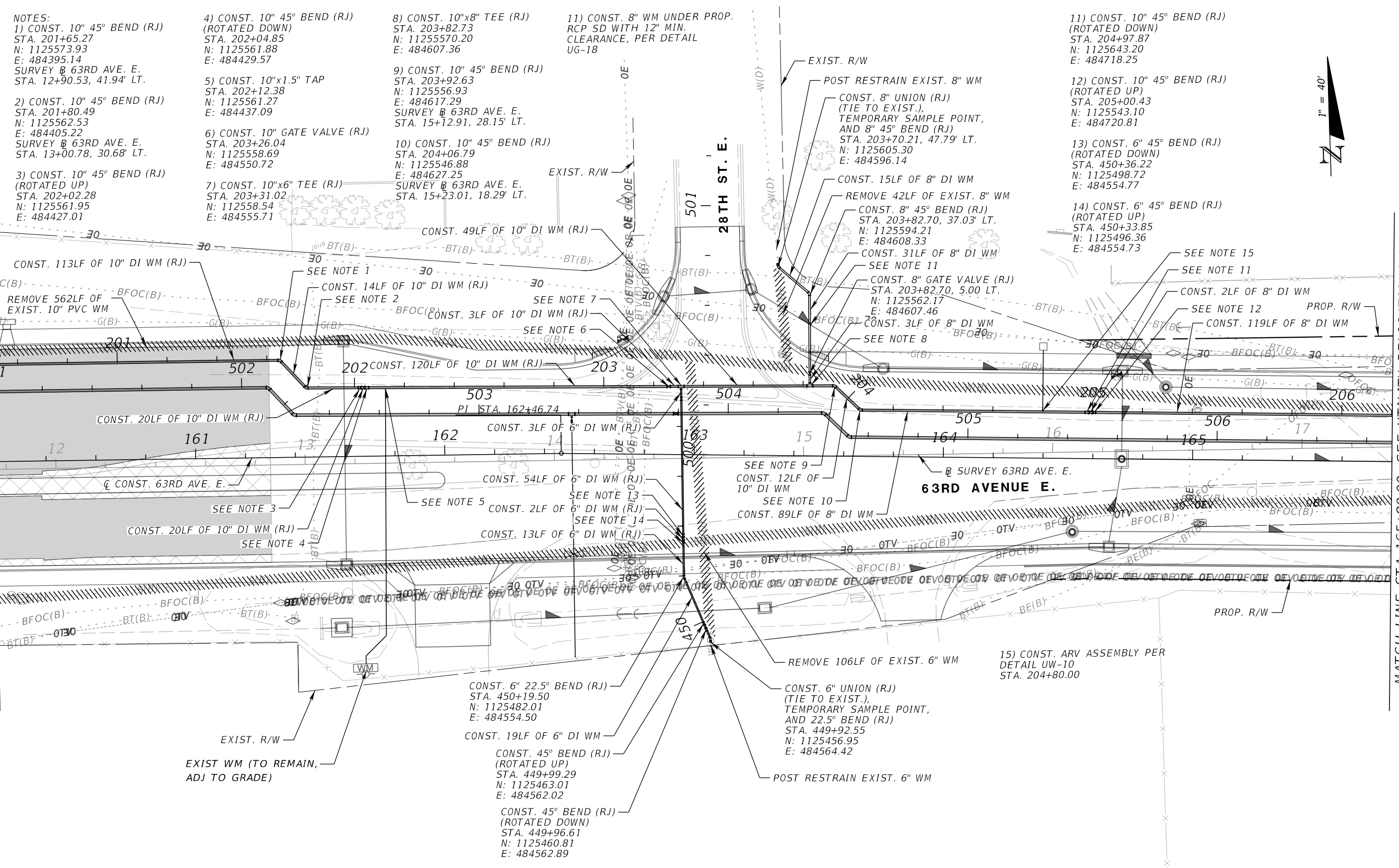
13) CONST. 6" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 450+36.22
 N: 1125498.72
 E: 484554.77

14) CONST. 6" 45° BEND (RJ)
 (ROTATED UP)
 STA. 450+33.85
 N: 1125496.36
 E: 484554.73



MATCH LINE STA 160+20.00, SEE UTILITY RELOCATIONS (1)

MATCH LINE STA 165+80.00, SEE UTILITY RELOCATIONS (3)



EXIST. R/W
 EXIST WM (TO REMAIN,
 ADJ TO GRADE)

CONST. 6" 22.5° BEND (RJ)
 STA. 450+19.50
 N: 1125482.01
 E: 484554.50

CONST. 19LF OF 6" DI WM
 CONST. 45° BEND (RJ)
 (ROTATED UP)
 STA. 449+99.29
 N: 1125463.01
 E: 484562.02

CONST. 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 449+96.61
 N: 1125460.81
 E: 484562.89

REMOVE 106LF OF EXIST. 6" WM

CONST. 6" UNION (RJ)
 (TIE TO EXIST.),
 TEMPORARY SAMPLE POINT,
 AND 22.5° BEND (RJ)
 STA. 449+92.55
 N: 1125456.95
 E: 484564.42

POST RESTRAIN EXIST. 6" WM

15) CONST. ARV ASSEMBLY PER
 DETAIL UW-10
 STA. 204+80.00

POTABLE WATER MAIN

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
	DESIGNED BY		HLM		12/2023
	DRAWN BY		JTT		PROJECT NO.
	CHECKED BY		JCH		6107860



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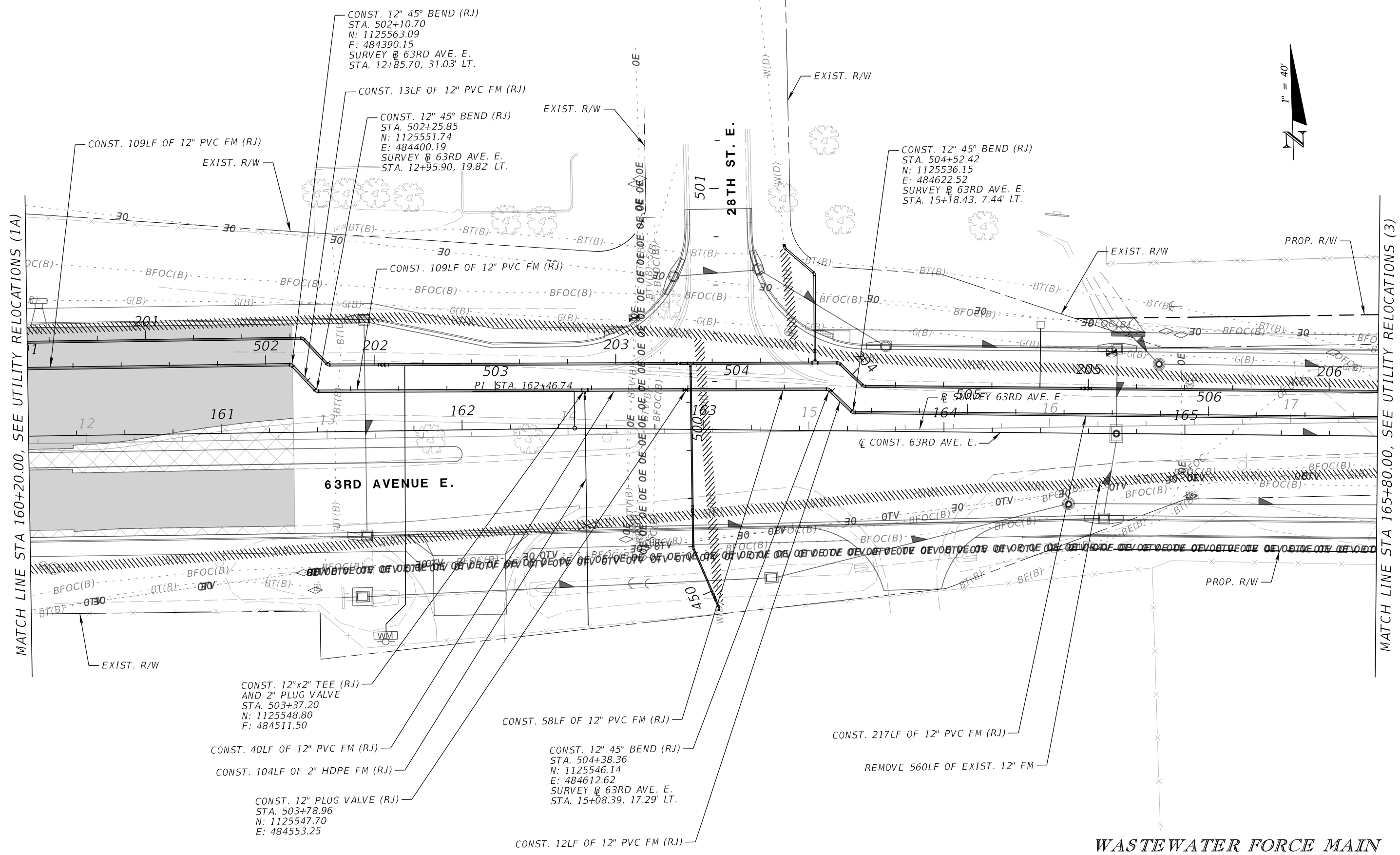
UTILITY RELOCATIONS (2)

SHEET NO.
 U-9

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

MATCH LINE STA 160+20.00, SEE UTILITY RELOCATIONS (1A)

MATCH LINE STA 165+80.00, SEE UTILITY RELOCATIONS (3)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
	DRAWN BY	JTT	PROJECT NO.		
	CHECKED BY	JCH	6107860		



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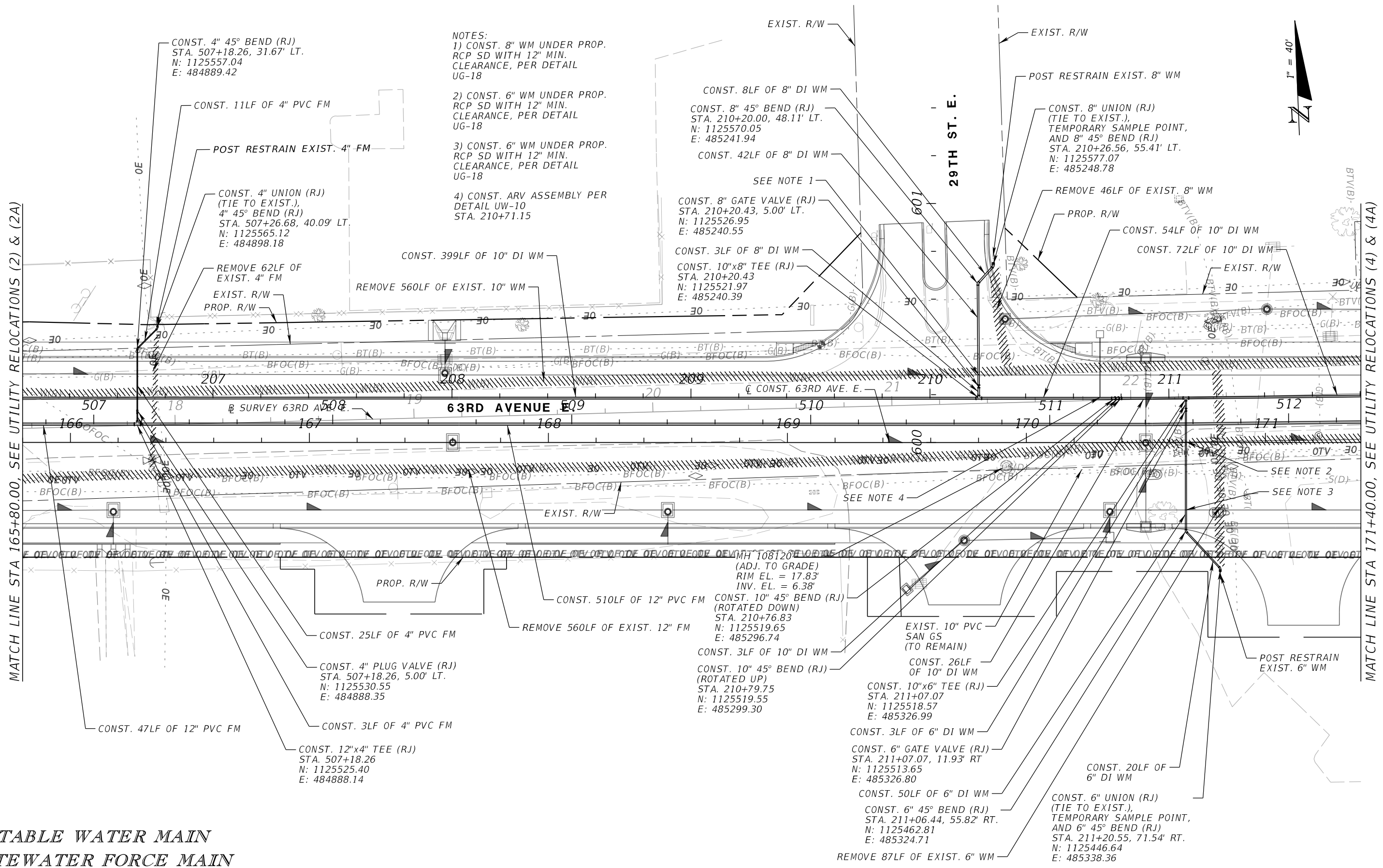
UTILITY RELOCATIONS (2A)

SHEET NO.
 U-10

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

MATCH LINE STA 165+80.00, SEE UTILITY RELOCATIONS (2) & (2A)

MATCH LINE STA 171+40.00, SEE UTILITY RELOCATIONS (4) & (4A)



- NOTES:
 1) CONST. 8" WM UNDER PROP. RCP SD WITH 12" MIN. CLEARANCE, PER DETAIL UG-18
 2) CONST. 6" WM UNDER PROP. RCP SD WITH 12" MIN. CLEARANCE, PER DETAIL UG-18
 3) CONST. 6" WM UNDER PROP. RCP SD WITH 12" MIN. CLEARANCE, PER DETAIL UG-18
 4) CONST. ARV ASSEMBLY PER DETAIL UW-10 STA. 210+71.15



**POTABLE WATER MAIN
 WASTEWATER FORCE MAIN**

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
	DESIGNED BY			HLM	12/2023
	DRAWN BY			JTT	PROJECT NO.
	CHECKED BY			JCH	6107860



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UTILITY RELOCATIONS (3)

SHEET NO.
 U-11

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NOTES:
 1) CONST. FIRE HYDRANT ASSEMBLY PER DETAIL UW-5 STA. 216+06.75, 35.19' LT. N: 1125544.80 E: 485826.86
 2) CONST. 6" UNION (RJ) (TIE TO EXIST.), TEMPORARY SAMPLE POINT AND 6" 45° BEND (RJ) STA. 216+91.37, 59.86' LT. N: 1125568.65 E: 485911.72

3) CONST. 9LF OF 6" DI WM (RJ)
 4) CONST. 6" 45° BEND (RJ) STA. 216+98.71, 52.42' LT. N: 1125561.27 E: 485918.99
 5) CONST. 46LF OF 6" DI WM (RJ)
 6) REMOVE 45LF OF EXIST. 6" WM

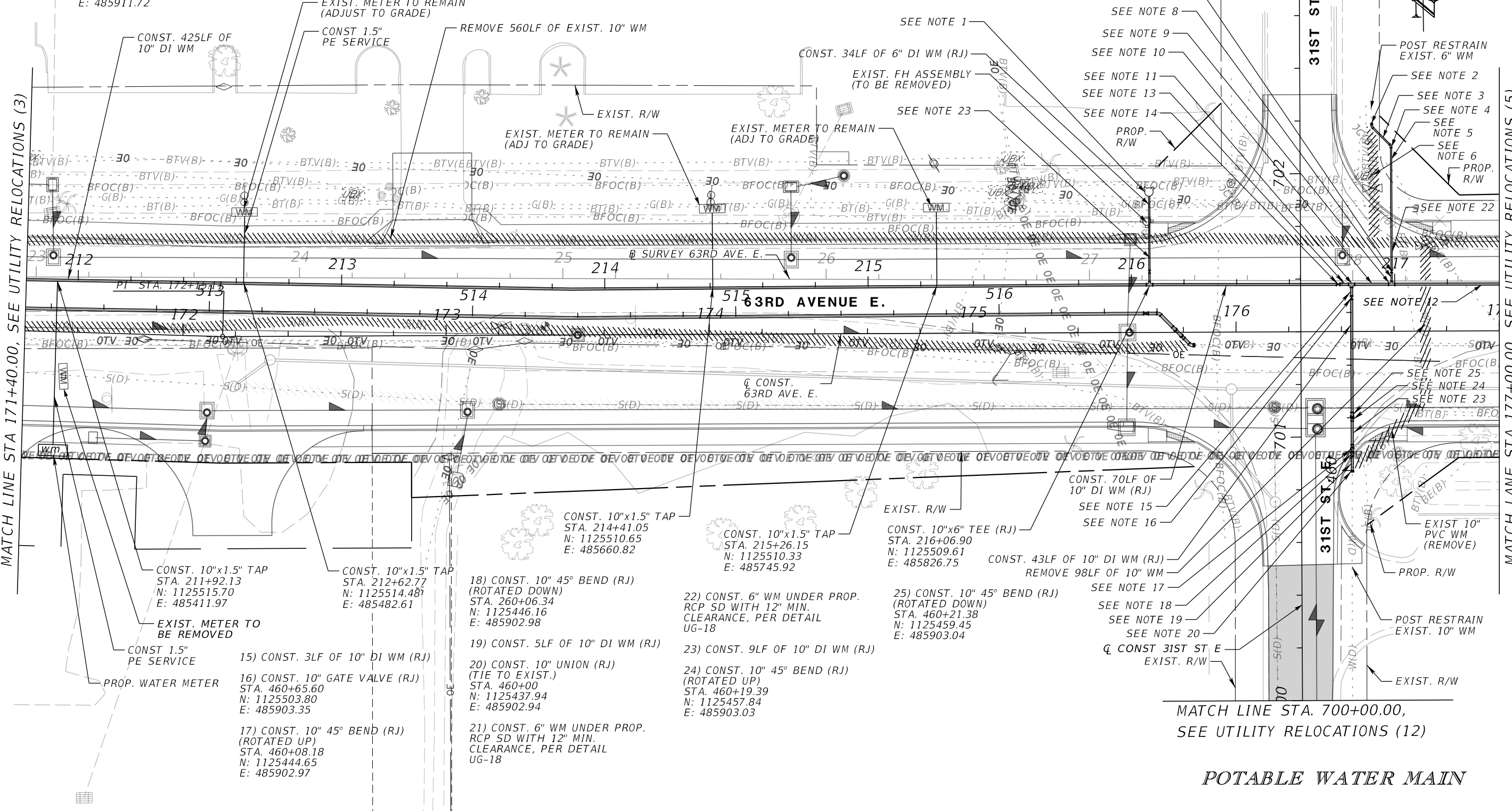
7) CONST. 6" GATE VALVE (RJ) STA. 216+98.85, 5.00' LT. N: 1125513.66 E: 485918.66
 8) CONST. 3LF OF 6" DI WM (RJ)
 9) CONST. 10"x6" TEE (RJ) STA. 216+98.85 N: 1125508.72 E: 485918.62
 10) CONST. 13LF OF 10" DI WM (RJ)

11) CONST. 10"x10" TEE (RJ) STA. 216+83.62 N: 1125508.87 E: 485903.39
 12) CONST. 40LF OF 10" DI WM (RJ)
 13) CONST. 3LF OF 10" DI WM (RJ)
 14) CONST. 10" GATE VALVE (RJ) STA. 216+78.55 N: 1125508.92 E: 485895.32

Q CONST 31ST ST E
 EXIST. R/W
 SEE NOTE 7
 SEE NOTE 8
 SEE NOTE 9
 SEE NOTE 10
 SEE NOTE 11
 SEE NOTE 13
 SEE NOTE 14
 PROP. R/W

MATCH LINE STA 171+40.00, SEE UTILITY RELOCATIONS (3)

MATCH LINE STA 177+00.00, SEE UTILITY RELOCATIONS (5)



CONST. 425LF OF 10" DI WM

EXIST. METER TO REMAIN (ADJUST TO GRADE)

CONST. 1.5" PE SERVICE

REMOVE 560LF OF EXIST. 10" WM

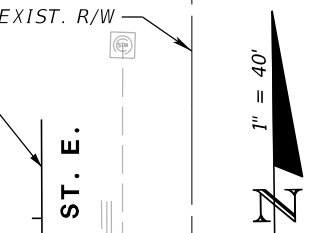
CONST. 34LF OF 6" DI WM (RJ)

EXIST. FH ASSEMBLY (TO BE REMOVED)

SEE NOTE 1

SEE NOTE 23

PROP. R/W



PI STA. 172+13.13

S(D)

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CONST. 10"x1.5" TAP STA. 211+92.13 N: 1125515.70 E: 485411.97

CONST. 10"x1.5" TAP STA. 212+62.77 N: 1125514.48 E: 485482.61

EXIST. METER TO BE REMOVED

CONST. 1.5" PE SERVICE

PROP. WATER METER

15) CONST. 3LF OF 10" DI WM (RJ)

16) CONST. 10" GATE VALVE (RJ) STA. 460+65.60 N: 1125503.80 E: 485903.35

17) CONST. 10" 45° BEND (RJ) (ROTATED UP) STA. 460+08.18 N: 1125444.65 E: 485902.97

18) CONST. 10" 45° BEND (RJ) (ROTATED DOWN) STA. 260+06.34 N: 1125446.16 E: 485902.98

19) CONST. 5LF OF 10" DI WM (RJ)

20) CONST. 10" UNION (RJ) (TIE TO EXIST.) STA. 460+00 N: 1125437.94 E: 485902.94

21) CONST. 6" WM UNDER PROP. RCP SD WITH 12" MIN. CLEARANCE, PER DETAIL UG-18

22) CONST. 6" WM UNDER PROP. RCP SD WITH 12" MIN. CLEARANCE, PER DETAIL UG-18

23) CONST. 9LF OF 10" DI WM (RJ)

24) CONST. 10" 45° BEND (RJ) (ROTATED UP) STA. 460+19.39 N: 1125457.84 E: 485903.03

25) CONST. 10" 45° BEND (RJ) (ROTATED DOWN) STA. 460+21.38 N: 1125459.45 E: 485903.04

CONST. 10"x1.5" TAP STA. 214+41.05 N: 1125510.65 E: 485660.82

CONST. 10"x1.5" TAP STA. 215+26.15 N: 1125510.33 E: 485745.92

CONST. 10"x6" TEE (RJ) STA. 216+06.90 N: 1125509.61 E: 485826.75

CONST. 43LF OF 10" DI WM (RJ) REMOVE 98LF OF 10" WM

CONST. 70LF OF 10" DI WM (RJ)

SEE NOTE 15

SEE NOTE 16

SEE NOTE 17

SEE NOTE 18

SEE NOTE 19

SEE NOTE 20

Q CONST 31ST ST E

EXIST. R/W

MATCH LINE STA. 700+00.00, SEE UTILITY RELOCATIONS (12)

POTABLE WATER MAIN

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
	DESIGNED BY			HLM	12/2023
	DRAWN BY			JTT	PROJECT NO.
	CHECKED BY			JCH	6107860



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UTILITY RELOCATIONS (4)

SHEET NO.
 U-12

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NOTES:
 1) CONST. 12" PLUG VALVE (RJ)
 STA. 516+55.77
 N: 1125498.70
 E: 485825.18

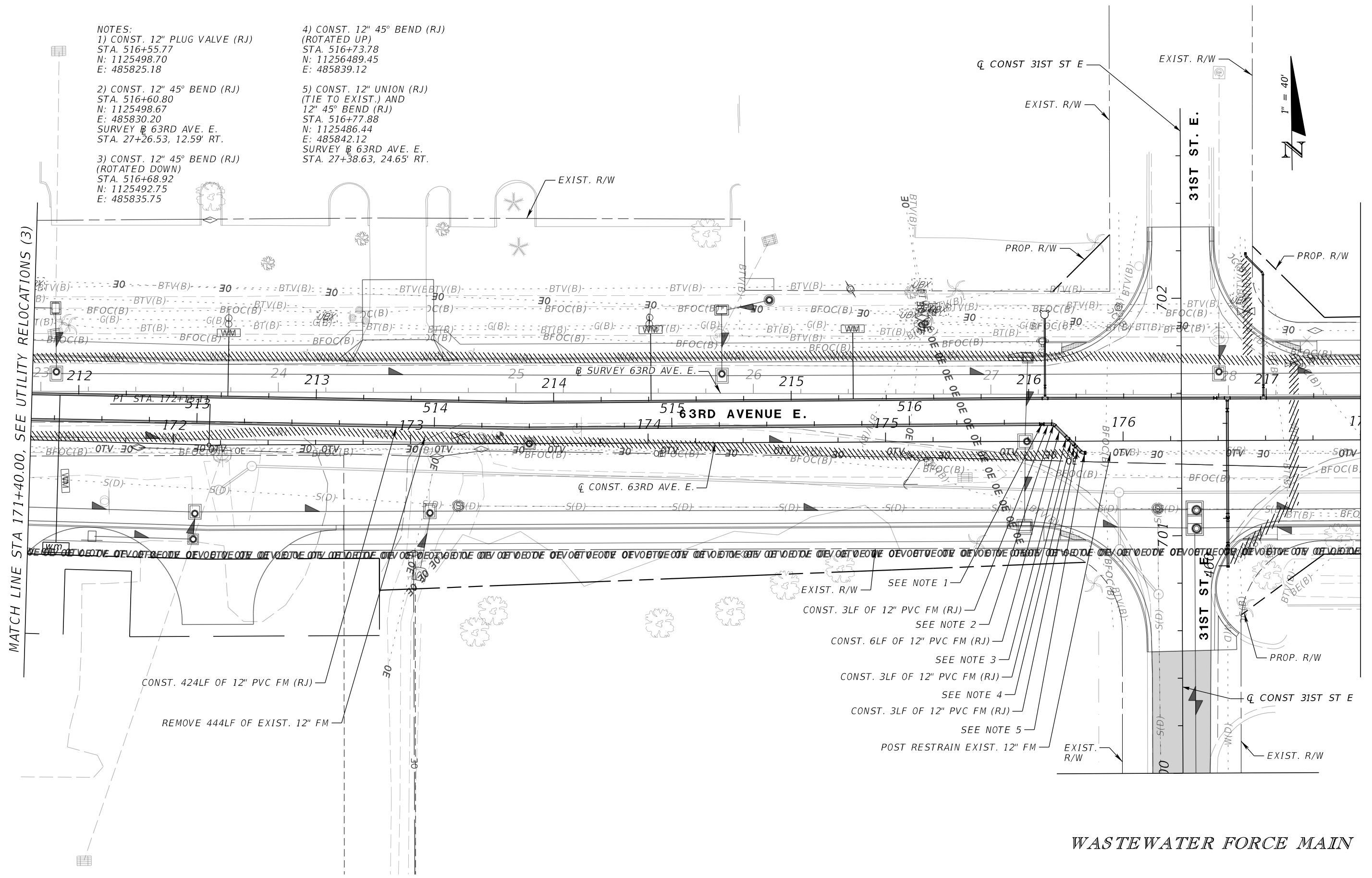
2) CONST. 12" 45° BEND (RJ)
 STA. 516+60.80
 N: 1125498.67
 E: 485830.20
 SURVEY $\#$ 63RD AVE. E.
 STA. 27+26.53, 12.59' RT.

3) CONST. 12" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 516+68.92
 N: 1125492.75
 E: 485835.75

4) CONST. 12" 45° BEND (RJ)
 (ROTATED UP)
 STA. 516+73.78
 N: 11256489.45
 E: 485839.12

5) CONST. 12" UNION (RJ)
 (TIE TO EXIST.) AND
 12" 45° BEND (RJ)
 STA. 516+77.88
 N: 1125486.44
 E: 485842.12
 SURVEY $\#$ 63RD AVE. E.
 STA. 27+38.63, 24.65' RT.

MATCH LINE STA 171+40.00, SEE UTILITY RELOCATIONS (3)



CONST. 424LF OF 12" PVC FM (RJ)
 REMOVE 444LF OF EXIST. 12" FM

- EXIST. R/W SEE NOTE 1
- CONST. 3LF OF 12" PVC FM (RJ) SEE NOTE 2
- CONST. 6LF OF 12" PVC FM (RJ) SEE NOTE 3
- CONST. 3LF OF 12" PVC FM (RJ) SEE NOTE 4
- CONST. 3LF OF 12" PVC FM (RJ) SEE NOTE 5
- POST RESTRAIN EXIST. 12" FM

WASTEWATER FORCE MAIN

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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UTILITY RELOCATIONS (4A)

SHEET NO.
 U-13

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NOTES:
 1) PROP. MH1 (DOG HOUSE)
 RIM EL. = MATCH PROP. GRADE
 EXIST. 10" INV. EL. (W) = 6.11'
 PROP. 10" INV. EL. (NE) = 6.01'
 STA. 10+00.00
 N: 1125475.02
 E: 485478.33
 SURVEY # 63RD AVE. E.
 STA. 23+75.04, 41.32' RT.

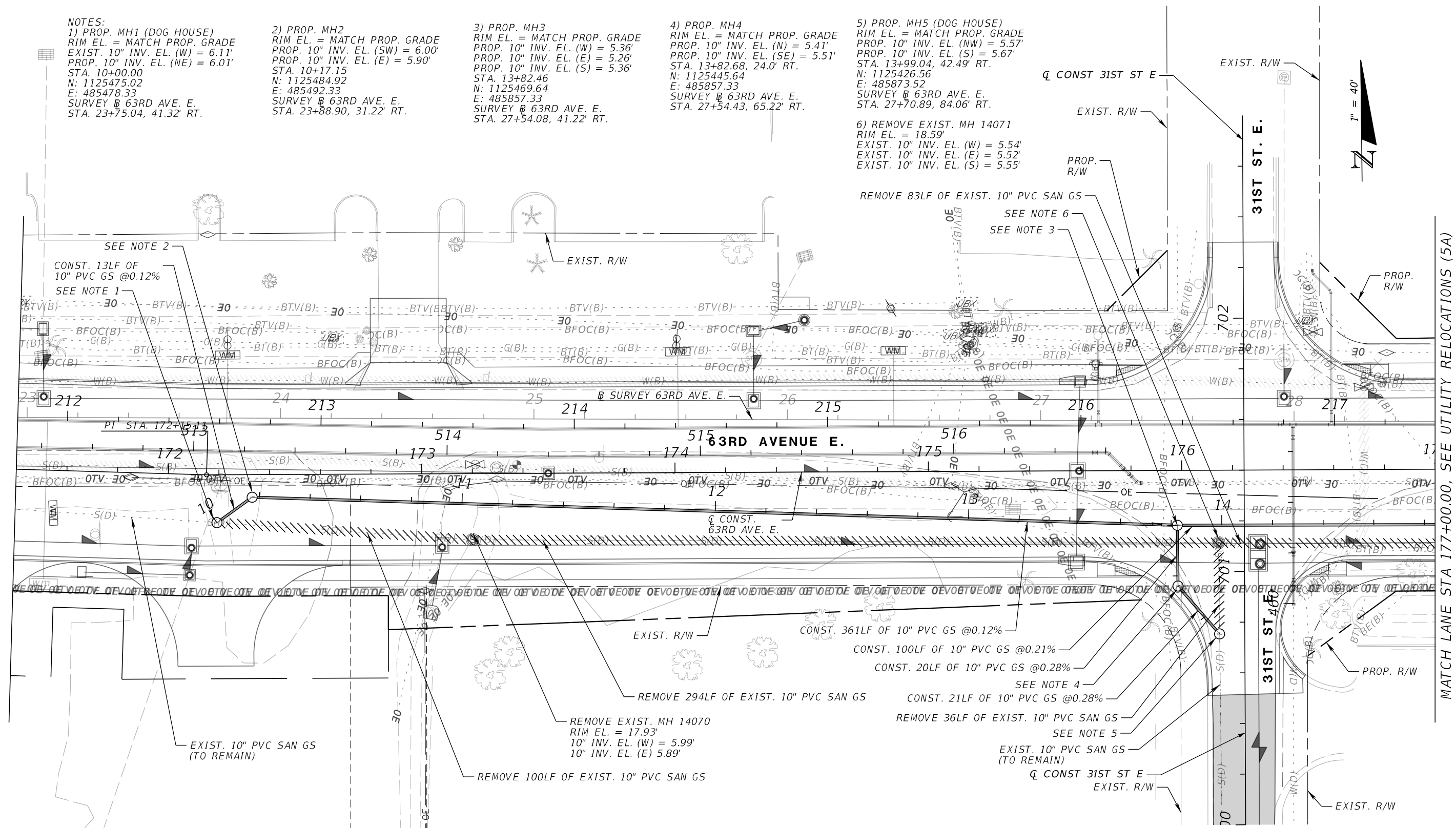
2) PROP. MH2
 RIM EL. = MATCH PROP. GRADE
 PROP. 10" INV. EL. (SW) = 6.00'
 PROP. 10" INV. EL. (E) = 5.90'
 STA. 10+17.15
 N: 1125484.92
 E: 485492.33
 SURVEY # 63RD AVE. E.
 STA. 23+88.90, 31.22' RT.

3) PROP. MH3
 RIM EL. = MATCH PROP. GRADE
 PROP. 10" INV. EL. (W) = 5.36'
 PROP. 10" INV. EL. (E) = 5.26'
 PROP. 10" INV. EL. (S) = 5.36'
 STA. 13+82.46
 N: 1125469.64
 E: 485857.33
 SURVEY # 63RD AVE. E.
 STA. 27+54.08, 41.22' RT.

4) PROP. MH4
 RIM EL. = MATCH PROP. GRADE
 PROP. 10" INV. EL. (N) = 5.41'
 PROP. 10" INV. EL. (SE) = 5.51'
 STA. 13+82.68, 24.0' RT.
 N: 1125445.64
 E: 485857.33
 SURVEY # 63RD AVE. E.
 STA. 27+54.43, 65.22' RT.

5) PROP. MH5 (DOG HOUSE)
 RIM EL. = MATCH PROP. GRADE
 PROP. 10" INV. EL. (NW) = 5.57'
 PROP. 10" INV. EL. (S) = 5.67'
 STA. 13+99.04, 42.49' RT.
 N: 1125426.56
 E: 485873.52
 SURVEY # 63RD AVE. E.
 STA. 27+70.89, 84.06' RT.

6) REMOVE EXIST. MH 14071
 RIM EL. = 18.59'
 EXIST. 10" INV. EL. (W) = 5.54'
 EXIST. 10" INV. EL. (E) = 5.52'
 EXIST. 10" INV. EL. (S) = 5.55'



MATCH LANE STA 177+00.00, SEE UTILITY RELOCATIONS (5A)

GRAVITY SEWER

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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UTILITY RELOCATIONS (4B)

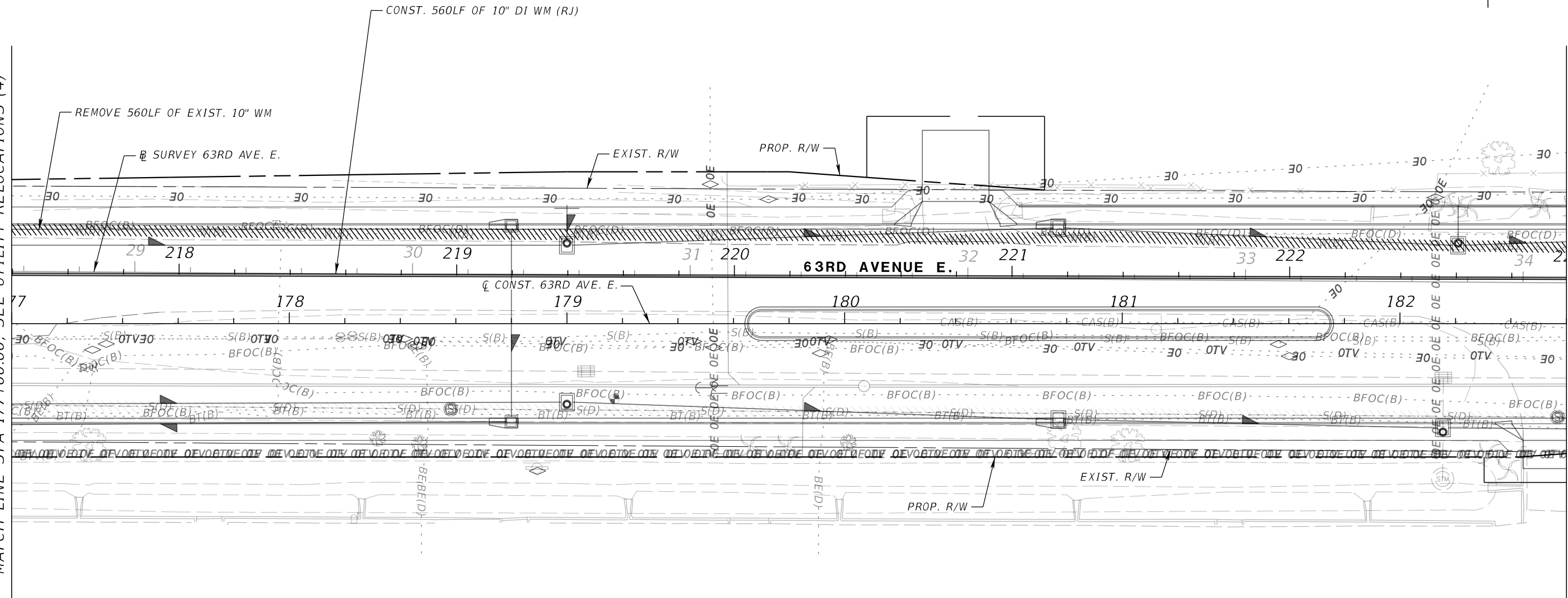
SHEET NO.
 U-14

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



MATCH LINE STA 177+00.00, SEE UTILITY RELOCATIONS (4)

MATCH LINE STA 182+60.00, SEE UTILITY RELOCATIONS (6)



POTABLE WATER MAIN

UTILITY RELOCATIONS (5)

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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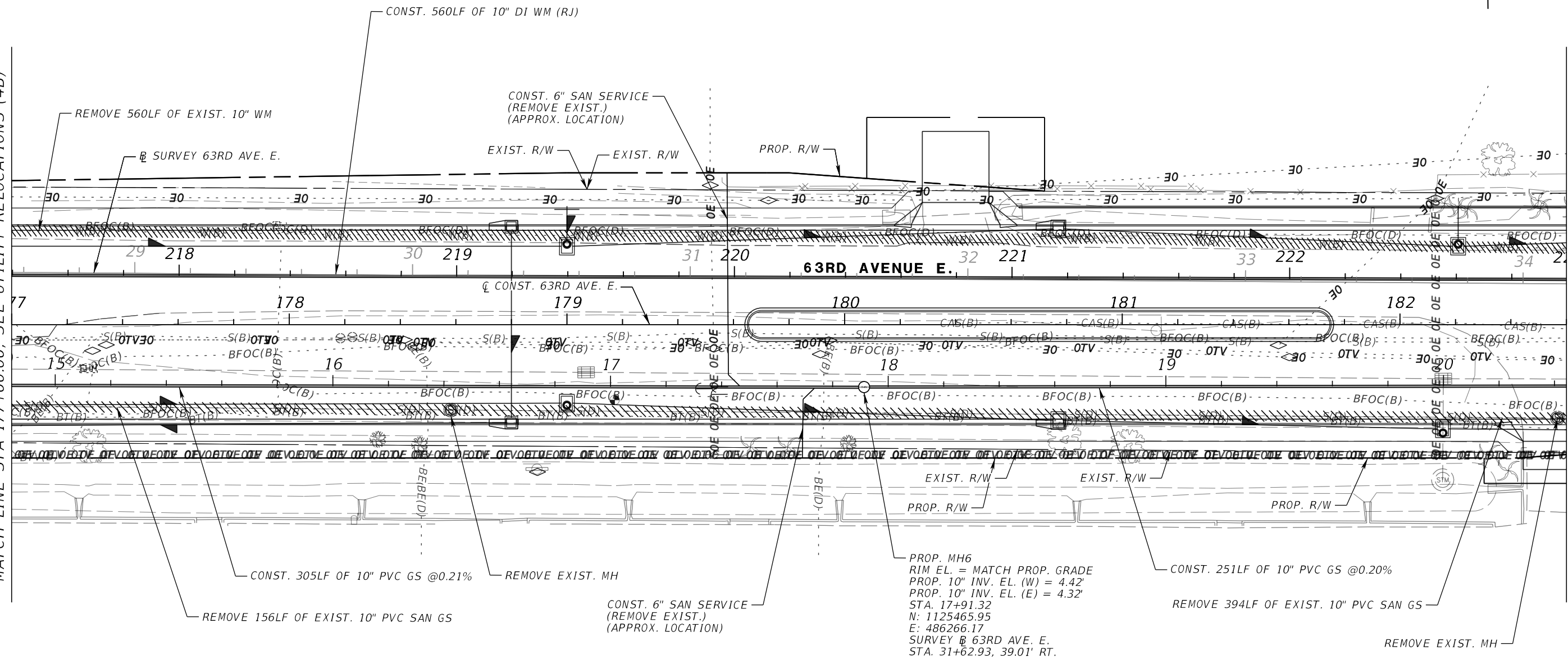
SHEET NO.

U-15



MATCH LINE STA 177+00.00, SEE UTILITY RELOCATIONS (4B)

MATCH LINE STA 182+60.00, SEE UTILITY RELOCATIONS (6A)



GRAVITY SEWER

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			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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UTILITY RELOCATIONS (5A)

SHEET NO.
U-16

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NOTES:

1) CONST. 16" 45° BEND (RJ)
 STA. 226+99.62
 N: 1125499.14
 E: 486919.32
 SURVEY @ 63RD AVE. E.
 STA. 38+15.56, 3.67' LT.

2) CONST. 16" 45° BEND (RJ)
 STA. 227+13.74
 N: 11256489.07
 E: 486929.25
 SURVEY @ 63RD AVE. E.
 STA. 38+25.56, 6.47' RT.

3) CONST. 24" GATE VALVE (RJ)
 STA. 400+06.61
 N: 1125506.31
 E: 486861.51

4) CONST. 16" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 226+67.24
 N: 1125499.37
 E: 486886.96

5) CONST. 16" 45° BEND (RJ)
 (ROTATED UP)
 STA. 226+70.68
 N: 1125499.35
 E: 486890.41

6) CONST. 16" 45° BEND (RJ)
 (ROTATED UP)
 STA. 227+23.90
 N: 1125488.99
 E: 486939.41

7) CONST. 16" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 227+29.31
 N: 1125488.95
 E: 486944.86

8) CONST. 24"x10" REDUCER (RJ)
 STA. 226+35.00
 N: 1125499.64
 E: 486854.54

9) CONST. 24"x24" TEE (RJ)
 STA. 226+41.73
 N: 1125499.58
 E: 486861.46

10) CONST. 6" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 431+70.58
 N: 1125390.39
 E: 486868.51

11) CONST. 6" 45° BEND (RJ)
 (ROTATED UP)
 STA. 431+66.98
 N: 1125387.00
 E: 486868.47

REMOVE 560LF OF EXIST. 10" WM
 CONST. 334LF OF 10" DI WM (RJ)

CONST. 88LF OF 24" DI WM (RJ)
 REMOVE 117LF OF EXIST. 6" WM
 REMOVE 114LF OF EXIST. 24" WM
 CONST. 21LF OF 24" DI WM (RJ)
 CONST. 24" 22.5° BEND (RJ)
 CONST. 4LF OF 24" DI WM (RJ)
 CONST. 3LF OF 24" DI WM (RJ)

CONST. 4LF OF 24" DI WM (RJ)
 CONST. 26LF OF 16" DI WM (RJ)
 CONST. 12LF OF 16" DI WM (RJ)
 CONST. 4LF OF 16" DI WM (RJ)
 CONST. 133LF OF 16" DI WM (RJ)
 CONST. 4LF OF 16" DI WM (RJ)

12) CONST. 6" 45° BEND (RJ)
 (ROTATED UP)
 STA. 431+50.65
 N: 1125370.36
 E: 486868.32

14) CONST. 24"x6" TEE (RJ)
 STA. 226+49.75
 N: 1125499.52
 E: 486869.47

15) CONST. 24"x16" REDUCER (RJ)
 STA. 226+56.80
 N: 1125499.45
 E: 486876.53

16) CONST. ARV ASSEMBLY PER
 DETAIL UW-11
 STA. 227+35.58

17) CONST. 24" 22.5° BEND (RJ)
 STA. 400+37.75
 N: 1125535.40
 E: 486871.07
 SURVEY @ 63RD AVE. E.
 STA. 37+66.76, 39.17' LT.

CONST. 24LF OF 6" DI WM (RJ)
 CONST. FIRE HYDRANT ASSEMBLY
 PER DETAIL UW-5

CONST. 3LF OF 6" DI WM (RJ)
 CONST. 2LF OF 6" DI WM (RJ)

CONST. 8LF OF 16" DI WM (RJ)
 CONST. 99LF OF 6" DI WM (RJ)
 CONST. 6"x6"x6" TEE (RJ)
 CONST. 5LF OF 6" DI WM (RJ)
 CONST. 3LF OF 6" DI WM (RJ)
 CONST. 15LF OF 6" DI WM (RJ)

MATCH LINE STA. 405+40.00,
 SEE UTILITY RELOCATIONS (14)

MATCH LINE STA. 402+80.00,
 SEE UTILITY RELOCATIONS (13)



MATCH LINE STA 182+60.00, SEE UTILITY RELOCATIONS (5)

MATCH LINE STA 188+20.00, SEE UTILITY RELOCATIONS (7)

POTABLE WATER MAIN

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
	DESIGNED BY			HLM	12/2023
	DRAWN BY			JTT	PROJECT NO.
	CHECKED BY			JCH	6107860



Heath E. Hardy, P.E.
 License Number 75444
 HDR Engineering, Inc.
 401 N. Cattlemen Road
 Suite 210
 Sarasota, FL 34232



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 1022 26th Avenue East
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UTILITY RELOCATIONS (6)

SHEET NO.
 U-17

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

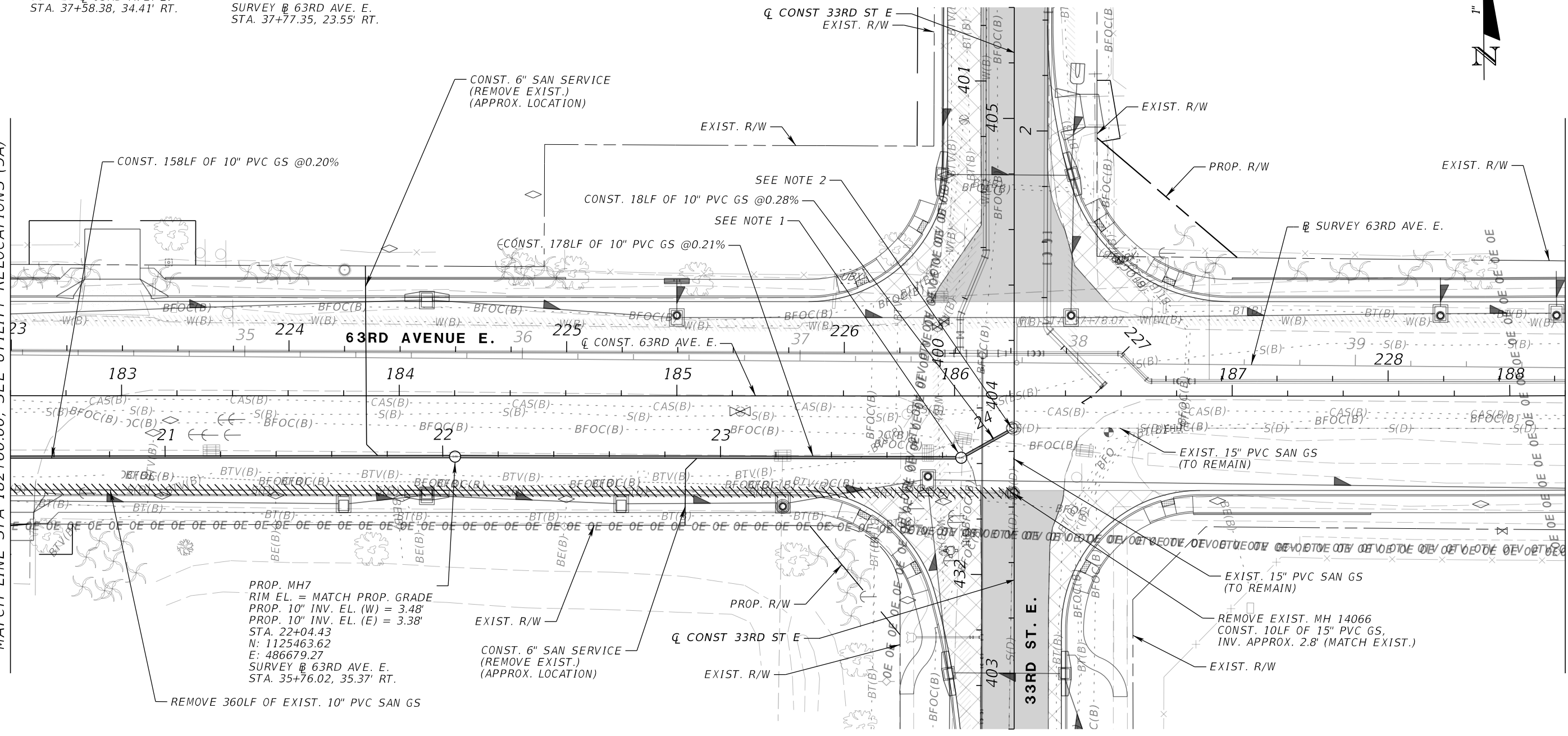
NOTES:
 1) PROP. MH8
 RIM EL. = MATCH PROP. GRADE
 PROP. 10" INV. EL. (W) = 2.99'
 PROP. 10" INV. EL. (NE) = 2.89'
 STA. 23+86.68
 N: 1125461.98
 E: 486861.58
 SURVEY @ 63RD AVE. E.
 STA. 37+58.38, 34.41' RT.

2) EXIST. MH 14065
 (ADJ./MODIFY)
 RIM EL. = MATCH PROP. GRADE
 PROP. 10" INV. EL. (SW) = 2.84'
 EXIST. 15" INV. EL. (E) = 2.76'
 EXIST. 15" INV. EL. (E) = 2.79'
 STA. 24+08.60
 N: 1125472.53
 E: 486880.72
 SURVEY @ 63RD AVE. E.
 STA. 37+77.35, 23.55' RT.



MATCH LINE STA 182+60.00, SEE UTILITY RELOCATIONS (5A)

MATCH LINE STA 188+20.00, SEE UTILITY RELOCATIONS (7A)



PROP. MH7
 RIM EL. = MATCH PROP. GRADE
 PROP. 10" INV. EL. (W) = 3.48'
 PROP. 10" INV. EL. (E) = 3.38'
 STA. 22+04.43
 N: 1125463.62
 E: 486679.27
 SURVEY @ 63RD AVE. E.
 STA. 35+76.02, 35.37' RT.

GRAVITY SEWER

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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UTILITY RELOCATIONS (6A)

SHEET NO.
U-18

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

MATCH LINE STA. 405+40.00,
SEE UTILITY RELOCATIONS (14)



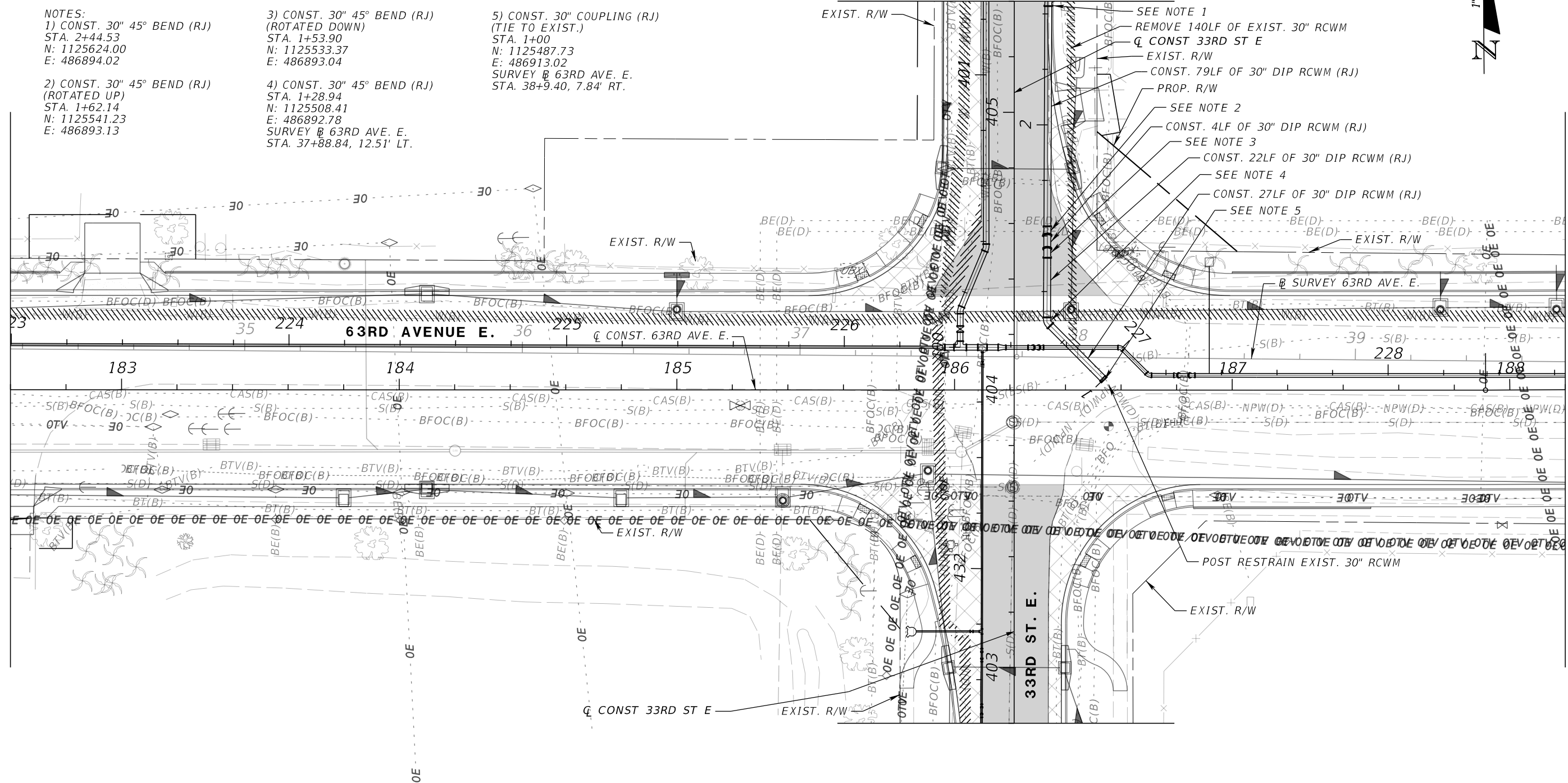
NOTES:
1) CONST. 30" 45° BEND (RJ)
STA. 2+44.53
N: 1125624.00
E: 486894.02

2) CONST. 30" 45° BEND (RJ)
(ROTATED UP)
STA. 1+62.14
N: 1125541.23
E: 486893.13

3) CONST. 30" 45° BEND (RJ)
(ROTATED DOWN)
STA. 1+53.90
N: 1125533.37
E: 486893.04

4) CONST. 30" 45° BEND (RJ)
STA. 1+28.94
N: 1125508.41
E: 486892.78
SURVEY @ 63RD AVE. E.
STA. 37+88.84, 12.51' LT.

5) CONST. 30" COUPLING (RJ)
(TIE TO EXIST.)
STA. 1+00
N: 1125487.73
E: 486913.02
SURVEY @ 63RD AVE. E.
STA. 38+9.40, 7.84' RT.



RECLAIMED WATER MAIN

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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	DRAWN BY	JTT	PROJECT NO.		
	CHECKED BY	JCH	6107860		



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1022 26th Avenue East
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UTILITY RELOCATIONS (6B)

SHEET NO.
U-19

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NOTES:

1) CONST. 16" 45° BEND (RJ)
(ROTATED UP)
STA. 233+69.64
N: 1125502.71
E: 487579.19

2) CONST. 16" 45° BEND (RJ)
(ROTATED DOWN)
STA. 233+74.27
N: 1125505.77
E: 487582.82

3) CONST. 16" 45° BEND (RJ)
(ROTATED DOWN)
STA. 233+95.60
N: 1125519.19
E: 487599.03

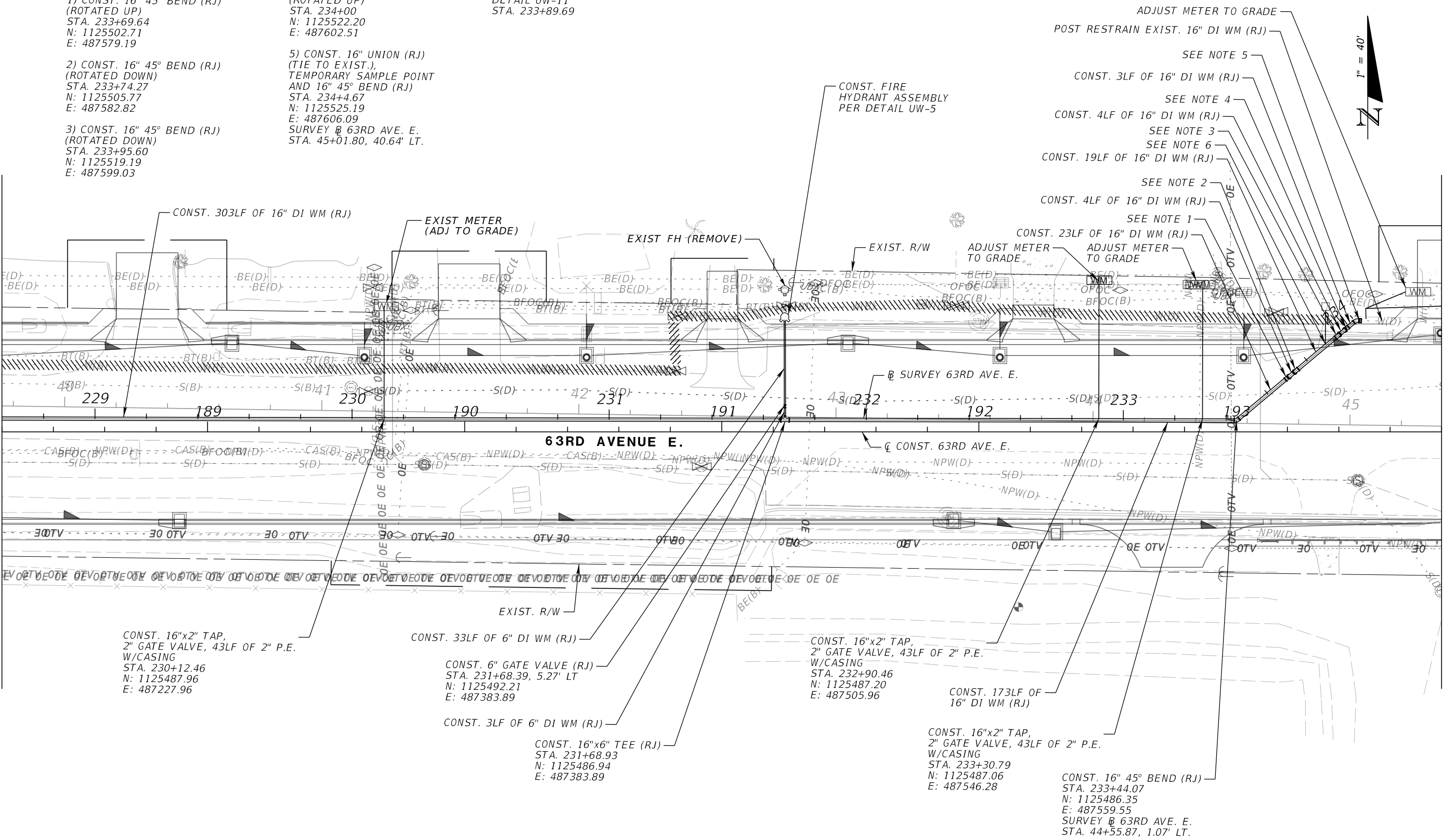
4) CONST. 16" 45° BEND (RJ)
(ROTATED UP)
STA. 234+00
N: 1125522.20
E: 487602.51

5) CONST. 16" UNION (RJ)
(TIE TO EXIST.),
TEMPORARY SAMPLE POINT
AND 16" 45° BEND (RJ)
STA. 234+4.67
N: 1125525.19
E: 487606.09
SURVEY @ 63RD AVE. E.
STA. 45+01.80, 40.64' LT.

6) CONST. ARV ASSEMBLY PER
DETAIL UW-11
STA. 233+89.69

MATCH LINE STA 188+20.00, SEE UTILITY RELOCATIONS (6)

MATCH LINE STA 193+80.00, SEE UTILITY RELOCATIONS (8)



POTABLE WATER MAIN

UTILITY RELOCATIONS (7)

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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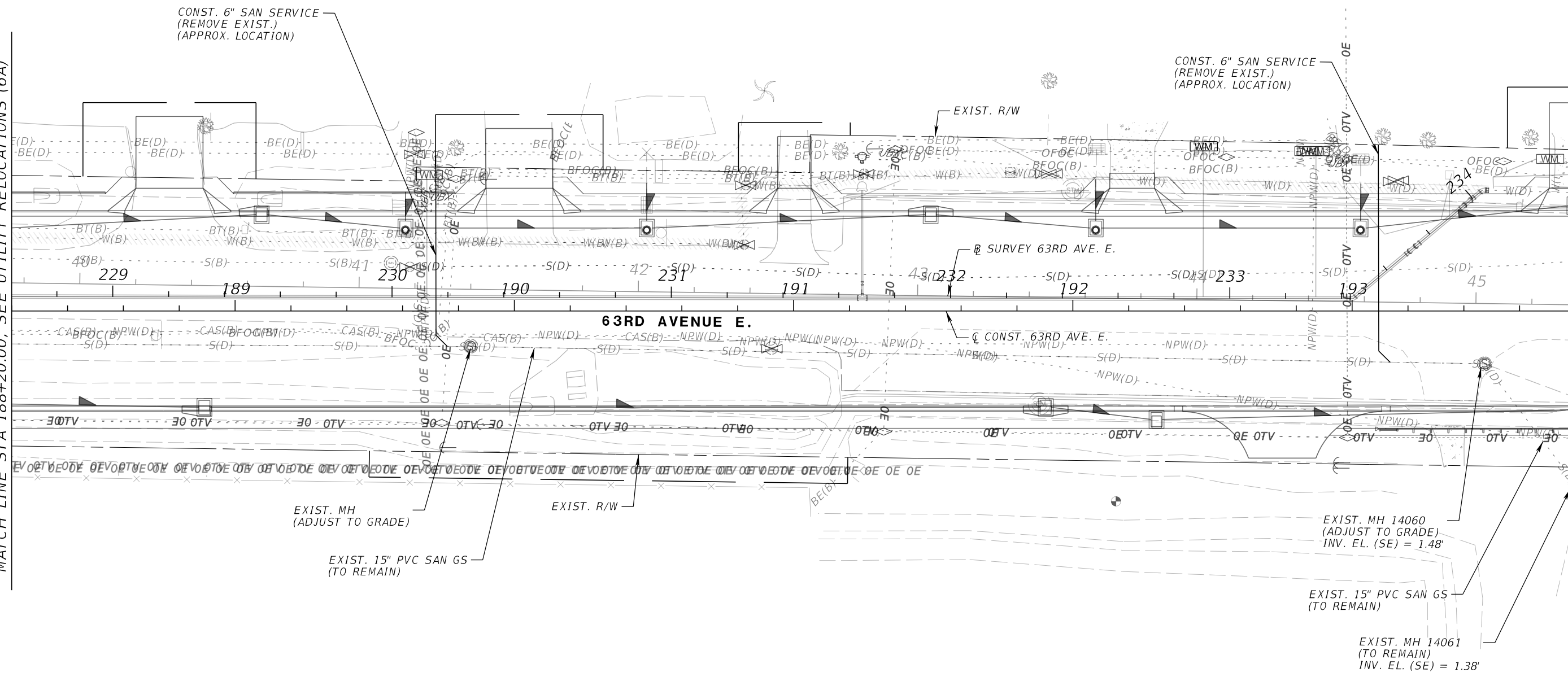
SHEET NO.
U-20

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



MATCH LINE STA 188+20.00, SEE UTILITY RELOCATIONS (6A)

MATCH LINE STA 193+80.00, SEE UTILITY RELOCATIONS (8B)



GRAVITY SEWER

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
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			CHECKED BY	JCH	6107860



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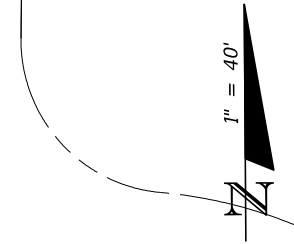
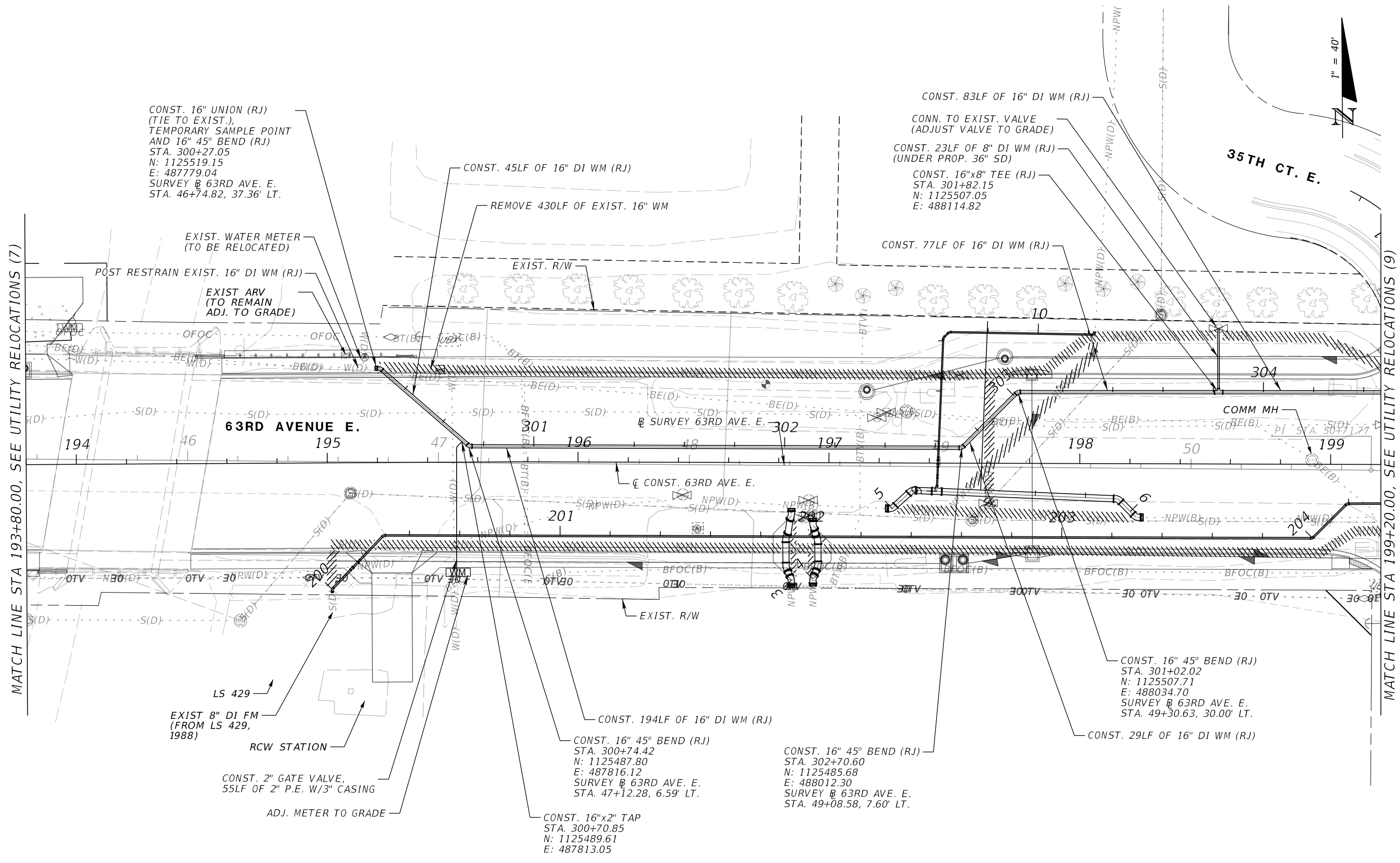
UTILITY RELOCATIONS (7A)

SHEET NO.
U-21

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

MATCH LINE STA 193+80.00, SEE UTILITY RELOCATIONS (7)

MATCH LINE STA 199+20.00, SEE UTILITY RELOCATIONS (9)



POTABLE WATER MAIN

UTILITY RELOCATIONS (8)

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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PUBLIC WORKS DEPARTMENT
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SHEET NO.
 U-22

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NOTES:

1) CONST. 8" UNION (RJ) (TIE TO EXIST.) AND 8" 45° BEND (RJ) STA. 201+00
N: 1125431.21
E: 487760.89
SURVEY # 63RD AVE. E. STA. 46+58.07, 50.87' RT.

2) CONST. 8" 45° BEND (RJ) (ROTATED DOWN) STA. 200+11.39
N: 1125439.39
E: 487768.81

3) CONST. 8" 45° BEND (RJ) (ROTATED UP) STA. 200+15.40
N: 1125442.27
E: 487771.60

4) CONST. 8" 45° BEND (RJ) STA. 200+29.66
N: 1125452.30
E: 487781.57
SURVEY # 63RD AVE. E. STA. 46+78.35, 29.25' RT.

5) CONST. 8" 45° BEND (RJ) STA. 203+99.85
N: 1125448.52
E: 488151.69
SURVEY # 63RD AVE. E. STA. 50+48.54, 27.34' RT.

6) CONST. 8" 45° BEND (RJ) STA. 204+19.40
N: 1125462.20
E: 488165.66
SURVEY # 63RD AVE. E. STA. 50+62.30, 13.44' RT.

7) CONST. 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 3+33.02
N: 1125450.41
E: 487942.05
SURVEY # 63RD AVE. E. STA. 48+38.86, 29.37' RT.

8) CONST. 30" UNION (RJ) (TIE TO EXIST. 30" BUTTERFLY VALVE) AND CONST. 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 3+31.71
N: 1125459.17
E: 487944.17
SURVEY # 63RD AVE. E. STA. 48+40.88, 19.99' RT.

9) CONST. 30" UNION (RJ) (TIE TO EXIST. 30" BUTTERFLY VALVE) AND CONST. 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 4+00.00
N: 1125433.88
E: 487952.71
SURVEY # 63RD AVE. E. STA. 48+49.48, 23.87' RT.

10) CONST. 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 4+17.05
N: 1125499.87
E: 487954.27
SURVEY # 63RD AVE. E. STA. 48+51.12, 29.13' RT.

11) CONST. 4LF OF 30" DI RCWM (RJ) STA. 4+10.25
N: 1125438.92
E: 487957.64
SURVEY # 63RD AVE. E. STA. 48+51.88, 39.97' RT.

12) CONST. 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 4+10.25
N: 1125438.92
E: 487957.64
SURVEY # 63RD AVE. E. STA. 48+51.88, 39.97' RT.

13) CONST. 30" UNION (RJ) (TIE TO EXIST.) AND 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 4+00.00
N: 1125433.88
E: 487952.71
SURVEY # 63RD AVE. E. STA. 48+49.48, 23.87' RT.

CONST. 57LF OF 6" DI RCWM (RJ)

CONST. 6" 45° BEND (RJ) STA. 9+64.52
N: 1125531.82
E: 488007.61

CONST. 2LF OF 6" DI RCWM (RJ) STA. 9+61.23
N: 1125529.55
E: 488005.23

CONST. 47LF OF 6" DI RCWM (RJ)

CONST. 3LF OF 6" DI RCWM (RJ)

CONST. 3LF OF 6" DI RCWM (RJ)

CONST. 3LF OF 6" DI RCWM (RJ)

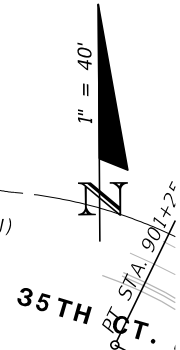
CONST. 6LF OF 30" DI RCWM (RJ) ADJUST VAVE TO GRADE

CONST. 6" 90° BEND (RJ) AND 6" UNION (TIE TO EXIST.) STA. 10+22.45
N: 1125530.38
E: 488065.52
SURVEY # 63RD AVE. E. STA. 49+61.08, 53.14' LT.

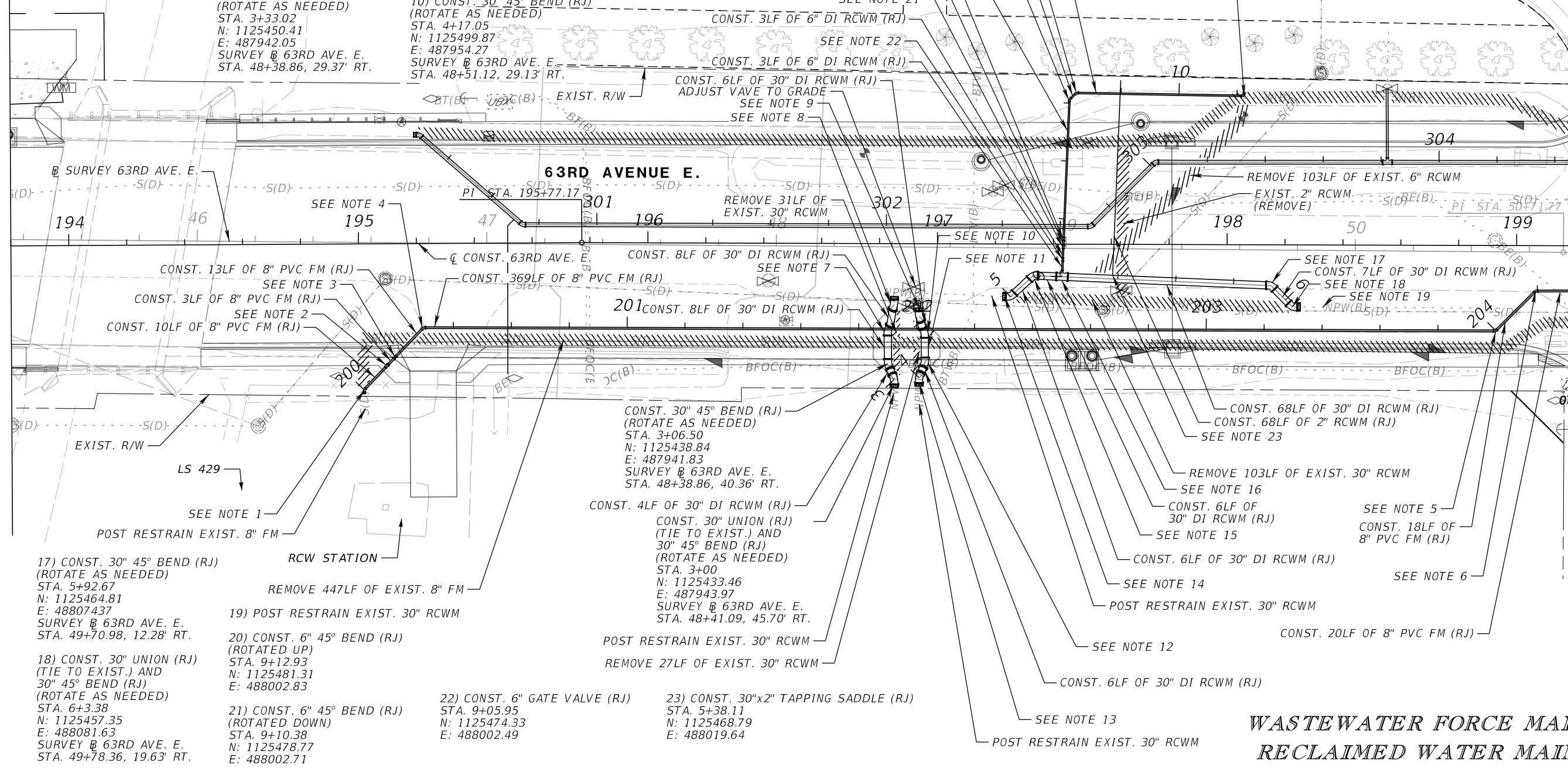
14) CONST. 30" UNION (RJ) (TIE TO EXIST.) AND 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 5+00.00
N: 1125461.62
E: 487984.30
SURVEY # 63RD AVE. E. STA. 48+80.97, 16.90' RT.

15) CONST. 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 5+10.82
N: 1125468.89
E: 487992.33
SURVEY # 63RD AVE. E. STA. 48+88.88, 9.51' RT.

16) CONST. 30"x6" TEE (RJ) STA. 5+20.70
N: 11254698.40
E: 488002.19



MATCH LINE STA 199+20.00, SEE UTILITY RELOCATIONS (9A)



17) CONST. 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 5+92.67
N: 1125464.81
E: 488074.37
SURVEY # 63RD AVE. E. STA. 49+70.98, 12.28' RT.

18) CONST. 30" UNION (RJ) (TIE TO EXIST.) AND 30" 45° BEND (RJ) (ROTATE AS NEEDED) STA. 6+3.38
N: 1125457.35
E: 488081.63
SURVEY # 63RD AVE. E. STA. 49+78.36, 19.63' RT.

19) POST RESTRAIN EXIST. 30" RCWM

20) CONST. 6" 45° BEND (RJ) (ROTATED UP) STA. 9+12.93
N: 1125481.31
E: 488002.83

21) CONST. 6" 45° BEND (RJ) (ROTATED DOWN) STA. 9+10.38
N: 1125478.77
E: 488002.71

22) CONST. 6" GATE VALVE (RJ) STA. 9+05.95
N: 1125474.33
E: 488002.49

23) CONST. 30"x2" TAPPING SADDLE (RJ) STA. 5+38.11
N: 1125468.79
E: 488019.64

**WASTEWATER FORCE MAIN
RECLAIMED WATER MAIN**

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
	DESIGNED BY			HLM	12/2023
	DRAWN BY			JTT	PROJECT NO.
	CHECKED BY			JCH	6107860



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Bradenton, FL 34208

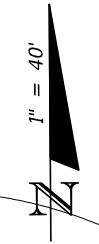
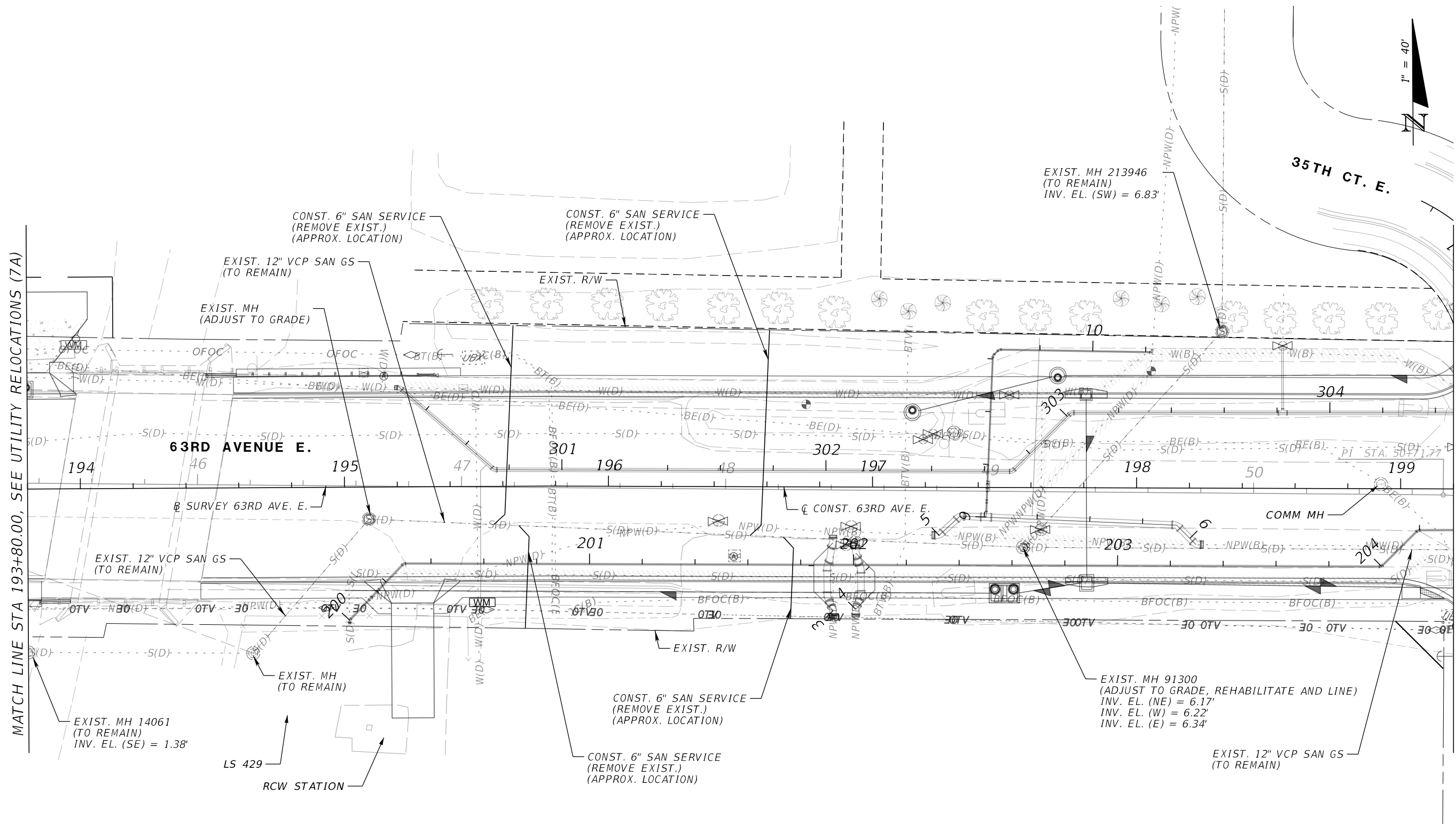
UTILITY RELOCATIONS (8A)

SHEET NO.
U-23

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MATCH LINE STA 193+80.00, SEE UTILITY RELOCATIONS (7A)

MATCH LINE STA 199+20.00, SEE UTILITY RELOCATIONS (9B)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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	DRAWN BY	JTT	PROJECT NO.		
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HDR

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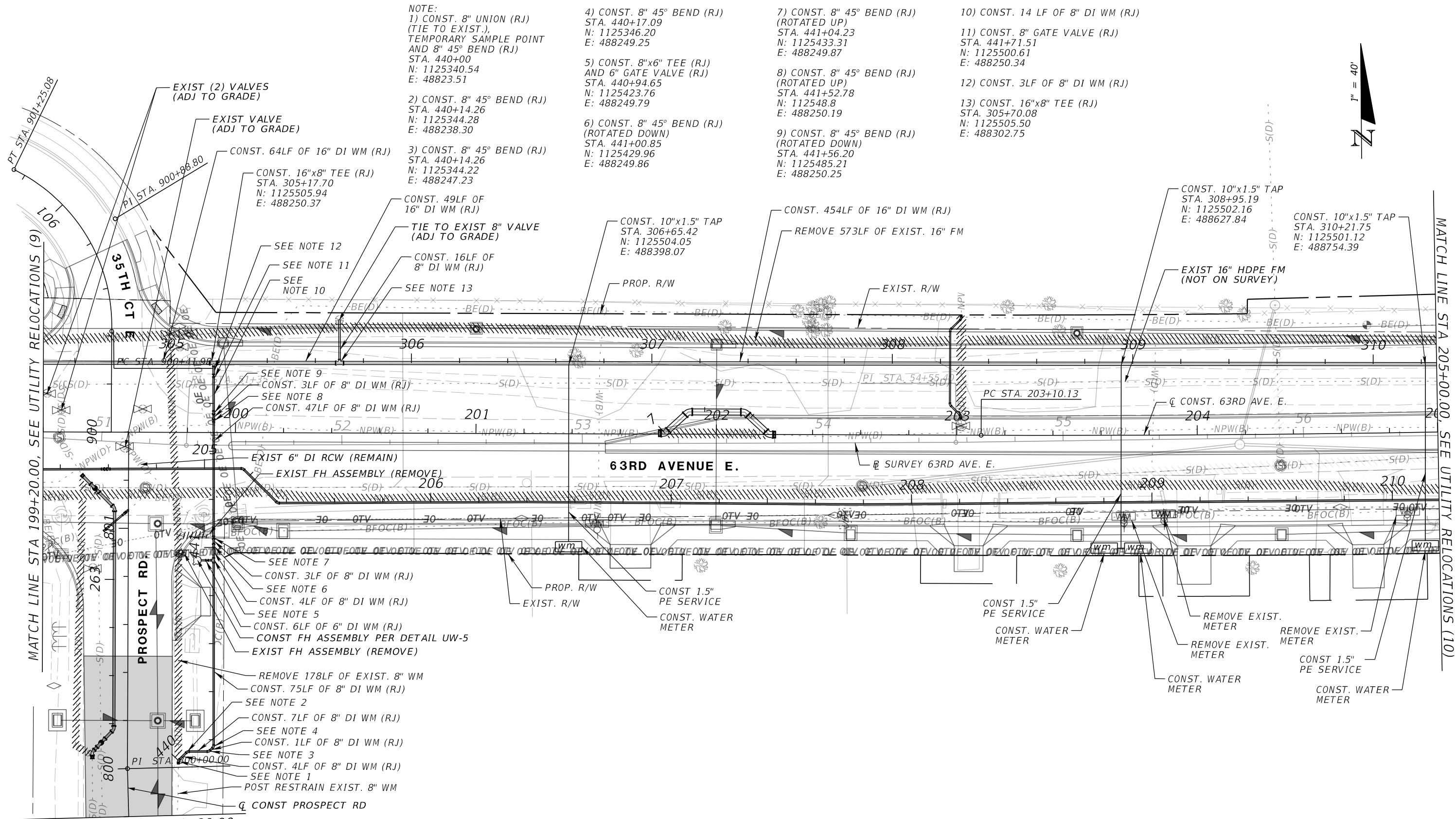
Manatee County
 FLORIDA

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 1022 26th Avenue East
 Bradenton, FL 34208

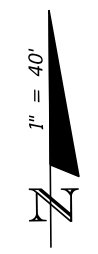
UTILITY RELOCATIONS (8B)

SHEET NO.
 U-24

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



- NOTE:
 1) CONST. 8" UNION (RJ)
 (TIE TO EXIST.),
 TEMPORARY SAMPLE POINT
 AND 8" 45° BEND (RJ)
 STA. 440+00
 N: 1125340.54
 E: 48823.51
- 2) CONST. 8" 45° BEND (RJ)
 STA. 440+14.26
 N: 1125344.28
 E: 488238.30
- 3) CONST. 8" 45° BEND (RJ)
 STA. 440+14.26
 N: 1125344.22
 E: 488247.23
- 4) CONST. 8" 45° BEND (RJ)
 STA. 440+17.09
 (TIE TO EXIST.),
 N: 1125346.20
 E: 488249.25
- 5) CONST. 8"x6" TEE (RJ)
 AND 6" GATE VALVE (RJ)
 STA. 440+94.65
 N: 1125423.76
 E: 488249.79
- 6) CONST. 8" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 441+00.85
 N: 1125429.96
 E: 488249.86
- 7) CONST. 8" 45° BEND (RJ)
 (ROTATED UP)
 STA. 441+04.23
 N: 1125433.31
 E: 488249.87
- 8) CONST. 8" 45° BEND (RJ)
 (ROTATED UP)
 STA. 441+52.78
 N: 112548.8
 E: 488250.19
- 9) CONST. 8" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 441+56.20
 N: 1125485.21
 E: 488250.25
- 10) CONST. 14 LF OF 8" DI WM (RJ)
- 11) CONST. 8" GATE VALVE (RJ)
 STA. 441+71.51
 N: 1125500.61
 E: 488250.34
- 12) CONST. 3LF OF 8" DI WM (RJ)
- 13) CONST. 16"x8" TEE (RJ)
 STA. 305+70.08
 N: 1125505.50
 E: 488302.75



MATCH LINE STA 199+20.00, SEE UTILITY RELOCATIONS (9)

MATCH LINE STA 799+80.00,
 SEE UTILITY RELOCATIONS (15)


MATCH LINE STA 205+00.00, SEE UTILITY RELOCATIONS (10)

POTABLE WATER MAIN

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
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			CHECKED BY	JCH	6107860



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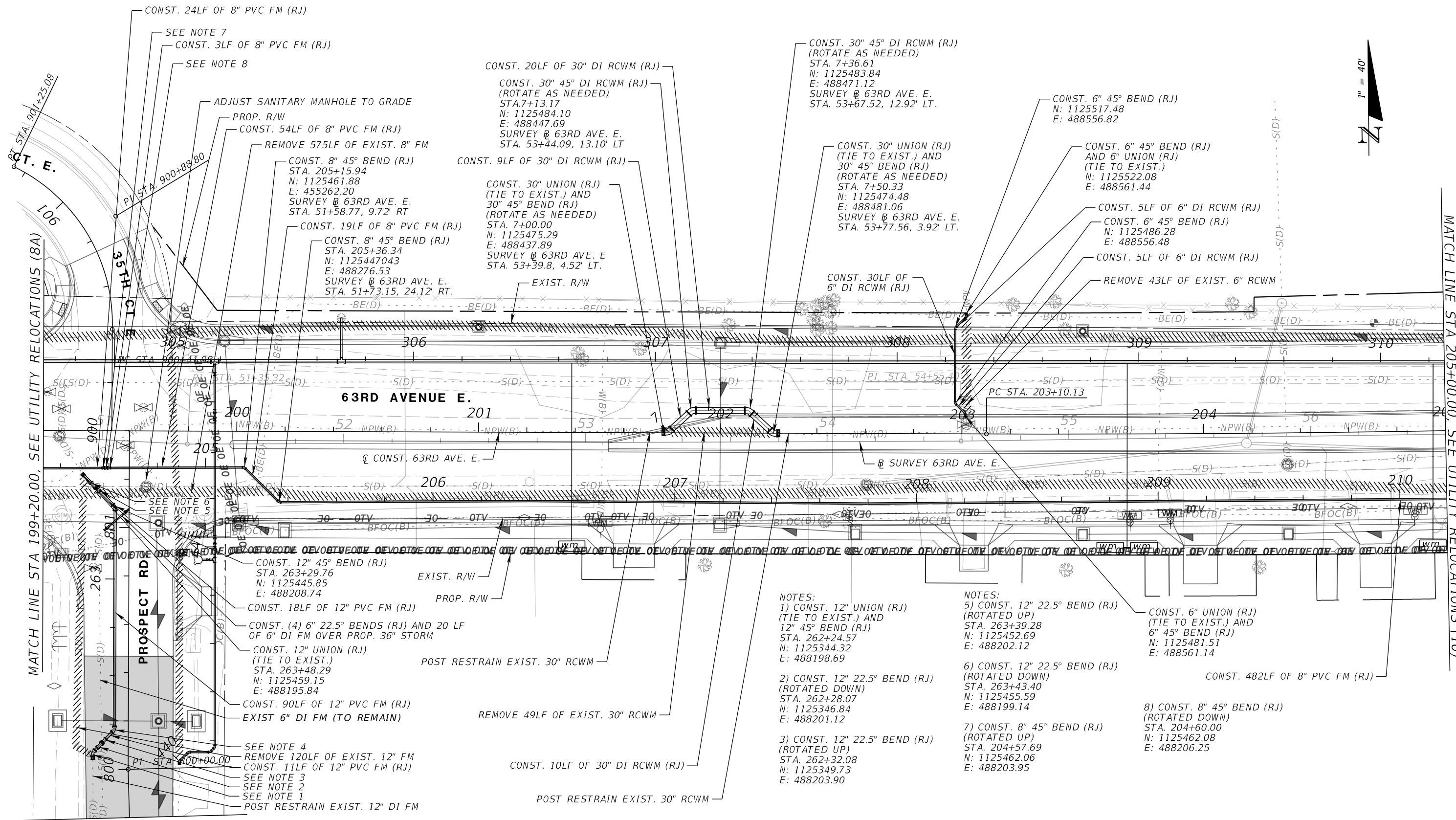


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UTILITY RELOCATIONS (9)

SHEET NO.
 U-25

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MATCH LINE STA 199+20.00, SEE UTILITY RELOCATIONS (8A)

MATCH LINE STA 205+00.00, SEE UTILITY RELOCATIONS (10)

**WASTEWATER FORCE MAIN
RECLAIMED WATER MAIN**

UTILITY RELOCATIONS (9A)

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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	DRAWN BY	JTT			PROJECT NO.
	CHECKED BY	JCH			6107860



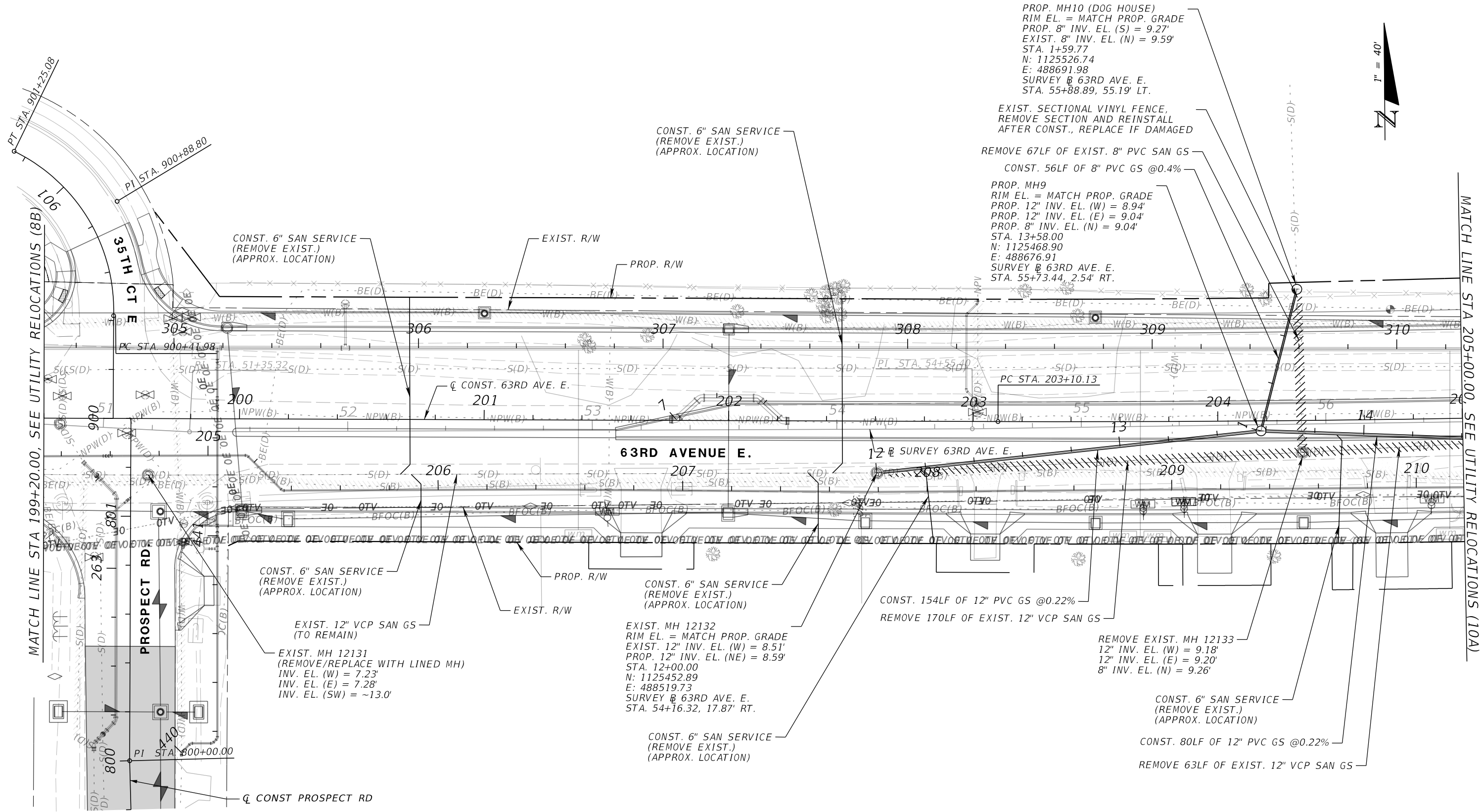
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SHEET NO.
U-26

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PROP. MH10 (DOG HOUSE)
 RIM EL. = MATCH PROP. GRADE
 PROP. 8" INV. EL. (S) = 9.27'
 EXIST. 8" INV. EL. (N) = 9.59'
 STA. 1+59.77
 N: 1125526.74
 E: 488691.98
 SURVEY @ 63RD AVE. E.
 STA. 55+88.89, 55.19' LT.

EXIST. SECTIONAL VINYL FENCE,
 REMOVE SECTION AND REINSTALL
 AFTER CONST., REPLACE IF DAMAGED

REMOVE 67LF OF EXIST. 8" PVC SAN GS
 CONST. 56LF OF 8" PVC GS @0.4%

PROP. MH9
 RIM EL. = MATCH PROP. GRADE
 PROP. 12" INV. EL. (W) = 8.94'
 PROP. 12" INV. EL. (E) = 9.04'
 PROP. 8" INV. EL. (N) = 9.04'
 STA. 13+58.00
 N: 1125468.90
 E: 488676.91
 SURVEY @ 63RD AVE. E.
 STA. 55+73.44, 2.54' RT.



GRAVITY SEWER

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
	DESIGNED BY			HLM	12/2023
	DRAWN BY			JTT	PROJECT NO.
	CHECKED BY			JCH	6107860

HDR
 Heath E. Hardy, P.E.
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 Sarasota, FL 34232

Manatee County
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 1022 26th Avenue East
 Bradenton, FL 34208

UTILITY RELOCATIONS (9B)

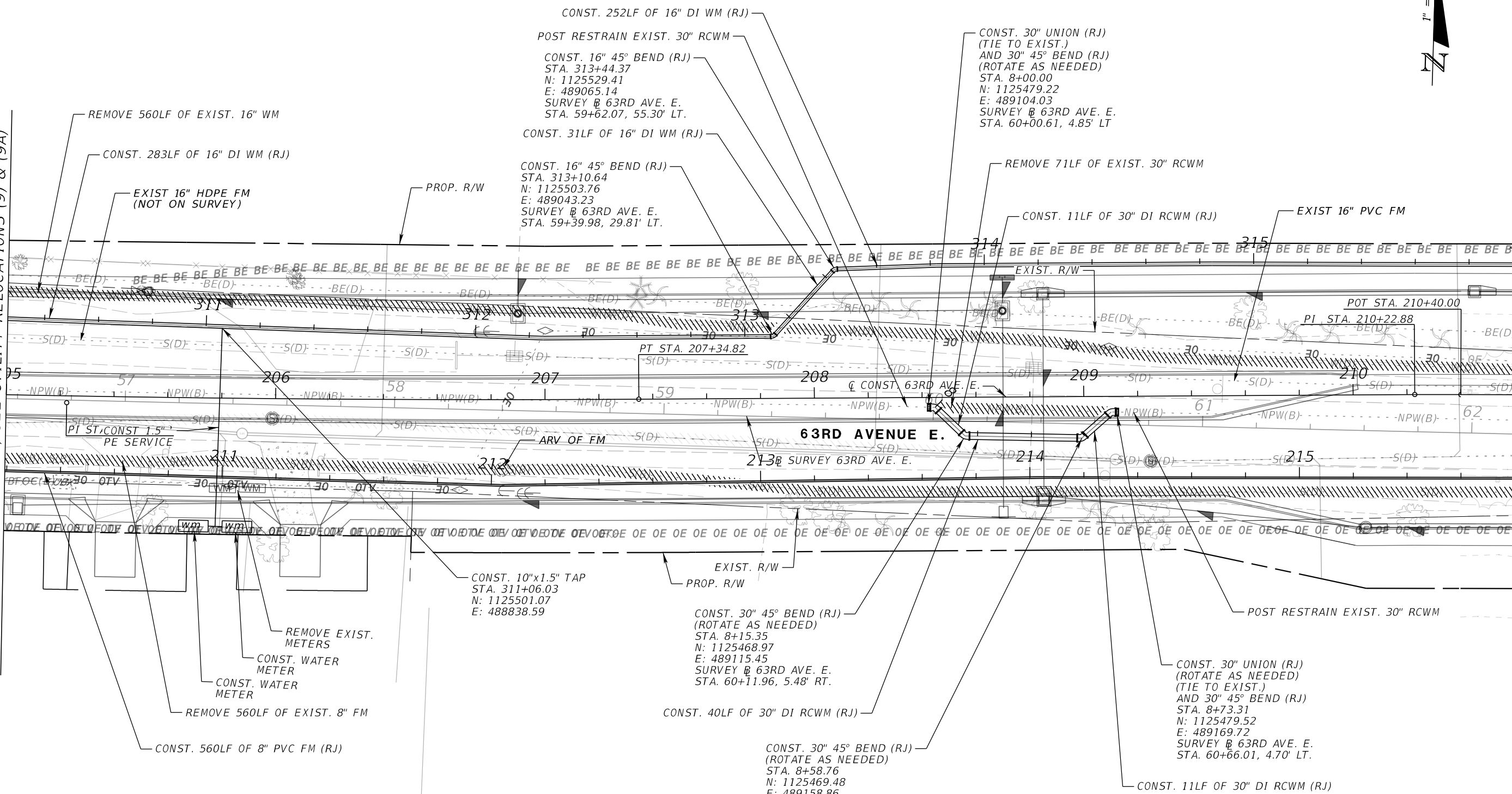
SHEET NO.
 U-27

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



MATCH LINE STA 205+00.00, SEE UTILITY RELOCATIONS (9) & (9A)

MATCH LINE STA 210+60.00, SEE UTILITY RELOCATIONS (11) & (11A)



**POTABLE WATER MAIN
WASTEWATER FORCE MAIN
RECLAIMED WATER MAIN**

UTILITY RELOCATIONS (10)

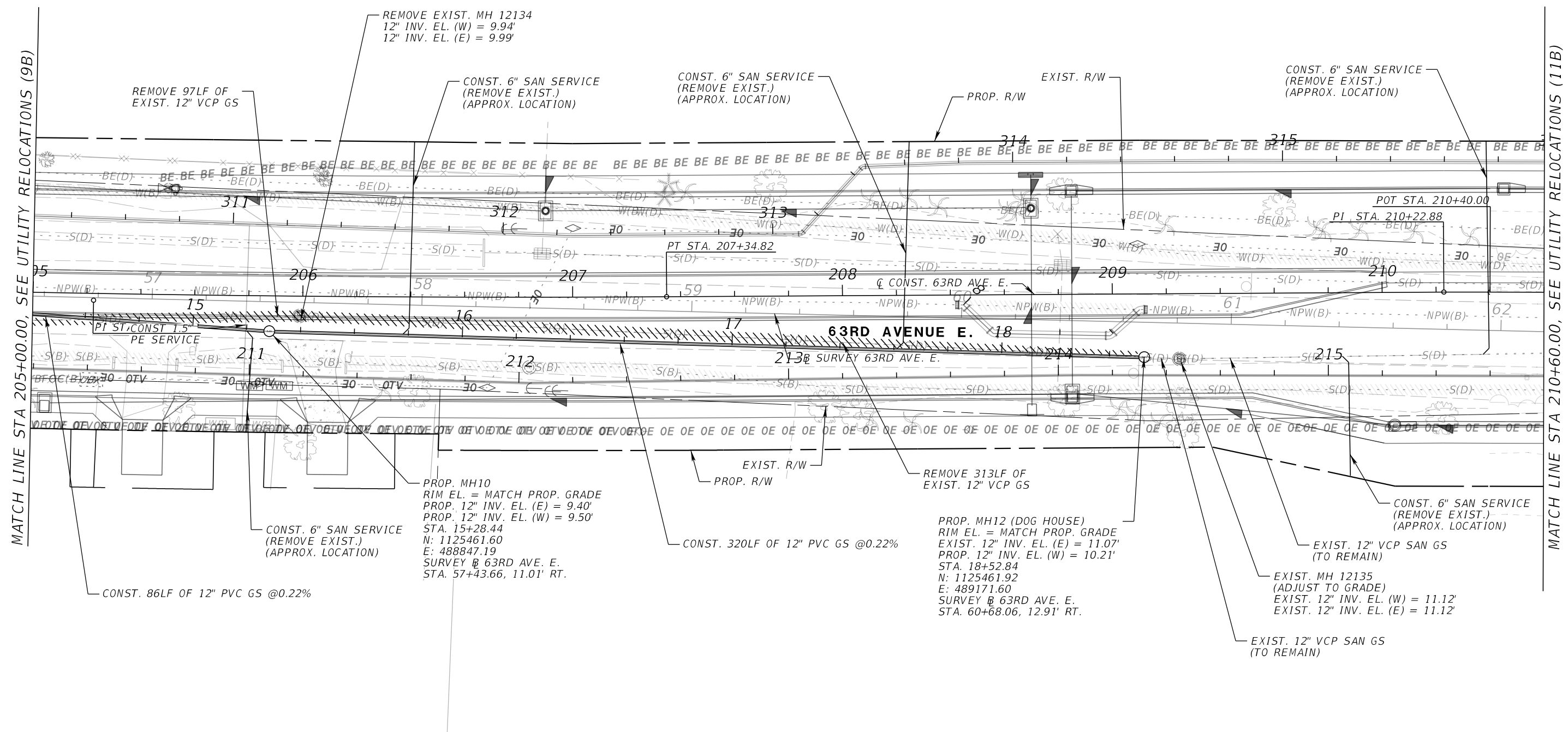
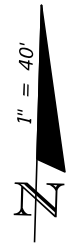
NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860

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License Number 75444
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Sarasota, FL 34232

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1022 26th Avenue East
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<p>UTILITY RELOCATIONS (10)</p>
<p>SHEET NO. U-28</p>

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MATCH LINE STA 205+00.00, SEE UTILITY RELOCATIONS (9B)

MATCH LINE STA 210+60.00, SEE UTILITY RELOCATIONS (11B)

GRAVITY SEWER

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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UTILITY RELOCATIONS (10A)

SHEET NO.
U-29

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MATCH LINE STA 109+80.00, SEE UTILITY RELOCATIONS (17)

MATCH LINE STA 210+60.00, SEE UTILITY RELOCATIONS (10)

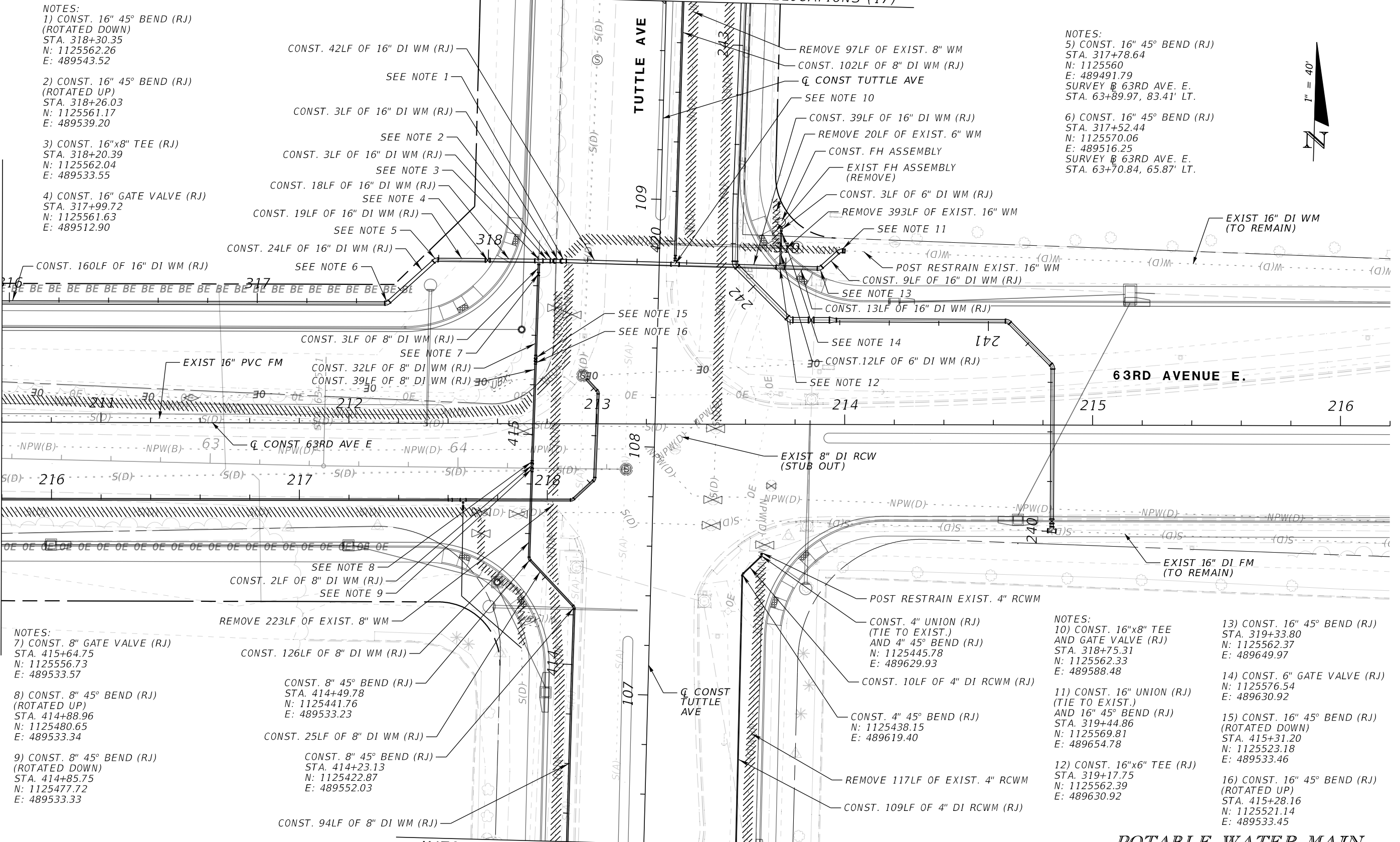
- NOTES:
 1) CONST. 16" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 318+30.35
 N: 1125562.26
 E: 489543.52
 2) CONST. 16" 45° BEND (RJ)
 (ROTATED UP)
 STA. 318+26.03
 N: 1125561.17
 E: 489539.20
 3) CONST. 16"x8" TEE (RJ)
 STA. 318+20.39
 N: 1125562.04
 E: 489533.55
 4) CONST. 16" GATE VALVE (RJ)
 STA. 317+99.72
 N: 1125561.63
 E: 489512.90

- NOTES:
 5) CONST. 16" 45° BEND (RJ)
 STA. 317+78.64
 N: 1125560
 E: 489491.79
 SURVEY B 63RD AVE. E.
 STA. 63+89.97, 83.41' LT.
 6) CONST. 16" 45° BEND (RJ)
 STA. 317+52.44
 N: 1125570.06
 E: 489516.25
 SURVEY B 63RD AVE. E.
 STA. 63+70.84, 65.87' LT.

- NOTES:
 7) CONST. 8" GATE VALVE (RJ)
 STA. 415+64.75
 N: 1125556.73
 E: 489533.57
 8) CONST. 8" 45° BEND (RJ)
 (ROTATED UP)
 STA. 414+88.96
 N: 1125480.65
 E: 489533.34
 9) CONST. 8" 45° BEND (RJ)
 (ROTATED DOWN)
 STA. 414+85.75
 N: 1125477.72
 E: 489533.33

- NOTES:
 10) CONST. 16"x8" TEE
 AND GATE VALVE (RJ)
 STA. 318+75.31
 N: 1125562.33
 E: 489588.48
 11) CONST. 16" UNION (RJ)
 (TIE TO EXIST.)
 AND 16" 45° BEND (RJ)
 STA. 319+44.86
 N: 1125569.81
 E: 489654.78
 12) CONST. 16"x6" TEE (RJ)
 STA. 319+17.75
 N: 1125562.39
 E: 489630.92

MATCH LINE STA 106+40.00, SEE UTILITY RELOCATIONS (16)



POTABLE WATER MAIN
 RECLAIMED WATER MAIN

UTILITY RELOCATIONS (11)

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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	CHECKED BY			JCH	6107860



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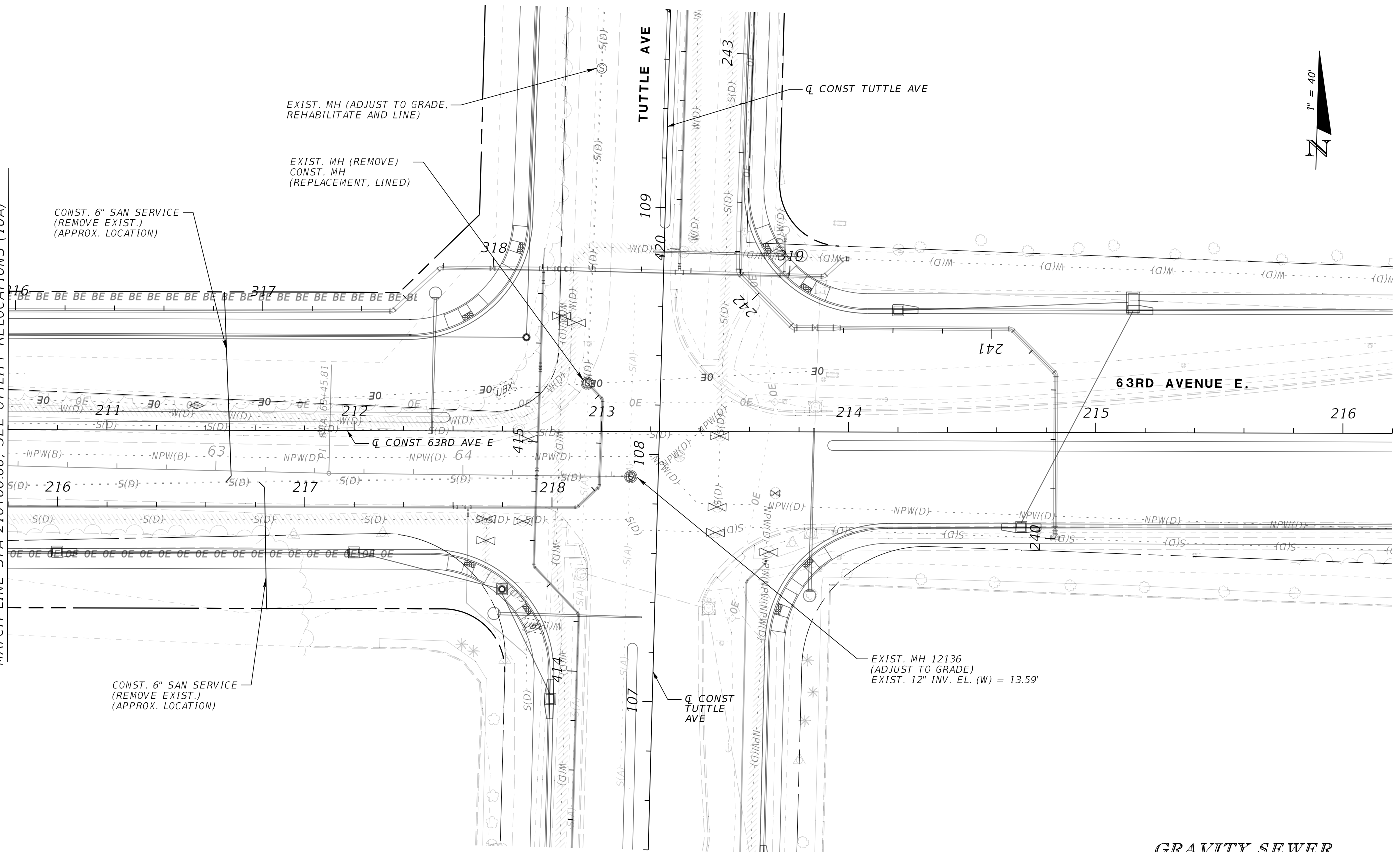


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SHEET NO.
 U-30

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MATCH LINE STA 210+60.00, SEE UTILITY RELOCATIONS (10A)



GRAVITY SEWER

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			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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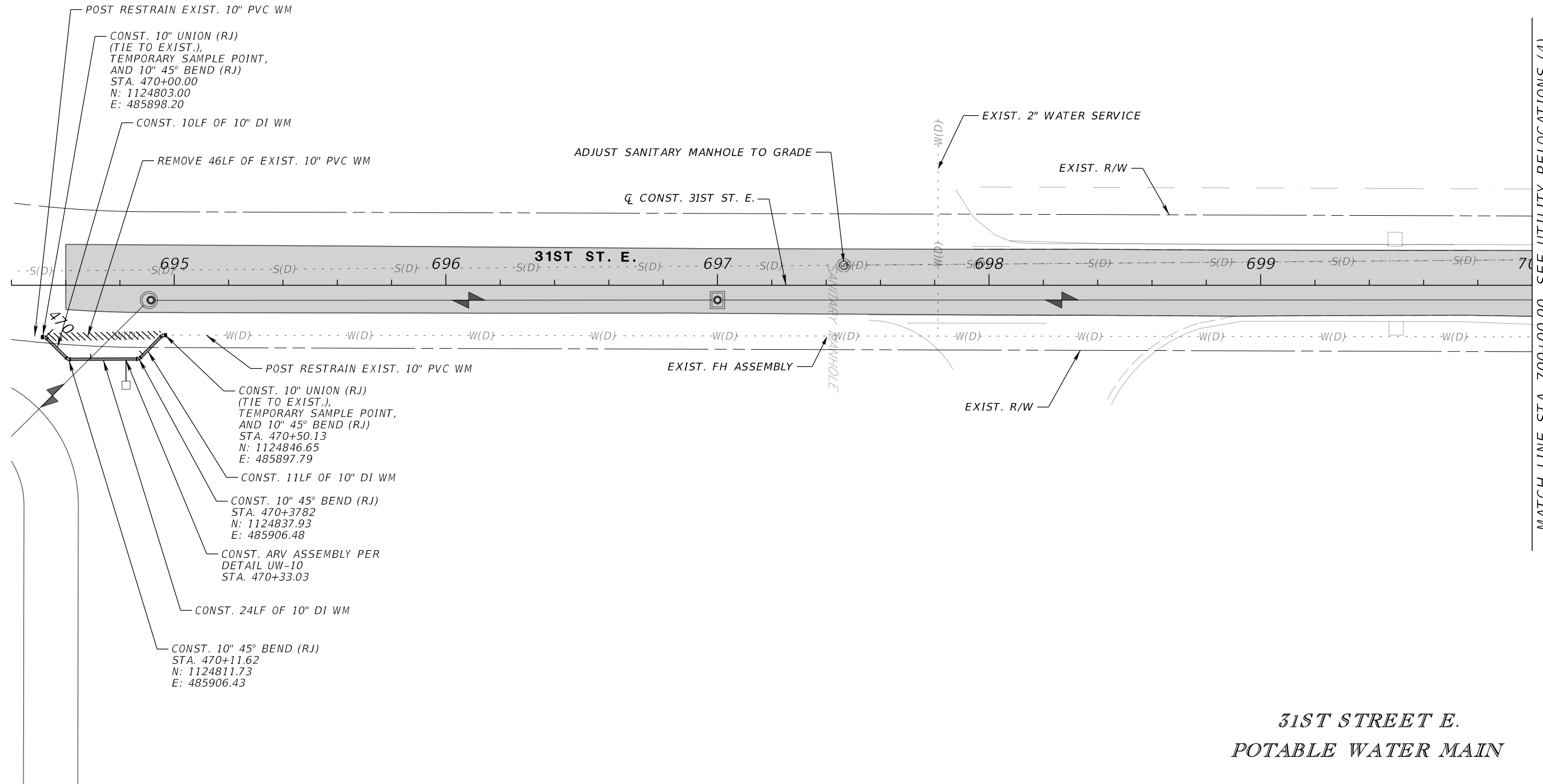
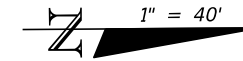


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UTILITY RELOCATIONS (11B)

SHEET NO.
 U-32

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MATCH LINE STA. 700+00.00, SEE UTILITY RELOCATIONS (4)

**31ST STREET E.
POTABLE WATER MAIN**

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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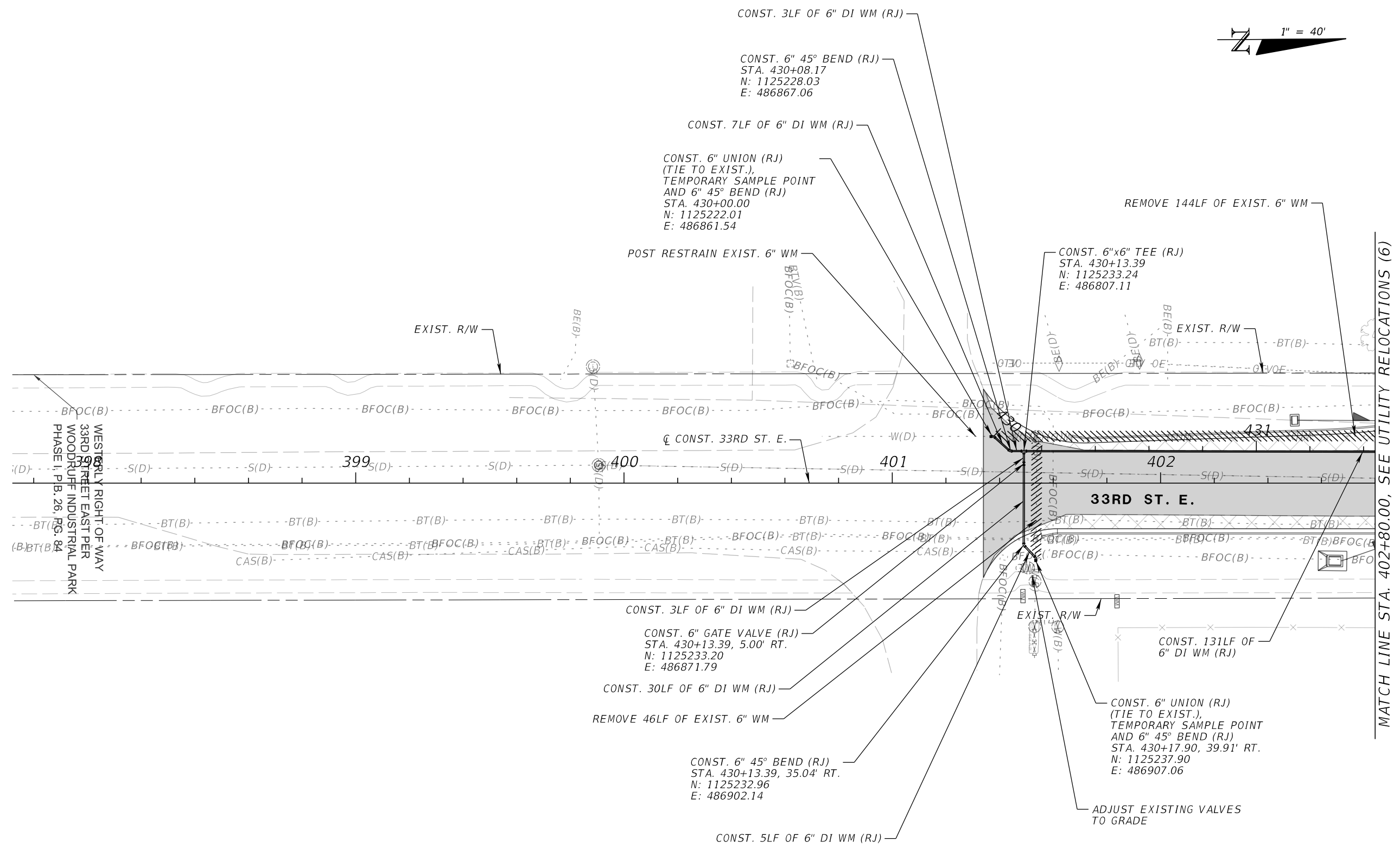
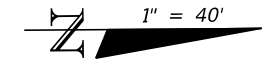


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UTILITY RELOCATIONS (12)

SHEET NO.

U-33



**33RD STREET E.
POTABLE WATER MAIN**

UTILITY RELOCATIONS (13)

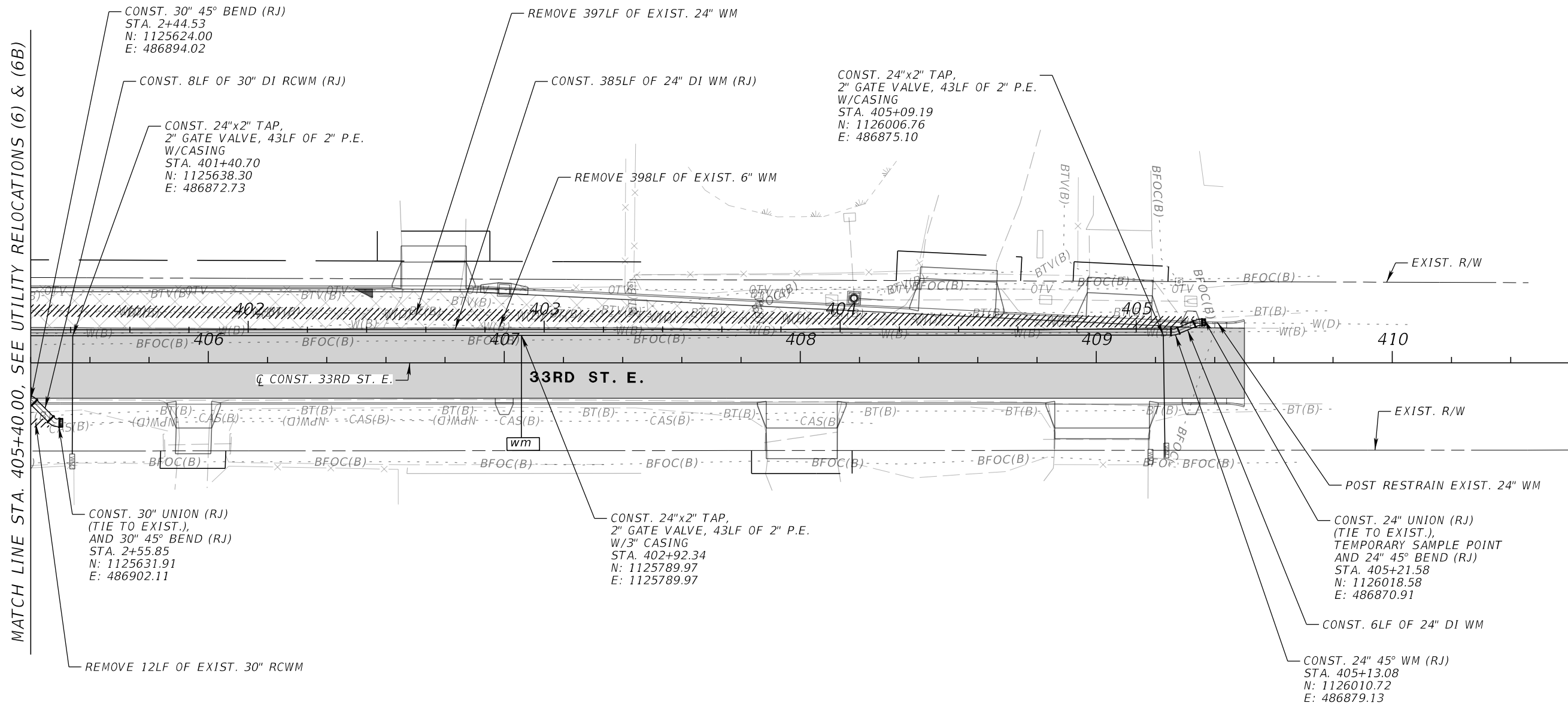
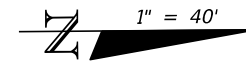
NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
	DESIGNED BY			HLM	12/2023
	DRAWN BY			JTT	PROJECT NO.
	CHECKED BY			JCH	6107860

HDR
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SHEET NO.
U-34

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MATCH LINE STA. 405+40.00, SEE UTILITY RELOCATIONS (6) & (6B)

**33RD STREET E.
POTABLE WATER MAIN
RECLAIMED WATER MAIN**

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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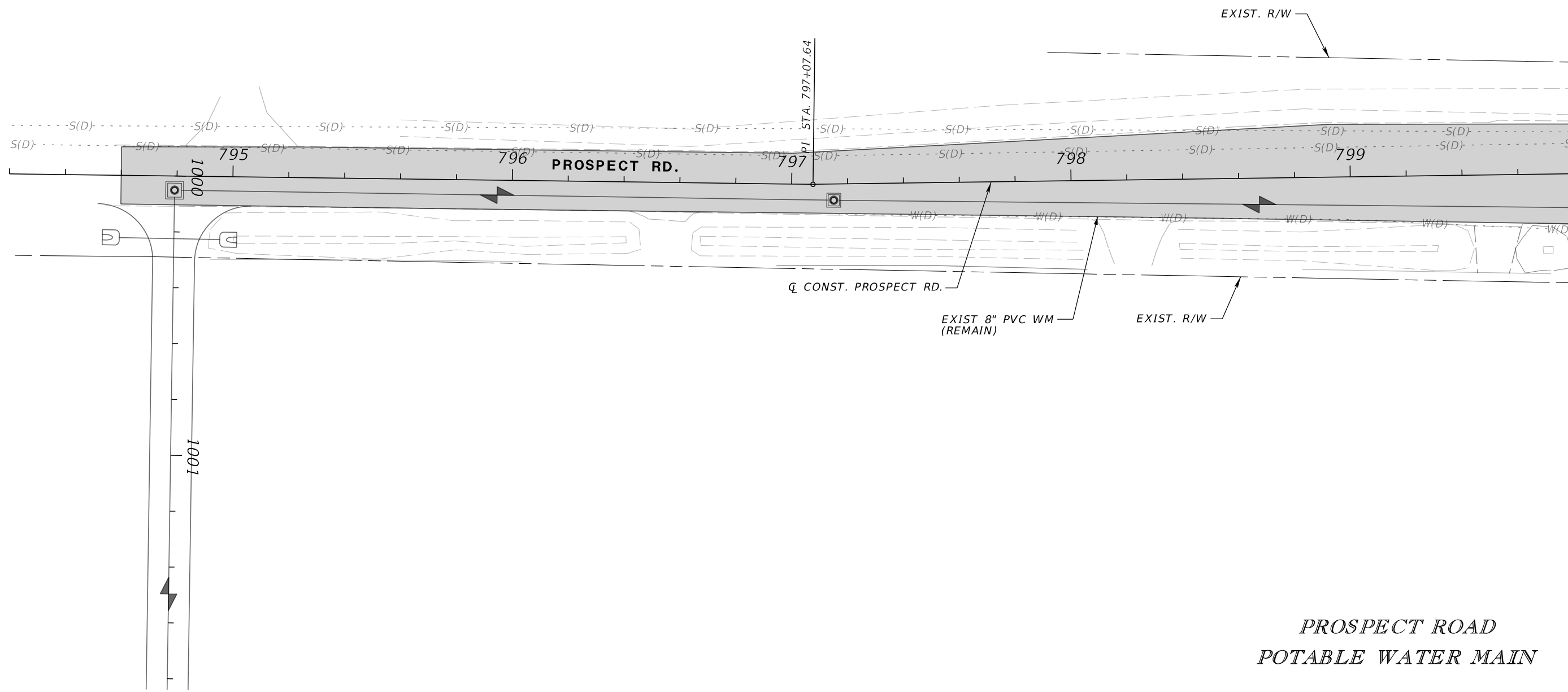
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UTILITY RELOCATIONS (14)

SHEET NO.
U-35

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1" = 40'



MATCH LINE STA. 799+80.00, SEE UTILITY RELOCATIONS (9)

**PROSPECT ROAD
POTABLE WATER MAIN**

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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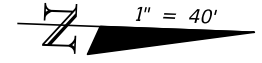
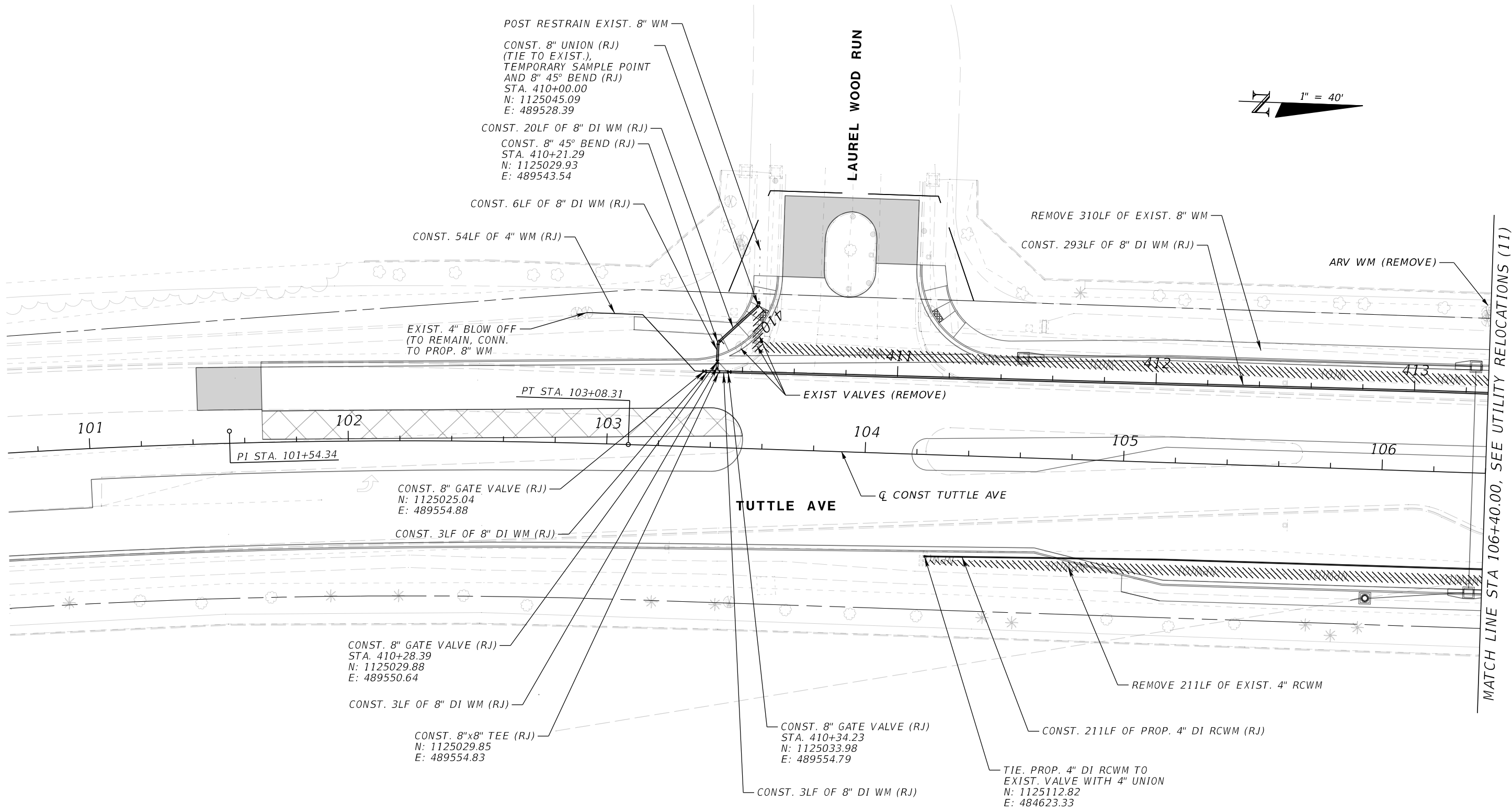
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UTILITY RELOCATIONS (15)

SHEET NO.

U-36

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



**TUTTLE AVE
POTABLE WATER MAIN
RECLAIMED WATER MAIN**

MATCH LINE STA 106+40.00, SEE UTILITY RELOCATIONS (11)

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860

HDR

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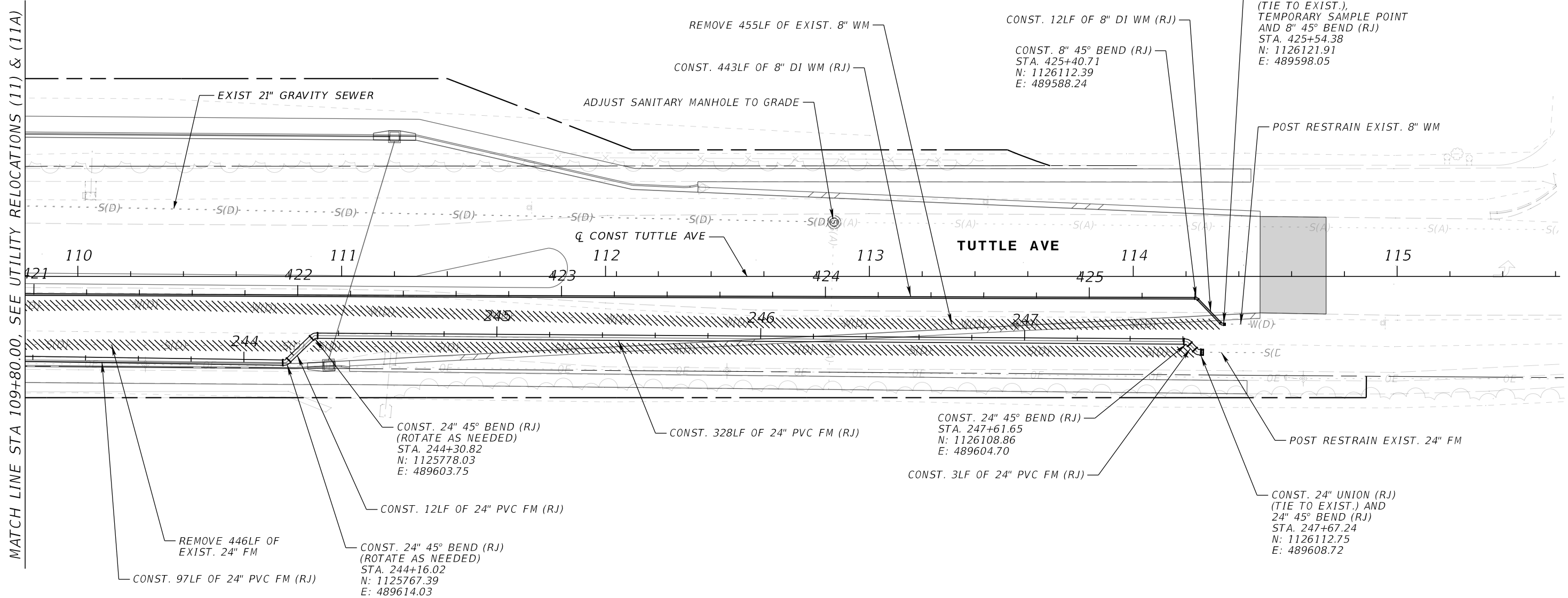
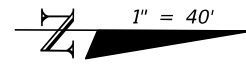
Manatee County
FLORIDA

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UTILITY RELOCATIONS (16)

SHEET NO.
U-37

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TUTTLE AVE
POTABLE WATER MAIN
WASTEWATER FORCE MAIN

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
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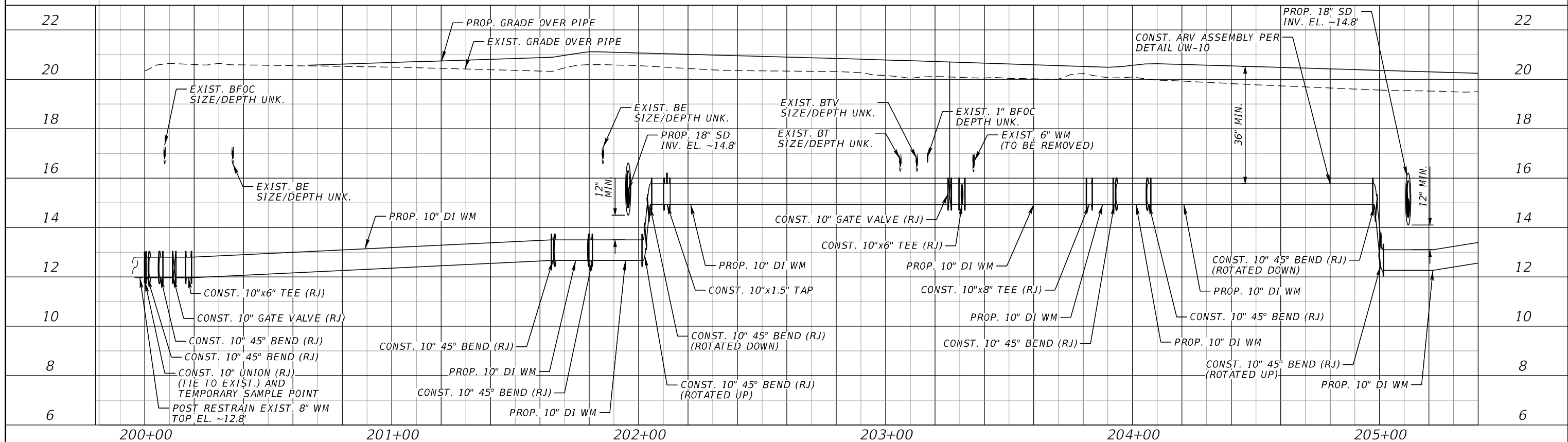
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UTILITY RELOCATIONS (17)

SHEET NO.
 U-38

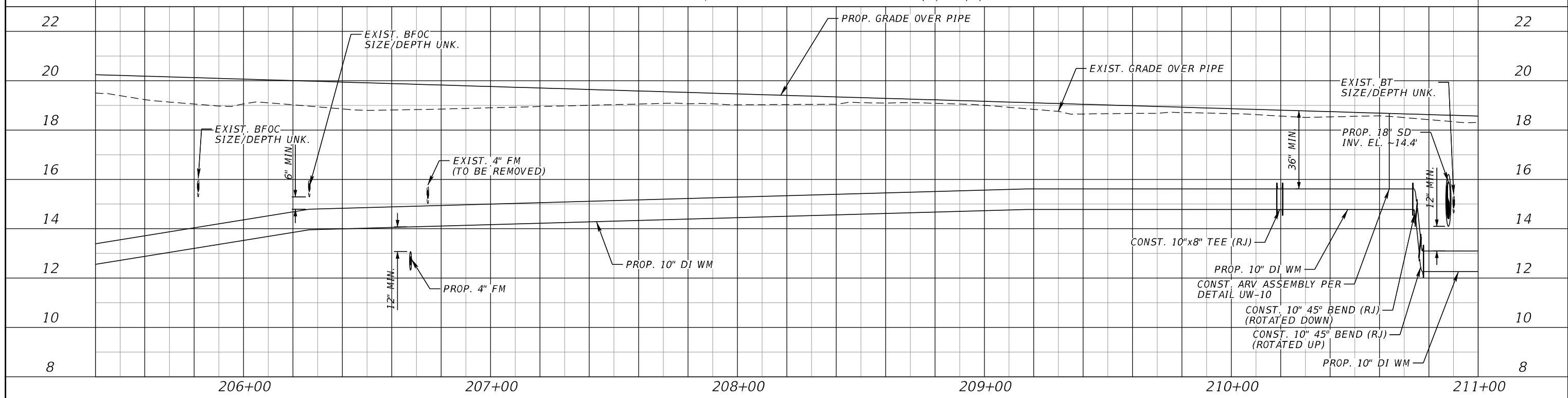
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

WATER MAIN, SEE UTILITY RELOCATIONS (1) & (2)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

WATER MAIN, SEE UTILITY RELOCATIONS (2) & (3)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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	CHECKED BY			JCH	6107860



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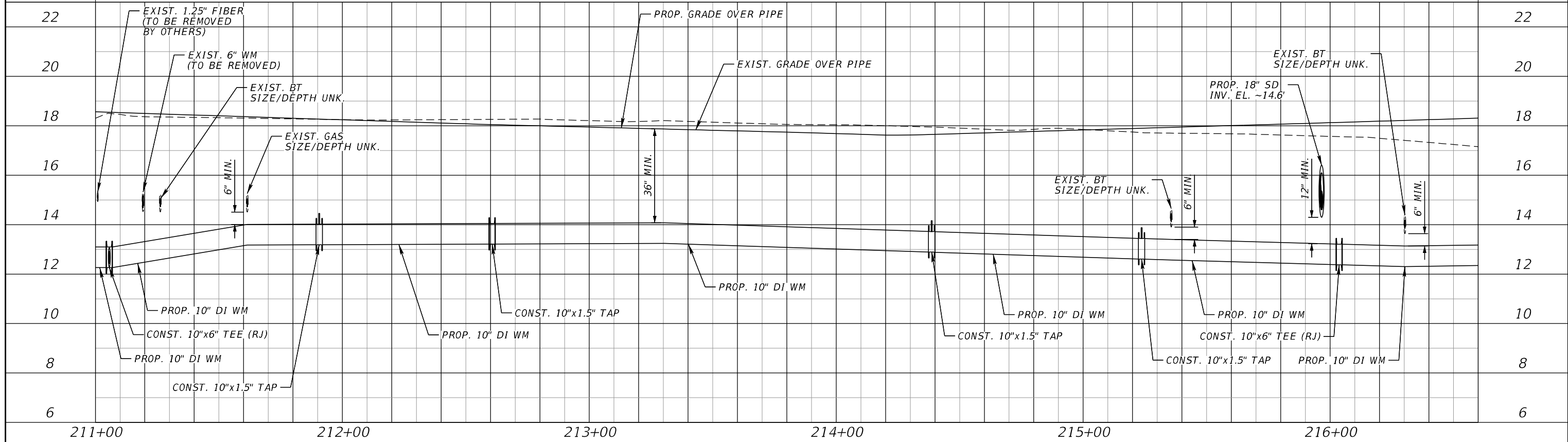
UTILITY RELOCATION
PROFILES (1)

SHEET NO.

U-39

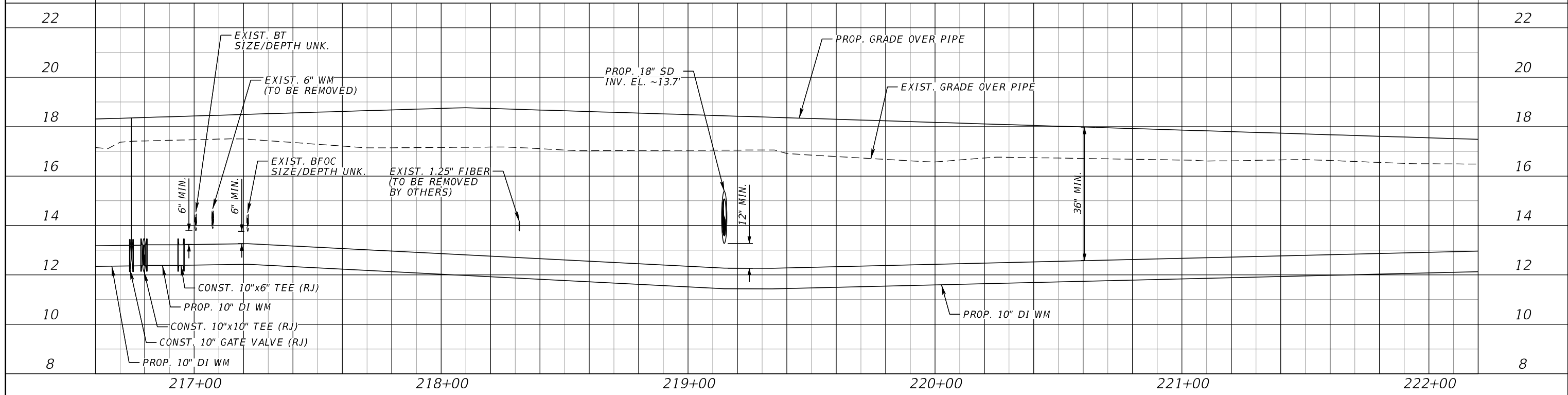
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WATER MAIN, SEE UTILITY RELOCATIONS (3) & (4)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

WATER MAIN, SEE UTILITY RELOCATIONS (4) & (5)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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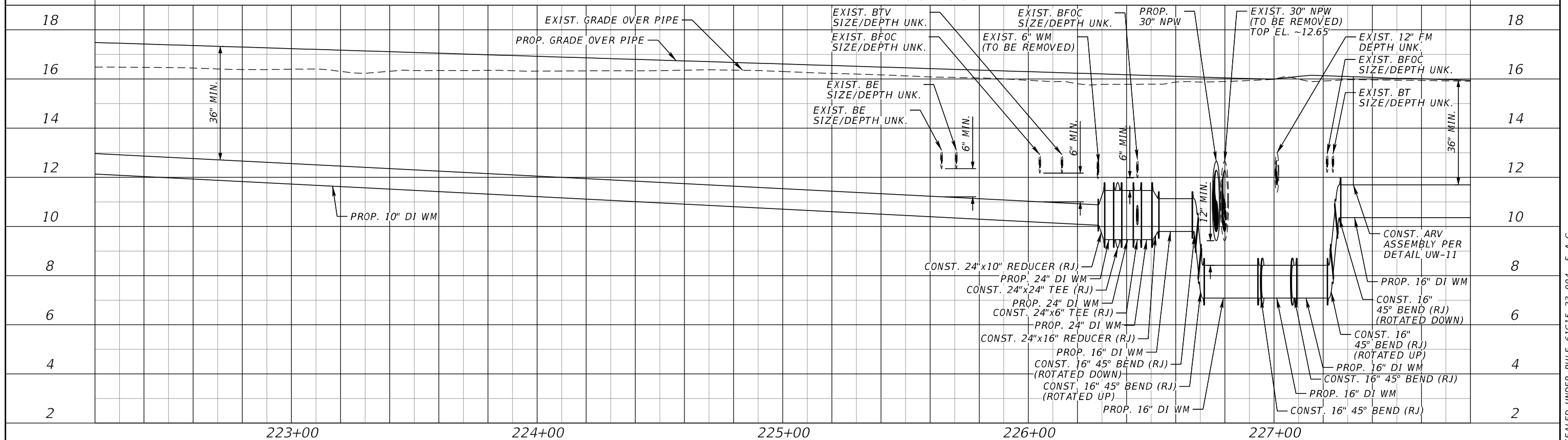
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**UTILITY RELOCATION
PROFILES (2)**

SHEET NO.
U-40

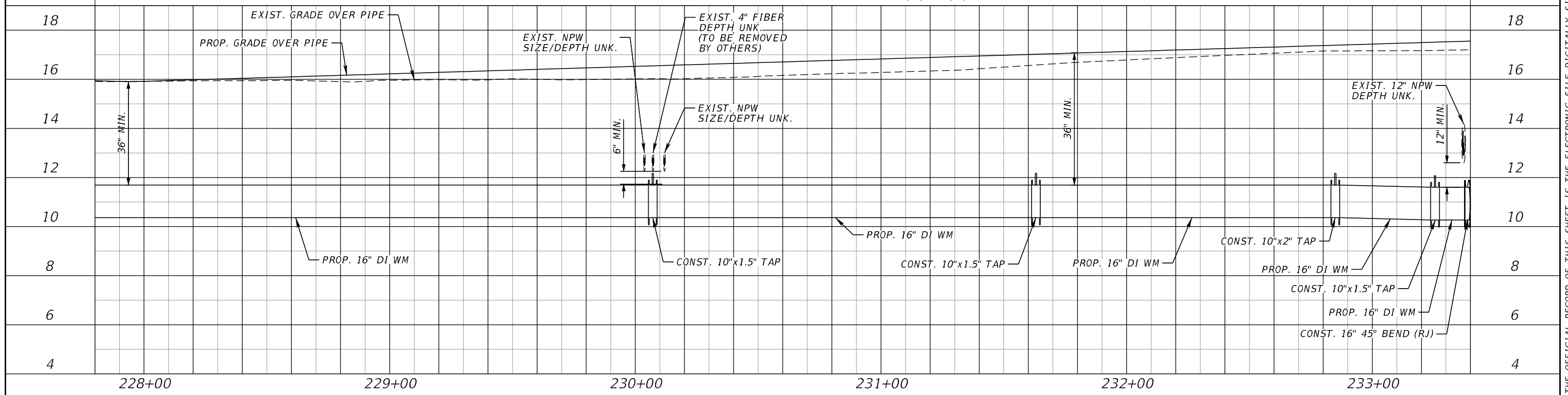
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WATER MAIN, SEE UTILITY RELOCATIONS (5) & (6)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

WATER MAIN, SEE UTILITY RELOCATIONS (6) & (7)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
	DESIGNED BY	HLM			12/2023
	DRAWN BY	JTT			PROJECT NO.
	CHECKED BY	JCH			6107860



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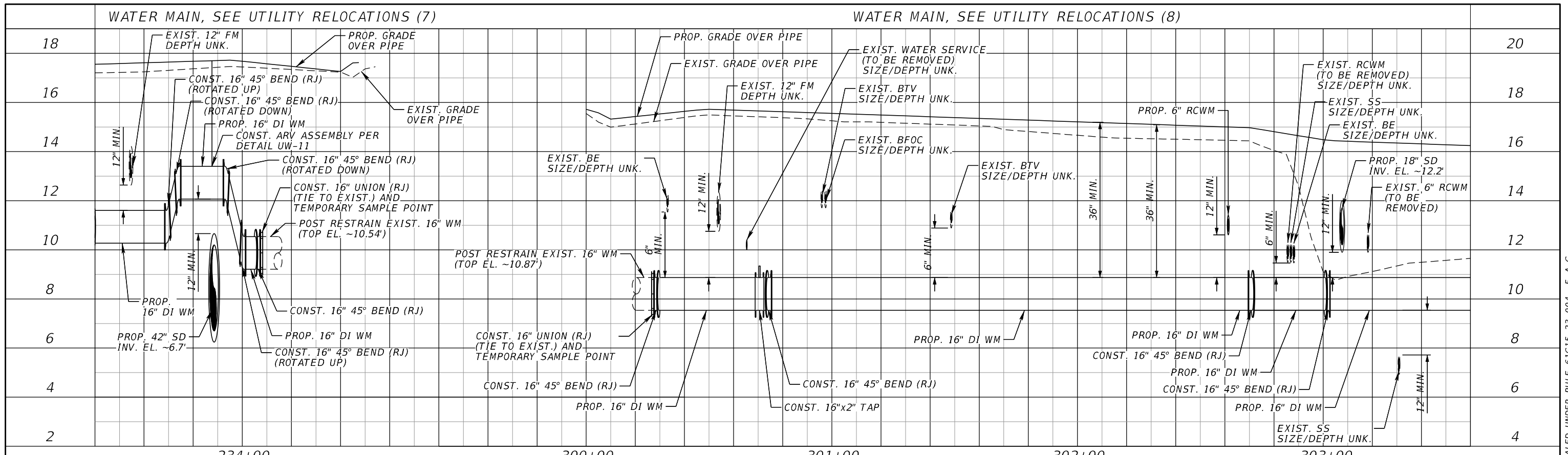


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UTILITY RELOCATION
PROFILES (3)

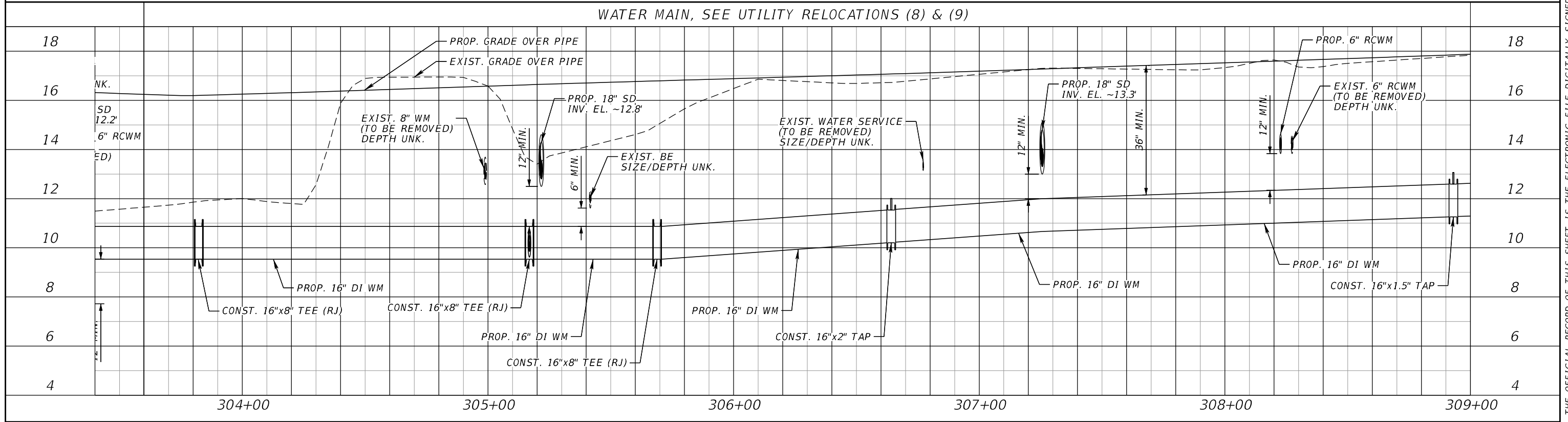
SHEET NO.
U-41

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SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

WATER MAIN, SEE UTILITY RELOCATIONS (7) WATER MAIN, SEE UTILITY RELOCATIONS (8)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
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			CHECKED BY	JCH	6107860



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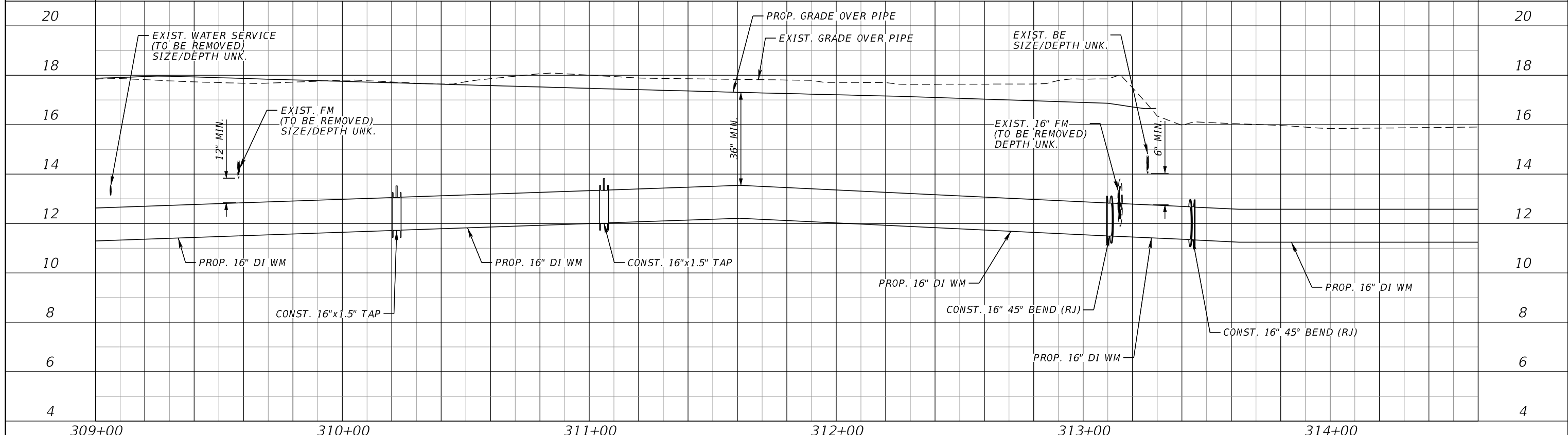
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**UTILITY RELOCATION
PROFILES (4)**

SHEET NO.
U-42

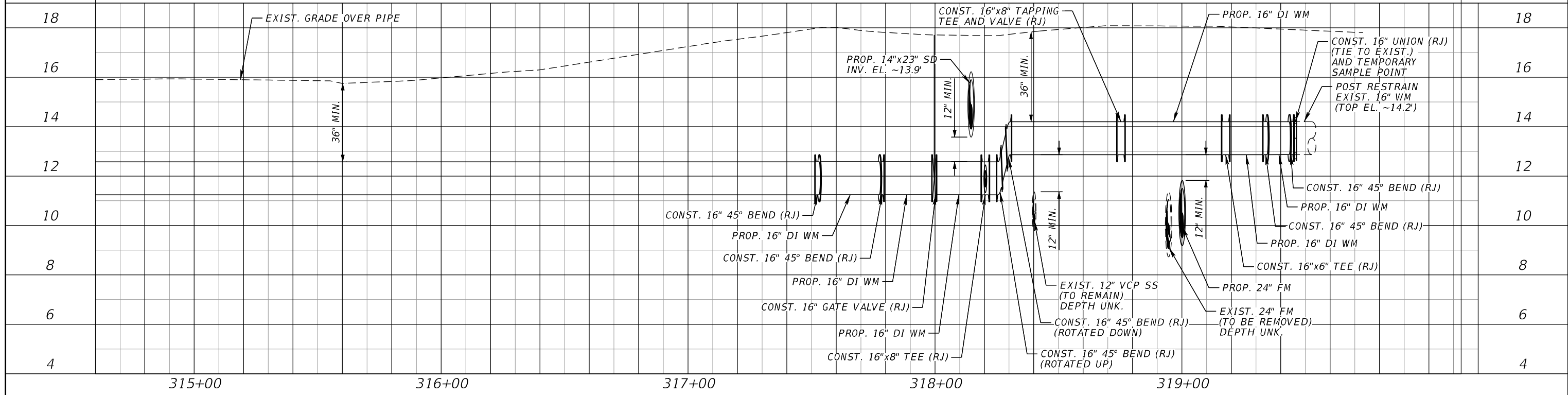
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WATER MAIN, SEE UTILITY RELOCATIONS (9) & (10)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

WATER MAIN, SEE UTILITY RELOCATIONS (10) & (11)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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			CHECKED BY	JCH	6107860



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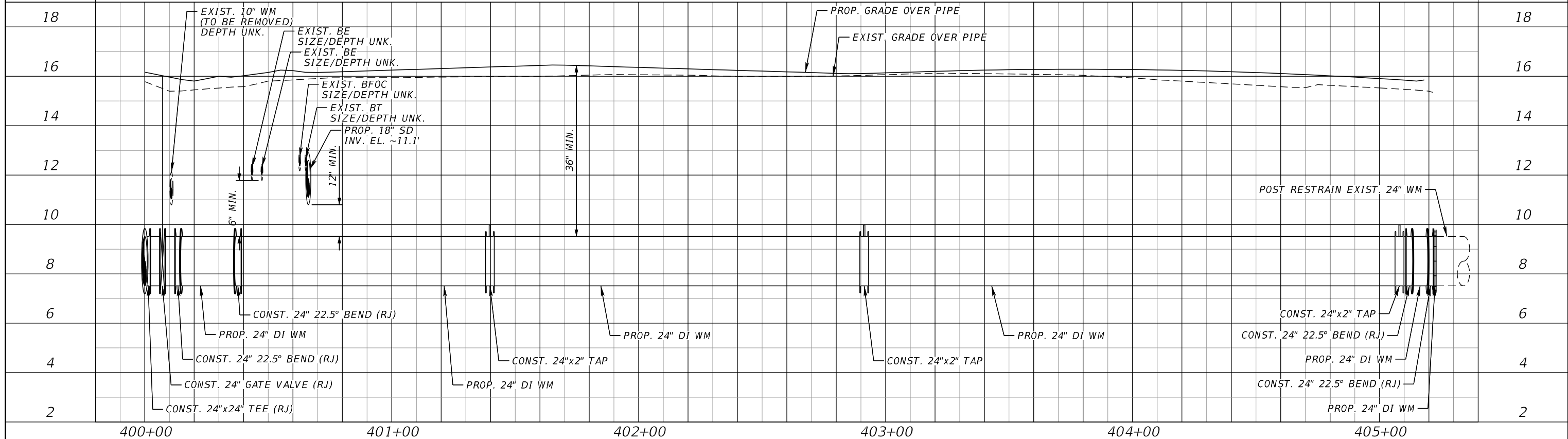
UTILITY RELOCATION
PROFILES (5)

SHEET NO.

U-43

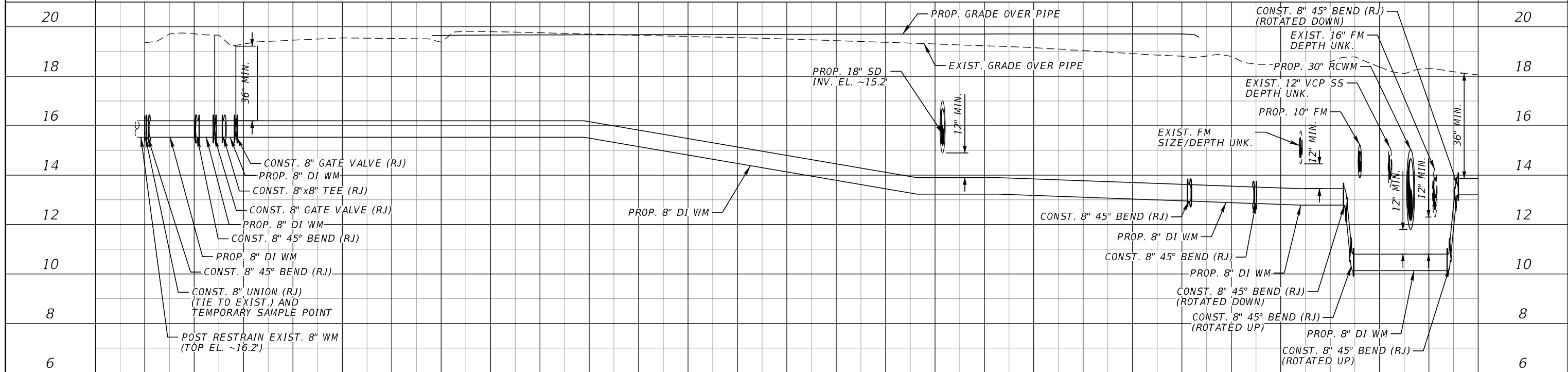
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WATER MAIN, SEE UTILITY RELOCATIONS (6) & (14)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

WATER MAIN, SEE UTILITY RELOCATIONS (11) & (16)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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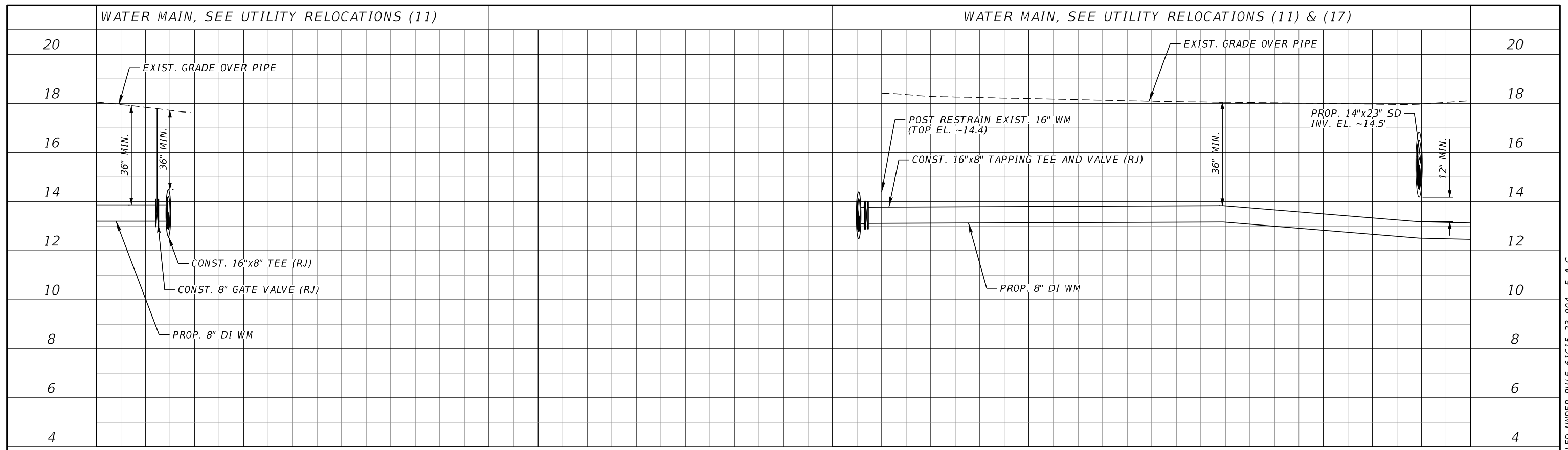


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UTILITY RELOCATION
PROFILES (6)

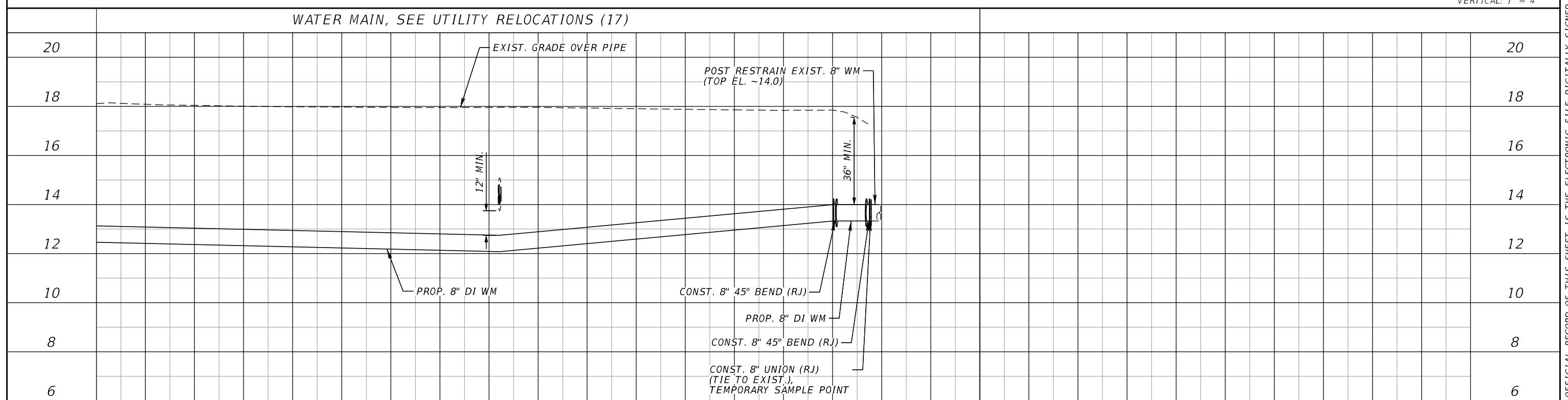
SHEET NO.
U-44

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416+00 420+00 421+00 422+00

SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'



423+00 424+00 425+00

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860

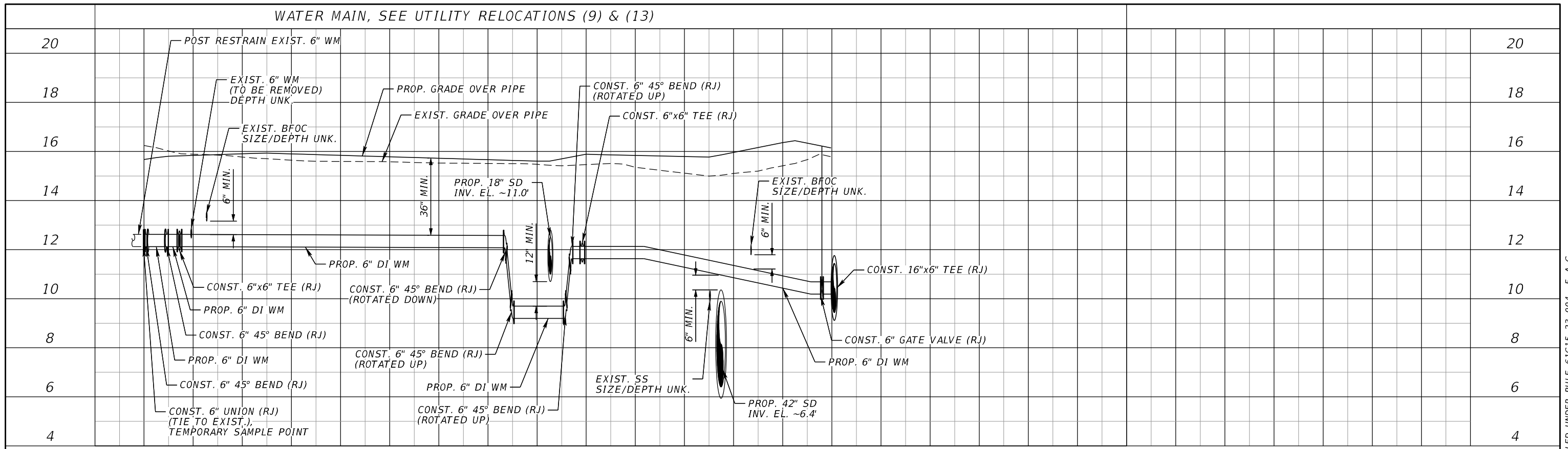
HDR
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License Number 75444
HDR Engineering, Inc.
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Sarasota, FL 34232

Manatee County
FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

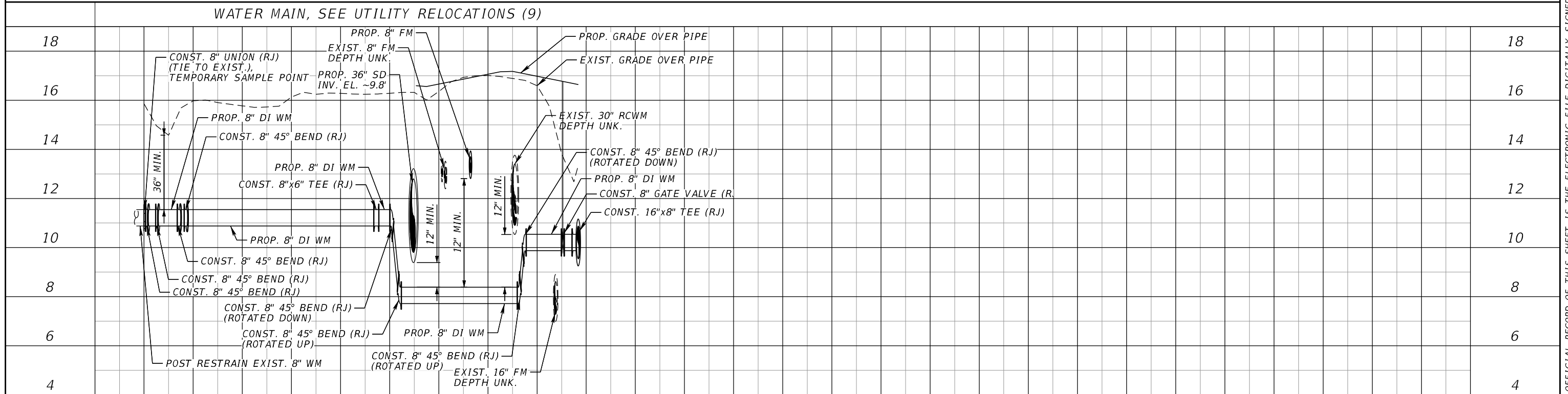
**UTILITY RELOCATION
PROFILES (7)**

SHEET NO.
U-45

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SCALE HORIZONTAL: 1" = 40'
 VERTICAL: 1" = 4'



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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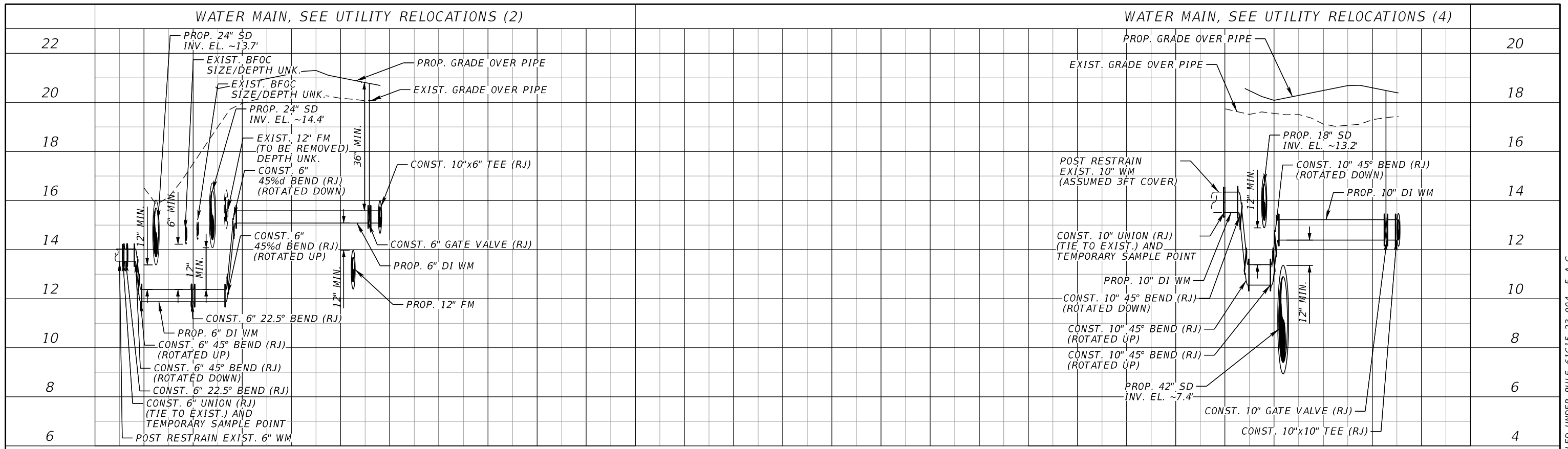


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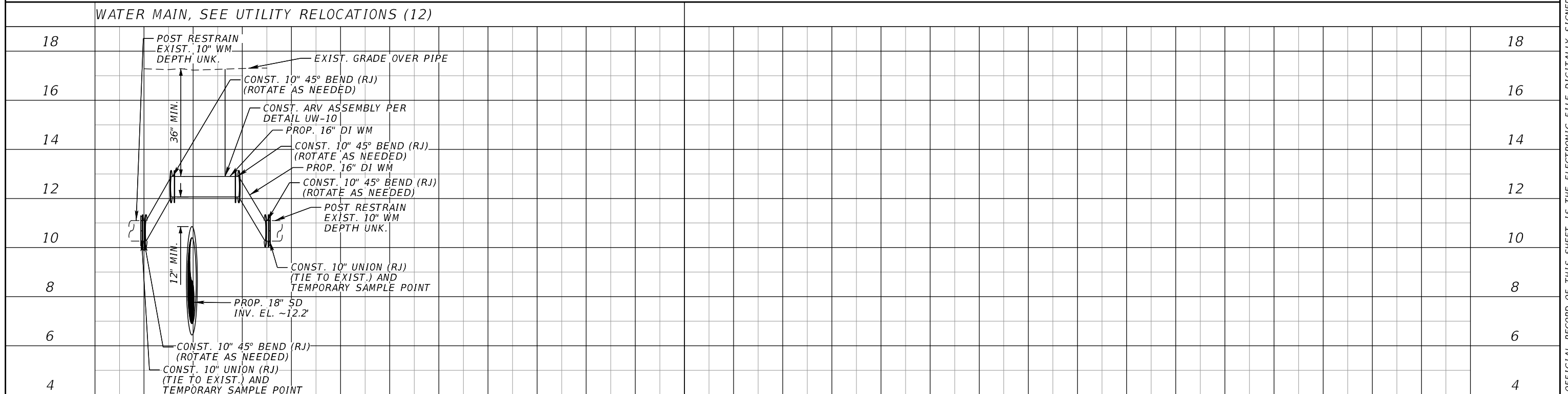
**UTILITY RELOCATION
 PROFILES (8)**

SHEET NO.
 U-46

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SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'



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			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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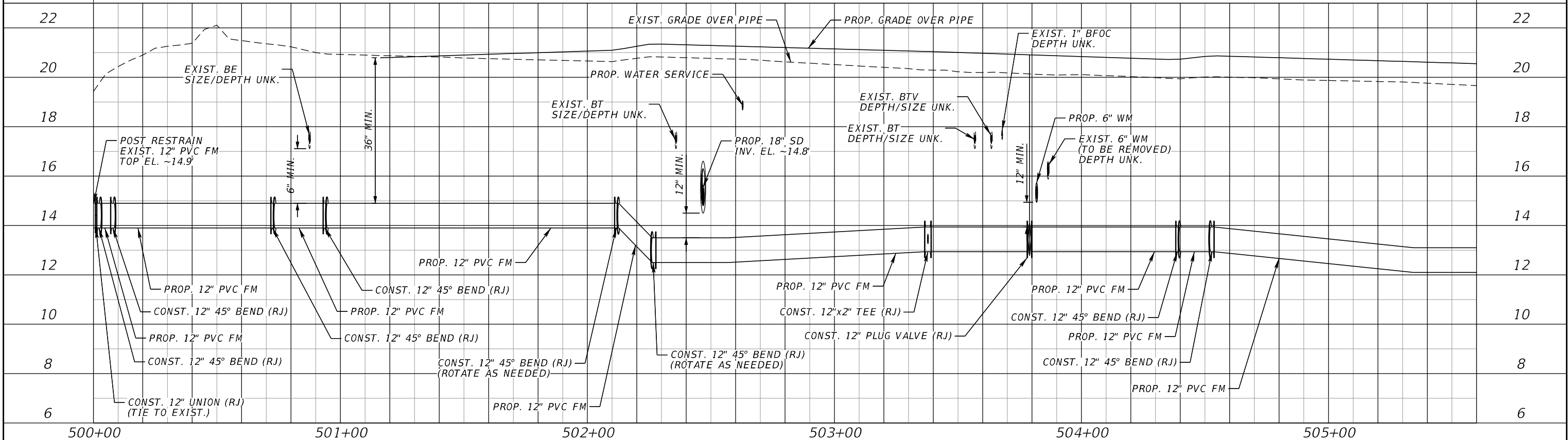
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1022 26th Avenue East
Bradenton, FL 34208

**UTILITY RELOCATION
PROFILES (9)**

SHEET NO.
U-47

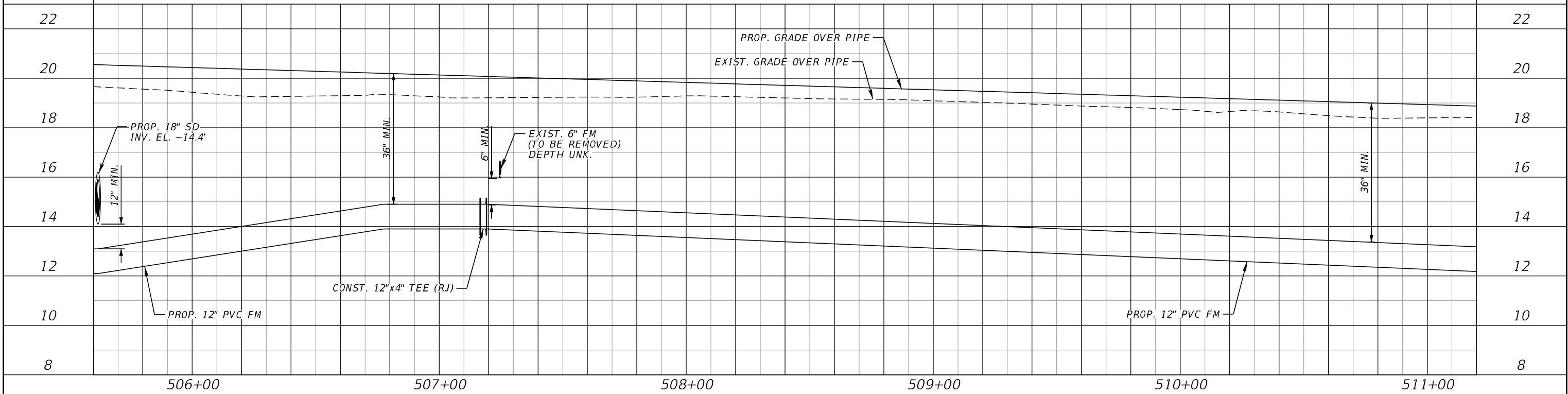
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FORCE MAIN, SEE UTILITY RELOCATIONS (1A) & (2A)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

FORCE MAIN, SEE UTILITY RELOCATIONS (2A) & (3)



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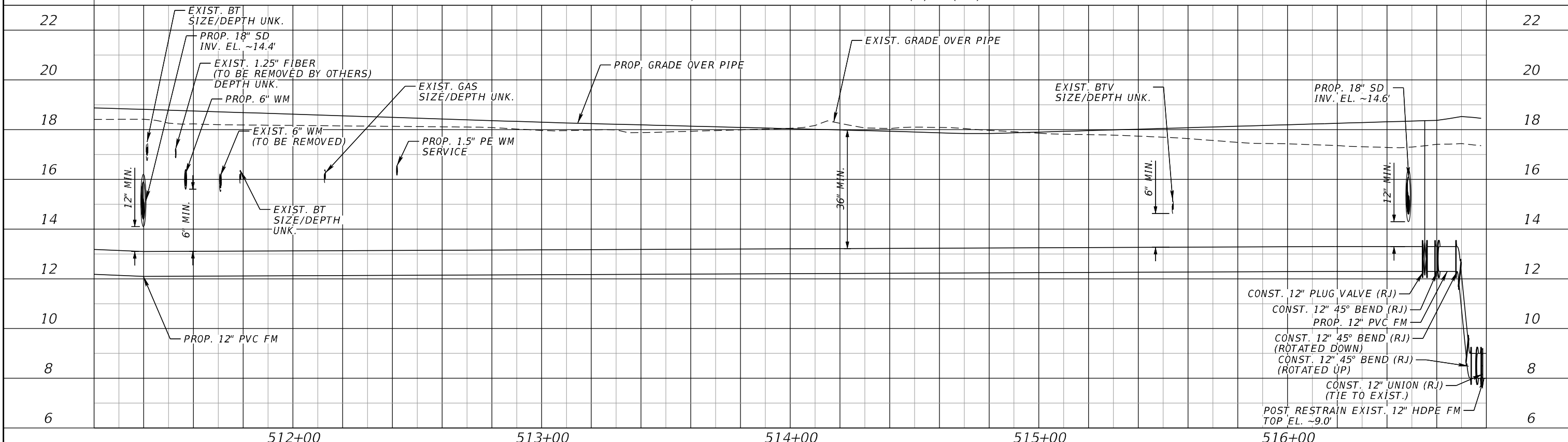
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UTILITY RELOCATION
PROFILES (10)

SHEET NO.

U-48

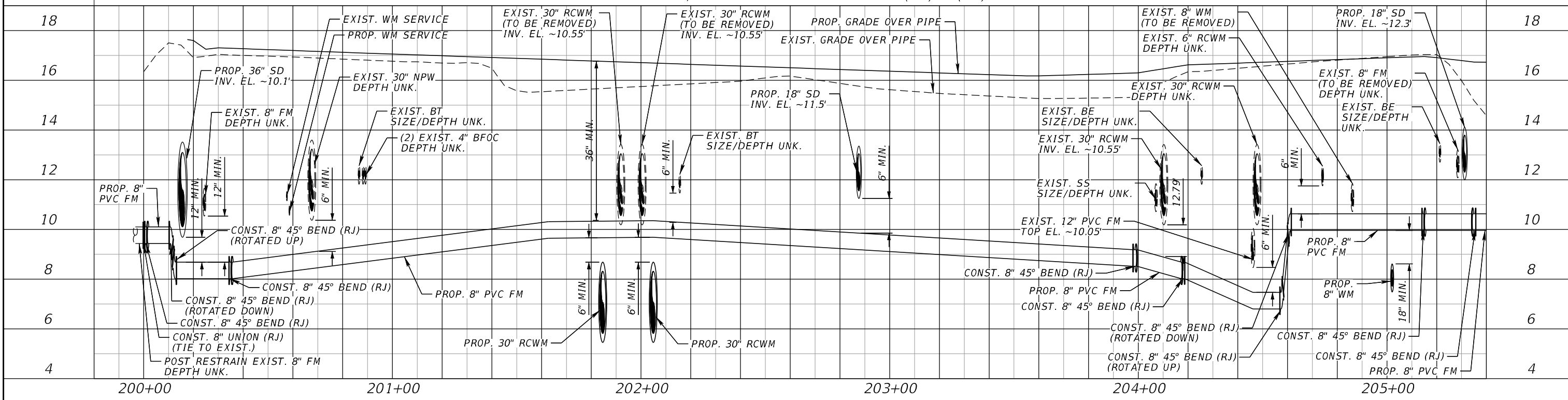
FORCE MAIN, SEE UTILITY RELOCATIONS (3) & (4A)



- CONST. 12" PLUG VALVE (RJ)
- CONST. 12" 45° BEND (RJ)
- PROP. 12" PVC FM
- CONST. 12" 45° BEND (RJ) (ROTATED DOWN)
- CONST. 12" 45° BEND (RJ) (ROTATED UP)
- CONST. 12" UNION (RJ) (TIE TO EXIST.)
- POST RESTRAIN EXIST. 12" HDPE FM TOP EL. ~9.0'

SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

FORCE MAIN, SEE UTILITY RELOCATIONS (8A) & (9A)



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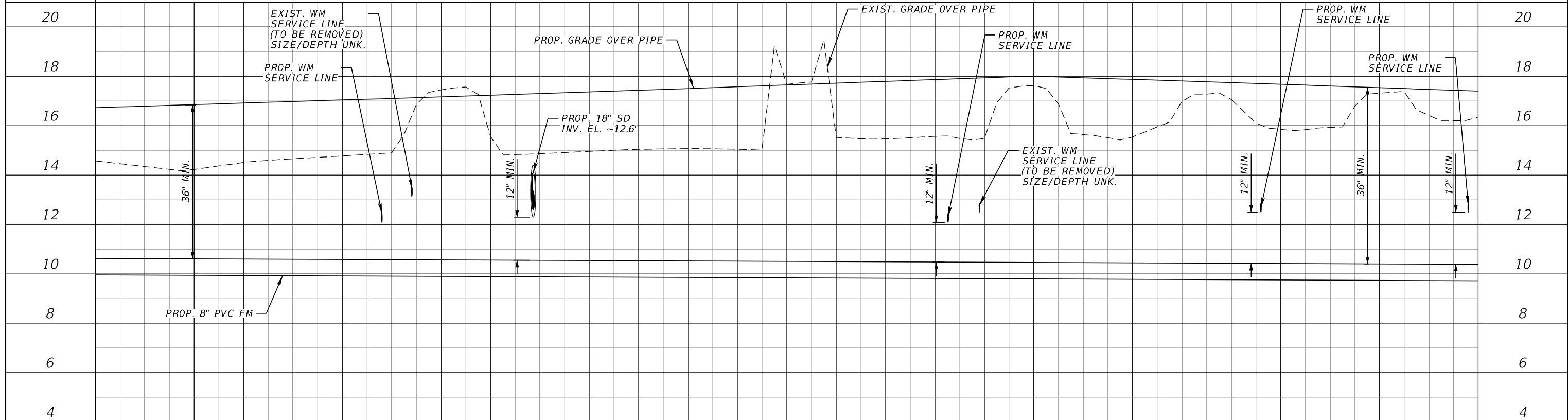
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UTILITY RELOCATION
PROFILES (11)

SHEET NO.
U-49

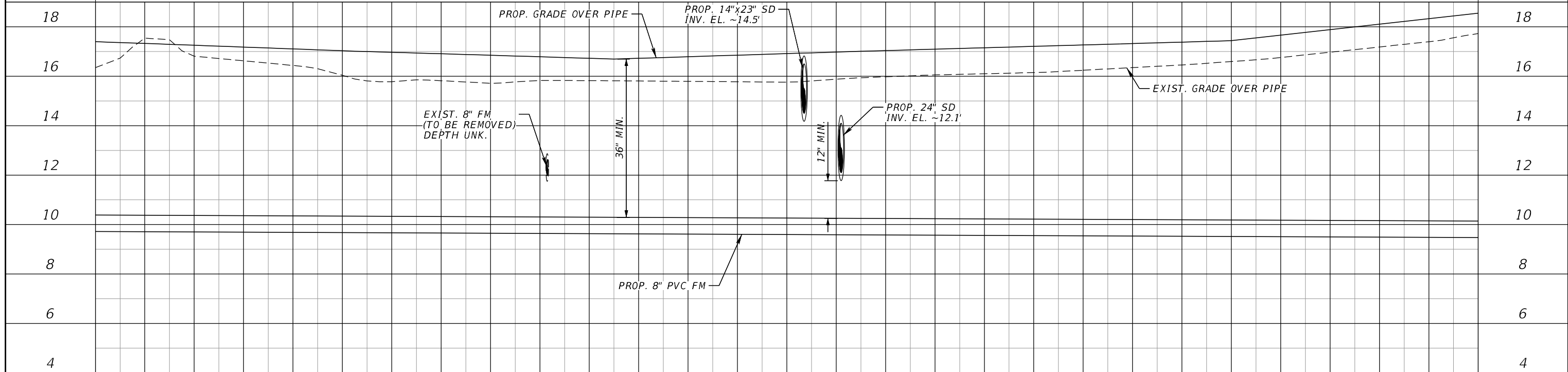
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FORCE MAIN, SEE UTILITY RELOCATIONS (9A) & (10)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

FORCE MAIN, SEE UTILITY RELOCATIONS (10) & (11A)



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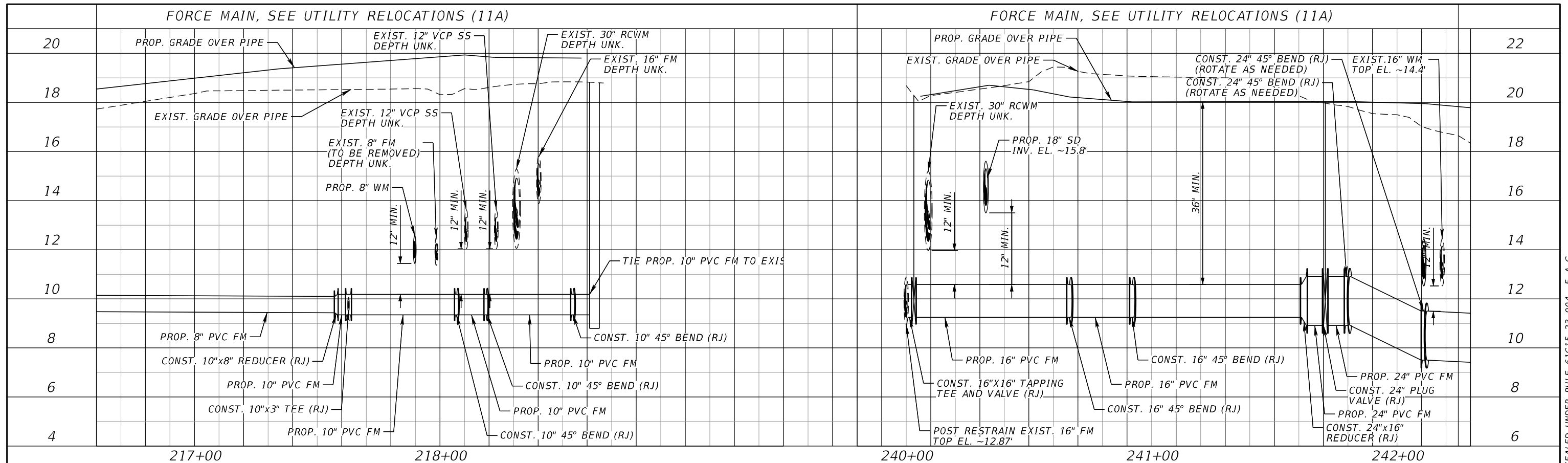


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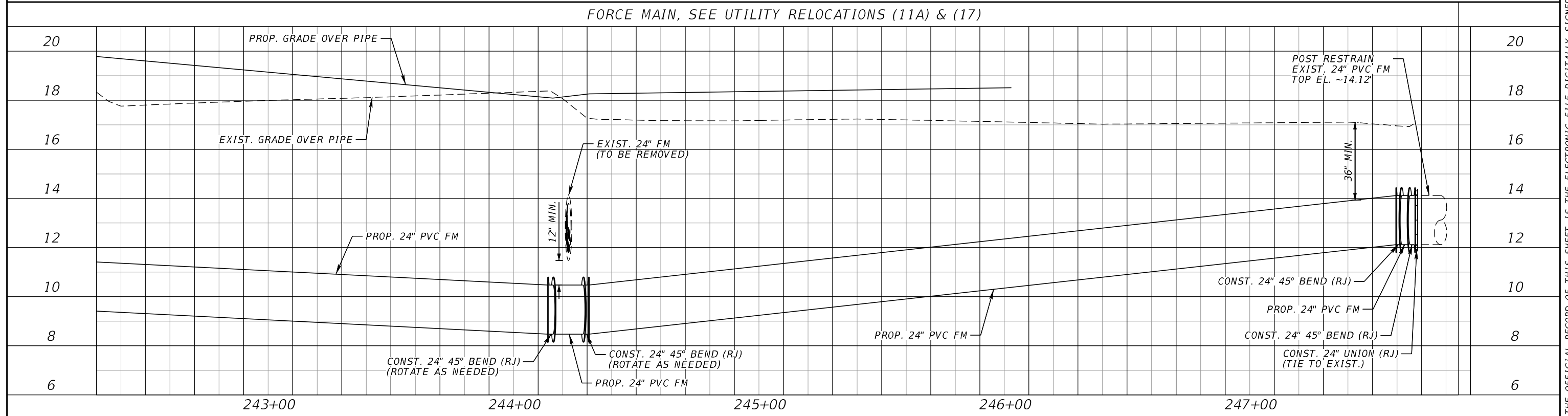
UTILITY RELOCATION
PROFILES (12)

SHEET NO.
U-50

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SCALE HORIZONTAL: 1" = 40'
 VERTICAL: 1" = 4'



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			CHECKED BY	JCH	6107860



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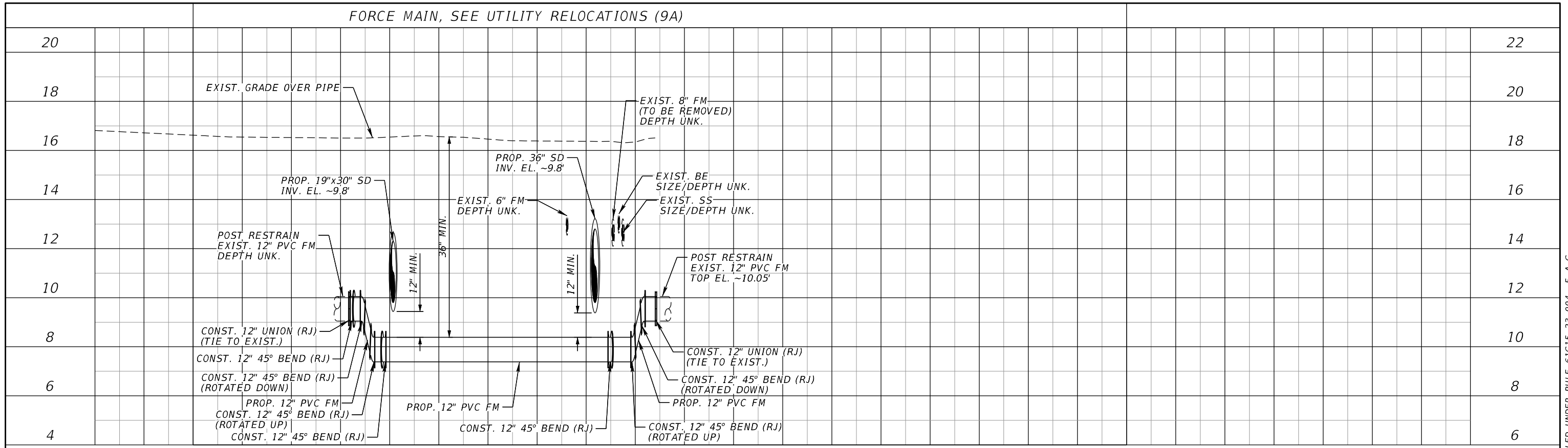
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**UTILITY RELOCATION
 PROFILES (13)**

SHEET NO.
 U-51

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FORCE MAIN, SEE UTILITY RELOCATIONS (9A)



262+00

263+00

SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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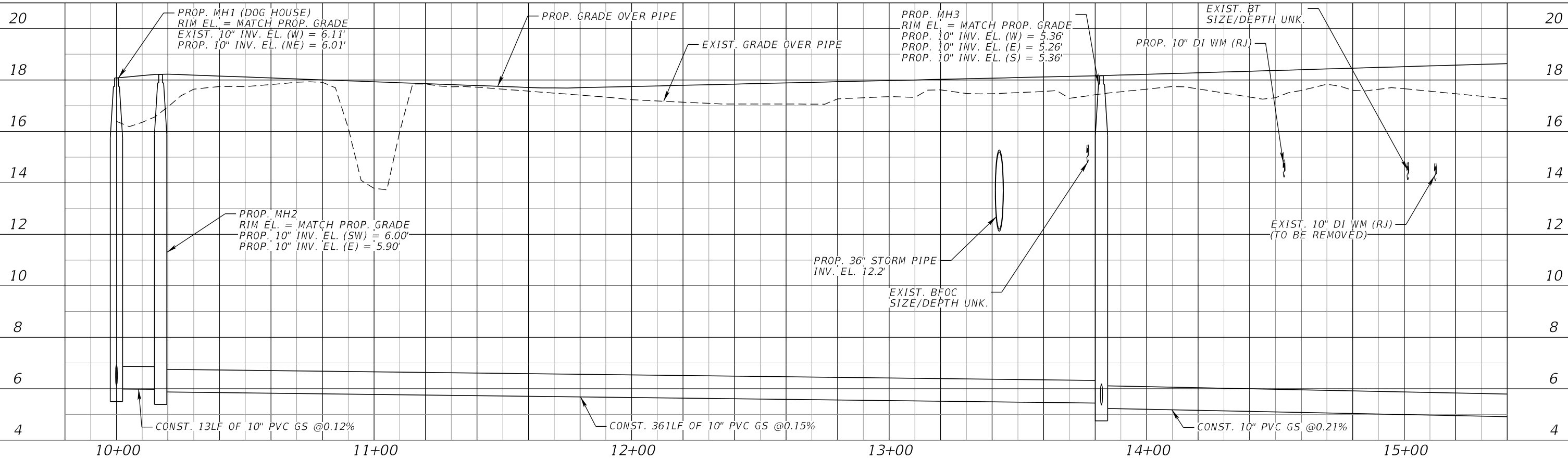
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UTILITY RELOCATION
PROFILES (14)

SHEET NO.

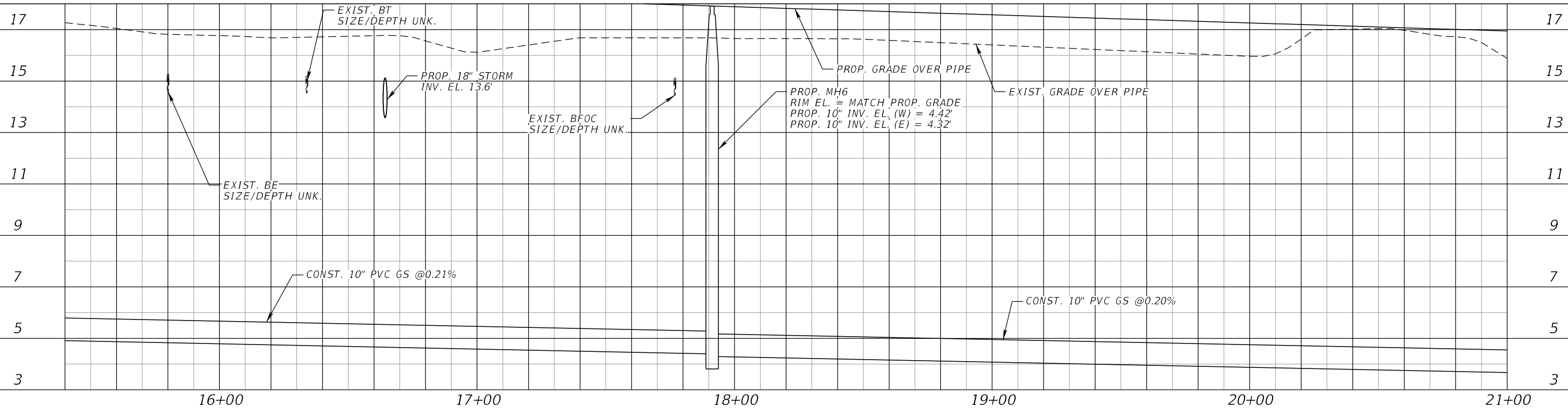
U-52

GRAVITY SEWER, SEE UTILITY RELOCATIONS (4B)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

GRAVITY SEWER, SEE UTILITY RELOCATIONS (5A) & (6A)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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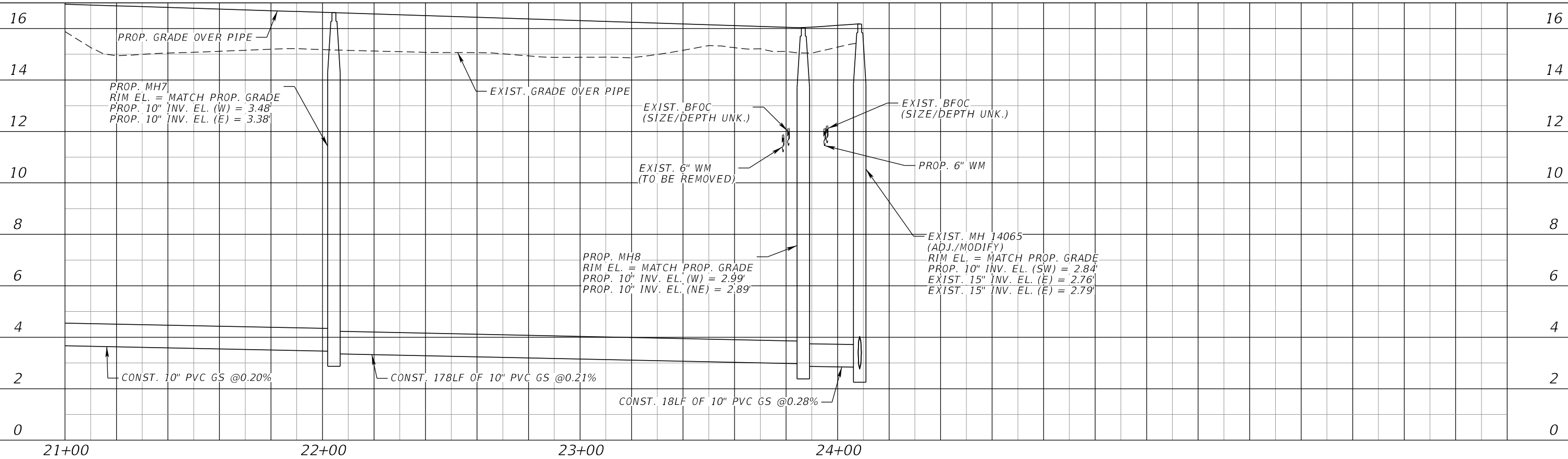
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UTILITY RELOCATION
PROFILES (15)

SHEET NO.
U-53

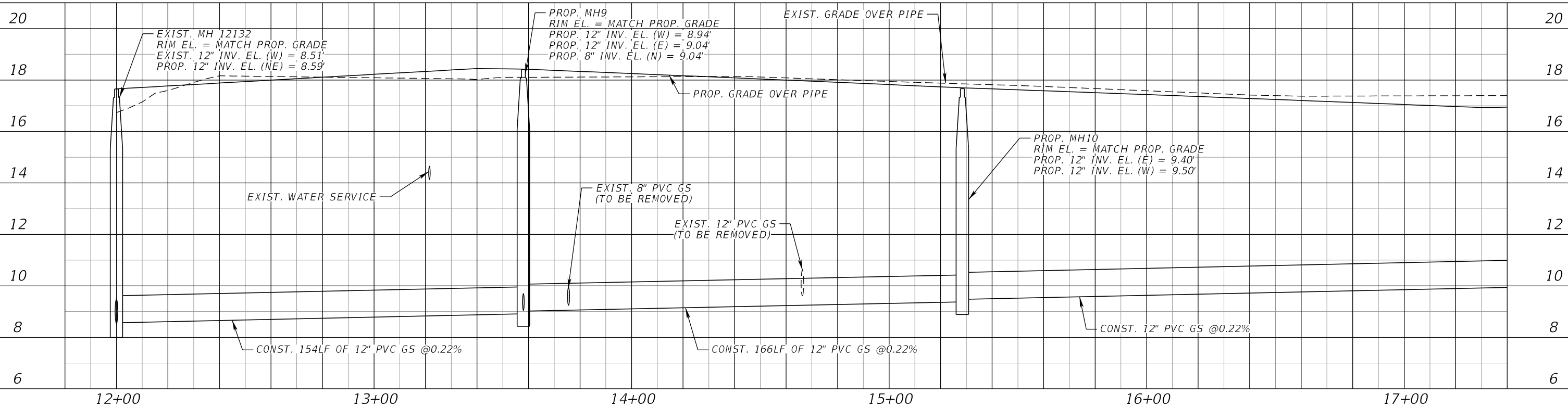
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GRAVITY SEWER, SEE UTILITY RELOCATIONS (6A) & (7A)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

GRAVITY SEWER, SEE UTILITY RELOCATIONS (9A) & (10A)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
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			CHECKED BY	JCH	6107860



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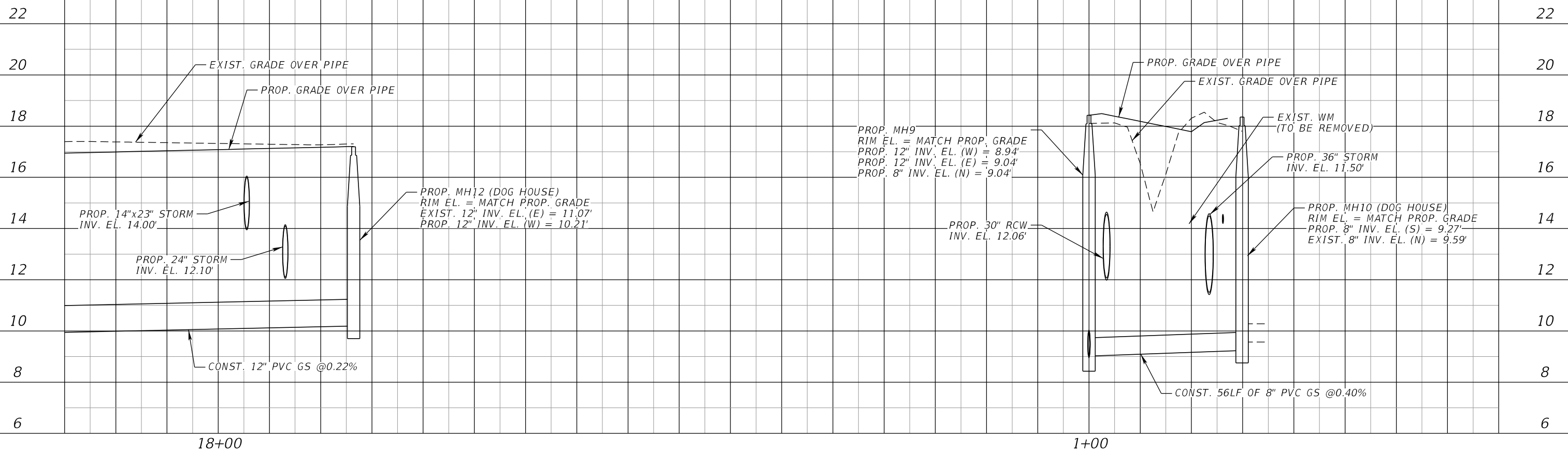
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UTILITY RELOCATION
PROFILES (16)

SHEET NO.
U-54

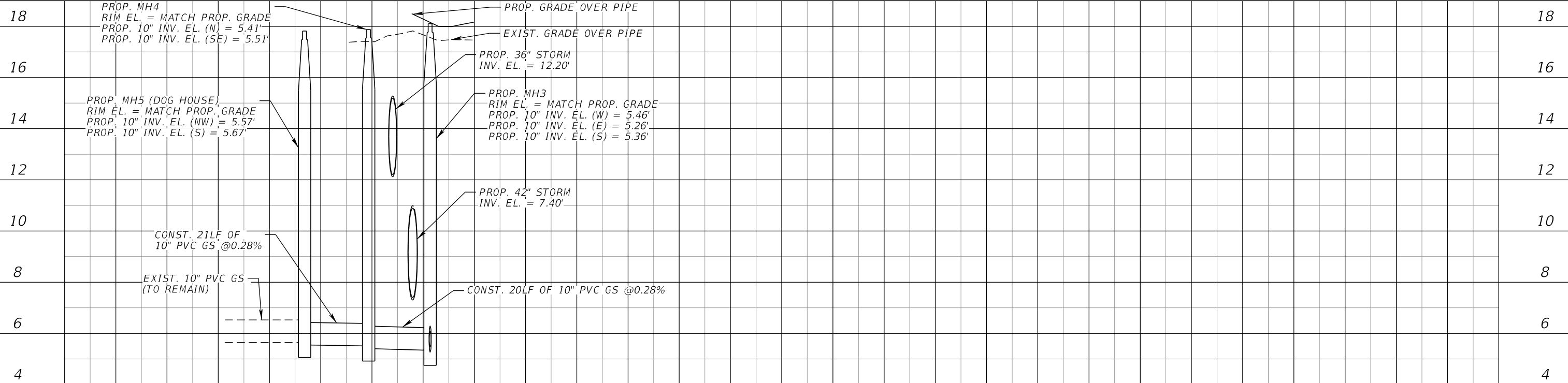
GRAVITY SEWER, SEE UTILITY RELOCATIONS (10A)

GRAVITY SEWER, SEE UTILITY RELOCATIONS (9B)



SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

GRAVITY SEWER, SEE UTILITY RELOCATIONS (4B)



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
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			CHECKED BY	JCH	6107860



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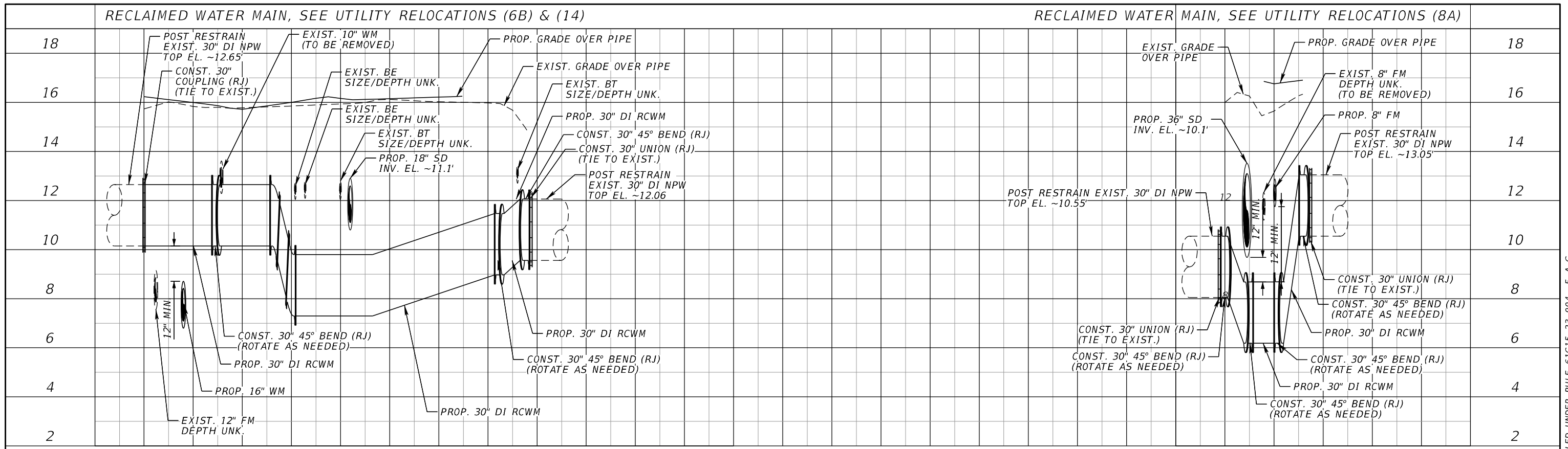


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UTILITY RELOCATION
PROFILES (17)

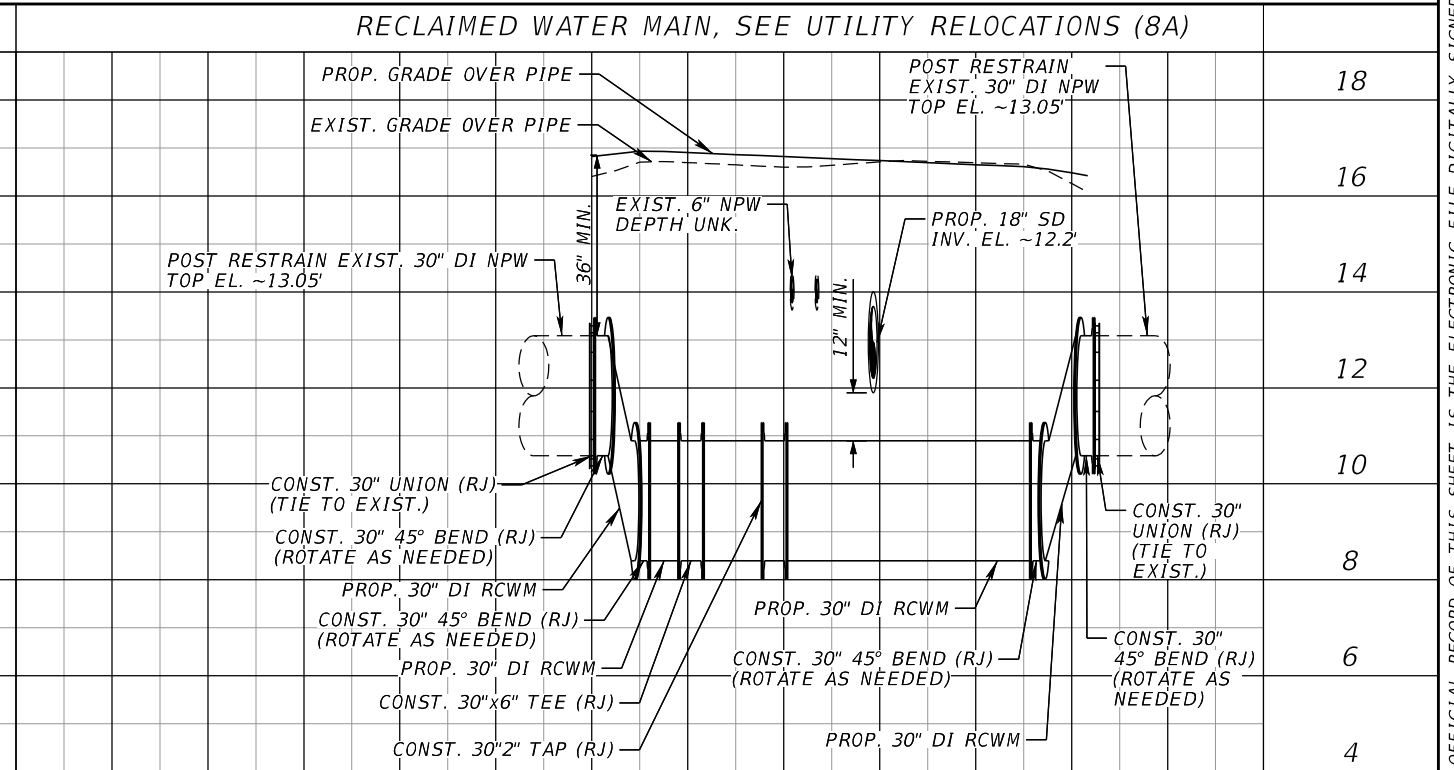
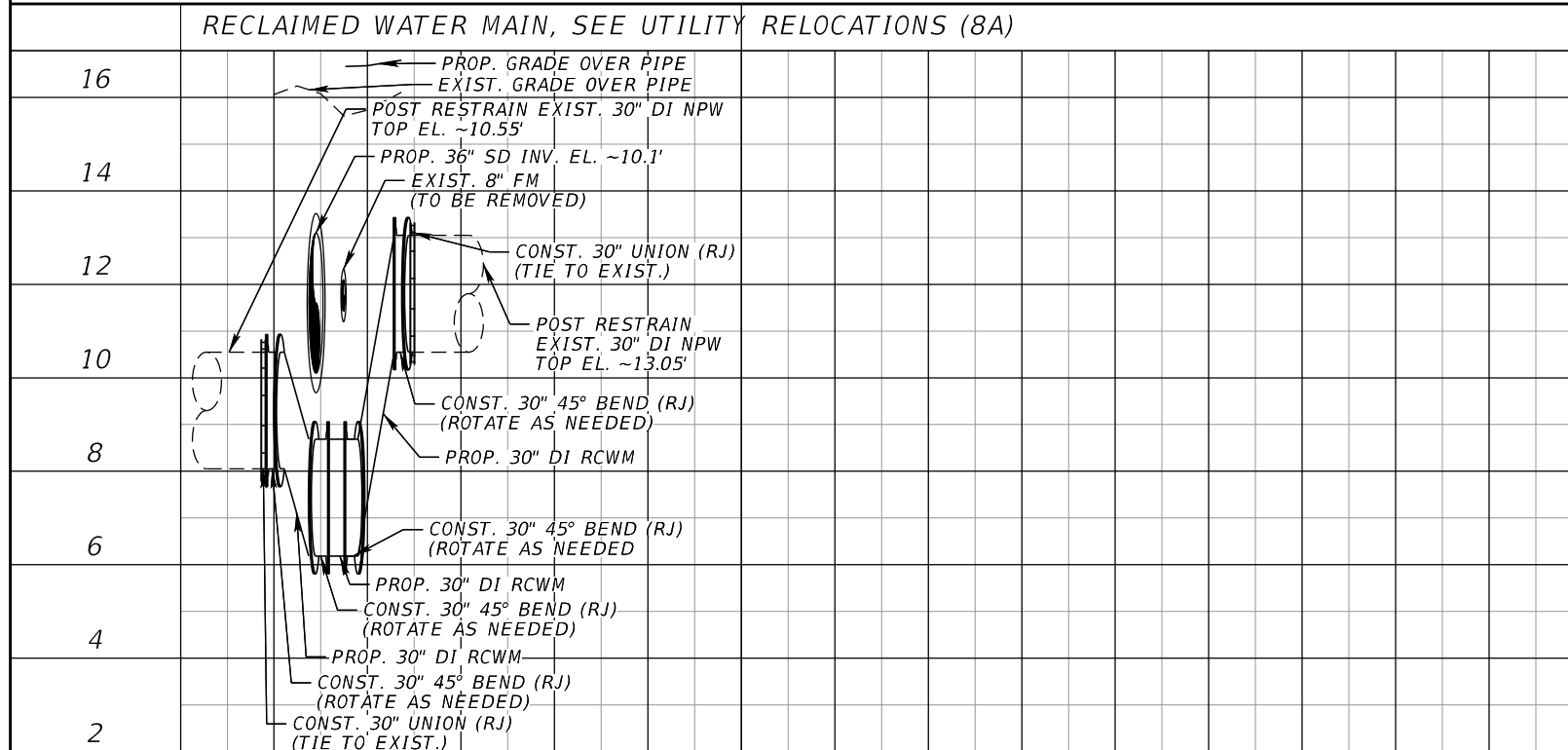
SHEET NO.
U-55

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RECLAIMED WATER MAIN, SEE UTILITY RELOCATIONS (6B) & (14) RECLAIMED WATER MAIN, SEE UTILITY RELOCATIONS (8A)


SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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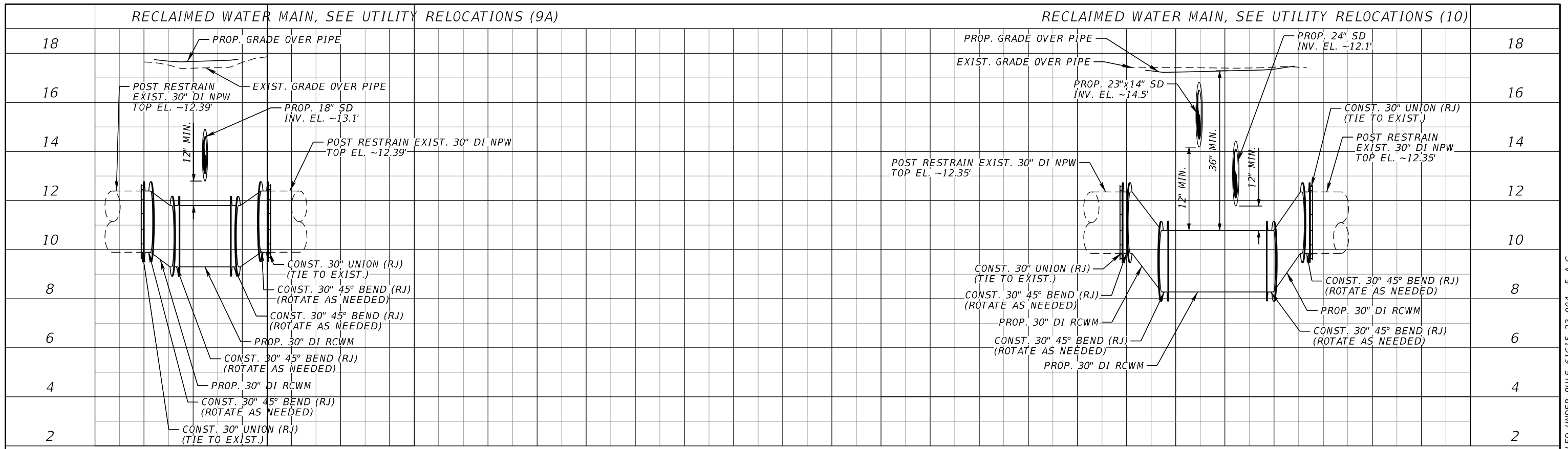


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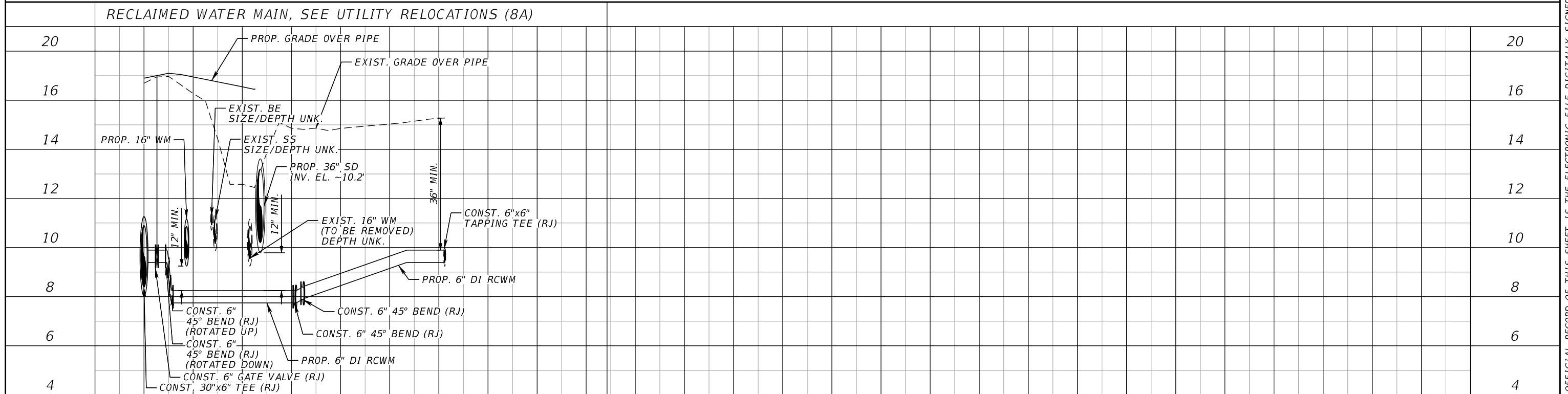
**UTILITY RELOCATION
PROFILES (18)**

SHEET NO.
U-56

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SCALE HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'



NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
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			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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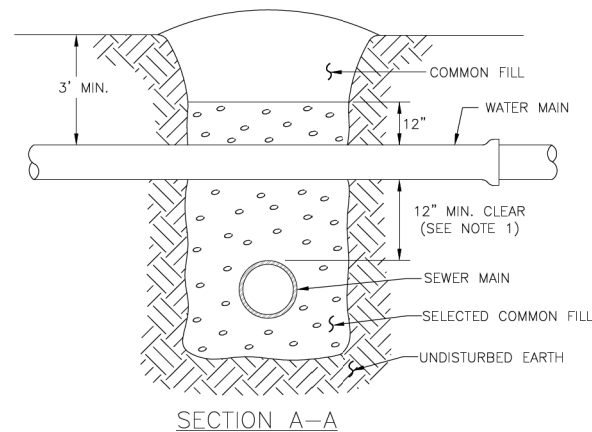
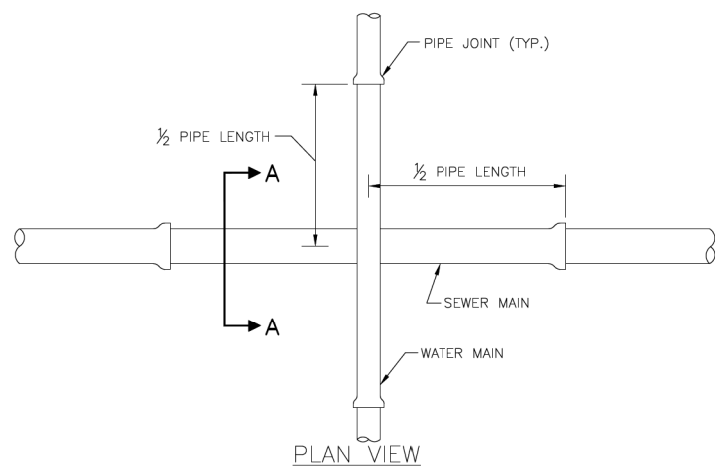


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**UTILITY RELOCATION
PROFILES (19)**

SHEET NO.
U-57

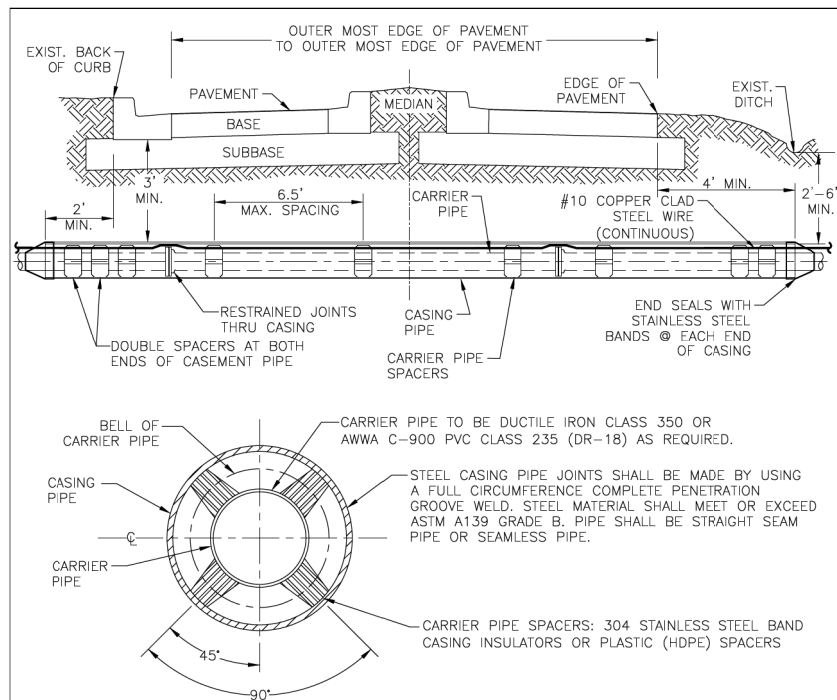
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NOTES:

- CLEARANCE MAY BE REDUCED TO 6" FOR GRAVITY SEWER WHERE WATER MAIN IS DUCTILE IRON.
- PIPE SECTIONS SHALL BE FULL-LENGTH AND SHALL BE ADJUSTED HORIZONTALLY, SO THAT THE CROSSING IS AT EACH PIPE SECTION'S MIDPOINT REGARDLESS OF THE VERTICAL CLEARANCE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYPICAL NEW WATER & SEWER LINE CROSSING	UG-2
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



CARRIER	4"	6"	8"	10"	12"	16"	18"	20"
CASING	12"	14"	18"	20"	24"	30"	36"	36"
CASING / WALL THICKNESS	0.188	0.188	0.250	0.250	0.344	0.406	0.406	0.406

STEEL CASING SIZES

CARRIER	4"	6"	8"	10"	12"	16"	18"	20"
CASING	8"	12"	16"	20"	24"	30"	36"	36"

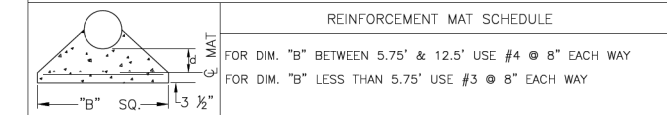
PVC/HDPE CASING SIZES

NOTES:

- THE ENGINEER OF RECORD MAY SELECT A LARGER CASING DIAMETERS, INCREASE WALL THICKNESS, AND/OR INCREASE DEPTH OF BURY DUE TO EXTERNAL LOADS WITH COUNTY APPROVAL PRIOR TO PERFORMING THE WORK.
- ALL PIPES CROSSINGS OF FEDERAL OR STATE ROADS; OR RAILROADS SHALL BE INSTALLED IN A CASING PIPE.
- ALL PIPES CROSSINGS OF COUNTY LOCAL ARTERIAL AND THOROUGHFARE ROADWAYS SHALL BE IN A CASING PIPE.
- SPLIT-STEEL CASINGS MAY BE USED ON EXISTING COUNTY MAINS ONLY.
- FOR JACK & BORE SPECIFICATIONS UNDER STATE ROADS AND RAILROADS, REFER TO THE F.D.O.T. UTILITY ACCOMMODATION MANUAL, LATEST EDITION.
- HDPE CASING SHALL HAVE ALL WELD BEADS REMOVED FROM THE INSIDE SURFACE SUCH THAT THE JOINT SURFACES SHALL BE SMOOTH.
- *14-INCH DIAMETER MAINS ARE NOT TO BE INSTALLED.

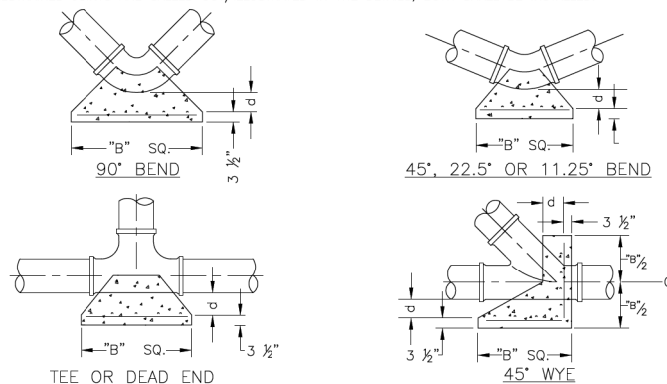
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CASING CROSSING	UG-3
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

PIPE SIZE (IN.)	90° BEND		45° BEND		22.5° BEND		11.25° BEND		DEAD END & TEE		45° WYE	
	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 1/2	1.1	3 1/2	0.8	3 1/2	0.6	3 1/2	1.3	3 1/2	1.1	3 1/2
6	2.2	5 1/4	1.6	3 3/4	1.2	3 1/2	0.8	3 1/2	1.9	4 1/2	1.6	3 3/4
8	2.9	7	2.1	5	1.5	3 1/2	1.1	3 1/2	2.4	5 3/4	2.0	4 3/4
10	3.5	8 1/2	2.6	6 1/4	1.9	4 1/2	1.3	3 1/2	3.0	7 1/4	2.5	6
12	4.2	10	3.1	7 1/2	2.2	5 1/4	1.6	3 3/4	3.5	8 1/4	3.0	7 1/4
14	4.9	11 3/4	3.6	8 3/4	2.6	6 1/4	1.8	4 1/4	4.1	9 3/4	3.4	8 1/4
16	5.5	13 1/4	4.1	9 3/4	2.9	7	2.1	5	4.7	11 1/4	3.9	9 1/4
18	6.2	15	4.6	11	3.3	8	2.3	5 1/2	5.2	12 1/2	4.4	10 1/2
20	6.9	16 1/2	5.0	12	3.6	8 3/4	2.6	6 1/4	5.8	14	4.9	11 3/4
24	8.2	19 3/4	6.0	14 1/2	4.3	10 1/4	3.1	7 1/2	6.9	16 1/2	5.8	14
30	10.1	24 1/4	7.5	18	5.3	12 3/4	3.8	9	8.5	20 1/2	7.2	17 1/4
36	12.1	29	8.9	21 1/4	6.4	15 1/4	4.5	10 3/4	10.2	24 1/2	8.6	20 3/4



NOTES:

- ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
- THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF. CONCRETE STRENGTH f_c =3000 PSI, REINFORCEMENT f_y =60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
- FOR LARGER "B" DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
- RESTRAINED JOINTS MAY BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. HOWEVER, WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE CALLED OUT/ILLUSTRATED IN THE DETAILS, BOTH SHALL BE INSTALLED.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CONCRETE THRUST BLOCKS	UG-7
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

UTILITY DETAILS
(1 OF 12)

SHEET NO.
U-58

**REQUIRED LENGTH OF RESTRAINED JOINT PIPE
FOR C900-16 PVC PIPE (DR-18)**

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS			PLUGS & VALVES				
	90°	45°	22.5°	SIZE			LENGTH			SIZE				LENGTH			
24	90	38	18	X24	X20	X16	X12	X10	X8	X6	X4	X24	X20	X16	X12	158	214
20	78	32	16	X20	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	X8	149	184
16	66	27	13	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	X8	X6	111	151
12	52	22	10	X12	X10	X8	X6	X4	X20	X16	X12	X10	X8	X6	X4	86	118
10	44	18	9	X10	X8	X6	X4	X20	X16	X12	X10	X8	X6	X4	X20	81	100
8	37	15	7	X8	X6	X4	X20	X16	X12	X10	X8	X6	X4	X20	X16	60	83
6	29	12	6	X6	X4	X20	X16	X12	X10	X8	X6	X4	X20	X16	X12	33	63
4	21	8	4	X4	X20	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	12	45

NOTES:

1. RESTRAIN 11.25' BENDS 50% OF LENGTH FOR 22.5' BENDS.
2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
3. ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
4. PIPE SIZES ARE GIVEN IN INCHES.
5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
6. LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL UG-10 RESTRAINED LENGTHS FOR PIPE.
9. ALL RESTRAINED JOINT HARDWARE SHALL CONFORM TO 1.11.17 OF THE PUBLIC WORKS UTILITIES STANDARDS MANUAL.
10. ALL THREE "LEGS" OF TEES SHALL BE RESTRAINED PER THE STATED LENGTH IN THE TABLE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PVC PIPE	UG-8
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

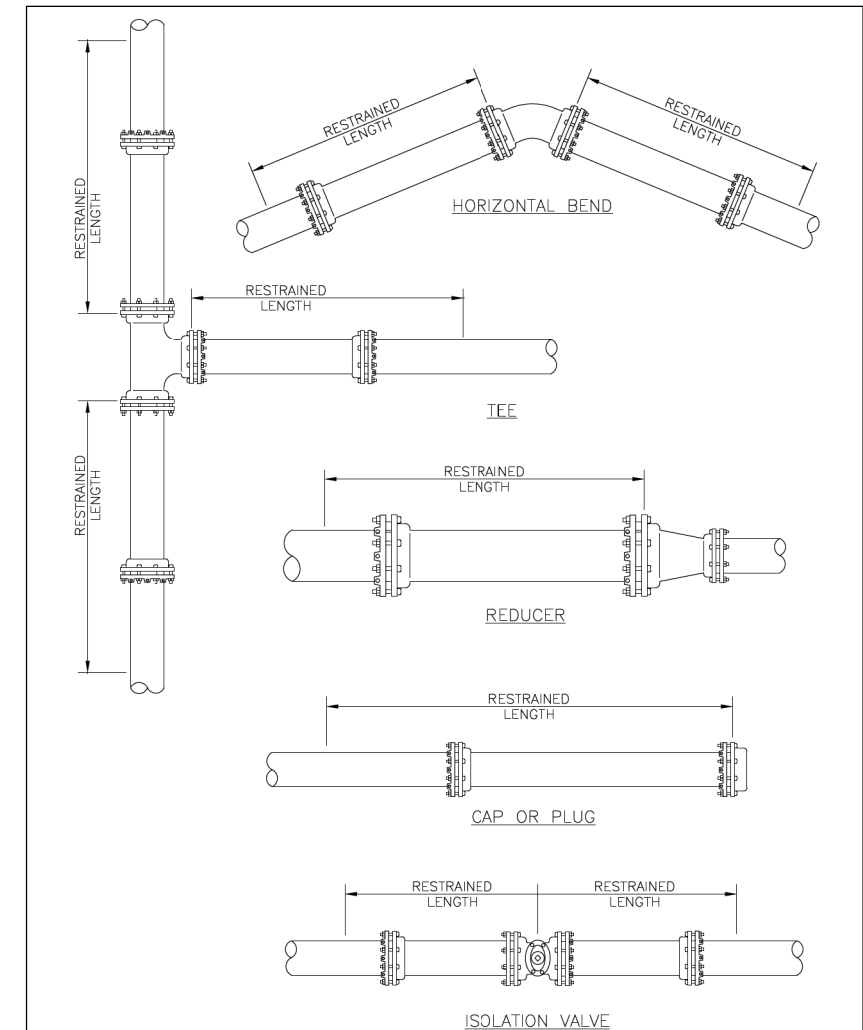
**REQUIRED LENGTH OF RESTRAINED JOINT PIPE
FOR DIP (POLY-WRAPPED)**

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS			PLUGS & VALVES					
	90°	45°	22.5°	SIZE			LENGTH			SIZE				LENGTH				
36	142	59	28	X36	X30	X24	X20	X16	X12	X10	X8	X36	X30	X24	X20	X16	359	453
30	124	51	25	X30	X24	X20	X16	X12	X10	X8	X6	X30	X24	X20	X16	X12	276	391
24	106	44	21	X24	X20	X16	X12	X10	X8	X6	X4	X24	X20	X16	X12	X10	241	327
20	92	38	18	X20	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	X8	X6	227	280
16	77	32	15	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	X8	X6	X4	169	231
12	61	25	12	X12	X10	X8	X6	X4	X20	X16	X12	X10	X8	X6	X4	X20	131	181
10	52	22	10	X10	X8	X6	X4	X20	X16	X12	X10	X8	X6	X4	X20	X16	125	153
8	44	18	9	X8	X6	X4	X20	X16	X12	X10	X8	X6	X4	X20	X16	X12	92	128
6	34	14	7	X6	X4	X20	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	50	98
4	24	10	5	X4	X20	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	X8	19	69

NOTE:

1. SEE UG-8, RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 9 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR DIP	UG-9
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



NOTE:

1. SEE DETAIL UG-8 RESTRAINED LENGTHS FOR PVC PIPE FOR NOTES 1 THROUGH 9 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR PIPE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PIPE	UG-10
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

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			CHECKED BY	JCH	6107860



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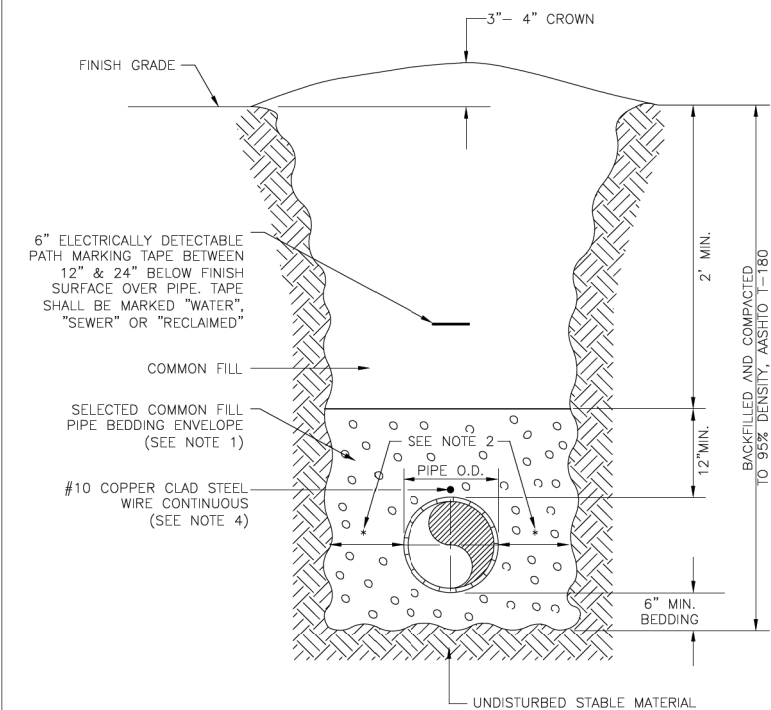
**UTILITY DETAILS
(2 OF 12)**

SHEET NO.

U-59

NOTES:

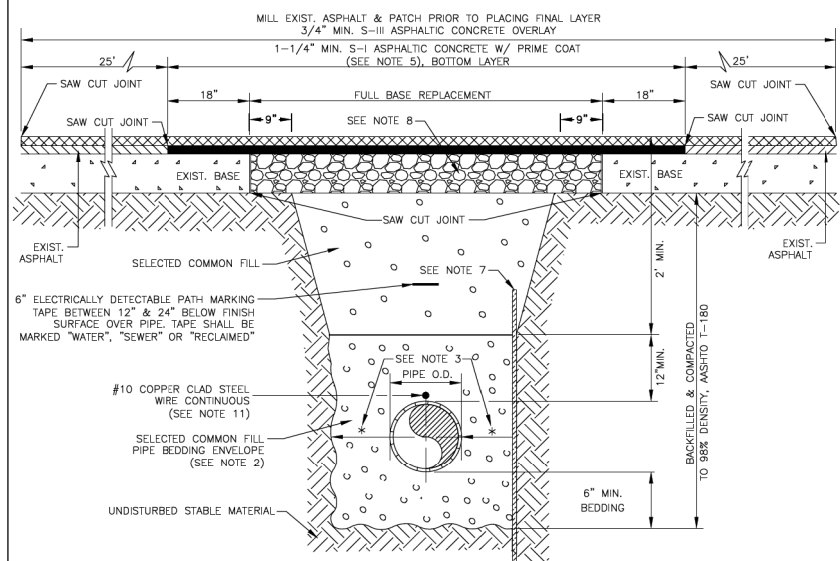
- USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
- PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



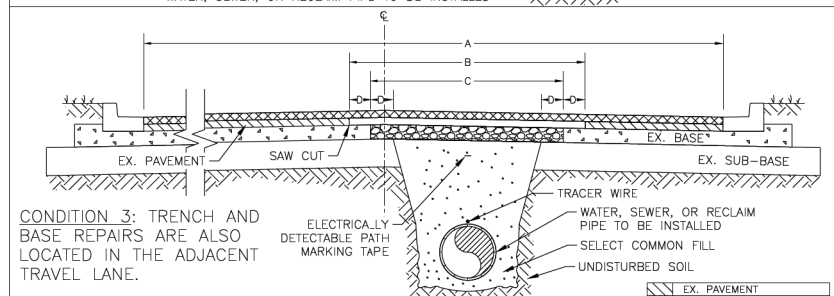
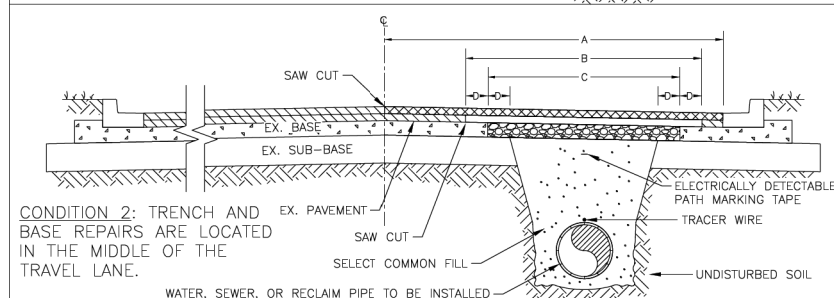
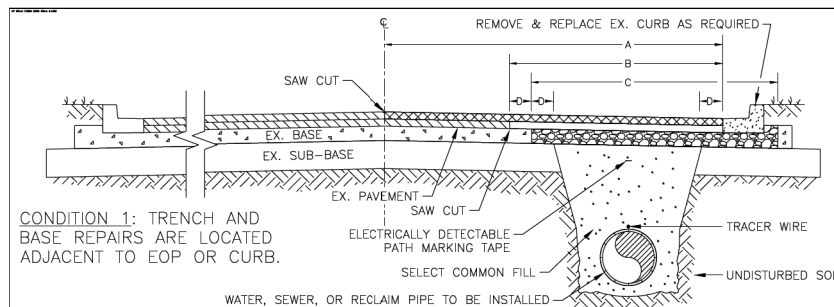
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

NOTES:

- BITUMINOUS PAVEMENT SHALL BE REMOVED IN CLEAN STRAIGHT LINES BY SAW CUTTING. WHERE BITUMINOUS PAVEMENT ADJOINS A TRENCH, THE EDGES ADJACENT TO THE TRENCH SHALL BE TRIMMED TO A NEAT STRAIGHT LINES BEFORE RESURFACING TO ENSURE THAT ALL AREAS TO BE RESURFACED ARE ACCESSIBLE TO ROLLERS OR TAMPERS USED TO COMPACT THE SUB-GRADE OR PAVING MATERIALS.
- USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
- PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1-1/4 INCH S-I, WHICHEVER IS GREATER.
- MILL 25' BACK FROM TRENCH CROSSING SAW CUTS. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCERNABLE "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
- SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
- NEW BASE SHALL MATCH EXISTING; OR BE CRUSHED CONCRETE, 8" MIN. THICKNESS, LBR ≥150, WHICHEVER IS GREATER.
- TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
- RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FOOT STANDARDS, LATEST EDITION.
- TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
- NOTES 5. THRU 10. ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A LOCAL ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING (CROSSING)	UG-12
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



- LEGEND:**
- EX. PAVEMENT
 - UNDISTURBED SOIL
 - EX. BASE
 - SELECT COMMON FILL
 - BASE REPLACEMENT
 - S-I
 - S-II
 - NEW CURB
- NOTE:**
- THIS DETAIL IS BASED ON A TWO-LANE ROADWAY AND SHALL BE FOLLOWED WHEN A PIPE IS INSTALLED WITHIN THE LIMITS OF A ROADWAY AND RUNS PARALLEL WITH THE EDGE OF PAVEMENT. THIS DETAIL CAN ALSO BE UTILIZED FOR RESTORATION NEEDS OF ROADWAYS WITH ADDITIONAL LANES. CONDITION 3 ONLY EXTENDS TO NEXT ADJACENT LANE ON MULTI-LANE ROADS.
 - THE MILL AND OVERLAY SHALL BE FIELD ADJUSTED TO MEET THE NEEDS FOR PAVEMENT RESTORATION DUE TO CONSTRUCTION ACTIVITIES AND SHALL BE COORDINATED WITH THE COUNTY.
 - SEE TRENCH WITH ASPHALT PAVEMENT TYPE A-1 PIPE BEDDING (CROSSING) DETAIL FOR NOTES 1 TO 12 THAT ARE ALSO APPLICABLE TO ASPHALT PAVEMENT RESTORATION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING (LONGITUDINAL)	UG-12B
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
				HLM	12/2023
				JTT	PROJECT NO.
				JCH	6107860

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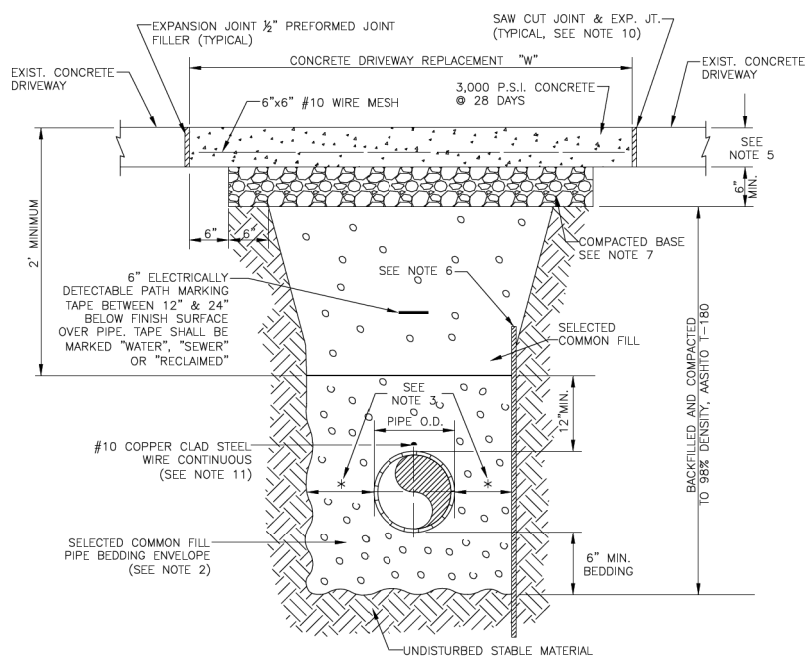
UTILITY DETAILS
(3 OF 12)

SHEET NO.
U-60

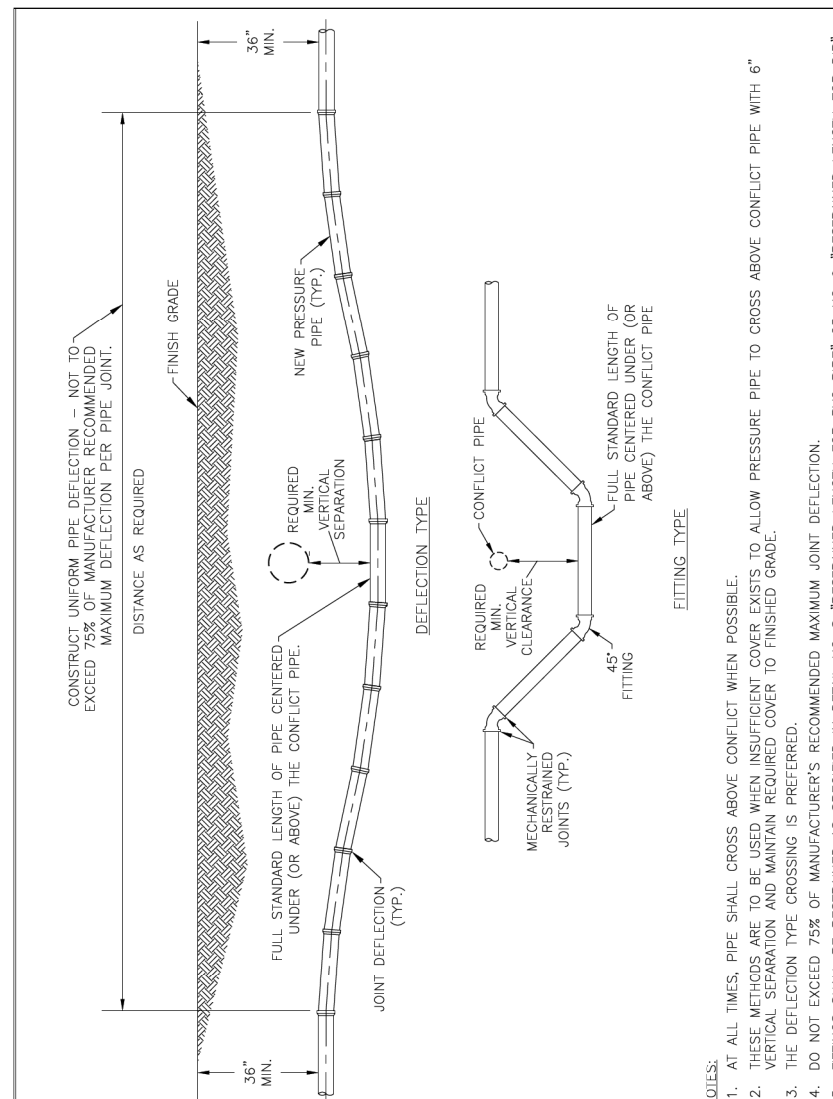
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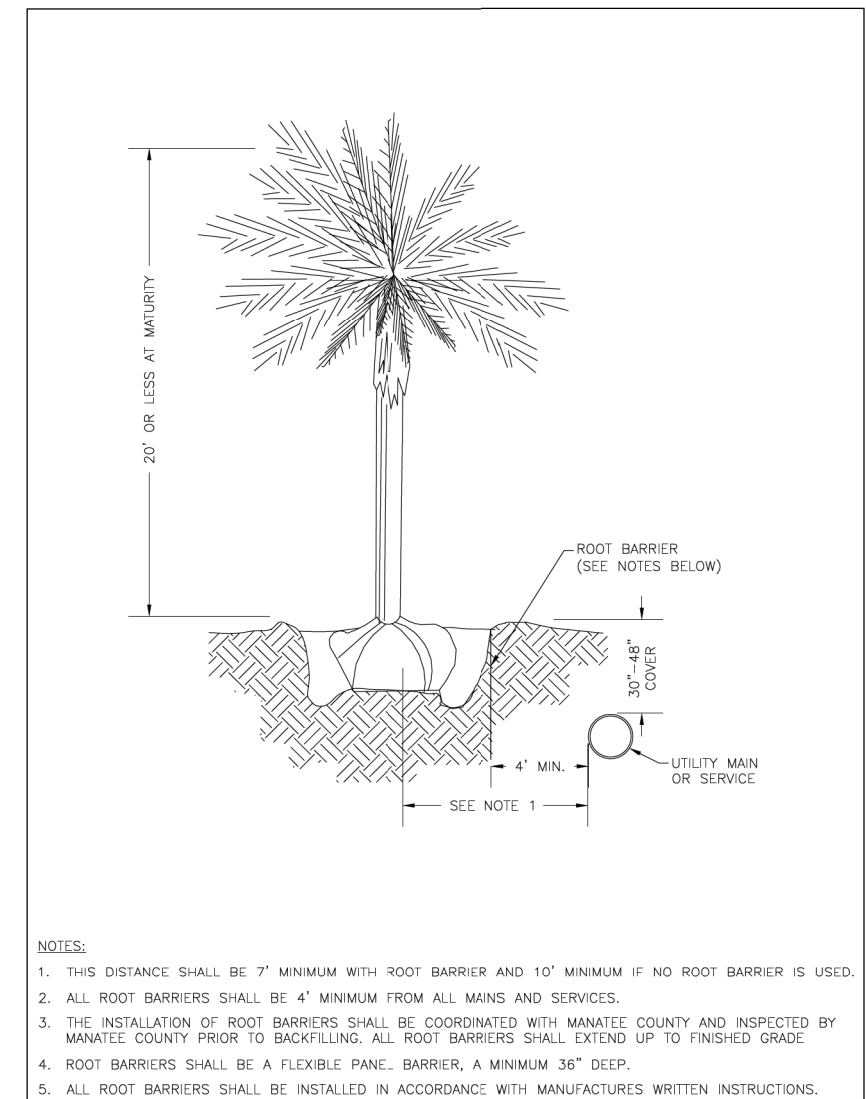
1. CONCRETE PAVEMENT SHALL BE REMOVED WITH SAWS EDGES AND CUT AT A MINIMUM DEPTH OF ONE AND ONE-HALF (1-1/2"). IF A SAW CUT IN CONCRETE PAVEMENT FALLS WITHIN THREE FEET (3') OF A CONTRACTION JOINT, COLD JOINT, EXPANSION JOINT OR EDGE, THE CONCRETE SHALL BE REMOVED TO THE JOINT OR EDGE. THE EDGES OF EXISTING CONCRETE PAVEMENT ADJACENT TO TRENCHES, WHICH HAD BEEN DAMAGED SUBSEQUENT TO SAW CUTTING OF PAVEMENT, SHALL BE SAW CUT TO NEAT STRAIGHT LINES FOR THE PURPOSE OF REMOVING THE DAMAGED PAVEMENT AREAS.
2. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.
8. DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
9. IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/8" WIDE AND 1 1/2" DEEP) AFTER THE CONCRETE HAS SET.
10. IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING	UG-14
REV. BY	DATE	February 25, 2020	DATE OF APPROVAL



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		PRESSURE PIPE DEFLECTION AT UTILITY CROSSING	UG-18
REV. BY	DATE	February 25, 2020	DATE OF APPROVAL



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYP. SMALL TREE OR PALM TREE WITH ROOT BARRIER	UG-19
REV. BY	DATE	February 25, 2020	DATE OF APPROVAL

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



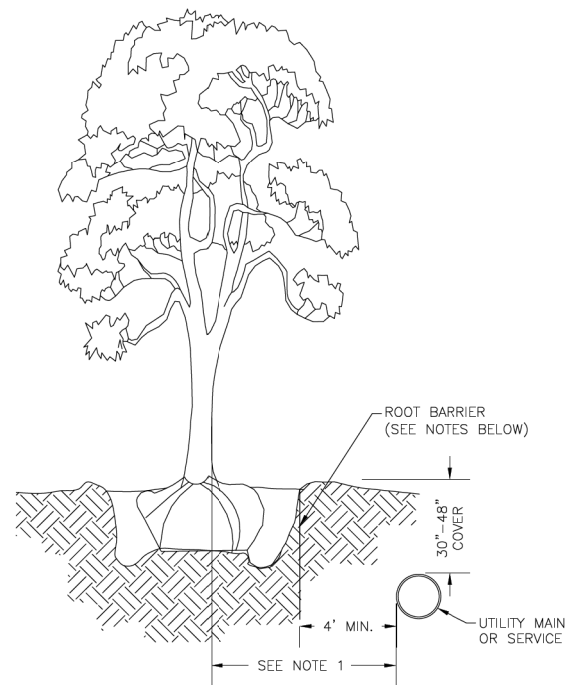
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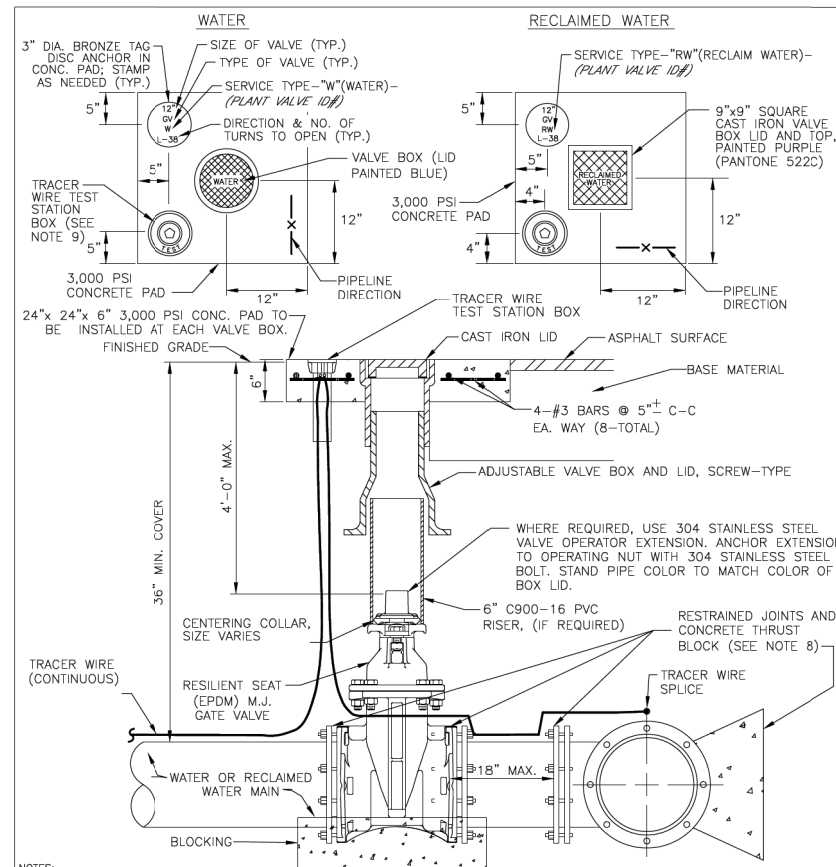
SHEET NO.
U-61



NOTES:

1. THIS DISTANCE SHALL BE 10' MINIMUM WITH ROOT BARRIER AND 15' MINIMUM IF NO ROOT BARRIER IS USED.
2. ALL ROOT BARRIERS SHALL BE 4' MINIMUM FROM ALL MAINS AND SERVICES.
3. THE INSTALLATION OF ROOT BARRIERS SHALL BE COORDINATED WITH MANATEE COUNTY AND INSPECTED BY MANATEE COUNTY PRIOR TO BACKFILLING. ALL ROOT BARRIERS SHALL EXTEND UP TO FINISHED GRADE
4. ROOT BARRIERS SHALL BE MINIMUM 36" DEEP. FLEXIBLE BARRIERS SHALL BE 36" PANELS.
5. ALL ROOT BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.
6. LARGE PALM TREES INCLUDE ROYAL, WASHINGTONIAN, BISMARCK AND SIMILAR SIZED SPECIES.

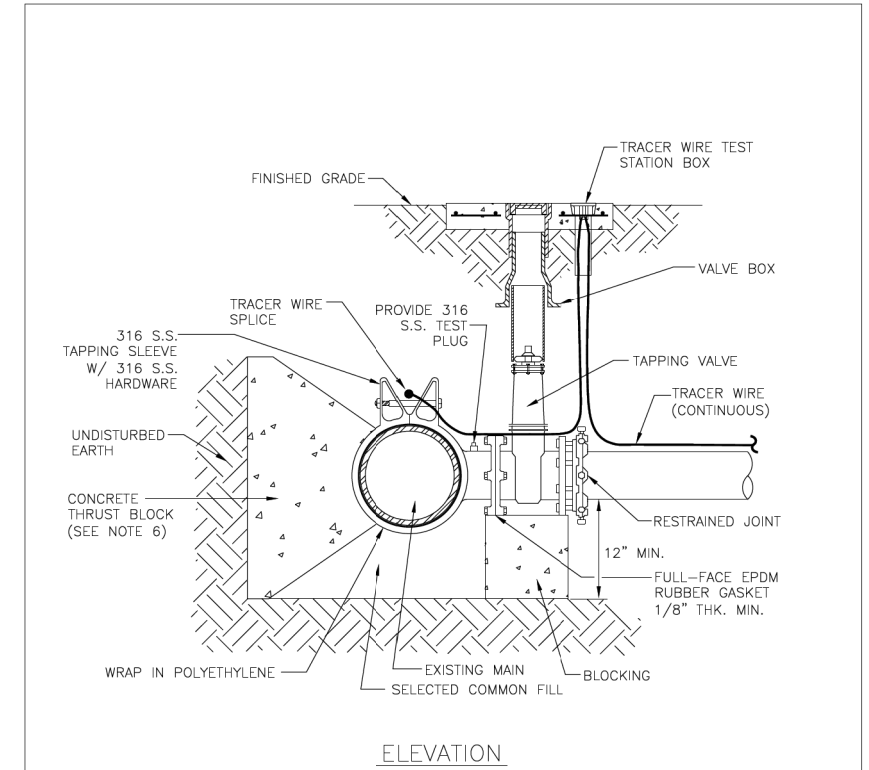
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYP. CANOPY TREE, LARGE PALM OR EXOTIC TREE WITH ROOT BARRIER	UG-20
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



NOTES:

1. "W" OR "RW" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "W" OR PURPLE DISC WITH "RW" USING A 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS, CURBS, OR GUTTERS.
4. PRECAST CONCRETE PADS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
7. TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
8. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
9. USE NON-TRAFFIC RATED BOXES FOR NORMAL YARD SERVICE, WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE TRAFFIC RATED BOXES. WHERE POSSIBLE, LOCATE TRACER WIRE TESTING STATION OUTSIDE OF TRAVEL LANE OR IN MEDIAN, CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.
10. THE BRASS TAG SHALL HAVE A "PLANT VALVE ID#" WHEN VALVES ARE INSTALLED WITHIN THE COUNTY TREATMENT PLANT LIMITS. THE PLANT VALVE ID# SHALL BE SHOWN ON THE CONSTRUCTION PLANS AND RECORD DRAWINGS.
11. REFER TO SECTION 1.11 GATE VALVES IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		GATE VALVE, BOX, LID AND TAG	UW-2
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



NOTES:

1. PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER.
2. ALL FITTINGS TO BE WRAPPED WITH 20 MIL POLYETHYLENE WRAP AT THRUST BLOCK.
3. ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
4. ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
5. CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
6. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
7. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.
8. SEE SECTION 1.11 TAPPING SLEEVES AND VALVES IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TAPPING SLEEVE AND VALVE (WATER/RECLAIM)	UW-3
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

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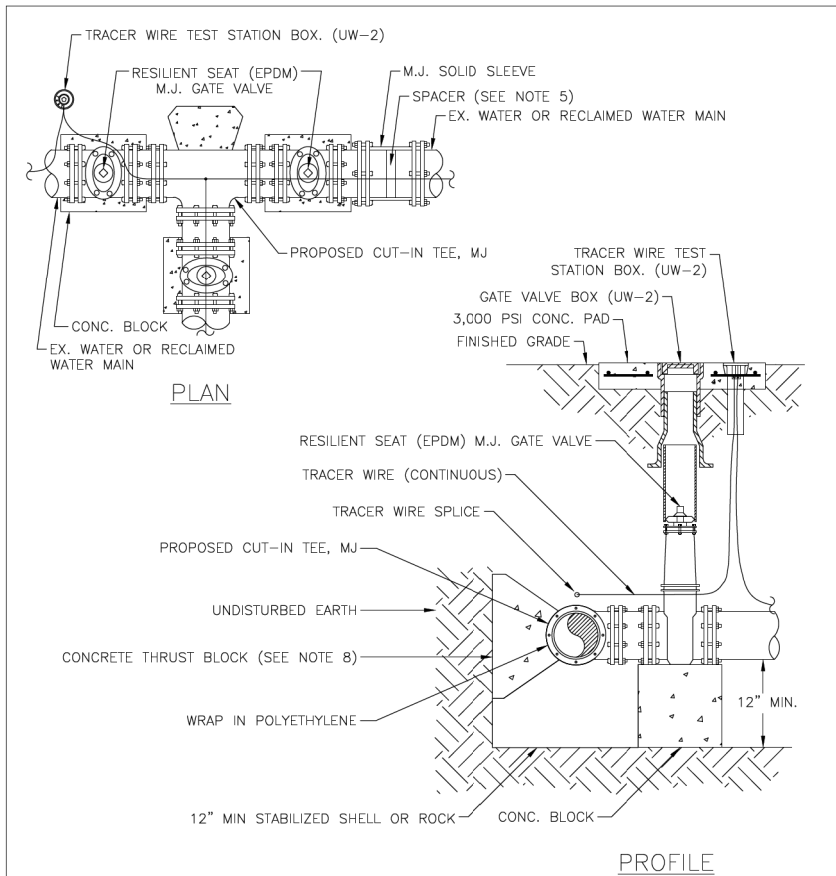
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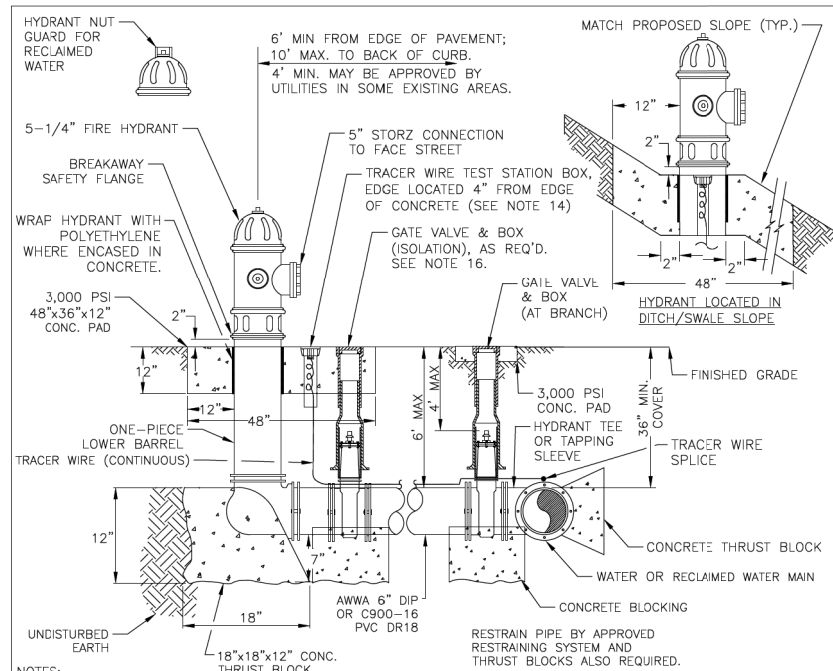
UTILITY DETAILS
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SHEET NO.
U-62



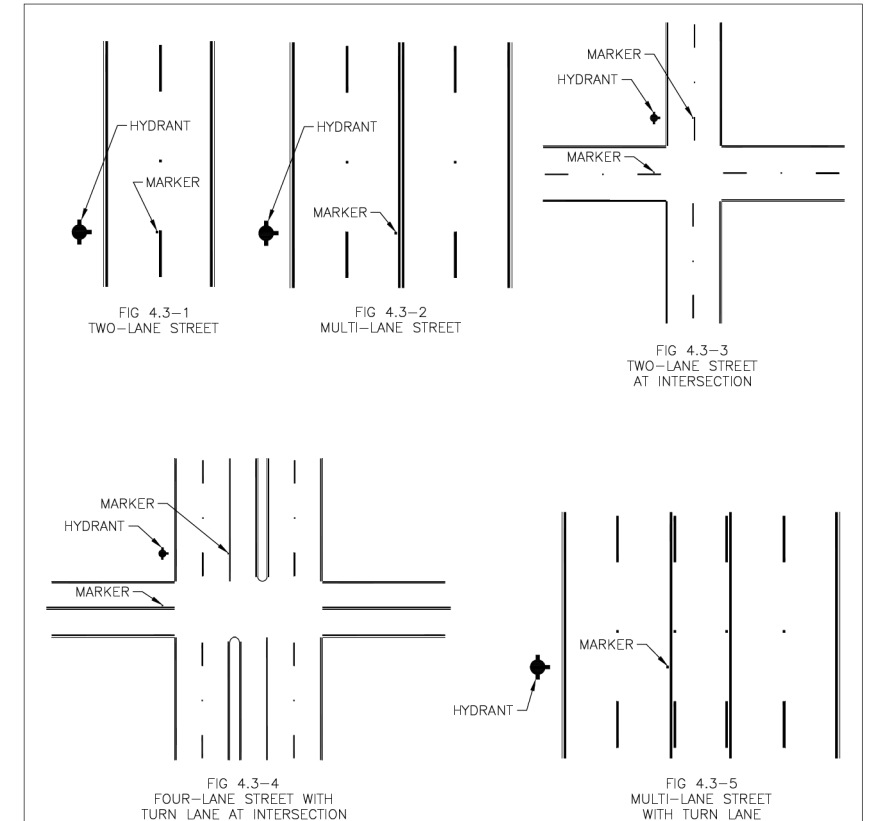
- NOTES:**
1. ALL FITTINGS TO BE WRAPPED WITH 20 MIL POLYETHYLENE WRAP AT THRUST BLOCK.
 2. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.
 3. WATER VALVES SHALL BE INSTALLED ON ALL SIDES OF TEES AND CROSSES, UNLESS INLINE VALVES ON THAT LEG WITHIN 200 FEET.
 4. RESTRAINED JOINTS MUST EXTEND FROM TEE FULL LENGTH SPECIFIED FOR VALVES.
 5. SPACER IS REQUIRED IF A GAP EXISTS. SPACER NOT TO EXCEED OVER 30% OF SLEEVE WIDTH.
 6. IN ASBESTOS CONCRETE PIPE (AC) APPLICATIONS: TWO COUPLINGS ARE REQUIRED. ALL FITTINGS INCLUDING COUPLINGS SHALL BE SUPPORTED WITH CONCRETE BLOCKING TO PREVENT SETTLEMENT.
 7. ALL EXISTING RESTRAINING SHALL BE MODIFIED AND OR RE-INSTATED AS NECESSARY, TO MEET THE RESTRAINT REQUIREMENT FOR VALVES.
 8. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES".

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CUT-IN TEE	UW-4
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



- NOTES:**
1. WEEPHOLES SHALL BE EXCLUDED FROM THE FIRE HYDRANT.
 2. FIRE HYDRANTS SHALL BE A MINIMUM OF 6' OFF EDGE OF PAVEMENT AND 10' MAX. FROM BACK OF CURB. WHERE POSSIBLE AND WHERE SIDEWALK IS TO BE INSTALLED, FIRE HYDRANT SHALL BE LOCATED BETWEEN SIDEWALK AND RIGHT-OF-WAY LINE.
 3. HYDRANT SHALL BE DUCTILE IRON CONSTRUCTION. HYDRANTS SHALL BE FUSION BONDED EPOXY COATED SAFETY YELLOW FOR WATER; PURPLE (PANTONE 522C) FOR RECLAIMED WATER; AND RED FOR PRIVATE.
 4. FIRE HYDRANTS SHALL BE PLACED SO THAT STORM WATER FLOWS AWAY FROM THE HYDRANT.
 5. FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
 6. FIRE HYDRANTS MAY BE CONSTRUCTED WITH "GRADELOK" OFFSET FITTING.
 7. RAISED REFLECTIVE PAVEMENT MARKER(S) (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER SHALL BE INSTALLED ON THE PAVEMENT DIRECTLY ACROSS FROM THE HYDRANT IN ACCORDANCE WITH THE FOOT TRAFFIC ENGINEERING MANUAL, CHAPTER 4, SECTION 4.3 OR MOST CURRENT ADDITION.
 8. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
 9. FIRE HYDRANT VALVE SHALL BE FASTENED DIRECTLY TO TEE.
 10. IN-LINE VALVES SHOULD BE LOCATED AT HYDRANT TEES.
 11. HYDRANTS SHALL BE LOCATED ON SAME SIDE OF ROAD AS WATER OR RECLAIMED MAIN.
 12. THERE MUST BE A CLEARANCE OF 7 1/2 FEET FROM FRONT AND BOTH SIDES, AND FOUR FEET TO THE REAR OF THE HYDRANT, TO ABOVE GRADE OBSTRUCTIONS INCLUDING POSTS, FENCES, TREES, ETC., PER THE FLORIDA FIRE PREVENTION CODE.
 13. SEE STANDARD DETAIL UW-2 GATE VALVE, BOX, LID AND TAG.
 14. SHOULD THE FIRE HYDRANT'S CONCRETE PAD OVERLAP A SIDEWALK, THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.
 15. IF A HYDRANT IS LOCATED ON THE SLOPE OF A DITCH OR SWALE; THE CONCRETE PAD SHALL CONFORM TO THE FINISH GRADE/SLOPE. THE CONCRETE PAD SHALL BE LEVEL 2-INCHES BEHIND & IN FRONT OF THE HYDRANT.
 16. AT THE DISCRETION OF THE COUNTY AN ADDITIONAL ISOLATION GATE VALVE SHALL BE ADDED, WHEN A PHYSICAL BARRIER IS PRESENT, (I.E. ROADWAY, FENCE, WALL, BERM ETC), BETWEEN THE BRANCH GATE VALVE AND THE HYDRANT.
 17. SEE SECTION 1.11 HYDRANTS IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		FIRE HYDRANT ASSEMBLY	UW-5
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



- NOTES:**
1. TWO-WAY STREETS OR ROADS: MARKER SHOULD BE PLACED 6 INCHES FROM EDGE OF PAINTED CENTERLINE ON THE SIDE NEAREST THE FIRE HYDRANT. IF THE STREET HAS NO CENTERLINE, THE MARKER SHOULD BE PLACED 6 INCHES FROM APPROXIMATE CENTER OF THE ROADWAY ON THE SIDE NEAREST THE HYDRANT. SEE FIGURE 4.3-1, 4.3-2, AND 4.3-3.
 2. STREETS WITH LEFT TURN LANE AT INTERSECTION: MARKER SHOULD BE PLACED 6 INCHES FROM EDGE OF PAINTED WHITE CHANNELIZING LINE OF THE SIDE NEAREST THE FIRE HYDRANT. SEE FIGURE 4.3-4.
 3. STREETS WITH CONTINUOUS TWO-WAY TURN LANE: MARKER SHOULD BE PLACED 6 INCHES FROM THE EDGE OF THE PAINTED YELLOW BARRIER LINE ON THE SIDE NEAREST THE FIRE HYDRANT. SEE FIGURE 4.3-5.
 4. MARKER SHALL BE BLUE/BLUE RAISED RETROREFLECTIVE PAVEMENT MARKER.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		HYDRANT LOCATION MARKERS - BLUE (RPMs)	UW-6
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

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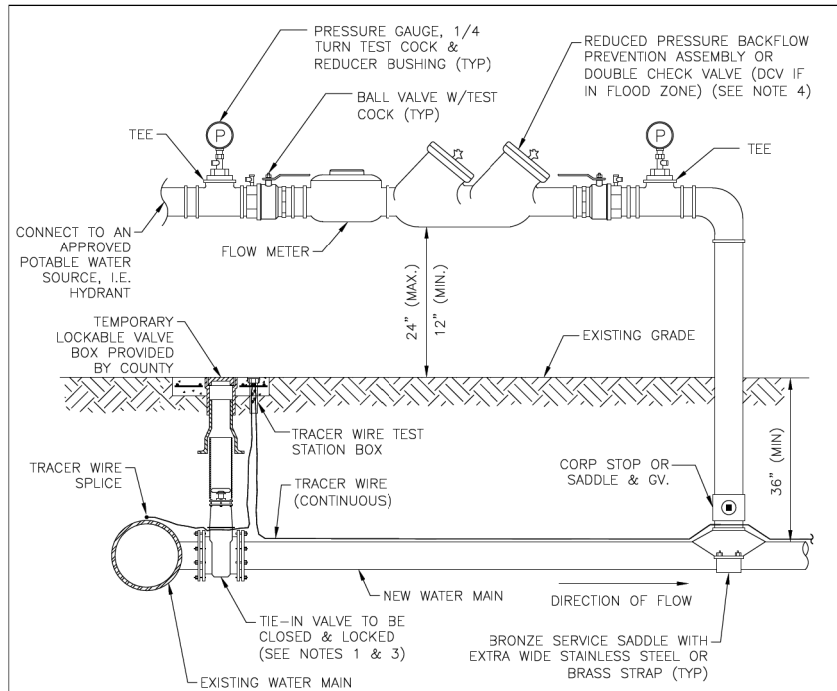
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UTILITY DETAILS
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SHEET NO.
U-63

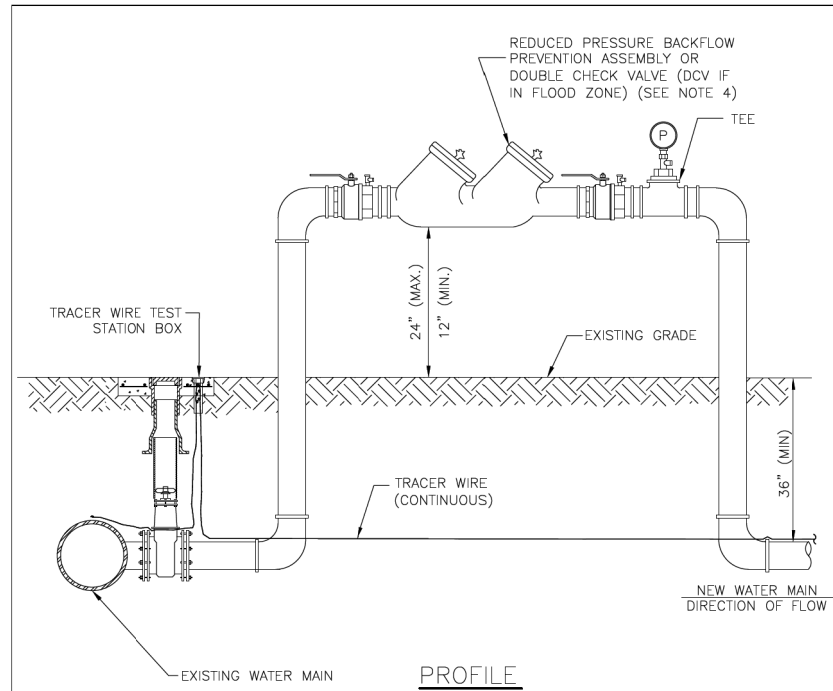


PROFILE

NOTES:

- FOR TIE-IN VALVE, SEE DETAIL UW-3 FOR TAPPING SLEEVE VALVE AND UW-2 FOR GATE VALVE.
- CORPORATION STOP CONNECTIONS TO WATER MAINS SHALL BE AT A SUFFICIENT DISTANCE FROM NEW TAPPING SLEEVE & VALVE (TIE-IN VALVE). ALL CORPORATION STOP TAPS SHALL BE PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP DIAMETERS (WHICHEVER IS LARGER) FROM THE NEW TIE-IN VALVE (TAPPING VALVE & SLEEVE). SIZE-ON-SIZE TAPS ARE NOT ALLOWED. A CUT-IN TEE SHALL BE USED.
- IF THE EXISTING WATER MAIN IS LOCATED UNDER PAVEMENT OR CLOSE TO THE ROADWAY, BOTH JUMPER CORPORATION STOPS MAY CONNECT TO THE NEW WATER MAIN LOCATED OUTSIDE OF THE PAVEMENT. AN ADDITIONAL GATE VALVE SHALL BE INSTALLED AND THE VALVE MAY BE LOCATED AT THE ROW LINE. PIPING AND APPURTENANCES BETWEEN THE EXISTING MAIN AND ISOLATION VALVE AND JUMPER SHALL BE DISINFECTED BY SPRAYING OR SWABBING.
- BACKFLOW PREVENTION ASSEMBLY SHALL BE STRUCTURALLY SUPPORTED.
- THE TIE-IN VALVE SHALL REMAIN CLOSED AND THE LOCKABLE VALVE BOX SHALL BE LOCKED BY MANATEE COUNTY. THE TIE-IN VALVE SHALL REMAIN CLOSED AND LOCKED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY THE FDEP AND ALL OTHER PERTINENT AGENCIES. AFTER CLEARANCE IS OBTAINED, THE LOCKABLE VALVE BOX SHALL BE REMOVED, RETURNED TO THE COUNTY, AND REPLACED WITH A STANDARD VALVE BOX.
- IN THE EVENT THE LOCKED TIE-IN VALVE MUST BE OPENED, THE VALVE SHALL ONLY BE OPERATED BY MANATEE COUNTY PERSONNEL.
- SEE DETAIL UW-24 FOR ADDITIONAL JUMPER CONNECTION NOTES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TEMPORARY JUMPER CONNECTION-HYDRANT AVAILABLE	UW-23A
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

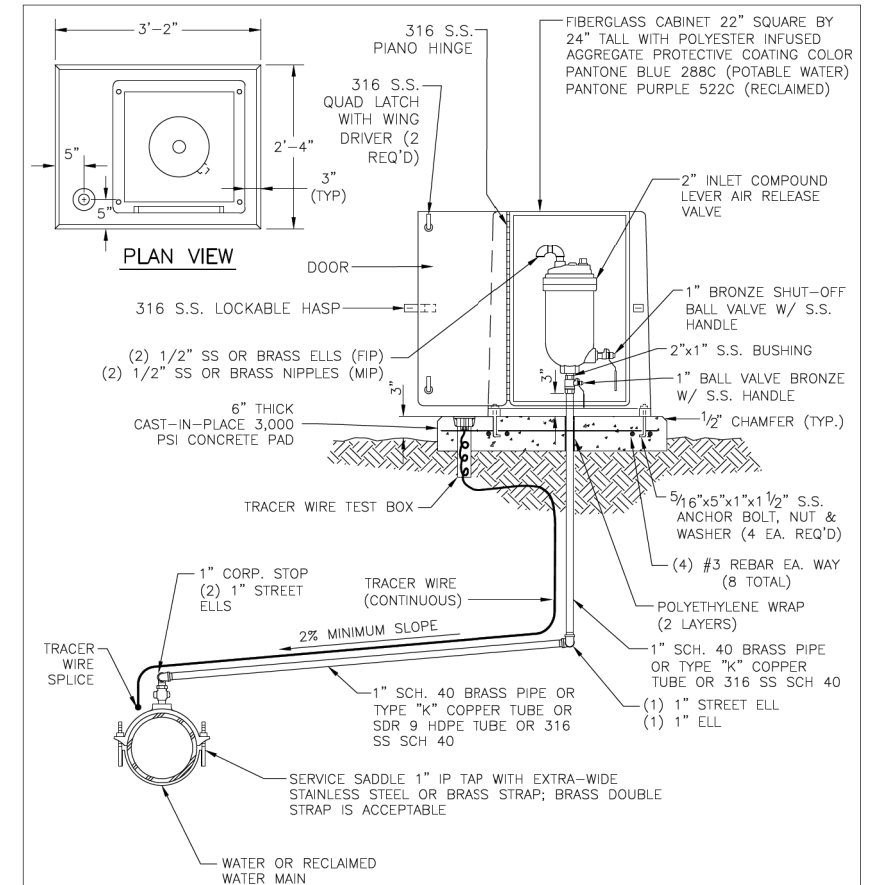


PROFILE

NOTES:

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- IF THE EXISTING WATER MAIN IS LOCATED UNDER PAVEMENT OR CLOSE TO THE ROADWAY, BOTH JUMPER CORPORATION STOPS MAY CONNECT TO THE NEW WATER MAIN LOCATED OUTSIDE OF THE PAVEMENT. AN ADDITIONAL GATE VALVE SHALL BE INSTALLED AND THE VALVE MAY BE LOCATED AT THE ROW LINE. PIPING AND APPURTENANCES BETWEEN THE EXISTING MAIN AND ISOLATION VALVE AND JUMPER SHALL BE DISINFECTED BY SPRAYING OR SWABBING.
- BACKFLOW PREVENTION ASSEMBLY SHALL BE STRUCTURALLY SUPPORTED.
- SEE DETAIL UW-24 FOR ADDITIONAL JUMPER CONNECTION NOTES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TEMPORARY JUMPER CONNECTION - NO HYDRANT AVAILABLE	UW-23B
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



NOTES:

- AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS ALONG THE CONSTRUCTED MAINS, WHERE AIR COULD BE TRAPPED.
- ARY VENT ORIFICE TO BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR WATER MAIN SIZE.
- ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL, BRASS OR COPPER.
- ALL PIPE THREADS TO BE SEALED AIR TIGHT.
- VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
- ARY SHALL BE INSTALLED MINIMUM 6 FT FROM EDGE OF PAVEMENT; 10 FT MAXIMUM FROM BACK OF CURB; 4 FT MIN. MAY BE APPROVED BY UTILITIES IN SOME EXISTING AREAS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR 12-INCH AND SMALLER WATER MAINS	UW-10
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860



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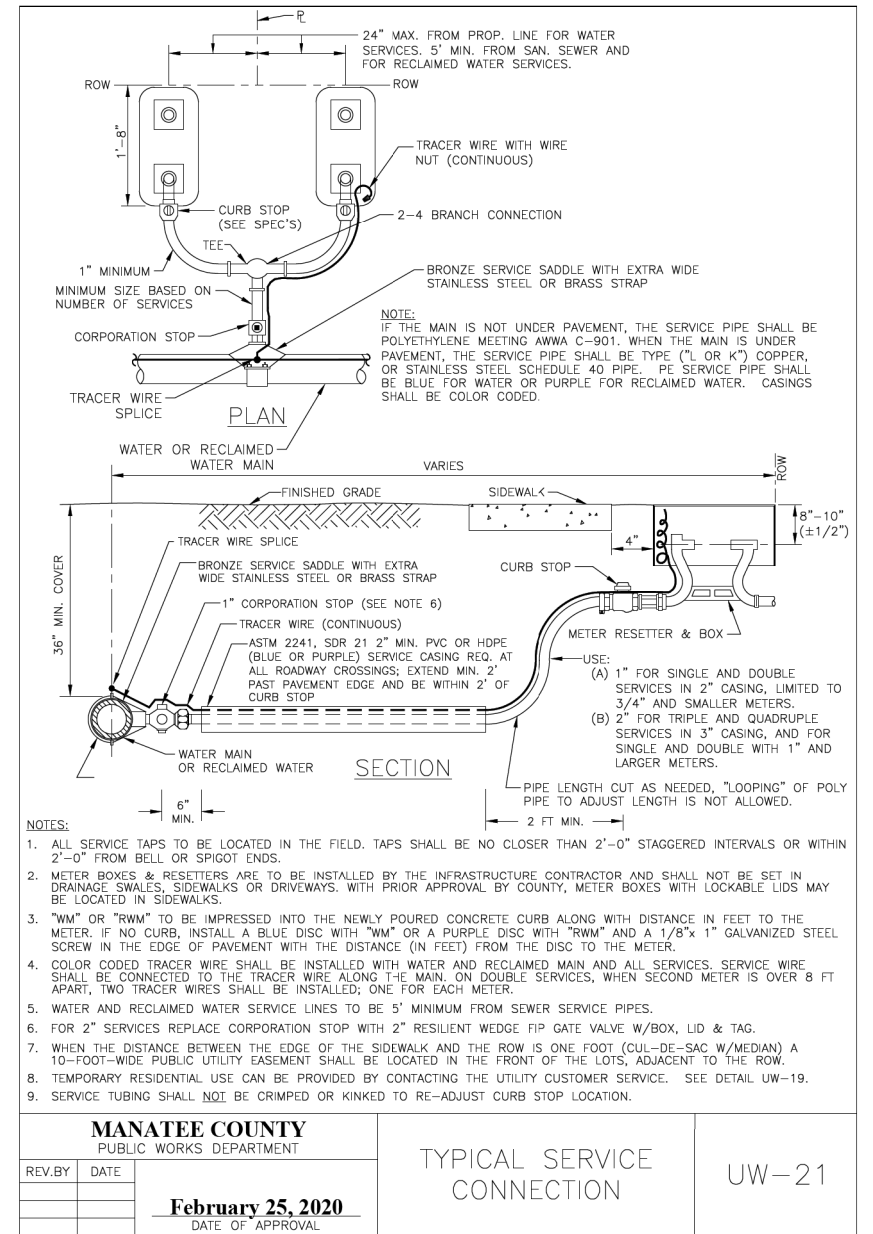
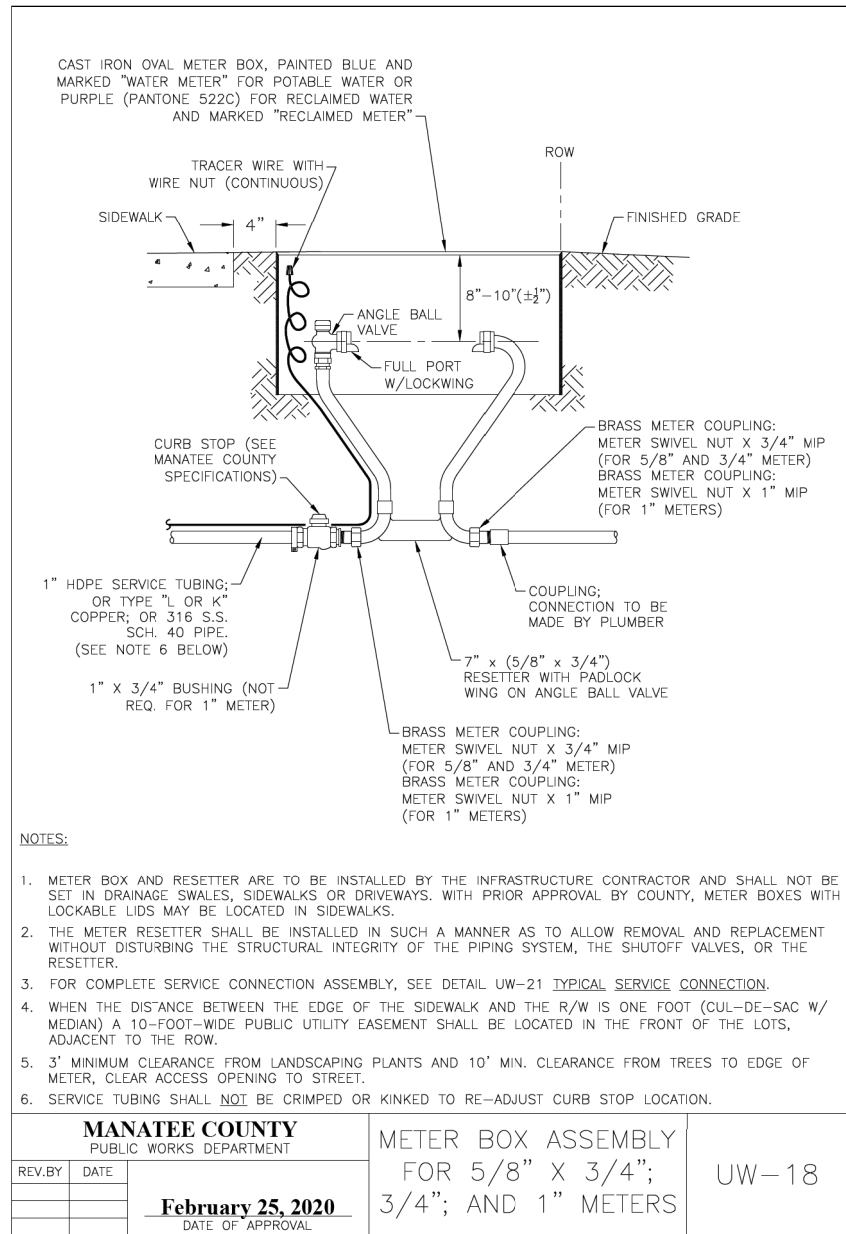
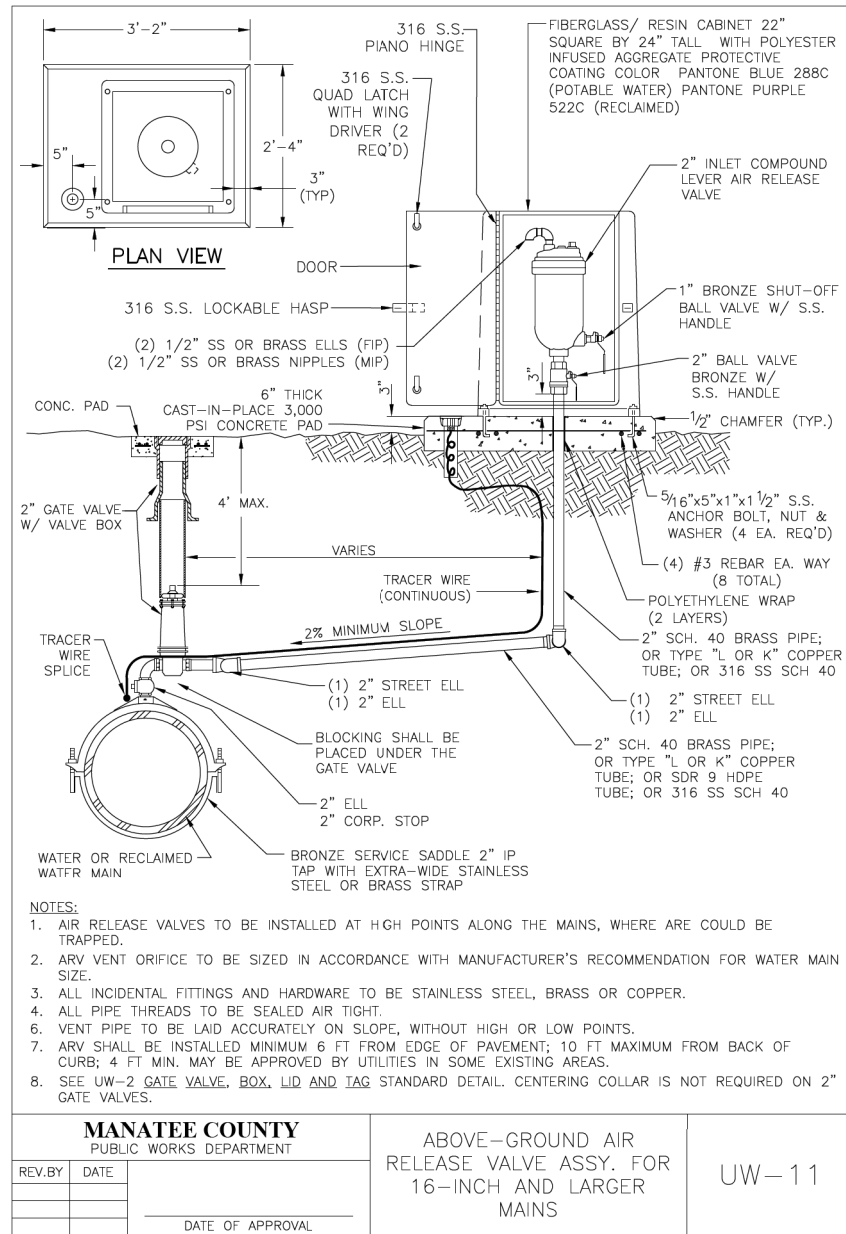


PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

UTILITY DETAILS
(7 OF 12)

SHEET NO.
U-64

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HDR

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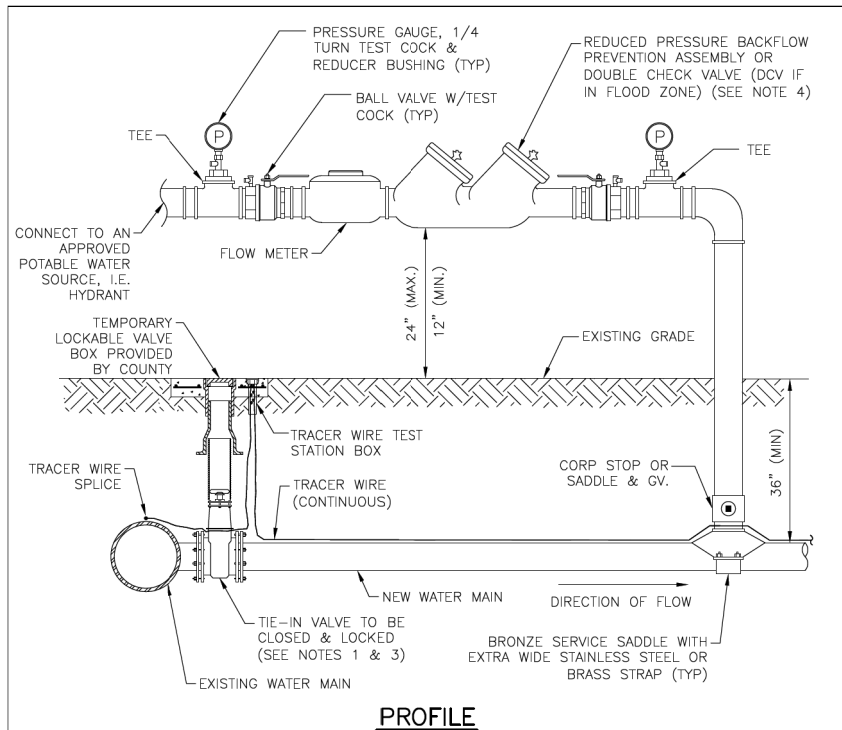
Manatee County
FLORIDA

PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

UTILITY DETAILS
(8 OF 12)

SHEET NO.
U-65

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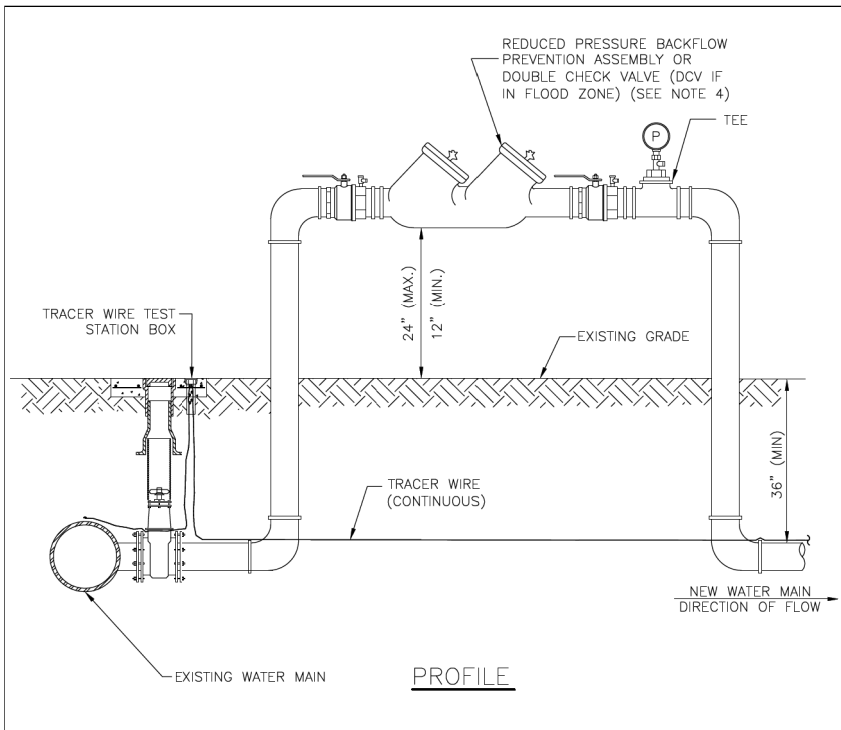


PROFILE

NOTES:

- FOR TIE-IN VALVE, SEE DETAIL UW-3 FOR TAPPING SLEEVE VALVE AND UW-2 FOR GATE VALVE.
- CORPORATION STOP CONNECTIONS TO WATER MAINS SHALL BE AT A SUFFICIENT DISTANCE FROM NEW TAPPING SLEEVE & VALVE (TIE-IN VALVE). ALL CORPORATION STOP TAPS SHALL BE PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP DIAMETERS (WHICHEVER IS LARGER) FROM THE NEW TIE-IN VALVE (TAPPING VALVE & SLEEVE). SIZE-ON-SIZE TAPS ARE NOT ALLOWED. A CUT-IN TEE SHALL BE USED.
- IF THE EXISTING WATER MAIN IS LOCATED UNDER PAVEMENT OR CLOSE TO THE ROADWAY, BOTH JUMPER CORPORATION STOPS MAY CONNECT TO THE NEW WATER MAIN LOCATED OUTSIDE OF THE PAVEMENT. AN ADDITIONAL GATE VALVE SHALL BE INSTALLED AND THE VALVE MAY BE LOCATED AT THE ROW LINE. PIPING AND APPURTENANCES BETWEEN THE EXISTING MAIN AND ISOLATION VALVE AND JUMPER SHALL BE DISINFECTED BY SPRAYING OR SWABBING.
- BACKFLOW PREVENTION ASSEMBLY SHALL BE STRUCTURALLY SUPPORTED.
- THE TIE-IN VALVE SHALL REMAIN CLOSED AND THE LOCKABLE VALVE BOX SHALL BE LOCKED BY MANATEE COUNTY. THE TIE-IN VALVE SHALL REMAIN CLOSED AND LOCKED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY THE FDEP AND ALL OTHER PERTINENT AGENCIES. AFTER CLEARANCE IS OBTAINED, THE LOCKABLE VALVE BOX SHALL BE REMOVED, RETURNED TO THE COUNTY, AND REPLACED WITH A STANDARD VALVE BOX.
- IN THE EVENT THE LOCKED TIE-IN VALVE MUST BE OPENED, THE VALVE SHALL ONLY BE OPERATED BY MANATEE COUNTY PERSONNEL.
- SEE DETAIL UW-24 FOR ADDITIONAL JUMPER CONNECTION NOTES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TEMPORARY JUMPER CONNECTION-HYDRANT AVAILABLE	UW-23A
REV. BY	DATE		
	February 25, 2020 DATE OF APPROVAL		



PROFILE

NOTES:

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- BACKFLOW PREVENTION ASSEMBLY SHALL BE STRUCTURALLY SUPPORTED.
- SEE DETAIL UW-24 FOR ADDITIONAL JUMPER CONNECTION NOTES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TEMPORARY JUMPER CONNECTION - NO HYDRANT AVAILABLE	UW-23B
REV. BY	DATE		
	February 25, 2020 DATE OF APPROVAL		

- A 2-INCH MINIMUM TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE POTABLE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS WITH THE FOLLOWING EXCEPTIONS:
 - PROJECTS THAT INCLUDE A PERMANENT BACKFLOW PREVENTER AT THE RIGHT-OF-WAY WHICH IS ADJACENT TO THE EXISTING WATER MAIN;
 - PROJECTS THAT INCLUDE NEW WATER MAINS THAT ARE LESS THAN OR EQUAL TO 18 LINEAR FEET IN LENGTH; OR
 - OTHER PROPOSED CASES THAT ARE APPROVED BY MANATEE COUNTY AND THE CONSTRUCTION DRAWINGS SPECIFICALLY STATE THAT A TEMPORARY JUMPER CONNECTION IS NOT REQUIRED.
- A TEMPORARY JUMPER SHALL BE USED AND BE CONNECTED TO AN APPROVED POTABLE WATER SOURCE (E.G., EXISTING FIRE HYDRANT, EXISTING MAIN, EXISTING SERVICE TAP OR TANK TRUCK, ETC.) AS SHOWN IN THE STANDARD TEMPORARY JUMPER DETAIL UW-23A OR UW-23B.
A TEMPORARY JUMPER SHALL BE USED FOR FILLING, FLUSHING AND FOR DISINFECTION OF ANY NEW MAIN OF ANY SIZE. THE TEMPORARY JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER THE FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) HAS BEEN OBTAINED.
- THE LOCATION AND ORIENTATION OF TEMPORARY JUMPERS ASSOCIATED WITH CONNECTIONS TO EXISTING WATER MAINS THAT ARE LOCATED UNDER THE ROADWAY PAVEMENT SHALL BE APPROVED ON A CASE-BY-CASE BASIS.
- PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION, UNLESS APPROVED OTHERWISE, THE TAPPING SLEEVE, AND EXTERIOR OF THE EXISTING MAIN TO BE TAPPED, PIPING WITHIN THE JUMPER, AND NEW PIPING SHOWN ON STANDARD TEMPORARY JUMPER DETAIL UW-23A OR UW-23B SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION 4.6 OF AWWA C651.
- THE JUMPER SHALL INCLUDE A FLOW METER TO ENSURE THAT THE FLOW FROM THE SUPPLY SOURCE IS AT A CONSTANT MEASURED RATE WHILE CHLORINATING THE NEW MAIN. THE CHLORINE CONCENTRATION SHALL BE MEASURED AT REGULAR INTERVALS TO ENSURE THAT IT IS FED AT A CONSTANT RATE OF NOT LESS THAN 25 MILLIGRAMS PER LITER (MG/L) OF FREE CHLORINE.
- THE JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS CONTINUOUSLY AFTER DISINFECTION AND UNTIL FDEP CLEARANCE LETTER IS OBTAINED.
- ALL TEMPORARY BACKFLOW PREVENTION ASSEMBLY OR "JUMPERS" UTILIZED DURING PIPELINE CONSTRUCTION MUST SHOW CERTIFICATION THAT THEY HAVE BEEN TESTED ANNUALLY AND PASSED ACCORDING TO THE FLORIDA BUILDING CODE, PLUMBING SECTION, CHAPTER 3, SECTION 312.9.1, 312.9.2, CHAPTER 6, SECTION 608, AND RESOLUTION R87-125. ANNUAL CERTIFICATION MUST BE VALID AT TIME OF INSTALLATION AND PROVIDED TO THE MANATEE COUNTY INSPECTOR UPON REQUEST.
- ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION ASSEMBLY, FLOW METER, FITTINGS, VALVES, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- TEMPORARY JUMPER SIZE DEPENDS ON THE SITUATION; JUMPERS LARGER THAN 2-INCHES MAY BE USED FOR FLUSHING PURPOSES OR IF PARTIAL FIRE PROTECTION IS REQUIRED DURING INITIAL CONSTRUCTION, AS DETERMINED BY THE ENGINEER OF RECORD OR FIRE DEPARTMENT.
- PRIOR TO REMOVAL OF THE TEMPORARY JUMPER, THE NEWLY-CONSTRUCTED WATER SYSTEM SHALL HAVE RECEIVED CLEARANCE FROM THE FDEP.
- AFTER RECEIPT OF CLEARANCE FOR USE BY FDEP, MANATEE COUNTY, AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION AND COMPLETE THE WATER MAIN. ALL CORPORATION STOPS LEFT-IN-PLACE ARE TO BE CLOSED AND PLUGGED WITH 2-INCH BRASS.
- IF THE TEMPORARY JUMPER IS LOCATED WITHIN A STANDARD PIPE LENGTH AWAY FROM THE PROPOSED TIE-IN AND A SINGLE STANDARD LENGTH OF PIPE IS USED FOR COMPLETING THE CONNECTION, THEN THE COUNTY WILL PERFORM A VISUAL INSPECTION AND A SEPARATE HYDROSTATIC TEST MAY NOT BE REQUIRED.
IF MULTIPLE LENGTHS OF PIPES ARE USED TO COMPLETE THE CONNECTION, THEN A SEPARATE HYDROSTATIC TEST WILL BE REQUIRED. THE HYDROSTATIC TEST SHALL BE PERFORMED BETWEEN THE PROPOSED TIE-IN VALVE AND THE FIRST DOWNSTREAM VALVE FROM THE TEMPORARY JUMPER LOCATION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TEMPORARY JUMPER CONNECTION NOTES	UW-24
REV. BY	DATE		
	February 25, 2020 DATE OF APPROVAL		

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			CHECKED BY	JCH	6107860



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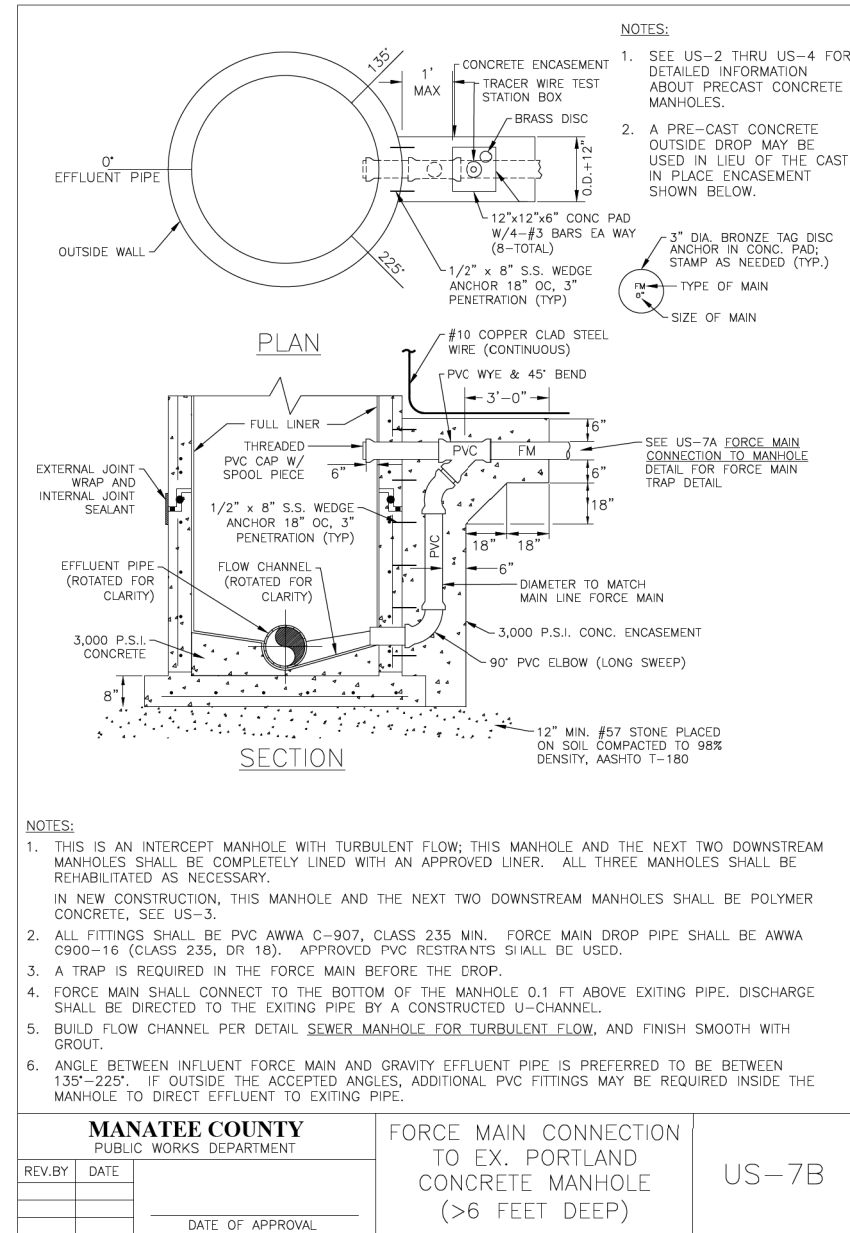
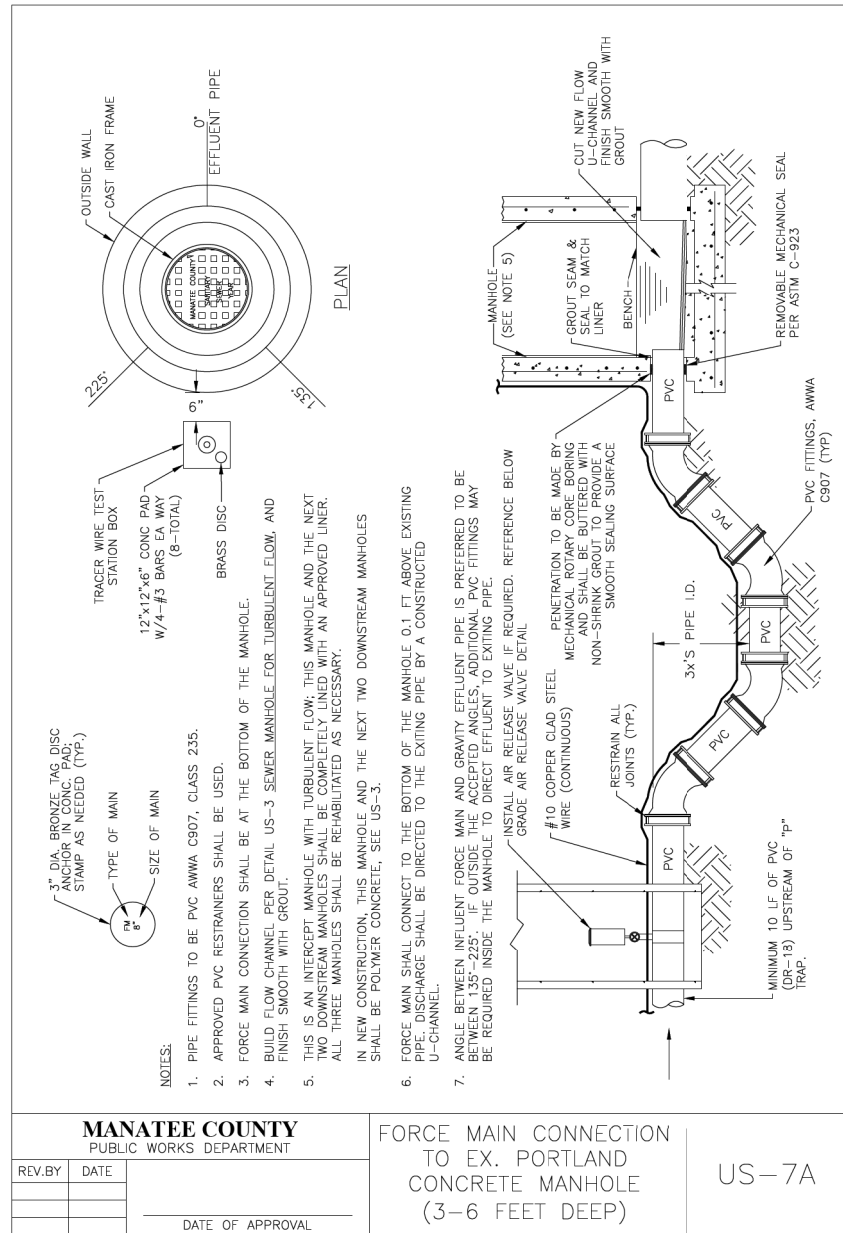
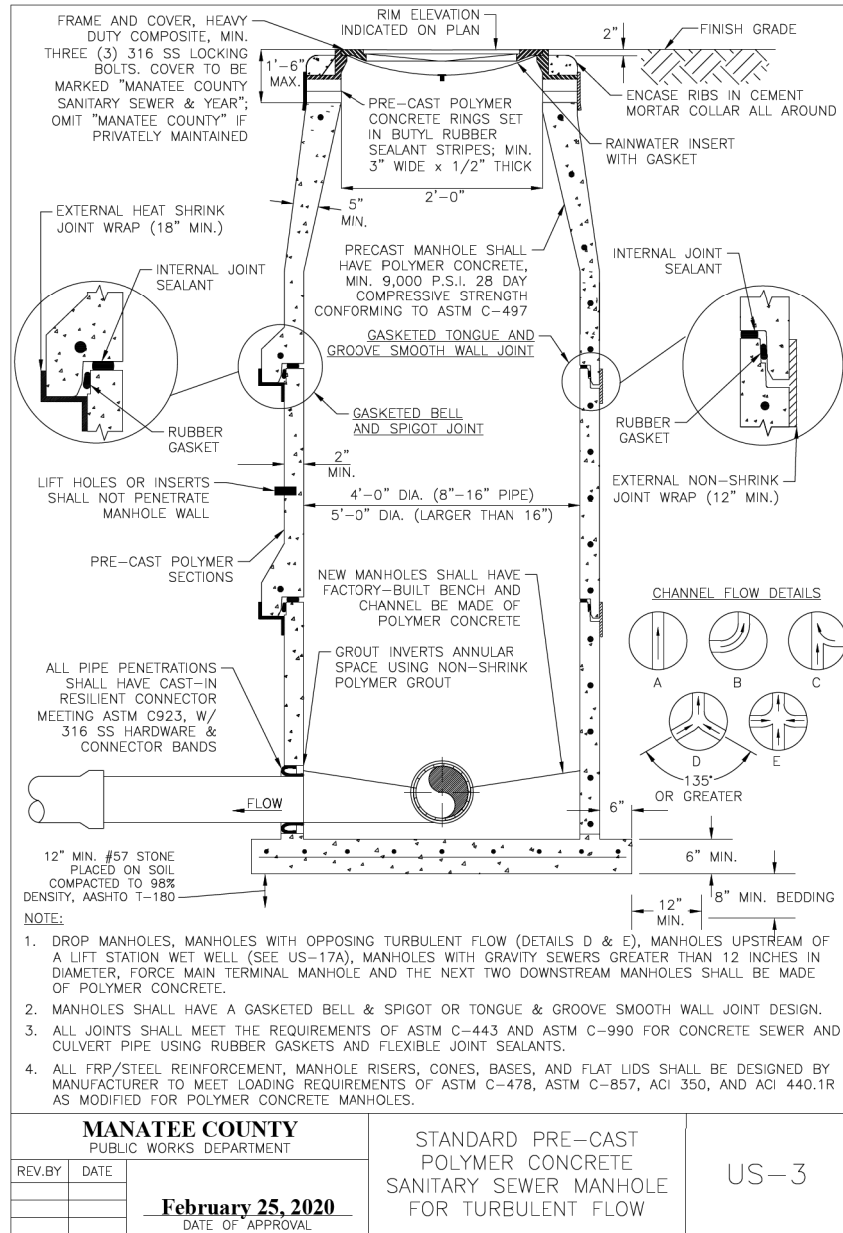


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ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

UTILITY DETAILS
(9 OF 12)

SHEET NO.
U-66

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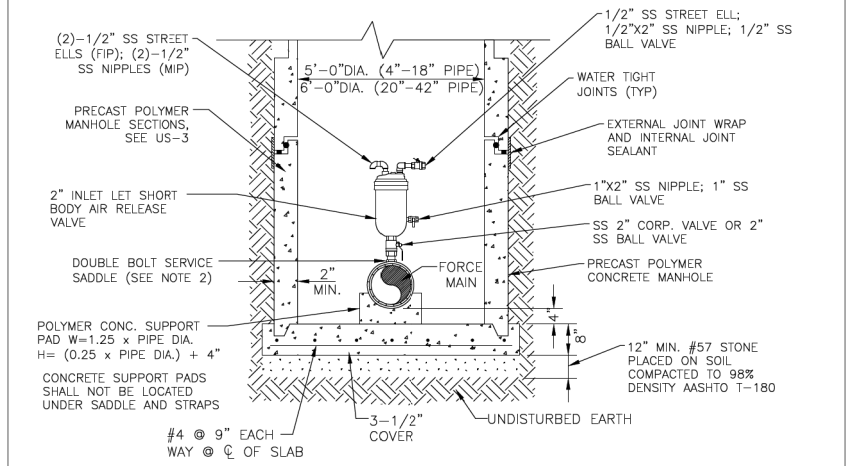
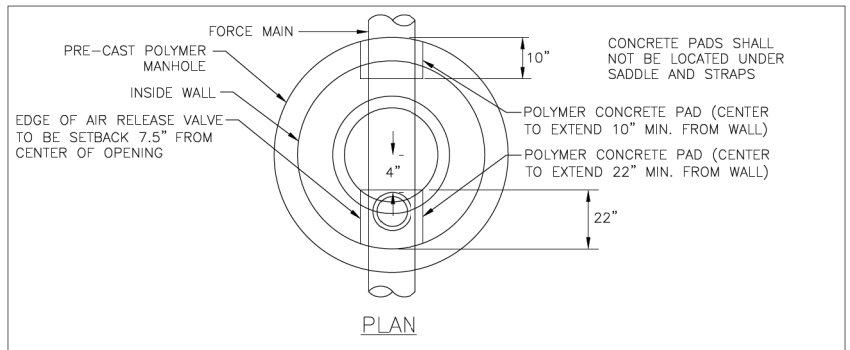
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1022 26th Avenue East
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UTILITY DETAILS
(10 OF 12)

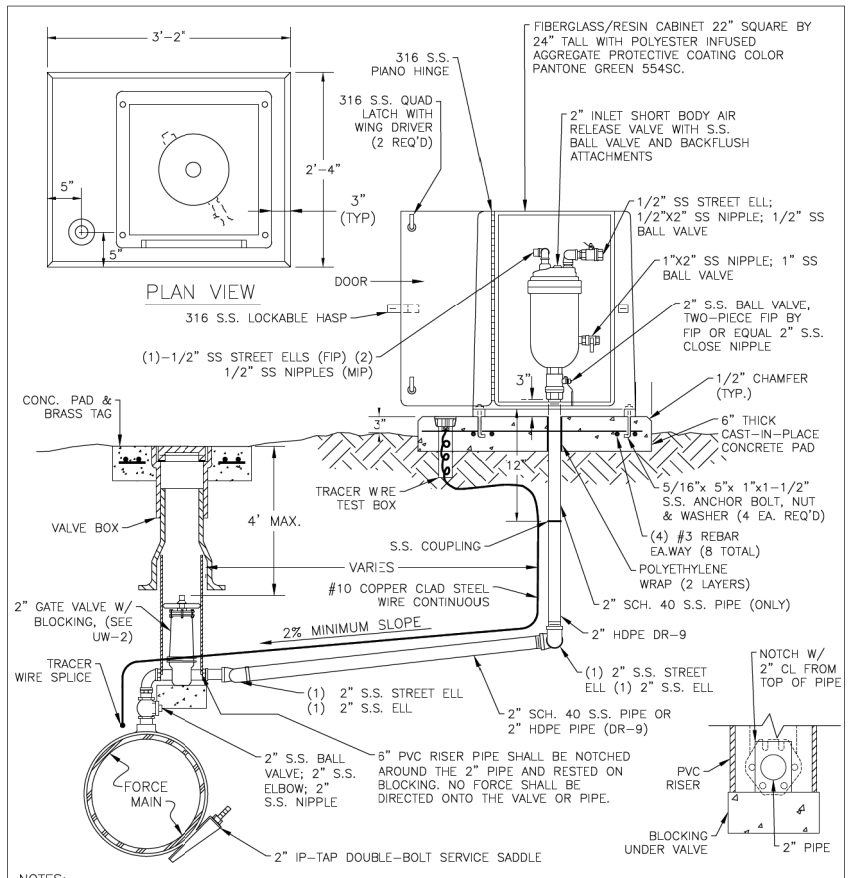
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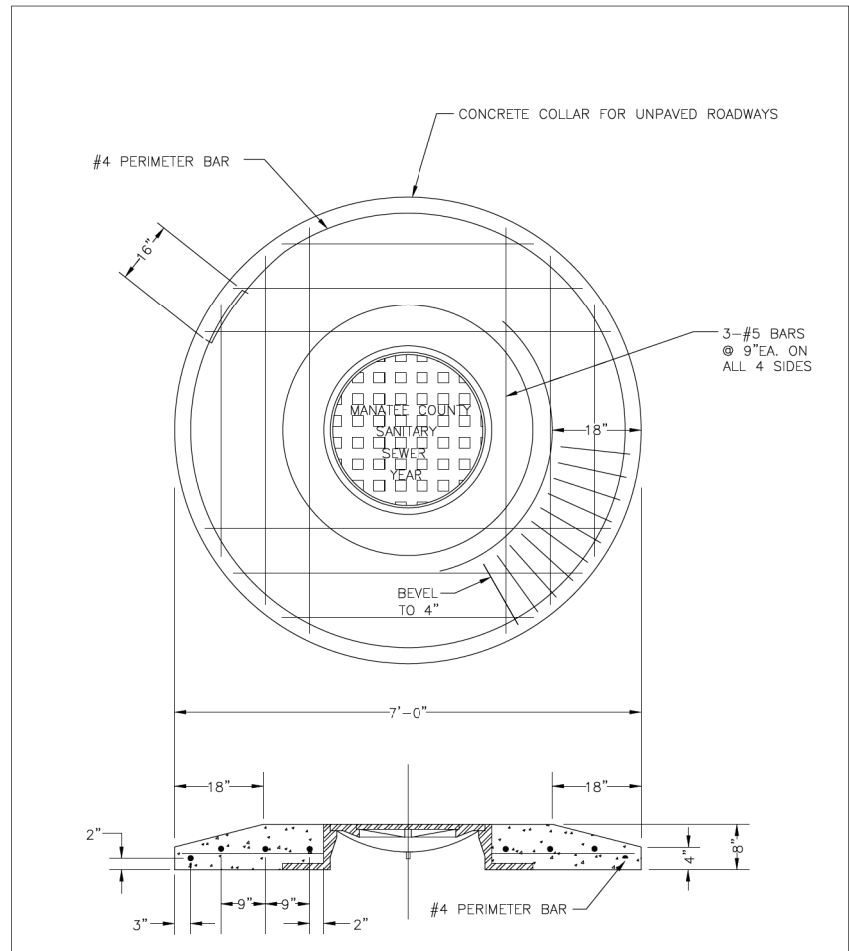
- NOTES:**
- AIR RELEASE VALVES WHERE REQUIRED ON 4" AND LARGER FORCE MAINS.
 - ARV TO BE SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATION FOR FORCE MAIN SIZE, MINIMUM 2" ARV REQUIRED.
 - SERVICE SADDLE, NIPPLES AND CORPORATION BALL VALVE SHALL BE 316 STAINLESS STEEL.
 - FOR MANHOLES WITH LESS THAN 44 INCHES OF COVER FROM TOP-OF-PIPE TO TOP-OF-FRAME, FRAME & COVER TO HAVE A 32-INCH OPENING. MINIMUM ALLOWABLE COVER IS 36 INCHES.
 - ALL PIPE PENETRATING MANHOLE SHALL HAVE RESILIENT PIPE TO MANHOLE SEALS PER ASTM-923.
 - FINAL GRADE TO BE SLOPED AWAY FROM MANHOLE.
 - MANHOLE SHALL BE AASHTO H-20 RATED, WHEN LOCATED WITHIN THE RIGHT OF WAY.
 - ALL STAINLESS STEEL SHALL BE 316 STAINLESS STEEL.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		BELOW GRADE AIR RELEASE VALVE FOR FORCE MAINS	US-8
REV. BY	DATE		
DATE OF APPROVAL			



- NOTES:**
- AIR RELEASE VALVES TO BE ABOVE-GROUND INSTALLATIONS, UNLESS IMPRACTICAL. INSTALLATIONS MAY BE BELOW-GROUND ONLY WHERE APPROVED AND SPECIFICALLY INDICATED ON THE PLAN.
 - AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, OR WHERE AIR WOULD BE ENTRAPPED, ALONG 4" AND LARGER FORCE MAINS.
 - FORCE MAIN VERTICAL ALIGNMENT TO BE DESIGNED SUCH THAT THE MINIMUM NUMBER OF REQUIRED AIR RELEASE VALVES ARE INSTALLED.
 - ALL INCIDENTAL FITTINGS AND HARDWARE TO BE 316 STAINLESS STEEL.
 - ALL PIPE THREADS TO BE SEALED AIR TIGHT.
 - VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
 - CONCRETE PAD SHALL BE TYPE I CONCRETE W/ 3,000 P.S.I., 28 DAY COMPRESSIVE STRENGTH.
 - ARV SHALL BE INSTALLED MINIMUM 6 FT FROM EDGE OF PAVEMENT; 10 FT MAXIMUM FROM BACK OF CURB; 4 FT MIN. MAY BE APPROVED BY UTILITIES IN SOME EXISTING AREAS.
 - SEE UW-2 GATE VALVE, BOX, LID AND TAG STANDARD DETAIL. CENTERING COLLAR IS NOT REQUIRED ON 2" GATE VALVES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR FORCE MAINS	US-9
REV. BY	DATE		
DATE OF APPROVAL			



- NOTES:**
- OMIT "MANATEE COUNTY", IF PRIVATELY MAINTAINED.
 - PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE 1, AND CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		MANHOLE COVER & CONCRETE COLLAR FOR UNPAVED ROADWAYS	US-10
REV. BY	DATE		
DATE OF APPROVAL			

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					12/2023
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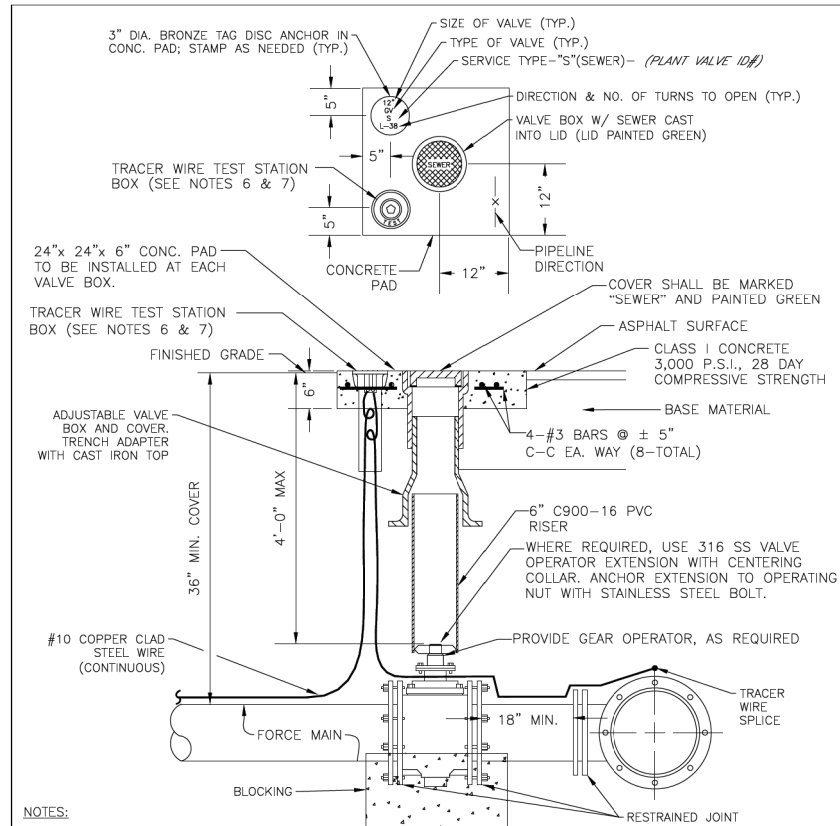
Manatee County
FLORIDA

PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

UTILITY DETAILS
(11 OF 12)

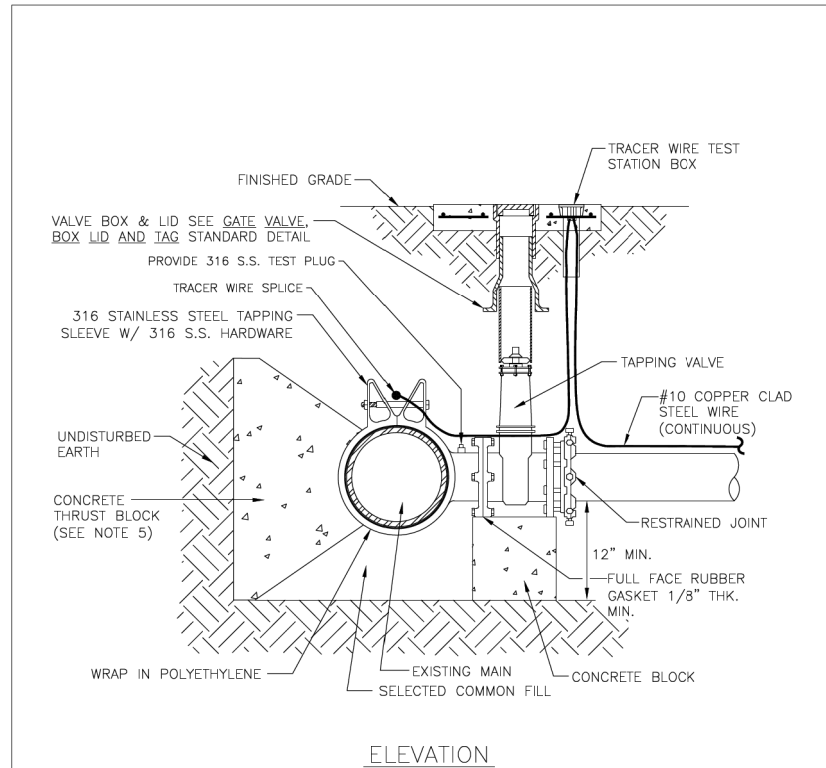
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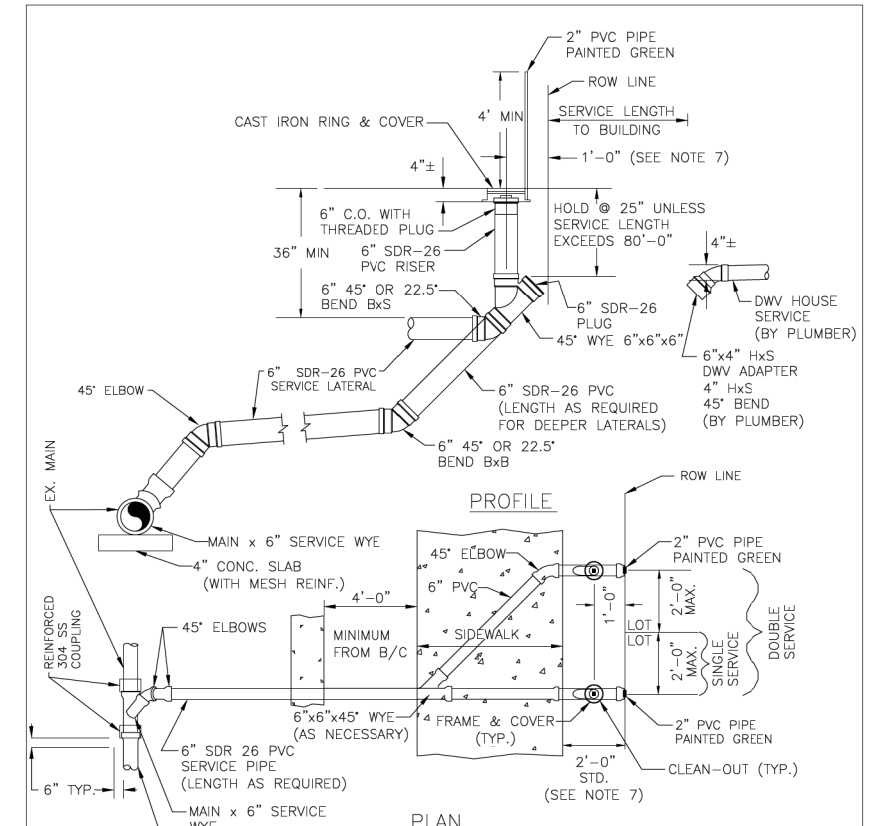
- NOTES:**
- "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
 - ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
 - VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS, CURBS OR GUTTERS.
 - PRECAST CONCRETE PADS AND THRUST BLOCKS SHALL NOT BE USED.
 - ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
 - USE NON-TRAFFIC RATED BOXES FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE TRAFFIC RATED BOXES. WHERE POSSIBLE, LOCATE TRACER WIRE TESTING STATION OUTSIDE OF TRAVEL LANE OR IN MEDIAN, CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.
 - TRACER WIRE BOX SHALL BE LOCATED OUTSIDE THE ROADWAY ON THOROUGHFARES, LOCAL ARTERIAL AND STATE ROADWAYS.
 - THE BRASS TAG SHALL HAVE A "PLANT VALVE ID#" WHEN VALVES ARE INSTALLED WITHIN THE COUNTY TREATMENT PLANT LIMITS. THE PLANT VALVE ID# SHALL BE SHOWN ON THE CONSTRUCTION PLANS AND RECORD DRAWINGS.
 - REFER TO SECTION 1.11 IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		VALVE, BOX, COVER AND TAG	US-11
REV. BY	DATE		
		DATE OF APPROVAL	



- NOTES:**
- PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 150 PSI FOR FORCE MAIN.
 - ALL FITTINGS TO BE WRAPPED WITH 20 MIL POLYETHYLENE PLASTIC SHEETING AT THRUST BLOCK.
 - ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
 - CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
 - WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
 - TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.
 - SEE SECTION 1.11 TAPPING SLEEVES AND VALVES IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TAPPING SLEEVE AND VALVE (FORCE MAINS)	US-12
REV. BY	DATE		
		DATE OF APPROVAL	



- NOTES:**
- RUBBER DONUTS ARE NOT TO BE USED.
 - "SCO" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE CLEAN-OUT. IF NO CURB INSTALL A GREEN DISC WITH "SCO" AND 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE CLEAN-OUT.
 - SANITARY SEWER CLEAN OUTS SHALL NOT BE LOCATED IN DRAINAGE SWALES, EASEMENTS, SIDEWALKS OR DRIVEWAYS.
 - NO SERVICE CONNECTIONS TO BE MADE TO THE CLEAN-OUT RISER. ALL DOMESTIC CONNECTIONS SHALL BE MADE TO THE STUB-OUT PROVIDED.
 - SEWER SERVICE SHALL BE 5" MIN. FROM WATER SERVICE OR FIRE HYDRANT.
 - CLEAN-OUT ADAPTER TO BE SOLVENT-WELDED TO RISER TOP. CLEAN-OUT THREADS SHALL BE WRAPPED WITH TEFLON PLUMBERS TAPE TO SEAL PLUG WATERTIGHT.
 - WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK & THE ROW LINE IS ONE FOOT (CUL-DE-SAC W/MEDIAN) THE DISTANCE BETWEEN THE CENTER OF THE CLEAN-OUT RISER & THE ROW LINE SHALL BE 6".

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CUT-IN SINGLE AND DOUBLE SERVICE WYES	US-13B
REV. BY	DATE		
		February 25, 2020	
		DATE OF APPROVAL	

NUMBER	DESCRIPTION	DATE	SCALE	AS NOTED	DATE
			DESIGNED BY	HLM	12/2023
			DRAWN BY	JTT	PROJECT NO.
			CHECKED BY	JCH	6107860

HDR

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FLORIDA

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ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

UTILITY DETAILS
(12 OF 12)

SHEET NO.	U-69
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.