

MANATEE COUNTY GOVERNMENT

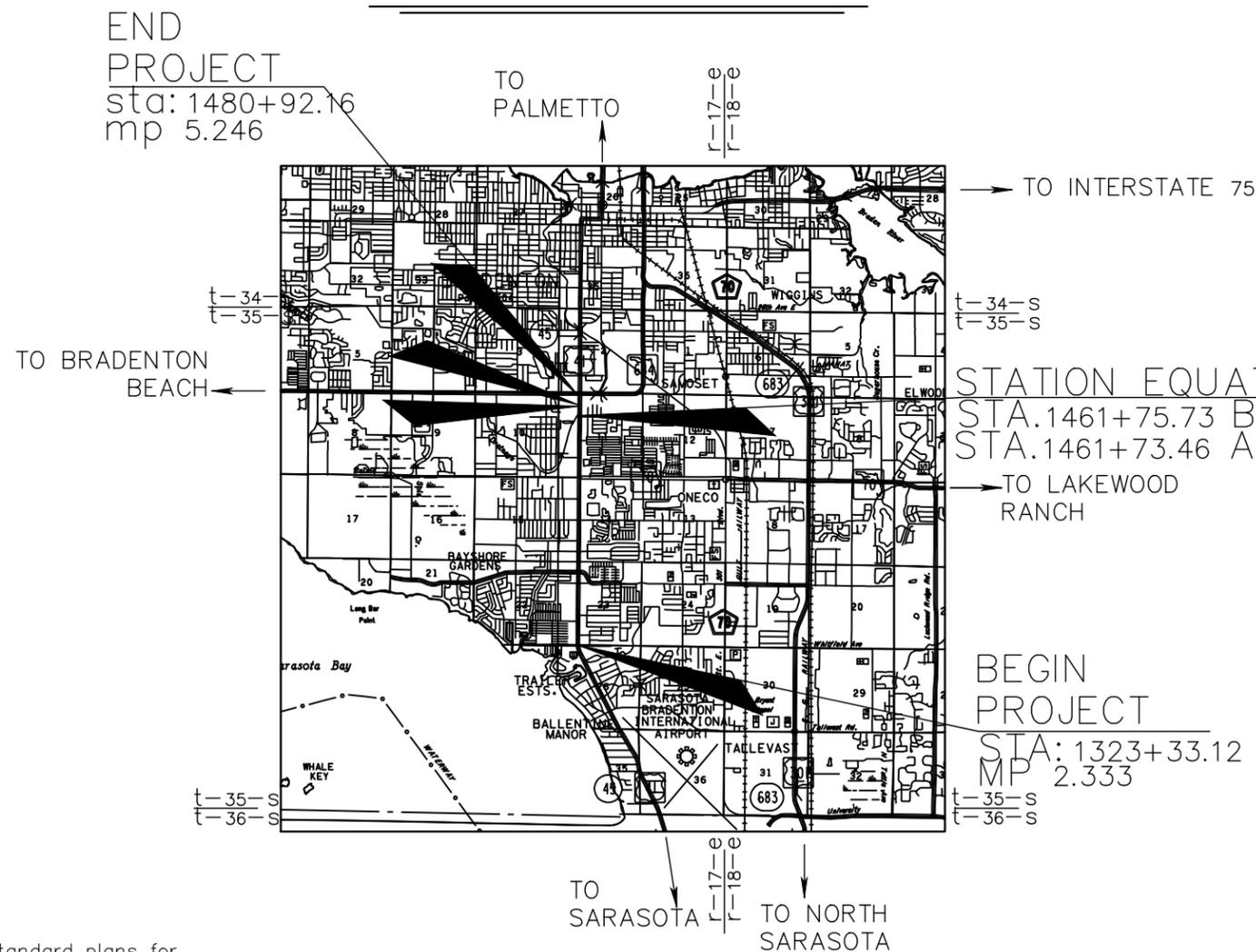
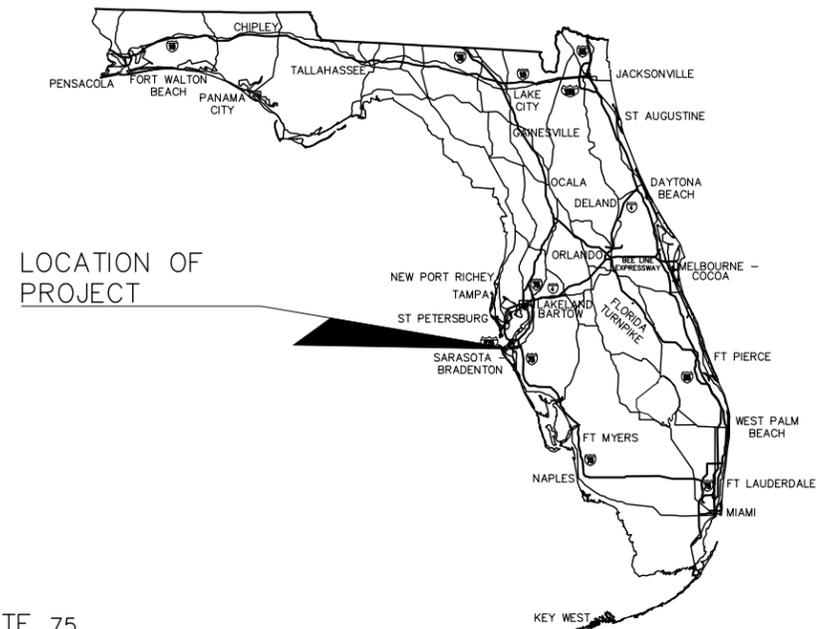
CONTRACT PLANS

FINANCIAL PROJECT ID
433592-4-58-01
FEDERAL FUNDS
MANATEE COUNTY
STATE ROAD NO. 45 (US 41)

UTILITY PLANS

INDEX OF UTILITY PLANS

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UD-1 TO UD-13	CONSTRUCTION DETAILS



STATION EQUATION:
STA.1461+75.73 BK=
STA.1461+73.46 AH

UTILITY ENGINEER OF RECORD
MICHAEL ANTHONY SEMAGO, P.E.
P.E. 87501
KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105N
ST. PETERSBURG, FL 33701
(727) 498-3853
REGISTRY NO. 35106

FDOT PROJECT MANAGER
AMY BLAIR, P.E.

MANATEE COUNTY PROJECT MANAGER
ALEJANDRO GONZALEZ, P.E.

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY

ON THE DATE ADJACENT TO THE SEAL

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BE VERIFIED ON ANY ELECTRONIC
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GOVERNING STANDARD PLANS:
Florida Department of Transportation, FY2022-2023 Standard plans for
Road and Bridge Construction and applicable Interim Revisions (Irs).
Standard Plans for Road Construction and associated Irs are available at
the following website:
<http://www.fdot.gov/design/Standardplans.shtm>

GOVERNING STANDARD SPECIFICATIONS:
Florida Department of Transportation, January, 2022 Standard
Specifications for Road and Bridge Construction at the following website:
<https://www.fdot.gov/programmanagement/Implemented/SpecBooks>

100% DESIGN PHASE IV

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
TBD	22	G-1

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

PROJECT NOTES

1. THE LOCATION(S) OF THE UTILITIES SHOWN IN THE PLANS (INCLUDING THOSE DESIGNATED VV, VH AND VVH) ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE VERIFIED LOCATIONS/ELEVATIONS APPLY ONLY AT THE POINTS SHOWN. INTERPOLATIONS BETWEEN THESE POINTS HAVE NOT BEEN VERIFIED.

2. RECORD DRAWING INFORMATION SHALL BE SUPPLIED IN ACCORDANCE WITH THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS INCLUDING, BUT NOT LIMITED TO FINISHED GRADE ELEVATIONS, TIES TO WATER MAINS, VALVES, BENDS, ELEVATIONS OF PIPES WHERE DEPTH OF COVER VARIES FROM DESIGN, AND LOCATIONS OF SAMPLE POINTS FOR WATER COMPLIANCE TESTING, LOCATIONS, DIMENSIONS, AND ELEVATIONS OF ALL OTHER CONSTRUCTION COMPONENTS WHICH VARY FROM THE DESIGN.

3. COVER AS MEASURED FROM FINISHED (PROPOSED) GRADE TO TOP OF THE PIPELINE SHALL BE A MINIMUM OF 36 INCHES UNLESS OTHERWISE INDICATED.

4. PIPELINE ALIGNMENTS SHALL BE ADJUSTED (AS REQUIRED) HORIZONTALLY AND/OR VERTICALLY TO AVOID CONFLICTS WITH ACTUAL FIELD CONDITIONS AS UNCOVERED DURING CONSTRUCTION. FIELD ADJUSTMENT SHALL BE COORDINATED WITH, AND APPROVED BY, THE ENGINEER,

SPECIAL CONDITIONS

1. BENCH MARK DATUM IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

2. CONSTRUCT HORIZONTAL AND VERTICAL TRANSITION OF PIPELINE BY DEFLECTION OF PIPE JOINTS USING NOT MORE THAN 75% OF THE MAXIMUM DEFLECTION RECOMMENDED BY THE MANUFACTURER. SHOP DRAWINGS SHALL BE FURNISHED FOR APPROVAL OF ALL PIPE CONNECTIONS, TRANSITIONS, AND SPECIAL FITTINGS PRIOR TO FABRICATION OR DELIVERY TO JOB SITE.

3. PROVIDE TEMPORARY THRUST RESTRAINT, BRACING, TESTING PLUGS, AND OTHER DEVICES NECESSARY TO SUCCESSFULLY COMPLETE PRESSURE TESTING OF PIPING SYSTEMS.

4. ALL PROPOSED DUCTILE IRON/WATER MAIN AND FITTINGS WITHIN PROJECT LIMITS SHALL BE RESTRAINED FULLY, DUCTILE IRON PIPE, AND FITTINGS ARE TO BE WRAPPED IN BLUE (WATER) OR (GREEN) WASTEWATER POLYETHYLENE WRAP IN ACCORDANCE WITH AWWA STANDARD C-105. POLYETHYLENE WRAP SHALL BE INCLUDED IN THE PRICE OF THE PIPE.

5. ALL EXISTING WATER, MAINS, REUSE MAINS, AND FORCE MAINS IDENTIFIED TO BE REMOVED OR PLACED OUT OF SERVICE CANNOT BE REMOVED OR PLACED OUT OF SERVICE UNTIL PROPOSED FACILITIES HAVE BEEN CONSTRUCTED, TESTED, CLEARED, AND PLACED IN SERVICE.

6. WATER SERVICE AND WASTEWATER CONVEYANCE MUST BE MAINTAINED FOR ALL CUSTOMERS AT ALL TIMES, EXCEPT FOR MINOR DISRUPTIONS DURING CONNECTIONS / CHANGEOVERS. COORDINATE ALL SYSTEM SHUT DOWNS WITH COUNTY OPERATIONS STAFF AND AS REQUIRED IN THE SPECIFICATIONS.

7. ALL UTILITY RELOCATION MUST BE IN PLACE, TESTED, CLEARED AND OPERATIONAL PRIOR TO ROADWAY CONSTRUCTION THAT IMPACTS EXISTING UTILITIES.

8. IN THE EVENT OF A WATER OR SEWER MAIN BREAK, CALL 24 HOUR EMERGENCY NUMBER (941) 792-8811 EXT. 5216

9. ALL CONCRETE SHOWN IN THESE DRAWINGS, UNLESS OTHERWISE NOTED, SHALL CONFORM TO CLASS NS CONCRETE.

10. STEEL PIPE CASING SHALL COMPLY WITH FDOT SECTION 556

11. THESE CONTRACT DOCUMENTS INCLUDE BY REFERENCE THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS APPROVAL FEBRUARY 2020.

12. SUBMIT WATER MAIN BACTERIOLOGICAL SAMPLING PLAN FOR TEMPORARY AND NEW WATER MAIN TO EOR REVIEW, SAMPLE LOCATIONS INCLUDE, AT A MINIMUM, ALL POINTS OF CONNECTION TO EXISTING WATER MAIN. ALL TERMINAL ENDS AND MAXIMUM INTERVALS OF 1,200 FEET BETWEEN TWO SAMPLING LOCATIONS. SAMPLE POINT FURNISH AND INSTALLATION AND REMOVAL COST TO BE INCORPORATED INTO COST OF NEW MAINS. NOTE SAMPLE POINT CORPORATION STOP LOCATIONS ON AS-BUILTS.

13. SUBMIT AND OBTAIN APPROVAL OF SHOP DRAWINGS, CONSTRUCTION SCHEDULE AND THE FOLLOWING PLANS PRIOR TO BEGINNING CONSTRUCTION (NOT LIMITED TO):

A. SHUTDOWN SCHEDULE AND PLAN TO INCLUDE BUT NOT LIMITED TO PIPE DEWATERING AND DISPOSAL PLANS; CONNECTION SCHEDULE FOR WATER, REUSE, AND FORCE MAINS (INCLUDING LINSTOPS); WATER MAIN SAMPLING PLAN AND LOCATIONS FOR BACTERIOLOGICAL TESTING; PRESSURE TESTING SCHEDULE; LINSTOP LOCATIONS.

B. FORCE MAIN BYPASS PLAN.

14. ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PROCESS SHALL BE REMOVED AND DISPOSED OF PRIOR TO FINAL ACCEPTANCE.

15. ADJUST ALL VALVES (LIDS AND STEMS), ARV S, MANHOLE LIDS, VAULT ACCESS HATCHES, AND FIRE HYDRANTS WITHIN PROJECT LIMITS TO NEW/PROPOSED GRADE.

16. ASBESTOS CEMENT PIPE

A. CUTTING AND DISPOSING OF ASBESTOS CEMENT PIPE (TRANSITE PIPE) MUST BE PERFORMED BY A FLORIDA-LICENSED ASBESTOS ABATEMENT CONTRACTOR. USE OF COMPRESSED AIR TO CLEAN TRANSITE PIPES IS PROHIBITED. AT NO TIME SHOULD TRANSITE PIPE OR PIECES BE MIXED IN WITH FILL.

B. CONTRACTOR MUST FURNISH ALL PERMITS, LABOR MATERIAL, SERVICES, INSURANCE, TOOLS, EQUIPMENT, AND NOTIFICATIONS IN ACCORDANCE WITH EPA, OSHA, STATE, AND ALL OTHER APPLICABLE AGENCIES TO HANDLE AND REMOVE ASBESTOS MATERIAL. SPECIFICALLY, REFER TO EPA 40 CFR PART 61.

UTILITY/AGENCY OWNERS:

<u>COMPANY</u>	<u>CONTACT</u>	<u>TELEPHONE NUMBER</u>
Comcast	Kevin Murphy	941-356-1489
Crown Castle	Kelly Klinefelter	786-610-7073
FP&L	Joel Bray	386-586-6403
Frontier	Toni Cannon	813-875-1014
Hotwire	Walter Sancho-Devilla	954-248-7396
Manatee County Water	Robby Phillips	941-792-8811 ext. 5149
Manatee County Sewer	Morgan DeFisher	941-792-8811 ext. 5011
MCI/Verizon Business	Andy Cole	813-847-4037
Spectrum	James Fleming	941-213-0877
MCG-ITS Department	Bill Kersey	941-748-4501 ext. 5803
TECO People's Gas	Alex Mcfarlane	813-275-3762
Uniti	Terry Young	251-422-3872
Verizon Wireless	Mikel Murphy	813-632-5900
Zayo	Mark Mathis	813-499-0750

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			GENERAL NOTES	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						US 41	MANATEE		433592-4-58-01

**US 41 UTILITY RELOCATION MATRIX
MANATEE COUNTY**

CONFLICT TYPE	STATION	OFFSET	TEST HOLE NUMBER (TH)	TYPE OF UTILITY	SIZE	MATERIAL	TOP DEPTH (FT)	BOTTOM FOOTER DEPTH (FT)	SEPARATION DISTANCE	SEPARATION DISTANCE FROM CASING	PROTECTION OPTION
LIGHT POLE	1331+43	46' RT	4	WATER MAIN	6"	AC	2.37	1.5	0.87	0.62	RELOCATION
LIGHT POLE	1332+71	45' RT	5	WATERMAIN	6"	AC	2.37	1.5	0.87	0.62	RELOCATION
LIGHT POLE	1334+56	47' RT	**	WATER MAIN	6"	AC	2.36	1.5	0.86	0.61	RELOCATION
LIGHT POLE	1337+83	47' RT	7	WATER MAIN	6"	UNK	2.36	1.5	0.86	0.61	RELOCATION
LIGHT POLE	1340+01	47' RT	**	WATER MAIN	6"	UNK	2.77	1.5	1.27	1.02	RELOCATION
LIGHT POLE	1341+96	46' RT	8	WATER MAIN	6"	PVC	3.18	1.5	1.68	1.43	RELOCATION
LIGHT POLE	1343+16	45' RT	15	WATER MAIN	6"	UNK	3.24	1.5	1.74	1.49	RELOCATION
LIGHT POLE	1344+81	48' RT	9	WATER MAIN	6"	AC	3.9	1.5	2.4	2.15	SPLIT CASING
LIGHT POLE	1346+17	45' RT	**	WATER MAIN	6"	UNK	3.72	1.5	2.215	1.965	SPLIT CASING
LIGHT POLE	1347+42	45' RT	10	WATER MAIN	6"	AC	3.53	1.5	2.03	1.78	SPLIT CASING
LIGHT POLE	1348+67	48' RT	**	WATER MAIN	6"	UNK	3.63	1.5	2.13	1.88	SPLIT CASING
LIGHT POLE	1349+85	48' RT	12	WATER MAIN	6"	AC	3.73	1.5	2.23	1.98	SPLIT CASING
LIGHT POLE	1350+93	48' RT	**	WATER MAIN	6"	UNK	3.69	1.5	2.19	1.94	SPLIT CASING
LIGHT POLE	1352+28	47' RT	11	WATER MAIN	6"	AC	3.65	1.5	2.15	1.9	SPLIT CASING
LIGHT POLE	1353+56	47' RT	**	WATER MAIN	6"	UNK	3.42	1.5	1.92	1.67	RELOCATION
LIGHT POLE	1354+81	49' RT	16	WATER MAIN	6"	AC	3.19	1.5	1.69	1.44	RELOCATION
LIGHT POLE	1356+53	48' RT	**	WATER MAIN	6"	UNK	3.26	1.5	1.755	1.505	RELOCATION
LIGHT POLE	1358+18	47' RT	13	WATER MAIN	6"	AC	3.32	1.5	1.82	1.57	RELOCATION
LIGHT POLE	1360+08	45' RT	**	WATER MAIN	6"	AC	3.2	1.5	1.7	1.45	SPLIT CASING
LIGHT POLE	1436+20	45' RT	23	FORCE MAIN	6"	CIP	3.25	1.5	1.75	1.5	SPLIT CASING
LIGHT POLE	1437+95	45' RT	**	FORCE MAIN	6"	CIP	2.78	1.5	1.275	1.025	SPLIT CASING
LIGHT POLE	1439+62	47' RT	20	FORCE MAIN	6"	DIP	2.3	1.5	0.8	0.55	SPLIT CASING
LIGHT POLE	1441+39	45' RT	21	FORCE MAIN	6"	CIP	2.83	1.5	1.33	1.08	SPLIT CASING
LIGHT POLE	1469+19	45' LT	25	WATERMAIN	10"	AC	2.99	1.5	1.49	0.99	RELOCATION
DRAINAGE IMPROVEMENT	1442+03	45' LT	30	WATER MAIN	10"	AC	3.09	N/A	-	-	SPLIT CASING
MAST ARM	1452+69	48' LT	28	WATERMAIN	10"	AC	2.8	N/A	-	-	HORIZONTAL RELOCATION
LOAD CENTER	1464+15	46' LT	26	WATERMAIN	10"	AC	2.8	N/A	-	-	SPLIT CASING
CULVERT CROSSING	1470+88	44' LT	**	WATERMAIN	10"	AC	N/A	N/A	-	-	RELOCATION

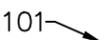
*NOTE UNK WMS ARE ASSUMED AC

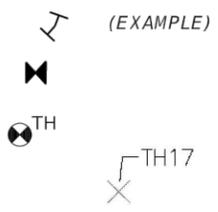
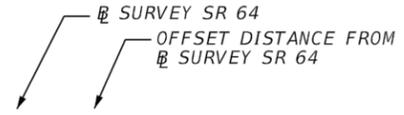
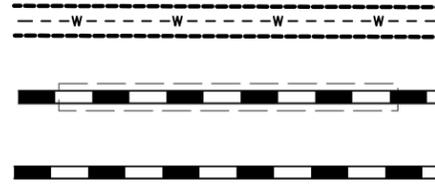
**ARE ASSUMED DEPTHS AND PIPE MATERIALS BASED ON OTHER VVH LOCATES, CONTRACTOR TO CONFIRM ACTUAL DEPTH AND MATERIAL OF PIPE IN THE FIELD AND REPORT BACK TO EOR

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			UTILITY RELOCATION MATRIX	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		G-3

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LEGEND

-  EXISTING RIGHT OF WAY
-  EXISTING MANATEE COUNTY EASEMENT
-  PROPOSED FDOT RIGHT-OF-WAY
-  PROPOSED MANATEE COUNTY TCE OR EASEMENT
-  EXISTING NON SUBORDINATED/ NON MANATEE COUNTY EASEMENTS
-  EXISTING PROPERTY/PARCEL LINES
-  EXISTING SUBDIVISION LINES
-  EXISTING MANATEE COUNTY WATERMAIN
-  EXISTING MANATEE COUNTY GRAVITY MAIN
-  EXISTING MANATEE COUNTY FORCEMAIN
-  EXISTING MANATEE COUNTY RECLAIMED WATER MAIN
-  BURIED ELECTRIC
-  EASEMENT PARCEL NUMBER
-  PROPOSED FDOT CONCRETE SIDEWALK
-  PROPOSED FDOT SOD PLACEMENT



ABBREVIATIONS:

- | | |
|---------|------------------------------------|
| APPROX. | APPROXIMATE |
| ARV | AIR RELEASE VALVE |
| BE | BURIED ELECTRIC |
| BE (B) | BURIED ELECTRIC TYPE B |
| BE (D) | BURIED ELECTRIC TYPE D |
| BT | BURIED TELEPHONE |
| BL | BASELINE |
| CI | CAST IRON |
| CL | CENTERLINE |
| CONST. | CONSTRUCT |
| DIA | DIAMETER |
| DIP | DUTILE IRON PIPE |
| EL | ELEVATION |
| ELEV. | ELEVATION |
| EOP. | EDGE OF PAVEMENT |
| EXIST. | EXISTING |
| FH | FIRE HYDRANT |
| FL | FLOW LINE |
| FM | FORCE MAIN |
| FOC | FIBER OPTIC CABLE |
| GM | GAS MAIN |
| GR | GRADE |
| HDD | HORIZONTAL DIRECTIONAL DRILL |
| HDPE | HIGH DENSITY POLYETHYLENE |
| INV. | INVERT |
| LA | LIMITED ACCESS |
| LT | LEFT |
| MIN | MINIMUM |
| NPW (B) | NONPOTABLE WATER MAIN TYPE B |
| OE | OVERHEAD ELECTRIC |
| OTV | OVERHEAD TELEVISION |
| PCCP | PRESTRESSED CONCRETE CYLINDER PIPE |
| P.E. | POLYETHYLENE |
| PVC | POLYVINYL CHLORIDE |
| RCW | RECLAIMED WATER |
| R/W | RIGHT OF WAY |
| RJ | RESTRAINED JOINT |
| RT | RIGHT |
| S (B) | EXISTING SANITARY TYPE B |
| SD | STORM DRAIN |
| STA. | STATION |
| TOP | TOP OF PIPE |
| TYP | TYPICAL |
| W (B) | EXISTING WATER MAIN TYPE B |
| W (D) | EXISTING WATER MAIN TYPE D |
| WM | WATER MAIN |

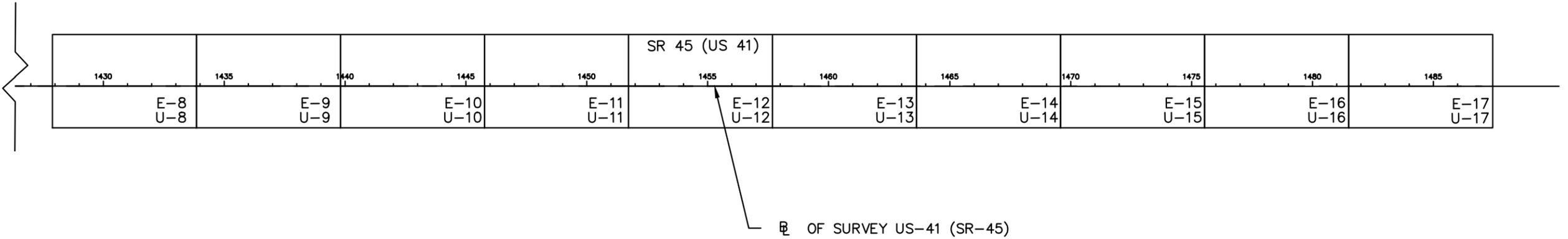
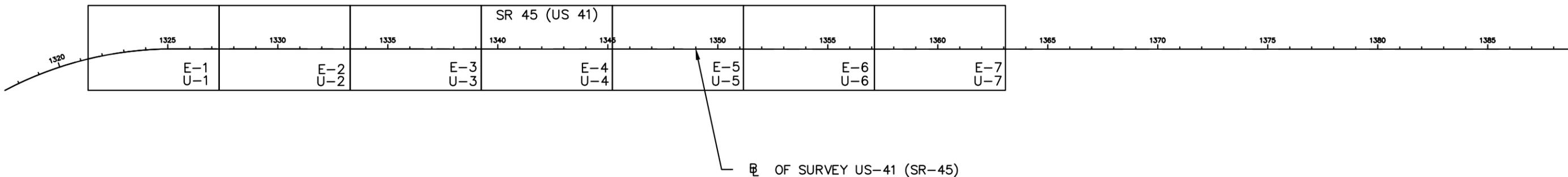
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DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
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TABULATION OF QUANTITIES																				
ITEM #	ITEM	UNIT	U-1	U-2	U-3	U-4	U-5	U-6	U-7	U-8	U-9	U-10	U-11	U-12	U-13	U-14	U-15	U-16	U-17	Total
1050 31 210	Utility Pipe – Polyvinyl Chloride, F&I, Water/Sewer, 10"	LF												30		23	50			103
1050 31 206	Utility Pipe – Polyvinyl Chloride, F&I, Water/Sewer, 6"	LF		46	46	69		69	23											253
1050 51 208	Utility Pipe – Ductile Iron/Cast Iron, F&I, Water/Sewer, 8"	LF															40			40
1050 61 120	Utility Pipe - Steel, F&I, Casing, 20" (Split)	LF										24				24				48
1050 61 112	Utility Pipe - Steel, F&I, Casing, 12" (Split)	LF				12	60	12	12		36	12								144
1050 61 120	Utility Pipe - Steel, F&I, Casing, 20"	LF														12				12
1050 61 112	Utility Pipe - Steel, F&I, Casing, 12"	LF		24	24	36		36	12											132
1055 51 110	Utility Fitting, Ductile Iron/Cast Iron, F&I, Elbow, 10"	EA												4		4				8
1055 51 310	Utility Fitting, Ductile Iron/Cast Iron, F&I, Reducer, 10"	EA															2			2
1055 51 108	Utility Fitting, Ductile Iron/Cast Iron, F&I, Elbow, 8"	EA															4			4
1050 16 002	Utility Pipe - Remove and Dispose, 2.0"-4.9"	LF									12									12
1050 16 003	Utility Pipe - Remove and Dispose, 5"-7.9"	LF		46	46	69		69	23					20		35				308
1050 16 004	Utility Pipe - Remove and Dispose, 8"-19.9"	LF												30		23	49			102
1050 15 001	Utility Pipe - Adjust/Modify, 0"-1.9"	LF				20		10												30
1080 23	Utility Fixture - Tapping Saddle/Sleeve - Remove	EA				2		1												3
1080 23 100	Utility Fixture - Tapping Saddle/Sleeve - Furnish and Install	EA				2		1												3
1060 15	Utility Structure, Below Ground, Adjust/Modify	EA		1	1		1	1	1	1	2		1							9
1080 24 110	Utility Fixture, Valve Assembly, Furnish & Install, 10"	EA															2			2
1080 24 500	Utility Fixture, Valve Assembly, Adjust/Modify	EA			2	2		1	1	1	2	1	1	1	1	1	2	2		18

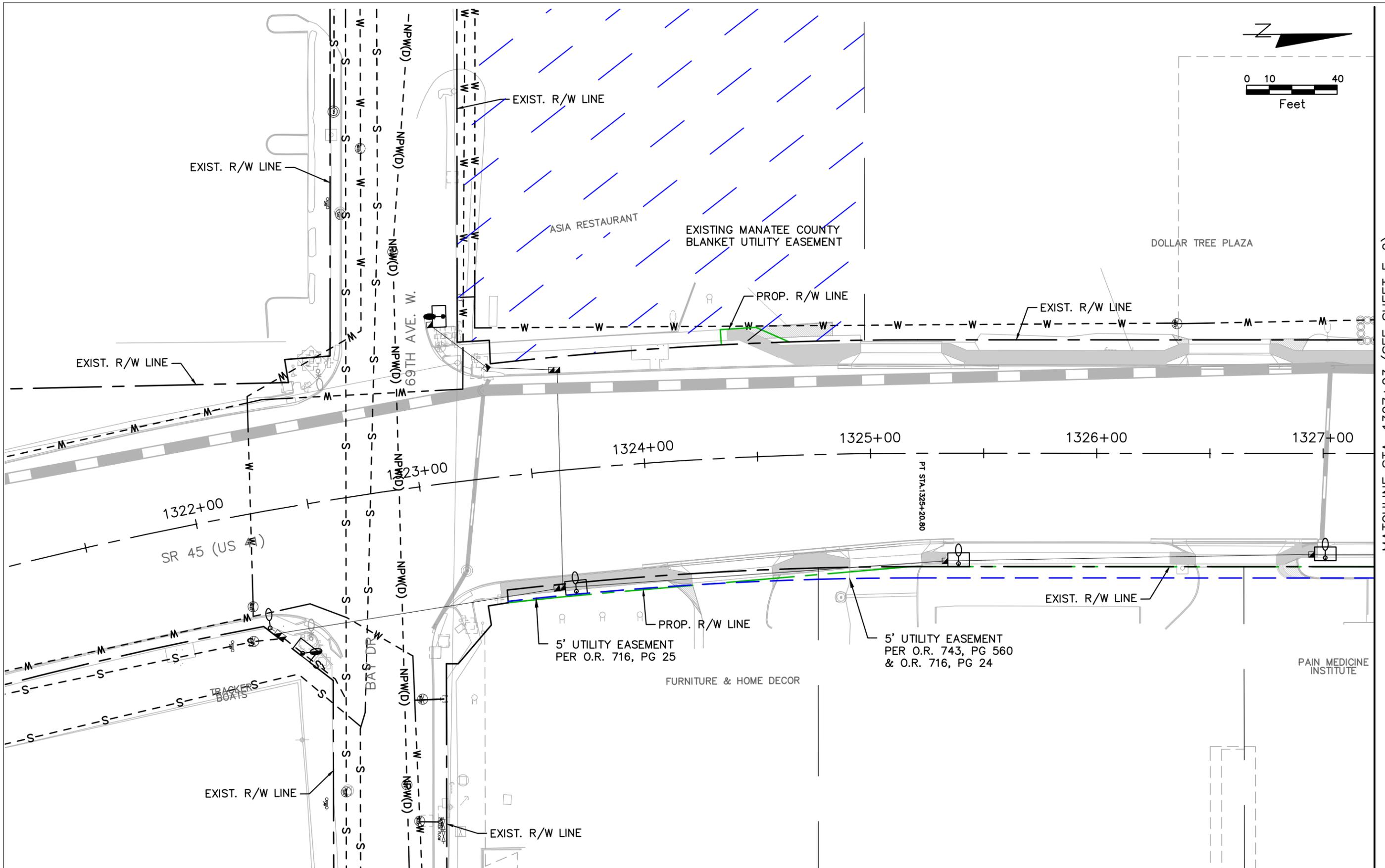
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DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		

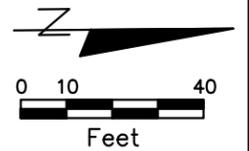
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MATCHLINE STA. 1327+23 (SEE SHEET E-2)

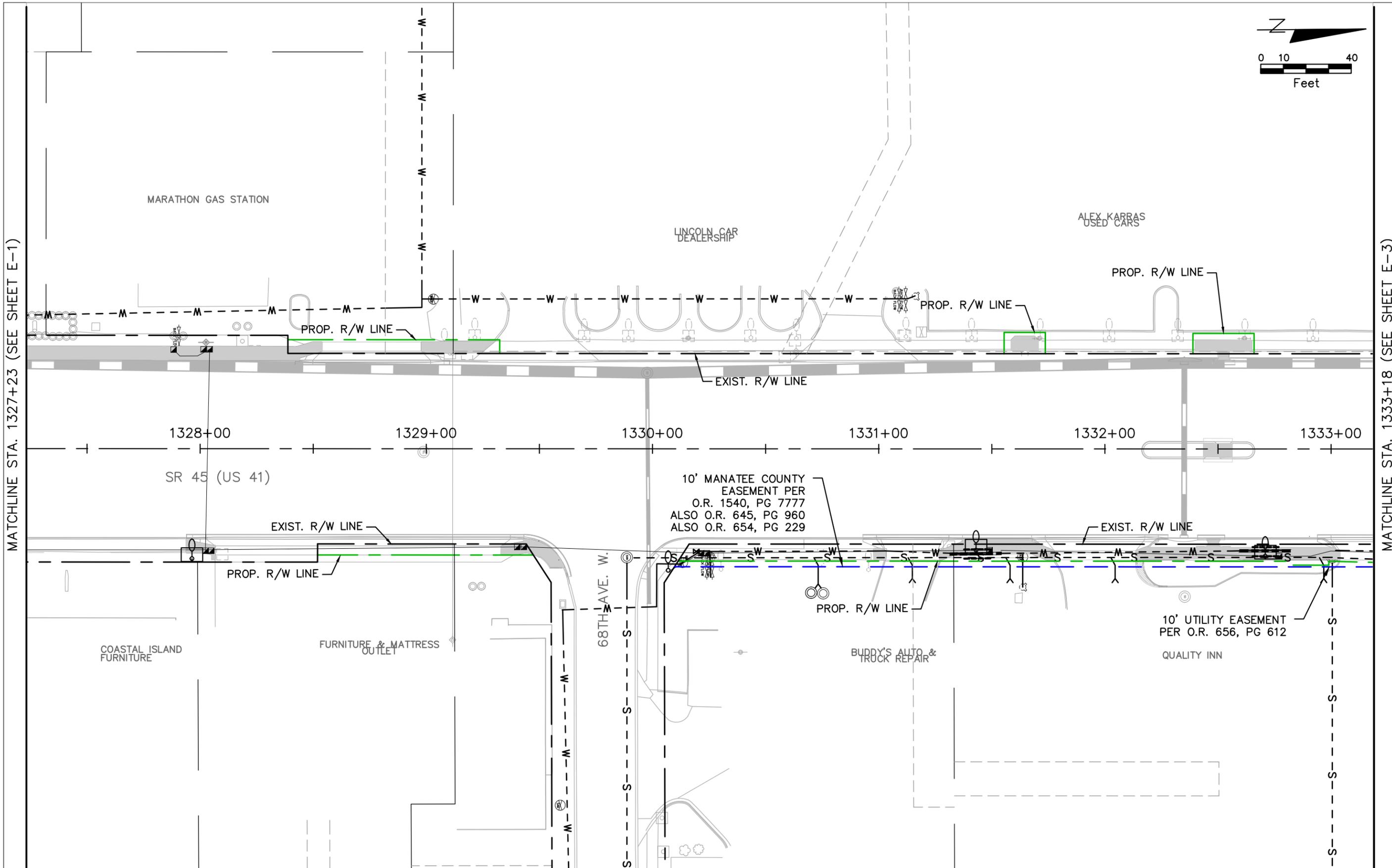
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DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		E-1
					US 41	MANATEE	433592-4-58-01		



MATCHLINE STA. 1327+23 (SEE SHEET E-1)

MATCHLINE STA. 1333+18 (SEE SHEET E-3)

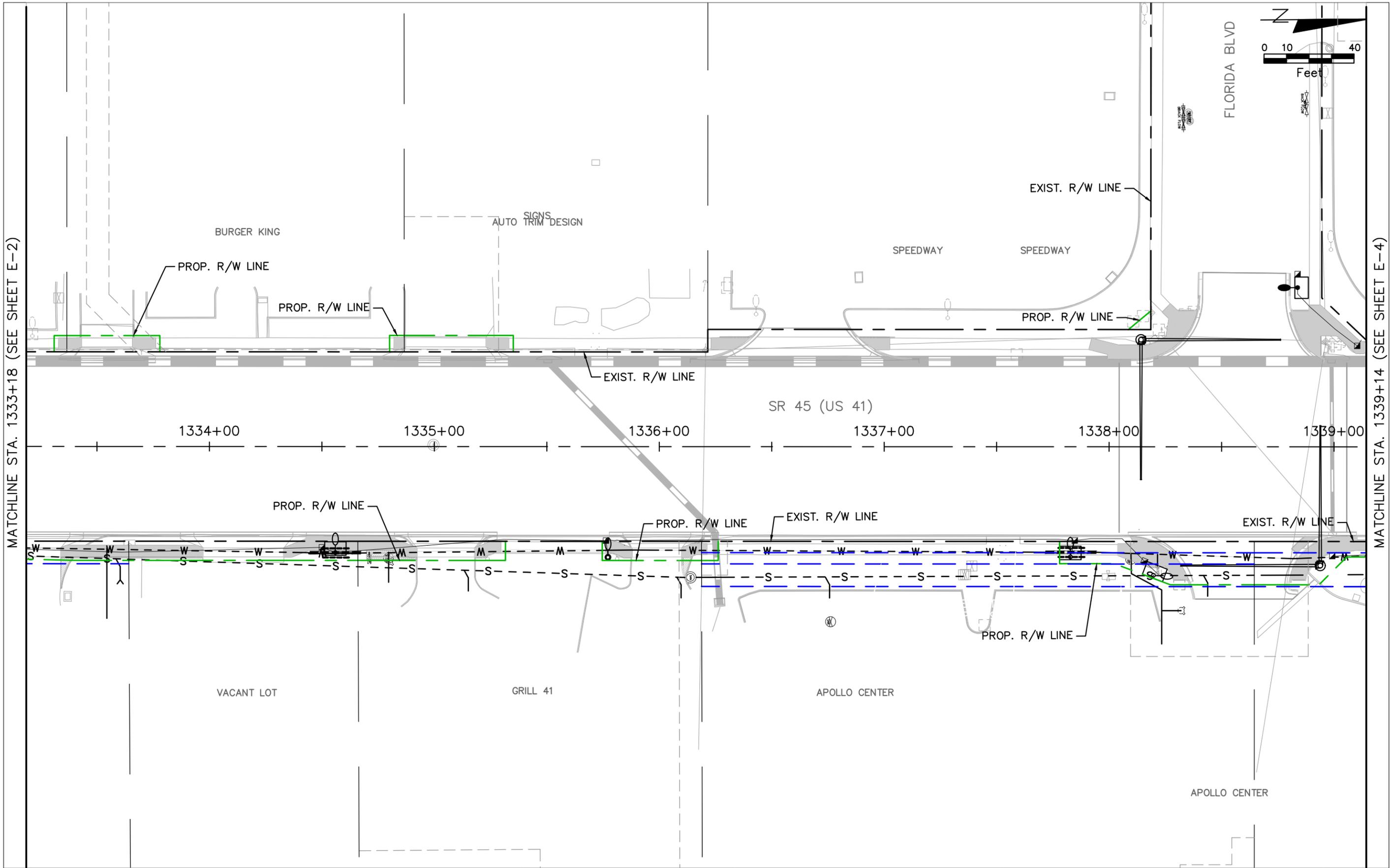
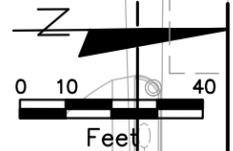


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					US 41	MANATEE	433592-4-58-01		

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MATCHLINE STA. 1333+18 (SEE SHEET E-2)

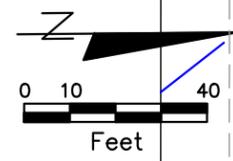
MATCHLINE STA. 1339+14 (SEE SHEET E-4)



REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. E-3
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

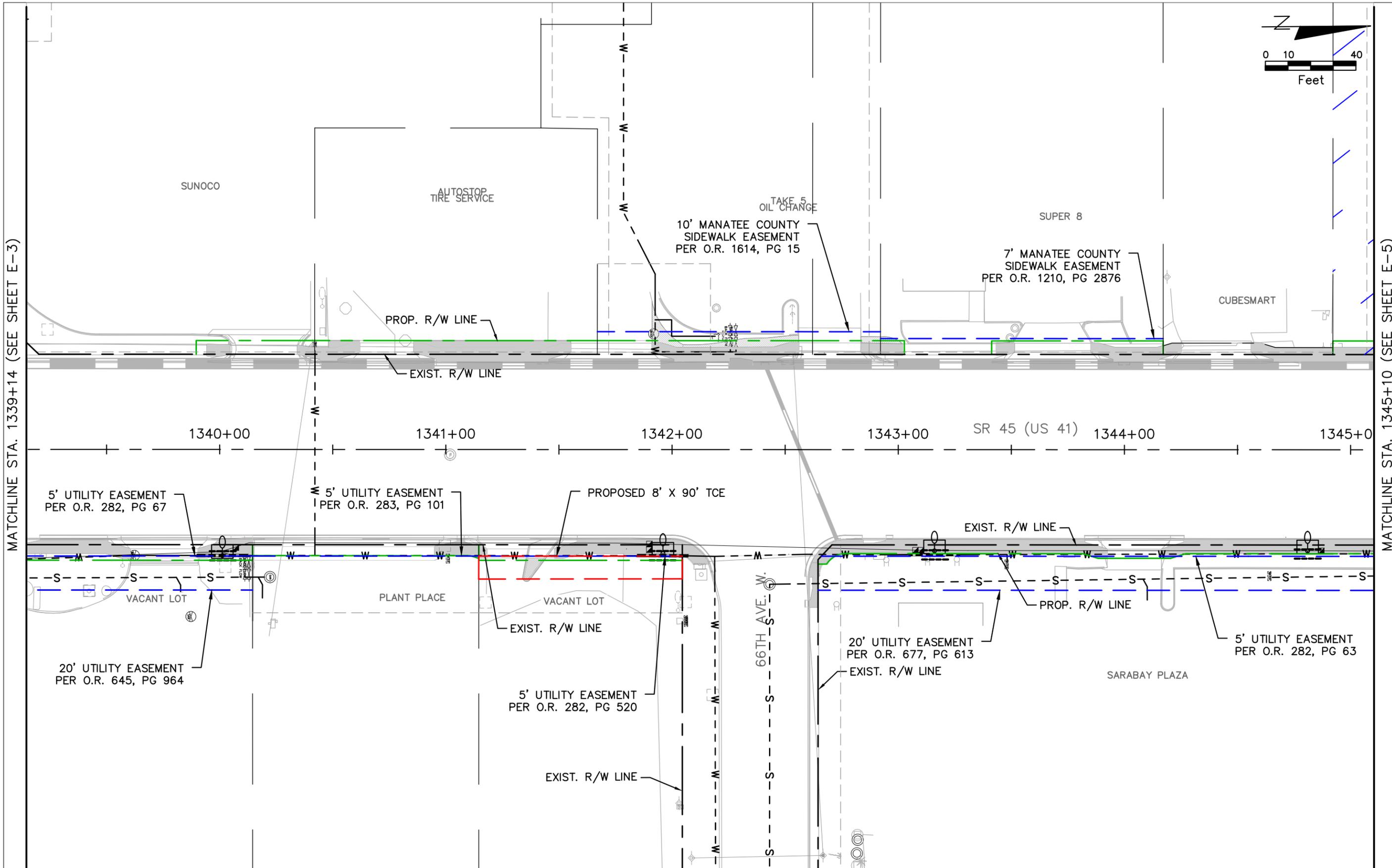
EASEMENT PLAN

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



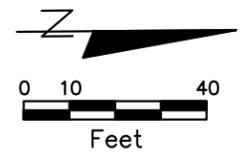
MATCHLINE STA. 1339+14 (SEE SHEET E-3)

MATCHLINE STA. 1345+10 (SEE SHEET E-5)



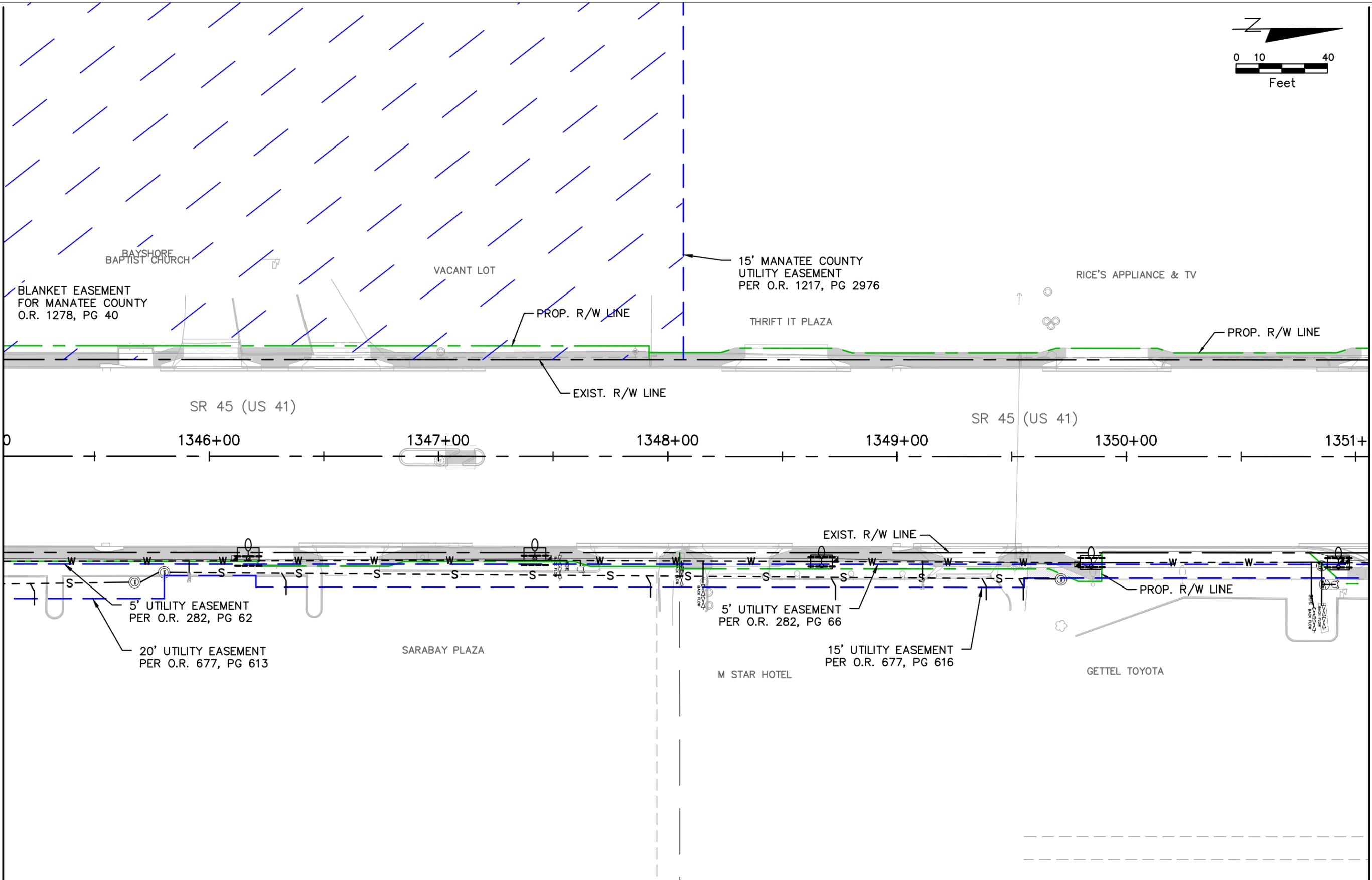
REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		E-4
					US 41	MANATEE	433592-4-58-01		

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



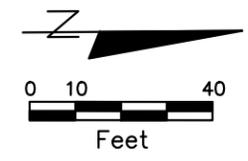
MATCHLINE STA. 1345+10 (SEE SHEET E-4)

MATCHLINE STA. 1351+06 (SEE SHEET E-6)



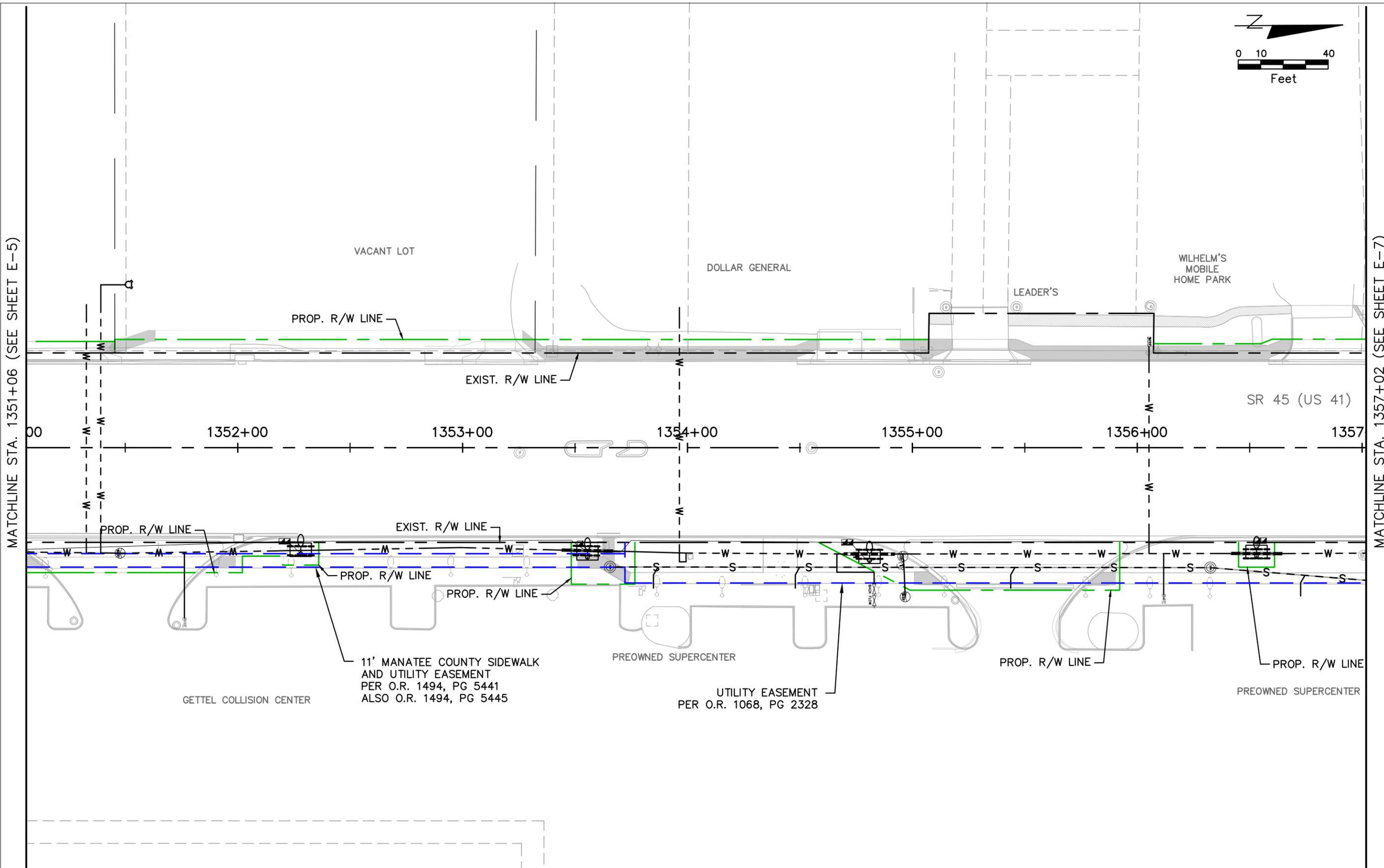
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO. E-5
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		



MATCHLINE STA. 1351+06 (SEE SHEET E-5)

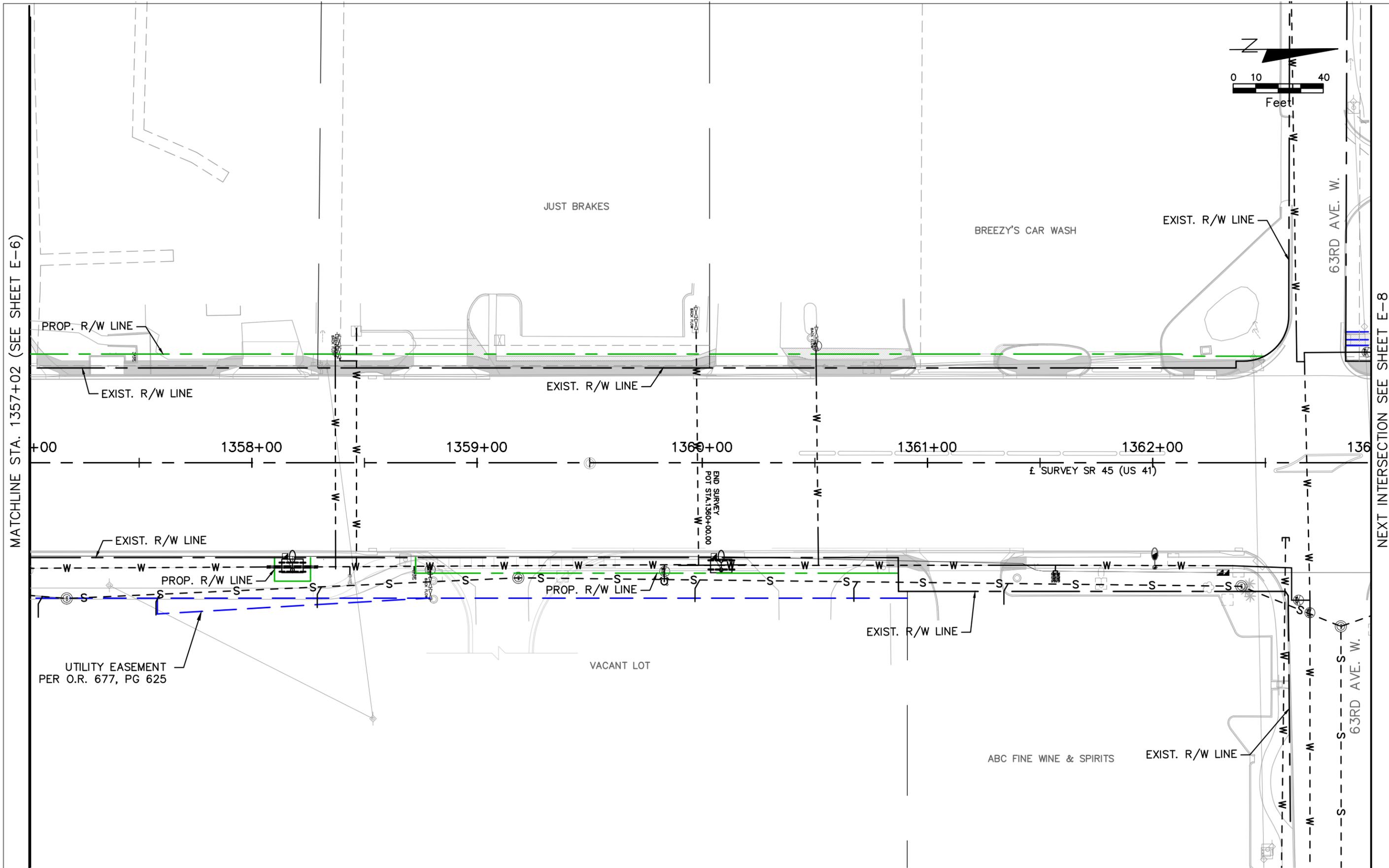
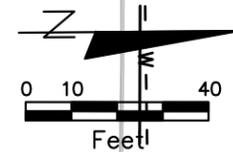
MATCHLINE STA. 1357+02 (SEE SHEET E-7)



REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		E-6
					US 41	MANATEE	433592-4-58-01		

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

MATCHLINE STA. 1357+02 (SEE SHEET E-6)

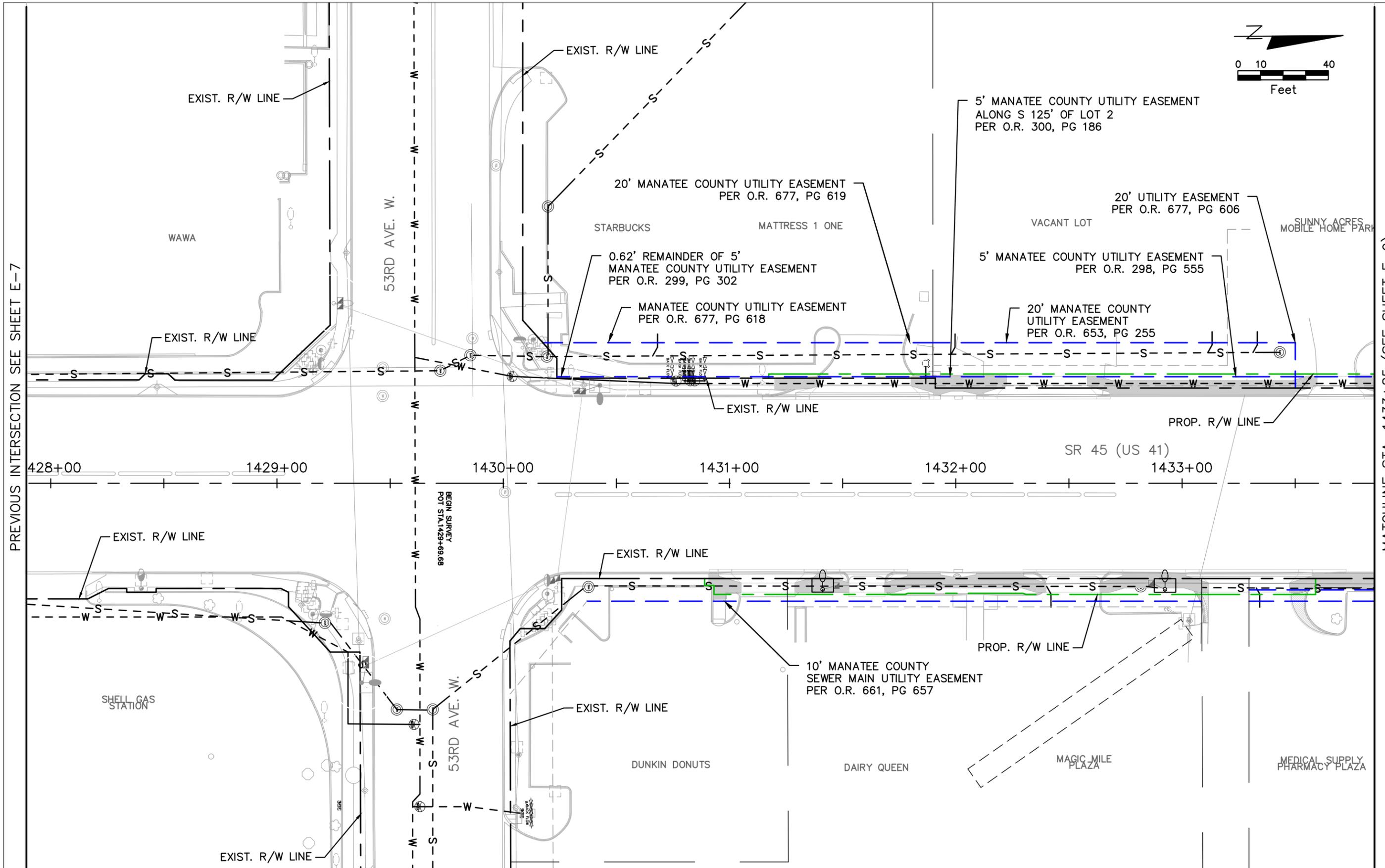
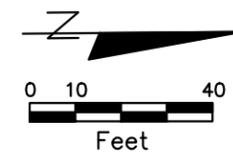


NEXT INTERSECTION SEE SHEET E-8

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

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		E-7
						US 41	MANATEE		433592-4-58-01

PREVIOUS INTERSECTION SEE SHEET E-7

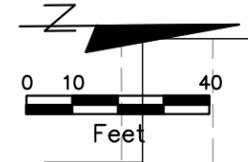
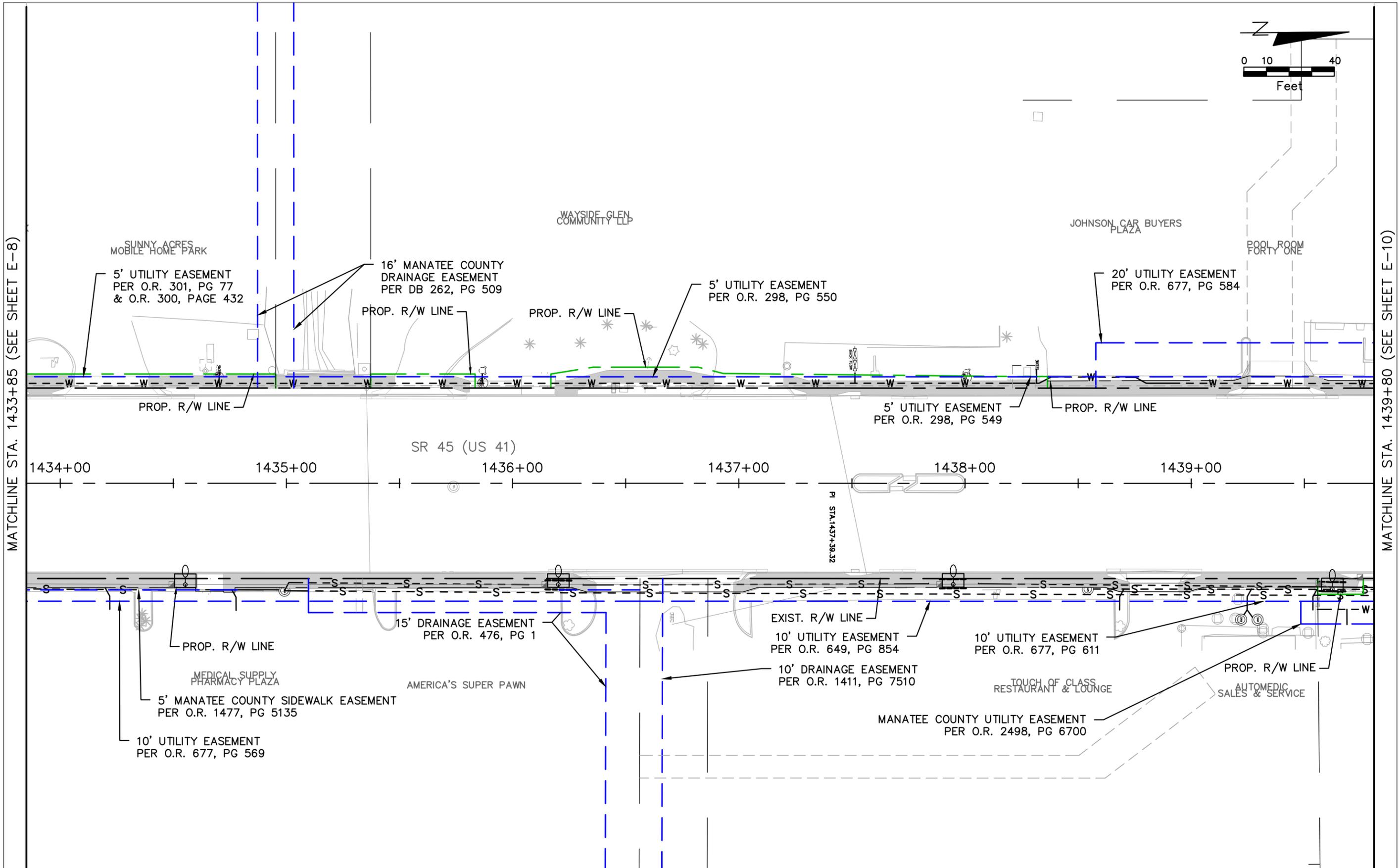


MATCHLINE STA. 1433+85 (SEE SHEET E-9)

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

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. E-8
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

EASEMENT PLAN

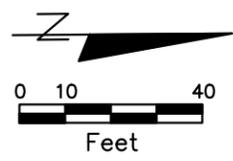


MATCHLINE STA. 1433+85 (SEE SHEET E-8)

MATCHLINE STA. 1439+80 (SEE SHEET E-10)

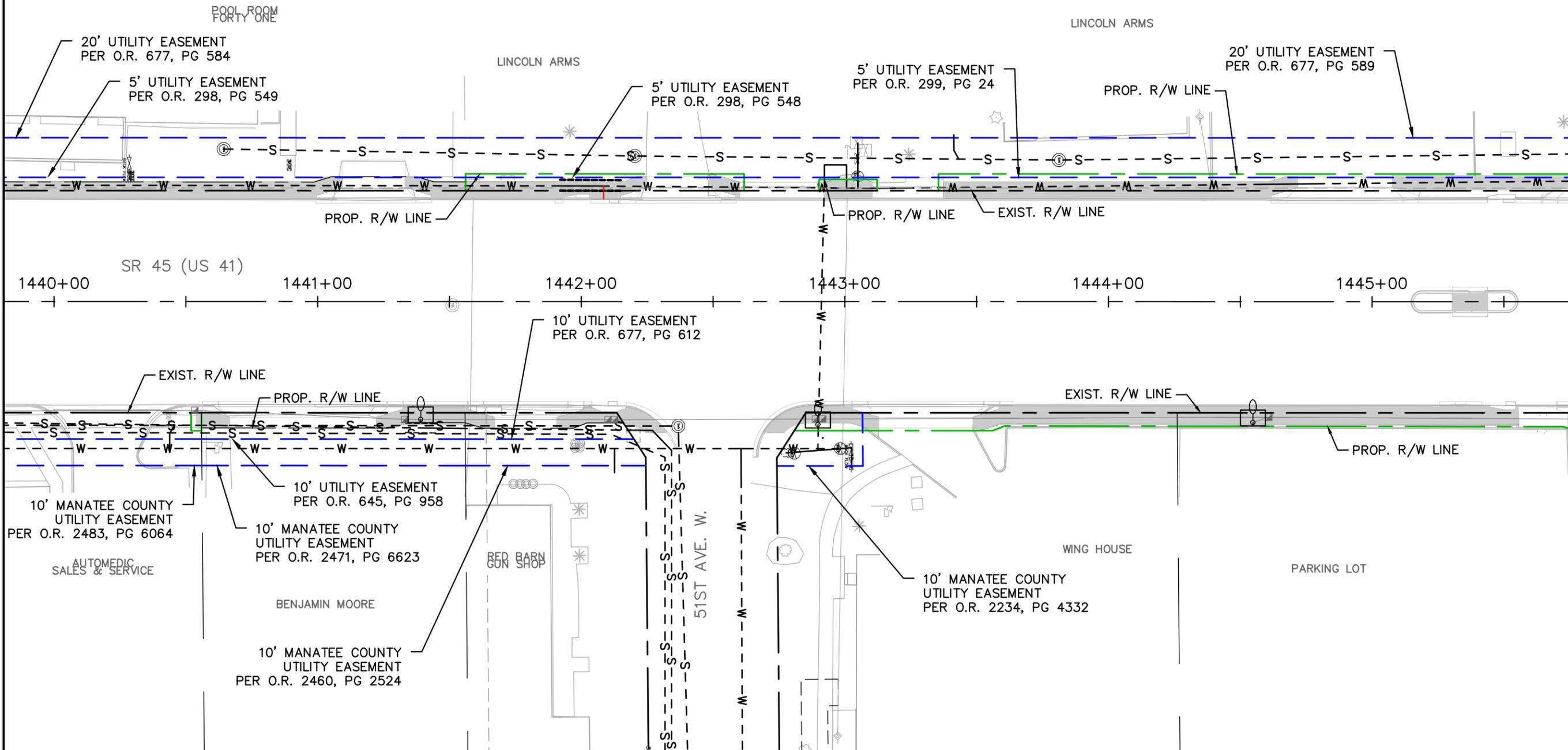
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO. E-9
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						US 41	MANATEE		



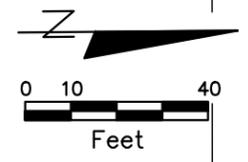
MATCHLINE STA. 1439+80 (SEE SHEET E-9)

MATCHLINE STA. 1445+77 (SEE SHEET E-11)



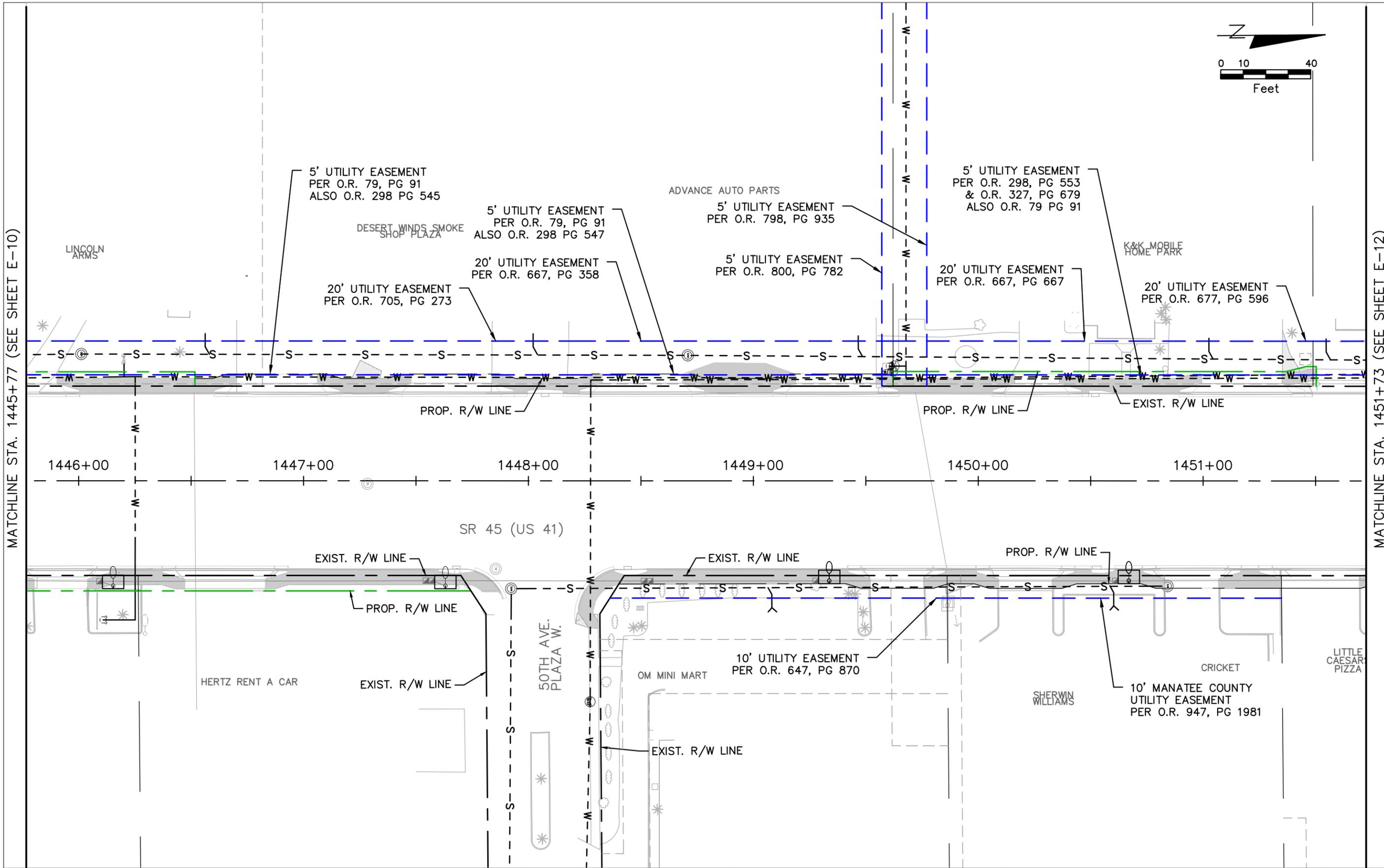
REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO. E-10
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		

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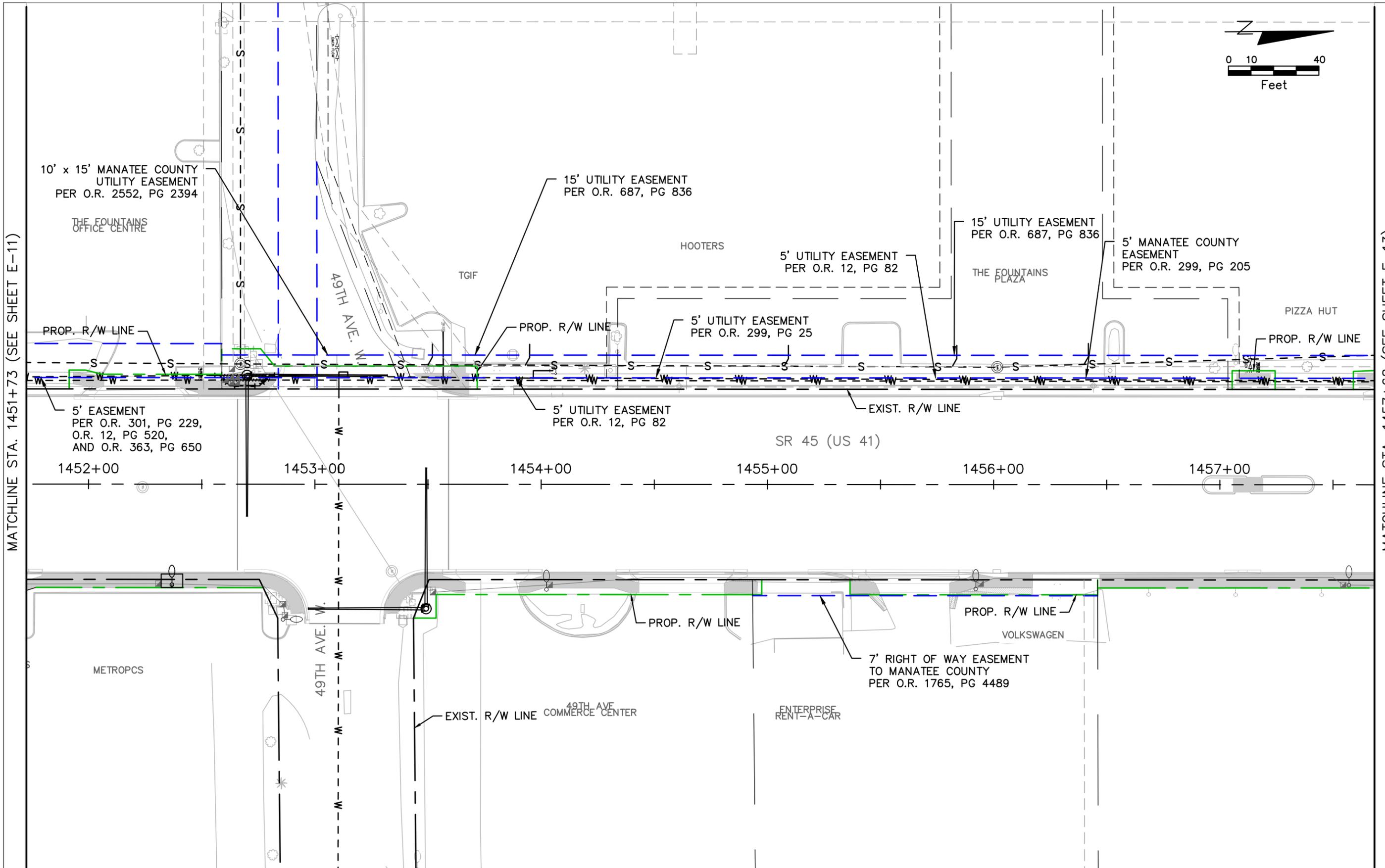
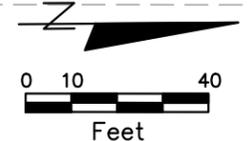
MATCHLINE STA. 1445+77 (SEE SHEET E-10)

MATCHLINE STA. 1451+73 (SEE SHEET E-12)



REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO. E-11
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		

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

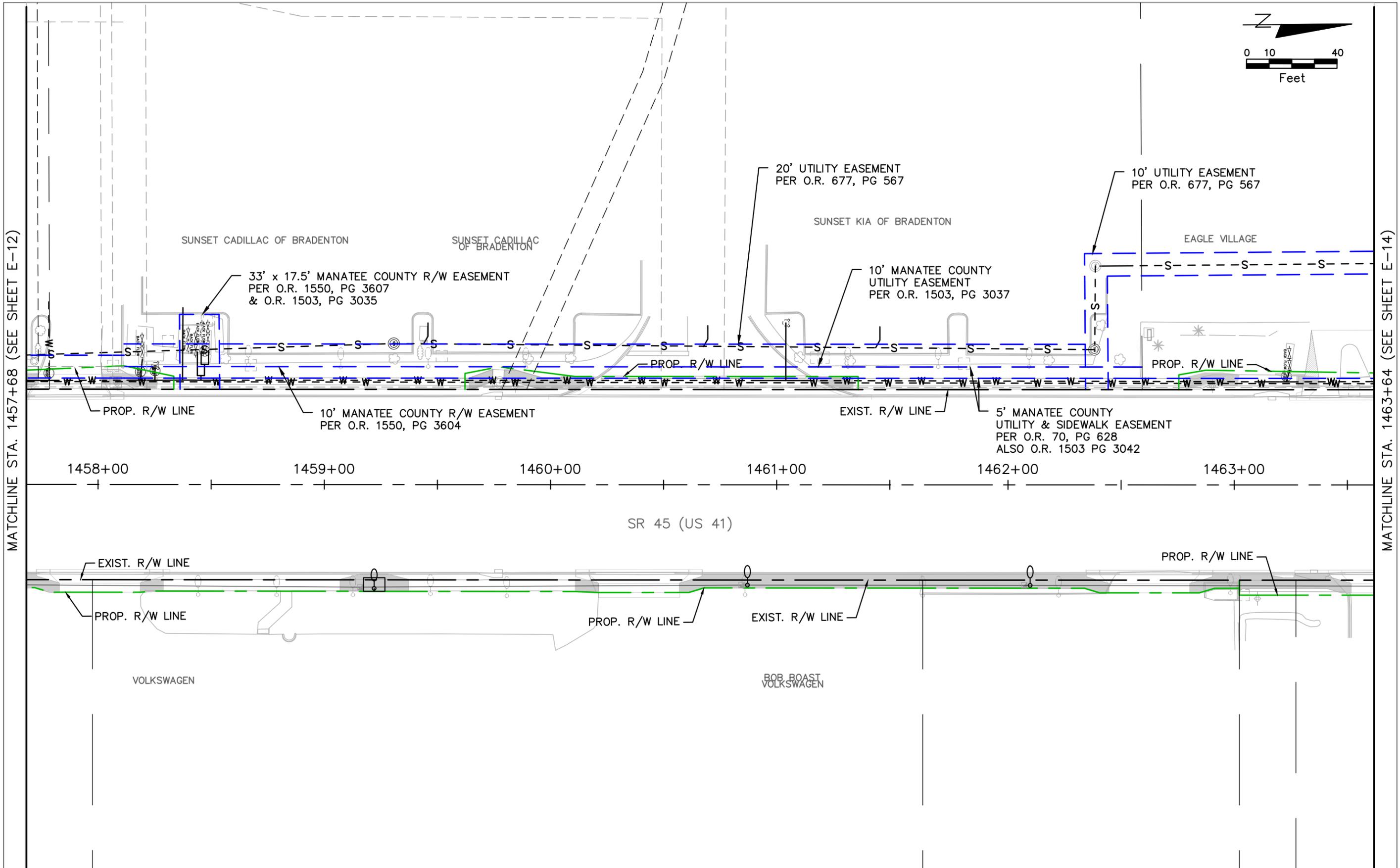
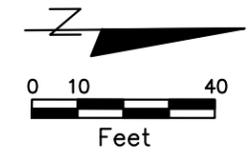


MATCHLINE STA. 1451+73 (SEE SHEET E-11)

MATCHLINE STA. 1457+68 (SEE SHEET E-13)

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

REVISIONS		REVISIONS		MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO. E-12
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		

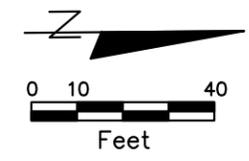


MATCHLINE STA. 1457+68 (SEE SHEET E-12)

MATCHLINE STA. 1463+64 (SEE SHEET E-14)

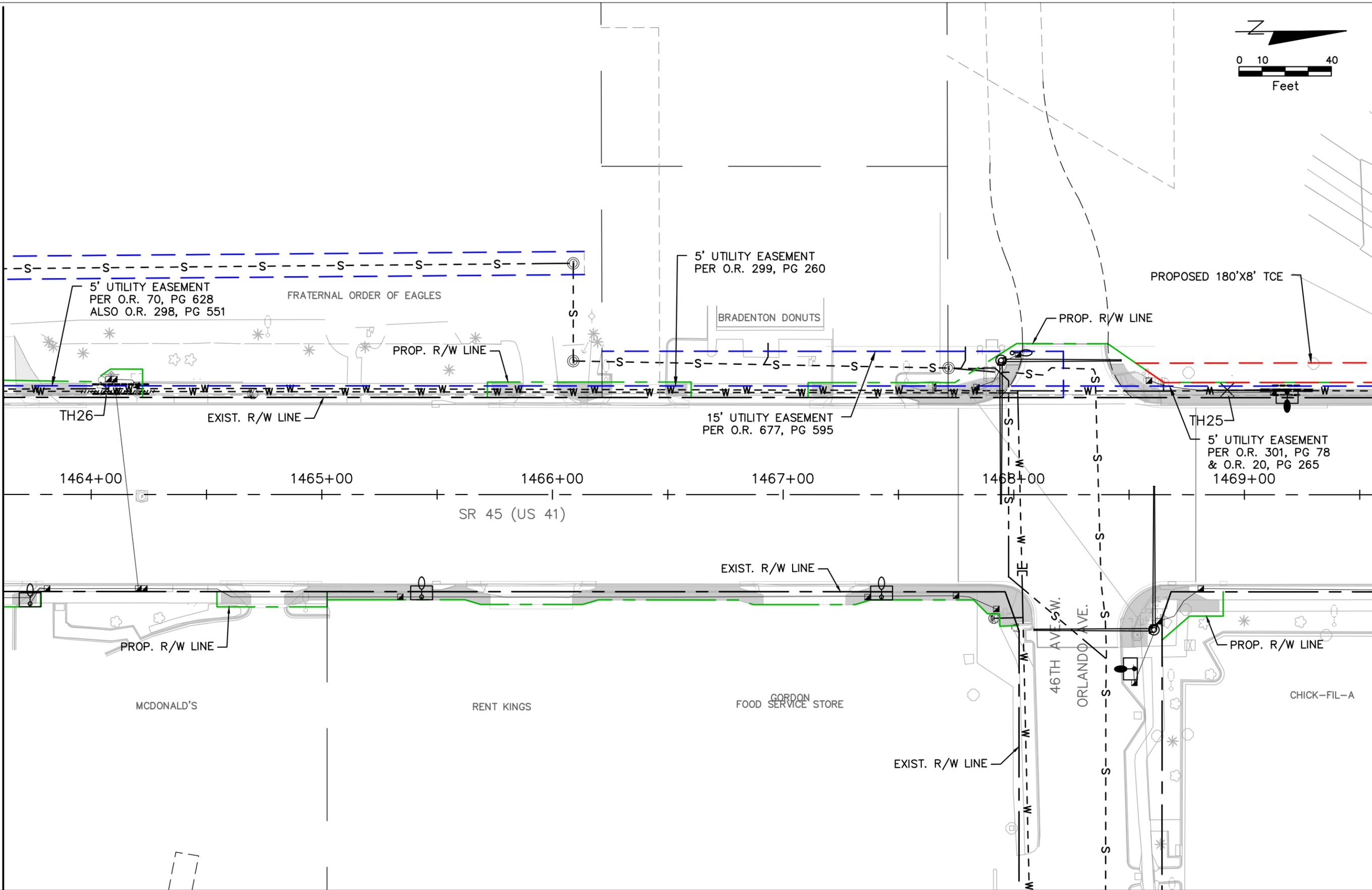
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO. E-13
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		



MATCHLINE STA. 1463+64 (SEE SHEET E-13)

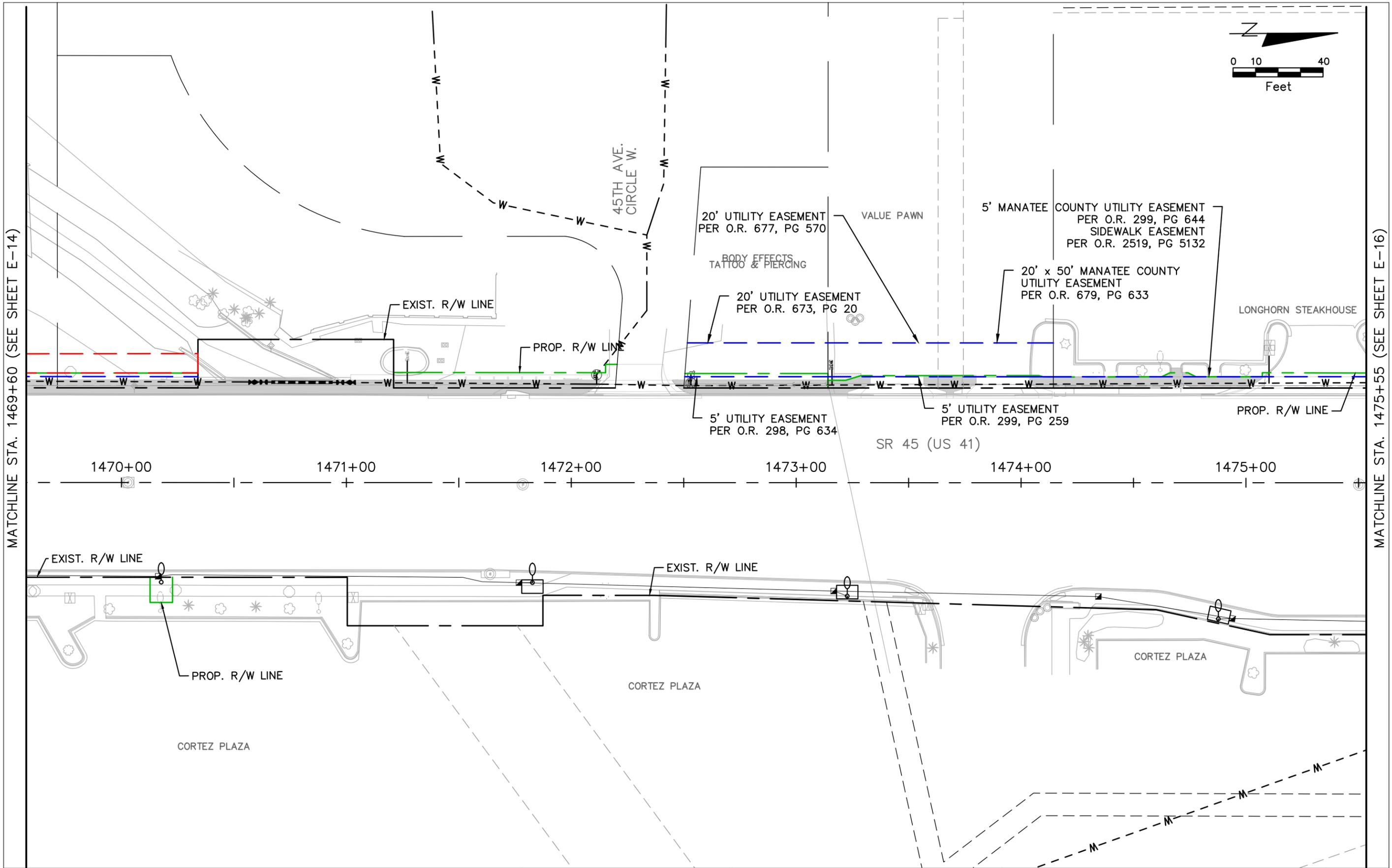
MATCHLINE STA. 1469+60 (SEE SHEET E-15)



REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. E-14
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

EASEMENT PLAN

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

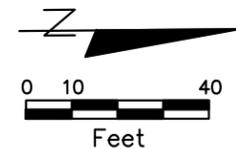


MATCHLINE STA. 1469+60 (SEE SHEET E-14)

MATCHLINE STA. 1475+55 (SEE SHEET E-16)

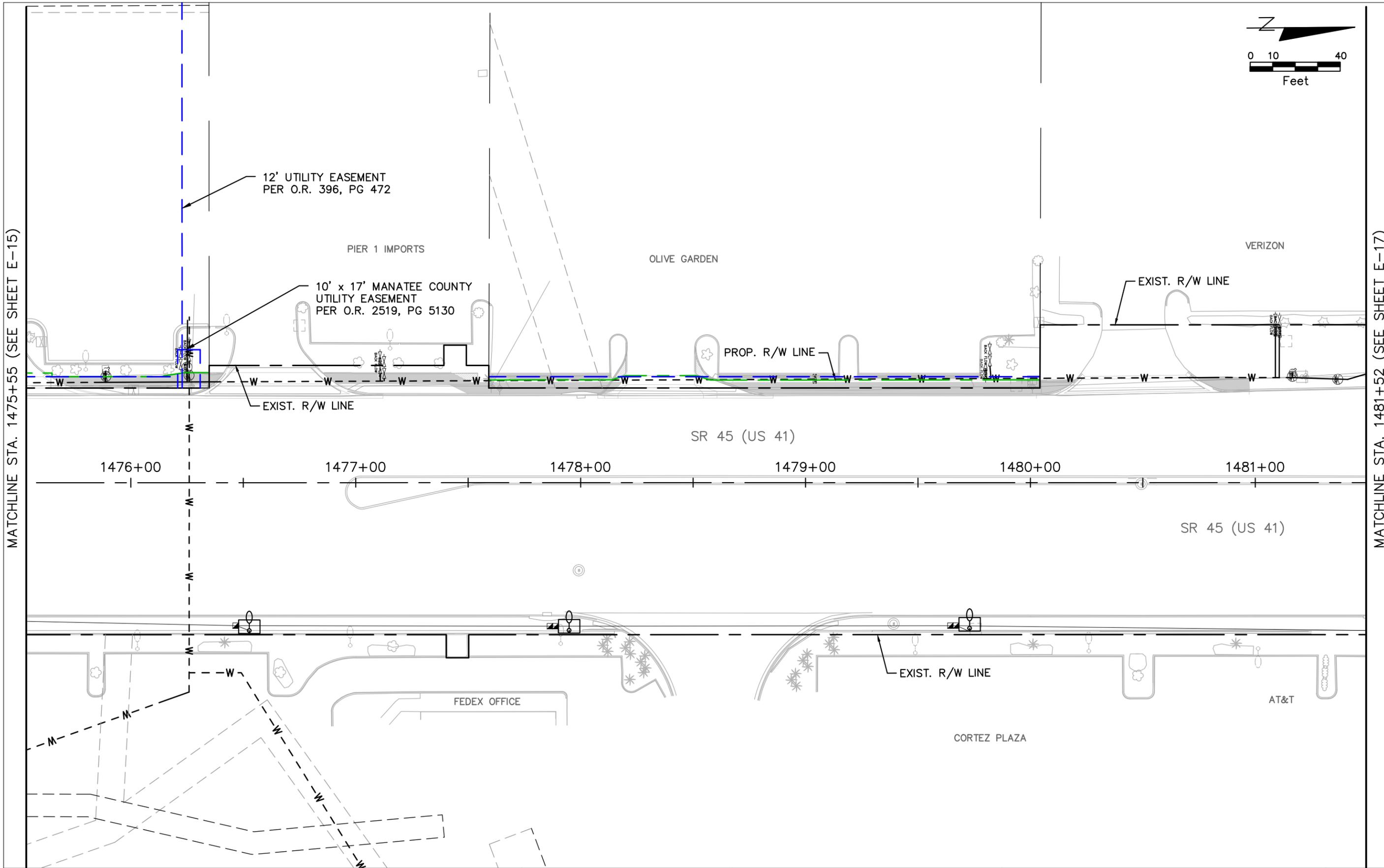
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO. E-15
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		



MATCHLINE STA. 1475+55 (SEE SHEET E-15)

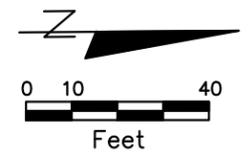
MATCHLINE STA. 1481+52 (SEE SHEET E-17)



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

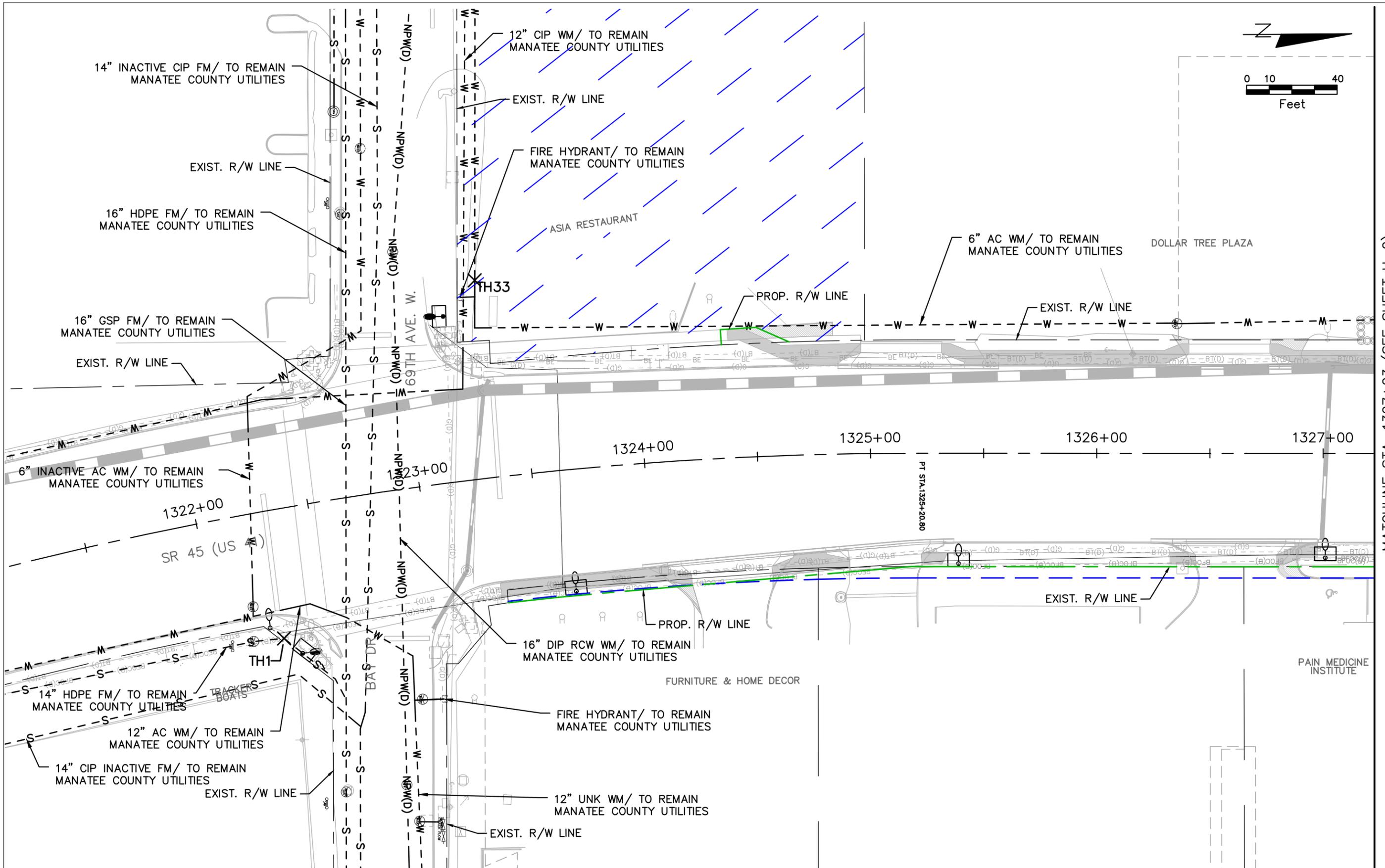
REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						US 41	MANATEE		433592-4-58-01

MATCHLINE STA. 1481+52 (SEE SHEET E-16)



REVISIONS		REVISIONS		MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			EASEMENT PLAN	SHEET NO. E-17
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		

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



MATCHLINE STA. 1327+23 (SEE SHEET U-2)

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

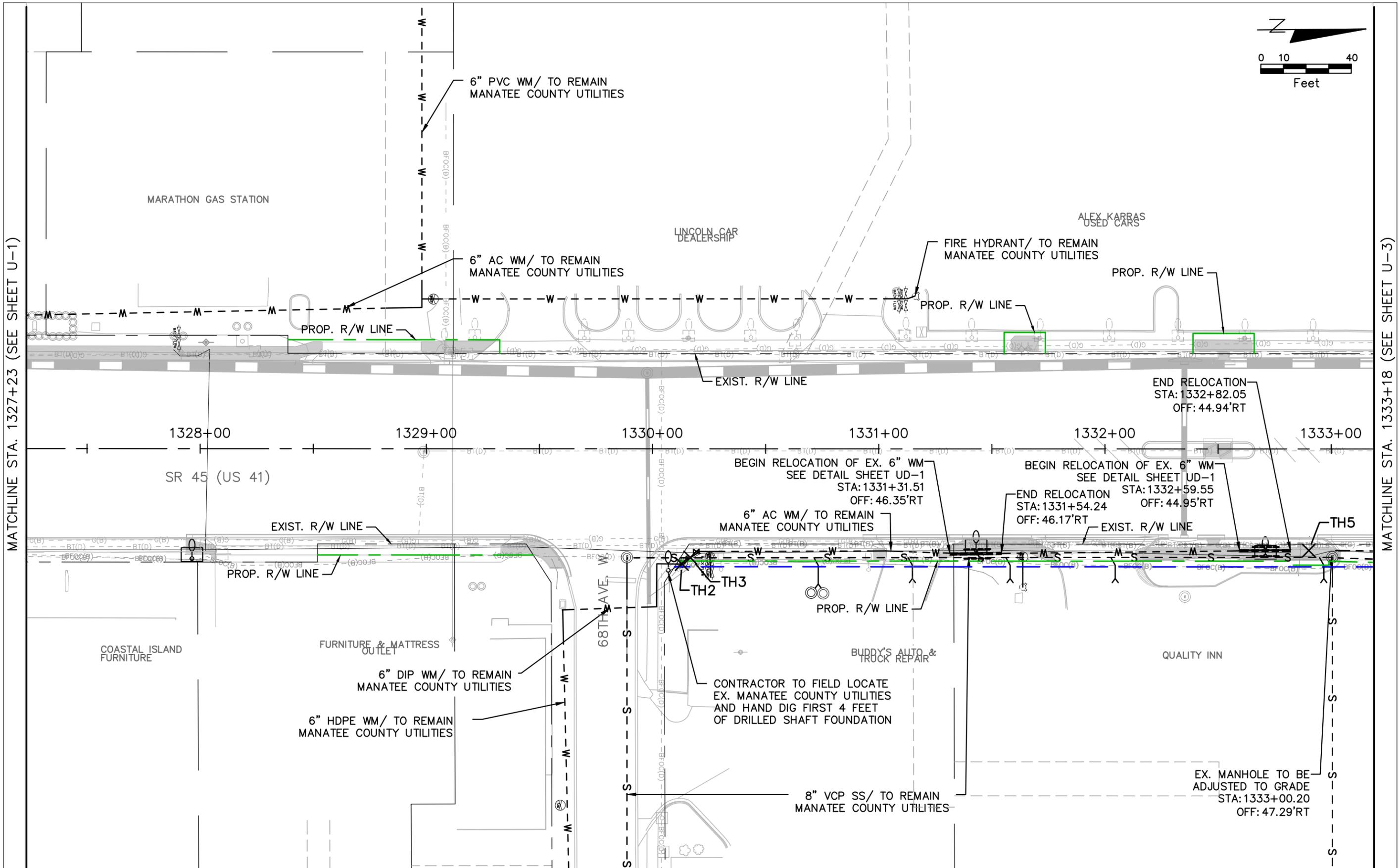
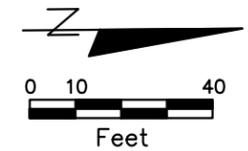
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL ANTHONY SEMAGO, P.E. 87501
 KIMLEY-HORN AND ASSOCIATES
 100 2ND AVENUE SOUTH, SUITE 105N
 ST. PETERSBURG, FL 33701
 REGISTRY NO. 35106

MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	433592-4-58-01

UTILITY PLAN

SHEET NO.
U-1



MATCHLINE STA. 1327+23 (SEE SHEET U-1)

MATCHLINE STA. 1333+18 (SEE SHEET U-3)

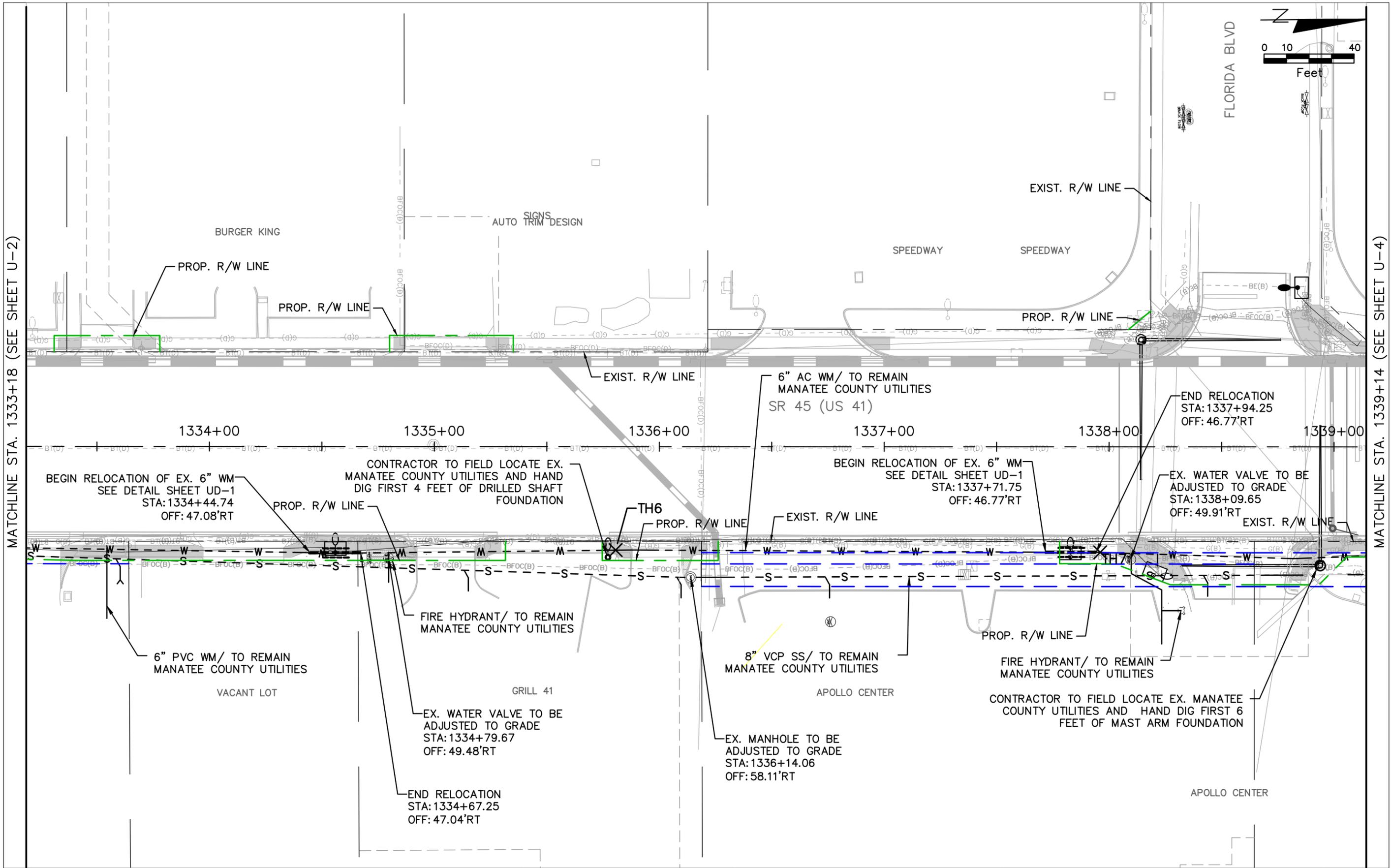
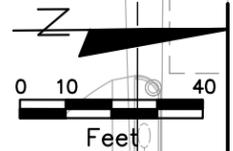
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS		DATE		DESCRIPTION	

MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106			MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID	<h2 style="margin: 0;">UTILITY PLAN</h2>		
US 41	MANATEE	433592-4-58-01			
SHEET NO.					U-2

MATCHLINE STA. 1333+18 (SEE SHEET U-2)

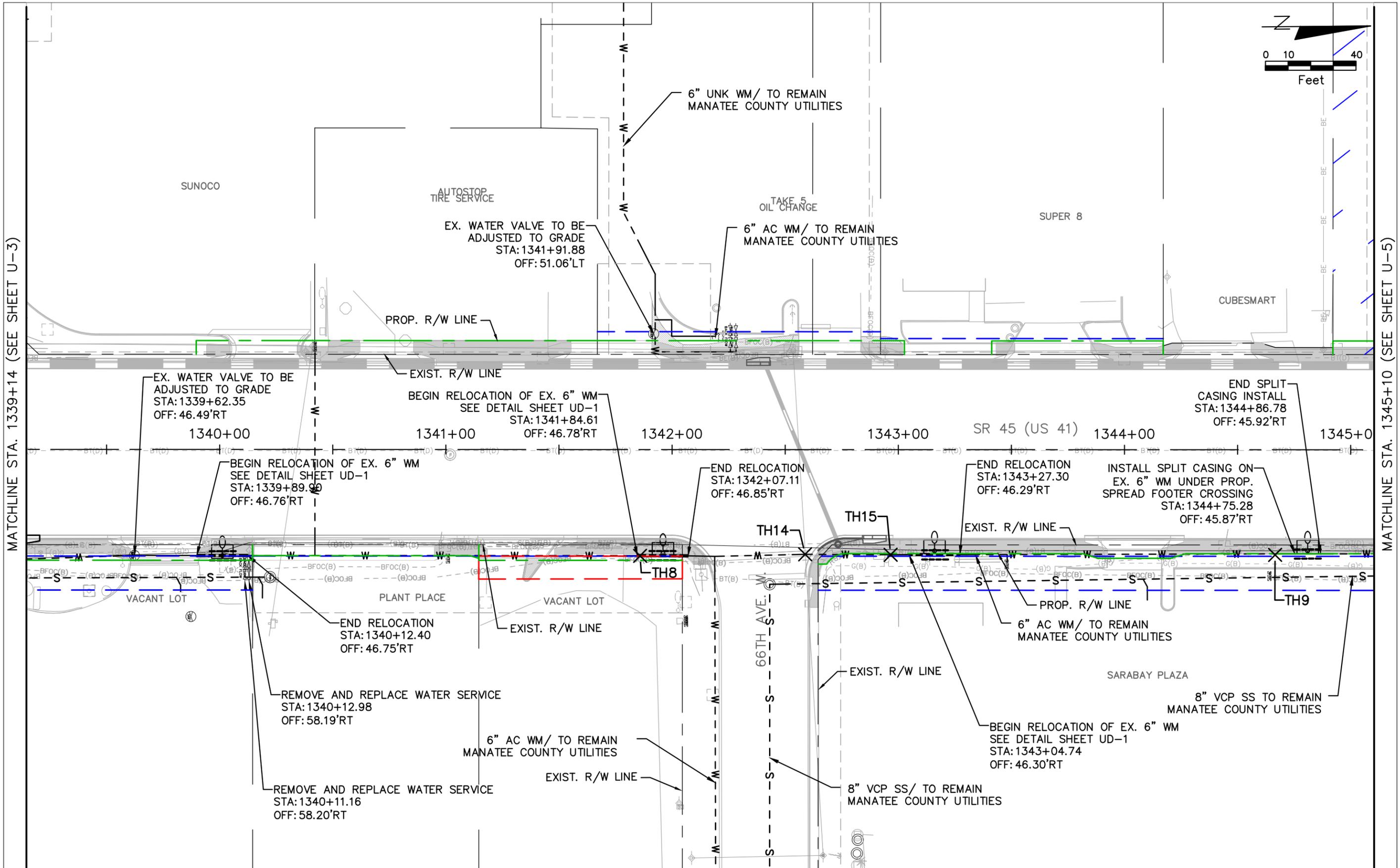
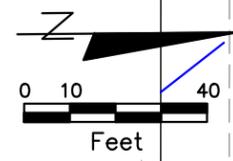
MATCHLINE STA. 1339+14 (SEE SHEET U-4)



REVISIONS		REVISIONS		MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-3
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

UTILITY PLAN

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

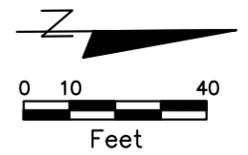


MATCHLINE STA. 1339+14 (SEE SHEET U-3)

MATCHLINE STA. 1345+10 (SEE SHEET U-5)

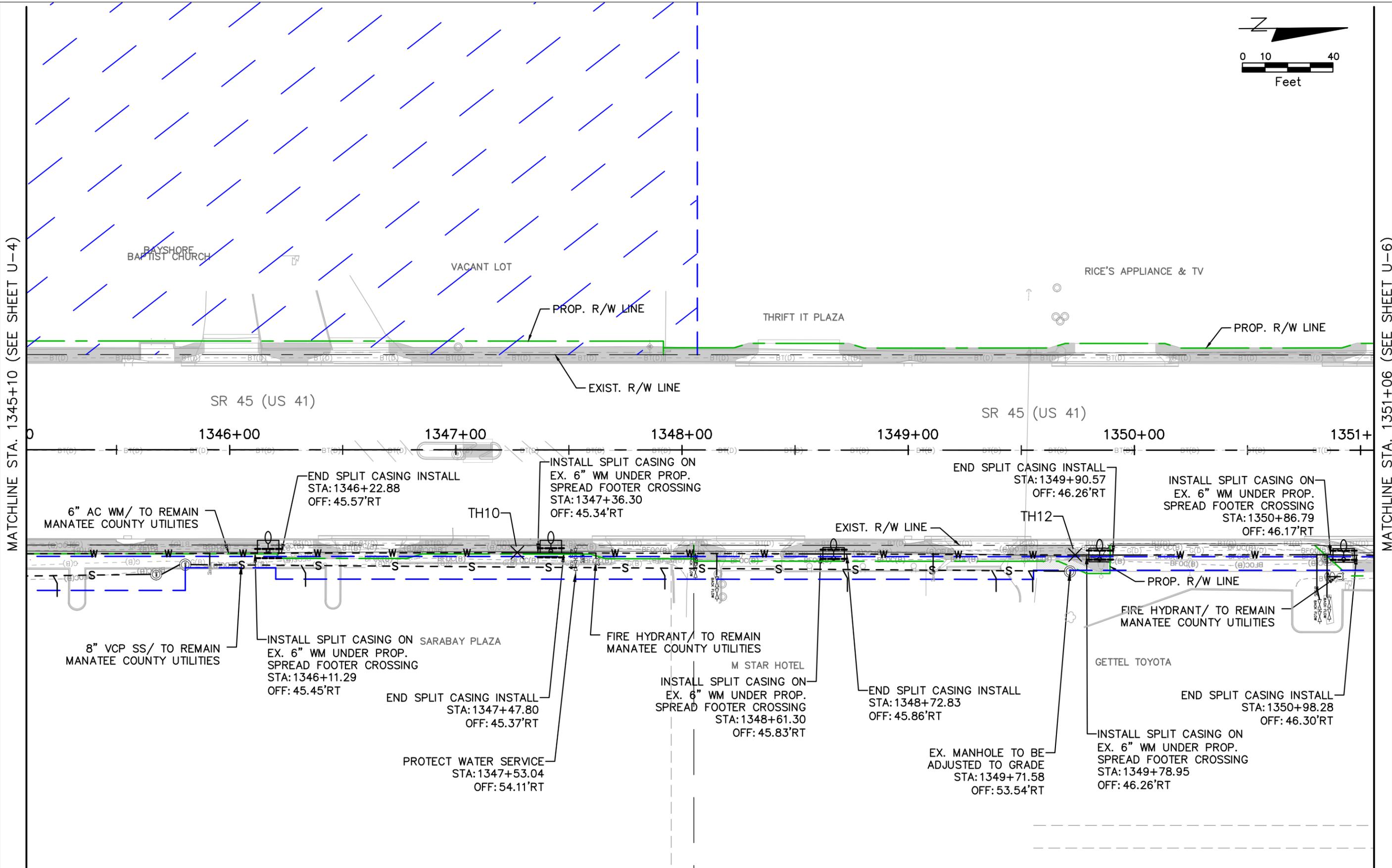
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			UTILITY PLAN	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		U-4
					US 41	MANATEE	433592-4-58-01		



MATCHLINE STA. 1345+10 (SEE SHEET U-4)

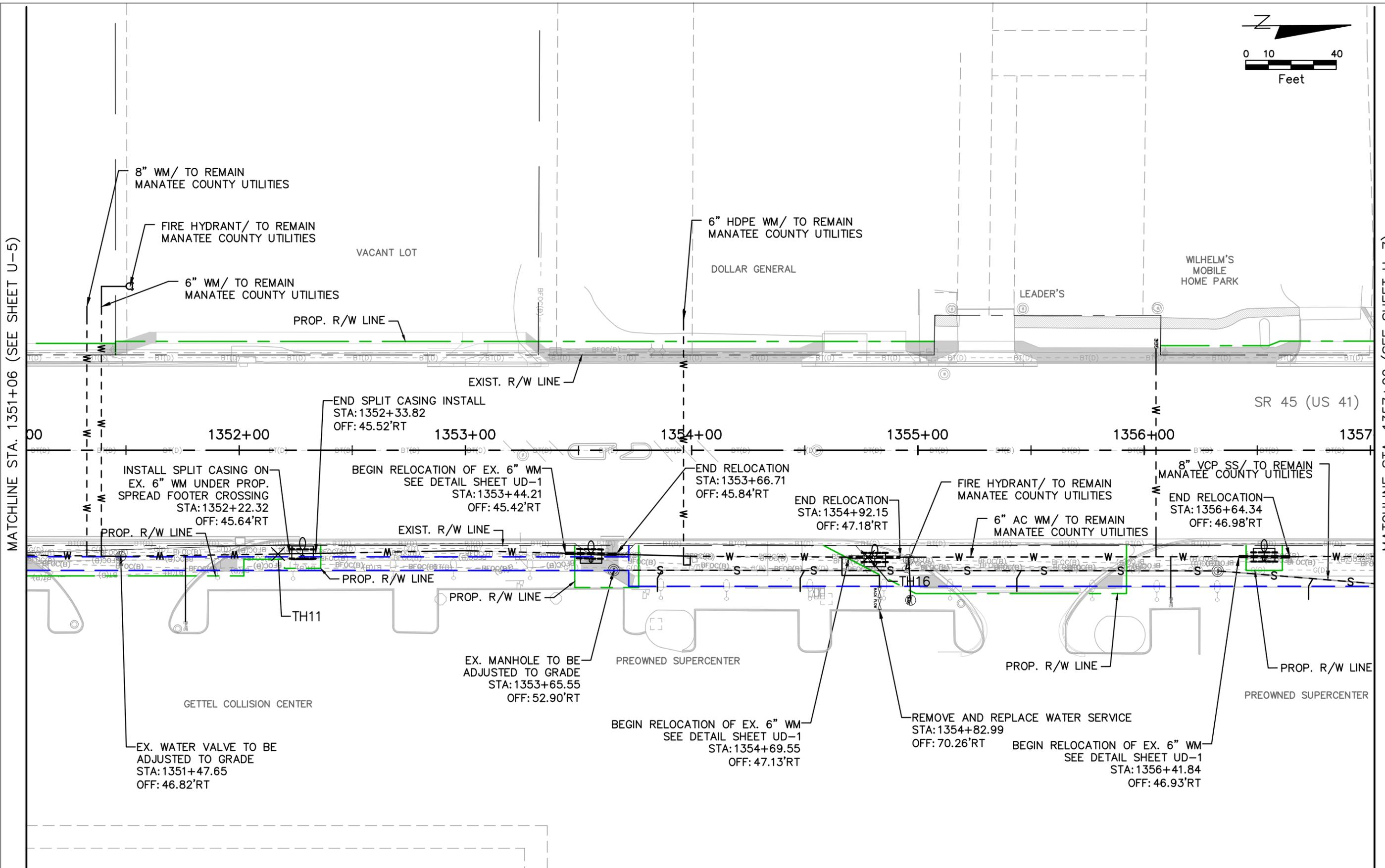
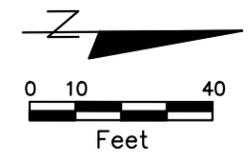
MATCHLINE STA. 1351+06 (SEE SHEET U-6)



REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-5
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

UTILITY PLAN

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

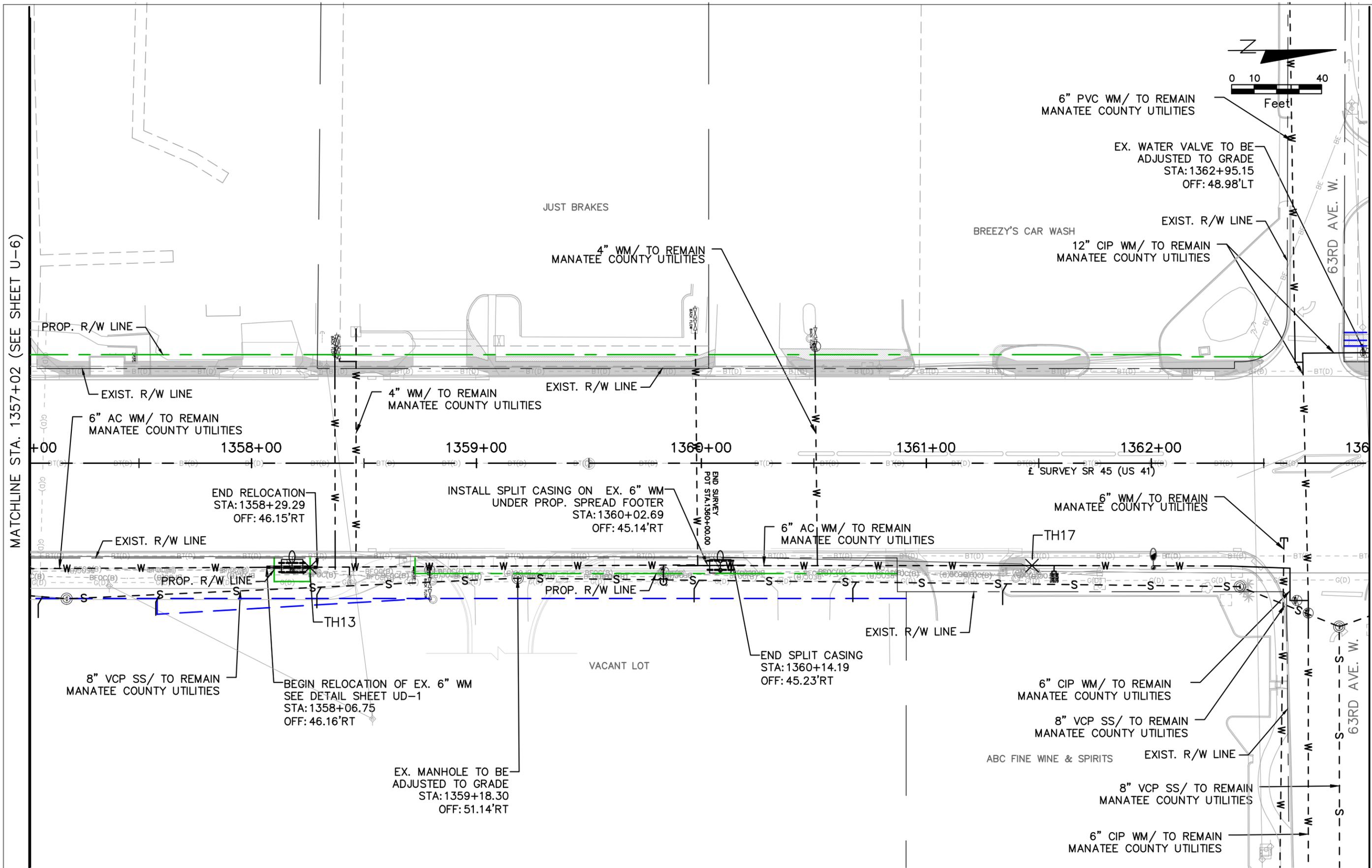


REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-6
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

UTILITY PLAN

MATCHLINE STA. 1351+06 (SEE SHEET U-5) MATCHLINE STA. 1357+02 (SEE SHEET U-7)

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MATCHLINE STA. 1357+02 (SEE SHEET U-6)

NEXT INTERSECTION SEE SHEET U-8

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

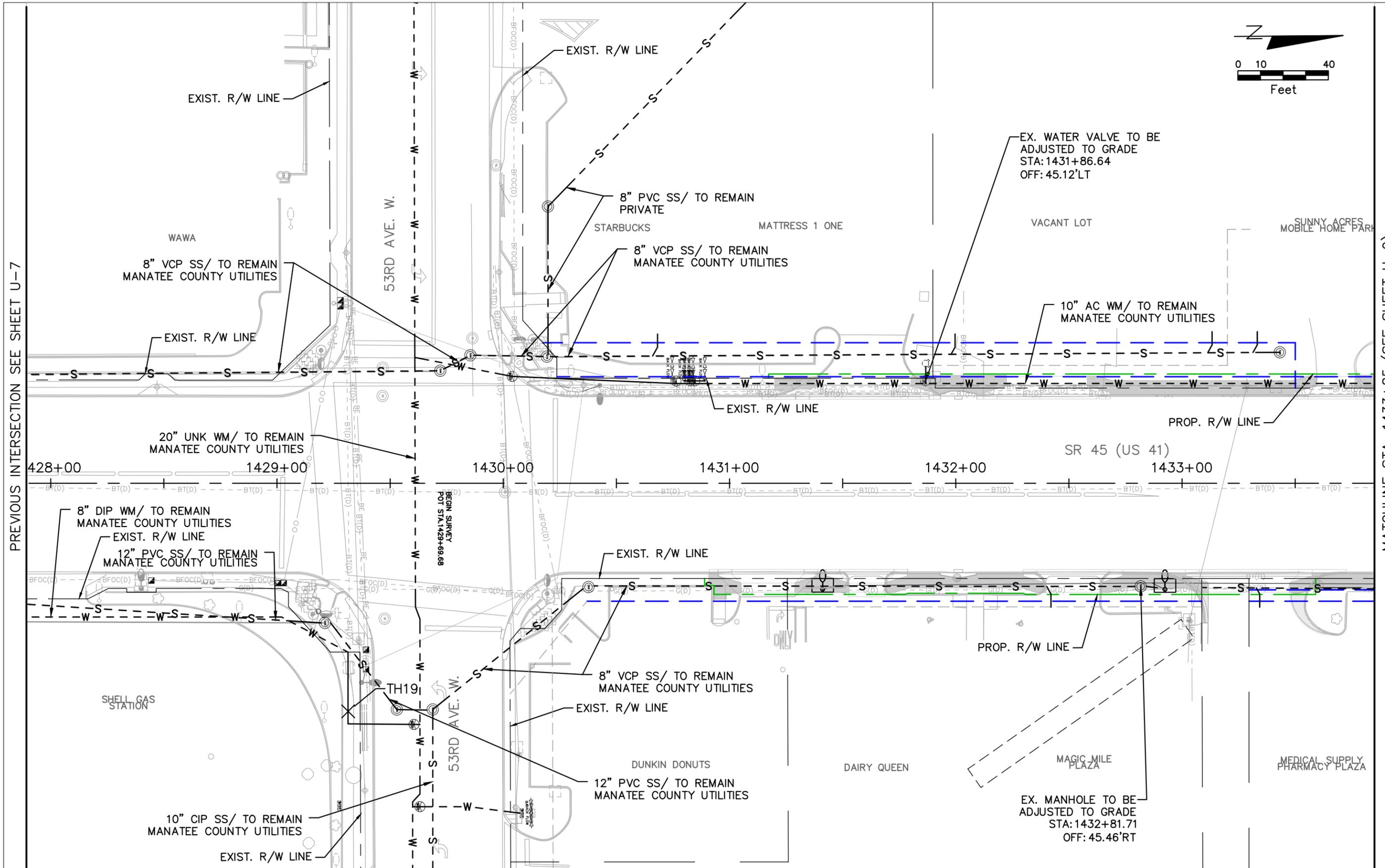
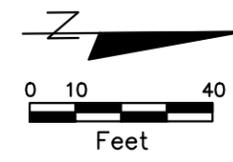
MICHAEL ANTHONY SEMAGO, P.E. 87501
 KIMLEY-HORN AND ASSOCIATES
 100 2ND AVENUE SOUTH, SUITE 105N
 ST. PETERSBURG, FL 33701
 REGISTRY NO. 35106

MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	433592-4-58-01

UTILITY PLAN

SHEET NO.
 U-7

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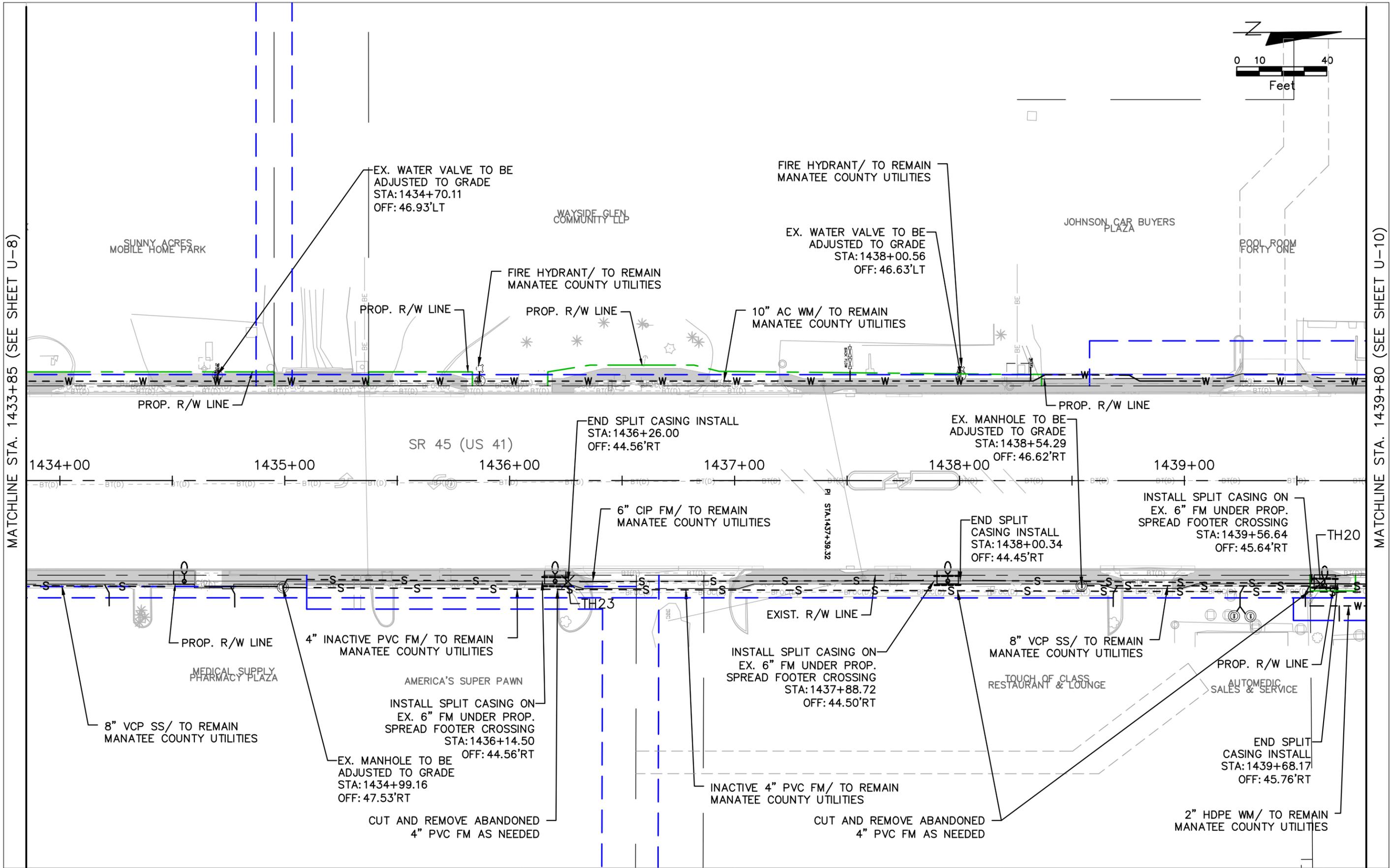
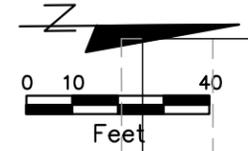
PREVIOUS INTERSECTION SEE SHEET U-7

MATCHLINE STA. 1433+85 (SEE SHEET U-9)

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REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-8
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

UTILITY PLAN



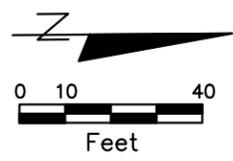
MATCHLINE STA. 1433+85 (SEE SHEET U-8)

MATCHLINE STA. 1439+80 (SEE SHEET U-10)

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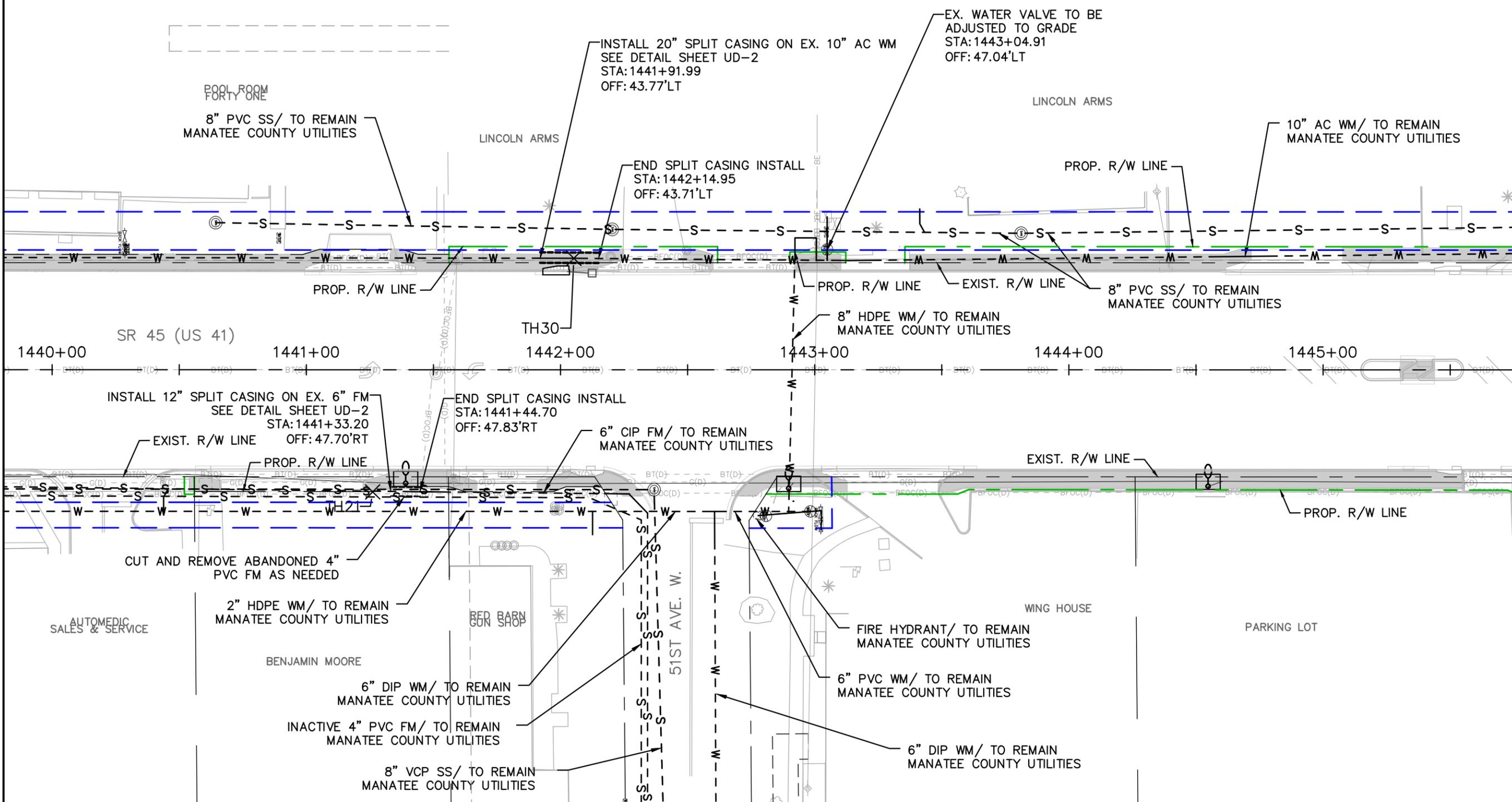
REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-9
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
						US 41	MANATEE	

UTILITY PLAN



MATCHLINE STA. 1439+80 (SEE SHEET U-9)

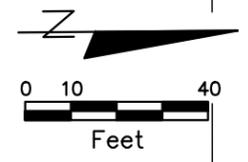
MATCHLINE STA. 1445+77 (SEE SHEET U-11)



REVISIONS		REVISIONS		MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-10
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

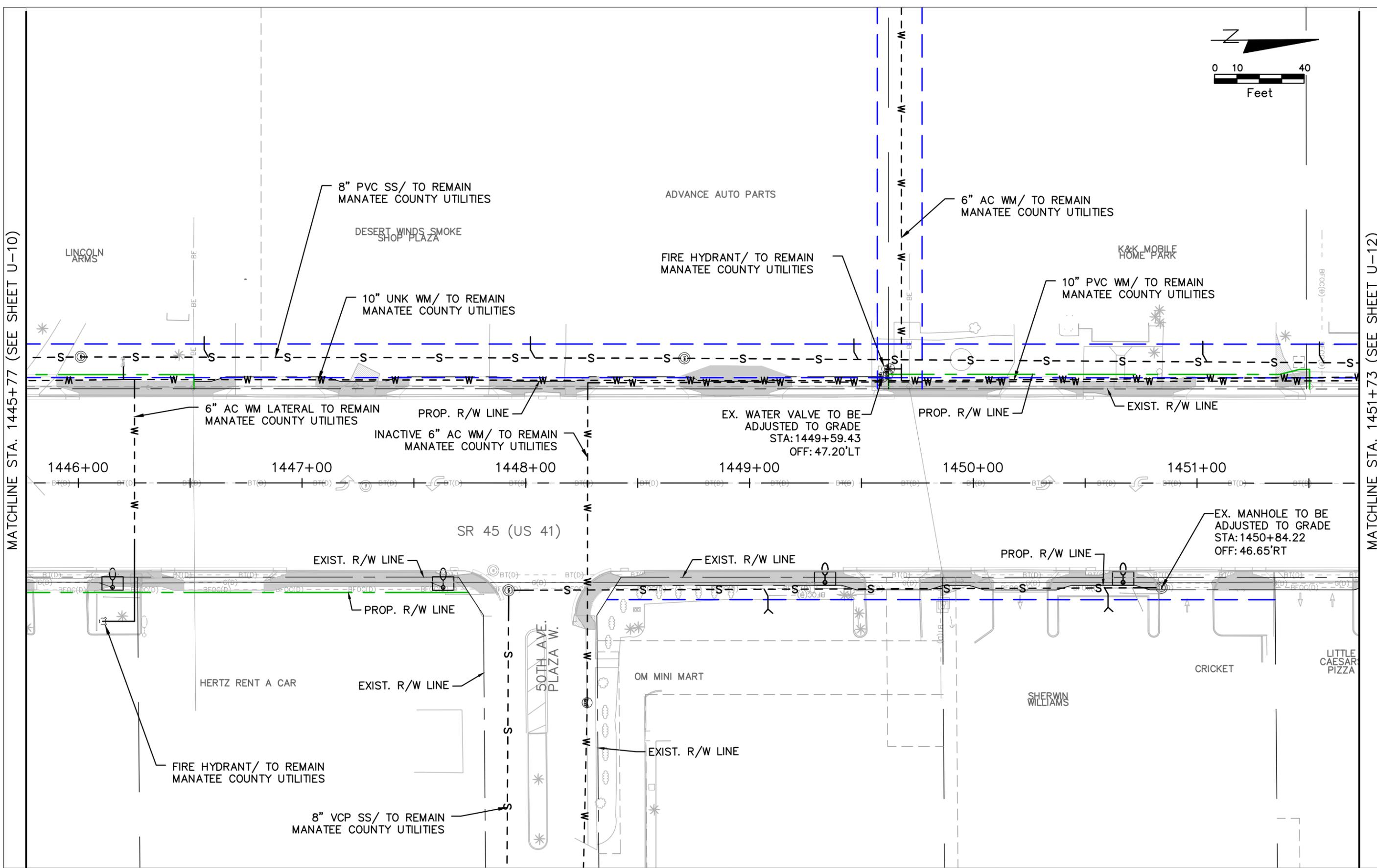
UTILITY PLAN

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MATCHLINE STA. 1445+77 (SEE SHEET U-10)

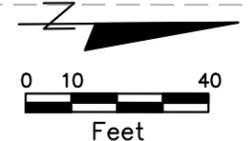
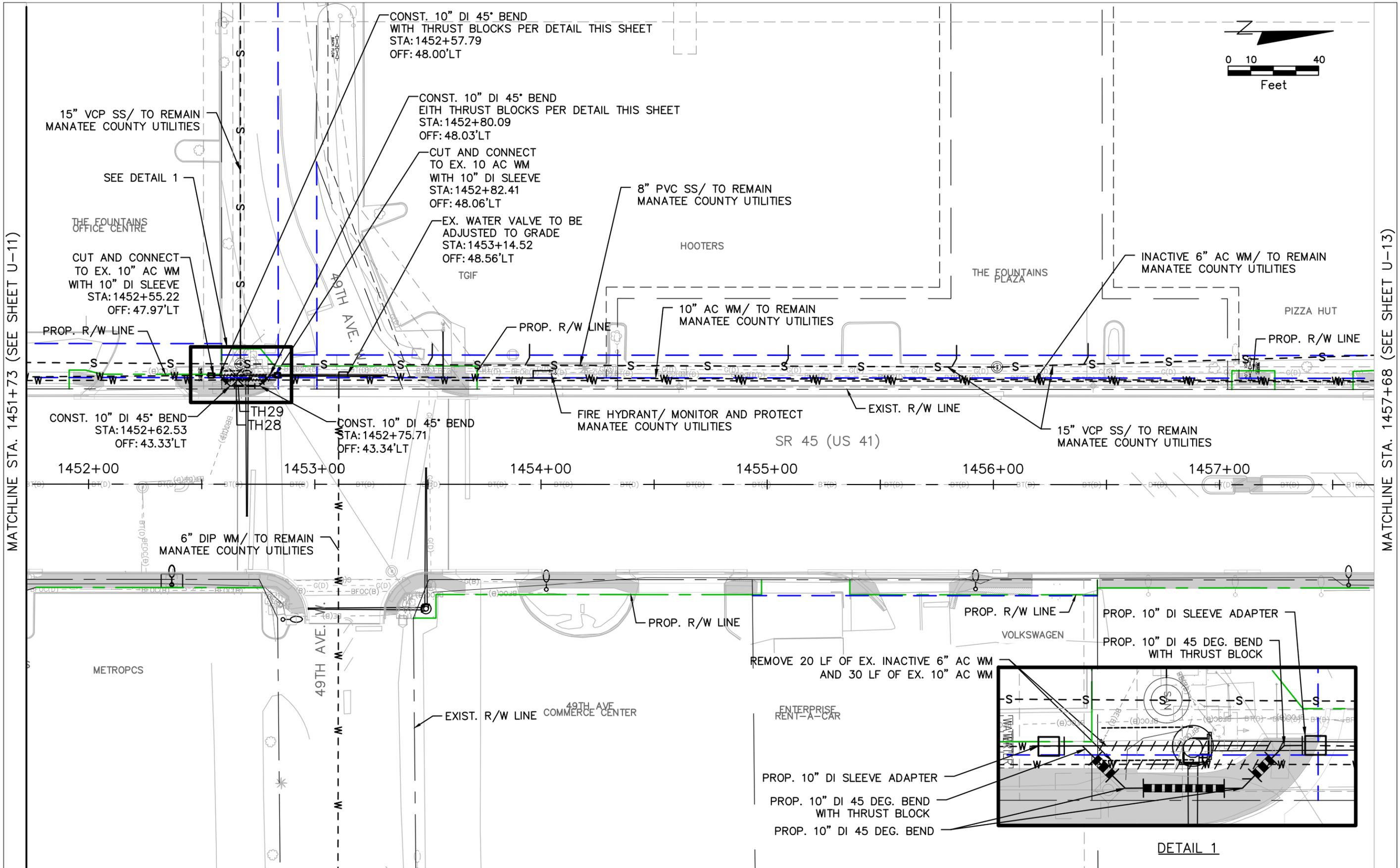
MATCHLINE STA. 1451+73 (SEE SHEET U-12)



REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-11
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
						US 41	MANATEE	

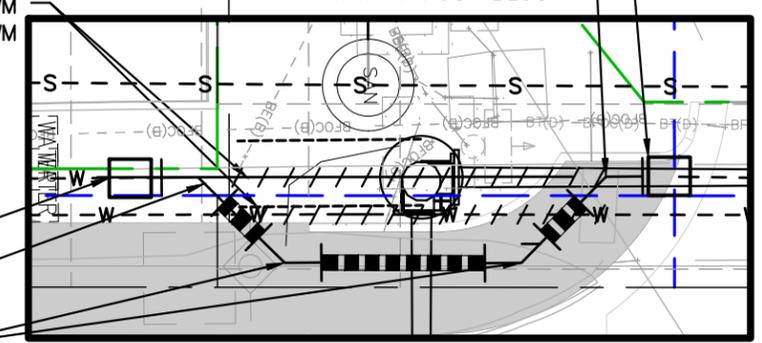
UTILITY PLAN

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MATCHLINE STA. 1451+73 (SEE SHEET U-11)

MATCHLINE STA. 1457+68 (SEE SHEET U-13)

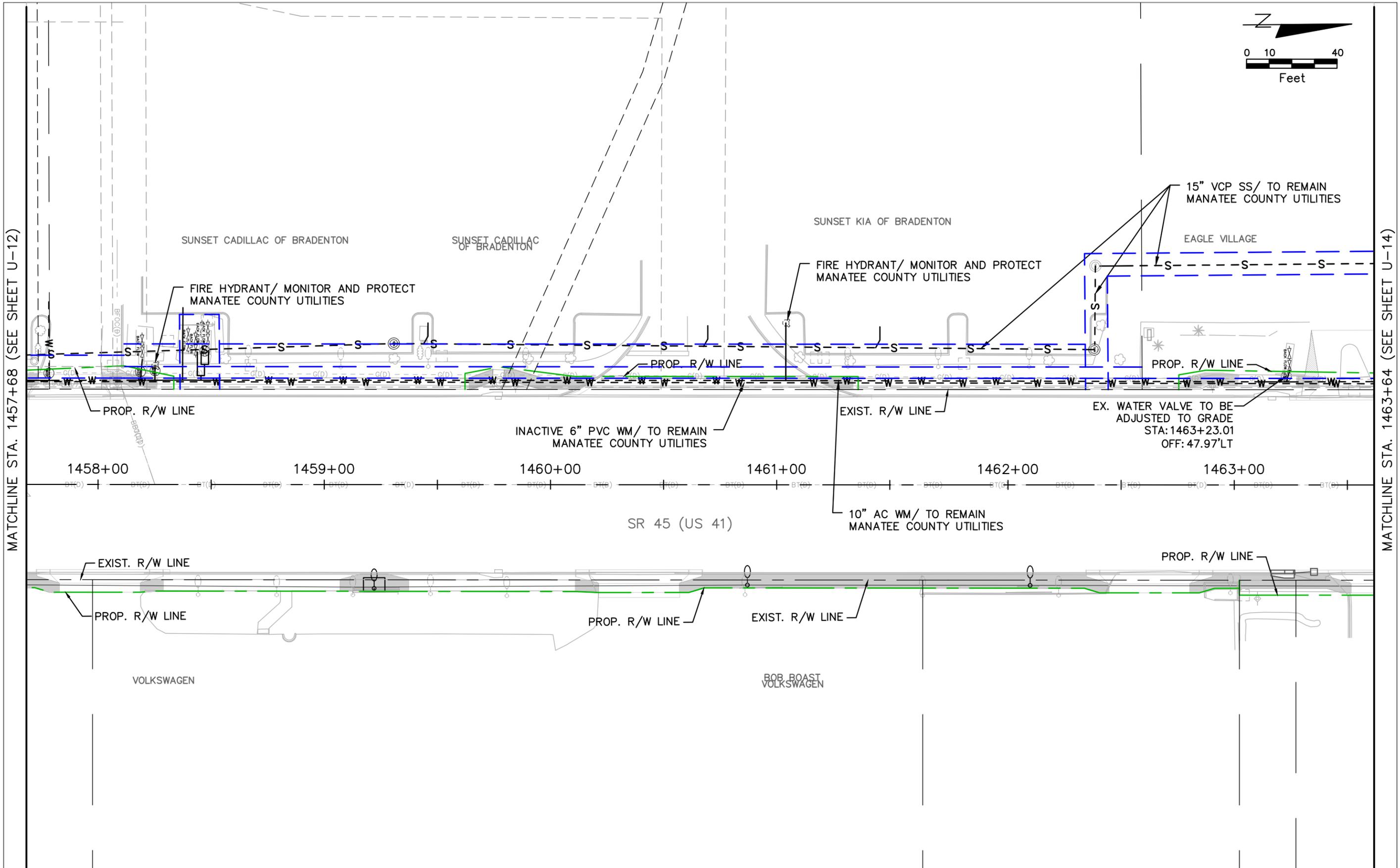
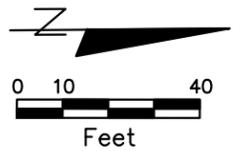


DETAIL 1

REVISIONS		REVISIONS		MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-12
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

UTILITY PLAN

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

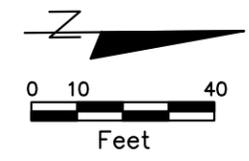


MATCHLINE STA. 1457+68 (SEE SHEET U-12)

MATCHLINE STA. 1463+64 (SEE SHEET U-14)

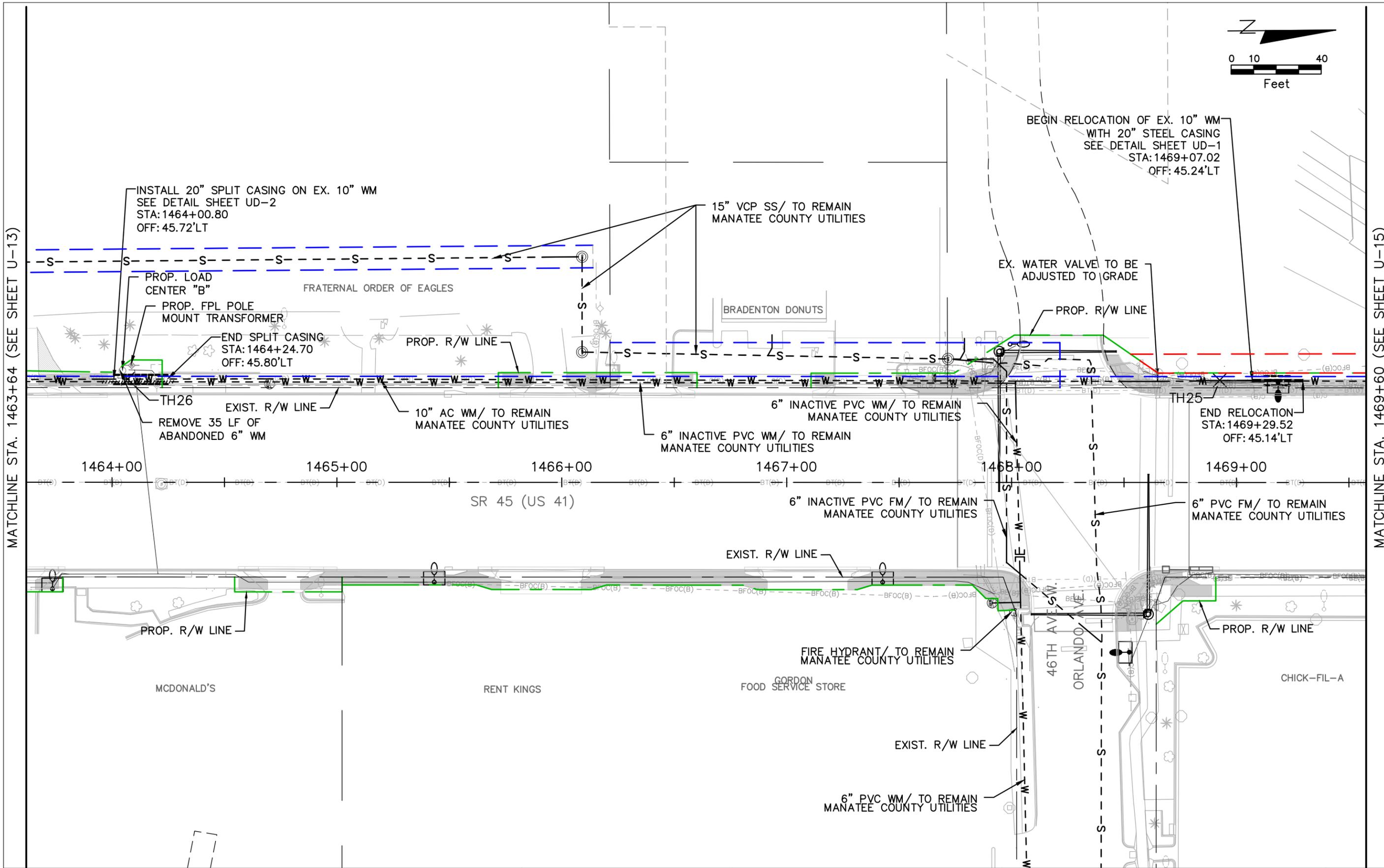
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			UTILITY PLAN	SHEET NO. U-13
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		



MATCHLINE STA. 1463+64 (SEE SHEET U-13)

MATCHLINE STA. 1469+60 (SEE SHEET U-15)

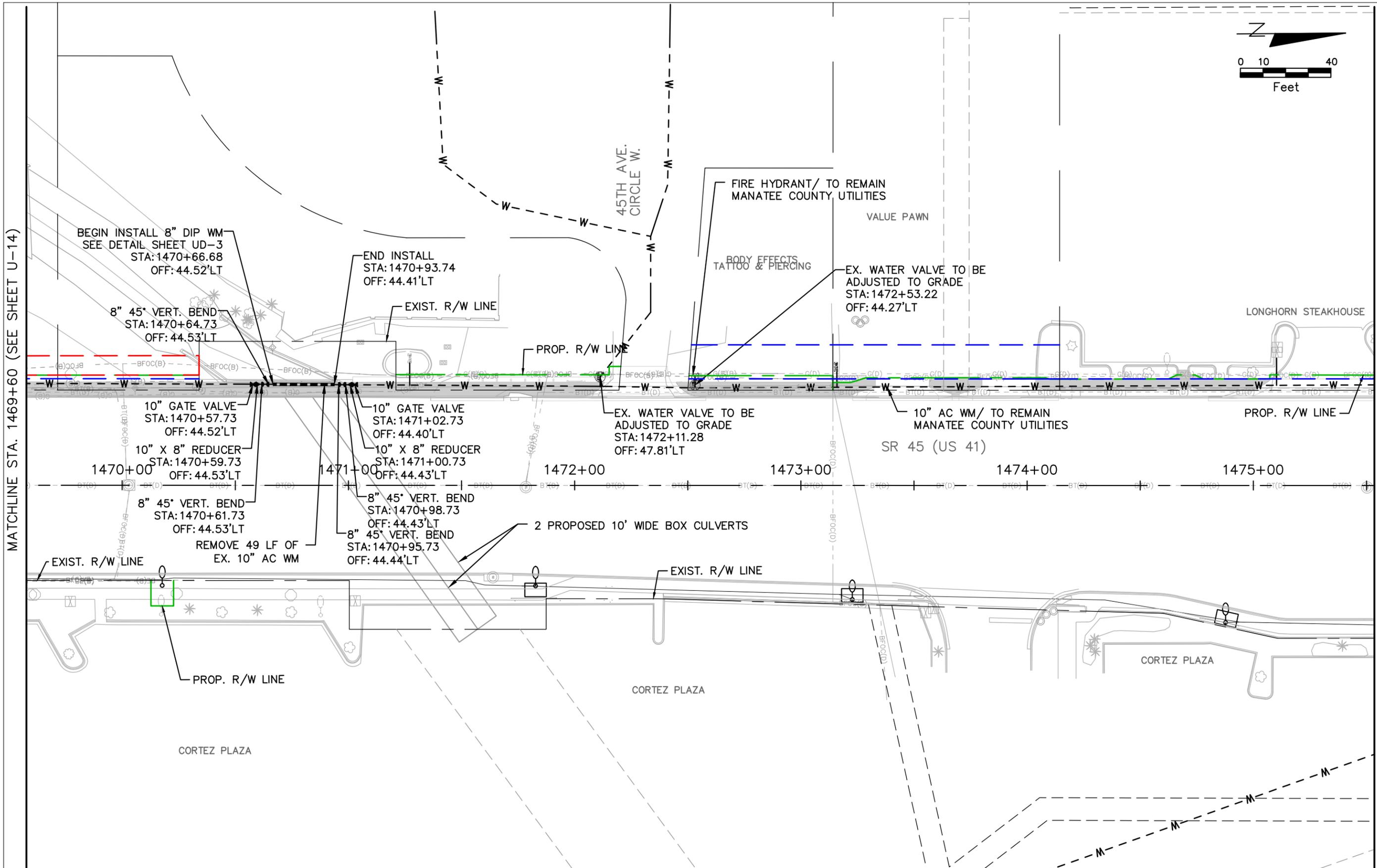
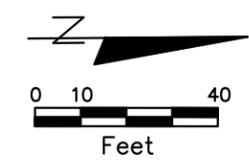


REVISIONS				MANATEE COUNTY			SHEET NO. U-14
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				US 41	MANATEE	433592-4-58-01	

MICHAEL ANTHONY SEMAGO, P.E. 87501
 KIMLEY-HORN AND ASSOCIATES
 100 2ND AVENUE SOUTH, SUITE 105N
 ST. PETERSBURG, FL 33701
 REGISTRY NO. 35106

UTILITY PLAN

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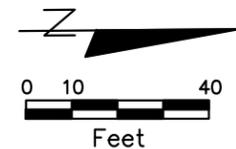
MATCHLINE STA. 1469+60 (SEE SHEET U-14)

MATCHLINE STA. 1475+55 (SEE SHEET U-16)

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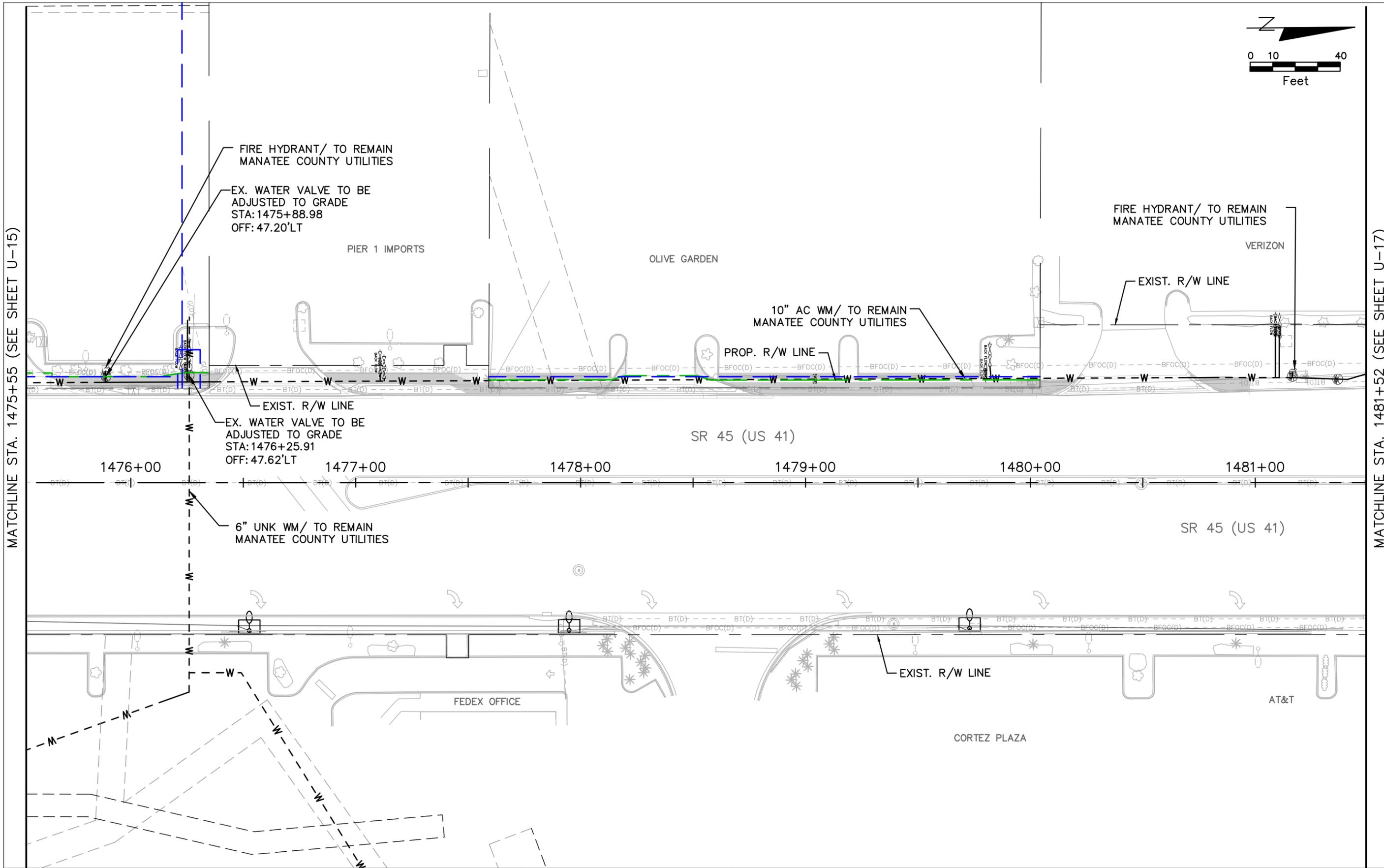
REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. U-15
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

UTILITY PLAN



MATCHLINE STA. 1475+55 (SEE SHEET U-15)

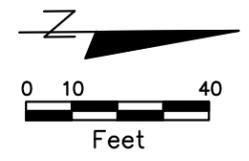
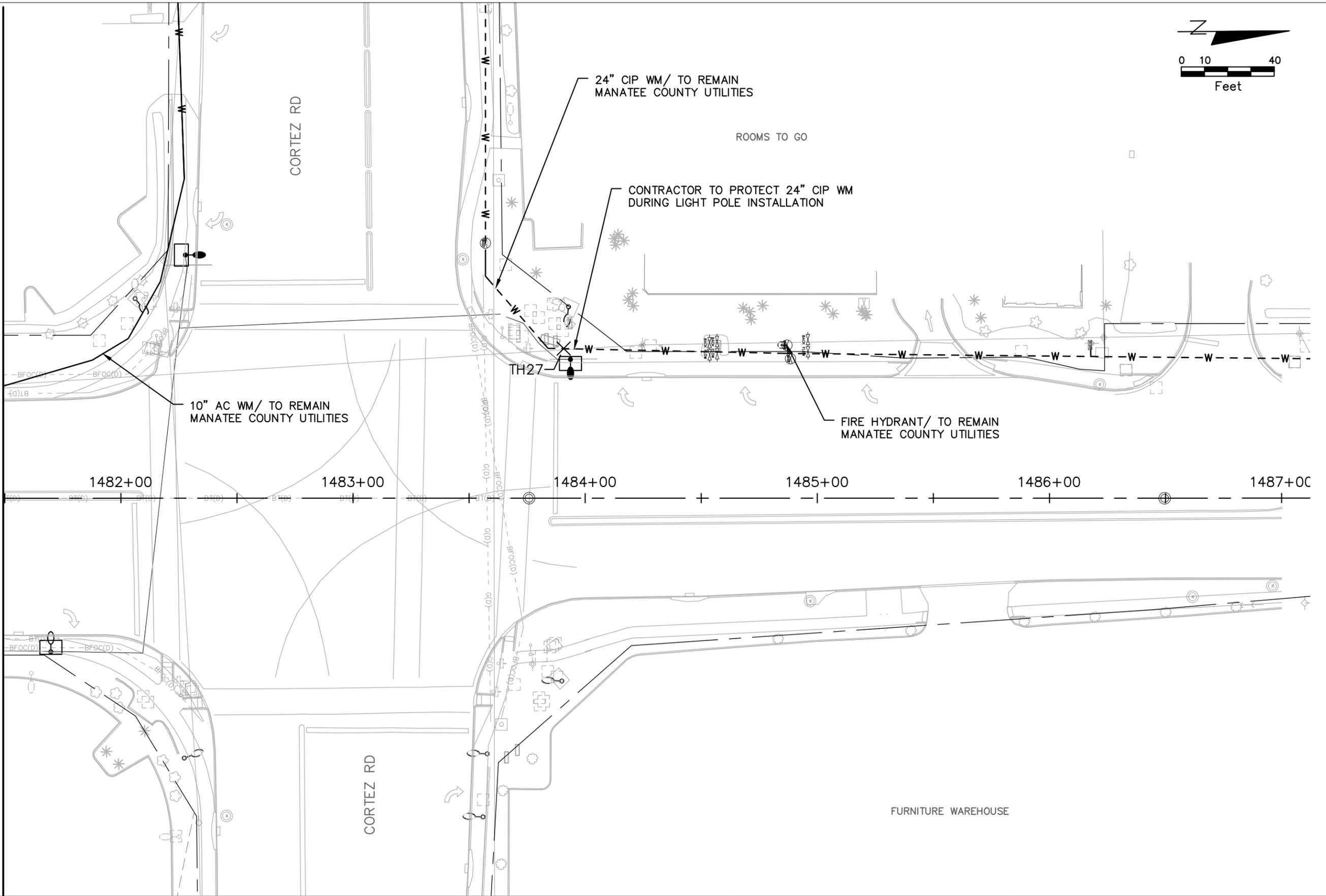
MATCHLINE STA. 1481+52 (SEE SHEET U-17)



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REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			UTILITY PLAN	SHEET NO. U-16
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						US 41	MANATEE		

MATCHLINE STA. 1481+52 (SEE SHEET U-16)



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL ANTHONY SEMAGO, P.E. 87501
 KIMLEY-HORN AND ASSOCIATES
 100 2ND AVENUE SOUTH, SUITE 105N
 ST. PETERSBURG, FL 33701
 REGISTRY NO. 35106

MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	433592-4-58-01

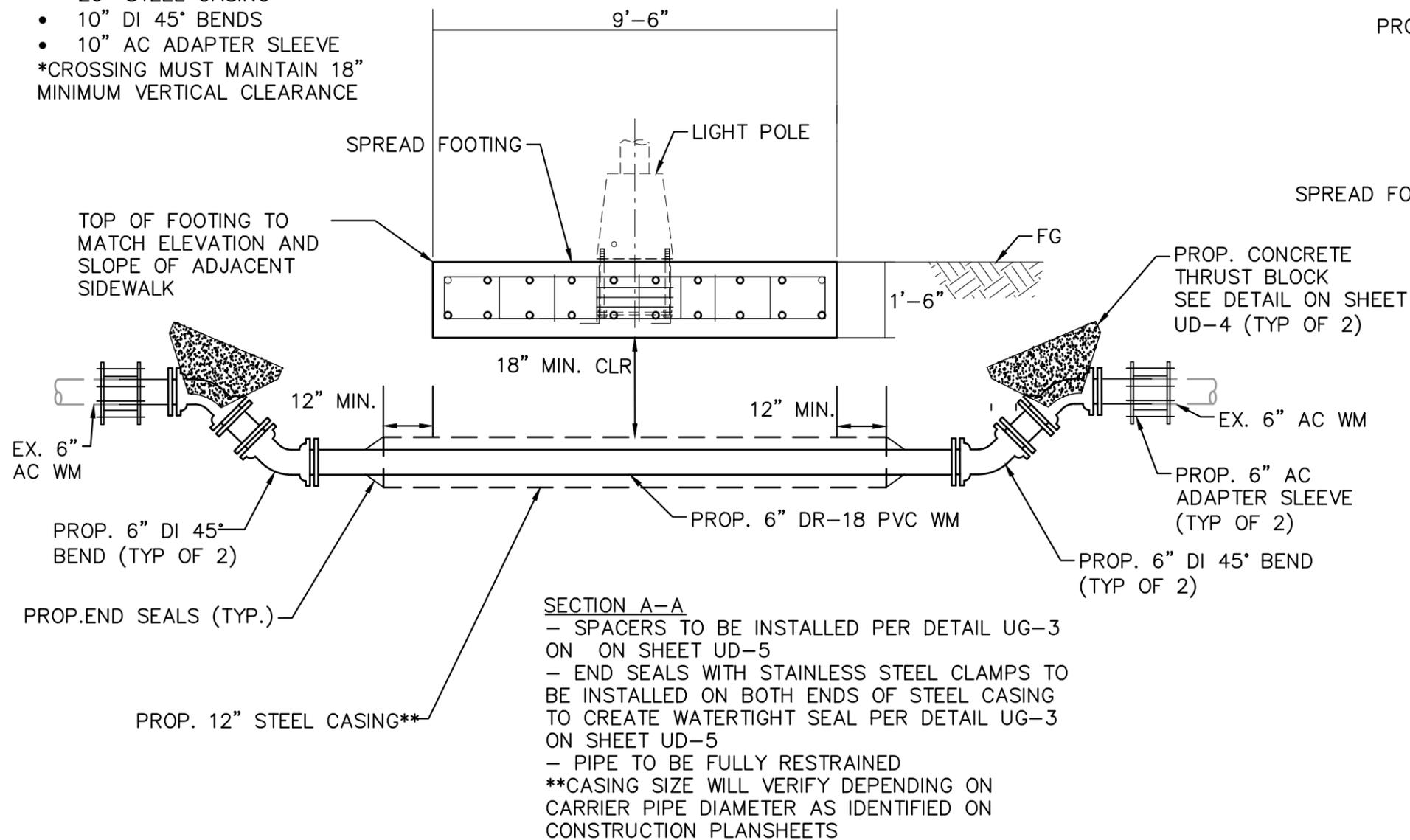
UTILITY PLAN

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.

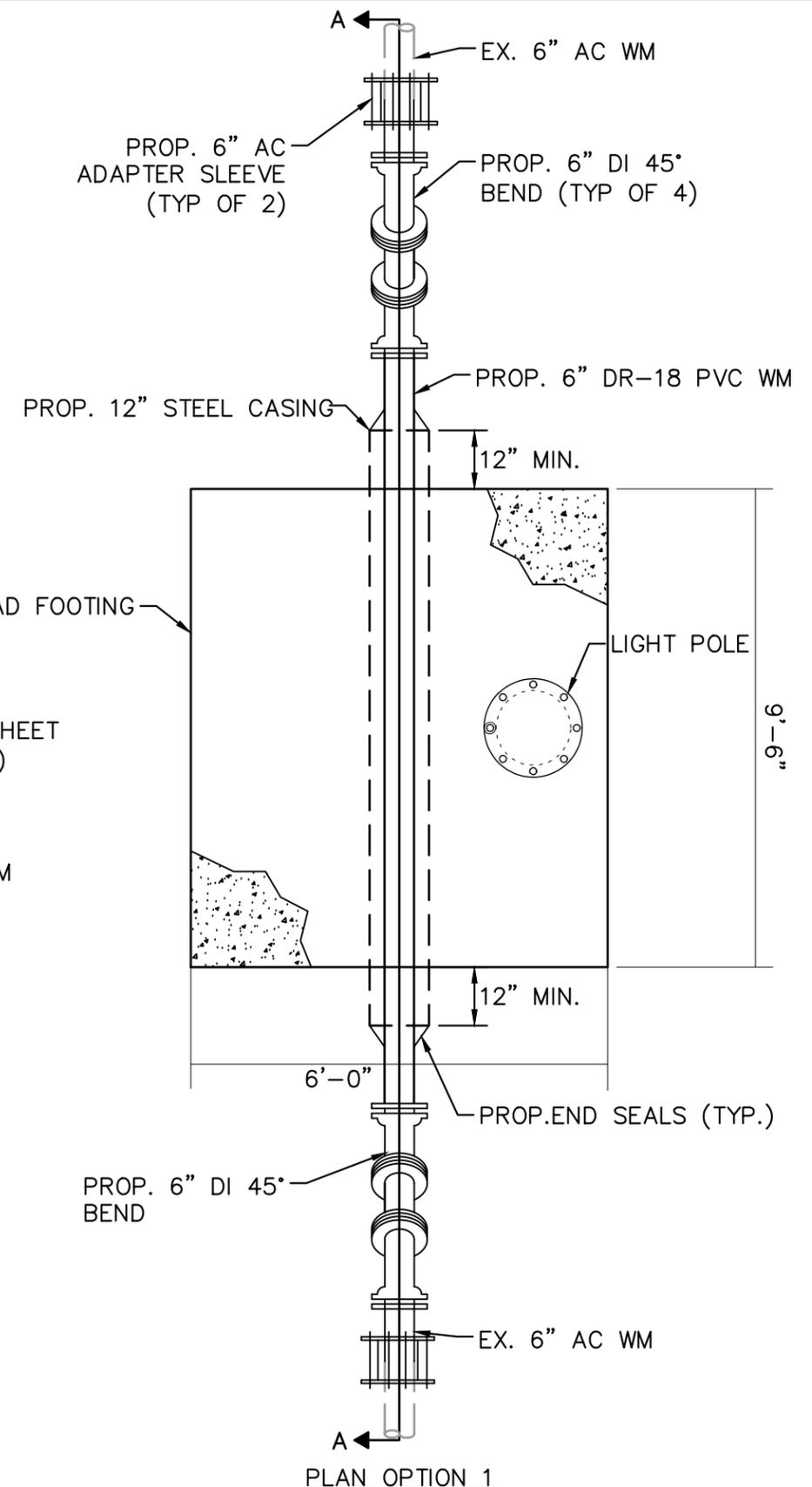
FOR EX 10" AC WM, USE

- 10" DR-18 PVC AND
 - 20" STEEL CASING
 - 10" DI 45° BENDS
 - 10" AC ADAPTER SLEEVE
- *CROSSING MUST MAINTAIN 18" MINIMUM VERTICAL CLEARANCE



SECTION A-A
 - SPACERS TO BE INSTALLED PER DETAIL UG-3 ON SHEET UD-5
 - END SEALS WITH STAINLESS STEEL CLAMPS TO BE INSTALLED ON BOTH ENDS OF STEEL CASING TO CREATE WATERTIGHT SEAL PER DETAIL UG-3 ON SHEET UD-5
 - PIPE TO BE FULLY RESTRAINED
 **CASING SIZE WILL VERIFY DEPENDING ON CARRIER PIPE DIAMETER AS IDENTIFIED ON CONSTRUCTION PLANSHEETS

WATER MAIN RELOCATION



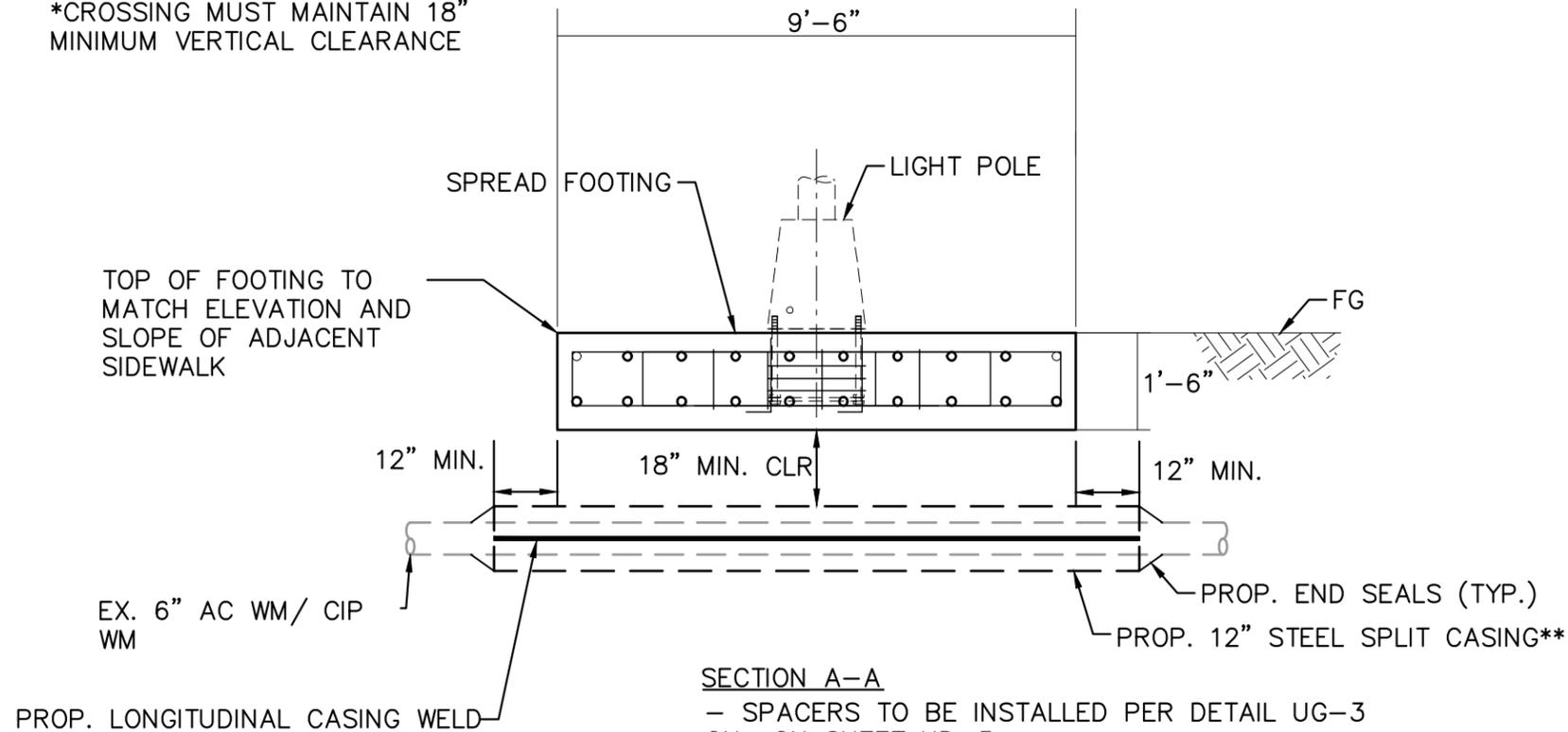
PLAN OPTION 1

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. UD-1
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
						US 41	MANATEE	

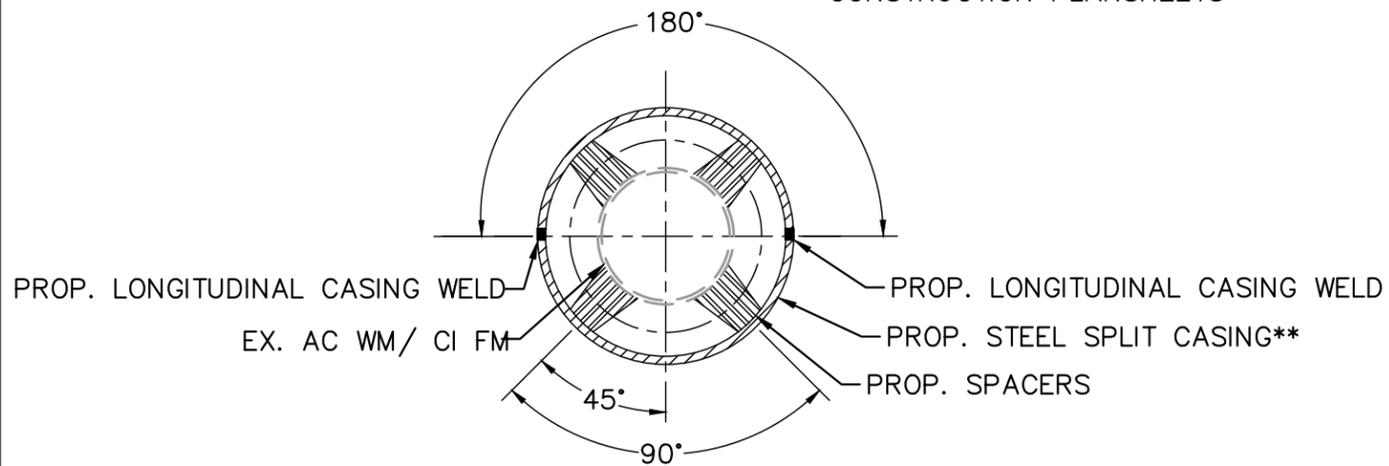
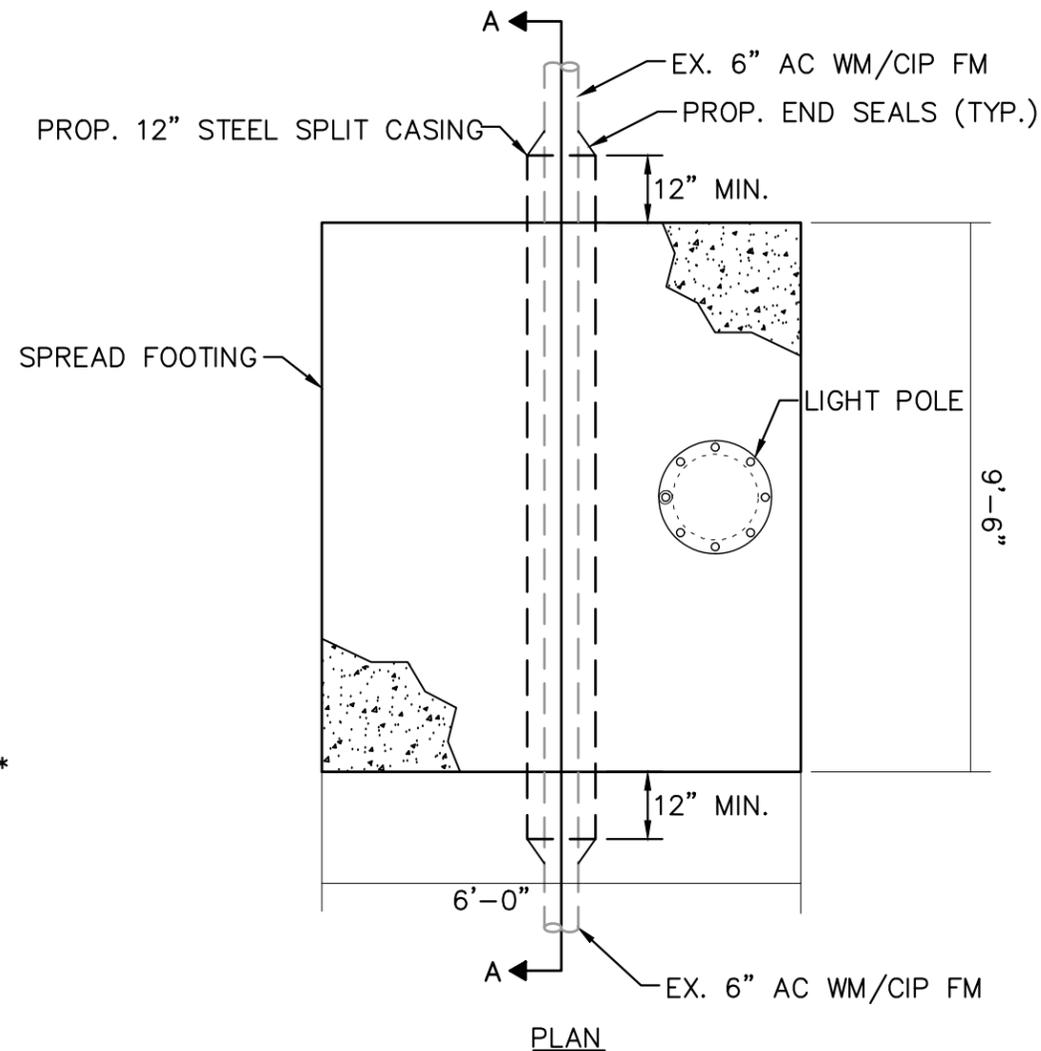
CONSTRUCTION DETAILS

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FOR EX 10" AC WM, USE
 • 20" STEEL CASING
 *CROSSING MUST MAINTAIN 18" MINIMUM VERTICAL CLEARANCE

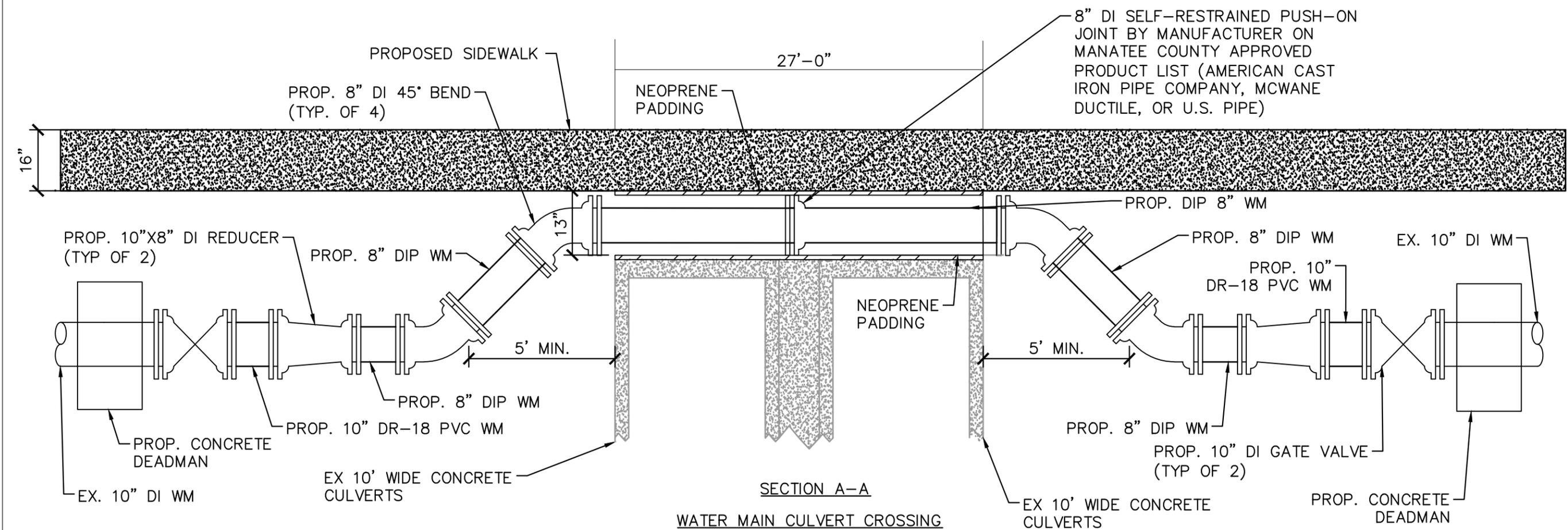
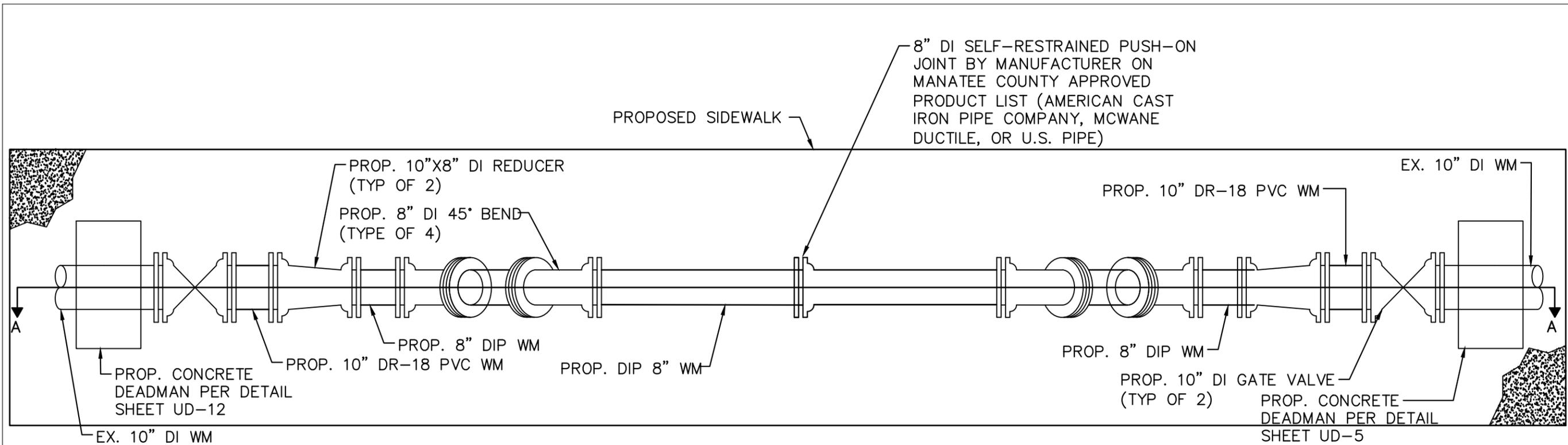


SECTION A-A
 - SPACERS TO BE INSTALLED PER DETAIL UG-3 ON ON SHEET UD-5
 - END SEALS WITH STAINLESS STEEL CLAMPS TO BE INSTALLED ON BOTH ENDS OF STEEL CASING TO CREATE WATERTIGHT SEAL PER DETAIL UG-3 ON SHEET UD-5
 **CASING SIZE WILL VERIFY DEPENDING ON CARRIER PIPE DIAMETER AS IDENTIFIED ON CONSTRUCTION PLANSHEETS



SPLIT CASING DETAIL

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			CONSTRUCTION DETAILS	SHEET NO. UD-2
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						US 41	MANATEE		433592-4-58-01



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL ANTHONY SEMAGO, P.E. 87501
 KIMLEY-HORN AND ASSOCIATES
 100 2ND AVENUE SOUTH, SUITE 105N
 ST. PETERSBURG, FL 33701
 REGISTRY NO. 35106

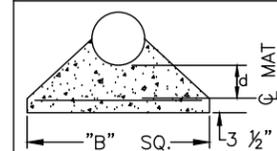
MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	433592-4-58-01

CONSTRUCTION DETAILS

SHEET NO.
UD-3

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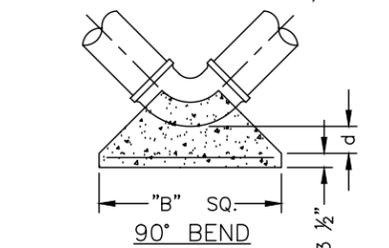
THRUST BLOCK DIMENSIONS B ft. x d inches												
PIPE SIZE (IN.)	90° BEND		45° BEND		22.5° BEND		11.25° BEND		DEAD END & TEE		45° WYE	
	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 1/2	1.1	3 1/2	0.8	3 1/2	0.6	3 1/2	1.3	3 1/2	1.1	3 1/2
6	2.2	5 1/4	1.6	3 3/4	1.2	3 1/2	0.8	3 1/2	1.9	4 1/2	1.6	3 3/4
8	2.9	7	2.1	5	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



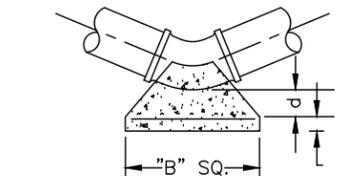
REINFORCEMENT MAT SCHEDULE
 FOR DIM. "B" BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY
 FOR DIM. "B" LESS THAN 5.75' USE #3 @ 8" EACH WAY

NOTES:

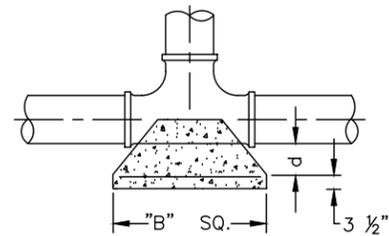
- ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
- THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF. CONCRETE STRENGTH f_c =3000 PSI, REINFORCEMENT f_y =60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST 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.



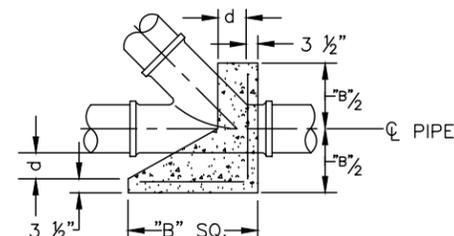
90° BEND



45°, 22.5° OR 11.25° BEND



TEE OR DEAD END



45° WYE

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

CONCRETE THRUST
BLOCKS

UG-7

REV. BY	DATE
DATE OF APPROVAL	

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS			TEES					REDUCERS			PLUGS & VALVES
	90°	45°	22.5°	SIZE LENGTH					SIZE LENGTH			
24	90	38	18	X24 169	X20 132	X16 90	X12 38	X10 6	X20 64	X16 117	X12 158	214
20	78	32	16	X20 141	X16 101	X12 53	X10 24	X8 1	X16 65	X12 115	X10 149	184
16	66	27	13	X16 111	X12 67	X10 41	X8 12		X12 64	X10 107	X8 111	151
12	52	22	10	X12 80	X10 56	X8 31	X6 1		X10 58	X8 62	X6 86	118
10	44	18	9	X10 63	X8 40	X6 7			X8 33	X6 61	X4 81	100
8	37	15	7	X8 49	X6 18	X4 1			X6 35	X4 60		83
6	29	12	6	X6 29	X4 1				X4 33			63
4	21	8	4	X4 12								45

NOTES:

- RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
- ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
- ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
- PIPE SIZES ARE GIVEN IN INCHES.
- RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
- LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
- 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.
- RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

RESTRAINED
LENGTHS FOR PVC
PIPE

UG-8

REV. BY	DATE
CLB/BR	11/10
MAY 10, 2011	
DATE OF APPROVAL	

PAGE 108

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL ANTHONY SEMAGO, P.E. 87501
KIMLEY-HORN AND ASSOCIATES
100 2ND AVENUE SOUTH, SUITE 105N
ST. PETERSBURG, FL 33701
REGISTRY NO. 35106

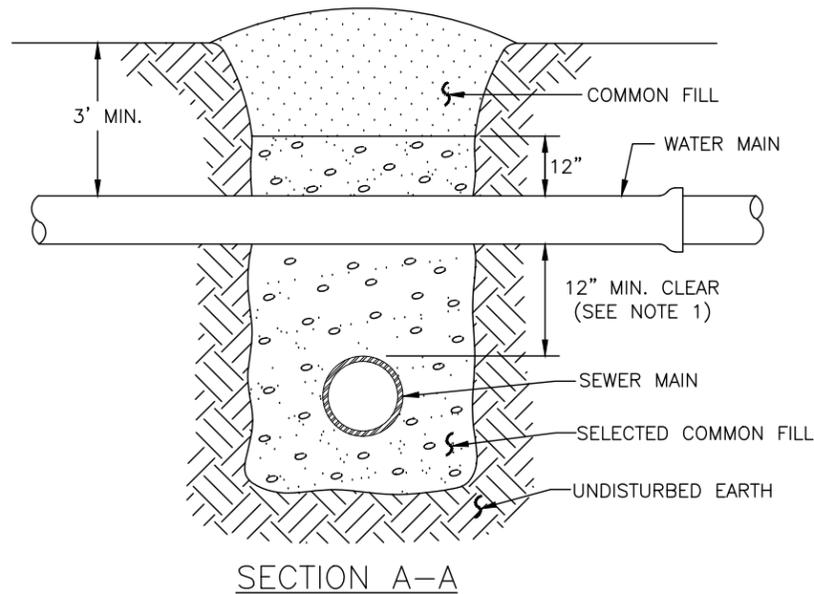
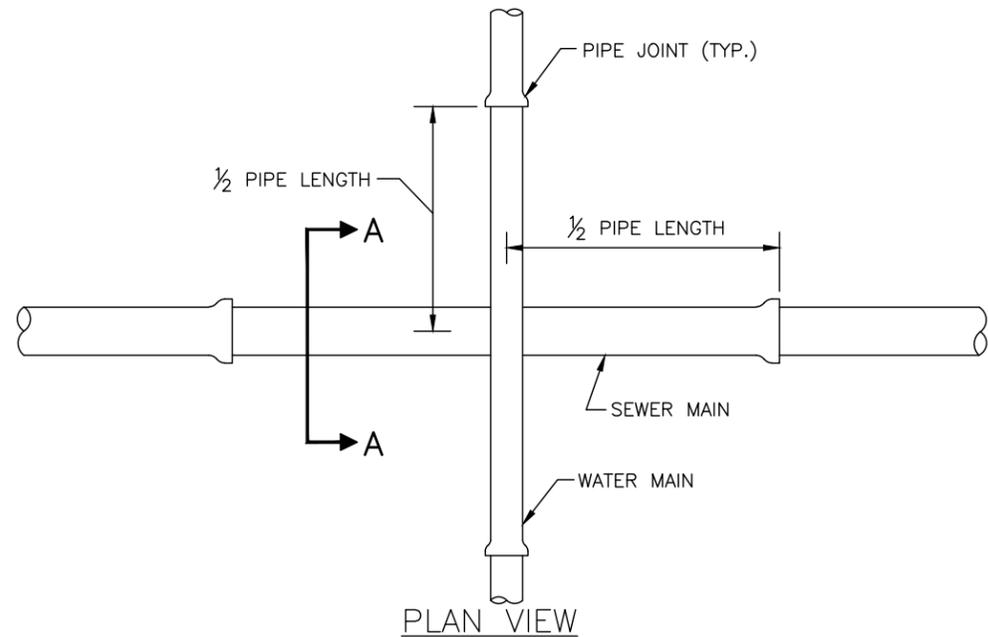
MANATEE COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	433592-4-58-01

CONSTRUCTION DETAILS

SHEET NO.

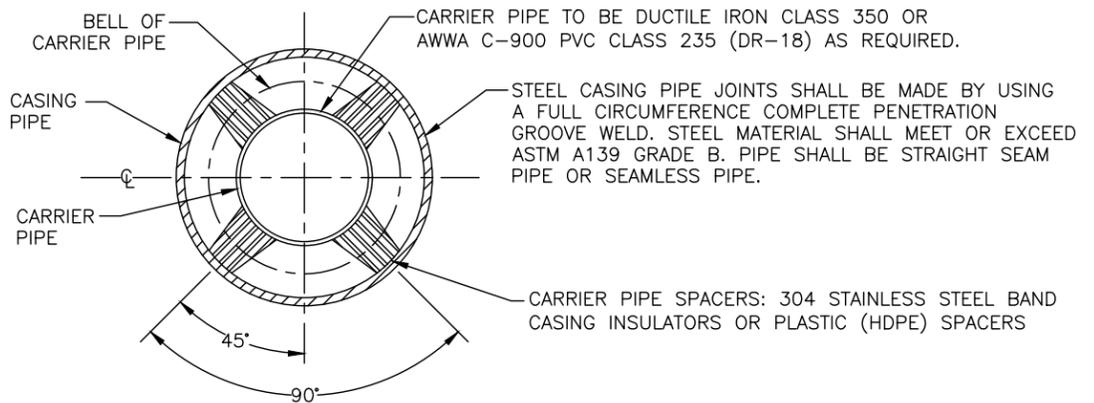
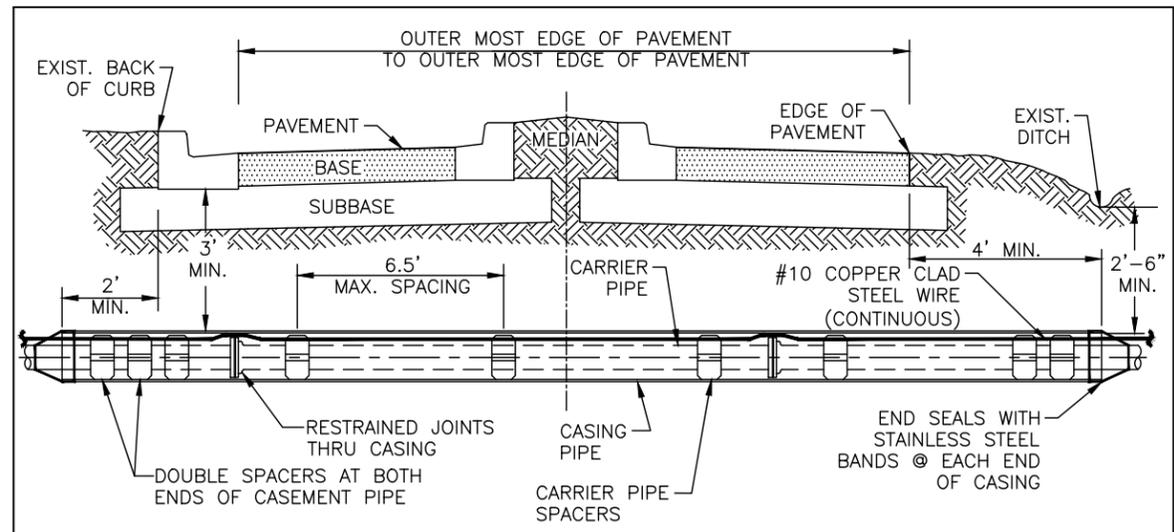
UD-4



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		
		DATE OF APPROVAL	



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

STEEL CASING SIZES

CARRIER SIZE & MINIMUM CASING SIZE									
CARRIER	4"	6"	8"	10"	12"	X	16"	18"	20"
CASING	8"	12"	16"	20"	24"	X	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		
		DATE OF APPROVAL	

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			CONSTRUCTION DETAILS	SHEET NO. UD-5
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				US 41	MANATEE	433592-4-58-01			

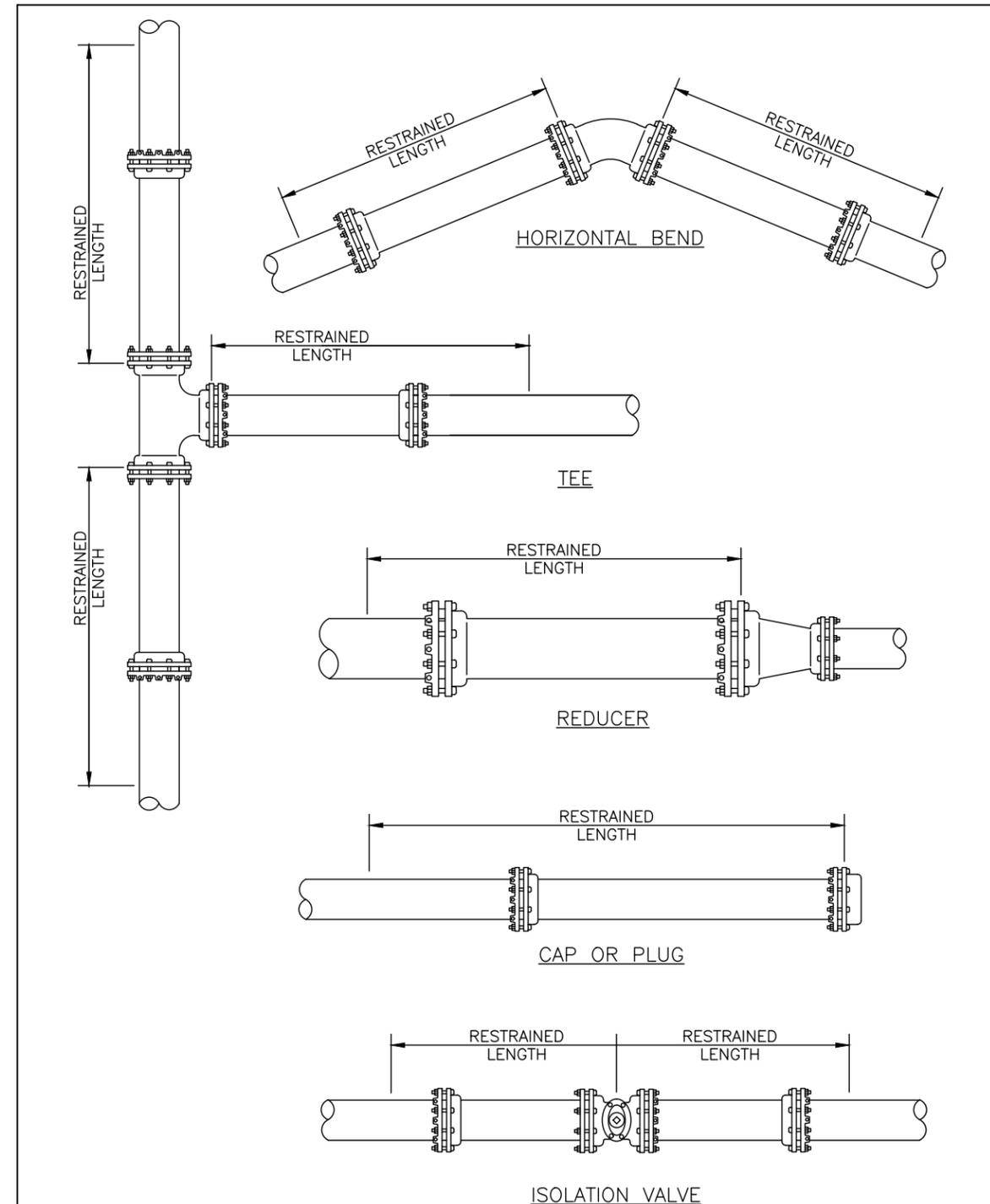
**REQUIRED LENGTH OF RESTRAINED JOINT PIPE
FOR DIP (POLY-WRAPPED)**

MAIN PIPE SIZE	HORIZ. BENDS			TEES									REDUCERS				PLUGS & VALVES
	90°	45°	22.5°	SIZE									SIZE				
				LENGTH			LENGTH			LENGTH			LENGTH				
36	142	59	28	x36 393	x30 318	x24 232	x20 165	x16 84	x12 1	x30 137	x24 247	x20 309	x16 359	453			
30	124	51	25	x30 333	x24 252	x20 189	x16 115	x12 23	x10 1	x24 137	x20 213	x16 276		391			
24	106	44	21	x24 270	x20 211	x16 143	x12 61	x10 10	x8 1	x20 98	x16 178	x12 241		327			
20	92	38	18	x20 225	x16 161	x12 85	x10 39	x8 1		x16 98	x12 176	x10 227		280			
16	77	32	15	x16 177	x12 107	x10 65	x8 19	x6 1		x12 98	x10 163	x8 169		231			
12	61	25	12	x12 127	x10 89	x8 50	x6 1			x10 88	x8 96	x6 131		181			
10	52	22	10	x10 101	x8 64	x6 11				x8 51	x6 94	x4 125		153			
8	44	18	9	x8 78	x6 30	x4 1				x6 54	x4 92			128			
6	34	14	7	x6 46	x4 1					x4 50				98			
4	24	10	5	x4 19										69			

NOTE:

- 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		
DATE OF APPROVAL			



NOTE:

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

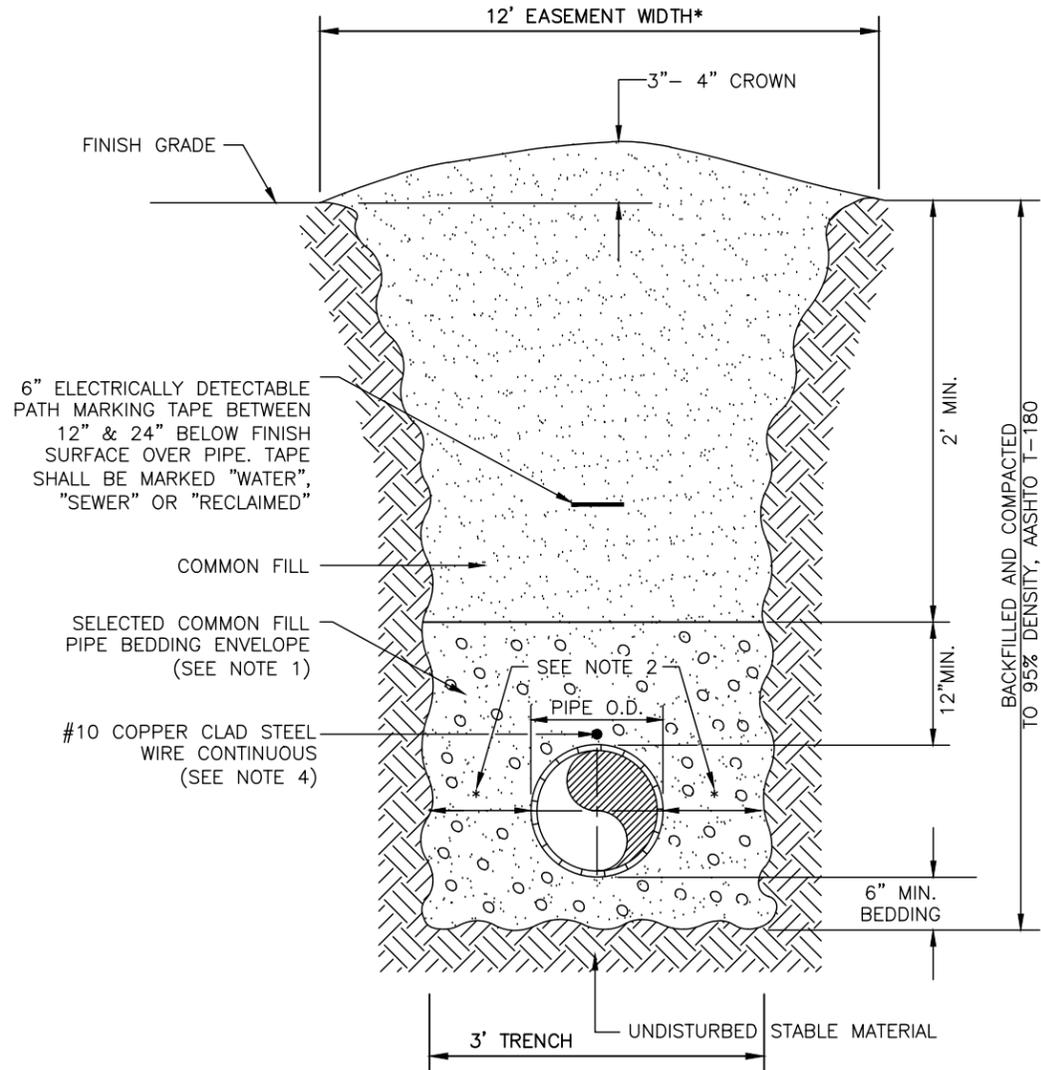
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PIPE	UG-10
REV. BY	DATE		
DATE OF APPROVAL			

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			CONSTRUCTION DETAILS	SHEET NO. UD-6
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. 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.
3. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

*EASEMENT SIZE BASED OFF DEEPEST UTILITY RELOCATION. EASEMENT WIDTH DETERMINED BY MEASURING FROM THE CENTERLINE OF THE PIPE AT THE TRENCH EDGE UP AT A 45° ANGLE TO THE FINISHED GRADE.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

TRENCH WITH
UNIMPROVED SURFACE
TYPE A-1 PIPE BEDDING

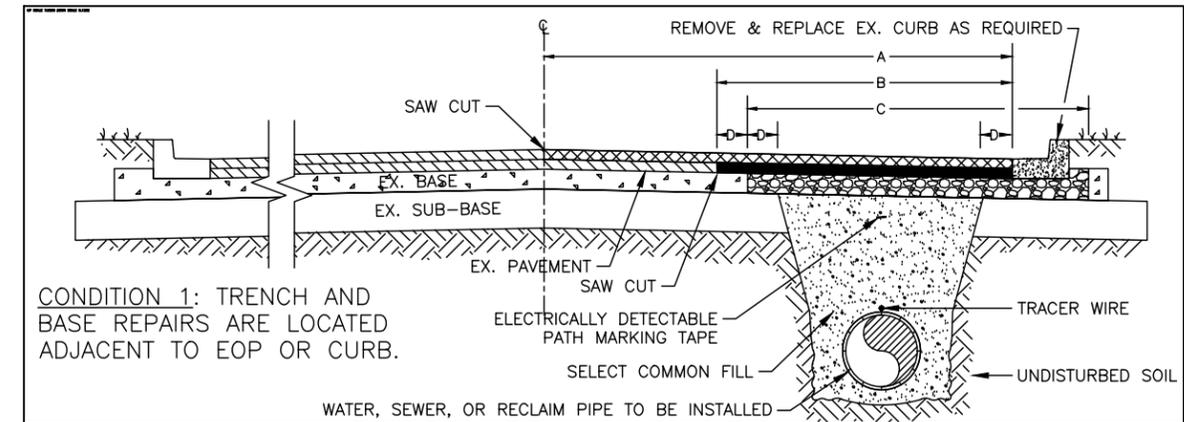
UG-11

REV. BY	DATE

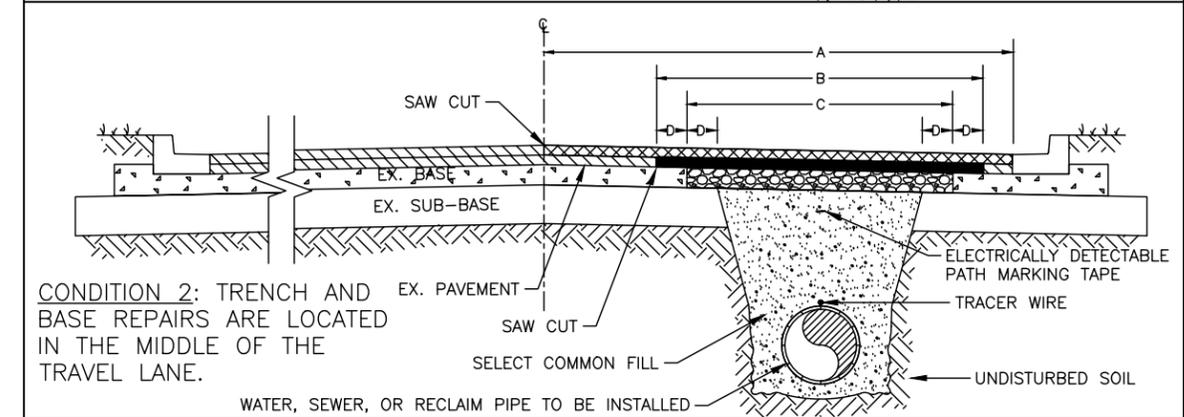
DATE OF APPROVAL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

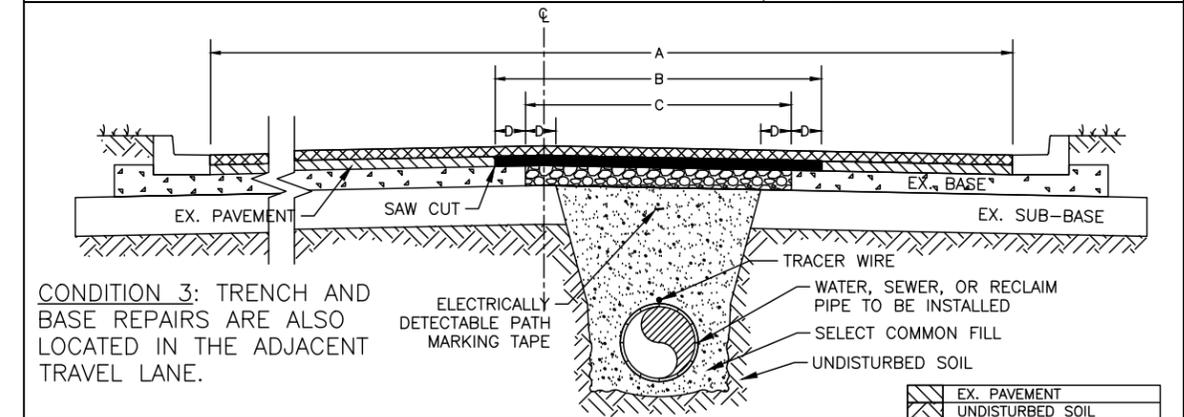
MICHAEL ANTHONY SEMAGO, P.E. 87501
KIMLEY-HORN AND ASSOCIATES
100 2ND AVENUE SOUTH, SUITE 105N
ST. PETERSBURG, FL 33701
REGISTRY NO. 35106



CONDITION 1: TRENCH AND
BASE REPAIRS ARE LOCATED
ADJACENT TO EOP OR CURB.



CONDITION 2: TRENCH AND
BASE REPAIRS ARE LOCATED
IN THE MIDDLE OF THE
TRAVEL LANE.



CONDITION 3: TRENCH AND
BASE REPAIRS ARE ALSO
LOCATED IN THE ADJACENT
TRAVEL LANE.

A = MILL EXIST. ASPHALT & PLACE 3/4" MIN. S-III ASPHALTIC CONCRETE OVERLAY.
B = 1-1/4" MIN. S-I ASPHALTIC CONCRETE W/ PRIME COAT.
C = FULL BASE REPLACEMENT.
D = 9 INCHES

NOTE:

1. 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.
2. 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.
3. 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.

	EX. PAVEMENT
	UNDISTURBED SOIL
	EX. BASE
	SELECT COMMON FILL
	BASE REPLACEMENT
	S-I
	S-III
	NEW CURB

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

TRENCH WITH ASPHALT
PAVEMENT SURFACE
TYPE A-1 PIPE
BEDDING (LONGITUDINAL)

UG-12B

REV. BY	DATE

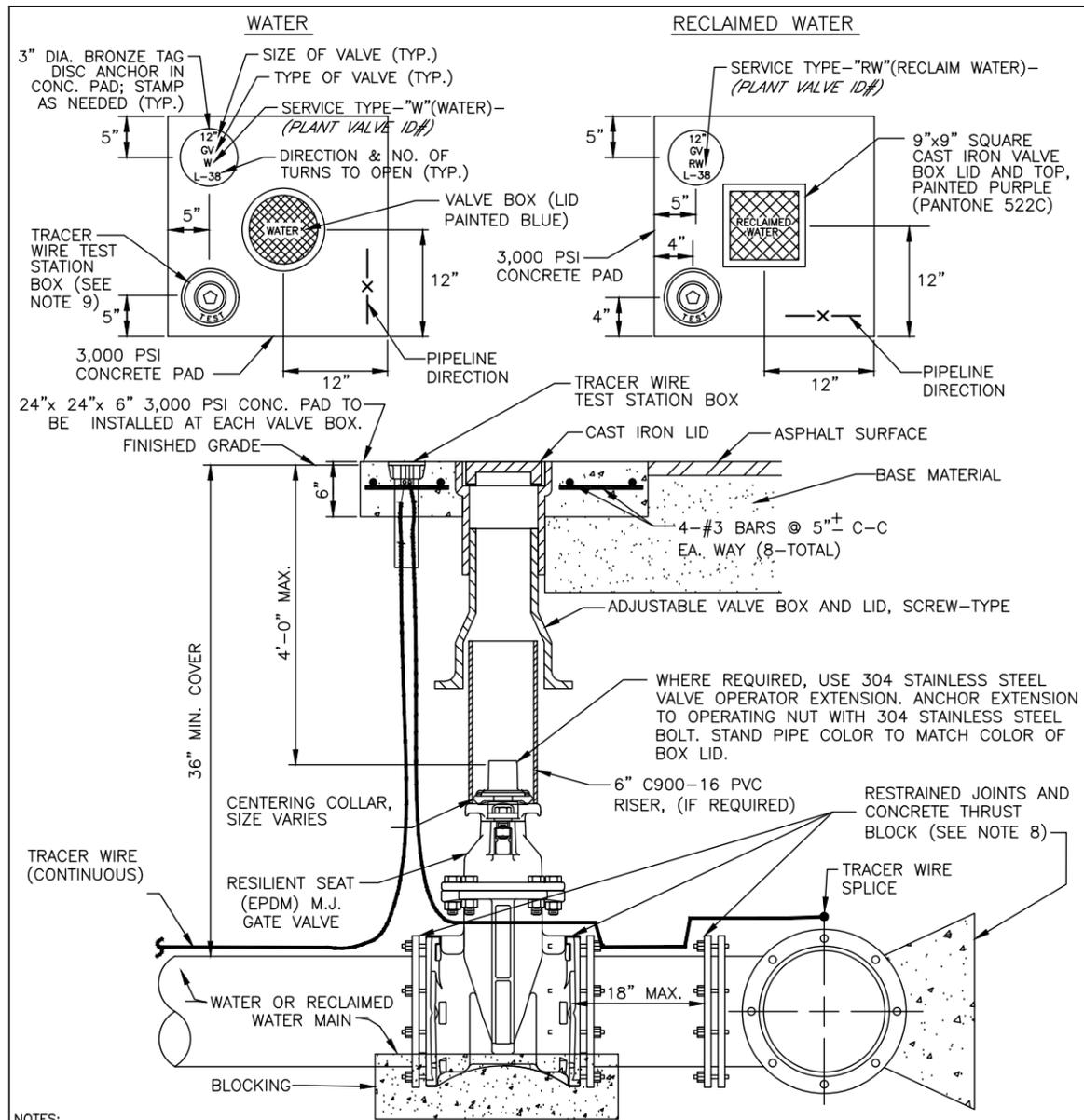
DATE OF APPROVAL

MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	433592-4-58-01

CONSTRUCTION DETAILS

SHEET
NO.

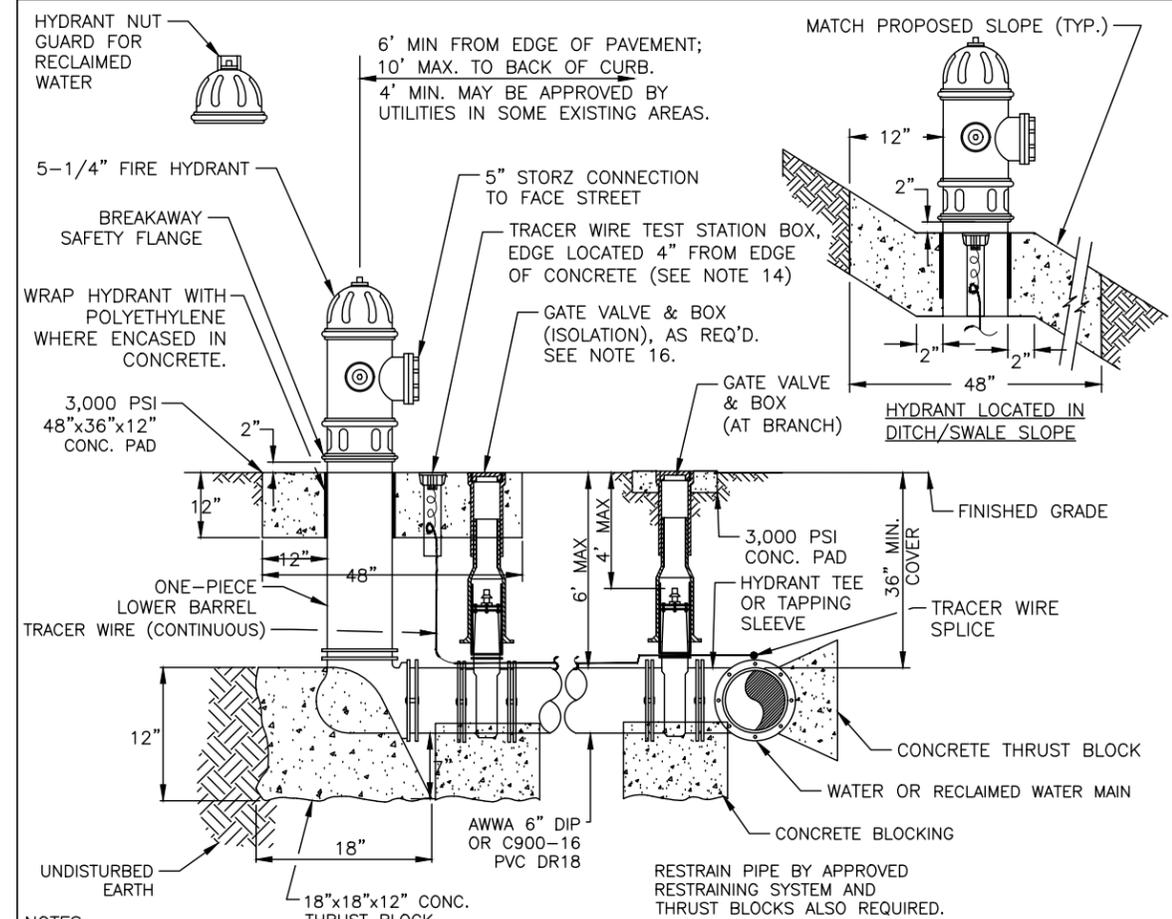
UD-7



NOTES:

- "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.
- 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 shall not be used.
- All exposed edges of concrete shall be chamfered 1/2".
- Pipeline direction to be impressed into newly poured concrete pad.
- 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.
- Where thrust block not used, restrained joints must then extend from tee full length specified for "tees."
- 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 trace wire testing station outside of travel lane or in median, centered in separate concrete pad similar to standard valve box pad.
- 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 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		
DATE OF APPROVAL			



NOTES:

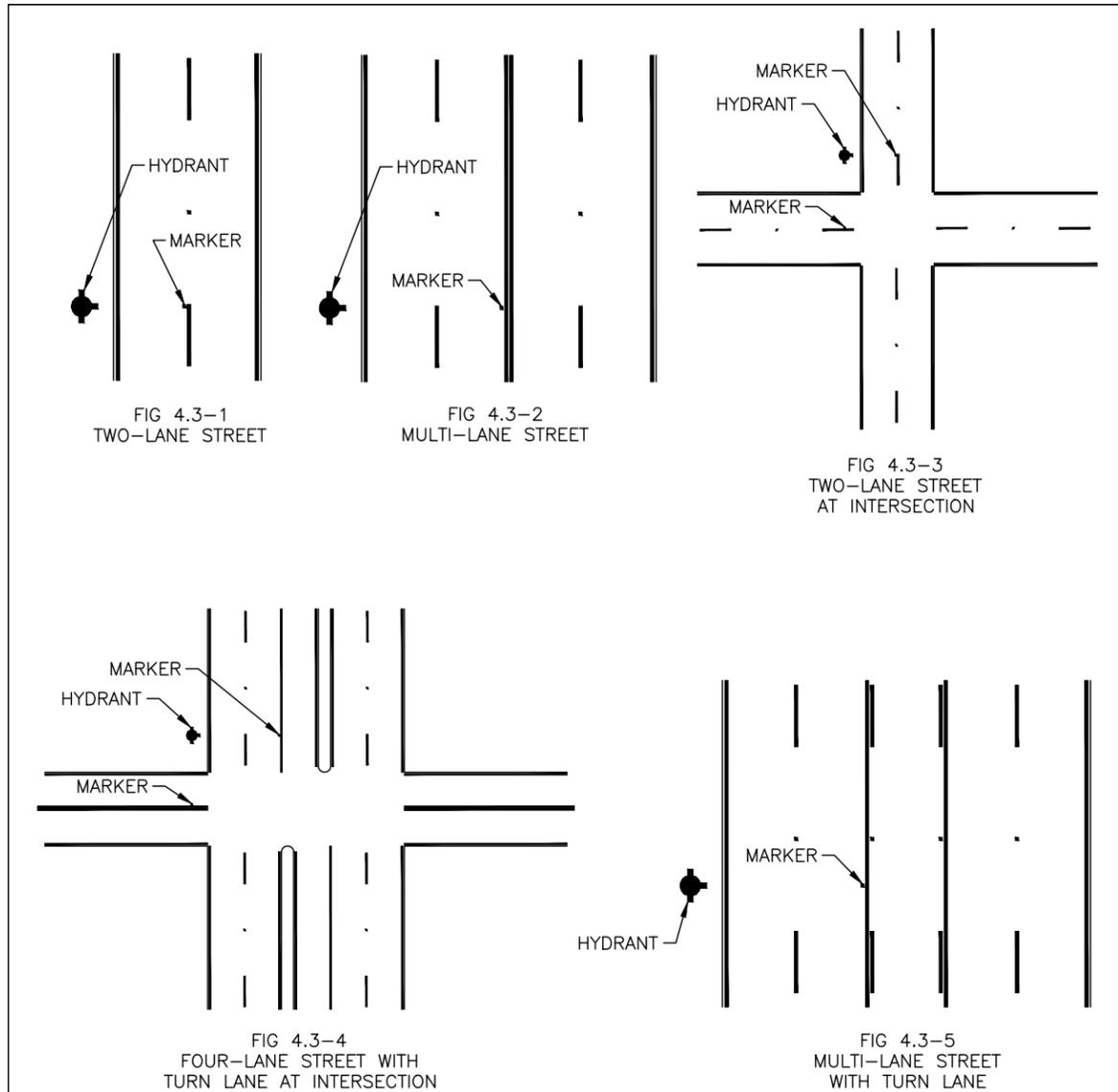
- Weepholes shall be excluded from the fire hydrant.
- Fire hydrants shall be a minimum of 6' off edge of pavement and 10' max. from back of curb. Where possible and where sidewalk is to be installed, fire hydrant shall be located between sidewalk and right-of-way line.
- Hydrant shall be ductile iron construction. Hydrants shall be fusion bonded epoxy coated safety yellow for water; purple (Pantone 522C) for reclaimed water; and red for private.
- Fire hydrants shall be placed so that storm water flows away from the hydrant.
- 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.
- Fire hydrants may be constructed with "GradeLok" offset fitting.
- 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 FDOT Traffic Engineering Manual, Chapter 4, Section 4.3 or most current addition.
- All exposed edges of concrete shall have 1/2" chamfer.
- Fire hydrant valve shall be fastened directly to tee.
- In-line valves should be located at hydrant tees.
- Hydrants shall be located on same side of road as water or reclaimed main.
- 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.
- See standard detail UW-2 Gate Valve, Box, Lid and Tag.
- Should the fire hydrant's concrete pad overlap a sidewalk, the tracer wire test station box shall not be located within the sidewalk.
- 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.
- 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.
- 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		
DATE OF APPROVAL			

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			SHEET NO. UD-8
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					US 41	MANATEE	433592-4-58-01	

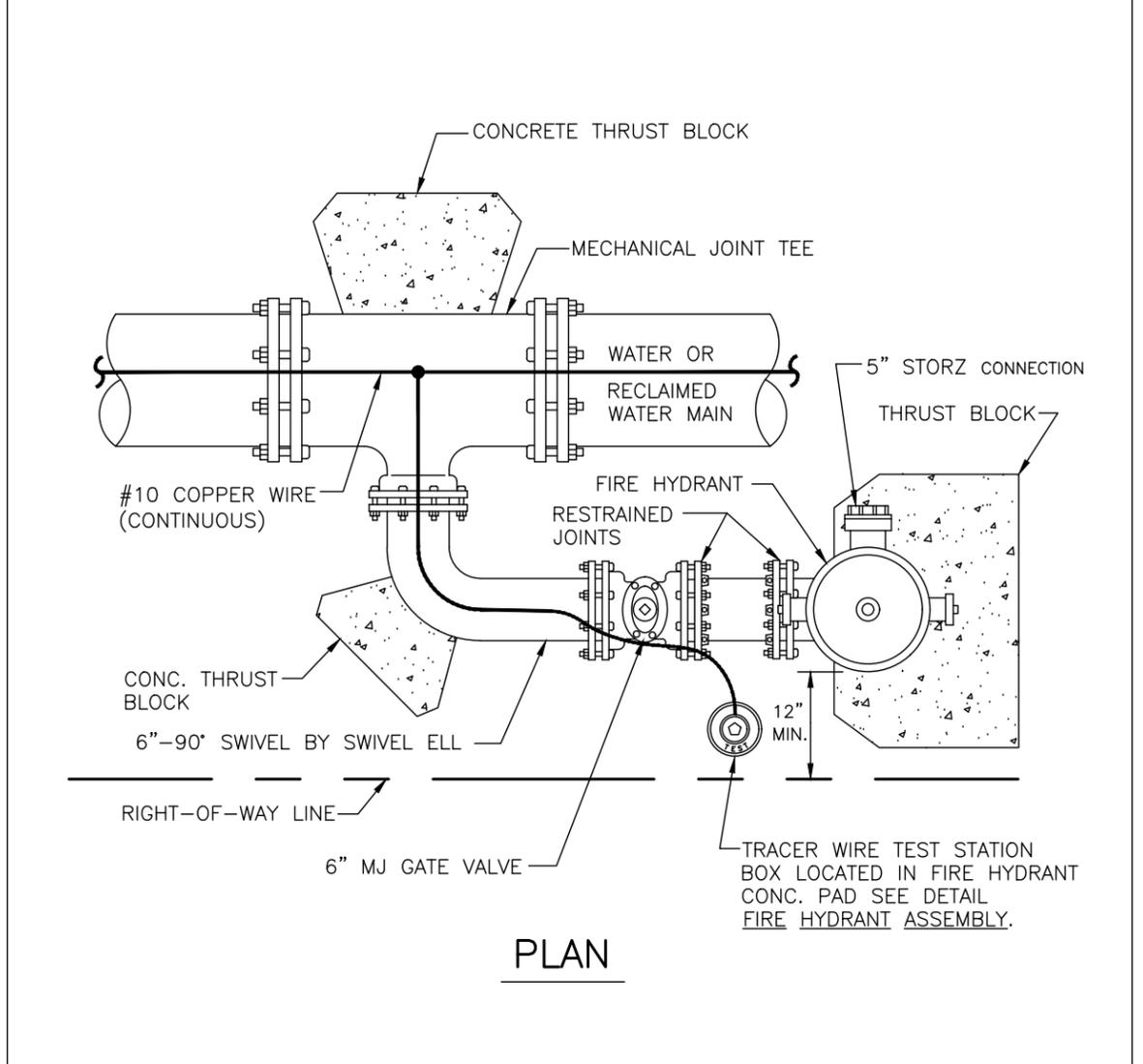
CONSTRUCTION DETAILS

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



- 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/BLEU RAISED RETROREFLECTIVE PAVEMENT MARKER.

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



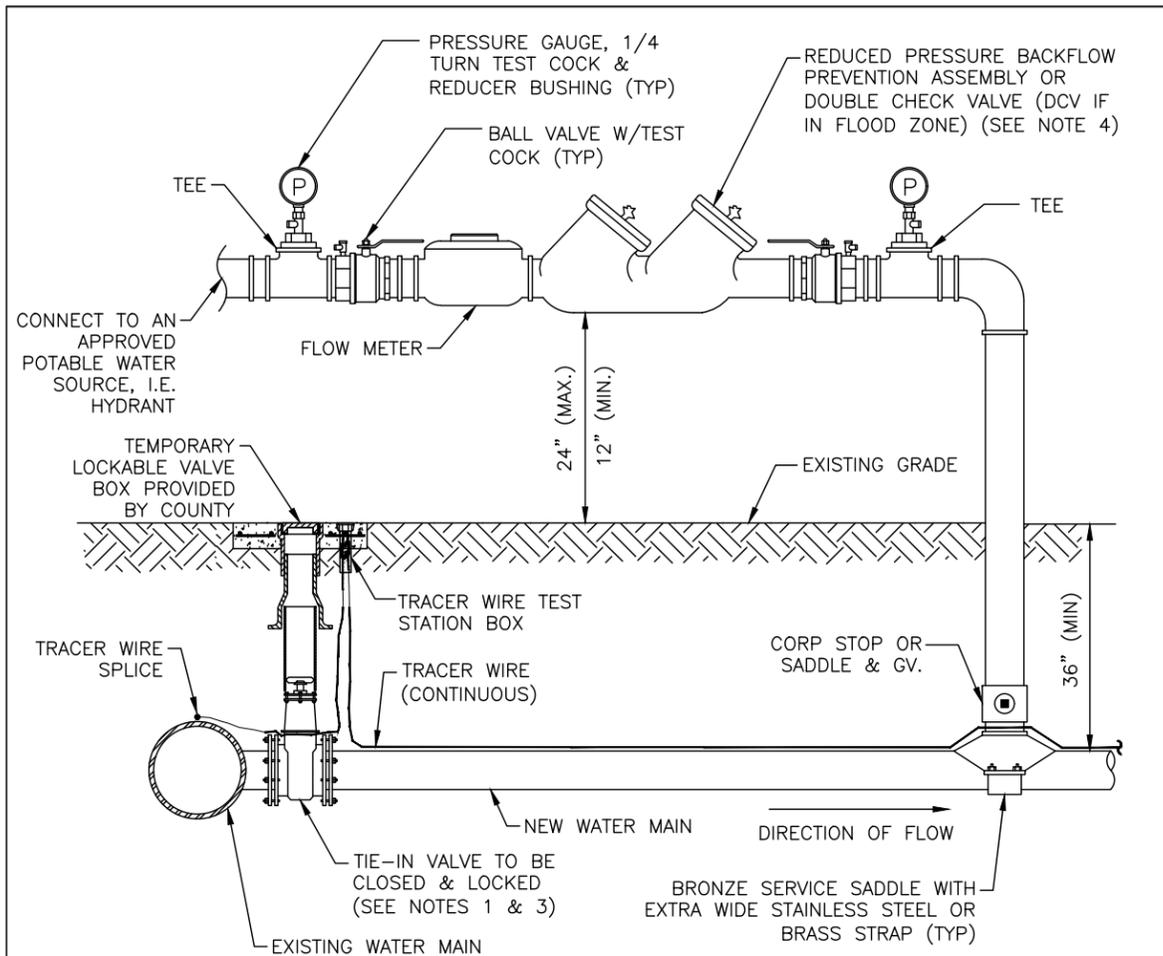
- NOTE:**
1. THIS DETAIL FOR USE ONLY WHEN THE WATER MAIN IS LOCATED TOO CLOSE TO THE RIGHT-OF-WAY LINE TO USE THE FIRE HYDRANT ASSEMBLY DETAIL.
 2. SEE STANDARD DETAIL GATE VALVE, BOX, LID AND TAG.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		FIRE HYDRANT WITH LOCKED 90° BEND	UW-6
REV. BY	DATE		
CLB/KE	11/10		
MAY 10, 2011			
DATE OF APPROVAL			

PAGE 124

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			CONSTRUCTION DETAILS	SHEET NO. UD-9
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				US 41	MANATEE	433592-4-58-01			

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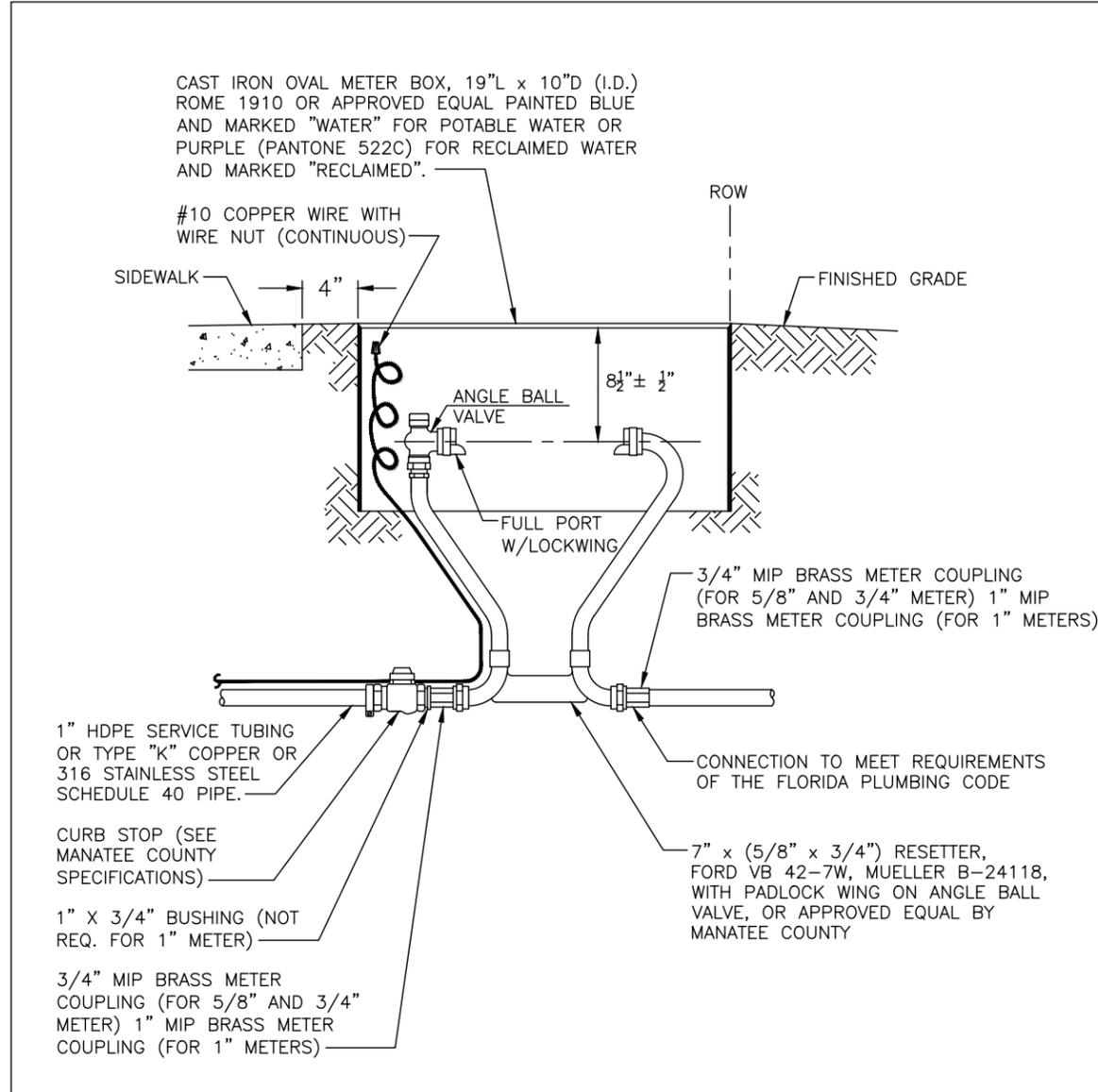


PROFILE

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		
DATE OF APPROVAL			



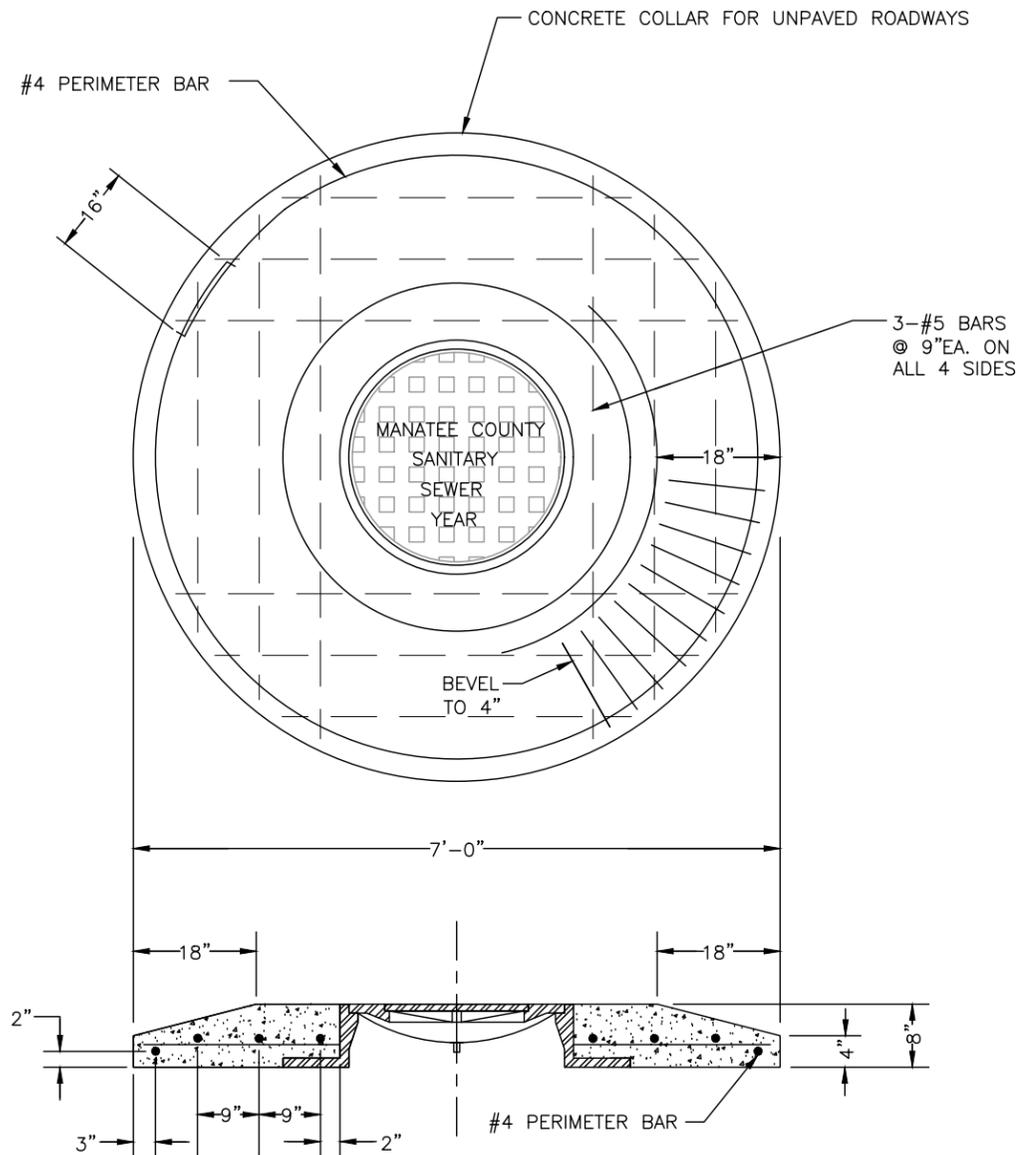
NOTES:

- FORD 40 SERIES RESETTERS VB43 AND VB44 OR EQUAL FOR 3/4" OR 1" METERS ALSO ALLOWED.
- METER BOX AND RESETTER ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS.
- FOR COMPLETE SERVICE CONNECTION ASSEMBLY, SEE DETAIL TYPICAL SERVICE CONNECTION.
- WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE R/W IS ONE FOOT (CUL-DE-SAC W/ MEDIAN) A 10-FOOT-WIDE PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE ROW.
- 3' MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF METER, CLEAR ACCESS OPENING TO STREET.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		METER BOX ASSEMBLY FOR 5/8" x 3/4", 3/4" & 1" METERS	UW-17
REV. BY	DATE		
CLB/BR	11/10		
MAY 10, 2011			
DATE OF APPROVAL			

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			CONSTRUCTION DETAILS	SHEET NO. UD-10
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				US 41	MANATEE	433592-4-58-01			

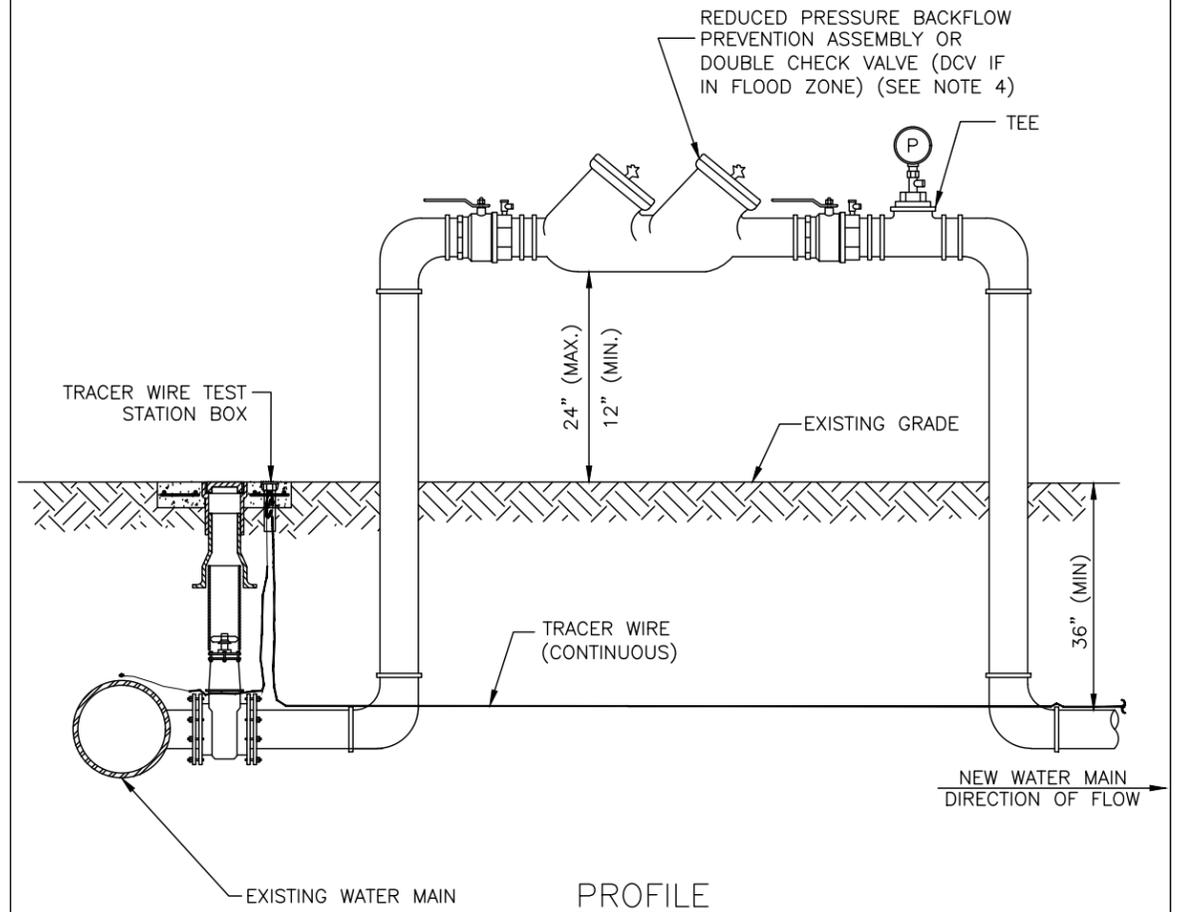
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



NOTES:

1. OMIT "MANATEE COUNTY" IF PRIVATELY MAINTAINED.
2. 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-11
REV. BY CLB/BR	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL			PAGE 151



PROFILE

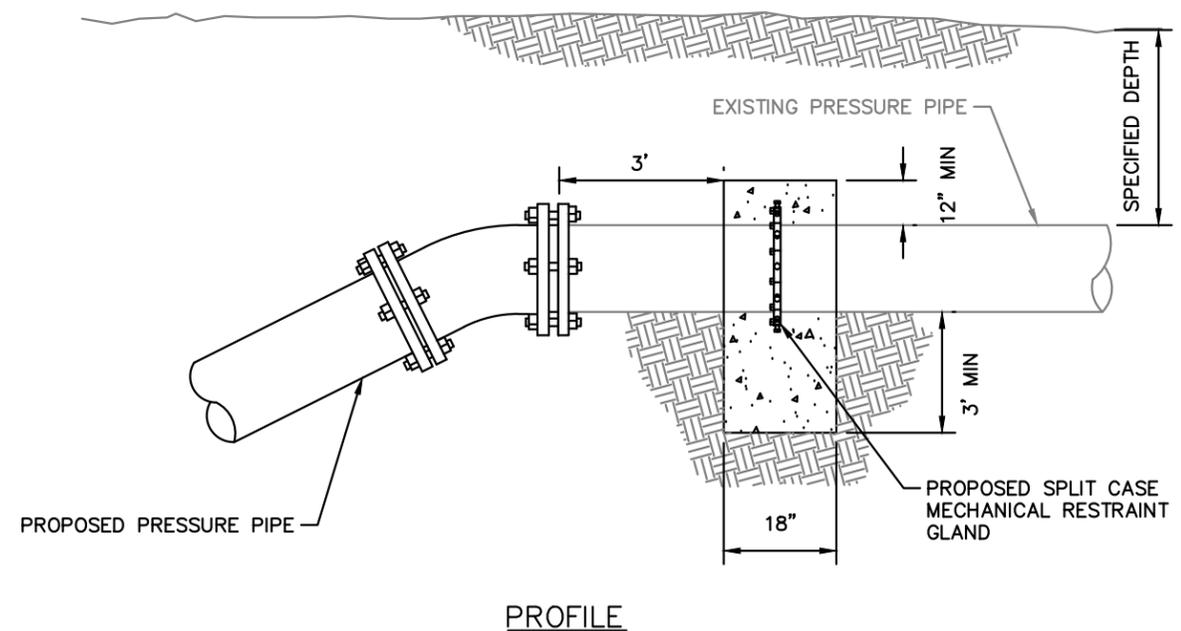
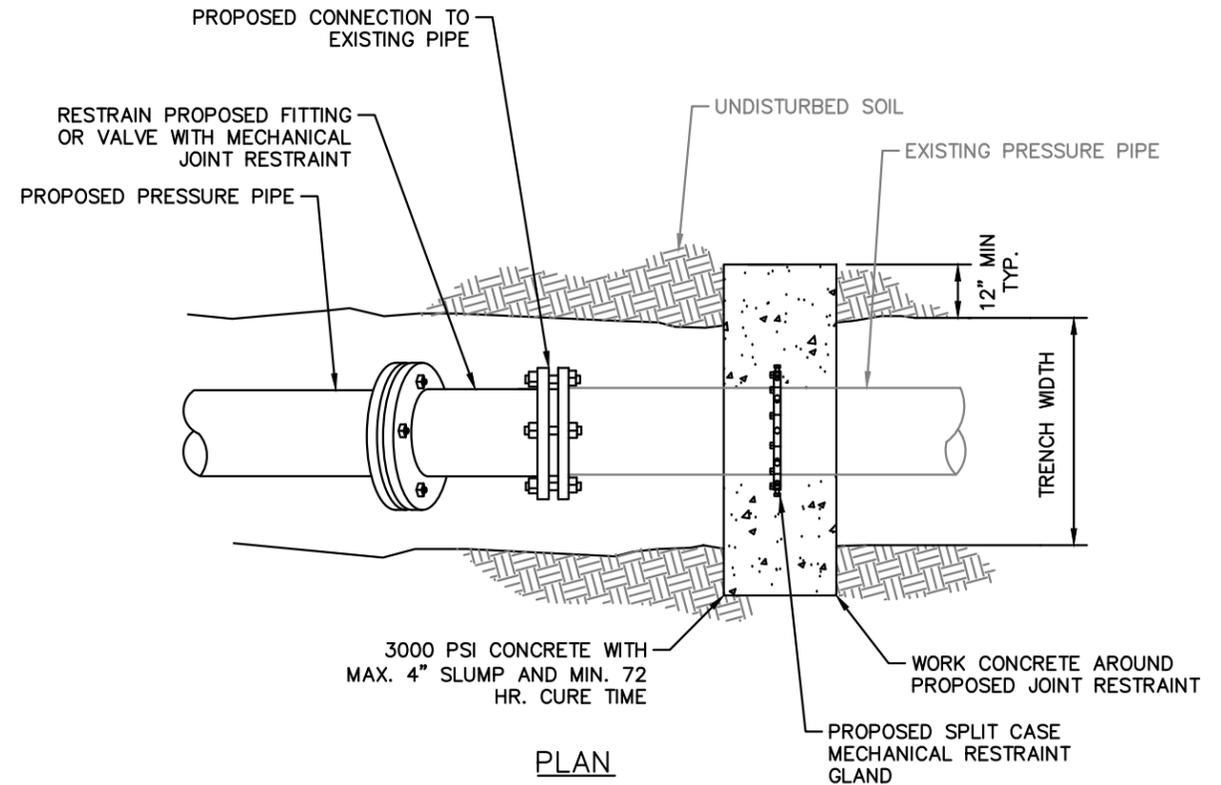
NOTES:

1. FOR TIE-IN VALVE, SEE DETAIL UW-3 FOR TAPPING SLEEVE VALVE AND UW-2 FOR GATE VALVE.
2. 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.
3. 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.
4. BACKFLOW PREVENTION ASSEMBLY SHALL BE STRUCTURALLY SUPPORTED.
5. 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		
DATE OF APPROVAL			

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			CONSTRUCTION DETAILS	SHEET NO. UD-11
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		

1. 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:
 - a. PROJECTS THAT INCLUDE A PERMANENT BACKFLOW PREVENTER AT THE RIGHT-OF-WAY WHICH IS ADJACENT TO THE EXISTING WATER MAIN;
 - b. PROJECTS THAT INCLUDE NEW WATER MAINS THAT ARE LESS THAN OR EQUAL TO 18 LINEAR FEET IN LENGTH; OR
 - c. OTHER PROPOSED CASES THAT ARE APPROVED BY MANATEE COUNTY AND THE CONSTRUCTION DRAWINGS SPECIFICALLY STATE THAT A TEMPORARY JUMPER CONNECTION IS NOT REQUIRED.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. PRIOR TO REMOVAL OF THE TEMPORARY JUMPER, THE NEWLY-CONSTRUCTED WATER SYSTEM SHALL HAVE RECEIVED CLEARANCE FROM THE FDEP.
11. 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.
12. 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.



CONCRETE DEADMAN RESTRAINT DETAIL
N.T.S.

MANATEE COUNTY
 PUBLIC WORKS DEPARTMENT

TEMPORARY JUMPER
 CONNECTION NOTES

UW-24

REV. BY	DATE

DATE OF APPROVAL

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL ANTHONY SEMAGO, P.E. 87501
 KIMLEY-HORN AND ASSOCIATES
 100 2ND AVENUE SOUTH, SUITE 105N
 ST. PETERSBURG, FL 33701
 REGISTRY NO. 35106

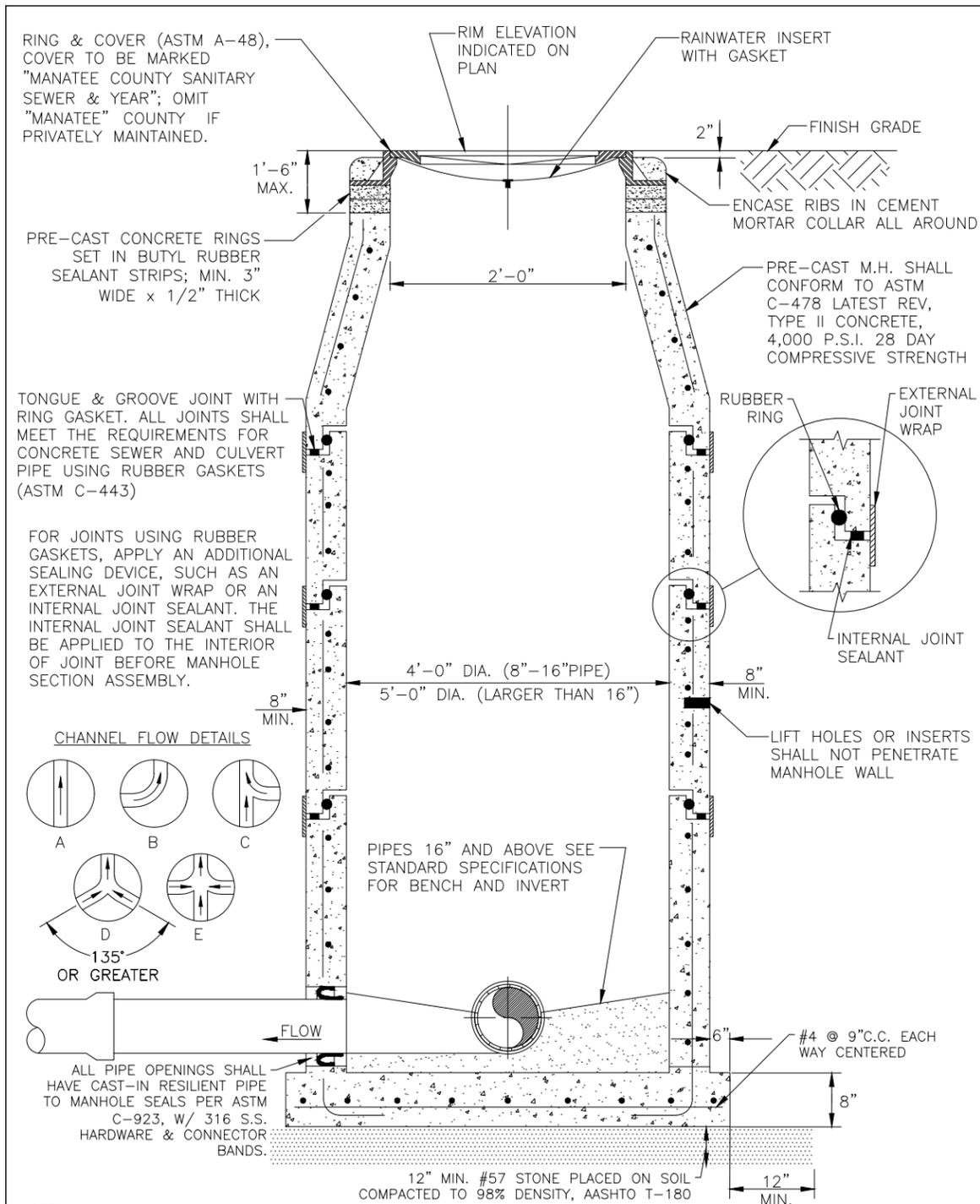
MANATEE COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	433592-4-58-01

CONSTRUCTION DETAILS

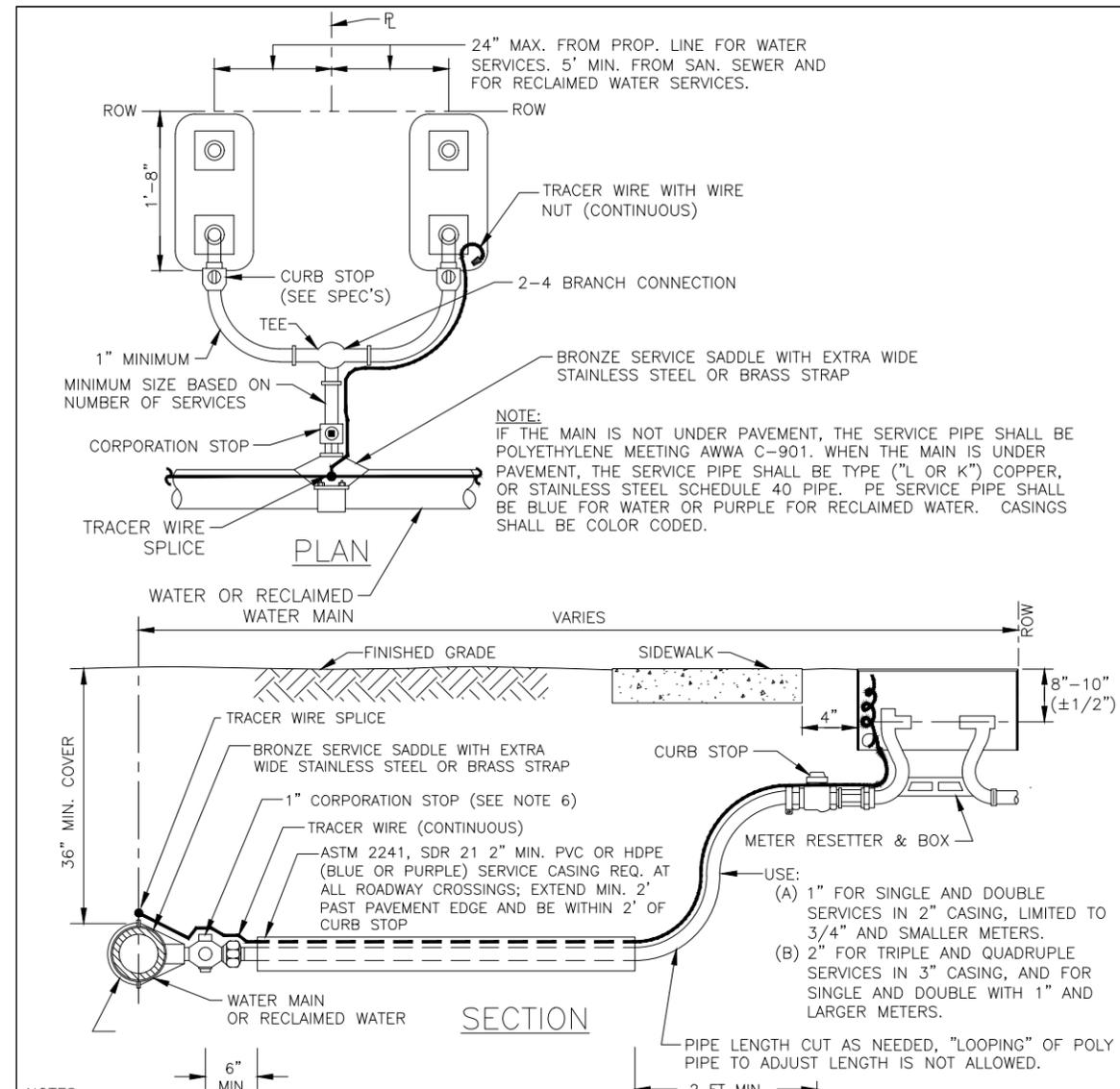
SHEET NO.

UD-12



NOTE:
 DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAILS D & E), MANHOLES UPSTREAM OF A LIFT STATION WET WELL (SEE US-17A), MANHOLES WITH GRAVITY SEWERS GREATER THAN 12 INCHES IN DIAMETER, MANHOLES RECEIVING A FORCE MAIN AND THE FIRST TWO GRAVITY MANHOLES DOWNSTREAM OF MANHOLES RECEIVING A FORCE MAIN SHALL BE A POLYMER CONCRETE MANHOLE (SEE US-3); OR EXISTING PORTLAND CONCRETE MANHOLE SHALL RECEIVE AN APPROVED LINER.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR UNDISTURBED FLOW	US-2
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



- NOTES:**
- ALL SERVICE TAPS TO BE LOCATED IN THE FIELD. TAPS SHALL BE NO CLOSER THAN 2'-0" STAGGERED INTERVALS OR WITHIN 2'-0" FROM BELL OR SPIGOT ENDS.
 - METER BOXES & RESETTERS ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS. WITH PRIOR APPROVAL BY COUNTY, METER BOXES WITH LOCKABLE LIDS MAY BE LOCATED IN SIDEWALKS.
 - "WM" OR "RWM" TO BE IMPRESSED INTO THE NEWLY POURED CONCRETE CURB ALONG WITH DISTANCE IN FEET TO THE METER. IF NO CURB, INSTALL A BLUE DISC WITH "WM" OR A PURPLE DISC WITH "RWM" AND A 1/8"x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (IN FEET) FROM THE DISC TO THE METER.
 - COLOR CODED TRACER WIRE SHALL BE INSTALLED WITH WATER AND RECLAIMED MAIN AND ALL SERVICES. SERVICE WIRE SHALL BE CONNECTED TO THE TRACER WIRE ALONG THE MAIN. ON DOUBLE SERVICES, WHEN SECOND METER IS OVER 8 FT APART, TWO TRACER WIRES SHALL BE INSTALLED; ONE FOR EACH METER.
 - WATER AND RECLAIMED WATER SERVICE LINES TO BE 5' MINIMUM FROM SEWER SERVICE PIPES.
 - FOR 2" SERVICES REPLACE CORPORATION STOP WITH 2" RESILIENT WEDGE FIP GATE VALVE W/BOX, LID & TAG.
 - WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE ROW IS ONE FOOT (CUL-DE-SAC W/MEDIAN) A 10-FOOT-WIDE PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE ROW.
 - TEMPORARY RESIDENTIAL USE CAN BE PROVIDED BY CONTACTING THE UTILITY CUSTOMER SERVICE. SEE DETAIL UW-19.
 - SERVICE TUBING SHALL NOT BE CRIMPED OR KINKED TO RE-ADJUST CURB STOP LOCATION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYPICAL SERVICE CONNECTION	UW-21
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

REVISIONS				MICHAEL ANTHONY SEMAGO, P.E. 87501 KIMLEY-HORN AND ASSOCIATES 100 2ND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 REGISTRY NO. 35106	MANATEE COUNTY			CONSTRUCTION DETAILS	SHEET NO. UD-13
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					US 41	MANATEE	433592-4-58-01		

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