

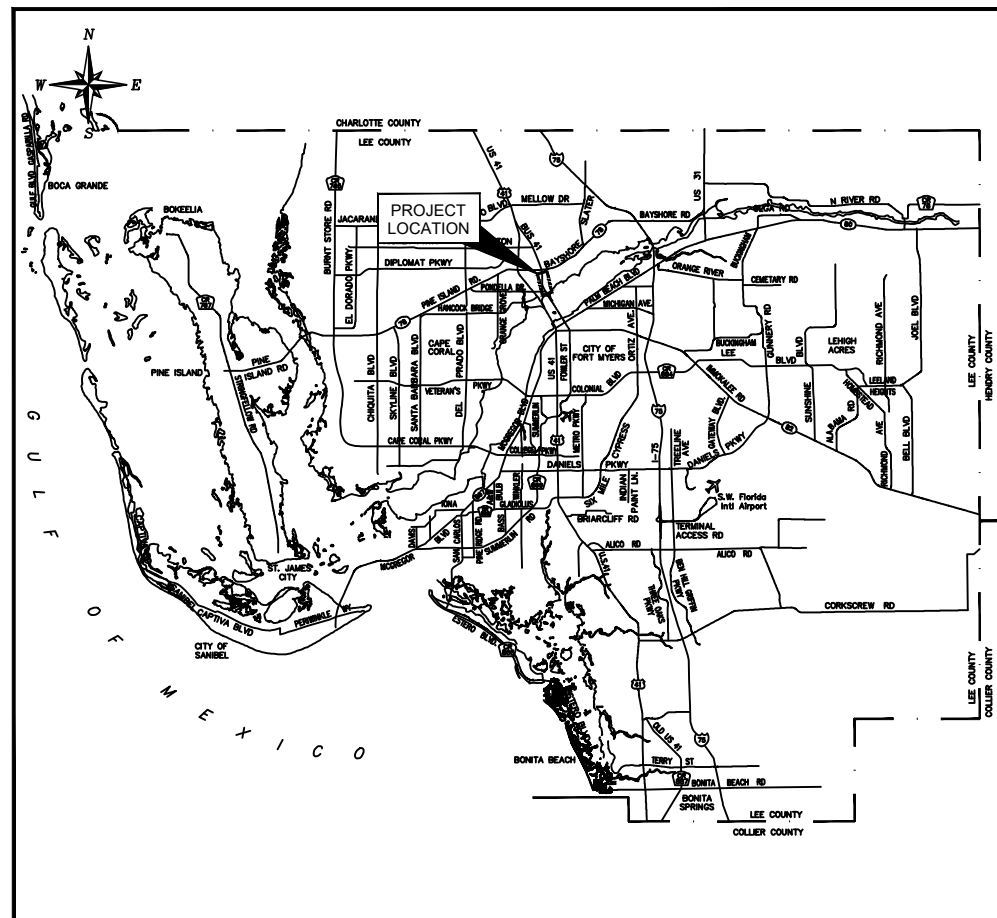
LEE COUNTY BOARD OF COUNTY COMMISSIONERS

LEE COUNTY UTILITIES ENGINEERING

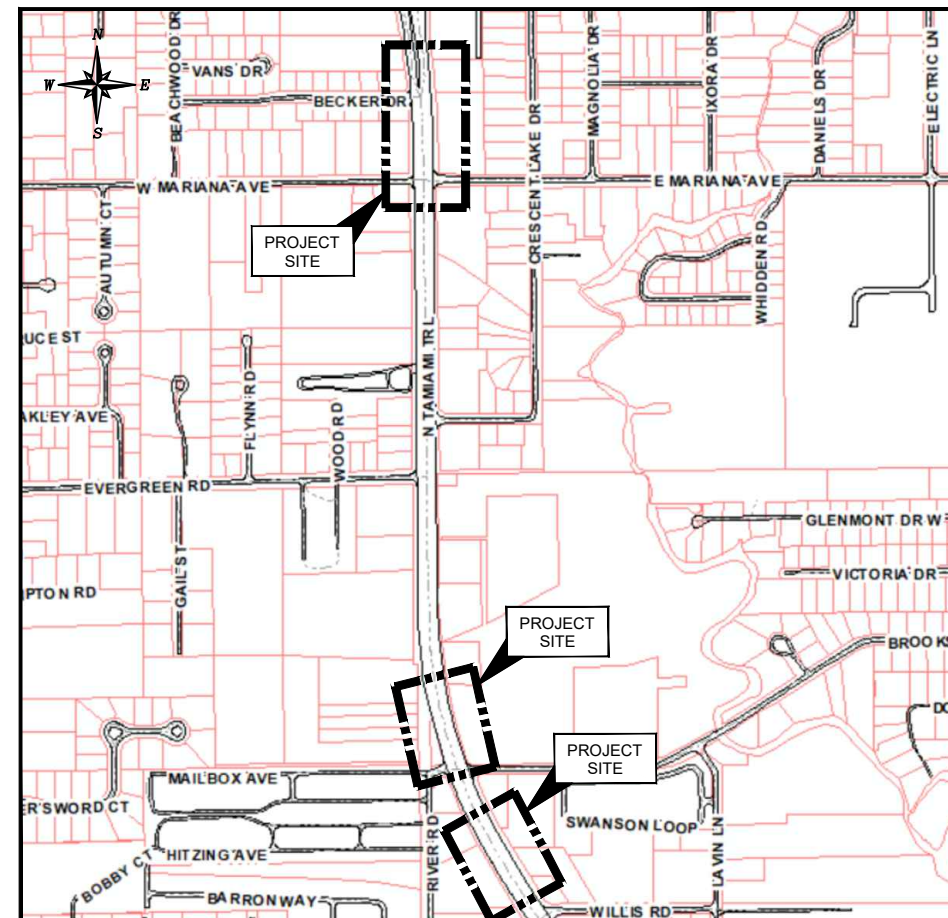
US 41 WATER MAIN DEFLECTIONS LEE COUNTY, FLORIDA

SHEET INDEX

Sheet Number	SHEET DESCRIPTION
1	COVER SHEET
2	SIGNATURE SHEET
3	LCU STANDARD SYM-ABB & NOTES SHEET
4	STATION 167+00 TO 169+00 P&P SHEET
5	STATION 175+00 TO 177+00 P&P SHEET
6	STATION 203+00 TO 207+00 P&P SHEET
7	BECKER DR P&P SHEET
8	LCU STANDARD DETAILS SHEET



PROJECT LOCATION
N.T.S.



PROJECT SITE
N.T.S.

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

ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM NAVD88.

LEE COUNTY COMMISSIONERS

- DIST 1. Kevin Ruane
- DIST 2. Cecil L Pendergrass
- DIST 3. David Mulicka
- DIST 4. Brian Hamman
- DIST 5. Michael Greenwell

COUNTY MANAGER

Dave Harner

ASSISTANT COUNTY MANAGER

Mark Mora

DIRECTOR OF PUBLIC UTILITIES

Pamela S. Keyes, P.E.

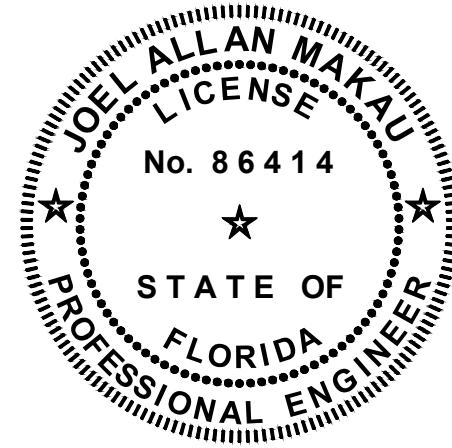
REVISIONS

No.	DATE	DESCRIPTION	APPROVED



LEE COUNTY
UTILITIES
ENGINEERING
1500 MONROE STREET
FORT MYERS, FLORIDA 33901

DATE:	11/22/2024	PROJECT No.:	----	SHEET No.:	1 OF 8
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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.

JOEL ALLAN MAKAU, P.E.
P.E. LICENSE NUMBER 86414
LEE COUNTY UTILITIES
1500 MONROE ST.
FORT MYERS, FL 33901

THE ABOVE NAMES PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE
FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

DATE
CHECKED
DRAWN
REVISION
REV #



**LEE COUNTY
UTILITIES
ENGINEERING**
1500 MONROE STREET
FORT MYERS, FLORIDA 33901

DRAWN: DRW	CHECKED: JAM
DESIGNED: JAM	DATE: 11/22/2024
HORIZ. SCALE (FULL): 1" = 40'	
VERT. SCALE (FULL): 1" = 4'	

SHEET TITLE: SIGNATURE SHEET
TITLE: WATER MAIN DEFLECTION

PROJECT: US 41 WATER MAIN DEFLECTIONS		
PROJECT NO.: ----	FILE NAME: US 41 WM DEFLECTIONS SS.dwg	SHEET NUMBER: 2 OF 8

SYMBOLS	
	AIR RELEASE VALVE
	AUTOMATIC FLUSHING DEVICE
	BACTERIAL SAMPLE POINT
	BEND
	BLOW-OFF VALVE
	CAP
	CROSS
	FIRE HYDRANT, EXISTING
	FIRE HYDRANT
	GATE VALVE, EXISTING
	GATE VALVE, PLUG VALVE
	IRRIGATION METER
	MANHOLE, EXISTING
	MANHOLE
	MECHANICAL JOINT SLEEVE
	POWER POLE
	REDUCER, EXISTING
	REDUCER
	SEWER CLEAN OUT, EX. (LATERAL)
	SEWER CLEAN OUT (LATERAL)
	TEE, SADDLE
	WATER METER, EXISTING
	WATER METER
	S-SHAPED FITTING
	LINE STOP
	DDCV (DCDV)
	LIFT STATION
	CASING (WATER/SEWER)

ABBREVIATIONS	
AC	ASBESTOS CEMENT
AFD	AUTOMATIC FLUSHING DEVICE
ARV	AIR RELEASE VALVE
BOV	BLOW-OFF VALVE
BV	BUTTERFLY VALVE
CI	CAST IRON
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DDCV	DOUBLE DETECTOR CHECK VALVE (DCDA)
DI	DUCTILE IRON
EOP	EDGE OF PAVEMENT
FH	FIRE HYDRANT
FM	FORCE MAIN
GM	GRAVITY MAIN
GV	GATE VALVE
HDPE	HIGH DENSITY POLYURETHANE
IRR	IRRIGATION
MH	MANHOLE
PSP	PERMANENT SAMPLE POINT
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
RDCR	REDUCER
ROW	RIGHT OF WAY
SP	STEEL PIPE
TSP	TEMPORARY SAMPLE POINT
VCP	VITRIFIED CLAY PIPE
WM	WATER MAIN

LCU STANDARD PLAN NOTES

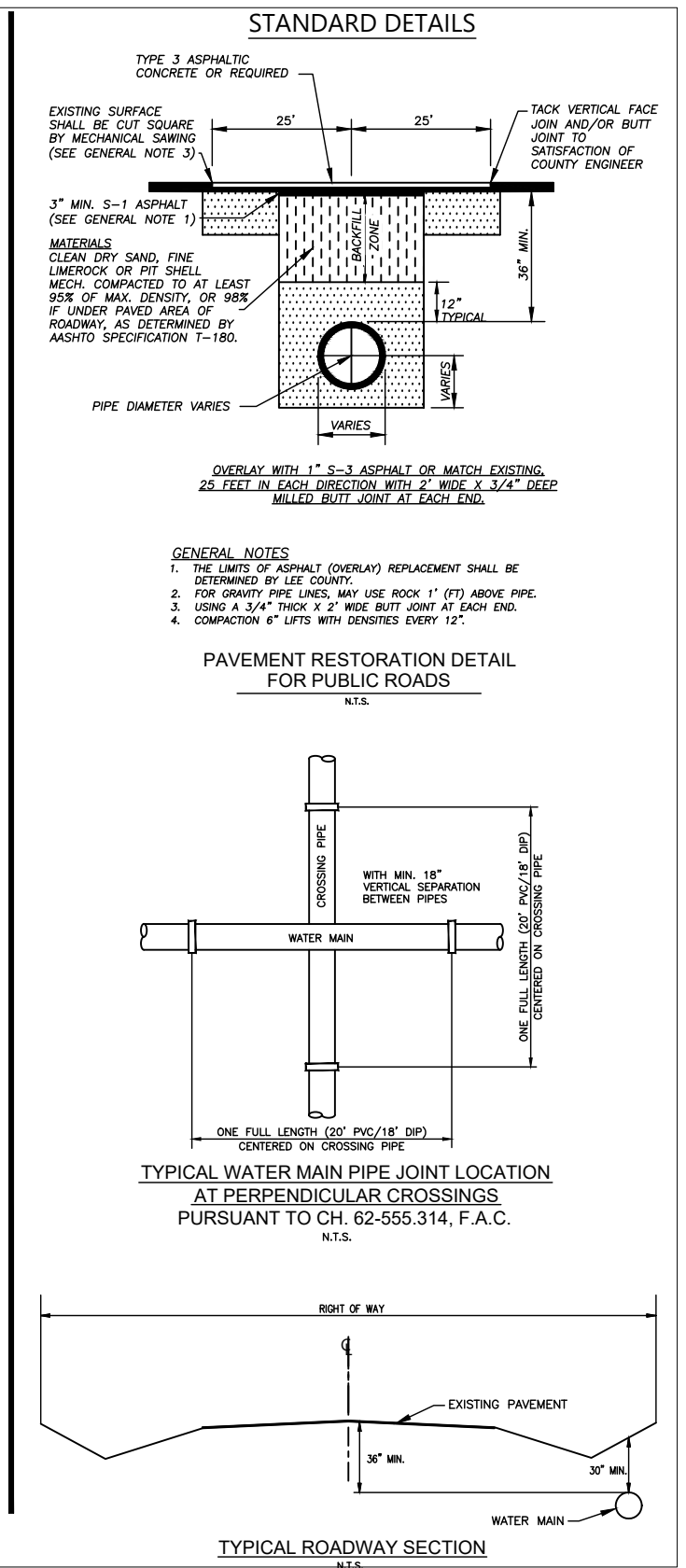
- ALL WORK SHALL CONFORM TO LATEST REVISION OF THE LCU DESIGN MANUAL WHICH IS AVAILABLE ON OUR WEB-PAGE VIA THE FOLLOWING LINK: [HTTPS://WWW.LEEGOV.COM/UTILITIES/DESIGN-MANUAL](https://www.lee.gov/utilities/design-manual)
- THE CONTRACTOR SHALL COMPLY WITH ALL REGULATORY AND PERMITTING AGENCIES' REQUIREMENTS.
- ANY QUANTITIES SHOWN ON PLANS ARE NOT VERIFIED BY LCU.
- ALL CONSTRUCTION PERFORMED MUST BE DONE BY A CONTRACTOR PROPERLY LICENSED IN THE STATE OF FLORIDA.
- A PRE-CONSTRUCTION MEETING IS REQUIRED BEFORE WORK MAY BEGIN. REQUIRED ATTENDEES INCLUDE BUT ARE NOT LIMITED TO: THE ENGINEER OF RECORD OR HIS/HER DESIGNEE, THE UNDERGROUND CONTRACTOR AND THE LCU INSPECTOR ASSIGNED TO THE PROJECT. LCU IS TO BE NOTIFIED A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING.
- ONE COPY OF THE LCU APPROVED/STAMPED CONSTRUCTION PLANS MUST BE MAINTAINED BY THE CONTRACTOR AT THE SITE AT ALL TIMES.
- ANY AND ALL WORK AND MATERIALS INSTALLED BY THE CONTRACTOR THAT ARE INTENDED FOR OWNERSHIP AND MAINTENANCE BY LCU, WHICH DO NOT CONFORM TO LCU SPECIFICATIONS AND WHICH DO NOT HAVE PRIOR LCU WRITTEN APPROVAL, ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- ANY WORK PERFORMED ON INFRASTRUCTURE INTENDED FOR OWNERSHIP AND MAINTENANCE BY LCU WITHOUT THE KNOWLEDGE OF LCU IS SUBJECT TO RE-EXCAVATION, REMOVAL AND REPLACEMENT OF SAME TO BE DONE AT THE CONTRACTOR'S EXPENSE.
- LCU INSPECTION STAFF IS TO BE PRESENT FOR ALL HOT TAPS, PRESSURE TESTS, LIFT STATION START-UPS AND FOR ANY OTHER NECESSARY INSPECTION. THE CONTRACTOR IS TO PROVIDE A MINIMUM OF TWO (2) WORKING DAYS NOTICE PRIOR TO SCHEDULING ANY OF THE ABOVE WITH THE EXCEPTION OF THE LIFT STATION START-UP WHICH REQUIRES MINIMUM OF TWO WEEKS NOTICE.
- THE CONTRACTOR IS TO UNCOVER ALL EXISTING LCU UTILITY INFRASTRUCTURE TO VERIFY HORIZONTAL LOCATION, VERTICAL LOCATION, PIPE DIAMETER, AND PIPE MATERIAL PRIOR TO SCHEDULING THE CONNECTION WITH LCU.
- LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. LCU WILL NOT GUARANTEE ANY LOCATIONS AS SHOWN ON THESE PLANS OR THOSE OMITTED FROM THESE PLANS.
- THE CONTRACTOR SHALL PROVIDE A MINIMUM OF AT LEAST TWO (2) WORKING DAYS NOTICE TO THE INDIVIDUAL UTILITY COMPANIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL CONTACT THE ENGINEER AND LCU IMMEDIATELY TO REPORT ANY CONFLICT WITH LCU UTILITIES/STRUCTURES ARISING DURING CONSTRUCTION OF ANY FACILITIES SHOWN ON THESE DRAWINGS.
- ALL FRAMES, COVERS VALVE BOXES, METER BOXES AND MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE UPON COMPLETION OF PAVING OR RELATED CONSTRUCTION. ALL VALVE PADS SHALL BE POURED IN PLACE. NO PRE-CAST VALVE PADS WILL BE ACCEPTED.
- LCU REQUIRES 36" OF MINIMUM COVER FOR ALL UNDERGROUND PIPING. IF LCU REQUIRED COVER CANNOT BE MAINTAINED, ALTERNATE METHODS OF CONSTRUCTION OR PIPE PROTECTION MUST BE APPROVED BY LCU AND THE ENGINEER, AT NO ADDITIONAL COST TO THE COUNTY. IF STATE AGENCIES REQUIRE ADDITIONAL COVER, MEETING THE REQUIREMENTS SHALL BE DONE AT NO ADDITIONAL COST TO THE COUNTY.
- LCU REQUIRES THERE TO BE A MINIMUM OF TEN (10) FEET HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN POTABLE WATER & SANITARY SEWER MAINS. LCU ALSO REQUIRES MINIMUM OF TEN (10) FEET HORIZONTAL SEPARATION BETWEEN OTHER PUBLIC AND/OR PRIVATE UTILITIES, STRUCTURE(S), BUILDING(S), WALL(S), FOUNTAIN(S), FENCE(S) AND LCU INFRASTRUCTURE UNLESS SPECIFICALLY APPROVED BY LCU

LCU STANDARD PLAN NOTES CONTINUED

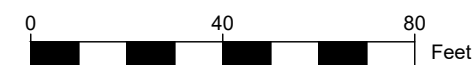
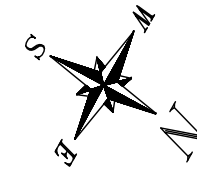
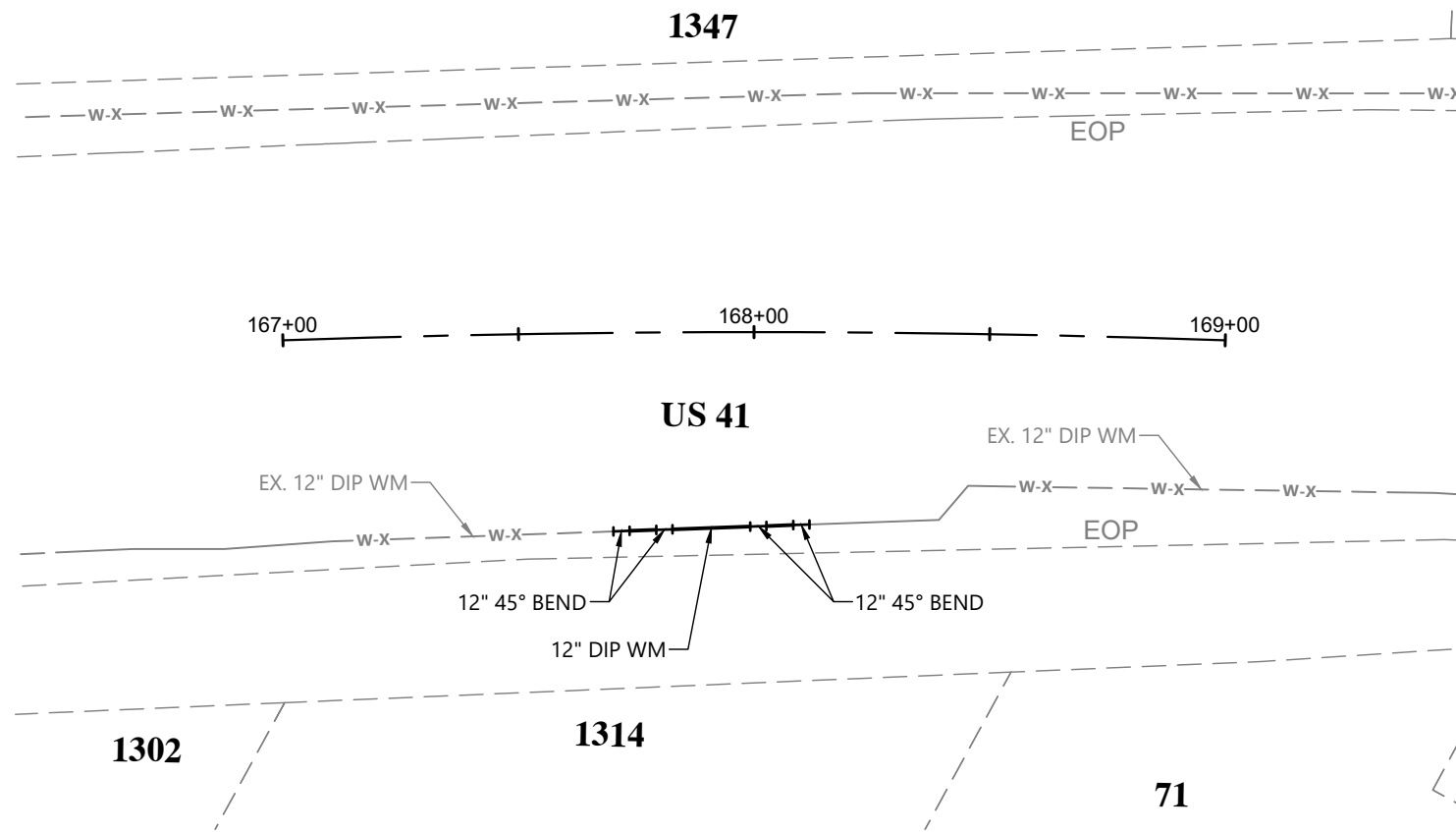
- LCU REQUIRES THERE TO BE A MINIMUM OF FIVE (5) FEET HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION BETWEEN LCU INFRASTRUCTURE AND DRAINAGE INFRASTRUCTURE, MITERED END SECTIONS, INLETS, ETC. LCU ALSO REQUIRES MINIMUM OF FIVE (5) FEET HORIZONTAL SEPARATION BETWEEN LCU INFRASTRUCTURE AND ALL NEW LIGHT POLE FOUNDATIONS.
- THE TRUNK OF PALM TREES SHALL BE A MINIMUM OF FIVE (5) FEET AND THE TRUNK OF SHADE TREES SHALL BE A MINIMUM OF TEN (10) FEET FROM ANY EXISTING OR PROPOSED LCU OWNED AND MAINTAINED PIPE/INFRASTRUCTURE.
- AS THE WORK PROGRESSES THE CONTRACTOR SHALL PROVIDE FOR ALL CHANGES AND DEVIATIONS FROM THE LCU STAMPED/APPROVED CONSTRUCTION PLANS TO BE RECORDED. THE EXACT LOCATION OF ALL CHANGES IN VERTICAL AND HORIZONTAL ALIGNMENT SHALL BE RECORDED WITH X, Y, AND Z COORDINATES WITH RESPECT TO THE NAVD 1988 STATE PLANE FLORIDA WEST COORDINATE SYSTEM, AS WELL AS ANY OTHER RECORD INFORMATION REQUIRED BY THE LCU DESIGN MANUAL.

STANDARD PLAN NOTES

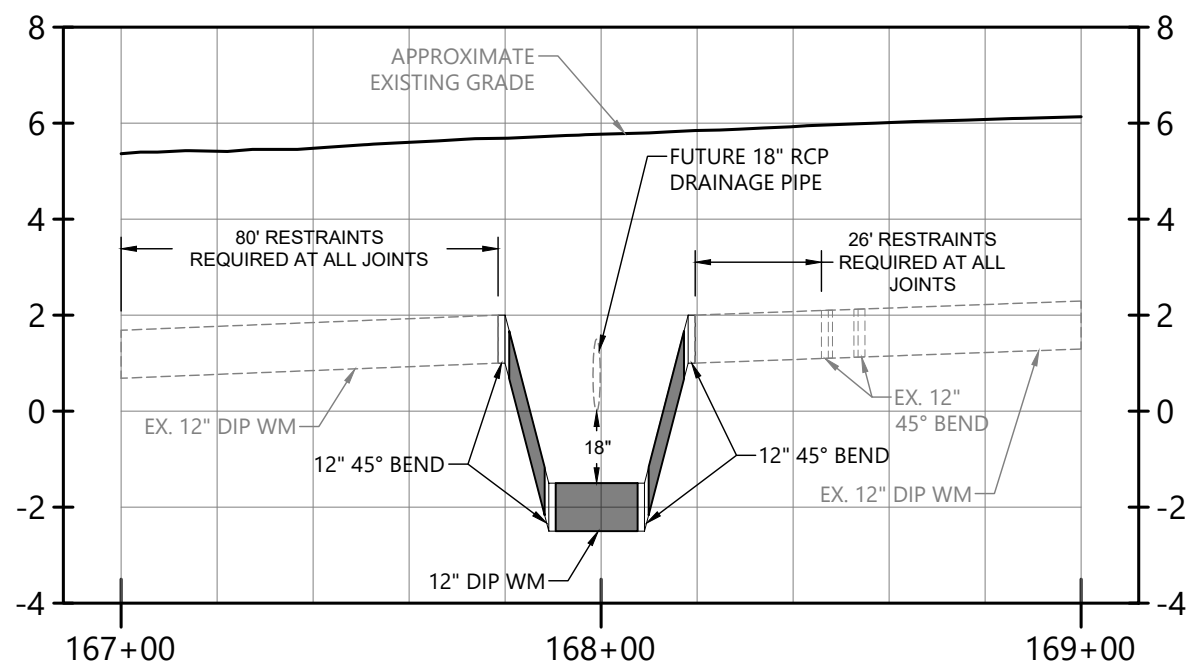
- THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS THAT MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
- TRAFFIC MUST BE MAINTAINED AT ALL TIMES AS PER LEE COUNTY DEPARTMENT OF TRANSPORTATION (LCDOT) AND PER FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND TAKE ALL POSSIBLE PRECAUTIONS TO AVOID ANY DAMAGE TO ALL UNDERGROUND PIPELINES, TELEPHONE, CABLE TV, ELECTRIC LINES/CONDUITS AND STRUCTURES IN ADVANCE OF ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES THAT MAY OCCUR DUE TO HIS FAILURE TO EXACTLY LOCATE AND PROTECT EXISTING UTILITIES AND STRUCTURES.
- ANYTHING NOT SHOWN ON THESE DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND SHALL NOT CONSTITUTE AN EXTRA, UNLESS APPROVED BY THE ENGINEER OF RECORD.
- THE CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THE PLANS. IF ANY DISCREPANCIES IN QUANTITIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND LCU.
- THE CONTRACTOR SHALL REPLACE ALL PAVEMENT, CURBS, DRIVEWAYS, SIDEWALKS, FENCES, ETC., WITH THE SAME TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL RESTORE ALL AREAS AFFECTED BY THE CONSTRUCTION TO ITS ORIGINAL CONDITION, OR BETTER.
- WITHIN THE FDOT AND LCDOT RIGHT-OF-WAY, ALL DISTURBED AREAS SHALL RECEIVE GRASSING (SEEDING) OR SODDING MATERIALS IN ACCORDANCE WITH FDOT SPECIFICATIONS. THOSE AREAS THAT ARE CLASSIFIED AS DRAINAGE DITCHES SHALL RECEIVE FULL SOLID SOD.
- APPROPRIATE TURBIDITY CONTROL DEVICES (E.G. SILT FENCES, HAY BALES) WILL BE UTILIZED DURING ALL PHASES OF INSTALLATION AND GRADING. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE NOTICE OF INTENT AND NOTICE OF TERMINATION TO THE EPA IN COMPLIANCE WITH LEE COUNTY'S NPDES PERMIT.
- CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND MAINTAINING AN EFFECTIVE STORM WATER POLLUTION PREVENTION PLAN.



	LEE COUNTY UTILITIES ENGINEERING 1500 MONROE STREET FORT MYERS, FLORIDA 33901	DRAWN: DRW DESIGNED: JAM HORIZ. SCALE (FULL): VERT. SCALE (FULL):	CHECKED: JAM DATE: 11/22/2024	SHEET TITLE: LCU STANDARD SYMBOLS, ABBREV. & NOTES SHEET	PROJECT: US 41 WATER MAIN DEFLECTIONS		
		TITLE: WATER MAIN DEFLECTION		PROJECT NO.: ----	FILE NAME: US 41 WM DEFLECTIONS SAN.dwg	SHEET NUMBER: 3 OF 8	
						REV #	REVISION
						DATE	CHECKED



ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM NAVD88.



REV #	REVISION	DRAWN	CHECKED	DATE



LEE COUNTY UTILITIES ENGINEERING
 1500 MONROE STREET
 FORT MYERS, FLORIDA 33901

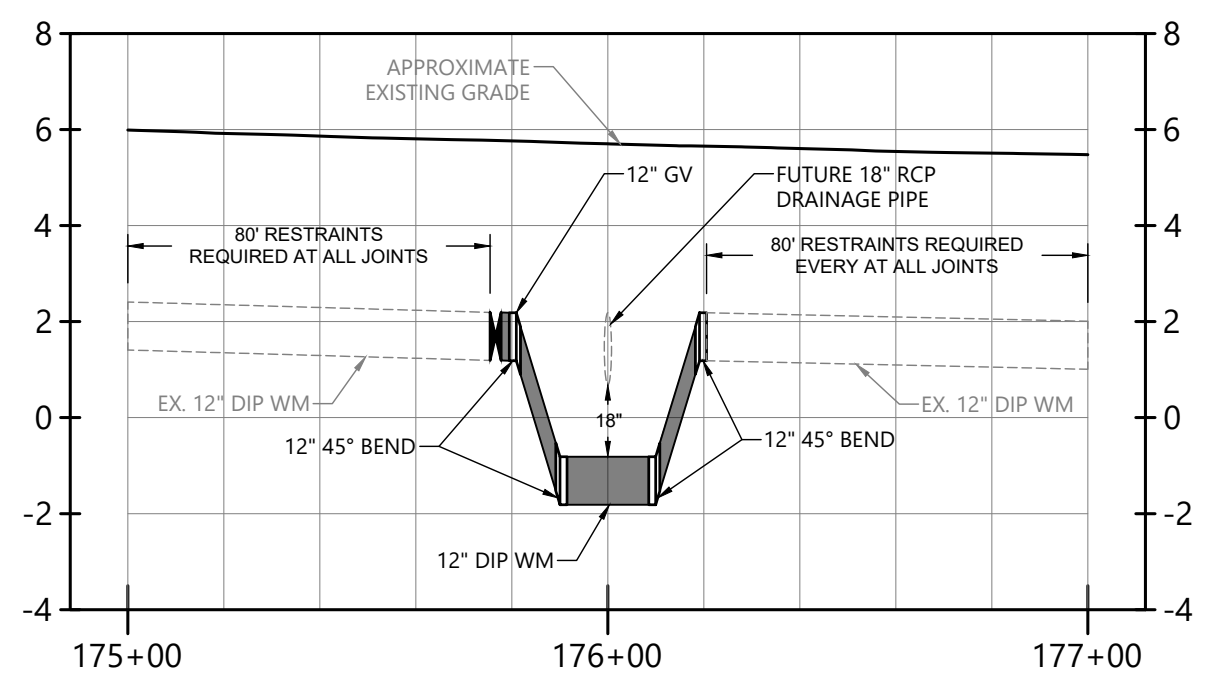
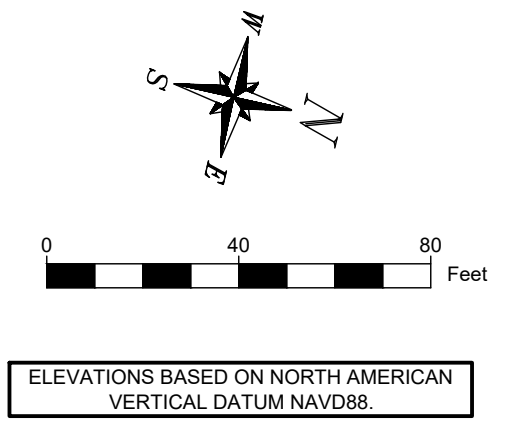
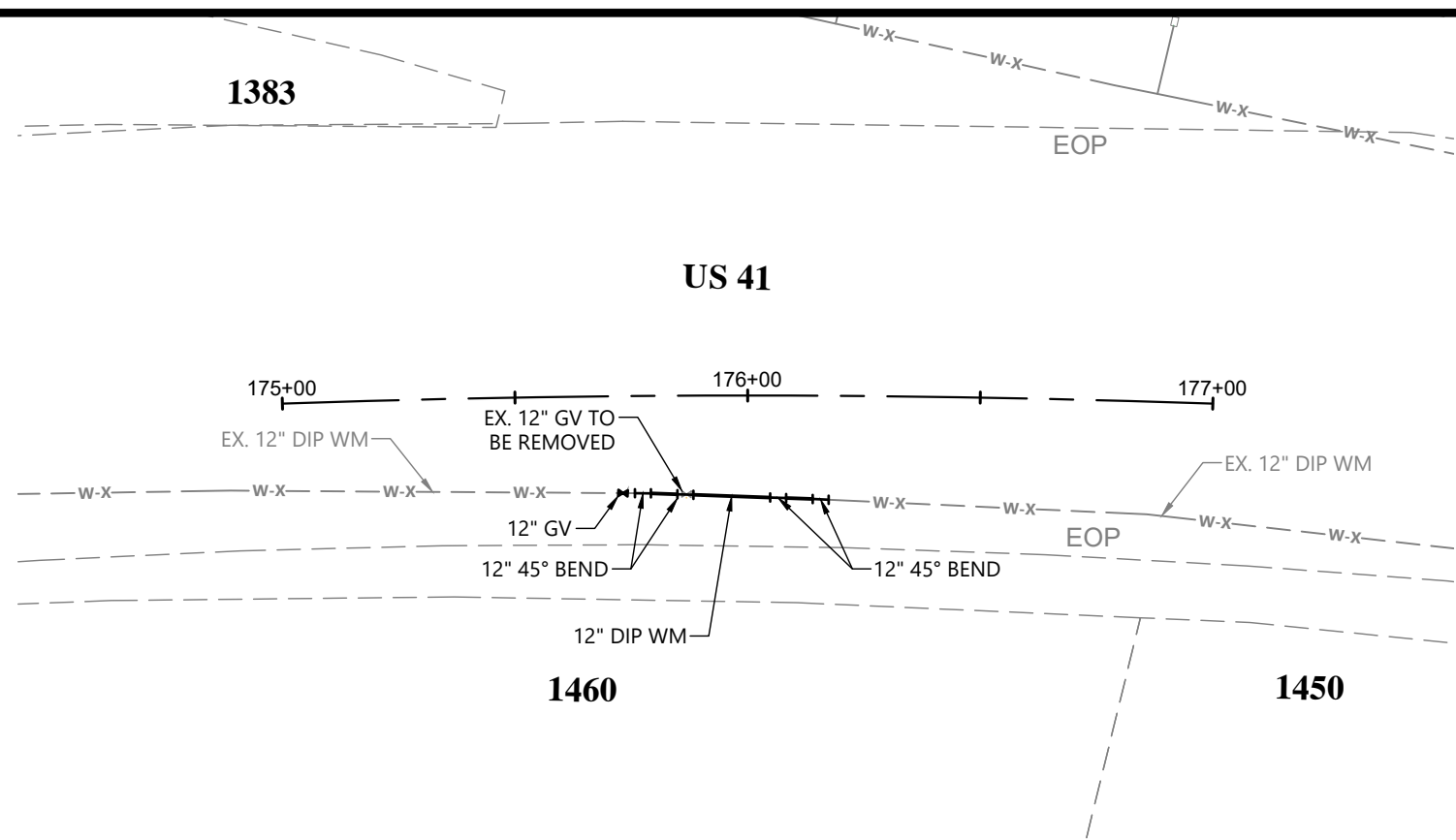
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 DESIGNED: JAM
 HORIZ. SCALE (FULL):
 VERT. SCALE (FULL):

CHECKED: JAM
 DATE: 11/22/2024

SHEET TITLE: **US 41 STA 167 TO 169 P&P SHEET**

TITLE: **WATER MAIN DEFLECTION**

FILE NAME:	US 41 WM DEFLECTIONS.DWG	
PROJECT:	US 41 WATER MAIN DEFLECTIONS	
PROJECT NO.:	----	SHEET NUMBER: 4 OF 8



REV #	REVISION	DRAWN	CHECKED	DATE

FILE NAME:	US 41 WM DEFLECTIONS.DWG	
PROJECT:	US 41 WATER MAIN DEFLECTIONS	
PROJECT NO.:	----	SHEET NUMBER: 5 OF 8

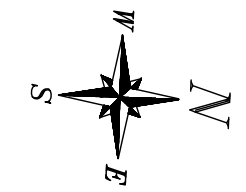
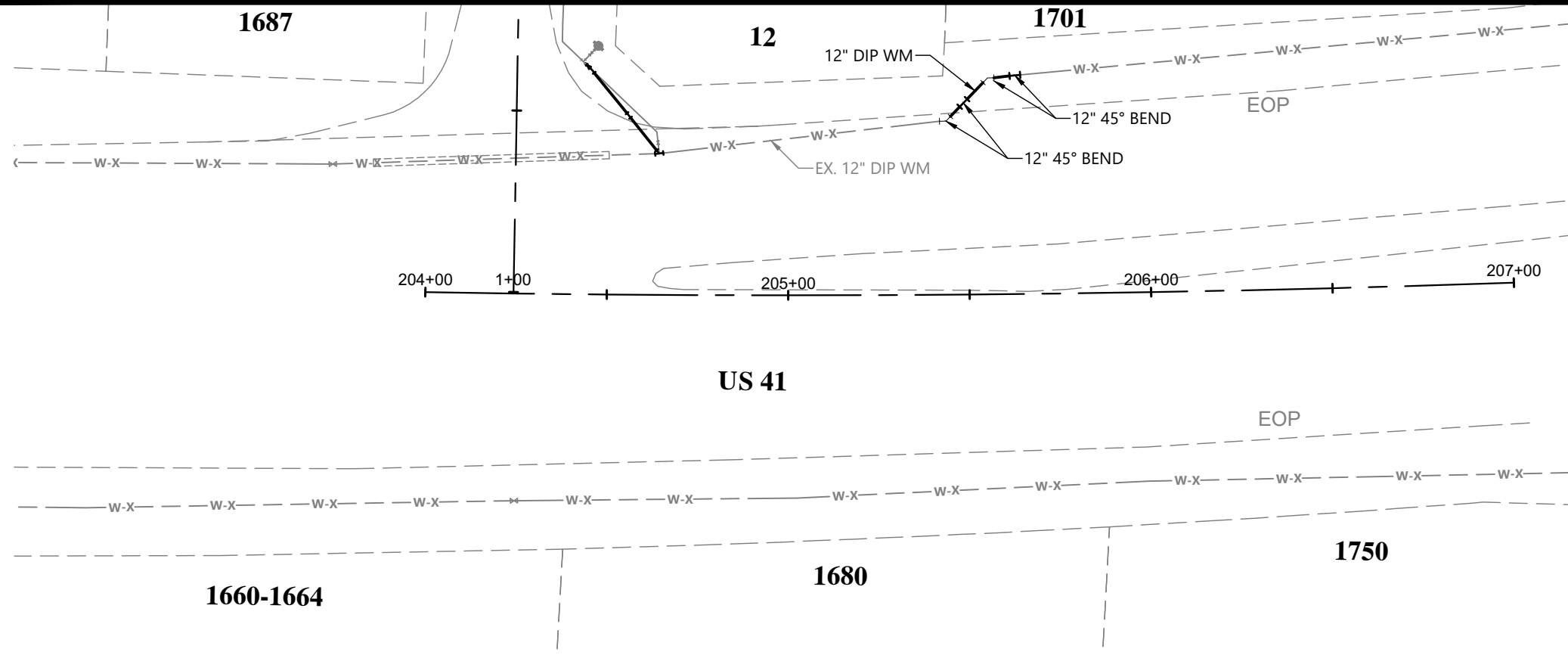


**LEE COUNTY
UTILITIES
ENGINEERING**
1500 MONROE STREET
FORT MYERS, FLORIDA 33901

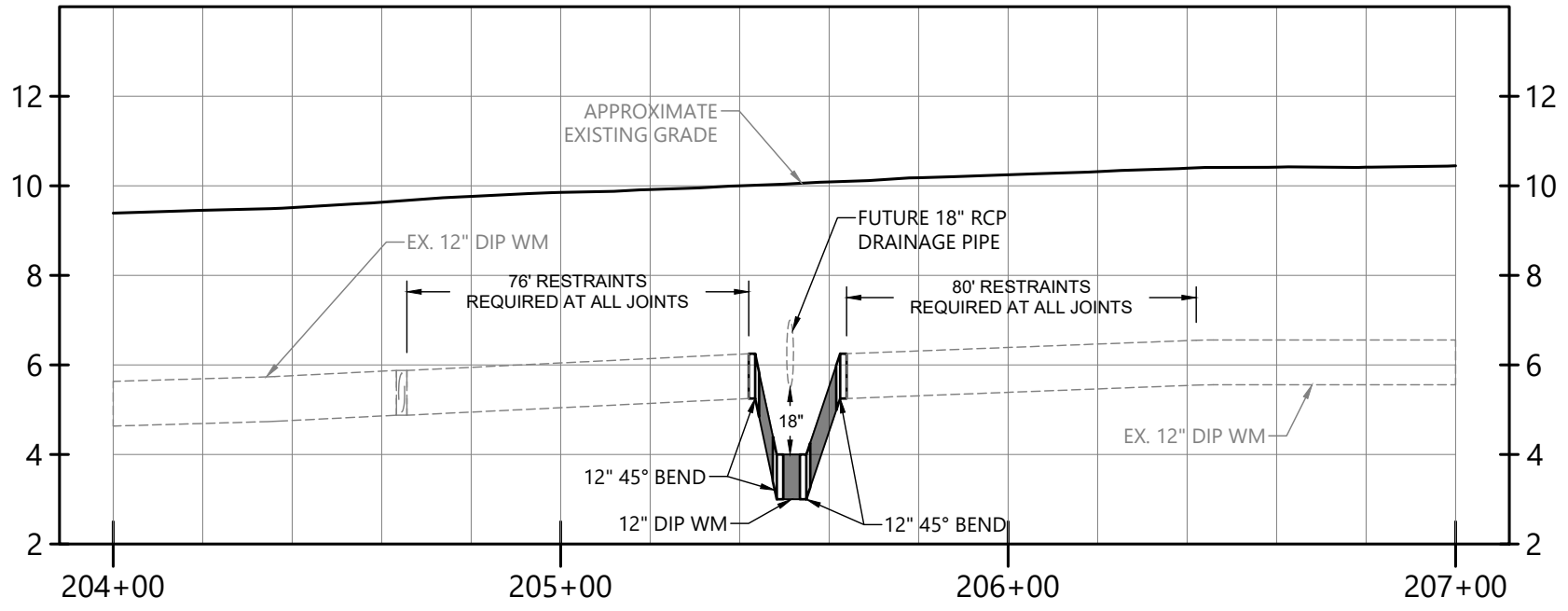
DRAWN: DRW	CHECKED: JAM
DESIGNED: JAM	DATE: 11/22/2024
HORIZ. SCALE (FULL):	
VERT. SCALE (FULL):	

SHEET TITLE: **US 41
STA 175 TO 177 P&P SHEET**

TITLE: **WATER MAIN
DEFLECTION**



ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM NAVD88.



REV #	REVISION	DRAWN	CHECKED	DATE



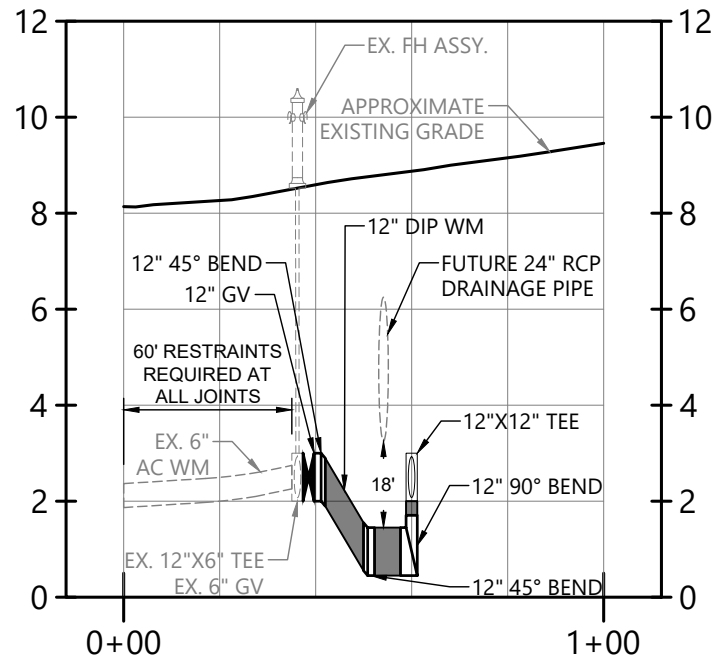
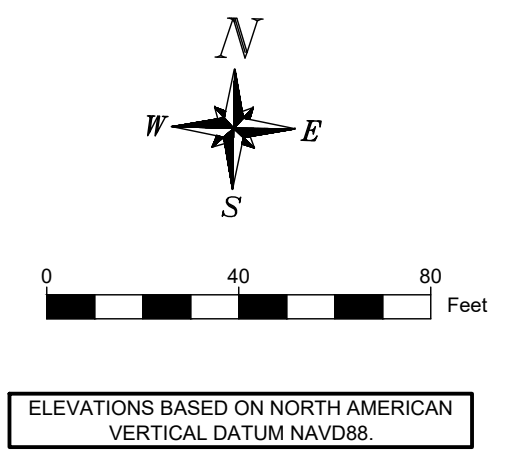
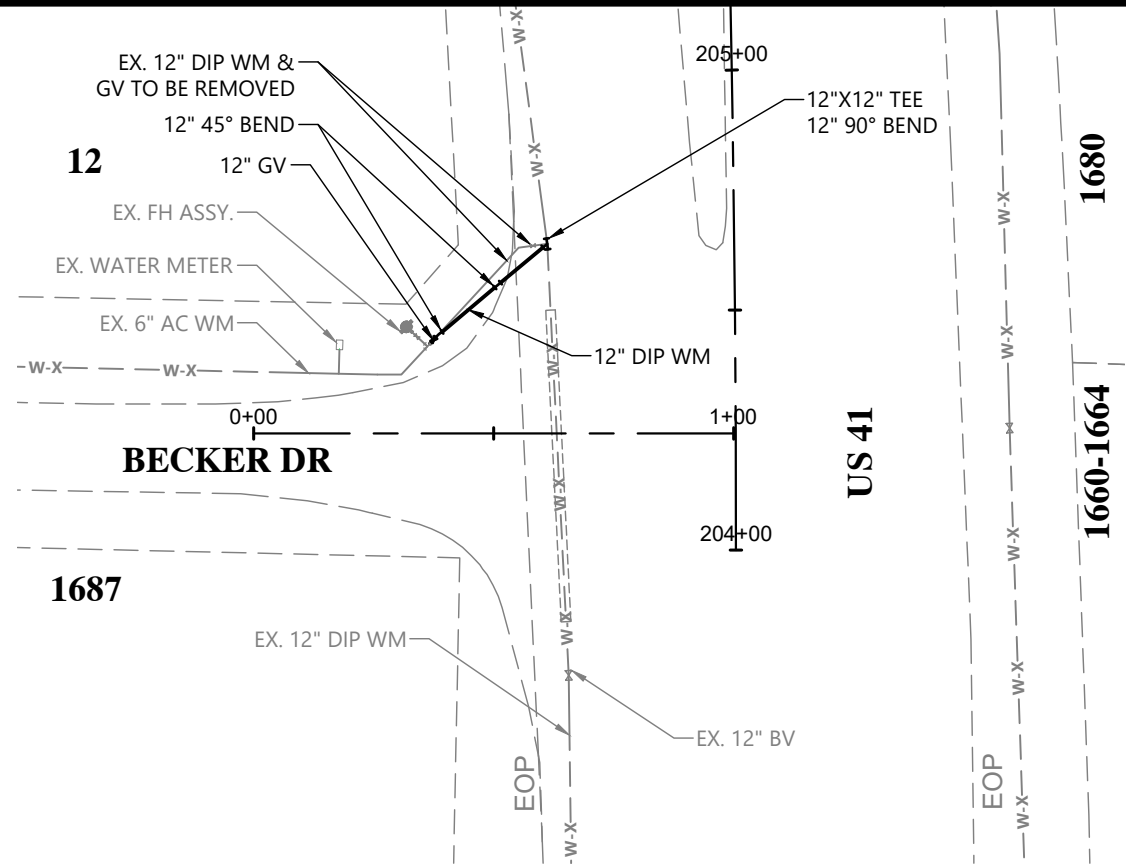
LEE COUNTY UTILITIES ENGINEERING
 1500 MONROE STREET
 FORT MYERS, FLORIDA 33901

DRAWN: DRW	CHECKED: JAM
DESIGNED: JAM	DATE: 11/22/2024
HORIZ. SCALE (FULL):	
VERT. SCALE (FULL):	

SHEET TITLE: **US 41 STA 203 TO 207 P&P SHEET**

TITLE: **WATER MAIN DEFLECTION**

FILE NAME:	US 41 WM DEFECTIONS.DWG	
PROJECT:	US 41 WATER MAIN DEFLECTIONS	
PROJECT NO.:	----	SHEET NUMBER: 6 OF 8



REV #	REVISION	DRAWN	CHECKED	DATE



**LEE COUNTY
UTILITIES
ENGINEERING**
1500 MONROE STREET
FORT MYERS, FLORIDA 33901

DRAWN: DRW	CHECKED: JAM
DESIGNED: JAM	DATE: 11/22/2024
HORIZ. SCALE (FULL):	
VERT. SCALE (FULL):	

SHEET TITLE: **BECKER DR
STA 0+00 TO 1+00 P&P SHEET**

TITLE: **WATER MAIN
DEFLECTION**

FILE NAME:	US 41 WM DEFEFLECTIONS.DWG	
PROJECT:	US 41 WATER MAIN DEFLECTIONS	
PROJECT NO.:	----	SHEET NUMBER: 7 OF 8

TYPICAL LAYOUT

SPLICE DETAIL

VALVE DETAIL

NOTES:

1. WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES, THE PVC RISER PIPE SHALL BE NOTCHED AND THE WIRE ATTACHED TO THE RISER PIPE TO ALLOW FOR THE WIRE TO FIT INSIDE THE CAST IRON VALVE BOX WITHOUT SHEARING THE WIRE.
2. LOCATING WIRE SHALL BE LAID ON TOP OF THE MAIN, AND SHALL BE TAPED TO IT AT 10' INTERVALS AND TAPED AT ALL FITTINGS. TAPE SHALL BE 10 MIL POLYETHYLENE.
3. CONTRACTOR SHALL CONDUCT A CONTINUITY TEST ON ALL LOCATING WIRE SPLICES. PRIOR TO SCHEDULING THE OFFICIAL FINAL INSPECTION WITH LCU.
4. ALL SPLICES SHALL UTILIZE A DIRECT BURY WATERPROOF SPLICE KIT. (SEE APPROVED MATERIAL LIST)

① SPLICE RUN TOGETHER, KEEP CLEAR OF FITTING, TYPICAL
 ② COVER SPLICE WITH 2 WRAPS OF 10 MIL. POLYETHYLENE TAPE
 ③ 6" LOOP OF BARE WIRE, 9" MAX DEPTH TO TOP OF BARE WIRE
 ④ 10 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE
 ⑤ SPLICE (SEE DETAIL THIS SHEET)

Lee County UTILITIES ENGINEERING
 TITLE: LOCATING WIRE FOR PRESSURE MAINS
 DATE: 1/26/24
 G-03.dwg

NOT TO SCALE

PIPE SIZE	HORIZONTAL DEFLECTIONS				VERTICAL DEFLECTIONS		DEAD END VALVES	REDUCERS (SEE NOTES)			TEES			
	90° BENDS L _r (FT.)	45° BENDS L _r (FT.)	22.5° BENDS L _r (FT.)	11.25° BENDS L _r (FT.)	45° BENDS L _h (FT.) (SEE NOTE 5)	L _v (FT.)		SIZE	L _h (FT.)	L _v (FT.)	RUN SIZE	BRANCH SIZE	L _h (FT.)	L _v (FT.)
4"	20	10	5	5	20	5	30	6 x 4	30	20	4"	4"	10	30
6"	20	10	5	5	30	5	40	6 x 6	30	20	6"	6"	10	40
8"	25	15	5	5	40	5	50	6 x 8	70	40	8"	8"	10	50
10"	30	15	10	5	50	10	60	10 x 8	25	20	8"	8"	10	40
12"	35	15	10	5	55	10	70	10 x 8	60	40	8"	8"	10	30
16"	40	20	10	5	55	10	90	12 x 8	25	20	10"	10"	10	60
20"	50	20	10	5	55	10	110	12 x 8	55	40	10"	10"	10	50
24"	60	25	15	10	65	15	130	16 x 10	25	20	12"	12"	10	70
30"	70	30	15	10	60	15	150	16 x 10	85	55	12"	12"	10	60
36"	75	30	15	10	90	20	180	20 x 15	50	40	16"	16"	10	90
								20 x 12	115	70	16"	12"	10	70
								24 x 20	50	40	16"	10"	10	60
								24 x 10	110	70	10"	10"	10	50
								30 x 24	70	55	20"	20"	10	110
								30 x 20	130	85	20"	16"	10	90
								36 x 20	65	55	24"	20"	10	130
								36 x 24	150	100	24"	20"	10	110
											16"	12"	10	90
											10"	12"	10	70
											10"	10"	10	60
											30"	30"	10	150
											30"	20"	10	130
											16"	10"	10	90
											12"	10"	10	70
											36"	30"	10	180
											30"	20"	10	150
											24"	20"	10	130
											16"	10"	10	90
											12"	10"	10	70
											16"	10"	10	90

NOTES:

1. LENGTHS SHOWN IN THIS TABLE ARE TO BE INTERPRETED AS FOLLOWS:
 L_r = RESTRAINED LENGTH ON BOTH SIDES FROM FITTING
 L_h = RESTRAINED LENGTH FROM HIGH SIDE FITTING OF A VERTICAL DEFLECTION
 L_v = RESTRAINED LENGTH FROM LOW SIDE FITTING OF A VERTICAL DEFLECTION
 L_A = LENGTH OF PIPE ON SMALL SIDE FREE OF FITTING
 L_B = RESTRAINED LENGTH ON LARGE SIDE OF REDUCER
 L_m = MINIMUM LENGTH TO FIRST JOINT OF RUN ON BOTH SIDES
 L_r = RESTRAINED LENGTH REQUIRED ON BRANCH FROM FITTING
2. ALL DEAD END LINES OR VALVES, PERMANENT OR TEMPORARY, SHALL BE RESTRAINED PER THE ABOVE RESTRAINT TABLE.
3. REDUCERS HAVE TWO OPTIONS FOR PROVIDING THRUST RESTRAINT FOR THE REDUCER. EITHER L_A LENGTH OF PIPE FREE OF FITTINGS (BENDS, TEES, REDUCERS, VALVES) ON THE SMALL SIDE OF THE REDUCER OR L_B RESTRAINED LENGTH ON THE LARGE SIDE OF THE REDUCER WILL PROVIDE THE REQUIRED RESTRAINT. NO RESTRAINT IS REQUIRED ON THE SMALL SIDE OF A REDUCER.
4. A SAFETY FACTOR = 2.5 IS USED FOR ALL OTHER CASES.
5. DEAD END VALVES AND REDUCERS ON PVC MATERIAL PIPES NEED TO MULTIPLY THE RESTRAINED LENGTH BY 1.5 FACTOR.

Lee County UTILITIES ENGINEERING
 TITLE: RESTRAINED LENGTH SCHEDULE
 DATE: 9/13/24
 G-10.dwg

NOT TO SCALE



LEE COUNTY UTILITIES ENGINEERING
 1500 MONROE STREET FORT MYERS, FLORIDA 33901

DRAWN: DRW
 DESIGNED: JAM
 HORIZ. SCALE (FULL):
 VERT. SCALE (FULL):

CHECKED: JAM
 DATE: 11/22/2024

SHEET TITLE:
LCU STANDARD SYMBOLS, ABBREV. & NOTES SHEET

TITLE:
WATER MAIN DEFLECTION

PROJECT:
US 41 WATER MAIN DEFLECTIONS

PROJECT NO.: ----
 FILE NAME: US 41 WM DEFLECTIONS SAN.dwg
 SHEET NUMBER: 8 OF 8