

LOCATION OF PROJECT

CONTRACT PLANS

COUNTY PROJECT NUMBER 6086960
MANATEE COUNTY

44th AVENUE EAST - BRADEN RIVER SEGMENT
(45th STREET EAST TO 44th AVENUE PLAZA EAST)

FEBRUARY 2019

POTABLE, SANITARY, AND RECLAIMED WATER UTILITY WORK PLANS

INDEX OF UTILITY WORK PLANS

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ULS-6 THRU ULS-11	GRINDER LIFT STATION ELECTRICAL SHEETS
US-01 THRU US-06	UTILITY STRUCTURAL SHEETS

UTILITY SHOP DRAWINGS TO BE SUBMITTED TO:

AECOM
ATTN: DAREN CARRIERE
7650 W COURTNEY CAMPBELL CAUSEWAY
TAMPA, FLORIDA 33607
(813) 286-1711

PLANS PREPARED BY:

AECOM TECHNICAL SERVICES, INC.
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711

VENDOR NO. F952661922
CERTIFICATE OF AUTHORIZATION NO. 00008115

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

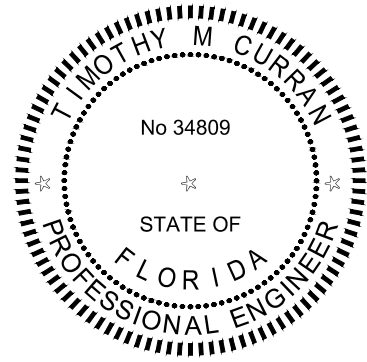
BID SUBMITTAL

UTILITY WORK PLANS
ENGINEER OF RECORD: TIMOTHY M. CURRAN, P.E.

P.E. NO.: 34809

FISCAL YEAR	SHEET NO.
18	U-01

MANATEE COUNTY PROJECT MANAGER: ERIC SHROYER



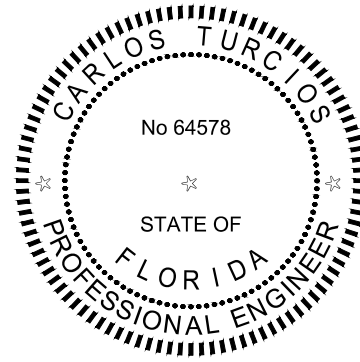
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AECOM TECHNICAL SERVICES, INC.
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION: 00008115
TIMOTHY M. CURRAN, P.E.

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

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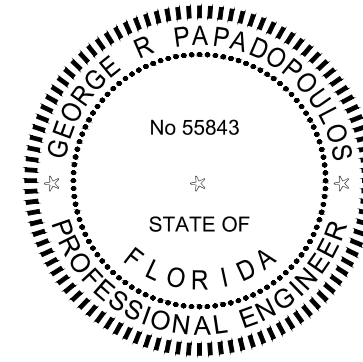
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AECOM TECHNICAL SERVICES, INC.
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION: 00008115
CARLOS TURCIOS, P.E.

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

<u>SHEET NO.</u>	<u>SHEET DESCRIPTION</u>
ULS-6 THRU ULS-11	GRINDER LIFT STATION ELECTRICAL SHEETS



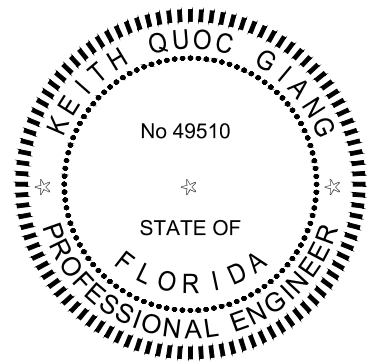
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AECOM TECHNICAL SERVICES, INC.
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION: 00008115
GEORGE R. PAPADOPOULOS, P.E.

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

<u>SHEET NO.</u>	<u>SHEET DESCRIPTION</u>
US-01 THRU US-06	UTILITY STRUCTURAL SHEETS




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AECOM TECHNICAL SERVICES, INC.
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION: 00008115
KEITH QUOC GIANG, P.E.


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

<u>SHEET NO.</u>	<u>SHEET DESCRIPTION</u>
UB-01	UTILITY BORING LOGS

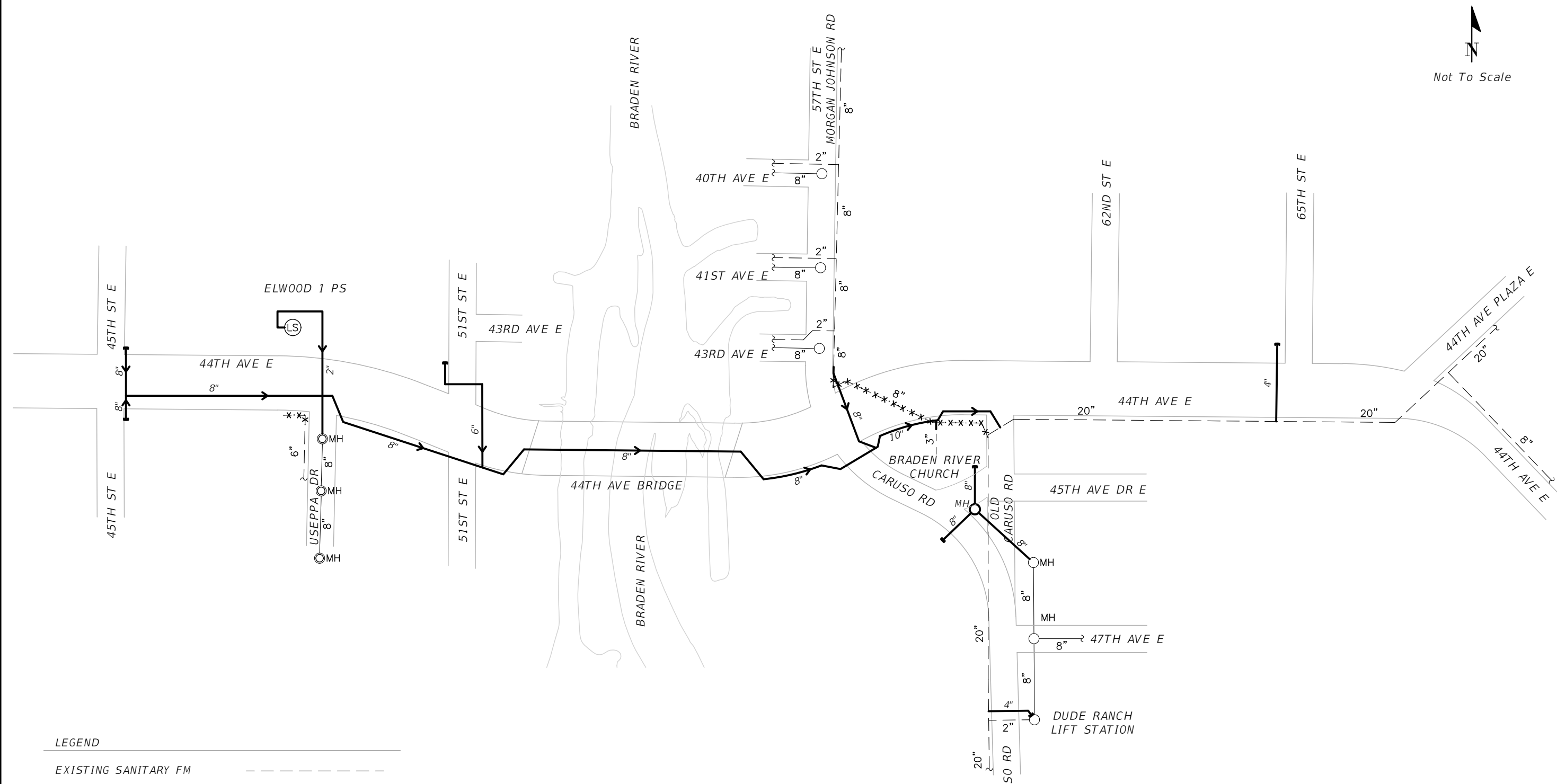
				SCALE AS NOTED	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.	SIGNATURE SHEET	SHEET NO.
				DESIGNED BY R.A.		PROJECT NO. 6086960		FL. LICENSE NO. 34809		U-01A
				DRAWN BY T.S.						
				CHECKED BY T.C.						
No.	REVISIONS	DATE	BY							

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

1. COORDINATES ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE) NAD 1983/2011 - EPOCH 2010.0000. THIS COORDINATE ORIENTATION IS DERIVED FROM THE FLORIDA PERMANENT REFERENCE NETWORK SITE "MANATEE G. STROOP CORS-ARP" (PID DL7628).
2. THE ELEVATIONS NOTED HEREIN ARE IN FEET AND ARE BASED ON NAVD 1988 DATUM (NAVD88) (NAVD88 = NGVD29 - 0.97'), THE BENCHMARKS USED AS CONTROL ARE E564 (PID-DE8707), GLADES (PID-DN9441), GULF (PID-DN9442) AND DESOTO (PID-D01662).
3. ALL FIELD LAYOUT AND SURVEYING FOR CONSTRUCTION OF THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR AT HIS EXPENSE, UNDER THE DIRECTION OF A LICENSED PROFESSIONAL LAND SURVEYOR.
4. PROPERTY MARKERS SHALL BE PROTECTED BY THE CONTRACTOR. THE CONTRACTORS REGISTERED SURVEYOR SHALL REPLACE ANY MARKERS THAT ARE DISTURBED.
5. ANY U.S.C. AND G.S. MONUMENT WITHIN LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL NOTIFY GEODETIC INFORMATION CENTER
ATTN.: MARK MAINTENANCE CENTER
ATTN.: N/CG-162
6001 EXECUTIVE BLVD. ROCKVILLE,
MARYLAND 20852 PH. (301)443-8319
6. ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF THE MANATEE COUNTY PUBLIC WORKS STANDARDS, PART 1 UTILITY STANDARDS MANUAL. THE SPECIFICATIONS AND DETAILS INCLUDED IN SAID MANUAL SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS FOR THIS PROJECT.
7. THE CONTRACTOR SHALL COMPLY WITH ALL STATE, COUNTY, AND LOCAL ORDINANCES AND OBTAIN ANY NECESSARY WORK PERMITS THAT MAY BE REQUIRED PRIOR TO CONSTRUCTION.
8. THE CONTRACTOR SHALL COORDINATE ALL TIE-INS AND ANY ACTIVITIES THAT COULD DISRUPT COUNTY UTILITY OPERATION WITH COUNTY PERSONNEL. THE OPENING AND CLOSING OF EXISTING VALVES SHALL BE BY COUNTY PERSONNEL.
9. LOCATION, ELEVATION, AND DIMENSIONS OF THE EXISTING UTILITIES, EXISTING AND PROPOSED STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT TIME OF THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, EXISTING AND PROPOSED STRUCTURES AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES. CALL SUNSHINE ONE CALL CENTER OF FLORIDA AT 1-800-432-4770 TO ARRANGE FIELD LOCATIONS. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM FAILURE TO COMPLY WITH THIS REQUIREMENT.
11. THE CONTRACTOR SHALL CONTACT THE COUNTY AND THE ENGINEER IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.
12. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, WATER AND SEWER LINES, STORM DRAINS, UTILITIES, DRIVEWAYS, SIDEWALKS, SIGNS, MAIL BOXES, FENCES, TREES, LANDSCAPING, AND ANY OTHER IMPROVEMENT OR FACILITY IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGED ITEM DUE TO HIS CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER THAN PRE-CONSTRUCTION CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
13. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF THIS WORK PERFORMED IN THIS CONTRACT. THE CONTRACTOR IS TO "PROTECT IN PLACE" THE FACILITIES THAT ARE NOT TO BE RELOCATED AND/OR REMOVED, BUT ARE TO REMAIN IN PLACE.
14. THE CONTRACTOR SHALL ENDEAVOR TO PROTECT PRIVATE PROPERTY. ANY DAMAGE CAUSED BY THE CONTRACTOR IN THE PERFORMANCE OF HIS WORK SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. PAYMENT SHALL NOT BE MADE FOR THIS WORK.
15. ALL PROPOSED MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER UNLESS SHOWN OTHERWISE.
16. PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE PIPE MANUFACTURER REQUIREMENTS.
17. ALL DUCTILE IRON PIPE SHALL BE POLY-WRAPPED.
18. ALL PIPING UNDER ROADWAYS SHALL BE DUCTILE IRON PIPE.
19. THE CONTRACTOR SHALL ADJUST (AS REQUIRED) PIPELINE ALIGNMENTS 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.
20. AIR RELEASE VALVE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL LOCATE AIR RELEASE VALVES IN THE FIELD AT THE HIGHEST POINT BEFORE VERTICAL DESCENT.
21. ALL CONNECTIONS TO EXISTING PIPING, DEAD ENDS, FITTINGS AND VALVES SHALL BE RESTRAINED AS SHOWN IN THE DETAILS AND ON THE PLANS.
22. THE CONTRACTOR(S) PERFORMING TRENCH EXCAVATION ON THIS CONTRACT, SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S (OSHA) TRENCH EXCAVATION SAFETY STANDARDS, 29 C.F.R., S.1926.650, SUBPART P, INCLUDING ALL SUBSEQUENT REVISIONS OR UPDATES TO THE STANDARDS AS ADOPTED BY THE DEPARTMENT OF LABOR AND EMPLOYMENT SECURITY (DLES).
23. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP EXCAVATIONS DRY AND SHALL PROVIDE ALL SHORING, SHEETING, AND BRACING NECESSARY TO PROTECT WORKMEN, ADJACENT STRUCTURES, UTILITIES, EXISTING PAVEMENT, OR TO MINIMIZE TRENCH WIDTH, AT THE CONTRACTORS' EXPENSE.
24. A STANDARD MINIMUM 18 INCHES OF VERTICAL CLEARANCE SHALL BE PRACTICED FOR WATER, GRAVITY SEWER, RECLAIMED WATER, STORM AND FORCE MAINS PIPES THAT CROSS. WHERE IT IS DEMONSTRATED AND THE COUNTY AGREES THAT STANDARD SEPARATIONS ARE NOT REALISTIC, OR WHERE MAINTENANCE OF A PIPE WOULD BE MADE MORE ACCESSIBLE THE COUNTY ENGINEER MAY APPROVE REDUCTIONS OF THE STANDARD SEPARATIONS AS FOLLOWS:
 - A. CLEARANCE FROM WATER TO FORCE MAIN, STORM, RECLAIMED WATER AND GRAVITY SEWER AND CLEARANCE FROM RECLAIMED WATER TO GRAVITY SEWER, WATER, FORCE MAIN AND STORM MAY BE REDUCED TO 6 INCHES WHEN THE WATER OR RECLAIMED WATER PIPE IS DI.
 - B. CLEARANCE FROM FORCE MAIN TO WATER AND RECLAIMED WATER MAY BE REDUCED TO 3 INCHES WHEN THE FORCE MAIN IS BELOW AND HAS A WATER TIGHT CASING PIPE.
 - C. CLEARANCE FROM RECLAIMED WATER TO WATER MAY BE REDUCED TO 3 INCHES WHEN THE RECLAIMED WATER IS BELOW AND HAS A WATER TIGHT CASING PIPE.
25. A MINIMUM OF 10 FEET OF HORIZONTAL SEPARATION (OUTSIDE OF PIPE TO OUTSIDE OF PIPE) IS REQUIRED BETWEEN WATER MAINS AND FORCE MAINS, AND BETWEEN WATER MAINS AND GRAVITY SEWER, AND BETWEEN WATER MAINS AND STORM SEWER, AND BETWEEN STORM SEWER AND GRAVITY SEWER. ALL OTHER COMBINATIONS OF WATER, GRAVITY SEWER, FORCE MAIN, RECLAIMED WATER AND STORM SEWER PIPES MUST HAVE 5 FEET OF SEPARATION AT A MINIMUM, EXCEPT FOR GRAVITY SEWER AND FORCE MAINS, WHICH SHALL HAVE A MINIMUM OF 3 FEET OF SEPARATION. IF NOT FEASIBLE, REFER TO CURRENT MANATEE COUNTY UTILITY STANDARDS FOR ALLOWABLE EXCEPTIONS.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING DRAINAGE SYSTEM WITHIN THE LIMITS OF THE PROJECT AREA, FOR THE DURATION OF THE PROJECT. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE WORK INVOLVED.
27. CONTRACTOR IS TO PROVIDE TEMPORARY EROSION CONTROL/SEDIMENTATION BARRIER (HAY BALES OR SILTATION CURTAIN) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS, AND WATERWAYS UNTIL THE PROJECT IS COMPLETE AND ALL BARED SOILS ARE STABILIZED. IF IN THE OPINION OF THE ENGINEER AND/OR LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF-SITE EITHER BY NATURAL DRAINAGE OR VEHICULAR TRAFFIC, THE CONTRACTOR IS TO REMOVE AND CLEAN SAID EARTH TO THE SATISFACTION OF THE ENGINEER AND/OR AUTHORITIES. THE MAINTENANCE AND INSPECTION OF EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR COMPLETE REMOVAL ARE TO BE INCLUDED IN THE BID PRICE. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING FOR AND OBTAINING THE FDEP NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) NOTICE OF INTENT (NOI). THE PERMIT SHALL BE KEPT ONSITE AT ALL TIMES DURING CONSTRUCTION.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXCESS MATERIAL AND THE PROPER DISPOSAL OF THE SAME.
29. OVERALL CLEAN UP SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH COUNTY STANDARDS OR AS DIRECTED BY THE ENGINEER.
30. IF DEWATERING IS NECESSARY, THE CONTRACTOR SHALL OBTAIN A DEWATERING PERMIT FROM FDEP PRIOR TO PERFORMING ANY DEWATERING ACTIVITY AND SHALL COMPLY WITH 62-34.453 F.A.C.
31. THE CONTRACTOR SHALL PROVIDE DETAILED RECORD DRAWINGS. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF REDLINE DRAWINGS THAT SHALL BE DELIVERED TO THE ENGINEER UPON COMPLETION OF CONSTRUCTION.

				SCALE	AS NOTED	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER	TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	GENERAL NOTES	SHEET NO.
				DESIGNED BY	R.A.		PROJECT NO.		6086960			
				DRAWN BY	T.S.							
				CHECKED BY	T.C.							
No.	REVISIONS			DATE	BY					U-02		

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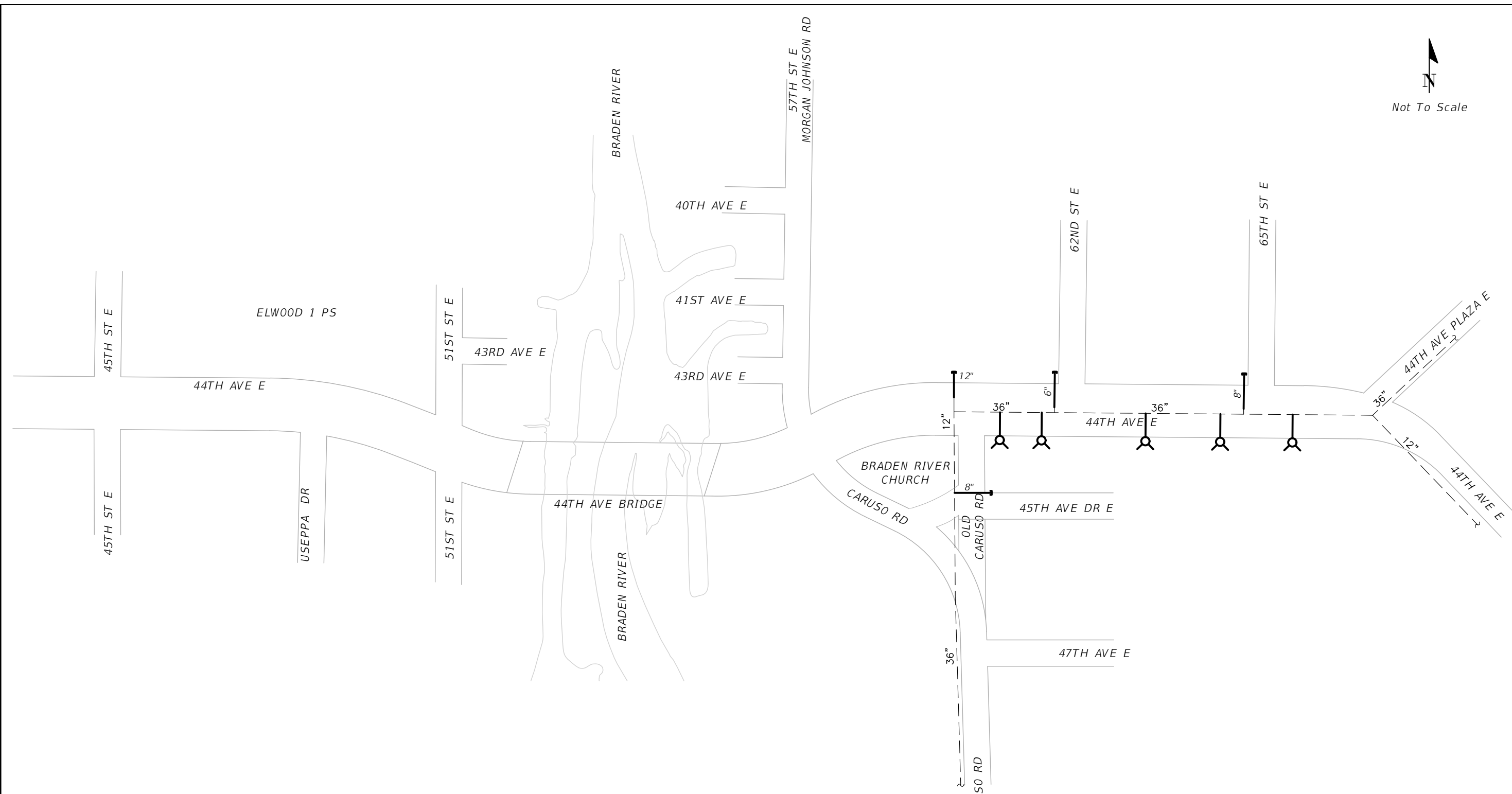
LEGEND

EXISTING SANITARY FM	---
PROPOSED SANITARY FM	—
EXISTING SANITARY FM TO BE REMOVED	-X-X-X-X-X-X-X-X-
EXISTING SANITARY	○
PROPOSED SANITARY	●

- NOTES:**
- THIS PROJECT OVERVIEW IS A SCHEMATIC. FOR DETAILED INFORMATION REFER TO THE PLAN AND DETAIL SHEETS.
 - FOR 44TH AVENUE EAST, ONLY THE PROPOSED ROADWAY IS SHOWN.
 - CONTRACTOR SHALL MAINTAIN SERVICE TO CUSTOMERS AT ALL TIMES.

SCALE AS NOTED		DESIGNED BY R.A.		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		SCHEMATIC PLAN VIEW SANITARY	SHEET NO. U-04	
DRAWN BY T.S.		CHECKED BY T.C.		PROJECT NO. 6086960			FL. LICENSE NO. 34809				
No. REVISIONS DATE BY		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115									

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LEGEND

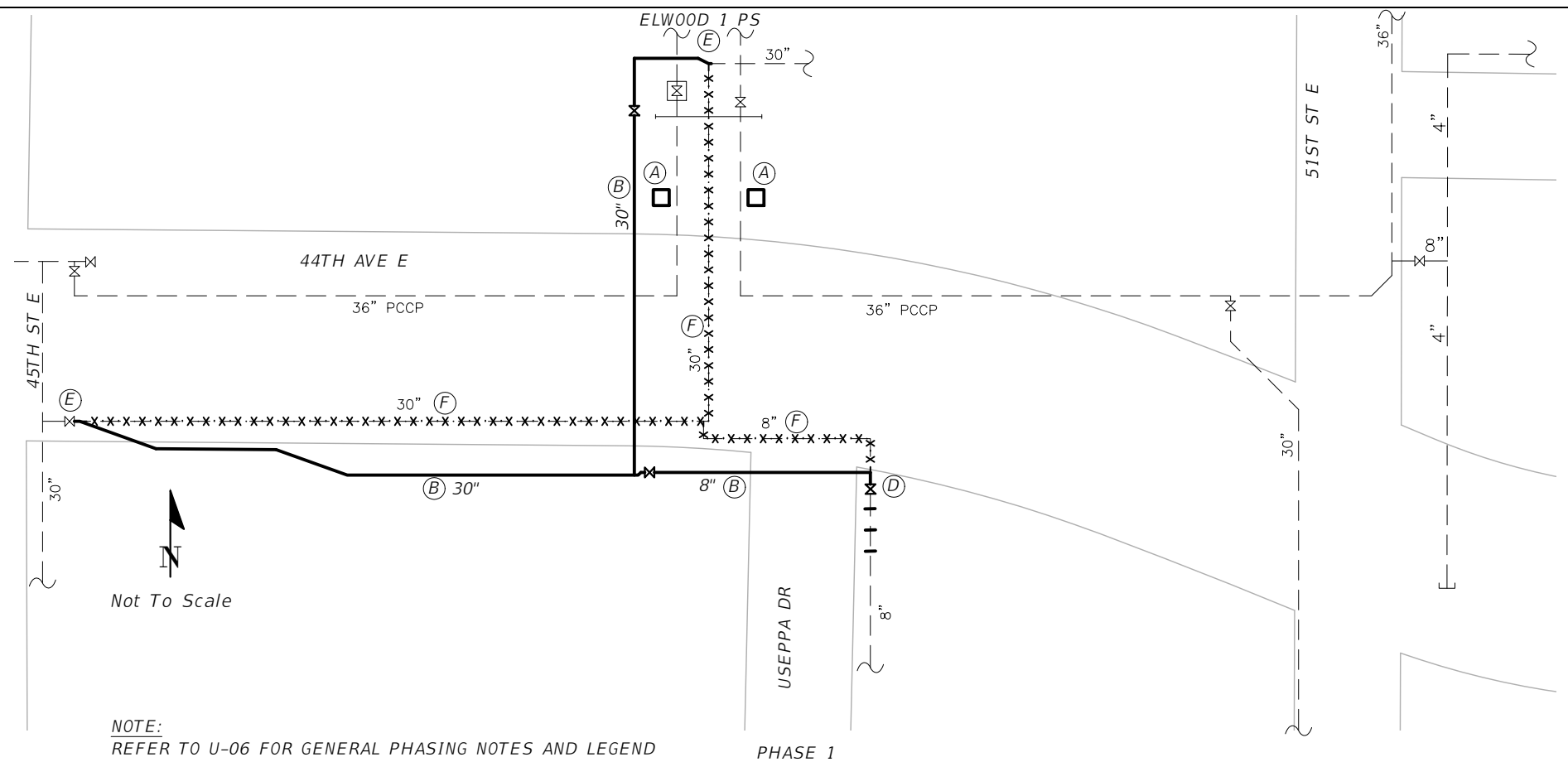
- EXISTING RECLAIMED WATER
- PROPOSED RECLAIMED WATER

NOTES:

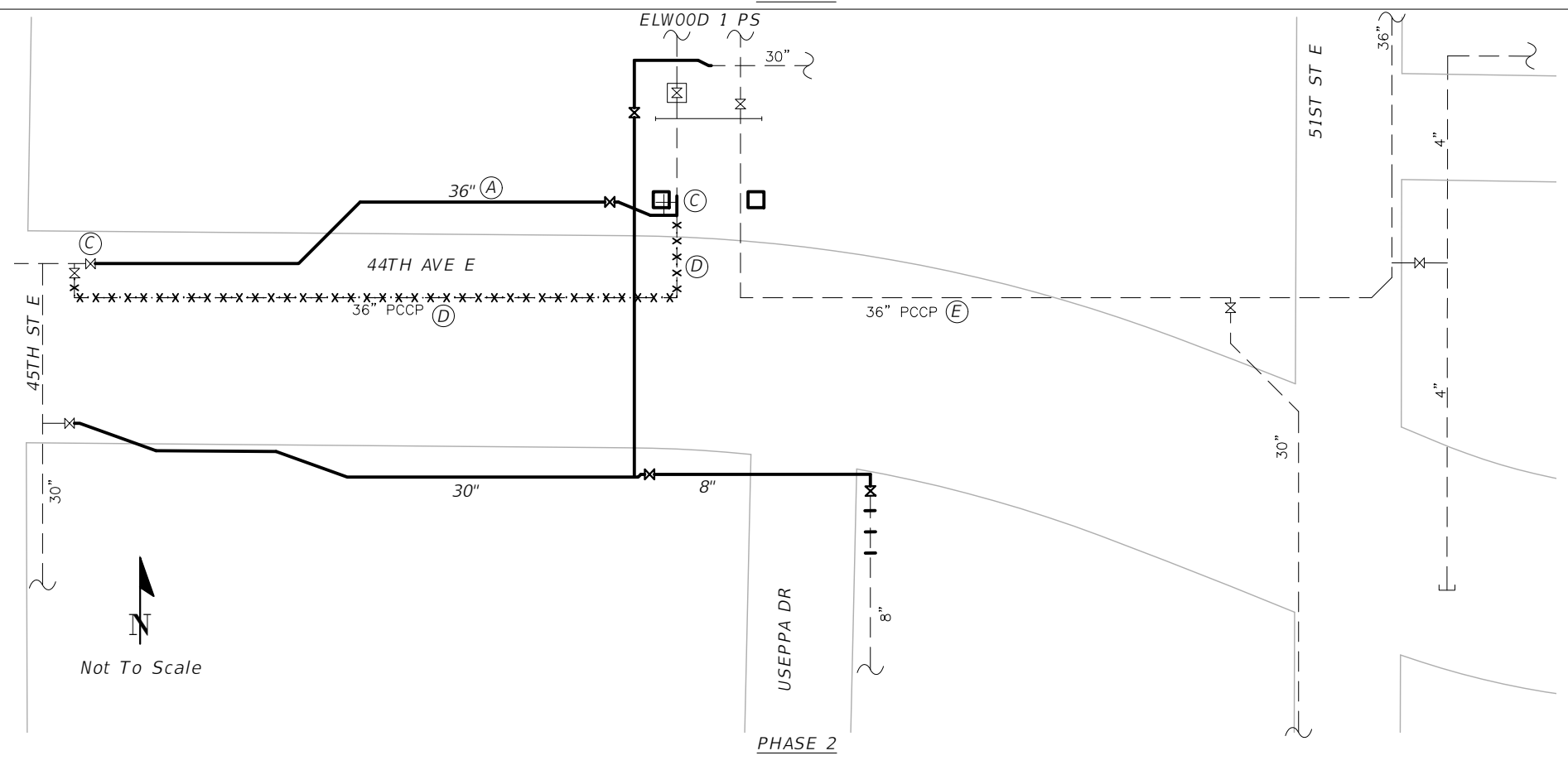
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No.	REVISIONS	DATE	BY	T.C.							


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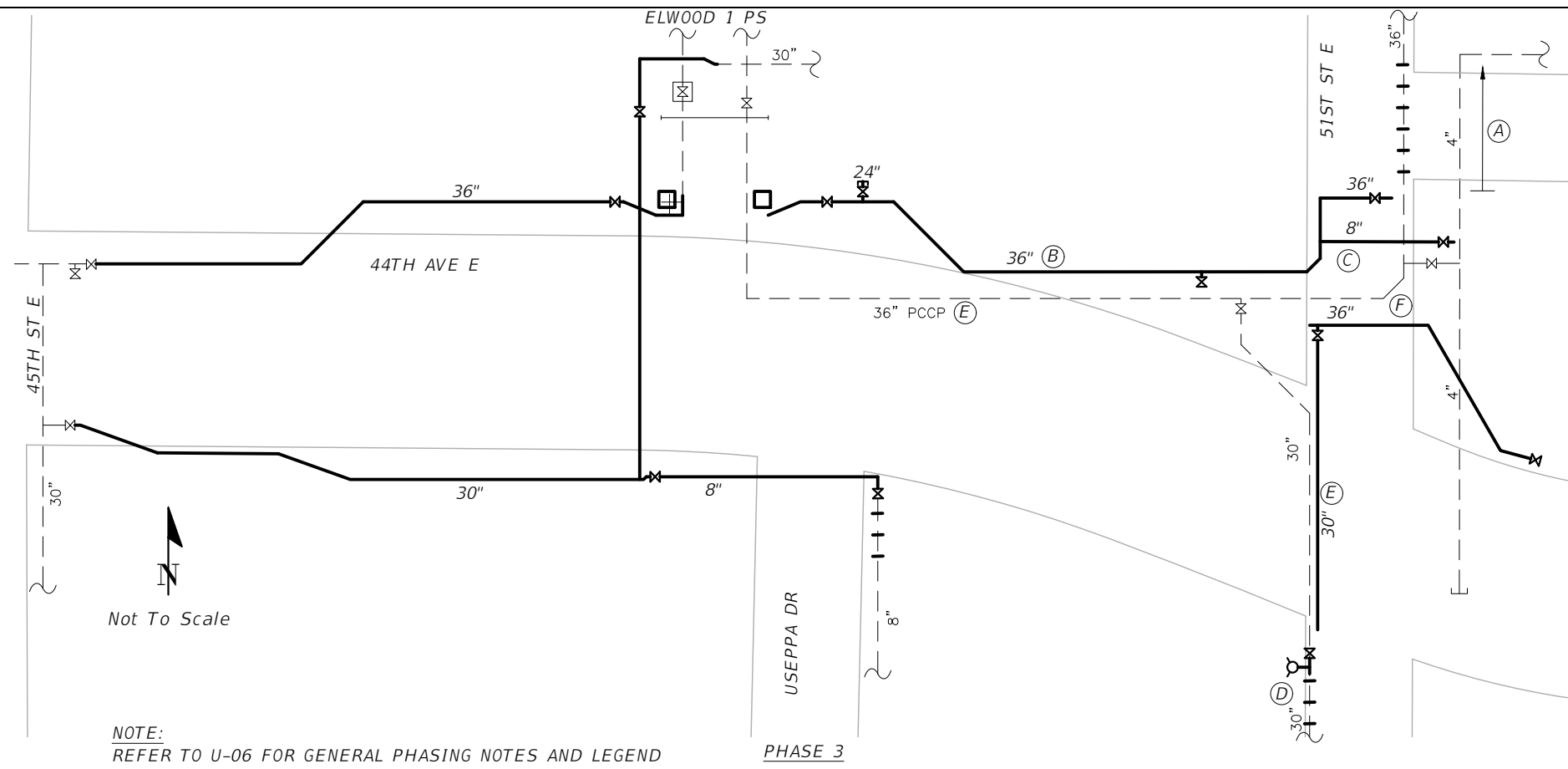
- PHASE 1 - RELOCATE ELWOOD 1 PS 30" OUTLET**
- A. INSTALL DEADMEN AT ELWOOD 1 PS. BEFORE CONNECTING TO DEADMEN IN SUBSEQUENT PHASES, ENSURE THAT THE DEADMEN ARE PROPERLY CURED.
 - B. INSTALL NEW 30" AND 8", ENDING NEAR CONNECTION POINTS.
 - C. PRESSURE TEST, BAC-T TEST AND OBTAIN FDEP CLEARANCES FOR 30" AND 8".
 - D. RESTRAIN EXISTING 8" SOUTH OF NEW VALVE AND INSTALL NEW VALVE. CLOSE NEW VALVE TO ISOLATE EXISTING 8" ON USEPPA DRIVE AND INSTALL NEW 8".
 - E. ISOLATE AND REMOVE EXISTING 30" FROM SERVICE. PERFORM 30" INTERCONNECTIONS AT EXISTING VALVE AT 45TH STREET E AND AT ELWOOD 1 PS.
 - F. REMOVE EXISTING 30" AND 8" LINES.



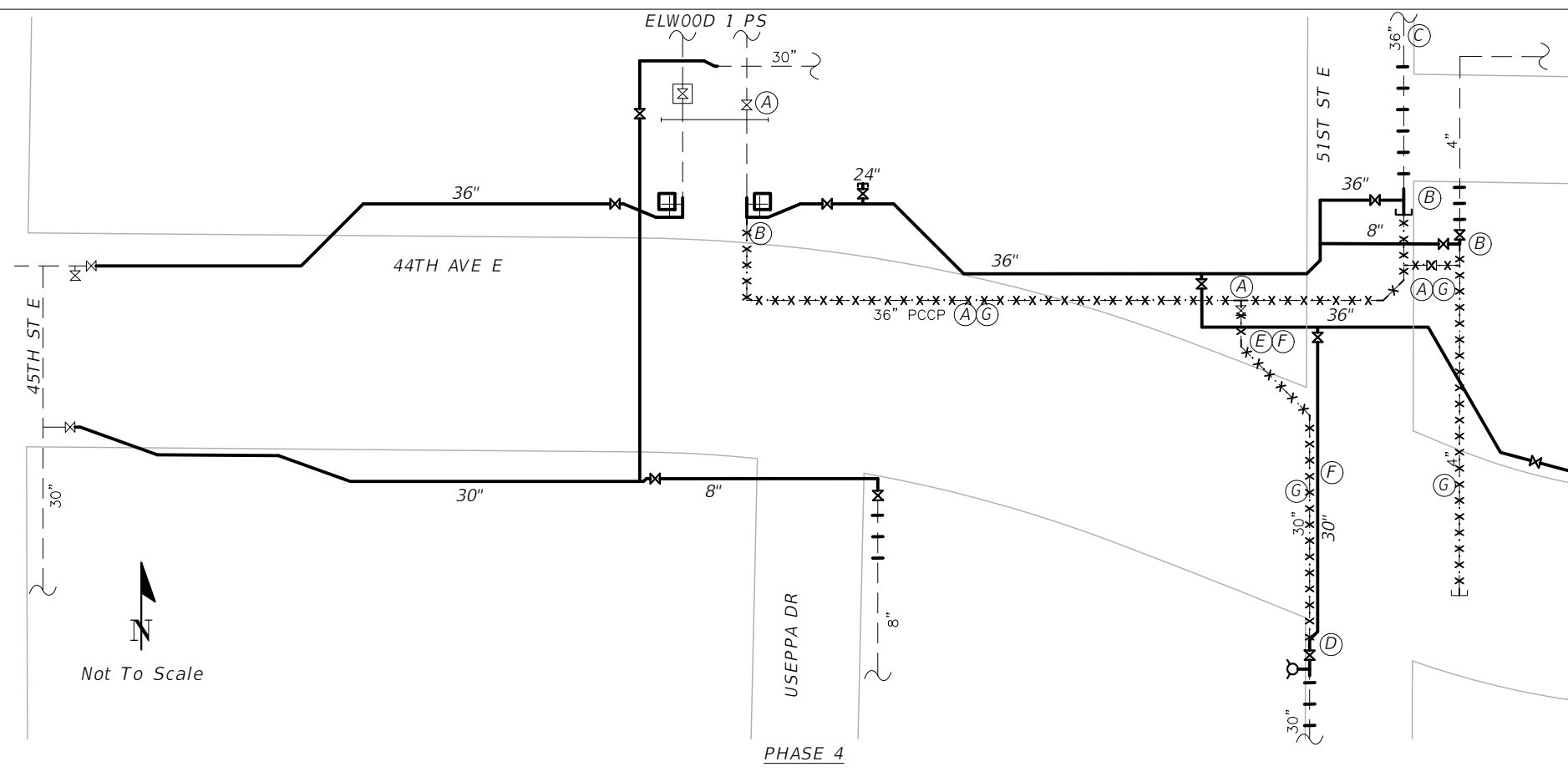
- PHASE 2 - RELOCATE ELWOOD 1 PS 36" OUTLET**
- A. INSTALL NEW 36" OUTLET FROM CONNECTION POINT AT 45TH STREET E TO NEAR CONNECTION POINT AT ELWOOD 1 PS.
 - B. PRESSURE TEST, BAC-T TEST AND OBTAIN FDEP CLEARANCE.
 - C. ISOLATE AND REMOVE EXISTING 36" FROM SERVICE. PERFORM 36" OUTLET INTERCONNECTIONS AT 45TH STREET E AND ELWOOD 1 PS INCLUDING CONNECTION TO DEADMAN. SEE DETAIL ON SHEET U-61.
 - D. REMOVE EXISTING 36" PCCP LINE FROM 45TH STREET E TO ELWOOD 1 PS.

SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		CONSTRUCTION PHASING WEST OF BRADEN RIVER POTABLE WATER		SHEET NO.: U-07
No. REVISIONS DATE BY														

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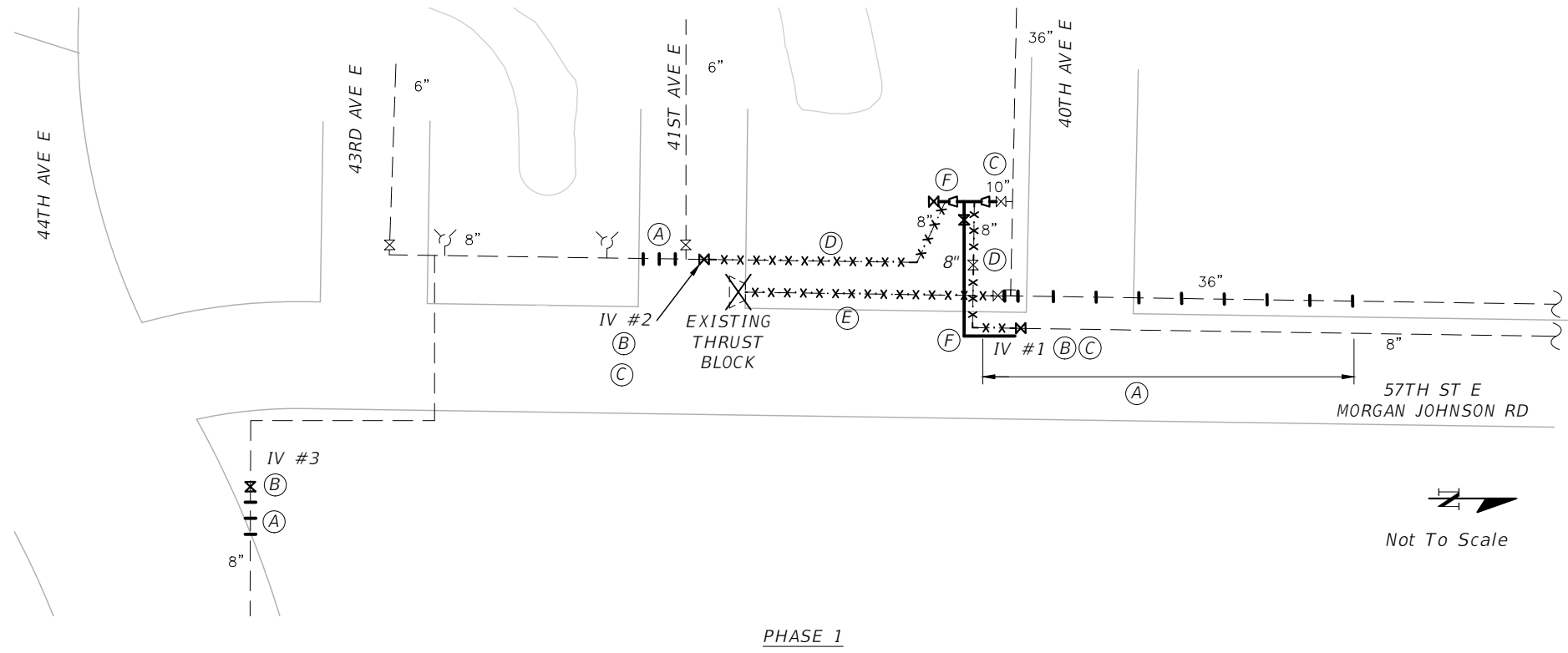
- PHASE 3 - PREPARE ELWOOD 1 PS 36" INLET AND 30" ON 51ST STREET E FOR RELOCATION.**
- A. RESTRAIN EXISTING 36" PCCP JOINTS NORTH OF NEW CONNECTION POINT ON 51ST STREET E. SEE DETAIL ON SHEET U-62.
 - B. INSTALL NEW 36" INLET FROM JUST EAST OF ELWOOD 1 PS TO NEAR THE CONNECTION POINT ON 51ST STREET E.
 - C. INSTALL NEW 8" AT 51ST STREET E. TO NEAR CONNECTION POINT.
 - D. RESTRAIN EXISTING 30" WATER MAIN SOUTH OF NEW INLINE 30" VALVE LOCATION. INSTALL NEW INLINE VALVE AND FIRE HYDRANT ASSEMBLY. SEE SHEET U-23.
 - E. INSTALL NEW 30" FROM NEAR CONNECTION POINT AT NEW INLINE VALVE TO NEW 30" VALVE AND 36"x30" TEE (W/TEMPORARY CAP).
 - F. INSTALL 36" FROM NEW TEE AND VALVE AT 51ST STREET E TO NEW ISOLATION VALVE ON WEST SIDE OF NEW BRIDGE (USE TEMPORARY CAP IF PIPING ON EAST SIDE OF VALVE IS NOT INSTALLED).
 - G. PRESSURE TEST, BAC-T TEST AND OBTAIN FDEP CLEARANCE FOR 36", 30" AND 8" LINES.



- PHASE 4 - COMPLETE RELOCATION OF ELWOOD 1 PS 36" INLET AND 30" ON 51ST ST E.**
- A. ISOLATE EXISTING 36" OUTLET (COORDINATE MULTIPLE REQUIRED VALVE CLOSURES WITH COUNTY). DEPRESSURIZE AND DRAIN EXISTING 36" PCCP. SHUTDOWN SHALL BE COORDINATED WITH MANATEE COUNTY, LIMITED TO 12 HOURS, AND NOT BE DURING SCHOOL HOURS.
 - B. DURING SHUTDOWN: CUT IN NEW 36" DIP ASSEMBLY AT 51ST STREET E (SEE DETAIL ON SHEET U-62). PERFORM 36" INLET INTERCONNECTION AT ELWOOD 1 PS, INCLUDING CONNECTION TO DEADMAN (SEE DETAIL ON SHEET U-61). PERFORM 4" INTERCONNECTION AT 51ST STREET E. CONNECT RESIDENTIAL SERVICES ON 44TH AVENUE E BETWEEN ELWOOD 1 PS AND 51ST STREET E.
 - C. PLACE NEW 36" ELWOOD 1 PS INLET INTO SERVICE. RETURN REMAINING 36" PCCP TO SERVICE.
 - D. CLOSE NEW 30" INLINE VALVE AND CONNECT TO NEW 30".
 - E. REMOVE EXISTING 36" AND 30" PIPING, AS NEEDED, AND COMPLETE 36" PIPING FROM 36" VALVE TO 36"x30" TEE PRESSURE TEST, BAC-T TEST AND OBTAIN FDEP CLEARANCE.
 - F. PLACE NEW 30" LINE AND NEWEST 36" LINE INTO SERVICE.
 - G. REMOVE EXISTING 36" PCCP LINE FROM ELWOOD 1 PS TO 51ST ST E., 8" AND 4" LINES AT 51ST ST E., AND 30" ON 51ST ST E.

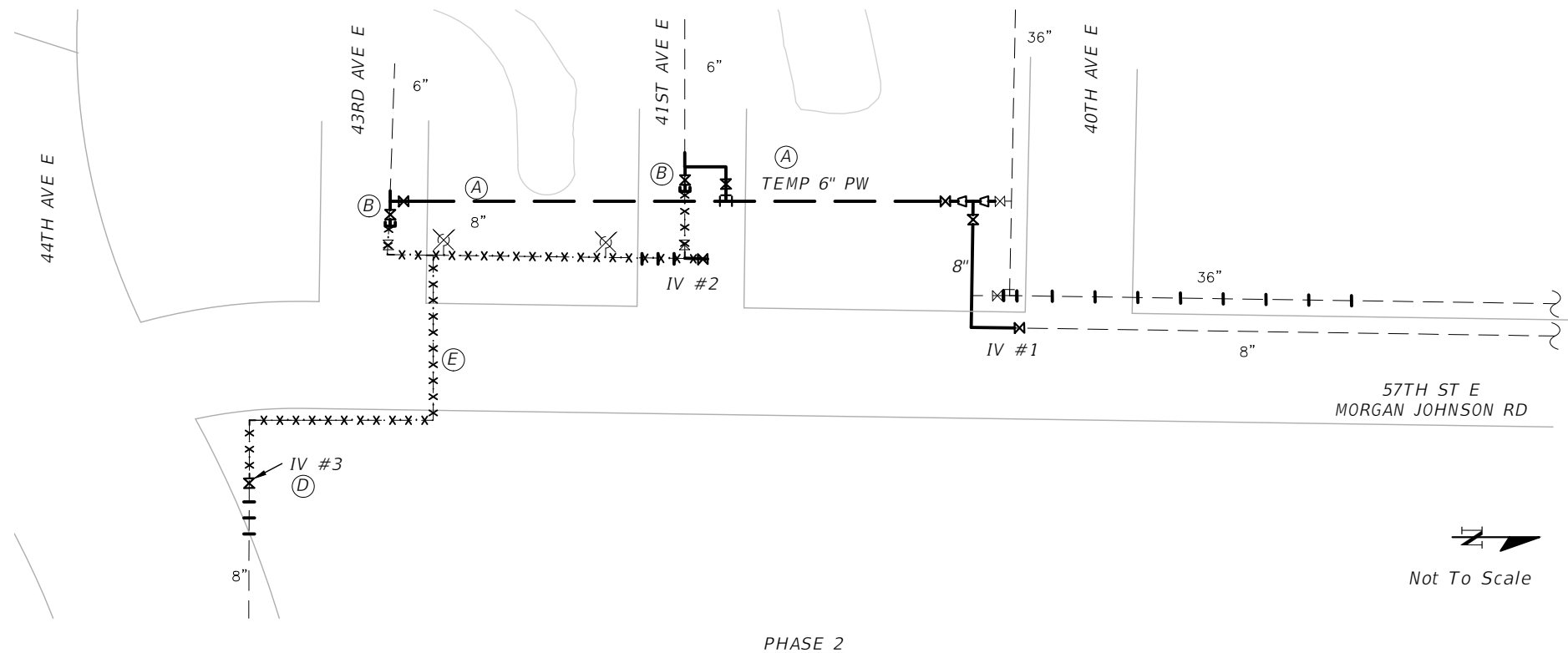
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				DATE: FEBRUARY 2019 PROJECT NO.: 6086960		PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		CONSTRUCTION PHASING WEST OF BRADEN RIVER POTABLE WATER	SHEET NO.: U-08
TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115				2/22/2019 10:15:18 AM			S:\Projects\RDWY\ProjFdat\ProjFDOT\VB\60460213000\ut\is\cadd\PHASING SCHEMATIC.dwg			
No.	REVISIONS	DATE	BY							

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



- PHASE 1 - REMOVE 36" PCCP AND REPLACE E/W 8" PW:**
- A. RESTRAIN EXISTING 8" JOINTS AND EXISTING 36" PCCP JOINTS NORTH OF EXISTING BFV AT 40TH AVE E.
 - B. INSTALL THREE 8" INSERTION VALVES (IV), ONE EACH AT 40TH AVE E (IV #1), 41ST AVE E (IV #2) AND 44TH AVE E (IV #3).
 - C. CLOSE EXISTING 10" VALVE AND INSERTION VALVES #1 AND #2.
 - D. REMOVE EXISTING 8" WATER MAINS FROM: (1) 40TH AVE E SOUTH TO 41ST AVE E AND (2) THE EAST/WEST PORTION ON THE SOUTH SIDE OF 40TH AVE E.
 - E. REMOVE EXISTING 36" PCCP WATER MAIN FROM EXISTING VALVE AT 40TH AVE E TO 41ST AVE E AND THRUST BLOCK AT 41ST AVE.
 - F. INSTALL NEW 8" WATER MAIN, FITTINGS AND VALVES FROM EXISTING 10" VALVE TO INSERTION VALVE #1. PRESSURE TEST, BAC-T TEST, OBTAIN FDEP CLEARANCE AND RETURN TO SERVICE.

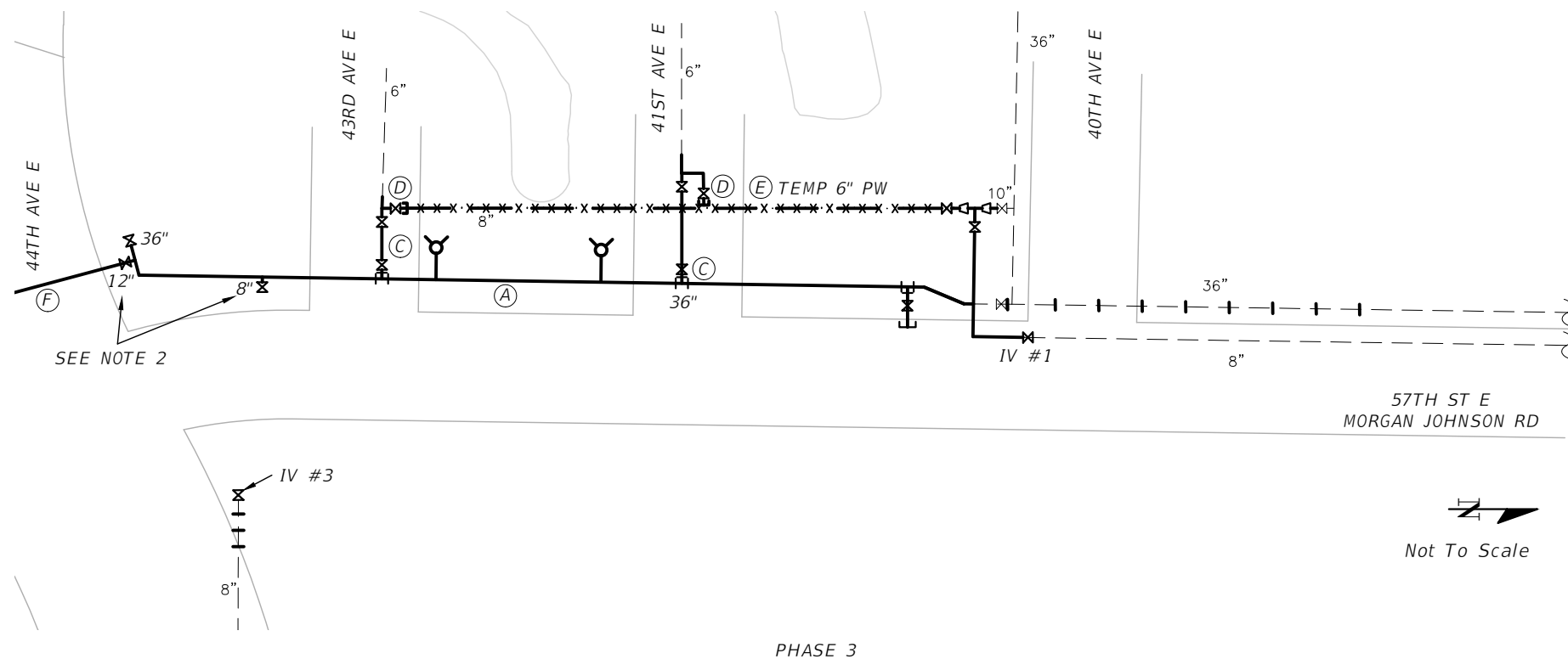
NOTE:
REFER TO U-06 FOR GENERAL PHASING NOTES AND LEGEND



- PHASE 2 - INSTALL TEMPORARY 6" PW AND COMPLETE REMOVAL OF 8" PW:**
- A. INSTALL TEMPORARY 6" WATER LINE FROM 40TH AVE E TO 43RD AVE E. PRESSURE TEST, BAC-T TEST AND OBTAIN FDEP CLEARANCE.
 - B. RESTRAIN EXISTING 6" PW JOINTS, ISOLATE EXISTING 6" PW LINES, CUT IN TEE AND VALVE WITH TEMPORARY PLUG, AND CONNECT TO VALVES ON TEMPORARY 6" LINE.
 - C. TRANSFER SERVICE TO TEMPORARY 6" LINE.
 - D. CLOSE INSERTION VALVE #3
 - E. REMOVE EXISTING 8" WATER MAIN FROM INSERTION VALVE #3 TO 41ST AVE E.
- NOTES:**
- 1. CONTRACTOR SHALL PROVIDE REMOVED INSERTION VALVE #2 TO COUNTY.

SCALE: AS NOTED		DESIGNED BY: R.A.		DRAWN BY: T.S.		CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		CONSTRUCTION PHASING MORGAN JOHNSON ROAD POTABLE WATER		SHEET NO. U-09	
No. REVISIONS		DATE		BY													

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PHASE 3 - INSTALL 36" PW:


- A. INSTALL NEW 36" DIP FROM 40TH AVE E TO THE NEW INLINE VALVE AT 44TH AVE E AND MORGAN JOHNSON RD.
- B. PRESSURE TEST, BAC-T TEST AND OBTAIN FDEP CLEARANCES FOR 36" & 8" WATER MAINS.
- C. TRANSFER SERVICES TO NEW 36" PW.
- D. INSTALL CAPS AND PERMANENTLY CLOSE VALVES.
- E. REMOVE TEMPORARY 6" WATER MAIN.
- F. INSTALL 12" PW ACROSS 44TH AVENUE E.

NOTES:

- 1. THE NEW 8" PW THAT RUNS EAST ACROSS MORGAN JOHNSON IS NOT SHOWN ON THIS PHASING PLAN. REFER TO PLAN SHEETS.
- 2. ONCE THE 8" PW ON 44TH AVE IS REPLACED, CONTRACTOR SHALL PROVIDE REMOVED INSERTION VALVE #3 TO COUNTY.

NOTE:
REFER TO U-06 FOR GENERAL PHASING NOTES AND LEGEND

PHASE 3

SCALE		AS NOTED		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		CONSTRUCTION PHASING MORGAN JOHNSON RD POTABLE WATER	SHEET NO.	
DESIGNED BY		R.A.		AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462		PROJECT NO. 6086960			FL. LICENSE NO. 34809			U-10	
DRAWN BY		T.S.		(813) 286-1711									
CHECKED BY		T.C.		CERTIFICATE OF AUTHORIZATION: 8115									
No.	REVISIONS	DATE	BY										


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POTABLE WATER MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
166+80.00	23.44 LT.	36" CAP				
167+01.00	37.65 RT.	30" 22.5° BEND				
167+15.82	33.50 LT.	36" 45° BEND				
167+19.91	45.48 RT.	30" 22.5° BEND				
167+22.00	33.50 LT.	36" 45° BEND				
167+33.60	45.48 RT.	30" 45° BEND				
167+38.00	45.48 RT.	30" 45° BEND				
167+87.00	45.48 RT.	30" 45° BEND				
167+90.34	45.48 RT.	30" 45° BEND				
170+99.89	63.90 LT.	6" GATE VALVE				
170+99.89	61.17 LT.	6"x6" TEE				
170+99.97	40.00 LT.	6" 90° BEND				
170+99.97	40.00 LT.	6" 90° BEND				
170+99.99	37.76 LT.	6" GATE VALVE				
171+00.00	33.50 LT.	36"x6" TEE				
171+02.33	61.17 LT.	6"x2" REDUCER				
171+04.28	61.18 LT.	2" GATE VALVE				
171+34.11	45.49 RT.	30" 11.25° BEND				
172+07.04	60.00 RT.	30" 11.25° BEND				
172+11.05	60.00 RT.	ARV CONNECTION				
173+05.00	33.50 LT.	36" 45° BEND				
173+30.50	59.00 LT.	36" 45° BEND				
173+37.00	59.00 LT.	36" 45° BEND				
173+43.00	59.00 LT.	36" 45° BEND				
173+46.36	59.01 LT.	ARV CONNECTION				
178+97.07	63.72 LT.	6" GATE VALVE				
179+00.00	63.73 LT.	6" 90° BEND				
179+00.00	58.98 LT.	36"x6" TEE				
179+55.56	58.94 LT.	36" BfV				
179+60.10	58.94 LT.	36" 22.5° BEND				
179+72.00	86.35 LT.	30" 45° BEND				
179+72.00	76.50 LT.	ARV CONNECTION				
179+72.00	60.00 RT.	30"x30" TEE				
179+72.00	79.15 LT.	30" BfV				
179+72.00	73.85 LT.	30" 45° BEND				
179+72.00	65.85 LT.	30" 45° BEND				
179+72.00	52.70 RT.	30" 45° BEND				
179+72.00	47.70 RT.	30" 45° BEND				

POTABLE WATER MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
179+75.64	52.50 LT.	36" 22.5° BEND				
179+77.00	60.00 RT.	30"x8" REDUCER				
179+79.07	93.54 LT.	30" 45° BEND				
179+80.32	60.00 RT.	8" 45° BEND				
179+80.83	52.54 LT.	36" 22.5° BEND				
179+83.81	58.50 RT.	8" 45° BEND				
179+86.16	58.50 RT.	8" GATE VALVE				
179+90.00	52.62 LT.	36" 22.5° BEND				
180+09.29	93.79 LT.	30" 45° BEND				
180+09.75	52.78 LT.	36" 90° BEND				
180+14.45	64.00 LT.	30" CAP				
180+15.09	88.09 LT.	30" 45° BEND				
180+21.43	52.88 LT.	36" 90° BEND				
180+40.13	53.03 LT.	36" 22.5° BEND				
180+59.25	61.00 LT.	36" 22.5° BEND				
180+66.00	61.00 LT.	36" 22.5° BEND				
180+77.30	61.00 LT.	36" 22.5° BEND				
180+82.00	61.00 LT.	36" BfV				
180+85.00	61.00 LT.	ARV CONNECTION				
181+46.90	95.08 LT.	1" 90° BEND				
181+47.11	70.13 LT.	1" 90° BEND				
181+76.62	129.32 LT.	1" 90° BEND				
181+76.90	95.32 LT.	1" 90° BEND				
182+32.17	58.50 RT.	8" 90° BEND				
182+32.20	61.54 RT.	8" GATE VALVE				
183+20.00	65.51 LT.	24" BfV				
183+20.00	76.00 LT.	24" CAP				
183+20.00	61.00 LT.	36"x24" TEE				
186+00.00	59.00 LT.	36" 11.25° BEND				
186+40.99	51.00 LT.	36" 11.25° BEND				
187+00.00	55.40 LT.	6" GATE VALVE				
187+00.00	51.00 LT.	36"x6" TEE				
188+49.17	51.00 LT.	36" 45° BEND				
188+55.90	50.99 LT.	36" 45° BEND				
189+42.72	51.00 LT.	36" 11.25° BEND				
191+60.00	101.37 LT.	36"x36" TEE				
191+61.14	96.66 LT.	36" BfV				
191+65.53	78.53 LT.	36" 90° BEND				

SCALE		AS NOTED		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809		VALVE AND FITTING LOCATIONS POTABLE WATER MAINS		SHEET NO. U-11		
DESIGNED BY R.A.		DRAWN BY T.S.		PROJECT NO. 6086960		CHECKED BY T.C.										
No.	REVISIONS	DATE	BY													


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POTABLE WATER MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
191+97.26	86.22 LT.	36" 45° BEND				
192+01.51	87.25 LT.	36" 45° BEND				
192+04.72	88.03 LT.	ARV CONNECTION				
192+23.70	92.63 LT.	36"x30" TEE				
192+47.10	98.34 LT.	36" 22.5° BEND				
193+29.66	80.44 LT.	6" GATE VALVE				
193+30.50	85.24 LT.	36"x6" TEE				
193+45.74	82.76 LT.	36" 22.5° BEND				
195+33.04	117.22 LT.	36" BFV				
195+40.00	118.26 LT.	36" 45° BEND				
196+82.00	1.00 LT.	36" 45° BEND				
196+88.74	1.00 LT.	36" 45° BEND				
197+05.15	1.00 LT.	36" 45° BEND				
202+40.00	1.00 LT.	ARV CONNECTION				
213+06.24	1.00 LT.	36" 45° BEND				
213+18.15	1.00 LT.	36" 45° BEND				
213+23.93	1.00 LT.	36" 45° BEND				
213+96.22	69.00 LT.	36" 45° BEND				
218+48.30	69.00 LT.	36" BFV				
218+64.76	69.03 LT.	36" 22.5° BEND				
218+75.57	72.92 LT.	36"x12" TEE				
218+82.35	75.37 LT.	36" 45° BEND				
219+06.26	147.89 LT.	8" GATE VALVE				
219+80.86	129.78 LT.	8" 22.5° BEND				
219+91.41	122.08 LT.	8" 22.5° BEND				
220+73.09	89.90 LT.	8" INSERTION VALVE	N/A	N/A	N/A	IV #3 (TEMPORARY)
221+39.40	83.31 LT.	6" GATE VALVE				
221+40.00	86.24 LT.	8"x6" TEE				
223+17.75	50.00 LT.	8" 11.25° BEND				
227+69.99	53.01 LT.	6" GATE VALVE				
227+70.01	50.01 LT.	8"x6" TEE				
230+01.96	79.00 RT.	6" 90° BEND				
230+07.36	79.00 RT.	6"x6" TEE				
230+07.36	47.79 LT.	6" GATE VALVE				
230+07.36	50.00 LT.	8"x6" TEE				
230+07.36	25.00 LT.	6" 45° BEND				
230+07.36	27.93 LT.	6" 45° BEND				
230+09.30	79.00 RT.	6"x2" REDUCER				

POTABLE WATER MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
232+24.77	50.00 LT.	8" 45° BEND				
232+27.69	50.00 LT.	8" 45° BEND				
232+45.69	50.00 LT.	8" 45° BEND				
232+48.86	50.00 LT.	8" 45° BEND				
232+52.67	188.66 RT.	8" 45° BEND				
232+53.00	50.00 LT.	8" GATE VALVE				
232+56.99	181.06 RT.	8" GATE VALVE				
232+56.99	178.33 RT.	10"x8" REDUCER				
232+56.99	183.77 RT.	8" 45° BEND				
232+57.00	44.75 LT.	10"x8" REDUCER				
232+57.00	47.23 LT.	8" GATE VALVE				
232+57.00	50.00 LT.	8"x8" TEE				
232+61.00	50.00 LT.	8" GATE VALVE				
234+09.98	53.00 LT.	6" GATE VALVE				
234+10.00	50.00 LT.	8"x6" TEE				
239+09.30	50.00 LT.	8" 11.25° BEND				
239+59.28	61.98 LT.	8" 11.25° BEND				
239+75.25	61.98 LT.	8" 45° BEND				
239+77.86	61.98 LT.	8" 45° BEND				
240+11.43	80.00 LT.	6" 90° BEND				
240+16.68	61.98 LT.	8" 45° BEND				
240+19.18	61.98 LT.	8" 45° BEND				
240+31.76	61.98 LT.	8"x6" TEE				
240+31.79	67.98 LT.	6" GATE VALVE				
240+31.81	83.00 LT.	6" GATE VALVE				
240+31.84	80.00 LT.	6"x6" TEE				
241+81.90	61.99 LT.	8" 11.25° BEND				
242+31.89	50.00 LT.	8" 11.25° BEND				
247+74.98	53.00 LT.	6" GATE VALVE				
247+75.00	50.00 LT.	8"x6" TEE				
247+78.00	50.00 LT.	8" GATE VALVE				
253+40.47	50.00 LT.	8" 11.25° BEND				
253+78.03	59.00 LT.	8" 11.25° BEND				
254+01.50	59.00 LT.	8" 45° BEND				
254+04.00	59.00 LT.	8" 45° BEND				
254+14.00	59.00 LT.	8" 22.5° BEND				
254+16.41	59.00 LT.	8" 22.5° BEND				
254+51.49	78.00 LT.	6" 90° BEND				

No.		REVISIONS	DATE	BY	SCALE	AS NOTED	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER	VALVE AND FITTING LOCATIONS POTABLE WATER MAINS	SHEET NO.
								FEBRUARY 2019		TIMOTHY M. CURRAN, P.E.		U-12
								PROJECT NO.		FL. LICENSE NO.		
								6086960		34809		


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POTABLE WATER MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
254+56.65	59.00 LT.	8" 22.5° BEND				
254+62.79	59.00 LT.	8" 22.5° BEND				
254+71.82	59.00 LT.	8"x6" TEE				
254+71.85	66.99 LT.	6" GATE VALVE				
254+71.88	81.00 LT.	6" GATE VALVE				
254+71.90	78.00 LT.	6"x6" TEE				
256+20.73	59.00 LT.	8" 11.25° BEND				
256+71.00	49.00 LT.	8" 11.25° BEND				
260+00.00	52.00 LT.	6" GATE VALVE				
260+00.00	49.00 LT.	8"x6" TEE				
260+28.46	3.48 RT.	8" CAP				
260+30.00	49.00 LT.	8"x8" TEE				
260+30.00	46.00 LT.	8" GATE VALVE				
260+30.34	3.18 RT.	8" GATE VALVE				
260+32.34	49.00 LT.	8" GATE VALVE				
260+32.80	2.79 RT.	8"x8" TEE				
260+34.67	49.01 LT.	8" CAP				
325+23.36	54.23 LT.	12" CAP				
325+26.21	54.16 LT.	12" GATE VALVE				
325+30.00	54.09 LT.	12"x6" TEE				
325+30.04	56.67 LT.	6" GATE VALVE				
500+27.61	41.25 LT.	12" 45° BEND				
500+33.55	42.18 LT.	12" 45° BEND				
500+50.00	44.99 LT.	12" 45° BEND				
500+54.05	45.74 LT.	12" 45° BEND				
500+57.79	46.42 LT.	12" 11.25° BEND				
500+68.16	50.45 LT.	12" GATE VALVE				
500+78.96	43.47 LT.	36" 11.25° BEND				
501+46.45	30.48 LT.	36"x8" TEE				
502+67.98	19.39 LT.	36"x6" TEE				
502+68.03	22.88 LT.	6" GATE VALVE				
502+68.10	27.99 LT.	6" GATE VALVE				
502+68.11	30.00 LT.	6"x6" TEE				
502+70.35	29.94 LT.	6" GATE VALVE				
502+71.76	29.92 LT.	6" CAP				
503+09.93	23.40 LT.	6" GATE VALVE				
503+10.00	19.00 LT.	36"x6" TEE				
504+40.85	19.00 LT.	36" 22.5° BEND				

POTABLE WATER MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
504+46.41	19.00 LT.	36" 22.5° BEND				
504+67.41	19.00 LT.	36" 22.5° BEND				
504+72.96	19.00 LT.	36" 22.5° BEND				
506+29.93	23.40 LT.	6" GATE VALVE				
506+30.00	19.00 LT.	36"x6" TEE				
506+62.45	32.04 LT.	6"x6" TEE				
506+62.47	29.74 LT.	6" GATE VALVE				
506+62.59	22.49 LT.	6" GATE VALVE				
506+62.64	19.00 LT.	36"x6" TEE				
506+66.43	29.80 LT.	6" GATE VALVE				
506+66.43	32.10 LT.	6" 90° BEND				
506+66.49	28.35 LT.	6" CAP				
506+74.04	17.50 LT.	8" INSERTION VALVE	N/A	N/A	N/A	IV #2 (TEMPORARY)
509+32.50	19.00 LT.	36" BfV				
509+37.03	31.59 LT.	6" CAP				
509+39.04	31.59 LT.	6" GATE VALVE				
509+40.00	10.19 LT.	36" CAP				
509+40.00	13.97 LT.	36" BfV				
509+40.00	18.97 LT.	36"x36" TEE				
509+43.32	31.59 LT.	8"x6" REDUCER				
509+45.75	31.59 LT.	8"x8" TEE				
509+45.75	26.58 LT.	8" 45° BEND				
509+45.75	24.53 LT.	8" 45° BEND				
509+45.75	15.37 LT.	8" 45° BEND				
509+45.75	13.26 LT.	8" 90° BEND				
509+45.76	28.97 LT.	8" GATE VALVE				
509+54.01	13.24 LT.	8" INSERTION VALVE				IV #1 (PERMANENT)
509+56.82	19.00 LT.	36" 22.5° BEND				
509+65.20	15.53 LT.	36" 22.5° BEND				
509+74.59	31.59 LT.	10"x8" REDUCER				
600+33.75	0.00	30"x6" TEE				
600+33.77	3.94 LT.	6" GATE VALVE				
600+38.75	0.00	30" BfV				
600+44.67	0.00	30" 45° BEND				
600+50.67	6.00 RT.	30" 45° BEND				
603+00.00	6.00 RT.	30" BfV				
603+28.48	24.68 LT.	36" 45° BEND				
603+42.27	11.02 LT.	36" 22.5° BEND				

No.		REVISIONS	DATE	BY	SCALE	AS NOTED	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER	TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	VALVE AND FITTING LOCATIONS POTABLE WATER MAINS	SHEET NO.	
						PROJECT NO.		6086960						
														U-13

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


POTABLE WATER MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
603+46.77	6.53 LT.	36" 22.5° BEND				
603+53.39	0.00	36" 45° BEND				
603+58.00	0.00	ARV CONNECTION				
604+20.15	0.00	36"x8" TEE				
604+20.20	3.94 RT.	8" 45° BEND				
604+20.25	7.42 RT.	8" 45° BEND				
604+20.32	12.92 RT.	8" 45° BEND				
604+20.36	16.39 RT.	8" 45° BEND				
604+20.38	17.81 RT.	8" GATE VALVE				
604+20.41	19.96 RT.	8" 90° BEND				
604+23.16	19.89 RT.	8"x4" REDUCER				
604+24.60	19.86 RT.	4" GATE VALVE				
604+28.57	9.57 RT.	36" CAP				
604+32.97	0.00	36" 90° BEND				
604+32.98	4.76 RT.	36" BFV				
604+33.00	9.52 RT.	36"x36" TEE				
910+40.00	31.76 LT.	8" 45° BEND				
910+40.00	30.00 LT.	8" 45° BEND				
910+40.00	12.78 RT.	8" GATE VALVE				
910+40.00	15.78 RT.	8"x8" TEE				
910+40.00	57.68 LT.	8" CAP				
917+80.00	42.00 LT.	4" CAP				
917+80.00	12.60 RT.	4" GATE VALVE				
917+80.00	15.11 RT.	8"x4" TEE				

RECLAIMED WATER MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
231+87.38	62.29 LT.	12" CAP				
231+90.38	62.29 LT.	12" GATE VALVE				
231+94.48	62.29 LT.	12"x12" TEE				
231+94.53	56.00 LT.	12" 45° BEND				
231+94.60	47.80 LT.	12" 45° BEND				
231+94.99	1.31 LT.	12" 45° BEND				
231+98.33	62.29 LT.	12"x6" REDUCER				
232+00.76	62.30 LT.	6" GATE VALVE				
232+02.43	62.31 LT.	6" CAP				
233+40.00	47.10 RT.	6" GATE VALVE				
233+40.01	14.01 RT.	6" TAPPING VALVE				
238+80.00	47.10 RT.	6" GATE VALVE				
238+80.02	16.71 RT.	6" TAPPING VALVE				
239+80.22	79.01 LT.	6" CAP				
239+80.26	65.81 LT.	6" 45° BEND				
239+80.28	58.97 LT.	6" 45° BEND				
239+80.34	37.33 LT.	6" 45° BEND				
239+80.35	32.61 LT.	6" 45° BEND				
246+00.00	47.10 RT.	6" GATE VALVE				
246+00.01	12.54 RT.	6" TAPPING VALVE				
252+20.00	47.10 RT.	6" GATE VALVE				
252+20.02	17.48 RT.	6" TAPPING VALVE				
254+21.12	71.88 LT.	8" CAP				
254+21.14	66.40 LT.	8" 45° BEND				
254+21.15	64.00 LT.	8" 45° BEND				
257+40.00	47.10 RT.	6" GATE VALVE				
257+40.01	18.47 RT.	6" TAPPING VALVE				
916+71.78	21.50 RT.	8" 45° BEND				
916+71.78	20.00 RT.	8" 45° BEND				
916+71.78	28.17 RT.	8" CAP				
916+71.82	15.90 LT.	8" 45° BEND				
916+71.82	13.00 LT.	8" 45° BEND				

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


No.		REVISIONS	DATE	BY	SCALE	AS NOTED	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE	FEBRUARY 2019	 Manatee County PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208	DESIGN ENGINEER	TIMOTHY M. CURRAN, P.E.	VALVE AND FITTING LOCATIONS POTABLE WATER MAINS AND RECLAIMED WATER MAINS	SHEET NO.	U-14
						R.A.		PROJECT NO.	6086960		FL. LICENSE NO.	34809			
						T.S.									
						T.C.									

SANITARY FORCE MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
166+71.79	96.71 LT.	8" CAP				
166+71.81	93.88 LT.	8" GATE VALVE				
166+71.89	84.19 LT.	8" 45° BEND				
166+83.03	73.23 LT.	8" 45° BEND				
166+84.32	71.96 LT.	8" 45° BEND				
167+05.00	51.62 LT.	8" 45° BEND				
167+05.00	47.19 LT.	8" 45° BEND				
167+05.00	45.70 LT.	8" 45° BEND				
167+05.00	27.00 RT.	8"x8" TEE				
167+05.00	44.52 RT.	8" 45° BEND				
167+05.00	48.22 RT.	8" 45° BEND				
167+05.00	57.00 RT.	8" GATE VALVE				
167+05.00	60.00 RT.	8" CAP				
167+48.00	27.00 RT.	8" 45° BEND				
167+53.30	27.00 RT.	8" 45° BEND				
181+23.92	81.98 LT.	2" 90° BEND				
181+23.98	75.19 LT.	2" 90° BEND				
181+94.18	158.62 RT.	6" CAP				
181+96.00	82.58 LT.	2" 90° BEND				
181+96.00	148.64 RT.	2" 45° BEND				
183+20.00	27.00 RT.	8" 45° BEND				
183+38.50	45.50 RT.	8" 45° BEND				
183+42.32	45.50 RT.	8" GATE VALVE				
186+80.00	45.50 RT.	ARV CONNECTION				
190+37.16	46.25 RT.	8" 22.5° BEND				
191+23.57	82.00 RT.	8" 22.5° BEND				
191+97.51	82.00 RT.	8" 45° BEND				
192+34.01	45.50 RT.	8" 45° BEND				
193+17.87	45.49 RT.	8" GATE VALVE				
193+20.01	45.49 RT.	8"x6" TEE				
195+86.00	45.50 RT.	8" GATE VALVE				
195+86.26	49.10 RT.	8" 45° BEND				
195+86.26	49.10 RT.	8" BLIND FLANGE				
195+87.04	48.31 RT.	8" 45° BEND				
195+87.57	47.78 RT.	8" GATE VALVE				
195+89.84	45.50 RT.	8" WYE				
195+95.00	45.50 RT.	8" WYE				
195+97.28	47.78 RT.	8" GATE VALVE				

SANITARY FORCE MAINS

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
195+98.59	49.10 RT.	8"x6" REDUCER				
195+98.59	49.10 RT.	8" 90° BEND				
195+98.59	49.10 RT.	6" QUICK DISCONNECT				
195+98.84	45.49 RT.	8" GATE VALVE				
196+86.71	48.34 RT.	8" 45° BEND				
196+91.25	5.55 RT.	8" 45° BEND				
196+91.43	43.50 RT.	8" 45° BEND				
196+94.77	2.00 RT.	8" 45° BEND				
196+97.41	2.00 RT.	8" 45° BEND				
197+05.06	2.00 RT.	8" 45° BEND				
202+40.00	2.00 RT.	ARV CONNECTION				
213+05.86	2.00 RT.	8" 45° BEND				
213+15.62	2.00 RT.	8" 45° BEND				
213+20.11	2.00 RT.	8" 45° BEND				
213+81.67	67.00 RT.	8" 45° BEND				
213+96.19	67.00 RT.	8" GATE VALVE				
213+96.44	70.60 RT.	8"x6" REDUCER				
213+96.44	70.60 RT.	8" 90° BEND				
213+96.44	70.60 RT.	6" QUICK DISCONNECT				
213+97.74	69.28 RT.	8" GATE VALVE				
214+00.00	67.00 RT.	8" WYE				
214+04.89	67.00 RT.	8" WYE				
214+07.15	69.28 RT.	8" GATE VALVE				
214+07.67	69.81 RT.	8" 45° BEND				
214+08.45	70.60 RT.	8" 45° BEND				
214+08.45	70.60 RT.	8" BLIND FLANGE				
214+08.70	66.99 RT.	8" GATE VALVE				
215+94.15	63.00 RT.	8" 90° BEND				
215+94.16	67.00 RT.	8"x8" TEE				
215+96.65	67.00 RT.	8" GATE VALVE				
215+99.99	67.00 RT.	8" CHECK VALVE				
216+00.02	63.00 RT.	8" GATE VALVE				
216+03.32	67.00 RT.	8" GATE VALVE				
216+05.89	63.00 RT.	8" 90° BEND				
216+05.89	67.00 RT.	8"x8" TEE				
218+47.64	67.01 RT.	8" 11.25° BEND				
218+53.30	68.00 RT.	8" 22.5° BEND				
219+09.61	104.94 RT.	8" 45° BEND				

No.	REVISIONS	DATE	BY	SCALE	AS NOTED	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER	VALVE AND FITTING LOCATIONS SANITARY FORCE MAINS	SHEET NO.
							FEBRUARY 2019		TIMOTHY M. CURRAN, P.E.		U-15
									PROJECT NO.		FL. LICENSE NO.
									6086960		34809

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SANITARY FORCE MAINS


DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
219+99.33	90.21 RT.	8" GATE VALVE				
220+01.27	89.90 RT.	10"x8" REDUCER				
220+04.81	89.32 RT.	10"x8" WYE				
220+08.65	88.69 RT.	10" 45° BEND				
220+39.66	45.50 RT.	10" 45° BEND				
227+82.18	53.84 RT.	3" 90° BEND				
227+85.87	45.50 RT.	ARV CONNECTION				
227+89.11	51.66 RT.	4"x3" REDUCER				
227+89.11	48.90 RT.	4" GATE VALVE				
227+89.11	53.85 RT.	3" 90° BEND				
227+89.11	45.50 RT.	10"x4" TEE				
228+60.00	45.50 RT.	10" 45° BEND				
228+67.57	38.00 RT.	10" 45° BEND				
231+79.04	38.00 RT.	ARV CONNECTION				
231+82.37	38.00 RT.	10" 45° BEND				
231+93.47	102.51 RT.	8" CAP				
232+24.55	79.47 RT.	10" 45° BEND				
232+27.23	82.12 RT.	10" 45° BEND				
232+29.74	84.58 RT.	10" TAPPING VALVE				
254+00.83	43.76 LT.	4" 45° BEND				
254+00.83	57.76 LT.	4" 45° BEND				
254+00.83	76.00 LT.	4" CAP				
254+00.83	61.47 LT.	4" 45° BEND				
254+05.00	37.76 LT.	4" 45° BEND				
254+05.00	48.23 RT.	4" TAPPING VALVE				
325+68.52	38.30 RT.	8" GATE VALVE				
325+98.24	7.85 RT.	8" 45° BEND				
500+30.34	38.85 RT.	8" 45° BEND				
500+36.05	38.98 RT.	8" 45° BEND				
500+56.05	39.18 RT.	8" 45° BEND				
500+57.96	39.18 RT.	8" 45° BEND				
501+26.82	36.79 RT.	8" 45° BEND				
501+44.49	21.98 RT.	8" 45° BEND				
501+48.07	18.88 RT.	8" 45° BEND				
501+54.02	13.67 RT.	8" 45° BEND				
601+50.63	68.62 RT.	6" GATE VALVE				
601+72.02	73.22 RT.	6" 45° BEND				
602+46.76	21.13 RT.	6" 22.5° BEND				

SANITARY FORCE MAINS

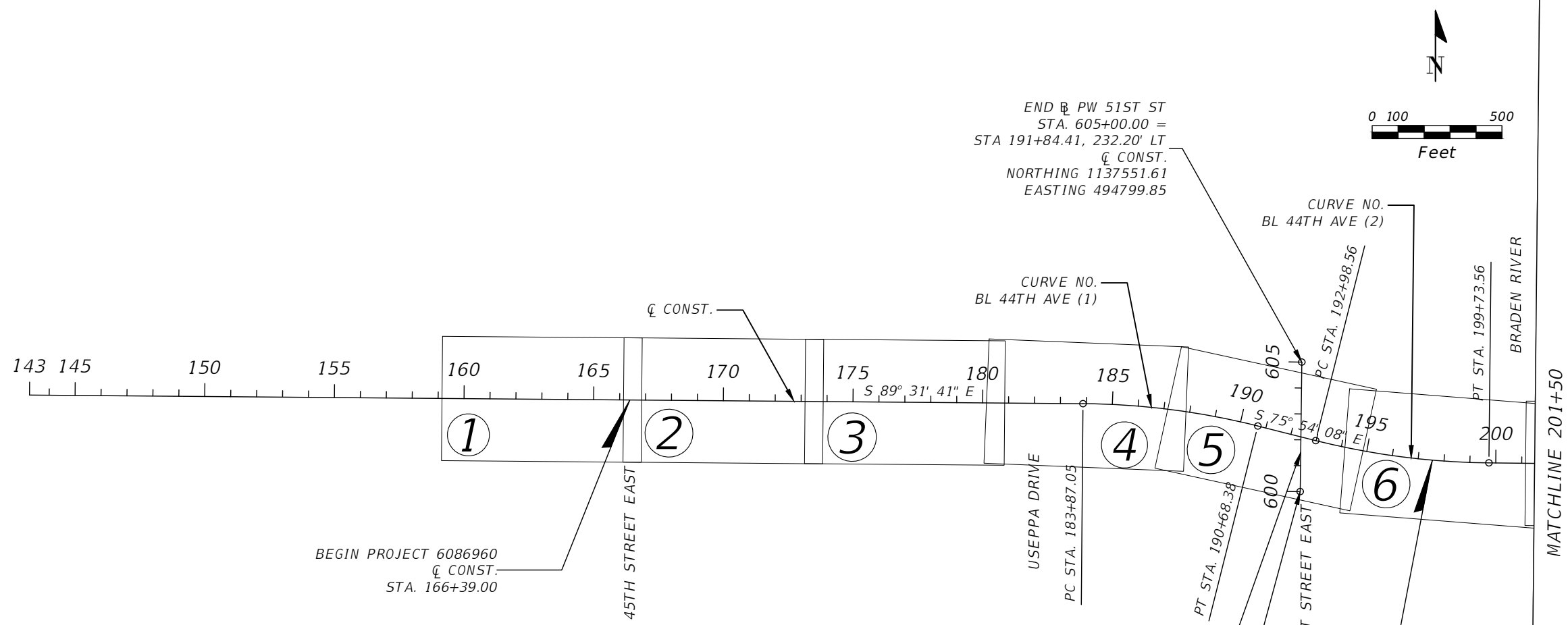
DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
602+54.23	19.49 RT.	6" 11.25° BEND				
602+89.01	18.54 RT.	6" 45° BEND				
602+95.18	18.37 RT.	6" 45° BEND				
603+37.00	17.23 RT.	6" 45° BEND				
603+41.25	17.12 RT.	6" 45° BEND				
603+65.95	16.44 RT.	6" 45° BEND				
603+68.07	14.21 RT.	6" 45° BEND				
603+68.07	9.88 LT.	6" 45° BEND				
603+70.19	12.00 LT.	6" 45° BEND				
604+10.00	12.00 LT.	6" CAP				
904+04.00	38.69 RT.	4" 90° BEND				
904+04.00	42.68 RT.	4" CAP				
904+39.30	11.01 RT.	4" 45° BEND				
904+39.30	14.98 RT.	4" 45° BEND				
904+39.30	32.72 RT.	4" 45° BEND				
904+39.30	16.24 LT.	4" TAPPING VALVE				
904+39.30	35.20 RT.	4" 45° BEND				
904+39.30	38.69 RT.	4" 90° BEND				

SANITARY SEWER

DESIGN			RECORD / AS-BUILT INFORMATION			
STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION	REMARKS
181+40.98	75.33 LT.	4" WYE				
181+43.98	75.35 LT.	4" CLEAN OUT				
311+21.67	47.47 LT.	8" CAP				
311+22.11	17.53 RT.	SAN MH				
312+07.33	63.73 RT.	8" CAP				

SCALE		AS NOTED		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809		VALVE AND FITTING LOCATIONS SANITARY FORCE MAINS AND SANITARY SEWER	SHEET NO.
DRAWN BY R.A.		T.S.		PROJECT NO. 6086960		FL. LICENSE NO. 34809			U-16			
No.	REVISIONS	DATE	BY	T.C.								

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CURVE DATA

CURVE NO.	P.C. STATION	P.I. STATION	P.T. STATION	Delta (Δ)	T	L	R	e
BL 44TH AVE (1)	183+87.05	187+29.33	190+68.38	013° 37' 33"	342.28	681.34	2865.00	NC
BL 44TH AVE (2)	192+98.56	196+37.63	199+73.56	013° 29' 56"	339.07	675.00	2865.00	NC
BL 44TH AVE (3)	212+13.19	215+52.26	218+88.19	013° 29' 56"	339.07	675.00	2865.00	NC
BL 44TH AVE (4)	220+72.36	225+26.22	229+75.95	013° 22' 40"	453.86	903.59	3870.00	NC
BL 44TH AVE (5)	257+58.16	260+14.43	262+67.27	016° 12' 19"	256.26	509.11	1800.00	RC
BL 44TH AVE (6)	262+67.27	265+11.83	267+44.86	030° 24' 16"	244.56	477.59	900.00	0.023
BL MORGAN JOHNSON (12)	500+00.00	501+48.85	502+95.51	016° 59' 59"	148.85	295.51	996.00	0.043
BL CARUSO RD (13)	318+47.36	322+80.11	326+61.64	047° 59' 55"	432.75	814.28	972.00	RC
BL CARUSO RD (14)	305+26.55	311+23.89	316+00.07	062° 34' 21"	597.35	1073.53	983.00	NC
BL CARUSO RD RAMP (15)	414+89.22	416+33.68	417+56.76	053° 35' 50"	144.46	267.54	286.00	0.050

BEGIN PW 51ST ST
STA. 600+00.00 =
STA 192+76.78, 156.99' RT
Q CONST.
NORTHING 1137051.65
EASTING 494793.34

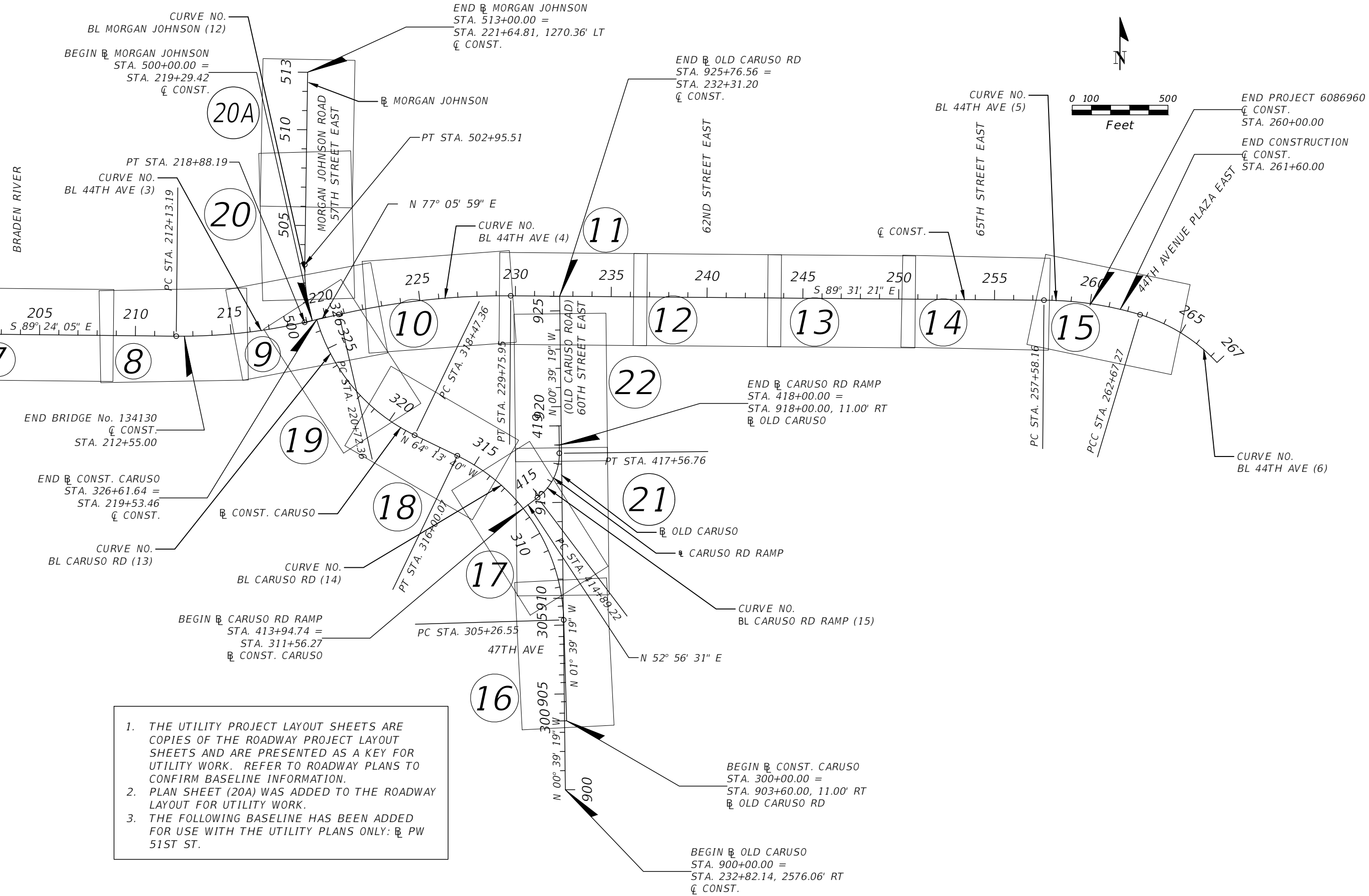
BEGIN BRIDGE No. 134130
Q CONST.
STA. 197+55.00

1. THE UTILITY PROJECT LAYOUT SHEETS ARE COPIES OF THE ROADWAY PROJECT LAYOUT SHEETS AND ARE PRESENTED AS A KEY FOR UTILITY WORK. REFER TO ROADWAY PLANS TO CONFIRM BASELINE INFORMATION.
2. PLAN SHEET (20A) WAS ADDED TO THE ROADWAY LAYOUT FOR UTILITY WORK.
3. THE FOLLOWING BASELINE HAS BEEN ADDED FOR USE WITH THE UTILITY PLANS ONLY: PW 51ST ST.


No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	UTILITY PROJECT LAYOUT (1)	SHEET NO. U-17
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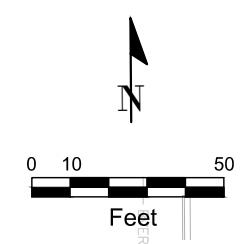
MATCHLINE 201+50



1. THE UTILITY PROJECT LAYOUT SHEETS ARE COPIES OF THE ROADWAY PROJECT LAYOUT SHEETS AND ARE PRESENTED AS A KEY FOR UTILITY WORK. REFER TO ROADWAY PLANS TO CONFIRM BASELINE INFORMATION.
2. PLAN SHEET (20A) WAS ADDED TO THE ROADWAY LAYOUT FOR UTILITY WORK.
3. THE FOLLOWING BASELINE HAS BEEN ADDED FOR USE WITH THE UTILITY PLANS ONLY: BL PW 51ST ST.

SCALE AS NOTED		DESIGNED BY R.A.		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		SHEET NO. U-18	
DRAWN BY T.S.		CHECKED BY T.C.		PROJECT NO. 6086960				FL. LICENSE NO. 34809		UTILITY PROJECT LAYOUT (2)	
No.		REVISIONS		DATE		BY					

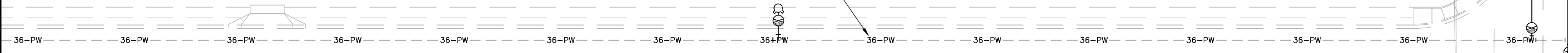
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



44th AVENUE EAST


EXIST 36" PW-DI
TO REMAIN

EXIST 6" PW
TO REMAIN

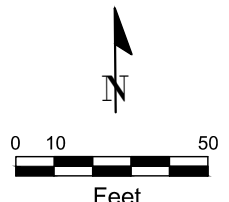
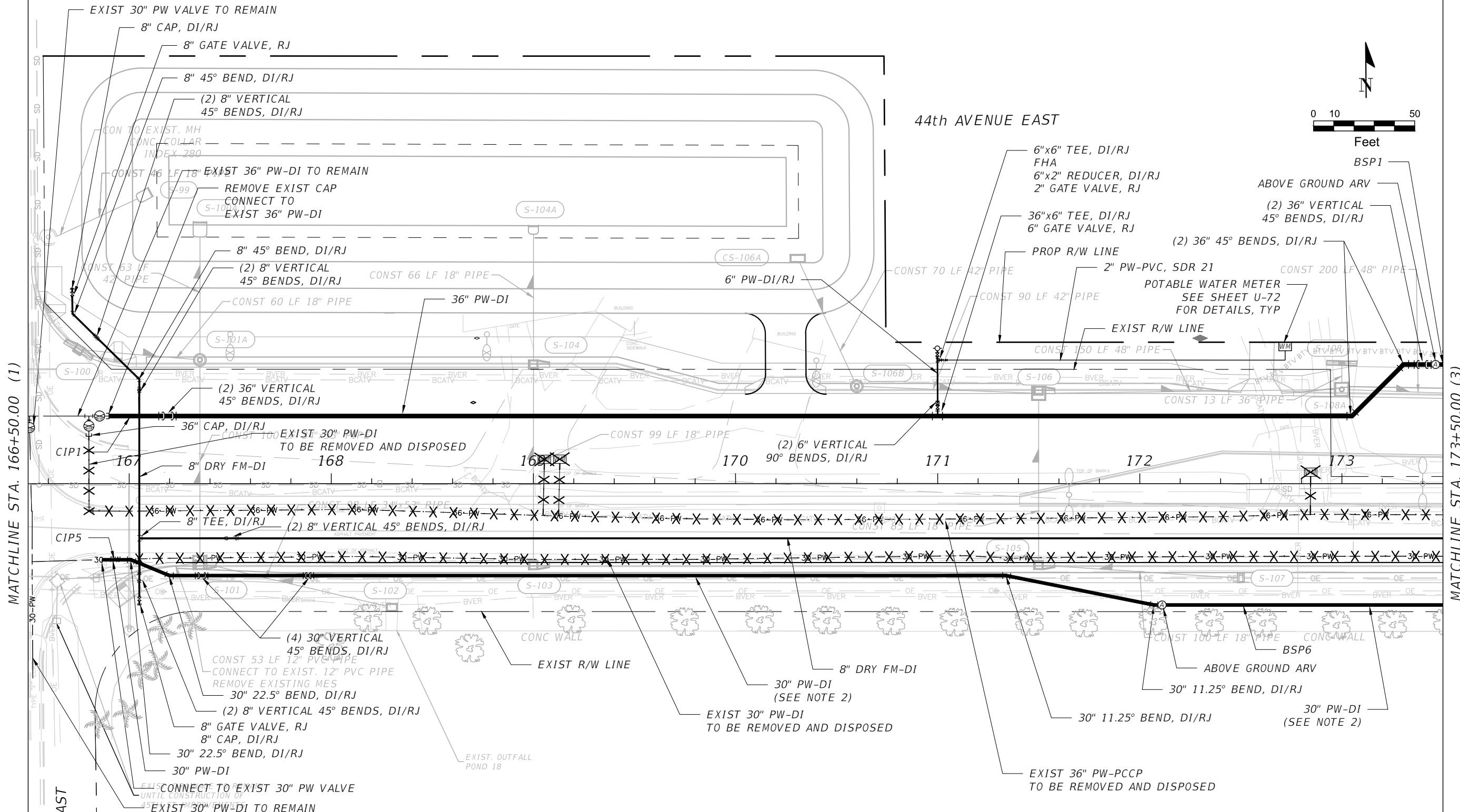


MATCHLINE STA. 166+50.00 (2)

45th STREET EAST

SCALE		AS NOTED		DESIGN ENGINEER		<p>POTABLE, SANITARY, AND RECLAIMED WATER (1)</p>	SHEET NO.
DESIGNED BY		R.A.		TIMOTHY M. CURRAN, P.E.			
DRAWN BY		T.S.		FL. LICENSE NO.			
CHECKED BY		T.C.		34809			
No.	REVISIONS	DATE	BY	DATE FEBRUARY 2019 PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		

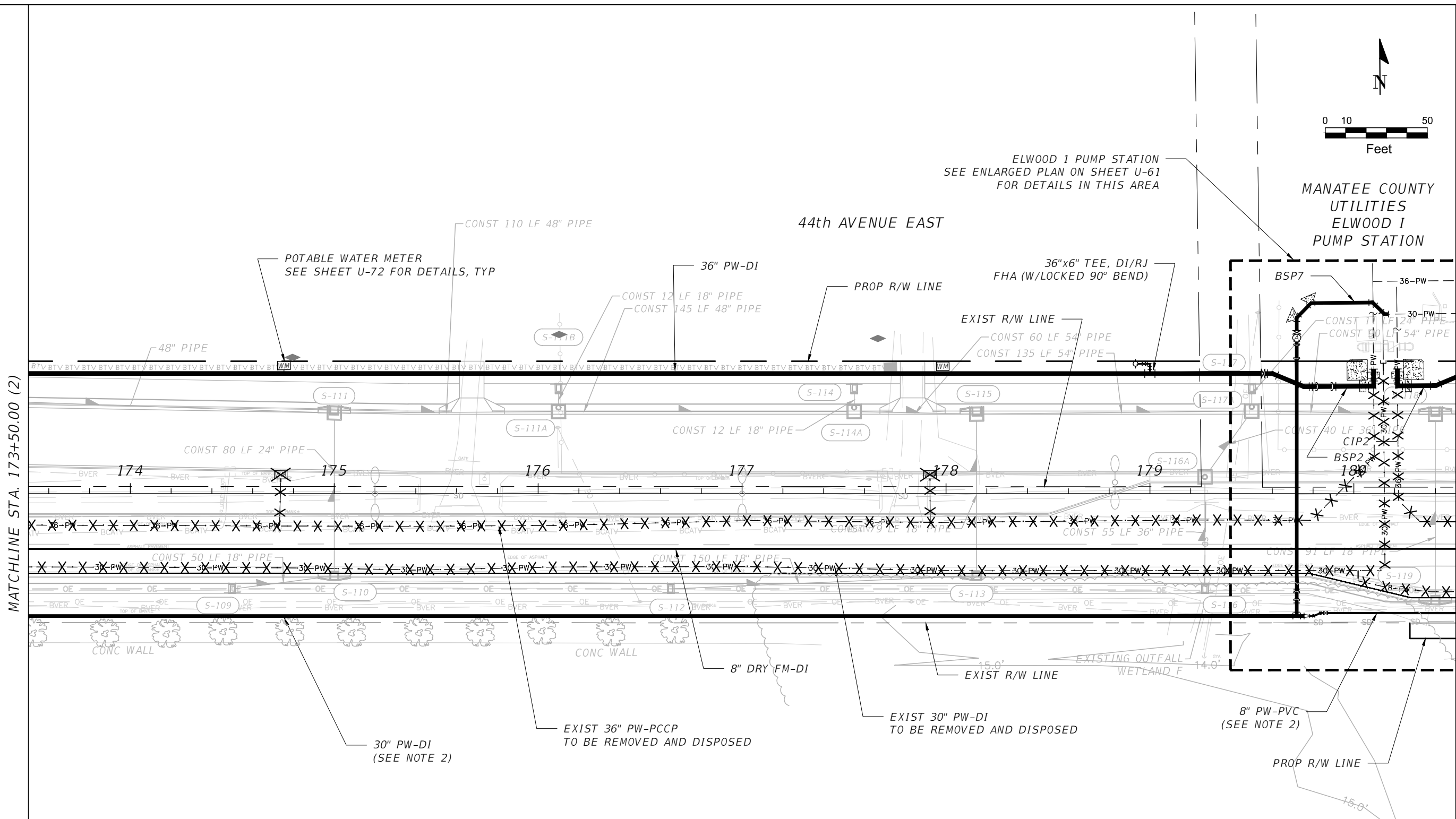
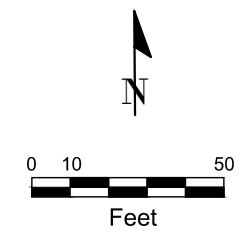
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C




- NOTES:**
- SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 - CONTRACTOR SHALL PROTECT EXIST FRONTIER 4" PVC W/ FOC DURING CONSTRUCTION OF 30" PW.
 - REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 - FROM STA 172+00 TO STA 180+00, CONTRACTOR SHALL COORDINATE INSTALLATION OF 30" PW MAIN WITH FP&L OPERATIONS STAFF DUE TO PROXIMITY OF NEW MAIN TO EXISTING 138 KV TRANSMISSION LINE POLES.

SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		POTABLE, SANITARY, AND RECLAIMED WATER (2)	SHEET NO.
No. REVISIONS DATE BY				TIMOTHY M. CURRAN, P.E. AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		Manatee County Florida PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence			U-20

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



- NOTES:**
1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. CONTRACTOR SHALL PROTECT EXIST FRONTIER 4" PVC W/ FOC DURING CONSTRUCTION OF 30" PW AND 8" PW.
 3. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 4. FROM STA 172+00 TO STA 180+00, CONTRACTOR SHALL COORDINATE INSTALLATION OF 30" PW MAIN WITH FP&L OPERATIONS STAFF DUE TO PROXIMITY OF NEW MAIN TO EXISTING 138 KV TRANSMISSION LINE POLES.

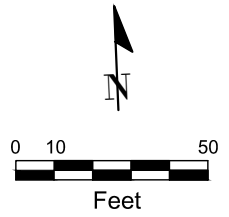
SCALE AS NOTED				DESIGNED BY R.A.		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		POTABLE, SANITARY, AND RECLAIMED WATER (3)	SHEET NO. U-21
DRAWN BY T.S.				CHECKED BY T.C.		PROJECT NO. 6086960			FL. LICENSE NO. 34809			
No.		REVISIONS		DATE		BY						

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

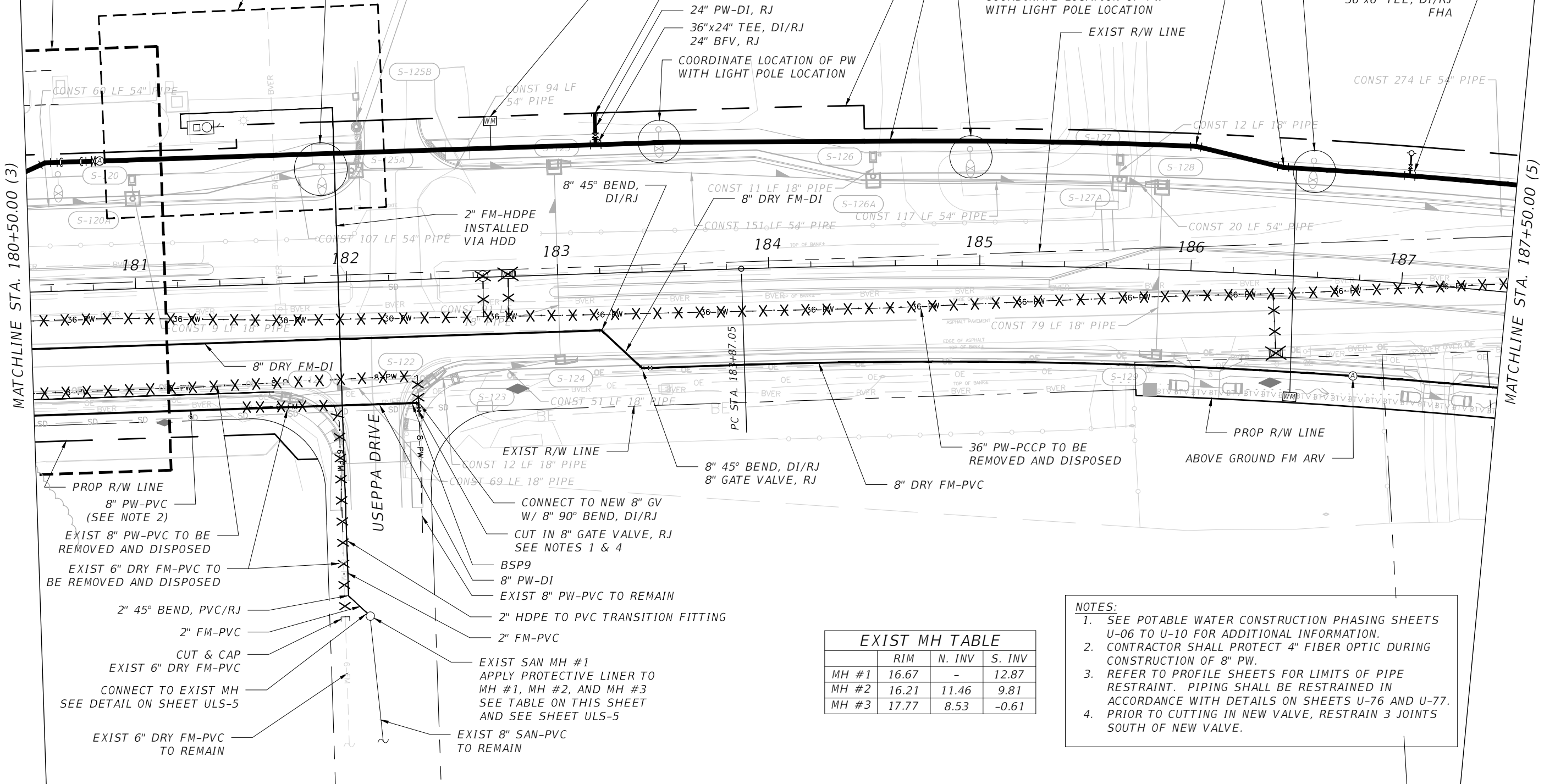
SEE ENLARGED PLAN ON SHEET U-61 FOR DETAILS IN THIS AREA

SEE ENLARGED SITE PLAN ON SHEET ULS-1 FOR GRINDER LIFT STATION DETAILS IN THIS AREA

44th AVENUE EAST



MANATEE COUNTY UTILITIES ELWOOD I PUMP STATION



EXIST 8" PW-PVC TO BE REMOVED AND DISPOSED
EXIST 6" DRY FM-PVC TO BE REMOVED AND DISPOSED

2" 45° BEND, PVC/RJ
2" FM-PVC
CUT & CAP
EXIST 6" DRY FM-PVC
CONNECT TO EXIST MH
SEE DETAIL ON SHEET ULS-5
EXIST 6" DRY FM-PVC TO REMAIN

CONNECT TO NEW 8" GV W/ 8" 90° BEND, DI/RJ
CUT IN 8" GATE VALVE, RJ
SEE NOTES 1 & 4

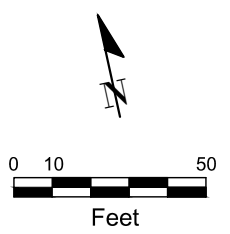
BSP9
8" PW-DI
EXIST 8" PW-PVC TO REMAIN
2" HDPE TO PVC TRANSITION FITTING
2" FM-PVC
EXIST SAN MH #1
APPLY PROTECTIVE LINER TO MH #1, MH #2, AND MH #3
SEE TABLE ON THIS SHEET AND SEE SHEET ULS-5
EXIST 8" SAN-PVC TO REMAIN

EXIST MH TABLE			
	RIM	N. INV	S. INV
MH #1	16.67	-	12.87
MH #2	16.21	11.46	9.81
MH #3	17.77	8.53	-0.61

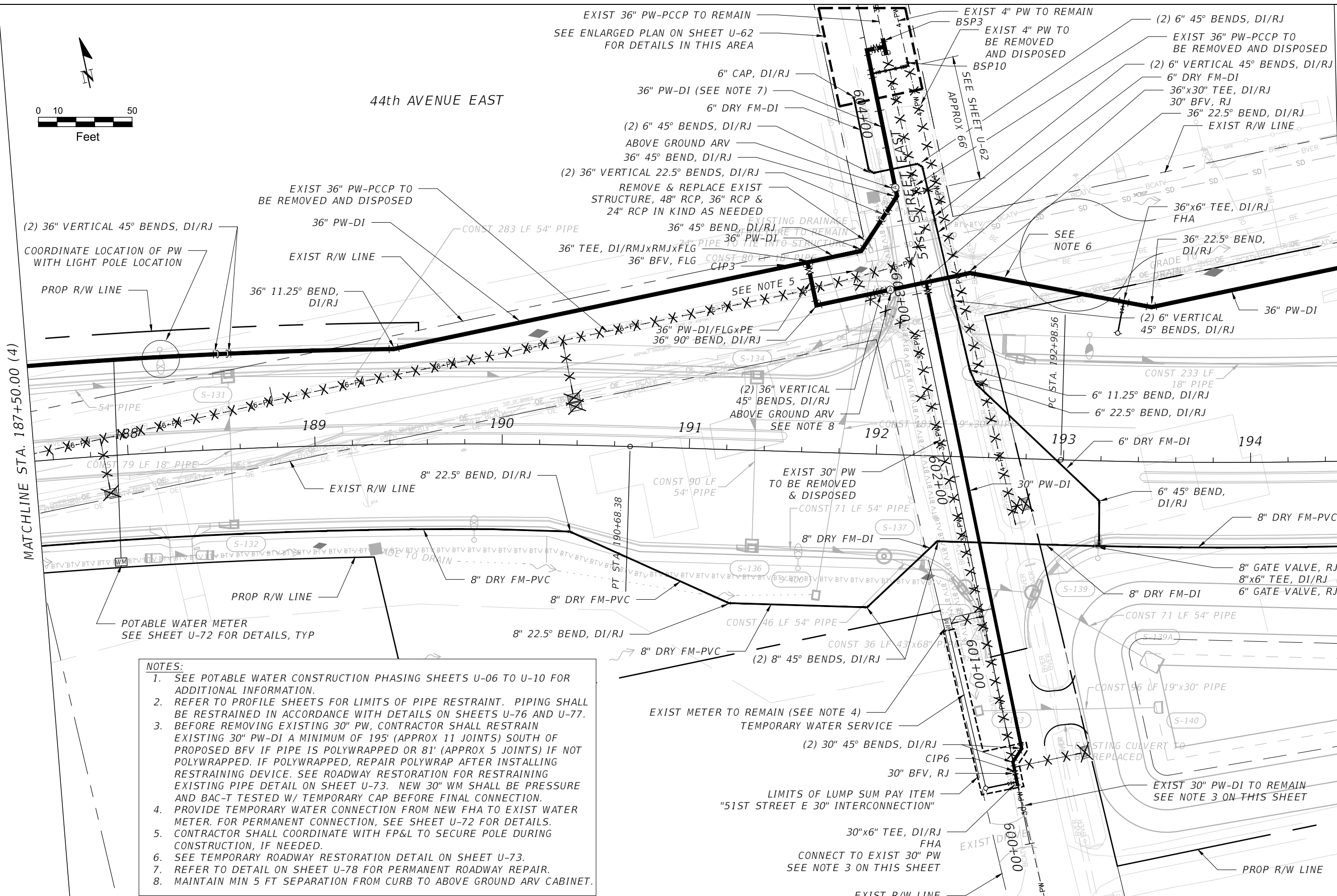
NOTES:
1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
2. CONTRACTOR SHALL PROTECT 4" FIBER OPTIC DURING CONSTRUCTION OF 8" PW.
3. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
4. PRIOR TO CUTTING IN NEW VALVE, RESTRAIN 3 JOINTS SOUTH OF NEW VALVE.

SCALE: AS NOTED		DESIGNED BY: R.A.		DATE: FEBRUARY 2019		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E.	<p>POTABLE, SANITARY, AND RECLAIMED WATER (4)</p>	SHEET NO. U-22
DRAWN BY: T.S.		CHECKED BY: T.C.		PROJECT NO. 6086960		FL. LICENSE NO. 34809		
No.	REVISIONS	DATE	BY	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		

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



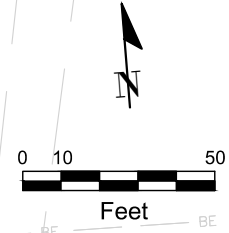
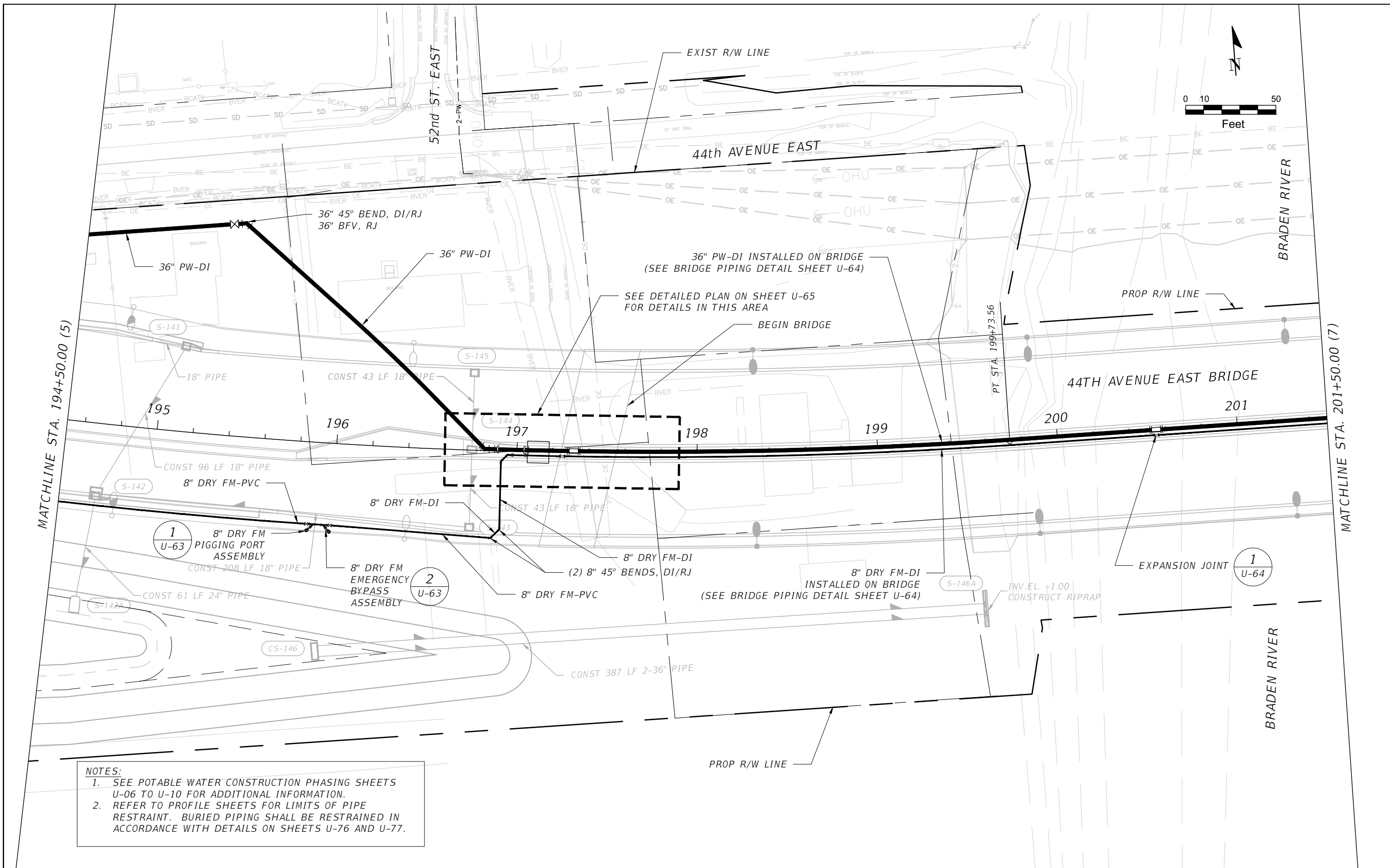
44th AVENUE EAST



- NOTES:**
1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 3. BEFORE REMOVING EXISTING 30" PW, CONTRACTOR SHALL RESTRAIN EXISTING 30" PW-DI A MINIMUM OF 195' (APPROX 11 JOINTS) SOUTH OF PROPOSED BFV IF PIPE IS POLYWRAPPED OR 81' (APPROX 5 JOINTS) IF NOT POLYWRAPPED. IF POLYWRAPPED, REPAIR POLYWRAP AFTER INSTALLING RESTRAINING DEVICE. SEE ROADWAY RESTORATION FOR RESTRAINING EXISTING PIPE DETAIL ON SHEET U-73. NEW 30" WM SHALL BE PRESSURE AND BAC-T TESTED W/ TEMPORARY CAP BEFORE FINAL CONNECTION.
 4. PROVIDE TEMPORARY WATER CONNECTION FROM NEW FHA TO EXIST WATER METER. FOR PERMANENT CONNECTION, SEE SHEET U-72 FOR DETAILS.
 5. CONTRACTOR SHALL COORDINATE WITH FP&L TO SECURE POLE DURING CONSTRUCTION, IF NEEDED.
 6. SEE TEMPORARY ROADWAY RESTORATION DETAIL ON SHEET U-73.
 7. REFER TO DETAIL ON SHEET U-78 FOR PERMANENT ROADWAY REPAIR.
 8. MAINTAIN MIN 5 FT SEPARATION FROM CURB TO ABOVE GROUND ARV CABINET.

SCALE: AS NOTED		DESIGNED BY: R.A.	DATE: FEBRUARY 2019	<p>Manatee County Florida PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence</p>	DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E.	<p>POTABLE, SANITARY, AND RECLAIMED WATER (5)</p>	SHEET NO.: U-23
DRAWN BY: T.S.		CHECKED BY: T.C.	PROJECT NO.: 6086960		FL. LICENSE NO.: 34809		
No.	REVISIONS	DATE	BY				

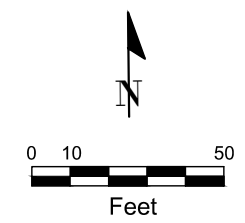
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



NOTES:
 1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. BURIED PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.

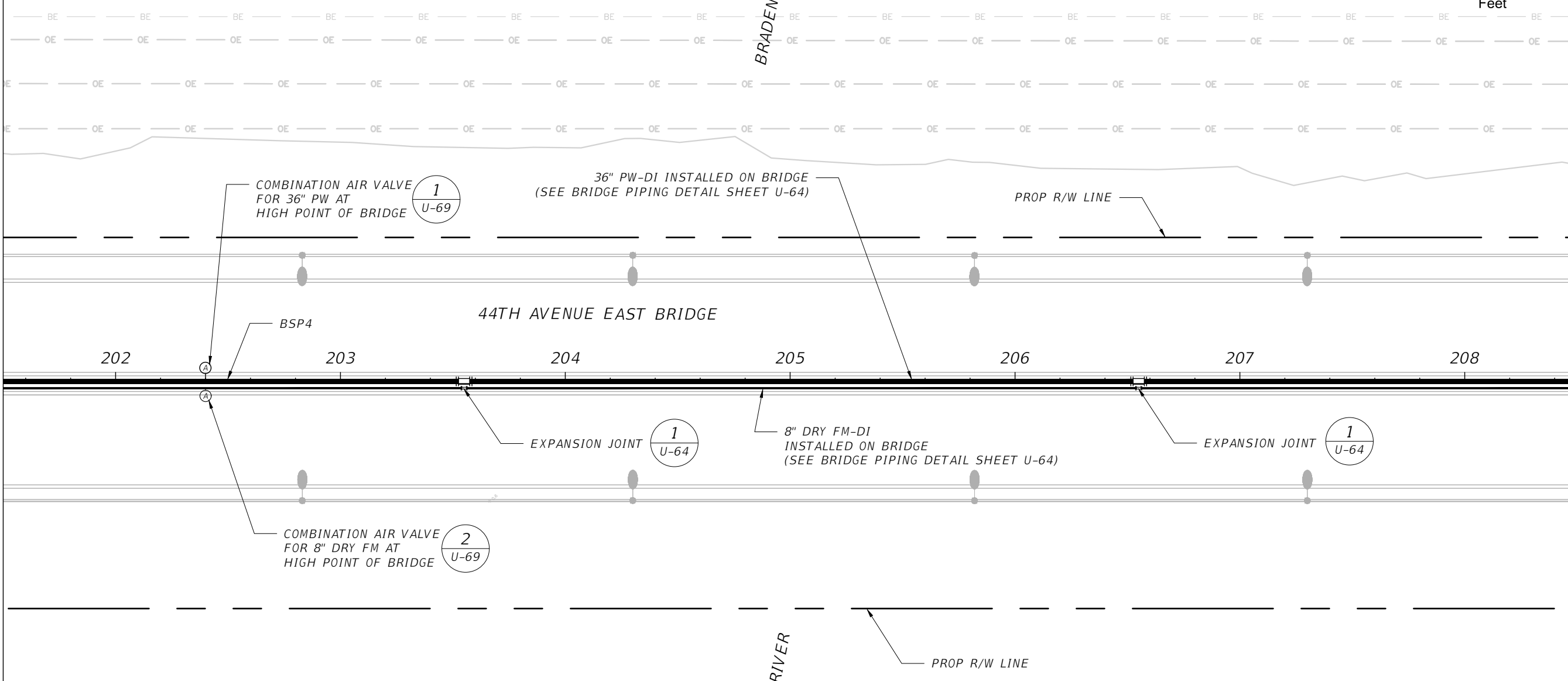
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		POTABLE, SANITARY, AND RECLAIMED WATER (6)		SHEET NO.: U-24
TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115				PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence 2/22/2019 12:19:26 PM		S:\Projects\RDWY\ProjFdot\ProjFDOT\VB8\60460213000\utils\cadd\PLANU01.dwg				

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




MATCHLINE STA. 201+50.00 (6)

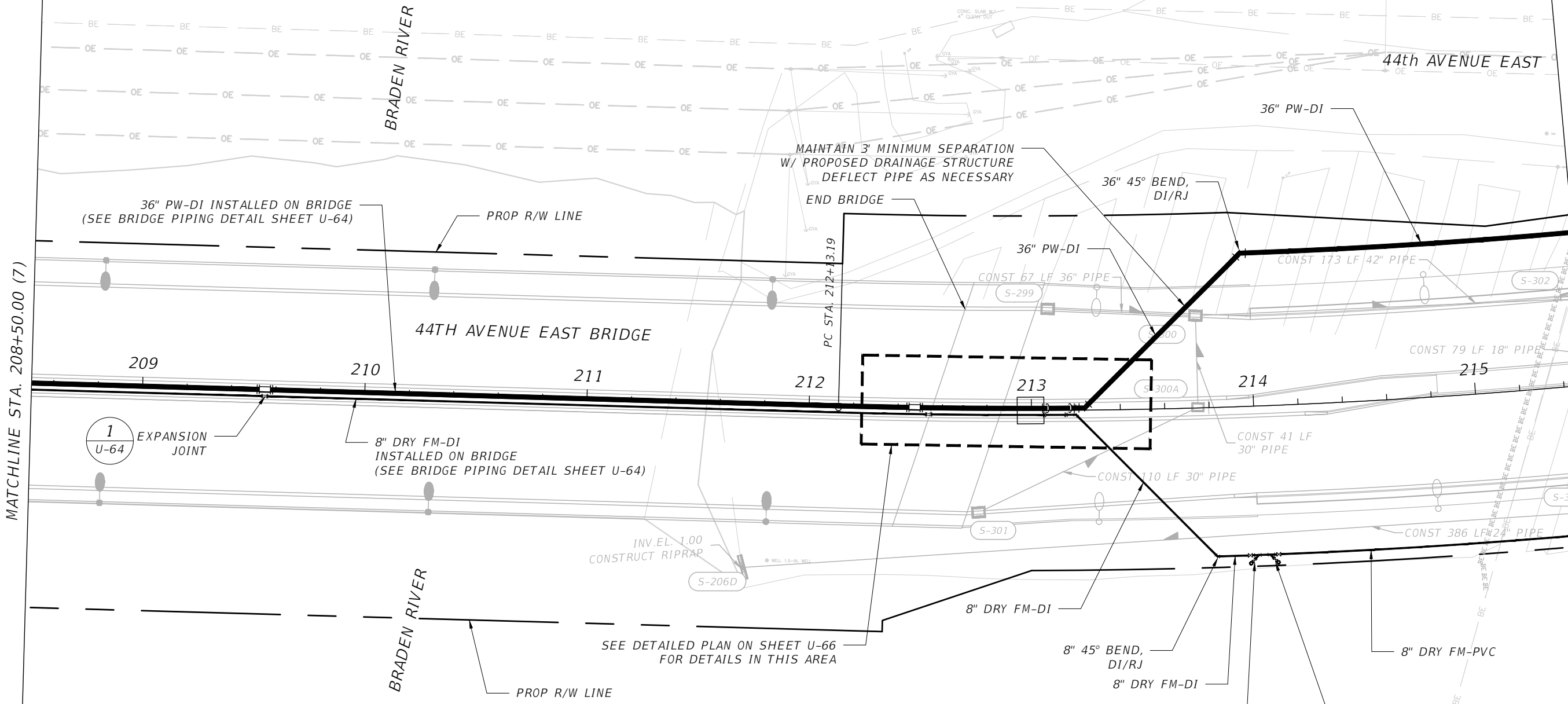
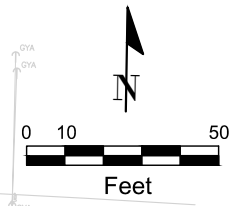
MATCHLINE STA. 208+50.00 (8)



NOTES:
 1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.

No.	REVISIONS	DATE	BY	SCALE	DESIGNED BY	DATE	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER	POTABLE, SANITARY, AND RECLAIMED WATER (7)	SHEET NO.
				AS NOTED	R.A.	FEBRUARY 2019		TIMOTHY M. CURRAN, P.E.		U-25
					T.S.	PROJECT NO.		FL. LICENSE NO.		
					T.C.	6086960		34809		

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



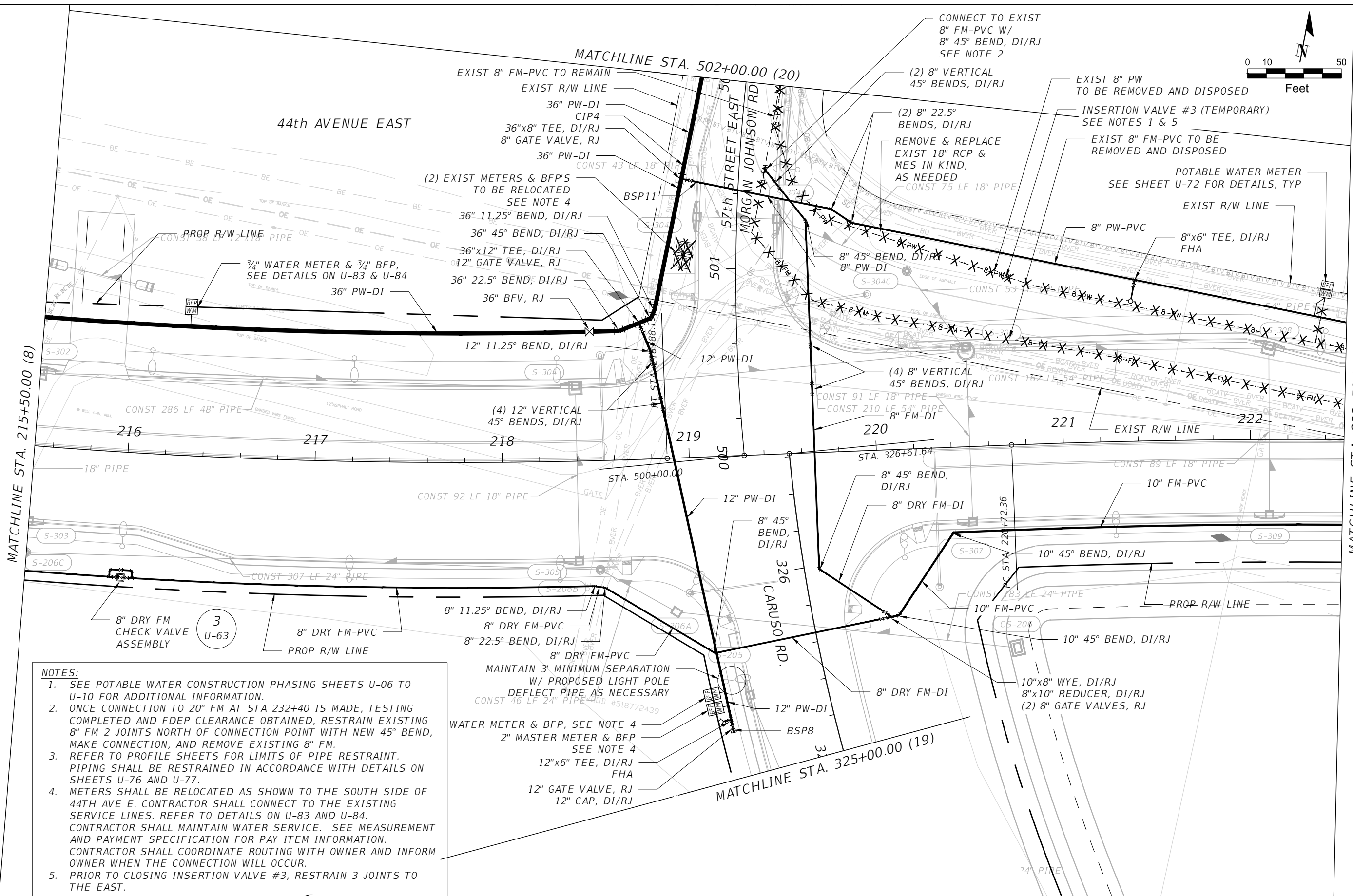
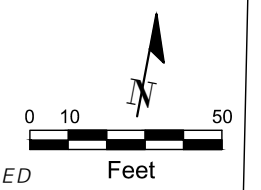
NOTES:
 1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. BURIED PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.

2 U-63 8" DRY FM EMERGENCY BYPASS ASSEMBLY


1 U-63 8" DRY FM PIGGING PORT ASSEMBLY

SCALE: AS NOTED				DESIGNER: TIMOTHY M. CURRAN, P.E. P.E. NO. 34809		DATE: FEBRUARY 2019			DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809		POTABLE, SANITARY, AND RECLAIMED WATER (8)	SHEET NO. U-26
DESIGNED BY: R.A.				PROJECT NO. 6086960		DRAWN BY: T.S.			PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208			
CHECKED BY: T.C.				CERTIFICATE OF AUTHORIZATION: 8115		PROJECT NO. 6086960		Sonnemberg, Terence		2/22/2019 12:23:08 PM		S:\Projects\RDWY\ProjFdot\ProjFDOT\VB8\60460213000\utils\cadd\PLANU01.dwg
No.	REVISIONS	DATE	BY									

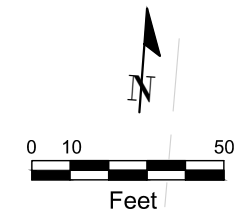
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



- NOTES:**
- SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 - ONCE CONNECTION TO 20" FM AT STA 232+40 IS MADE, TESTING COMPLETED AND FDEP CLEARANCE OBTAINED, RESTRAIN EXISTING 8" FM 2 JOINTS NORTH OF CONNECTION POINT WITH NEW 45° BEND, MAKE CONNECTION, AND REMOVE EXISTING 8" FM.
 - REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 - METERS SHALL BE RELOCATED AS SHOWN TO THE SOUTH SIDE OF 44TH AVE E. CONTRACTOR SHALL CONNECT TO THE EXISTING SERVICE LINES. REFER TO DETAILS ON U-83 AND U-84. CONTRACTOR SHALL MAINTAIN WATER SERVICE. SEE MEASUREMENT AND PAYMENT SPECIFICATION FOR PAY ITEM INFORMATION. CONTRACTOR SHALL COORDINATE ROUTING WITH OWNER AND INFORM OWNER WHEN THE CONNECTION WILL OCCUR.
 - PRIOR TO CLOSING INSERTION VALVE #3, RESTRAIN 3 JOINTS TO THE EAST.

SCALE AS NOTED		DESIGNED BY R.A.		DATE FEBRUARY 2019	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.	POTABLE, SANITARY, AND RECLAIMED WATER (9)	SHEET NO. U-27
DRAWN BY T.S.		CHECKED BY T.C.		PROJECT NO. 6086960		FL. LICENSE NO. 34809		
No.	REVISIONS	DATE	BY	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115				

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



44th AVENUE EAST

PROP R/W LINE

POTABLE WATER METER
SEE SHEET U-72 FOR DETAILS, TYP

EXIST 8" PW TO BE
REMOVED AND DISPOSED

8" PW-PVC

8" 11.25° BEND,
DI/RJ

8" PW-PVC

8"x6" TEE, DI/RJ
FHA

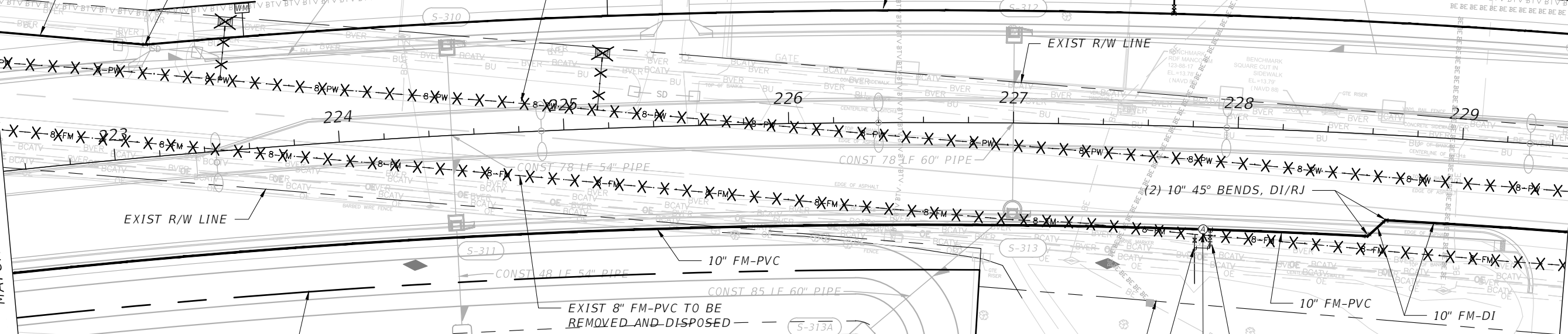
60" PIPE

CONST 243 LF 54" PIPE

EXIST R/W LINE

MATCHLINE STA. 222+50.00 (9)

MATCHLINE STA. 229+50.00 (11)



EXIST R/W LINE

PROP R/W LINE

EXIST R/W LINE


BRADEN RIVER
UNITED METHODIST
CHURCH

10"x4" TEE, DI/RJ
4" FM-DI/RJ
4" GATE VALVE, RJ
4"x3" REDUCER, DI/RJ
3" 90° BEND, DI/RJ
3" FM-DI/RJ

ABOVE GROUND FM ARV

EXIST 3" FM-PVC TO REMAIN
3" 90° BEND, DI/RJ
SEE NOTE 3

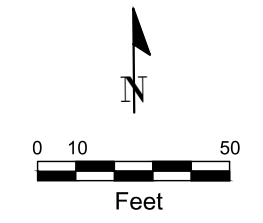
- NOTES:**
1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 3. ONCE 10" FM IS PLACED INTO SERVICE, RESTRAIN 1 JOINT OF EXISTING 3" FM-PVC SOUTH OF NEW 90° BEND BEFORE MAKING CONNECTION.

SCALE AS NOTED		DESIGNED BY R.A.		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		POTABLE, SANITARY, AND RECLAIMED WATER (10)	SHEET NO. U-28	
DRAWN BY T.S.		CHECKED BY T.C.		PROJECT NO. 6086960			FL. LICENSE NO. 34809				
No.	REVISIONS	DATE	BY	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115							

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

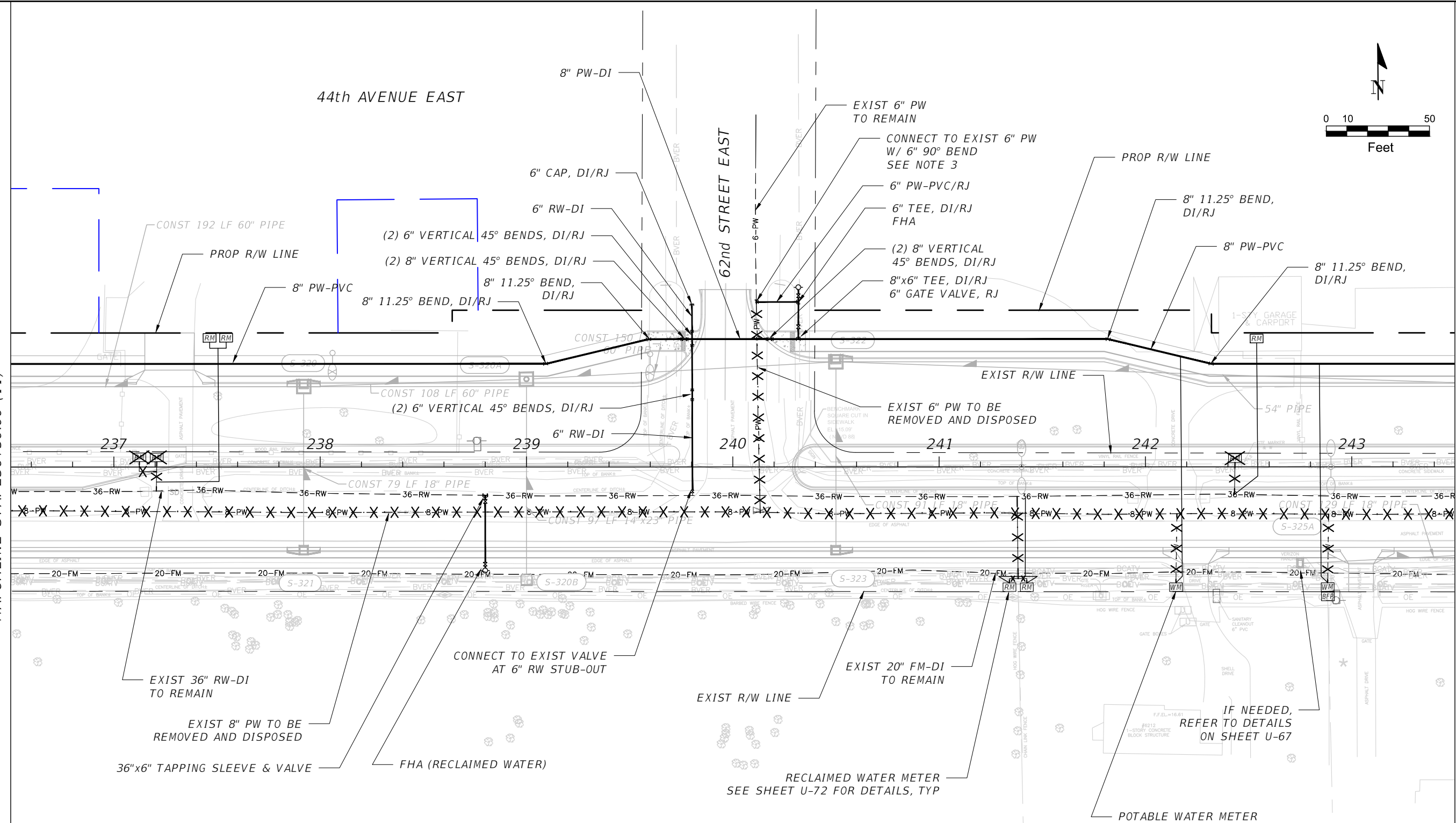
44th AVENUE EAST

62nd STREET EAST



MATCHLINE STA. 236+50.00 (11)

MATCHLINE STA. 243+50.00 (13)

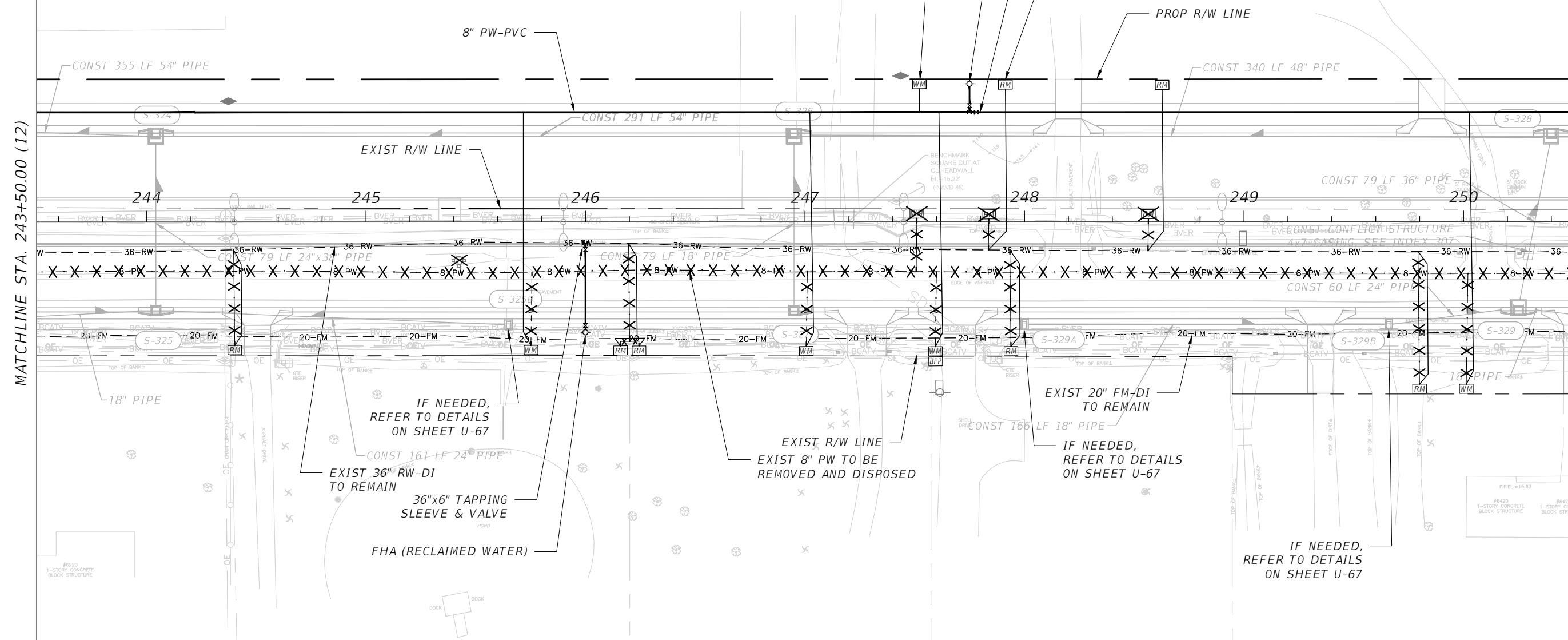
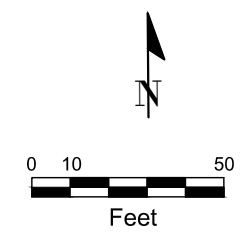


- NOTES:**
- SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 - REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 - RESTRAIN 1 PIPE LENGTH NORTH OF CUT IN 6" PW 90° BEND PRIOR TO MAKING CONNECTION.

				SCALE AS NOTED	DESIGNED BY R.A.	DATE FEBRUARY 2019	<p>MANATEE COUNTY FLORIDA PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Floyd, Cindy</p>	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.	<p>POTABLE, SANITARY, AND RECLAIMED WATER (12)</p>	SHEET NO. U-30
				DRAWN BY T.S.	PROJECT NO. 6086960	FL. LICENSE NO. 34809				
No.	REVISIONS	DATE	BY	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115					

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

44th AVENUE EAST



NOTES:
 1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.

IF NEEDED, REFER TO DETAILS ON SHEET U-67
 EXIST 36" RW-DI TO REMAIN
 36"x6" TAPPING SLEEVE & VALVE
 FHA (RECLAIMED WATER)

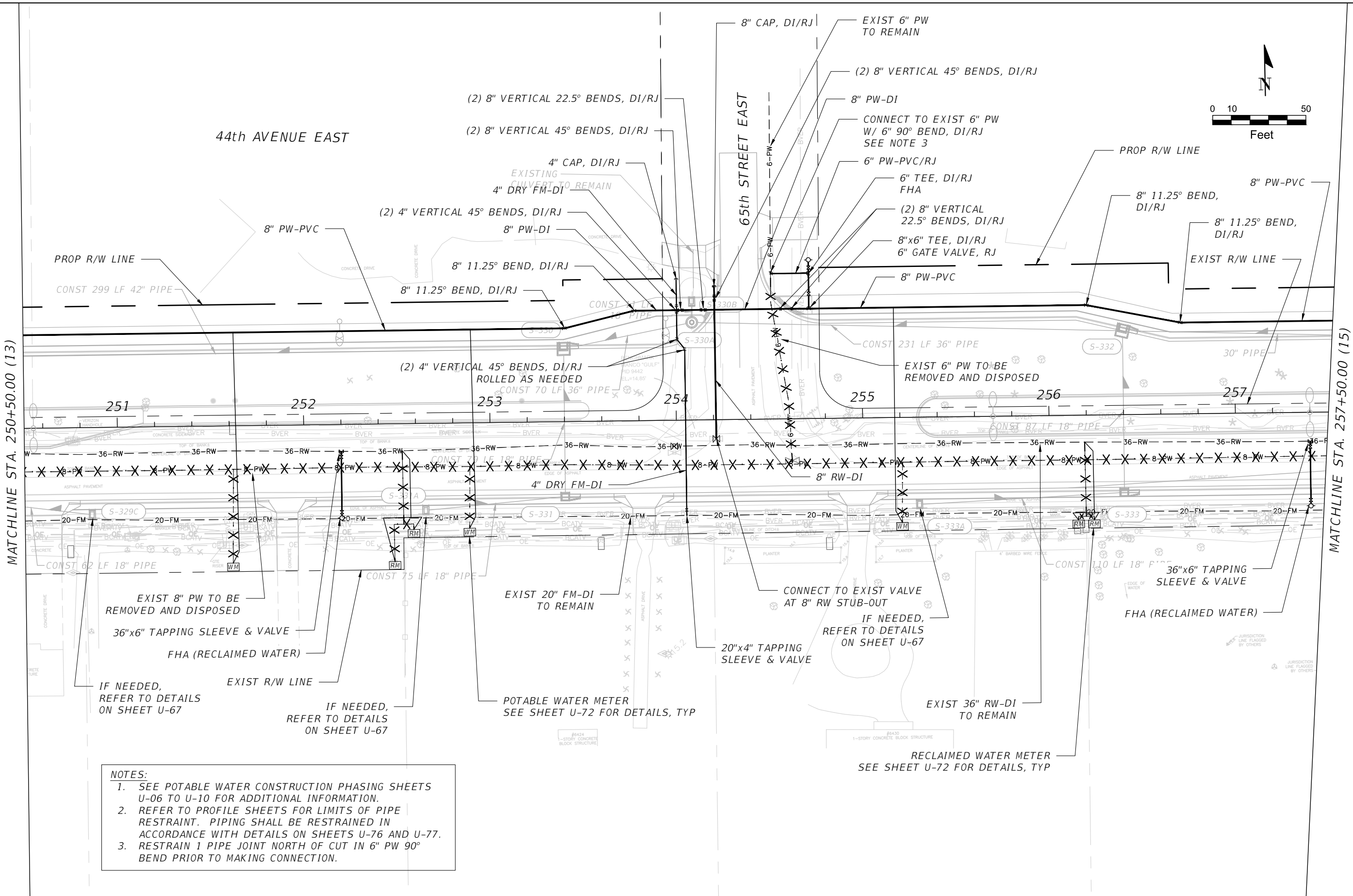
EXIST R/W LINE
 EXIST 8" PW TO BE REMOVED AND DISPOSED

EXIST 20" FM-DI TO REMAIN
 IF NEEDED, REFER TO DETAILS ON SHEET U-67

IF NEEDED, REFER TO DETAILS ON SHEET U-67


SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence 2/22/2019 12:33:53 PM		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		POTABLE, SANITARY, AND RECLAIMED WATER (13)		SHEET NO.: U-31
No. REVISIONS DATE BY														

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

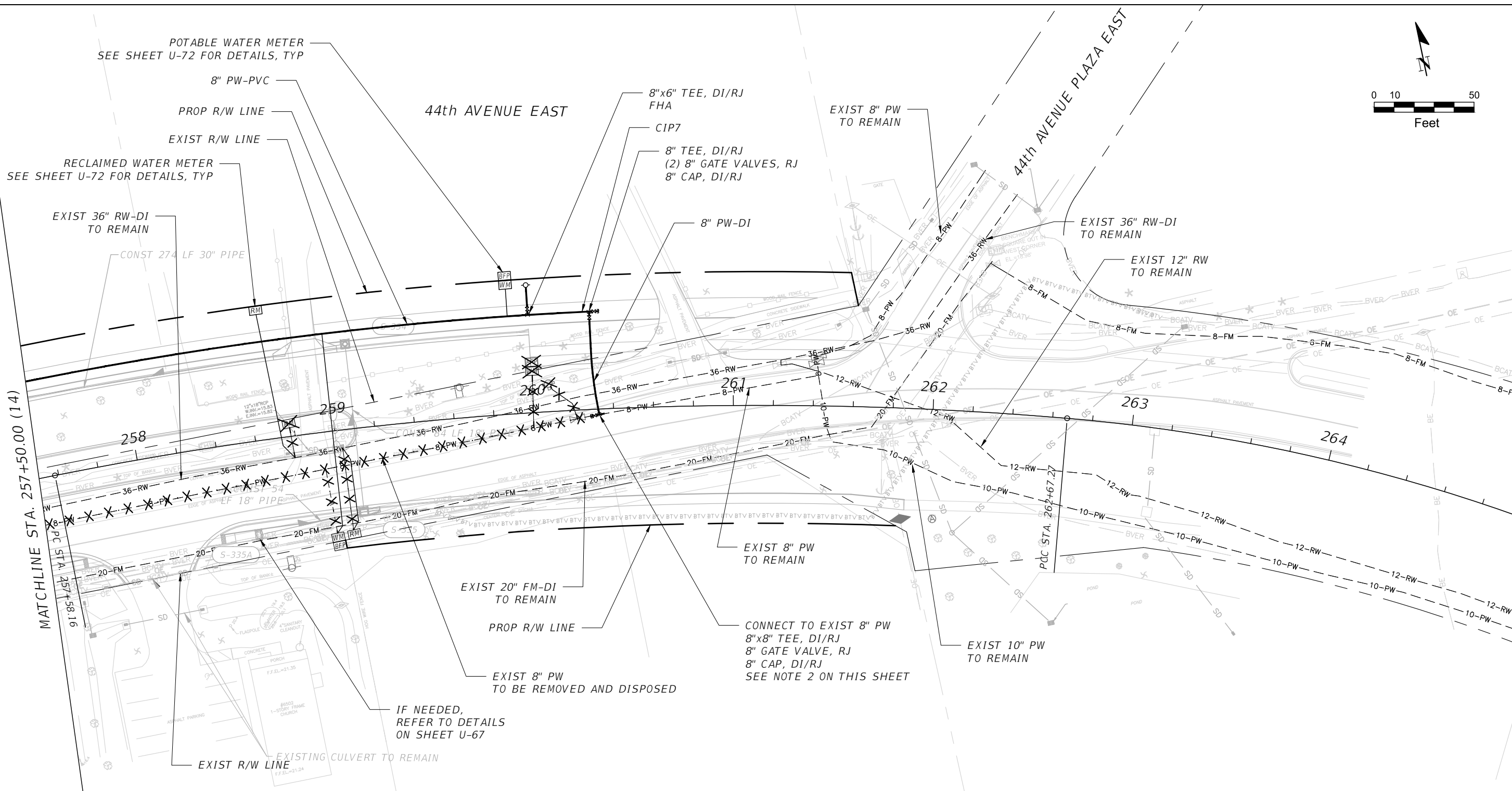
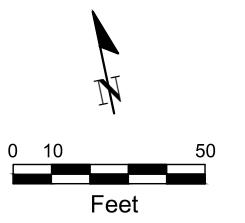


NOTES:


1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
2. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
3. RESTRAIN 1 PIPE JOINT NORTH OF CUT IN 6" PW 90° BEND PRIOR TO MAKING CONNECTION.

SCALE: AS NOTED				DESIGNED BY: R.A.		DATE: FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E.		POTABLE, SANITARY, AND RECLAIMED WATER (14)		SHEET NO.: U-32	
DRAWN BY: T.S.				CHECKED BY: T.C.		PROJECT NO.: 6086960				FL. LICENSE NO.: 34809					
No.		REVISIONS		DATE		BY									

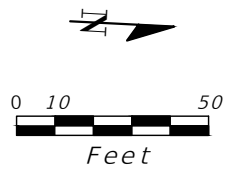
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



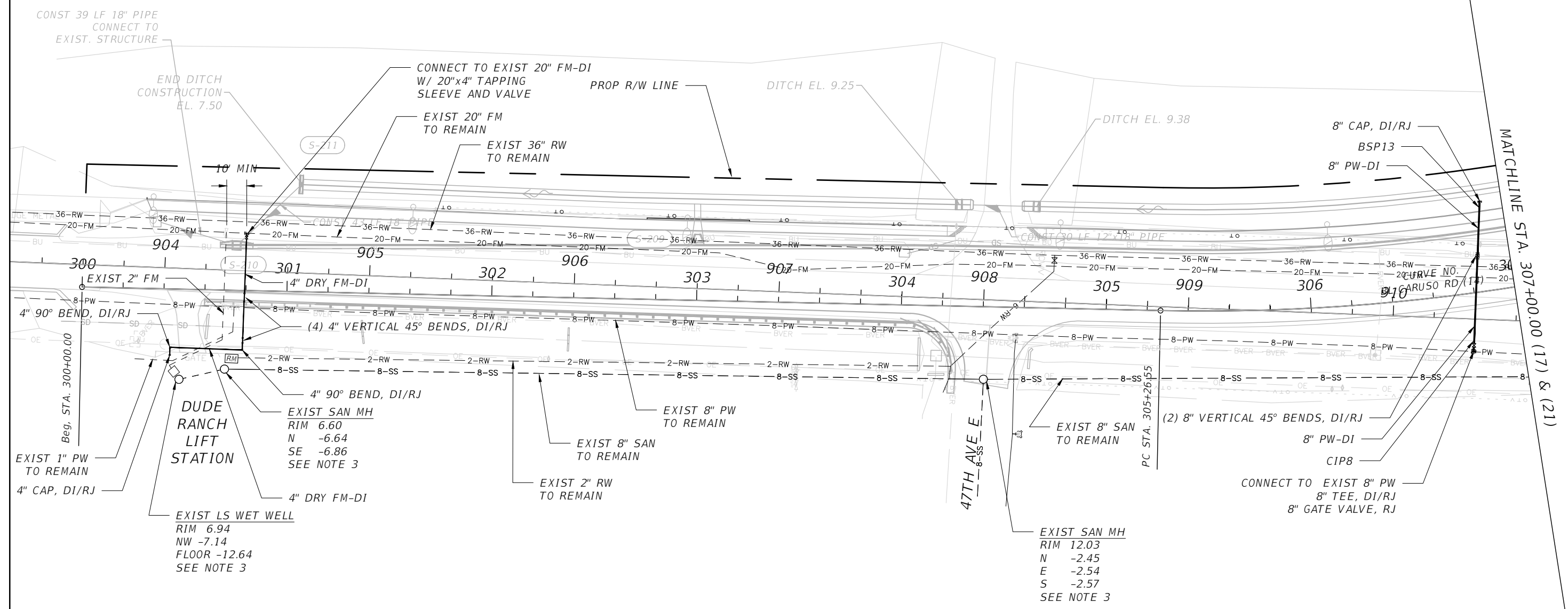
- NOTES:**
1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. CONTRACTOR SHALL RESTRAIN 2 JOINTS OF EXISTING 8" PW EAST OF CONNECTION POINT PRIOR TO CONSTRUCTION ACTIVITIES. CAP AND REMOVE EXISTING 8" PW AFTER NEW 8" PW IS CLEARED BY FDEP AND PLACED INTO SERVICE AND ALL SERVICES HAVE BEEN TRANSFERRED.
 3. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77

SCALE: AS NOTED				DESIGNED BY: R.A.		DATE: FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E.		POTABLE, SANITARY, AND RECLAIMED WATER (15)		SHEET NO.: U-33	
DRAWN BY: T.S.				CHECKED BY: T.C.		PROJECT NO.: 6086960				FL. LICENSE NO.: 34809					
No.		REVISIONS		DATE		BY									

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



CARUSO RD



NOTES:

- SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
- REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
- COUNTY RECORD DRAWING ELEVATION DATA FOR EXISTING WET WELL AND MANHOLES WAS IN NGVD 29. THE ELEVATION DATA PRESENTED HEREIN HAS BEEN CONVERTED TO NAVD 88 USING: NAVD88 = NGVD29 - 0.97.

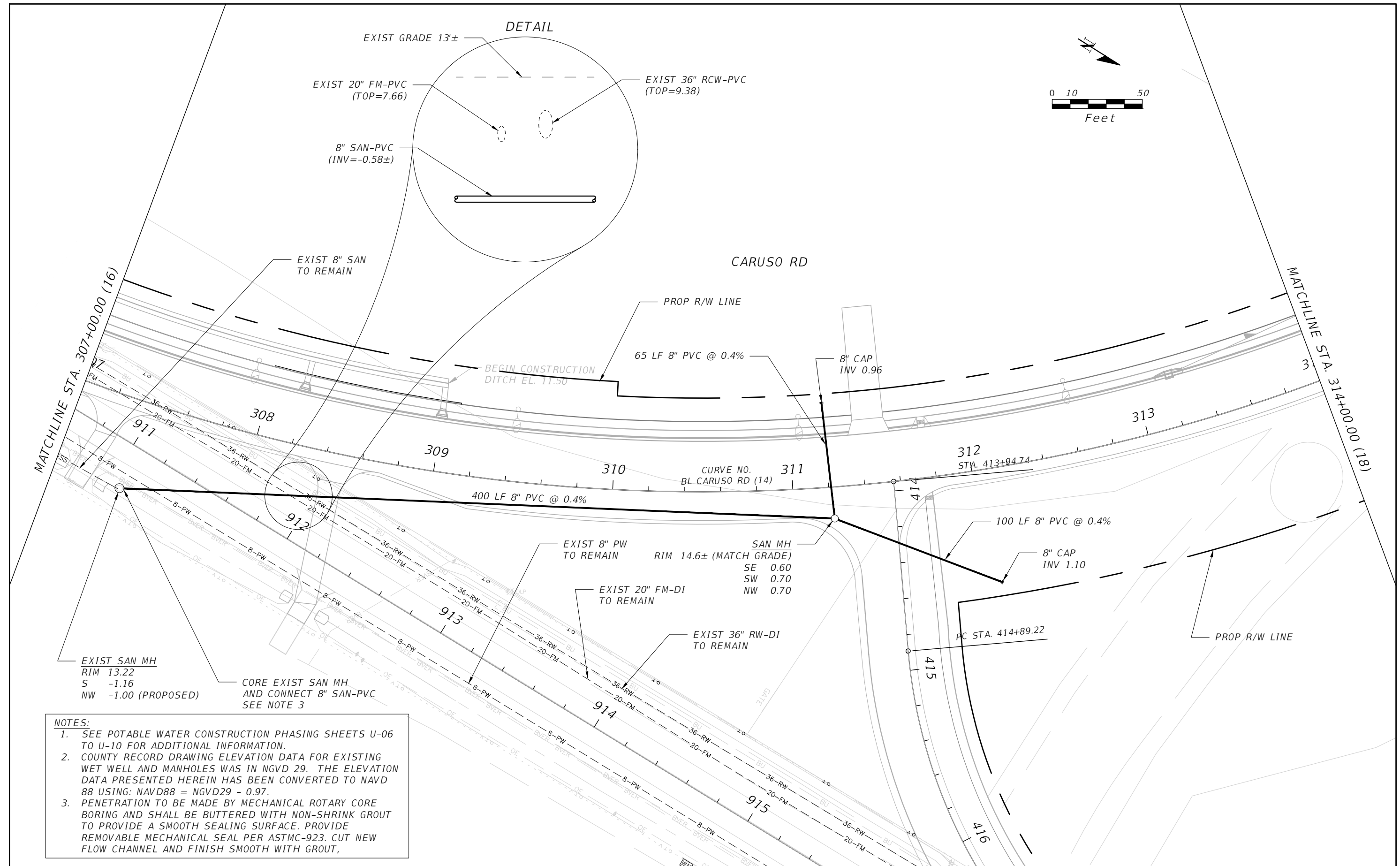
SCALE AS NOTED		DESIGNED BY R.A.		DATE FEBRUARY 2019		DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		SHEET NO. U-34
DRAWN BY T.S.		CHECKED BY T.C.		PROJECT NO. 6086960		FL. LICENSE NO. 34809		
No.		REVISIONS		DATE		BY		

TIMOTHY M. CURRAN, P.E.
P.E. NO. 34809
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115



POTABLE, SANITARY, AND RECLAIMED WATER (16)

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



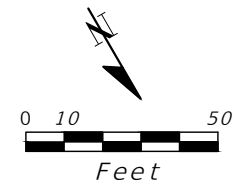
NOTES:

- SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
- COUNTY RECORD DRAWING ELEVATION DATA FOR EXISTING WET WELL AND MANHOLES WAS IN NGVD 29. THE ELEVATION DATA PRESENTED HEREIN HAS BEEN CONVERTED TO NAVD 88 USING: NAVD88 = NGVD29 - 0.97.
- PENETRATION TO BE MADE BY MECHANICAL ROTARY CORE BORING AND SHALL BE BUTTERED WITH NON-SHRINK GROUT TO PROVIDE A SMOOTH SEALING SURFACE. PROVIDE REMOVABLE MECHANICAL SEAL PER ASTM C-923. CUT NEW FLOW CHANNEL AND FINISH SMOOTH WITH GROUT.

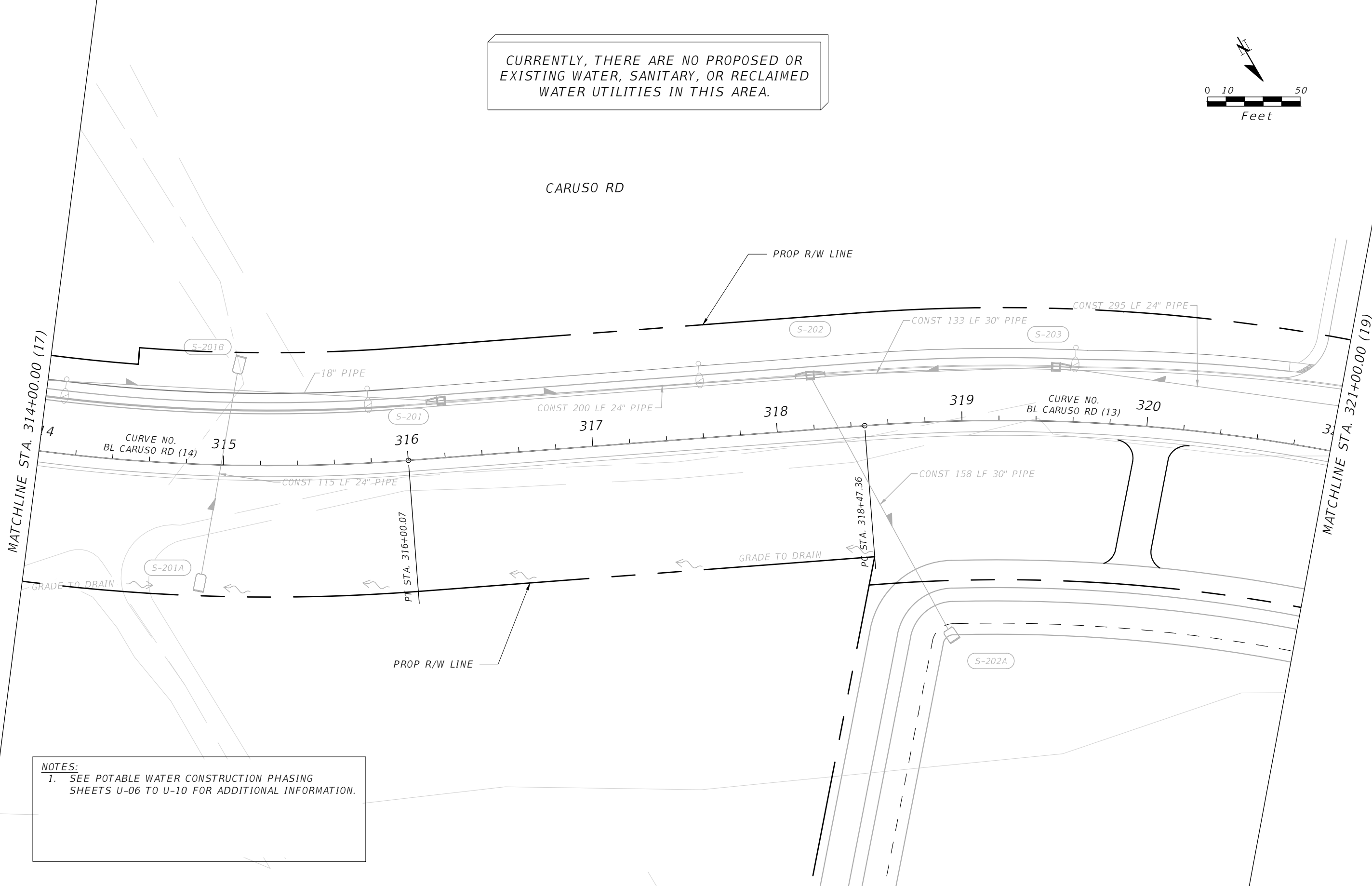
SCALE				AS NOTED	TIMOTHY M. CURRAN, P.E.	DATE	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Floyd, Cindy	DESIGN ENGINEER	POTABLE, SANITARY, AND RECLAIMED WATER (17)	SHEET NO.
DESIGNED BY				R.A.	AECOM TECHNICAL SERVICES, INC.	FEBRUARY 2019		TIMOTHY M. CURRAN, P.E.		U-35
DRAWN BY				T.S.	7650 WEST COURTNEY CAMPBELL CAUSEWAY	PROJECT NO.		FL. LICENSE NO.		
CHECKED BY				T.C.	TAMPA, FL 33607-1462	6086960	34809			
REVISIONS				DATE	BY					

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


CURRENTLY, THERE ARE NO PROPOSED OR EXISTING WATER, SANITARY, OR RECLAIMED WATER UTILITIES IN THIS AREA.



CARUSO RD

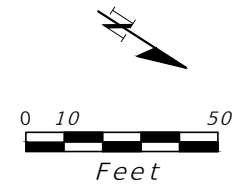


NOTES:
 1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.

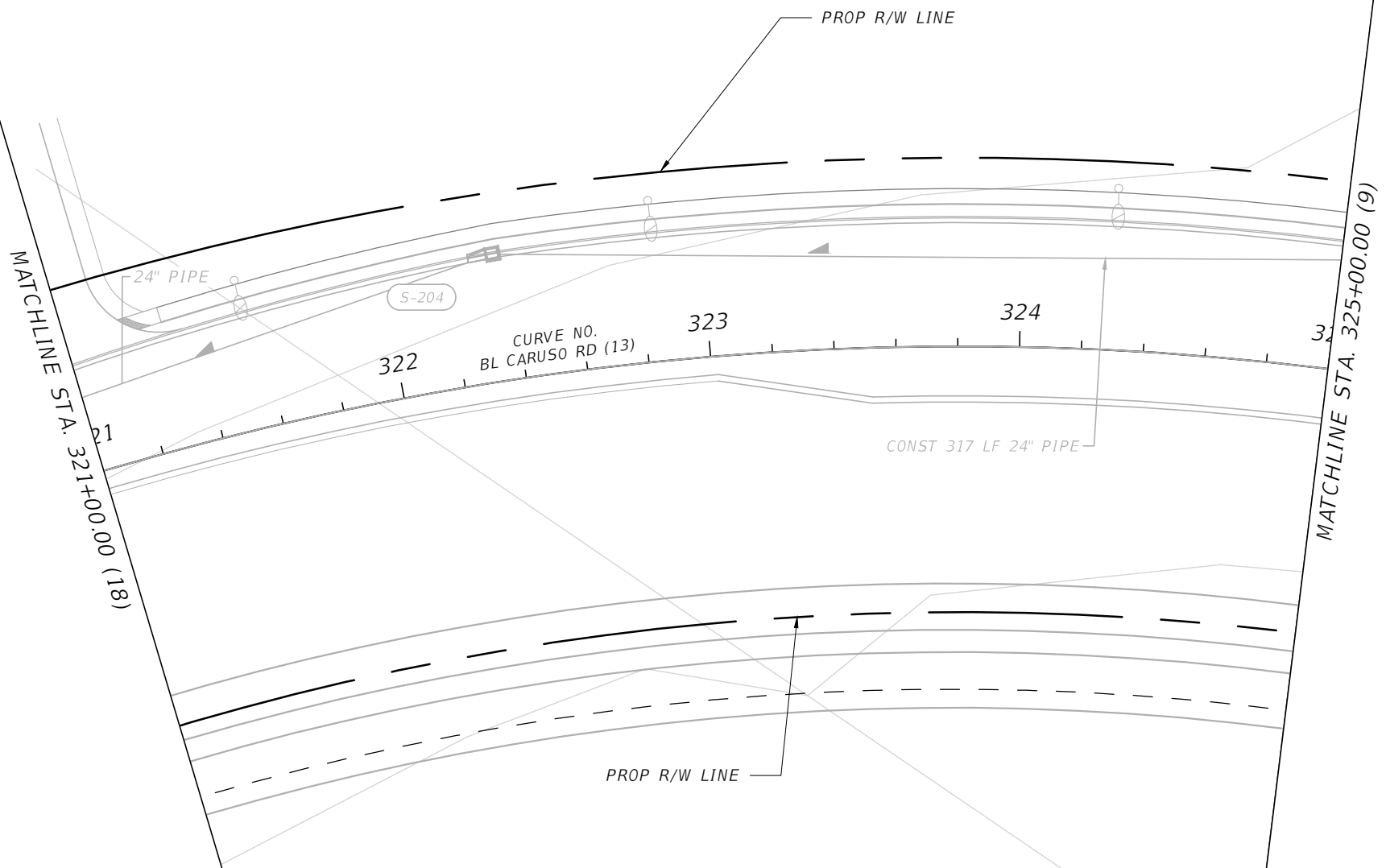
SCALE AS NOTED				DESIGNED BY TIMOTHY M. CURRAN, P.E. P.E. NO. 34809		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		POTABLE, SANITARY, AND RECLAIMED WATER (18)		SHEET NO.	
DRAWN BY R.A.				AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462		PROJECT NO. 6086960				FL. LICENSE NO. 34809				U-36	
CHECKED BY T.S.				T.C.		CERTIFICATE OF AUTHORIZATION: 8115									
No.	REVISIONS			DATE	BY										

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


CURRENTLY, THERE ARE NO PROPOSED OR EXISTING WATER, SANITARY, OR RECLAIMED WATER UTILITIES IN THIS AREA.



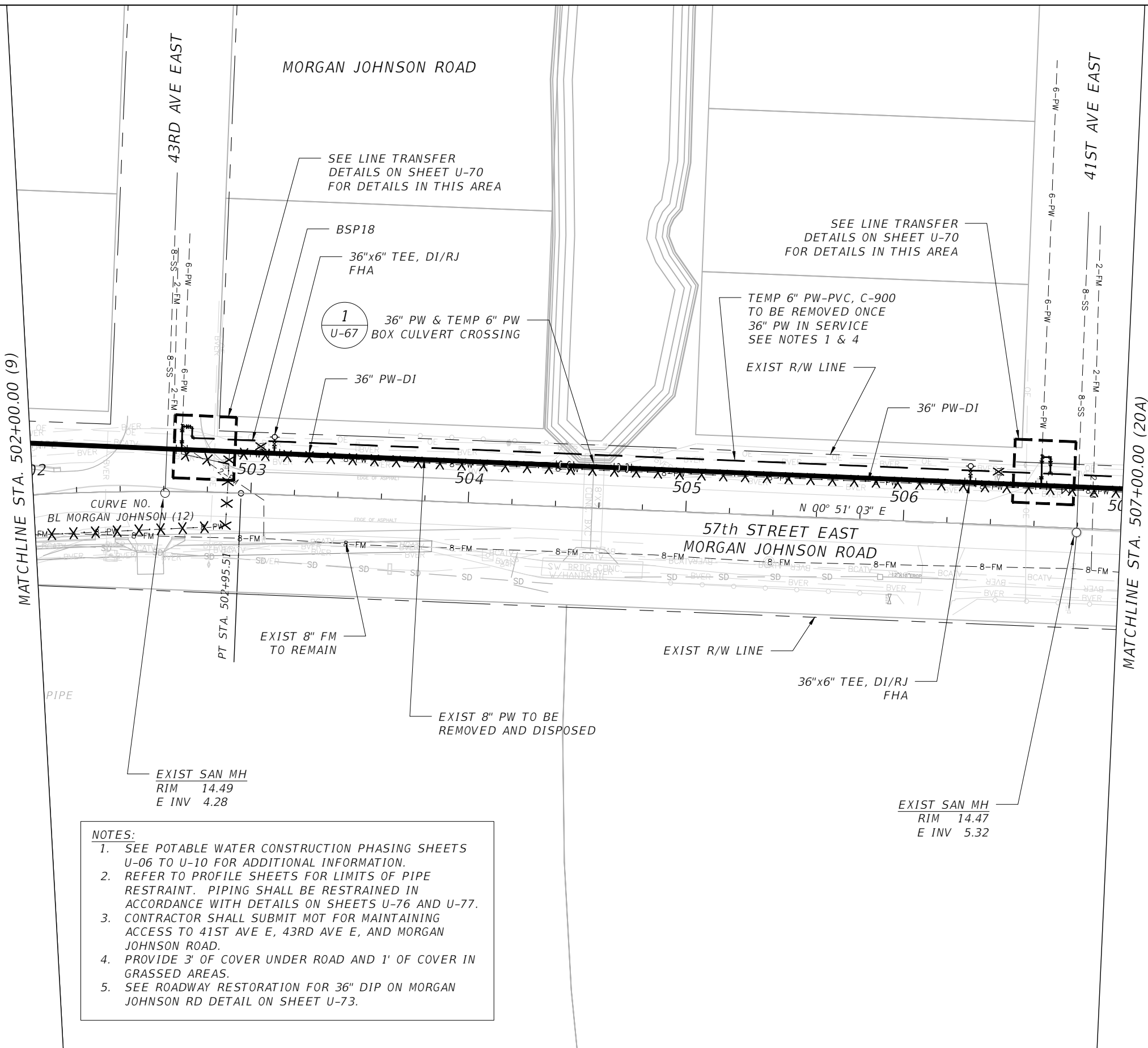
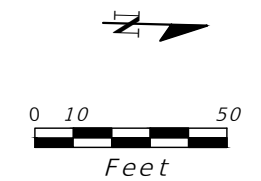
CARUSO RD




NOTES:
 1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.

SCALE		AS NOTED		DESIGN ENGINEER		POTABLE, SANITARY, AND RECLAIMED WATER (19)	SHEET NO. U-37
DESIGNED BY		R.A.		TIMOTHY M. CURRAN, P.E.			
DRAWN BY		T.S.		FL. LICENSE NO.			
CHECKED BY		T.C.		34809			
No.	REVISIONS	DATE	BY	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	

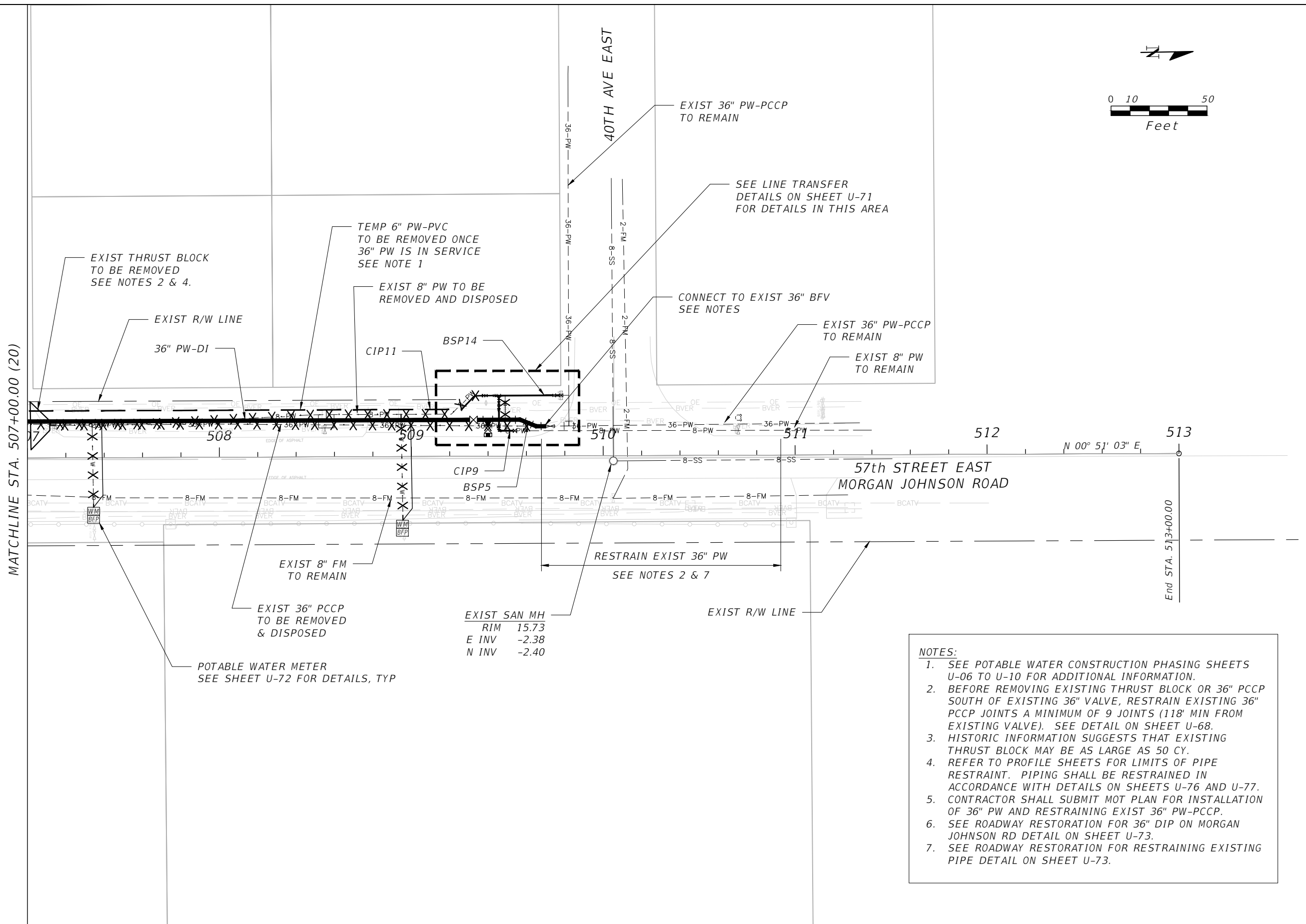
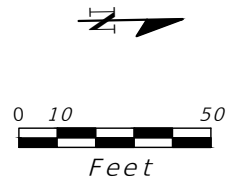
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C



- NOTES:**
1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 3. CONTRACTOR SHALL SUBMIT MOT FOR MAINTAINING ACCESS TO 41ST AVE E, 43RD AVE E, AND MORGAN JOHNSON ROAD.
 4. PROVIDE 3' OF COVER UNDER ROAD AND 1' OF COVER IN GRASSED AREAS.
 5. SEE ROADWAY RESTORATION FOR 36" DIP ON MORGAN JOHNSON RD DETAIL ON SHEET U-73.

SCALE AS NOTED				DESIGNED BY R.A.		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		POTABLE, SANITARY, AND RECLAIMED WATER (20)		SHEET NO. U-38	
DRAWN BY T.S.				CHECKED BY T.C.		PROJECT NO. 6086960				FL. LICENSE NO. 34809					
No.		REVISIONS		DATE		BY									


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



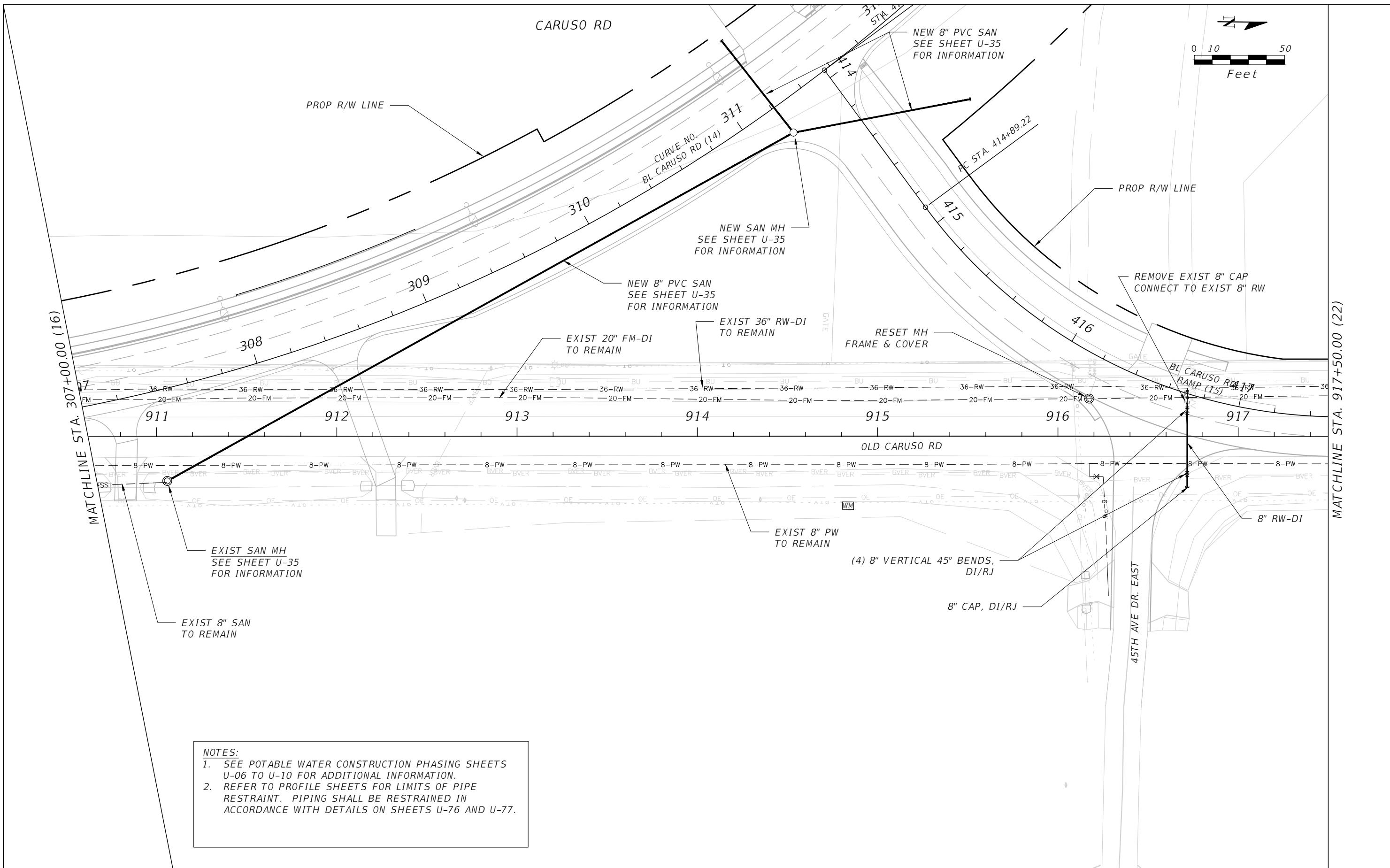
- NOTES:**
- SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 - BEFORE REMOVING EXISTING THRUST BLOCK OR 36" PCCP SOUTH OF EXISTING 36" VALVE, RESTRAIN EXISTING 36" PCCP JOINTS A MINIMUM OF 9 JOINTS (118' MIN FROM EXISTING VALVE). SEE DETAIL ON SHEET U-68.
 - HISTORIC INFORMATION SUGGESTS THAT EXISTING THRUST BLOCK MAY BE AS LARGE AS 50 CY.
 - REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 - CONTRACTOR SHALL SUBMIT MOT PLAN FOR INSTALLATION OF 36" PW AND RESTRAINING EXIST 36" PW-PCCP.
 - SEE ROADWAY RESTORATION FOR 36" DIP ON MORGAN JOHNSON RD DETAIL ON SHEET U-73.
 - SEE ROADWAY RESTORATION FOR RESTRAINING EXISTING PIPE DETAIL ON SHEET U-73.

EXIST SAN MH
 RIM 15.73
 E INV -2.38
 N INV -2.40


POTABLE WATER METER
 SEE SHEET U-72 FOR DETAILS, TYP

SCALE AS NOTED				DESIGNER TIMOTHY M. CURRAN, P.E. P.E. NO. 34809		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	POTABLE, SANITARY, AND RECLAIMED WATER (20A)	SHEET NO. U-39
DESIGNED BY R.A.				PROJECT NO. 6086960		DRAWN BY T.S.					
CHECKED BY T.C.				CERTIFICATE OF AUTHORIZATION: 8115							
No.	REVISIONS	DATE	BY								

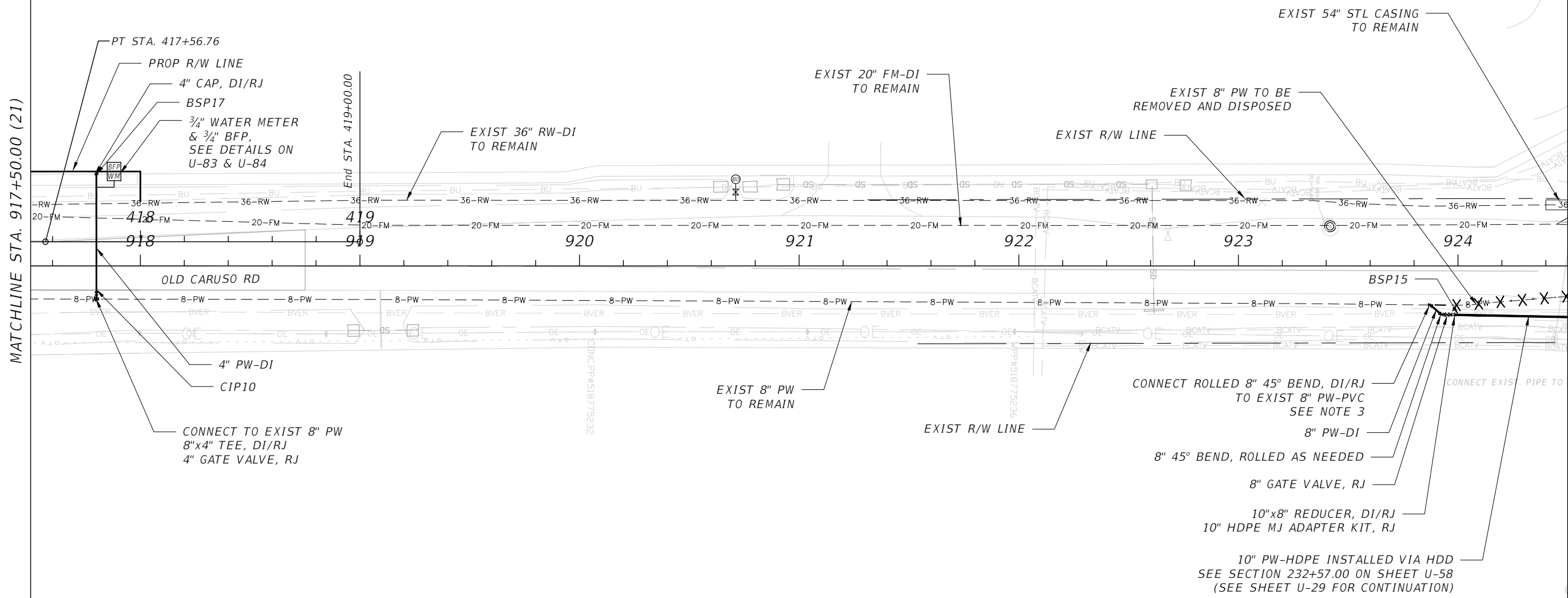
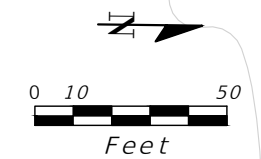
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C



NOTES:
 1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 2. REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.

SCALE AS NOTED				DESIGNED BY R.A.		DATE FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		POTABLE, SANITARY, AND RECLAIMED WATER (21)		SHEET NO. U-40	
DRAWN BY T.S.				CHECKED BY T.C.		PROJECT NO. 6086960				FL. LICENSE NO. 34809					
No.		REVISIONS		DATE		BY									

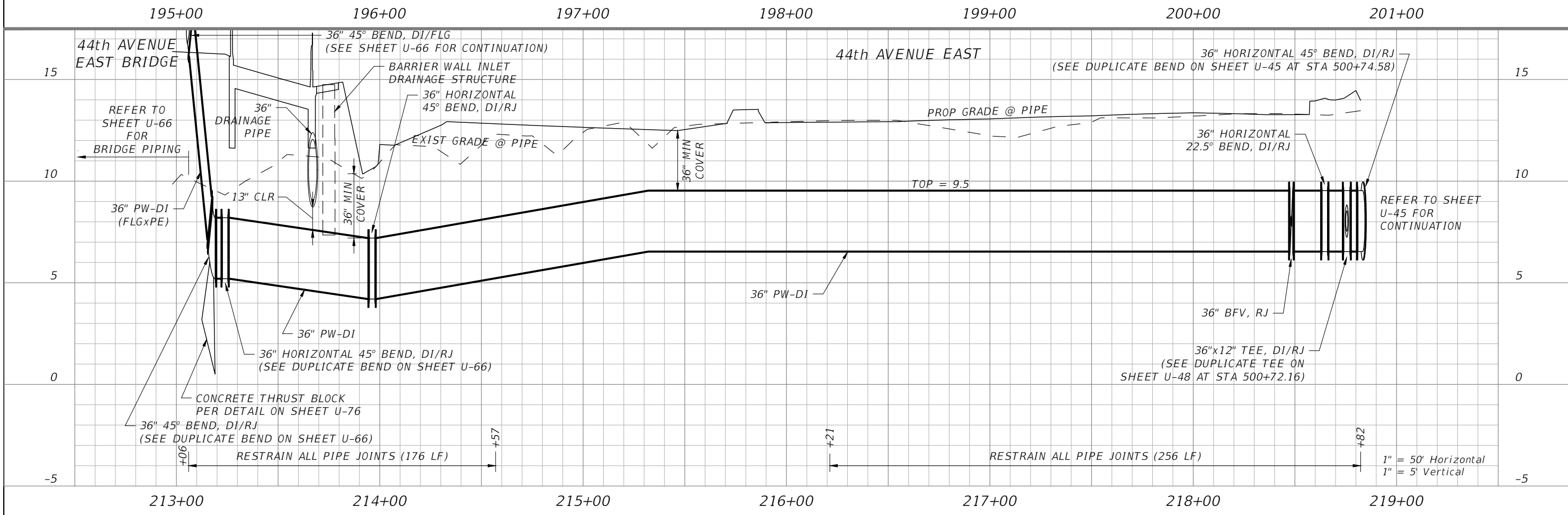
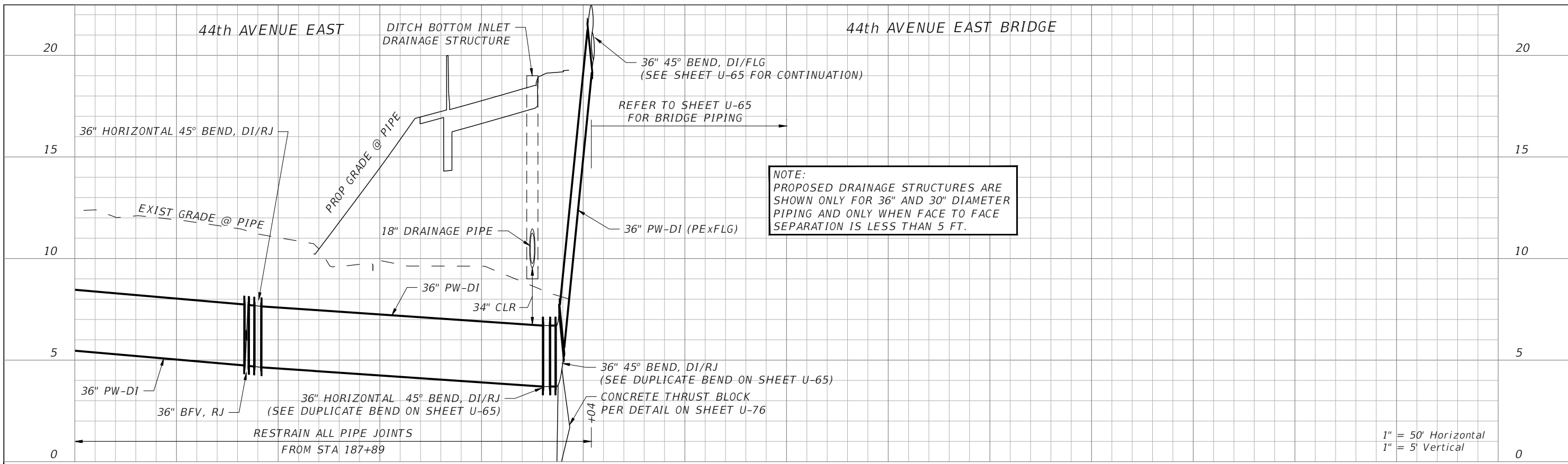
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



- NOTES:**
- SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 - REFER TO PROFILE SHEETS FOR LIMITS OF PIPE RESTRAINT. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 - PRIOR TO CONNECTING NEW 45° BEND, RESTRAIN 3 JOINTS OF EXIST 8" PW-PVC SOUTH OF NEW BEND AND OBTAIN CLEARANCE FROM FDEP.

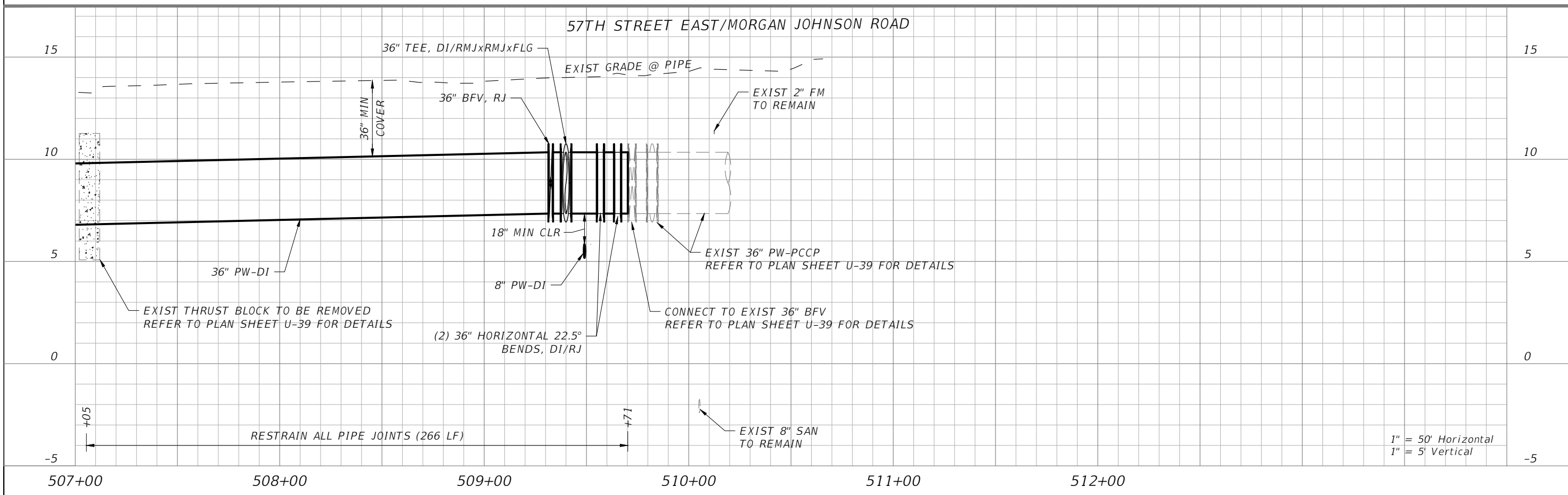
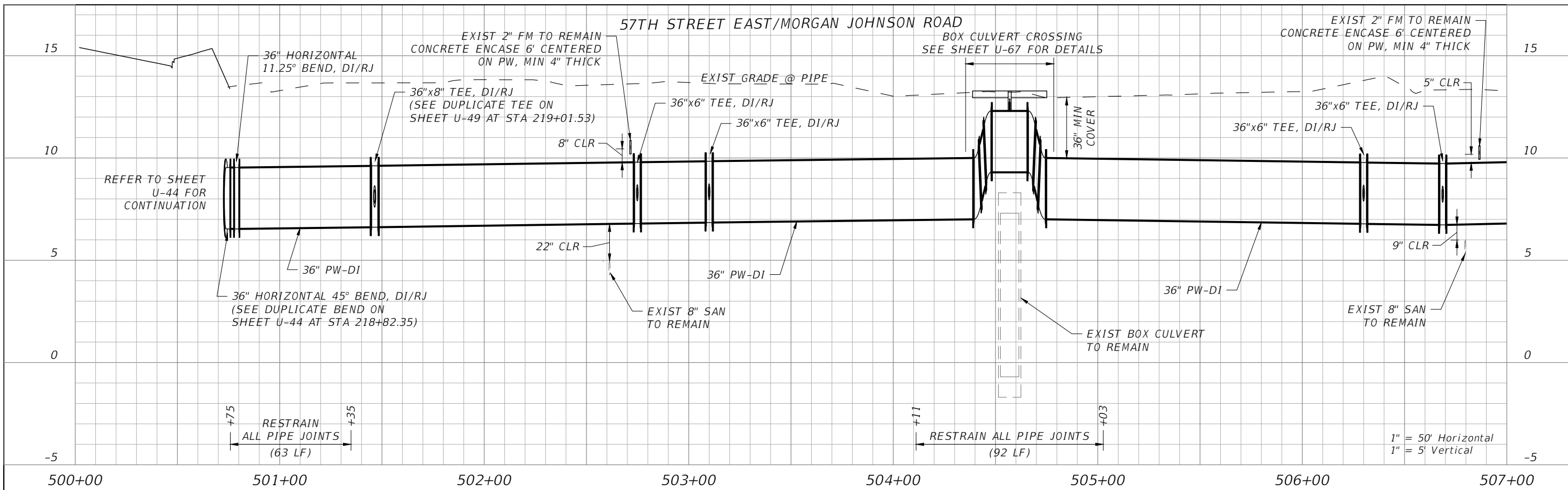
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence 2/22/2019 12:47:09 PM		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		POTABLE, SANITARY, AND RECLAIMED WATER (22)		SHEET NO.: U-41	
No.	REVISIONS			DATE	BY										

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



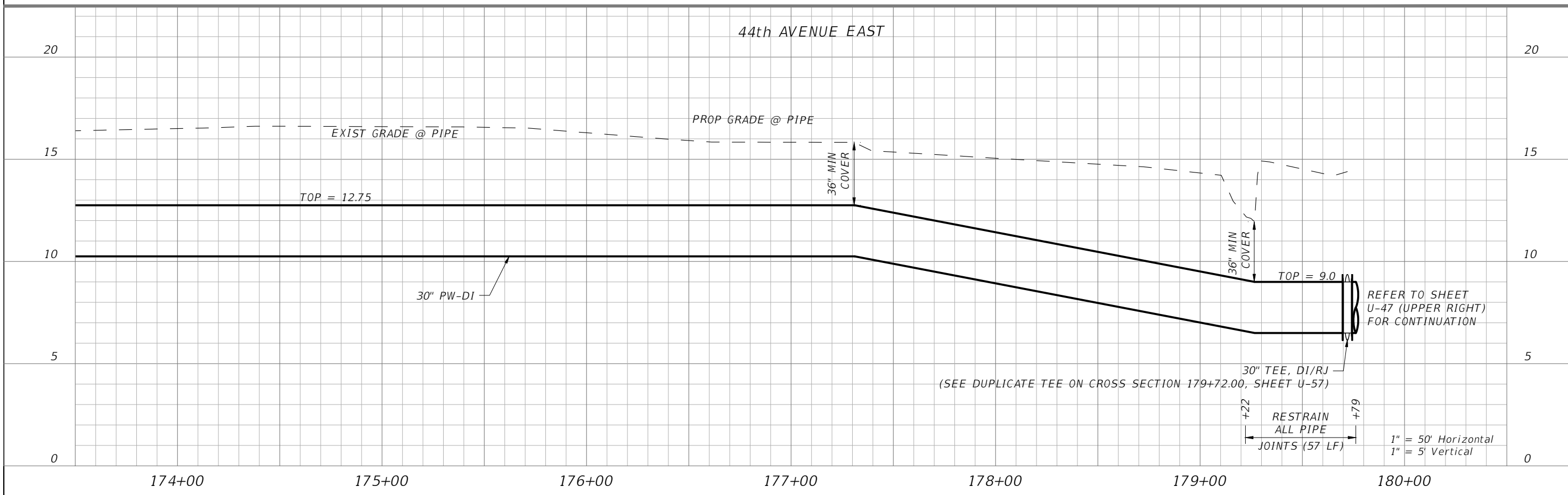
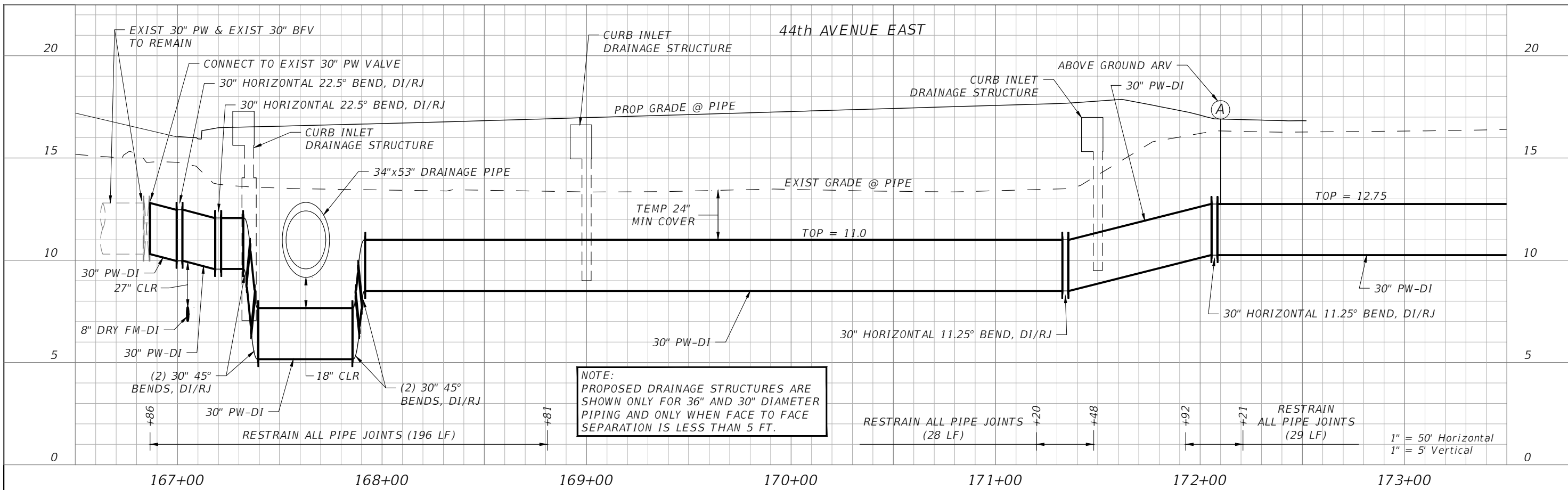
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		PROFILE SHEET (3) 36" POTABLE WATER MAIN		SHEET NO.: U-44	
No.	REVISIONS	DATE	BY								


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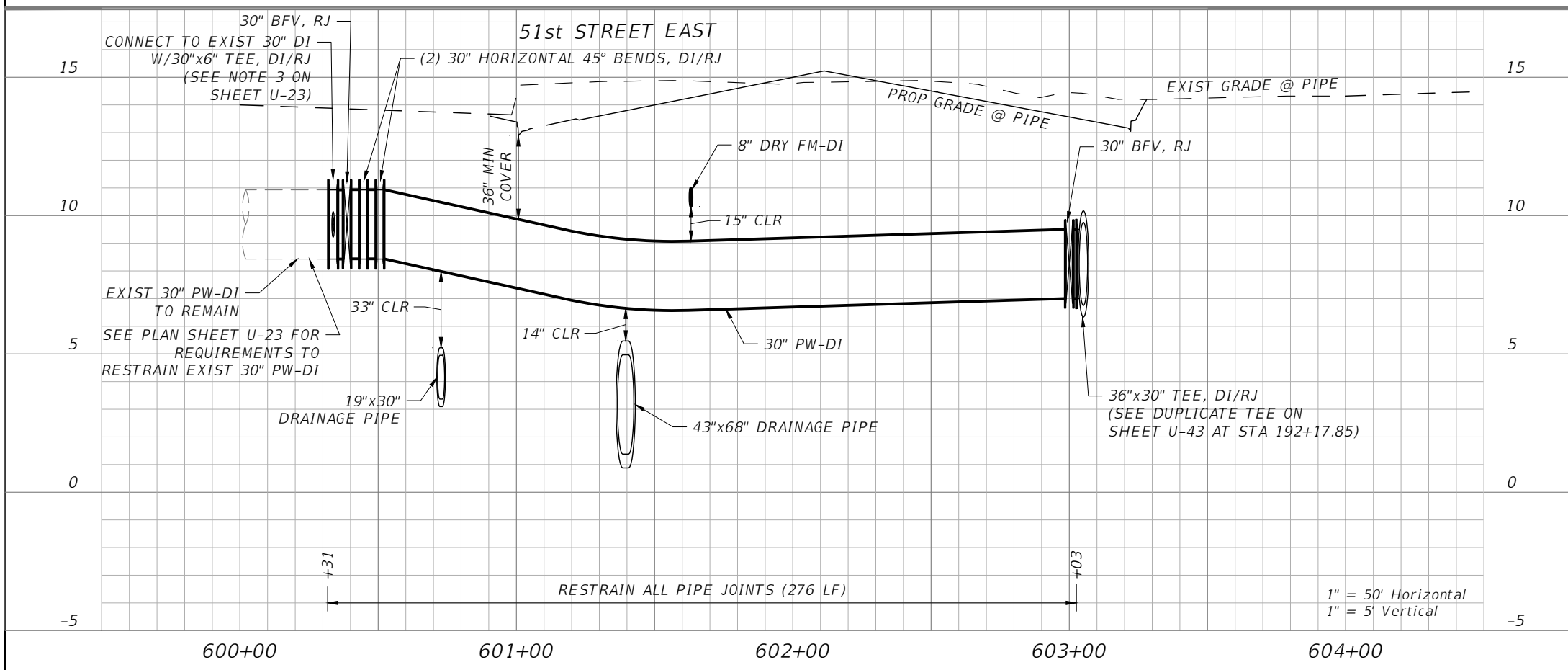
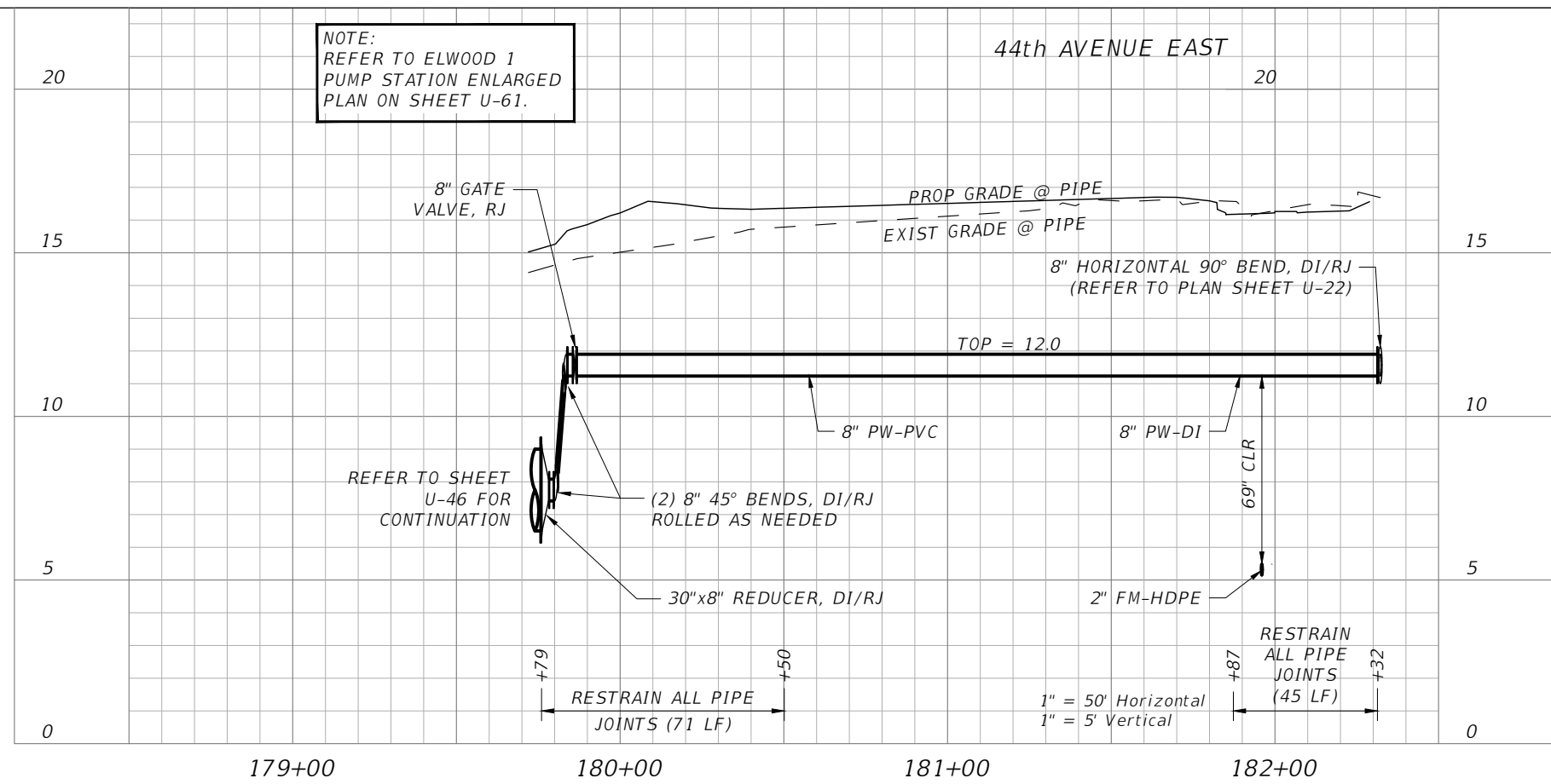
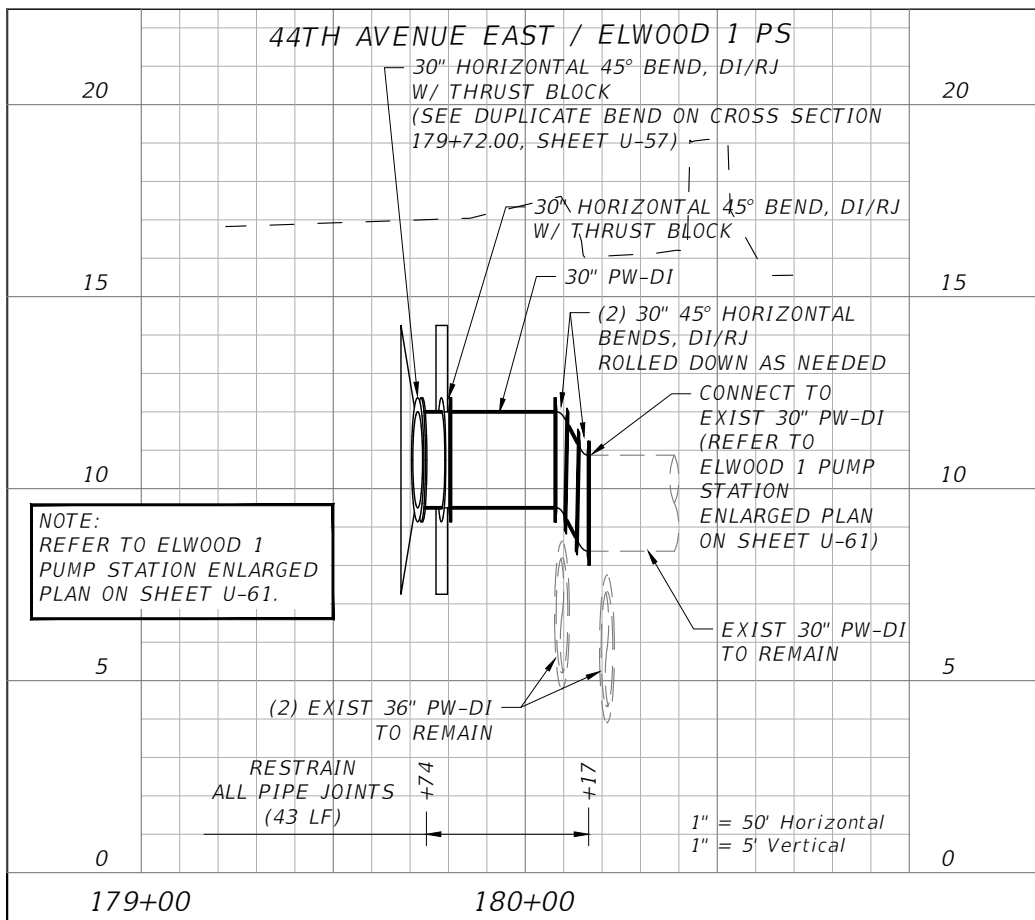
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		PROFILE SHEET (4) 36" POTABLE WATER MAIN		SHEET NO.: U-45	
No.	REVISIONS	DATE	BY								


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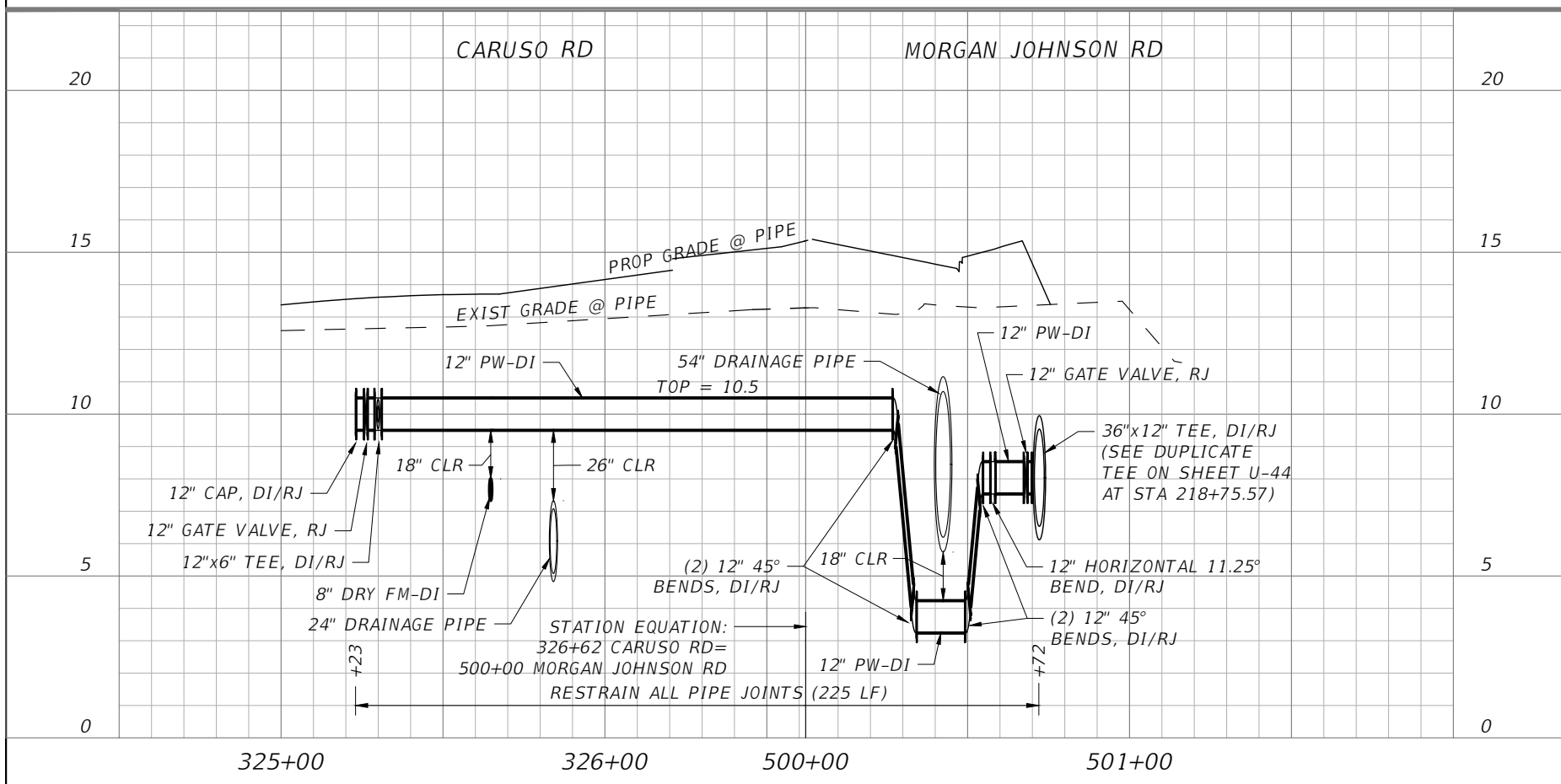
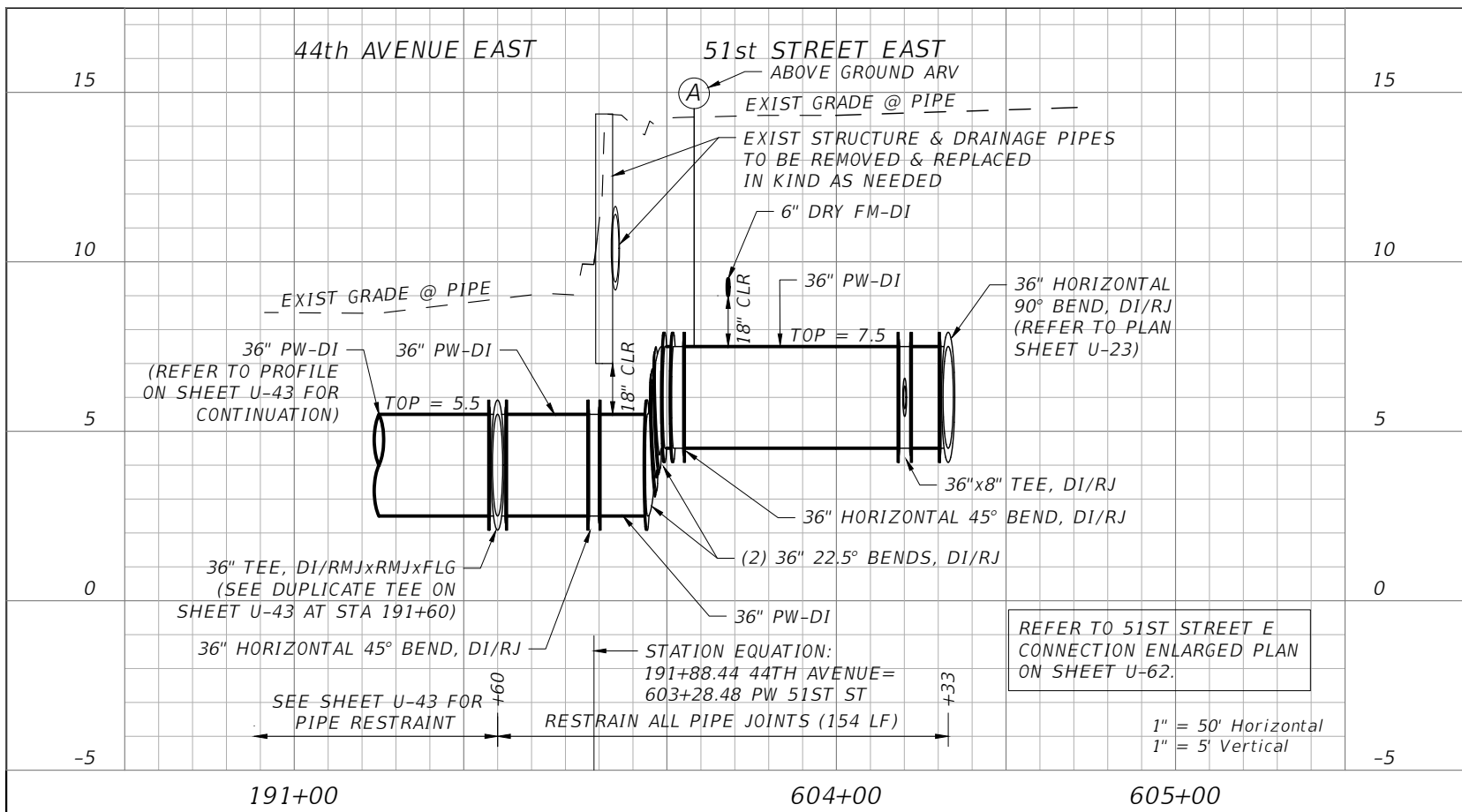
SCALE		AS NOTED		DESIGN ENGINEER		TIMOTHY M. CURRAN, P.E.		SHEET NO.			
DESIGNED BY		R.A.		DATE		FEBRUARY 2019		U-46			
DRAWN BY		T.S.		PROJECT NO.		6086960		34809			
CHECKED BY		T.C.		DESIGNER		TIMOTHY M. CURRAN, P.E.		FL. LICENSE NO.			
No.		REVISIONS		DATE		BY		34809			
				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115				 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence 2/22/2019 11:11:43 AM		PROFILE SHEET (5) 30" POTABLE WATER MAIN	

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



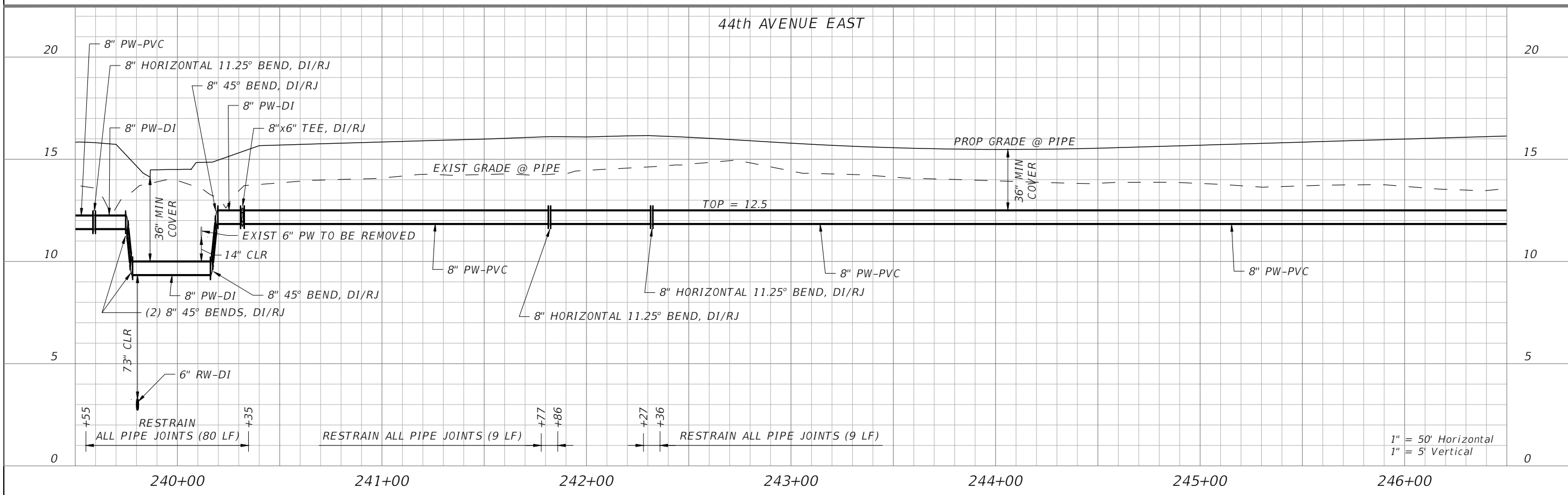
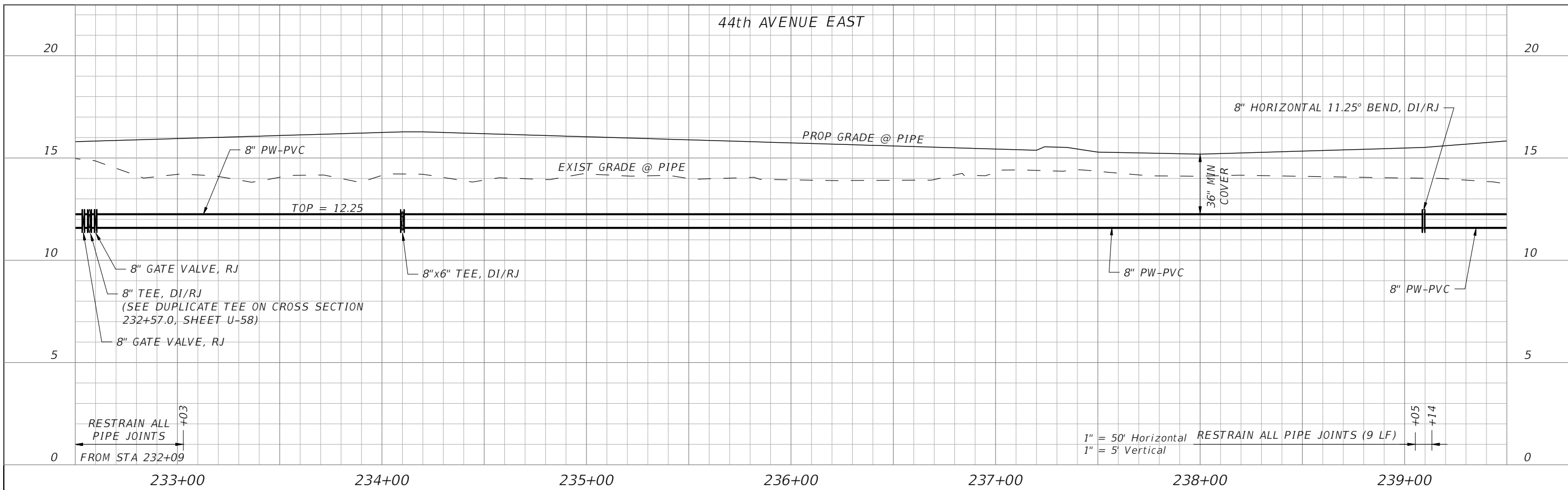
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence 2/22/2019 11:12:08 AM		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		PROFILE SHEET (6) 8" POTABLE WATER MAIN AND 30" POTABLE WATER MAIN		SHEET NO.: U-47	
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.													

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



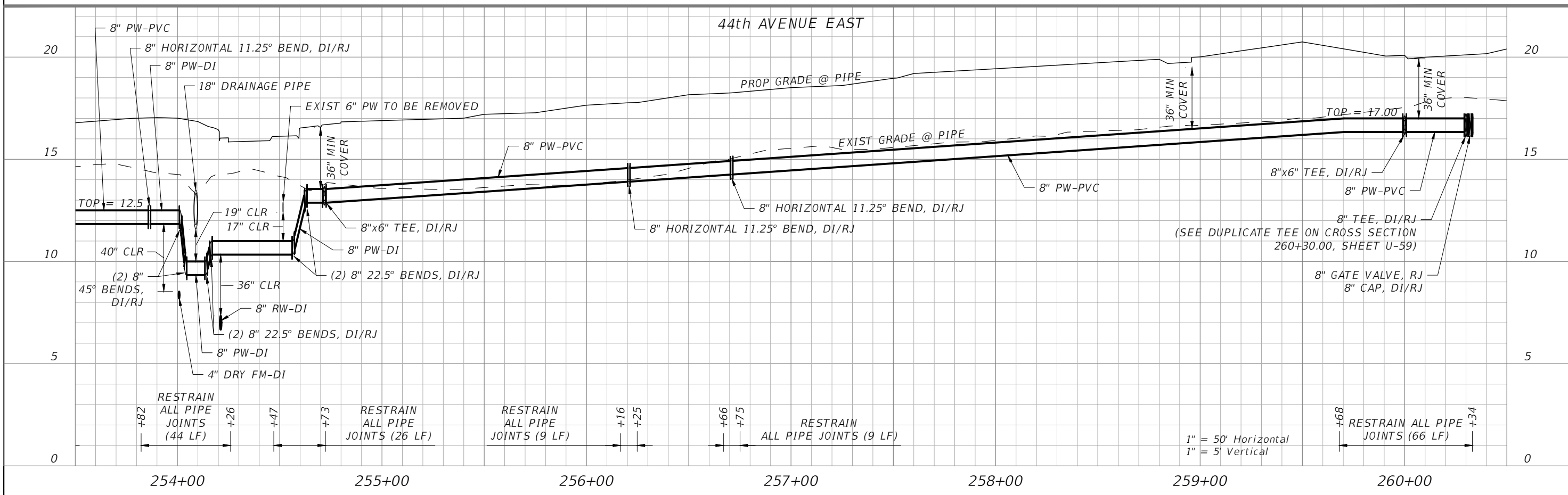
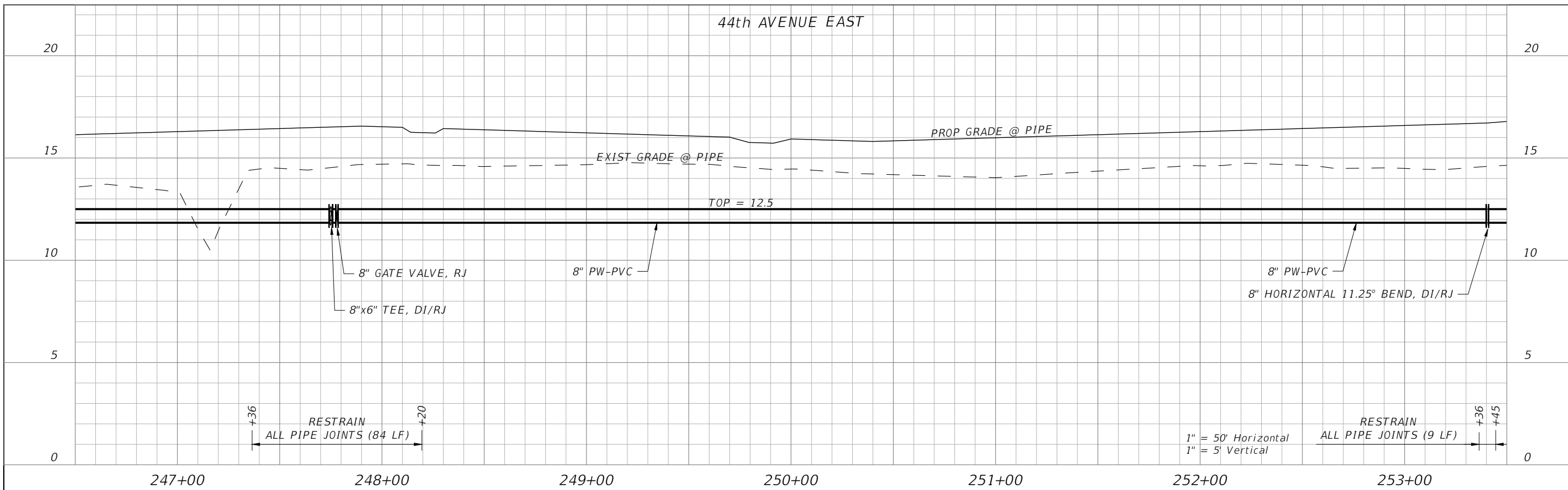
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		PROFILE SHEET (7) 36" POTABLE WATER MAIN AND 12" POTABLE WATER MAIN		SHEET NO.: U-48	
No.	REVISIONS	DATE	BY								

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



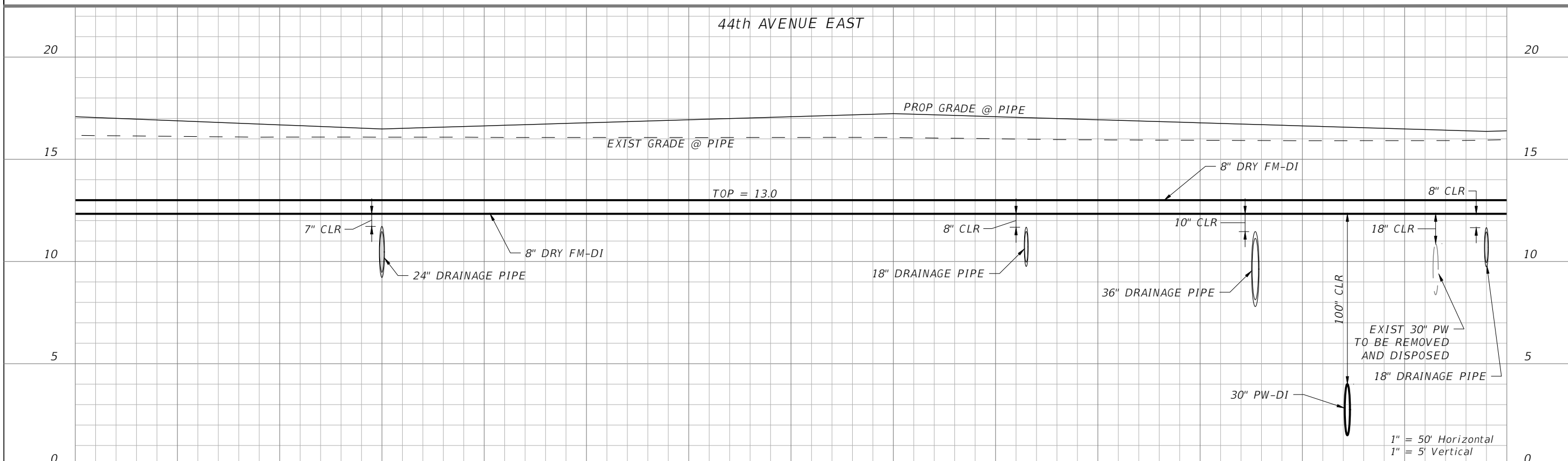
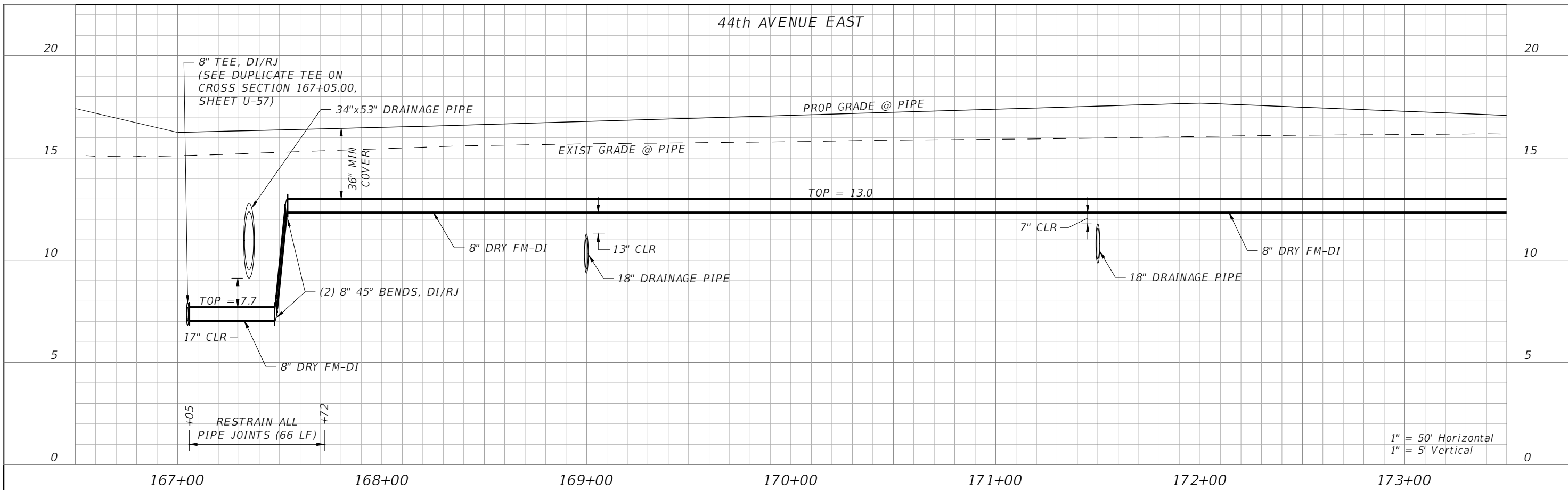
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		PROFILE SHEET (9) 8" POTABLE WATER MAIN		SHEET NO.: U-50	
No.	REVISIONS	DATE	BY								

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



SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		PROFILE SHEET (10) 8" POTABLE WATER MAIN		SHEET NO.: U-51	
No. REVISIONS DATE BY											

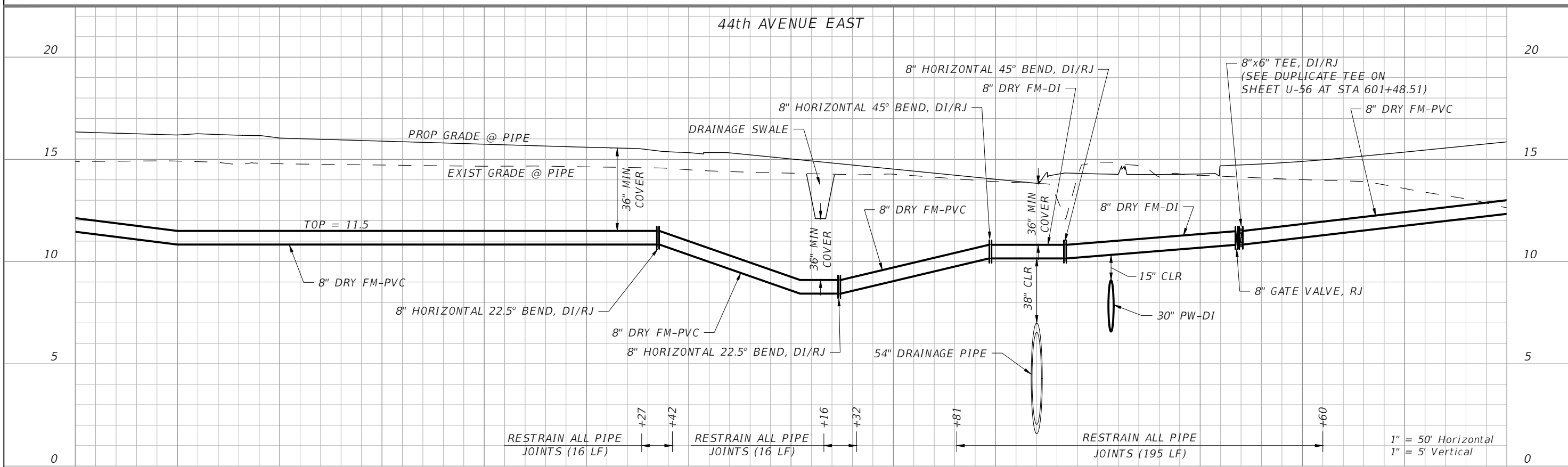
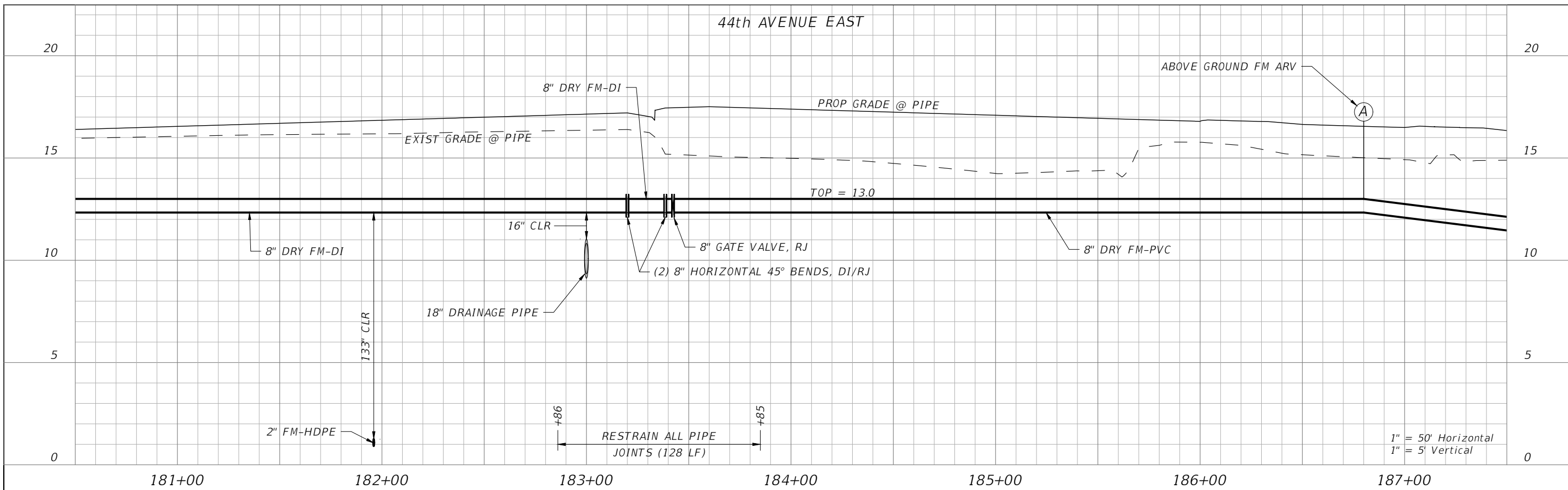
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.




No.		REVISIONS	DATE	BY	SCALE	AS NOTED	DESIGNED BY	R.A.	DRAWN BY	T.S.	CHECKED BY	T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE	FEBRUARY 2019	PROJECT NO.	6086960	DESIGN ENGINEER	TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.	34809	<p align="center">PROFILE SHEET (11) 8" DRY FORCE MAIN</p>	SHEET NO.	U-52

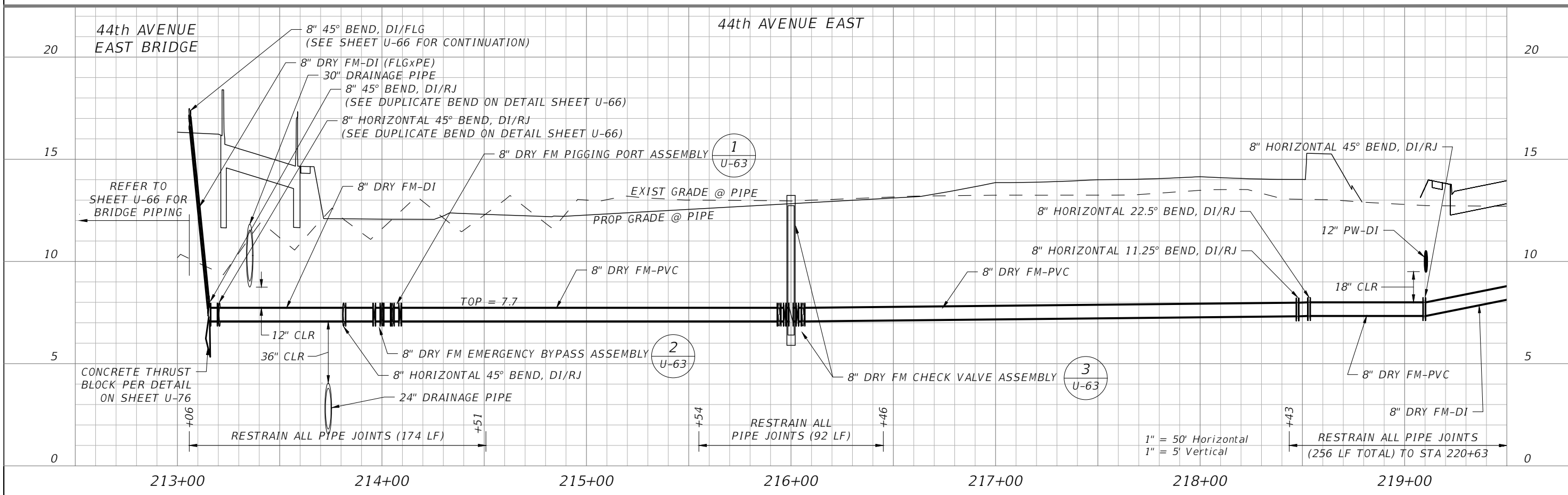
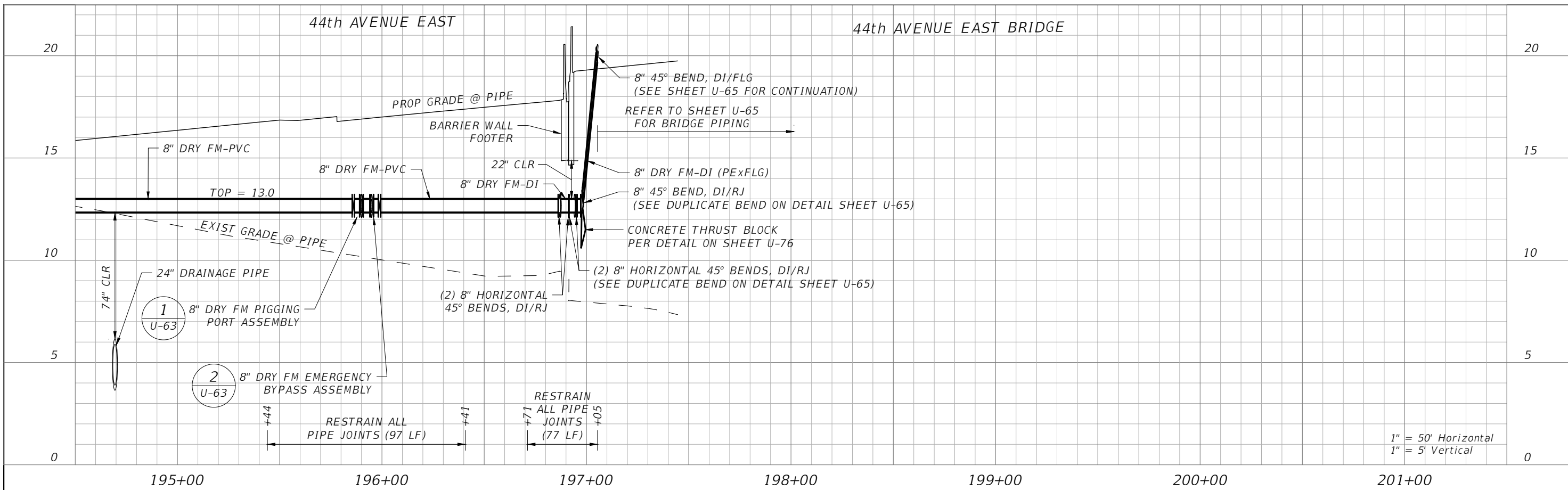


THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



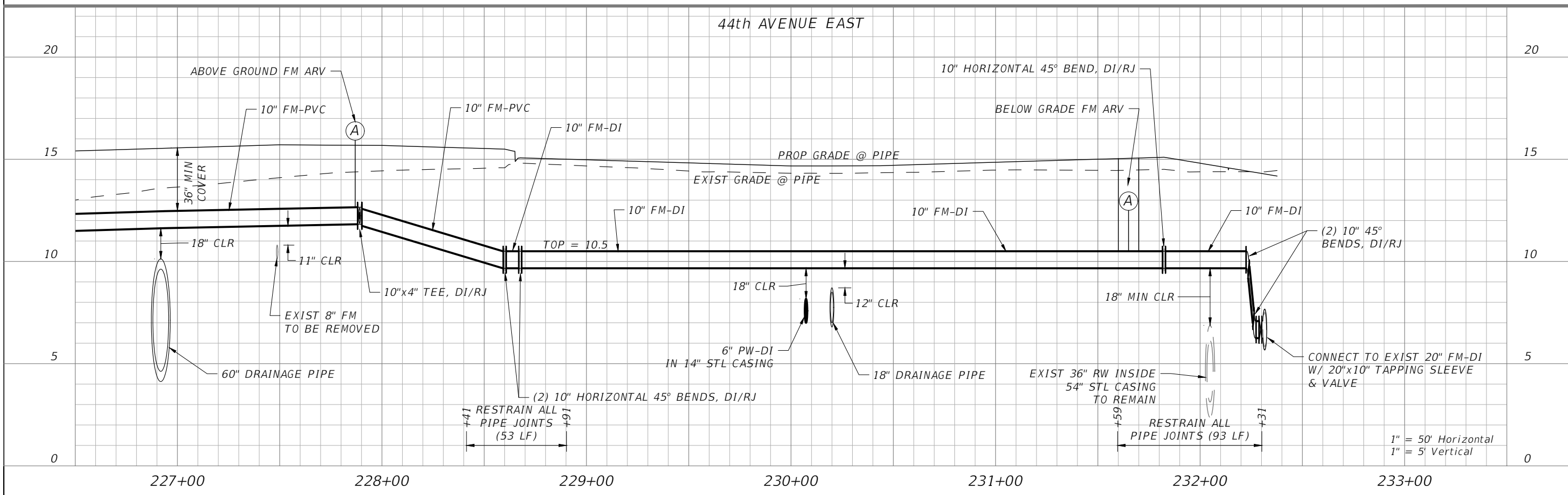
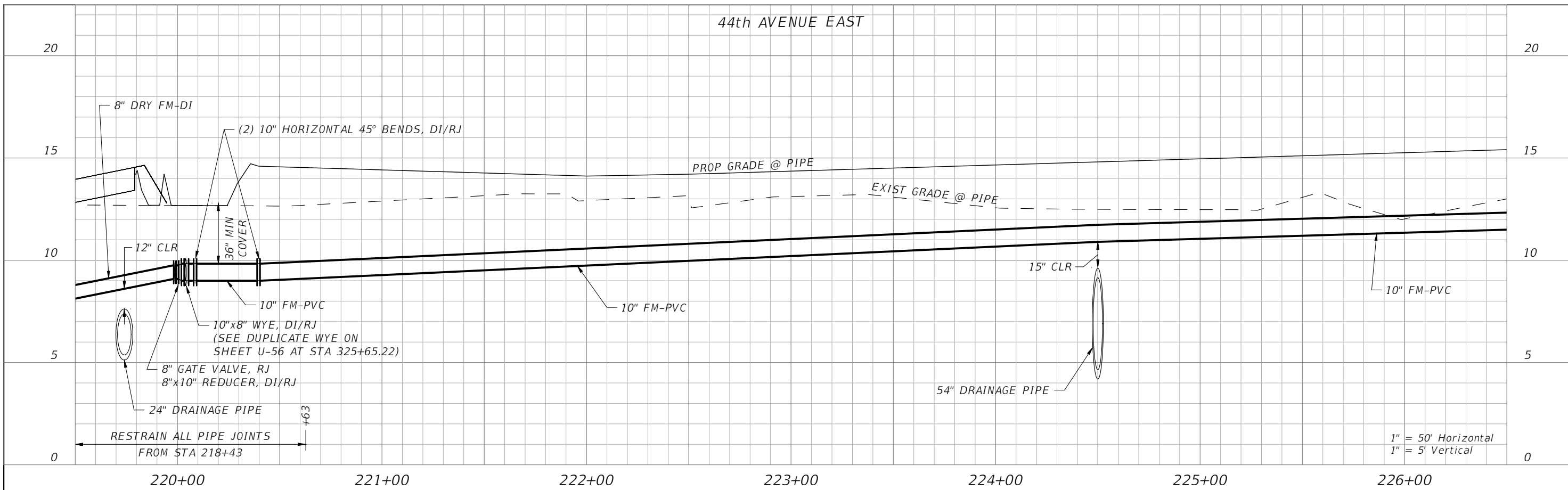
No. REVISIONS DATE BY		SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	PROFILE SHEET (12) 8" DRY FORCE MAIN	SHEET NO. U-53
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



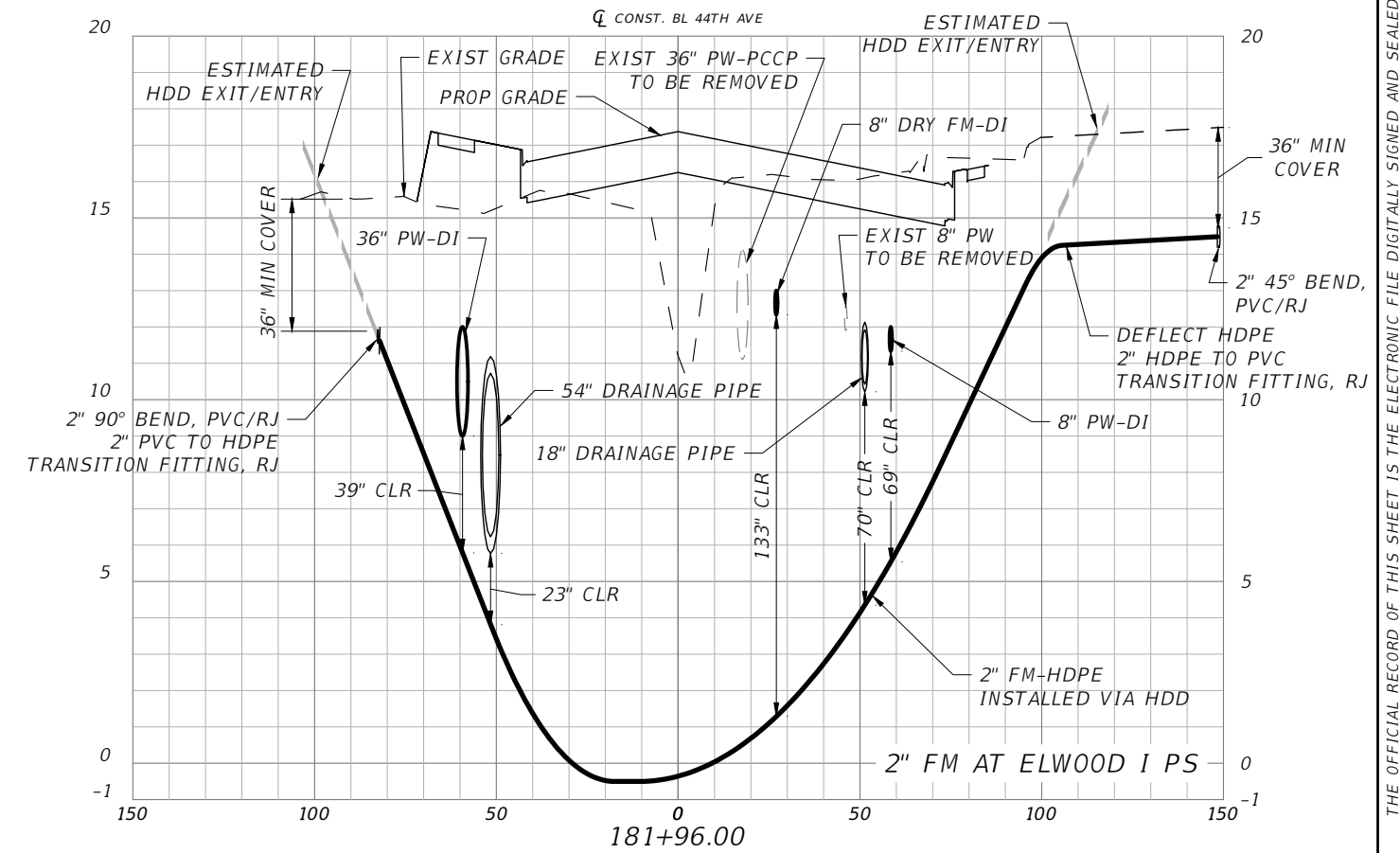
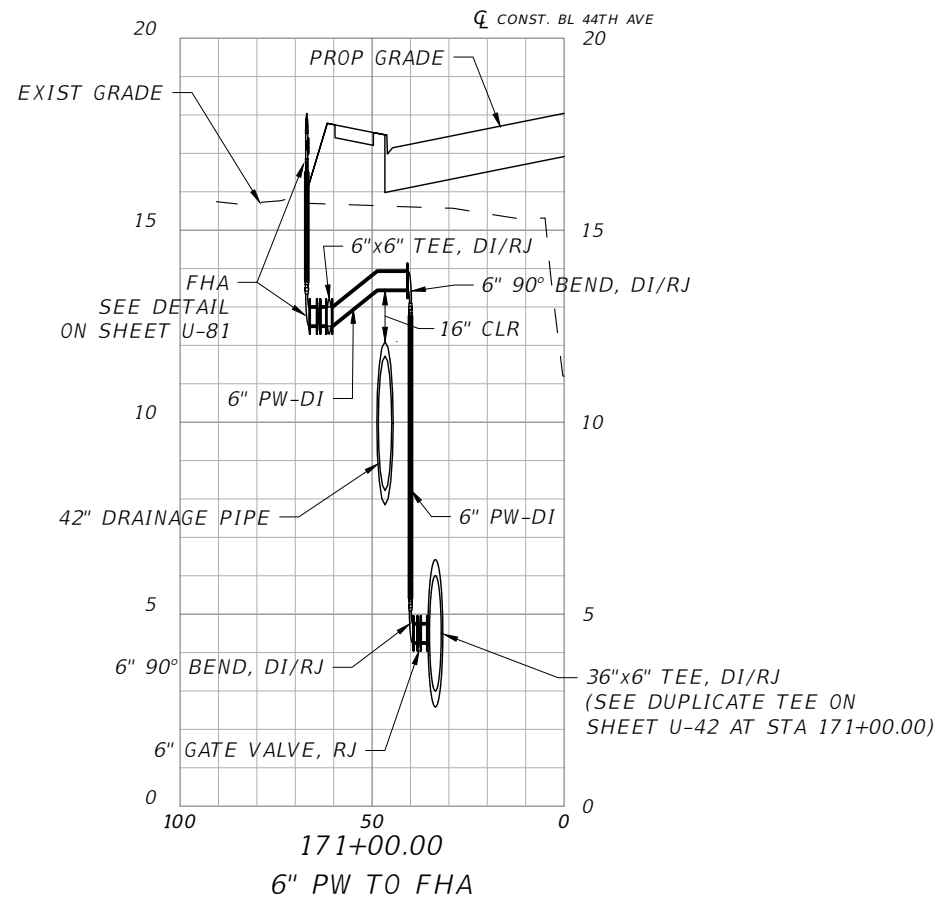
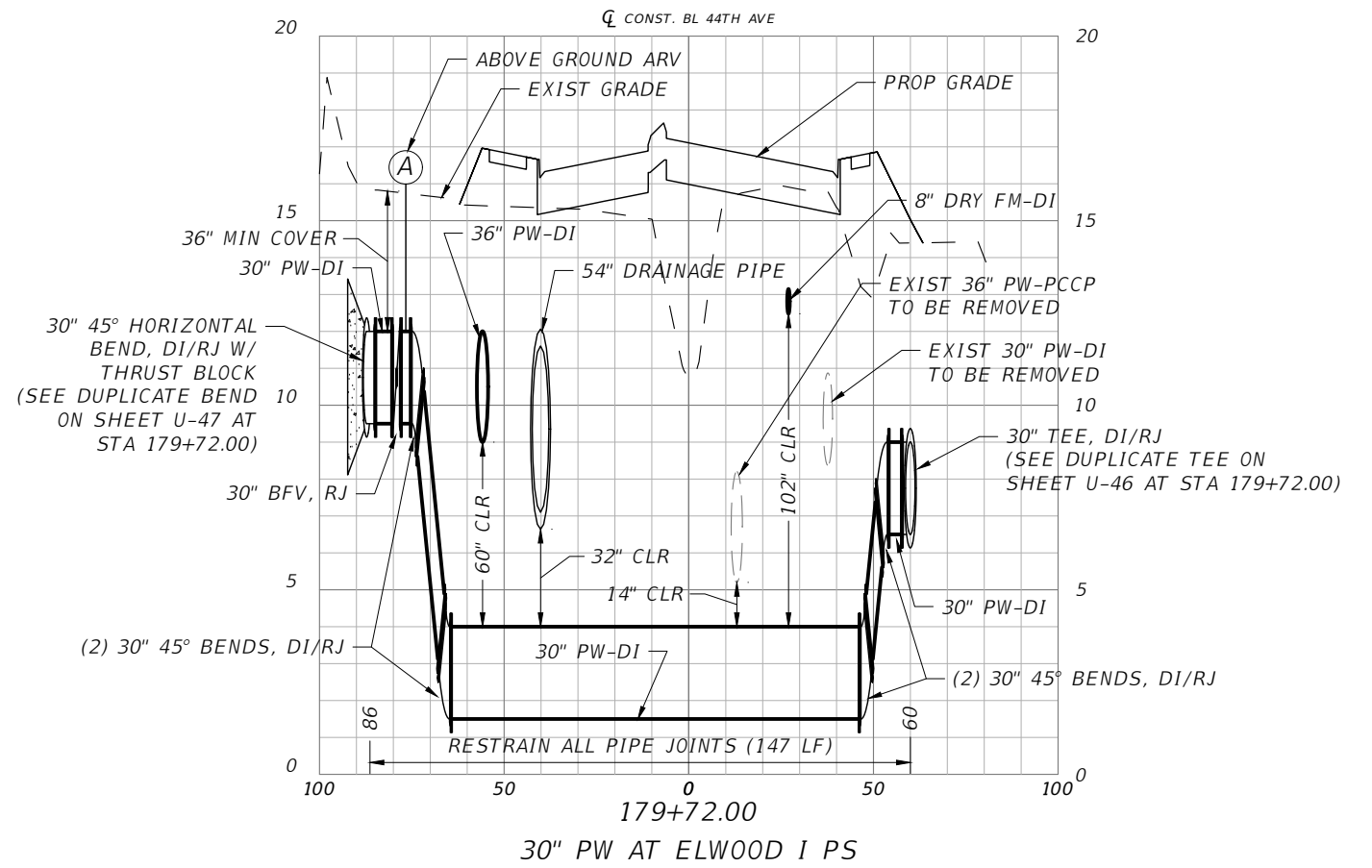
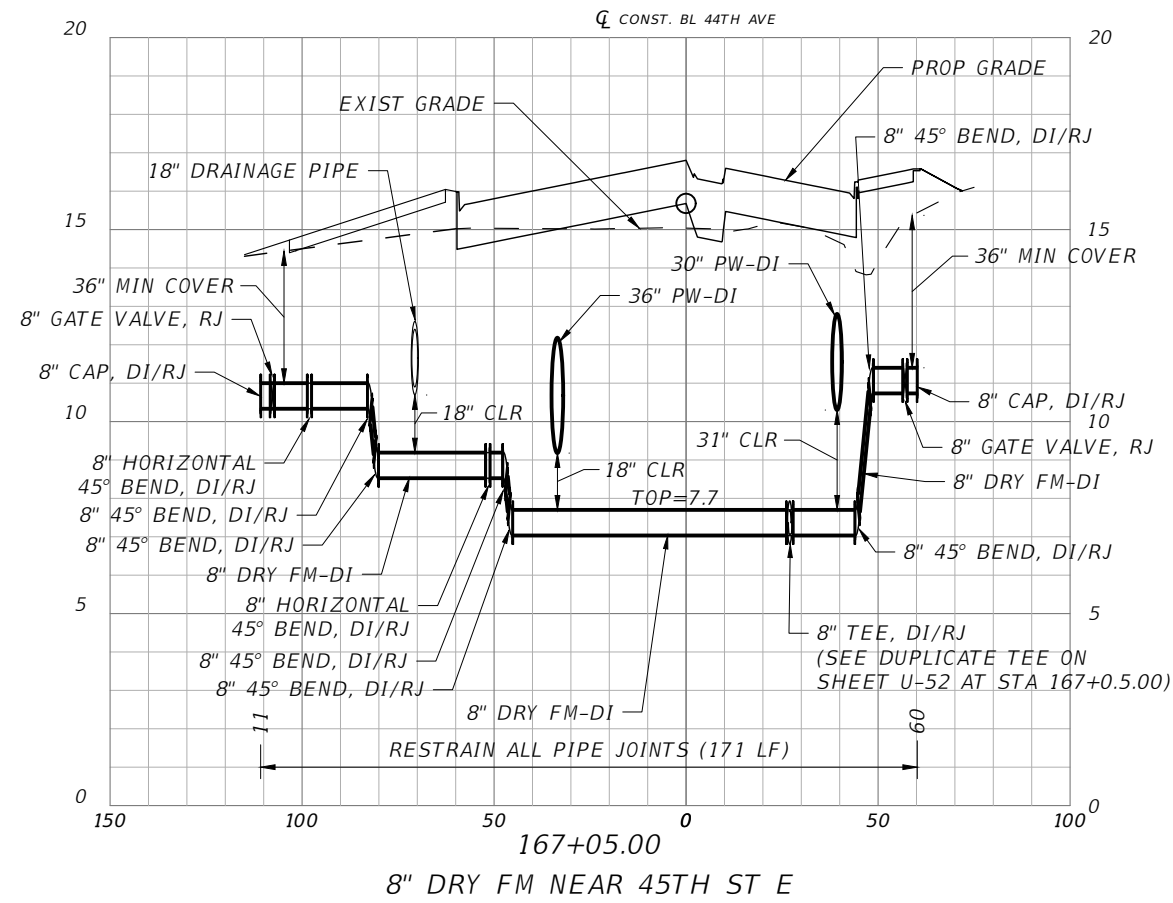
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		PROFILE SHEET (13) 8" DRY FORCE MAIN		SHEET NO.: U-54	
No. REVISIONS DATE BY											


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



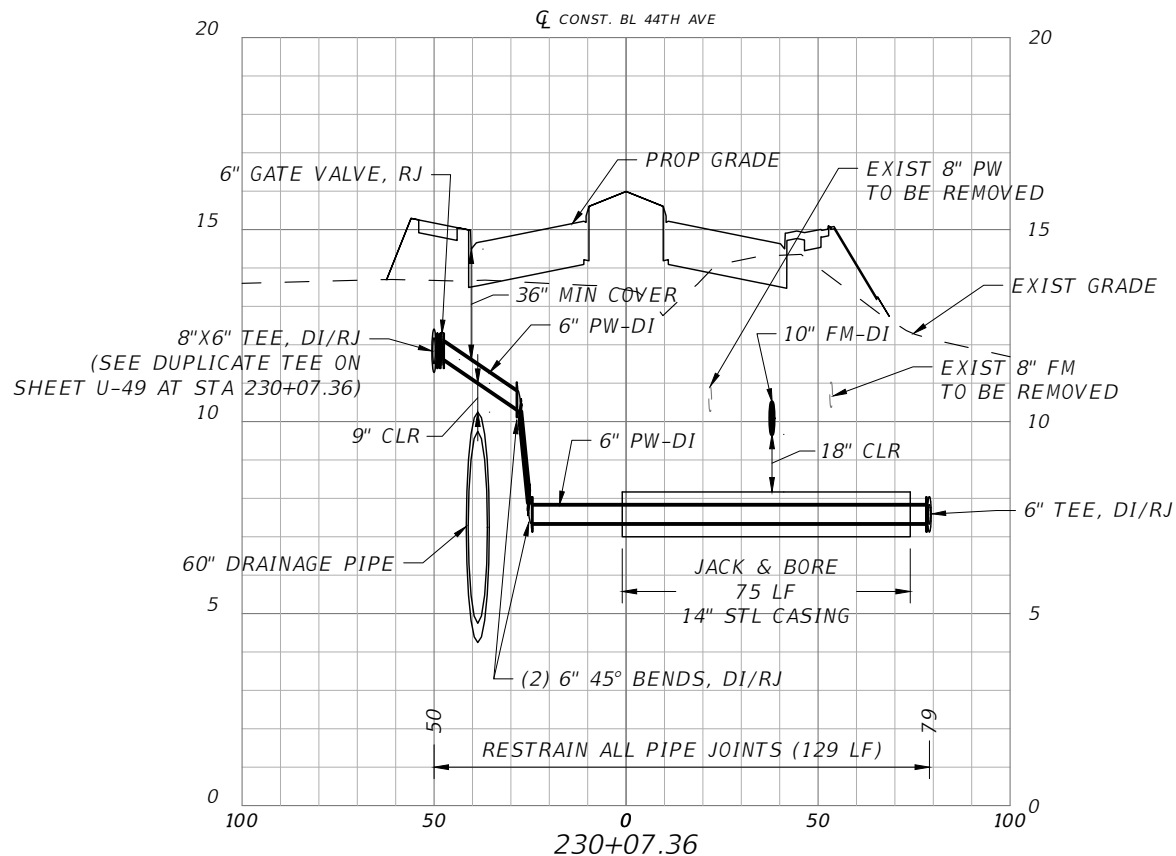
SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence 2/22/2019 11:16:16 AM		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		PROFILE SHEET (14) 10" FORCE MAIN		SHEET NO.: U-55	
No.	REVISIONS	DATE	BY												

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

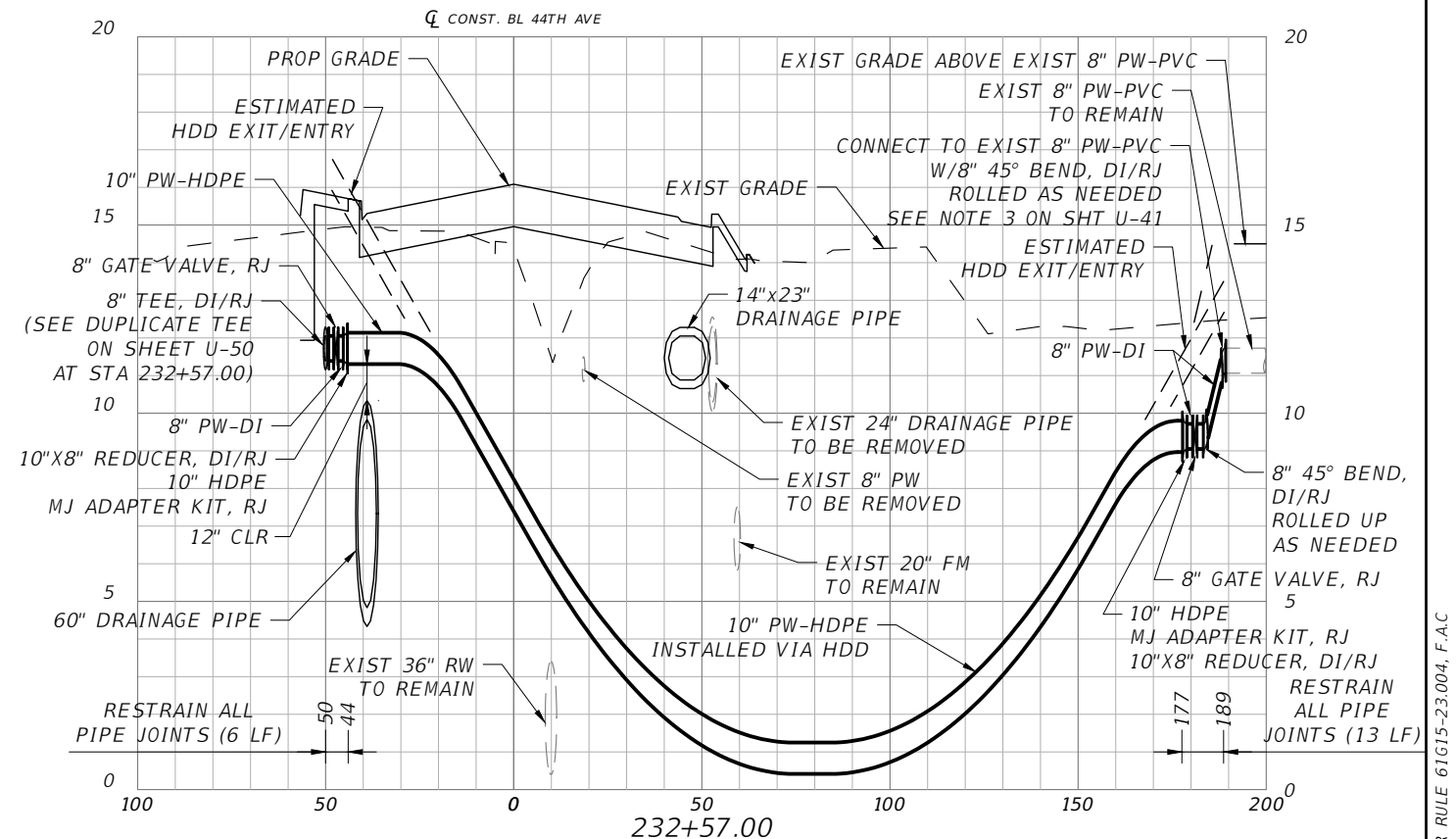


SCALE: AS NOTED				DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E.		SHEET NO.: U-57	
DESIGNED BY: R.A.				DATE: FEBRUARY 2019		PUBLIC WORKS DEPARTMENT	
DRAWN BY: T.S.				PROJECT NO.: 6086960		ENGINEERING SERVICES	
CHECKED BY: T.C.				CERTIFICATE OF AUTHORIZATION: 8115		FL. LICENSE NO.: 34809	
No.	REVISIONS	DATE	BY				

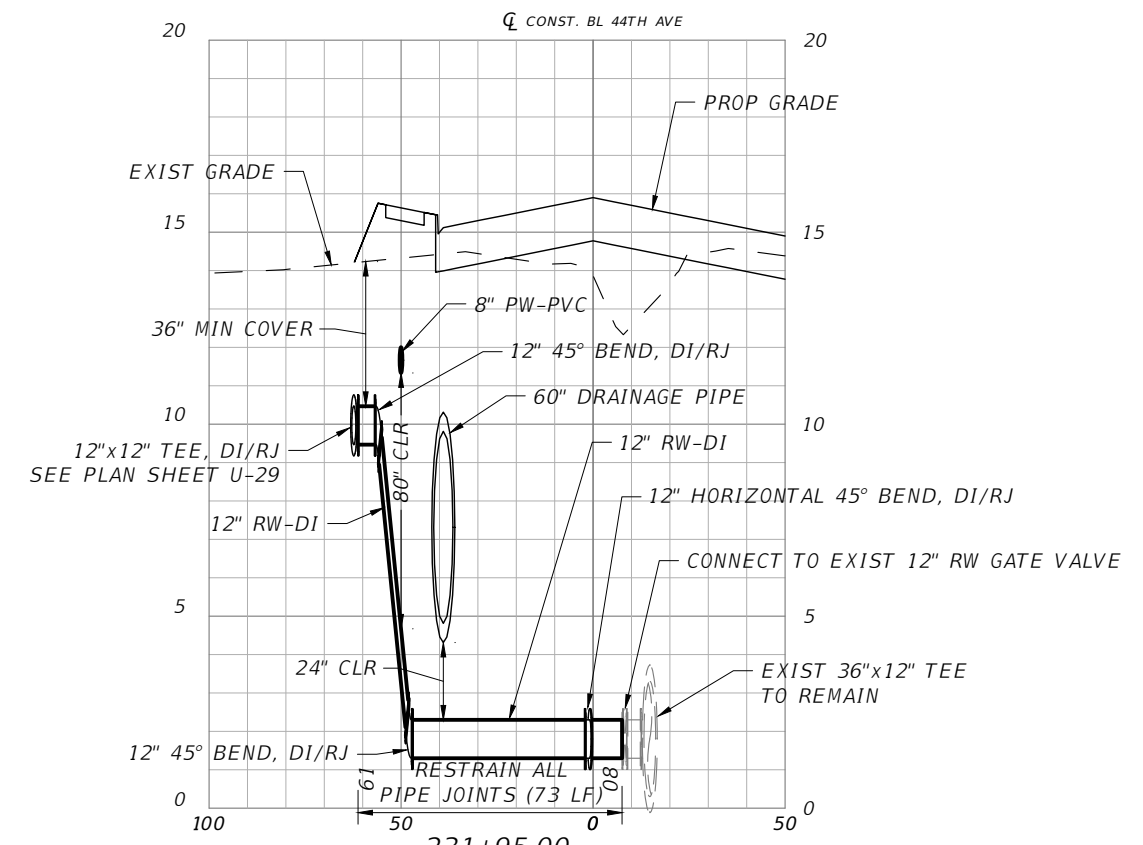
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



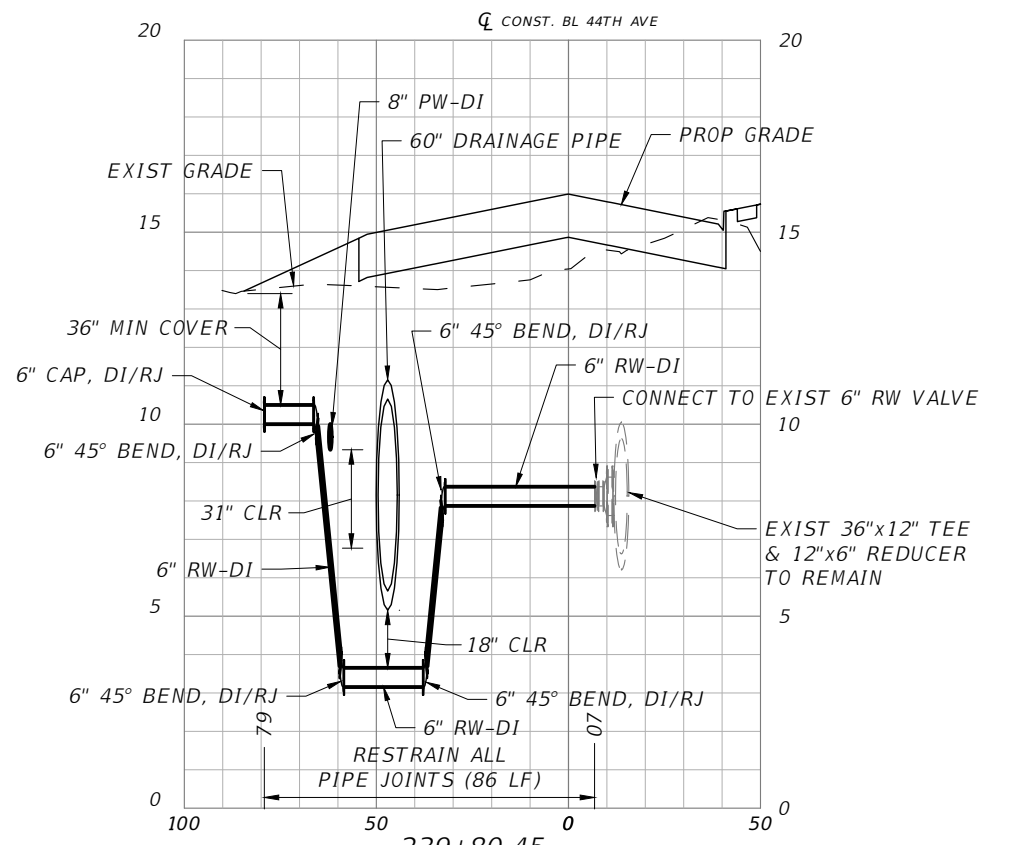
6" PW TO BRADEN RIVER CHURCH



10" PW HDD AT OLD CARUSO RD



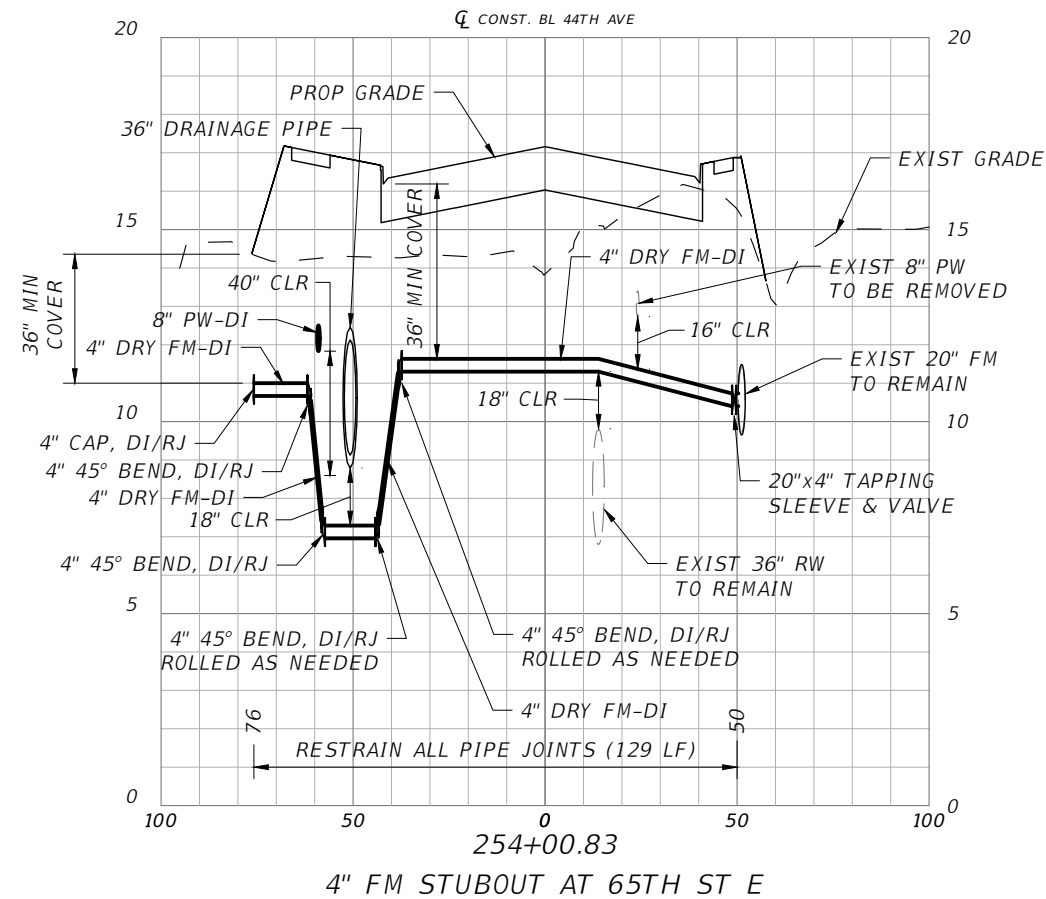
12" RW STUBOUT AT OLD CARUSO RD



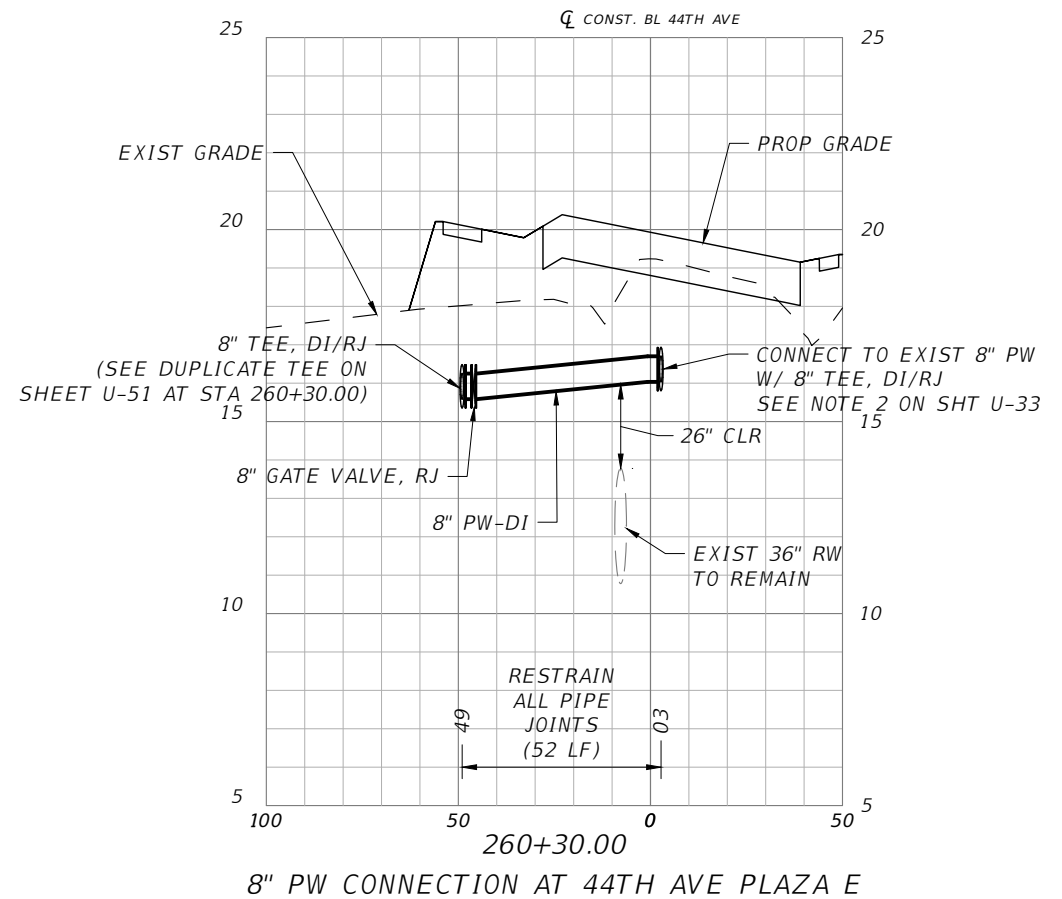
6" RW STUBOUT AT 62ND ST E

SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		UTILITY SECTIONS (2) 44TH AVENUE EAST		SHEET NO.: U-58	
No.	REVISIONS	DATE	BY								

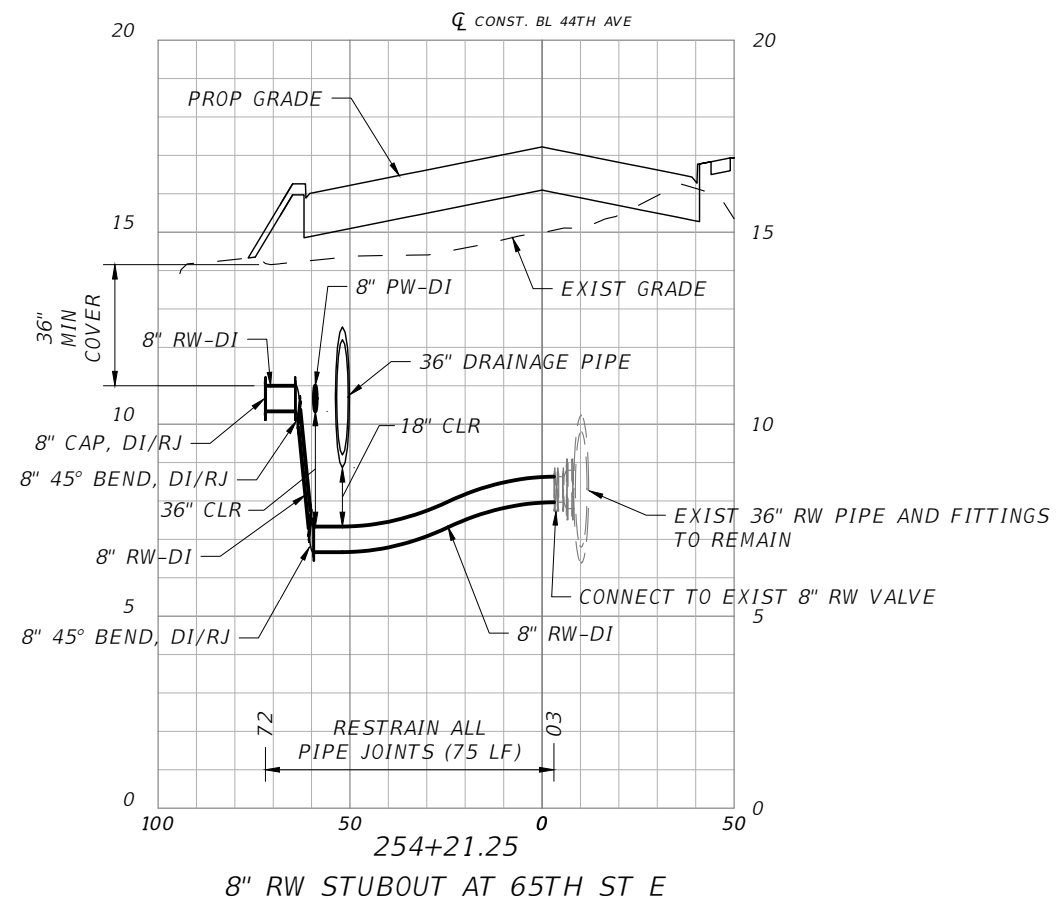
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



4" FM STUBOUT AT 65TH ST E



8" PW CONNECTION AT 44TH AVE PLAZA E



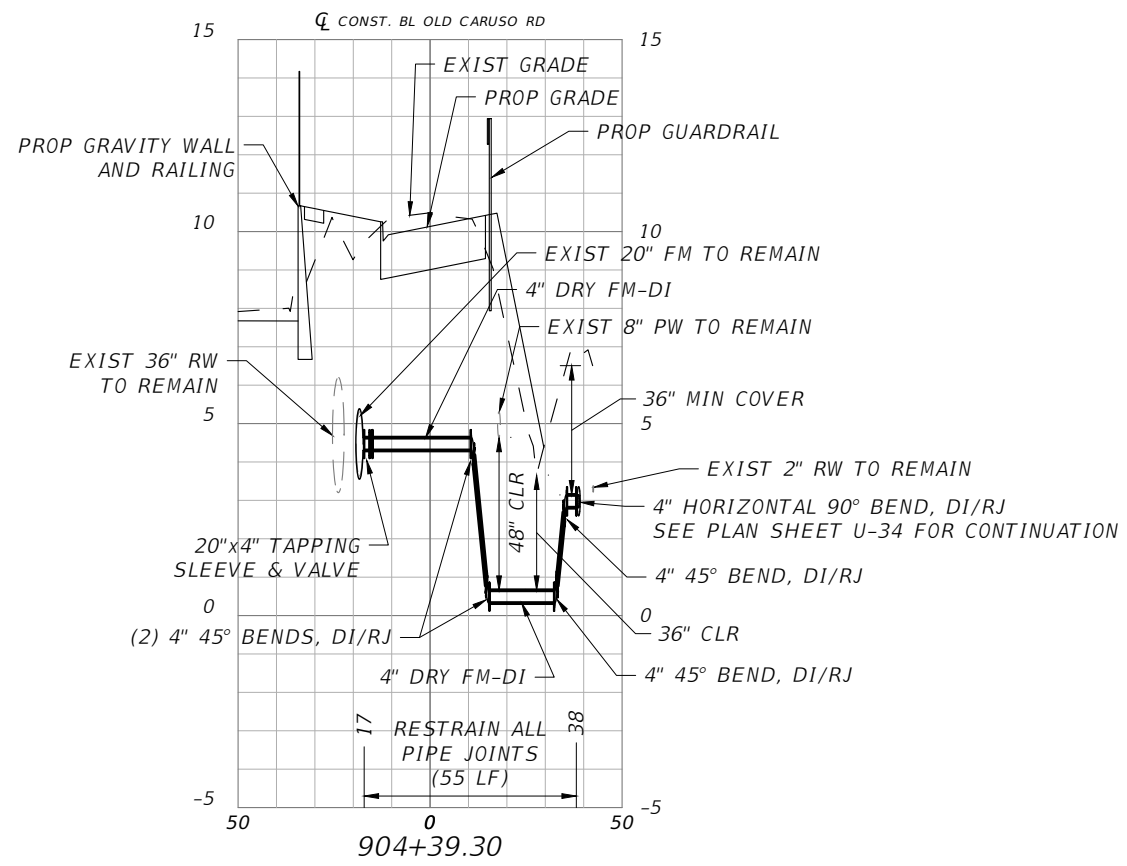
8" RW STUBOUT AT 65TH ST E

SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		SHEET NO.: U-59	
UTILITY SECTIONS (3) 44TH AVENUE EAST											

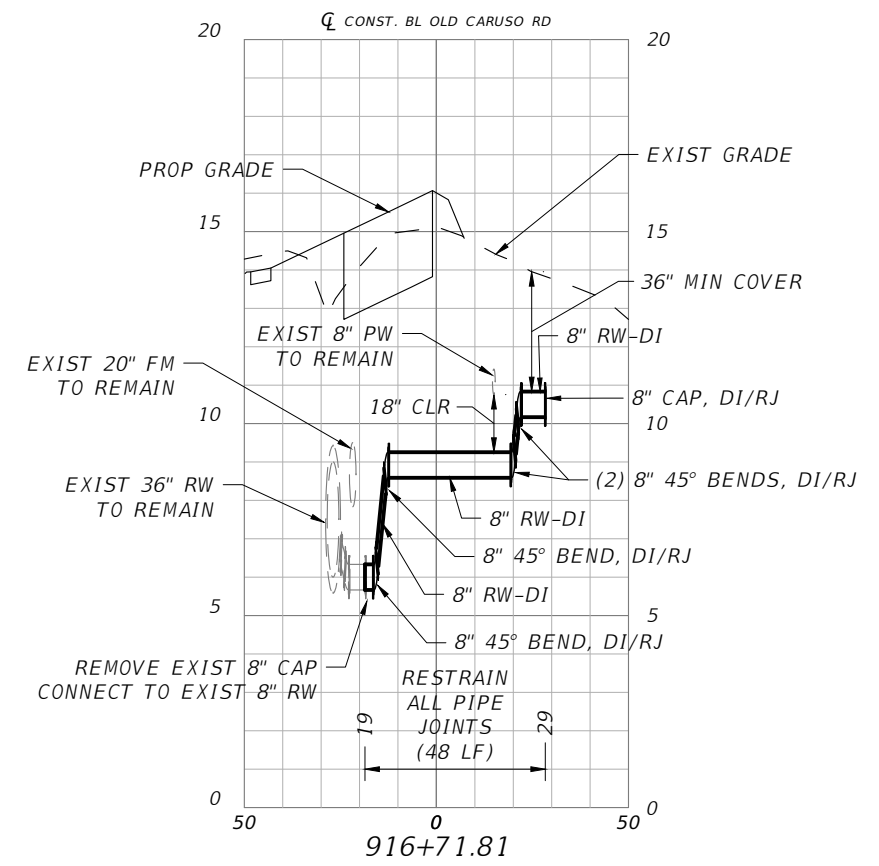
No.	REVISIONS	DATE	BY



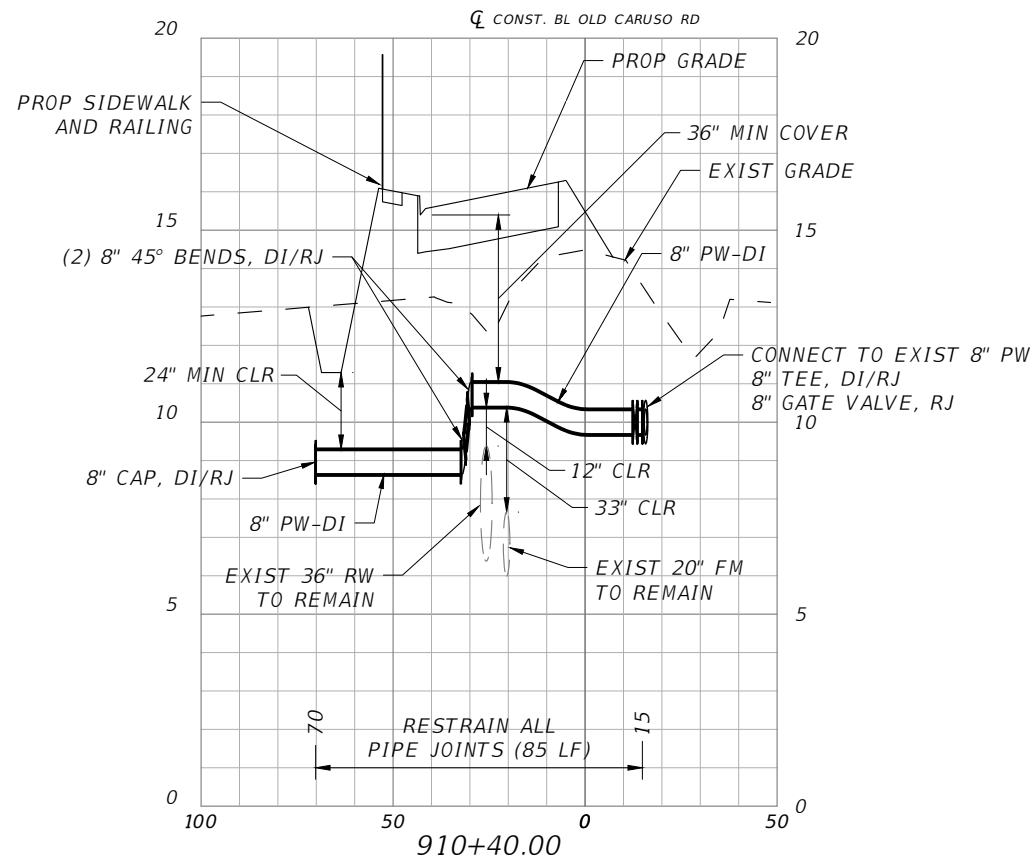
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



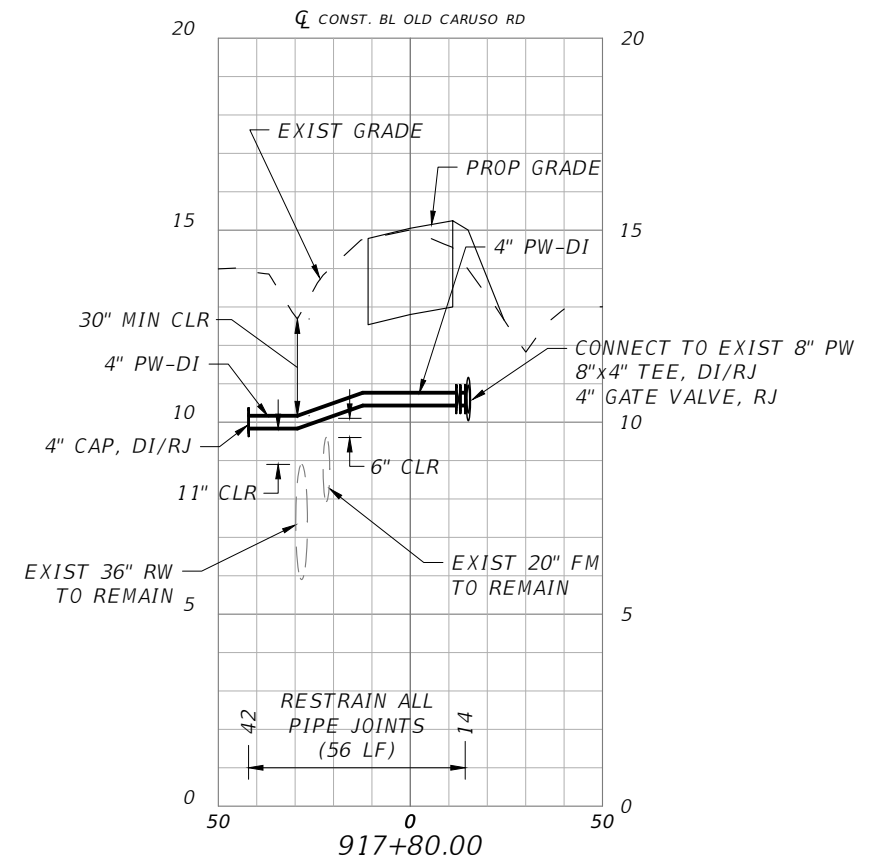
4" DRY FM TO DUDE RANCH LIFT STATION




8" RW STUBOUT TO 45TH AVE DR EAST



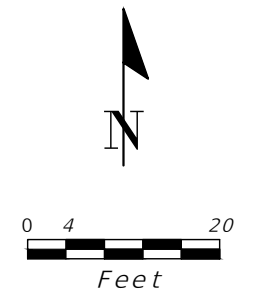
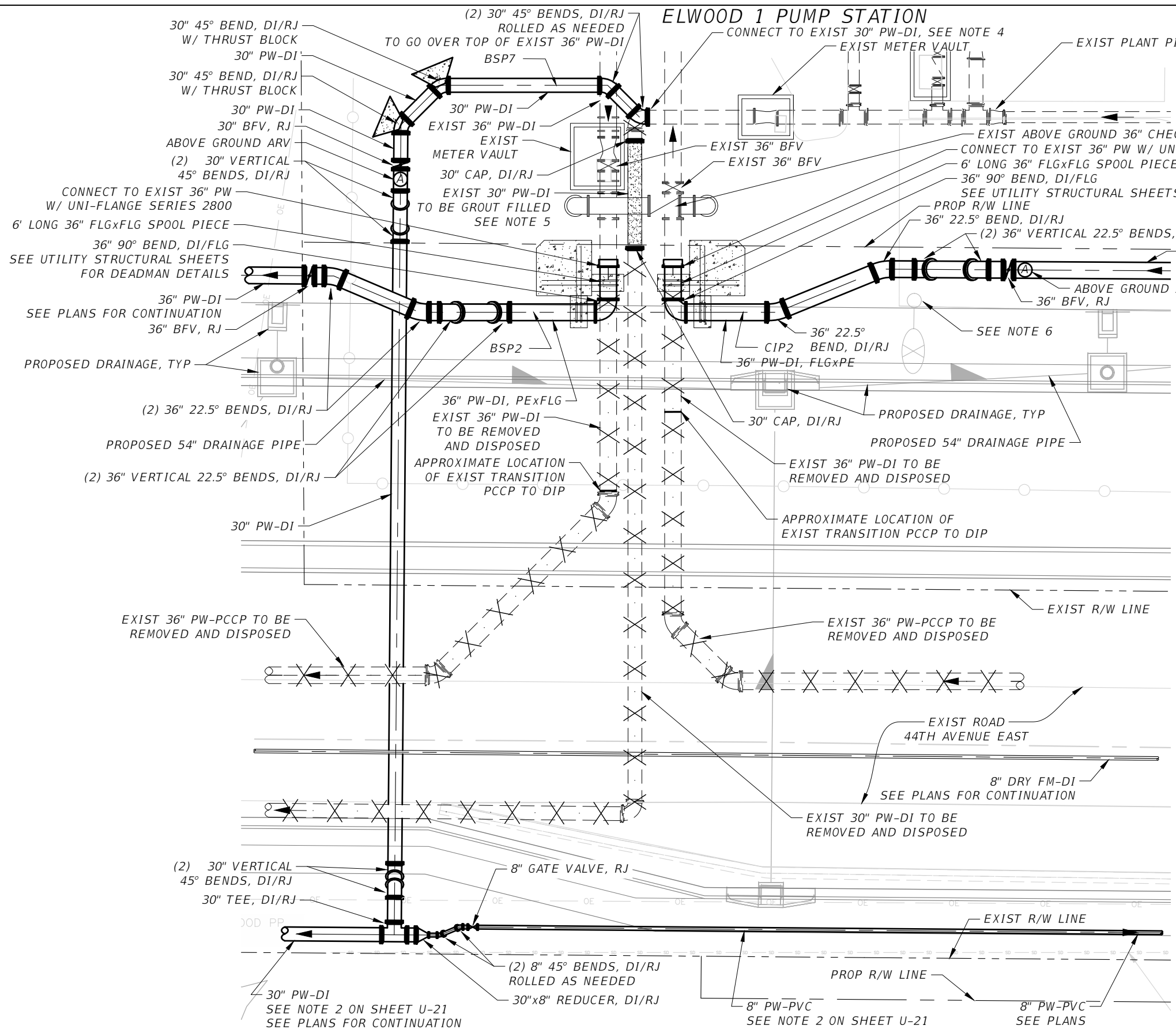
8" PW STUBOUT NEAR 47TH AVE EAST



4" PW STUBOUT TO KING PROPERTY

SCALE		AS NOTED		DESIGN ENGINEER		<p align="center">UTILITY SECTIONS (4) CARUSO ROAD</p>	SHEET NO.	
DESIGNED BY		R.A.		TIMOTHY M. CURRAN, P.E.				U-60
DRAWN BY		T.S.		FL. LICENSE NO.				
CHECKED BY		T.C.		34809				
No.	REVISIONS	DATE	BY	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019 PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		


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



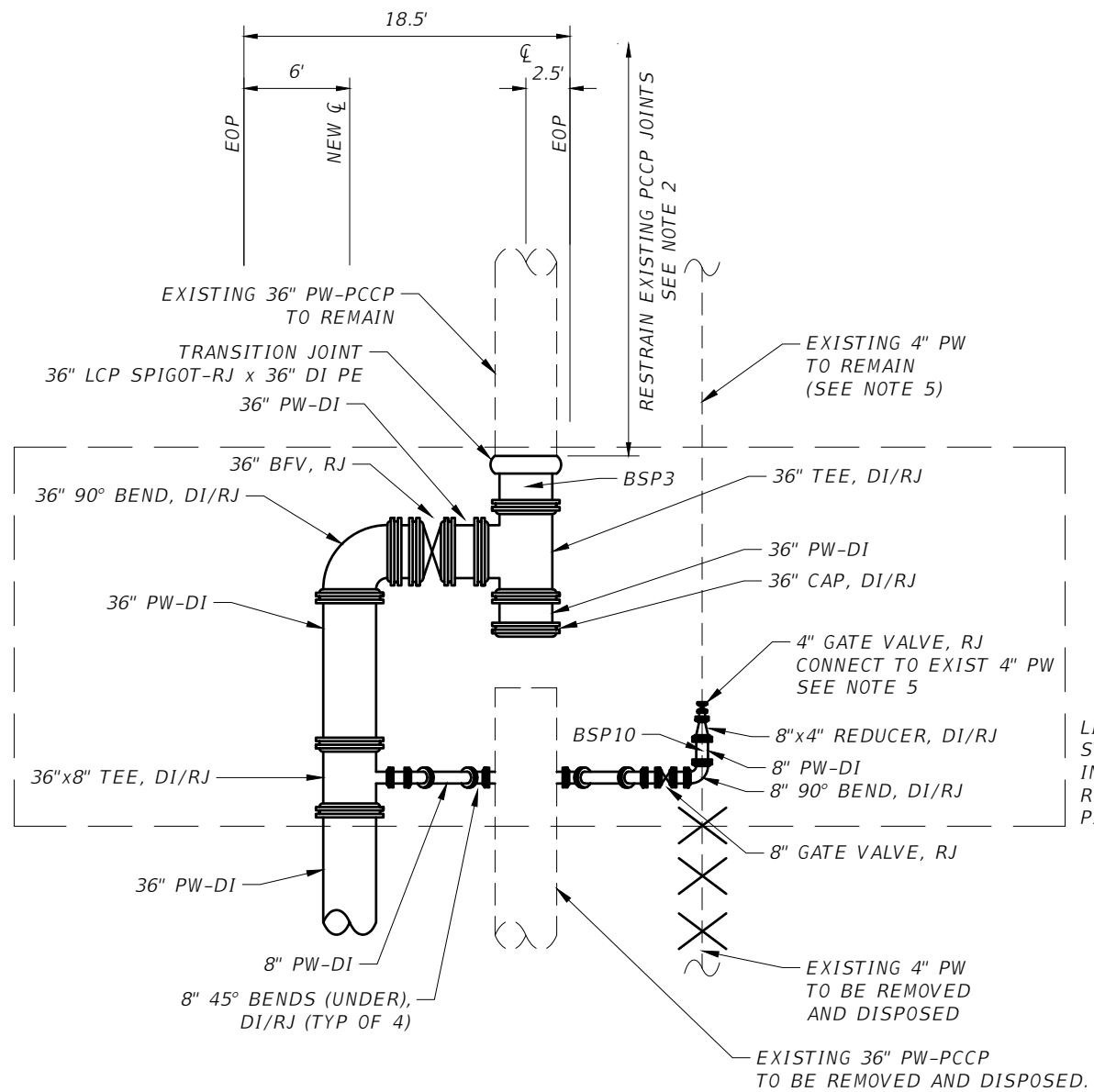
- NOTES:**
1. DEADMAN SHALL BE INSTALLED AND CURED PRIOR TO REMOVAL OF EXISTING PIPING. SEE SHEETS US-04 TO US-06 FOR DEADMAN STRUCTURAL DETAILS.
 2. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
 3. PIPING SHALL BE RESTRAINED IN ACCORDANCE WITH DETAILS ON SHEETS U-76 AND U-77.
 4. EXIST 30" PW-DI SHALL BE RESTRAINED BACK TO THE EXIST METER VAULT.
 5. THIS PORTION OF THE 30" PW-DI SHALL BE ABANDONED IN-PLACE AND GROUT FILLED.
 6. COORDINATE LOCATION OF 36" PW WITH LOCATION OF LIGHT POLE.

REFER TO MEASUREMENT AND PAYMENT SPECIFICATION FOR LIMITS OF LUMP SUM INTERCONNECTION PAY ITEM.

ELWOOD 1 PUMP STATION ENLARGED PLAN
SCALE: NTS

SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		DETAILS ELWOOD 1 PUMP STATION ENLARGED PLAN		SHEET NO.: U-61
No.	REVISIONS	DATE	BY									

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NOTES:

1. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
2. PRIOR TO CONSTRUCTION ACTIVITIES IN THIS AREA, CONTRACTOR SHALL UNCOVER AND RESTRAIN 7 JOINTS (118' MIN FROM NEW VALVE) OF EXISTING 36" PW PCCP PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DETAIL ON SHEET U-68. SEE ROADWAY RESTORATION FOR RESTRAINING EXISTING PIPE DETAIL ON SHEET U-73.
3. CONTRACTOR SHALL LOCATE THE 2 FT LONG SECTION OF EXISTING 36" PW-PCCP LOCATED APPROXIMATELY 66' NORTH OF EXISTING 8" VALVE TO 4" PW (SEE SHEET U-23). REMOVE THE 2 FT SECTION ALONG WITH THE 16 FT SECTION DIRECTLY TO THE NORTH, PER MANUFACTURER'S RECOMMENDATIONS.
4. PRIOR TO ORDERING MATERIALS, CONTRACTOR SHALL EXCAVATE EXISTING 36" PCCP AND REPORT THE CONDITION TO THE ENGINEER.
5. RESTRAIN 3 JOINTS OF EXISTING 4" PW NORTH OF NEW 4" GATE VALVE.
6. REFER TO DETAIL ON SHEET U-78 FOR PERMANENT ROADWAY REPAIR.

LIMITS FOR LUMP SUM 51ST STREET E 36-INCH INTERCONNECTION. REFER TO MEASUREMENT AND PAYMENT SPECIFICATION.

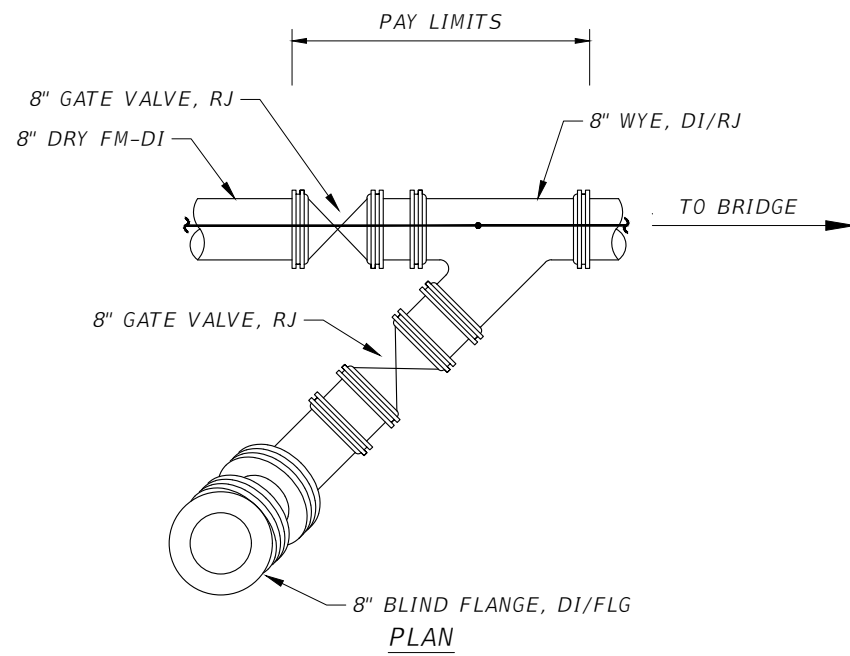
51ST STREET E CONNECTION ENLARGED PLAN
SCALE: NTS

SCALE		AS NOTED		DESIGNED BY		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809		DATE		FEBRUARY 2019		DESIGN ENGINEER		TIMOTHY M. CURRAN, P.E.		SHEET NO.	
				DRAWN BY		R.A.						FL. LICENSE NO.		34809		U-62	
				CHECKED BY		T.S.		PROJECT NO.		6086960							
No.		REVISIONS		DATE		BY		T.C.		CERTIFICATE OF AUTHORIZATION: 8115							

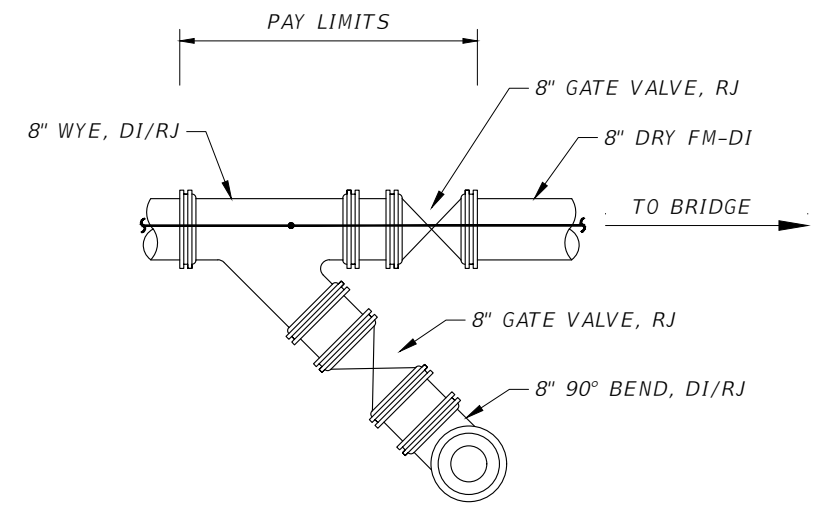


PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

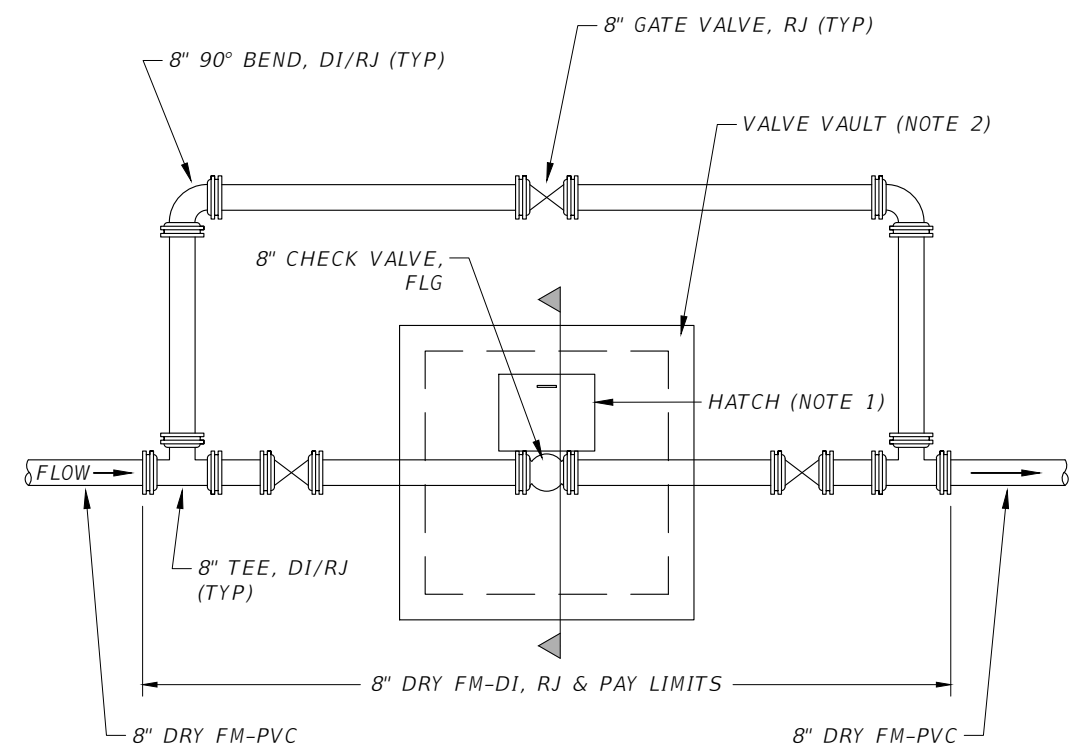
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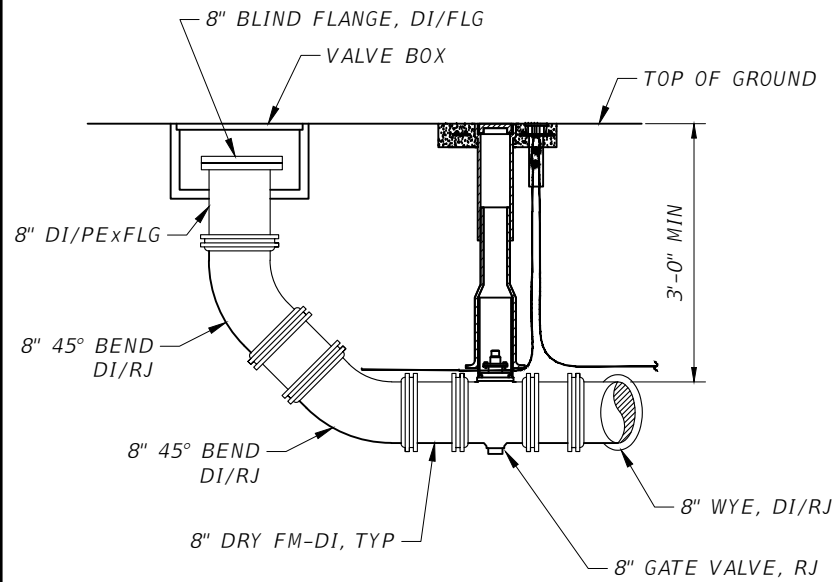
PLAN



PLAN

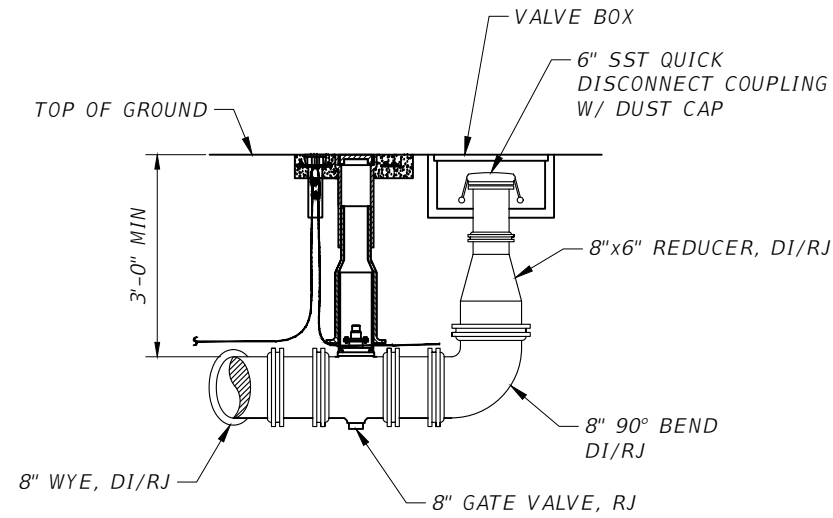


PLAN



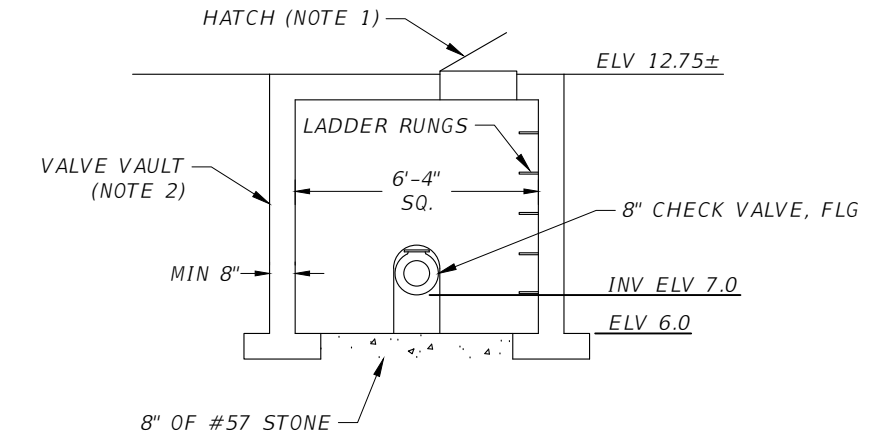
SECTION

NOTES:
1. ASSEMBLY SHOWN IS FOR WEST SIDE.
EAST SIDE ASSEMBLY SHALL BE REVERSED.



SECTION

NOTES:
1. ASSEMBLY SHOWN IS FOR WEST SIDE.
EAST SIDE ASSEMBLY SHALL BE REVERSED.




SECTION

NOTES:
1. CAST IN 24"x30" ALUMINUM HATCH WITH SST HARDWARE, HOLD-OPEN ARM, LOCKABLE AND AASHTO H20 RATING. H1R2430 BY HALLIDAY, OE.
2. PRECAST DOGHOUSE VALVE VAULT W/ AASHTO H20 RATING.

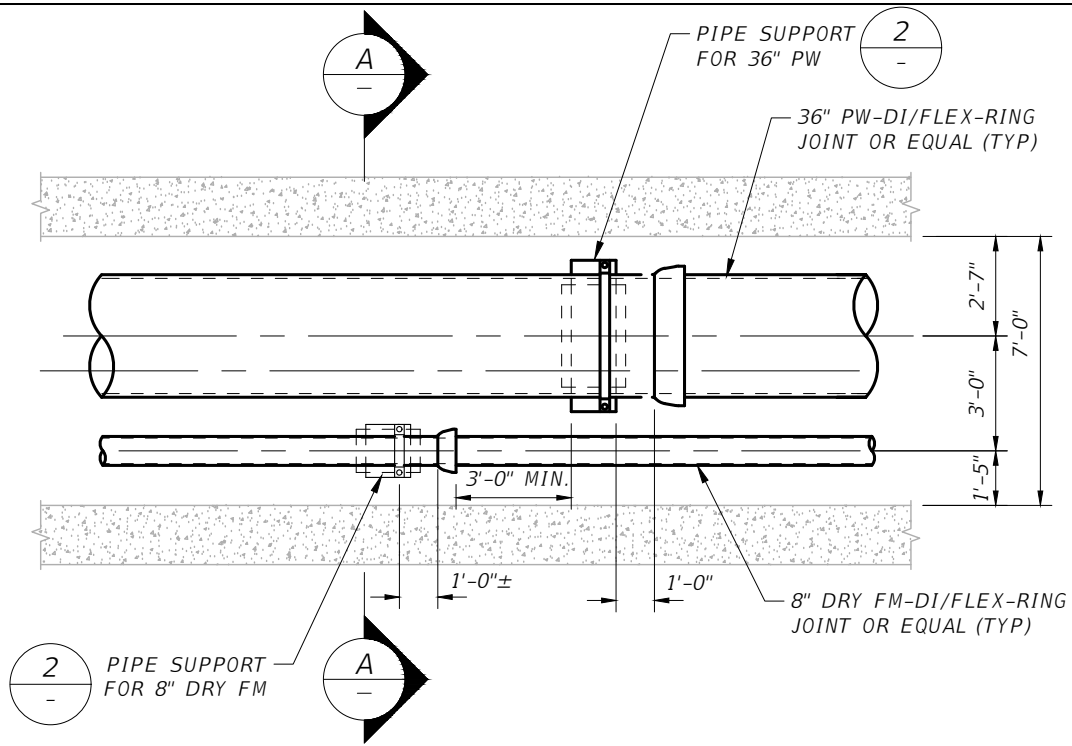
1 8" DRY FM PIGGING PORT ASSEMBLY
SCALE: NTS
U-24
U-26
U-54

2 8" DRY FM EMERGENCY BYPASS ASSEMBLY
SCALE: NTS
U-24
U-26
U-54

3 8" DRY FM CHECK VALVE ASSEMBLY
SCALE: NTS
U-27
U-54

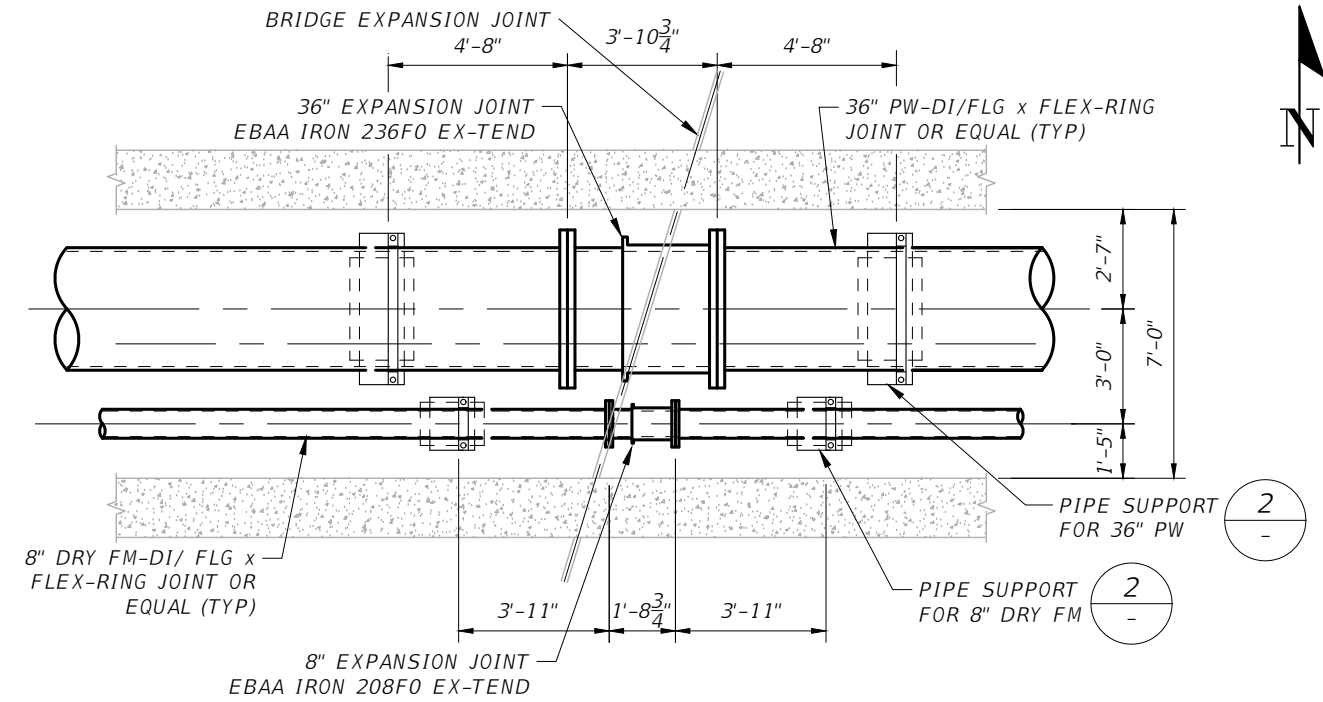
SCALE: AS NOTED		DESIGNED BY: R.A.		DRAWN BY: T.S.		CHECKED BY: T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		SHEET NO.: U-63	
No.		REVISIONS		DATE		BY		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		2/22/2019 11:27:53 AM		S:\Projects\RDWY\ProjFdot\ProjFdot\8\60460213000\utils\cadd\UTDTUW01.dwg			

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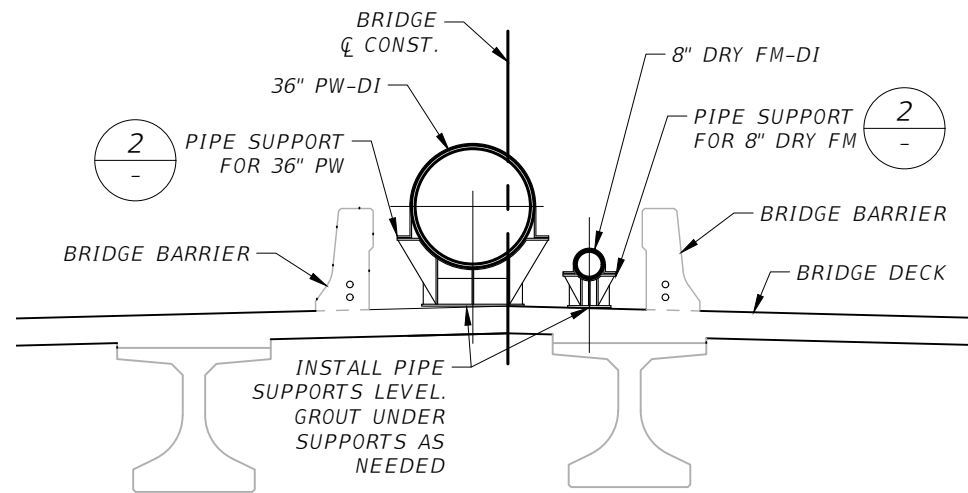
- NOTE:
- 1) PIPE BELL AND SUPPORTS SHALL BE OFFSET AS SHOWN TO MAXIMIZE THE CLEAR SPACE AVAILABLE BETWEEN THE PIPELINES FOR ACCESS.
 - 2) DURING ASSEMBLY, EACH FLEX-RING JOINT (OR EQUAL) SHALL BE FULLY EXTENDED TO REMOVE SLACK AND ENGAGE RESTRAINT TO PREVENT JOINT DEFLECTION UPON PRESSURIZATION.
 - 3) PRESSURIZATION OF THE PIPELINE SHALL BE PERFORMED SLOWLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE JOINT DEFLECTION. CONTRACTOR SHALL SUBMIT PLAN FOR ENGINEER'S APPROVAL PRIOR TO PRESSURE TEST.
 - 4) REFER TO SPECIFICATIONS FOR PIPE COATING REQUIREMENTS.

BRIDGE PIPING PLAN
SCALE: NTS

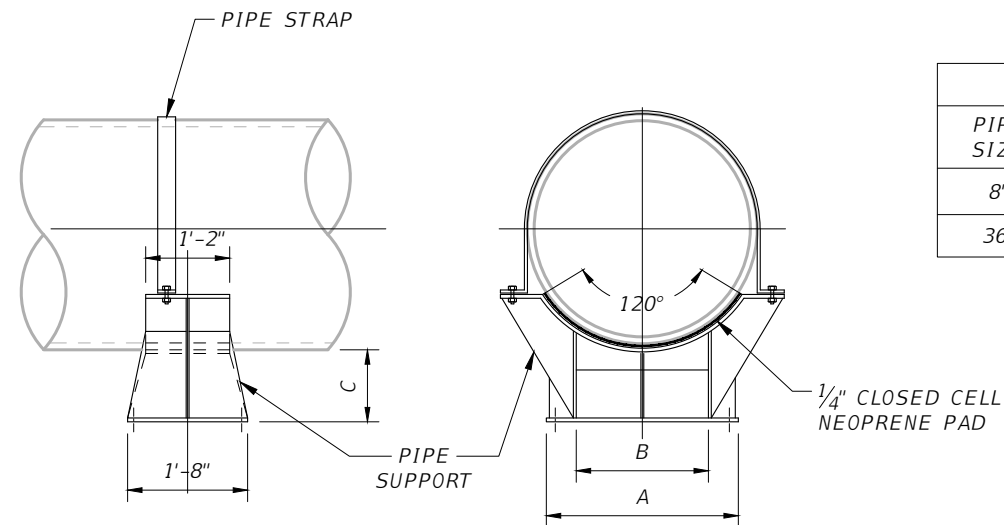


- NOTE:
- 1) INSTALL EXPANSION JOINT WITH FACTORY PRESET AT 50% CONTRACTION/50% EXPANSION SETTING.

1 EXPANSION JOINT
SCALE: NTS



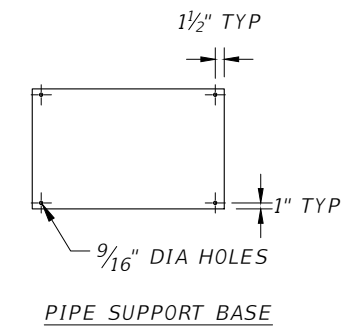
A SECTION
SCALE: NTS



- NOTE:
- 1) PIPE SUPPORT SHALL BE FIGURE 2000, MODIFIED AS SHOWN, BY PIPING TECHNOLOGY INC OR APPROVED EQUAL.
 - 2) PIPE SUPPORTS SHALL BE SHOP PAINTED PER SPECIFICATIONS.
 - 3) ANCHORS SHALL BE 1/2" DIA HILTI HAS-R SST (AISI TYPE 316) THREADED RODS WITH A 4" MINIMUM EMBEDMENT, AND A 4 1/4" MAXIMUM EMBEDMENT.
 - 4) EPOXY ADHESIVE FOR THE THREADED RODS SHALL BE HIT-RE 500 V3.
 - 5) HARDWARE SHALL BE SST (AISI TYPE 316) TREATED W/ NEVER-SEIZE.

2 PIPE SUPPORT
SCALE: NTS

TABLE			
PIPE SIZE	A	B	C
8"	1'-1"	5"	9"
36"	2'-8"	1'-10"	12"

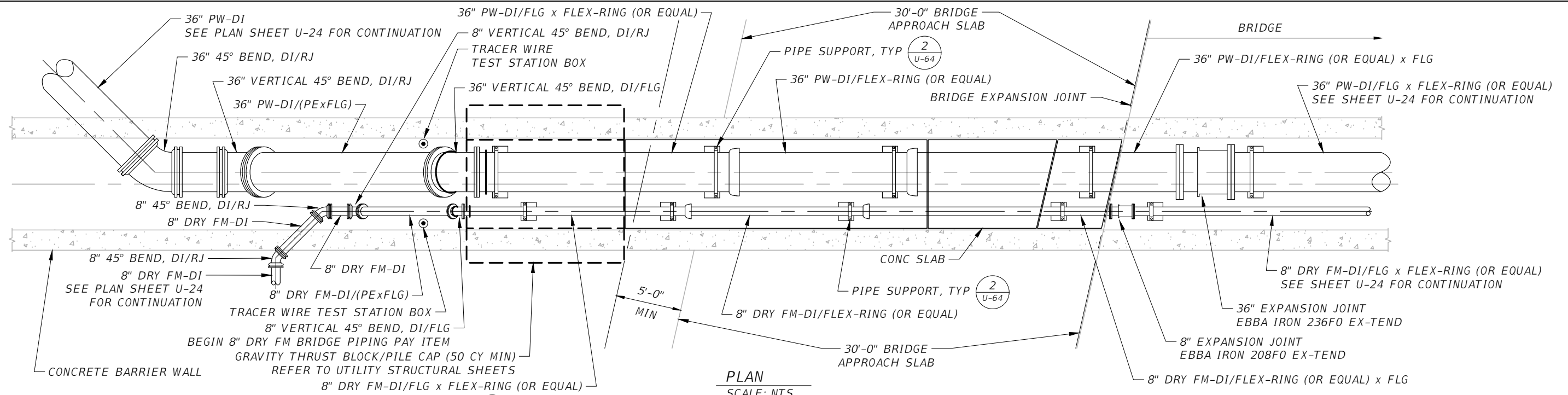


PIPE SUPPORT BASE

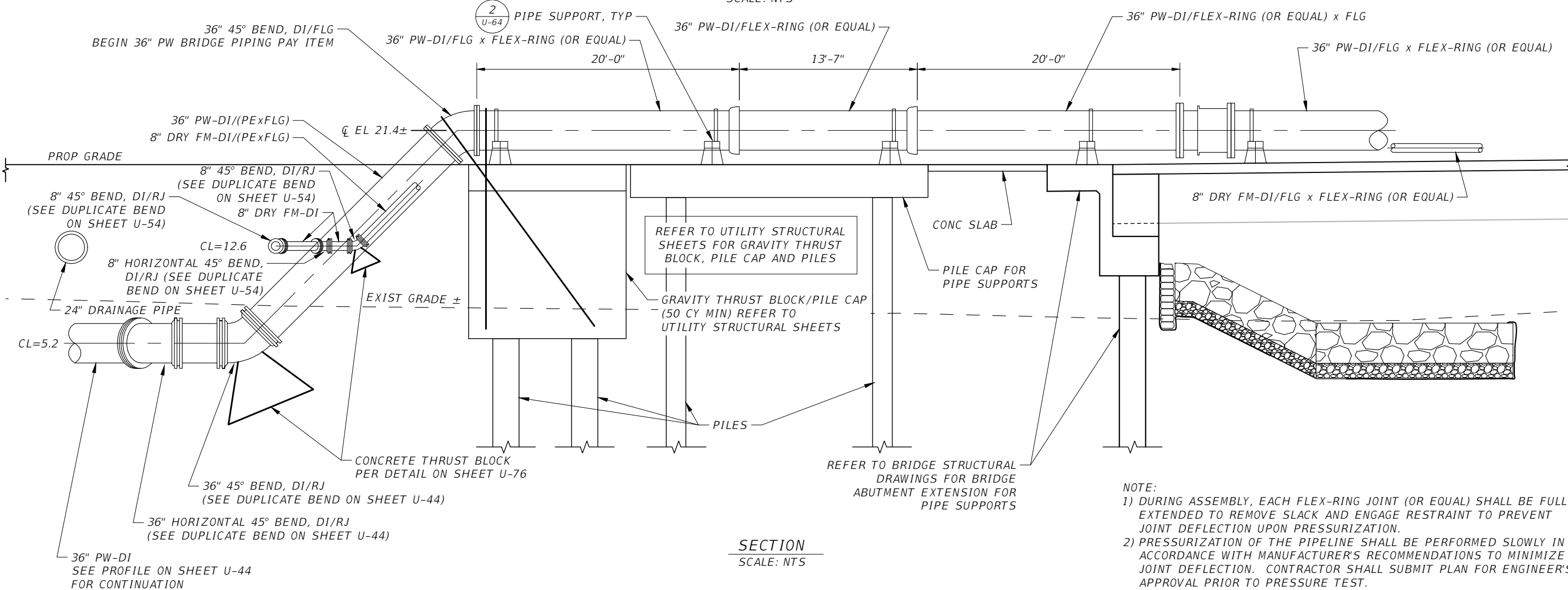
No.	REVISIONS	DATE	BY	SCALE	AS NOTED	DESIGNED BY	R.A.	DRAWN BY	T.S.	CHECKED BY	T.C.	DATE	FEBRUARY 2019	PROJECT NO.	6086960	DESIGN ENGINEER	TIMOTHY M. CURRAN, P.E.	FL. LICENSE NO.	34809	SHEET NO.	U-64



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PLAN
SCALE: NTS

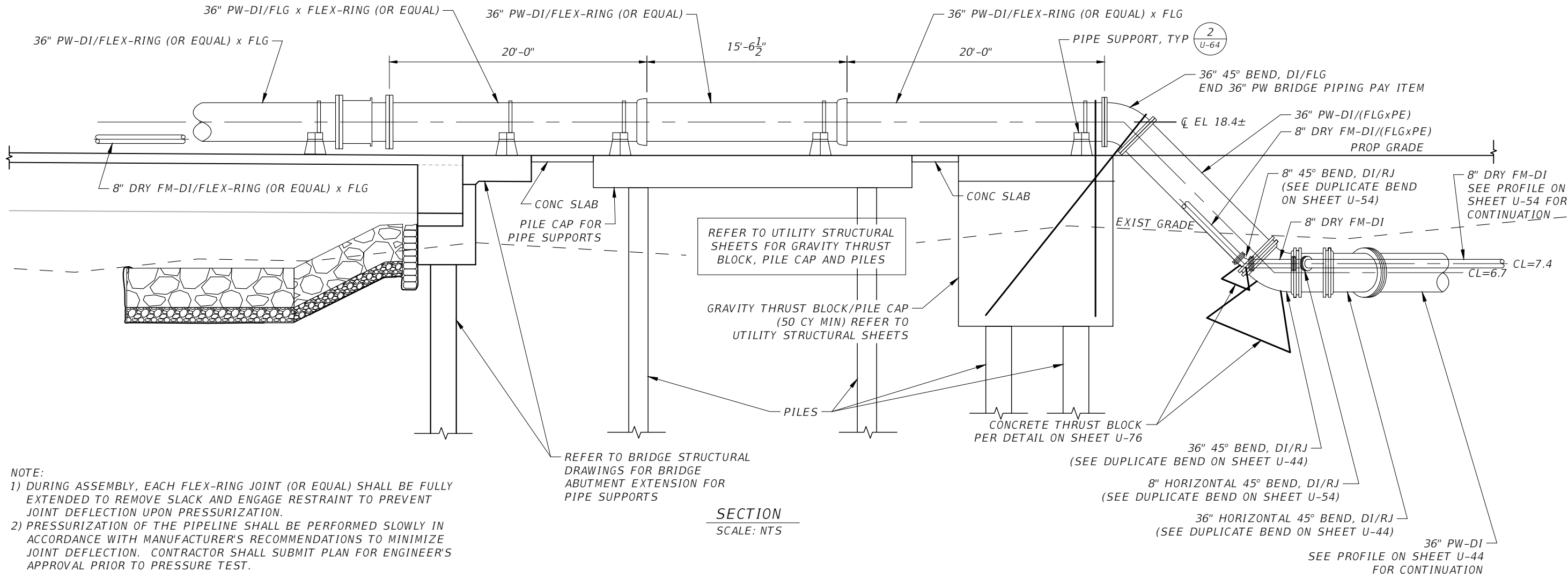
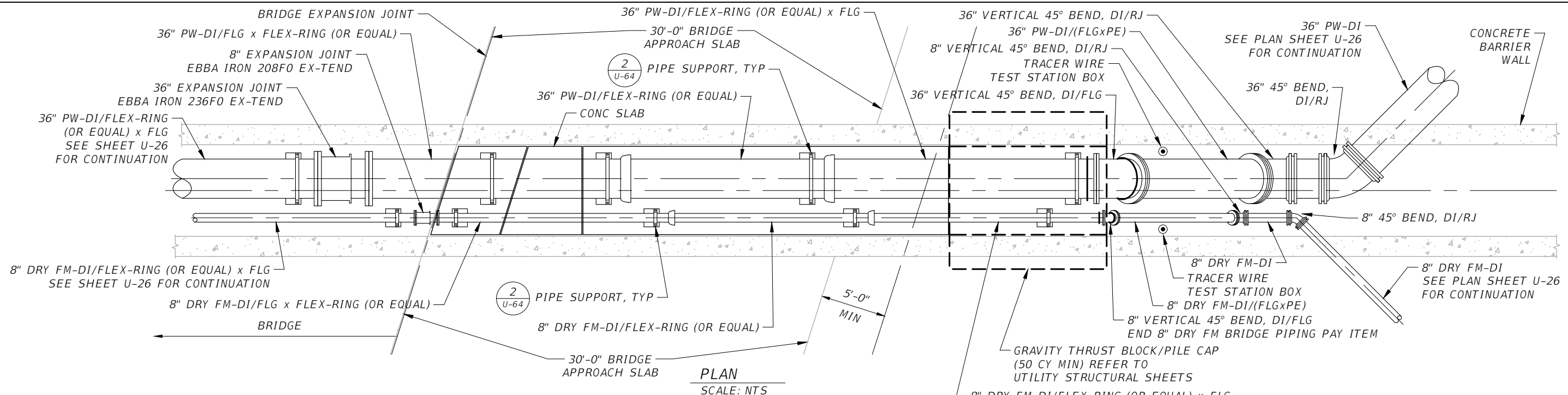


SECTION
SCALE: NTS


NOTE:
 1) DURING ASSEMBLY, EACH FLEX-RING JOINT (OR EQUAL) SHALL BE FULLY EXTENDED TO REMOVE SLACK AND ENGAGE RESTRAINT TO PREVENT JOINT DEFLECTION UPON PRESSURIZATION.
 2) PRESSURIZATION OF THE PIPELINE SHALL BE PERFORMED SLOWLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE JOINT DEFLECTION. CONTRACTOR SHALL SUBMIT PLAN FOR ENGINEER'S APPROVAL PRIOR TO PRESSURE TEST.

SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		DETAILS BRIDGE PIPING WEST SIDE OF BRIDGE		SHEET NO.: U-65
No.	REVISIONS	DATE	BY									

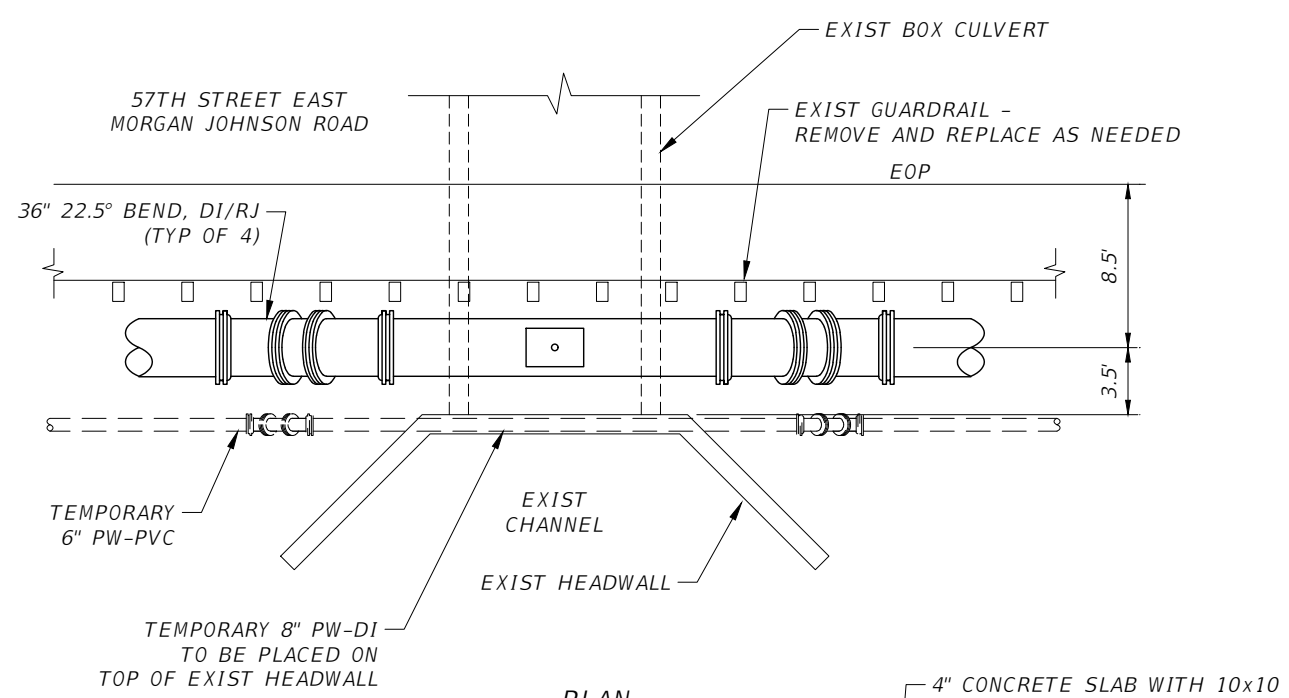
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



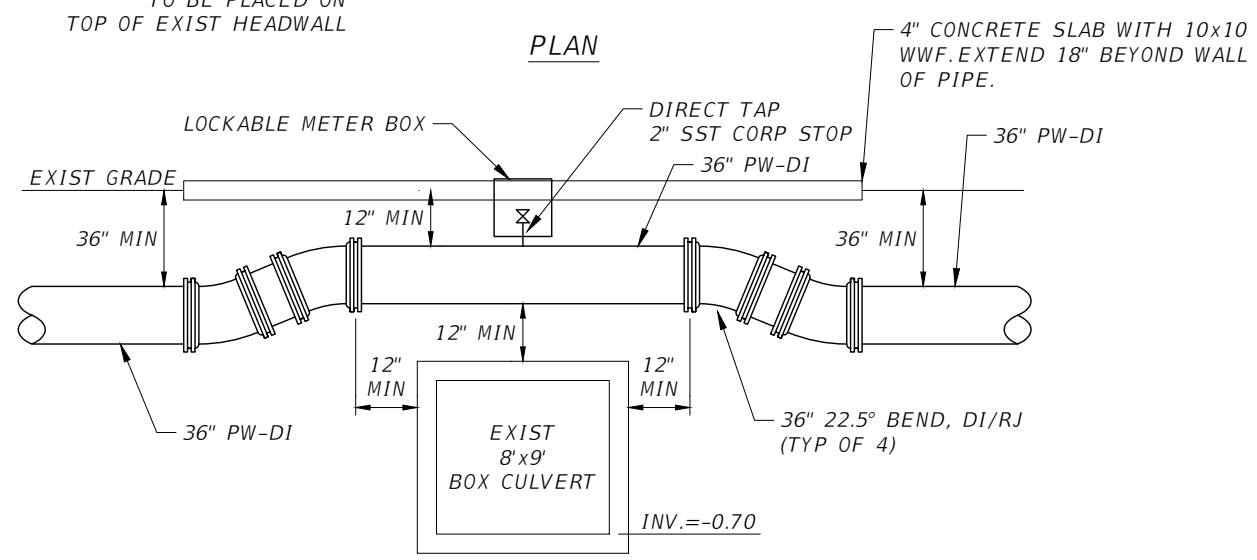
NOTE:
1) DURING ASSEMBLY, EACH FLEX-RING JOINT (OR EQUAL) SHALL BE FULLY EXTENDED TO REMOVE SLACK AND ENGAGE RESTRAINT TO PREVENT JOINT DEFLECTION UPON PRESSURIZATION.
2) PRESSURIZATION OF THE PIPELINE SHALL BE PERFORMED SLOWLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE JOINT DEFLECTION. CONTRACTOR SHALL SUBMIT PLAN FOR ENGINEER'S APPROVAL PRIOR TO PRESSURE TEST.

SCALE: AS NOTED				DESIGNED BY: R.A.		DATE: FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E.		DETAILS BRIDGE PIPING EAST SIDE OF BRIDGE		SHEET NO.: U-66	
DRAWN BY: T.S.				CHECKED BY: T.C.		PROJECT NO.: 6086960				FL. LICENSE NO.: 34809				No. REVISIONS DATE BY	
TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115															

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



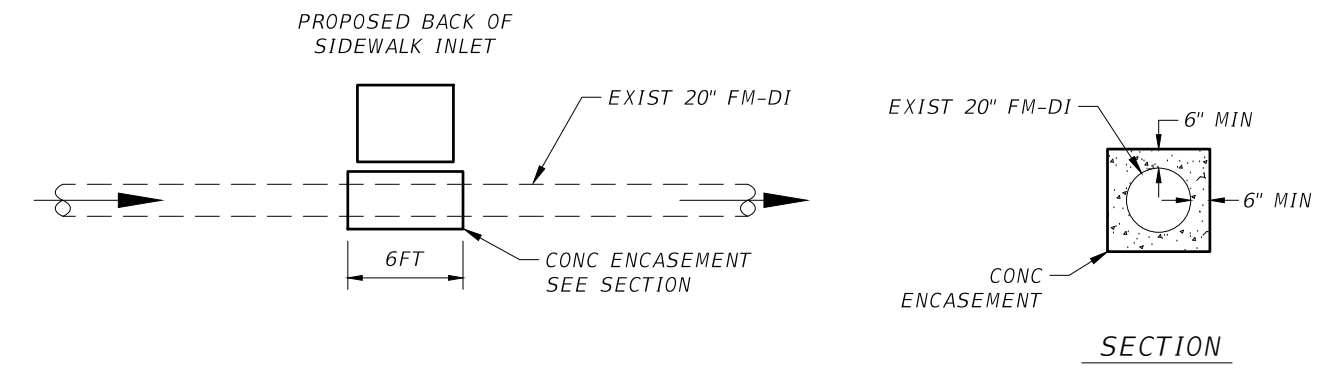
PLAN



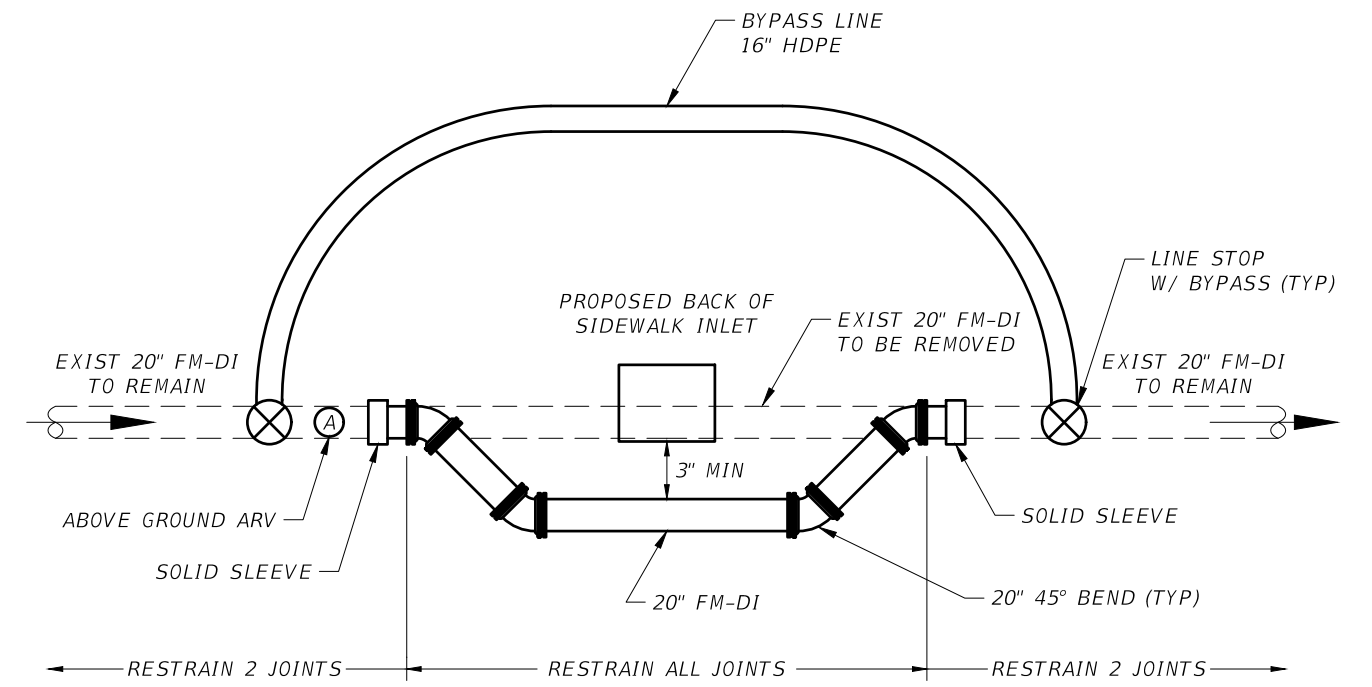
SECTION

- NOTES:
- CORP STOP SHALL BE MUELLER B-20046 WITH PLUG OR APPROVED EQUAL BY MANATEE COUNTY.

1 BOX CULVERT CROSSING
U-38 SCALE: NTS




2 CONCRETE ENCASUREMENT OF EXIST 20" FM (IF NEEDED)
SCALE: NTS
ENCASE EXISTING 20" FM IN AREAS WHERE DEPTH OF COVER IS LESS THAN 36" IN THE VICINITY OF PROPOSED BACK OF SIDEWALK INLETS.



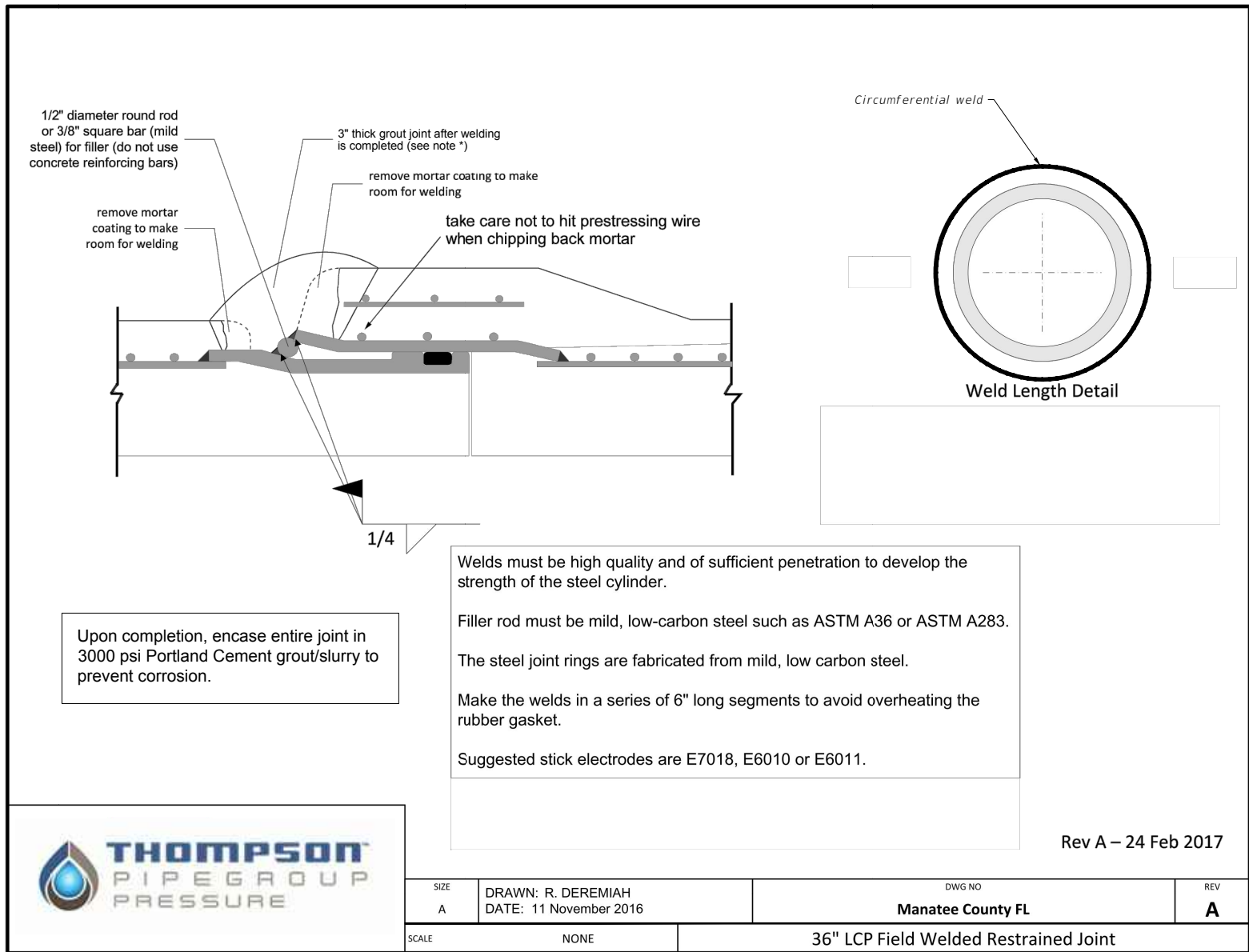
- NOTES:
- REFER TO MEASUREMENT AND PAYMENT SPECIFICATIONS FOR DESCRIPTION.
 - ROTATE ASSEMBLY DOWN TO ATTAIN MINIMUM OF 36" OF COVER.

3 20" FM OFFSET (IF NEEDED)
SCALE: NTS

				SCALE	AS NOTED	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE	FEBRUARY 2019	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER	TIMOTHY M. CURRAN, P.E.	SHEET NO. U-67	
				DESIGNED BY	R.A.		PROJECT NO.	6086960		FL. LICENSE NO.	34809		
				DRAWN BY	T.S.								
				CHECKED BY	T.C.								
No.	REVISIONS			DATE	BY								

DETAILS

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Welds must be high quality and of sufficient penetration to develop the strength of the steel cylinder.

Filler rod must be mild, low-carbon steel such as ASTM A36 or ASTM A283.

The steel joint rings are fabricated from mild, low carbon steel.

Make the welds in a series of 6" long segments to avoid overheating the rubber gasket.

Suggested stick electrodes are E7018, E6010 or E6011.

Upon completion, encase entire joint in 3000 psi Portland Cement grout/slurry to prevent corrosion.



SIZE A	DRAWN: R. DEREMIAH DATE: 11 November 2016	DWG NO Manatee County FL	REV A
SCALE NONE	36" LCP Field Welded Restrained Joint		

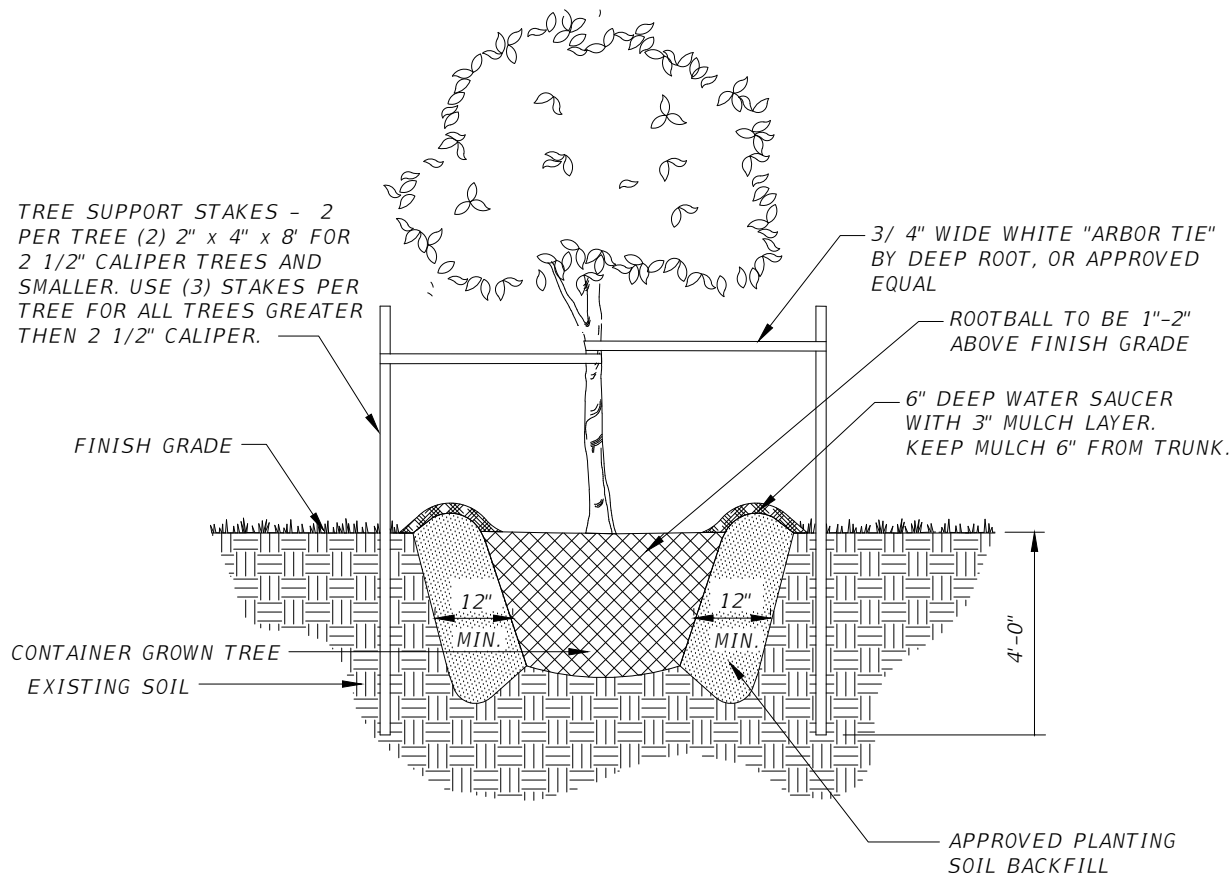
Rev A – 24 Feb 2017

1 RESTRAIN EXISTING 36" PCCP JOINTS
SCALE: NTS

2 TREE PLANTING
SCALE: NTS

NOTE:

1) DETAIL IS FOR INFORMATIONAL PURPOSES ONLY. PCCP JOINT RESTRAINT SHALL BE PERFORMED BY PIPE MANUFACTURER, THOMPSON PIPE GROUP (KEN BEUL, (972) 266-7476)

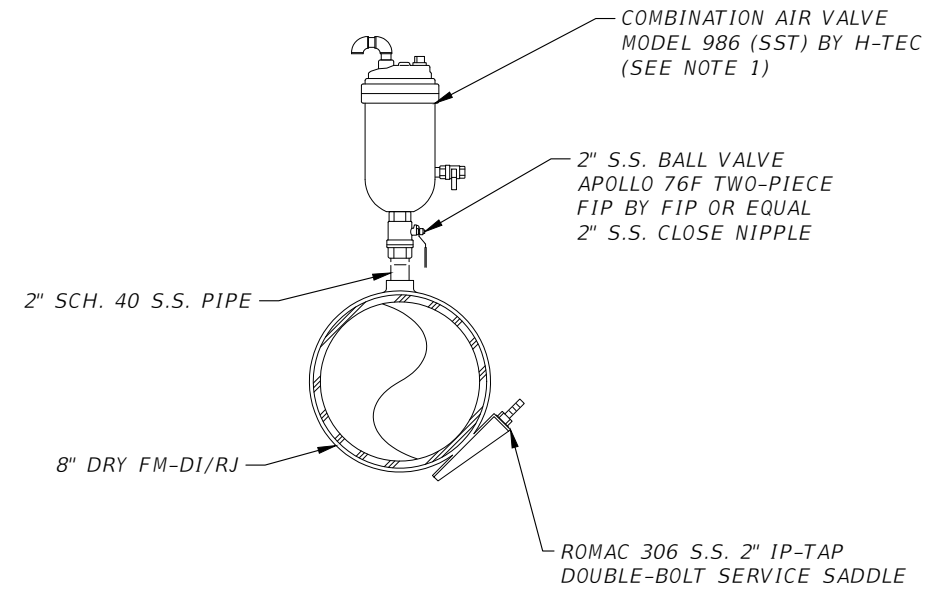
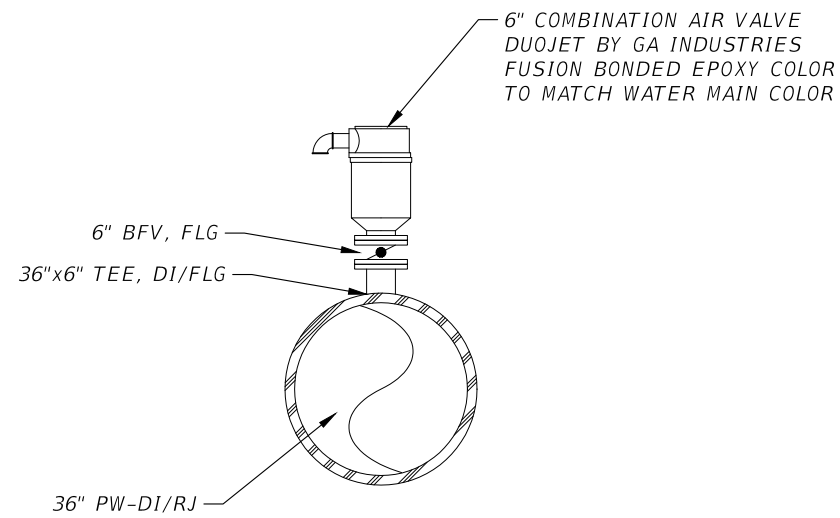


No.	REVISIONS	DATE	BY	SCALE	AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	SHEET NO. U-68
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PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

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



NOTES:


1. COMBINATION AIR VALVE TO BE INSTALLED AT HIGH POINT ON BRIDGE.
2. COMBINATION AIR VALVE TO BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR WATER MAIN SIZE.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL, BRASS OR COPPER.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.

NOTES:

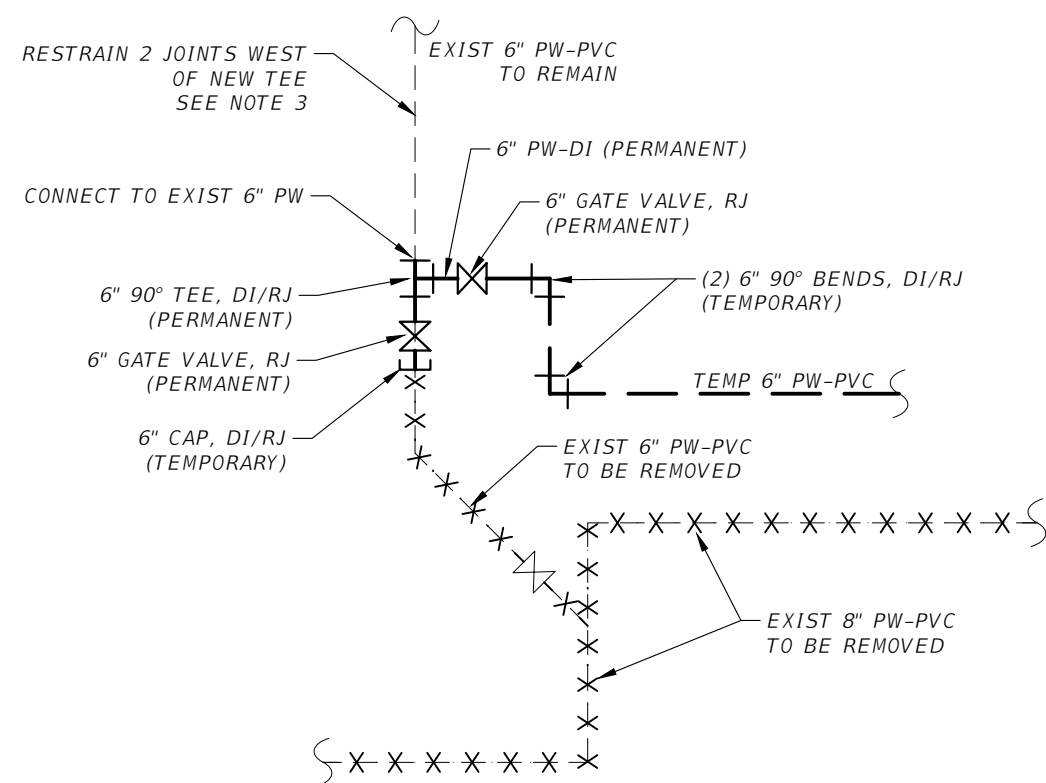
1. THE H-TEC MODEL 986 COMBINATION AIR VALVE IS TO BE USED ONLY AT THIS LOCATION (IN ORDER TO PREVENT WASTEWATER SPILLAGE). THE REST OF THE FM AIR VALVES ON THE PROJECT ARE AIR RELEASE VALVES (ARV's) AND SHALL BE AS SPECIFIED IN THE COUNTY DETAILS.
2. COMBINATION AIR VALVE TO BE INSTALLED AT HIGH POINT ON BRIDGE.
3. COMBINATION AIR VALVE TO BE SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATION FOR FORCE MAIN SIZE.
4. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL.
5. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
6. CONTRACTOR SHALL ENSURE VERTICAL INSTALLATION, WHICH IS REQUIRED FOR PROPER FUNCTIONING.

1 36" PW COMBINATION AIR VALVE AT BRIDGE HIGH POINT
U-25 SCALE: NTS

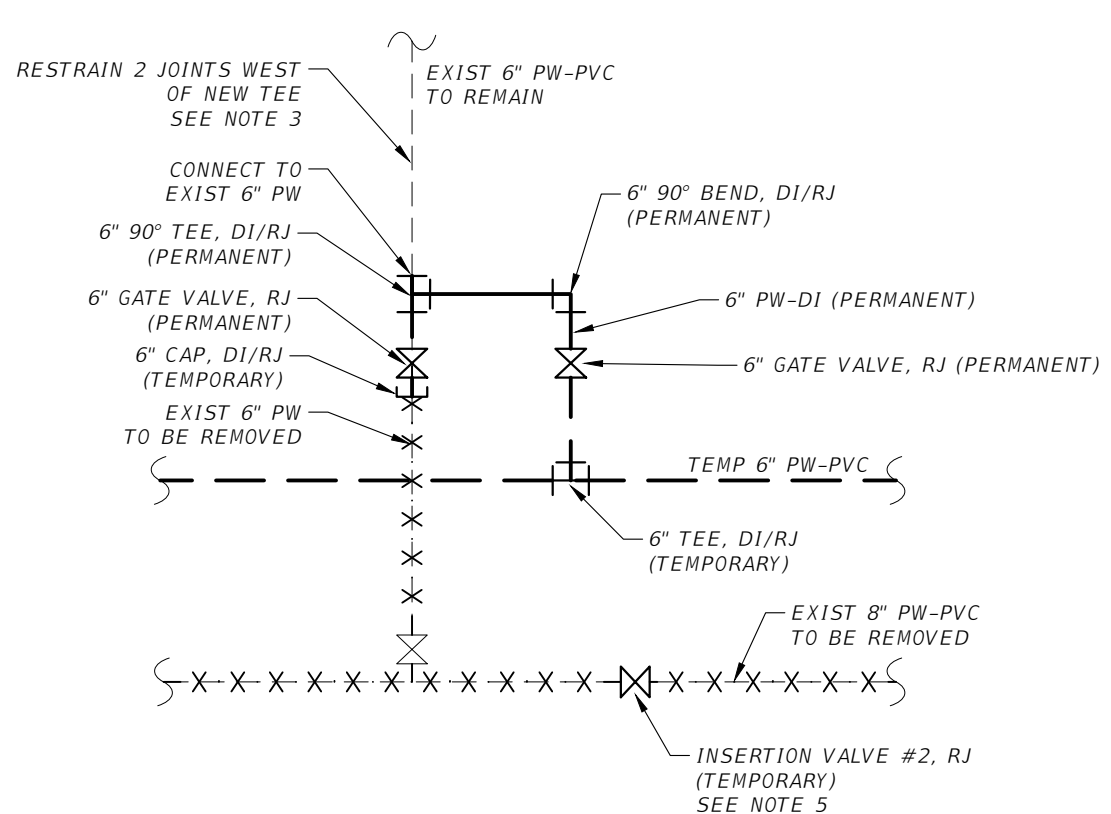
2 8" FM COMBINATION AIR VALVE AT BRIDGE HIGH POINT
U-25 SCALE: NTS

SCALE		AS NOTED		DESIGNED BY		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809		DATE		FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER		DETAILS ARVS AT BRIDGE HIGH POINT		SHEET NO.			
		DRAWN BY		R.A.		AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462		PROJECT NO.		6086960				TIMOTHY M. CURRAN, P.E.				FL. LICENSE NO.		U-69	
		CHECKED BY		T.S.		(813) 286-1711								34809							
No.		REVISIONS		DATE		BY		T.C.		CERTIFICATE OF AUTHORIZATION: 8115											

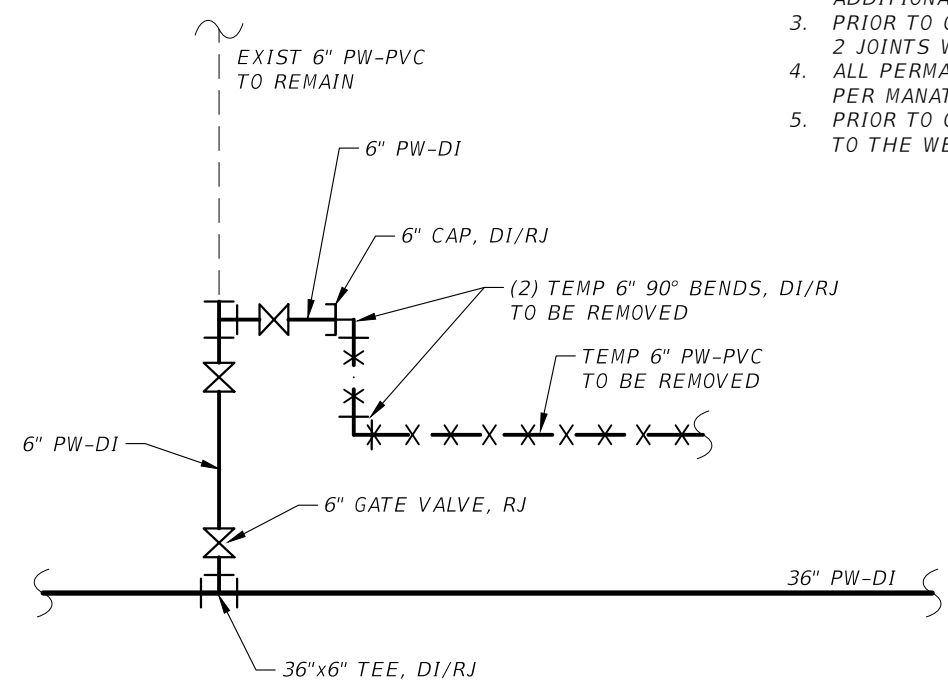
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TEMPORARY

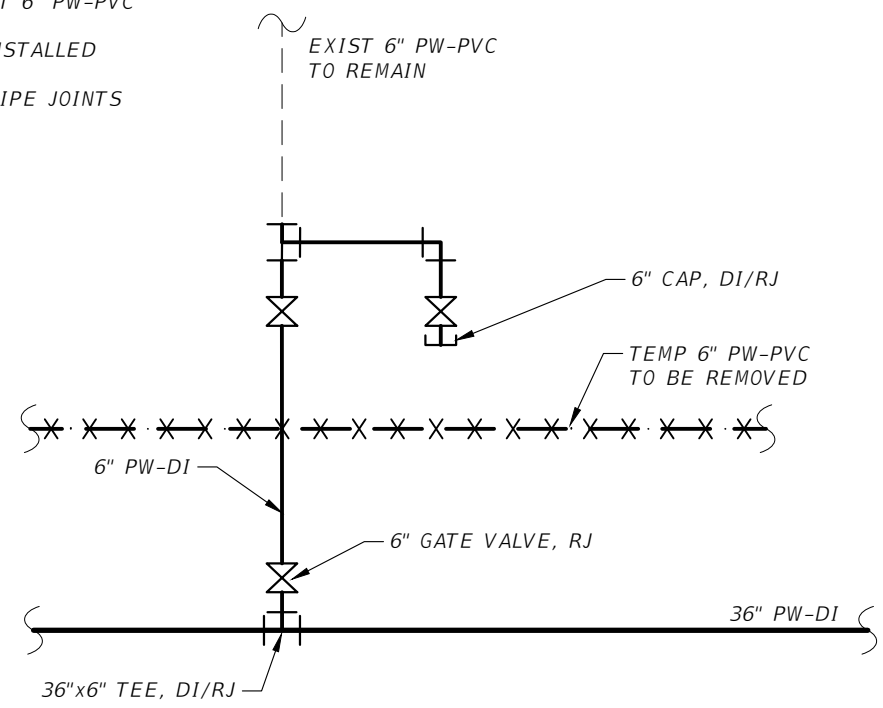


TEMPORARY



FINAL

LINE TRANSFER AT 43RD AVE E
SCALE: NTS




FINAL

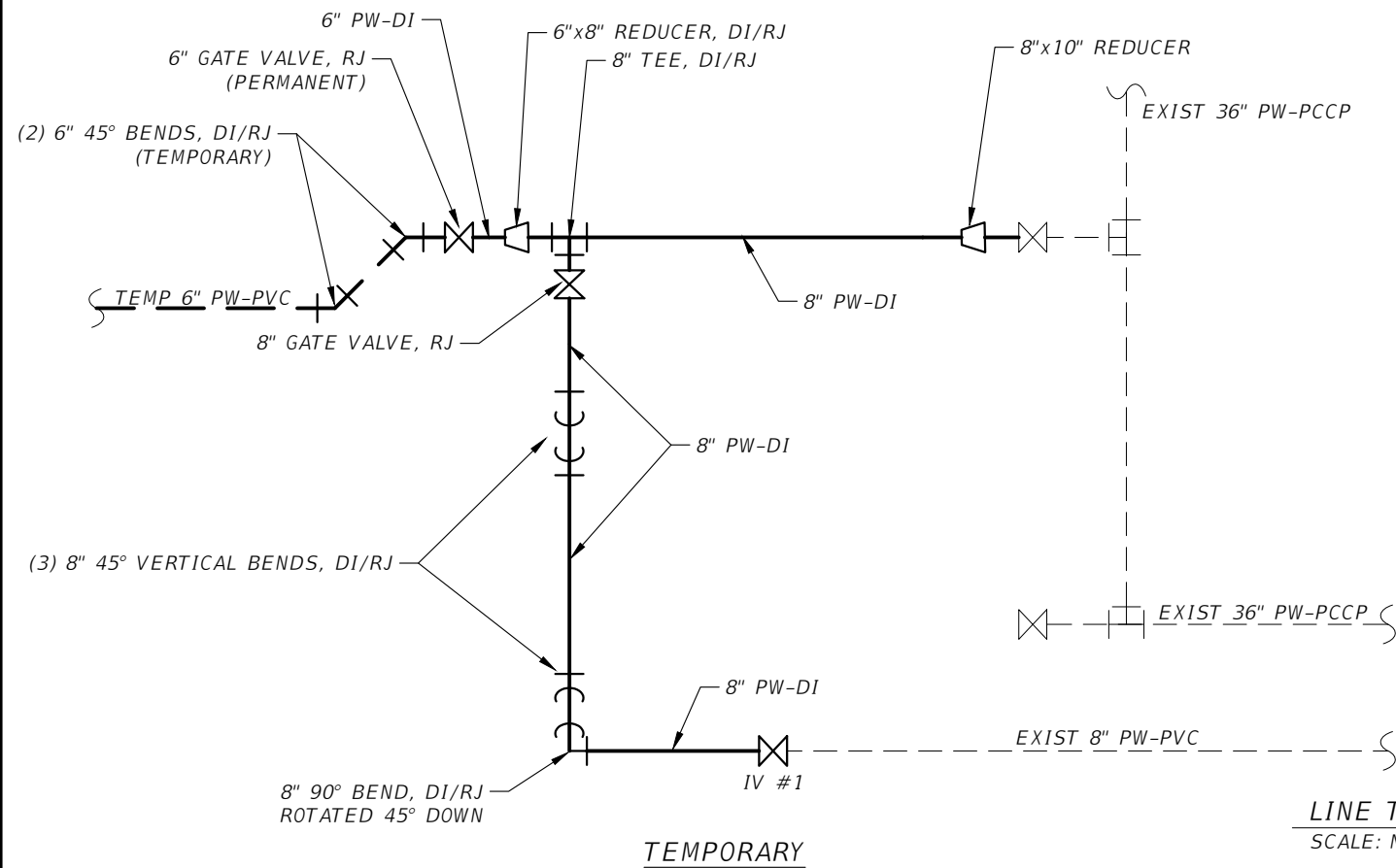
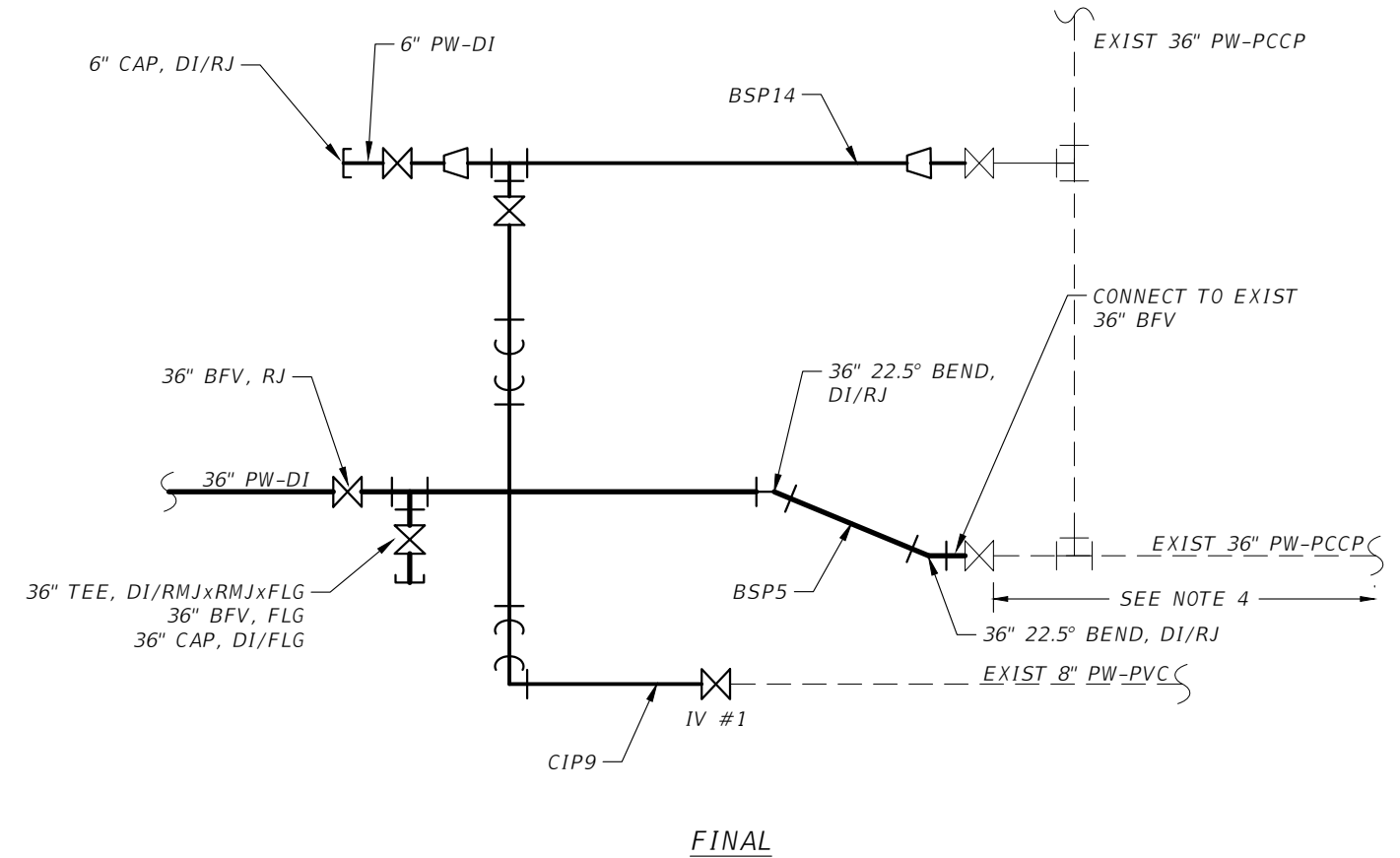
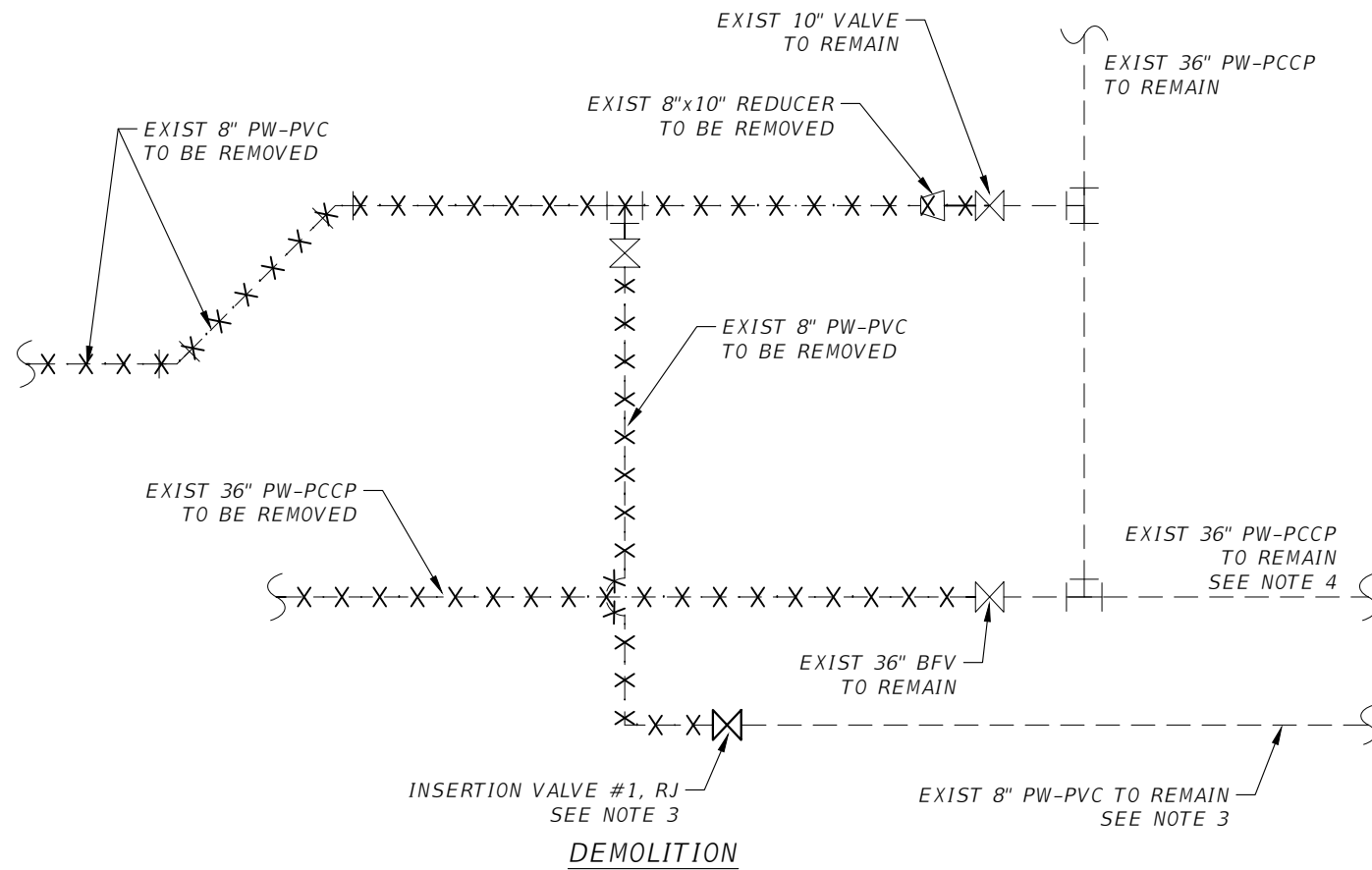
LINE TRANSFER AT 41ST AVE E
SCALE: NTS

NOTES:

1. SEE PLAN SHEET U-38 FOR CONTINUATION.
2. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
3. PRIOR TO CONNECTING TO EXIST 6" PW-PVC, RESTRAIN EXIST 6" PW-PVC 2 JOINTS WEST OF CONNECTION POINT.
4. ALL PERMANENT PIPES, VALVES, AND FITTINGS SHALL BE INSTALLED PER MANATEE COUNTY STANDARDS.
5. PRIOR TO CLOSE IV #2, RESTRAIN TEE AND 2 ADDITIONAL PIPE JOINTS TO THE WEST OF IV #2.

SCALE		AS NOTED		DESIGNED BY		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE		FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER		TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809		DETAILS LINE TRANSFER		SHEET NO.		U-70	
DRAWN BY		R.A.		T.S.		PROJECT NO.		6086960		FL. LICENSE NO.				34809									
CHECKED BY		T.C.																					
No.		REVISIONS		DATE		BY																	


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



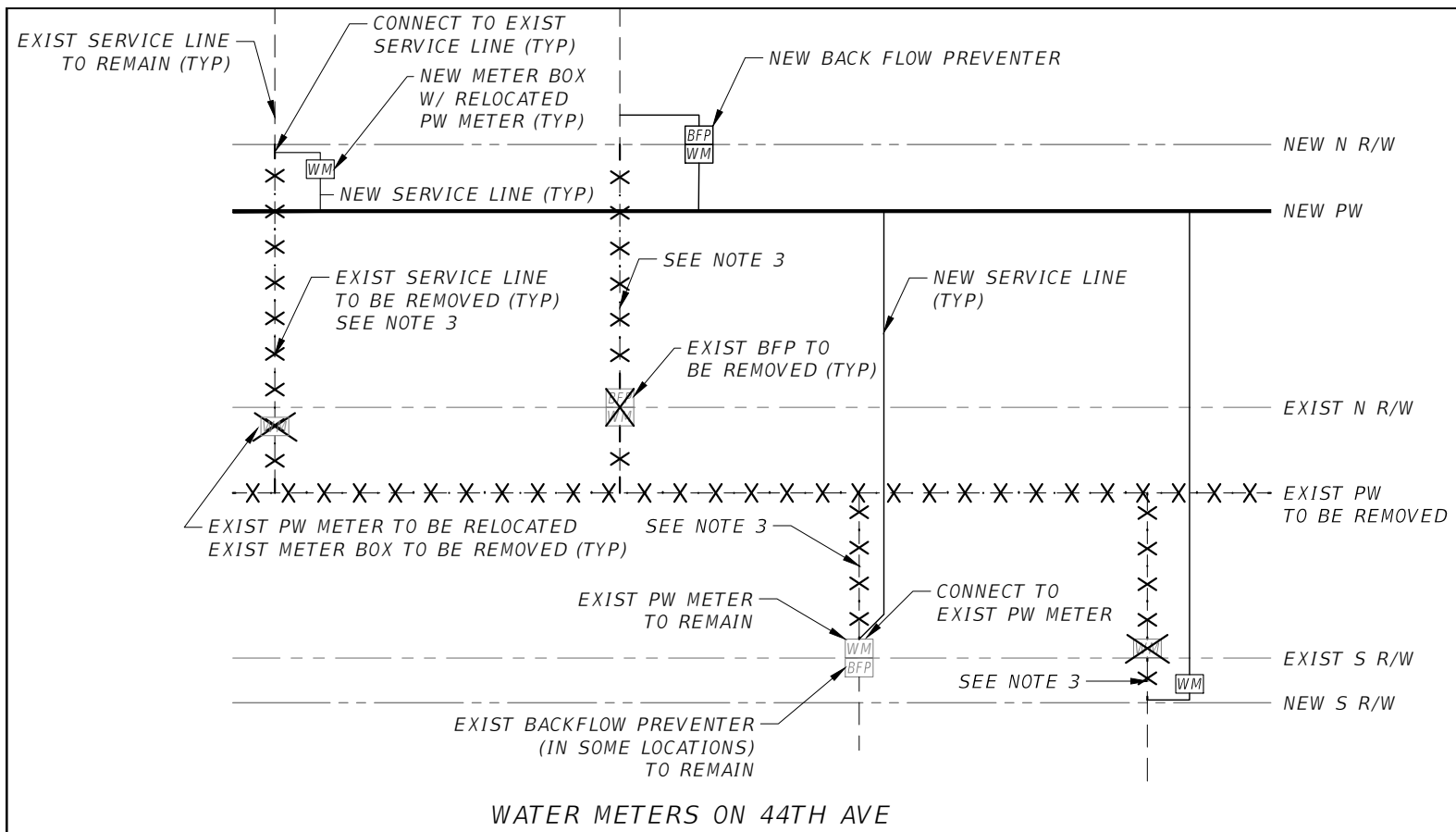
NOTES:

1. SEE PLAN SHEET U-39 FOR CONTINUATION.
2. SEE POTABLE WATER CONSTRUCTION PHASING SHEETS U-06 TO U-10 FOR ADDITIONAL INFORMATION.
3. PRIOR TO INSTALLING INSERTION VALVE #1, RESTRAIN EXISTING 8" PW-PVC 3 JOINTS NORTH OF IV#1.
4. THE EXISTING 36" PW-PCCP MUST BE RESTRAINED BEFORE DEMOLITION. REFER TO SHEET U-39.

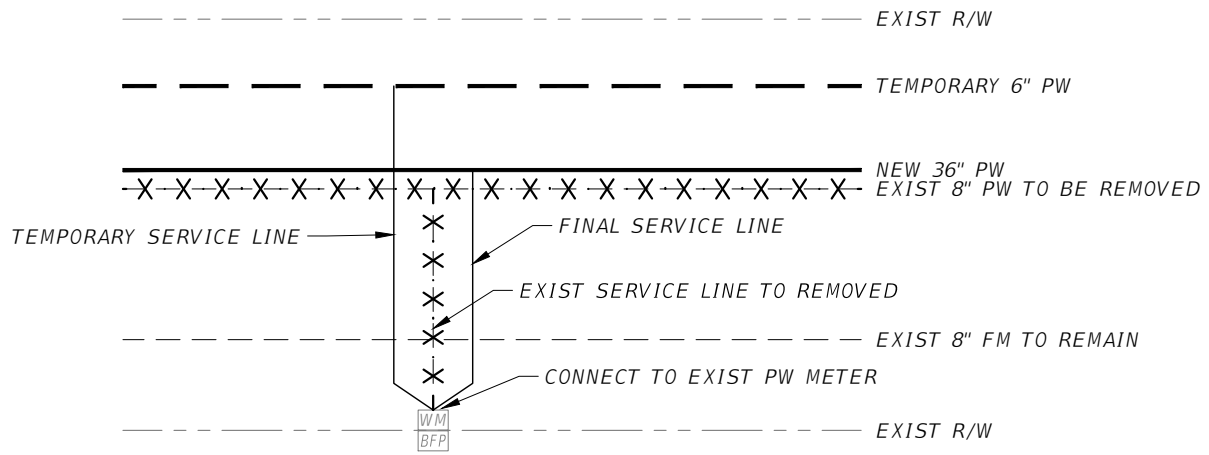
LINE TRANSFER AT 40TH AVE E
SCALE: NTS

SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		DETAILS LINE TRANSFER		SHEET NO.: U-71
No.	REVISIONS	DATE	BY											

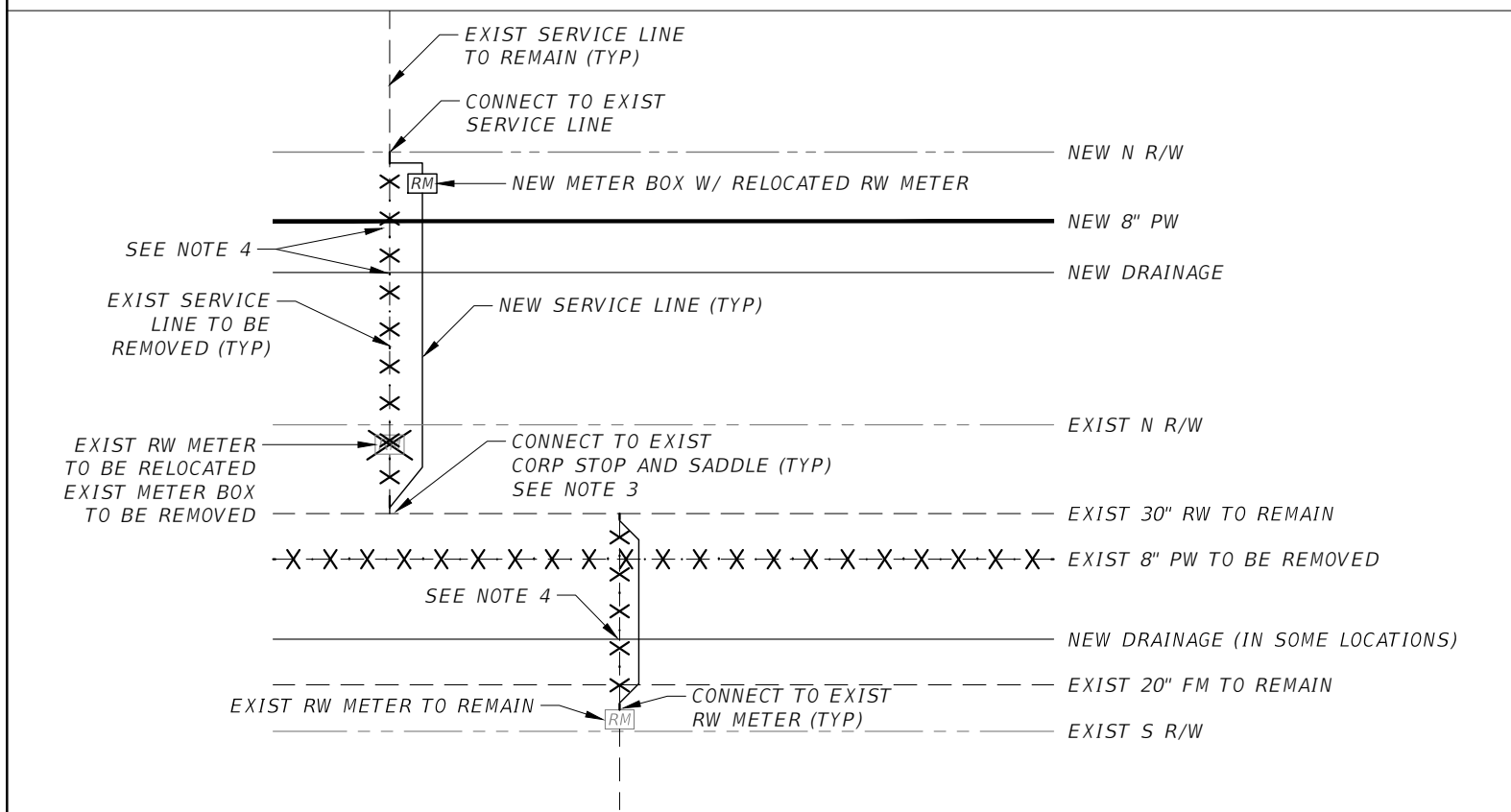
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WATER METERS ON 44TH AVE



WATER METERS ON MORGAN JOHNSON ROAD



RECLAIMED WATER METERS

WATER METER NOTES:

1. CONTRACTOR SHALL MAINTAIN POTABLE WATER SERVICE TO CUSTOMERS.
2. ONCE THE NEW POTABLE WATER LINE IS CLEARED AND IN-SERVICE, MAKE NEW SERVICE CONNECTIONS.
3. TEMPORARILY RELOCATE EXISTING SERVICE LINES, AS NEEDED, FOR CONSTRUCTION OF NEW UTILITIES.
4. NEW AND PROPOSED UTILITIES (BESIDES POTABLE) ARE NOT SHOWN. REFER TO PLAN SHEETS FOR REQUIRED SERVICE LINE CROSSINGS OF EXISTING AND PROPOSED UTILITIES.
5. REFER TO MANATEE COUNTY STANDARD DETAILS UW-17 AND UW-19 ON SHEET U-84 FOR METER BOX AND SERVICE CONNECTIONS.

RECLAIMED WATER METER NOTES:

1. CONTRACTOR SHALL MAINTAIN RECLAIMED WATER SERVICE TO CUSTOMERS.
2. RECLAIMED WATER METERS MAY BE SINGLE OR DOUBLE SERVICE.
3. CLOSE EXISTING CORPORATION STOP AT SERVICE SADDLE ON 36" RECLAIMED WATER MAIN. REMOVE EXISTING SERVICE LINE AS SHOWN AND INSTALL NEW SERVICE LINE AND METER (AS NECESSARY).
4. TEMPORARILY RELOCATE EXISTING SERVICE LINES, AS NEEDED, FOR CONSTRUCTION OF NEW UTILITIES.
5. COMMUNICATION UTILITIES ARE NOT SHOWN; CROSSINGS MAY BE REQUIRED.
6. REFER TO MANATEE COUNTY STANDARD DETAILS UW-17 AND UW-19 ON SHEET U-84 FOR METER BOX AND SERVICE CONNECTIONS.

SCALE	AS NOTED		
DESIGNED BY	R.A.		
DRAWN BY	T.S.		
CHECKED BY	T.C.		
No.	REVISIONS	DATE	BY

TIMOTHY M. CURRAN, P.E.
P.E. NO. 34809
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE
FEBRUARY 2019
PROJECT NO.
6086960

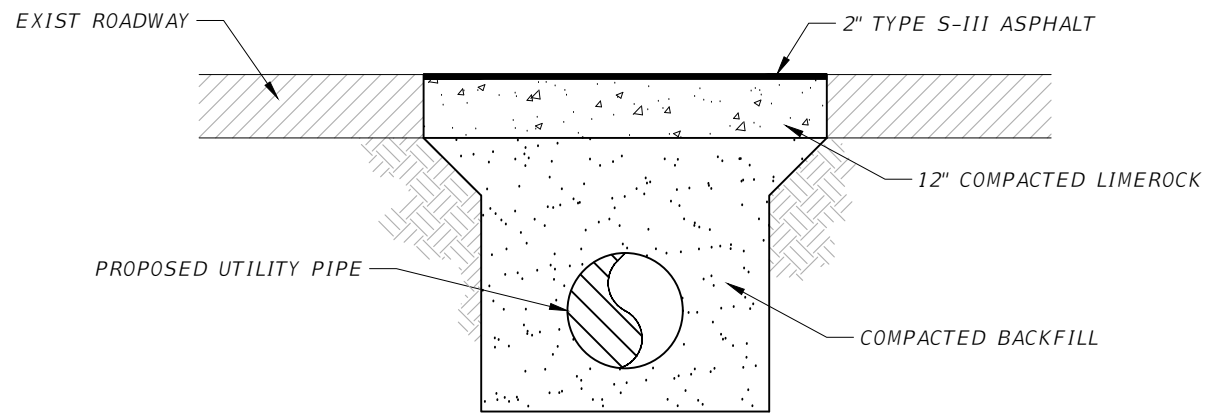


DESIGN ENGINEER
TIMOTHY M. CURRAN, P.E.
FL. LICENSE NO.
34809

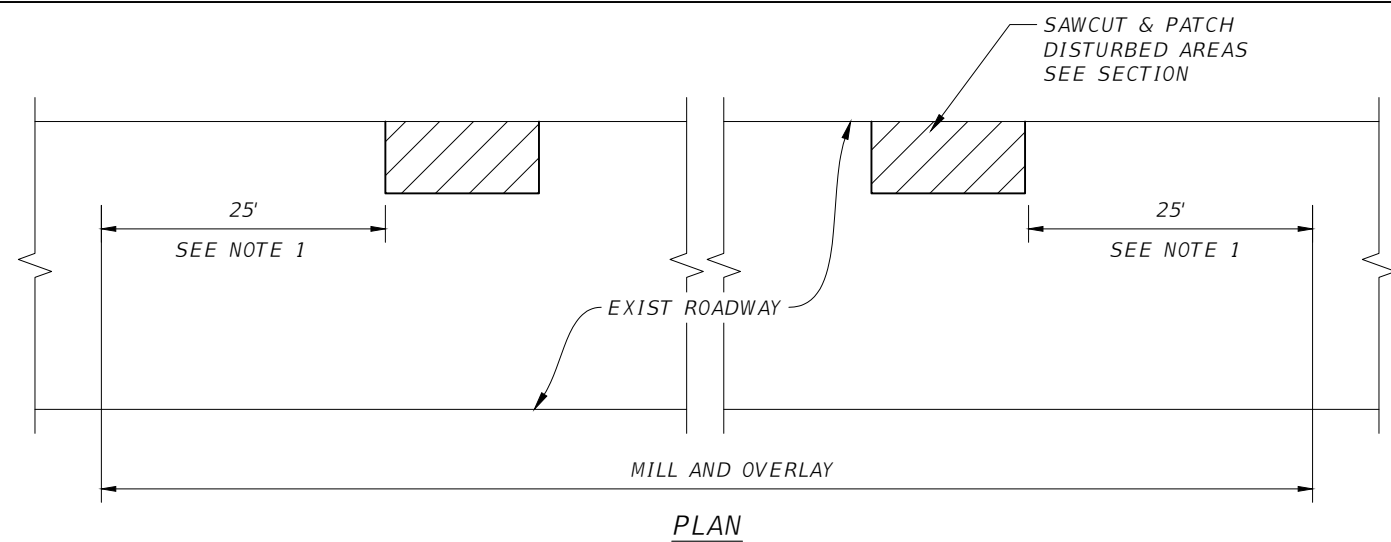
**DETAILS
METER RECONNECTIONS
AND RELOCATIONS**

SHEET NO.
U-72

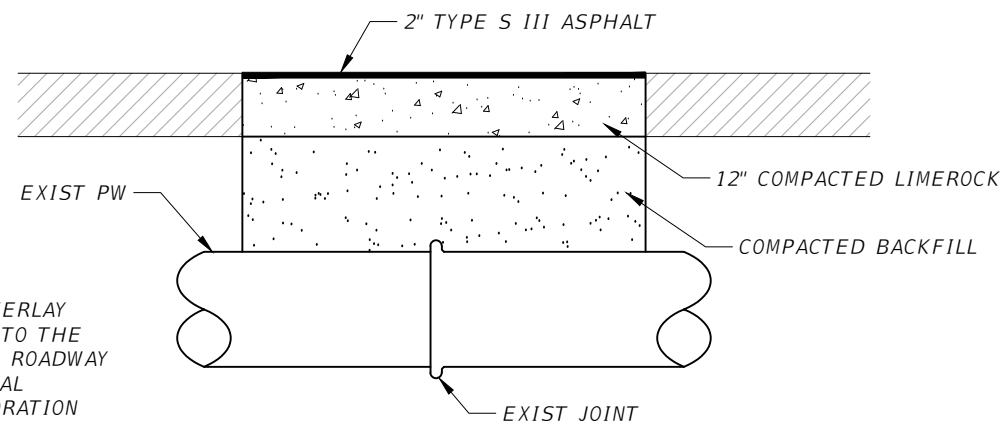
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TEMPORARY ROADWAY RESTORATION



PLAN

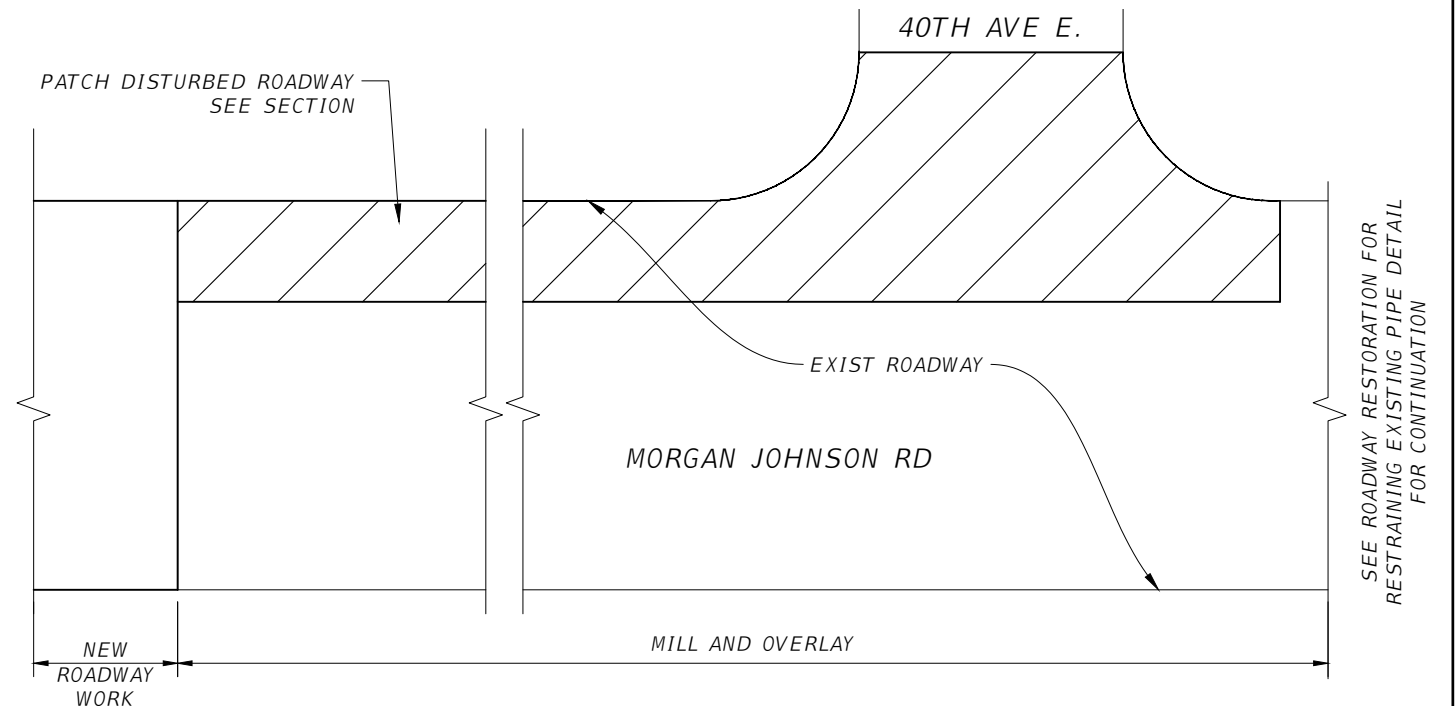


SECTION AT DISTURBED AREAS

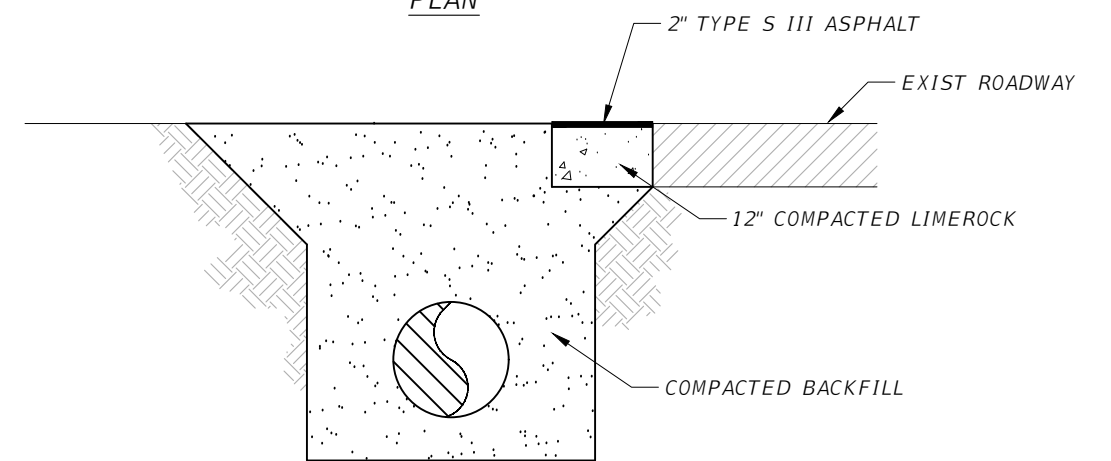
NOTES:

1. THE MILL AND OVERLAY SHALL CONTINUE TO THE END OF THE NEW ROADWAY WORK. SEE TYPICAL PAVEMENT RESTORATION DETAIL ON THIS SHEET.

ROADWAY RESTORATION FOR RESTRAINING EXISTING PIPE - 36" PCCP AND 30" DIP AT 51ST ST E AND MORGAN JOHNSON RD



PLAN



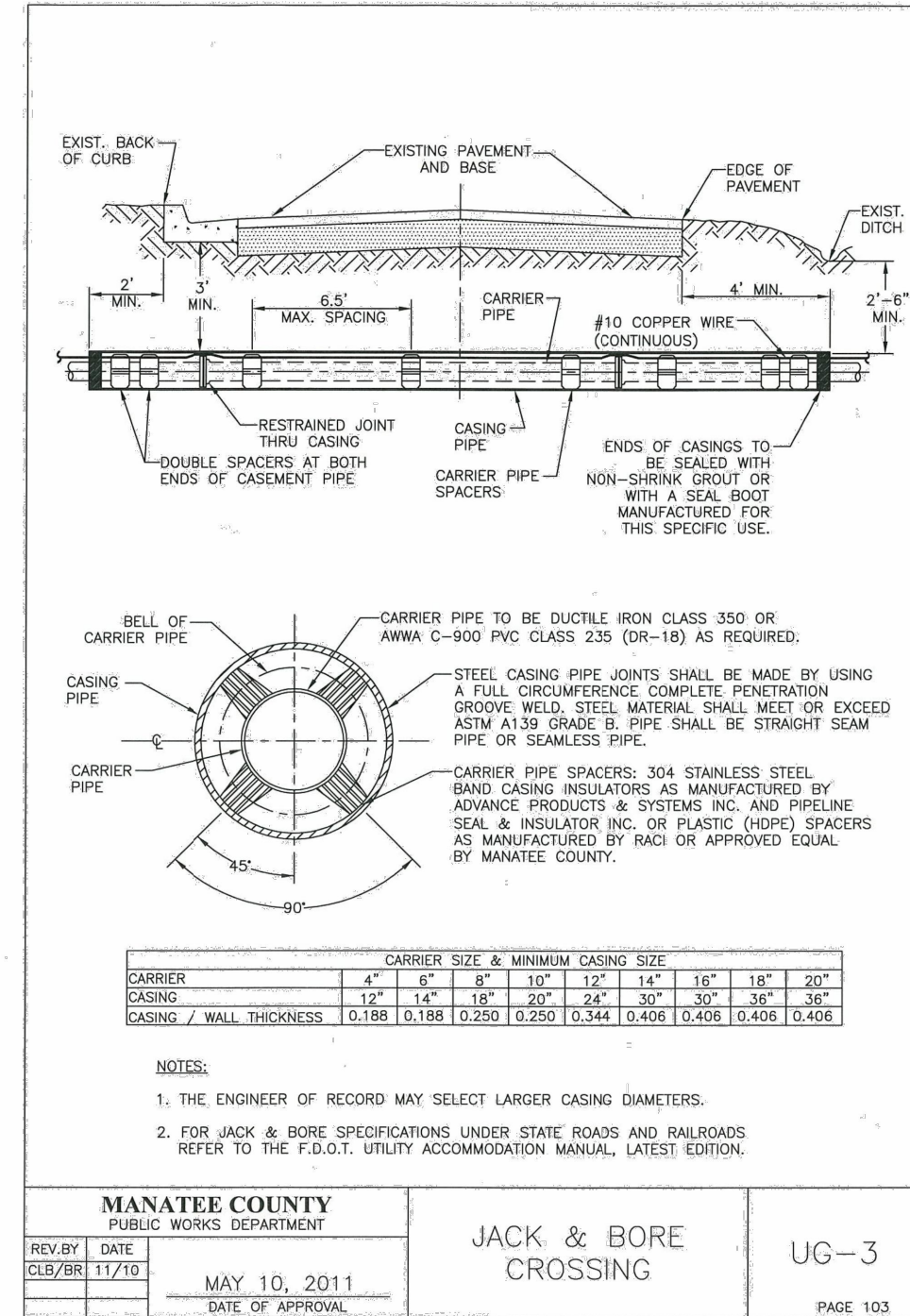
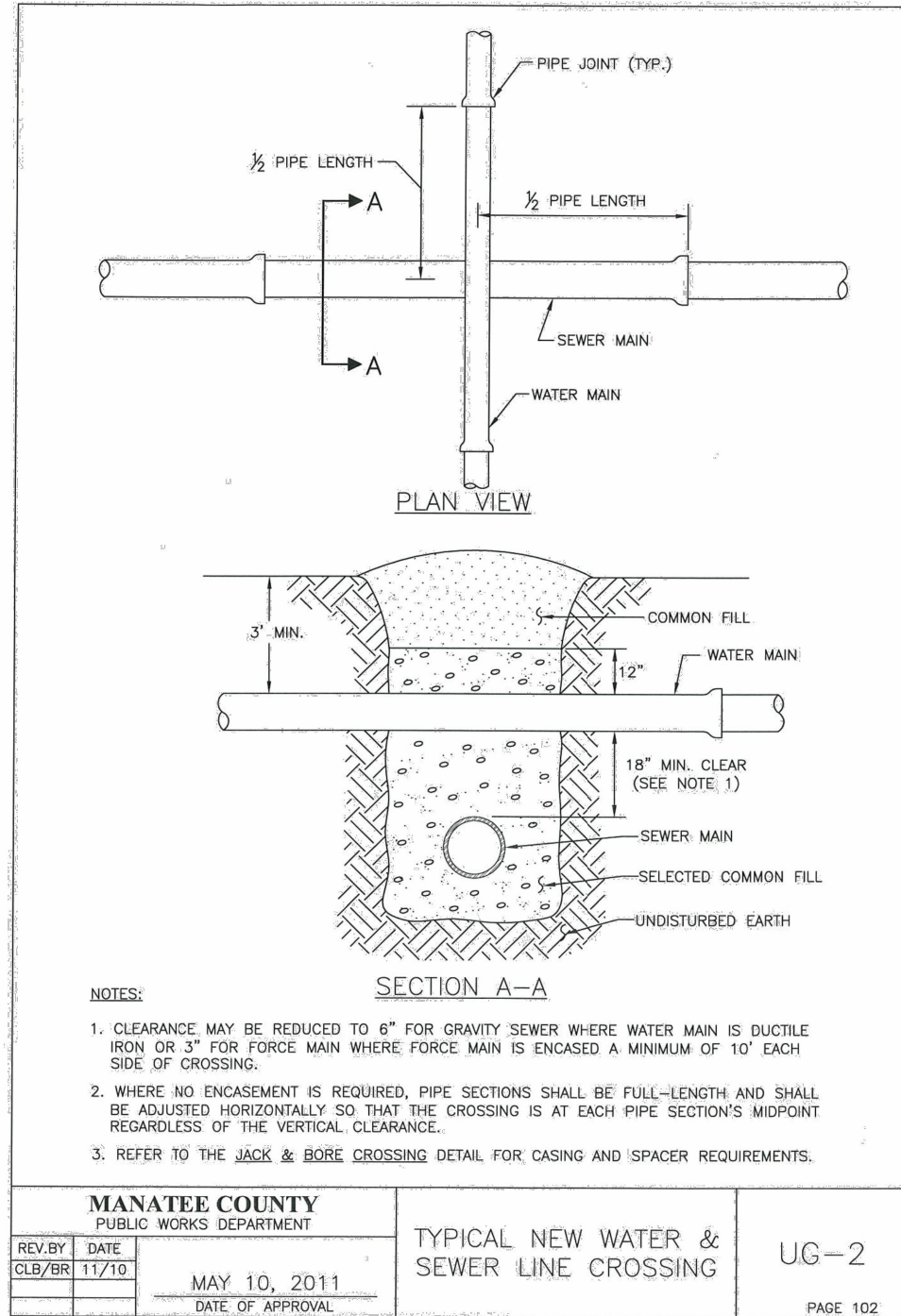
SECTION

ROADWAY RESTORATION FOR 36" DIP ON MORGAN JOHNSON RD

No.		REVISIONS	DATE	BY	SCALE	AS NOTED	DESIGNED BY	R.A.	DRAWN BY	T.S.	CHECKED BY	T.C.	DATE	FEBRUARY 2019	PROJECT NO.	6086960	DESIGN ENGINEER	TIMOTHY M. CURRAN, P.E.	FL. LICENSE NO.	34809	<p align="center">DETAILS ROADWAY RESTORATION</p>	SHEET NO.	U-73



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

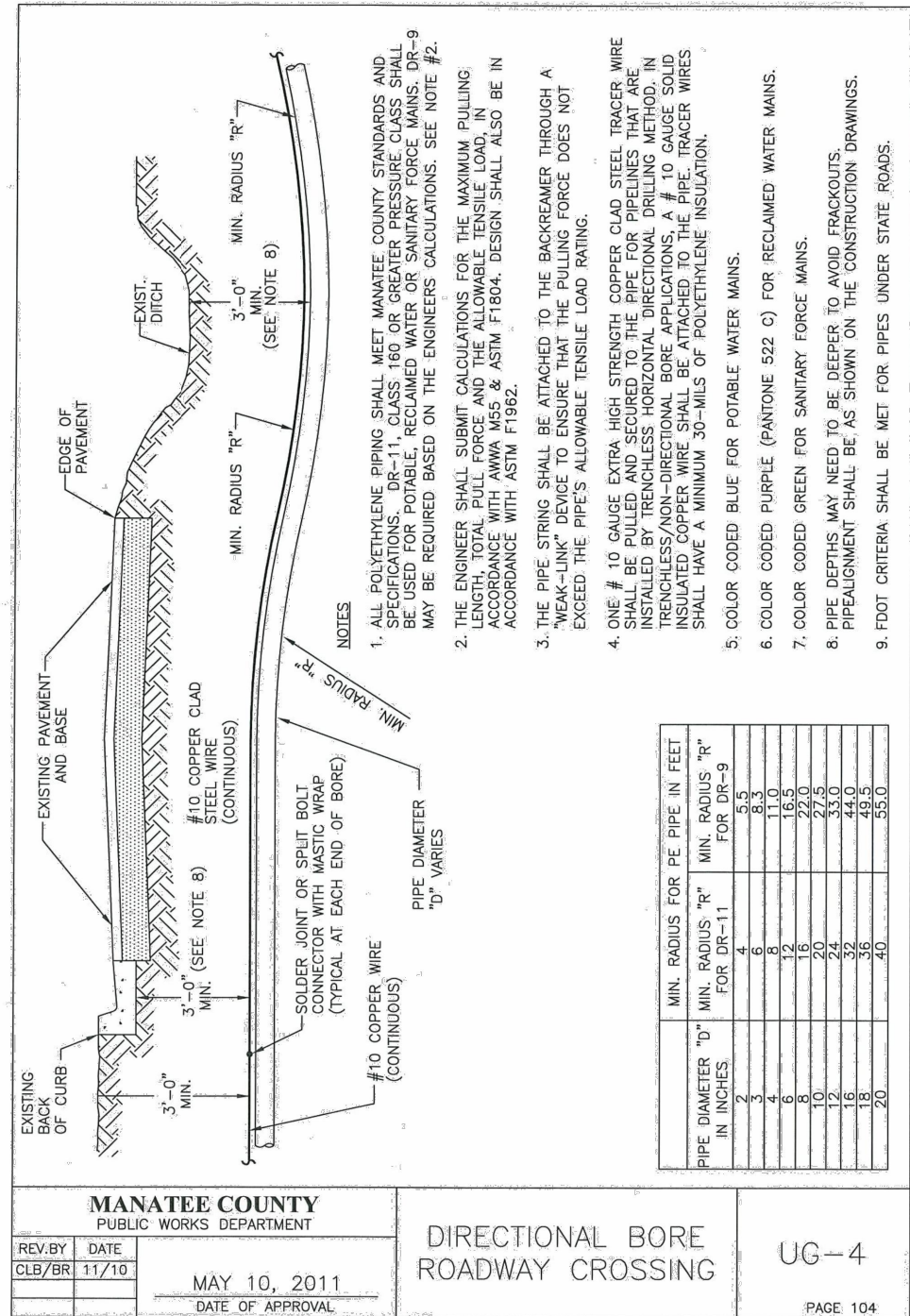


No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	SHEET NO. U-74
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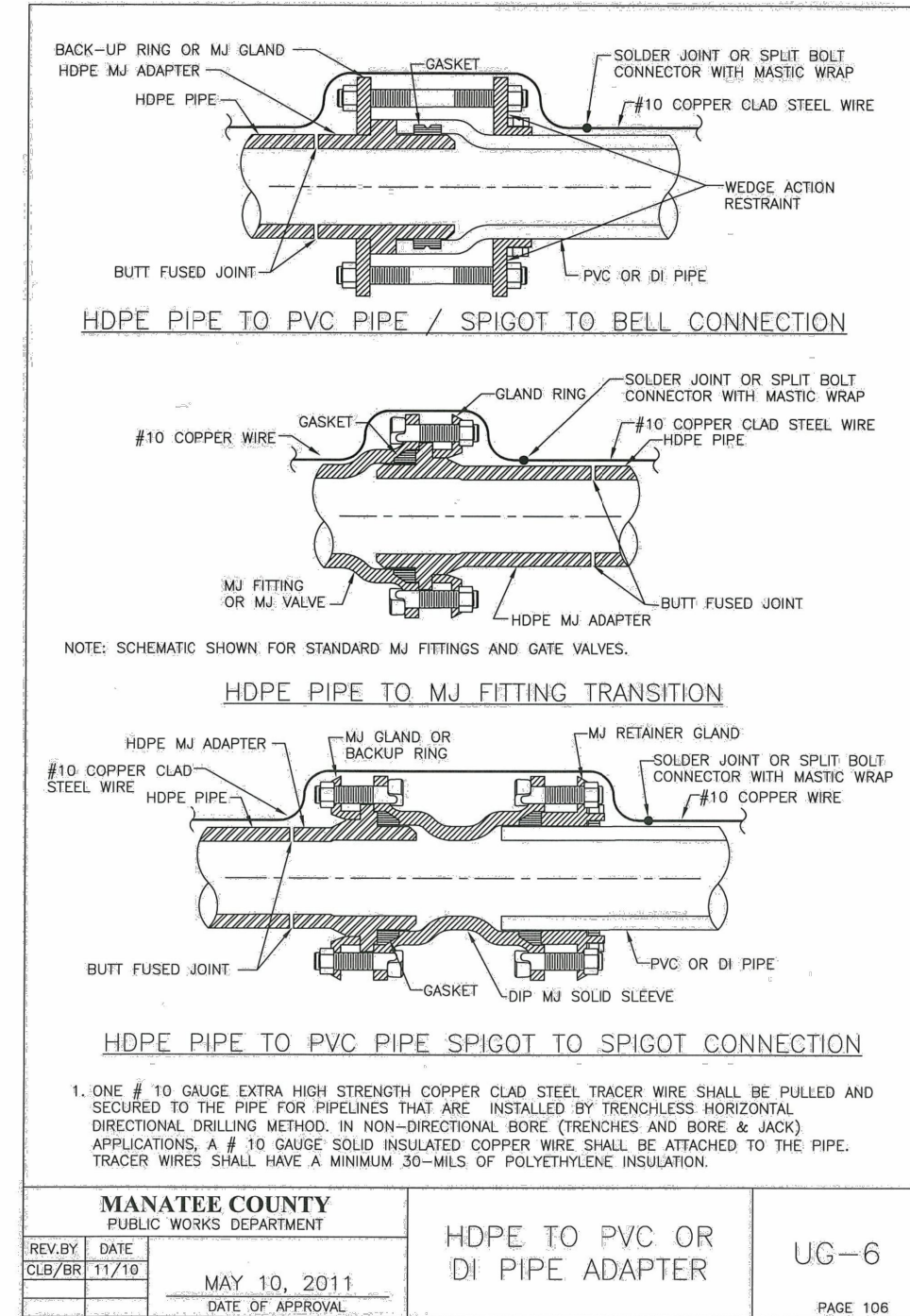
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

STANDARD DETAILS



- NOTES**
1. ALL POLYETHYLENE PIPING SHALL MEET MANATEE COUNTY STANDARDS AND SPECIFICATIONS. DR-11, CLASS 160 OR GREATER, PRESSURE CLASS SHALL BE USED FOR POTABLE, RECLAIMED WATER OR SANITARY FORCE MAINS. DR-9 MAY BE REQUIRED BASED ON THE ENGINEER'S CALCULATIONS. SEE NOTE #2.
 2. THE ENGINEER SHALL SUBMIT CALCULATIONS FOR THE MAXIMUM PULLING LENGTH, TOTAL PULL FORCE AND THE ALLOWABLE TENSILE LOAD, IN ACCORDANCE WITH AWWA M55 & ASTM F1804. DESIGN SHALL ALSO BE IN ACCORDANCE WITH ASTM F1962.
 3. THE PIPE STRING SHALL BE ATTACHED TO THE BACKREAMER THROUGH A "WEAK-LINK" DEVICE TO ENSURE THAT THE PULLING FORCE DOES NOT EXCEED THE PIPE'S ALLOWABLE TENSILE LOAD RATING.
 4. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN TRENCHLESS/NON-DIRECTIONAL BORE APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.
 5. COLOR CODED BLUE FOR POTABLE WATER MAINS.
 6. COLOR CODED PURPLE (PANTONE 522 C) FOR RECLAIMED WATER MAINS.
 7. COLOR CODED GREEN FOR SANITARY FORCE MAINS.
 8. PIPE DEPTHS MAY NEED TO BE DEEPER TO AVOID FRACKOUTS. PIPEALIGNMENT SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
 9. FDOT CRITERIA SHALL BE MET FOR PIPES UNDER STATE ROADS.

PIPE DIAMETER "D" IN INCHES	MIN. RADIUS "r" FOR DR-11	MIN. RADIUS "r" FOR DR-9
2	4	5.5
3	6	8.3
4	8	11.0
6	12	16.5
8	16	22.0
10	20	27.5
12	24	33.0
16	32	44.0
18	36	49.5
20	40	55.0

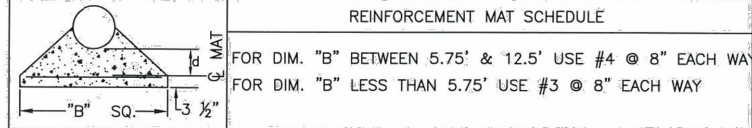


1. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN NON-DIRECTIONAL BORE (TRENCHES AND BORE & JACK) APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.

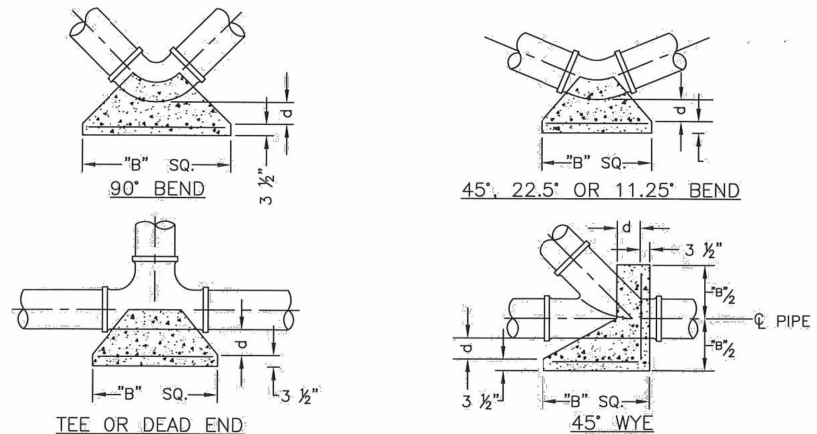
No.	REVISIONS	DATE	BY	SCALE: AS NOTED	DESIGNED BY: R.A.	DRAWN BY: T.S.	CHECKED BY: T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE: FEBRUARY 2019	PROJECT NO.: 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809	STANDARD DETAILS	SHEET NO.: U-75
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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 3/4	4.1	9 3/4	2.9	7	2.1	5	4.7	11 1/4	3.9	9 1/4
18	6.2	15	4.6	11	3.3	8	2.3	5 1/2	5.2	12 1/2	4.4	10 1/2
20	6.9	16 1/2	5.0	12	3.6	8 3/4	2.6	6 1/4	5.8	14	4.9	11 3/4
24	8.2	19 3/4	6.0	14 1/2	4.3	10 1/4	3.1	7 1/2	6.9	16 1/2	5.8	14
30	10.1	24 1/4	7.5	18	5.3	12 3/4	3.8	9	8.5	20 1/2	7.2	17 1/4
36	12.1	29	8.9	21 1/4	6.4	15 1/4	4.5	10 3/4	10.2	24 1/2	8.6	20 3/4



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



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CONCRETE THRUST BLOCKS	UG-7
REV. BY CLB/BR	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL		PAGE 107	

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 CLB/BR	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL		PAGE 108	

No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	SHEET NO. U-76
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**REQUIRED LENGTH OF RESTRAINED JOINT PIPE
FOR DIP (POLY-WRAPPED)**

MAIN PIPE SIZE	HORIZ. BENDS			TEES										REDUCERS				PLUGS & VALVES		
	90°	45°	22.5°	SIZE LENGTH										SIZE LENGTH						
				x36	x30	x24	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16			
36	142	59	28	393	318	232	165	84	1	1	1	1	1	1	1	137	247	309	359	453
30	124	51	25	333	252	189	115	23	1	1	1	1	1	1	1	137	213	276		391
24	106	44	21	270	211	143	61	10	1	1	1	1	1	1	1	98	178	241		327
20	92	38	18	225	161	85	39	1	1	1	1	1	1	1	1	98	176	227		280
16	77	32	15	177	107	65	19	1	1	1	1	1	1	1	1	98	163	169		231
12	61	25	12	127	89	50	1	1	1	1	1	1	1	1	1	88	96	131		181
10	52	22	10	101	64	11	1	1	1	1	1	1	1	1	1	88	94	125		153
8	44	18	9	78	30	1	1	1	1	1	1	1	1	1	1	54	42	92		128
6	34	14	7	46	1	1	1	1	1	1	1	1	1	1	1	50				98
4	24	10	5	19																69

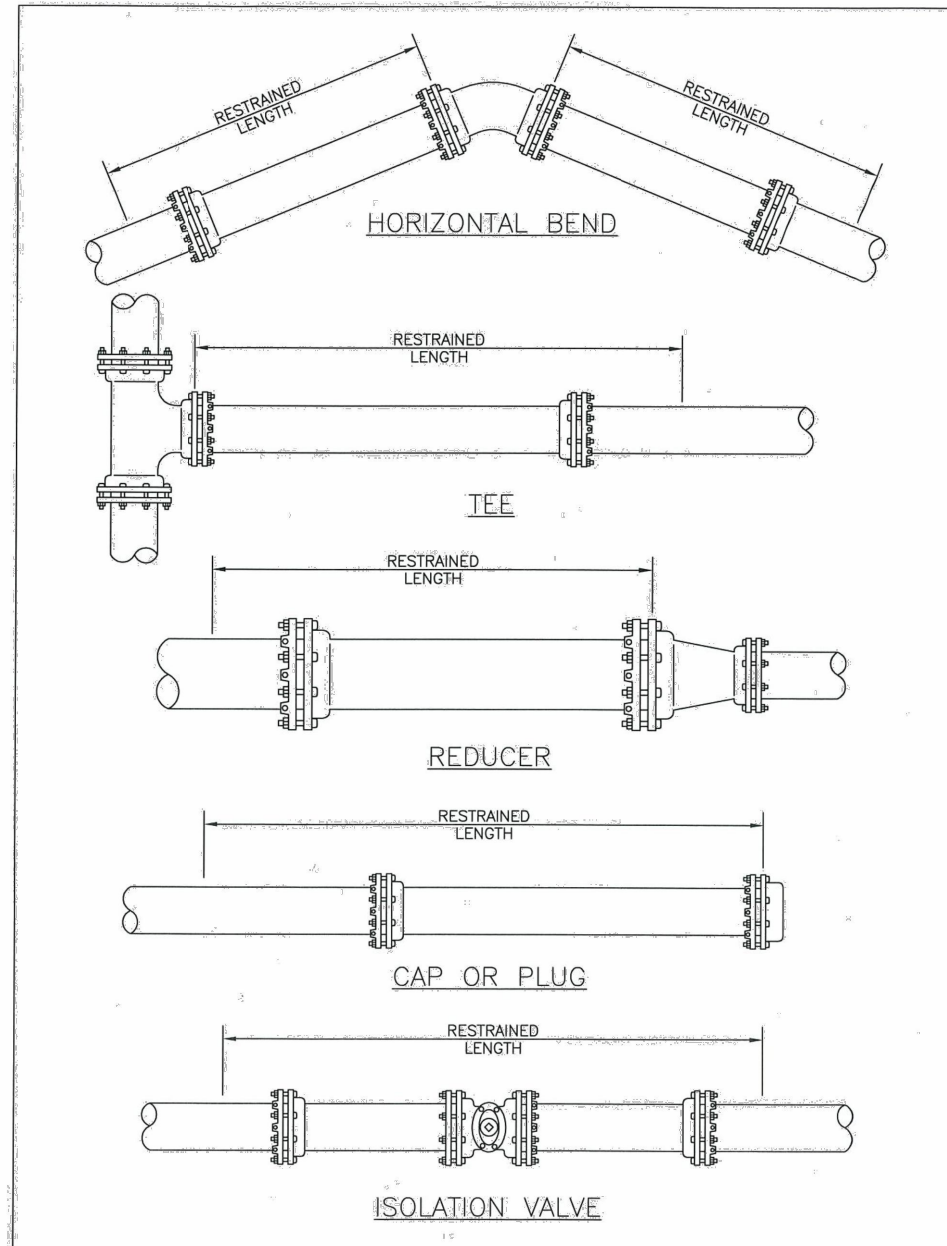
**REQUIRED LENGTH OF RESTRAINED JOINT PIPE
FOR DIP (NON-WRAPPED)**

MAIN PIPE SIZE	HORIZ. BENDS			TEES										REDUCERS				PLUGS & VALVES		
	90°	45°	22.5°	SIZE LENGTH										SIZE LENGTH						
				x36	x30	x24	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16			
36	100	42	20	163	132	96	68	35	1	1	1	1	1	1	1	57	103	128	149	188
30	88	37	18	138	104	78	48	10	1	1	1	1	1	1	1	57	88	114		162
24	75	31	15	112	87	59	25	4	1	1	1	1	1	1	1	40	74	100		135
20	65	27	13	93	67	35	16	1	1	1	1	1	1	1	1	41	73	94		116
16	54	22	11	73	44	27	8	1	1	1	1	1	1	1	1	41	68	70		96
12	43	18	8	53	37	21	1	1	1	1	1	1	1	1	1	37	40	54		75
10	37	15	7	42	26	5	1	1	1	1	1	1	1	1	1	21	39	52		63
8	30	13	6	32	12	1	1	1	1	1	1	1	1	1	1	22	38			53
6	24	10	5	19	1	1	1	1	1	1	1	1	1	1	1	21				41
4	17	7	3	8																29

NOTE:

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

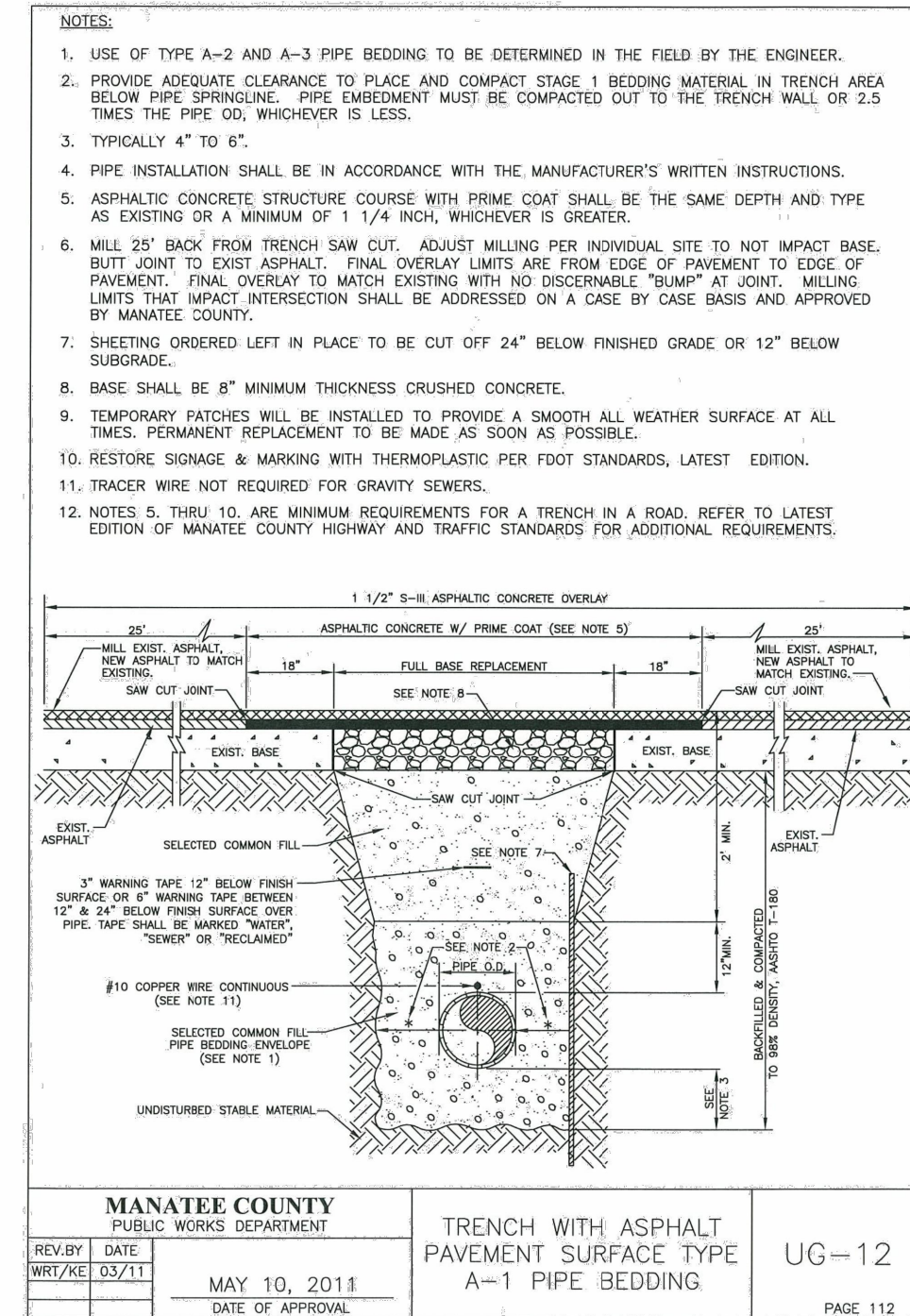
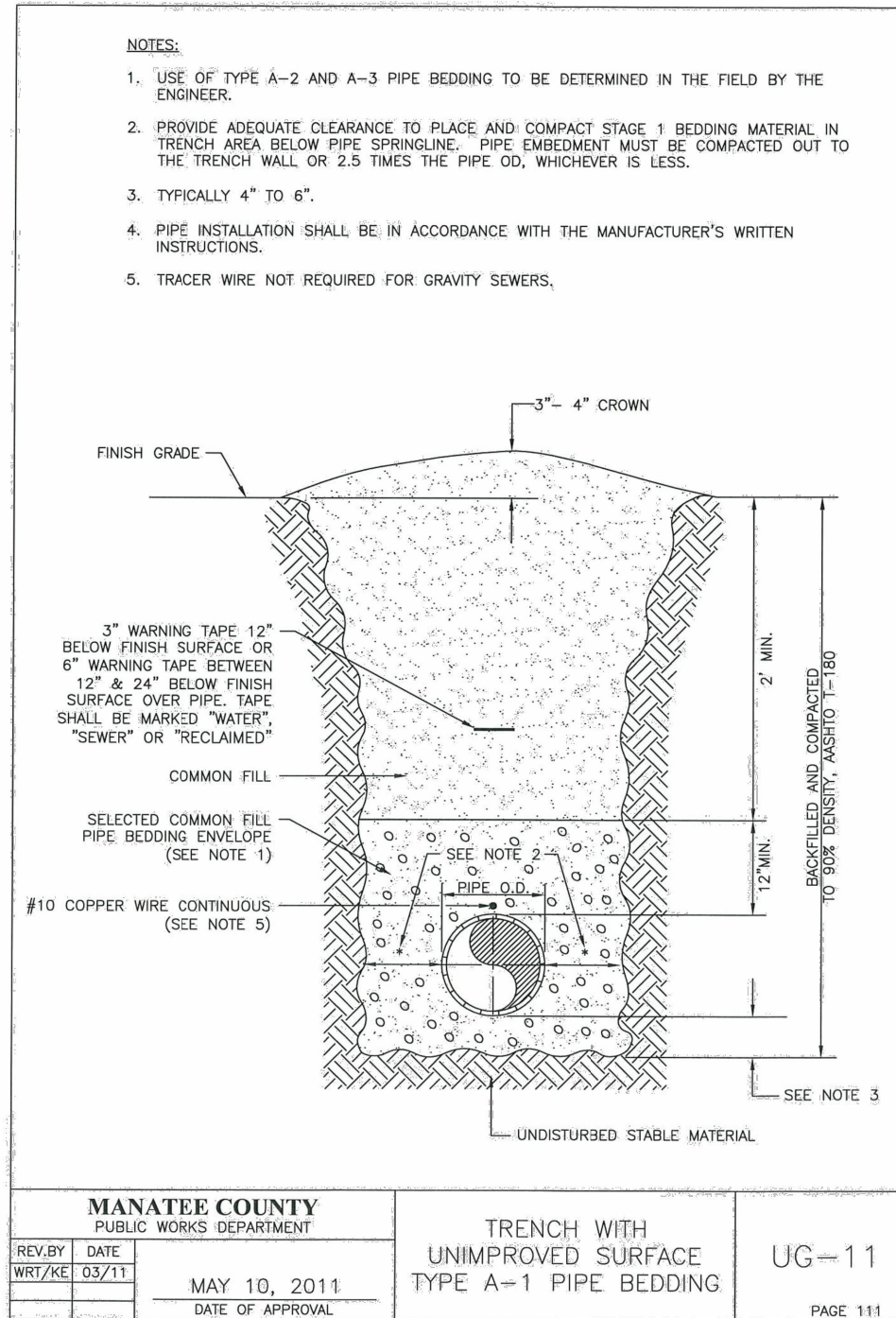
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR DIP	UG-9
REV. BY CLB/BR	DATE 11/10		
MAY 10, 2011			
DATE OF APPROVAL			PAGE 109




MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PIPE	UG-10
REV. BY CLB/BR	DATE 11/10		
MAY 10, 2011			
DATE OF APPROVAL			PAGE 110

SCALE AS NOTED				DESIGNED BY R.A.		DRAWN BY T.S.		CHECKED BY T.C.		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE FEBRUARY 2019		PROJECT NO. 6086960		DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809		SHEET NO. U-77	
No.				REVISIONS				DATE		BY		Sonnenberg, Terence		2/22/2019 11:37:38 AM		S:\Projects\RDWY\ProjFdot\ProjFdot\VB\60460213000\utils\cadd\UTDTU02.dwg			

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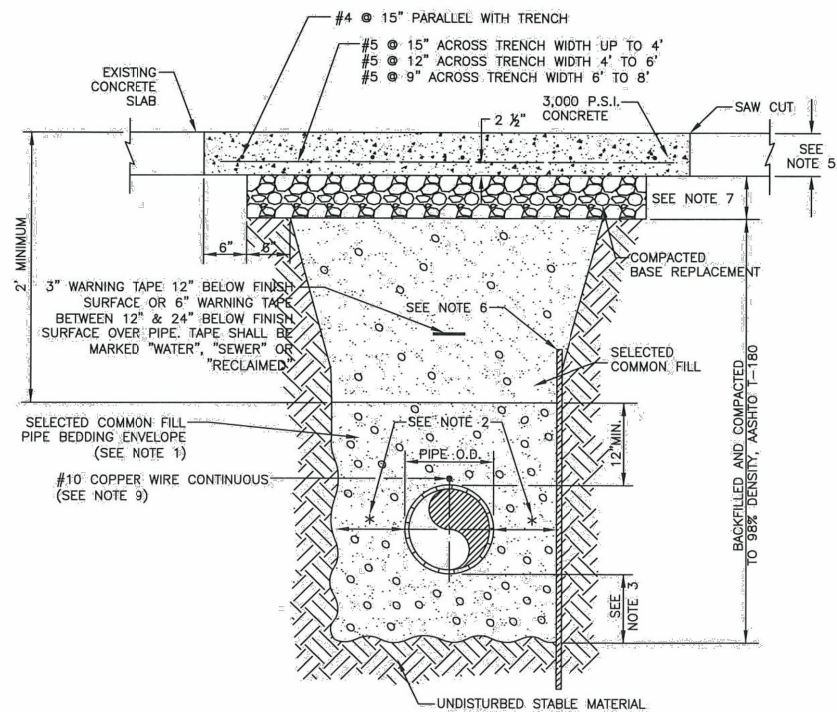


No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	STANDARD DETAILS	SHEET NO. U-78
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NOTES:

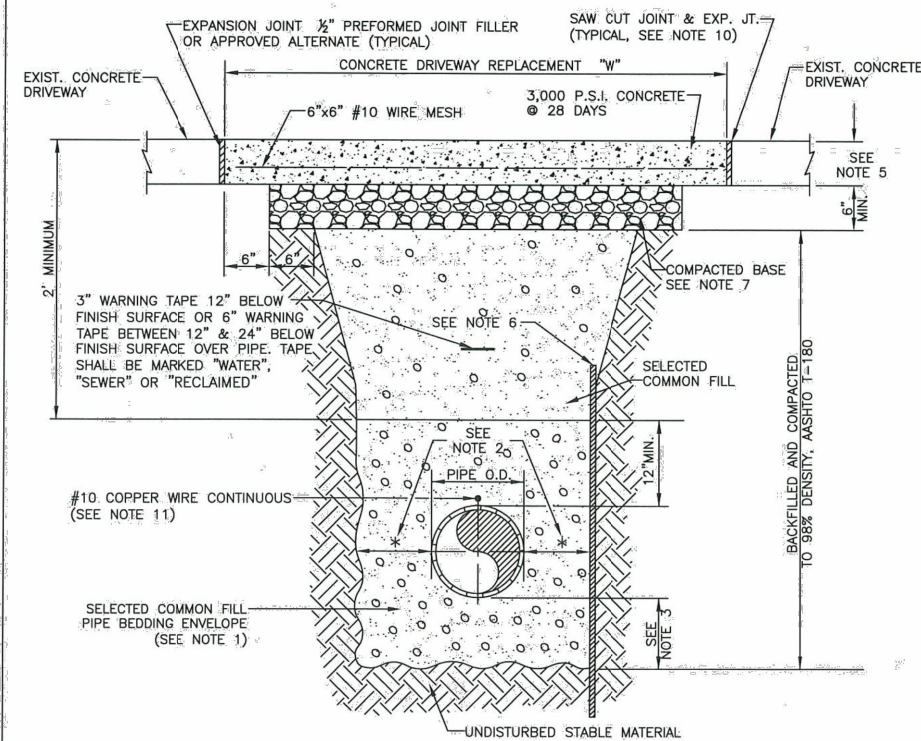
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
8. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
9. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
10. NOTES 5. THRU 8. ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.




MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-13
REV. BY CLB/BR	DATE 11/10	MAY 10, 2011 DATE OF APPROVAL	PAGE 113

NOTES:

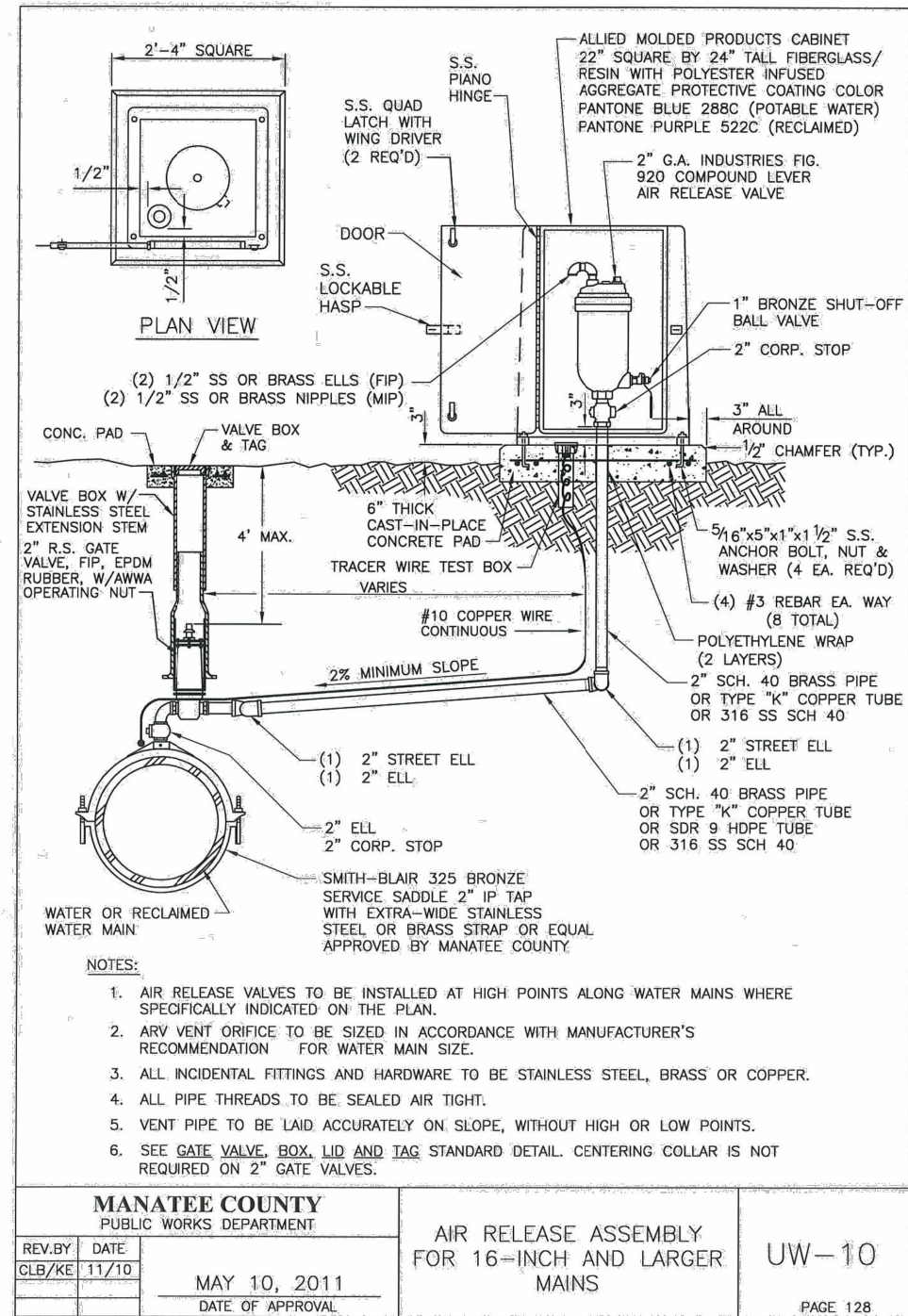
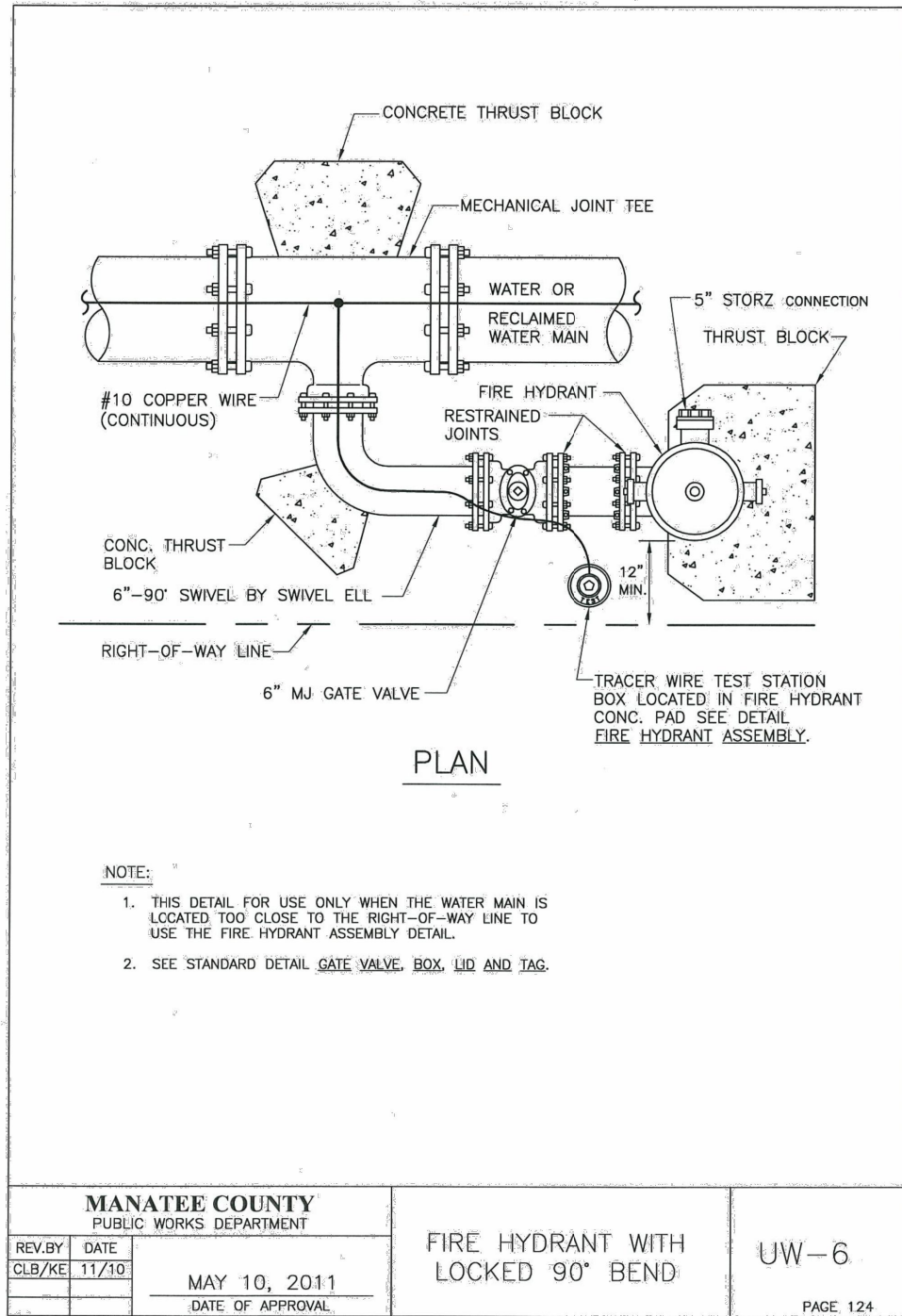
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.
8. DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
9. IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/8" WIDE AND 1 1/2" DEEP) AFTER THE CONCRETE HAS SET.
10. IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.




MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING	UG-14
REV. BY CLB/BR	DATE 11/10	MAY 10, 2011 DATE OF APPROVAL	PAGE 114

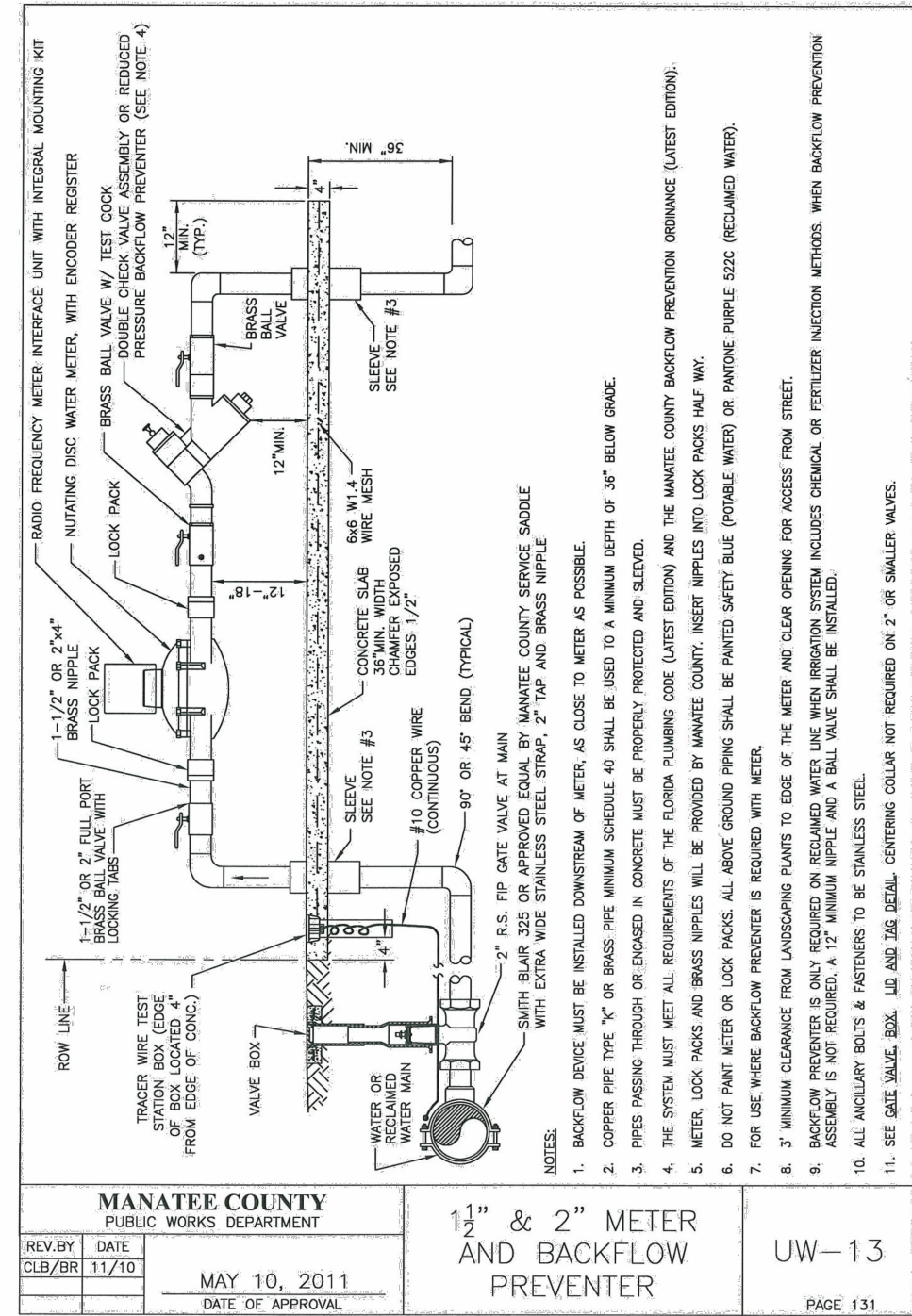
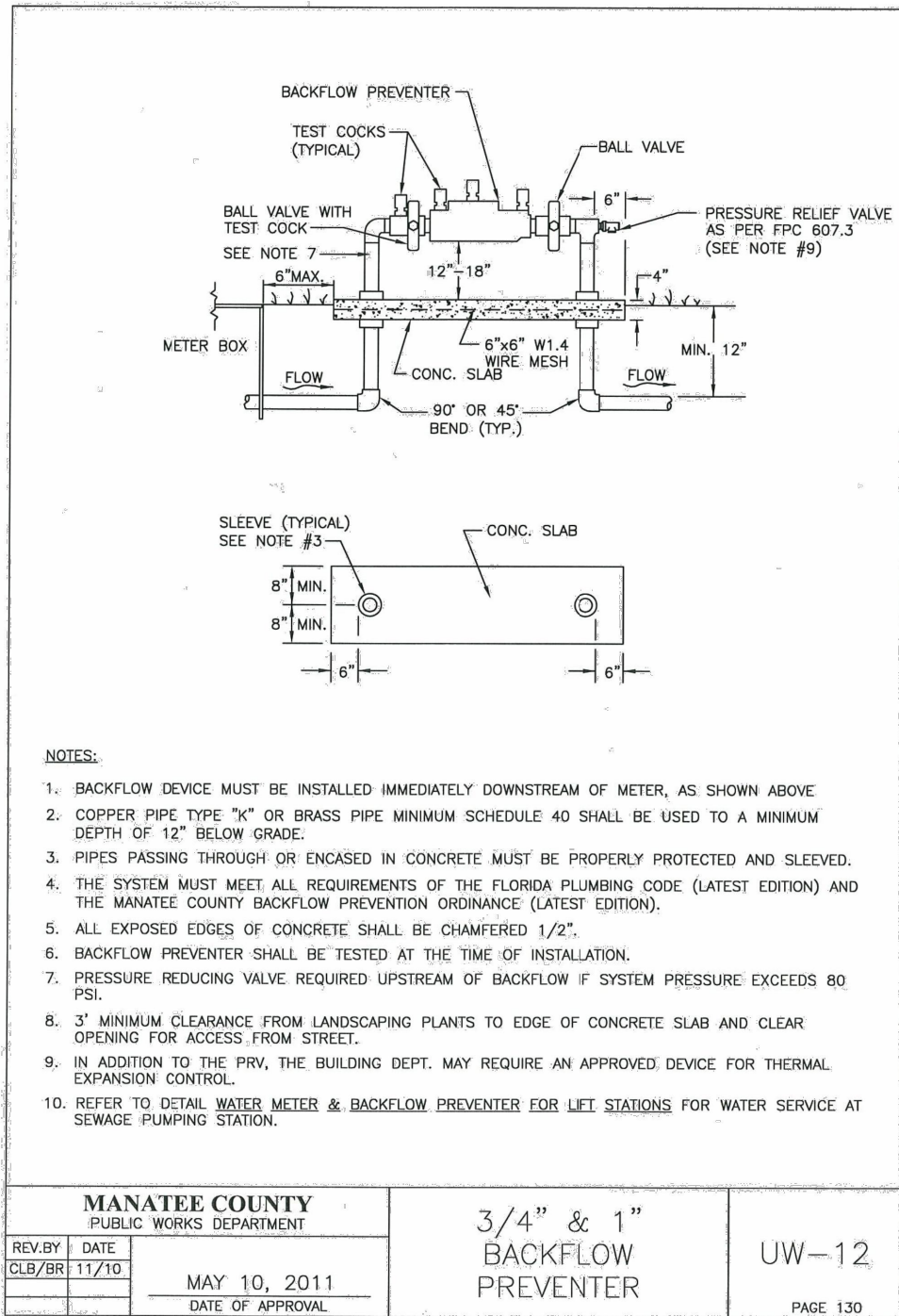
No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	STANDARD DETAILS	SHEET NO. U-79
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No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence 2/22/2019 11:37:48 AM	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	STANDARD DETAILS	SHEET NO. U-82
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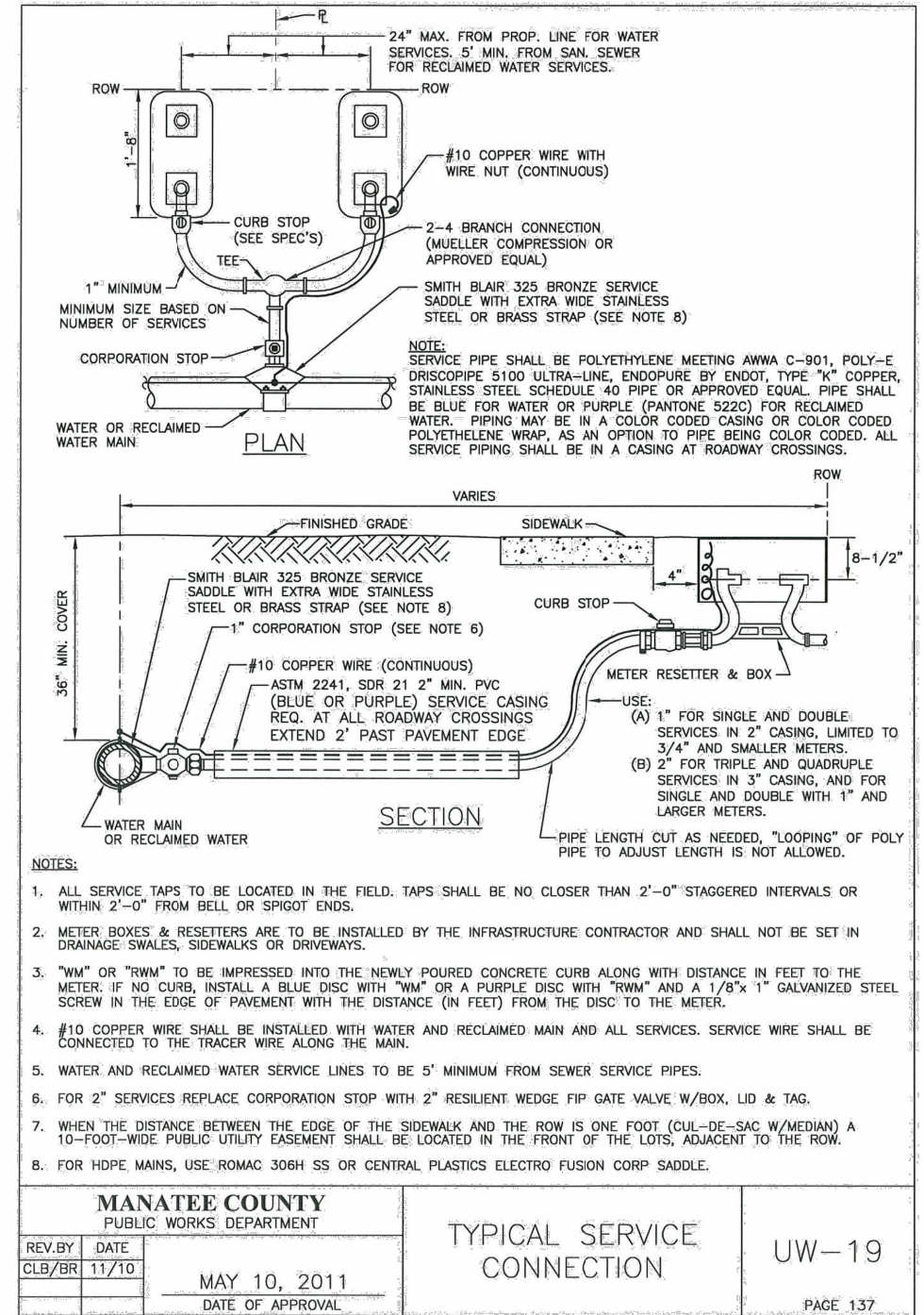
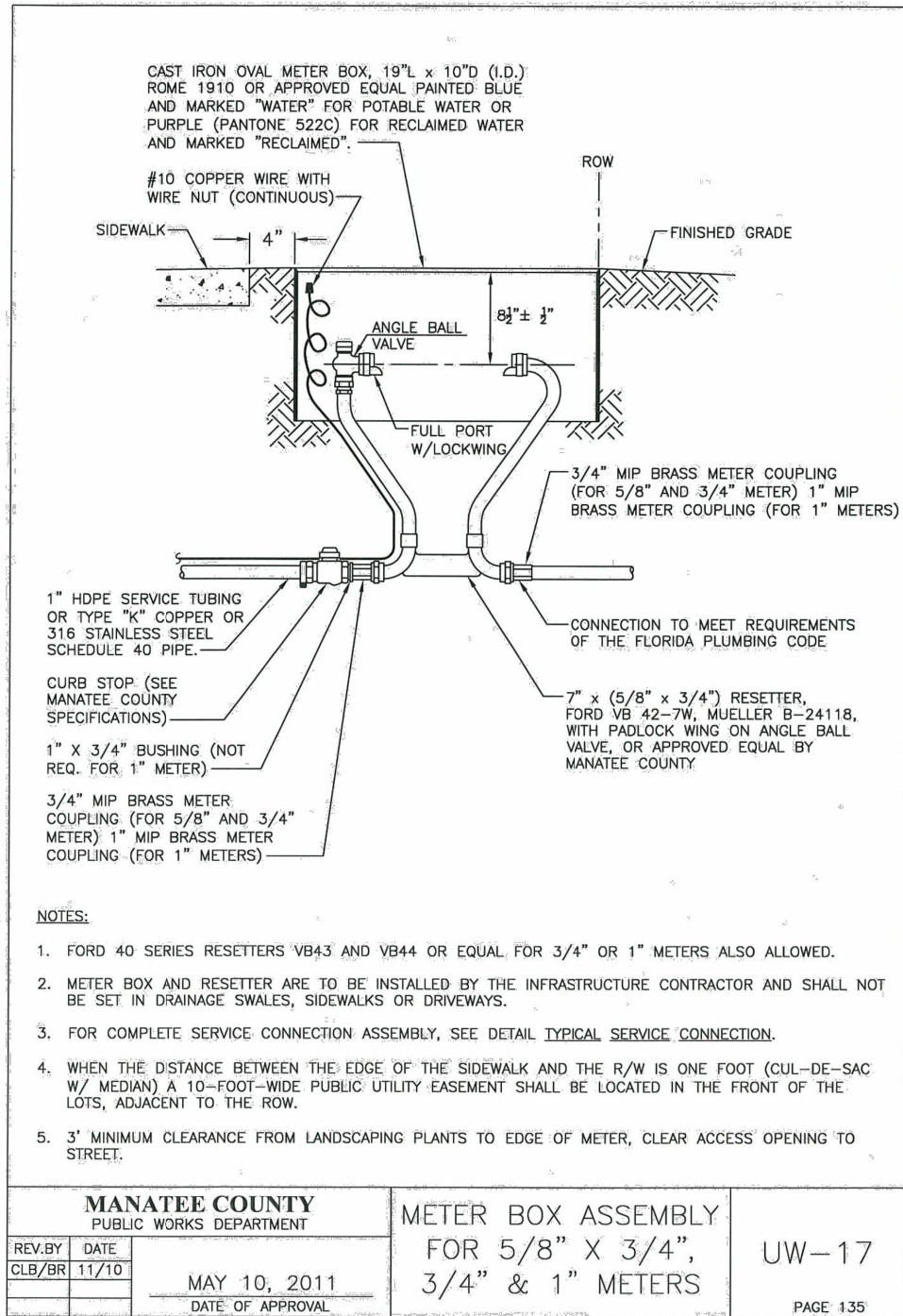


No.	REVISIONS	DATE	BY	SCALE	DESIGNED BY	DATE	PROJECT NO.	DESIGN ENGINEER	SHEET NO.
				AS NOTED	TIMOTHY M. CURRAN, P.E.	FEBRUARY 2019	6086960	TIMOTHY M. CURRAN, P.E.	U-83
					P.E. NO. 34809			FL. LICENSE NO.	
					AECOM TECHNICAL SERVICES, INC.			34809	
					7650 WEST COURTNEY CAMPBELL CAUSEWAY				
					TAMPA, FL 33607-1462				
					(813) 286-1711				
					CERTIFICATE OF AUTHORIZATION: 8115				



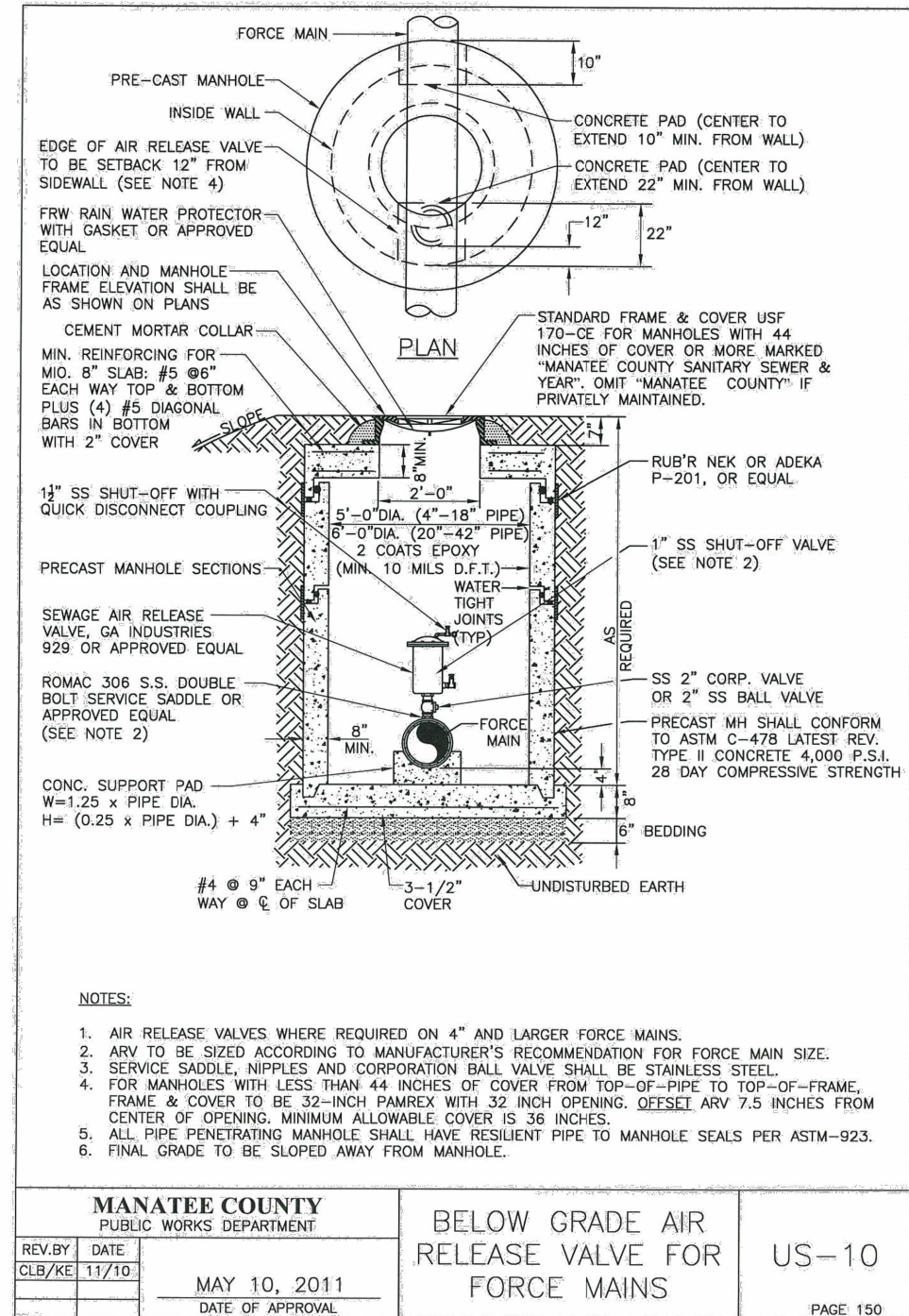
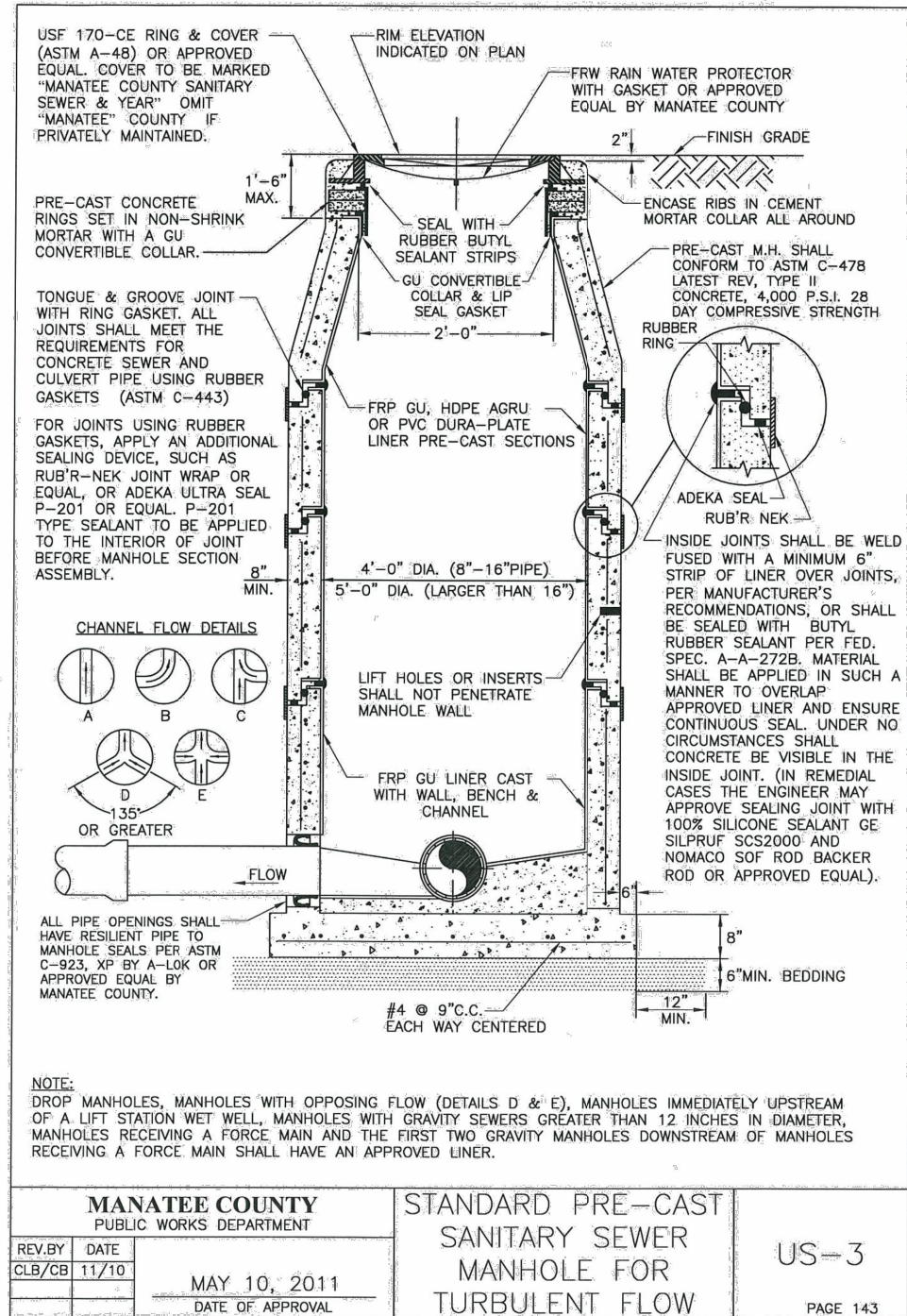
STANDARD DETAILS

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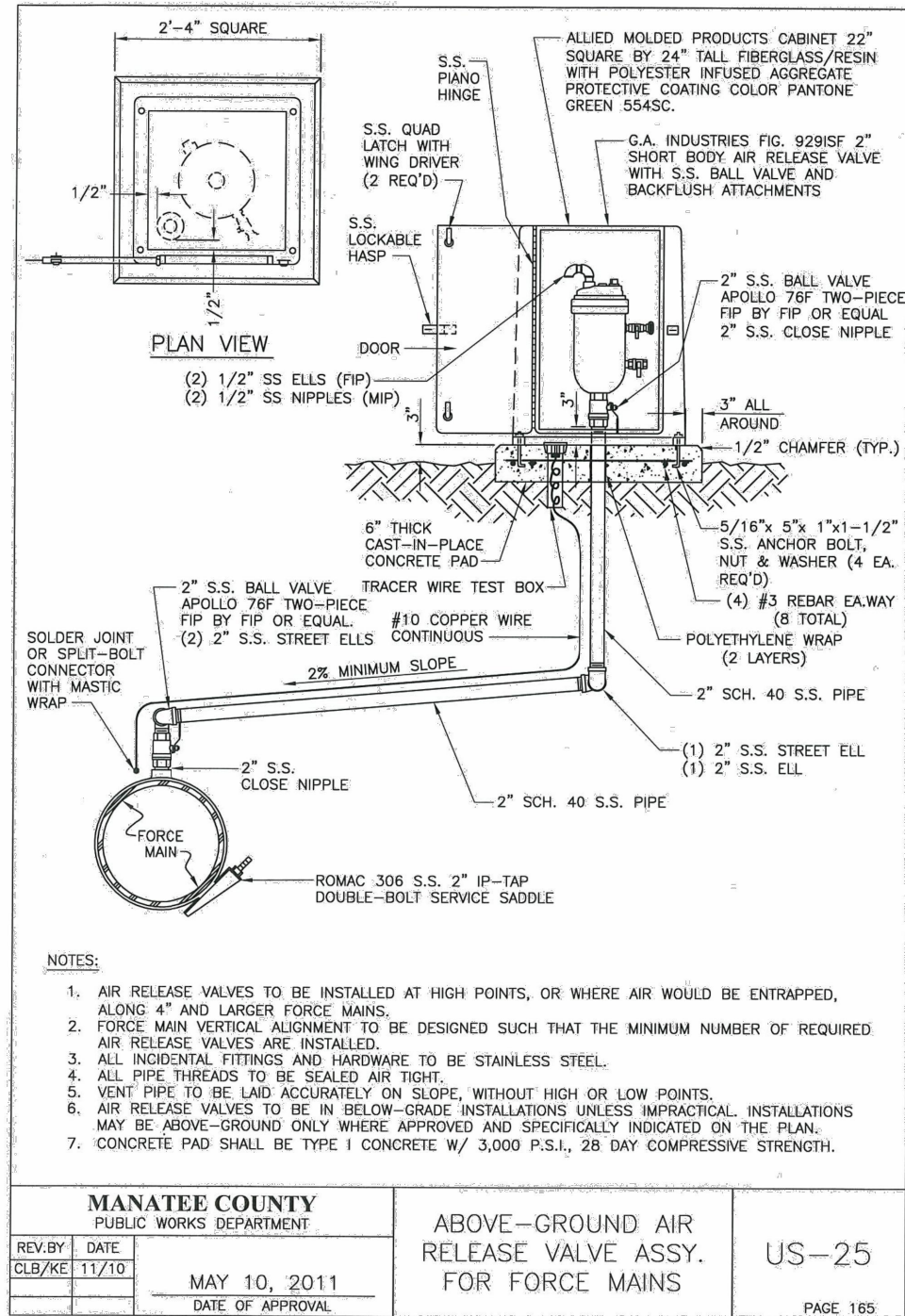
No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	DATE FEBRUARY 2019	PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	STANDARD DETAILS	SHEET NO. U-84
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No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY R.A.	DRAWN BY T.S.	CHECKED BY T.C.	TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	DATE FEBRUARY 2019	PROJECT NO. 6086960	DESIGN ENGINEER TIMOTHY M. CURRAN, P.E. FL. LICENSE NO. 34809	SHEET NO. U-86
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- NOTES:
1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, OR WHERE AIR WOULD BE ENTRAPPED, ALONG 4" AND LARGER FORCE MAINS.
 2. FORCE MAIN VERTICAL ALIGNMENT TO BE DESIGNED SUCH THAT THE MINIMUM NUMBER OF REQUIRED AIR RELEASE VALVES ARE INSTALLED.
 3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL.
 4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
 5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
 6. AIR RELEASE VALVES TO BE IN BELOW-GRADE INSTALLATIONS UNLESS IMPRACTICAL. INSTALLATIONS MAY BE ABOVE-GROUND ONLY WHERE APPROVED AND SPECIFICALLY INDICATED ON THE PLAN.
 7. CONCRETE PAD SHALL BE TYPE I CONCRETE W/ 3,000 P.S.I., 28 DAY COMPRESSIVE STRENGTH.

No.	REVISIONS	DATE	BY	SCALE	DESIGNED BY	DATE	DESIGN ENGINEER	SHEET NO.
				AS NOTED	TIMOTHY M. CURRAN, P.E.	FEBRUARY 2019	TIMOTHY M. CURRAN, P.E.	U-87
				R.A.	AECOM TECHNICAL SERVICES, INC.	PROJECT NO.	FL. LICENSE NO.	
				T.S.	7650 WEST COURTNEY CAMPBELL CAUSEWAY	6086960	34809	
				T.C.	TAMPA, FL 33607-1462			
					(813) 286-1711			
					CERTIFICATE OF AUTHORIZATION: 8115			



STANDARD DETAILS

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NOTES:

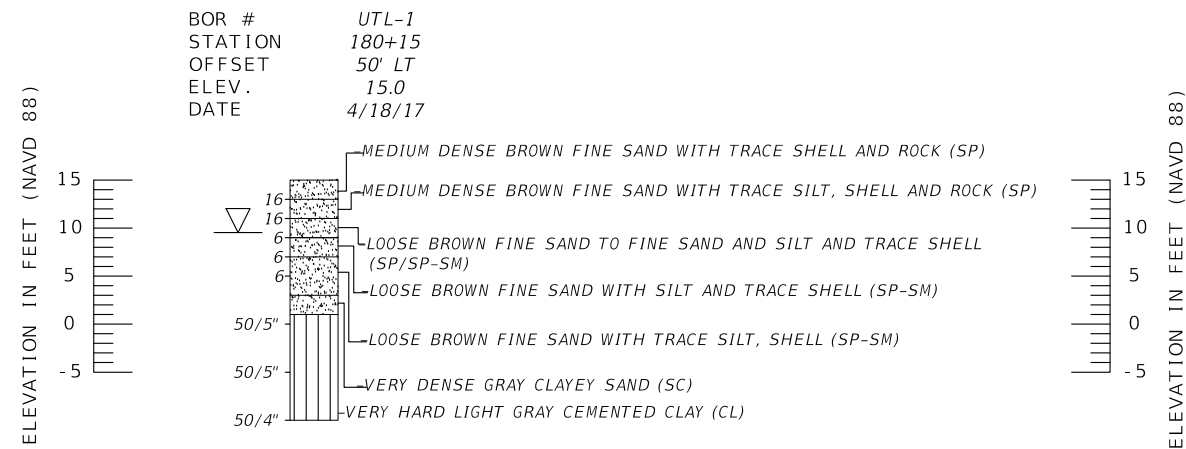
- LABORATORY TEST RESULTS HAVE BEEN ROUNDED TO THE NEAREST WHOLE NUMBER.
- THE FOLLOWING APPLY TO ALL BORINGS:

DRILLER: UNIVERSAL
 HAMMER: SAFETY
 RIG: CME 45

LEGEND

	SAND		SANDY SILT
	SILT		SANDY CLAY
	CLAY		SILTY SAND
	SAND WITH SOME SILT		SILTY CLAY
	CLAY WITH SOME SAND		HARD LIMESTONE
	CLAYEY SAND		CEMENTED SILT
	SAND WITH SOME CLAY		

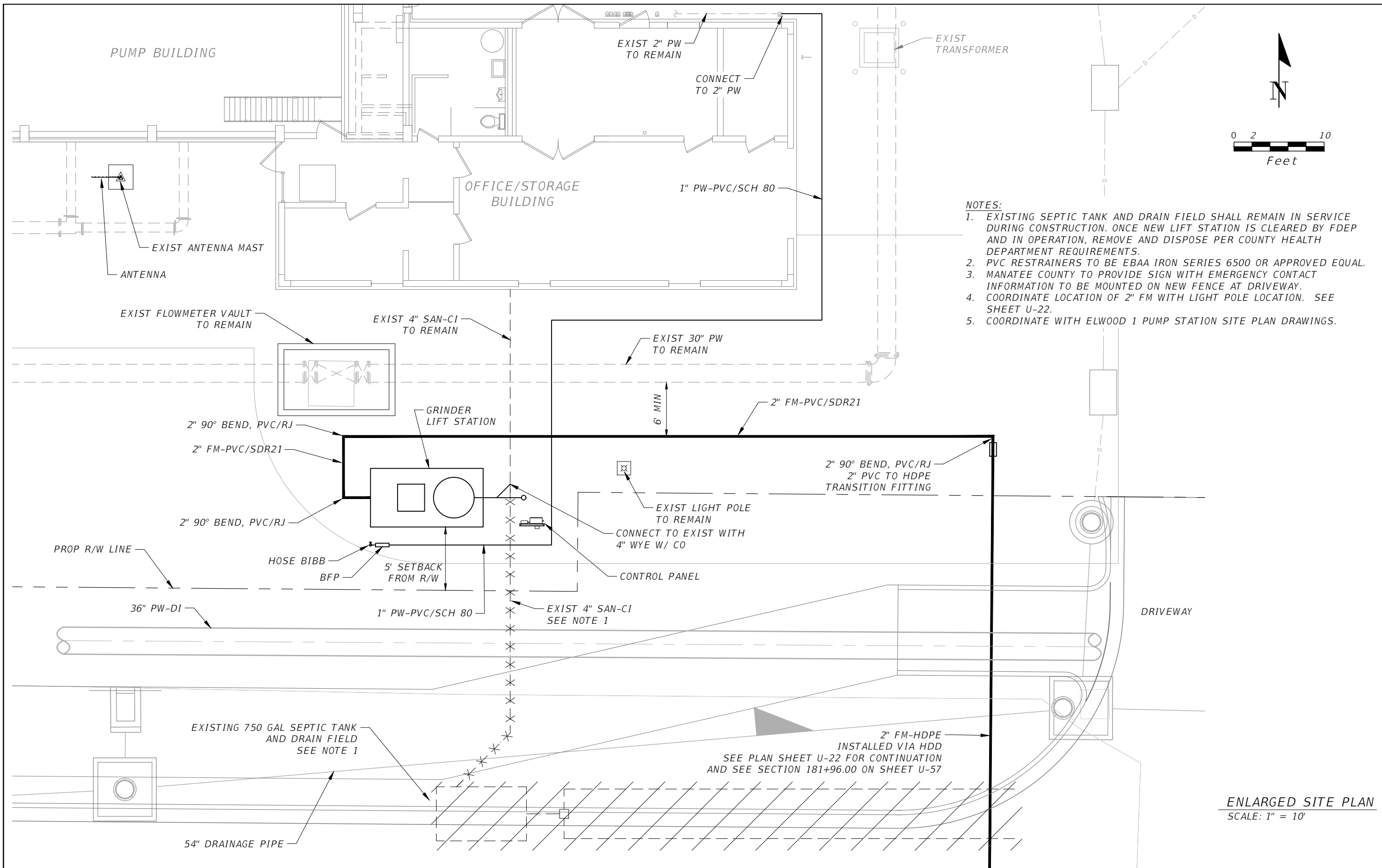
GRANULAR MATERIALS-- RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2 to 4
FIRM	4 to 8
STIFF	8 to 15
VERY STIFF	16 to 30
HARD	GREATER THAN 30



- SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING.
- N NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
- 50/4 NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
- WH FELL UNDER WEIGHT OF ROD AND HAMMER
- WR FELL UNDER WEIGHT OF ROD
- 200 PERCENT PASSING #200 SIEVE
- LL LIQUID LIMIT (%)
- PI PLASTICITY INDEX (%)
- WC WATER CONTENT (%)
- NGVD 88 NATIONAL GEODETIC VERTICAL DATUM OF 1988
- APPROXIMATE SPT BORING LOCATION
- GROUNDWATER TABLE
- NR NO RECOVERY
- CASING
- B/L BASELINE


SCALE	AS NOTED	DESIGNED BY	K.G.	DATE	FEBRUARY 2018	DESIGN ENGINEER	KEITH QUOC GIANG, P.E.	SHEET NO.	UB-01
DRAWN BY	I.Z.	CHECKED BY	K.G.	PROJECT NO.	6086960	FL. LICENSE NO.	49510	UTILITY BORING LOGS	UB-01
No.	REVISIONS	DATE	BY	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		2/22/2019 11:38:08 AM			

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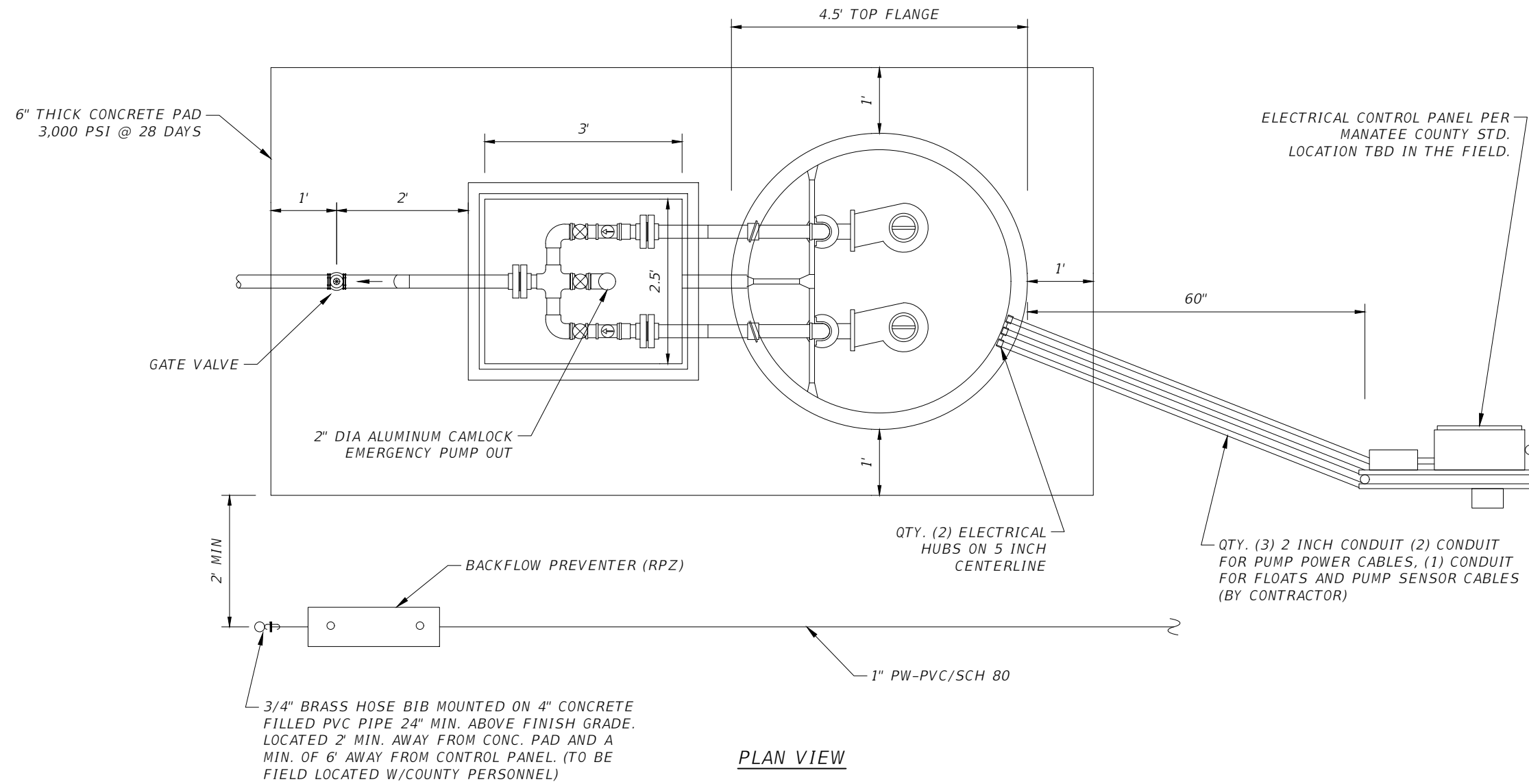


- NOTES:**
- EXISTING SEPTIC TANK AND DRAIN FIELD SHALL REMAIN IN SERVICE DURING CONSTRUCTION. ONCE NEW LIFT STATION IS CLEARED BY FDEP AND IN OPERATION, REMOVE AND DISPOSE PER COUNTY HEALTH DEPARTMENT REQUIREMENTS.
 - PVC RESTRAINERS TO BE EBAA IRON SERIES 6500 OR APPROVED EQUAL.
 - MANATEE COUNTY TO PROVIDE SIGN WITH EMERGENCY CONTACT INFORMATION TO BE MOUNTED ON NEW FENCE AT DRIVEWAY.
 - COORDINATE LOCATION OF 2" FM WITH LIGHT POLE LOCATION. SEE SHEET U-22.
 - COORDINATE WITH ELWOOD 1 PUMP STATION SITE PLAN DRAWINGS.

ENLARGED SITE PLAN
SCALE: 1" = 10'

SCALE: AS NOTED DESIGNED BY: R.A. DRAWN BY: T.S. CHECKED BY: T.C.				TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2019 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence 2/22/2019 11:41:16 AM		DESIGN ENGINEER: TIMOTHY M. CURRAN, P.E. FL. LICENSE NO.: 34809		GRINDER LIFT STATION AT ELWOOD 1 PS ENLARGED SITE PLAN		SHEET NO.: ULS-1	
No.	REVISIONS	DATE	BY												

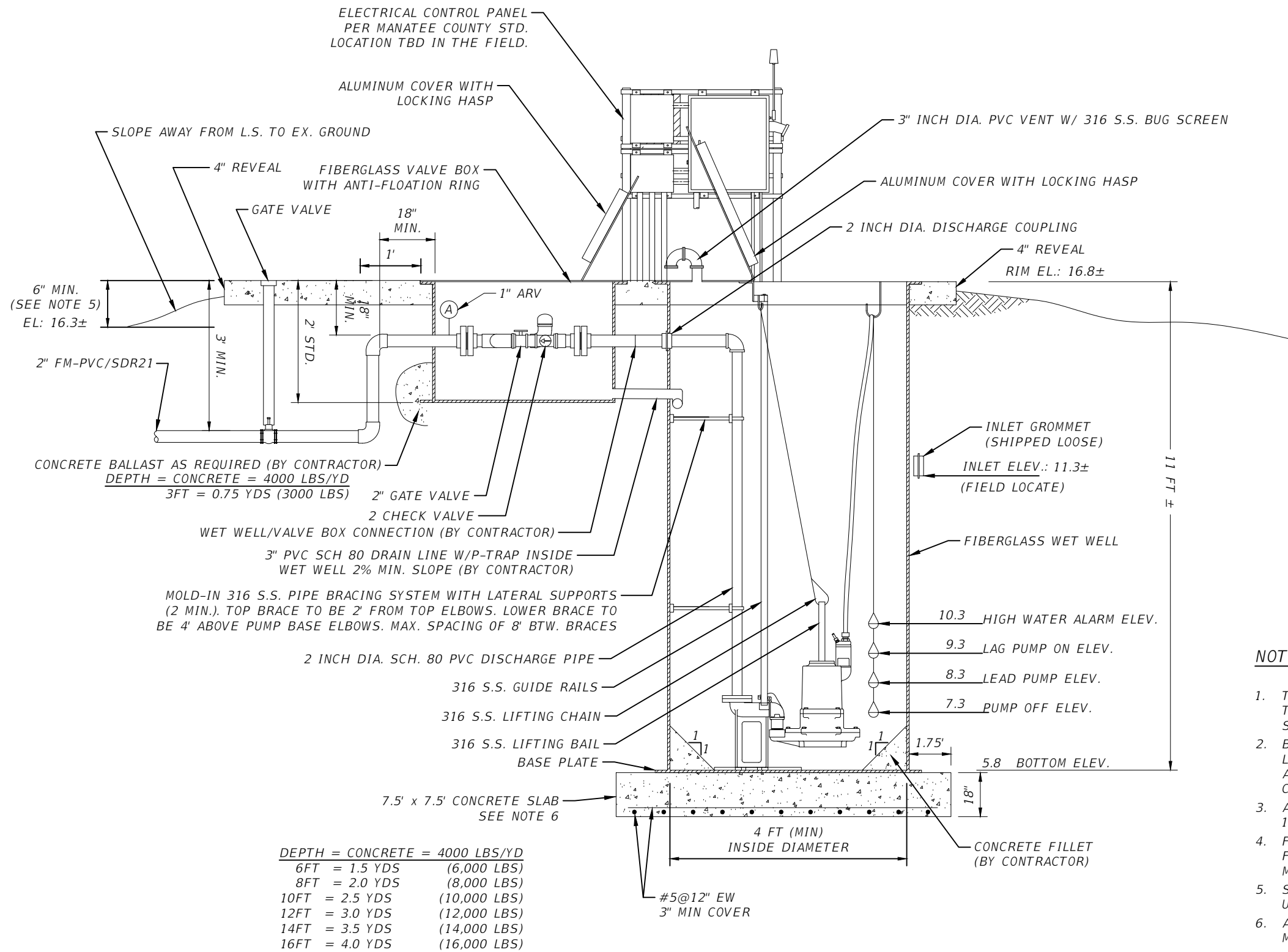
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



SCALE		AS NOTED		DESIGNED BY		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809		DATE		FEBRUARY 2019		DESIGN ENGINEER		TIMOTHY M. CURRAN, P.E.		SHEET NO.			
DRAWN BY		R.A.		CHECKED BY		T.S.		PROJECT NO.		6086960		FL. LICENSE NO.		34809		ULS-2			
No.		REVISIONS		DATE		BY		T.C.		CERTIFICATE OF AUTHORIZATION: 8115		PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208		Sonnenberg, Terence		2/22/2019 11:41:23 AM		S:\Projects\RDWY\ProjFdot\ProjFdot\WB\60460213000\utils\cadd\LIFT STATION.dwg	

**GRINDER LIFT STATION
AT ELWOOD 1 PS
PLAN VIEW**

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SECTION VIEW

NOTES:

1. THE GRINDER LIFT STATION SHALL MEET THE CRITERIA OF THE LATEST MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS FOR PUMP (LIFT) STATION, SECTION 1.13.
2. BFP & HOSE BIB SHALL BE PER M.C. UTILITY STANDARDS & LOCATED AS SUCH TO PROVIDE UNIMPEDED VEHICULAR ACCESS TO THE LIFT STATION FOR PUMP REMOVAL. COORDINATE LOCATION WITH COUNTY PERSONNEL.
3. ALL ELECTRICAL PANELS SHALL BE ABOVE THE REQUIRED 100 YEAR FLOOD PROTECTION ELEVATION (FPE).
4. FENCING AROUND THE GRINDER LIFT STATION SHALL BE FIELD LOCATED AND INSTALLATION COORDINATED WITH MANATEE COUNTY PERSONNEL.
5. SEE "ENTRANCE HATCH ELEVATION" CRITERIA IN THE M.C. UTILITY STANDARDS, 1.13.6
6. ANCHOR FIBERGLASS WET WELL TO CONCRETE SLAB PER MANUFACTURER'S RECOMMENDATIONS.

DEPTH = CONCRETE = 4000 LBS/YD	
6FT = 1.5 YDS	(6,000 LBS)
8FT = 2.0 YDS	(8,000 LBS)
10FT = 2.5 YDS	(10,000 LBS)
12FT = 3.0 YDS	(12,000 LBS)
14FT = 3.5 YDS	(14,000 LBS)
16FT = 4.0 YDS	(16,000 LBS)

SCALE AS NOTED		DESIGNED BY R.A.		DATE FEBRUARY 2019		DESIGN ENGINEER TIMOTHY M. CURRAN, P.E.		GRINDER LIFT STATION AT ELWOOD 1 PS SECTION VIEW		SHEET NO. ULS-3	
DRAWN BY T.S.		CHECKED BY T.C.		PROJECT NO. 6086960		FL. LICENSE NO. 34809					
TIMOTHY M. CURRAN, P.E. P.E. NO. 34809 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		2/22/2019 11:41:31 AM		S:\Projects\RDWY\ProjFdot\ProjFdot\WB\60460213000\utils\cadd\LIFT STATION.dwg					

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

GENERAL LIFT STATION NOTES:

- ALL ACCESS COVERS SHALL BE ALUMINUM, WITH 316 STAINLESS STEEL HARDWARE AND RATED FOR 300 P.S.F. LOADING. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE 2 COATS BITUMASTIC EPOXY, TOTAL 16 MILS DFT. ALL ACCESS COVERS SHALL BE EQUIPPED WITH A LOCKING STAPLE OR BAR FOR USE WITH A PADLOCK. PADLOCKS FOR WETWELL, FENCE GATE AND CONTROL PANELS OF PUBLICLY OWNED & MAINTAINED LIFT STATIONS SHALL BE FURNISHED BY THE MANATEE COUNTY UTILITIES DEPARTMENT, UPON ACCEPTANCE.
- INSTALL WET WELL VENT ON THE HINGED SIDE OF THE WET WELL HATCH COVER, BETWEEN DISCHARGE PIPING AND MATCH HEIGHT.
- ALL METAL APPURTENANCES INCLUDING BOLTS, NUTS AND WASHERS SHALL BE 316 STAINLESS STEEL. ALL STAINLESS STEEL BOLTS SHALL BE TREATED WITH NEVER-SEIZE PRIOR TO ASSEMBLY.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOTATION.
- TOP OF WET WELL AND VALVE ASSEMBLY SLAB SHALL BE AT THE SAME ELEVATION.
- ELECTRICAL CONDUIT SHALL BE RUN BY THE SHORTEST ROUTE POSSIBLE FROM THE ELECTRICAL SOURCE TO THE CONTROL PANEL AND FROM THE CONTROL PANEL TO THE LIFT STATION WET WELL.
- THE ANTENNA FOR THE RADIO TELEMETRY UNIT REQUIRES DIRECT LINE-OF-SIGHT SIGNALING CAPABILITY TO THE UTILITIES DEPARTMENT'S OFFICE THAT WILL RECEIVE THE SIGNAL. THERE SHALL BE AN UNOBSTRUCTED HORIZONTAL ANGLE OF FIFTEEN (15) DEGREES FROM THE ANTENNA MAST (7.5 DEGREES ON BOTH SIDES OF THE DIRECT LINE-OF-SIGHT AZIMUTH). NO TREE SHALL BE PLANTED WITHIN THE DESIGNATED UNOBSTRUCTED ANGLE FOR A TWENTY (20) FEET HORIZONTAL DISTANCE MEASURED FROM THE MAST. LANDSCAPE BUFFER PLANTINGS ARE TO BE FIELD ADJUSTED IN COORDINATION WITH THE LOCATION OF THE CONSTRUCTED TELEMETRY ANTENNA. THE ANTENNA TOWER/MAST SHALL BE TO THE LEFT OF THE CONTROL PANEL.

GRINDER LIFT STATION NOTES:

- GRINDER LIFT STATION SHALL BE IN ACCORDANCE WITH THE LATEST MANATEE COUNTY UTILITY STANDARDS, UNLESS OTHERWISE STATED BELOW.
- ALL THE HATCH COVERS SHALL BE 2/3 HINGED TO ALLOW FOR MAXIMUM ACCESS TO THE WET WELL. THE HATCH COVER SHALL INCLUDE A SINGLE OR DUAL DOOR OF DIMENSIONS SPECIFIED BY THE PUMP MANUFACTURER FOR PROPER PUMP CLEARANCE.
- ALL FORCE MAIN PIPING AND FITTINGS WITHIN THE WET WELL AND THE VALVE VAULT SHALL BE PVC SCHEDULE 80. THE FORCE MAIN SHALL BE AT LEAST 18 INCHES BELOW THE TOP WITHIN THE WET WELL & VALVE VAULT. A 90 DEGREE BEND, THAT IS TURNED DOWN, SHALL BE INSTALLED 18 INCHES OUTSIDE OF THE VALVE VAULT TO OBTAIN A MINIMUM 3 FEET OF COVER. ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH THESE STANDARDS. GREEN-RAW SEWAGE; PANTONE 522C PURPLE-RECLAIMED: BLUE-POTABLE WATER.
- ANCHORS & LIFTING DEVICES SHALL NOT PENETRATE THE WALLS OF THE WET WELL.
- VERTICAL PVC PUMP DISCHARGE PIPE IN THE WET WELL SHALL BE BRACED, TOP BRACE TO BE 2' FROM TOP ELBOW, LOWER BRACE TO BE 4' ABOVE BASE ELBOW, MAX. SPACING OF 8' BETWEEN BRACES. THE PIPE SHALL BE CLAMPED TO A SINGLE LENGTH OF 1-5/8" STAINLESS STEEL CHANNEL (UNISTRUT P1000 OR EQUAL) INSTALLED HORIZONTALLY AND ANCHORED TO THE WET WELL WALL AT EACH END WITH A CENTER BRACE OF 1-5/8" CHANNEL ATTACHED TO THE BACK OF THE WET WELL. THE PIPE CLAMPS SHALL BE UNISTRUT P1117 STAINLESS STEEL OR EQUAL.

DESIGN CONDITIONS

MANUFACTURER	HYDROMATIC		
MODEL	HPG200	2	HP
GPM	41	20	FT/TDH
VOLTAGE	208	3	PHASE
DISCHARGE (INCHES)	1.25	4	IMPELLER (INCHES)

PUMPS SHALL BE OF THE SUBMERSIBLE TYPE. EACH PUMP SHALL BE MOUNTED ON A BPIU.12 RAIL SYSTEM. THE RAIL SYSTEM SHALL BE SELF ENGAGING RESULTING IN A LEAKPROOF COUPLING. THE RAIL SYSTEM SHALL INCLUDE THE BASE ELBOW, DISCHARGE FLANGE ASSEMBLY, Ø1" 316 SS GUIDE RAILS, 316 SS UPPER GUIDE BRACKET, 316 SS LIFTING BAIL AND CABLE, AND A SIX-HOOK 316 SS CABLE HOLDER. THE RAIL SYSTEM SHALL BE MOUNTED AND PRE-PIPED BY THE PUMP SUPPLIER.

PUMP CONSTRUCTION

THE PUMP VOLUTE, MOTOR AND SEAL HOUSING SHALL BE CONSTRUCTED OF CAST IRON, ASTM A-48. ALL EXTERNAL FASTENERS SHALL BE SERIES 300 STAINLESS STEEL. THE PUMP SHAFT SHALL BE CONSTRUCTED OF SERIES 416 STAINLESS STEEL.

IMPELLER

THE IMPELLER SHALL BE OF MULTI-VANE, SEMI-OPEN BRONZE CONSTRUCTION. THE IMPELLER SHALL INCLUDE PUMP-OUT VANES ON THE BACK OF THE IMPELLER AND SHALL BE STATICALLY AND HYDRAULICALLY BALANCED.

CUTTERS

A TWO-STAGE CUTTER ASSEMBLY SHALL BE MOUNTED ON THE SUCTION SIDE OF THE PUMP WITH DIRECT DISCHARGE INTO THE PUMP IMPELLER. THE GRINDER SHALL BE CAPABLE OF GRINDING ALL MATERIALS FOUND IN NORMAL, DOMESTIC SEWAGE, INCLUDING PLASTICS, RUBBER, SANITARY NAPKINS, DISPOSABLE DIAPERS AND WOOD PARTICLES, INTO A FINE SLURRY. BOTH THE STATIONARY AND ROTATING CUTTERS SHALL BE CONSTRUCTED OF 440C STAINLESS STEEL HARDENED TO ROCKWELL 60C.

MOTOR

THE MOTOR SHALL BE MOUNTED IN A SEALED, SUBMERSIBLE TYPE HOUSING. THE STATOR SHALL BE SECURELY HELD IN PLACE WITH A REMOVABLE END RING AND THREADED FASTENERS FOR EASE OF REMOVAL WITHOUT THE USE OF HEAT OR A PRESS. THE MOTOR WILL HAVE TWO HEAVY-DUTY BALL BEARINGS; ONE UPPER (RADIAL) AND ONE LOWER (THRUST), TO SUPPORT THE SHAFT. THE MOTOR SHALL BE EQUIPPED WITH A WINDING THERMOSTAT THAT AUTOMATICALLY SHUTS THE MOTOR OFF IN CASE OF MOTOR OVERHEATING.

SEAL CHAMBER

THE PUMP SHALL HAVE TWO MECHANICAL SEALS, MOUNTED IN TANDEM WITH AN OIL CHAMBER BETWEEN THE SEALS (OR EQUIVALENT). THE PUMP SHALL BE EQUIPPED WITH A SEAL LEAK DETECTION PROBE AND WARNING SYSTEM BY USING A SEAL FAILURE SENSOR INSTALLED IN THE SEAL CHAMBER.

WET WELL

THE PUMP SUPPLIER SHALL PROVIDE THE FIBERGLASS WET WELL. THIS GLASS FIBER-REINFORCED POLYESTER BASIN SHALL BE CONSTRUCTED OF A COMMERCIAL GRADE OF GLASS FIBER AND SHALL BE PROVIDED WITH AN ANTI-FLOTATION RING WITH A MINIMUM DIAMETER OF THREE INCHES LARGER THAN THE BASIN DIAMETER. THE RAIL SYSTEM, INTERNAL PIPING AND DISCHARGE CONNECTIONS SHALL BE PRE-INSTALLED BY THE PUMP SUPPLIER.

VALVE BOX

THE VALVE BOX IS FIBERGLASS WITH ALUMINUM LOCKABLE COVER. STANDARD SIZE VALVE BOX IS 3' X 2 1/2' X 2'.

VALVES

VALVES SHALL BE SEWAGE SWING CHECK WITH CLEAN-OUT PORTS AND BRASS GATE VALVES.

FLOATS


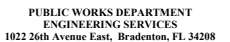
FLOATS SHALL BE MDIGFLOW4000W OR EQUAL.

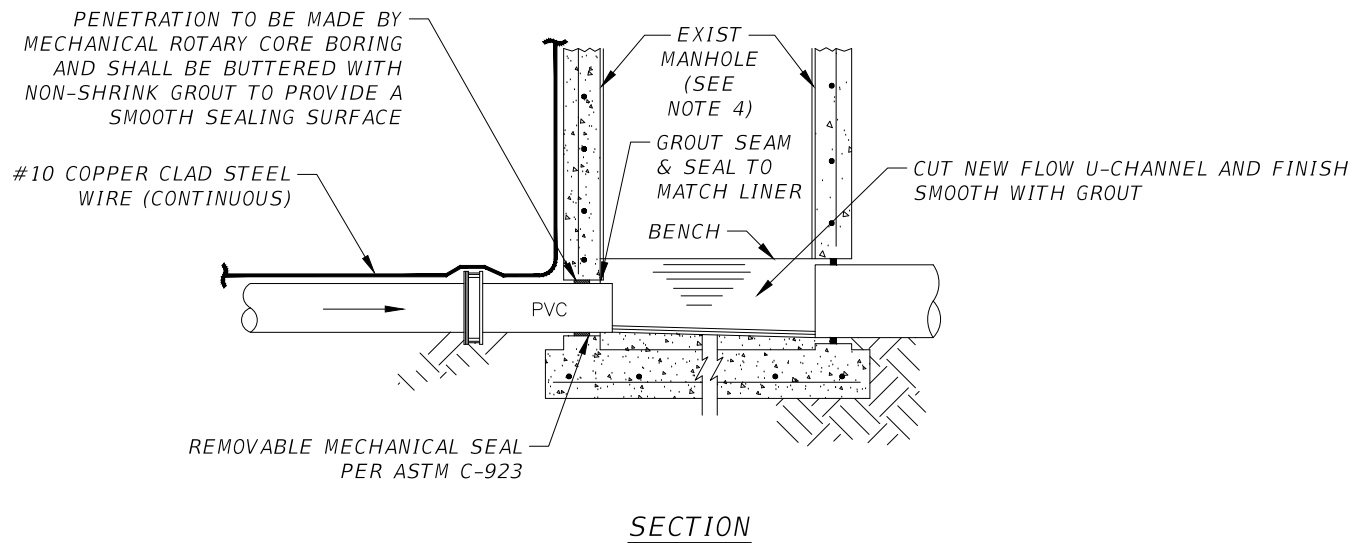
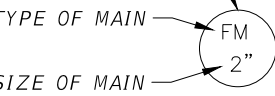
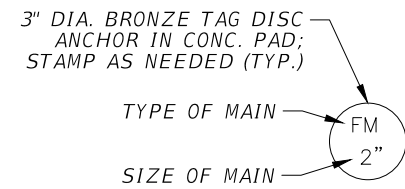
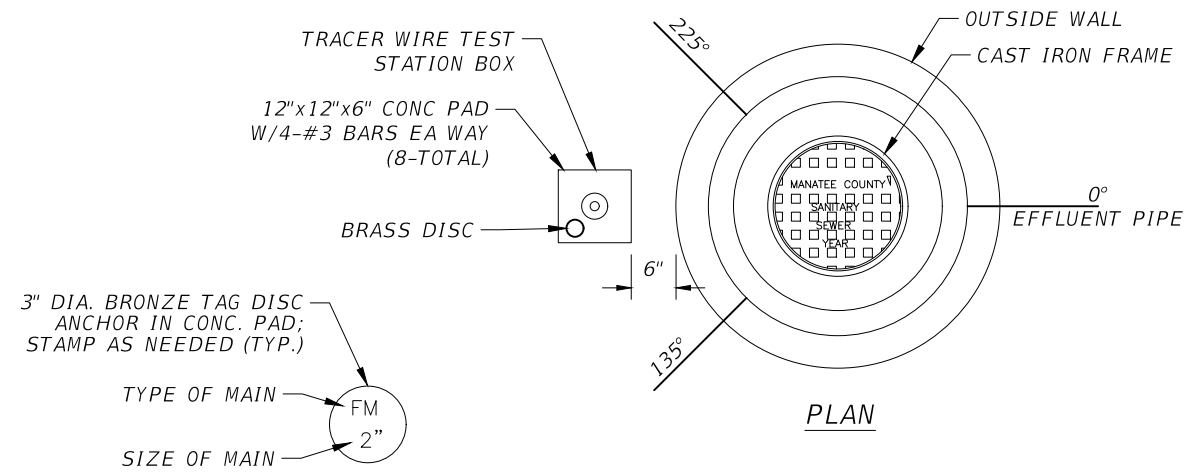
CONTROLS

THE CONTROL PANEL SHALL CONFORM TO THE CURRENT MANATEE COUNTY SPECIFICATIONS.

SUPPLIER

PUMP SUPPLIER SHALL PROVIDE SUBMERSIBLE PUMPS, SLIDE RAIL ASSEMBLIES, CONTROL PANEL, FLOAT SWITCHES, ALUMINUM HATCHES AND ACCESSORIES TO INSURE PROPER OPERATIONS AND WARRANTY. THE COMPLETE PACKAGE PUMPING STATION SHALL HAVE PUMP BASES, RAIL ASSEMBLIES, AND DISCHARGE PIPING READY FOR FIELD INSTALLATION.

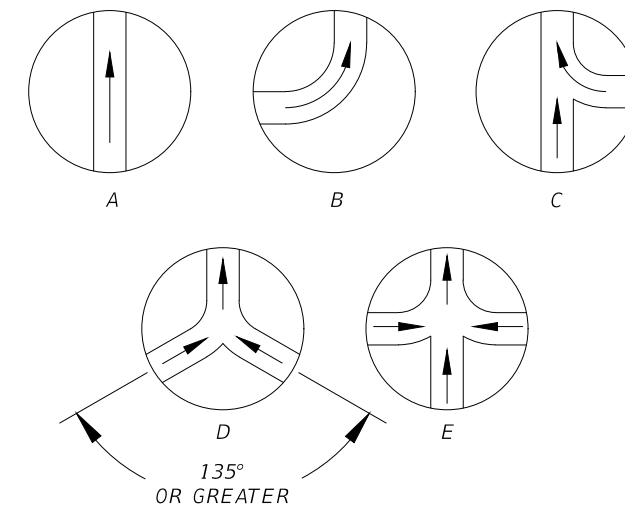
				SCALE	AS NOTED	TIMOTHY M. CURRAN, P.E.	DATE		DESIGN ENGINEER	<p>GRINDER LIFT STATION AT ELWOOD 1 PS NOTES</p>	SHEET NO.
				DESIGNED BY	R.A.	P.E. NO. 34809	FEBRUARY 2019		TIMOTHY M. CURRAN, P.E.		
				DRAWN BY	T.S.	AECOM TECHNICAL SERVICES, INC.	PROJECT NO.		FL. LICENSE NO.		<p>ULS-4</p>
				CHECKED BY	T.C.	7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115	6086960		34809		
No.	REVISIONS	DATE	BY								




FORCE MAIN CONNECTION TO EXISTING MANHOLE

NOTES:

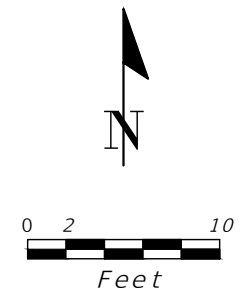
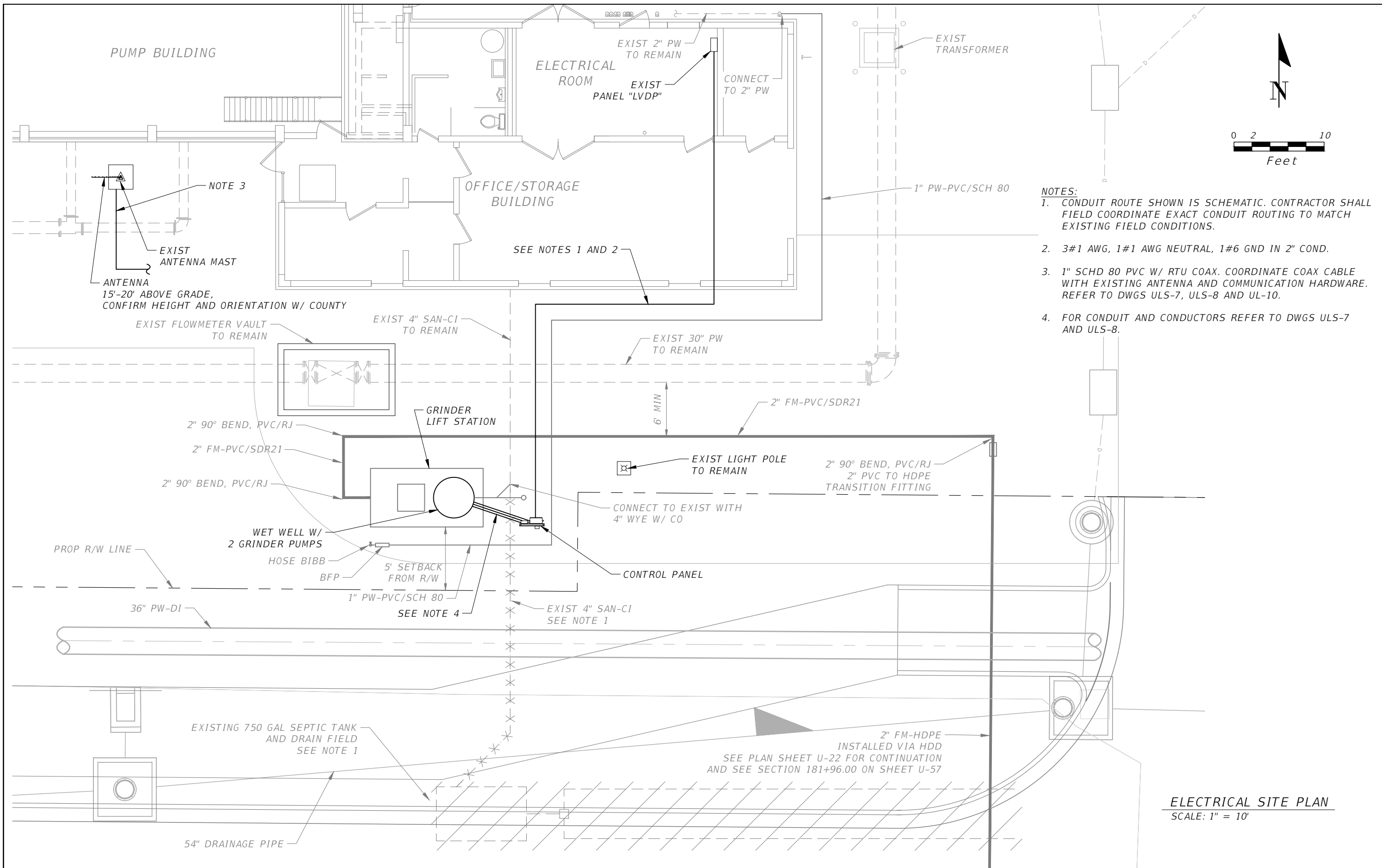
1. FORCE MAIN CONNECTION SHALL BE AT THE BOTTOM OF THE MANHOLE.
2. BUILD FLOW CHANNEL PER DETAIL AND FINISH SMOOTH WITH GROUT.
3. THIS IS AN INTERCEPT MANHOLE WITH TURBULENT FLOW; THIS MANHOLE AND THE NEXT TWO DOWNSTREAM MANHOLES SHALL BE COMPLETELY LINED WITH AN APPROVED LINER. ALL THREE MANHOLES SHALL BE REHABILITATED AS NECESSARY.
4. FORCE MAIN SHALL CONNECT TO THE MANHOLE NO MORE THAN 1.9 FT FROM THE LOWEST INVERT. AN ELEVATED U-CHANNEL SHALL BE CONSTRUCTED TO DIRECT THE FORCE MAIN FLOW TO THE EXITING PIPE.
5. ANGLE BETWEEN INFLUENT FORCE MAIN AND GRAVITY EFFLUENT PIPE SHALL BE BETWEEN 135°-225°, UNLESS PRIOR APPROVAL FROM COUNTY.



CHANNEL FLOW DETAILS


SCALE		AS NOTED		DESIGNED BY		TIMOTHY M. CURRAN, P.E. P.E. NO. 34809		DATE		FEBRUARY 2019		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER		GRINDER LIFT STATION AT ELWOOD 1 PS DETAILS		SHEET NO.					
DRAWN BY		R.A.		DRAWN BY		T.S.		PROJECT NO.		6086960				TIMOTHY M. CURRAN, P.E.				FL. LICENSE NO.		34809		ULS-5	
CHECKED BY		T.C.		CHECKED BY		T.C.		CERTIFICATE OF AUTHORIZATION: 8115															
No.		REVISIONS		DATE		BY																	

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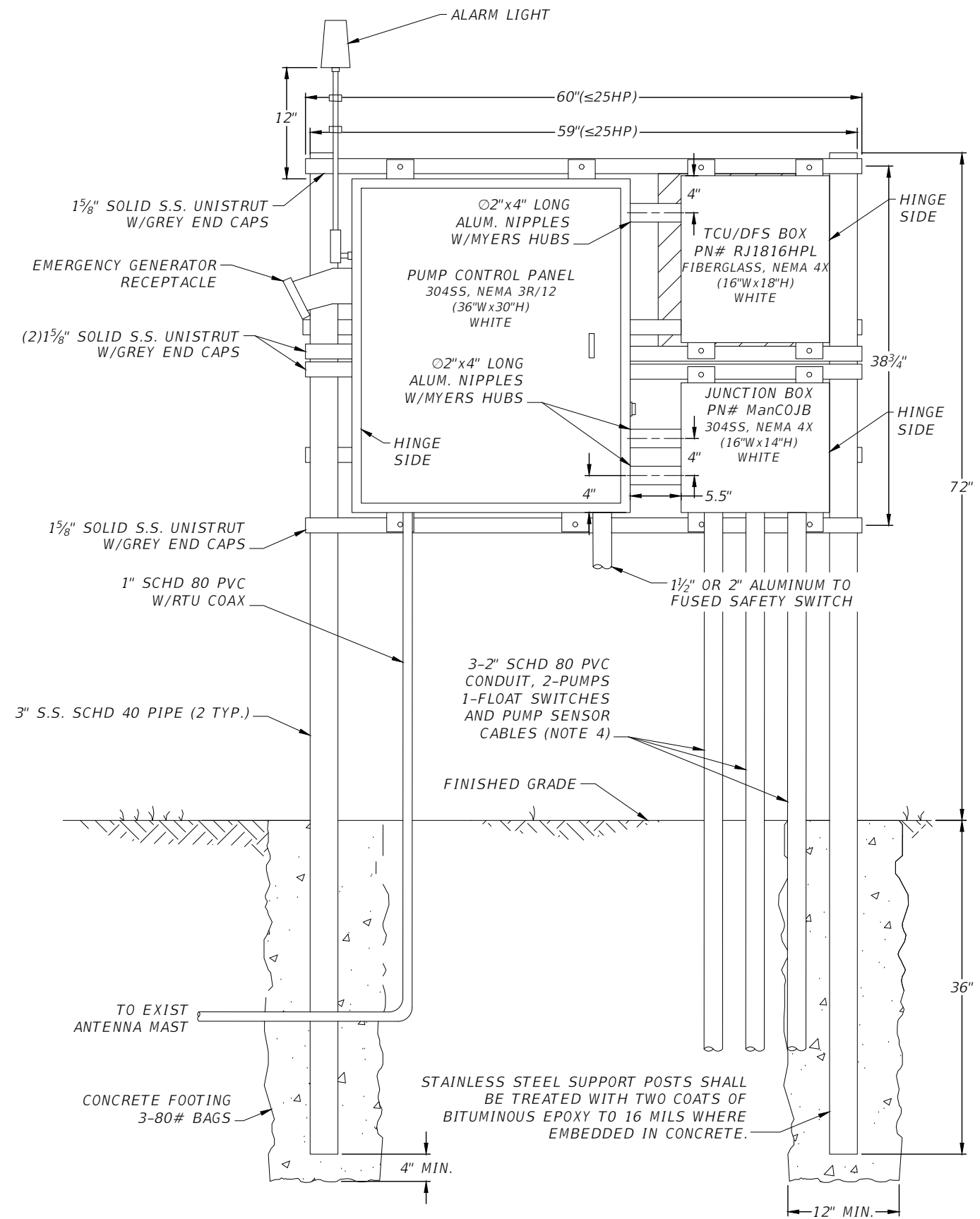


- NOTES:**
1. CONDUIT ROUTE SHOWN IS SCHEMATIC. CONTRACTOR SHALL FIELD COORDINATE EXACT CONDUIT ROUTING TO MATCH EXISTING FIELD CONDITIONS.
 2. 3#1 AWG, 1#1 AWG NEUTRAL, 1#6 GND IN 2" COND.
 3. 1" SCHD 80 PVC W/ RTU COAX. COORDINATE COAX CABLE WITH EXISTING ANTENNA AND COMMUNICATION HARDWARE. REFER TO DWGS ULS-7, ULS-8 AND UL-10.
 4. FOR CONDUIT AND CONDUCTORS REFER TO DWGS ULS-7 AND ULS-8.

ELECTRICAL SITE PLAN
SCALE: 1" = 10'

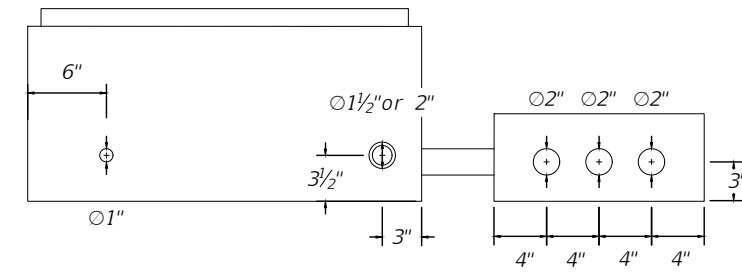
SCALE AS NOTED		DESIGNED BY C.T.		DATE FEBRUARY 2018	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER CARLOS TURCIOS, P.E.	GRINDER LIFT STATION AT ELWOOD 1 PS ELECTRICAL SITE PLAN	SHEET NO.
DRAWN BY T.S.		CHECKED BY C.T.		PROJECT NO. 6086960		FL. LICENSE NO. 64578		ULS-6
No.	REVISIONS	DATE	BY	CARLOS TURCIOS, P.E. P.E. NO. 64578 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115				

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NOTES

1. TYPICAL CONTROL PANEL SHALL BE 30"x36".
2. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
3. PUMP CONTROL PANEL AND JUNCTION BOX ARE TO BE POWDER COATED WHITE.
4. PROVIDE THE REQUIRED CONDUCTORS AS PER CONTROL PANEL AND END DEVICES SUPPLIER. REFER TO SPECIFICATION SECTION 03500 FOR ADDITIONAL INFORMATION.




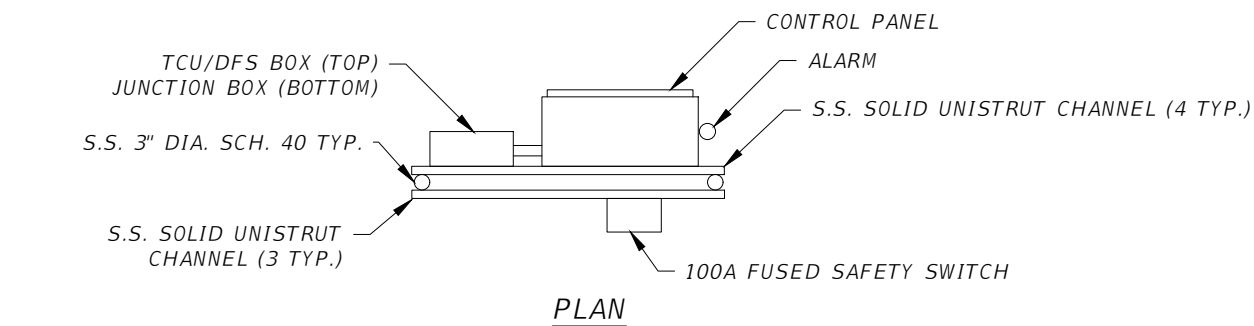
PUMP CONTROL PANEL BOTTOM

JUNCTION BOX BOTTOM

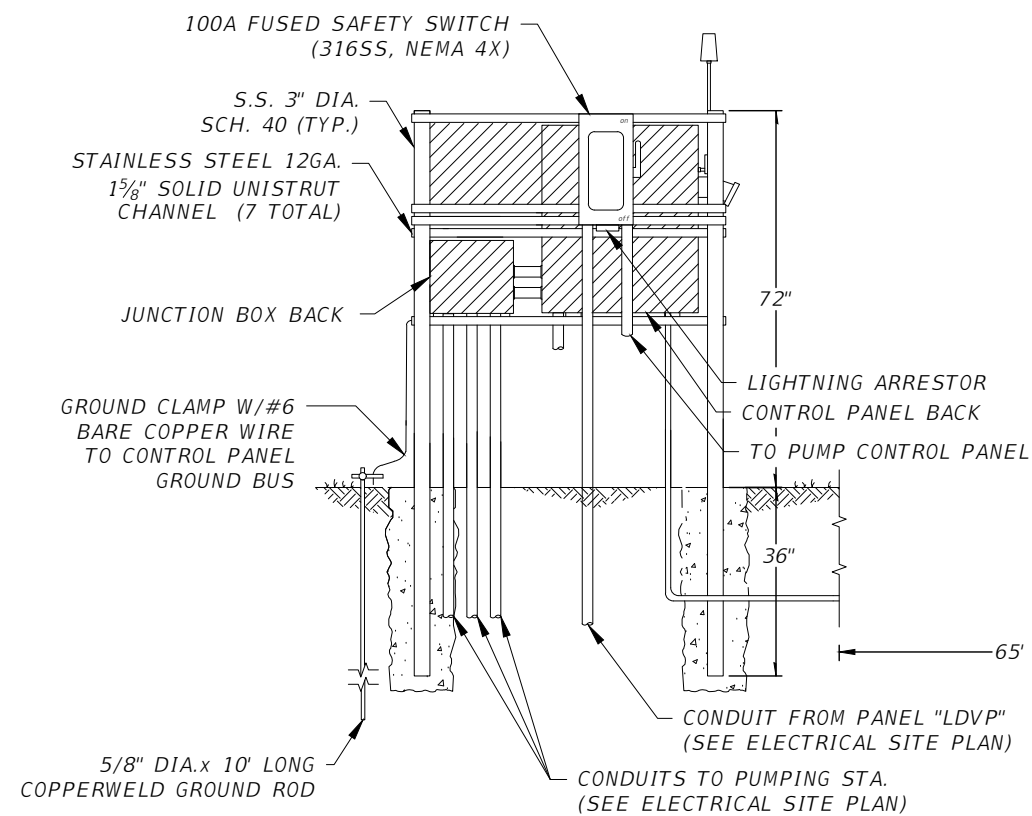
CONTROL PANEL INSTALLATION (FRONT)

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

SCALE		AS NOTED		DESIGNED BY		CARLOS TURCIOS, P.E. P.E. NO. 64578		DATE		FEBRUARY 2018		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		DESIGN ENGINEER		GRINDER LIFT STATION AT ELWOOD 1 PS ELECTRICAL DETAILS		SHEET NO.			
		C.T.		DRAWN BY		AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711		PROJECT NO.		6086960				CARLOS TURCIOS, P.E.				FL. LICENSE NO.		ULS-7	
No.		REVISIONS		DATE		BY		C.T.		CERTIFICATE OF AUTHORIZATION: 8115				64578							

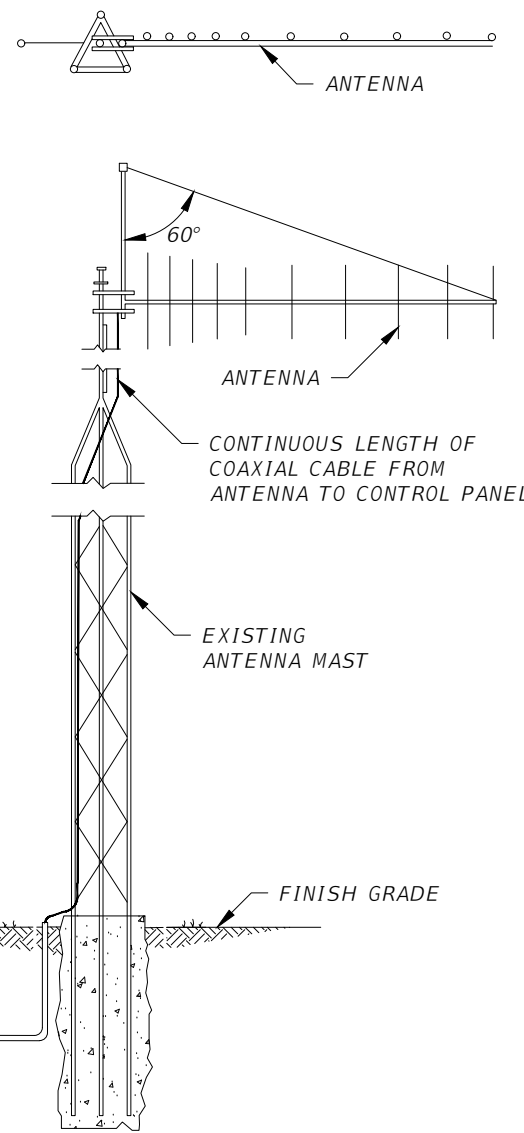


PLAN



SECTION

CONTROL PANEL INSTALLATION (BACK)



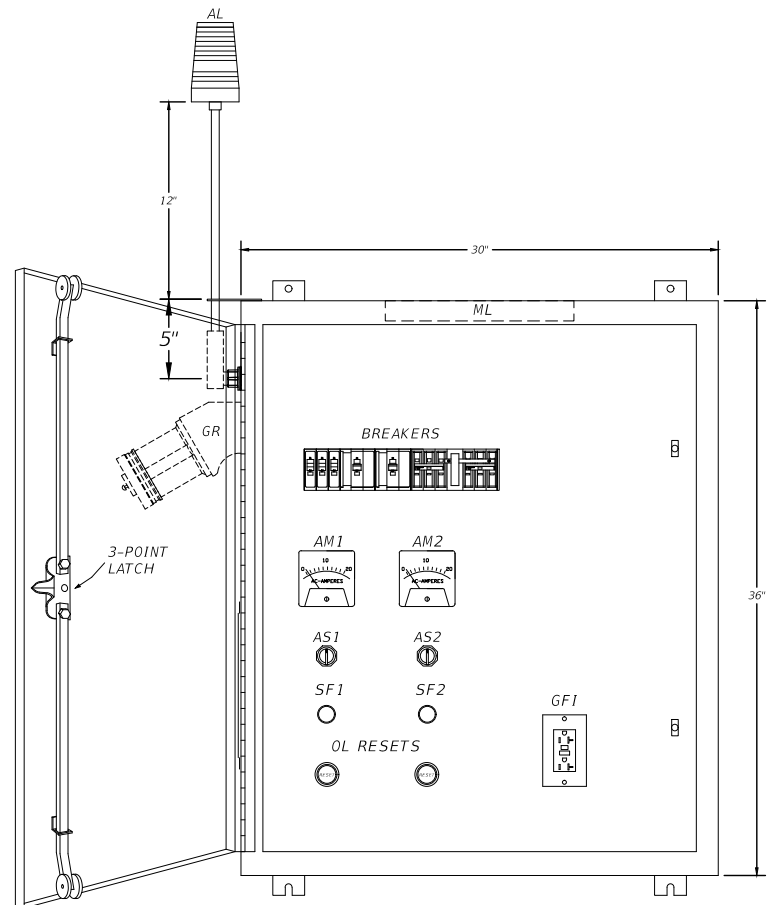
ANTENNA

NOTES

1. ALL EQUIPMENT FURNISHED FOR THE PUMP STATION SHALL CONFORM TO MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS.
2. POWER TO BE SUPPLIED AS DIRECTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING TEMPORARY AND PERMANENT ELECTRICAL SERVICE.
3. STAINLESS STEEL CONTROL PANEL SUPPORT POSTS SHALL BE TREATED WITH TWO COATS OF BITUMINOUS EPOXY TO 16 MILS WHERE EMBEDDED IN CONCRETE.
4. CONTROL ENCLOSURE TO BE NEMA 3R/12 304 STAINLESS STEEL WITH RAIN SHIELD. DISCONNECT ENCLOSURE TO BE NEMA 4X STAINLESS STEEL.
5. ALL P.V.C. CONDUIT SHALL BE SCHEDULE 80.

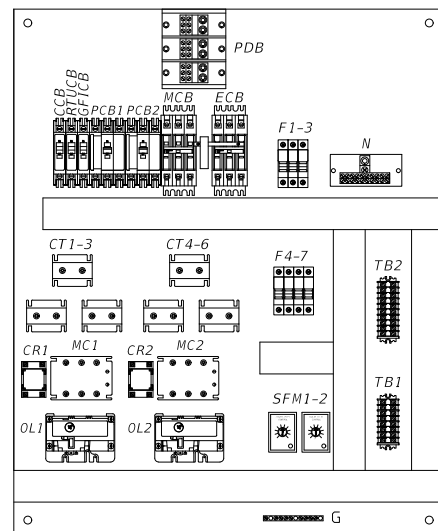
SCALE		AS NOTED		DESIGNED BY		CARLOS TURCIOS, P.E. P.E. NO. 64578		DATE		FEBRUARY 2018		DESIGN ENGINEER		CARLOS TURCIOS, P.E.		SHEET NO.	
DRAWN BY		C.T.		DRAWN BY		T.S.		PROJECT NO.		6086960		FL. LICENSE NO.		64578		GRINDER LIFT STATION AT ELWOOD 1 PS ELECTRICAL DETAILS	
CHECKED BY		C.T.		TAMPA, FL 33607-1462		(813) 286-1711		PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208		Sonnenberg, Terence		2/22/2019 11:43:24 AM		S:\Projects\RDWY\ProjFdot\ProjFdot\8\60460213000\utils\cadd\LIFT STATION-ELECTRICAL.dwg		ULS-8	
No.	REVISIONS	DATE	BY	CERTIFICATE OF AUTHORIZATION: 8115													

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ENCLOSURE POWDER
COATED WHITE


ENCLOSURE & DEADFRONT LAYOUT (TYPICAL)



BASE PLATE LAYOUT (TYPICAL)

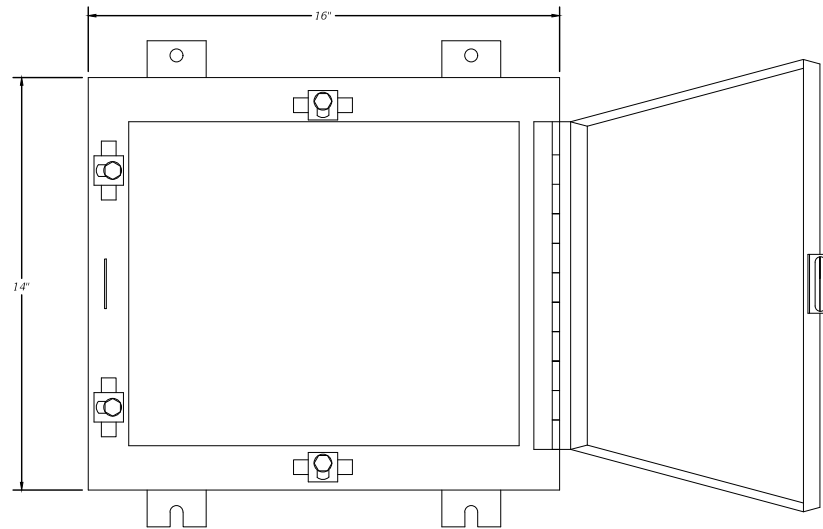
PUMP CONTROL PANEL

PUMP CONTROL PANEL BILL OF MATERIALS			
QTY.	ABBR.	DESCRIPTION	MANUFACTURER, PART #
1	ENC	ENCLOSURE, 304SS N3R (WHITE)	CUSTOM EQUIPMENT, 36X30X12-WHT-MANCO
1	MCB	MAIN CIRCUIT BREAKER	SQ.D, (100A)
1	ECB	EMERGENCY CIRCUIT BREAKER	SQ.D, (100A)
2	PCB1,2	PUMP CIRCUIT BREAKER	SQ.D, (SIZE AS REQUIRED)
1	CCB	CONTROL CIRCUIT BREAKER	SQ.D, Q0U115
1	RTUCB	RTU CIRCUIT BREAKER	SQ.D, Q0U115
1	GFICB	GFI CIRCUIT BREAKER	SQ.D, Q0U120
2	MC1,2	SOLID STATE CONTACTOR	CRYDON, A53TP SIZE 1
2	CR1-2	CURRENT RELAY	CRYDON, CWA2410
2	OL1-2	OVERLOAD RELAY	SIEMENS, ESP200 (SIZE AS REQUIRED)
1	GR	GENERATOR RECEPTACLE	RUSSELL STOLL, JR SB1044FR (230V, 100A) RUSSELL STOLL, JR SB2044FR (230V, 200A)
1	SPD	SURGE PROTECTOR	DITEK, DTK-2403CMX+
6	CT1-6	CURRENT TRANSFORMER 20:5	ELECTRO. IND, 2SFT-___ (SIZE AS REQUIRED)
2	AS1-2	AMMETER SELECTOR SWITCH	SPRECHER & SCHUH, LE2-12-8751
2	AM1-2	AMMETER 0-20A	YOKOGAWA, YE-250-340-LS__ (SIZE AS REQUIRED)
7	F1-7	FUSE, 1A	FERRAZ, ATMR-1
1	GFI	120V RECEPTACLE	PASS & SEYMOUR, 1595-1
1	ML	MAINTENANCE LIGHT, LED	HOFFMAN, LEDA1S35
2	SFM1,2	SEAL FAIL MODULE	SYRELEC, PNRU-110A
2	IL	INDICATING LIGHT, RED LED	EATON, C22-L-XR-120
1	ASB	ALARM SILENCE BUTTON	SQ.D, 9001-SKR1BH5
1	AL	ALARM LIGHT, 120V STROBE	FEDERAL, LP3P-120R

No.	REVISIONS	DATE	BY	SCALE AS NOTED	DESIGNED BY C.T.	DRAWN BY T.S.	CHECKED BY C.T.	DATE FEBRUARY 2018	PROJECT NO. 6086960	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER CARLOS TURCIOS, P.E. FL. LICENSE NO. 64578	GRINDER LIFT STATION AT ELWOOD 1 PS ELECTRICAL DETAILS	SHEET NO. ULS-9
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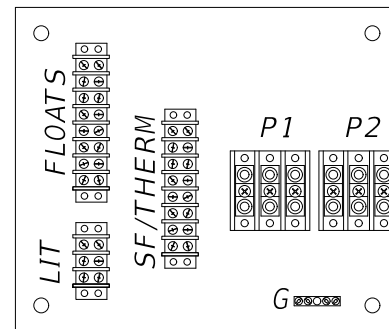
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JUNCTION BOX BILL OF MATERIALS			
QTY.	ABBR.	DESCRIPTION	MANUFACTURER, PART#
1	ENC	ENCLOSURE, 304SS N4X (WHITE)	CUSTOM EQUIPMENT, 14X16X8-WHT-MANCO
2		8-POINT TERMINAL BLOCK	IDEAL, 89-208
1		3-POINT TERMINAL BLOCK	IDEAL, 89-203
2		PUMP TERMINAL BLOCK	MARATHON, 1323572
1	G	GROUND BAR	EATON, GBK5



JUNCTION BOX

ENCLOSURE
POWDER COATED
WHITE



BASE PLATE

JUNCTION BOX

PANEL "LVDP" (NOTE 2)		MAINS: MCB		AMPS: 225A		MOUNTING: SURFACE		
VOLTAGE: 208/120V		PHASE: 3		WIRE: 4		60HZ		
		MIN. INTERRUPTING RATING: 18,000 A		NEMA: 12				
CKT NO	DESCRIPTION/LOCATION	BREAKERS		KVA	BREAKERS		DESCRIPTION/LOCATION	CKT NO
		POLE	AMPS		AMPS	POLE		
1								2
3	EXISTING PNLBD. 'D'	3	150	47.13	8.38	100	3	4
5								6
7	PUMP P-2 HTR	1	20	0.35	0.72	20	1	8
9	PUMP P-3 HTR	1	20	0.35	1.08	20	1	10
11	PUMP P-4 HTR	1	20	0.35	1.44	20	2	12
13	PUMP P-5 HTR	1	20	0.35				
15	SPARE	1	20	-	1.08	20	1	16
17	SPACE	1	-	-	-	20	1	18
19				7.2	-	20	1	20
21	GRINDER LIFT STATION	3	100	7.2	-	-	1	22
23				7.2	-	-	1	24
25	SPACE	1	-	-	-	-	1	26
27	SPACE	1	-	-	-	-	1	28
29	SPACE	1	-	-	-	-	1	30

SEE
NOTE 1
BELOW

EXIST. CONNECTED LOAD: 61.23 KVA (169 AMPS @ 208V)
 EXIST. CONNECTED DEMAND: 37.23 KVA (103 AMPS @ 208V)
 MODIFIED CONNECTED LOAD: 88.20 KVA (244 AMPS @ 208V)
 MODIFIED CONNECTED DEMAND: 60.18 KVA (167 AMPS @ 208V)

EXISTING PANEL TO BE MODIFIED

NOTES:

1. PROVIDE NEW 100A 3-PHASE BREAKER AS SHOWN.
2. PROVIDE A 30 DAY DEMAND RECORDING OF THIS PANEL FEEDER IN ACCORDANCE WITH THE EXCEPTION UNDER NEC ART 220.87. SUBMIT THE RESULTS OF THE RECORDING LISTING PEAK AMPS AND PEAK POWER TO THE ENGINEER FOR APPROVAL.

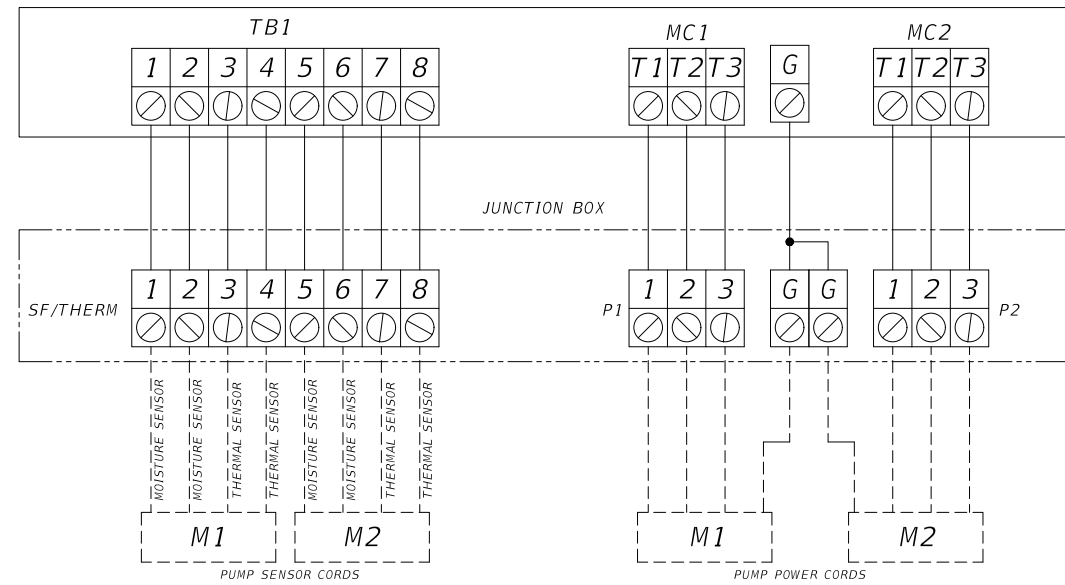
SCALE		AS NOTED		DATE		DESIGN ENGINEER		GRINDER LIFT STATION AT ELWOOD 1 PS ELECTRICAL DETAILS		SHEET NO.	
DESIGNED BY		C.T.		FEBRUARY 2018		CARLOS TURCIOS, P.E.				ULS-10	
DRAWN BY		T.S.		PROJECT NO.		FL. LICENSE NO.					
CHECKED BY		C.T.		6086960		64578					
No.		REVISIONS		DATE		BY					

CARLOS TURCIOS, P.E.
 P.E. NO. 64578
 AECOM TECHNICAL SERVICES, INC.
 7650 WEST COURTNEY CAMPBELL CAUSEWAY
 TAMPA, FL 33607-1462
 (813) 286-1711
 CERTIFICATE OF AUTHORIZATION: 8115

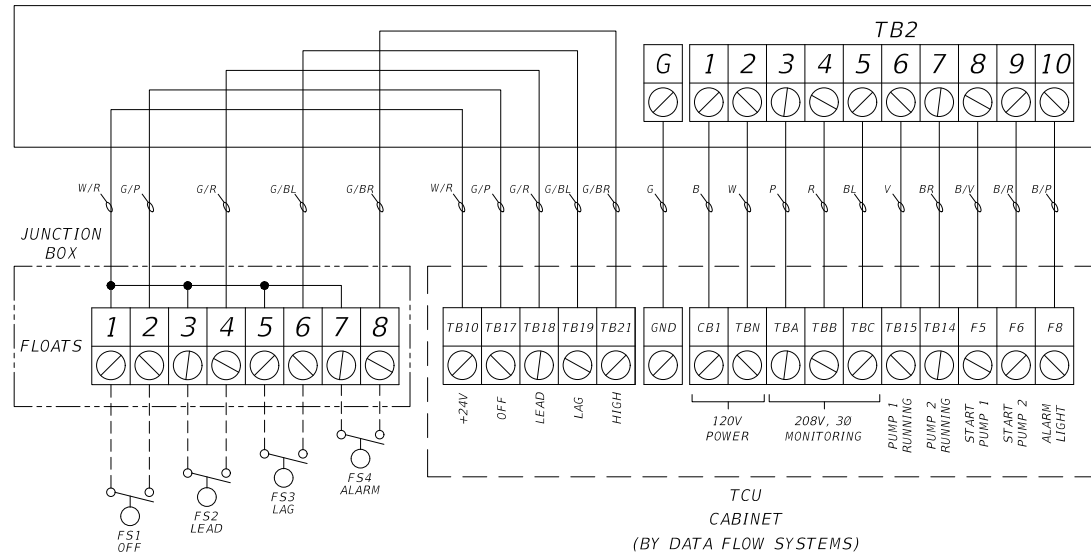


WIRE COLOR CODE					
SYMBOL	COLOR	SYMBOL	COLOR	SYMBOL	COLOR
B	BLACK	V	VIOLET	G/R	GREY/RED
W	WHITE	BR	BROWN	G/BL	GREY/BLUE
G	GREEN	B/R	BLACK/RED	G/BR	GREY/BROWN
BL	BLUE	B/V	BLACK/VIOLET	W/R	WHITE/RED
R	RED	B/P	BLACK/PINK	W/B/V	WHT/BLK/VIOLET
P	PINK	G/P	GREY/PINK	W/B/R	WHT/BLK/RED

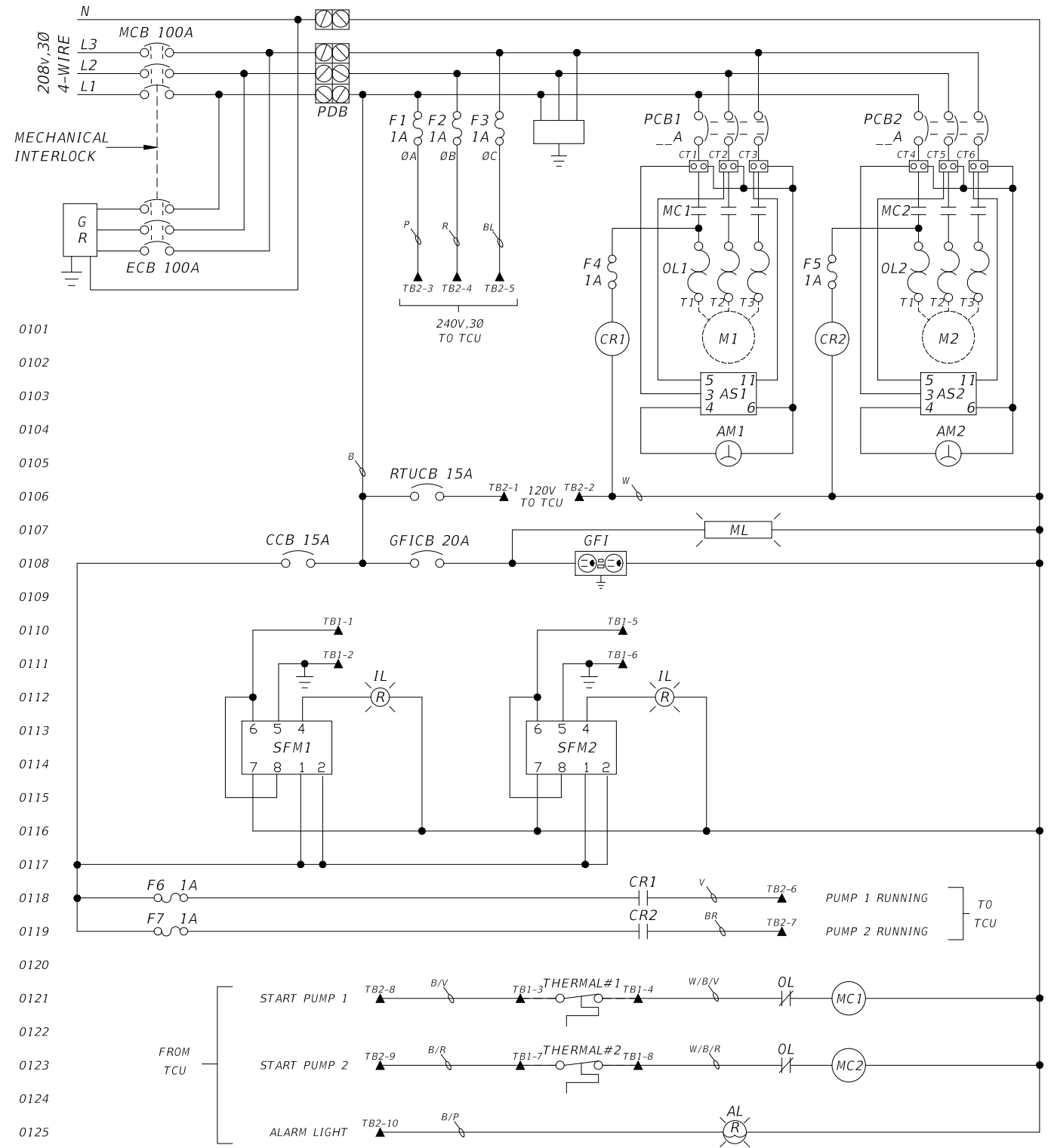
TERMINALS
PUMP CONTROL PANEL



TERMINALS
PUMP CONTROL PANEL



WIRING DIAGRAM



CONTROL DIAGRAM

SCALE AS NOTED		DESIGNED BY C.T.		DATE FEBRUARY 2018			DESIGN ENGINEER CARLOS TURCIOS, P.E. FL. LICENSE NO. 64578		GRINDER LIFT STATION AT ELWOOD 1 PS ELECTRICAL DETAILS	SHEET NO.
DRAWN BY T.S.		CHECKED BY C.T.		PROJECT NO. 6086960			PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence			ULS-11
No.	REVISIONS	DATE	BY	CARLOS TURCIOS, P.E. P.E. NO. 64578 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		2/22/2019 11:43:58 AM		S:\Projects\RDWY\ProjFdot\ProjFdot\860460213000\utils\cadd\LIFT STATION-ELECTRICAL.dwg		

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A – CODES:

1. ACI 318-11 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
2. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR DESIGN FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, 14TH ED.
3. AWS STRUCTURAL WELDING CODE (LATEST EDITION) – D1.1 STEEL
4. FLORIDA DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" (2017 EDITION).

B– DESIGN LOADS:

THE FOLLOWING LOADS WERE USED:

1. WEIGHT OF 36" PIPE = 700 POUNDS/FT, WEIGHT OF 8" PIPE = 47 POUNDS/FT.
2. ALLOWABLE SOIL PRESSURE = 3000 PSF (NET).

C– CONSTRUCTION MATERIALS:

1. CAST-IN-PLACE CONCRETE COMPRESSIVE STRENGTH 4500 PSI AT 28 DAYS, AND ALL CONCRETE MIXES SHALL MEET THE REQUIREMENTS OF FDOT SPECIFICATION SECTION 346.
2. REINFORCING STEEL: ASTM A615, GRADE 60, DEFORMED, UNCOATED UNLESS OTHERWISE NOTED.
3. NON-METALLIC SHRINKAGE-RESISTANT GROUT (5000 PSI); PRE MIXED NON-CORROSIVE, NON-STAINING PRODUCT CONTAINING SELECTED SILICA SANDS, PORTLAND PORTLAND CEMENT, SHRINKAGE COMPENSATING AGENTS, PLASTICIZING AND WATER REDUCING AGENTS, PLASTICIZING AND WATER REDUCING AGENTS, COMPLYING WITH ASTM C1107.
4. WELDED STEEL WIRE FABRIC: ASTM A1064

D– CONCRETE:

1. SUPPORTS FOR REINFORCEMENT: PROVIDE SUPPORTS FOR REINFORCEMENT INCLUDING; BOLSTERS, CHAIRS, SPACERS AND OTHER DEVICES FOR SPACING, SUPPORTING AND FASTENING REINFORCING BARS AND WELDED WIRE FABRIC IN PLACE. USE WIRE BAR SUPPORTS USE WIRE BAR TYPE SUPPORTS CONFORMING TO CRSI SPECIFICATIONS.
2. MINIMUM COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS:
 CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ---- 3"
 CONCRETE EXPOSED TO EARTH OR WEATHER
 #5 BAR AND SMALLER ---- 1 1/2"
 #6 BARS AND LARGER ---- 2"
3. MASS CONCRETE PER FDOT SPECIFICATION 346 WILL BE NEEDED AT VARIOUS LOCATIONS. REFER TO PLANS FOR LOCATIONS OF ITEMS DESIGNATED AS MASS CONCRETE.

E– ANCHORS FOR PIPE SUPPORTS

1. ANCHORS SHALL BE STAINLESS STEEL (TYPE 316). INSTALL ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. ADHESIVE BONDED ANCHORS IN HARDENED CONCRETE SHALL BE IN ACCORDANCE WITH FDOT SPECIFICATION 416 AND 937. (SEE NOTE N-6 ON SHEET NO. US-02 AND US-03).

F– STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL", ALLOWABLE STRESS DESIGN, FOURTEENTH EDITION, AND SHALL CONFORM TO THE FOLLOWING MINIMUM SPECIFICATIONS: ANGLES AND PLATES: ASTM A36 (UON)
2. ERECTION BOLTS: REMOVE AFTER FIELD WELDING IS COMPLETED. PLUG WELD HOLES AND GRIND SMOOTH.
3. ALL WELDMENTS SHALL BE INSPECTED AND APPROVED BEFORE COVERED BY OTHER MEMBERS AND / OR OTHER WELDMENTS.

4. ALL WELDS SHALL BE WITH E70XX ELECTRODES AND IN ACCORDANCE WITH AWS STANDARDS. ALL WELDS SHALL BE FILLET WELDS OF THE MINIMUM SIZE REQUIRED FOR THE THICKNESS OF PLATES CONNECTED UNLESS NOTED OTHERWISE.
5. DO NOT WELD GALVANIZED STEEL (U.O.N.).

G– FOUNDATIONS:

1. THE FOUNDATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 455 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (2017 EDITION).
2. THE CONCRETE PILES SHALL BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) DESIGN STANDARDS INDEX 20600 AND INDEX 20624 (FY 2016-17). FOR THE 24" SQUARE CONCRETE PILES. THE MINIMUM TIP ELEVATION = - 40 FEET (EAST SIDE OF RIVER) AND MINIMUM TIP ELEVATION = - 36 FEET (WEST SIDE OF RIVER). FOR BIDDING PURPOSES, ASSUME ALL 24" SQUARE CONCRETE PILES TO BE 70 FEET LONG.
3. CONTRACTOR TO CONFIRM LOCATIONS/STATIONS SHOWN ON PIPE SUPPORT FOUNDATIONS PLANS (SHEET NO. US-02 AND US-03) PRIOR TO PILE INSTALLATION.
4. REFER TO SHEET US-04 FOR SOIL ANCHOR NOTES.

H– GENERAL NOTES:

1. DIMENSIONS SHALL NOT BE SCALED.
2. ALL CONCRETE EMBEDDED STEEL ANGLES, WELD PLATES, ANCHORAGE DEVICES, ETC., SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123 AND/OR 2329.
3. ALL REINFORCEMENT SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI 315 LATEST EDITION. ALL CONSTRUCTION JOINTS, WITH REINFORCING PASSING THROUGH THE JOINT, SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4" INCH, UNLESS NOTED OTHERWISE.
4. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4"x3/4", EXCEPT AS NOTED OTHERWISE.
5. VERIFY AND CORRELATE ALL DIMENSIONS BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
6. ALL DIMENSIONS ARE MEASURED HORIZONTALLY OR VERTICALLY UNLESS NOTED OTHERWISE.
7. VERIFY ALL FIELD CONDITIONS AND DIMENSIONS RELATIVE TO SAME. WHERE THERE ARE CONFLICTS BETWEEN ACTUAL FIELD CONDITIONS AND/OR DATA PRESENTED ON THESE DRAWINGS, SUCH CONDITIONS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER IMMEDIATELY AND NECESSARY ADJUSTMENTS MADE PER THEIR INSTRUCTIONS
8. TAKE ALL MEASURES NECESSARY FOR SAFETY. DETERMINE ERECTION PROCEDURE AND SEQUENCE THE WORK TO ENSURE THE SAFETY OF WORKERS. PROPERLY SHORE ALL EXCAVATIONS. FULLY COMPLY WITH ALL APPLICABLE OSHA REGULATIONS. OBSERVATION VISITS TO THE SITE BY AECOM PERSONAL SHALL NOT INCLUDE INSPECTION FOR THESE ITEMS.
9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

J– COORDINATION:

1. COORDINATE WITH ALL TRADES PRIOR TO PLACING CONCRETE.
2. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE CIVIL AND MECHANICAL SHEETS TO PROPERLY LOCATE DRAINS, SLOPES, PIPE SLEEVES, ANCHOR BOLTS, BLOCK-OUTS, ETC. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
3. VERIFY AND CORRELATE ALL DIMENSIONS BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
4. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE PROJECT SPECIFICATIONS.
5. DIMENSIONS SHOWN ON THESE DRAWINGS MAY VARY SLIGHTLY DUE TO THE CURVATURE OF THE ROADWAY.

K– DEWATERING:

1. FOR ALL EXCAVATIONS, EXPECT TO PERFORM DEWATERING. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT THE FLOATATION OF STRUCTURES UNTIL ALL BACKFILL IS PROPERLY COMPACTED IN PLACE AND CONSTRUCTION IS COMPLETE


L– SUBMITTALS

1. ALL SHOP DRAWINGS THAT ARE NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL, WILL BE REJECTED.
2. SUBMIT THE FOLLOWING SHOP DRAWINGS FOR THE ENGINEER TO REVIEW:

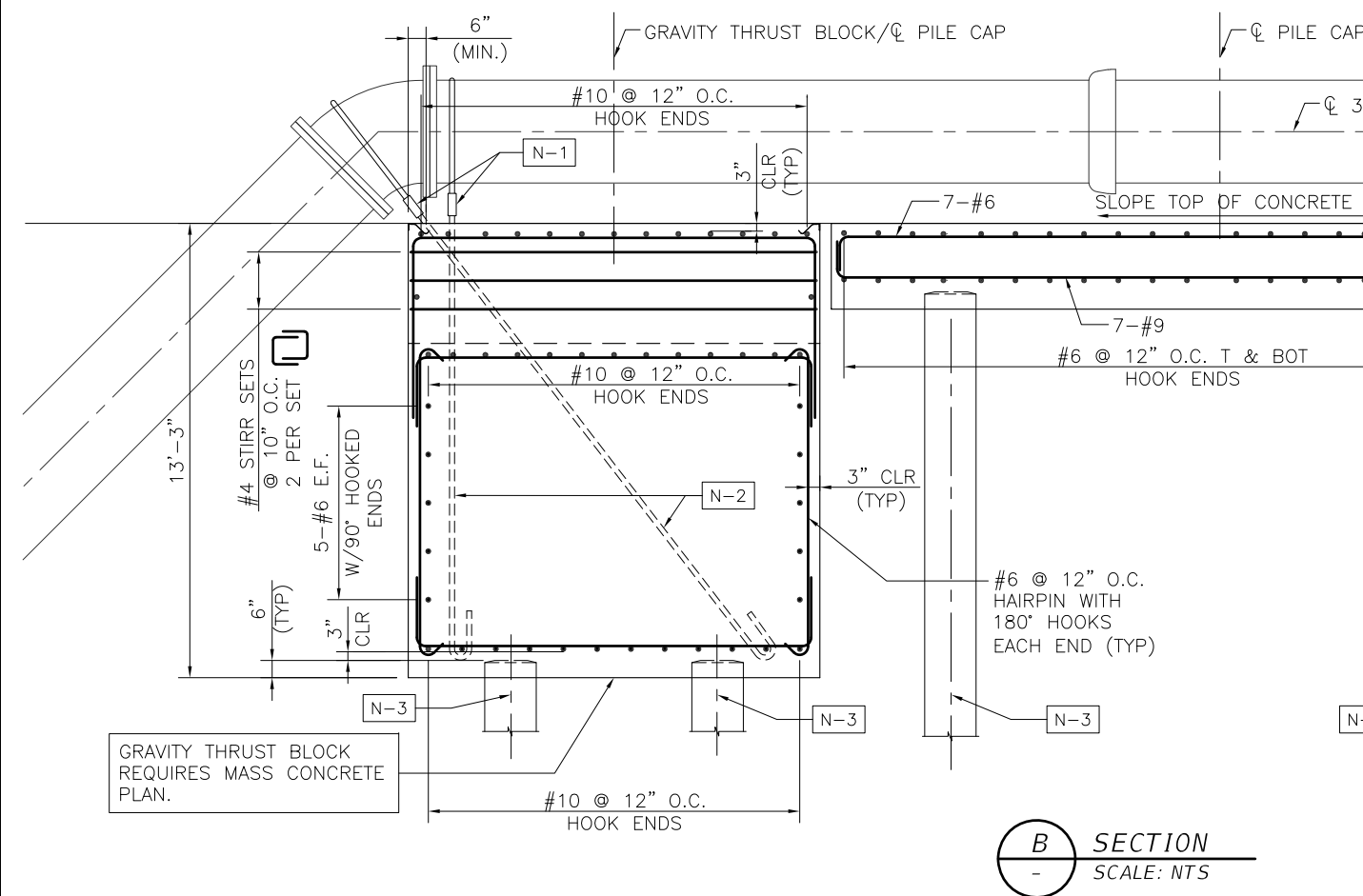
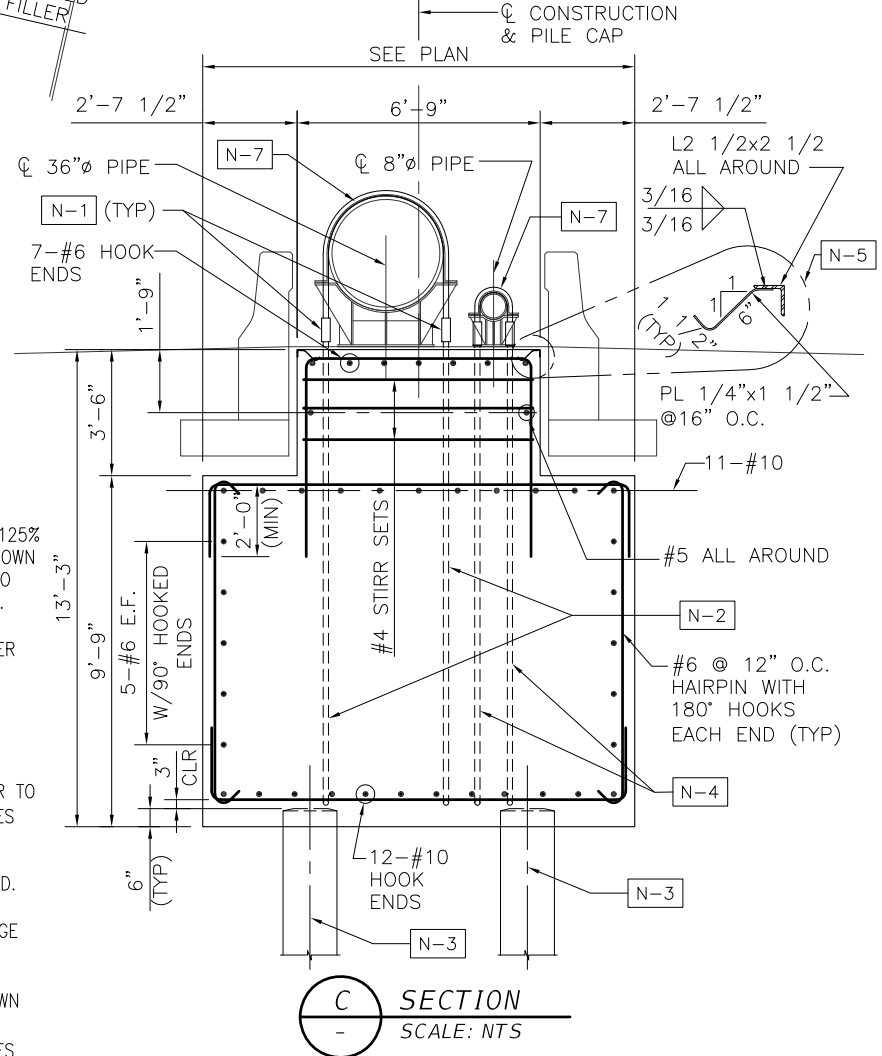
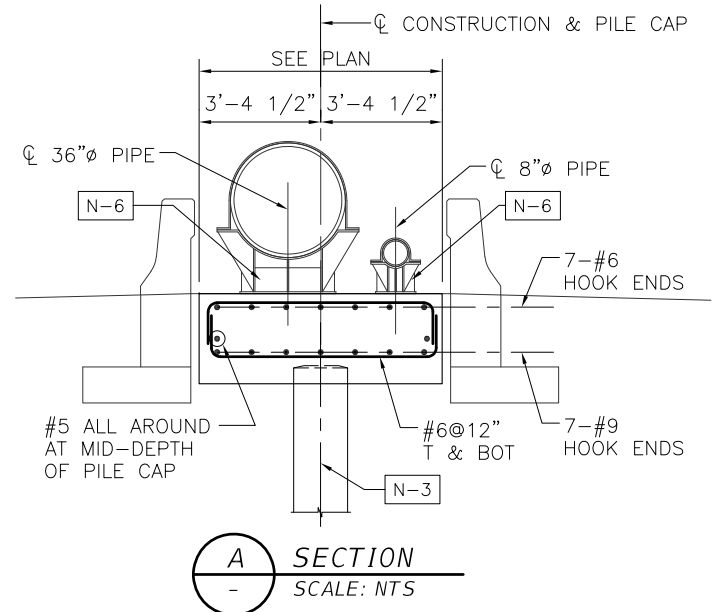
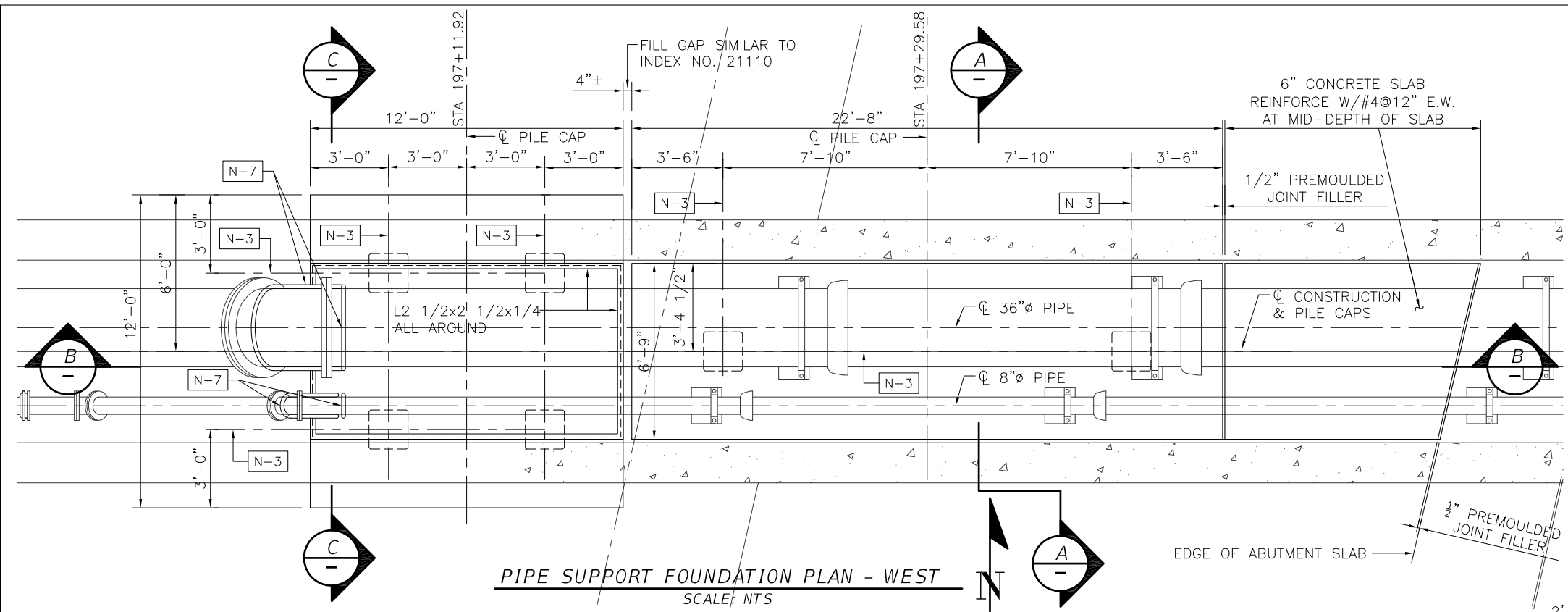
- CONCRETE MIX DESIGNS
- REINFORCING STEEL
- PRESTRESSED CONCRETE PILES
- STAINLESS STEEL ANCHORS FOR PIPE SUPPORTS
- ANY EXPANSION & EPOXY ANCHORS
- WELD PROCEDURE SPECIFICATIONS AND WELDER QUALIFICATIONS
- MASS CONCRETE PLAN PER FDOT SPECIFICATION SECTION 346
- PIPE HOLDDOWNS AND PIPE CLAMPS FOR DEADMAN
- CONCRETE ANCHORAGE FOR PIPE HOLDDOWNS AND PIPE CLAMPS
- SOIL ANCHORS

M– SPECIALLY DESIGNED PIPE CLAMPS AND PIPE HOLDDOWNS:


1. SHOP DRAWINGS AND CALCULATIONS FOR THE FOLLOWING ITEMS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA:
 - HEAVY DUTY PIPE HOLDDOWNS SHOWN IN SECTION 'C' ON SHEET NO. US-02 AND US-03, ALONG WITH THE RELATED ANCHORAGE TO CONCRETE. THE HOLDDOWNS, FOR THE 36" DIAMETER PIPE, SHALL BE DESIGNED FOR A VERTICAL THRUST OF 130,000 POUNDS AND A HORIZONTAL THRUST OF 54,000 POUNDS, ACTING CONCURRENTLY. NOTE, THESE ARE "UNFACTORED" LOADS. THESE LOADS ARE VERY HIGH (NON-STANDARD) AND WILL REQUIRE A UNIQUE DESIGN BY AN ENGINEER SPECIALIZED IN THE DESIGN OF PIPE RESTRAINT DEVICES. THE HOLDDOWNS, AND ALL ASSOCIATED HARDWARE, SHALL BE MADE OF GALVANIZED STEEL.
 - HEAVY DUTY PIPE CLAMPS SHOWN IN DETAIL '1' ON SHEET NO. US-06, ALONG WITH THE RELATED ANCHORAGE TO CONCRETE. THE DIRECTION OF THE 117,000 POUND "UNFACTORED" LOADS FOR THE PIPE CLAMP ARE SHOWN ON SHEET NO. US-06. THESE LOADS ARE VERY HIGH (NON-STANDARD) AND WILL REQUIRE A UNIQUE DESIGN BY AN ENGINEER SPECIALIZED IN THE DESIGN OF PIPE RESTRAINT DEVICES. THE PIPE CLAMP, AND ALL ASSOCIATED HARDWARE, SHALL BE MADE OF GALVANIZED STEEL.

				SCALE	AS NOTED	DESIGNED BY	G.P.	DATE	FEBRUARY 2018	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER	GEORGE R. PAPADOPOULOS, P.E.	UTILITY STRUCTURAL NOTES	SHEET NO.
				DRAWN BY	E.C.	PROJECT NO.	6086960	FL. LICENSE NO.	55843		US-01			
				CHECKED BY	G.P.	CERTIFICATE OF AUTHORIZATION: 8115								
No.	REVISIONS	DATE	BY											

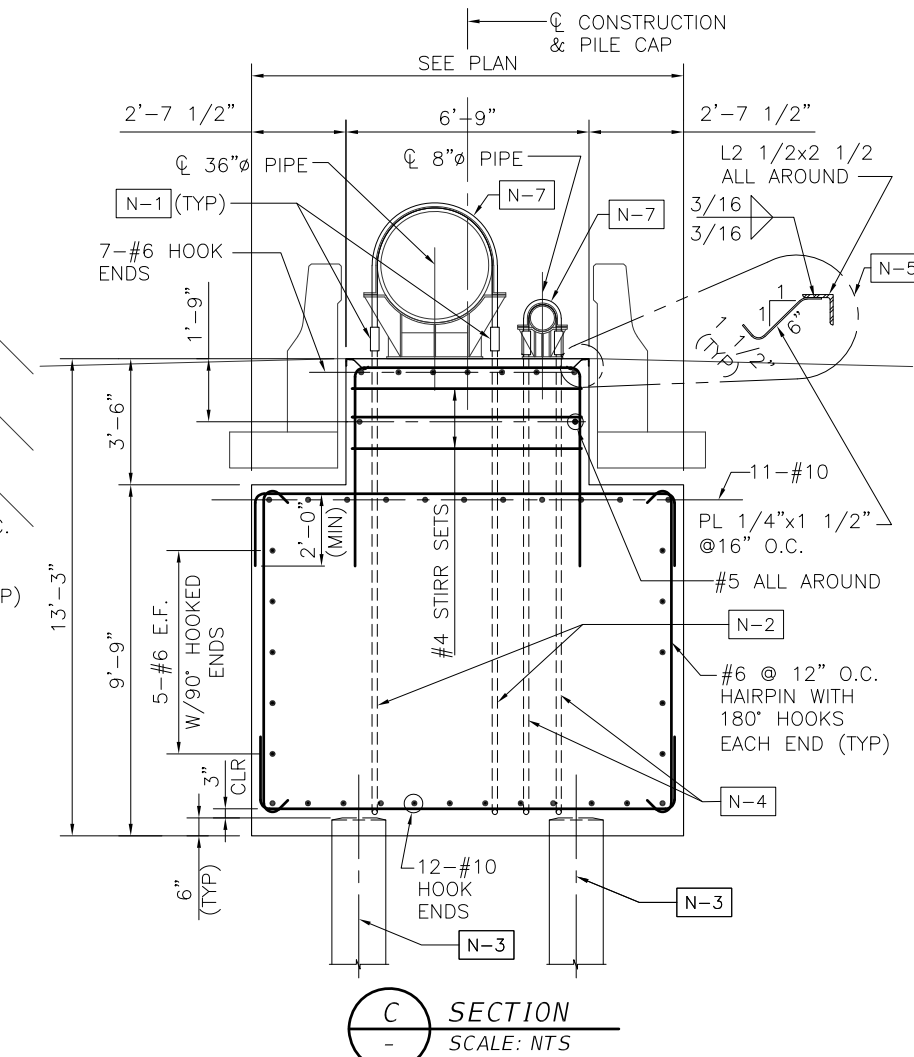
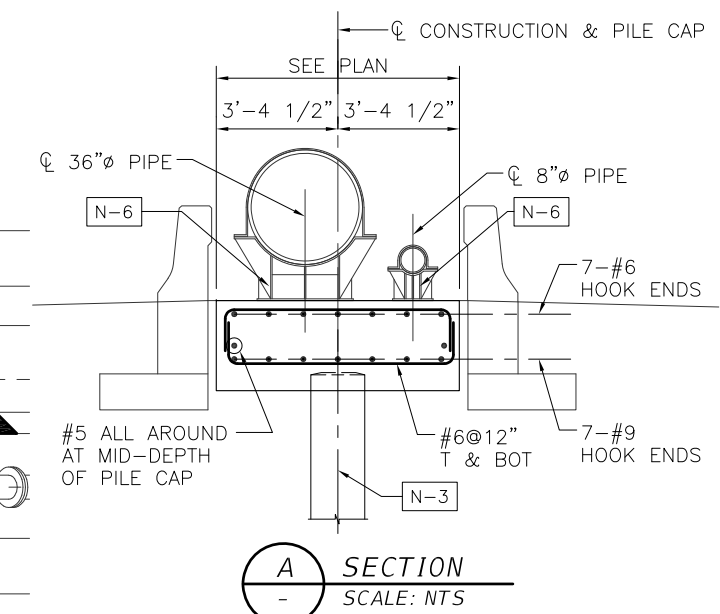
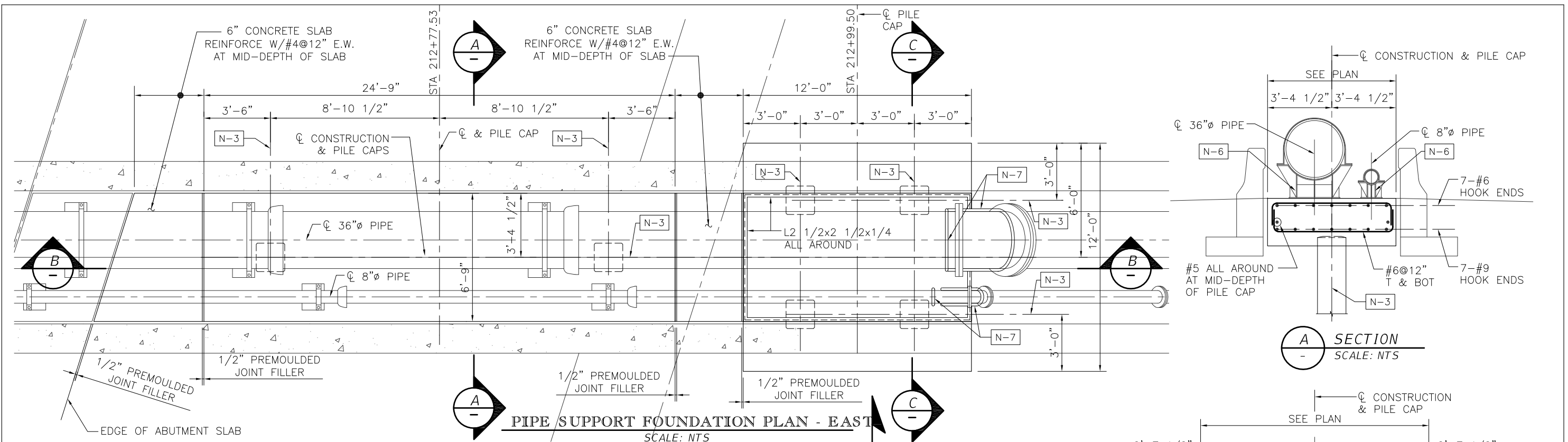
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- STRUCTURAL ITEM NOTES:**
- N-1 GALVANIZED COUPLER CAPABLE OF PROVIDING 125% OF THE YIELD STRENGTH OF THE PIPE HOLD DOWN AND ANCHORAGE. COUPLER SHALL BE ABLE TO SPLICE BOTH, WHEN NEITHER CAN BE ROTATED.
 - N-2 ANCHORAGE OF 36" PIPE TO CONCRETE. REFER TO SECTION "M" OF THE UTILITY STRUCTURAL NOTES ON SHEET NO. US-01.
 - N-3 24" SQUARE PRESTRESS CONCRETE PILE.
 - N-4 ANCHORAGE OF 8" PIPE TO CONCRETE. REFER TO SECTION "M" OF THE UTILITY STRUCTURAL NOTES ON SHEET NO. US-01.
 - N-5 ANGLE AND PLATE ASSEMBLY TO BE GALVANIZED.
 - N-6 FOR PIPE SUPPORTS, REFER TO (DETAILS BRIDGE PIPING), SHEET NO. U-64.
 - N-7 GALVANIZED STEEL HEAVY DUTY PIPE HOLD DOWN FOR 36" PIPE, AND 8" PIPE. REFER TO SECTION "M" OF THE UTILITY STRUCTURAL NOTES ON SHEET NO. US-01.

SCALE: AS NOTED DESIGNED BY: G.P. DRAWN BY: E.C. CHECKED BY: G.P.				GEORGE R. PAPADOPOULOS, P.E. P.E. NO. 55843 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2018 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 55843		UTILITY STRUCTURAL PIPE SUPPORT FOUNDATION - WEST		SHEET NO.: US-02
REVISIONS No. DATE BY												


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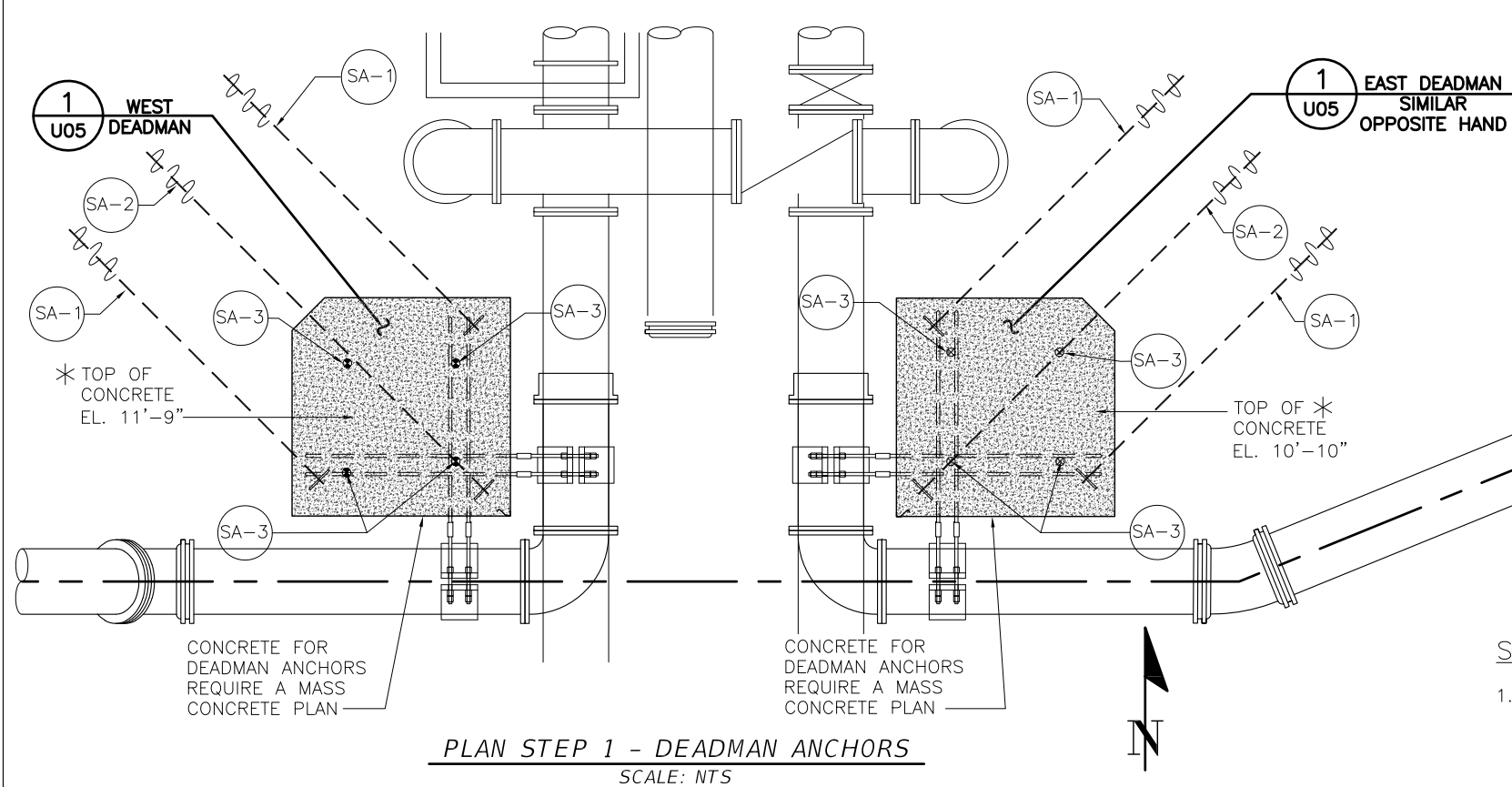
- STRUCTURAL ITEM NOTES**
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 - N-2 ANCHORAGE OF 36" PIPE TO CONCRETE. REFER TO SECTION "M" OF THE UTILITY STRUCTURAL NOTES ON SHEET NO. US-01.
 - N-3 24" SQUARE PRESTRESS CONCRETE PILE.
 - N-4 ANCHORAGE OF 8" PIPE TO CONCRETE. REFER TO SECTION "M" OF THE UTILITY STRUCTURAL NOTES ON SHEET NO. US-01.
 - N-5 ANGLE AND PLATE ASSEMBLY TO BE GALVANIZED.
 - N-6 FOR PIPE SUPPORTS, REFER TO (DETAILS BRIDGE PIPING), SHEET NO. U-64.
 - N-7 GALVANIZED STEEL HEAVY DUTY PIPE HOLD DOWN FOR 36" PIPE, AND 8" PIPE. REFER TO SECTION "M" OF THE UTILITY STRUCTURAL NOTES ON SHEET NO. US-01.

B SECTION
SCALE: NTS

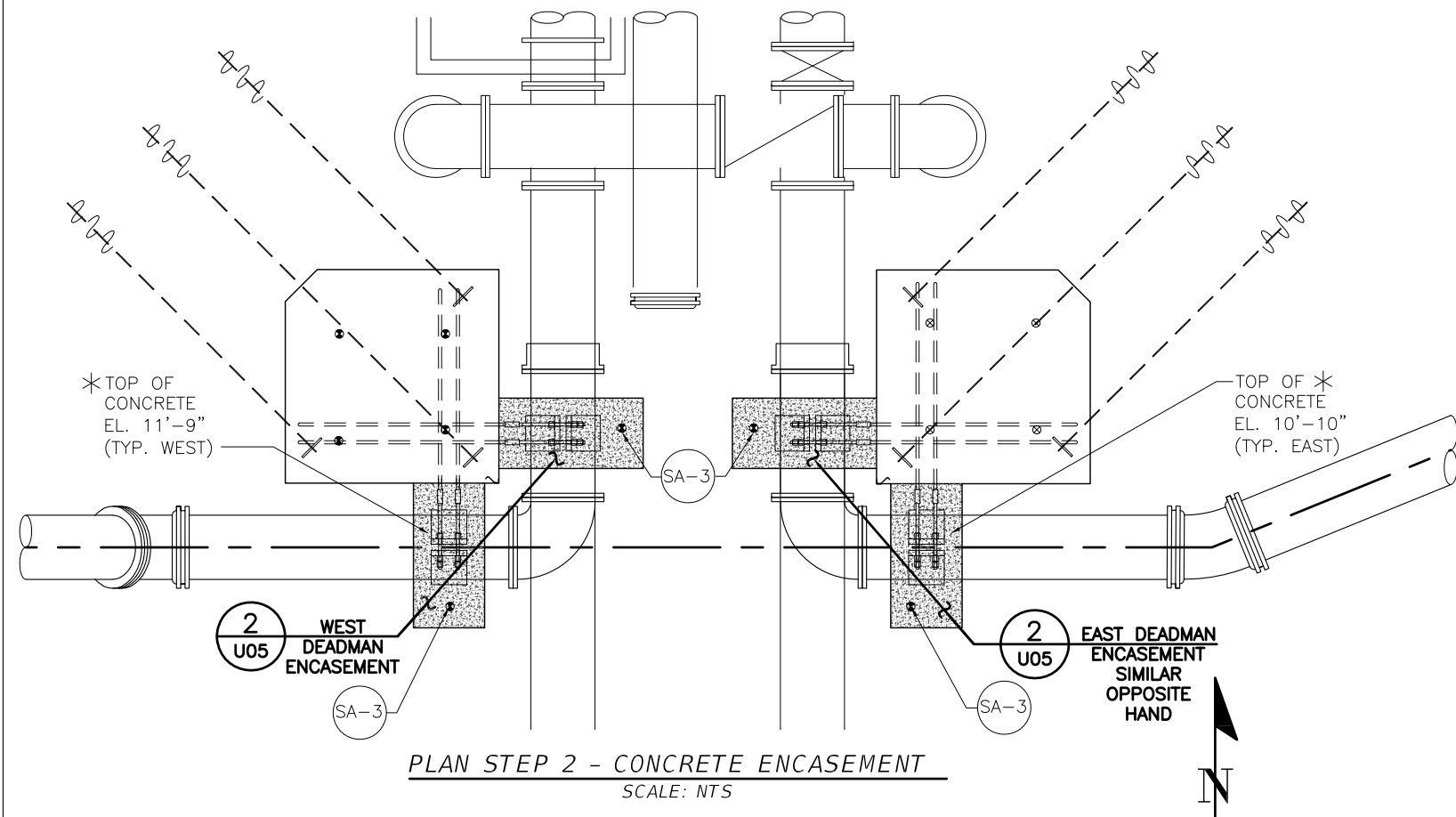
C SECTION
SCALE: NTS

SCALE: AS NOTED DESIGNED BY: G.P. DRAWN BY: E.C. CHECKED BY: G.P.				GEORGE R. PAPADOPOULOS, P.E. P.E. NO. 55843 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2018 PROJECT NO.: 6086960		 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 55843		UTILITY STRUCTURAL PIPE SUPPORT FOUNDATION - EAST		SHEET NO.: US-03	
No.	REVISIONS	DATE	BY										

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PLAN STEP 1 - DEADMAN ANCHORS
SCALE: NTS

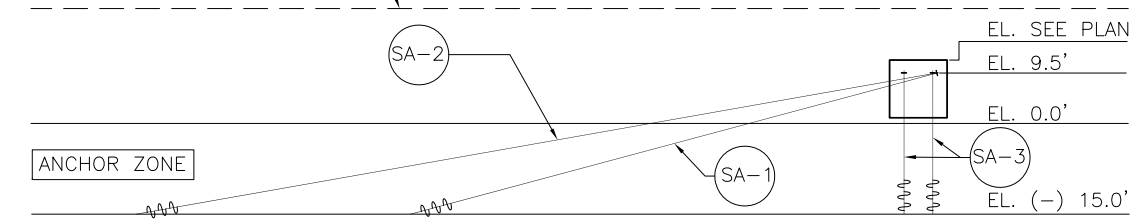


PLAN STEP 2 - CONCRETE ENCASEMENT
SCALE: NTS

ANCHOR INSTALLATION TABLE		
DESIGNATION	INSTALLATION ANGLE FROM HORIZONTAL	ANCHOR DESIGN LOAD (KIPS)
SA-1	15 DEGREES	94
SA-2	10 DEGREES	94
SA-3	90 DEGREES	132

* FIELD VERIFY ELEVATIONS PRIOR TO INSTALLATION OF THE SOIL ANCHORS.

EXISTING GRADE, ELEVATION VARIES (14±), FIELD VERIFY. SEE ROAD WAY PLANS FOR FINAL GRADE.




SOIL ANCHOR DIAGRAM AND TABLE
SCALE: NTS

SOIL ANCHOR NOTES:

- HELICAL SOIL ANCHOR BY CHANCE ANCHOR WITH CENTRAL STEEL SHAFT TYPE SS200-2" RCS AND WITH COMMON LEAD CONFIGURATIONS CATALOG NUMBER C110-0572 - THREE 14" DIAMETER PLATES ANCHORS. EXTENSION FROM THE ANCHOR ZONE TO THE CONNECTION TO THE STRUCTURE SHALL BE ACCOMPLISHED VIA COMMON EXTENSION CONFIGURATIONS CATALOG NUMBER C110-0563, C110-0564, C110-0565 AND C110-0566, AS APPROPRIATE OR AS RECOMMENDED BY THE CHANCE ANCHOR, WHICHEVER IS MORE STRINGENT.
 - THE INDICATED DESIGN LOADS (DL) REPRESENT THE REACTION FORCES FROM THE SYSTEM, WITH CONSIDERATIONS FOR THE INSTALLATION ANGLES SHOWN, TIMES A SAFETY FACTOR OF 2.0.
 - THE SELECTED ANCHOR TYPE, SIZE, INDICATED INSTALLATION ANGLES, AND DEPTHS PROVIDE ANCHOR CAPACITY EQUAL TO OR GREATER THAN THE DESIGN LOAD. THE DERIVED ANCHOR CAPACITY BASED ON THE ASSUMPTIONS THAT THE ANCHORS ARE INSTALLED INTO A MEDIUM DENSE SAND LAYER OCCURRING FROM ABOUT ELEVATION 0.0 TO ELEVATION -15.0 NAVD88 THROUGHOUT THE PROJECT SITE. THE CONTRACTOR MAY PROPOSE DIFFERENT ANCHOR TYPES, SIZES, INSTALLATION ANGLES AND DEPTHS FOR USE IN THE PROJECT. THE PROPOSED ANCHOR SYSTEM SHALL PROVIDE ANCHOR CAPACITY EQUAL TO OR GREATER THAN THE DESIGN LOADS INDICATED.
 - THE ANCHOR INSTALLATION MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ANCHOR INSTALLATION AND TESTING SHALL BE PERFORMED BY QUALIFIED FACTORY AUTHORIZED INSTALLER ONLY.
 - PERFORM PROOF TEST ON ALL INSTALLED ANCHORS. THE TEST LOADS SHALL BE A MINIMUM 1.0 TIMES THE INDICATED DESIGN LOADS. TENSION TESTS MAY BE SUBSTITUTE FOR THE COMPRESSION TESTS. THE TESTING SEQUENCE SHALL BE AS SHOWN IN TABLE BELOW:
- | LOAD STEPS | HOLD TIMES (MINUTES) |
|------------|----------------------|
| AL | 0 MIN. |
| 0.2 DL | 2.5 MIN. |
| 0.4 DL | 2.5 MIN. |
| 0.6 DL | 2.5 MIN. |
| 0.8 DL | 2.5 MIN. |
| 1.0 DL | 5.0 MIN. |
| 0.6 DL | 1.0 MIN. |
| 0.4 DL | 1.0 MIN. |
| 0.2 DL | 1.0 MIN. |
| AL | 5.0 MIN. |
- THE ACCEPTANCE CRITERIA FOR THE PROOFED TEST ANCHORS SHALL BE WHEN THE ANCHORS SUSTAIN THE TENSION OR COMPRESSION CAPACITY (AT 1.0 DL) WITH NO MORE THAN 0.5 INCHES OF TOTAL MOVEMENT OF THE ANCHOR HEAD AS MEASURED RELATIVE TO THE ANCHOR HEAD PRIOR TO THE START OF THE TESTING.
 - PROOF TESTS SHALL BE PERFORMED AND PAID FOR BY THE CONTRACTOR. A QUALIFIED TESTING AGENCY SHALL BE EMPLOYED AND PAID FOR BY THE CONTRACTOR TO MONITOR AND RECORD THE TESTS AND TO PREPARE THE PROOF TEST REPORT.
 - THE COUNTY SHALL RESERVE THE RIGHT TO VISIT THE SITE TO OBSERVE THE TESTING IN PROGRESS. THE CONTRACTOR SHALL PROVIDE ACCOMMODATIONS TO THE COUNTY PERSONNEL VISITING THE SITE.
 - PROVIDE RESULTS OF PROOF TESTS TO THE COUNTY WITHIN 48-HOURS OF COMPLETION. INCLUDE ALL RELEVANT TEST DATA, TEST SET UP AND TEST RESULTS, INCLUDING THE GRAPHS OF LOAD VERSUS DEFLECTION, AND CONCLUSION / RECOMMENDATION IN THE REPORT SUBMITTED TO THE COUNTY.
 - SOIL BORING PERFORMED FOR THE PROJECT ENCOUNTERED SOIL LAYERS WITH VARYING CONSISTENCY AND THICKNESS. SEE SOIL BORING LOGS INCLUDED ELSEWHERE IN THESE PLANS. THE CONTRACTOR MAY PERFORM ADDITIONAL SUBSURFACE INVESTIGATION PRIOR TO CONSTRUCTION. THE ADDITIONAL INVESTIGATION SHOULD NOT INCUR ADDITIONAL COSTS TO THE COUNTY.

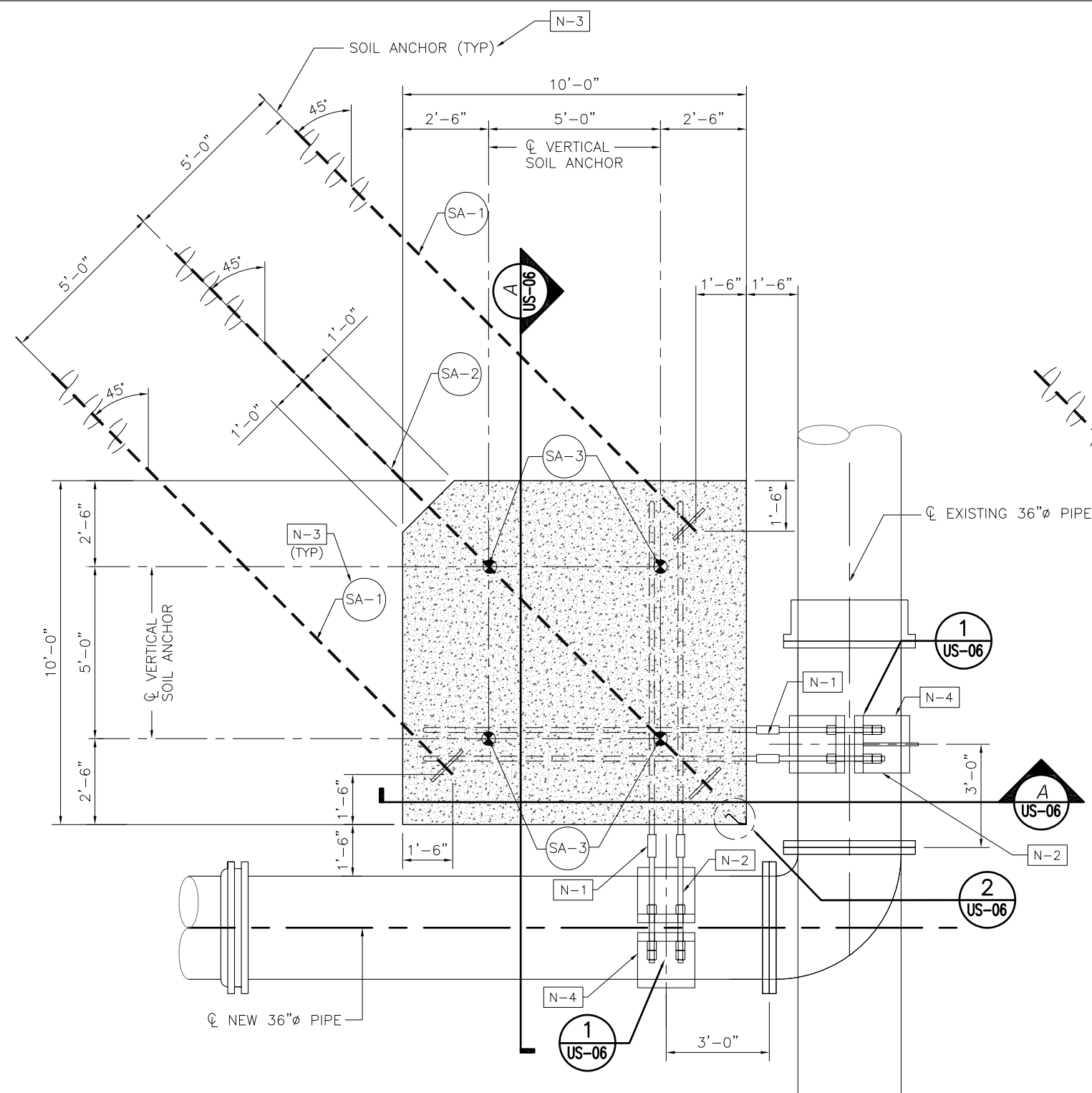
AL = Alignment Load=0.1 DL;
DL=Design Load

SCALE AS NOTED DESIGNED BY G.P. DRAWN BY E.C. CHECKED BY G.P.				GEORGE R. PAPADOPOULOS, P.E. P.E. NO. 55843 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE FEBRUARY 2018 PROJECT NO. 6086960		 DESIGN ENGINEER GEORGE R. PAPADOPOULOS, P.E. FL. LICENSE NO. 55843		UTILITY STRUCTURAL DEADMAN		SHEET NO. US-04
No. REVISIONS DATE BY												

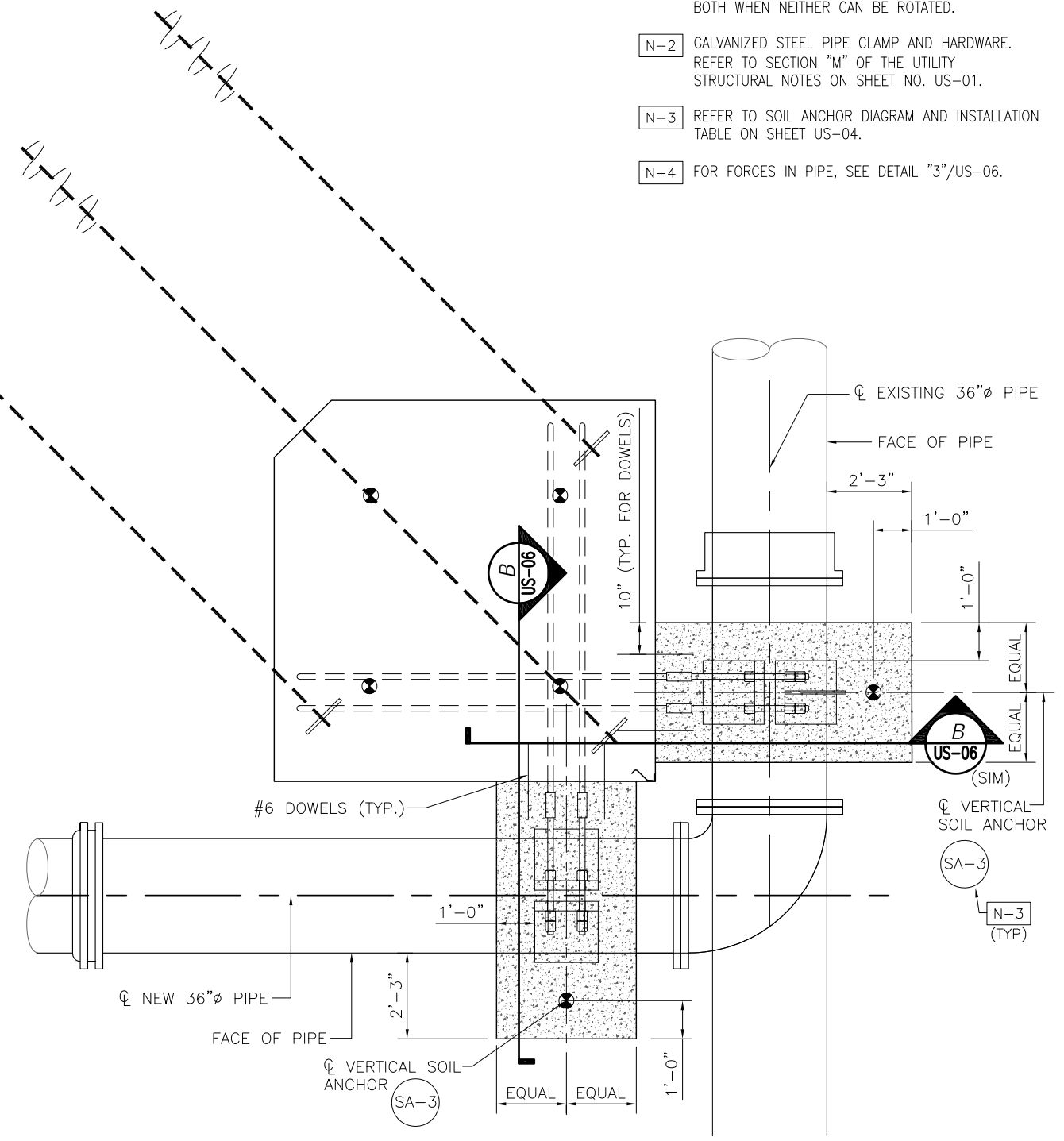
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STRUCTURAL ITEM NOTES:


- N-1 GALVANIZED COUPLER CAPABLE OF PROVIDING 125% OF THE YIELD STRENGTH OF THE PIPE CLAMP AND ANCHORAGE. COUPLER SHALL BE ABLE TO SPLICE BOTH WHEN NEITHER CAN BE ROTATED.
- N-2 GALVANIZED STEEL PIPE CLAMP AND HARDWARE. REFER TO SECTION "M" OF THE UTILITY STRUCTURAL NOTES ON SHEET NO. US-01.
- N-3 REFER TO SOIL ANCHOR DIAGRAM AND INSTALLATION TABLE ON SHEET US-04.
- N-4 FOR FORCES IN PIPE, SEE DETAIL "3"/US-06.



1 DETAIL - ENLARGED PLAN (STEP 1)
US-05 SCALE: 1/4"=1'-0"



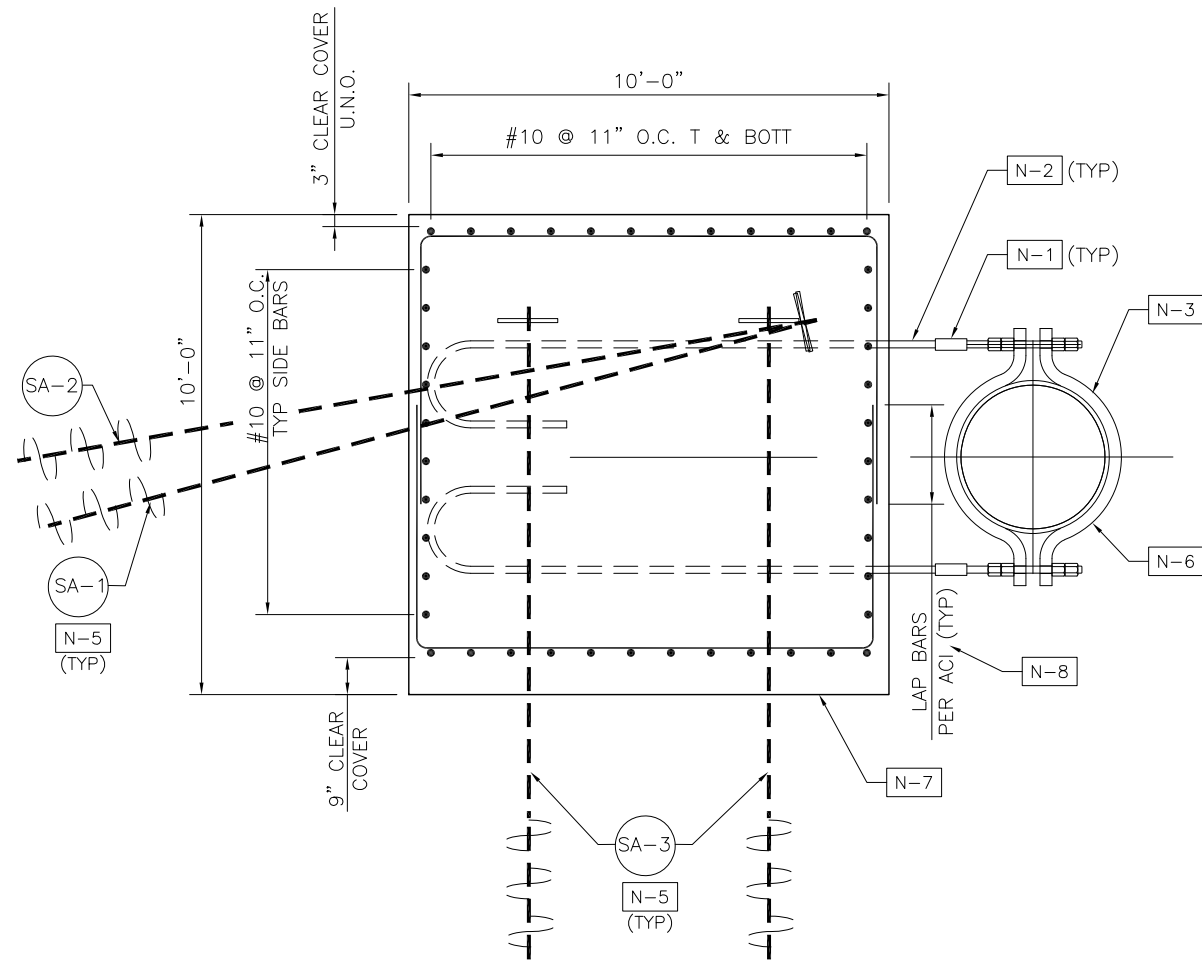
2 DETAIL - ENLARGED PLAN (STEP 2)
US-05 SCALE: 1/4"=1'-0"

No.	REVISIONS	DATE	BY	SCALE	AS NOTED	DESIGNED BY	GEORGE R. PAPADOPOULOS, P.E. P.E. NO. 55843	DATE	FEBRUARY 2018	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence	DESIGN ENGINEER	GEORGE R. PAPADOPOULOS, P.E. FL. LICENSE NO. 55843	SHEET NO. US-05
							AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115						
UTILITY STRUCTURAL DEADMAN													

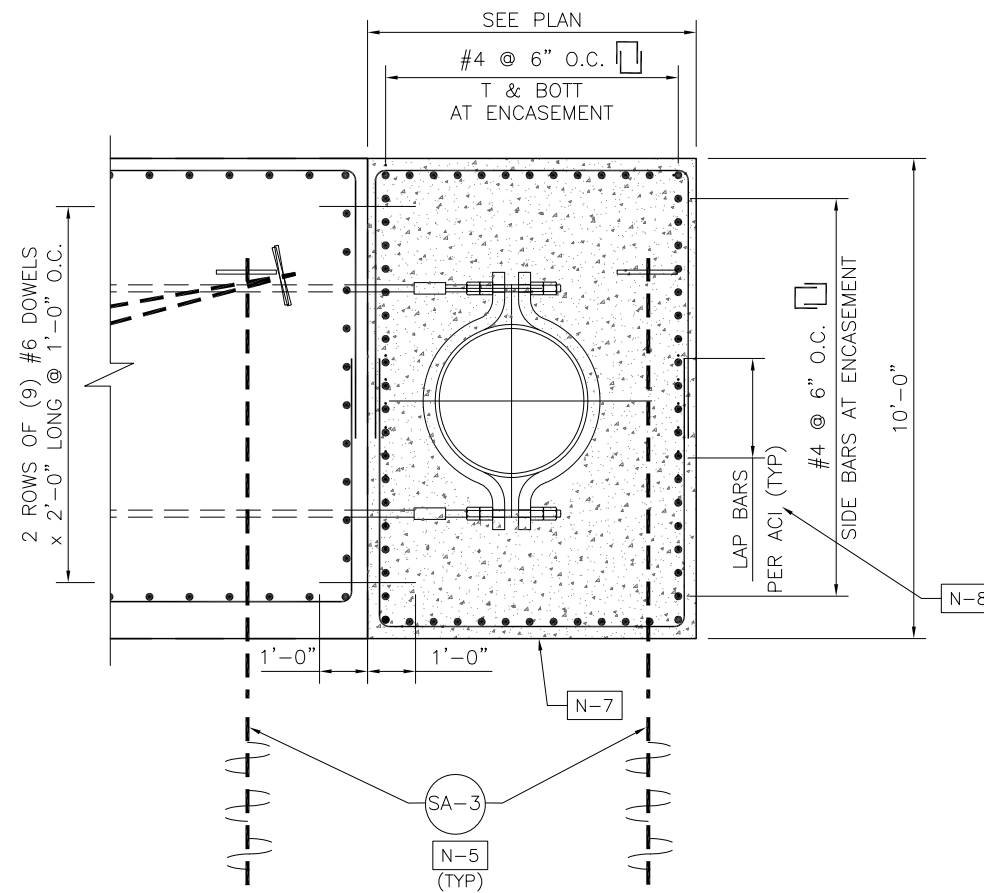
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STRUCTURAL ITEM NOTES:

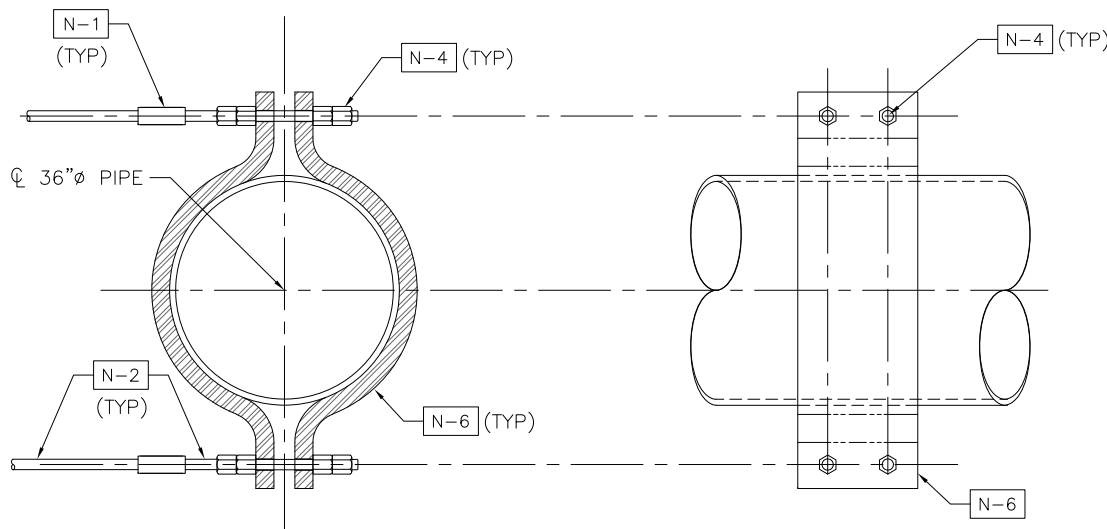
- N-1 GALVANIZED COUPLER CAPABLE OF PROVIDING 125% OF THE YIELD STRENGTH OF THE PIPE CLAMP AND ANCHORAGE. COUPLER SHALL BE ABLE TO SPLICE BOTH WHEN NEITHER CAN BE ROTATED.
- N-2 ANCHORAGE OF 36" PIPE TO CONCRETE. REFER TO SECTION "M" OF THE UTILITY STRUCTURAL NOTES ON SHEET NO. US-01.
- N-3 PIPE CLAMP REFER TO DETAIL "1" THIS SHEET.
- N-4 IN STEP 1, HEAVY DUTY PIPE CLAMP TO BE SECURED TO CONCRETE ANCHORAGE AND BE CAPABLE OF TRANSFERRING THE LOADS SHOWN IN DETAIL, PLAN 3 ON THIS SHEET.
- N-5 REFER TO SOIL ANCHOR DIAGRAM AND INSTALLATION TABLE ON SHEET US-04.
- N-6 STEEL PIPE CLAMP AND HARDWARE TO BE GALVANIZED. REFER TO SECTION "M" OF UTILITY STRUCTURAL NOTES ON SHEET NO. US-01, AND "DETAIL, PLAN 3" ON THIS SHEET FOR FORCES IN THE PIPE.
- N-7 PRIOR TO PLACING CONCRETE, COMPACT SOIL UNDERNEATH CONCRETE DEADMAN AND CONCRETE ENCASEMENT. REFER TO SECTION "G" OF UTILITY STRUCTURAL NOTES ON SHEET NO. US-01. COMPACTION OF SOIL SHALL BE SIMILAR TO THE "SPREAD FOOTING" PORTION OF FDOT SPECIFICATION SECTION 455.
- N-8 LAP ALL BARS AS AN ACI CLASS "B" TENSION SPLICE.



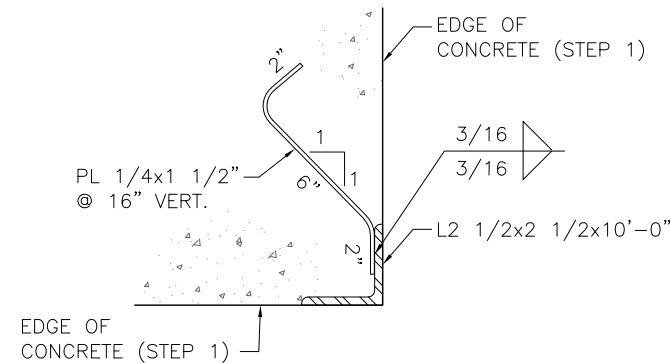
A SECTION (STEP 1)
US-06 SCALE: 1/4"=1'-0"



B SECTION -ENCASEMENT (STEP 2)
US-06 SCALE: 1/4"=1'-0"

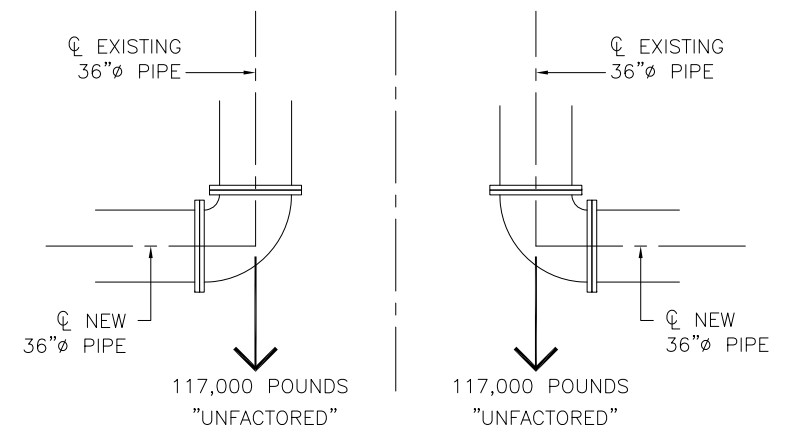


1 DETAIL - HEAVY DUTY STEEL PIPE CLAMP
US-06 SCALE: NTS



NOTE:
PLATE AND ANGLE TO BE GALVANIZED.

2 DETAIL
US-06 SCALE: 1/2"=1'-0"



3 DETAIL, PLAN - FORCES IN 36" PIPE
US-06 SCALE: NTS

SCALE: AS NOTED DESIGNED BY: G.P. DRAWN BY: E.C. CHECKED BY: G.P.				GEORGE R. PAPADOPOULOS, P.E. P.E. NO. 55843 AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 (813) 286-1711 CERTIFICATE OF AUTHORIZATION: 8115		DATE: FEBRUARY 2018 PROJECT NO.: 6086960		DESIGN ENGINEER: GEORGE R. PAPADOPOULOS, P.E. FL. LICENSE NO.: 55843		SHEET NO.: US-06	
No. REVISIONS DATE BY				PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208 Sonnenberg, Terence		2/21/2019 4:49:18 PM		UTILITY STRUCTURAL DEADMAN		S:\Projects\RDWY\Proj\Fdot\Proj\FDOT\IV8\60460213000\utils\scadd\Struct\US-06.dwg	

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