## WATERMAIN AND FORCEMAIN CONSTRUCTION PLANS

## FOR

# U.S. 41 TRANSMISSION MAINS TRAILWINDS DRIVE TO SOUTH AIRPORT ROAD (ALICO ROAD TO COLONIAL BOULEVARD PHASE 1B)

PART OF SECTION 12 AND 13 TOWNSHIP 45 SOUTH, RANGE 24 EAST FORT MYERS, LEE COUNTY, FLORIDA

### LEE COUNTY COMMISSIONERS

DISTRICT 1. JOHN E. MANNING DISTRICT 2. CECIL L. PENDERGRASS DISTRICT 3. LARRY KIKER DISTRICT 4. BRIAN HAMMAN DISTRICT 5. FRANK MANN **COUNTY MANAGER** 

ROGER DESJARLAIS

**DIRECTOR OF PUBLIC WORKS** 

**DIRECTOR OF UTILITIES** 

### PAMELA KEYES, P.E.

PERMIT REQUIREMENTS			
AGENCY	STATUS	NOTES	
S. FLORIDA WATER MANAGEMENT DISTRICT	N/A	-	
LEE COUNTY DEVELOPMENT ORDER	PENDING	-	
FLORIDA DEPARTMENT OF HEALTH	PENDING	-	
FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION	PENDING	-	
F.D.O.T. CONNECTION PERMIT	N/A	-	
F.D.O.T. DRAINAGE CONNECTION PERMIT	N/A	-	
F.D.O.T. UTILITY PERMIT	PENDING	-	
ARMY CORPS OF ENGINEERS	N/A	-	
F.D.E.P. NOTICE OF INTENT	PENDING	-	

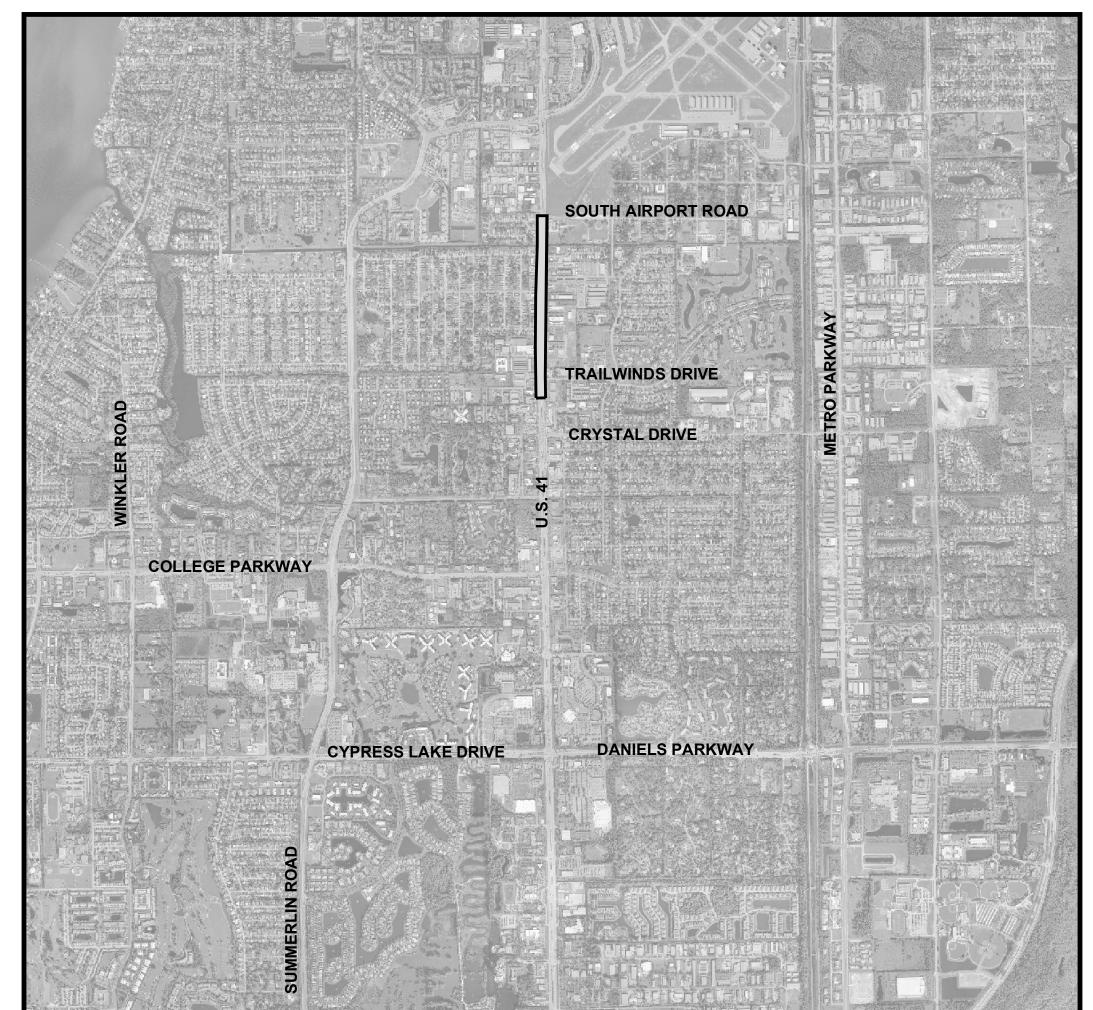
NOTE: CONTRACTOR MUST OBTAIN AND KEEP ON FILE A COPY OF ALL PERMITS REQUIRED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY

### **DESIGN TEAM**

PROJECT ENGINEER	PROJECT MANAGEMENT		
TIMOTHY B. GAVIN, P.E.	CHRIS VAN BUSKIRK		
DESIGN ENGINEER	PROJECT SURVEYOR		
TIMOTHY B. GAVIN, P.E.	SCOTT A. WHEELER, PSM		
LEAD DESIGN TECHNICIAN	SITE PLANNING		
JAN BILDZUKEWICZ	N/A		
DESIGN STAFF	LAND PLANNING		
WILLIAM SCOTT ENGLISH			
QUALITY CONTROL	RECORD DRAWINGS		

THESE PLANS MAY HAVE BEEN MODIFIED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA

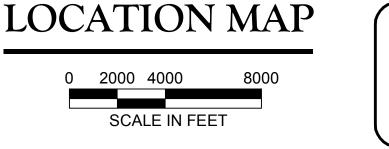
ALL DIMENSIONS ARE IN FEET.





**PROJECT** 

LOCATION





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C11.0	STORMWATER POLLUTION PREVENTION PLAN	23063F52.DWG
C12.0-C12.2	LEE COUNTY UTILITY DETAILS	23063F70.DWG

DEVIATIONS: NONE		
TIMOTHY B. GAVIN, P.E. ENGINEER OF RECORD	FL. P.E. LICENSE NO. 70675	DATE
DEVELOPMENT ORDER APPROVED: PUBLIC WORKS ADMINISTRATION		

PLAN STATUS

**BID SET** 2018-06-12 Darraco

CIVIL ENGINEERING - LAND SURVEYING LAND PLANNING - LANDSCAPE DESIGN

www.barraco.net

2271 McGREGOR BLVD., SUITE 100 POST OFFICE DRAWER 2800 FORT MYERS, FLORIDA 33902-2800 PHONE (239) 461-3170

FAX (239) 461-3169 LORIDA CERTIFICATES OF AUTHORIZATION NGINEERING 7995 - SURVEYING LB-6940

PREPARED FOR



1500 MONROE STREET FORT MYERS, FLORIDA 33907 PHONE (239) 533-8181 FAX (239) 485-8845

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PROJECT DESCRIPTION

## **U.S.** 41 (S.R. 45) TRANSMISSION MAINS

PHASE 1B **SOUTH AIRPORT ROAD** 

PART OF SECTION 12 AND 13 TOWNSHIP 45 SOUTH, **RANGE 24 EAST** FORT MYERS, LEE COUNTY, FLORIDA

ENGINEER OF RECORD TIMOTHY B. GAVIN, P.E., FOR THE FIRM

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PLOT BY JAN BILDZUKEWICZ

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CROSS REFERENCED DRAWINGS

PLAN REVISIONS

BID SET 2018-06-12

**COVER SHEET** AND **LOCATION MAP** 

PROJECT / FILE NO. SHEET NUMBER 23063 C1.0

### **GENERAL NOTES:**

NOTE: SEE ADDITIONAL NOTES ON SUBSEQUENT PLAN SHEETS WHICH ARE SPECIFIC TO THIS PROJECT. IN THE EVENT OF A CONFLICT, UTILIZE NOTES ON THE PLAN SHEETS.

- 1. THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE LATEST EDITIONS OF THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, F.D.O.T. DESIGN STANDARDS AND APPLICABLE DESIGN STANDARDS MODIFICATIONS FOUND AT http://www.dot.state.fl.us/rddesign AND ALL LOCAL CODES.
- 2. ALL APPROVALS REQUIRED IN CONJUNCTION WITH THESE NOTES MUST BE OBTAINED IN WRITING BY THE CONTRACTOR. ANY DEVIATIONS FROM THE PLANS AND / OR SPECIFICATIONS MUST BE APPROVED IN ADVANCE BY THE OWNER. ENGINEER AND APPROPRIATE REGULATORY AGENCY.
- 3. CONTRACTOR SHALL ENSURE THAT ALL PERMITS ARE IN PLACE PRIOR TO CONSTRUCTION, THAT COPIES OF ALL PERMITS ARE RETAINED ON SITE AT ALL TIMES AND SHALL ADHERE TO ALL PERMIT CONDITIONS. AT LEAST 72 HOURS PRIOR TO CONSTRUCTION CONTRACTOR SHALL NOTIFY THE LOCAL MAINTENANCE ENGINEER'S OFFICE TO SECURE GENERAL USE PERMITS AND / OR OTHER PERMITS REQUIRED FOR WORK WITHIN F.D.O.T. AND LEE COUNTY RIGHT-OF-WAY AND EASEMENTS.
- 4. ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST VERSIONS OF THE AMERICANS WITH DISABILITIES ACT (A.D.A.), THE FLORIDA FIRE CODE AND THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (F.A.C.B.C.).
- 5. SIDEWALKS ARE DESIGNED AND INTENDED FOR PEDESTRIAN TRAFFIC ONLY. ALL SIDEWALKS AND CURB CUTS SHALL BE IN ACCORDANCE WITH F.D.O.T. INDEX 304 AND SHALL INCLUDE DETECTABLE WARNING SURFACES. VALLEY GUTTER ADJACENT TO CURB CUTS SHALL DEVIATE FROM STANDARD DETAIL BY NOT EXCEEDING 12:1 SLOPES.
- 6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, OWNER'S REPRESENTATIVE AND APPROPRIATE AGENCY A MINIMUM OF 72 HOURS PRIOR TO ALL INSPECTIONS REQUIRED BY THE RESPECTIVE PERMIT.
- 7. THE CONTRACTOR SHALL NOTIFY THE OWNER AND CONTACT ALL UTILITY COMPANIES FOR LOCATIONS OF EXISTING UTILITIES A MINIMUM OF 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL DETERMINE IF UTILITIES OTHER THAN THOSE SHOWN ON THESE PLANS EXIST. THE LOCATION OF EXISTING UTILITIES, PAVEMENT, VEGETATION AND OTHER IMPROVEMENTS ARE APPROXIMATE ONLY. THE EXACT SIZES, ELEVATIONS AND LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS. CONTRACTOR SHALL NOTIFY ENGINEER / OWNER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. COST ASSOCIATED WITH UTILITY LOCATING IS CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
- 8. ANY PUBLIC LAND CORNER OR BENCHMARK WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED AND IF IN DANGER OF BEING DESTROYED MUST BE PROPERLY REFERENCED AND REPLACED AT THE COMPLETION OF CONSTRUCTION BY THE CONTRACTOR.
- EXISTING IMPROVEMENTS SHALL REMAIN UNLESS NOTED OTHERWISE, AND SHALL BE RESTORED TO A CONDITION EQUIVALENT TO THAT WHICH EXISTED PRIOR TO COMMENCING CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER. EXISTING OFF-SITE DRAINAGE PATTERNS SHALL BE MAINTAINED DURING CONSTRUCTION.
- 10. THE CONTRACTOR SHALL OBTAIN ANY CLEARING, VEGETATION REMOVAL OR RIGHT-OF-WAY PERMITS REQUIRED FOR THIS PROJECT. ALL DEBRIS SHALL BE REMOVED FROM SITE AND PROPERLY DISPOSED OF
- 11. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND USAGE OF THE EXISTING STREETS ADJACENT TO THE PROJECT. ALL TRAFFIC MAINTENANCE CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS. CONTRACTOR SHALL ASSURE THAT ALL TRAFFIC CONTROL DEVICES MEET ACCEPTABLE STANDARDS AS OUTLINED IN THE LATEST EDITION OF THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA'S) "QUALITY STANDARDS FOR WORK ZONE TRAFFIC CONTROL DEVICES", AND SHALL IMMEDIATELY REPAIR, REPLACE OR CLEAN DAMAGED, DEFACED OR DIRTY DEVICES. TRAFFIC CONTROL OPERATION PROCEDURES SHALL BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. ANY IMPACTS TO TRAFFIC FLOW SHALL BE COORDINATED WITH AND APPROVED BY THE APPROPRIATE LOCAL AGENCY.
- 12. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER AND OWNER'S REPRESENTATIVE.
- 13. THE LOCATIONS OF PROPOSED DRAINAGE STRUCTURES AND UTILITY LINES MAY BE FIELD ADJUSTED TO PRESERVE EXISTING VEGETATION AS APPROVED IN ADVANCE BY THE ENGINEER. UNDERGROUND CONTRACTOR SHALL MINIMIZE THE WORK AREA AND WIDTH OF TRENCHES TO AVOID DISTURBANCES OF NATURAL VEGETATION. EXERCISE CARE TO PROTECT THE ROOTS OF TREES TO REMAIN. WITHIN THE BRANCH SPREAD OF SUCH TREES, PERFORM ALL TRENCHING BY HAND. OPEN THE TRENCH ONLY WHEN UTILITIES CAN BE INSTALLED IMMEDIATELY. PRUNE INJURED ROOTS CLEANLY AND BACKFILL AS SOON AS POSSIBLE. SPOIL FROM TRENCHES SHALL BE PLACED ONLY ON PREVIOUSLY CLEARED AREAS OR AS DIRECTED BY THE OWNER. CONTRACTOR SHALL NOT REMOVE OR DISTURB ANY TREES AND/OR SHRUBS WITHOUT PRIOR APPROVAL BY OWNER.
- 14. INSTALLATION OF SUBSURFACE CONSTRUCTION, INCLUDING BUT NOT LIMITED TO WATER, SEWER AND IRRIGATION LINES, PUBLIC UTILITIES AND STORM DRAINAGE IS REQUIRED PRIOR TO COMPACTION OF THE ROADWAY SUBGRADE.
- 15. SUBGRADE AND LIMEROCK BASE COURSES TO BE COMPACTED TO 98% MINIMUM OF THE MAXIMUM DRY DENSITY AS SPECIFIED BY AASHTO T-180 TESTING. CONTRACTOR SHALL PROVIDE THE ENGINEER SATISFACTORY DENSITY TESTS FOR SUBGRADE AND LIMEROCK PRIOR TO PAYMENT OR FINAL ACCEPTANCE. EXCESS ROAD BASE AND COMPACTED SOIL SHALL BE REMOVED FROM ALL LANDSCAPE AREAS PRIOR TO FINAL GRADING. UTILITY TRENCHES SHALL BE COMPACTED TO 95% MINIMUM OF THE MAXIMUM DRY DENSITY AS SPECIFIED BY AASHTO-99. ALL GEOTECHNICAL TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO SEPARATE PAYMENT SHALL BE MADE FOR GEOTECHNICAL TESTING.
- 16. SWALE ELEVATIONS SHOWN ARE TO TOP OF SOD. CONTRACTOR TO ADJUST SWALE GRADING ACCORDINGLY. ALL UNPAVED AREAS SHALL BE GRADED TO DRAIN TO THE DRAINAGE SYSTEM TO PREVENT STANDING WATER. YARD DRAINS MAY BE ADDED IN GREEN AREAS AS NECESSARY AT THE DIRECTION OF THE ENGINEER, AND SHALL HAVE PEDESTRIAN-SAFE GRATES MEETING THE REQUIREMENTS OF H-20 LOADING.
- 17. CASING AND/OR CONDUIT SHALL HAVE A MINIMUM OF 36" COVER, EXTEND 5' BEYOND THE EDGE OF

- PAVEMENT, BACK OF CURB AND/OR SIDEWALK AT EACH END, AND ENDS SHALL BE SEALED AND DENOTED WITH MARKING TAPE.
- 18. THE CONTRACTOR IS REQUIRED TO ADJUST ALL EXISTING AND PROPOSED VALVE BOXES, MANHOLE RIMS, GRATES AND OTHER IMPROVEMENTS AS REQUIRED TO MATCH THE FINAL GRADE.
- 19. CONTRACTOR SHALL NOTIFY THE ENGINEER 24 HOURS PRIOR TO PLACING SOD ON AREAS THAT REQUIRE CRITICAL MINIMUM OR MAXIMUM ELEVATIONS IN ORDER FOR ENGINEER TO VERIFY SUCH ELEVATIONS. THE OBLIGATION TO ACHIEVE MINIMUM ELEVATIONS REMAINS WITH THE CONTRACTOR.
- 20. SOD A 12" STRIP ADJACENT TO ALL PAVEMENT PER F.D.O.T. REQUIREMENTS. SOD ALL UNPAVED DISTURBED AREAS WITHIN F.D.O.T. RIGHT OF WAY.
- 21. THE CONTRACTOR SHALL REMOVE ALL UNSUITABLE MATERIAL ENCOUNTERED FROM FILL AREAS PRIOR TO PLACEMENT OF FILL, AND SUCH MATERIAL SHALL BE STOCKPILED OR REMOVED AS DIRECTED BY OWNER. CONTRACTOR SHALL BE REQUIRED TO PROVIDE SUITABLE BACK FILL MATERIAL AS NEEDED FOR UTILITY BACK FILL ETC. AS IN ACCORDANCE WITH THE SPECIFICATIONS.
- 22. CONTRACTOR SHALL MAINTAIN MINIMUM SEPARATION BETWEEN UTILITIES AS SHOWN ON "UTILITY LOCATION DETAIL" AND IN ACCORDANCE WITH APPLICABLE LOCAL UTILITY SERVICE PROVIDER REQUIREMENTS.
- 23. ALL COMPONENTS OF THE POTABLE WATER SYSTEM SHALL BE IN CONFORMANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE / NSF INTERNATIONAL STANDARD 61. ALL COMPONENTS, INSTALLATION AND TESTING OF THE POTABLE WATER SYSTEM SHALL BE IN ACCORDANCE WITH ALL A.W.W.A. APPLICABLE STANDARDS.
- 24. NO VEGETATION OR OTHER OBSTRUCTIONS SHALL BE PLACED SO AS TO BLOCK ACCESS OR LINE OF SIGHT TO FIRE HYDRANTS, F.D.C, P.I.V, ETC. IN ACCORDANCE WITH LOCAL FIRE JURISDICTION AND / OR AS SHOWN IN DETAILS.
- 25. SEPARATE PERMITS MAY BE REQUIRED FOR ANY DEDICATED FIRE LINE. UNDERGROUND FIRE LINES MUST MEET REQUIREMENT OF NFPA 24.
- 26. THE CONTRACTOR SHALL RESTORE ALL PAVING ETC. TO MATCH ORIGINAL CONDITION. NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS UNLESS SPECIFICALLY INCLUDED IN THE BID TABULATION OR OUTLINED IN THE SPECIFICATIONS. ALL MILLING AND RESURFACING TO BE FULL WIDTH FROM EDGE OF PAVEMENT TO RIGHT OF WAY.
- 27. EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE INSTALLED PRIOR TO PERFORMING ANY EXCAVATION IN ANY AREA AND SHALL BE MAINTAINED DURING WORK AND REMOVED WHEN WORK IS COMPLETED. SEE EROSION CONTROL DETAILS FOR ADDITIONAL INFORMATION, IF APPLICABLE.
- 28. LIMITS OF CONSTRUCTION SHALL BE CONFINED TO THE EXISTING RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THE PLANS.
- 29. CONTRACTOR SHALL RECONSTRUCT ALL DRAINAGE DITCHES AND SWALES DISTURBED BY CONSTRUCTION ACTIVITIES TO THEIR ORIGINAL GRADE AND LOCATION.
- 30. THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND EQUIPMENT WITH WHICH TO REMOVE AND PROPERLY DISPOSE OF ANY WATER ENTERING THE EXCAVATION OR OTHER PARTS OF THE WORK AND KEEP ALL EXCAVATIONS DRY UNTIL SUCH TIME AS PIPE LAYING AND GRADING IS COMPLETED AND STRUCTURES TO BE BUILT THEREIN ARE COMPLETED. NO WATER SHALL BE ALLOWED TO RISE AROUND THE PIPE IN OPEN TRENCHES NOR SHALL IT BE ALLOWED TO RISE OVER MASONRY UNTIL THE CONCRETE OR MORTAR HAS SET. ALL WATER PUMPED OR DRAINED FROM THE SITE SHALL BE DISPOSED OF IN SUCH A MANNER AS TO PREVENT SILTATION AND EROSION TO ADJACENT PROPERTY OR OTHER CONSTRUCTION. IF REQUIRED THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN ANY LOCAL, STATE OR FEDERAL PERMITS REQUIRED FOR DEWATERING. NO OFFSITE DISCHARGE IS PERMITTED UNLESS SPECIFICALLY ALLOWED IN DEWATERING PERMIT.
- 31. CONTRACTOR SHALL PROTECT OR REMOVE AND REINSTALL ALL SIGNS AND MAIL BOXES WITHIN THE RIGHT-OF-WAY OR EASEMENT LIMITS.
- 32. CONTRACTOR SHALL PROVIDE 48 HOURS MINIMUM ADVANCE NOTICE OF ALL UTILITY SHUT DOWNS AND TIE-INS TO THE ENGINEER, THE PUBLIC INVOLVEMENT CONSULTANT (IF APPLICABLE) AND THE UTILITY COMPANY.
- 33. ROADWAY LANE CLOSURES, DRIVEWAY CLOSURES, POTABLE WATERMAIN AND FORCEMAIN SHUT DOWNS MAY BE REQUIRED TO OCCUR AT NIGHT OR EARLY MORNING HOURS. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR REQUIRED NIGHT WORK.
- 34. IN THE EVENT OF UNSCHEDULED WATERMAIN SHUT DOWNS (BREAKS) THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER, THE PUBLIC INVOLVEMENT CONSULTANT AND THE UTILITY COMPANY TO DETERMINE THE AFFECTED AREA FOR "BOIL WATER NOTICES". THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL THE NECESSARY REPAIRS AND REQUIRED BACTERIOLOGICAL TESTS NECESSARY TO RETURN THE SYSTEM TO ITS NORMAL OPERATING CONDITION. NO ADDITIONAL COMPENSATION WILL BE MADE FOR ACCIDENTAL BREAKS, REPAIRS AND TESTING.
- 35. CONTRACTOR SHALL MAINTAIN REASONABLE ACCESS TO EXISTING BUSINESSES AT ALL TIMES. IN THE EVENT OF A DRIVEWAY CLOSURE, THE CONTRACTOR SHALL PROVIDE A "BUSINESS ACCESS" SIGN AT THE AVAILABLE ACCESS POINT UNTIL SUCH TIME THAT ALL ORIGINAL ACCESS POINTS ARE REOPENED.
- 36. THESE PLANS HAVE BEEN PREPARED SUCH THAT ALL WATERMAIN AND FORCEMAIN TO BE PLACED OUT OF SERVICE SHALL BE REMOVED OR GROUTED IN PLACE. WHERE POSSIBLE, CONTRACTOR SHALL MAKE EVERY EFFORT POSSIBLE TO REMOVE EXISTING MAINS WHERE FEASIBLE WITHOUT IMPACTING EXISTING SIDEWALK, LANDSCAPING, PAVEMENT, AND OTHER PUBLIC FACILITIES.
- ALL DRIVEWAYS AND ROADWAY OPEN CUTS WITHIN F.D.O.T. RIGHT-OF-WAY SHALL CONFORM TO THE UTILITIES ACCOMMODATIONS MANUAL. SECTION 4.1.8.2 AS FOLLOWS:
- 1. NOTIFY USERS SEVEN (7) DAYS IN ADVANCE USING DOOR-HANGER TYPE NOTICES OR ON-SITE SIGNS AS APPROPRIATE AND APPROVED BY F.D.O.T.
- 2. MAINTAIN USERS' ACCESS TO THE PROPERTY.
- RESTORE THE DRIVEWAYS TO AT LEAST AN EQUIVALENT CONDITION AND TYPES OF MATERIAL TO WHAT EXISTED PRIOR TO CUTTING.

4. ALL MILLING AND RESURFACING TO BE FULL WIDTH FROM EDGE OF PAVEMENT TO RIGHT OF WAY.

38. ALL PROPOSED WATER SERVICES SHALL BE NEW MATERIALS (FROM THE TAPPING SADDLE WITH CORPORATION STOP IN THE WATERMAIN, POLY TUBE AND CURB STOP) AND SHALL BE CONNECTED TO THE WATER METER IN THE METER BOX.

### SIGNING AND PAVEMENT MARKING NOTES:

- I. ALL SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE F.D.O.T. STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION, THE F.D.O.T DESIGN STANDARDS INDEX, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND ALL APPLICABLE LOCAL STANDARDS. UTILIZATION OF THE 2009 M.U.T.C.D. SHALL BE IN ACCORDANCE WITH F.D.O.T. POLICY.
- 2. DURING CONSTRUCTION, THE CONTRACTOR SHALL COMPLY WITH THE LATEST EDITIONS OF THE "STATE OF FLORIDA MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS" AND WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND WITH ALL OTHER GOVERNING SAFETY REGULATIONS.
- PAVEMENT MARKINGS SHALL BE PERMANENT REFLECTIVE TRAFFIC PAINT WITH GLASS BEADS IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS SECTION 710 UNLESS NOTED OTHERWISE. PERMANENT PAVEMENT MARKINGS WITHIN F.D.O.T. RIGHT-OF-WAY SHALL BE THERMOPLASTIC UNLESS NOTED OTHERWISE.
- 4. MATCH EXISTING PAVEMENT MARKINGS AT EXISTING ROADS. ALL EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH PROPOSED MARKINGS SHALL BE REMOVED BY HYDRO-BLASTING. EXISTING SIGNS SHALL REMAIN UNLESS NOTED OTHERWISE.
- ALL STOP SIGN LOCATIONS SHALL INCLUDE A 24" PAINTED WHITE STOP BAR. AS AN ALTERNATIVE, ROADS WITH PAVER BRICK SURFACES MAY UTILIZE CONTRASTING COLOR PAVERS IN LIEU OF PAINT.
- 6. THE CONTRACTOR SHALL FURNISH AND INSTALL STREET NAME SIGNS IN ACCORDANCE WITH LOCAL DEVELOPMENT STANDARDS. IF POSSIBLE, STREET NAME SIGNAGE TO BE ATOP ALL STOP SIGNS.
- 7. THE CONTRACTOR SHALL PROVIDE AND INSTALL BLUE / BLUE REFLECTIVE PAVEMENT MARKERS AT THE CENTER OF THE TRAFFIC LANE NEAREST ALL PROPOSED FIRE HYDRANTS.
- 8. ALL ROADWAY SIGNING AND PAVEMENT MARKINGS, STREET NAME SIGNS, ETC. (EXCLUDING PROJECT IDENTIFICATION SIGNING) ARE TO BE INCLUDED IN THE LUMP SUM PRICE FOR SIGNING AND MARKING UNLESS A DETAILED BID QUANTITY BREAKDOWN IS PROVIDED.
- 9. ANY EXISTING SIGN TO REMAIN THAT IS RELOCATED OR DISTURBED DURING CONSTRUCTION SHALL BE RESET TO CURRENT F.D.O.T. STANDARD INDEXES 11860 AND 17302 FOR HEIGHT, OFFSET AND METHOD OF INSTALLATION. ANY SIGNS DAMAGED BY CONTRACTOR SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.
- ALL SIGNS THAT ARE EMBEDDED IN CONCRETE OR ASPHALT SHALL BE INSTALLED IN A F.D.O.T. APPROVED PIPE SLEEVE.

### QUANTITIES AND PAYMENT:

- 1. CONTRACTOR SHALL REFER TO THE BID TABULATION AND PROJECT TECHNICAL SPECIFICATIONS FOR NOTES REGARDING THE METHOD OF PAYMENT FOR SPECIFIC PAY ITEMS.
- 2. DIRECTIONAL BORE CASING AND CARRIER PIPE WILL BE PAID BASED ON QUANTITY PROVIDED IN PLANS AND BID TABULATION. NO ADDITIONAL PAYMENT SHALL BE MADE DUE TO CONTRACTOR MEANS AND METHODS, EQUIPMENT CAPABILITIES OR PRESENCE OF ROCK. DURING THE BID, THE CONTRACTOR SHALL ANALYZE THE DIRECTIONAL BORE LENGTHS TO DETERMINE FEASIBILITY BASED UPON SITE CONDITIONS, MEANS AND METHODS, EQUIPMENT TO BE USED, AND THE PRESENCE OF ROCK. NO ADDITIONAL PAYMENTS SHALL BE MADE FOR EXTENSIONS BEYOND PLAN AND BID LENGTHS.

## Parraco

CIVIL ENGINEERING - LAND SURVEYING

### LAND PLANNING - LANDSCAPE DESIGN

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WWW.LEEGOV.COM/UTILITIES

PROJECT DESCRIPTION

## U.S. 41 (S.R. 45) TRANSMISSION MAINS

PHASE 1B
TRAILWINDS DRIVE TO SOUTH AIRPORT ROAD

PART OF SECTION 12 AND 13 TOWNSHIP 45 SOUTH, RANGE 24 EAST FORT MYERS, LEE COUNTY, FLORIDA

ENGINEER OF RECORD

TIMOTHY B. GAVIN, P.E., FOR THE FIRM

FLORIDA P.E. NO. 70675 - TIMG@BARRACO.NET

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FILE NAME	23063F02.DWG

| LOCATION | J:\23063\DWG\DO\PHASE 1B\ | PLOT DATE | TUE. 6-12-2018 - 9:48 AM

PLOT BY JAN BILDZUKEWICZ

CROSS REFERENCED DRAWINGS

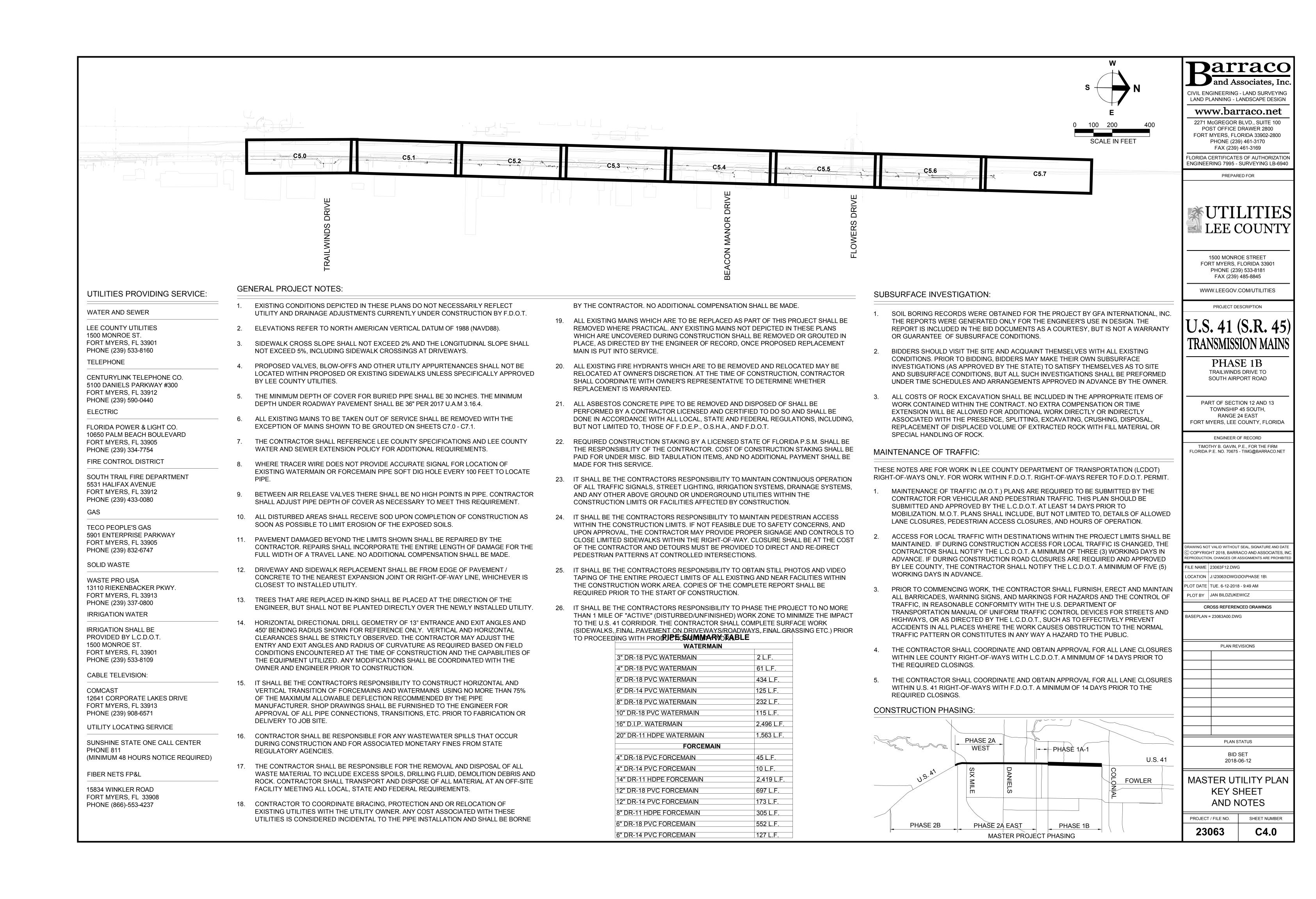
PLAN REVISIONS
PLAN STATUS

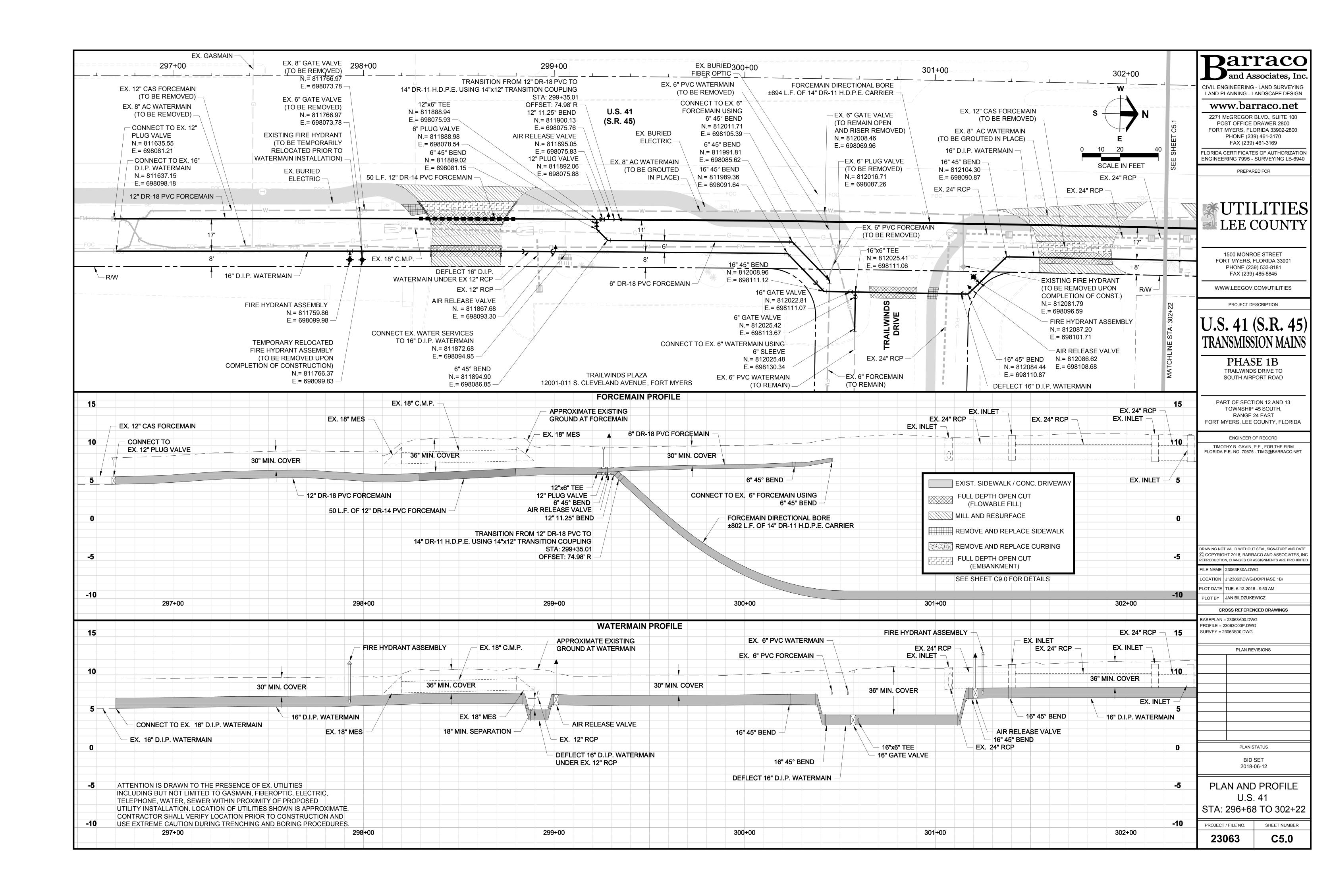
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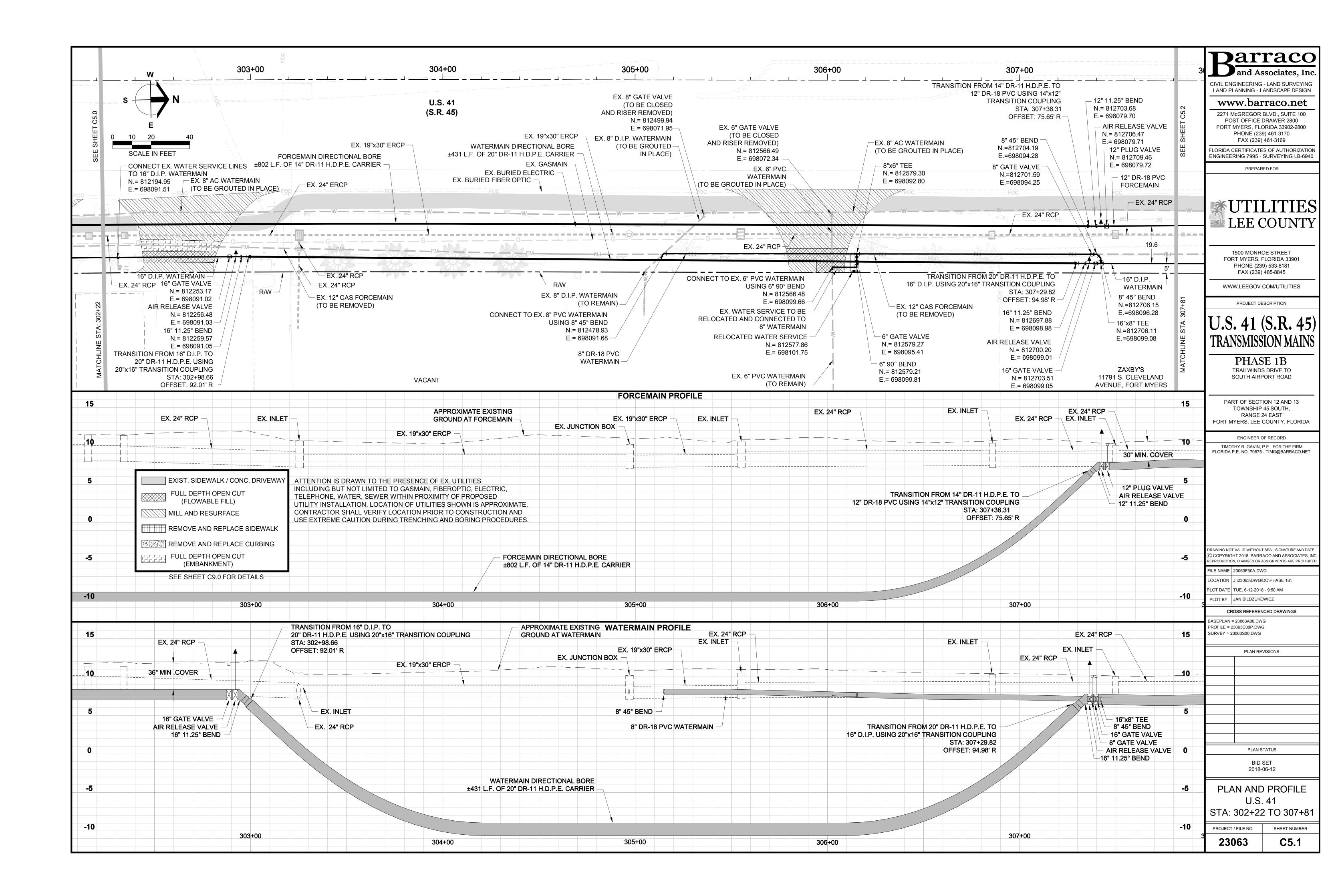
STANDARD NOTES

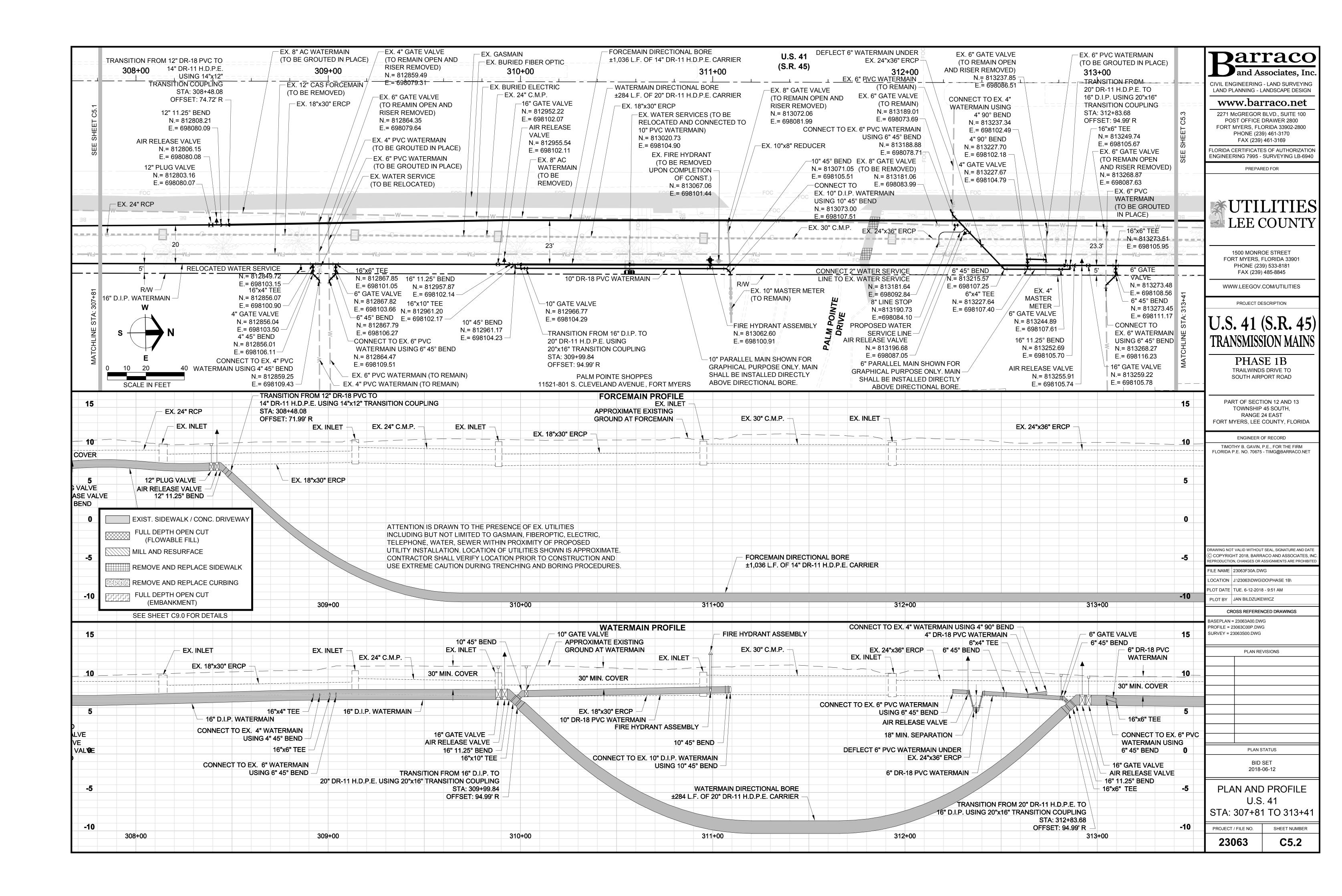
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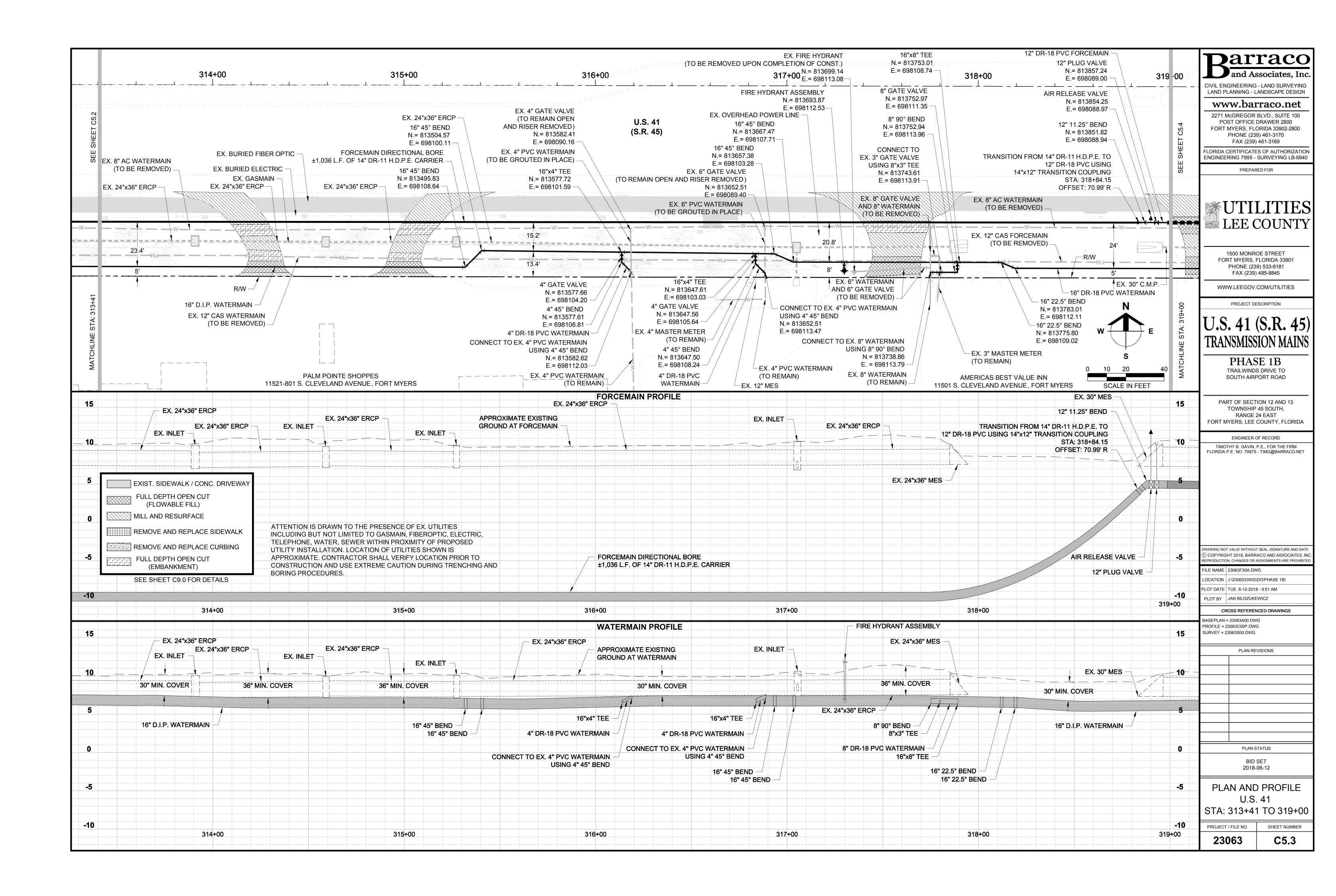


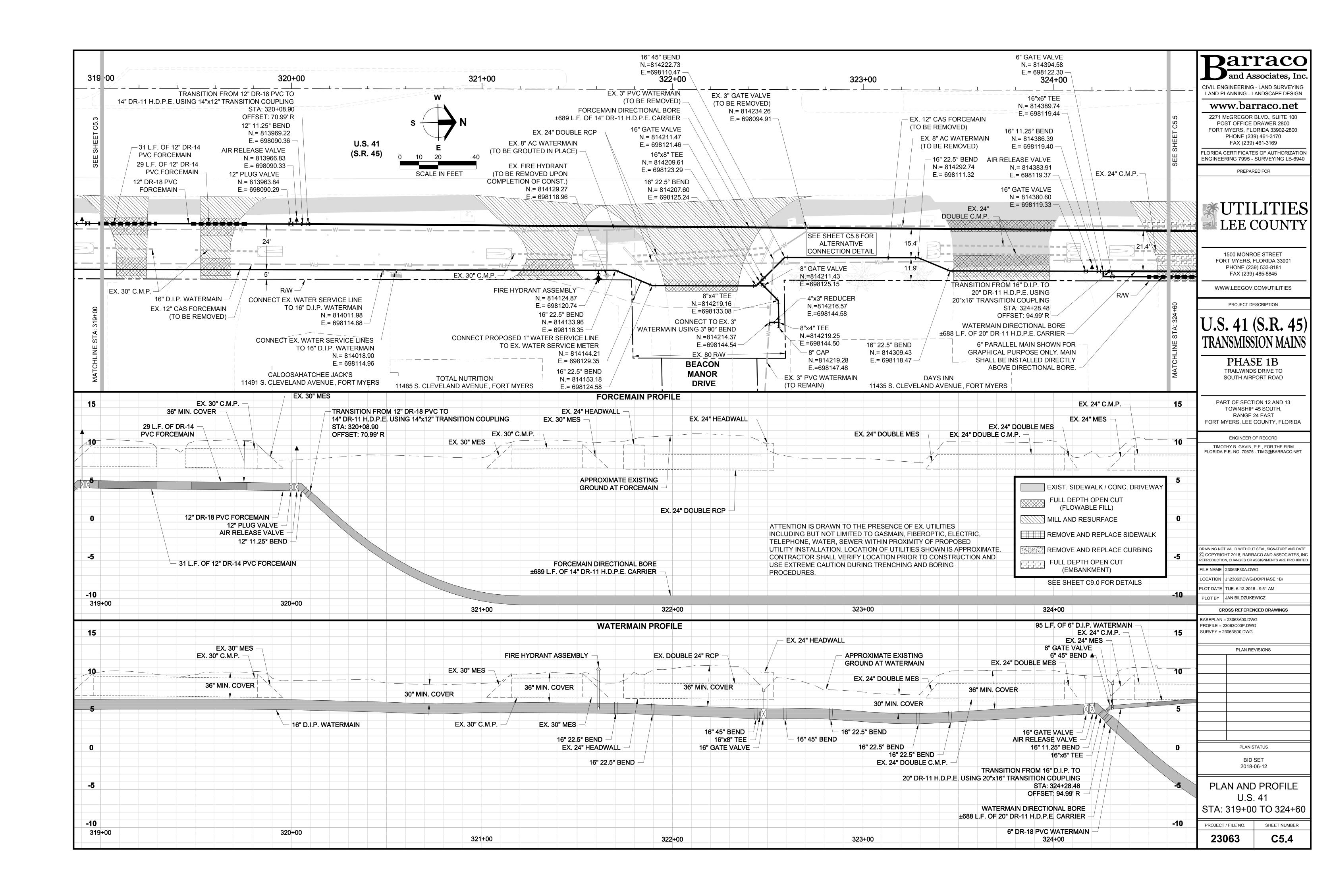


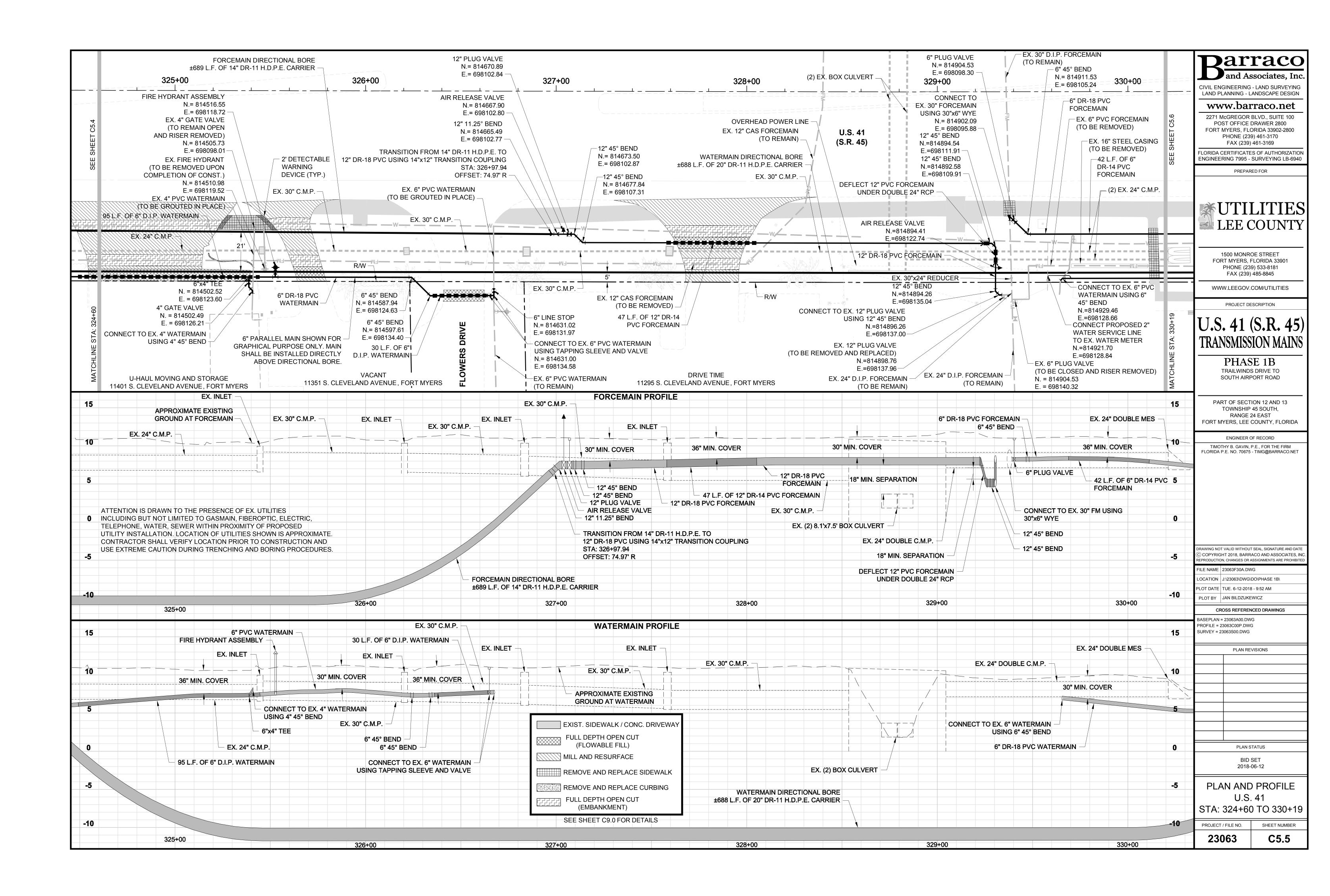


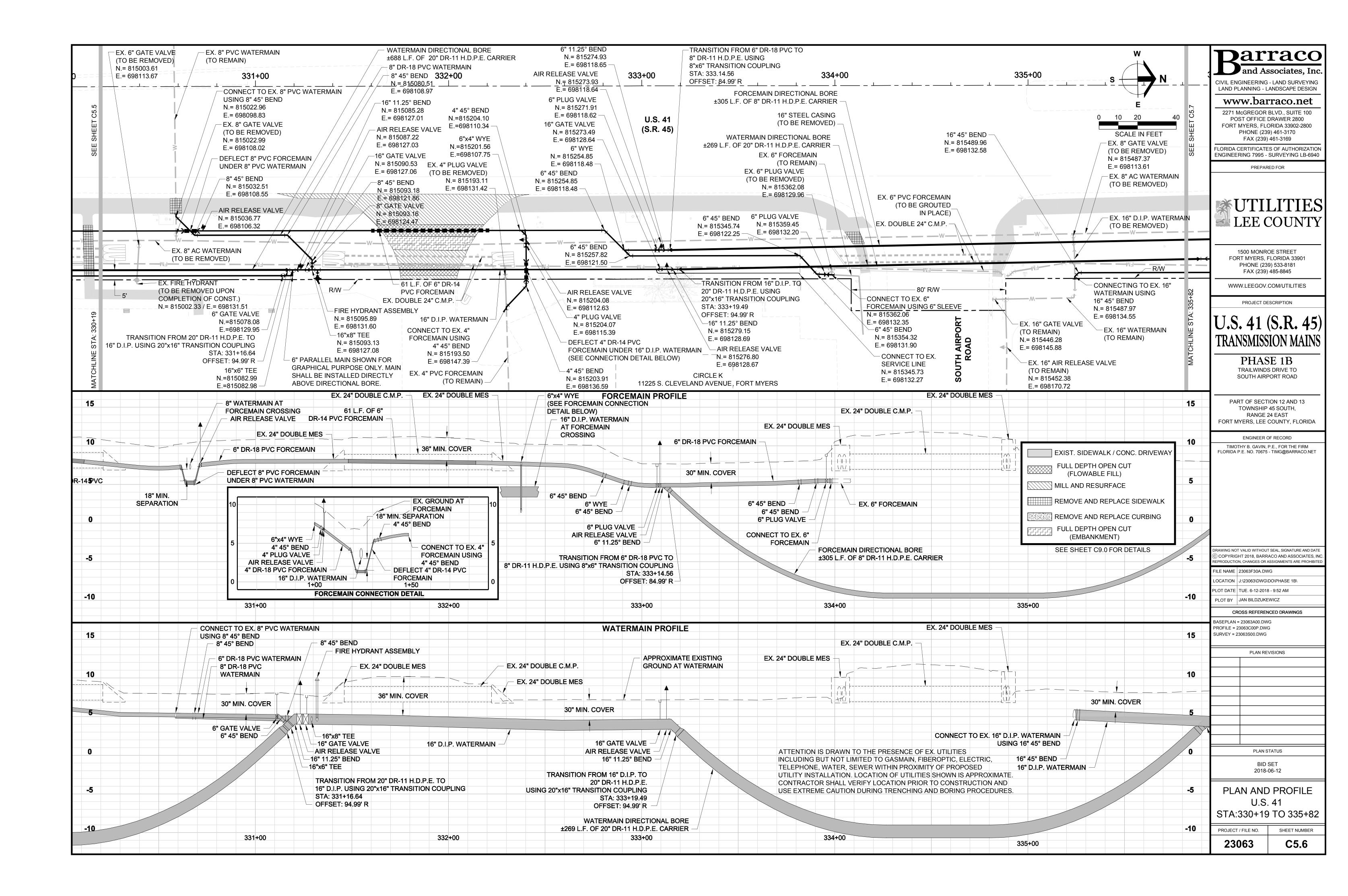


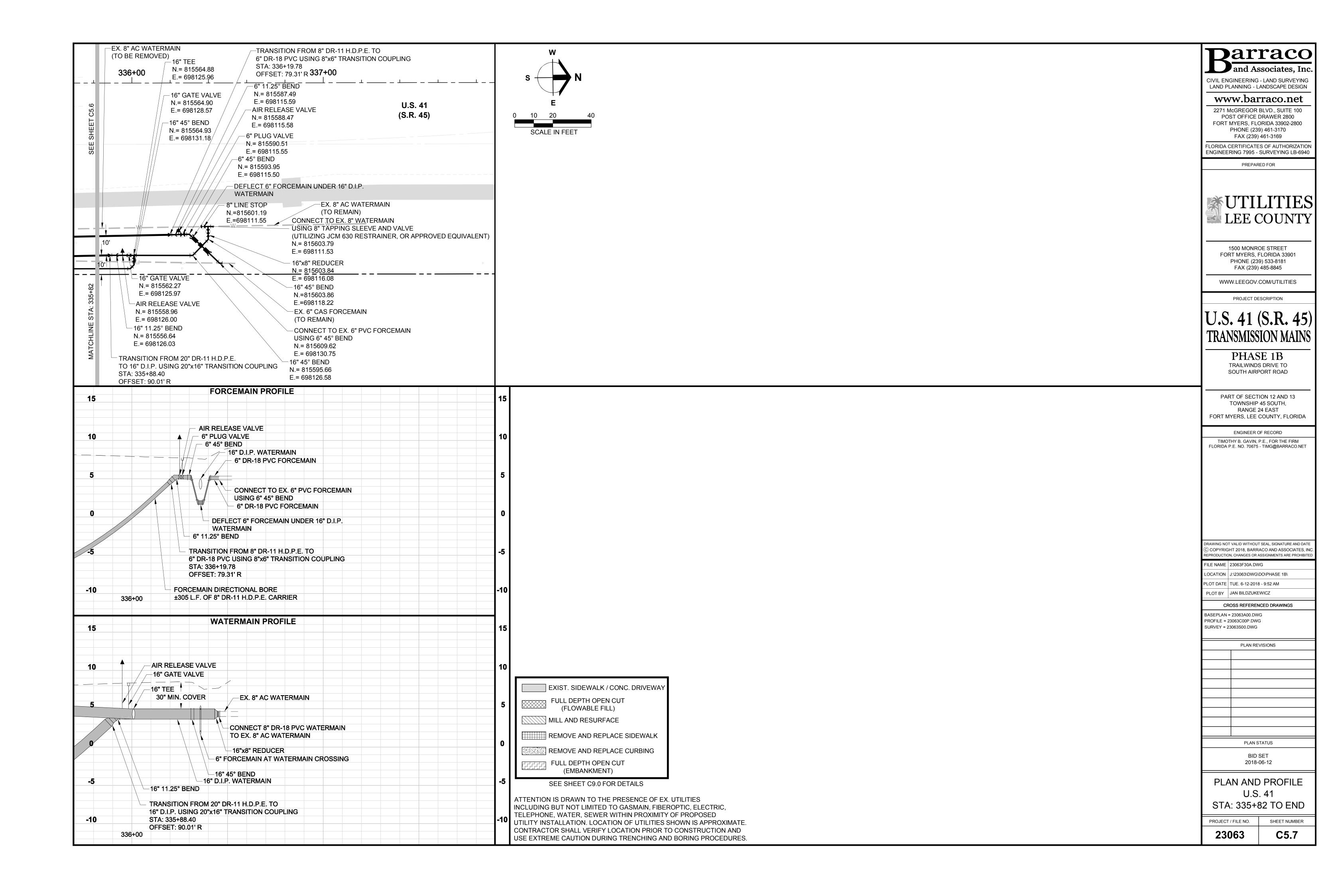


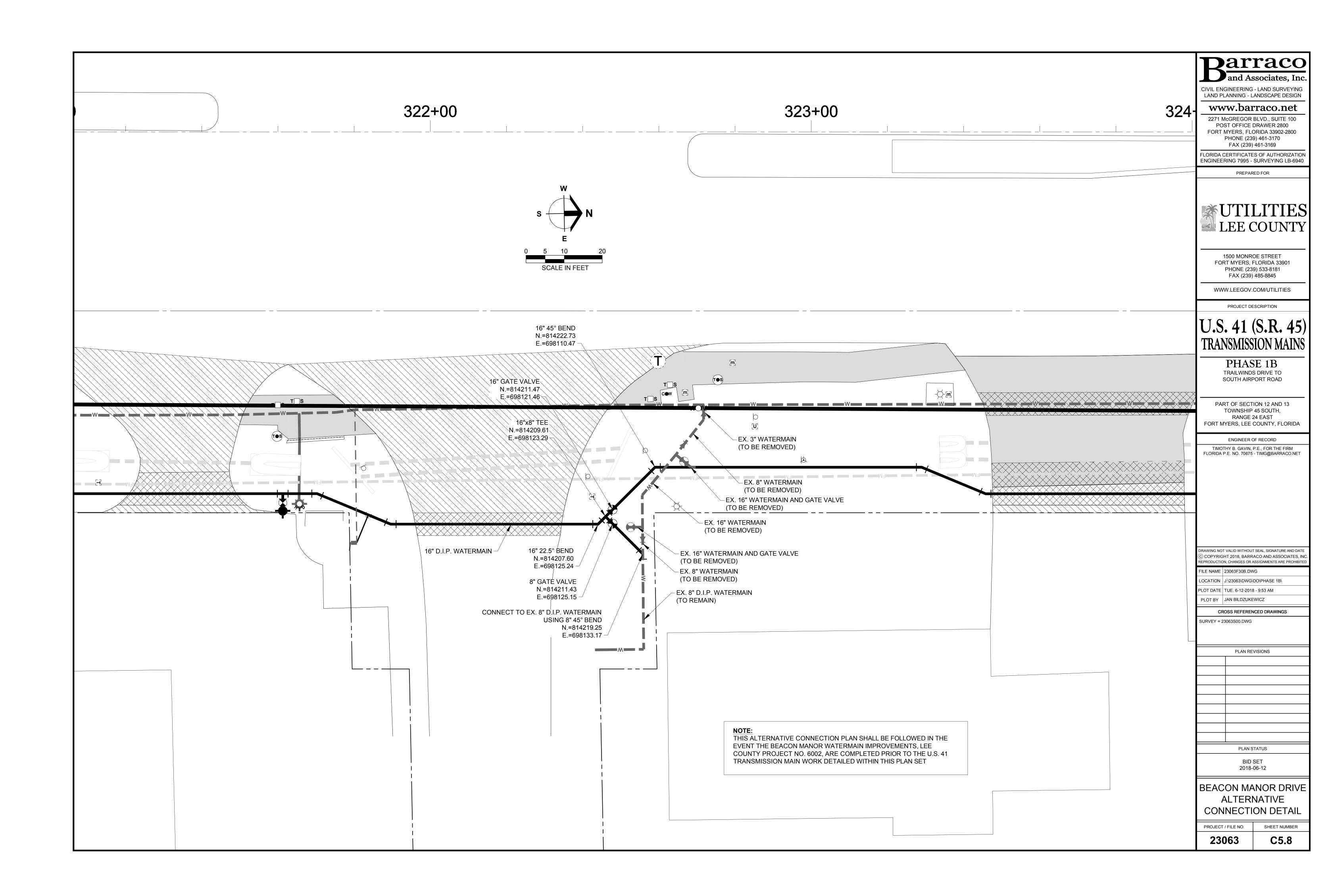


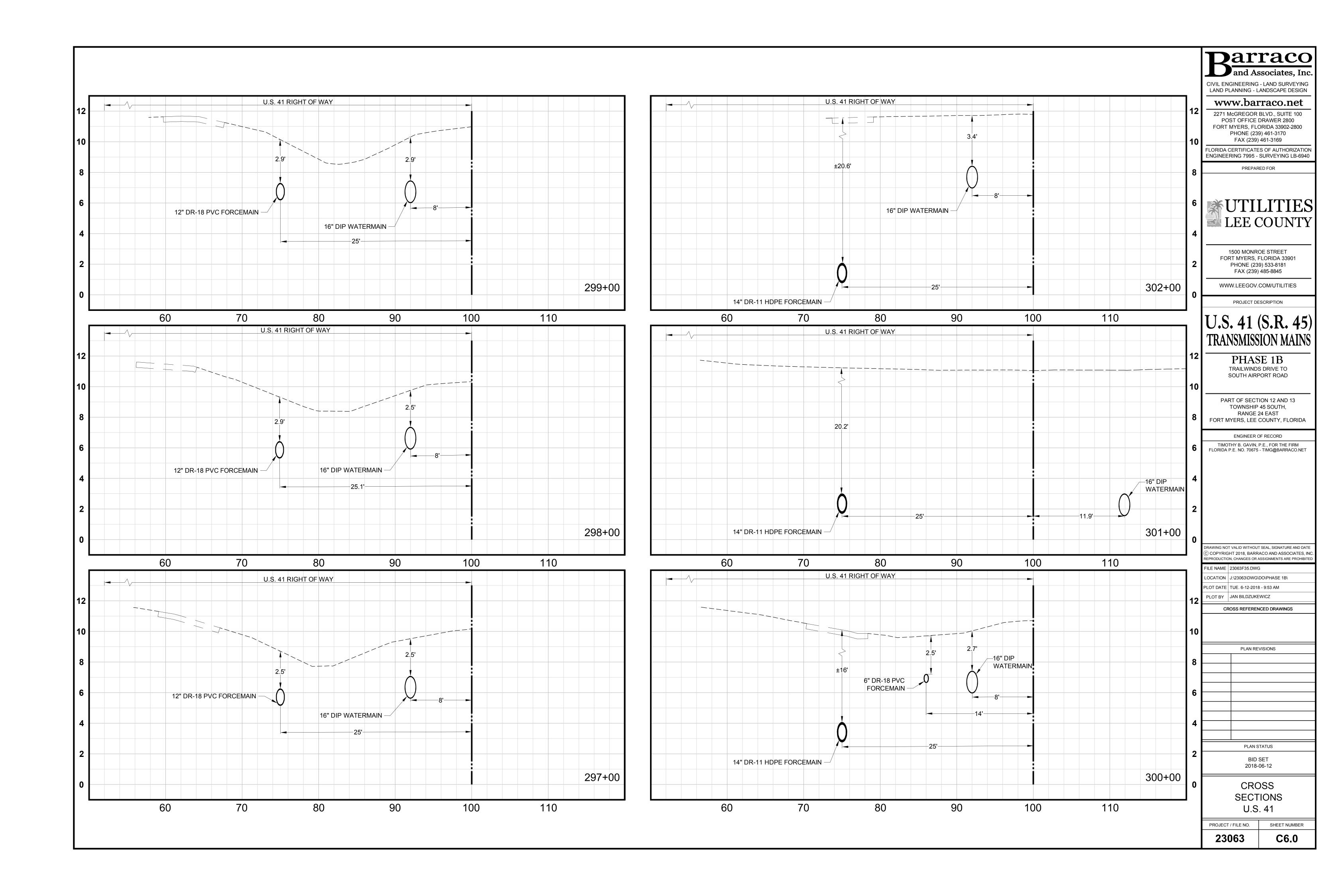


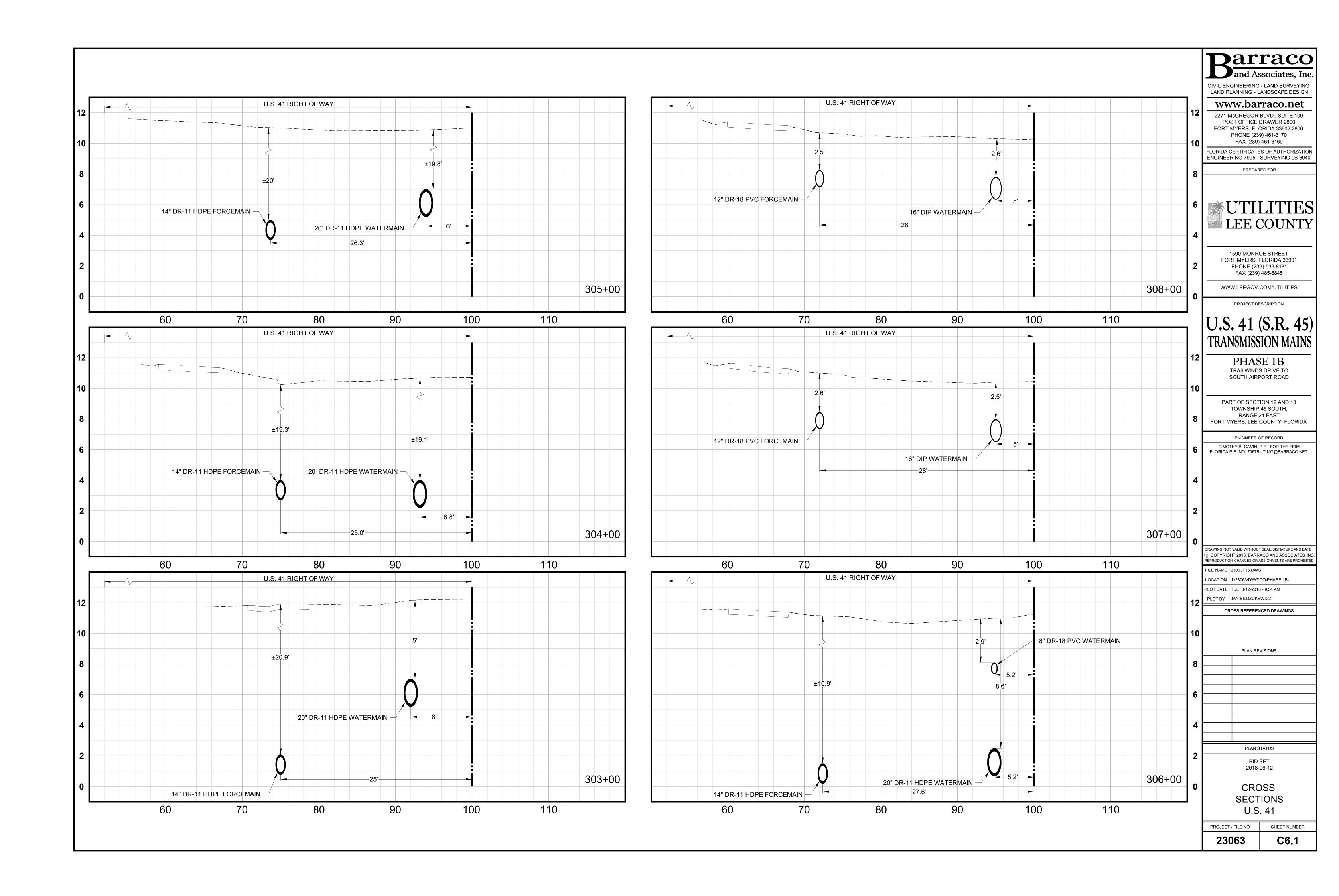


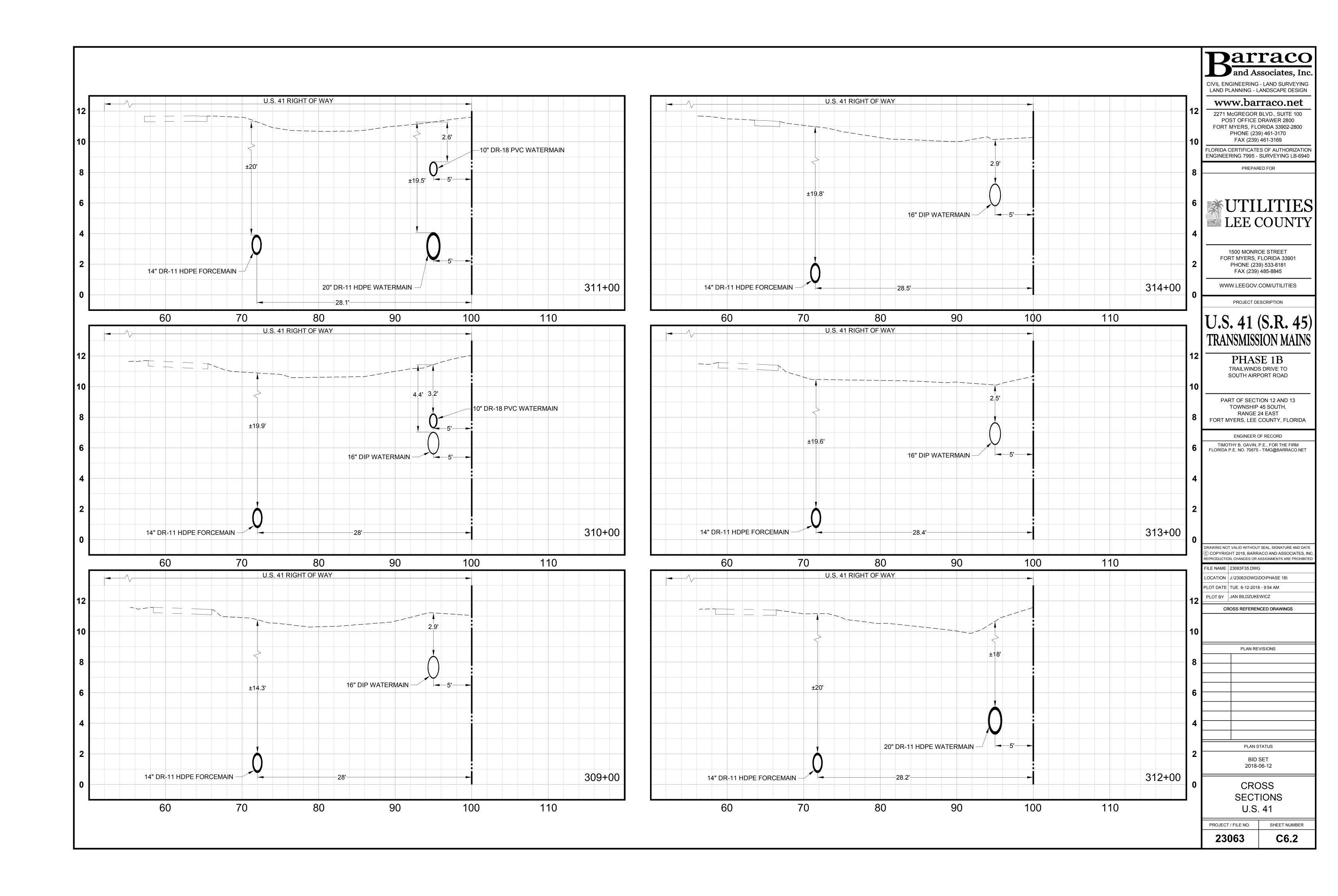


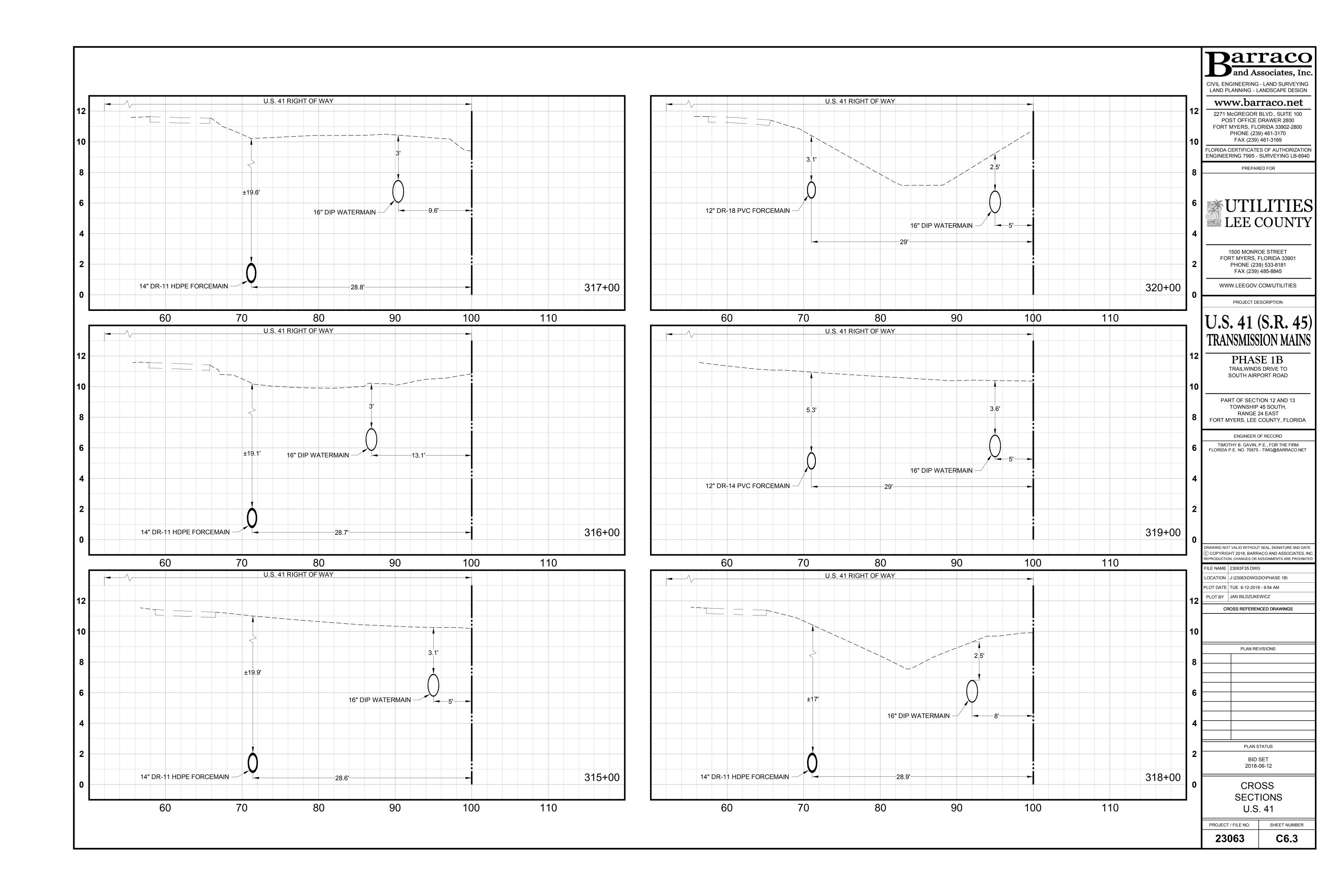


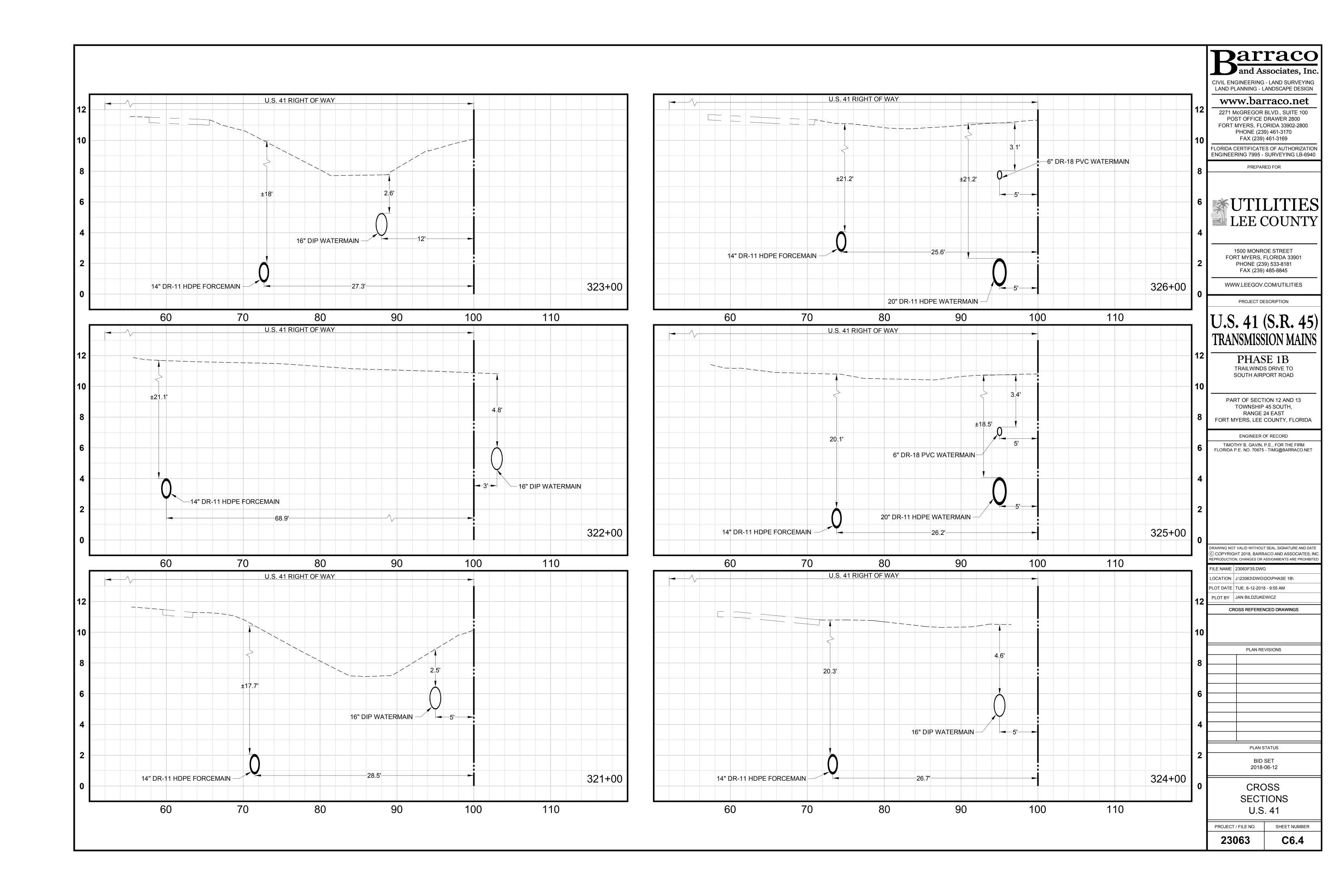


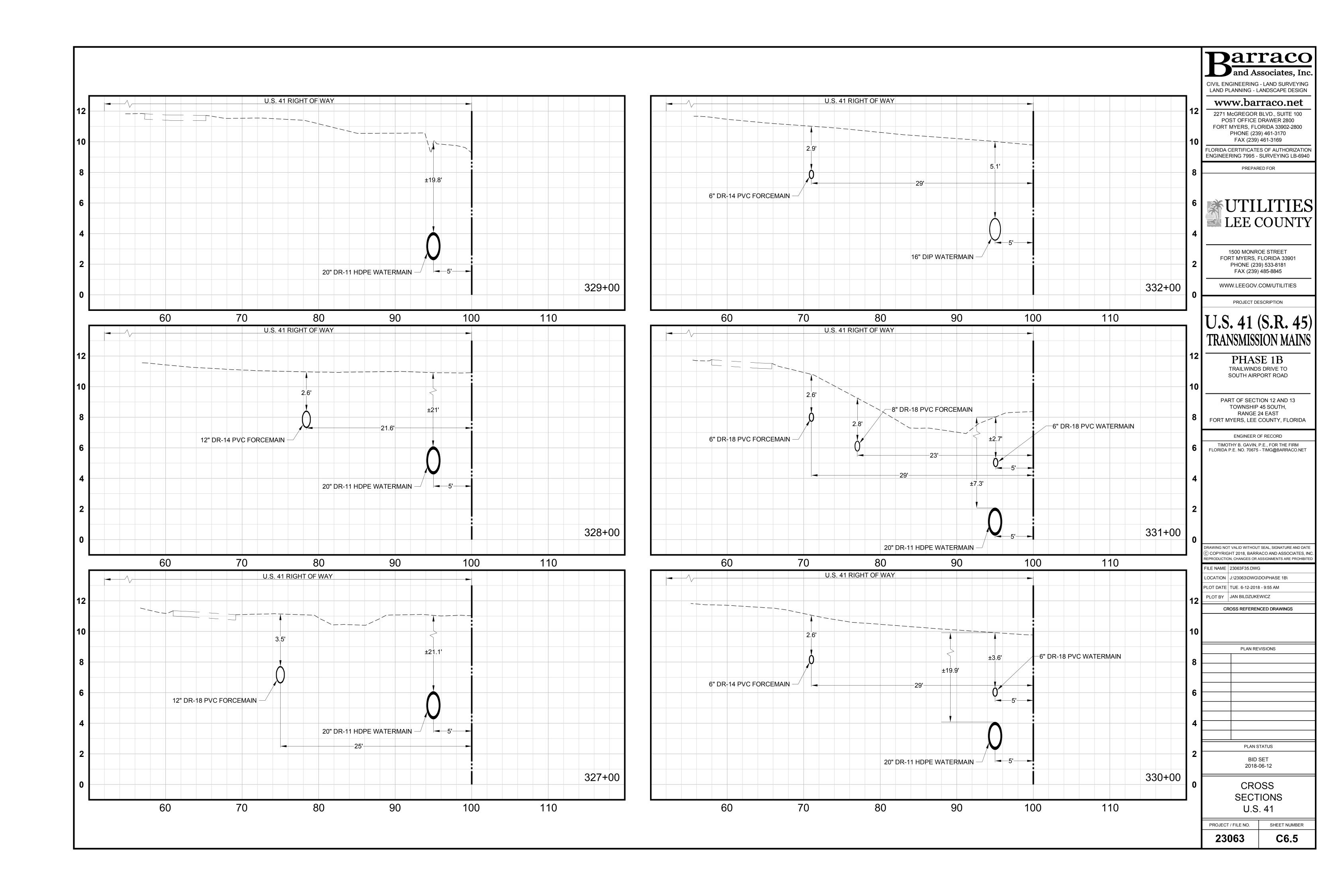


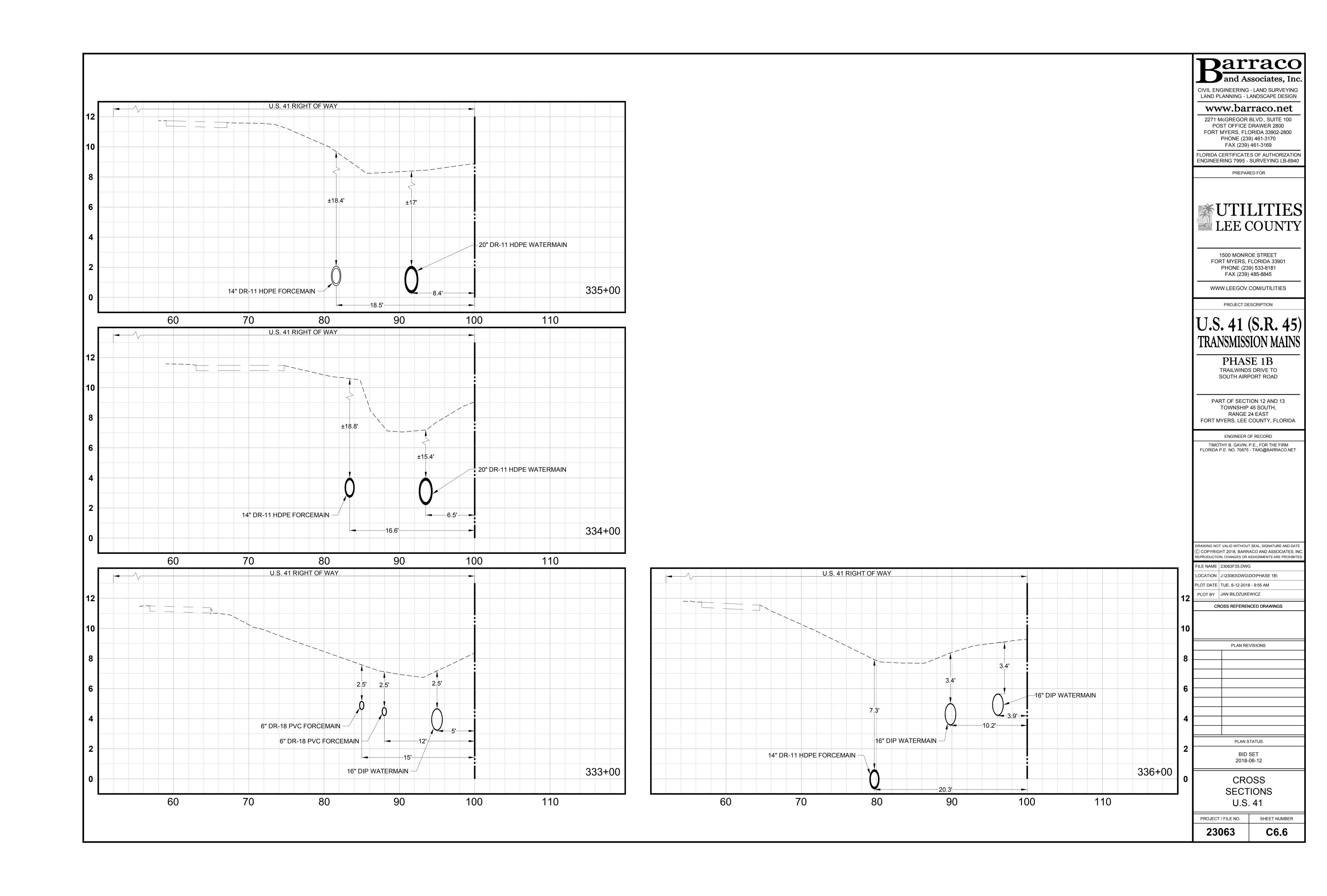


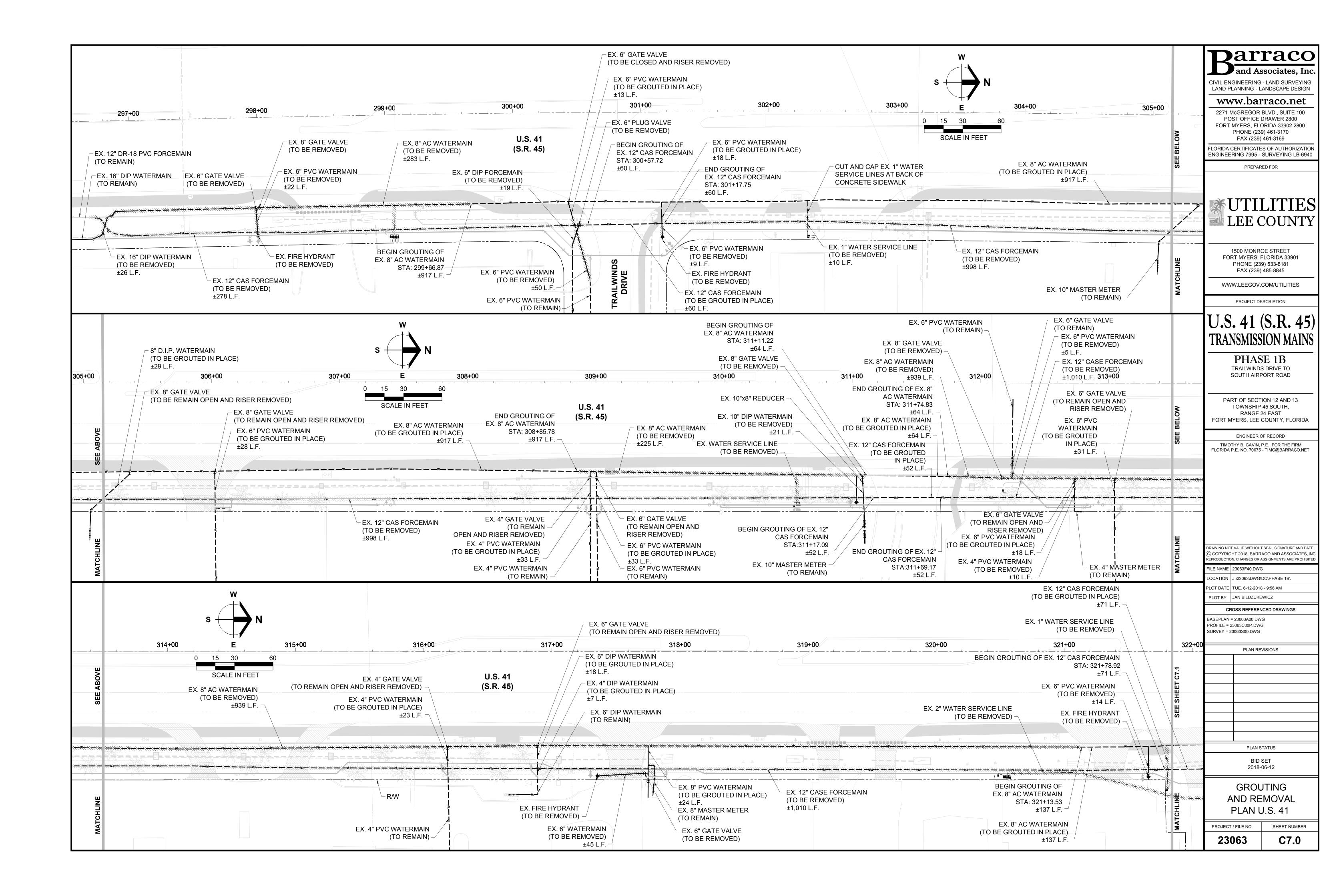


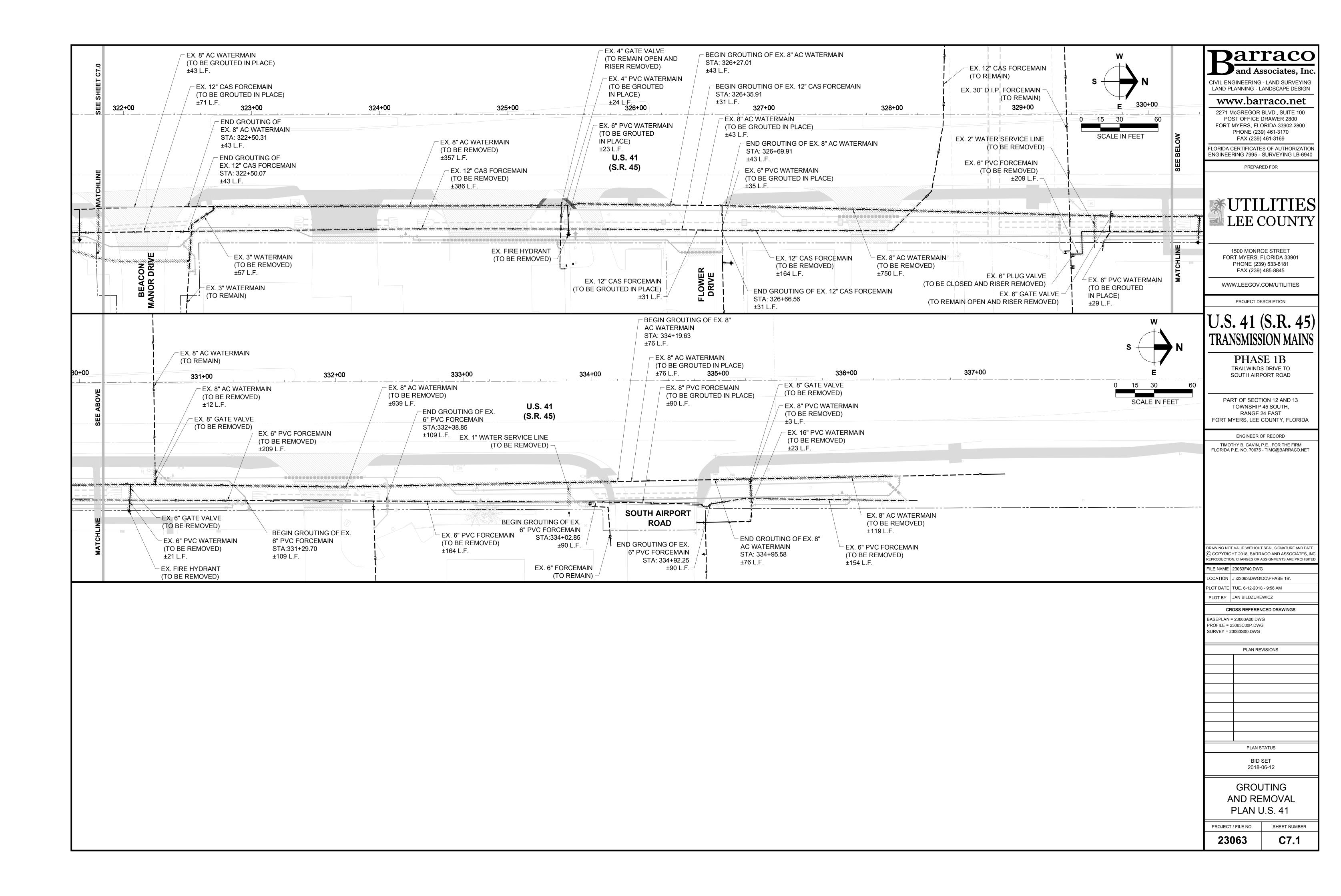


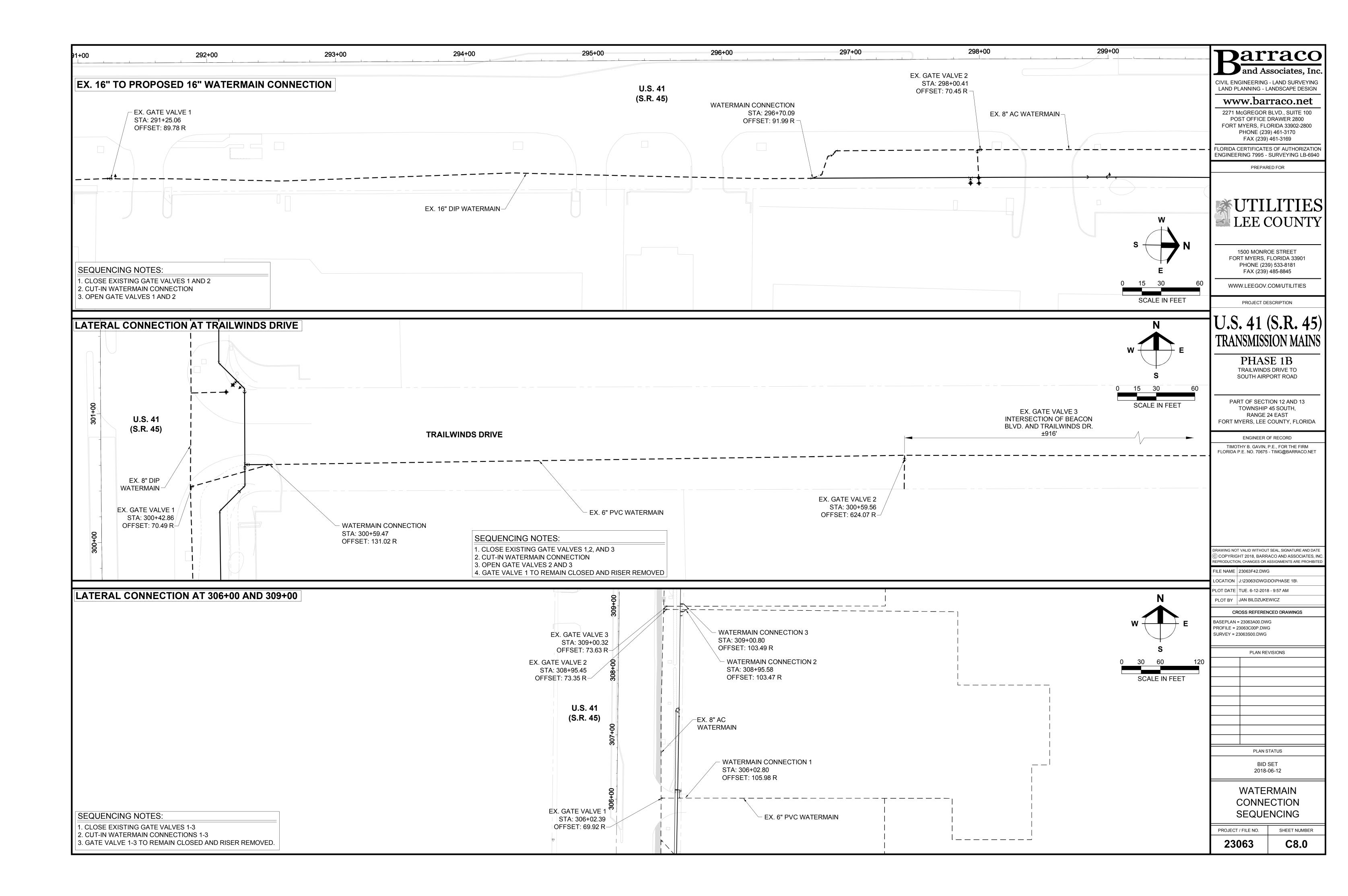


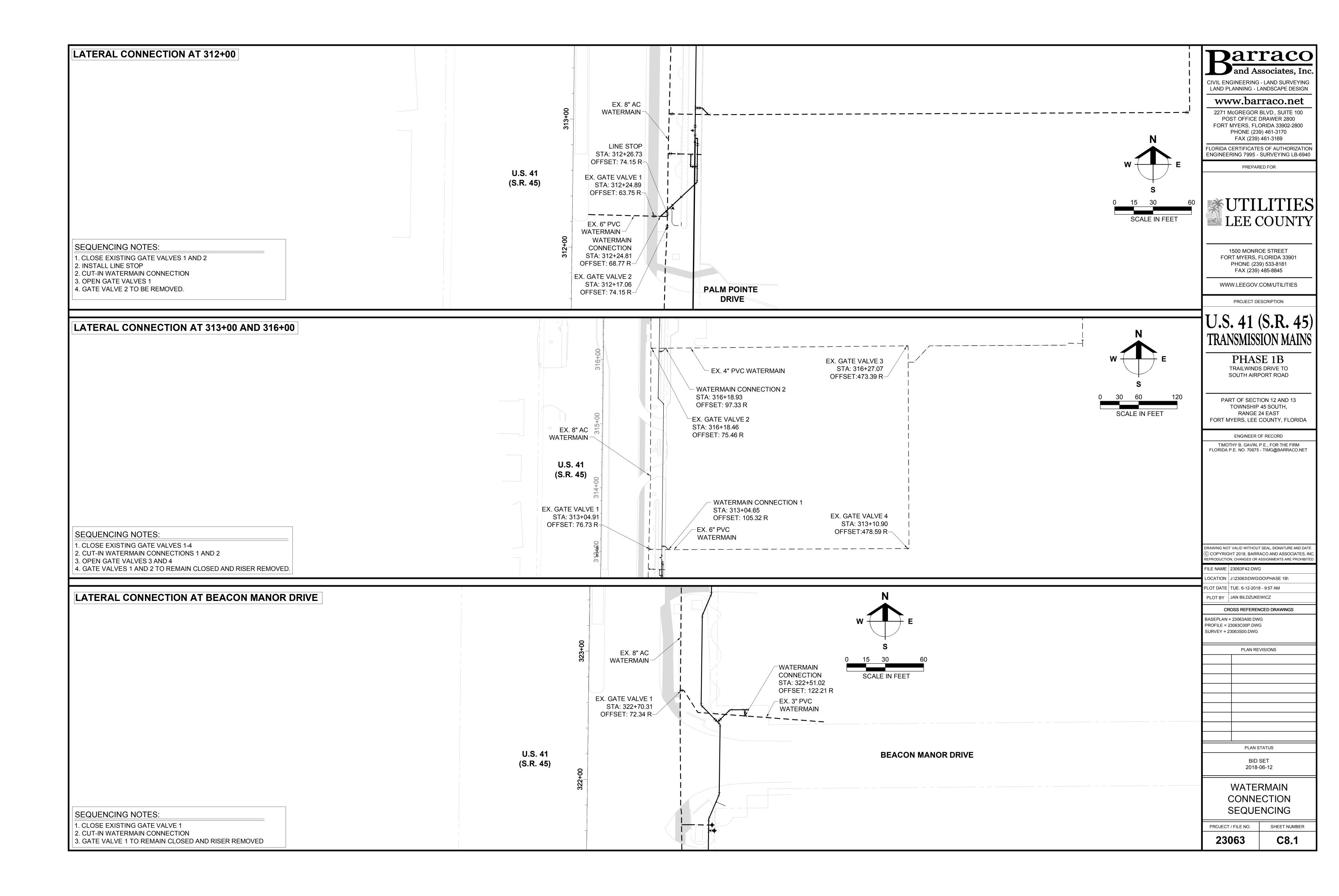


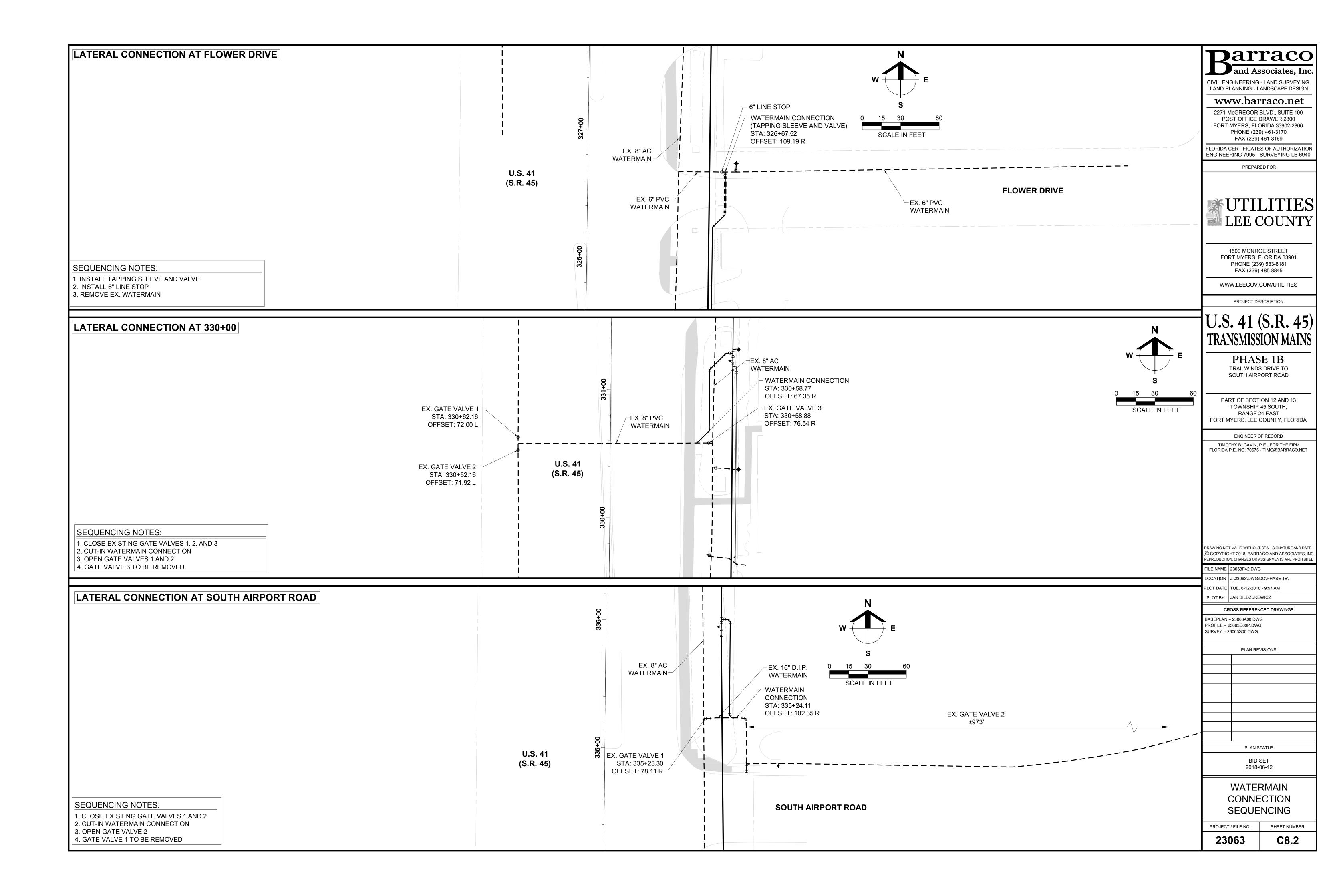


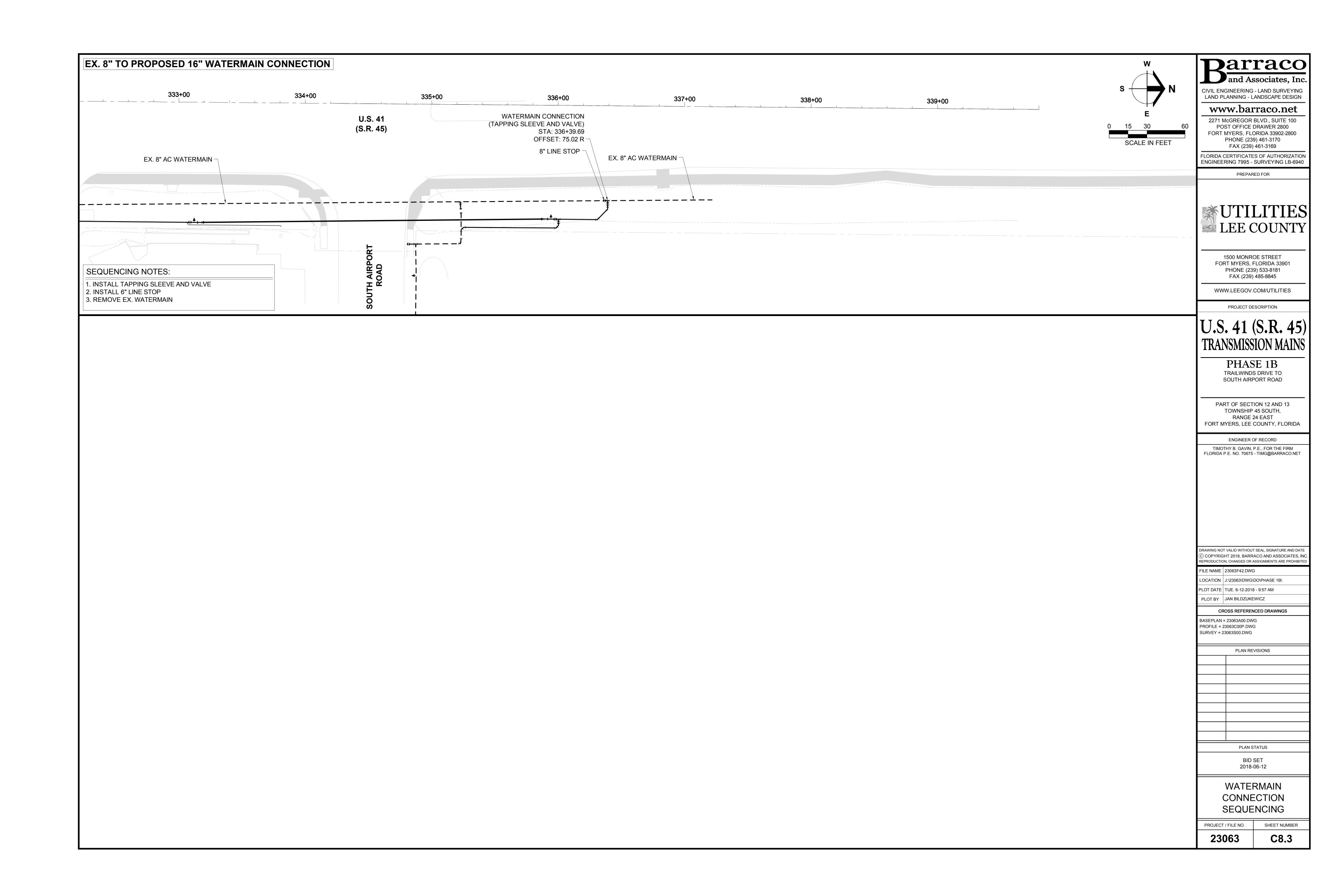
















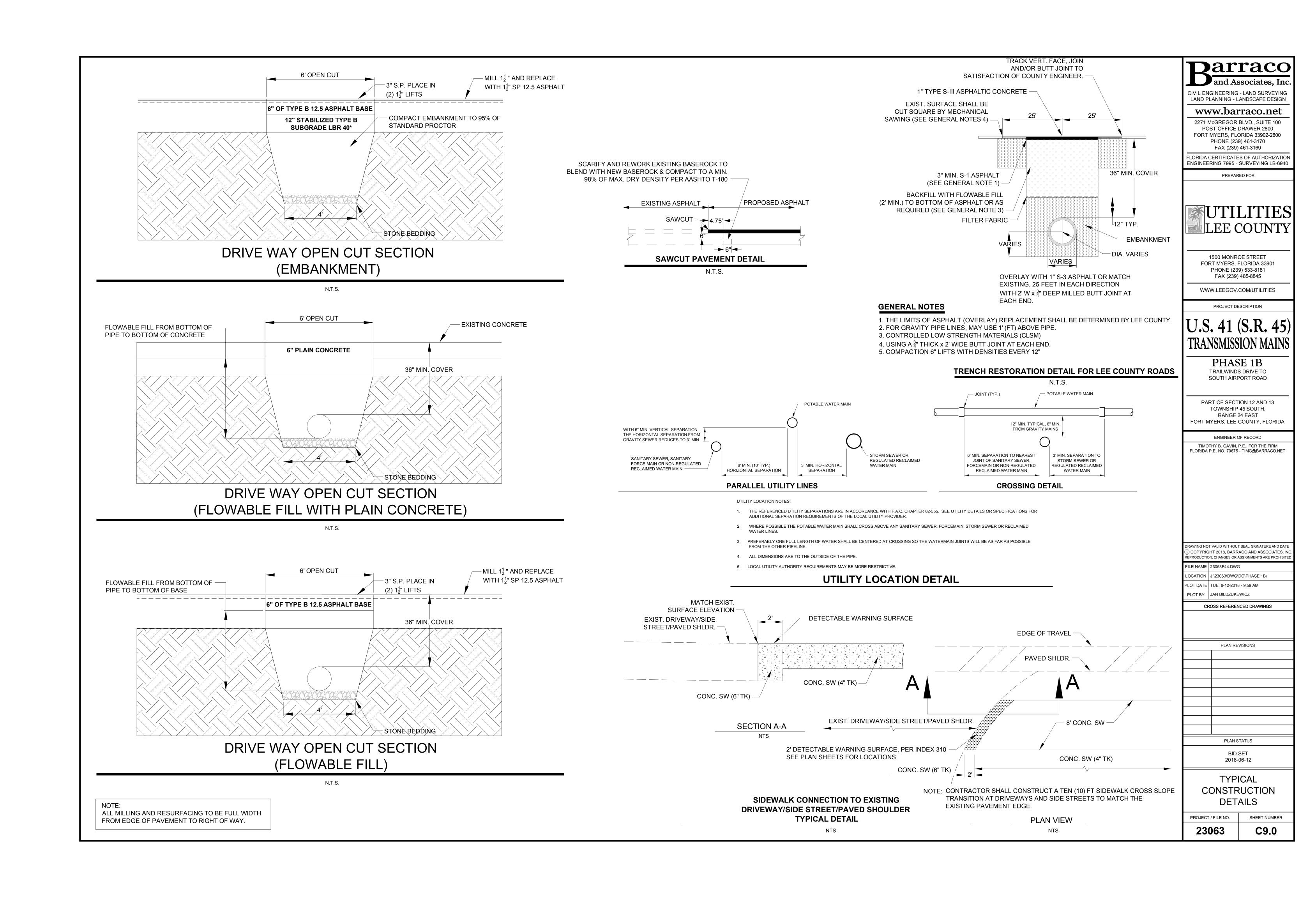
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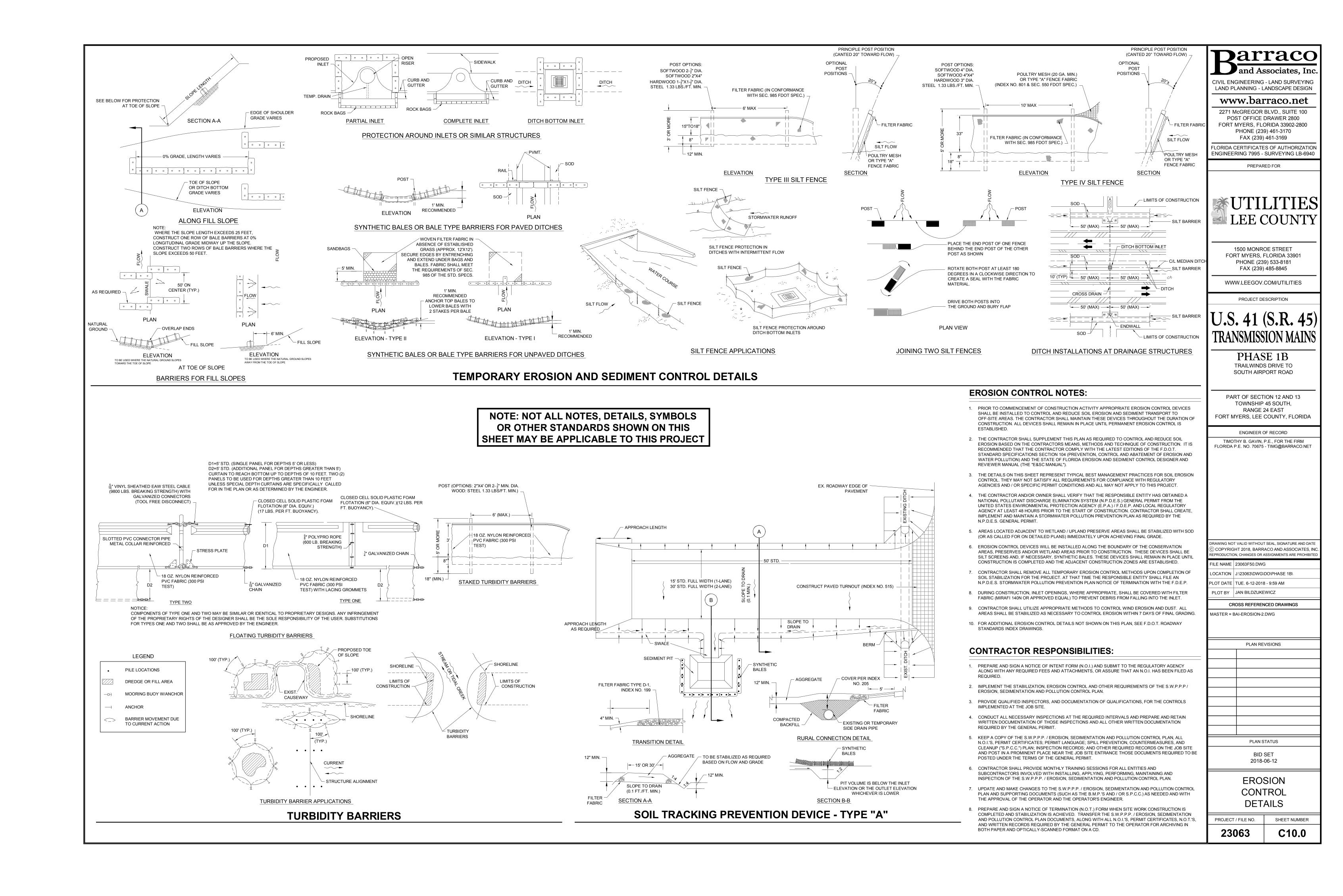
**BID SET** 2018-06-12

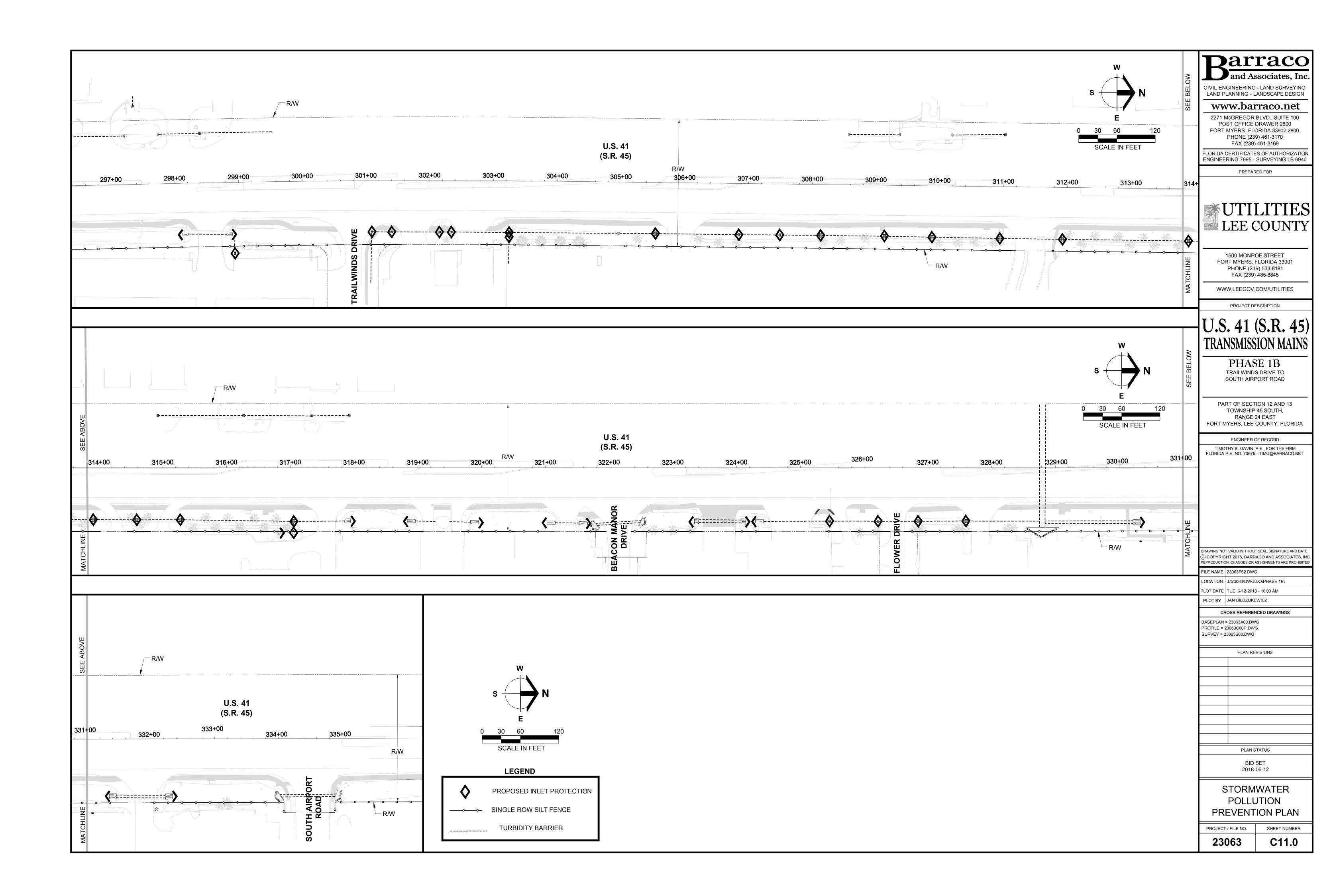
**OPEN CUT** M.O.T. SEQUENCING

PROJECT / FILE NO. SHEET NUMBER

23063 C8.5







## STANDARD DETAIL NO. 6.1 LEE COUNTY UTILITIES TAPPING SLEEVE AND VALVE

- (1) CONCRETE PAD (SEE VALVE INSTALLATION DETAIL)
- 2 SET TOP OF BOX FLUSH WITH FINISHED GRADE (3) EXTENSION STEM IF TOP OF OPERATING

PLAN VIEW

- NUT IS MORE THAN 30" BELOW FINISH GRADE (4) VALVE BOX (SEE VALVE INSTALLATION DETAIL)
- (5) OUTLET FOR TESTING
- (6) MJ RESTRAINED

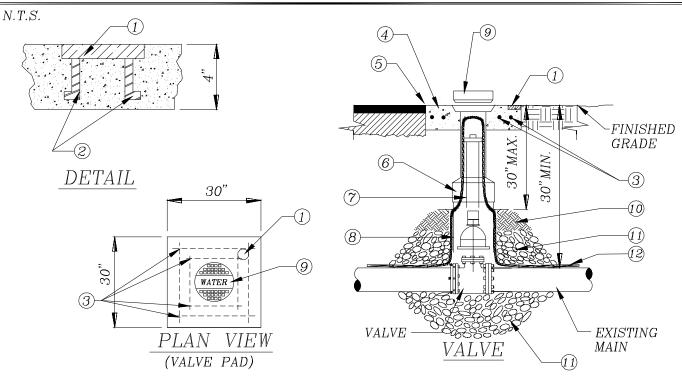
SECTION VIEW

REV: 12/10/2015

N.T.S.

- (7) MAIN SIZE VARIES
- (8) TAPPING VALVE (SEE VALVE INSTALLATION DETAIL)
- (9) LCU APPROVED ALL STAINLESS STEEL PRESSURE RATED TAPPING SLEEVE. FOR SIZE ON SIZE TAPS A FLANGED TAPPING SLEEVE IS REQUIRED. SPRING LOADED TAPPING SLEEVE IS REQUIRED WHEN CONNECTING TO HDPE (SEE APPROVED MATERIAL LIST).
- (10) BRASS PLATE (SEE VALVE INSTALLATION DETAIL) (1) CAST IRON DROP COVER MARKED "WATER", "SEWER",
- (2) COMPACTED SUITABLE EARTH BACKFILL
- (3) 3/4" GRANULAR MATERIAL #57 STONE (4) 12 GAUGE DOUBLE INSULATED COPPER
- LOCATING WIRE (SEE LCU STANDARD DETAIL)

## STANDARD DETAIL NO. 6.2 LEE COUNTY UTILITIES VALVE INSTALLATION

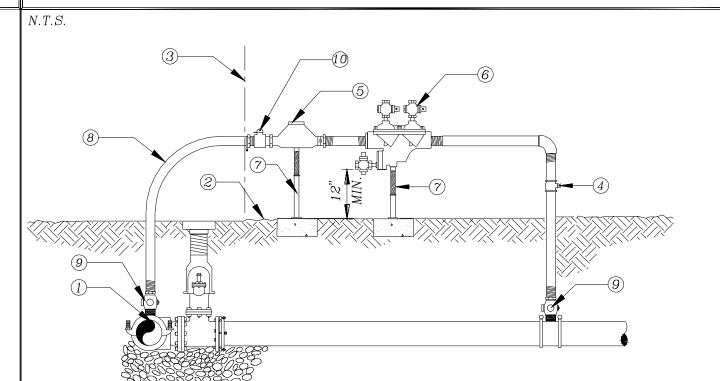


- (1) BRASS PLATE: SIZE OF VALVE, VALVE TYPE No. OF TURNS & DIRECTION TO OPEN VALVE M.F.G. & YEAR INSTALL SYSTEM "WATER" OR "SEWER" OR "REUSE" OR "FIRE"
- (2) ANCHOR
- ③ EIGHT (8) #4 BARS OVERLAP EACH CORNER BY 2"
- (4) 30"SQ X 4" THK.CONC.PAD SURROUNDING BOX, MIN. 3,000 P.S.I. POURED IN PLACE
- (5) SET TOP OF BOX FLUSH WITH FINISHED GRADE
- 6 HEAVY DUTY TRAFFIC BEARING CAST IRON VALVE BOX, ADJUSTABLE SCREW
- TYPE, 5 1/4" DIAMETER SHAFT THAT IS LCU APPROVED
- (7) EXTENSION STEM WITH 2" OPERATING NUT AS REQUIRED, IF NUT IS MORE THAN 30" BELOW FINISH GRADE
- (8) RISER NOT TO BEAR ON VALVE OR PIPE
- (9) CAST IRON DROP COVER MARKED "WATER" OR "SEWER" OR "REUSE OR "FIRE"
- (10) COMPACTED SUITABLE EARTH BACKFILL
- (1) 3/4" GRANULAR MATERIAL #57 STONE
- (2) 12 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE (SEE LCU STANDARD DETAIL)

REV: 12/10/2015

N.T.S.

## STANDARD DETAIL NO. 6.15 LEE COUNTY UTILITIES TEMPORARY CONSTRUCTION JUMPER WITH METER



CONTRACTOR/CUSTOMER SHALL APPLY AT LEE COUNTY UTILITIES FOR TEMPORARY WATER SERVICE FIVE DAYS PRIOR TO REQUIRED SERVICE DATE. THE METER ONLY WILL BE FURNISHED BY LEE COUNTY UTILITIES. ALL FITTINGS, PIPING, VALVES AND MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR/CUSTOMER. THE APPROVED BACKFLOW PREVENTION DEVICE SHALL BE TESTED AND CERTIFIED BY LEE COUNTY UTILITIES APPROVED CERTIFIED BACKFLOW PREVENTION TECHNICIAN (FURNISHED BY CONTRACTOR/CUSTOMER) AT TIME OF METER INSTALLATION. CONTRACTOR/CUSTOMER SHALL PROTECT THE ASSEMBLY FROM DAMAGE. TEMPORARY CONSTRUCTION JUMPER/METER ASSEMBLY SHALL NOT BE REMOVED UNTIL SYSTEM IS ACCEPTED AND DEPARTMENT OF HEALTH CERTIFICATION AND CLEARANCE FOR SERVICE FORM HAS BEEN RECEIVED BY LEE COUNTY UTILITIES. WHEN THE NEW SYSTEM IS ACCEPTED, THE TEMPORARY

REV: 12/10/2015

COMPLETELY REMOVED DOWN TO CORP STOPS.

CONSTRUCTION JUMPER METER ASSEMBLY MUST BE

- (1) TAPPING SLEEVE AND VALVE TO BE FULLY RESTRAINED ON EXISTING MAIN (SEE LCU STANDARD DETAIL)
- ② GRADE
- ③ PROPERTY LINE AND/OR RIGHT OF WAY LINE

N.T.S.

- (4) BRONZE BALL VALVE (5) METER FURNISHED BY LEE COUNTY UTILITIES
- (6) REDUCED PRESSURE BACKFLOW PREVENTER
- (7) PIPE STAND (SEE LCU STANDARD DETAIL)
- (8) 2" DIA. HDPE DR9 (9) 2" DIA. CORPORATION STOP
- (10) 2" DIA. CURB STOP

6

29

38

49

68

105

129

63

74

94

131

156

4

STANDARD DETAIL NO. 6.5

DIAMETER

VARIES

LEE COUNTY UTILITIES

TRENCH CROSS SECTION

- (2) FINISHED GRADE
- (3) MARKING TAPE 12" DEPTH MAX. (4) MATERIALS CLEAN DRY SAND,

1) EXCAVATED TRENCH

REV: 12/10/2015

N.T.S.

- FINE LIME ROCK OR PIT SHELL MECHANICALLY COMPACTED IN 6" LIFTS TO AT LEAST 95% OF MAX. DENSITY, OR 98% IF UNDER PAVED AREA OF ROADWAY.
- 5) #57 STONE LOCATED UNDER PIPE OR EXISTING UNDISTURBED SUITABLE MATERIAL

24" MIN.

(7) STANDARD 8" MIN TRENCH UNDERCUT

(6) SPRING LINE

- AND BACKFILL WITH #57 STONE COMPACTED IN 6" LIFTS ADDITIONAL UNDERCUT AND CRUSHED ROCK BEDDING FOUNDATION WHEN DIRECTED BY L.C.U. THE CONTRACTOR IS TO REMOVE UNSTABLE MATERIAL FROM THE TRENCH FOUNDATION. THEN INSTALL STABILIZED CRUSHED ROCK BACKFILL WITH #57 STONE
- LOCATING WIRE IS REQUIRED FOR ALL PRESSURIZED PIPELINĖS

COMPACTED IN 6" LIFTS

## Darraco

CIVIL ENGINEERING - LAND SURVEYING

### LAND PLANNING - LANDSCAPE DESIGN www.barraco.net

2271 McGREGOR BLVD., SUITE 100 POST OFFICE DRAWER 2800 FORT MYERS. FLORIDA 33902-2800 PHONE (239) 461-3170 FAX (239) 461-3169

FLORIDA CERTIFICATES OF AUTHORIZATION

PREPARED FOR

ENGINEERING 7995 - SURVEYING LB-6940

## UTILITIES LEE COUNTY

1500 MONROE STREET FORT MYERS, FLORIDA 33901 PHONE (239) 533-8181 FAX (239) 485-8845

WWW.LEEGOV.COM/UTILITIES

PROJECT DESCRIPTION

# TRANSMISSION MAINS

PHASE 1B TRAILWINDS DRIVE TO

SOUTH AIRPORT ROAD

PART OF SECTION 12 AND 13 TOWNSHIP 45 SOUTH, **RANGE 24 EAST** FORT MYERS, LEE COUNTY, FLORIDA

ENGINEER OF RECORD TIMOTHY B. GAVIN, P.E., FOR THE FIRM FLORIDA P.E. NO. 70675 - TIMG@BARRACO.NET

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HESE DETAILS WERE NOT DESIGNED BY BARRACO AND SSOCIATES, INC. AND ARE INCLUDED IN THIS PLAN SET

NOTES ENGINEERED, DESIGNED AND PROVIDED BY LEE COUNTY UTILITIES.

AS REQUIRED BY LEE COUNTY UTILITIES

THE ENGINEERS CERTIFICATION INDICATES THAT THE

PLAN REVISIONS

ENGINEER HAS REVIEWED THESE DETAILS AND FOUND THEM TO BE SUITABLE FOR THIS PROJECT.

OCATION J:\23063\DWG\DO\PHASE 1B\

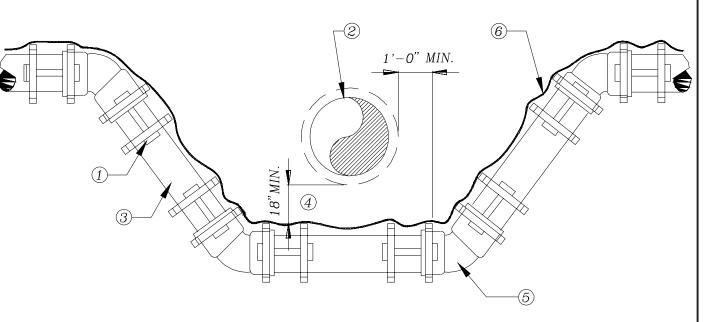
LOT DATE | TUE. 6-12-2018 - 10:01 AM

PLOT BY JAN BILDZUKEWICZ

FILE NAME 23063F70.DWG

## STANDARD DETAIL NO. 6.10 LEE COUNTY UTILITIES WATER PRESSURE LINE VERTICAL OFFSET DUCTILE IRON MJ FITTINGS & PIPE

## STANDARD DETAIL NO.\_6.11 LEE COUNTY UTILITIES WASTE WATER FORCE MAIN VERTICAL OFFSET WITH FITTINGS, (P.V.C.



- 1 LCU APPROVED JOINT RESTRAINT FOR D.I., M.J. PIPE AND FITTINGS PLACED IN ACCORDANCE WITH JOINT RESTRAINT SCHEDULE. (SEE DETAIL 6.12)
- (2) CONFLICT PIPE
- (3) LCU APPROVED DUCTILE IRON PIPING PRESSURE CLASS 350
- (4) 18" MIN. UNLESS OTHERWISE APPROVED
- (5) 45° MECHANICAL JOINT FITTING, TYPICAL
- (6) 12 GAUGE DOUBLE INSULATED COPPER WIRE (SEE LCU STANDARD DETAIL)

WASTE WATER FORCE MAIN 1 LCU APPROVED JOINT RESTRAINT FOR P.V.C., M.J. PIPE AND FITTINGS PLACED IN ACCORDANCE WITH JOINT RESTRAINT SCHEDULE. (SEE DETAIL 6.12) (2) CONFLICT PIPE (3) LCU APPROVED C-900 PVC DR 14 (4) 18" MIN. UNLESS OTHERWISE APPROVED (5) 45° MECHANICAL JOINT FITTING, TYPICAL

6 12 GAUGE DOUBLE INSULATED COPPER WIRE (SEE LCU STANDARD DETAIL)

### RESTRAINED LENGTH SCHEDULE N.T.S.DUCTILE IRON PIPE PIPEMINIMUM RESTRAINED PIPE LENGTH (FEET) SIZEHORIZONTAL BENDS DEADHORIZONTAL ENDTEE $| 22-1/2^{\circ} | 11-1/4^{\circ} |$ (Inches) 45° 17 29 23 17 10 5 40 29 12 53 6

35

41

51

69

81

14

17

21

29

34

10

12

16

30

## PVC PIPE

7

8

11

14

17

STANDARD DETAIL NO. 6.12

LEE COUNTY UTILITIES

PIPE	MINIMUM RESTRAINED PIPE LENGTH (FEET)					
SIZE		HORIZONTAL BENDS			DEAD	HORIZONTA
(Inches)	90°	45°	22-1/2°	11-1/4°	END	TEE
4	20	8	4	2	45	8
6	29	12	6	3	63	25
8	36	15	8	4	83	43
10	44	18	9	5	99	58
12	51	21	11	5	116	74
16	63	26	13	7	149	103
24	87	36	18	9	208	158
30	102	42	21	10	248	194

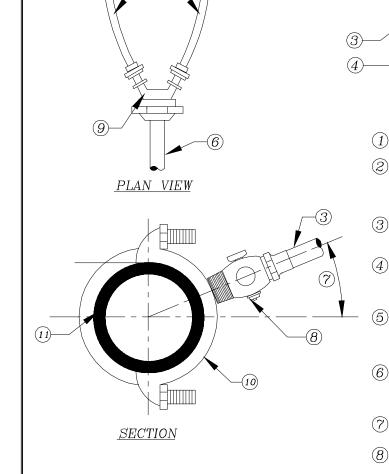
ALL ENCOUNTERED VERTICAL & HORIZONTAL BENDS, VERTICAL OFFSETS, TEES, AND DEAD ENDS SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER.

LENGTH FIGURES BASED ON FOLLOWING:

Pressure = 150 psi, FS = 1.5, trench type = 3, 30" cover on Bare pipe, Soil type = GP & SP REV: 12/10/2015

## STANDARD DETAIL NO. 6.16 LEE COUNTY UTILITIES

WATER SERVICE INSTALLATION 5/8" THROUGH 1



NOTES:

ENCASED IN 4" P.V.C. PIPE SCHEDULE 40 MINIMUM AND EXTEND 4 FEET BEYOND THE EDGES OF PAVEMENT OR BACK OF CURB.

1. TUBING UNDER ROADWAY SHALL BE EV: 12/10/2015

QUAZITE B001118501 METER BOX WITH QUAZITE CO0111802P050 COVER OR CDR B001118501 METER BOX WITH CDR CO0111802P050X COVER. <u>SECTION</u> 1 FINISHED GRADE INSIDE R.O.W. @ PROPERTY LINE &

(2) METER BOX WITH COVER TO BE LOCATED CLEAR OF DRIVEWAYS. (3) POLYETHYLENE TUBING, PE 3408, 200PSI,

SDR9, BLUE (SEE APPROVED MATERIAL LIST) ) STRAIGHT CURB STOP WITH PADLOCK WING CONNECTED TO LEE COUNTY WATER METER (SEE APPROVED MATERIAL LIST)

5) 3/4" POLYETHYLENE TUBING, PE 3408, 200 PSI, SDR 9, BLUE (SEE APPROVED MATERIAL LIST) WITH LOCATING WIRE (6) 1" POLYETHYLENE TUBING, PE 3408, SDR 9, BLUE (SEE APPROVED MATERIAL

LIST) WITH LOCATING WIRE MIN. 22 1/2° NOT TO EXCEED 45° (8) BALL CORPORATION STOP

(SEE APPROVED MATERIAL LIST) (9) BRASS "Y" OR "T" CONNECT (SEE APPROVED MATERIAL LIST) (10) DOUBLE STRAP SERVICE SADDLE

PROVIDE SPRING LOADED TAPPING SADDLE WHEN TAPPING HDPE (SEE APPROVED MATERIAL LIST) (11) WATER MAIN

BID SET 2018-06-12 LEE COUNTY UTILITY **DETAILS** 

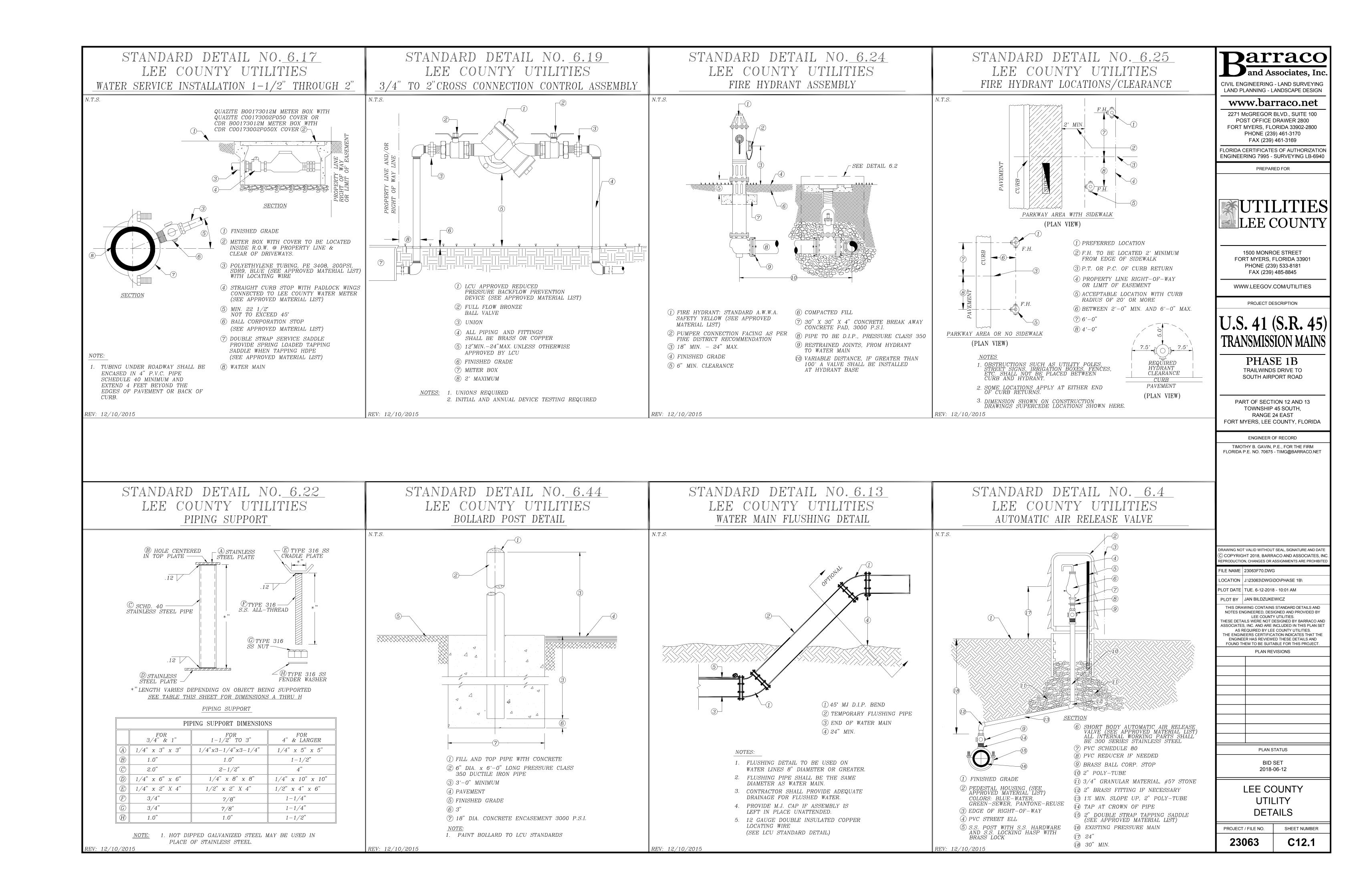
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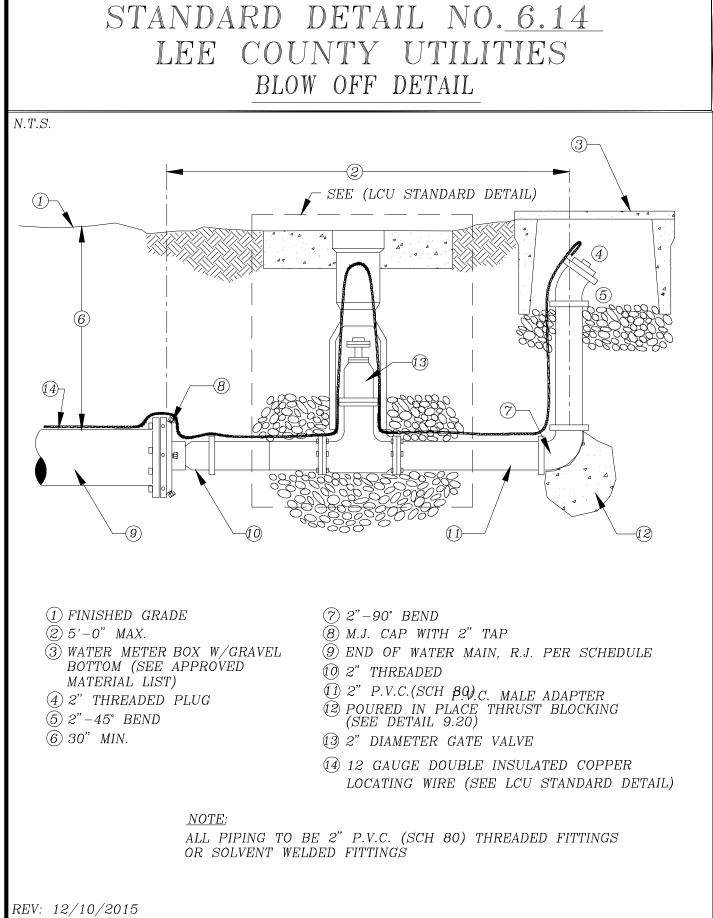
PROJECT / FILE NO. SHEET NUMBER

23063 C12.0

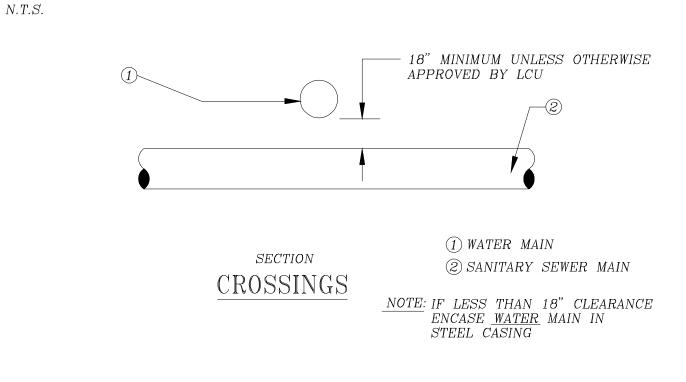
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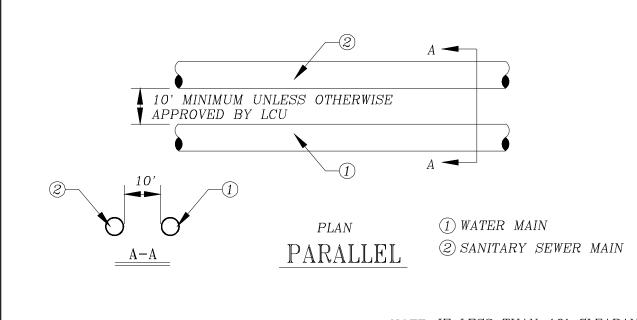
REV: 12/10/2015





## STANDARD DETAIL NO. 6.8 LEE COUNTY UTILITIES WATER AND SEWER CROSSING DETAIL

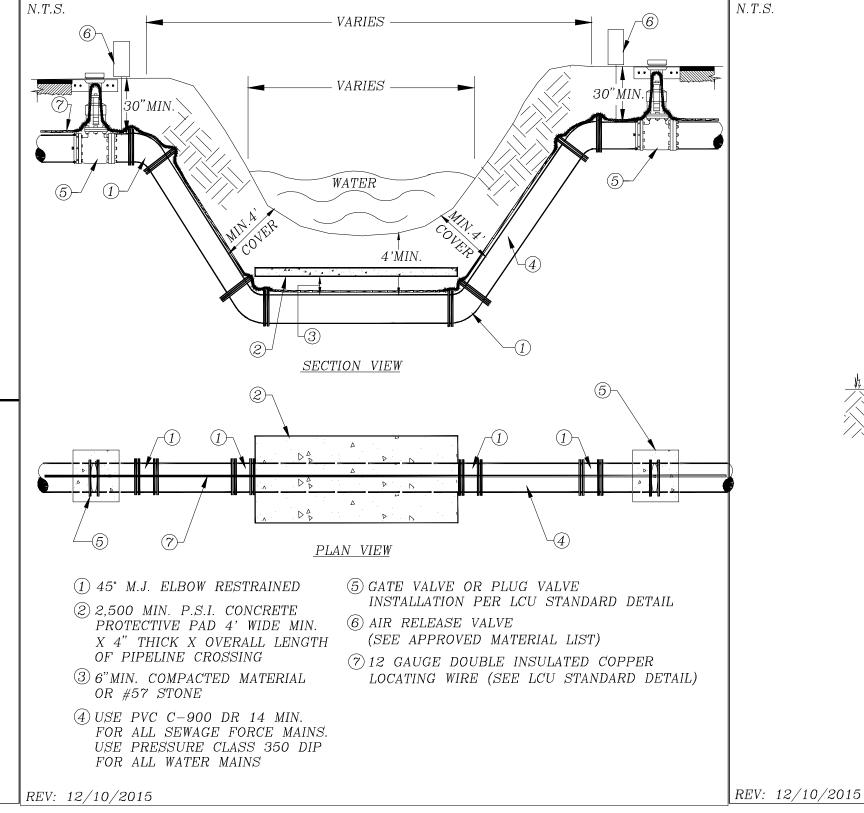




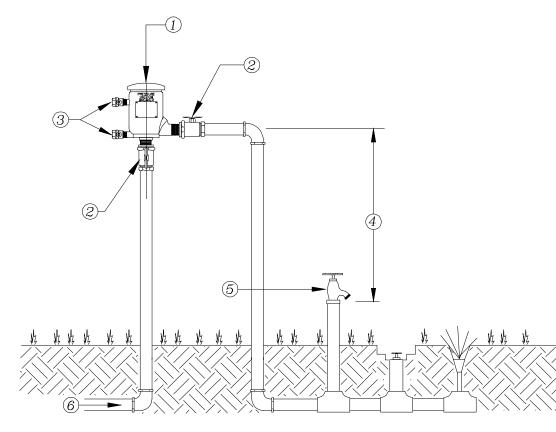
N.T.S.

NOTE: IF LESS THAN 10' CLEARANCE ENCASE WATER MAIN IN STEEL CASING REV: 12/10/2015

## STANDARD DETAIL NO. 6.9 LEE COUNTY UTILITIES SUBAQUEOUS CROSSING



## STANDARD DETAIL NO. 6.26 LEE COUNTY UTILITIES



① PRESSURE VACUUM BREAKER TO BE USED ON IRRIGATION LINES ONLY ② RESILIENT SEATED FULL FLOW VALVE

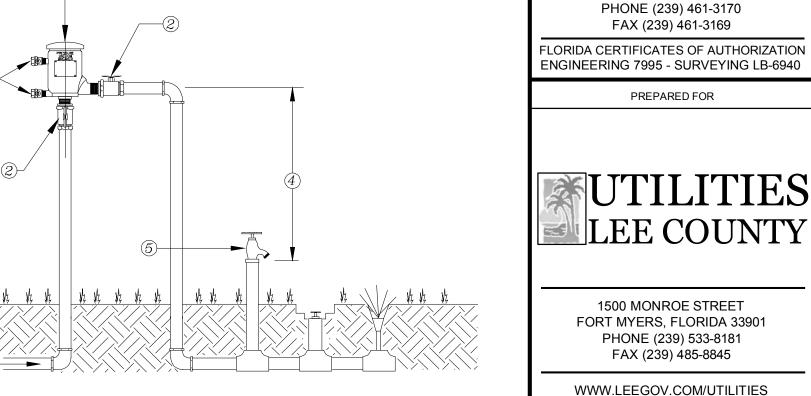
③ TEST PORT

4) 12" MIN. ABOVE THE HIGHEST OUTLET

(5) HOSE BIB

(6) FLOW

PRESSURE VACUUM BREAKER



PROJECT DESCRIPTION

U.S. 41 (S.R. 45) TRANSMISSION MAINS

Darraco

CIVIL ENGINEERING - LAND SURVEYING LAND PLANNING - LANDSCAPE DESIGN

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PREPARED FOR

PHASE 1B TRAILWINDS DRIVE TO SOUTH AIRPORT ROAD

PART OF SECTION 12 AND 13 TOWNSHIP 45 SOUTH, **RANGE 24 EAST** FORT MYERS, LEE COUNTY, FLORIDA

> ENGINEER OF RECORD TIMOTHY B. GAVIN, P.E., FOR THE FIRM FLORIDA P.E. NO. 70675 - TIMG@BARRACO.NET

## STANDARD DETAIL NO. 6.27 LEE COUNTY UTILITIES AIR GAP DETAIL

① 3" MIN. AIR GAP ② BASIN, RECEPTACLE OR TANK TRUCK APPLICATIONS ③ SUPPLY LINE PREFERRED LOCATION

(4) CUSTOMERS VALVE (5) WATER METER (7) 24" MAX.

NOTE:

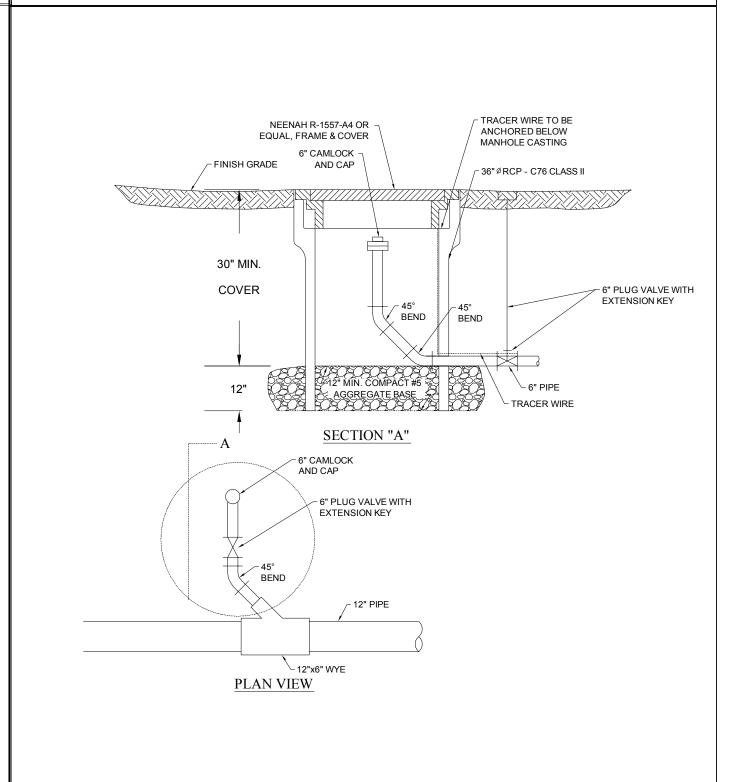
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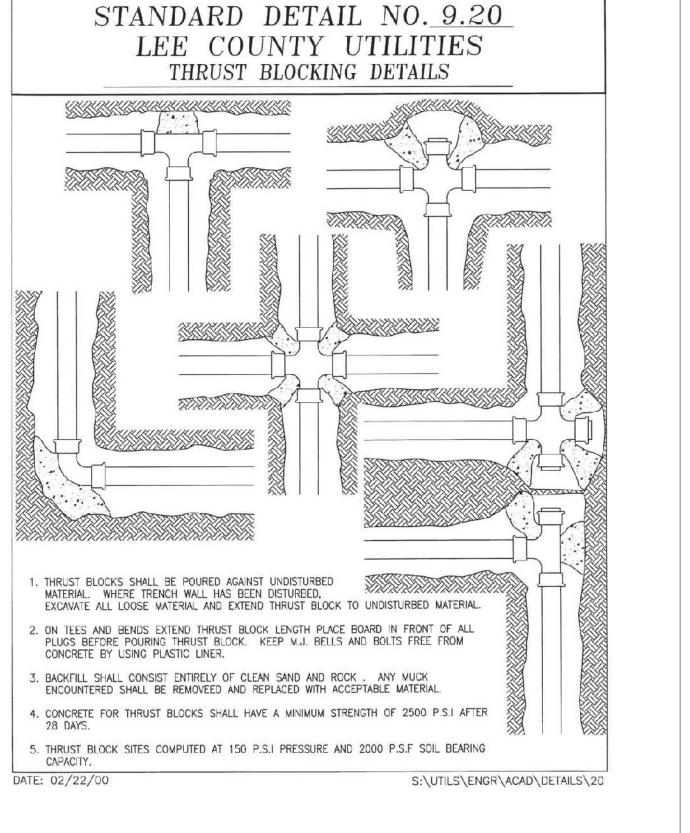
N.T.S.

1. AIR GAP MUST HAVE A MINIMUM SEPARATION OF TWO TIMES THE INSIDE DIAMETER OF THE SUPPLY PIPE MEASURED VERTICALLY ABOVE THE TOP RIM OF THE VESSEL, WITH A MINIMUM DISTANCE OF THREE INCHES.

## STANDARD DETAIL NO. LEE COUNTY UTILITIES

PRESSURE CLEANOUT DETAIL





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FILE NAME 23063F70.DWG LOCATION J:\23063\DWG\DO\PHASE 1B\

PLOT DATE | TUE. 6-12-2018 - 10:01 AM PLOT BY JAN BILDZUKEWICZ

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PLAN REVISIONS

PLAN STATUS BID SET

LEE COUNTY UTILITY **DETAILS** 

2018-06-12

PROJECT / FILE NO. SHEET NUMBER 23063 C12.2