

# LEE COUNTY UTILITIES PALM BEACH BLVD (SR-80) FORCE MAIN REPLACEMENT AT ORANGE RIVER CROSSING

10600 CHEVROLET WAY, SUITE 300  
ESTERO, FLORIDA 33928  
Ph: 239-390-1467 Fax: 239-390-1769



**TETRA TECH**

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**PROJECT LOCATION:**  
LEE COUNTY, FLORIDA

**CLIENT INFORMATION:**  
LEE COUNTY UTILITIES  
1825 HENDRY STREET, 3RD FLOOR  
FORT MYERS, FLORIDA 33901

**Tt PROJECT No.:**  
200-01558-13001

**CLIENT PROJECT No.:**

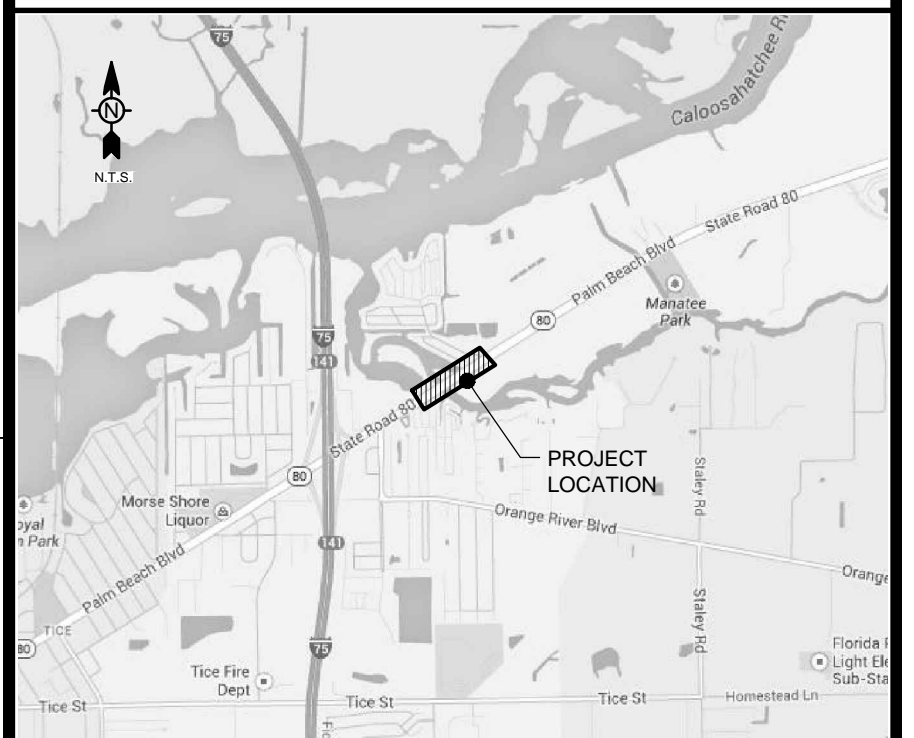
**PROJECT DESCRIPTION / NOTES:**

- INSTALLATION OF APPROXIMATELY 1,900 LINEAR FEET OF A PROPOSED 24-INCH WASTEWATER FORCE MAIN ALONG STATE ROAD 80 (PALM BEACH BOULEVARD), WITH A PRIMARY FOCUS OF CROSSING THE ORANGE RIVER VIA DIRECTIONAL DRILL.
- THE PROJECT HAS BEEN DESIGNED BASED ON A DIRECTIONAL DRILL OF APPROXIMATELY 1,400 LINEAR FEET FROM WEST TO EAST WITH PULL-BACK FROM EAST TO WEST.
- THE PROPOSED 24-INCH FM WILL REPLACE THE EXISTING FORCE MAIN. THE EXISTING FORCE MAIN SHALL REMAIN IN SERVICE UNTIL THE NEW FORCE MAIN HAS BEEN INSTALLED AND CERTIFIED FOR FINAL CONNECTION.

**ISSUED:**

BID SET - AUGUST 2014.

**VICINITY MAP:**



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PREPARED FOR  
**LEE COUNTY UTILITIES**  
1825 Hendry Street, 3rd Floor  
Fort Myers, Florida 33901

**LEE COUNTY BOARD OF COMMISSIONERS**

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

THIS IS TO CERTIFY THAT THESE PLANS AND THE ASSOCIATED CONSTRUCTION PROJECT ARE IN SUBSTANTIAL COMPLIANCE WITH THE LEE COUNTY LAND DEVELOPMENT CODE WITH THE EXCEPTION OF THE FOLLOWING DEVIATIONS WHICH HAVE BEEN APPROVED BY THE DIRECTOR OF PUBLIC WORKS:

DEVIATIONS:  
1. NONE

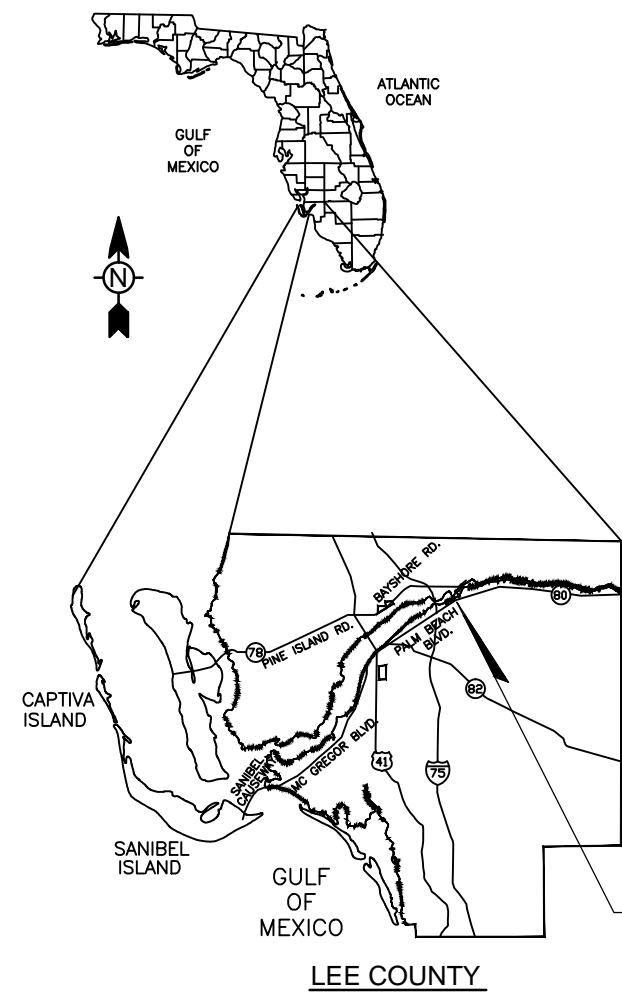
SIGNATURE & SEAL DATE  
ALFRED J. MITTL, P.E. 59913  
SENIOR PROJECT MANAGER FL PE LICENCE No.

DEVELOPMENT ORDER APPROVED:  
PUBLIC WORKS ADMINISTRATION

DOUGLAS L. MEURER, P.E. DATE  
ASSISTANT COUNTY MANAGER, PUBLIC WORKS

Alfred J. Mittl, P.E.  
P.E. No. 59913, FL  
Tetra Tech Inc.  
10600 Chevrolet Way, Ste. 300  
Estero, Florida 33928  
Engineering Business No. 2429

DATE \_\_\_\_\_



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8/15/2014 10:28:42 AM - P:\NER\01558\200-01558-13001\CAD\SHEETFILES\G-001 GENERAL NOTES - ALTDESIGN\_1500F.DWG - VITTTTIOE, WYLMER


### GENERAL NOTES

1. ALL WORK SHALL CONFORM TO LATEST REVISION OF THE LEE COUNTY UTILITIES OPERATIONAL MANUAL WHICH IS ON FILE AT THE DIVISION OF LEE COUNTY UTILITIES OFFICE (1500 MONROE STREET, P.O. BOX 398, FORT MYERS, FLORIDA 33902).
2. AT THE SITE KEEP AND MAINTAIN ONE RECORD COPY OF ALL CONTRACT DOCUMENTS SUBMITTED IN GOOD ORDER. AS THE WORK PROGRESSES THE CONTRACTOR SHALL RECORD ON ONE SET OF REPRODUCIBLE DRAWINGS ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL PLANS. HE SHALL RECORD THE EXACT LOCATION OF ALL CHANGES IN VERTICAL AND HORIZONTAL ALIGNMENT BY OFFSETS AND TIES AT EACH; SEWER, WATER, ELECTRICITY, GAS, COMMUNICATION AND OTHER SERVICES BY OFF-SET DISTANCE TO PERMANENT IMPROVEMENTS SUCH AS BUILDING AND CURBS.
3. CONTRACTOR SHALL OBTAIN THE SERVICES OF A FLORIDA REGISTERED PROFESSIONAL SURVEYOR AND MAPPER TO STAKE THE PROPOSED PIPELINE EVERY 500 FT AND AT CHANGES IN DIRECTION AND SHALL PROVIDE COMPLETED AS-BUILT INFORMATION DISPLAYING THE LOCATION OF THE PIPING BASED ON PROFESSIONAL SURVEYOR STAKING IN ELECTRONIC (AUTOCAD) FORMAT AND PAPER (REDLINE).
4. A PRE-CONSTRUCTION MEETING IS REQUIRED BEFORE WORK MAY BEGIN. LEE COUNTY UTILITIES SHALL BE NOTIFIED 48 HOURS PRIOR TO PROJECT MOBILIZATION.
5. ALL WORK AND MATERIALS, WHICH DO NOT CONFORM TO LCU SPECIFICATIONS, ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
6. ANY WORK PERFORMED WITHOUT THE KNOWLEDGE OF LCU IS SUBJECT TO RE-EXCAVATION, REMOVAL AND REPLACEMENT OF SAME TO BE DONE AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL PROVIDE SUFFICIENT PERSONNEL AND EQUIPMENT ON THE JOB AT ALL TIMES DURING CONSTRUCTION TO SATISFY THE SPECIFICATIONS AND TO COMPLETE WORK.
8. LCU INSPECTION STAFF MAY OBSERVE PROJECT CONSTRUCTION.
9. THE CONTRACTOR IS TO UNCOVER ALL EXISTING LINES BEING TIED INTO AND VERIFY GRADES BEFORE BEGINNING OF CONSTRUCTION.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND TAKE ALL POSSIBLE PRECAUTIONS TO AVOID ANY DAMAGE TO ALL UNDERGROUND PIPELINES, TELEPHONE, CABLE TV, ELECTRIC LINES/CONDUITS AND STRUCTURES IN ADVANCE OF ANY CONSTRUCTION. LCU WILL NOT GUARANTEE ANY LOCATIONS AS SHOWN ON THESE PLANS OR THOSE OMITTED FROM THESE PLANS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PROTECT EXISTING UTILITIES AND STRUCTURES.
11. CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THE PLANS. IF ANY DISCREPANCY IN QUANTITIES IS FOUND, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND LCU.
12. ALL REGULATORY AND PERMITTING AGENCIES' REQUIREMENTS SHALL BE COMPLIED WITH.
13. APPROPRIATE TURBIDITY CONTROL DEVICES (E.G. SILT FENCES, HAY BAILS) WILL BE UTILIZED DURING ALL PHASES OF INSTALLATION AND GRADING. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE NOTICE OF INTENT AND NOTICE OF TERMINATION TO THE EPA IN COMPLIANCE WITH LEE COUNTY'S NPDES PERMIT. CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND MAINTAINING AN EFFECTIVE STORM WATER POLLUTION PREVENTION PLAN.
14. A GEOTECHNICAL INVESTIGATION AND REPORT WAS PREPARED BY ARDAMAN & ASSOCIATES, INC. AND WAS INTENDED ONLY FOR USE BY THE OWNER AND ENGINEER IN PREPARING THE CONTRACT DOCUMENTS. THE GEOTECHNICAL INVESTIGATION REPORT MAY BE EXAMINED FOR WHAT EVER VALUE IT MAY BE CONSIDERED TO BE WORTH. HOWEVER, THIS INFORMATION IS NOT GUARANTEED AS TO ITS ACCURACY OR COMPLETENESS. THE GEOTECHNICAL INVESTIGATION REPORT IS NOT PART OF THE CONTRACT DOCUMENTS.

15. A SUBSURFACE UTILITY ENGINEERING (SUE) INVESTIGATION AND REPORT WAS PREPARED BY JOHNSON ENGINEERING, INC. AND WAS INTENDED ONLY FOR USE BY THE OWNER AND ENGINEER IN PREPARING THE CONTRACT DOCUMENTS. THE SUBSURFACE UTILITY INVESTIGATION REPORT MAY BE EXAMINED FOR WHAT EVER VALUE IT MAY BE CONSIDERED TO BE WORTH. HOWEVER, THIS INFORMATION IS NOT GUARANTEED AS TO ITS ACCURACY OR COMPLETENESS. THE SUBSURFACE UTILITY INVESTIGATION REPORT IS NOT PART OF THE CONTRACT DOCUMENTS.
16. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK. ANYTHING NOT SHOWN ON THESE DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND SHALL NOT CONSTITUTE AN EXTRA, UNLESS APPROVED BY THE ENGINEER.
17. THE CONTRACTOR SHALL CONTACT THE ENGINEER AND LCU IMMEDIATELY CONCERNING ANY CONFLICTS WITH LCU UTILITIES/STRUCTURES ARISING DURING CONSTRUCTION OF ANY FACILITIES SHOWN ON THESE DRAWINGS.
18. TRAFFIC MUST BE MAINTAINED AT ALL TIMES AS PER LEE COUNTY DEPARTMENT OF TRANSPORTATION (LCDOT) AND PER FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION OF THE FDOT DESIGN STANDARDS 600 FOR MULTILANE ROADWAYS.
19. THE CONTRACTOR SHALL VERIFY ALL UTILITIES AND PROVIDE AT LEAST 48 HOURS NOTICE TO THE INDIVIDUAL UTILITY COMPANIES AND FDOT AND LCDOT PRIOR CONSTRUCTION.
20. THE CONTRACTOR SHALL REPLACE ALL PAVEMENT, CURBS, DRIVEWAYS, SIDEWALKS, FENCES, ETC., WITH THE SAME TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL RESTORE ALL AREAS AFFECTED BY THE CONSTRUCTION TO ITS ORIGINAL CONDITION, OR BETTER. CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS ALONG THE ENTIRE PROJECT DURING THE DURATION OF THE PROJECT.
21. WITHIN THE FDOT AND LCDOT RIGHT-OF-WAY, ALL DISTURBED AREAS SHALL RECEIVE SODDING MATERIALS IN ACCORDANCE WITH FDOT SPECIFICATIONS. THOSE AREAS THAT ARE CLASSIFIED AS DRAINAGE DITCHES SHALL RECEIVE FULL SOLID SOD.
22. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
23. ALL FRAMES, COVER VALVE BOXES, METER BOXES AND MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE UPON COMPLETION OF PAVING OR RELATED CONSTRUCTION. ALL VALVE PADS SHALL BE POURED IN PLACE. NO PRE-FORMED VALVE PADS ALLOWED.
24. DUCTILE IRON PIPE AND FITTINGS SHALL BE ENCASED IN POLYETHYLENE TWENTY (20) FEET ON EACH SIDE OF ANY CROSSING OF METALLIC GAS MAINS, ELECTRIC TRANSMISSION EASEMENTS AND TRANSMISSION STRUCTURES AS OUTLINED IN AWWA C105/ANSI A21.5. ALL PIPING LOCATED WITHIN THESE TRANSMISSION EASEMENTS SHALL BE POLYETHYLENE ENCASED.


### SURVEYOR'S REPORT

1. DISTANCES ARE IN FEET AND DECIMALS THEREOF.
2. HORIZONTAL CONTROL FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATE SYSTEM, FLORIDA WEST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83) UTILIZING RTK GPS EQUIPMENT OPERATING ON THE TRIMBLE VRS NETWORK, U.S. SURVEY FEET.
3. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND WERE DERIVED FROM NATIONAL GEODETIC SURVEY BENCHMARK "L 580" USING THE PUBLISHED ELEVATION OF 3.86 FEET. (TO OBTAIN NGVD 29 ELEVATIONS ADD 1.19 FEET.)
4. THE SURVEY LIMITS INCLUDE THE AREA ON THE NORTH SIDE OF PALM BEACH BOULEVARD (SR 80) FROM 700 FEET SOUTHWEST OF THE WEST EDGE OF THE ORANGE RIVER TO 1200 FEET NORTHEAST OF THE EAST EDGE OF THE ORANGE RIVER AS WELL AS A CROSSING OF PALM BEACH BOULEVARD ON THE NORTH END OF THE SURVEY AREA.
5. THE FOLLOWING FEATURES WERE INTENDED TO BE SURVEYED WITHIN THE SCOPE OF THIS PROJECT:
  - a. ABOVE GROUND AND VISIBLE IMPROVEMENTS WITHIN THE SURVEY LIMITS;
  - b. FLAGS AND MARKS INDICATING THE LOCATION OF UNDERGROUND UTILITIES AS SET BY OTHERS IN THE AREAS THAT SOIL BORINGS WERE PERFORMED. MARKERS AS SET BY OTHERS AT THE LOCATIONS WHERE SUBSURFACE UTILITY EXCAVATIONS WERE PERFORMED.
  - c. CROSS-SECTIONS OF SPOT ELEVATIONS OBTAINED AT 100 FOOT INTERVALS ALONG WITH ELEVATIONS ALONG BREAKLINES SUFFICIENT TO SHOW THE EXISTING TERRAIN;
6. THE FOLLOWING SOURCES OF INFORMATION AND DATA WERE USED IN THE PREPARATION OF THIS SURVEY:
  - a. RIGHT-OF-WAY MAP FOR STATE ROAD 80, SECTION 12020-2538, APPROVED DATE 3/19/86.
  - b. DEEDS OF ADJACENT PARCELS WITHIN THE SURVEY AREA.
  - c. OWNERSHIP AND EASEMENT SEARCHES FOR THE ADJACENT PARCELS WITHIN THE SURVEY AREA AS PROVIDED BY LEE COUNTY.
7. LIMITATIONS PERTAINING TO INFORMATION PRESENTED ON THIS SURVEY INCLUDE:
  - a. UNDERGROUND UTILITIES HAVE NOT BEEN INVESTIGATED, LOCATED OR CONFIRMED, EXCEPT AS DESCRIBED IN REPORT ITEM 5.B.
  - b. PIPES DESIGNATED AS "RCP" (REINFORCED CONCRETE PIPE) ARE ASSUMED TO BE REINFORCED BUT THE REINFORCING ELEMENT HAS NOT BEEN OBSERVED OR CONFIRMED.
  - c. ENVIRONMENTAL ASSESSMENTS OR AUDITS, IF ANY, HAVE NOT BEEN REFLECTED ON THIS SURVEY.
  - d. THE LINES SHOWN ON THE SURVEY MAP REPRESENTING RIGHT-OF-WAY LINES, PROPERTY LINES AND EASEMENT LINES ARE BASED ON THE ITEMS LISTED IN REPORT ITEM 6 AND FOUND MONUMENTATION. THESE LINES ARE APPROXIMATE IN THAT EACH INDIVIDUAL LINE HAS NOT BEEN SURVEYED ON THE GROUND. THIS IS NOT A RIGHT-OF-WAY SURVEY OR A BOUNDARY SURVEY.
  - e. LANDS SHOWN HEREON ARE SUBJECT TO ADDITIONAL EASEMENTS, RESTRICTIONS, RESERVATIONS AND RIGHTS-OF-WAY (RECORDED, UNRECORDED, WRITTEN AND UNWRITTEN) THAT MAY NOT BE DISCLOSED IN THE DOCUMENTS DESCRIBED IN REPORT ITEM 6.C.
8. DATE OF FIELD WORK: MARCH 8, 2013



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**LEE COUNTY**  
SOUTHWEST FLORIDA

	BY		DATE		
	DESCRIPTION		DATE		
	MARK		DATE		

LEE COUNTY UTILITIES  
PALM BEACH BLVD FORCE MAIN REPLACEMENT  
AT ORANGE RIVER CROSSING  
**GENERAL NOTES  
AND SURVEYOR'S REPORT**

Project No.: 200-01558-13001
Designed By: AJM
Drawn By: GM
Checked By: SPH

**G-001**  
Sheet

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8/15/2014 10:29:13 AM - P:\IER\01558\200-01558-13001\CAD\SHSHEETFILES\G-002 LEGENDS AND ABBREVIATIONS - ALTDESIGN\_1500F.DWG - VITITOE, WYLMER

E  
D  
C  
B  
A

1

2

3

4

5

6

**SITE LEGEND**

SITE SYMBOLS		UTILITY SYMBOLS		TYPICAL LINETYPES	
<b>FEATURES</b>		<b>UTILITY SYMBOLS</b>		<b>TYPICAL LINETYPES</b>	
	EXISTING SIGN		UTILITY MARKER		RIGHT OF WAY LINE
	POST		FIRE HYDRANT (AS SHOWN)		PROPERTY LINE
	MAIL BOX		SPRINKLER HEAD (AS SHOWN)		UTILITY EASEMENTS
	POWER METER		WATER SPIGOT (AS SHOWN)		EX. CONTOUR - MAJOR
	= SPOT ELEVATION (HARD SURFACE)		CLEAN OUT (AS SHOWN)		EX. CONTOUR - MINOR
	= SPOT ELEVATION (SOFT SURFACE)		UTILITY METER (AS SHOWN)		WETLAND BOUNDARY
<b>MISCELLANEOUS</b>			UTILITY VALVE (AS SHOWN)		SILT FENCE
	FLOW DIRECTION		GUY WIRE		FENCE
	1.00% SLOPE ARROW		SATELLITE DISH		FENCE (STEEL)
	HANDICAP MARKING		MITERED END SECTION		FLOOD HAZARD
	EMBANKMENT		CATCH BASIN		GUARD RAILING
	REMOVE TREES		STORM SEWER MANHOLE		GRAVEL ROAD OR DRIVE
	TREE PROTECTION		ELECTRIC RISER		RAIL ROAD TRACKS
	WRAP INLETS WITH FILTER FABRIC		TELEPHONE RISER		WATER EDGES/C.L.'S
<b>SURVEY</b>			FIBER OPTIC CABLE POST		TREE / BRUSH LINES
	BENCHMARK		CABLE TELEVISION RISER		SANITARY SEWER
	NAIL & DISK		TRAFFIC SIGNAL BOX		WATER MAIN (PROP TRENCH)
	TRAVERSE POINT		CONCRETE POWER POLE		WATER MAIN (PROP DIR. DRILL)
	FOUND IRON (TYPE)		WOOD UTILITY POLE		FORCE MAIN
	SET IRON (TYPE)		UTILITY POLE		NATURAL GAS
	FOUND MONUMENT (TYPE)		GUY ANCHOR		CABLE TV OVERHEAD
	SET MONUMENT (TYPE)		LITE POLE		CABLE TV UNDERGROUND
	SECTION CORNER		SANITARY SEWER MANHOLE		POWER UNDERGROUND
	SOFT DIG		BACK FLOW ASSEMBLY		POWER OVERHEAD
<b>REFERENCE SYMBOLS</b>			GAS WARNING POST		STORM PIPES
	DENOTES DETAIL NUMBER IDENTIFICATION		BASELINE		LIMIT OF CONSTRUCTION
	DENOTES DRAWING NO. WHERE DETAIL IS LOCATED		TRAFFIC/SIGNAL/ELEC. LINE		WATER MAIN (EXISTING)
	DENOTES DRAWING NO. WHERE DETAIL IS REFERENCED		REUSE/RECLAIMED WATER		TELEPHONE (UNDERGROUND)

**PIPING LEGEND**

FITTING/ APPURTENANCE	FLANGED				MECHANICAL-JOINT			
	SINGLE-LINE		DOUBLE-LINE		SINGLE-LINE		DOUBLE-LINE	
	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED
BEND								
TEE								
WYE								
CONCENTRIC REDUCER								
CAP					N/A	N/A	N/A	N/A
PLUG (PLUGGED VALVE)	N/A	N/A	N/A	N/A				
BUTTERFLY VALVE	N/A	N/A			N/A	N/A		
BALL VALVE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CHECK VALVE	N/A	N/A			N/A	N/A		
GATE VALVE	N/A	N/A			N/A	N/A		
PLUG VALVE	N/A	N/A			N/A	N/A		
PINCH VALVE								
AUTOMATIC CONTROL VALVE								

**ABBREVIATIONS**

ANT	ANTENNA	GV	GAS VALVE	S	SET
ARV	AIR RELEASE VALVE	INV	INVERT	SC	SECTION CORNER
BM	BENCHMARK	IP	IRON PIPE	SF	SILT FENCE
BFV	BUTTERFLY VALVE	IR	IRON ROD	SH	SPRINKLER HEAD
CO	CLEANOUT	IRRV	IRRIGATION VALVE	SP	SAMPLE POINT
CONC	CONCRETE	JBL	JURISDICTIONAL BOUNDARY LINE	SPIG	WATER SPIGOT
CFL	CENTRAL FLORIDA LOCATING INC.	LBR	LIMEROCK BEARING RATING (M) AS MEASURED	SS	SANITARY SEWER
CM	CONCRETE MONUMENT	MB	MAILBOX	ST	STORM SEWER
CMP	CORRUGATED METAL PIPE	MJ	MECHANICAL JOINT	STA	STATION
CPP	CORRUGATED PLASTIC PIPE	MH	MANHOLE	SV	SANITARY SEWER VALVE
D	DRAINAGE PIPE	MIN	MINIMUM	TB	TELEPHONE RISER
DI	DRAINAGE INLET	MW	MONITORING WELL	TEL	TELEPHONE
DIP	DUCTILE IRON PIPE	NL	NAIL	TOP	TOP OF PIPE
DH	DRILL HOLE	OE	OVERHEAD UTILITY LINES	TP	TRAVERSE POINT
EB	ELECTRIC RISER	OR	OFFICIAL RECORDS	TSC	TRAFFIC SIGNAL CONTROL
EG	EXISTING GRADE	P	POST	TSP	TRAFFIC SIGNAL POLE
ELEC	ELECTRIC	(P)	PER PLAT	TV	CABLE TELEVISION
EM	ELECTRIC METER	PB	PLAT BOOK	UE	UNDERGROUND UTILITY (ELECTRIC) LINES
EOP	EDGE OF PAVEMENT	PG	PAGE	UGND	UNDERGROUND
ET	ELECTRIC TRANSFORMER	PZO	PIZOMETER	W	WATER
EXST	EXISTING	PM	PARKING METER	W/I	WITHIN
F	FOUND	PROP	PROPOSED	WH	WOODEN HUB
FF	FINISHED FLOOR	RCP	REINFORCED CONCRETE PIPE	WM	WATER METER
FH	FIRE HYDRANT	RJ	RESTRAINED JOINT	WV	WATER VALVE
FM	FORCE MAIN	RR	RAILROAD	XC	X CUT
FO	FIBER OPTIC	RW	RECLAIMED WATER		
G	GAS				
GM	GAS METER				

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**LEE COUNTY**  
SOUTHWEST FLORIDA  
Alfred J. Mill, P.E.  
P.E. No. 59514, FL  
Professional Seal  
10600 Chevrolet Way, Ste. 300  
Estero, Florida 33928  
Engineering Business No. 2429  
DATE

BY	DATE	DESCRIPTION

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PALM BEACH BLVD FORCE MAIN REPLACEMENT  
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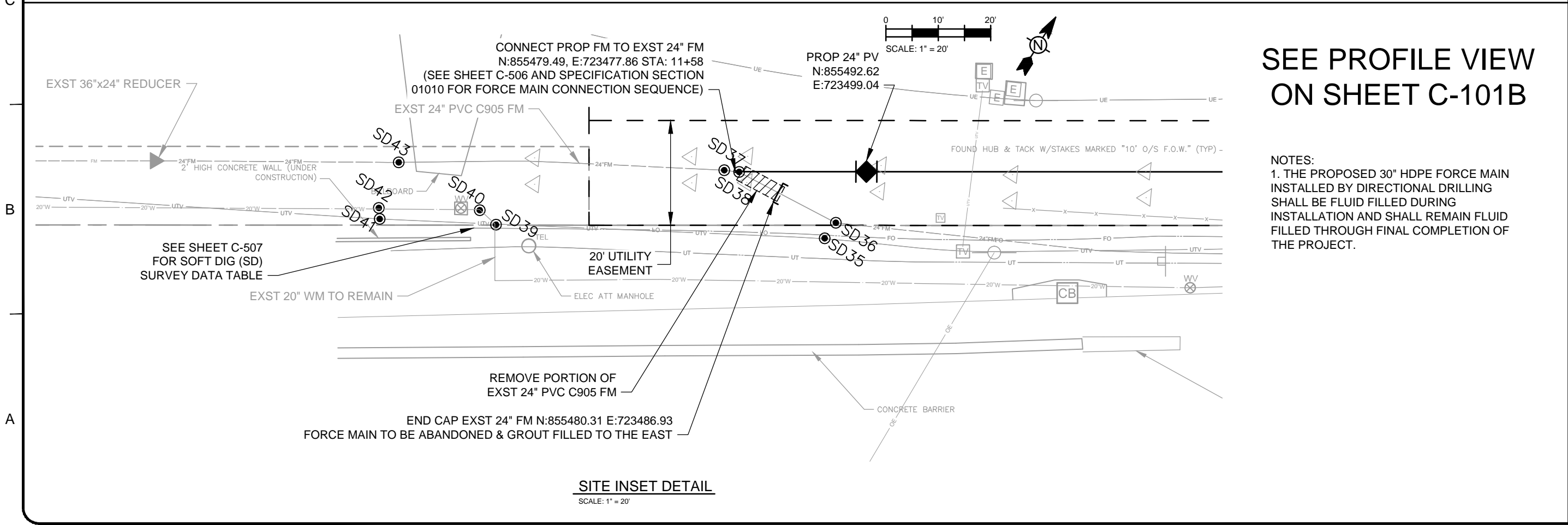
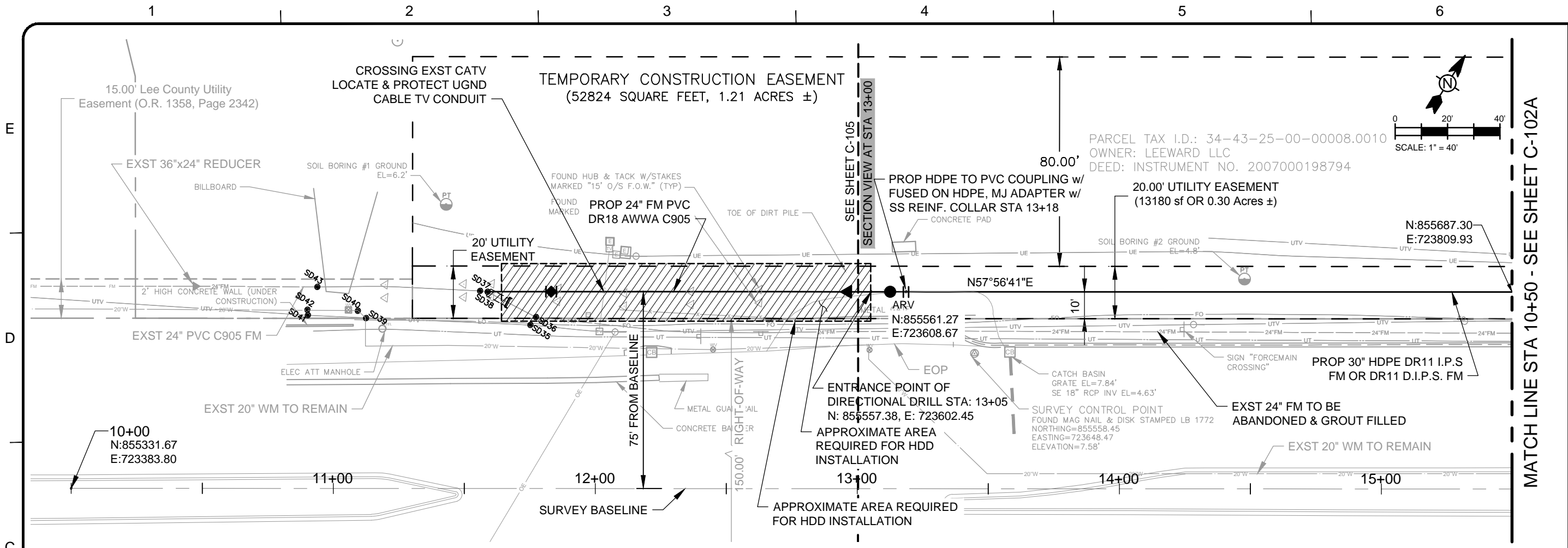
Project No.:	200-01558-13001
Designed By:	AJM
Drawn By:	GM
Checked By:	SPH

**G-002**  
Sheet

Bar Measures 1 inch

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8/15/2014 10:29:55 AM - P:\NER\01558\200-01558-13001\CAD\SHEETFILES\C-101\_C-110 PLAN-PROFILE - ALTDDESIGN\_1500F.DWG - VITITTOE, WYLMER



**SEE PROFILE VIEW ON SHEET C-101B**

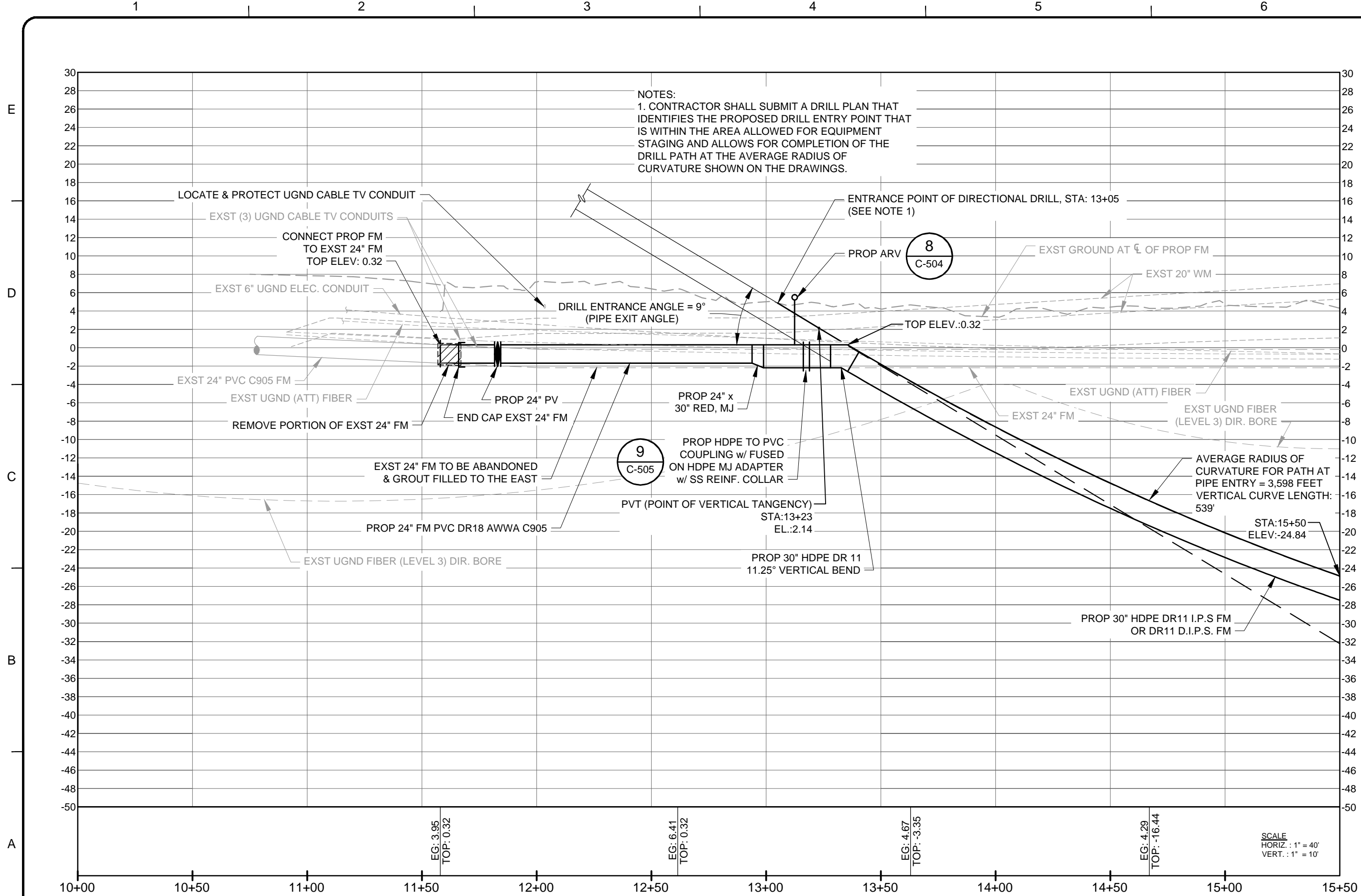
**NOTES:**  
 1. THE PROPOSED 30\"/>


<b>TETRA TECH</b>		www.tetrattech.com	
<b>LEE COUNTY</b> SOUTHWEST FLORIDA		10600 CHEVROLET WAY, SUITE 300 ESTERO, FLORIDA 33928 Ph: 239-390-1467 Fax: 239-390-1769	
Alfred J. Mittl, P.E. P.E. No. 59913, FL Tetra Tech Inc. 10600 Chevrolet Way, Ste. 300 Estero, Florida 33928 Engineering Business No. 2429			DATE
BY	DESCRIPTION	MARK	DATE
LEE COUNTY UTILITIES PALM BEACH BLVD FORCE MAIN REPLACEMENT AT ORANGE RIVER CROSSING <b>PALM BEACH BLVD (SR-80) FORCE MAIN REPLACEMENT PLAN &amp; PROFILE</b>			
Project No.: 200-01558-13001			
Designed By: AJM			
Drawn By: GM			
Checked By: SPH			
<b>C-101A</b> Sheet			

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Bar Measures 1 inch


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SOUTHWEST FLORIDA

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10600 Chevrolet Way, Ste. 300  
Estero, Florida 33928  
Engineering Business No. 2429

BY	DATE	DESCRIPTION

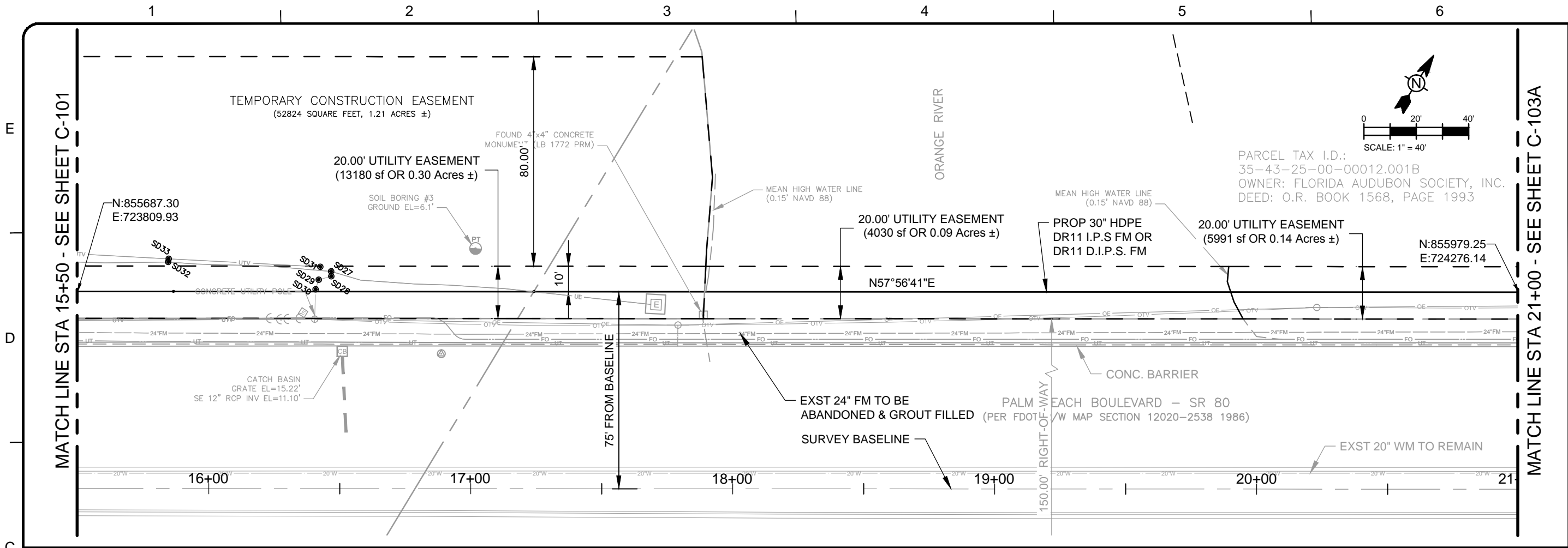
LEE COUNTY UTILITIES  
PALM BEACH BLVD FORCE MAIN REPLACEMENT  
AT ORANGE RIVER CROSSING  
**PALM BEACH BLVD (SR-80)  
FORCE MAIN REPLACEMENT  
PROFILE**

Project No.: 200-01558-13001  
Designed By: AJM  
Drawn By: GM  
Checked By: SPH

**C-101B**  
Sheet

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Bar Measures 1 inch

8/15/2014 10:30:16 AM - P:\NER\01558\200-01558-1300\1\CAD\SHEETFILES\C-101\_C-110 PLAN\PROFILE - ALTDESIGN\_1500F.DWG - VITITTOE, WYLMER

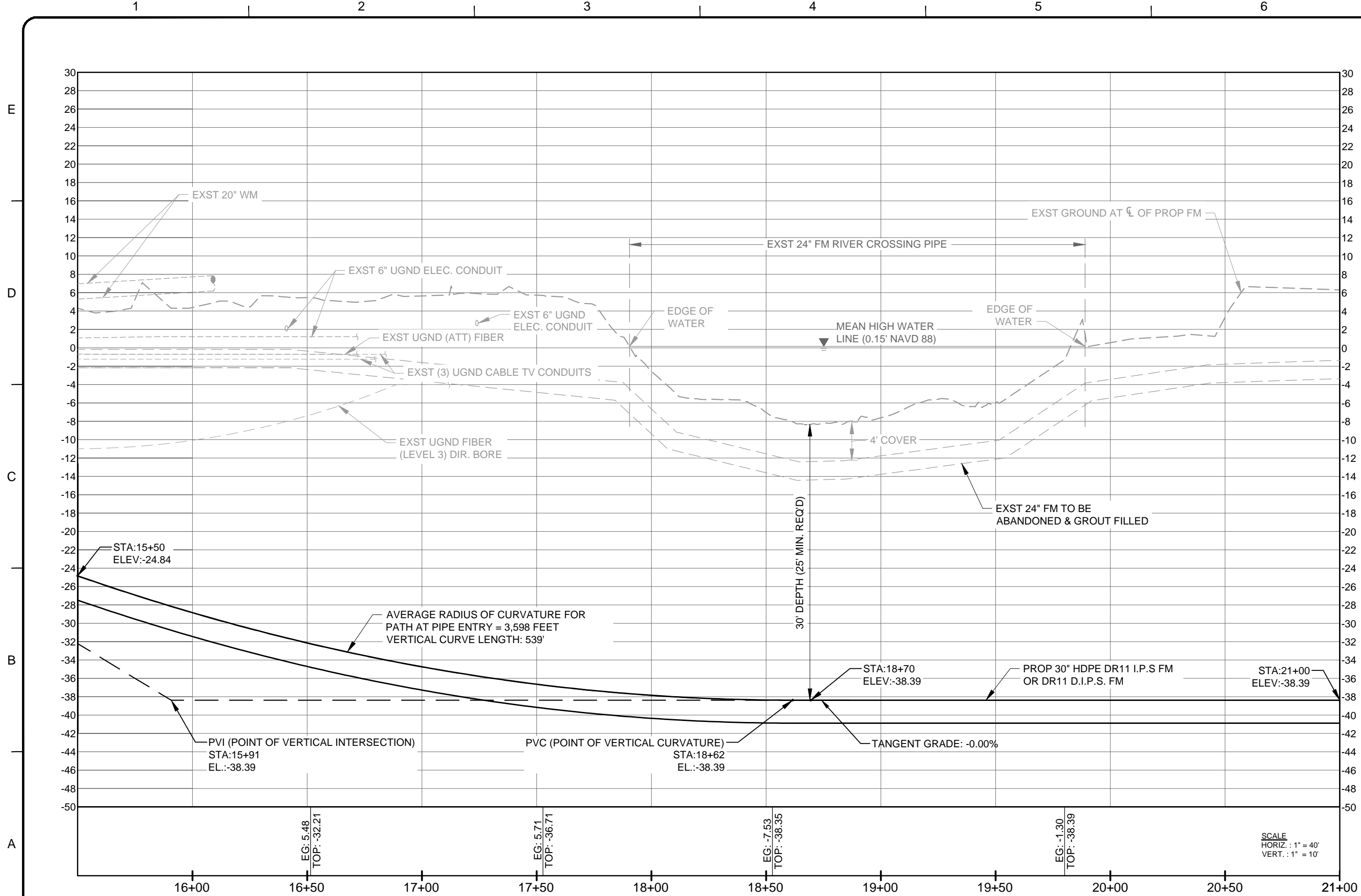


SEE PROFILE VIEW ON SHEET C-102B

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<p>LEE COUNTY SOUTHWEST FLORIDA</p>	
<p>Alfred J. Mittl, P.E. P.E. No. 59913, FL Tetra Tech Inc. 10600 Chevrolet Way, Ste. 300 Estero, Florida 33928 Engineering Business No. 2429</p>	
BY	DATE
DESCRIPTION	MARK
<p>LEE COUNTY UTILITIES PALM BEACH BLVD FORCE MAIN REPLACEMENT AT ORANGE RIVER CROSSING PALM BEACH BLVD (SR-80) FORCE MAIN REPLACEMENT PLAN</p>	
Project No.:	200-01558-13001
Designed By:	AJM
Drawn By:	GM
Checked By:	SPH
<p><b>C-102A</b> Sheet</p>	

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 Tetra Tech Inc.  
 10600 Chevrolet Way, Ste. 300  
 Estero, Florida 33928  
 Engineering Business No. 2429

LEE COUNTY  
 SOUTHWEST FLORIDA

DATE

---

MARK	DATE	DESCRIPTION	BY

---

LEE COUNTY UTILITIES  
 PALM BEACH BLVD FORCE MAIN REPLACEMENT  
 AT ORANGE RIVER CROSSING

**PALM BEACH BLVD (SR-80)  
 FORCE MAIN REPLACEMENT  
 PROFILE**

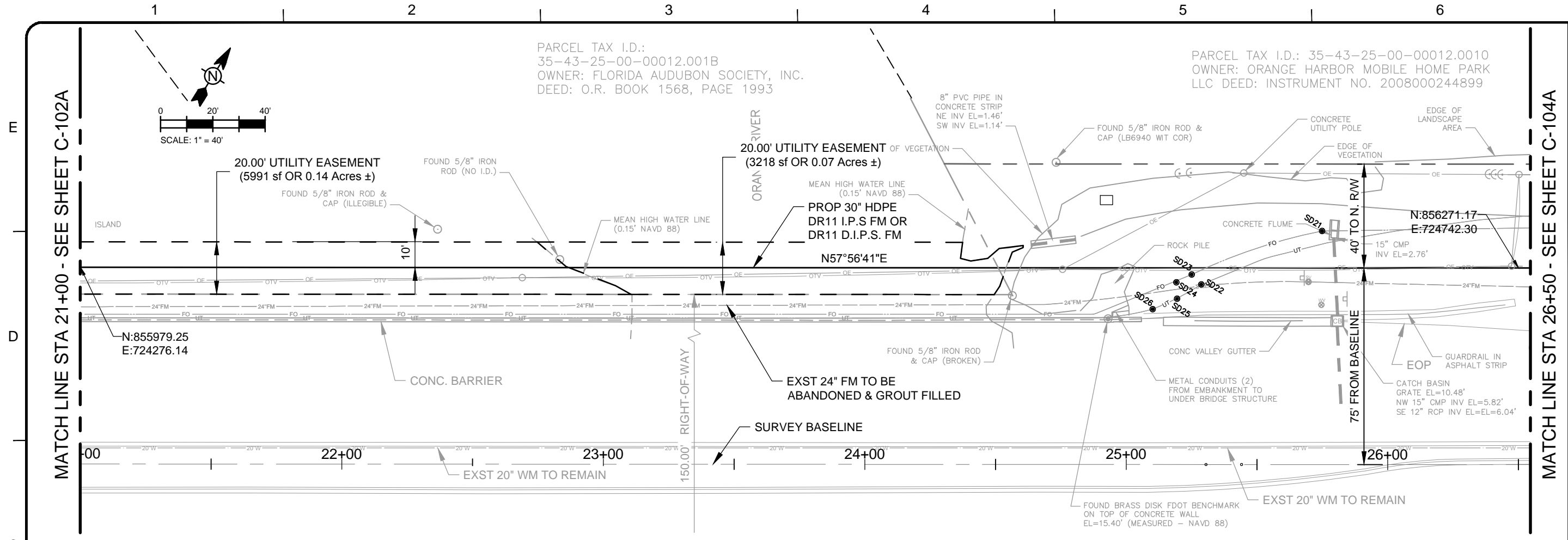
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Project No.: 200-01558-13001  
 Designed By: AJM  
 Drawn By: GM  
 Checked By: SPH

**C-102B**  
 Sheet

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 Bar Measures 1 inch

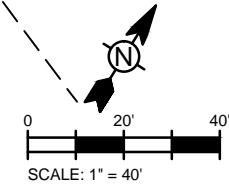
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SEE PROFILE VIEW ON SHEET C-103B

PARCEL TAX I.D.:  
35-43-25-00-00012.001B  
OWNER: FLORIDA AUDUBON SOCIETY, INC.  
DEED: O.R. BOOK 1568, PAGE 1993

PARCEL TAX I.D.: 35-43-25-00-00012.0010  
OWNER: ORANGE HARBOR MOBILE HOME PARK  
LLC DEED: INSTRUMENT NO. 2008000244899



MATCH LINE STA 21+00 - SEE SHEET C-102A

MATCH LINE STA 26+50 - SEE SHEET C-104A

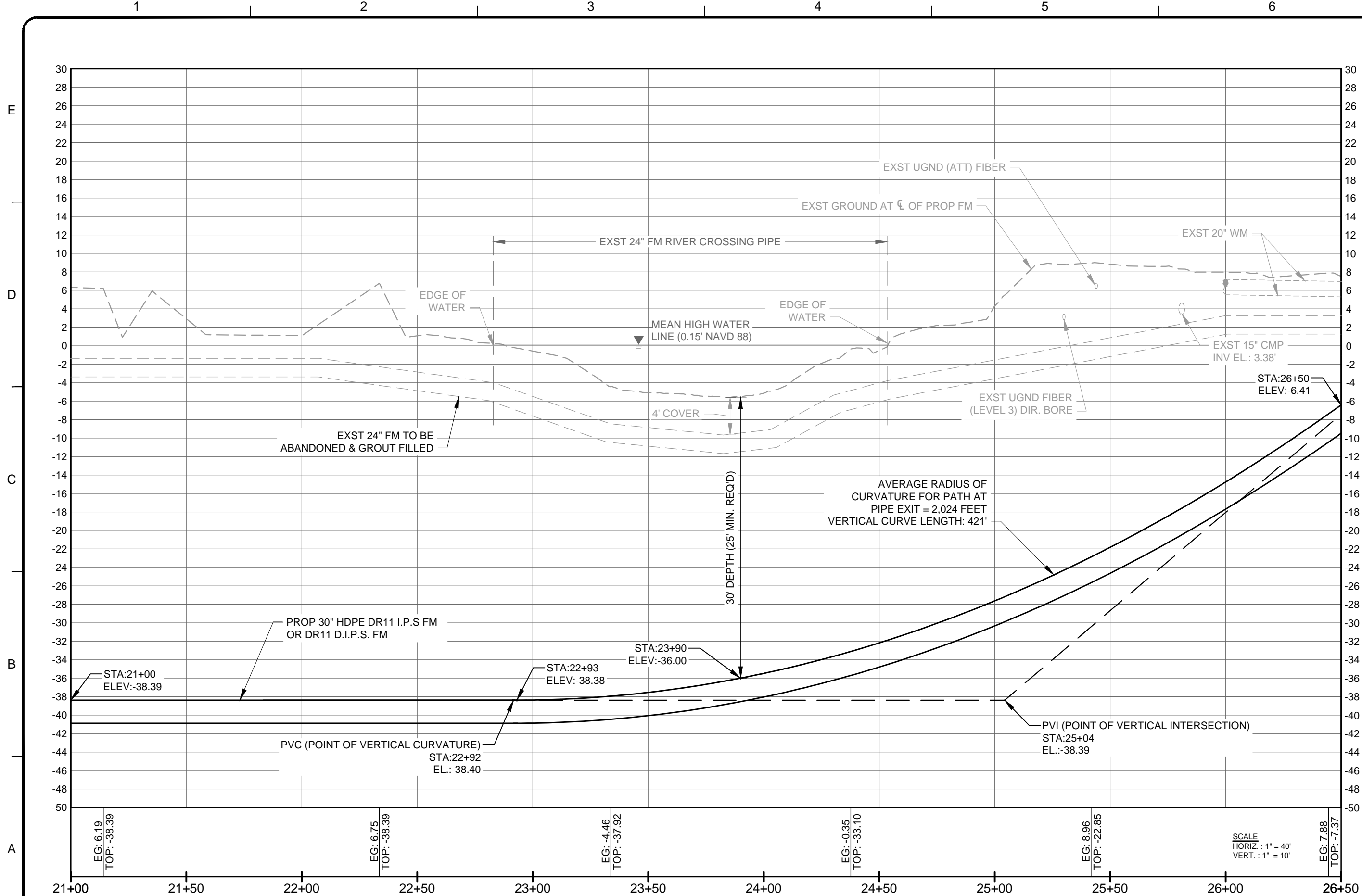
		www.tetrattech.com 10600 CHEVROLET WAY, SUITE 300 ESTERO, FLORIDA 33928 Ph: 239-390-1467 Fax: 239-390-1768	
		Lee County SOUTHWEST FLORIDA	
Alfred J. Mill, P.E. P.E. No. 59913, FL Tetra Tech Inc. 10600 Chevrolet Way, Ste. 300 Estero, Florida 33928 Engineering Business No. 2429	BY: _____ DATE: _____ MARK: _____ DATE: _____	DESCRIPTION: _____ DATE: _____ MARK: _____ DATE: _____	DATE: _____
LEE COUNTY UTILITIES PALM BEACH BLVD FORCE MAIN REPLACEMENT AT ORANGE RIVER CROSSING PALM BEACH BLVD (SR-80) FORCE MAIN REPLACEMENT PLAN			
Project No.: 200-01558-13001 Designed By: AJM Drawn By: GM Checked By: SPH			
<b>C-103A</b> Sheet			


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Tetra Tech Inc.  
10600 Chevrolet Way, Ste. 300  
Estero, Florida 33928  
Engineering Business No. 2429

LEE COUNTY  
SOUTHWEST FLORIDA

DATE

MARK	DATE	DESCRIPTION

LEE COUNTY UTILITIES  
PALM BEACH BLVD FORCE MAIN REPLACEMENT  
AT ORANGE RIVER CROSSING  
**PALM BEACH BLVD (SR-80)  
FORCE MAIN REPLACEMENT  
PROFILE**

Project No.: 200-01558-13001  
Designed By: AJM  
Drawn By: GM  
Checked By: SPH

C-103B

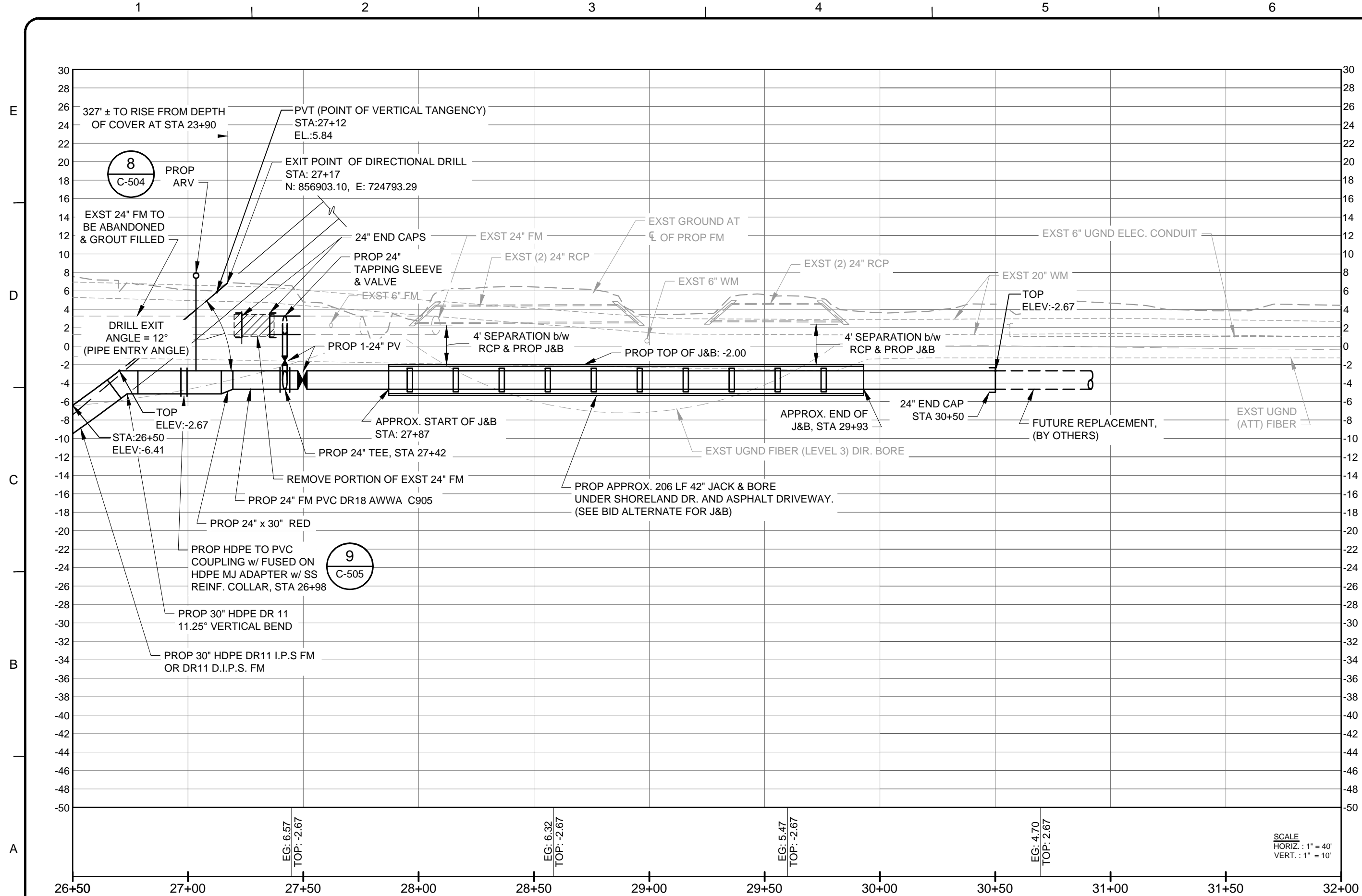
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SCALE  
HORIZ. : 1" = 40'  
VERT. : 1" = 10'



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**LEE COUNTY**  
SOUTHWEST FLORIDA

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P.E. No. 59913, FL  
Tetra Tech Inc.  
10600 Chevrolet Way, Ste. 300  
Estero, Florida 33928  
Engineering Business No. 2429  
DATE

BY	DESCRIPTION	DATE	MARK

LEE COUNTY UTILITIES  
PALM BEACH BLVD FORCE MAIN REPLACEMENT  
AT ORANGE RIVER CROSSING  
**PALM BEACH BLVD (SR-80)  
FORCE MAIN REPLACEMENT  
PROFILE**

Project No.: 200-01558-13001  
Designed By: AJM  
Drawn By: GM  
Checked By: SPH

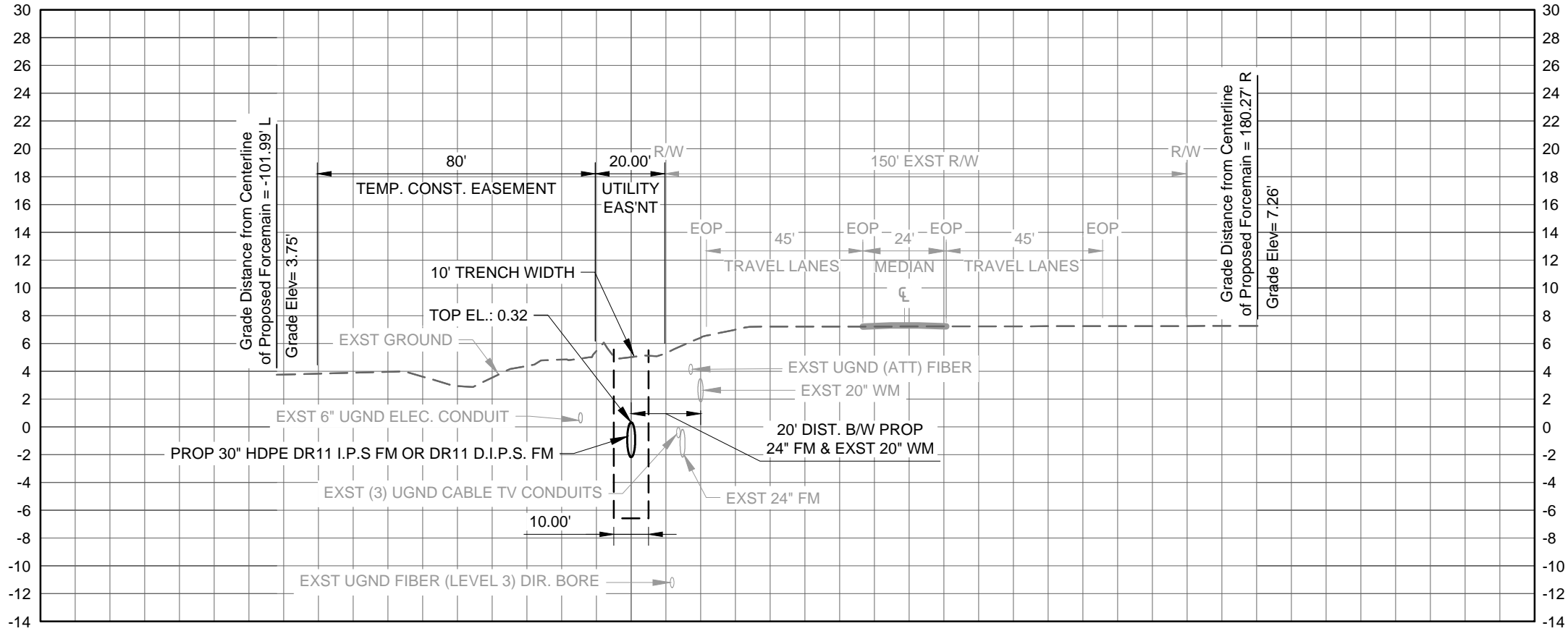
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A B C D E

1 2 3 4 5 6



SECTION VIEW AT STA: 13+00

SCALE  
HORIZ. : 1" = 40'  
VERT. : 1" = 10'

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P.E. No. 59913, FL  
Tetra Tech Inc.  
10600 Chevrolet Way, Ste. 300  
Estero, Florida 33928  
Engineering Business No. 2429  
DATE

MARK	DATE	DESCRIPTION	BY

LEE COUNTY UTILITIES  
PALM BEACH BLVD FORCE MAIN REPLACEMENT  
AT ORANGE RIVER CROSSING  
**PALM BEACH BLVD (SR-80)  
SECTION**

Project No.:	200-01558-13001
Designed By:	AJM
Drawn By:	GM
Checked By:	SPH

**C-105**  
Sheet

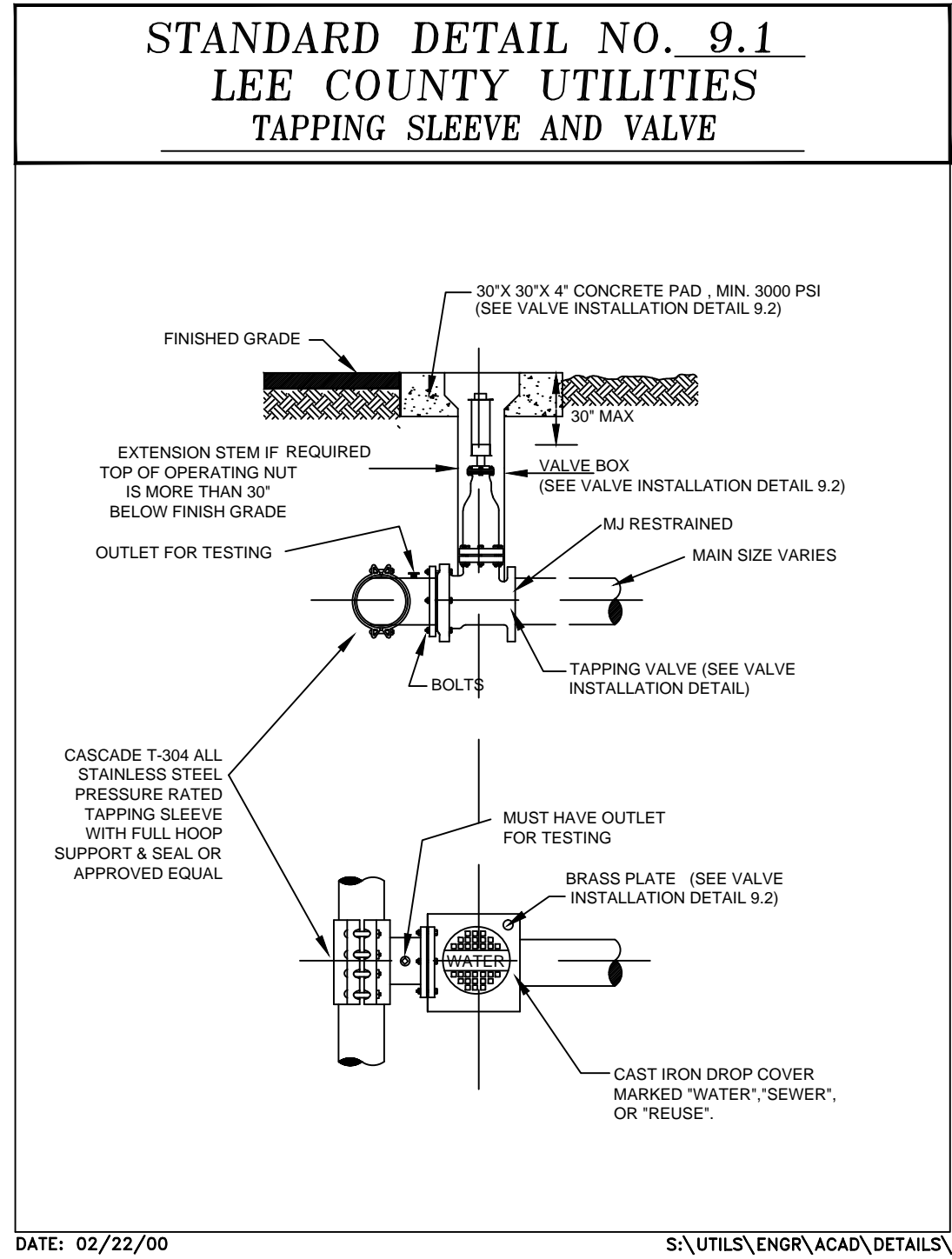
Bar Measures 1 inch

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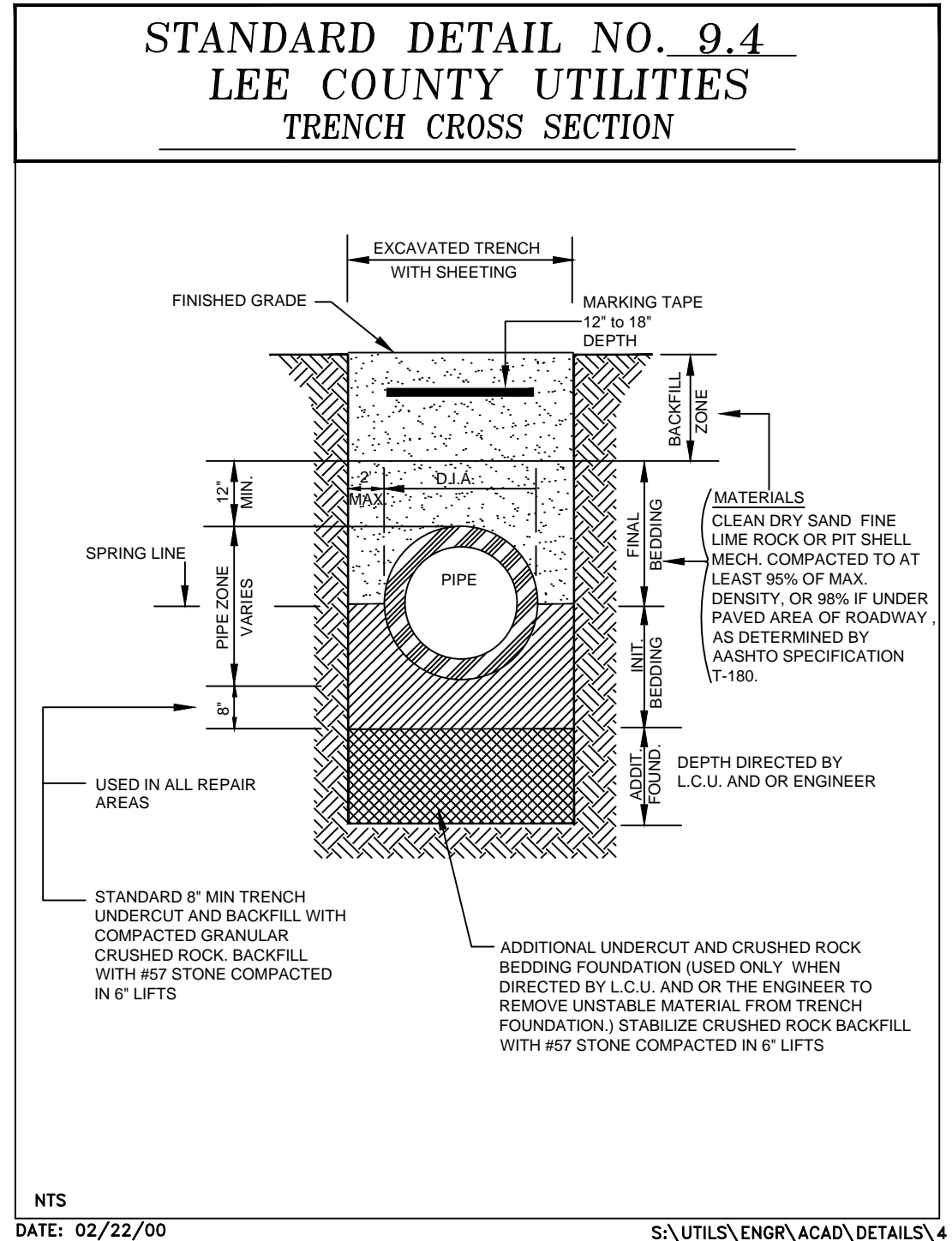
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1 2 3 4 5 6

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1 **DETAIL**  
SCALE: N.T.S.



2 **DETAIL**  
SCALE: N.T.S.

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**LEE COUNTY**  
SOUTHWEST FLORIDA

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P.E. No. 59973, FL  
Tetratech Way, Ste. 300  
Estero, Florida 33928  
Engineering Business No. 2429

DATE: \_\_\_\_\_

MARK	DATE	DESCRIPTION

LEE COUNTY UTILITIES

PALM BEACH BLVD FORCE MAIN REPLACEMENT  
AT ORANGE RIVER CROSSING

### STANDARD UTILITY DETAILS

Project No.: 200-01558-13001  
Designed By: AJM  
Drawn By: GM  
Checked By: SPH

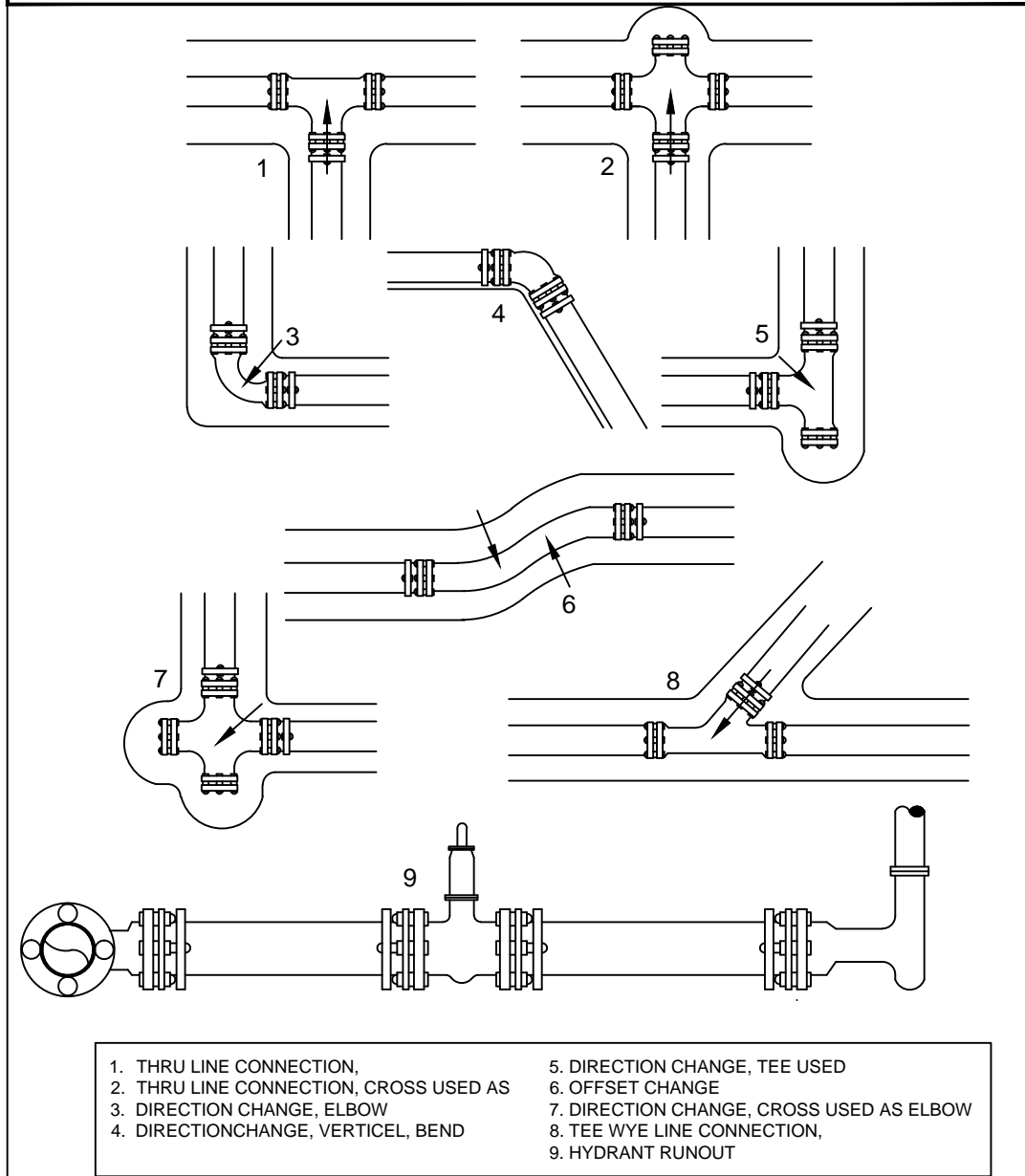
**C-501**  
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### STANDARD DETAIL NO. 9.19 LEE COUNTY UTILITIES THRUST RESTRAINING



DATE: 02/22/00

S:\UTILS\ENGR\ACAD\DETAILS\19

**3** DETAIL  
SCALE: N.T.S.

### STANDARD DETAIL NO. 9.8 LEE COUNTY UTILITIES RESTRAINED LENGTH SCHEDULE

#### DUCTILE IRON PIPE

PIPE SIZE (Inches)	RESTRAINED PIPE LENGTH (FEET)					
	BENDS				DEAD	
	90°	45°	22 1/2°	11 1/4°	END	TEE
4	17	7	4	2	21	0
6	23	10	5	2	32	2
8	29	12	6	3	42	6
10	35	14	7	4	53	17
12	41	17	8	4	62	26
16	51	21	11	5	81	44
24	69	29	14	7	114	75
30	81	34	17	8	140	99

#### PVC PIPE

PIPE SIZE (Inches)	RESTRAINED PIPE LENGTH (FEET)					
	BENDS				DEAD	
	90°	45°	22 1/2°	11 1/4°	END	TEE
4	20	8	4	2	33	2
6	29	12	6	3	50	6
8	36	15	8	4	66	9
10	44	18	9	5	83	24
12	51	21	11	5	99	39
16	63	26	13	7	130	68
24	87	36	18	9	183	120
30	102	42	21	10	222	158

LENGTH FIGURES BASED ON FOLLOWING:

Pressure = 150 psi, FS = 1.5, trench type = 3, 30' cover  
on Bare pipe, Soil type = GP & SP

DATE: 02/22/00

S:\UTILS\ENGR\ACAD\DETAILS\8

**4** DETAIL  
SCALE: N.T.S.

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LEE COUNTY  
SOUTHWEST FLORIDA

Alfred J. Mill, P.E.  
P.E. No. 59973, FL  
Tetratech, Inc.  
10600 Chevrolet Way, Ste. 300  
Estero, Florida 33928  
Engineering Business No. 2429  
DATE

MARK	DATE	DESCRIPTION	BY

LEE COUNTY UTILITIES  
PALM BEACH BLVD FORCE MAIN REPLACEMENT  
AT ORANGE RIVER CROSSING  
STANDARD UTILITY DETAILS

Project No.: 200-01558-13001  
Designed By: AJM  
Drawn By: GM  
Checked By: SPH

**C-502**  
Sheet

Bar Measures 1 inch

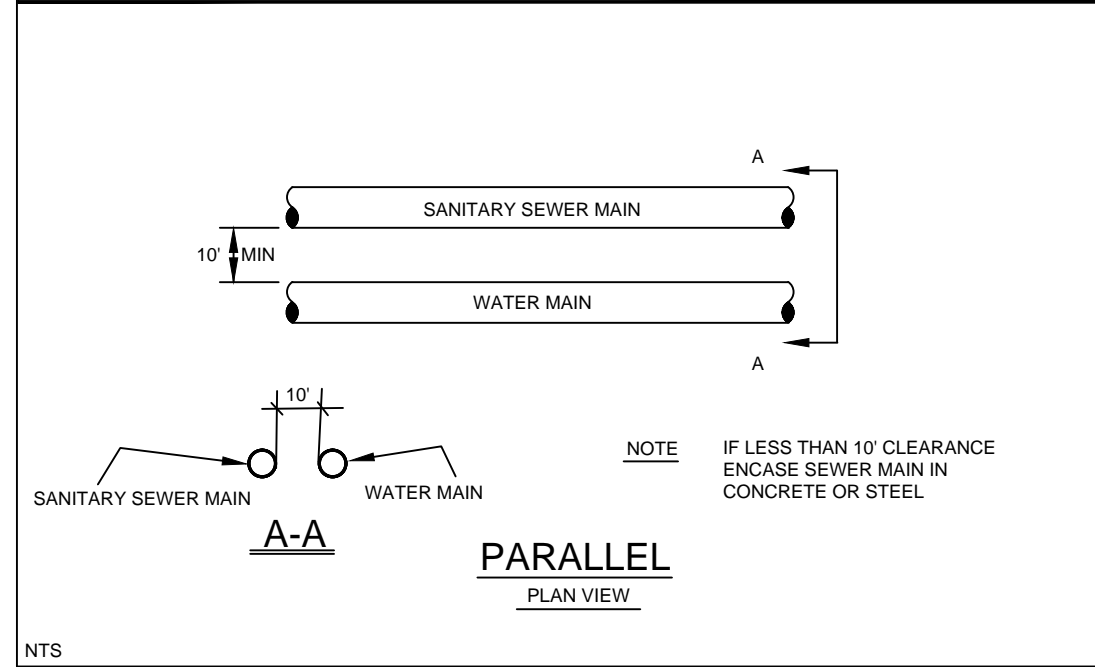
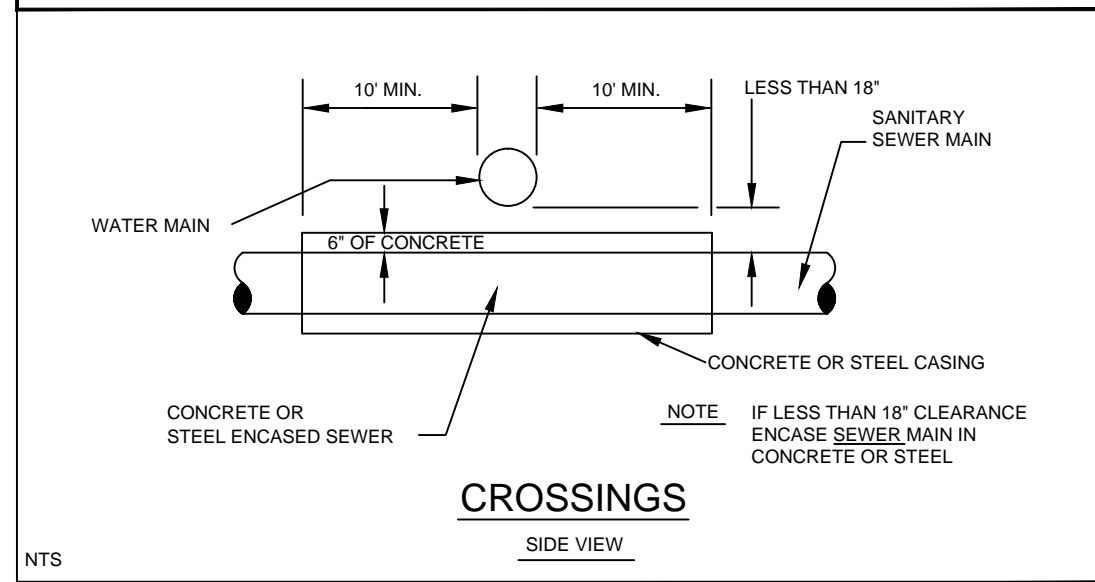
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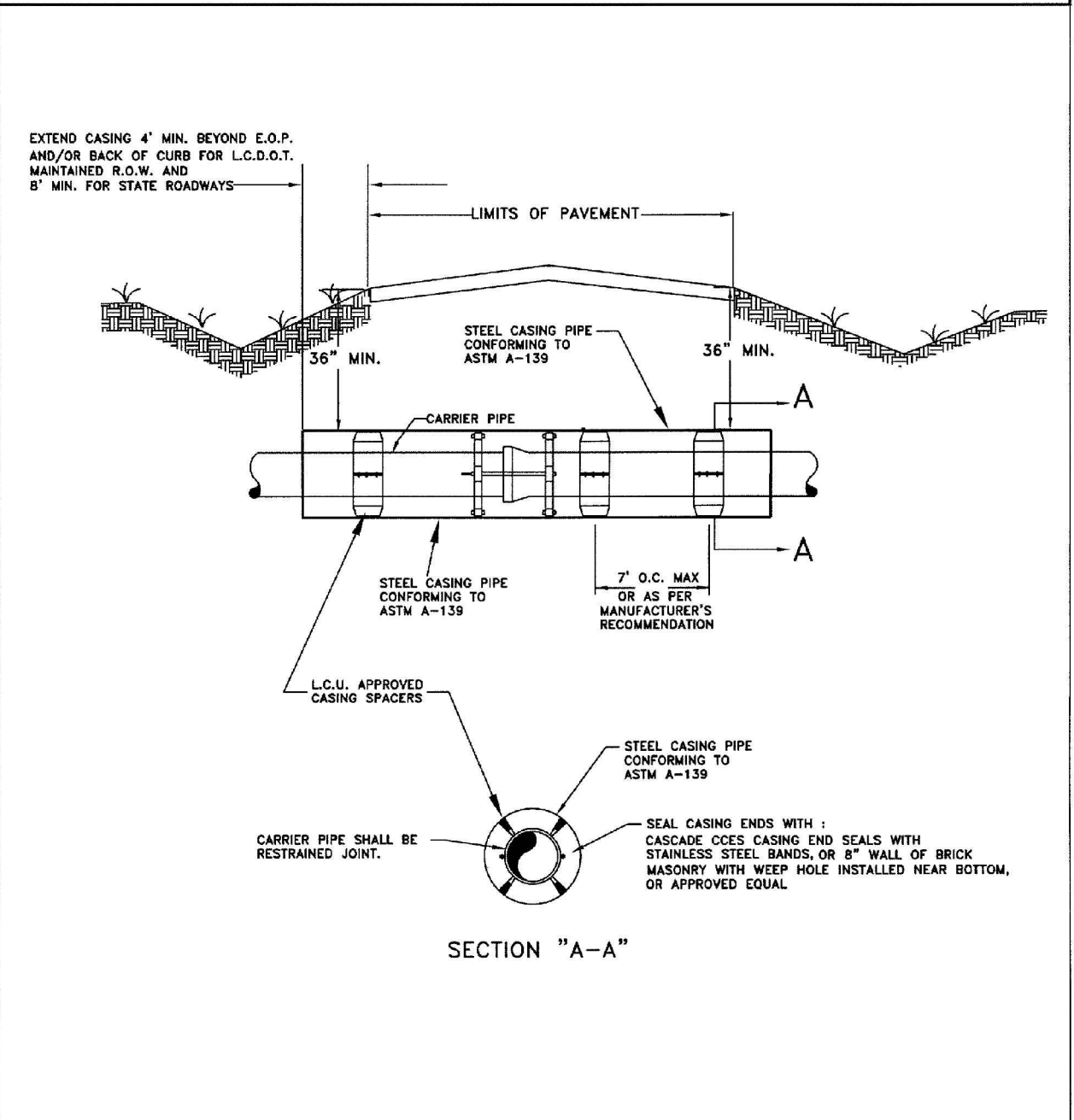
**STANDARD DETAIL NO. 9.21**  
**LEE COUNTY UTILITIES**  
**WATER AND SEWER CROSSING DETAIL**



NTS  
 DATE 02/22/00  
 S:\UTILS\ENGR\ACAD\DETAILS\21

**5** **DETAIL**  
 SCALE: N.T.S.

**STANDARD DETAIL NO. 9.5**  
**LEE COUNTY UTILITIES**  
**JACK AND BORE**



NTS  
 DATE: 02/22/00  
 S:\UTILS\ENGR\ACAD\DETAILS\5

**6** **DETAIL**  
 SCALE: N.T.S.

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 SOUTHWEST FLORIDA  
 Alfred J. Mill, P.E.  
 P.E. No. 59973, FL  
 10600 Chevrolet Way, Ste. 300  
 Estero, Florida 33928  
 Engineering Business No. 2429

BY	DATE	DESCRIPTION

LEE COUNTY UTILITIES  
 PALM BEACH BLVD FORCE MAIN REPLACEMENT  
 AT ORANGE RIVER CROSSING  
**STANDARD UTILITY DETAILS**

Project No.: 200-01558-13001  
 Designed By: AJM  
 Drawn By: GM  
 Checked By: SPH

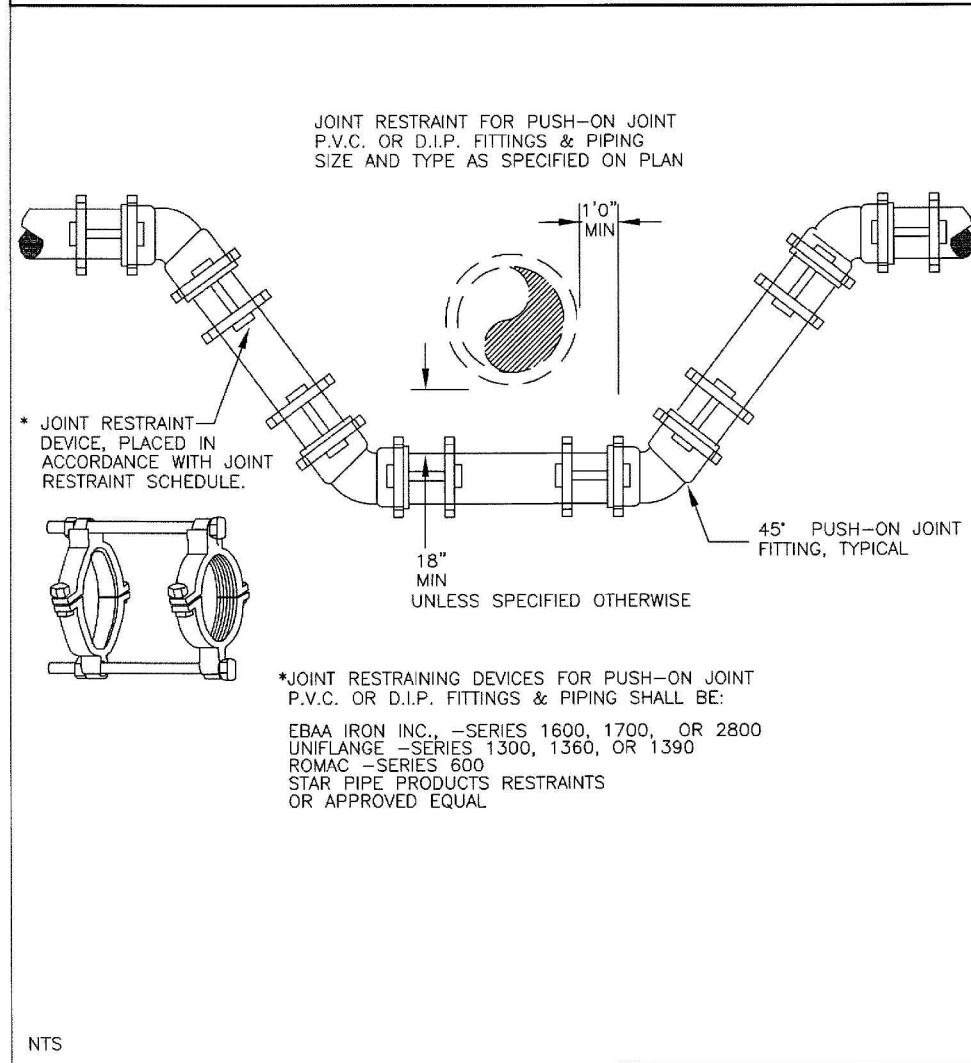
**C-503**  
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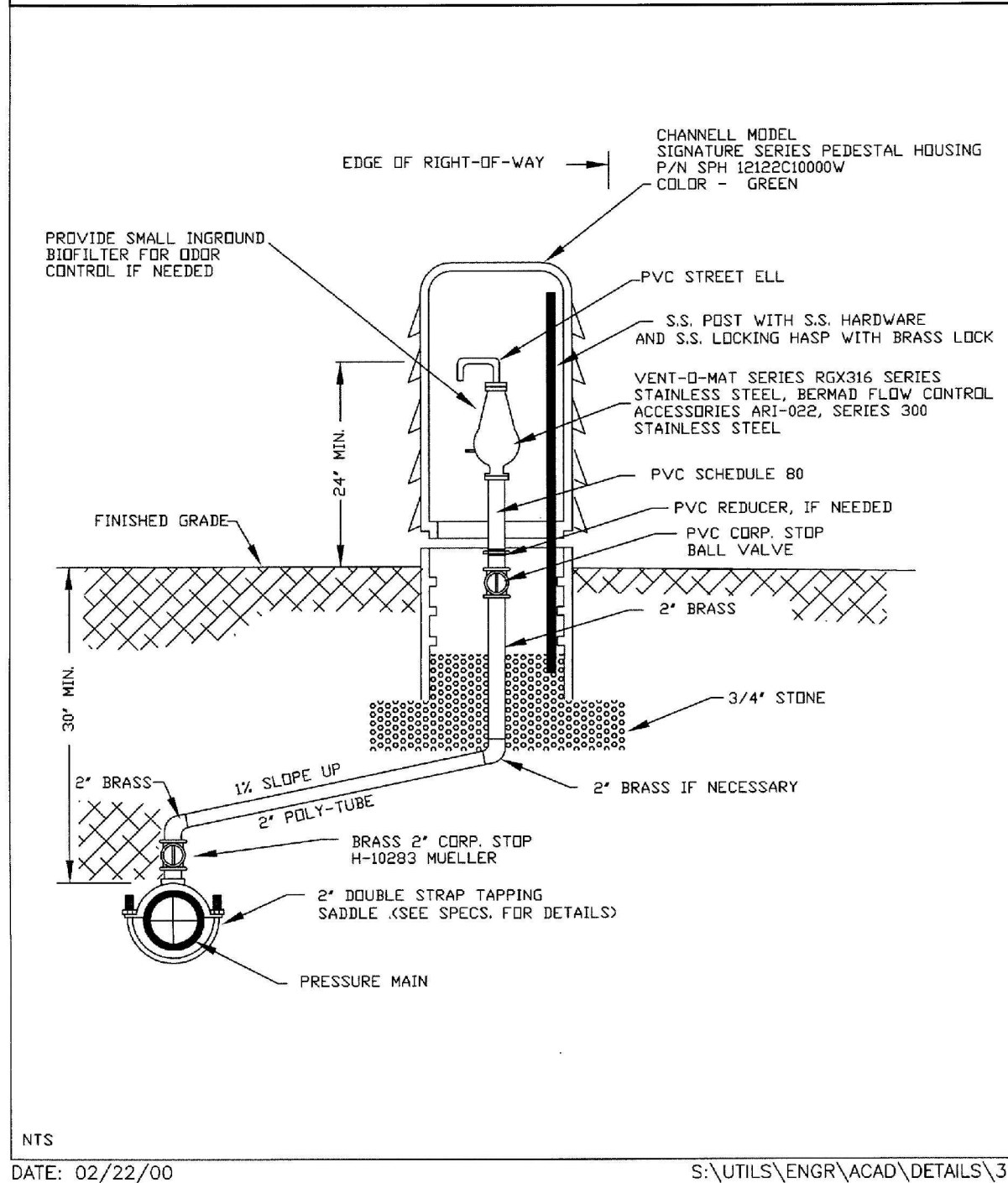
8/15/2014 10:31:46 AM - P:\IER\01558\200-01558-13001\CAD\SHSHEETFILES\C-501\_C-505 STANDARD UTILITY DETAILS - ALTDISEGN\_1500F.DWG - VITITTOE, WYLMER

**STANDARD DETAIL NO. 9.7**  
**LEE COUNTY UTILITIES**  
**WASTE WATER FORCE MAIN VERTICAL OFFSET**  
**WITH FITTINGS, (P.V.C.)**



**7** **DETAIL**  
 SCALE: N.T.S.

**STANDARD DETAIL NO. 9.37**  
**LEE COUNTY UTILITIES**  
**AUTOMATIC AIR RELEASE VALVE (SEWER)**



**8** **DETAIL**  
 SCALE: N.T.S.

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 P.E. No. 599754, FL  
 T. 813-941-1111  
 10600 Chevrolet Way, Ste. 300  
 Estero, Florida 33928  
 Engineering Business No. 2429

MARK	DATE	DESCRIPTION

LEE COUNTY UTILITIES  
 PALM BEACH BLVD FORCE MAIN REPLACEMENT  
 AT ORANGE RIVER CROSSING  
**STANDARD UTILITY DETAILS**

Project No.: 200-01558-13001  
 Designed By: AJM  
 Drawn By: GM  
 Checked By: SPH

**C-504**  
 Sheet

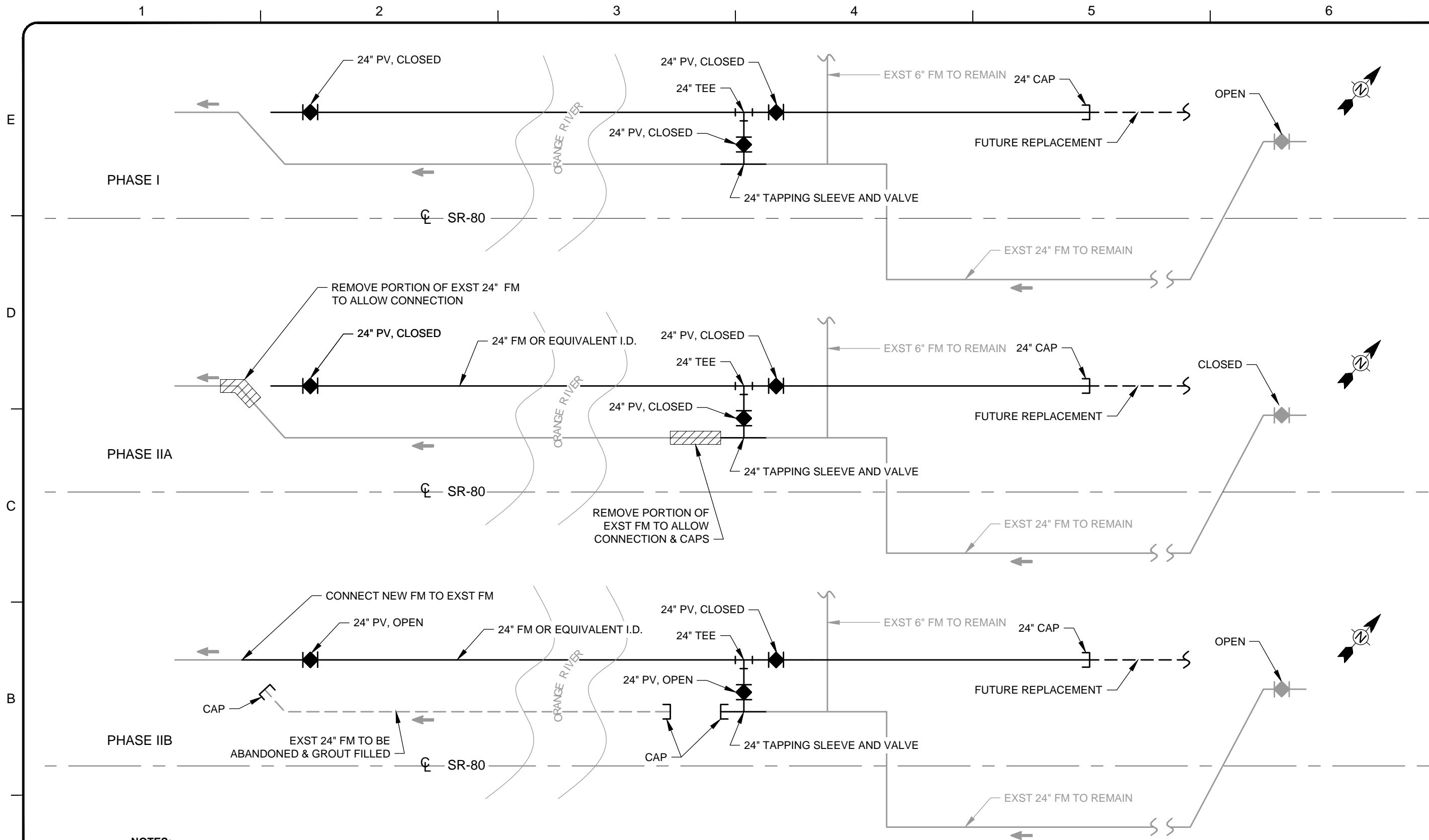
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- NOTES:**
1. SHOWN HERE IS A GENERAL SEQUENCE ONLY. CONTRACTOR TO SUBMIT CONNECTION PLAN FOR OWNER REVIEW PRIOR TO PROCEEDING.
  2. NOT ALL FITTINGS REQUIRED TO COMPLETE THE INSTALLATION ARE SHOWN ON THIS DRAWING. REFER TO PLAN AND PROFILE DRAWINGS, C-101 TO C105
  3. SEE SECTION 01010 - SUMMARY OF WORK FOR A DESCRIPTION OF CONNECTION WORK CONTRACTOR IS TO PERFORM IN A SINGLE NIGHT AND FOR PIPE ABANDONMENT INSTRUCTIONS.

**INSTALLATION SEQUENCE DETAILS**  
SCALE: N.T.S.

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**LEE COUNTY**  
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Alfred J. Mill, P.E.  
P.E. No. 59973, FL  
Professional Seal  
10600 Chevrolet Way, Suite 300  
Estero, Florida 33928  
Engineering Business No. 2429  
DATE

MARK	DATE	DESCRIPTION	BY

LEE COUNTY UTILITIES  
PALM BEACH BLVD FORCE MAIN REPLACEMENT  
AT ORANGE RIVER CROSSING  
**INSTALLATION SEQUENCE  
DETAILS**

Project No.: 200-01558-13001  
Designed By: AJM  
Drawn By: GM  
Checked By: SPH

**C-506**  
Sheet

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Bar Measures 1 inch

