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90% Construction Plans
Corkscrew Utilities Relocation (Phase 2)

FOR

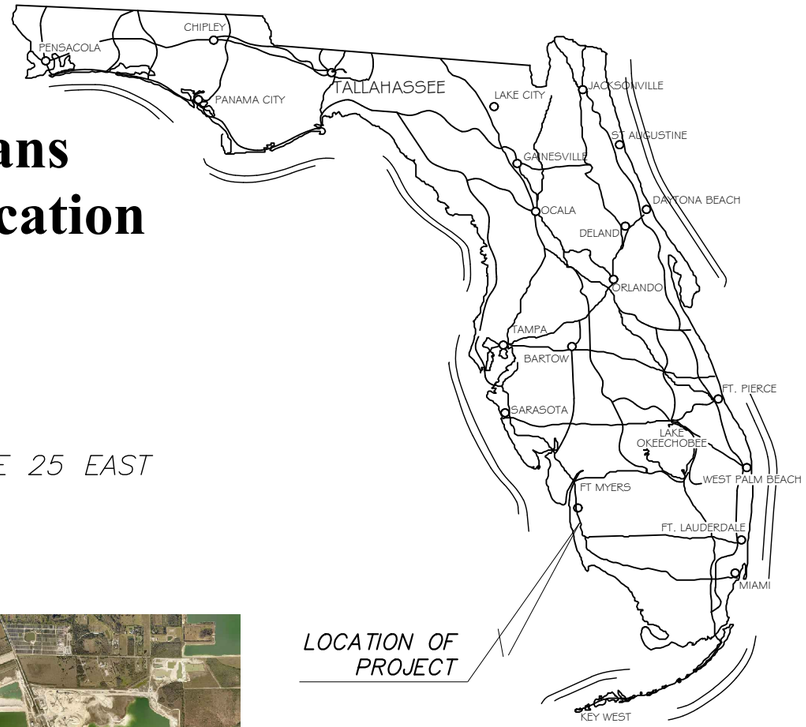
LEE COUNTY

LOCATED IN

SECTIONS 25 TOWNSHIP 46 SOUTH, RANGE 25 EAST

LEE COUNTY, FLORIDA

July 6, 2021





LOCATION MAP

N.T.S.

90% Construction Plans

TRAFFIC CONTROL SHALL COMPLY WITH THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES [MUTCD] AND FDOT DESIGN STANDARDS 600 SERIES

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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Cover

SHEET NUMBER



NOTICE TO ALL CONTRACTORS

IT'S THE LAW IN FLORIDA
2 BUSINESS DAYS BEFORE YOU DIG
CALL SUNSHINE 1-800-432-4770

STATE, COUNTIES & CITIES ARE "NOT"
PART OF THE ONE CALL SYSTEM.
THEY MUST BE CALLED INDIVIDUALLY.

STATE OF FLORIDA DOT
ALL INTERSTATE RIGHT-OF-WAY
HIGHMAST LIGHTING
7-DAY NOTICE REQUIRED
239-656-7811
239-656-7742 FAX

ABBREVIATIONS

ABD	=	Abandoned
AE	=	Access Easement
ALT	=	Alternate
ARV	=	Air Release Valve
ASPH	=	Asphalt
BLDG	=	Building
BTM	=	Bottom
CATV	=	Cable Television
CB	=	Catch Basin
CMP	=	Corrugated Metal Pipe
CO	=	Cleanout
DE	=	Drainage Easement
DIP	=	Ductile Iron Pipe
DR	=	Dimensional Ratio
EOP	=	Edge of Pavement
EX	=	Existing
FE	=	Flared End Section
FH	=	Fire Hydrant
FLG	=	Flanged
FM	=	Force Main
GV	=	Gate Valve
HDPE	=	High Density Poly Ethylene
INV	=	Invert
IRR	=	Irrigation
MH	=	Manhole
ME	=	Mitered End Section
MJ	=	Mechanical Joint
OC	=	On Center
PAVT	=	Pavement
PKWY	=	Parkway
PS	=	Pump Station
PV	=	Plug Valve
PVC	=	Polyvinyl Chloride
RCWM	=	Reclaimed Water Main
RD	=	Road
REQ	=	Required
ROW	=	Right-of-way
SAN	=	Sanitary
SD	=	Storm Drain
SPEC	=	Specification
SS	=	Sanitary Sewer
ST	=	Street
STA	=	Station
STD	=	Standard
STM	=	Storm
TEL	=	Telephone
TYP	=	Typical
UE	=	Utility Easement
WM	=	Water Main

LEGEND

EX XX" FM	= EXISTING FORCE MAIN & PIPE SIZE
EX XX" WM	= EXISTING POTABLE WATER MAIN & SIZE
EX XX" SS	= EXISTING SANITARY SEWER MAIN & SIZE
EX XX" RCWM	= EXISTING RECLAIMED WATER MAIN & SIZE
	= EX GATE VALVE
WM	= EXISTING WATER METER
	= PROPOSED GATE VALVE
Ⓐ	= PROPOSED AUTOMATIC AIR RELEASE VALVE
	= PROPOSED FIRE HYDRANT ASSEMBLY
	= PROPOSED REDUCER
	= PROPOSED UTILITY ROLLDOWN

GENERAL (LCU STANDARD NOTES)

1. ALL WORK SHALL CONFORM TO LATEST REVISION OF THE LCU DESIGN MANUAL WHICH IS AVAILABLE ON OUR WEB-PAGE VIA THE FOLLOWING LINK: HTTPS://WWW.LEEGOV.COM/UTILITIES/DESIGN-MANUAL
2. ALL REGULATORY AND PERMITTING AGENCIES' REQUIREMENTS SHALL BE COMPLIED WITH AS WELL.
3. ANY QUANTITIES SHOWN ON PLANS ARE NOT VERIFIED BY LCU.
4. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS THAT MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
5. ALL CONSTRUCTION WORK PERFORMED MUST BE DONE BY A CONTRACTOR LICENSED IN THE STATE OF FLORIDA TO DO THE WORK INTENDED.
6. A PRE-CONSTRUCTION MEETING IS REQUIRED BEFORE WORK MAY BEGIN. REQUIRED ATTENDEES INCLUDE BUT ARE NOT LIMITED TO; THE ENGINEER OF RECORD OR HIS DESIGNEE, THE UNDERGROUND CONTRACTOR AND THE LCU INSPECTOR ASSIGNED TO THE PROJECT. LCU IS TO BE NOTIFIED TWO (2) WORKING DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING.
7. ONE COPY OF THE LCU APPROVED/STAMPED CONSTRUCTION PLANS, ALL CONTRACT DOCUMENTS, REFERENCE DOCUMENTS AND TECHNICAL DOCUMENTS SUBMITTED MUST BE KEPT AT THE SITE AND MAINTAINED IN GOOD ORDER.
8. ALL WORK AND MATERIALS, WHICH DO NOT CONFORM TO LCU SPECIFICATIONS, ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
9. 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.
10. LCU INSPECTION STAFF IS TO BE PRESENT FOR ALL HOT TAPS, PRESSURE TESTS, LIFT STATION START-UPS AND FOR ANY NECESSARY INSPECTION. THE CONTRACTOR IS TO PROVIDE A MINIMUM OF TWO (2) WORKING DAYS NOTICE PRIOR TO SCHEDULING ANY OF THE ABOVE WITH THE EXCEPTION OF THE LIFT STATION START-UP WHICH REQUIRES ONE-WEEK NOTICE.
11. TRAFFIC MUST BE MAINTAINED AT ALL TIMES AS PER LEE COUNTY DEPARTMENT OF TRANSPORTATION AND PER FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
12. THE CONTRACTOR IS TO UNCOVER ALL EXISTING LINES BEING TIED INTO AND VERIFY GRADES BEFORE BEGINNING CONSTRUCTION.
13. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. LCU WILL NOT GUARANTEE ANY LOCATIONS AS SHOWN ON THESE PLANS OR THOSE OMITTED FROM THESE PLANS.
14. THE CONTRACTOR SHALL VERIFY ALL UTILITIES AND PROVIDE AT LEAST TWO (2) WORKING DAYS NOTICE TO THE INDIVIDUAL UTILITY COMPANIES, FDOT AND LCDOT PRIOR TO CONSTRUCTION.
15. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND TAKE ALL POSSIBLE PRECAUTIONS TO AVOID ANY DAMAGE TO ALL UNDERGROUND PIPELINES, TELEPHONE, CABLE TV, ELECTRIC LINES/CONDUITS AND STRUCTURES IN ADVANCE OF ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES THAT MAY OCCUR DUE TO HIS FAILURE TO EXACTLY LOCATE AND PROTECT EXISTING UTILITIES AND STRUCTURES.
16. ANYTHING NOT SHOWN ON THESE DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND SHALL NOT CONSTITUTE AN EXTRA, UNLESS APPROVED BY THE ENGINEER OF RECORD AND LEE COUNTY UTILITIES (LCU).
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. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THE PLANS. IF ANY DISCREPANCIES IN QUANTITIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND LCU.
19. 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.
20. WITHIN THE FDOT AND LCDOT RIGHT-OF-WAY, ALL DISTURBED AREAS SHALL RECEIVE GRASSING (SEEDING) OR SODDING MATERIALS IN ACCORDANCE WITH FDOT SPECIFICATIONS. THOSE AREAS THAT ARE CLASSIFIED AS DRAINAGE DITCHES SHALL RECEIVE FULL SOLID SOD.
21. ALL FRAMES, COVERS VALVE BOXES, METER BOXES AND MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE UPON COMPLETION OF PAVING OR RELATED CONSTRUCTION. ALL VALVE PADS SHALL BE POURED IN PLACE. NO PRE-FORMED VALVE PADS WILL BE ALLOWED.
22. APPROPRIATE TURBIDITY CONTROL DEVICES (E.G. SILT FENCES, HAY BALES) WILL BE UTILIZED DURING ALL PHASES OF INSTALLATION AND GRADING. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE NOTICE OF INTENT AND NOTICE OF TERMINATION TO THE EPA IN COMPLIANCE WITH LEE COUNTY'S NPDES PERMIT.
23. CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND MAINTAINING AN EFFECTIVE STORM WATER POLLUTION PREVENTION PLAN.
24. LCU REQUIRES 36" OF COVER FOR ALL UNDERGROUND PIPING. IF LCU REQUIRED COVER CANNOT BE MAINTAINED, THE CONTRACTOR SHALL PROVIDE OTHER METHODS OF CONSTRUCTION OR PIPE PROTECTION, WHICH SHALL FIRST BE APPROVED BY LCU AND THE ENGINEER, AT NO ADDITIONAL COST TO THE COUNTY. IF STATE AGENCIES REQUIRE ADDITIONAL COVER, MEETING THE REQUIREMENTS SHALL BE DONE AT NO ADDITIONAL COST TO THE COUNTY.
25. LCU REQUIRES THERE TO BE A MINIMUM OF TEN (10) FEET HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN POTABLE WATER & SANITARY SEWER MAINS. LCU ALSO REQUIRES MINIMUM OF TEN (10) FEET HORIZONTAL SEPARATION BETWEEN OTHER PUBLIC AND/OR PRIVATE UTILITIES, STRUCTURE(S), BUILDING(S), WALL(S), FOUNTAIN(S), FENCE(S) AND LCU INFRASTRUCTURE UNLESS SPECIFICALLY APPROVED BY LCU.
26. LCU REQUIRES THERE TO BE A MINIMUM OF FIVE (5) FEET HORIZONTAL SEPARATION BETWEEN LCU INFRASTRUCTURE AND DRAINAGE INFRASTRUCTURE, MITERED END SECTIONS, INLETS, ETC. LCU ALSO REQUIRES MINIMUM OF FIVE (5) FEET HORIZONTAL SEPARATION BETWEEN LCU INFRASTRUCTURE AND ALL NEW LIGHT POLE FOUNDATIONS.
27. THE ROOT BALL OF PALM TREES SHALL BE A MINIMUM OF FIVE (5) FEET AND THE ROOT BALL OF SHADE TREES SHALL BE A MINIMUM OF TEN (10) FEET FROM ANY EXISTING OR PROPOSED LCU OWNED AND MAINTAINED PIPE/INFRASTRUCTURE.
28. AS THE WORK PROGRESSES THE CONTRACTOR SHALL RECORD ALL CHANGES AND DEVIATIONS FROM THE LCU STAMPED/APPROVED CONSTRUCTION PLANS. IN ADDITION, HE SHALL RECORD THE EXACT LOCATION OF ALL CHANGES IN VERTICAL AND HORIZONTAL ALIGNMENT WITH COORDINATES WITH RESPECT TO THE NGVD 1929 STATE PLANE FLORIDA WEST COORDINATE SYSTEM AS WELL AS ALL REQUIREMENTS SET FORTH IN THE LCU DESIGN MANUAL. THIS INFORMATION IS TO BE FORWARDED TO THE ENGINEER OF RECORD WHO PREPARED, SIGNED AND SEALED THE APPROVED CONSTRUCTION PLANS SO THAT HE CAN PREPARE 'RECORD DRAWINGS' PER THE REQUIREMENTS SET FORTH IN THE LCU DESIGN MANUAL.

GENERAL NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929).
2. HORIZONTAL DATA IS BASED ON STATE PLANE COORDINATES FOR THE WEST ZONE OF FLORIDA.
3. CONTRACTOR SHALL NOT EXCEED 75% OF THE MANUFACTURERS RECOMMENDED MAXIMUM DEFLECTION WHEN DEFLECTING PIPE AT JOINTS. ENGINEER WILL DETERMINE MAXIMUM DEFLECTION AFTER PIPE MANUFACTURER IS SELECTED.
4. THE CONTRACTOR SHALL KEEP A RECORD OF ALL CHANGES AND MAINTAIN AN AS-BUILT PLAN. PRIOR TO FINAL ACCEPTANCE, THIS PLAN WILL BE FURNISHED TO THE ENGINEER. THE CONTRACTOR SHALL ALSO FURNISH THE ENGINEER WITH A STATEMENT THAT THE AS-BUILT PLAN REPRESENTS ALL CHANGES MADE AND THAT THE LOCATION OF WATER LINES SHOWN ARE WITHIN 2'.
5. THE LOCATION OF EXISTING UTILITIES HAS BEEN PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE TO THE ENGINEER. THE INFORMATION IS NOT GUARANTEED. THEREFORE THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
6. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA 48 HOURS MINIMUM PRIOR TO START OF CONSTRUCTION, AND SHALL HAVE ALL SERVICE LINES (UTS, FPL, WATER, CABLE AT&T, SANITARY SEWER, IRRIGATION, FORCE MAIN & ANY OTHERS) LOCATED AND FLAGGED PRIOR TO ANY EXCAVATION.
7. THE CONTRACTOR IS REQUIRED TO OBTAIN WRITTEN APPROVAL FROM THE ENGINEER FOR ANY DEVIATIONS FROM THE PLANS AND/OR SPECIFICATIONS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A DEWATERING PERMIT FROM THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT AS REQUIRED, IF NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, MATERIALS, MOBILIZATIONS, AND COSTS ASSOCIATED WITH ANY DEWATERING REQUIRED FOR INSTALLATION OF LCU UTILITIES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND USAGE OF THE EXISTING STREETS ADJACENT TO THE PROJECT AREA. ALL TRAFFIC MAINTENANCE CONTROL SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 600 SERIES.
10. THE CONTRACTOR SHALL COMPLY WITH LEE COUNTY UTILITIES SPECIFICATIONS.
11. THE CONTRACTOR SHALL NOTIFY RESIDENCES AND BUSINESSES AT LEAST 72 HOURS IN ADVANCE OF ANY DISRUPTION IN SERVICE, INCLUDING DRIVEWAY CUTS.
12. AIR RELEASE VALVES ARE REQUIRED AT A MAXIMUM EVERY 1500 LF PER LCU STANDARDS. EXACT LOCATIONS ARE TO BE DETERMINED BY LCU PERSONNEL DURING CONSTRUCTION.
13. ALL FITTINGS AND PIPE SHALL BE RESTRAINED PER LCU DETAILS.
14. CONTRACTOR TO MAINTAIN SIDEWALK ACCESSIBILITY AT ALL TIMES.
15. ALL VALVES SHALL BE RESTRAINED AS DEAD ENDS.
16. CONTRACTOR TO COMPLETELY REMOVE ALL UTILITIES THAT ARE TO BE ABANDONED.
17. CONTRACTOR TO USE HDPE DR11 FOR ALL FORCE MAIN ROADWAY CROSSINGS, UNLESS OTHERWISE INDICATED ON THE CONSTRUCTION PLANS.
18. CONTRACTOR TO POTHOLE FOR ALL CONNECTIONS AND CROSSINGS OF EXISTING UTILITIES AHEAD OF TIME.
19. CONTRACTOR IS RESPONSIBLE FOR RESTRAINING ALL MAINS, BENDS, TEES, PLUGS, REDUCERS, AND OTHER FITTINGS PER LCU DETAILS. CONTRACTOR ALSO MUST VERIFY WHEN CONNECTING TO EXISTING MAINS THAT EXISTING MAINS ARE RESTRAINED PER LCU DETAILS. SEE SHEET 20 FOR LEE COUNTY UTILITIES RESTRAINT LENGTH SCHEDULE.

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LEE COUNTY

Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

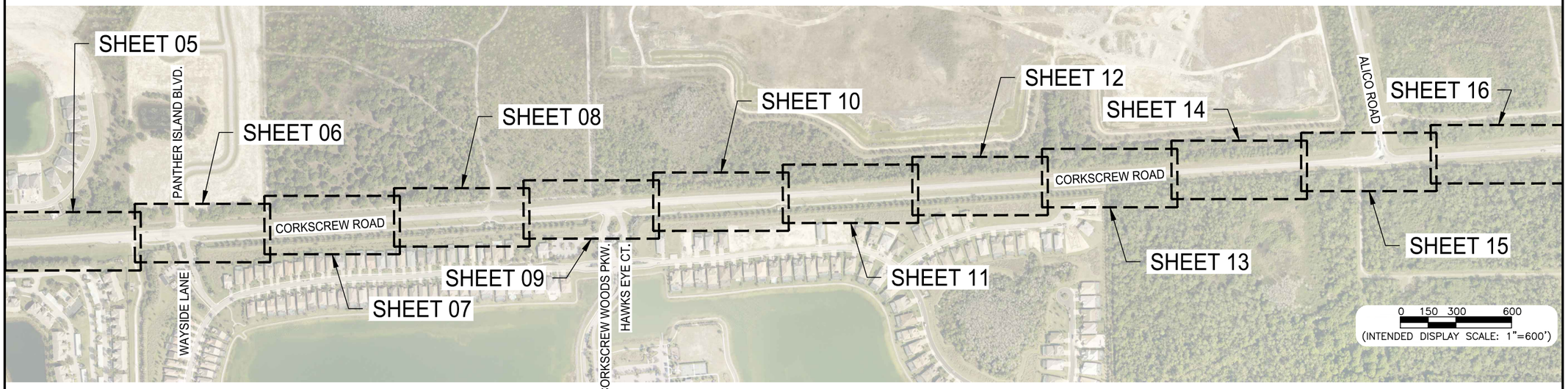
NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
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FILE NO.	25-46-25
SCALE:	As Shown

Notes & Legends

SHEET NUMBER

02



VALVE NUMBER	PLAN DESCRIPTION	STATION / OFFSET	NORTHING EASTING
PV-201	16" FM - VALVE (#201)	799+71.22 -50.93	770121.14 746278.99
PV-202	16" FM - VALVE (#202)	799+74.41 -53.96	770124.36 746281.97
PV-203	16" FM - VALVE (#203)	799+77.22 -50.85	770121.44 746284.98
PV-204	CONNCET TO EX 12" FM AT EX. 12" VALVE (#204)	801+99.03 114.29	769970.69 746516.81
PV-205	16" FM - VALVE (#205)	812+65.10 -52.96	770202.13 747570.49
PV-206	16" FM - VALVE (#206)	825+55.21 -52.93	770279.87 748858.26
PV-207	16" FM - VALVE (#207)	836+42.59 -53.00	770345.48 749943.65
PV-208	16" FM - VALVE (#208)	846+62.59 -53.00	770406.96 750961.80
PV-210	16" FM - VALVE (#210)	866+83.61 -42.00	770520.80 752979.62
PV-211	24" FM - VALVE (#211)	867+44.33 -75.66	770558.06 753038.20
PV-212	16" FM - VALVE (#212)	868+80.23 48.26	770443.06 753181.58

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Key Map

SHEET NUMBER

03

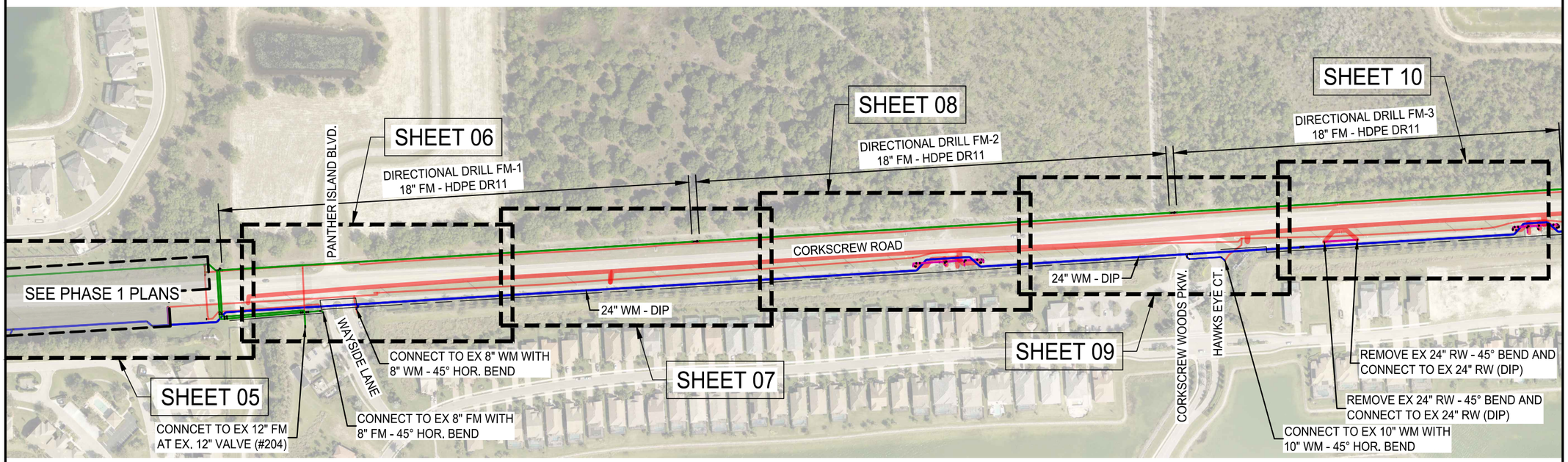
PROPOSED IMPROVEMENT LEGEND
- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY

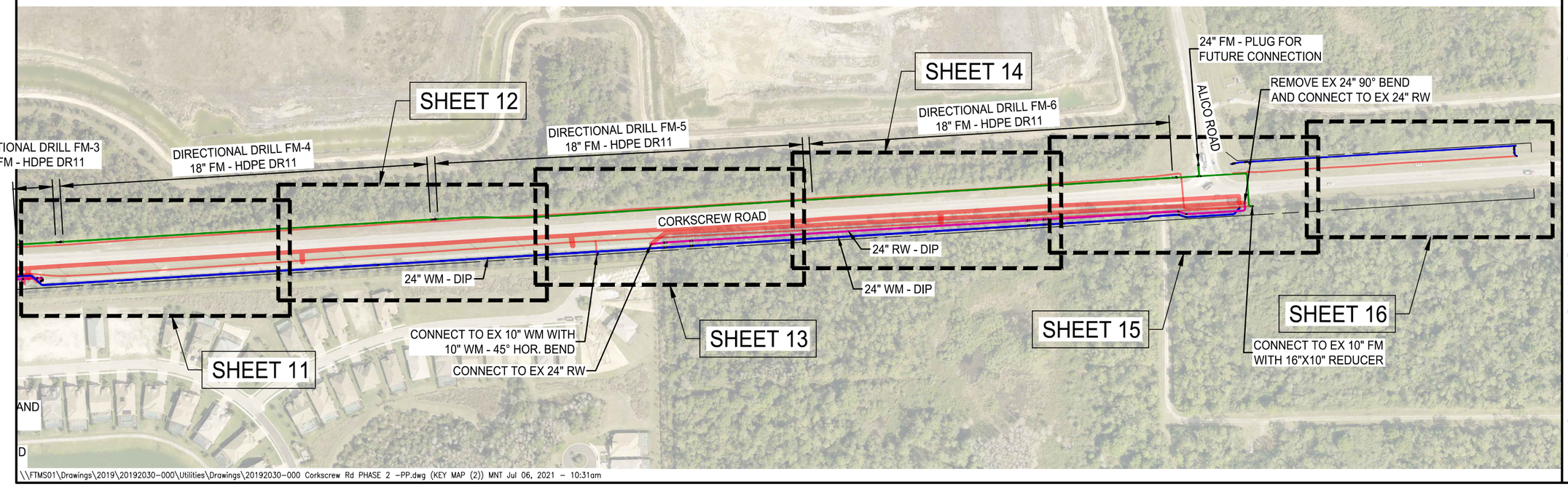
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NOT TO SCALE

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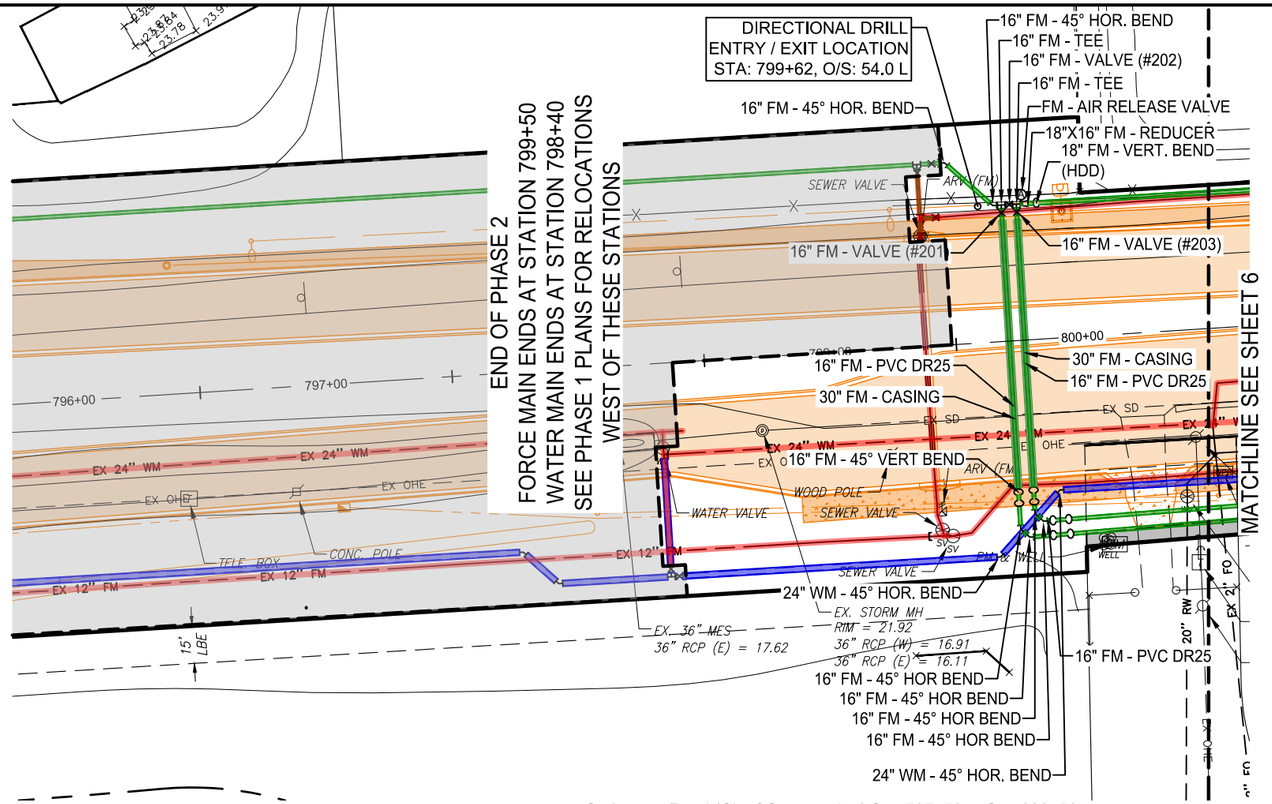
Overall Improvement Map

SHEET NUMBER

04

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (KEY MAP (2)) MNT Jul 06, 2021 - 10:31am

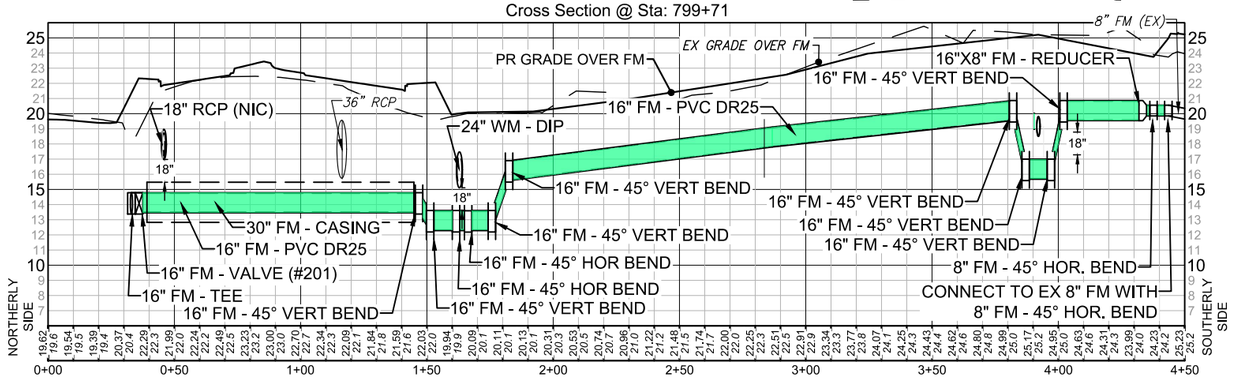
PROPOSED IMPROVEMENT LEGEND
- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

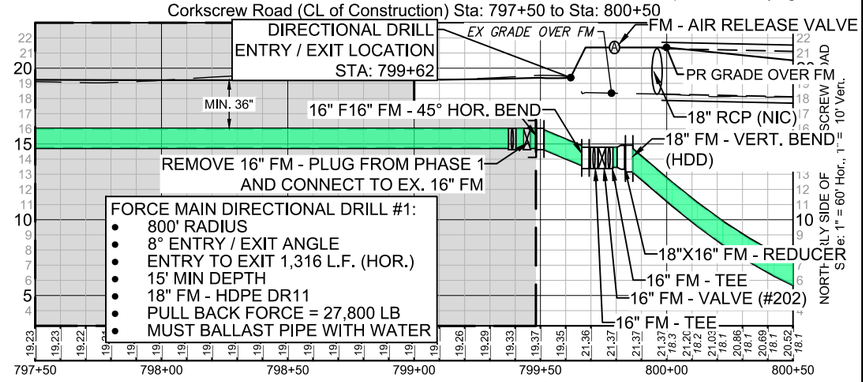


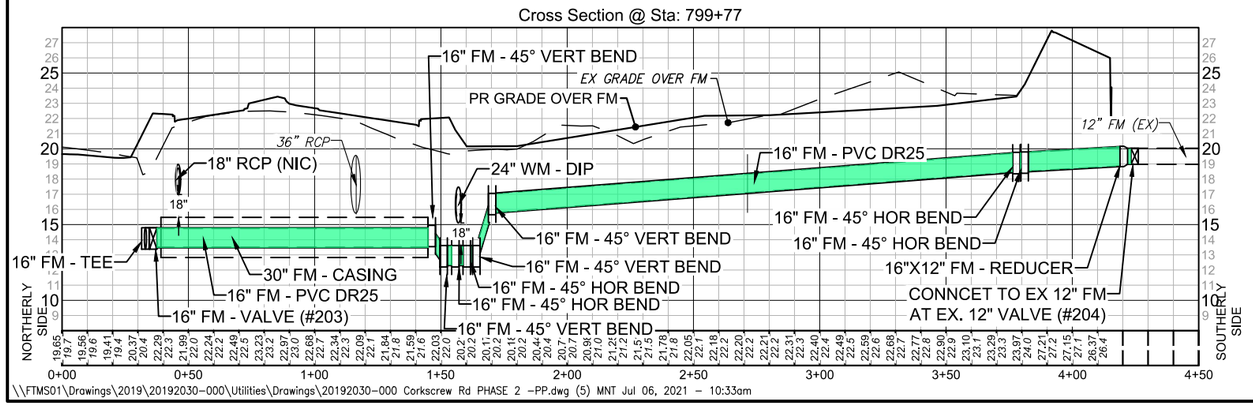
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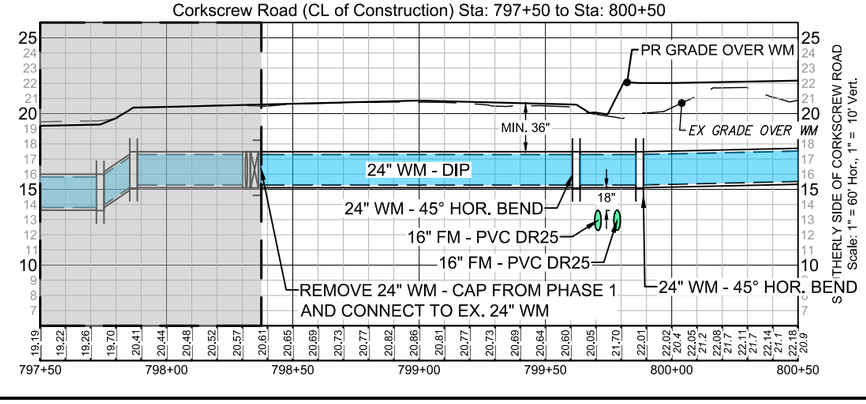
0 15 30 60

INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=60'
22"X34" PLAN 1"=30'









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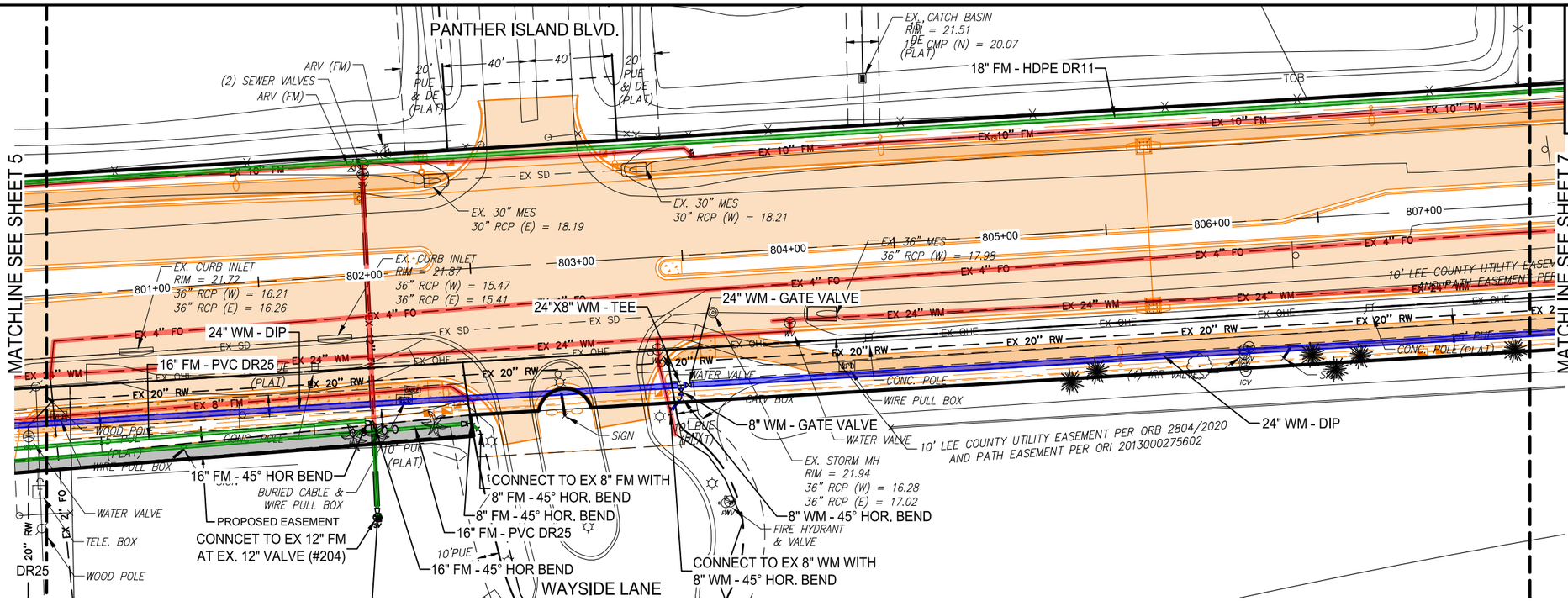
REVISIONS

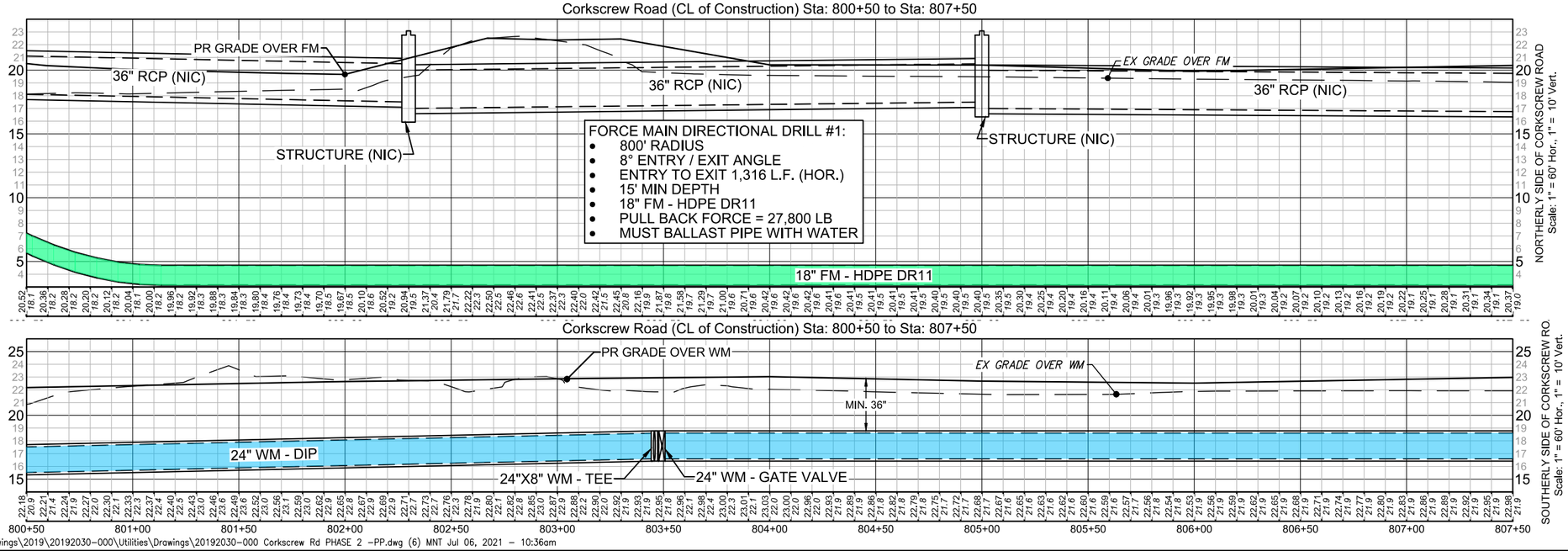
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Sta 796+00 to 800+50

SHEET NUMBER
05





\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (6) MNT Jul 06, 2021 - 10:36am

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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2) LEE COUNTY, FLORIDA

REVISIONS

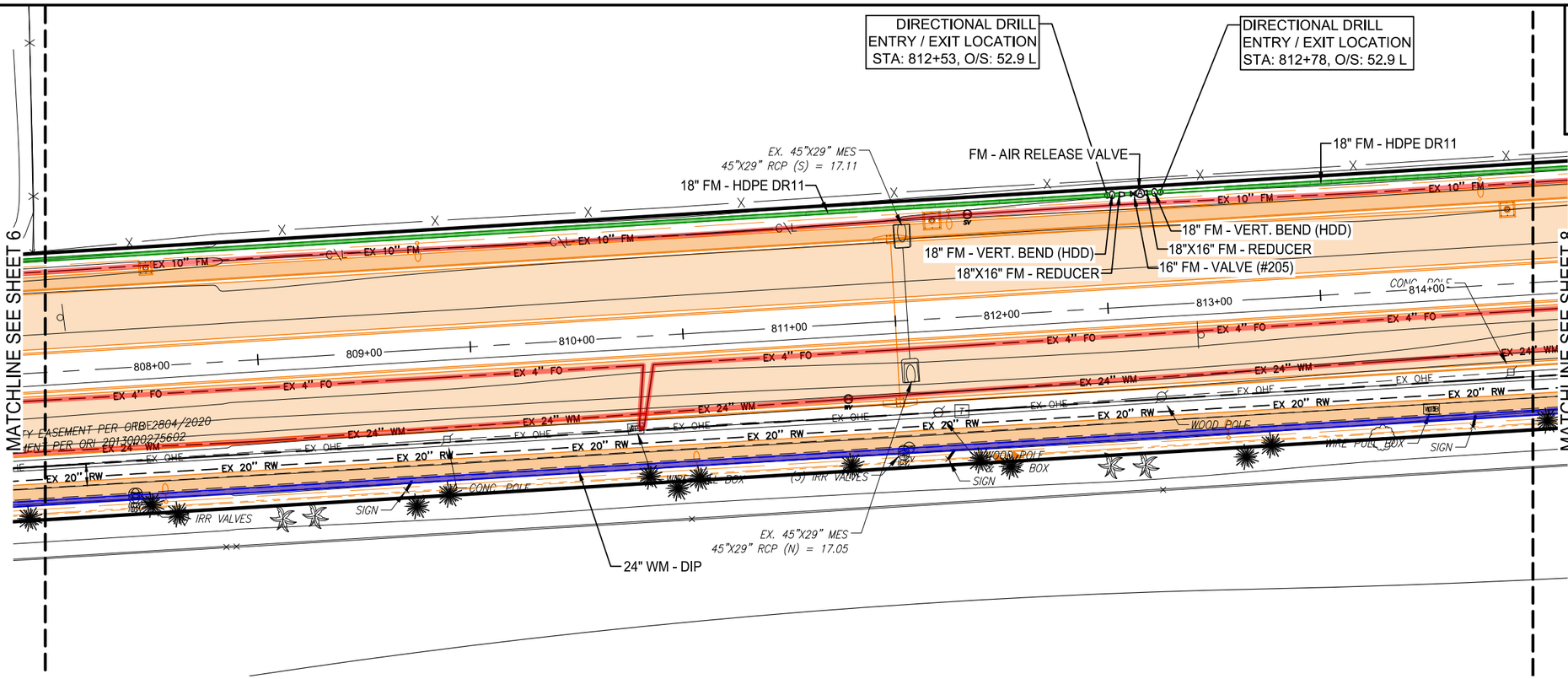
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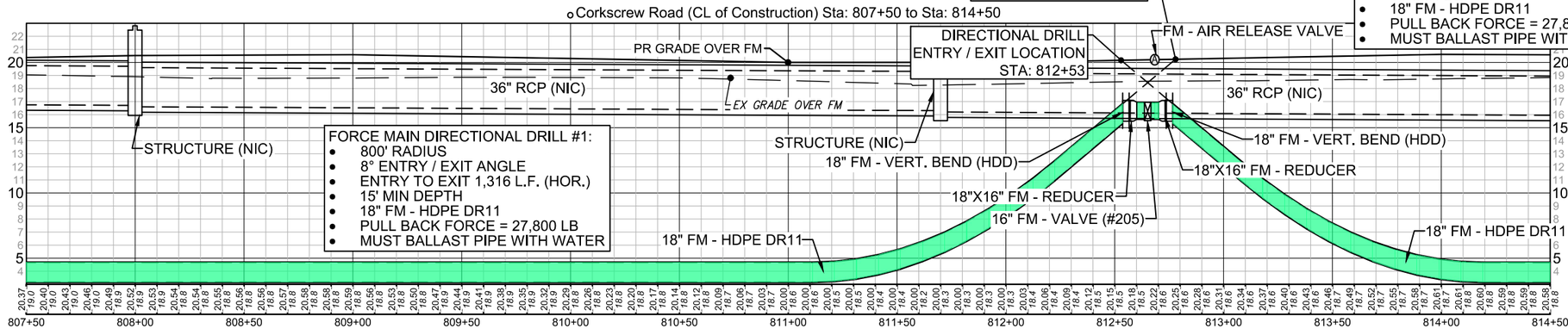
DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

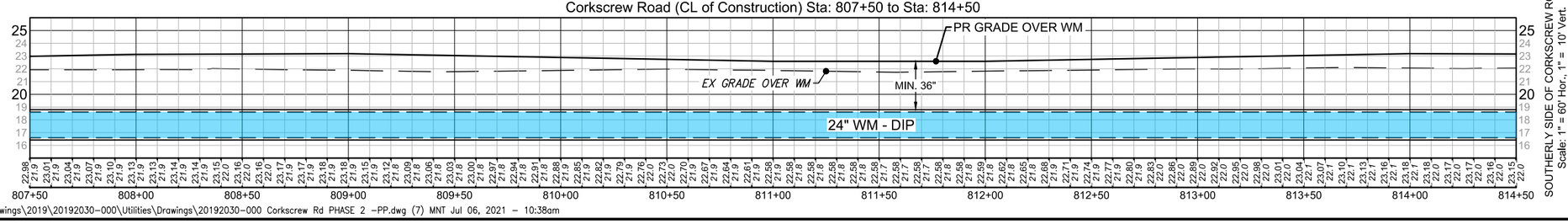
Sta 800+50 to 807+50

SHEET NUMBER

06







PROPOSED IMPROVEMENT LEGEND

- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

N

0 15 30 60

INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=60'
22"X34" PLAN 1"=30'

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Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

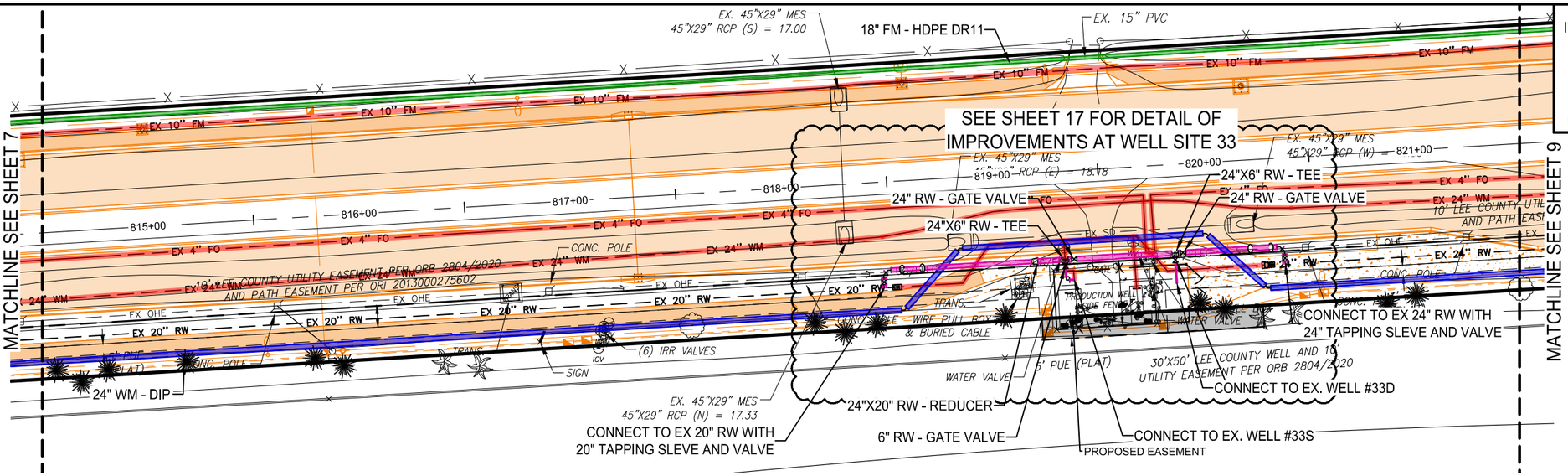
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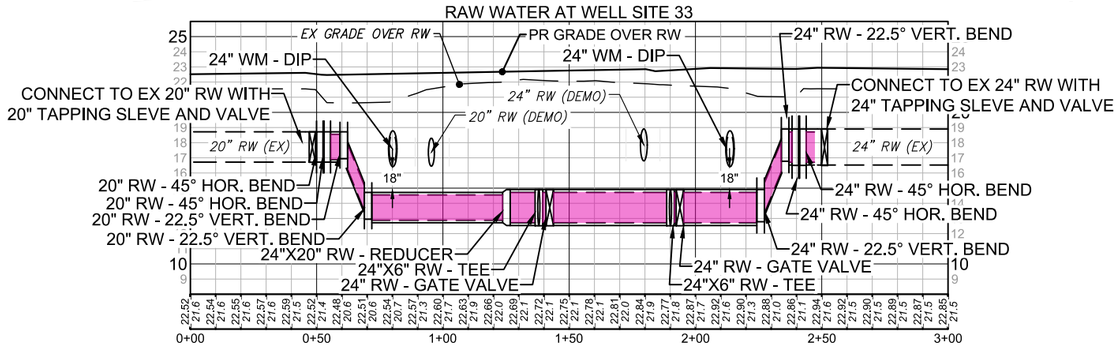
DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

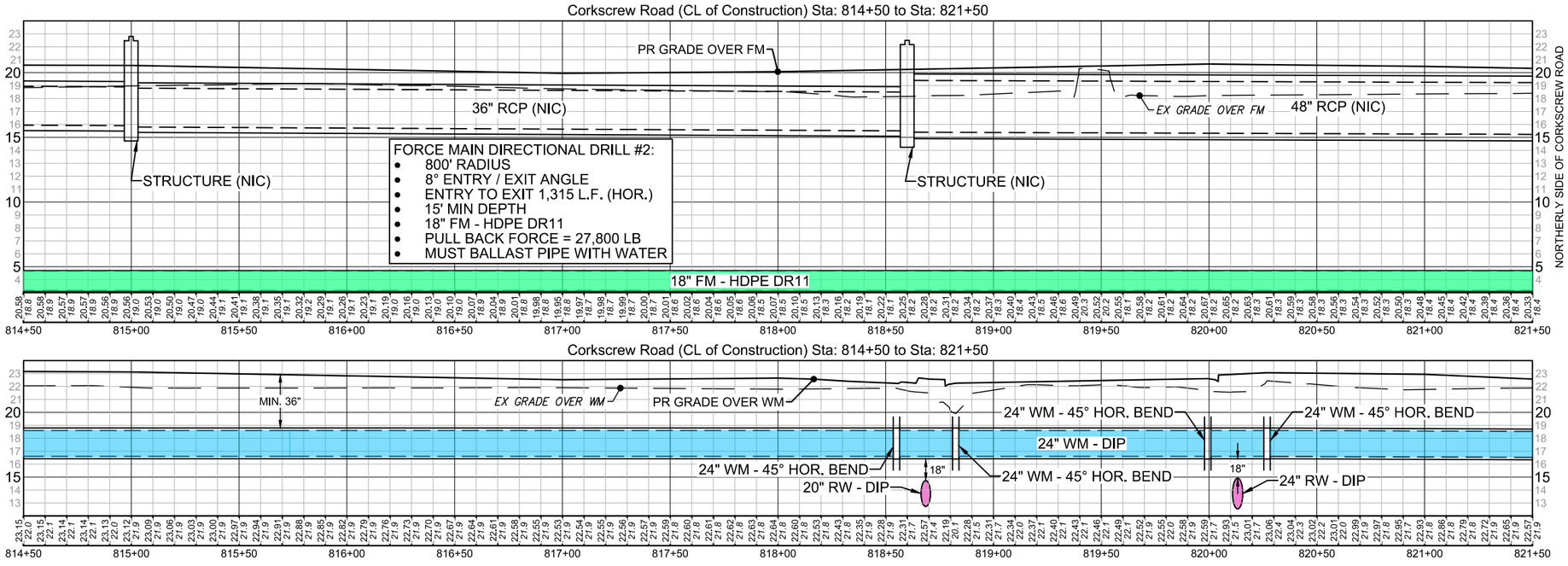
Sta 807+50 to 814+50

SHEET NUMBER
07

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (7) MNT Jul 06, 2021 - 10:38am







0 15 30 60
INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=60'
22"X34" PLAN 1"=30'

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Corkscrew Utilities Relocation (Phase 2) LEE COUNTY, FLORIDA

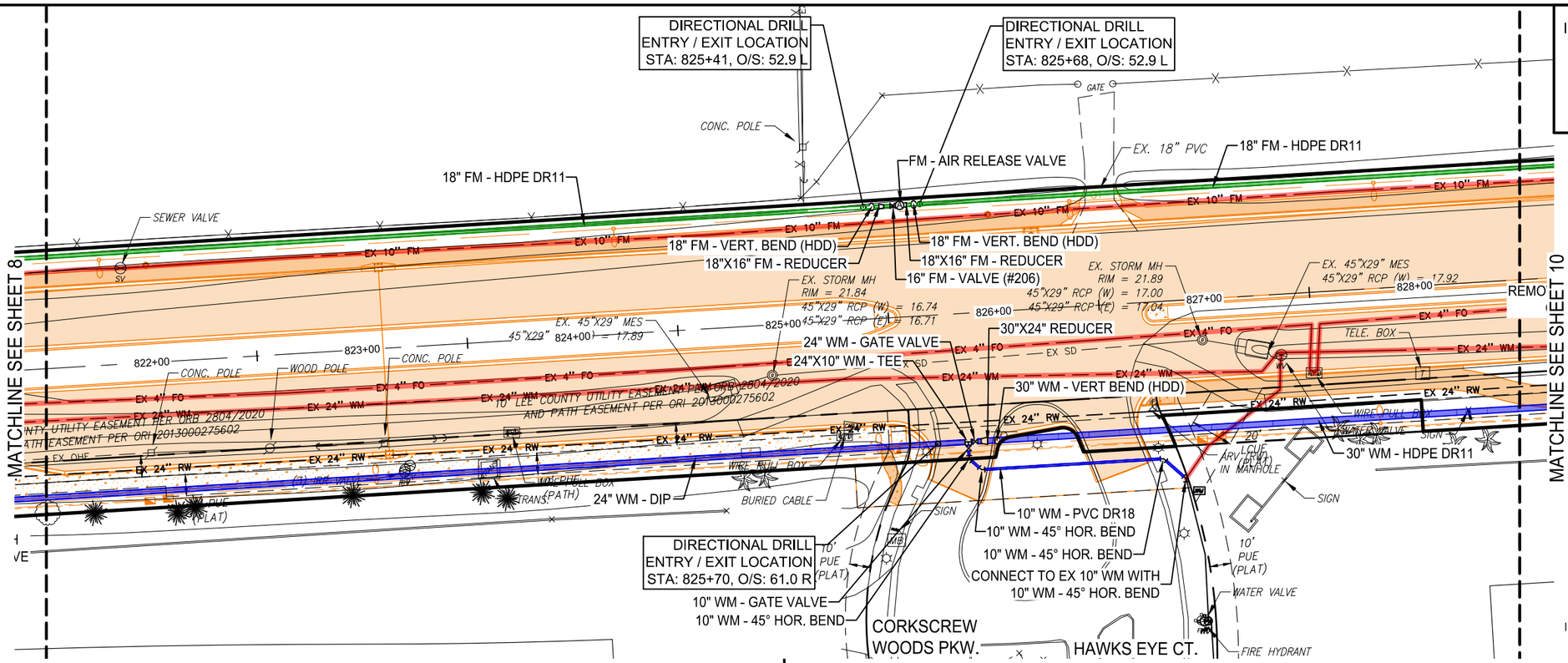
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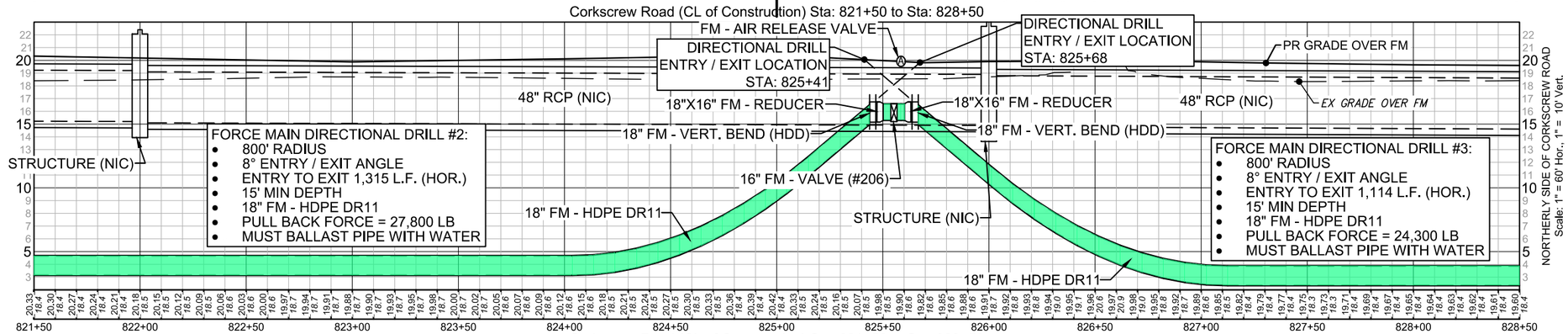
NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Sta 814+50 to 821+50

SHEET NUMBER
08





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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Sta 821+50 to 828+50

SHEET NUMBER
09

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (9) MNT Jul 06, 2021 - 10:43am

MATCHLINE SEE SHEET 9

MATCHLINE SEE SHEET 11

SEE SHEET 18 FOR DETAIL OF IMPROVEMENTS AT WELL SITE 32

EX. 48" MES (DBL)

EX. 48" MES (DBL)
45"X29" RCP (N) = 16.75

18" FM - HDPE DR11

EX 10" FM

EX SD

829+00

830+00

831+00

832+00

833+00

834+00

835+00

836+00

WIRE PULL BOX

EX 4" FO

10' LEE COUNTY UTILITY EASEMENT PER ORB 2804/2020
AND PATH EASEMENT PER ORB 2013000275602

EX 24" WM

EX OHE

EX 24" RW

BURIED CABLE

WOOD POLE

(3) IRR VALVES

CONC. POLE

TOE

TOB

TOP

C\L

EX. 45"X29" MES

45"X29" RCP (E) = 18.38

WATER VALVE

2" DIA (PLAT)

PRODUCTION WELL #32S
WITH FENCE

TRANS.

30'X50' LEE COUNTY WELL AND 10'
UTILITY EASEMENT PER ORB 2804/2020

PROPOSED EASEMENT

REMOVE EX 24" RW - 45° BEND AND
CONNECT TO EX 24" RW (DIP)

30" WM - HDPE DR11

24" RW - DIP

24" WM - DIP

24" RW - GATE VALVE

24"X6" RW - TEE

CONNECT TO EX 24" RW WITH
24" TAPPING SLEVE AND VALVE

CONNECT TO EX. WELL #32S

6" RW - GATE VALVE

CONNECT TO EX. WELL #32D

DIRECTIONAL DRILL
ENTRY / EXIT LOCATION
STA: 829+17, O/S: 61.0 R

AIR RELEASE VALVE

30"X24" REDUCER

30" WM - VERT BEND (HDD)

Corkscrew Road (CL of Construction) Sta: 829+10 to Sta: 831+00

PR GRADE OVER RW

EX GRADE OVER RW

24" RW (EX)

24" RW - DIP

REMOVE EX 24" RW - 45° BEND AND
CONNECT TO EX 24" RW (DIP)

RAW WATER AT WELL SITE 32

EX GRADE OVER RW

PR GRADE OVER RW

24" RW (DEMO)

24" RW – DIP

24" WM - DIP

24" RW - 45° HOR. BEND

CONNECT TO EX 24" RW WITH
24" TAPPING SLEVE AND VALVE

24" RW - 22.5° VERT. BEND

24" RW - GATE VALVE

24"X6" RW - TEE

18"

Corkscrew Road (CL of Construction) Sta: 828+50 to Sta: 835+50

48" RCP (NIC)

60" RCP (NIC)

EX GRADE OVER FM

PR GRADE OVER FM

STRUCTURE (NIC)

FORCE MAIN DIRECTIONAL DRILL #3:

- 800' RADIUS
- 8° ENTRY / EXIT ANGLE
- ENTRY TO EXIT 1,114 L.F. (HOR.)
- 15' MIN DEPTH
- 18" FM - HDPE DR11
- PULL BACK FORCE = 24,300 LB
- MUST BALLAST PIPE WITH WATER

18" FM - HDPE DR11

NORTHERLY SIDE OF CORKSCREW ROAD
Scale: 1" = 60' Hor., 1" = 10' Vert.

Corkscrew Road (CL of Construction) Sta: 828+50 to Sta: 835+50

AIR RELEASE VALVE

DIRECTIONAL DRILL
ENTRY / EXIT LOCATION
STA: 829+17

MIN. 36"

EX GRADE OVER WM

PR GRADE OVER WM

24" WM - DIP

24" WM - 45° HOR. BEND

24" RW - DIP

30"X24" REDUCER

30" WM - VERT BEND (HDD)

30" WM - HDPE DR11

0 15 30 60
INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=60'
22"X34" PLAN 1"=30'

PROPOSED IMPROVEMENT LEGEND

- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

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E.B. #642 & L.B. #642

LEE COUNTY

Corkscrew Utilities Relocation (Phase 2) LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

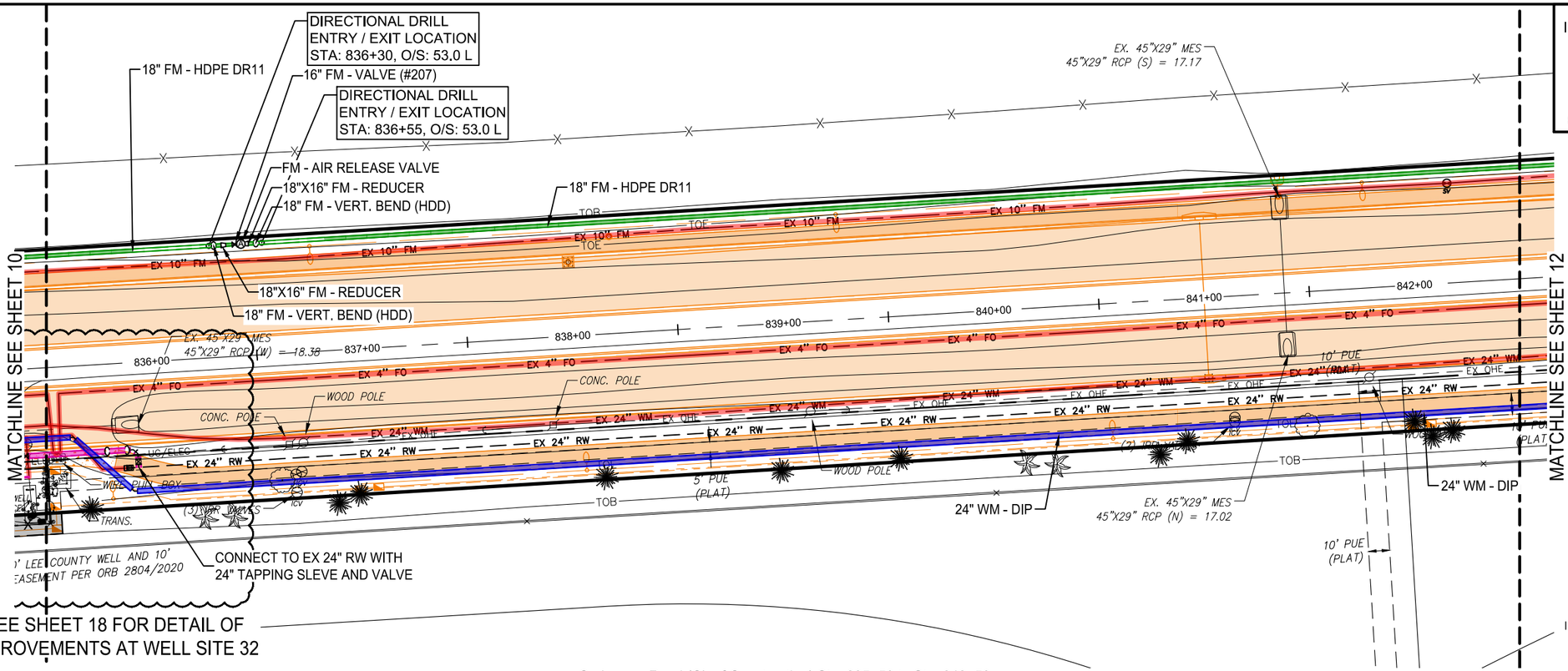
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PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

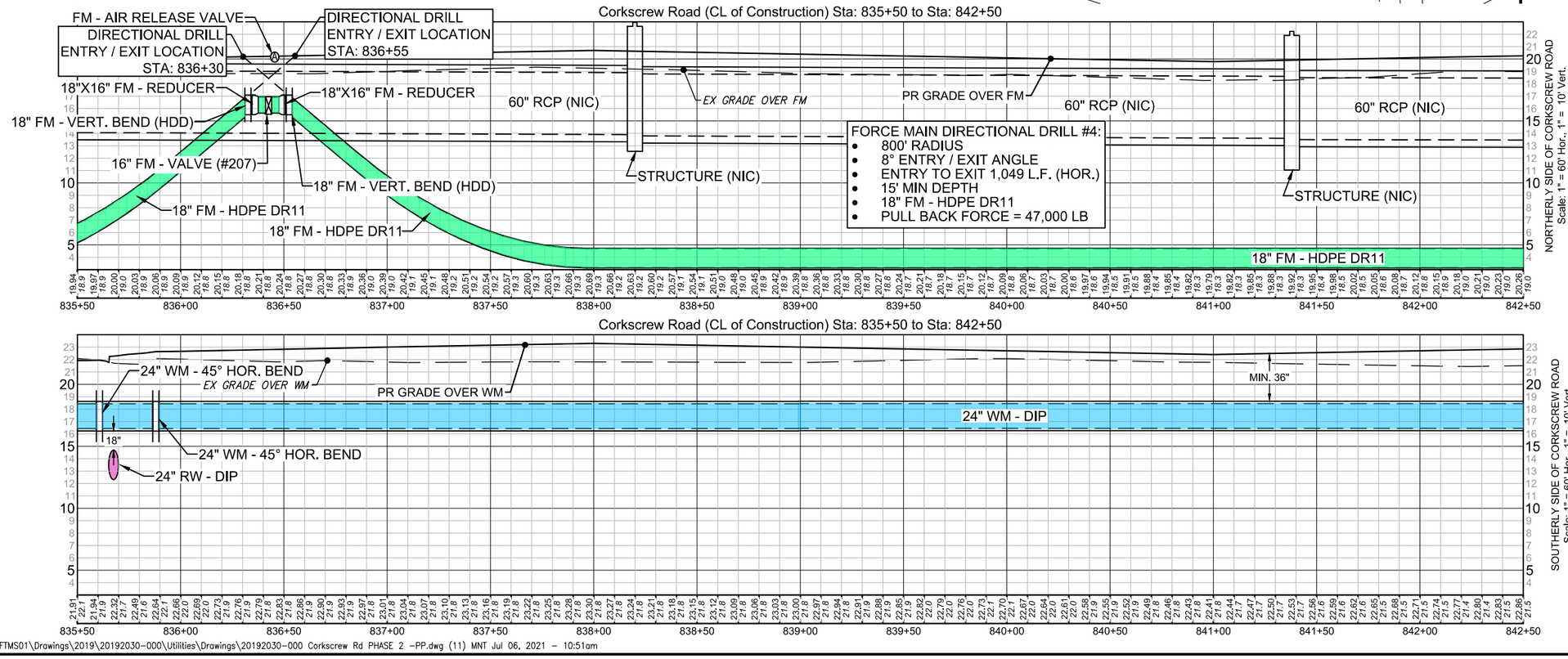
Sta 828+50 to 835+50

SHEET NUMBER

10

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (10) MNT Jul 06, 2021 - 10:48am





\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (11) MNT Jul 06, 2021 - 10:51am

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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2) LEE COUNTY, FLORIDA

REVISIONS

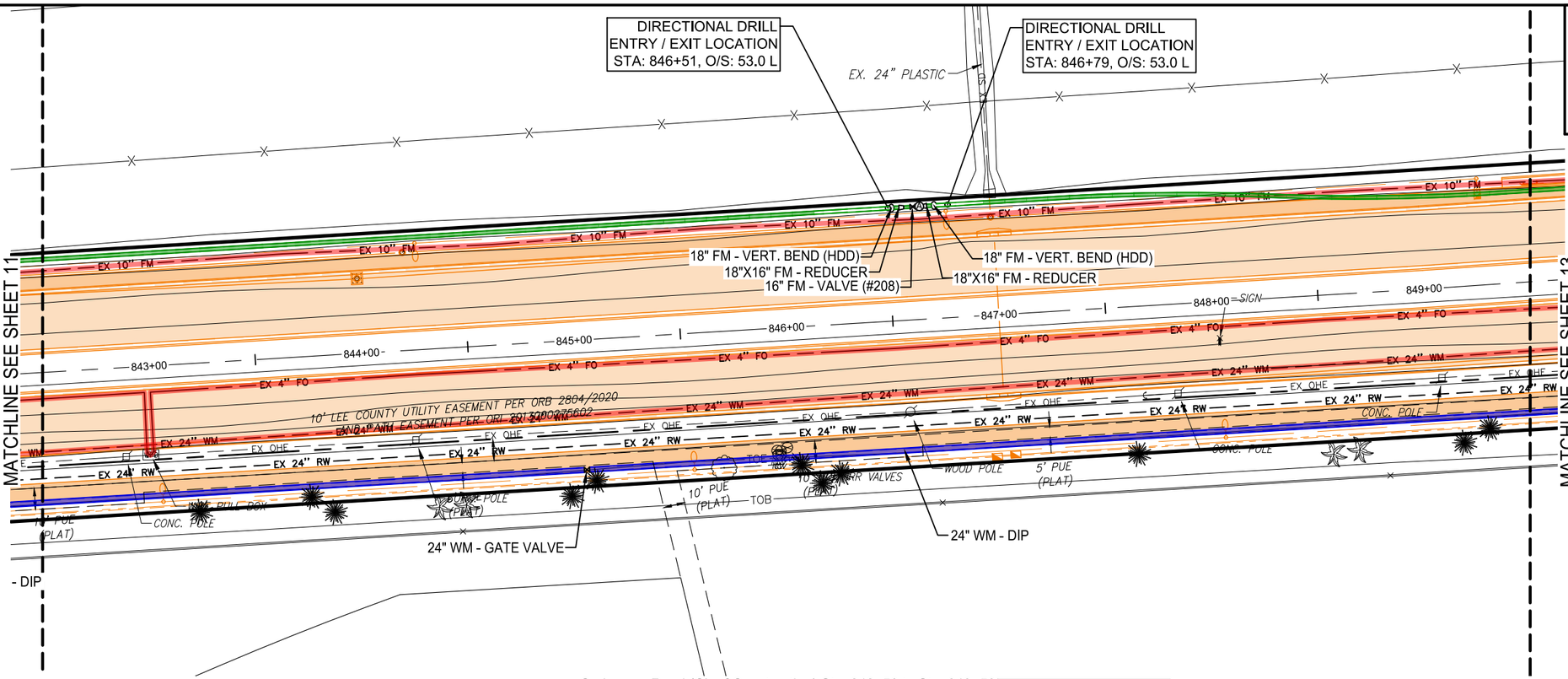
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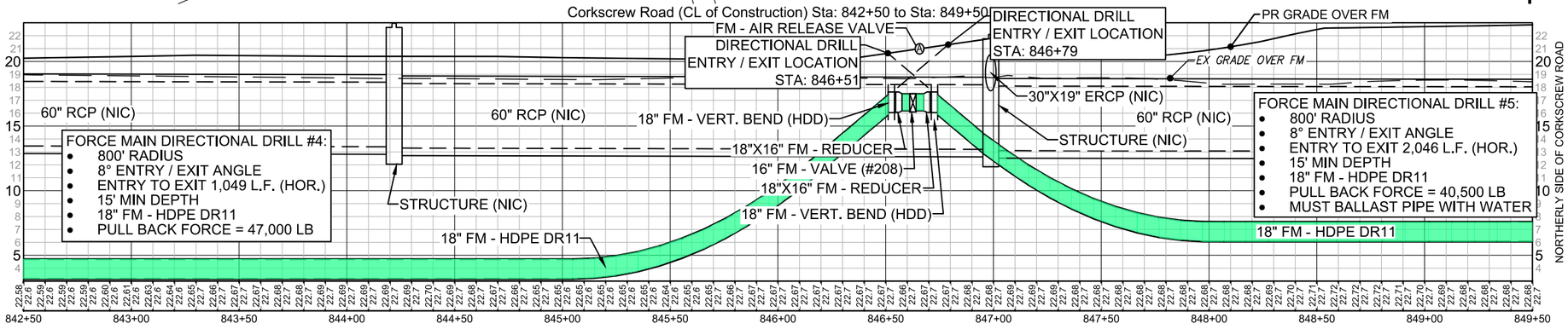
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PROJECT NO.	20192030-000
FILE NO.	25-46-25
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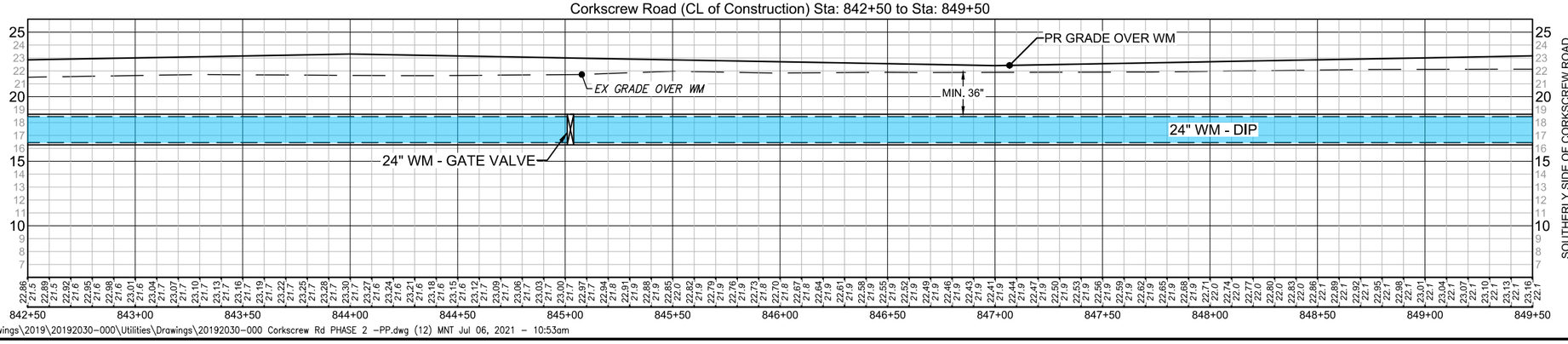
Sta 835+50 to 842+50

SHEET NUMBER

11







PROPOSED IMPROVEMENT LEGEND

- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

N

0 15 30 60

INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=60'
22"X34" PLAN 1"=30'

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Corkscrew Utilities Relocation (Phase 2) LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

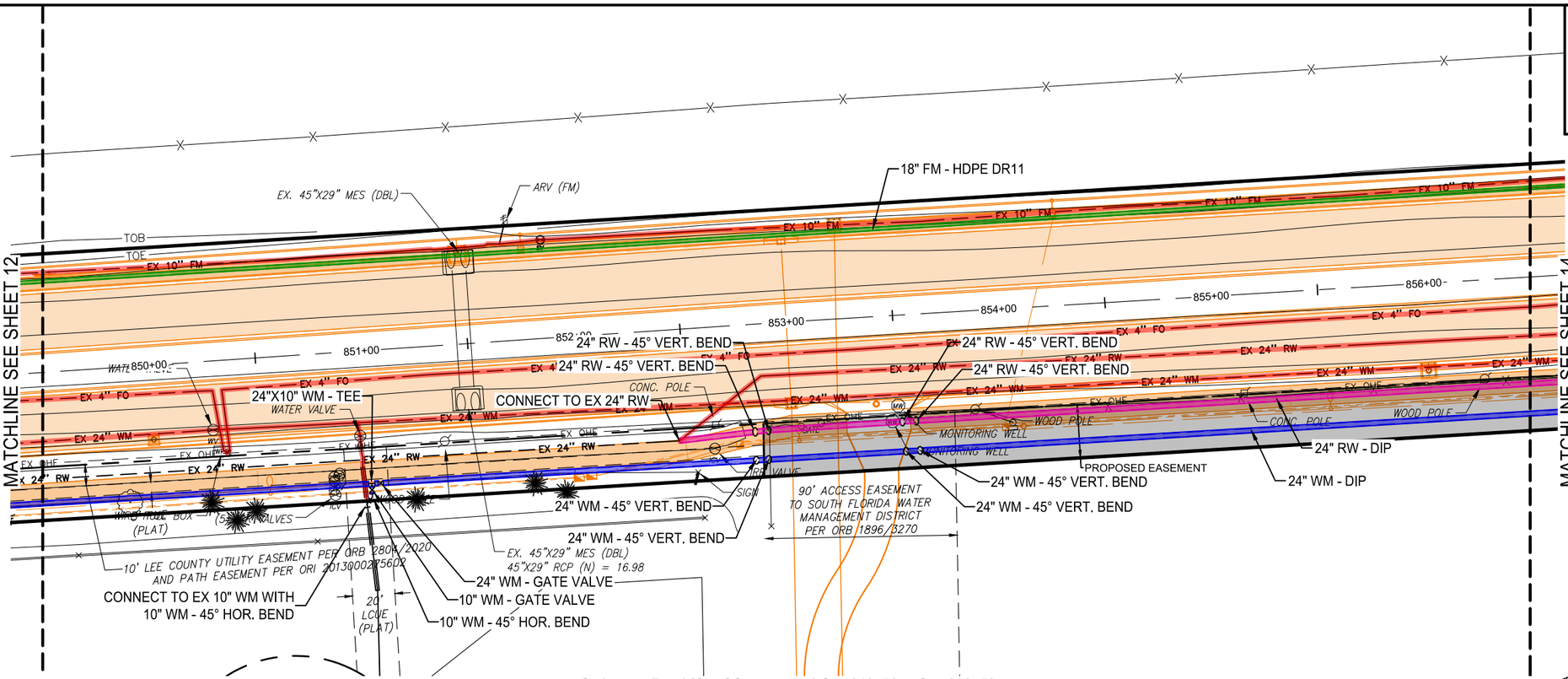
DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Sta 842+50 to 849+50

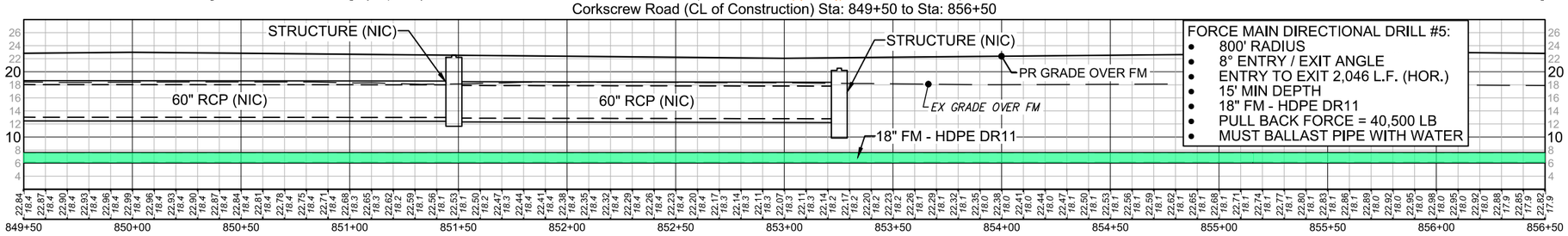
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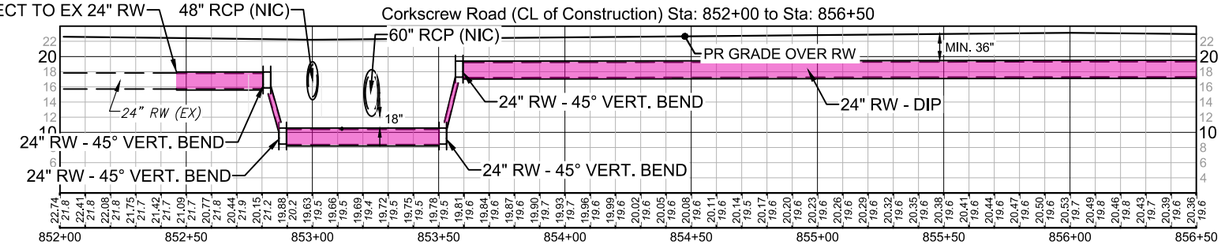
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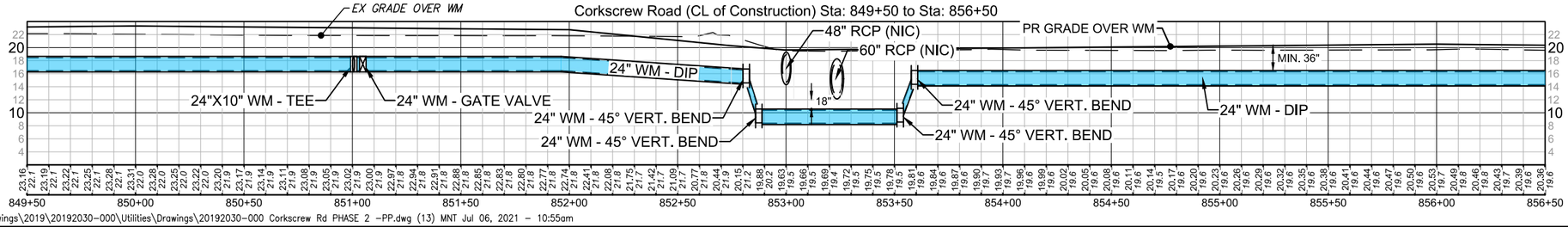
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Corkscrew Road (CL of Construction) Sta: 849+50 to Sta: 856+50







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LEE COUNTY

Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

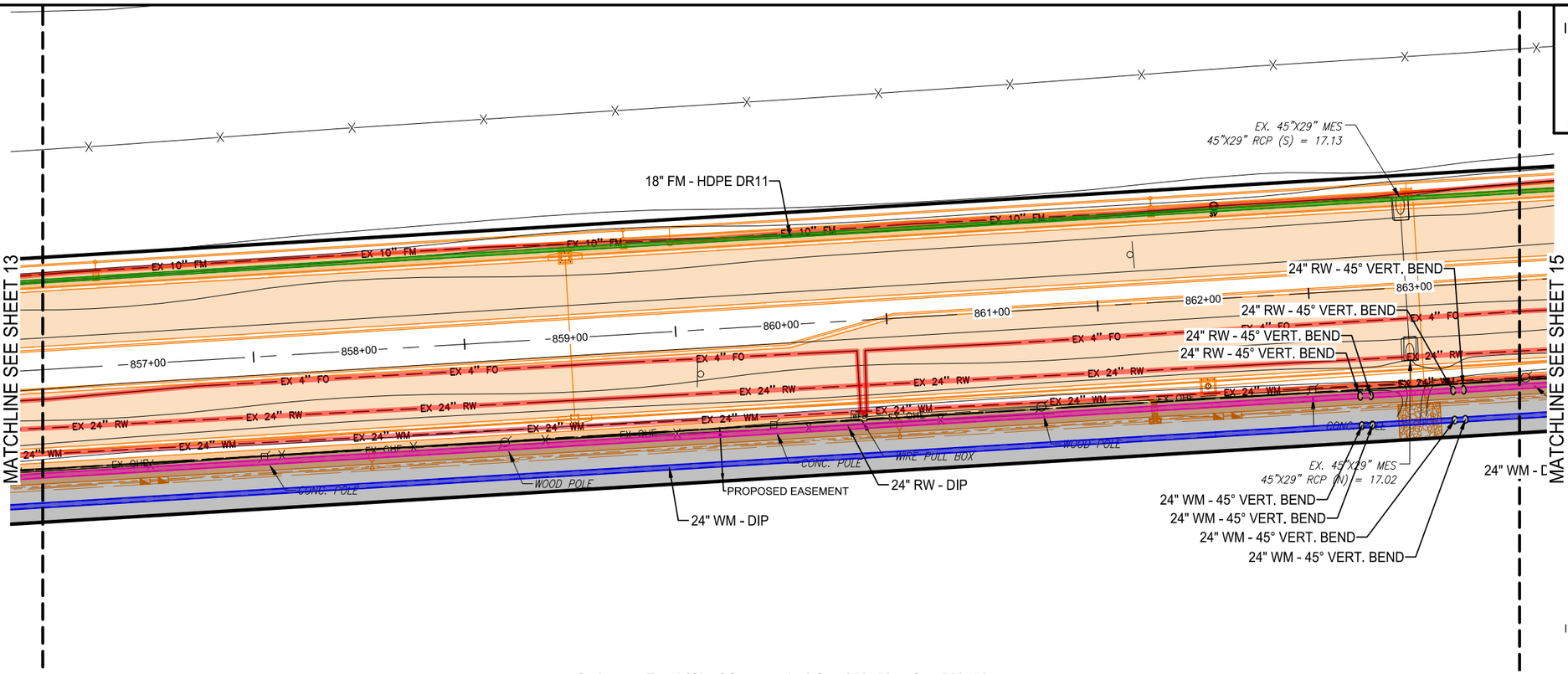
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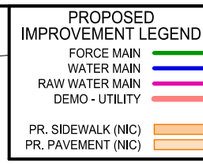
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PROJECT NO.	20192030-000
FILE NO.	25-46-25
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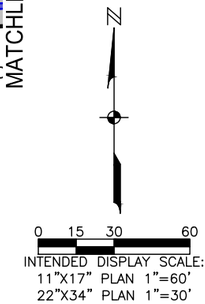
Sta 849+50 to 856+50

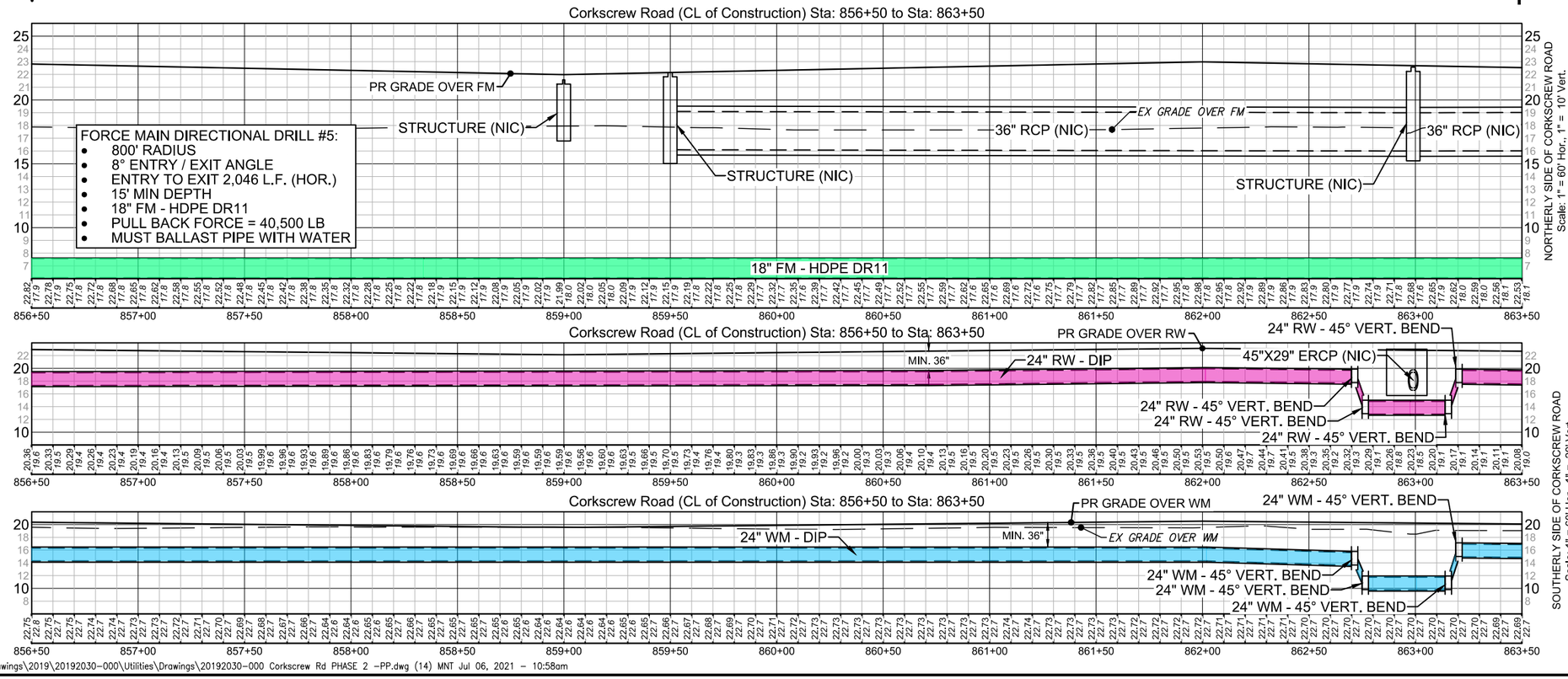
SHEET NUMBER
13

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (13) MNT Jul 06, 2021 - 10:55am









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Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

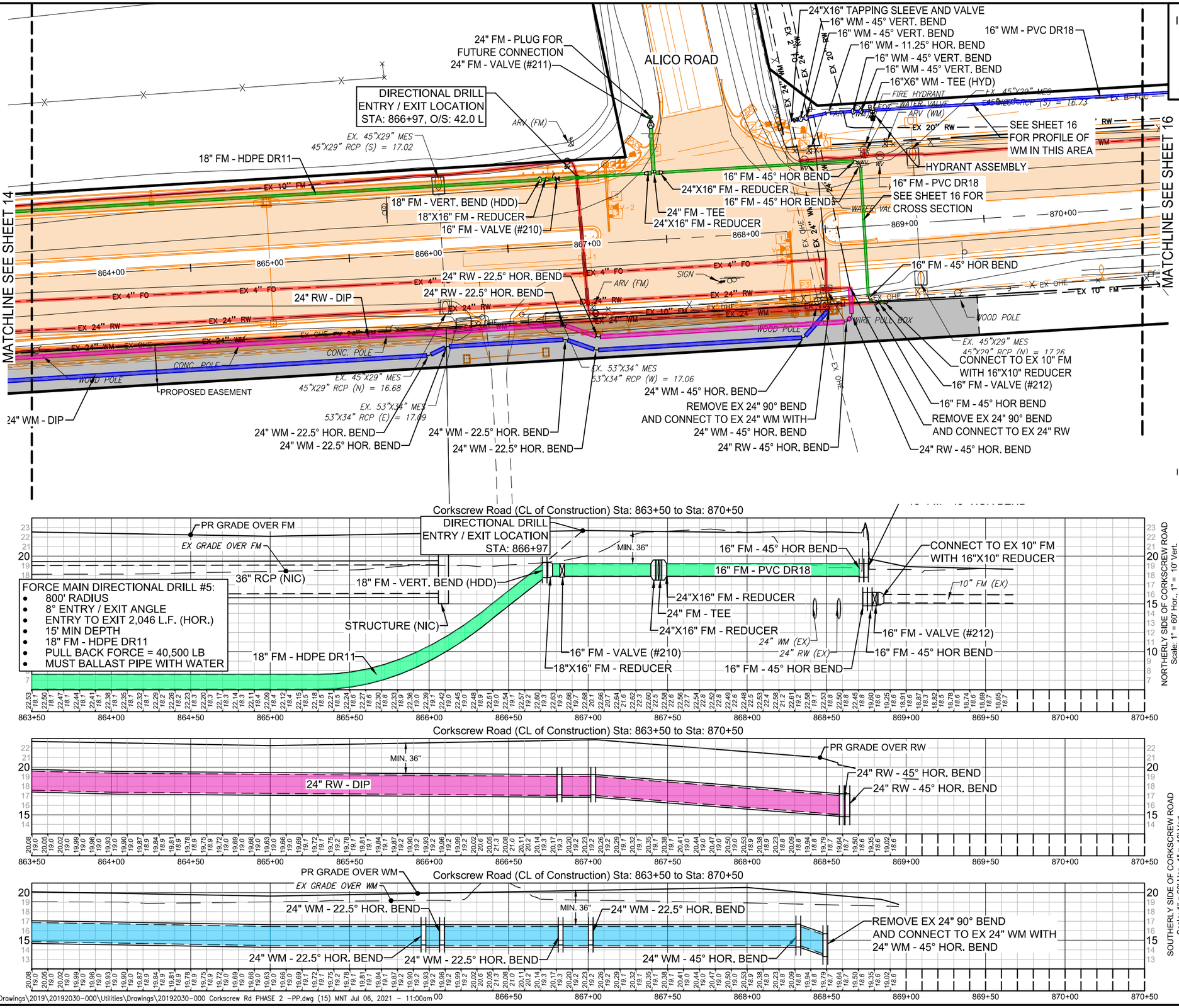
DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Sta 856+50 to 863+50

SHEET NUMBER

14

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (14) MNT Jul 06, 2021 - 10:58am



PROPOSED IMPROVEMENT LEGEND
- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

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LEE COUNTY

0 15 30 60
INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=60'
22"X34" PLAN 1"=30'

Corkscrew Utilities Relocation (Phase 2) LEE COUNTY, FLORIDA

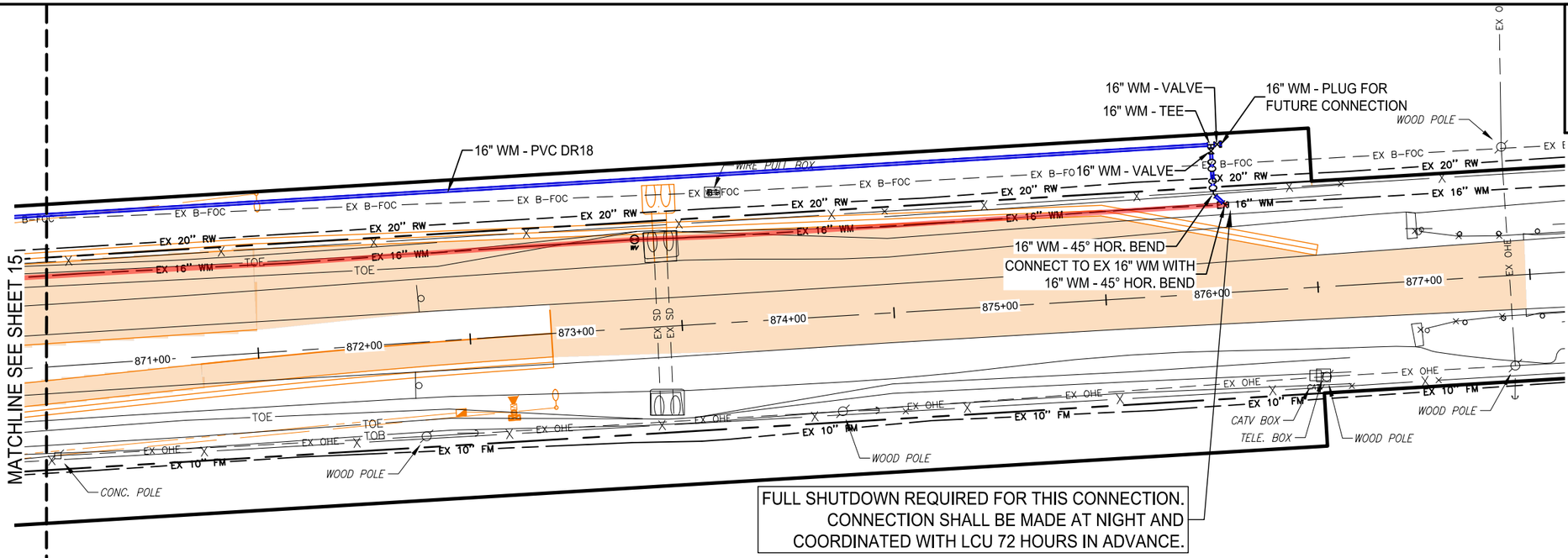
REVISIONS

NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Sta 863+50 to 870+50

SHEET NUMBER
15



FULL SHUTDOWN REQUIRED FOR THIS CONNECTION. CONNECTION SHALL BE MADE AT NIGHT AND COORDINATED WITH LCU 72 HOURS IN ADVANCE.

PROPOSED IMPROVEMENT LEGEND

- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

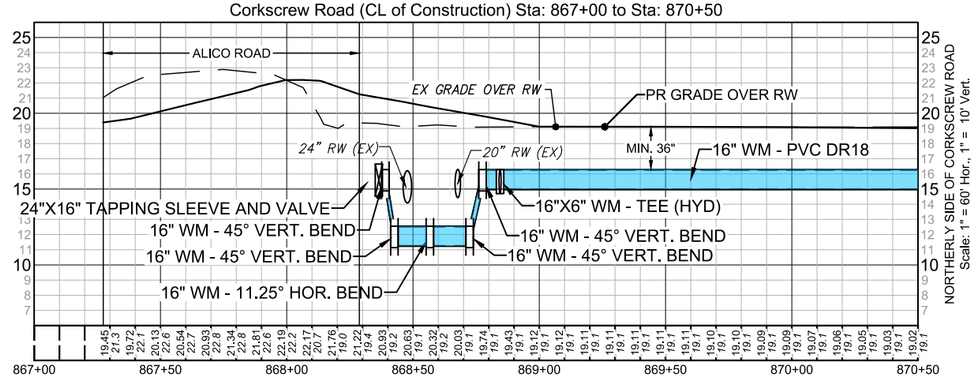
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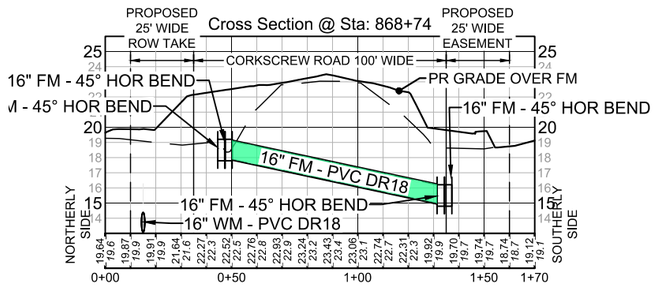
INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=60'
22"X34" PLAN 1"=30'

SEE SHEET 15 FOR PLAN VIEW OF WATER MAIN

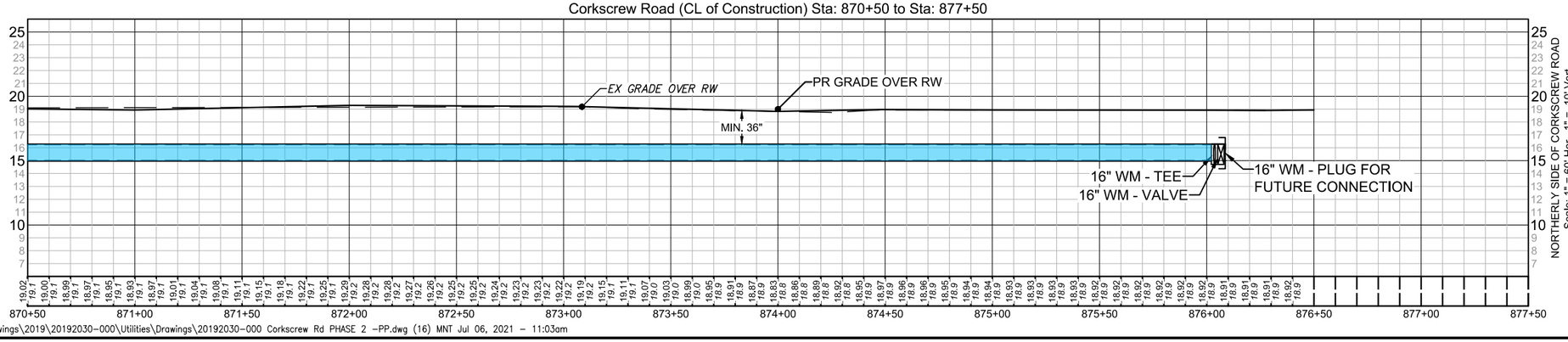
Corkscrew Road (CL of Construction) Sta: 867+00 to Sta: 870+50



SEE SHEET 15 FOR PLAN VIEW OF FORCE MAIN



Corkscrew Road (CL of Construction) Sta: 870+50 to Sta: 877+50



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LEE COUNTY, FLORIDA

REVISIONS

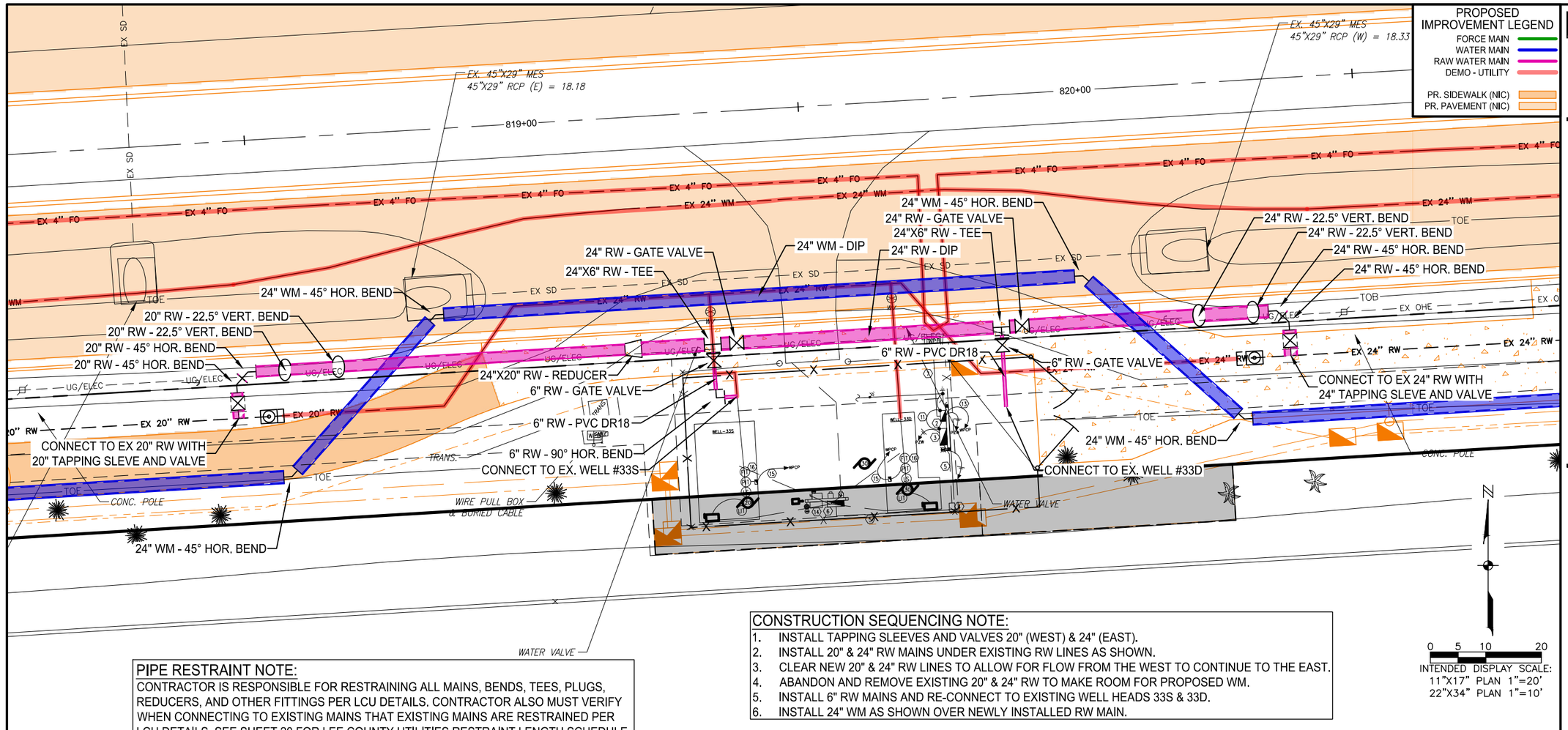
NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Sta 870+50 to 877+50

SHEET NUMBER

16



PROPOSED IMPROVEMENT LEGEND

- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

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LEE COUNTY

Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

0 5 10 20
INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=20'
22"X34" PLAN 1"=10'

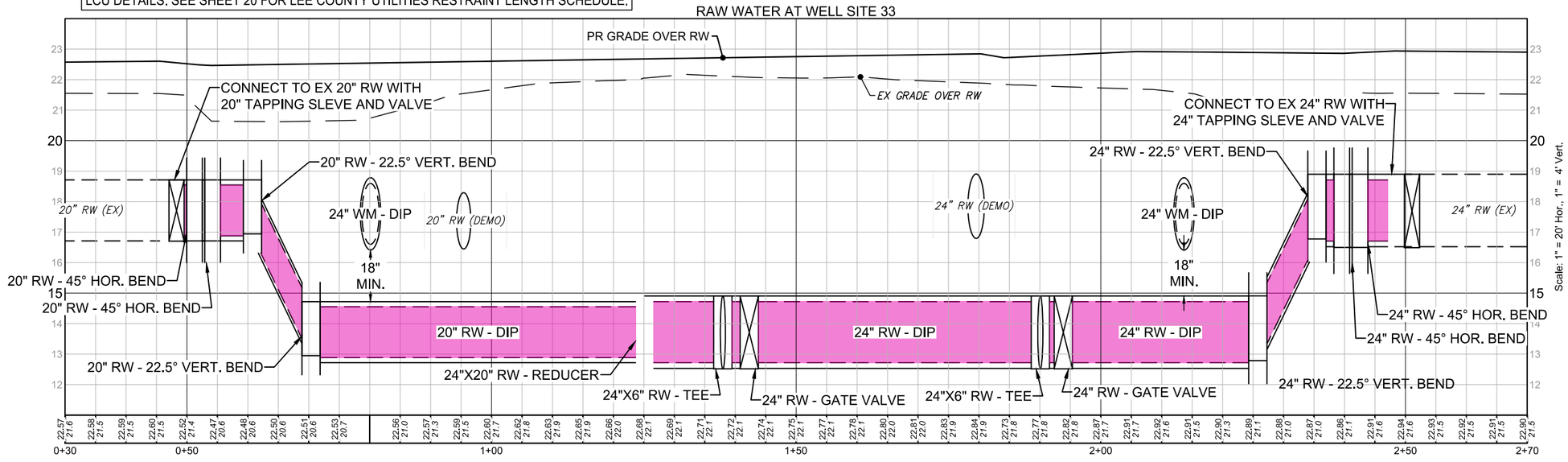
CONSTRUCTION SEQUENCING NOTE:

1. INSTALL TAPPING SLEEVES AND VALVES 20" (WEST) & 24" (EAST).
2. INSTALL 20" & 24" RW MAINS UNDER EXISTING RW LINES AS SHOWN.
3. CLEAR NEW 20" & 24" RW LINES TO ALLOW FOR FLOW FROM THE WEST TO CONTINUE TO THE EAST.
4. ABANDON AND REMOVE EXISTING 20" & 24" RW TO MAKE ROOM FOR PROPOSED WM.
5. INSTALL 6" RW MAINS AND RE-CONNECT TO EXISTING WELL HEADS 33S & 33D.
6. INSTALL 24" WM AS SHOWN OVER NEWLY INSTALLED RW MAIN.

PIPE RESTRAINT NOTE:

CONTRACTOR IS RESPONSIBLE FOR RESTRAINING ALL MAINS, BENDS, TEES, PLUGS, REDUCERS, AND OTHER FITTINGS PER LCU DETAILS. CONTRACTOR ALSO MUST VERIFY WHEN CONNECTING TO EXISTING MAINS THAT EXISTING MAINS ARE RESTRAINED PER LCU DETAILS. SEE SHEET 20 FOR LEE COUNTY UTILITIES RESTRAINT LENGTH SCHEDULE.

RAW WATER AT WELL SITE 33



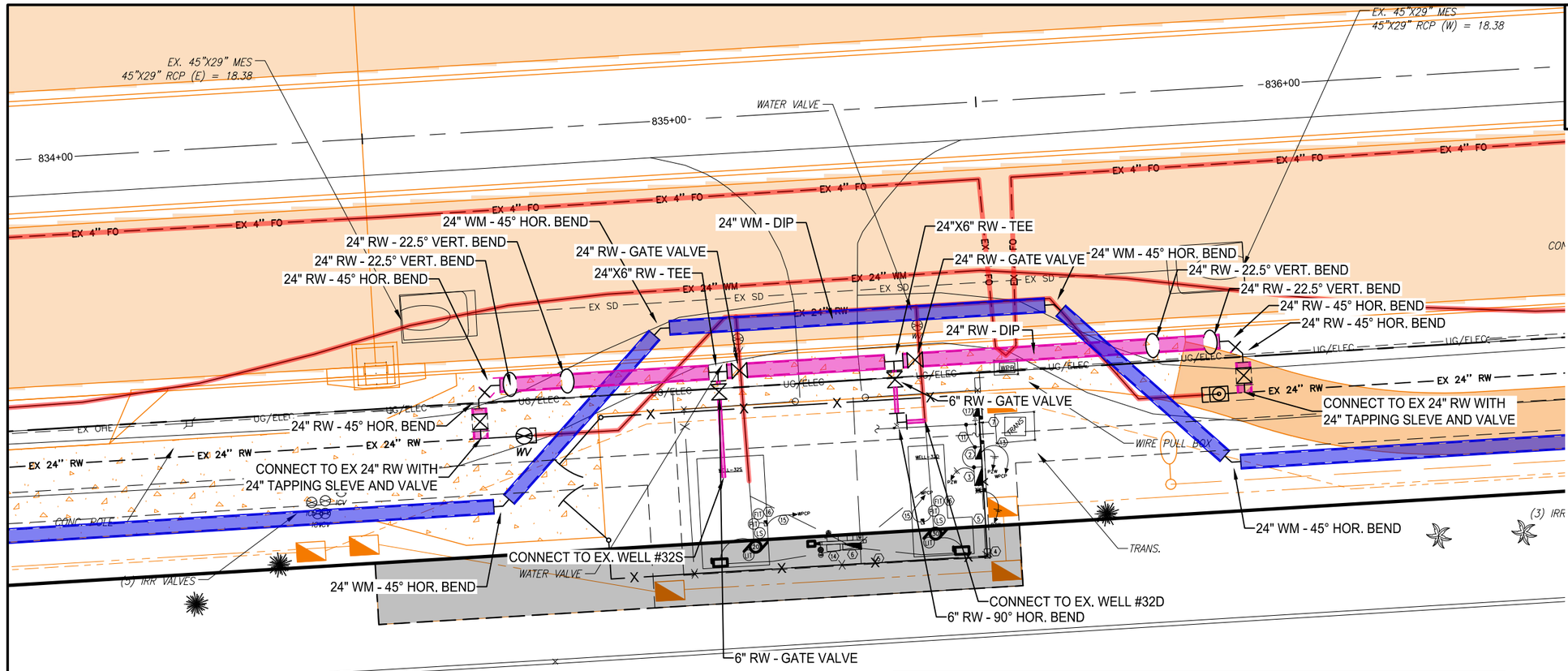
REVISIONS		
NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Well Site 33 at Station 819+50

SHEET NUMBER

17



PROPOSED IMPROVEMENT LEGEND

- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

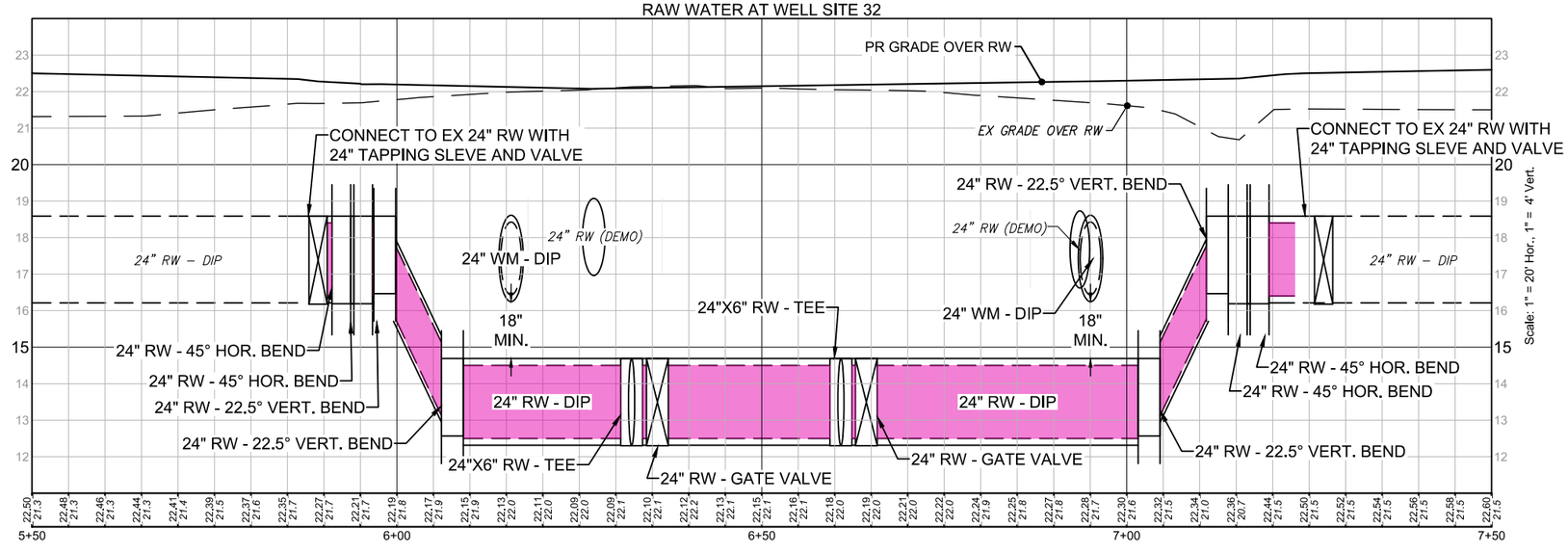
PIPE RESTRAINT NOTE:

CONTRACTOR IS RESPONSIBLE FOR RESTRAINING ALL MAINS, BENDS, TEES, PLUGS, REDUCERS, AND OTHER FITTINGS PER LCU DETAILS. CONTRACTOR ALSO MUST VERIFY WHEN CONNECTING TO EXISTING MAINS THAT EXISTING MAINS ARE RESTRAINED PER LCU DETAILS. SEE SHEET 20 FOR LEE COUNTY UTILITIES RESTRAINT LENGTH SCHEDULE.

CONSTRUCTION SEQUENCING NOTE:

1. INSTALL TAPPING SLEEVES AND VALVES 24" (WEST & EAST).
2. INSTALL 24" RW MAINS UNDER EXISTING RW LINES AS SHOWN.
3. CLEAR NEW 24" RW LINES TO ALLOW FOR FLOW FROM THE WEST TO CONTINUE TO THE EAST.
4. ABANDON AND REMOVE EXISTING 24" RW TO MAKE ROOM FOR PROPOSED WM.
5. INSTALL 6" RW MAINS AND RE-CONNECT TO EXISTING WELL HEADS 32S & 32D.
6. INSTALL 24" WM AS SHOWN OVER NEWLY INSTALLED RW MAIN.

RAW WATER AT WELL SITE 32



N

0 5 10 20

INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=20'
22"X34" PLAN 1"=10'

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LEE COUNTY

Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

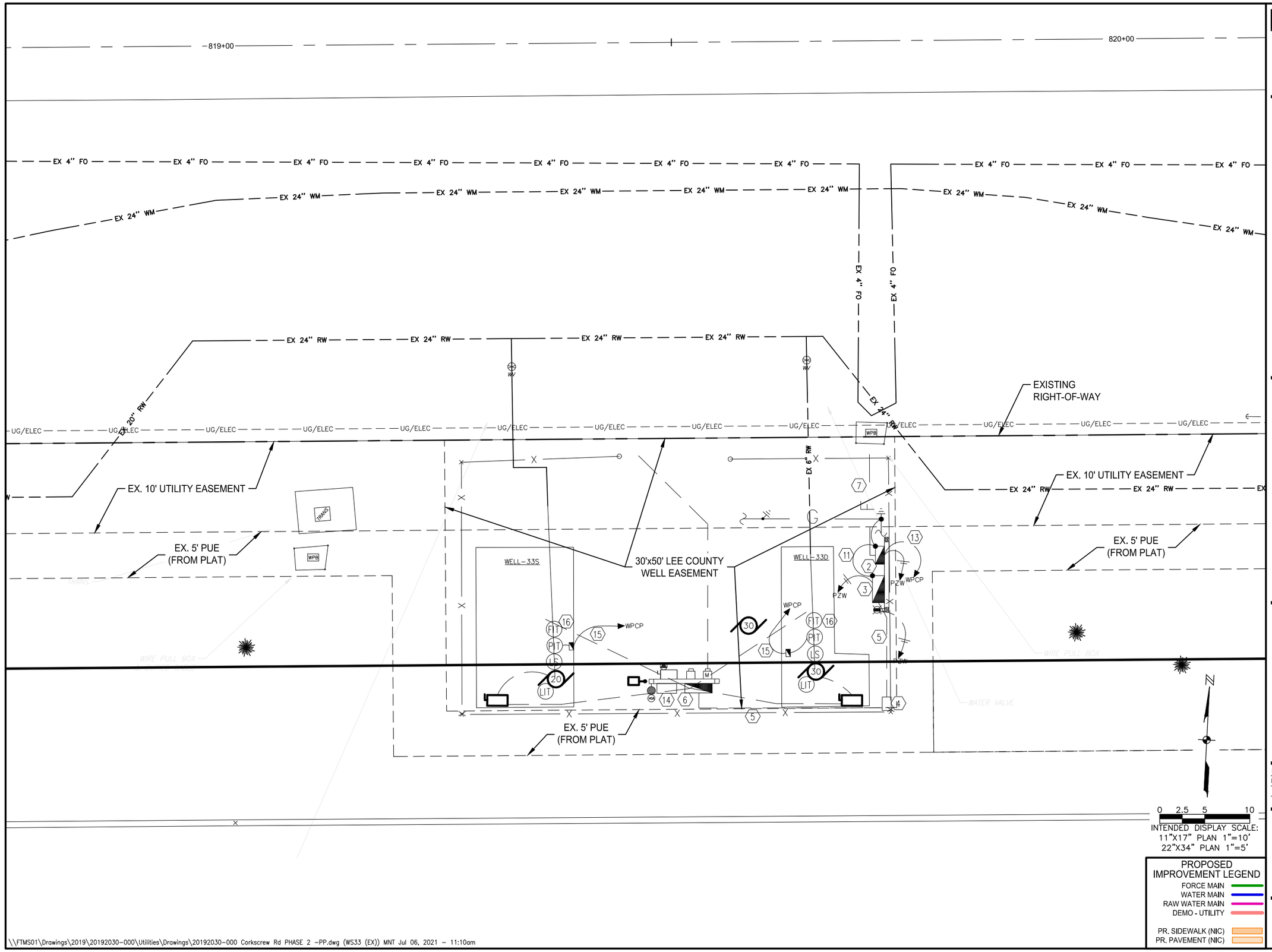
DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Well Site 32 at Station 835+00

SHEET NUMBER

18

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (18) MNT Jul 06, 2021 - 11:08am



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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Well Site 33 - Existing Plan

SHEET NUMBER

19

819+00

820+00

EX 4" FO

EX 24" WM

EX 24" RW

UG/ELEC

EX 20" RW

EX. 10' UTILITY EASEMENT

EX. 5' PUE
(FROM PLAT)

TRANS.

WPB

30'x50' LEE COUNTY
WELL EASEMENT

WIRE PULL BOX
& BURIED CABLE

WELL-33S

WELL-33D

RE-POSITION BOTH
CONTROL PANELS

EX 6" RW

PROPOSED
6" RW - PVC DR18
(UNDERGROUND)

6" RW - 90° HOR. BEND

ROTATE EXISTING
ABOVEGROUND PIPING

+/- 90°

PROPOSED
DOWN PIPE

FIT
PIT
LS
LIT
20
30

DEMO EXISTING
CONTROL PANEL

RE-POSITION
DISCONNECT

NEW CONCRETE PAB

REMOVE EXISTING DOWN PIPE
AND CONNECT TO EX. 6
WITH SLEEVE OR MJ FITTING

6" RW - 90° HOR. BEND

EX. 10' UTILITY EASEMENT

EX. 5' PUE
(FROM PLAT)

DEMO EXISTING
CONTROL PANEL

WIRE PULL BOX

WATER VALVE

N

0 2.5 5 10

INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=10'
22"X34" PLAN 1"=5'

PROPOSED
IMPROVEMENT LEGEND

- FORCE MAIN
- WATER MAIN
- RAW WATER MAIN
- DEMO - UTILITY
- PR. SIDEWALK (NIC)
- PR. PAVEMENT (NIC)

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (WS33 (RKS)) MNT Jul 06, 2021 - 11:11am

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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Well Site 33 - RKS Plan

SHEET NUMBER

20

819+00

820+00

EX 4" FO

EX 24" WM

24" WM - 45° HOR. BEND

EX 24" RW

24" WM - DIP

24"X20" RW - REDUCER

24"X6" RW - TEE

24" RW - GATE VALVE

20" RW

20" RW - DIP

24" RW - DIP

UG/ELEC

SUGGESTED ADJUSTMENT TO CONDUIT

6" RW - GATE VALVE

CONNECT TO EX. WELL #33S

6" RW - 90° HOR. BEND

PROPOSED FENCE

TRANS.

WELL-33S

FIT

PIT

LS

20

LIT

30

WELL-33D

PROPOSED RIGHT-OF-WAY

REMAINDER OF 30'x50' LEE COUNTY WELL EASEMENT

6" RW

PROPOSED 6" RW - PVC DR18 (UNDERGROUND)

REMOVE 90° BEND AND CONNECT TO EXISTING 6" MAIN

PROPOSED 20' GATE

SUGGESTED ADJUSTMENT TO WIRE PULL BOXES

PROPOSED 10' UTILITY EASEMENT

N

0 2.5 5 10

INTENDED DISPLAY SCALE:
11"X17" PLAN 1"=10'
22"X34" PLAN 1"=5'

PROPOSED IMPROVEMENT LEGEND

FORCE MAIN
WATER MAIN
RAW WATER MAIN
DEMO - UTILITY

PR. SIDEWALK (NIC)
PR. PAVEMENT (NIC)

\\FTMS01\Drawings\2019\20192030-000\Utilities\Drawings\20192030-000 Corkscrew Rd PHASE 2 -PP.dwg (WS33 (PR)) MNT Jul 06, 2021 - 11:13am

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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

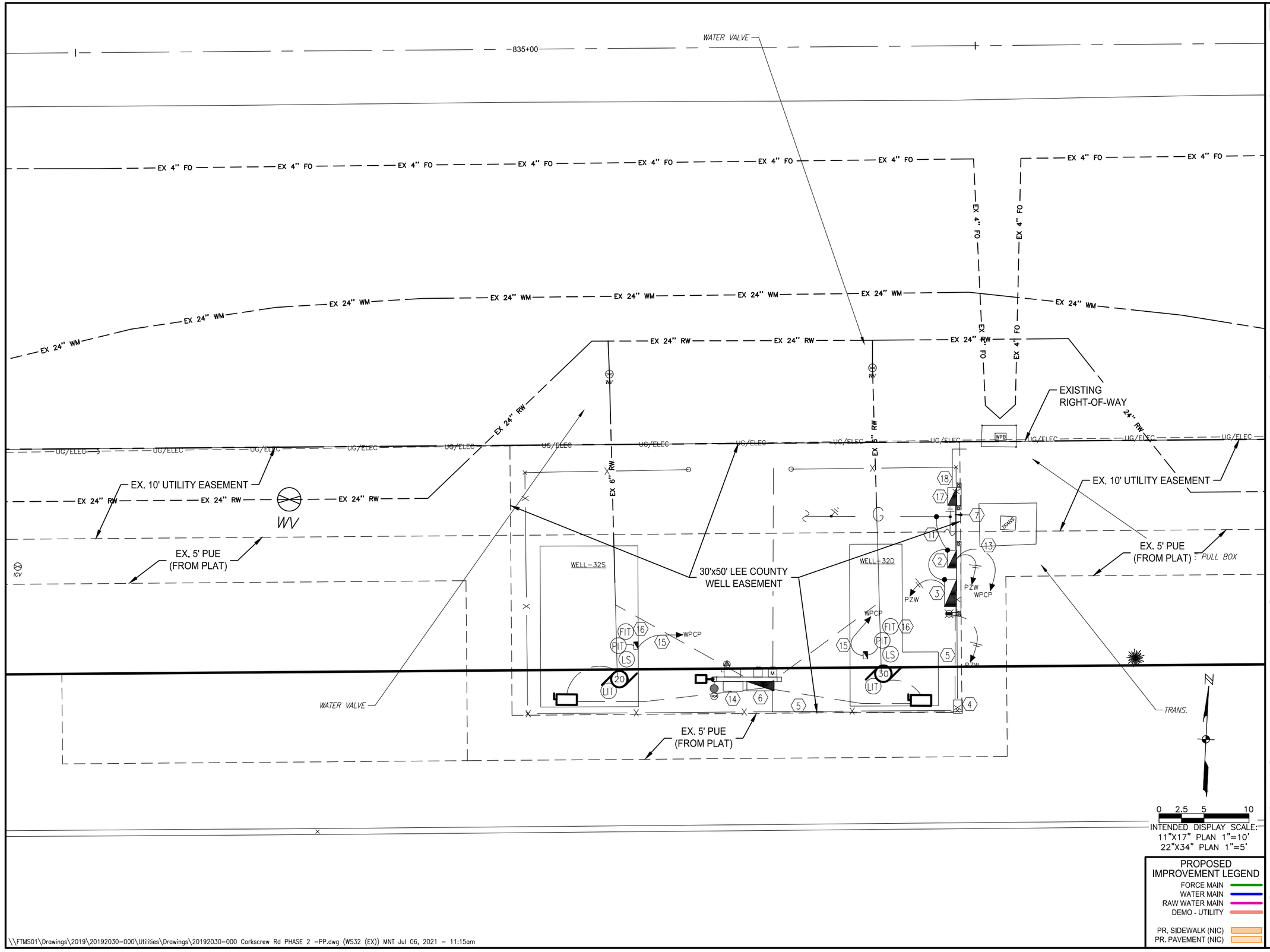
NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Well Site 33 - Final Plan

SHEET NUMBER

21



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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

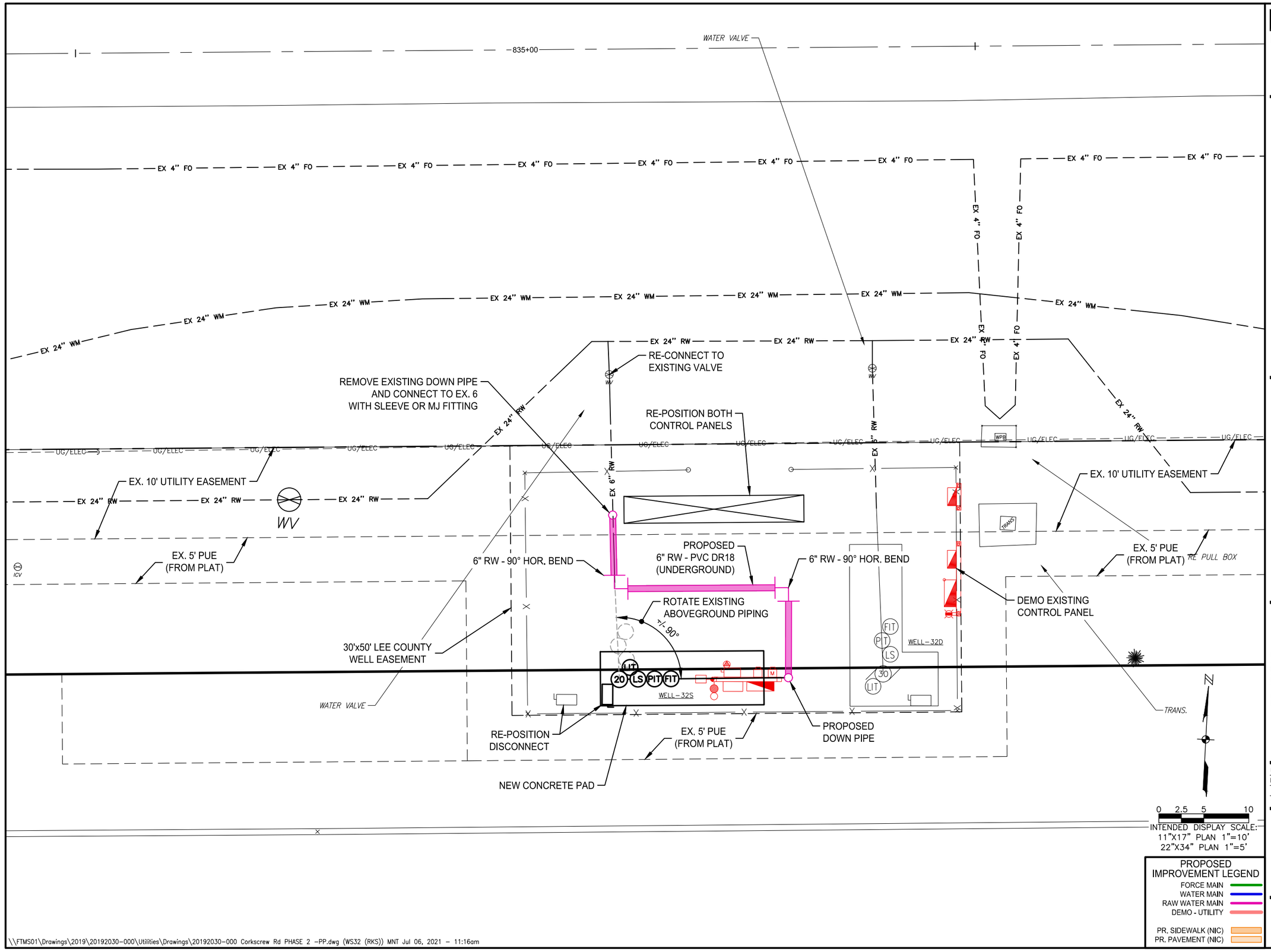
NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Well Site 32 - Existing Plan

SHEET NUMBER

22



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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

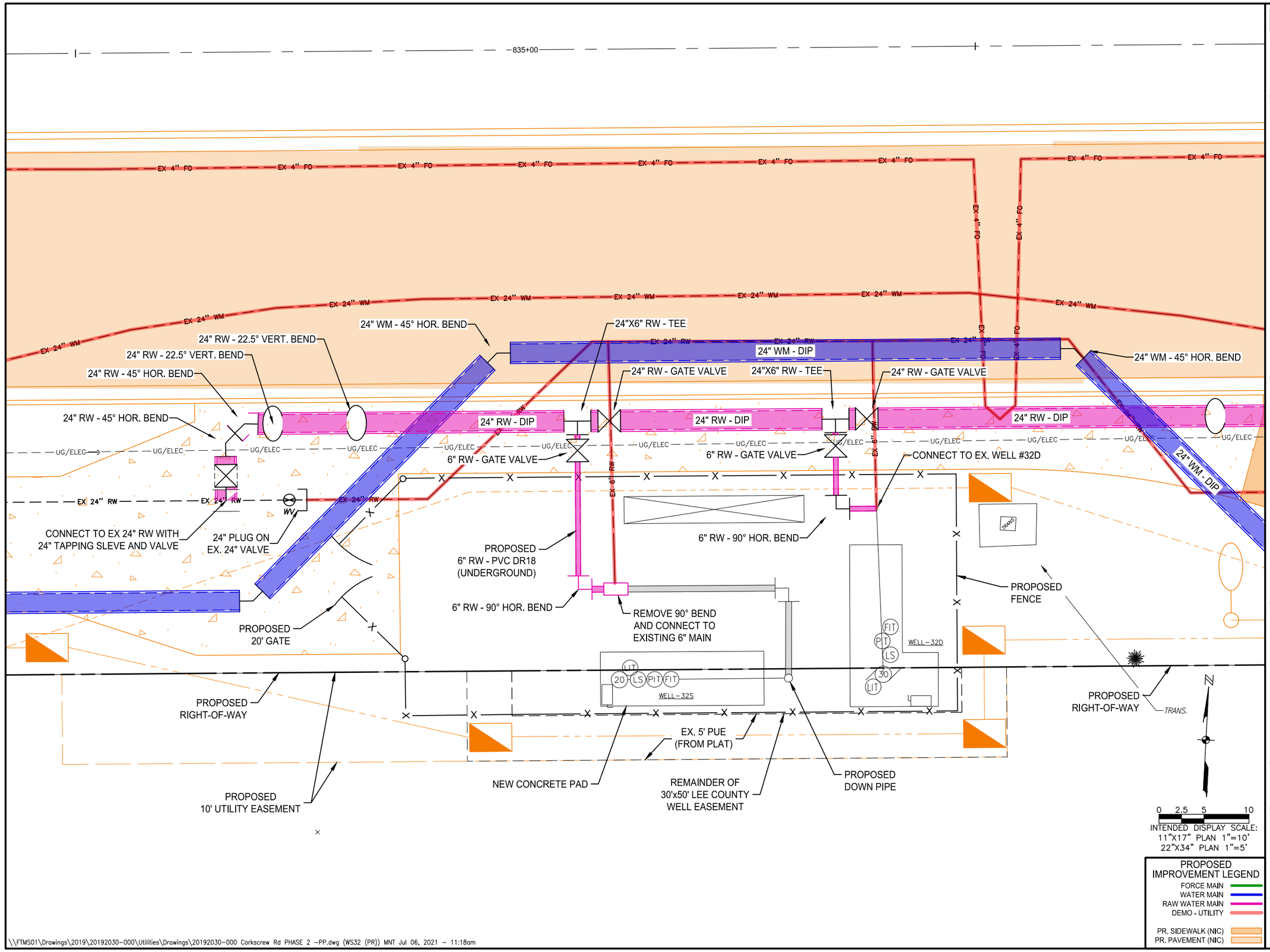
NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Well Site 32 - RKS Plan

SHEET NUMBER

23



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LEE COUNTY

Corkscrew Utilities Relocation (Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

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SCALE:	As Shown

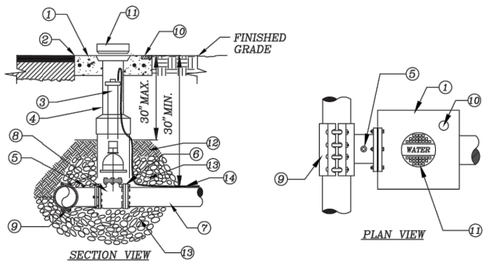
Well Site 32 - Final Plan

SHEET NUMBER

24

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

N.T.S.

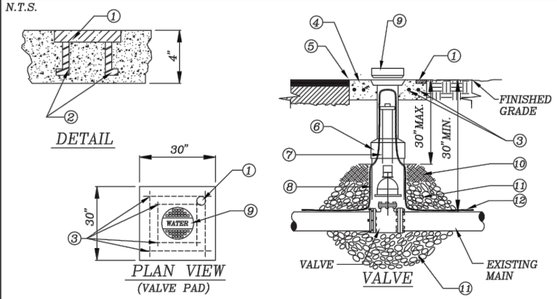


1. CONCRETE PAD (SEE VALVE INSTALLATION DETAIL)
2. SET TOP OF BOX FLUSH WITH FINISHED GRADE
3. EXTENSION STEM IF TOP OF OPERATING NUT IS MORE THAN 30" BELOW FINISH GRADE
4. VALVE BOX (SEE VALVE INSTALLATION DETAIL)
5. OUTLET FOR TESTING
6. MJ RESTRAINED
7. MAIN SIZE VARIES
8. TAPPING VALVE (SEE VALVE 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)
11. CAST IRON DROP COVER MARKED "WATER","SEWER", OR "REUSE"
12. COMPACTED SUITABLE EARTH BACKFILL
13. 3/4" GRANULAR MATERIAL #57 STONE
14. 12 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE (SEE LCU STANDARD DETAIL)

REV: 12/10/2015

STANDARD DETAIL NO. 6.2
LEE COUNTY UTILITIES
VALVE INSTALLATION

N.T.S.

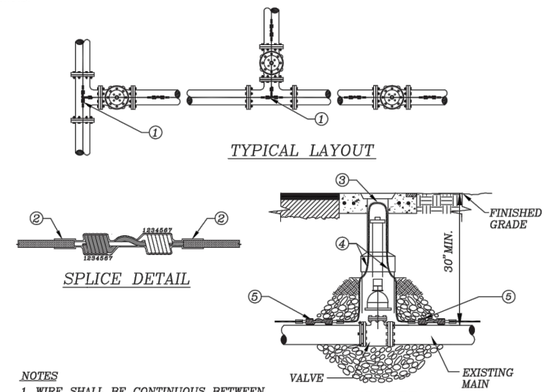


1. BRASS PLATE: SIZE OF VALVE, VALVE TYPE No. OF TURNS & DIRECTION TO OPEN VALVE M.F.G. & YEAR INSTALL SYSTEM "WATER" OR "SEWER" OR "REUSE" OR "FIRE"
2. ANCHOR
3. EIGHT (8) #4 BARS OVERLAP EACH CORNER BY 2"
4. 30"SQ X 4" THK.CONC.PAD SURROUNDING BOX, MIN. 3,000 P.S.I. POURED IN PLACE
5. SET TOP OF BOX 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
11. 3/4" GRANULAR MATERIAL #57 STONE
12. 12 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE (SEE LCU STANDARD DETAIL)

REV: 12/10/2015

STANDARD DETAIL NO. 6.3
LEE COUNTY UTILITIES
LOCATING WIRE FOR PRESSURE MAINS

N.T.S.



NOTES

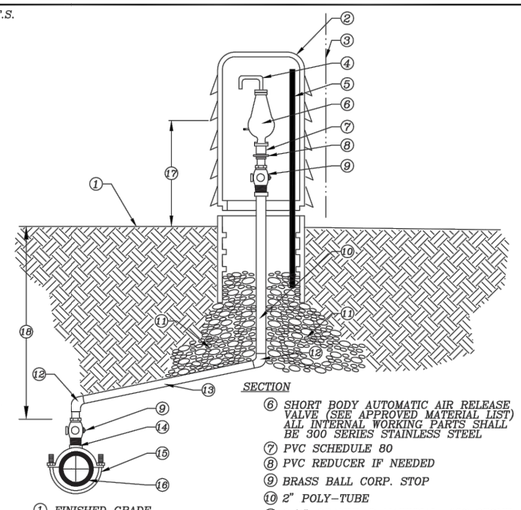
1. WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES. THE PVC RISER PIPE SHALL BE NOTCHED AND THE WIRE ATTACHED TO THE RISER PIPE TO ALLOW FOR THE WIRE TO FIT INSIDE THE CAST IRON VALVE BOX WITHOUT SHEARING THE WIRE.
2. LOCATING WIRE SHALL BE LAID ON TOP OF THE MAIN, AND SHALL BE TAPED TO IT AT 10' INTERVALS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

1. SPLICE RUN TOGETHER, KEEP CLEAR OF FITTING, TYPICAL
2. COVER SPLICE WITH 2 WRAPS OF 10 MIL. POLYETHYLENE TAPE
3. 6" LOOP OF BARE WIRE, 9" MAX. DEPTH TO TOP OF BARE WIRE
4. 12 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE
5. SPLICE (SEE DETAIL THIS SHEET)

REV: 12/10/2015

STANDARD DETAIL NO. 6.4
LEE COUNTY UTILITIES
AUTOMATIC AIR RELEASE VALVE

N.T.S.

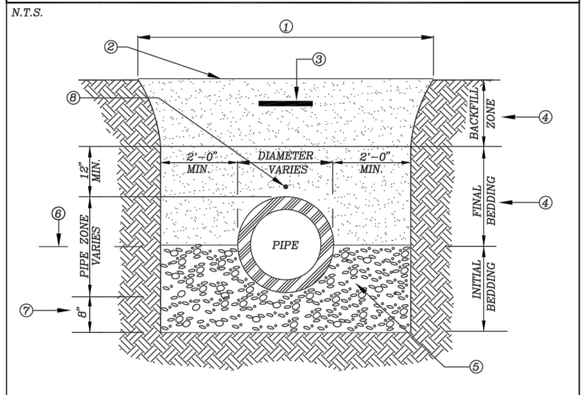


1. FINISHED GRADE
2. PEDESTAL HOUSING (SEE APPROVED MATERIAL LIST) COLORS: BLUE–WATER GREEN–SEWER, PANTONE–REUSE
3. EDGE OF RIGHT–OF–WAY
4. PVC STREET ELL
5. S.S. POST WITH S.S. HARDWARE AND S.S. LOCKING HASP WITH BRASS LOCK
6. SHORT BODY AUTOMATIC AIR RELEASE VALVE (SEE APPROVED MATERIAL LIST) ALL INTERNAL WORKING PARTS SHALL BE 300 SERIES STAINLESS STEEL
7. PVC SCHEDULE 80
8. PVC REDUCER IF NEEDED
9. BRASS BALL CORP. STOP
10. 2" POLY–TUBE
11. 3/4" GRANULAR MATERIAL, #57 STONE
12. 2" BRASS FITTING IF NECESSARY
13. 1% MIN. SLOPE UP, 2" POLY–TUBE
14. TAP AT CROWN OF PIPE
15. 2" DOUBLE STRAP TAPPING SADDLE (SEE APPROVED MATERIAL LIST)
16. EXISTING PRESSURE MAIN
17. 24"
18. 30" MIN.

REV: 12/10/2015

STANDARD DETAIL NO. 6.5
LEE COUNTY UTILITIES
TRENCH CROSS SECTION

N.T.S.

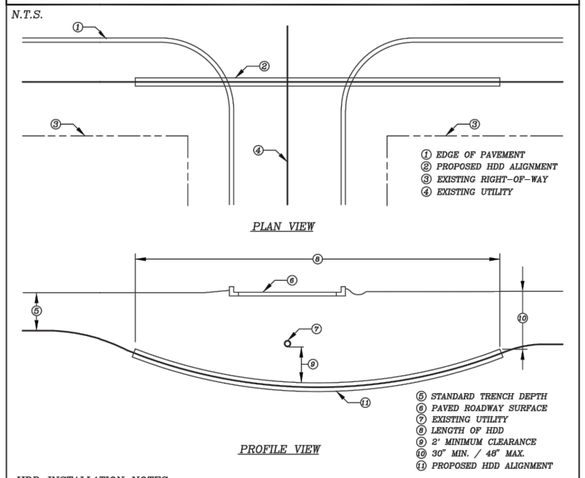


1. EXCAVATED TRENCH
2. FINISHED GRADE
3. MARKING TAPE 12" DEPTH MAX.
4. MATERIALS CLEAN DRY SAND, FINE LIME ROCK OR PIT SHELL MECHANICALLY COMPACTED IN 6" LIFTS TO AT LEAST 95% OF MAX. DENSITY, OR 98% IF UNDER PAVED AREA OF ROADWAY.
5. #57 STONE LOCATED UNDER PIPE OR EXISTING UNDISTURBED SUITABLE MATERIAL
6. SPRING LINE
7. STANDARD 8" MIN TRENCH UNDERCUT 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 COMPACTED IN 6" LIFTS
8. LOCATING WIRE IS REQUIRED FOR ALL PRESSURIZED PIPELINES.

REV: 12/10/2015

STANDARD DETAIL NO. 6.7
LEE COUNTY UTILITIES
HORIZONTAL DIRECTIONAL DRILL UNDER A ROADWAY

N.T.S.



1. EDGE OF PAVEMENT
2. PROPOSED HDD ALIGNMENT
3. EXISTING RIGHT–OF–WAY
4. EXISTING UTILITY

5. STANDARD TRENCH DEPTH
6. PAVED ROADWAY SURFACE
7. EXISTING UTILITY
8. LENGTH OF HDD
9. 2' MINIMUM CLEARANCE
10. 30" MIN. / 48" MAX.
11. PROPOSED HDD ALIGNMENT

HDD INSTALLATION NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LEE COUNTY UTILITIES DESIGN MANUAL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF AFFECTED AGENCIES AND COORDINATION WITH ALL UTILITIES PRIOR TO CONSTRUCTION.
3. ALL CONSTRUCTION MATERIALS, INCLUDING DRILLING FLUID, SHALL BE REMOVED FROM THE SITE PRIOR TO RESTORATION OF DISTURBED AREAS.
4. ALL RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE LCU DESIGN MANUAL.
5. CASING DIAMETER SHALL BE IN ACCORDANCE WITH THE LCU DESIGN MANUAL.
6. NO CASING SPACERS REQUIRED.
7. WHEN CASING IS REQUIRED INSTALL 1" HDPE PIPE ATTACHED TO THE CARRIER PIPE WITH 12 GAUGE DOUBLE INSULATED COPPER WIRE INSIDE THE HDPE PIPE.

REV: 12/10/2015

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FL License No. 69783

LEE COUNTY

Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

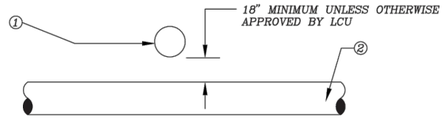
Details 1 of 3

SHEET NUMBER

D-01

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

N.T.S.



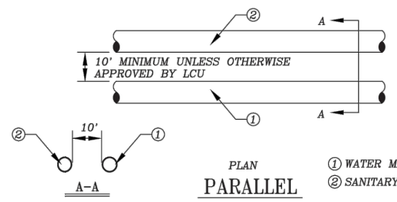
SECTION

CROSSINGS

① WATER MAIN
② SANITARY SEWER MAIN

NOTE: IF LESS THAN 16" CLEARANCE ENCASE WATER MAIN IN STEEL CASING

N.T.S.



PLAN

PARALLEL

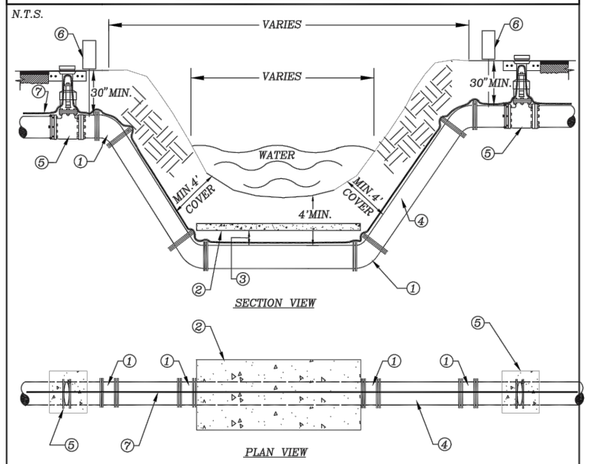
① WATER MAIN
② SANITARY SEWER MAIN

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

N.T.S.

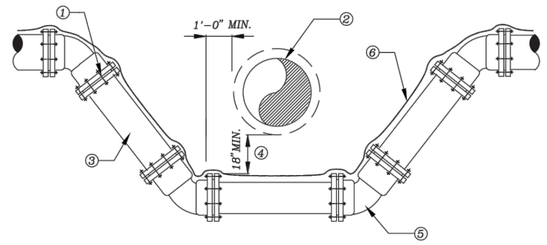


① 45° M.J. ELBOW RESTRAINED
② 2,500 MIN. P.S.I. CONCRETE PROTECTIVE PAD 4' WIDE MIN. X 4" THICK X OVERALL LENGTH OF PIPELINE CROSSING
③ 6"MIN. COMPACTED MATERIAL OR #57 STONE
④ USE PVC C-900 DR 14 MIN. FOR ALL SEWAGE FORCE MAINS. USE PRESSURE CLASS 350 DIP FOR ALL WATER MAINS
⑤ GATE VALVE OR PLUG VALVE INSTALLATION PER LCU STANDARD DETAIL
⑥ AIR RELEASE VALVE (SEE APPROVED MATERIAL LIST)
⑦ 12 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE (SEE LCU STANDARD DETAIL)

REV: 12/10/2015

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

N.T.S.

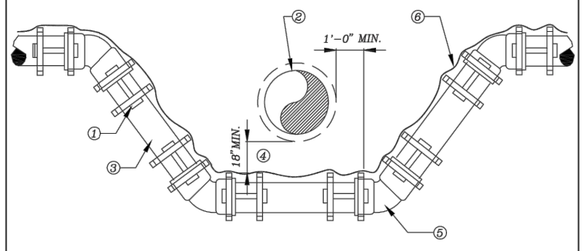


① LCU APPROVED JOINT RESTRAINT FOR D.I., M.J. PIPE AND FITTINGS PLACED IN ACCORDANCE WITH JOINT RESTRAINT SCHEDULE. (SEE DETAIL 6.12)
② CONFLICT PIPE
③ LCU APPROVED DUCTILE IRON PIPING PRESSURE CLASS 350
④ 18" MIN. UNLESS OTHERWISE APPROVED BY LCU
⑤ 45° MECHANICAL JOINT FITTING, TYPICAL
⑥ 12 GAUGE DOUBLE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

REV: 12/10/2015

STANDARD DETAIL NO. 6.11
LEE COUNTY UTILITIES
WASTE WATER FORCE MAIN VERTICAL OFFSET WITH FITTINGS, (P.V.C.)

N.T.S.



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 16" MIN. UNLESS OTHERWISE APPROVED BY LCU
⑤ 45° MECHANICAL JOINT FITTING, TYPICAL
⑥ 12 GAUGE DOUBLE INSULATED COPPER WIRE (SEE LCU STANDARD DETAIL)

REV: 12/10/2015

STANDARD DETAIL NO. 6.12
LEE COUNTY UTILITIES
RESTRAINED LENGTH SCHEDULE

N.T.S.

DUCTILE IRON PIPE

PIPE SIZE (Inches)	MINIMUM RESTRAINED PIPE LENGTH (FEET)					
	HORIZONTAL BENDS				DEAD END	HORIZONTAL TEE
	90°	45°	22-1/2°	11-1/4°		
4	17	7	4	2	29	6
6	23	10	5	2	40	17
8	29	12	6	3	53	29
10	35	14	7	4	63	38
12	41	17	8	4	74	49
16	51	21	11	5	94	68
24	69	29	14	7	131	105
30	81	34	17	8	156	129

PVC PIPE

PIPE SIZE (Inches)	MINIMUM RESTRAINED PIPE LENGTH (FEET)					
	HORIZONTAL BENDS				DEAD END	HORIZONTAL TEE
	90°	45°	22-1/2°	11-1/4°		
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

A COMPLETE JOINT RESTRAINING SCHEDULE FOR ALL ENCOUNTERED VERTICAL & HORIZONTAL BENDS, VERTICAL OFFSETS, TEES, AND DEAD ENDS SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER.

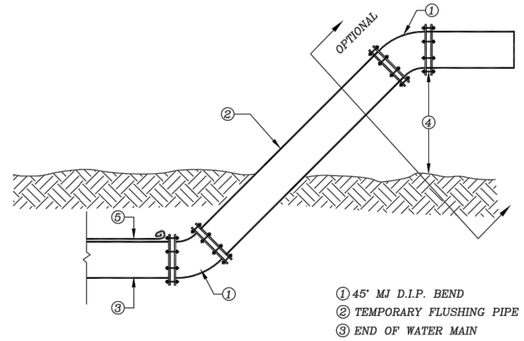
LENGTH FIGURES BASED ON FOLLOWING:

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. 6.13
LEE COUNTY UTILITIES
WATER MAIN FLUSHING DETAIL

N.T.S.



① 45° MJ D.I.P. BEND
② TEMPORARY FLUSHING PIPE
③ END OF WATER MAIN
④ 24" MIN.

NOTES:

1. FLUSHING DETAIL TO BE USED ON WATER LINES 8" DIAMETER OR GREATER.
2. FLUSHING PIPE SHALL BE THE SAME DIAMETER AS WATER MAIN.
3. CONTRACTOR SHALL PROVIDE ADEQUATE DRAINAGE FOR FLUSHED WATER.
4. PROVIDE M.J. CAP IF ASSEMBLY IS LEFT IN PLACE UNATTENDED.
5. 12 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE (SEE LCU STANDARD DETAIL)

REV: 12/10/2015

JOHNSON ENGINEERING
JOHNSON ENGINEERING, INC.
2122 JOHNSON STREET
P.O. BOX 1550
FORT MYERS, FLORIDA 33902-1550
PHONE: (239) 334-0046
FAX: (239) 334-3661
E.B. #642 & L.B. #642

DAVID BRICE TROUTEAUD, PE
FL License No. 69783

LEE COUNTY

Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

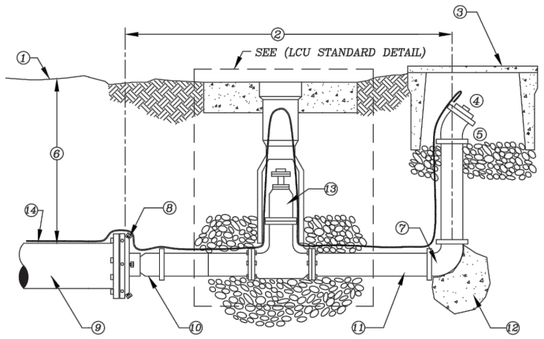
Details 2 of 3

SHEET NUMBER

D-02

STANDARD DETAIL NO. 6.14
LEE COUNTY UTILITIES
BLOW OFF DETAIL

N.T.S.



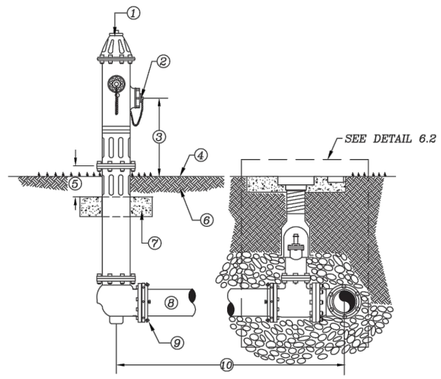
1. FINISHED GRADE
2. 5'–0" MAX.
3. WATER METER BOX W/GRAVEL BOTTOM (SEE APPROVED MATERIAL LIST)
4. 2" THREADED PLUG
5. 2"–45° BEND
6. 30" MIN.
7. 2"–90° BEND
8. M.J. CAP WITH 2" TAP
9. END OF WATER MAIN, R.J. PER SCHEDULE
10. 2" THREADED
11. 2" P.V.C.(SCH 80) P.V.C. MALE ADAPTER
12. POURED IN PLACE THRUST BLOCKING (SEE DETAIL 9.20)
13. 2" DIAMETER GATE VALVE
14. 12 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE (SEE LCU STANDARD DETAIL)

NOTE:
ALL PIPING TO BE 2" P.V.C. (SCH 80) THREADED FITTINGS OR SOLVENT WELDED FITTINGS

REV: 12/10/2015

STANDARD DETAIL NO. 6.24
LEE COUNTY UTILITIES
FIRE HYDRANT ASSEMBLY

N.T.S.

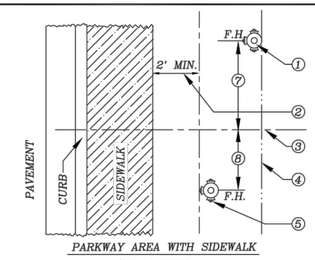


1. FIRE HYDRANT: STANDARD A.W.W.A. SAFETY YELLOW (SEE APPROVED MATERIAL LIST)
2. PUMPER CONNECTION FACING AS PER FIRE DISTRICT RECOMMENDATION
3. 18" MIN. – 24" MAX.
4. FINISHED GRADE
5. 6" MIN. CLEARANCE
6. COMPACTED FILL
7. 30" X 30" X 4" CONCRETE BREAK AWAY CONCRETE PAD, 3000 P.S.I.
8. PIPE TO BE D.I.P., PRESSURE CLASS 350
9. RESTRAINED JOINTS, FROM HYDRANT TO WATER MAIN
10. VARIABLE DISTANCE, IF GREATER THAN 100' A VALVE SHALL BE INSTALLED AT HYDRANT BASE

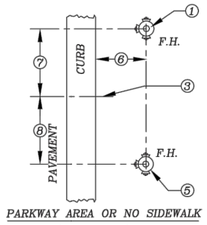
REV: 12/10/2015

STANDARD DETAIL NO. 6.25
LEE COUNTY UTILITIES
FIRE HYDRANT LOCATIONS/CLEARANCE

N.T.S.

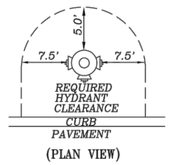


PARKWAY AREA WITH SIDEWALK
(PLAN VIEW)



PARKWAY AREA OR NO SIDEWALK
(PLAN VIEW)

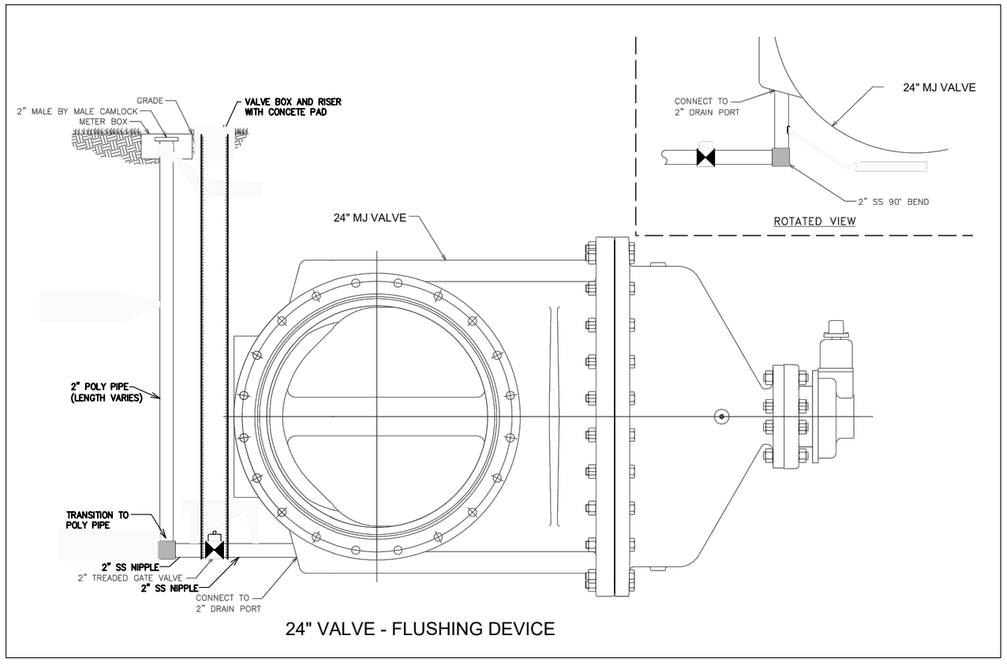
1. PREFERRED LOCATION
2. F.H. TO BE LOCATED 2' MINIMUM FROM EDGE OF SIDEWALK
3. P.T. OR P.C. OF CURB RETURN
4. PROPERTY LINE RIGHT–OF–WAY OR LIMIT OF EASEMENT
5. ACCEPTABLE LOCATION WITH CURB RADIUS OF 20' OR MORE
6. BETWEEN 2'–0" MIN. AND 6'–0" MAX.
7. 6'–0"
8. 4'–0"



(PLAN VIEW)

NOTES
1. OBSTRUCTIONS SUCH AS UTILITY POLES, STREET SIGNS, IRRIGATION BOXES, FENCES, ETC. SHALL NOT BE PLACED BETWEEN CURB AND HYDRANT.
2. SOME LOCATIONS APPLY AT EITHER END OF CURB RETURNS.
3. DIMENSION SHOWN ON CONSTRUCTION DRAWINGS SUPERCEDE LOCATIONS SHOWN HERE.

REV: 12/10/2015



24" VALVE - FLUSHING DEVICE

JOHNSON ENGINEERING
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2122 JOHNSON STREET
P.O. BOX 1550
FORT MYERS, FLORIDA 33902-1550
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LEE COUNTY

Corkscrew Utilities Relocation
(Phase 2)
LEE COUNTY, FLORIDA

REVISIONS

NO.	DESCRIPTION	DATE

DATE:	July 6, 2021
PROJECT NO.	20192030-000
FILE NO.	25-46-25
SCALE:	As Shown

Details 3 of 3

SHEET NUMBER

D-03