

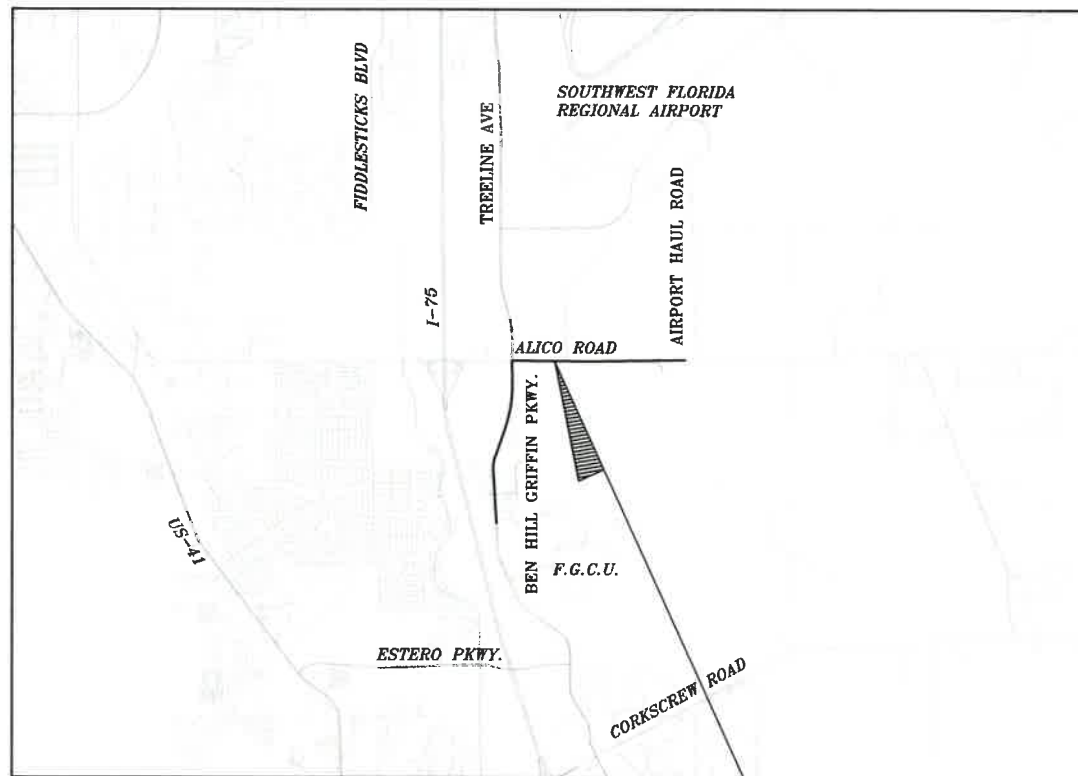


BEN HILL - ALICO ROAD WATER MAIN IMPROVEMENTS

FOR
LEE COUNTY UTILITIES

LOCATED IN
SECTIONS 11, 12, 14 & 35, TOWNSHIP 46 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA
APRIL 5, 2018

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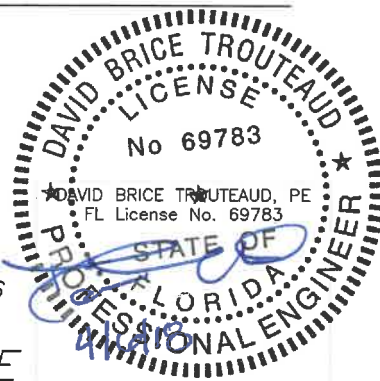
LOCATION MAP
N.T.S.

PROJECT SITE

LEE COUNTY BOARD OF COUNTY COMMISSIONERS:
DISTRICT 1: JOHN E. MANNING
DISTRICT 2: CECIL L. PENDERGRASS
DISTRICT 3: LARRY KIKER
DISTRICT 4: BRIAN HAMMAN
DISTRICT 5: FRANK MANN

For Information Regarding This
Project, Contact:
David Brice Trouteaud, PE

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



THIS IS TO CERTIFY THAT THESE PLANS AND ASSOCIATED
CONSTRUCTION PROJECTS ARE IN SUBSTANTIAL COMPLIANCE
WITH THE LEE COUNTY LAND DEVELOPMENT CODE:

DATE _____ 69783
David Brice Trouteaud, P.E. FL LIC #
DESIGN ENGINEER

DEVELOPMENT ORDER APPROVED:
PUBLIC WORKS ADMINISTRATION

DATE _____
DOUG MEURER
DIRECTOR OF PUBLIC WORKS

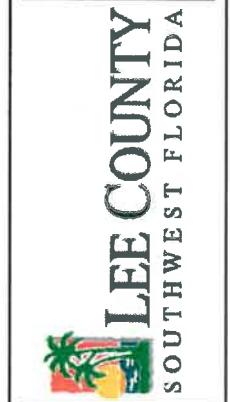
Final Construction Plans

DESIGN CONSULTANT



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

**JOHNSON
ENGINEERING**
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BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA

NO.	DATE	DESCRIPTION

Water Main Improvements
Final Construction Plans
Cover

SHEET NUMBER
01

GENERAL NOTES

- A. All work shall conform to the latest revision of the Lee County Utilities Manual on file at the Lee County Utilities Division (LCU), 1500 Monroe Street, P.O. Box 398, Fort Myers, Florida 33902.
- B. Any quantities shown on plans are not verified by LCU.
- C. At the site keep and maintain one record copy of all Contract Documents, reference documents and all technical documents submitted in good order. As the work progresses, the Florida Registered Professional Engineer (David Brice Troutaud) or his designated representative 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, electric, gas, communication, and other services by off-set distance to permanent improvements such as building and curbs.

These Record Drawings must be certified by the Engineer, who prepared the plans and signs and seals these plans. The Record Drawings shall include vertical and horizontal alignment of all water, sewer, and effluent reuse lines, valves, tees, bends, reducers, hydrants, pump stations, service connections, meter boxes and/or pads, and other pertinent structures. Pipeline runs in excess of 500 feet, without fittings shall include vertical alignment information at 500 foot intervals. Said alignment shall be tied to permanent improvements, such as roadway and/or railroad centerlines and rights-of-way, building and property corners, and shall be certified by a Florida Registered Professional Land Surveyor (Surveyor). The Surveyor can coordinate with the Contractor to install the necessary appurtenances on buried utilities to facilitate the survey after construction is completed. In addition, property strap numbers and street names shall be shown on the plan.

On a case by case basis, LCU may waive the requirement for certification by a Surveyor. However, prior consent must first be obtained from LCU. The County shall withhold final acceptance of the project until the requirement for record drawings and related records has been met. Record Drawings without detailed field verified horizontal and vertical locations of all facilities shown will be rejected.
- D. A pre-construction meeting is required before work may begin. LCU shall be notified 48 hours prior to project mobilization.
- E. All work and materials, which do not conform to LCU specifications, are subject to removal and replacement at the Contractor's expense.
- F. 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.
- G. The Contractor shall provide sufficient personnel and equipment on the job at all times during construction to satisfy the specifications and to complete work.
- H. LCU inspection staff may observe project construction.
- I. The Contractor is to uncover all existing lines being tied into and verify grades before beginning construction.
- J. 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 that may occur by his failure to exactly locate and protect existing utilities and structures.
- K. Contractor shall verify all quantities shown on the plans. If any discrepancies in quantities are found, the Contractor shall notify the Engineer and LCU.

- L. All Regulatory and Permitting Agencies' requirements shall be complied with.
- M. Appropriate turbidity control devices, such as silt fences and hay bails, will be utilized during all phases of installation and grading. The Contractor is responsible for submitting the Notice of Intent and Notice of Termination to the EPA in compliance with the County's NPDES permit. The Contractor is responsible for developing and maintaining an effective Storm Water Pollution Prevention Plan.
- N. In the event that hard limestone formation is encountered, making it impossible to excavate to the depth required under this contract, the Contractor may be allowed to reduce the pipe cover to not less than 2 feet while maintaining the LCU required thickness of bedding under the pipe. Such deviation from the plans must be first be approved by LCU and the Engineer prior to the pipe laying. If 2 feet of cover or more can not be attained, the Contractor shall provide other method of construction or pipe protection which shall first be approved by LCU and the Engineer, at no additional cost to the County.
- O. 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. Prior to construction, the Contractor shall verify and be fully responsible for any and all damages that 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.
- P. The Contractor shall contact the Engineer and LCU immediately concerning any conflicts with LCU utilities and/or structures arising during construction of any facilities shown on these drawings.
- Q. Traffic must be maintained at all times in accordance with the latest edition of the Lee County Department of Transportation (LCDOT) and Florida Department of Transportation (FDOT) standard specifications for road and bridge construction.
- R. The Contractor shall verify all utilities and provide at least 48 hours notice to the individual utility companies and FDOT and LCDOT prior to construction.
- S. 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.
- T. 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.
- U. 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.
- V. 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 allowed.
- W. All elevations are based on North American Vertical Datum of 1988 (NAVD 1988).
- X. Horizontal data is based on state plane coordinates for the West Zone of Florida.

ABBREVIATIONS

- ABD = ABANDONED
- AE = ACCESS EASEMENT
- ALT = ALTERNATE
- ARV = AIR RELEASE VALVE
- ASPH = ASPHALT
- BLDG = BUILDING
- CATV = CABLE TELEVISION
- CB = CATCH BASIN
- CMP = CORRUGATED METAL PIPE
- CO = CLEANOUT
- DE = DRAINAGE EASEMENT
- DIP = DUCTILE IRON PIPE
- EOP = EDGE OF PAVEMENT
- ERCPC = ELLIPTICAL REINFORCED CONCRETE PIPE
- EX = EXISTING
- FE = FLARED END SECTION
- FH = FIRE HYDRANT
- FLG = FLANGED
- FM = FORCE MAIN
- FO = FIBER OPTIC
- GV = GATE VALVE
- HDPE = HIGH DENSITY POLY ETHYLENE
- INV = INVERT
- IRR = IRRIGATION
- MH = MANHOLE
- ME = MITERED END SECTION
- MJ = MECHANICAL JOINT
- NIC = NOT IN CONTRACT
- OC = ON CENTER
- PAVT = PAVEMENT
- PKWY = PARKWAY
- PS = PUMP STATION
- PV = PLUG VALVE
- PVC = POLYVINYL CHLORIDE
- RCP = REINFORCED CONCRETE PIPE
- RD = ROAD
- REQ = REQUIRED
- R/W = RIGHT-OF-WAY
- SAN = SANITARY
- SD = STORM DRAIN
- SPEC = SPECIFICATION
- SS = SANITARY SEWER
- ST = STREET
- STA = STATION
- STD = STANDARD
- STM = STORM SEWER
- TEL = TELEPHONE
- TYP = TYPICAL
- UE = UTILITY EASEMENT
- WM = WATER MAIN
- VLV = CONC. VALVE VAULT

LEGEND

- EX XX" FM = EXISTING FORCE MAIN & PIPE SIZE
- XX" FM = PROPOSED FORCE MAIN & PIPE SIZE
- EX XX" WM = EXISTING POTABLE WATER MAIN & SIZE
- PR. XX" WM = PROPOSED WATER MAIN & PIPE SIZE
- XX" SS = PROPOSED SANITARY SEWER MAIN & SIZE
- EX XX" SS = EXISTING SANITARY SEWER MAIN & SIZE
- PR. XX" RU = PROPOSED RECLAIMED WATER MAIN & SIZE
- EX XX" RCWM = EXISTING RECLAIMED WATER MAIN & SIZE
- = PROPOSED PLUG VALVE
- = EX PLUG VALVE
- = EXISTING FIRE HYDRANT
- = PROPOSED AUTOMATIC AIR RELEASE VALVE
- = PROPOSED REDUCER
- = EXISTING SANITARY MANHOLE
- = EXISTING PUMP STATION
- = PROPOSED PLUG
- = SOIL BORING
- = CATCH BASIN
- = WOOD POWER POLE
- = CONCRETE POWER POLE
- = EXISTING WATER METER
- = EXISTING CLEANOUT
- = UNDERGROUND ELECTRIC
- = UNDERGROUND GAS MAIN
- = OVERHEAD POWER LINES
- = STREET SIGN
- = ELECTRIC SERVICE BOX
- = GUY ANCHOR
- = SEWER VALVE
- = WOOD POWER POLE
- = PROPOSED CONSTRUCTION SIGN
- = PROPOSED SIDEWALK
- = EXISTING SAN. SEWER AND WATER MAIN OUTSIDE OF PAVEMENT TO BE GROUTED AND ABANDONED
- = EXISTING SAN. SEWER AND WATER MAIN UNDER PAVEMENT TO BE REMOVED
- = PROPOSED JACK AND BORE
- = TEMPORARY BLOW-OFF
- = FLOW ARROW
- = PROPOSED UTILITY ROLLDOWN
- = EXISTING MH TO BE REHABBED

NOTICE TO ALL CONTRACTORS

IT'S THE LAW IN FLORIDA
2 BUSINESS DAYS BEFORE YOU DIG
CALL SUNSHINE 1-800-432-1111

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

STATE OF FLORIDA
ALL INTERESTS RIGHT-OF-WAY
HORIZONTAL ALIGNING
7-DAY NOTICE REQUIRED
CALL SUNSHINE
1-800-432-1111

STOP
NO 69783

JOHNSON ENGINEERING

2122 JOHNSON STREET
P.O. BOX 1550
FORT MYERS, FLORIDA 33902-1550
TEL: (813) 334-0046
FAX: (813) 334-0061
CELL: (813) 334-8642

DAVID BRICE TROUTAUD, PE
License No. 03721

LEE COUNTY
SOUTHWEST FLORIDA

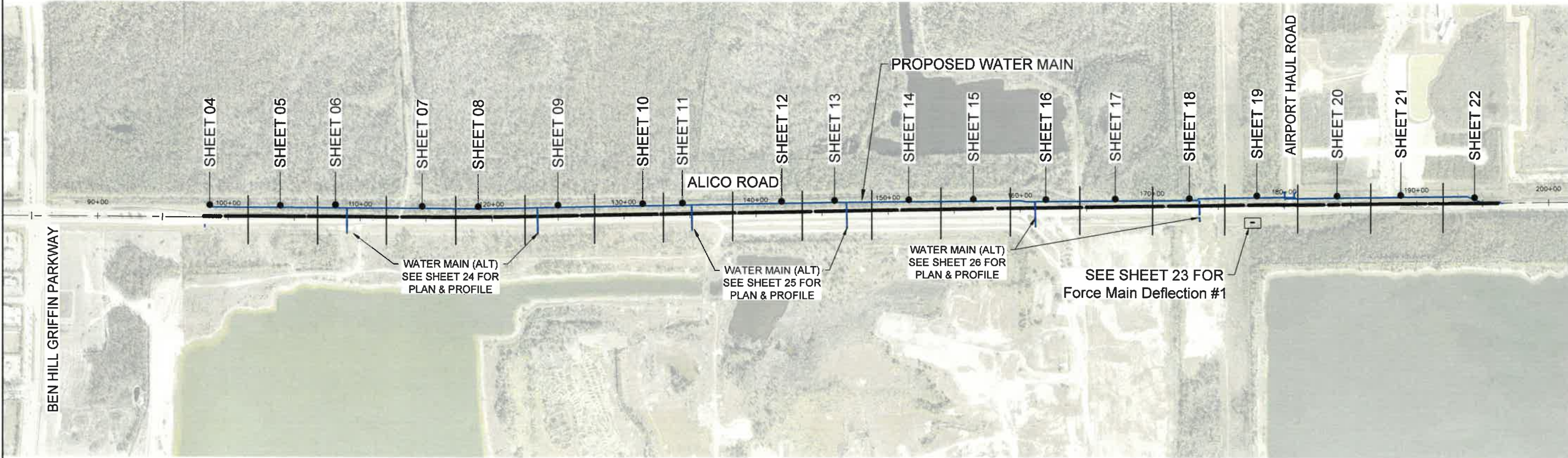
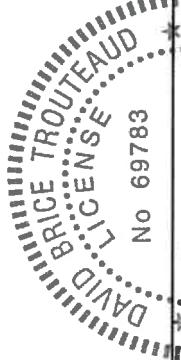
BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA

NO.	DESCRIPTION	DATE

Water Main Improvements
Final Construction Plans
Notes & Legends

SHEET NUMBER

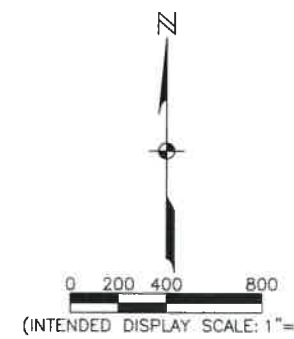
02



AERIAL PHOTOGRAPH: MR. SID 2018

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
239-856-7811
239-856-7742 FAX



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

NO.	REVISIONS DESCRIPTION	DATE

Water Main Improvements
Final Construction Plans
Key Map

SHEET NUMBER

03

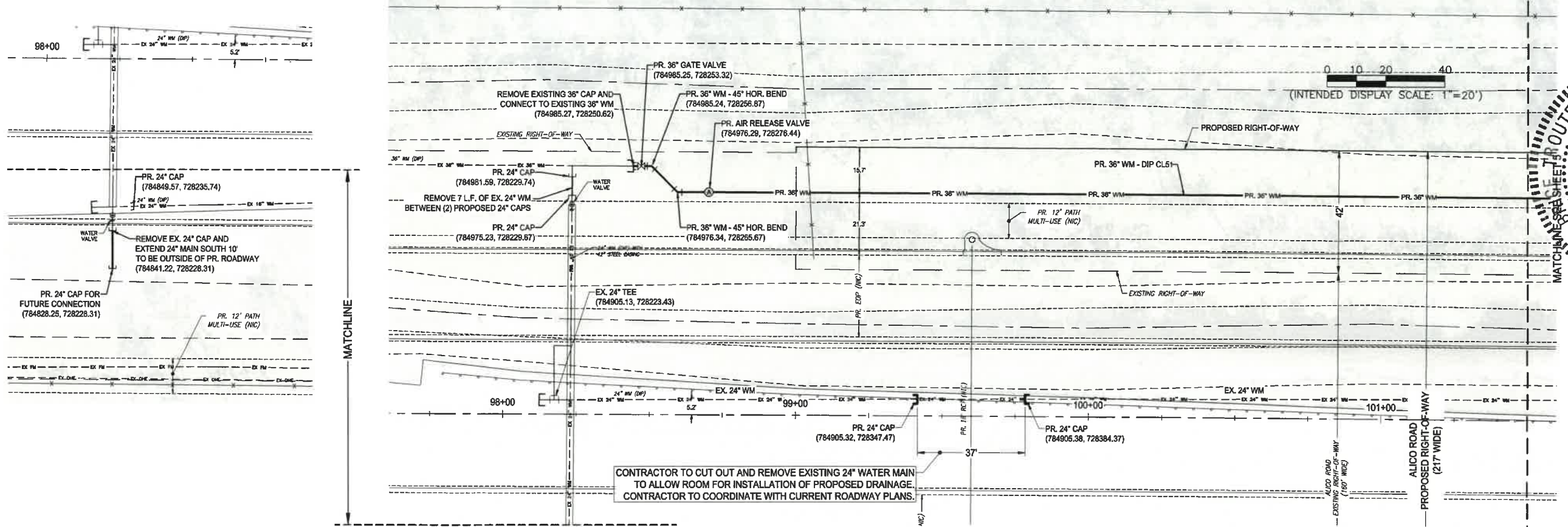
NIC = Not included in this phase of construction.

**BEN HILL - ALICO ROAD
 WATER MAIN IMPROVEMENTS
 LEE COUNTY, FLORIDA**

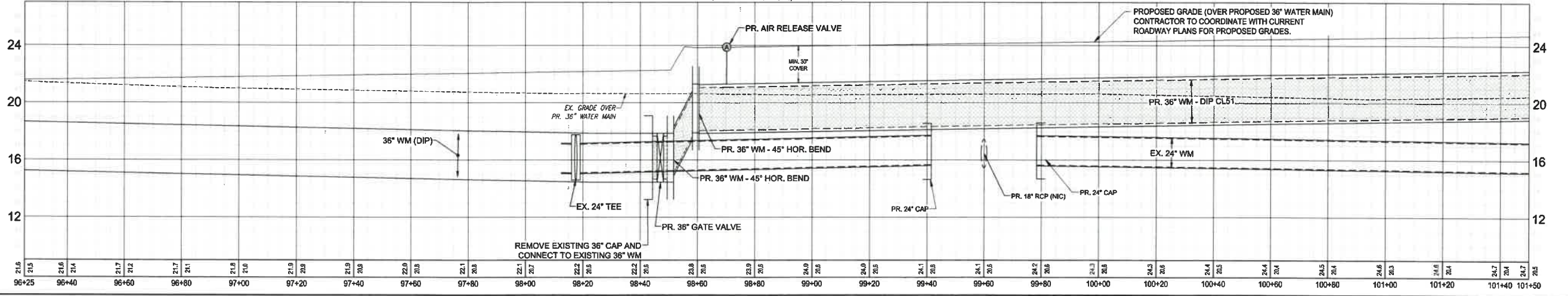
NO.	DATE	DESCRIPTION

DATE: APRIL 5, 2018
 PROJECT NO. 20149745-000
 FILE NO. 11, 12, 14-46-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 96+25 to 101+50

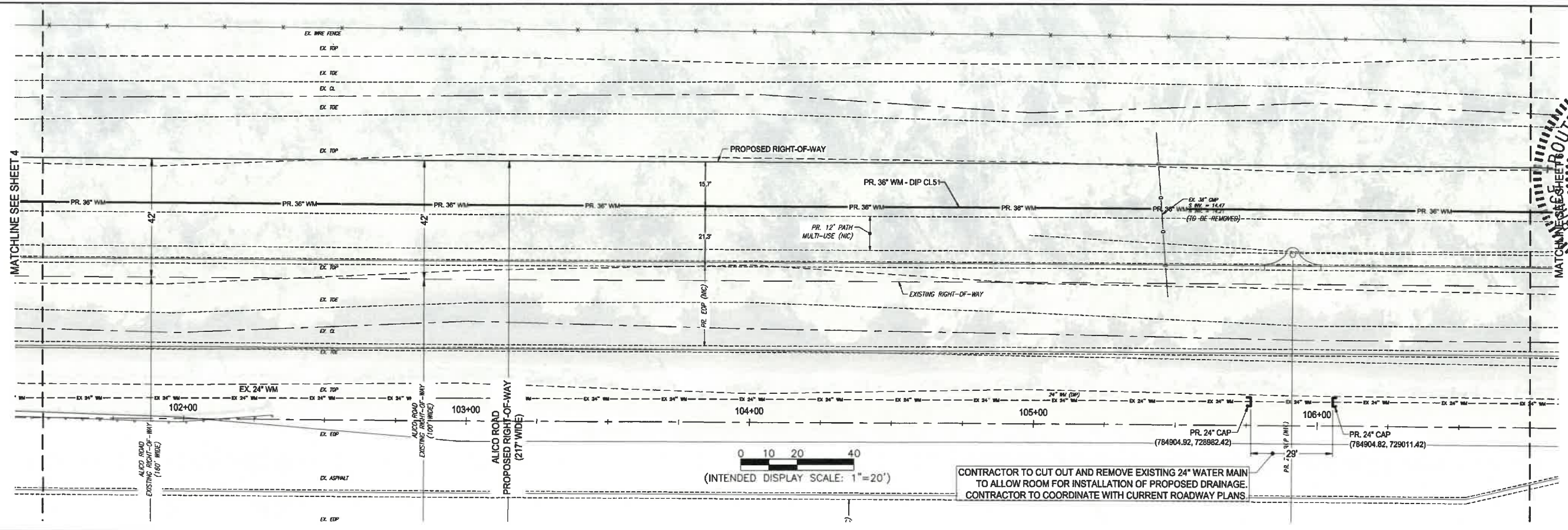


PROFILE VIEW OF Alico Road - Sta: 96+25 to Sta: 101+50
 SCALE: 1" = 20' HOR., 1" = 4' VERT.



- NOTES & LEGENDS:**
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 3. PR. = PROPOSED
 4. EX. = EXISTING
 5. ROADWAY IMPROVEMENT SHOWN, BUT NOT LIMITED TO MULTI-USE PATH, DETENTION AREAS, DITCHES, PAVEMENT, CURBING AND DRAINAGE, MAY OR MAY NOT BE CONSTRUCTED AT THE TIME OF UTILITY INSTALLATION.
 6. CONTRACTOR TO VERIFY TIMING OF ROADWAY CONSTRUCTION AND DEFLECT PROPOSED UTILITIES IF NECESSARY.
 7. CONTRACTOR TO INSTALL BACTERIOLOGICAL SAMPLE / TESTING POINTS EVERY 1,000' ALONG PROPOSED WATER MAIN.
 8. SEE SHEETS 27 & 28 FOR ABANDONMENT AND CONNECTION EXHIBIT.

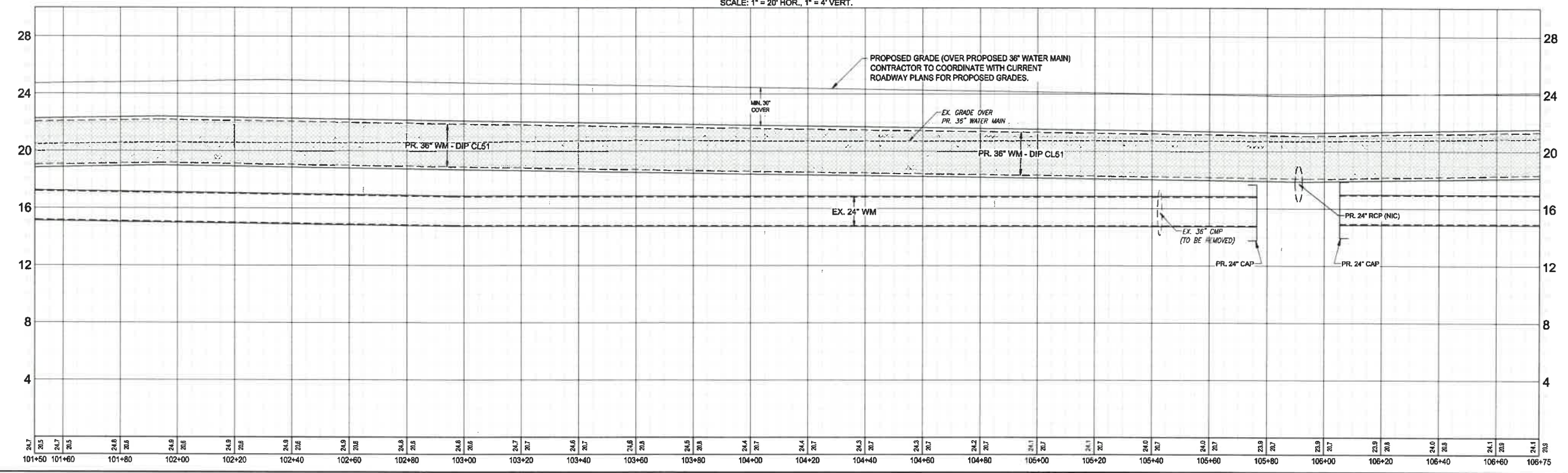
DAVID BRICE, ROUTEAUD, PE
FL License No. 89783



0 10 20 40
(INTENDED DISPLAY SCALE: 1"=20')

CONTRACTOR TO CUT OUT AND REMOVE EXISTING 24" WATER MAIN TO ALLOW ROOM FOR INSTALLATION OF PROPOSED DRAINAGE. CONTRACTOR TO COORDINATE WITH CURRENT ROADWAY PLANS

PROFILE VIEW OF Alico Road - Sta: 101+50 to Sta: 106+75
SCALE: 1" = 20' HOR., 1" = 4' VERT.

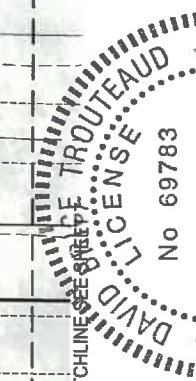


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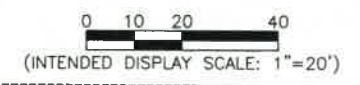
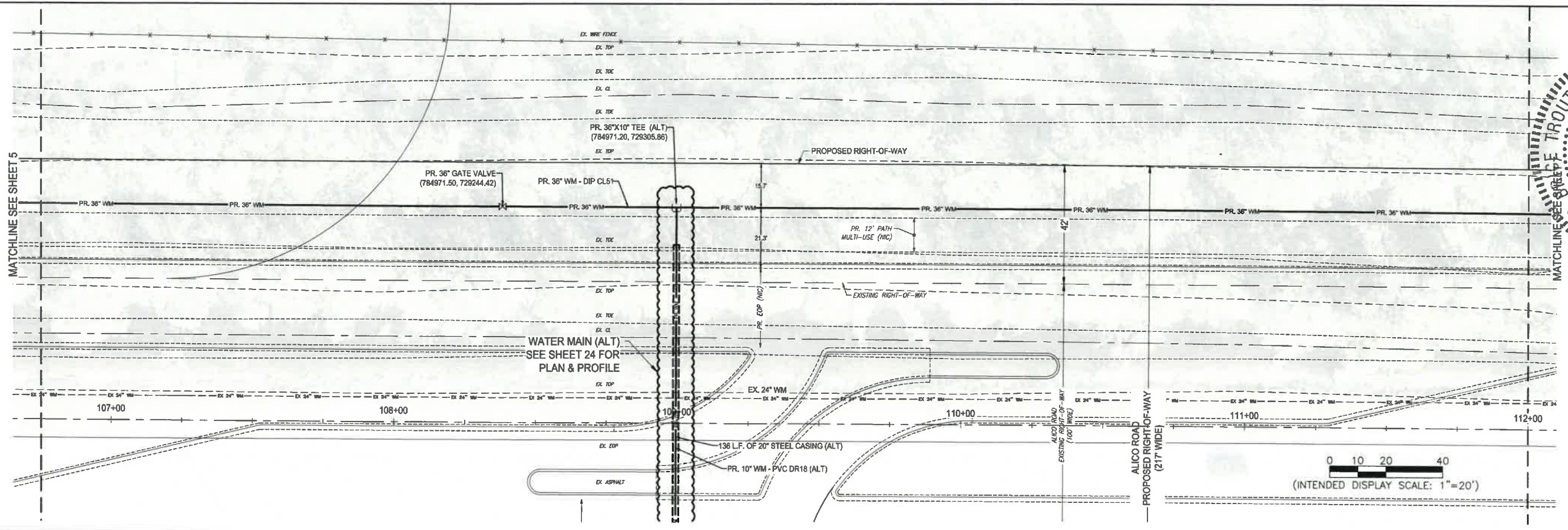
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DATE: APRIL 5, 2018
PROJECT NO. 20149745-000
FILE NO. 11, 12, 14-48-25
SCALE: AS SHOWN

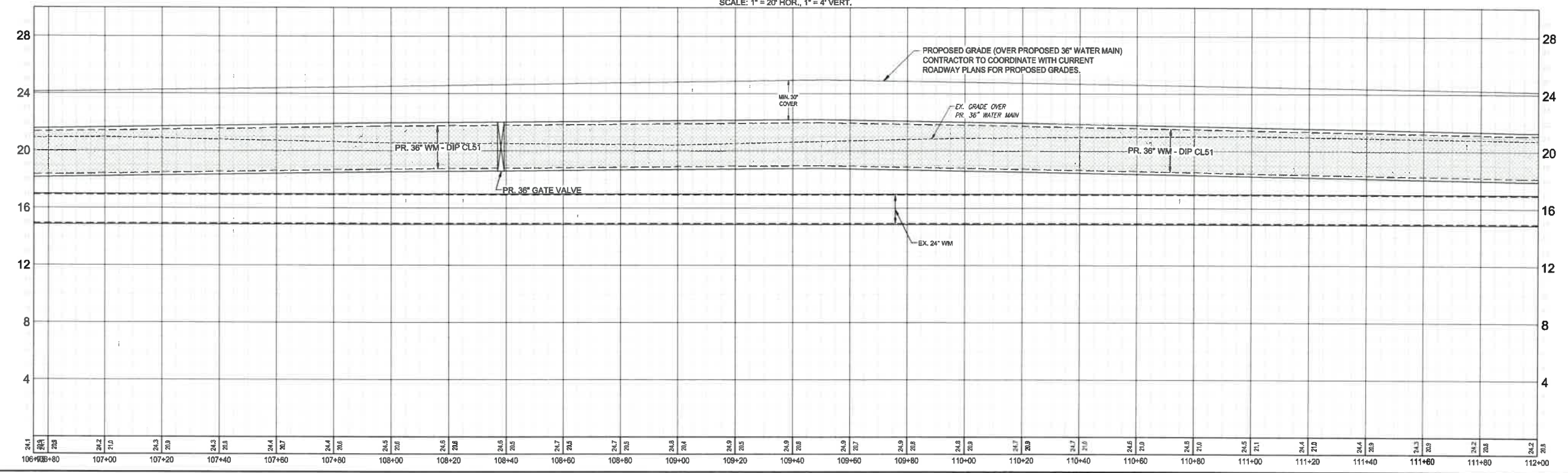
Water Main Improvements
Final Construction Plans
Plan & Profile
Station 101+50 to 106+75



**BEN HILL - ALICO ROAD
 WATER MAIN IMPROVEMENTS
 LEE COUNTY, FLORIDA**



PROFILE VIEW OF Alico Road - Sta: 106+75 to Sta: 112+00
 SCALE: 1" = 20' HOR., 1" = 4' VERT.



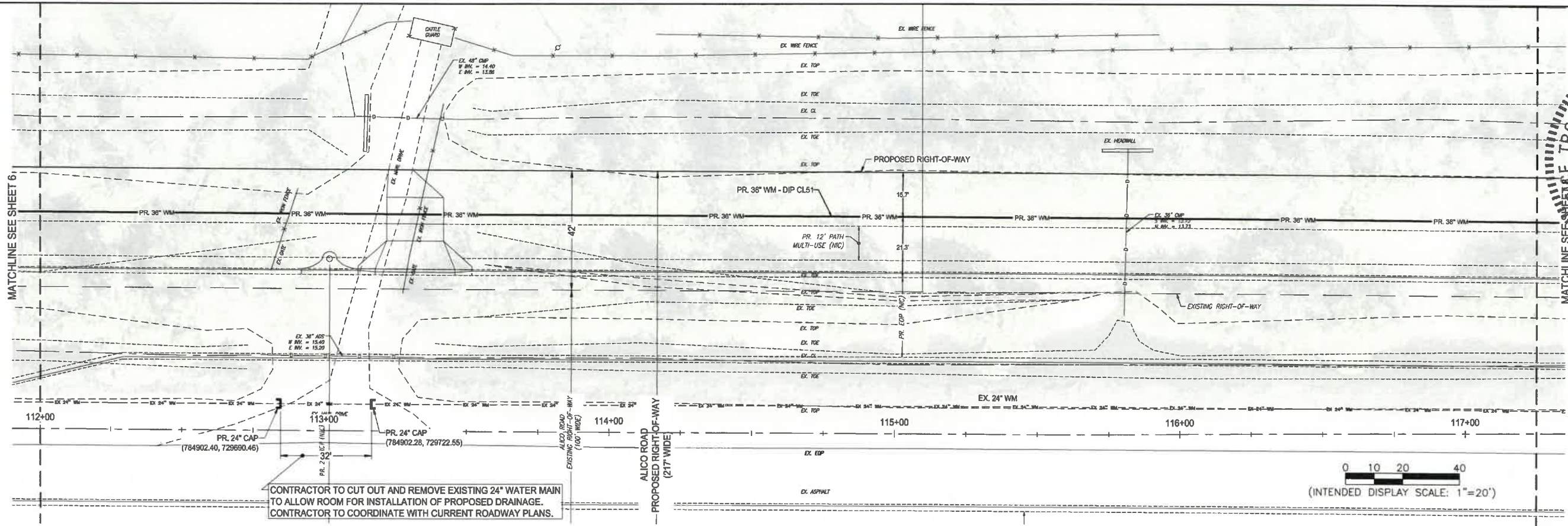
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DATE: APRIL 5, 2018
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 FILE NO. 11, 12, 14-46-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 106+75 to 112+00

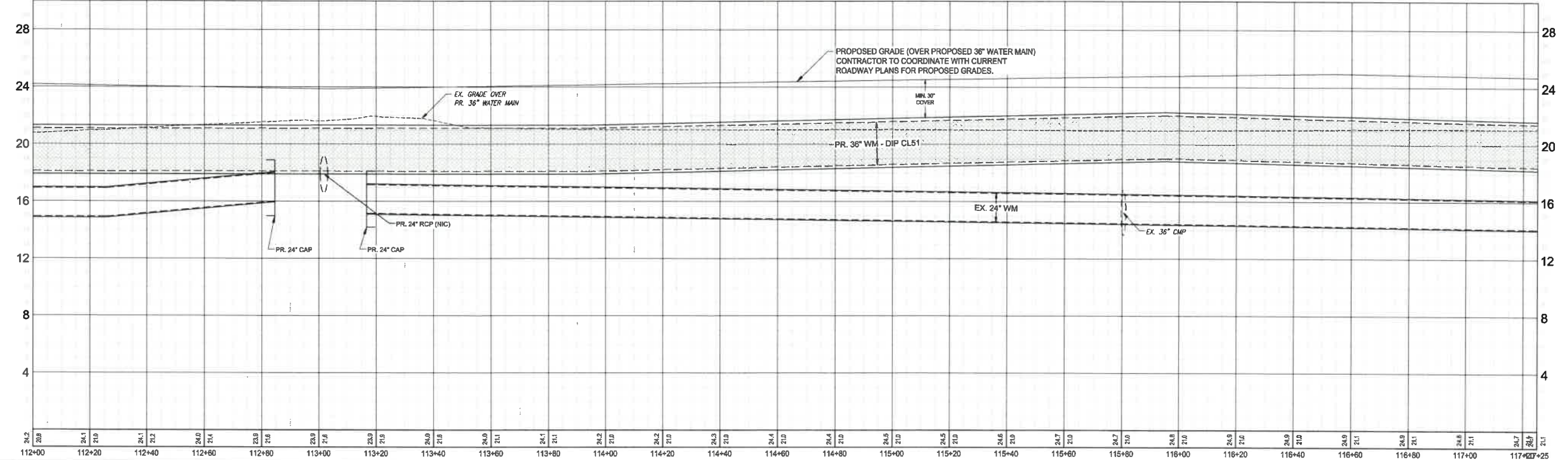
DAVID BRICE TROUPEAU, P.E.
 FL License No. 95783



CONTRACTOR TO CUT OUT AND REMOVE EXISTING 24" WATER MAIN TO ALLOW ROOM FOR INSTALLATION OF PROPOSED DRAINAGE. CONTRACTOR TO COORDINATE WITH CURRENT ROADWAY PLANS.

0 10 20 40
 (INTENDED DISPLAY SCALE: 1"=20')

PROFILE VIEW OF Alico Road - Sta: 112+00 to Sta: 117+25
 SCALE: 1" = 20' HOR., 1" = 4' VERT.

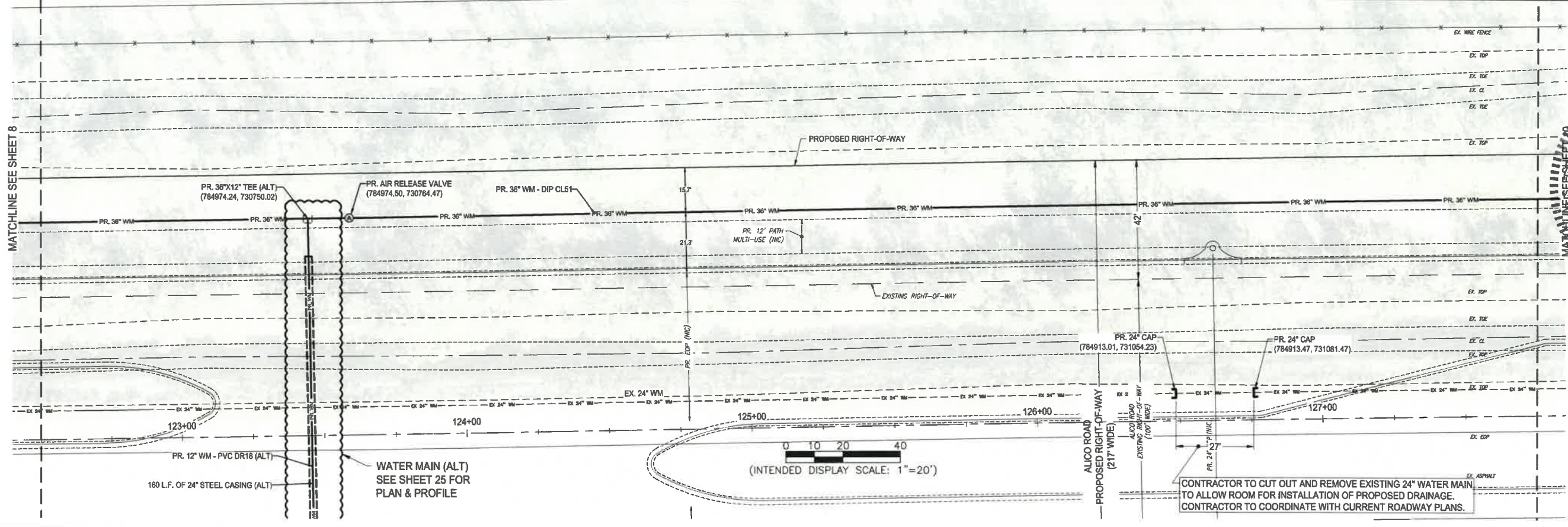


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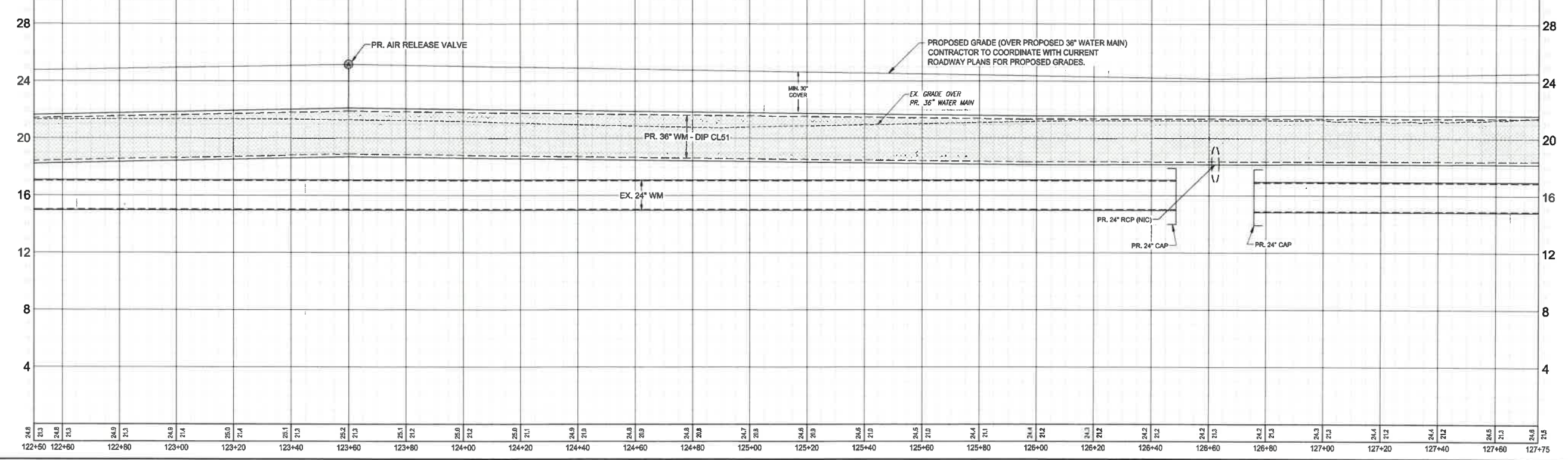
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DATE: APRIL 5, 2018
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 FILE NO. 11, 12, 14-46-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 112+00 to 117+25



PROFILE VIEW OF Alico Road - Sta: 122+50 to Sta: 127+75
 SCALE: 1" = 20' HOR., 1" = 4' VERT.



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 8. SEE SHEETS 27 & 28 FOR ABANDONMENT AND CONNECTION EXHIBIT.

**BEN HILL - ALICO ROAD
 WATER MAIN IMPROVEMENTS
 LEE COUNTY, FLORIDA**

NO.	DESCRIPTION	DATE

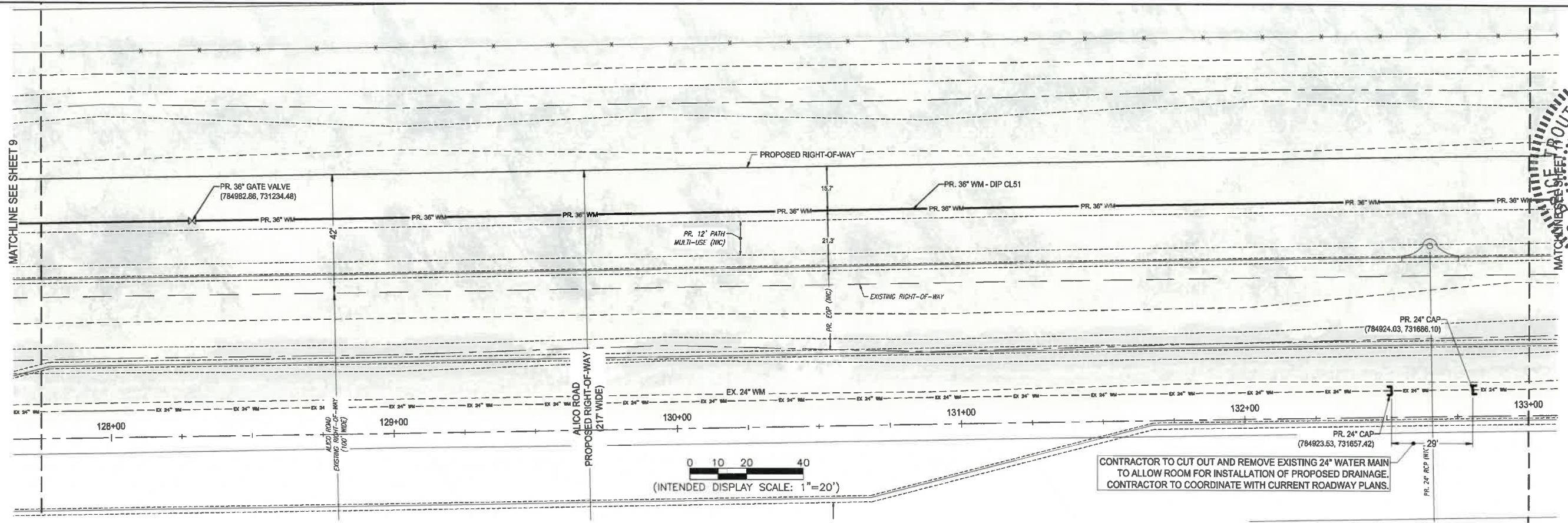
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 FILE NO. 11, 12, 14-48-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 122+50 to 127+75

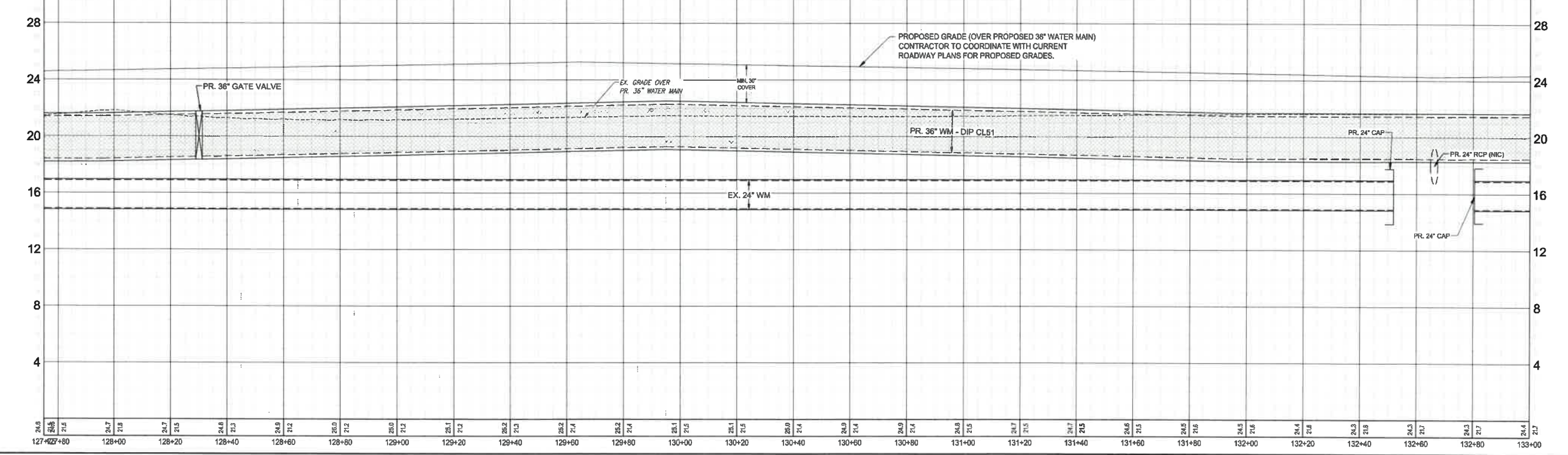
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PROJECT NO. 20149745-000
FILE NO. 11, 12, 14-48-25
SCALE: AS SHOWN

Water Main Improvements
Final Construction Plans
Plan & Profile
Station 127+75 to 133+00
SHEET NUMBER
10

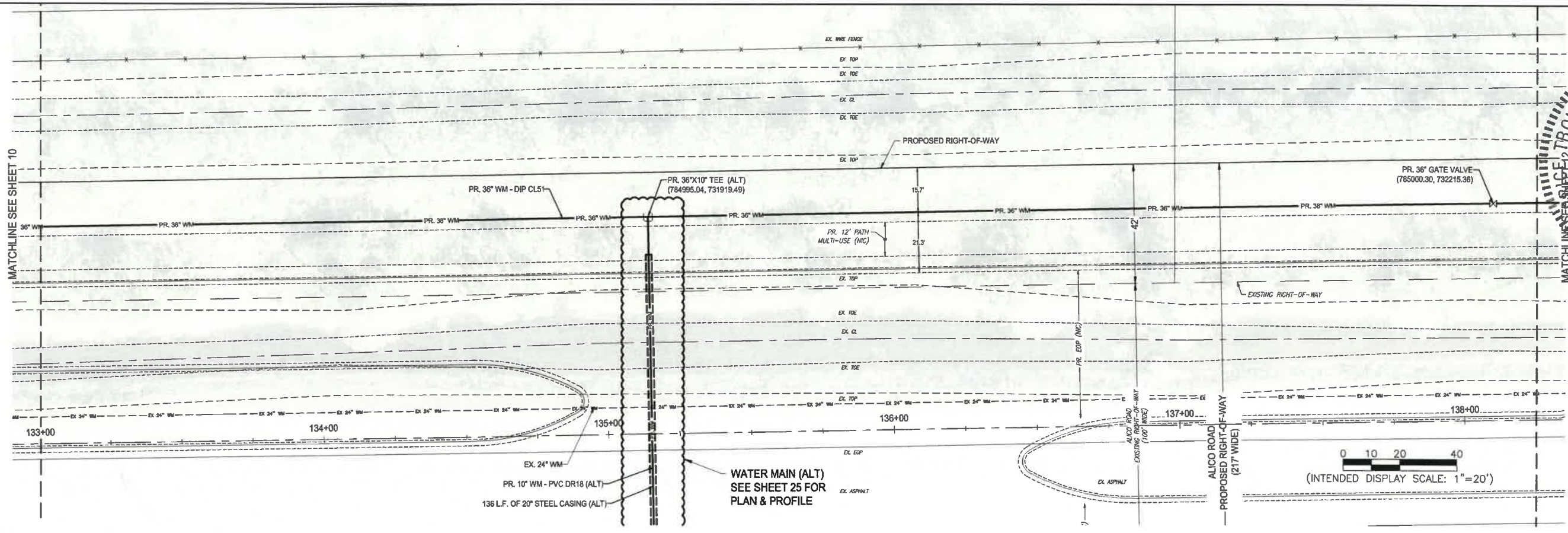


PROFILE VIEW OF Alico Road - Sta: 127+75 to Sta: 133+00
SCALE: 1" = 20' HOR., 1" = 4' VERT.

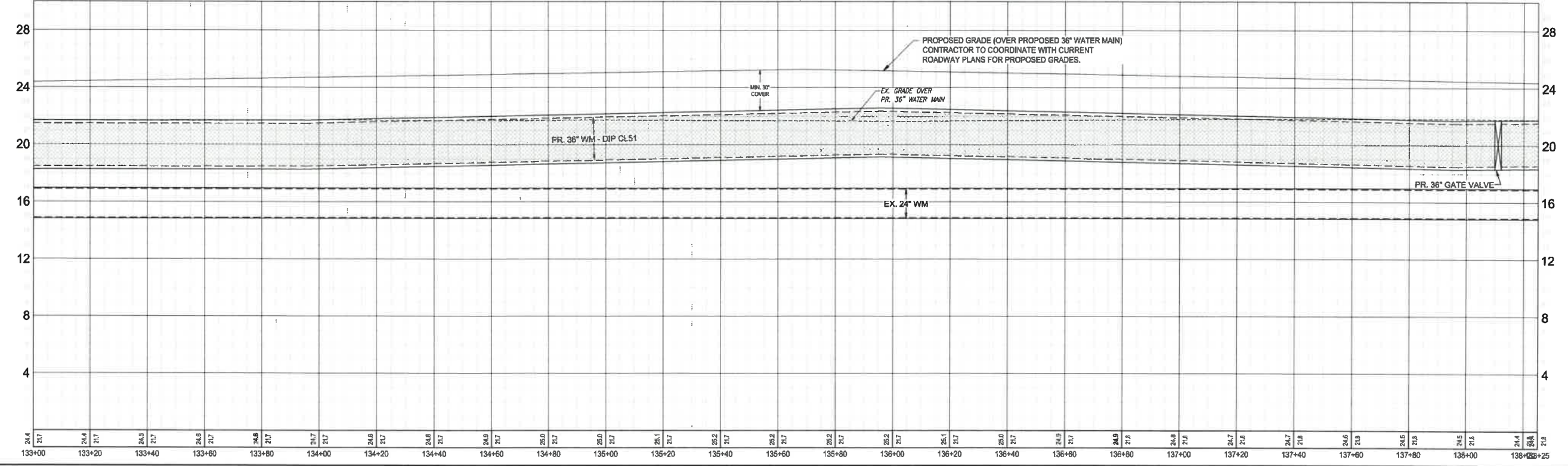


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 6. CONTRACTOR TO VERIFY TIMING OF ROADWAY CONSTRUCTION AND DEFLECT PROPOSED UTILITIES IF NECESSARY.
 7. CONTRACTOR TO INSTALL BACTERIOLOGICAL SAMPLE / TESTING POINTS EVERY 1,000' ALONG PROPOSED WATER MAIN.
 8. SEE SHEETS 27 & 28 FOR ABANDONMENT AND CONNECTION EXHIBIT.

DAVID BRICE TROUPEAU
 LICENSE No 69783



PROFILE VIEW OF Alico Road - Sta: 133+00 to Sta: 138+25
 SCALE: 1" = 20' HOR., 1" = 4' VERT.



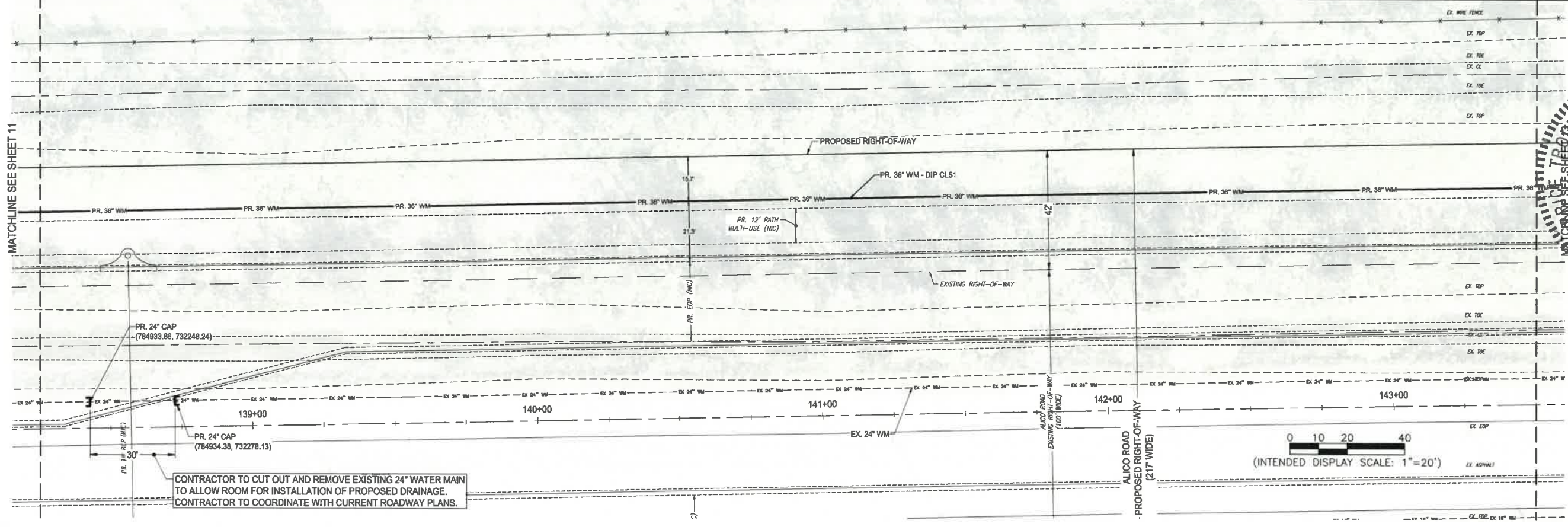
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**BEN HILL - ALICO ROAD
 WATER MAIN IMPROVEMENTS
 LEE COUNTY, FLORIDA**

NO.	REVISIONS DESCRIPTION	DATE

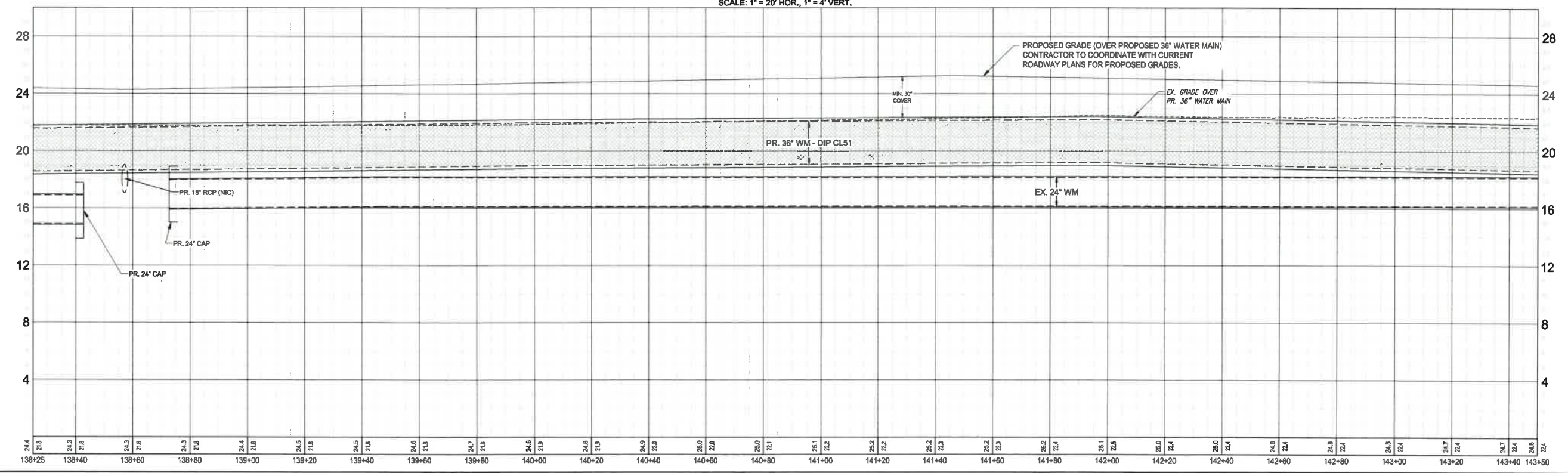
DATE: APRIL 5, 2018
 PROJECT NO. 20149745-000
 FILE NO. 11, 12, 14-48-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 133+00 to 138+25



CONTRACTOR TO CUT OUT AND REMOVE EXISTING 24\"/>

PROFILE VIEW OF Alico Road - Sta: 138+25 to Sta: 143+50
 SCALE: 1\"/>

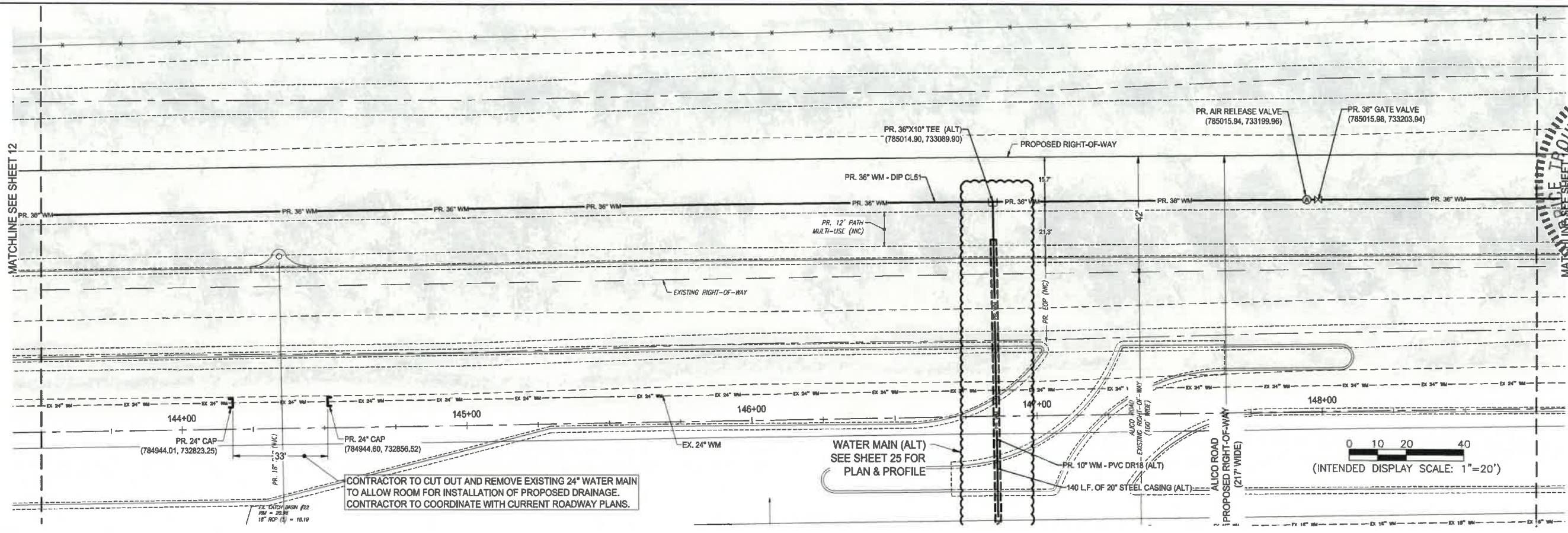


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NO.	DESCRIPTION	DATE

DATE: APRIL 5, 2018
 PROJECT NO. 20149745-000
 FILE NO. 11, 12, 14-48-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 138+25 to 143+50

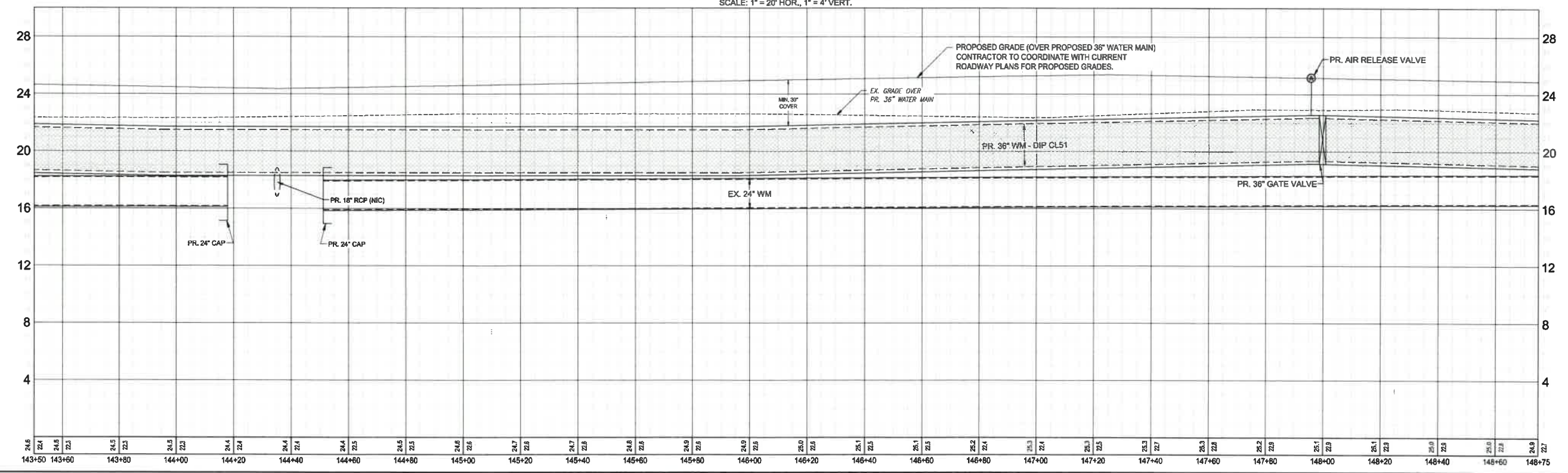


CONTRACTOR TO CUT OUT AND REMOVE EXISTING 24" WATER MAIN TO ALLOW ROOM FOR INSTALLATION OF PROPOSED DRAINAGE. CONTRACTOR TO COORDINATE WITH CURRENT ROADWAY PLANS.

WATER MAIN (ALT) SEE SHEET 25 FOR PLAN & PROFILE

0 10 20 40
 (INTENDED DISPLAY SCALE: 1"=20')

PROFILE VIEW OF Alico Road - Sta: 143+50 to Sta: 148+75
 SCALE: 1" = 20' HOR., 1" = 4' VERT.

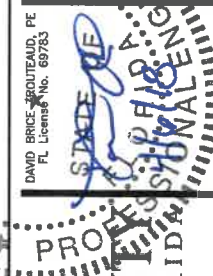
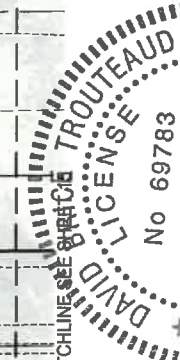


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 8. SEE SHEETS 27 & 28 FOR ABANDONMENT AND CONNECTION EXHIBIT.

NO.	DATE	DESCRIPTION

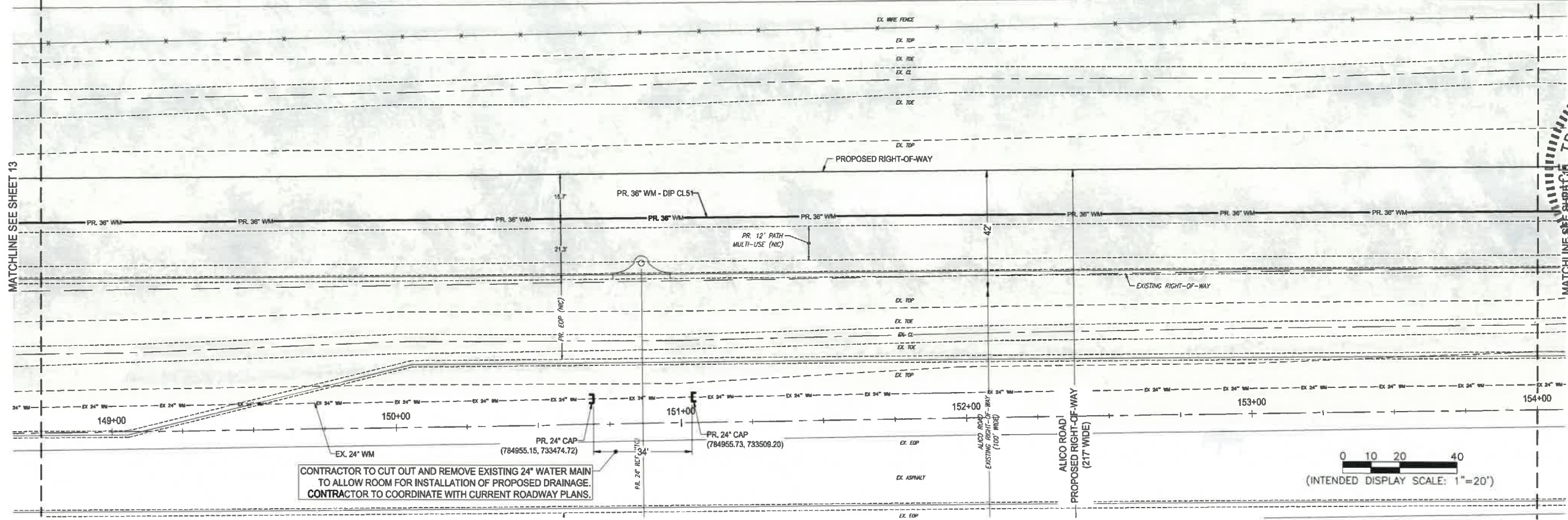
DATE: APRIL 5, 2018
 PROJECT NO. 20149745-000
 FILE NO. 11, 12, 14-46-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 143+50 to 148+75

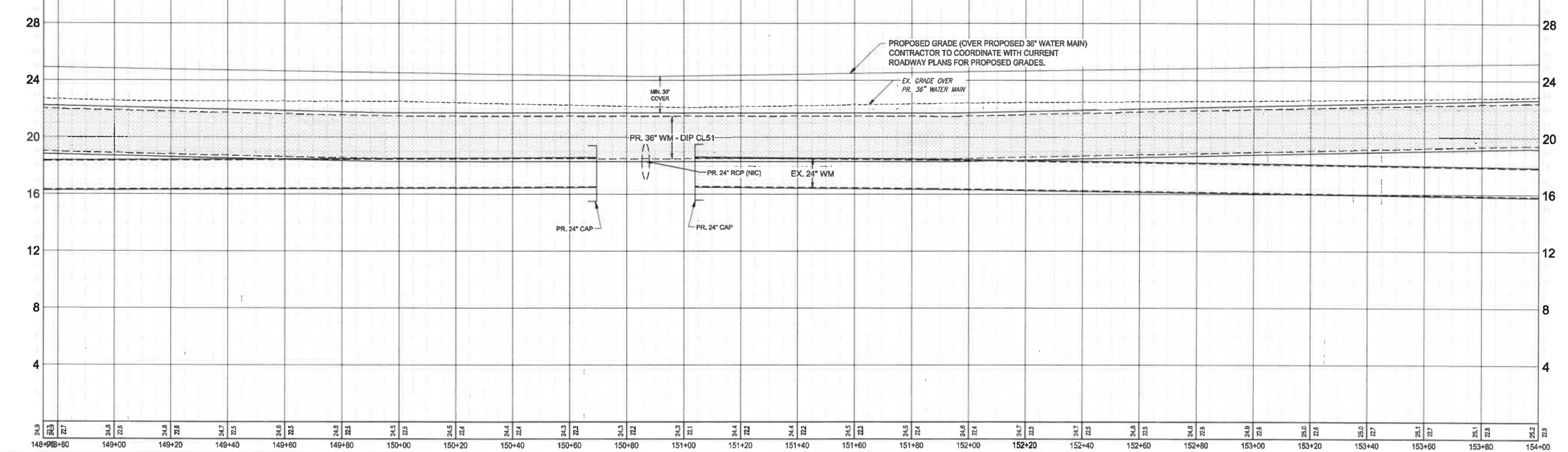


NO.	DESCRIPTION	DATE

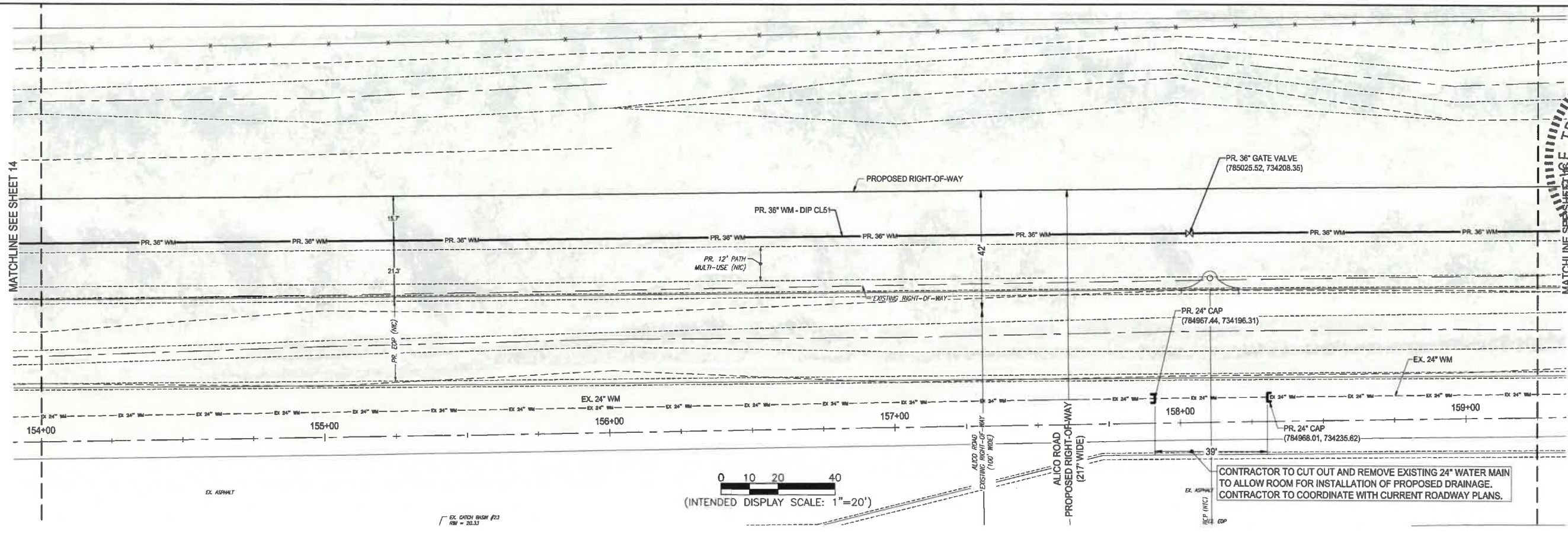
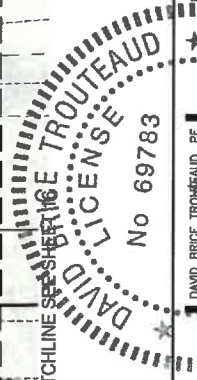
DATE: APRIL 5, 2018
 PROJECT NO. 20149745-000
 FILE NO. 11, 12, 14-48-25
 SCALE: AS SHOWN



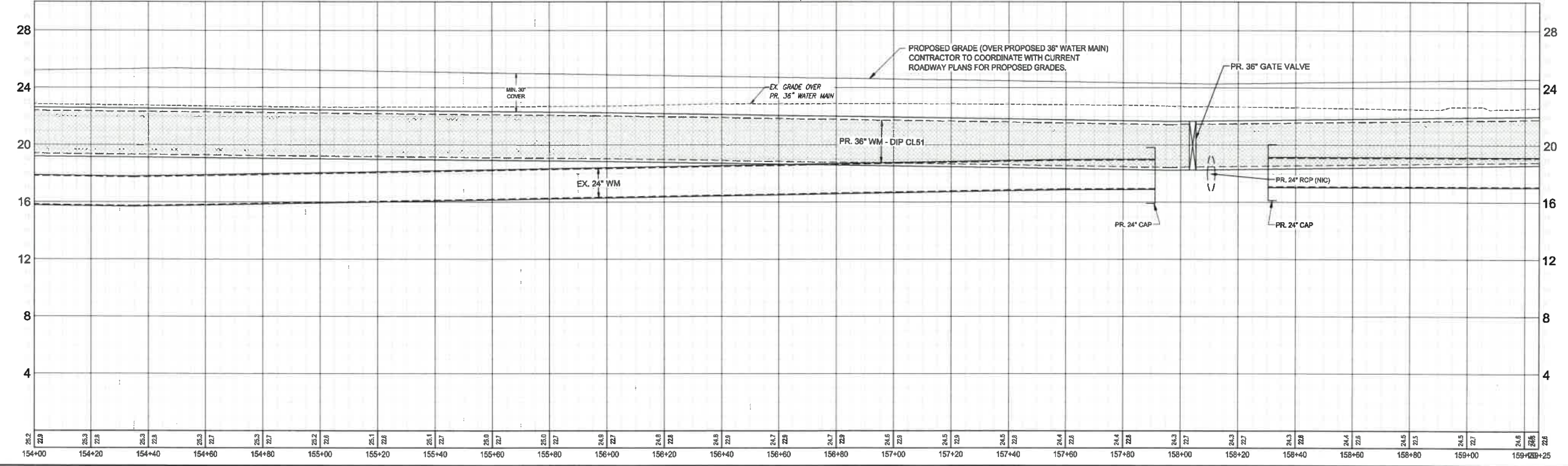
PROFILE VIEW OF Alico Road - Sta: 148+75 to Sta: 154+00
 SCALE: 1" = 20' HOR., 1" = 4' VERT.



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 - SEE SHEETS 27 & 28 FOR ABANDONMENT AND CONNECTION EXHIBIT.



PROFILE VIEW OF Alico Road - Sta: 154+00 to Sta: 159+25
 SCALE: 1" = 20' HOR., 1" = 4' VERT.

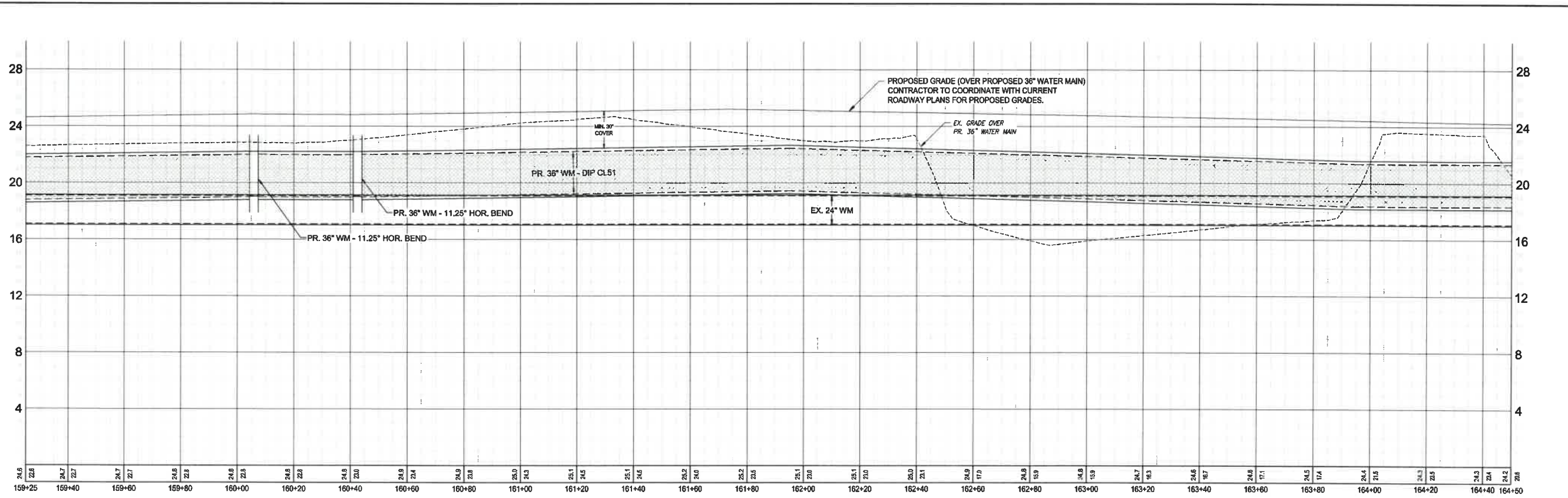
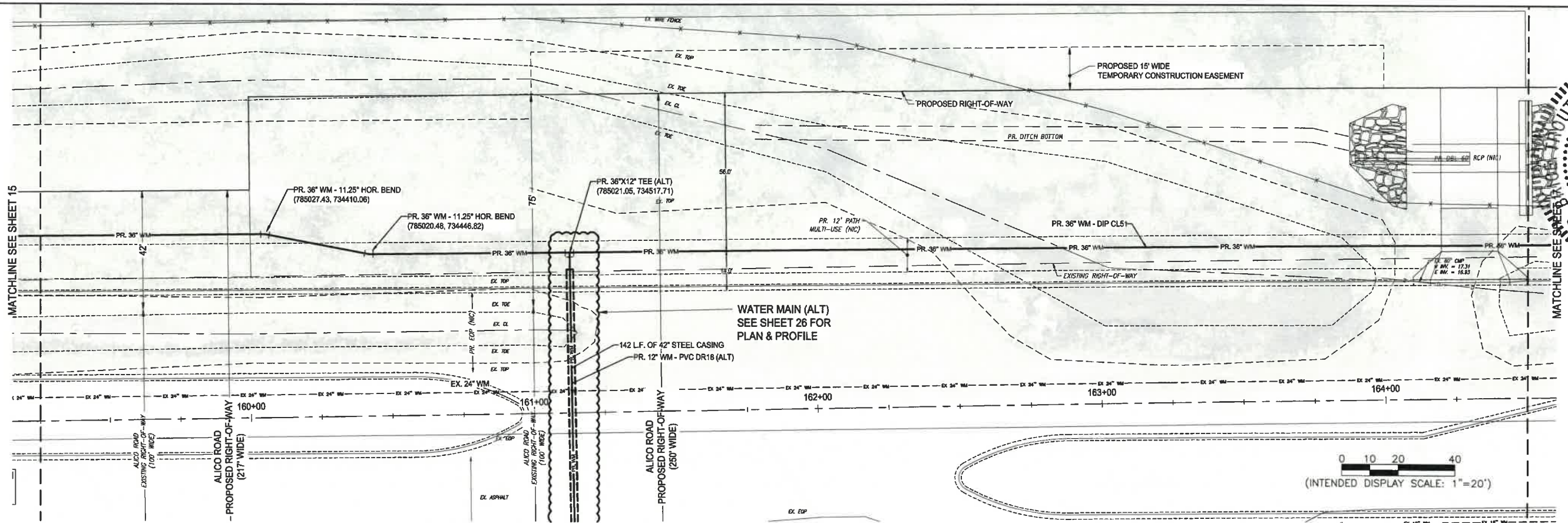


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 - SEE SHEETS 27 & 28 FOR ABANDONMENT AND CONNECTION EXHIBIT.

NO.	DESCRIPTION	DATE

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 154+00 to 159+25

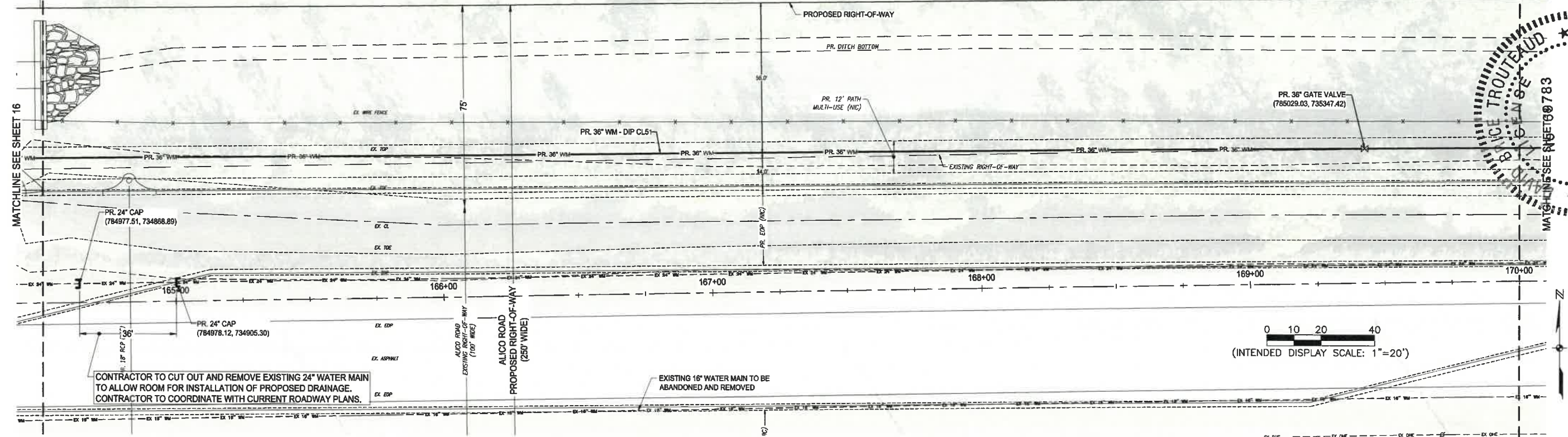
DAVID BRICE TROTTHEAD, P.E.
 FL License No. 89783
 LICENSE No 69783



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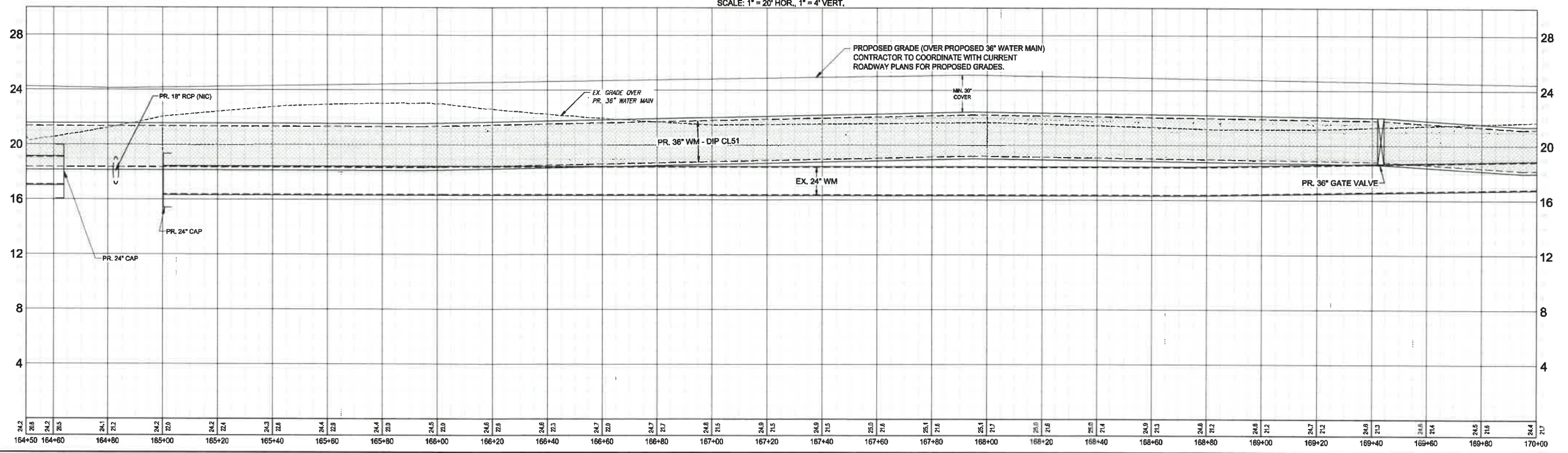
Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 159+25 to 164+50



CONTRACTOR TO CUT OUT AND REMOVE EXISTING 24" WATER MAIN TO ALLOW ROOM FOR INSTALLATION OF PROPOSED DRAINAGE. CONTRACTOR TO COORDINATE WITH CURRENT ROADWAY PLANS.

EXISTING 16" WATER MAIN TO BE ABANDONED AND REMOVED

PROFILE VIEW OF Alico Road - Sta: 164+50 to Sta: 170+00
 SCALE: 1" = 20' HOR., 1" = 4' VERT.

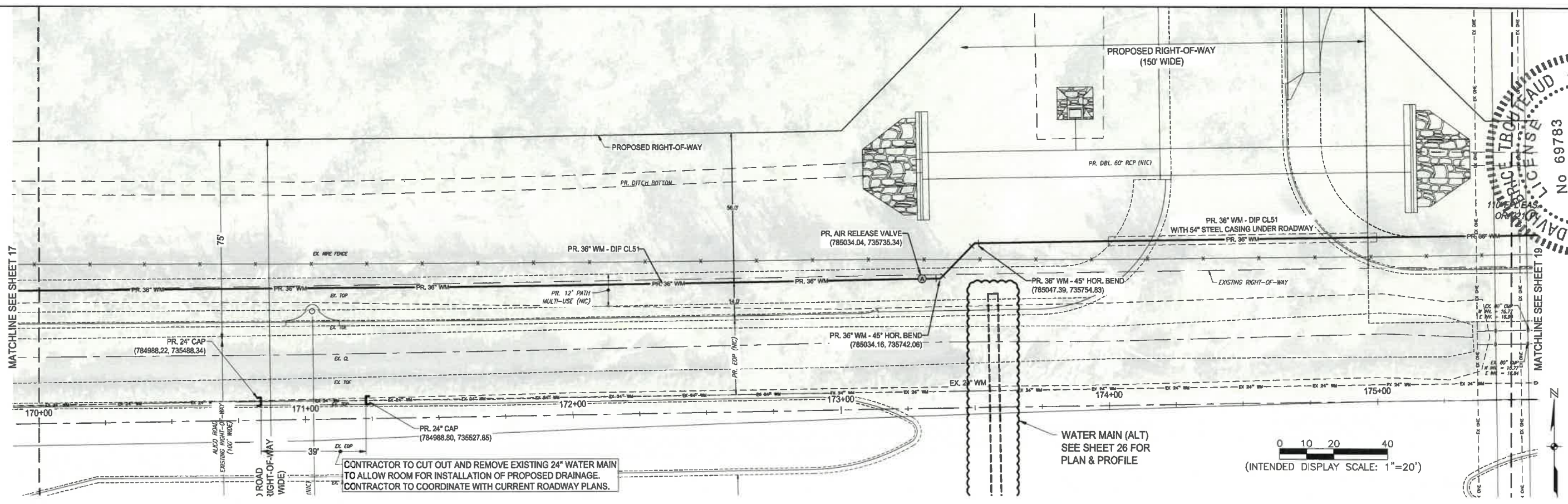


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NO.	REVISIONS DESCRIPTION	DATE

DATE: APRIL 5, 2018
 PROJECT NO. 20149745-000
 FILE NO. 11, 12, 14-46-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 164+50 to 170+00

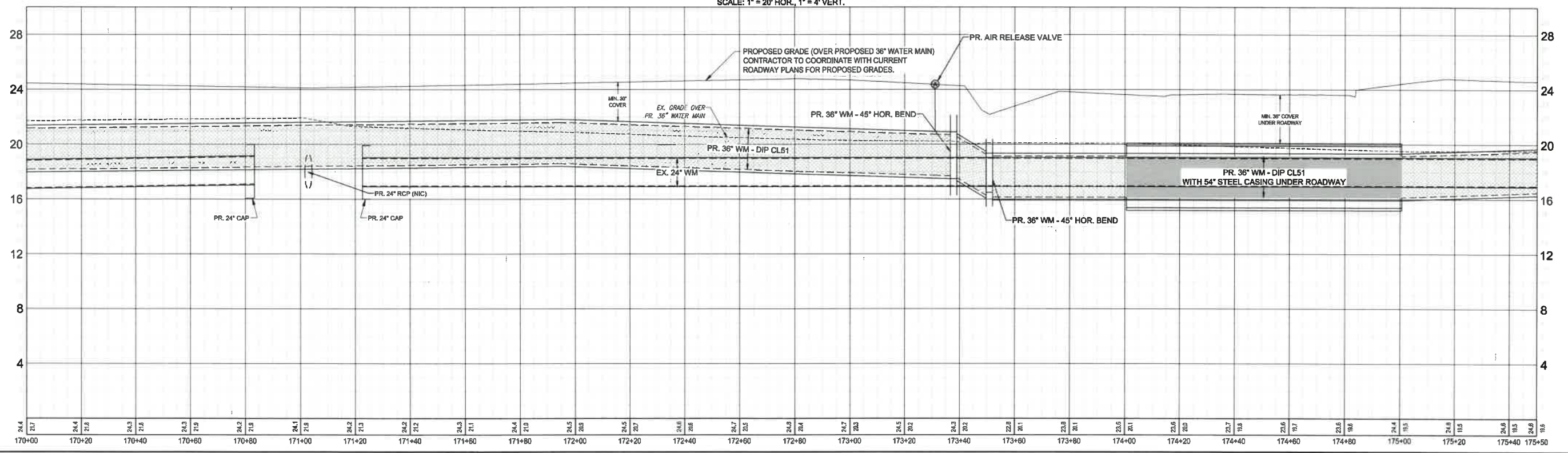


CONTRACTOR TO CUT OUT AND REMOVE EXISTING 24\"/>

WATER MAIN (ALT)
SEE SHEET 26 FOR
PLAN & PROFILE

0 10 20 40
(INTENDED DISPLAY SCALE: 1"=20')

PROFILE VIEW OF Alico Road - Sta: 170+00 to Sta: 175+50
SCALE: 1"=20' HOR., 1"=4' VERT.



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JOHNSON ENGINEERING
2122 S. W. 8th STREET
FORT MYERS, FL 33901-1550
PHONE (813) 241-1100
FAX (813) 241-1101
E.B. #64234.E.P. #1

DAVID BRICE TROGHEAD, P.E.
FL License #269750

LEE COUNTY PROFESSIONAL SEAL
No 69783

LEE COUNTY SOUTH WEST FLORIDA

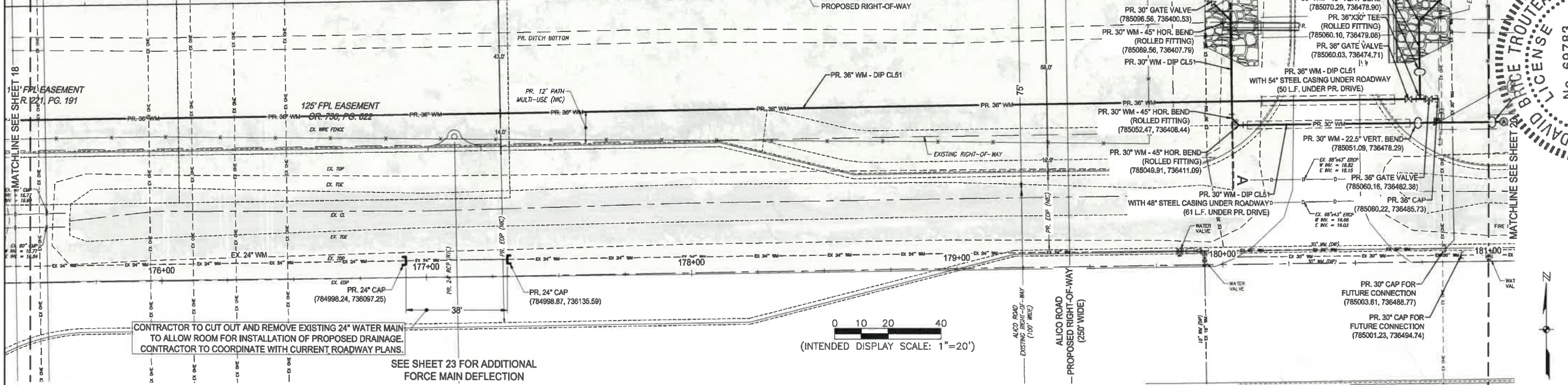
**BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA**

NO.	DATE	DESCRIPTION

DATE: APRIL 5, 2018
PROJECT NO. 20149745-000
FILE NO. 11, 12, 14-46-25
SCALE: AS SHOWN

Water Main Improvements
Final Construction Plans
Plan & Profile
Station 170+00 to 175+50

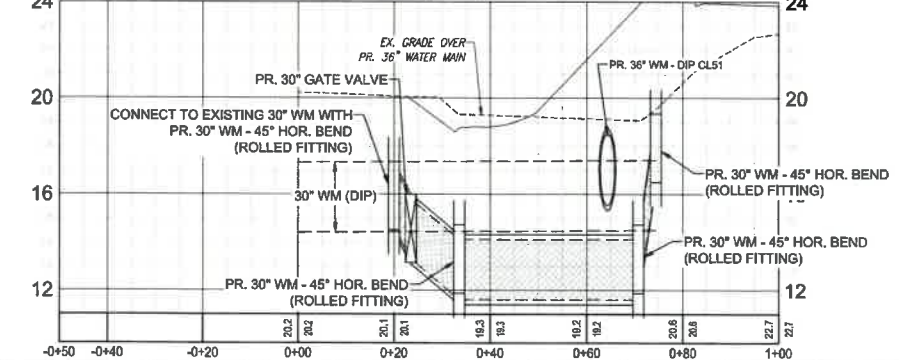
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CONTRACTOR TO CUT OUT AND REMOVE EXISTING 24" WATER MAIN TO ALLOW ROOM FOR INSTALLATION OF PROPOSED DRAINAGE. CONTRACTOR TO COORDINATE WITH CURRENT ROADWAY PLANS.

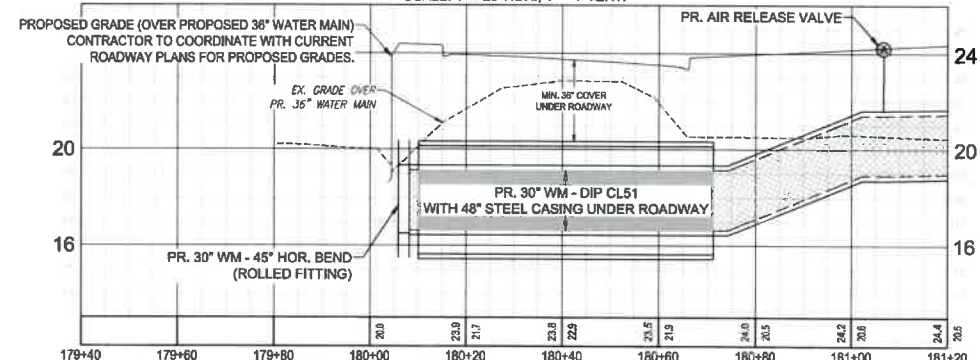
SEE SHEET 23 FOR ADDITIONAL FORCE MAIN DEFLECTION

SECTION A-A
SCALE: 1" = 20' HOR., 1" = 4' VERT.



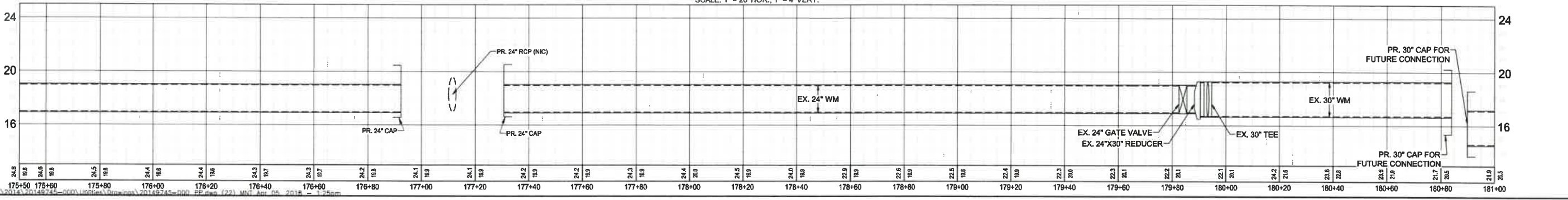
PROFILE VIEW OF Alico Road - Sta: 175+50 to Sta: 181+00
SCALE: 1" = 20' HOR., 1" = 4' VERT.

PROFILE VIEW OF Alico Road - Sta: 179+40 to Sta: 181+20
SCALE: 1" = 20' HOR., 1" = 4' VERT.



PROFILE VIEW OF Alico Road - Sta: 175+50 to Sta: 181+00
SCALE: 1" = 20' HOR., 1" = 4' VERT.

PROFILE VIEW OF Alico Road - Sta: 175+50 to Sta: 181+00
SCALE: 1" = 20' HOR., 1" = 4' VERT.



JOHNSON ENGINEERING
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FORT MYERS, FLORIDA 33802-1550
PHONE (813) 334-2046
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www.johnsoneng.com

DAVID BRICE, ARD, P.E.
FL License No. 69783

LEE COUNTY PROFESSIONAL ENGINEERS
SOUTHWEST FLORIDA

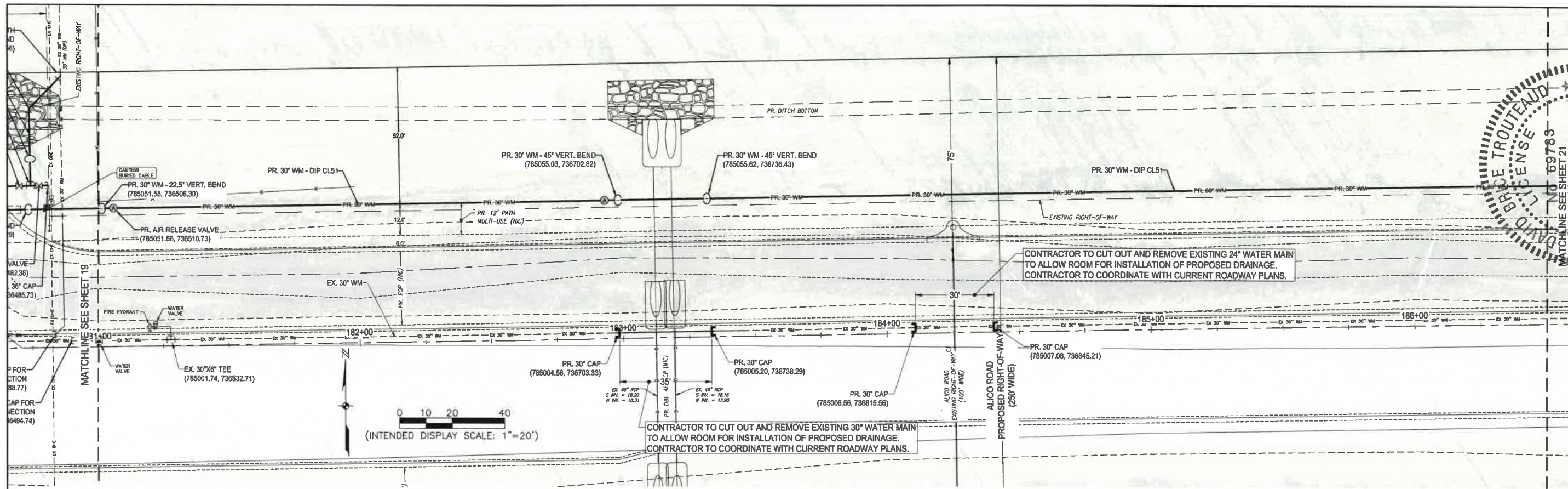
BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA

NO.	DATE	DESCRIPTION

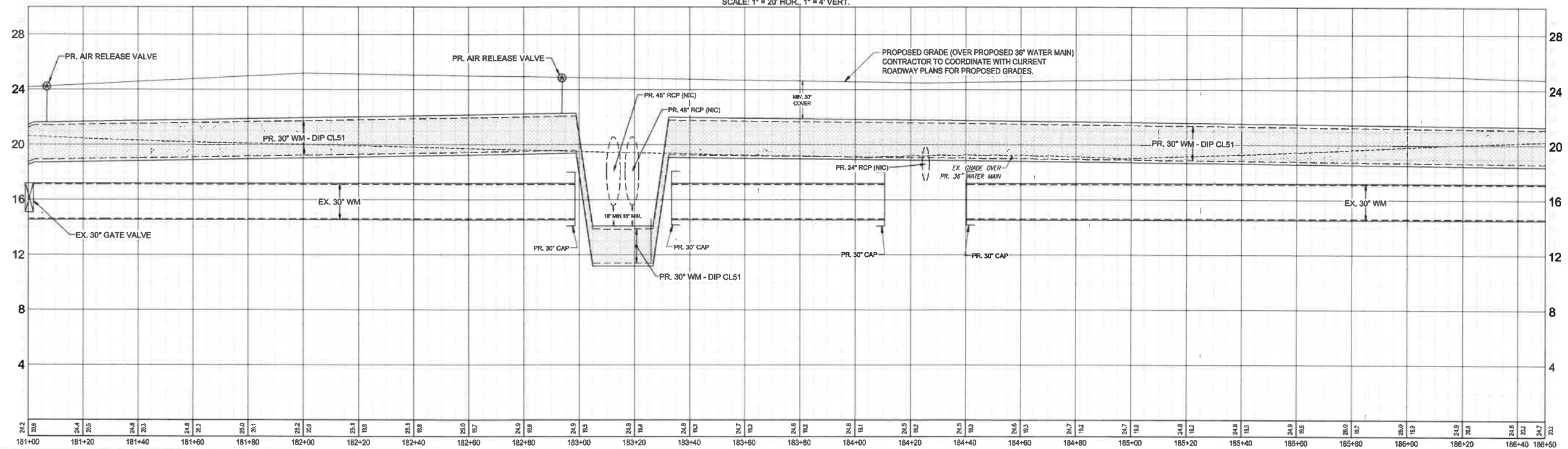
DATE: APRIL 5, 2018
PROJECT NO. 20149745-000
FILE NO. 11, 12, 14-46-25
SCALE: AS SHOWN

Water Main Improvements
Final Construction Plans
Plan & Profile
Station 175+50 to 181+00

SHEET NUMBER
19



PROFILE VIEW OF PROPOSED 30" WATER MAIN (North Side of Alico Road)
 Alico Road - Sta: 181+00 to Sta: 186+50
 SCALE: 1" = 20' HOR., 1" = 4' VERT.



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 2122 JOHNSON STREET
 FORT MYERS, FLORIDA 33802-1550
 PHONE: (888) 333-0046
 FAX: (888) 333-0051
 E-MAIL: J.E. @ J.E. ENG.

STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 DAVID BRICE TROUTEAUD, PE
 FL License No. 69783

LEE COUNTY
 SOUTHWEST FLORIDA

**BEN HILL - ALICO ROAD
 WATER MAIN IMPROVEMENTS
 LEE COUNTY, FLORIDA**

NO.	DESCRIPTION	DATE

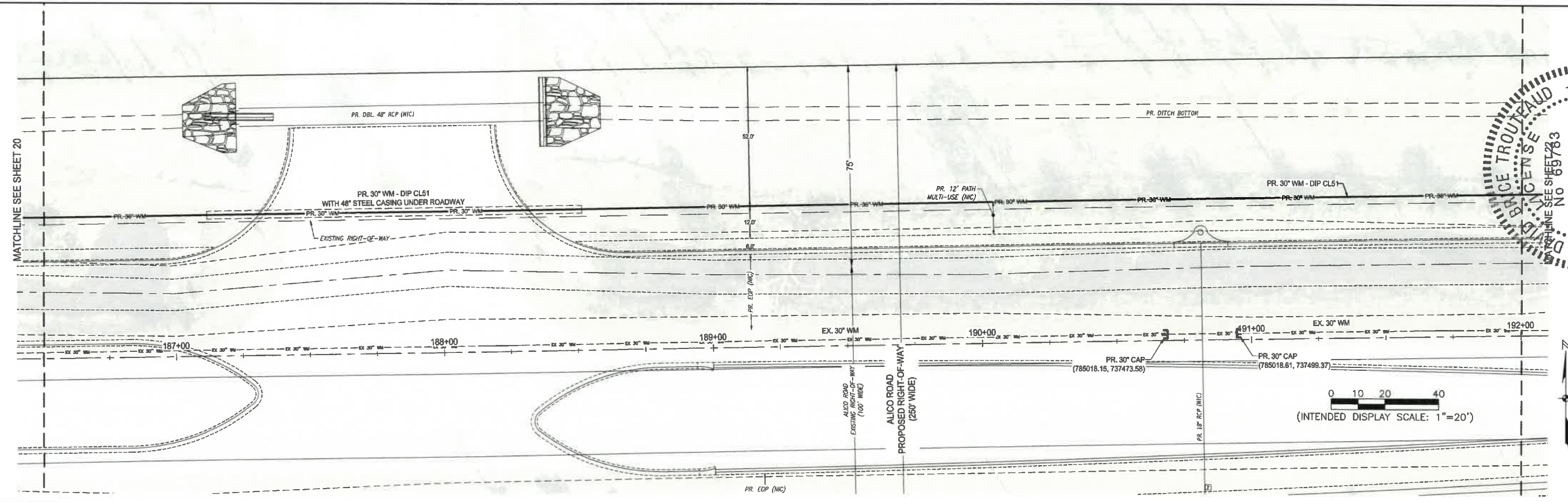
DATE: APRIL 5, 2018
 PROJECT NO. 20149745-000
 FILE NO. 11, 12, 14-46-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Plan & Profile
 Station 181+00 to 186+50

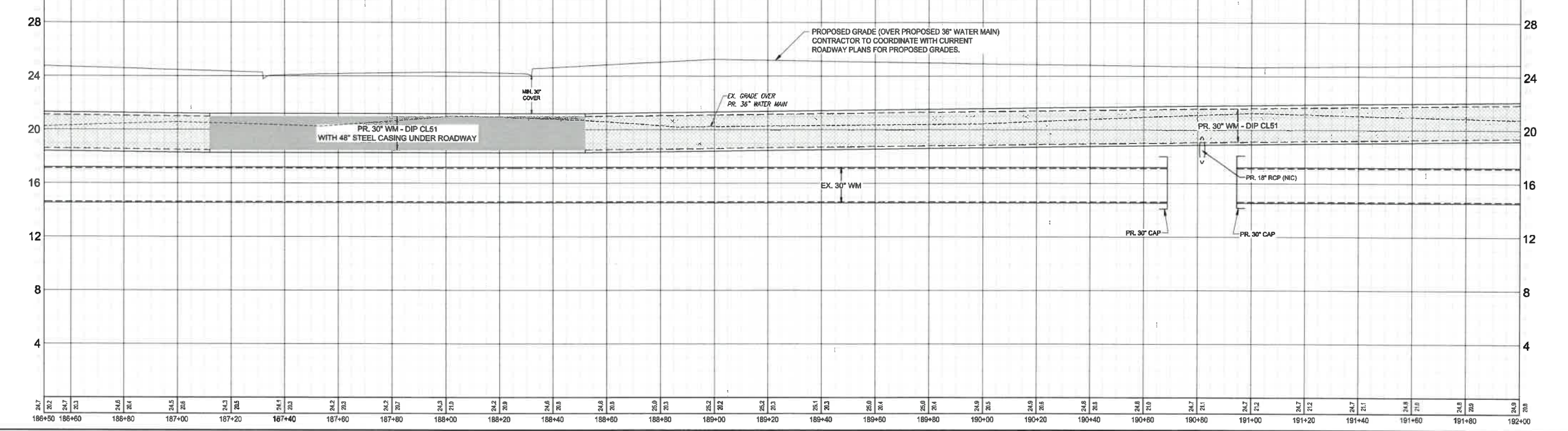
NO.	DESCRIPTION	DATE

DATE: APRIL 5, 2018
PROJECT NO. 20149745-000
FILE NO. 11, 12, 14-48-25
SCALE: AS SHOWN

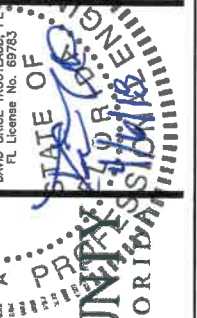
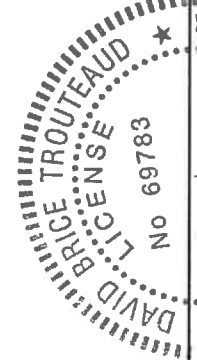
Water Main Improvements
Final Construction Plans
Plan & Profile
Station 186+50 to 192+00
SHEET NUMBER
21



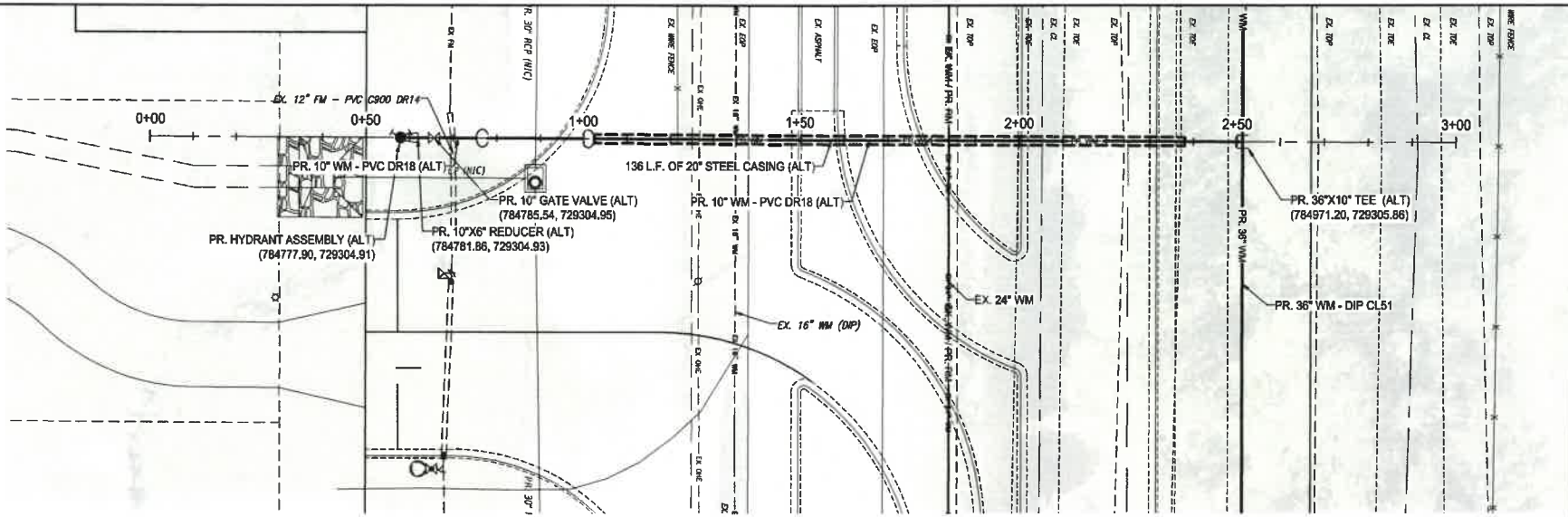
PROFILE VIEW OF PROPOSED 30" WATER MAIN (North Side of Alico Road)
Alico Road - Sta: 186+50 to Sta: 192+00
SCALE: 1" = 20' HOR., 1" = 4' VERT.



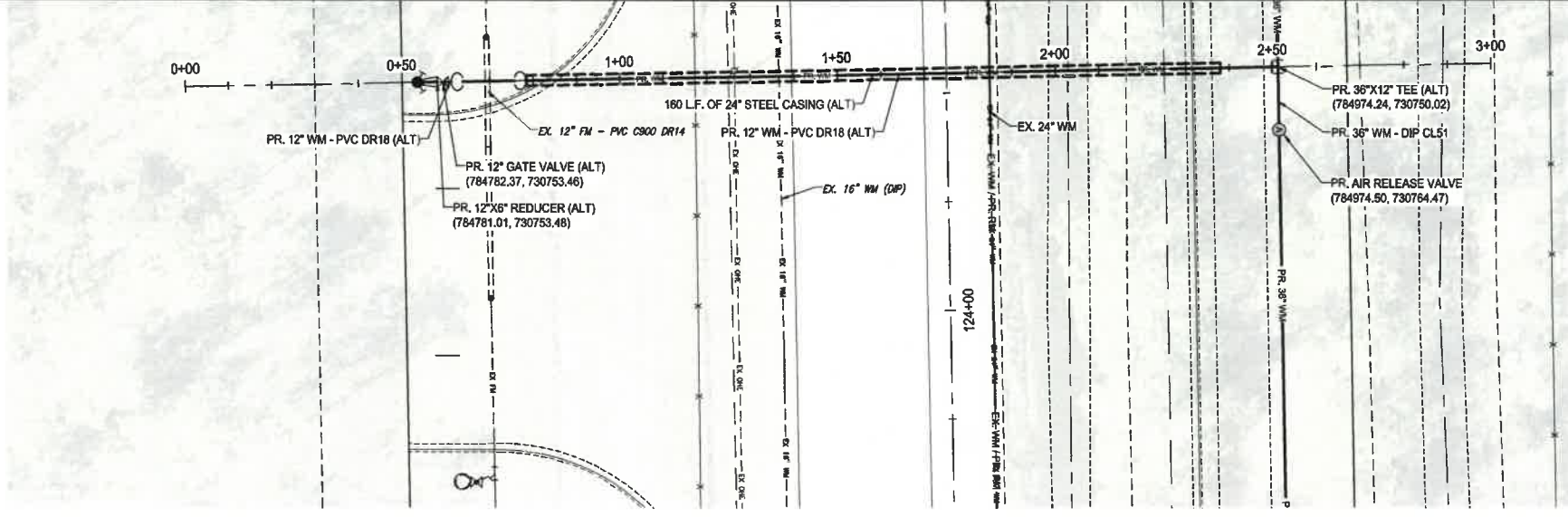
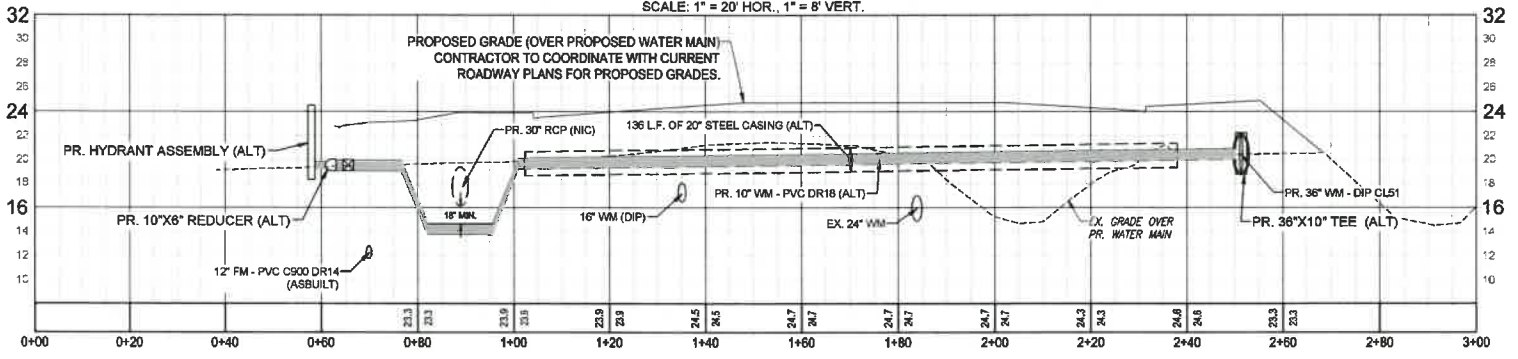
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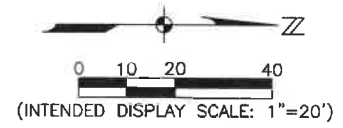
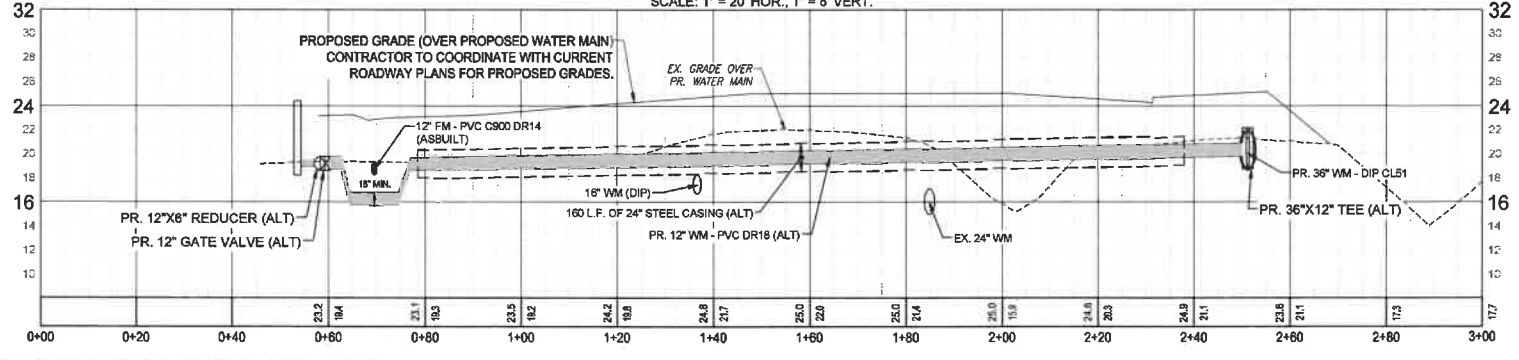
**BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA**



WM Crossing @109+00
SCALE: 1" = 20' HOR., 1" = 8' VERT.



WM Crossing @123+50
SCALE: 1" = 20' HOR., 1" = 8' VERT.



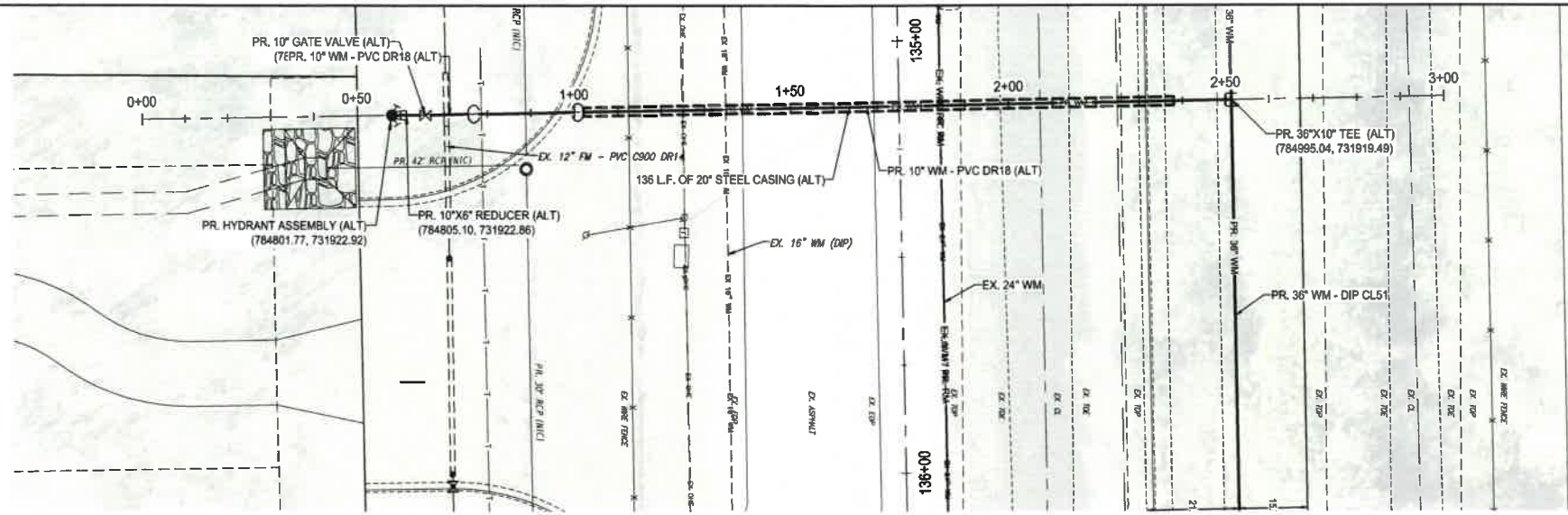
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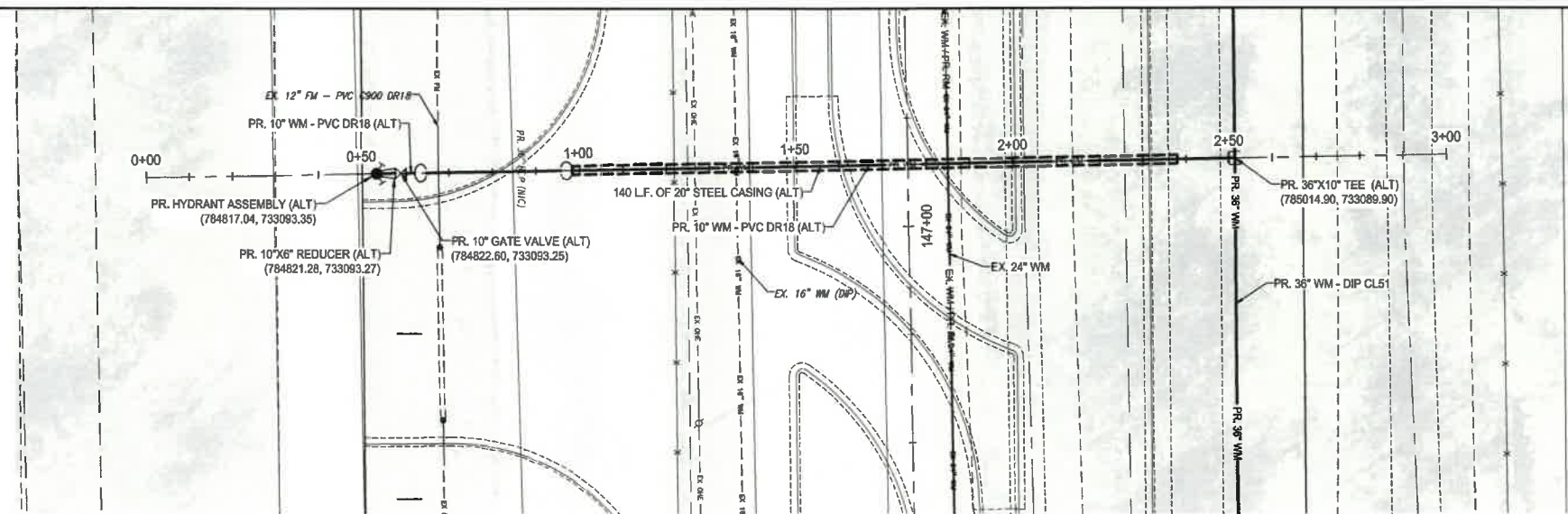
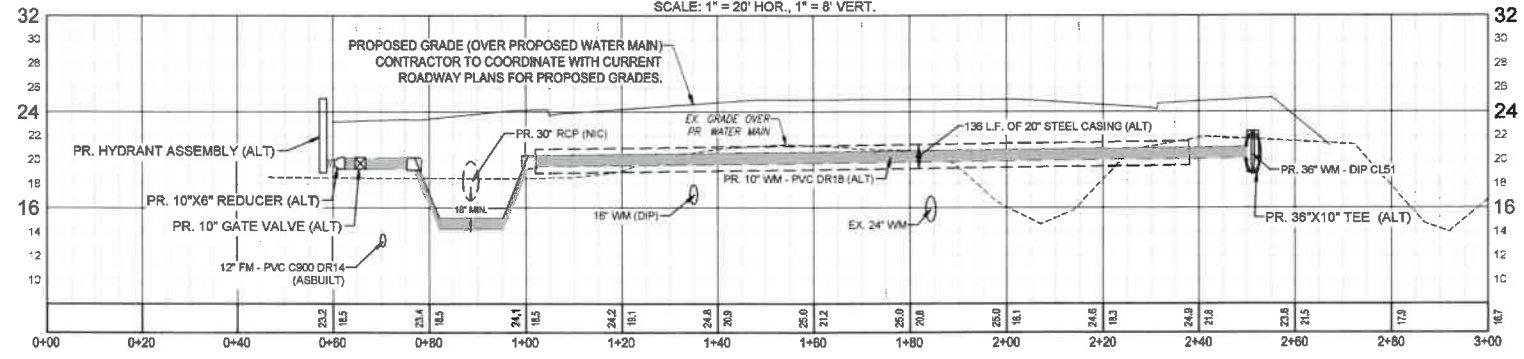
NO.	DESCRIPTION	DATE

Water Main Improvements
Final Construction Plans
Water Main (ALT)
Crossing @ Stations 109+00
& 123+50

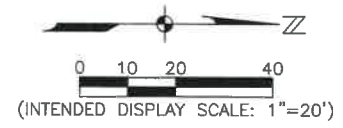
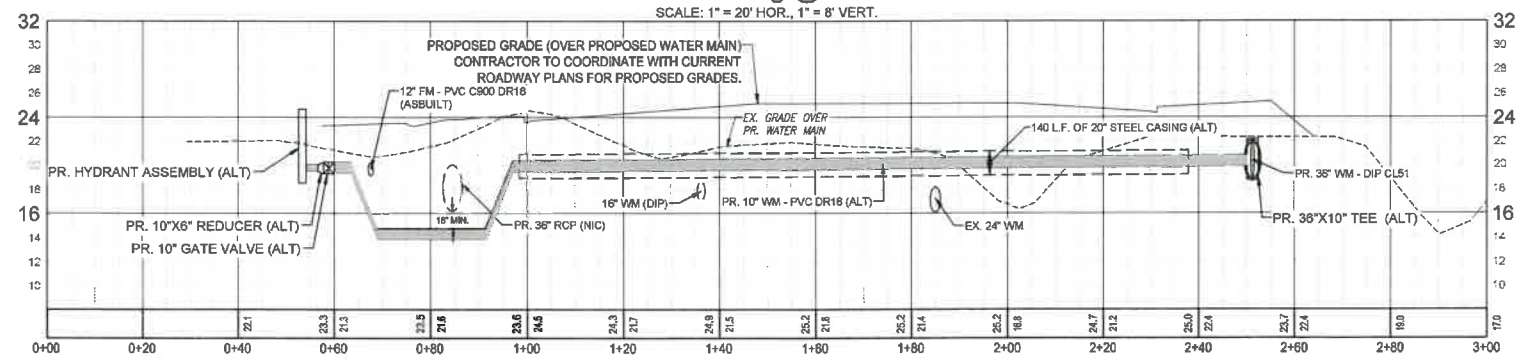
SHEET NUMBER



WM Crossing @135+15
SCALE: 1" = 20' HOR., 1" = 8' VERT.



WM Crossing @146+86
SCALE: 1" = 20' HOR., 1" = 8' VERT.



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 8. SEE SHEETS 27 & 28 FOR ABANDONMENT AND CONNECTION EXHIBIT.

JOHNSON ENGINEERING
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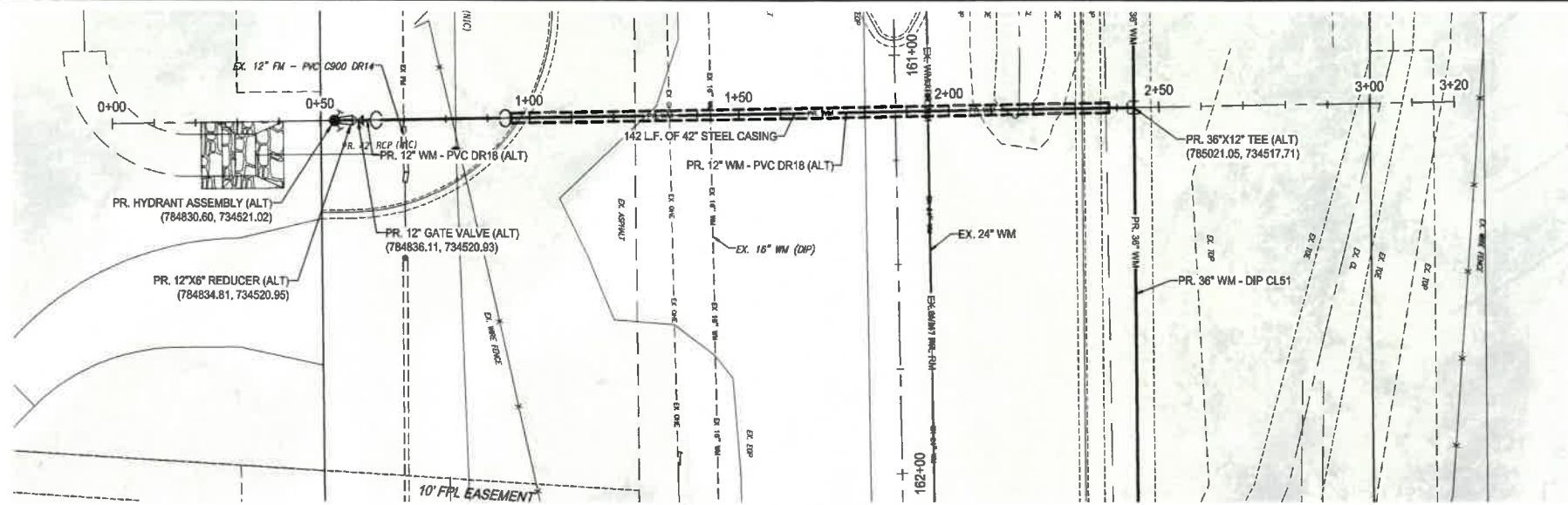
DAVID BRICE TROUPEAU
FL STATE OF
PROFESSIONAL ENGINEER
LICENSE NO. 69783

LEE COUNTY
SOUTH WEST FLORIDA

**BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA**

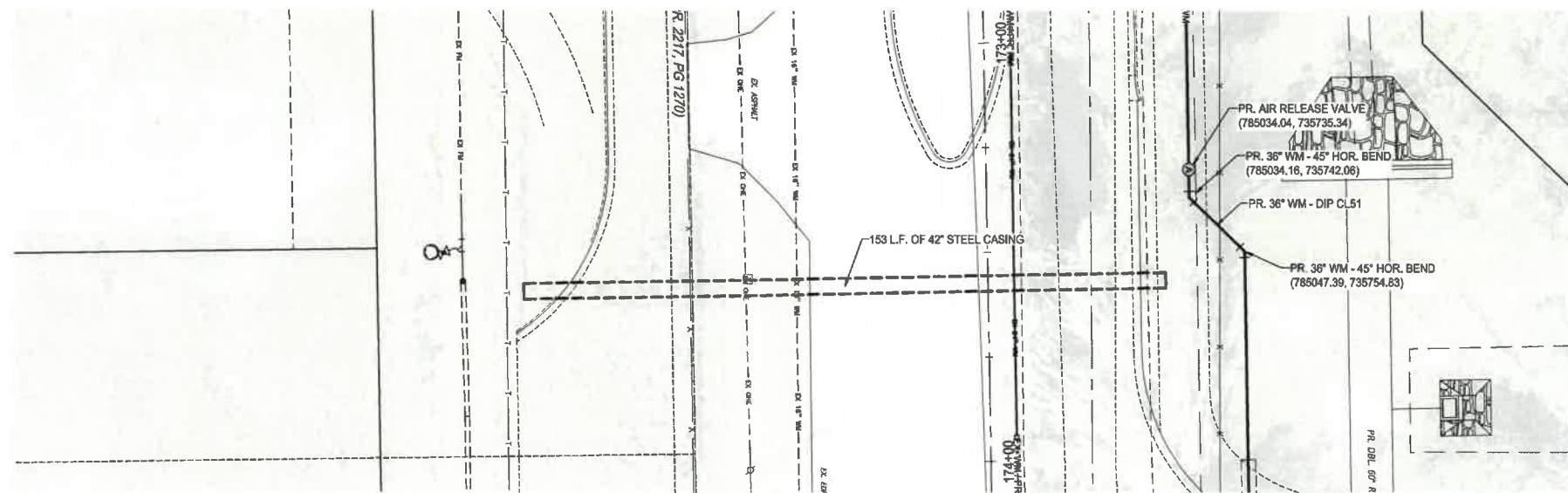
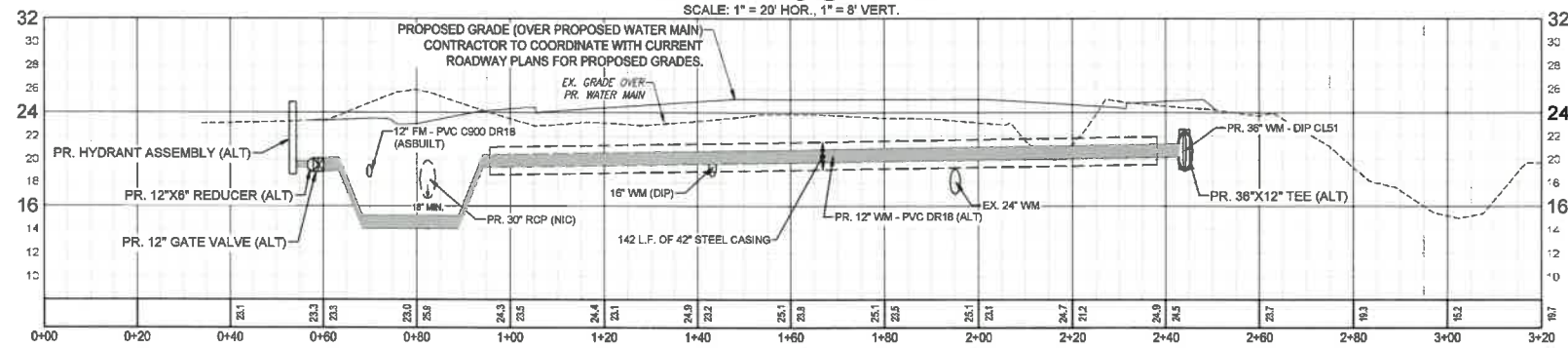
NO.	DESCRIPTION	DATE

DATE: APRIL 5, 2018
PROJECT NO. 20149745-000
FILE NO. 11, 12, 14-48-25
SCALE: AS SHOWN



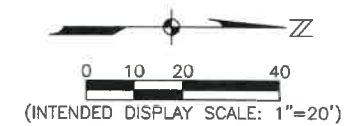
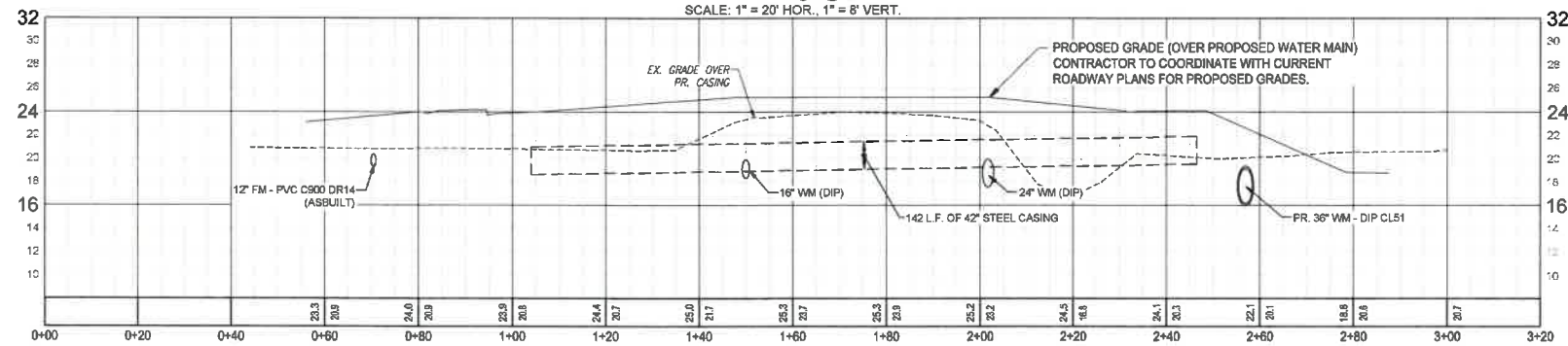
WM Crossing @161+13

SCALE: 1" = 20' HOR., 1" = 8' VERT.



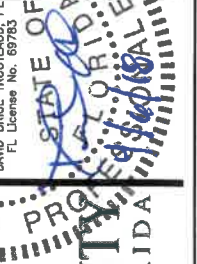
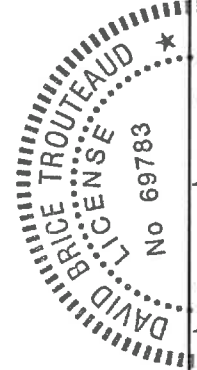
WM Crossing @173+57

SCALE: 1" = 20' HOR., 1" = 8' VERT.



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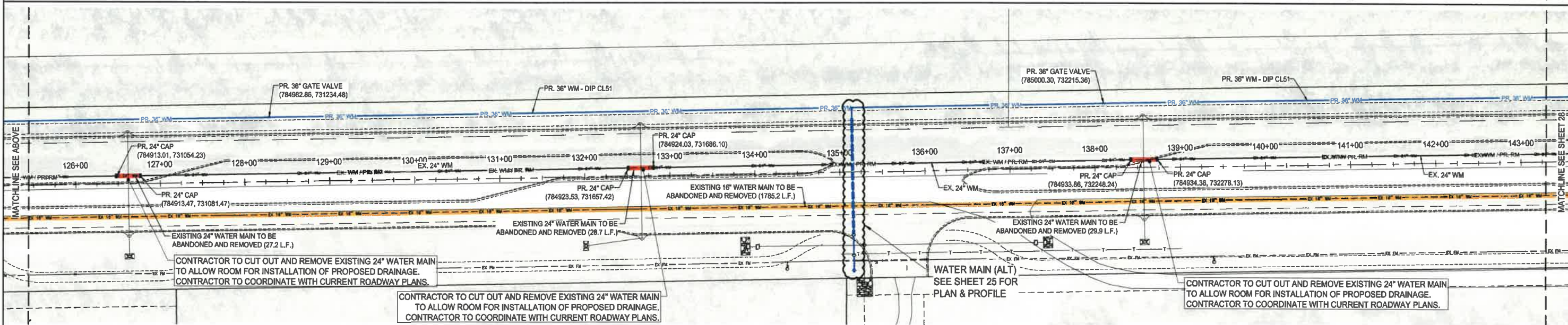
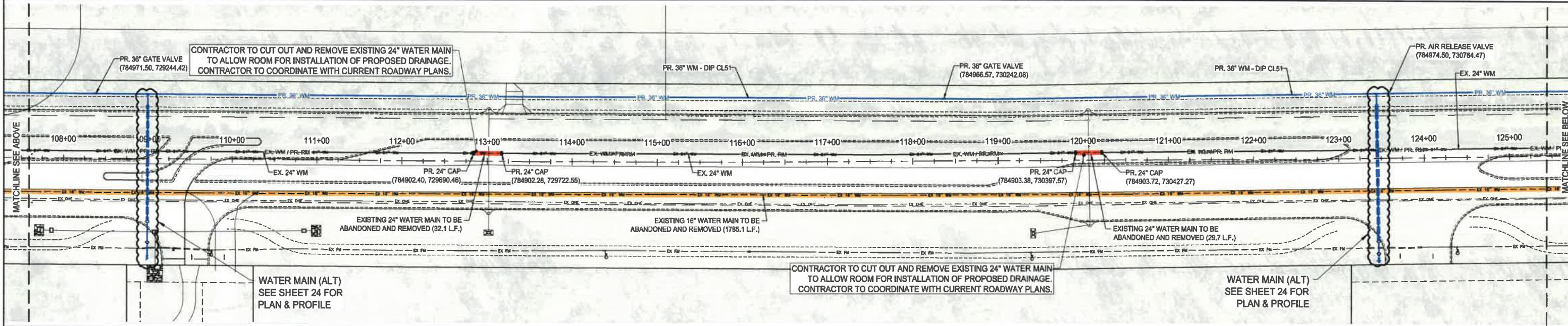
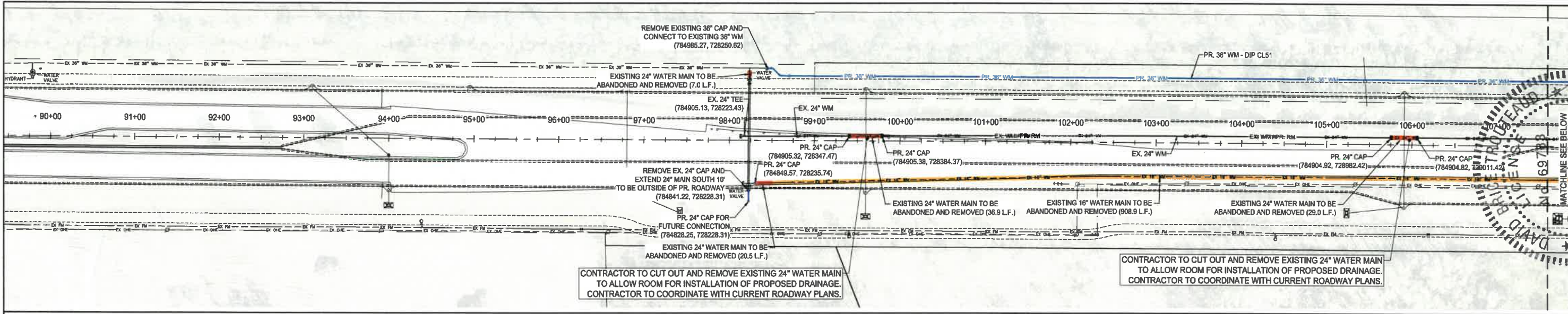
**BEN HILL - ALICO ROAD
 WATER MAIN IMPROVEMENTS
 LEE COUNTY, FLORIDA**

NO.	DESCRIPTION	DATE

Water Main Improvements
 Final Construction Plans
 Water Main (ALT)
 Crossing @ Station 161+13 & 173+57



**BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA**



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NO.	DESCRIPTION	DATE

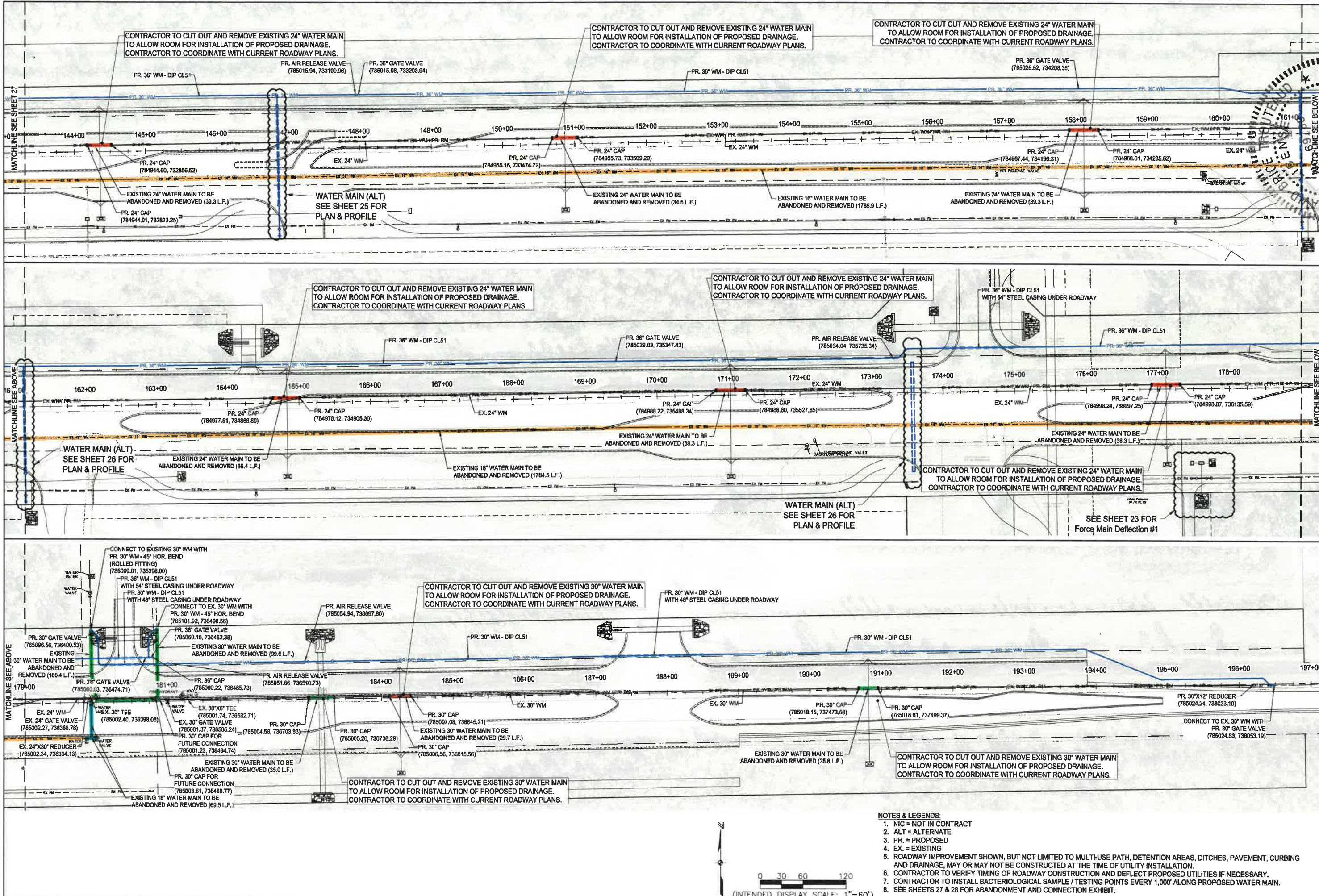
DATE: APRIL 5, 2018
PROJECT NO. 20149745-000
FILE NO. 11, 12, 14-46-25
SCALE: AS SHOWN

Water Main Improvements
Final Construction Plans
Overall Abandonment &
Connection Exhibit
Station 90+00 to 143+50

SHEET NUMBER
27



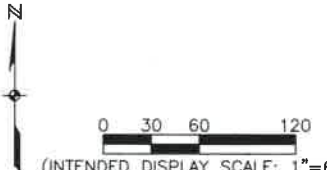
**BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA**



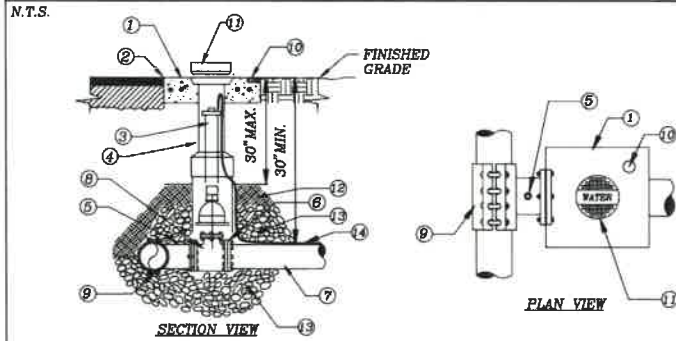
NO.	REVISIONS DESCRIPTION	DATE

DATE: APRIL 5, 2018
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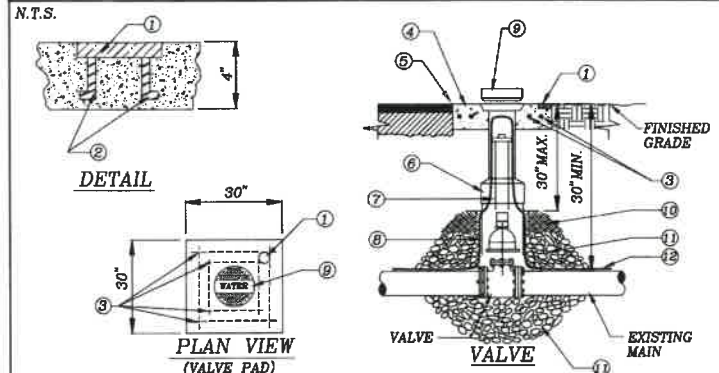
**STANDARD DETAIL NO. 6.1
LEE COUNTY UTILITIES
TAPPING SLEEVE AND VALVE**



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

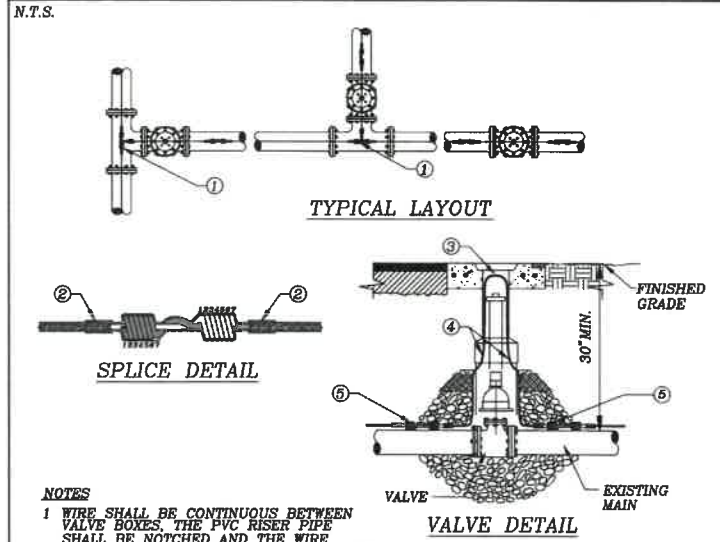
**STANDARD DETAIL NO. 6.2
LEE COUNTY UTILITIES
VALVE INSTALLATION**



- 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

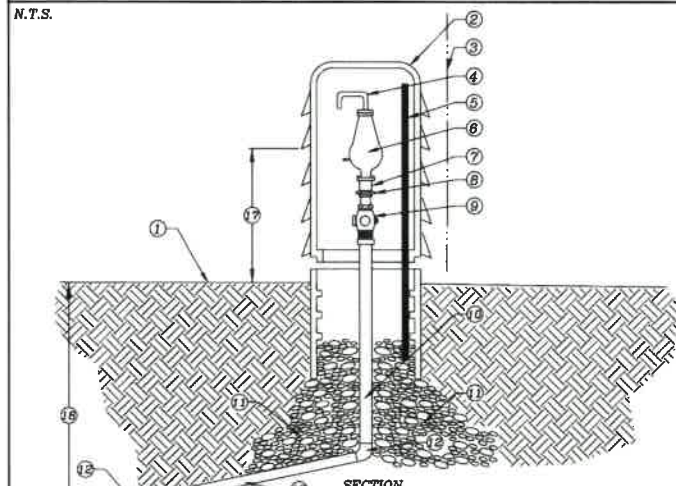
**STANDARD DETAIL NO. 6.3
LEE COUNTY UTILITIES
LOCATING WIRE FOR PRESSURE MAINS**



- 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 6" 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

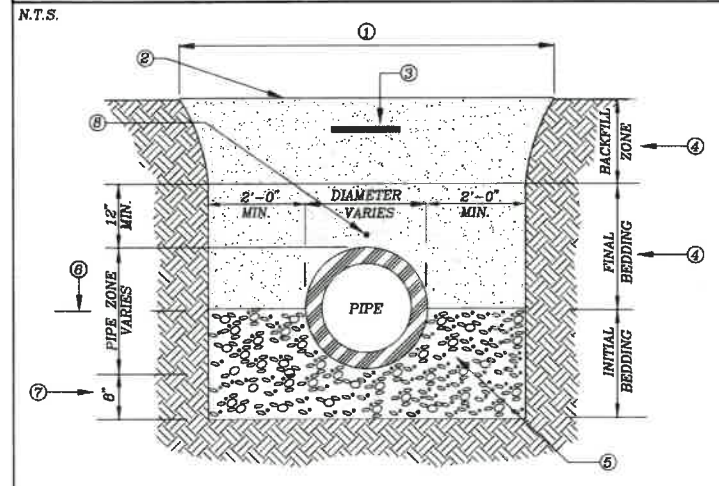
**STANDARD DETAIL NO. 6.4
LEE COUNTY UTILITIES
AUTOMATIC AIR RELEASE VALVE**



- 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

REV: 12/10/2015

**STANDARD DETAIL NO. 6.5
LEE COUNTY UTILITIES
TRENCH CROSS SECTION**



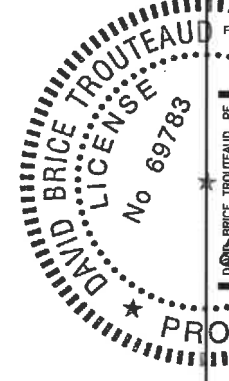
- 1 EXCAVATED TRENCH
- 2 FINISHED GRADE
- 3 MARKING TAPE 12" DEPTH MAX.
- 4 MATERIALS CLEAN DRY SAND, FINE LIME ROCK OR PIT SHELL MECHANICALLY COMPACTED IN 6" LIFTS TO AT LEAST 95% OF MAX DENSITY, OR 98% IF UNDER PAVED AREA OF ROADWAY.
- 5 #57 STONE LOCATED UNDER PIPE OR EXISTING UNDISTURBED SUITABLE 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

THIS DRAWING CONTAINS DETAILS DESIGNED BY, STANDARD TO, AND FURNISHED BY LEE COUNTY UTILITIES SAID DETAILS WERE NOT DESIGNED BY JOHNSON ENGINEERING.

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LEE COUNTY SOUTH WEST FLORIDA



**BEN HILL - ALICO ROAD
WATER MAIN IMPROVEMENTS
LEE COUNTY, FLORIDA**

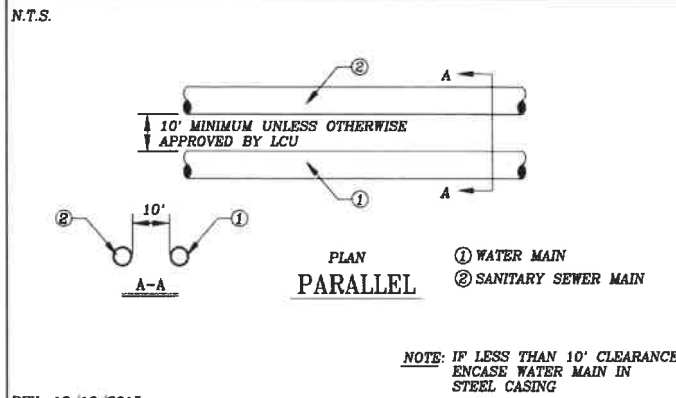
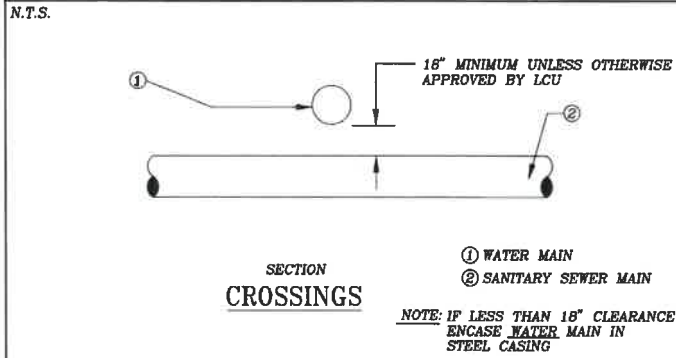
NO.	DESCRIPTION	DATE

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PROJECT NO. 20149745-000
FILE NO. 11, 12, 14-46-25
SCALE: AS SHOWN

Water Main Improvements
Final Construction Plans
Lee County Details

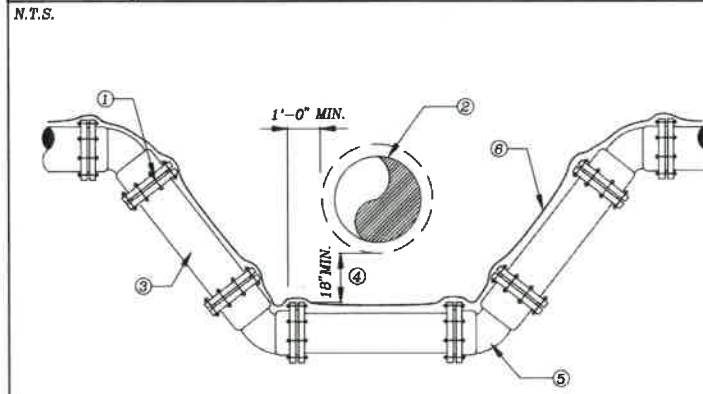
SHEET NUMBER
29

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



REV: 12/10/2015

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



- 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

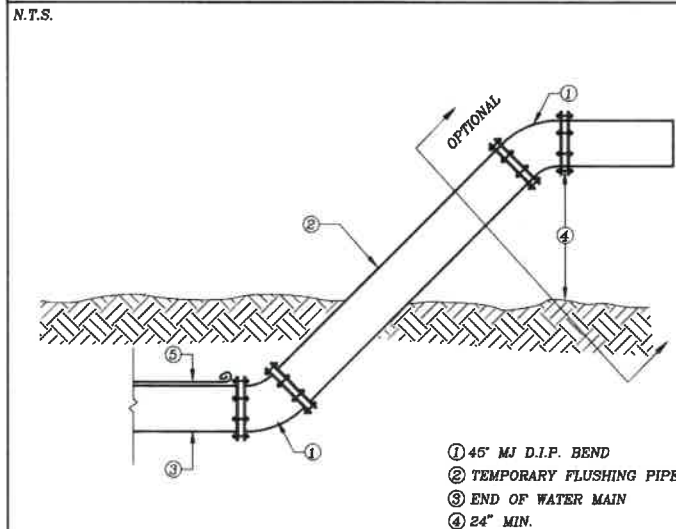
RESTRAINT TABLE

PIPE SIZE	HORIZONTAL BENDS				VERTICAL OFFSETS		DEAD ENDS Lr (FT.)	TEES				REDUCERS (SEE NOTES)			
	90° BENDS Lr (FT.)	45° BENDS Lr (FT.)	22.5° BENDS Lr (FT.)	11.25° BENDS Lr (FT.)	45° BENDS (SEE NOTE 2) L _{HS} (FT.)	L _{LS} (FT.)		RUN SIZE	BRANCH SIZE	L _m (FT.)	L _b (FT.)	SIZE	L(A) (FT.)	L(B) (FT.)	
4"	27	11	5	3	31	8	60	4"	4"	10	11	6 x 4	64	43	
6"	37	15	7	4	43	11	84	6"	4" OR LESS	10	34	8 x 6	60	46	
8"	48	20	10	5	57	15	110	8"	8"	10	59	8 x 4	153	79	
10"	57	24	11	6	68	17	131	10"	4" OR LESS	10	17	10 x 8	55	44	
12"	67	24	11	6	68	19	131	12"	10"	10	80	12 x 10	46	38	
18"	58	24	12	6	56	19	108	18"	6" OR LESS	10	45	12 x 8	104	69	
20"	70	28	14	7	67	23	129	20"	8"	10	79	16 x 12	61	45	
24"	81	33	16	8	78	27	150	24"	12"	10	48	16 x 10	103	63	
									6" OR LESS	10	15	20 x 18	58	45	
									10" OR LESS	10	16	20 x 12	139	81	
									16"	16"	10	73	24 x 20	55	45
										12"	10	38			
										10"	10	16	24 x 16	128	82
										8" OR LESS	10	24			
										20"	20"	10	95		
										16"	10	83			
										12"	10	24			
										10" OR LESS	10	16			
										24"	24"	10	116		
										20"	10	87			
										16"	10	53			
										12"	10	10			
										10" OR LESS	10	10			

- NOTES:
- LENGTHS SHOWN ON THIS TABLE ARE TO BE INTERPRETED AS FOLLOWS:
 - L_{HS} = RESTRAINED LENGTH FROM HIGH SIDE FITTING OF A VERT. BEND
 - L_{LS} = RESTRAINED LENGTH FROM LOW SIDE FITTING OF VERT. BEND
 - L_r = RESTRAINED LENGTH ON BOTH SIDES FROM FITTING
 - L_m = MINIMUM LENGTH TO FIRST JOINT OF RUN ON BOTH SIDES
 - L_b = RESTRAINED LENGTH REQUIRED ON BRANCH FROM FITTING
 - L(A) = LENGTH OF PIPE ON SMALL SIDE FREE OF FITTING
 - L(B) = RESTRAINED LENGTH ON LARGE SIDE OF REDUCER
 - A SAFETY FACTOR = 2.5 IS USED FOR VERTICAL OFFSETS TO COMPENSATE FOR SATURATED SOIL CONDITIONS. A SAFETY FACTOR = 2.0 IS USED FOR ALL OTHER CASES.
 - L(A) AND L(B) ABOVE ARE TWO OPTIONS FOR PROVIDING THE REQUIRED THRUST RESTRAINT FOR THE FITTING. EITHER L(A) LENGTH OF PIPE FREE OF FITTINGS (BENDS, TEES, REDUCERS OR VALVES) ON THE SMALL SIDE OF THE REDUCER WILL PROVIDE THE REQUIRED RESTRAINT OR L(B) LENGTH CAN BE RESTRAINED ON THE LARGE SIDE OF THE FITTING.
 - THE FOLLOWING ARE ASSUMED:
 - 4" - 10" PIPE HAS 30" MIN. COVER
 - 12" - 24" PIPE HAS 36" MIN. COVER
 - 4" - 24" PIPE IS PVC
 - VALVES SHALL BE RESTRAINED ON EITHER SIDE OF THE FITTING AS A MINIMUM. IN LINE VALVES SHALL HAVE NO FITTINGS WITHIN THE LENGTHS SHOWN ON THIS TABLE FOR THE SAME SIZE DEAD END. IN CASES WHERE THIS LENGTH CAN NOT BE PROVIDED FREE OF FITTINGS, ADDITIONAL RESTRAINT SHALL BE REQUIRED AS APPROVED BY ENGINEER.
 - ALL DEAD END LINES, PERMANENT OR TEMPORARY, SHALL BE RESTRAINED PER THE ABOVE RESTRAINT TABLE.

RESTRAINT TABLE
 CB-1

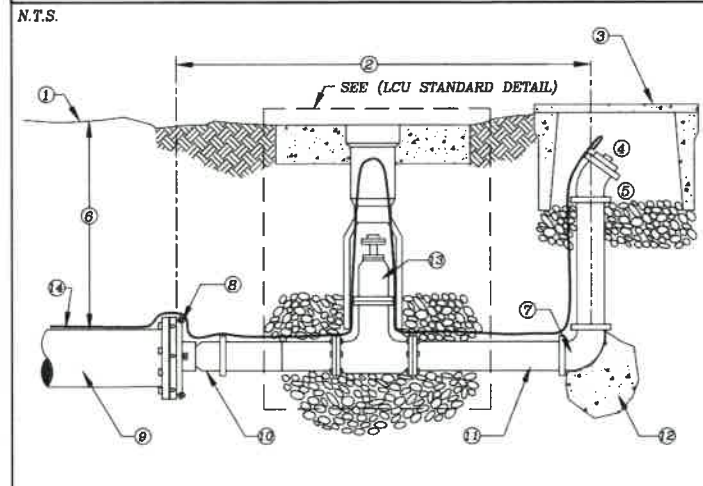
STANDARD DETAIL NO. 6.13
LEE COUNTY UTILITIES
WATER MAIN FLUSHING DETAIL



- NOTES:
- FLUSHING DETAIL TO BE USED ON WATER LINES 6" DIAMETER OR GREATER.
 - FLUSHING PIPE SHALL BE THE SAME DIAMETER AS WATER MAIN.
 - CONTRACTOR SHALL PROVIDE ADEQUATE DRAINAGE FOR FLUSHED WATER.
 - PROVIDE M.J. CAP IF ASSEMBLY IS LEFT IN PLACE UNATTENDED.
 - 12 GAUGE DOUBLE INSULATED COPPER LOCATING WIRE (SEE LCU STANDARD DETAIL)

REV: 12/10/2015

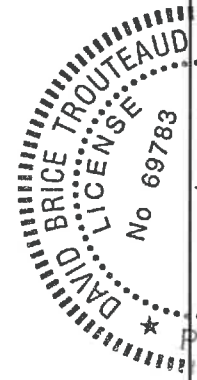
STANDARD DETAIL NO. 6.14
LEE COUNTY UTILITIES
BLOW OFF DETAIL



- 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.I. PER SCHEDULE
- ⑩ 2" THREADED
- ⑪ 2" P.V.C. (SCH 80) 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



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STATE OF FLORIDA
 PROFESSIONAL ENGINEERING

LEE COUNTY
 SOUTHWEST FLORIDA

BEN HILL - ALICO ROAD
 WATER MAIN IMPROVEMENTS
 LEE COUNTY, FLORIDA

NO.	REVISIONS DESCRIPTION	DATE

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 FILE NO. 11, 12, 14-46-25
 SCALE: AS SHOWN

Water Main Improvements
 Final Construction Plans
 Lee County Details

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