

# CONSTRUCTION PLANS FOR SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING

MANATEE COUNTY, FLORIDA

JANUARY 2024

MANATEE COUNTY PROJECT #6093070



**PROJECT TEAM:**

**OWNER:**  
MANATEE COUNTY  
1022 26TH AVE. E.  
BRADENTON, FL 34208  
CONTACT: ALBERT ROSENSTEIN, P.E., C.P.M.  
941-708-7450 EXT. 7219

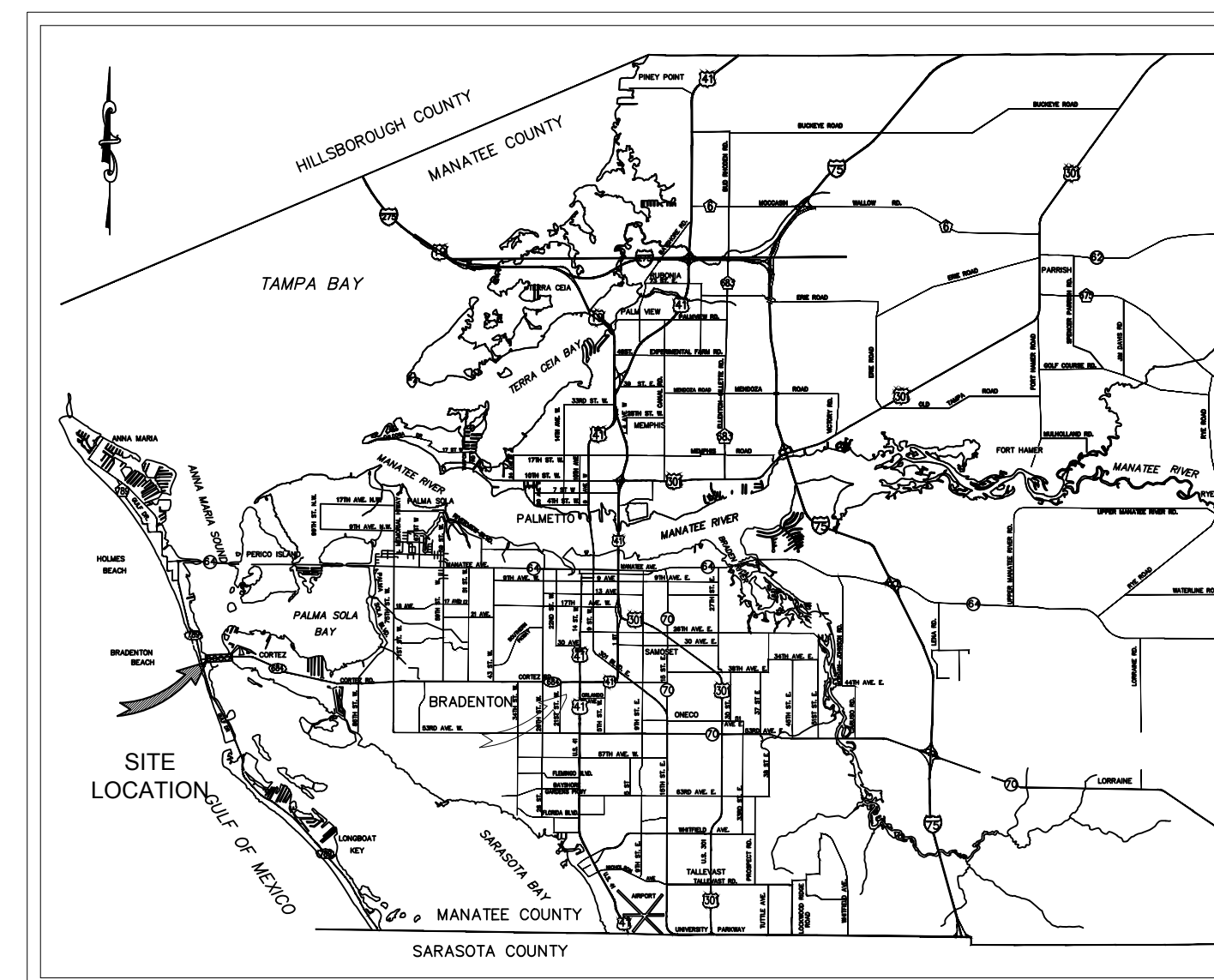
HYATT SURVEY SERVICES, INC  
2012 LENA ROAD  
BRADENTON, FL 34211  
CONTACT: RUSSELL HYATT, P.S.M.  
941-748-4693

**ENGINEER:**  
KIMLEY-HORN AND ASSOCIATES, INC.  
100 2ND AVENUE SOUTH, SUITE 105N  
ST. PETERSBURG, FL 33701  
CONTACT: JORDAN WALKER, P.E.  
727-302-4320

**SURVEYOR:**  
McKIM & CREED  
1365 HAMLET AVE  
CLEARWATER, FL 33756  
CONTACT: CHRIS BOSSHART, P.S.M.  
813-549-3740

**UTILITY CONTACTS:**

COMPANY	CONTACT	TELEPHONE NUMBER
BRIGHTHOUSE NETWORKS	TOM WRIGHT	941-345-1348
FPL	GREG COKER	941-723-4430
MCI (VERIZON)	JAMES BARRA	813-928-9881
MANATEE COUNTY (IT)	BILL KERSEY	941-708-4501 EXT. 5801
MANATEE COUNTY UTILITY OPERATIONS	MICHAEL STURM	941-708-7450 EXT. 7323
SPECTRUM	JAMES CRUZAN	727-329-2846
TECO/PEOPLES GAS	ANTHONY BAUBLITZN SR.	941-342-4025



PROJECT VICINITY MAP  
N.T.S.

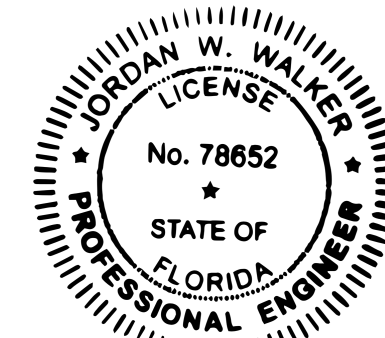
**BID PLANS**

PERMIT #2023-H-194-00154,  
SR 684/US 41 CORTEZ RD W,  
SECTION #13040000,  
BMP #0.011, EMP #0.750

PREPARED BY  
**Kimley»Horn**

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200 CENTRAL AVENUE, SUITE 800  
ST. PETERSBURG, FL 33701  
PHONE (727) 547-3999  
WWW.KIMLEY-HORN.COM Registry No. 55106

GEORGE E. ROLAND, PROFESSIONAL ENGINEER,  
STATE OF FLORIDA, LICENSE NO. 62338



JORDAN W. WALKER, PROFESSIONAL ENGINEER,  
STATE OF FLORIDA, LICENSE NO. 78652

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SUITE 2350  
JACKSONVILLE, FL 32258  
REGISTRY 35106  
GEORGE E. ROLAND, P.E. NO. 62338

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

SHEETS 22-23

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SUITE 600  
ST PETERSBURG, FL 33701  
REGISTRY 35106  
JORDAN W. WALKER, P.E. NO. 78652

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SHEETS 1-21 AND 24-27

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02	GENERAL NOTES
03	KEY SHEET
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17	WATER MAIN RELOCATION
18	EAST APPROACH CORTEZ RD CROSS SECTIONS
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20	MAINTENANCE OF DRILL PLAN - EAST APPROACH
21	MAINTENANCE OF DRILL PLAN - LAY DOWN AREA
22	MAINTENANCE OF TRAFFIC - PEDESTRIAN / BICYCLE
23	MAINTENANCE OF TRAFFIC - VEHICLES
24	DETAILS 01
25	DETAILS 02
26	DETAILS 03
27	DETAILS 04

THE SITE CONSTRUCTION STAKEOUT SHALL BE PERFORMED UNDER THE DIRECTION OF A FLORIDA REGISTERED SURVEYOR. AUTOCAD FILES WILL BE FURNISHED TO AID IN THE SITE CONSTRUCTION STAKEOUT. ANY DISCREPANCIES FOUND BETWEEN AUTOCAD FILES AND SITE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO THAT STAKEOUT.

No.	REVISIONS	DATE	BY

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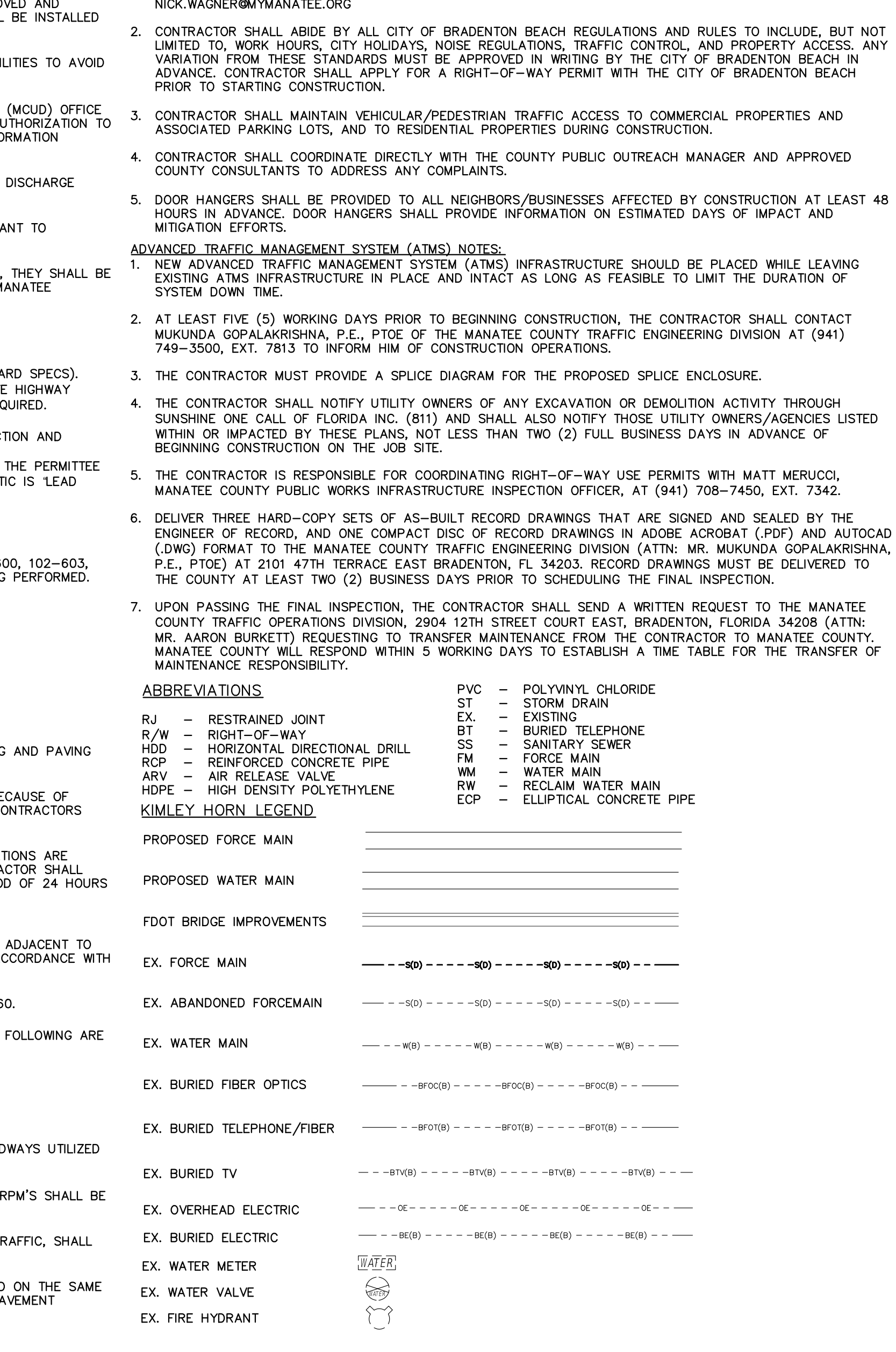
JORDAN WALKER, PE  
FLORIDA LICENSE NUMBER:  
78652

DATE  
JAN 2024  
PROJECT NO.  
148400081  
SHEET NUMBER  
01



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- GENERAL
1. ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS: ALBERT ROSENTHAL, P.E., C.P.M. AND CAN BE REACHED AT (941) 708-7450 X7219
2. IF THE CONTRACTOR WANTS A SITE VISIT PRIOR TO BIDDING, THESE SHALL BE ARRANGED THROUGH THE COUNTY'S PURCHASING DIVISION.
3. ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MANATEE COUNTY PUBLIC WORKS STANDARDS UTILITIES STANDARDS MANUAL AND HIGHWAY & TRAFFIC STANDARDS MANUAL AND/OR FDOT 'STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION' UNLESS OTHERWISE INDICATED ON THE PLANS.
... (rest of list items follow similar format)



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200 CENTRAL AVENUE, SUITE 600, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400081
DATE JANUARY 2024
SCALE AS SHOWN
DESIGNED BY JWV
DRAWN BY SLB
CHECKED BY KMS

SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING



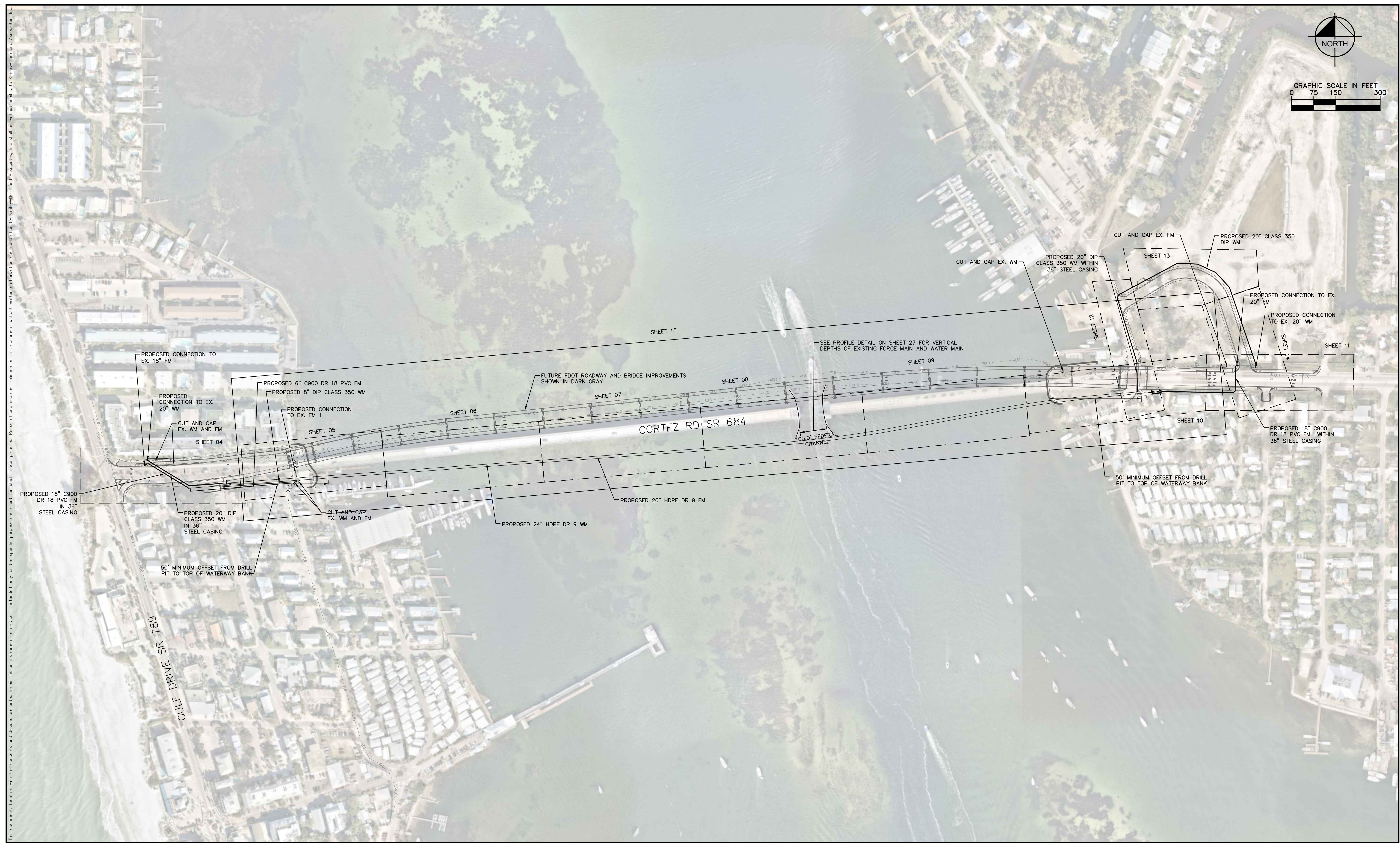
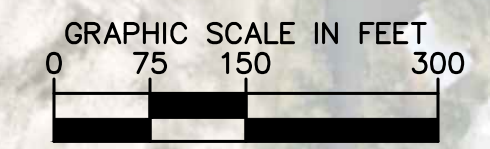
MANATEE COUNTY FL

LICENSED PROFESSIONAL
JORDAN W. WALKER, P.E.
FL LICENSE NUMBER 78652
DATE:

GENERAL NOTES
02

SHEET NUMBER





No.	REVISIONS	DATE	BY

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KHA PROJECT 148400081
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 **SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

LICENSED PROFESSIONAL
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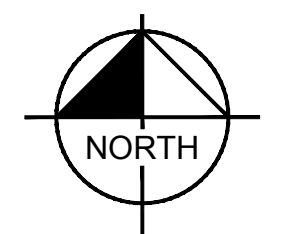
**KEY SHEET**

SHEET NUMBER
<b>03</b>

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GRAPHIC SCALE IN FEET  
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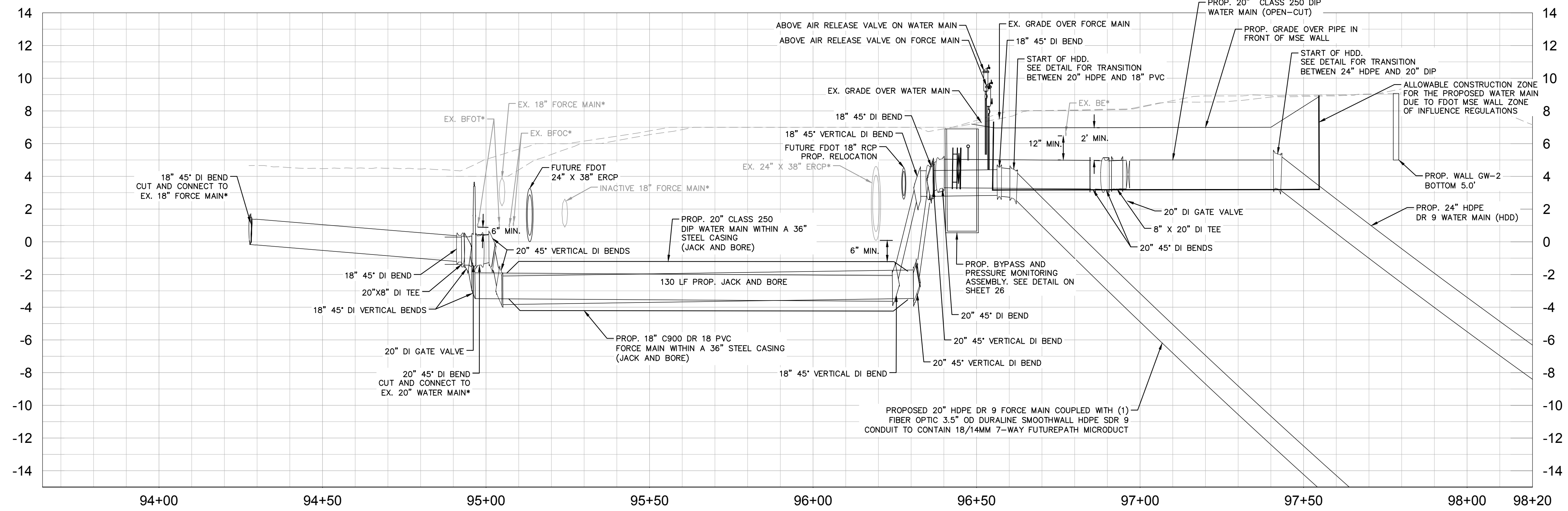
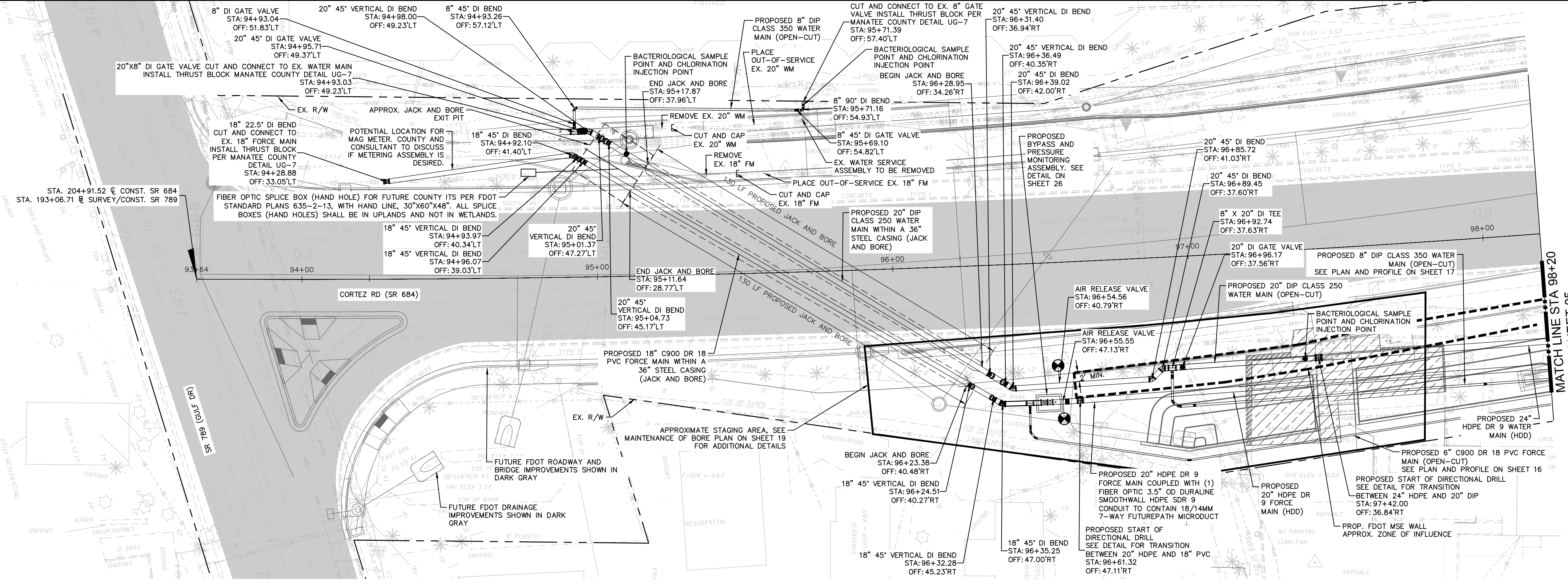
LEGEND

	SIDEWALK/CONCRETE DRIVEWAY RESTORATION
	FULL ROADWAY RESTORATION
	MILLING AND RESURFACING
	REMOVE & REPLACE CURB

NOTES:  
 THE ELEVATIONS OF THE UTILITIES MARKED WITH AN ASTERISK (\*) HAVE BEEN ASSUMED ON THE BASIS OF TYPICAL ANTICIPATED SOIL COVERAGE. CONTRACTOR SHALL NOT RELY ON THIS INFORMATION FOR CONSTRUCTION, BUT SHALL BE RESPONSIBLE FOR FIELD LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL UTILITIES CROSSING THE PROPOSED PIPELINES. CONTRACTOR SHALL INCLUDE IN THE UNIT COST OF THE SUBJECT FORCE MAIN CONSTRUCTION, THE COST OF UTILITY ADJUSTMENTS NECESSARY TO ATTAIN DESIGN MINIMUM SEPARATION FOR UTILITIES CONFLICTING WITH THE CONSTRUCTION OF THE PROPOSED FORCE MAIN. INTERRUPTIONS OF ANY EXISTING UTILITY SERVICES SHALL BE NOTICED TO EFFECTED CUSTOMERS A MINIMUM OF 48 HOURS IN ADVANCE AND SHALL NOT EXCEED 4 HOURS IN DURATION.  
 WHERE CONCRETE REPAIRS ARE NECESSARY AND EXPANSION JOINTS ARE PRESENT, CONTRACTOR TO REMOVE AND REPLACE CONCRETE UP TO THE NEXT EXPANSION JOINT; OTHERWISE, REPLACE CONCRETE AS NECESSARY.

- NOTES:
- CONTRACTOR SHALL RESTRAIN PIPE PER RESTRAIN LENGTHS TABLE ON DETAIL SHEET 24
  - CONSTRUCTION DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CHAPTERS 62-621.300 AND 62-620 OF THE FLORIDA ADMINISTRATIVE CODE (FAC)
  - EXISTING 2" GAS LINE AND BURIED ELECTRIC TO BE FIELD LOCATED WHERE NECESSARY PRIOR TO CONSTRUCTION
  - WHERE LESS THAN 6" MINIMUM SEPARATION IS SHOWN ALL JOINTS SHALL BE RESTRAINED IN ORDER TO MEET FDEP SEPARATION REQUIREMENTS.

**GROUNDWATER / DEWATERING NOTE:**  
 THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



No.	REVISIONS	DATE	BY

**Kimley & Horn**  
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 200 CENTRAL AVENUE, SUITE 600, ST. PETERSBURG, FL 33701  
 PHONE: 727-547-3999  
 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400081  
 DATE JANUARY 2024  
 SCALE AS SHOWN  
 DESIGNED BY JWW  
 DRAWN BY SLB  
 CHECKED BY KMS

**Manatee County**  
 SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING  
 MANATEE COUNTY

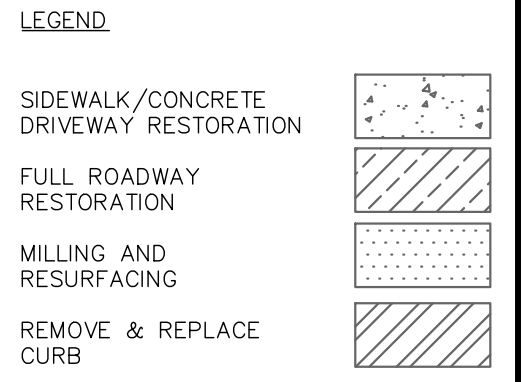
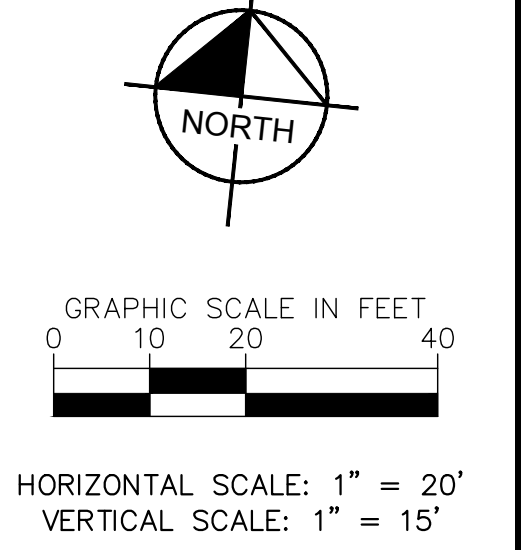
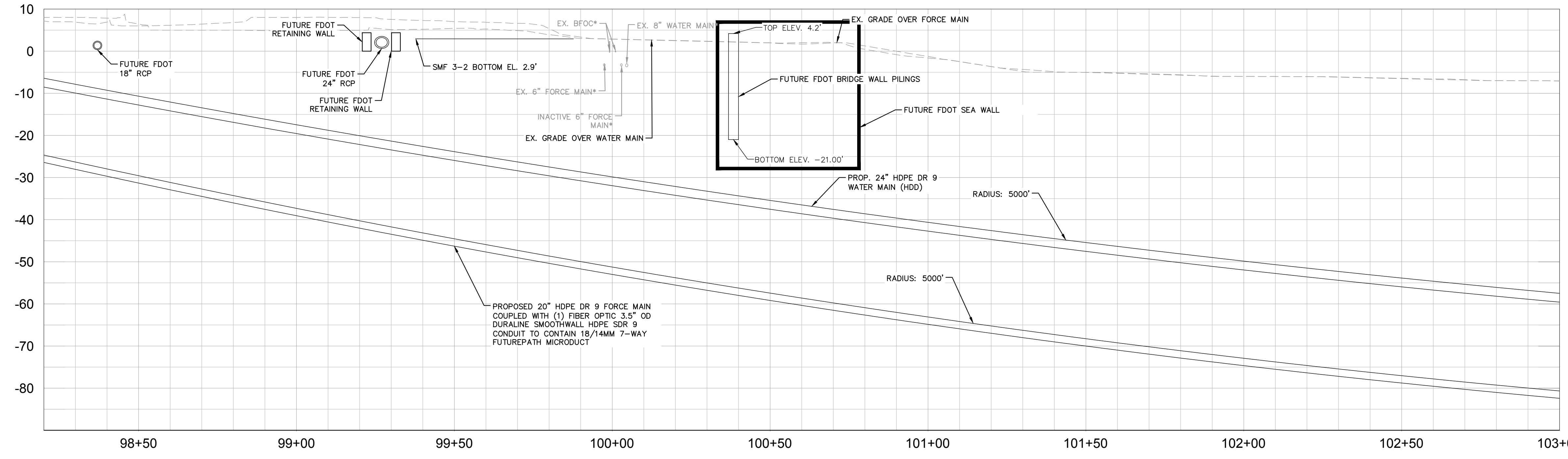
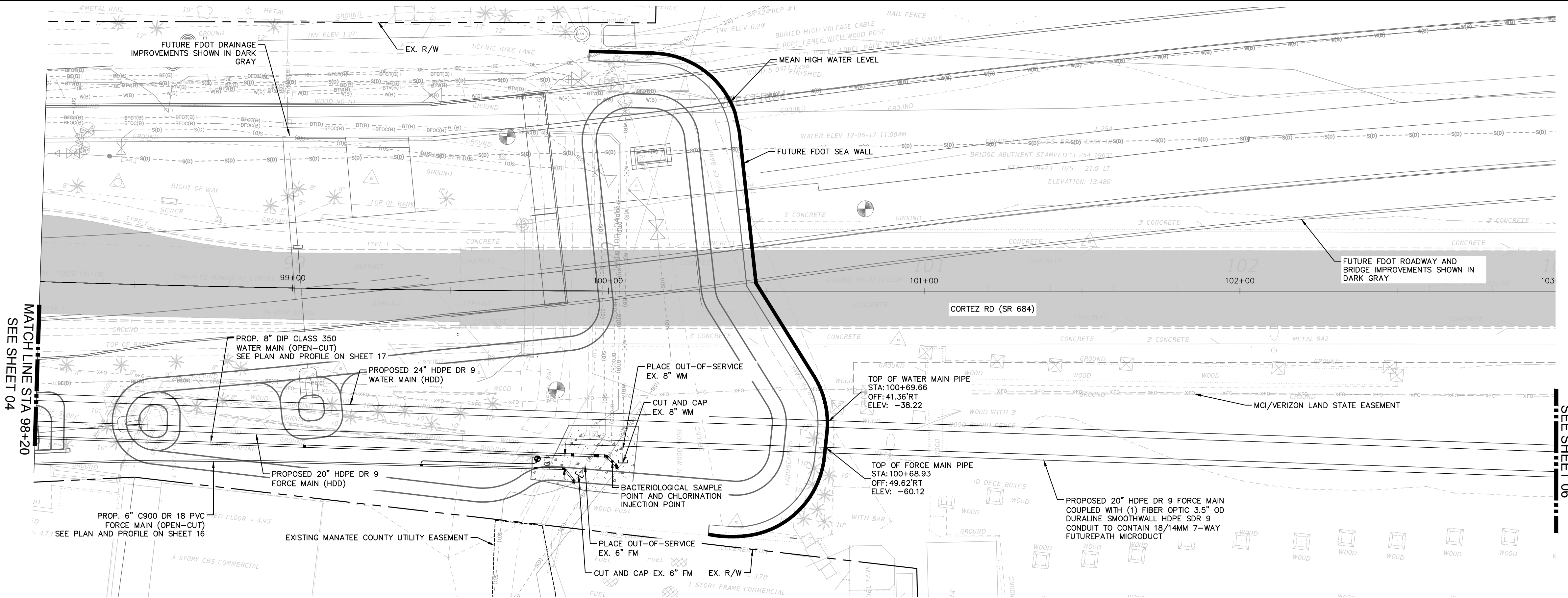
LICENSED PROFESSIONAL  
 JORDAN W. WALKER, P.E.  
 FL LICENSE NUMBER 78652  
 FL DATE: \_\_\_\_\_

**WEST APPROACH**

SHEET NUMBER **04**



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No.	REVISIONS	DATE	BY

**Kimley»Horn**

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 PHONE: 727-547-3999  
 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400081
DATE JANUARY 2024
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
CHECKED BY KMS

**Manatee County**  
 FLORIDA

**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

LICENSED PROFESSIONAL  JORDAN W. WALKER, P.E.
FL LICENSE NUMBER 78652

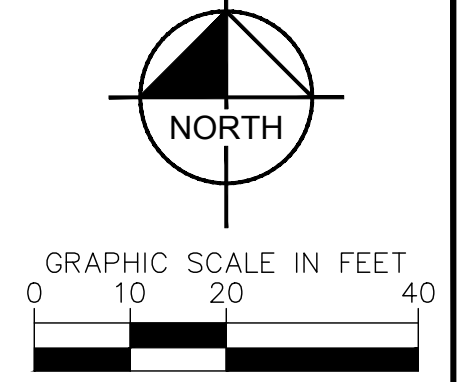
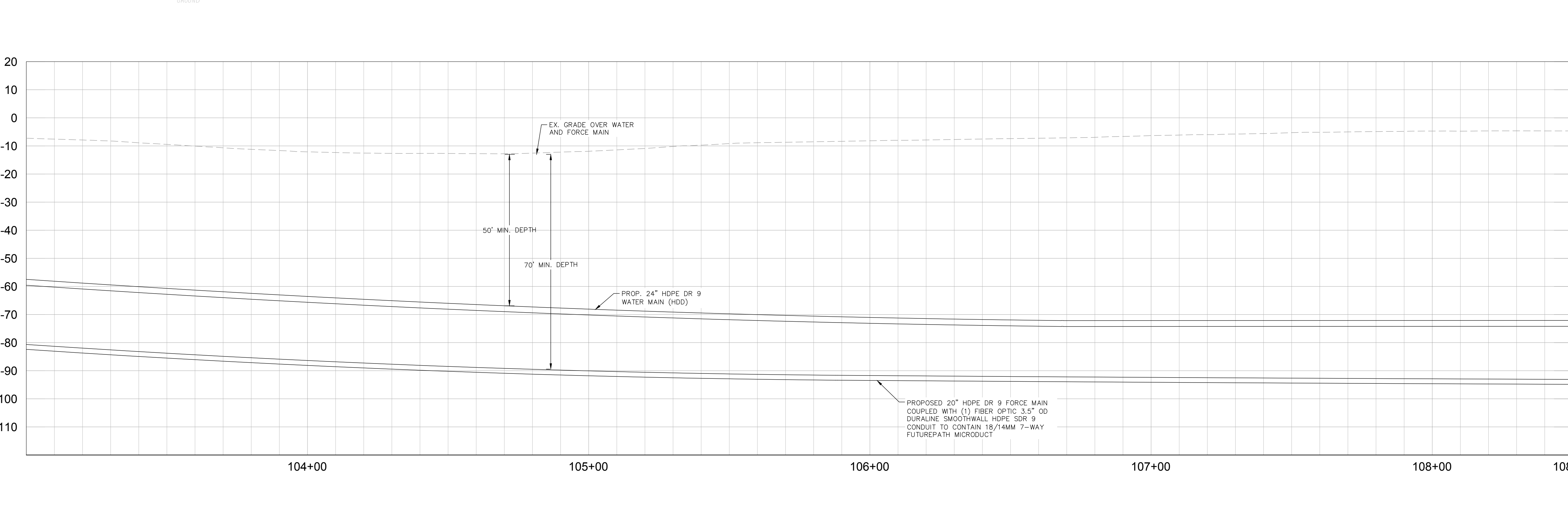
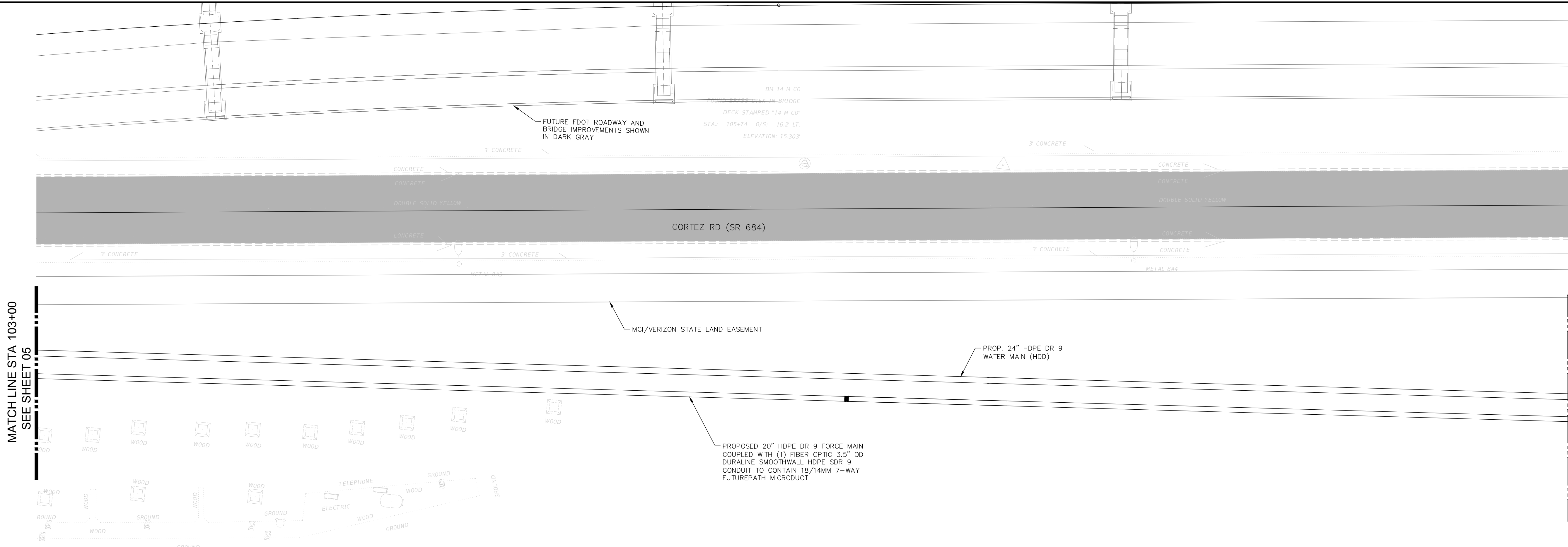
**WEST APPROACH**

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

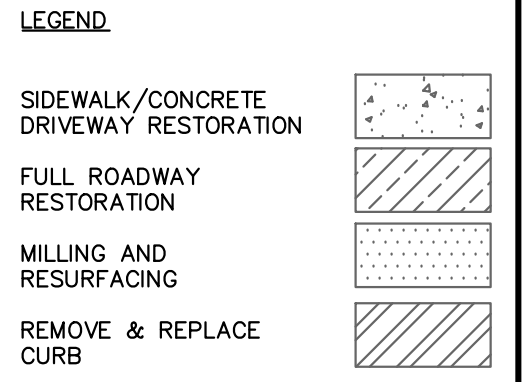
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HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 20'



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**Kimley»Horn**

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**Manatee County FLORIDA**

**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

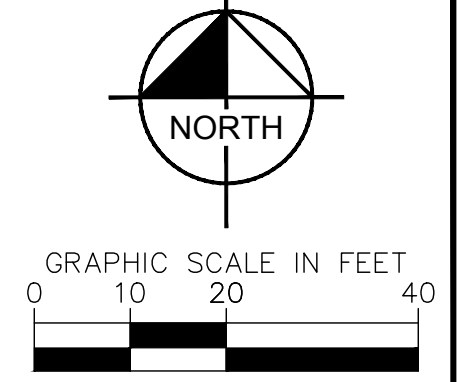
LICENSED PROFESSIONAL
JORDAN W. WALKER, P.E.
FL LICENSE NUMBER 78652

**INTRACOASTAL CROSSING**

SHEET NUMBER
<b>06</b>



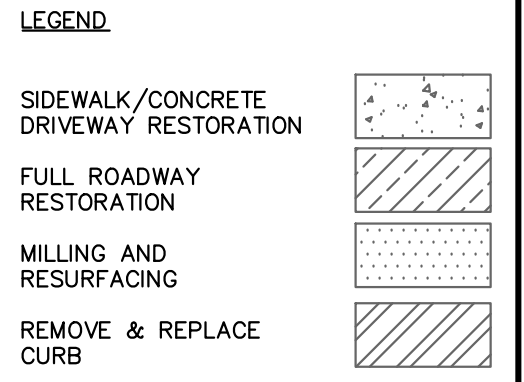
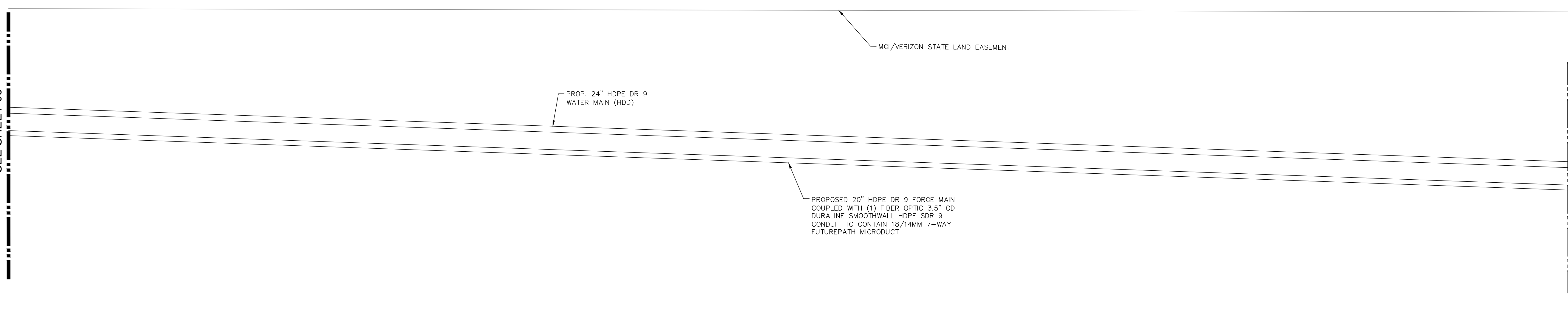
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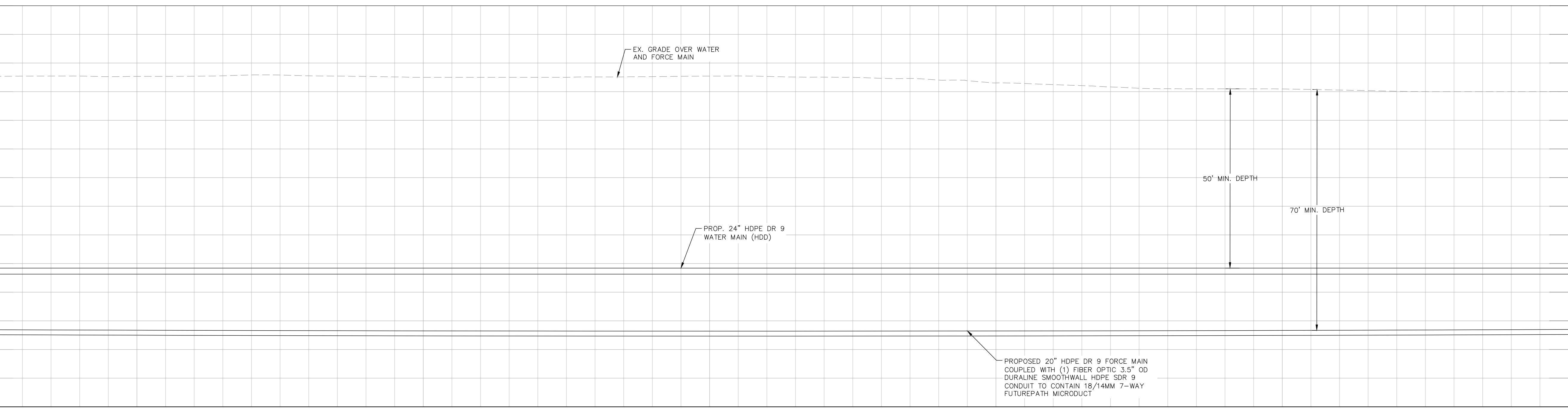
MATCH LINE STA 108+50  
SEE SHEET 06

MATCH LINE STA 114+00  
SEE SHEET 08



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KHA PROJECT 148400081
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DRAWN BY SLB
CHECKED BY KMS

**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

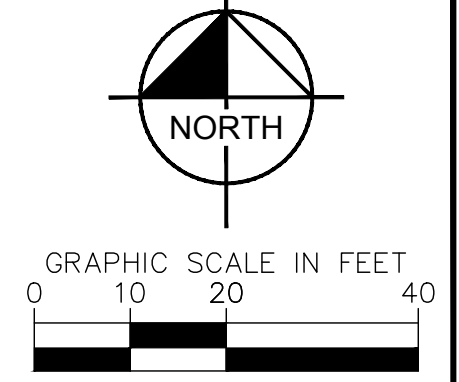
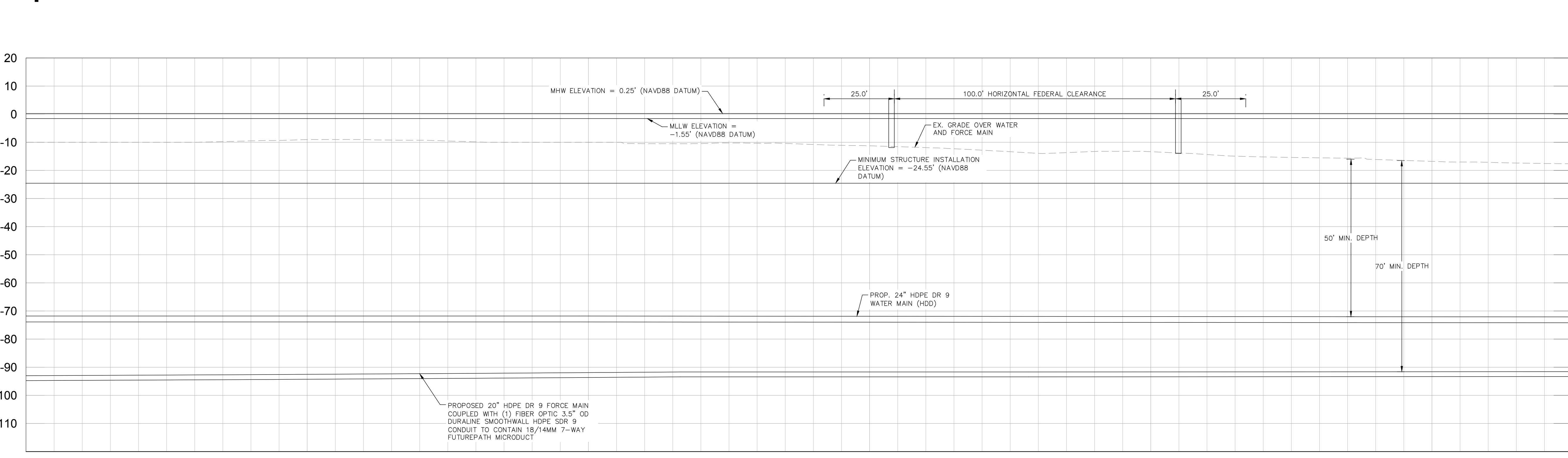
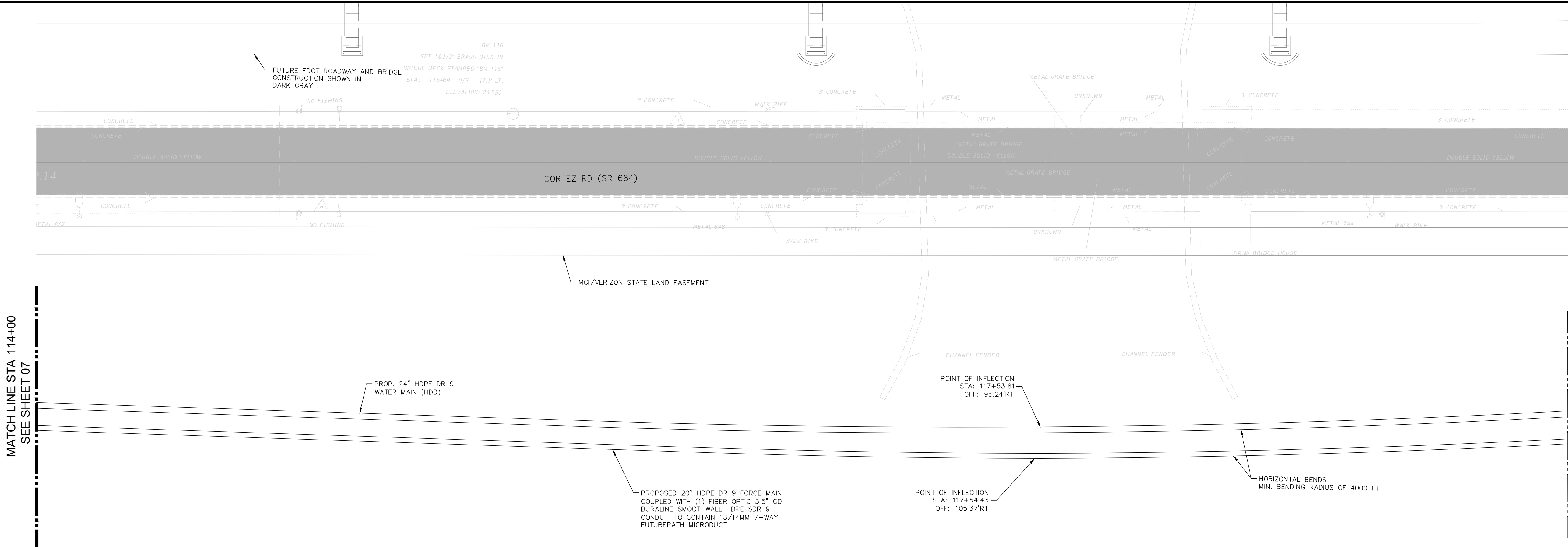
LICENSED PROFESSIONAL  JORDAN W. WALKER, P.E.  FL LICENSE NUMBER 78652
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**INTRACOASTAL CROSSING**

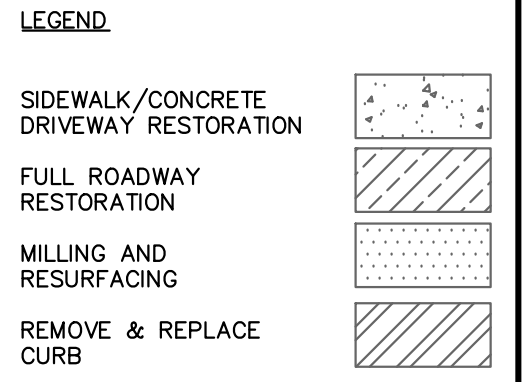
SHEET NUMBER  <b>07</b>
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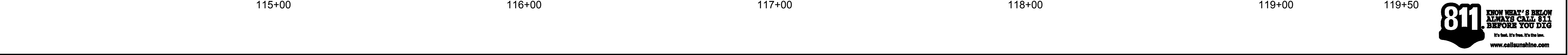
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 20'



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- NOTES:**
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  2. CONSTRUCTION DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CHAPTERS 62-621.300 AND 62-620 OF THE FLORIDA ADMINISTRATIVE CODE (FAC)
  3. EXISTING 2" GAS LINE AND BURIED ELECTRIC TO BE FIELD LOCATED WHERE NECESSARY PRIOR TO CONSTRUCTION
  4. WHERE LESS THAN 6' MINIMUM SEPARATION IS SHOWN ALL JOINTS SHALL BE RESTRAINED IN ORDER TO MEET DEEP SEPARATION REQUIREMENTS.

**GROUNDWATER / DEWATERING NOTE:**  
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No.	REVISIONS	DATE	BY

**Kimley»Horn**

© 2024 KIMLEY-HORN AND ASSOCIATES, INC.  
200 CENTRAL AVENUE, SUITE 600, ST. PETERSBURG, FL 33701  
PHONE: 727-547-3999  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400081
DATE JANUARY 2024
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
CHECKED BY KMS

**Manatee County FLORIDA**

**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

LICENSED PROFESSIONAL

JORDAN W. WALKER, P.E.

FL LICENSE NUMBER  
78652

FL DATE:

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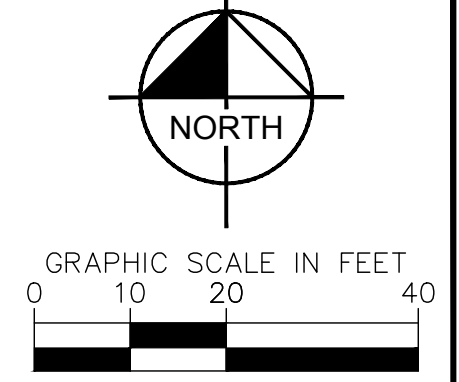
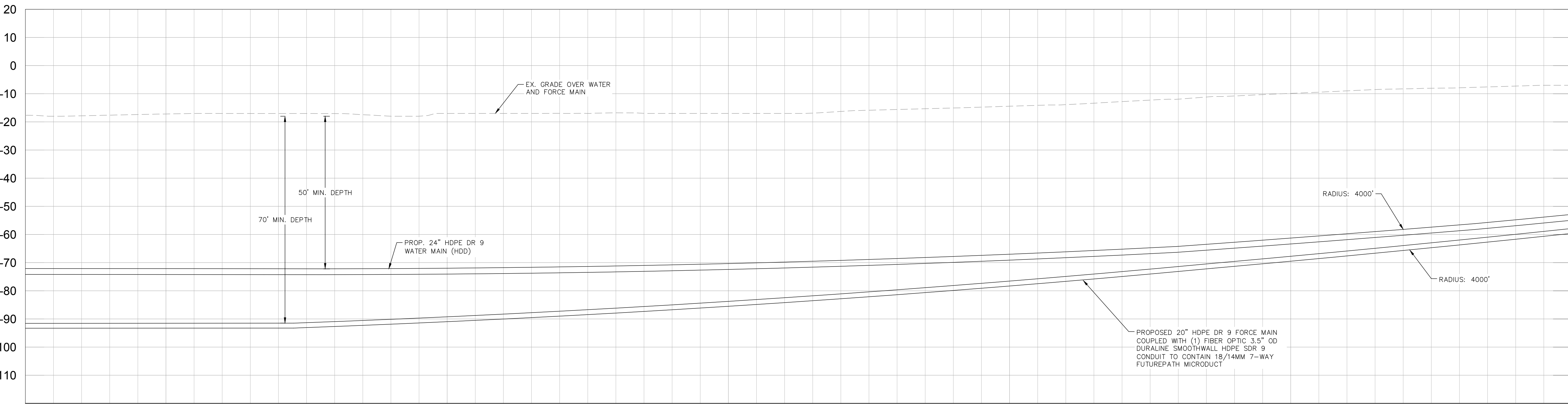
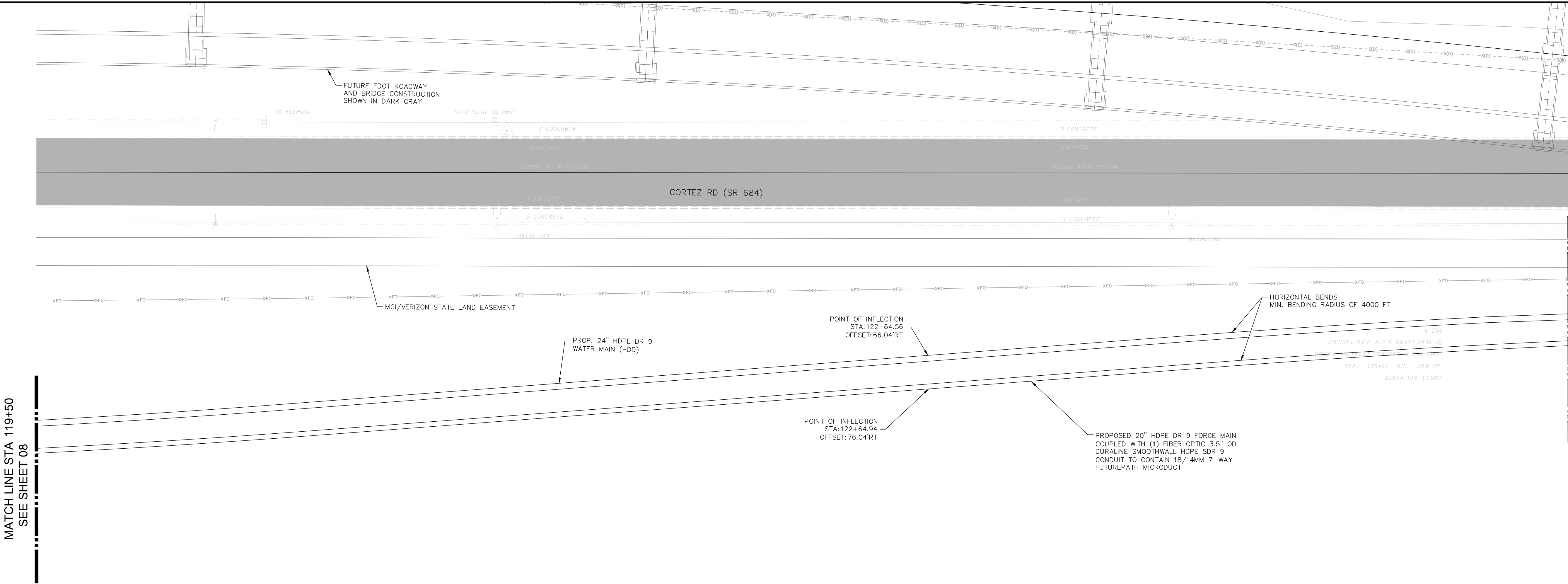
SHEET NUMBER

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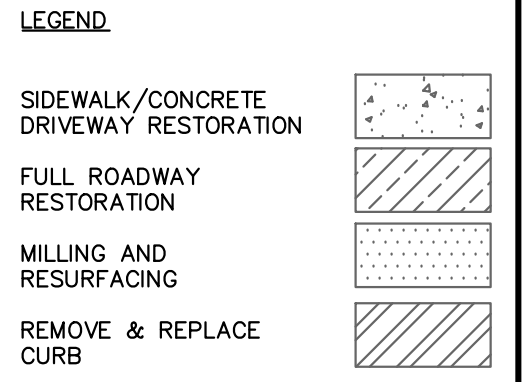
**811** KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG  
It's fast. It's free. It's the law.  
www.callsunshine.com



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PHONE: 727-547-3999  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400081
DATE JANUARY 2024
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
CHECKED BY KMS

**Manatee County**

**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

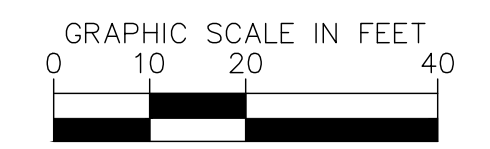
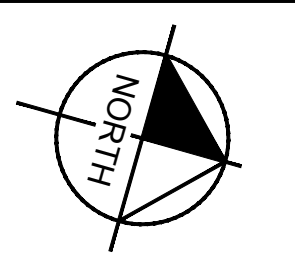
LICENSED PROFESSIONAL JORDAN W. WALKER, P.E.
FL LICENSE NUMBER 78652

**INTRACOASTAL CROSSING**

DATE:

SHEET NUMBER <b>09</b>
---------------------------





HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 15'

LEGEND

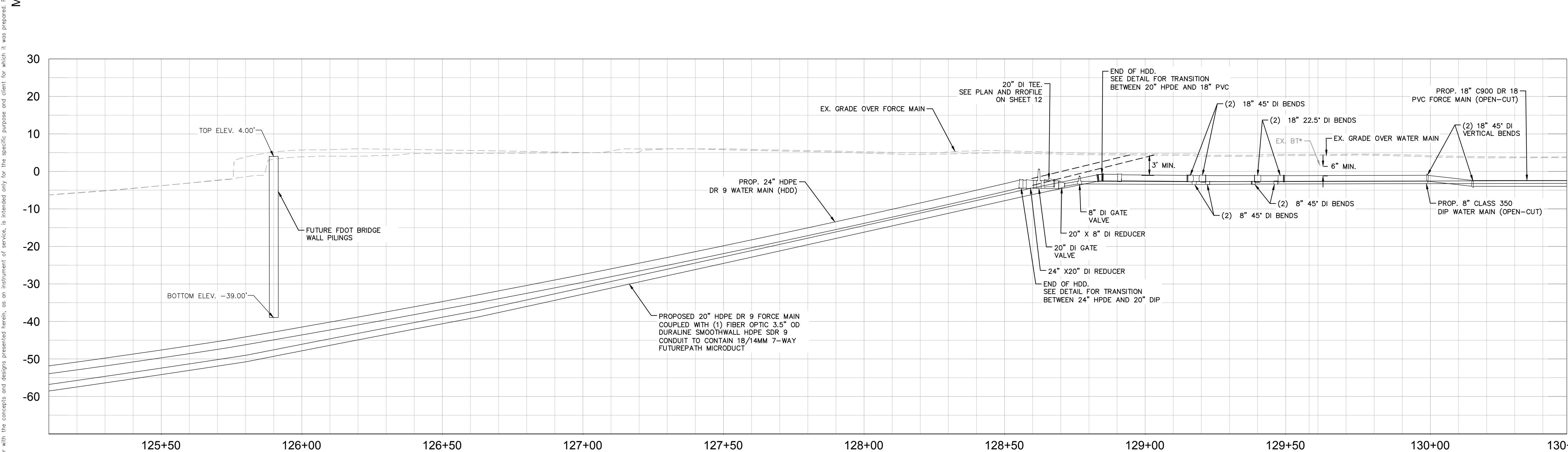
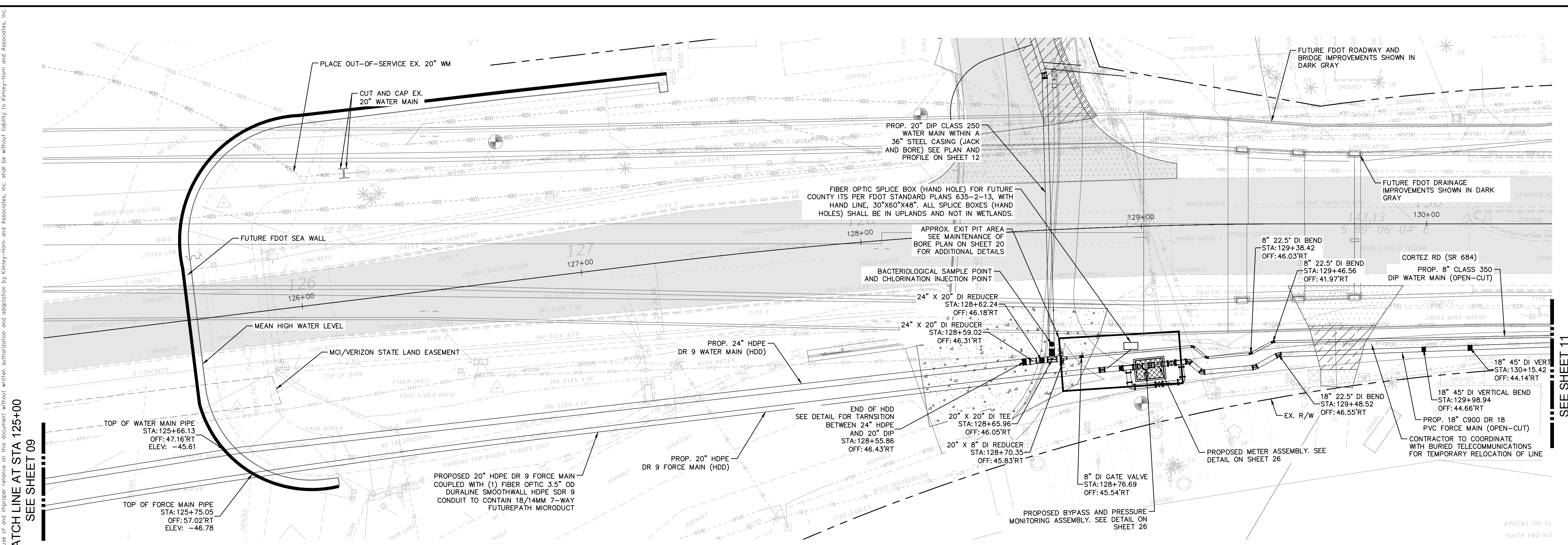
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FULL ROADWAY RESTORATION	[Pattern]
MILLING AND RESURFACING	[Pattern]
REMOVE & REPLACE CURB	[Pattern]

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WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT	148400081
DATE	JANUARY 2024
SCALE	AS SHOWN
DESIGNED BY	JWW
DRAWN BY	SLB
CHECKED BY	KMS

**Manatee County**  
FLORIDA

**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

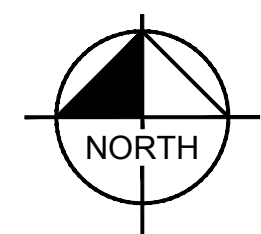
MANATEE COUNTY

LICENSED PROFESSIONAL  
JORDAN W. WALKER, P.E.  
FL LICENSE NUMBER  
78652

**EAST APPROACH**

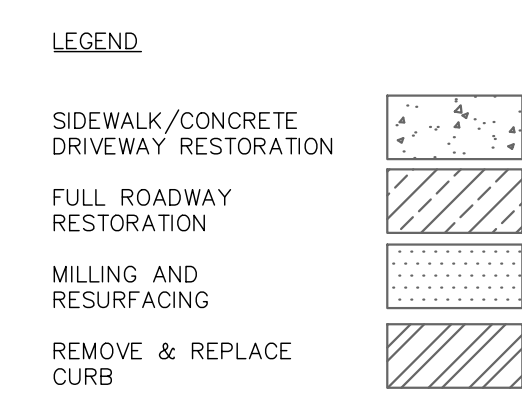
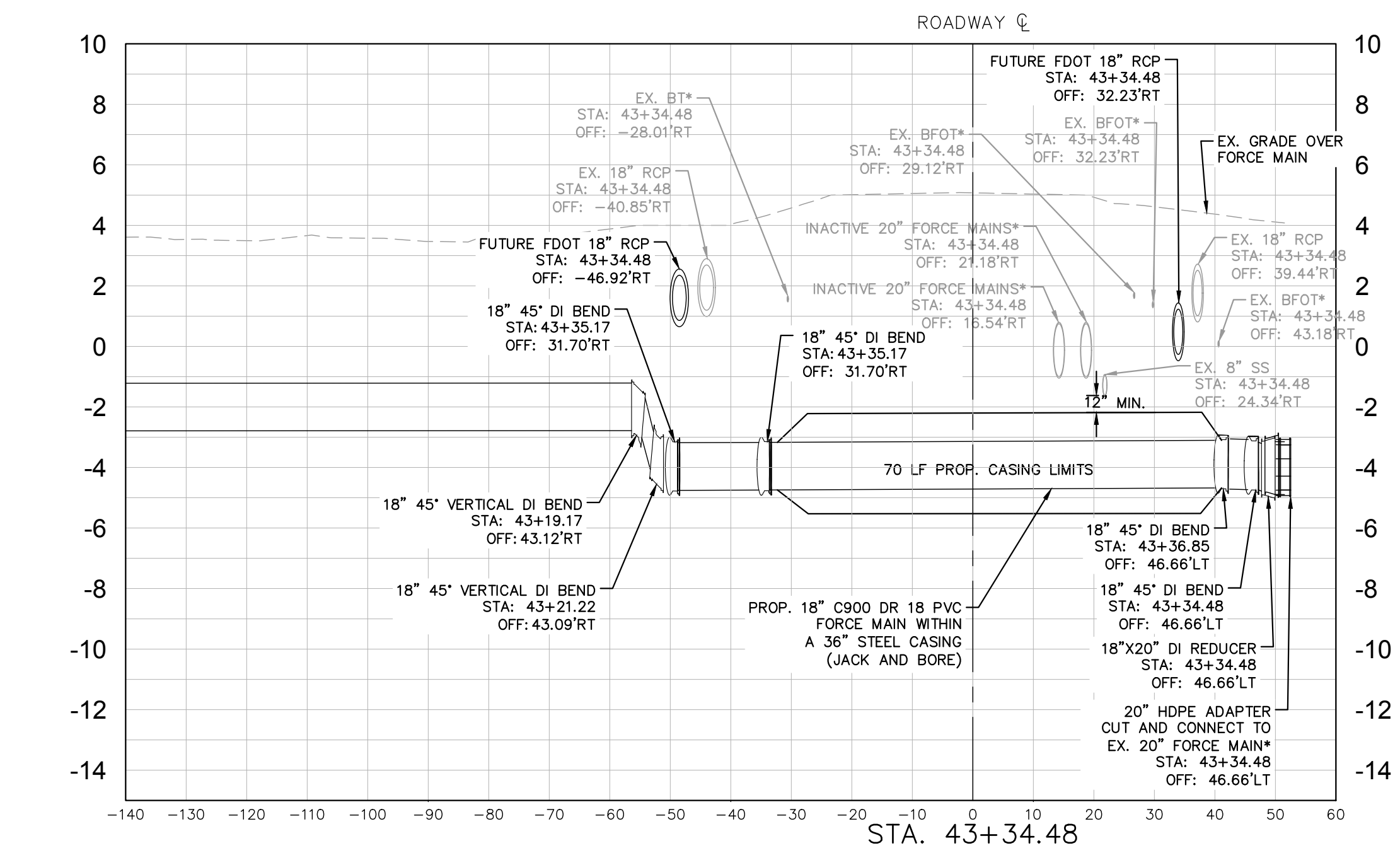
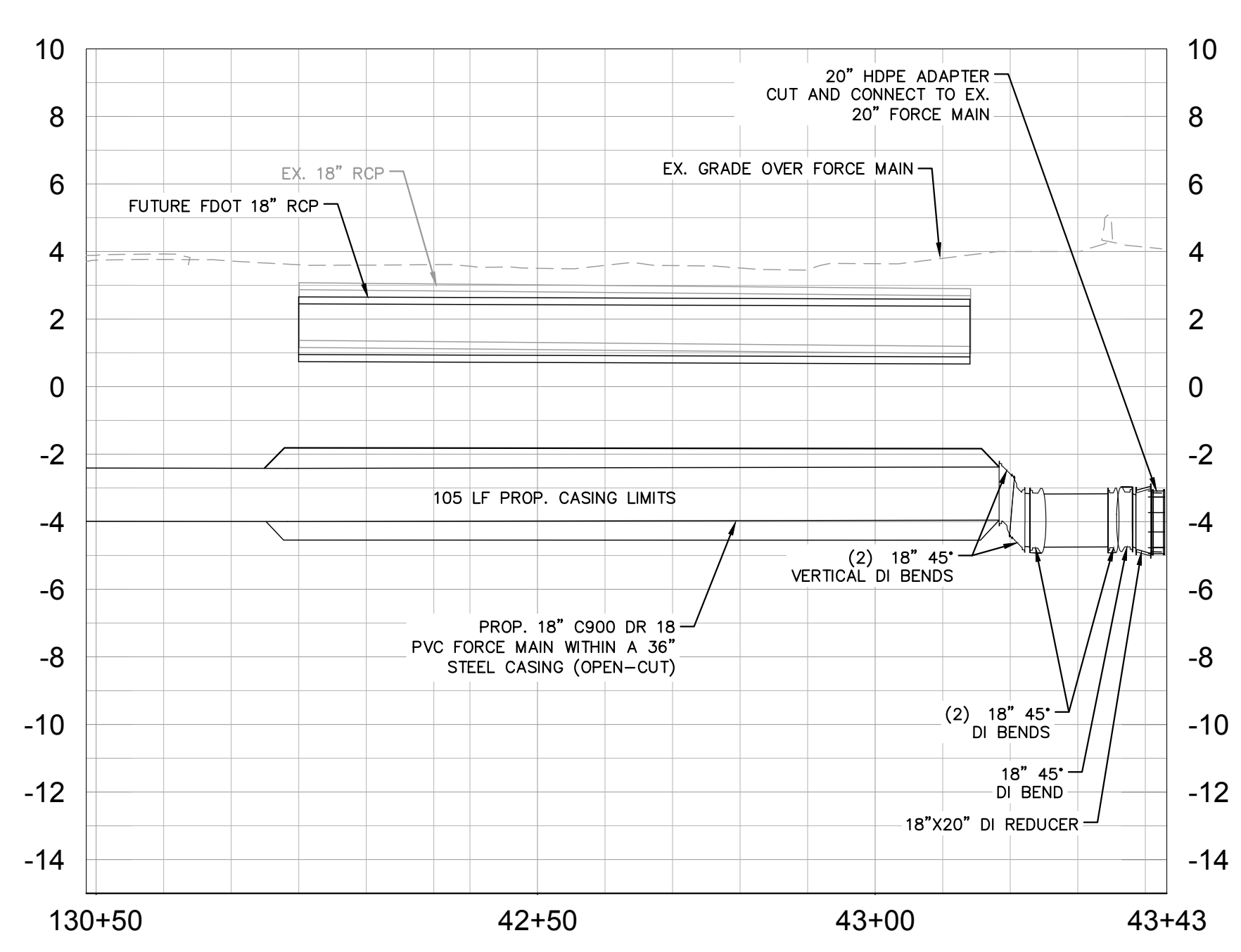
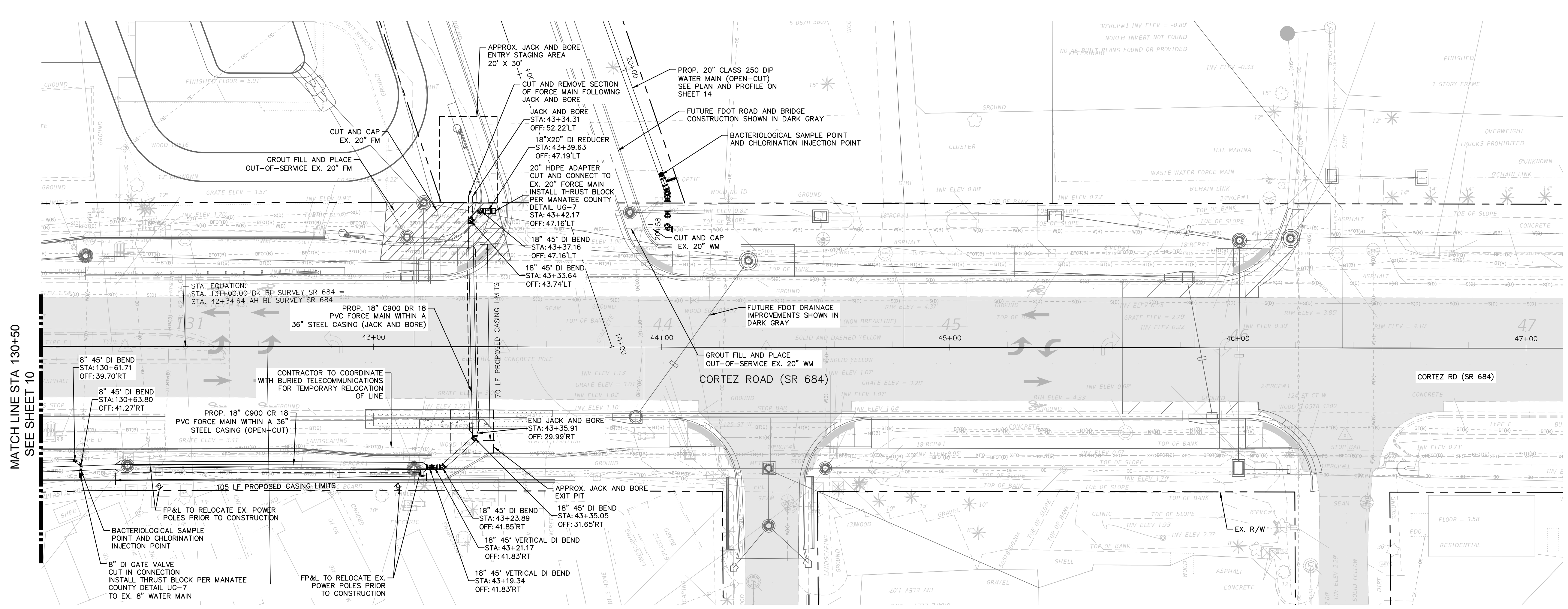
SHEET NUMBER  
**10**





GRAPHIC SCALE IN FEET  
0 10 20 40

HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'



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**Manatee County**  
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MANATEE COUNTY

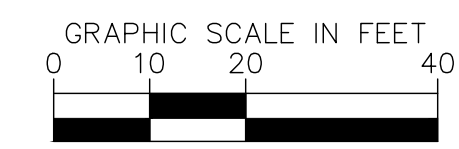
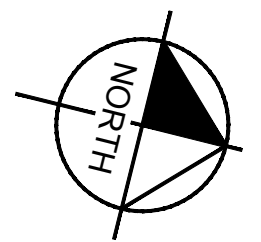
LICENSED PROFESSIONAL  
JORDAN W. WALKER, P.E.  
FL LICENSE NUMBER  
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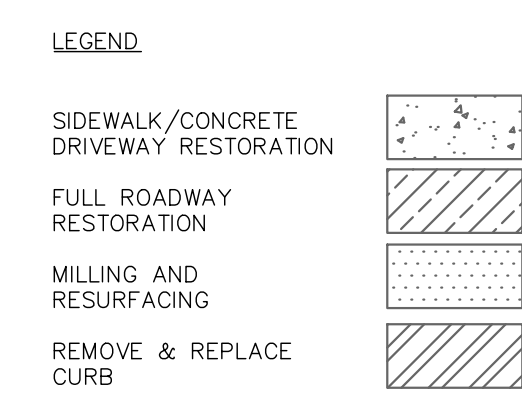
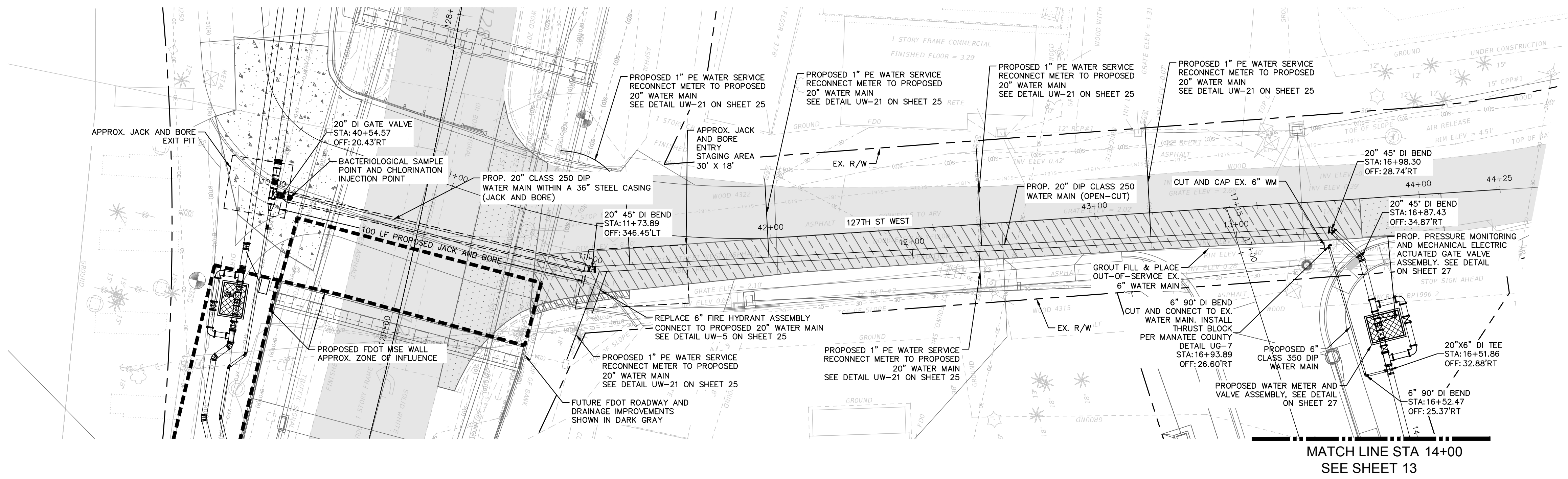
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SHEET NUMBER  
**11**





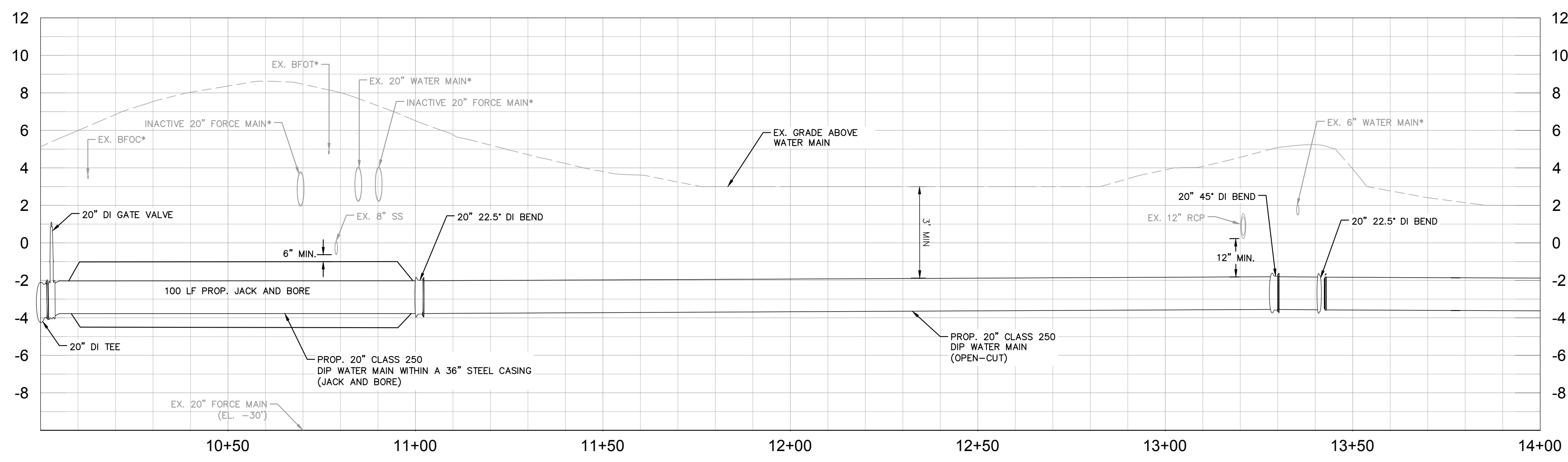
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VERTICAL SCALE: 1" = 4'



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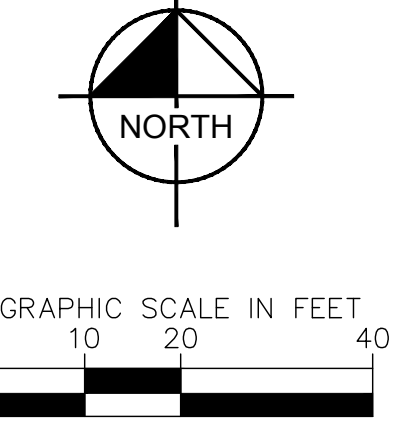
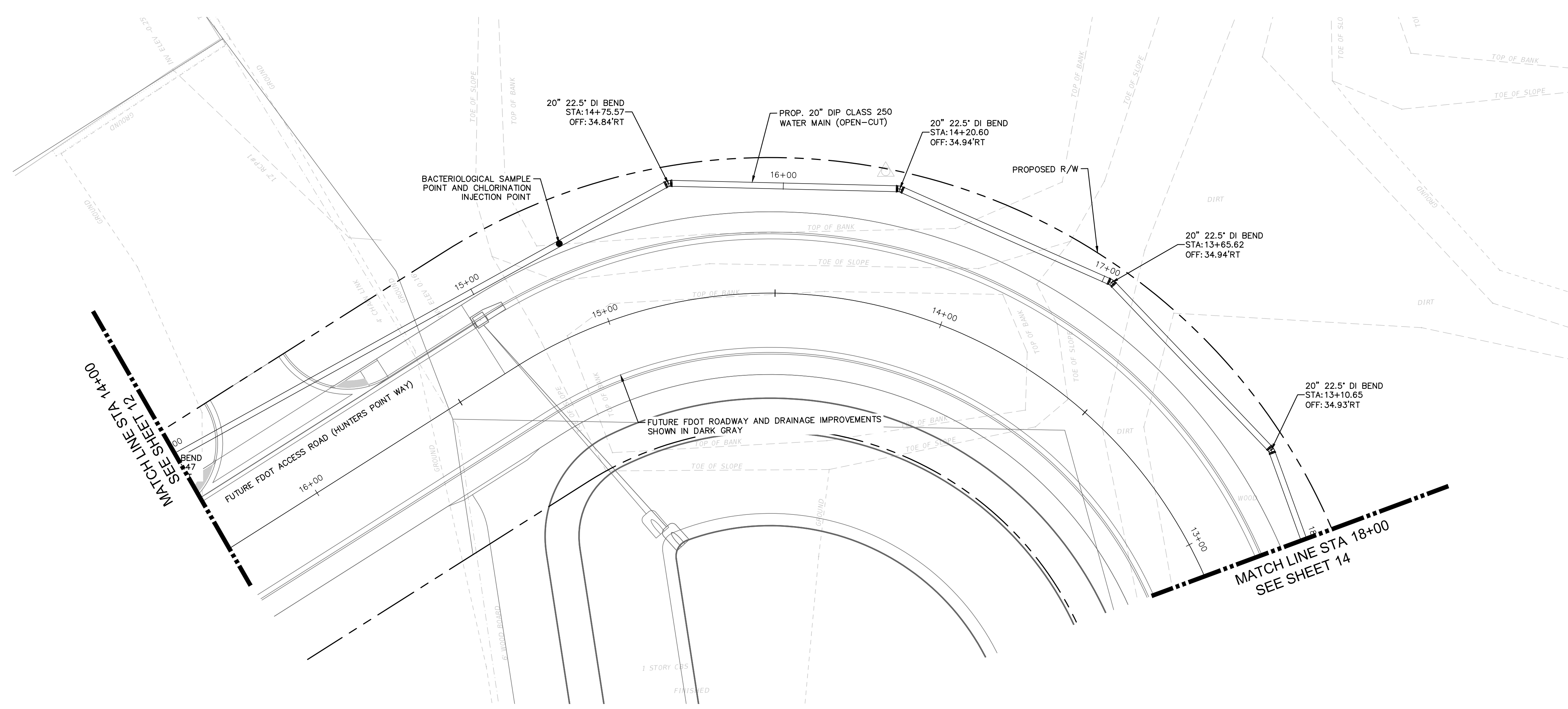
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SHEET NUMBER
<b>12</b>

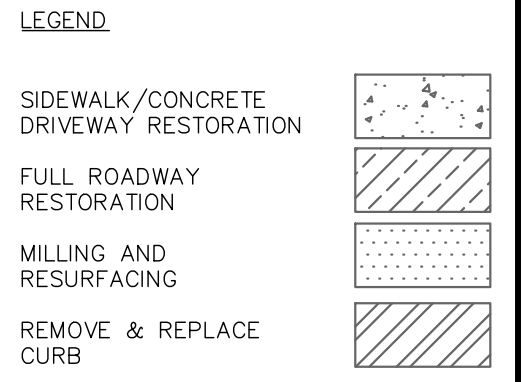




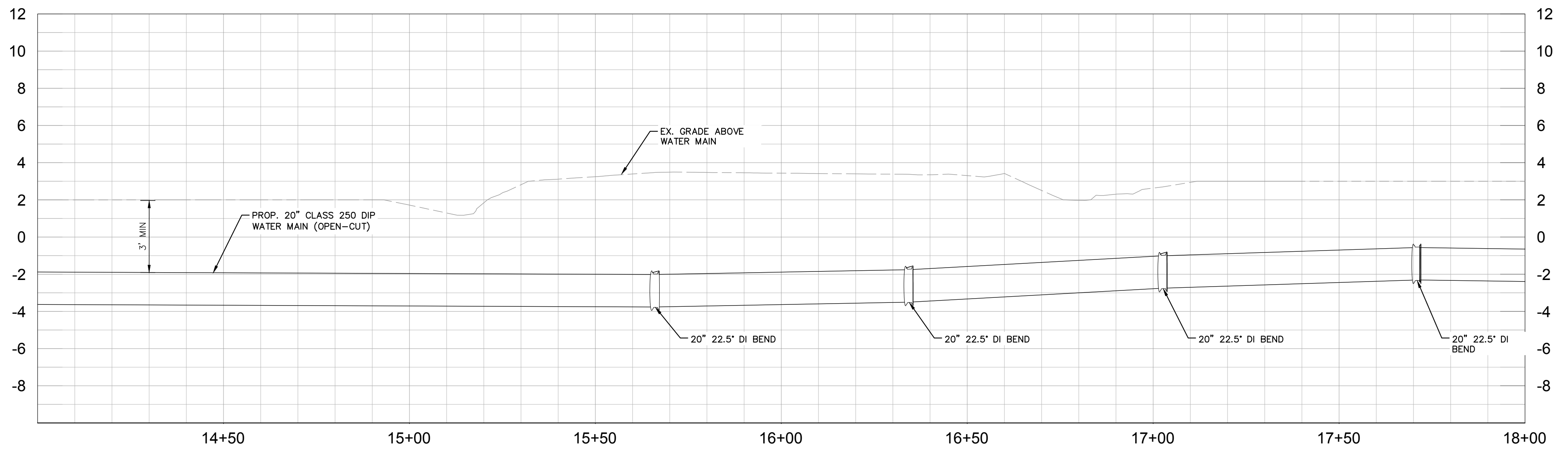
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**Manatee County**  
SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING  
MANATEE COUNTY

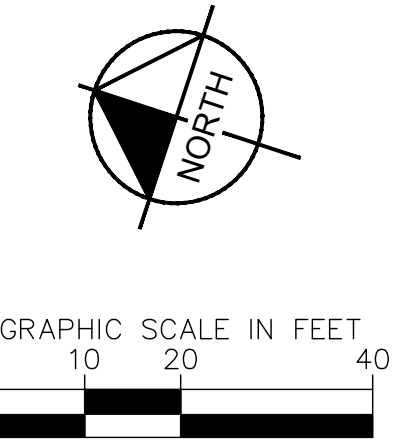
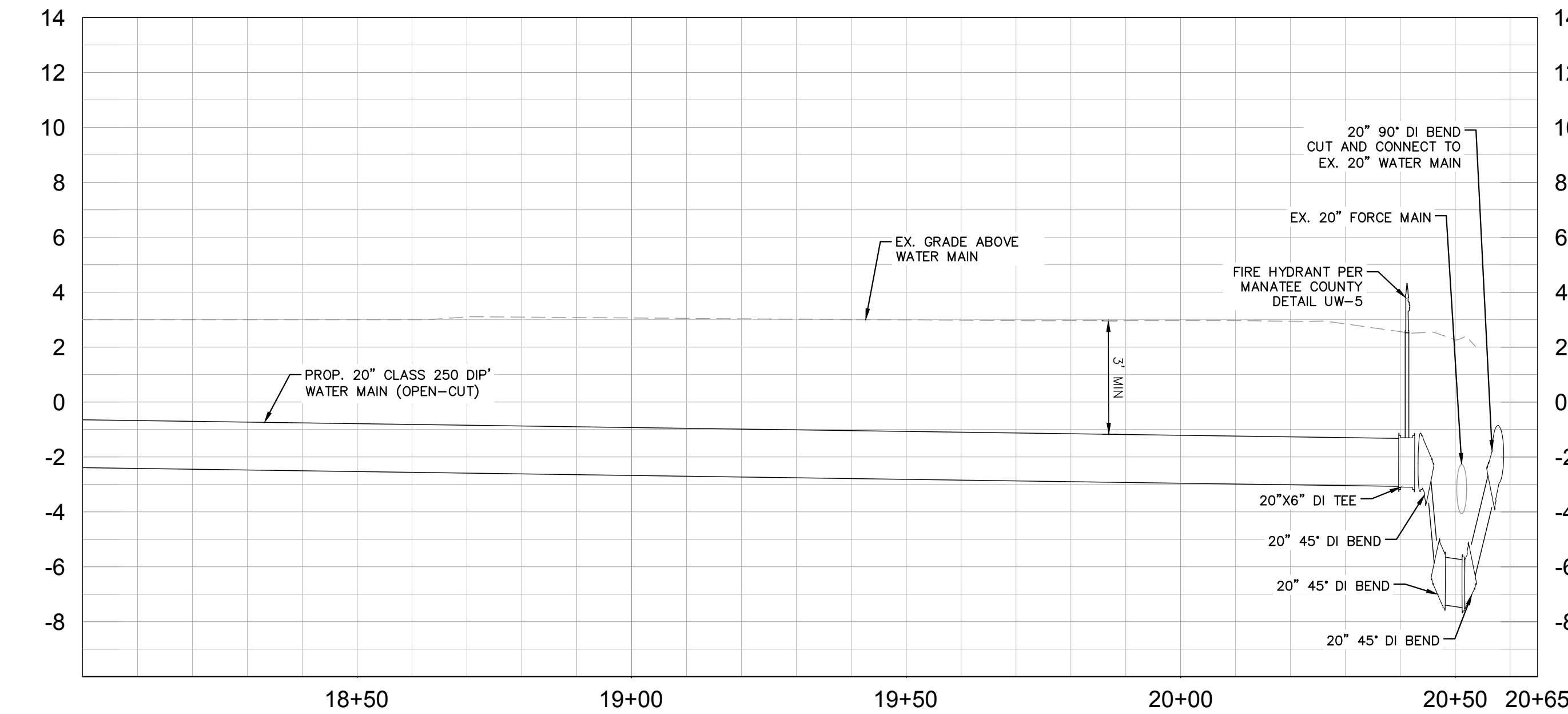
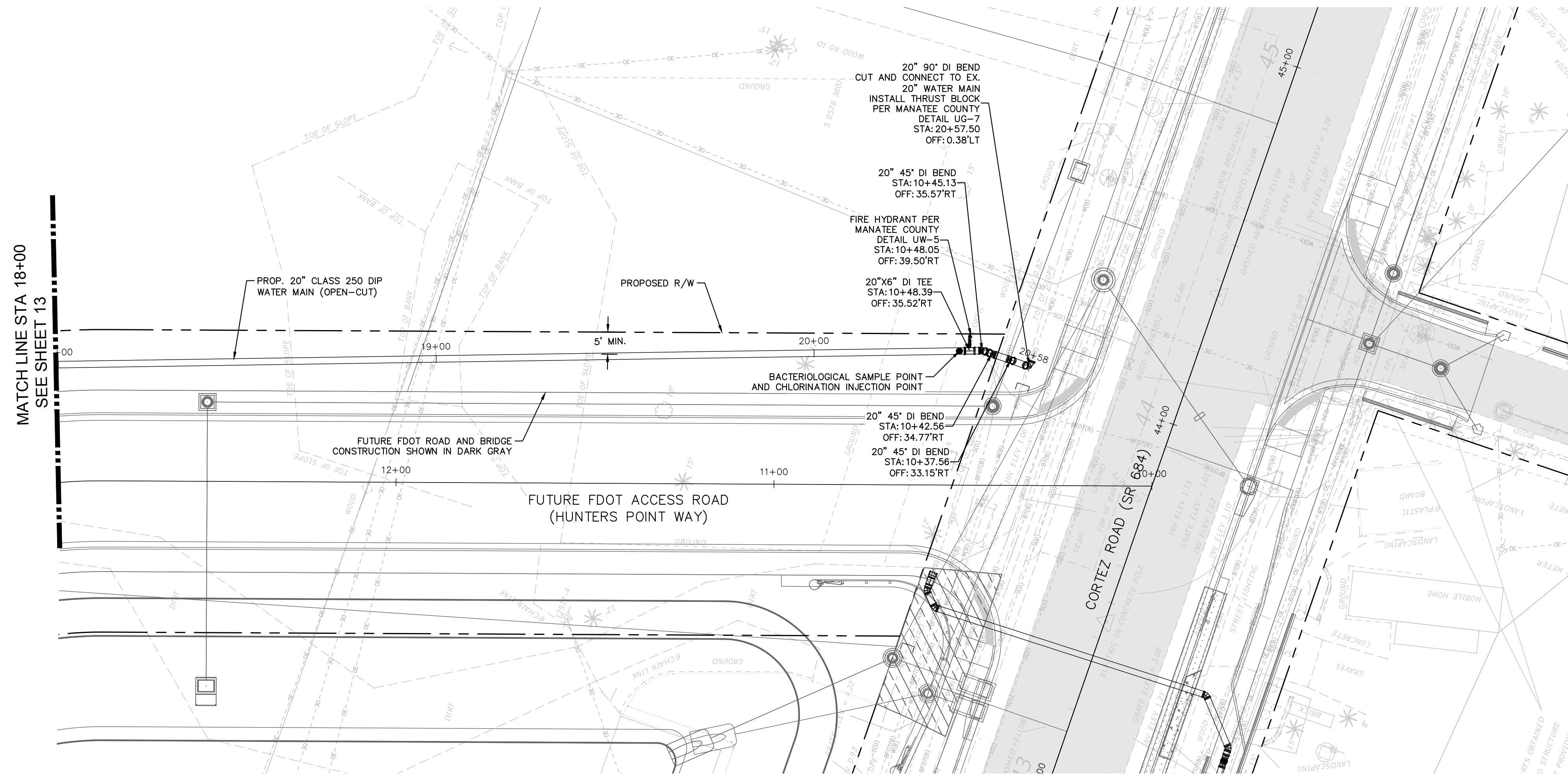
LICENSED PROFESSIONAL JORDAN W. WALKER, P.E. FL LICENSE NUMBER 78652
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**EAST APPROACH**

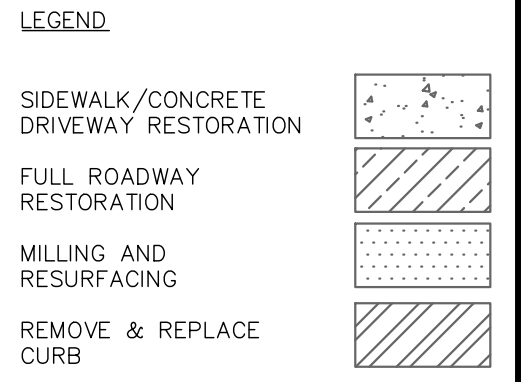
SHEET NUMBER <b>13</b>
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HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'



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200 CENTRAL AVENUE, SUITE 600, ST. PETERSBURG, FL 33701  
PHONE: 727-547-3999  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400081
DATE JANUARY 2024
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
CHECKED BY KMS

**Manatee County**  
SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING  
MANATEE COUNTY

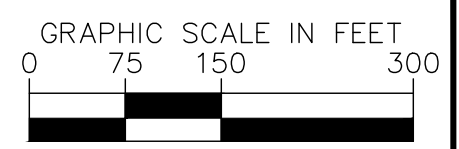
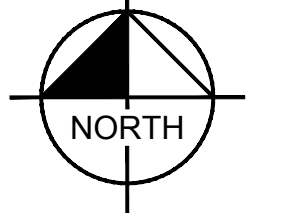
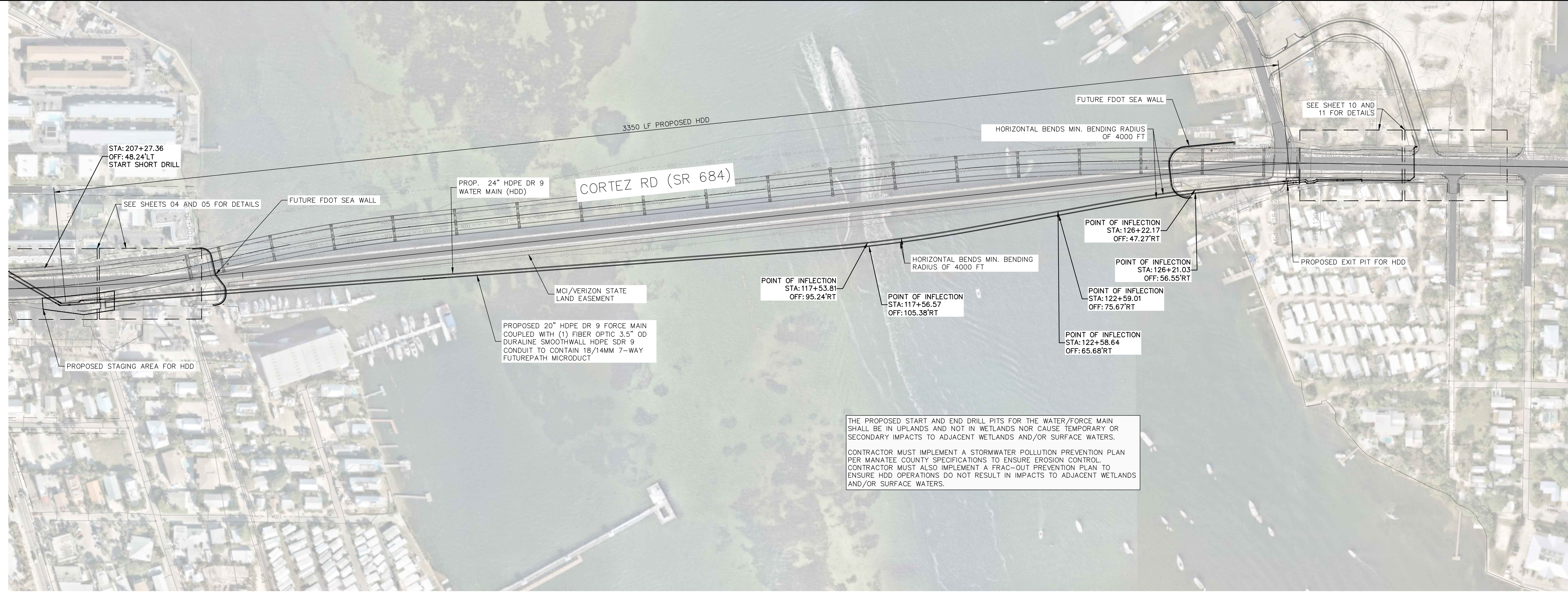
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FL LICENSE NUMBER  
78652

**EAST APPROACH**

SHEET NUMBER  
**14**



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HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 20'

**LEGEND**

- SIDEWALK/CONCRETE DRIVEWAY RESTORATION
- FULL ROADWAY RESTORATION
- MILLING AND RESURFACING
- REMOVE & REPLACE CURB

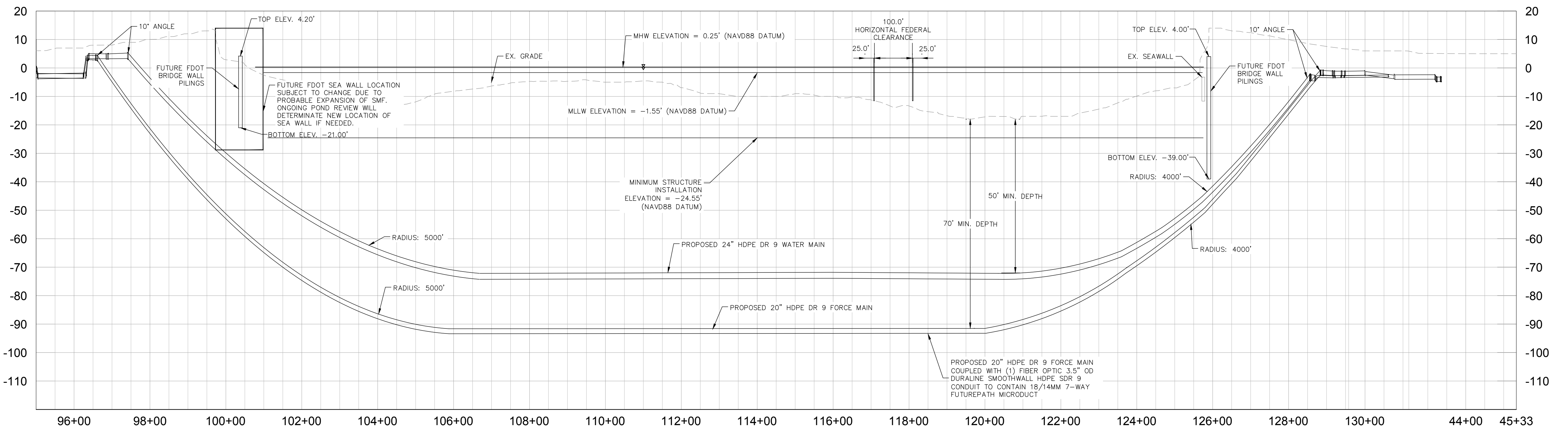
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KHA PROJECT 148400081
DATE JANUARY 2024
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
CHECKED BY KMS

**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

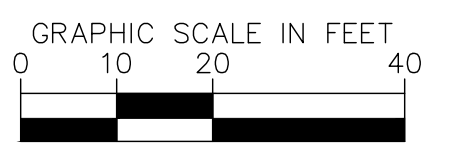
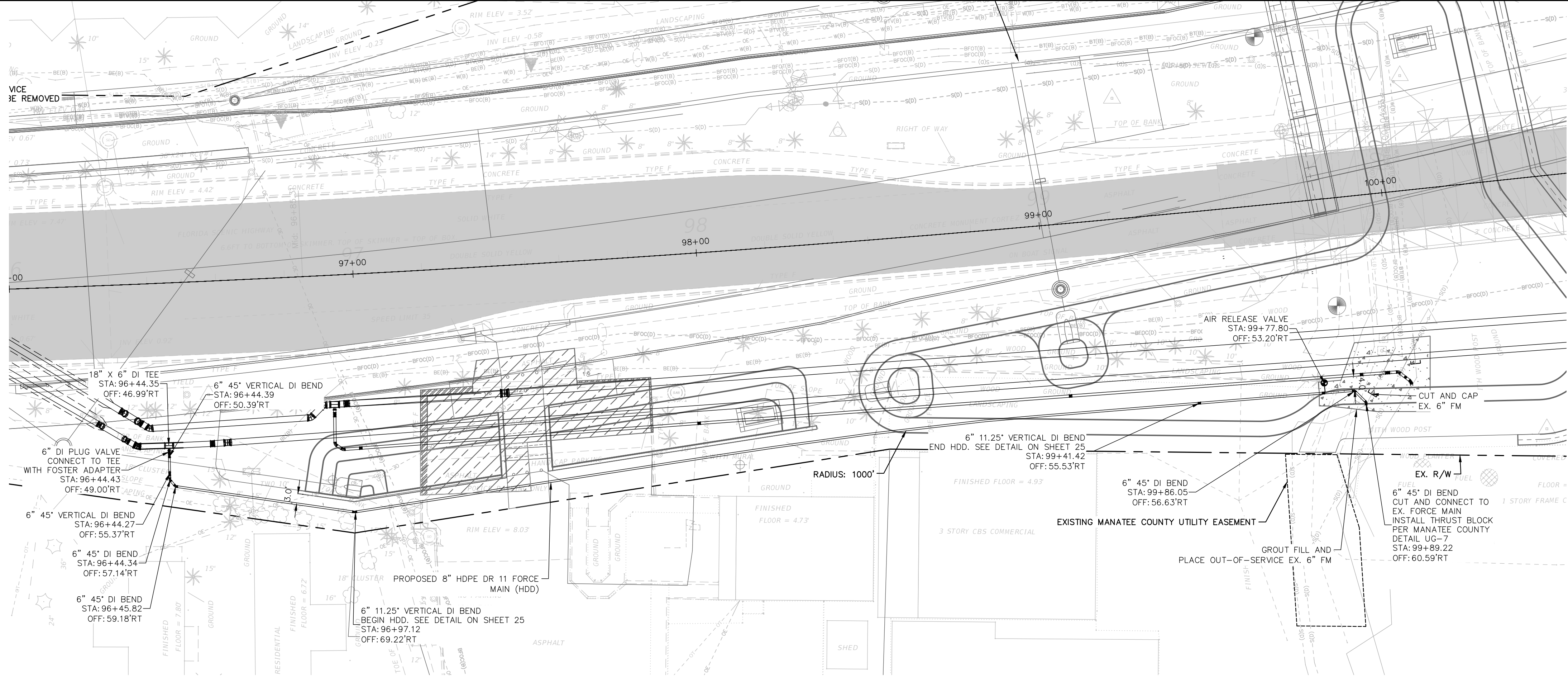
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FL LICENSE NUMBER 78652

**OVERALL DRILL PLAN**

SHEET NUMBER
<b>15</b>



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HORIZONTAL SCALE: 1" = 20'  
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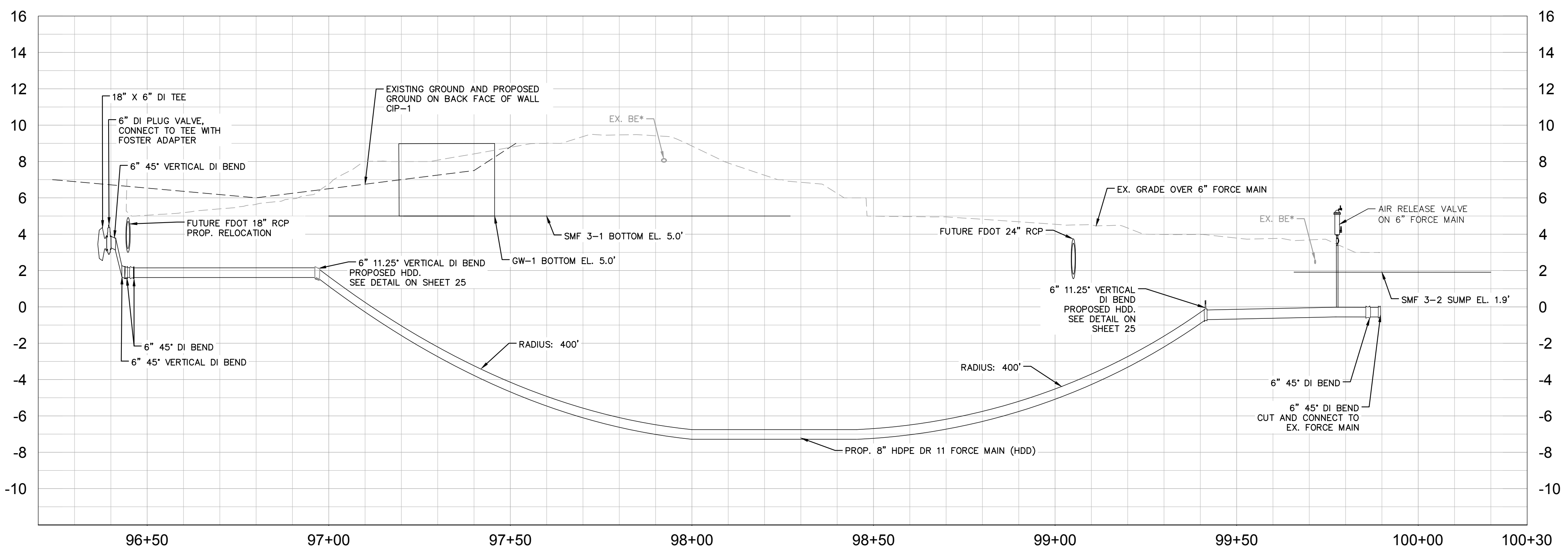
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**Manatee County**  
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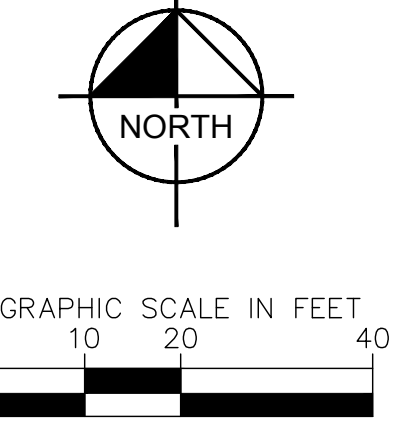
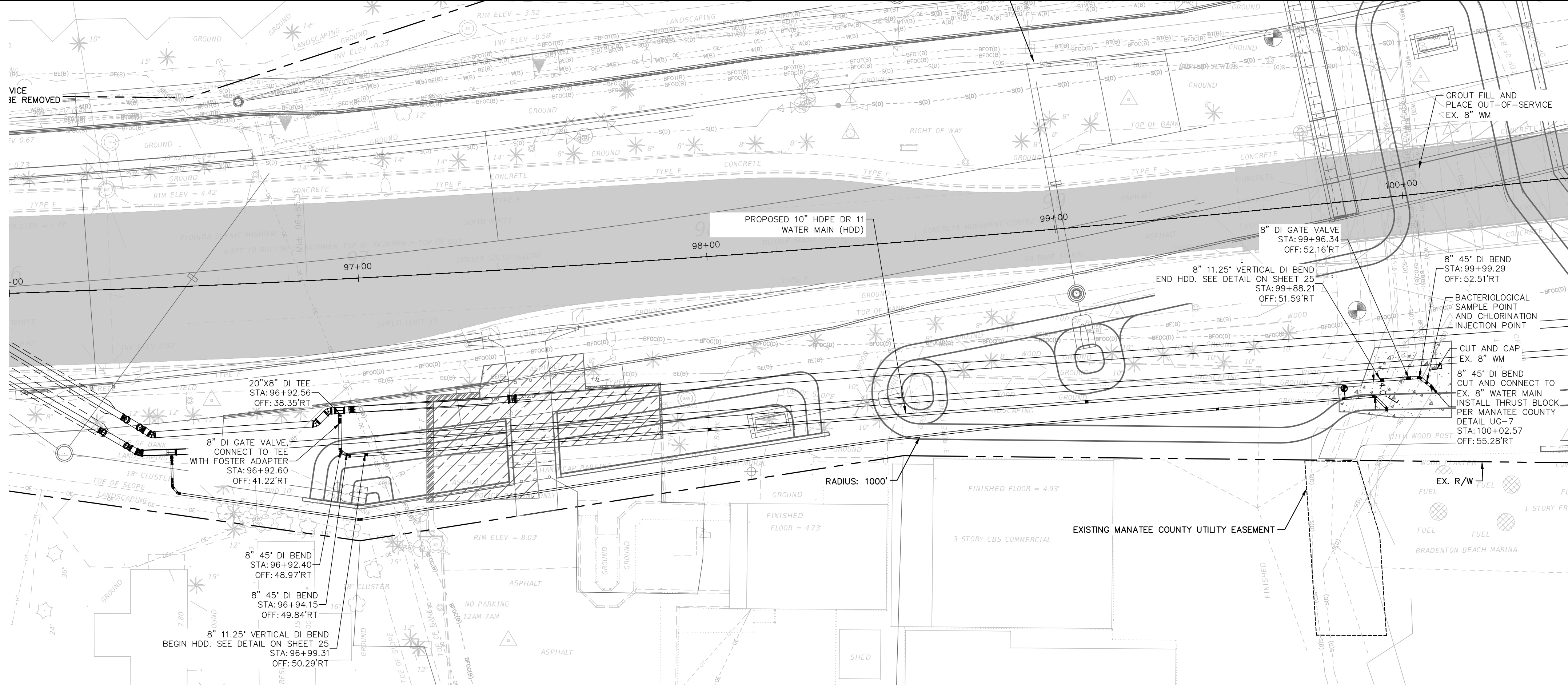
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FL LICENSE NUMBER 78652

**FORCE MAIN RELOCATION**

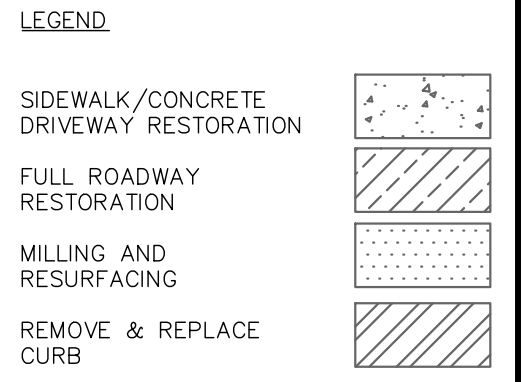
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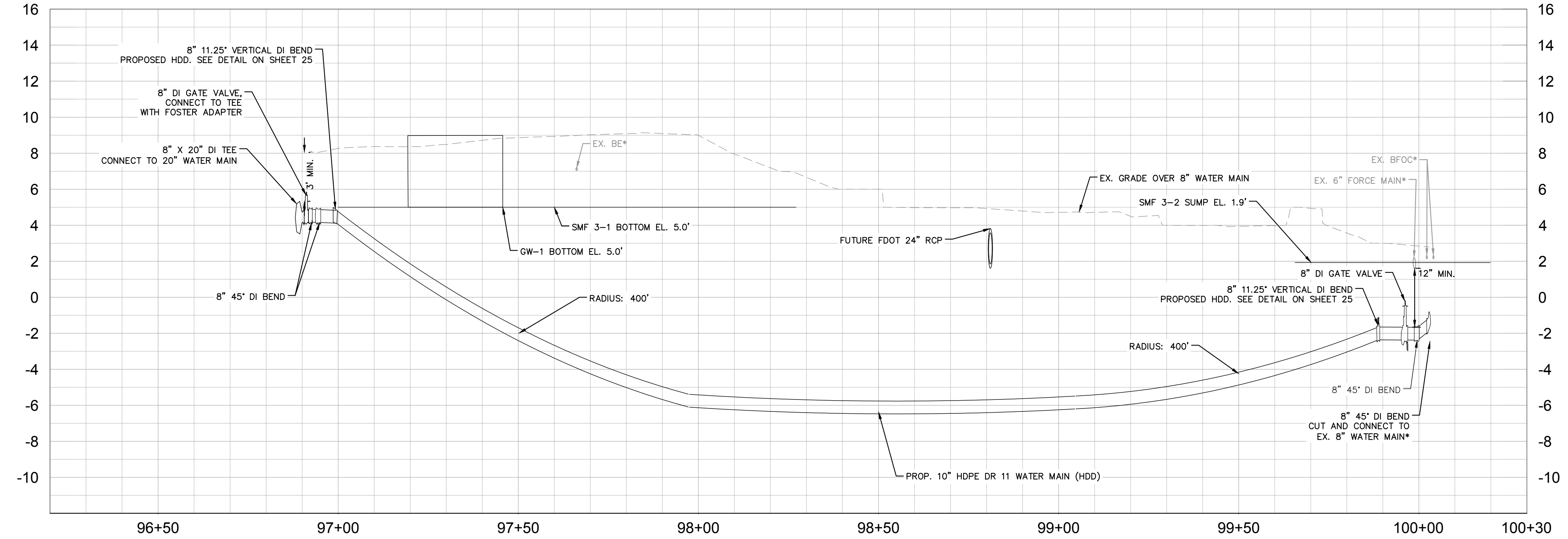
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WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400081
DATE JANUARY 2024
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
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**Manatee County**  
FLORIDA

SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING  
MANATEE COUNTY

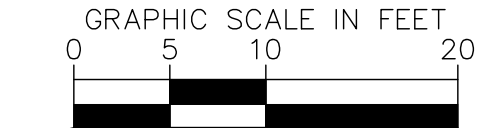
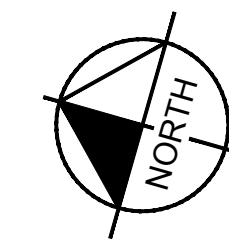
LICENSED PROFESSIONAL JORDAN W. WALKER, P.E.
FL LICENSE NUMBER 78652

**WATER MAIN RELOCATION**

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

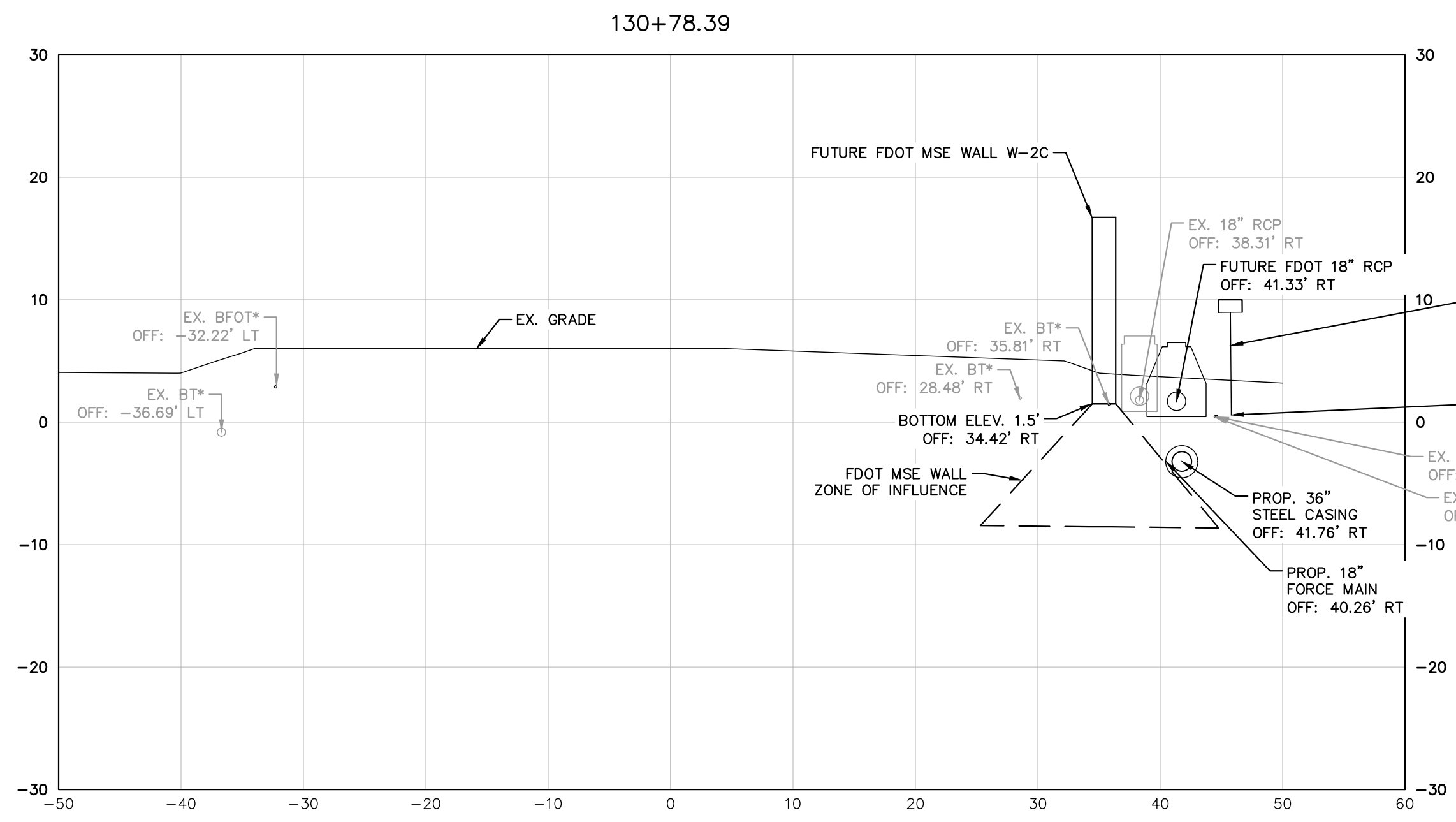
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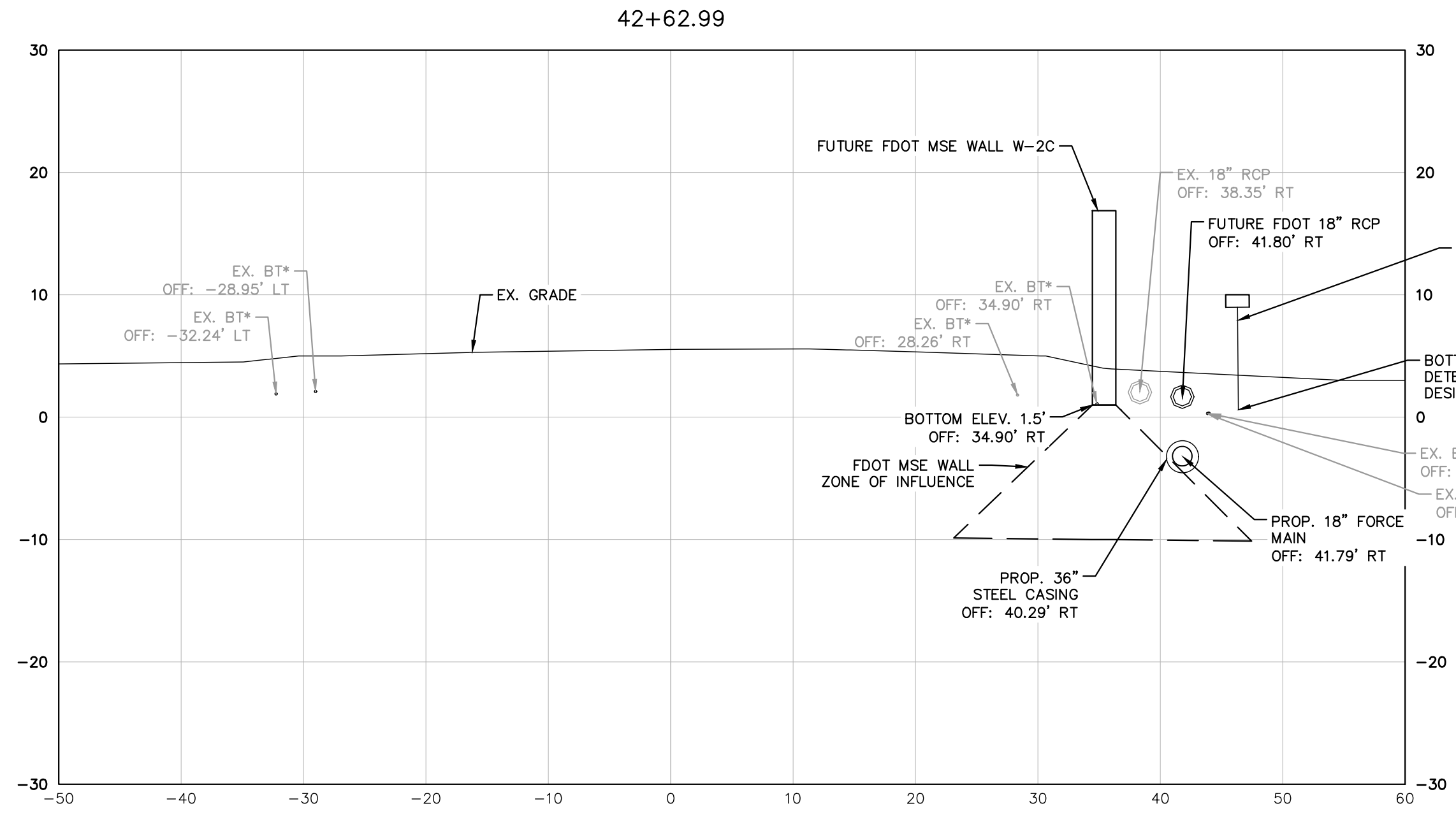


HORIZONTAL SCALE: 1" = 10'  
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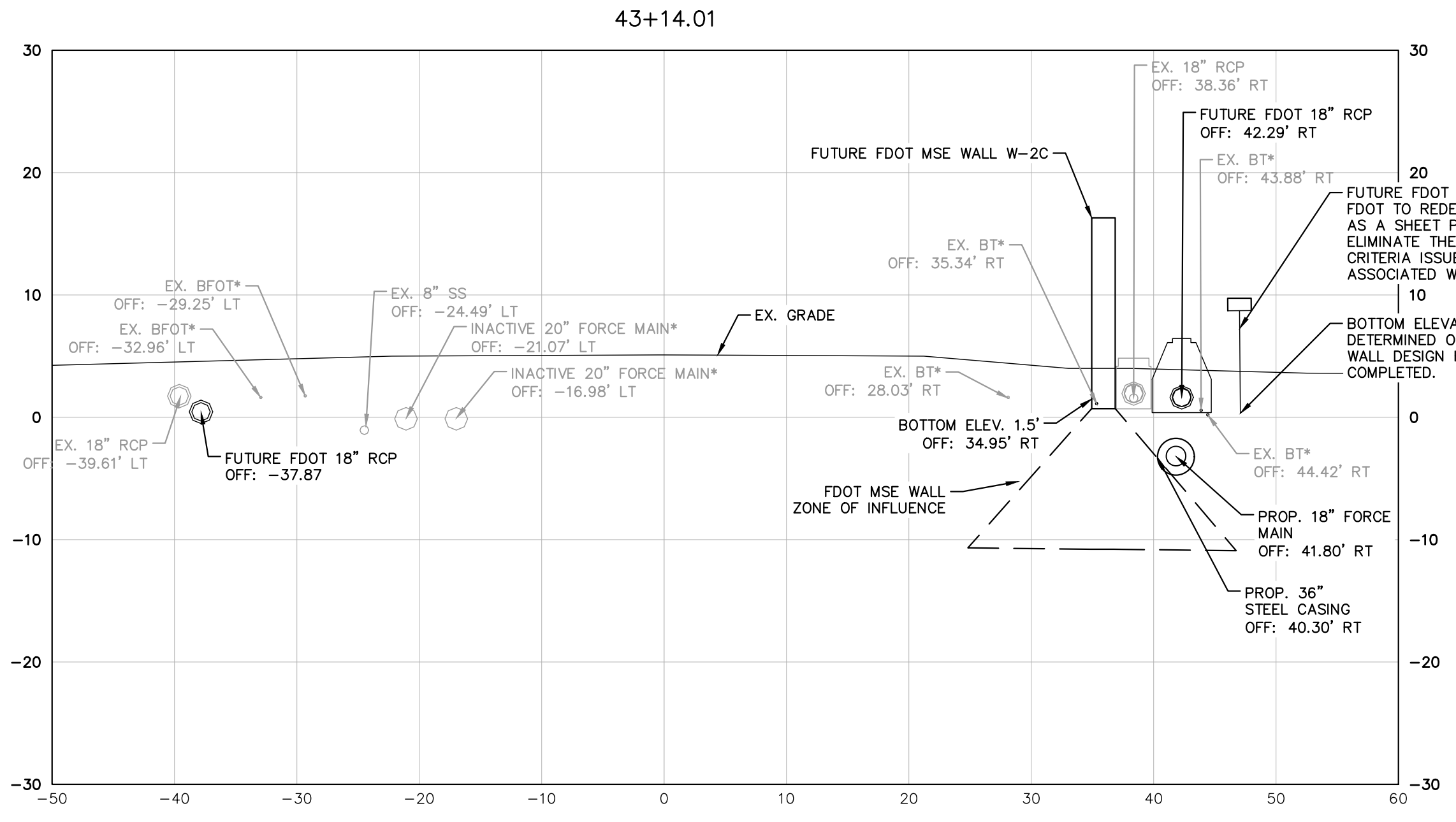
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FUTURE FDOT MSE WALL W-3. FDOT TO REDESIGN THIS WALL AS A SHEET PILE WALL TO ELIMINATE THE WALL ZONE CRITERIA ISSUE THAT WOULD BE ASSOCIATED WITH AN MSE WALL  
BOTTOM ELEVATION IS TO BE DETERMINED ONCE SHEET PILE WALL DESIGN HAS BEEN COMPLETED.



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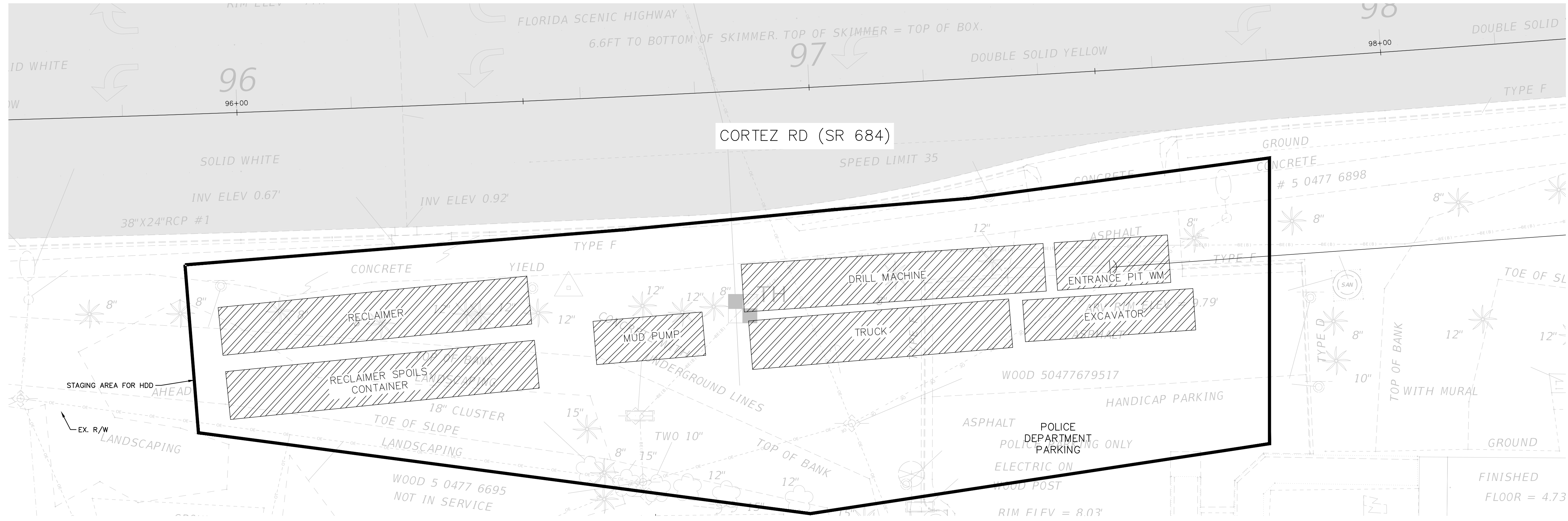
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JORDAN W. WALKER, P.E.  
FL LICENSE NUMBER  
78652

**EAST APPROACH CORTEZ RD  
CROSS SECTIONS**

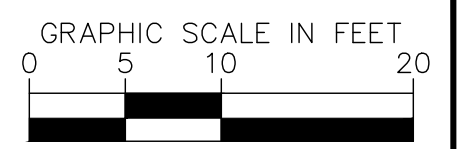
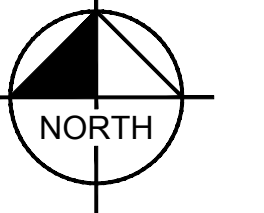
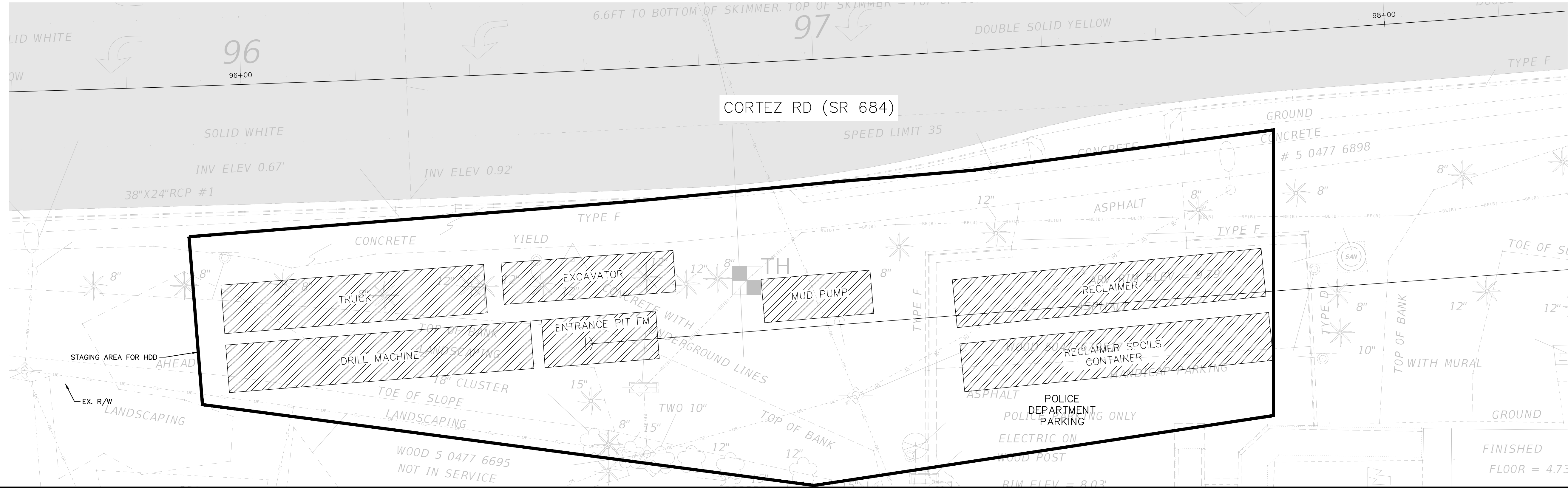
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**18**



MAINTENANCE OF DRILL PLAN FOR WATER MAIN – ENTRY



MAINTENANCE OF DRILL PLAN FOR FORCE MAIN – ENTRY



MAINTENANCE OF DRILL PLANS SHOWN ONLY AS AN APPROXIMATION FOR CONTRACTOR INFORMATION. THE CONTRACTOR SHALL SUBMIT THEIR OWN DIRECTIONAL DRILL PLAN PRIOR TO MOBILIZATION AND USE THEIR OWN MEANS AND METHODS FOR THE CONSTRUCTION OF THE PIPELINES.

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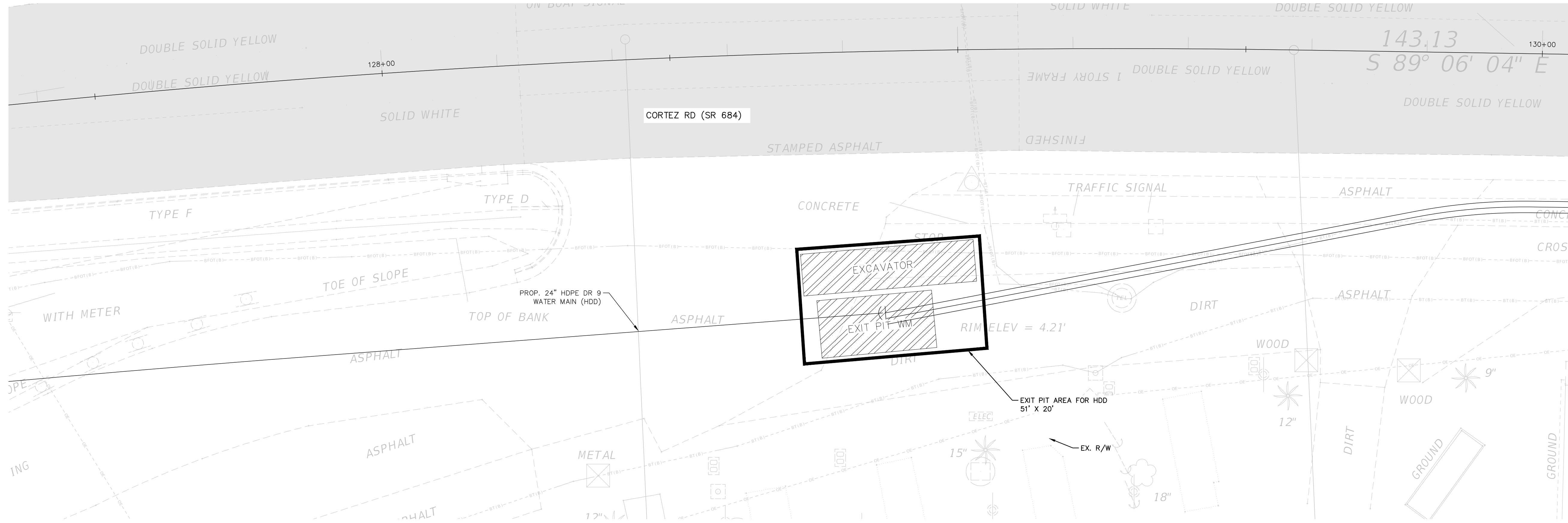
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**MAINTENANCE OF DRILL PLAN - WEST APPROACH**

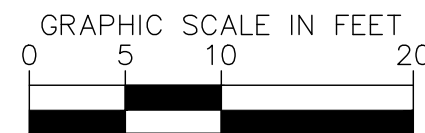
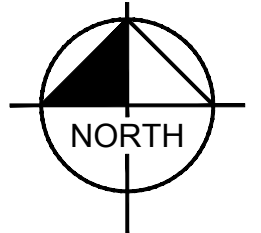
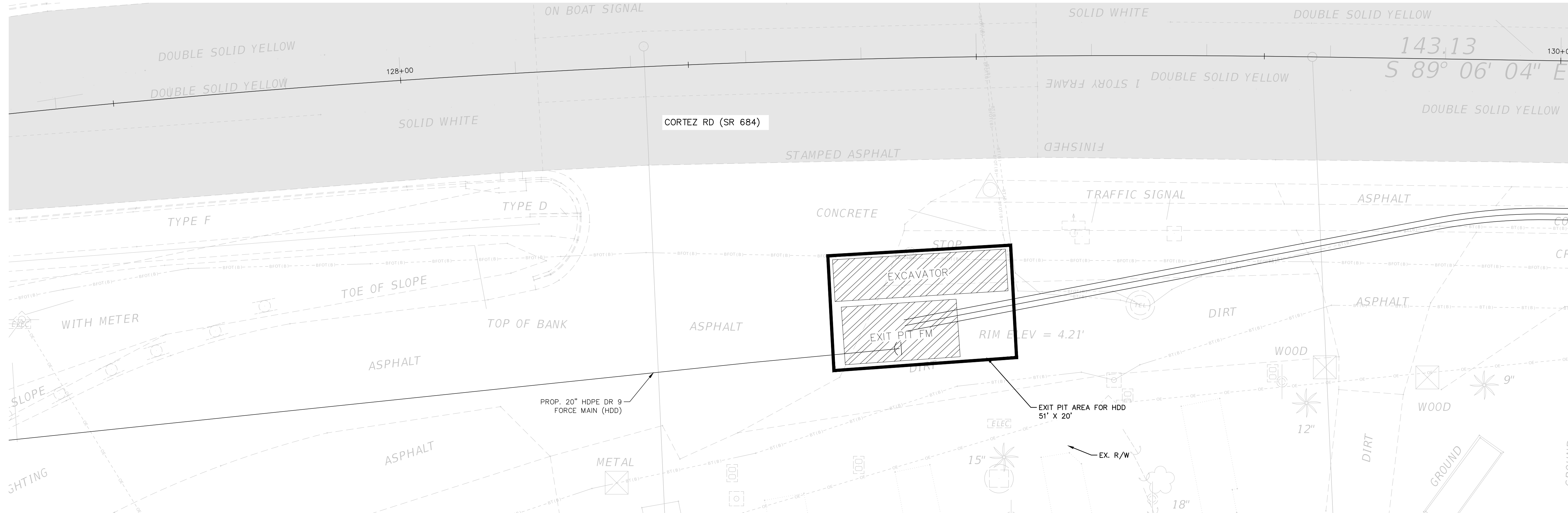
SHEET NUMBER <b>19</b>
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MAINTENANCE OF DRILL PLAN FOR WATER MAIN – EXIT



MAINTENANCE OF DRILL PLAN FOR FORCE MAIN – EXIT



MAINTENANCE OF DRILL PLANS SHOWN ONLY AS AN APPROXIMATION FOR CONTRACTOR INFORMATION. THE CONTRACTOR SHALL SUBMIT THEIR OWN DIRECTIONAL DRILL PLAN PRIOR TO MOBILIZATION AND USE THEIR OWN MEANS AND METHODS FOR THE CONSTRUCTION OF THE PIPELINES.

**GROUNDWATER / DEWATERING NOTE:**  
THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



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No.	REVISIONS	DATE	BY

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PHONE: 727-547-3999  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT  
148400081  
DATE  
JANUARY 2024  
SCALE AS SHOWN  
DESIGNED BY JWW  
DRAWN BY SLB  
CHECKED BY KMS

**Manatee County Florida**  
**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**  
MANATEE COUNTY

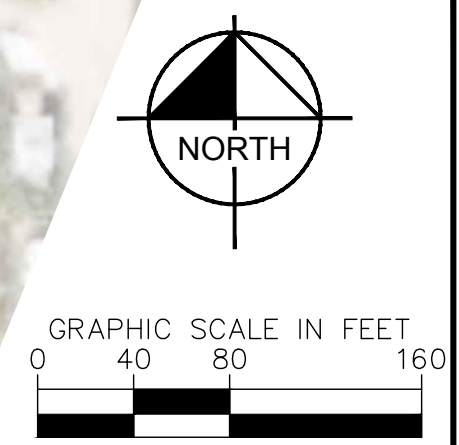
LICENSED PROFESSIONAL  
JORDAN W. WALKER, P.E.  
FL LICENSE NUMBER  
78652  
DATE:

**MAINTENANCE OF DRILL PLAN - EAST APPROACH**

SHEET NUMBER  
**20**



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**GROUNDWATER / DEWATERING NOTE:**  
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KHA PROJECT	148400081
DATE	JANUARY 2024
SCALE	AS SHOWN
DESIGNED BY	JWW
DRAWN BY	SLB
CHECKED BY	KMS

  
**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**  
 MANATEE COUNTY

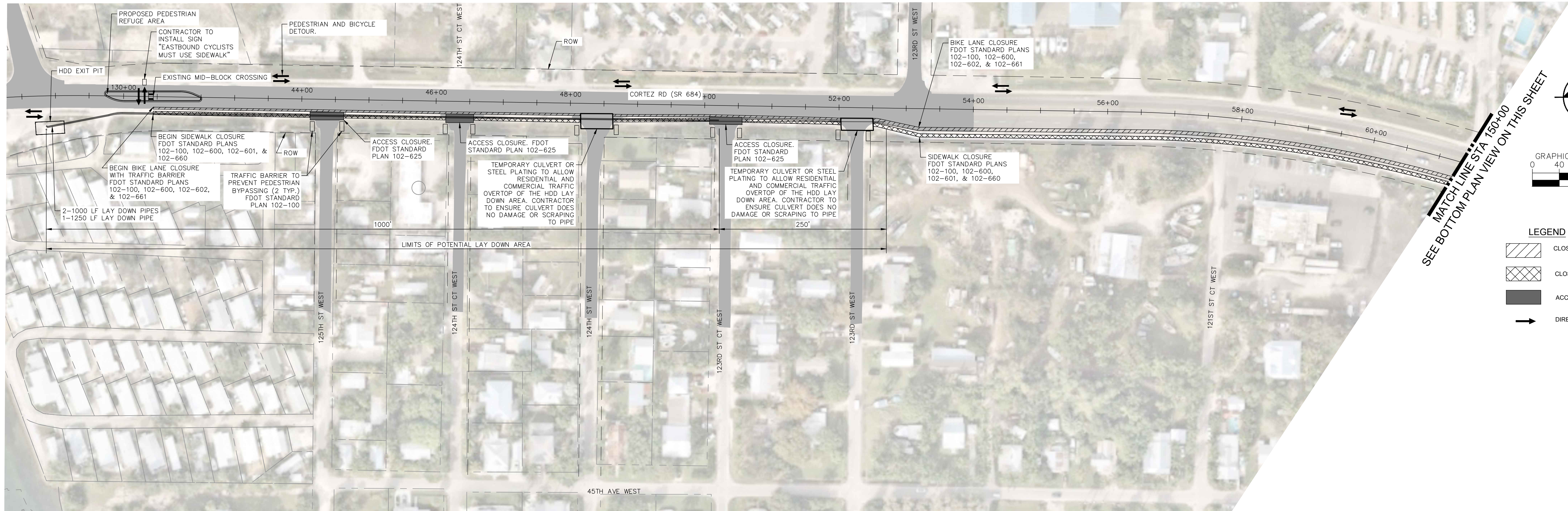
LICENSED PROFESSIONAL  
 JORDAN W. WALKER, P.E.  
 FL LICENSE NUMBER  
 78652

**MAINTENANCE OF DRILL PLAN - LAY DOWN AREA**

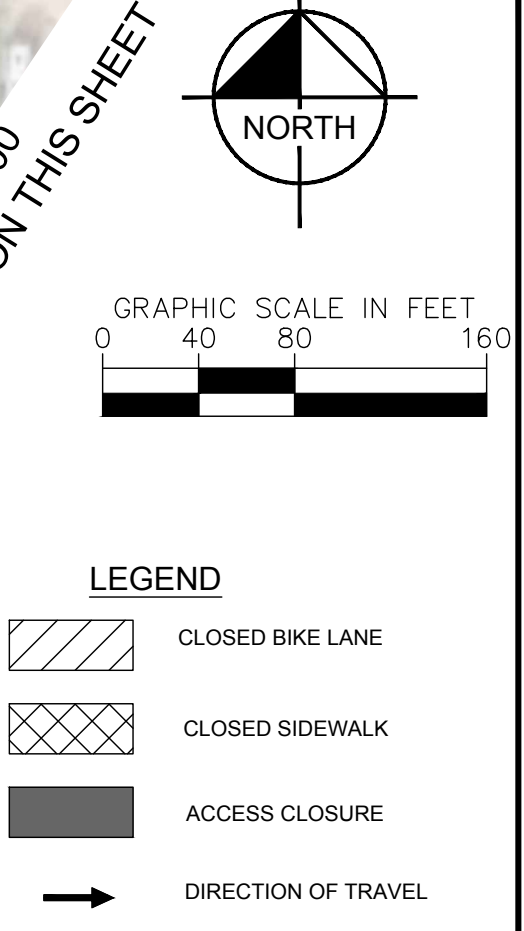
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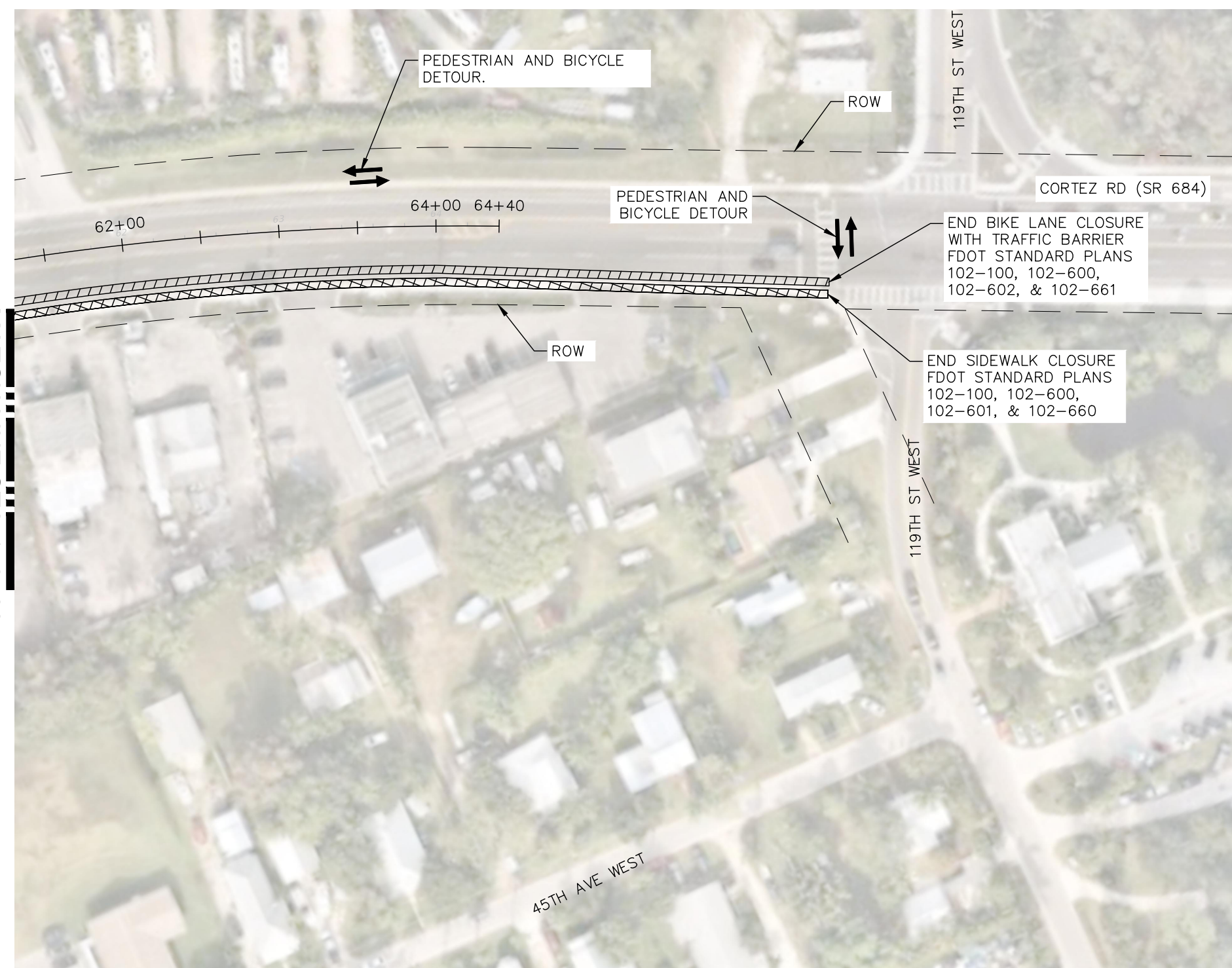
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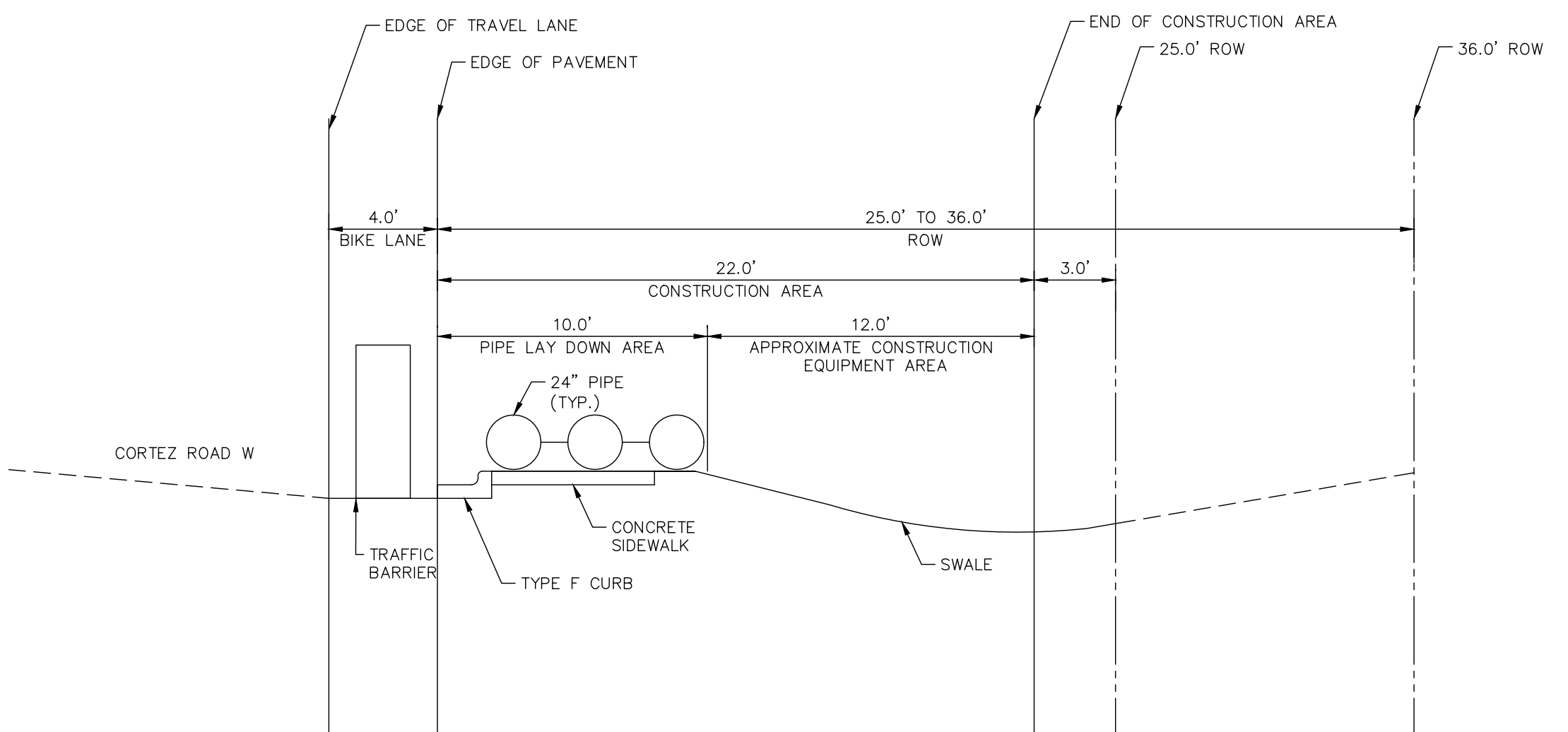
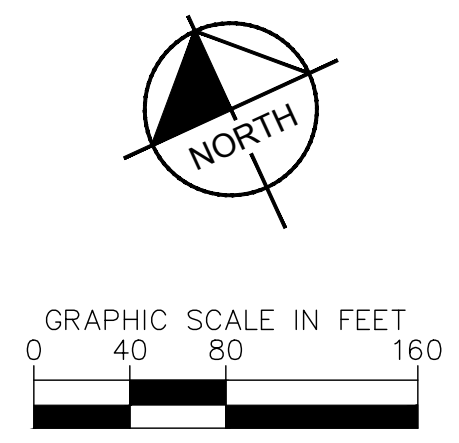
MATCH LINE STA 150+00  
SEE BOTTOM PLAN VIEW ON THIS SHEET



- LEGEND**
- CLOSED BIKE LANE
  - CLOSED SIDEWALK
  - ACCESS CLOSURE
  - DIRECTION OF TRAVEL



MATCH LINE STA 150+00  
SEE TOP PLAN VIEW ON THIS SHEET



TYPICAL SECTION OF PIPE LAY DOWN AREA  
1"=5'

**GROUNDWATER / DEWATERING NOTE:**  
THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



No.	REVISIONS	DATE	BY

**Kimley & Horn**

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WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT	148400081
DATE	MAY 2023
SCALE	AS SHOWN
DESIGNED BY	JWW
DRAWN BY	SLB
CHECKED BY	KMS

**Manatee County**

**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

LICENSED PROFESSIONAL

GEORGE E. ROLAND, P.E.

FL LICENSE NUMBER  
62338

FL DATE:

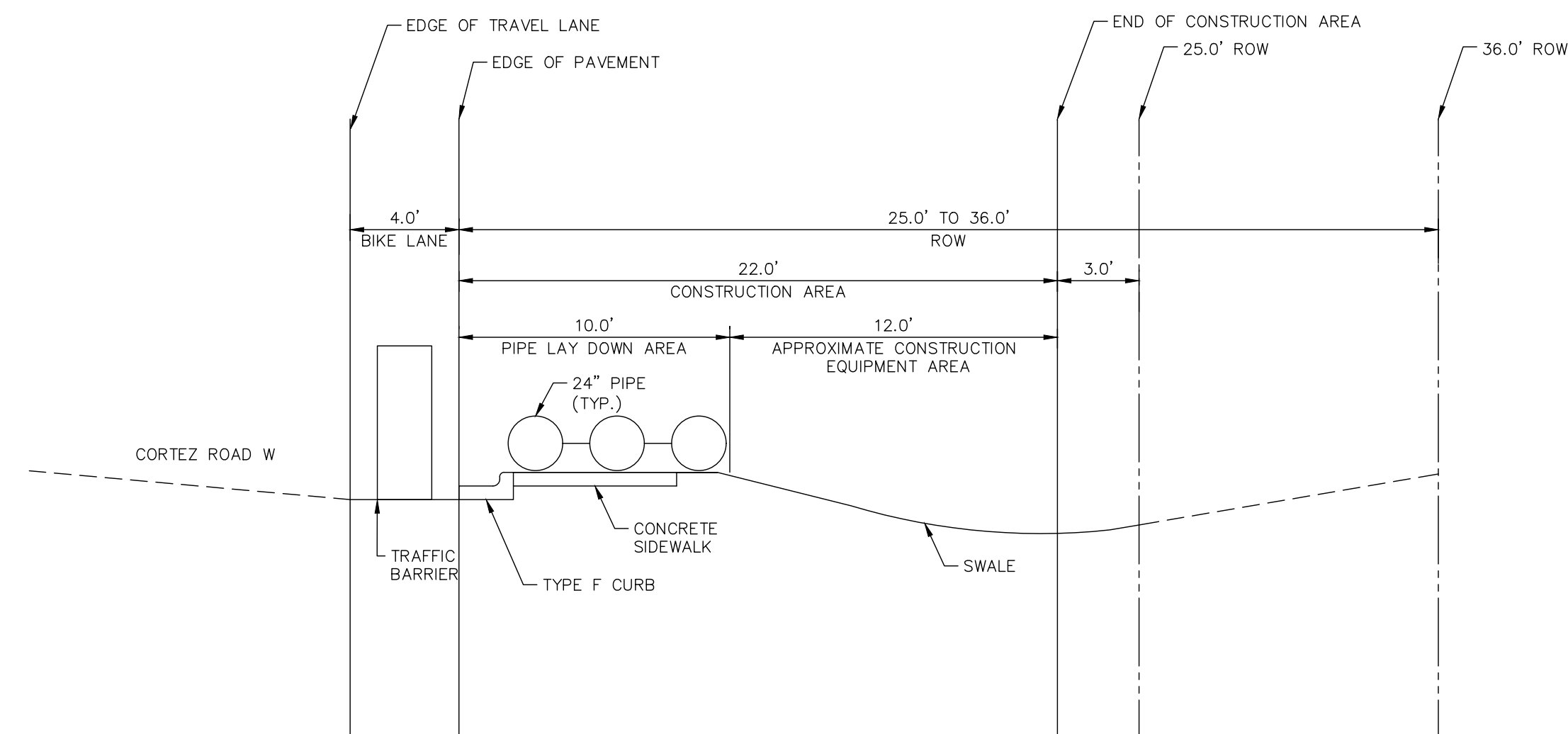
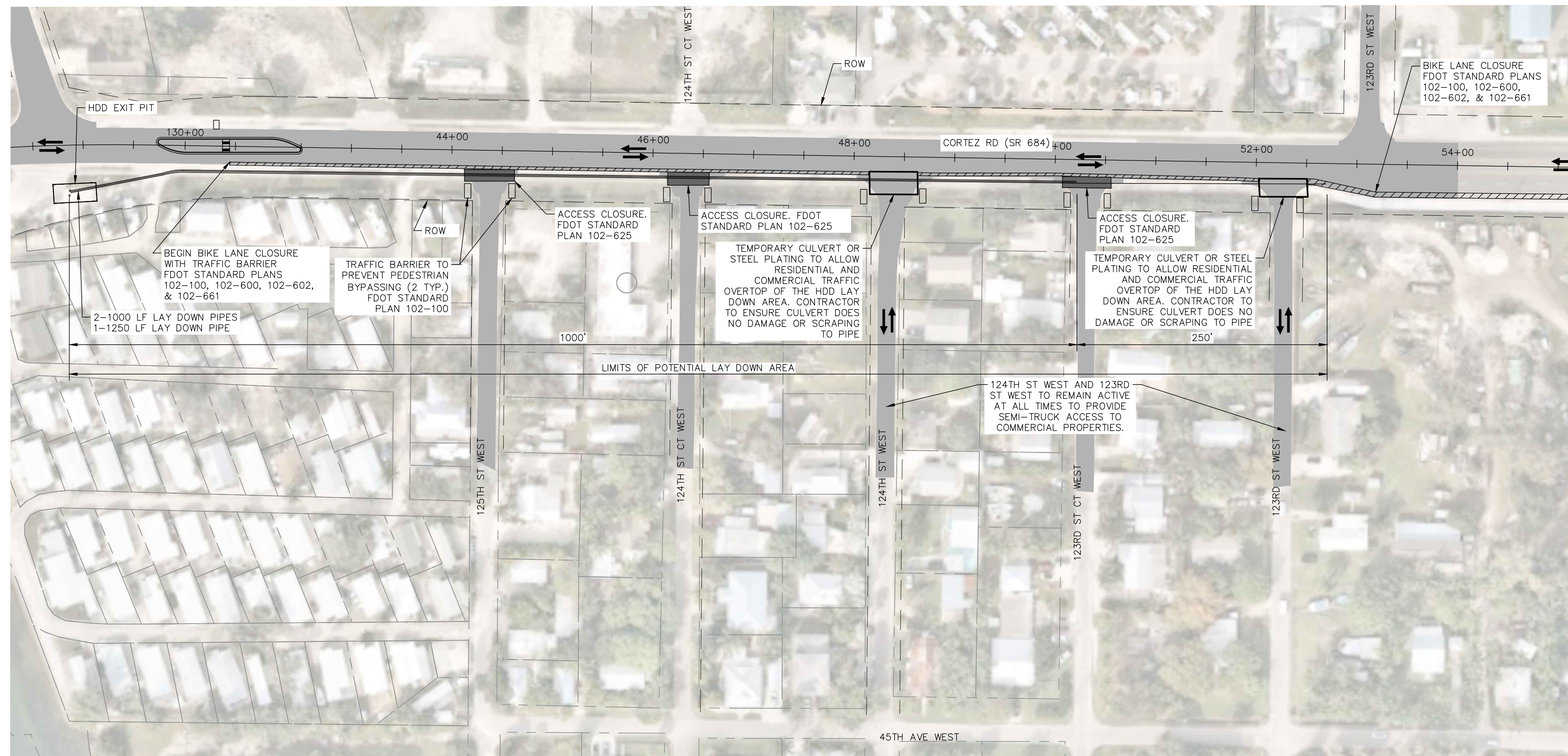
**MAINTENANCE OF TRAFFIC - PEDESTRIAN / BICYCLE**

SHEET NUMBER

**22**



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TYPICAL SECTION OF PIPE LAY DOWN AREA  
1"=5'

**GROUNDWATER / DEWATERING NOTE:**  
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No.	REVISIONS	DATE	BY

**Kimley-Horn**  
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PHONE: 727-547-3999  
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KHA PROJECT  
148400081  
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MAY 2023  
SCALE AS SHOWN  
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**Manatee County**  
SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING  
MANATEE COUNTY

LICENSED PROFESSIONAL  
GEORGE E. ROLAND, P.E.  
FL LICENSE NUMBER  
62338  
DATE:

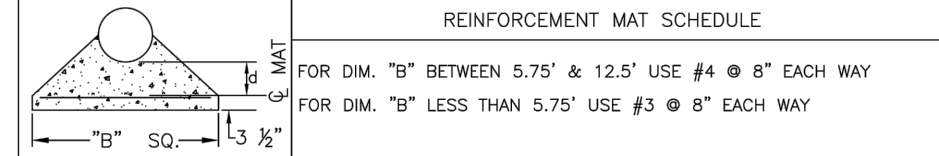
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SHEET NUMBER  
**23**

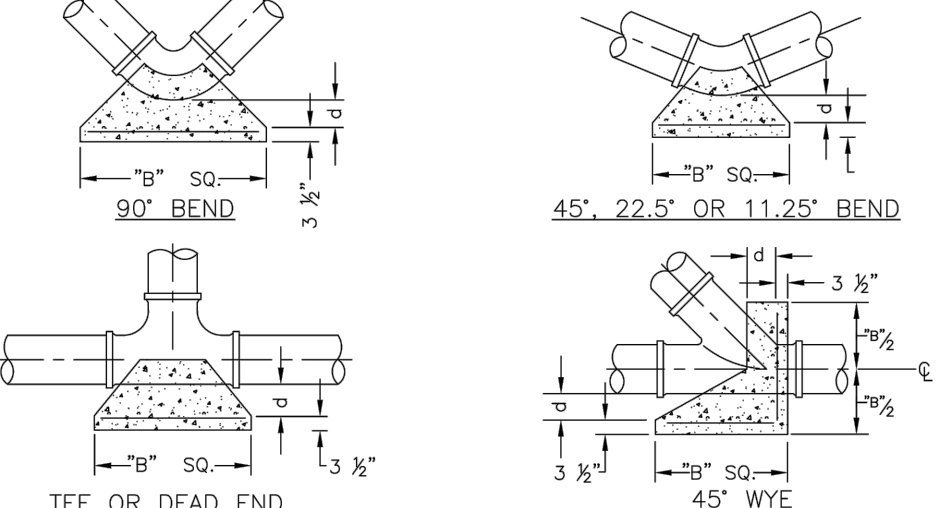


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PIPE SIZE (IN.)	90° BEND		45° BEND		22.5° BEND		11.25° BEND		DEAD END & TEE		45° WYE	
	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 1/2	1.1	3 1/2	0.8	3 1/2	0.6	3 1/2	1.3	3 1/2	1.1	3 1/2
6	2.2	5 1/4	1.6	3 3/4	1.2	3 3/4	0.8	3 3/4	1.9	4 1/2	1.6	3 3/4
8	2.9	7	2.1	5	1.5	3 1/2	1.1	3 1/2	2.4	5 3/4	2.0	4 3/4
10	3.5	8 1/2	2.6	6 1/4	1.9	4 1/2	1.3	3 3/2	3.0	7 1/4	2.5	6
12	4.2	10	3.1	7 1/2	2.2	5 1/4	1.6	3 3/4	3.5	8 1/4	3.0	7 1/4
14	4.9	11 3/4	3.6	8 3/4	2.6	6 1/4	1.8	4 1/4	4.1	9 3/4	3.4	8 1/4
16	5.5	13 1/4	4.1	9 3/4	2.9	7	2.1	5	4.7	11 1/4	3.9	9 1/4
18	6.2	15	4.6	11	3.3	8	2.3	5 1/2	5.2	12 1/2	4.4	10 1/2
20	6.9	16 1/2	5.0	12	3.6	8 3/4	2.6	6 1/4	5.8	14	4.9	11 3/4
24	8.2	19 1/4	6.0	14 1/2	4.3	10 1/4	3.1	7 3/4	6.9	16 1/2	5.8	14
30	10.1	24 1/4	7.5	18	5.3	12 3/4	3.8	9	8.5	20 1/2	7.2	17 1/4
36	12.1	29	8.9	21 1/4	6.4	15 1/4	4.5	10 3/4	10.2	24 1/4	8.6	20 3/4

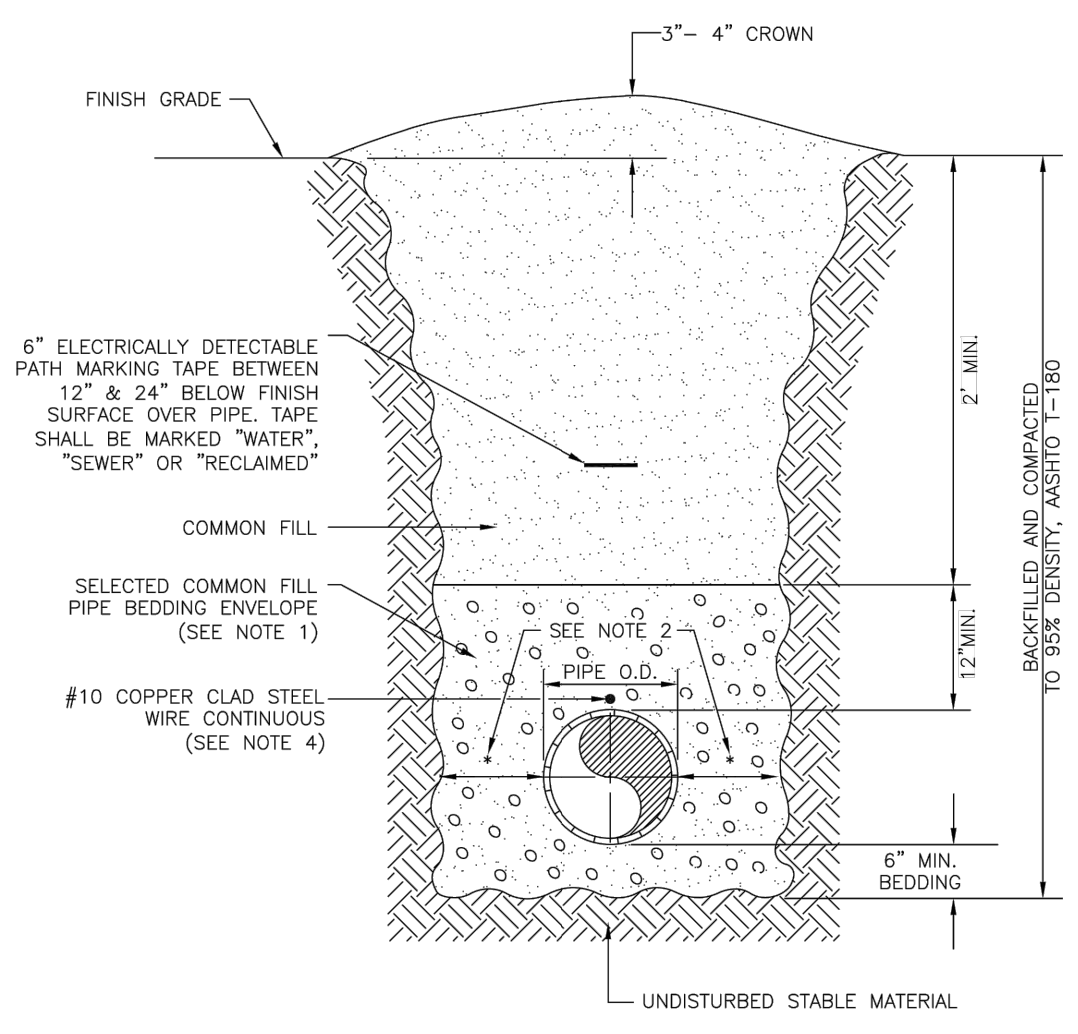


- NOTES:**
- ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
  - THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF. CONCRETE STRENGTH  $f_c$  =3000 PSI, REINFORCEMENT  $f_y$  =60.0 KSI. THRUST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



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CONCRETE THRUST BLOCKS	UG-7
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

- NOTES:**
- USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
  - PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
  - TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

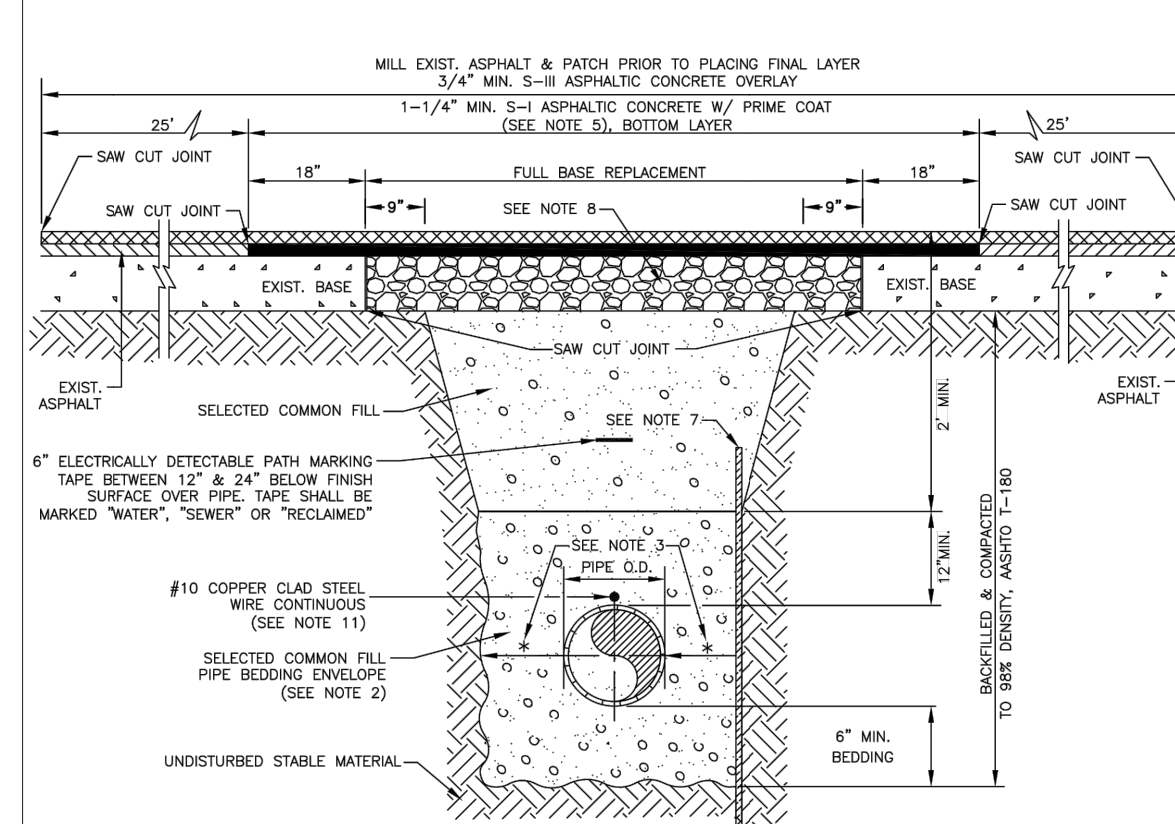
**REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR C900-16 PVC PIPE (DR-18)**

MAIN PIPE SIZE	HORIZ. BENDS		TEES		REDUCERS		PLUGS & VALVES	
	90°	45°	SIZE	LENGTH	SIZE	LENGTH		
24	90	38	X24	169	X10	117	X10	158
20	78	32	X20	141	X10	115	X10	148
16	66	27	X16	111	X10	107	X10	111
12	52	22	X12	80	X8	62	X8	86
10	44	18	X10	63	X8	40	X8	81
8	37	15	X8	49	X6	35	X6	60
6	29	12	X6	29	X4	1	X4	33
4	21	8	X4	12				45

- NOTES:**
- RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
  - ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
  - ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
  - PIPE SIZES ARE GIVEN IN INCHES.
  - RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
  - LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
  - THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
  - RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL UG-10 RESTRAINED LENGTHS FOR PIPE.
  - ALL RESTRAINED JOINT HARDWARE SHALL CONFORM TO 1.11.17 OF THE PUBLIC WORKS UTILITIES STANDARDS MANUAL.
  - ALL THREE "LEGS" OF TEES SHALL BE RESTRAINED PER THE STATED LENGTH IN THE TABLE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PVC PIPE	UG-8
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

- NOTES:**
- BITUMINOUS PAVEMENT SHALL BE REMOVED IN CLEAN STRAIGHT LINES BY SAW CUTTING. WHERE BITUMINOUS PAVEMENT ADJACENT TO A TRENCH, THE EDGES ADJACENT TO THE TRENCH SHALL BE TRIMMED TO A NEAT STRAIGHT LINE BEFORE RESURFACING TO ENSURE THAT ALL AREAS TO BE RESURFACED ARE ACCESSIBLE TO ROLLERS OR TAMPERS USED TO COMPACT THE SUB-GRADE OR PAVING MATERIALS.
  - USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
  - PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
  - ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1-1/4" INCH S-I, WHICHEVER IS GREATER.
  - MILL 25" BACK FROM TRENCH CROSSING SAW CUTS. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCREPANT "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
  - SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
  - NEW BASE SHALL MATCH EXISTING, OR BE CRUSHED CONCRETE, 8" MIN. THICKNESS, LBR ≥150, WHICHEVER IS GREATER.
  - TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
  - RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.
  - TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
  - NOTES 5, THRU 10, ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A LOCAL ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING (CROSSING)	UG-12
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

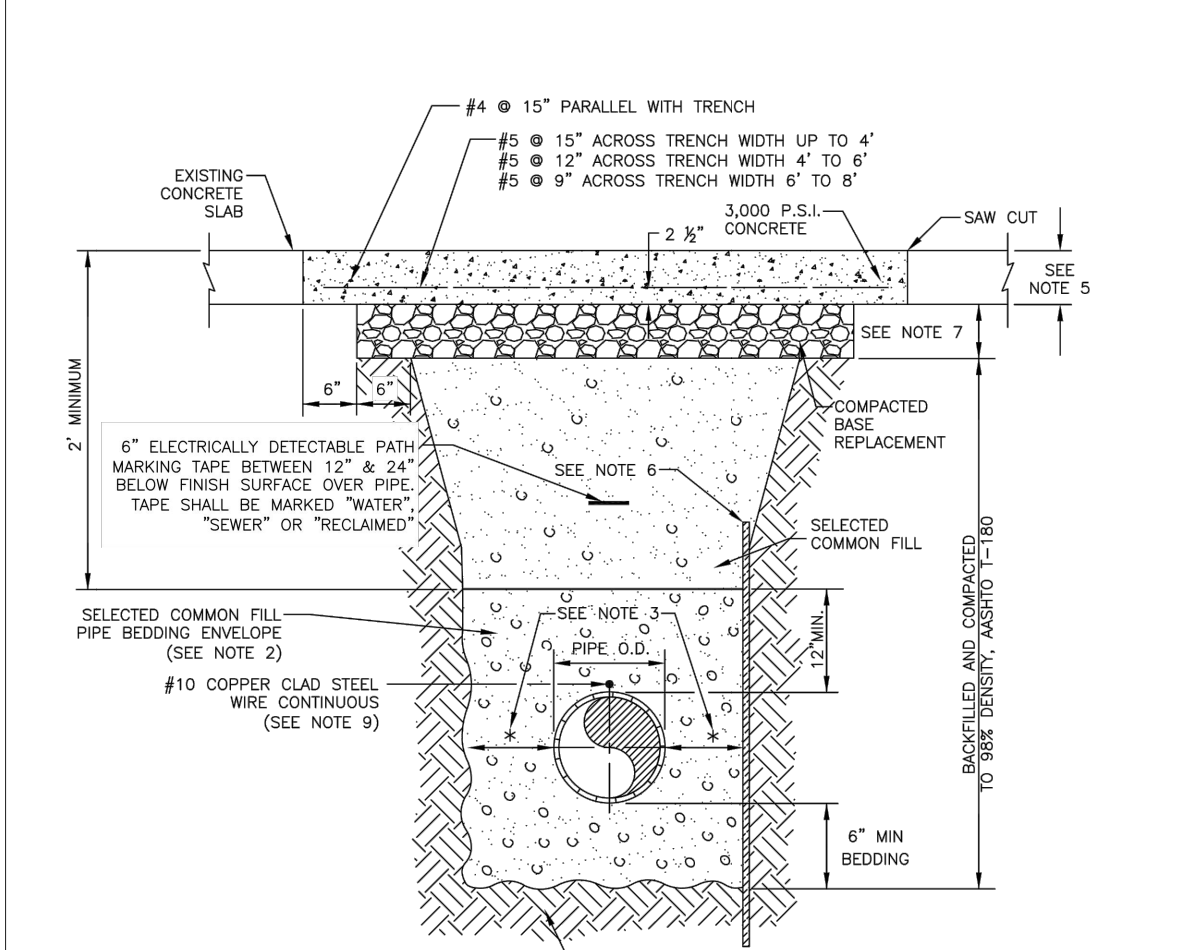
**REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)**

MAIN PIPE SIZE	HORIZ. BENDS		TEES		REDUCERS		PLUGS & VALVES	
	90°	45°	SIZE	LENGTH	SIZE	LENGTH		
36	142	59	X36	293	X16	232	X16	359
30	124	51	X30	253	X16	203	X16	276
24	106	44	X24	213	X16	163	X16	241
20	92	38	X20	173	X16	123	X16	227
16	77	32	X16	133	X12	83	X12	169
12	61	25	X12	93	X10	43	X10	131
10	52	22	X10	77	X8	37	X8	125
8	44	18	X8	61	X6	31	X6	94
6	34	14	X6	45	X4	1	X4	92
4	24	10	X4	29				69

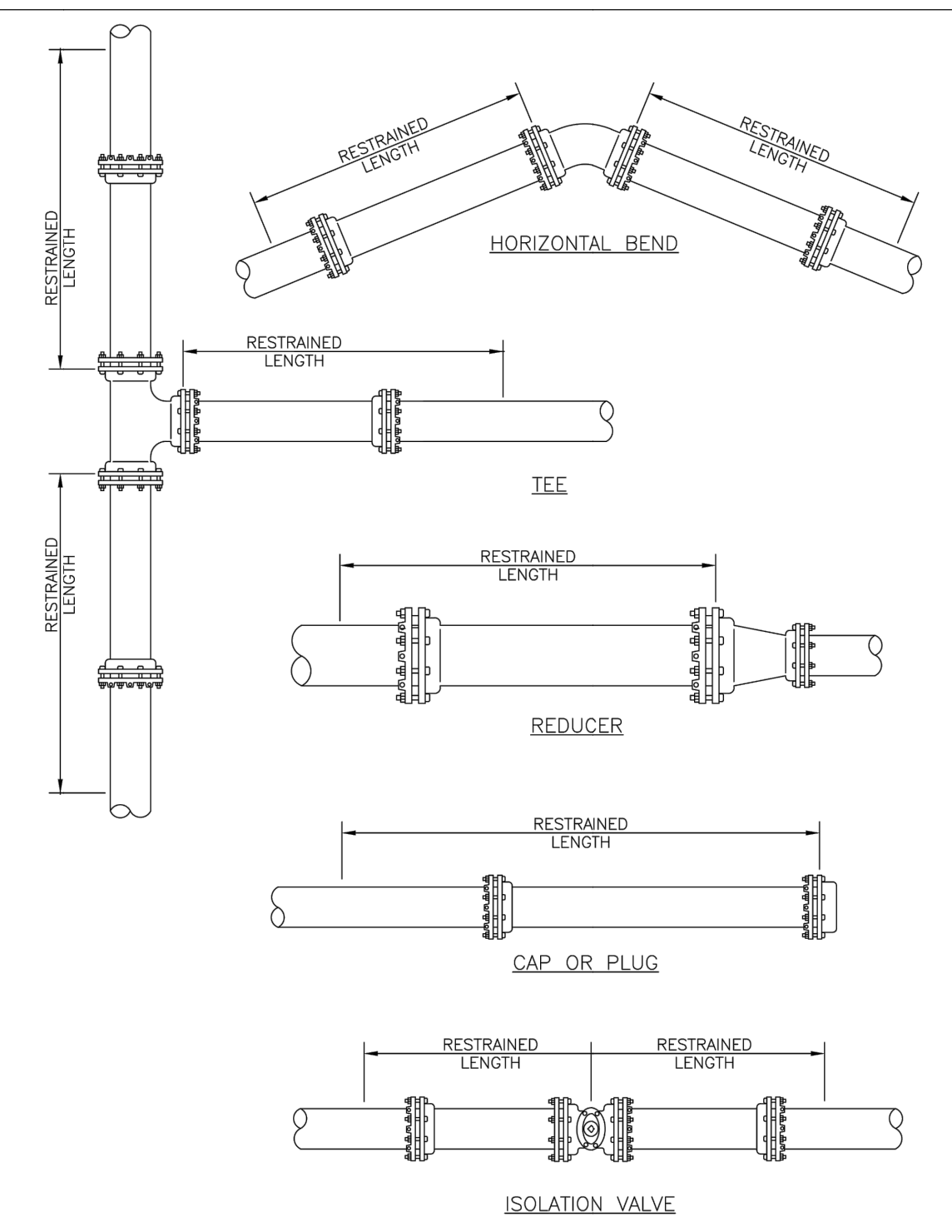
- NOTE:**
- SEE UG-8, RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 9 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR DIP	UG-9
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

- NOTES:**
- CONCRETE PAVEMENT SHALL BE REMOVED WITH SAWED EDGES AND CUT AT A MINIMUM DEPTH OF ONE AND ONE-HALF (1-1/2"), IF A SAW CUT IN CONCRETE PAVEMENT FALLS WITHIN THREE FEET (3') OF A CONTRACTION JOINT, COLD JOINT, EXPANSION JOINT OR EDGE, THE CONCRETE SHALL BE REMOVED TO THE JOINT OR EDGE. THE EDGES OF EXISTING CONCRETE PAVEMENT ADJACENT TO TRENCHES, WHICH HAD BEEN DAMAGED SUBSEQUENT TO SAW CUTTING OF PAVEMENT, SHALL BE SAW CUT TO NEAT STRAIGHT LINES FOR THE PURPOSE OF REMOVING THE DAMAGED PAVEMENT AREAS.
  - USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
  - PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
  - THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.
  - SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
  - BASE SHALL BE CRUSHED CONCRETE, 8" MIN. THICKNESS, LBR ≥150.
  - TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
  - TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
  - NOTES 5 THRU 8 ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



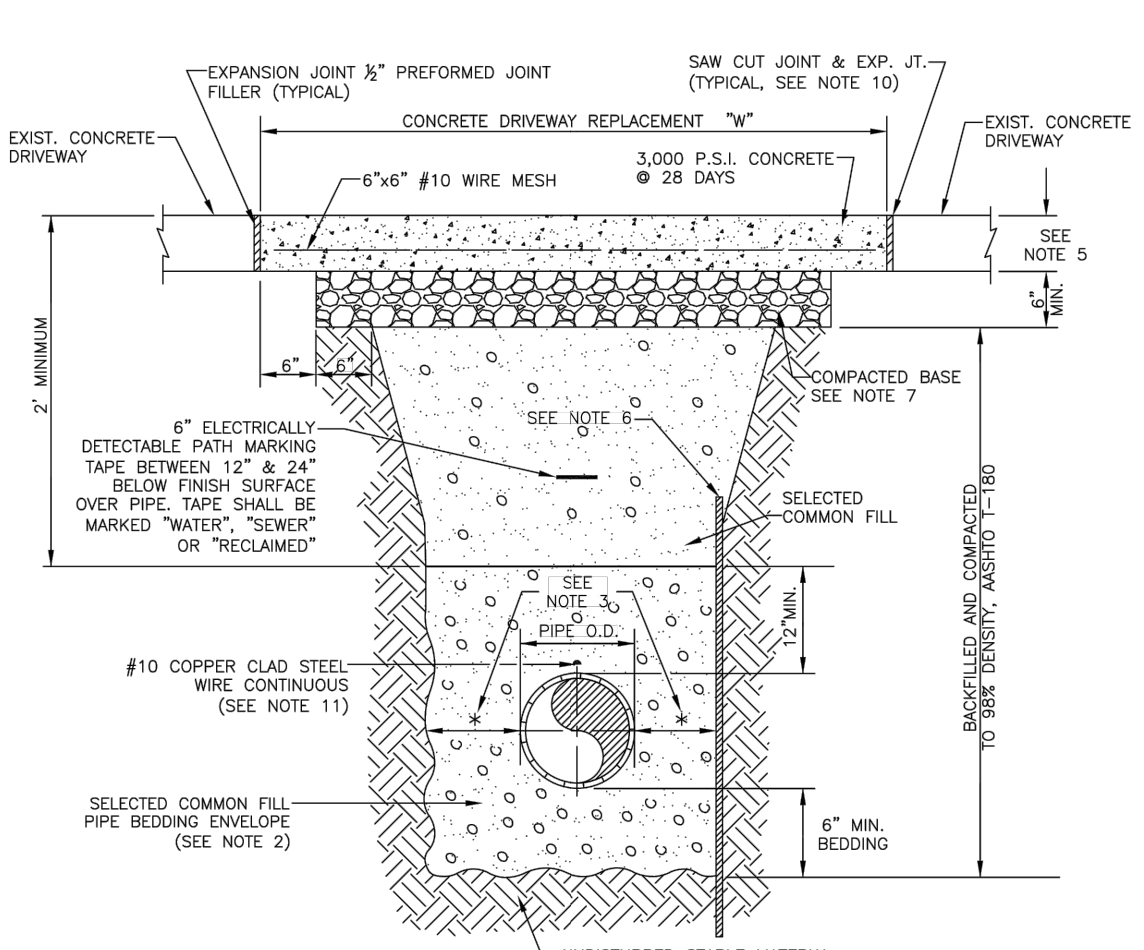
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-13
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



- NOTE:**
- SEE DETAIL UG-8 RESTRAINED LENGTHS FOR PVC PIPE FOR NOTES 1 THROUGH 9 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR PIPE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PIPE	UG-10
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

- NOTES:**
- CONCRETE PAVEMENT SHALL BE REMOVED WITH SAWED EDGES AND CUT AT A MINIMUM DEPTH OF ONE AND ONE-HALF (1-1/2"), IF A SAW CUT IN CONCRETE PAVEMENT FALLS WITHIN THREE FEET (3') OF A CONTRACTION JOINT, COLD JOINT, EXPANSION JOINT OR EDGE, THE CONCRETE SHALL BE REMOVED TO THE JOINT OR EDGE. THE EDGES OF EXISTING CONCRETE PAVEMENT ADJACENT TO TRENCHES, WHICH HAD BEEN DAMAGED SUBSEQUENT TO SAW CUTTING OF PAVEMENT, SHALL BE SAW CUT TO NEAT STRAIGHT LINES FOR THE PURPOSE OF REMOVING THE DAMAGED PAVEMENT AREAS.
  - USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
  - PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
  - THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
  - SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.
  - BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.
  - DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
  - IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/8" WIDE AND 1/2" DEEP) AFTER THE CONCRETE HAS SET.
  - IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.
  - TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING	UG-14
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

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 PHONE: 727-547-3999  
 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400081
DATE JANUARY 2024
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
CHECKED BY KMS

**Manatee County Florida**  
**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**  
 MANATEE COUNTY

LICENSED PROFESSIONAL
JORDAN W. WALKER, P.E.
FL LICENSE NUMBER 78652
FL DATE:

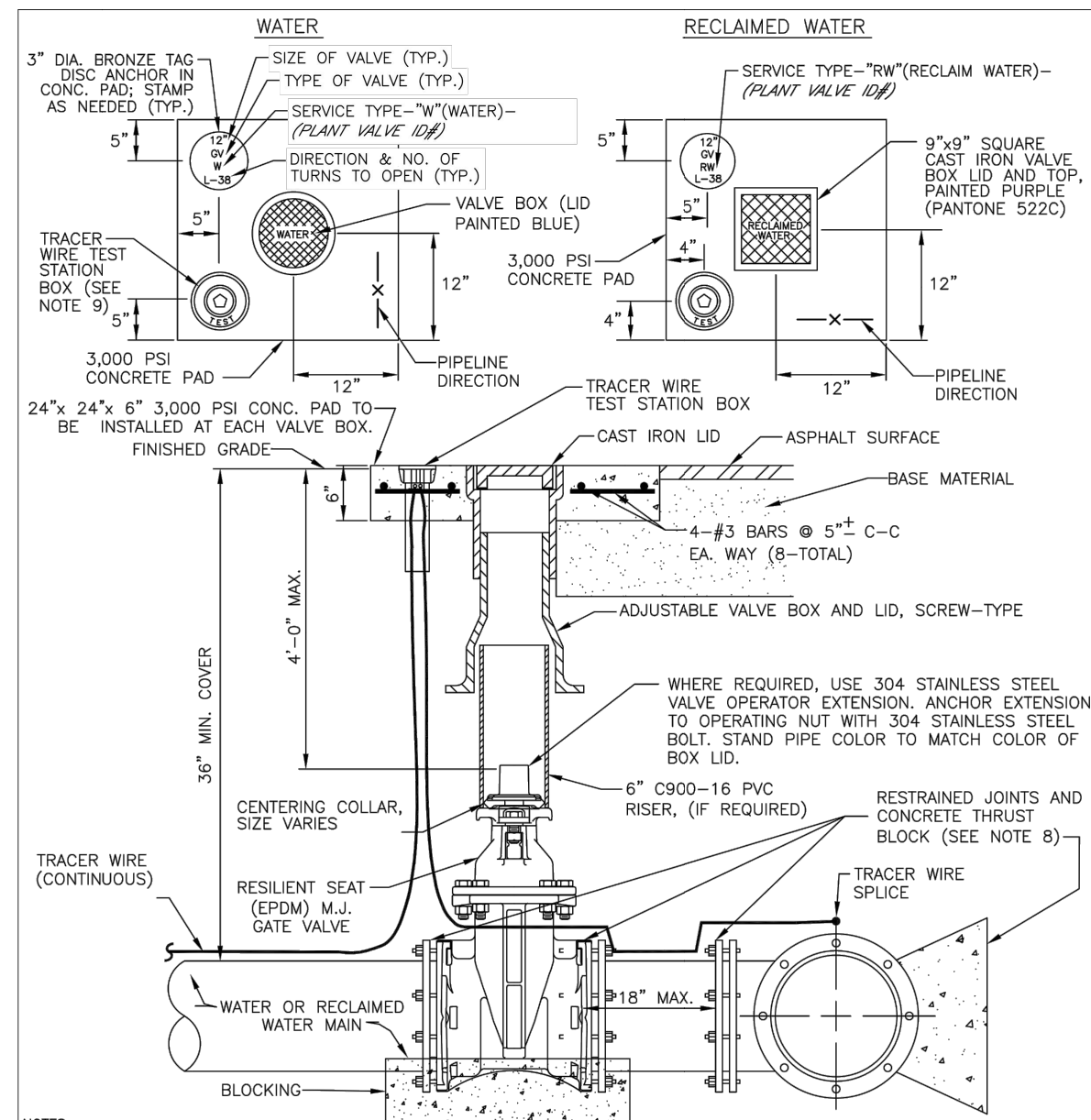
**DETAILS**

SHEET NUMBER  
**24**

No.	REVISIONS	DATE	BY

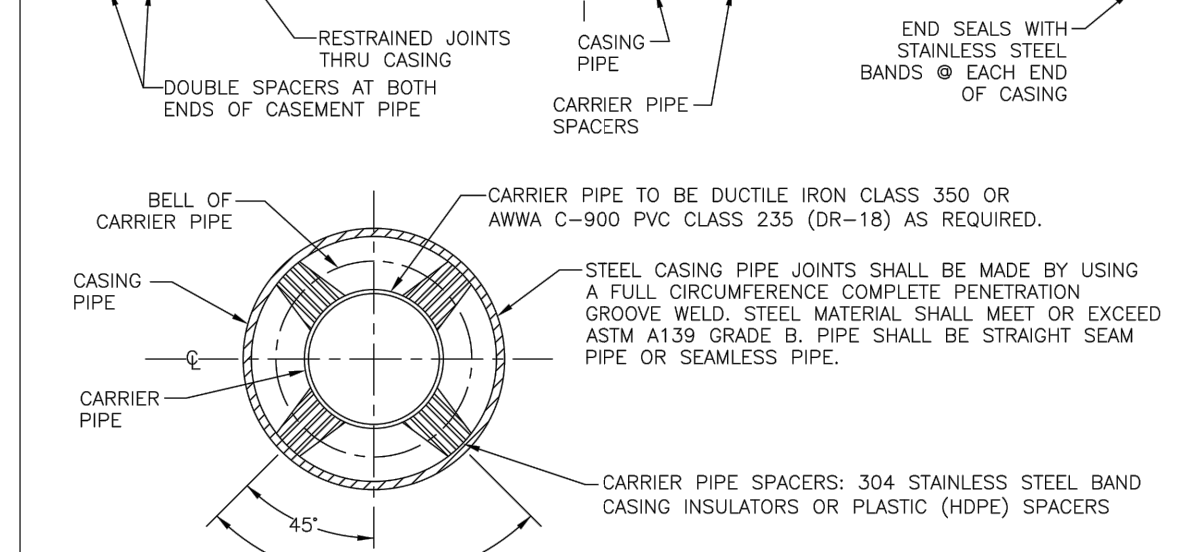
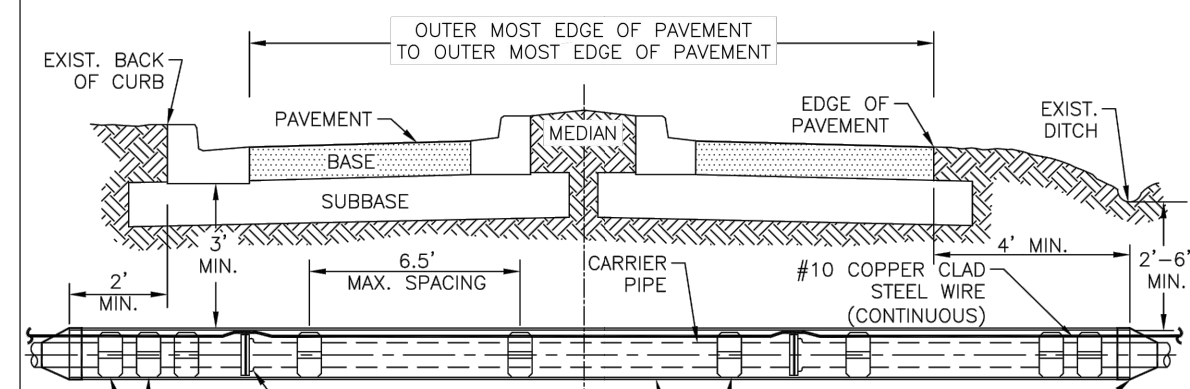


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- NOTES:**
- "W" or "RW" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "W" OR PURPLE DISC WITH "RW" USING A 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
  - ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
  - VALVES SHALL NOT BE PLACED IN HANDICAPPED CURBS, CURBS, OR OUTLETS.
  - PRECAST CONCRETE PADS SHALL NOT BE USED.
  - ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
  - PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY-POURED CONCRETE PAD.
  - TRACER WIRE TEST STATION BOX IS NOT REQUIRED FOR VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
  - WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES".
  - USE NON-TRAFFIC RATED BOXES FOR NORMAL WARE SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE TRAFFIC RATED BOXES. WHERE POSSIBLE, LOCATE TRACER WIRE TESTING STATION OUTSIDE OF TRAVEL LANE OR IN MEDIAN, CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.
  - THE BRASS TAG SHALL HAVE A "PLANT VALVE" WHEN VALVES ARE INSTALLED WITHIN THE COUNTY TREATMENT PLANT LIMITS. THE PLANT VALVE TAG SHALL BE SHOWN ON THE CONSTRUCTION PLANS AND RECORD DRAWINGS.
  - REFER TO SECTION 1.1.1 GATE VALVES IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

<b>MANATEE COUNTY</b> PUBLIC WORKS DEPARTMENT		GATE VALVE, BOX, LID AND TAG	UW-2
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



CARRIER SIZE & MINIMUM CASING SIZE	
CARRIER	4" 6" 8" 10" 12" 16" 18" 20"
CASING / WALL THICKNESS	0.188 0.188 0.250 0.250 0.344 0.406 0.406 0.406

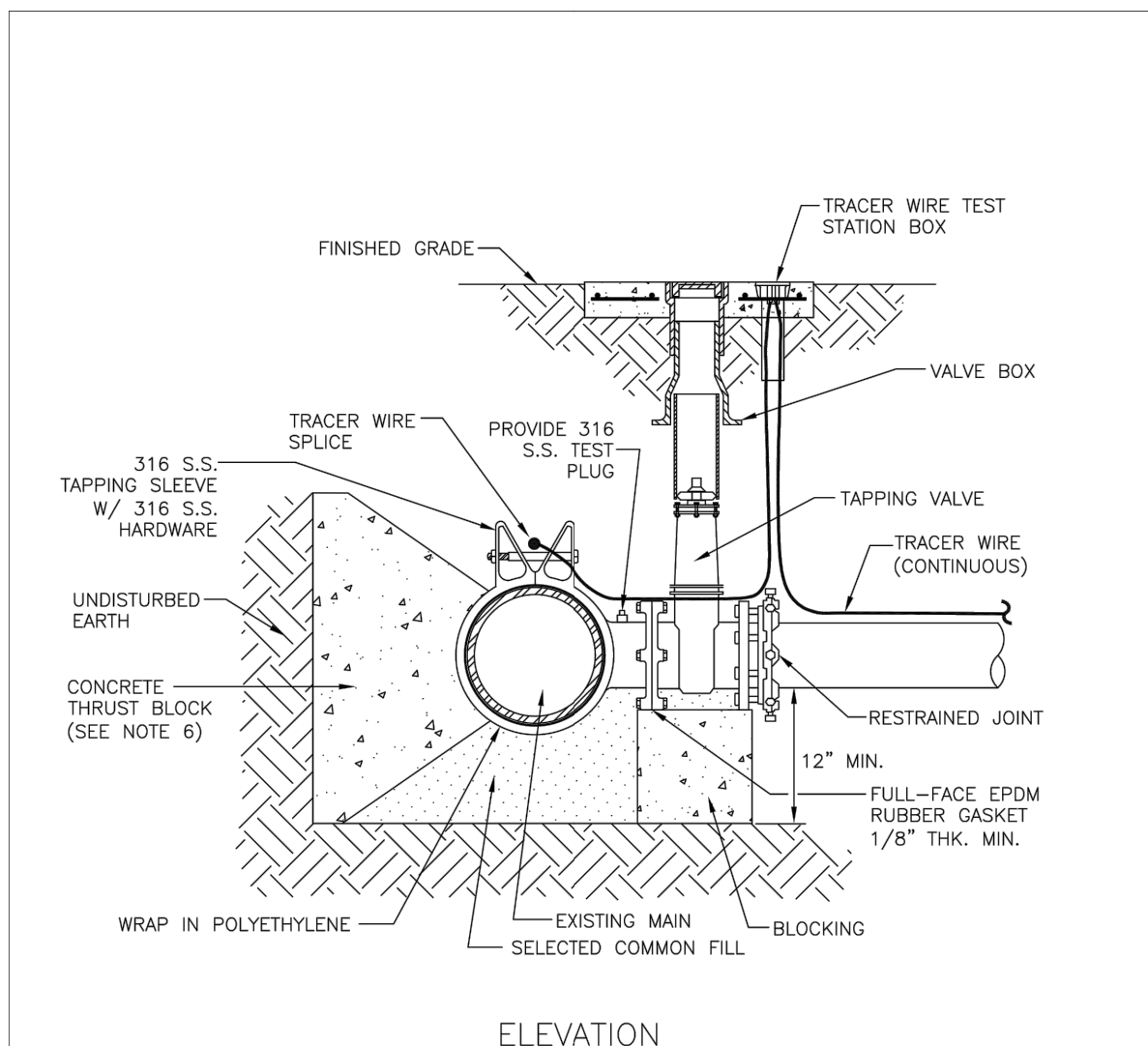
STEEL CASING SIZES	
CARRIER	4" 6" 8" 10" 12" 16" 18" 20"
CASING	12" 14" 16" 18" 20" 24" 30" 36" 36"

PVC/HDPE CASING SIZES	
CARRIER	4" 6" 8" 10" 12" 16" 18" 20"
CASING	8" 12" 16" 20" 24" 30" 36" 36"

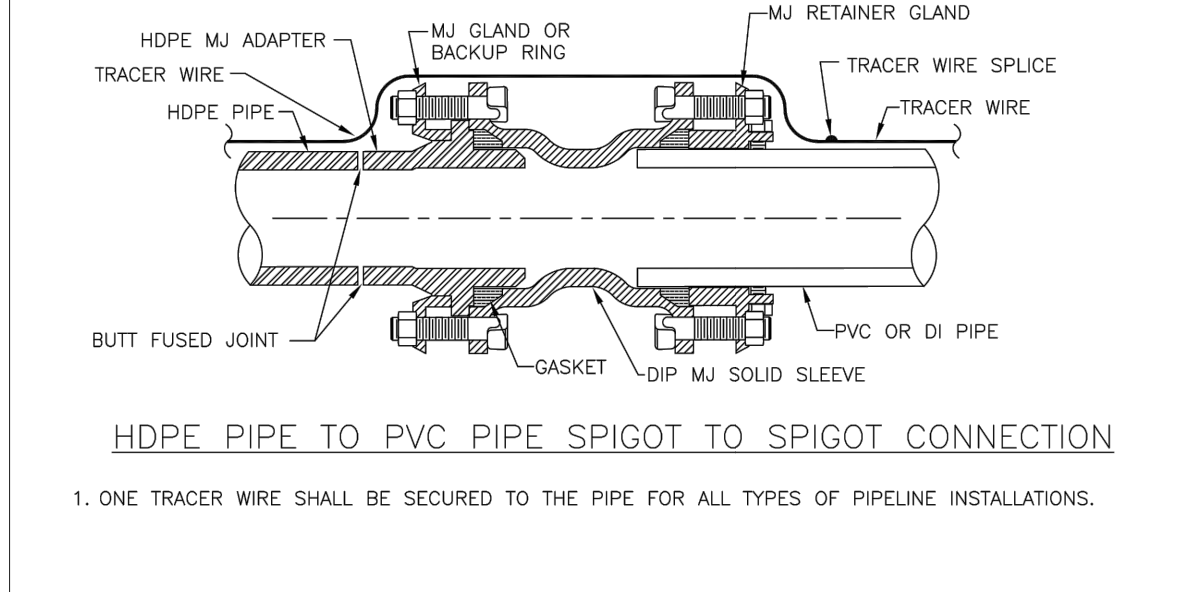
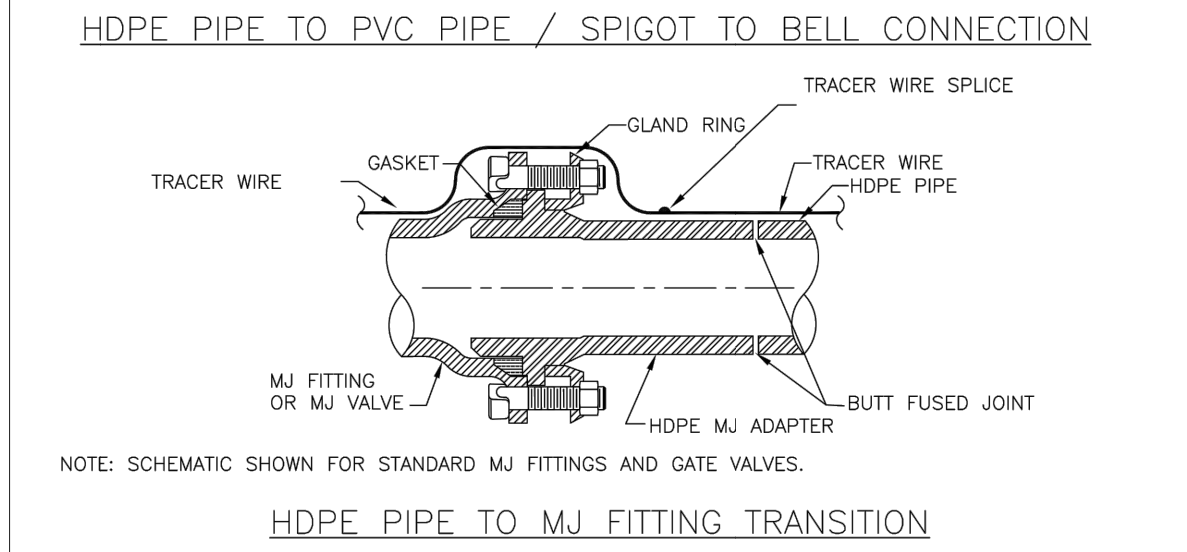
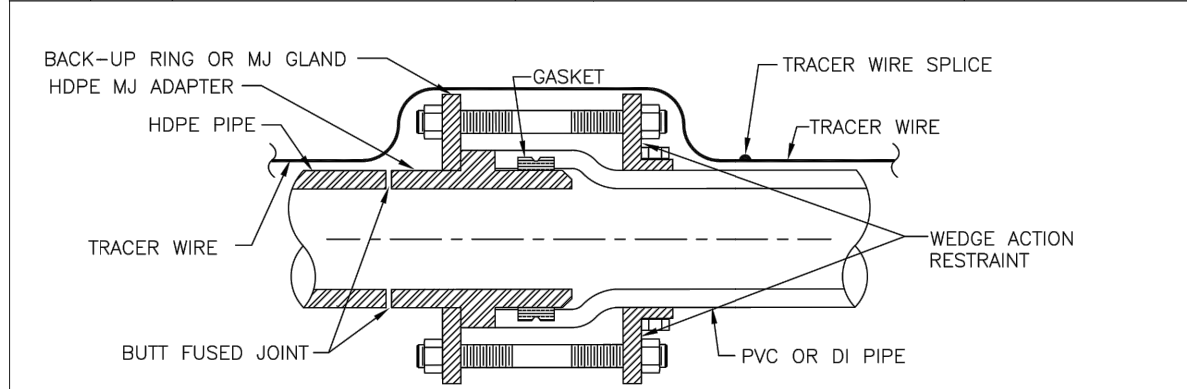
- NOTES:**
- THE ENGINEER OF RECORD MAY SELECT A LARGER CASING DIAMETER, INCREASE WALL THICKNESS, AND/OR INCREASE DEPTH OF BURY DUE TO EXTERNAL LOADS WITH COUNTY APPROVAL PRIOR TO PERFORMING THE WORK.
  - ALL PIPES CROSSINGS OF FEDERAL OR STATE ROADS, OR RAILROADS SHALL BE INSTALLED IN A CASING PIPE.
  - ALL PIPES CROSSINGS OF COUNTY LOCAL ARTERIAL AND THROUGHFARE ROADWAYS SHALL BE IN A CASING PIPE.
  - SPLIT-STEEL CASINGS MAY BE USED ON EXISTING COUNTY MAINS ONLY.
  - FOR JACK & BORE SPECIFICATIONS UNDER STATE ROADS AND RAILROADS, REFER TO THE F.D.O.T. UTILITY ACCOMMODATION MANUAL, LATEST EDITION.
  - HDPE CASING SHALL HAVE ALL WELD BEADS REMOVED FROM THE INSIDE SURFACE SUCH THAT THE JOINT SURFACES SHALL BE SMOOTH.
  - \*14-INCH DIAMETER MAINS ARE NOT TO BE INSTALLED.

<b>MANATEE COUNTY</b> PUBLIC WORKS DEPARTMENT		CASING CROSSING	UG-3
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

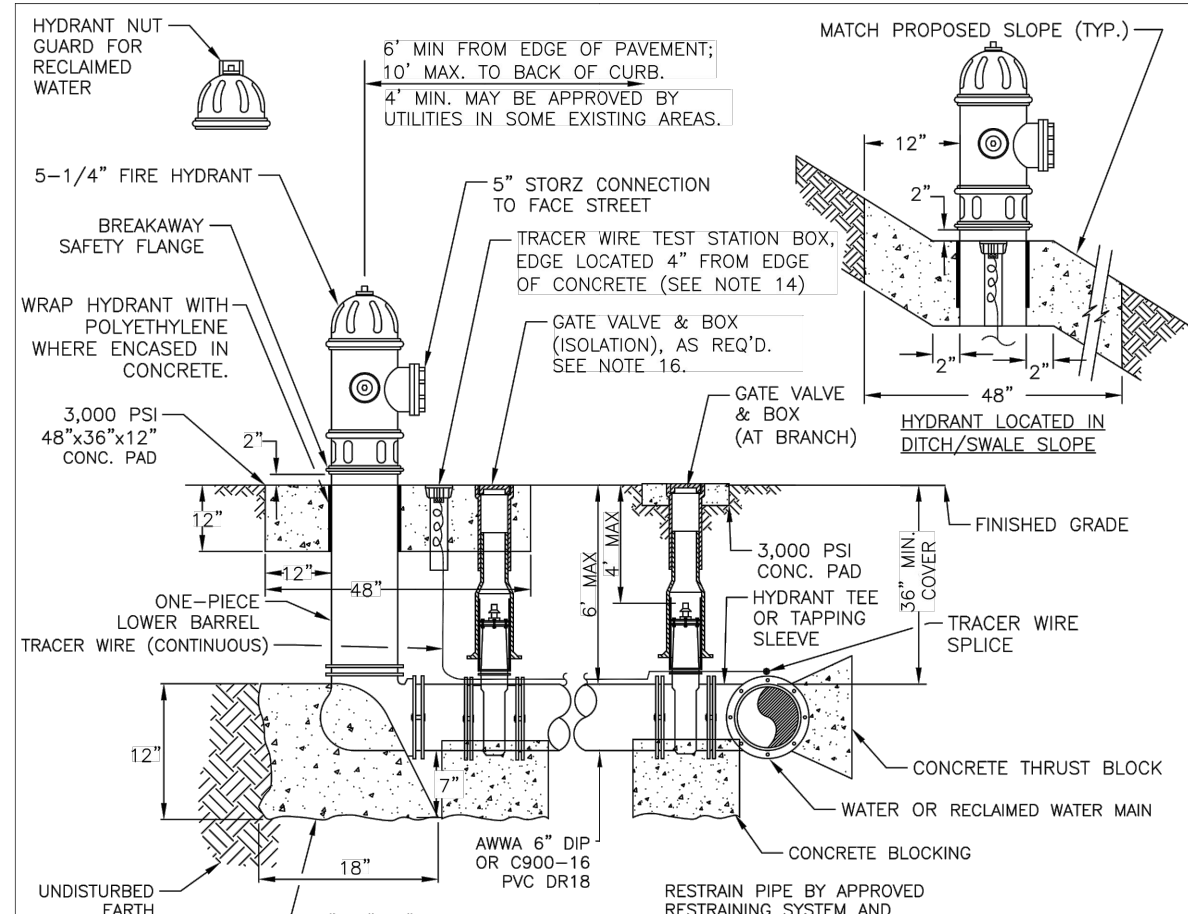


- NOTES:**
- PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER.
  - ALL FITTINGS TO BE WRAPPED WITH 20 MIL POLYETHYLENE WRAP AT THRUST BLOCK.
  - ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
  - ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
  - CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
  - WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES".
  - TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.
  - SEE SECTION 1.1.1 TAPPING SLEEVES AND VALVES IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

<b>MANATEE COUNTY</b> PUBLIC WORKS DEPARTMENT		TAPPING SLEEVE AND VALVE (WATER/RECLAIM)	UW-3
REV. BY	DATE		
	February 25, 2020		
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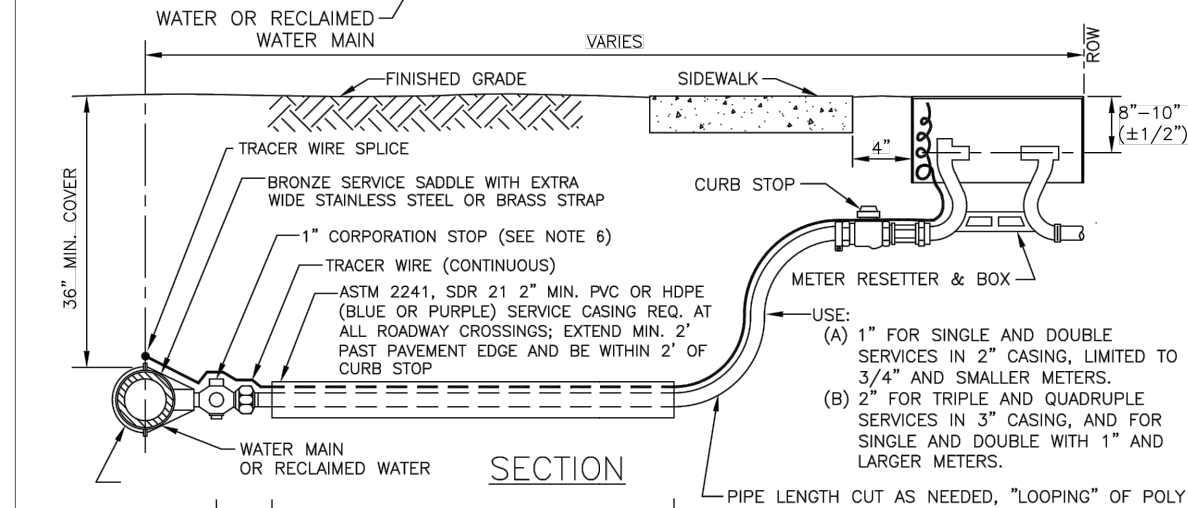
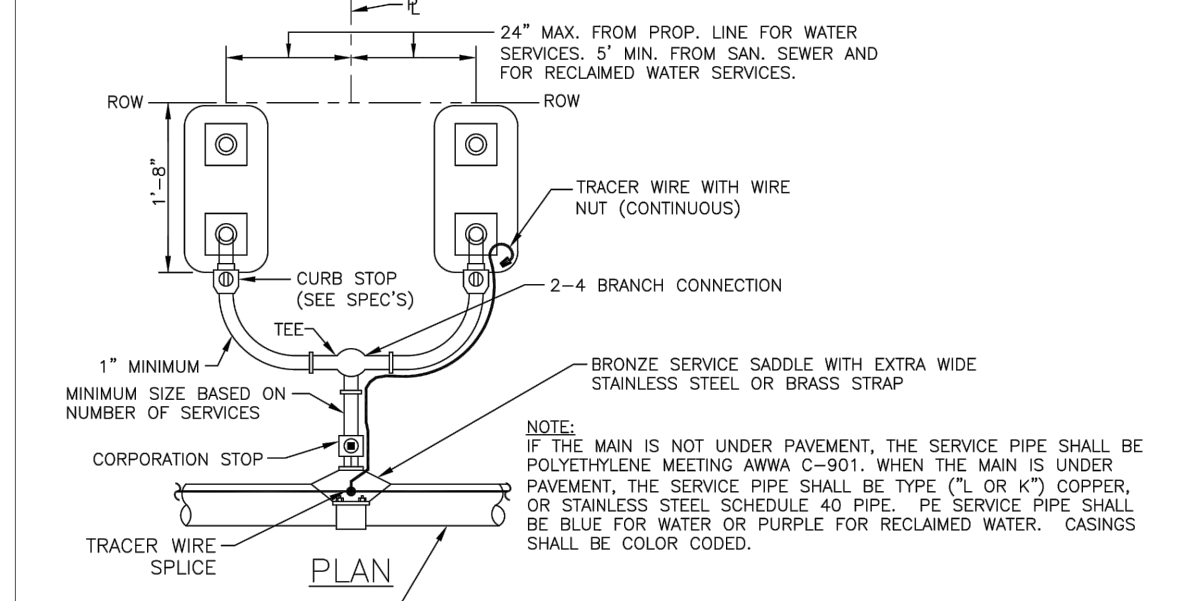


<b>MANATEE COUNTY</b> PUBLIC WORKS DEPARTMENT		HDPE TO PVC OR DI PIPE ADAPTER	UG-6
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



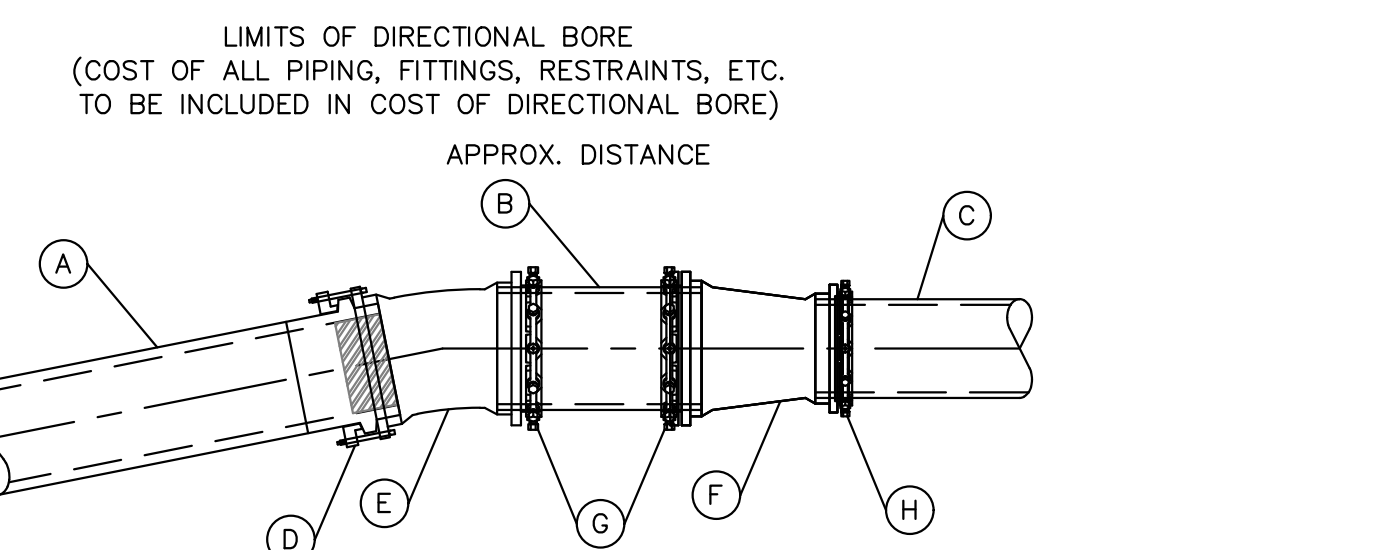
- NOTES:**
- WEEPHOLES SHALL BE EXCLUDED FROM THE FIRE HYDRANT.
  - FIRE HYDRANTS SHALL BE A MINIMUM OF 6" OFF EDGE OF PAVEMENT AND 10" MAX. FROM BACK OF CURB, WHERE POSSIBLE AND WHERE SIDEWALK IS TO BE INSTALLED, FIRE HYDRANT SHALL BE LOCATED BETWEEN SIDEWALK AND RIGHT-OF-WAY LINE.
  - HYDRANT SHALL BE DUCTILE IRON CONSTRUCTION. HYDRANTS SHALL BE FUSION BONDED EPOXY COATED SAFETY YELLOW FOR WATER; PURPLE (PANTONE 522C) FOR RECLAIMED WATER; AND RED FOR PRIVATE.
  - FIRE HYDRANTS SHALL BE PLACED SO THAT STORM WATER FLOWS AWAY FROM THE HYDRANT.
  - FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD, NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
  - FIRE HYDRANTS MAY BE CONSTRUCTED WITH "OROLOG" OFFSET FITTING.
  - RAISED REFLECTIVE PAVEMENT MARKER(S) (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER SHALL BE INSTALLED ON THE PAVEMENT DIRECTLY ACROSS THE HYDRANT IN ACCORDANCE WITH THE FDOT TRAFFIC ENGINEERING MANUAL, CHAPTER 4, SECTION 4.3 OR MOST CURRENT ADDITION.
  - ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
  - FIRE HYDRANT VALVE SHALL BE FASTENED DIRECTLY TO TEE.
  - IN-LINE VALVES SHOULD BE LOCATED AT HYDRANT TEES.
  - HYDRANTS SHALL BE LOCATED ON SAME SIDE OF ROAD AS WATER OR RECLAIMED MAIN.
  - THERE MUST BE A CLEARANCE OF 7 1/2 FEET FROM FRONT AND BOTH SIDES, AND FOUR FEET TO THE REAR OF THE HYDRANT, TO ABOVE GRADE OBSTRUCTIONS INCLUDING POSTS, FENCES, TREES, ETC., PER THE FLORIDA FIRE PREVENTION CODE.
  - SEE STANDARD DETAIL UW-2 GATE VALVE, BOX, LID AND TAG.
  - SHOULD THE FIRE HYDRANT'S CONCRETE PAD OVERLAP A SIDEWALK, THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.
  - IF A HYDRANT IS LOCATED ON THE SLOPE OF A DITCH OR SWALE, THE CONCRETE PAD SHALL CONFORM TO THE FINISH GRADE/SLOPE. THE CONCRETE PAD SHALL BE LEVEL 2-INCHES BEHIND & IN FRONT OF THE HYDRANT.
  - AT THE DISCRETION OF THE CONTRACTOR AN ADDITIONAL ISOLATION GATE VALVE SHALL BE ADDED, WHEN A PHYSICAL BARRIER IS PRESENT, (I.E. ROADWAY, FENCE, WALL, BERM ETC.) BETWEEN THE BRANCH GATE VALVE AND THE HYDRANT.
  - SEE SECTION 1.1.1 HYDRANTS IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

<b>MANATEE COUNTY</b> PUBLIC WORKS DEPARTMENT		FIRE HYDRANT ASSEMBLY	UW-5
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



- NOTES:**
- ALL SERVICE TAPS TO BE LOCATED IN THE FIELD. TAPS SHALL BE NO CLOSER THAN 2'-0" STAGGERED INTERVALS OR WITHIN 2'-0" FROM BELL OR SPIGOT ENDS.
  - METER BOXES & RESETTERS ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS. BY COUNTY, METER BOXES WITH LOCKABLE LIDS MAY BE LOCATED IN SIDEWALKS.
  - "W" OR "RW" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB ALONG WITH DISTANCE IN FEET TO THE METER. IF NO CURB, INSTALL A BLUE DISC WITH "W" OR A PURPLE DISC WITH "RW" AND A 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (IN FEET) FROM THE DISC TO THE METER.
  - COLOR CODED TRACER WIRE SHALL BE INSTALLED WITH WATER AND RECLAIMED MAIN AND ALL SERVICES. SERVICE WIRE SHALL BE CONNECTED TO THE TRACER WIRE ALONG THE MAIN. ON DOUBLE SERVICES, WHEN SECOND METER IS OVER 8 FT APART, TWO TRACER WIRES SHALL BE INSTALLED; ONE FOR EACH METER.
  - WATER AND RECLAIMED WATER SERVICE LINES TO BE 5" MINIMUM FROM SEWER SERVICE PIPES.
  - FOR 2" SERVICES REPLACE CORPORATION STOP WITH 2" RESILIENT WEDGE FIP GATE VALVE W/BOX, LID & TAG.
  - WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE ROW IS ONE FOOT (CUL-DE-SAC W/MEDIAN) A 10-FOOT-WIDE PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE ROW.
  - TEMPORARY RESIDENTIAL USE CAN BE PROVIDED BY CONTACTING THE UTILITY CUSTOMER SERVICE. SEE DETAIL UW-19.
  - SERVICE TUBING SHALL NOT BE CRIMPED OR KINKED TO RE-ADJUST CURB STOP LOCATION.

<b>MANATEE COUNTY</b> PUBLIC WORKS DEPARTMENT		TYPICAL SERVICE CONNECTION	UW-21
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



- LIMITS OF DIRECTIONAL BORE**  
(COST OF ALL PIPING, FITTINGS, RESTRAINTS, ETC. TO BE INCLUDED IN COST OF DIRECTIONAL BORE)
- APPROX. DISTANCE
- (A) HDPE PIPE (NOMINAL SIZE NOTED IN TABLE BELOW)
  - (B) 3 LF OF PVC OR DI PIPE (NOMINAL SIZE NOTED IN TABLE BELOW)
  - (C) PVC PIPE (NOMINAL SIZE NOTED IN TABLE BELOW)
  - (D) HDPE/DUCTILE IRON M.J. ADAPTER WITH GASKET SEAL AND STAINLESS STEEL STIFFENER (NOMINAL SIZE NOTED IN TABLE BELOW)
  - (E) 11.25" M.J. BEND (SIZE NOTED IN TABLE BELOW). REQUIRED FITTING SUBJECT TO CHANGE PER PLAN AND PROFILE SHEETS.
  - (F) M.J. REDUCER (SIZE NOTED IN TABLE BELOW). REQUIRED FITTING SUBJECT TO CHANGE PER PLAN AND PROFILE SHEETS.
  - (G) PVC/DI PIPE/M.J. JOINT RESTRAINT (SIZE NOTED IN TABLE BELOW)
  - (H) PVC/DI PIPE/M.J. JOINT RESTRAINT (SIZE NOTED IN TABLE BELOW)

DIAMETER OF DRILL PIPE	A	B	C	D	E	F	G	H
6"	6"	6"	4"	6"	6"	6"x4"	6"	4"
8"	8"	8"	6"	8"	8"	8"x6"	8"	6"
10"	10"	10"	8"	10"	10"	10"x8"	10"	8"
12"	12"	12"	10"	12"	12"	12"x10"	12"	10"
16"	16"	16"	12"	16"	16"	16"x12"	16"	12"
18"	18"	18"	16"	18"	18"	18"x16"	18"	16"
20"	20"	20"	18"	20"	20"	20"x18"	20"	18"
24"	24"	24"	20"	24"	24"	24"x20"	24"	20"

## HDPE TO PVC/DIP TRANSITION DETAIL

N.T.S. 25

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KHA PROJECT  
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DATE  
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SCALE AS SHOWN

DESIGNED BY JWW

DRAWN BY SLB

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**SR 684 (CORTEZ ROAD) WATER MAIN AND FORCE MAIN INTRACOASTAL CROSSING**

MANATEE COUNTY

LICENSED PROFESSIONAL

JORDAN W. WALKER, P.E.

FL LICENSE NUMBER  
78652

**DETAILS**

**25**

SHEET NUMBER

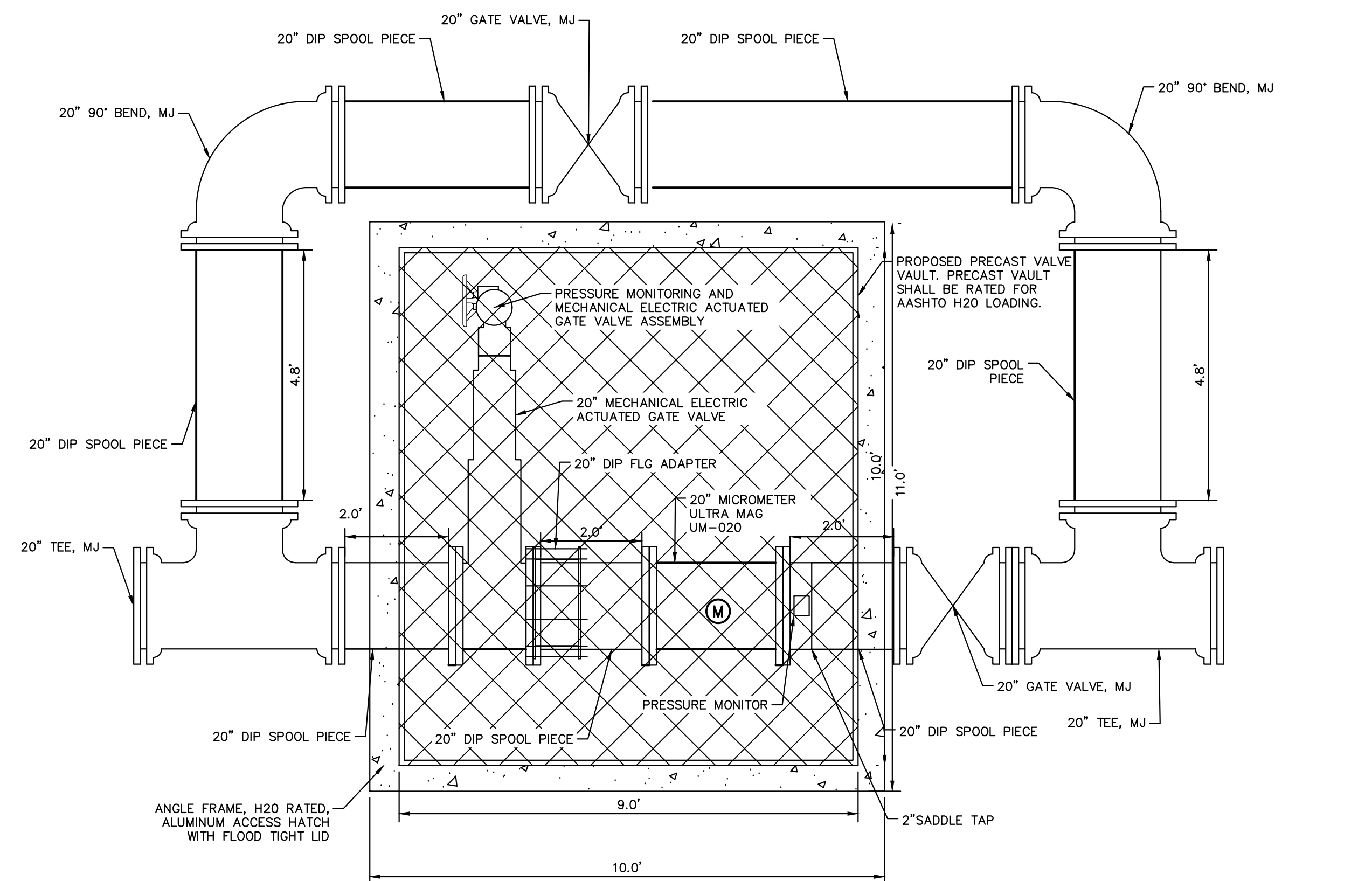
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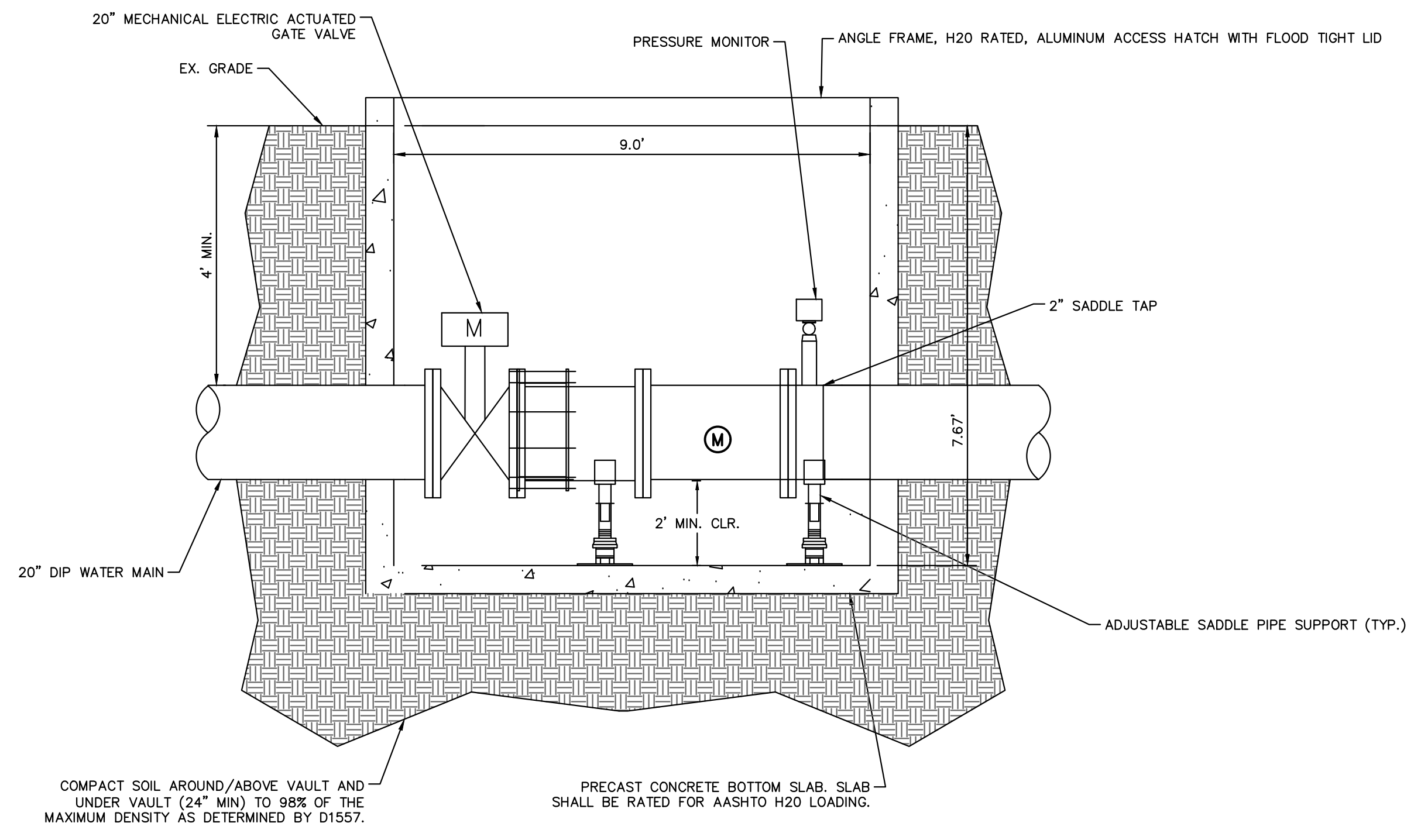


**ELECTRICAL & INSTRUMENTATION APPROACH:**  
**POWER:**

- CONTRACTOR SHALL DESIGN AND CONNECT TO THE ELECTRICAL SERVICE FOR POWER FOR REMOTE MONITORING OF PRESSURE AND FLOW ON THE WATER MAIN WITH THE ADDITION OF A MOTOR OPERATED VALVE AND REMOTE MANUAL CONTROL.
- THE ELECTRICAL UTILITY SUPPLYING THIS AREA IS FLORIDA POWER & LIGHT COMPANY (FPL).
- FPL ELECTRIC SERVICE STANDARDS ALLOW 115V SINGLE PHASE MOTORS UP TO 1/2 HP AND RECOMMENDS SINGLE PHASE MOTORS 3/4 HP AND ABOVE BE 230V. SINGLE PHASE MOTORS ABOVE 5 HP ARE NOT ALLOWED.
- THE APPROACH WOULD BE TO OBTAIN AN OVERHEAD OR UNDERGROUND 120/240VAC, 1Ø SERVICES FROM FPL OVERHEAD DISTRIBUTION SYSTEM IN THE VICINITY. ONE SERVICE WOULD SUPPLY THE WATER MAIN ASSEMBLY. THE SERVICE WILL TERMINATE IN A CONTRACTOR FURNISHED SELF-CONTAINED METER SOCKET WITH REVENUE METER FURNISHED AND INSTALLED BY FPL.

**INSTRUMENTATION:**  
 PROPOSED INSTRUMENTATION SHALL BE INTEGRATED WITH THE CURRENT MANATEE COUNTY SYSTEM.

INSTRUMENT	MANUFACTURER
PRESSURE INDICATING TRANSMITTER	1. ENDRESS & HAUSER 2. ROSEMOUNT



WATER MAIN PRESSURE MONITORING AND VALVE ASSEMBLY EAST APPROACH DETAIL  
 N.T.S.

27

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**DETAILS**

SHEET NUMBER  <b>27</b>
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