

# CONSTRUCTION PLANS FOR SR 70/15TH ST. E. WATER MAIN RELOCATION

MANATEE COUNTY, FLORIDA  
SEPTEMBER 2023  
MANATEE COUNTY PROJECT #008896



PROJECT TEAM:

**OWNER:**  
MANATEE COUNTY  
1022 26TH AVE. E.  
BRADENTON, FL 34208  
CONTACT: STEVE KERR  
941-708-7450 ext. 7418

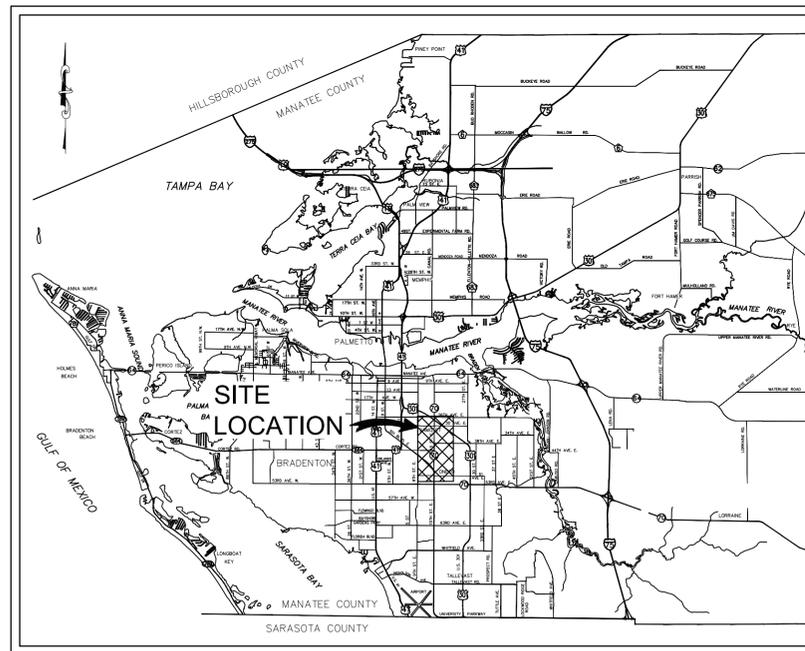
**ENGINEER:**  
KIMLEY-HORN AND ASSOCIATES, INC.  
200 CENTRAL AVE, SUITE 600  
ST PETERSBURG, FL 33701  
CONTACT: JORDAN W. WALKER, P.E.  
727-308-4320

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

THIS ITEM HAS BEEN DIGITALLY SIGNED AND  
SEALED BY JORDAN W. WALKER, P.E.

PRINTED COPIES OF THIS DOCUMENT ARE NOT  
CONSIDERED SIGNED AND SEALED AND THE  
SIGNATURE MUST BE VERIFIED ON ANY  
ELECTRONIC COPIES.

KIMLEY-HORN AND ASSOCIATES, INC.  
200 CENTRAL AVENUE  
SUITE 600  
ST PETERSBURG, FL 33701  
REGISTRY 35106  
JORDAN W. WALKER, P.E. NO. 78652



PROJECT VICINITY MAP  
N.T.S.

## BID PLANS

PREPARED BY  
**Kimley»Horn**

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
200 CENTRAL AVENUE SOUTH, SUITE 600,  
ST. PETERSBURG, FL 33701  
PHONE (727) 547-3999  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
01	COVER SHEET
02	GENERAL NOTES
03	GENERAL NOTES
04	KEY SHEET
05	PLAN AND PROFILE
06	UTILITY ADJUSTMENTS
07	UTILITY ADJUSTMENTS
08	DETAILS
09	DETAILS

FDOT PERMIT 2023-H-194-00224  
SR 70A (15TH ST E)  
BRADENTON, FL  
SECTION NUMBER: 13120001  
BEGIN MP 0.845, END MP 0.892

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

THIS DOCUMENT IS PROTECTED BY SECTION 106 OF THE "UNITED STATES COPYRIGHT ACT". REPRODUCTION OR ALTERATION OF THIS DOCUMENT OR THE INFORMATION CONTAINED HEREON BY ANY MEANS WHATSOEVER IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF KIMLEY-HORN AND ASSOCIATES, INC. CONSENT IS HEREBY GRANTED SPECIFICALLY TO GOVERNMENTAL AGENCIES TO REPRODUCE THIS DOCUMENT IN COMPLIANCE WITH F.S. CHAPTER 119.	DATE	SEPTEMBER 2023
	KHA PROJECT NO.	148400118
JORDAN W. WALKER, P.E. FLORIDA LICENSE NUMBER: 78652	SHEET NUMBER	01



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and shall be without liability to Kimley-Horn and Associates, Inc. or its representatives. Reuse of any information contained herein for any other purpose without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

**CSXT TRANSPORTATION (CSXT) GENERAL NOTES:**

1. CSXT OWNS ITS RIGHT--OF--WAY FOR THE PRIMARY PURPOSE OF OPERATING A RAILROAD, AND SHALL MAINTAIN UNRESTRICTED USE OF ITS PROPERTY FOR CURRENT AND FUTURE OPERATIONS.
2. AGENCY OR ITS CONTRACTOR SHALL ARRANGE AND CONDUCT ITS WORK SO THAT THERE WILL BE NO INTERFERENCE WITH CSXT OPERATIONS, INCLUDING TRAIN, SIGNAL, TELEPHONE AND TELEGRAPHIC SERVICES, OR DAMAGES TO CSXT'S PROPERTY, OR TO POLES, WIRES, AND OTHER FACILITIES OF TENANTS OF CSXT'S PROPERTY OR RIGHT--OF--WAY.
3. REFER TO THE CSXT'S "DESIGN & CONSTRUCTION STANDARD SPECIFICATIONS PIPELINE OCCUPANCIES" REVISED JUNE 5, 2018 (4.1.2).
4. WORK SCHEDULE IS SUBJECT TO THE APPROVAL OF ALL REQUIRED CONSTRUCTION SUBMITTALS BY THE CSXT CONSTRUCTION REPRESENTATIVE. VERIFICATION THAT PROPOSED WORK WILL NOT CONFLICT WITH ANY CSXT U.G. FACILITIES, AND THE AVAILABILITY OF CSXT FLAGGING AND PROTECTION SERVICES. CONSTRUCTION SUBMITTALS WILL BE BASED UPON THE PROPOSED SCOPE OF WORK AND MAY INCLUDE, BUT ARE NOT LIMITED TO; PROPOSED WORK PLAN, PROJECT SCHEDULE, MEANS AND METHODS, SITE ACCESS, DEWATERING, TEMPORARY EXCAVATION/SHORING, SOIL DISPOSITION/MANAGEMENT, TRACK MONITORING, CONCRETE PLACEMENT WORK, STRUCTURAL LIFTING/RIGGING PLANS FOR HOISTING OPERATIONS, SUBSTRUCTURE CONSTRUCTION PLANS, STEEL ERECTION PLANS, ROADWORK PLANS, ETC. NO WORK MAY BEGIN ON, OVER, OR ADJACENT TO CSXT PROPERTY, OR THAT COULD POTENTIALLY IMPACT CSXT PROPERTY, OPERATIONS OR SAFETY WITHOUT THE PRIOR COMPLETION AND APPROVAL OF THE REQUIRED AFOREMENTIONED INFORMATION AND APPROVALS.
5. PRIOR TO CONSTRUCTION, ALL SIGNAL FACILITIES AND/OR WARNING DEVICES AT PROPOSED FACILITY CROSSING, I.E. CANTILEVERS, FLASHERS, AND GATES MUST BE LOCATED AND MARKED/FLAGGED BY CSXT. THE TRADITIONAL "ONE CALL" UTILITY LOCATE SERVICES ARE NOT RESPONSIBLE FOR LOCATING ANY CSXT UNDER--GRADE UTILITIES OR FACILITIES. CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGES TO CSXT COMMUNICATION & SIGNAL FACILITIES.
6. CONTRACTOR ALSO HAS THE SOLE RESPONSIBILITY OF ASCERTAINING THAT ALL OTHER UTILITIES HAVE BEEN PROPERLY LOCATED BY COMPLYING WITH THE LOCAL "CALL BEFORE YOU DIG" REGULATION(S). CONTRACTOR SHALL SOLELY BE RESPONSIBLE FOR NOTIFYING OWNERS OF ADJACENT PROPERTIES AND OF UNDERGROUND FACILITIES AND UTILITY OWNERS WHEN PROSECUTION OF THE WORK MAY AFFECT THEM, AND SHALL COOPERATE WITH THEM IN THE PROTECTION, REMOVAL, RELOCATION AND REPLACEMENT OF THEIR PROPERTY.
7. THE USE OF CONSTRUCTION SAFETY FENCING IS REQUIRED WHEN A CSXT FLAGMAN IS NOT PRESENT. DISTANCE OF FENCING FROM NEAREST RAIL TO BE DETERMINED BY THE CSXT TRACK SUPERVISOR AND SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
8. CONTRACTOR ACCESS WILL BE LIMITED TO THE IMMEDIATE PROJECT AREA ONLY. THE CSXT PROPERTY OUTSIDE THE PROJECT AREA MAY NOT BE USED FOR CONTRACTOR ACCESS TO THE PROJECT SITE AND NO TEMPORARY AT--GRADE CROSSINGS WILL BE ALLOWED.
9. ALL MATERIAL AND EQUIPMENT WILL BE STAGED TO NOT BLOCK ANY CSXT ACCESS OR MAINTENANCE ROADS. NO HOISTING OR AUXILIARY EQUIPMENT NECESSARY FOR THE PROCEDURE SHALL BE PLACED ON CSXT TRACK STRUCTURE AND / OR BALLAST SECTION. CLEAR WORKING LOCATIONS FOR EQUIPMENT USED WILL BE LAID OUT AND APPROVED BY CSXT'S REPRESENTATIVE PRIOR TO EQUIPMENT SET--UP. AGENCY AND CONTRACTOR SHALL NOT STORE THEIR MATERIALS OR EQUIPMENT ON CSXT'S PROPERTY OR WHERE THEY MAY POTENTIALLY INTERFERE WITH CSXT'S OPERATIONS.
10. CSXT DOES NOT GRANT OR CONVEY AN EASEMENT FOR THIS INSTALLATION.
11. CSXT REQUIRES CONTRACTORS, SUBCONTRACTORS, AND VENDORS TO PARTICIPATE IN JOB SAFETY BRIEFINGS DAILY AND AS NECESSARY WITH THE CSXT FLAGGER. THE SCOPE OF WORK MAY REQUIRE THAT VARIOUS PROTECTION AGAINST TRAIN MOVEMENTS BE DISCUSSED, UNDERSTOOD, AND UTILIZED. WORK SHALL ONLY BE UNDERTAKEN WITH THE PRESENCE AND PERMISSION OF THE CSXT FLAGGER. IF AT ANY TIME THE CSXT FLAGGER PERCEIVES THAT THE HOISTING PROCEDURE IS CAUSING OR HAS THE POTENTIAL TO CAUSE A HAZARD OR DELAY TO CSXT OPERATIONS THROUGH THE PROJECT SITE, WORK WILL CEASE UNTIL SUCH TIME AS SATISFACTORY MODIFICATIONS HAVE BEEN REVIEWED AND APPROVED.
12. THE RIGHT OF WAY SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE CONDITION PRIOR TO BEGINNING THE PROJECT BEFORE FINAL ACCEPTANCE WILL BE PROVIDED. PUNCH LISTS SHALL BE RESPONDED TO PRIOR TO ISSUANCE OF AN ACCEPTANCE MEMORANDUM SIGNED BY THE CSXT REPRESENTATIVE.
13. NO CONSTRUCTION OR ENTRY UPON THE CSXT CORRIDOR IS PERMITTED UNTIL THE DOCUMENT TRANSACTION IS COMPLETED, YOU ARE IN RECEIPT OF A FULLY EXECUTED DOCUMENT, AND YOU HAVE OBTAINED AUTHORITY FROM CSXT'S.
14. THE FRONT OF THE PIPE SHALL BE PROVIDED WITH MECHANICAL ARRANGEMENTS OR DEVICES THAT WILL POSITIVELY PREVENT THE AUGER FROM LEADING THE PIPE SO THAT NO UNSUPPORTED EXCAVATION IS AHEAD OF THE PIPE. THE BORE HEAD / AUGER SET--UP (SKETCH OR PHOTOS) SHALL BE SUBMITTED BY CONTRACTOR AND ACCEPTED BY ASSIGNED CSXT REPRESENTATIVE PRIOR TO START OF THE JACK & BORE.
15. THE OPERATION SHALL BE PROGRESSED ON A 24--HOUR BASIS WITHOUT STOPPAGE (EXCEPT FOR ADDING LENGTHS OF PIPE) UNTIL THE LEADING EDGE OF THE PIPE HAS REACHED THE RECEIVING PIT.
16. THE AUGER AND CUTTING HEAD ARRANGEMENT SHALL BE REMOVABLE FROM WITHIN THE PIPE IN THE EVENT AN OBSTRUCTION IS ENCOUNTERED.
17. PIPELINE SHALL BE PROMINENTLY MARKED AT BOTH SIDES OF THE CSXT PROPERTY LINES BY DURABLE, WEATHERPROOF SIGNS LOCATED OVER THE CENTERLINE OF THE PIPE IN ACCORDANCE WITH CSXT SPECIFICATIONS.
18. IF REQUIRED, A DEWATERING PLAN IN ACCORDANCE WITH CSXT SPECIFICATIONS WILL BE SUBMITTED TO THE CSXT REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO ANY DEWATERING OPERATIONS. DEWATERING DRAWDOWN LEVEL AT TRACKS SHALL BE FIELD VERIFIED THAT IT MEETS THE APPROVED DEWATERING DESIGN PRIOR TO COMMENCEMENT OF JACK AND BORE OPERATIONS.
19. BLASTING IS NOT PERMITTED UNDER, ON, OR ADJACENT TO CSXT PROPERTY.
20. JACKING PIT: IDENTIFY HAZARDS AND PUT CONTROLS IN PLACE PRIOR TO START OF EXCAVATION. CONTRACTOR SHALL ERECT A BARRIER AND CONSTRUCTION FENCE ALONG THE FACE OF JACKING PIT CONSTRUCTION LIMITS AND NOT ENDOUR PAST IT WHEN PREPARING THE PIT. STAKE OR MARK PIT AS NEEDED FOR DIGGING. EROSION CONTROL DEVICES SHALL BE PLACED AT THE JACKING AND RECEIVING PITS PROTECTING CSXT PROPERTY AND DITCHES TO THE SATISFACTION OF THE CSXT REPRESENTATIVE.
21. EXCAVATION: IF THE EXCAVATION IS 5 FEET OR GREATER IN DEPTH, THE WALLS MAY BE SLOPED AT 1.5 HORIZONTAL TO 1 VERTICAL TO REDUCE THE RISK OF CAVE--INS OR SLIDES. A SAFE MANNER IN WHICH TO ENTER AND EXIT THE EXCAVATION MUST BE ESTABLISHED. THE TOE OF SLOPES IN EXCAVATION SHALL IN NO CASE BE UNDERCUT BY POWER SHOVELS, BULLDOZERS, GRADERS, BLASTING, OR IN ANY MANNER. EXCAVATION SHALL NOT BE MADE IN EXCESS OF THE AUTHORIZED CROSS--SECTION.
22. BACKFILL, COVER OR FENCE ALL EXCAVATIONS WHEN UNATTENDED. THE CSXT REPRESENTATIVE WILL APPROVE THE PROTECTION METHOD AND THE TYPE OF FENCING MATERIAL. SET FENCING BACK AT LEAST 3 FEET (91 CENTIMETERS) FROM THE EDGES OF THE EXCAVATION. SET FENCE POSTS SECURELY IN THE GROUND AND INSURE THE FENCING IS SECURELY TIED TO POSTS WITH ZIP TIES OR SOME OTHER TIE WRAP PRODUCT.
23. FOR ANY EXCAVATIONS PERMITTED ON CSXT PROPERTY, ALL BACKFILL IN EXCAVATIONS AND TRENCHES SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY AS DEFINED IN ASTM STANDARD D1557 AND INSTALLED IN SIX--INCH LIFTS. IN--SITU SOIL SHALL BE USED FOR BACKFILL MATERIAL. SHOULD ADDITIONAL OFFSITE BACKFILL MATERIAL BE NEEDED, OFFSITE MATERIAL SOURCES ARE TO MEET STATE AND RESIDENTIAL CLEAN FILL REQUIREMENTS AND BE PREAPPROVED BY CSXT'S REPRESENTATIVE. CSXT DOES NOT REQUIRE A SPECIFIC TESTING REQUIREMENT OR STANDARD FOR STONE.
24. TRACK MONITORING: PRIOR TO COMMENCING JACK & BORE OPERATIONS, CONTRACTOR SHALL BE REQUIRED TO CONDUCT AND SUBMIT A BASELINE SURVEY ALONG THE TOP OF EACH RAIL UNDER CSXT FLAGGER PROTECTION AND IN ACCORDANCE WITH THE PREAPPROVED SETTLEMENT MONITORING CONSTRUCTION SUBMITTAL. ADDITIONAL SURVEY DATA SHALL BE COLLECTED AND SUBMITTED ONCE EACH DAY DURING CASING PIPE INSTALLATION, OR AS DIRECTED BY CSXT REPRESENTATIVE. CONTRACTOR SHALL ALSO TAKE ELEVATION SHOTS AT TOP OF TIE AND TOP OF CASING PIPE BEFORE STARTING THE BORE TO VERIFY DEPTH OF COVER PROPOSED FOR THE WORK HAS BEEN MET.
25. PROJECTS THAT GENERATE SOILS FROM CSXT PROPERTY MUST ADHERE TO CSXT'S SOIL MANAGEMENT POLICIES. CSXT REQUIRES SOILS GENERATED FROM ITS PROPERTY TO EITHER BE REUSED ON CSXT PROPERTY OR PROPERLY DISPOSED IN A CSXT APPROVED DISPOSAL FACILITY. CSXT ENVIRONMENTAL DEPARTMENT WILL HANDLE WASTE CHARACTERIZATION AND PROFILING INTO AN APPROVED DISPOSAL FACILITY. CSXT PROHIBITS ANY ENVIRONMENTAL SAMPLING ON ITS PROPERTY UNLESS GRANTED THROUGH A WRITTEN ENVIRONMENTAL RIGHT--OF--ENTRY OR APPROVED IN WRITING BY THE CSXT ENVIRONMENTAL DEPARTMENT. THE MANAGEMENT OF SOILS GENERATED FROM CSXT PROPERTY SHOULD BE PLANNED FOR AND PROPERLY PERMITTED (IF APPLICABLE) PRIOR TO INITIATING ANY WORK ON CSXT PROPERTY. A LIST OF CSXT APPROVED LABORATORIES AND/OR DISPOSAL FACILITIES MAY BE OBTAINED FROM THE CSXT MANAGER ENVIRONMENTAL PROGRAMS.
26. CSXT DOES NOT REPRESENT OR WARRANT THE RIGHT--OF--WAY DIMENSIONS DEPICTED ON THESE DRAWINGS. A THIRD PARTY SURVEY IS RECOMMENDED FOR VERIFICATION AND ACCURACY.
27. UPON COMPLETION OF PROJECT CONSTRUCTION, CONTRACTOR MUST SUBMIT TO CSXT THE AS--BUILT PLANS SHOWING THE FINAL ALIGNMENT ON CSXT PROPERTY, INCLUDING ACTUAL DEPTH OF FACILITY AND ANY FIELD CHANGE TO LOCATION ON CSXT PROPERTY, PIPE MATERIALS, NUMBER OF INNERDUCTS, ETC.

**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**

© 2023 KIMLEY--HORN AND ASSOCIATES, INC.  
 200 CENTRAL AVE, SUITE 600, ST. PETERSBURG, FL 33701  
 PHONE: 727--547--3999  
 WWW.KIMLEY--HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400118
DATE September 2023
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
CHECKED BY JWW

**SR 70/ 15TH ST. E. WATER MAIN RELOCATION**

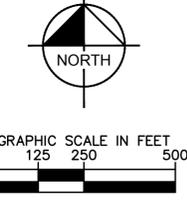
MANATEE COUNTY

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

**GENERAL NOTES**

SHEET NUMBER  
03

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**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**  
 © 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
 200 CENTRAL AVE, SUITE 600, ST. PETERSBURG, FL 33701  
 PHONE: 727-547-3999  
 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

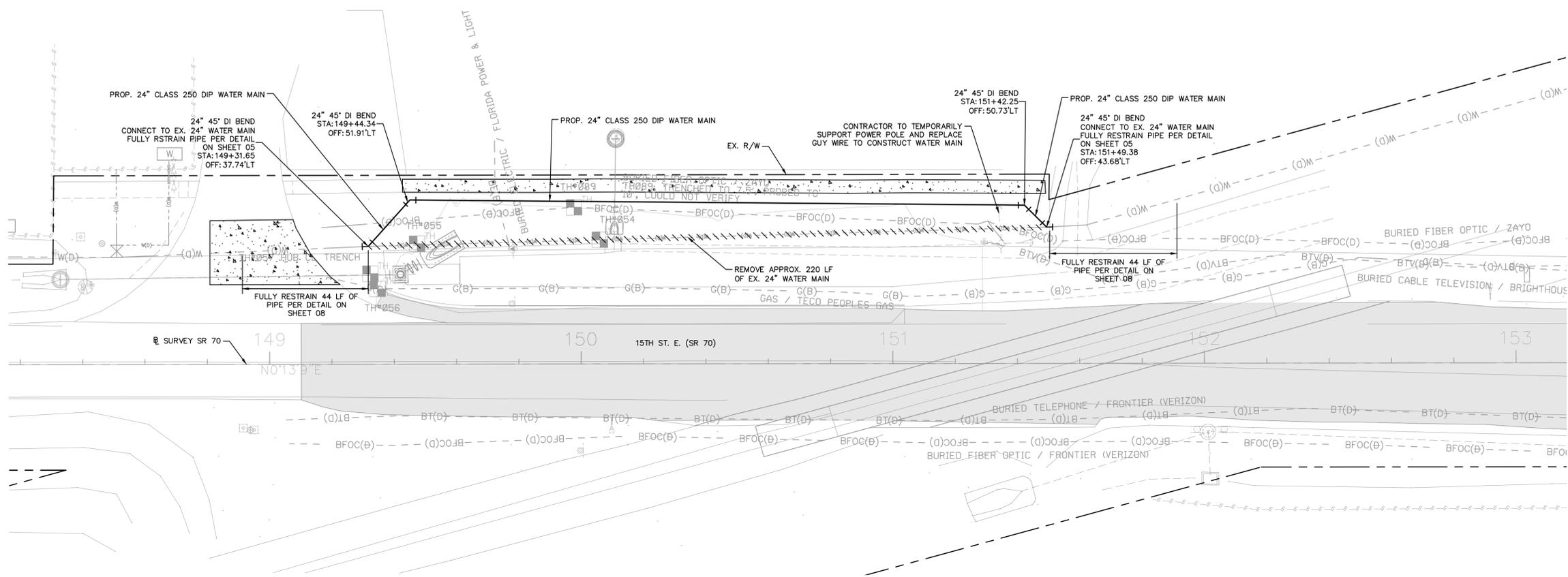
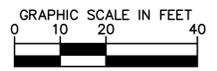
KHA PROJECT  
 148400118  
 DATE  
 September  
 2023  
 SCALE AS SHOWN  
 DESIGNED BY JWW  
 DRAWN BY SLB  
 CHECKED BY JWW

  
**SR 70/ 15TH ST. E. WATER MAIN  
 RELOCATION**  
 MANATEE COUNTY FL

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

**KEY SHEET**

SHEET NUMBER  
**04**



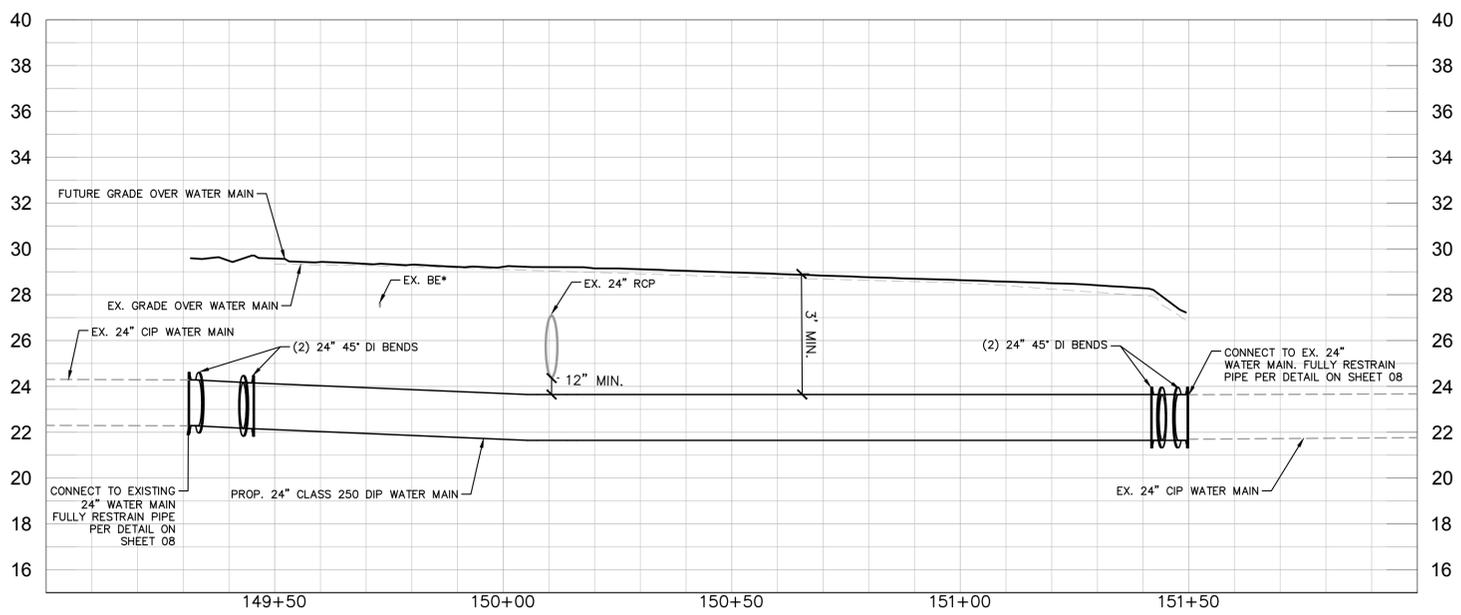
**DISINFECTION AND TESTING**

1. ALL PIPES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 (LATEST EDITION).
2. ALLOWABLE LEAKAGE FOR PVC PRESSURE MAINS WILL BE IN ACCORDANCE WITH AWWA M23.
3. THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ALL NECESSARY TEST PUMPING EQUIPMENT, WATER METERS, PRESSURE GAUGES, AND OTHER EQUIPMENT, MATERIAL AND FACILITIES REQUIRED FOR ALL HYDROSTATIC AND LEAKAGE TESTING. CONTRACTOR SHALL CONTACT THE UTILITY AND ENGINEER IN WRITTEN FORM, SEVENTY-TWO (72) HOURS IN ADVANCE OF PROPOSED TESTING. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRETESTING PRIOR TO NOTIFICATION. NO TESTING WILL BE SCHEDULED ON A MONDAY OR FRIDAY.
4. THE WATER SYSTEM SHALL BE TESTED FOR LEAKAGE AT 180 PSI FOR TWO (2) HOURS, WITH ALLOWABLE LEAKAGE IN ACCORDANCE WITH AWWA STANDARD C600 (LATEST EDITION) THERE SHALL BE NO WORK OR ACTIVITY DURING PRESSURE TEST.
5. CONTRACTOR SHALL OBTAIN A COPY OF THE FDEP WATER SYSTEM PERMIT AND PULL BACTERIOLOGICAL TEST SAMPLE FROM THE SAMPLE POINTS SPECIFIED IN THAT PERMIT TESTING SHALL BE PERFORMED IN THE FOLLOWING ORDER.
  1. PRESSURE TEST
  2. FULL BORE FLUSH SAMPLES
  3. DISINFECTION
  4. BACTERIOLOGICAL SAMPLES

**\*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 WATER 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.

CONTRACTOR TO COORDINATE WITH CSX FOR REQUIRED FLAGGING OPERATIONS, MAINTENANCE OF TRAFFIC, ETC. NEEDED FOR CONSTRUCTION IN THE CSX RIGHT-OF-WAY.



**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.



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reference on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

No.	REVISIONS	DATE	BY

**Kimley >> Horn**

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
 200 CENTRAL AVE, SUITE 600, ST. PETERSBURG, FL 33701  
 PHONE: 727-547-3999  
 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT  
 148400118  
 DATE  
 September  
 2023  
 SCALE AS SHOWN  
 DESIGNED BY JWW  
 DRAWN BY SLB  
 CHECKED BY JWW

**Manatee County**  
 FLORIDA

**SR 70/ 15TH ST. E. WATER MAIN  
 RELOCATION**

MANATEE COUNTY

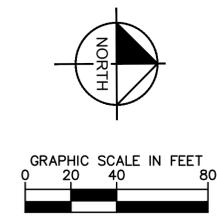
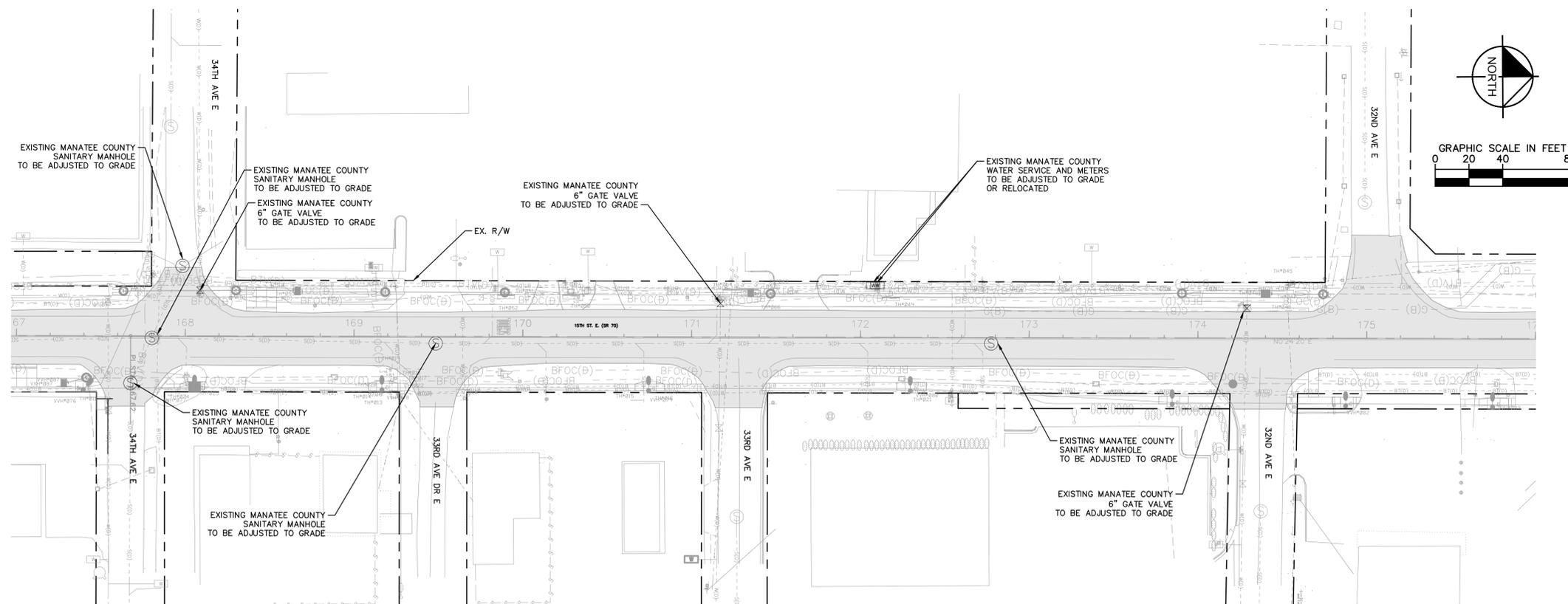
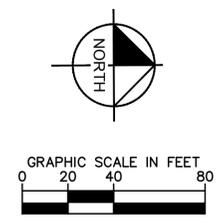
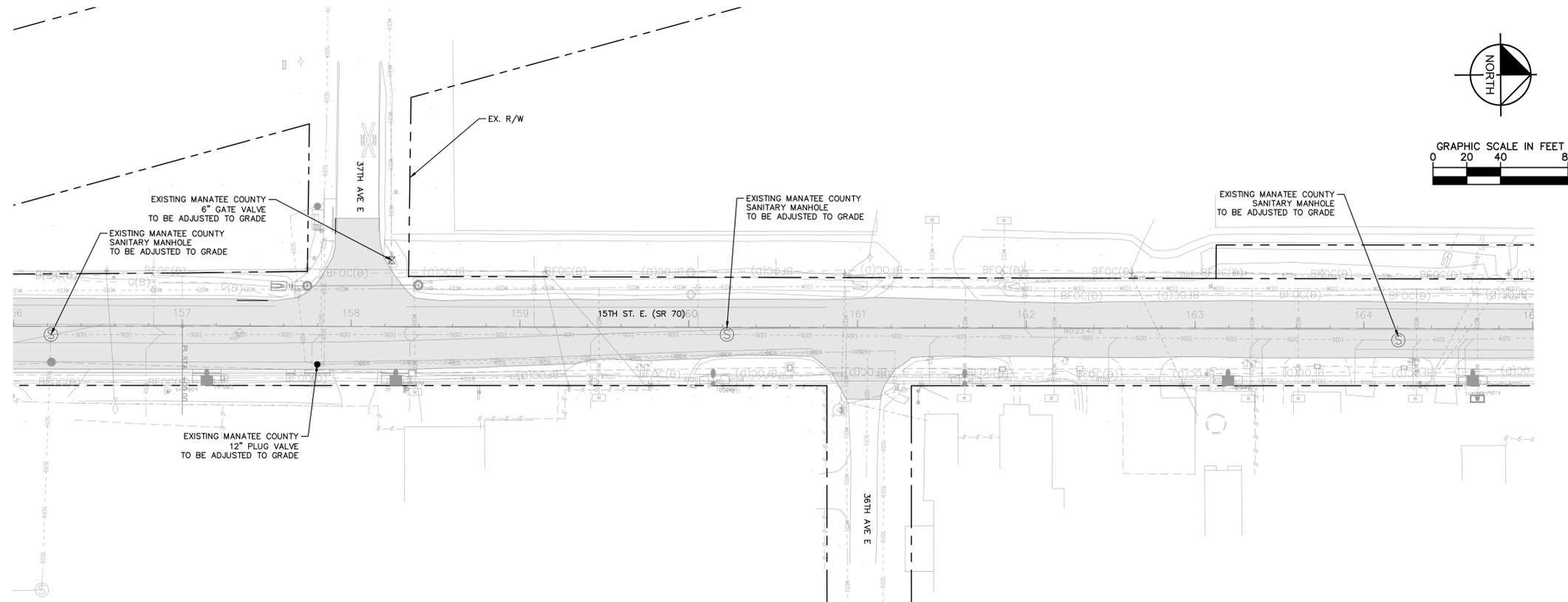
LICENSED PROFESSIONAL  
 JORDAN W. WALKER, P.E.  
 FL LICENSE NUMBER  
 78652

**PLAN AND PROFILE**

FL DATE:

SHEET NUMBER  
**05**

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reference on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**DISINFECTION AND TESTING**

1. ALL PIPES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 (LATEST EDITION).
2. ALLOWABLE LEAKAGE FOR PVC PRESSURE MAINS WILL BE IN ACCORDANCE WITH AWWA M23.
3. THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ALL NECESSARY TEST PUMPING EQUIPMENT, WATER, WATER METERS, PRESSURE GAUGES, AND OTHER EQUIPMENT, MATERIAL AND FACILITIES REQUIRED FOR ALL HYDROSTATIC AND LEAKAGE TESTING. CONTRACTOR SHALL CONTACT THE UTILITY AND ENGINEER IN WRITTEN FORM, SEVENTY-TWO (72) HOURS IN ADVANCE OF PROPOSED TESTING. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRETESTING PRIOR TO NOTIFICATION. NO TESTING WILL BE SCHEDULED ON A MONDAY OR FRIDAY.
4. THE WATER SYSTEM SHALL BE TESTED FOR LEAKAGE AT 180 PSI FOR TWO (2) HOURS, WITH ALLOWABLE LEAKAGE IN ACCORDANCE WITH AWWA STANDARD C600 (LATEST EDITION) THERE SHALL BE NO WORK OR ACTIVITY DURING PRESSURE TEST.
5. CONTRACTOR SHALL OBTAIN A COPY OF THE FDEP WATER SYSTEM PERMIT AND PULL BACTERIOLOGICAL TEST SAMPLE FROM THE SAMPLE POINTS SPECIFIED IN THAT PERMIT TESTING SHALL BE PERFORMED IN THE FOLLOWING ORDER.
  1. PRESSURE TEST
  2. FULL BORE FLUSH SAMPLES
  3. DISINFECTION
  4. BACTERIOLOGICAL SAMPLES

**\*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 WATER 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.

**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**  
 © 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
 200 CENTRAL AVE, SUITE 600, ST. PETERSBURG, FL 33701  
 PHONE: 727-547-3999  
 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400118
DATE September 2023
SCALE AS SHOWN
DESIGNED BY JWW
DRAWN BY SLB
CHECKED BY JWW

**Manatee County FLORIDA**

**SR 70/ 15TH ST. E. WATER MAIN RELOCATION**

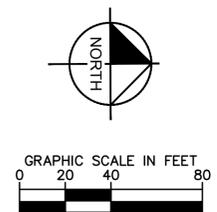
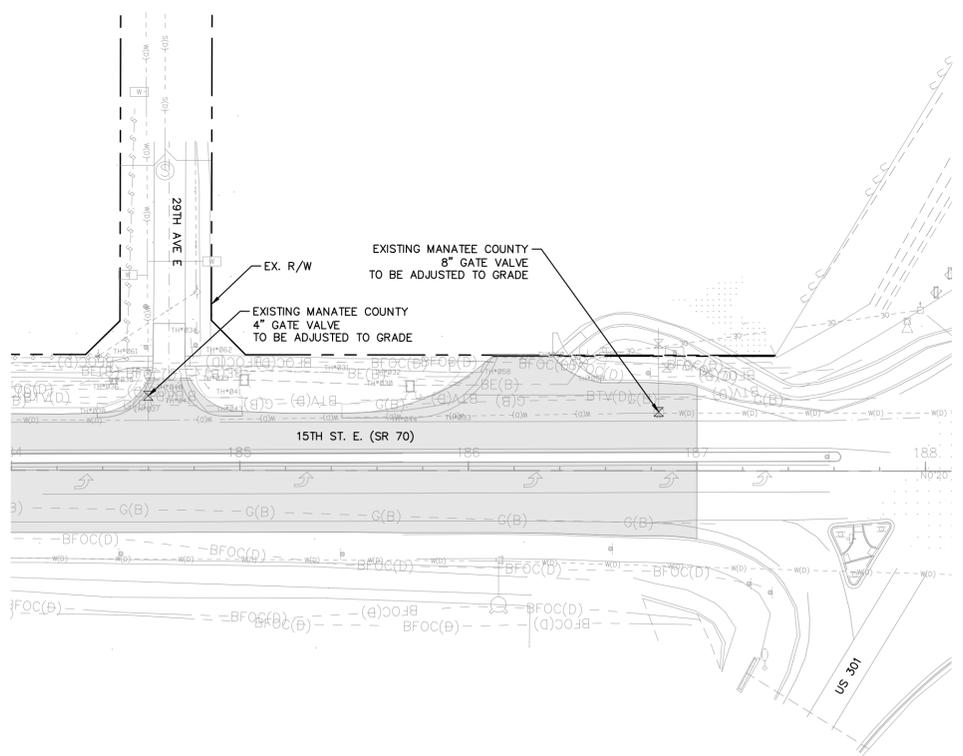
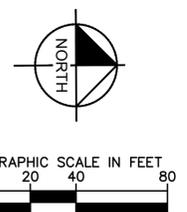
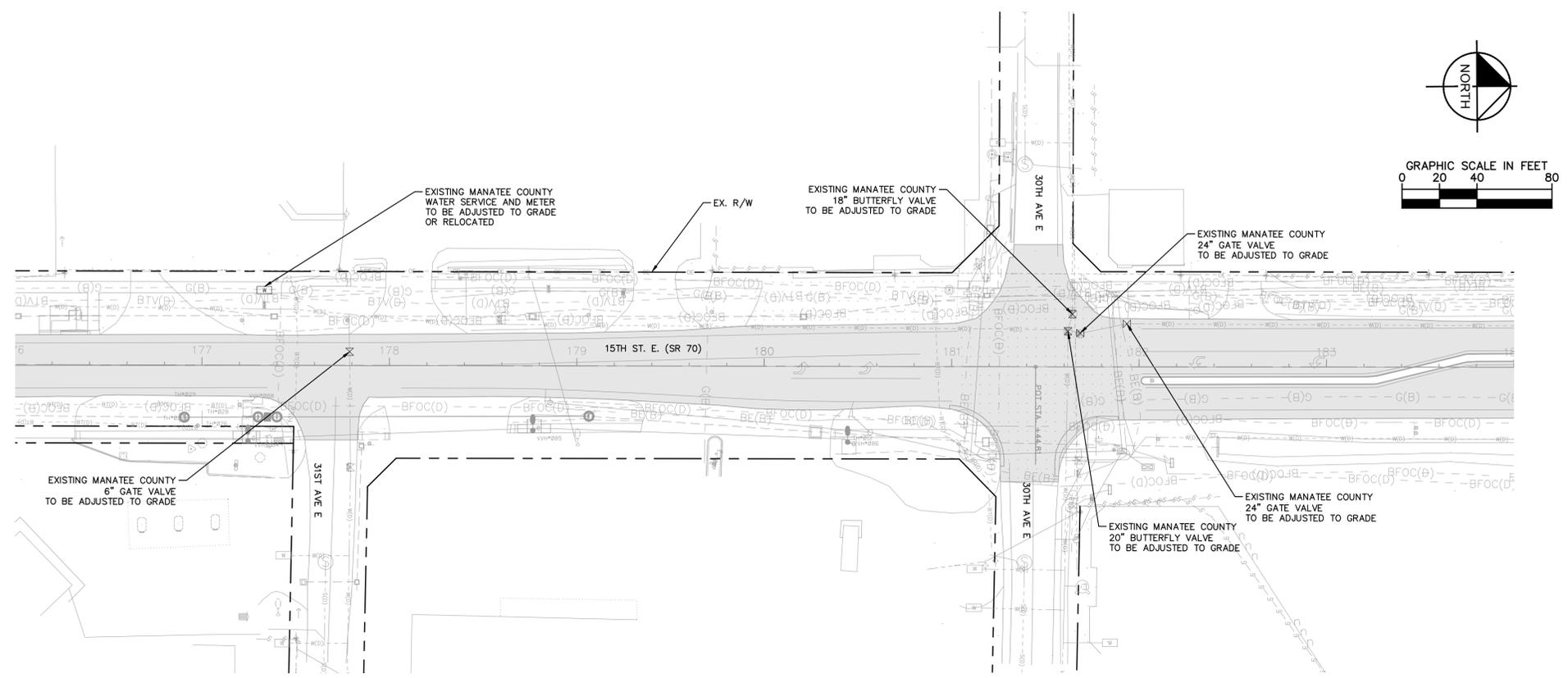
MANATEE COUNTY

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

**MANHOLE AND VALVE ADJUSTMENTS**

SHEET NUMBER  <b>06</b>
-------------------------------

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reference on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**DISINFECTION AND TESTING**

1. ALL PIPES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 (LATEST EDITION).
2. ALLOWABLE LEAKAGE FOR PVC PRESSURE MAINS WILL BE IN ACCORDANCE WITH AWWA M23.
3. THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ALL NECESSARY TEST PUMPING EQUIPMENT, WATER, WATER METERS, PRESSURE GAUGES, AND OTHER EQUIPMENT, MATERIAL AND FACILITIES REQUIRED FOR ALL HYDROSTATIC AND LEAKAGE TESTING. CONTRACTOR SHALL CONTACT THE UTILITY AND ENGINEER IN WRITTEN FORM, SEVENTY-TWO (72) HOURS IN ADVANCE OF PROPOSED TESTING. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRETESTING PRIOR TO NOTIFICATION. NO TESTING WILL BE SCHEDULED ON A MONDAY OR FRIDAY.
4. THE WATER SYSTEM SHALL BE TESTED FOR LEAKAGE AT 180 PSI FOR TWO (2) HOURS, WITH ALLOWABLE LEAKAGE IN ACCORDANCE WITH AWWA STANDARD C600 (LATEST EDITION) THERE SHALL BE NO WORK OR ACTIVITY DURING PRESSURE TEST.
5. CONTRACTOR SHALL OBTAIN A COPY OF THE FDEP WATER SYSTEM PERMIT AND PULL BACTERIOLOGICAL TEST SAMPLE FROM THE SAMPLE POINTS SPECIFIED IN THAT PERMIT TESTING SHALL BE PERFORMED IN THE FOLLOWING ORDER.
 

1. PRESSURE TEST	3. DISINFECTION
2. FULL BORE FLUSH SAMPLES	4. BACTERIOLOGICAL SAMPLES

**\*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 WATER 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.

**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**  
 © 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
 200 CENTRAL AVE, SUITE 600, ST. PETERSBURG, FL 33701  
 PHONE: 727-547-3999  
 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT  
 148400118  
 DATE  
 September  
 2023  
 SCALE AS SHOWN  
 DESIGNED BY JWW  
 DRAWN BY SLB  
 CHECKED BY JWW

**SR 70/ 15TH ST. E. WATER MAIN  
 RELOCATION**  
 MANATEE COUNTY

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

**MANHOLE AND VALVE ADJUSTMENTS**

SHEET NUMBER  
**07**

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

PIPE SIZE (IN.)	THRUST BLOCK DIMENSIONS B ft. x d inches							
	90° BEND		45° BEND		22.5° BEND		1.25° BEND	
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
6	2.2	5 1/4	1.6	3 3/4	1.2	3 3/4	0.8	3 3/4
8	2.9	7	2.1	5	1.5	3 3/4	1.1	3 3/4
10	3.5	8 1/2	2.6	6 1/4	1.9	4 1/4	1.3	3 3/4
12	4.2	10	3.1	7 1/2	2.2	5 1/4	1.6	3 3/4
14	4.9	11 3/4	3.6	8 3/4	2.6	6 1/4	1.8	4 1/4
16	5.5	13 1/4	4.1	9 3/4	2.9	7	2.1	5
18	6.2	15	4.6	11	3.3	8	2.3	5 1/2
20	6.9	16 1/2	5.0	12	3.6	8 3/4	2.6	6 1/4
24	8.2	19 3/4	6.0	14 1/2	4.3	10 1/4	3.1	7 1/2
30	10.1	24 1/4	7.5	18	5.3	12 3/4	3.8	9
36	12.1	29	8.9	21 1/4	6.4	15 1/4	4.5	10 3/4

REINFORCEMENT MAT SCHEDULE	
FOR DIM. "B" BETWEEN 5.75' & 12.5'	USE #4 @ 8" EACH WAY
FOR DIM. "B" LESS THAN 5.75'	USE #3 @ 8" EACH WAY

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

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

MAIN PIPE SIZE	HORIZ. BENDS			TEES		REDUCERS		PLUGS & VALVES
	90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH	
24	90	38	18	K24	169	K20	132	214
20	78	32	16	K20	141	K16	101	184
16	66	27	13	K16	111	K12	87	151
12	52	22	10	K12	80	K8	63	118
10	44	18	9	K10	63	X8	49	100
8	37	15	7	X8	49	X6	35	83
6	29	12	6	X6	29	X4	1	63
4	21	8	4	X4	12	X3		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

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

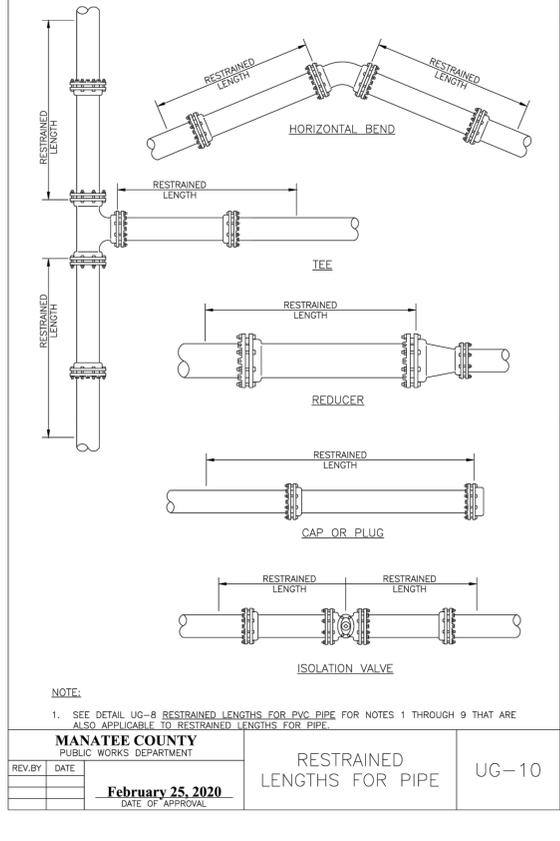
MAIN PIPE SIZE	HORIZ. BENDS			TEES		REDUCERS		PLUGS & VALVES
	90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH	
36	142	59	28	K36	393	K24	232	453
30	124	51	25	K30	333	K24	252	391
24	106	44	21	K24	270	K20	189	327
20	92	38	18	K20	225	K16	161	280
16	77	32	15	K16	177	K12	107	231
12	61	25	12	K12	127	K8	89	181
10	52	22	10	K10	101	X8	64	153
8	44	18	9	X8	78	X6	50	128
6	34	14	7	X6	46	X4	1	98
4	24	10	5	X4	19	X3		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



#### LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH RULE 62-555.314, F.A.C.

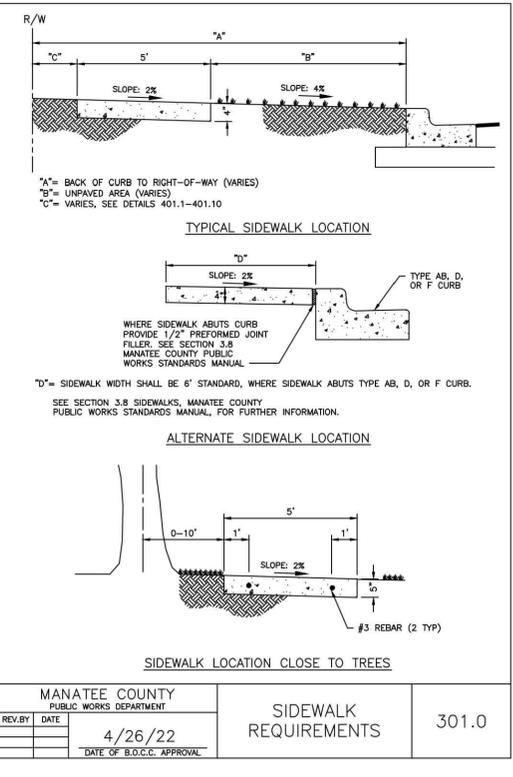
The following table summarizes the required separation distances from public water mains to other pipes as provided in Rule 62-555.314, F.A.C. Exceptions to these required distances are addressed on the second page.

**Separation Requirements for Public Water System Mains:**

Other Pipe	Horizontal Separation (X)	Crossings Vertical Separation (Y)	Joint Spacing (Z) @ Crossings (Full Joint Centered)
<ul style="list-style-type: none"> <li>Storm Sewers</li> <li>Stormwater Force Mains</li> <li>Reclaimed Water Pipelines regulated under Part III of Chapter 62-610, F.A.C.</li> </ul>	3 ft. minimum	For water main installed above other pipe (preferred), 12 inches is the minimum except for storm sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 3 ft. minimum
<ul style="list-style-type: none"> <li>Vacuum Sanitary Sewer</li> </ul>	10 ft. preferred 3 ft. minimum	For water main installed above other pipe, 12 inches preferred and 6 inches minimum	Alternate 3 ft. minimum
<ul style="list-style-type: none"> <li>Gravity or Pressure Sanitary Sewer</li> <li>Sanitary Sewer Force Main</li> <li>Reclaimed Water Pipelines not regulated under Part III of Chapter 62-610, F.A.C.</li> </ul>	10 ft. preferred 6 ft. minimum (note - 3 ft. minimum for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer)	For water main installed above other pipe (preferred), 12 inches is the minimum except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 6 ft. minimum
<ul style="list-style-type: none"> <li>On-Site Sewage Treatment &amp; Disposal System</li> </ul>	10 ft. minimum	NA	NA

Refer to the next page for exceptions to the minimum separation requirements provided above.

**Disclaimer** - This document is provided for your convenience only. Please refer to Rule 62-555.314, F.A.C., for additional construction 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

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
200 CENTRAL AVE, SUITE 600, ST. PETERSBURG, FL 33701  
PHONE: 727-547-3999  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT  
148400118  
DATE  
September 2023  
SCALE AS SHOWN  
DESIGNED BY JWW  
DRAWN BY SLB  
CHECKED BY JWW

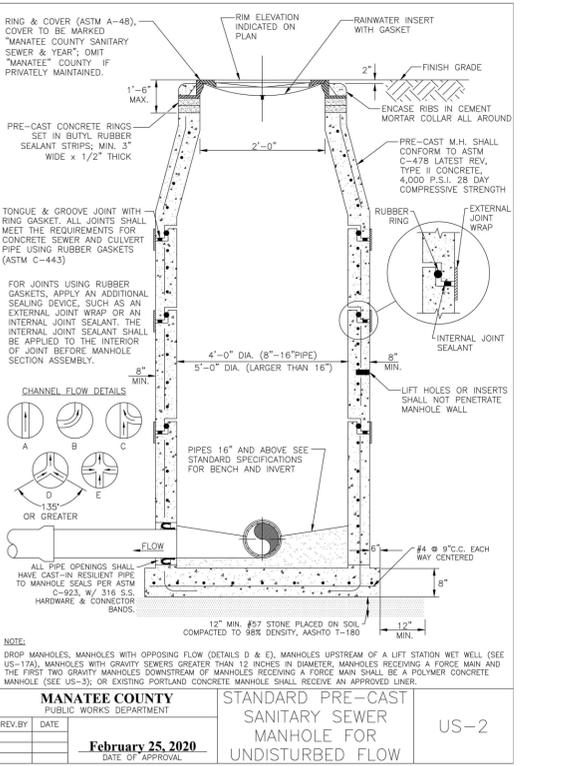
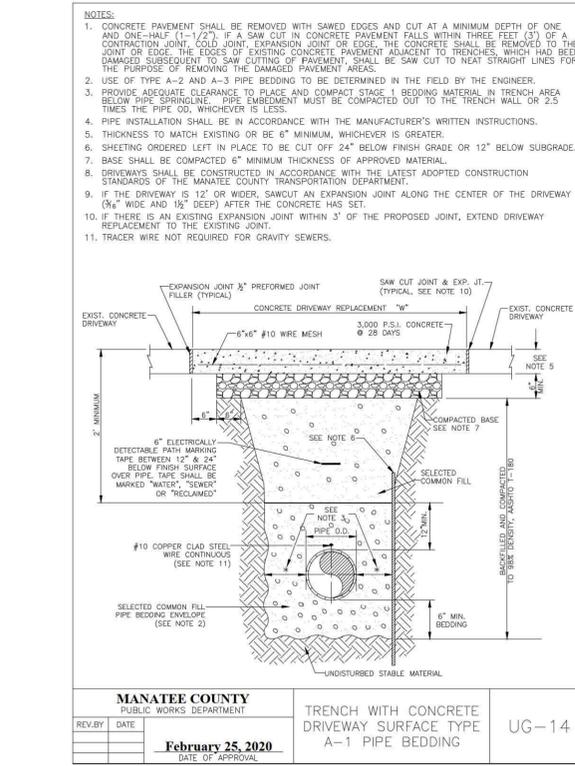
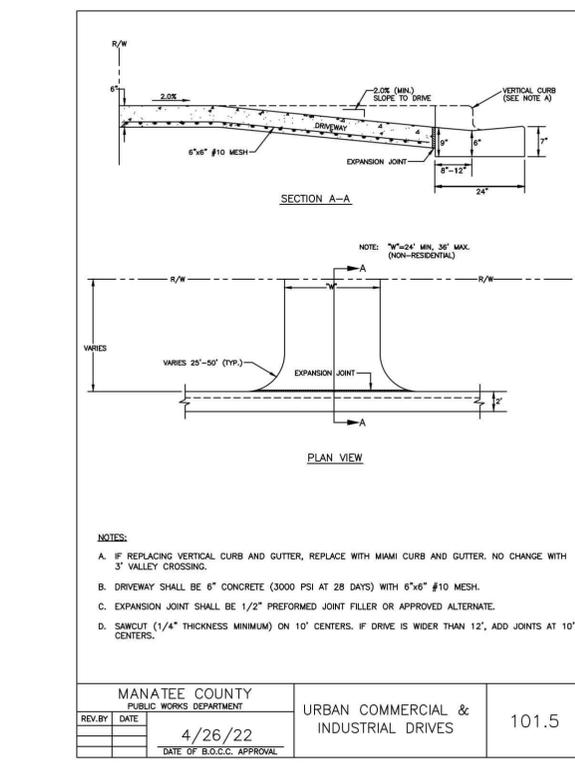
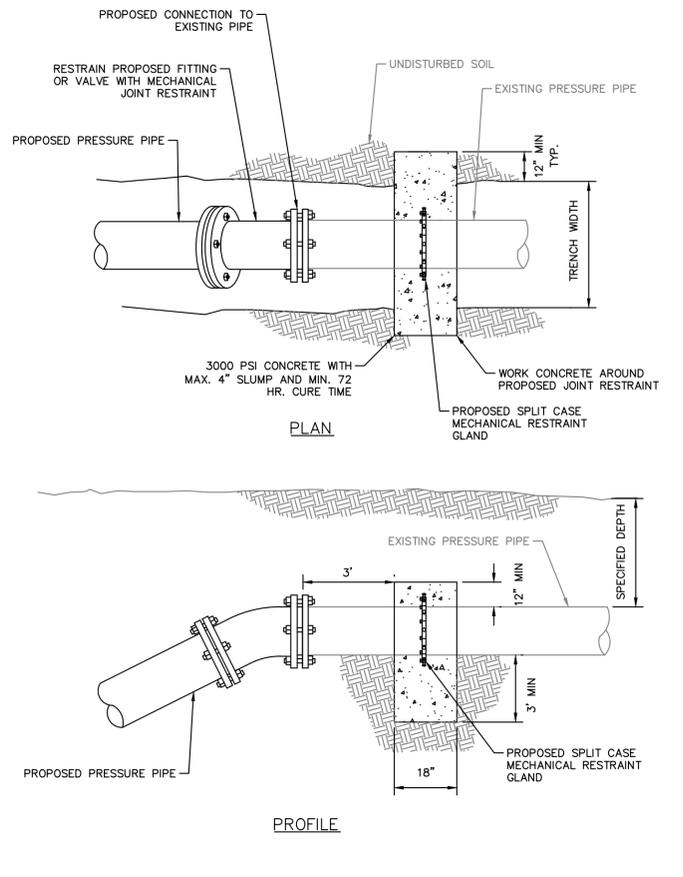
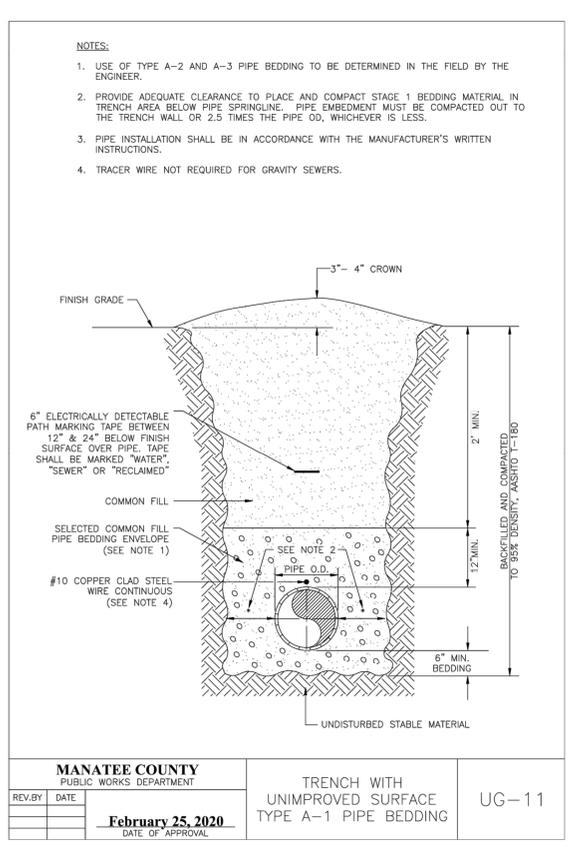
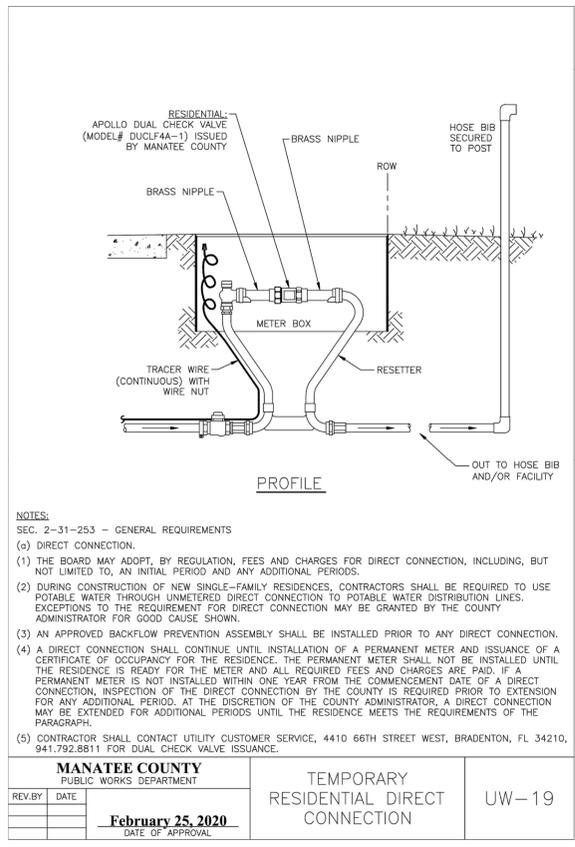
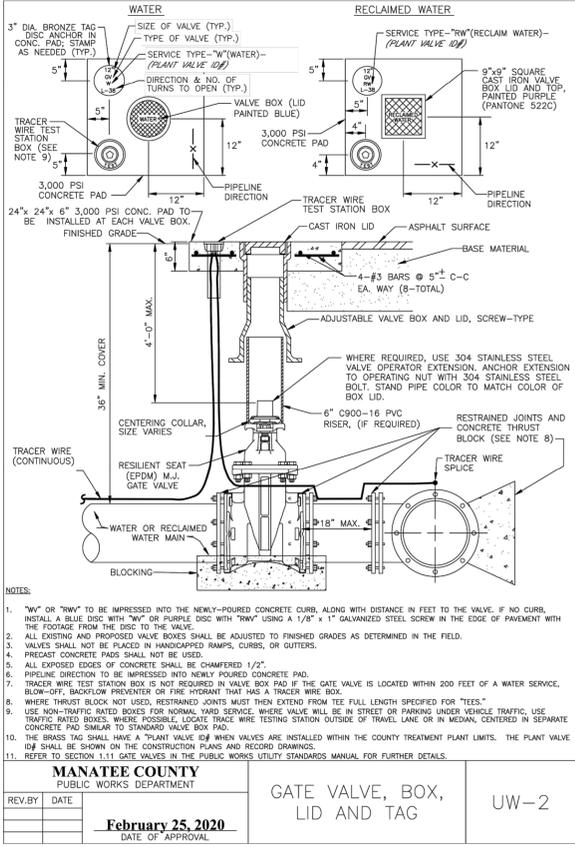
**Manatee County**  
SR 70/ 15TH ST. E. WATER MAIN RELOCATION  
MANATEE COUNTY

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

DETAILS

SHEET NUMBER  
**08**

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Review of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



CONCRETE DEADMAN RESTRAINT DETAIL N.T.S.

**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.



**Kimley-Horn**

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
200 CENTRAL AVE, SUITE 600, ST. PETERSBURG, FL 33701  
PHONE: 727-547-3999  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400118  
DATE September 2023  
SCALE AS SHOWN  
DESIGNED BY JWW  
DRAWN BY SLB  
CHECKED BY JWW

**Manatee County Florida**

**SR 70/ 15TH ST. E. WATER MAIN RELOCATION**

MANATEE COUNTY

LICENSED PROFESSIONAL

JORDAN W. WALKER, P.E.

FL LICENSE NUMBER 78652

**DETAILS**

SHEET NUMBER 09

FL DATE:

No.	REVISIONS	DATE	BY