OSCEOLA COUNTY, FLORIDA

TOHO WATER AUTHORITY

CONSTRUCTION PLANS FOR

CARROLL STREET UTILITY ADJUSTMENTS

SHEET REVISIONS			
DATE	BY	#	DESCRIPTION
		△	

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION

GOVERNING DESIGN STANDARDS:

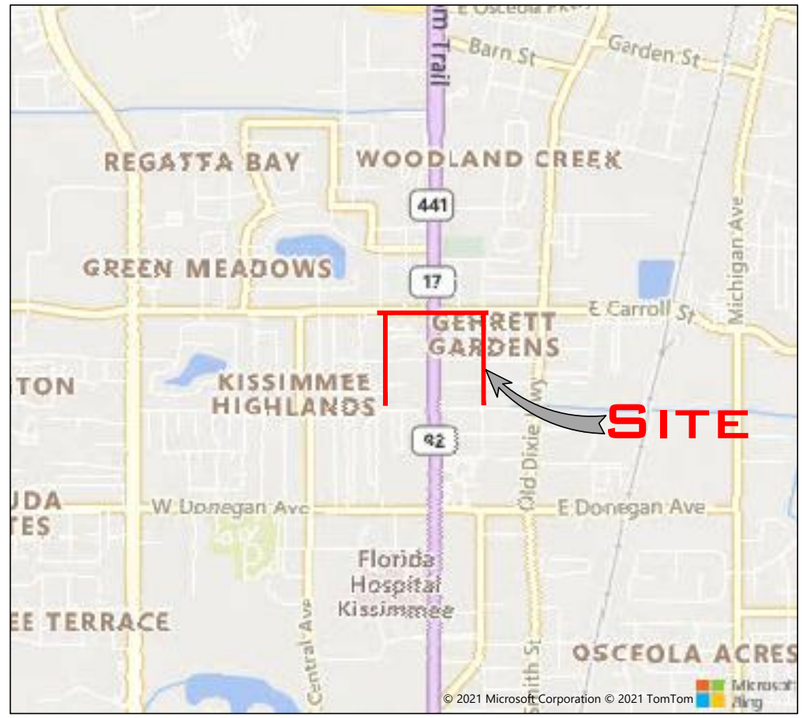
Florida Department of Transportation, FY 2023-24 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: http://www.fdot.gov/design/standardplans

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, standard plans dated 2023-2024, and standard specifications for road and bridge construction at the following website:

https://www.fdot.gov/programmanagement/Implemented/SpecBooks



COMPONENTS OF CONTRACT PLANS SET

CONSTRUCTION PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS	
SHEET NO.	SHEET DESCRIPTION
C0.001	KEY SHEET
C0.002 - C0.004	GENERAL NOTES
C1.001 - C1.004	PLAN & PROFILE - CARROLL STREET
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C2.001 - C2.004	OPEN CUT LOCATIONS
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C4.001 - C3.006	FDOT DETAILS

JOHN ERIC MOODY LICENSE No. 48927 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

This item has been digitally signed and sealed by John E. Moody, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

John E Moody
2023.01.26
08:05:01 -05'00'

ON THE DATE ADJACENT TO THE SEAL

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

OSCEOLA ENGINEERING, INC.
1003 FLORIDA AVENUE
SAINT CLOUD, FLORIDA 34769
JOHN ERIC MOODY, P.E. NO. 48927

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

ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO:

PLANS PREPARED BY:

OSCEOLA ENGINEERING INCORPORATED
CERTIFICATE OF AUTHORIZATION NUMBER: 00026265
1003 FLORIDA AVENUE, SAINT CLOUD, FL 34769
PHONE 407.891.0452 FAX 407.891.9173

ENGINEER OF RECORD: JOHN ERIC MOODY, P.E.
P.E. NUMBER: 48927

SURVEYOR OF RECORD: --
COMPANY: --

PROJECT NUMBER: OEI 21-040

SHEET NO.
C0.001

OSCEOLA COUNTY PUBLIC WORKS

PEGGY CHOUDHRY	**COUNTY COMMISSIONER, DISTRICT 1**
VIVIANA JANER	**CHAIRMAN BOCC, DISTRICT 2**
BRANDON ARRINGTON	**COUNTY COMMISSIONER, DISTRICT 3**
CHERYL GRIEB	**VICE CHAIRWOMAN BOCC, DISTRICT 4**
RICKY BOOTH	**COUNTY COMMISSIONER, DISTRICT 5**
DON FISHER	**COUNTY MANAGER**
TAWNY OLORE, P.E.	**DIRECTOR OF TRANSIT AND TRANSPORTATION**

OSCEOLA COUNTY PROJECT MANAGER: STEVEN KANE, P.E.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

GENERAL UTILITY NOTES:

1. EXISTING UTILITIES ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO LOCATE AND ADJUST TO GRADE ALL EXISTING ABOVE GROUND UTILITIES (MANHOLES, VALVE BOXES, METERS, HYDRANTS, IDENTIFICATION DISKS, ETC.) AND OTHER EXISTING IMPROVEMENTS THAT ARE AFFECTED BY THE CONTRACTORS RESTORATION ACTIVITIES.
3. THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA, INC. AS REQUIRED BY CHAPTER 556 OF THE FLORIDA STATUTES. THE LOCATIONS OF THE UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION.

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811 or 1-800-432-4770
Sunshine State One Call of Florida, Inc.
http://www.callsunshine.com/corp/index.html

4. ALL EXCESS MATERIAL AS DESIGNATED BY THE ENGINEER IS TO BE DISPOSED BY THE CONTRACTOR IN AREAS PROVIDED BY HIM WITHIN 72 HOURS OF BEING DEPOSITED IN THE CONSTRUCTION AREA AND AT THE CONTRACTORS EXPENSE.
5. THE CONTRACTOR SHALL VERIFY NATURE, DEPTH, AND CHARACTER OF EXISTING UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
6. IN NO CASE SHALL A CONTRACTOR INSTALL UTILITY PIPES, CONDUITS, CABLES, ETC. IN THE SAME TRENCH PARALLEL TO AND ABOVE AN EXISTING WATER OR SEWER PIPE EXCEPT WHERE THEY CROSS.
7. THE BENCH MARK DATUM IS ASSUMED.
8. ALL PUBLIC LAND CORNERS AND MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED BY THE CONTRACTOR AS FOLLOWS: CORNERS AND MONUMENTS IN CONFLICT WITH THE WORK AND IN DANGER OF BEING DAMAGED, DESTROYED OR COVERED SHALL BE PROPERLY REFERENCED BY A REGISTERED LAND SURVEYOR IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS OF THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS PRIOR TO BEGINNING WORK AT THAT SITE. THE CONTRACTOR SHALL RETAIN THE LAND SURVEYOR TO REFERENCE, AND RESTORE UPON COMPLETION OF THE WORK, ALL SUCH CORNERS AND MONUMENTS AND SHALL FURNISH TO THE DISTRICT LOCATION ENGINEER A SIGNED AND SEALED COPY OF THE LAND SURVEYORS REFERENCE DRAWING.
9. ALL BENCH MARK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED AND REFERENCED BY THE CONTRACTOR IN THE SAME WAY AS PUBLIC LAND CORNERS EXCEPT THAT THE LAND SURVEYOR SHALL NOT BE REQUIRED TO RESTORE THE BENCH MARK UPON COMPLETION OF THE WORK. THE CONTRACTOR SHALL PROMPTLY TRANSMIT ALL DISPLACED OR DAMAGED DISCS TO THE DISTRICT LOCATION SURVEYOR, WHO WILL NOTIFY THE GEODETIC INFORMATION CENTER.
10. ALL STATION AND OFFSETS ARE GIVEN BASED ON BASELINE OF CONSTRUCTION, UNLESS OTHERWISE INDICATED.
11. THE CONTRACTOR IS ADVISED THAT THE CORRIDOR AS WELL AS PROPERTIES ADJACENT TO THE PROJECT HAVE ELECTRIC, TELEPHONE, GAS, WATER AND OR SEWER SERVICE LATERAL WHICH MAY NOT BE SHOWN IN PLANS. THE CONTRACTOR MUST REQUEST THE LOCATION OF THESE LATERAL SERVICES FROM THE UTILITY COMPANIES. THE ADDITIONAL COST OF EXCAVATING, INSTALLING, BACK FILLING AND COMPACTING AROUND THESE LATERALS SERVICING SAID PROPERTIES MUST BE INCLUDED IN THE BID RELATED ITEM FOR THE WORK BEING DONE.
12. PROPOSED WATER MAIN AND FORCE MAIN SHALL BE INSTALLED WITH 42" MINIMUM COVER FROM EXISTING GRADE UNLESS OTHERWISE NOTED.
13. THE CONTRACTOR SHALL NOT BEND PIPE FOR REUSE, FORCE MAIN OR WATER MAIN DIVERSIONS. THE CONTRACTOR SHALL ADD BENDS AS REQUIRED.
14. ALL UTILITY DIVERSIONS SHALL MEET MINIMUM FDEP UTILITY CROSSING REQUIREMENTS.

UTILITY DIVERSION NOTES:

WATER MAIN DIVERSION NOTE:

THE PROPOSED SECTION OF WATER MAIN TO BE USED FOR THE DIVERSION SHALL BE CONSTRUCTED ABOVE GROUND, PRESSURE TESTED AND THOROUGHLY DISINFECTED PER THE PROCEDURES OUTLINED IN ANSI/AWWA C651–05 SECTION 4.6.1. THE EXCAVATED TRENCH, WHICH EXPOSES THE EXISTING WATER MAIN, SHALL BE LINED WITH VISQUEEN AND MAINTAINED IN A CLEAN AND DRY CONDITION THROUGHOUT THE CONNECTION PROCEDURE PER ANSI/AWWA C651–05 SECTION 4.7.1. THE CONTRACTOR SHALL PROVIDE A 360° POINT OF VIEW OF BOTH POINTS OF CONNECTION FOR TWA INSPECTION TO REVIEW. AFTER COMPLETION OF THE WATER MAIN DIVERSION, AND VISUAL INSPECTION BY TWA, CONTRACTOR TO FLUSH WATER MAIN AND OBTAIN SATISFACTORY WATER SAMPLES ON EACH SIDE OF THE DIVERSION FOR (2) CONSECUTIVE DAYS.

FORCE MAIN DIVERSION NOTE:

THE PROPOSED SECTION OF FORCE MAIN TO BE USED FOR THE CONNECTION SHALL BE CONSTRUCTED ABOVE GROUND, FLUSHED AND PRESSURE TESTED. THE EXCAVATED TRENCH, WHICH EXPOSED THE EXISTING FORCE MAIN, SHALL BE MAINTAINED IN A CLEAN AND DRY CONDITION THROUGHOUT THE CONNECTION PROCEDURE. FINAL CONNECTIONS TO THE EXISTING MAIN WILL REQUIRE A 360° VISUAL INSPECTION ON THE CONNECTION JOINTS FOR LEAKAGE OF THE PIPE BY TWA INSPECTION STAFF, ENGINEER OR AUTHORIZED TWA REPRESENTATIVE.

RECORD DRAWING REQUIREMENTS:

1. RECORD DRAWINGS SHALL BE SUBMITTED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. AN ENGINEER'S CERTIFICATE OF COMPLETION INDICATING THAT ALL INFRASTRUCTURE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS SHALL BE PROVIDED. STATE PLANE COORDINATES AND AUTOCAD DWG FILES SHALL BE PROVIDED IN DIGITAL FORMAT.
2. THE PERMITTEE SHALL PROVIDE A COMPLETE 'AS–BUILT' SURVEY BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA OF THE PERMITTED WORK INCLUDING HORIZONTAL LOCATIONS BASED ON STATE PLANE COORDINATES AND VERTICAL DATA BASED ON BENCH MARK INFORMATION PROVIDED BY THE COUNTY ON ALL ABOVE AND BELOW GROUND IMPROVEMENTS.
3. DRAWINGS SHALL SHOW ACTUAL LOCATION OF ALL UNDERGROUND AND ABOVE GROUND WATER AND WASTEWATER PIPING AND RELATED APPURTENANCES. ALL CHANGES TO PIPING LOCATION INCLUDING HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES AND APPURTENANCES SHALL BE CLEARLY SHOWN AND REFERENCED TO PERMANENT SURFACE IMPROVEMENTS. DRAWINGS SHALL ALSO SHOW ACTUAL INSTALLED PIPE MATERIAL, CLASS, ETC.
4. DRAWINGS SHALL CLEARLY SHOW ALL FIELD CHANGES OF DIMENSIONS AND DETAIL INCLUDING CHANGES MADE BY FIELD ORDER OR CHANGE ORDER. DRAWINGS SHALL CLEARLY SHOW ALL DETAILS NOT ON THE ORIGINAL CONTRACT DRAWINGS, BUT CONSTRUCTED IN THE FIELD. ALL EQUIPMENT AND PIPING RELOCATION SHALL BE CLEARLY SHOWN.
5. THE CONTRACTOR SHALL PROVIDE AN ASSET COORDINATE TABLE CONTAINING COORDINATES AND ELEVATIONS OF ALL IMPROVEMENTS.
6. COMPLETE RECORD DRAWING REQUIREMENTS CAN BE FOUND IN THE TOHOPEKALIGA WATER AUTHORITY STANDARDS, SPECIFICATIONS, AND DETAILS MANUAL, 2017 EDITION.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NO.	DATE	REVISION	BY

AUGUST 2021

DESIGNED	BKJ	DRAWN	
CHECKED	CMK	CHECKED	
SUPERVISED BY	JOHN E. MOODY, P.E.		

OSCEOLA ENGINEERING INCORPORATED
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TOHO WATER AUTHORITY
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KISSIMMEE, FLORIDA 34741–5054
(407)944–5000 FAX(407)847–7945
Toho Water Authority

GENERAL NOTES

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21–040
WORKSTATION: WS
SHEET NO. C0.002

GENERAL:

1. CONSTRUCT UTILITIES IN ACCORDANCE TO TWA CONFORMED PLANS AND SHOP DRAWINGS. ANY DEVIATION FROM THE APPROVED PLANS SHALL BE APPROVED BY THE ENGINEER AND TWA

2. A PRE CONSTRUCTION MEETING WITH THE TWA'S STAFF IS REQUIRED PRIOR TO INITIATING CONSTRUCTION.

3. ALL REQUIRED PERMITS SHALL BE OBTAINED PRIOR TO INITIATING CONSTRUCTION.

4. PIPE DEFLECTION CANNOT EXCEED 50% OF THE PIPE MANUFACTURER'S RECOMMENDATION.

5. REFERENCE TWA'S STANDARDS, SPECIFICATIONS AND DETAILS, LATEST EDITION FOR ISSUES NOT SPECIFICALLY ADDRESSED BELOW OR ON THE TWA CONFORMED DOCUMENTS.

PERMITS, PLANS, SHOP DRAWINGS:

1. PERMITS OR LETTERS OF DETERMINATION FROM FDEP SHALL BE OBTAINED FOR THE SANITARY SEWER COLLECTION SYSTEM AND WATER DISTRIBUTION SYSTEM PRIOR TO COMMENCEMENT OF CONSTRUCTION.

2. A CONFORMED SET OF PLANS BY TWA SHALL BE PRESENT ON THE SITE AT ALL TIMES.

3. A MINIMUM OF THREE SETS OF SHOP DRAWINGS SHALL BE SUBMITTED TO TWA FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

4. INSTALLATION OF MATERIALS AND/OR STRUCTURES PRIOR TO SHOP DRAWING APPROVAL IS DONE AT THE CONTRACTOR'S OWN RISK.

5. TWO HARD COPIES AND ONE ELECTRONIC COPY OF RECORD DRAWINGS SHALL BE SUBMITTED TO TWA AT OR BEFORE THE FINAL INSPECTION. RECORD DRAWINGS SHALL CONFORM TO CONFORMED DOCUMENTS.

WATER – TESTING:

1. WATER LINE SHALL BE INSTALLED, CLEANED, FLUSHED, DISINFECTED AND BACTERIOLOGICALLY TESTED AND CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND FDEP RULES AND REGULATIONS.

   ALL WATER DISTRIBUTION SYSTEMS SHALL BE FLUSHED CLEAN OF ALL DELETERIOUS MATERIAL PRIOR TO ANY TESTING. FULL DIAMETER FLUSHING IS REQUIRED. LINES 4 AND GREATER SHALL BE PIGGED.

2. WATER LINE SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA–C600 (DUCTILE IRON PIPE) AND AWWA– C605/M23 (PVC PIPE) SPECIFICATIONS AT 150 PSI AND WITNESSED BY TWA PERSONNEL. NO LEAKAGE SHALL BE ALLOWED. SCHEDULE TEST A MINIMUM OF 72 HOURS IN ADVANCE.

3. ALL WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH THE LATEST VERSION OF AWWA C651 AND WITNESSED BY TWA PERSONNEL.
4. ALL BACTERIOLOGICAL SAMPLES SHALL BE WITNESSED BY TWA PERSONNEL.

WATER – MATERIALS:

1. PVC PIPE: FOUR (4) INCHES THROUGH TWELVE (12) INCHES SHALL BE AWWA C–900, LATEST EDITION. FOURTEEN (14) INCHES THROUGH THIRTY–SIX (36) INCHES SHALL BE AWWA C–905, LATEST EDITION.

2. DIP PIPE: FOUR (4) THROUGH FIFTY–FOUR (54) SHALL BE ANSI/AWWA A21.51/C151 WITH A MINIMUM WORKING PRESSURE CLASS 150 PIPE.

   ANY FITTINGS REQUIRED SHALL BE MECHANICAL JOINT DUCTILE IRON CONFORMING TO ANSI/AWWA A21.10/C110, 250 PSI MINIMUM PRESSURE RATING, OR DUCTILE IRON COMPACT FITTINGS IN ACCORDANCE WITH ANSI/AWWA A21.53/C153.

   JOINTS FOR DUCTILE IRON PIPE SHALL BE PUSH–ON OR MECHANICAL JOINTS CONFORMING TO ANSI/AWWA A21.11/C111. ABOVE GROUND JOINTS SHALL BE FLANGED WITH T5 CADMIUM PLATED BOLTS, NUTS AND WASHERS. FLANGED JOINTS SHALL CONFORM TO ANSI STANDARD B 16.1–125 LB.

   WHERE DUCTILE IRON PIPE AND FITTINGS ARE TO BE BELOW GROUND OR INSTALLED IN A CASING PIPE THE COATING SHALL BE A MINIMUM 1.0 MIL THICK IN ACCORDANCE WITH ANSI/AWWA A21.51/C151.

   WHERE DUCTILE IRON PIPE AND FITTINGS ARE TO BE INSTALLED ABOVE GROUND, PIPE, FITTINGS AND VALVES SHALL BE THOROUGHLY CLEANED AND GIVEN ONE FIELD COAT (MINIMUM 1.5 MILS DRY THICKNESS) OF RUST INHIBITOR PRIMER, AND TWO FINISH COATS (MINIMUM 1.5 MILS DRY THICKNESS EACH).

   ALL DUCTILE IRON PIPE AND FITTINGS SHALL HAVE AN INTERIOR PROTECTIVE LINING OF CEMENT–MORTAR WITH A SEAL COAT OF ASPHALTIC MATERIAL IN ACCORDANCE WITH ANSI/AWWA A21.4/C104.

   THE PIPE SHALL BE POLYETHYLENE ENCASED (8 MIL) WHERE SHOWN ON THE PLANS, IN ACCORDANCE WITH ANSI/AWWA A21.51/C105.

3. POLYETHYLENE PIPE: FOUR (4) THROUGH TWELVE (12) SHALL BE AWWA STANDARD C906, PE3408 LATEST EDITION. THE POLYETHYLENE PIPE SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI AND SHALL HAVE A STANDARD DIMENSION RATIO (SDR) OF 11. PIPE SHALL BE THE SAME ID AS DUCTILE IRON PIPE.

   POLYETHYLENE PIPE SHALL HAVE FUSION BONDED JOINTS.

   FITTINGS USED WITH POLYETHYLENE PIPE SHALL BE FUSION FITTINGS IN ACCORDANCE WITH AWWA STANDARD C906.

4. SERVICE PIPES: ALL SERVICE LINES SHALL BE 1", 1–1/2" OR 2" BLUE, PC200, SDR9, POLYETHYLENE TUBING CONFORMING TO SPECIFICATIONS IN AWWA C901, PE3608. 4 AND LARGER SERVICE PIPE SHALL BE C–900 PVC OR DIP. 3 SERVICE PIPE SHALL NOT BE PERMITTED.

5. VALVES SHALL BE RESILIENT WEDGE GATE VALVES.

6. VALVES SHALL BE LOCATED AT NOT MORE THAN 500 FOOT INTERVALS IN COMMERCIAL, INDUSTRIAL AND HIGH DENSITY RESIDENTIAL AREAS AND AT NOT MORE THAN 1000 FOOT INTERVALS IN ALL OTHER AREAS. APPROPRIATE VALVING SHALL ALSO BE PROVIDED AT THE DOWNSTREAM SIDES OF TEES AND CROSSES AND BOTH SIDES OF A DIRECTIONAL BORE OR JACK AND BORE.. THIS SHALL INCLUDE ALL SIDES OF TEES AND CROSSES WITHIN LOOPED SYSTEMS, WHERE FLOW IS POTENTIALLY MULTIDIRECTIONAL.

REUSE – TESTING:

1. REUSE LINE SHALL BE INSTALLED, CLEANED, FLUSHED, DISINFECTED AND BACTERIOLOGICALLY TESTED AND CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND FDEP RULES AND REGULATIONS.

   ALL REUSE DISTRIBUTION SYSTEMS SHALL BE FLUSHED CLEAN OF ALL DELETERIOUS MATERIAL PRIOR TO ANY TESTING. FULL DIAMETER FLUSHING IS REQUIRED. LINES 4 AND GREATER SHALL BE PIGGED.

2. REUSE LINES SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA–C600 (DUCTILE IRON PIPE) AND AWWA– C605/M23 (PVC PIPE) SPECIFICATIONS AT 150 PSI AND WITNESSED BY TWA PERSONNEL. NO LEAKAGE SHALL BE ALLOWED. SCHEDULE TEST A MINIMUM OF 72 HOURS IN ADVANCE.

3. ALL REUSE MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH THE LATEST VERSION OF AWWA C651 AND WITNESSED BY TWA PERSONNEL.

4. ALL BACTERIOLOGICAL SAMPLES SHALL BE WITNESSED BY TWA PERSONNEL.

REUSE – MATERIALS:

1. PVC PIPE: FOUR (4) INCHES THROUGH TWELVE (12) INCHES SHALL BE AWWA C–900, LATEST EDITION. FOURTEEN (14) INCHES THROUGH THIRTY–SIX (36) INCHES SHALL BE AWWA C–905, LATEST EDITION.

2. DIP PIPE: FOUR (4) THROUGH FIFTY–FOUR (54) SHALL BE ANSI/AWWA A21.51/C151 WITH A MINIMUM WORKING PRESSURE CLASS 150 PIPE.

   ANY FITTINGS REQUIRED SHALL BE MECHANICAL JOINT DUCTILE IRON CONFORMING TO ANSI/AWWA A21.10/C110, 250 PSI MINIMUM PRESSURE RATING, OR DUCTILE IRON COMPACT FITTINGS IN ACCORDANCE WITH ANSI/AWWA A21.53/C153.

   JOINTS FOR DUCTILE IRON PIPE SHALL BE PUSH–ON OR MECHANICAL JOINTS CONFORMING TO ANSI/AWWA A21.11/C111. ABOVE GROUND JOINTS SHALL BE FLANGED WITH T5 CADMIUM PLATED BOLTS, NUTS AND WASHERS. FLANGED JOINTS SHALL CONFORM TO ANSI STANDARD B 16.1–125 LB.

   WHERE DUCTILE IRON PIPE AND FITTINGS ARE TO BE BELOW GROUND OR INSTALLED IN A CASING PIPE THE COATING SHALL BE A MINIMUM 1.0 MIL THICK IN ACCORDANCE WITH ANSI/AWWA A21.51/C151.

   WHERE DUCTILE IRON PIPE AND FITTINGS ARE TO BE INSTALLED ABOVE GROUND, PIPE, FITTINGS AND VALVES SHALL BE THOROUGHLY CLEANED AND GIVEN ONE FIELD COAT (MINIMUM 1.5 MILS DRY THICKNESS) OF RUST INHIBITOR PRIMER, AND TWO FINISH COATS (MINIMUM 1.5 MILS DRY THICKNESS EACH).

   ALL DUCTILE IRON PIPE AND FITTINGS SHALL HAVE AN INTERIOR PROTECTIVE LINING OF CEMENT–MORTAR WITH A SEAL COAT OF ASPHALTIC MATERIAL IN ACCORDANCE WITH ANSI/AWWA A21.4/C104.

   THE PIPE SHALL BE POLYETHYLENE ENCASED (8 MIL) WHERE SHOWN ON THE PLANS, IN ACCORDANCE WITH ANSI/AWWA A21.51/C105.

3. POLYETHYLENE PIPE: FOUR (4) THROUGH TWELVE (12) SHALL BE AWWA STANDARD C906, PE3408 LATEST EDITION. THE POLYETHYLENE PIPE SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI AND SHALL HAVE A STANDARD DIMENSION RATIO (SDR) OF 11. PIPE SHALL BE THE SAME ID AS DUCTILE IRON PIPE.

   POLYETHYLENE PIPE SHALL HAVE FUSION BONDED JOINTS.

   FITTINGS USED WITH POLYETHYLENE PIPE SHALL BE FUSION FITTINGS IN ACCORDANCE WITH AWWA STANDARD C906.
4. SERVICE PIPES: ALL SERVICE LINES SHALL BE 1", 1–1/2" OR 2" PURPLE, PC200, SDR9, POLYETHYLENE TUBING CONFORMING TO SPECIFICATIONS IN AWWA C901, PE3608. 4 AND LARGER SERVICE PIPE SHALL BE C–900 PVC OR DIP. 3 SERVICE PIPE SHALL NOT BE PERMITTED.

5. VALVES SHALL BE RESILIENT WEDGE GATE VALVES.

6. VALVES SHALL BE LOCATED AT NOT MORE THAN 500 FOOT INTERVALS IN COMMERCIAL, INDUSTRIAL AND HIGH DENSITY RESIDENTIAL AREAS AND AT NOT MORE THAN 1000 FOOT INTERVALS IN ALL OTHER AREAS. APPROPRIATE VALVING SHALL ALSO BE PROVIDED AT THE DOWNSTREAM SIDES OF TEES AND CROSSES AND BOTH SIDES OF A DIRECTIONAL BORE OR JACK AND BORE. THIS SHALL INCLUDE ALL SIDES OF TEES AND CROSSES WITHIN LOOPED SYSTEMS, WHERE FLOW IS POTENTIALLY MULTIDIRECTIONAL.

7. ALL METERS SHALL BE INSTALLED BY THE TWA AFTER ALL PAYMENT OF APPLICABLE FEES AND CHARGES. ALL METERS 2 AND LESS IN SIZE SHALL BE INSTALLED UNDERGROUND IN AN APPROVED METER BOX. METERS LARGER THAN 2 SHALL BE INSTALLED ABOVE GROUND. IN GENERAL, METERS 2 INCH AND LARGER SHALL BE LOCATED IN A METER EASEMENT LOCATED ADJACENT TO THE PUBLIC RIGHT OF WAY AND OUTSIDE OF PAVED AREAS.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NO.	DATE	REVISION	BY

AUGUST 2021

DESIGNED BKJ	DRAWN
CHECKED CMK	CHECKED
SUPERVISED BY JOHN E. MOODY, P.E.	

OSCEOLA ENGINEERING INCORPORATED
CERTIFICATE OF AUTHORIZATION NUMBER: 00026268
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TOHO WATER AUTHORITY
951 MARTIN LUTHER KING BLVD.
KISSIMMEE, FLORIDA 34741–5054
(407)944–5000 FAX(407)847–7945

GENERAL NOTES

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C0.003

SEWER – TESTING:

PRIOR TO ANY TESTING TO BE WITNESSED, ALL PASSING SOIL DENSITY TESTS AND SLOPE SURVEYS SHALL BE SUBMITTED TO THE TWA ENGINEER AND TO THE TWA INSPECTOR.

1. ALL SANITARY MANHOLES SHALL BE INSPECTED BY TWA PERSONNEL.

2. SANITARY SEWERS SHALL BE VIDEO INSPECTED AND WITNESSED BY TWA PERSONNEL.

3. SANITARY SEWERS SHALL BE LOW PRESSURE AIR TESTED WITH NO ALLOWABLE LOSS AND WITNESSED BY TWA PERSONNEL. SCHEDULE TEST A MINIMUM OF 72 HOURS IN ADVANCE.

GRAVITY SEWER – MATERIALS:

1. PVC PIPE: FOUR (4) THROUGH FIFTEEN (15) SHALL BE ASTM D3034, SDR 35. THE JOINTS SHALL BE INTEGRAL BELL ELASTOMERIC GASKET JOINTS MANUFACTURED IN ACCORDANCE WITH ASTM D3212 AND ASTM F477/ APPLICABLE UNI–BELL PLASTIC PIPE ASSOCIATION STANDARD IS UNI B–4.

   PVC PIPE: EIGHTEEN (18) THROUGH TWENTY–SEVEN (27) SHALL BE ASTM F679, SDR 35. THE JOINTS SHALL BE INTEGRAL BELL ELASTOMERIC GASKET JOINTS MANUFACTURED IN ACCORDANCE WITH ASTM D3212 AND ASTM F477/ APPLICABLE UNI–BELL PLASTIC PIPE ASSOCIATION STANDARD IS UNI B–7.

   ALL PVC PIPE SHALL BEAR THE NSF–DW SEAL. THE MINIMUM STANDARD LENGTH OF PIPE SHALL BE THIRTEEN (13) FEET. PVC PIPE WITH LESS THAN 15 FT OF COVER SHALL BE SDR 35; 15 TO 20 FT SHALL BE SDR 26; AND 20 TO 30 FT SHALL BE SDR 18.

2. DIP PIPE: ANSI/AWWA A21.51/C151, CLASS THICKNESS DESIGNED PER ANSI/AWWA A21.50/C150, WITH PUSH ON JOINTS. AN INTERIOR PROTECTIVE LINING OF PROTECTO 401" EPOXY, OR EQUAL, WITH A MINIMUM DRY FILM THICKNESS 40 MILS.

3. JOINT MATERIALS:

   – PVC SEWER PIPE JOINTS SHALL BE FLEXIBLE ELASTOMERIC SEALS PER ASTM D3212.
   – DIP AND FITTING JOINTS SHALL BE PUSH–ON OR MECHANICAL JOINTS CONFORMING TO ANSI A21.11.
   – JOINTS BETWEEN PIPES OF DIFFERENT MATERIALS SHALL BE MADE WITH A RIGID, PVC, ADAPTOR COUPLING. FERNCO ADAPTERS ARE NOT ALLOWED.

SEWER FORCE MAINS – TESTING:

1. FORCE MAIN PIPING SHALL BE INSTALLED AND PIGGED UNTIL CLEAN.

2. FORCE MAIN SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA–C600 (DUCTILE IRON PIPE) AND AWWA– C605/M23 (PVC PIPE) SPECIFICATIONS AT 100 PSI OR 1.5 TIMES THE OPERATING PRESSURE, WHICHEVER IS GREATER FOR A MINIMUM OF 2 HOURS AND WITNESSED BY TWA PERSONNEL. NO LEAKAGE SHALL BE ALLOWED. SCHEDULE TEST A MINIMUM OF 72 HOURS IN ADVANCE.

SEWER FORCE MAINS – MATERIALS:

1. PVC PIPE: FOUR (4) THROUGH TWELVE (12) SHALL BE AWWA STANDARD C900 AND A DIMENSION RATIO (DR) OF 25 OR 18.

   PVC PIPE SHALL BE INTEGRAL BELL, PUSH–ON TYPE JOINTS.

   ALL FITTINGS SHALL BE MECHANICAL JOINT DUCTILE IRON CONFORMING TO ANSI/AWWA A21.10/C110, 250 PSI MINIMUM PRESSURE RATING, FOUR (4) THROUGH TWELVE (12) .

   JOINTS FOR DIP SHALL BE PUSH–ON OR MECHANICAL JOINTS AND JOINTS FOR FITTINGS SHALL BE MECHANICAL JOINTS CONFORMING TO ANSI/AWWA A21.11/C111.

   ABOVE GROUND JOINTS SHALL BE FLANGED WITH T5 CADMIUM PLATED BOLTS, NUTS, AND WASHERS. FLANGED JOINTS SHALL CONFORM TO ANSI STANDARD B16.1–125 LB.

   WHERE DUCTILE IRON PIPE AND FITTINGS ARE TO BE BELOW GROUND OR INSTALLED IN A CASING PIPE THE COATING SHALL BE A MINIMUM 1.0 MIL THICK IN ACCORDANCE WITH ANSI/AWWA A21.51/C151.

   WHERE DUCTILE IRON PIPE AND FITTINGS ARE TO BE INSTALLED ABOVE GROUND, PIPE, FITTINGS AND VALVES SHALL BE THOROUGHLY CLEANED AND GIVEN ONE FIELD COAT (MINIMUM 1.5 MILS DRY THICKNESS) OF RUST INHIBITOR PRIMER, AND TWO FINISH COATS (MINIMUM 1.5 MILS DRY THICKNESS EACH).

   ALL DUCTILE IRON PIPE AND FITTINGS SHALL HAVE AN INTERIOR PROTECTIVE LINING OF PROTECTO 401" EPOXY OR EQUAL WITH A MINIMUM DRY FILM THICKNESS OF 40 MILS.

   THE PIPE SHALL BE POLYETHYLENE ENCASED (8 MIL) WHERE SHOWN ON THE PLANS, IN ACCORDANCE WITH ANSI/AWWA A21.51/C105.

2. POLYETHYLENE (PE3408) PIPE: FOUR (4) THROUGH TWELVE (12) SHALL BE IN ACCORDANCE WITH AWWA STANDARD C906, LATEST EDITION. THE POLYETHYLENE PIPE SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 100 PSI AND SHALL HAVE A DIMENSION RATIO (DR) OF 17.

   POLYETHYLENE PIPE SHALL HAVE FUSION BONDED JOINTS.

   FITTINGS USED WITH POLYETHYLENE PIPE SHALL BE FUSION FITTINGS IN ACCORDANCE WITH AWWA STANDARD C906.

8. WASTEWATER FORCE MAINS SHALL BE EQUIPPED WITH AIR RELEASE VALVES LOCATED AT PIPING HIGH POINTS IMMEDIATELY UPSTREAM OF DIPS, OR OTHER ELEVATION DECLINES.

9. VALVES SHALL BE RESILIENT WEDGE GATE VALVES.

10. VALVES SHALL BE LOCATED AT NOT MORE THAN 2,000 FOOT INTERVALS IN ALL AREAS.

SEPARATION REQUIREMENTS:

PER F.D.E.P. REQUIREMENTS AND SUBJECT TO TWA APPROVAL. MISCELLANEOUS:

1. ALL TIE–INS TO EXISTING MANHOLES SHALL BE CORE DRILLED. CONNECT PIPE TO MANHOLE USING A FLEXIBLE CONNECTOR OR APPROVED A–LOK.

2. ALL MECHANICAL JOINTS SHALL BE RESTRAINED. THRUST BLOCKS ARE NOT ALLOWED FOR TWA MAINTAINED INFRASTRUCTURES.

3. MAINTAIN A MINIMUM OF 36" OF COVER (42" MIN. COVER WITHIN COUNTY ROW) MEASURED FROM THE BOTTOM OF THE SUB–GRADE OVER ALL PIPES. IF LESS THAN 36" OF COVER, USE DIP AND NOTIFY ENGINEER FOR EVALUATION.

4. GALVANIZED PIPE IS NOT ALLOWED AND IF ENCOUNTERED SHALL BE REPLACED WITH APPROVED MATERIALS.

5. MARKING TAPE SHALL BE INSTALLED 12" TO 18" OVER ALL PIPE. ALL PVC PIPE SHALL BE GREEN IN COLOR (FOR SEWER), BLUE IN COLOR (FOR WATER) AND PURPLE IN COLOR (FOR REUSE). DIP SHALL HAVE A CONTINUOUS 2" WIDE, PERMANENT GREEN/BLUE/PURPLE STRIPE (OIL BASED ENAMEL) ON THE TOP OF THE PIPE.

6. A CONTINUOUS, INSULATED 14 GAUGE COPPER WIRE SHALL BE INSTALLED UNDER THE PIPE AND BE ACCESSIBLE AT EACH VALVE BOX. DIRECTIONAL BORES SHALL USE 8 GAUGE STEEL CORE COPPER AND 8 GAUGE COPPER WIRE. ONE (1) EACH AT A MINIMUM.

7. ONLY RIGID ADAPTERS SHALL BE PERMITTED UNLESS TRANSITIONING TO CLAY PIPE.

8. IN GENERAL, ONE COMPACTION TEST SHALL BE TAKEN FOR EACH 12" LAYER OF FILL FROM THE SPRINGLINE OF THE PIPE TO THE FINISH GRADE FOR EACH 300 FEET OF PIPE AND FOR EVERY 100 SQUARE FEET OF BACKFILL AROUND STRUCTURES.

9. ALL EXISTING WATER, REUSE AND SANITARY APPURTENANCES ON A PROJECT SITE OR AFFECTED BY PROJECT WORK SHALL BE PROTECTED DURING CONSTRUCTION AND SHALL BE BROUGHT TO FINISHED GRADE PER THE STANDARD CONSTRUCTION DETAILS.

10. ALL TREE AND SHRUB ROOT BALLS SHALL BE PLACED WITH A MINIMUM OF 5' HORIZONTAL SEPARATION FROM TOHO MAINTAINED UTILITIES.

11. IF THE UNDERGROUND CONTRACTOR DE–MOBILIZES BETWEEN PHASES OF A PROJECT AND THE WATER DISTRIBUTION SYSTEM HAS BEEN CLEARED FOR USE BY FDEP, THE CONTRACTOR WILL BE REQUIRED TO INSTALL AUTOMATIC FLUSHING DEVICES ON ALL WATER MAIN DEAD–ENDS WHETHER INTENDED AS STUB–OUTS OR AS INCOMPLETE CONSTRUCTION. IF THE SITE HAS NOT BEEN CLEARED FOR USE BY FDEP, THE CONTRACTOR WILL BE REQUIRED TO PHYSICALLY DISCONNECT ALL UN–CLEARED MAINS FROM THE POINTS–OF–CONNECTION TO CLEARED MAINS.

12. WHEN REQUIRED BY ANOTHER REGULATORY AGENCY, MASONRY WALLS AROUND LIFT STATIONS SHALL REQUIRE BARBED WIRE AT THE TOP OF THE WALL. AT TWA'S DISCRETION, ALTERNATIVE ANTI–CLIMB MEASURES MAY ALSO BE UTILIZED IN PLACE OF BARBED WIRE, HOWEVER, SIGNAGE WILL BE REQUIRED ON ALL EXTERIOR WALLS INDICATING THE USE OF ANTI– CLIMB MEASURES THAT MAY NOT BE VISIBLE.

13. ALL PERMANENT STRUCTURES INCLUDING, BUT NOT LIMITED TO: BUILDING FOUNDATIONS, WALLS, AND LIGHT POLES SHALL BE PLACED WITH A MINIMUM 10' HORIZONTAL SEPARATION FROM ALL TWA OWNED INFRASTRUCTURE.

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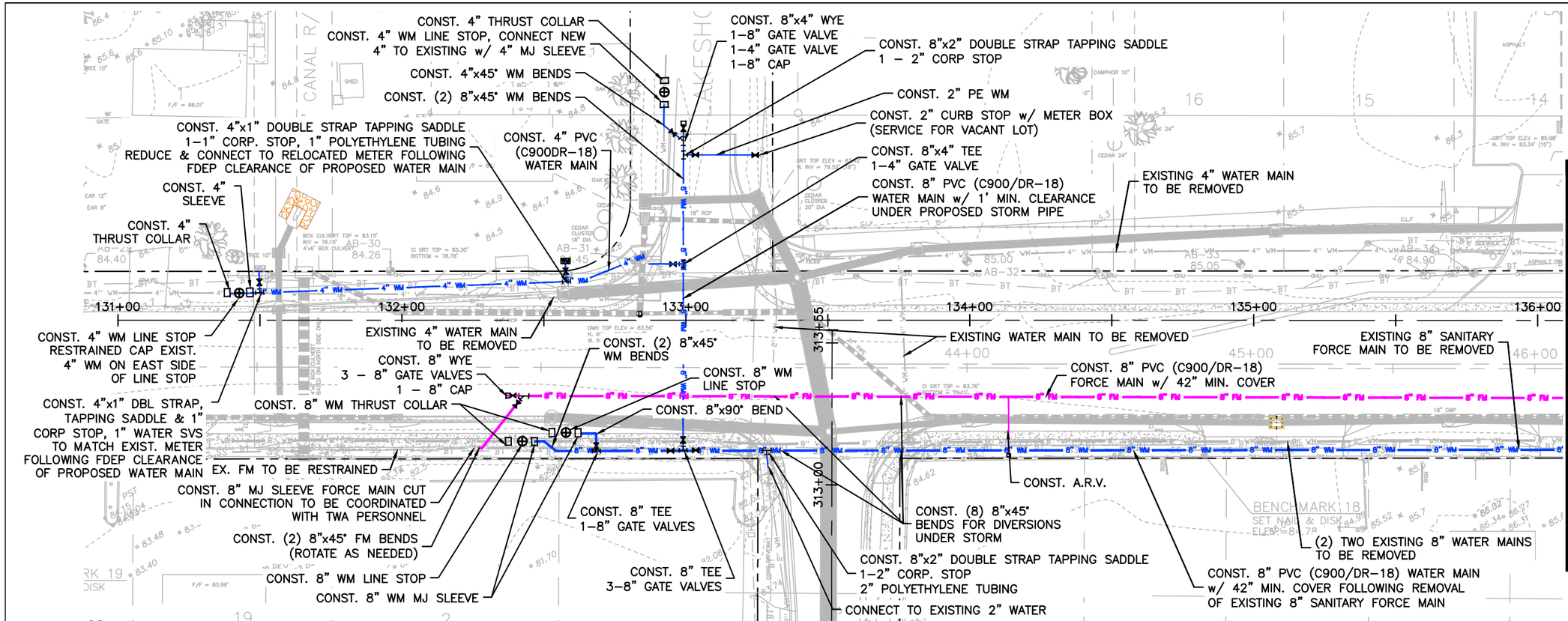

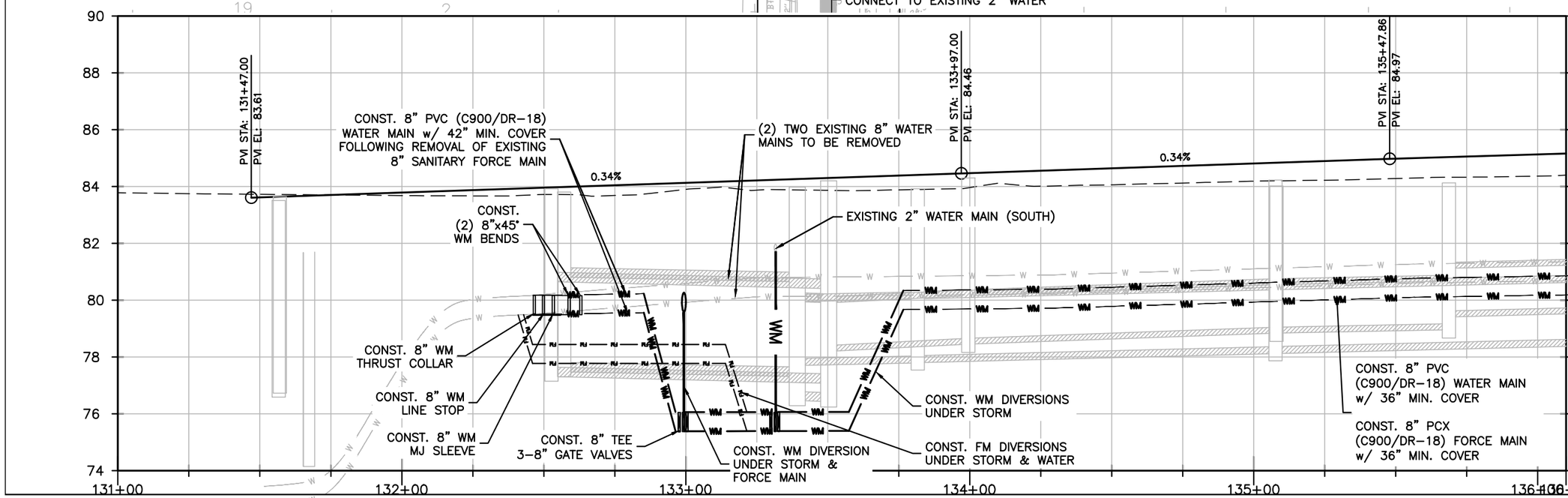

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NO.	DATE	REVISION	BY

AUGUST 2021

DESIGNED	BKJ	DRAWN	
CHECKED	CMK	CHECKED	
SUPERVISED BY	JOHN E. MOODY, P.E.		

OSCEOLA ENGINEERING INCORPORATED
CERTIFICATE OF AUTHORIZATION NUMBER: 00026265
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PLAN & PROFILE

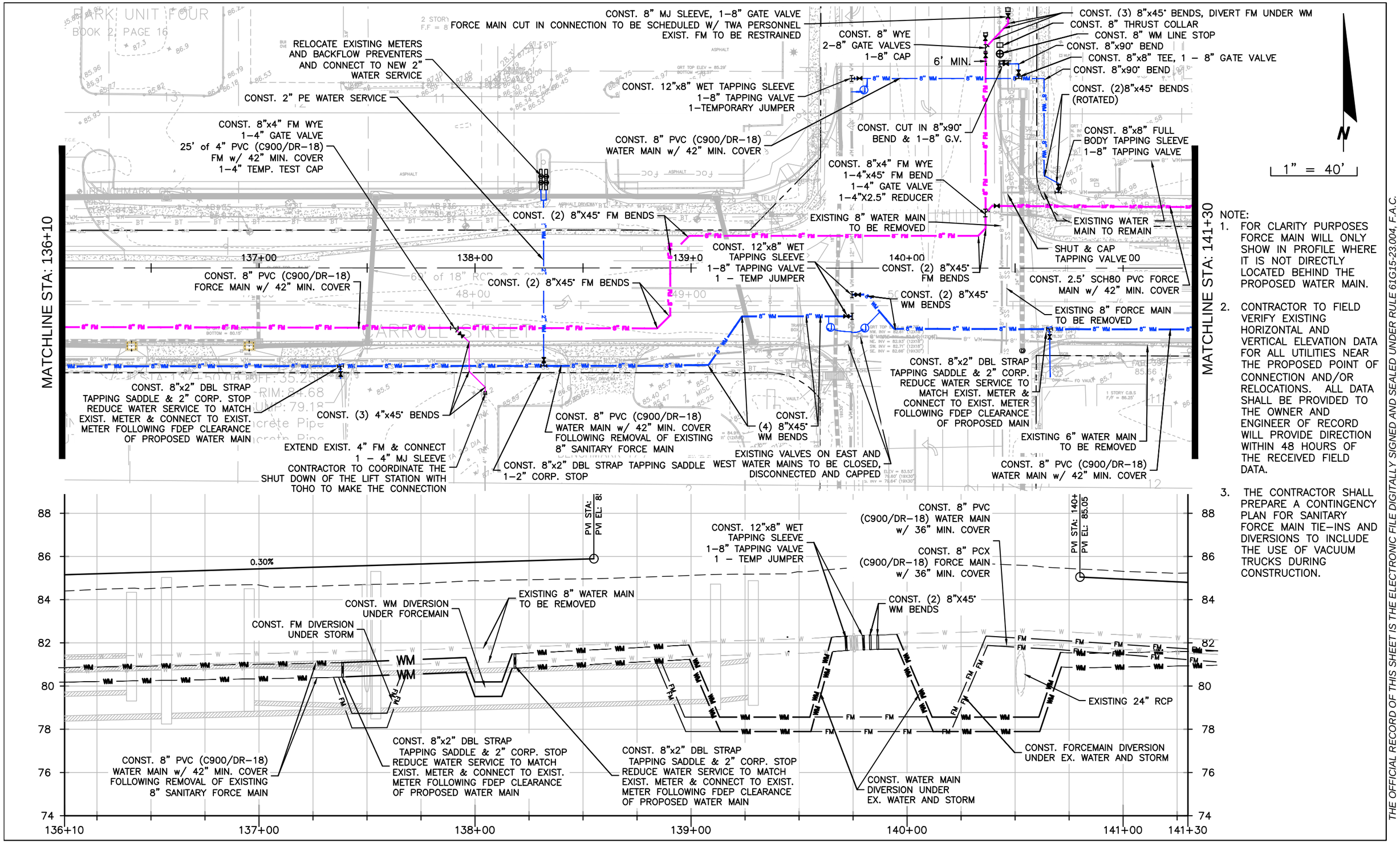
KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040

WORKSTATION: WS

SHEET NO. C1.001



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PLAN & PROFILE
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CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
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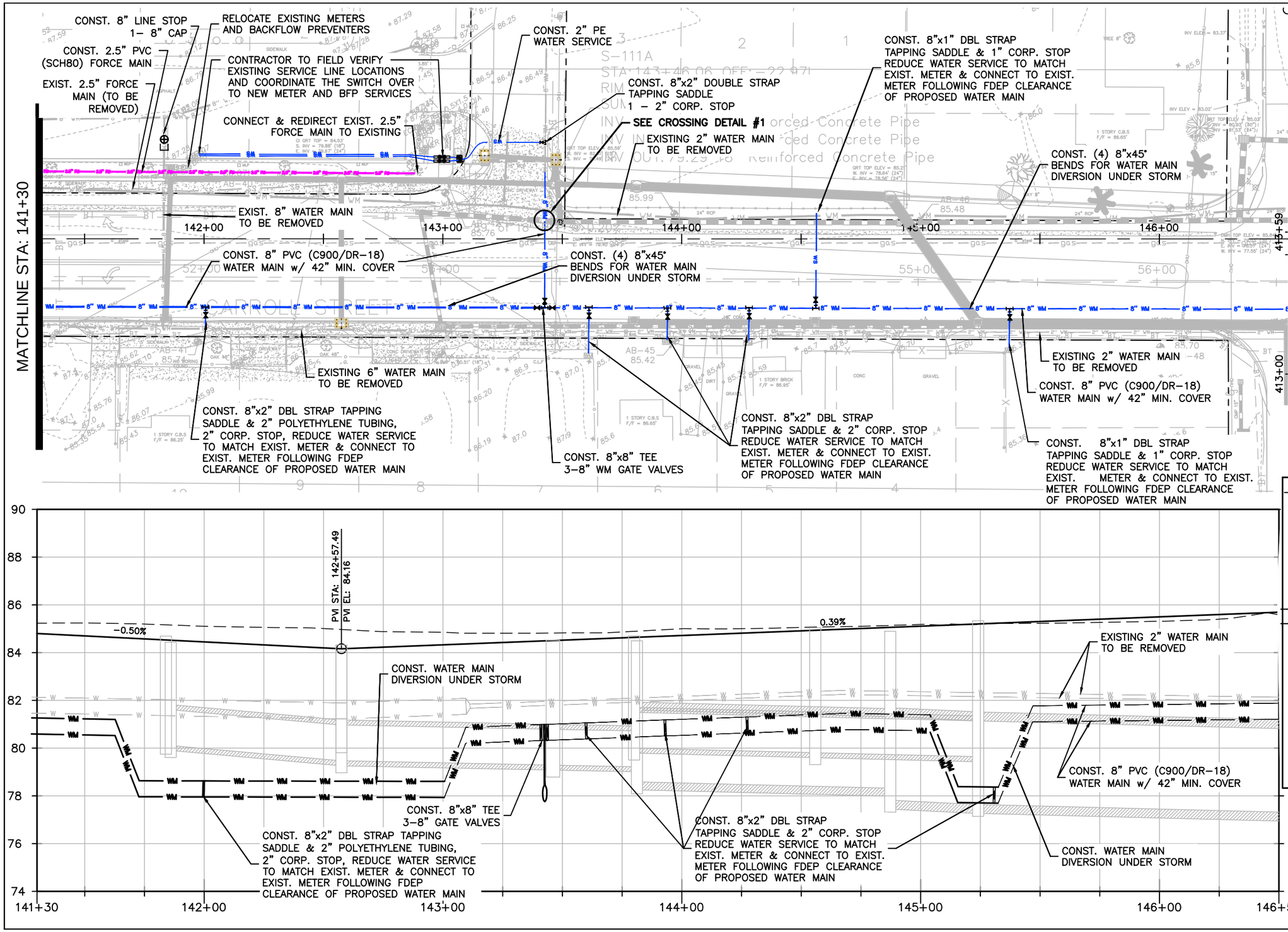

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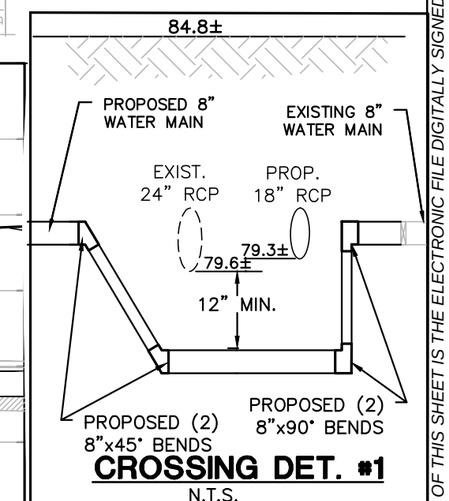

CROSSING DET. #1
N.T.S.

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Toho Water Authority

PLAN & PROFILE
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
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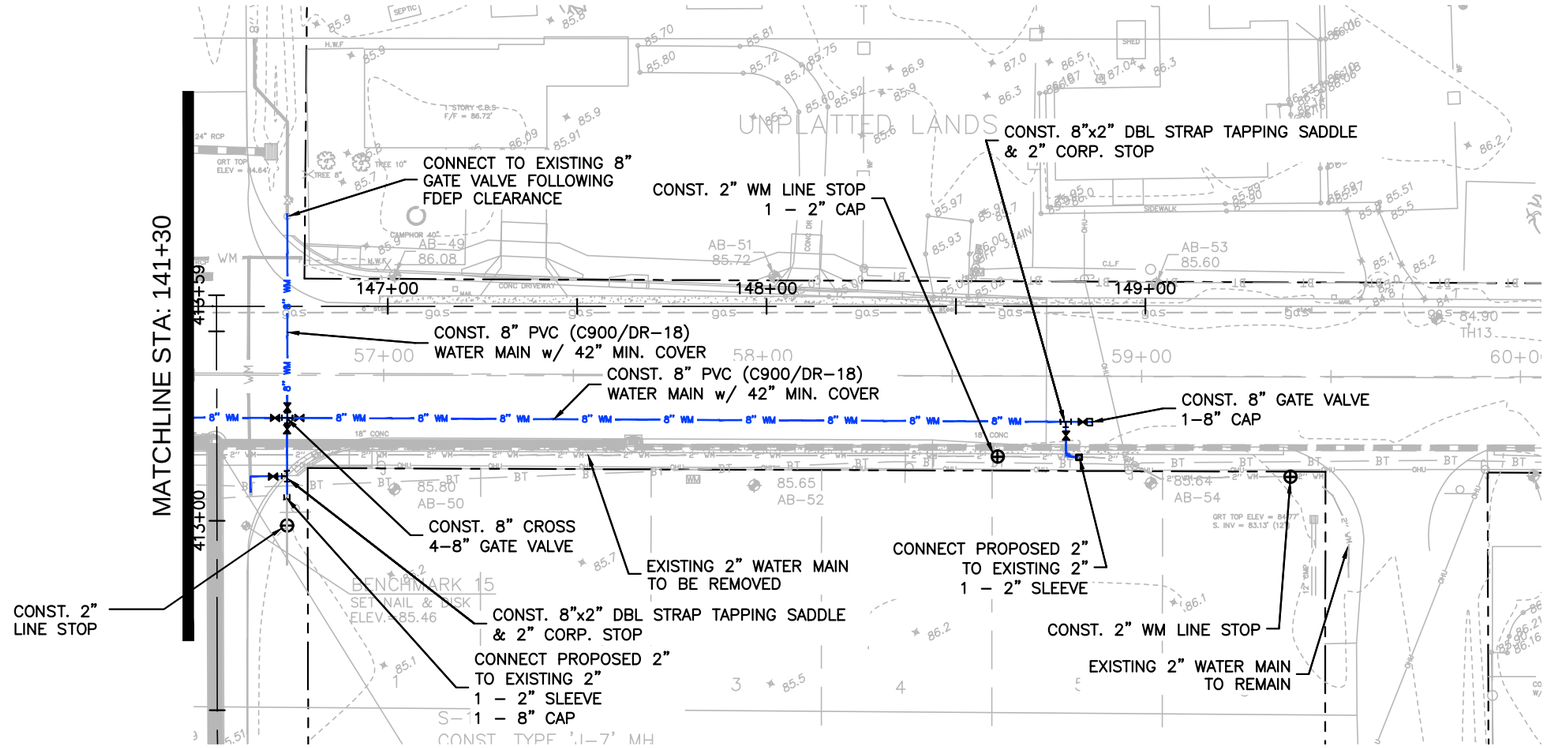

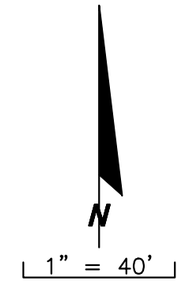

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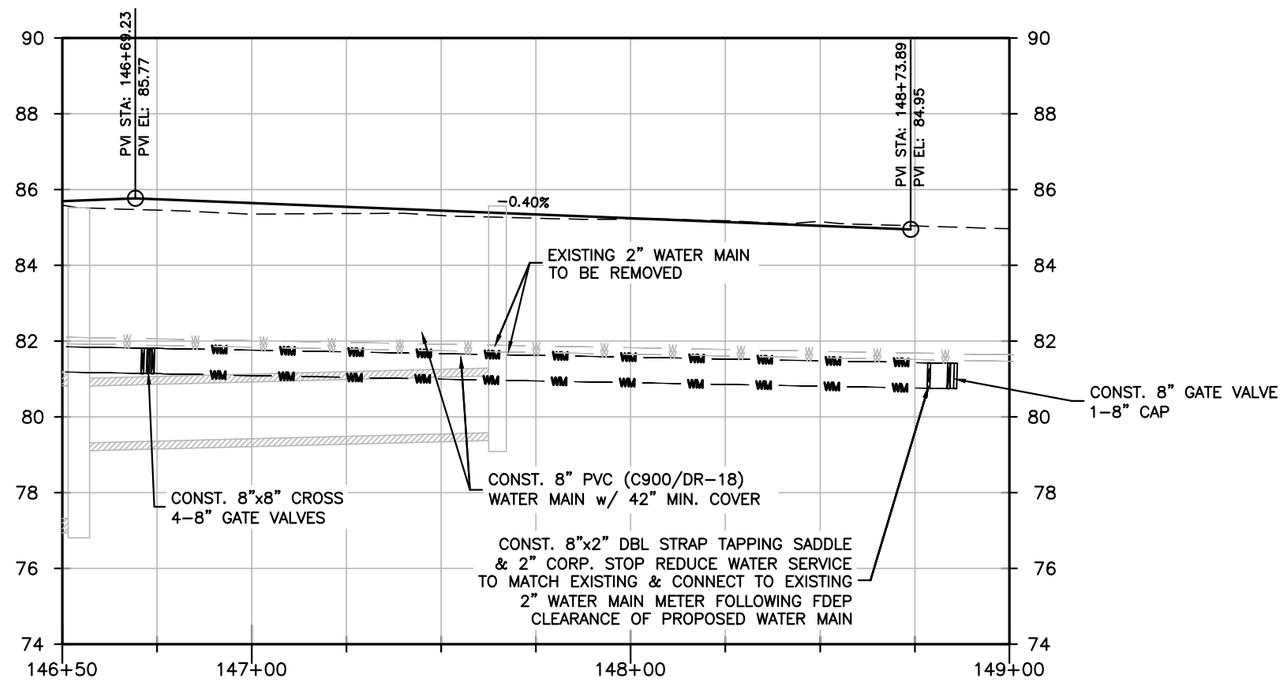

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KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

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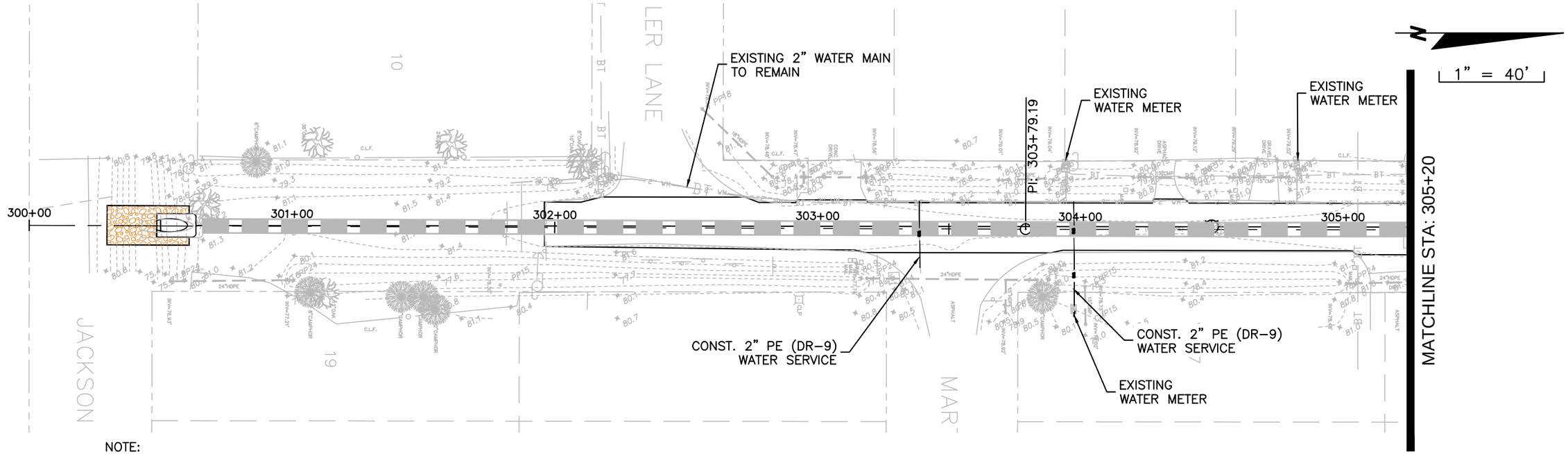

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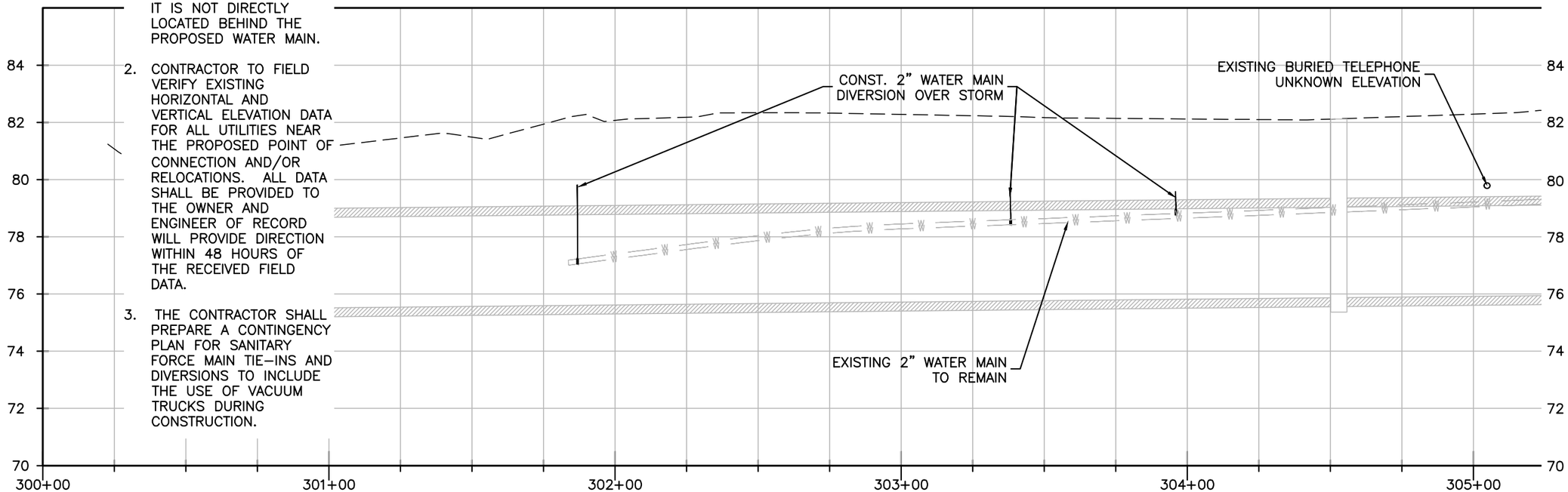

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Toho Water Authority

PLAN & PROFILE - LEHIGH

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

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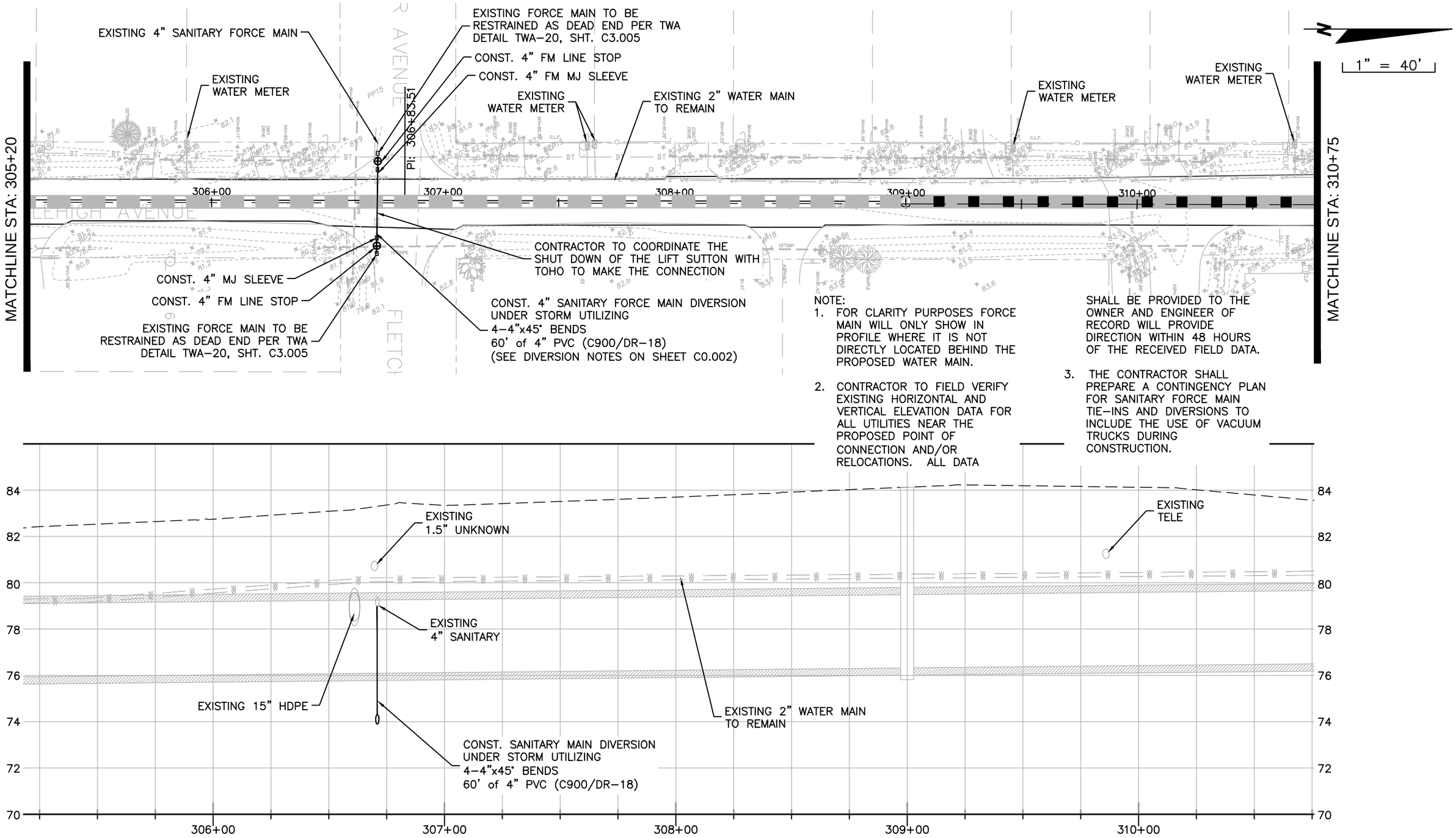

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Toho Water Authority

PLAN & PROFILE - LEHIGH
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CARROLL STREET UTILITY ADJUSTMENTS

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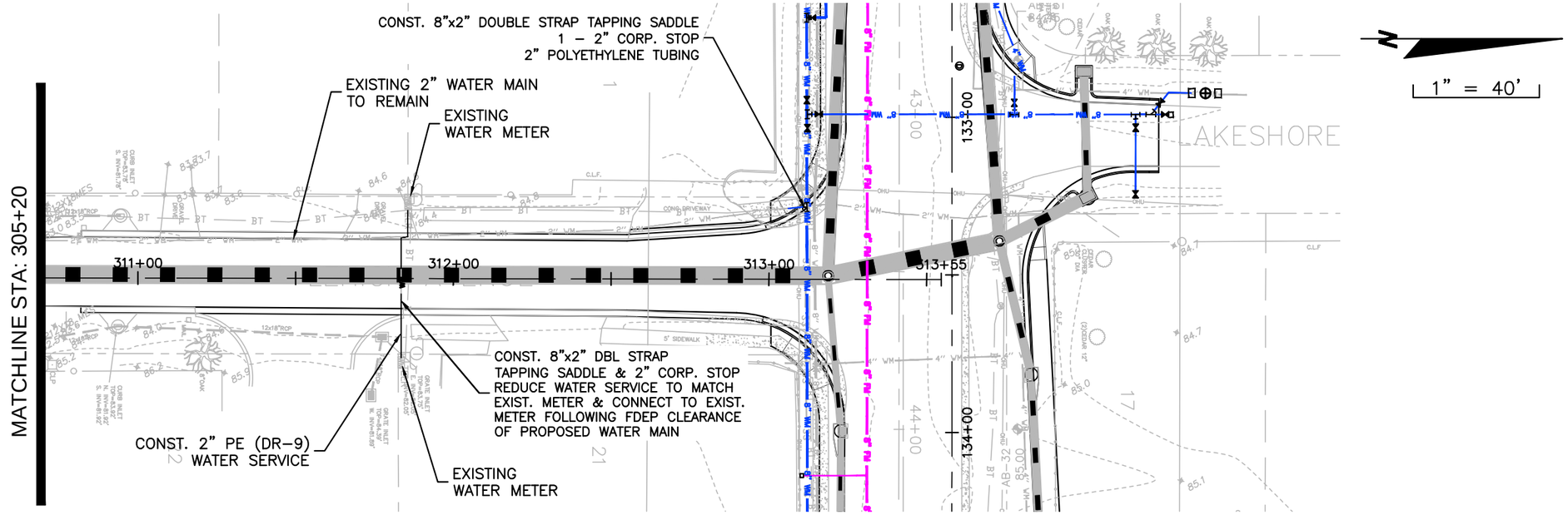

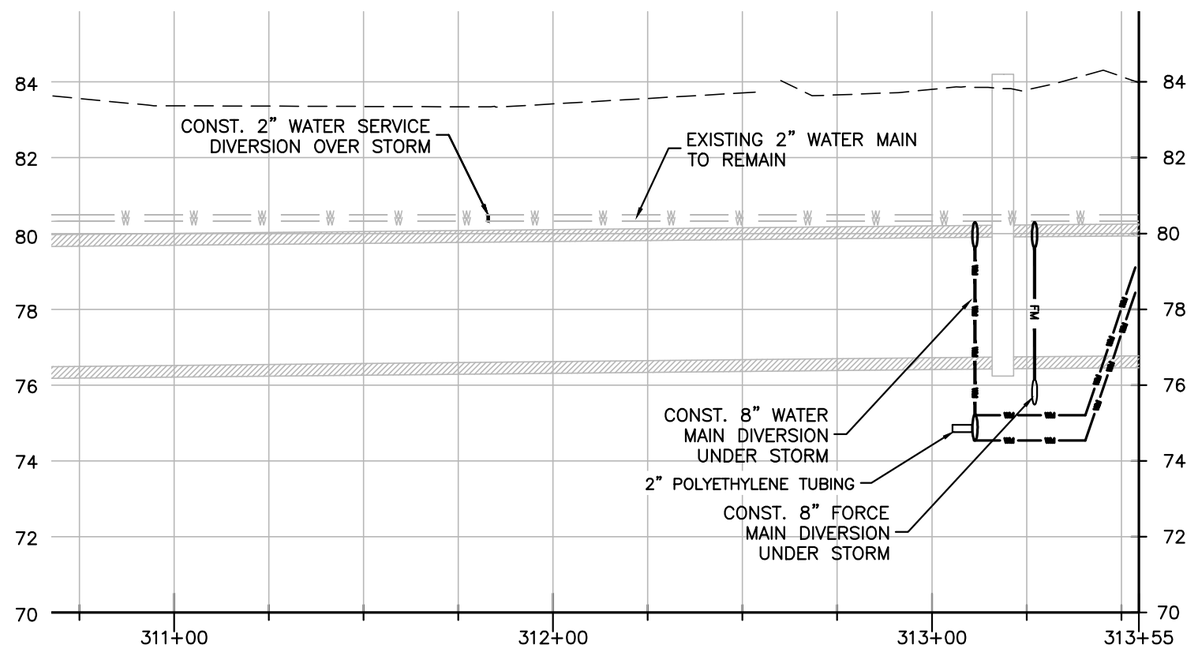

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PLAN & PROFILE - LEHIGH
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C1.007

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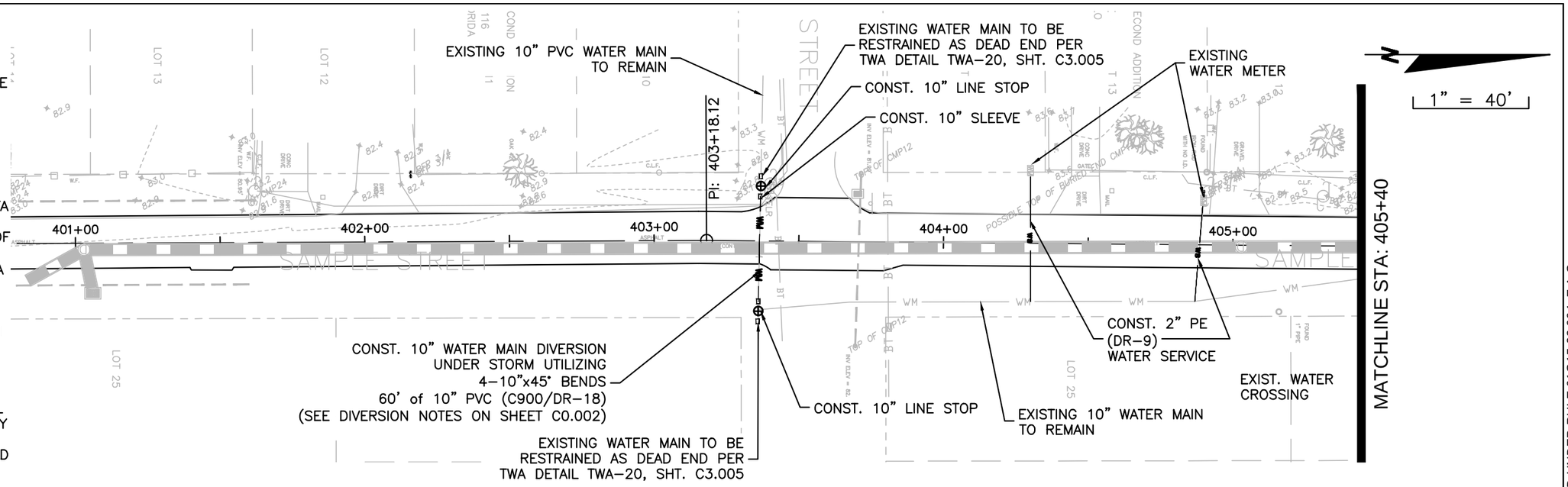

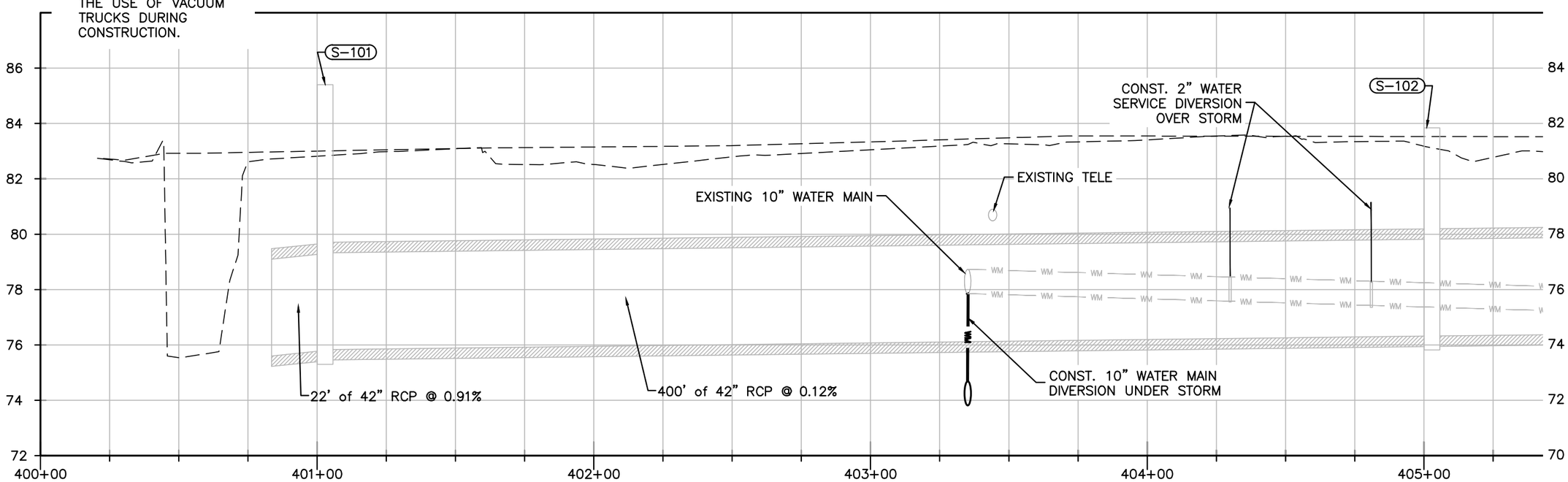

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Toho Water Authority

PLAN & PROFILE - SAMPLE
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
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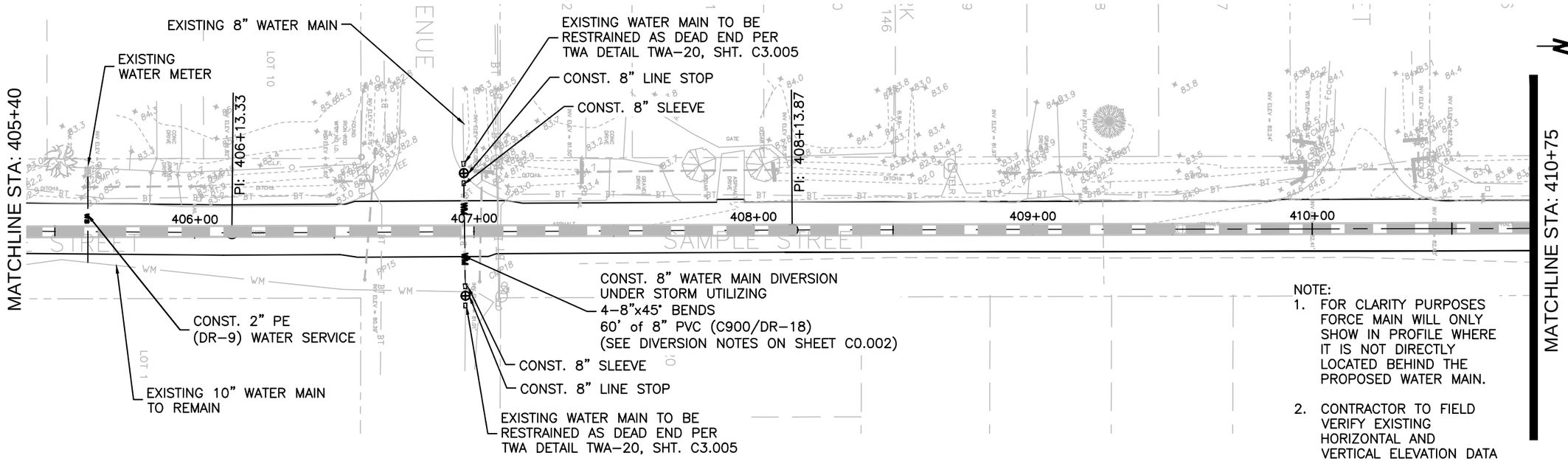

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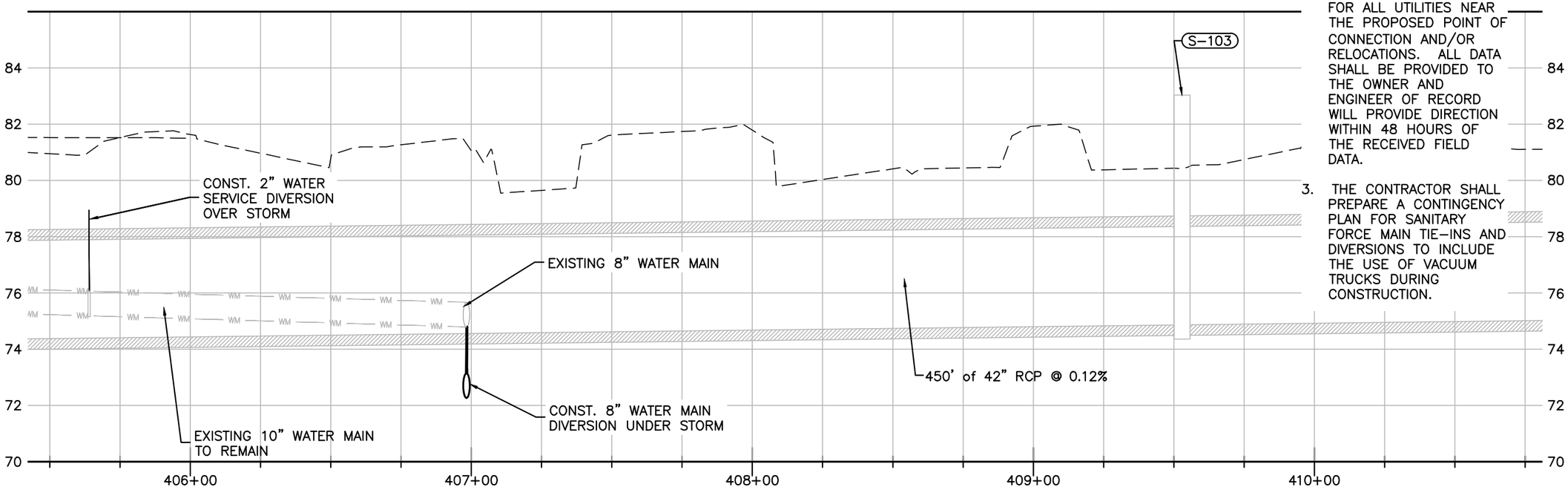

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PLAN & PROFILE - SAMPLE

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

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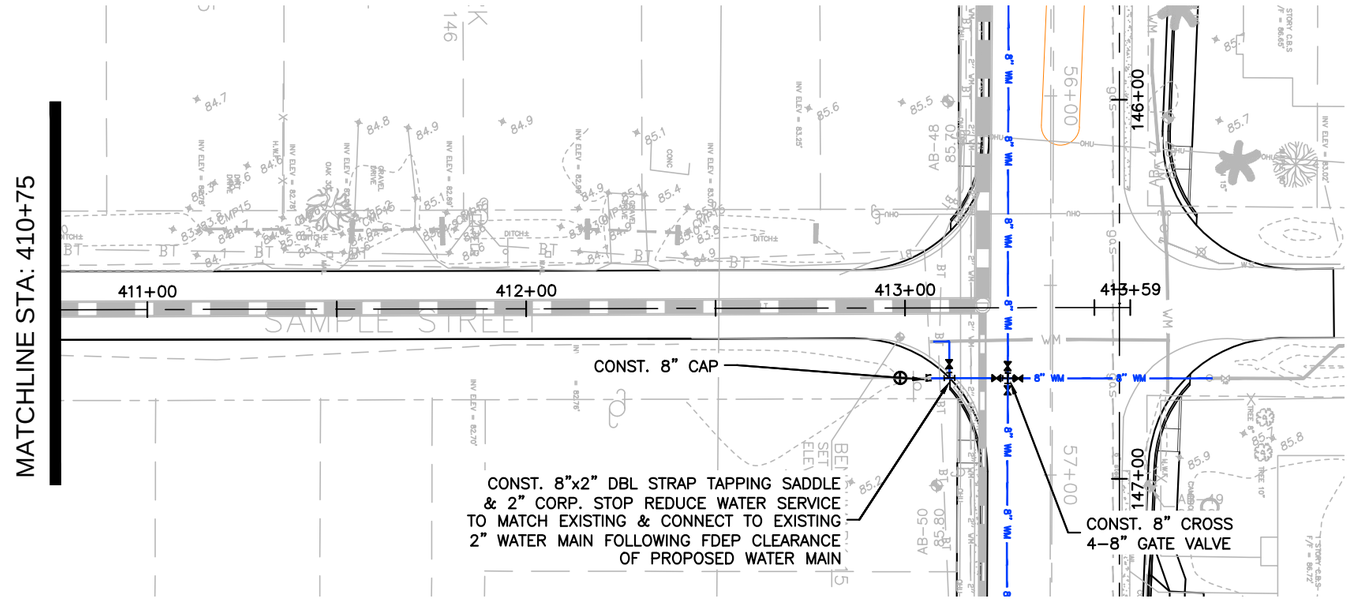
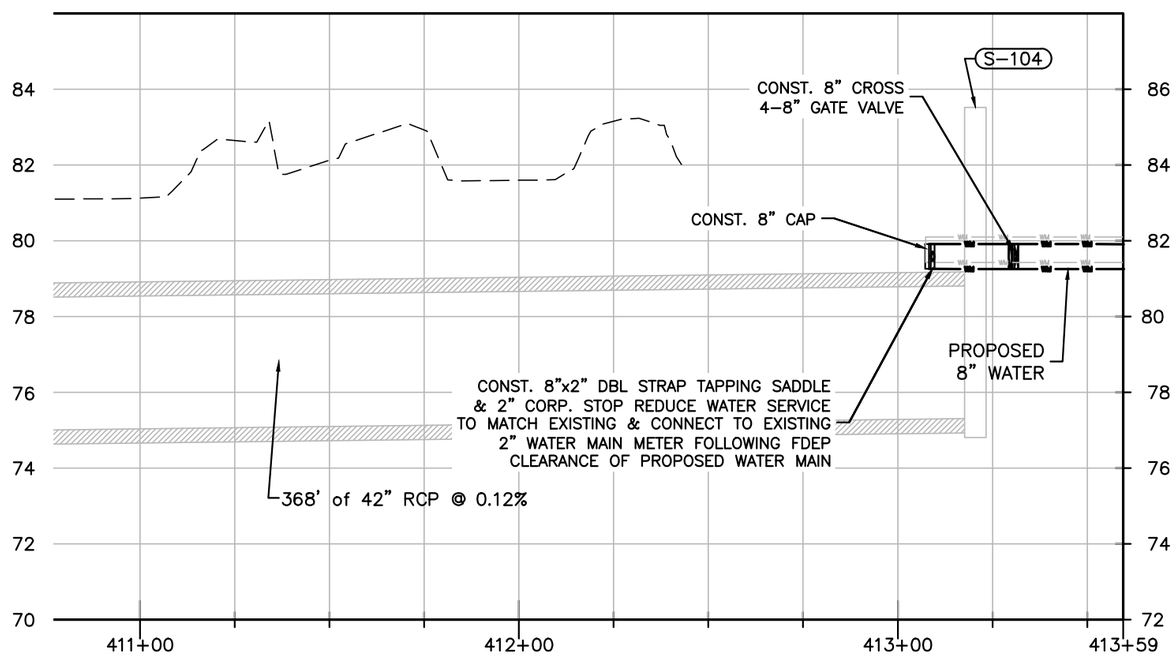
WORKSTATION: WS
SHEET NO. C1.009



1" = 40'



NOTE:

1. FOR CLARITY PURPOSES FORCE MAIN WILL ONLY SHOW IN PROFILE WHERE IT IS NOT DIRECTLY LOCATED BEHIND THE PROPOSED WATER MAIN.
2. CONTRACTOR TO FIELD VERIFY EXISTING HORIZONTAL AND VERTICAL ELEVATION DATA FOR ALL UTILITIES NEAR THE PROPOSED POINT OF CONNECTION AND/OR RELOCATIONS. ALL DATA SHALL BE PROVIDED TO THE OWNER AND ENGINEER OF RECORD WILL PROVIDE DIRECTION WITHIN 48 HOURS OF THE RECEIVED FIELD DATA.
3. THE CONTRACTOR SHALL PREPARE A CONTINGENCY PLAN FOR SANITARY FORCE MAIN TIE-INS AND DIVERSIONS TO INCLUDE THE USE OF VACUUM TRUCKS DURING CONSTRUCTION.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NO.	DATE	REVISION	BY

AUGUST 2021

DESIGNED BKJ	DRAWN
CHECKED CMK	CHECKED
SUPERVISED BY JOHN E. MOODY, P.E.	

OSCEOLA ENGINEERING INCORPORATED
CERTIFICATE OF AUTHORIZATION NUMBER: 00026265
1003 Florida Avenue, Saint Cloud, FL 34769
phone 407.891.0452 fax 407.891.9173

TOHO WATER AUTHORITY
951 MARTIN LUTHER KING BLVD.
KISSIMMEE, FLORIDA 34741-5054
(407)944-5000 FAX(407)847-7945

Toho Water Authority

PLAN & PROFILE - SAMPLE

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040

WORKSTATION: WS

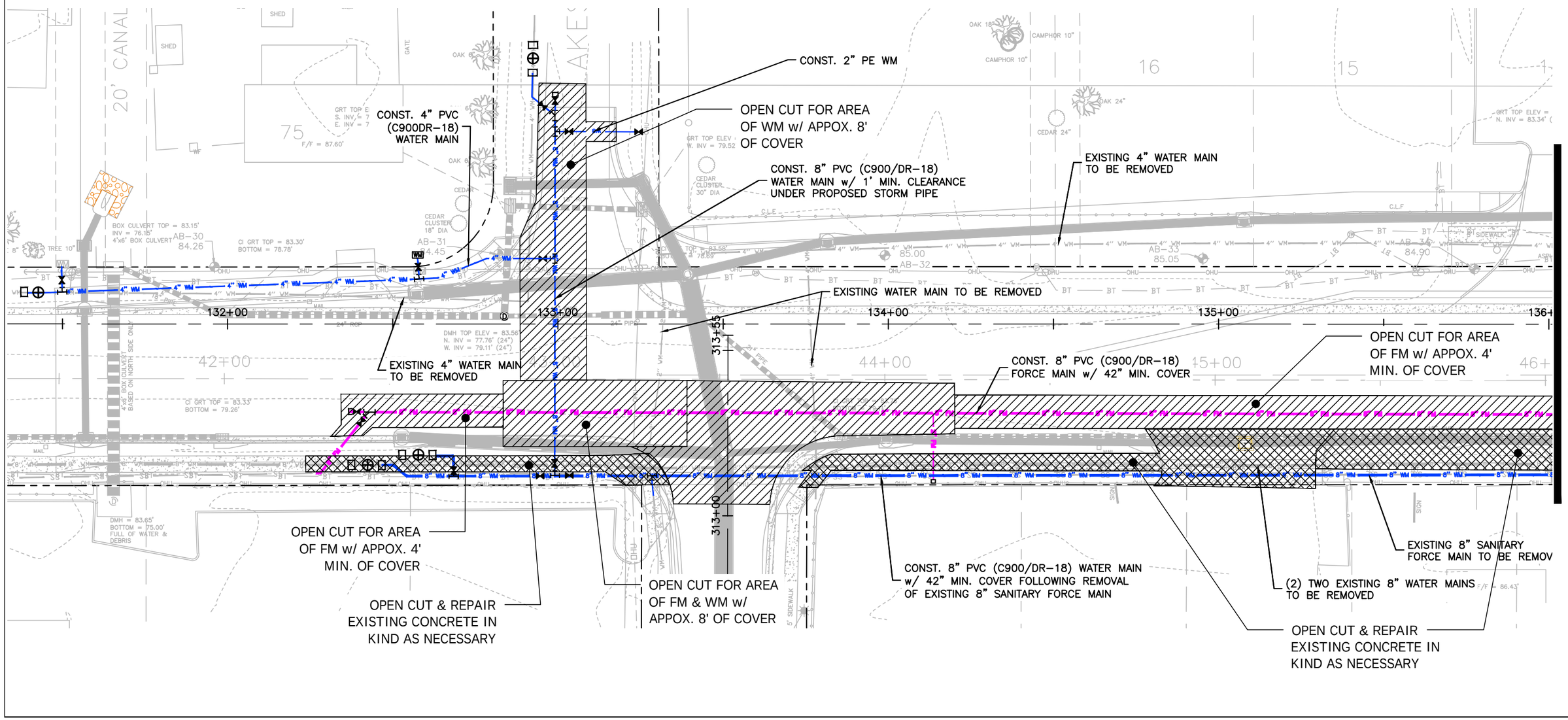
SHEET NO. C1.010

NOTE:

OPEN CUT AND REPAIR ALL AREAS IN KIND. FDOT R/W AND OSCEOLA COUNTY R/W ROAD SECTIONS MAY DIFFER.

N

1" = 30'



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Toho Water Authority

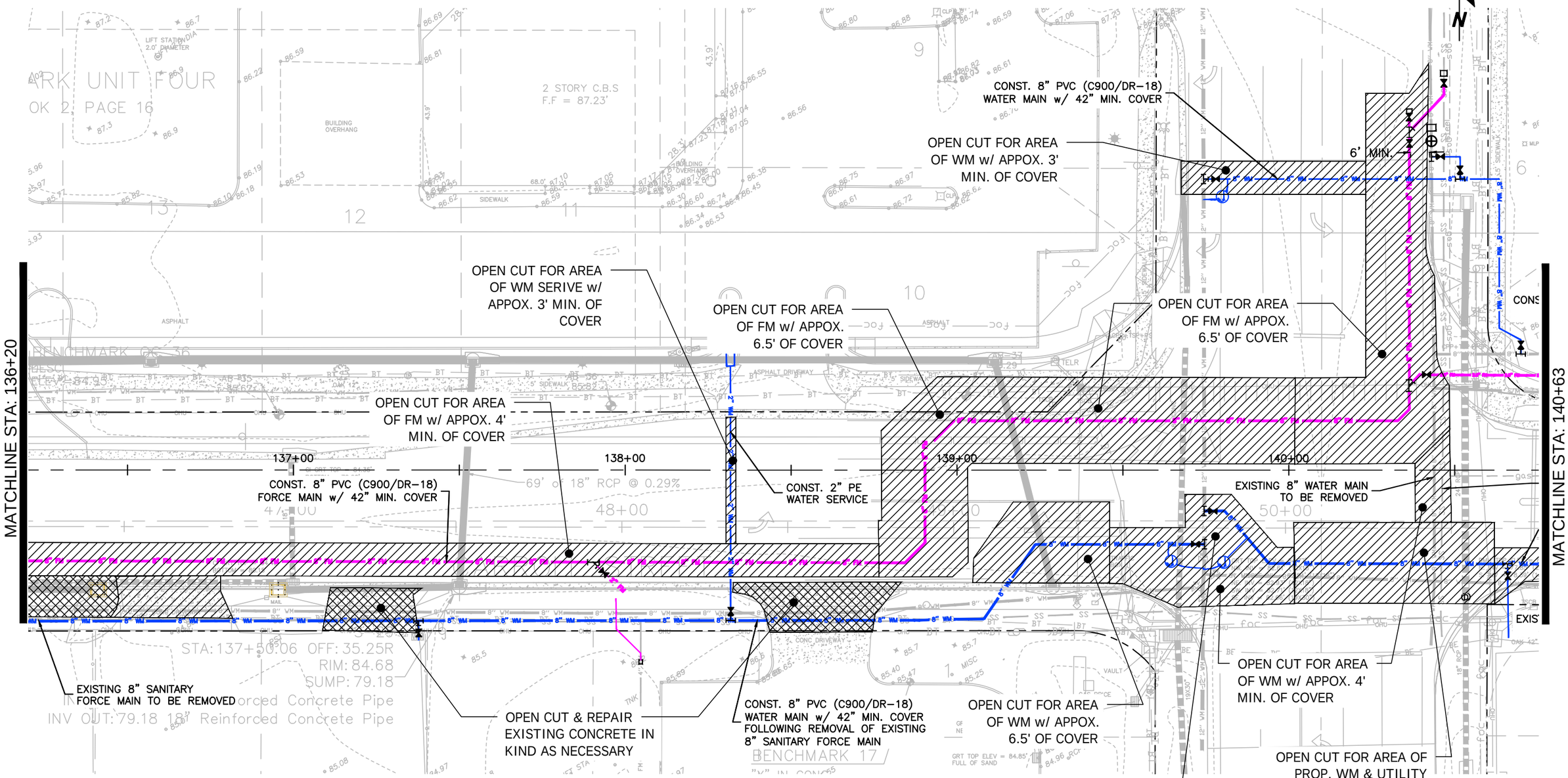
OPEN CUT LOCATION
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C2.001

NOTE:

OPEN CUT AND REPAIR ALL AREAS IN KIND. FDOT R/W AND OSCEOLA COUNTY R/W ROAD SECTIONS MAY DIFFER.

1" = 30'



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Toho Water Authority

OPEN CUT LOCATION

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C2.002

NOTE:

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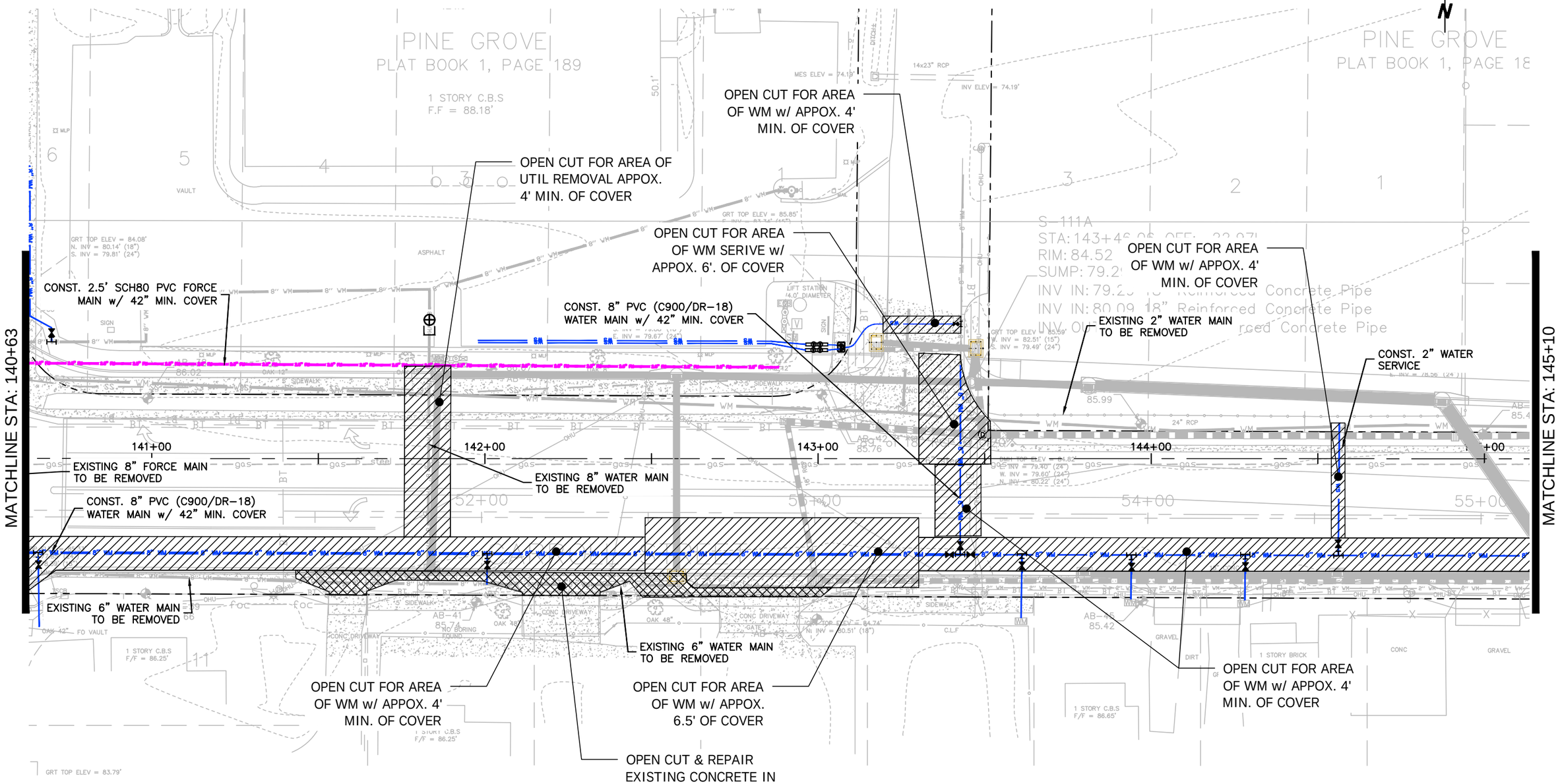
N



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OPEN CUT LOCATION

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C2.003

NOTE:

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1" = 30'

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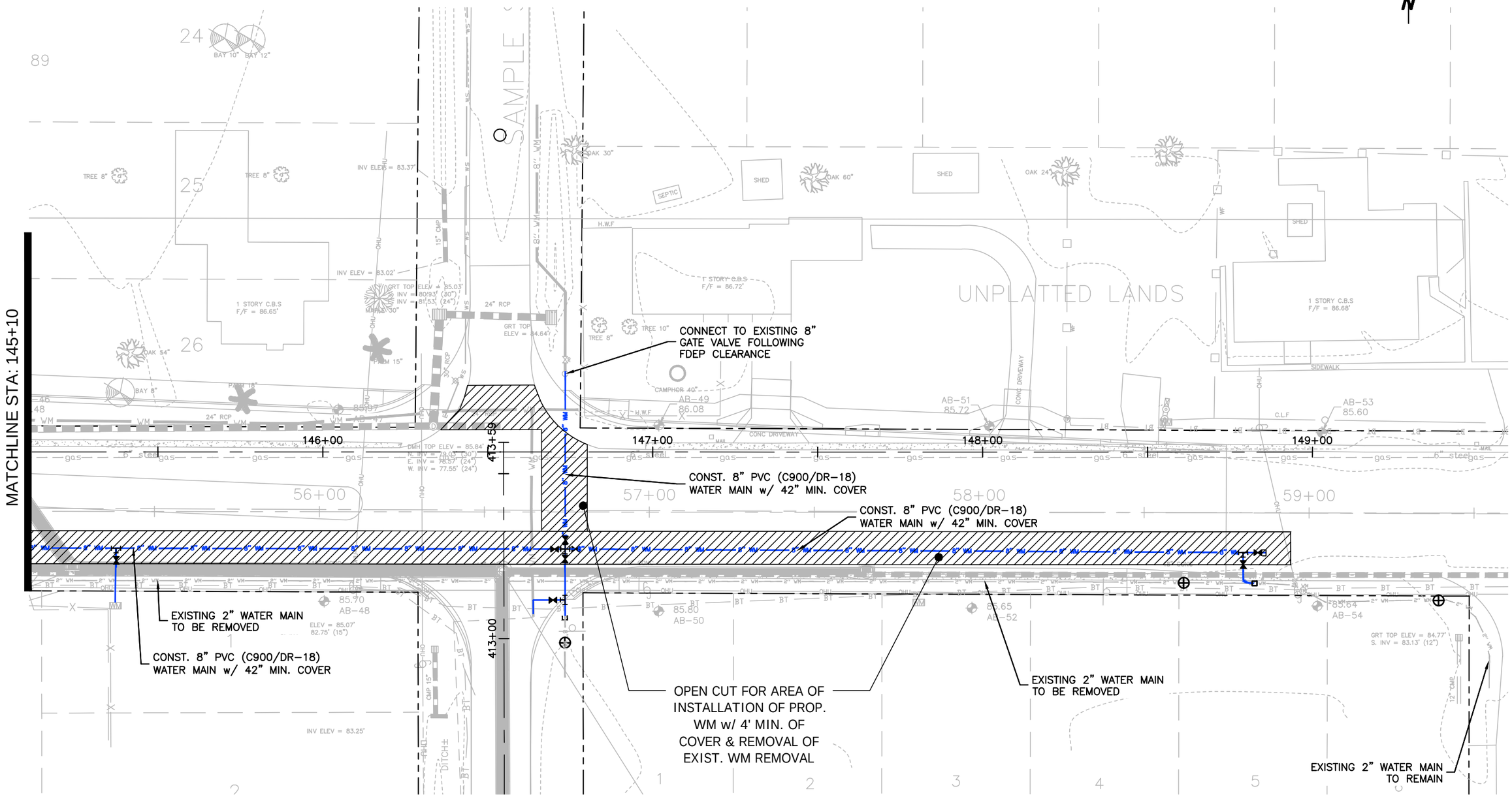

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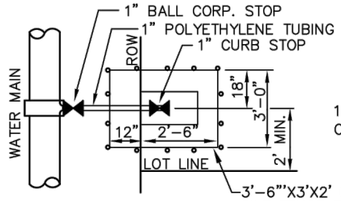
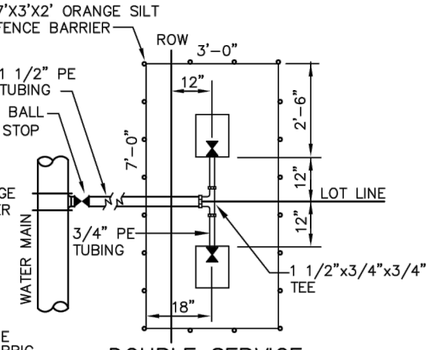
Toho Water Authority

OPEN CUT LOCATION
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

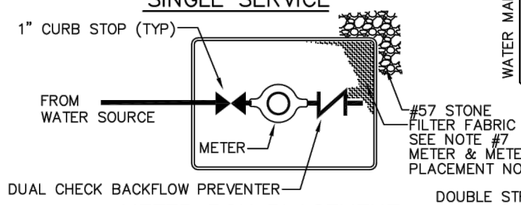
PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C2.004



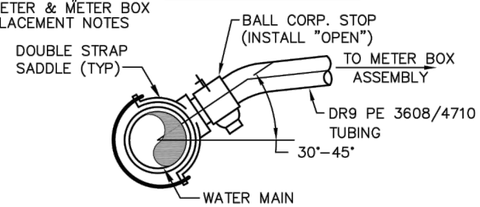
SINGLE SERVICE



DOUBLE SERVICE



METER BOX PLACEMENT



NOTES:

1. METERS INSTALLED BY TOHO WATER AUTHORITY
2. METER BOX INSTALLED BY CONTRACTOR

SERVICE NOTES:

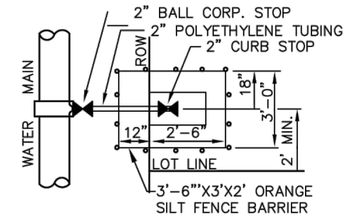
1. ALL FITTINGS AND STOPS SHALL BE BRASS PACK JOINT TYPE w/CLAMP SCREW RETAINERS.
2. SERVICE SHALL NOT TERMINATE BENEATH PAVEMENT, CURBS, SIDEWALKS OR OTHER STRUCTURES.
3. CURB STOPS SHALL BE LOCKING TYPE, STRAIGHT BALL VALVE WITH OUTLET SIZE AND THREADS TO MATCH INTENDED METER.
4. METER COUPLINGS SHALL NOT BE USED.
5. TAPS SHALL BE A MINIMUM 18" FROM JOINTS, SUCCESSIVE TAPS INTO THE WATER MAIN SHOULD BE SPACED A MINIMUM 18".
6. THE SERVICE LINE SHALL BE CONTINUOUS FROM CORPORATION STOP TO CURB STOP OR TEE BRANCH WITH NO FITTINGS IN BETWEEN.
7. TRACER WIRE SHOULD BE RUN WITH ALL SERVICES A MINIMUM OF 1' BEYOND THE CURB STOP AND TIED INTO THE TRACER WIRE THAT RUNS WITH THE MAIN.
8. NO FITTINGS SHALL BE INSTALLED UNDER AN IMPERVIOUS SURFACE.
9. SERVICE TUBING SHALL BE POLYETHYLENE DR9, 200 PSI. BLUE FOR POTABLE, PURPLE FOR REUSE.
10. ETCH A 3 INCH "W" IN THE CURB. "R" FOR REUSE.
11. THIS DETAIL IS INTENDED FOR SINGLE OR DOUBLE SERVICE CONNECTIONS. SEE DETAIL TWA-03 "MULTIPLE WATER SERVICE CONNECTION" FOR GROUPS OF 3 TO 10 SERVICE CONNECTIONS.

METER & METER BOX PLACEMENT NOTES:

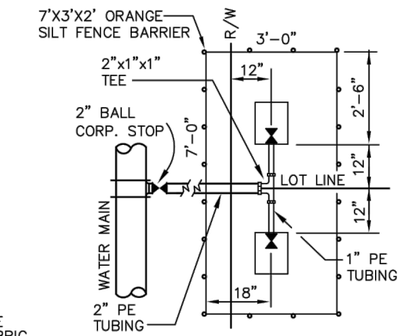
1. APPROVED BACKFLOW PREVENTION IS REQUIRED ON ALL SERVICES.
2. BACKFLOW PREVENTERS SHALL BE INSTALLED MINIMUM OF 12" ABOVE FLOOD PLAIN ("DCV" OR RPZ). "PVB" MUST BE INSTALLED A MINIMUM OF 12" ABOVE THE HIGHEST OUTLET.
3. THE BUILDER SHALL MAKE FINAL HORIZONTAL AND VERTICAL ADJUSTMENTS TO METER ASSEMBLY AND METER BOX. THE METER ASSEMBLY SHALL BE ADJUSTED TO APPROXIMATELY 7" BELOW FINISH GRADE. THE METER BOX SHALL BE CENTERED OVER METER ASSEMBLY, AS SHOWN ABOVE.
4. SINGLE SERVICE METER BOX SHALL BE UNIFORMLY PERPENDICULAR TO THE CURB OR SIDEWALK. DOUBLE SERVICE METER BOXES SHALL BE UNIFORMLY PARALLEL TO THE CURB OR SIDEWALK PER DETAIL TWA-29. TOP OF METER BOX TO BE ADJUSTED FLUSH WITH FINISH GRADE
5. MAINTAIN A MINIMUM OF 3' CLEARANCE FREE OF ALL PLANTINGS & STRUCTURES AROUND METER BOX.
6. METER BOX LIDS SHALL BE SOLID PLASTIC W/NO METAL. BLACK FOR WATER, PURPLE FOR REUSE.
7. PLACE FILTER FABRIC UNDER METER BOX EXTENDING 1' BEYOND ALL DIRECTIONS. BELOW METER BOX PROVIDE #57 STONE A MIN. 6" DEEP EXTENDING BEYOND THE METER BOX 1' IN ALL DIRECTIONS.
8. INSTALL CURB STOP WITH OPERATING NUT FACING UP.
9. METER BOXES ARE TO BE SET AT SOD GRADE.

TYPICAL RESIDENTIAL WATER SERVICE

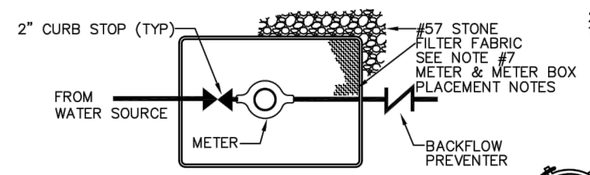
TWA-01
2017



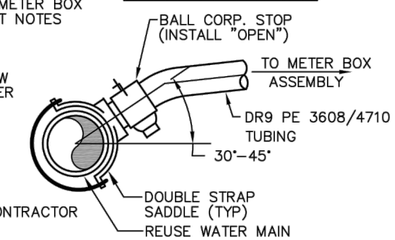
SINGLE SERVICE



DOUBLE SERVICE



METER BOX PLACEMENT



NOTES:

1. METERS INSTALLED BY TOHO WATER AUTHORITY
2. METER BOX AND BACKFLOW PREVENTER INSTALLED BY CONTRACTOR

SERVICE NOTES:

1. ALL FITTINGS AND STOPS SHALL BE BRASS PACK JOINT TYPE w/CLAMP SCREW RETAINERS.
2. SERVICE SHALL NOT TERMINATE BENEATH PAVEMENT, CURBS, SIDEWALKS OR OTHER STRUCTURES.
3. CURB STOPS SHALL BE LOCKING TYPE, STRAIGHT BALL VALVE WITH OUTLET SIZE AND THREADS TO MATCH INTENDED METER.
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11. THIS DETAIL IS INTENDED FOR SINGLE OR DOUBLE SERVICE CONNECTIONS. SEE DETAIL TWA-03 "MULTIPLE WATER SERVICE CONNECTION" FOR GROUPS OF 3 TO 10 SERVICE CONNECTIONS.

METER & METER BOX PLACEMENT NOTES:

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2. BACKFLOW PREVENTERS SHALL BE INSTALLED MINIMUM OF 12" ABOVE FLOOD PLAIN ("DCV" OR RPZ). "PVB" MUST BE INSTALLED A MINIMUM OF 12" ABOVE THE HIGHEST OUTLET.
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7. PLACE FILTER FABRIC UNDER METER BOX EXTENDING 1' BEYOND ALL DIRECTIONS. BELOW METER BOX PROVIDE #57 STONE A MIN. 6" DEEP EXTENDING BEYOND THE METER BOX 1' IN ALL DIRECTIONS.
8. INSTALL CURB STOP WITH OPERATING NUT FACING UP.
9. METER BOXES ARE TO BE SET AT SOD GRADE.

TYPICAL COMMERCIAL WATER SERVICE

TWA-02
2017

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NO.	DATE	REVISION	BY

AUGUST 2021

DESIGNED BKJ | DRAWN
CHECKED CMK | CHECKED
SUPERVISED BY JOHN E. MOODY, P.E.

OSCEOLA ENGINEERING INCORPORATED
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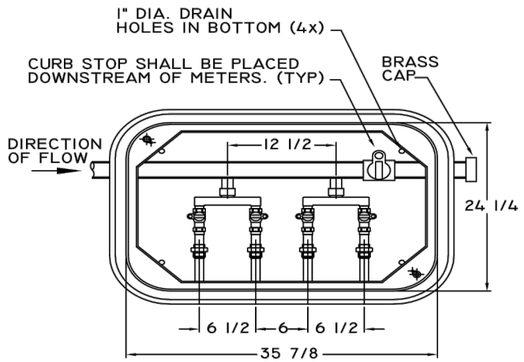
TOHO WATER AUTHORITY
951 MARTIN LUTHER KING BLVD.
KISSIMMEE, FLORIDA 34741-5054
(407)944-5000 FAX(407)847-7945

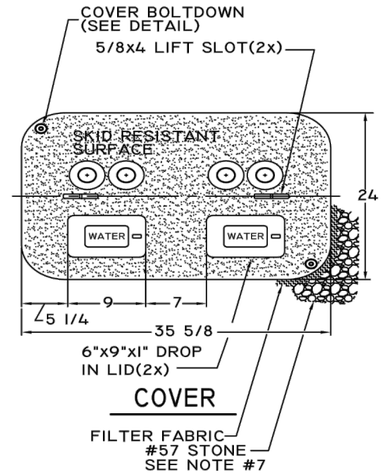
DETAILS

KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

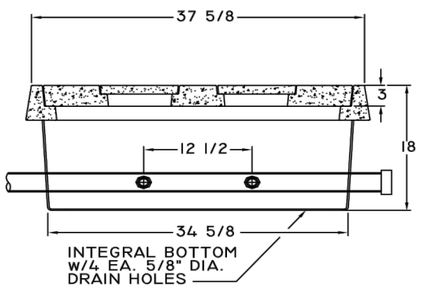
PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C3.001



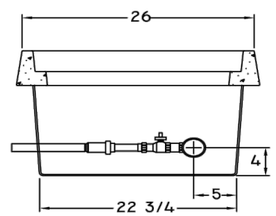
TOP VIEW



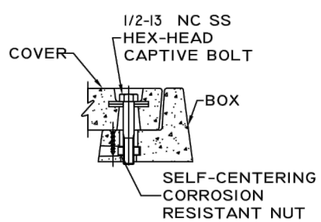
COVER



SECTION



SECTION



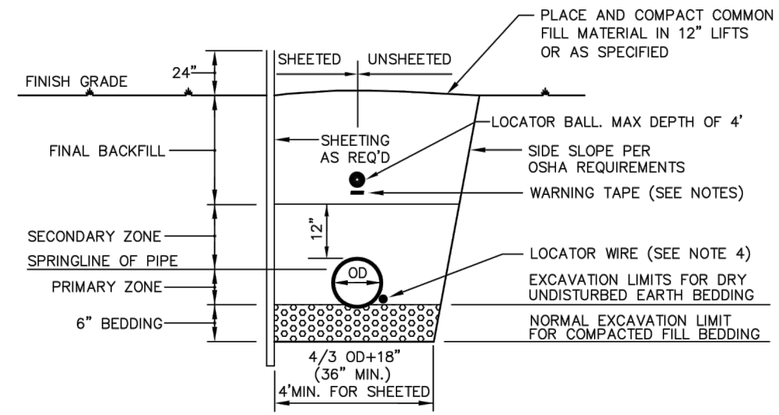
COVER BOLTDOWN DETAIL

NOTES:

1. THIS DETAIL IS INTENDED FOR GROUPS OF 3-4 SERVICE CONNECTIONS.
2. SEE DETAIL TWA-01 "TYPICAL RESIDENTIAL WATER SERVICE" AND TWA-02 "TYPICAL COMMERCIAL WATER SERVICE" FOR ADDITIONAL REQUIREMENTS.
3. CONTRACTOR SHALL ENSURE THAT THE METER BOX/ES BE CORRECTLY ORIENTED.
4. METER BOX/ES MUST BE ORDERED WITH METER SIZE/S SPECIFIED.
5. BRASS UNION NIPPLE AND CURB STOP TO CONNECT TO SERVICE.
6. TRACER WIRE SHOULD BE RUN WITH ALL SERVICES A MINIMUM OF 1' BEYOND THE CURB STOP AND TIED INTO THE TRACER WIRE THAT RUNS WITH THE MAIN.
7. PLACE FILTER FABRIC UNDER METER BOX EXTENDING 1' BEYOND ALL DIRECTIONS. BELOW METER BOX PROVIDE #57 STONE A MIN 6" DEEP EXTENDING BEYOND THE METER BOX 1' IN ALL DIRECTIONS.
8. INSTALL CURB STOP WITH OPERATING NUT FACING UP.
9. METER BOXES ARE TO BE SET TO SOD GRADE.

- MATERIAL: FIBERGLASS REINFORCED POLYMER CONCRETE & FIBERGLASS REINFORCED POLYMER

TWA 03.0
2017



SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

NOTES:

1. BEDDING SHALL BE No. 57 CRUSHED STONE, IF EARTH BEDDING IS YIELDING.
2. PRIMARY AND SECONDARY ZONES SHALL BE INDIVIDUALLY COMPACTED LAYERS OF CLEAN FILL.
3. COMPACTION OF BACKFILL BENEATH STRUCTURES, PAVING AND PARKWAYS, SHALL BE 98% OF AASHTO T-180; ALL OTHER COMPACTION SHALL BE 95%, EXCEPT AS OTHERWISE REQUIRED BY PERMITTING AUTHORITY.
4. INSTALL CONTINUOUS 14 GAUGE INSULATED COPPER WIRE FOR ALL PIPE, EXCEPT GRAVITY SEWERS. TERMINATE THESE LOCATOR WIRES AT TOP OF EACH VALVE PAD WITH 12" OF EXTRA WIRE. CONNECT SPLICED WIRES WITH WIRE NUTS AND SEAL IN WATER-TIGHT SILICONE FILLED JACKET.
5. PLACE APPROVED METALLIC PRINTED WARNING TAPE 12"-18" ABOVE PIPE.
6. SIDE SLOPE AND BENCH PER OSHA REQUIREMENTS.
7. PLACE SEWER LOCATOR BALLS PER TWA-05. DO DOT EXCEED 4' OF DEPTH.

TYPICAL PIPE TRENCH SECTION

TWA-14
2017

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DETAILS

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C3.002

HORIZONTAL & VERTICAL SEPARATION FROM OTHER UTILITIES

OTHER PIPE	(a) GRAVITY OR PRESSURE SANITARY SEWER (b) SANITARY SEWER FORCE MAIN (c) RECLAIMED WATER (4)	(a) STORM SEWER, (b) STORMWATER FORCE MAIN, (c) RECLAIMED WATER (2)	ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM
HORIZONTAL SEPARATION	WATER MAIN 10' PREFERRED 6' MINIMUM (3) OTHER PIPE	WATER MAIN 3' MIN OTHER PIPE	10' MIN.
CROSSINGS (1)	WATER MAIN 12" IS THE MINIMUM EXCEPT FOR GRAVITY SEWER, THEN 6" IS THE MINIMUM AND 12" IS PREFERRED. OTHER PIPE	WATER MAIN 12" IS THE MINIMUM EXCEPT FOR STORM SEWER, THEN 6" IS THE MINIMUM AND 12" IS PREFERRED. OTHER PIPE	—
JOINT SPACING AT CROSSINGS (FULL JOINT CENTERED)	ALTERNATE 6 FT MINIMUM PIPE WATER MAIN OTHER	ALTERNATE 3 FT MINIMUM PIPE WATER MAIN OTHER	—

(1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.

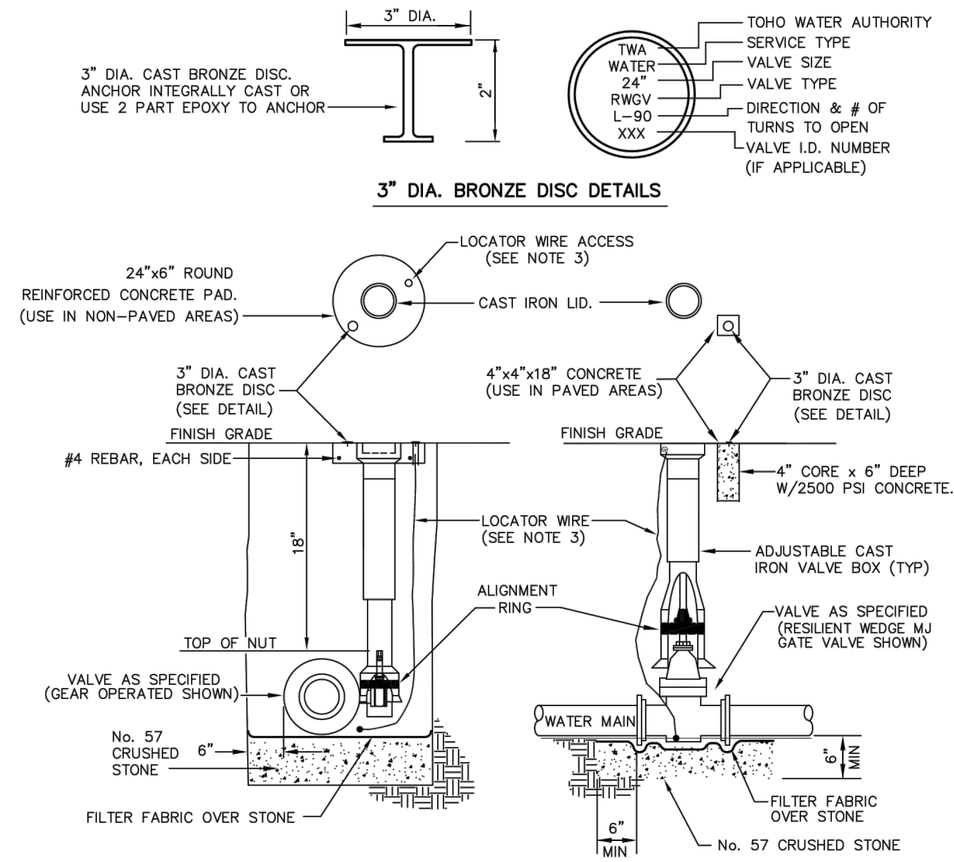
(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(3) 3 FT 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.

(4) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

PIPING CLEARANCES

TWA-16
2017



NOTES:

1. CRUSHED STONE BEDDING 6" MINIMUM BELOW VALVE TO BE COVERED WITH FILTER FABRIC.
2. LOCATOR WIRE ACCESS – IN UNPAVED AREA USE 2" SCH80 PVC, FEMALE ADAPTOR COUPLING AND 2" BRASS PLUG w/RECESSED NUT. TERMINATE INSULATED, SOLID 14 GA. COPPER WIRES AT TOP w/12" OF EXTRA WIRE.
   IN PAVED AREA, TERMINATE SOLID 14 GA. COPPER WIRES INSIDE OF TOP PORTION OF VALVE BOX w/12" OF EXTRA WIRE.
3. MAINTAIN A MINIMUM OF 3' CLEARANCE FREE OF ALL PLANTINGS & STRUCTURES AROUND VALVE BOX.
4. PRIVATELY MAINTAINED WATER SYSTEMS SHALL HAVE "PRIVATE" STAMPED ON BRONZE ID DISC.
5. FIRE LINE VALVES SHALL HAVE "FIRE LINE VALVE" STAMPED ON BRONZE DISC AND VALVE BOX COVER SHALL BE PAINTED RED.
6. OPERATING NUT TO BE BOLTED. SHEER PINS NOT ALLOWED.
7. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION. .
8. SCREW TYPE ADJUSTABLE VALVE BOX ONLY.

VALVE AND BOX DETAILS

TWA-17
2017

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NO.	DATE	REVISION	BY

AUGUST 2021

DESIGNED	BKJ	DRAWN	
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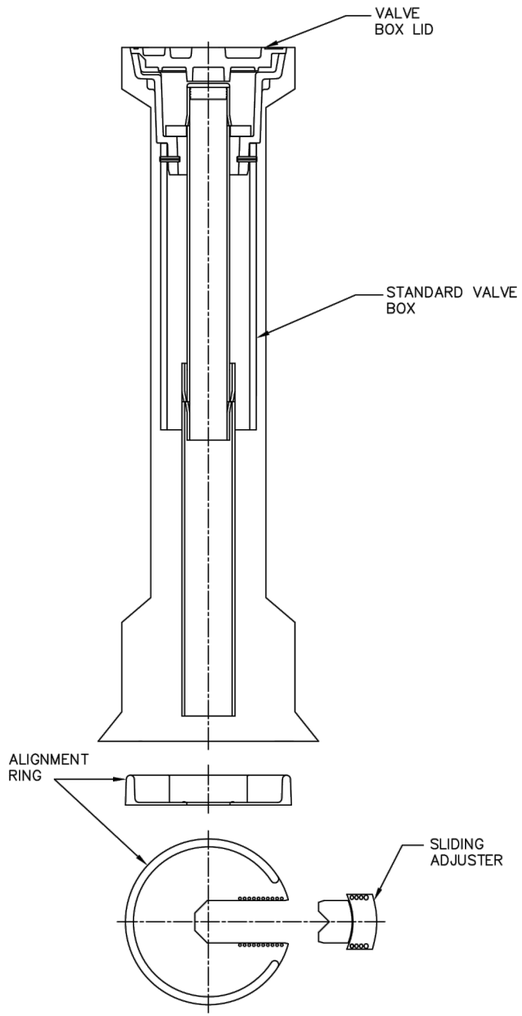
Toho Water Authority

DETAILS

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

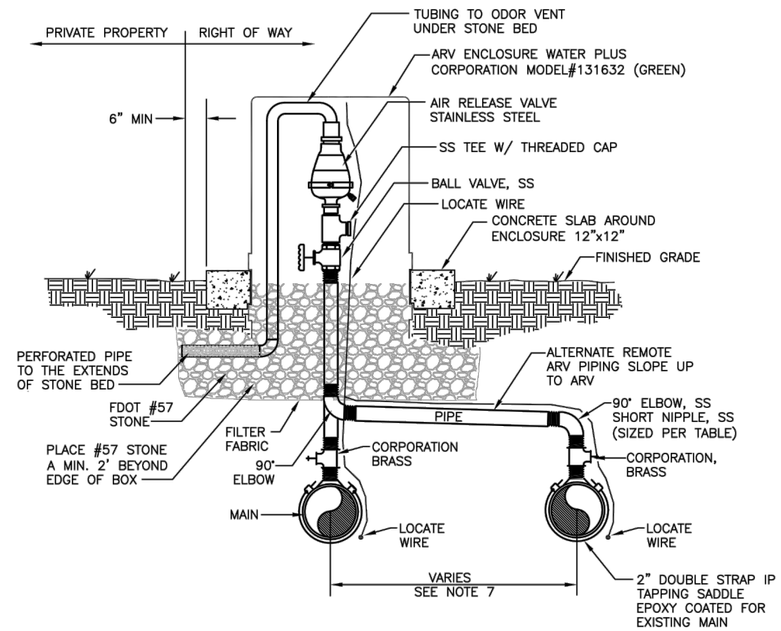
PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C3.003



NOTES:
1. FOR ALL MAINS 6' DEEP OR GREATER.
2. SCREW TYPE ADJUSTABLE VALVE BOX ONLY.

SEALED VALVE BOX, ADJUSTABLE

TWA–17A
2017



FOR NEW PIPE : SIZE PER SIZE TEE W/ TAPPED PLUG.
(SEE TABLE BELOW TAP SIZE)

NOTES:

1. PROVIDE ANGLE STOP FOR REMOTE ARV. PIPING.
2. PROVIDE STAINLESS STEEL PIPE WITH STAINLESS STEEL VALVES, STOPS NIPPLES, AND FITTINGS SIZED TO ARV INLET.
3. No. 57 CRUSHED STONE BEDDING TO BE COVERED WITH FILTER FABRIC
4. THE ENCLOSURE VENTS MUST BE CAPABLE OF ALLOWING AT LEAST THE SAME AMOUNT OF AIRFLOW AS THE VALVE.
5. OFFSET DISTANCE TO BE FIELD DETERMINED AND AS CLOSE TO THE RIGHT OF WAY AS POSSIBLE AND CLEAR OF PEDESTRIAN WALKWAYS. IF PIPE IS AT RIGHT OF WAY LINE, NO OFFSET IS REQUIRED.
6. ABOVE DETAIL APPLIES TO A 2" ARV. FOR LARGER ARVS, PIPE DIAMETER AND VALVES SHALL BE EQUAL TO THE SIZE OF THE ARV.
7. LOCATE WIRE TO EXTEND 1' BEYOND ARV.

MAIN DIAMETER	ARV
12" AND UNDER	2"
18"	3"
20" , 24"	4"
30" , 36"	6"

AIR RELEASE VALVE
ABOVE GROUND OFFSET PIPE LAYOUT–SEWER ONLY

TWA–18
2017

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AUGUST 2021
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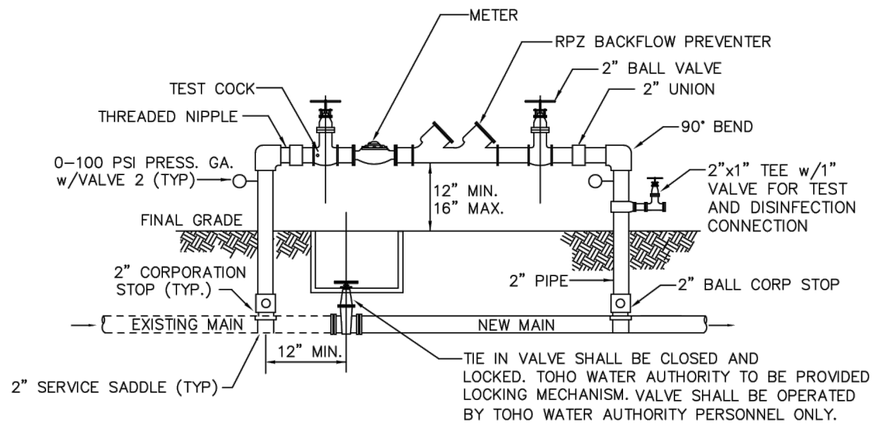
DETAILS
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C3.004



NOTES

1. PROVIDE TEMPORARY PIPE SUPPORTS AS REQUIRED
2. DO NOT USE GALVANIZED PIPE OR ACCESSORIES

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
2. THE DETAIL SHOWN IS TO BE USED FOR FILLING ANY NEW WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MIN. VELOCITY) AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED. PIPE AND FITTINGS USED FOR CONNECTION OF THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, CURRENT EDITION. SWAB OR SPRAY THE EXTERIOR OF THE MAIN TO BE TAPPED AND THE TAPPING SADDLE WITH 1% HYPOCHLORITE SOLUTION.
3. THE CONTRACTOR SHALL EITHER PROVIDE DOCUMENTATION DEMONSTRATING THAT RPZ BACKFLOW PREVENTION DEVICE HAS BEEN TESTED AND IS IN GOOD WORKING ORDER AT TIME OF INSTALLATION.
4. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTIONS DEVICE, FITTINGS AND VALVES, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. ABANDONED JUMPER CONNECTION POINTS MUST BE INCLUDED IN THE RECORD DRAWINGS.

TEMPORARY JUMPER CONNECTION

TWA–30
2017

USE THIS THRUST RESTRAINT TABLE FOR THESE TRENCH CONDITIONS:
-- MIN. 50% SOIL RETAINED ON No. 200 SIEVE.
-- MIN. 95% COMPACTION, AASHTO T–180.
-- MIN. 3' OF COVER.

NUMBER OF FULL LENGTH RESTRAINED PIPE SECTIONS REQUIRED AT ALL FITTINGS AND VALVE JOINTS

SIZE	BENDS																	
	90°		45°		22–1/2°		11–1/4°		VERTICAL BENDS		DEAD END		CROSS OR VALVE		TEE			
															RUN		BRANCH	
IN.	100 psi	150 psi	100 psi	150 psi	100 psi	150 psi	100 psi	150 psi	100 psi	150 psi	100 psi	150 psi	100 psi	150 psi	100 psi	150 psi	100 psi	150 psi
4	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	2
6	1	2	1	1	1	1	1	1	1	2	2	3	1	1	1	1	2	2
8	1	2	1	1	1	1	1	1	2	2	2	4	1	1	1	1	2	2
10	2	2	1	1	1	1	1	1	2	2	3	4	1	1	1	1	2	2
12	2	2	1	1	1	1	1	1	2	3	3	5	1	1	1	1	2	2
14	2	3	1	1	1	1	1	1	2	3	4	6	1	1	1	1	2	2
16	2	3	1	1	1	1	1	1	2	3	4	6	1	1	1	2	2	3
18	2	3	1	2	1	1	1	1	3	4	5	7	1	1	1	2	2	3
20	2	3	1	2	1	1	1	1	3	4	5	8	1	1	1	2	2	4
24	3	4	1	2	1	1	1	1	3	4	6	9	1	1	1	3	2	5
30	3	4	2	2	1	1	1	1	4	5	7	10	1	1	2	4	3	7

WHERE CONDITIONS VARY FROM THOSE STATED ABOVE, HAVE A FLORIDA REGISTERED PROFESSIONAL ENGINEER DETERMINE THE REQUIRED RESTRAINED LENGTH OF PIPING.

1. WATER MAIN AND REUSE MAIN TEST PRESSURE 150 psi MINIMUM
2. SANITARY FORCE MAIN PRESSURE PIPE 100 psi MINIMUM.
3. RESTRAIN THROUGH VALVING.
4. ALL FITTINGS AND VALVES SHALL BE RESTRAINED AT LEAST ONE (1) FULL LENGTH OF PIPE IN ALL DIRECTIONS.
5. PRESSURE CONNECTIONS SHALL BE TREATED AS A TEE.

NOTE: THIS TABLE INCLUDES A 1.5 SAFETY FACTOR ABOVE THE LISTED TEST PRESSURES.

RESTRAINED JOINT TABLE

TWA–20
2017

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NO.	DATE	REVISION	BY

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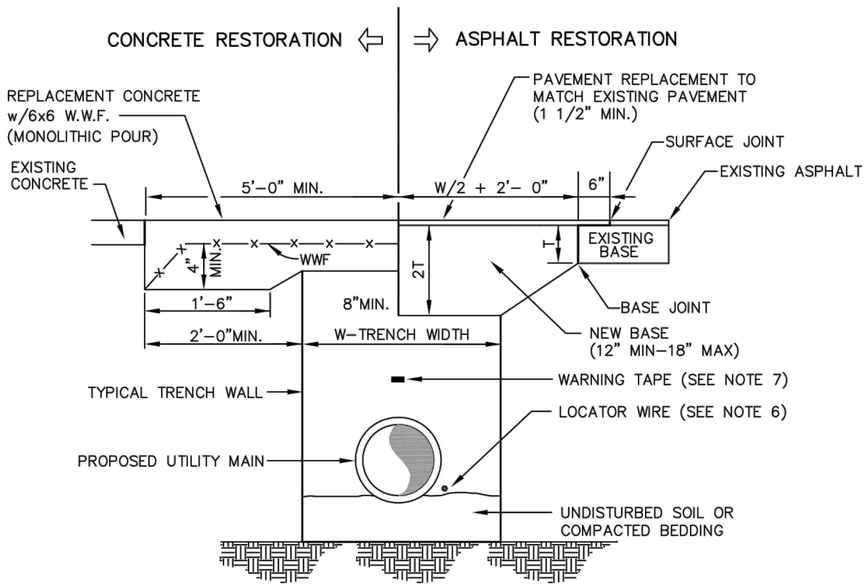
DETAILS
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C3.005



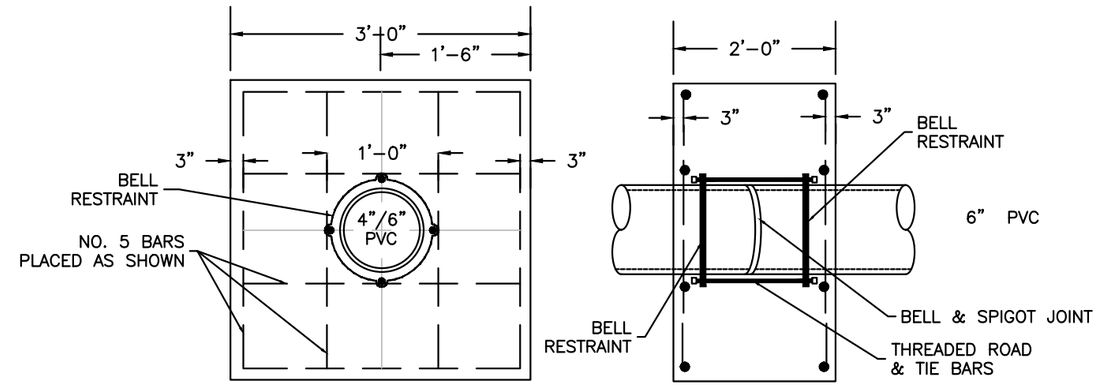
TYPICAL SECTION

NOTES:

1. SURFACE AND BASE CUTS SHALL BE SAW-CUT.
2. LONGITUDINAL OR DIAGONAL CUTS REQUIRE OVERLAY/RESURFACING COMPLETE WIDTH OF ROAD.
3. CUTS AT INTERSECTIONS REQUIRE COMPLETE OVERLAY/RESURFACING TO END OF ALL RETURN TURNOUTS AND/OR 10FT. BEYOND CUT, WHICHEVER IS GREATER.
4. CUTS THROUGH TURNOUTS AND CUL-DE-SACS REQUIRE OVERLAY/RESURFACING.
5. COMPACTION OF BACKFILL SHALL BE 98% OF AASHTO T-180.
6. INSTALL CONTINUOUS 14 GA. INSULATED COPPER WIRE FOR OF ALL PIPE, EXCEPT GRAVITY SEWERS. TERMINATE THESE LOCATOR WIRES AT TOP OF EACH VALVE PAD w/12" OF EXTRA WIRE. CONNECT SPLICED WIRES WITH WIRE NUTS AND SEAL IN WATER-TIGHT SILICONE FILLED JACKET.
7. PLACE APPROVED METALLIC PRINTED WARNING TAPE 12"-18" ABOVE PIPE.
8. SIDE SLOPE AND BENCH PER OSHA REQUIREMENTS.
9. PUBLIC ROADS SHALL MEET THE REQUIREMENTS OF THE MUNICIPAL OWNER.

OPEN CUT DETAIL
(PRIVATE ROADS)

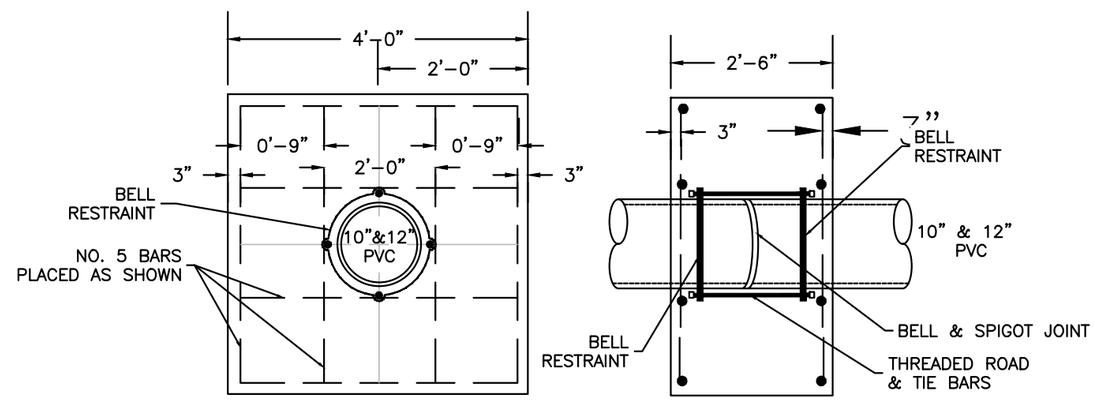
TWA-15
2017



REINFORCED CONCRETE THRUST COLLAR
FOR 6" RESTRAINED JOINT

4" or 6" THRUST COLLAR DETAIL

NOT TO SCALE



REINFORCED CONCRETE THRUST COLLAR
FOR 10" & 12" RESTRAINED JOINT

8", 10" or 12" THRUST COLLAR DETAIL

NOT TO SCALE

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DETAILS

KISSIMMEE FLORIDA

CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C3.006

NOTES:

1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work on the shoulder.

2. L = Taper Length
   X = Work Zone Sign Spacing
   B = Buffer Length
   See Index 102-600 for "L", "X", "B", and channelizing device spacing values.

3. For incidental work (e.g. mowing or litter removal), only the Road Work Ahead sign is required.

4. When four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), use a flagger or lane closure to accommodate work vehicle ingress and egress.

5. For work less than two feet from the traveled way and work zone speed is greater than 45 MPH, use a lane closure.

6. The "Speeding Fines Doubled When Workers Present"signs (MOT-13-06) and "End Road Work" Signs (G20-2) along with the associated work zone sign spacing distances may be omitted when the temporary condition is in place for 24 hours or less.

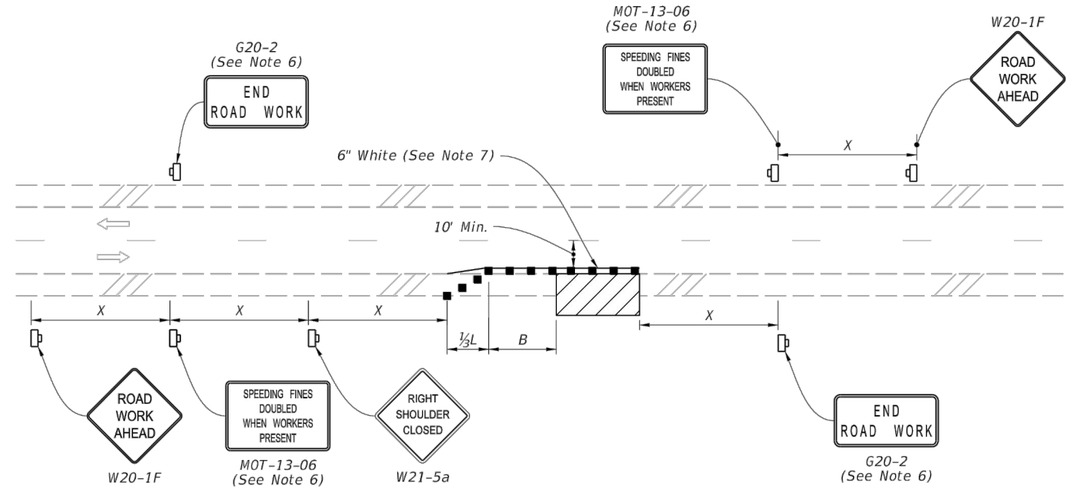
7. Temporary pavement markings may be omitted when the work zone is in place for 3 days or less.

8. If the work encroaches on a marked bicycle lane or ridable shoulder, close the lane or shoulder in accordance with the Plans.

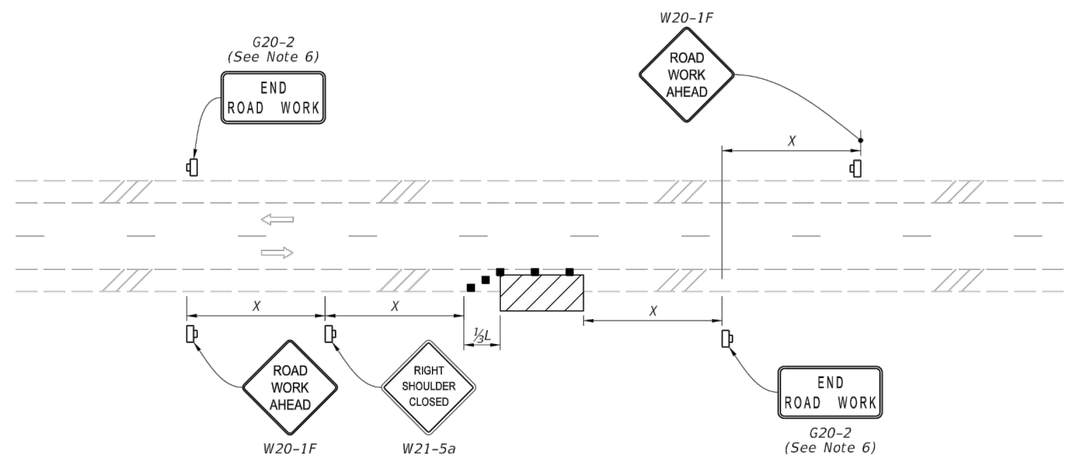
9. Omit "Shoulder Closed" signs (W21-5a) along with associated work zone sign spacing distances for work on the median

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification and Direction of Traffic



TWO-LANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS



TWO-LANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

10/9/2020 1:18:37 PM

LAST REVISION	REVISION	DESCRIPTION:
11/01/20		

FDOT

FY 2021-22
STANDARD PLANS

TWO-LANE AND MULTILANE, WORK ON SHOULDER

INDEX 102-602

SHEET 1 of 2

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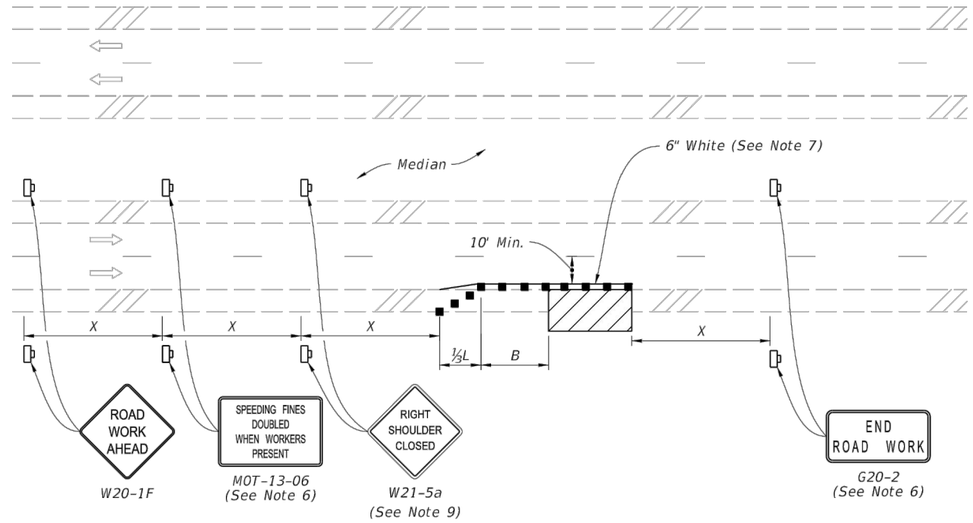
FDOT DETAILS
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

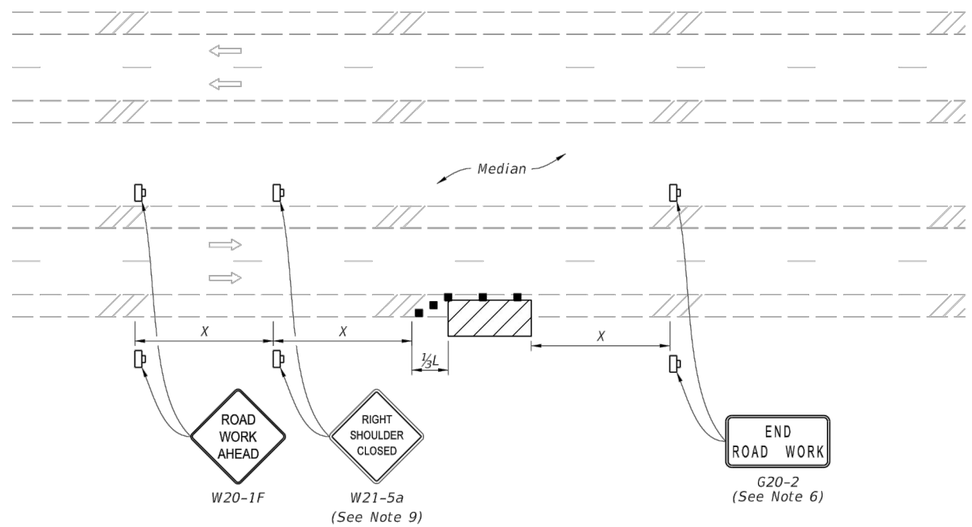
PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C4.001



MULTILANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification and Direction of Traffic



MULTILANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

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LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/20			FDOT FY 2021-22 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	102-602	2 of 2

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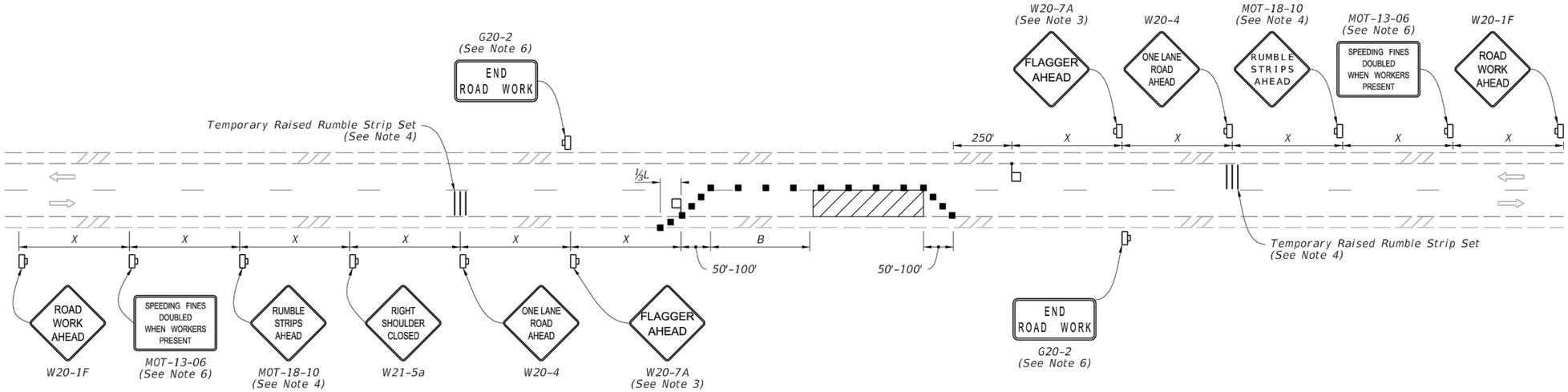
FDOT DETAILS
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C4.002



NOTES:

1. This Index applies to Two-Lane, Two-Way Roadways with work within the traveled way.

2. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-600 for "L", "B", "X" and channelizing device spacing values.

3. Optionally, use "Flagger Ahead" sign with symbol (W20-7) instead of "Flagger Ahead" sign with text (W20-7A).

4. Use temporary raised rumble when the existing posted speed is 55 mph or greater and the work duration is greater than 60 minutes. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing.

5. Additional one-way control may be provided by the following means:
   a. Flag-carrying vehicle
   b. Official vehicle
   c. Pilot vehicles
   d. Traffic signals

   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.

6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing, may be omitted when the work zone will be in place for 24 hours or less.

7. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specification Sections 102, 990 and the APL vendor drawings.

8. Special Conditions may be required in accordance with these notes and the following sheets:

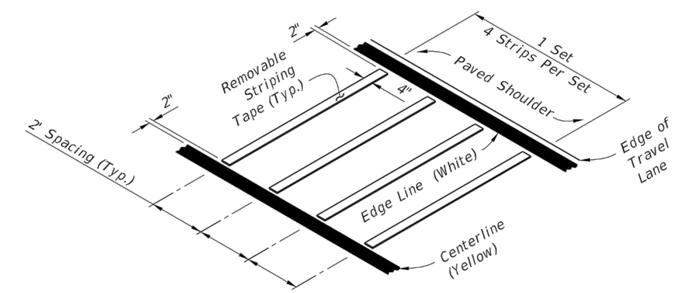
   A. Railroad Crossings:
      a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 2.
      b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.

   B. If the Work Area encroaches on the Centerline, use the Layout for Temporary Lane Shift to Shoulder on Sheet 2 only if the Existing Paved Shoulder width is sufficient to provide for an 11' lane between the Work Area and the Edge of Existing Paved Shoulder and the Work Zone will be in place for 24 hours or less. Reduce the posted speed when appropriate.

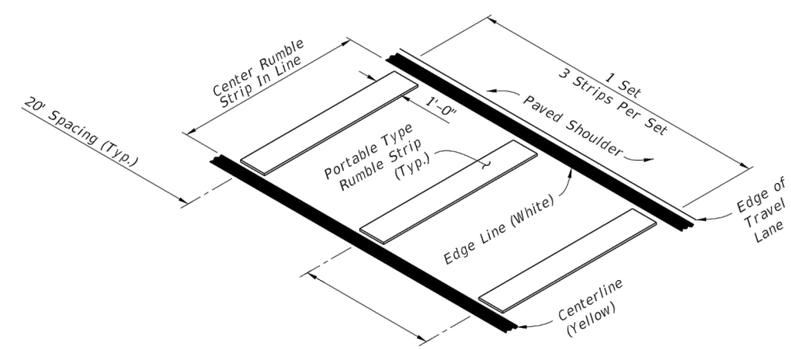
9. If the work encroaches on a marked bicycle lane or ridable shoulder, close the lane or shoulder in accordance with the Plans.

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Flagger



OPTION - 1
REMOVABLE STRIPING TYPE



OPTION - 2
PORTABLE TYPE

RUMBLE STRIP SETS

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2021-22 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX	SHEET
11/01/20						102-603	1 of 2

10/12/2020 6:15:07 AM

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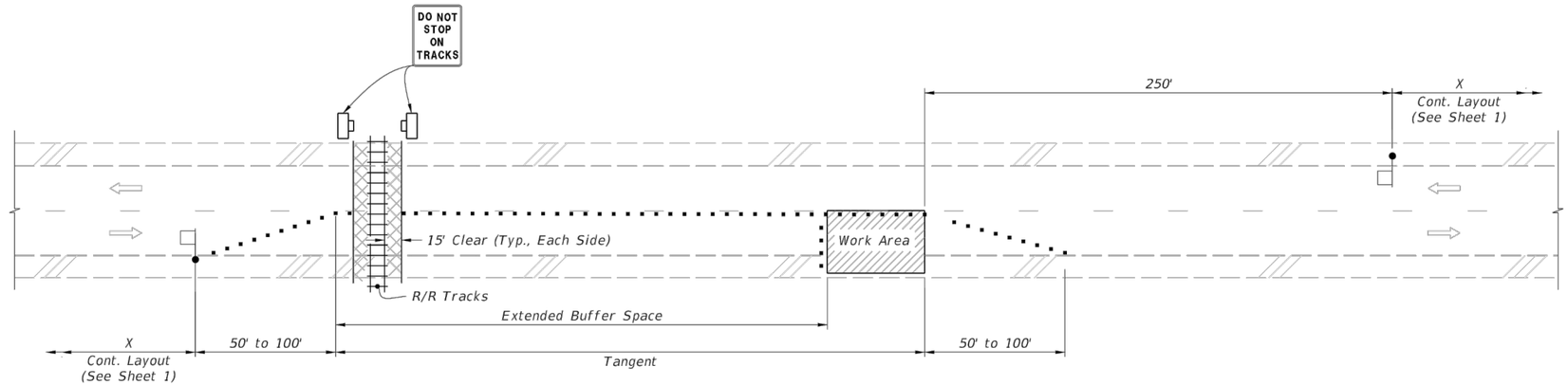
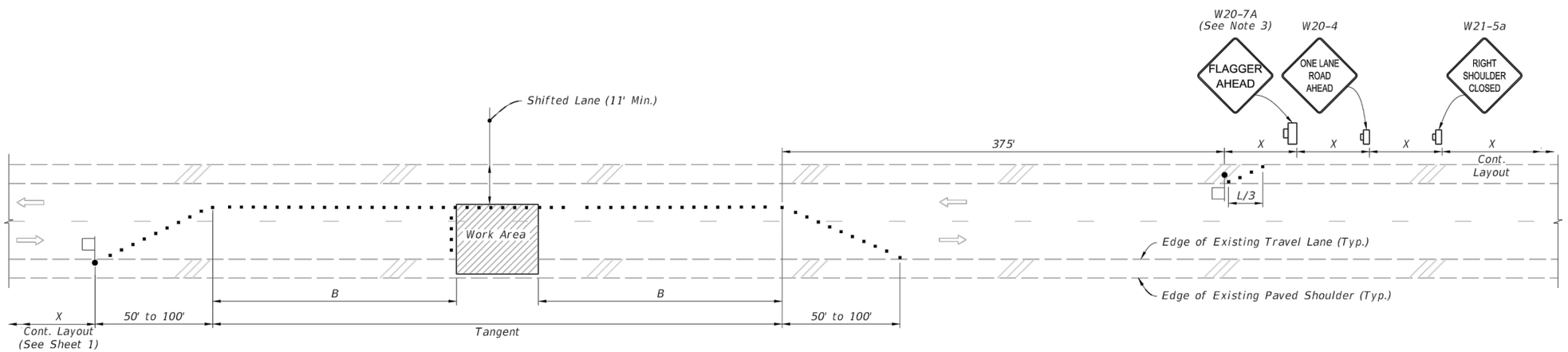
FDOT DETAILS
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C4.003



TEMPORARY RAILROAD CROSSING BUFFER SPACE EXTENSION



TEMPORARY LANE SHIFT TO SHOULDER WHEN WORK AREA ENCROACHES ON THE CENTERLINE

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Flagger

SPECIAL CONDITIONS

LAST REVISION	REVISION	DESCRIPTION:	FY 2021-22 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX	SHEET
11/01/20					102-603	2 of 2

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NO.	DATE	REVISION	BY

AUGUST 2021
DESIGNED BKJ DRAWN
CHECKED CMK CHECKED
SUPERVISED BY JOHN E. MOODY, P.E.

OSCEOLA ENGINEERING INCORPORATED
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FDOT DETAILS
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

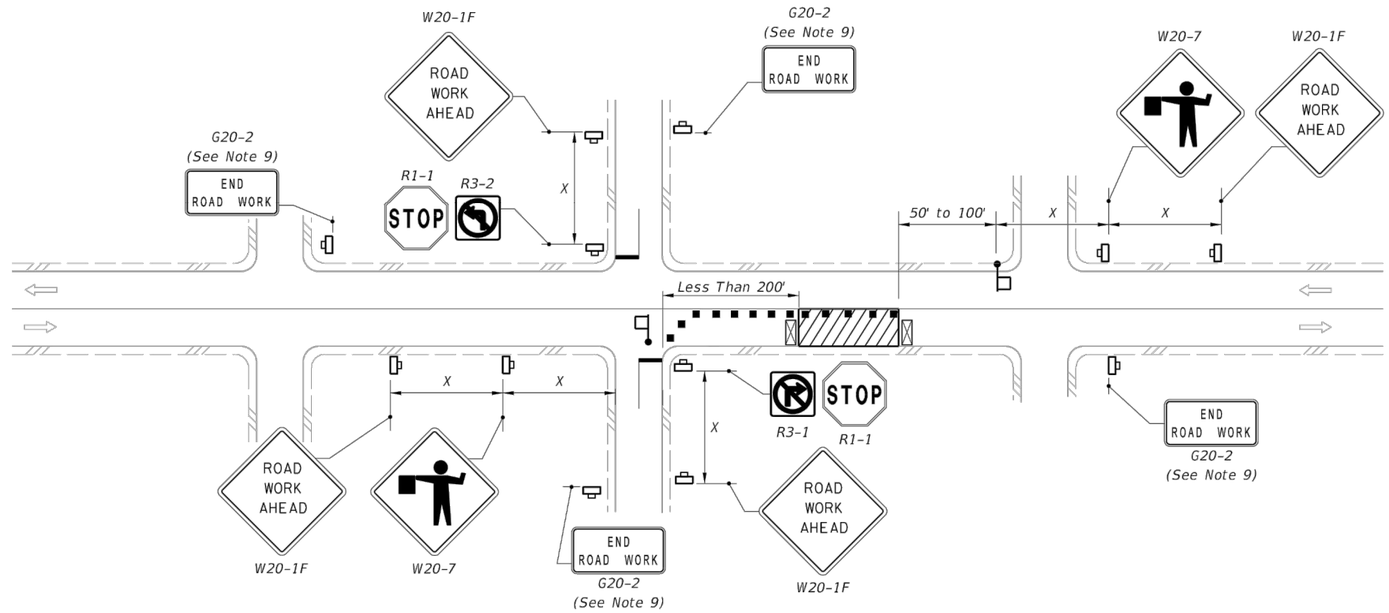
PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C4.004

GENERAL NOTES:

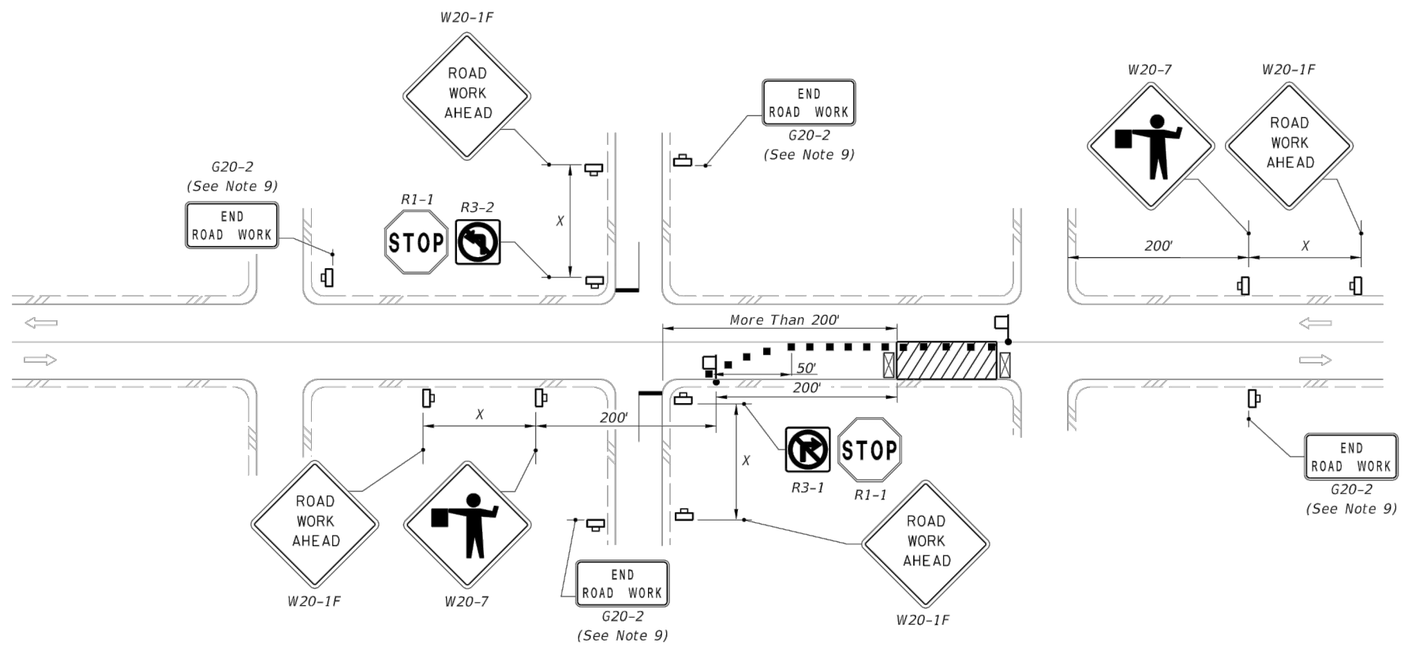
1. This Index applies to two-lane, two-way roadways with work within or near the intersection.
2. X = Work Zone Sign Spacing
   See Index 102-600 for "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with text (W20-7A) instead of "Flagger Ahead" sign with symbol (W20-7).
4. If vehicles in a parking zone block the line of sight to TCZ signs, locate and post mount signs in accordance with Index 700-101.
5. If the work area extends across a crosswalk, close the crosswalk in accordance with Index 102-660.
6. District Traffic Operations Engineer must approve temporary signal phasing modifications prior to beginning of work
7. For unsignalized intersections, use Temporary Raised Rumble Strips in accordance with Index 102-603. Placement of Rumble Strips and additional signs should begin at FLAGGER sign location.
8. The "End Road Work" signs (G20-2) along with the associated work zone sign distances may be omitted when the work zone will be in place for 24 hours or less.
9. If the work encroaches on a marked bicycle lane or ridable shoulder, close the lane or shoulder in accordance with the Plans.

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Stop Bar
- Lane Identification and Direction of Traffic
- Flagger



LANE CLOSURE FOR WORK LESS THAN 200' FROM INTERSECTION



LANE CLOSURE FOR WORK MORE THAN 200' FROM INTERSECTION

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2021-22 STANDARD PLANS	TWO-LANE, TWO-WAY, INTERSECTION WORK	INDEX	SHEET
11/01/20						102-604	1 of 2

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AUGUST 2021
DESIGNED BKJ DRAWN
CHECKED CMK CHECKED
SUPERVISED BY JOHN E. MOODY, P.E.

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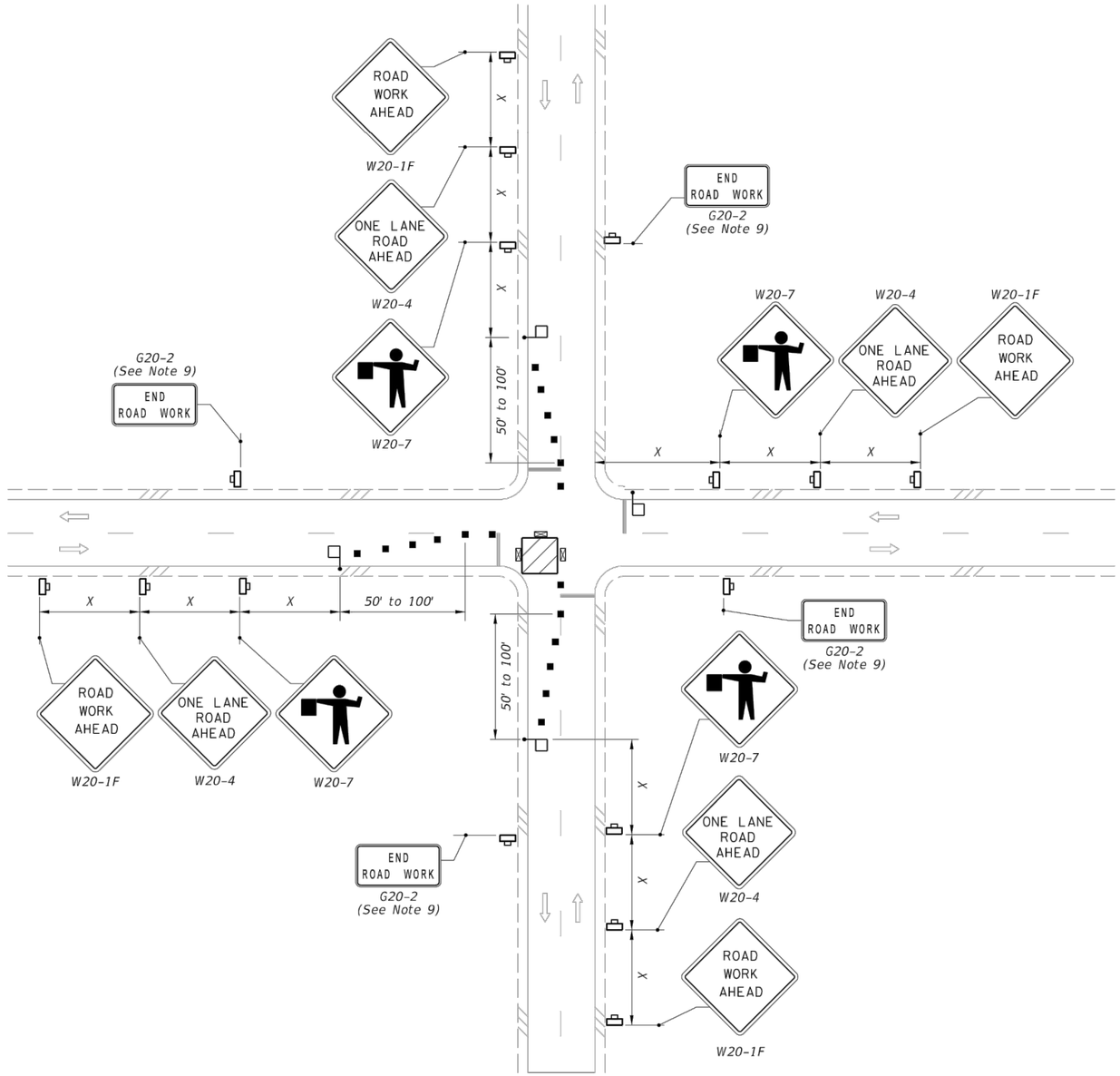
FDOT DETAILS
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C4.005

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-000)
- Type III Barricade
- Work Zone Sign
- Stop Bar
- Lane Identification and Direction of Traffic
- Flagger or Traffic Control Officer (TCO)



WORK IN INTERSECTION OF TWO-LANE ROADWAY

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2021-22 STANDARD PLANS	TWO-LANE, TWO-WAY, INTERSECTION WORK	INDEX	SHEET
11/01/20						102-604	2 of 2

10/12/2020 6:15:59 AM

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NO.	DATE	REVISION	BY

AUGUST 2021

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Toho Water Authority

FDOT DETAILS
KISSIMMEE FLORIDA
CARROLL STREET UTILITY ADJUSTMENTS

PROJECT NO. 21-040
WORKSTATION: WS
SHEET NO. C4.006