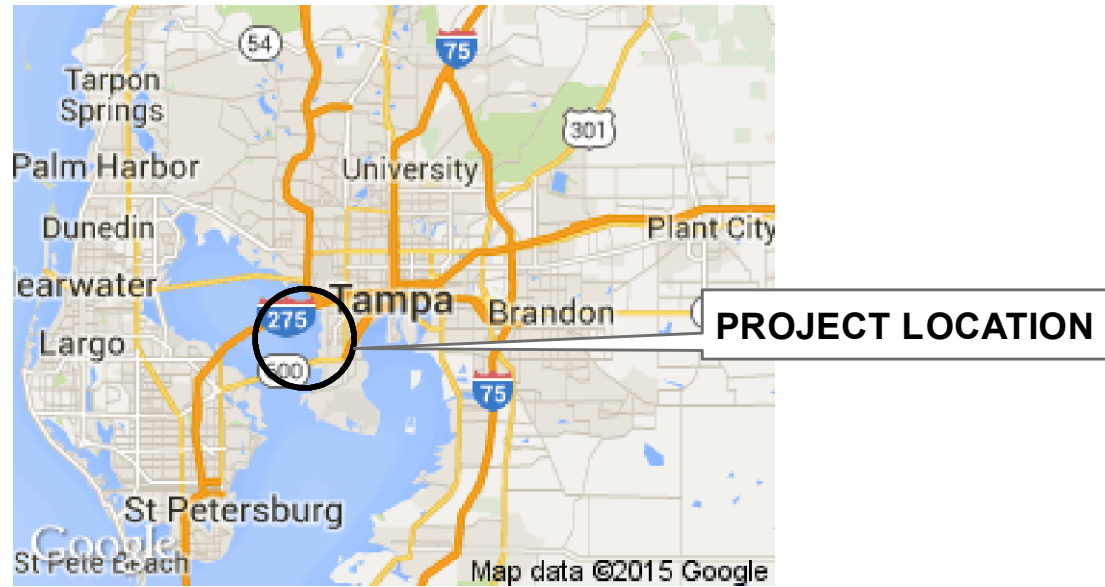


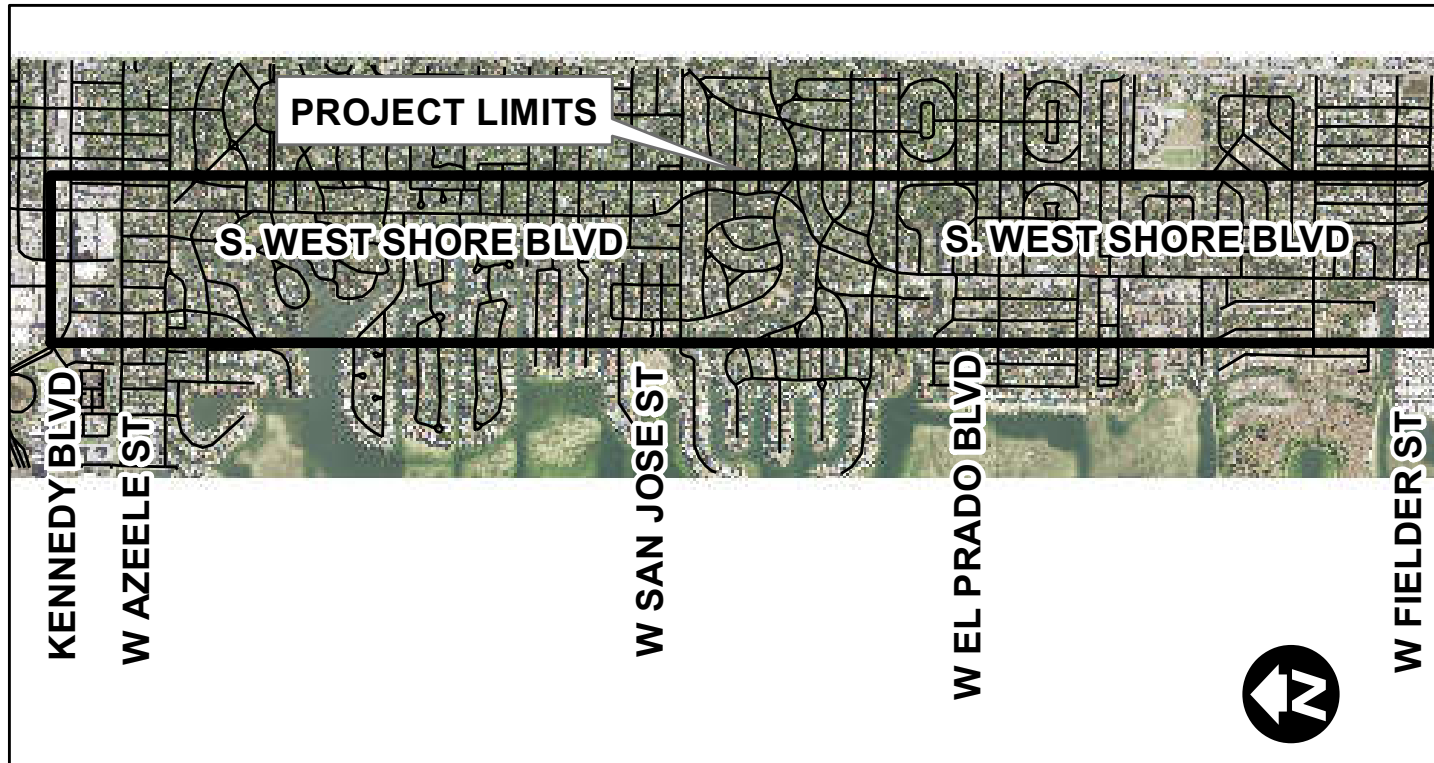
**The Enclosed Document Is Provided For Your Convenience.**

**Please Email ALL Questions:**  
**[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)**

City of Tampa  
Contract Administration Department  
306 E. Jackson St. #280A4N  
Tampa, FL 33602  
(813)274-8456



**LOCATION MAP**  
NOT TO SCALE



**VICINITY MAP**  
1" = 2500'



PLANS FOR:  
**SOUTH WESTSHORE BOULEVARD  
 WATER MAIN REPLACEMENT II**  
 TAMPA WATER DEPARTMENT  
 WORK ORDER NO:  
**WTR-18-0004**

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2	GENERAL NOTES
3	OVERALL PLAN
4-36	SITE PLAN
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40-50	DETAILS



PERMITS  
 CITY  COUNTY  STATE  DEP  
 CONTRACTOR:

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

S. WESTSHORE BLVD. WATER  
 MAIN REPLACEMENT II

100% PLANS

PROJECT NO. 18D408  
 DATE: 1/29/2020

COVER SHEET



SHEET 1

# GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH AND CONFORM TO THE MOST STRINGENT REQUIREMENTS OF THE PROJECT'S SPECIFICATIONS AND SPECIAL PROVISIONS, THE LATEST EDITION OF THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND SUPPLEMENTS THERETO AND CITY OF TAMPA WATER DEPARTMENT (CITY).
2. THE CONTRACTOR SHALL HAVE ALL NECESSARY PERMITS IN-HAND PRIOR TO BEGINNING CONSTRUCTION. A CITY OF TAMPA ROW USE PERMIT IS REQUIRED AND MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO BEGIN CONSTRUCTION.
3. THE CONTRACTOR SHALL PERFORM HIS WORK IN ACCORDANCE WITH REQUIREMENTS OF THE VARIOUS PERMITS REQUIRED. ENVIRONMENTAL CONTROLS SHALL BE USED AT LOCATIONS DESIGNATED IN THE PLANS AND DESIGNATED BY THE CITY.
4. PUBLIC LAND CORNERS OR CITY MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED OR DISTURBED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHALL NOTIFY THE CITY'S CONTRACT ADMINISTRATION DEPARTMENT.
5. THE CONTRACTOR SHALL BE ENTIRELY RESPONSIBLE AND LIABLE FOR ALL DAMAGE OR INJURY AS A RESULT OF HIS OPERATIONS TO ALL ADJACENT PUBLIC AND PRIVATE PROPERTIES, LANDSCAPING TREES, FENCES, UTILITIES, STRUCTURES OF ANY KIND AND APPURTENANCES THERETO MET WITH DURING THE PROGRESS OF THE WORK. ANY IRRIGATION SYSTEM IN THE ZONES ADJACENT TO THE PROJECT MAY NEED TO BE MODIFIED BY THE CONTRACTOR. ANY RESTORATION WORK SHALL BE COORDINATED WITH THE PROPERTY OWNERS. COST TO BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.
6. ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THE CONSTRUCTION WORK SHALL BE RESTORED TO A CONDITION EQUAL OR BETTER TO THE EXISTING PRE-CONSTRUCTION CONDITION, UNLESS OTHERWISE NOTED. COST TO BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.
7. ALL GRASSED AREAS DISTURBED AS A RESULT OF CONSTRUCTION SHALL BE SODDED.
8. EXISTING DRAINAGE STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION SHALL REMAIN UNLESS OTHERWISE NOTED.
9. THE LOCATION OF UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION. PRIOR TO CONSTRUCTION, ALL EXISTING UTILITIES, PUBLIC OR PRIVATE, SHALL BE LOCATED IN THE AREA OF CONSTRUCTION, SAID UTILITIES SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK. UTILITIES ARE TO BE ADJUSTED BY OTHERS AS COORDINATED BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL USE THE SERVICES OF "SUNSHINE ONE CALL" UTILITY LOCATOR A MINIMUM OF 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
11. THE CONTRACTOR SHALL NOTIFY ALL GAS UTILITY COMPANIES A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION AS REQUIRED BY CHAPTER 556 OF THE FLORIDA STATUTES.
12. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, QUANTITIES AND DETAILS SHOWN ON THE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS AND OTHER DATA RECEIVED FROM THE ENGINEER AND SHALL NOTIFY THE ENGINEER OF ANY ERRORS, OMISSIONS, CONFLICTS OR DISCREPANCIES FOUND THEREIN. FAILURE TO DISCOVER OR CORRECT ERRORS, CONFLICTS OR DISCREPANCIES SHALL NOT RELIEVE THE CONTRACTOR OF FULL

RESPONSIBILITY FOR UNSATISFACTORY WORK, FAULTY CONSTRUCTION, IMPROPER OPERATION RESULTING THEREFROM, NOR FROM RECTIFYING SUCH CONDITIONS AT HIS OWN EXPENSE. CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY ERRORS OR OMISSIONS.

13. THE CONTRACTOR SHALL COMPLY WITH THE DEPARTMENT OF LABOR, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (PL 91-596) AND UNDER SECTION 10 OF THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (PL 91-54).

14. NO BURNING SHALL BE DONE WITHOUT APPROVAL BY THE CITY.

15. TEMPORARY DRAINAGE SHALL BE PROVIDED DURING CONSTRUCTION TO ELIMINATE ANY FLOODING OF PRIVATE OR PUBLIC PROPERTY.

16. THE CONTRACTOR SHOULD ANTICIPATE THAT DEWATERING WILL BE REQUIRED AND THAT IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO ACQUIRE ALL NECESSARY PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH THE DEWATERING. THE COST OF THE DEWATERING SHALL BE INCLUDED IN THE COST OF THE PIPE, FRENCH DRAIN OR STRUCTURE AS REQUIRED.

17. DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE "MANUAL OF TRAFFIC CONTROLS AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION MAINTENANCE AND UTILITY OPERATION" (F.D.O.T.)

### EROSION AND SEDIMENT CONTROL

1. THE EROSION CONTROL MEASURES PER F.D.O.T. INDEXES 102 AND 103 ARE THE MINIMUM REQUIRED. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO FIELD CONDITIONS AS DETERMINED BY THE PROJECT ENGINEER AND THE REGULATORY AGENCIES.

2. THE CONTRACTOR SHALL SUBMIT AN "EROSION CONTROL PLAN" FOR APPROVAL AT LEAST 14 DAYS PRIOR TO THE START OF CONSTRUCTION.

3. THE CONTRACTOR SHALL PROTECT CULVERTS FROM SEDIMENT DUE TO CONSTRUCTION IN ACCORDANCE WITH F.D.O.T. INDEX 102. ALL SEDIMENT DUE TO CONSTRUCTION SHALL BE REMOVED FROM OPEN AREAS, DRAINAGE STRUCTURES, PIPES, DITCHES, DRIVEWAYS, ROADWAYS, GUTTERS AND SIDEWALKS AT ADEQUATE INTERVALS AS DETERMINED BY THE INSPECTOR.

4. ALL PIPES AND INLETS AFFECTED BY THE PROJECT ARE TO BE PROTECTED FROM SEDIMENT DURING CONSTRUCTION; CONTRACTOR TO INSTALL TURBIDITY BARRIERS AT AFFECTED OUTFALLS TO PROTECT SURFACE WATER BODIES.

### CLEARING, EARTHWORK

1. THE DISPOSAL OF EXCESS EARTHWORK MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

2. EARTHWORK INCLUDES ALL EXCAVATION, SHEETING, SHORING, BRACING, FILL, COMPACTING AND GRADING NECESSARY TO CONSTRUCT THE EROSION CONTROL MATERIALS.

3. FILL WITHIN ROADWAYS, WALKWAYS, PARKING AREAS, AND BUILDING SITES SHALL BE COMPACTED TO A DENSITY NOT LESS THAN 98 PERCENT OF THE MAXIMUM MODIFIED PROCTOR DENSITY AS DETERMINED BY AASHTO METHOD T 180, AND FILL WITHIN OTHER AREAS SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95 PERCENT OF ITS MAXIMUM MODIFIED PROCTOR DENSITY AS DETERMINED BY AASHTO METHOD T 180.

4. BORROW REQUIRED FROM OFFSITE SOURCES SHALL BE WELL-GRADED, CLEAN, GRANULAR NATURAL SOIL FREE OF TOPSOIL, ORGANIC MATERIAL, WOOD, RUBBISH, DEBRIS OR OTHER DELETERIOUS MATERIALS. PROPOSED BORROW SHALL BE SUBJECT TO REVIEW AND APPROVAL OF THE CITY PRIOR TO HAULING MATERIALS TO THE SITE. PROPOSED BORROW MATERIALS SHOULD COMPLY WITH THE REQUIREMENTS OF SECTION 120-6, BE NON-PLASTIC AND WELL GRADED WITH THE FOLLOWING LIMITS:

U.S. STANDARD SIEVE SIZE % FINER BY DRY WEIGHT:  
 3" - 100; 1" - 80-100; #4 - 50-100  
 #40 - 10-50; #200 - 0-10

5. TREES AND SIGNIFICANT VEGETATION OCCURRING WITHIN THE CONSTRUCTION LIMITS ARE TO BE PROTECTED DURING CONSTRUCTION UNLESS OTHERWISE SHOWN ON PLANS OR DIRECTED BY THE CITY. CLEARING SHALL BE PERFORMED IN AREAS TO BE EXCAVATED OR AREAS IN WHICH FILL OR STRUCTURES ARE TO BE PLACED.

### CONSTRUCTION NOTES

1. CONTRACTOR SHALL PERFORM A PRECONSTRUCTION ASSESSMENT AND MAKE AN OVERALL EVALUATION OF THE CONDITION OF STRUCTURES, SIDEWALKS, DRIVEWAYS, FENCES, PAVED PATHS, ROADS, ROAD CROSSINGS, AND OTHER PUBLIC OR PRIVATE PROPERTY IN THE VICINITY OF THE WORK, AND AS APPLICABLE, WHICH MIGHT BE DAMAGED DURING CONSTRUCTION ACTIVITIES. A CITY REPRESENTATIVE WILL ACCOMPANY THE CONTRACTOR DURING THE PRECONSTRUCTION SURVEY.

2. CONTRACTOR SHALL PROVIDE MEANS AND METHODS SUBMITTALS FOR:

A) EQUIPMENT TO BE UTILIZED, TO INCLUDE:

- i. METHOD OF BURSTING
- ii. TYPE OF BURSTING TOOL AND PULLING UNIT
- iii. EQUIPMENT OPERATION PROCEDURES
- iv. TYPE OF LUBRICATION (IF USED) AND RESPECTIVE MSDS SHEETS.

B) PROCEDURES / WORK PLAN TO INCLUDE:

- i. DESCRIPTION OF CONSTRUCTION PROCESS (SHOP DRAWINGS)
- ii. BEDDING INSTALLATION PROCEDURES (MACHINE / PIPE PITS)
- iii. SERVICE CONNECTION RESTORATION PLAN
- iv. WRITTEN CONTINGENCY PLANS, TO INCLUDE HEAVE AT GROUND SURFACE, UTILITY STRIKES, EQUIPMENT FAILURE, OR INABILITY TO COMPLETE THE BURST

C) PIPE MATERIALS, TO INCLUDE:

- i. RECOMMENDED JOINING OR FUSING METHODS (INCLUDING FUSION CERTIFICATION)
- ii. PHYSICAL MATERIAL PROPERTIES
- iii. DIMENSIONAL INFORMATION

D) SITE LAYOUT, TO INCLUDE:

- i. LOCATION / DIMENSION OF PITS (MACHINE, PIPE, SERVICES)
- ii. PIPE LAYOUT AND JOINING PLAN
- iii. STORAGE AND EQUIPMENT SET UP AREAS
- iv. TRAFFIC CONTROL PLAN
- v. WORK AREAS

E) BYPASS PUMPING, TO INCLUDE SERVICE CONNECTIONS

F) COMPREHENSIVE SAFETY PLAN OUTLINING PROCEDURES THAT ENSURE THE SAFETY OF THE GENERAL PUBLIC AND WORKERS

G) QUALITY ASSURANCE / QUALITY CONTROL (QA/QC) PLAN

3. CONSTRUCTION MATERIALS PROVIDED SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS PROVIDED WITH THESE PLANS, AND THE CURRENT CITY OF TAMPA WATER DEPARTMENT "APPROVED MATERIALS LIST". CONTRACTOR PROPOSED PRODUCTS ON THE LIST DO NOT REQUIRE FURTHER SUBMITTAL. PRODUCTS PROPOSED THAT ARE NOT ON THE LIST REQUIRE SUBMITTAL FOR REVIEW AND APPROVAL BY THE CITY.

4. PIPE FITTINGS SHALL BE DUCTILE IRON ONLY, COMPACT, AND MECHANICAL JOINT (MJ). PROVIDE 304 STAINLESS STEEL STIFFENER INSERTS (PER ASTM 240) AT ALL HDPE-TO-DIP CONNECTIONS. FASTEN MJ FITTINGS/VALVES TO HDPE VIA APPROVED WEDGE-ACTION RESTRAINTS.

5. POLYWRAP ALL BURIED METAL PIPE AND FITTINGS INSTALLED.

6. PERFORM ALL NON-PIPE BURSTING CONSTRUCTION REQUIRED IN ACCORDANCE WITH APPLICABLE CITY OF TAMPA STANDARD CONSTRUCTION DETAILS ON PLAN SHEETS INCLUDED IN THIS SET AND THE CITY OF TAMPA'S WEBSITE.

7. TRACER WIRE IS REQUIRED ON ALL PLASTIC / PIPE TUBING INSTALLED FOR HDPE PIPE VIA PIPE BURSTING, PER THE STANDARD DETAILS. TRACER WIRE SHALL BE 10-GAUGE APPROVED INSULATED COPPER CLAD STEEL (CCS) WIRE SUCH AS COPPERHEAD SOLOSHOT EXTRA HS OR PRO-TRACE HD-CCD PE45. A 1" CONDUIT MAY BE PULLED BACK WITH THE LOCATING WIRES TO EASE INSTALLATION AND TO PREVENT THE WIRES FROM BREAKING. WIRE SPLICES MUST BE WITH WIRE CONNECTORS SUITABLE FOR BURIED SERVICE AND BE CORROSION AND MOISTURE-PROOF, SUCH AS DBR KIT BY 3M, SNAKEBITE BY COPPERHEAD INDUSTRIES, OR EQUAL.

8. CITY WILL PROVIDE ANY REPLACEMENT METER BOX AND/OR COVERS REQUIRED FOR EXISTING METER SERVICES.

### SITE SPECIFIC NOTES

1. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL EXISTING ABOVE GROUND LANDSCAPING FEATURES THAT ARE DISTURBED AS PART OF THE PROJECT. ABOVE GROUND LANDSCAPING FEATURES ARE TO BE REPLACED IN KIND OR BETTER. APPROVAL OF THE ABOVE GROUND LANDSCAPING FEATURE REPLACEMENT IS TO BE COORDINATED WITH THE OWNER.

2. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL EXISTING ABOVE GROUND LANDSCAPING FEATURES THAT ARE DISTURBED AS PART OF THE PROJECT, AND CARE SHALL BE EXERCISED WHEN PERFORMING WORK IN AREAS SURROUNDING EXISTING ABOVE GROUND LANDSCAPE FEATURES. CONTRACTOR SHALL PLAN THE LOCATIONS OF MACHINE/PIPE PITS AND SERVICE CONNECTION PITS IN AN EFFORT TO MINIMIZE ABOVE GROUND DISTURBANCE. ABOVE GROUND LANDSCAPING FEATURES ARE TO BE REPLACED IN KIND OR BETTER. APPROVAL OF THE ABOVE GROUND LANDSCAPING FEATURE REPLACEMENT IS TO BE COORDINATED WITH THE OWNER.



3. CONTRACTOR SHALL PROTECT EXISTING UTILITIES WHILE PERFORMING WORK. DAMAGE TO EXISTING UTILITIES SHALL BE COORDINATED WITH THE EXISTING UTILITY OWNER FOR REPAIR AS SOON AS POSSIBLE. EXISTING STORM SEWER WITHIN THE PROJECT AREA IS OWNED AND MAINTAINED BY THE CITY AND THE F.D.O.T. CONTRACTOR SHALL PLAN THE LOCATIONS OF MACHINE/PIPE PITS AND SERVICE CONNECTIONS PITS IN AN EFFORT TO MINIMIZE DISTURBANCES TO EXISTING UTILITIES.

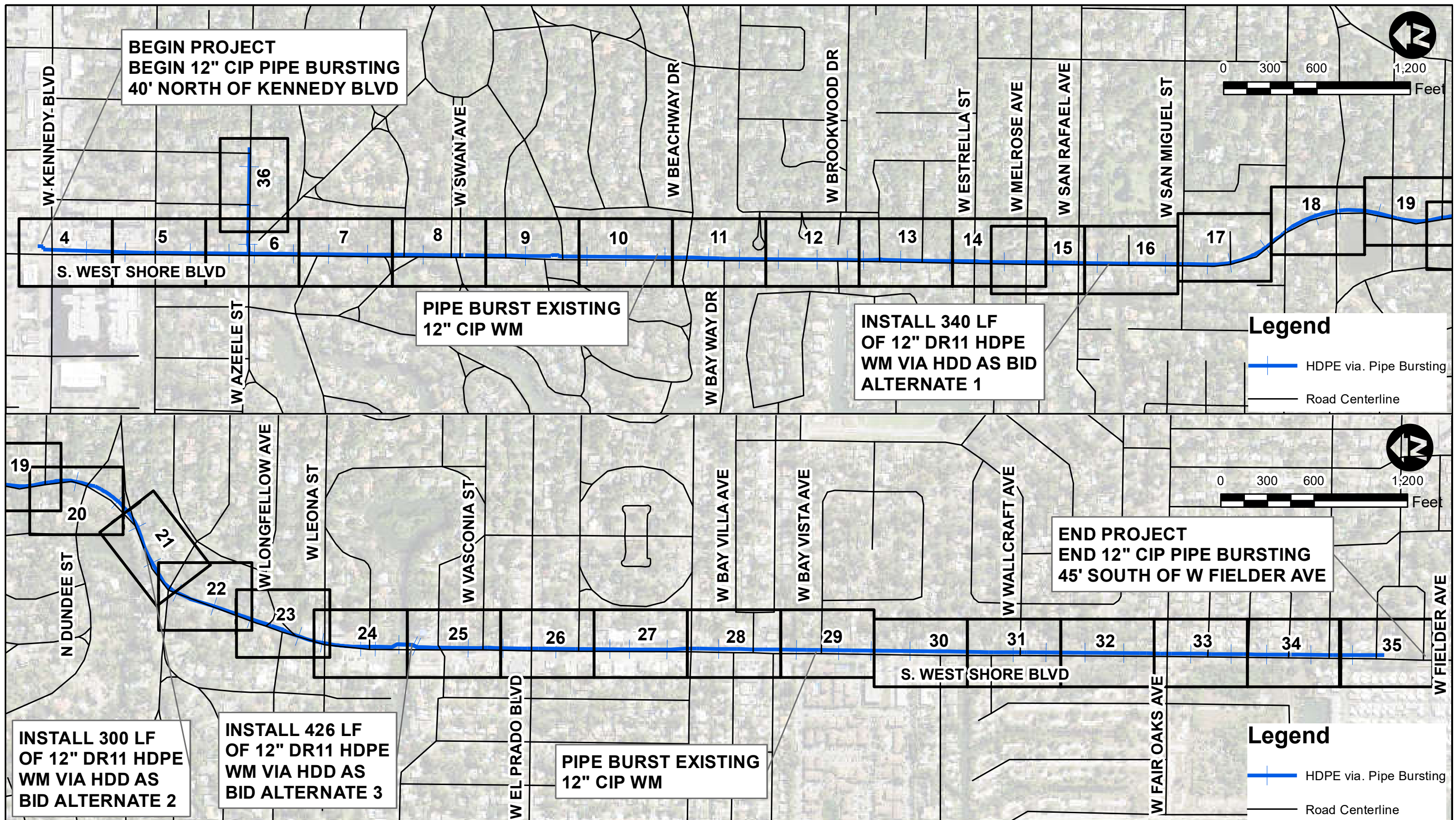
4. CONTRACTOR IS RESPONSIBLE TO PERFORM EXPLORATORY WORK ON THE EXISTING PIPELINE TO IDENTIFY ANY PROBLEM AREAS THAT MAY SLOW OR HALT THE PROGRESSION OF WORK TO BE PERFORMED FOR THIS PROJECT. CONTRACTOR SHALL PREPARE PIPE BURSTING PLAN TO BE SUBMITTED TO AND APPROVED BY THE CITY.

5. CONTRACTOR IS RESPONSIBLE TO PERFORM EXPLORATORY WORK ON THE EXISTING PIPELINE TO IDENTIFY THE LOCATIONS OF EXISTING WATER SERVICE LINES. CONTRACTOR SHALL INSTALL NEW SERVICES LINES FOR EACH SERVICE CONNECTION FROM THE POINT OF CONNECTION TO THE NEW WATER MAIN TO THE LOCATION OF THE EXISTING WATER SERVICE METER, IN ACCORDANCE WITH THE METER DETAILS.

6. CONTRACTOR SHALL EXERCISE DUE CARE WHEN PERFORMING WORK IN AREAS SURROUNDING EXISTING ABOVE GROUND LANDSCAPE FEATURES AND SHALL PLAN THE LOCATIONS OF NEW WATER SERVICE CONNECTIONS IN AN EFFORT TO MINIMIZE ABOVE GROUND DISTURBANCE.

7. TEMPORARY POTABLE WATER BYPASS IS REQUIRED. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH RESIDENTS TO MINIMIZE INTERRUPTIONS TO PRIVATE PROPERTY. THE CONTRACTOR SHALL NOT BLOCK ACCESS TO DRIVEWAYS, INTERSECTIONS AND ROADWAYS FOR AN EXTENDED PERIOD OF TIME. CONTRACTOR IS TO COORDINATE WITH OWNER AND RIGHT-OF-WAY CONTROLLER FOR APPROVAL OF ANY PIPE BURSTING PLAN THAT REQUIRES MAINTENANCE OF TRAFFIC REQUIREMENTS THAT REQUIRE SIGNIFICANT DETOURS OR ROAD CLOSURES.

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>	<b>100% PLANS</b>	PROJECT NO. 18D408			
									DATE: 1/29/2020			
												SHEET 2
										GENERAL NOTES		



Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II

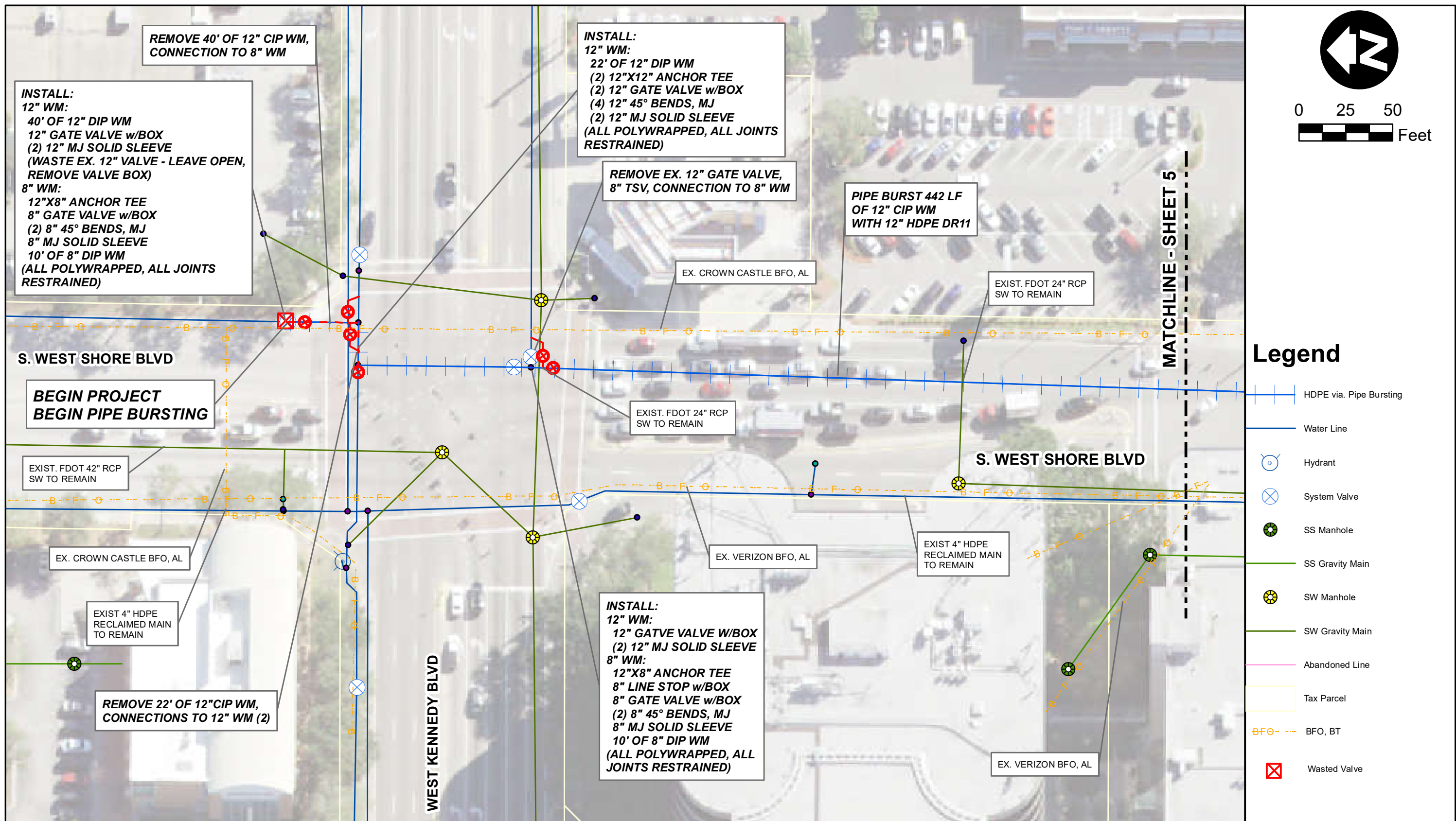
OVERALL PLAN

100% PLANS

**AM TRENCHLESS**

PROJECT NO. 18D408  
 DATE: 1/29/2020

SHEET 3



Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697

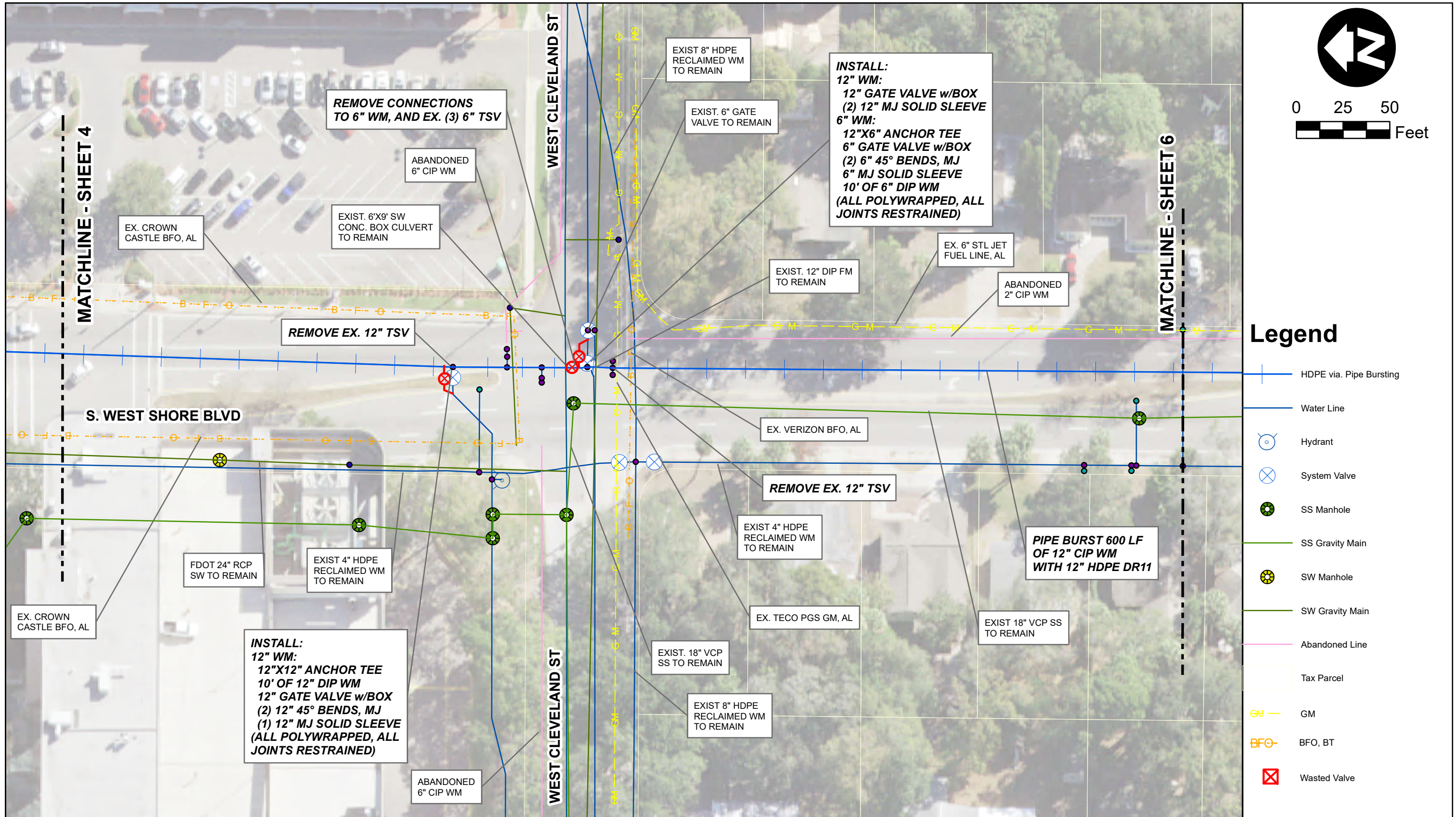


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				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W KENNEDY AND S WESTSHORE BLVD**

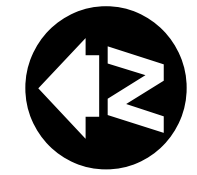
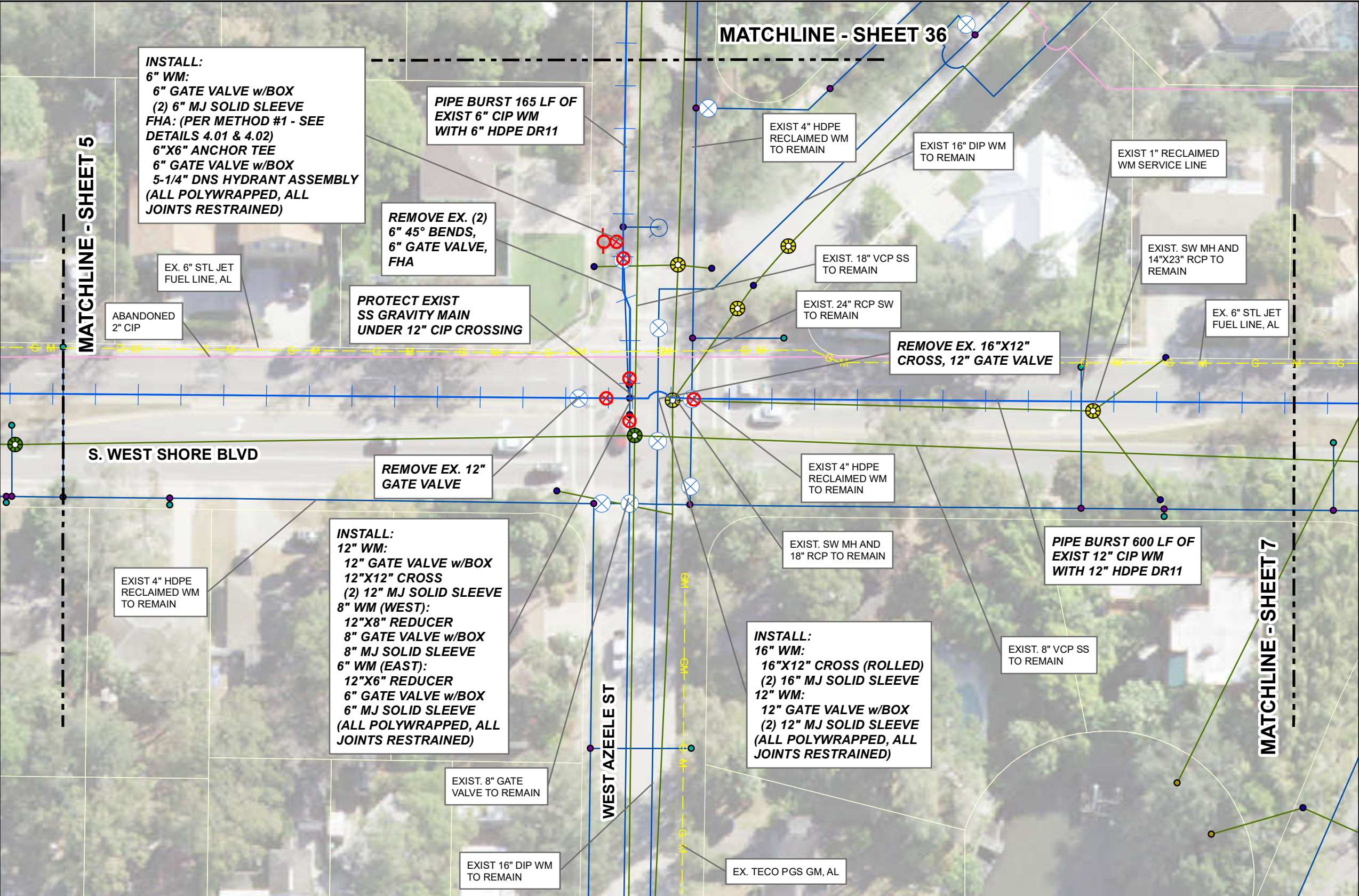
100% PLANS  
**AM TRENCHLESS**

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 4



- ### Legend
- HDPE via. Pipe Bursting
  - Water Line
  - Hydrant
  - System Valve
  - SS Manhole
  - SS Gravity Main
  - SW Manhole
  - SW Gravity Main
  - Abandoned Line
  - Tax Parcel
  - GM
  - BFO, BT
  - Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED <u>AA</u>	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b> <b>INTERSECTION OF W CLEVELAND ST AND S WESTSHORE BLVD</b>	<b>100% PLANS</b>	PROJECT NO. 18D408	
									DRAWN <u>JV</u>	DATE: 1/29/2020
									CHECKED <u>JMA</u>	DATE 1/29/2020



**Legend**

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- Interceptor
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

**INSTALL:**  
**6" WM:**  
 6" GATE VALVE w/BOX  
 (2) 6" MJ SOLID SLEEVE  
 FHA: (PER METHOD #1 - SEE  
 DETAILS 4.01 & 4.02)  
 6"X6" ANCHOR TEE  
 6" GATE VALVE w/BOX  
 5-1/4" DNS HYDRANT ASSEMBLY  
 (ALL POLYWRAPPED, ALL  
 JOINTS RESTRAINED)

PIPE BURST 165 LF OF  
 EXIST 6" CIP WM  
 WITH 6" HDPE DR11

REMOVE EX. (2)  
 6" 45° BENDS,  
 6" GATE VALVE,  
 FHA

PROTECT EXIST  
 SS GRAVITY MAIN  
 UNDER 12" CIP CROSSING

EX. 6" STL JET  
 FUEL LINE, AL

ABANDONED  
 2" CIP

EXIST 4" HDPE  
 RECLAIMED WM  
 TO REMAIN

EXIST 16" DIP WM  
 TO REMAIN

EXIST 1" RECLAIMED  
 WM SERVICE LINE

EXIST. 18" VCP SS  
 TO REMAIN

EXIST. 24" RCP SW  
 TO REMAIN

EXIST. SW MH AND  
 14"X23" RCP TO  
 REMAIN

EX. 6" STL JET  
 FUEL LINE, AL

REMOVE EX. 16"X12"  
 CROSS, 12" GATE VALVE

REMOVE EX. 12"  
 GATE VALVE

EXIST 4" HDPE  
 RECLAIMED WM  
 TO REMAIN

EXIST. SW MH AND  
 18" RCP TO REMAIN

PIPE BURST 600 LF OF  
 EXIST 12" CIP WM  
 WITH 12" HDPE DR11

EXIST 4" HDPE  
 RECLAIMED WM  
 TO REMAIN

**INSTALL:**  
**12" WM:**  
 12" GATE VALVE w/BOX  
 12"X12" CROSS  
 (2) 12" MJ SOLID SLEEVE  
**8" WM (WEST):**  
 12"X8" REDUCER  
 8" GATE VALVE w/BOX  
 8" MJ SOLID SLEEVE  
**6" WM (EAST):**  
 12"X6" REDUCER  
 6" GATE VALVE w/BOX  
 6" MJ SOLID SLEEVE  
 (ALL POLYWRAPPED, ALL  
 JOINTS RESTRAINED)

**INSTALL:**  
**16" WM:**  
 16"X12" CROSS (ROLLED)  
 (2) 16" MJ SOLID SLEEVE  
**12" WM:**  
 12" GATE VALVE w/BOX  
 (2) 12" MJ SOLID SLEEVE  
 (ALL POLYWRAPPED, ALL  
 JOINTS RESTRAINED)

EXIST. 8" GATE  
 VALVE TO REMAIN

EXIST. 8" VCP SS  
 TO REMAIN

WEST AZEELE ST

EXIST 16" DIP WM  
 TO REMAIN

EX. TECO PGS GM, AL

MATCHLINE - SHEET 7

MATCHLINE - SHEET 5

MATCHLINE - SHEET 36

S. WEST SHORE BLVD

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697



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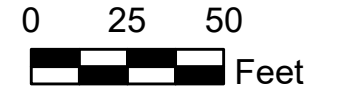
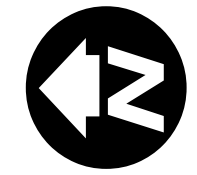
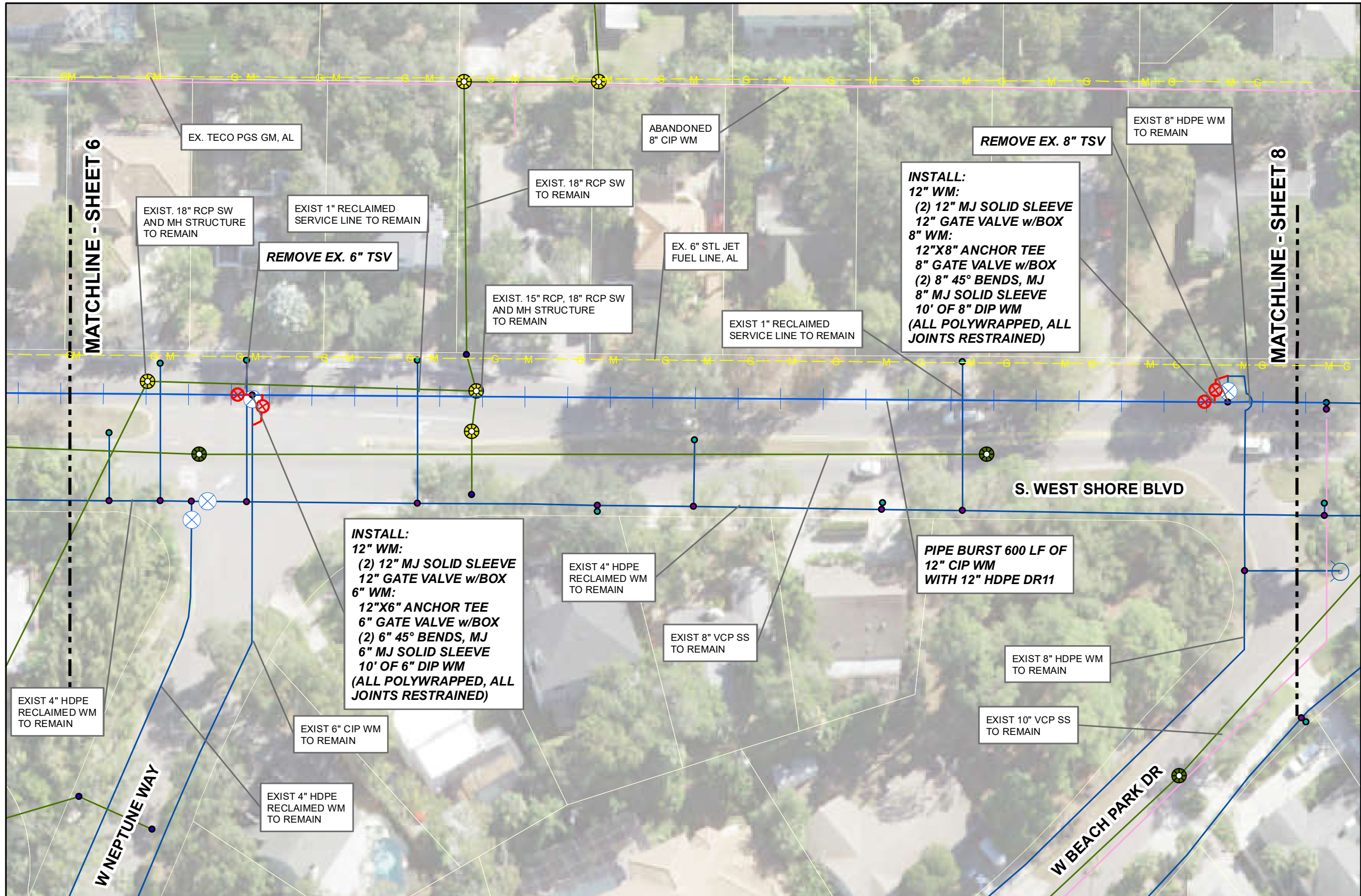
S. WESTSHORE BLVD. WATER  
 MAIN REPLACEMENT II  
 INTERSECTION OF W AZEELE  
 ST AND S WESTSHORE BLVD

100% PLANS



PROJECT NO. 18D408  
 DATE: 1/29/2020

SHEET 6



### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697



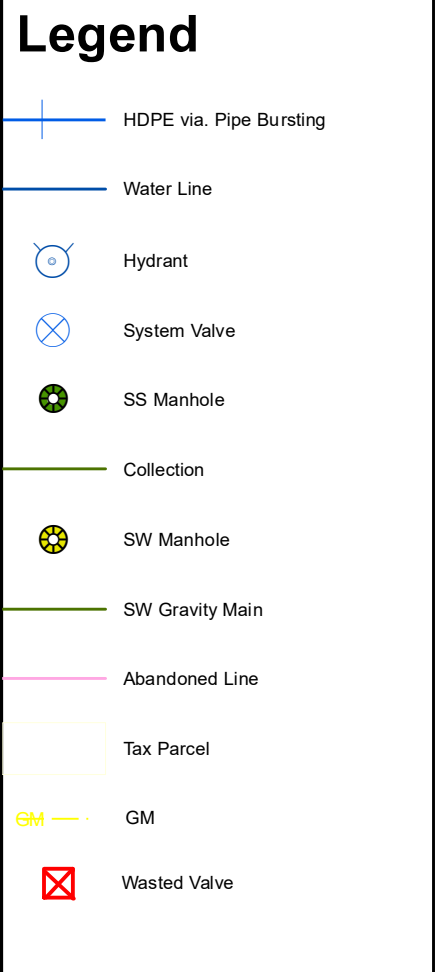
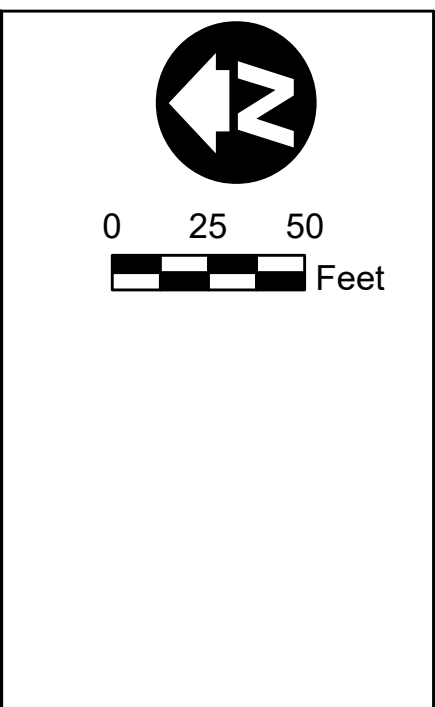
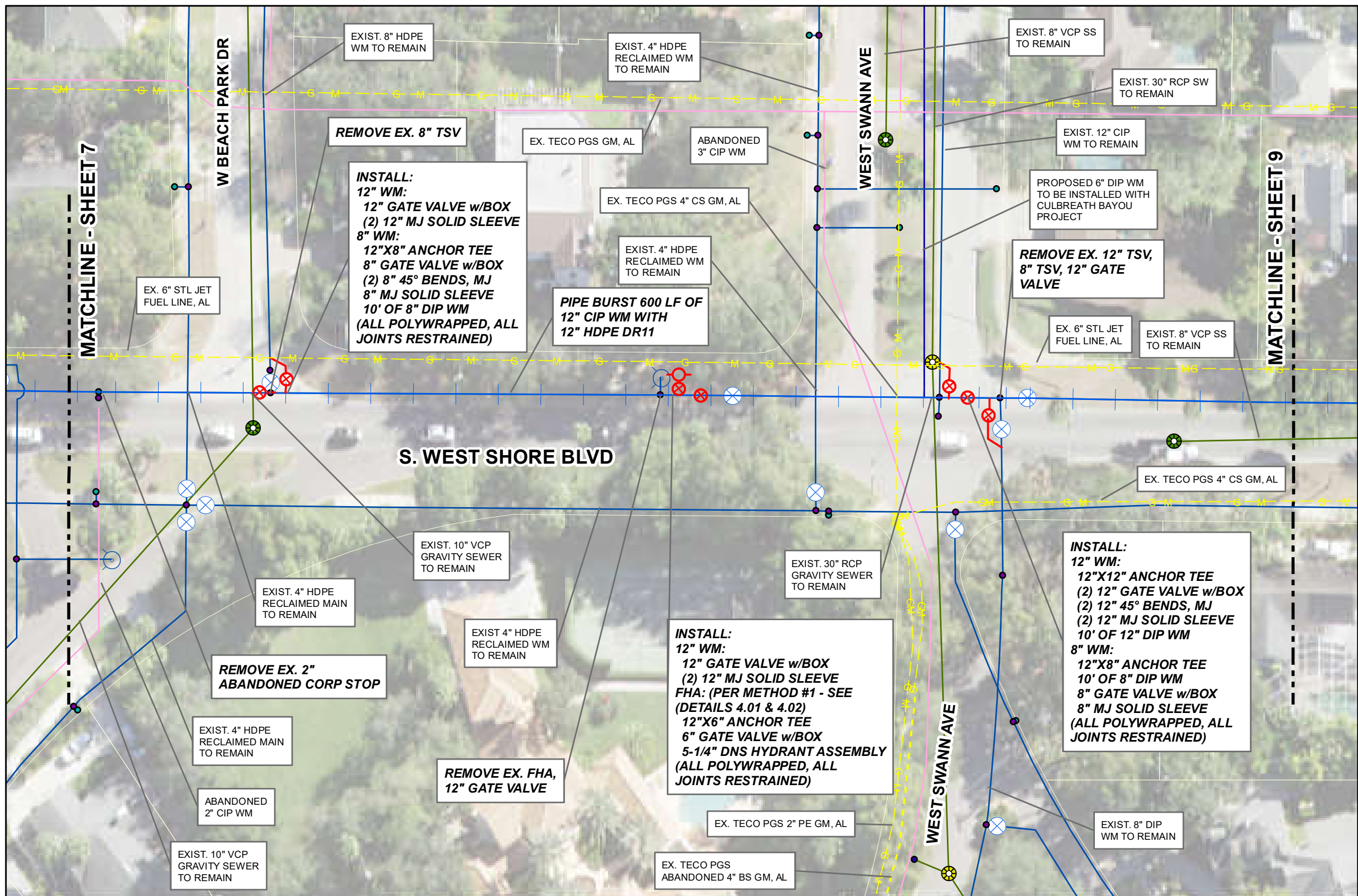
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				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W NEPTUNE WAY AND S WESTSHORE BLVD**

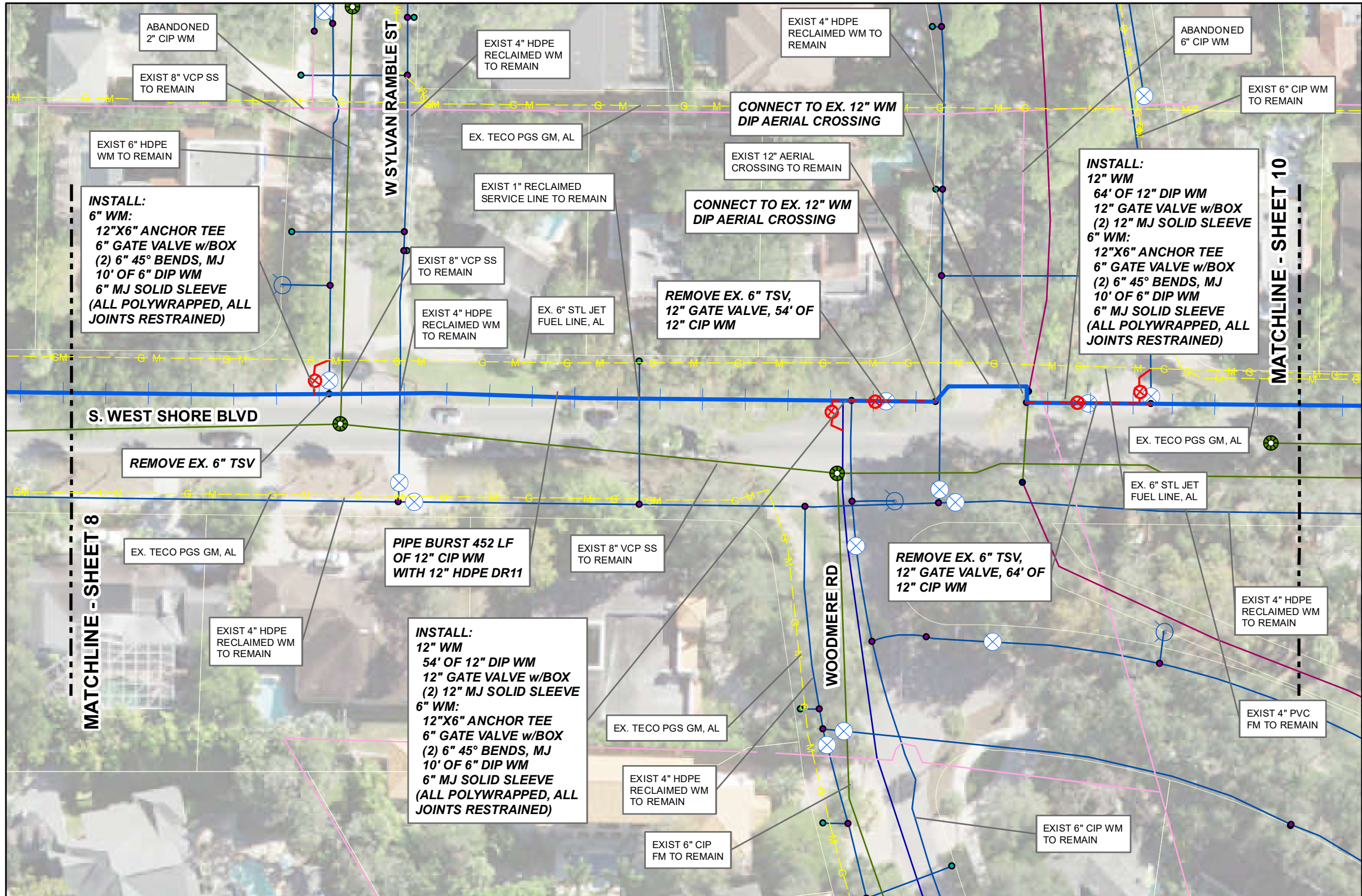
100% PLANS

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 7





Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>INTERSECTION OF W SWANN AVE AND S WESTSHORE BLVD</b>	100% PLANS  	PROJECT NO. 18D408 DATE: 1/29/2020	



0 25 50  
Feet

### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**

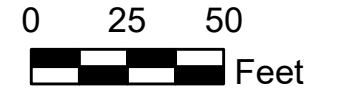
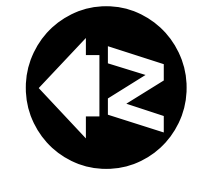
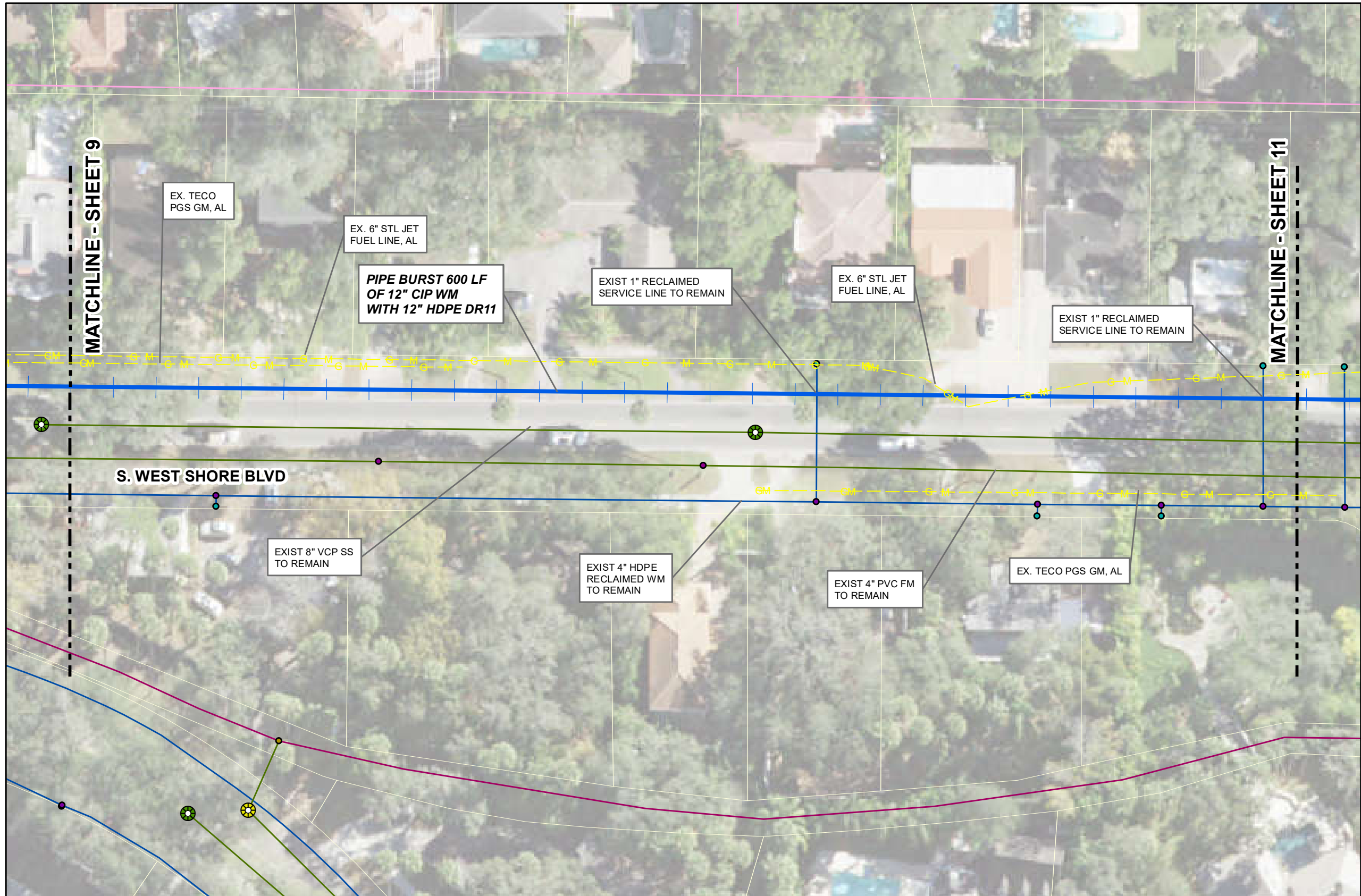
**INTERSECTION OF WOODMERE RD AND S WESTSHORE BLVD**

100% PLANS













**AM TRENCHLESS**

PROJECT NO. 18D408  
 DATE: 1/29/2020

SHEET 9



### Legend

-  HDPE via. Pipe Bursting
-  Water Line
-  Hydrant
-  System Valve
-  SS Manhole
-  Collection
-  SW Manhole
-  SW Gravity Main
-  Abandoned Line
-  Tax Parcel
-  GM
-  Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
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 P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**

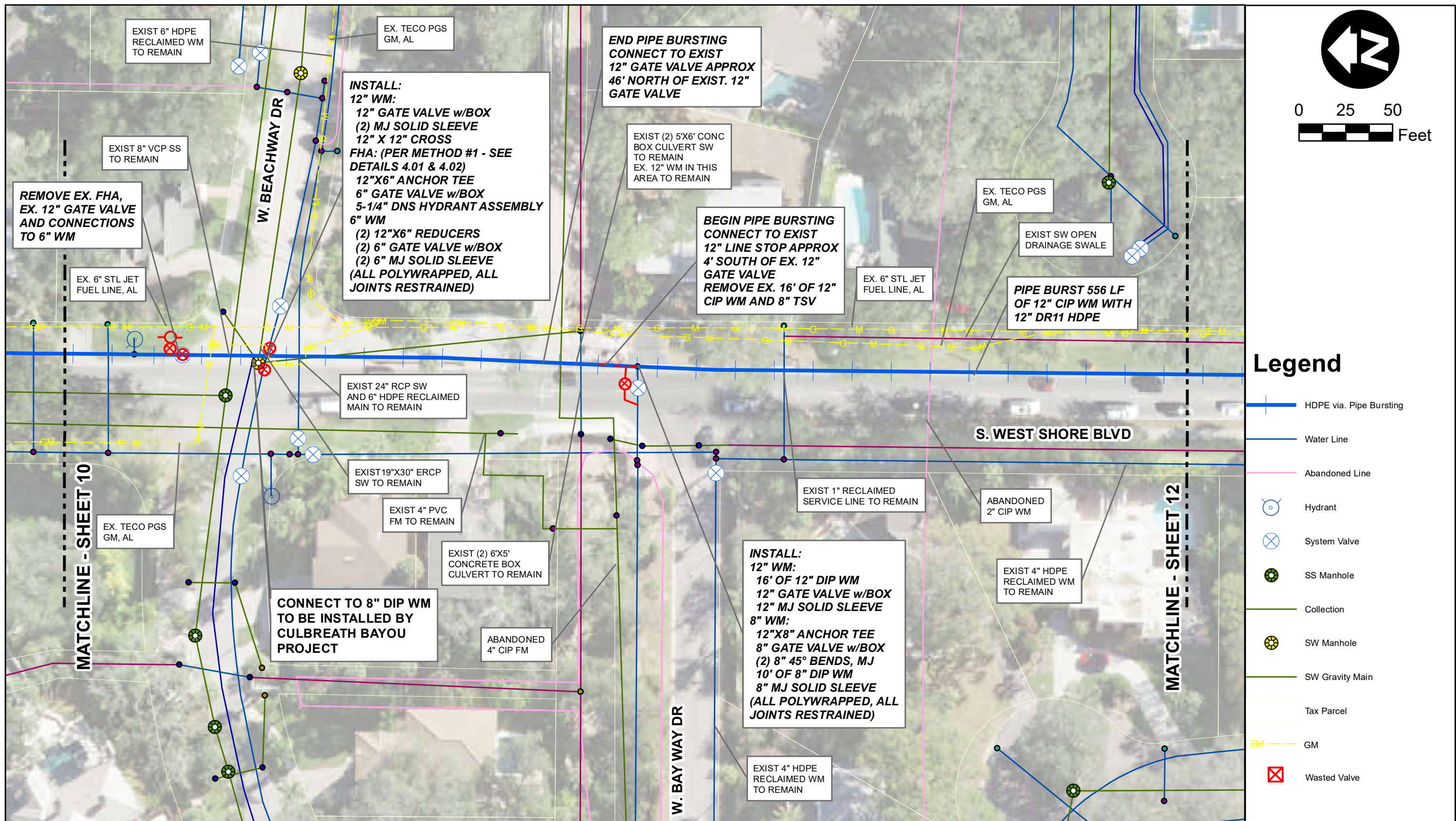
S WESTSHORE BLVD

100% PLANS



PROJECT NO. 18D408  
 DATE: 1/29/2020

SHEET 10



Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
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 P.E. #64697

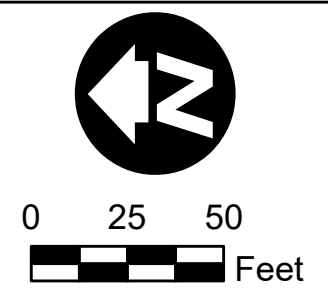
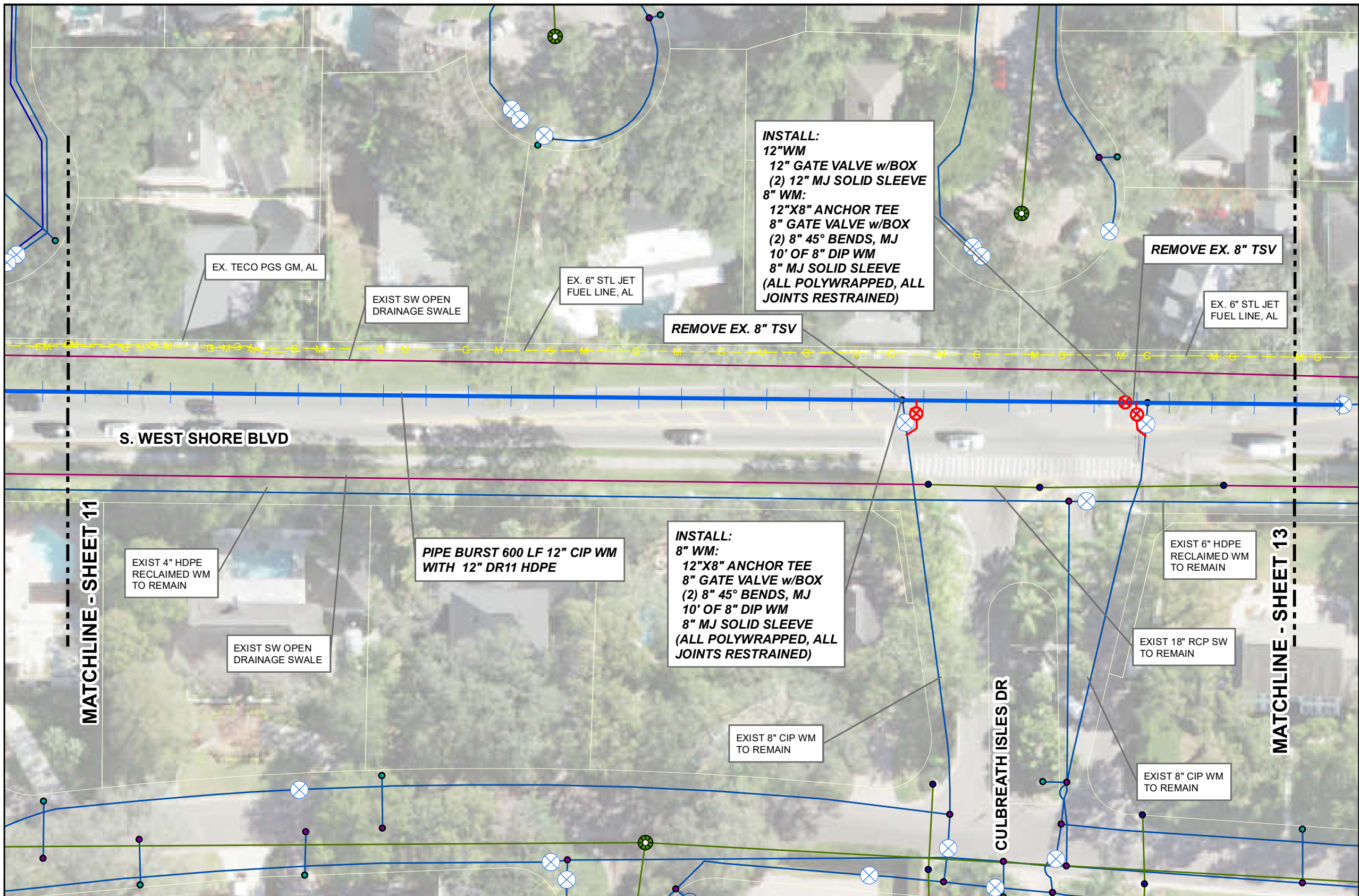


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W BAY WAY BLVD AND S WESTSHORE BLVD**

100% PLANS  
**AM TRENCHLESS**

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 11



- ### Legend
- HDPE via. Pipe Bursting
  - Water Line
  - Hydrant
  - System Valve
  - SS Manhole
  - Collection
  - SW Manhole
  - SW Gravity Main
  - Abandoned Line
  - Tax Parcel
  - GM
  - Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
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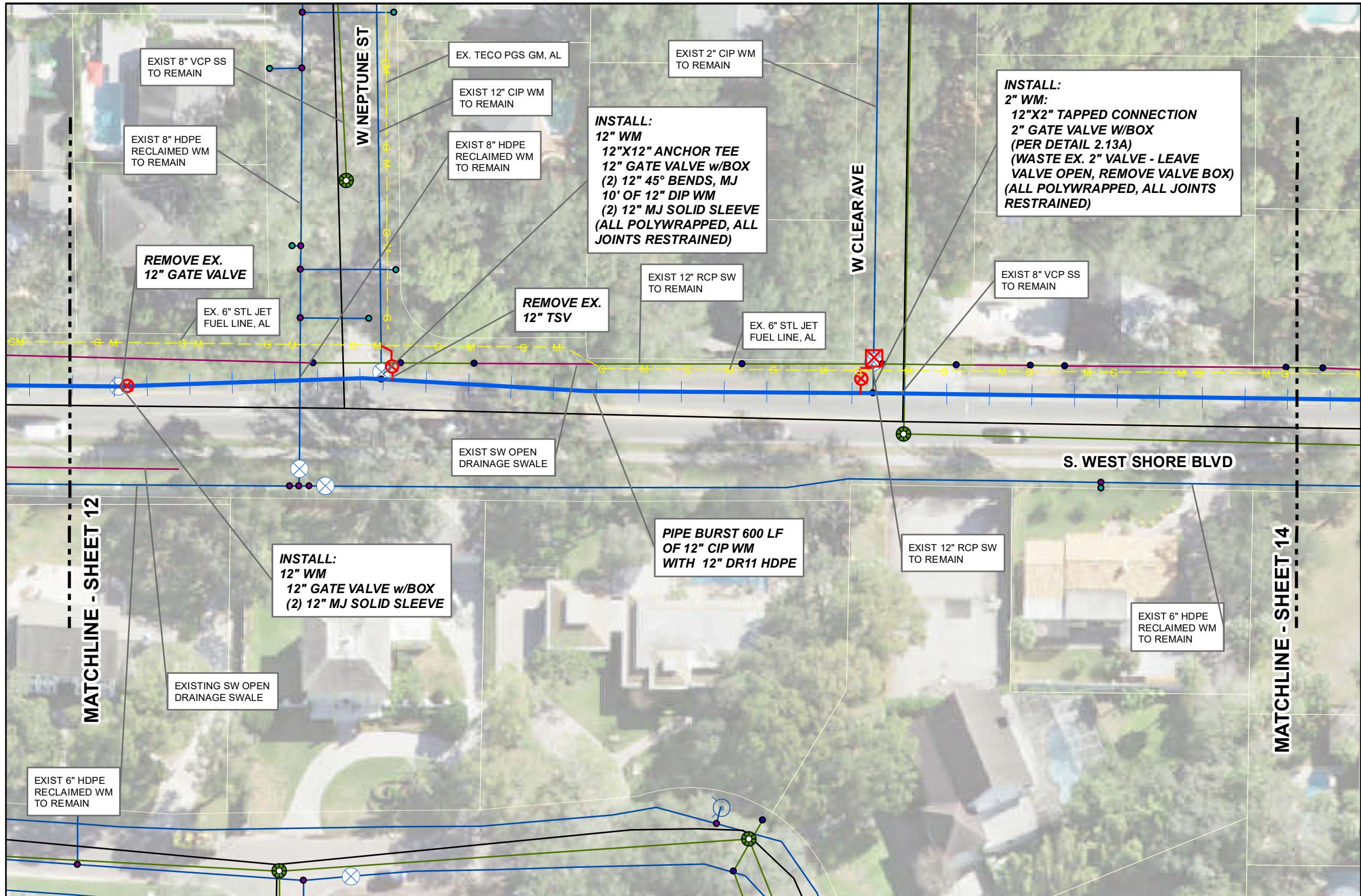



REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF CULBREATH ISLES AND S WESTSHORE BLVD**

100% PLANS  
**AM TRENCHLESS**













PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 12





0 25 50  
Feet

### Legend

-  HDPE via. Pipe Bursting
-  Water Line
-  Hydrant
-  System Valve
-  SS Manhole
-  Collection
-  SW Manhole
-  SW Gravity Main
-  Abandoned Line
-  Tax Parcel
-  GM
-  Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
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 P.E. #64697

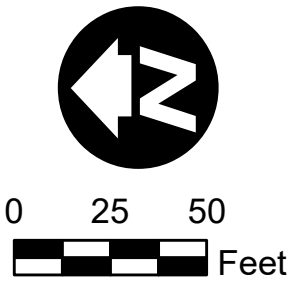
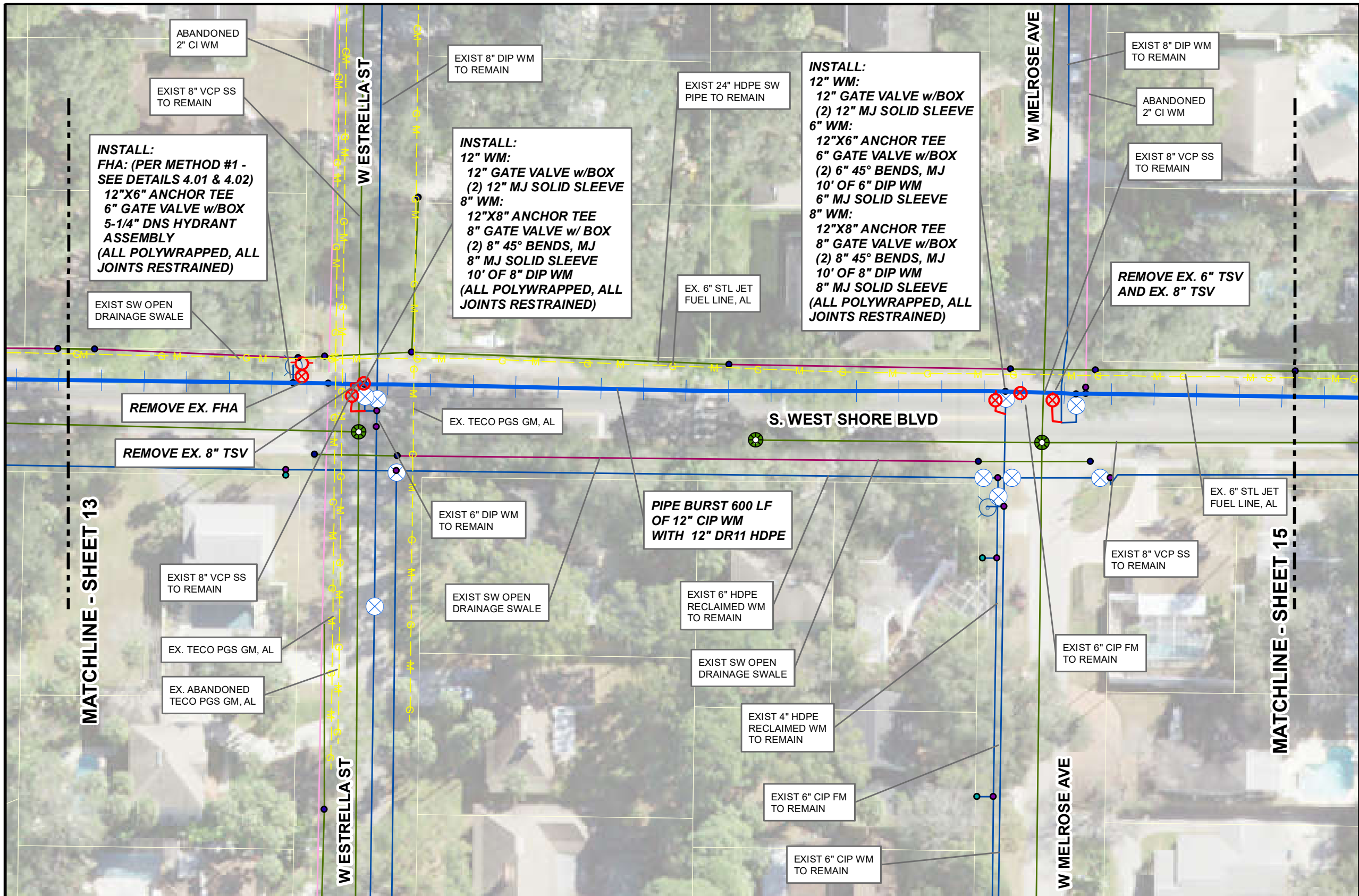


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W NEPTUNE ST AND S WESTSHORE BLVD**

100% PLANS  


PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 13



### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697

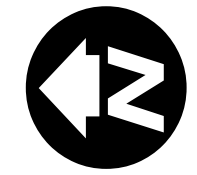
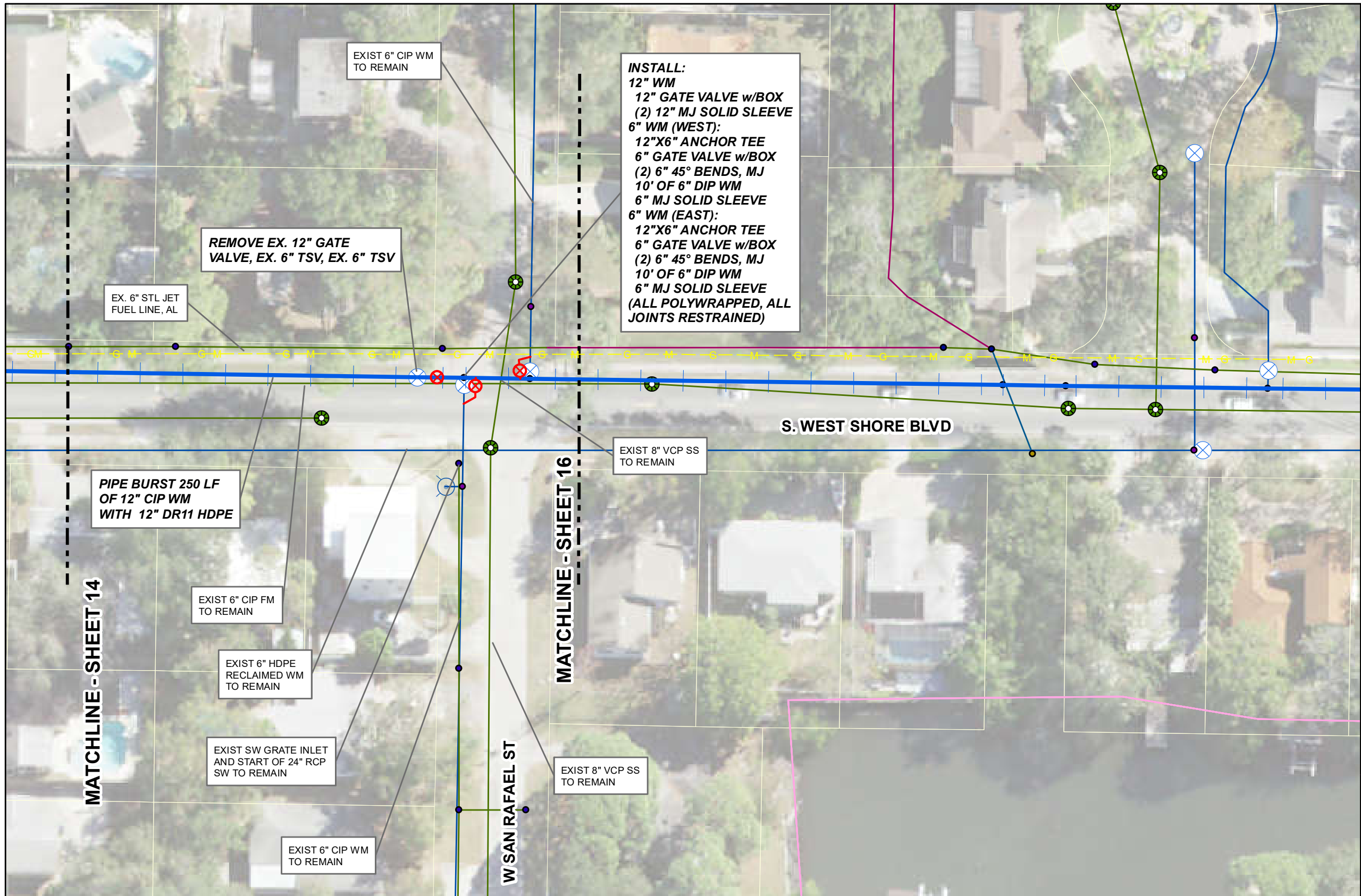


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W MELROSE AVE AND S WESTSHORE BLVD**

100% PLANS

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 14



### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- Wasted Valve

**INSTALL:**  
 12" WM  
 12" GATE VALVE w/BOX  
 (2) 12" MJ SOLID SLEEVE  
 6" WM (WEST):  
 12"X6" ANCHOR TEE  
 6" GATE VALVE w/BOX  
 (2) 6" 45° BENDS, MJ  
 10' OF 6" DIP WM  
 6" MJ SOLID SLEEVE  
 6" WM (EAST):  
 12"X6" ANCHOR TEE  
 6" GATE VALVE w/BOX  
 (2) 6" 45° BENDS, MJ  
 10' OF 6" DIP WM  
 6" MJ SOLID SLEEVE  
 (ALL POLYWRAPPED, ALL JOINTS RESTRAINED)

REMOVE EX. 12" GATE VALVE, EX. 6" TSV, EX. 6" TSV

EX. 6" STL JET FUEL LINE, AL

EXIST 6" CIP WM TO REMAIN

PIPE BURST 250 LF OF 12" CIP WM WITH 12" DR11 HDPE

EXIST 6" CIP FM TO REMAIN

EXIST 6" HDPE RECLAIMED WM TO REMAIN

EXIST SW GRATE INLET AND START OF 24" RCP SW TO REMAIN

EXIST 6" CIP WM TO REMAIN

EXIST 8" VCP SS TO REMAIN

EXIST 8" VCP SS TO REMAIN

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W SAN RAFAEL ST AND S WESTSHORE BLVD**

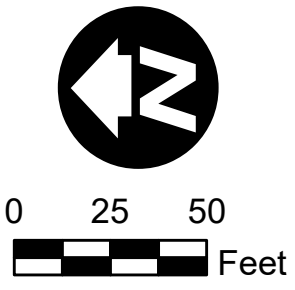
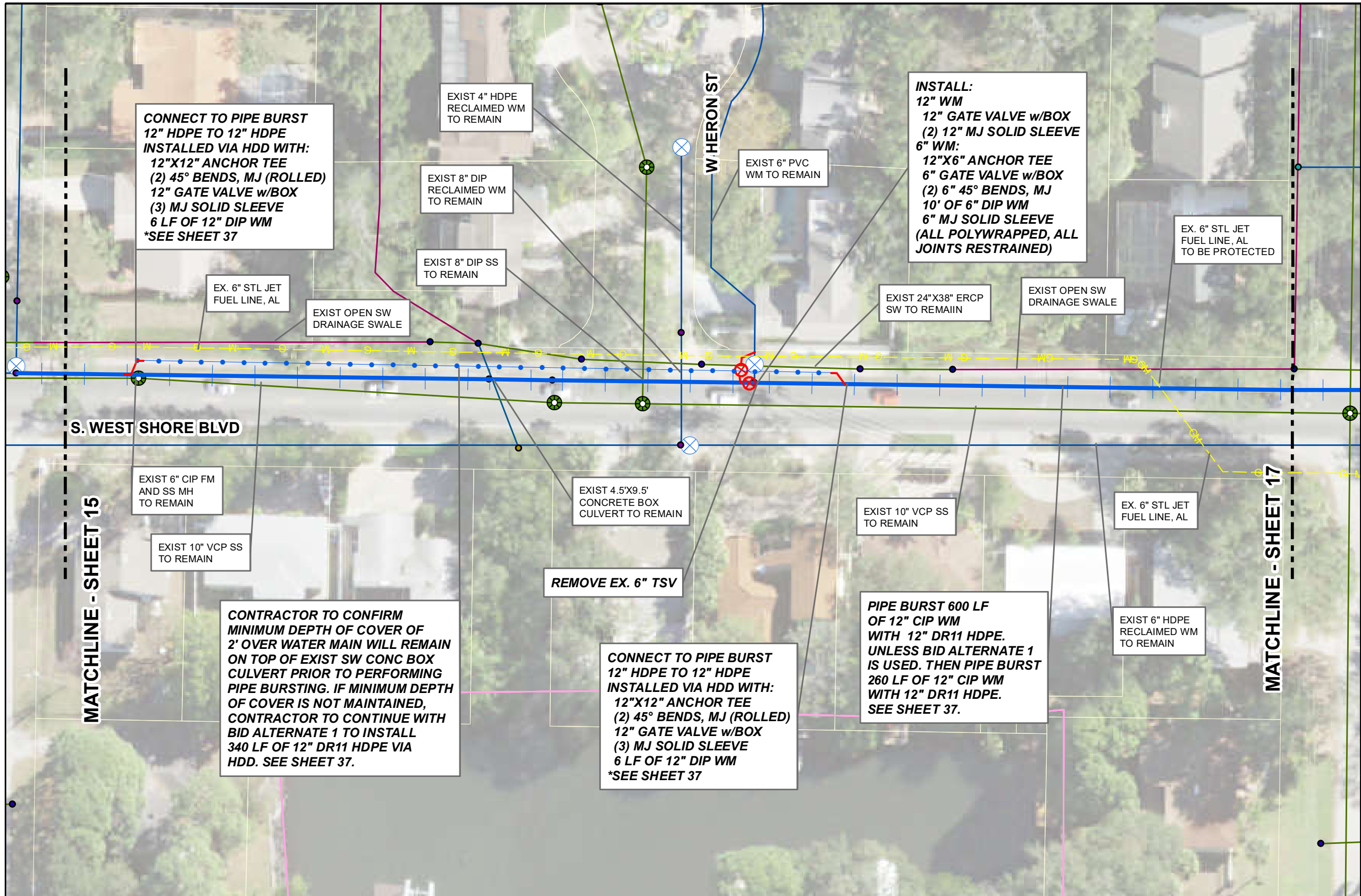
100% PLANS



PROJECT NO. 18D408  
 DATE: 1/29/2020

SHEET 15





- ### Legend
- HDPE via. Pipe Bursting
  - Water Line
  - Hydrant
  - System Valve
  - SS Manhole
  - Collection
  - SW Manhole
  - SW Gravity Main
  - Abandoned Line
  - Tax Parcel
  - Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697

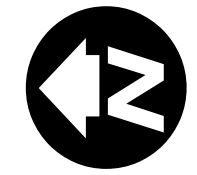
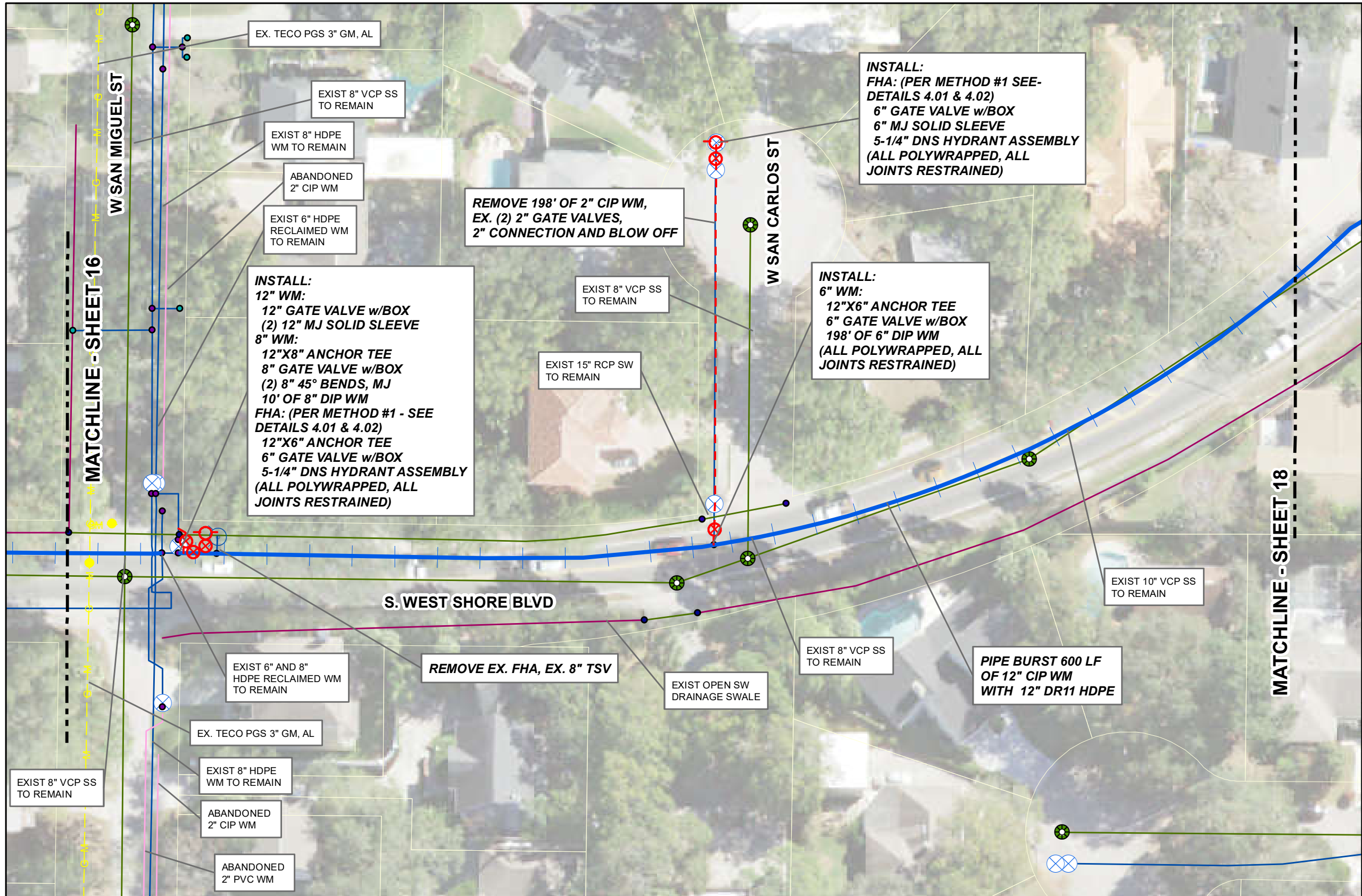


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W HERON ST AND S WESTSHORE BLVD**

100% PLANS

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 16



### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
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 P.E. #64697

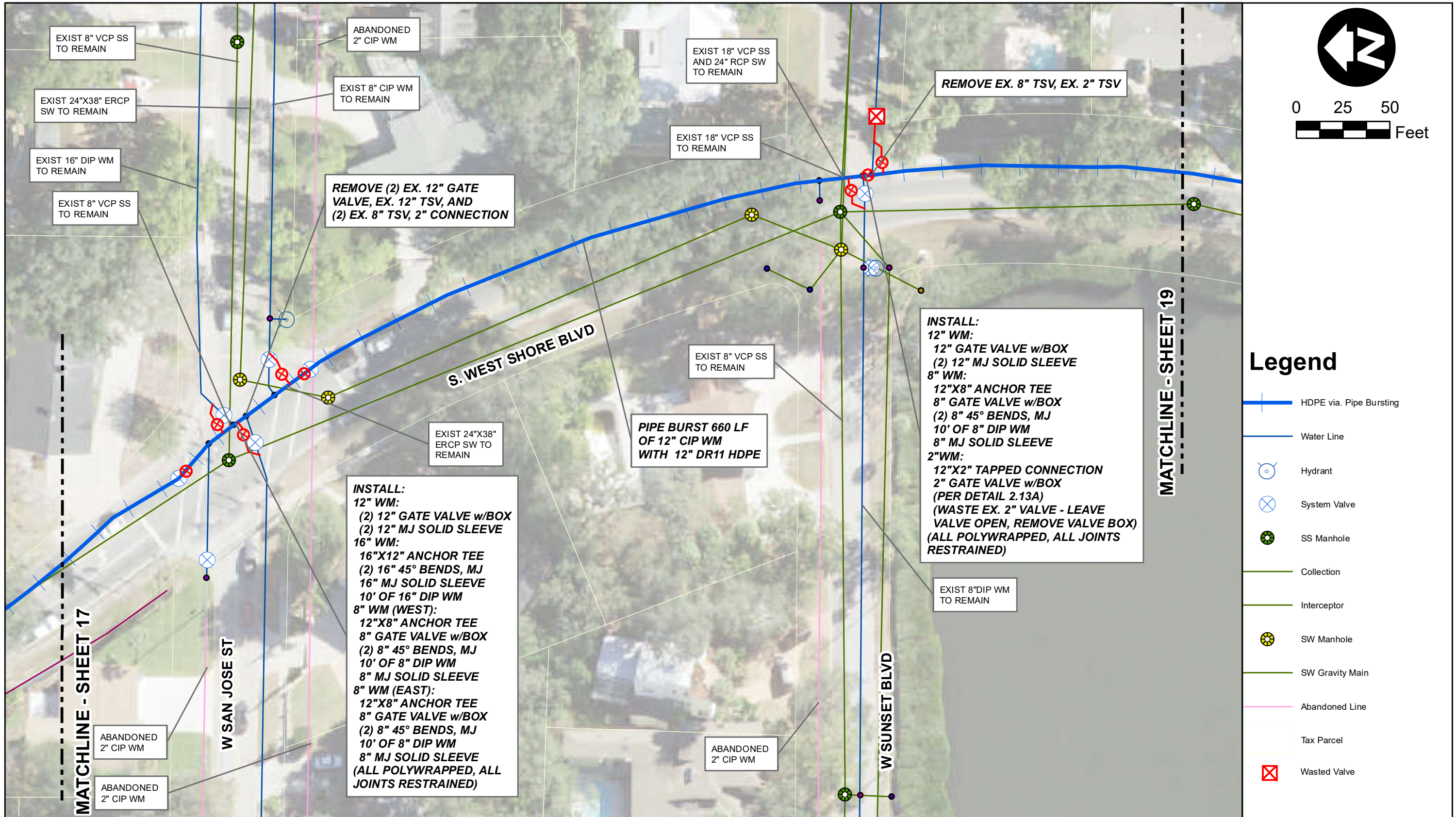


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W SAN MIGUEL ST AND S WESTSHORE BLVD**

100% PLANS

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 17



Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697

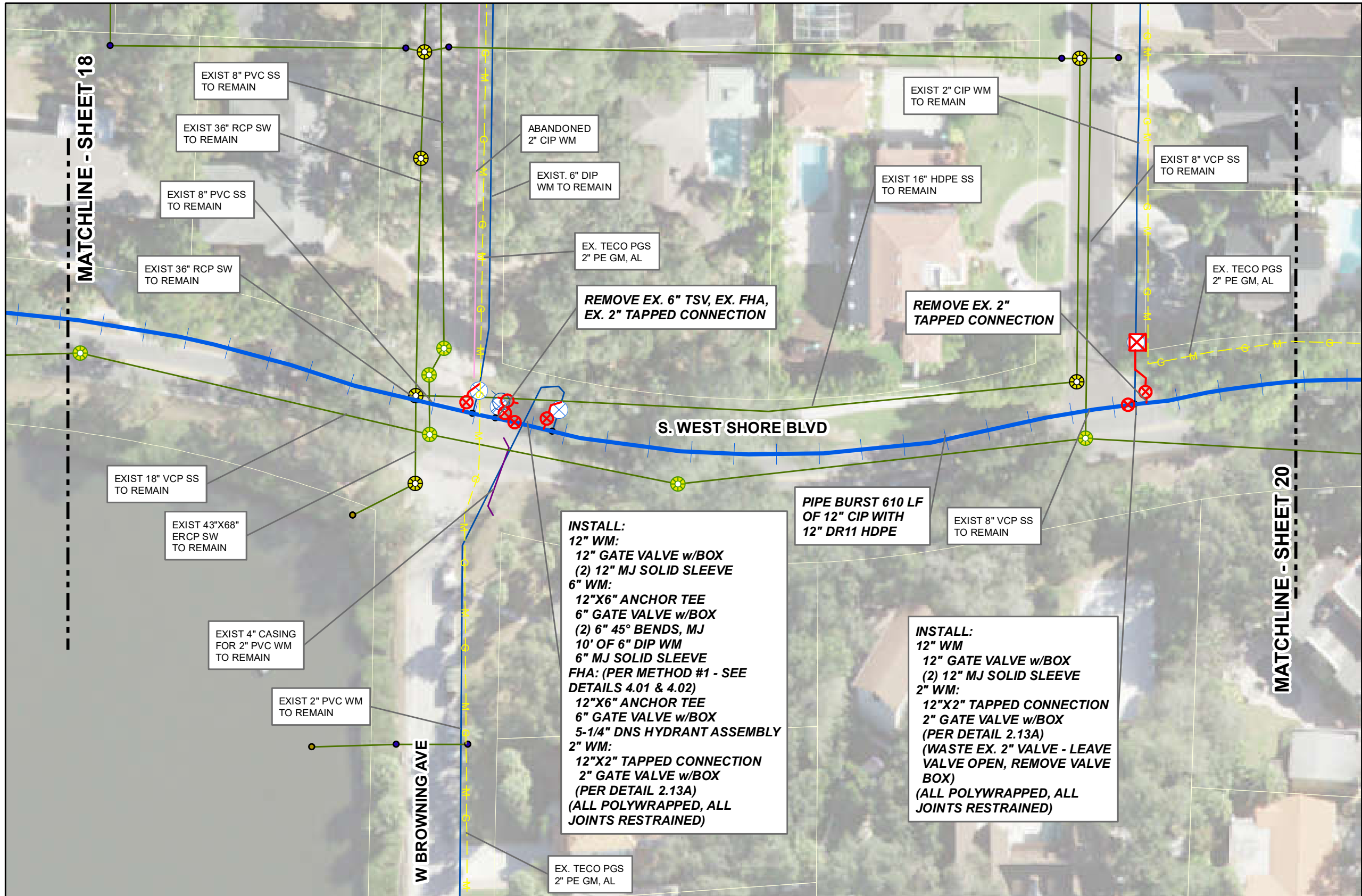


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W SUNSET BLVD AND S WESTSHORE BLVD**

100% PLANS  
**AM TRENCHLESS**

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 18

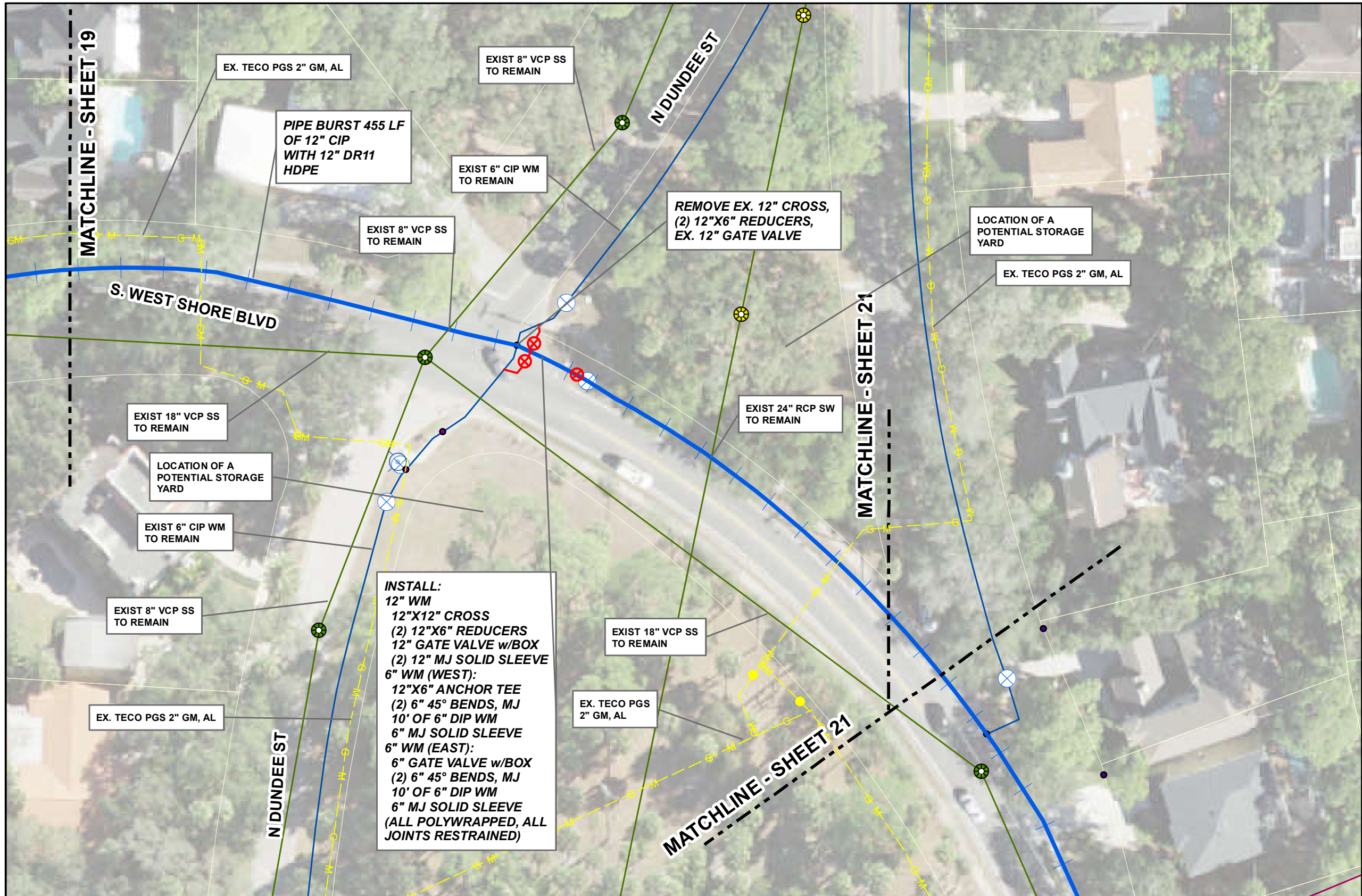



0 25 50  
Feet

### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- Interceptor
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve














Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>INTERSECTION OF W BROWNING AVE AND S WESTSHORE BLVD</b>	100% PLANS  	PROJECT NO. 18D408
							DATE 1/29/2020	SHEET 19	







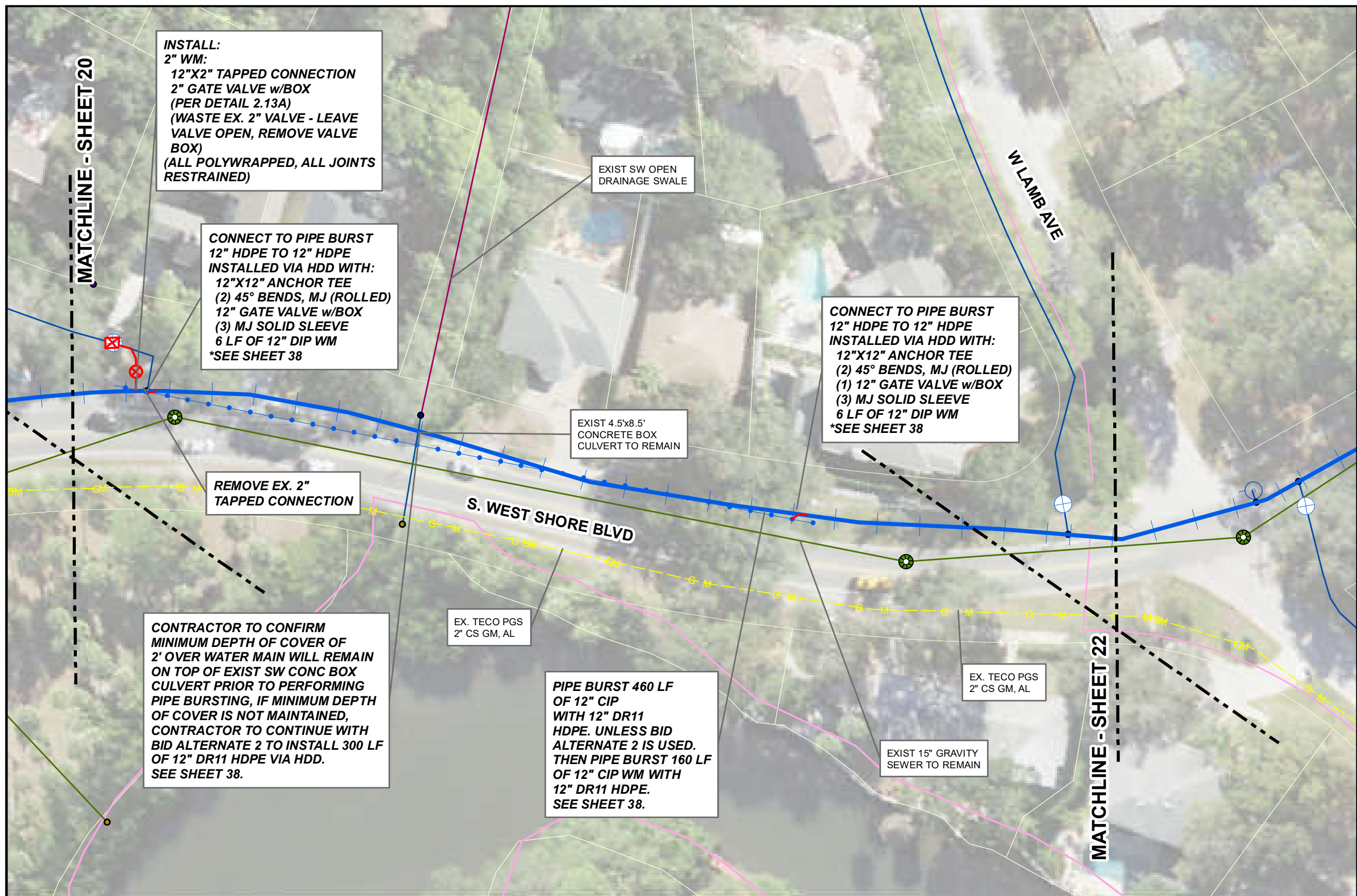
0 25 50  
Feet

### Legend

-  HDPE via. Pipe Bursting
-  Water Line
-  Hydrant
-  System Valve
-  SS Manhole
-  Collection
-  Interceptor
-  SW Manhole
-  SW Gravity Main
-  Abandoned Line
-  Tax Parcel
-  GM
-  Wasted Valve

**INSTALL:**  
 12" WM  
 12"X12" CROSS  
 (2) 12"X6" REDUCERS  
 12" GATE VALVE w/BOX  
 (2) 12" MJ SOLID SLEEVE  
 6" WM (WEST):  
 12"X6" ANCHOR TEE  
 (2) 6" 45° BENDS, MJ  
 10' OF 6" DIP WM  
 6" MJ SOLID SLEEVE  
 6" WM (EAST):  
 6" GATE VALVE w/BOX  
 (2) 6" 45° BENDS, MJ  
 10' OF 6" DIP WM  
 6" MJ SOLID SLEEVE  
 (ALL POLYWRAPPED, ALL JOINTS RESTRAINED)

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b> <b>INTERSECTION OF N DUNDEE ST AND S WESTSHORE BLVD</b>	<b>100% PLANS</b>	PROJECT NO. 18D408		
										DATE: 1/29/2020	
											SHEET 20



**INSTALL:  
2" WM:  
12"X2" TAPPED CONNECTION  
2" GATE VALVE w/BOX  
(PER DETAIL 2.13A)  
(WASTE EX. 2" VALVE - LEAVE  
VALVE OPEN, REMOVE VALVE  
BOX)  
(ALL POLYWRAPPED, ALL JOINTS  
RESTRAINED)**


**CONNECT TO PIPE BURST  
12" HDPE TO 12" HDPE  
INSTALLED VIA HDD WITH:  
12"X12" ANCHOR TEE  
(2) 45° BENDS, MJ (ROLLED)  
12" GATE VALVE w/BOX  
(3) MJ SOLID SLEEVE  
6 LF OF 12" DIP WM  
\*SEE SHEET 38**

**CONNECT TO PIPE BURST  
12" HDPE TO 12" HDPE  
INSTALLED VIA HDD WITH:  
12"X12" ANCHOR TEE  
(2) 45° BENDS, MJ (ROLLED)  
(1) 12" GATE VALVE w/BOX  
(3) MJ SOLID SLEEVE  
6 LF OF 12" DIP WM  
\*SEE SHEET 38**

**REMOVE EX. 2"  
TAPPED CONNECTION**














**CONTRACTOR TO CONFIRM  
MINIMUM DEPTH OF COVER OF  
2' OVER WATER MAIN WILL REMAIN  
ON TOP OF EXIST SW CONC BOX  
CULVERT PRIOR TO PERFORMING  
PIPE BURSTING, IF MINIMUM DEPTH  
OF COVER IS NOT MAINTAINED,  
CONTRACTOR TO CONTINUE WITH  
BID ALTERNATE 2 TO INSTALL 300 LF  
OF 12" DR11 HDPE VIA HDD.  
SEE SHEET 38.**



**PIPE BURST 460 LF  
OF 12" CIP  
WITH 12" DR11  
HDPE. UNLESS BID  
ALTERNATE 2 IS USED.  
THEN PIPE BURST 160 LF  
OF 12" CIP WM WITH  
12" DR11 HDPE.  
SEE SHEET 38.**

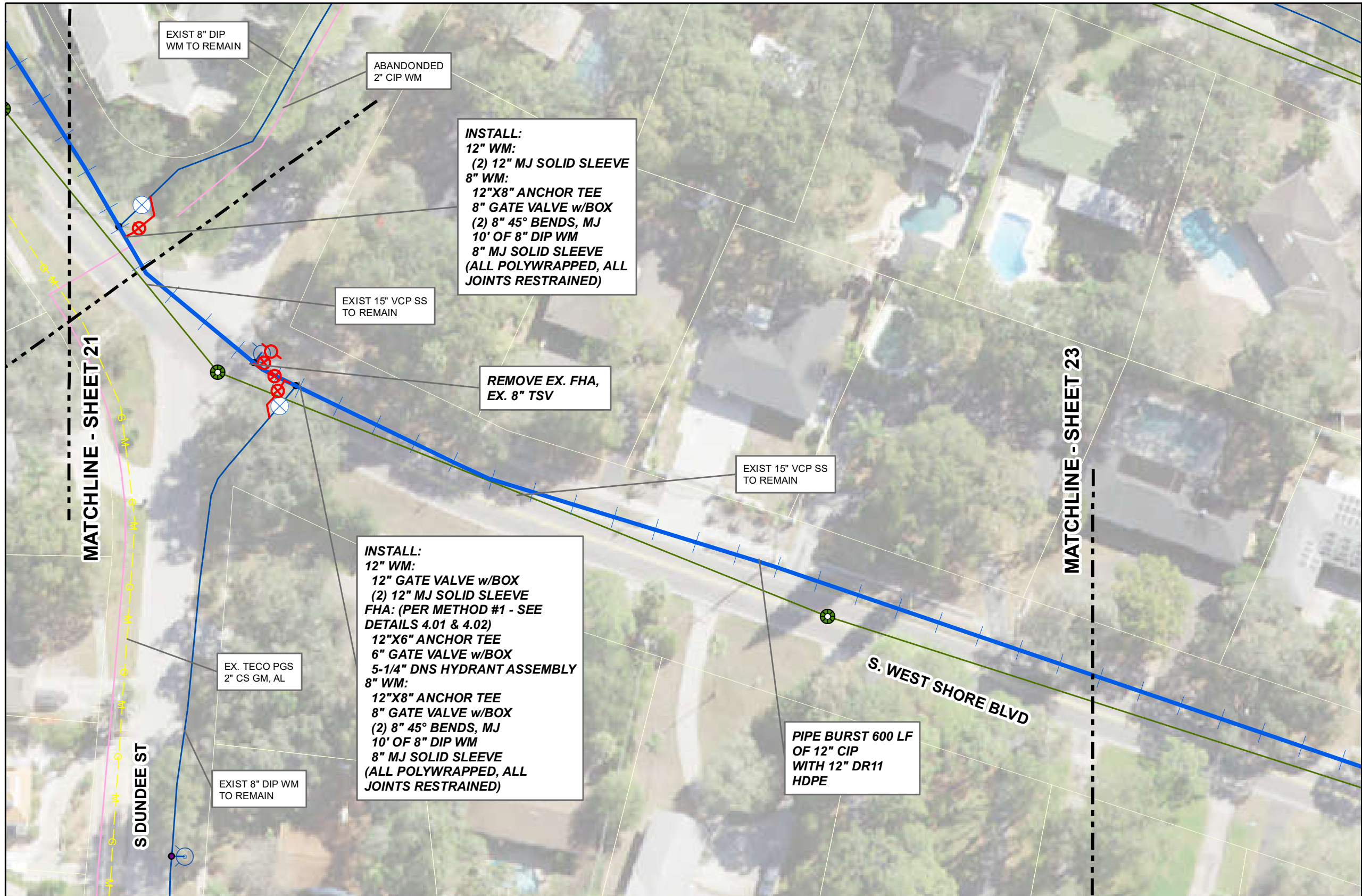


0 25 50  
Feet

### Legend

-  HDPE via. Pipe Bursting
-  Water Line
-  Hydrant
-  System Valve
-  SS Manhole
-  Collection
-  Interceptor
-  SW Manhole
-  SW Gravity Main
-  Abandoned Line
-  Tax Parcel
-  GM
-  Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>INTERSECTION OF W LAMB AVE AND S WESTSHORE BLVD</b>	100% PLANS  	PROJECT NO. 18D408	
										DATE: 1/29/2020
										SHEET 21

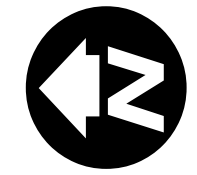
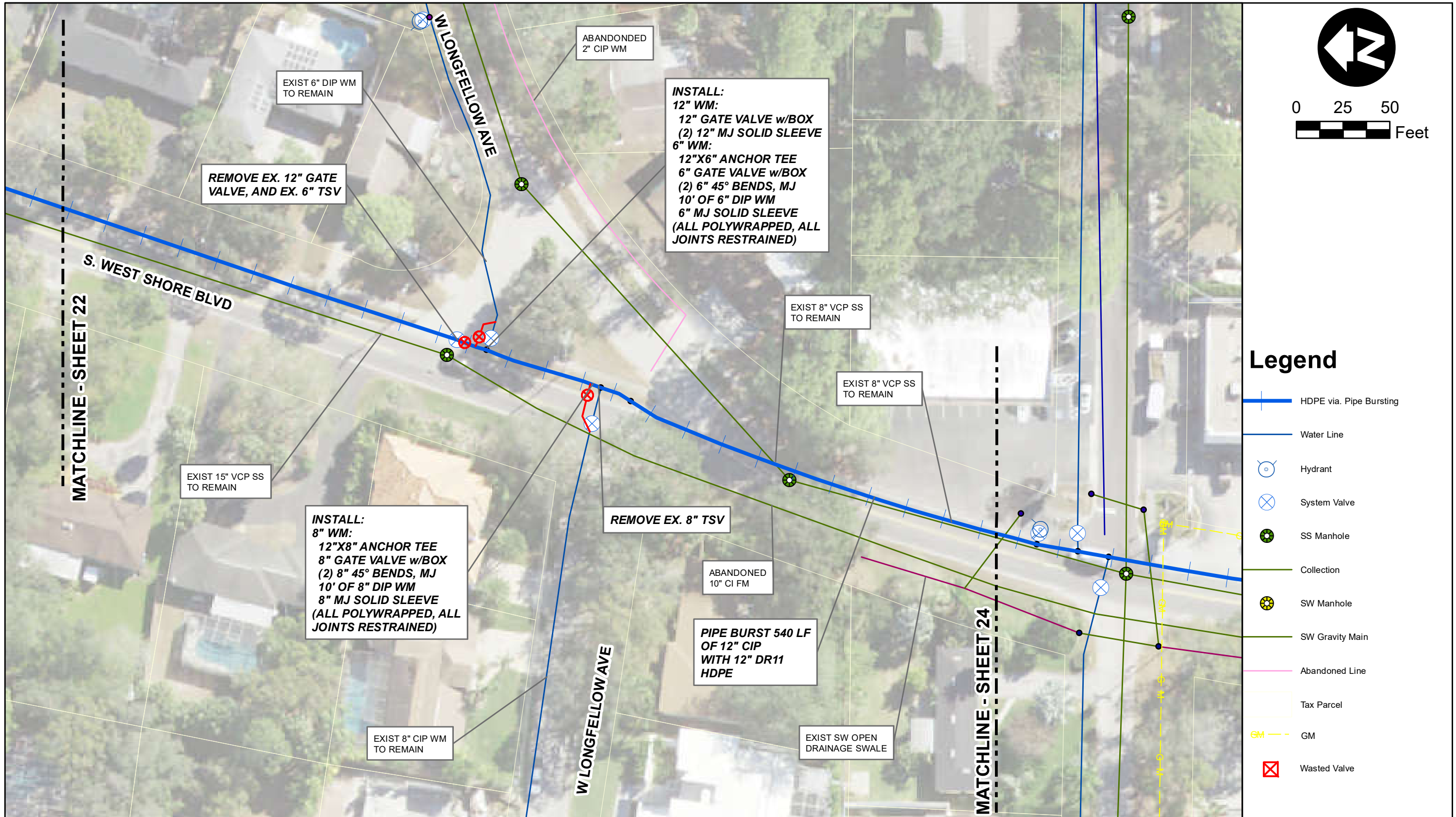


0 25 50  
Feet

### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>INTERSECTION OF S DUNDEE ST AND S WESTSHORE BLVD</b>	100% PLANS  	PROJECT NO. 18D408
							DATE 1/29/2020	SHEET 22	

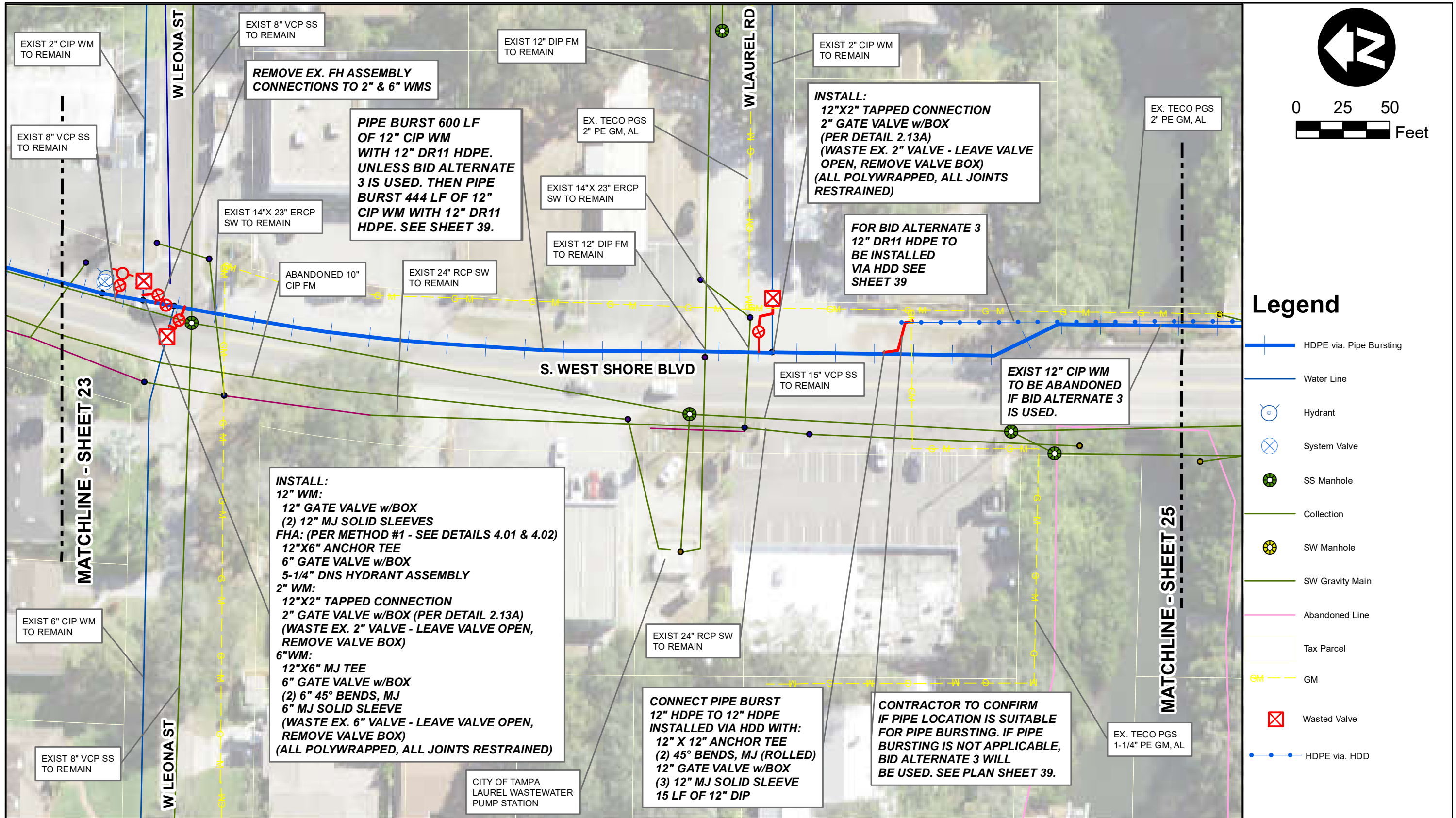


**Legend**

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II  W LONGFELLOW AVE AND S WESTSHORE BLVD	100% PLANS  	PROJECT NO. 18D408
						DRAWN JV			DATE: 1/29/2020
						CHECKED JMA			
						DATE 1/29/2020			
SHEET 23									





Edward Alan Ambler, PE  
 AM Trenchless  
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 Lake Mary, FL 32795  
 P.E. #64697

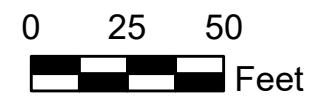
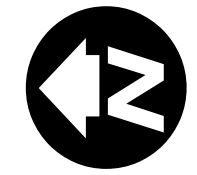
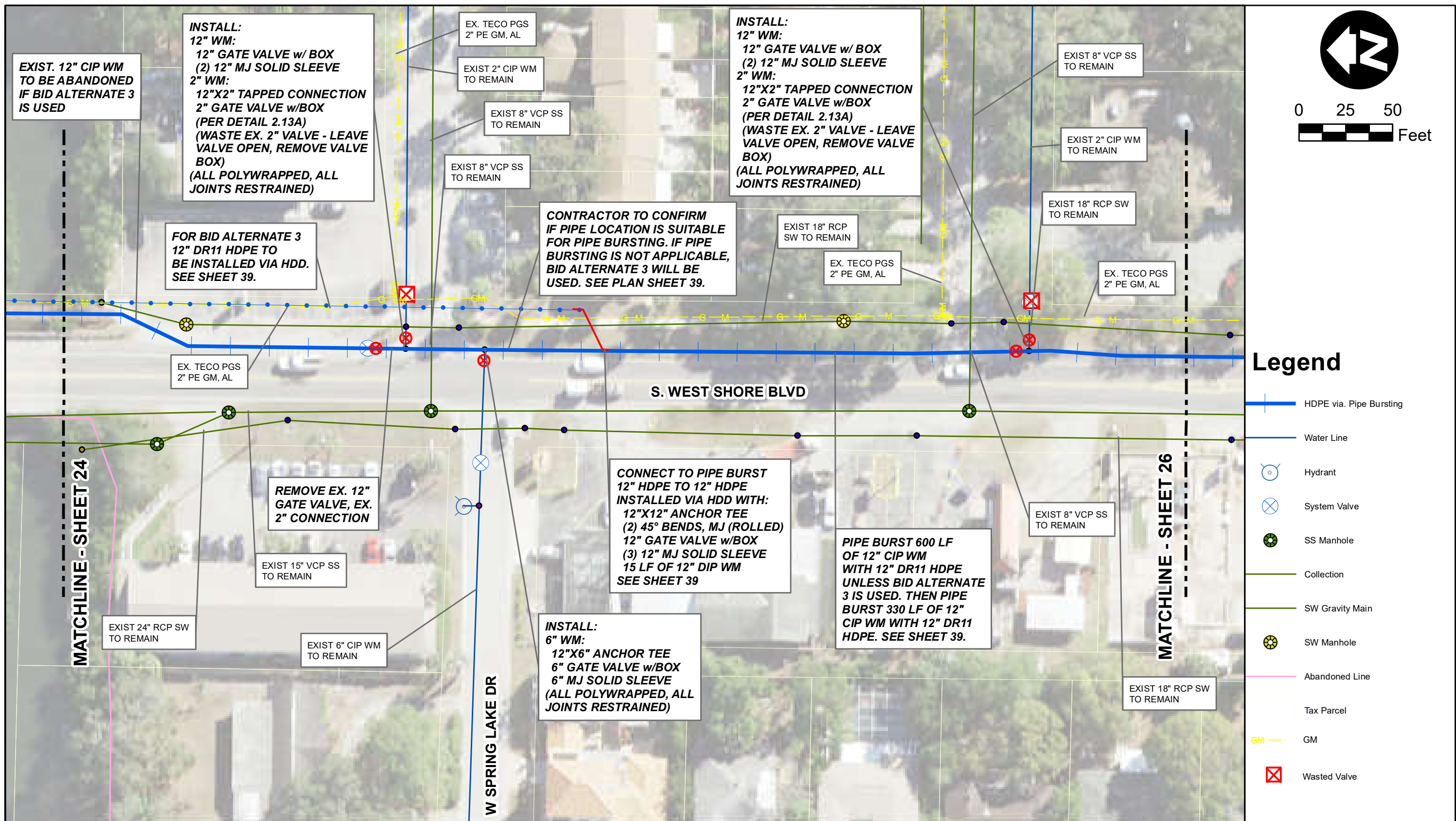


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II  
 INTERSECTION OF W LEONA ST AND S WESTSHORE BLVD

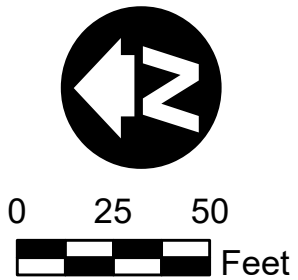
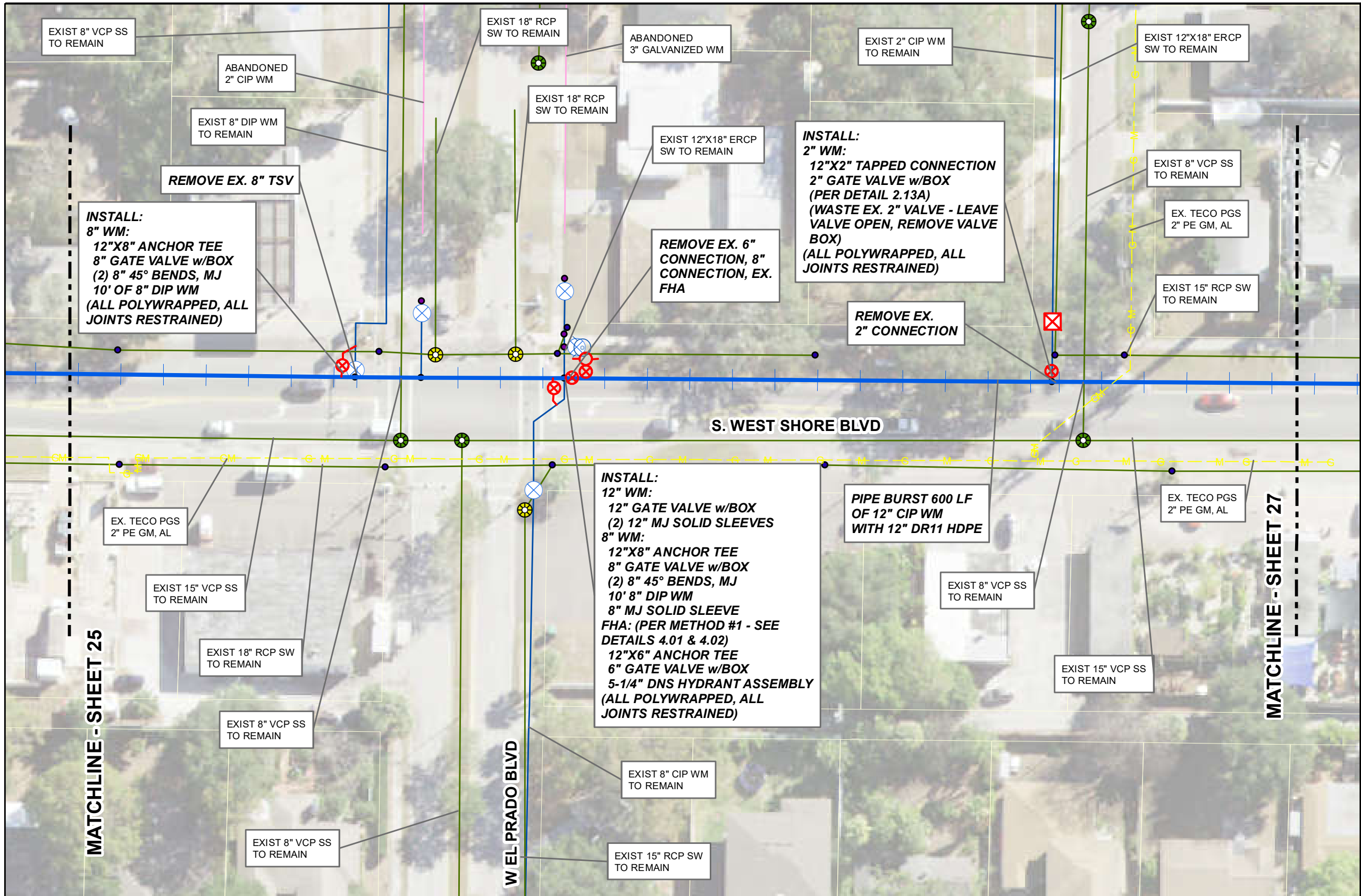
100% PLANS  
**AM TRENCHLESS**

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 24



- ### Legend
- HDPE via. Pipe Bursting
  - Water Line
  - Hydrant
  - System Valve
  - SS Manhole
  - Collection
  - SW Gravity Main
  - SW Manhole
  - Abandoned Line
  - Tax Parcel
  - - - GM
  - Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED <u>AA</u>	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>W SPRING LAKE DR AND S WESTSHORE BLVD</b>	100% PLANS  	PROJECT NO. 18D408	
										DATE: 1/29/2020
									DATE 1/29/2020	SHEET 25



- ### Legend
- HDPE via. Pipe Bursting
  - Water Line
  - Hydrant
  - System Valve
  - SS Manhole
  - Collection
  - SW Manhole
  - SW Gravity Main
  - Abandoned Line
  - Tax Parcel
  - GM
  - Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697

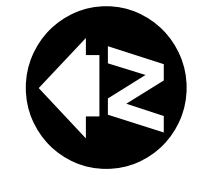
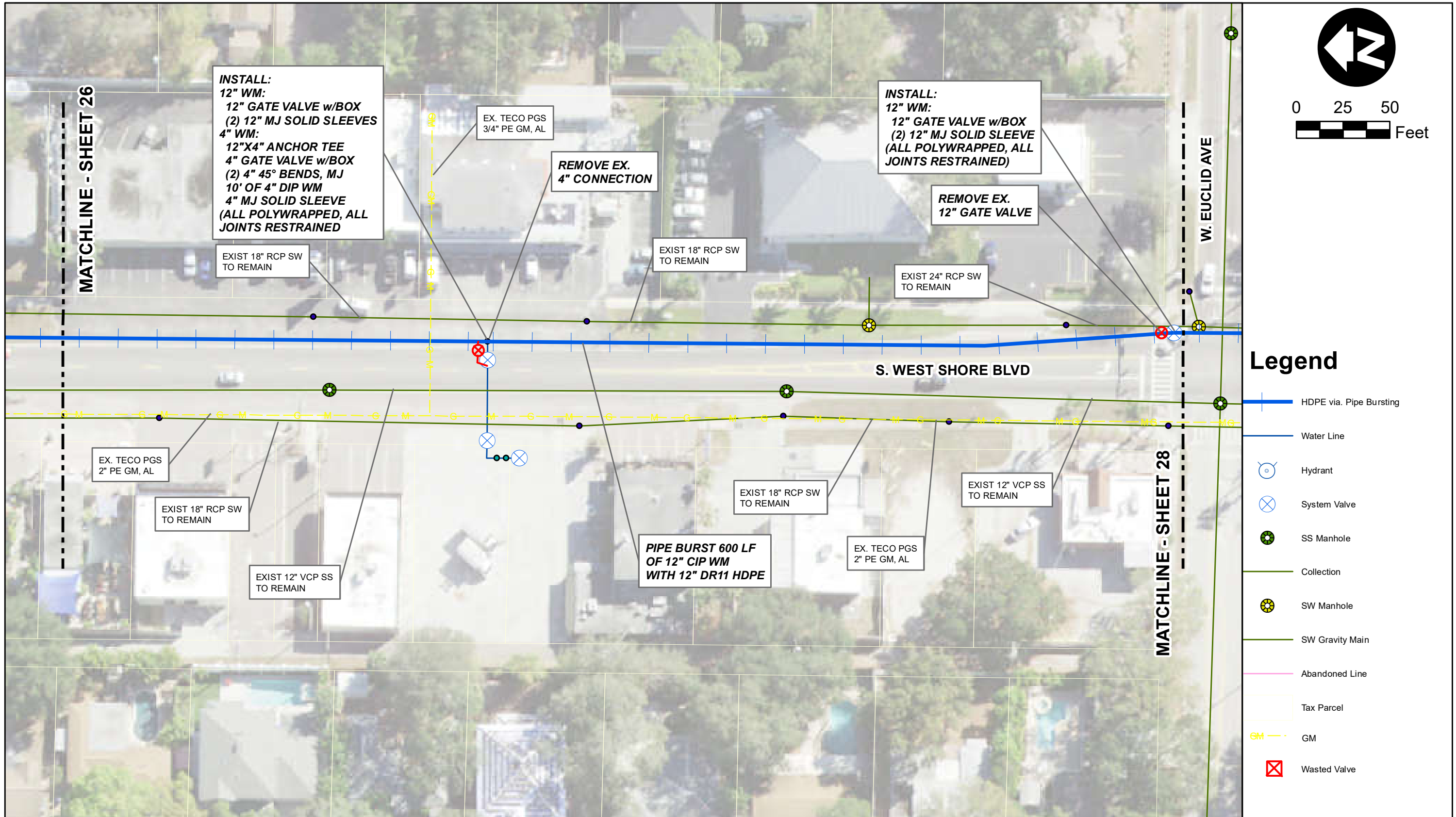


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**W EL PRADO BLVD AND S WESTSHORE BLVD**

100% PLANS

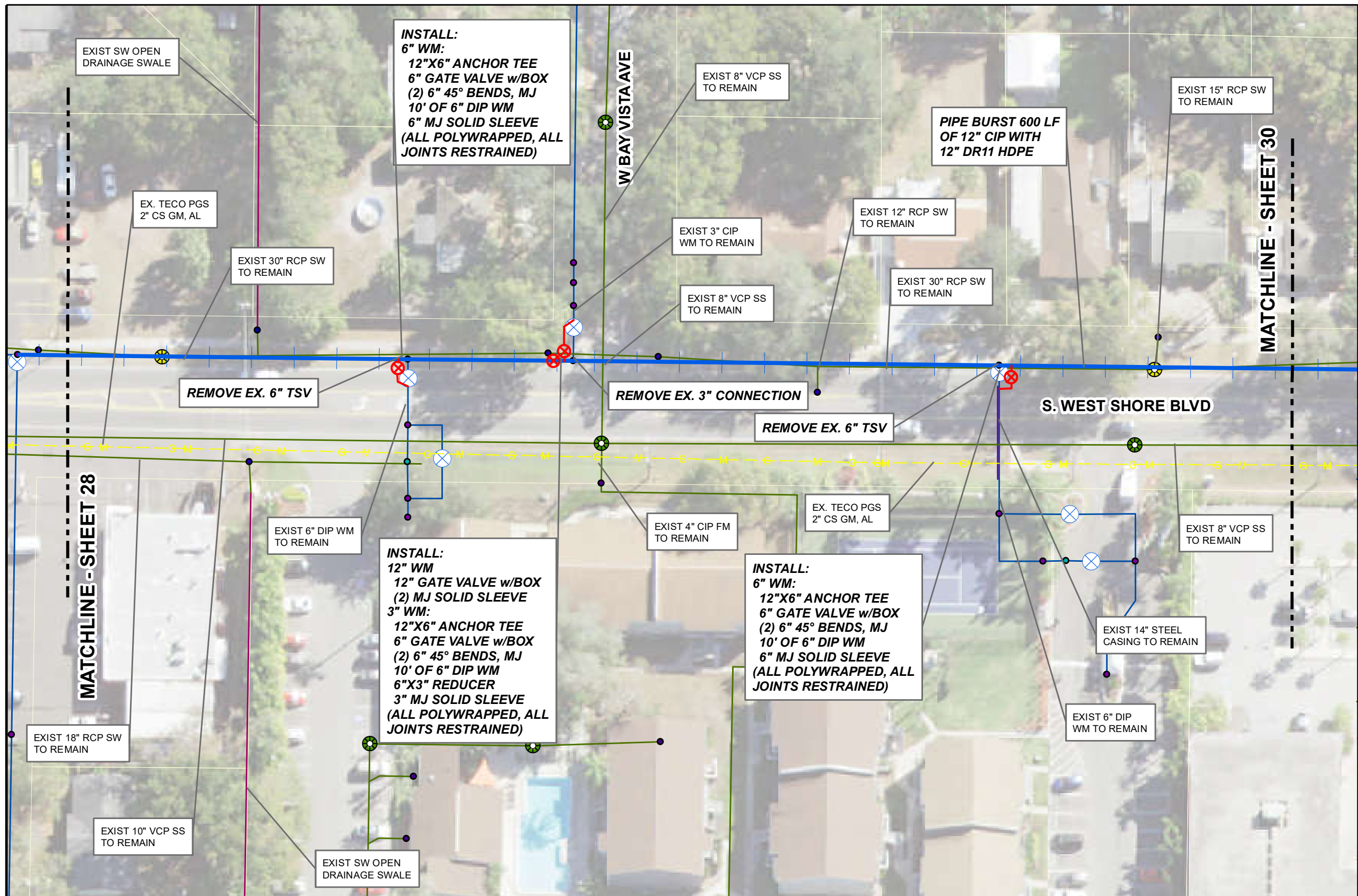
PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 26



- ### Legend
- HDPE via. Pipe Bursting
  - Water Line
  - Hydrant
  - System Valve
  - SS Manhole
  - Collection
  - SW Manhole
  - SW Gravity Main
  - Abandoned Line
  - Tax Parcel
  - - - GM
  - Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>S WESTSHORE BLVD NORTH OF W EUCLID AVE</b>	100% PLANS  	PROJECT NO. 18D408	
										DATE: 1/29/2020
									DATE 1/29/2020	SHEET 27





### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

Edward Alan Ambler, PE  
 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697

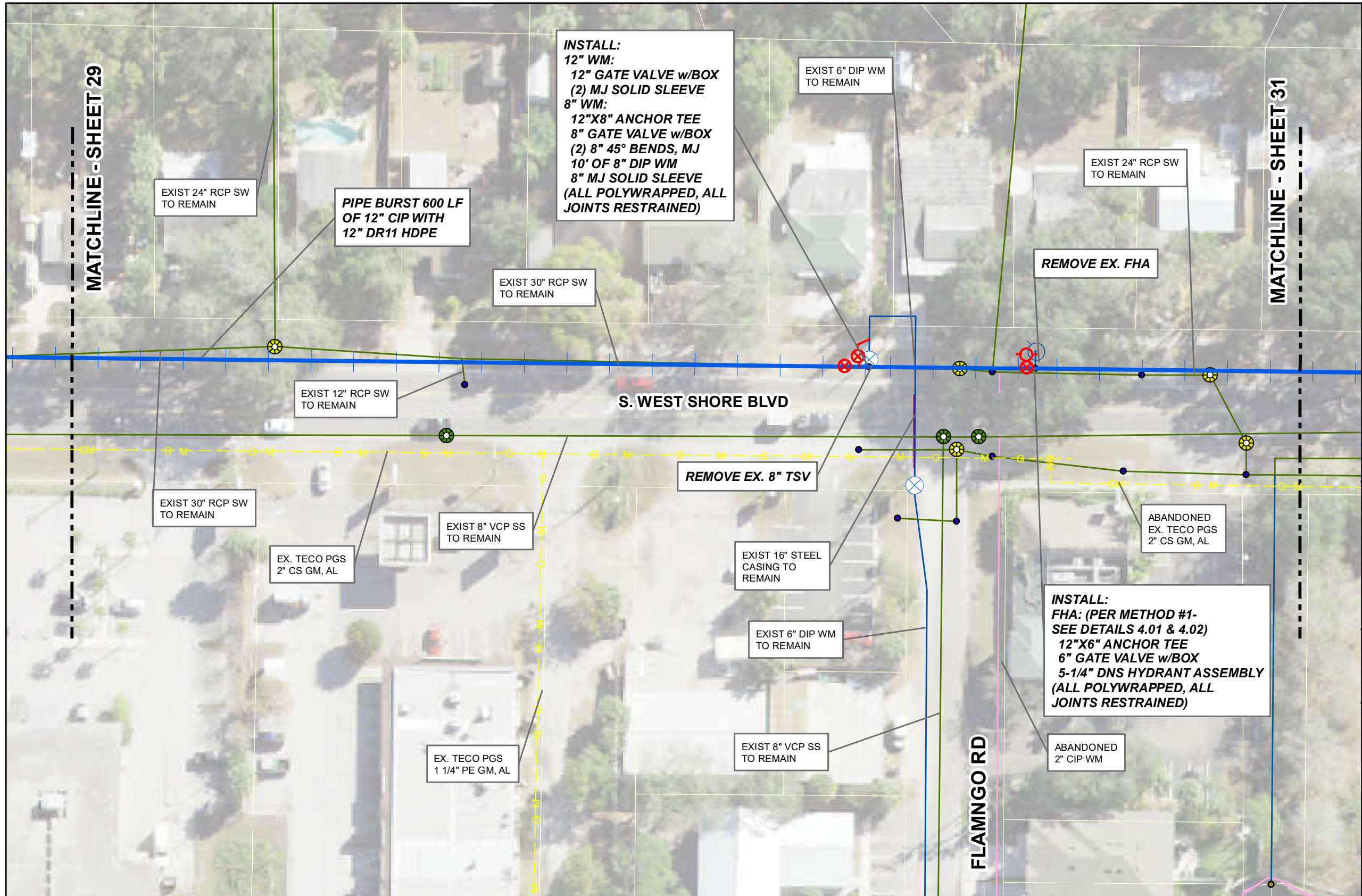


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W BAY VISTA AVE AND S WESTSHORE BLVD**

100% PLANS

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 29

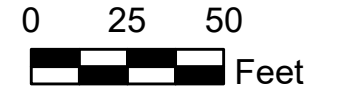
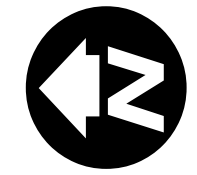
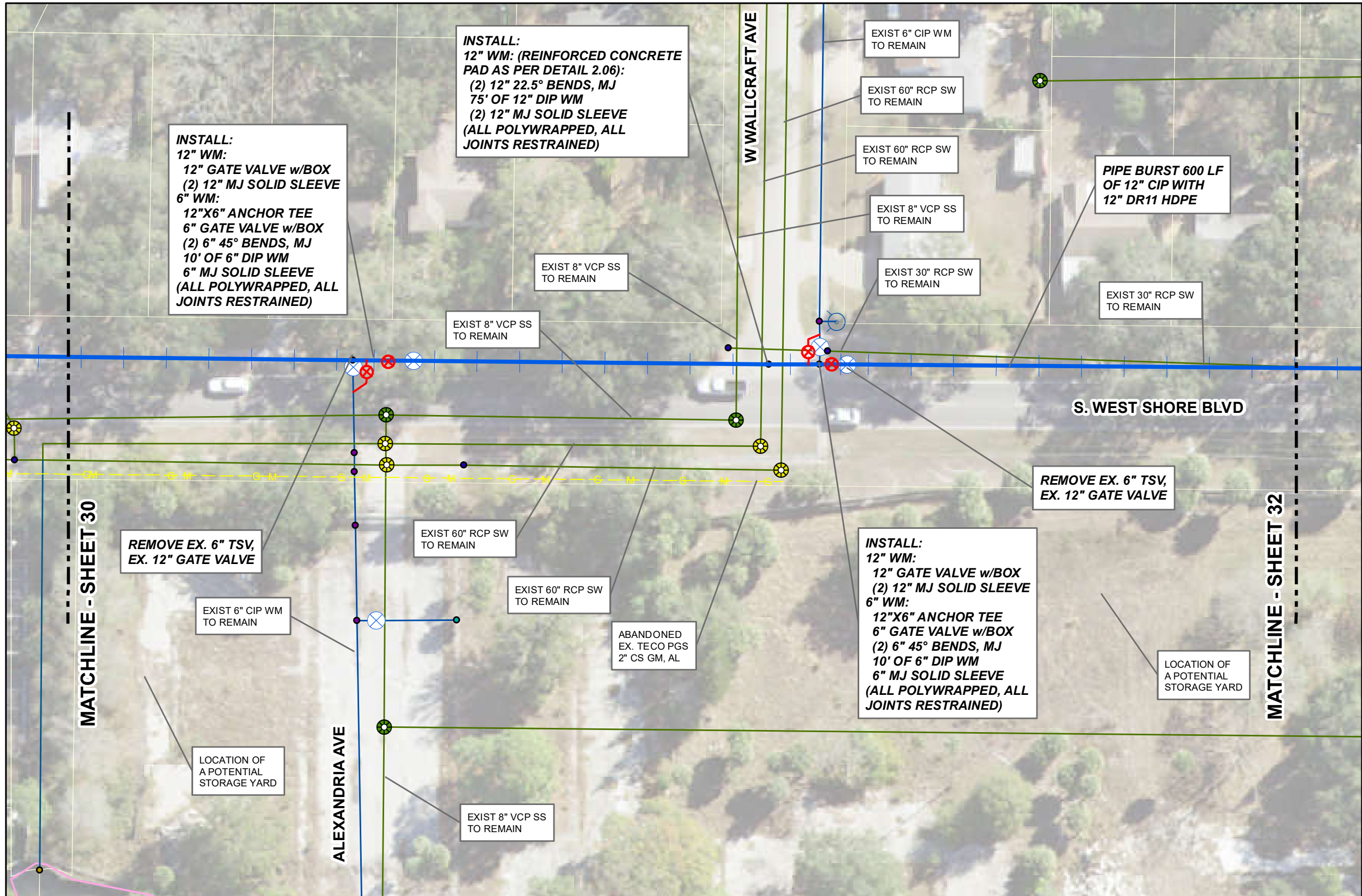


0 25 50  
Feet

### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>INTERSECTION OF FLAMINGO RD AND S WESTSHORE BLVD</b>	<b>100% PLANS</b>	<b>PROJECT NO. 18D408</b>		
									DRAWN JV	<b>DATE: 1/29/2020</b>	
									CHECKED JMA		
						DATE 1/29/2020					

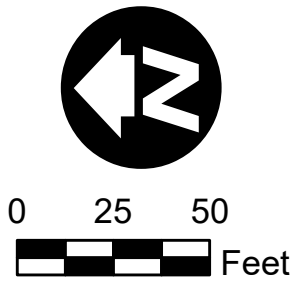
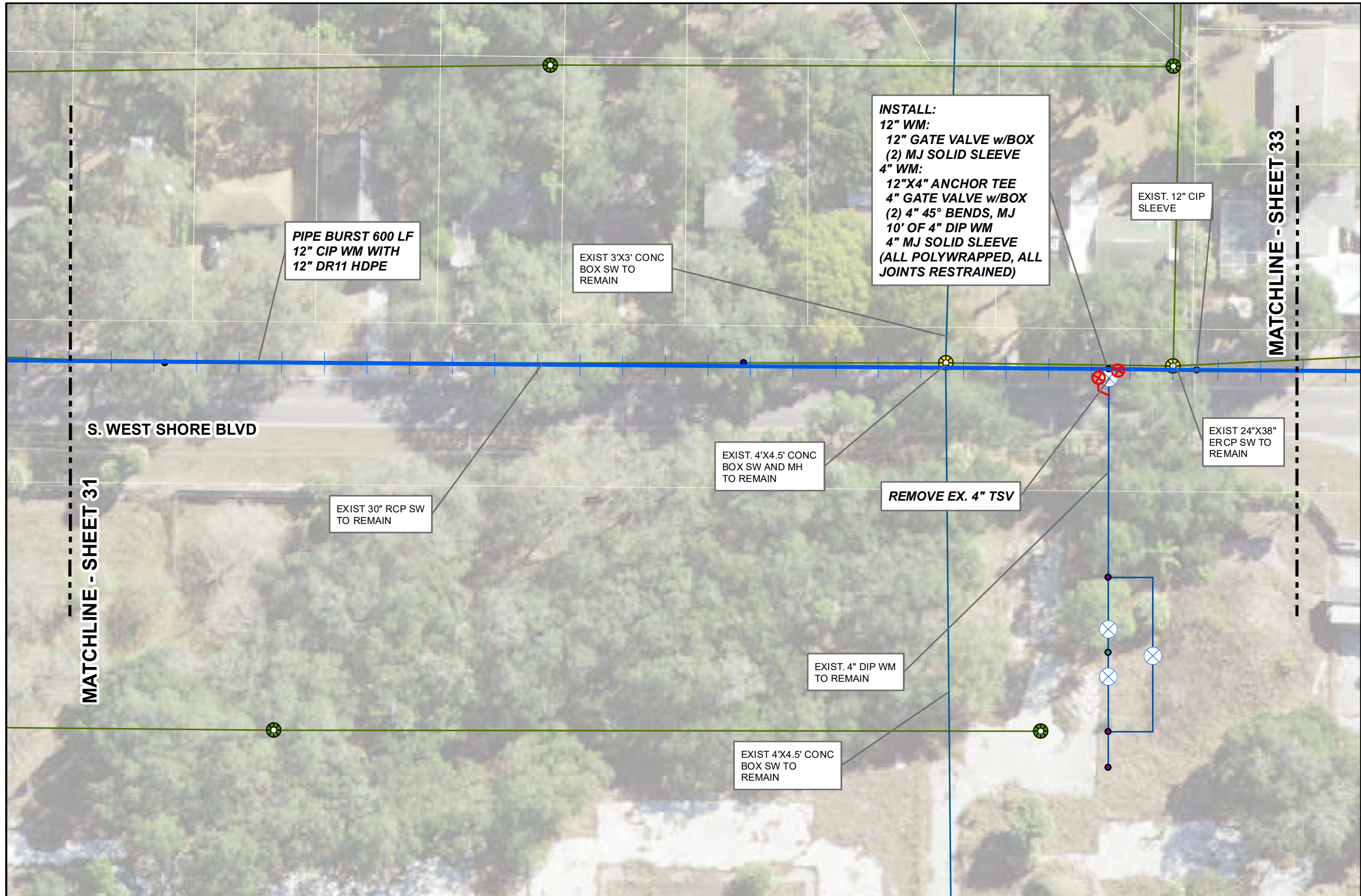


**Legend**












- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve



Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II  INTERSECTION OF W WALLCRAFT AVE AND S WESTSHORE BLVD	100% PLANS  	PROJECT NO. 18D408
						DRAWN JV			DATE: 1/29/2020
						CHECKED JMA			
						DATE 1/29/2020			
								SHEET 31	

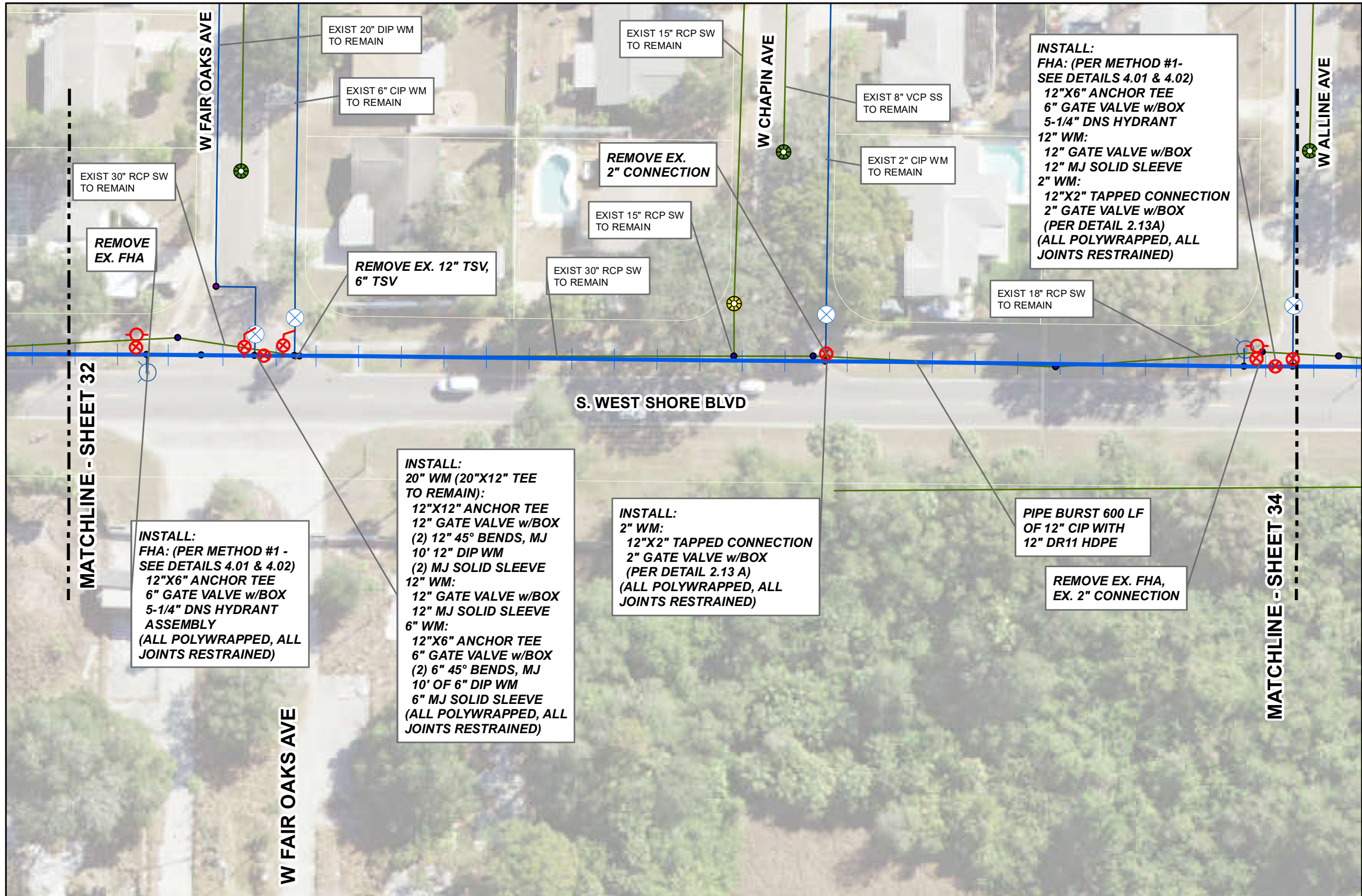




**Legend**

-  HDPE via. Pipe Bursting
-  Water Line
-  Hydrant
-  System Valve
-  SS Manhole
-  Collection
-  SW Manhole
-  SW Gravity Main
-  Abandoned Line
-  Tax Parcel
-  Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>SOUTH OF W WALLCRAFT AVE AND S WESTSHORE BLVD</b>	<b>100% PLANS</b>	<b>PROJECT NO. 18D408</b> DATE: 1/29/2020	
									DRAWN JV	
									CHECKED JMA	
									DATE 1/29/2020	
									<b>SHEET 32</b>	



0 25 50  
Feet

### Legend

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- Wasted Valve

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 AM Trenchless  
 PO Box 952066  
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 P.E. #64697

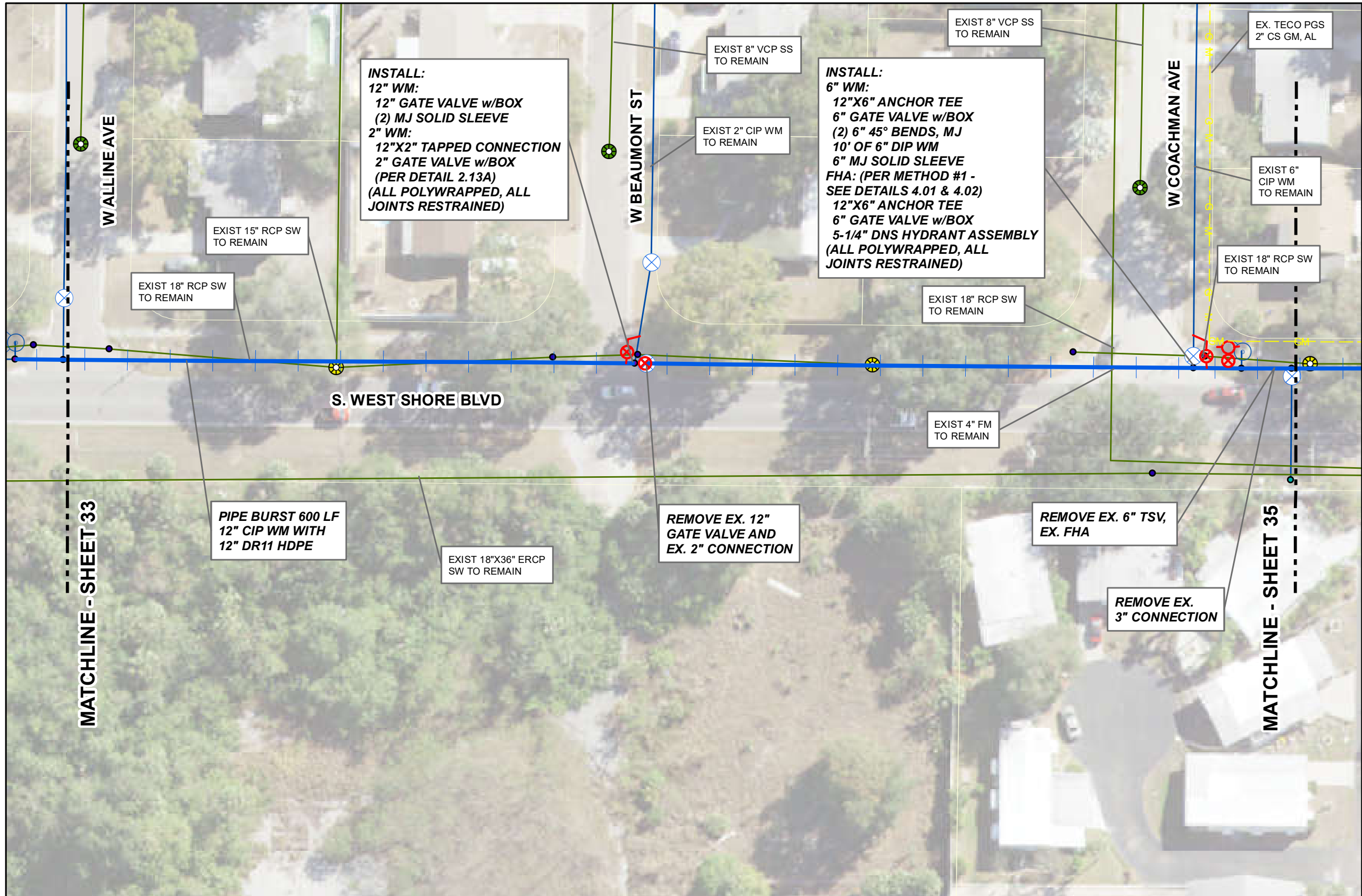


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W FAIR OAKS AVE AND S WESTSHORE BLVD**

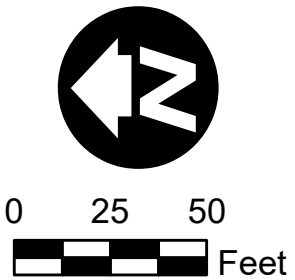
100% PLANS

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 33



**INSTALL:**  
**12" WM:**  
 12" GATE VALVE w/BOX  
 (2) MJ SOLID SLEEVE  
**2" WM:**  
 12"X2" TAPPED CONNECTION  
 2" GATE VALVE w/BOX  
 (PER DETAIL 2.13A)  
 (ALL POLYWRAPPED, ALL JOINTS RESTRAINED)

**INSTALL:**  
**6" WM:**  
 12"X6" ANCHOR TEE  
 6" GATE VALVE w/BOX  
 (2) 6" 45° BENDS, MJ  
 10' OF 6" DIP WM  
 6" MJ SOLID SLEEVE  
 FHA: (PER METHOD #1 -  
 SEE DETAILS 4.01 & 4.02)  
 12"X6" ANCHOR TEE  
 6" GATE VALVE w/BOX  
 5-1/4" DNS HYDRANT ASSEMBLY  
 (ALL POLYWRAPPED, ALL JOINTS RESTRAINED)



- Legend**
- HDPE via. Pipe Bursting
  - Water Line
  - Hydrant
  - System Valve
  - SS Manhole
  - Collection
  - SW Manhole
  - SW Gravity Main
  - Abandoned Line
  - Tax Parcel
  - GM
  - Wasted Valve

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 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697

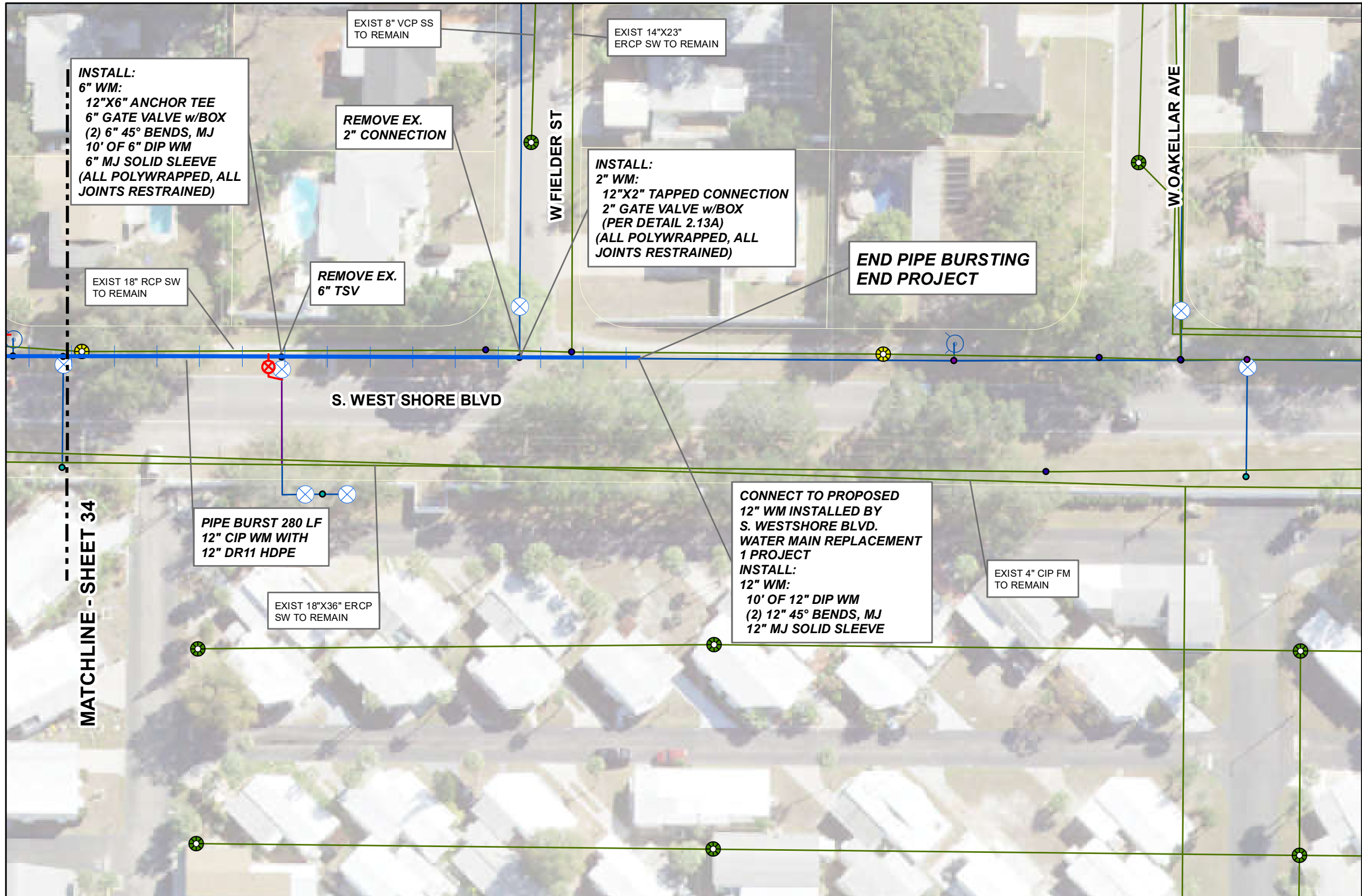



REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
**INTERSECTION OF W COACHMAN AVE AND S WESTSHORE BLVD**

100% PLANS







PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 34




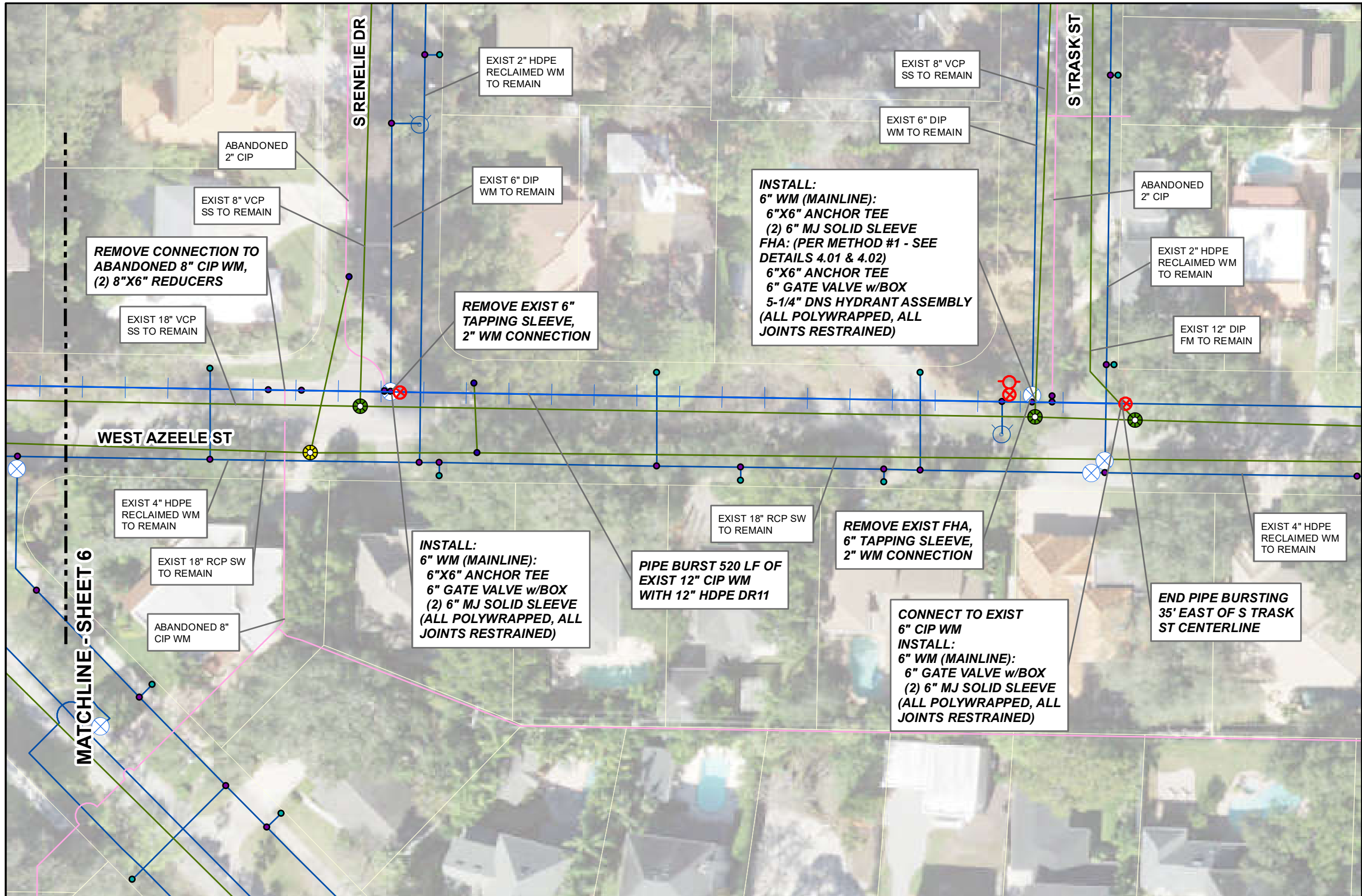


0 25 50  
Feet

### Legend

- HDPE via. Pipe Bursting
- Water Line
-  Hydrant
-  System Valve
-  SS Manhole
- Collection
-  SW Manhole
- SW Gravity Main
- Abandoned Line
-  Tax Parcel
-  Wasted Valve

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED <u>AA</u>	<b>S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II</b>  <b>INTERSECTION OF W FIELDER ST AND S WESTSHORE BLVD</b>	<b>100% PLANS</b>	PROJECT NO. 18D408	
									DRAWN <u>JV</u>	DATE: 1/29/2020
									CHECKED <u>JMA</u>	DATE 1/29/2020



**Legend**

- HDPE via. Pipe Bursting
- Water Line
- Hydrant
- System Valve
- SS Manhole
- Collection
- Interceptor
- SW Manhole
- SW Gravity Main
- Abandoned Line
- Tax Parcel
- GM
- Wasted Valve

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 AM Trenchless  
 PO Box 952066  
 Lake Mary, FL 32795  
 P.E. #64697

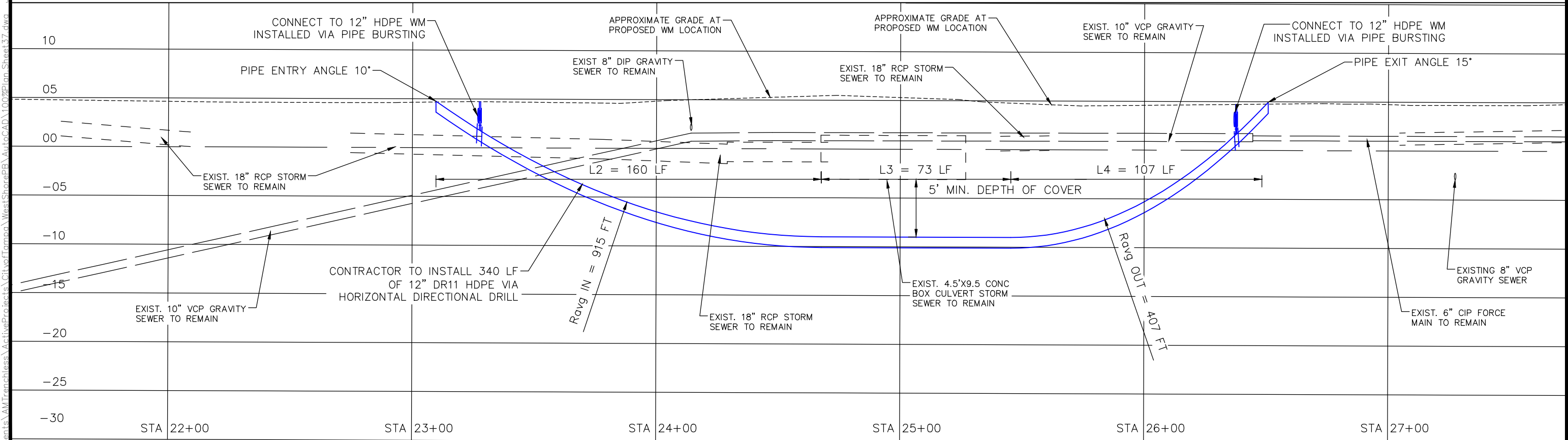
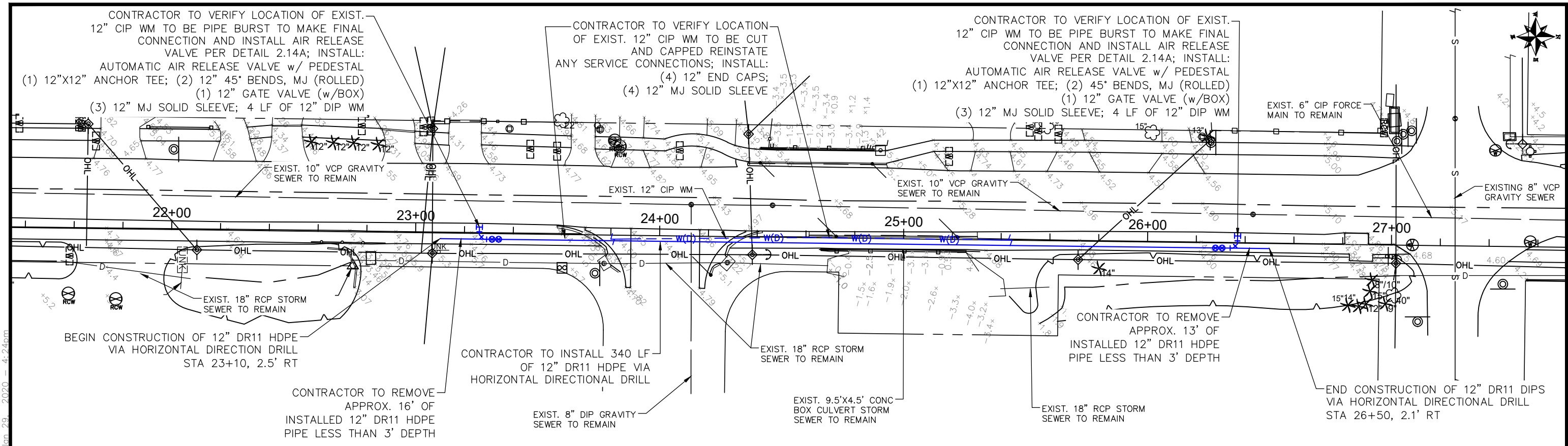


REV NO	DATE	DESCRIPTION	BY	DESIGNED	AA
				DRAWN	JV
				CHECKED	JMA
				DATE	1/29/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II**  
 W AZEELE ST TO S TRASK ST

100% PLANS

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 36



EDWARD ALAN AMBLER, P.E. PO BOX 952066 LAKE MARY, FLORIDA 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA
<b>AM TRENCHLESS</b>		.	.	.	.	DRAWN JV
		.	.	.	.	CHECKED JMA
		.	.	.	.	DATE 1/2020
		.	.	.	.	

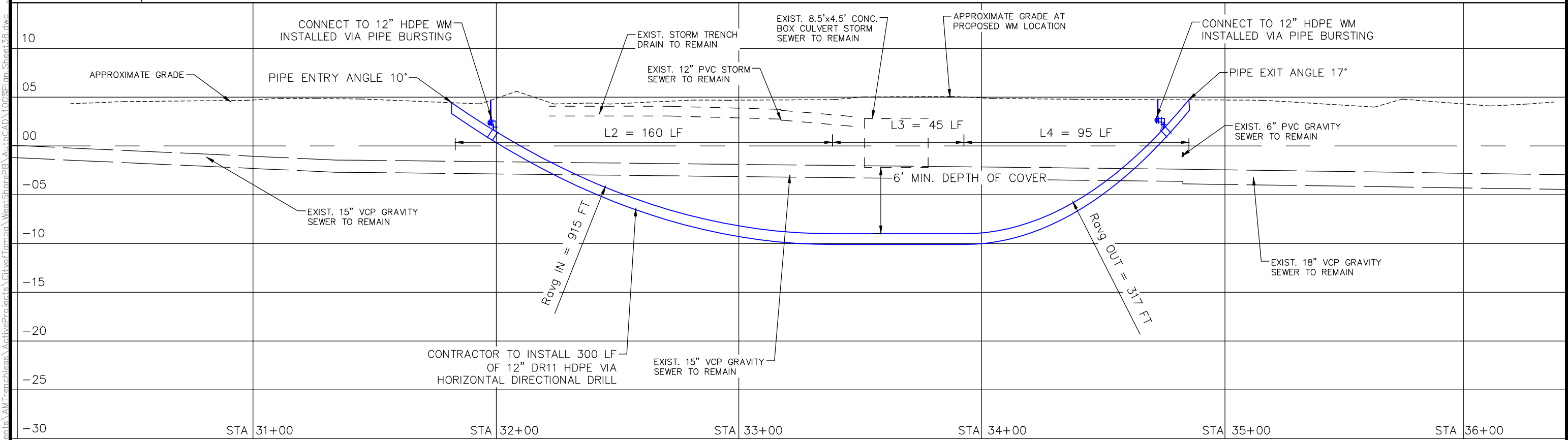
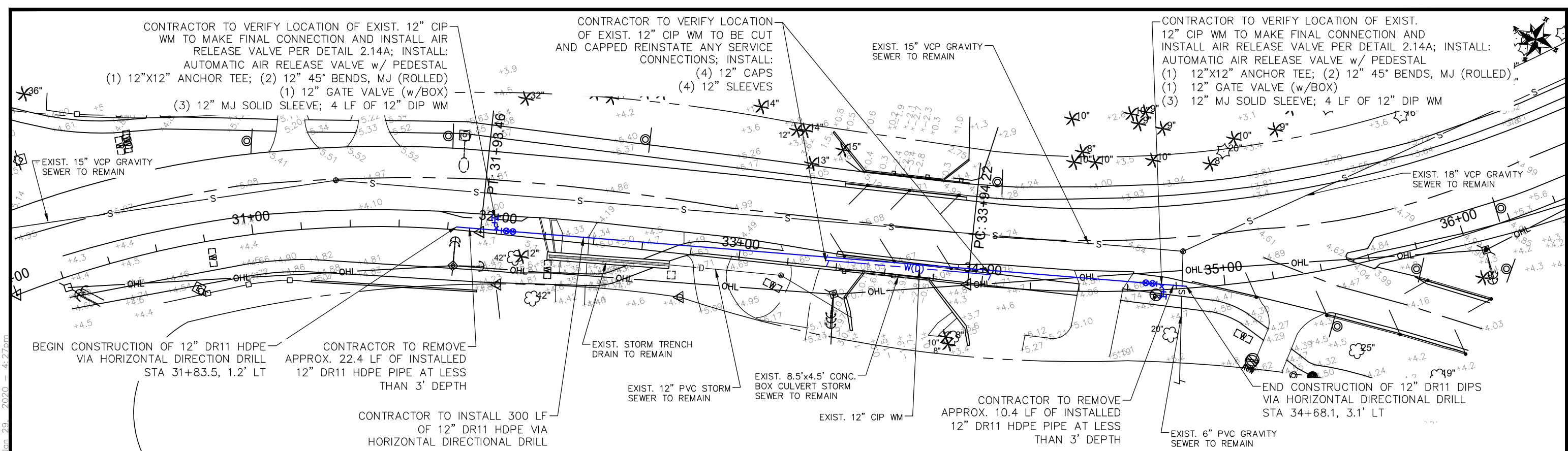
**S. WESTSHORE BLVD. WATER MAIN  
REPLACEMENT II - BID ALTERNATE 1**

**WEST HERON BLVD.  
PLAN AND PROFILE**



100% PLANS	
PROJECT NO.	WTR-18D408
DATE:	1/29/2020
SHEET 37 OF 37	

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 PO BOX 952066  
 LAKE MARY, FLORIDA 32795  
 P.E. #64697

REV NO	DATE	DESCRIPTION	BY

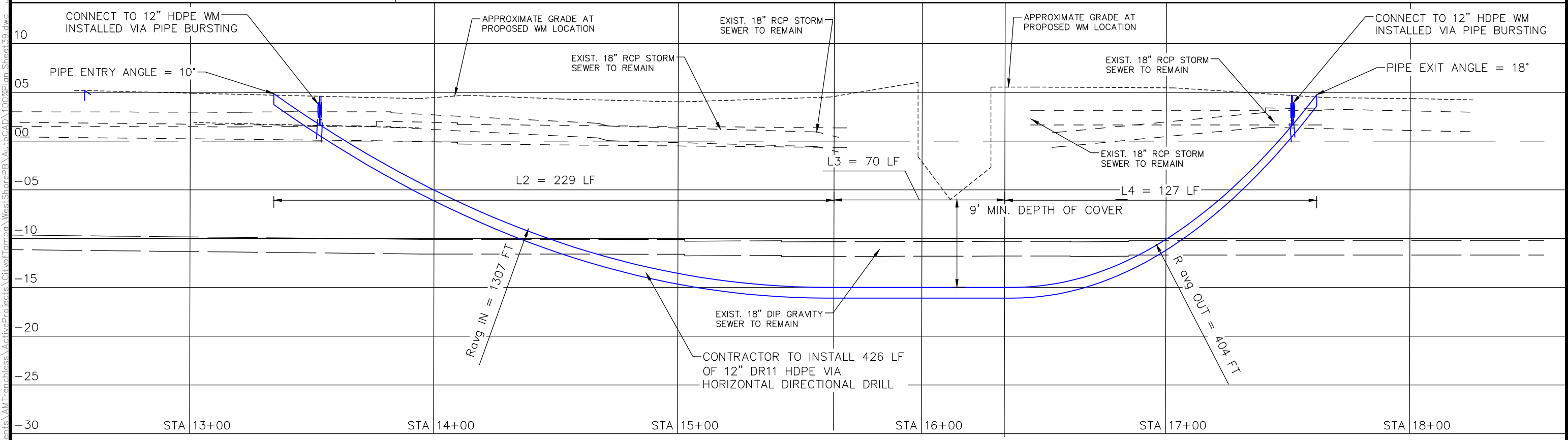
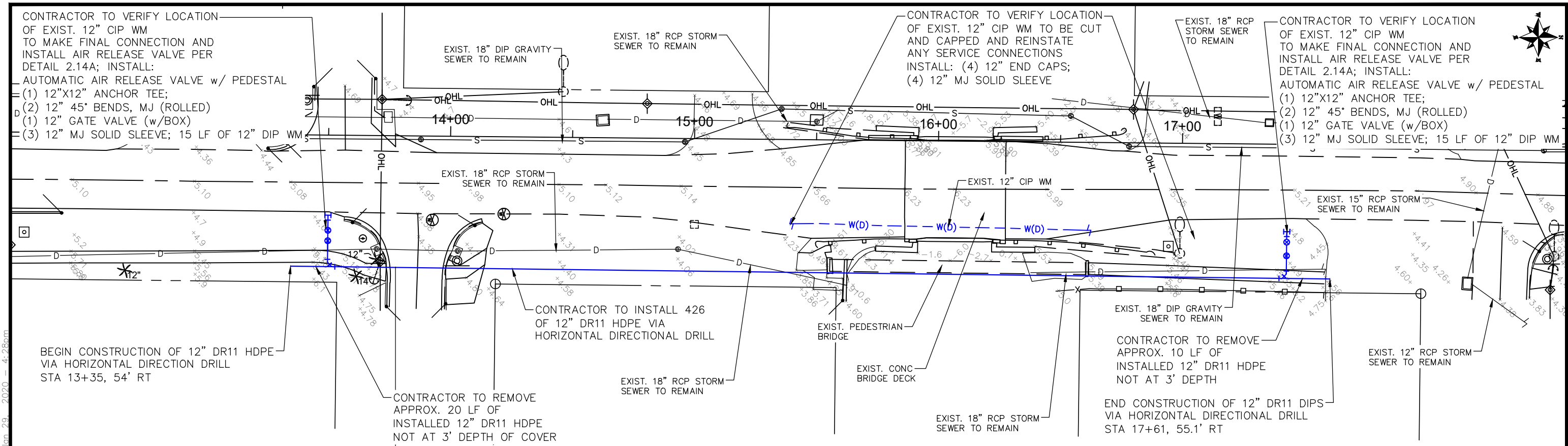
DESIGNED AA  
 DRAWN JV  
 CHECKED JMA  
 DATE 1/2020



100% PLANS  
 PROJECT NO. WTR-18D408  
 DATE: 1/29/2020  
 SHEET 38 OF 38



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 PO BOX 952066  
 LAKE MARY, FLORIDA 32795  
 P.E. #64697

REV NO	DATE	DESCRIPTION	BY

DESIGNED AA  
 DRAWN JV  
 CHECKED JMA  
 DATE 1/2020

**S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II - BID ALTERNATE 3**

**SPRING LAKE BAYOU PLAN AND PROFILE**



100% PLANS

PROJECT NO. WTR-18D408

DATE: 1/29/2020

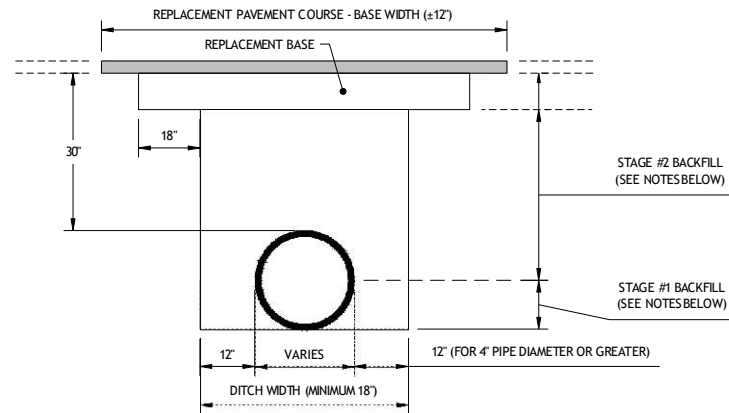
SHEET 39 OF 39





**DETAIL FOR RESTORATION WITHIN FDOT ROADWAY**

(DETAILS MODIFIED FROM FDOT DESIGN STANDARDS INDEX 307, LATEST EDITION)



**FLEXIBLE PAVEMENT NOTES:**

**PAVEMENT SHALL BE MECHANICALLY SAWED.**

PAVEMENT, BASE, AND BACKFILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH CITY OF TAMPA PAVEMENT RESTORATION REQUIREMENTS, LATEST STANDARD SPECIFICATIONS.

IN STAGE #1, CONSTRUCT COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING.

IN STAGE #2, CONSTRUCT COMPACTED FILL ALONG SIDES OF THE PIPE AND UP TO THE BOTTOM OF THE BASE. COMPACT MATERIAL USING MECHANICAL TAMPS SUITABLE TO ACHIEVE DENSITY MEETING 98% OF AASHTO T-180, LIFTS NOT TO EXCEED 12" COMPACTED.

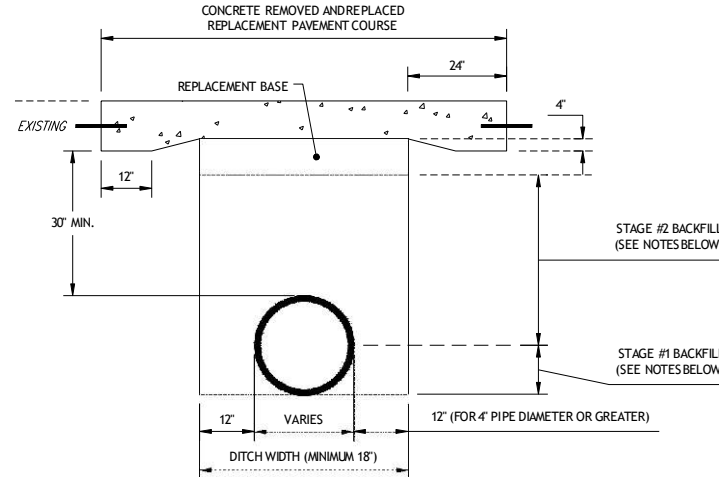
IF MECHANICAL COMPACTION IS DIFFICULT TO ACHIEVE, THEN FLOWABLE FILL MAY BE USED. IN STAGE #1, PLACE FLOWABLE FILL MIDWAY UP ON BOTH SIDES OF THE UTILITY. ALLOW TO HARDEN BEFORE PLACING STAGE #2. IF A METHOD IS PROVIDED TO PREVENT FLOATION FROM OCCURRING, STAGE #1 AND #2 CAN BE COMBINED, IF APPROVED BY CITY ENGINEER.

NOTE: SPECIFICATION STANDARDS AND REQUIREMENTS NOT ILLUSTRATED SHALL MEET LATEST FDOT STANDARD SPECIFICATIONS.

	REVISION DATE		
	JUL 2018	STANDARD DETAIL FOR RESTORATION WITHIN FDOT ROADWAY - FLEXIBLE PAVEMENT	2.00A

**DETAIL FOR RESTORATION WITHIN FDOT ROADWAY**

(DETAILS MODIFIED FROM FDOT DESIGN STANDARDS INDEX 307, LATEST EDITION)



**RIGID PAVEMENT NOTES:**

PAVEMENT SHALL BE MECHANICALLY SAWED AND RESTORED TO CONFORM WITH EXISTING PAVEMENT JOINTS.

**HIGH EARLY STRENGTH CEMENT CONCRETE (3000 PSI) MEETING WITH REQUIREMENTS OF FDOT STANDARD SPECIFICATION 346, LATEST EDITION SHALL BE USED FOR RIGID PAVEMENT REPLACEMENT.**

PAVEMENT, BASE, AND BACKFILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH CITY OF TAMPA PAVEMENT RESTORATION REQUIREMENTS, LATEST STANDARD SPECIFICATIONS.

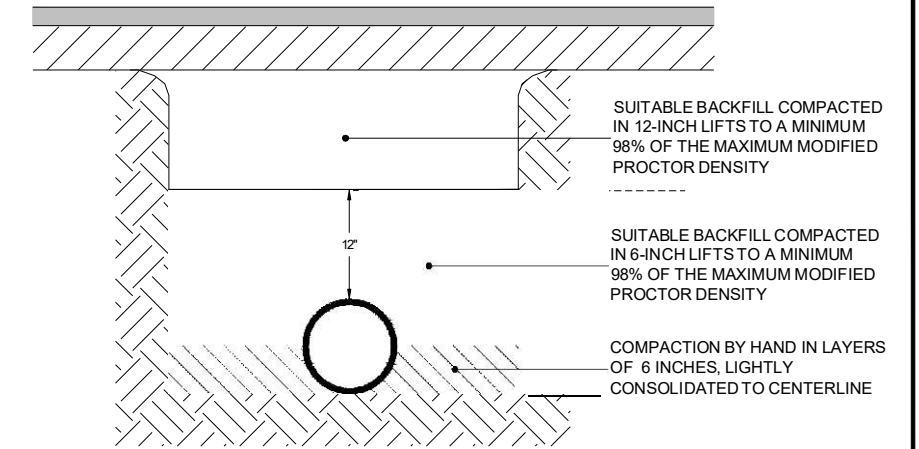
IN STAGE #1, CONSTRUCT COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING.

IN STAGE #2, CONSTRUCT COMPACTED FILL ALONG SIDES OF THE PIPE AND UP TO THE BOTTOM OF THE BASE. COMPACT MATERIAL USING MECHANICAL TAMPS SUITABLE TO ACHIEVE DENSITY MEETING 98% OF AASHTO T-180, LIFTS NOT TO EXCEED 12" COMPACTED.

IF MECHANICAL COMPACTION IS DIFFICULT TO ACHIEVE, THEN FLOWABLE FILL MAY BE USED. IN STAGE #1, PLACE FLOWABLE FILL MIDWAY UP ON BOTH SIDES OF THE UTILITY. ALLOW TO HARDEN BEFORE PLACING STAGE #2. IF A METHOD IS PROVIDED TO PREVENT FLOATION FROM OCCURRING, STAGE #1 AND #2 CAN BE COMBINED, IF APPROVED BY CITY ENGINEER.

NOTE: SPECIFICATION STANDARDS AND REQUIREMENTS NOT ILLUSTRATED SHALL MEET LATEST FDOT STANDARD SPECIFICATIONS.

	LAST REVISION		
	JUL 2018	STANDARD DETAIL FOR RESTORATION WITHIN FDOT ROADWAY - RIGID PAVEMENT	2.00B

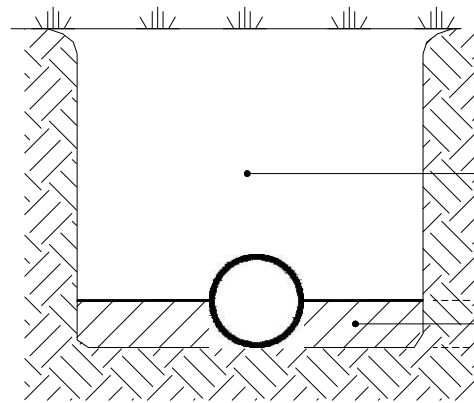


**NOTES:**

- TYPE 2 TRENCH IS DEFINED AS A FLAT-BOTTOM TRENCH. LIGHTLY CONSOLIDATE BACKFILL TO CENTERLINE OF PIPE.
- THIS STANDARD SHALL BE UTILIZED IN THE ABSENCE OF SPECIFIC STANDARDS. THE STANDARD OF THE AGENCY CONTROLLING THE RIGHT-OF-WAY SHALL GOVERN UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
- SUITABLE BACKFILL SHALL BE DEFINED AS MATERIAL FREE FROM CINDERS, ASHES, REFUSE, CLAY, ORGANIC MATTER, BOULDERS, ROCKS OR STONES, OR OTHER MATERIAL THAT IN THE OPINION OF THE CITY ENGINEER IS UNSUITABLE.
- NON-PERVIOUS AREAS SHALL MEAN ANY CONCRETE OR ASPHALT CURB, SIDEWALK, TRAIL, DRIVEWAY, OR ROADWAY.

	LAST REVISION		
	JAN 2018	TRENCHING, BEDDING AND BACKFILL DETAIL FOR NON-PERVIOUS (PAVED) AREAS	2.01A

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II	100% PLANS	PROJECT NO. 18D408
						DRAWN JV			DATE: 1/29/2020
						CHECKED JMA			
						DATE 1/29/2020			
DETAILS									SHEET 40



SUITABLE BACKFILL COMPACTED IN 12-INCH LIFTS TO A MINIMUM 95% OF THE MAXIMUM MODIFIED PROCTOR DENSITY

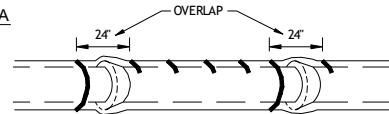
COMPACTION BY HAND IN LAYERS OF 6 INCHES, LIGHTLY CONSOLIDATED TO CENTERLINE

**NOTES:**

1. TYPE 2 TRENCH IS DEFINED AS A FLAT-BOTTOM TRENCH. LIGHTLY CONSOLIDATE BACKFILL TO CENTERLINE OF PIPE.
2. THIS STANDARD SHALL BE UTILIZED IN THE ABSENCE OF SPECIFIC STANDARDS. THE STANDARD OF THE AGENCY CONTROLLING THE RIGHT-OF-WAY SHALL GOVERN UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
3. SUITABLE BACKFILL SHALL BE DEFINED AS MATERIAL FREE FROM CINDERS, ASHES, REFUSE, CLAY, ORGANIC MATTER, BOULDERS, ROCKS OR STONES, OR OTHER MATERIAL THAT IN THE OPINION OF THE CITY ENGINEER IS UNSUITABLE.
4. NON-PAVED AREA IS A PERVIOUS AREA. IF ANY PART OF THE TRENCH IS WITHIN A CONCRETE OR ASPHALT CURB, SIDEWALK, DRIVEWAY, OR ROADWAY, THEN STANDARD DETAIL 2.01 APPLIES.

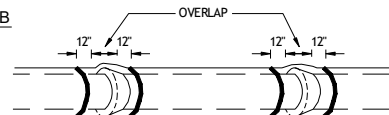
	LAST REVISION	TRENCHING, BEDDING, AND BACKFILL DETAIL FOR PERVIOUS (NON-PAVED) AREAS	2.02
	JUL 2018		

**METHOD A**



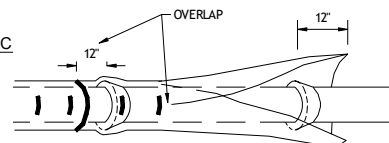
POLYETHYLENE TUBE IS CUT INTO LENGTHS APPROXIMATELY TWO FEET LONGER THAN THE PIPE SECTION AND PLACED AROUND IT. AFTER THE PIPE JOINT IS ASSEMBLED, THE POLYETHYLENE TUBE IS MADE TO OVERLAP THE JOINT AND THE OVERLAP SECURED IN PLACE. SINCE THE TUBE IS CONSIDERABLY LARGER THAN THE BARREL OF PIPE, IT IS MADE TO FIT SNUGLY BY FOLDING OVER AT THE TOP AND SECURING WITH TAPE EVERY 24" ALONG THE PIPE SECTION.

**METHOD B**



POLYETHYLENE TUBE IS CUT ONE FOOT SHORTER THAN THE LENGTH OF THE PIPE SECTION. AFTER PLACEMENT OF THE PIPE, IT IS FOLDED AND SECURED SNUGLY OVERALL. A THREE FOOT LENGTH OF POLYETHYLENE TUBE PLACED OVER THE END OF THE PRECEDING SECTION IS THEN PULLED IN PLACE OVER THE JOINT AFTER ASSEMBLY AND SECURED.

**METHOD C**

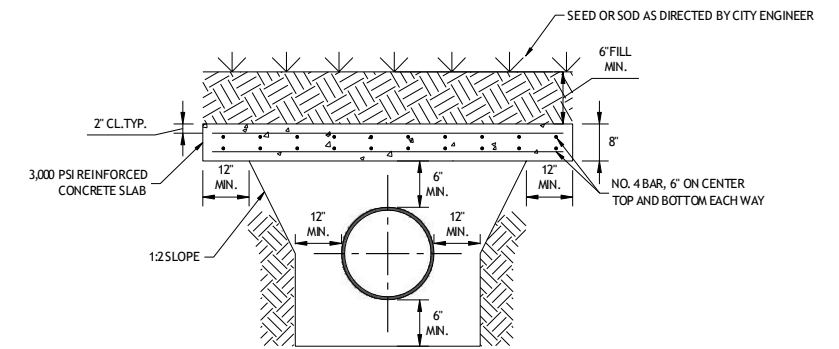


POLYETHYLENE SHEET IS CUT TO A LENGTH TWO FEET LONGER THAN THE PIPE SECTION. THE SHEET IS WRAPPED AROUND THE PIPE SO THAT IT OVERLAPS CIRCUMFERENTIALLY OVER THE TOP QUADRANT OF THE PIPE, THEN SECURED. AFTER JOINT ASSEMBLY, THE SURPLUS LENGTH OF POLYETHYLENE FILM IS SECURED AROUND THE JOINT, PROVIDING AN OVERLAP OF EACH JOINT. TAPE AT EACH JOINT AND AT 3' INTERVALS IN BETWEEN.

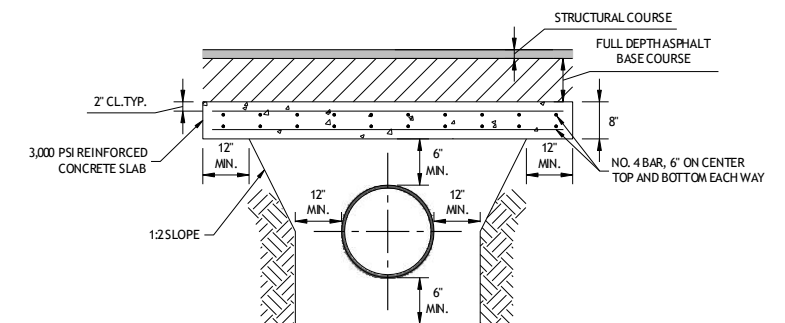
**NOTES:**

1. USE BLUE POLYETHYLENE FILM AND TAPE ONLY.
2. POLYETHYLENE FILM SHALL BE A MINIMUM OF 8 MIL THICKNESS.
3. SPIRAL WRAP NOT REQUIRED WITH POLYWRAP.

	LAST REVISION	POLYETHYLENE ENCASEMENT INSTALLATION DETAIL	2.05
	JUL 2018		



GRASSED SECTION



ROADWAY SECTION

**NOTES:**

1. STRUCTURAL COURSE AND BASE COURSE REQUIREMENT SHALL BE ESTABLISHED BY THE AGENCY HAVING JURISDICTION.
2. SHOCK PADS FOR MAINS TOO SHALLOW FOR THE ABOVE CONFIGURATION SHALL BE DESIGNED ON A CASE-BY-CASE BASIS.

	LAST REVISION	REINFORCED CONCRETE SHOCK PAD (FOR COVER LESS THAN 2.5')	2.06
	JUL 2018		

Edward Alan Ambler, PE  
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Lake Mary, FL 32795  
P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED AA
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				CHECKED JMA
				DATE 1/29/2020

S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II

100% PLANS

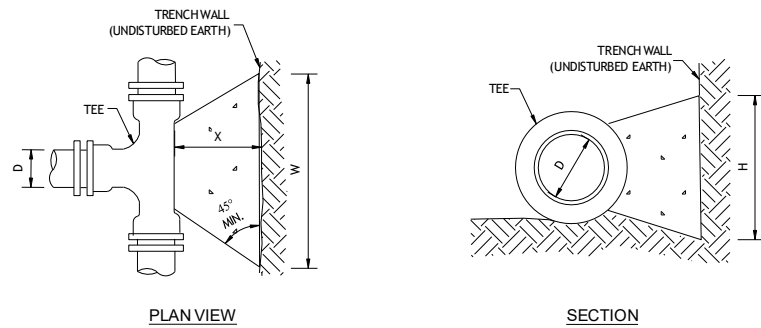
PROJECT NO. 18D408

DATE: 1/29/2020

DETAILS



SHEET 41



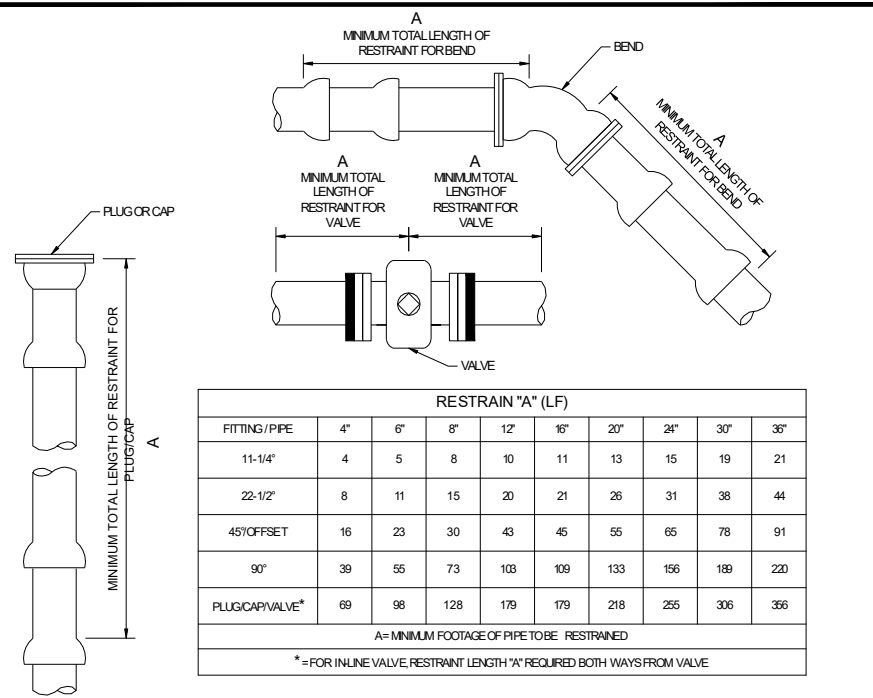
DIMENSIONS OF THRUST BLOCKS FOR GOOD SOIL								
TEES	SIZE (D)	4'	6'	8'	12'	16'	20'	24'
	THRUST (LBS.)	3,439	7,104	12,223	26,002	45,180	69,624	99,330
	BEARING AREA (FT. <sup>2</sup> )	2.58	5.33	9.17	19.50	33.89	52.22	74.50
	CONCRETE (YDS. <sup>3</sup> )	0.042	0.126	0.285	0.891	1.811	3.005	4.594
	H (FT.)	1.3	1.9	2.5	3.6	4.8	5.9	7.0
	W (FT.)	2.0	2.8	3.7	5.4	7.1	8.9	10.6
	X (FT.)	1.0 MIN.	1.4 MIN.	1.9 MIN.	2.7 MIN.	3.0 MIN.	3.0 MIN.	3.0 MIN.

**NOTES:**

1. SIZE (D), SHALL BE THE BRANCH SIZE OF TEES.
2. CONCRETE SHALL BE KEPT AT SUFFICIENT DISTANCE FROM JOINT FOR REMOVAL OF ALL JOINT ACCESSORIES INCLUDING BOLTS.
3. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED SOIL.
4. THIS TABLE SHOWS THE MINIMUM SIZE THRUST BLOCKS FOR SOIL BEARING PRESSURE OF 2000 PSF AND AN INTERNAL PRESSURE OF 190 PSI.
5. TEES SHALL BE COMPLETELY POLYWRAPPED PRIOR TO POURING THRUST BLOCKS.

**WARNING** - COVER TO T.O.P. IS 3 FEET FOR 12" AND SMALLER MAINS; 4 FEET FOR 16" AND LARGER MAINS. POOR AND WET SOIL (SILTY SOILS, CLAY, MUCK AND PEAT) WILL REQUIRE LARGER THRUST BLOCKS.

	LAST REVISION		
	JUL 2018	THRUST BLOCKS FOR TEES	2.09



**NOTES:**

1. THIS TABLE IS BASED ON:
  - a. MAXIMUM TEST PRESSURE OF 190 PSI
  - b. LAYING CONDITION TYPE 2 (SEE DETAILS 2.01 AND 2.02)
  - c. POOR SOIL CONDITIONS
  - d. USING D.I.P.
  - e. 3 FEET OF COVER FOR 12" AND SMALLER MAINS; 4 FEET OF COVER FOR 16" AND LARGER MAINS
  - f. HORIZONTAL BENDS ONLY - ENGINEER TO SUBMIT CALCULATIONS FOR VERTICAL RESTRAINTS
2. "RESTRAINED" PIPE SHALL BE MANUFACTURED RESTRAINED JOINT PIPE, PUSH-ON JOINT PIPE RESTRAINED W/GASKET-TYPE "GRIPPER RESTRAINTS", OR MECHANICAL JOINT PIPE RESTRAINED BY MEGALUG (OR APPROVED EQUIVALENT).
3. ANY ADDITIONAL FITTINGS WITHIN THE RESTRAINED SECTION SHALL BE RESTRAINED ACCORDINGLY.

	LAST REVISION		
	JUL 2018	RESTRAINED JOINT STANDARD FOR BENDS, PLUGS, CAPS, AND VALVES	2.11

FITTING SIZE	RESTRAIN (LF)		UNRESTRAINED STRAIGHT RUN (LF)
	TEE "A"	REDUCER "B"	
4x4	31	*	*
6x4	14	50	74
6x6	60	*	*
8x4	A.T.	91	178
8x6	48	54	70
8x8	90	*	*
12x4	A.T.	155	455
12x6	24	130	280
12x8	71	95	144
12x12	143	*	*
16x6	A.T.	151	401
16x8	34	130	285
16x12	96	76	103
16x16	148	*	*
20x6	A.T.	195	669
20x8	18	180	461
20x12	85	136	233
20x16	139	76	96
20x20	186	*	*
24x6	A.T.	236	971
24x8	A.T.	224	700
24x12	74	188	301
24x16	130	139	215
24x20	180	76	98
24x24	224	*	*
30x6	A.T.	293	1534
30x8	A.T.	283	1130
30x12	56	255	678
30x16	118	216	426
30x20	169	198	280
30x24	215	108	138
30x30	275	*	*
36x6	A.T.	345	2220
36x8	A.T.	336	1660
36x12	38	314	1030
36x16	104	283	689
36x20	159	244	466
36x24	206	195	306
36x30	289	108	133
36x36	328	*	*

A.T. = RESTRAINT REQUIRED AT TEE ONLY. \* = NOT APPLICABLE

**NOTES:**

1. THIS TABLE IS BASED ON:
  - a. MAXIMUM TEST PRESSURE OF 190 PSI
  - b. LAYING CONDITION TYPE 2 (SEE DETAILS 2.01 AND 2.02)
  - c. POOR SOIL CONDITIONS
  - d. USING D.I.P.
  - e. 3 FEET OF COVER FOR 12" AND SMALLER MAINS; 4 FEET OF COVER FOR 16" AND LARGER MAINS
  - f. HORIZONTAL BENDS ONLY - ENGINEER TO SUBMIT CALCULATIONS FOR VERTICAL RESTRAINTS
2. RESTRAINT FOR REDUCERS: IF "C" STRAIGHT RUN OF PIPE DOWNSTREAM OF REDUCER NOT AVAILABLE, THE RESTRAINT "B" UPSTREAM OF REDUCER.
3. "RESTRAINED" PIPE SHALL BE MANUFACTURED RESTRAINED JOINT PIPE, PUSH-ON JOINT PIPE RESTRAINED W/GASKET-TYPE "GRIPPER RESTRAINTS", OR MECHANICAL JOINT PIPE RESTRAINED BY MEGALUG (OR APPROVED EQUIVALENT).
4. ANY ADDITIONAL FITTINGS WITHIN THE RESTRAINED SECTION SHALL BE RESTRAINED ACCORDINGLY.

	LAST REVISION		
	JUL 2018	RESTRAINED JOINT STANDARD FOR TEES AND REDUCERS	2.12A

**PLAN VIEW**

**PROFILE**

SIZE (D)	4"	6"	8"	12"	16"	20"	24"
THRUST (LBS.)	3,439	7,104	12,223	26,002	45,180	69,624	99,330
BEARING AREA (FT. <sup>2</sup> )	2.58	5.33	9.17	19.50	33.89	52.22	74.50
CONCRETE (YDS. <sup>3</sup> )	0.15	0.31	0.71	1.51	3.29	5.07	7.23
H (FT.)	1.6	2.4	3.1	4.5	6.0	7.4	8.8
W (FT.)	1.6	2.4	3.1	4.5	6.0	7.4	8.8
X (FT.)	1.5 MIN.	1.5 MIN.	2.0 MIN.	2.0 MIN.	2.5 MIN.	2.5 MIN.	2.5 MIN.

**NOTES:**

- CONCRETE SHALL BE KEPT AT SUFFICIENT DISTANCE FROM JOINT FOR REMOVAL OF ALL JOINT ACCESSORIES INCLUDING BOLTS.
- ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED SOIL.
- THIS TABLE SHOWS THE MINIMUM SIZE THRUST BLOCKS FOR SOIL BEARING PRESSURE OF 2000 PSF AND AN INTERNAL PRESSURE OF 190 PSI. COVER TO T.O.P. IS 3 FEET FOR 12" AND SMALLER MAINS; 4 FEET FOR 16" AND LARGER MAINS.
- POOR AND WET SOIL (SILTY SOILS, CLAY, MUCK AND PEAT) WILL REQUIRE LARGER THRUST BLOCKS, AS DIRECTED BY CITY ENGINEER.
- FITTINGS SHALL BE COMPLETELY POLYWRAPPED PRIOR TO POURING THRUST BLOCKS.

\* CLOSEST DISTANCE TO VALVE FOR DEADMAN TO REMAIN EFFECTIVE.

City of Tampa Water Department	LAST REVISION	DEADMAN THRUST BLOCK	2.12B
	JUL 2018		

**EXISTING 2" TO 2-1/2" WATER MAIN TO BE CONNECTED TO LARGER MAIN**

2" THREADED GATE VALVE W/BOX  
2" STD. GALVANIZED NIPPLE, MAX LENGTH 1', OR AS DIRECTED BY THE ENGINEER  
2" HDPE COMPRESSION x 2" FEMALE IP THREAD COUPLING  
2" HDPE TUBING  
2" CORPORATION STOP x 2" HDPE COMPRESSION FITTING  
INSTALL CORP STOP BY DIRECT TAP OR SERVICE SADDLE AS REQUIRED PER DETAIL 5.01 "TAPPING DETAIL"  
LARGER MAIN TO BE TAPPED FOR CONNECTION TO SMALLER MAIN

2" STD. GALVANIZED NIPPLE  
TRANSITION SLEEVE  
2" STD. GALVANIZED ELBOW OR 2" x 2" STD. GALVANIZED TEE (AS REQUIRED)  
2" STD. GALVANIZED NIPPLE  
TRANSITION SLEEVE  
EXISTING 2" TO 2-1/2" WATER MAIN

**NOTE:**  
SEE DETAIL 5.01 TO DETERMINE WHEN SADDLES ARE REQUIRED FOR CORP INSTALLATION. VALVE SHALL BE SET IN ACCORDANCE WITH DETAIL 3.01.

City of Tampa Water Department	LAST REVISION	TAPPED CONNECTION FROM DI, CI, OR PVC PIPE TO <4" WATER MAINS	2.13A
	JUL 2018		

10" PEDLOCK FIBER OPTIC PEDESTAL - SHELL ONLY (TWO-PIECE SPLIT BASE AND LOW PROFILE DOME) CHARLES INDUSTRIES PART NO. CP210-NLP (SEE DETAIL 2.15 FOR PEDESTAL DIMENSIONS)

1/2" PVC SCREENED STANDPIPE  
VACUUM CHECK  
FINISH GRADE  
APPROVED 2" AUTOMATIC AIR RELEASE VALVE  
GRAVEL  
2" GALV. 90° BEND  
2" HDPE  
2" CORP STOP  
2" TAP

**NOTES:**

- AIR RELEASE VALVE TO BE INSTALLED INSIDE OF A CHARLES IND. BURIED, SQUARE, SPLIT PEDESTAL WITH LOW PROFILE DOME OR APPROVED EQUAL. LOCK MECHANISM TO BE LOCATED MIN. 2" ABOVE FINISH GRADE.
- PEDESTAL BASE TO BE PLACED ON 4" THICK, COMPACTED GRAVEL BED.
- SCREENED OPENING OF THE STANDPIPE TO BE 12" MIN. ABOVE FINISH GRADE.

City of Tampa Water Department	LAST REVISION	AUTOMATIC AIR RELEASE VALVE	2.14A
	JUL 2018		

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PO Box 952066  
Lake Mary, FL 32795  
P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED AA
				DRAWN JV
				CHECKED JMA
				DATE 1/29/2020

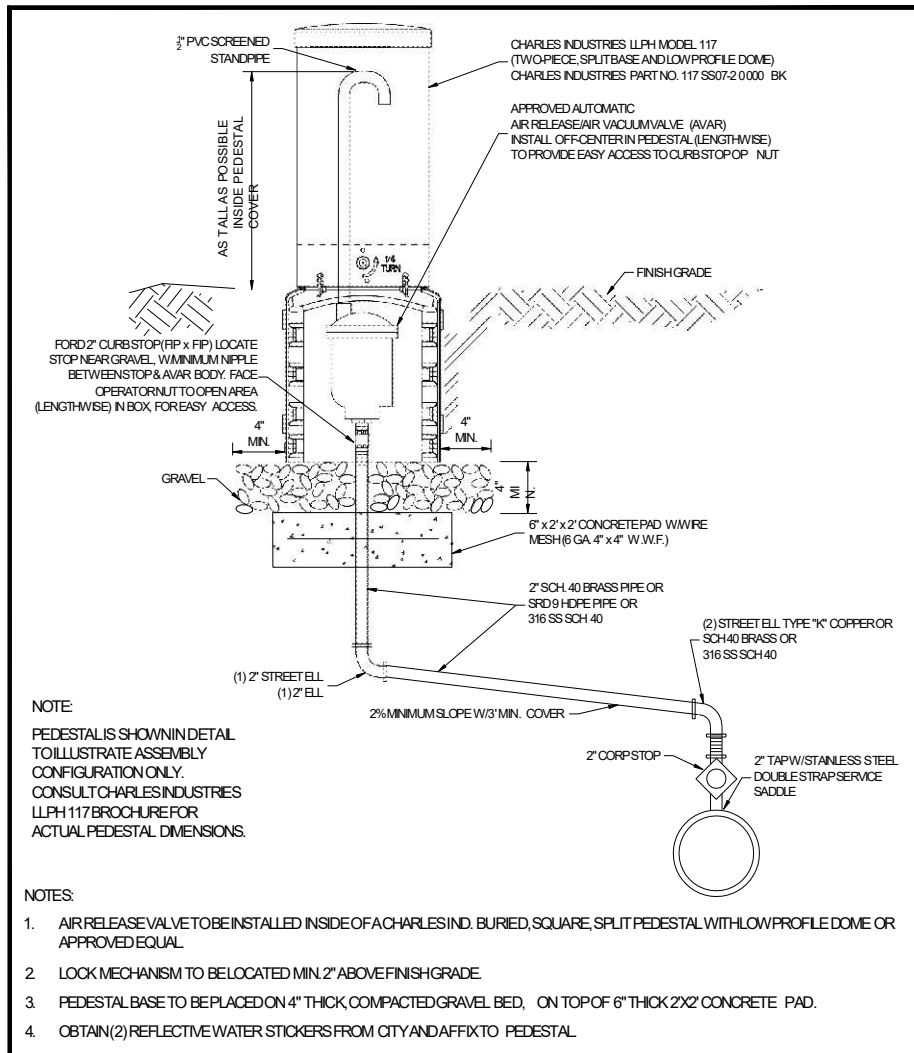
S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II

DETAILS

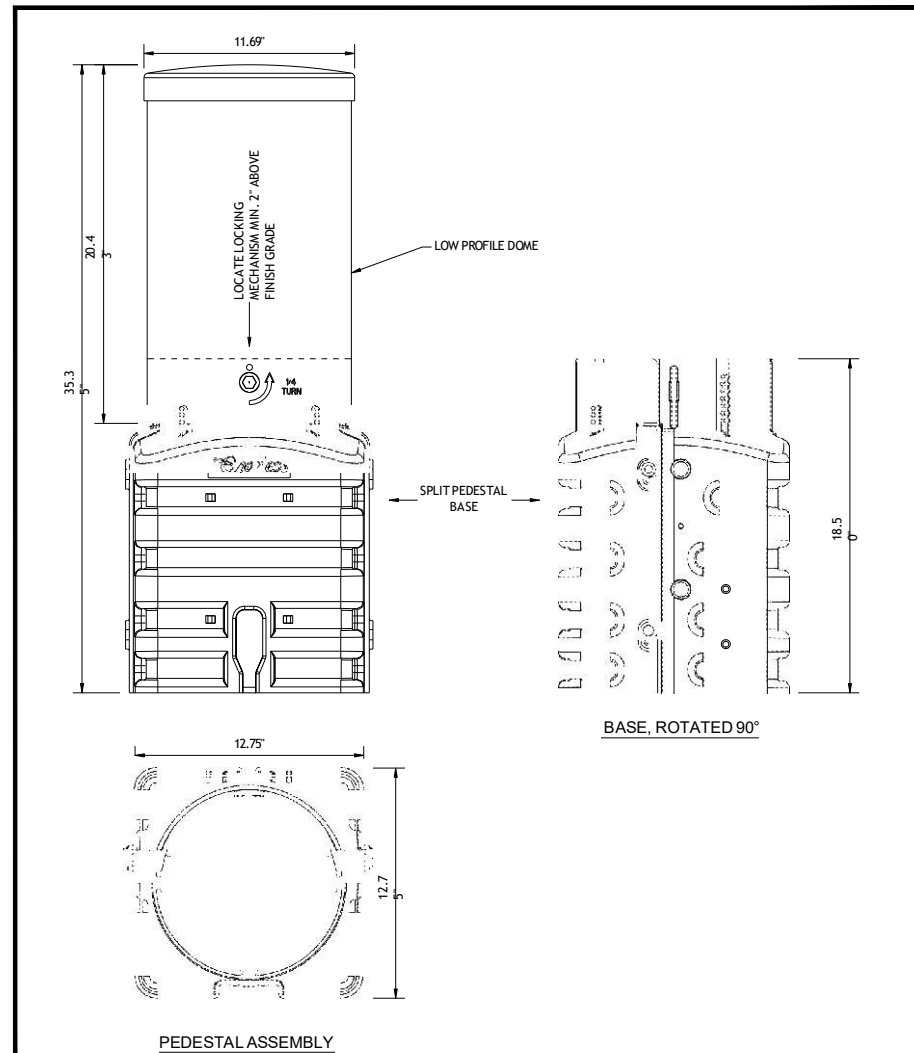
100% PLANS

**AM TRENCHLESS**

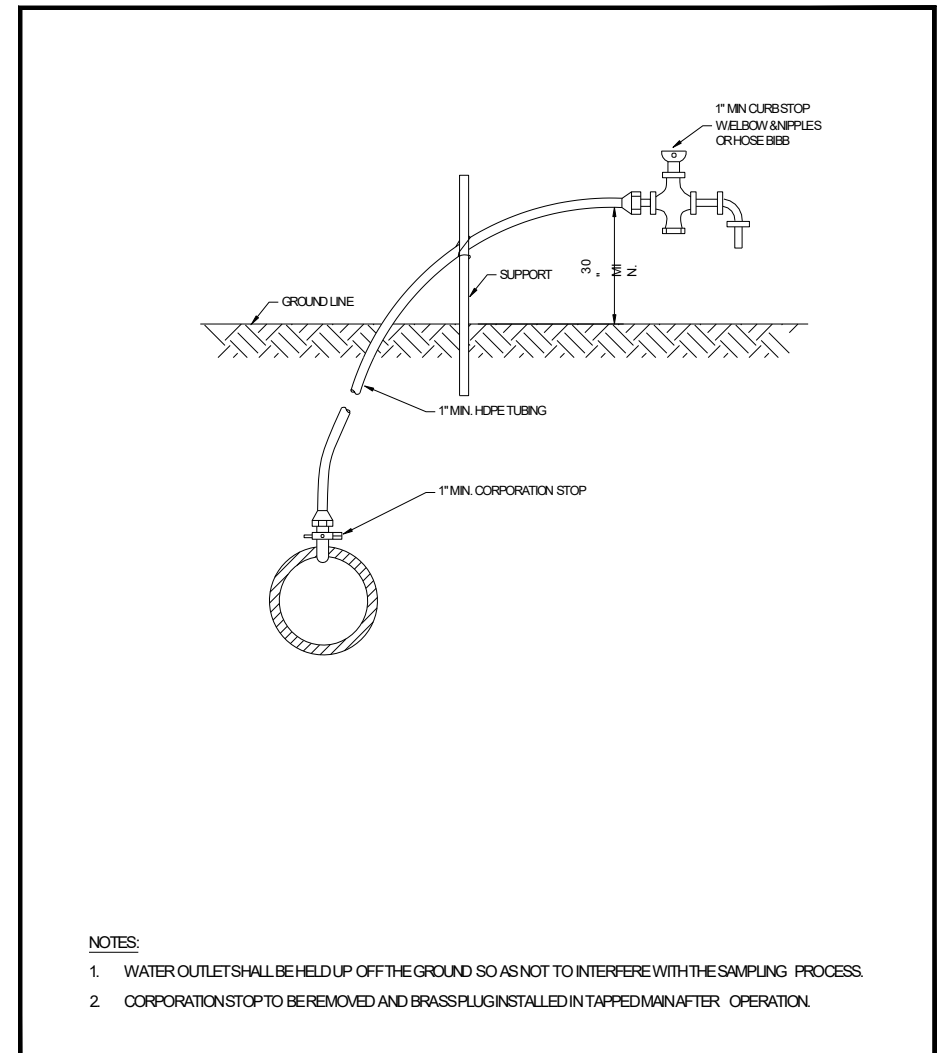
PROJECT NO. 18D408  
DATE: 1/29/2020  
SHEET 43



	LAST REVISION	AUTOMATIC AIR RELEASE/AIR VACUUM VALVE	2.14B
	JUL 2018		



	LAST REVISION	PEDESTAL FOR AUTOMATIC AIR RELEASE VALVE	2.15
	JUL 2018		



	LAST REVISION	TEMPORARY SAMPLE TAP INSTALLATION W/DI, CI, OR PVC PIPE	2.18A
	JUL 2018		

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Lake Mary, FL 32795  
P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED AA
				DRAWN JV
				CHECKED JMA
				DATE 1/29/2020

S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II

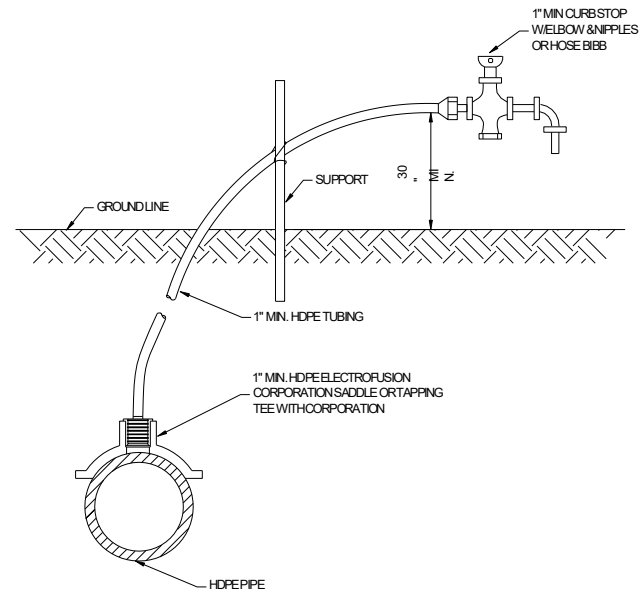
DETAILS

100% PLANS



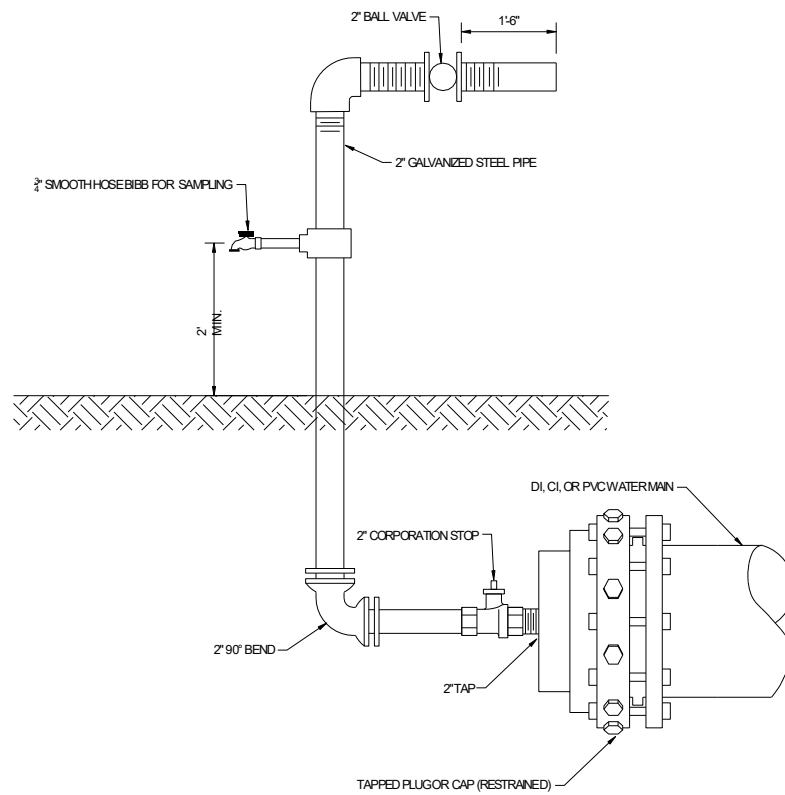
PROJECT NO. 18D408  
DATE: 1/29/2020

SHEET 44



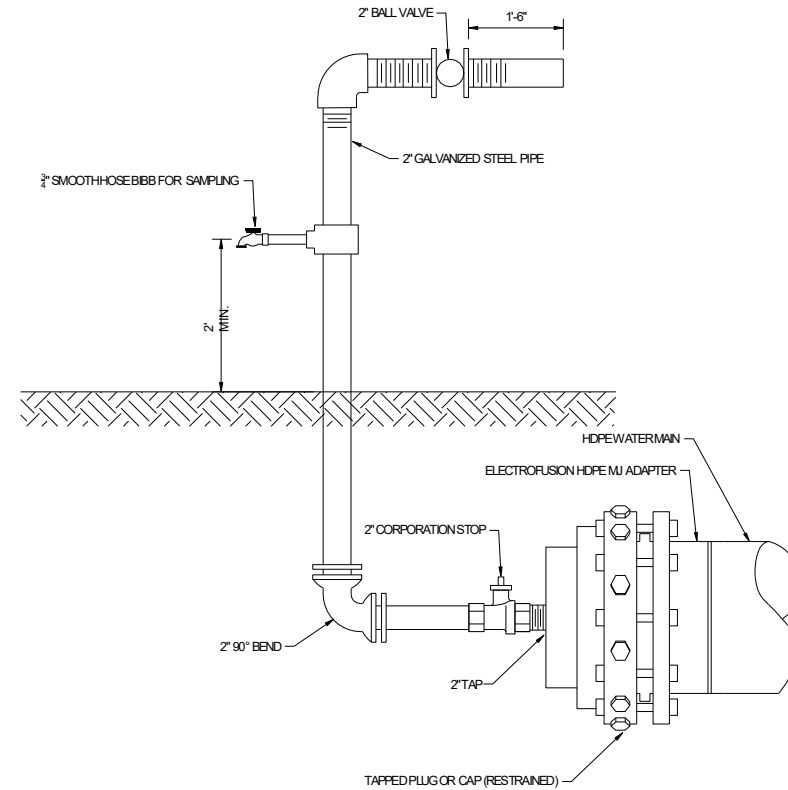
- NOTES:
1. WATER OUTLET SHALL BE HELD UP OFF THE GROUND SO AS NOT TO INTERFERE WITH THE SAMPLING PROCESS.
  2. CORPORATION STOP TO BE REMOVED AND PLUGGED AFTER OPERATION.

	LAST REVISION	TEMPORARY SAMPLE TAP INSTALLATION W/HDPE PIPE	2.18B
	JUL 2018		



- NOTES:
1. FOR DEAD-END MAINS, SAMPLE TAP TO BE INSTALLED ON A 2" TAPPED CAP/PLUG.
  2. FLUSHING/SAMPLING ARRANGEMENT TO BE REMOVED AFTER DISINFECTION OF MAINLINE.
  3. AFTER OPERATION COMPLETE, INSTALL BRASS PLUG AT CORPORATION STOP.

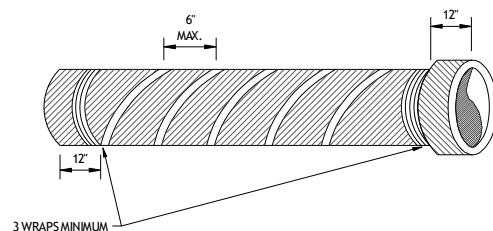
	LAST REVISION	TEMPORARY SAMPLE TAP INSTALLATION FOR END OF LINE W/DI, CI, OR PVC PIPE	2.19A
	JUL 2018		



- NOTES:
1. FOR DEAD-END MAINS, SAMPLE TAP TO BE INSTALLED ON A 2" TAPPED CAP/PLUG.
  2. FLUSHING/SAMPLING ARRANGEMENT TO BE REMOVED AFTER DISINFECTION OF MAINLINE.
  3. AFTER OPERATION COMPLETE, INSTALL BRASS PLUG AT CORPORATION STOP.

	LAST REVISION	TEMPORARY SAMPLE TAP INSTALLATION FOR END OF LINE W/HDPE PIPE	2.19B
	JUL 2018		

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II	100% PLANS	PROJECT NO. 18D408		
										DATE: 1/29/2020	
						DATE 1/29/2020	DETAILS		SHEET 45		



SPIRAL WRAP

NOTES:

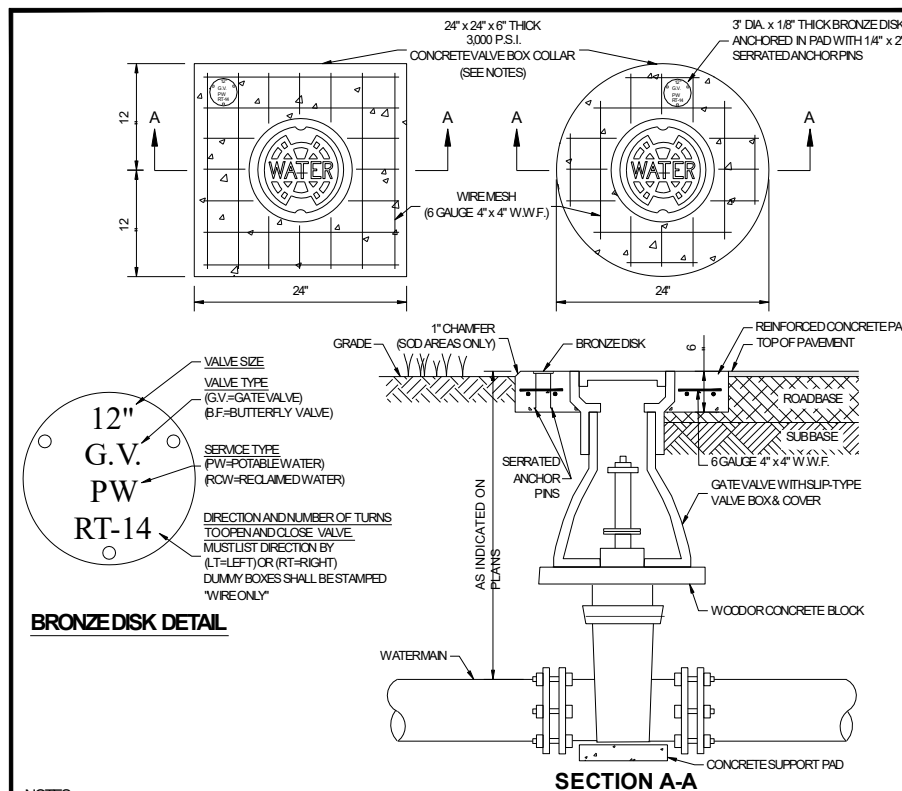
1. TO ENSURE PROPER ADHESION, EACH PIPE RUN SHALL BE WRAPPED WITH A CONTINUOUS RUN OF TAPE.
2. ALL TAPE SHALL BE MIN. 2" BLUE VINYL TAPE FOR POTABLE WATER.



LAST REVISION  
JUL 2018

DUCTILE IRON PIPE  
IDENTIFICATION DETAIL

2.20



BRONZE DISK DETAIL

NOTES:

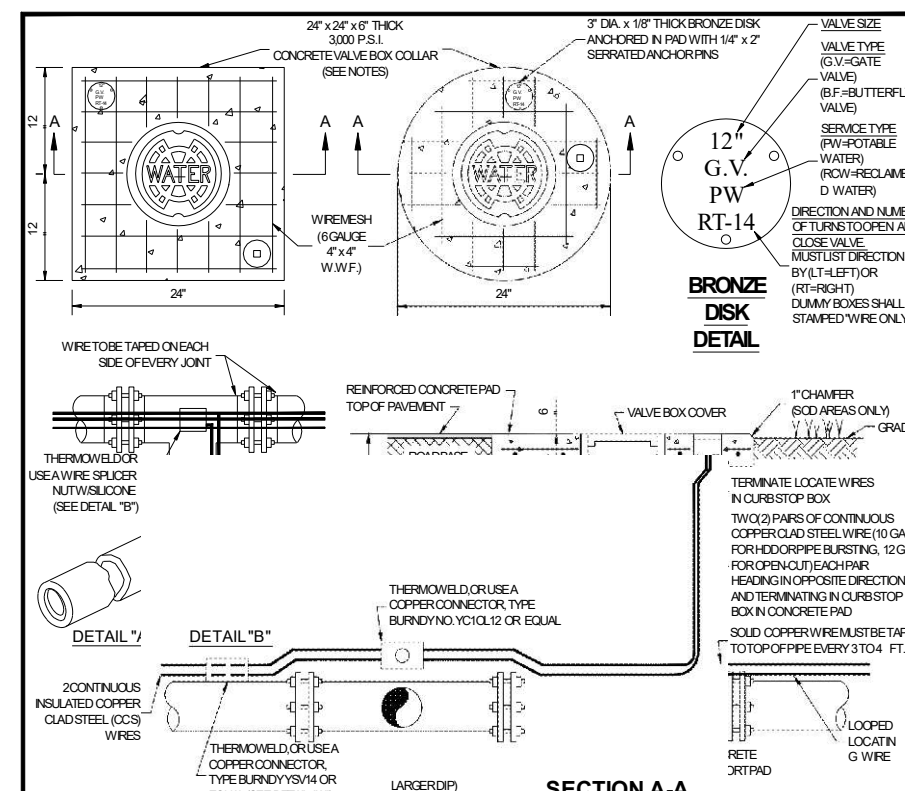
1. CIRCULAR OR SQUARE CONCRETE PAD REQUIRED FOR ALL VALVE BOX INSTALLATIONS.
2. CAST IRON VALVE BOXES SHALL BE FIRMLY SUPPORTED AND CENTERED AND PLUMB OVER THE OPERATING NUT OF THE VALVE. VALVE BOX COVER SHALL BE FLUSH WITH THE SURFACE OF THE FINISHED PAVEMENT, OR GRADE OR AT SUCH OTHER LEVEL AS MAY BE DIRECTED BY THE DEPARTMENT.
3. "BLUE" WATER VALVE LOCATE MARKERS REQUIRED FOR ALL VALVE INSTALLATIONS.
4. EMBED BRONZE VALVE INFO DISK INTO CONCRETE VALVE BOX COLLAR.
5. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST T.W.D. APPROVED MATERIAL SPECIFICATIONS.
6. IF VALVE IS LOCATED WITHIN A SIDEWALK CONCRETE COLLAR MAY BE ELIMINATED AND DISK SET FLUSH DIRECTLY IN SIDEWALK.
7. BRONZE DISK REQUIRED FOR ALL VALVES AND DUMMY BOXES.



LAST REVISION  
JUL 2018

VALVE INSTALLATION  
W/ VALVE BOX & PAD  
FOR DI OR CI PIPE

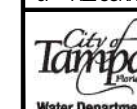
3.01



BRONZE DISK DETAIL

NOTES:

1. CIRCULAR OR SQUARE CONCRETE PAD REQUIRED FOR ALL VALVE BOX INSTALLATIONS.
2. CAST IRON VALVE BOXES SHALL BE FIRMLY SUPPORTED AND CENTERED AND PLUMB OVER THE OPERATING NUT OF THE VALVE. VALVE BOX COVER SHALL BE FLUSH WITH THE SURFACE OF THE FINISHED PAVEMENT, OR GRADE OR AT SUCH OTHER LEVEL AS MAY BE DIRECTED BY THE DEPARTMENT.
3. "BLUE" WATER VALVE LOCATE MARKERS REQUIRED FOR ALL VALVE INSTALLATIONS.
4. EMBED BRONZE VALVE INFO DISK INTO CONCRETE VALVE BOX COLLAR.
5. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST T.W.D. APPROVED MATERIAL SPECIFICATIONS.
6. IF VALVE IS LOCATED WITHIN A SIDEWALK CONCRETE COLLAR MAY BE ELIMINATED AND DISK SET FLUSH DIRECTLY IN SIDEWALK.
7. BRONZE DISK REQUIRED FOR ALL VALVES AND DUMMY BOXES.
8. ALL CONNECTIONS SHALL BE SEALED WITH A BITUMINOUS COATING FOR CORROSION PROTECTION.



LAST REVISION  
JUL 2018

VALVE INSTALLATION W/ VALVE BOX &  
PAD FOR PLASTIC PIPE WITH DOUBLE  
COPPER TRACER WIRE ON PIPE

3.02

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P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED AA
				DRAWN JV
				CHECKED JMA
				DATE 1/29/2020

S. WESTSHORE BLVD. WATER  
MAIN REPLACEMENT II

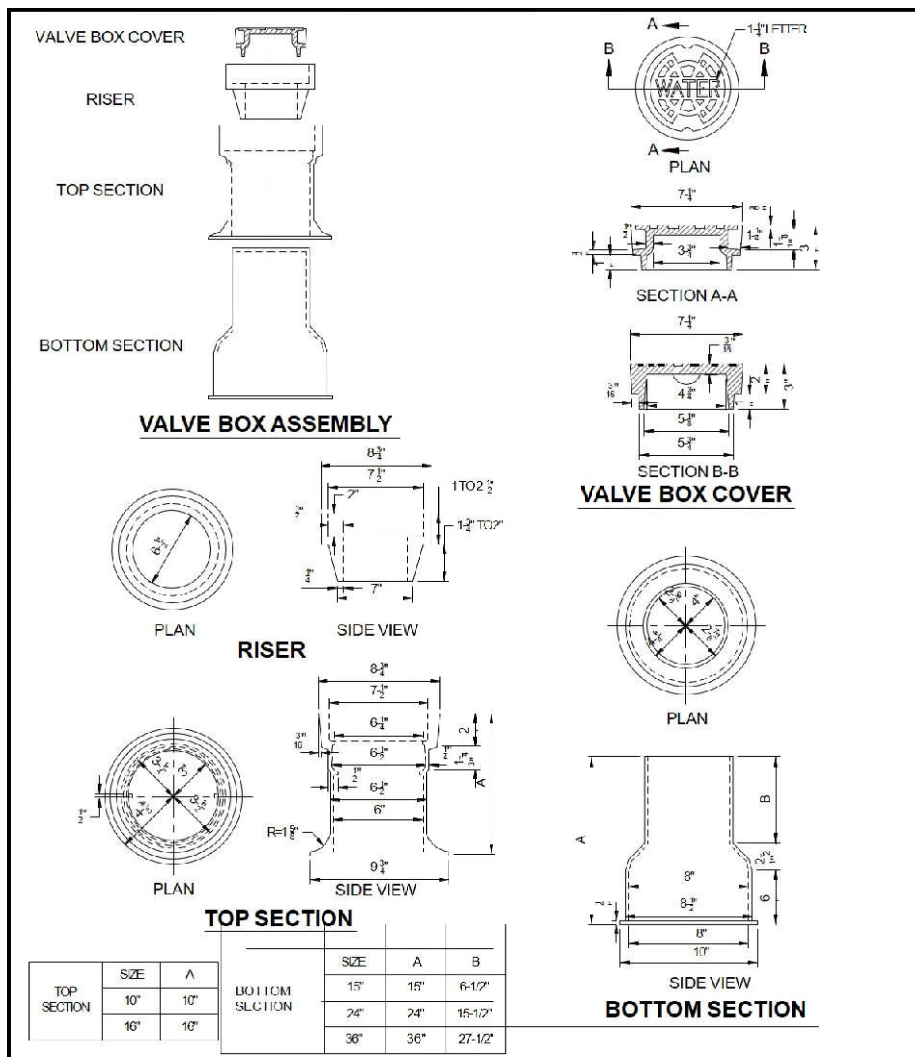
DETAILS

100% PLANS

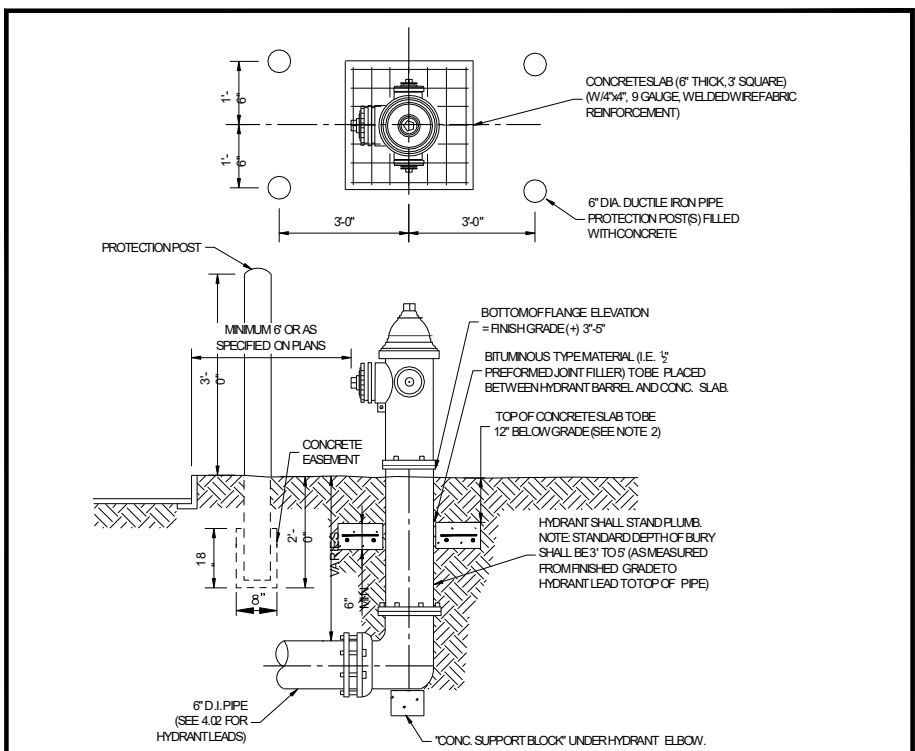


PROJECT NO. 18D408  
DATE: 1/29/2020

SHEET 46

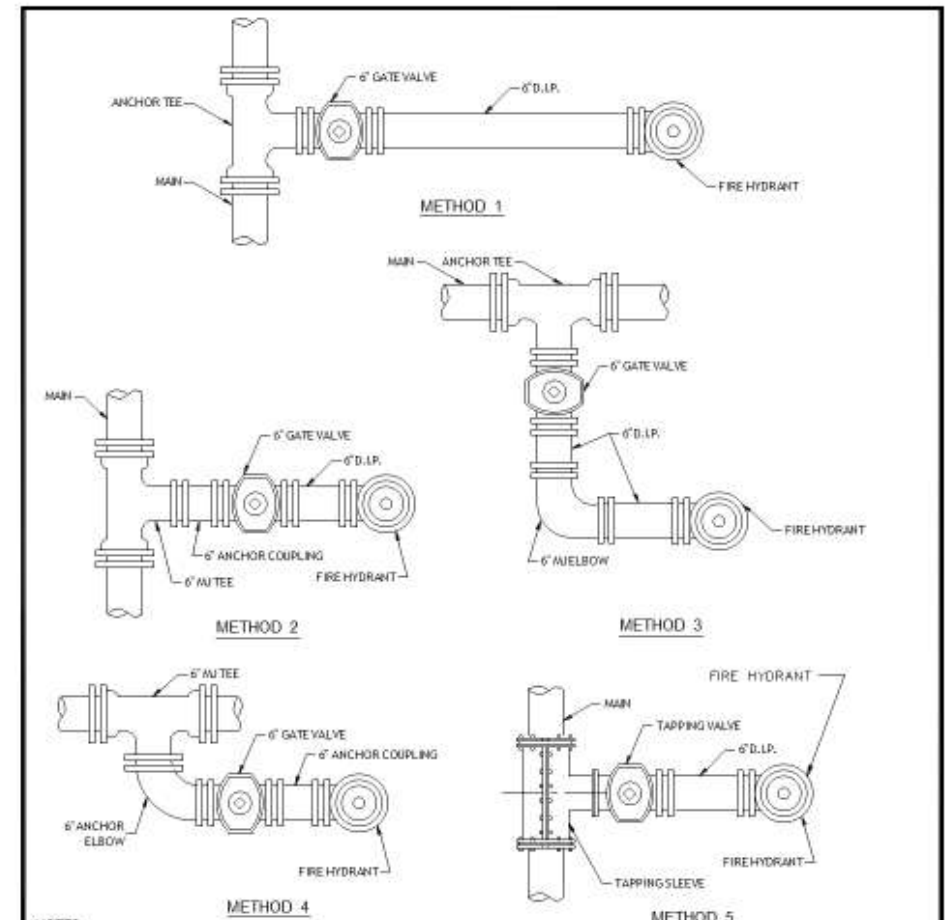


	LAST REVISION		
	JUL 2018	VALVE BOX, SLIP TYPE	3.04



- NOTES:
- FIRE HYDRANT BARREL ABOVE THE GROUND LINE SHALL BE PAINTED WITH A HIGH GRADE ENAMEL PAINT, FEDERAL SAFETY YELLOW (OSHA APPROVED), AND THE HYDRANT BONNET SHALL BE PAINTED OSHA GREEN.
  - CONCRETE SLAB MAY BE ELIMINATED IN AREAS WHERE HYDRANT IS SET IN SIDEWALK AND SIDEWALK HAS BEEN INSTALLED PRIOR TO FINAL ACCEPTANCE OF THE HYDRANT.
  - THRUST RESTRAINT FOR HYDRANT:
    - HYDRANT SHALL BE FIRMLY SUPPORTED UNDER ELBOW IN ALL METHODS BY SUPPORT BLOCK
    - ALL BACKFILL SHALL BE THOROUGHLY COMPACTED UNDER SUPPORT BLOCK AND UNDER THRUST COLLAR
    - ALL HYDRANT LEADS SHALL BE RESTRAINED BY MEGALUGS OR EQUIVALENT MECHANICAL RESTRAINTS
  - PROTECTION POSTS ARE REQUIRED WHEN HYDRANT IS LESS THAN 6 FEET FROM EDGE OF PAVEMENT, OR AS DIRECTED BY THE ENGINEER.
  - FOR PVC MAINS, INSTALL CONCRETE SUPPORT BLOCK UNDER ALL HYDRANT TEES.

	LAST REVISION		
	JUL 2018	FIRE HYDRANT INSTALLATION	4.01

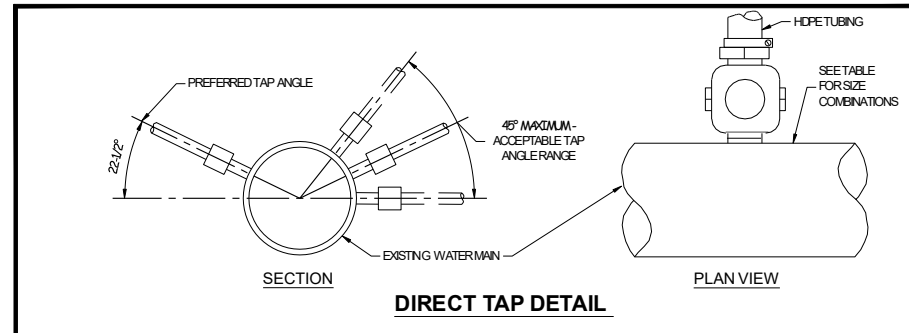


- NOTES:
- VALVE SHALL BE SET IN ACCORDANCE WITH DETAIL 3.01. FOR HYDRANT SET, SEE DETAIL 4.01.
  - ALL VALVES SHALL BE ANCHORED TO BRANCH OF TEE ON ALL HYDRANT INSTALLATIONS.
  - ALL HYDRANT LEADS SHALL BE RESTRAINED BY MEGALUGS OR EQUIVALENT.
  - FOR PVC MAINS, INSTALL CONCRETE SUPPORT BLOCK UNDER HYDRANT TEES.

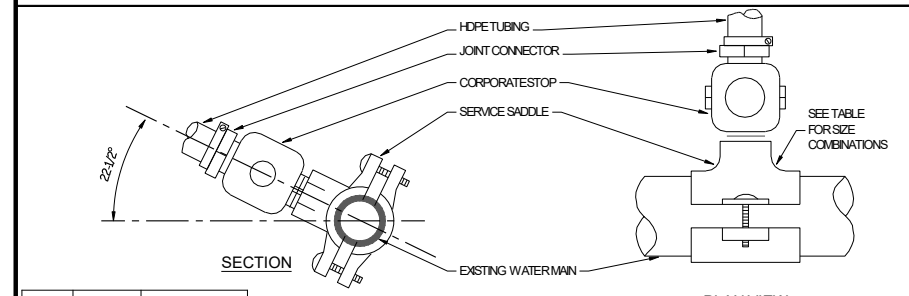
	LAST REVISION		
	JUL 2018	FIRE HYDRANT METHODS OF INSTALLATION	4.02

Edward Alan Ambler, PE AM Trenchless PO Box 952066 Lake Mary, FL 32795 P.E. #64697		REV NO	DATE	DESCRIPTION	BY	DESIGNED AA	S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II	100% PLANS	PROJECT NO. 18D408
						DRAWN JV			DATE: 1/29/2020
						CHECKED JMA			
						DATE 1/29/2020			
DETAILS									SHEET 47





**DIRECT TAP DETAIL**

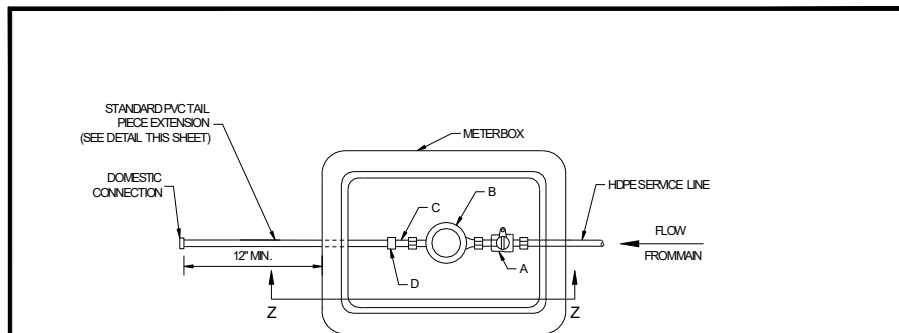


**SADDLE TAP DETAIL**

PIPE	SIZE	CORP. TAP SIZE	
D/I/O	12"	DT	DT
	8"	DT	SS
	6"	DT	SS
	4"	SS	SS
PVC	2", 2-1/2"	SS	NA
	8", C900	SS	SS
	6", C900	SS	SS
	2", SDR21	SS	NA
OTHER*	12"	SS	SS
	10"	SS	SS
	8"	SS	SS
	6"	SS	SS
	4"	SS	NA
	3"	SS	NA
	2", 2-1/2"	SS	NA

**LEGEND**  
 DT- DIRECT TAP CAN BE ALLOWED SS- SERVICE SADDLE IS REQUIRED NA- NOT ALLOWED  
 \*ASBESTOS CEMENT, STEEL, GALVANIZED IRON PIPE, NON STD PVC, ETC.

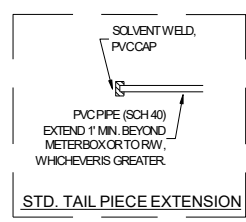
City of Tampa Water Department logo and revision information: LAST REVISION JUL 2018, TAPPING DETAIL FOR 3/4", 1", 1-1/2" & 2" W/DI, CI, OR PVC PIPE, 5.01A



**SECTION Z-Z**

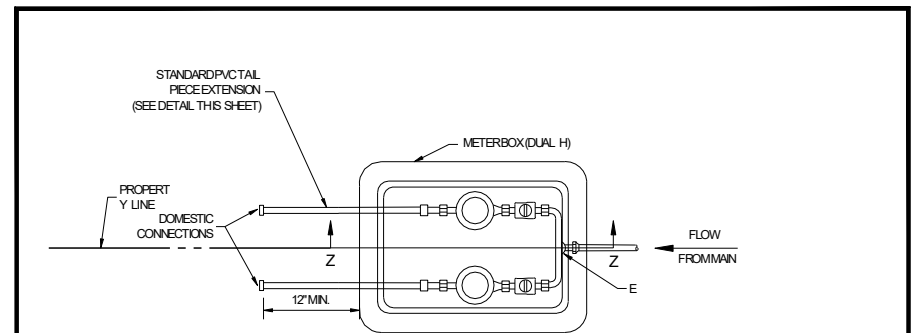
**METER INSTALLATION PARTS LIST**

ITEM	DESCRIPTION
A	HDPE C/J X METER SW/VEL NUT (CURB STOP)
B	METER
C	BRASS METER COUPLING
D	*PVC F/P X WELD COUPLING



\* ALL PVC PIPE AND FITTINGS SHALL BE SCH 80 EXCEPT FOR STANDARD TAIL PIECE SECTION WHICH WILL BE SCH 40.  
 NOTE: PARTS LIST IS FOR STANDARD INSTALLATION; ACTUAL PARTS REQUIRED MAY VARY AS DIRECTED BY THE ENGINEER.

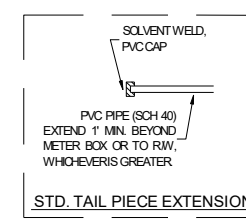
City of Tampa Water Department logo and revision information: LAST REVISION JUL 2018, SINGLE METER SET DETAIL 3/4", 1", 1-1/2", 2", 5.02



**SECTION Z-Z**

**METER INSTALLATION PARTS LIST**

ITEM	DESCRIPTION
A	RP CURB X METER SW/VEL NUT (CURB STOP)
B	METER
C	METER COUPLING
D	*PVC F/P X WELD COUPLING
E	MIP X HDPE C/J BRANCH COUPLING



\* ALL PVC PIPE AND FITTINGS SHALL BE SCH 80 EXCEPT FOR STANDARD TAIL PIECE SECTION WHICH WILL BE SCH 40.  
 NOTE: PARTS LIST IS FOR STANDARD INSTALLATION; ACTUAL PARTS REQUIRED MAY VARY AS DIRECTED BY THE CITY ENGINEER.

City of Tampa Water Department logo and revision information: LAST REVISION JUL 2018, DUAL METER SET DETAIL 3/4" & 1", 5.03

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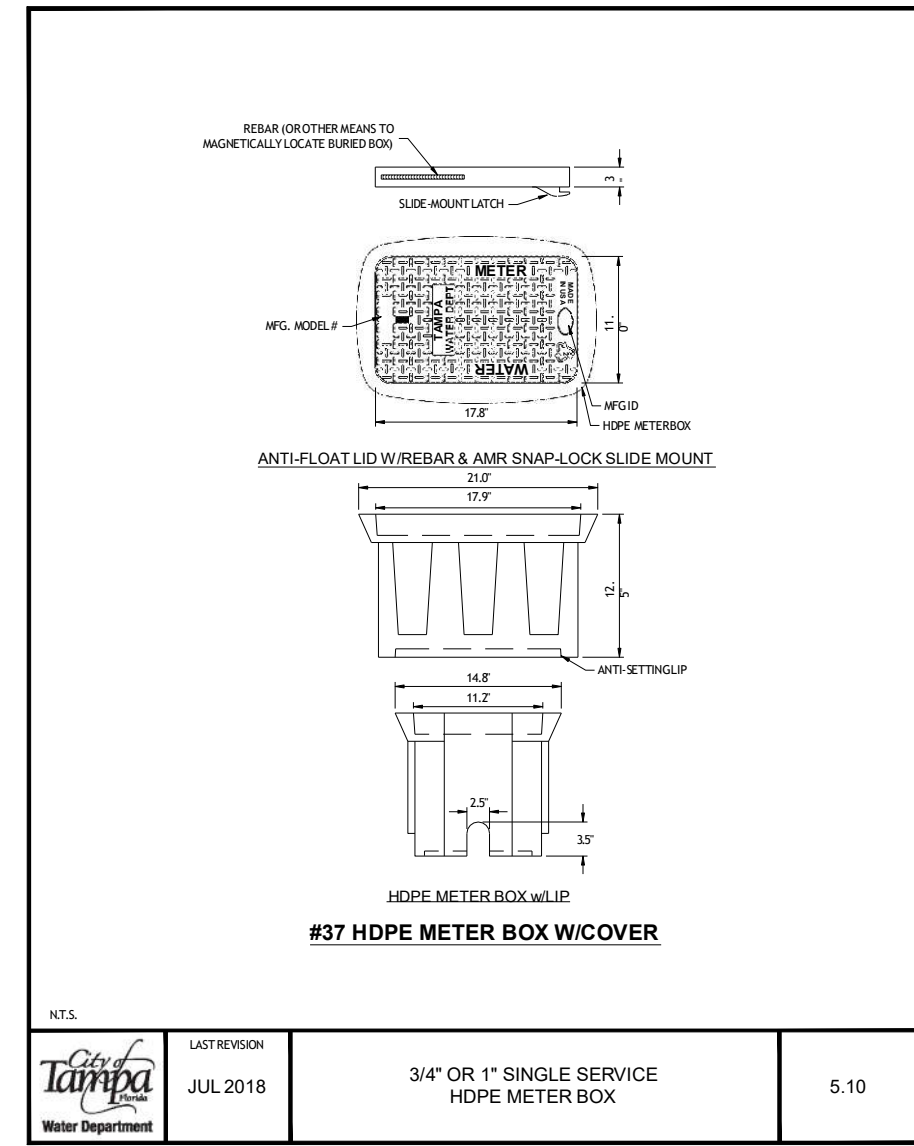
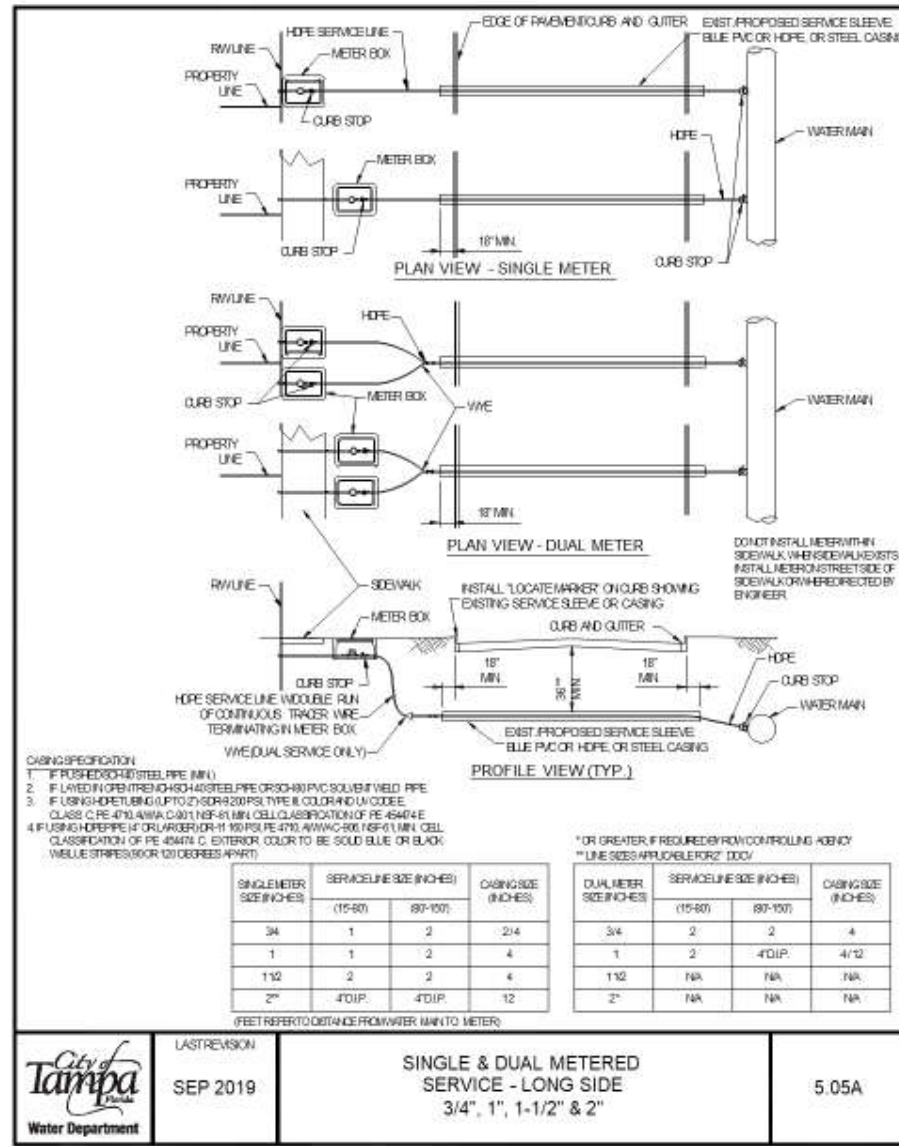
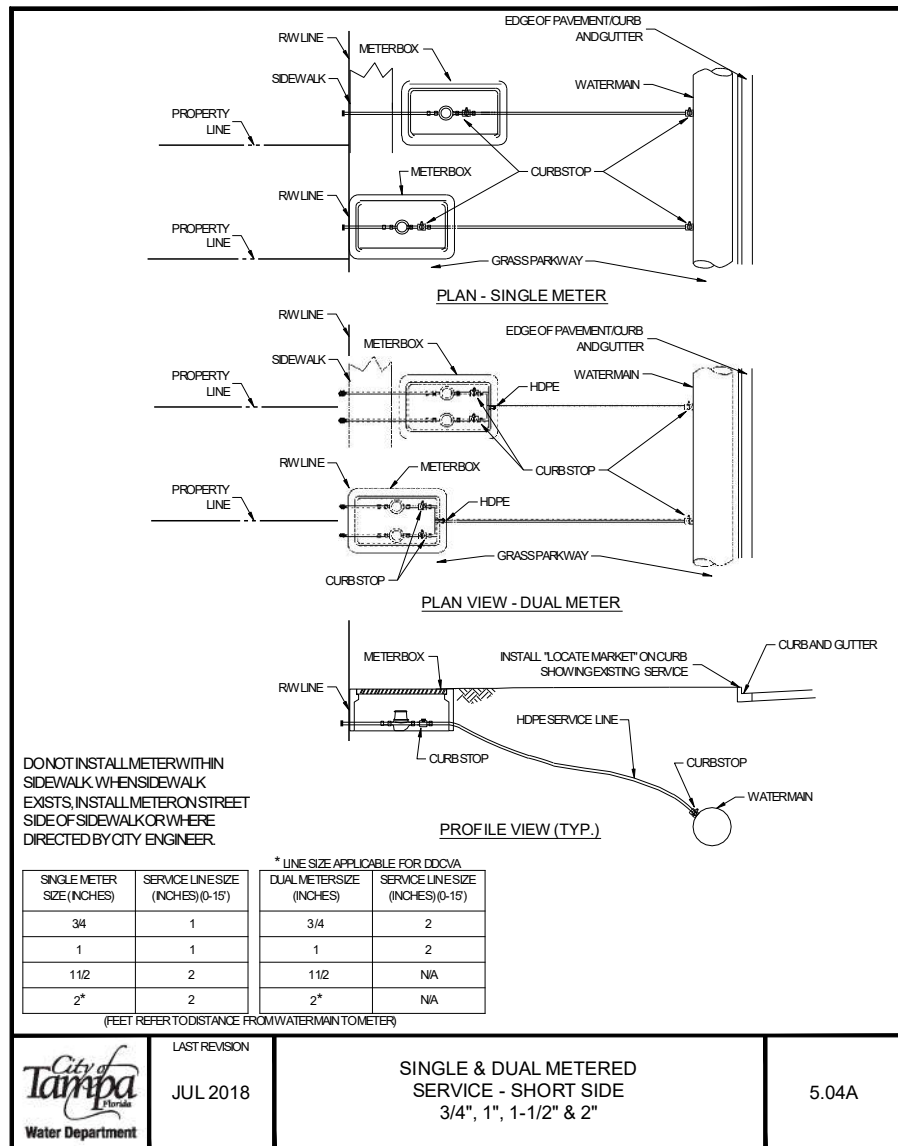


REV NO	DATE	DESCRIPTION	BY	DESIGNED AA

S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II  
 DETAILS

100% PLANS  
**AM TRENCHLESS**

PROJECT NO. 18D408  
 DATE: 1/29/2020  
 SHEET 48



Edward Alan Ambler, PE  
AM Trenchless  
PO Box 952066  
Lake Mary, FL 32795  
P.E. #64697



REV NO	DATE	DESCRIPTION	BY

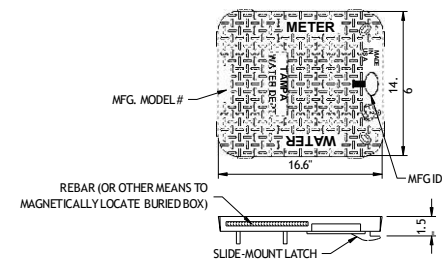
DESIGNED AA  
DRAWN JV  
CHECKED JMA  
DATE 1/29/2020

S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II

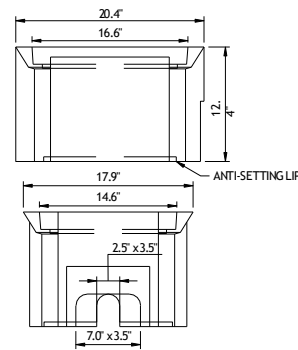
100% PLANS

AM TRENCHLESS

PROJECT NO. 18D408  
DATE: 1/29/2020  
SHEET 49



ANTI-FLOAT LID W/REBAR & AMR SNAP-LOCK SLIDE MOUNT

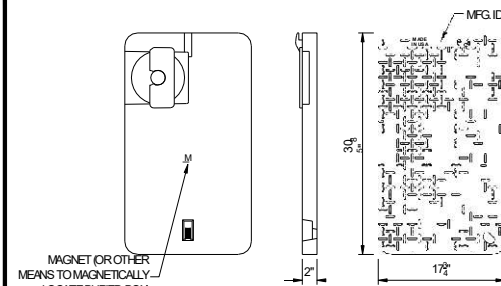


HDPE METER BOX w/LIP

**"DUAL-H" HDPE METER BOX W/COVER**

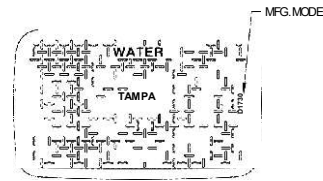
N.T.S.

	LAST REVISION	3/4" OR 1" DUAL SERVICE HDPE METER BOX	5.11
	JUL 2018		

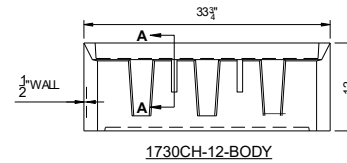


1730C-AF1MA TPA-LID

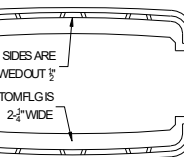
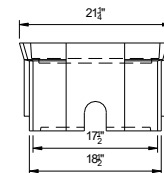
BODY KEY	
H	HEAVY WALL 1/2"
LID KEY	
AF	ANTI-FLOAT MATERIAL
1	BLACK COLOR
M	MAGNET
A	AMR SLIDE MOUNT
TPA	TAMPAWATER



1730CH-12-AF1MA TPA



1730CH-12-BODY



BOTTOM VIEW

LIFT STRUCTURE SECTION A-A

- NOTES**
- 1) DIMS ± 1/8" U.N.O.
  - 2) LID MATERIAL: HDPE
  - 3) BODY MATERIAL: LLDPE
  - 4) WALL THICKNESS: 1/2" MINIMUM
  - 5) I.W.A. = INSIDE WORK AREA
  - 6) SNAP LOCK POCKET WILL RECEIVE AMR/AMI DEVICE ENDPOINT. SNAP LOCK SLOT IS 1.80" ± .015" TO ALLOW FOR A FINGER FORCE INSTALL. POCKET HEIGHT IS 15/16" FOR MIN 1/8" AIR GAP.

**#66 HDPE METER BOX W/COVER**

N.T.S.

	LAST REVISION	1-1/2" & 2" SINGLE SERVICE HDPE METER BOX	5.12
	JUL 2018		

Edward Alan Ambler, PE  
AM Trenchless  
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Lake Mary, FL 32795  
P.E. #64697



REV NO	DATE	DESCRIPTION	BY	DESIGNED AA

S. WESTSHORE BLVD. WATER MAIN REPLACEMENT II

100% PLANS

PROJECT NO. 18D408  
DATE: 1/29/2020

DETAILS



SHEET 50