



Attachment 3

Suburban System Water Line Replacement Project Phase 3

Manatee County, Florida

Project No. 60747.70

INDEX OF DRAWINGS

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G3	KEY PLAN

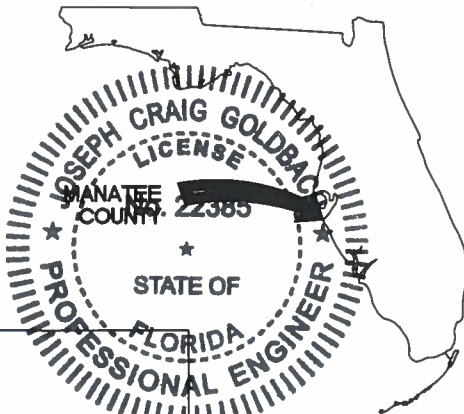
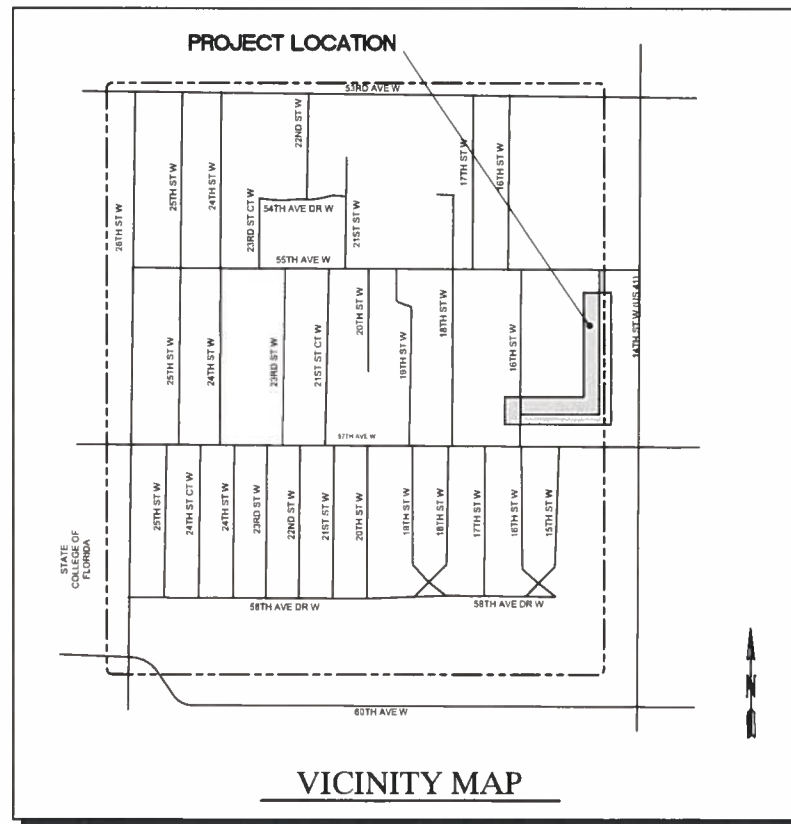
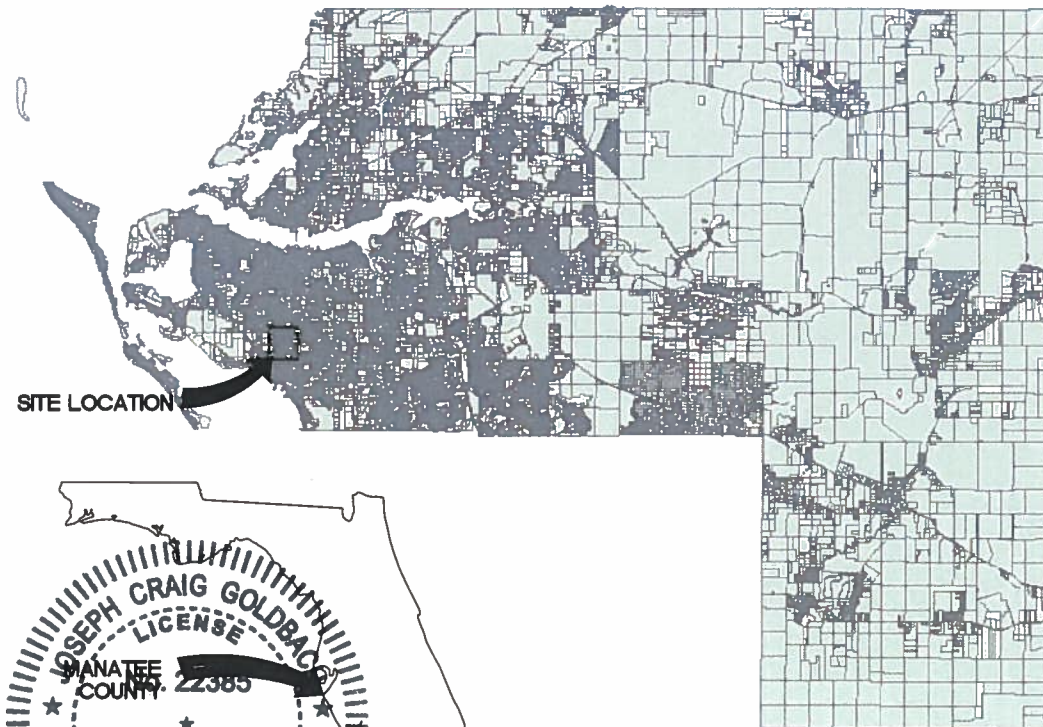
CIVIL

C1	PLAN SHEET WATER LINE 16th ST W PIPELINE TO TRI-MOR ESTATES WEST PART
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C3	PLAN SHEET WATER LINE 56th AVE W TO TRI-MOR ESTATES SOUTH PART
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REFERENCE DRAWINGS

R1	ZNS ENGINEERING SPECIFIC PURPOSE SURVEY OF SUBURBAN WATERLINE RIGHT OF WAY CORRIDOR DATED SEPTEMBER 10, 2013
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JOSEPH C. GOLDBACH
FL P.E. No. 22385

DSGN	JAM
DR	JAM
CHK	JCG
APVD	NHP

BID DOCUMENTS

NO.	DATE
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REVISION

BY

APVD

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY.

CH2MHILL
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

MANATEE COUNTY
SUBURBAN SYSTEM
WATER LINE REPLACEMENT PROJECT
PHASE 3
MANATEE COUNTY, FLORIDA
PROJECT No. 60747.70

COVER SHEET

SHEET	G1
DWG	GICOVER.DWG
DATE	AUGUST, 2018
PROJ	386879.WM

CONTACTS

MANATEE COUNTY WATER DEPARTMENT
DAVE SCHOFIELD
SUPERINTENDENT WATER DISTRIBUTION
(941) 782-8811 EXT. 5130

TECO/PEOPLES GAS CO.
DAN SHANAHAN
(941) 342-4030
FAX: (941) 342-4011
EMERGENCY: 1-877-832-6911

VERIZON FLORIDA INC.
DENISE HUTTON
(941) 330-9203
FAX: (941) 906-6706

FLORIDA POWER & LIGHT
GREG COKER
(841) 723-4430
FAX: (941) 723-4444
EMERGENCY: 1-800-4-OUTAGE

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
SARASOTA SERVICE OFFICE
DARYL R. FLATT, P.E.
(941) 377-3722
FAX: (941) 373-7660

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHWEST DISTRICT OFFICE
PAMELA VAZQUEZ
(813) 470-5798

BRIGHT HOUSE NETWORKS
TOM WRIGHT
(941) 748-3816 EXT. 21348

SUNSHINE 811
SUNSHINE811.COM

MANATEE COUNTY PUBLIC WORK DEPT.
TRAFFIC ENGINEERING
BOB AGRUSA, P.E.
(941) 749-3571

BENCHMARKS

BENCHMARK 2-18
ELEVATION: 20.55 NGVD29
SQUARE CUT IN SIDEWALK
NW CORNER OF 18TH ST W AND 57TH AVE W

BENCHMARK 2-15
ELEVATION: 19.38 NGVD29
SQUARE CUT IN SIDEWALK
SE CORNER OF 15TH ST W AND 57TH AVE W

BM Bench mark
CM Concrete Monument
IP Iron Pipe
IR Iron Rod
HUB Hub
N&D Nail & Disk
 Elevation
 Parcel ID No.
 Parcel ID No.
 Lot No.
GW Guy Wire
PP Power Pole
LP Light Pole
MB Mail Box
SN Sign

REF
SPRK
GM
BFP
BO
FH
WV
RED
WM
ARV
SMH
CO
SB#1
TEL
CPP

LEGEND

EXISTING

Reflector
Sprinkler
Gas Marker
Back Flow Preventer
Blow Off Valve
Fire Hydrant
Water Valve
Reducer
Water Meter
Air Release Valve
Sanitary Sewer Manhole
Sanitary Sewer Clean-out
Soil Boring Location
Telephone Service Box
Concrete Power Pole

TSB Traffic Signal Box
WPP Wood Power Pole
JB Junction Box
RV Reclaim Valve
RM Reclaim Meter
GI Grate Inlet
CB Curb Inlet
CI Catch Basin
 Bush
Ornamental Tree
Oak Tree
Palm Tree
Pine Tree
Edge of Vegetation
Guard Rail

Chain Link Fence
Wood Fence
Force Main
Potable Water
Reclaimed Water
Sanitary Sewer
Storm Drain
Gas Line
Overhead Utility
Underground utility
Edge of Concrete
Edge of Road
Edge of Slope
Property Line / Lot Line
Right of Way

PROPOSED

Water Main
Water Service
Proposed Easement
Fire Hydrant Assembly
Gate, Plug, or Butterfly Valve
Sanitary Sewer Manhole
Blow-off Assembly
Reducer
Tee
Bend (Horizontal)
Bend (Vertical)
Plug or Cap
Master Meter Assembly
Water Service Line & Meter
Double Service
Cross
CHLORINE INJECTION POINT
BACTERIOLOGICAL SAMPLE POINT
RIGHT-OF-ENTRY (ROE) METER REPLACEMENT
ROE LOCATION & TYPE
HAND AUGER BORING LOCATION

CONC Concrete
ACP Asbestos Cement (Transite) Pipe
ASPH Asphalt
DRWY Driveway
SWK Sidewalk
EP Edge of Pavement
TB Top of Bank
GD-RL Guard Rail
RMJ Restrained Mechanical Joint
GV Gate Valve
WM Watermain
LF Linear Foot
RCP Reinforced Concrete Pipe

GENERAL NOTES

1. THE CONSTRUCTION DOCUMENTS HAVE BEEN PREPARED USING AVAILABLE INFORMATION PERTAINING TO EXISTING UTILITY SYSTEMS AND OTHER IMPROVEMENTS LOCATED WITHIN THE RIGHT-OF-WAY IN THE VICINITY OF THE NEW WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL INVESTIGATIONS OR FIELD EVALUATION PRIOR TO AND DURING CONSTRUCTION TO CONFIRM THE EXISTING CONDITIONS IN THE FIELD THAT MAY IMPACT CONSTRUCTION OF THE WORK TO VERIFY THE EXISTING LOCATION OF ALL ABOVE GRADE AND BELOW GRADE IMPROVEMENTS THAT MAY IMPACT CONSTRUCTION OF THE WORK.

2. SURVEY INFORMATION USED TO PREPARE THE CONSTRUCTION DOCUMENTS WAS COMPILED BY ZNS ENGINEERING, 201 5TH AVE. DR. EAST, BRADENTON, FLORIDA 34208 (941) 748-8080, LEAD SURVEYOR JIM GATCH, P.S.M.

3. ELEVATIONS SHOWN ON THE CONSTRUCTION DOCUMENTS ARE BASED UPON NATIONAL GEODETIC VERTICAL DATUM, 1929 (N.G.V.D. - 1929). MANATEE COUNTY BENCHMARK # 110-29-18, ELEVATION = 20.57, ALL ELEVATIONS REPORTED IN CONTRACTOR PREPARED RECORD DRAWINGS SHALL BE BASED UPON NAVD83. CONTRACTOR'S SURVEYOR SHALL PROVIDE CONVERSION FROM NGVD29 TO NAVD83 DATUM AT START OF PROJECT.

4. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM (NAD) OF 1983 (1980 ADJUSTMENT), FLORIDA STATE PLANE, WEST ZONE, AND WAS DERIVED FROM REDUNDANT REAL-TIME KINEMATIC GPS OBSERVATIONS UTILIZING NGS CONTROL POINT M 687 (NGS PID AS192) AND ADHERES TO THE ACCURACY REQUIREMENTS OF FLORIDA'S MINIMUM TECHNICAL STANDARDS (61G17-6.003, F.A.C.).

5. IN THE EVENT A PUBLIC OR PRIVATE SURVEY MARKER, PROPERTY CORNER OR RIGHT-OF-WAY MARKER OR SIMILAR SURVEYED POINT IS DAMAGED OR MOVED BY CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A FLORIDA REGISTERED LAND SURVEYOR TO RESTORE SUCH ITEMS IMPACTED BY CONSTRUCTION.

6. THE PROJECT INVOLVES THE CONSTRUCTION OF BURIED POTABLE WATER PIPELINES. THE CONTRACTOR SHALL USE CAUTION IN PERFORMING THE WORK TO PREVENT DAMAGE TO EXISTING UTILITY SYSTEMS AND SHALL COORDINATE WITH UTILITY COMPANIES LISTED AND OTHER UTILITY COMPANIES PRIOR TO AND DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE TO UTILITY COMPANIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN FIELD LOCATES OF EXISTING UNDERGROUND UTILITIES IN THE VICINITY OF NEW CONSTRUCTION.

7. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUNSHINE STATE ONE CALL OF FLORIDA, EXCAVATION GUIDE, LATEST EDITION. THE CONTRACTOR SHALL CONTACT SUNSHINE 811 (SUNSHINE811.COM) 1-800-432-4770 A MINIMUM OF 48 HOURS PRIOR TO THE PLANNED EXCAVATION OR CONSTRUCTION DATE TO ARRANGE FOR THE FIELD LOCATION OF BURIED UTILITIES WITHIN THE CONSTRUCTION AREA.

8. THE CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL RULES, STATUTES, ORDINANCES AND GUIDELINES RELATIVE TO PERFORMING ALL WORK ASSOCIATED WITH THE PROJECT. OF SPECIAL INTEREST ON THIS PROJECT IS THE REQUIREMENT TO PERFORM TRENCH EXCAVATION AND THE CONTRACTOR'S REQUIREMENT TO PERFORM ALL EXCAVATION IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) TRENCH EXCAVATION SAFETY STANDARDS.

9. THE CONTRACTOR SHALL PERFORM THE WORK TO MINIMIZE IMPACT AND DAMAGE PRIVATE PROPERTY DAMAGE TO PRIVATE PROPERTY CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.

10. THE CONTRACTOR SHALL PERFORM WORK TO MINIMIZE IMPACT AND DAMAGE TO PUBLIC ROADWAYS, ADJACENT FEATURES, PUBLIC AND PRIVATE UTILITIES LOCATED WITHIN THE RIGHT-OF-WAY AND ADJACENT FEATURES ADJOINING THE WORK AREA. DAMAGE TO PUBLIC ROADWAYS, PUBLIC OR PRIVATE UTILITIES OR OTHER FEATURES LOCATED WITHIN THE MANATEE COUNTY RIGHT-OF-WAY SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.

11. THE CONTRACTOR SHALL PRODUCE VIDEO CONSTRUCTION VIDEOS OF THE AREA OF CONSTRUCTION PER SECTION 02609 SPECIFICATIONS PRIOR TO COMMENCING CONSTRUCTION.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS THAT ARE LOCATED ADJACENT TO THE NEW WORK AND ARE SHOWN TO NOT BE RELOCATED.

13. THE CONTRACTOR SHALL RELOCATE ALL FACILITIES OR IMPROVEMENTS THAT ARE IN CONFLICT WITH THE NEW WORK AND WHICH RELOCATION SHALL BE IN ACCORDANCE WITH COUNTY OR THE ADJOINING PARTIES STANDARDS.

24. THE CONTRACTOR SHALL ESTABLISH A PIPE DRILLING PLAN FOR EACH PIPE SEGMENT PRIOR TO CONSTRUCTION. THE DRILLING PLAN SHALL TAKE INTO CONSIDERATION THE ELEVATION OF CROSSING UTILITIES AS NOTED ABOVE. SUCH THAT THE DEPTH OF THE PIPELINE IS ESTABLISHED TO MINIMIZE DEPTH OF BURY GREATER THAN THREE (3) FEET, AND MINIMIZE ELEVATION CHANGES ALONG THE ALIGNMENT WHILE TAKING INTO CONSIDERATION THE ELEVATION OF CROSSING UTILITIES AND OTHER ROW STRUCTURES. MANATEE COUNTY DEPTH OF BURY STANDARDS AND WATER LINE CONNECTION POINTS. PLAN SHALL PROVIDE ELEVATION OF CROSSING UTILITY AND PROPOSED WATER LINE IN NAVD83 (SEE NOTE 3). THE CONTRACTOR SHALL INSTALL AUTOMATIC AIR RELEASE VALVES ON EACH SIDE OF A LOW POINT IN THE LINE, WHEN THE PIPELINE ELEVATION CHANGES WITHIN A STREET SEGMENT BY MORE THAN 3 FEET VERTICALLY WITHIN A 200 LINEAR DISTANCE.

25. RESTRAINED PIPE JOINTS SHALL BE USED AT ALL FITTINGS, BENDS AND VALVES IN ACCORDANCE WITH THE REQUIREMENTS OF MANATEE COUNTY STANDARD DETAILS UG-8, UG-9, UG-10 AND PROJECT SPECIFICATIONS. THRUST BLOCKS AS SHOWN IN COUNTY STANDARD DETAIL UG-7 SHALL ONLY BE USED ONLY WHEN SPECIFICALLY APPROVED BY THE COUNTY OR WHEN SHOWN ON COUNTY STANDARD DETAILS FOR THE PARTICULAR PIPING INSTALLATION IN QUESTION.

26. THE CONTRACTOR IS CAUTIONED TO CAREFULLY COORDINATE THE PIPING MATERIALS USED FOR CONSTRUCTION UNDER PAVEMENT WITH THE CONSTRUCTION METHOD AND MATERIALS THAT ARE ELECTED FOR USE. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 02609 INSTALLATION OF PIPELINES PERTAINING TO THIS ISSUE.

27. A LATERAL SEPARATION OF A MINIMUM OF 10 FEET EDGE TO EDGE SHALL BE MAINTAINED BETWEEN NEW WATER MAINS AND SANITARY SEWER GRAVITY LINES OR FORCE MAINS. PLEASE REFER TO THE SPECIFICATION SECTION 02609 INSTALLATION OF PIPELINES FOR SPECIFIC REQUIREMENTS REGARDING PIPELINE INSTALLATION.

28. IF A NEW WATER MAIN PARALLELS A SEWER MAIN WITH LESS THAN 10 FEET OF LATERAL CLEARANCE EDGE TO EDGE, THE JOINTS OF THE NEW WATER MAIN SHALL BE STAGGERED WITH THE JOINTS OF THE EXISTING SEWER LINE TO ACHIEVE A MINIMUM 10 FEET OF SEPARATION BETWEEN THE JOINTS OF THE LINES IF POSSIBLE. PLEASE REFER TO THE SPECIFICATION SECTION 02609 INSTALLATION OF PIPELINES FOR SPECIFIC REQUIREMENTS REGARDING PIPELINE INSTALLATION.

29. A LATERAL SEPARATION OF A MINIMUM OF 3 FEET EDGE TO EDGE SHALL BE MAINTAINED BETWEEN NEW WATER MAINS AND STORMWATER SEWERS OR MAINS OR RECLAIMED WATER MAINS. PLEASE REFER TO THE SPECIFICATION SECTION 02609 INSTALLATION OF PIPELINES FOR SPECIFIC REQUIREMENTS REGARDING PIPELINE INSTALLATION.

30. A VERTICAL CLEARANCE OF NOT LESS THAN 18 INCHES SHALL BE MAINTAINED BETWEEN ALL NEW WATER MAIN CROSSINGS WITH EXISTING SEWER MAINS, RECLAIMED WATER MAINS, STORM SEWERS, SANITARY SERVICE LINES, GAS LINES AND OTHER UTILITIES. PLEASE REFER TO THE SPECIFICATION SECTION 02609 INSTALLATION OF PIPELINES - FOR SPECIFIC REQUIREMENTS REGARDING PIPELINE INSTALLATION.

31. THIS PROJECT WILL REQUIRE THAT EXISTING WATER MAINS BE CONNECTED TO THE NEW WATER MAINS BEING INSTALLED AS A PART OF THIS PROJECT TO MAINTAIN WATER SERVICE TO EXISTING CUSTOMERS. CONTINUOUS WATER SERVICE TO ALL CUSTOMERS WITHIN THE PROJECT AREA SHALL BE PROVIDED EXCEPT FOR THE SCHEDULED CHANGE-OUT OF WATER METERS AND SERVICES AND THE DISCONNECTION AND RECONNECTION OF OTHER WATER MAINS TO THE NEW WATER MAINS BEING CONSTRUCTED AS A PART OF THIS PROJECT. THE CONTRACTOR SHALL PERFORM EXPLORATORY WORK AND COORDINATE THE DISCONNECTION AND RECONNECTION OF WATER SERVICES AND EXISTING WATER MAINS SERVING OTHER CUSTOMERS WITHIN THE TIME FRAME LIMITS ESTABLISHED BY THE COUNTY. THE CONTRACTOR SHALL COMPILE ALL FIELD EXPLORATORY INFORMATION AND CONFIRM THE IMPACTS OF PLANNED DISCONNECTION/RECONNECTION ACTIVITIES PRIOR TO INITIATING WORK TO INSURE THAT WATER SERVICE TO ALL CUSTOMERS IN RESTORED IN A TIME FRAME CONSISTENT WITH THE REQUIREMENTS OF THE PROJECT.

32. THE CONTRACTOR SHALL INSTALL NEW WATER SERVICES, WATER METER BOX ASSEMBLIES AS A PART OF THIS PROJECT. COMPLETE. THE COUNTY WILL PROVIDE NEW METERS FOR THE CONTRACTOR TO INSTALL UNDER THIS PROJECT IN THE NEW METER BOXES. THE CONTRACTOR SHALL REMOVE ALL EXISTING METERS, METER BOXES AND APPURTENANCES PRIOR TO INSTALLING THE NEW WATER METER SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH MIKE HOOEY OF THE COUNTY METER DEPARTMENT (941) 782-8811 PERTAINING TO METER REPLACEMENT. AT THE BEGINNING OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE A LIST TO THE COUNTY OF ALL METERS TO BE REPLACED NOTING THE STREET ADDRESS, SIZE AND SERIAL NUMBER OF THE METER CURRENTLY IN PLACE. THE CONTRACTOR SHALL DEVELOP A SCHEDULE FOR METER REPLACEMENT THAT WILL ASSURE CONTINUOUS WATER SERVICE TO CUSTOMERS WITH SHUT DOWNS REQUIRED FOR METER INSTALLATION LIMITED TO NOT MORE THAN 30 MINUTES. THE CONTRACTOR SHALL NOTIFY THE COUNTY METER DEPARTMENT 2 WORKING DAYS PRIOR TO NEEDING METERS FOR REPLACEMENT AND SHALL PROVIDE THE COUNTY A LIST OF ADDRESSES WHERE METERS WILL BE REPLACED.

33. MOST NEW WATER METER BOXES WITH METERS WILL BE INSTALLED AT THE SAME LOCATION AS THE EXISTING WATER METERS. THERE ARE SEVERAL LOCATIONS ON THE PROJECT WHERE THE EXISTING WATER METERS ARE LOCATED DEEP WITHIN PRIVATE PROPERTY (APPROXIMATELY 4 FEET OR MORE INSIDE THE PROPERTY LINE) AND MUST BE RELOCATED TO A LOCATION WITHIN THE PUBLIC ROW OR UTILITY EASEMENT. THESE WORK LOCATIONS WILL REQUIRE THAT A RIGHT-OF-ENTRY APPROVAL BE GRANTED FOR PERFORMING WORK SUBSTANTIALLY WITHIN PRIVATE PROPERTY. IN ADDITION, AT THESE LOCATIONS, CUSTOMER SIDE SERVICE PIPING MODIFICATIONS WILL BE REQUIRED TO RE-PIPE THE CUSTOMER SERVICE FROM THE NEW METER LOCATION TO THE CUSTOMER BUILDING CONNECTION. COMPENSATION FOR REPLACEMENT OF METERS AS THESE LOCATIONS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE BID ITEMS ESTABLISHED FOR PRIVATE WATER SERVICE RELOCATION COMPLETE. THE CONTRACTOR SHALL NOT PERFORM WORK ON RIGHT-OF-ENTRY PROPERTIES UNTIL THE COUNTY HAS PROVIDED THE CONTRACTOR WITH SPECIFIC RIGHT-OF-ENTRY APPROVAL DOCUMENTATION FOR THE LOCATION IN QUESTION.

34. ALL COMPONENTS OF THE NEWLY INSTALLED WATER SYSTEM SHALL BE TESTED IN ACCORDANCE WITH SECTION 02608 TESTING AND INSPECTIONS. TESTING AND INSPECTIONS SHALL INCLUDE COMPACTION TESTING FOR PIPELINE INSTALLATIONS; HYDROSTATIC TESTING OF PIPELINE, VALVES AND FITTINGS; BACTERIOLOGICAL TESTING OF PIPING, FITTINGS, VALVES AND APPURTENANCES; TRACER WIRE TESTING AND OTHER SUCH TESTS AS REQUIRED BY THE SPECIFICATION AND MANATEE COUNTY STANDARDS. THE CONTRACTOR SHALL PERFORM ALL TESTING AND PROVIDE TESTING RESULTS AS SPECIFIED AND WHEN REQUIRED PRIOR TO PLACING NEW WATER LINE COMPONENTS INTO SERVICE.

35. ALL PIPELINES SHALL BE CLEANED, DISINFECTED AND BACTERIOLOGICAL TESTS OF THE DISINFECTED PIPELINE SHALL BE APPROVED BY THE FDEP BEFORE THE PIPELINES CAN BE PLACED INTO SERVICE. CHLORINE INJECTION POINTS AND SAMPLING POINTS SHALL BE LOCATED TO COMPLY WITH THE SPECIFICATIONS, FDEP REQUIREMENTS AND THE REQUIREMENTS OF AWWA C651 LATEST EDITION. THE SPECIFIC LOCATION FOR THE CHLORINE INJECTION POINTS SHOWN ON THE DRAWINGS SHALL BE MODIFIED TO COMPLY WITH THE FOREGOING SPECIFICATIONS, FDEP AND AWWA REGULATIONS AND THE CONTRACTORS SPECIFIC PLAN FOR SEQUENCING CONSTRUCTION OF THE PIPELINES. SAMPLING POINTS FOR BACTERIOLOGICAL TESTING WILL BE ESTABLISHED BY THE FDEP BEFORE THE CONTRACTORS PIPE INSTALLATION PLAN AND THE FOREGOING REQUIREMENTS. THE CONTRACTOR SHALL INSTALL AND REMOVE SAMPLING POINTS REQUIRED TO PERFORM BACTERIOLOGICAL SAMPLING OF EACH PIPE SEGMENT AT THE LOCATIONS DEFINED BY THE FDEP AS A PART OF THE PROJECT.

36. ALL ABANDONED WATER MAINS SHALL BE FILLED WITH SAND/CEMENT GROUT IN ACCORDANCE WITH MANATEE COUNTY STANDARDS. ALL ABANDONED WATER MAINS SHALL BE DISCONNECTED FROM EXISTING ACTIVE WATER MAINS BACK TO THE NEAREST ISOLATION VALVE. THE DISCHARGE SIDE OF EXISTING VALVES WHICH REMAIN CONNECTED TO EXISTING ACTIVE WATER MAINS SHALL BE PLUGGED WITH A PLUG SUITABLE FOR LINE TEST PRESSURE AS REQUIRED BY THE CONTRACT DOCUMENTS FOR NEW PIPING. (FIELD TESTING WILL NOT BE REQUIRED). VALVE BOXES SHALL BE REMOVED ON VALVES WHICH ARE PLUGGED AND REMOVED FROM SERVICE. ALL EXISTING FIRE HYDRANTS CONNECTED TO EXISTING WATER LINES WHICH ARE TO BE REMOVED FROM SERVICE SHALL BE REMOVED. CLOSE FIRE HYDRANT ISOLATION VALVES; REMOVE VALVE BOX; PLUG OUTLET OF ISOLATION VALVE; REMOVE FIRE HYDRANT LATERAL TO HYDRANT; REMOVE FIRE HYDRANT ASSEMBLY COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROPERLY DISPOSE OF SECTIONS OF ABANDONED WATER MAIN, AND ALL OTHER MATERIALS AND APPURTENANCES, WHICH MUST BE CUT-OUT AND REMOVED FROM THE PROJECT SITE. DISPOSAL OF ALL PIPE, PIPELINE MATERIALS, EXCESS EXCAVATION AND OTHER ABANDONED MATERIALS SHALL BE IN ACCORDANCE WITH APPROPRIATE ENVIRONMENTAL AND REGULATORY REQUIREMENTS FOR THE MATERIALS IN QUESTION.

37. THE CONTRACTOR SHALL MAINTAIN RECORD DRAWING OF THE WORK AS CONSTRUCTED. AS-BUILT DRAWINGS SHALL INCLUDE THE LOCATION OF ABANDONED WATER MAIN CUT AND PLUG POINTS. AS BUILT DRAWINGS SHALL BE ANNOTED EACH DAY AS THE WORK PROCEEDS AND SHALL BE AVAILABLE TO THE COUNTY PROJECT MANAGER FOR REVIEW ON AN ONGOING BASIS. AS BUILT DRAWINGS SHALL PROVIDE THE HORIZONTAL AND VERTICAL INSTALLED LOCATION OF ALL NEW PIPELINES, FITTINGS, VALVES SERVICE LINES AND WATER SYSTEM APPURTENANCES REFERENCED TO FIXED SURFACE FEATURES THAT ARE SHOWN ON THE CONSTRUCTION DRAWINGS AND/OR RIGHT-OF-WAY LINES, EASEMENT LINES, PROPERTY CORNERS OR OTHER SURVEYED POINTS. THE CONTRACTOR SHALL ABLE TO PRESENT THE RECORD DRAWINGS TO THE COUNTY PROJECT MANAGER ON DEMAND AS THE WORK PROCEEDS. RECORD DRAWINGS SHALL REPORT ALL ELEVATIONS AS NAVD83 DATUM.

JOSEPH C. GOLDBACH
FI. P.E. No. 22385

9/12/18

DR

JAM

CHK

JCG

APVD

NHP

NO.

DATE

REVISION

BY

APVD

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.

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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CH2MHILL

4350 WEST CYPRESS STREET SUITE 600
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WATER LINE REPLACEMENT PROJECT
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PROJECT No. 60747.70

LEGEND AND NOTES

SHEET G2

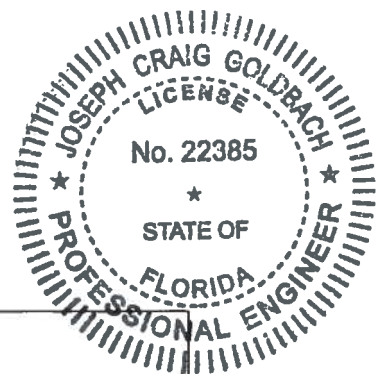
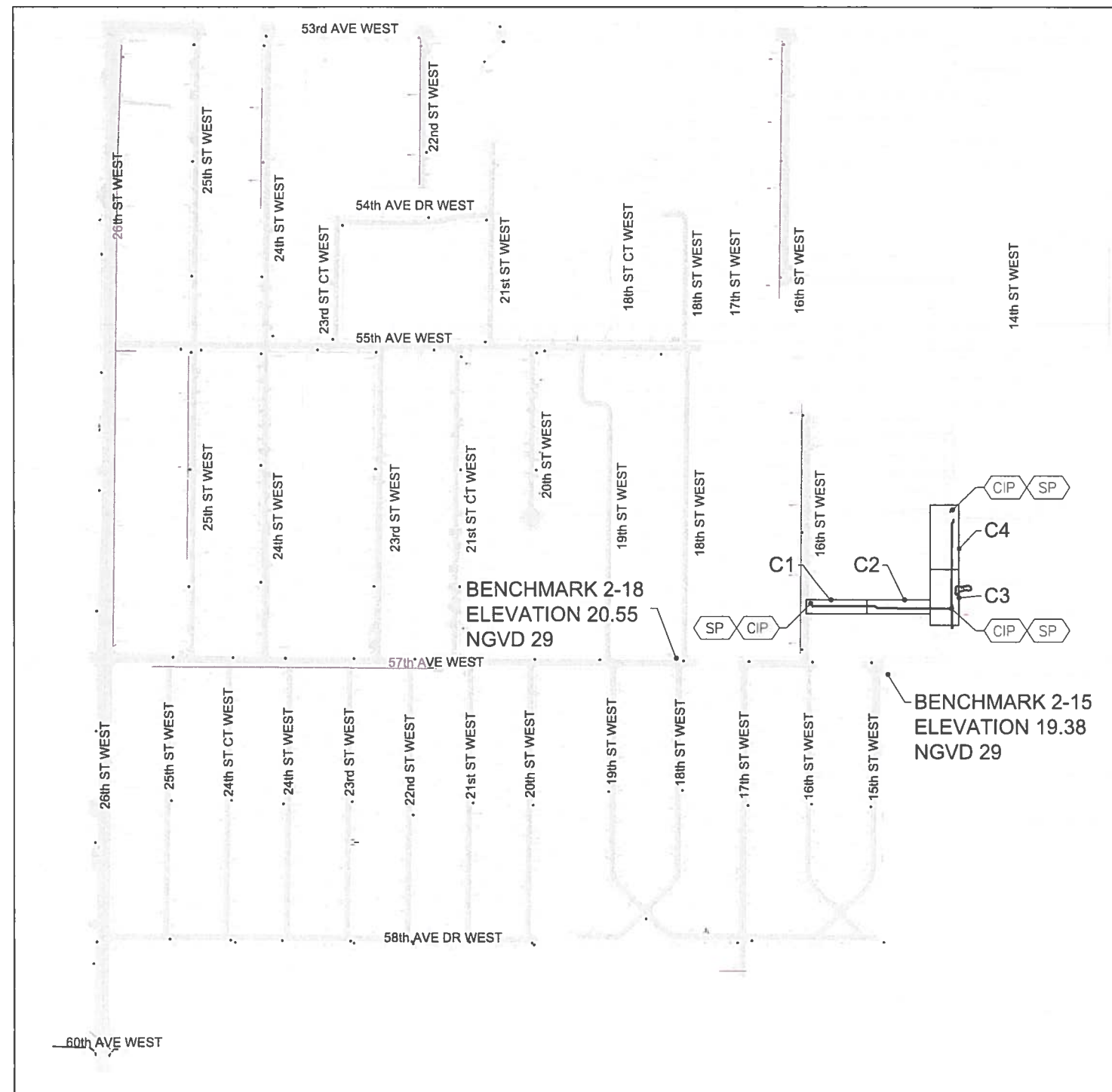
DWG G2NOTES.DWG

DATE AUGUST, 2018

PROJ 386879.WM

CIP CHLORINE INJECTION POINT
SP SAMPLE POINT

300' 150' 0 300'
1" = 300'-0"



JOSEPH C. GOLDBACH
FL P.E. No. 22385

DESIGN JAM
CHECK JCG
APVD NHP

BID DOCUMENTS

NO. DATE REVISION

BY APVD

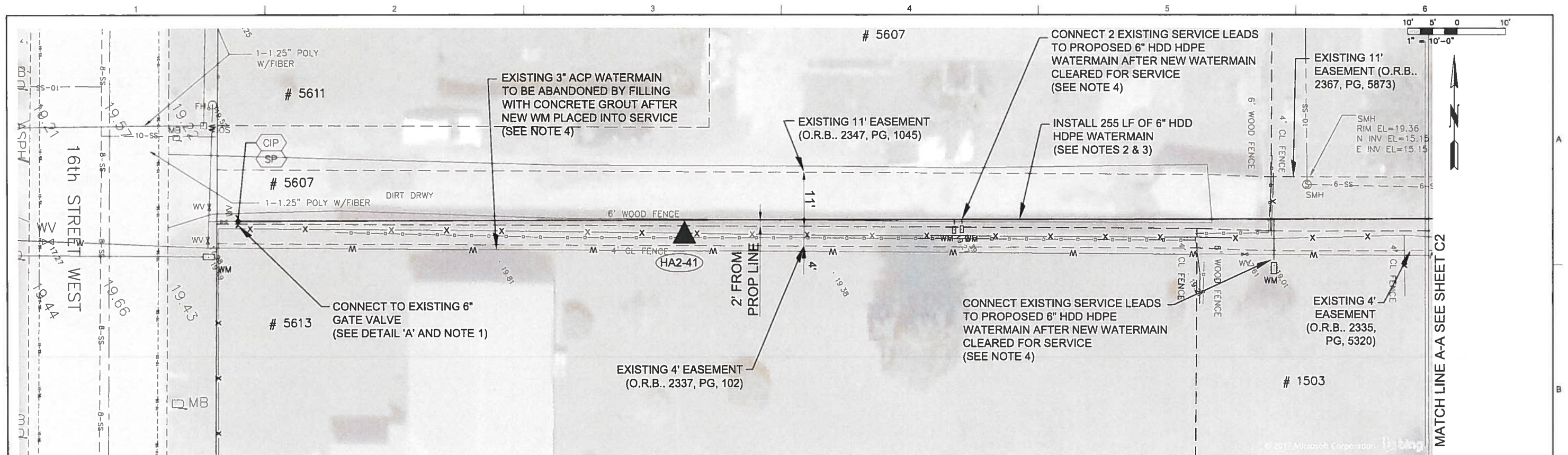
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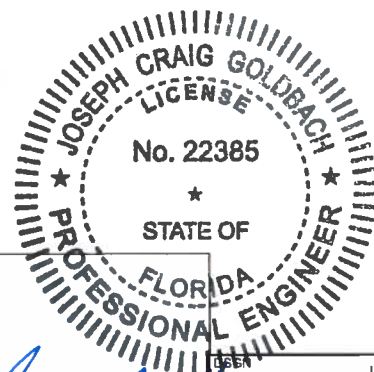
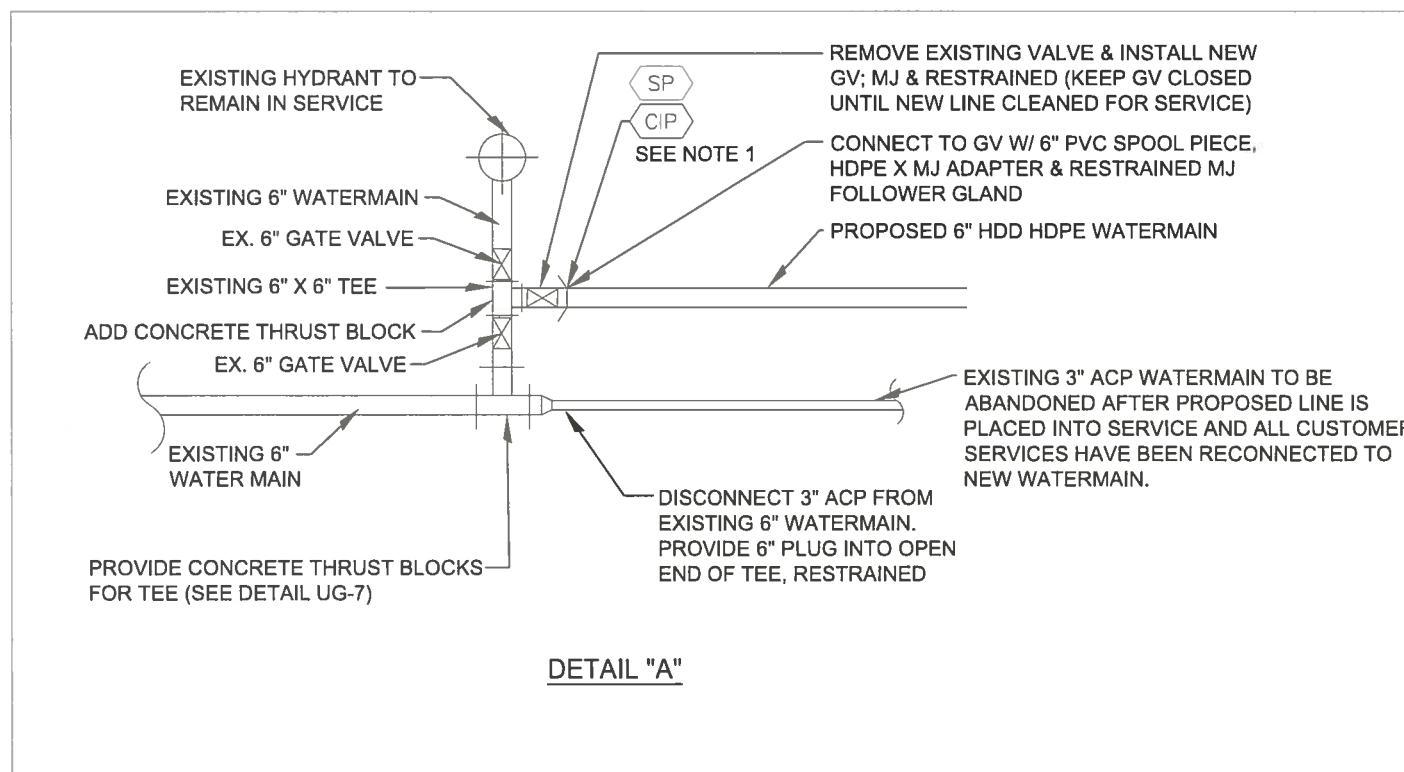
KEY PLAN

SHEET G3
DWG G3.DWG
DATE AUGUST, 2018
PROJ 386879.WM



NOTES:

1. PROVIDE TEMPORARY JUMPER CONNECTION TO PLACE NEW WATERMAIN IN SERVICE. WATER SOURCE TO BE EXISTING FIRE HYDRANT. BURY TEMPORARY SUPPLY LINE UNDER EXISTING DIRT DRIVEWAY. ABOVE GROUND METER AND BFP TO BE LOCATED ON SOUTH SIDE OF DRIVE
2. INSTALLED DEPTH OF HDD WATERMAIN SHALL NOT EXCEED 6 FEET. MINIMUM DEPTH OF COVER OVER PIPE IS 3 FEET.
3. LENGTH GIVEN FOR INSTALLED WATERMAIN IS PLAN LENGTH MEASURED HORIZONTALLY.
4. MECHANICALLY DISASSEMBLE ACP WATERMAIN AT CONNECTIONS WITH EXISTING PIPING., DO NOT CRUSH



JOSEPH C. GOLDBACH
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JAM	
JAM	
CHK	JCG
APVD	NHP

BID DOCUMENTS

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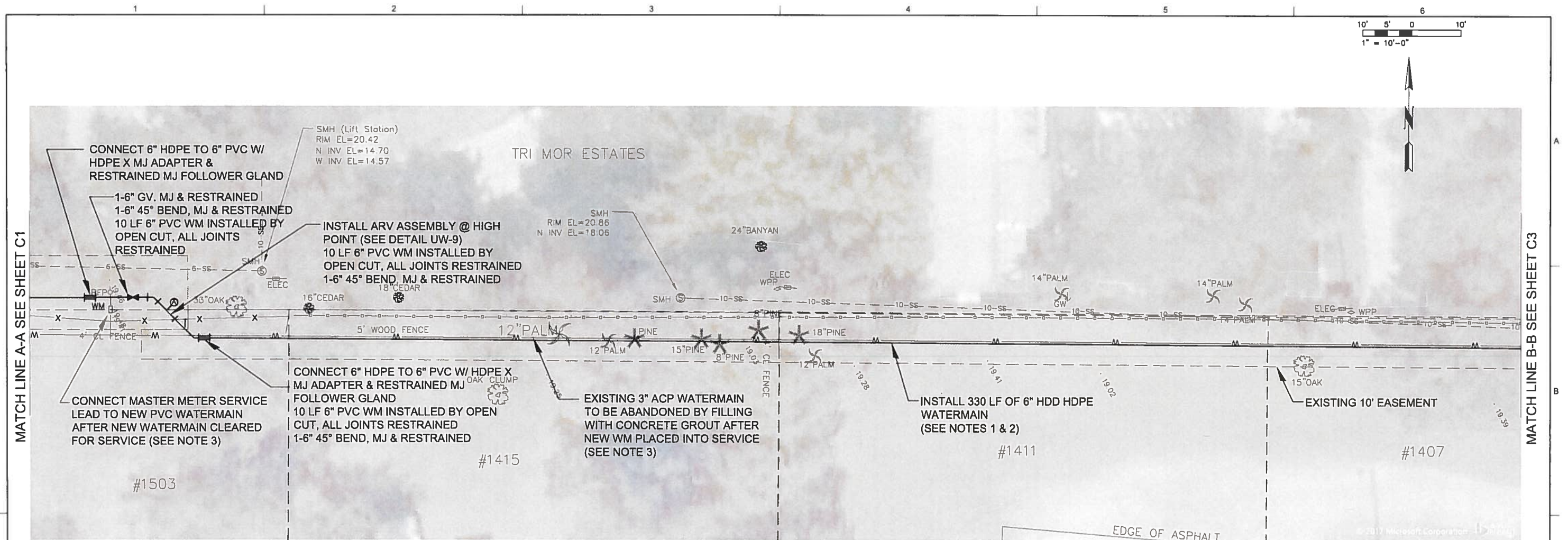
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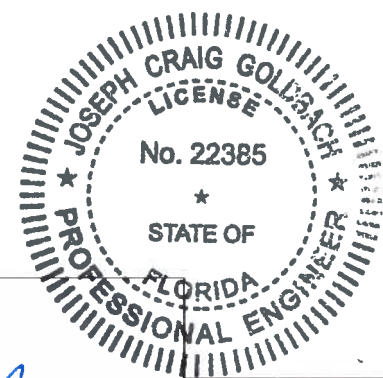
PLAN SHEET WATER LINE
16th ST W TO TRI-MOR ESTATES
WEST PART

SHEET	C1
DWG	C1.DWG
DATE	AUGUST, 2018
PROJ	386879.WM



NOTES:

1. INSTALLED DEPTH OF HDD WATERMAIN SHALL NOT EXCEED 6 FEET. MINIMUM DEPTH OF COVER OVER PIPE IS 3 FEET.
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3. MECHANICALLY DISASSEMBLE ACP WATERMAIN AT CONNECTIONS WITH EXISTING PIPING. DO NOT CRUSH.



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DESIGN JAM
CHECK JAM
CHECK JCG
APVD NHP

BID DOCUMENTS

NO. DATE REVISION BY APVD

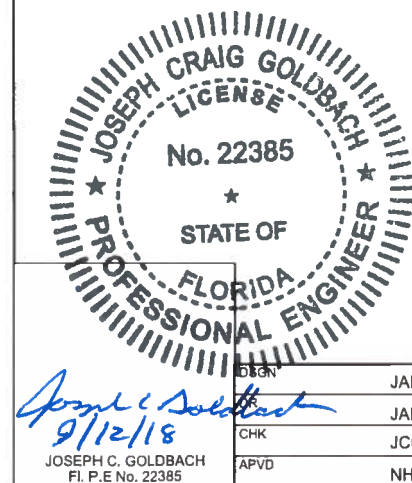
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CH2MHILL
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

MANATEE COUNTY
SUBURBAN SYSTEM
WATER LINE REPLACEMENT PROJECT
PHASE 3
MANATEE COUNTY, FLORIDA
PROJECT No. 60747.70

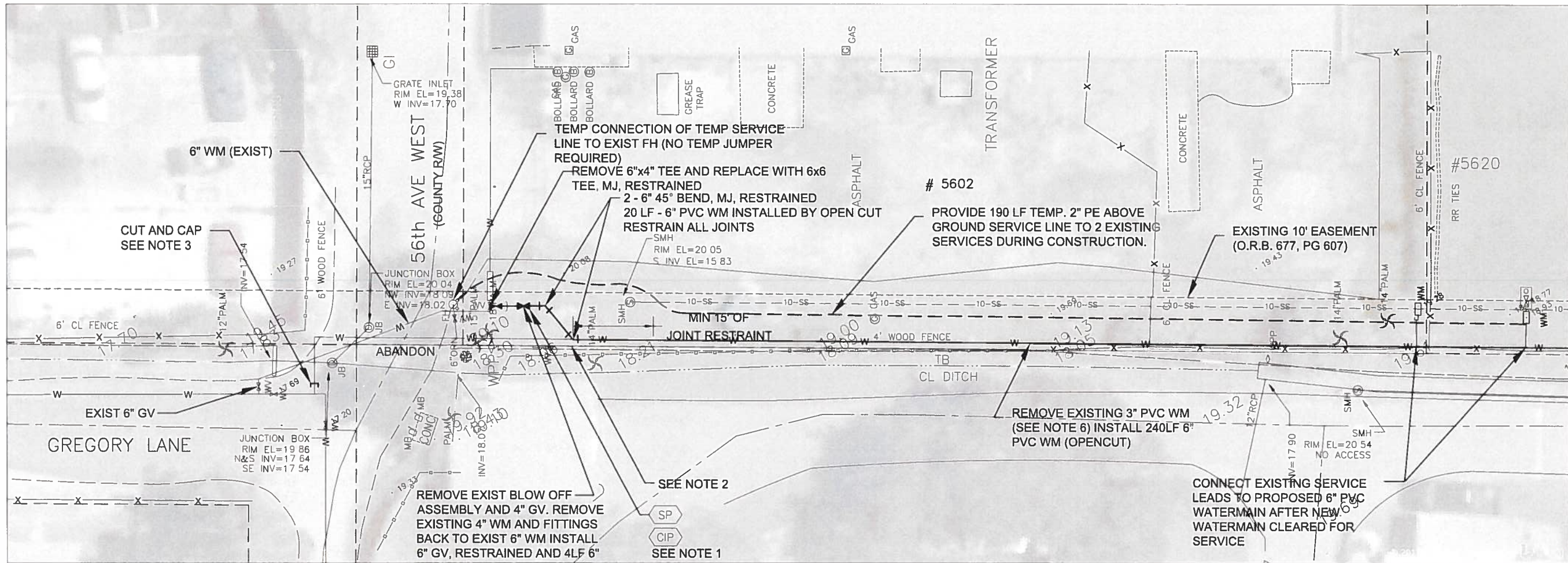
PLAN SHEET WATER LINE
16th ST W TO TRI-MOR ESTATES
EAST PART

SHEET C-2
DWG C1.DWG
DATE AUGUST, 2018
PROJ 386879.WM



DESIGN	JAM	1	6/18	CHANGE TO 6" PVC (OPENCUT) INSTEAD OF 8" HDPE PIPE BURST	BJK	JCG	VERIFY SCALE	<div>CH2MHILL</div> <div>4350 WEST CYPRESS STREET SUITE 600 TAMPA, FLORIDA 33607-4155 LB 0002934 AA C000656</div>	<div>MANATEE COUNTY SUBURBAN SYSTEM WATER LINE REPLACEMENT PROJECT PHASE 3 MANATEE COUNTY, FLORIDA PROJECT No. 60747.70</div>	<div>PLAN SHEET WATER LINE 56th AVE W TO TRI-MOR ESTATES SOUTH PART</div>	SHEET	C3
PLANT	JAM						DWG				C30.DWG	
CHK	JCG						DATE				AUGUST, 2018	
APVD	NHP						PROJ				386879.WM	

1. PROVIDE TEMPORARY HOSE CONNECTION FROM THIS POINT TO CONTRACTOR PROVIDED TANKER TRUCK TO RECEIVE FLUSH WATER FROM NEW HDPE WM.
2. MECHANICALLY DISASSEMBLE ACP WATERMAIN AT CONNECTIONS WITH EXISTING PIPING. DO NOT CRUSH.
3. INSTALLED DEPTH OF HDD WATERMAIN SHALL NOT EXCEED 6 FEET. MINIMUM DEPTH OF COVER OVER PIPE IS 3 FEET.
4. LENGTH GIVEN FOR INSTALLED WM IS PLAN LENGTH MEASURED HORIZONTALLY.
5. POSITION CROSS TO AVOID CONFLICT WITH OTHER UTILITIES. DRAWING IS SCHEMATIC OF INTENT AND ACTUAL LOCATION CAN SHIFT WITHIN EASEMENT TO ADAPT TO FIELD CONDITIONS.
6. CONTRACTOR SHALL VERIFY EXIST PIPE MATERIAL AND DEPTH PRIOR TO MOBILIZATION.



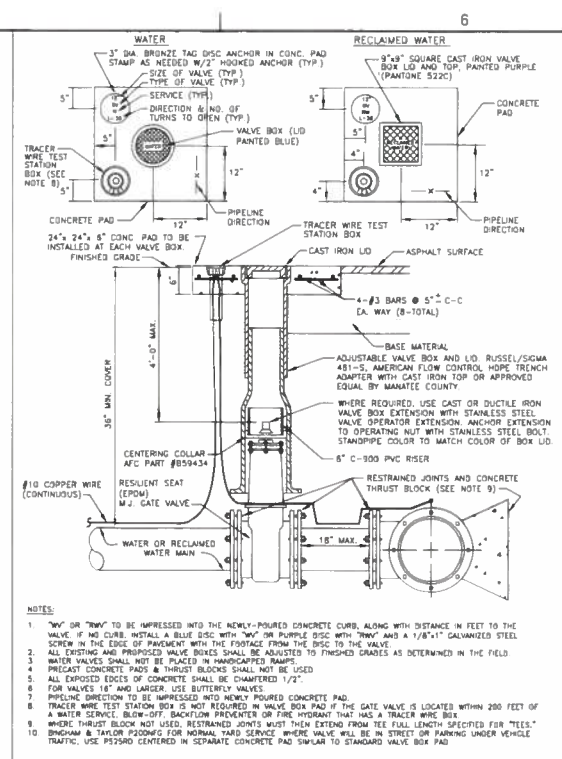
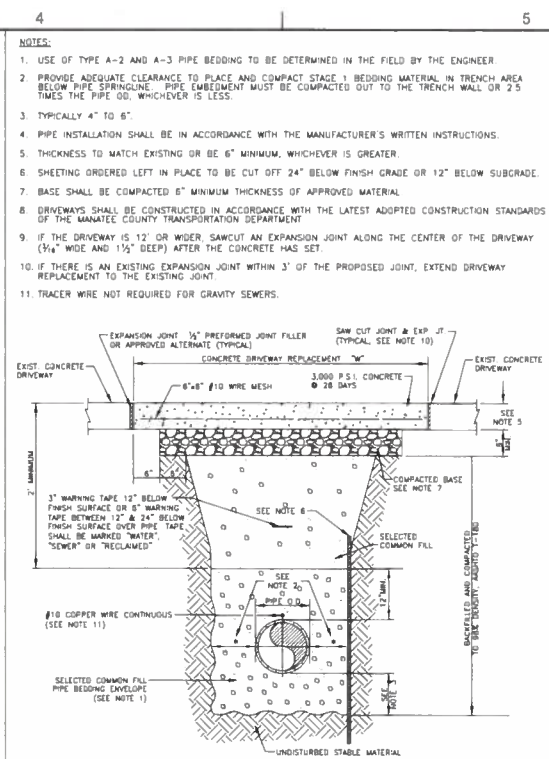
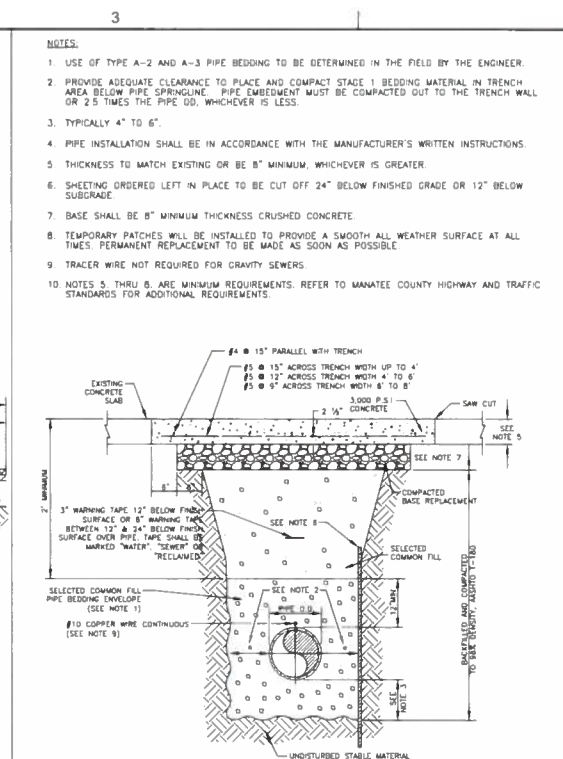
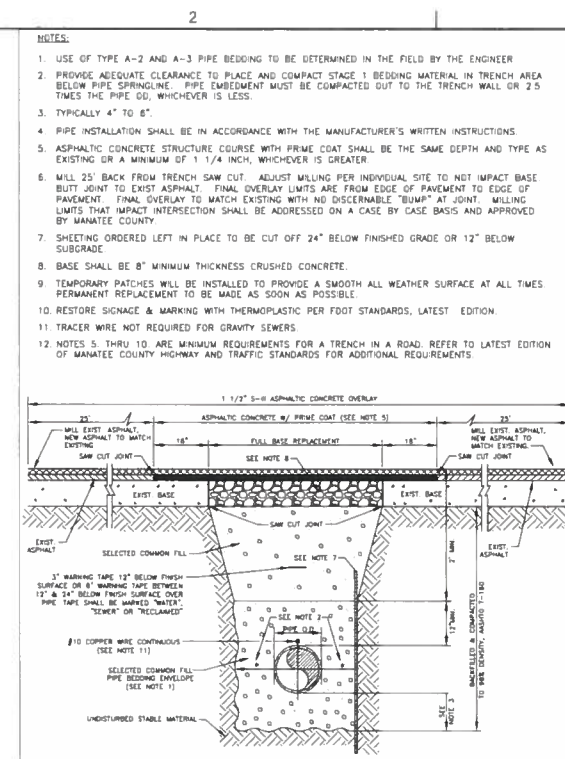
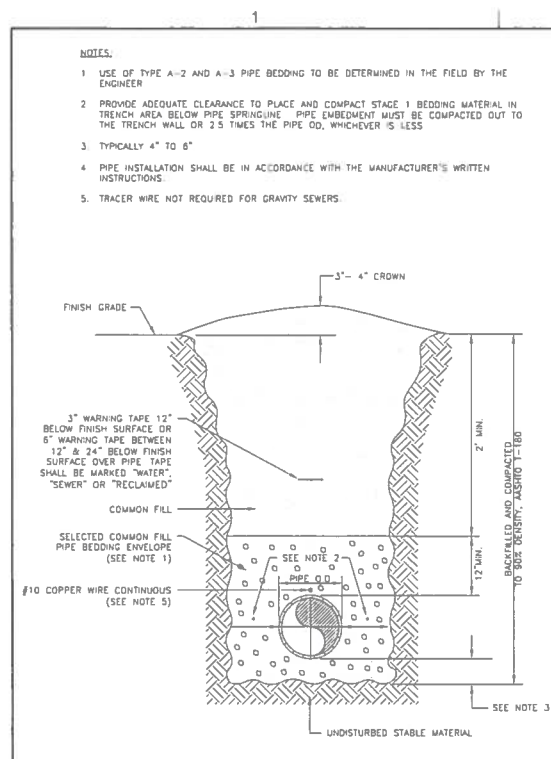
NOTES:

1. PROVIDE TEMPORARY JUMPER CONNECTION TO PLACE NEW WATERMAIN IN SERVICE. WATER SOURCE TO BE EXISTING FIRE HYDRANT.
 2. CUT & CAP EXISTING WM AT START OF NEW WM WORK. WHEN NEW WM CLEARED FOR SERVICE, ABANDON EXISTING WM BY FILLING WITH CONCRETE GROUT.
 3. CUT & CAP EXISTING WM. ABANDON EXISTING WM TO EAST BY FILLING WITH CONCRETE GROUT.
- LENGTH GIVEN FOR INSTALLED WM IS PLAN LENGTH MEASURED HORIZONTALLY.
- MINIMUM DEPTH OF COVER OVER NEW WM IS 3 FEET.

CONTRACTOR SHALL VERIFY EXISTING PIPE MATERIAL AND DEPTH PRIOR TO MOBILIZATION.

Professional Engineer Seal: JOSEPH C. GOLDBACH, No. 22385, State of Florida.

DSGN JAM DR JAM CHK JCG APVD NHP		1 6/18 NO. DATE		BID DOCUMENTS CHANGE TO 6" PVC (OPENCUT) INSTEAD OF 8" HDPE PIPE BURST REVISION		BJK JCG BY APVD		VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		CH2MHILL 4350 WEST CYPRESS STREET SUITE 600 TAMPA, FLORIDA 33607-4155 LB 0002934 AA C000656		MANATEE COUNTY SUBURBAN SYSTEM WATER LINE REPLACEMENT PROJECT PHASE 3 MANATEE COUNTY, FLORIDA PROJECT No. 60747.70		PLAN SHEET WATER LINE 56th AVE W TO TRI-MOR ESTATES NORTH PART		SHEET C4 DWG C30.DWG DATE AUGUST, 2018 PROJ 386879.WM	
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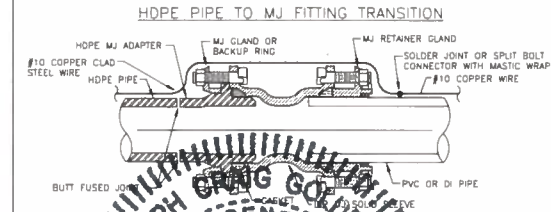
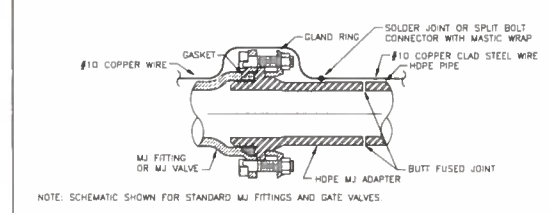
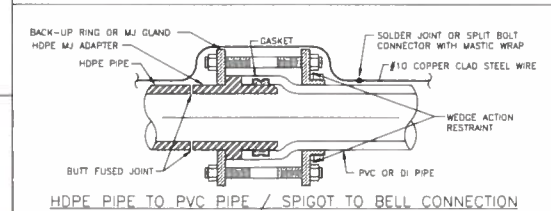
MANATEE COUNTY		TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	PUBLIC WORKS DEPARTMENT	UG-11
REV BY	DATE			
WRT/KC	03/11	MAY 10, 2011		
		DATE OF APPROVAL		PAGE 111

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-12 PAGE 112
REV BY	DATE		
WRT/KE	03/11		
	MAY 10, 2011		
	DATE OF APPROVAL		

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-13
REV BY CLB/BR	DATE 11/10		
MAY 10, 2011			
DATE OF APPROVAL			PAGE 113

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING	UG-14 PAGE 114
REV BY	DATE		
CLB/BR	11/10		
MAY 10, 2011 DATE OF APPROVAL			

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		GATE VALVE, BOX, LID AND TAG	UW-2
REV BY	DATE		
CLB/WE	11/10		
MAY 10, 2011 DATE OF APPROVAL			PAGE 120

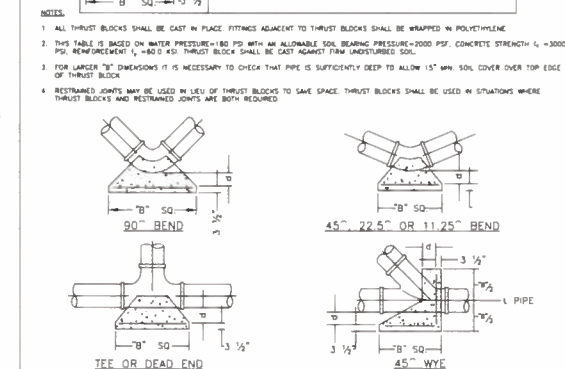


THURST BLOCK DIMENSIONS B 1" x d inches

F-RF SIZE (IN)	90° BEND			45° BEND			22.5° BEND			DEAD END			45° WYE	
	B	d	B	B	d	B	B	d	B	B	d			
4	1 5/8	3 1/2	1 1/2	3 3/8	3 1/8	0 8	3 3/8	3 1/8	0 8	3 3/8	1 3	3 3/8	1 1	3 3/8
6	2 2	5 1/4	1 6	3 3/4	1 2	3 3/8	0 8	3 3/8	0 8	3 3/8	1 9	4 1/4	1 6	3 3/8
8	2 9	7	2 1	5	1 5	3 3/8	1 1	3 3/8	2 4	5	2 4	5	2 4	4 3/4
10	3 5	8 1/2	2 8	6 1/4	1 9	4 1/4	1 3	3 3/8	3 0	7 4	2 5	6		
12	4 2	10	3 1	7 1/2	2 2	5 1/4	1 6	3 3/8	3 5	8 3/4	3 0	7 4	3	7 4
14	4 9	11 3/4	3 8	8 1/4	2 6	5 1/4	1 8	4 1/4	4 1	9 1/4	3 4	8 1/4		
16	5 5	13 1/4	4 1	9 1/4	2 9	7	2 1	5	4 7	11 1/4	3 9	9 1/4		
18	6 2	15	4 8	11	3 3	8	2 3	5 1/4	5 2	12 1/4	4 4	10 1/2		
20	6 9	16 1/2	5 0	12	3 8	8 3/4	2 6	5 1/4	5 8	14	4 9	11 3/4		
24	8 2	19 3/4	6 0	14 1/4	4 3	10 1/4	3 1	7 1/2	6 9	16 1/2	5 8	14		
30	10	24 1/4	7 5	18 1/2	5 3	12 3/4	3 8	9	8 5	20 3/4	7 2	17 1/4		
36	12 1	29	8 9	21 1/4	6 4	15 1/4	4 5	10 3/4	10 2	24 1/2	8 6	20 3/4		

REINFORCEMENT MAT SCHEDULE

FOR DM "B" BETWEEN 5.75" & 12.5" USE #4 @ 8" EACH WAY
 FOR DM "B" LESS THAN 5.75" USE #3 @ 8" EACH WAY

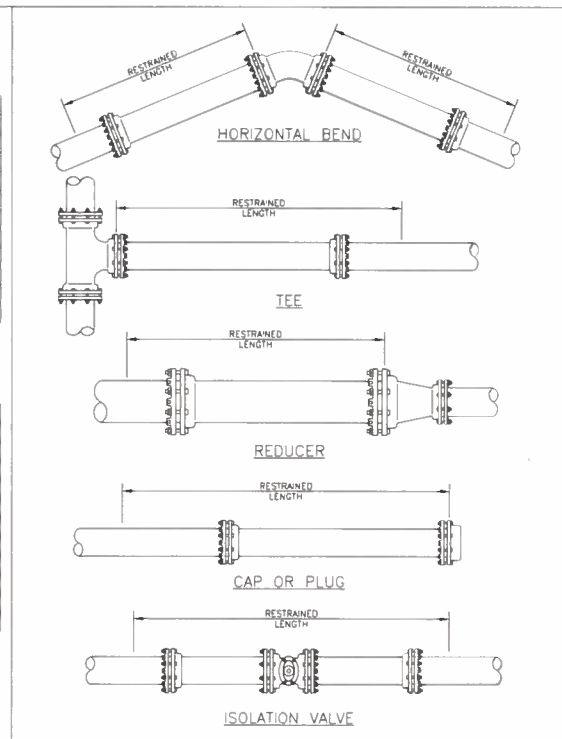


REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE												
MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS		PLUGS & VALVES
	90°	45°	22 1/2°	SIZE			LENGTH			SIZE	LENGTH	
24	90	38	18	#24 160	#20 132	#18 90	#12 38	#10 6	#20 94	#18 117	#16 108	214
20	78	32	16	#20 141	#18 101	#12 31	#10 24	#8 6	#18 85	#16 110	#14 104	184
16	66	27	13	#16 111	#12 81	#10 41	#8 12	#6 6	#16 84	#14 107	#12 85	151
12	52	22	10	#12 80	#10 58	#8 31	#6 1	#4 6	#12 68	#10 82	#8 85	118
10	44	18	9	#10 63	#8 46	#6 18	#4 1	#3 6	#10 58	#8 81	#6 81	100
8	37	15	7	#8 49	#6 18	#4 1	#3 1	#2 6	#8 35	#6 50	#4 33	83
6	29	12	6	#6 29	#4 1	#3 1	#2 1	#1 6	#6 33	#4 33	#3 33	63
4	21	8	4	#4 12	#3 1	#2 1	#1 1	#1 6	#4 33	#3 33	#2 33	45

- NOTES.
1. RESTRAIN 11.25" BENDS 50% OF LENGTH FOR 22.5" BENDS.
2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
3. ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
4. PIPE SIZES ARE GIVEN IN INCHES.
5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
6. LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH ANNA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
MAIN PIPE SIZE	HORIZ. BENDS			TEES												REDUCERS												PLUGS & VALVES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	90°	45°	22.5°	SIZE												SIZE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
				3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24	30	36	42	48	60	72	90	108	120	144	168	180	216	240	270	300	360	420	480	540	600	720	840	960	1080	1200	1440	1680	1800	2160	2400	2700	3000	3600	4200	4800	5400	6000	7200	8400	9600	10800	12000	14400	16800	18000	21600	24000	27000	30000	36000	42000	48000	54000	60000	72000	84000	96000	108000	120000	144000	168000	180000	216000	240000	270000	300000	360000	420000	480000	540000	600000	720000	840000	960000	1080000	1200000	1440000	1680000	1800000	2160000	2400000	2700000	3000000	3600000	4200000	4800000	5400000	6000000	7200000	8400000	9600000	10800000	12000000	14400000	16800000	18000000	21600000	24000000	27000000	30000000	36000000	42000000	48000000	54000000	60000000	72000000	84000000	96000000	108000000	120000000	144000000	168000000	180000000	216000000	240000000	270000000	300000000	360000000	420000000	480000000	540000000	600000000	720000000	840000000	960000000	1080000000	1200000000	1440000000	1680000000	1800000000	2160000000	2400000000	2700000000	3000000000	3600000000	4200000000	4800000000	5400000000	6000000000	7200000000	8400000000	9600000000	10800000000	12000000000	14400000000	16800000000	18000000000	21600000000	24000000000	27000000000	30000000000	36000000000	42000000000	48000000000	54000000000	60000000000	72000000000	84000000000	96000000000	108000000000	120000000000	144000000000	168000000000	180000000000	216000000000	240000000000	270000000000	300000000000	360000000000	420000000000	480000000000	540000000000	600000000000	720000000000	840000000000	960000000000	1080000000000	1200000000000	1440000000000	1680000000000	1800000000000	2160000000000	2400000000000	2700000000000	3000000000000	3600000000000	4200000000000	4800000000000	5400000000000	6000000000000	7200000000000	8400000000000	9600000000000	10800000000000	12000000000000	14400000000000	16800000000000	18000000000000	21600000000000	24000000000000	27000000000000	30000000000000	36000000000000	42000000000000	48000000000000	54000000000000	60000000000000	72000000000000	84000000000000	96000000000000	108000000000000	120000000000000	144000000000000	168000000000000	180000000000000	216000000000000	240000000000000	270000000000000	300000000000000	360000000000000	420000000000000	480000000000000	540000000000000	600000000000000	720000000000000	840000000000000	960000000000000	1080000000000000	1200000000000000	1440000000000000	1680000000000000	1800000000000000	2160000000000000	2400000000000000	2700000000000000	3000000000000000	3600000000000000	4200000000000000	4800000000000000	5400000000000000	6000000000000000	7200000000000000	8400000000000000	9600000000000000	10800000000000000	12000000000000000	14400000000000000	16800000000000000	18000000000000000	21600000000000000	24000000000000000	27000000000000000	30000000000000000	36000000000000000	42000000000000000	48000000000000000	54000000000000000	60000000000000000	72000000000000000	84000000000000000	96000000000000000	108000000000000000	120000000000000000	144000000000000000	168000000000000000	180000000000000000	216000000000000000	240000000000000000	270000000000000000	300000000000000000	360000000000000000	420000000000000000	480000000000000000	540000000000000000	600000000000000000	720000000000000000	840000000000000000	960000000000000000	1080000000000000000	1200000000000000000	1440000000000000000	1680000000000000000	1800000000000000000	2160000000000000000	2400000000000000000	2700000000000000000	3000000000000000000	3600000000000000000	4200000000000000000	4800000000000000000	5400000000000000000	6000000000000000000	7200000000000000000	8400000000000000000	9600000000000000000	10800000000000000000	12000000000000000000	14400000000000000000	16800000000000000000	18000000000000000000	21600000000000000000	24000000000000000000	27000000000000000000	30000000000000000000	36000000000000000000	42000000000000000000	48000000000000000000	54000000000000000000	60000000000000000000	72000000000000000000	84000000000000000000	96000000000000000000	108000000000000000000	120000000000000000000	144000000000000000000	168000000000000000000	180000000000000000000	216000000000000000000	240000000000000000000	270000000000000000000	300000000000000000000	360000000000000000000	420000000000000000000	480000000000000000000	540000000000000000000	600000000000000000000	720000000000000000000	840000000000000000000	960000000000000000000	1080000000000000000000	1200000000000000000000	1440000000000000000000	1680000000000000000000	1800000000000000000000	2160000000000000000000	2400000000000000000000	2700000000000000000000	3000000000000000000000	3600000000000000000000	4200000000000000000000	4800000000000000000000	5400000000000000000000	6000000000000000000000	7200000000000000000000	8400000000000000000000	9600000000000000000000	10800000000000000000000	12000000000000000000000	14400000000000000000000	16800000000000000000000	18000000000000000000000	21600000000000000000000	24000000000000000000000	27000000000000000000000	30000000000000000000000	36000000000000000000000	42000000000000000000000	48000000000000000000000	54000000000000000000000	60000000000000000000000	72000000000000000000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REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)																						
MAIN PIPE SIZE	HORIZ. BENDS			TEES										REDUCERS				PLUGS & VALVES				
	90°	45°	22.5°	SIZE					LENGTH					SIZE		LENGTH						
36	100	42	20	x38	x30	x24	x18	x12	x6	x36	x30	x24	x18	x12	x6	x36	x30	x24	x18	x12	x6	188
30	88	37	18	x30	x24	x18	x12	x6	x30	x24	x18	x12	x6	x30	x24	x18	x12	x6	x30	x24	x18	162
24	75	31	15	x24	x18	x12	x6	x24	x18	x12	x6	x24	x18	x12	x6	x24	x18	x12	x6	x24	x18	135
20	65	27	13	x20	x15	x12	x6	x20	x15	x12	x6	x20	x15	x12	x6	x20	x15	x12	x6	x20	x15	116
16	54	22	11	x16	x12	x9	x6	x16	x12	x9	x6	x16	x12	x9	x6	x16	x12	x9	x6	x16	x12	98
12	43	18	8	x12	x9	x6	x3	x12	x9	x6	x3	x12	x9	x6	x3	x12	x9	x6	x3	x12	x9	75
10	37	15	7	x10	x8	x6	x4	x10	x8	x6	x4	x10	x8	x6	x4	x10	x8	x6	x4	x10	x8	63
8	30	13	6	x8	x6	x4	x3	x8	x6	x4	x3	x8	x6	x4	x3	x8	x6	x4	x3	x8	x6	53
6	24	10	5	x6	x4	x3	x2	x6	x4	x3	x2	x6	x4	x3	x2	x6	x4	x3	x2	x6	x4	41
4	17	7	3	x4	x3	x2	x1	x4	x3	x2	x1	x4	x3	x2	x1	x4	x3	x2	x1	x4	x3	29



MAYAQUE COUNTY PUBLIC WORKS DEPARTMENT		STATE OF PIPE TO THE RIVER DI PIPE TO THE RIVER		UG-6
REV BY	DATE			
CLB/BR	11/10			
NOV 10 2011				
				PAGE 108

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CONCRETE THRUST BLOCKS	UG-7
REV BY:	DATE:		
CLB/BR	11/10		
MAY 10, 2011 DATE OF APPROVAL			
			PAGE 107

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PVC PIPE	UG-8
REV BY CLB/BR	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL			

PAGE 108

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR DIP	UG-9
REV BY	DATE		
CLB/BR	11/10		
MAY 10, 2011			
DATE OF APPROVAL			

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PIPE	UG-10
REV BY	DATE		
CLB/BR	11/10		
MAY 10, 2011 DATE OF APPROVAL			PAGE 110

JOSEPH C. GOLDBACH
FI. P.E No. 22385

DSGN	JAM		
DR	JAM		
CHK	JCG		
APVD	NHP		

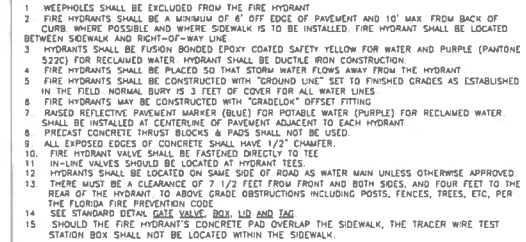
BID DOCUMENTS			
REVISION		BY	AP

VD	VERIFY SCALE	 4350 WEST CYPRESS STREET SUITE TAMPA, FLORIDA 33607-4155 LB 0002934 AA C000656
	BAR IS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	

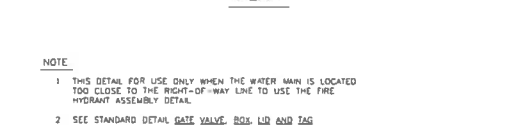
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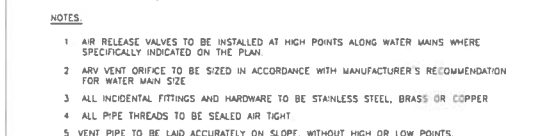
DETAILS	SHEET
	DWG
	DATE
	PROJ

D1
D1.DWG
AUGUST, 2018
386879.WM

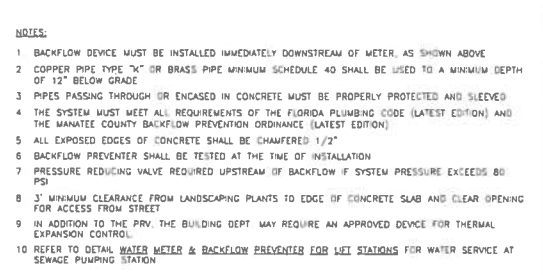


CAST IRON OVAL METER BOX 18" x 10" (10)

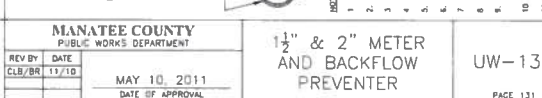




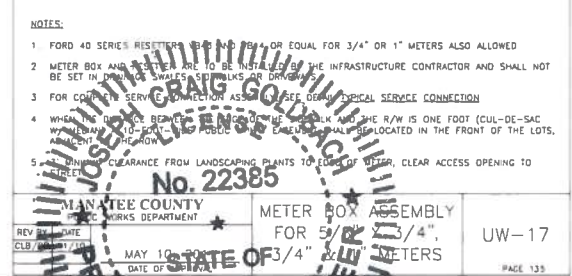
24" MAX. FROM PROP. LINE FOR WATER SERVICES. 9' MIN. FROM SAN SEWER FOR RECLAIMED WATER SERVICES



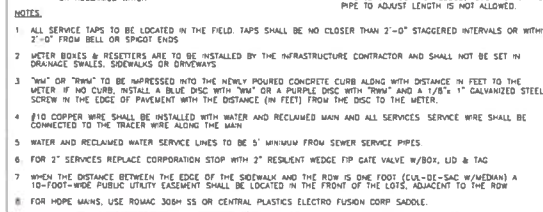
— PRESSURE GAUGE,
1/4 TURN TEST COCK & — REDUCED PRESSURE BACKFLOW



1. A temporary jumper connection is required at all connections between existing active potable water mains and proposed new water main improvements with the following exceptions:



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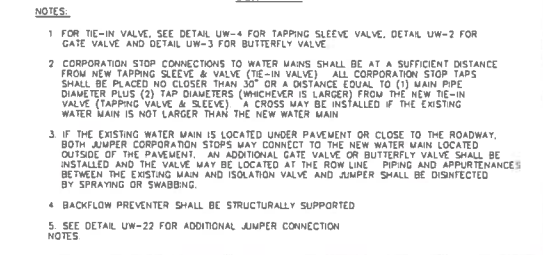
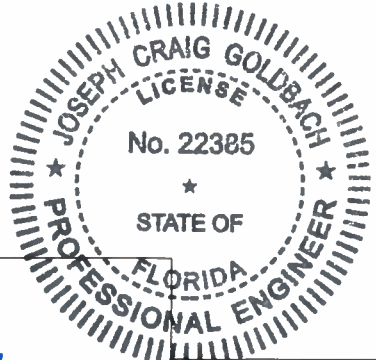
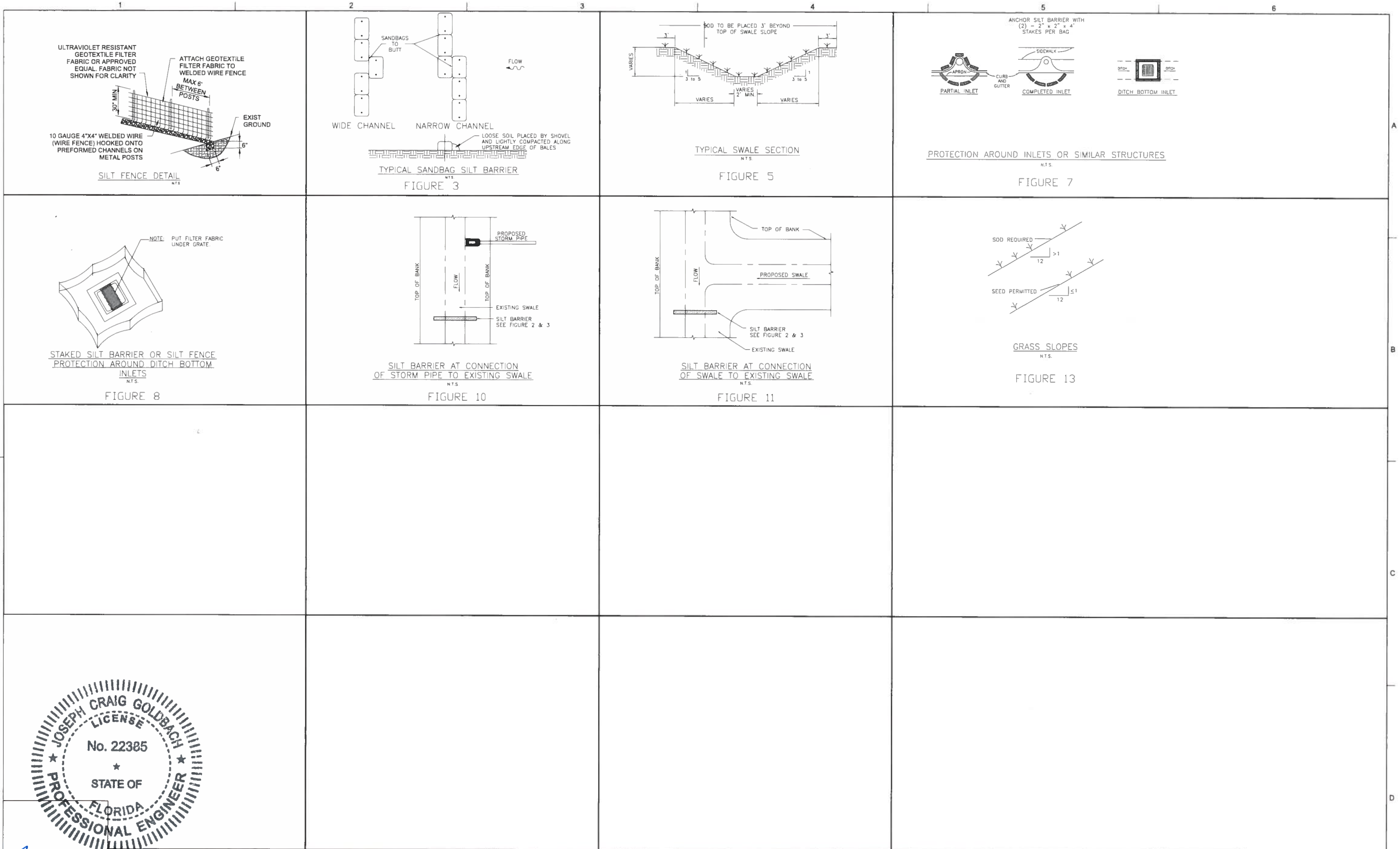
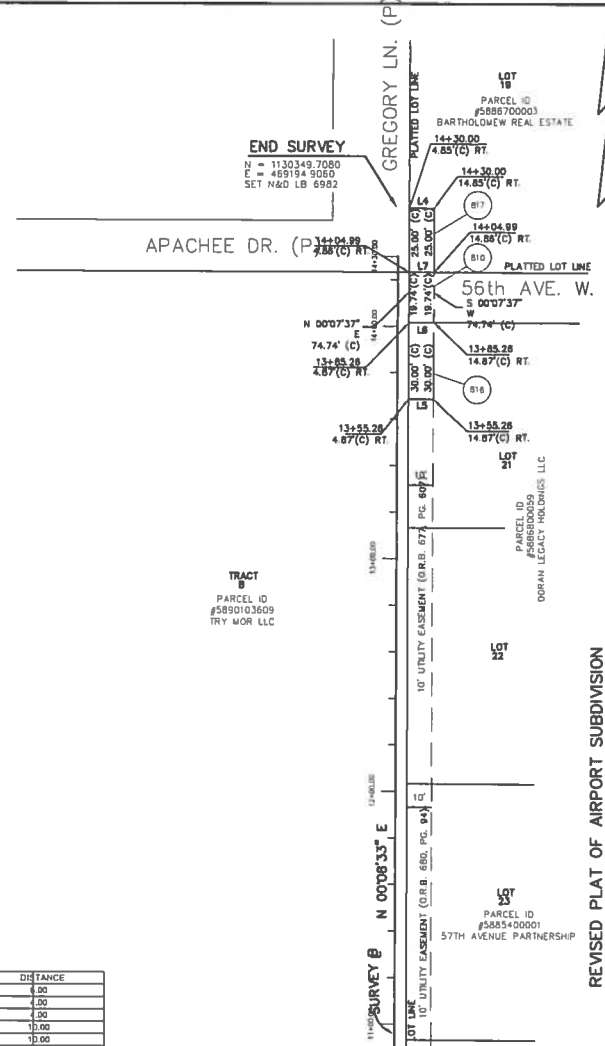
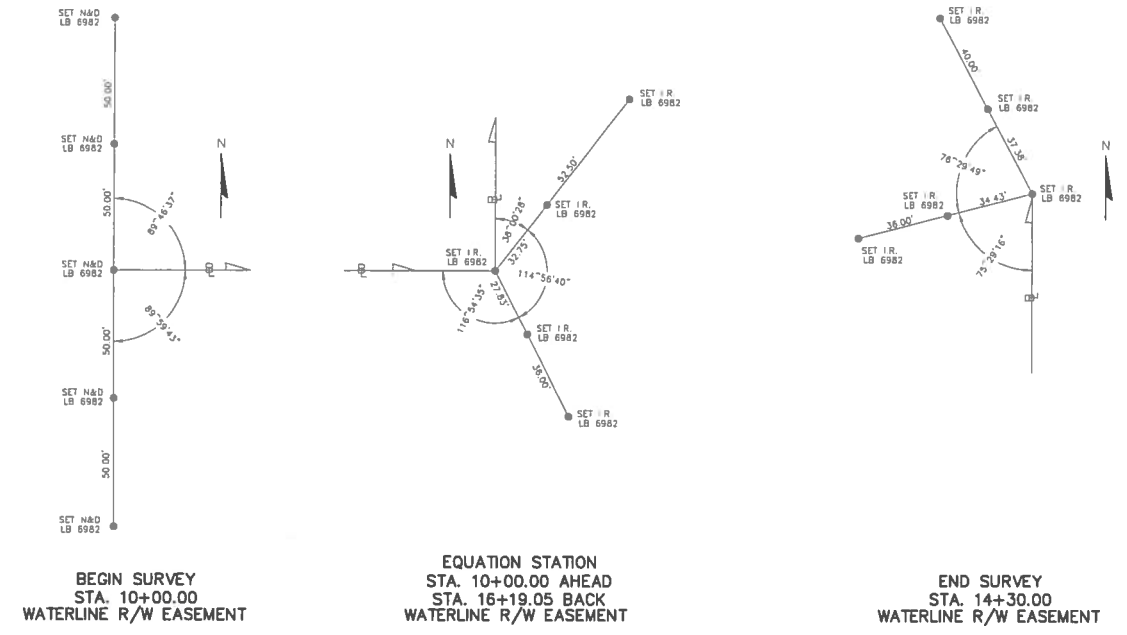


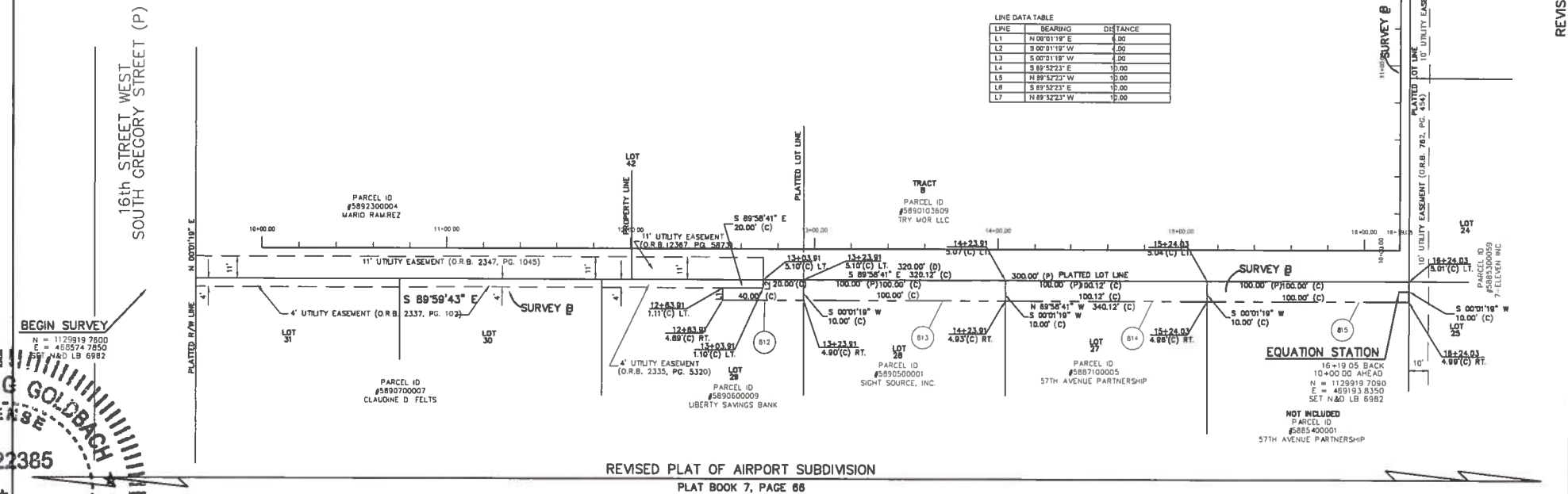


Figure 1 illustrates the timeline of the study. The timeline is divided into five segments: 2007, 2008, 2009, 2010, and 2011-2012. Above the timeline, a box labeled 'Study' contains a list of activities: 'Study design', 'Data collection', 'Data analysis', and 'Data interpretation'. Below the timeline, a box labeled 'Results' contains a list of activities: 'Results', 'Conclusions', 'Recommendations', and 'Dissemination'. The timeline itself is marked with years: 2007, 2008, 2009, 2010, and 2011-2012.





- DRAWING IDENTIFYING PROJECT BASELINE AND STATIONING
- THIS DRAWING SHEET IS INCLUDED AS PART OF THE PROJECT DRAWING SET FOR REFERENCE PURPOSES ONLY, AND HAS BEEN RELIED UPON BY CH2M FOR HORIZONTAL CONTROL OF THE PROJECT. THE INFORMATION PROVIDED BY THIS DRAWING HAS BEEN DEVELOPED BY ZNS/ENGINEERING FOR THIS PROJECT, AND ZNS/ENGINEERING SHOULD BE CONTACTED BY THE CONTRACTOR, OR THE CONTRACTOR'S SURVEYOR, SHOULD THERE BE ANY QUESTIONS ABOUT THE INFORMATION PROVIDED HEREIN, OR FOR ANY UPDATES TO THIS DRAWING.
 - IN ACCORDANCE WITH SPECIFICATION SECTION 01050 "FIELD ENGINEERING AND SURVEYING," PARAGRAPH 1.04, THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR ESTABLISH IN THE FIELD THE LIMITS OF EASEMENTS, AND A SURVEY BASELINE FOR USE IN REFERENCING THE CONSTRUCTED LOCATION OF THE VARIOUS PROJECT ELEMENTS. THE FIELD ESTABLISHED BASELINE SHALL BE SHOWN IN THE PROJECT RECORD DRAWINGS.
 - IN ACCORDANCE WITH SPECIFICATION SECTION 01720 RECORD DRAWINGS, THE CONTRACTOR PREPARED RECORD DRAWINGS SHALL REPORT ALL ELEVATIONS BASED ON NAVD 88.



SPECIFIC PURPOSE SURVEY
OF
SUBURBAN WATERLINE RIGHT OF WAY CORRIDOR
REVISED PLAT OF AIRPORT SUBDIVISION
PLAT BOOK 7, PAGE 66
LOCATED IN
SECTION 14, TOWNSHIP 35 SOUTH, RANGE 17 EAST
MANATEE COUNTY, FLORIDA



DSGN	JAM
CHK	JAM
CHK	JCG
APVD	NHP

BID DOCUMENTS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CH2MHILL
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

MANATEE COUNTY
SUBURBAN SYSTEM
WATER LINE REPLACEMENT PROJECT
PHASE 3
MANATEE COUNTY, FLORIDA
PROJECT No. 60747.70

ZNS/ENGINEERING
ENGINEERS PLANNERS SURVEYORS
LANDSCAPE ARCHITECTS | ENVIRONMENTAL CONSULTANTS
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E-MAIL: ZNS@ZNS.COM | TELEPHONE: (813) 744-8880 | FAX: (813) 744-1316

DRAWING	1.000W-HALLWAYLINE L&R	DATE	SEPTEMBER 10, 2013	SCALE	N.T.S.
DRAWN	SECS	COMP	JOB NO.	00-43485	FB NO.
SHEET 2 OF 2					

SHEET	R1
DWG	R4.DWG
DATE	AUGUST, 2018
PROJ	386879.WM