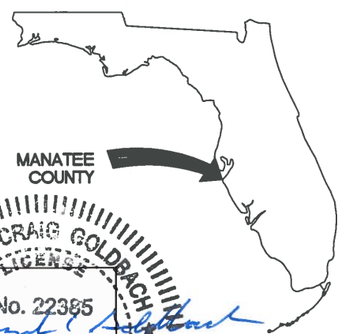
Suburban System
Water Line Replacement Project Phase 3
Manatee County, Florida
Project No. 60747.70



VICINITY MAP

INDEX OF DRAWINGS

JOSEPH CRAIG GOLDBACH LICENSE No. 22385 STATE OF FLORIDA PROFESSIONAL ENGINEER
JOSEPH C. GOLDBACH
STATE No. 22385
10/12/17

DSGN	JAM
DRWN	JAM
CHK	JCG
APVD	NHP

NO.	DATE	REVISION	BY	APVD
		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

COVER SHEET

SHEET	G1
DWG	GICOVER.DWG
DATE	MAY, 2017
PROJ	386879.WM

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811
Know what's below.
Call before you dig.

BENCHMARKS

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

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

LEGEND

EXISTING

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 Reflector
SPRK Sprinkler
GM Gas Marker
BFP Back Flow Preventer
BO Blow Off Valve
FH Fire Hydrant
WV Water Valve
RED Reducer
WM Water Meter
ARV Air Release Valve
SMH Sanitary Sewer Manhole
CO Sanitary Sewer Clean-out
SB#1 Soil Boring Location
TEL Telephone Service Box
CPP 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
8"FM Force Main
W Potable Water
Reclaimed Water
8"SS Sanitary Sewer
12"SD Storm Drain
GAS Gas Line
OH Overhead Utility
UG Underground utility
Edge of Concrete
Edge of Road
Ditch-Toe of Slope
Property Line / Lot Line
Right of Way

Headwall
Drainage Structure
Mitered End Section
GI Grate Inlet
Sewer Flow Direction
CONC Concrete
ACP Asbestos Cement (Transite) Pipe
ASPH Asphalt
DRWY Driveway
SWK Sidewalk
EP Edge of Pavement
TB Top of Bank
R/W Right of Way
GD-RL Guard Rail
RMJ Restrained Mechanical Joint
GV Gate Valve

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
CIP CHLORINE INJECTION POINT
SP BACTERIOLOGICAL SAMPLE POINT
RIGHT-OF-ENTRY (ROE) METER REPLACEMENT
ROEMR #5312 TYPE X ROE LOCATION & TYPE
HA2-XX HAND AUGER BORING LOCATION

GENERAL NOTES

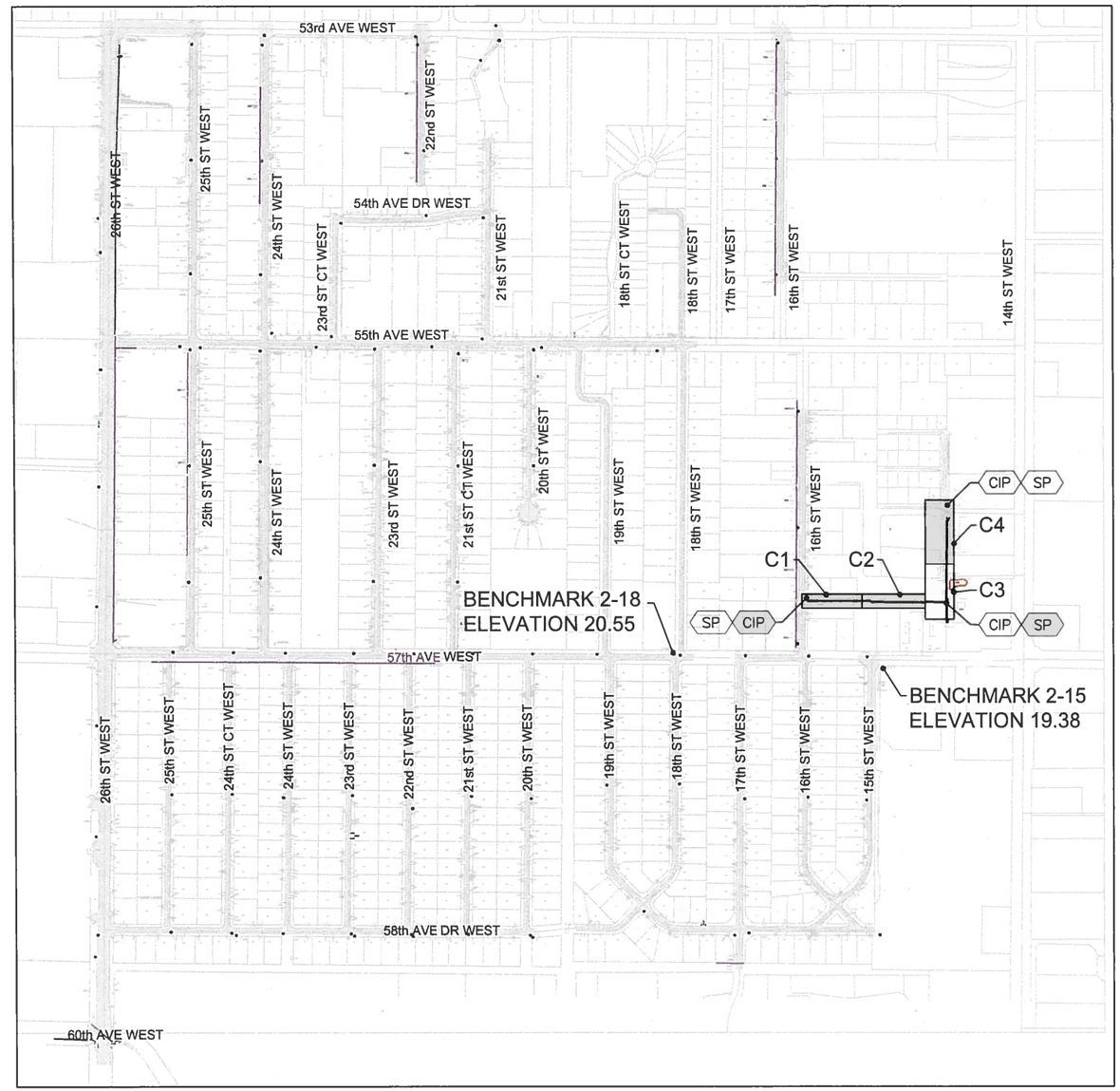
1. THE CONSTRUCTION DOCUMENTS HAVE BEEN PREPARED USING AVAILABLE INFORMATION PERTAINING TO EXISTING UTILITY SYSTEMS AND OTHER IMPROVEMENTS LOCATED WITHIN THE RIGHT-OF-WAY IN THE VICINITY OF THE NEW WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL INVESTIGATIONS OR FIELD EVALUATION PRIOR TO AND DURING CONSTRUCTION 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 BASE UPON NATIONAL GEODETIC VERTICAL DATUM, 1929 (N.G.V.D. - 1929). MANATEE COUNTY BENCHMARK # 110-29-18, ELEVATION = 20.557.
4. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM (NAD) OF 1983 (1990 ADJUSTMENT), FLORIDA STATE PLANE, WEST ZONE, AND WAS DERIVED FROM REDUNDANT REAL-TIME KINEMATIC GPS OBSERVATIONS UTILIZING NGS CONTROL POINT M 087 (NGS PID AG9192) 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 THE ONE CALL CENTER AT 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 RELATED 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 ADMINISTRATIONS (OHSA) 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 WORK IS TO TAKE PLACE WITHIN PUBLIC RIGHT-OF-WAY AND WITHIN UTILITY EASEMENTS. THE CONTRACTOR SHALL PERFORM WORK TO MINIMIZE IMPACT AND DAMAGE TO PUBLIC ROADWAYS, ROADWAY FEATURES, SIGNS, DRAINAGE FEATURES, PUBLIC AND PRIVATE UTILITIES LOCATED WITHIN THE RIGHT-OF-WAY AND ALL OTHER FEATURES ADJOINING THE WORK AREA. DAMAGE TO PUBLIC RIGHT-OF-WAY, ROADWAY, 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 PRE-CONSTRUCTION VIDEOS OF THE AREA OF CONSTRUCTION PER SECTION 01380 OF THE 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 TO BE RELOCATED.
13. THE CONTRACTOR SHALL RELOCATE ALL FACILITIES OR IMPROVEMENTS THAT ARE IN CONFLICT WITH THE NEW WORK AND SUCH RELOCATION SHALL BE IN ACCORDANCE WITH COUNTY OR THE TOWNSHIP DEPARTMENT STANDARDS.
14. THE CONTRACTOR SHALL PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL AS REQUIRED DURING CONSTRUCTION OF THE WORK. SPECIFIC EROSION CONTROL AND SEDIMENTATION CONTROL REQUIREMENTS ARE PROVIDED IN THE SPECIFICATIONS AND SHALL BE FOLLOWED TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL AND CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION AND SEDIMENTATION CONTROL OR SEDIMENTATION IMPACTS THAT RESULT FROM ACTIVITIES AT THE WORK SITE OR WHILE TRANSPORTING FILL OR OVER-EXCATION MATERIAL TO OR FROM THE WORK SITE. THE CONTRACTOR SHALL PROVIDE PERIODIC MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL DEVICES INSTALLED AND SHALL CLEAN-UP AND RESTORE ALL AREAS IMPACTED BY EROSION CONTROL ACTIVITIES AS THE WORK PROCEEDS
15. THE CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE SYSTEMS WITHIN THE AREA OF THE WORK AND SHALL NOT IMPAIR OR IMPACT THE ABILITY OF EXISTING DRAINAGE FEATURES TO PERFORM THEIR INTENDED FUNCTION. IMPACTS TO EXISTING DRAINAGE FEATURES CAUSED BY THE WORK OF THE CONTRACTOR SHALL BE REPAIRED WHEN NOTED AND SHALL NOT IMPACT AREA DRAINAGE CAPACITY.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING DAMAGE TO EXISTING ABOVE GROUND AND BELOW GROUND FACILITIES THAT RESULT FROM THE CONTRACTOR PERFORMING WORK UNDER THIS CONTACT. ALL RESTORATION WORK SHALL RESULT IN A REPAIR THAT IS EQUAL TO OR BETTER THAN THE UTILITY SYSTEM, ABOVE GROUND FEATURE OR BELOW GROUND FEATURE DAMAGED. REPAIRS SHALL BE MADE WITH NEW MATERIALS EQUAL IN QUALITY TO THAT DAMAGED. IN THE EVENT OF DAMAGE TO AN EXISTING RECLAIMED WATER SERVICE OR POTABLE WATER SERVICE LINE, THE REPAIR SHALL INCLUDED COMPLETE REPLACEMENT OF THE LINE FROM SERVICE CONNECTION TO CUSTOMER SERVICE WITH NO PATCH/SPLICE REPAIRS ALLOWED. NO ADDITIONAL PAYMENT SHALL BE MADE FOR SUCH REPAIRS.
17. THE CONTRACTOR SHALL BACKFILL TRENCHES AND/OR EXCAVATIONS AT THE END OF EACH WORK DAY. MAINTAINING EXCAVATIONS OPEN OVER-NITE SHOULD BE THE EXCEPTION NOT THE RULE. SHOULD AN EXCAVATION NEED TO BE MAINTAINED OVERNIGHT, THE CONTRACTOR SHALL COVER THE EXCAVATION WITH A TRAFFIC BEARING STEEL PLATE AND PROPERLY PLACE BARRICADES, LIGHTING AND SIGNAGE AROUND THE PLATED EXCAVATION PREVENTING THE ENTRY OF VEHICLES OR PEDESTRIANS.
18. THE CONTRACTOR SHALL PERFORM CLEAN-UP OF THE WORK SITE AND RESTORATION OF SURFACE AND SUBSURFACE IMPROVEMENTS DAMAGED AS A PART OF THE WORK AS THE PROJECT PROCEEDS. SURFACE RESTORATION, RE-GRADING, GRASSING, REPLACEMENT OF PAVEMENT, REPLACEMENT OF DRIVEWAYS, REPLACEMENT OF SIDEWALKS, REPLACEMENT OF STREET SIGNS, REPLACEMENT OR RESTORATION OF PRIVATE PROPERTY AND SIMILAR ITEMS SHALL BE COMPLETED ON A STREET SEGMENT BY STREET SEGMENT BASIS AS THE WORK PROCEEDS.
19. MAINTENANCE OF TRAFFIC AND PEDESTRIAN SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL DEVELOP SPECIFIC TRAFFIC CONTROL PLANS (TCP) AND PEDESTRIAN WALKING PLANS TO PROTECT THE PUBLIC IN THE AREA OF CONSTRUCTION. TRAFFIC CONTROL AND PEDESTRIAN CONTROL PLANS SHALL FOLLOW THE REQUIREMENTS OF FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) INDEX DRAWINGS AND STANDARDS. ACCESS TO EXISTING RESIDENCES SHALL BE MAINTAINED DURING THE WORK. SHORT TERM TEMPORARY BLOCKAGE OF RESIDENTIAL DRIVEWAYS WILL BE APPROVED BY THE HOMEOWNER. ALL TRAFFIC CONTROL AND PEDESTRIAN CONTROL PLANS SHALL BE DEVELOPED BY AN INDIVIDUAL OR COMPANY WHO SPECIALIZES IN COMPLIANCE WITH FDOT TCP REQUIREMENTS.
20. THE CONTRACTOR'S WORK PLAN OR EXECUTION OF THE WORK SHALL NOT IMPACT THE PROVISION OF WATER SERVICE TO MANATEE COUNTY CUSTOMERS EXCEPT AS REQUIRED TO MAKE METER CHANGE-OUTS OR SERVICE LINE TRANSFERS. THE CONTRACTOR SHALL COORDINATE WITH THE CUSTOMER AND THE MANATEE COUNTY FIELD PROJECT MANAGER PRIOR TO ALL ACTIVITIES WHICH MAY IMPACT THE AVAILABILITY OF WATER SERVICE TO CUSTOMERS.
21. ALL PIPING, VALVES, FITTINGS, APPURTENANCES AND UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS AND MANATEE COUNTY PUBLIC WORKS DEPARTMENT UTILITY STANDARDS, LATEST EDITION. SHOULD THERE BE A CONFLICT BETWEEN THESE PLANS AND SPECIFICATIONS AND THE COUNTY STANDARDS, THE ENGINEER SHALL RESOLVE CONFLICT IN FAVOR OF THE REQUIREMENT THAT PROVIDES THE BETTER WORK QUALITY.
22. NEW WATER PIPELINES SHALL BE INSTALLED WITH A MINIMUM OF 3 FEET OF COVER. PRIOR TO CONSTRUCTION OF PIPELINE ALONG EACH STREET SEGMENT, THE CONTRACTOR SHALL VERIFY THE ELEVATION AND LOCATION OF ALL UNDERGROUND CROSSING UTILITIES THAT MAY INTERFERE WITH THE CONSTRUCTION OF THE NEW PIPELINES AND SERVICES. (EG; WATER SERVICES, SANITARY SEWER SERVICES, GAS SERVICES, COMMUNICATION SERVICES ETC.) THE CONTRACTOR SHALL ADJUST THE ELEVATION OF THE NEW PIPELINE BASED UPON SUCH VERIFICATIONS TO A MINIMUM DEPTH OF COVER TO PROVIDE CLEARANCE AS REQUIRED BY MANATEE COUNTY SPECIFICATIONS BETWEEN EXISTING UTILITIES.
23. INTERCONNECTIONS BETWEEN NEW PIPELINES AND EXISTING PIPELINES SHALL BE OPEN-CUT CONSTRUCTION; FIRE HYDRANT LATERALS SHALL BE PER STANDARD DETAIL UW-5: NEW SERVICE LINES SHALL BE VIA OPEN-CUT CONSTRUCTION OR HDD, NO PNEUMATIC IMPACT MOLING FOR INSTALLATION OF NEW SERVICE LINES.
24. THE CONTRACTOR SHALL ESTABLISH A PIPE DRILLING OR BURSTING PLAN FOR EACH PIPE SEGMENT PRIOR TO CONSTRUCTION. THE DRILLING OR BURSTING 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. 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 CONTRACTORS 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) 792-8811 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 BASED UPON 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 AS-BUILT 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.

JOSEPH CRAIG LEDBACH LICENSE No. 22385 STATE OF FLORIDA PROFESSIONAL ENGINEER
JOSEPH CRAIG LEDBACH
P.E. No. 22385

DSGN	JAM			BID DOCUMENTS			VERIFY SCALE	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	LEGEND AND NOTES	SHEET G2
DR	JAM						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.				DWG G2NOTES.DWG
CHK	JCG										DATE MAY, 2017
QA	NHP	NO.	DATE	REVISION	BY	APVD					PROJ 386879.WM

CIP CHLORINE INJECTION POINT

SP SAMPLE POINT



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

JOSEPH CRAIG GOLDBACH
LICENSE
No. 22385
10/12/17
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
JOSEPH CRAIG GOLDBACH
P.E. No. 22385

DESIGN	JAM
DRAWN	JAM
CHECKED	JCG
APVD	NHP

NO.	DATE	REVISION	BY	APVD
		BID DOCUMENTS		

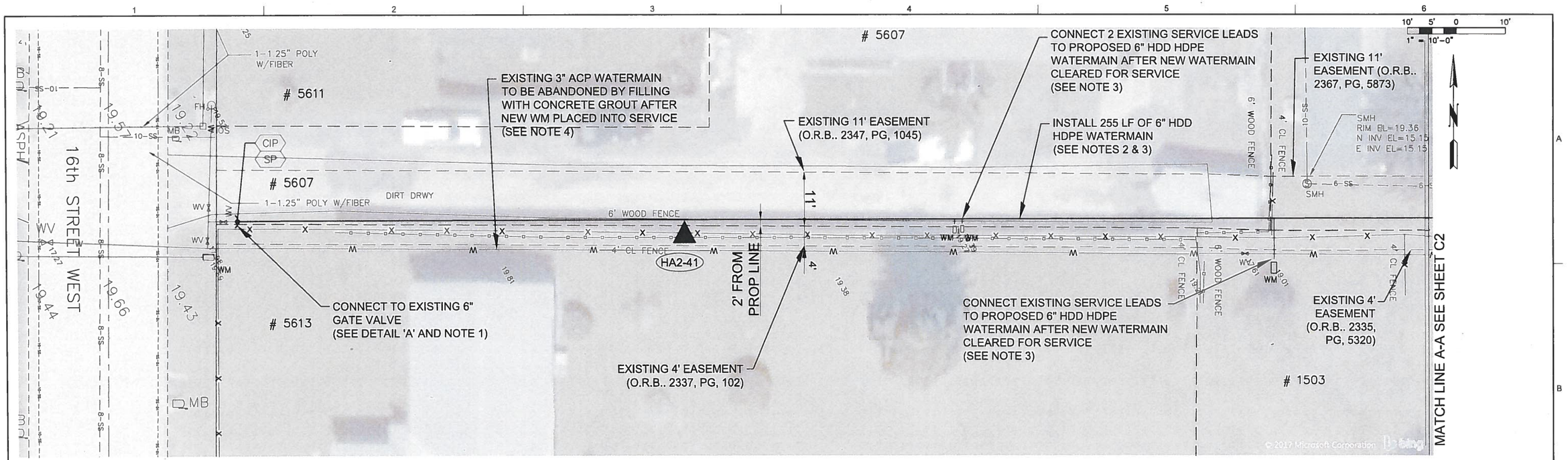
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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

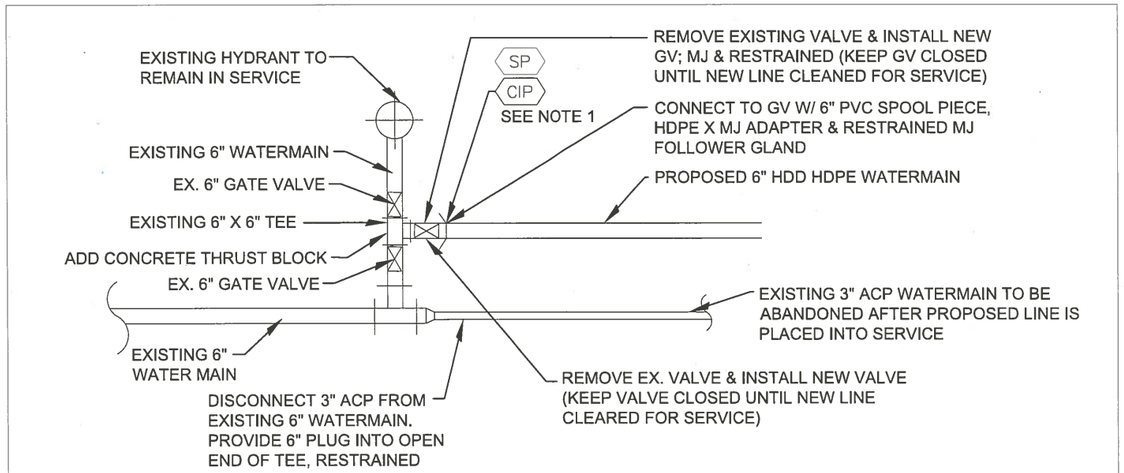
KEY PLAN

SHEET	G3
DWG	G3.DWG
DATE	MAY, 2017
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



DETAIL "A"

JOSEPH CRAIG GOLDBACH LICENSE No. 22385 STATE OF FLORIDA PROFESSIONAL ENGINEER
Joseph C. Goldbach 10/27/17
JOSEPH C. GOLDBACH FLORIDA P.E. No. 22385

DSGNR	JAM
DR	JAM
CK	JCG
QA/QC	NHP

NO.	DATE	REVISION	BY	APVD
		BID DOCUMENTS		

VERIFY SCALE
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0 1"
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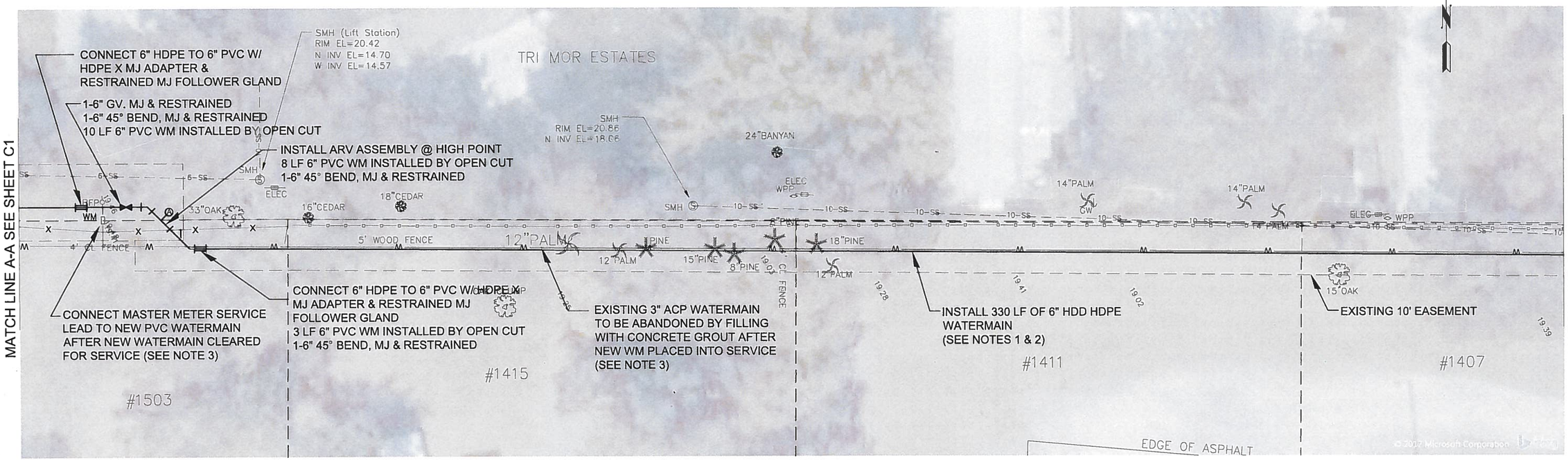
CH2MHILL
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

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
WEST PART

SHEET	C1
DWG	C1.DWG
DATE	MAY, 2017
PROJ	386879.WM



NOTES:

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

JOSEPH CRAIG GOLDBACH
LICENSE
No. 22885
STATE OF FLORIDA
PROFESSIONAL ENGINEER
JOSEPH C. GOLDBACH, P.E. No. 22885
10/12/17

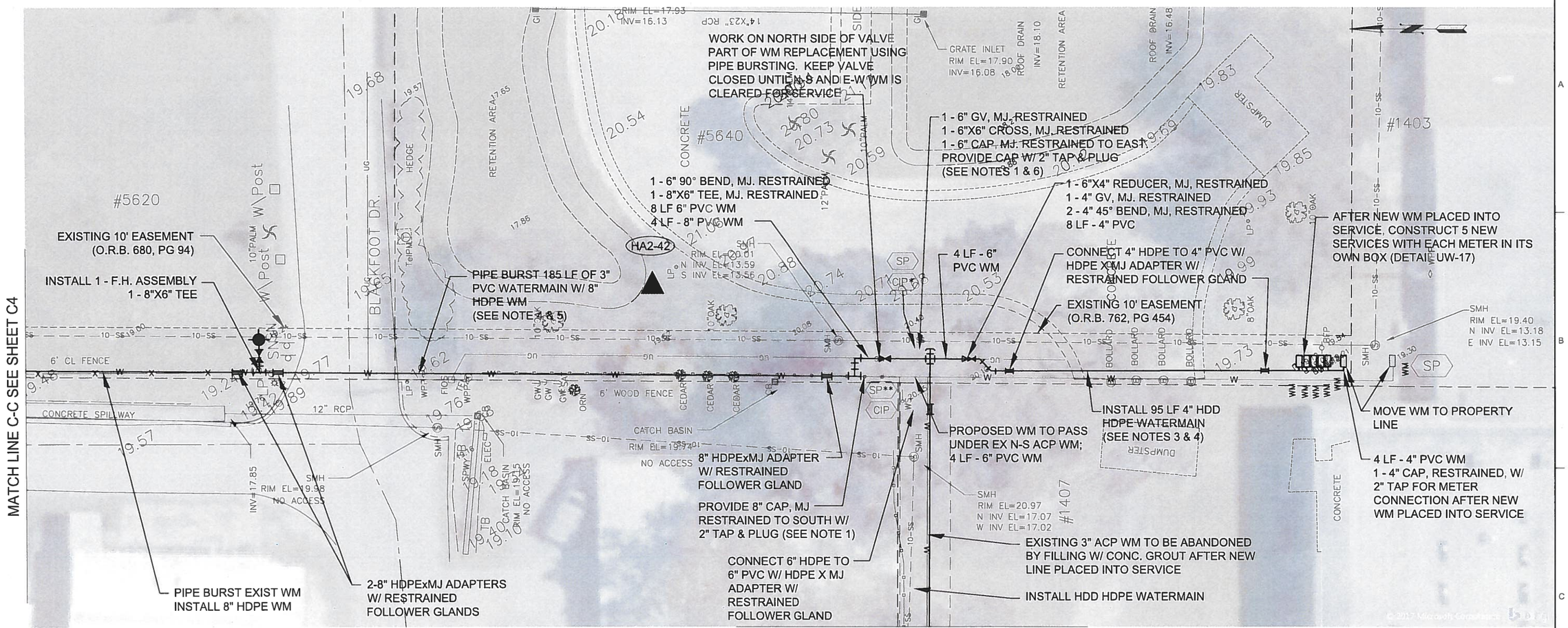
DSGN	JAM			BID DOCUMENTS			VERIFY SCALE: BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1". IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
DR	JAM						
CHK	JCG						
APVD	NHP	NO.	DATE	REVISION	BY	APVD	

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	MAY, 2017
PROJ	386879.WM



NOTES:

1. PROVIDE TEMPORARY HOSE CONNECTION FROM THIS POINT TO 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. CONTRACTOR VERIFY EXISTING PIPE SIZE, MATERIAL & DEPTH PRIOR TO MOBILIZING PIPE BURST EQUIPMENT.
6. 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.

JOSEPH CRAIG GOLDBACH LICENSE No. 22385 STATE OF FLORIDA PROFESSIONAL ENGINEER
10/12/17

DSGN	JAM
DR	JAM
CK	JCG
APVD	NHP

NO.	DATE	REVISION	BY	APVD
		BID DOCUMENTS		

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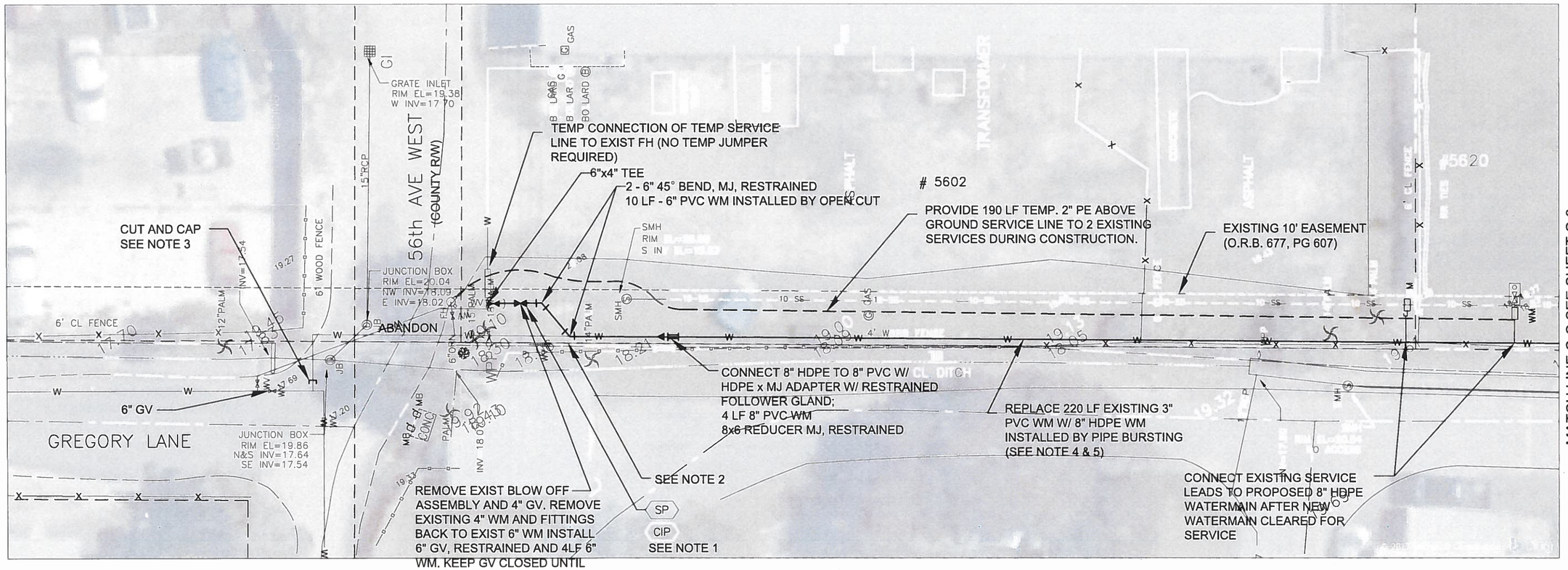
CH2MHILL
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

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
SOUTH PART

SHEET	C3
DWG	C30.DWG
DATE	MAY, 2017
PROJ	386879.WM



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 PIPE BURST WORK. WHEN NEW WM CLEARED FOR SERVICE, ABANDON EXISTING WM BY FILLING WITH CONCRETE GROUT.
3. CUT & CAP EXISTING WM TO WEST. ABANDON EXISTING WM TO EAST BY FILLING WITH CONCRETE GROUT.
4. LENGTH GIVEN FOR INSTALLED WM IS PLAN LENGTH MEASURED HORIZONTALLY
5. CONTRACTOR VERIFY EXISTING PIPE SIZE, MATERIAL & DEPTH PRIOR TO MOBILIZING PIPE BURST EQUIPMENT.

JOSEPH CRAIG GOLDBACH
LICENSE
No. 22385
STATE OF FLORIDA
PROFESSIONAL ENGINEER
JOSEPH C. GOLDBACH
P.E. LIC. # 22385

DSGN	JAM
DR	JAM
CHK	JCG
APVD	NHP

NO.	DATE	REVISION	BY	APVD
		BID DOCUMENTS		

VERIFY SCALE
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0 1"
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CH2MHILL
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

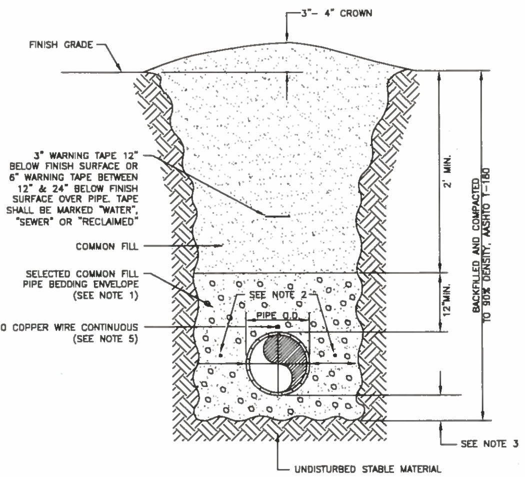
MANATEE COUNTY
SUBURBAN SYSTEM
WATER LINE REPLACEMENT PROJECT
PHASE 3
MANATEE COUNTY, FLORIDA
PROJECT No. 60747.70

PLAN SHEET WATER LINE
56th AVE W TO TRI-MOR ESTATES
NORTH PART

SHEET	C4
DWG	C30.DWG
DATE	MAY, 2017
PROJ	386879.WM

NOTES:

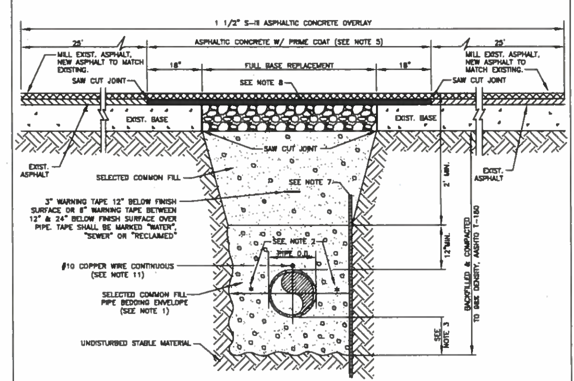
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY WRT/KE	DATE 03/11	MAY 10, 2011 DATE OF APPROVAL	TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11 PAGE 111

NOTES:

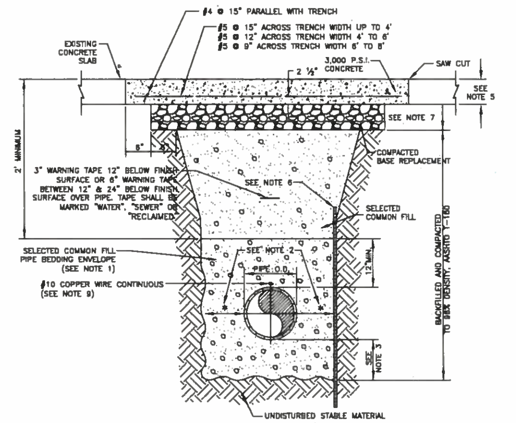
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1 1/4 INCH, WHICHEVER IS GREATER.
6. MILL 25' BACK FROM TRENCH SAW CUT. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCERNABLE "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
7. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
8. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
10. RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
12. NOTES 5. THRU 10. ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



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

NOTES:

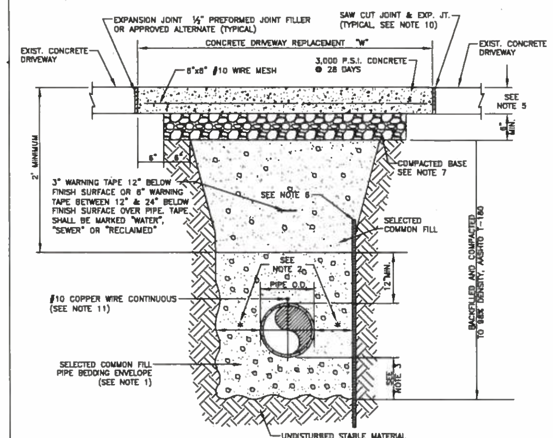
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
8. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
9. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
10. NOTES 5. THRU 8. ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



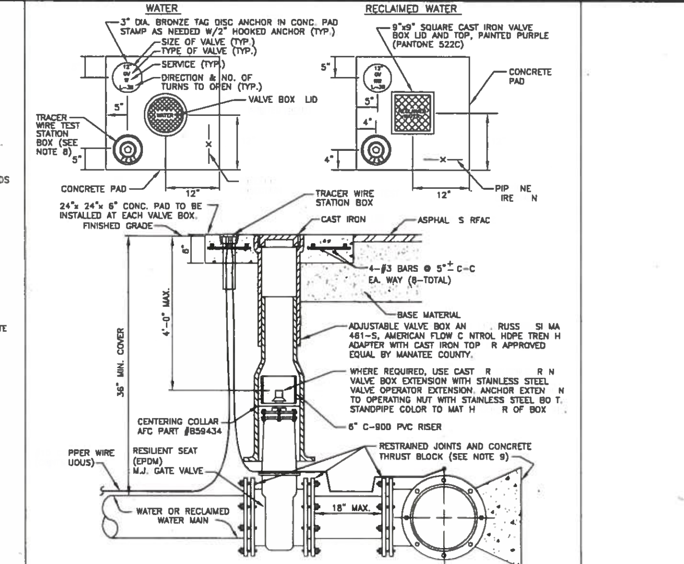
MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY CLB/BR	DATE 11/10	MAY 10, 2011 DATE OF APPROVAL	TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-13 PAGE 113

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.
8. DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
9. IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/16" WIDE AND 1½" DEEP) AFTER THE CONCRETE HAS SET.
10. IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



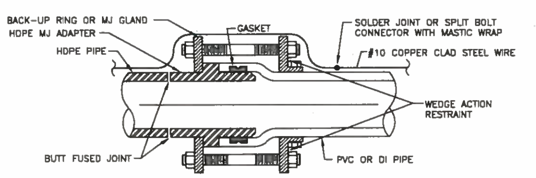
MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY CLB/BR	DATE 11/10	MAY 10, 2011 DATE OF APPROVAL	H WITH N R AY S R A A 1 P PE BE I	– PAGE 4



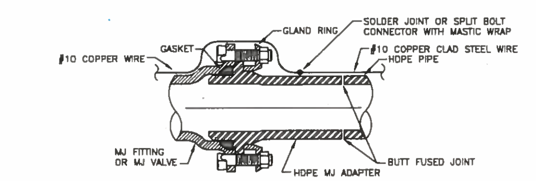
NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD
8. TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
9 WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
1 . BINGHAM & TAYLOR P200NFG FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

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

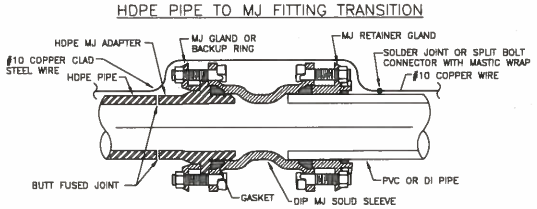


HDPE PIPE TO PVC PIPE / SPIGOT TO BELL CONNECTION



NOTE: SCHEMATIC SHOWN FOR STANDARD MJ FITTINGS AND GATE VALVES.

HDPE PIPE TO MJ FITTING TRANSITION



HDPE PIPE TO PVC PIPE SPIGOT TO SPIGOT CONNECTION

1. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN NON-DIRECTIONAL BORE (TRENCHES AND BORE & JACK) APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY CLB/BR	DATE 11/10	MAY 10, 2011 DATE OF APPROVAL	HDPE TO PVC OR DI PIPE ADAPTER	UG-6 PAGE 106

THRUST BLOCK DIMENSIONS B ft. x d inches

PIPE SIZE (IN.)	90° BEND B	90° BEND d	45° BEND B	45° BEND d	22.5° BEND B	22.5° BEND d	11.25° BEND B	11.25° BEND d	DEAD END & TEE B	DEAD END & TEE d	45° WYE B	45° WYE d
4	1.5	3 ½	1.1	3 ½	0.8	3 ½	0.6	3 ½	1.3	3 ½	1.1	3 ½
6	2.2	5 ¼	1.6	3 ¾	1.2	3 ½	0.8	3 ½	1.9	4 ½	1.6	3 ¾
8	2.9	7	2.1	5	1.5	3 ½	1.1	3 ½	2.4	5 ¾	2.0	4 ¾
10	3.5	8 ½	2.6	6 ¼	1.9	4 ½	1.3	3 ½	3.0	7 ¼	2.5	6
12	4.2	10	3.1	7 ½	2.2	5 ¼	1.6	3 ¾	3.5	8 ¼	3.0	7 ¼
14	4.9	11 ¾	3.6	8 ¾	2.6	6 ¼	1.8	4 ¼	4.1	9 ¾	3.4	8 ¼
16	5.5	13 ¼	4.1	9 ¾	2.9	7	2.1	5	4.7	11 ¼	3.9	9 ¼
18	6.2	15	4.6	11	3.3	8	2.3	5 ½	5.2	12 ½	4.4	10 ½
20	6.9	16 ½	5.0	12	3.6	8 ¾	2.6	6 ¼	5.8	14	4.9	11 ¾
24	8.2	19 ¾	6.0	14 ½	4.3	10 ¼	3.1	7 ½	6.9	16 ½	5.8	14
30	10.1	24 ¼	7.5	18	5.3	12 ¾	3.8	9	8.5	20 ½	7.2	17 ¼
36	12.1	29	8.9	21 ¼	6.4	15 ¼	4.5	10 ¾	10.2	24 ½	8.6	20 ¾

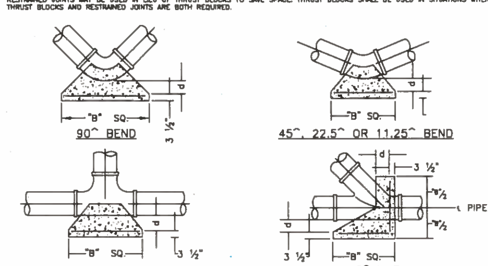
REINFORCEMENT MAT SCHEDULE

FOR DIM. "B" BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY

FOR DIM. "B" LESS THAN 5.75' USE #3 @ 8" EACH WAY

NOTES:

1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
2. THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF, CONCRETE STRENGTH f_c =3000 PSI, REINFORCEMENT f_y =60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
3. FOR LARGER "B" DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
4. RESTRAINED JOINTS MAY BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED.



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

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES (SIZE/LENGTH)					REDUCERS (SIZE/LENGTH)			PLUGS & VALVES
24	90	38	18	X24/169	X20/132	X16/90	X12/38	X10/6	X20/64	X16/117	X12/158	214
20	78	32	16	X20/141	X16/101	X12/53	X10/24	X8/1	X16/65	X12/115	X10/149	184
16	66	27	13	X16/111	X12/67	X10/41	X8/12		X12/64	X10/107	X8/111	151
12	52	22	10	X12/80	X10/56	X8/31	X6/1		X10/58	X8/62	X6/88	118
10	44	18	9	X10/63	X8/40	X6/7			X8/33	X6/61	X4/81	100
8	37	15	7	X8/49	X6/18	X4/1			X6/35	X4/60		83
6	29	12	6	X6/29	X4/1				X4/33			63
4	21	8	4	X4/12								45

NOTES:

1. RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTINGSECTIONS OF PIPE.
3. ALL ISOLATIONVALVES 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 PRESURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFTEY. 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.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY CLB/BR	DATE 11/10	MAY 10, 2011 DATE OF APPROVAL	RESTRAINED LENGTHS FOR PVC PIPE	UG-8 PAGE 108

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

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES (SIZE/LENGTH)						REDUCERS (SIZE/LENGTH)				PLUGS & VALVES
36	142	59	28	x36/393	x30/316	x24/232	x20/165	x16/84	x12/1	X30/137	X24/247	X20/309	X16/359	453
30	124	51	25	X30/333	X24/252	X20/189	X16/115	X12/23	x10/1	X24/137	X20/213	X16/276		391
24	106	44	21	X24/270	X20/211	X16/143	X12/81	X10/10	x8/1	X20/98	X16/178	X12/241		327
20	92	38	18	X20/225	X16/161	X12/85	X10/39	x8/1		X16/98	X12/176	X10/227		280
16	77	32	15	X16/177	X12/107	X10/65	X8/19	x6/1		X12/98	X10/163	X8/169		231
12	61	25	12	X12/127	X10/89	X8/50	x6/1			X10/68	X8/96	X6/131		181
10	52	22	10	X10/101	X8/64	x6/11				X8/51	X6/94	X4/125		153
8	44	18	9	X8/78	X6/30	x4/1				X6/54	X4/92			128
6	34	14	7	X6/46	x4/1					X4/50				98
4	24	10	5	x4/19										69

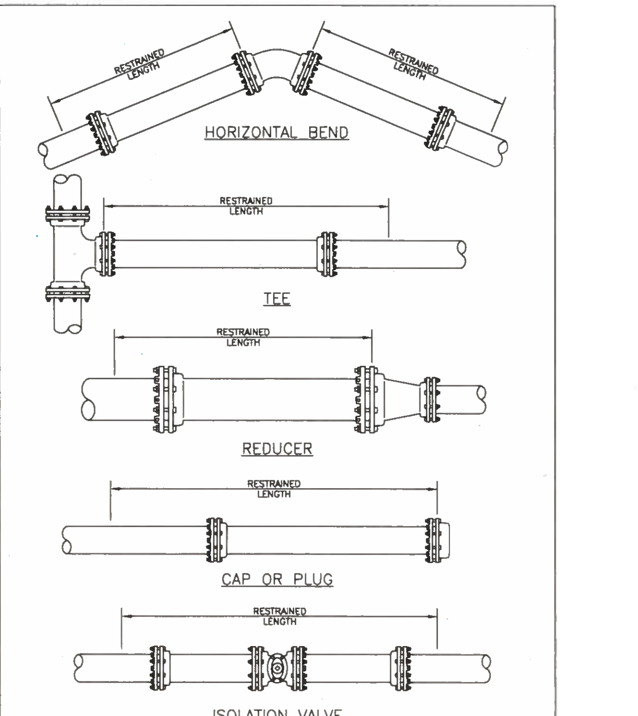
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES (SIZE/LENGTH)						REDUCERS (SIZE/LENGTH)				PLUGS & VALVES
36	100	42	20	x36/163	x30/132	x24/96	x20/68	x16/35	x12/1	X30/57	X24/103	X20/128	X16/149	188
30	88	37	18	X30/138	X24/104	X20/78	X16/48	X12/10	x10/1	X24/57	X20/88	X16/114		162
24	75	31	15	X24/112	X20/87	X16/59	X12/25	x10/4	x8/1	X20/40	X16/74	X12/100		135
20	65	27	13	X20/93	X16/67	X12/35	X10/16	x8/1		X16/41	X12/73	X10/94		116
16	54	22	11	X16/73	X12/44	X10/27	x8/8	x8/1		X12/41	X10/68	X8/70		96
12	43	18	8	X12/53	X10/37	X8/21	x8/1			X10/37	X8/40	X6/54		75
10	37	15	7	X10/42	X8/26	x6/5				X8/21	X6/39	X4/52		63
8	30	13	6	X8/32	X6/12	x4/1				X6/22	X4/38			53
6	24	10	5	X6/18	x4/1					X4/21				41
4	17	7	3	x4/8										29

NOTE:

SEE RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY CLB/BR	DATE 11/10	MAY 10, 2011 DATE OF APPROVAL	RESTRAINED LENGTHS FOR DIP	UG-9 PAGE 109



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

JOSEPH CRAIG GOLDBACH LICENSE No. 22385 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/12/17

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

DSGN	JAM					
DR	JAM		BID DOCUMENTS			
CHK	JCG					
APVD	NHP	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.

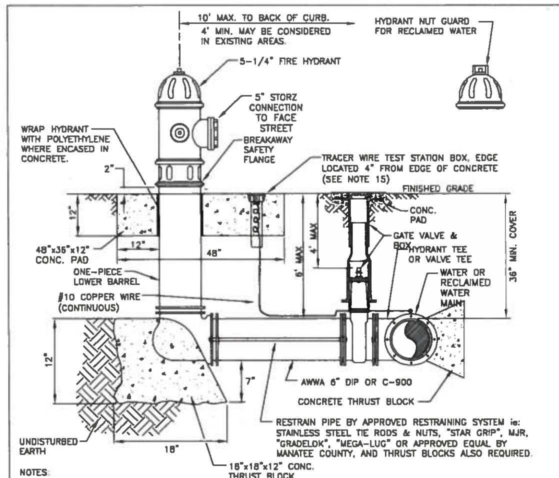
CH2MHILL

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

DETAILS

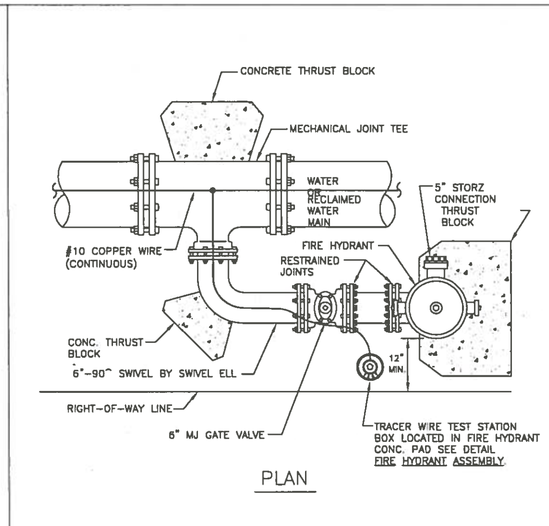
SHEET	D1
DWG	D1.DWG
DATE	MAY, 2017
PROJ	386879.WM



NOTES:

1. WEEPHOLES SHALL BE EXCLUDED FROM THE FIRE HYDRANT.
2. FIRE HYDRANTS SHALL BE A MINIMUM OF 6' OFF EDGE OF PAVEMENT AND 10' MAX. FROM BACK OF CURB. WHERE POSSIBLE AND WHERE SIDEWALK IS TO BE INSTALLED, FIRE HYDRANT SHALL BE LOCATED BETWEEN SIDEWALK AND RIGHT-OF-WAY LINE.
3. HYDRANTS SHALL BE FUSION BONDED EPOXY COATED SAFETY YELLOW FOR WATER AND PURPLE (PANTONE 522C) FOR RECLAIMED WATER. HYDRANT SHALL BE DUCTILE IRON CONSTRUCTION.
4. FIRE HYDRANTS SHALL BE PLACED SO THAT STORM WATER FLOWS AWAY FROM THE HYDRANT.
5. FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
6. FIRE HYDRANTS MAY BE CONSTRUCTED WITH "GRADELOK" OFFSET FITTING.
7. RAISED REFLECTIVE PAVEMENT MARKER (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER. SHALL BE INSTALLED AT CENTERLINE OF PAVEMENT ADJACENT TO EACH HYDRANT.
8. PRECAST CONCRETE THRUST BLOCKS & PADS SHALL NOT BE USED.
9. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
10. FIRE HYDRANT VALVE SHALL BE FASTENED DIRECTLY TO TEE.
11. IN-LINE VALVES SHOULD BE LOCATED AT HYDRANT TEES.
12. HYDRANTS SHALL BE LOCATED ON SAME SIDE OF ROAD AS WATER MAIN UNLESS OTHERWISE APPROVED.
13. THERE MUST BE A CLEARANCE OF 7 1/2 FEET FROM FRONT AND BOTH SIDES, AND FOUR FEET TO THE REAR OF THE HYDRANT, TO ABOVE GRADE OBSTRUCTIONS INCLUDING POSTS, FENCES, TREES, ETC, PER THE FLORIDA FIRE PREVENTION CODE.
14. SEE STANDARD DETAIL GATE VALVE, BOX, LID AND TAG.
15. SHOULD THE FIRE HYDRANT'S CONCRETE PAD OVERLAP THE SIDEWALK, THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.

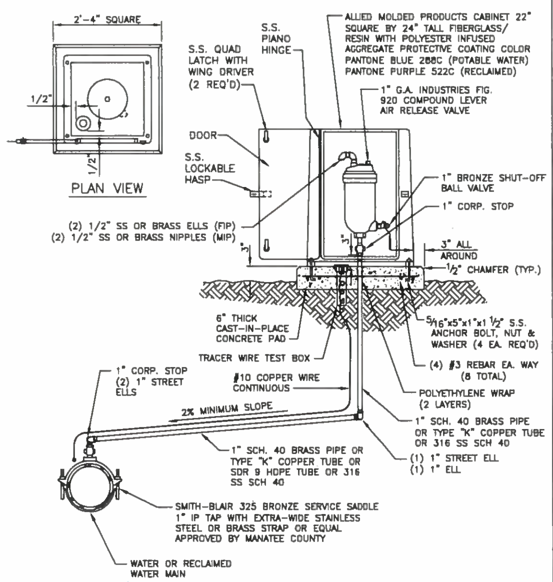
MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY CLB/KE, DATE 11/10 — MAY 10, 2011 DATE OF APPROVAL — FIRE HYDRANT ASSEMBLY — UW-5 — PAGE 123



NOTE:

1. THIS DETAIL FOR USE ONLY WHEN THE WATER MAIN IS LOCATED TOO CLOSE TO THE RIGHT-OF-WAY LINE TO USE THE FIRE HYDRANT ASSEMBLY DETAIL.
2. SEE STANDARD DETAIL GATE VALVE, BOX, LID AND TAG.

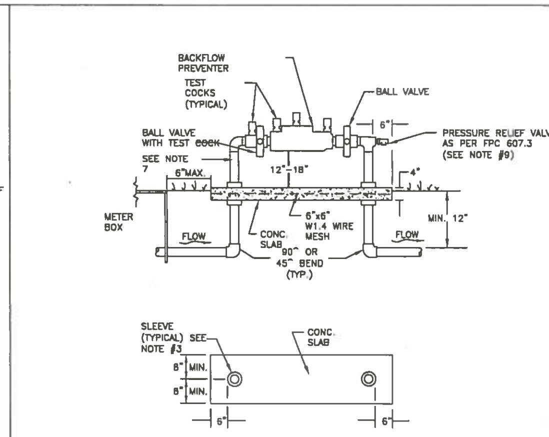
MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY CLB/KE, DATE 11/10 — MAY 10, 2011 DATE OF APPROVAL — FIRE HYDRANT WITH LOCKED 90° BEND — UW-6 — PAGE 124



NOTES:

1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS ALONG WATER MAINS WHERE SPECIFICALLY INDICATED ON THE PLAN.
2. ARV VENT ORIFICE TO BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR WATER MAIN SIZE.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL, BRASS OR COPPER.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.

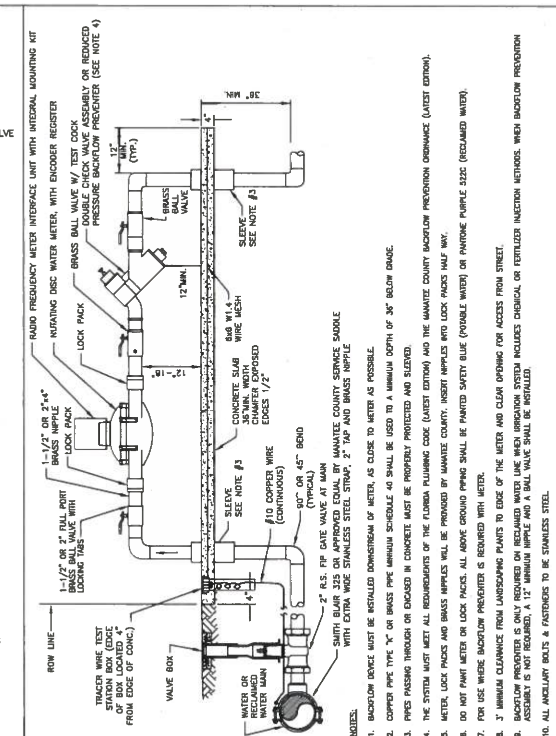
MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY CLB/KE, DATE 11/10 — MAY 10, 2011 DATE OF APPROVAL — ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR 12-INCH AND SMALLER WATER MAINS — UW-9 — PAGE 127



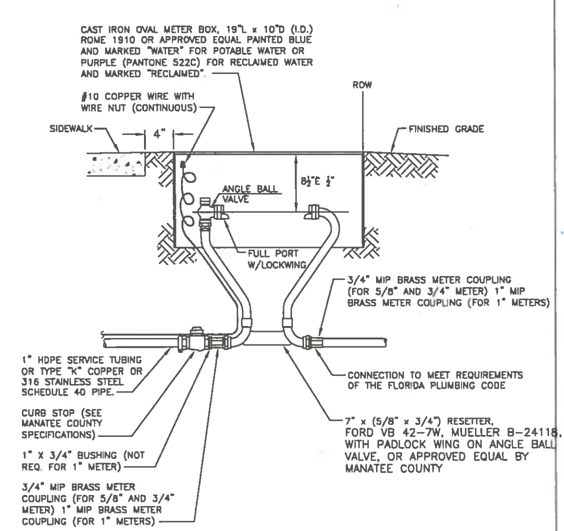
NOTES:

1. BACKFLOW DEVICE MUST BE INSTALLED IMMEDIATELY DOWNSTREAM OF METER, AS SHOWN ABOVE
2. COPPER PIPE TYPE "K" OR BRASS PIPE MINIMUM SCHEDULE 40 SHALL BE USED TO A MINIMUM DEPTH OF 12" BELOW GRADE.
3. PIPES PASSING THROUGH OR ENCASED IN CONCRETE MUST BE PROPERLY PROTECTED AND SLEEVED.
4. THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND THE MANATEE COUNTY BACKFLOW PREVENTION ORDINANCE (LATEST EDITION).
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. BACKFLOW PREVENTER SHALL BE TESTED AT THE TIME OF INSTALLATION.
7. PRESSURE REDUCING VALVE REQUIRED UPSTREAM OF BACKFLOW IF SYSTEM PRESSURE EXCEEDS 80 PSI.
8. 3' MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF CONCRETE SLAB AND CLEAR OPENING FOR ACCESS FROM STREET.
9. IN ADDITION TO THE PRV, THE BUILDING DEPT. MAY REQUIRE AN APPROVED DEVICE FOR THERMAL EXPANSION CONTROL.
10. REFER TO DETAIL WATER METER & BACKFLOW PREVENTER FOR LIFT STATIONS FOR WATER SERVICE AT SEWAGE PUMPING STATION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY CLB/BR, DATE 11/10 — MAY 10, 2011 DATE OF APPROVAL — 3/4" & 1" BACKFLOW PREVENTER — UW-12 — PAGE 130



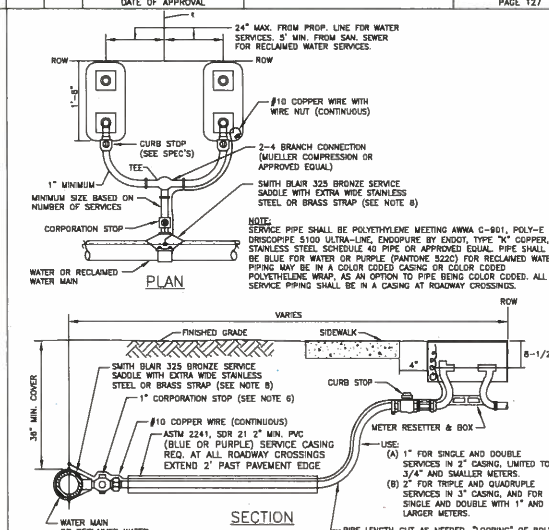
MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY CLB/BR, DATE 11/10 — MAY 10, 2011 DATE OF APPROVAL — 1½" & 2" METER AND BACKFLOW PREVENTER — UW-13 — PAGE 131



NOTES:

1. FORD 40 SERIES RESETTERS VB43 AND VB44 OR EQUAL FOR 3/4" OR 1" METERS ALSO ALLOWED.
2. METER BOX AND RESETTER ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS.
3. FOR COMPLETE SERVICE CONNECTION ASSEMBLY, SEE DETAIL TYPICAL SERVICE CONNECTION.
4. WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE R/W IS ONE FOOT (CUL-DE-SAC W/ MEDIAN) A 10-FOOT-WIDE PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE ROW.
5. 3' MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF METER, CLEAR ACCESS OPENING TO STREET.

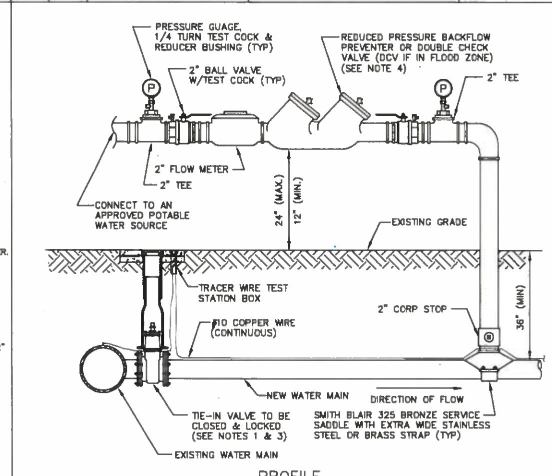
MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY CLB/BR, DATE 11/10 — MAY 10, 2011 DATE OF APPROVAL — METER BOX ASSEMBLY FOR 5/8" X 3/4", 3/4" & 1" METERS — UW-17 — PAGE 135



NOTES:

1. ALL SERVICE TAPS TO BE LOCATED IN THE FIELD. TAPS SHALL BE NO CLOSER THAN 2'-0" STAGGERED INTERVALS OR WITHIN 2'-0" FROM BELL OR SPIGOT ENDS.
2. METER BOXES & RESETTERS ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS.
3. "WM" OR "RWM" TO BE IMPRESSED INTO THE NEWLY POURED CONCRETE CURB ALONG WITH DISTANCE IN FEET TO THE METER. IF NO CURB, INSTALL A BLUE DISC WITH "WM" OR A PURPLE DISC WITH "RWM" AND A 1/8"x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (IN FEET) FROM THE DISC TO THE METER.
4. #10 COPPER WIRE SHALL BE INSTALLED WITH WATER AND RECLAIMED MAIN AND ALL SERVICES. SERVICE WIRE SHALL BE CONNECTED TO THE TRACER WIRE ALONG THE MAIN.
5. WATER AND RECLAIMED WATER SERVICE LINES TO BE 5' MINIMUM FROM SEWER SERVICE PIPES.
6. FOR 2" SERVICES REPLACE CORPORATION STOP WITH 2" RESILIENT WEDGE FIP GATE VALVE W/BOX, LID & TAG.
7. WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE ROW IS ONE FOOT (CUL-DE-SAC W/MEDIAN) A 10-FOOT-WIDE PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE ROW.
8. FOR HDPE MAINS, USE ROMAC 306H SS OR CENTRAL PLASTICS ELECTRO FUSION CORP SADDLE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY CLB/BR, DATE 11/10 — MAY 10, 2011 DATE OF APPROVAL — TYPICAL SERVICE CONNECTION — UW-19 — PAGE 137



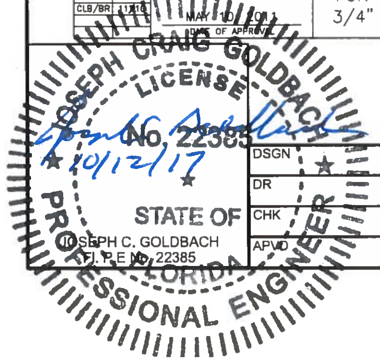
NOTES:

1. FOR TIE-IN VALVE, SEE DETAIL UW-4 FOR TAPPING SLEEVE VALVE, DETAIL UW-2 FOR GATE VALVE AND DETAIL UW-3 FOR BUTTERFLY VALVE.
2. CORPORATION STOP CONNECTIONS TO WATER MAINS SHALL BE AT A SUFFICIENT DISTANCE FROM NEW TAPPING SLEEVE & VALVE (TIE-IN VALVE). ALL CORPORATION STOP TAPS SHALL BE PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP DIAMETERS (WHICHEVER IS LARGER) FROM THE NEW TIE-IN VALVE (TAPPING VALVE & SLEEVE). A CROSS MAY BE INSTALLED IF THE EXISTING WATER MAIN IS NOT LARGER THAN THE NEW WATER MAIN.
3. IF THE EXISTING WATER MAIN IS LOCATED UNDER PAVEMENT OR CLOSE TO THE ROADWAY, BOTH JUMPER CORPORATION STOPS MAY CONNECT TO THE NEW WATER MAIN LOCATED OUTSIDE OF THE PAVEMENT. AN ADDITIONAL GATE VALVE OR BUTTERFLY VALVE SHALL BE INSTALLED AND THE VALVE MAY BE LOCATED AT THE ROW LINE. PIPING AND APPURTENANCES BETWEEN THE EXISTING MAIN AND ISOLATION VALVE AND JUMPER SHALL BE DISINFECTED BY SPRAYING OR SWABBING.
4. BACKFLOW PREVENTER SHALL BE STRUCTURALLY SUPPORTED.
5. SEE DETAIL UW-22 FOR ADDITIONAL JUMPER CONNECTION NOTES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY WT/KE, DATE 01/11 — MAY 10, 2011 DATE OF APPROVAL — TEMPORARY JUMPER CONNECTION — UW-21 — PAGE 139

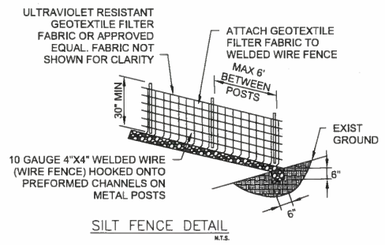
1. A temporary jumper connection is required at all connections between existing active potable water mains and proposed new water main improvements with the following exceptions:
   A. Projects that include a permanent backflow preventer at the right-of-way which is adjacent to the existing water main;
   B. Projects that include new water mains that are less than or equal to 18 linear feet in length; or
   C. Other proposed cases that are approved by Manatee County and the construction drawings specifically state that a temporary jumper connection is not required.
2. A temporary jumper shall be used and be connected to an approved potable water source (e.g., existing fire hydrant, existing main, existing service tap or tank truck, etc.) as shown in the standard temporary jumper detail UW-21. A temporary jumper shall be used for filling, flushing and for disinfection of any new main of any size. The jumper connection shall be maintained until after the filling, flushing, testing and disinfection of the new main has been successfully completed and clearance for use from the Florida Department of Environmental Protection (FDEP) or the Florida Department of Health (FDOH) has been obtained.
3. Locations and orientation of jumpers associated with connections to existing water mains that are located under the roadway pavement shall be approved on a case-by-case basis.
4. Pipe and fittings used for connecting the new pipe to the existing pipe shall be disinfected prior to installation in accordance with AWWA C651, latest edition. Unless approved otherwise, the tapping sleeve, and exterior of the existing main to be tapped, piping within the jumper, and new piping shown on standard temporary jumper detail UW-21 shall be disinfected by spraying or swabbing per Section 4.6 of AWWA C651.
5. A separate and successful hydrostatic test on the new system shall occur between the tie-in valve and the closest downstream gate valve or butterfly valve before performing a hydrostatic test on the remainder of the newly-constructed water main. The tie-in valve and the closest downstream gate valve or butterfly valve shall be closed during the hydrostatic test of the remainder of the newly constructed water main.
6. The jumper shall include a flow meter to ensure that the flow from the supply source is at a constant measured rate while chlorinating the new main. The chlorine concentration shall be measured at regular intervals to ensure that it is fed at a constant rate of not less than 25 milligrams per liter (mg/L) of free chlorine.
7. The jumper connection shall also be used to maintain a minimum pressure of 20 psi in the new mains continuously after disinfection and until FDEP/FDOH clearance letter is obtained.
8. All temporary backflow devices or "jumpers" utilized during pipeline construction must show certification that they have been tested annually according to the Florida Building Code, Plumbing Section, Chapter 3, Section 312.9.1, 312.9.2. Chapter 6, Section 608, and Resolution R87-125. Annual certification must be valid at time of installation and provided to the Manatee County Inspector upon request.
9. Except as required to flush lines greater than 6 inches in diameter, the lockable tie-in valve shall remain closed and shall be locked in the closed position by Manatee County. The tie-in valve shall remain closed and locked until the new system has been cleared for use by the FDEP/FDOH and all other pertinent agencies.
10. After receipt of clearance for use by FDEP/FDOH, Manatee County, and all other pertinent agencies, the Contractor shall remove the temporary jumper connection. The corporation stops are to be closed and plugged with 2-inch brass or PVC stops.
11. All installation and maintenance of the temporary jumper connection and associated backflow prevention device, flow meter, fittings, valves, etc., shall be the responsibility of the Contractor.
12. The tie-in valve shall remain closed if the potable water source is a tank truck.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT — REV.BY JAA/JEA, DATE 02/09 — MAY 10, 2011 DATE OF APPROVAL — TEMPORARY JUMPER CONNECTION NOTES — UW-22 — PAGE 140

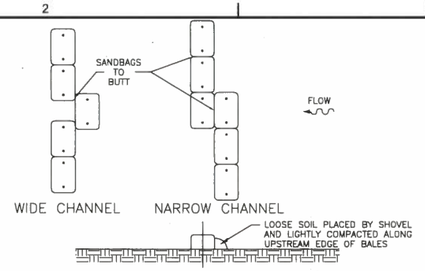


DSGN	JAM	BID DOCUMENTS	VERIFY SCALE: BAR IS ONE INCH ON ORIGINAL DRAWING. 0 — 1". IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CH2MHILL 4350 WEST CYPRESS STREET SUITE 600 TAMPA, FLORIDA 33607-4155 LB 0002934 AA C000656	MANATEE COUNTY SUBURBAN SYSTEM WATER LINE REPLACEMENT PROJECT PHASE 3 MANATEE COUNTY, FLORIDA PROJECT No. 60747.70	DETAILS
DR	JAM					
CHK	JCG					
APVD	NHP	NO. / DATE / REVISION / BY / APVD				

SHEET	D2
DWG	D2.DWG
DATE	MAY, 2017
PROJ	386879.WM

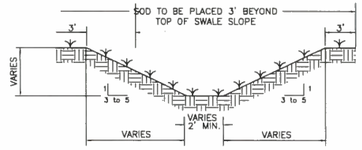


SILT FENCE DETAIL
N.T.S.



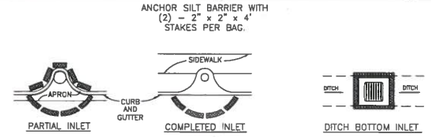
TYPICAL SANDBAG SILT BARRIER
N.T.S.

FIGURE 3



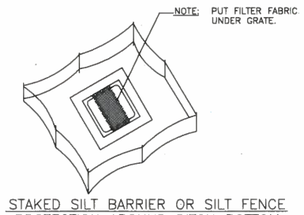
TYPICAL SWALE SECTION
N.T.S.

FIGURE 5



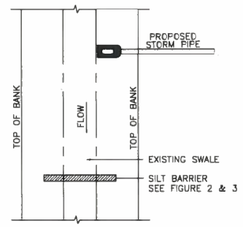
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES
N.T.S.

FIGURE 7



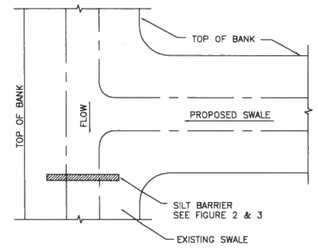
STAKED SILT BARRIER OR SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS
N.T.S.

FIGURE 8



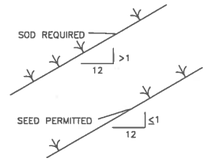
SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING SWALE
N.T.S.

FIGURE 10



SILT BARRIER AT CONNECTION OF SWALE TO EXISTING SWALE
N.T.S.

FIGURE 11



GRASS SLOPES
N.T.S.

FIGURE 13

JOSEPH CRAIG GOLDBACH LICENSE No. 22388 STATE OF FLORIDA PROFESSIONAL ENGINEER
JOSEPH C. GOLDBACH P.E. No. 22388
10/12/17

DSGN	JAM
DR	JAM
CHK	JCG
APVD	NHP

NO.	DATE	REVISION	BY	APVD
		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

BEST MANAGEMENT PRACTICES

SHEET	D3
DWG	D3.DWG
DATE	MAY, 2017
PROJ	386879.WM