**RECORD DRAWING NOTES:** 

- 1. ALL RECORD DRAWING INFORMATION SHOWN IN ITALIC.
- 2. ELEVATIONS ARE BASED ON N.G.V.D. 1929 DATUM
- 3. UTILITIES COUNTY OWNED AND MAINTAINED. 4. GRAPHICAL SYMBOLS OF UTILITIES ARE EXAGGERATED
- FOR CLARITY. 5. ALL VALVES NOTED ON CONSTRUCTION PLANS ARE "AMERICAN FLOW CONTROL SERIES 2600.
- 6. ALL 6" & 8" WATER & REUSE MAINS WERE INSTALLED WITH 6" & 8" DUCTILE IRON CLASS 350 DIP. 2  $\frac{1}{2}$ " & 1  $\frac{1}{2}$ " WATER SERVICES WERE INSTALLED WITH (SCH-40) MATERIAL. ALL 4" FIRE LINES WERE INSTALLED USING (C900, DR-14). ALL 6" & 8" SANITARY MAINS WERE INSTALLED WITH SDR 26 PVC MATERIAL. 2" FORCE MAIN WAS INSTALLED WITH HDPE (PE 3408

## NOTES

- 1. TOTAL PROPERTY BOUNDARY AREA: 149.18± AC
- 2. TOTAL ERP PROJECT AREA = 8.90± AC

- 5. PRESENT ZONING IS CONSERVATION (CON). THE SITE IS LOCATED WITHIN THE LIMITS OF THE MANATEE COUNTY ROBINSON PRESERVE EXPANSION—ENVIRONMENTAL PRESERVE MANAGEMENT PLAN (EPMP). THE SITE IS ALSO LOCATED WITHIN THE COASTAL HIGH HAZARD AREA (CHHA) AND THE COASTAL EVACUATION AREA (CEA). PLEASE REFER TO EPMP-13-01 (RESOLUTION NO. R-13-160).
- 6. THE PROJECT IS 100% OPEN SPACE/RECREATIONAL
- 7. THE EXISTING LAND USE IS VACANT/COUNTY USE.
- 8. PROJECT IS LOCATED WITHIN FLOOD ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) AS PER FEMA FIRM COMMUNITY PANEL 12081C 0143E (EFFECTIVE 3/17/2014). THE BASE FLOOD ELEVATION IS 9 FT NAVD88
- EXISTING FACILITIES MAINTAINED BY MANATEE COUNTY. ALL POTABLE WATER, SANITARY SEWER, AND RECLAIMED
- 11. ALL REQUIRED SITE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 722, "INSTALLATION OF REQUIRED IMPROVEMENTS", OF THE MANATEE COUNTY LDC.
- 12. THERE ARE NO KNOWN EXISTING PLATS, RIGHT-OF-WAYS, BUILDINGS, STREETS, AND/OR HISTORIC SITES
- THE PROPOSED DEVELOPMENT.
- 14. THIS PROJECT HAS BEEN DESIGNED TO PROVIDE REASONABLE ASSURANCE THAT ALL APPLICABLE PERMITS CAN BE OBTAINED.
- 15. THE STORMWATER MANAGEMENT SYSTEM FOR THIS DEVELOPMENT WILL BE MAINTAINED BY MANATEE COUNTY
- 16. CONSTRUCTION SCHEDULE: APPROXIMATE START DATE:
- APPROXIMATE END DATE:
- 17. TOPOGRAPHY IS COMPILED FROM FIELD INFORMATION OBTAINED BY STANTEC. ALL EXISTING AND PROPOSED ELEVATIONS ARE IN NATIONAL GEODETIC VERTICAL DATUM (1929). EXISTING TREE LOCATIONS, TYPES, AND SIZES AS SHOWN ON THE PLANS ARE PER THE "SPECIFIC PURPOSE SURVEY TO ILLUSTRATE TREE LOCATIONS" PREPARED BY ZNS ENGINEERING, L.C. (REVISION DATE 5/22/2013).
- 18. ALL COMMON IMPROVEMENTS AND OPEN SPACE WITHIN THE SITE WILL BE MAINTAINED BY MANATEE COUNTY
- 19. THE STORMWATER MANAGEMENT SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH MANATEE COUNTY REQUIREMENTS, AND CHAPTER 62-330 F.A.C. REQUIREMENTS.
- 20. THERE ARE NO EXISTING WETLANDS LOCATED WITHIN OR ADJACENT TO THE PROJECT AREA. FDEP AND USACE PERMITS WILL BE OBTAINED AS REQUIRED.
- 21. IN ORDER TO MEET THE PARKING DEMANDS ANTICIPATED BY MANATEE COUNTY, THE FOLLOWING PARKING 29 VEHICLE PARKING SPACES (INCLUDES 2 HANDICAP SPACES) BUS LOADING/UNLOADING SPACE
- 22. THERE IS ONE KNOWN WELL LOCATED WITHIN THE PROJECT AREA WHICH WILL REMAIN.
- 23. THERE ARE NO KNOWN PERENNIAL STREAMS LOCATED WITHIN OR DIRECTLY ADJACENT TO THE PROJECT AREA.
- 24. ALL PROPOSED SIGNAGE WILL BE IN ACCORDANCE WITH THE MANATEE COUNTY LAND DEVELOPMENT CODE.
- 25. DRAINAGE AND UTILITY EASEMENTS WILL BE PROVIDED AS REQUIRED BY THE MANATEE COUNTY LAND DEVELOPMENT CODE.
- 26. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION ACTIVITIES.
- 27. ALL EXISTING FEATURES ARE LABELED AS EXISTING ON THE SITE PLAN SHEETS. ALL OTHER FEATURES NOT LABELED EXISTING, ARE PROPOSED.
- 28. ALL PROPOSED SETBACKS ARE SHOWN ON THE SITE PLAN.
- 29. ALL DRIVEWAYS AND DRIVE AISLES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE MANATEE COUNTY LDC AND WILL BE MAINTAINED BY MANATEE COUNTY. ALL TRAFFIC CONTROL SIGNAGE AND PAVEMENT MARKINGS, SHALL CONFORM TO FDOT AND MUTCD STANDARDS.
- 30. SOLID WASTE WILL BE COLLECTED BY MANATEE COUNTY PARKS AND NATURAL RESOURCES STAFF AND TRANSPORTED TO THE EXISTING SOLID WASTE COLLECTION FACILITIES LOCATED WITHIN THE ROBINSON PRESERVE PROPERTY.
- 31. NO PARKING LOT LIGHTING IS PROPOSED AT THIS TIME.
- 32. PROPOSED BUILDING SQUARE FOOTAGE (7,072 S.F. TOTAL): CLASSROOM BUILDING = 1,643 S.F. (PHASE IA) RESTROOM BUILDING = 362 S.F. (PHASE IA) OFFICE BUILDING = 5,067 S.F. (PHASE IB)
- 33. THE PROPOSED OFFICE BUILDING AND CLASSROOM BUILDING WILL BE FIRE SPRINKLED. ALL ON-SITE FIRE
- 34. ALL POTABLE WATER AND RECLAIMED WATER FACILITIES DOWNSTREAM OF THE METERS, AND ALL WASTEWATER FACILITIES ON PARK PROPERTY SHALL BE PARKS AND NATURAL RESOURCES DEPARTMENT OWNED AND MAINTAINED. ALL POTABLE AND RECLAIMED WATER FACILITIES FROM THE TIE INTO EXISTING UP TO AND INCLUDING THE METER AND ALL WASTEWATER FACILITIES WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE UTILITY DEPARTMENT OWNED AND

ALL EXISTING AND PROPOSED ELEVATIONS ON THE PLANS REFERENCE THE NGVD29 VERTICAL ELEVATION DATUM.

THE CONVERSION FACTOR BETWEEN THE NGVD29 AND NAVD88 VERTICAL ELEVATION DATUM IS AS FOLLOWS PER CORPSCON v6.0.1, U.S. ARMY CORPS OF ENGINEERS:

NGVD29 - 0.95 FT = NAVD88

# RECORD DRAWINGS

## UTILITIES

(WATER, SEWER, REUSE + FORCEMAIN)

TO SERVE

ROBINSON PRESERVE EXPANSION PHASE I

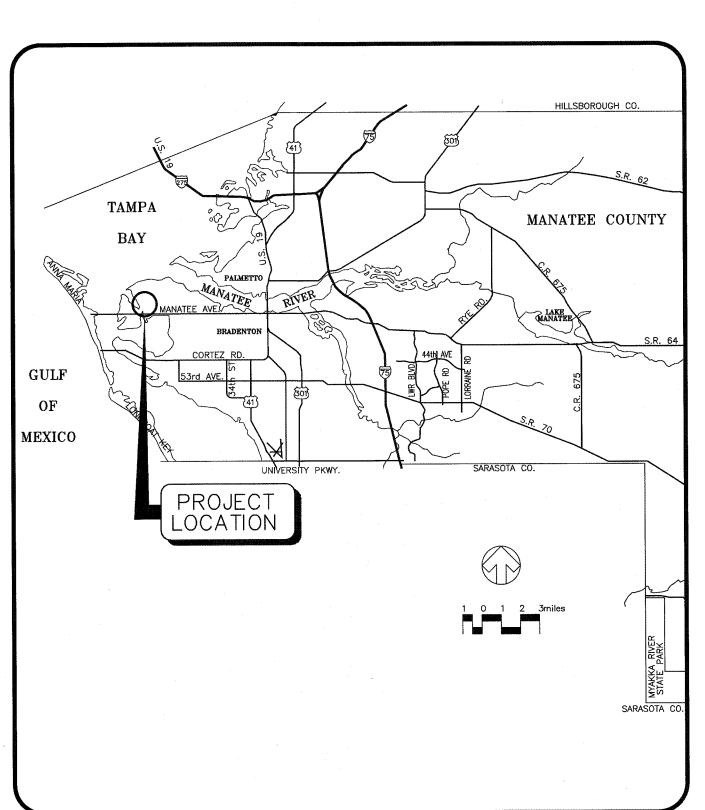
PART OF SECTIONS 23 AND 26, TOWNSHIP 34 SOUTH, RANGE 16 EAST, MANATEE COUNTY, FLORIDA

A PROJECT BY

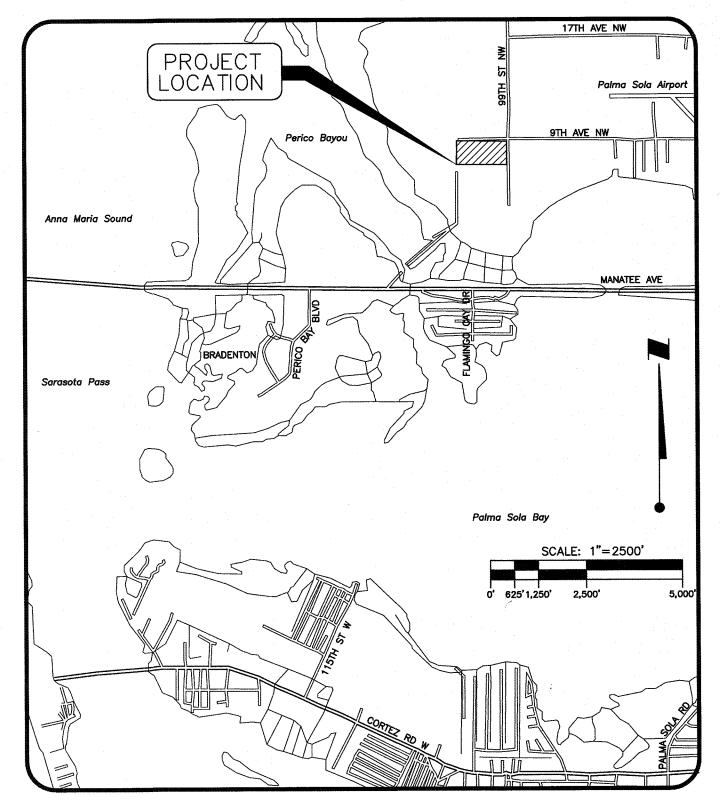
# MANATEE BOARD OF COUNTY COMMISSIONERS

1112 MANATEE AVENUE WEST BRADENTON, FL 34205 (941) 748-4501

"TRACER WIRE INSTALLED AND TESTED PER STANDARDS CONTINUITY OF TRACER WIRE WAS CONFIRMED AND ALL TESTS PASSED." 06 - 19 - 17





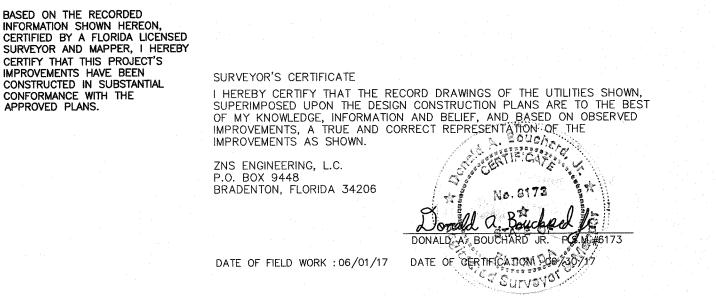


SITE MAP

IMPROVEMENTS HAVE BEEN

## ALL UTILITIES ARE COUNTY OWNED AND MAINTAINED

		REVISION		
1	RECORD	DRAWING	ВС	06/27/17
2	REVISED	RECORD DRAWING	ВС	09/13/17
3				
4				



## INDEX TO SHEETS

SHEET NO.	DESCRIPTION	
1/1/	COVER SHEET (INCLUDED)	
/2/	AERIAL LOCATION MAP (NOT INCLUDED)	
3/	MASTER SITE PLAN AND KEY SHEET (NOT INCLUDED)	
4/	SITE PLAN — WEST (NOT INCLUDED)	
5	SITE PLAN — EAST (NOT INCLUDED)	
8	PAVING AND DRAINAGE PLAN — WEST (NOT INCLUDED)	
1/1/	PAVING AND DRAINAGE PLAN — EAST (NOT INCLUDED)	
8	MASTER UTILITY PLAN & PLAN AND PROFILE KEY SHEET (INCLUDE	<b>:</b> D)
9-11	PLAN AND PROFILES (INCLUDED)	
12-14	CONSTRUCTION DETAILS (NOT INCLUDED)	- 1.
15	SECTIONS AND DETAILS (NOT INCLUDED)	
16	UTILITY DETAILS (NOT INCLUDED)	27 - 4 - 22-
17	UTILITY DETAILS (NOT INCLUDED)	
18	UTILITY DETAILS (NOT INCLUDED)	
19	UTILITY DETAILS / GRINDER PUMP STATION SITE PLAN (NOT INCLU	IDED)
20	GRINDER PUMP STATION DETAILS (INCLUDED)	
21/	BEST MANAGEMENT PRACTICES PLAN (NOT INCLUDED)	
/22/	BEST MANAGEMENT PRACTICES DETAILS (NOT INCLUDED)	
LP-101	LANDSCAPE PLAN (NOT INCLUDED)	
LP-401	TREE REMOVAL & CONSERVATION PLAN (NOT INCLUDED)	
LP-50	LANDSCAPE DETAILS (NOT INCLUDED)	
LP-60	LANDSCAPE NOTES (NOT INCLUDED)	
LS-40	LANDSCAPE SURFACES PLAN (NOT INCLUDED)	
LI-101	LANDSCAPE IRRIGATION PLAN (NOT INCLUDED)	
LI-501	IRRIGATION NOTES & DETAILS (NOT INCLUDED)	
LI-502	IRRIGATION NOTES & DETAILS (NOT INCLUDED)	
1 OF	ROBINSON PRESERVE EXPANSION PHASE II—IIB RESTORATION PROJECT (NOT INCLUDED)	, v , , , , , ,
1 OF 2	SPECIFIC PURPOSE SURVEY TO ILLUSTRATE TREE LOCATIONS (NOT INCLUDED) (BY ZNS ENGINEERING, L.C.)	
2 OF 2	SPECIFIC PURPOSE SURVEY TO ILLUSTRATE TREE LOCATIONS (NOT INCLUDED) (BY ZNS ENGINEERING, L.C.)	
	DENOTES SHEETS SUBMITTED FOR ERP	ing a second
		<u> </u>
A	12/4/15 ADDED NOTE 34; ALSO INCLUDES REVISIONS TO SHEETS 8, 10, 11, 19, AND LP-101	DJB/8936
A	REVISED NOTES 2, 16, 21, 30, SHEET 19 NAME, ADD VERTICAL DATUM NOTE; ALSO INCLUDES REVISIONS TO SHEETS 2-21, LP-101, LP-401, LP-501, LP-601, LS-401, LI-101, LI-501, AND LI-502	DJB/8936
NO.	DATE DESCRIPTION	BY
	STATUS : REVISIONS	
	NEERING TECHNICIAN PROJECT MANAGER PROJECT ENGI ALD SMITH J. MICHAEL BELL, P.E. DANIEL J. BONE	

ADMINISTRATIVE PERMIT/CONSTRUCTION PLANS PROJECT NAME: ROBINSON PRESERVE EXPANSION - PHASE I

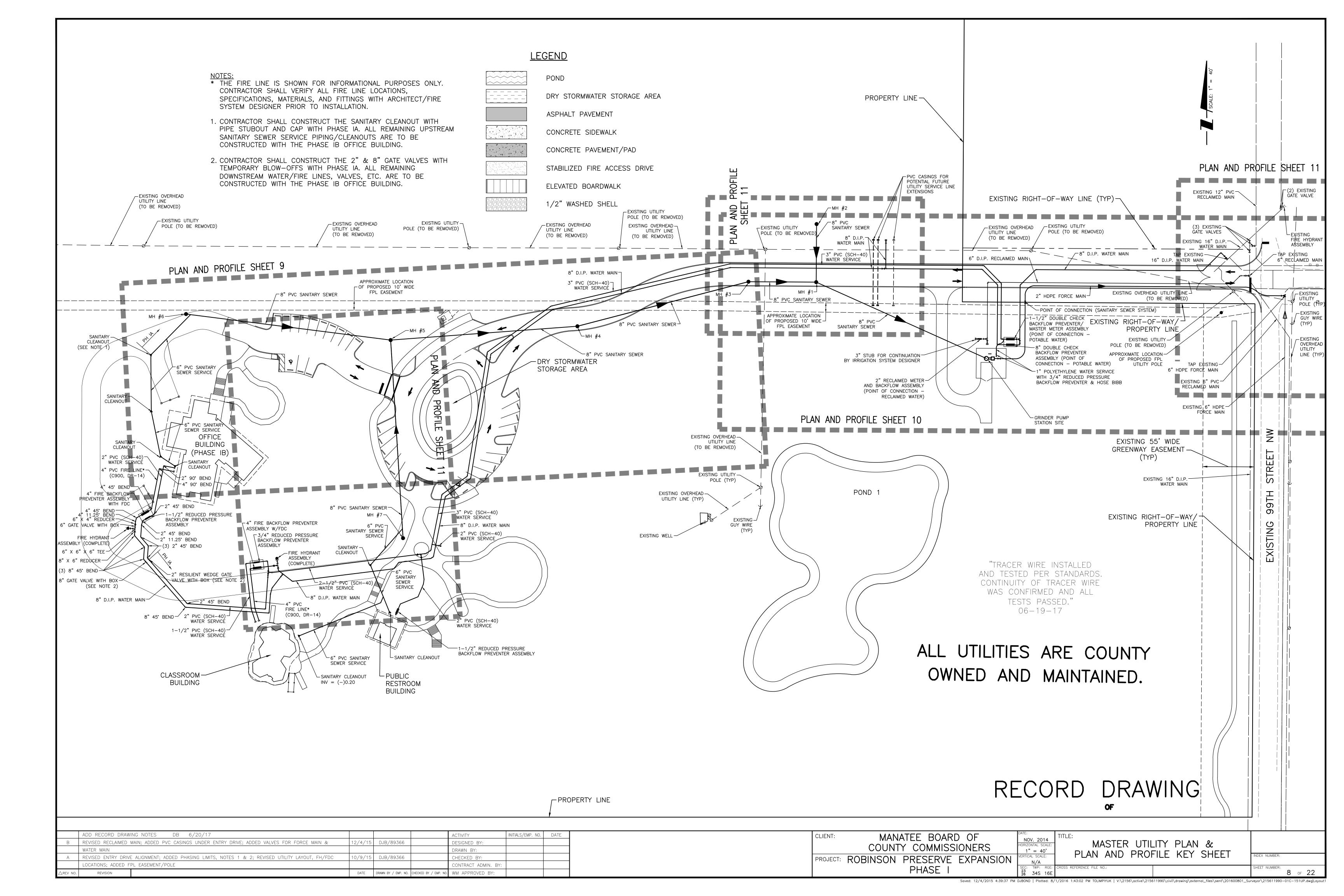
Attention: A copy of this Project Planner (PD) approved plan and the approval letter must be Project Engineer (PW provided to the contractor Concurrency (PD) and submitted with your application for a building Fire District Owner/Agent

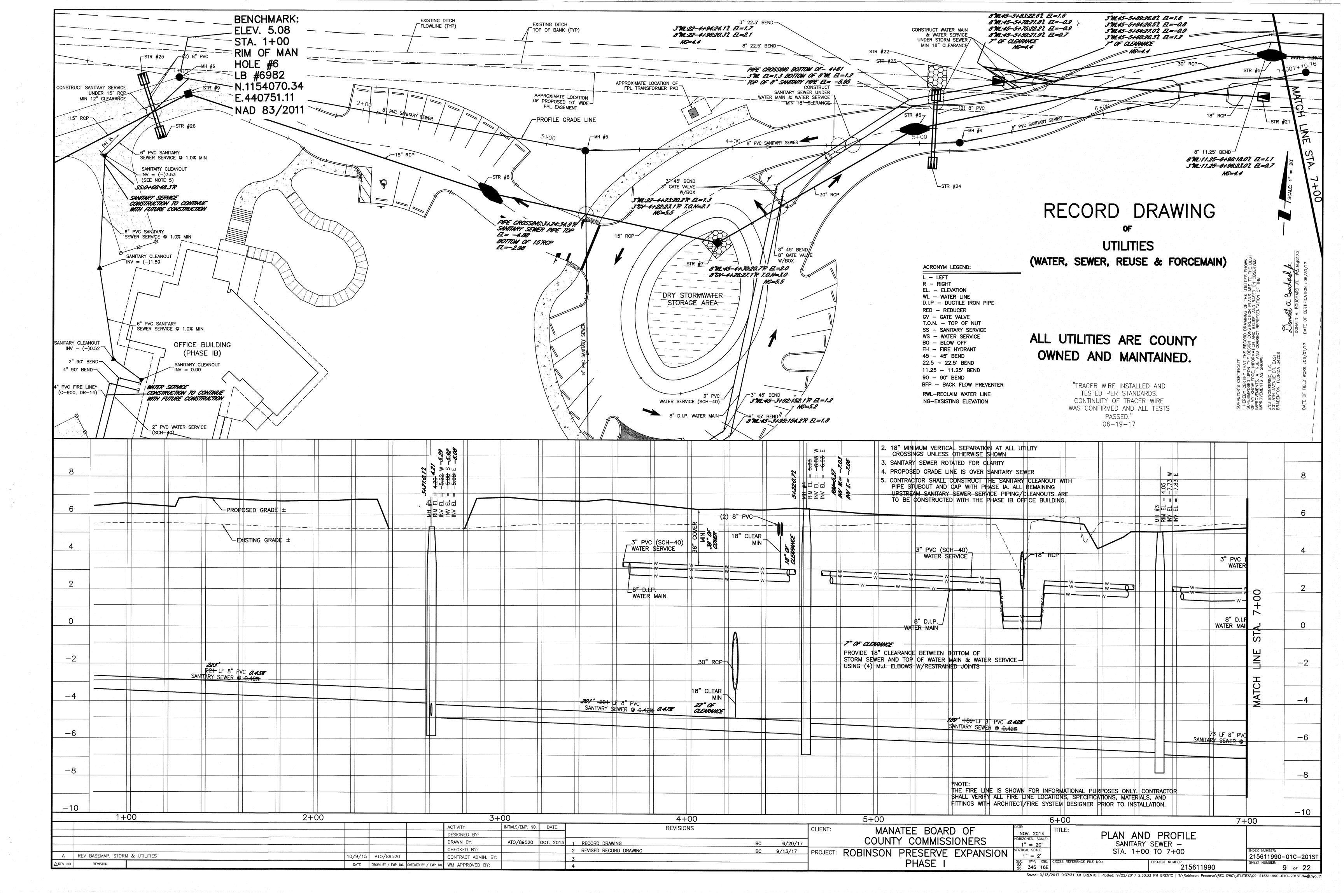
PROJECT NUMBER

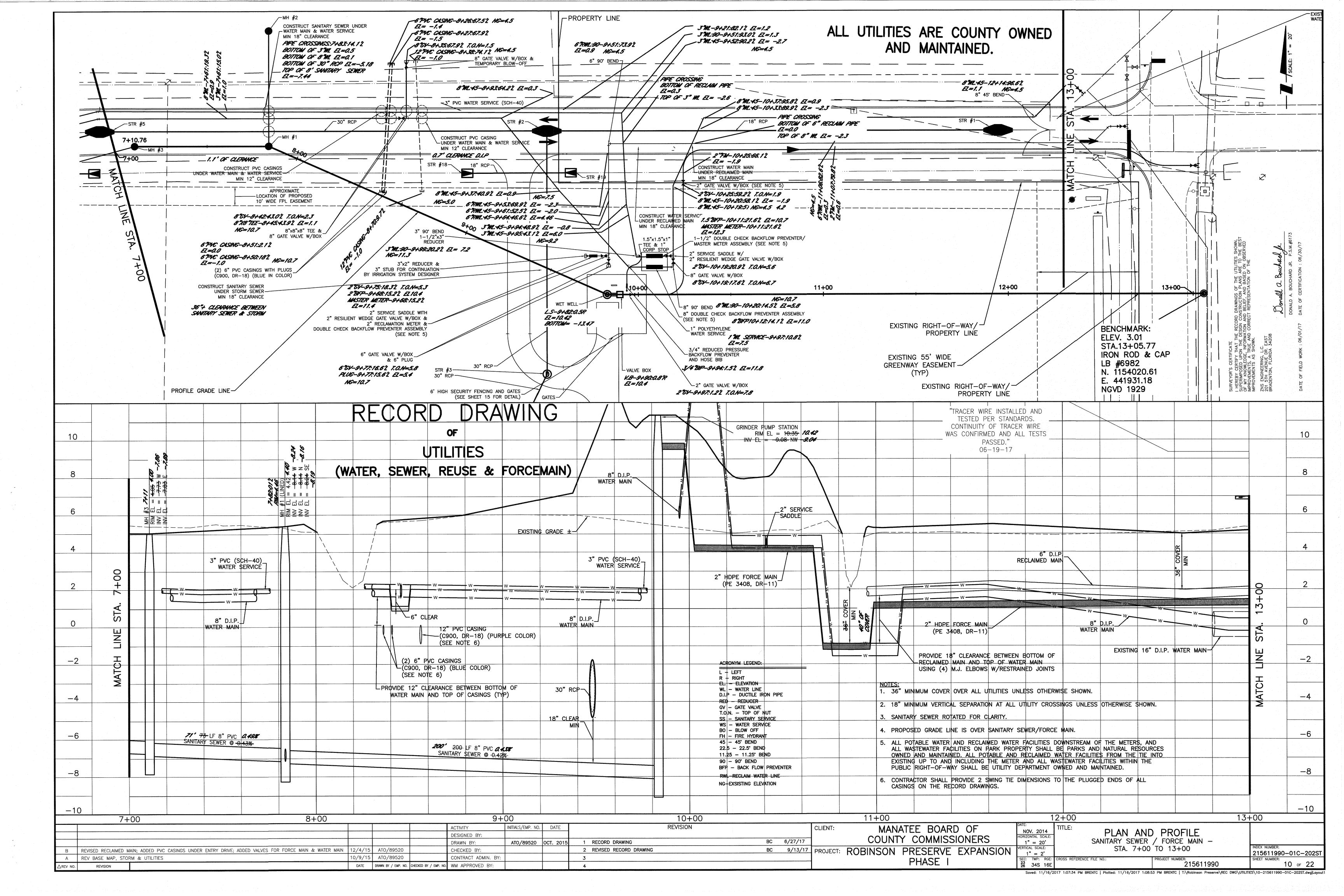
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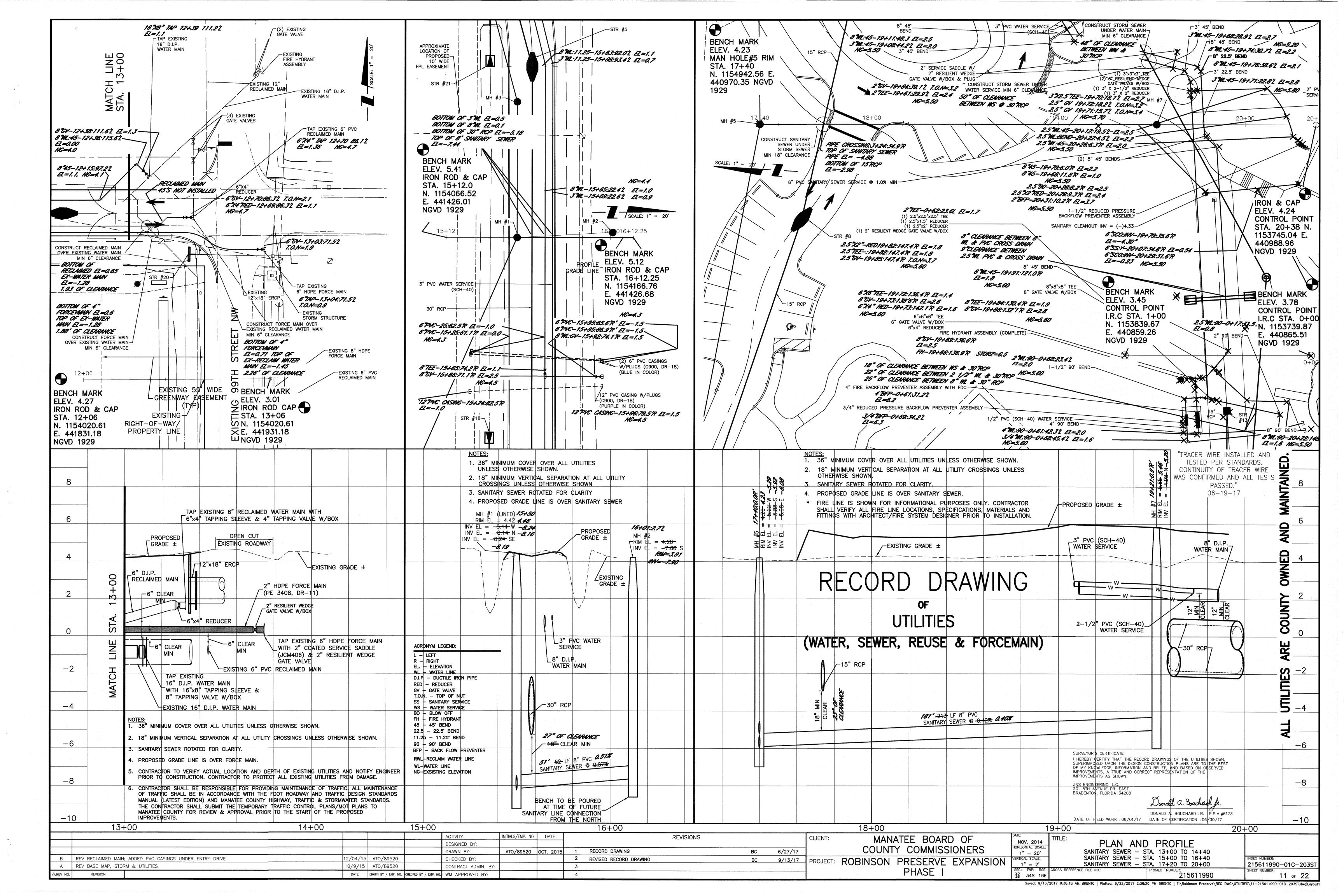
NOVEMBER 2014

INDEX NUMBER D-215611990-01C-001CV









#### WATER DISTRIBUTION GENERAL NOTES:

PUBLIC WORKS DEPARTMENT

THE FOLLOWING NOTES ARE INTENDED AS A SUPPLEMENT TO THE PROJECT SPECIFICATIONS AND ARE NOT INTENDED TO SUPERSEDE THE SPECIFICATIONS. IT IS ASSUMED THE IRRIGATION MAINS ARE OR WILL CONVEY REUSE WATERS.

- 1. ALL CONSTRUCTION SHALL MEET THE MINIMUM REQUIREMENTS OF MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS, LATEST REVISION, AND EXCEED THE REQUIREMENTS OF THOSE SPECIFICATIONS WHERE INDICATED ON THESE CONSTRUCTION DRAWINGS OR IN THE PROJECT SPECIFICATIONS.
- THE CONTRACTOR SHALL INVESTIGATE AND VERIFY OR HAVE VERIFIED THE LOCATION OF EXISTING UTILITIES AND ANY OTHER SUBSURFACE FACILITIES BEFORE STARTING WORK. HE SHALL BE LIABLE FOR ANY EXPENSE RESULTING FROM DAMAGE TO SAME. ANY CONFLICTS WITH EXISTING UTILITIES SHALL BE BROUGHT
- 3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE COUNTY, AND THE ENGINEER 24 HOURS PRIOR TO ANY WORK AT SITE & 48 HOURS PRIOR TO ANY TESTING. WATER MAINS TIE-INS REQUIRING WATER SERVICE TO BE SHUT OFF SHALL BE MADE WHEN REQUIRED BY MANATEE COUNTY
- 4. THE CONTRACTOR SHALL COORDINATE HOLDING OF POLES WITH UTILITY COMPANIES IN ADVANCE SO UNNECESSARY DELAYS OF PROJECT SHALL NOT BE INCURRED. THE COST FOR THE HOLDING OF THE POWER POLES SHALL BE INCLUDED IN THE WATER MAIN UNIT COST ITEMS CONTAINED IN THE PROPOSAL
- WATER MAIN INSTALLATION SHALL BE CONSTRUCTED WITH A MINIMUM OF 3 FEET OF COVER BELOW PROPOSED GRADE OR TO THE ELEVATIONS AND DEPTHS
- 6. ALL EXISTING SALVAGEABLE PIPE FITTINGS, ETC. SHALL REMAIN THE PROPERTY OF THE OWNER AND BE STORED ON SITE AT THE DIRECTION OF THE

AS INDICATED ON THE PLANS WITHIN 0.25 FT. COST TO RELAY MAIN, IF NECESSARY, SHALL BE BORNE BY THE CONTRACTOR.

- ENGINEER. 7. ALL PVC WATER MAINS SHALL BE BLUE IN COLOR. COLOR CODED 3" DETECTABLE TAPE SHALL BE LOCATED 12" BELOW GRADE OR COLOR CODED 6"
- DETECTABLE TAPE SHALL BE LOCATED BETWEEN 12" & 24" BELOW GRADE AND ABOVE THE WATER MAIN. THE TAPE SHALL BE MARKED "WATER". THE COST FOR THE TAPE SHALL BE INCLUDED IN THE WATER MAIN UNIT PRICES. 8. UNLESS OTHERWISE NOTED PROPOSED WATER MAINS TO GO UNDER EXISTING CULVERTS STRUCTURES AND OTHER APPURTENANCES. EXCEPT SEWER MAINS
- WHICH SHALL BE CROSSED OVER. 9. PVC WATER MAINS 4" THROUGH 12" SHALL BE AWWA C-900 DR18 (CLASS 150), BLUE IN COLOR & HAVE THE O.D. OF DUCTILE IRON PIPE. PVC WATER
- MAINS 14" THROUGH 24" SHALL BE AWWA C-905 DR18. FIREMAINS SHALL BE AWWA C-900 DR14 (CLASS 200).
- 10. WHERE THE WATER MAIN EXCEEDS THE PIPE MANUFACTURER'S RECOMMENDATIONS FOR MAXIMUM JOINT DEFLECTION THE CONTRACTOR SHALL FURNISH AND
- 11. THE CONTRACTOR SHALL PROVIDE AND UTILIZE A METERED JUMPER ASSEMBLY BETWEEN THE EXISTING POTABLE WATER SOURCE PIPING AND THE NEW WATER MAIN IN ORDER TO PROVIDE BACKFLOW PREVENTION WHILE FILLING AND FLUSHING THE NEW WATER MAIN. FINAL TIE-IN SHALL BE COMPLETED ONLY AFTER THE NEW SYSTEM HAS BEEN FLUSHED CLEAN, PRESSURE TESTED, DISINFECTED, BACTERIOLOGICALLY CLEARED, CERTIFIED COMPLETE BY THE ENGINEER, AND A RELEASE IS OBTAINED FROM THE HEALTH DEPARTMENT, ENGINEER'S REPRESENTATIVE TO BE PRESENT AT FINAL TIE-IN. THE LENGTH OF PIPE REQUIRED FOR FINAL TIE-IN SHALL BE LIMITED TO LESS THAN 20 FEET. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH HEALTH DEPARTMENT AND LOCAL GOVERNMENT RULES AND REGULATIONS.

#### WATER SERVICE NOTES:

- 1. ALL METER BOXES HAVE BEEN CALCULATED FOR LOCATION AND SHALL BE STAKED ACCORDINGLY IN THE FIELD. BOXES FOUND NOT CONSTRUCTED TO THE PROPOSED LOCATION SHALL BE REMOVED AND RELOCATED BY THE CONTRACTOR AT NO ADDITIONAL CHARGE TO THE OWNER/ENGINEER. THOSE BOXES SHOWN IN CLUSTERS SHALL BE PLACED IN A NEAT ROW AND AGAINST EACH OTHER.
- 2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NO ADDITIONAL COMPENSATION SHALL BE MADE BY THE OWNER.
- WHERE A HOUSE OR OTHER CONNECTION TERMINATES, THE CONTRACTOR SHALL PROVIDE AND INSTALL 2" x 4" STAKE WITH A MINIMUM OF EIGHTEEN INCHES (18") ABOVE GROUND AND TWO FEET (2') BELOW GROUND THE TOP TWELVE INCHES (12") ARE TO BE PAINTED BLUE.
- 4. 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 WATER LINES. IF EXTENSIONS ARE REQUIRED, THE COST SHALL BE INCLUDED IN THE PRICE BID.
- 5. 2 INCHES OR SMALLER DIAMETER SERVICES SHALL BE P.E. PIPE MEETING AWWA C-901. PIPE SHALL BE POLY-E DRISCO-PIPE 5100 ULTRALINE OR ENDOPURE BY ENDOT OR APPROVED EQUAL. PIPE SHALL BE BLUE OR ENCASED IN BLUE SLEEVE.

#### 6. VERTICAL CLEARANCE BETWEEN WATER AND STORM/WATER MAIN/WASTEWATER LINES SHALL BE 18 INCHES MINIMUM.

#### THRUST BLOCKS, ANCHOR BLOCKS AND JOINT RESTRAINING:

- 1. THE CONTRACTOR SHALL PROVIDE ALL THRUST BLOCKING AND JOINT RESTRAINING AS REQUIRED. SEE THRUST BLOCK AND JOINT RESTRAINTS DETAILS ON WATER DISTRIBUTION CONSTRUCTION DETAILS SHEET.
- 2. DESIGN CRITERIA: 180 P.S.I. TEST PRESSURE TIMES 1.67 SAFETY FACTOR (300 P.S.I.) FOR WATER HAMMER WITH ASSUMED SOIL BEARING CAPACITY OF 1000 LBS. PER SQUARE FOOT.
- 3. COMPLETELY COAT EXPOSED TIE-BARS OR OTHER UNCOATED STEEL AFTER INSTALLATION WITH TWO COATS OF PORTER TARSET MAXI- BUILD #7080 AT 8 MILS D.F.T. EACH (COAT) USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 4. WRAP ALL FITTINGS IN POLYETHYLENE PRIOR TO PLACING CONCRETE AGAINST PIPE OR FITTINGS.
- 5. ALL CONCRETE BLOCKING SHALL BE 3000 P.S.I. AT 28 DAYS MINIMUM 6. BLOCK FOR TEE SHALL BE CONSTRUCTED IN SIZE FOR BRANCH DIAMETER.
- MECHANICAL RESTRAINED JOINTS SHALL BE INSTALLED TO MEET MANUFACTURERS RECOMMENDED MINIMUM RESTRAINED DISTANCES FROM FITTING IN ACCORDANCE WITH RECOMMENDED INSTALLATION CRITERIA.

## WASTEWATER COLLECTION GENERAL NOTES:

FOLLOWING NOTES ARE INTENDED AS A SUPPLEMENT TO THE PROJECT SPECIFICATIONS AND ARE NOT INTENDED TO SUPERSEDE THE SPECIFICATIONS. IT IS ASSUMED THE IRRIGATION MAINS ARE OR WILL CONVEY REUSE WATERS.

- ALL CONSTRUCTION SHALL MEET THE MINIMUM REQUIREMENTS OF MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS, LATEST REVISION, AND EXCEED THE REQUIREMENTS OF THOSE SPECIFICATIONS WHERE INDICATED ON THESE CONSTRUCTION DRAWINGS OR IN THE PROJECT SPECIFICATIONS.
- 2. ELEVATIONS SHOWN ON THE PLANS FOR FLOWLINES OF PROPOSED WASTEWATER MAINS SHALL BE ADHERED TO. IN MOST CASES THE DESIGN GRADES ARE CRITICAL AND ADJUSTMENTS CAUSED BY MISALIGNMENT OR IMPROPER GRADES ARE IMPRACTICAL. COST TO RELAY MAIN, IF NECESSARY, SHALL BE BORNE BY THE CONTRACTOR.
- 3. THE CONTRACTOR SHALL INVESTIGATE AND VERIFY OR HAVE VERIFIED THE LOCATION OF EXISTING UTILITIES AND ANY OTHER SUBSURFACE FACILITIES BEFORE STARTING WORK. HE SHALL BE LIABLE FOR ANY EXPENSE RESULTING FROM DAMAGE TO SAME. ANY CONFLICTS WITH EXISTING UTILITIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AS SOON AS POSSIBLE.
- 4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE COUNTY, AND THE ENGINEER 24 HOURS PRIOR TO ANY WORK AT SITE & 48 HOURS PRIOR TO ANY TESTING.
- 5. THE CONTRACTOR SHALL COORDINATE HOLDING OF POLES WITH UTILITY COMPANIES IN ADVANCE SO UNNECESSARY DELAYS OF PROJECT SHALL NOT BE INCURRED. THE COST FOR THE HOLDING OF THE POWER POLES SHALL BE INCLUDED IN THE WASTEWATER MAIN UNIT COST ITEMS CONTAINED IN THE
- 6. PIPE AND FITTINGS FOR P.V.C. GRAVITY PIPE SHALL MEET THE REQUIREMENTS OF A.S.T.M. SPECIFICATION D-3034 SDR26. GRAVITY SEWER MAINS SHALL BE GREEN IN COLOR
- 7. FORCE MAINS SHALL BE THRUST BLOCKED IN ACCORDANCE WITH THE WATER MAIN DETAILS UNLESS OTHERWISE SPECIFIED. FORCE MAINS 4" THROUGH 12" SHALL BE AWWA C-900 DR18 (150 PSI), GREEN IN COLOR & HAVE THE O.D. OF DUCTILE IRON. FORCE MAINS OVER 14" THROUGH 36" SHALL BE AWWA
- 8. ALL EXISTING SALVAGEABLE PIPE FITTINGS, ETC. SHALL REMAIN THE PROPERTY OF THE OWNER AND BE STORED ON SITE AT THE DIRECTION OF THE ENGINEER.
- 9. ALL PVC GRAVITY SEWER LINES AND FORCEMAINS SHALL BE GREEN IN COLOR. COLOR CODED 3" DETECTABLE TAPE SHALL BE LOCATED 12" BELOW GRADE OR COLOR CODED 6" DETECTABLE TAPE SHALL BE LOCATED BETWEEN 12" & 24" BELOW GRADE AND ABOVE THE GRAVITY SEWER LINE OR FORCEMAIN. THE TAPE SHALL BE MARKED "SEWER" FOR GRAVITY SEWER LINES AND "FORCEMAIN" FOR FORCEMAINS. THE COST FOR THE TAPE SHALL BE INCLUDED IN THE SEWER LINES OR FORCEMAIN UNIT PRICES.

## SANITARY SEWER SERVICE NOTES:

- METALLIC IDENTIFICATION TAPE SHALL EXTEND FROM WYE CONNECTION TO THE END OF THE SERVICE EIGHTEEN INCHES (18") BELOW FINISHED GRADE AND TERMINATE TWELVE INCHES (12") ABOVE GROUND AT THE LOCATION STAKE. IN ADDITION THE CONTRACTOR SHALL BURY A TWO FOOT, (2') LONG #3 REBAR AT THE END OF THE SERVICE PARALLEL TO THE SURFACE FOR ELECTRONIC LOCATION PURPOSES. COST OF TAPE AND REBAR TO BE INCLUDED IN THE COST FOR SERVICE PIPE INSTALLATION.
- 2. WHERE A HOUSE OR OTHER CONNECTION TERMINATES, THE CONTRACTOR SHALL PROVIDE AND INSTALL 2" x 4" STAKE WITH A MINIMUM OF EIGHTEEN INCHES (18") ABOVE GROUND AND TWO (2) FEET BELOW GROUND. THE TOP TWELVE INCHES (!2") ARE TO BE PAINTED GREEN.

1. CLEANOUTS ARE REQUIRED ON ALL SERVICES AND AS SHOWN ON THE PLAN.

2. CLEAN-OUTS SHALL BE ADJUSTED TO CONFORM WITH FINISHED SURFACES. ALL ADJUSTMENTS SHALL BE INCLUDED IN THE PRICE BID. NO ADDITIONAL COMPENSATION SHALL BE MADE BY THE OWNER.

1. TESTING SHALL BE IN CONFORMANCE WITH MANATEE COUNTY PUBLIC WORKS STANDARDS.

- 2. THE CONTRACTOR SHALL INCLUDE IN HIS COST FOR THE VARIOUS ITEMS CONTAINED IN THE BID SCHEDULE, THE ADDITIONAL COSTS INVOLVED WITH LAMPING THE NEWLY LAID SEWER PIPE, EXFILTRATION OR INFILTRATION TESTING, LOW PRESSURE AIR TEST PIPE DEFLECTION (MANDREL) TESTS, ALL AS OUTLINED IN THE MANATEE COUNTY PUBLIC WORKS STANDARDS
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING ALL FORCE MAINS IN ACCORDANCE WITH THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS, LATEST EDITION. THE CONTRACTOR SHALL ENSURE THAT FORCE MAINS CAN BE TESTED AT ALL MANHOLE CONNECTIONS AND PLUG VALVE LOCATIONS. IF GATE VALVES MUST BE UTILIZED FOR TESTING PURPOSES, ANY COST ASSOCIATED WITH THE INSTALLATION OF GATE VALVES, (INCLUDING MATERIALS) SHALL BE AT THE CONTRACTOR'S EXPENSE. ANY GATE VALVE(S) INSTALLED FOR TESTING PURPOSES SHALL BE ABANDONED AND LEFT FULLY OPENED.

#### TRENCH NOTES:

- 1. WHERE WATER, RECLAIMED, SEWER MAINS, FORCEMAINS AND/OR STORM SEWERS WOULD CROSS WITH LESS THAN EIGHTEEN INCHES (18") OF VERTICAL CLEARANCE, UPON COUNTY APPROVAL, THE MAIN (WATER, RECLAIMED WATER, FORCEMAIN) MAY BE BURIED WITH LESS THAN 3 FEET OF COVER TO AVOID OBSTRUCTION OF ANOTHER PIPE, PROVIDED THAT THE MAIN IS CONSTRUCTED OF DUCTILE IRON PIPE OR ENCASED IN DUCTILE IRON OR STEEL ENCASEMENT PIPES. WRITTEN APPROVAL FROM THE COUNTY IS REQUIRED PRIOR TO CONSTRUCTION OF MAINS WITH COVER OF LESS THAN 3 FEET OR MORE THAN 6 FEET. MAINS (WATER, RECLAIMED WATER, FORCEMAIN) WITH LESS THAN 3' OF COVER WILL ALSO REQUIRE INCREASED THRUST RESTRAINT.
- 2. HORIZONTAL OR VERTICAL SEPARATION OF PIPES AS REFERRED TO IN THESE NOTES SHALL BE DEFINED TO BE THE MEASUREMENT FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
- 3. A STANDARD MINIMUM 18 INCHES OF VERTICAL CLEARANCE SHALL BE PRACTICED FOR WATER, GRAVITY SEWER RECLAIMED WATER, STORM AND FORCEMAIN PIPES THAT CROSS. WHERE IT IS DEMONSTRATED AND THE COUNTY AGREES THAT STANDARD SEPARATIONS ARE NOT REALISTIC, OR WHERE MAINTENANCE OF
- A PIPE WOULD BE MADE MORE ACCESSIBLE THE COUNTY ENGINEER MAY APPROVE REDUCTIONS OF THE STANDARD SEPARATIONS AS FOLLOWS: A. CLEARANCE FROM WATER TO FORCEMAIN, RECLAIMED WATER, STORM AND GRAVITY SEWER AND CLEARANCE FROM RECLAIMED WATER TO GRAVITY SEWER, WATER, FORCEMAIN AND STORM MAY BE REDUCED TO 6 INCHES WHEN THE WATER OR RECLAIMED WATER PIPE IS DI.
- B. CLEARANCE FROM FORCEMAIN TO WATER AND RECLAIMED WATER MAY BE REDUCED TO 3 INCHES WHEN THE FORCEMAIN IS BELOW AND HAS A WATER
- C. CLEARANCE FROM RECLAIMED WATER TO WATER MAY BE REDUCED TO 3 INCHES WHEN THE RECLAIMED WATER IS BELOW AND HAS A WATER TIGHT CASING PIPE.
- 4. A MINIMUM OF 10 FEET OF HORIZONTAL SEPARATION (OUTSIDE OF PIPE TO OUTSIDE OF PIPE) IS REQUIRED BETWEEN WATER MAINS AND FORCEMAINS, AND BETWEEN WATER MAINS AND GRAVITY SEWER. AND BETWEEN WATER MAINS AND STORM SEWER. AND BETWEEN STORM SEWER AND GRAVITY SEWER. ALL OTHER COMBINATIONS OF WATER, GRAVITY SEWER, FORCEMAIN, RECLAIMED WATER AND STORM SEWER PIPES MUST HAVE A 5 FEET OF SEPARATION AT A MINIMUM, EXCEPT FOR GRAVITY SEWER AND FORCEMAINS, WHICH SHALL HAVE A MINIMUM OF 3 FEET SEPARATION.
- 5. WHERE IT IS TECHNICALLY FEASIBLE AND ECONOMICALLY PRACTICAL, THE STANDARD MINIMUM HORIZONTAL SEPARATIONS BETWEEN PIPELINES SHALL BE PRACTICED. WHERE IT IS DEMONSTRATED AND THE COUNTY AGREES THAT STANDARD SEPARATIONS ARE NOT REALISTIC, THE COUNTY ENGINEER MAY APPROVE REDUCTIONS OF THE STANDARD SEPARATIONS AS FOLLOWS:
- A. SEPARATION FROM RECLAIMED WATER TO GRAVITY SEWER, WATER, STORM, OR FORCEMAIN MAY BE REDUCED TO 3 FEET WHEN THE RECLAIMED WATER IS
- B. SEPARATION FROM GRAVITY SEWER TO WATER OR STORM MAY BE REDUCED TO 5 FEET, AND SEPARATION FROM GRAVITY SEWER TO RECLAIMED OR
- C. SEPARATION FROM WATER TO GRAVITY SEWER. STORM AND FORCEMAINS MAY BE REDUCED TO 5 FEET. AND SEPARATION FROM WATER TO RECLAIMED WATER MAY BE REDUCED TO 3 FEET WHEN THE WATER IS DI OR HDPE, OR HAS A WATER TIGHT CASING PIPE.
- D. SEPARATION FROM FORCEMAIN TO WATER MAIN MAY BE REDUCED TO 5 FEET, AND SEPARATION FROM FORCEMAIN TO RECLAIMED WATER MAY BE REDUCED TO 3 FEET WHEN THE FORCEMAIN IS HDPE OR HAS A WATER TIGHT CASING PIPE.
- 6. TRENCH SHALL BE BRACED OR SHORED IN ACCORDANCE WITH THE "FLORIDA TRENCH & SAFETY ACT"

STORM MAY BE REDUCED TO 3 FEET WHEN THE GRAVITY SEWER HAS A WATER TIGHT CASING PIPE.

DI OR HDPE, OR HAS A WATER TIGHT CASING PIPE.

- 7. WIDTH OF TRENCH BOTTOM SHALL BE OUTSIDE DIAMETER OF PIPE PLUS TEN INCHES (10") EACH SIDE, MAXIMUM FOR PIPES LESS THAN 24" DIAMETER.
- 8. CONTRACTOR SHALL PLACE METALLIC BURIAL IDENTIFICATION TAPE DIRECTLY ABOVE SEWER LINES IN CONFORMANCE WITH COUNTY CODE.
- 9. ALL WELL POINT HOLES SHALL BE FILLED WITH COARSE SAND OR OTHER SATISFACTORY GRANULAR MATERIAL AT TIME WELL POINTS ARE PULLED.
- 10. DISCHARGE FROM DEWATERING OPERATION SHALL BE DISPOSED OF IN SUCH A MANNER THAT IT SHALL NOT INTERFERE WITH THE NORMAL DRAINAGE OF THE AREA IN WHICH THE WORK IS BEING PERFORMED, CREATE A PUBLIC NUISANCE OR FORM PONDING. THE OPERATIONS SHALL NOT CAUSE INJURY TO ANY PORTION OF THE WORK COMPLETED. OR IN PROGRESS, OR TO THE SURFACE OF STREETS, OR TO PRIVATE PROPERTY.
- 11. THE PROPOSED DEWATERING METHOD(S) AND SCHEDULE SHALL BE COORDINATED WITH THE UTILITY AND/OR THE ENGINEER OF RECORD AND OTHER NECESSARY REGULATORY AGENCIES PRIÓR TO CONSTRUCTION. ADDITIONALLY, WHERE PRIVATE PROPERTY SHALL BE INVOLVED, ADVANCE PERMISSION SHALL BE OBTAINED BY THE CONTRACTOR AND/OR DEVELOPER.
- 12. THE CONTRACTOR SHALL PROVIDE SOIL COMPACTION TESTING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. IF THE SPECIFICATIONS DO NOT ADDRESS COMPACTION TESTS, THEY SHALL BE DONE IN ACCORDANCE WITH MANATEE COUNTY PUBLIC UTILITY STANDARDS, LATEST EDITION. ALL SOIL COMPACTION TESTS RESULTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD.

#### AS-BUILTS:

FINISHED GRADE -

RESILIENT SEAT (EPDM)

10 COPPER WIRE (CONTINUOUS)

M.J. GATE VALVE

- 1. THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS THAT MEET OR EXCEED THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS, LATEST EDITION.
- 2. THE CONTRACTOR SHALL FURNISH "AS-BUILT" STATIONING OF SEWER WYES USING EACH DOWNSTREAM MANHOLE AS STA. 0+00.
- 3. TOP OF PIPE ELEVATIONS FOR ALL POTABLE WATER AND GRAVITY SEWER MAINS ARE REQUIRED EVERY ONE HUNDRED FEET(100') AND/OR AT EACH STRUCTURE, FITTING OR CHANGE IN GRADE. 4. RECORD DRAWINGS, IF PREPARED BY THE CONTRACTOR OR CONTRACTORS SURVEYOR. DRAFT COPIES OF THE RECORD DRAWINGS SHALL BE SUBMITTED TO
- THE ENGINEER PRIOR TO FINALIZING THE DRAWINGS. ONCE ACCEPTABLE TO THE ENGINEER THE CONTRACTOR/SURVEYOR WILL PROVIDE 9 SETS OF SIGNED AND SEALED FINALIZED DRAWINGS FOR SUBMITTAL TO THE COUNTY. ONCE THE DRAWING ARE APPROVED BY THE COUNTY, CONTRACTOR/SURVEYOR IS RESPONSIBLE TO PROVIDE THE ENGINEER OF RECORD ONE SET OF MYLARS AND A DIGITAL COPY OF RECORD DRAWINGS IN CAD AND PDF FORMAT, RECORD INFORMATION SHALL BE ON UNIQUE LAYER(S) AND TEXT SHALL USE A STANDARD AUTOCAD FONT.

-APPROVED METER

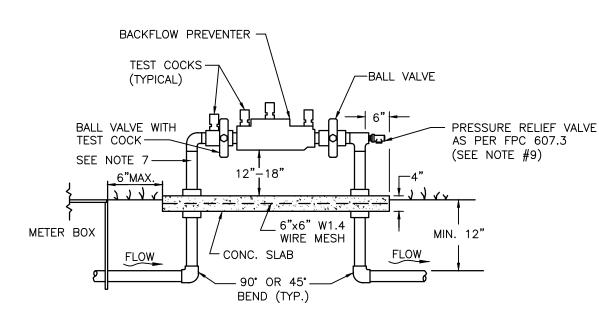
— 2" BRASS MALE

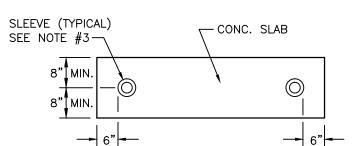
ADAPTER AND PVC

HDPF TUBING

AWWA C-901

BOX & LID

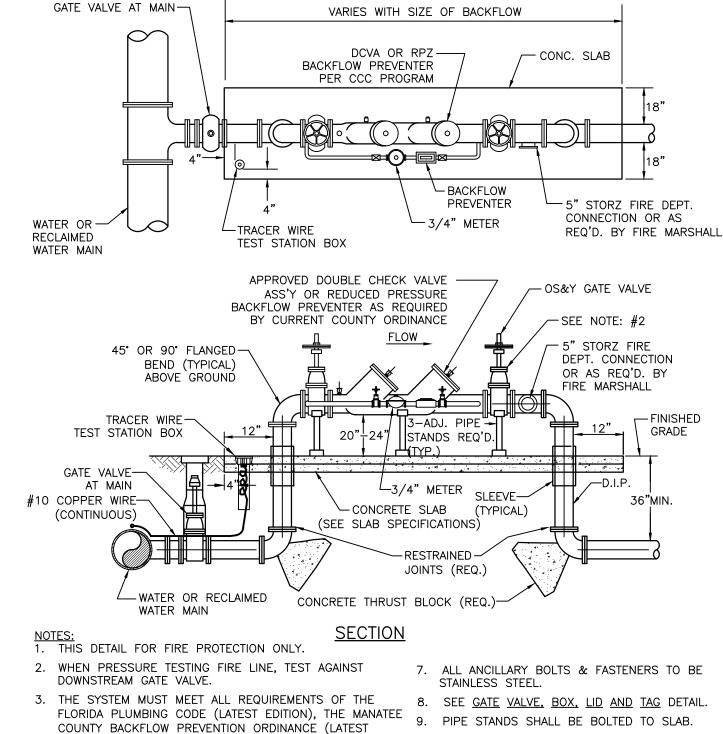




## NOTES:

- 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
- 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 <u>WATER METER & BACKFLOW PREVENTER FOR LIFT STATIONS</u> FOR WATER SERVICE AT SEWAGE PUMPING STATION.

3/4" & 1" BACKFLOW PREVENTER



COUNTY BACKFLOW PREVENTION ORDINANCE (LATEST EDITION) AND THE MANATEE COUNTY FIRE MARSHALL REQUIREMENTS.

4. ABOVE GROUND PIPING SHALL BE FLANGED DUCTILE IRON CLASS 53 AND PAINTED RED.

R/W

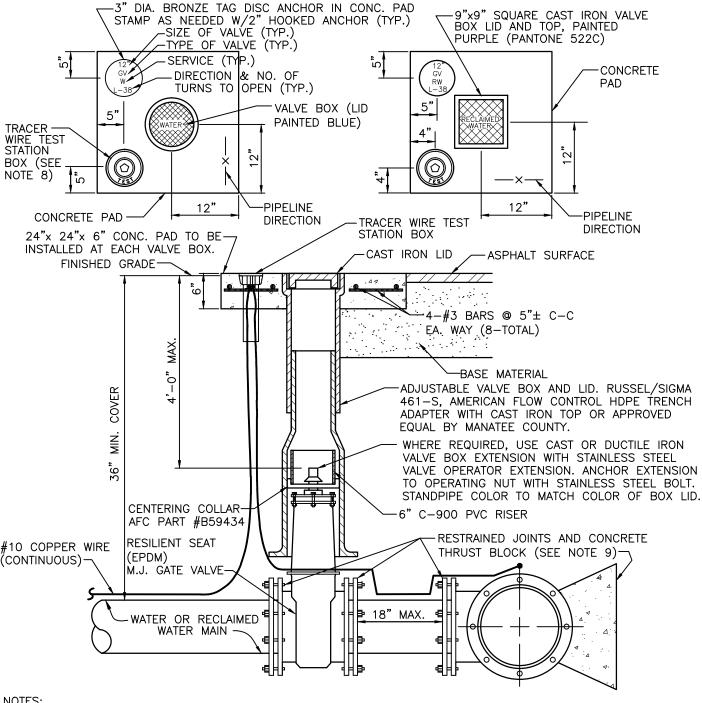
- 5. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
- 6. LANDSCAPE VEGETATION SHALL BE 6 FEET MIN. FROM EDGE OF CONCRETE SLAB. STREET SIDE OF ASSEMBLY SHALL REMAIN OPEN.

SLAB SPECIFICATIONS

DIAMETER THICKNESS REINFORCEMENT 6x6 W1.4 3" TO 10" 4" WIRE MESH 6x6 W3 2" TO 181 4" WIRE MESH

## <u>'AND ABOVE FIRE LINE BACKFLOW PREVENTER</u>

UW-14 (5/10/11)



RECLAIMED WATER

- "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
- 2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
- WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2". FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
- PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
- 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. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH
- SPECIFIED FOR "TEES." 10. 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

GATE VALVE, BOX, LID AND TAG

MANATEE BOARD OF NOV. 2014 COUNTY COMMISSIONERS UTILITY DETAILS N/A PROJECT: ROBINSON PRESERVE EXPANSION 15611990-01C-531WI N/A PHASE 215611990 16 of 22

VALVE BOX PAD.

## RESTRAINED JOINT WATER OR RECLAIMED WATER MAIN MIP x COMPRESSION COUPLING - SOLID TAPPED CAP UNDISTURBED EARTH PIPE DIA. x 2" FIP NOTE: 1. SEE STANDARD DETAIL <u>GATE VALVE, BOX, LID AND TAG</u>. 2" BLOW-OFF ASSEMBLY

/—VALVE BOX & LID

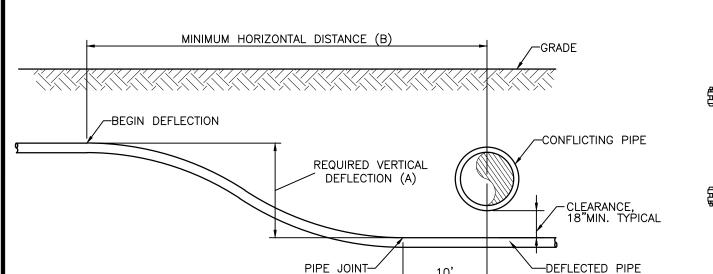
TEST STATION BOX

N ADDITION TO THE MANATEE COUNTY BLOW-OFF ASSEMBLY DETAIL: METER BOX FOR BLOW-OFF SHALL BE CAST IRON OVAL METER BOX, 19"L x 10"D (I.D.) ROME 1910 OR APPROVED EQUAL PAINTED BLUE AND

RECLAIMED WATER AND MARKED "RECLAIMED"

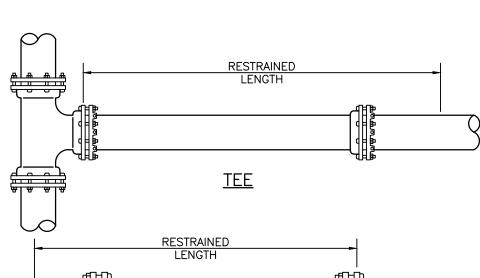
MARKED "WATER" FOR POTABLE WATER OR PURPLE (PANTONE 522C) FOR

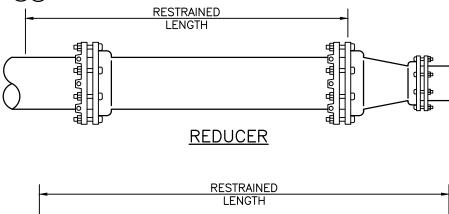
INITIALS/EMP. NO. RAWN RY REMOVE METER BOX ASSEMBLY DETAIL; ADD 2" BLOW-OFF DETAIL 0/9/15| DJB/8936 ONTRACT ADMIN. BY DATE DRAWN BY / EMP. NO. CHECKED BY / EMP. NO. WM APPROVED BY:

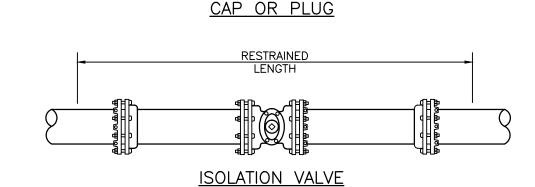


ABLE RADIUS	ABLE ADIUS	REQUIRED VERTICAL DEFLECTION (A)										
	ALLOW	1.0'	1.5'	2.0'	2.5'	3.0'	4.0'	5.0'	6.0'	8.0'	10.0	
AL BENC	75% BEND	MINIMUM HORIZONTAL DISTANCE (B)										
100'	134'	34'	39'	43'	47'	50'	57'	62'	67'	75'	83'	
150'	200'	39'	45'	50'	55'	59'	67'	74'	80'	90'	99'	
200'	267'	43'	50'	57'	62'	67'	76'	83'	90'	103'	113'	
250'	334'	47'	55'	62'	68'	74'	83'	92'	100'	114'	126'	
300'	400'	50'	59'	67'	74'	80'	90'	100'	108'	123'	137'	
	100° 150° 200° 250°	9 NIGN S	100'   134'   34'   150'   200'   39'   250'   334'   47'	MININ   100'   134'   34'   39'	MINIMUM  100' 134' 34' 39' 43'  150' 200' 39' 45' 50'  200' 267' 43' 50' 57'  250' 334' 47' 55' 62'	MINIMUM HOR  100' 134' 34' 39' 43' 47'  150' 200' 39' 45' 50' 55'  200' 267' 43' 50' 57' 62'  250' 334' 47' 55' 62' 68'	MINIMUM HORIZON  100' 134' 34' 39' 43' 47' 50'  150' 200' 39' 45' 50' 55' 59'  200' 267' 43' 50' 57' 62' 67'  250' 334' 47' 55' 62' 68' 74'	MINIMUM   HORIZONTAL	MINIMUM HORIZONTAL DIST   100'   134'   34'   39'   43'   47'   50'   57'   62'   150'   200'   39'   45'   50'   55'   59'   67'   74'   200'   267'   43'   50'   57'   62'   67'   76'   83'   250'   334'   47'   55'   62'   68'   74'   83'   92'	MINIMUM HORIZONTAL DISTANCE  100' 134' 34' 39' 43' 47' 50' 57' 62' 67'  150' 200' 39' 45' 50' 55' 59' 67' 74' 80'  200' 267' 43' 50' 57' 62' 67' 76' 83' 90'  250' 334' 47' 55' 62' 68' 74' 83' 92' 100'	MINIMUM HORIZONTAL DISTANCE (B)  100' 134' 34' 39' 43' 47' 50' 57' 62' 67' 75'  150' 200' 39' 45' 50' 55' 59' 67' 74' 80' 90'  200' 267' 43' 50' 57' 62' 67' 76' 83' 90' 103'  250' 334' 47' 55' 62' 68' 74' 83' 92' 100' 114'	

PIPE DEFLECTION DETAIL







### RESTRAINED LENGTHS FOR PIPE UG-10 (5/10/11)

N ADDITION TO THE MANATEE COUNTY RESTRAINED LENGTHS FOR PVC PIPE 1. IN-LINE GATE VALVES TO BE RESTRAINED THE SAME LENGTH EACH WAY THE SAME AS A PLUG. 2. DEAD END GATE VALVES TO BE RESTRAINED THE SAME LENGTH AS A THE CONTRACTOR SHALL OBTAIN A QUALIFIED TESTING LABORATORY IN ORDER TO DETEMINE ACTUAL SOIL CONDITIONS PRIOR TO PIPE INSTALLATION. IF EXISTING SOIL CONDITIONS ARE NOT CONSISTENT

WITH THE DESIGN SOIL CONDITIONS, THE CONTRACTOR SHALL NOTIFY

THE ENGINEER OF RECORD IN ORDER TO MODIFY THE RESTRAINED

LENGTHS ACCORDINGLY.

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

MAIN	HOR	RIZ. B	ENDS			TE	ES				REDU	CERS		PLUGS	& VALV	/E
PIPE SIZE	90.	45°	22.5°			SIZE	LENGTI	4			SIZE	LENGTH	1			
36	142	59	28	x36 393	x30 318	x24 232	x20 165	x16 84	x12 1	X30 137	X24 247	X20 309	X16 359	4	<del>-</del> 53	
30	124	51	25	X30 333	X24 252	X20 189	X16 115	X12 23	x10 1	X24 137	X20 213	X16 276		1-3	391	
24	106	44	21	X24 270	X20 211	X16 143	X12 61	X10 10	x8 1	X20 98	X16 178	X12 241		7	327	
20	92	38	18	X20 225	X16 161	X12 85	X10 39	x8_1		X16 98	X12 176	X10 227		2	280	
16	77	32	15	X16 177	X12 107	X10 65	X8 19	x6_1		X12 98	X10 163	X8 169		2	231	
12	61	25	12	X12 127	X10 89	X8 50	x6 <sub>1</sub>			X10 88	X8 96	X6 131		1	81	
10	52	22	10	X10 101	X8 64	x6 11				X8 51	X6 94	X4 125		1	53	
8	44	18	9	X8 78	X6 30	×4_1				X6 54	X4 92			1	28	
6	34	14	7	X6 46	×4 1					X4 50					98	
4	24	10	5	x4 19											69	

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

PIP				ENDS			10	ES.				REDU	CERS		PLUGS	& VALVES
SIZ		90.	45 <b>°</b>	22.5°			SIZE	LENGTI	4			SIZE	LENGTH	+		
36	. 1	100	42	20	x36 163	x30 132	x24 96	x20 68	x16 35	x12	X30 57	X24 103	X20 128	X16 149		188
30		88	37	18	X30 138	X24 104		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	×104	x8_1	X20 40	X16 74	X12 100			135
20		65	27	13	X20 93	X16 67	X12 35	X10 16	x8 <sub>1</sub>		X16 41	X12 73	X10 94			116
16		54	22	11	X16 73	X12 44	X10 27	x8 8	x6 1		X12 41	X10 68	X8 70			96
12		43	18	8	X12 53	X10 37	X8 21	x6 1			X10 37	X8 40	X6 54			75
10		37	15	7	X10 42	X8 26	x6 <sub>5</sub>				X8 21	X6 39	X4 52			63
8		30	13	6	X8 32	X6 12	×4_1				X6 22	X4 38				53
6		24	10	5	X6 19	x4 1					X4 21					41
4		17	7	3	×4 8											29

NOTE: SEE <u>RESTRAINED LENGTHS FOR PVC PIPE</u> DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

## RESTRAINED LENGTHS FOR DIP UG-9 (5/10/11)

N ADDITION TO THE MANATEE COUNTY RESTRAINED LENGTHS FOR PVC PIPE

I. IN-LINE GATE VALVES TO BE RESTRAINED THE SAME LENGTH EACH WAY TI SAME AS A PLUG. 2. DEAD END GATE VALVES TO BE RESTRAINED THE SAME LENGTH AS A

3. THE CONTRACTOR SHALL OBTAIN A QUALIFIED TESTING LABORATORY IN ORDER TO DETEMINE ACTUAL SOIL CONDITIONS PRIOR TO PIPE INSTALLATION. IF EXISTING SOIL CONDITIONS ARE NOT CONSISTENT WITH THE DESIGN SOIL CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IN ORDER TO MODIFY THE RESTRAINED

3/17/09

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

MAIN PIPE	HOR	IZ. BE	ENDS			TEES			R	EDUCER	S	PLUGS & VALVES
SIZE	90°	45°	22.5°		S	SIZE LEN	IGTH		S	SIZE LEN	IGTH	
24	90	38	18	X24 169	X20 132	X16 90	X12 38	X10 <sub>6</sub>	X20 64	X16 117	X12 158	214
20	78	32	16	X20 141	X16 101	X12 53	X10 24	X8 <sub>1</sub>	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 86	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
- 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.
- RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

### RESTRAINED LENGTHS FOR PVC PIPE UG-8 (5/10/11

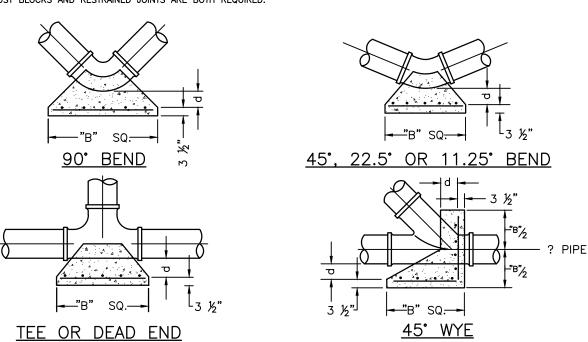
IN ADDITION TO THE MANATEE COUNTY RESTRAINED LENGTHS FOR PVC PIPE DETAIL 1. IN-LINE GATE VALVES TO BE RESTRAINED THE SAME LENGTH EACH WAY T SAME AS A PLUG. 2. DEAD END GATE VALVES TO BE RESTRAINED THE SAME LENGTH AS A

3. THE CONTRACTOR SHALL OBTAIN A QUALIFIED TESTING LABORATORY IN ORDER TO DETEMINE ACTUAL SOIL CONDITIONS PRIOR TO PIPE INSTALLATION. IF EXISTING SOIL CONDITIONS ARE NOT CONSISTENT WITH THE DESIGN SOIL CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IN ORDER TO MODIFY THE RESTRAINED LENGTHS ACCORDINGLY.

3/17/09

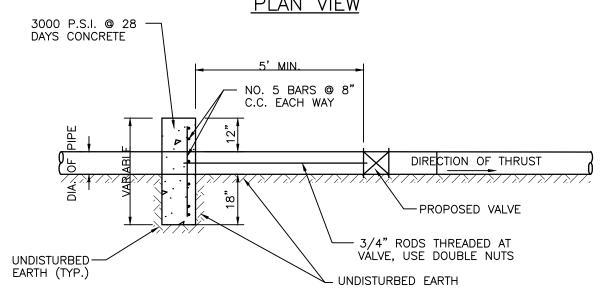
THRUST BLOCK DIMENSIONS B ft. x d inches 45'BEND 22.5'BEND 11.25'BEND DEAD END 45' WYE 90°BEND 4 | 1.5 | 3 ½ | 1.1 | 3 ½ | 0.8 | 3 ½ | 0.6 | 3 ½ | 1.3 | 3 ½ | 1.1 | 3 ½ 6 | 2.2 | 5 ½ | 1.6 | 3 ¾ | 1.2 | 3 ½ | 0.8 | 3 ½ | 1.9 | 4 ½ | 1.6 | 3 ¾ | 2.1 | 5 | 1.5 | 3 ½ | 1.1 | 3 ½ | 2.4 | 5 ¾ | 2.0 | 4 ¾ 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 34 | 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 ——"B" SQ.—— └3 ½

- 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 fc =3000 PSI, REINFORCEMENT  $f_v$  =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.



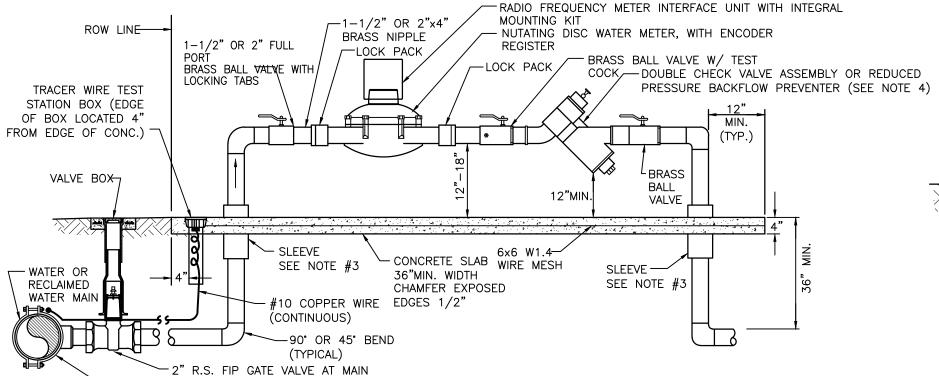
**CONCRETE THRUST BLOCKS** 

## NO. 5 BARS @ 8" – C.C. EACH WAY - 3/4" RODS THREADED AT VÁLVE, USE DOUBLE NUTS OF THRUST - PROPOSED VALVE EARTH (TYP.) 3000 P.S.I. @ 28 DAYS CONCRETE PLAN VIEW



## DEADMAN THRUST BLOCK

SECTION "A-A"



-SMITH BLAIR 325 OR APPROVED EQUAL BY MANATEE COUNTY SERVICE SADDLE WITH EXTRA WIDE STAINLESS STEEL STRAP, 2" TAP AND BRASS NIPPLE

. BACKFLOW DEVICE MUST BE INSTALLED DOWNSTREAM OF METER, AS CLOSE TO METER AS POSSIBLE.

3. PIPES PASSING THROUGH OR ENCASED IN CONCRETE MUST BE PROPERLY PROTECTED AND SLEEVED.

3/17/09

2. COPPER PIPE TYPE "K" OR BRASS PIPE MINIMUM SCHEDULE 40 SHALL BE USED TO A MINIMUM DEPTH OF 36" BELOW GRADE.

4. THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND THE MANATEE COUNTY BACKFLOW PREVENTION ORDINANCE (LATEST EDITION).

5. METER, LOCK PACKS AND BRASS NIPPLES WILL BE PROVIDED BY MANATEE COUNTY. INSERT NIPPLES INTO LOCK PACKS HALF WAY.

6. DO NOT PAINT METER OR LOCK PACKS. ALL ABOVE GROUND PIPING SHALL BE PAINTED SAFETY BLUE (POTABLE WATER) OR PANTONE PURPLE 522C

7. FOR USE WHERE BACKFLOW PREVENTER IS REQUIRED WITH METER.

8. 3' MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF THE METER AND CLEAR OPENING FOR ACCESS FROM STREET.

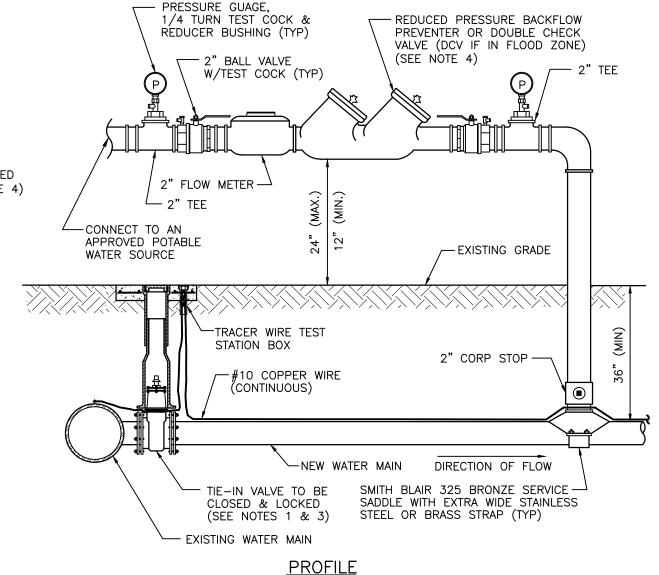
9. BACKFLOW PREVENTER IS ONLY REQUIRED ON RECLAIMED WATER LINE WHEN IRRIGATION SYSTEM INCLUDES CHEMICAL OR FERTILIZER INJECTION METHODS. WHEN BACKFLOW PREVENTION ASSEMBLY IS NOT REQUIRED, A 12" MINIMUM NIPPLE AND A BALL VALVE SHALL BE INSTALLED.

10. ALL ANCILLARY BOLTS & FASTENERS TO BE STAINLESS STEEL.

11. SEE GATE VALVE, BOX, LID AND TAG DETAIL. CENTERING COLLAR NOT REQUIRED ON 2" OR SMALLER VALVES.

## 1-1/2" & 2" METER AND BACKFLOW PREVENTER

1. A METER IS NOT REQUIRED FOR THE RESTROOM BUILDING OR OFFICE BUILDING BACKFLOW PREVENTER ASSEMBLIES.



- 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.
- 6. IF FIRE FLOW IS NEEDED DURING CONSTRUCTION, THE JUMPER SHALL BE A MINIMUM OF 4 INCHES AND SUPPLY FIRE FLOW TO EACH HYDRANT.

## TEMPORARY JUMPER CONNECTION UW-21 (5/10/11)

<ol> <li>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:</li> </ol>
A. Projects that include a permanent backflow preventer at the right—of—way which is adjacent to t
existing water main;

UG-7 (5/10/11)

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

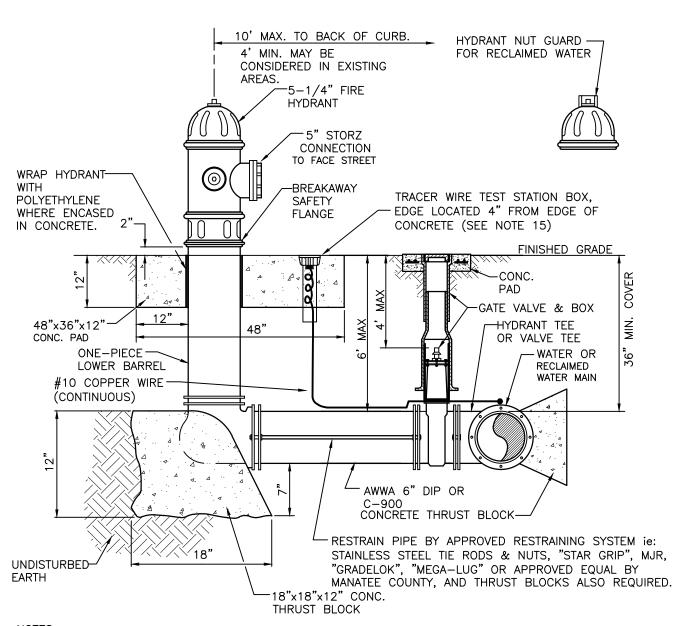
B. Projects that include new water mains that are less than or equal to 18 linear feet in length; or

- 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
- 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.

## TEMPORARY JUMPER CONNECTION NOTES UW-22 (5/10/11)

(MANATEE)

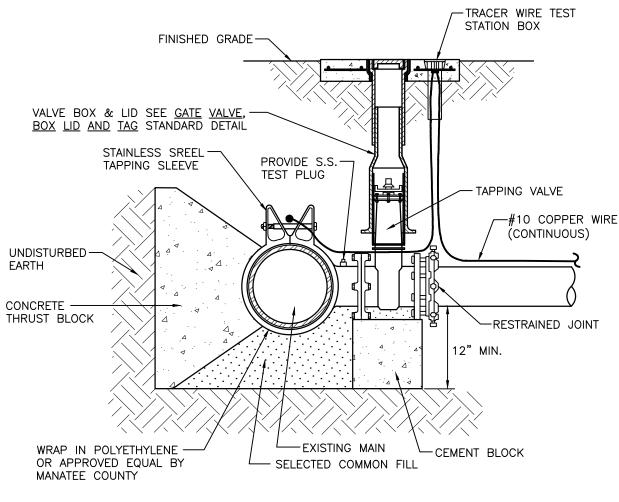
		ACTIVITY	INITIALS/EMP. N	O. DATE	CLIENT: MANATEE BOARD OF	DATE: TITLE:		
		DESIGNED BY:				NOV. 2014 HORIZONTAL SCALE:		
		DRAWN BY:			COUNTY COMMISSIONERS	N/A	UTILITY DETAILS	
		CHECKED BY:			PROJECT: ROBINSON PRESERVE EXPANSIO	VERTICAL SCALE:		INDEX NUMBER:
A ADD RESTRAINED LENGTHS FOR DIP DETAIL; ADD NOTE TO $1-1/2$ ' & 2" METER DETAIL	10/9/15 DJB/89366	CONTRACT ADMIN. BY:				SEC: TWP: RGE: CROSS REFERENCE FILE NO.:	PROJECT NUMBER:	215611990-01C-531W SHEET NUMBER:
AREV NO. REVISION	DATE DRAWN BY / EMP. NO. CHECKED BY / EMP.	wo. WM APPROVED BY:			PHASE I	<sup>23</sup> 26 34S 16E	215611990	17 of 22



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 RAISED REFLECTIVE PAVEMENT MARKER (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER.
- SHALL BE INSTALLED AT CENTERLINE OF PAVEMENT ADJACENT TO EACH HYDRANT 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 <u>GATE VALVE</u>, <u>BOX</u>, <u>LID AND TAG</u>. 15. SHOULD THE FIRE HYDRANT'S CONCRETE PAD OVERLAP THE SIDEWALK, THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.

## FIRE HYDRANT ASSEMBLY UW-5 (5/10/11)



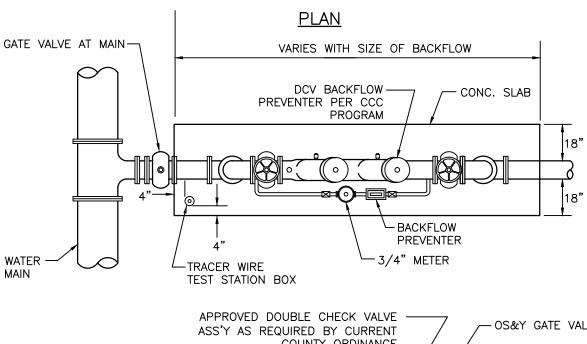
**ELEVATION** 

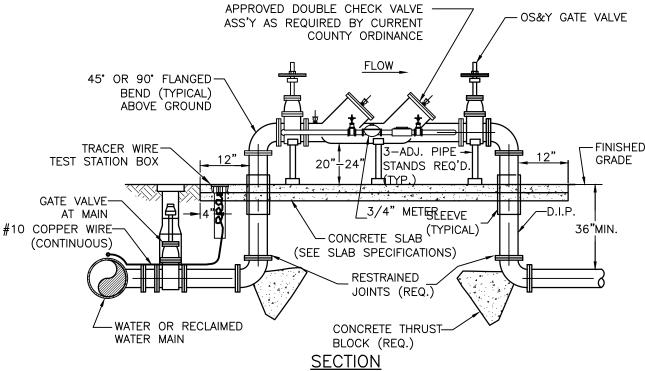
- NOTES:

  1. PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER OR 150 PSI FOR FORCE MAIN.
- 2. ALL FITTINGS TO BE WRAPPED WITH 20 MIL VISQUEEN AT THRUST BLOCK.
- 3. ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR. 4. ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
- CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
- 6. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL
- LENGTH SPECIFIED FOR "TEES." 7. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.

## TAPPING SLEEVE AND VALVE

UW-4 (5/10/11)



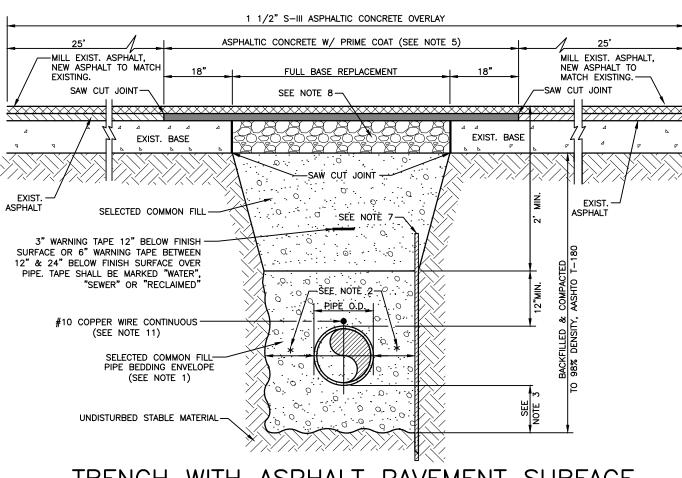


- 1. THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND THE MANATEE COUNTY BACKFLOW PREVENTION ORDINANCE
- (LATEST EDITION). 2. ABOVE GROUND PIPING SHALL BE FLANGED DUCTILE IRON CLASS 53 AND PAINTED BLUE.
- 3. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2"
- 4. ALL ANCILLARY BOLTS & FASTENERS TO BE STAINLESS STEEL.
- 5. SEE GATE VALVE, BOX, LID AND TAG DETAIL. 6. PIPE STANDS SHALL BE BOLTED TO SLAB.

S	SLAB SPECIFICATIONS												
PIPE DIAMETER	SLAB THICKNESS	REINFORCEMENT											
3" TO 10"	4"	6x6 W1.4 WIRE MESH											
12" TO 18"	4"	6x6 W3 WIRE MESH											

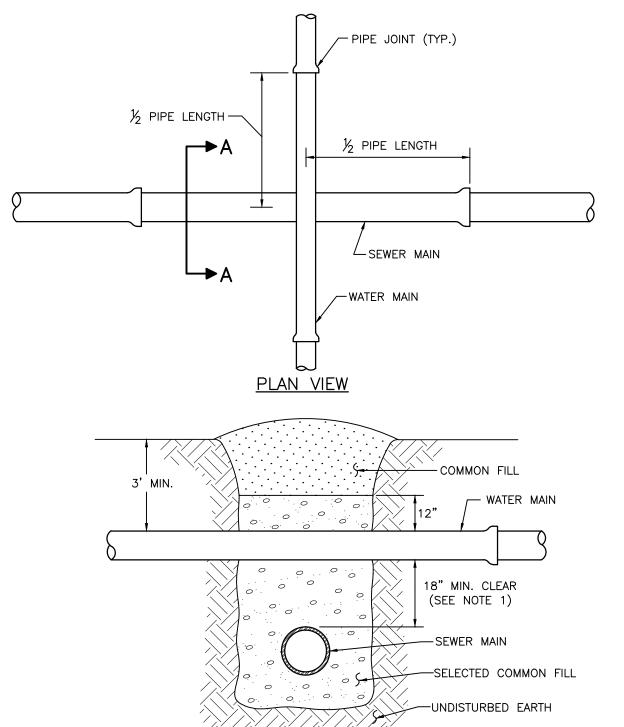
## 8" DOUBLE CHECK BACKFLOW PREVENTER ASSEMBLY DETAIL

- 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.



TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING

UG-12 (5/10/11)



NOTES:

1. CLEARANCE MAY BE REDUCED TO 6" FOR GRAVITY SEWER WHERE WATER MAIN IS DUCTILE IRON OR 3" FOR FORCE MAIN WHERE FORCE MAIN IS ENCASED A MINIMUM OF 10' EACH SIDE OF CROSSING.

SECTION A-A

- 2. WHERE NO ENCASEMENT IS REQUIRED, PIPE SECTIONS SHALL BE FULL-LENGTH AND SHALL BE ADJUSTED HORIZONTALLY SO THAT THE CROSSING IS AT EACH PIPE SECTION'S MIDPOINT REGARDLESS OF THE VERTICAL CLEARANCE.
- 3. REFER TO THE <u>JACK & BORE CROSSING</u> DETAIL FOR CASING AND SPACER REQUIREMENTS.

TYPICAL NEW WATER & SEWER CROSSING UG-2 (5/10/11)

## NOTES:

NOTES:

FINISH GRADE -

3" WARNING TAPE 12

BELOW FINISH SURFACE OR 6" WARNING TAPE BETWEEN

12" & 24" BELOW FINISH

SURFACE OVER PIPE. TAPE

"SEWER" OR "RECLAIMED"

SELECTED COMMON FILL

PIPE BEDDING ENVELOPE

COMMON FILL

(SEE NOTE 1)

CONTINUOUS

(SEE NOTE 5)

#10 COPPER WIRE

SHALL BE MARKED "WATER"

3. TYPICALLY 4" TO 6".

INSTRUCTIONS.

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.

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE

4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN

THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.

5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN

- SEE NOTE 2

TRENCH WITH UNIMPROVED SURFACE

TYPE A-1 PIPE BEDDING

TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO

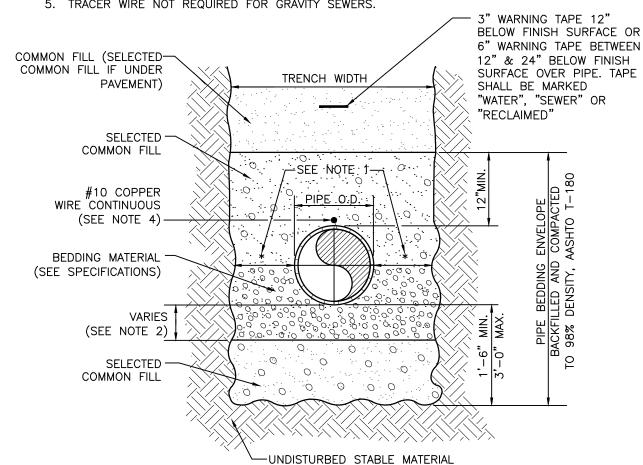
\_\_\_3"- 4" CROWN

UNDISTURBED STABLE MATERIAL

— SEE NOTE 3

- 3. TYPICALLY 4" TO 6".
- 4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

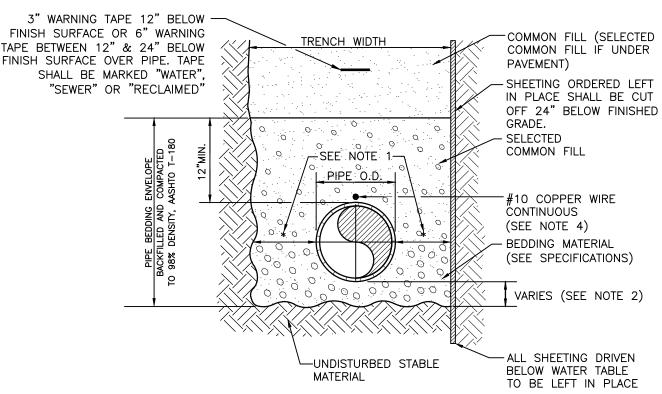
UG-11 (5/10/11)



TRENCH WITH TYPE A-3 PIPE BEDDING

## NOTES:

- 1. 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.
- 2. TYPICALLY 4" TO 6".
- 3. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 4. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



TRENCH WITH TYPE A-2 PIPE BEDDING UG-15 (5/10/11)

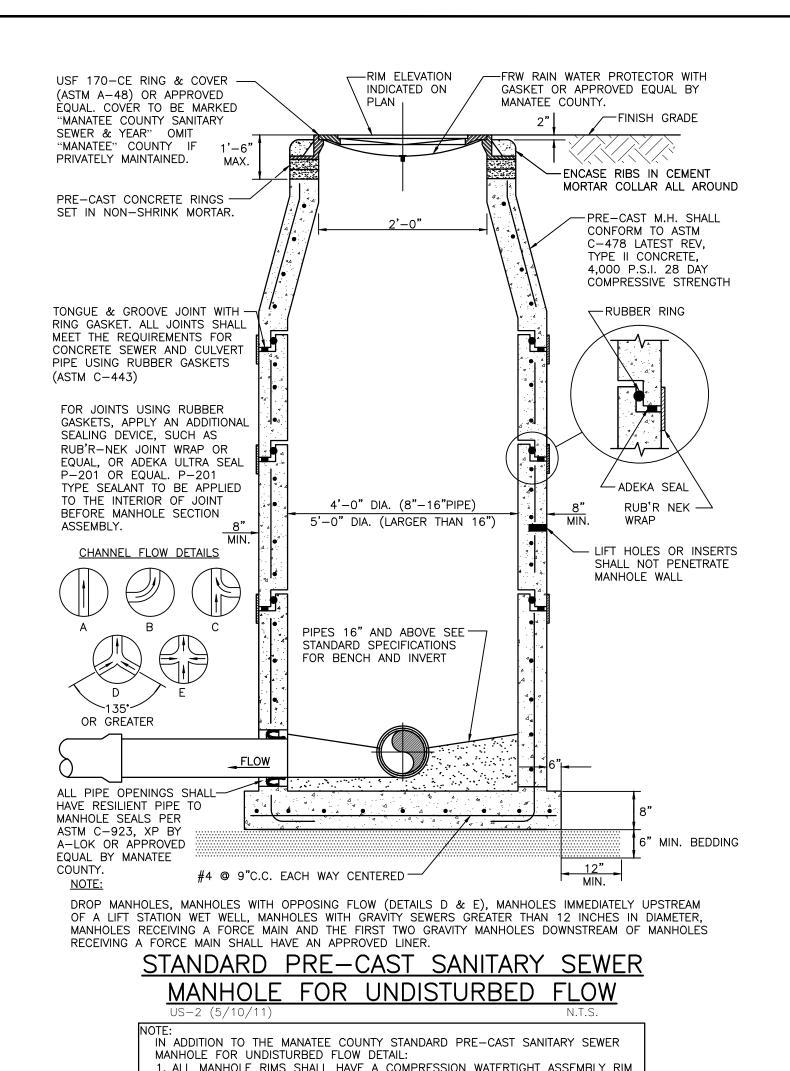
INITIALS/EMP. NO. ESIGNED BY: RAWN RY HECKED BY ADD 8" DOUBLE CHECK BACKFLOW PREVENTER ASSEMBLY DETAIL 0/9/15 | DJB/89366 ONTRACT ADMIN. BY: DATE DRAWN BY / EMP. NO. CHECKED BY / EMP. NO. WM APPROVED BY:

MANATEE BOARD OF CLIENT: NOV. 2014 COUNTY COMMISSIONERS N/A PROJECT: ROBINSON PRESERVE EXPANSION ICAL SCALE N/A PHASE

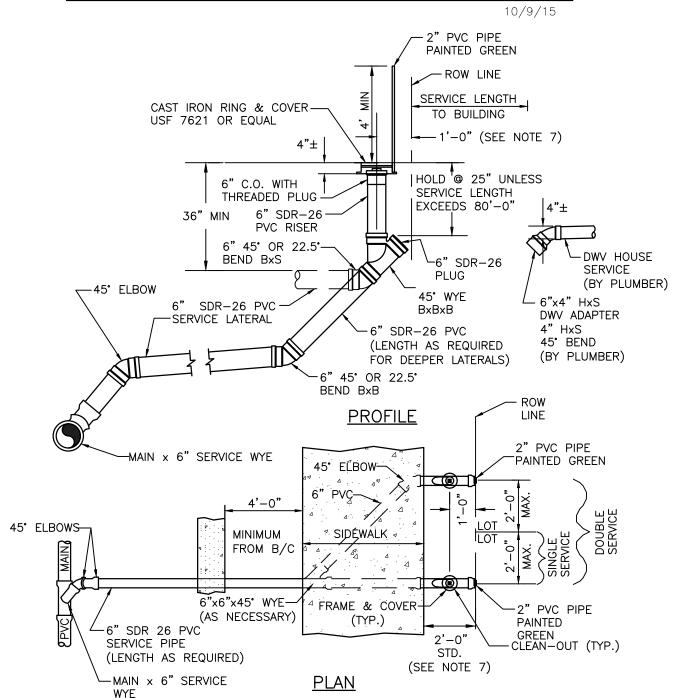
UTILITY DETAILS

UG-16 (5/10/11)

15611990-01C-522SN 215611990 18 of 22



1. ALL MANHOLE RIMS SHALL HAVE A COMPRESSION WATERTIGHT ASSEMBLY RIM AND COVER, AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR COUNTY APPROVED EQUAL.



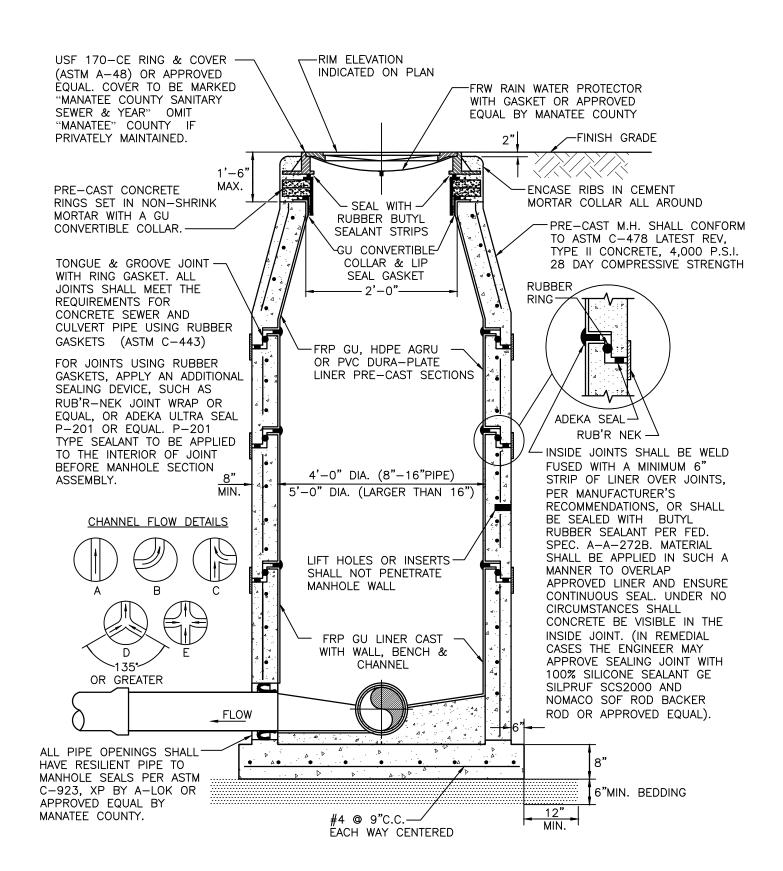
1. RUBBER DONUTS ARE NOT TO BE USED.

US-13 (5/10/11)

- 2. "SCO" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE CLEAN-OUT. IF NO CURB INSTALL A GREEN DISC WITH "SCO" AND 1/8" X 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO
- 3. SANITARY SEWER CLEAN-OUTS SHALL NOT BE LOCATED IN DRAINAGE SWALES, EASEMENTS, SIDEWALKS OR DRIVEWAYS.
- 4. NO SERVICE CONNECTIONS TO BE MADE TO THE CLEAN-OUT RISER. ALL DOMESTIC CONNECTIONS SHALL BE MADE TO THE STUB-OUT PROVIDED.
- 5. SEWER SERVICE SHALL BE 5' MIN. FROM WATER SERVICE OR FIRE HYDRANT. 6. CLEAN-OUT ADAPTER TO BE SOLVENT-WELDED TO RISER TOP. CLEAN-OUT THREADS SHALL BE
- WRAPPED WITH TEFLON PLUMBERS TAPE TO SEAL PLUG WATERTIGHT.

  7. WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK & THE ROW LINE IS ONE FOOT (CUL-DE-SAC W/MEDIAN) THE DISTANCE BETWEEN THE CENTER OF THE CO RISER & THE ROW LINE SHALL BE 6".

SINGLE AND DOUBLE SERVICE CONNECTION

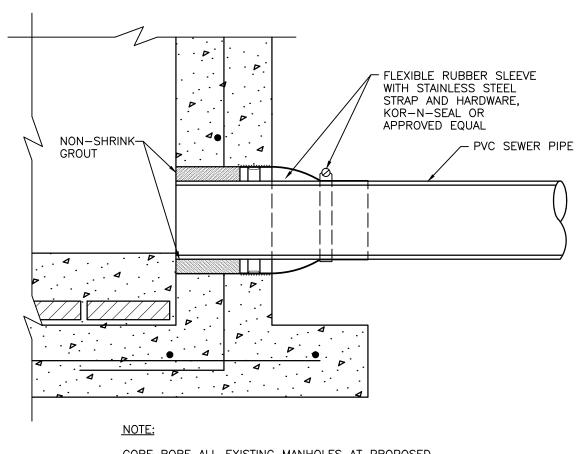


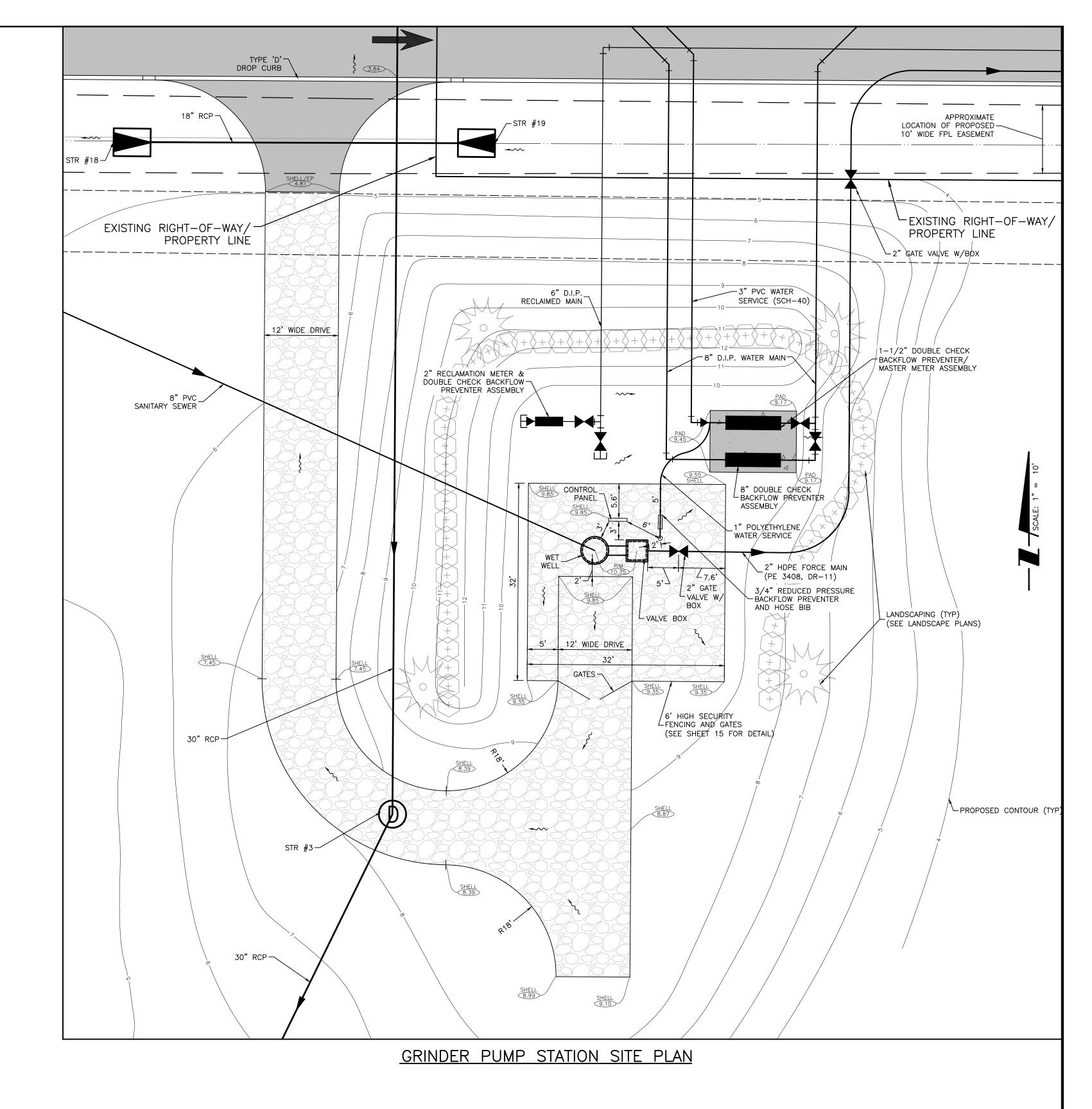
DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAILS D & E), MANHOLES IMMEDIATELY UPSTREAM OF A LIFT STATION WET WELL, MANHOLES WITH GRAVITY SEWERS GREATER THAN 12 INCHES IN DIAMETER, MANHOLES RECEIVING A FORCE MAIN AND THE FIRST TWO GRAVITY MANHOLES DOWNSTREAM OF MANHOLES RECEIVING A FORCE MAIN SHALL HAVE AN APPROVED LINER.

## STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR TURBULENT FLOW

US-3 (5/10/11)

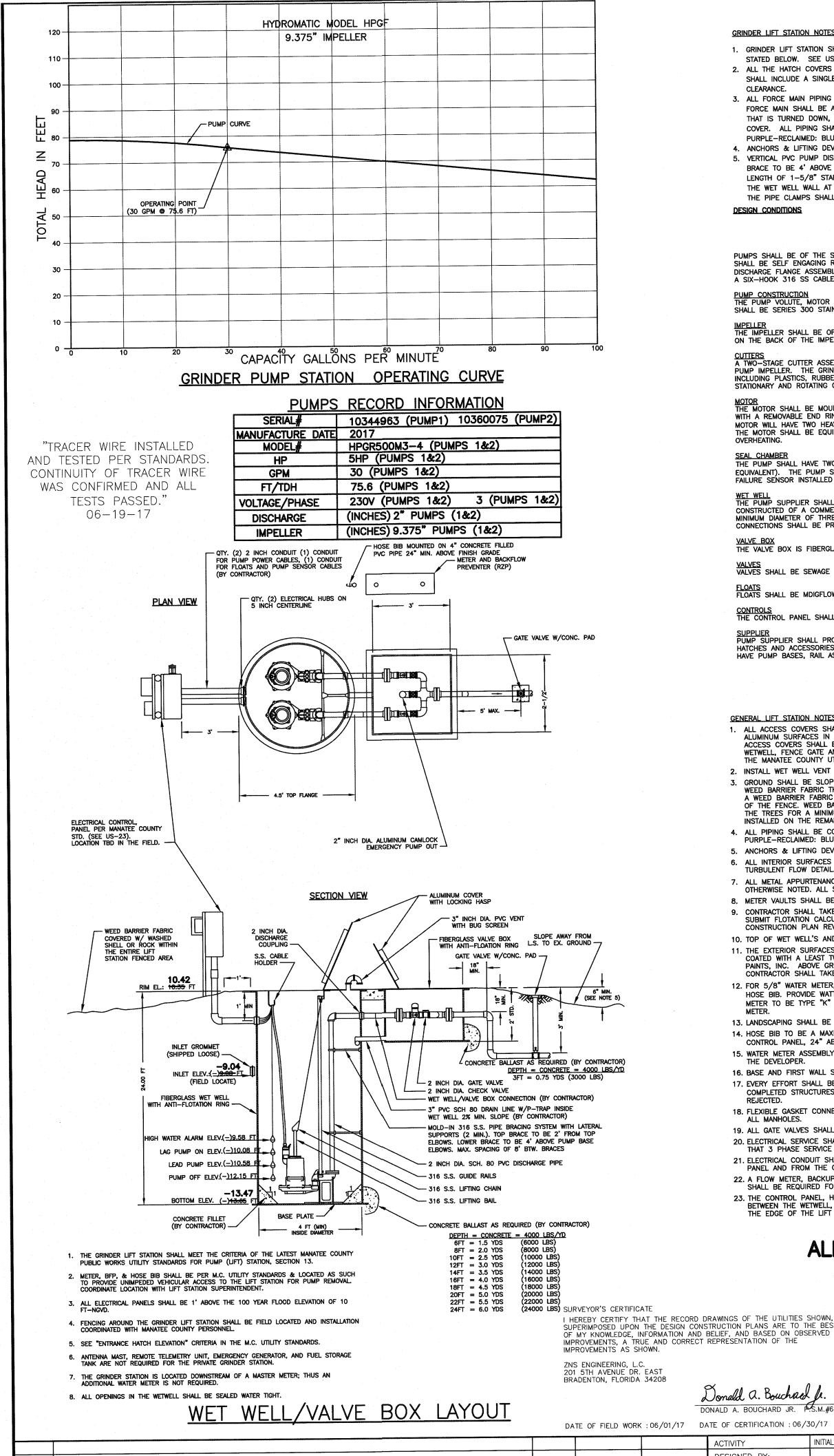
IN ADDITION TO THE MANATEE COUNTY STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR TURBULENT FLOW DETAIL: 1. ALL MANHOLE RIMS SHALL HAVE A COMPRESSION WATERTIGHT ASSEMBLY RIM AND COVER, AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR COUNTY APPROVED ÉQUAL.





NOTE:  CORE BORE ALL EXISTING MANHOLES AT PROPOSED CONNECTIONS.
PIPE TO MANHOLE CONNECTION S-S006 N.T.S.

	ACTIVITY INITIALS/EMP. NO. DATE	CLIENT: MANATEE BOARD OF NOV. 2014 TITLE:	
	DESIGNED BY:		
	DRAWN BY:	COUNTI COMMISSIONENS AS SHOWN CRINDER PLIMP STATION SITE PLAN	NIIIMDED.
REV RECLAIMED MAIN; ADDED FORCE MAIN & WATER MAIN VALVES 12/4/15 ATO/89520	CHECKED BY:	PROJECT: ROBINSON PRESERVE EXPANSION VERTICAL SCALE: GIVINDEN FOWER STATION SHE FLAIN INDEX NOM 215611	611990
ADDED NOTE TO COUNTY MANHOLE DETAILS REG. WATER TIGHT RIM/COVER; ADDED GRINDER STATION SITE PLAN 10/9/15 DJB/89366	CONTRACT ADMIN. BY:	SEC: TWP: RGE: CROSS REFERENCE FILE NO.: PROJECT NUMBER: SHEET NUM	NUMBER:
NO. REVISION DATE DRAWN BY / EMP. NO. CHECKED BY / EM	. NO. WM APPROVED BY:	PHASE I 23 34S 16E 215611990	•



### **GRINDER LIFT STATION NOTES:**

DESIGN CONDITIONS

- 1. GRINDER LIFT STATION SHALL BE IN ACCORDANCE WITH THE LATEST MANATEE COUNTY UTILITY STANDARDS, UNLESS OTHERWISE STATED BELOW. SEE US-23 FOR CONTROL PANEL ELECTRICAL DETAILS PREPARED BY MANATEE COUNTY.
- 2. ALL THE HATCH COVERS SHALL BE 2/3 HINGED TO ALLOW FOR MAXIMUM ACCESS TO THE WET WELL. THE HATCH COVER SHALL INCLUDE A SINGLE OR DUAL DOOR OF DIMENSIONS SPECIFIED BY THE PUMP MANUFACTURER FOR PROPER PUMP
- 3. ALL FORCE MAIN PIPING AND FITTINGS WITHIN THE WET WELL AND THE VALVE VAULT SHALL BE PVC SCHEDULE 80. THE FORCE MAIN SHALL BE AT LEAST 18 INCHES BELOW THE TOP WITHIN THE WET WELL & VALVE VAULT. A 90 DEGREE BEND, THAT IS TURNED DOWN, SHALL BE INSTALLED 18 INCHES OUTSIDE OF THE VALVE VAULT TO OBTAIN A MINIMUM 3 FEET OF COVER. ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH THESE STANDARDS. GREEN-RAW SEWAGE; PANTONE 522C PURPLE-RECLAIMED: BLUE-POTABLE WATER.
- 4. ANCHORS & LIFTING DEVICES SHALL NOT PENETRATE THE WALLS OF THE WET WELL. 5. VERTICAL PVC PUMP DISCHARGE PIPE IN THE WET WELL SHALL BE BRACED, TOP BRACE TO BE 2' FROM TOP ELBOW, LOWER BRACE TO BE 4' ABOVE BASE ELBOW, MAX. SPACING OF 8' BETWEEN BRACES. THE PIPE SHALL BE CLAMPED TO A SINGLE LENGTH OF 1-5/8" STAINLESS STEEL CHANNEL (UNISTRUT P1000 OR EQUAL) INSTALLED HORIZONTALLY AND ANCHORED TO THE WET WELL WALL AT EACH END WITH A CENTER BRACE OF 1-5/8" CHANNEL ATTACHED TO THE BACK OF THE WET WELL. THE PIPE CLAMPS SHALL BE UNISTRUT P1117 STAINLESS STEEL OR EQUAL.

MODEL HYDROMATIC HPGF GPM\_\_30 GPM \_\_\_ FT/TDH VOLTAGE 240 VOLT 9.375" PHASE
| 9.375" IMPELLER (INCHES)

PUMPS SHALL BE OF THE SUBMERSIBLE TYPE. EACH PUMP SHALL BE MOUNTED ON A BPIU.12 RAIL SYSTEM. THE RAIL SYSTEM SHALL BE SELF ENGAGING RESULTING IN A LEAKPROOF COUPLING. THE RAIL SYSTEM SHALL INCLUDE THE BASE ELBOW, DISCHARGE FLANGE ASSEMBLY, Ø1" 316 SS GUIDE RAILS, 316 SS UPPER GUIDE BRACKET, 316 SS LIFTING BAIL AND CABLE, AND A SIX—HOOK 316 SS CABLE HOLDER. THE RAIL SYSTEM SHALL BE MOUNTED AND PRE—PIPED BY THE PUMP SUPPLIER.

PUMP CONSTRUCTION
THE PUMP VOLUTE, MOTOR AND SEAL HOUSING SHALL BE CONSTRUCTED OF CAST IRON, ASTM A-48. ALL EXTERNAL FASTENERS SHALL BE SERIES 300 STAINLESS STEEL. THE PUMP SHAFT SHALL BE CONSTRUCTED OF SERIES 416 STAINLESS STEEL.

IMPELLER
THE IMPELLER SHALL BE OF MULTI-VANE, SEMI-OPEN BRONZE CONSTRUCTION. THE IMPELLER SHALL INCLUDE PUMP-OUT VANES
ON THE BACK OF THE IMPELLER AND SHALL BE STATICALLY AND HYDRAULICALLY BALANCED.

CUTTERS
A TWO-STAGE CUTTER ASSEMBLY SHALL BE MOUNTED ON THE SUCTION SIDE OF THE PUMP WITH DIRECT DISCHARGE INTO THE PUMP IMPELLER. THE GRINDER SHALL BE CAPABLE OF GRINDING ALL MATERIALS FOUND IN NORMAL, DOMESTIC SEWAGE, INCLUDING PLASTICS, RUBBER, SANITARY NAPKINS, DISPOSABLE DIAPERS AND WOOD PARTICLES, INTO A FINE SLURRY. BOTH THE STATIONARY AND ROTATING CUTTERS SHALL BE CONSTRUCTED OF 440C STAINLESS STEEL HARDENED TO ROCKWELL 60C.

MOTOR
THE MOTOR SHALL BE MOUNTED IN A SEALED, SUBMERSIBLE TYPE HOUSING. THE STATOR SHALL BE SECURELY HELD IN PLACE
WITH A REMOVABLE END RING AND THREADED FASTENERS FOR EASE OF REMOVAL WITHOUT THE USE OF HEAT OR A PRESS. THE MOTOR WILL HAVE TWO HEAVY-DUTY BALL BEARINGS; ONE UPPER (RADIAL) AND ONE LOWER (THRUST), TO SUPPORT THE SHAFT.
THE MOTOR SHALL BE EQUIPPED WITH A WINDING THERMOSTAT THAT AUTOMATICALLY SHUTS THE MOTOR OFF IN CASE OF MOTOR

SEAL CHAMBER
THE PUMP SHALL HAVE TWO MECHANICAL SEALS, MOUNTED IN TANDEM WITH AN OIL CHAMBER BETWEEN THE SEALS (OR EQUIVALENT). THE PUMP SHALL BE EQUIPPED WITH A SEAL LEAK DETECTION PROBE AND WARNING SYSTEM BY USING A SEAL FAILURE SENSOR INSTALLED IN THE SEAL CHAMBER.

WET WELL
THE PUMP SUPPLIER SHALL PROVIDE THE FIBERGLASS WET WELL. THIS GLASS FIBER—REINFORCED POLYESTER BASIN SHALL BE
CONSTRUCTED OF A COMMERCIAL GRADE OF GLASS FIBER AND SHALL BE PROVIDED WITH AN ANTI-FLOTATION RING WITH A
MINIMUM DIAMETER OF THREE INCHES LARGER THAN THE BASIN DIAMETER. THE RAIL SYSTEM, INTERNAL PIPING AND DISCHARGE
CONNECTIONS SHALL BE PRE—INSTALLED BY THE PUMP SUPPLIER.

VALVE BOX
THE VALVE BOX IS FIBERGLASS WITH ALUMINUM LOCKABLE COVER. STANDARD SIZE VALVE BOX IS 3' X 2 1/2' X 2'.

VALVES SHALL BE SEWAGE SWING CHECK WITH CLEAN—OUT PORTS AND BRASS GATE VALVES.

FLOATS
FLOATS SHALL BE MDIGFLOW4000W OR EQUAL.

 ${\color{red} \underline{\text{CONTROLS}}}$  THE CONTROL PANEL SHALL CONFORM TO THE CURRENT MANATEE COUNTY SPECIFICATIONS.

SUPPLIER
PUMP SUPPLIER SHALL PROVIDE SUBMERSIBLE PUMPS, SLIDE RAIL ASSEMBLIES, CONTROL PANEL, FLOAT SWITCHES, ALUMINUM
HATCHES AND ACCESSORIES TO INSURE PROPER OPERATIONS AND WARRANTY. THE COMPLETE PACKAGE PUMPING STATION SHALL
HAVE PUMP BASES, RAIL ASSEMBLIES, AND DISCHARGE PIPING READY FOR FIELD INSTALLATION.

### GENERAL LIFT STATION NOTES:

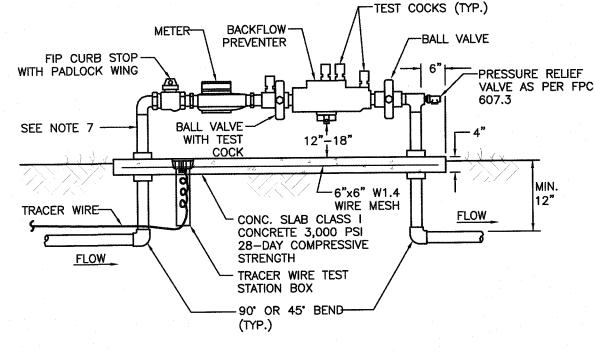
Donald a. Bouchard be.

- 1. ALL ACCESS COVERS SHALL BE ALUMINUM, WITH STAINLESS STEEL HARDWARE AND RATED FOR 300 P.S.F. LOADING. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE 2 COATS BITUMASTIC EPOXY, TOTAL 16 MILS DFT. ALL ACCESS COVERS SHALL BE EQUIPPED WITH A LOCKING STAPLE OR BAR FOR USE WITH A PADLOCK. PADLOCKS FOR WETWELL, FENCE GATE AND CONTROL PANELS OF PUBLICLY OWNED & MAINTAINED LIFT STATIONS SHALL BE FURNISHED BY THE MANATEE COUNTY UTILITIES DEPARTMENT
- 2. INSTALL WET WELL VENT ON THE HINGED SIDE OF THE WET WELL HATCH COVER. 3. GROUND SHALL BE SLOPED AWAY FROM SLAB TO NATURAL GROUND ELEVATION IN ALL DIRECTIONS. SITE SHALL INCLUDE A A WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD TYPE MULCH UNDER THE SHRUBS AND UP TO OUTSIDE OF THE FENCE. WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD—TYPE MULCH SHALL BE LOCATED UNDER THE TREES FOR A MINIMUM DISTANCE OF 3 FEET FROM THE TREE. SODDING OR SHREDDED WOOD—TYPE MULCH SHALL BE INSTALLED ON THE REMAINDER OF THE SITE TO THE EDGE OF THE EASEMENT.
- 4. ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH THESE STANDARDS. GREEN-RAW SEWAGE; PANTONE 522C PURPLE-RECLAIMED: BLUE-POTABLE WATER.
- 5. ANCHORS & LIFTING DEVICES SHALL NOT PENETRATE THE WALLS OF THE WET WELL. 6. ALL INTERIOR SURFACES OF WET WELL SHALL BE LINED. SEE STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR
- 7. ALL METAL APPURTENANCES INCLUDING BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL (TYPE 316) UNLESS OTHERWISE NOTED. ALL STAINLESS STEEL BOLTS SHALL BE TREATED WITH NEVER—SEIZE PRIOR TO ASSEMBLY.
- 8. METER VAULTS SHALL BE PRECAST TYPE II REINFORCED CONCRETE. 9. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOTATION DURING CONSTRUCTION. ENGINEER SHALL SUBMIT FLOTATION CALCULATIONS ALONG WITH HYDRAULIC CALCULATIONS TO MCPWD ENGINEERING SERVICES DIVISION AT
- CONSTRUCTION PLAN REVIEW SUBMITTAL. 10. TOP OF WET WELL'S AND VALVE SLABS SHALL BE AT THE SAME ELEVATION
- 11. THE EXTERIOR SURFACES OF THE CONCRETE WET WELL AND VALVE ASSEMBLY PAD EXPOSED ABOVE GRADE SHALL I COATED WITH A LEAST TWO COATS OF H&C SILICONE ACRYLIC CONCRETE STAIN, PATIO GREEN, MANUFACTURED BY FLR PAINTS, INC. ABOVE GROUND VALVE ASSEMBLY & PIPING SHALL BE PAINTED, RUSTOLEUM 7538 HUNTER GREEN. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID OVER-SPRAY ONTO THE VALVE ASSEMBLY CONCRETE PAD.
- 12. FOR 5/8" WATER METER, PROVIDE POTABLE WATER SERVICE CONNECTION WITH 3/4" BRASS LOCKSHIELD AND LOOSE KEY HOSE BIB. PROVIDE WATTS 909 BACKFLOW PREVENTER (OR APPROVED EQUAL). ALL WATER SERVICE PIPING FROM WATER METER TO BE TYPE "K" COPPER OR BRASS, 3/4" MIN. DIAMETER FOR 5/8" METER AND 2" MIN. DIAMETER PIPING FOR 2"
- 13. LANDSCAPING SHALL BE IRRIGATED WITH NON-POTABLE WATER. A RAIN SENSOR SHALL BE FURNISHED AND INSTALLED. 14. HOSE BIB TO BE A MAXIMUM OF 2 FEET FROM THE VALVE ASSEMBLY, A MINIMUM OF 6 FEET FROM THE ELECTRICAL CONTROL PANEL, 24" ABOVE THE SURROUNDING FINISH GRADE, AND ANCHORED TO A 4" PVC CONCRETE FILLED PIPE. 15. WATER METER ASSEMBLY TO BE INSTALLED BY CONTRACTOR AS PART OF WATER SERVICE CONNECTION WITH FEES PAID BY
- THE DEVELOPER. 16. BASE AND FIRST WALL SECTION OF WET WELL SHALL BE MONOLITHIC. 17. EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO CONSTRUCT WATERTIGHT STRUCTURES WITH NO VISIBLE LEAKS.
- COMPLETED STRUCTURES THAT ARE NOT WATERTIGHT AND/OR DO NOT MEET THE REQUIREMENTS OF ASTM C-443 WILL BE 18. FLEXIBLE GASKET CONNECTORS SHALL MEET THE REQUIREMENTS OF ASTM C-923 LATEST REVISION AND ARE REQUIRED IN
- 19. ALL GATE VALVES SHALL BE RESILIENT SEAT IN ACCORDANCE WITH THESE STANDARDS. 20. ELECTRICAL SERVICE SHALL BE 3 PHASE MINIMUM UNLESS THE ELECTRICAL UTILITY PROVIDES CORRESPONDENCE STATING
- THAT 3 PHASE SERVICE IS UNAVAILABLE. 21. ELECTRICAL CONDUIT SHALL BE RUN BY THE SHORTEST ROUTE POSSIBLE FROM THE ELECTRICAL SOURCE TO THE CONTROL
- PANEL AND FROM THE CONTROL PANEL TO THE LIFT STATION WET WELL. 22. A FLOW METER, BACKUP POWER GENERATOR, FUEL STORAGE LEVEL TRANSDUCER AND FORCE MAIN PRESSURE TRANSDUCER
- SHALL BE REQUIRED FOR ALL LIFT STATIONS THAT REPUMP SEWAGE FROM OTHER LIFT STATIONS. 23. THE CONTROL PANEL, HOSE BIB, EMERGENCY GENERATOR, FUEL STORAGE TANK AND ANTENNA SHALL NOT BE LOCATED BETWEEN THE WETWELL, VALVE ASSEMBLY AND THE DRIVEWAY. THE GENERATOR SHALL NOT BE LOCATED WITHIN 25 FEET OF THE EDGE OF THE LIFT STATION EASEMENT AT THE ROW LINE.

## ALL UTILITIES ARE COUNTY OWNED AND MAINTAINED.

# RECORD DRAWING

## LIFT STATION DETAILS



## SLEEVE (TYP.) --CONC. SLAB SEE NOTE #3 TRACER WIRE TEST STATION BOX

OF 12" BELOW GRADE.

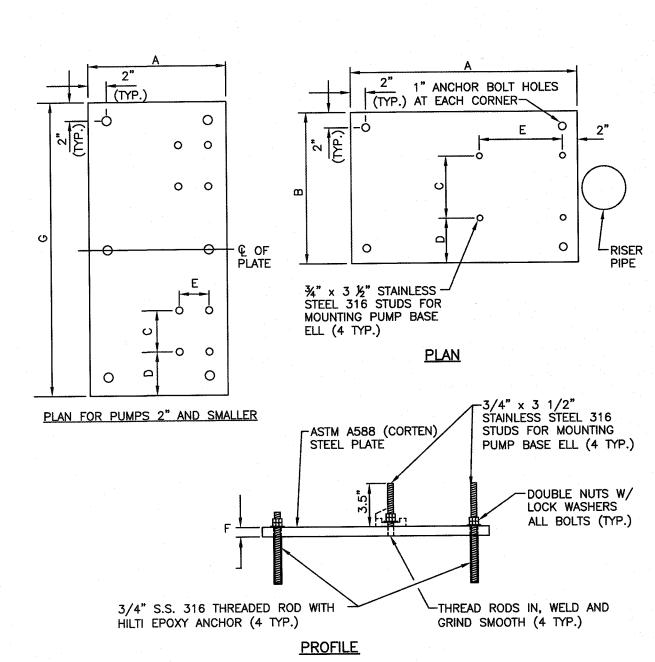
- 1. BACKFLOW DEVICE MUST BE INSTALLED DOWNSTREAM OF METER, AS CLOSE TO METER AS POSSIBLE. 2. COPPER PIPE TYPE "L" OR BRASS PIPE MINIMUM SCHEDULE 40 SHALL BE USED TO A MINIMUM DEPTH
- 3. PIPES PASSING THROUGH OR ENCASED IN CONCRETE MUST BE PROPERLY PROTECTED AND SLEEVED.
- 4. THE SYSTEM MUST MEET ALL REQUIRMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND
- 5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
- 6. BACKFLOW PREVENTER SHALL BE TESTED AT THE TIME OF INSTALLATION.

THE MANATEE COUNTY BACKFLOW PREVENTION ORDINANCE (LATEST EDITION).

- 7. PRESSURE REDUCING VALVE REQUIRED UPSTREAM OF BACKFLOW IF SYSTEM PRESSURE EXCEEDS 80
- 8. 3' MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF CONCRETE SLAB AND CLEAR OPENING FOR ACCESS FROM STREET.
- 9. THE WATER METER AND BACKFLOW PREVENTER SHALL BE LOCATED WITHIN THE LIFT STATION FENCING FOR PUBLICLY OWNED AND MAINTAINED LIFT STATIONS. THE ASSEMBLY FOR PRIVATE LIFT STATIONS SHALL BE LOCATED ADJACENT TO THE ROW LINE OR WITHIN AN EASEMENT OUTSIDE OF THE FENCING.
- 10. SATTELITE PUMP STATIONS SHALL HAVE A 5/8-INCH WATER METER, WITH A 3/4-INCH REDUCED PRESSURE BACKFLOW PREVENTER. STATIONS WITH WETWELL DIAMETERS 12 FEET AND LARGER TO HAVE A 2-INCH METER AND RPZ BACKFLOW PREVENTER.

## WATER METER & BACKFLOW PREVENTER FOR PUMP STATIONS US-15 (5/10/11)

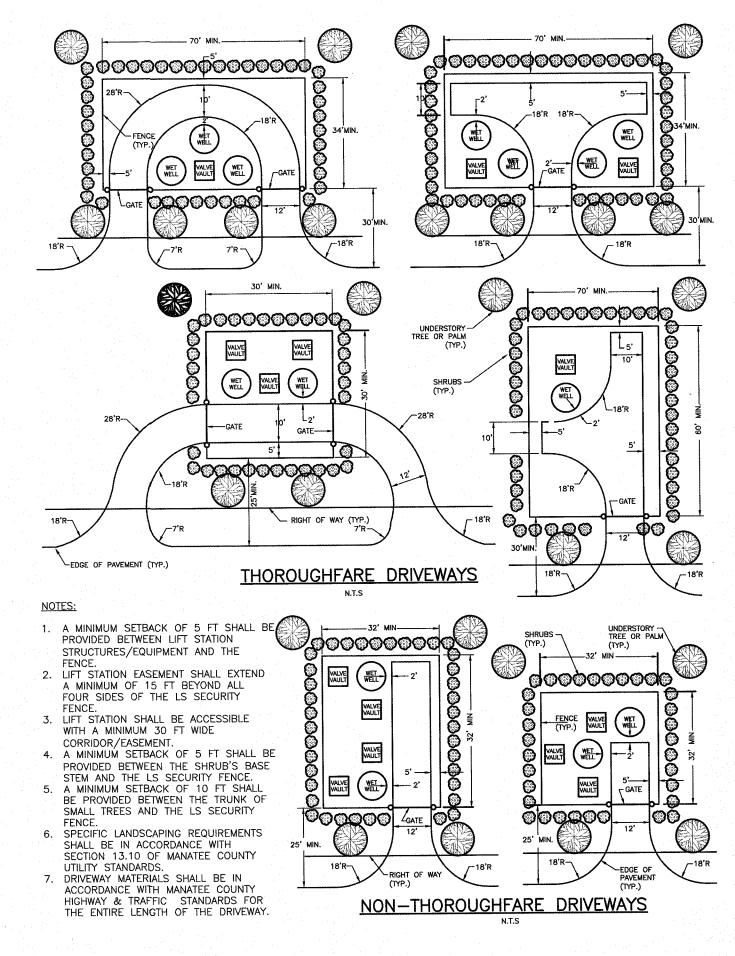
A WATER METER IS NOT REQUIRED AS PART OF THE BACKFLOW PREVENTER ASSEMBLY FOR THE GRINDER PUMP STATION



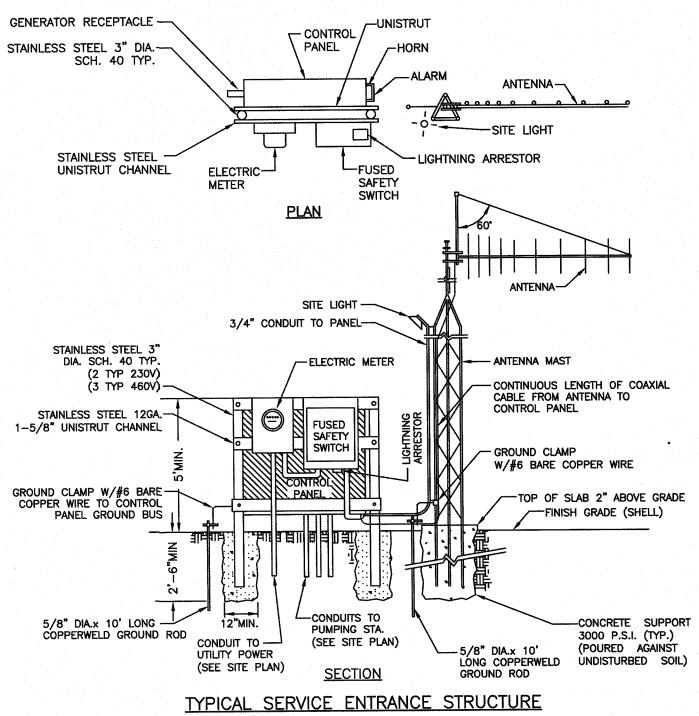
	PUMP BA	ASE ELL MO	DUNTING P	LATE DIMEN	SIONS		
DIMENSIONS	Α	В	С	D	Е	F	G
FOR 6" PUMPS	24"	20"	8.25"	5.875"	11"	¾"	N/A
FOR 4" PUMPS	20"	16"	6"	5"	10"	1/2"	N/A
2" PUMPS & SMALLER	15"	N/A	4.5"	4.75"	3.25"	1/2"	32"

- 1. INSTALL DOUBLE NUTS ON ALL EIGHT (8) THREADED RODS.
- 2. THE PLATE EDGES AND ALL HOLES SHALL BE GROUND SMOOTH TO REMOVE ALL BURRS 3. DIMENSIONS "C" & "E" ARE FOR BARNEY'S PUMPS, INC. BASE ELLS. 4. FOR PUMPS WITH A 2-INCH DISCHARGE OR LESS, A SINGLE BASE PLATE SHALL BE INSTALLED UNDER BOTH GRINDER PUMPS.

## PUMP BASE ELL MOUNTING PLATE



## MINIMUM ACCESS/EGRESS AND LANDSCAPING REQUIREMENTS FOR PUMP STATIONS US-16 (5/10/11)



- . ALL EQUIPMENT FURNISHED FOR THE PUMP STATION SHALL CONFORM TO MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS.
- POWER TO BE SUPPLIED AS DIRECTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING TEMPORARY AND PERMANENT ELECTRICAL SERVICE.
- 3. STAINLESS STEEL CONTROL PANEL SUPPORT POSTS SHALL BE TREATED WITH TWO COATS OF BITUMONOUS EPOXY TO 16 MILS WHERE EMBEDED IN CONCRETE.
- . CONTROL AND FLOW METER ENCLOSURE TO BE NEMA
- . ANTENNA MAST SHALL BE RATED FOR 150 MPH WINDS 3R/12 304 STAINLESS STEEL WITH RAIN SHIELD. DISCONNECT ENCLOSURE TO BE NEMA 4X STAINLESS.
  - 8. IF ANTENNA MAST IS MORE THAN 18" FROM PANEL RUN CONDUIT FOR SITE LIGHT UNDERGROUND.

ALL STATIONS WHICH REPUMP SEWAGE FROM OTHER

OTHER LIFT STATIONS SHALL BE EQUIPPED WITH A FLOW METER WITH ABOVE GROUND TRANSMITTER IN WEATHER PROOF HOUSING, A PRESSURE TRANSDUCER TO MONITOR FORCE MAIN PRESSURES, AND A TRANSDUCER AS THE PRIMARY LEVEL SENSOR MOUNTED INSIDE A STILLING WEST WELL.

5. ALL P.V.C. CONDUIT SHALL BE SCHEDULE 80.

SEWAGE PUMP STATION METER & ELECTRICAL DETAILS

ANTENNA MAST. REMOTE TELEMETRY, AND SITE LIGHT IS NOT REQUIRED FOR THIS PRIVATE GRINDER PUMP STATION.

	DATE OF FIELD WORK: 06/01/17 DATE OF CERTIFICATION: 06/30/17					DATE: TITLE						
		ACTIVITY	INITIALS/EMP. NO.	DATE	REVISIONS		CLIENT:	MANATEE BOARD OF	NOV. 2014	HLE:		
		DESIGNED BY:						COUNTY COMMISSIONERS	HORIZONTAL SCALE:	CRINDER PLIMP	STATION DETAILS	
		DRAWN BY:		1	RECORD DRAWING	BC 6/27/17			N/A  • VERTICAL SCALE:	GIVINDEIV I OWI	SIMILOR BEIMIES	INDEX NUMBER:
A DEMOVED 6' MAY NOTATION: ADDED NOTES LINDER WATER METER & METER/ELECTRICAL DETAILS; ADDED NOTES,	10/9/15 DJB/89366	CHECKED BY:		2	REVISED RECORD DRAWING	BC 9/13/17	PROJECT:	ROBINSON PRESERVE EXPANSION	N/A			215611990-01C-521LD
REVISED VARIOUS WET WELL ELEVS, AND REMOVED ANTENNA/LIGHT FOR WET WELL/VALVE BOX LAYOUT DETAIL		CONTRACT ADMIN. BY	:	3				PHASE I	SEC: TWP: RGE: CF	ROSS REFERENCE FILE NO.:	PROJECT NUMBER: 215611990	SHEET NUMBER: 20 of 22
△REV NO. REVISION	DATE DRAWN BY / EMP. NO. CHECKED BY / EMP. NO.	. WM APPROVED BY:		4					26 343 TOL Saved: 9/27/201	17 9:33:37 AM BRENTC   Plotted: 9/27/2017 9:51:	21 AM BRENTC   T:\Robinson Preserve\REC DWG\U	TILITIES\20-215611990-01C-521LD.dwg DET-20