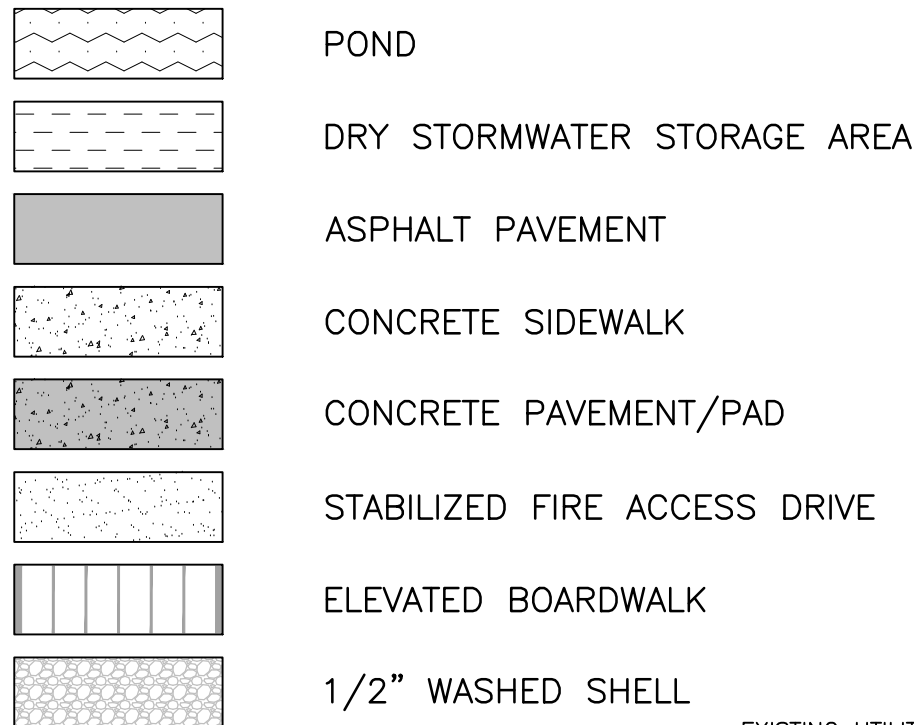


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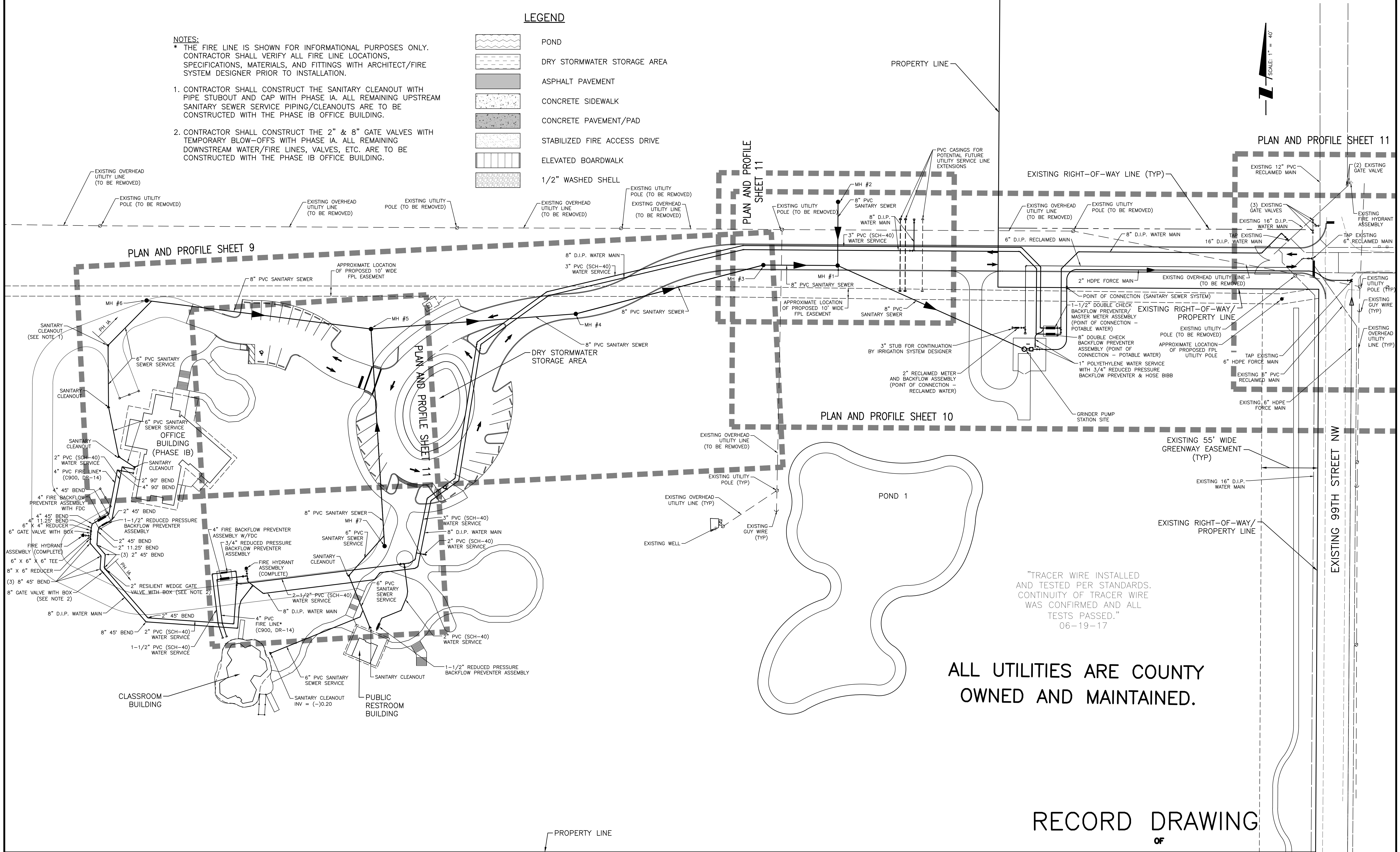
LEGEND



NOTES:

* THE FIRE LINE IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL VERIFY ALL FIRE LINE LOCATIONS, SPECIFICATIONS, MATERIALS, AND FITTINGS WITH ARCHITECT/FIRE SYSTEM DESIGNER PRIOR TO INSTALLATION.

1. CONTRACTOR SHALL CONSTRUCT THE SANITARY CLEANOUT WITH PIPE STUBOUT AND CAP WITH PHASE IA. ALL REMAINING UPSTREAM SANITARY SEWER SERVICE PIPING/CLEANOUTS ARE TO BE CONSTRUCTED WITH THE PHASE IB OFFICE BUILDING.
2. CONTRACTOR SHALL CONSTRUCT THE 2" & 8" GATE VALVES WITH TEMPORARY BLOW-OFFS WITH PHASE IA. ALL REMAINING DOWNSTREAM WATER/FIRE LINES, VALVES, ETC. ARE TO BE CONSTRUCTED WITH THE PHASE IB OFFICE BUILDING.



RECORD DRAWING
OF

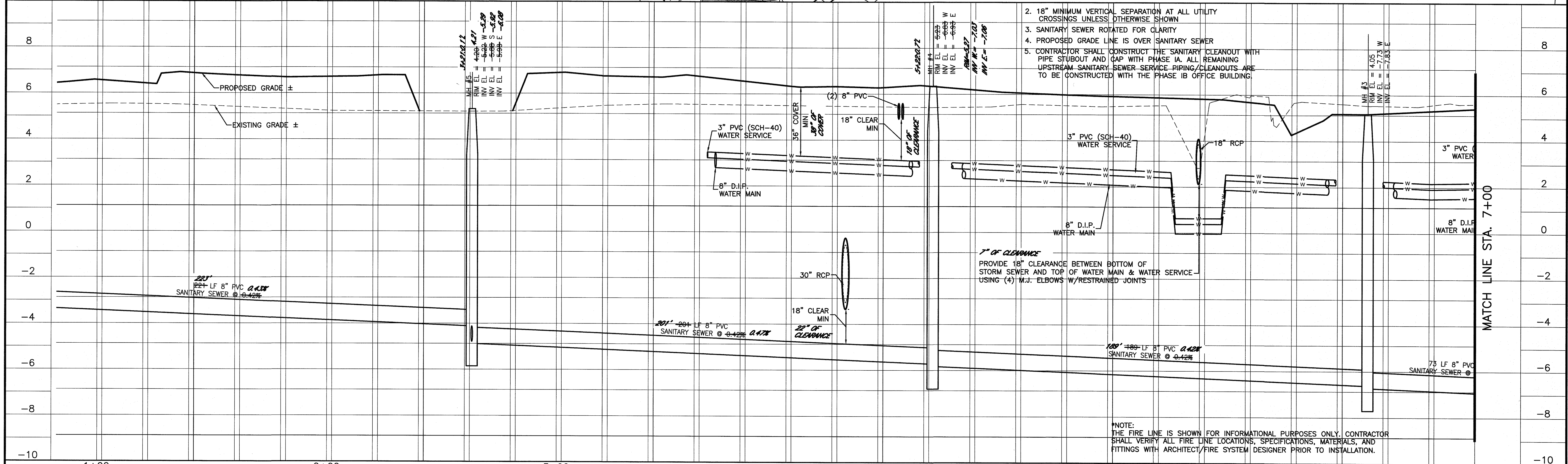
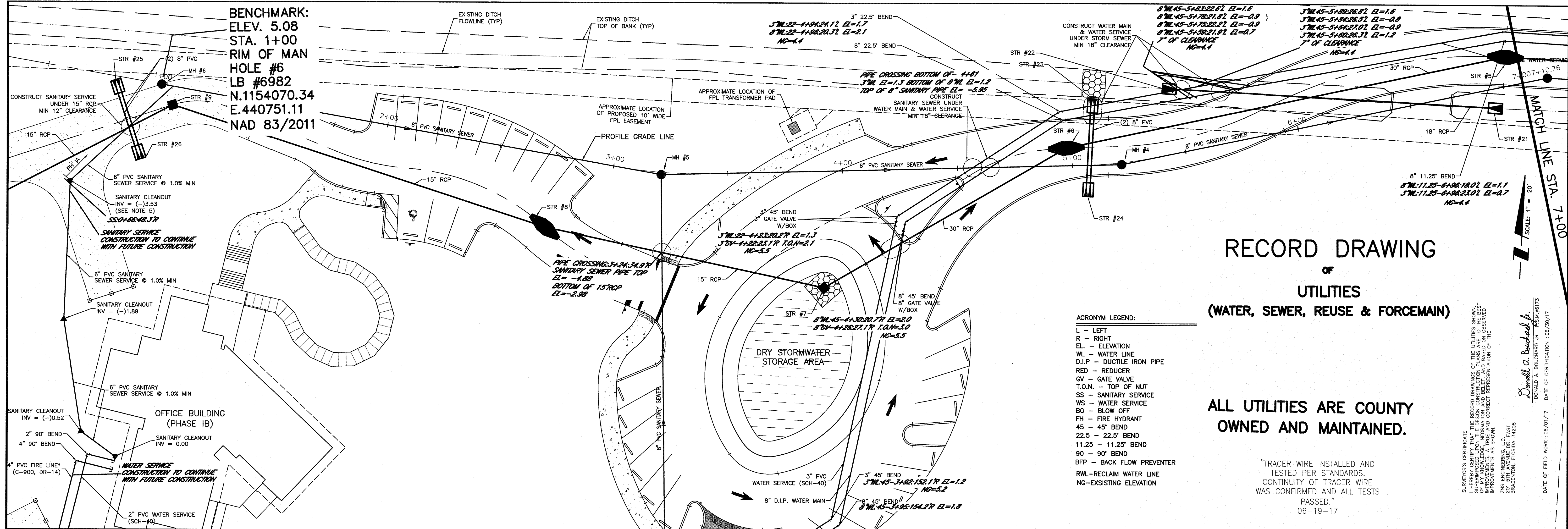
REV NO.	REVISION	DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.	WM APPROVED BY:
B	ADD RECORD DRAWING NOTES DB 6/20/17				
B	REVISED RECLAIMED MAIN; ADDED PVC CASINGS UNDER ENTRY DRIVE; ADDED VALVES FOR FORCE MAIN & WATER MAIN	12/4/15	DJB/89366		
A	REVISED ENTRY DRIVE ALIGNMENT; ADDED PHASING LIMITS, NOTES 1 & 2; REVISED UTILITY LAYOUT, FH/FDC LOCATIONS; ADDED FPL EASEMENT/POLE	10/9/15	DJB/89366		

ACTIVITY	INITIALS/EMP. NO.	DATE
DESIGNED BY:		
DRAWN BY:		
CHECKED BY:		
CONTRACT ADMIN. BY:		
WM APPROVED BY:		

CLIENT:	MANATEE BOARD OF COUNTY COMMISSIONERS
PROJECT:	ROBINSON PRESERVE EXPANSION PHASE I

DATE:	NOV. 2014
HORIZONTAL SCALE:	1" = 40'
VERTICAL SCALE:	N/A
SEC:	28
TWP:	34S
RGE:	16E

TITLE:	MASTER UTILITY PLAN & PLAN AND PROFILE KEY SHEET
INDEX NUMBER:	
SHEET NUMBER:	8 OF 22

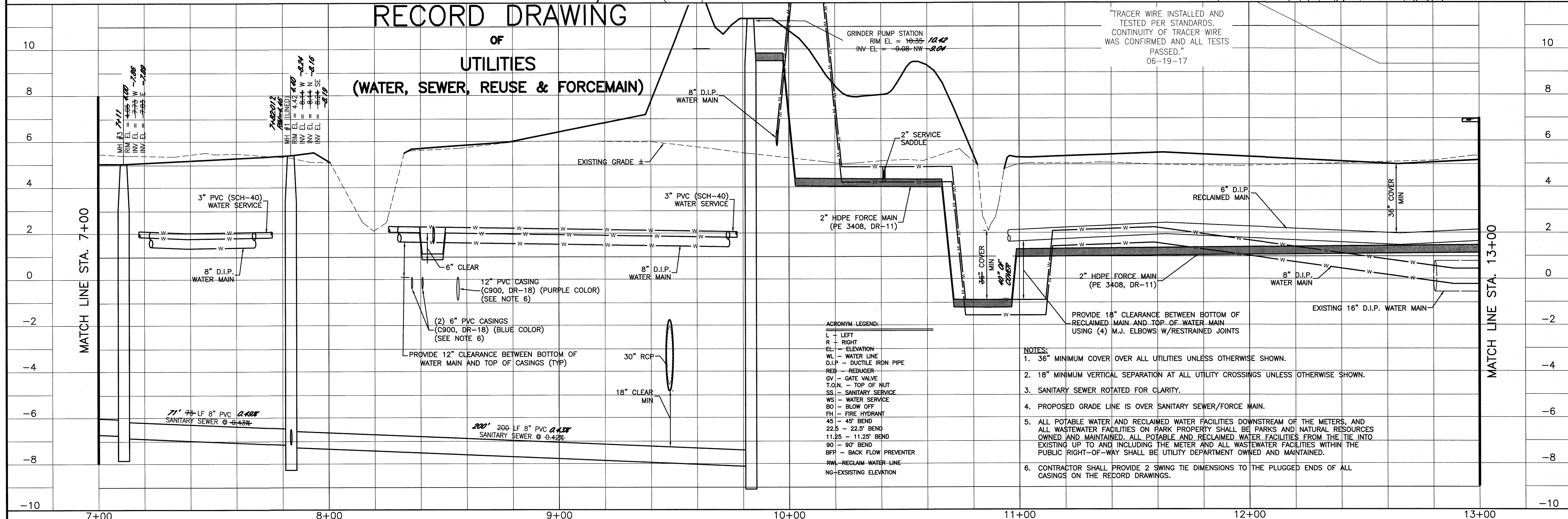
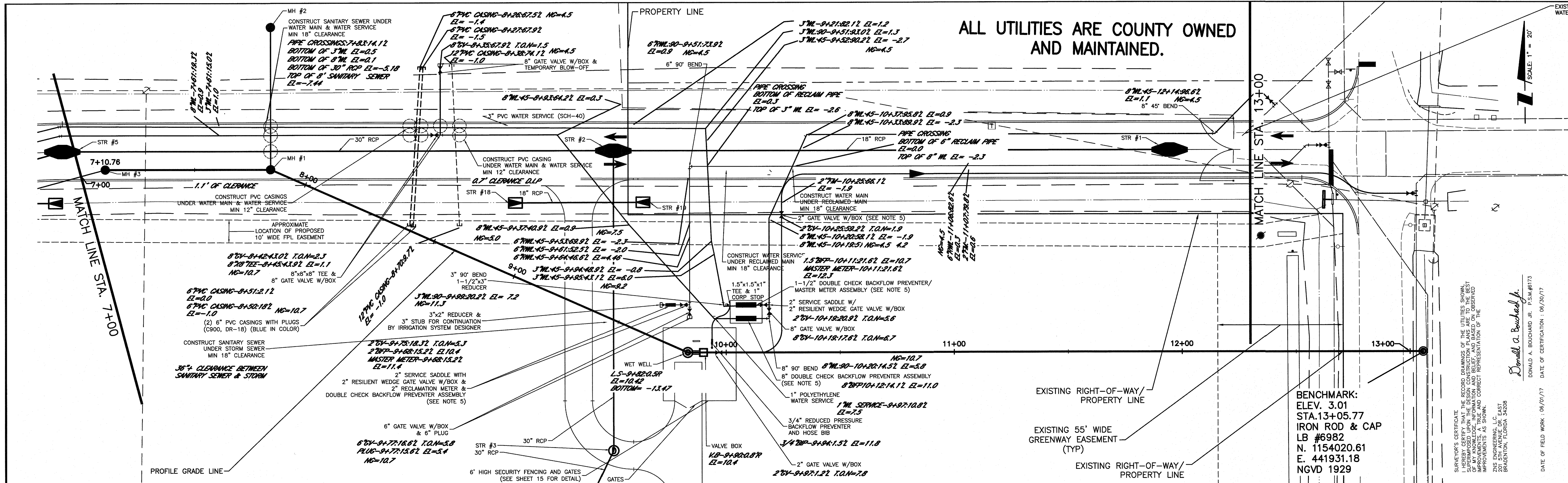


REVISIONS				CLIENT:				TITLE:			
1	RECORD DRAWING	BC	6/20/17	MANATEE BOARD OF COUNTY COMMISSIONERS				PLAN AND PROFILE SANITARY SEWER - STA. 1+00 TO 7+00			
2	REVISED RECORD DRAWING	BC	9/13/17	PROJECT: ROBINSON PRESERVE EXPANSION PHASE I				INDEX NUMBER: 215611990-01C-201ST			
3								SHEET NUMBER: 9 OF 22			
4											

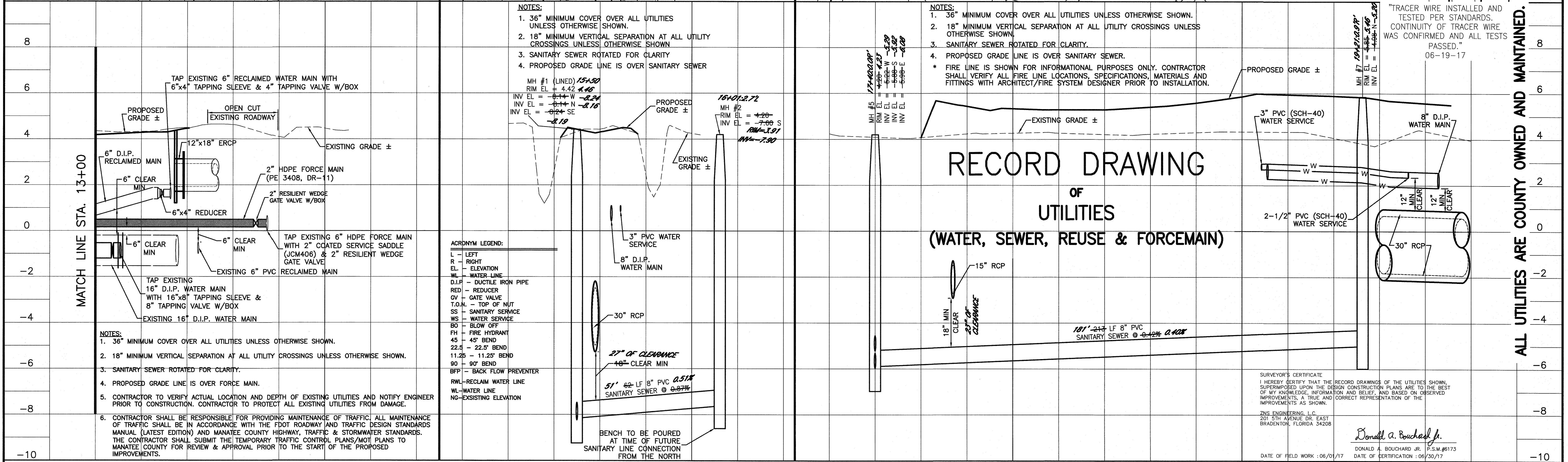
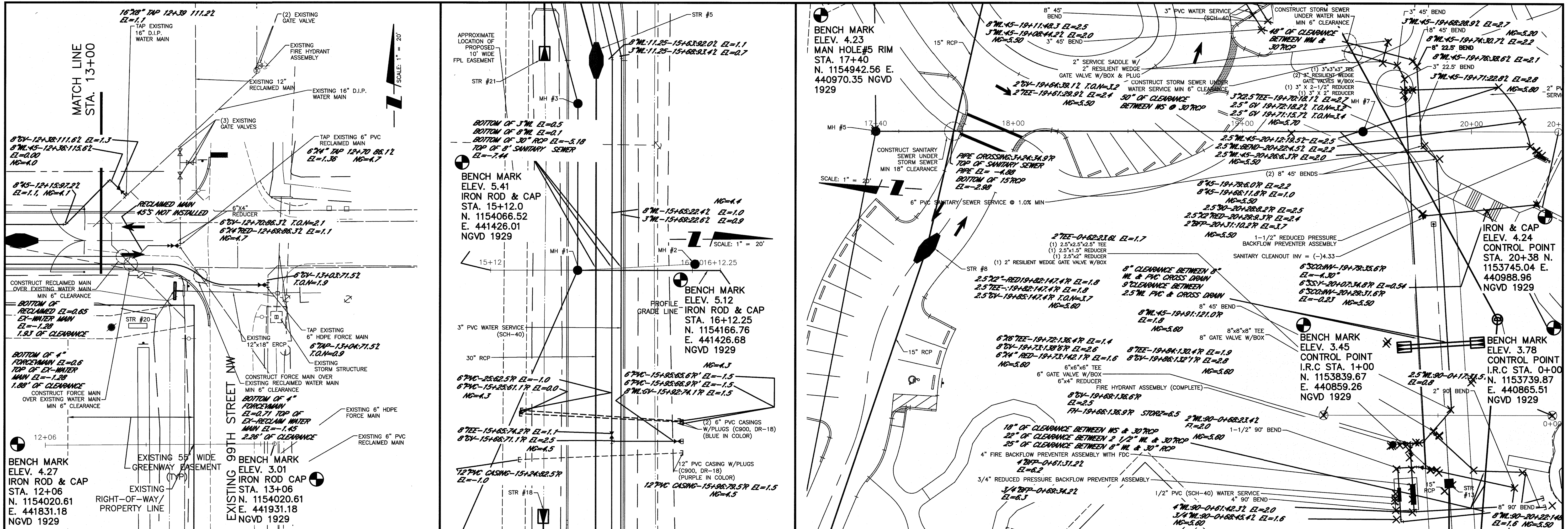
ACTIVITY	INITIALS/EMP. NO.	DATE
DESIGNED BY:		
DRAWN BY:	ATO/89520	OCT. 2015
CHECKED BY:		
CONTRACT ADMIN. BY:		
WM APPROVED BY:		

DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.	WM APPROVED BY / EMP. NO.
10/9/15	ATO/89520		

DATE	NOV. 2014
HORIZONTAL SCALE:	1" = 20'
VERTICAL SCALE:	1" = 2'
CROSS REFERENCE FILE NO.:	215611990



REVISION				CLIENT:		DATE:		TITLE:	
				MANATEE BOARD OF COUNTY COMMISSIONERS		NOV. 2014		PLAN AND PROFILE	
				ROBINSON PRESERVE EXPANSION PHASE I		1\"/>		SANITARY SEWER / FORCE MAIN - STA. 7+00 TO 13+00	
						215611990-01C-202ST		INDEX NUMBER	
						215611990		10 OF 22	



13+00				14+00				15+00				16+00				18+00				19+00				20+00							
								ACTIVITY		INITIALS/EMP. NO.		DATE		REVISIONS				CLIENT: MANATEE BOARD OF COUNTY COMMISSIONERS				DATE: NOV. 2014		TITLE: PLAN AND PROFILE							
								DESIGNED BY:						1 RECORD DRAWING				BC		6/27/17		HORIZONTAL SCALE: 1" = 20'				SANITARY SEWER - STA. 13+00 TO 14+40					
								DRAWN BY:		ATO/89520		OCT. 2015		2 REVISED RECORD DRAWING				BC		9/13/17		VERTICAL SCALE: 1" = 2'				SANITARY SEWER - STA. 15+00 TO 16+40		INDEX NUMBER: 215611990-01C-203ST			
B		REV RECLAIMED MAIN; ADDED PVC CASINGS UNDER ENTRY DRIVE		12/04/15		ATO/89520		CHECKED BY:						3								PROJECT: ROBINSON PRESERVE EXPANSION PHASE I				CROSS REFERENCE FILE NO.:		PROJECT NUMBER: 215611990		SHEET NUMBER: 11 OF 22	
A		REV BASE MAP, STORM & UTILITIES		10/9/15		ATO/89520		CONTRACT ADMIN. BY:						4																	
Δ/REV NO.		REVISION		DATE		DRAWN BY / EMP. NO.		CHECKED BY / EMP. NO.		WM APPROVED BY:																					

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.

- WATER SERVICE NOTES:

- WASTEWATER COLLECTION GENERAL NOTES:

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.

- SANITARY SEWER SERVICE NOTES:

- CLEAN-OUT NOTES:

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.

SEWER TESTING:

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.

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.

- AS-BUILTS:

1. THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS THAT MEET OR EXCEED THE MANATEE COUNTY PUBLIC UTILITIES 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, THE CONTRACTOR/SURVEYOR IS REQUIRED TO PROVIDE TO THE COUNTY 9 SETS OF SIGNED AND SEALED FINALIZED DRAWINGS AND A DIGITAL COPY OF RECORD DRAWINGS IN CAD AND PDF FORMAT. RECORD INFORMATION SHALL BE ON UNWING LAYER(S) AND TEXT SHALL USE A STANDARD AUTOCAD FONT.



UW-7 (5/10/11)

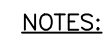
NOTE: IN ADDITION TO THE MANATEE COUNTY BLOW-OFF ASSEMBLY DETAIL:

1. 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 MARKED "WATER" FOR POTABLE WATER OR PURPLE (PANTONE 522C) FOR RECLAIMED WATER AND MARKED "RECLAIMED".



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.

UW-12 (5/10/11)

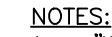
SECTION

1. THIS DETAIL FOR FIRE PROTECTION ONLY.
 2. WHEN PRESSURE TESTING FIRE LINE, TEST AGAINST DOWNSTREAM GATE VALVE.
 3. THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE LATEST PLUMBING CODE (LATEST EDITION). THE MANHOLE COUNTY BACKFLOW PREVENTION ORDINANCE (LATEST EDITION) AND THE MANHOLE COUNTY FIRE MARSHALL REQUIREMENTS.
 4. ABOVE GROUND PIPING SHALL BE FLANGED DUCTILE IRON CLASS 53 AND PAINTED RED.
 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.
 7. ALL ANCILLARY BOLTS & FASTENERS TO BE STEEL SESS.
 8. SEE GATE VALVE, BOX, LID AND TAG DETAIL.
 9. PIPE STANDS SHALL BE BOLTED TO SLAB.

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

UW-14 (5/10/11)

N.T.S.

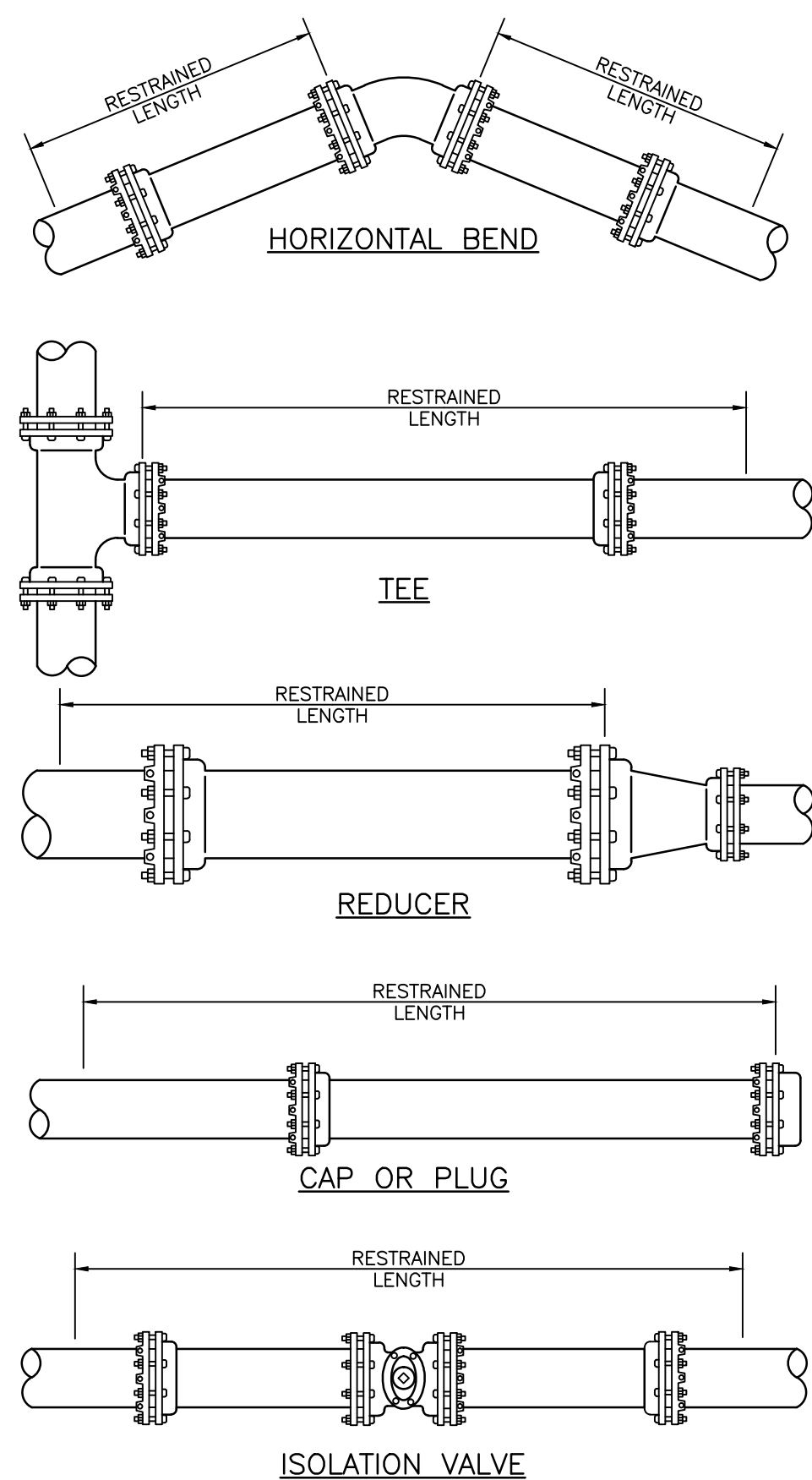
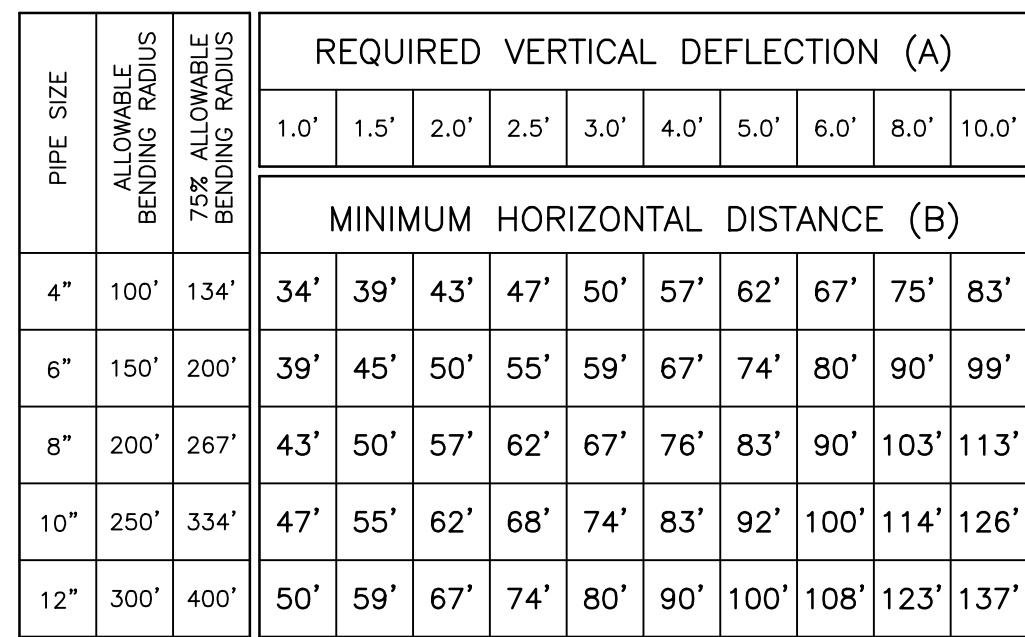


1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED 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.
5. 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."
10. BINGHAM & TAYLOR P200NF FOR NORMAL YARD SERVICE, WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE P250SF CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

UW-2 (5/10/11)

N.T.S

						ACTIVITY	INITIALS/EMP. NO.	DATE	CLIENT: MANATEE BOARD OF COUNTY COMMISSIONERS PROJECT: ROBINSON PRESERVE EXPANSION PHASE I DATE: NOV. 2014 HORIZONTAL SCALE: N/A VERTICAL SCALE: N/A SEC. 26 TWP. 34S RGE. 16E CROSS REFERENCE FILE NO.: PROJECT NUMBER: 215611990	TITLE: UTILITY DETAILS INDEX NUMBER: 215611990-01C-531WD SHEET NUMBER: 16 OF 22
						DESIGNED BY:				
						DRAWN BY:				
						CHECKED BY:				
						CONTRACT ADMIN. BY:				
A	REMOVE METER BOX ASSEMBLY DETAIL; ADD 2" BLOW-OFF DETAIL			10/9/15	DJB/89366					
Δ REV NO.	REVISION			DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.	WM APPROVED BY:			



MAIN PIPE SIZE	HORIZ. BENDS			TEES												REDUCERS												PLUGS & VALVES
				SIZE												SIZE												
	90°	45°	22.5°	LENGTH												LENGTH												
36	142	59	28	x36 130	x30 118	x24 104	x18 90	x12 76	x16 84	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	359	453						
30	124	51	25	x30 124	x24 104	x18 90	x12 76	x16 84	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	391							
24	106	44	21	x24 106	x18 90	x12 76	x16 84	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	327								
20	92	38	18	x20 92	x16 76	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	280							
16	77	32	15	x16 77	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	231								
12	61	25	12	x12 61	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	181									
10	52	22	10	x10 52	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	153										
8	44	18	9	x8 44	x6 40	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	128											
6	34	14	7	x6 34	x4 20	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	98											
4	24	10	5	x4 19	x30 130	x24 104	x18 90	x12 76	x10 64	x8 52	x6 40	x30 130	x24 104	x18 90	x12 76	69												

MAIN PIPE SIZE	HORIZ. BENDS			TEES												REDUCERS				PLUGS & VALVES
				SIZE												SIZE				
	90°	45°	22.5°	LENGTH												LENGTH				
36	100	42	20	x36	x30	x24	x20	x18	x16	x14	x12	x10	x8	x6	x54	x48	x42	x36	188	
30	88	37	18	x30	x24	x20	x18	x16	x14	x12	x10	x8	x6	x54	x48	x42	x36	162		
24	75	31	15	x24	x20	x18	x16	x14	x12	x10	x8	x6	x54	x48	x42	x36	132			
20	65	27	13	x20	x18	x16	x14	x12	x10	x8	x6	x54	x48	x42	x36	116				
16	54	22	11	x16	x14	x12	x10	x8	x6	x54	x48	x42	x36	96						
12	43	18	8	x12	x10	x8	x6	x54	x48	x42	x36	75								
10	37	15	7	x10	x8	x6	x54	x48	x42	x36	63									
8	30	13	6	x8	x6	x54	x48	x42	x36	51										
6	24	10	5	x6	x54	x48	x42	x36	43											
4	17	7	3	x4	x36	x30	x24	x20	x18	x16	x14	x12	x10	x8	x6	x54	x48	x42	x36	29

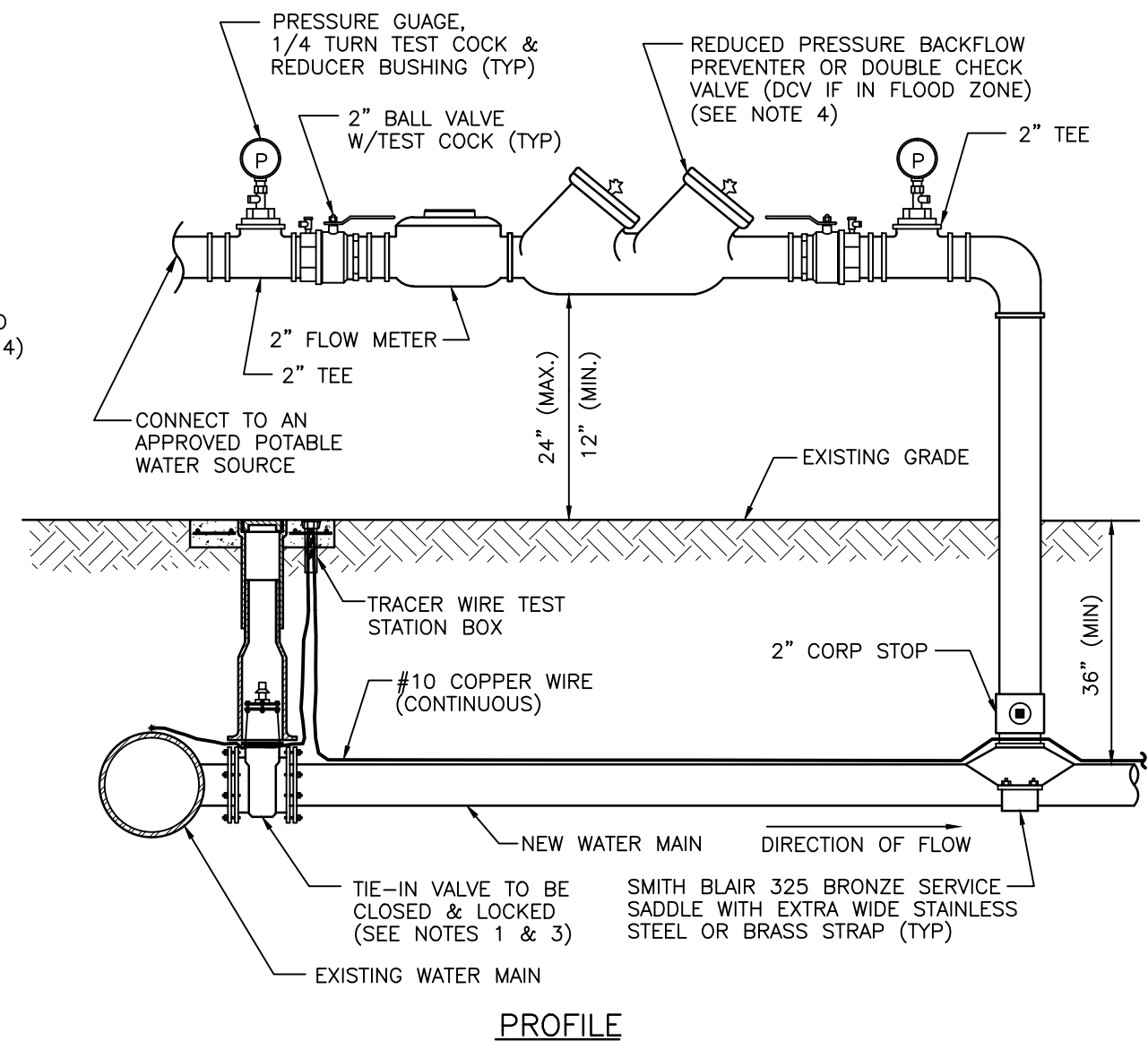
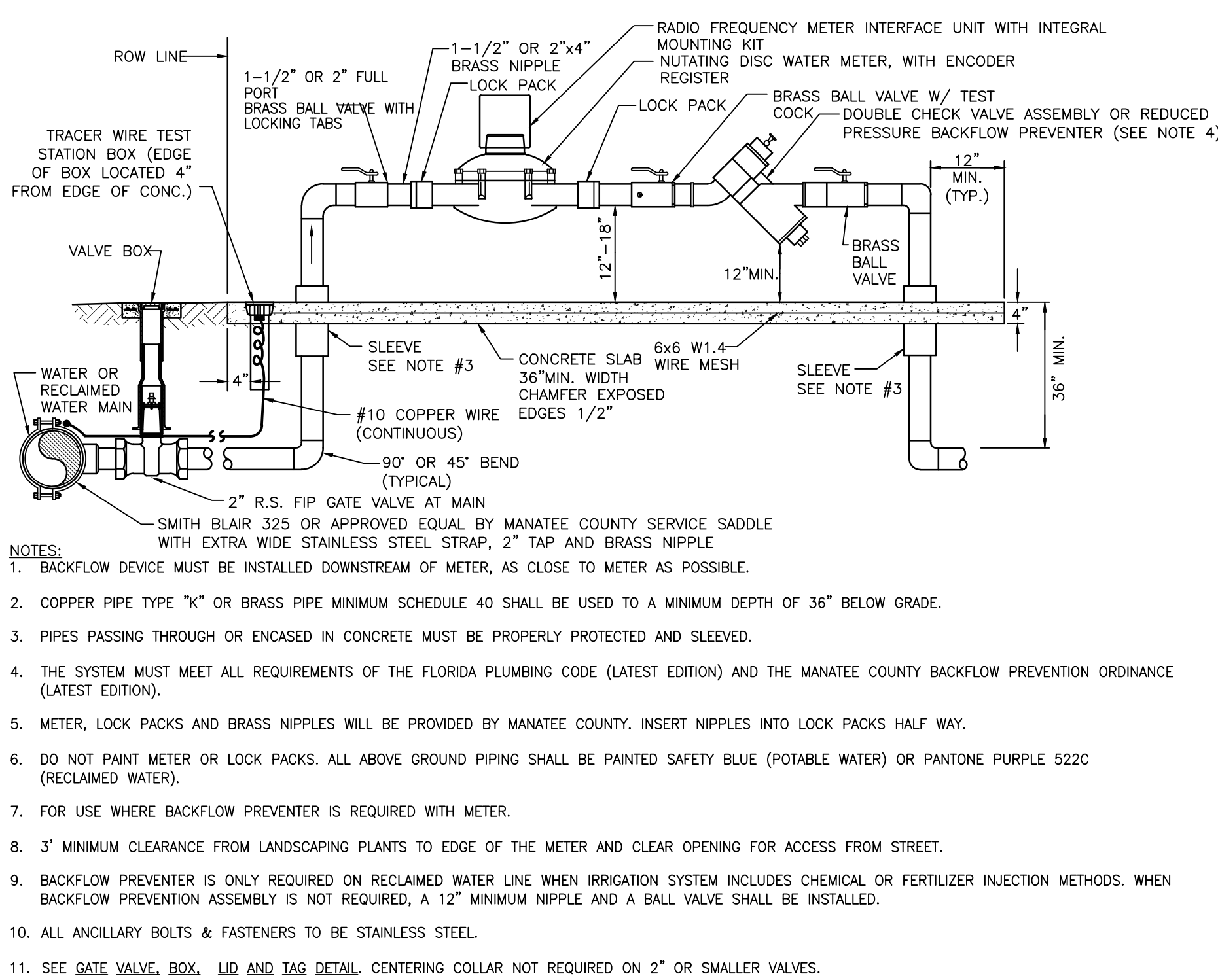
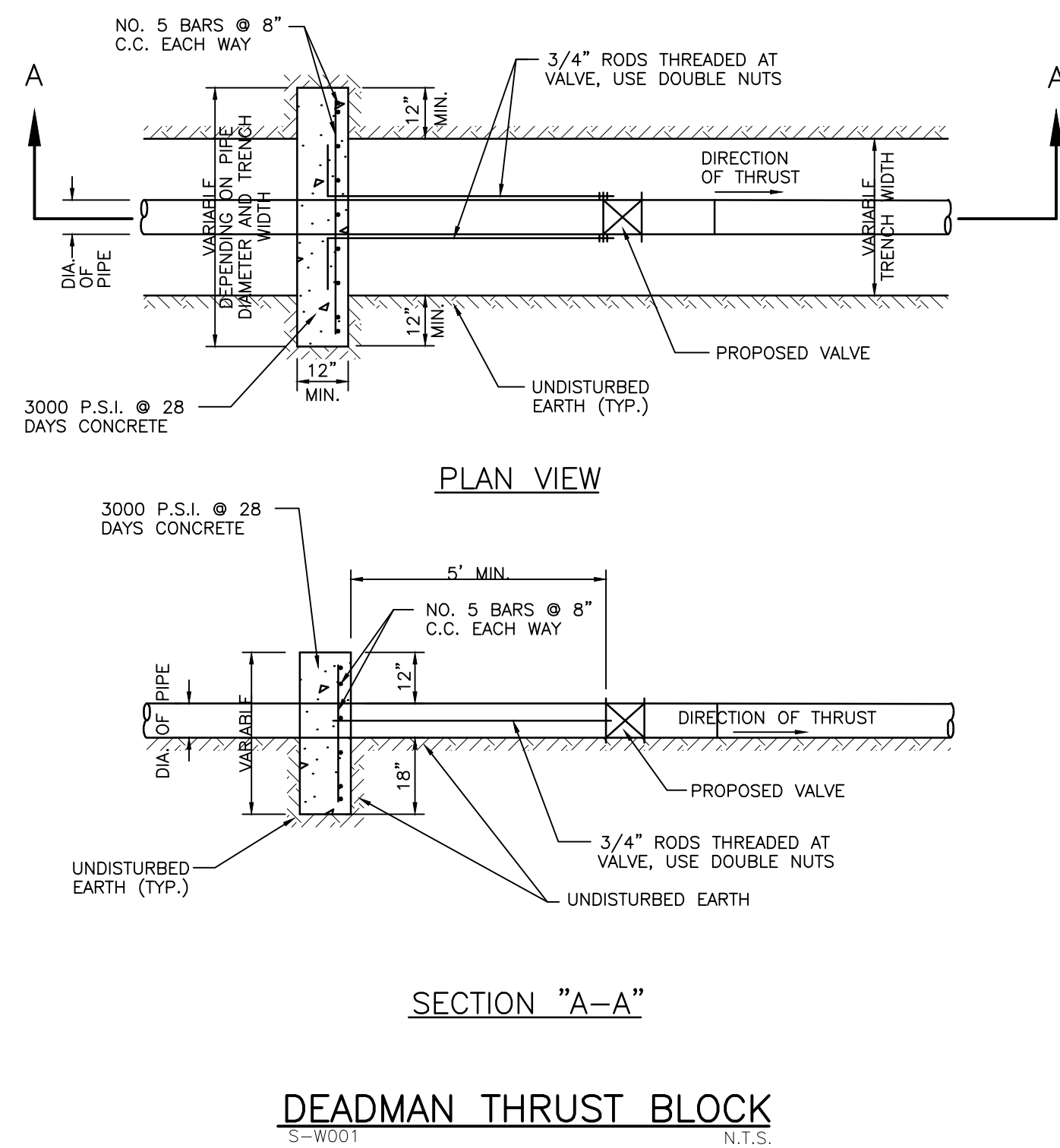
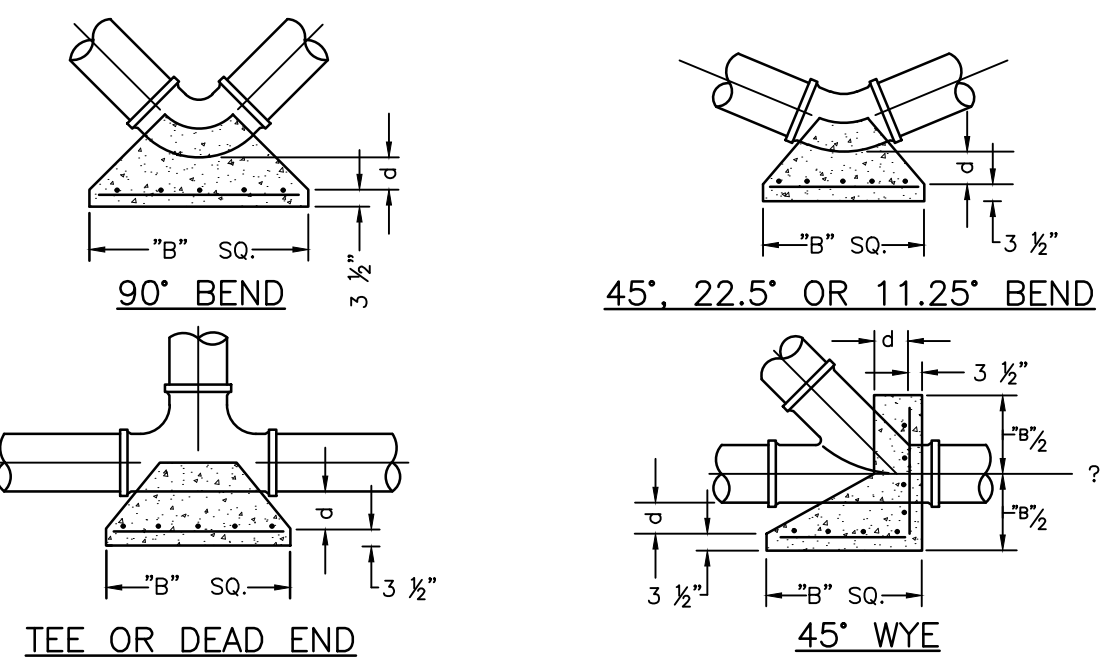
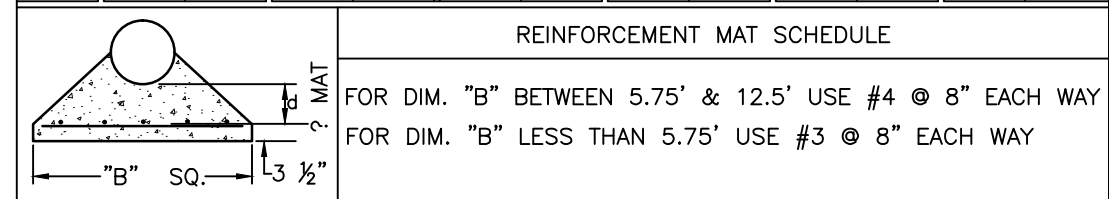
NOTE:
SEE RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

NOTE:
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 THE
SAME AS A PLUG.
2. DEAD END GATE VALVES TO BE RESTRAINED THE SAME LENGTH AS A
PLUG.
3. THE CONTRACTOR SHALL OBTAIN A QUALIFIED TESTING LABORATORY IN
ORDER TO DETERMINE 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.

[illegible]

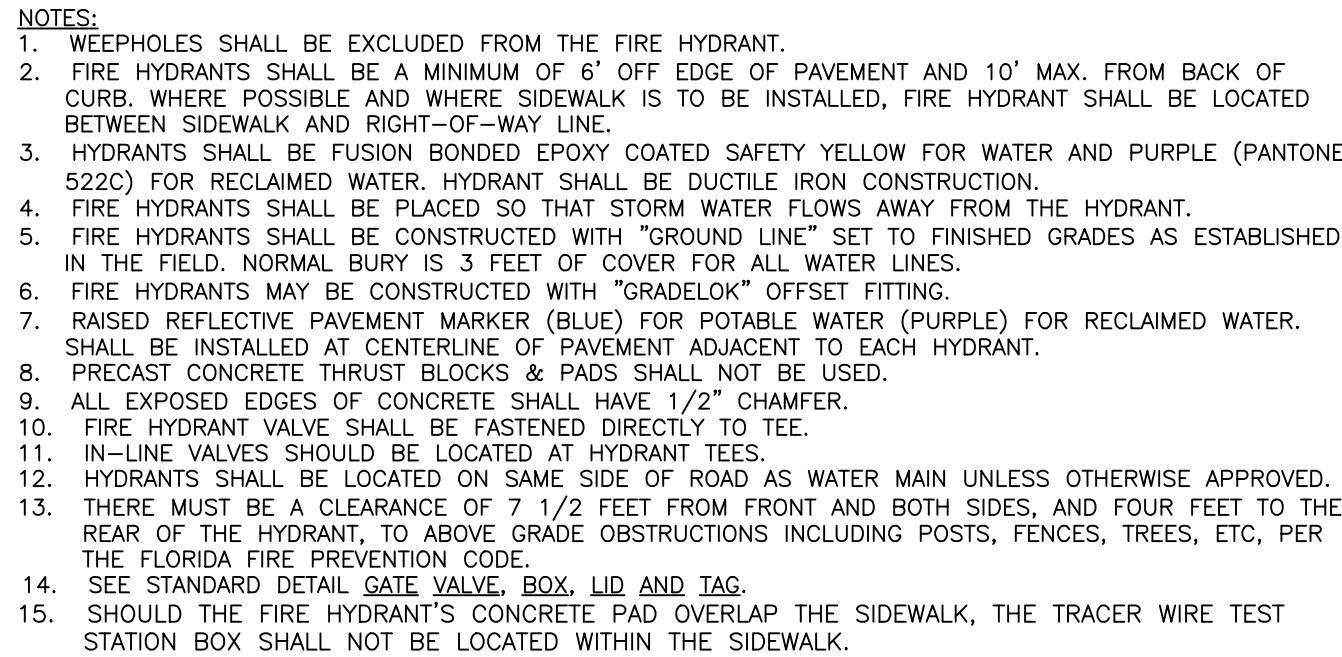
- NOTES:
1. RESTRAIN 11.25" BENDS 50% OF LENGTH FOR 22.5" BENDS.
 2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
 3. ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
 4. PIPE SIZES ARE GIVEN IN INCHES.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

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



- 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. CORROSION STOP CONNECTIONS TO WATER MAINS SHALL BE AT A SUFFICIENT DISTANCE FROM NEW TAPPING SLEEVE & VALVE (TIE-IN VALVE). ALL CORROSION 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 CORROSION 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 (THE EXISTING VALVE AND ISOLATION VALVE AND JUMPER SHALL BE DISINFECTED BY SPRAYING OR SWABING).
 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.

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



UW-5 (5/10/11)

N.T.S.



UW-4 (5/10/11)

N.T.S



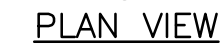
N.T.S

- 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 2" BACK FROM TRENCH SAW CUT, ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. MILL 2" TO EXIST JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FRACTION 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.



N.T.S

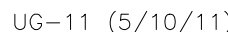


NOTES

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.
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 **JACK & BORE CROSSING** DETAIL FOR CASING AND SPACER REQUIREMENTS.

UG-2 (5/10/11)

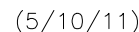
N.T.S



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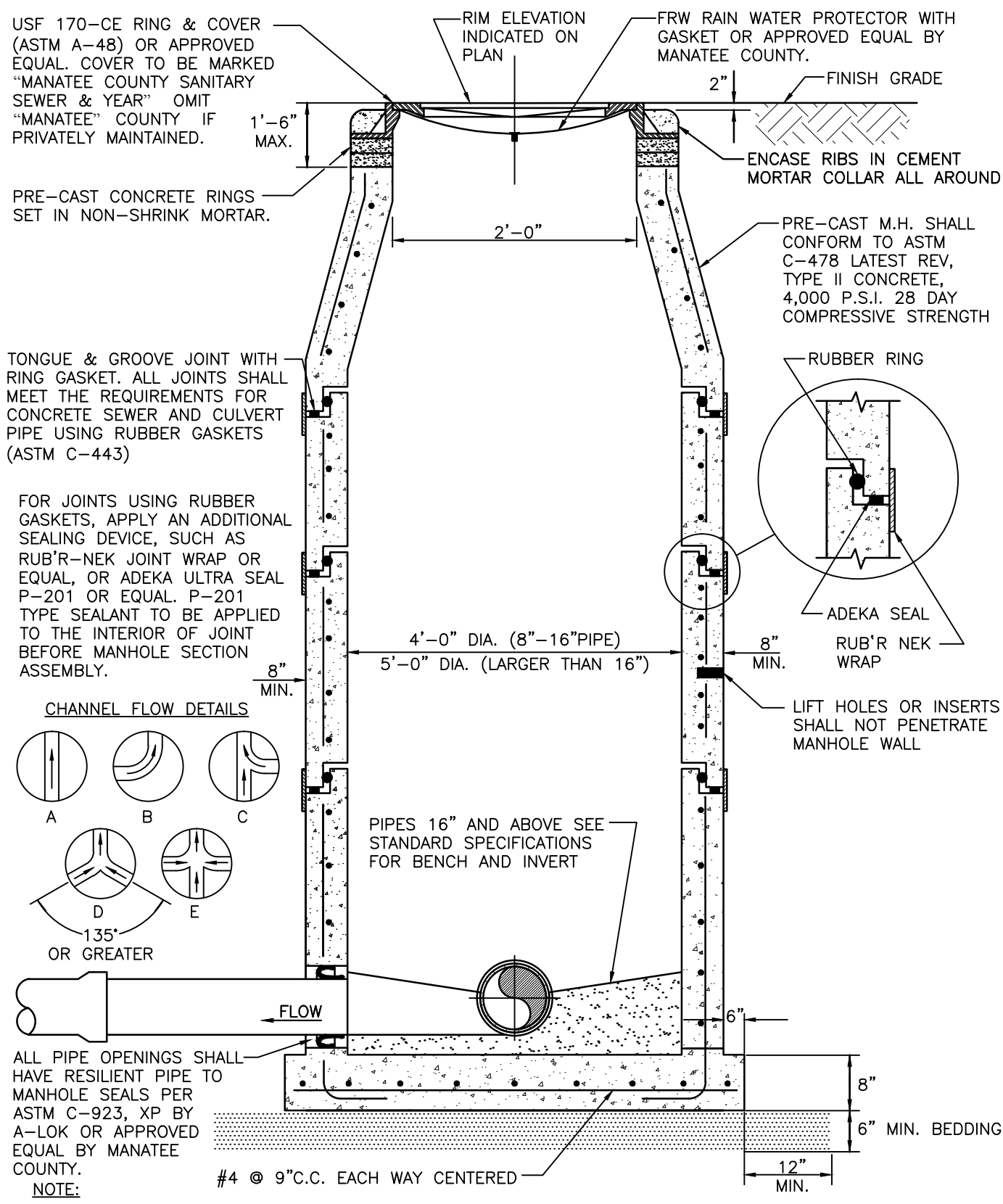
- NOTES:

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 MANUFACTURER'S WRITTEN INSTRUCTIONS
5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



N.T.S

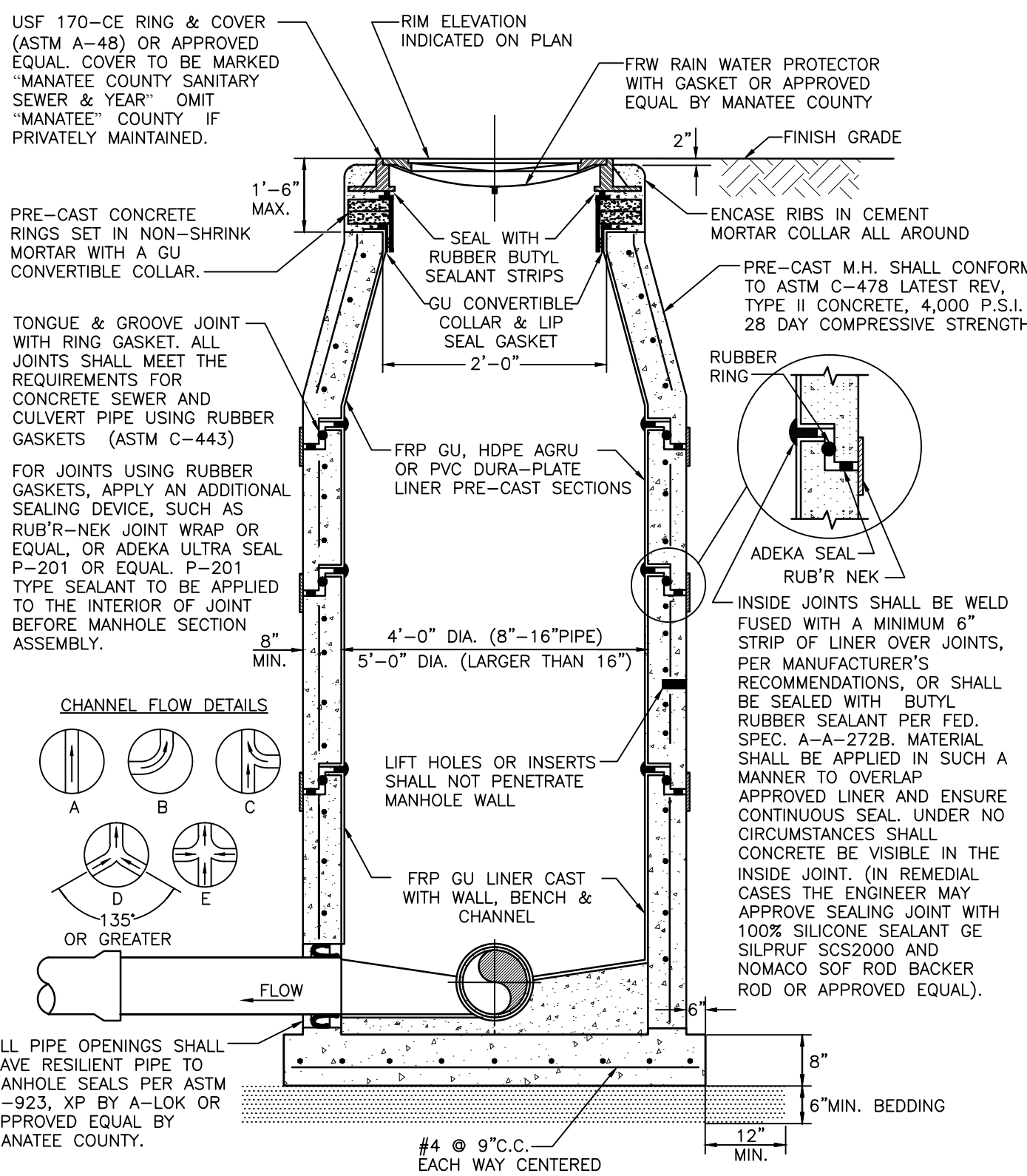
						ACTIVITY	INITIALS/EMP. NO.	DATE	CLIENT: MANATEE BOARD OF COUNTY COMMISSIONERS PROJECT: ROBINSON PRESERVE EXPANSION PHASE I	DATE: NOV. 2014 HORIZONTAL SCALE: N/A VERTICAL SCALE: N/A SEC. 23 TWP. 34S RGE. 16E	TITLE: UTILITY DETAILS	INDEX NUMBER: 215611990-01C-522SM	
						DESIGNED BY:							
						DRAWN BY:							
						CHECKED BY:							
						CONTRACT ADMIN. BY:							
A	ADD 8" DOUBLE CHECK BACKFLOW PREVENTER ASSEMBLY DETAIL				10/9/15	DJB/89366							
REV. NO.	REVISION				DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.	WM APPROVED BY:			CROSS REFERENCE FILE NO.:	PROJECT NUMBER: 215611990	SHEET NUMBER: 18 OF 22



STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR UNDISTURBED FLOW

US-2 (5/10/11) N.T.S.

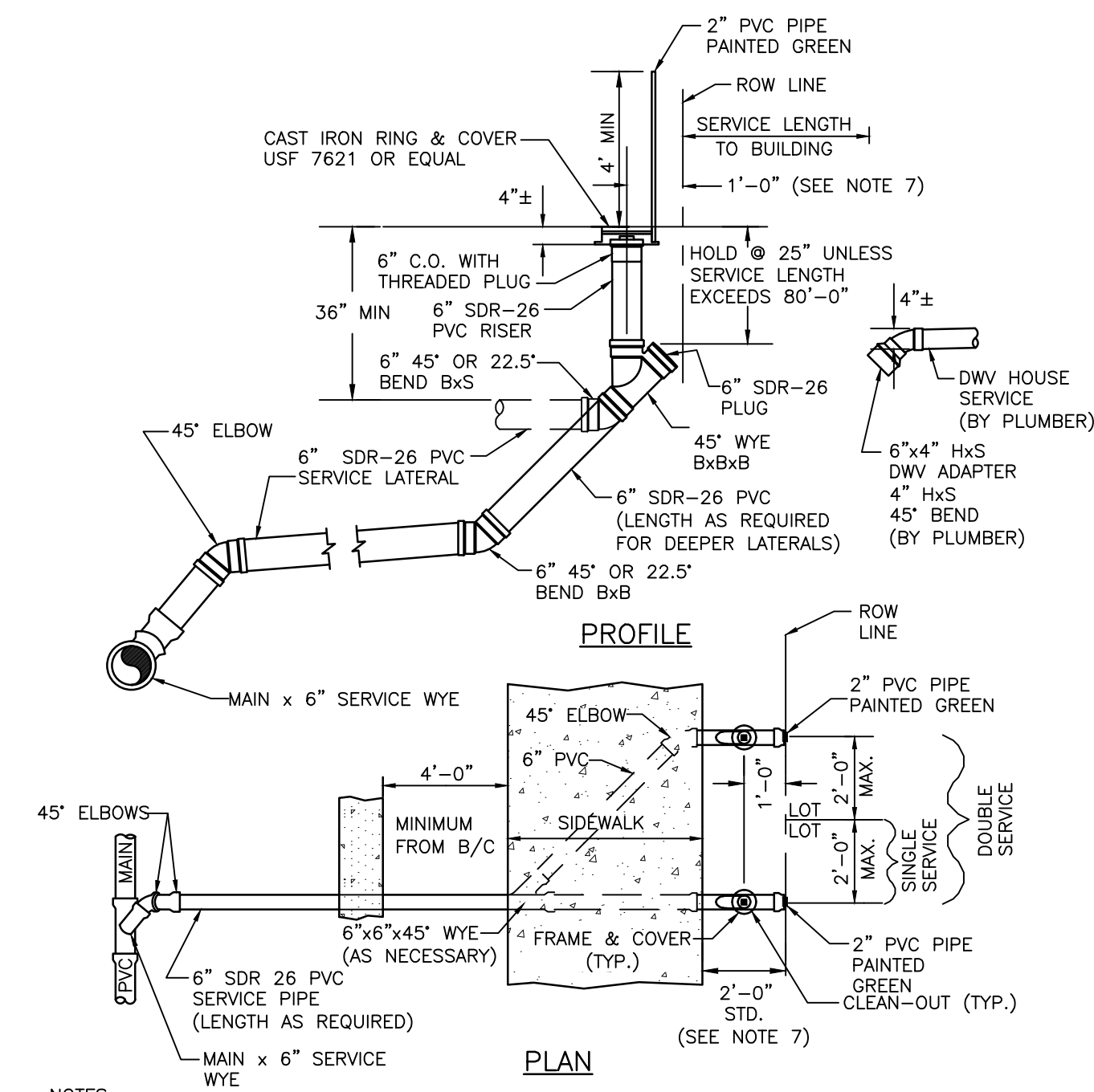
NOTE:
IN ADDITION TO THE MANATEE COUNTY STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR UNDISTURBED FLOW DETAIL:
1. ALL MANHOLE RIMS SHALL HAVE A COMPRESSION WATERTIGHT ASSEMBLY RIM AND COVER, AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR COUNTY APPROVED EQUAL.



STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR TURBULENT FLOW

US-3 (5/10/11) N.T.S.

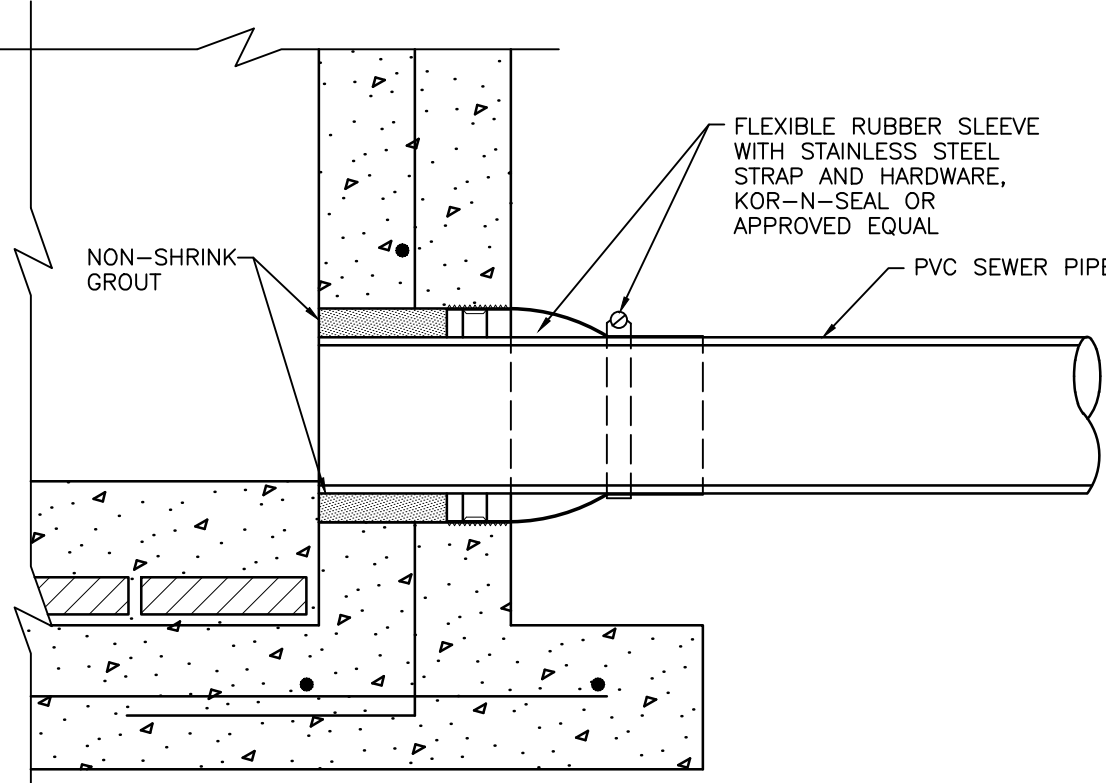
NOTE:
IN ADDITION TO THE MANATEE COUNTY STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR TURBULENT FLOW DETAIL:
1. ALL MANHOLE RIMS SHALL HAVE A COMPRESSION WATERTIGHT ASSEMBLY RIM AND COVER, AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR COUNTY APPROVED EQUAL.



SINGLE AND DOUBLE SERVICE CONNECTION

US-13 (5/10/11) N.T.S.

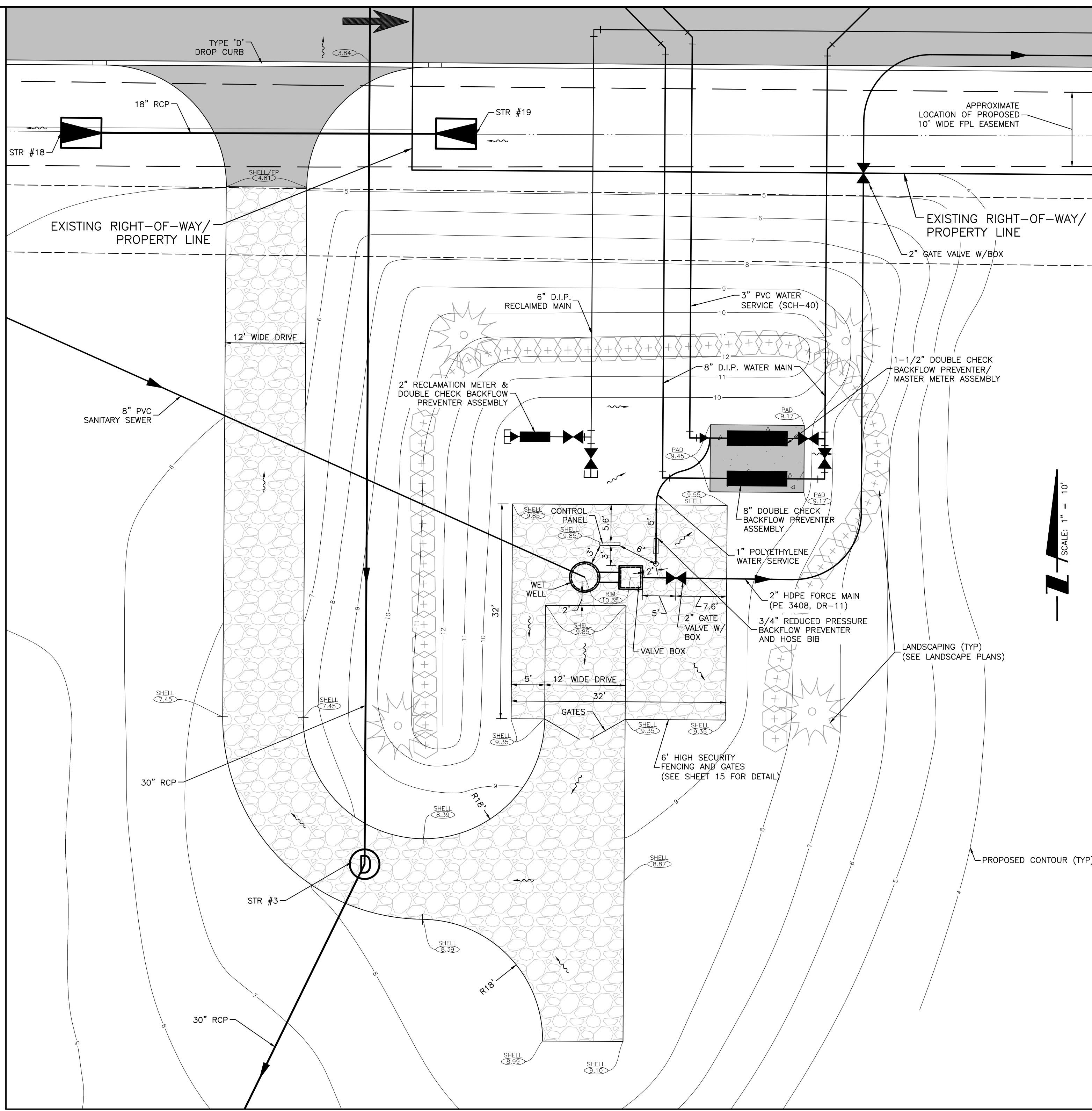
- RUBBER DONUTS ARE NOT TO BE USED.
- "SCO" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE CLEAN-OUT. IF NO CURB INSTALL A GREEN DISC WITH "SCO" AND $\frac{3}{4}$ " X 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE CLEAN-OUT.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



PIPE TO MANHOLE CONNECTION

S-S006 N.T.S.

NOTE:
CORE BORE ALL EXISTING MANHOLES AT PROPOSED CONNECTIONS.



GRINDER PUMP STATION SITE PLAN

				ACTIVITY		INITIALS/EMP. NO.	DATE	CLIENT:		DATE:	TITLE:		
				DESIGNED BY:				MANATEE BOARD OF COUNTY COMMISSIONERS		NOV. 2014	UTILITY DETAILS / GRINDER PUMP STATION SITE PLAN		
				DRAWN BY:				PROJECT: ROBINSON PRESERVE EXPANSION PHASE I		HORIZONTAL SCALE: AS SHOWN		INDEX NUMBER: 215611990-01C-522SM	
				CHECKED BY:						VERTICAL SCALE: AS SHOWN		SHEET NUMBER: 19 OF 22	
Δ	REV NO.	REVISION	DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.	WM APPROVED BY:				CROSS REFERENCE FILE NO.:	PROJECT NUMBER: 215611990		
B	REV	RECLAIMED MAIN; ADDED FORCE MAIN & WATER MAIN VALVES	12/4/15	ATO/89520									
A	ADDED	NOTE TO COUNTY MANHOLE DETAILS REG. WATER TIGHT RIM/COVER; ADDED GRINDER STATION SITE PLAN	10/9/15	DJB/89366									

