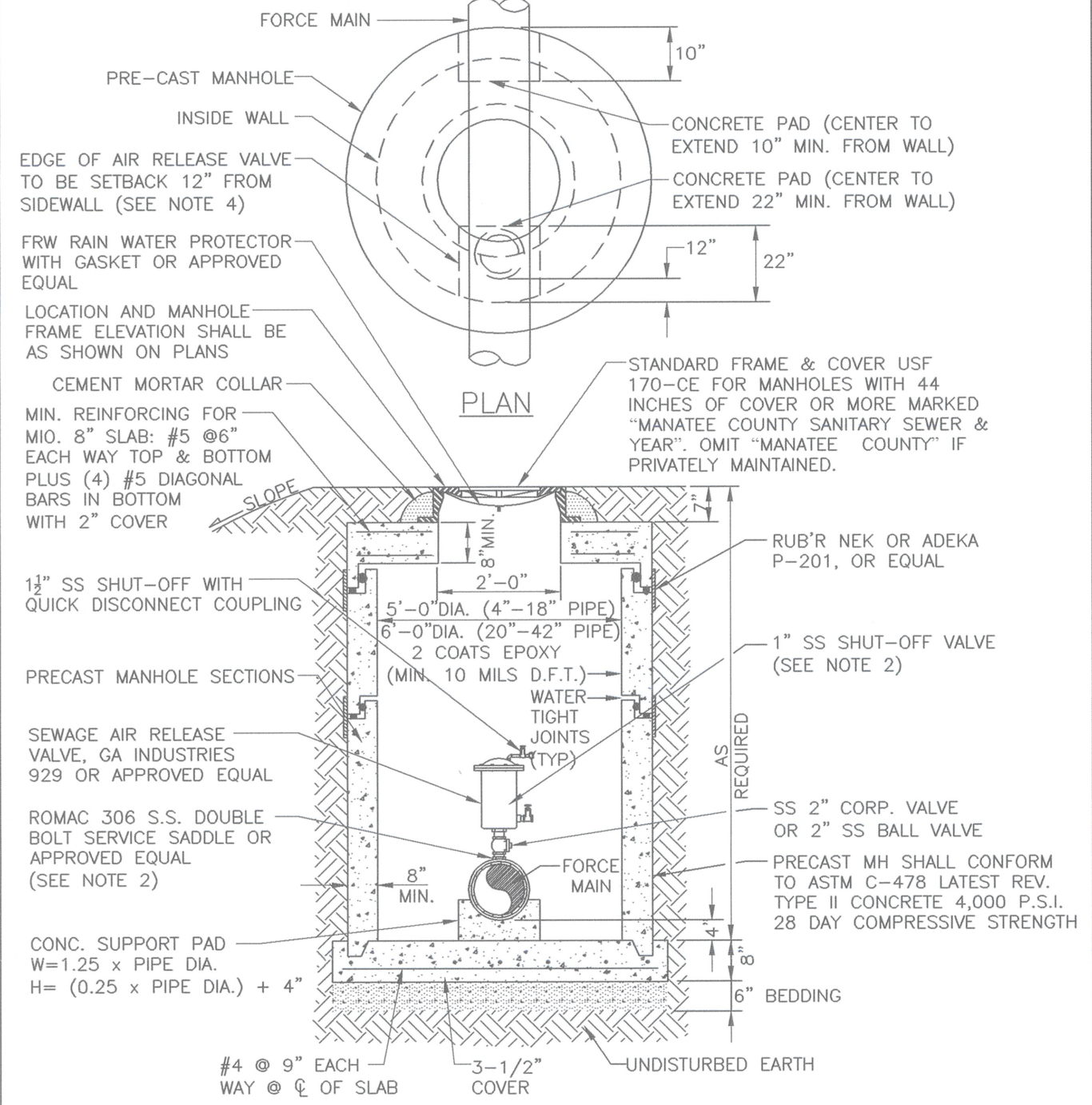


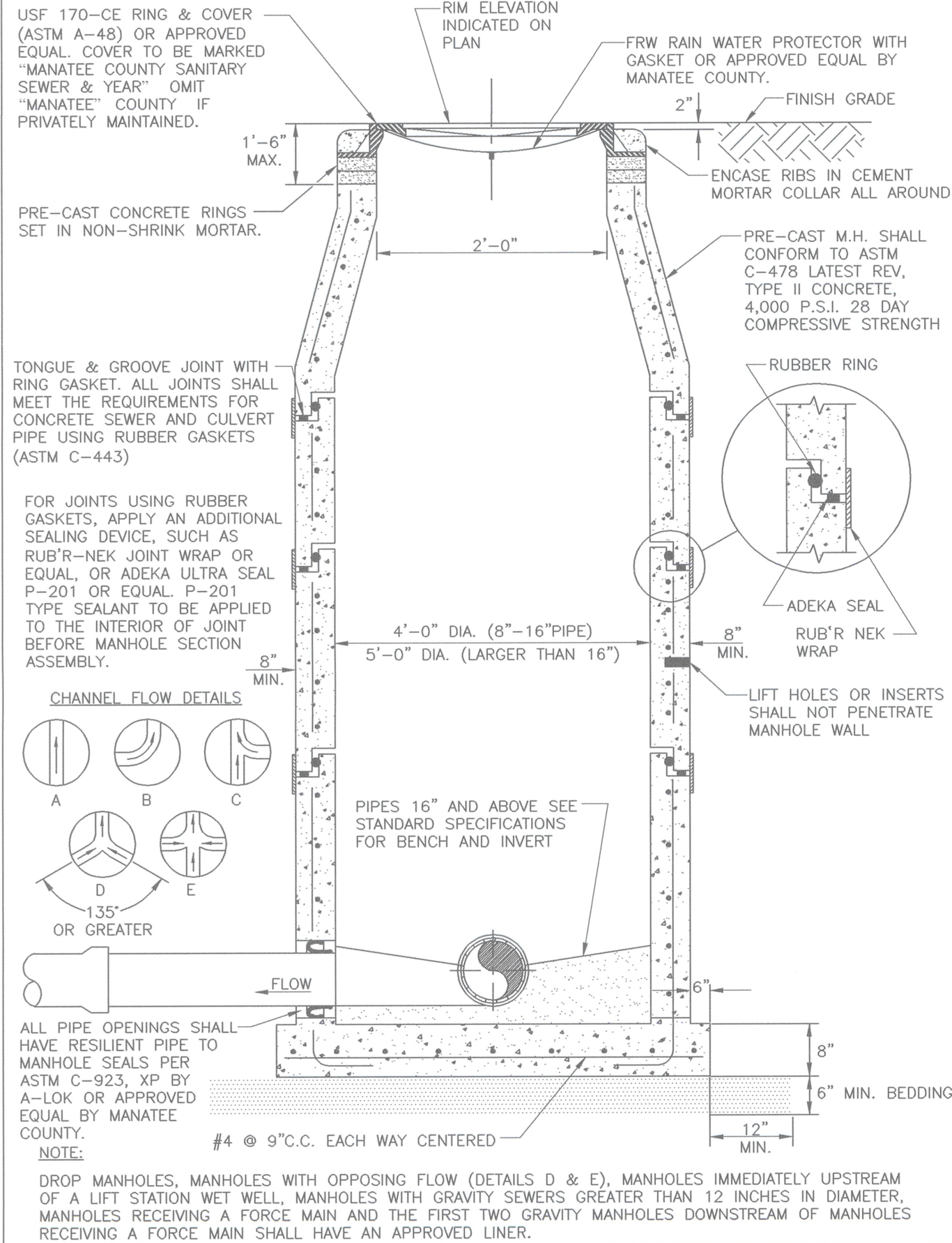
COPYRIGHT 2010 MANATEE COUNTY GOVERNMENT / S:\P\W\Engineering_Store\Util_Eng_Design\PROJ\3-SAN SWR Pro\TM-33rd Ave W\DWG\SYM 27-Adwg.23, 9/25/2014 9:15 AM Bruce Robertson, 1:1, ANSI full bleed D (34.00 x 22.00 inches)



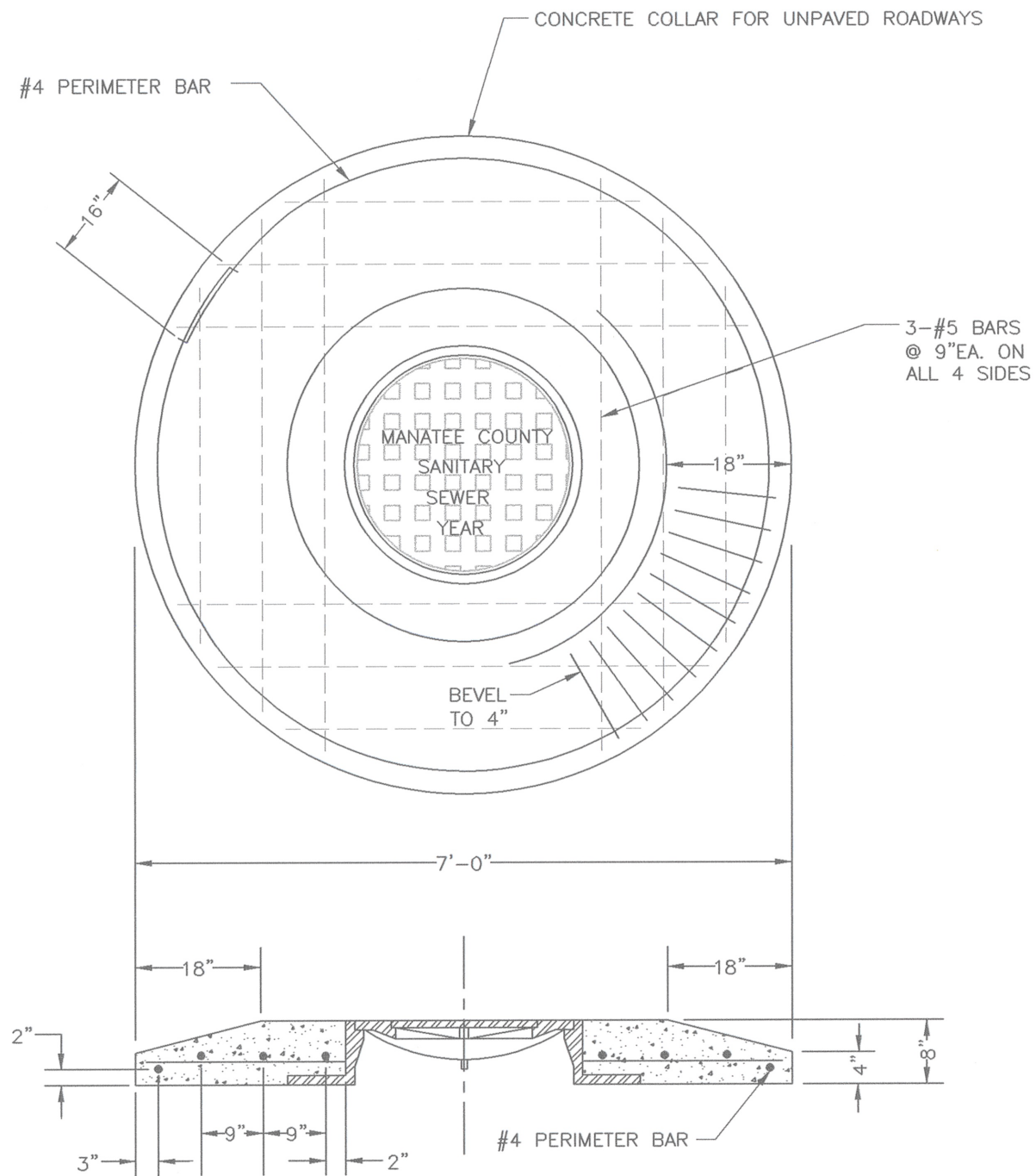
NOTES:

1. AIR RELEASE VALVES WHERE REQUIRED ON 4" AND LARGER FORCE MAINS.
2. ARV TO BE SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATION FOR FORCE MAIN SIZE.
3. SERVICE SADDLE, NIPPLES AND CORPORATION BALL VALVE SHALL BE STAINLESS STEEL.
4. FOR MANHOLES WITH LESS THAN 44 INCHES OF COVER FROM TOP-OF-PIPE TO TOP-OF-FRAME, FRAME & COVER TO BE 32-INCH PAMREX WITH 32 INCH OPENING. OFFSET ARV 7.5 INCHES FROM CENTER OF OPENING. MINIMUM ALLOWABLE COVER IS 36 INCHES.
5. ALL PIPE PENETRATING MANHOLE SHALL HAVE RESILIENT PIPE TO MANHOLE SEALS PER ASTM-923.
6. FINAL GRADE TO BE SLOPED AWAY FROM MANHOLE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		BELOW GRADE AIR RELEASE VALVE FOR FORCE MAINS	US-10
REV. BY	DATE		
CLB/KE	11/10		
MAY 10, 2011		DATE OF APPROVAL	PAGE 150



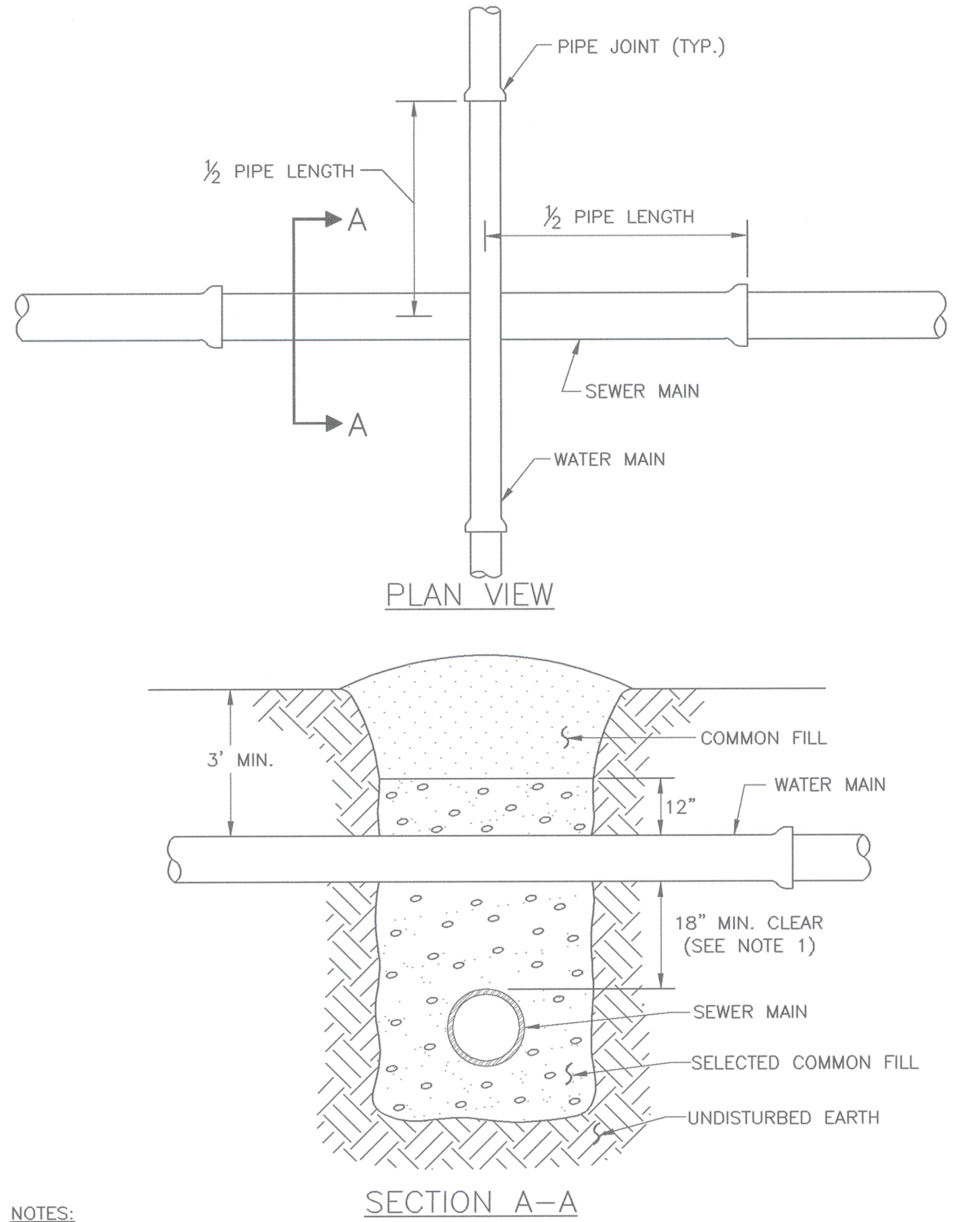
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR UNDISTURBED FLOW	US-2
REV. BY	DATE		
WRT/KE	04/11		
MAY 10, 2011		DATE OF APPROVAL	PAGE 142



NOTES:

1. OMIT "MANATEE COUNTY" IF PRIVATELY MAINTAINED.
2. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE I, AND CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I.

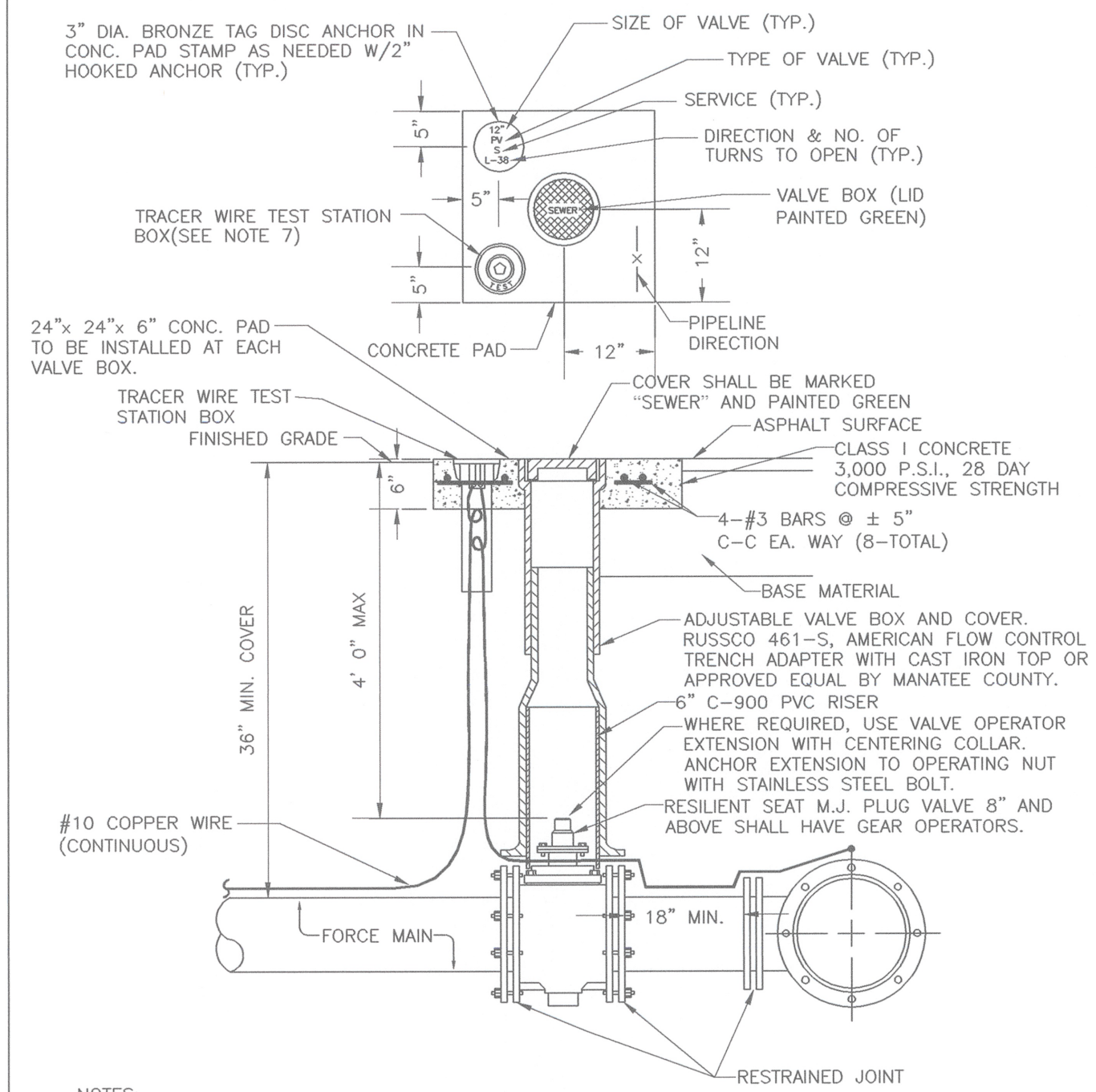
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		MANHOLE COVER & CONCRETE COLLAR FOR UNPAVED ROADWAYS	US-11
REV. BY	DATE		
CLB/BR	11/10		
MAY 10, 2011		DATE OF APPROVAL	PAGE 151



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.

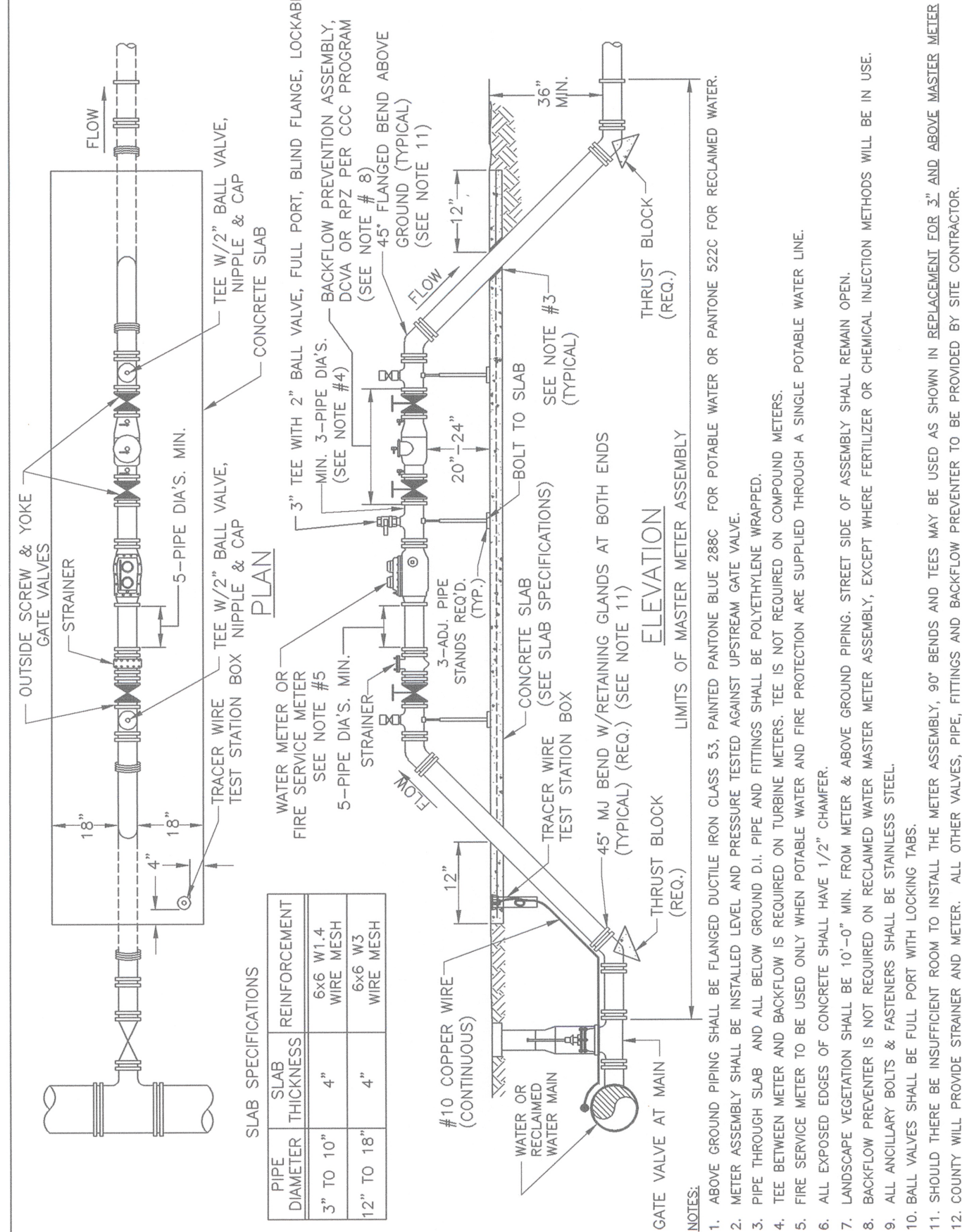
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYPICAL NEW WATER & SEWER LINE CROSSING	UG-2
REV. BY	DATE		
CLB/BR	11/10		
MAY 10, 2011		DATE OF APPROVAL	PAGE 102



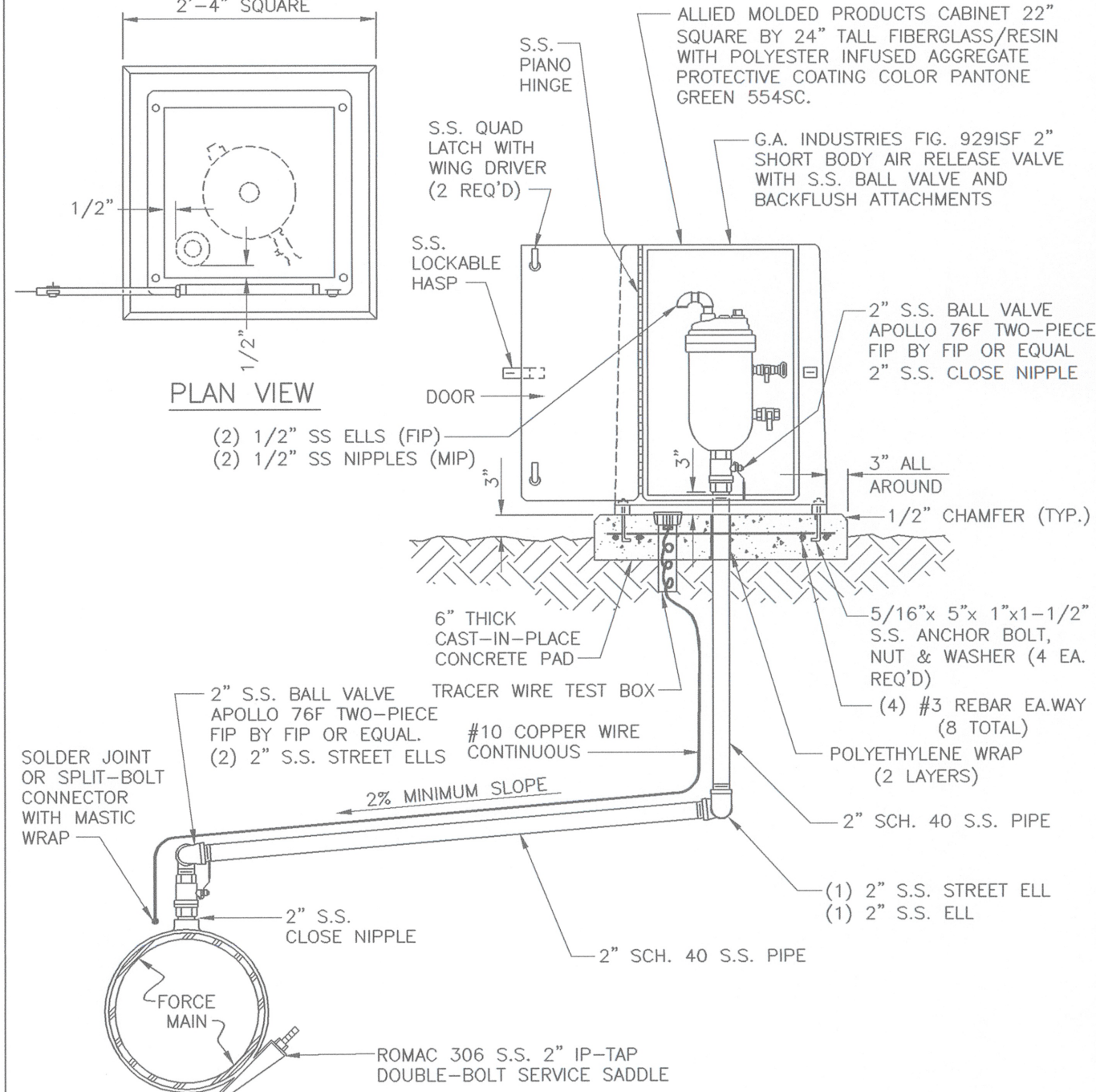
NOTES:

1. "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (FT.) FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. PLUG VALVES SHALL NOT BE USED AS A TAPPING VALVE, WHERE AN EXISTING FORCE MAIN IS TO BE TAPPED, USE A TAPPING GATE VALVE PER THE TAPPING SLEEVE AND VALVE DETAIL.
7. TEST BOX TO BE BINGHAM & TAYLOR P200NFG OR EQUAL FOR NORMAL YARD SERVICE, WHERE VALVE WILL BE IN STREET OR UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		PLUG VALVE, BOX, COVER AND TAG	US-12
REV. BY	DATE		
CLB/DOH	11/10		
MAY 10, 2011		DATE OF APPROVAL	PAGE 152



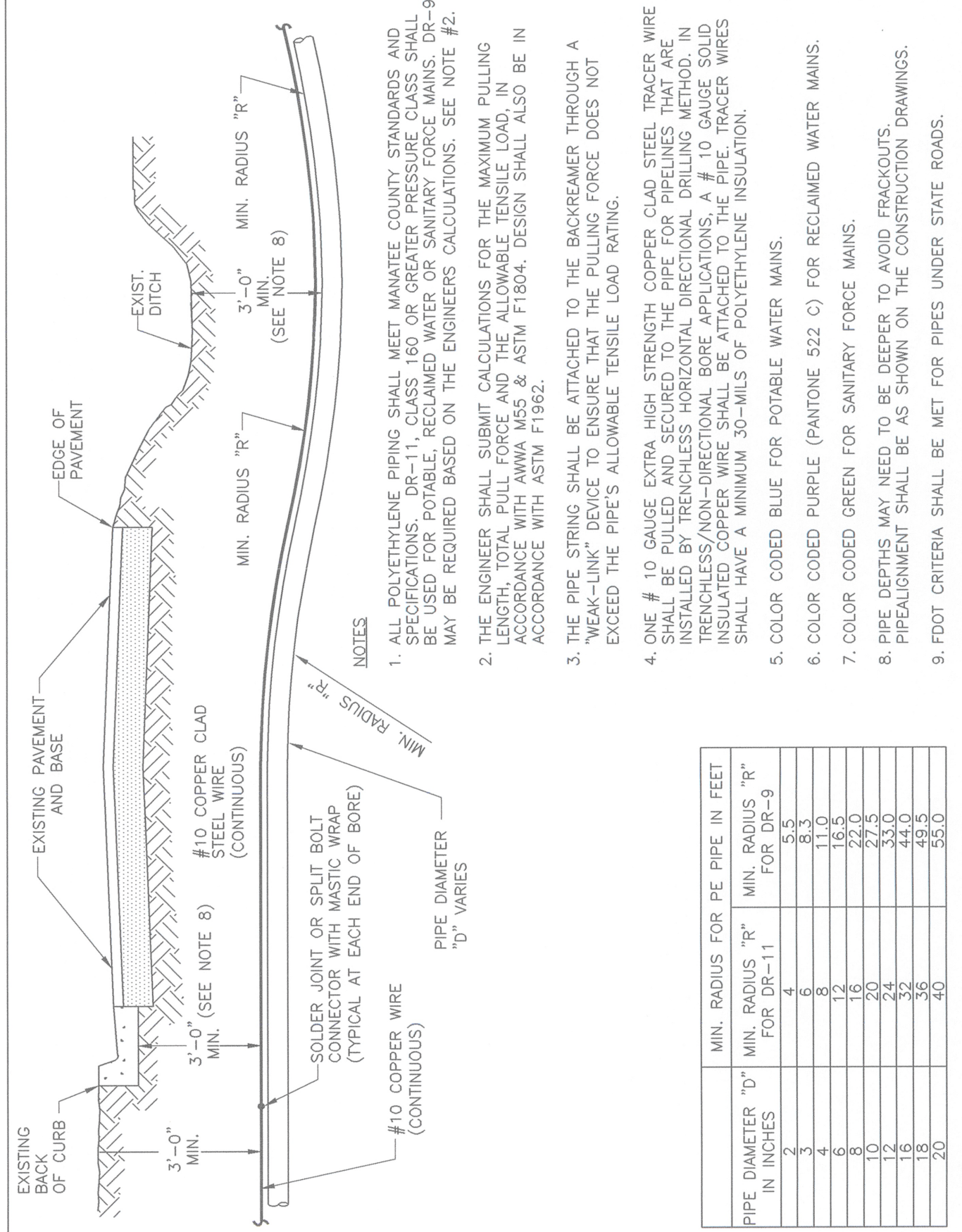
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		3" AND ABOVE MASTER METER	UW-15
REV. BY	DATE		
CLB/KE	11/10		
JANUARY 7, 2014		DATE OF APPROVAL	



NOTES:

1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, OR WHERE AIR WOULD BE ENTRAPPED, ALONG 4" AND LARGER FORCE MAINS.
2. FORCE MAIN VERTICAL ALIGNMENT TO BE DESIGNED SUCH THAT THE MINIMUM NUMBER OF REQUIRED AIR RELEASE VALVES ARE INSTALLED.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
6. AIR RELEASE VALVES TO BE IN BELOW-GRADE INSTALLATIONS UNLESS IMPRACTICAL. INSTALLATIONS MAY BE ABOVE-GROUND ONLY WHERE APPROVED AND SPECIFICALLY INDICATED ON THE PLAN.
7. CONCRETE PAD SHALL BE TYPE I CONCRETE W/ 3,000 P.S.I., 28 DAY COMPRESSIVE STRENGTH.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR FORCE MAINS	US-25
REV. BY	DATE		
CLB/KE	11/10		
MAY 10, 2011		DATE OF APPROVAL	PAGE 165



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		DIRECTIONAL BORE ROADWAY CROSSING	UG-4
REV. BY	DATE		
CLB/BR	11/10		
MAY 10, 2011		DATE OF APPROVAL	PAGE 104

FORCE MAIN 27-A
FROM 51st ST. W. TO THE SWWRF
STANDARD DETAILS

REVISION DESCRIPTION		BY	DATE
NO.			
PROJECT #	406-6082980		
SURVEY #	3825		
SEC./TWN./RGE	16,17,18/35/17		
VERT. SCALE	N.T.S.		
HORZ. SCALE	N.T.S.		
		BY	DATE
SURVEYED	LSF/HYATT	2001/2012	
DESIGNED	LSF/JS	2002/2013	
DRAWN	BLR	03/2013	
CHECKED	JS	03/2013	
JAMES STOCKWELL, P.E.			
FLORIDA PROFESSIONAL ENGINEER LICENSE NO. 167198			
SHEET 11 OF 27			