

MANATEE COUNTY, FLORIDA FORCE MAIN 14 REPLACEMENT NORTH SHORE DRIVE, ANNA MARIA 404-6079980

APRIL 2011

VICINITY MAP

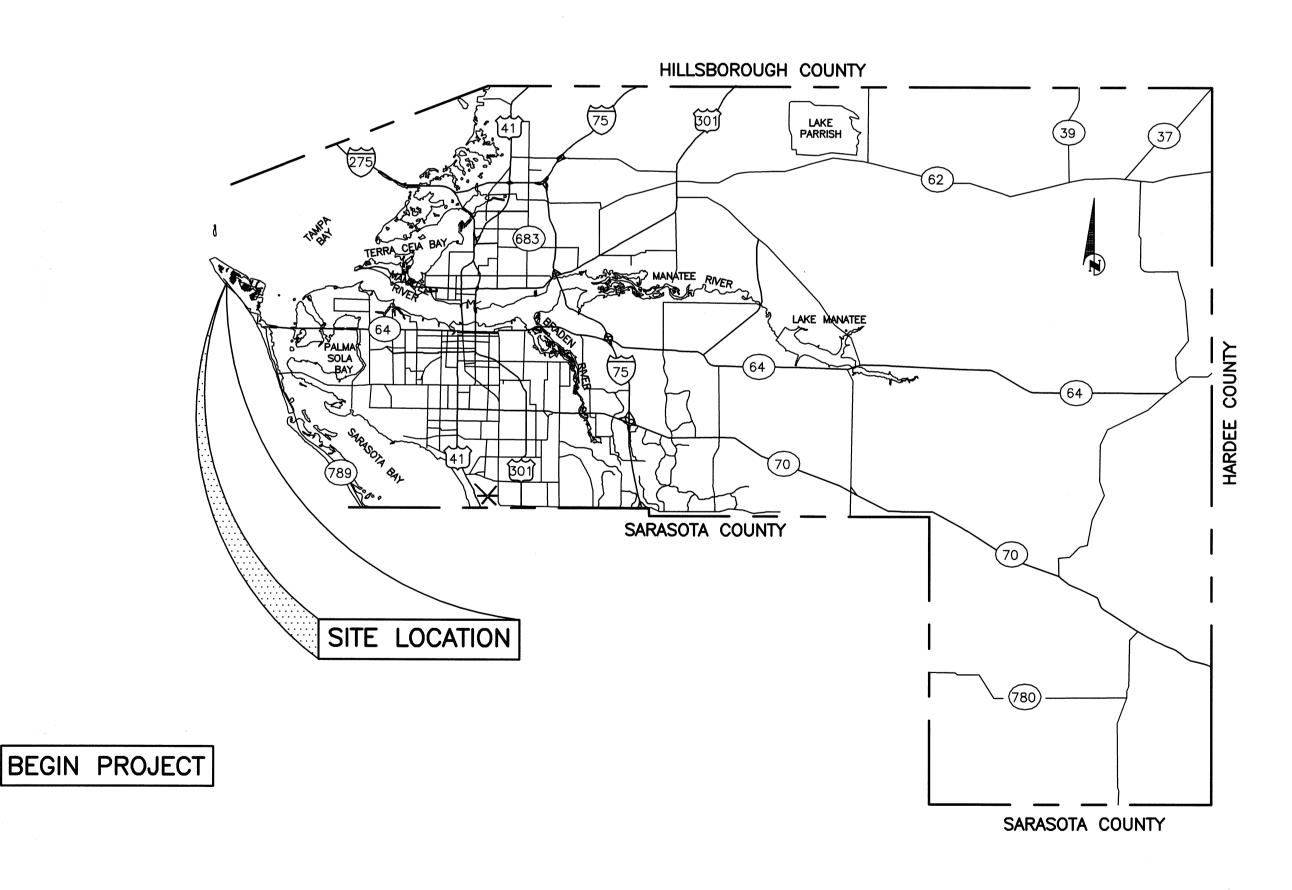
N.T.S.

REPLACE A 6" DUCTILE IRON FORCE MAIN ON NORTH SHORE DRIVE FROM CYPRESS AVENUE TO PALM AVENUE WITH A 8" HDPE FORCE

PROJECT DESCRIPTION

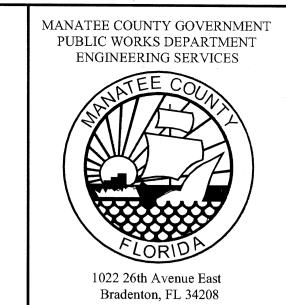
MAIN DIRECTIONALLY DRILLED.

END PROJECT



BID DOCUMENTS

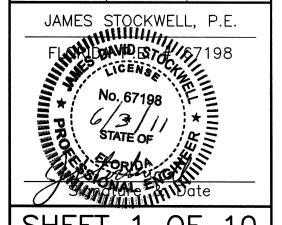
NO.	INDEX OF SHEETS
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3-7	PLAN & PROFILE
8-9	DETAILS
10	EROSION CONTROL



FORCE MAIN 14 REPLACEME ORTH SHORE DR., ANNA MA

DATE							
АВ							
REVISION DESCRIPTION							
NO.							
PRO	JECT	#		404-6079980			
WOF	RK DI	R. #		11.004			
SEC	./TWI	N./RG	E	18/3	4S/1	6E	

WORK DIR.	#	11.004			
SEC./TWN./	RGE	18/34S/16E			
SCALE		1"=20'			
		BY	DATE		
SURVEYED	Z	'NS	1/7/11		
DESIGNED	KE	E/JS	03/15/11		
DRAWN		KE	04/05/11		
CHECKED		JS	04/21/11		



SEC.-18, TWP.-34S, RGE.-16E

- I. ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS: CHARLES FROMAN
- AND CAN BE REACHED AT (941) 708-7450; EXT. 7333

AND BRIDGE CONSTRUCTION" UNLESS OTHERWISE INDICATED ON THE PLANS.

- 2. SITE VISITS ARE MANDATORY FOR ALL BIDDERS. THESE SITE VISITS CAN BE ARRANGED THROUGH THE PROJECT MANAGER 3. ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MANATEE COUNTY UTILITY STANDARDS (MAY 2011) AND TRANSPORTATION STANDARDS (2007) AND/OR FDOT "STANDARD SPECIFICATIONS FOR ROAD
- 4. VERTICAL CONTROL FOR THIS PROJECT WAS ESTABLISHED BY A MINIMUM OF TWO REFERENCE BENCHMARKS DESCRIBED ON THE "THE NATIONAL GEODETIC VERTICAL DATUM OF 1929", (NGVD '29).
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS AND ALL GOVERNING FEDERAL, STATE, AND LOCAL AGENCIES. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS THAT ARE NOT PROVIDED IN THE BID DOCUMENTS, AT NO ADDITIONAL COST TO THE OWNER.
- 5. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATION THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE
- 7. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
- B. AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 1-800-432-4770 OR THE NATIONAL 811 ONE CALL NUMBER WHEN APPLICABLE FOR UTILITY LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITIES FOR THE POSSIBLE RELOCATION OR THE TEMPORARY MOVEMENT OF ANY EXISTING UTILITIES WITHIN THE RIGHTS-OF-WAY.
- . NO WORK, EXCEPT FOR EMERGENCY TYPE, SHALL BE PERFORMED AFTER 7:00 PM AND BEFORE 7:00 AM. FOR ADDITIONAL PROJECT RESTRAINTS, REFER TO SECTION 01310 OF THE SPECIFICATIONS.

- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT, 90-96, LAWS OF FLORIDA EFFECTIVE OCTOBER 1. 1990 AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION EXCAVATION SAFETY STANDARDS, 29 CFR 1926.650, SUBPART P, AS AMENDED. THE CONTRACTOR SHALL INCLUDE IN THE TOTAL BID PRICE ALL COSTS FOR COMPLIANCE WITH THESE REGULATIONS.
- 11. THE CONTRACTOR SHALL USE SHEET PILING, SHEETING, BRACING, ETC., AS REQUIRED IN ALL EXCAVATION AREAS AND CONFORM TO ALL OSHA REQUIREMENTS.
- 12. THE CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.
- 13. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THIS EXCLUSION DOES NOT ALLEVIATE THE CONTRACTOR FOR PROVIDING A CONTINUOUS SAFE WORKSPACE.

ENVIRONMENTAL

- 14. WHEN A BENTONITE SPILL OR FRACK—OUT OCCURS OR THERE IS A LOSS OF RETURN INDICATING EXCESSIVE SEEPAGE OR LOSS OF DRILLING FLUID, DRILLING MUST BE STOPPED UNTIL THE LOCATION OF THE SPILL IS IDENTIFIED. UNDER NO CIRCUMSTANCES WILL DRILLING CONTINUE WHEN A SPILL IS APPARENT.
- I.5. ONCE LOCATED. THE BENTONITE SPILL MUST BE ISOLATED AND SEEPAGE INTO ANY NEARBY WATER BODIES WILL BE BLOCKED DEPENDING ON THE DEGREE OF THE SPILL. THE ISOLATED BENTONITE MUST BE REMOVED MANUALLY OR MECHANICALLY AND DISPOSED OF BY APPROPRIATE MEANS OR REUSED.
- 16. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY STORM WATER, EROSION, AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE FDEP "FLORIDA STORM WATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL". IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT TO SURFACE DRAINS AND TO DITCHES DURING CONSTRUCTION.
- STOCKPILES SHALL BE PROTECTED AT ALL TIMES BY ON-SITE DRAINAGE CONTROLS WHICH PREVENT EROSION OF THE STOCKPILED MATERIAL. CONTROL OF DUST FROM SUCH STOCKPILES IS REQUIRED, DEPENDING UPON THEIR LOCATION AND THE EXPECTED LENGTH OF TIME THE STOCKPILES WILL BE PRESENT. IN NO CASE SHALL ANY STOCKPILED MATERIAL REMAIN AFTER THIRTY (30) CALENDAR DAYS.
- 18. STORM WATER INLETS IN THE VICINITY OF THE PROJECT SHALL BE PROTECTED BY SEDIMENT TRAPS SUCH AS SECURED HAY BALES, SOD. STONE, ETC., WHICH SHALL BE MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS, AND WHICH MUST BE APPROVED BY THE ENGINEER BEFORE INSTALLATION. THIS WILL BE MAINTAINED TO PREVENT DEGRADATION OF THE WATERS OF THE COUNTY AND STATE.
- 19. SEDIMENT BASINS AND TRAPS, PERIMETER BERMS, SEDIMENT BARRIERS, VEGETATIVE BUFFERS, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT AND/OR PREVENT THE TRANSPORT OF SEDIMENT ONTO ADJACENT PROPERTIES, OR INTO EXISTING BODIES OF WATER, MUST BE INSTALLED, CONSTRUCTED, OR IN THE CASE OF VEGETATIVE BUFFERS, PROTECTED FROM DISTURBANCE. AS A FIRST STEP IN THE LAND ALTERATION PROCESS. SUCH SYSTEMS SHALL BE FULLY OPERATIVE BEFORE ANY OTHER DISTURBANCE OF THE SITE BEGINS. EARTHEN STRUCTURES INCLUDING BUT NOT LIMITED TO BERMS, EARTH FILTERS, DAMS OR DIKES SHALL BE STABILIZED AND PROTECTED FROM DRAINAGE DAMAGE OR EROSION WITHIN ONE (1) WEEK OF INSTALLATION.
- 20. ALL SWALES, DITCHES, AND CHANNELS LEADING FROM THE SITE SHALL BE PROTECTED FROM SILTATION AND EROSION DURING CONSTRUCTION AND BE SODDED WITHIN THREE (3) DAYS OF EXCAVATION.
- 1. SOIL DISPLACED BY CONSTRUCTION WILL BE REMOVED. EROSION CONTROL SHALL BE IMPLEMENTED IN AREAS WHICH ARE CONSIDERED ENVIRONMENTALLY SENSITIVE. EROSION CONTROL SYSTEMS SHALL BE REQUIRED FOR ALL WORK WITHIN JURISDICTIONAL AREAS. THESE SYSTEMS MAY INCLUDE STAKED HAY BALES, SILT SCREENS, FILTER FABRIC, AND TURBIDITY
- 22. ALL EROSION AND POLLUTION CONTROL DEVICES SHALL BE CHECKED REGULARLY, ESPECIALLY AFTER EACH RAINFALL AND SHALL BE CLEANED OUT AND/OR REPAIRED AS REQUIRED.
- 23. THE CONTRACTOR SHALL NOT ENTER UPON OR IN ANY WAY ALTER WETLAND AREAS THAT MAY BE ON OR NEAR THE CONSTRUCTION SITE. ALL WORK IN THE VICINITY OF OPEN WATER AND/OR WETLANDS IS TO BE PERFORMED IN COMPLIANCE -WITH THE ENVIRONMENTAL REGULATIONS—AND/OR—PERMITS FOR THE SITE. -THE CONTRAGTOR WILL BE RESPONSIBLE FOR ANY FINES RESULTING FROM HIS VIOLATION OF ANY REGULATIONS OR PERMIT CONDITIONS.
- 24. FOR MORE INFORMATION, SEE THE EROSION CONTROL DETAIL SHEET INCLUDED IN THE PLANS.

RIGHT-OF-WAY

- 25. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE MANATEE COUNTY/FDOT RIGHT—OF—WAY AND/OR EASEMENTS SHOWN ON THE DRAWINGS.
- 26. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNER MONUMENTS, PINS, AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- 27. THE CONTRACTOR, PRIOR TO CONSTRUCTION AND RESTRICTING ANY TRAFFIC, MUST OBTAIN A RIGHTS—OF—WAY USE PERMIT AND A TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM OTHER GOVERNMENTAL AGENCIES HAVING RELEVANT JURISDICTION. ALL MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE CURRENT FLORIDA DEPARTMENT OF TRANSPORTATION "MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES". A TRAFFIC CONTROL PLAN SHALL BE SUPPLIED BY THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING.
- 28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED STORM WATER STRUCTURES, PIPING, ENTRANCE PIPE AND HEADWALLS WHETHER SHOWN ON THE PLANS OR NOT. THE HEADWALLS SHALL BE REPLACED IN ACCORDANCE WITH F.D.O.T. STANDARDS.
- 29. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD THE RIGHT-OF-WAY LINES, BASE LINES, BENCH MARKS (ELEV.), CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.
- 30. THE CONTRACTOR SHALL COORDINATE THE CUTTING OF DRIVEWAYS WITH THE PROPERTY OWNER PRIOR TO CUT. ALL DRIVEWAYS WILL BE IN PASSABLE CONDITION AT THE END OF THE WORK DAY AND FULLY RESTORED PER SECTION 02575.

31. A RIGHT OF ENTRY AGREEMENT SHALL BE OBTAINED BY THE PROJECT MANAGER FROM THE PROPERTY OWNER BEFORE ANY DRIVEWAY CONSTRUCTION WORK IS DONE OUTSIDE OF THE RIGHT-OF-WAY OR FASFMENT.

<u>UTILITIES</u>

- 32. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE NOT BEEN LOCATED OR IDENTIFIED, MAY NOT BE IN THE EXACT LOCATION SHOWN OR RELOCATED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) THAT MAY EFFECT HIS WORK. ALL EXISTING UTILITIES TO BE EXTENDED, CROSSED OR CONNECTION POINTS SHALL BE EXPOSED PRIOR TO CONSTRUCTION TO VERIFY LOCATION AND ELEVATION. ANY DISCREPANCIES OR CONFLICTS FOUND SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR RESOLUTION.
- 33. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, WATER AND SEWER LINES, STORM DRAINS, UTILITIES, DRIVEWAYS, SIDEWALKS, SIGNS, MAIL BOXES, FENCES, TREES, LANDSCAPING, AND ANY OTHER IMPROVEMENT OR FACILITY IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGED ITEM DUE TO HIS CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER THAN PRE-CONSTRUCTION CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
- 34. THE CONTRACTOR SHALL USE APPROPRIATE TECHNIQUES, AS APPROVED, RECOMMENDED OR OFFERED BY FLORIDA POWER AND LIGHT TO PREVENT UNDERMINING OF POWER POLES DURING CONSTRUCTION. IF HOLDING OF POWER POLES IS RECOMMENDED OR REQUIRED BY THE UTILITY, THE CONTRACTOR SHALL COORDINATE THIS ACTIVITY WITH THE UTILITY AND BEAR ALL RELATED COSTS.
- 35. ANY TEMPORARY SHUTDOWNS FOR MODIFICATIONS OF EXISTING UTILITY SYSTEMS THAT MUST REMAIN IN SERVICE DURING CONSTRUCTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE COORDINATED WITH AND APPROVED BY THE MANATEE COUNTY UTILITY OPERATIONS DEPARTMENT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. IT IS NOTED THAT TEMPORARY SHUTDOWNS MAY BE RESTRICTED TO CERTAIN HOURS AT ANY TIME OF THE DAY OR NIGHT AND WILL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.
- 36. FOR WORK BEING DONE ON EXISTING SANITARY SEWER LINES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE FLOW OF ALL SEWAGE DURING CONSTRUCTION, WHICH MAY REQUIRE BY-PASS PUMPING AND/OR PUMPER TRUCKS. THE CONTRACTOR SHALL SUBMIT A DETAILED BY-PASS PUMPING PLAN PER SECTION 02720.

RESTORATION

- 37. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS SHOWN OTHERWISE.
- 38. ALL DISTURBED GRASSED AREAS SHALL BE SODDED OR SEEDED UNLESS OTHERWISE INDICATED. THE TYPE OF SOD USED TO REPLACE OWNER MAINTAINED AREAS IN RIGHT-OF-WAY SHALL BE COORDINATED WITH THE PROPERTY OWNER.
- 39. ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE OPERATION OF THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, PRIOR TO FINAL ACCEPTANCE, AT NO ADDITIONAL COST TO THE OWNER.
- 40. ASPHALT DRIVES THAT ARE CUT SHALL BE RESTORED PER SECTION 02513.
- 41. CONCRETE DRIVEWAYS OR SIDEWALKS THAT ARE CUT SHALL BE RESTORED TO MATCH EXISTING ACCORDING TO THE CURRENT EDITIONS OF THE F.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE DESIGN, SECTION 522, AND SECTION 310 OF THE F.D.O.T. DESIGN STANDARDS.
- 42. WHENEVER A PERMANENT ROADWAY SURFACE IS NOT PLACED IMMEDIATELY AFTER BACKFILLING AND COMPACTION OF THE NEWLY INSTALLED PIPE LINE IN AREAS WHERE TRAFFIC MUST PASS, THE CONTRACTOR SHALL INSTALL A TEMPORARY SURFACE CONSISTING OF NINE INCHES OF COMPACTED LIME ROCK BASE AND A COAT OF ASPHALT EMULSION. PERMANENT ROADWAY REPAIR SHALL BE PERFORMED A MAXIMUM OF TWENTY-ONE CALENDAR DAYS AFTER THE INITIAL OPEN CUTTING.
- 43. RESTORATION OF CURBS, DRIVEWAYS, SIDEWALKS, AND PLACEMENT OF SOD SHALL BE COMPLETED WITHIN FORTY-FIVE CALENDAR DAYS OF INITIAL DISTURBANCE, OR TWENTY-ONE CALENDAR DAYS OF SUBSTANTIAL COMPLETION. WHICHEVER OCCURS FIRST.

CONSTRUCTION

- 44. THE EXHAUST SYSTEM OF ALL GASOLINE AND DIESEL ENGINES SHALL BE EQUIPPED WITH MUFFLERS THAT MEET THE EQUIPMENT MANUFACTURER'S REQUIREMENTS FOR NOISE SUPPRESSION. THE CONTRACTOR SHALL INSTALL NOISE ABATEMENT BAFFLES POSITIONED TO BREAK LINE-OF-SITE FROM THE NOISE SOURCE TO AFFECTED RESIDENCES, AS APPROVED BY THE ENGINEER.
- 45. NO MATERIAL SHALL BE STOCKPILED IN ROADWAYS. ALL DIRT AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE DAILY. ROADS SHALL BE SWEPT DAILY AS PART OF DAILY CLEAN UP.
- 46. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
- 47. INGRESS AND EGRESS TO ALL THE PROPERTIES IN THE CONSTRUCTION AREA SHALL BE MAINTAINED AT ALL TIMES.
- 48. PRIOR APPROVAL WILL BE REQUIRED FOR REMOVAL OF ANY TREE WITHIN THE CONSTRUCTION AREA.
- 49. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP ALL EXCAVATIONS DRY. DEWATERING IS REQUIRED TO 18" BELOW TRENCH BOTTOM.
- 50. ALL PIPING AND FITTINGS USED ON THIS PROJECT SHALL BE AS NOTED ON THE PLANS AND IN THE CONTRACT DOCUMENT AND SHALL BE INSTALLED TO THE LINES AND GRADES SHOWN ON THE PLANS AND PROFILES.
- 51. ALL PIPE SHALL BE COLOR CODED TO CONFORM TO MANATEE COUNTY STANDARDS
- 52. ALL PIPE AND FITTINGS SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER AND ALL PIPE JOINTS SHALL BE RESTRAINED WHERE REQUIRED.
- 53. ALL FITTINGS FOR PRESSURE CLASS-RATED PIPE SHALL BE RESTRAINED DUCTILE IRON. RESTRAINED LENGTHS OF PIPE SHALL ADHERE TO THE REQUIREMENTS AS SHOWN ON THE DETAIL SHEETS
- 54. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE RECOMMENDED DEFLECTION.
- 55. ALL PIPE LENGTHS ARE PLUS OR MINUS AND MAY BE ADJUSTED IN THE FIELD AS REQUIRED. PIPE MEASUREMENTS ARE TO CENTER OF STRUCTURES OR FITTINGS.
- 56. ALL ROCKS OR STONES LARGER THAN SIX INCH DIAMETER SHALL BE REMOVED FROM THE BACKFILL MATERIAL. BACKFILL MATERIAL PLACED WITHIN ONE FOOT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN TWO INCH DIAMETER.
- 57. ONLY MANATEE COUNTY UTILITY OPERATIONS STAFF ARE AUTHORIZED TO OPERATE VALVES ON COUNTY OWNED AND MAINTAINED UTILITY SYSTEMS.
- 58. ALL PENETRATION OF EXISTING STRUCTURES SHALL BE BY THE MECHANICAL ROTARY CORE BORING METHOD.
- 59. ALL CONCRETE PENETRATED OR DISTURBED SHALL BE COATED WITH TWO COATS OF EPOXY.
- 60. THE CONTRACTOR, PRIOR TO ANY TEMPORARY WATER SHUT-OFFS DURING WATER MAIN TIE-IN, ETC., SHALL NOTIFY THE AFFECTED RESIDENTS BY POSTING INFORMATIONAL SIGNS IN THE NEIGHBORHOOD AT LEAST TWO DAYS (48 HRS) PRIOR TO THE WATER SHUT-OFF. REFERENCE SECTION 01580, PARAGRAPH 1.03 OF THE SPECIFICATIONS. WHEN FEASIBLE, "DOOR HANGERS" SHALL BE DELIVERED TO AFFECTED RESIDENCES AT LEAST TWO DAYS (48 HRS) PRIOR TO WATER SHUT-OFF. FOR LARGE PROJECTS WITH HUNDREDS OF HOMES AFFECTED, THE CONTRACTOR SHALL ALSO MAKE EXTENSIVE USE OF THE MEDIA AND SHALL HAVE PRIOR CONTACT WITH HOMEOWNER'S ASSOCIATIONS. WRITTEN NOTIFICATIONS SHALL ALSO BE FAXED TO THE TAMPA TRIBUNE, BRADENTON HERALD, SARASOTA HERALD TRIBUNE, WBRD RADIO, EMERGENCY COMMUNITY CENTERS, INSPECTIONS, WATER TREATMENT PLANT, WATER MANAGER, HELPLINE, CUSTOMER SERVICE, AND THE MANATEE COUNTY UTILITY OPERATIONS DEPARTMENT.
- 61. ALL NEW PIPE LINES SHALL BE PIG CLEANED (4" AND LARGER), FLUSHED, PRESSURE TESTED, DISINFECTED AND CERTIFIED PRIOR TO TIE-INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PIG CLEANING AND PRESSURE TESTING.
- 62. ALL TEST POINT PIPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. A CORPORATION STOP PLUG SHALL BE INSTALLED AND THE CORPORATION STOP SHALL REMAIN IN PLACE.

- 63. ALL EXISTING MAINS THAT ARE BEING REPLACED SHALL BE ABANDONED IN PLACE UPON ACCEPTANCE AND ACTIVATION OF THE NEW MAINS. ABANDONED MAINS SHALL BE CUT, FILLED WITH GROUT, AND CAPPED. REFER TO SECTION 02064 OF THE SPECIFICATIONS FOR GROUTING OF ABANDONED PIPE.
- 64. WATER MAINS CROSSING OVER OR UNDER SANITARY SEWERS, FORCE MAINS, AND RECLAIMED WATER LINES SHALL BE LAID PER CURRENT EDITION OF "10 STATE STANDARDS" AND MANATEE COUNTY UTILITY STANDARDS UNLESS NOTED OTHERWISE ON THE PLANS.
- 65. FIELD CONDITIONS MAY NECESSITATE MINOR ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER.
- 66. CONTRACTOR SHALL PROVIDE RECORD DRAWINGS IN ACCORDANCE WITH SECTION 14 IN THE CURRENT MANATEE COUNTY UTILITY STANDARDS AT NO COST TO THE OWNER. RECORD DRAWINGS SHALL BE SIGNED & SEALED BY A SURVEYOR CURRENTLY LICENSED BY THE STATE OF FLORIDA. ALL RECORD DRAWING INFORMATION REQUIREMENTS IN SECTION 14 SHALL BE STRICTLY ENFORCED. A COPY OF SECTION 14 WILL BE PROVIDED UPON REQUEST.

ENGINEERING SERVICES 1022 26th Avenue East Bradenton, FL 34208

MANATEE COUNTY GOVERNMENT

PUBLIC WORKS DEPARTMENT

EMERGENCY CONTACTS

FLORIDA POWER & LIGHT

1253 12TH AVENUE EAST

PALMETTO, FL 34221

FAX: (941) 723-4444

FAX: (941) 373-7660

(941) 723-4430

GREG COKER

MANATEE COUNTY PUBLIC WORKS DEPT. WAYNE TROXLER, P.E. 1022 26TH AVENUE EAST BRADENTON, FL. 34208 (941) 708-7450 EXT. 7650 FAX: (941) 708-7415

TECO/PEOPLES GAS CO. DAN SHANAHAN 8261 VICO COURT SARASOTA, FL. 34240 (941) 342-4030 FAX: (941) 342-4011 EMERGENCY: 1-877-832-6911 FAX: (941) 750-9364

VERIZON FLORIDA INC. JOHN PLOTT 1701 RINGLING BLVD. SARASOTA, FL. 34236 (941) 906-6707 FAX: (941) 906-6706 John.Plott@verizon.com

FLORIDA GAS TRANSMISSION CHRIS LEE 7804 ANDERSON RD. TAMPA FL 33634 PHONE: (813) 466-3327 christopher.lee@sug.com EMERGENCY: 1-800-4-OUTAGE

FLORIDA 1-(800) 432-4770

DEPARTMENT OF Greg_Coker@fpl.com ENVIRONMENTAL PROTECTION MANATEE COUNTY HEALTH DEPT. STEPHANIE BARIOS 13051 N. TELECOM PKWY HARRY MESSICK 410 6th AVENUE EAST BRADENTON, FL. 34208 (941) 748-0747 EXT. 1355 408 FAX: (813) 632-7662

BRIGHT HOUSE NETWORKS TOM WRIGHT SOUTHWEST FLORIDA WATER 5413 E. STATE ROAD 64 MANAGEMENT DISTRICT SARASOTA SERVICE OFFICE BRADENTON, FL. 34208-5535 DARYL R. FLATT, P.E. (941) 748-3816 EXT. 21348 6750 FRUITVILLE ROAD Tom.Wright@mybrighthouse.com SARASOTA, FL. 34240 SUNSHINE STATE ONE CALL OF (941) 377-3722

PEACE RIVER ELECTRIC COOPERATIVE, INC. P.O. BOX 1310 WACHULA, FL 33873 KENDELL COKER (863) 767 - 4660kendell.coker@preco.coop

MANATEE COUNTY PUBLIC WORKS DEPT. AUTOMATED TRAFFIC TEMPLE TERRACE, FL 33637 MANAGEMENT SYSTEM PHONE: (813) 632-7600, EXT. BOB AGRUSA 2101 47TH TERRACE EAST BRADENTON, FL 34203 (941) 749-3500 X 7812 bob.agrusa@mymanatee.org

ABBREVIATIONS

RIGHT OF WAY

CONCRETE

DRIVEWAY

SIDEWALK

EDGE OF PAVEMENT

BACK OF CURB

PROPOSED

---- SERVICE LINE

VALVE

REDUCER

PLUG

SANITARY SEWER MANHOLE

BLOW OFF ASSEMBLY

HORIZONTAL BEND

MASTER METER ASSEMBLY

SERVICE LINE & METER

DOUBLE SERVICE

VERTICAL BEND

R/W

CONC

BOC

 $\triangleright \blacktriangleleft$

₩.

H \Box

PROJECT # 404-6079980 SURVEY # 11.004 SEC./TWN./RGE| 18/34S/16E

SCALE 1"=20' DATE BY SURVEYED 1/7/1 ZNS DESIGNED 03/15/1 KE/JS 04/05/ DRAWN ΚE

CHECKED

JAMES STOCKWELL, P.E. LINES LICENSE CT STATE OF

JS

04/21/

(TYPICAL) STA. 40+60, 17' LT. LEGEND

BENCH MARK TREE CONCRETE MONUMENT IRON PIPE OAK TREE IRON ROD PALM TREE PINE TREE NAIL & DISK EDGE OF VEGETATION ELEVATION 1234 PARCEL ID NO. ------ WOOD FENCE (1878) PARCEL ID NO. ----x----- BARBED WIRE FENCE 770 LOT NO. PW POTABLE WATER GUY WIRE POWER POLE LIGHT POLE --- ss --- SANITARY SEWER MAIL BOX — — — s— — STORM DRAIN SIGN ---- GAS LINE REFLECTOR ----- OVERHEAD TV SPRINKLER ----- UGTV ----- UNDERGROUND TV GAS MARKER OVERHEAD ELECTRIC BACKFLOW PREVENTER ------ BE ------ UNDERGROUND ELECTRIC ----- OH VER ----- OVERHEAD VERIZON FIRE HYDRANT ------ UG VER ------ UNDERGROUND VERIZON WATER VALVE ----- VER ----- VERIZON ARV (A) AIR RELEASE VALVE ------ UNDERGROUND UTILITY WATER METER ------OVERHEAD UTILITY SANITARY SEWER CLEAN OUT — — — — EDGE OF CONCRETE SOIL BORING LOCATION ---- EDGE OF ROAD TELEPHONE SERVICE BOX —— TOE OF SLOPE

TOP OF BANK

- RIGHT OF WAY

PROPERTY LINE

FLOW DIRECTION

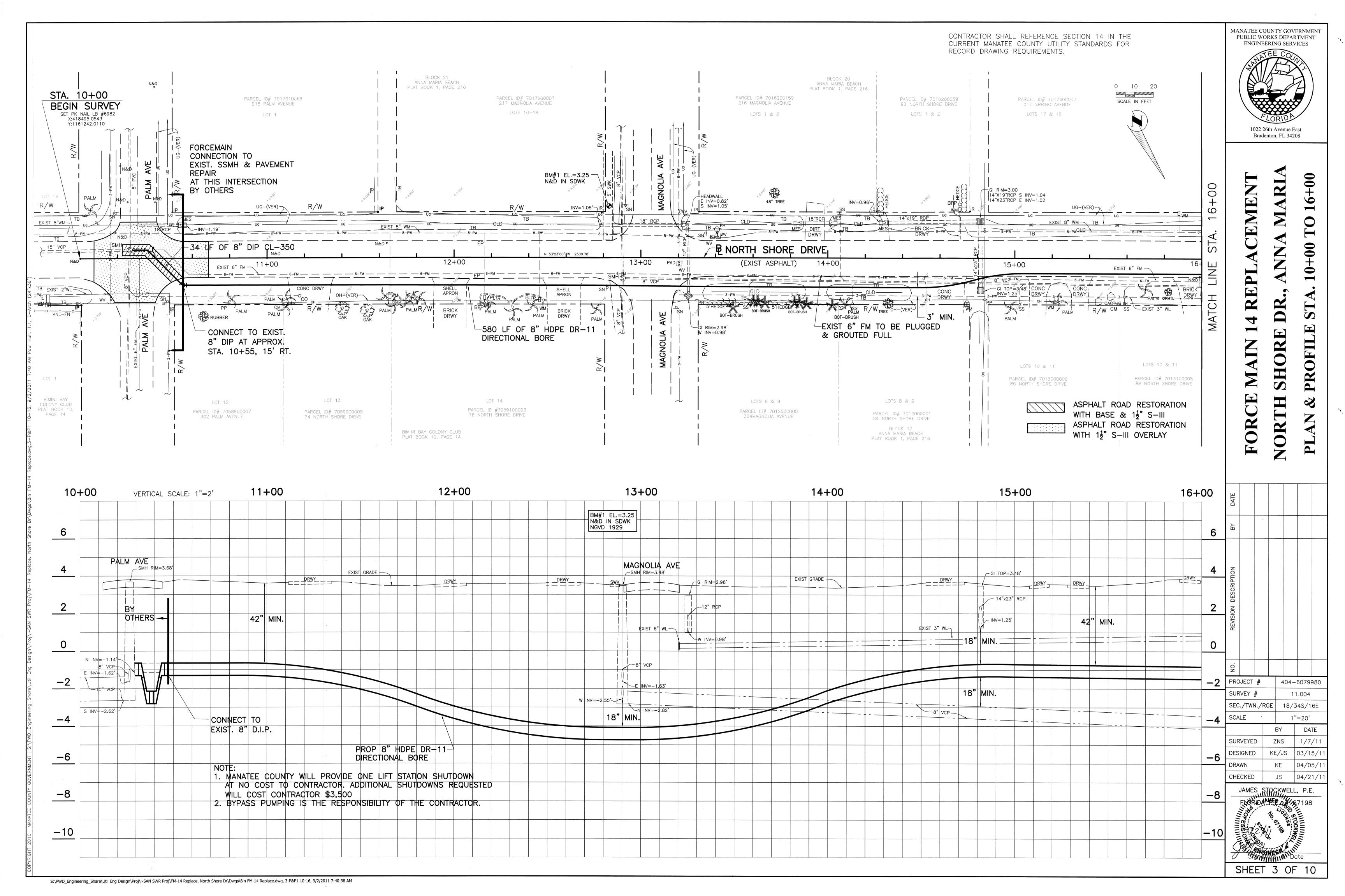
MITERED END SECTION

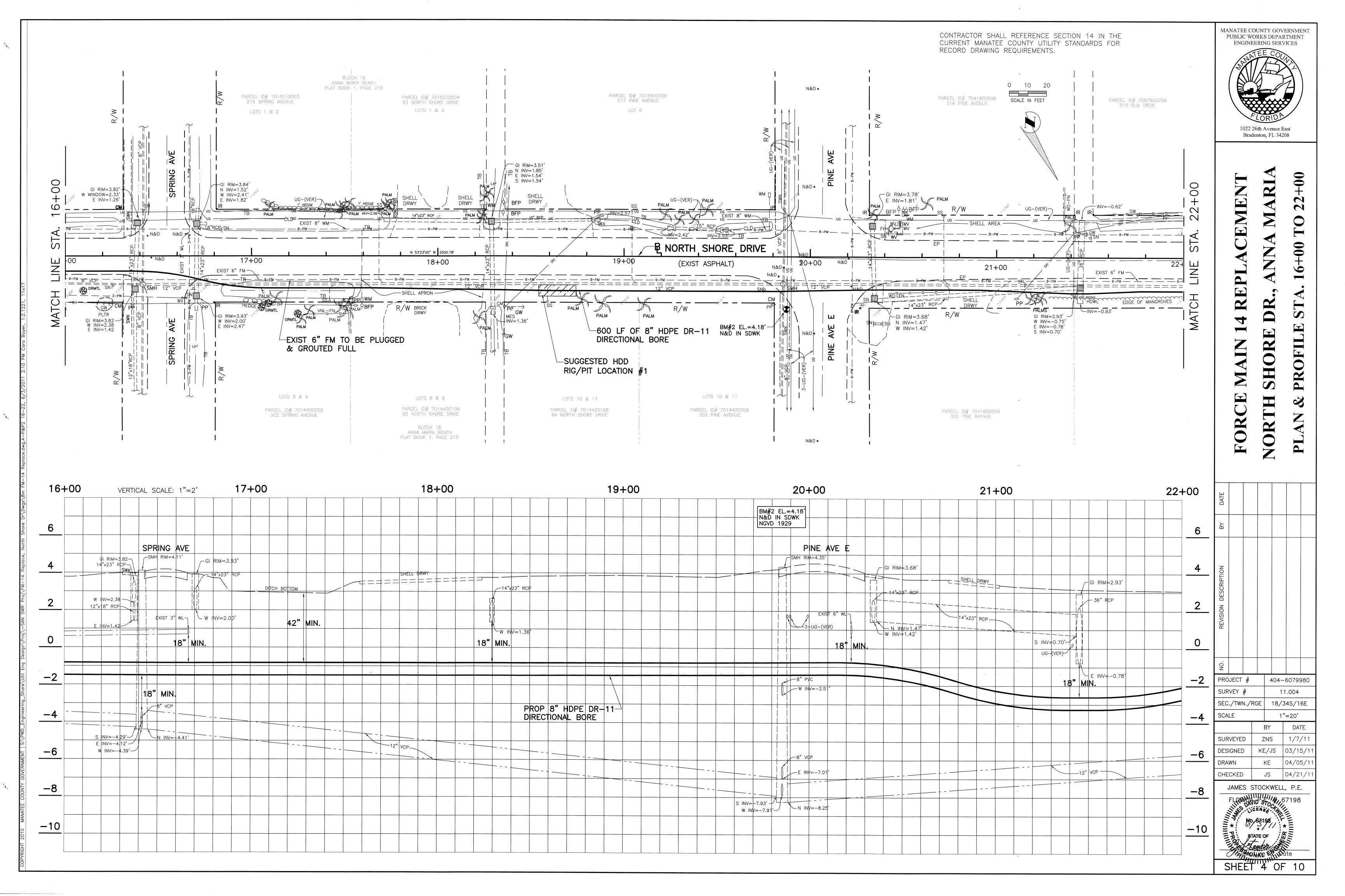
GI 📰 GRATE INLET

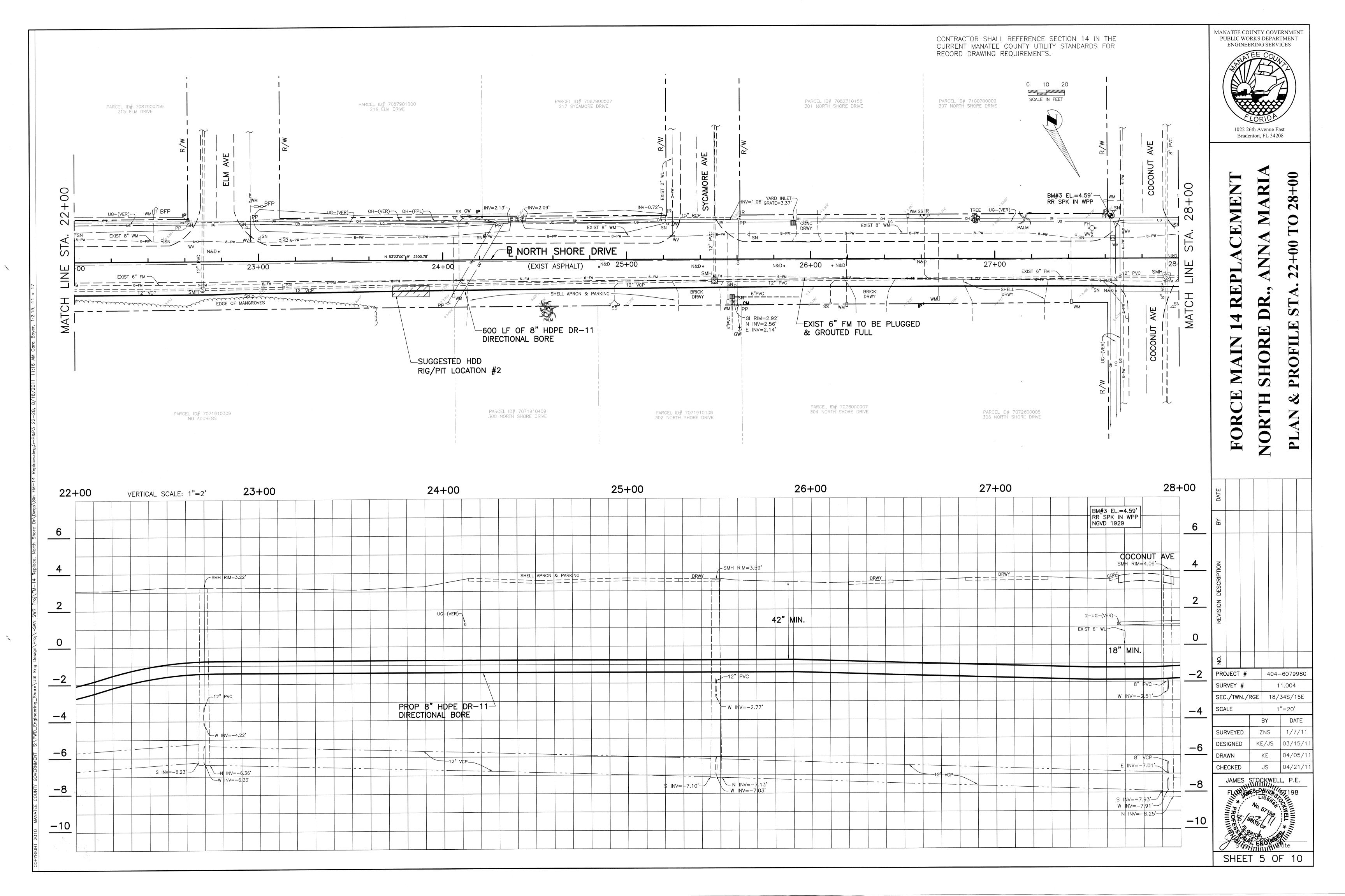
EXISTING

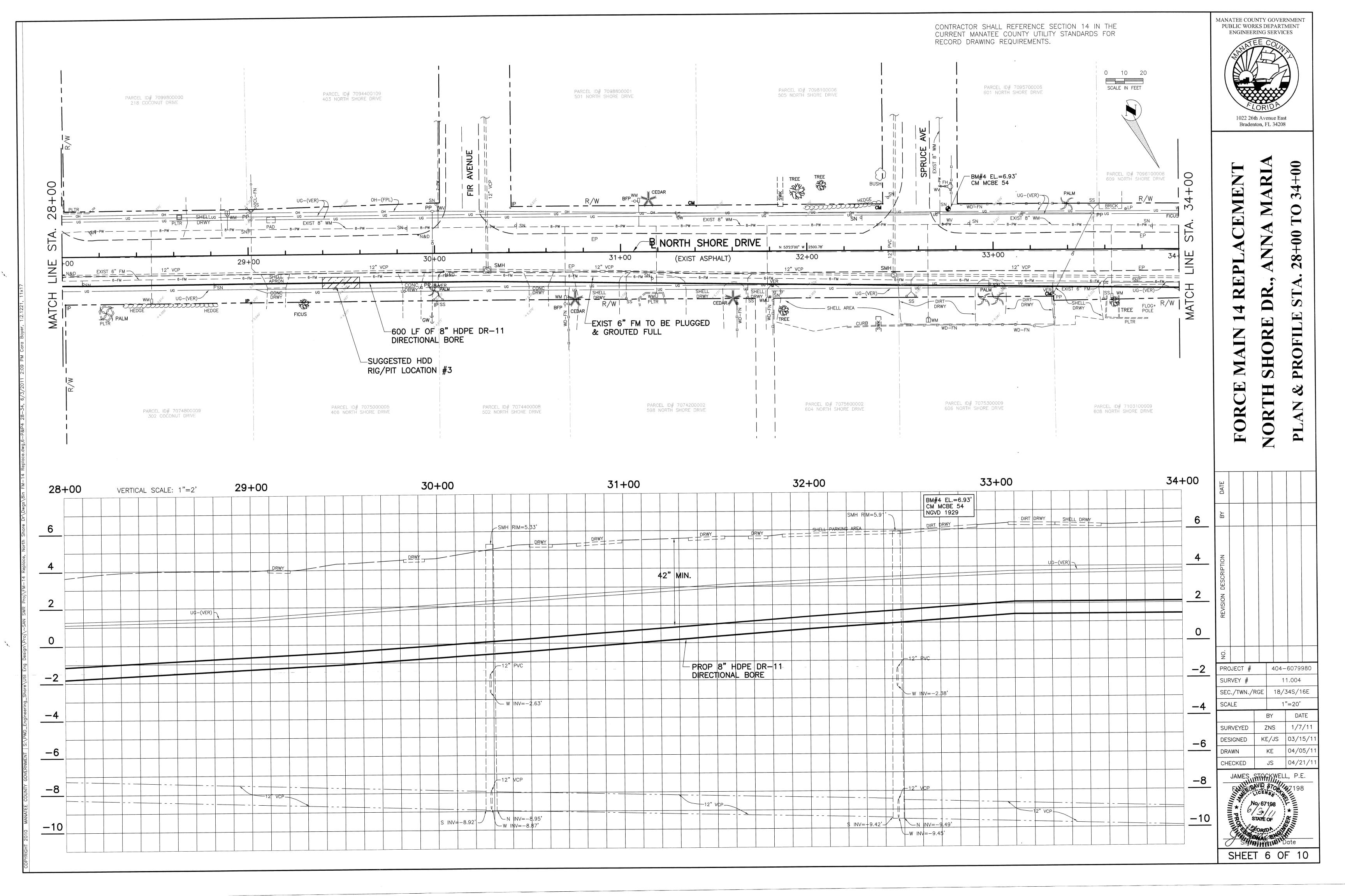
PROPOSED PROJECT NOTES JOB SPECIFIC (EXAMPLE): WATER LINE CALL-OUT

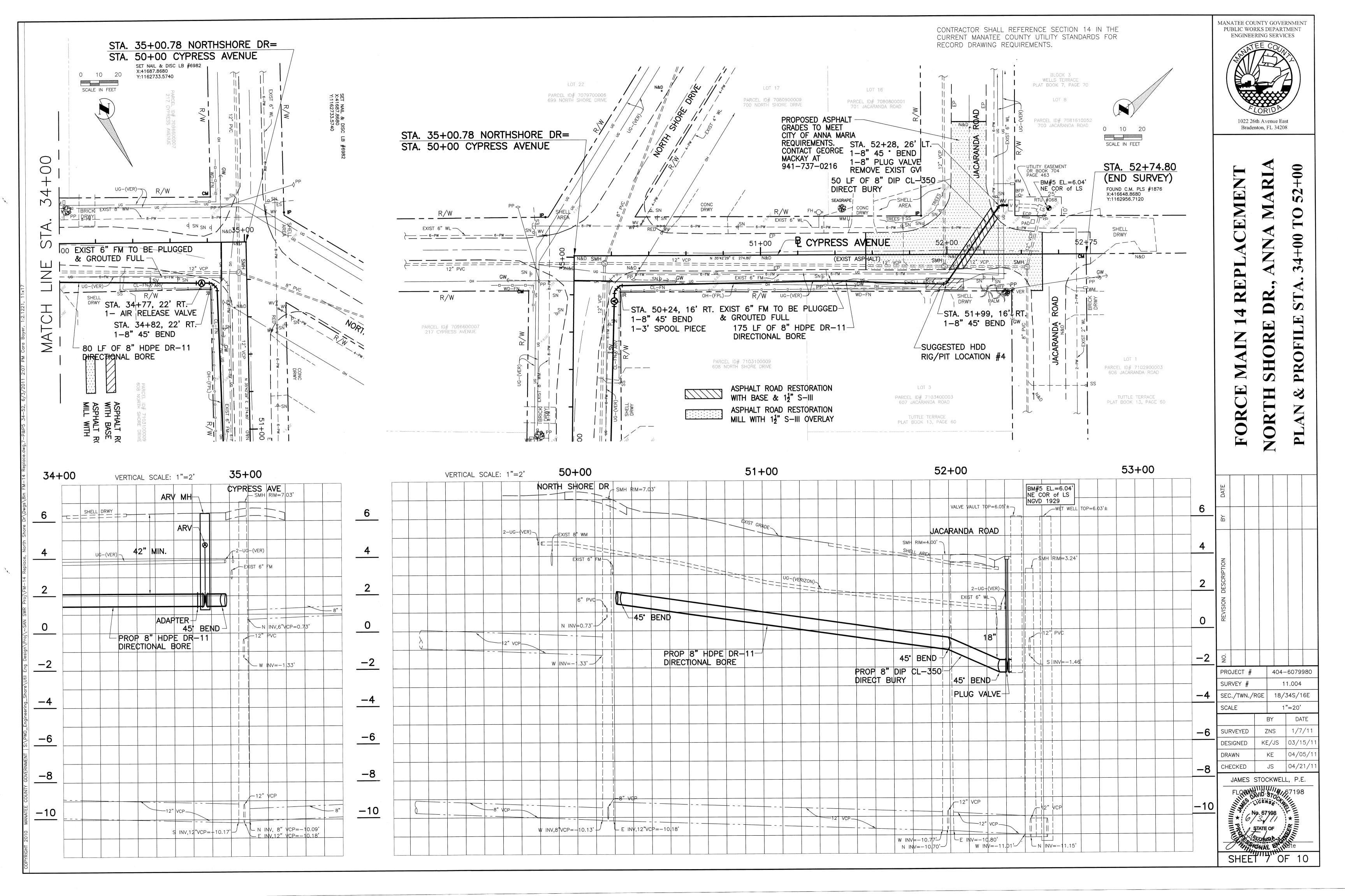
1-6" GATE VALVE 1-6" FITTING

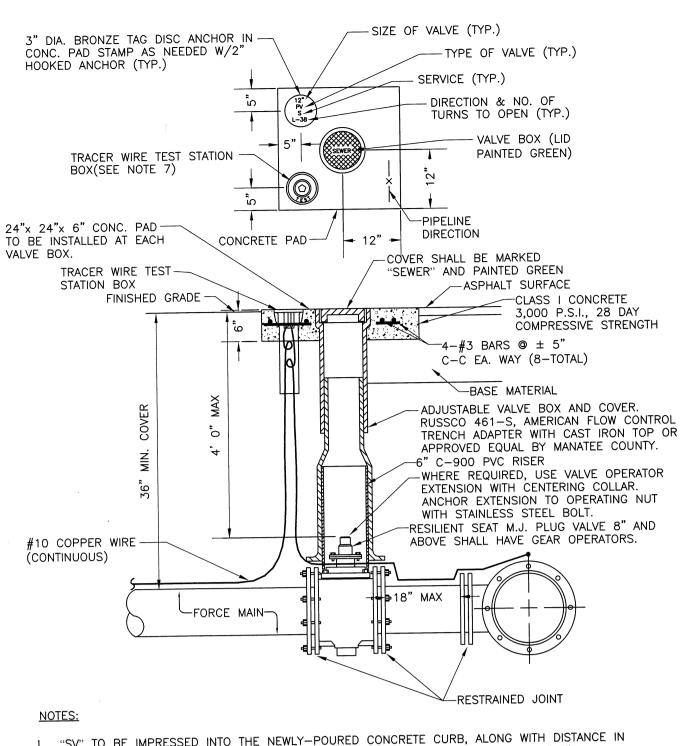










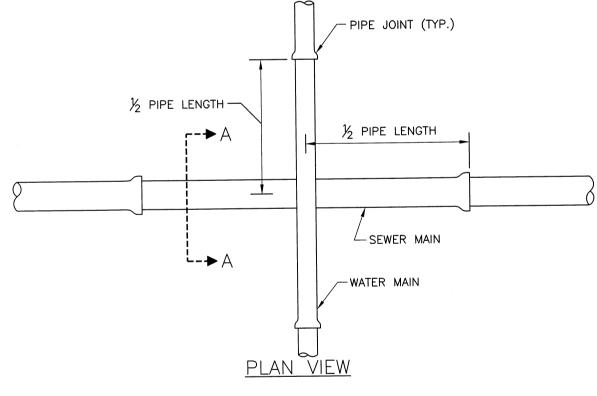


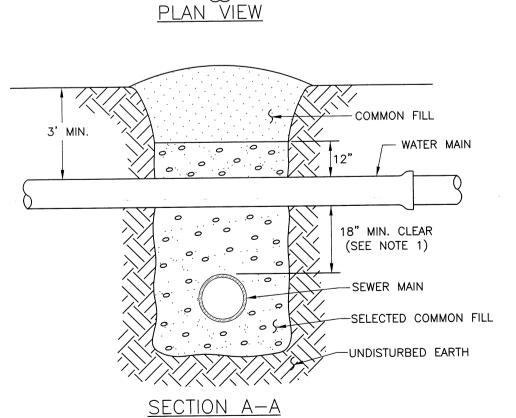
- 1. "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (FT.) FROM THE DISC TO THE
- VALVE.

 2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS
- ESTABLISHED IN THE FIELD.

 S. 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'
- 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.
 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.

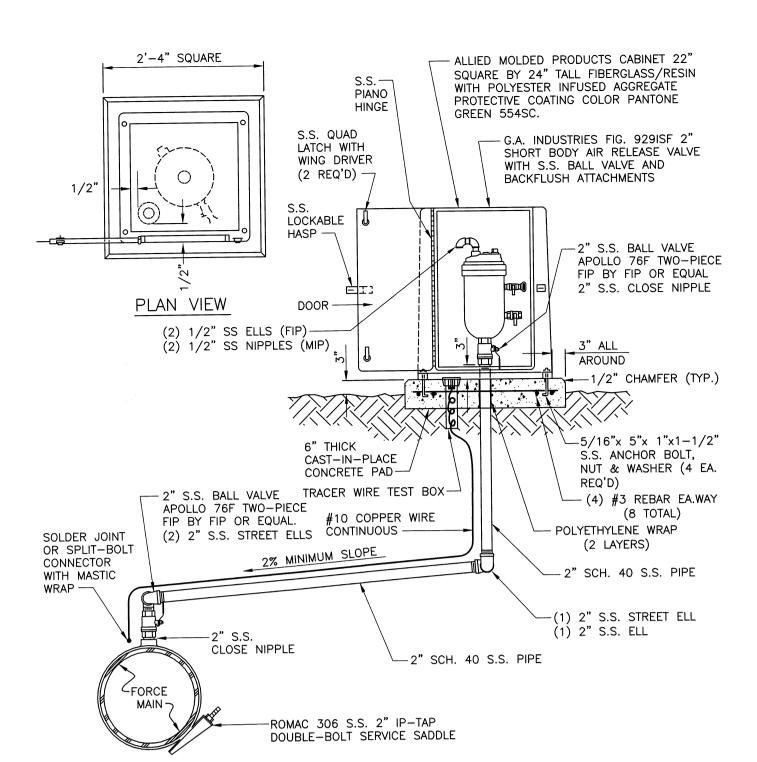
PLUG VALVE, BOX, COVER AND TAG NTS US-12





- 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.
- 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 WATER & SEWER CROSSING



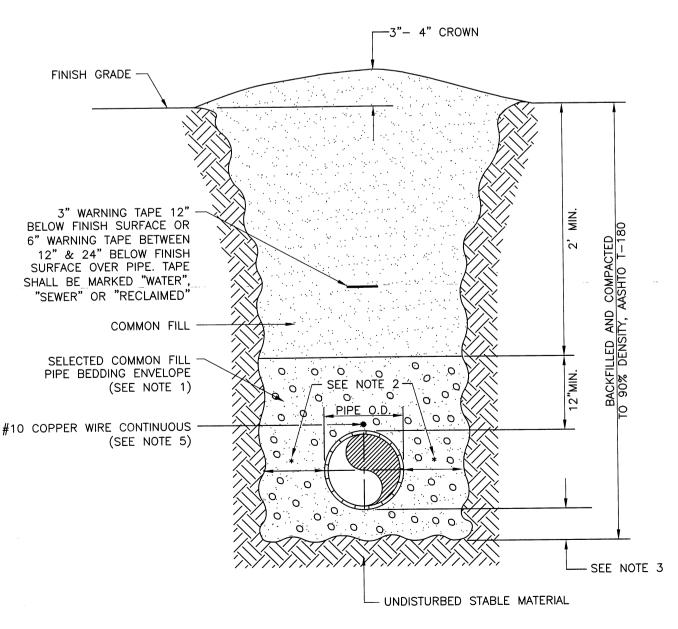
NOTEC

- 1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, OR WHERE AIR WOULD BE ENTRAPPED,
- ALONG 4" AND LARGER FORCE MAINS.
 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
 6. AIR RELEASE VALVES TO BE IN BELOW-GRADE INSTALLATIONS UNLESS IMPRACTICAL. INSTALLATIONS
- 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.
 CONCRETE PAD SHALL BE TYPE I CONCRETE W/ 3,000 P.S.I., 28 DAY COMPRESSIVE STRENGTH.

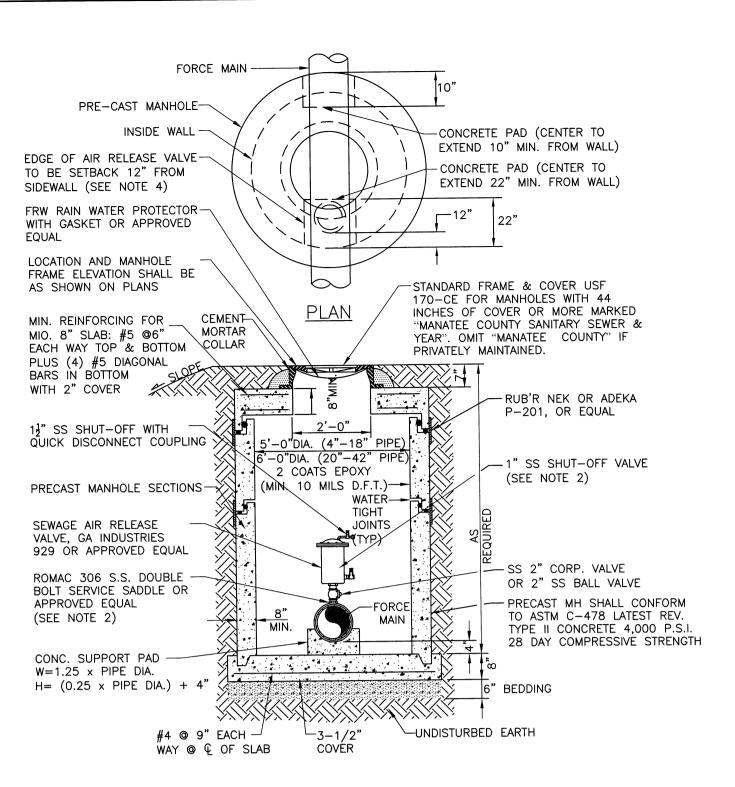
ABOVE—GROUND AIR RELEASE VALVE ASSY. FOR FORCE MAINS NTS US-25

NOTES:

- 1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 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
- 5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING NTS UG-11



IOTES:

- AIR RELEASE VALVES WHERE REQUIRED ON 4" AND LARGER FORCE MAINS.
 ARV TO BE SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATION FOR FORCE MAIN SIZE.
 SERVICE SADDLE, NIPPLES AND CORPORATION BALL VALVE SHALL BE STAINLESS STEEL.
 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.

BELOW GRADE AIR RELEASE VALVE FOR FORCE MAINS NTS US-10

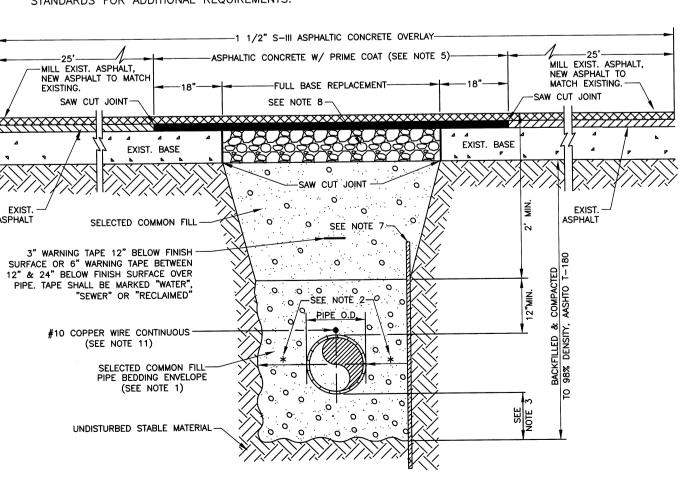
NOTES:

- 1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2. 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
- 3. 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
- 4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

 5. ASPHALTIC CONCRETE FRICTION COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS
- EXISTING OR A MINIMUM OF ONE INCH, WHICHEVER IS GREATER.

 6. MILL 25' BACK FROM TRENCH SAW CUT. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY TO MATCH
- EXISTING WITH NO DISCERNABLE "BUMP" AT JOINT.

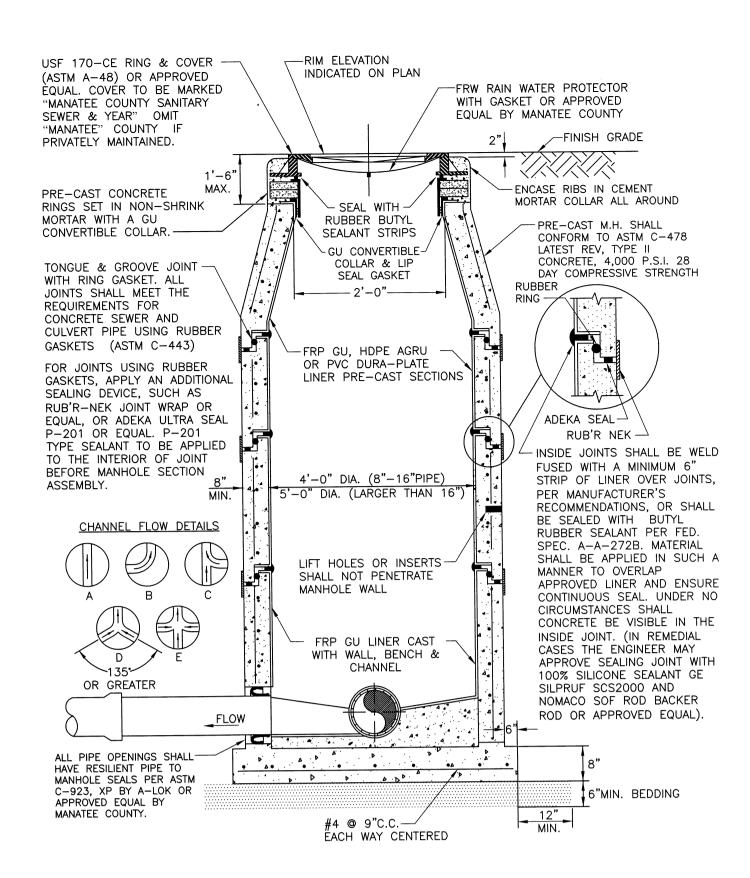
 7. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
- 8. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
- 9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
- 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. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



TRENCH WITH ASPHALT PAVEMENT SURFACE

TYPE A-1 PIPE BEDDING

NTS UG-12



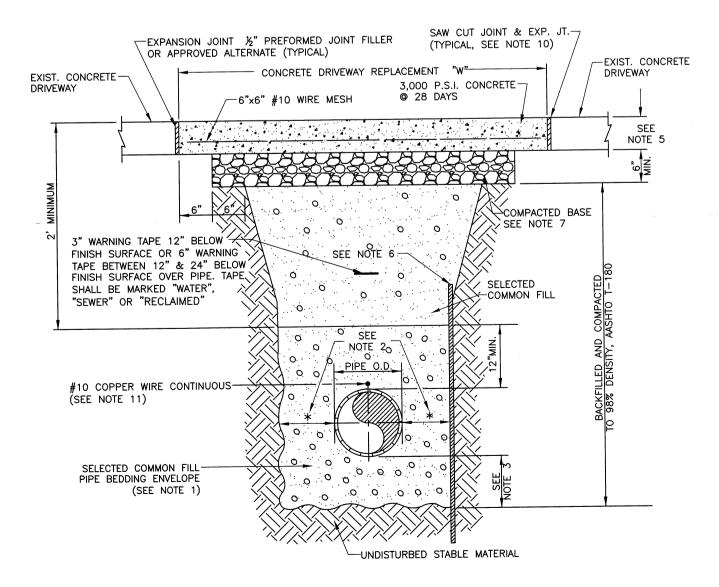
NOTE:
DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAILS D & E), MANHOLES IMMEDIATELY UPSTREAM
OF A LIFT STATION WET WELL, MANHOLES WITH GRAVITY SEWERS GREATER THAN 12 INCHES IN DIAMETER,
MANHOLES RECEIVING A FORCE MAIN AND THE FIRST TWO GRAVITY MANHOLES DOWNSTREAM OF MANHOLES
RECEIVING A FORCE MAIN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

STANDARD PE	RE-CAST SAI	VITARY SEWER
MANHOLE	FOR TURBUI	ENT FLOW
	NTS	US-3

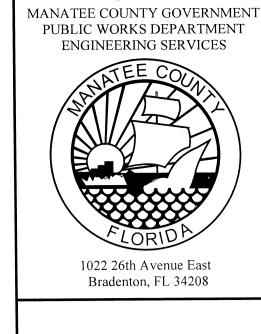
NOTES:

- 1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2. 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
- 3. 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
- 4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 5. THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
- 6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.
- 7. BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.
- DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
- 9. IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/6" WIDE AND 1½" DEEP) AFTER THE CONCRETE HAS SET.
- 10. IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY
- REPLACEMENT TO THE EXISTING JOINT.

 11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING NTS UG-14



FORCE MAIN 14 REPLACEMENT NORTH SHORE DR., ANNA MARL

| NOLLAR | N

DRAWN KE 04/05/11

CHECKED JS 04/21/11

JAMES STOCKWELL, P.E.

FLORIDAVID 570 67198

**

No. 67198

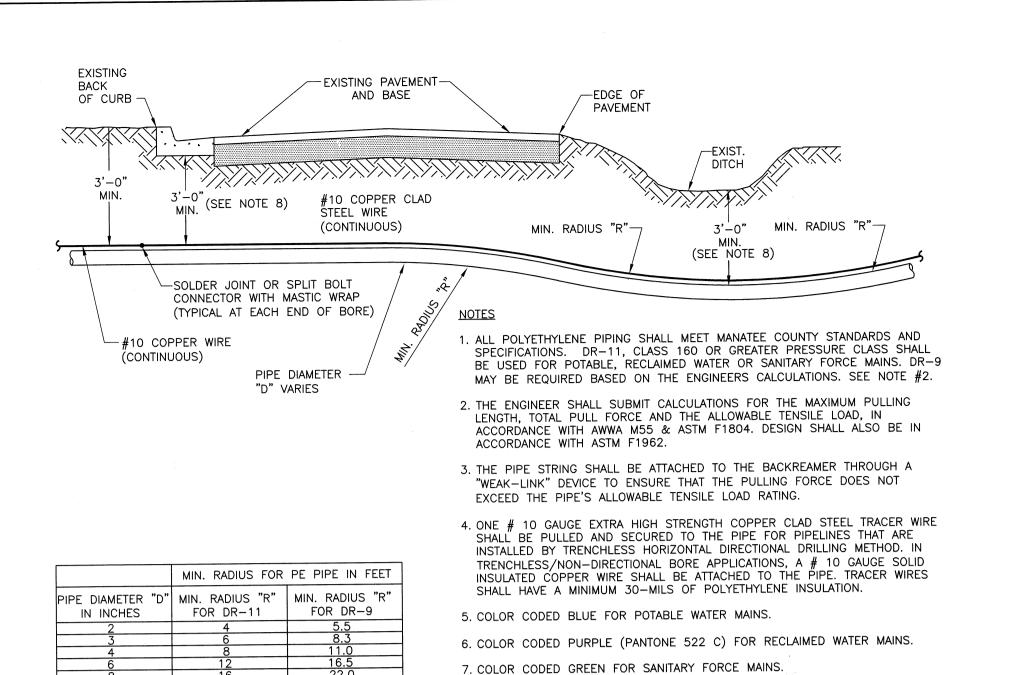
**

STATE OF

ONAE

Wate

SHEET 8 OF 10





-SOLDER JOINT OR SPLIT BOLT

HDPE PIPE TO PVC PIPE / SPIGOT TO BELL CONNECTION

HDPE PIPE TO MJ FITTING TRANSITION

HDPE PIPE TO PVC PIPE SPIGOT TO SPIGOT CONNECTION

1. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND

APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE.

SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN NON-DIRECTIONAL BORE (TRENCHES AND BORE & JACK)

TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.

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

BACKUP RING

CONNECTOR WITH MASTIC WRAP

#10 COPPER CLAD STEEL WIRE

-wedge action

RESTRAINT

-SOLDER JOINT OR SPLIT BOLT

-BUTT FUSED JOINT

-SOLDER JOINT OR SPLIT BOLT CONNECTOR WITH MASTIC WRAP

#10 COPPER WIRE

-MJ RETAINER GLAND

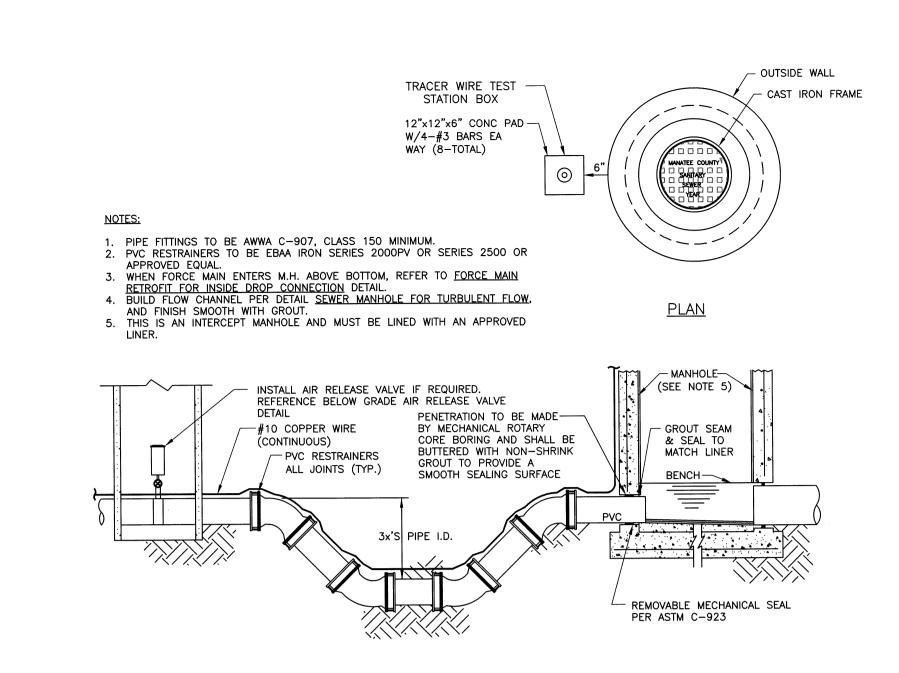
CONNECTOR WITH MASTIC WRAP

#10 COPPER CLAD STEEL WIRE

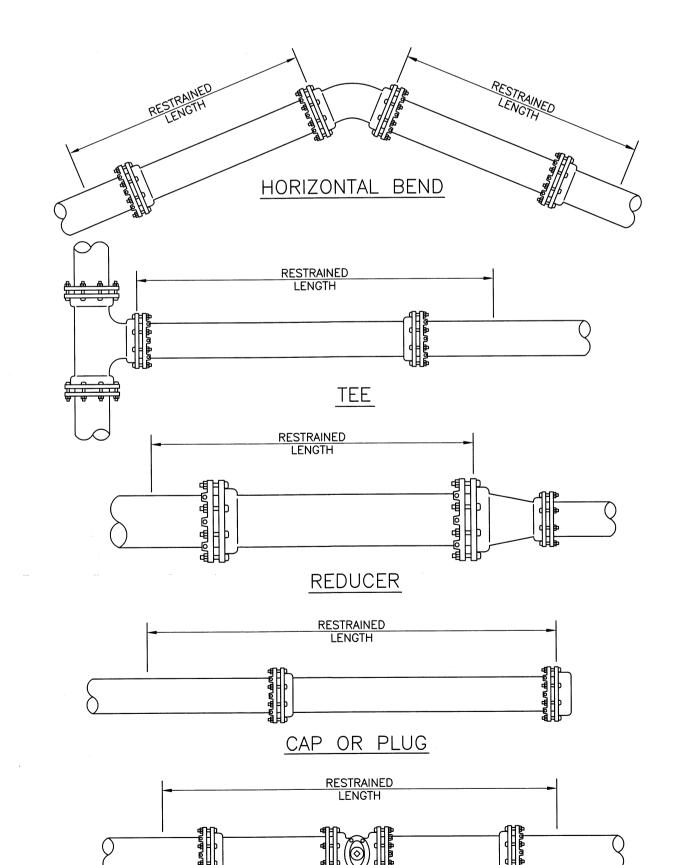
8. PIPE DEPTHS MAY NEED TO BE DEEPER TO AVOID FRACKOUTS.

9. FDOT CRITERIA SHALL BE MET FOR PIPES UNDER STATE ROADS.

PIPEALIGNMENT SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS.

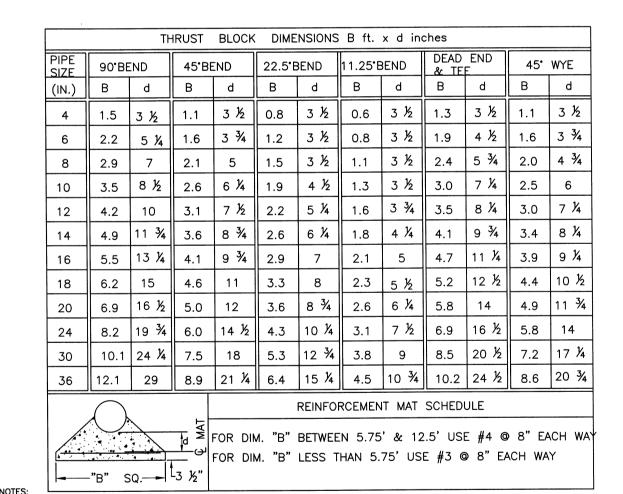


FORCE MAIN CONNECTION TO MANHOLE

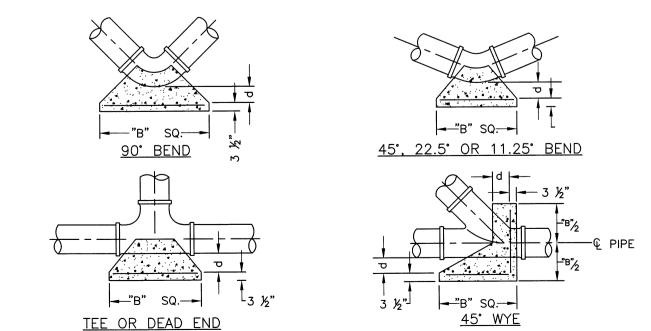


RESTRAINED LENGTHS FOR PIPE

ISOLATION VALVE



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



CONCRETE THRUST BLOCKS

UG-7

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

RIM ELEVATION AS

FULL LINER-

TURBULENT FLOW

(SEE NOTE 1)

4'-0" DIA. (FOR 8"-16"PIPE)

(SEE NOTE 3)

5'-0" DIA. (LARGER THAN 16")

1. DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAILS D & E), MANHOLES IMMEDIATELY

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

2. LIFT HOLES OR INSERTS SHALL NOT PENETRATE THE WALLS OF THE MANHOLES.

5'-0" AND THE FRAME AND COVER SHALL BE 32" "PAMREX" WITH 32" OPENING.

UPSTREAM OF A LIFT STATION WET WELL, MANHOLES WITH GRAVITY SEWERS GREATER THAN 12

3. A MINIMUM COVER OF 3' OVER THE GRAVITY SEWER SHALL BE PROVIDED. FOR MANHOLES WITH

STANDARD PRE-CAST SHALLOW MANHOLE

LESS THAN 4" OF COVER OVER THE GRAVITY SEWER, THE MANHOLE INSIDE DIAMETER SHALL BE

6" MIN. BEDDING-

#4 @ 9"C/C EACH WAY CENTERED-

IF REQUIRED FOR

INDICATED ON PLANS

FRW RAIN WATER PROTECTOR

WITH GASKET OR APPROVED

EQUAL BY MANATEE COUNTY.

-FINISH GRADE/

-MIN. REINFORCING FOR

10 1/2" SLAB: #4 @6"

BOTTOM PLUS (4) #4

BOTTOM w/ 2" COVER

DIAGONAL BARS IN

EACH WAY TOP &

RUB'R NEK,

OR ADEKA

P-201, OR APPROVED

CHANNEL FLOW DETAILS

OR GREATER

EQUAL

STANDARD MANHOLE COVER MARKED -

YEAR" OMIT "MANATEE COUNTY" IF

ENCASE RIBS IN CEMENT MORTAR -

PRIVATELY MAINTAINED.

COLLAR ALL AROUND

MIN. REINFORCING FOR

MIO. 8" SLAB: #5 @6"

PLUS (4) #5 DIAGONAL

PRE-CAST M.H. SHALL

LATEST REV, TYPE II

ALL PIPE OPENINGS

PIPE TO MANHOLE

XP BY A-LOK OR

MANATEE COUNTY.

SHALL HAVE RESILIENT

SEALS PER ASTM-923,

APPROVED EQUAL BY

CONFORM TO ASTM C-478

CONCRETE, 4000 P.S.I. 28

DAY COMPRESSIVE STRENGTH

REINFORCED PER ASTM C-478 - ↓

COVER

BARS IN BOTTOM w/ 2"

EACH WAY TOP & BOTTOM

"MANATEE COUNTY SANITARY SEWER &

					•			OLI	****					
MAIN	HORIZ. BENDS			TEES						REDU	PLUGS & VALVES			
PIPE SIZE	90.	45 °	22.5°		. SIZE LENGTH					SIZE LENGTH				
36	142	59	28	×36 393	36 x30 x24 x20 x16 x12				X30 137	X24 247	309	X16 359	453	
30	124	51	25	X30 333	X24 252	X20 189	X16 115	X12 23	×10 1	X24 137	X20 213	X16 276		391
24	106	44	21	X24 270	X20 211	X16 143	X12 61	X10 10	x8 1	X20 98	X16 178	X12/		327
20	92	38	18	X20 225		X12 85	X10 39	x8 ₁		X16 98	X12 176	X10 227		280
16	77	32	15	X16	X12 107	X10 65	X8 19	×6_1		X12 98	X10 163	X8 169		231
12	61	25	12	X12 127	X10 89	X8 50	x61			X10 88	X8 96	X6 131		181
10	52	22	10	X10 101	X8 64	×6/11				X8 51	X6 94	X4 125		153
8	44	18	9	X8 78	X6 30	×4 ₁				X6 54	X4 92			128
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)

	MAIN	HORIZ. BENDS			TEES					REDUCERS				PLUGS	& VALVES	
	PIPE 90° 45			22.5°	SIZE LENGTH						SIZE LENGTH					
· · · · · · ·	36	100	42	20	x36	x30 132		x20 68	×16 35	x12	X30 57	X24 103	X20 128	X16 149		188
l	30	88	37	18	X30 138	X24 104		X16 48	X12 10	×10 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 ₁		X16 41	X12 73	X10 94			116
	16	54	22	11	X16	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_5				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	×4_1					X4 21					41
	4	17	7	3	×4 8											29

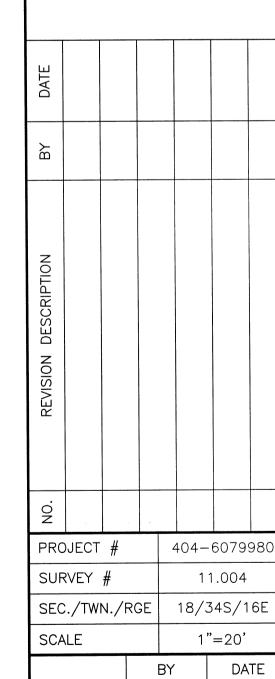
SEE <u>RESTRAINED LENGTHS FOR PVC PIPE</u> DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

RESTRAINED LENGTHS FOR DIP

UG-9

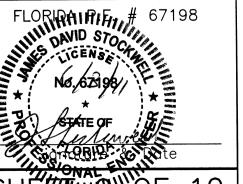
MANATEE COUNTY GOVERNMENT PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East Bradenton, FL 34208

X



1/7/1 ZNS SURVEYED 03/15/1 DESIGNED KE/JS 04/05/1 DRAWN ΚE 04/21/1 CHECKED JS

JAMES STOCKWELL, P.E. FLORIDALFIFT,# 67198



BACK-UP RING OR MJ GLAND -

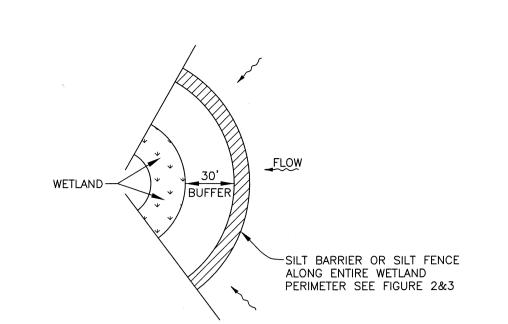
HDPE MJ ADAPTER -

#10 COPPER CLAD-

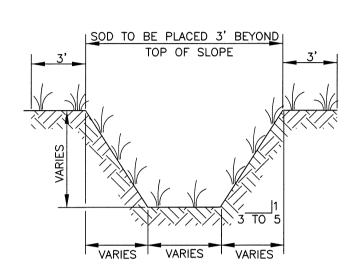
STEEL WIRE

HDPE TO PVC OR DI PIPE ADAPTER

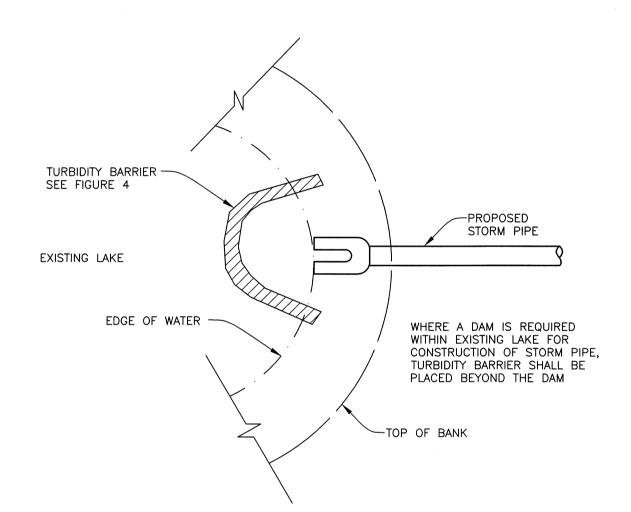
UG-10 NTS



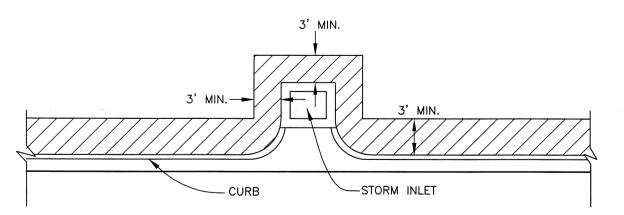
WETLAND BUFFER FIGURE 1



TYPICAL SWALE SECTION FIGURE 5

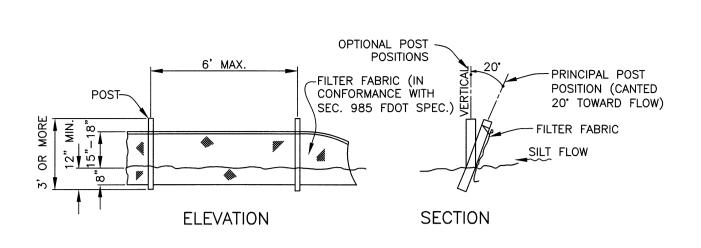


TURBIDITY BARRIER AT CONNECTION OF STORM PIPE TO EXISTING LAKE FIGURE 9



SOD ALONG CURB AND AROUND INLET

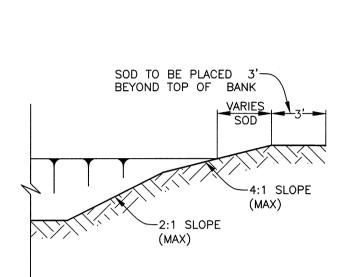
NOTE: REFERENCE THE FDOT DESIGN STANDARDS LATEST EDITION FOR ALL TEMPORARY EROSION CONTROL MEASURES.



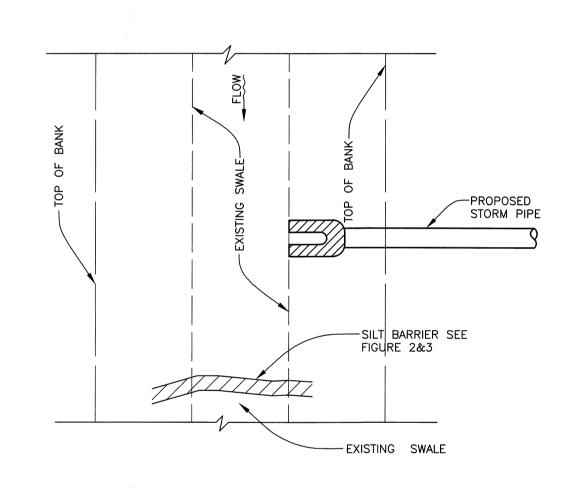
NOTE: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF).

TYPICAL SILT FENCE

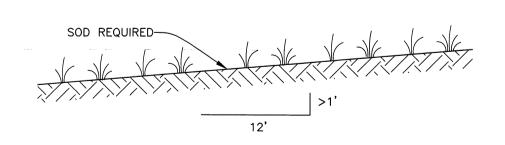
FIGURE 2

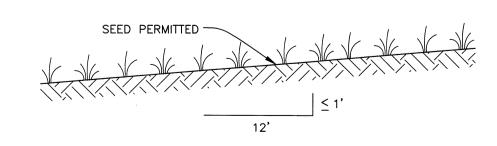


TYPICAL RETENTION/DETENTION POND SECTION

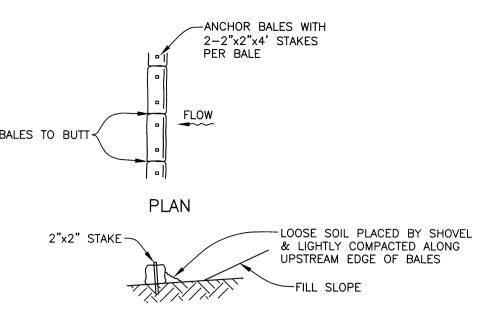


SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING SWALE FIGURE 10

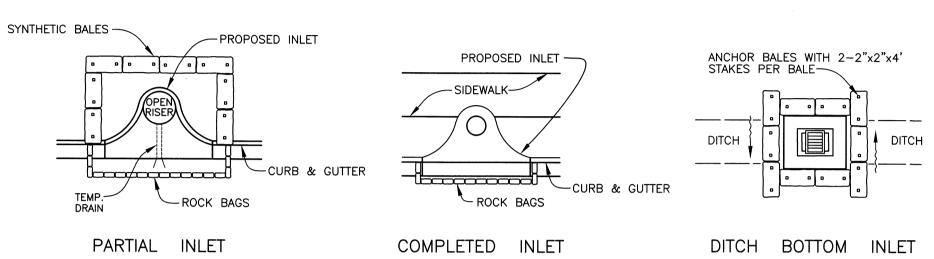




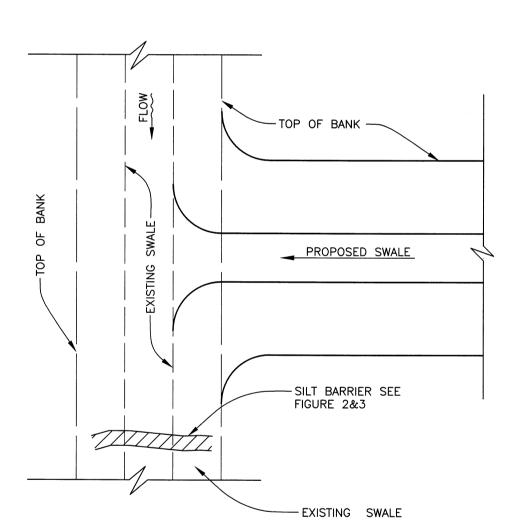
GRASS SLOPES FIGURE 13



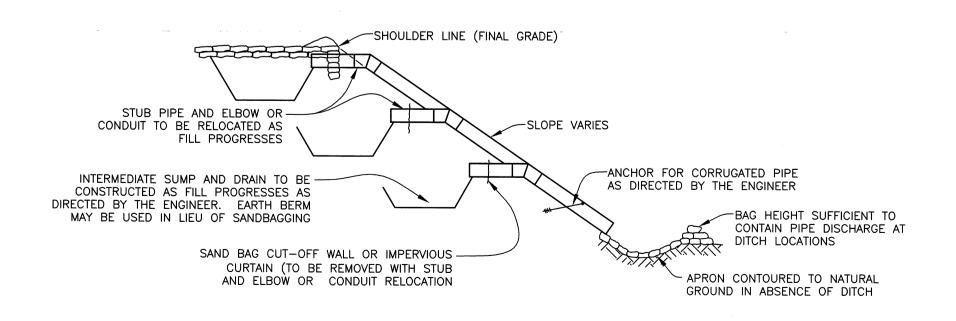
TYPICAL BALE SILT BARRIER



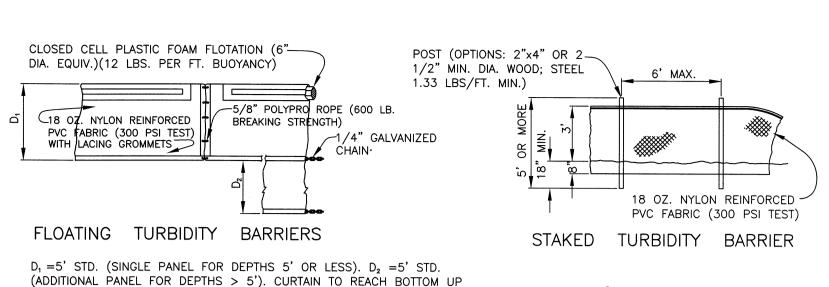
SYNTHETIC BALE PROTECTION AROUND INLETS OR SIMILAR STRUCTURES FIGURE 7



SILT BARRIER AT CONNECTION OF SWALE TO EXISTING SWALE FIGURE 11

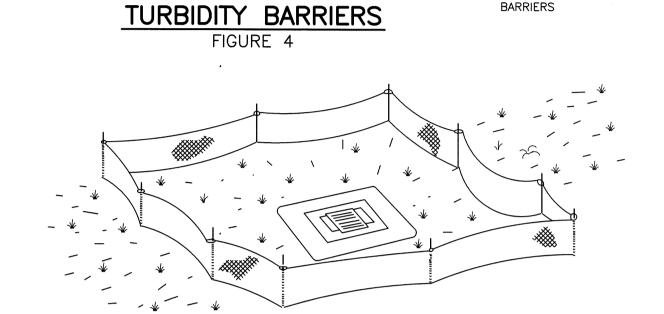


SECTION AA TEMPORARY SLOPE DRAIN FIGURE 15



TO DEPTHS OF 10 FEET. TWO(2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER. NOTICE: COMPONENTS OF TYPES ${f I}$ AND ${f II}$ MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE

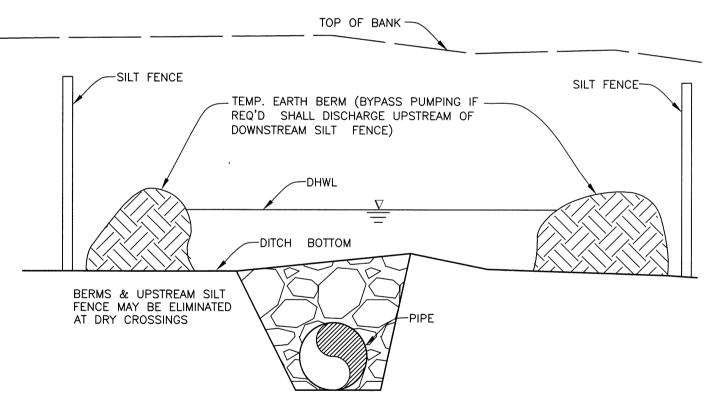
RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.



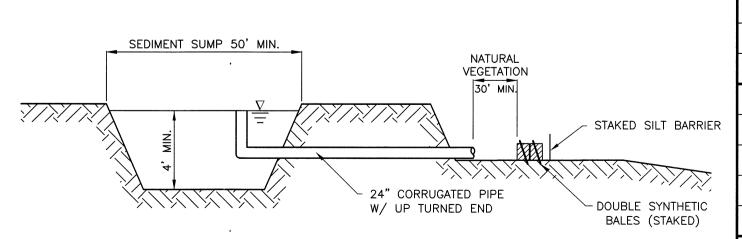
LIMITS OF CONST.

TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

STAKED SILT BARRIER OR SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS FIGURE 8



UNDERGROUND PIPE CROSSING FIGURE 12



SEDIMENT SUMP SECTION



ME \square S X

DATE							
ВҮ							
REVISION DESCRIPTION							
NO.							
PRO	JECT	#		404-6079980			
SUR	VEY	#		1 -			
SEC	./TWI	N./RG	E	18/34S/16E			
SCA	IF			1"-20'			

OJECT #		404-6079980			
RVEY #		11.004			
C./TWN./	RGE	18/34S/16E			
ALE		1"=20'			
		BY	DATE		
RVEYED	Z	'NS	1/7/11		
SIGNED	KE	Z/JS	03/15/11		
AWN		KE	04/05/11		

