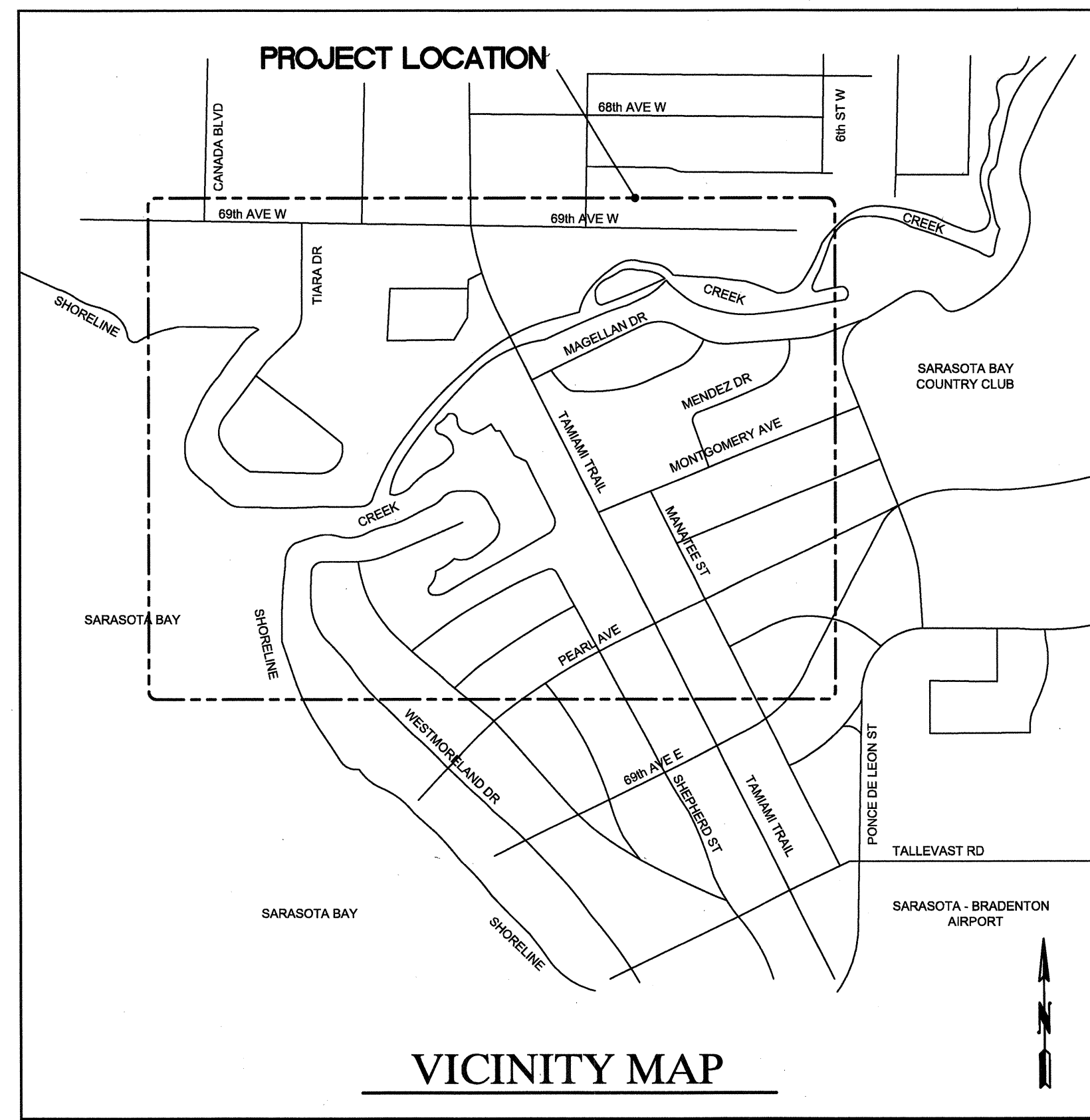







SHEET NO.	DESCRIPTION
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SITE LOCATION

MANATEE COUNTY



PROJECT LOCATED IN SECTION 26 TOWNSHIP 35 RANGE 17

																															
PROJECT LOCATED IN SECTION 26 TOWNSHIP 35 RANGE 17																															
DSGN		RAC						BID DOCUMENTS						VERIFY SCALE		<div>CH2MHILL</div> <div>4350 WEST CYPRESS STREET SUITE 600 TAMPA, FLORIDA 33607-4155 LB 0002934 AA C000656</div>				<div>MANATEE COUNTY FORCE MAIN 1A, 2A, AND 16A REPLACEMENT PROJECT MANATEE COUNTY, FLORIDA PROJECT No. 60522.80</div>				COVER SHEET				SHEET		G1	
DR		BJK								BAR IS ONE INCH ON ORIGINAL DRAWING. 0  1"		DWG		GICOVER.DWG																	
CHK		HLP								IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		DATE		NOVEMBER 2011																	
APVD		RAC		NO.		DATE				REVISION		BY		APVD														PROJ		395791.FM	

CONTACTS

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VERIZON FLORIDA INC.
WAYNE SUMNER
(941) 330-9203

SUNSHINE STATE ONE CALL OF FLORIDA
1-(800) 432-4770

- BM Bench mark
- CM Concrete Monument
- IP Iron Pipe
- IR Iron Rod
- HUB Hub
- N&D Nail & Disk
- Elevation
- Parcel ID No.
- Parcel ID No.
- Parcel ID No.
- GW Guy Wire
- PP Power Pole
- LP Light Pole
- MB Mail Box
- SN Sign

- REF Reflector
- SPRK Sprinkler
- GM Gas Marker
- BFP Back Flow Preventer
- BO Blow Off Valve
- FW Fire Hydrant
- WV Water Valve
- RED Reducer
- WM Water Meter
- ARV Air Release Valve
- SMH Sanitary Sewer Manhole
- CO Sanitary Sewer Clean-out
- SB#1 Soil Boring Location
- TEL Telephone Service Box
- CPP Concrete Power Pole

EXISTING

- TSB Traffic Signal Box
- WPP Wood Power Pole
- JB Junction Box
- RV Reclaim Valve
- RM Reclaim Meter
- GI Grate Inlet
- CB Catch Basin
- CI Curb Inlet
- Bush
- Ornamental Tree
- Oak Tree
- Palm Tree
- Pine Tree
- Edge of Vegetation
- Guard Rail
- Chain Link Fence
- Wood Fence
- Force Main
- Potable Water
- Reclaimed Water
- Sanitary Sewer
- Storm Drain
- Gas Line
- Overhead Utility
- Underground utility
- Edge of Concrete
- Edge of Road
- Ditch-Tee of Slope
- Property Line / Lot Line
- Right of Way

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

PROPOSED

- HDPE Force Main
- FPVC High Density Polyethylene
- Fusible PVC
- Proposed Easement
- Gate, Plug, or Butterfly Valve
- Sanitary Sewer Manhole
- Blow-off Assembly
- Air Release Valve
- Reducer
- Tee
- Bend (Horizontal)
- Bend (Vertical)
- Plug or Cap
- Master Meter Assembly
- Wye
- Boring Location
- Water Table
- Ground Markers

GENERAL NOTES

1. THE CONSTRUCTION DOCUMENTS HAVE BEEN PREPARED USING AVAILABLE INFORMATION PERTAINING TO EXISTING UTILITY SYSTEMS AND OTHER IMPROVEMENTS LOCATED WITHIN THE RIGHT-OF-WAY IN THE VICINITY OF THE NEW WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL INVESTIGATIONS OR FIELD EVALUATION PRIOR TO AND DURING CONSTRUCTION TO CONFIRM THE EXISTING CONDITIONS IN THE FIELD THAT MAY IMPACT CONSTRUCTION OF THE WORK TO VERIFY THE EXISTING LOCATION OF ALL ABOVE GRADE AND BELOW GRADE IMPROVEMENTS THAT MAY IMPACT CONSTRUCTION OF THE WORK.
2. SURVEY INFORMATION USED TO PREPARE THE CONSTRUCTION DOCUMENTS WAS COMPILED BY ZNS ENGINEERING, 201 5TH AVE. DR. EAST, BRADENTON, FLORIDA 34208 (941) 748-8080, LEAD SURVEYOR JIM GATCH, P.S.M.
3. ELEVATIONS SHOWN ON THE CONSTRUCTION DOCUMENTS ARE BASE UPON NATIONAL GEODETIC VERTICAL DATUM, 1929 (N.G.V.D. - 1929). MANATEE COUNTY BENCHMARK # 110-29-18, ELEVATION = 20.557.
4. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM (NAD) OF 1983 (1990 ADJUSTMENT), FLORIDA STATE PLANE, WEST ZONE, AND WAS DERIVED FROM REDUNDANT REAL-TIME KINEMATIC GPS OBSERVATIONS UTILIZING NGS CONTROL POINT M 087 (NGS PID AG9192) AND ADHERES TO THE ACCURACY REQUIREMENTS OF FLORIDA'S MINIMUM TECHNICAL STANDARDS (81G17-6.003, F.A.C.).
5. IN THE EVENT A PUBLIC OR PRIVATE SURVEY MARKER, PROPERTY CORNER OR RIGHT-OF-WAY MARKER OR SIMILAR SURVEYED POINT IS DAMAGED OR MOVED BY CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A FLORIDA REGISTERED LAND SURVEYOR TO RESTORE SUCH ITEMS IMPACTED BY CONSTRUCTION.
6. THE PROJECT INVOLVES THE CONSTRUCTION OF BURIED SANITARY SEWER FORCE MAIN PIPELINES. THE CONTRACTOR SHALL USE CAUTION IN PERFORMING THE WORK TO PREVENT DAMAGE TO EXISTING UTILITY SYSTEMS AND SHALL COORDINATE WITH UTILITY COMPANIES LISTED AND OTHER UTILITY COMPANIES PRIOR TO AND DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE TO UTILITY COMPANIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN FIELD LOCATES OF EXISTING UNDERGROUND UTILITIES IN THE VICINITY OF NEW CONSTRUCTION.
7. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUNSHINE STATE ONE CALL OF FLORIDA, EXCAVATION GUIDE, LATEST EDITION. THE CONTRACTOR SHALL CONTACT THE ONE CALL CENTER AT 1-800-432-4770 A MINIMUM OF 48 HOURS PRIOR TO THE PLANNED EXCAVATION OR CONSTRUCTION DATE TO ARRANGE FOR THE FIELD LOCATION OF BURIED UTILITIES WITHIN THE CONSTRUCTION AREA.
8. THE CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL RULES, STATUTES, ORDINANCES AND GUIDELINES RELATED TO PERFORMING ALL WORK ASSOCIATED WITH THE PROJECT, OF SPECIAL INTEREST ON THIS PROJECT IS THE REQUIREMENT TO PERFORM TRENCH EXCAVATION AND THE CONTRACTOR'S REQUIREMENT TO PERFORM ALL EXCAVATION IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS (OSHA) TRENCH EXCAVATION SAFETY STANDARDS.
9. THE CONTRACTOR SHALL PERFORM THE WORK TO MINIMIZE IMPACT AND DAMAGE TO PRIVATE PROPERTY. DAMAGE TO PRIVATE PROPERTY CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.
10. THE WORK IS TO TAKE PLACE WITHIN PUBLIC RIGHT-OF-WAY, WITHIN PUBLIC ROADWAYS AND WITHIN UTILITY EASEMENTS OBTAINED BY THE COUNTY THROUGH AND WITHIN PRIVATE PROPERTY. THE CONTRACTOR SHALL CONDUCT ALL WORK ACTIVITIES OF THE PROJECT WITHIN PUBLIC ROW OR WITHIN DOCUMENTED UTILITY EASEMENTS AND SHALL ESTABLISH, WHEN REQUIRED, SURVEY LINES WITHIN THE AREA OF CONSTRUCTION TO DEFINE THE LIMITS OF PUBLIC RIGHT-OF-WAY AND EASEMENTS.
11. THE CONTRACTOR SHALL PERFORM WORK TO MINIMIZE IMPACT AND DAMAGE TO PUBLIC ROADWAYS, ROADWAY FEATURES, SIGNS, DRAINAGE FEATURES, PUBLIC AND PRIVATE UTILITIES LOCATED WITHIN THE RIGHT-OF-WAY AND ALL OTHER FEATURES ADJOINING THE WORK AREA. DAMAGE TO PUBLIC RIGHT-OF-WAY, ROADWAY, PUBLIC OR PRIVATE UTILITIES OR OTHER FEATURES LOCATED WITHIN THE MANATEE COUNTY RIGHT-OF-WAY SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS THAT ARE LOCATED ADJACENT TO THE NEW WORK AND ARE SHOWN TO NOT TO BE RELOCATED.
13. A PORTION OF THE WORK WILL TAKE PLACE ON AN ALIGNMENT THAT CROSSES US 41 (SR45) 14TH STREET AT TWO LOCATIONS, PEARL STREET AND 69TH STREET WEST, AND PARALLELS THE US 41 EAST ROW FROM PEARL STREET TO 68TH AVE WEST. THE WORK WITHIN THIS AREA IS SUBJECT TO A FLORIDA DEPARTMENT OF TRANSPORTATION PERMIT WHICH IS INCLUDED IN THE SPECIFICATIONS FOR REFERENCE. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THIS PERMIT. AMONG OTHER SPECIFIC PERMIT REQUIREMENTS, THE CONTRACTOR IS CAUTIONED NOT TO ENTER OR EXIT THE WORK AREA BY DRIVING OVER CURBS OR THROUGH OR OVER OTHER NONE VEHICLE TRAFFIC LOADING PAVED OR NON-PAVED AREAS.

14. THE WORK OF THIS PROJECT IS SUBJECT TO THE PROVISIONS OF AN ENVIRONMENTAL RESOURCE PERMIT ISSUED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION WHICH IS INCLUDED IN THE SPECIFICATIONS FOR REFERENCE. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THIS PERMIT. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION OF 25 FEET BETWEEN ANY AND ALL SURFACE WATER SYSTEMS AND CONSTRUCTION AREAS OR CONSTRUCTION STAGING OPERATIONS. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO ASSURE THAT SURFACE WATER QUALITY WILL NOT BE NEGATIVELY IMPACTED DURING CONSTRUCTION ACTIVITIES INCLUDING: EXCAVATION, BACKFILL, DEWATERING, SOIL IMPOUNDMENT, SPOIL IMPOUNDMENT AND ALL OTHER CONSTRUCTION RELATED ACTIVITIES. PRIOR TO COMMENCING FIELD WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A FRAC-OUT PLAN FOR HORIZONTAL DIRECTIONAL DRILLING OPERATIONS. ALL HORIZONTAL DIRECTIONAL DRILLING OPERATIONS SHALL BE CONDUCTED IN STRICT ACCORDANCE WITH THE APPROVED FRAC-OUT PLAN.
15. THE CONTRACTOR SHALL RELOCATE ALL FACILITIES OR IMPROVEMENTS THAT ARE IN CONFLICT WITH THE NEW WORK AND SUCH RELOCATION SHALL BE IN ACCORDANCE WITH COUNTY OR THE OWNING PARTIES STANDARDS. NO ADDITIONAL PAYMENT WILL BE MADE FOR RELOCATION WORK REQUIRED BY CONSTRUCTION OF THE WORK AND THE COST ASSOCIATED WITH SUCH RELOCATIONS SHALL BE INCLUDED IN THE VARIOUS BID ITEMS ASSOCIATED WITH THE WORK TO BE CONSTRUCTED.
16. THE CONTRACTOR SHALL PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL AS REQUIRED DURING CONSTRUCTION OF THE WORK. SPECIFIC EROSION CONTROL AND SEDIMENTATION CONTROL REQUIREMENTS ARE PROVIDED IN THE SPECIFICATIONS AND SHALL BE FOLLOWED TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL AND CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION AND SEDIMENTATION CONTROL OR SEDIMENTATION IMPACTS THAT RESULT FROM ACTIVITIES AT THE WORK SITE OR WHILE TRANSPORTING FILL OR OVER-EXCAVATION MATERIAL TO OR FROM THE WORK SITE. THE CONTRACTOR SHALL PROVIDE PERIODIC MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL DEVICES INSTALLED AND SHALL CLEAN-UP AND RESTORE ALL AREAS IMPACTED BY EROSION CONTROL ACTIVITIES AS THE WORK PROCEEDS.
17. THE CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE SYSTEMS WITHIN THE AREA OF THE WORK AND SHALL NOT IMPAIR OR IMPACT THE ABILITY OF EXISTING DRAINAGE FEATURES TO PERFORM THEIR INTENDED FUNCTION. IMPACTS TO EXISTING DRAINAGE FEATURES CAUSED BY THE WORK OF THE CONTRACTOR SHALL BE REPAIRED WHEN NOTED AND SHALL NOT IMPACT AREA DRAINAGE CAPACITY.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING DAMAGE TO EXISTING ABOVE GROUND AND BELOW GROUND FACILITIES THAT RESULT FROM A RESULT OF THE CONTRACTOR WORK UNDER THIS CONTACT. ALL RESTORATION WORK SHALL RESULT IN A REPAIR THAT IS EQUAL TO OR BETTER THAN THE UTILITY SYSTEM, ABOVE GROUND FEATURE OR BELOW GROUND FEATURE DAMAGED. REPAIRS SHALL BE MADE WITH NEW MATERIALS EQUAL IN QUALITY TO THAT DAMAGED. IN THE EVENT OF DAMAGE TO AN EXISTING RECLAIMED WATER SERVICE OR POTABLE WATER SERVICE LINE, THE REPAIR SHALL INCLUDED COMPLETE REPLACEMENT OF THE LINE FROM SERVICE CONNECTION TO CUSTOMER SERVICE WITH NO PATCH/SPICE REPAIRS ALLOWED.
19. THE CONTRACTOR SHALL BACKFILL TRENCHES AND/OR EXCAVATIONS AT THE END OF EACH WORK DAY. MAINTAINING EXCAVATIONS OPEN OVER-NIGHT SHOULD BE THE EXCEPTION NOT THE RULE. SHOULD AN EXCAVATION NEED TO BE MAINTAINED OPEN OVERNIGHT, THE CONTRACTOR SHALL COVER THE EXCAVATION WITH A TRAFFIC BEARING STEEL PLATE AND PROPERLY PLACE BARRICADES, LIGHTING AND SIGNAGE AROUND THE PLATED EXCAVATION PREVENTING THE ENTRY OF VEHICLES OR PEDESTRIANS.
20. THE CONTRACTOR SHALL PERFORM CLEAN-UP OF THE WORK SITE AND RESTORATION OF SURFACE AND SUBSURFACE IMPROVEMENTS DAMAGED AS A PART OF THE WORK AS THE PROJECT PROCEEDS. SURFACE RESTORATION, RE-GRADING, GRASSING, REPLACEMENT OF PAVEMENT, REPLACEMENT OF DRIVEWAYS, REPLACEMENT OF SIDEWALKS, REPLACEMENT OF STREET SIGNS, REPLACEMENT OR RESTORATION OF PRIVATE PROPERTY AND SIMILAR ITEMS SHALL BE COMPLETED ON A STREET SEGMENT BY STREET SEGMENT BASIS AS THE WORK PROCEEDS.
21. MAINTENANCE OF TRAFFIC AND PEDESTRIAN SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL DEVELOP SPECIFIC TRAFFIC CONTROL PLANS (TCP) AND PEDESTRIAN WALKING PLANS TO PROTECT THE PUBLIC IN THE AREA OF CONSTRUCTION. TRAFFIC CONTROL AND PEDESTRIAN CONTROL PLANS SHALL FOLLOW THE REQUIREMENTS OF FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) INDEX DRAWINGS AND STANDARDS. ACCESS TO EXISTING RESIDENCES SHALL BE MAINTAINED DURING THE WORK. SHORT TERM TEMPORARY BLOCKAGE OF RESIDENTIAL OR COMMERCIAL DRIVEWAYS WILL BE APPROVED BY THE PROPERTY OWNER. ALL TRAFFIC CONTROL AND PEDESTRIAN CONTROL PLANS SHALL BE DEVELOPED BY AN INDIVIDUAL OR COMPANY WHO SPECIALIZES IN COMPLIANCE WITH FDOT TCP REQUIREMENTS. SEE SHEET G4 FOR MAINTENANCE OF TRAFFIC GUIDELINES.

22. THE CONTRACTORS WORK PLAN AND EXECUTION OF THE WORK SHALL NOT IMPACT THE PROVISION OF WATER, SANITARY SEWER OR RECLAIMED WATER SERVICE TO MANATEE COUNTY CUSTOMERS NOR SHALL IT IMPACT THE PROVISION OF OTHER UTILITY SERVICES TO RESIDENTS AND BUSINESSES IN THE VICINITY OF CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE MANATEE COUNTY FIELD PROJECT MANAGER AND INSPECTOR IN ORDER TO DEVELOP THE SPECIFIC CONNECTION PLANS NECESSARY TO TRANSFER FORCE MAIN SERVICE FROM THE OLD FORCE MAIN SYSTEM TO THE NEW FORCE MAIN SYSTEM. IT IS ANTICIPATED THAT THE DISCONNECTION OF EXISTING FORCE MAINS AND CONNECTION AND START-UP OF NEW FORCE MAINS WILL TAKE PLACE DURING EVENING OR WEEKEND OFF-PEAK SEWER FLOW HOURS.
23. THE CONTRACTOR SHALL CONSTRUCT NEW SANITARY FORCE MAINS WITH HDPE PIPE USING HORIZONTAL DIRECTIONAL DRILLING OR OPEN CUT CONSTRUCTION AS GENERALLY SHOWN ON THE DRAWINGS. THE DRAWINGS HAVE BEEN PREPARED SHOWING PIPE SIZE GRAPHICALLY BASED UPON THE USE OF HDPE PIPING MATERIAL AND NECESSARY CASING SIZES.
24. NEW SANITARY FORCEMAIN PIPELINES SHALL BE INSTALLED WITH A MINIMUM OF 3 FEET OF COVER. PRIOR TO CONSTRUCTION OF PIPELINE ALONG EACH STREET SEGMENT, THE CONTRACTOR SHALL VERIFY THE ELEVATION AND LOCATION OF ALL UNDERGROUND CROSSING UTILITIES THAT MAY INTERFERE WITH THE CONSTRUCTION OF THE NEW PIPELINES AND SERVICES. (EG: WATER SERVICES, SANITARY SEWER SERVICES, GAS SERVICES, COMMUNICATION SERVICES ETC.) THE CONTRACTOR SHALL ADJUST THE ELEVATION OF THE NEW PIPELINE BASED UPON SUCH VERIFICATIONS TO A MINIMUM DEPTH OF COVER TO PROVIDE CLEARANCE AS REQUIRED BY MANATEE COUNTY SPECIFICATIONS BETWEEN EXISTING UTILITIES.
25. THE CONTRACTOR SHALL CONSTRUCT NEW SANITARY FORCEMAINS USING HDD WITH HDPE PIPE AND OPEN CUT CONSTRUCTION AS SHOWN ON THE DRAWINGS. CONSTRUCTION OF THE PROJECT USING ALTERNATE MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
26. THE CONTRACT DOCUMENTS DEFINE THE REQUIRED PLAN LOCATION AND VERTICAL ALIGNMENT OF THE NEW FORCE MAIN PIPE REPLACEMENT SYSTEM. THE CONTRACTOR SHALL ESTABLISH A PIPE DRILLING OR LAYING PLAN FOR EACH PIPELINE SEGMENT PRIOR TO CONSTRUCTION. THE DRILLING OR LAYING PLAN SHALL TAKE INTO CONSIDERATION GEOTECHNICAL CONDITIONS AT THE SITE, GROUND WATER CONDITIONS AT THE SITE AT THE TIME OF CONSTRUCTION, THE ELEVATION OF CROSSING UTILITIES, CONTRACTOR SPECIFIC EQUIPMENT AND CONSTRUCTION SET-UP AND STAGING AREA REQUIREMENTS, PIPE PREFABRICATION AREA NEEDS AND OTHER FACTORS. THE CONTRACTOR DRILLING OR LAYING PLAN SHALL ESTABLISH THE FINAL FIELD LOCATION FOR ALL NEW PIPE, FITTINGS AND VALVES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE COUNTY, PRIOR TO CONSTRUCTION, FOR ANY PLANNED DEVIATION IN THE LOCATION OF THE NEW WORK.
27. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF UNDERGROUND UTILITIES PARALLELING AND CROSSING THE ALIGNMENT OF THE NEW PIPELINE SYSTEM PRIOR TO CONSTRUCTION. FOR HDD ENTRY LOCATIONS, CONDUCTOR CASING SHALL BE USED TO PROTECT EXISTING UTILITIES WHEN FIELD CONDITIONS INDICATE THAT THE INSTALLATION OF THE NEW PIPELINE MAY IMPACT EXISTING CROSSING UTILITIES. THE REQUIREMENT FOR THE USE OF CONDUCTOR CASING WILL BE ESTABLISHED IN THE FIELD ON A CASE BY CASE BASIS DURING HDD BORE INITIAL SET-UP AND CROSSING UTILITY ALIGNMENT VERIFICATION PROCESS AND SHALL BE APPROVED BY THE OWNER AND ENGINEER. HDD PULL BACK ENTRY POINTS AND ANGLES SHALL BE SELECTED TO PROVIDE ADEQUATE CLEARANCE BETWEEN ALL EXISTING UNDERGROUND UTILITIES THAT ARE CROSSING THE ALIGNMENT OF THE PULL BACK PATH AND TO PROTECT EXISTING UTILITIES. THE NEED FOR CONDUCTOR CASING AND PULL BACK ALIGNMENT DEFINITION SHALL BE INCLUDED AS A PART OF THE HDD DRILLING PLAN DEVELOPED FOR EACH HDD BORE AS INDICATED IN NOTE 26.
28. GROUND MARKERS SHALL BE SET PRIOR TO CONSTRUCTION TO MONITOR GRADE ELEVATION AT THE AUGER BORING LOCATIONS ON US 41. GROUND MARKER ELEVATIONS SHALL BE RECORDED PRIOR TO INITIATING AUGER BORE OPERATIONS. MONITOR GROUND MARKER ELEVATIONS DURING AUGER BORE OPERATIONS AND SUSPENDED AUGER BORING SHOULD GROUND MARKER ELEVATION CHANGES OR ANY OTHER VISUAL FACTORS INDICATE POSSIBLE SUBSIDENCE OF THE ROADWAY SURFACE. DOCUMENT GROUND MARKER ELEVATIONS AS A PART OF THE RECORD DRAWINGS ONE MONTH PRIOR TO INITIATING WORK ON EACH AUGER BORING, DURING AUGER BORING OPERATIONS AND AT ONE MONTH AFTER COMPLETION OF EACH AUGER BORE.
29. RESTRAINED PIPE JOINTS SHALL BE USED AT ALL FITTINGS, BENDS AND VALVES IN ACCORDANCE WITH THE REQUIREMENTS OF MANATEE COUNTY STANDARD DETAILS UG-8, UG-9, UG-10 AND PROJECT SPECIFICATIONS. THRUST BLOCKS AS SHOWN IN COUNTY STANDARD DETAIL UG-7 SHALL ONLY BE USED ONLY WHEN SPECIFICALLY APPROVED BY THE COUNTY OR WHEN SHOWN ON COUNTY STANDARD DETAILS FOR THE PARTICULAR PIPING INSTALLATION IN QUESTION.
30. THE CONTRACTOR IS CAUTIONED TO CAREFULLY COORDINATE THE PIPING MATERIALS USED FOR CONSTRUCTION UNDER PAVEMENT WITH THE CONSTRUCTION METHOD AND MATERIALS THAT ARE ELECTED FOR USE. THE CONTRACTORS ATTENTION IS DIRECTED TO SECTION 02609 INSTALLATION OF PIPELINES PERTAINING TO THIS ISSUE.
31. A LATERAL SEPARATION OF A MINIMUM OF 10 FEET EDGE TO EDGE SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWER GRAVITY LINES OR FORCE MAINS. PLEASE REFER TO THE SPECIFICATION SECTION 02609 INSTALLATION OF PIPELINES FOR SPECIFIC REQUIREMENTS REGARDING PIPELINE INSTALLATION.

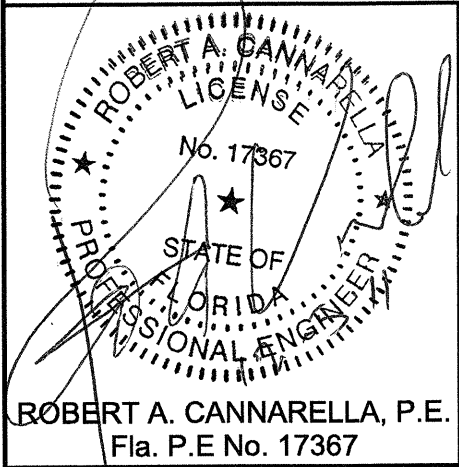
32. A VERTICAL CLEARANCE OF NOT LESS THAN 18 INCHES SHALL BE MAINTAINED BETWEEN ALL FORCEMAIN CROSSINGS WITH EXISTING WATER MAINS, RECLAIMED WATER MAINS, STORM SEWERS, SANITARY SERVICE LINES, GAS LINES AND OTHER UTILITIES. PLEASE REFER TO THE SPECIFICATION SECTION 02609 INSTALLATION OF PIPELINES - FOR SPECIFIC REQUIREMENTS REGARDING PIPELINE INSTALLATION. IN DEVELOPING EXCAVATION AND WORK PLANS, THE CONTRACTOR SHALL CONTACT MANATEE COUNTY TO OBTAIN ANY AVAILABLE INFORMATION PERTAINING TO THE MATERIALS OF CONSTRUCTION OF EXISTING WATER, WASTEWATER AND RECLAIMED WATER MAINS WHICH MAY IMPACT CONSTRUCTABILITY OR CLEARANCE NEEDS. THE CONTRACTOR SHALL SPECIFICALLY VERIFY IF PIPELINES ARE CONSTRUCTED OF ASBESTOS CEMENT PIPE (ACP) AND COMPLY WITH THE COUNTY SPECIFICATIONS PERTAINING TO CONSTRUCTION ADJACENT TO OR IMPACTING SUCH MATERIAL. CERTAIN LOCATIONS ON THE DRAWINGS INDICATED THE KNOWN PRESENCE OF ACP IN THE VICINITY OF THE WORK HOWEVER, THE CONTRACTOR SHALL VERIFY WITH THE COUNTY OTHER POSSIBLE LOCATIONS PRIOR TO EXCAVATION.
33. ALL COMPONENTS OF THE NEWLY INSTALLED FORCE MAIN SYSTEM SHALL BE TESTED IN ACCORDANCE WITH SECTION 02608 TESTING AND INSPECTIONS. TESTING AND INSPECTIONS SHALL INCLUDE COMPACTION TESTING FOR PIPELINE INSTALLATIONS; HYDROSTATIC TESTING OF PIPELINE VALVES AND FITTINGS; TRACER WIRE TESTING AND OTHER SUCH TESTS AS REQUIRED BY THE SPECIFICATION AND MANATEE COUNTY STANDARDS. THE CONTRACTOR SHALL PERFORM ALL TESTING AND PROVIDE TESTING RESULTS AS SPECIFIED AND WHEN REQUIRED PRIOR TO PLACING NEW FORCEMAIN COMPONENTS INTO SERVICE.
34. ALL EXISTING FORCE MAINS TO BE REMOVED FROM SERVICE SHALL BE FILLED WITH SAND/CEMENT GROUT IN ACCORDANCE WITH MANATEE COUNTY SPECIFICATIONS. FORCE MAINS SHALL BE DEWATERED AND FORCE MAIN CONTENTS SHALL BE ROUTED TO AND CONTAINED WITHIN TANK TRUCKS FOR DISPOSAL IN ACCORDANCE WITH FDEP REGULATIONS. THE CONTENTS OF FORCE MAINS SHALL NOT BE DISCHARGED TO OR SPILLED TO THE GROUND, PAVED AREAS, DITCHES, TRENCHES, DRAINAGE SYSTEMS, SURFACE WATER BODIES OR ANY OTHER LOCATIONS. PUMP GROUT INTO EXISTING FORCE MAINS ENSURING THAT ALL INTERIOR VOIDS ARE FILLED WITH GROUT AND AIR POCKETS ARE REMOVED. REMOVE VALVE BOXES ON EXISTING LINE VALVES OF EACH FORCE MAIN AND RESTORE SURFACE AREA. DISPOSE OF ALL PIPE, FITTINGS, EXCESS MATERIALS, FORCE MAIN CONTENTS IN ACCORDANCE WITH APPROPRIATE ENVIRONMENTAL AND REGULATORY REQUIREMENTS FOR THE MATERIALS IN QUESTION.
35. THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWING OF THE WORK AS CONSTRUCTED. AS-BUILT DRAWINGS SHALL INCLUDE THE LOCATION OF ABANDONED FORCEMAIN CUT AND PLUG POINTS. AS BUILT DRAWINGS SHALL BE ANNOTED EACH DAY AS THE WORK PROCEEDS AND SHALL BE AVAILABLE TO THE COUNTY PROJECT MANAGER FOR REVIEW ON AN ONGOING BASIS. AS BUILT DRAWINGS SHALL PROVIDE THE HORIZONTAL AND VERTICAL INSTALLED LOCATION OF ALL NEW PIPELINES, FITTINGS, VALVES SERVICE LINES AND WATER SYSTEM APPURTENANCES REFERENCED TO FIXED SURFACE FEATURES THAT ARE SHOWN ON THE CONSTRUCTION DRAWINGS AND/OR RIGHT-OF-WAY LINES, PROPERTY CORNERS OR OTHER SURVEYED POINTS. THE CONTRACTOR SHALL ABLE TO PRESENT THE RECORD DRAWINGS TO THE COUNTY PROJECT MANAGER ON DEMAND AS THE WORK PROCEEDS.
36. MANATEE COUNTY GOVERNMENT WILL PROVIDE FOR ONE LIFT STATION SHUTDOWN AT NO COST TO THE CONTRACTOR FOR EACH TIE-IN. ADDITIONAL SHUTDOWNS WILL COST THE CONTRACTOR \$3,500 EACH, AS NEEDED. CONTRACTOR SHALL SCHEDULE THE SHUTDOWNS BETWEEN 11PM AND 6AM DURING LOW FLOW PERIODS. CONTRACTOR SHALL PROVIDE COUNTY AT LEAST TWO DAYS NOTICE FOR EACH SHUTDOWN.

BENCHMARKS

- C10 BM SQ CUT IN LIFT STATION
- BM 35-29-04
- C2 BM 35-29-05
- C3 BM 35-29-06
- C4 BM 35-29-06
- C5 BM 35-29-07
- C8 BM IR&C SET
- C10 BM N&D SET
- C11 BM N RIB JB
- C13 BM IR&C SET
- C14 BM SQ CUT IN LIFT STATION



Know what's below.
Call before you dig.



DSGN	RAC						
DR	BJK						
CHK	HLP						
APVD	RAC	NO.	DATE				

BID DOCUMENTS

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

CH2MHILL

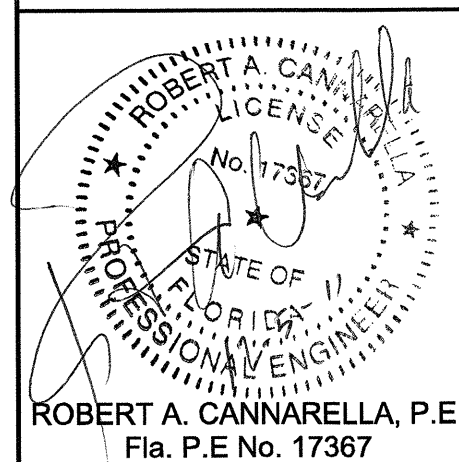
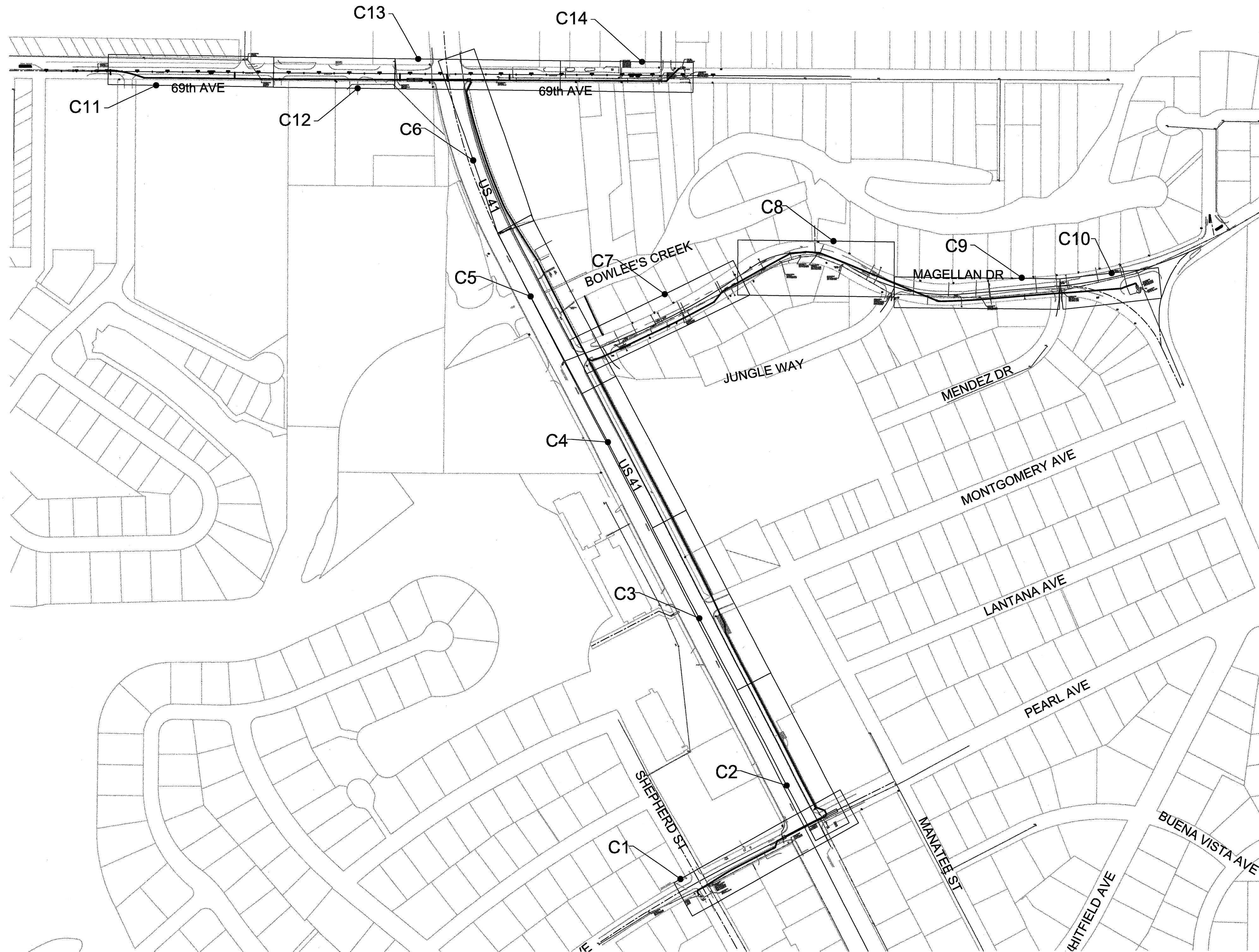
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

MANATEE COUNTY
FORCE MAIN 1A, 2A, AND 16A
REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

LEGEND AND NOTES

SHEET	G2
DWG	G2NOTES.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM

V:\Manatee County Waterline\Drawings\Ticover.dwg Plotted: 2/18/2009 0:13 pm By: bklein Model Plot Scale: 1"=10' Xref: Dwg's



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DR	BJK
CHK	HLP
APVD	RAC

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MANATEE COUNTY
FORCE MAIN 1A, 2A, AND 16A
REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

KEY PLAN

SHEET	G3
DWG	G3KEYPLAN.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM

CONSTRUCTION BY INDEX 612
ALL LEFT AND RIGHT TURNS (NB & SB)
FROM US 41 RESTRICTED
69TH AVE. TRAFFIC CONTROL BY DETOUR.
SEE NOTE 13

USE FDOT
INDEX 603
FOR OPEN CUT
AND PAVEMENT
RESTORATION

USE FDOT
INDEX 602
STA. 13+22 TO
STA. 21+73

USE FDOT
INDEX 612
STA. 27+87 TO
STA. 37+93

USE FDOT
INDEX 602
STA. 24+63 TO
STA. 30+42

USE DETOUR
SEE NOTE 13

USE FDOT
INDEX 603
FOR OPEN CUT
AND PAVEMENT
RESTORATION

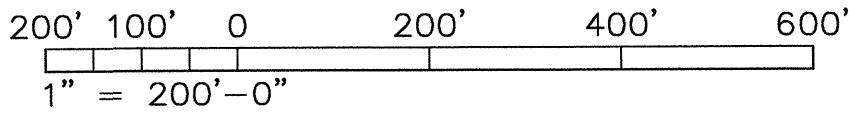
USE FDOT
INDEX 602
STA. 23+48 TO
STA. 29+45

USE FDOT
INDEX 602 OR 603
STA. 10+86 TO
STA. 15+31

USE FDOT
INDEX 612
STA. 11+40 TO
STA. 27+87

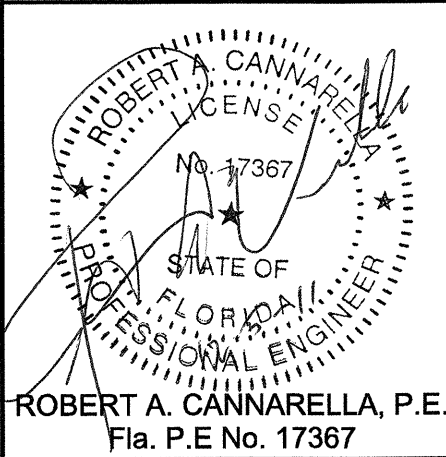
USE FDOT
INDEX 602 OR 603
STA. 10+28 TO
STA. 13+25

CONSTRUCTION BY INDEX 612
ALL LEFT AND RIGHT TURNS (NB & SB)
FROM US 41 RESTRICTED
PEARL AVE. TRAFFIC CONTROL BY
DETOUR. SEE NOTE 13



TRAFFIC CONTROL GENERAL NOTES

1. THIS TRAFFIC CONTROL PLAN IS SHOWN AS A MINIMUM GUIDELINE ONLY. CONTRACTOR IS RESPONSIBLE FOR ANY TRAFFIC CONTROL PLAN IMPLEMENTED. THE CONTRACTOR MAY MODIFY THE TRAFFIC CONTROL PLANS PROVIDED HEREIN. ALL MODIFICATIONS SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D. LATEST EDITION) AND THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION (600 SERIES). ANY CHANGE RECOMMENDED BY THE CONTRACTOR MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA AND SUBMITTED TO THE ENGINEER AT LEAST FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN COUNTY APPROVAL (PRIOR TO IMPLEMENTATION) AND FAILURE TO OBTAIN APPROVAL SHALL NOT BE GROUNDS FOR ANY DELAY CLAIM FOR TIME OR ADDITIONAL COMPENSATION.
2. THE RECOMMENDED FDOT DESIGN STANDARD INDICES ARE CONCEPTUAL. THE CONTRACTOR SHALL AT ALL TIMES ADHERE TO THE REQUIREMENTS SET FORTH IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D. LATEST EDITION) AND THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION (600 SERIES).
3. IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL TEMPORARY DRAINAGE AND INCIDENTAL CONSTRUCTION NECESSARY TO MAINTAIN TRAFFIC. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE TEMPORARY DRAINAGE. THERE WILL BE NO DIRECT PAY FOR THIS WORK. COSTS SHALL BE INCLUDED IN THE COST OF THE PIPE.
4. MOTORIZED AND MECHANICAL EQUIPMENT SHALL BE EFFECTIVELY SHIELDED, PADDED, OR LOCATED TO MINIMIZE NOISE AS DIRECTED BY THE ENGINEER.
5. THE CONTRACTOR WILL NOTIFY ALL EMERGENCY AND RESCUE AGENCIES LOCATED IN THE PROJECT VICINITY 24 HOURS IN ADVANCE OF ANY PROPOSED LANE CLOSURES OR DETOURS.
6. ACCESS TO ALL SIDE STREETS AND DRIVEWAYS MUST BE PROVIDED AND MAINTAINED DURING CONSTRUCTION.
7. FOR TRAFFIC CONTROL MEASURES WHEN CONSTRUCTION EQUIPMENT IS DRIVEN ON OPEN TRAVEL LANES USE INDEX NO. 627. THE REGULATORY SPEED IN WORK ZONES SHOULD BE AS CLOSE TO NORMAL CONDITIONS AS POSSIBLE UNLESS NOTED ON TRAFFIC CONTROL PLANS.
8. THE CONTRACTOR SHALL PROVIDE SAFE PEDESTRIAN ACCESS THROUGH THE WORK ZONE AT ALL TIMES.
9. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO WORKING NEAR THEIR EXISTING FACILITIES.
10. CONSTRUCTION SEQUENCES SHALL BE COORDINATED TO PROVIDE POSITIVE DRAINAGE OF THE TRAVELED WAY AT ALL TIMES.
11. ANY MOT ITEM NOT SPECIFICALLY LISTED UNDER A PARTICULAR PAY ITEM SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS: THERE SHALL BE NO SEPARATE PAYMENT.
12. THE MAXIMUM SPACING BETWEEN WARNING DEVICES USED FOR DELINEATION BETWEEN THE TRAVEL WAY AND CONSTRUCTION AREA SHALL BE AS PER FDOT STANDARD INDEX. 600
13. ALL DETOURS SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D. LATEST EDITION) AND THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION (600 SERIES). ANY DETOUR RECOMMENDED BY THE CONTRACTOR MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA AND SUBMITTED TO THE ENGINEER AT LEAST FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN COUNTY APPROVAL (PRIOR TO IMPLEMENTATION) AND FAILURE TO OBTAIN APPROVAL SHALL NOT BE GROUNDS FOR ANY DELAY CLAIM FOR TIME OR ADDITIONAL COMPENSATION.



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CHK	HLP
APVD	RAC

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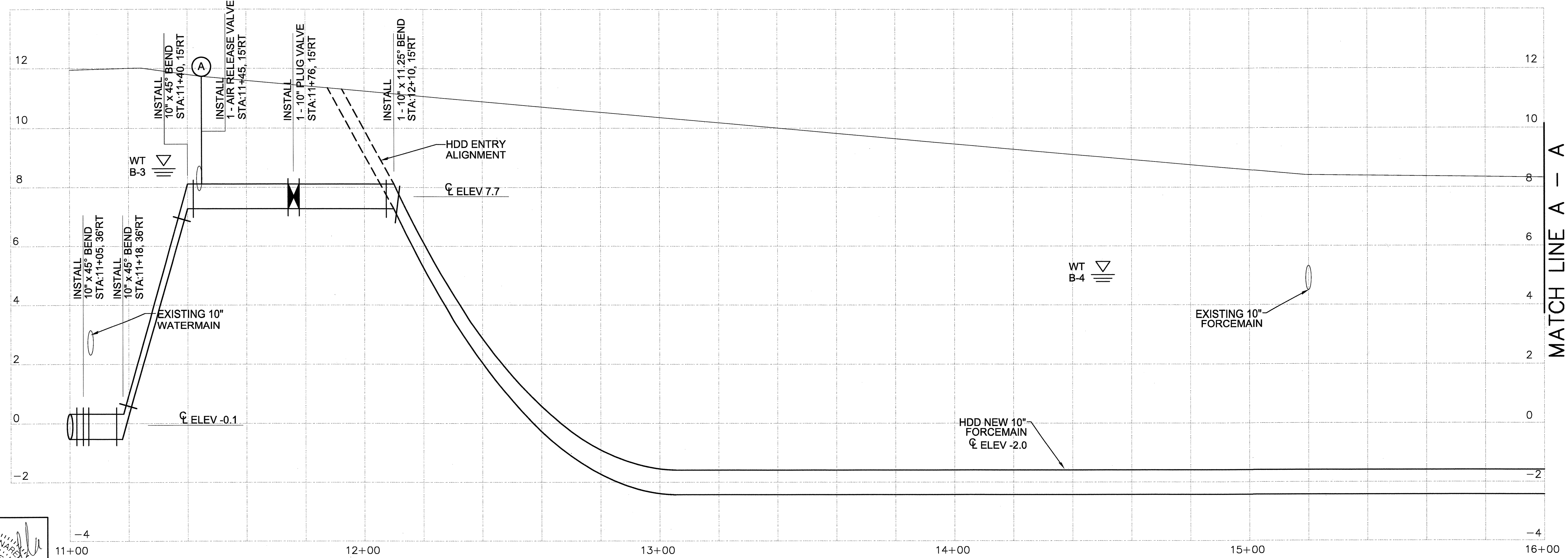
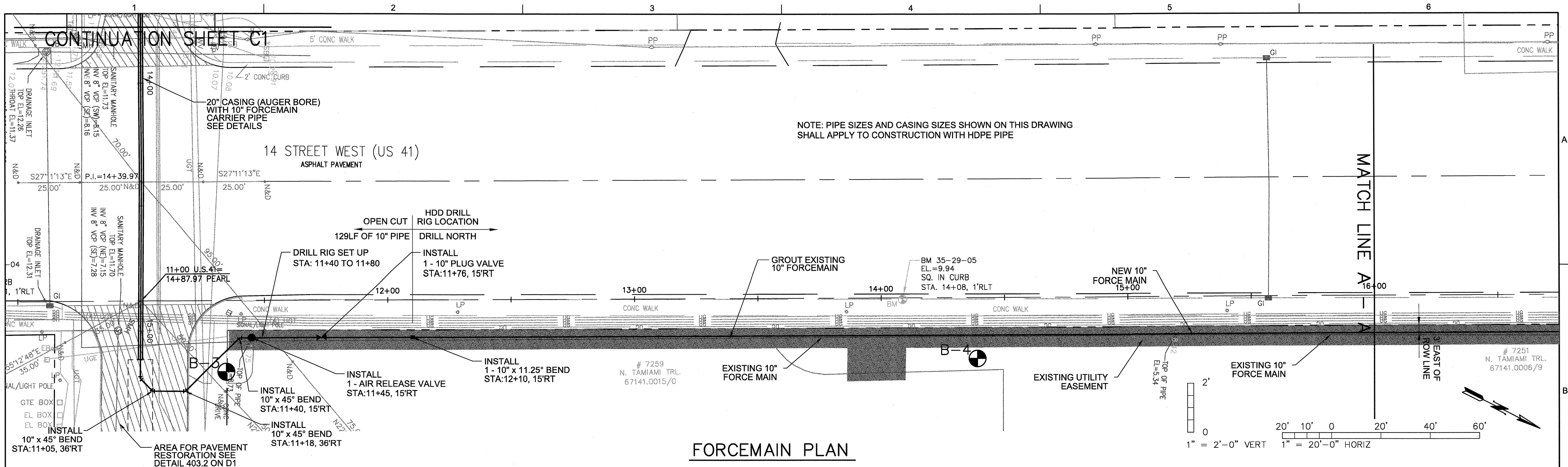
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MANATEE COUNTY
FORCE MAIN 1A, 2A, AND 16A
REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

MAINTENANCE OF TRAFFIC

SHEET	G4
DWG	G4.DWG
DATE	NOVEMBER 2011
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MANATEE COUNTY WATERLINE DRAWINGS
Plotted: 2/18/2009 0:13 pm
By: bklep1
Model Plot Scale: 1=10
Xref Dwg's:

ROBERT A. CANNARELLA, P.E.
FLA. P.E. No. 17367

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APVD	RAC

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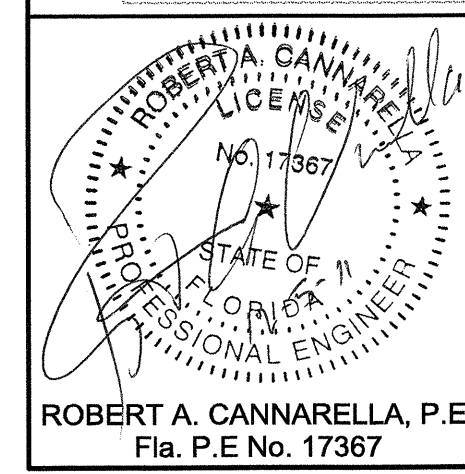
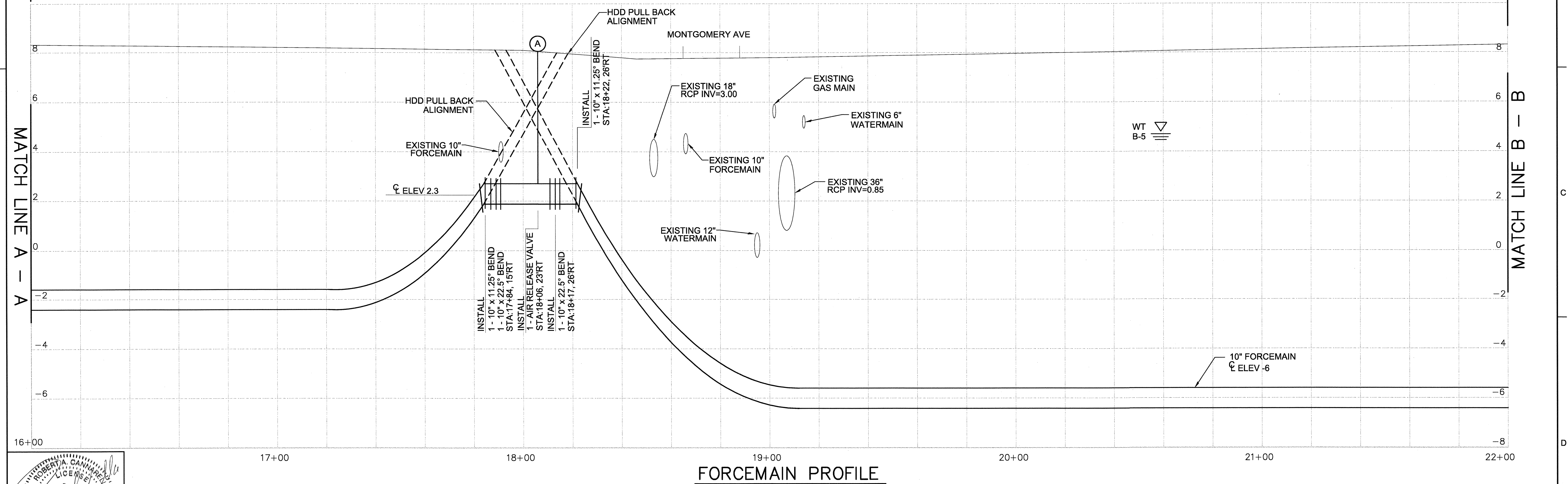
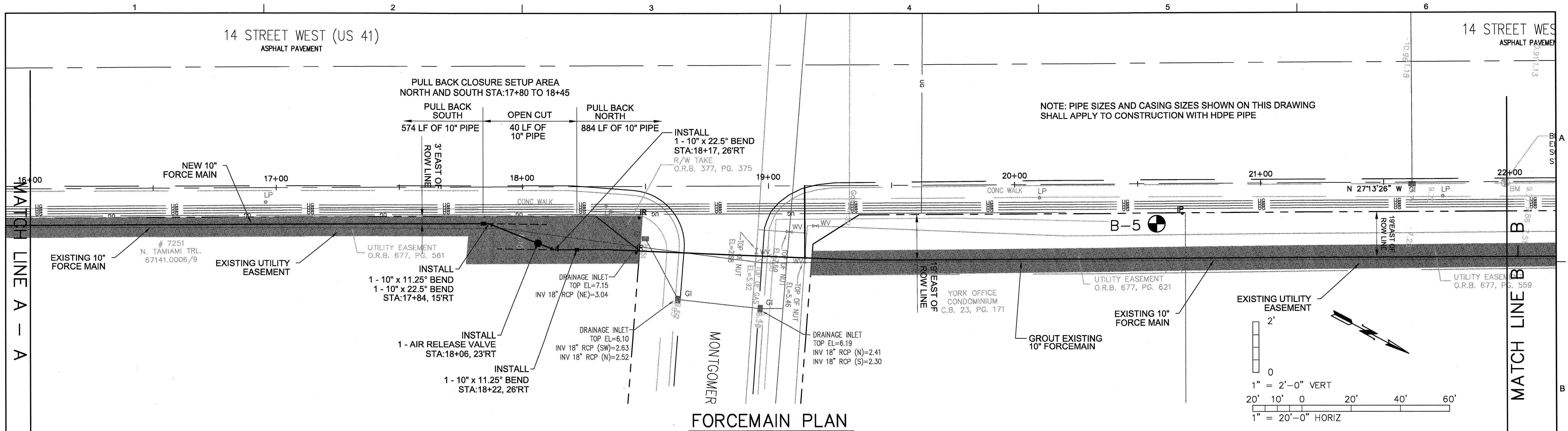
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TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

MANATEE COUNTY
FORCE MAIN 1A, 2A, AND 16A
REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

PLAN AND PROFILE
US 41 STA: 11+00 TO 16+00

SHEET	C2
DWG	C2.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM

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APVD	RAC

NO. DATE

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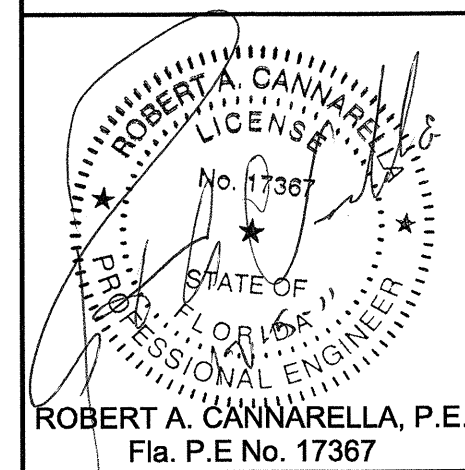
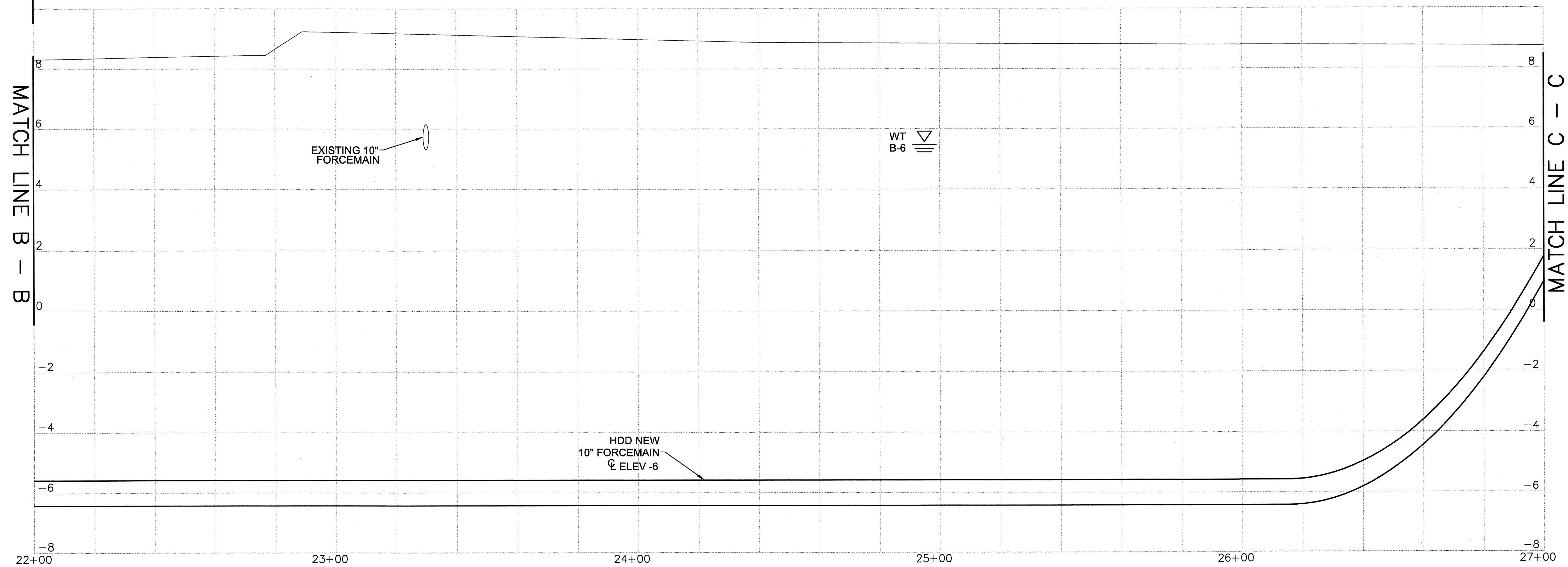
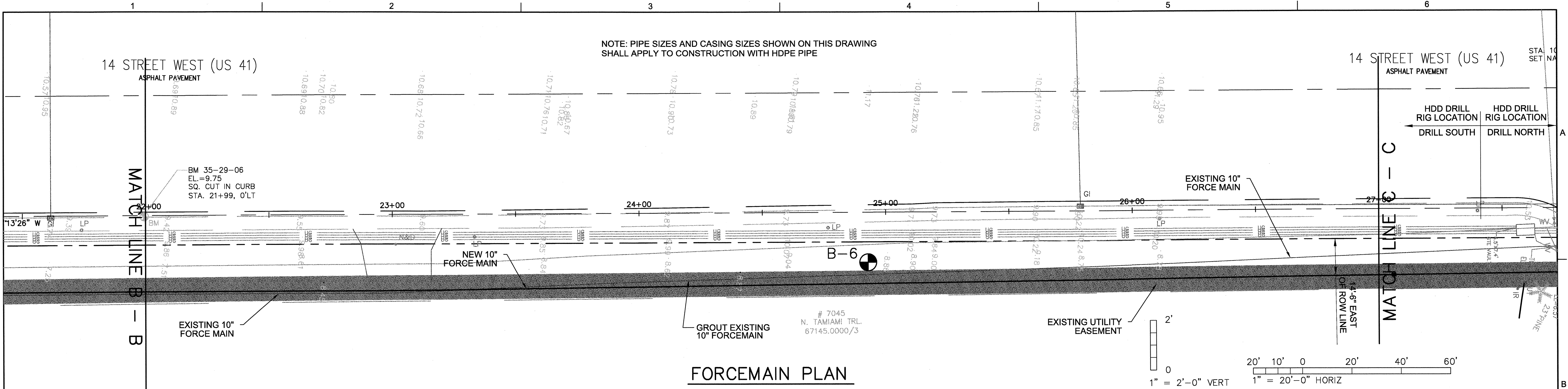
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MANATEE COUNTY
FORCE MAIN 1A, 2A, AND 16A
REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

PLAN AND PROFILE
US 41 STA: 16+00 TO 22+00

SHEET	C3
DWG	C3.DWG
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APVD	RAC							
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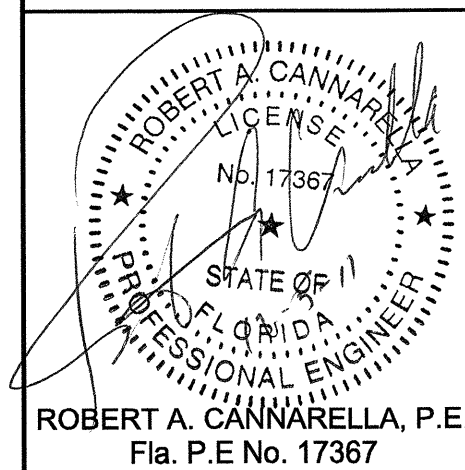
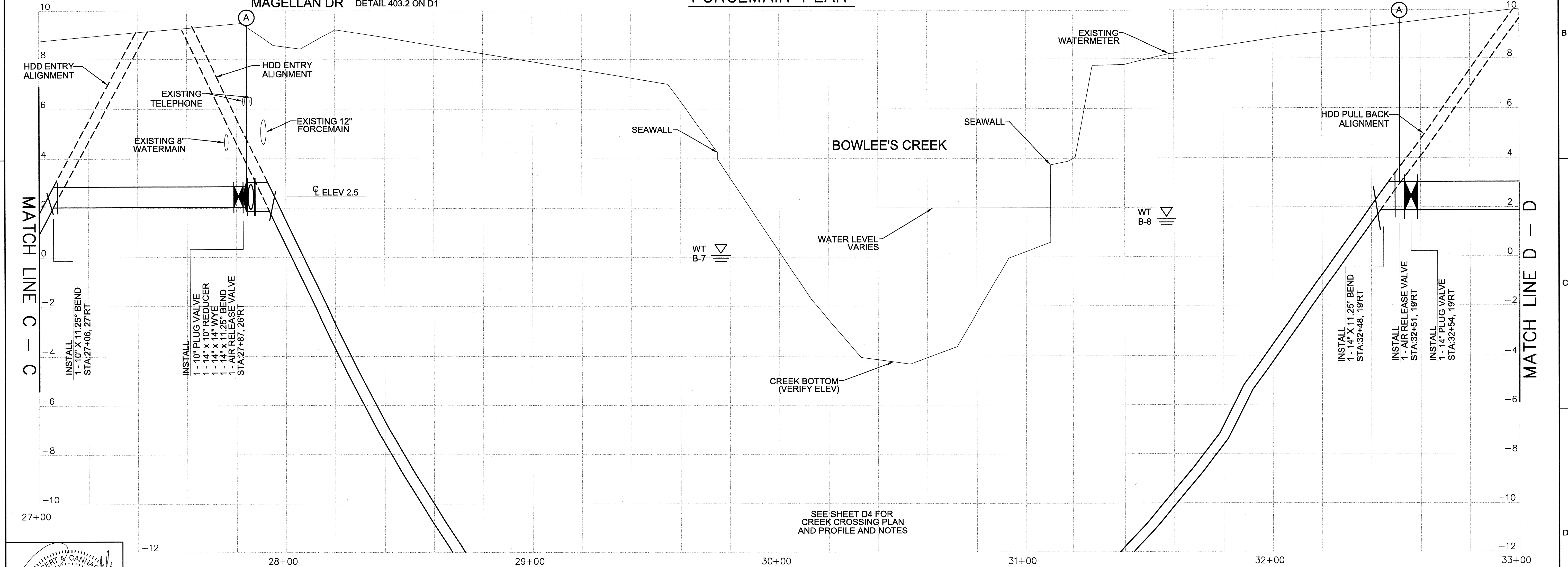
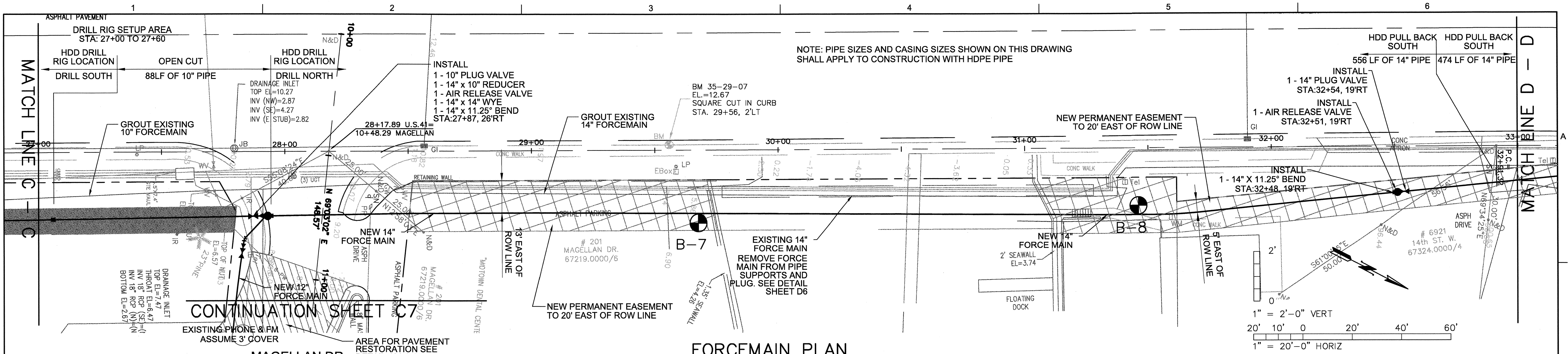
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MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

PLAN AND PROFILE
US 41 STA: 22+00 TO 27+00

SHEET	C4
DWG	C4.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM



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APVD	RAC

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FORCEMAIN PROFILE

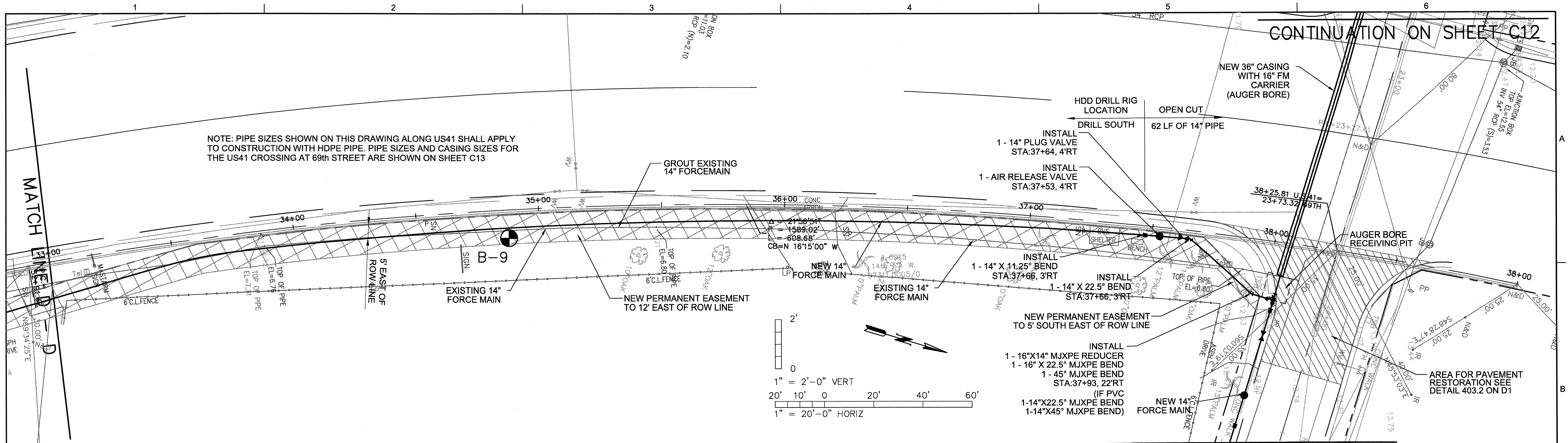
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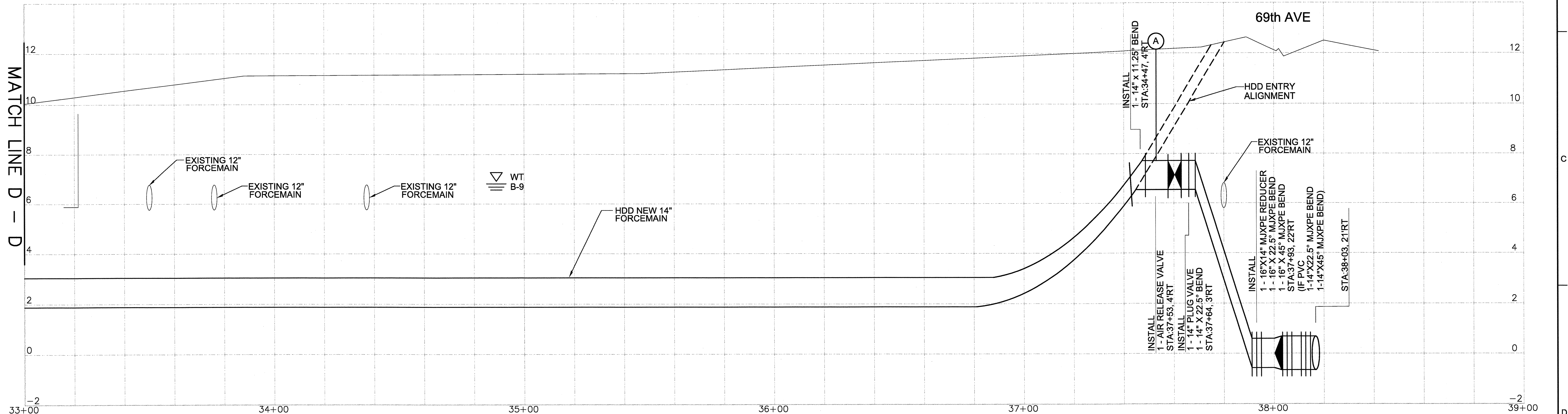
MANATEE COUNTY
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REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

PLAN AND PROFILE
US 41 STA: 27+00 TO 33+00

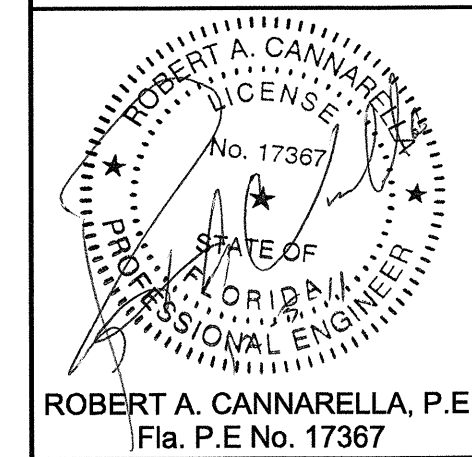
SHEET	C5
DWG	C5.DWG
DATE	NOVEMBER 2011
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FORCEMAIN PLAN



FORCEMAIN PROFILE


 ROBERT A. CANNARELLA, P.E.
 Fla. P.E. No. 17367

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 REPLACEMENT PROJECT
 MANATEE COUNTY, FLORIDA
 PROJECT No. 60522.80

PLAN AND PROFILE
 US 41 STA: 33+00 TO 69th AVE

SHEET	C6
DWG	C6.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM

CONTINUATION SHEET C5

NOTE: PIPE SIZES AND CASING SIZES SHOWN ON THIS DRAWING SHALL APPLY TO CONSTRUCTION WITH HDPE PIPE

MAGELLAN DRIVE

NEW 12" FORCE MAIN

B-10

INSTALL 12" X 22.5° BEND STA:15+31, 27°RT

INSTALL 12" X 22.5° BEND STA:15+70, 12°RT

INSTALL 14" X 45° BEND STA:10+86, 31°RT

INSTALL 16" X 12" REDUCER 12" PLUG VALVE STA:10+88, 31°RT

INSTALL 1-10" PLUG VALVE
1-14" X 10" REDUCER
1-14" X 14" WYE
1-14" X 11.25" BEND STA:27+87, 26°RT

DRAINAGE INLET TOP EL=7.47 THROAT EL=6.47 INV 18" RCP (SE)=(NO ACCESS) INV 18" RCP (N)=(NO ACCESS) BOTTOM EL=2.67

SANITARY MANHOLE RIM EL=6.87 INV 8" VCP (W)=1.63(STUB) INV 8" VCP (E)=0.69 INV 8" VCP (S)=0.77

DRAINAGE INLET TOP EL=7.55 THROAT EL=7.00 INV 18" RCP (E)=(NO ACCESS) INV 18" RCP (W)=(NO ACCESS) INV 18" RCP (S)=(NO ACCESS) BOTTOM EL=5.05

HDD PULL BACK WEST 297 LF OF 12" PIPE

HDD PULL BACK EAST 820 LF OF 12" PIPE

OPEN CUT 164 LF OF 12" PIPE

HDD DRILL RIG LOCATION DRILL EAST

AREA FOR PAVEMENT RESTORATION SEE DETAIL 403.2 ON D1

AREA FOR PAVEMENT RESTORATION SEE DETAIL 403.2 ON D1

NEW 10" FORCE MAIN

NEW 14" FORCE MAIN

GROUT EXISTING 12" FORCEMAIN

11" NORTH OF ROW LINE

8" NORTH OF ROW LINE

17" OAK

24" OAK

22" PUNK

12" TREE

36" OAK

10" PALM

9" CITRUS

4" MASONRY PLANTER

MB

CB

PP

WM

IP

CO

LP

CM

SMH

IR

N&D

#201 MAGELLAN DR. 67219.0000/6

#205 MAGELLAN DR. 67224.0000/6

#209 MAGELLAN DR. 67228.0000/7

#213 MAGELLAN DR. 67230.0000/3

#217 MAGELLAN DR. 67236.0000/9

#221 MAGELLAN DR. 67237.0000/8

#225 MAGELLAN DR. 67239.0000/4

#210 MAGELLAN DR. 67159.0000/4

#214 MAGELLAN DR. 67163.0000/6

#218 MAGELLAN DR. 67164.0000/4

#226 MAGELLAN DR. 67165.0000/1

CONTINUATION SHEET C4

FORCEMAIN PLAN

1" = 2'-0" VERT

1" = 20'-0" HORIZ

FORCEMAIN PROFILE

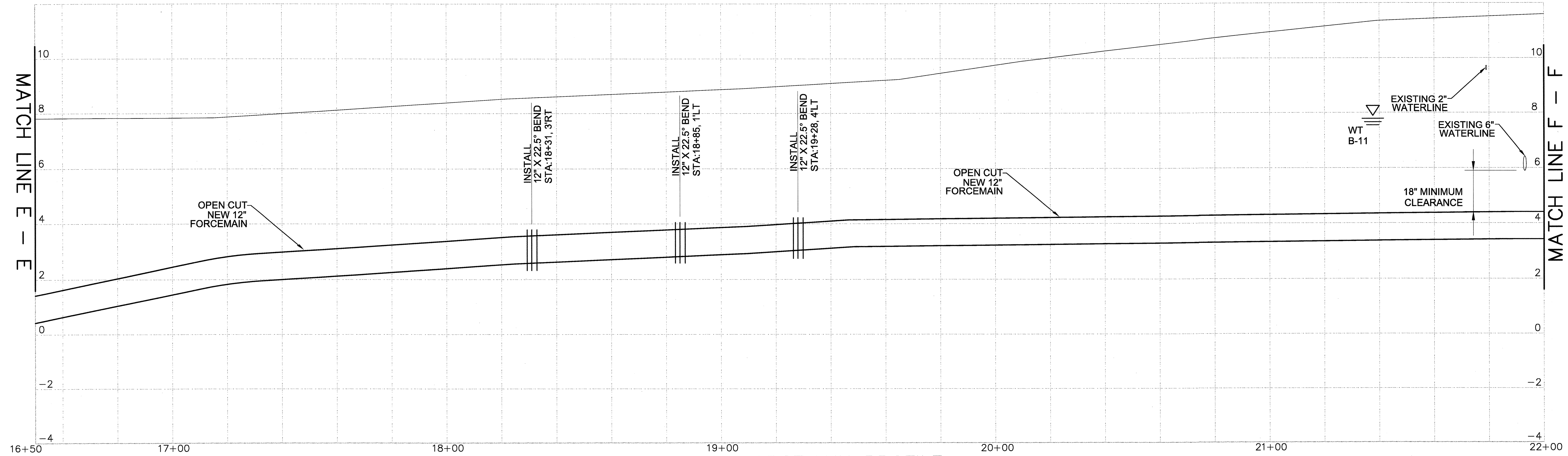
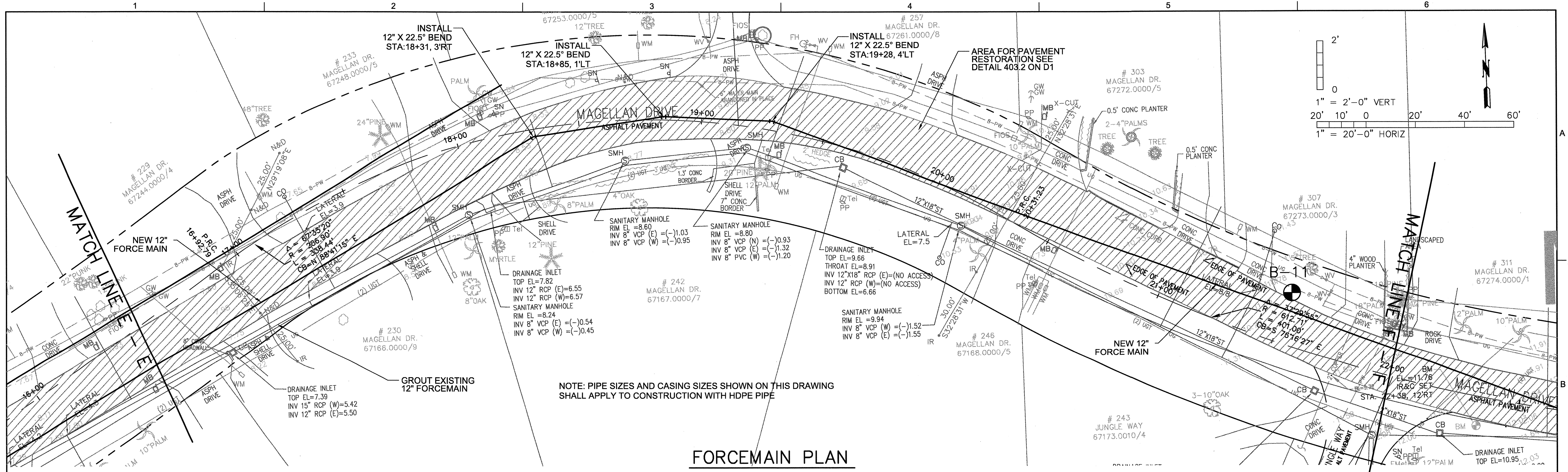
The diagram illustrates the vertical alignment of a forcemain system. The horizontal axis represents stationing from 10+50 to 16+50. The vertical axis represents elevation in feet, ranging from -6 to 8.

Key Features and Labels:

- EXISTING 8" WATERMAIN:** Located at station 10+50, with a centerline elevation of 2.25.
- EXISTING 6" WATERMAIN:** Located at station 11+00.
- EXISTING 18" RCP INV=0.00:** Located at station 15+00.
- EXISTING 12" FORCEMAIN:** Located at station 15+00.
- EXISTING 8" SANITARY SEWER:** Located at station 15+00.
- HDD ENTRY ALIGNMENT:** Indicated by a dashed line starting at station 12+00.
- HDD PULL BACK ALIGNMENT:** Indicated by a dashed line starting at station 15+00.
- WT B-10:** Water tank structure located at station 13+50.
- INVERT UNKNOWN FORCEMAIN COVER UNKNOWN:** Located at station 15+00.
- INSTALL 12" X 22.5° BEND STA:12+37, 26'RT:** Bend location at station 12+37.
- INSTALL 12" X 22.5° BEND STA:15+31, 27'RT:** Bend location at station 15+31.
- INSTALL 12" X 22.5° BEND STA:15+70, 12'RT:** Bend location at station 15+70.
- CONNECT TO 14" x 14" WYE STA:27+92, 26'RT:** Connection point at station 27+92.
- INSTALL 14" x 45° BEND STA:10+86, 31'RT:** Bend location at station 10+86.
- INSTALL 16" x 12" REDUCER 12" PLUG VALVE STA:10+88, 31'RT:** Reducer and valve location at station 10+88.

Match Line E - E at station 16+50.

SHEET	C7
DWG	C7.DWG
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ROBERT A. CANNARELLA, P.E.
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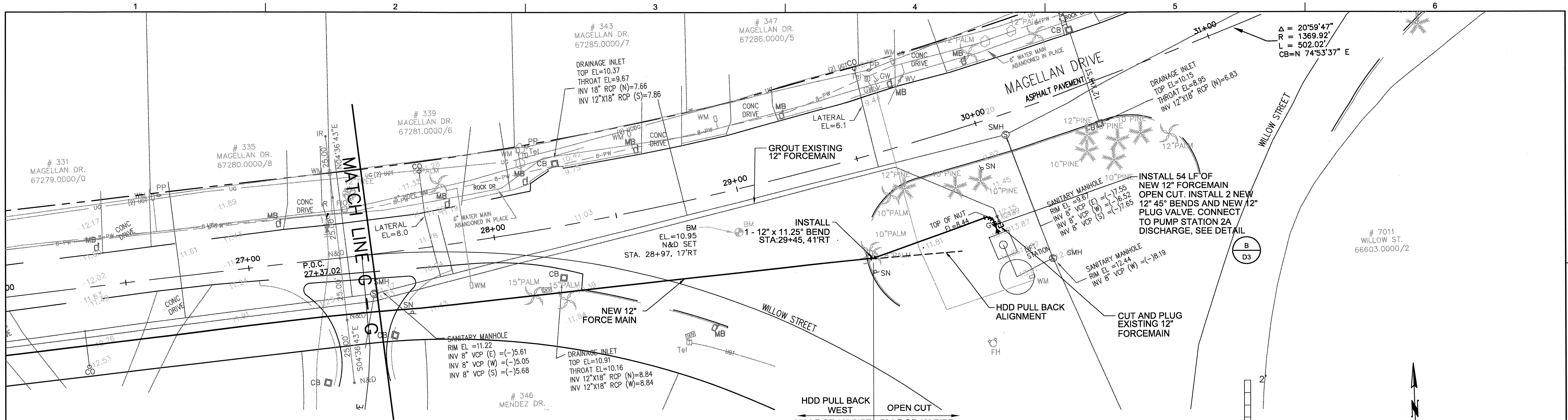
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 LB 0002934 AA C000656

MANATEE COUNTY
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 MANATEE COUNTY, FLORIDA
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PLAN AND PROFILE
 MAGELLAN DR STA: 16+50 TO 22+00

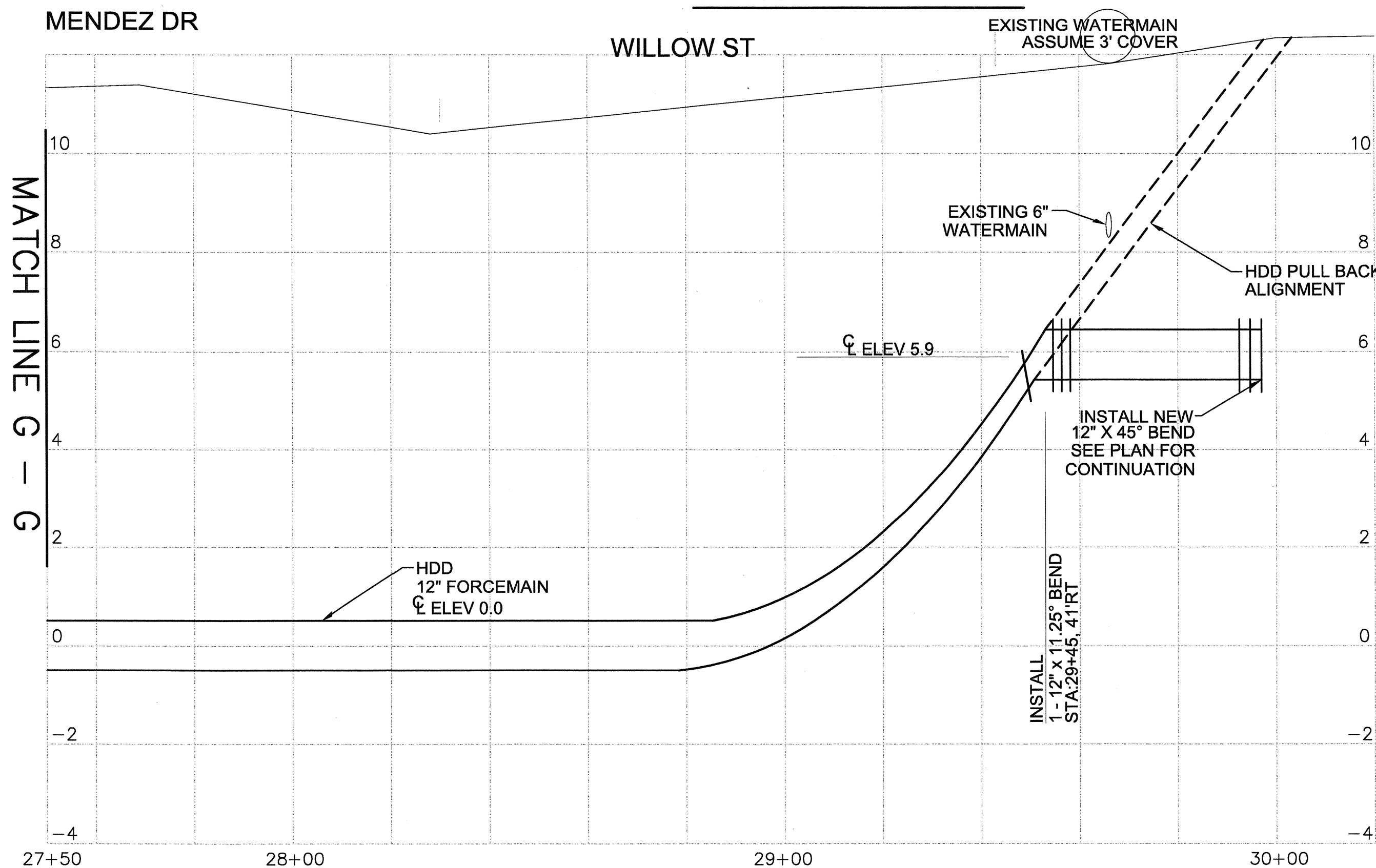
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DATE	NOVEMBER 2011
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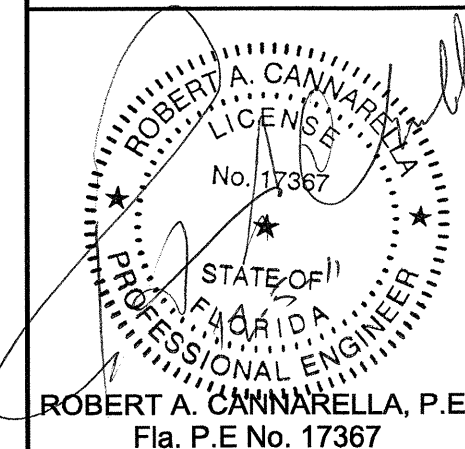


NOTE: PIPE SIZES AND CASING SIZES SHOWN ON THIS DRAWING SHALL APPLY TO CONSTRUCTION WITH HDPE PIPE

FORCEMAIN PLAN



FORCEMAIN PROFILE



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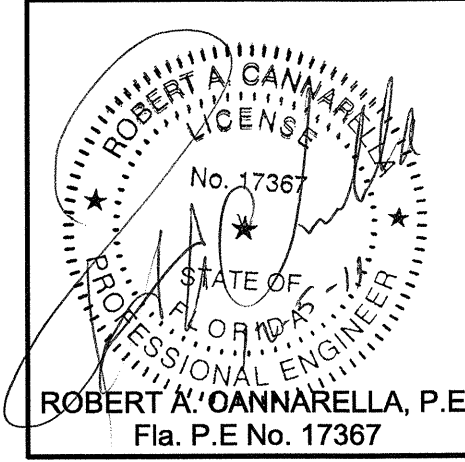
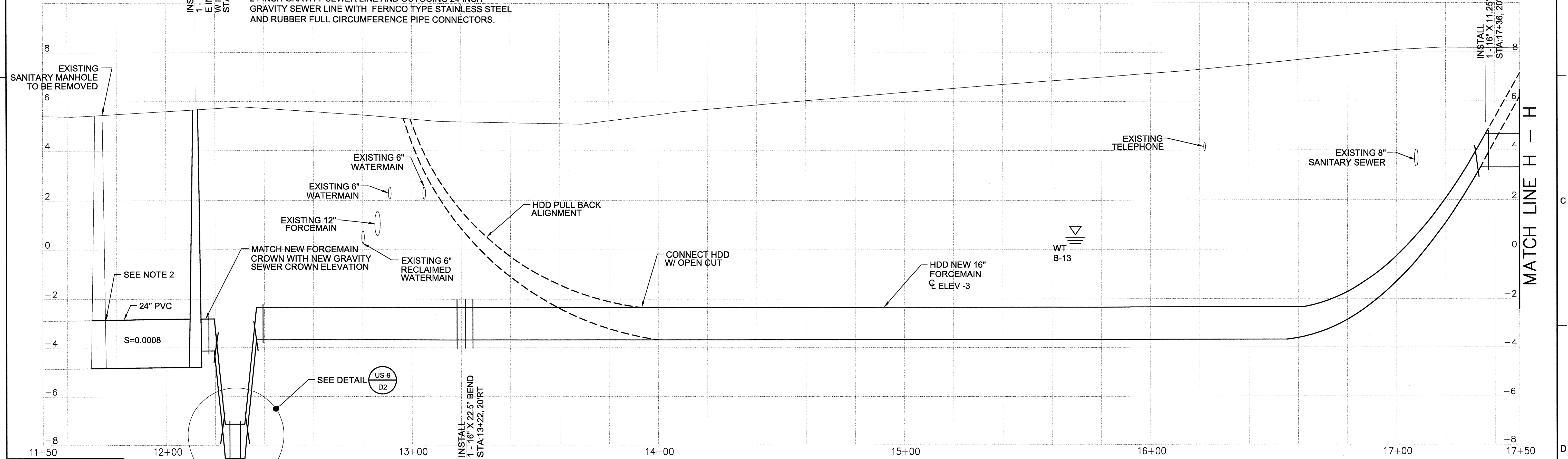
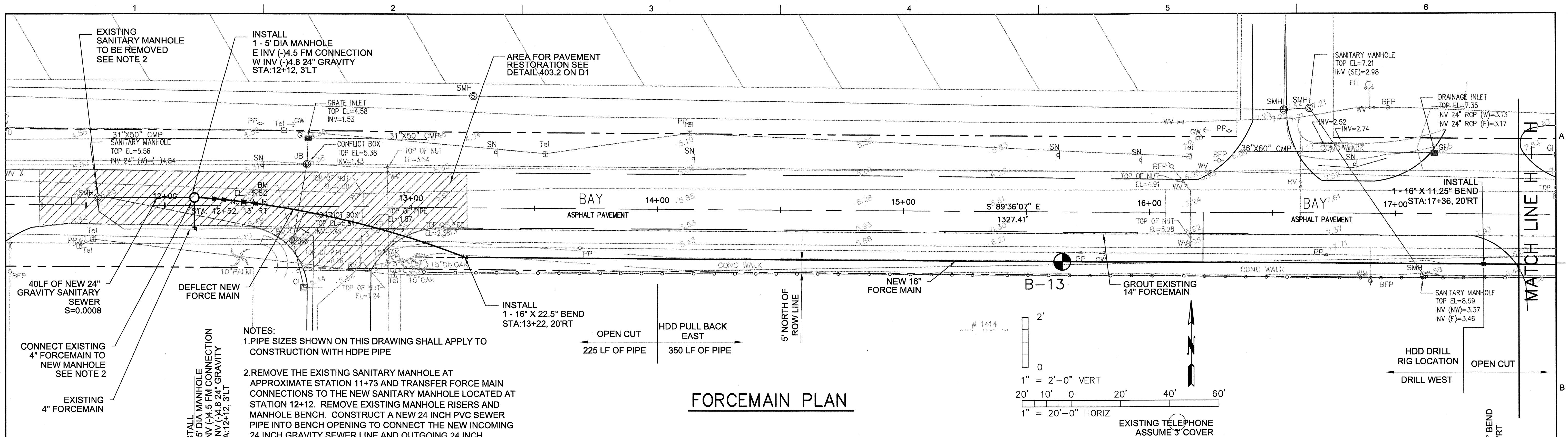
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MANATEE COUNTY
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REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

PLAN AND PROFILE
MAGELLAN DR STA: 27+50 TO 30+00

SHEET	C10
DWG	C10.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM

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DR	BJK		
CHK	HLP		
APVD	RAC	NO.	DATE

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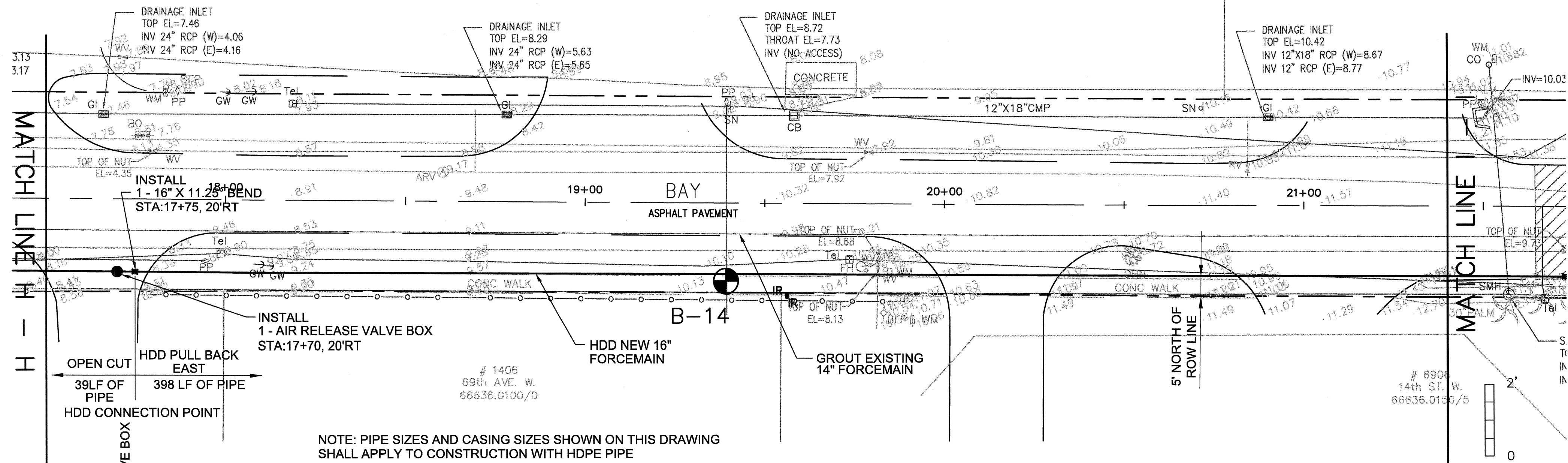
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FORCE MAIN 1A, 2A, AND 16A
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MANATEE COUNTY, FLORIDA
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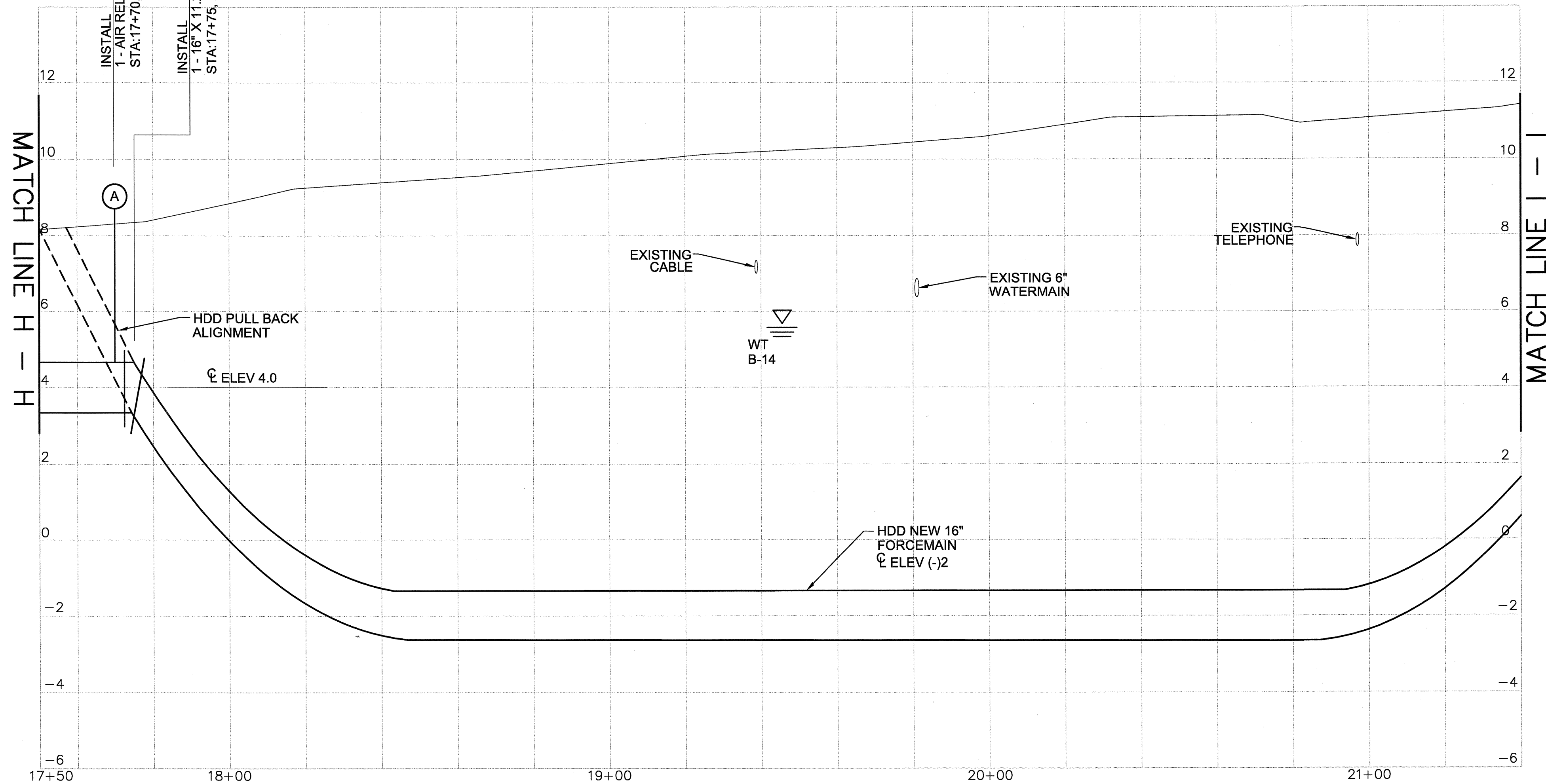
PLAN AND PROFILE
69th AVE (BAY) STA: 11+50 TO 17+50

SHEET	C11
DWG	C11.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM

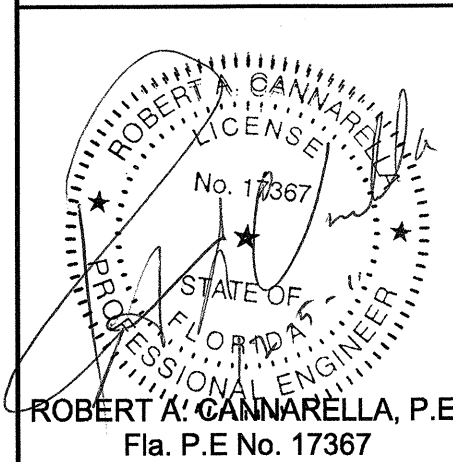
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FORCEMAIN PLAN



FORCEMAIN PROFILE



DSGN	RAC
DR	BJK
CHK	HLP
APVD	RAC

NO.	DATE

BID DOCUMENTS

REVISION

BY

APVD

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

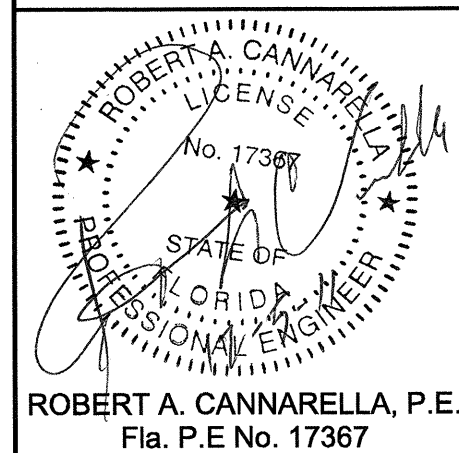
CH2MHILL
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

MANATEE COUNTY
FORCE MAIN 1A, 2A, AND 16A
REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

PLAN AND PROFILE
69th AVE (BAY) STA: 17+50 TO 21+40

SHEET	C12
DWG	C12.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM

V:\Manatee County Waterline\Drawings\T\cover.dwg Plotted: 2/18/2009 0:13 pm By: bk1e1n1 Model Plot Scale: 1=10 Xref: Dwg's:



DSGN	RAC
DR	BJK
CHK	HLP
APVD	RAC

NO.	DATE
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BID DOCUMENTS

REVISION

BY

APVD

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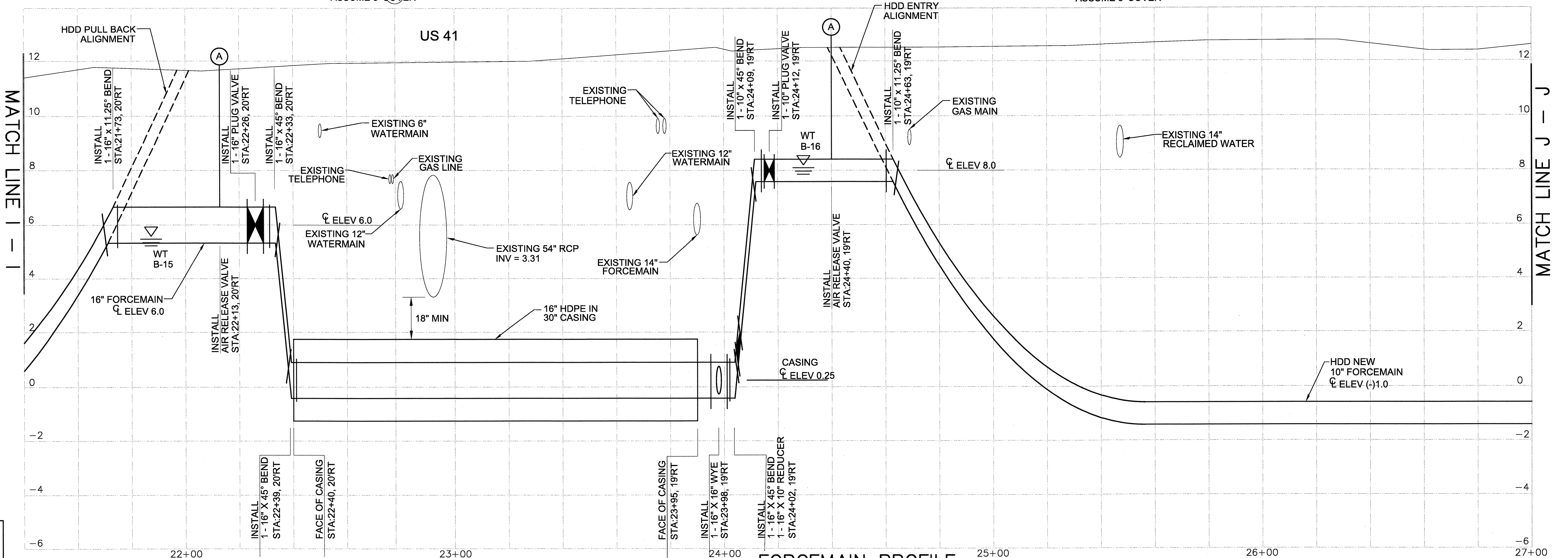
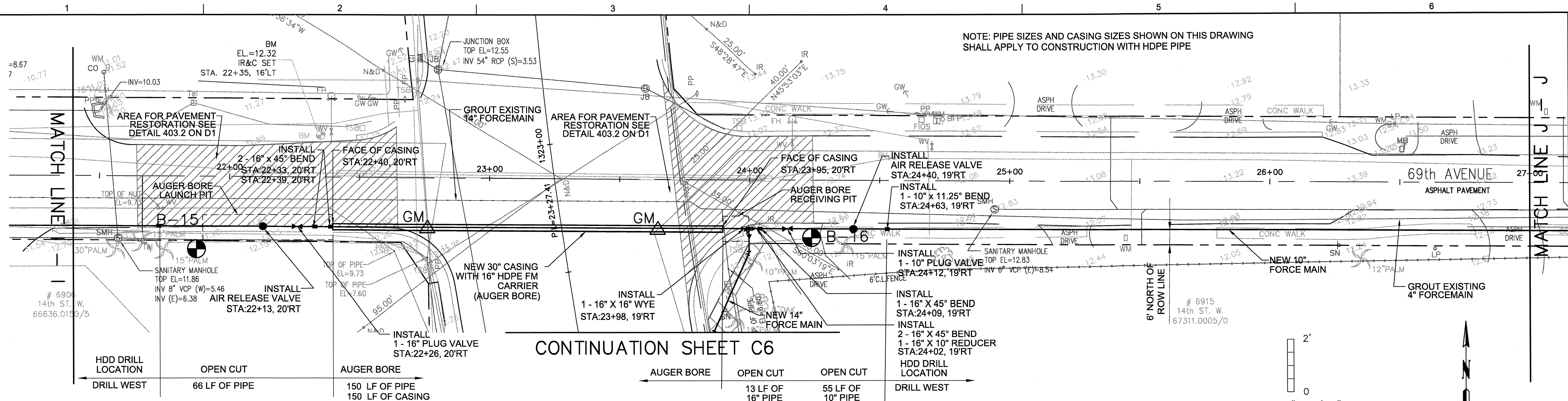
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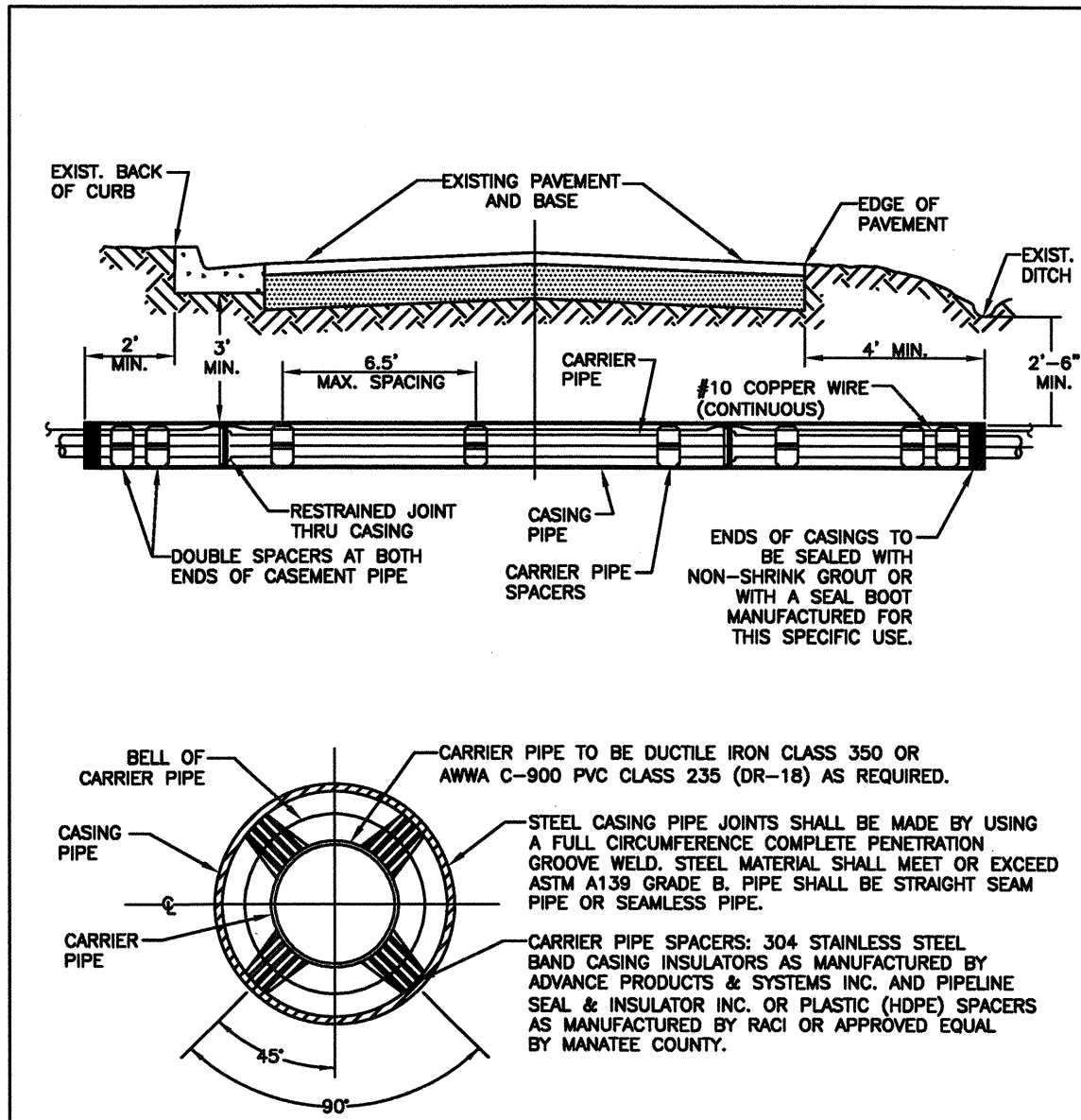
4350 WEST CYPRESS STREET SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

MANATEE COUNTY
FORCE MAIN 1A, 2A, AND 16A
REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

PLAN AND PROFILE
69th AVE STA: 21+40 TO 27+00

SHEET	C13
DWG	C13.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM





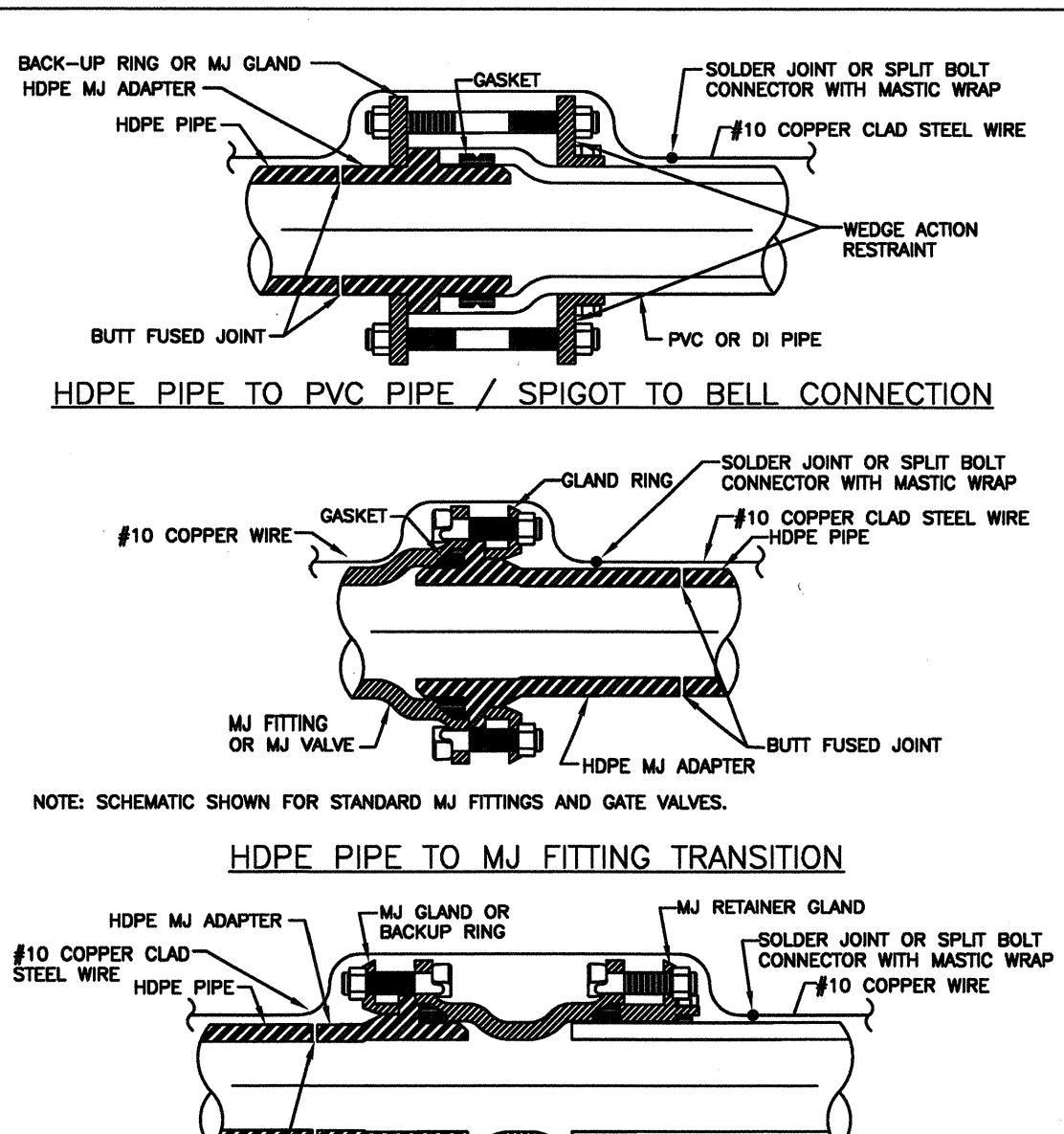
CARRIER SIZE & MINIMUM CASING SIZE									
CARRIER	4"	6"	8"	10"	12"	14"	16"	18"	20"
CASING	12"	14"	16"	20"	24"	30"	36"	42"	48"
CASING / WALL THICKNESS	0.188	0.188	0.250	0.250	0.344	0.408	0.408	0.408	0.408

NOTES:

- THE ENGINEER OF RECORD MAY SELECT LARGER CASING DIAMETERS.
- FOR JACK & BORE SPECIFICATIONS UNDER STATE ROADS AND RAILROADS REFER TO THE D.O.T. UTILITY ACCOMMODATION MANUAL, LATEST EDITION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT
REV. BY DATE
CLB/BR 11/10
MAY 10, 2011
DATE OF APPROVAL

JACK & BORE CROSSING
UG-3
PAGE 103



CARRIER SIZE & MINIMUM CASING SIZE									
CARRIER	4"	6"	8"	10"	12"	14"	16"	18"	20"
CASING	12"	14"	16"	20"	24"	30"	36"	42"	48"
CASING / WALL THICKNESS	0.188	0.188	0.250	0.250	0.344	0.408	0.408	0.408	0.408

NOTES:

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

MANATEE COUNTY PUBLIC WORKS DEPARTMENT
REV. BY DATE
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MAY 10, 2011
DATE OF APPROVAL

HDPE TO PVC OR DI PIPE ADAPTER
UG-6
PAGE 108

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE									
MAIN SIZE		HORIZ. BENDS		TEES		REDUCERS		PLUGS & VALVES	
90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH	SIZE	LENGTH	
24	90	38	18	X24	X24	X18	X18	X18	214
20	78	32	16	X20	X20	X16	X16	X16	184
16	66	27	13	X16	X16	X12	X12	X12	151
12	52	22	10	X12	X12	X10	X10	X10	118
10	44	18	9	X10	X10	X8	X8	X8	100
8	37	15	7	X8	X8	X6	X6	X6	83
6	29	12	6	X6	X6	X4	X4	X4	63
4	21	8	4	X4	X4	X3	X3	X3	45

NOTES:

- RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
- ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
- ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
- PIPE SIZES ARE GIVEN IN INCHES.
- RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
- LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
- 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.
- RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

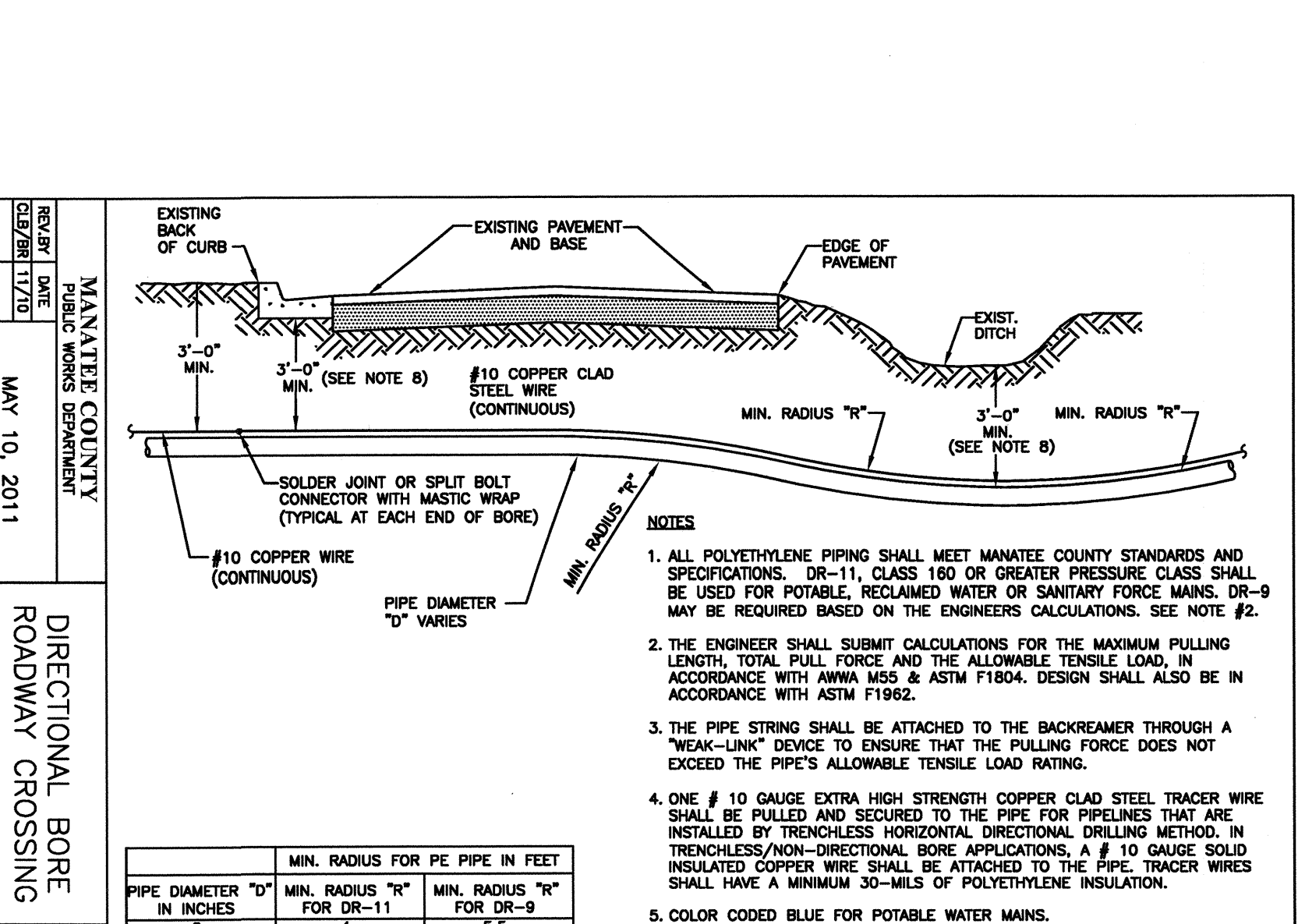
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE									
MAIN SIZE		HORIZ. BENDS		TEES		REDUCERS		PLUGS & VALVES	
90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH	SIZE	LENGTH	
24	90	38	18	X24	X24	X18	X18	X18	214
20	78	32	16	X20	X20	X16	X16	X16	184
16	66	27	13	X16	X16	X12	X12	X12	151
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MANATEE COUNTY PUBLIC WORKS DEPARTMENT
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RESTRAINED LENGTHS FOR PVC PIPE
UG-8
PAGE 108



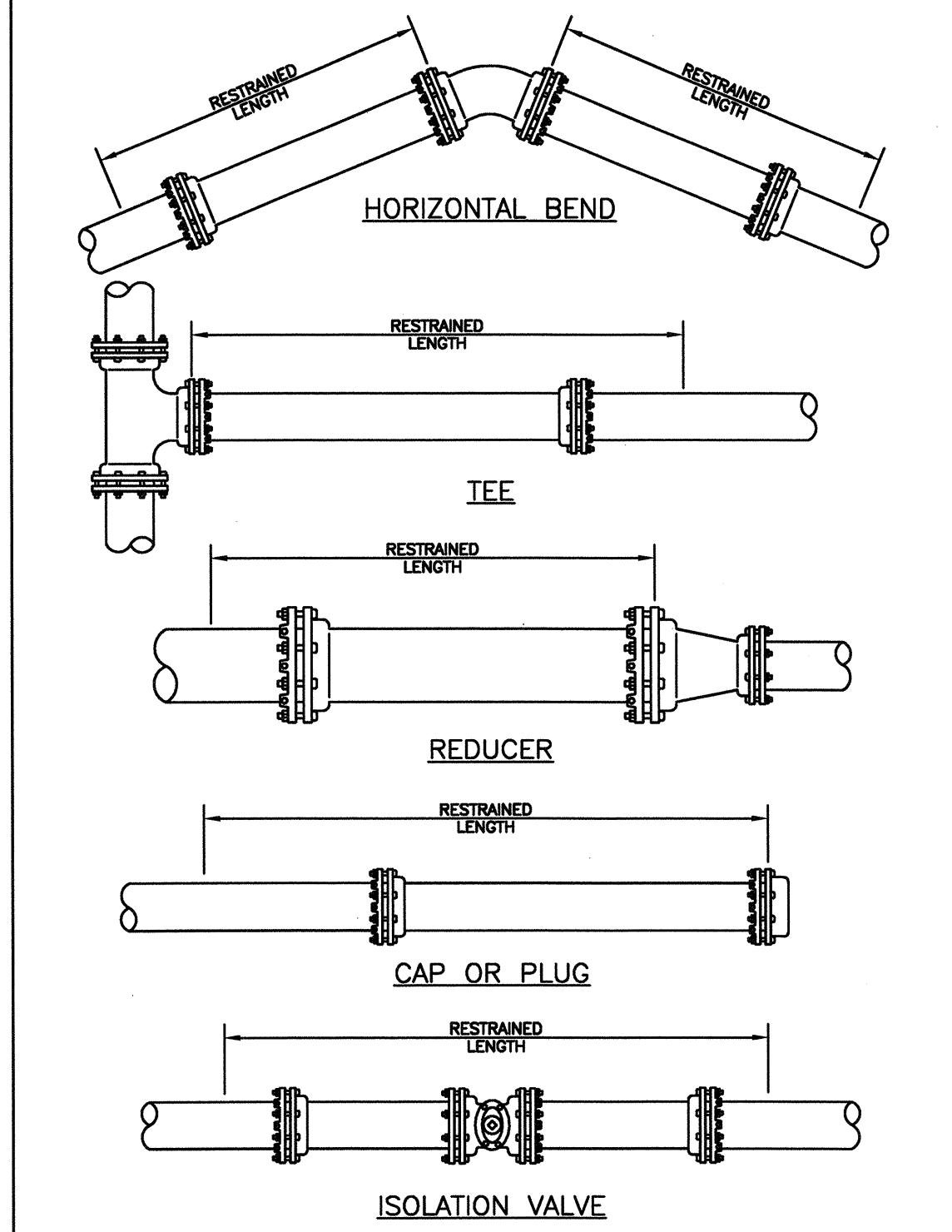
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NOTES:

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MANATEE COUNTY PUBLIC WORKS DEPARTMENT
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JACK & BORE CROSSING
UG-3
PAGE 103



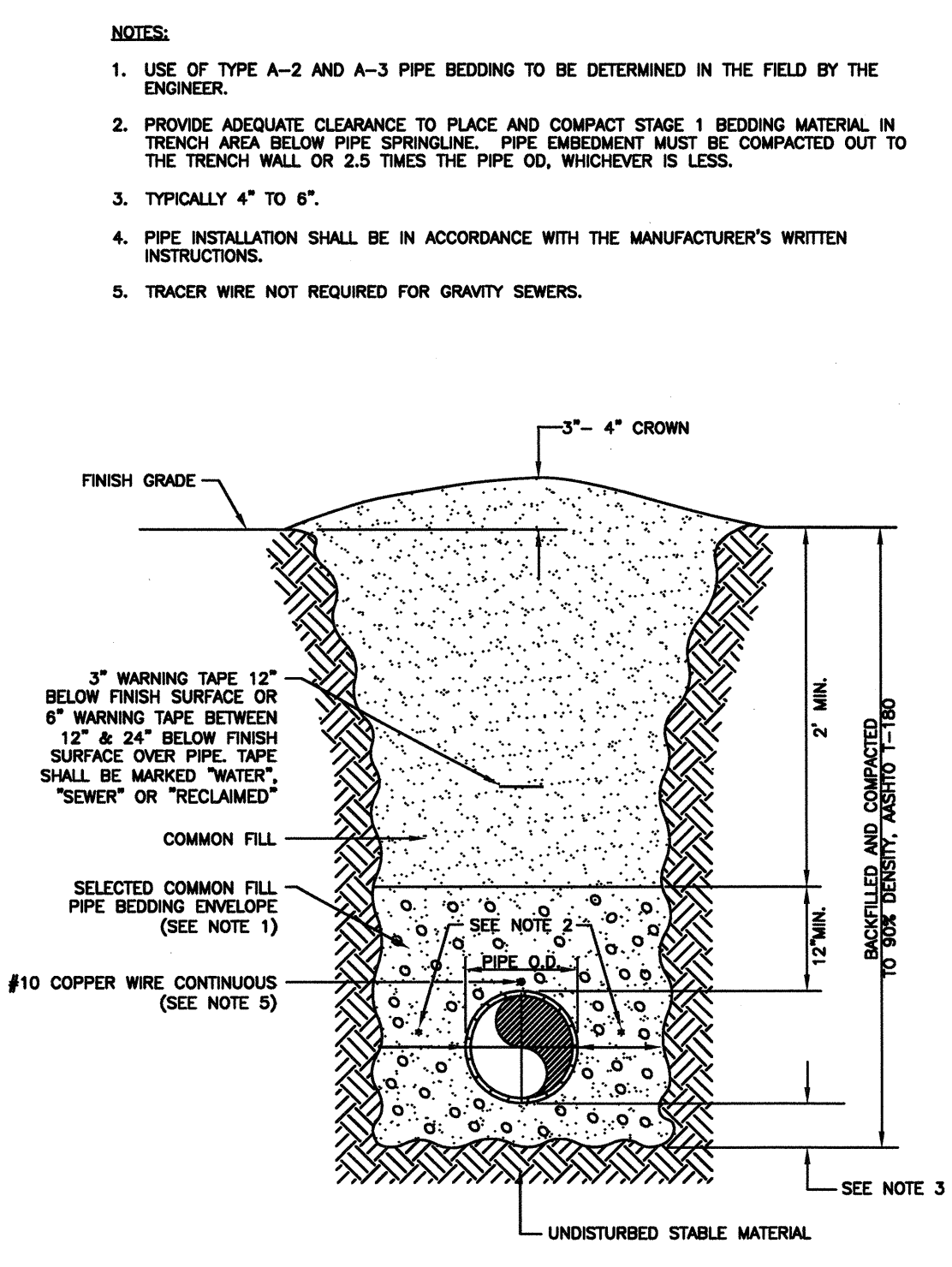
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JACK & BORE CROSSING
UG-3
PAGE 103



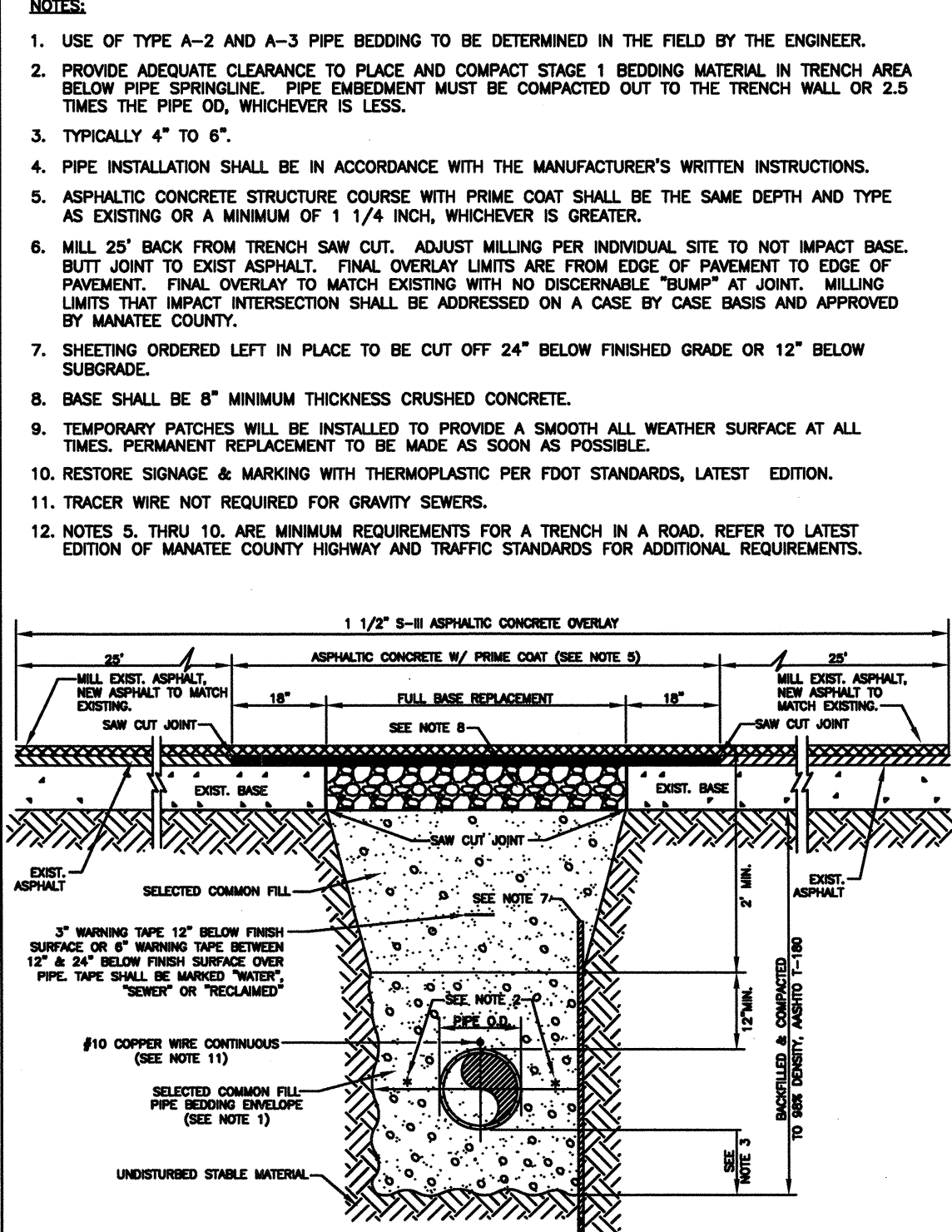
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JACK & BORE CROSSING
UG-3
PAGE 103



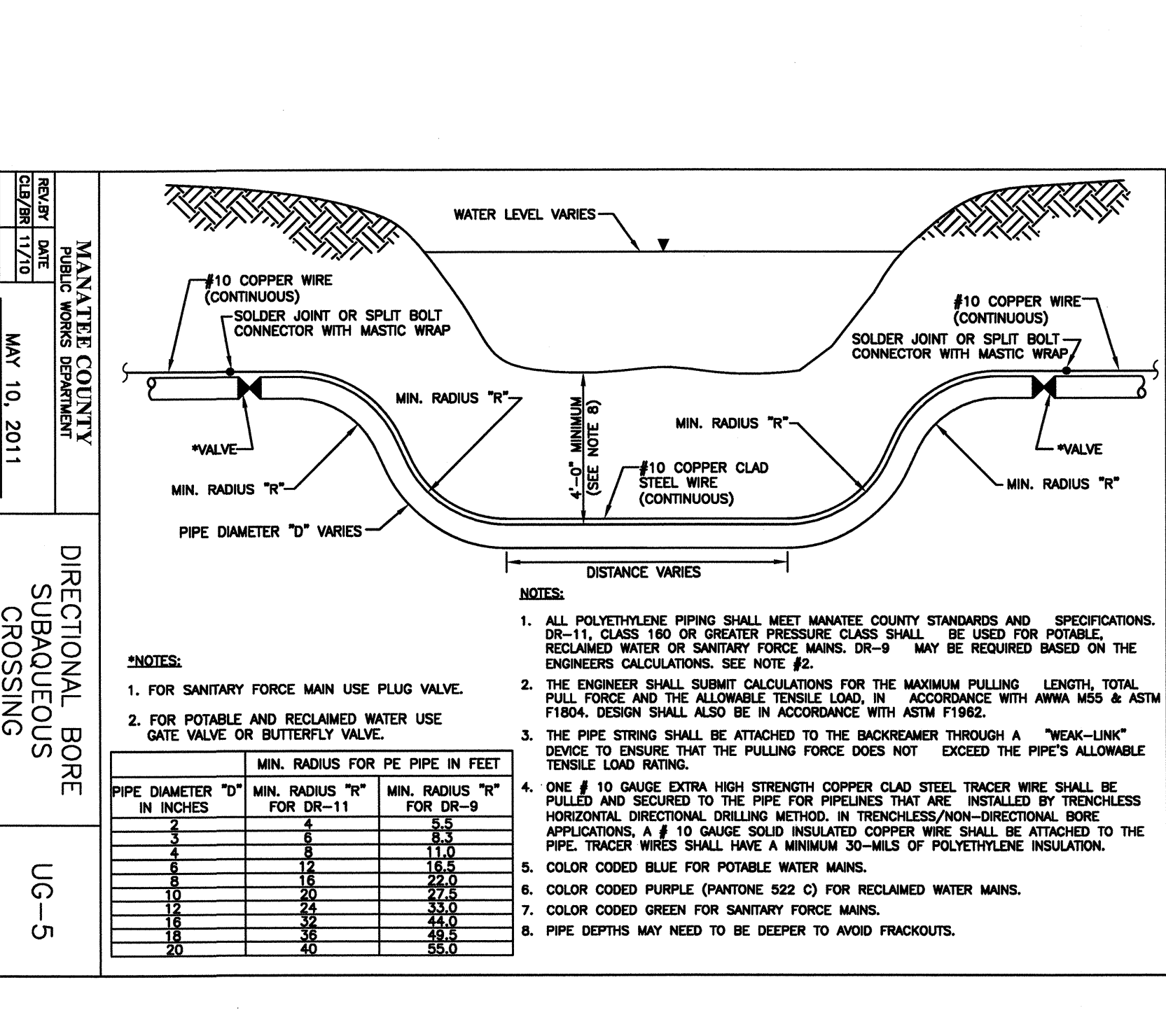
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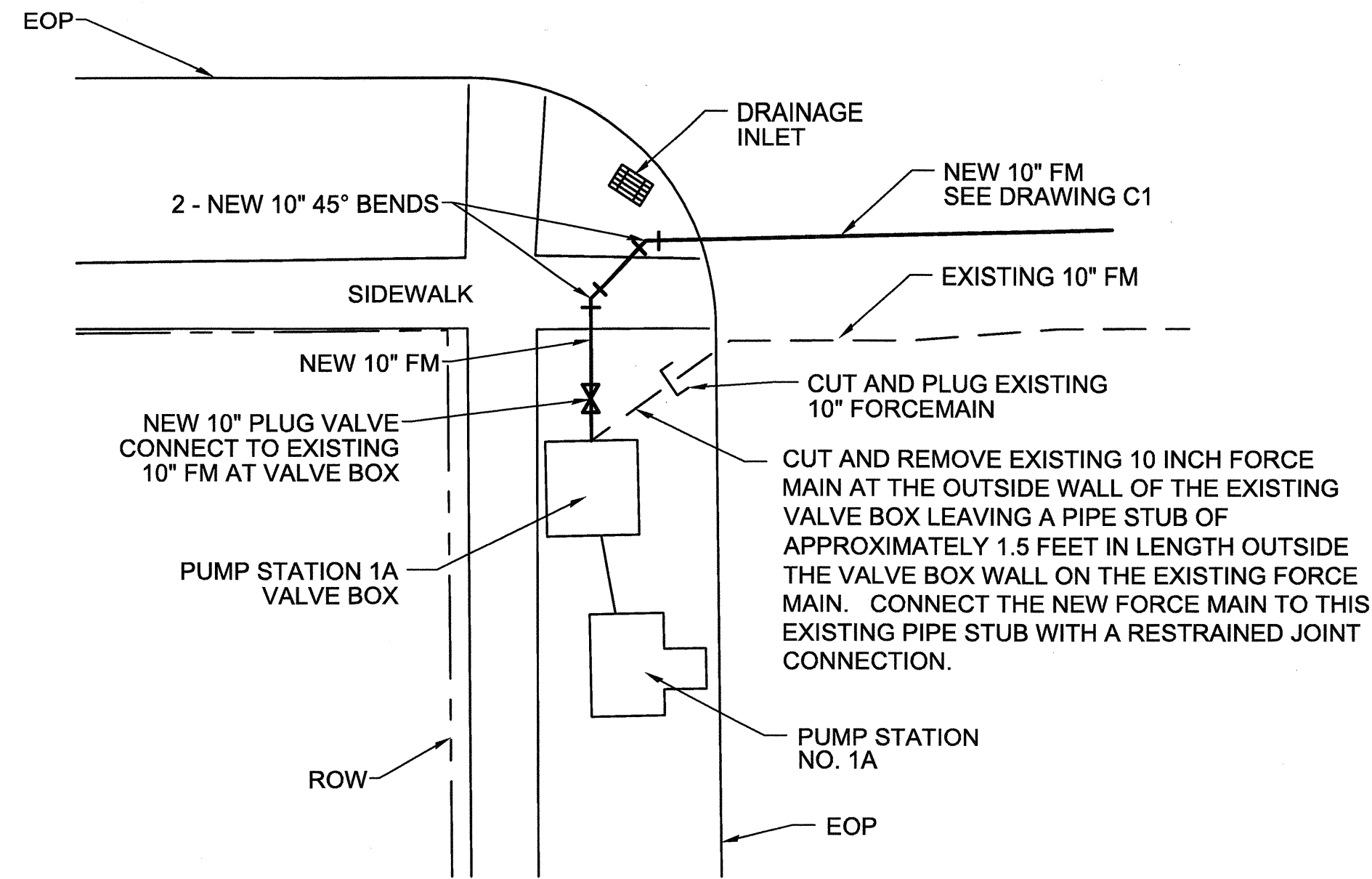
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JACK & BORE CROSSING
UG-3
PAGE 103

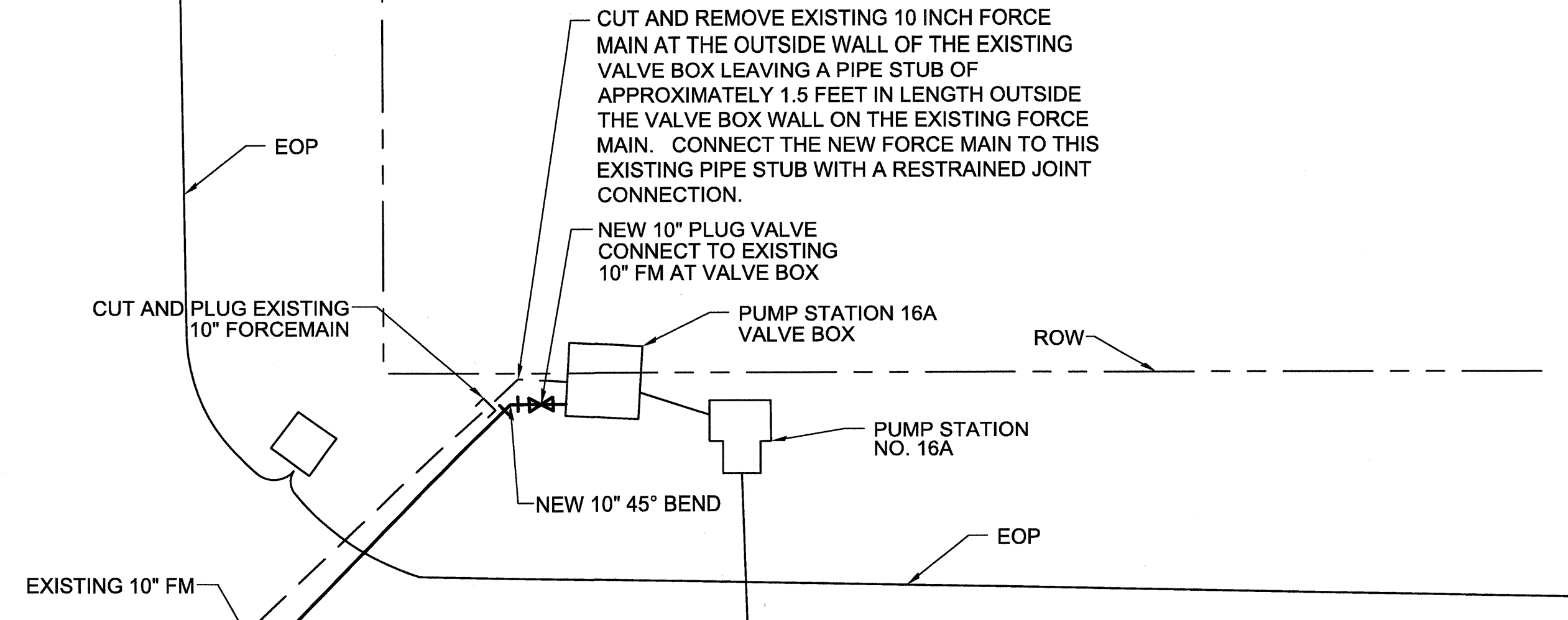
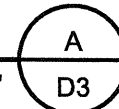
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|-------|--------------|
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| DWG | D2.DWG |
| DATE | NOVEMBER 201 |
| PROJ | 395791.FM |

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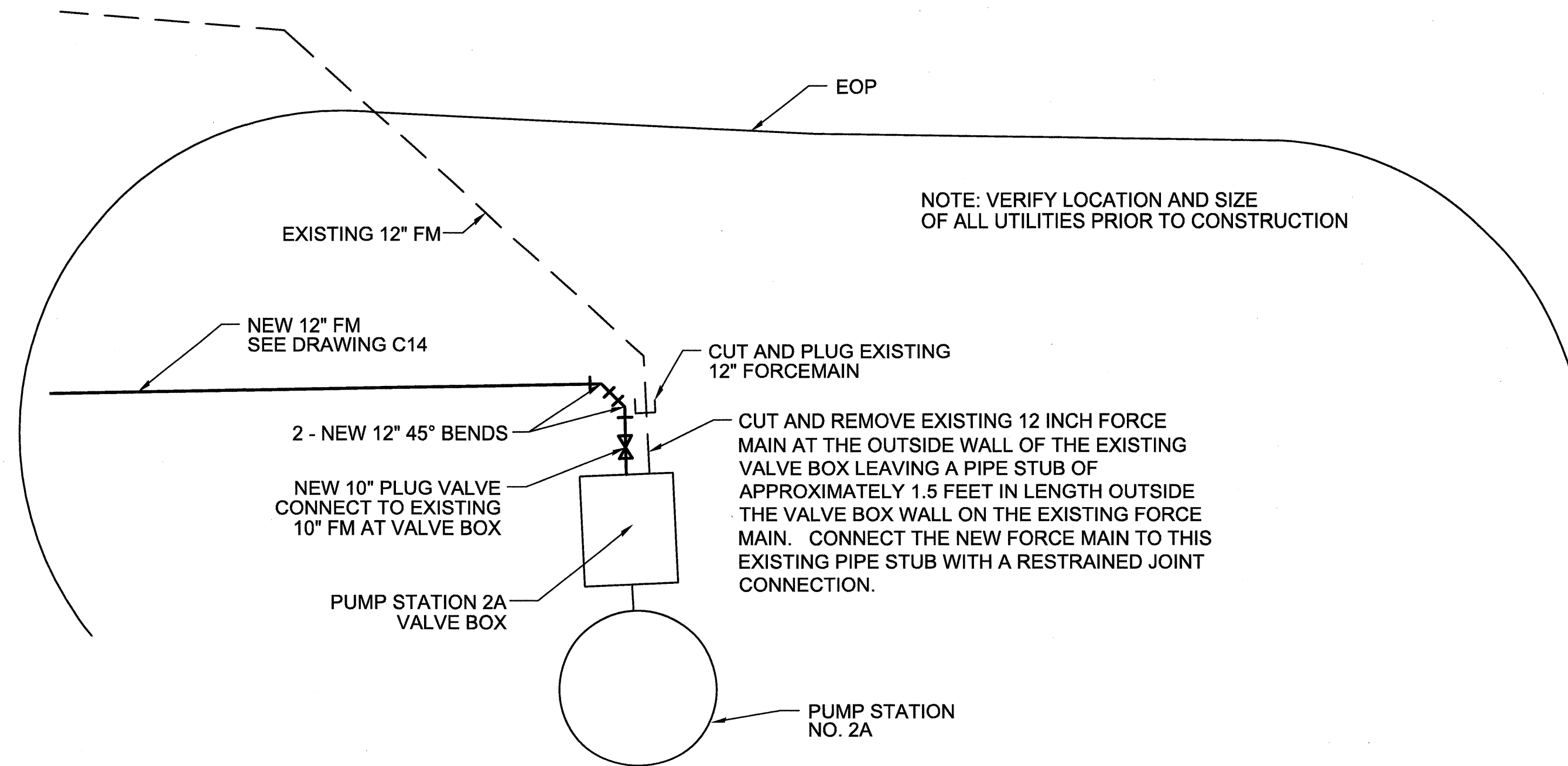
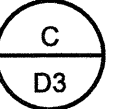
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FORCEMAIN CONNECTION DETAIL

SCALE 1" = 10'



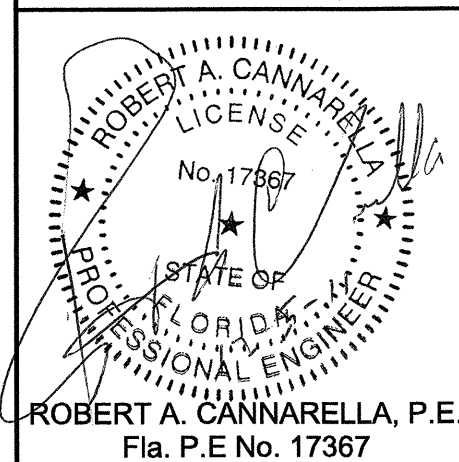
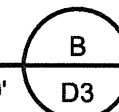
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FORCEMAIN CONNECTION DETAIL

SCALE 1" = 10'



PUMPING STATION 2A
FORCEMAIN CONNECTION DETAIL

SCALE 1" = 10'



DSGN	RAC
DR	BJK
CHK	HLP
APVD	RAC

NO.

DATE

REVISION

BY

APVD

BID DOCUMENTS

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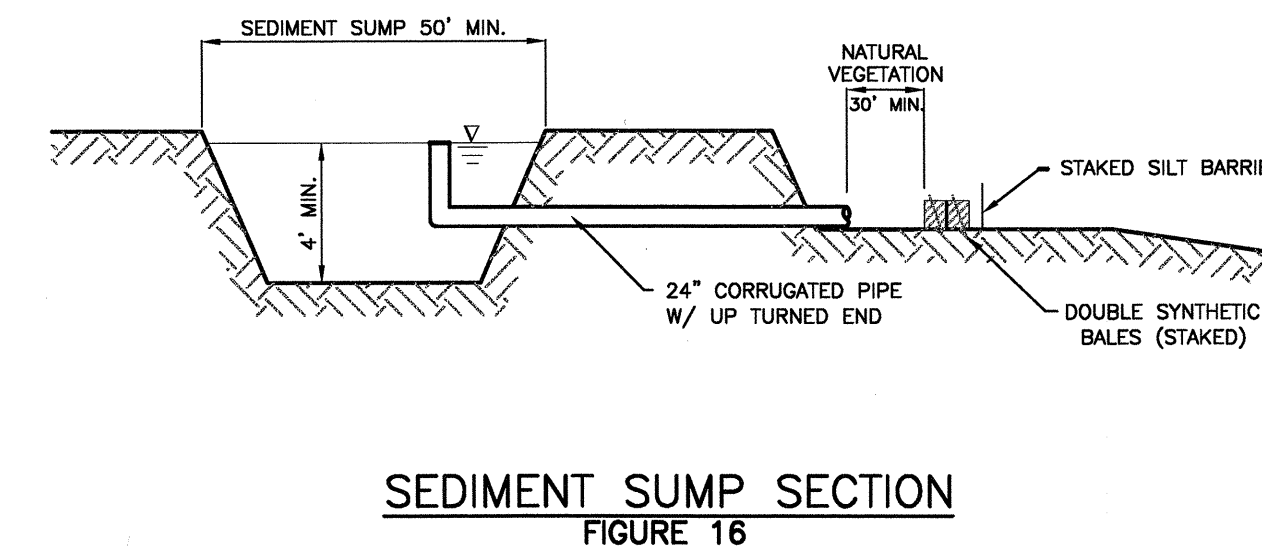
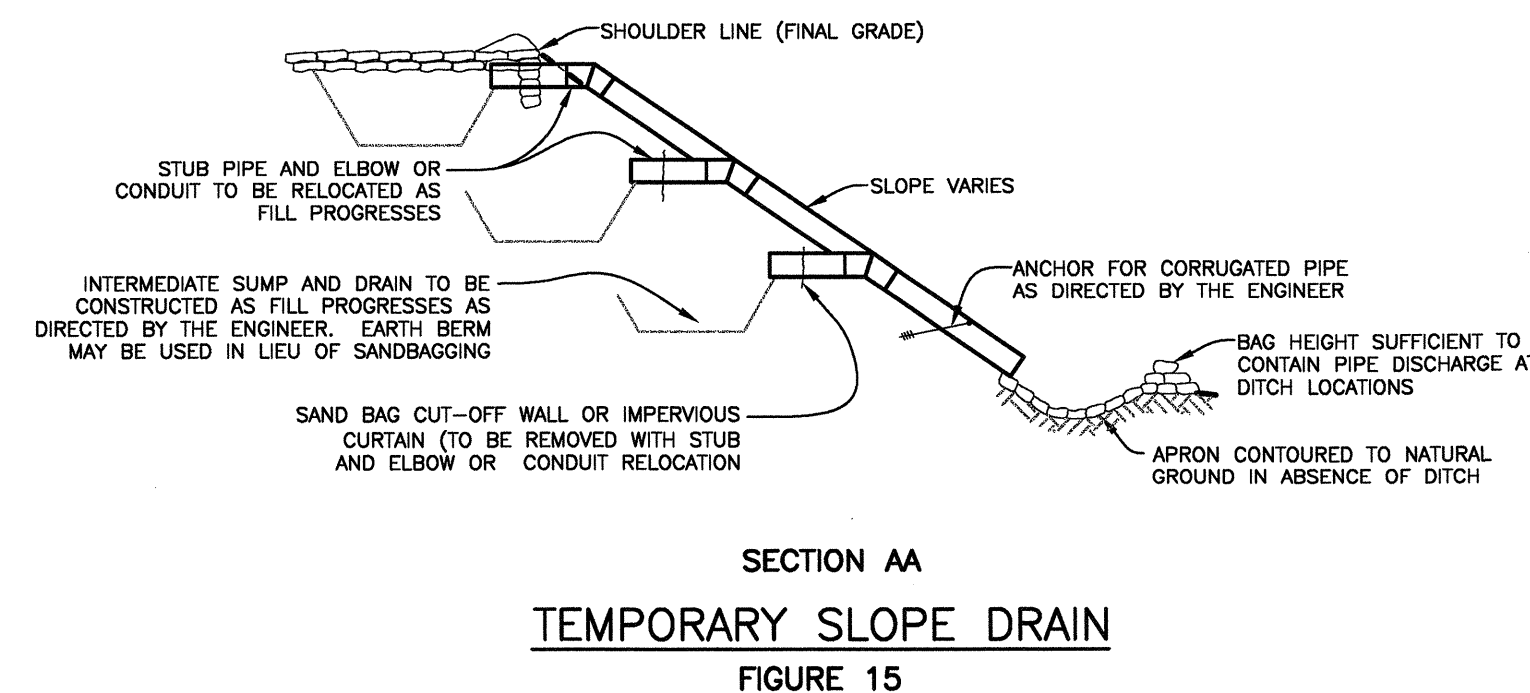
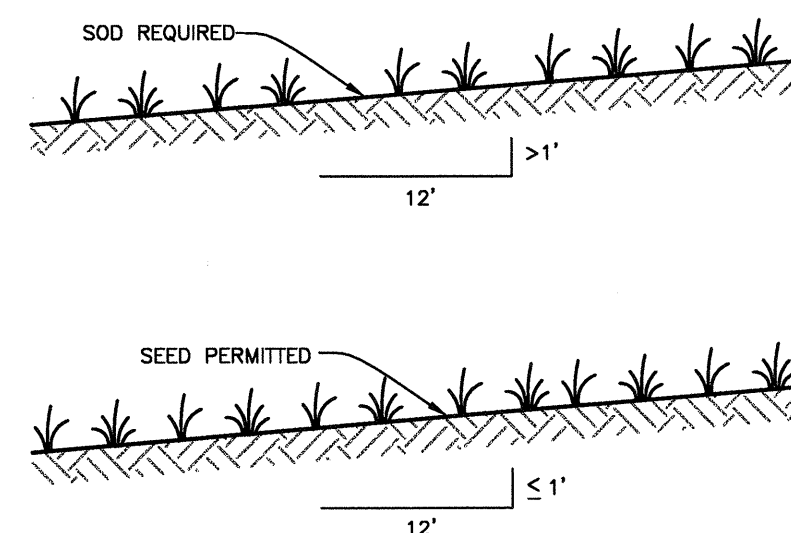
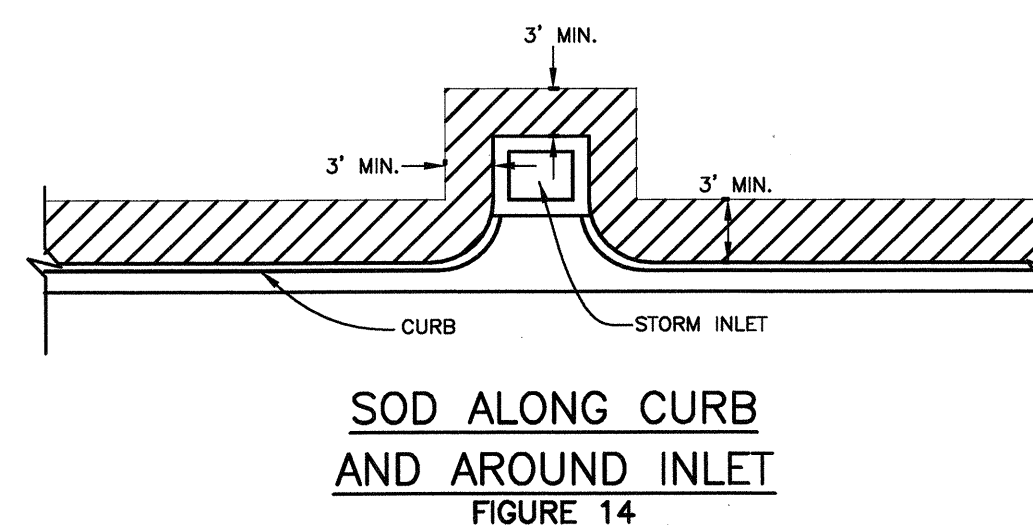
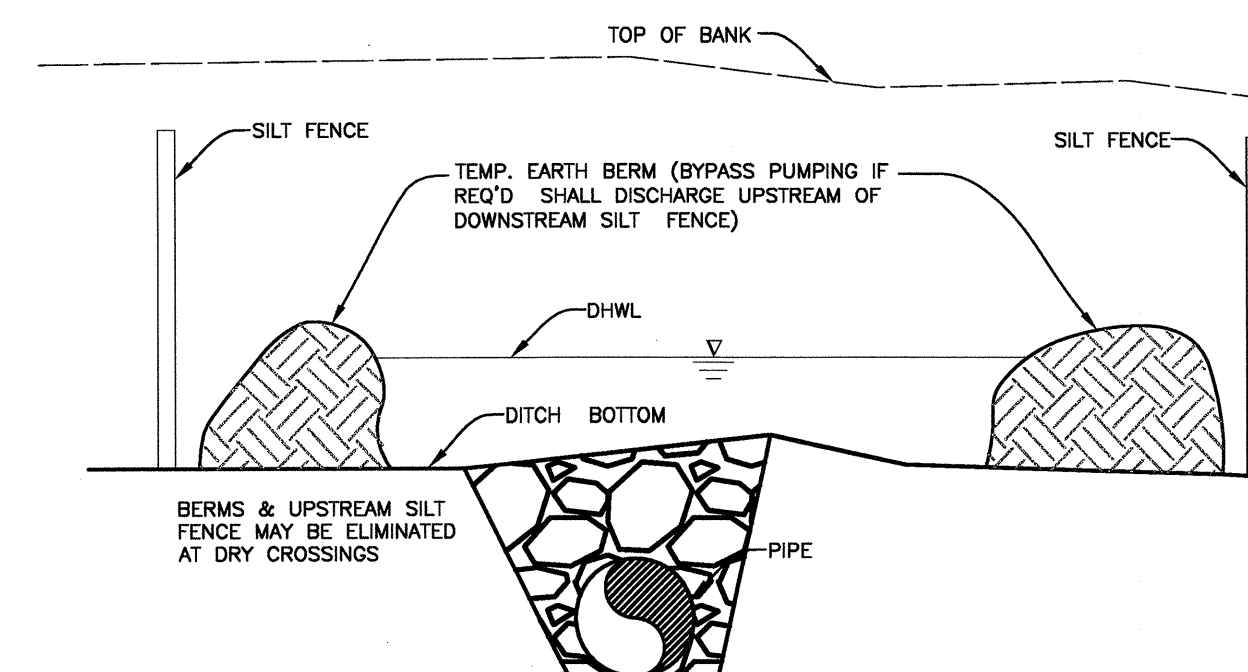
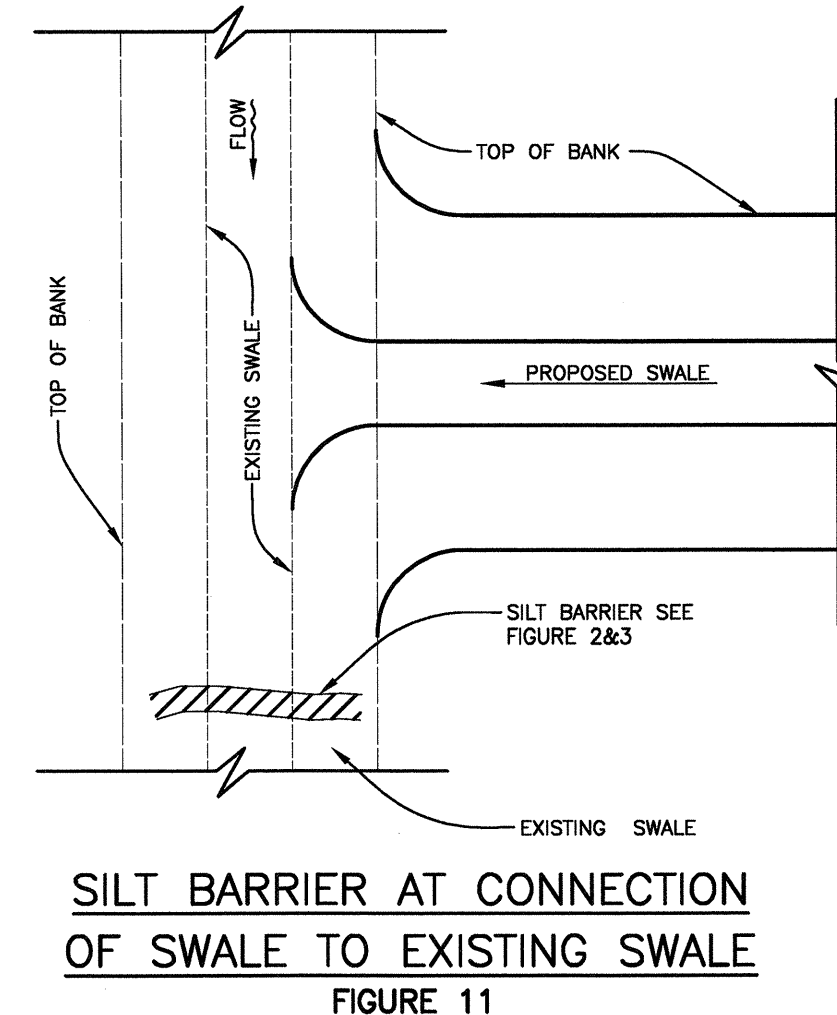
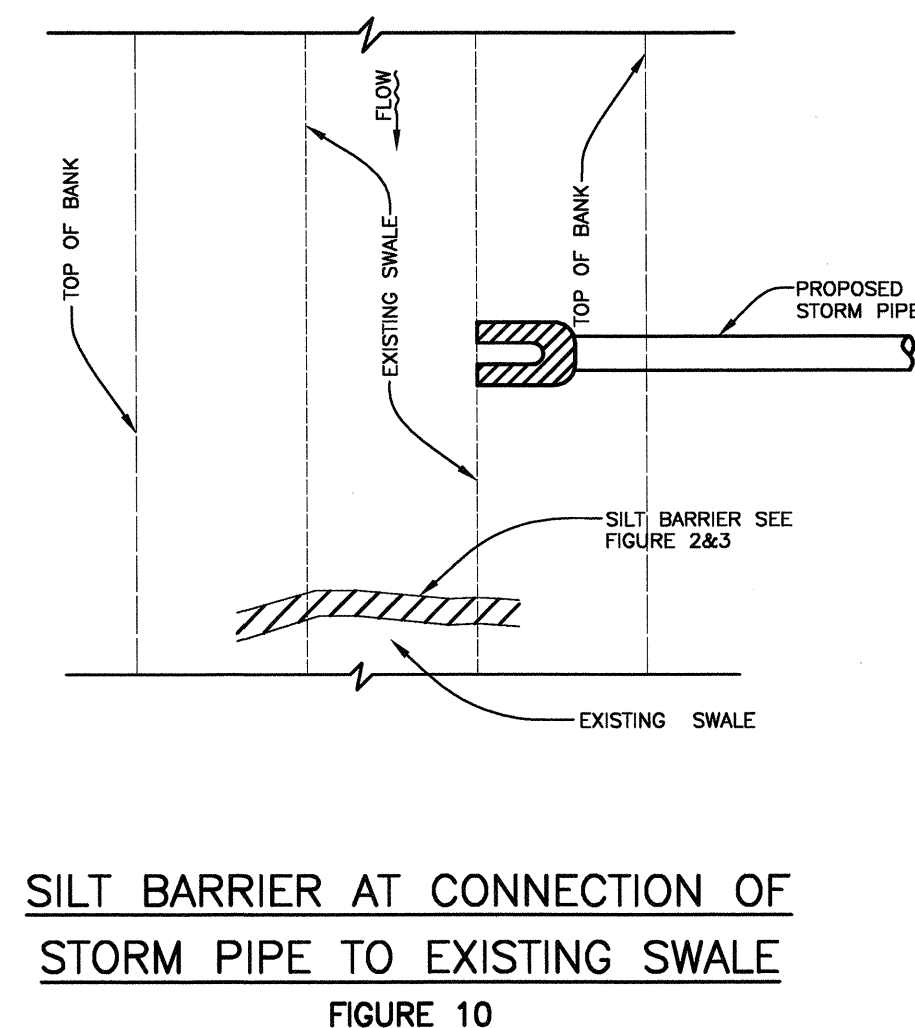
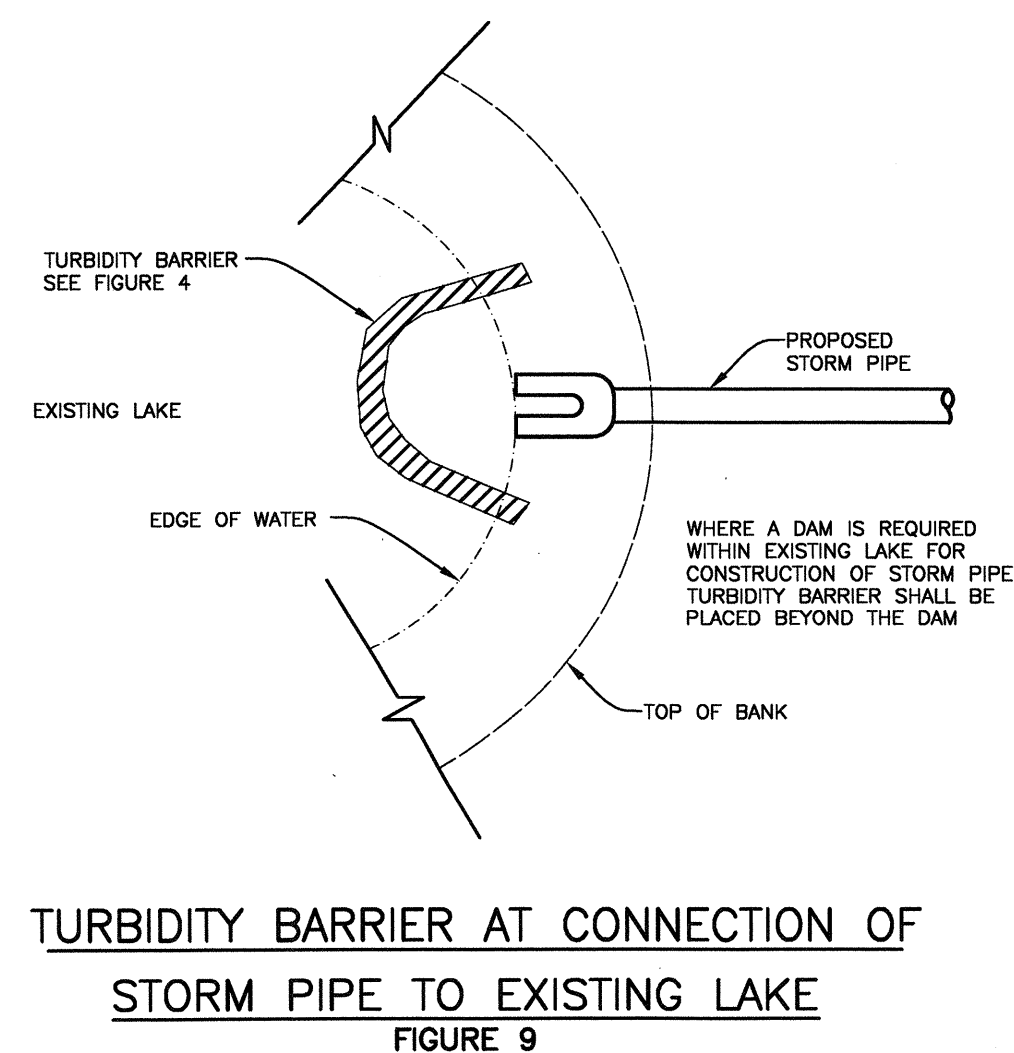
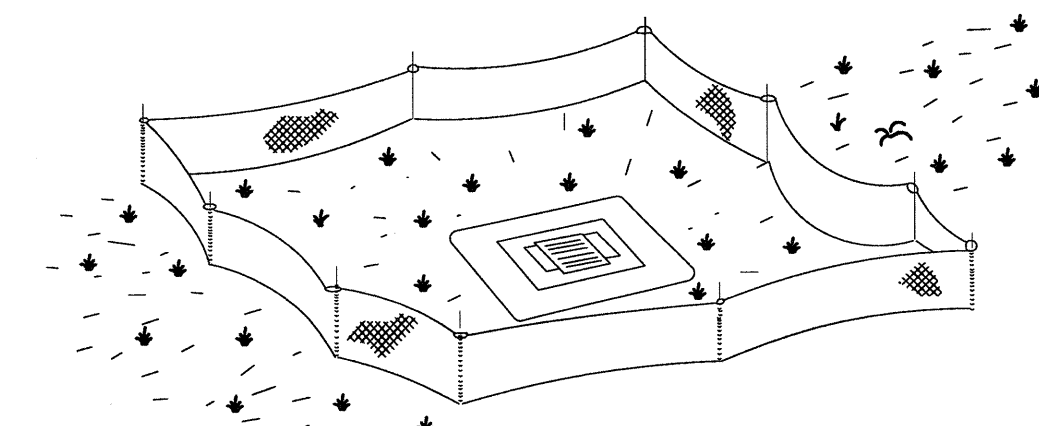
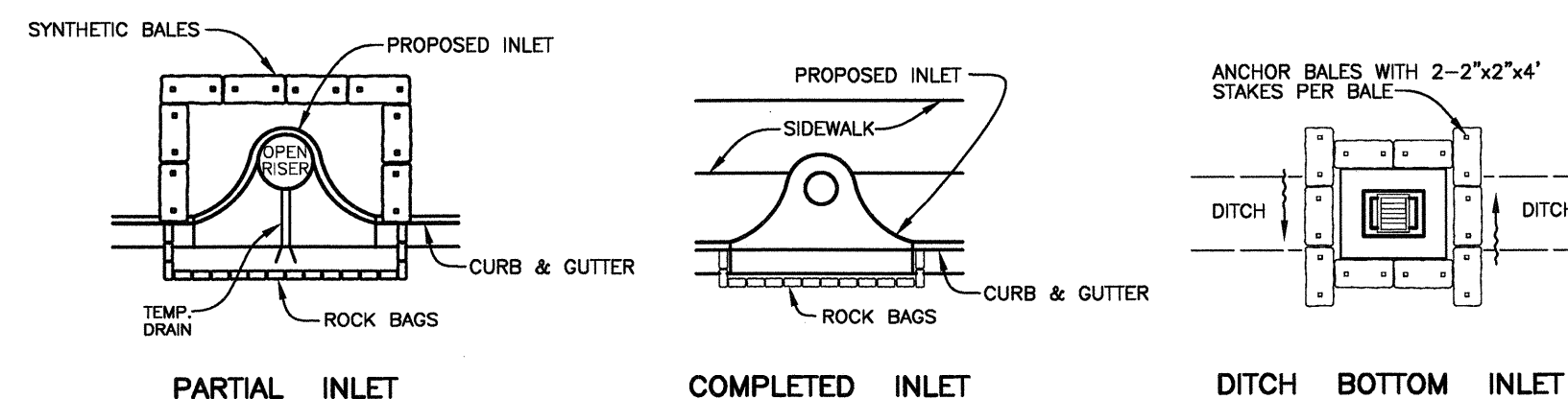
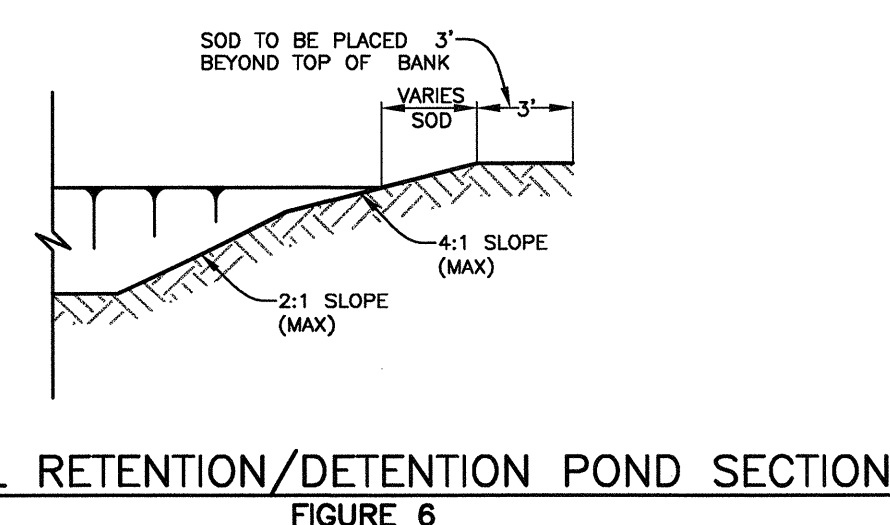
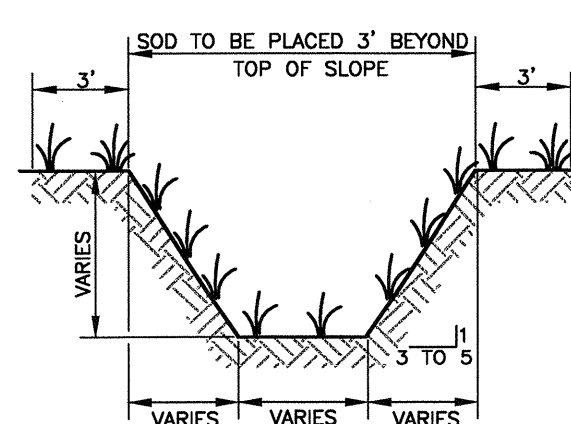
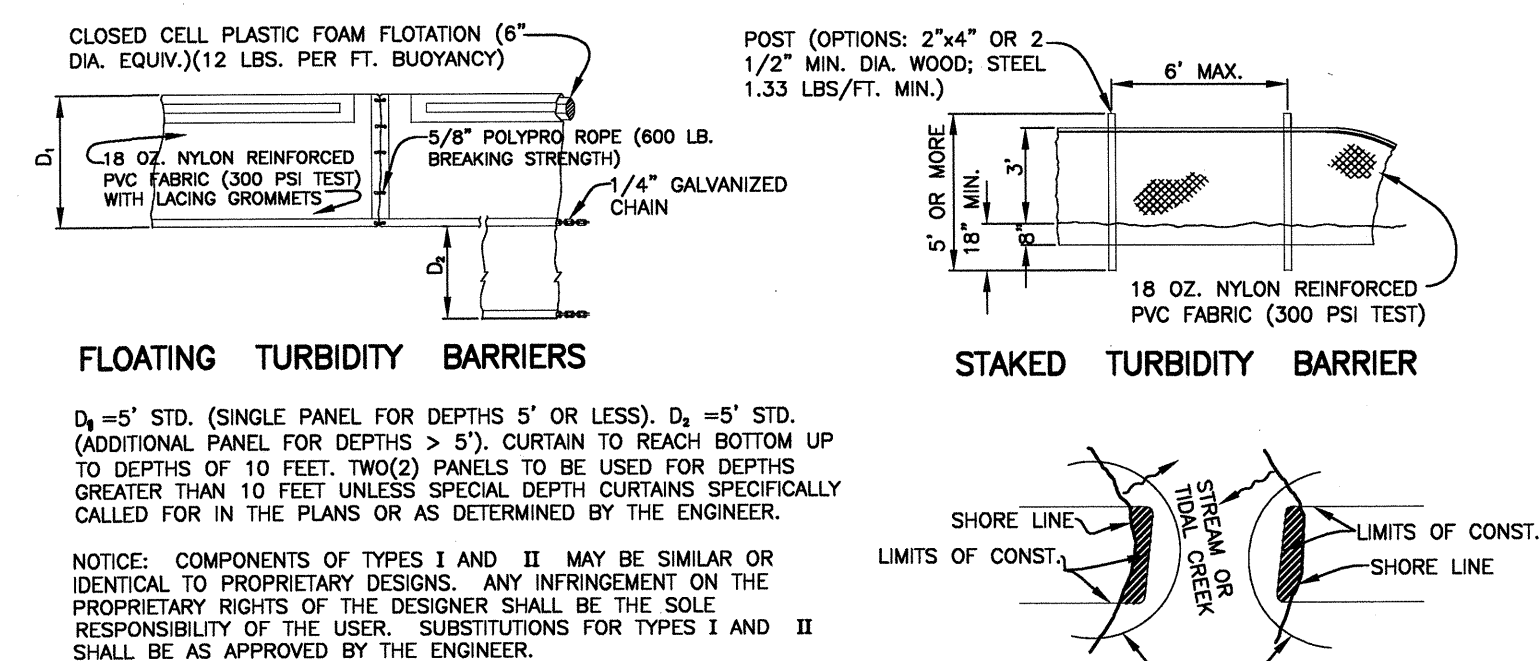
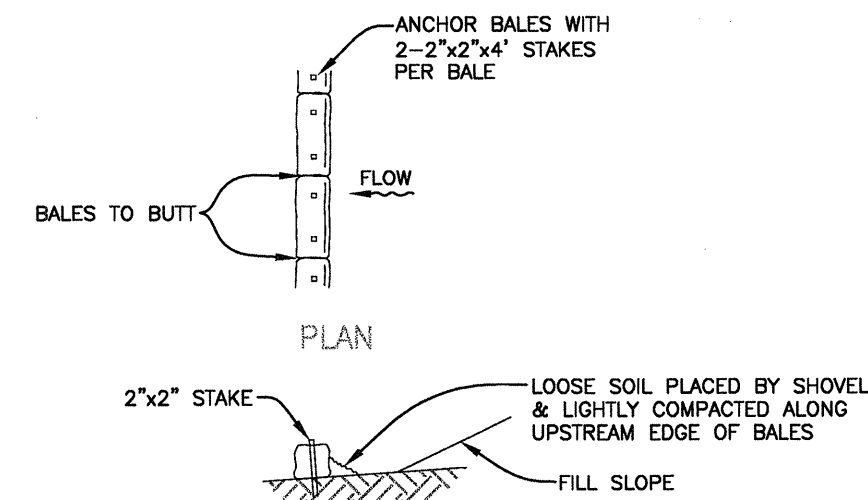
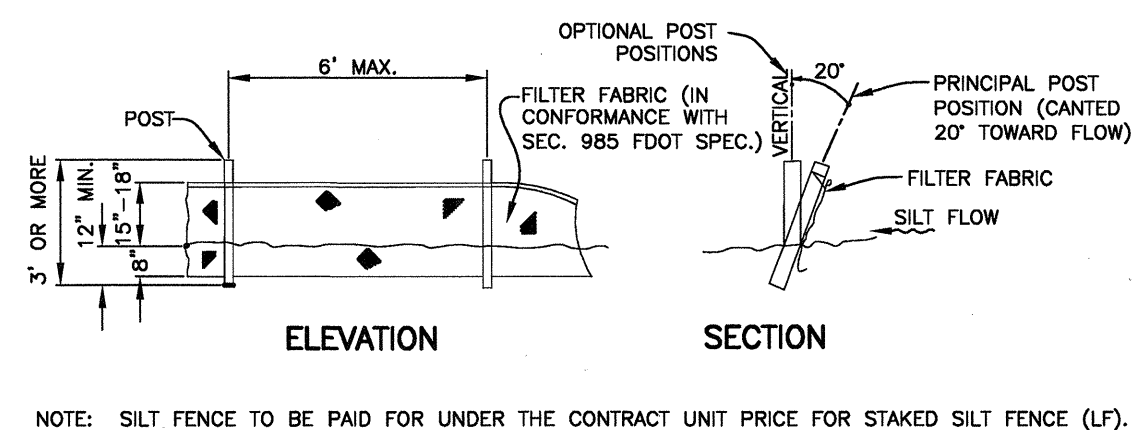
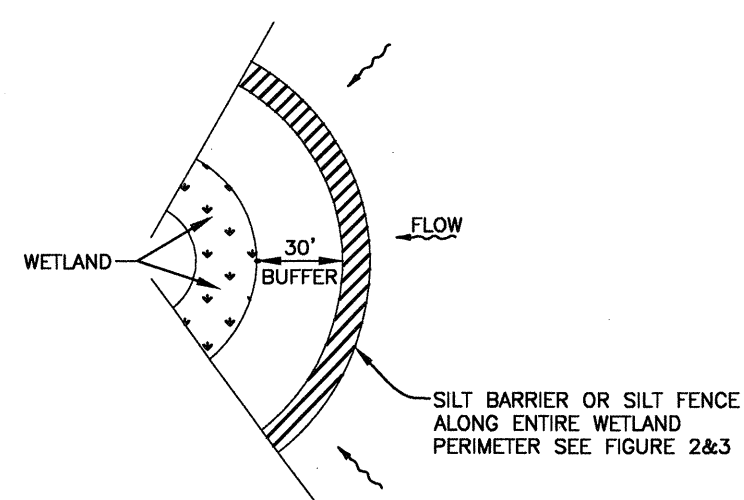
CH2MHILL

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

MANATEE COUNTY
FORCE MAIN 1A, 2A, AND 16A
REPLACEMENT PROJECT
MANATEE COUNTY, FLORIDA
PROJECT No. 60522.80

FORCEMAIN CONNECTION DETAILS

SHEET	D3
DWG	D3.DWG
DATE	NOVEMBER 2011
PROJ	395791.FM



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

DSGN	RAC	<div><div></div><div></div></div> <div>BID DOCUMENTS</div> <div><div></div><div></div></div>	<div><div></div><div></div></div> <div>VERIFY SCALE</div> <div>BAR IS ONE INCH ON ORIGINAL DRAWING. 0 <div></div> 1"</div> <div>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</div> <div><div><div>CH2MHILL</div><div>4350 WEST CYPRESS STREET SUITE 600 TAMPA, FLORIDA 33607-4155 LB 0002934 AA C000656</div></div><div><div>MANATEE COUNTY FORCE MAIN 1A, 2A, AND 16A REPLACEMENT PROJECT MANATEE COUNTY, FLORIDA PROJECT No. 60522.80</div></div></div>	<div>BEST MANAGEMENT PRACTICES</div>	SHEET	D5
DR	BJK				DWG	BMP.DWG
CHK	HLP				DATE	NOVEMBER 201
APVD	RAC				PROJ	395791.FM
		<div><div>NO. DATE</div><div>REVISION</div></div>	<div><div>BY</div><div>APVD</div></div>			