



DEPARTMENT OF
ENVIRONMENTAL PROTECTION

OCT 22 2012

SITING COORDINATION

October 19, 2012

Ms. Anne Seiler
Florida Department of Environmental Protection
Siting Coordination Office, MS 48
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

Via FedEx
Airbill No. 7992-3566-7376

**Re: Tampa Electric Company
Polk Power Station
Reclaimed Water Pipeline
Environmental Resource Application
DEP Case No. PA92-32M; OGC Case No. 11-0604
File No. 53-0304847-003
Request for Additional Information**

Dear Ms. Seiler:

Tampa Electric Company (TEC) received Mark Langford's (Florida Department of Environmental Protection-Southwest District's (FDEP)) Request for Additional Information (RAI) dated August 3, 2012 inquiring about additional information on TEC's above referenced project. Given that the FDEP-Siting Coordination Office oversees the certification process, please find each of the requested items that have been reviewed by TEC and a response for each item is presented below. A copy of this letter is being provided to Mr. Langford as well.

Part I-Pipeline Installation

FDEP Comment 1:

The Department acknowledges the applicant's submitted plan-view drawings. However sheets 169-181 include a note which states "Data Provided, Not Field Verified." A telephone conversation on July 30, 2012 with Nate Alcoz of TECO confirmed that TECO does not have permission from the property owner to access the property represented on the above referenced drawing sheets. It appears that potential wetland impacts may be proposed within this un-verified portion of the project. Please provide the Department with revised project drawings of this area that have been field verified and accurately represent the existing and proposed conditions of the work area. Please be advised, TECO shall certify to the Department that all lands required for the right-of-way have been acquired (refer to Section VII(C) of the General Conditions of Certification, PA-92-32M).

Please Note: Gopher Tortoise habitat may occur within this area. Any impact to Gopher Tortoises of their burrows found within 25 feet of the work area would require the authorization of the Florida Fish and Wildlife Conservation Commission (refer to Section IV of the Specific Conditions of Certification, PA 92-32M).

TEC Response:

As agreed upon with Ms. Ann Seiler (FDEP-Siting), TEC would submit a post certification submittal to FDEP for the portions of the corridor with land access rights (i.e., Polk Power Station to Cozart Road and Mulberry Phosphate to City of Lakeland's Waste Water Treatment Facility). It was also agreed that FDEP-Siting would review and approve these two sections to allow TECO to begin construction in a timely manner.

Once land access rights have been established, TEC will be submitting another post certification submittal for the remaining portion of the route.

FDEP Comment 2:

The Department acknowledges the submitted drawing sheets include cross-section drawings with existing ground elevations and contours at the locations where the proposed pipeline will cross wetlands. However, no ground elevations, contours, or flow arrows were provided for any other portion of the proposed pipeline. Please revise the project drawings to include elevation contours and/or spot elevations with drainage flow arrows to provide reasonable assurance that the work corridor can be restored to original grades and not alter pre-construction drainage patterns (refer to Chapter 4.8 of the Southwest Florida Water Management District Basis of Review, (B.O.R.)).

TEC Response:

Please see Appendix A which contains 11 inch x 17 inch drawings indicating existing spot elevations along the proposed route.

FDEP Comment 3:

Typical plan-view and cross-section drawings of the proposed open-cut pipeline trenches were not provided with the project drawings. Please provide dimensioned typical plan-view and cross-section drawings of the proposed open cut trenches within the wetland and upland areas. Please also represent the spoil piles and breaches in the drawings. (refer to Chapter 3.1.1, 3.2.1 and 4.8 of the B.O.R.).

TEC Response:

Please see Appendix B which contains a typical cross-section drawing of the proposed open cut trenches. Spoil piles will be placed outside of wetland areas, where possible. All grades will be re-established and historical flow patterns returned to pre-construction activities once the project is complete.

FDEP Comment 4:

The submitted application states, "Dewatering will potentially be required at jack and bore pit locations and during trenching in flooded areas. Information will be submitted to FDEP for a permit prior to any dewatering activities". Some of the man-made water bodies near the proposed pipeline alignment contain water of degraded quality. Additionally, some of the wetlands and water bodies near the proposed alignment may be sensitive to changes in hydrology which can occur during dewatering activities. While it is understood that dewatering activities will require further review, please provide additional information and typical drawings illustrating the proposed dewatering methods (refer to Chapter 3.1.1, 3.2.2.4 and 3.2.4 of the B.O.R.).

TEC Response:

Since the areas that will require dewatering are unknown at this time no drawings are available, but please see Appendix C which contains TEC's dewatering plan that provides a narrative of the steps that will be utilized for dewatering. At this time, it is difficult to determine what areas will require dewatering. Again, once these areas are determined the information required will be submitted to the FDEP for processing.

FDEP Comment 5:

Sheet 203 of the submitted plan-view drawings shows a jack and bore receiving pit on the south side of State Road 60. I site inspection conducted by Department personnel on July 27, 2012 revealed that the location of this receiving pit appears to be located within a ditch system. A ditch system was not identified on the above referenced drawing sheet. Please revise the plan-view drawing to include labeling and impact area to the ditch. Please consider revising the plan-view drawings to relocate the receiving pit to an adjacent upland area pursuant to Section XVIII(C) of the General Conditions of Certification, PA 92-32M).

TEC Response:

TEC re-inspected the areas to the north and south of the CSX railroad tracks and identified two man-made ditches. The southern ditch to be referred to as RR1 is a surface water based on the steep side slope (i.e., no discernible seasonal high water or wetlands vegetation), therefore the jurisdictional limits were set at the top of bank. The northern ditch to be referred to as RR2 is dominated by wetland vegetation and has a shallower side slope, but a discernible top of bank, which was also utilized as the jurisdictional limits at the location. The jurisdictional limits in both areas within the project corridor were flagged and surveyed. The surveyed locations for RR1 and RR2 are provided on the revised plan view drawing, Sheet 203 (please see revised plan view Sheet 203 in Appendix D). However, the jack and bore pit will need to remain in the same location due to engineering constraints. A relocation of the bore pit will result in the following constraints: 1) an increased length of bore which creates harder control of the bore, 2) re-permitting

issues with CSX and the Florida Department of Transportation and 3) scheduling conflicts, to name just a few. The impact acreage for this section of the pipeline is 0.013 acres of upland, cut manmade ditch, FLUCFCS 513. A revised table of wetland impacts is provided in Appendix E. Before, during and after installation of the bore pit in the man-made ditch, TEC will follow all of the Best Management Practices previously described in the ERP application for work in and around wetlands and surface waters (e.g., sediment controls will be utilized to protect downstream systems from siltation and sedimentation). Due to the nature of the impacted wetland no changes are required or proposed to the previously submitted mitigation plan.

FDEP Comment 6:

Sheet 189 of the submitted plan-view drawings shows a commencement location for Horizontal Directional Drilling (HDD) on the north side of the north prong of the Alafia River. The drilling commencement location is located outside the area proposed to be contained with Best Management Practices (BMPs). Please revise the plan-view drawing to represent the use of BMPs around the drilling commencement location (refer to Section XXVIII (B) (3) of the General Conditions of Certification, PA-92-32M).

TEC Response:

Please see Appendix F which contains a revised Sheet 189 indicating that BMPs will protect the area surrounding the commencement location for the HDD.

FDEP Comment 7:

Sheet 107 and 104 of the submitted plan-view drawings shows an additional un-labeled green line just east of the proposed pipeline. Please revise the plan-view drawing to clarify/identify this line by either labeling this line or by removing from the drawing sheet.

TEC Response:

The green line just east of the pipeline was included in error. Please find see Appendix G which contains Sheets 104 and 107 where the green line has been removed.

FDEP Comment 8:

As stated in the application, the area of the north prong of the Alafia River to be crossed by the proposed pipeline via HDD includes areas encumbered by Conservation Easements prohibiting underground utilities. Department staff has confirmed that a Conservation Easement and a Restrictive Covenant have been granted to the Department in the vicinity of the pipeline crossing at the north prong of the Alafia River. Please provide documentation from the Department's Phosphate Management Section and

Easement Holders that the Conservation Easement and Restrictive Covenant no longer prohibit the proposed activities.

TEC Response:

As suggested in the RAI, TEC has been in contact with Vishwas Sathe in the Phosphate Section at the Southwest District office. Mr. Sathe contacted Jonathon Alden, an attorney with FDEP's Office of General Counsel. A conference call was held on Monday, October 15th, 2012, and was attended by Mr. Sathe, Mr. Alden and John Coates of FDEP. The purpose of the call was to the steps that needed to be taken to resolve the issues associated with the Conservation Easement and the Restrictive Covenant on the property. As a result of the call, it was agreed that approval of the modification to the Conditions of Certification to authorize the reclaimed water project satisfies paragraph 1.c of the Restrictive Covenant. For the Conservation Easement, additional information will be required and this information is being compiled and will be submitted as soon as possible.

We request that FDEP condition the authorization to require that the documentation and modifications to the Conservation Easement to permit the activities proposed be submitted prior to the commencement of construction rather than prior to issuance of the authorization.

FDEP Comment 9:

The Department acknowledges the submitted UMAM score sheets and the wetland impact area total. The submitted scores for Wetland W1 do not appear to sufficiently characterize the functional loss of the community structure for this wetland area due to the large and more matures forested component of the wetland. For better characterization of this wetland impact, and consistency with similar projects of this nature, the Department requests that the community structure scores be taken from a 6 to a 3 rather than a 6 to a 4 for this wetland. Please revise the wetland impact totals and UMAM score sheets to accurately reflect the "field verified areas" (see question #1 above) and include these modifies scores.

TEC Response:

TEC agrees to the FDEP-requested change in community structure scores for Wetland W1 from a 6 to a 3 rather than the originally provided 6 to a 4 (please see Appendix H for the revised UMAM score sheets for Wetland W1). The change in scoring has been recalculated as follows:

Wetland W1:

- Impact delta (with – current):
 $((6+5+3)/30) - ((6+5+6)/30) = -0.10$
- Functional Loss (impact delta x area):
 $-0.10 \times 1.848 \text{ acre} = -0.185$

Using the change in scores for Wetland W1 presented above, the total functional loss and thus the number of freshwater forested mitigation credits to be purchased from the Peace River Mitigation Bank was recalculated for the field verified areas of the project corridor:

ORIGINAL TEC UMAM ANALYSES

Wetland ID	FLUCFCS	Impact in Acres	UMAM Score	Functional Loss*
PP4	647	0.060	0.07	0.004
R8	647	0.152	0.03	0.005
R9	647	0.197	0.03	0.006
R35	617	0.206	0.07	0.014
W1	617	1.848	0.07	0.129
W3	647	0.102	0.03	0.003
M4	532/647	0.125	0.07	0.009
M5	532/647	0.076	0.07	0.005
M7	534/647	0.034	0.03	0.001
M8	532/647	0.016	0.07	0.001

Total Functional Loss

0.177

REVISED FDEP UMAM ANALYSES

Wetland ID	FLUCFCS	Impact	UMAM Score	Functional Loss*
PP4	647	0.060	0.07	0.004
R8	647	0.152	0.03	0.005
R9	647	0.197	0.03	0.006
R35	617	0.206	0.07	0.014
W1	617	1.848	0.10	0.185
W3	647	0.102	0.03	0.003
M4	532/647	0.125	0.07	0.009
M5	532/647	0.076	0.07	0.005
M7	534/647	0.034	0.03	0.001
M8	532/647	0.016	0.07	0.001

Total Functional Loss

0.233

***Impact x UMAM Score = Functional Loss = Number of Mitigation Credits**

Note: Colored cells denote revised scores

Therefore, based upon the re-analyses provided, TEC will assume that purchasing 0.233 or 0.2 forested wetland mitigation credits will be more than sufficient to ameliorate 2.816 acres of permanent wetland clearing impacts associated with the proposed project construction.

FDEP Comment 10:

The Department acknowledges the applicant's proposal to purchase freshwater forested mitigation credits from Peace River Mitigation Bank. Once the wetland impacts and UMAM scores have been confirmed, please provide the Department with a letter from Peace River Mitigation Bank showing the confirmed number of freshwater forested credits have been reserved for this project. Additionally, please provide confirmation that the freshwater forested credits are appropriate to be used as mitigation to offset a mixed hardwood system

TEC Response:

Please see Appendix I which contains a letter from Peace River Mitigation Bank that indicates the appropriateness of the credits to offset the impacts associated for this project.

Part II-Public Easement

FDEP Comment 11:

As stated in the application, the proposed project crosses State owned Sovereign Submerged Lands at both end the north prong and the south prong of the Alafia River. A Public Easement will be required for the crossings (refer to Section XXI of the General Conditions of Certification, PA-92-32M). Please provide the following information to the Department for the processing of the Public Easements:

- Provide \$595 processing fee payable to the Department of Environmental Protection for the easement. If you are requesting to construct outside your riparian property lines, the adjacent affected riparian owner must enter into the lease as a co-lessee.*
- Provide evidence of title to the subject riparian upland property in the form of a recorded deed, title insurance, legal option of title, or a long-term lease which includes riparian rights. Evidence submitted must demonstrate that the applicant has sufficient title interest in the riparian upland property. An Affidavit of Ownership or Control may suffice as satisfactory evidence of title for federal, state and local government entities and those that qualify as Public Utilities.*
- An acceptable sketch and description of the proposed easement will be required. Refer to the enclosed package (SLER 0960) for specific requirements and information.*

TEC Response:

This section of the RAI refers to the portion of the project proposed the cross the north and south prong of the Alafia River. It is stated that a public easement is required for the crossings. Our consultants contacted representatives of the Department to inquire further about this. They were advised that with respect to the south prong, there would be no submerged lands lease, but the lands are state lands and an easement is necessary. With

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respect to the north prong, they were advised that the lands lying below the ordinary high water line of the north prong are considered sovereignty submerged lands. TEC is pursuing the necessary authorizations in accordance with these discussions. Due to timing considerations, we request that these be made a requirement to be completed prior to the commencement of construction, rather than prior to the authorization.

If there are any questions, please let me know by contacting me at (813) 228-1095. Thank you for your kind attention to this matter.

Sincerely,



David M. Lukcic, P.E.
Manager, Environmental Capital Projects
Environmental, Health & Safety

EHS/iyw/AJA642 Polk Reclaimed Water Pipeline Post Cert ERP RAI
Response for DEP

Enclosures

c/enc: Mr. Larry Curtin
Holland & Knight
3150 South Calhoun Street
Tallahassee, FL 32301-1872

Mr. Mark Langford
Florida Department of
Environmental Protection
Southwest District Office
13051 North Telecom Parkway
Temple Terrace, FL 33637-0926

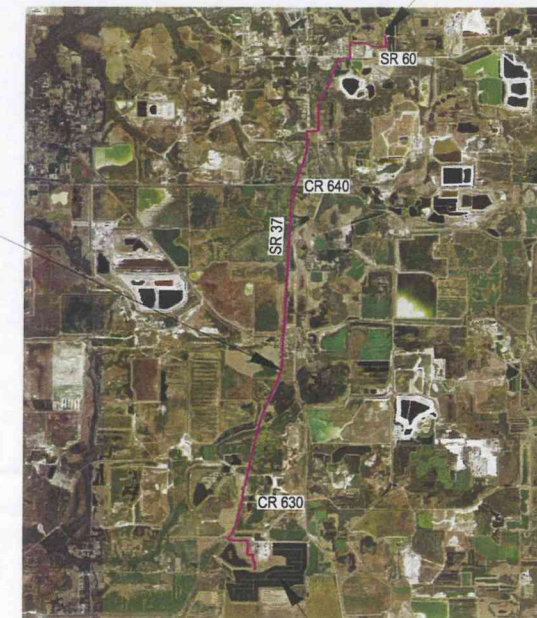
Appendix A

CONSTRUCTION PLANS
FOR
TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE

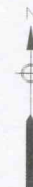


GENERAL LOCATION MAP

PROJECT LOCATION



CITY OF LAKELAND
WETLAND TREATMENT
SYSTEM



RECLAIMED WATER
TREATMENT PLANT AT
THE POLK POWER
STATION



MARCH 2012

Prepared By:

AECOM

AECOM TECHNICAL SERVICES, INC.
10210 HIGHLAND MANOR DRIVE, SUITE 350
TAMPA, FLORIDA 33610
PHONE (813) 630-2500
CERTIFICATE OF AUTHORIZATION NO. EB-38

DRAWING INDEX

GENERAL SHEETS

DRAWING No.	DESCRIPTION
379-EY-401A	DRAWING INDEX & VALVE LIST
379-EY-401B	ABBREVIATIONS, LEGEND AND SURVEY CONTROL POINT TABLE
379-EY-401C	ABBREVIATIONS, LEGEND AND SURVEY CONTROL POINT TABLE
379-EY-401D	DRAWING KEY SHEET I
379-EY-401E	DRAWING KEY SHEET II

CIVIL SHEETS

DRAWING No.	DESCRIPTION
379-EY-401F	STATION 100+00 TO 121+00 PLAN & PROFILE
379-EY-401G	STATION 121+00 TO 143+00 PLAN & PROFILE
379-EY-401H	STATION 143+00 TO 168+00 PLAN & PROFILE
379-EY-401I	STATION 168+00 TO 198+00 PLAN & PROFILE
379-EY-401J	STATION 198+00 TO 229+00 PLAN & PROFILE
379-EY-401K	STATION 229+00 TO 260+00 PLAN & PROFILE
379-EY-401M	STATION 260+00 TO 290+00 PLAN & PROFILE
379-EY-401N	STATION 290+00 TO 321+00 PLAN & PROFILE
379-EY-401P	STATION 321+00 TO 349+00 PLAN & PROFILE
379-EY-401Q	STATION 349+00 TO 379+00 PLAN & PROFILE
379-EY-401R	STATION 379+00 TO 409+00 PLAN & PROFILE
379-EY-401S	STATION 409+00 TO 439+00 PLAN & PROFILE
379-EY-401T	STATION 439+00 TO 469+00 PLAN & PROFILE
379-EY-401U	STATION 469+00 TO 499+00 PLAN & PROFILE
379-EY-401V	STATION 499+00 TO 529+00 PLAN & PROFILE
379-EY-401W	STATION 529+00 TO 559+00 PLAN & PROFILE
379-EY-401X	STATION 559+00 TO 589+00 PLAN & PROFILE
379-EY-401Y	STATION 589+00 TO 613+00 PLAN & PROFILE
379-EY-401Z	STATION 613+00 TO 643+00 PLAN & PROFILE
379-EY-401AA	STATION 643+00 TO 666+00 PLAN & PROFILE
379-EY-401AB	STATION 666+00 TO 689+00 PLAN & PROFILE
379-EY-401AC	STATION 689+00 TO 714+00 PLAN & PROFILE
379-EY-401AD	STATION 714+00 TO 739+00 PLAN & PROFILE
379-EY-401AE	STATION 739+00 TO 763+00 PLAN & PROFILE
379-EY-401AF	STATION 763+00 TO 786+00 PLAN & PROFILE
379-EY-401AG	STATION 786+00 TO 794+00 PLAN & PROFILE
379-EY-401AH	STATION 794+00 TO 809+00 PLAN & PROFILE
379-EY-401AJ	STATION 809+00 TO 832+00 PLAN & PROFILE
379-EY-401AK	STATION 832+00 TO 862+00 PLAN & PROFILE
379-EY-401AL	STATION 862+00 TO 888+12 PLAN & PROFILE
379-EY-401AM	SECTIONS

DETAIL SHEETS

DRAWING No.	DESCRIPTION
379-EY-401AN	CIVIL DETAILS I
379-EY-401AP	CIVIL DETAILS II
379-EY-401AQ	CIVIL DETAILS III
379-EY-401AR	FDOT DETAILS I
379-EY-401AS	FDOT DETAILS II
379-EY-401AT	FDOT DETAILS III
379-EY-401AU	FDOT DETAILS IV
379-EY-401AV	FDOT DETAILS V
379-EY-401AW	FDOT DETAILS VI

WETLAND TABLE

SHEET NUMBER	WETLAND ID	NORTHING	EASTING	LATITUDE	LONGITUDE
379-EY-401F	PP1	1230675	658649	N 27° 43' 12.65"	W 81° 59' 32.38"
379-EY-401H	PP2	1231074	658663	N 27° 43' 13.63"	W 81° 59' 32.22"
	PP4	1234473	658624	N 27° 43' 47.29"	W 82° 00' 03.81"
	R1	1235274	658674	N 27° 43' 59.45"	W 82° 00' 03.97"
	R2	1235848	656151	N 27° 44' 00.90"	W 82° 00' 01.03"
	R4	1236595	656407	N 27° 44' 08.30"	W 81° 59' 57.33"
	R5	1236907	656481	N 27° 44' 11.39"	W 81° 59' 56.90"
	R6	1237562	656617	N 27° 44' 17.88"	W 81° 59' 54.99"
	R8	1239467	657075	N 27° 44' 36.74"	W 81° 59' 49.89"
	R9	1239805	657153	N 27° 44' 40.09"	W 81° 59' 49.02"
	R10	1243769	657930	N 27° 45' 19.34"	W 81° 59' 40.37"
	R11	1245499	658318	N 27° 45' 36.47"	W 81° 59' 36.05"
	R12	1248089	658910	N 27° 46' 02.12"	W 81° 59' 29.46"
	R13	1254849	661522	N 27° 47' 09.06"	W 81° 59' 00.37"
	R14	1255297	661641	N 27° 47' 13.49"	W 81° 58' 59.05"
	R15	1256068	661703	N 27° 47' 16.53"	W 81° 58' 58.26"
	R16	1256039	661783	N 27° 47' 20.84"	W 81° 58' 57.46"
	R17	1256628	661817	N 27° 47' 26.67"	W 81° 58' 57.08"
	R18	1257189	661847	N 27° 47' 32.23"	W 81° 58' 56.76"
	R19	1258802	661934	N 27° 47' 48.20"	W 81° 58' 55.78"
	R20	1258970	661912	N 27° 47' 49.86"	W 81° 58' 56.02"
	R21	1259096	661950	N 27° 47' 51.11"	W 81° 58' 55.60"
	R22	1259302	661962	N 27° 47' 53.15"	W 81° 58' 55.47"
	R23	1259463	661971	N 27° 47' 54.74"	W 81° 58' 55.37"
	R24	1259544	661975	N 27° 47' 55.55"	W 81° 58' 55.32"
	R25	1259902	661979	N 27° 47' 58.12"	W 81° 58' 55.28"
	R26	1260354	662018	N 27° 48' 03.57"	W 81° 58' 54.87"
	R27	1261214	662063	N 27° 48' 12.08"	W 81° 58' 54.34"
	R28	1262588	662119	N 27° 48' 25.69"	W 81° 58' 53.71"
	R29	1263885	662186	N 27° 48' 38.53"	W 81° 58' 52.96"
	R30	1265897	662314	N 27° 48' 58.46"	W 81° 58' 51.52"
	R31	1266629	662459	N 27° 48' 58.46"	W 81° 58' 49.92"
	R32	1271330	662606	N 27° 49' 52.26"	W 81° 58' 48.27"
	R33	127512	663135	N 27° 50' 53.47"	W 81° 58' 42.37"
	R34	1277997	663144	N 27° 50' 54.31"	W 81° 58' 42.27"
	R35	1277826	663131	N 27° 50' 54.60"	W 81° 58' 42.41"
	R36	1278137	663204	N 27° 50' 59.68"	W 81° 58' 40.48"
	R37	1279113	663638	N 27° 51' 08.22"	W 81° 58' 36.76"
	R38	1279266	663680	N 27° 51' 10.84"	W 81° 58' 36.24"
	R39	1280149	663956	N 27° 51' 19.58"	W 81° 58' 33.23"
	R40	1281503	664370	N 27° 51' 32.99"	W 81° 58' 28.60"
	R41	1282391	664605	N 27° 51' 40.79"	W 81° 58' 25.98"
	R42	1283273	664734	N 27° 51' 50.51"	W 81° 58' 24.54"
	R43	1283719	664739	N 27° 51' 54.93"	W 81° 58' 24.48"
	R44	1283908	664734	N 27° 51' 56.80"	W 81° 58' 24.54"
	R45	1292270	667878	N 27° 53' 19.60"	W 81° 57' 49.48"
	R46	1293492	668288	N 27° 53' 31.70"	W 81° 57' 44.91"
	R47	1294714	668698	N 27° 53' 35.75"	W 81° 57' 44.83"
	R48	1295936	669108	N 27° 53' 38.17"	W 81° 57' 44.16"
	R49	1297158	669518	N 27° 53' 38.17"	W 81° 57' 44.16"
	R50	1298390	669928	N 27° 53' 38.64"	W 81° 57' 44.27"
	R51	1299602	670338	N 27° 53' 38.69"	W 81° 57' 44.06"
	R52	1300824	670748	N 27° 53' 40.55"	W 81° 57' 46.20"
	R53	1302046	671158	N 27° 53' 43.88"	W 81° 57' 46.34"
	R54	1303268	671568	N 27° 53' 47.57"	W 81° 57' 46.30"
	R55	1304490	671978	N 27° 53' 48.93"	W 81° 57' 46.29"
	R56	1305712	672388	N 27° 53' 50.03"	W 81° 57' 46.26"
	R57	1306934	672798	N 27° 53' 51.39"	W 81° 57' 46.40"
	R58	1308156	673208	N 27° 53' 51.39"	W 81° 57' 46.40"
	R59	1309378	673618	N 27° 53' 57.95"	W 81° 56' 57.53"
	R60	1310600	674028	N 27° 53' 54.93"	W 81° 56' 57.53"

TAG LIST

AIR RELEASE VALVES

SHEET NUMBER	AIR RELEASE VALVE TAG NUMBER	NORTHING	EASTING	STATION	TYPE
379-EY-401F	0-RWR-ARV-101	1231424.7	658789.9	105+74.4	2" COMBINATION
379-EY-401G	0-RWR-ARV-102	1232690.8	658803.3	123+97.5	2" COMBINATION
379-EY-401H	0-RWR-ARV-103	1234452.3	657674.5	144+80	2" COMBINATION
	0-RWR-ARV-104	1234452.3	65723.9	164+30	2" COMBINATION
	0-RWR-ARV-105	123637.1	656880.3	211+85.6	2" COMBINATION
379-EY-401H	0-RWR-ARV-106	1236218.8	657012.9	217+82.6	2" COMBINATION
	0-RWR-ARV-107	1240281.6	657142.1	229+45.0	2" COMBINATION
379-EY-401I	0-RWR-ARV-108	1241844.0	657501.4	245+48.0	2" COMBINATION
	0-RWR-ARV-109	1243019.7	657771.0	257+54.2	2" COMBINATION
	0-RWR-ARV-110	1244895.9	658566.6	293+13.7	2" COMBINATION
379-EY-401H	0-RWR-ARV-111	1248837.1	659105.0	317+35.3	2" COMBINATION
379-EY-401P	0-RWR-ARV-112	1250928.1	659836.2	339+53.7	2" COMBINATION
379-EY-401R	0-RWR-ARV-113	1256736.3	661817.8	401+43.0	2" COMBINATION
379-EY-401S	0-RWR-ARV-114	1259133.2	661941.1	425+45.1	2" COMBINATION
379-EY-401T	0-RWR-ARV-115	1259778.8	661975.9	431+91.6	2" COMBINATION
379-EY-401U	0-RWR-ARV-116	1263148.7	662141.6	465+65.5	2" COMBINATION
379-EY-401U	0-RWR-ARV-117	1266291.7	662327.2	497+14.0	2" COMBINATION
379-EY-401U	0-RWR-ARV-118	1268354.7	662438.4	517+80.0	2" COMBINATION
379-EY-401V	0-RWR-ARV-119	1271701.4	662618.9	551+31.5	2" COMBINATION
379-EY-401V	0-RWR-ARV-120	1273697.0	662784.4	579+99.0	2" COMBINATION
379-EY-401Z	0-RWR-ARV-121	1278589.3	663452.9	621+40.0	2" COMBINATION
379-EY-401AB	0-RWR-ARV-122	1284466.7	664722.1	681+59.9	2" COMBINATION
	0-RWR-ARV-123	1285079.9	664824.3	688+77.3	2" COMBINATION
379-EY-401AC	0-RWR-ARV-124	1285120.2	665439.7	694+92.9	2" COMBINATION
	0-RWR-ARV-125	1285339.6	666154.5	703+85.0	2" COMBINATION
379-EY-401AD	0-RWR-ARV-126	1286704.5	666136.6	717+50.0	2" COMBINATION
	0-RWR-ARV-127	1286600.7	666129.0	736+50.7	2" COMBINATION
379-EY-401AF	0-RWR-ARV-128	1290899.9	667386.7	763+75.2	2" COMBINATION
379-EY-401AJ	0-RWR-ARV-129	1294430.4	669881.5	812+97.0	2" COMBINATION
379-EY-401AK	0-RWR-ARV-130	1295372.5	669975.9	822+65.0	2" COMBINATION
379-EY-401AL	0-RWR-ARV-131	1296672.3	670448.1	834+40.0	4" COMBINATION
379-EY-401AL	0-RWR-ARV-132	1296810.9	674362.7	886+60.0	8" COMBINATION

VALVES

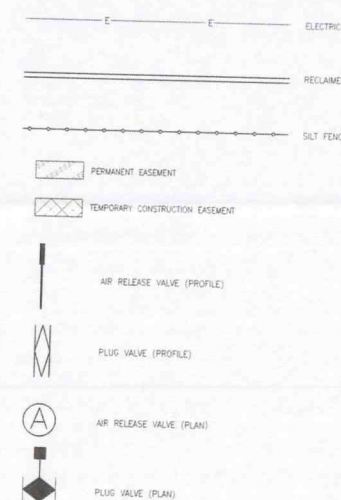
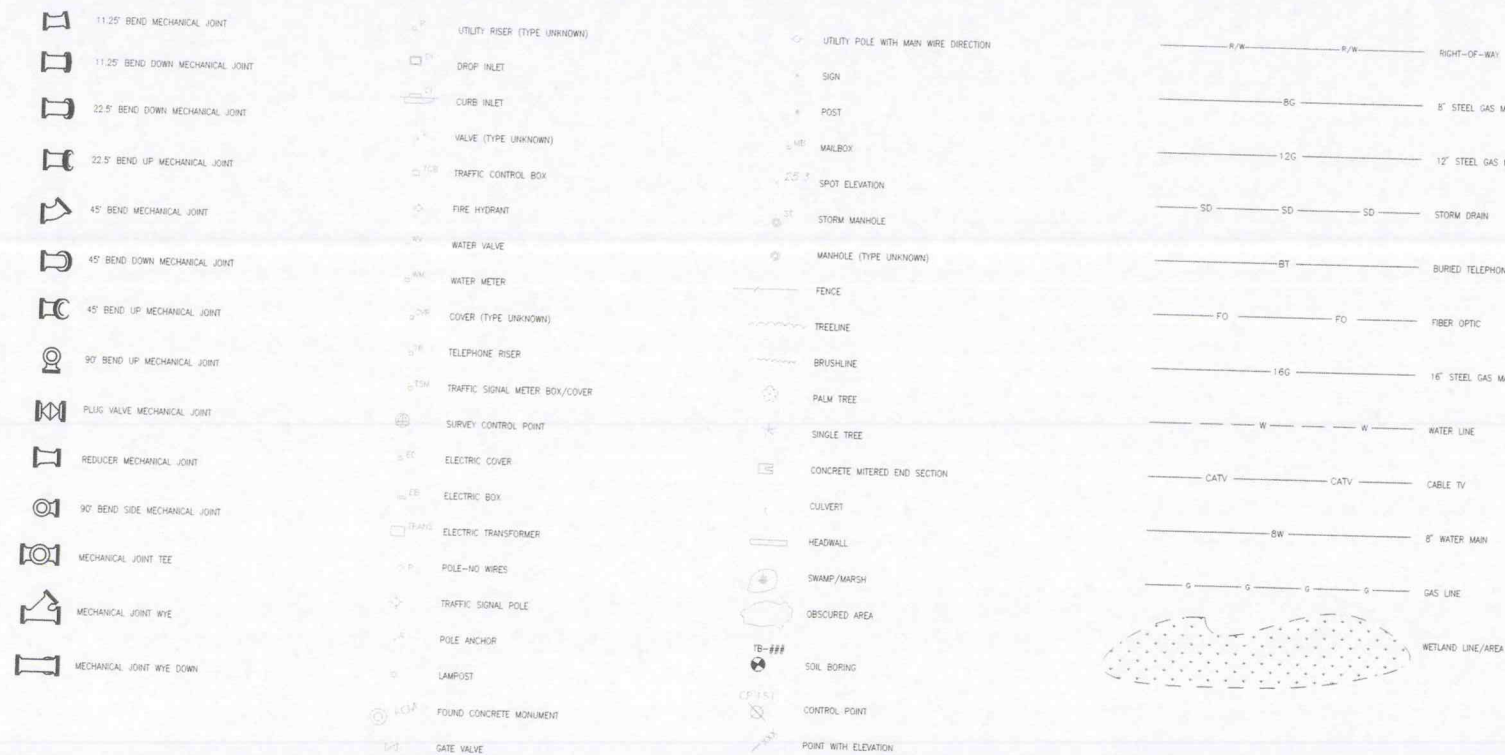
SHEET NUMBER	PLUG VALVE TAG NUMBER	NORTHING	EASTING	STATION	TYPE
379-EY-401G	0-RWR-V-101	1232690.8	657999.8	124+25.0	30" PLUG VALVE
	0-RWR-V-102	1234452.3	657672.2	144+82.1	30" PLUG VALVE
	0-RWR-V-103	1234452.3	657272.8	144+24.5	3" GATE VALVE
379-EY-401J	0-RWR-V-104	1234452.3	657614.6	145+39.7	3" GATE VALVE
	0-RWR-V-105	1235110.8	656660.7	174+17.0	30" PLUG VALVE
	0-RWR-V-106	1236230.9	657015.6	217+99.0	30" PLUG VALVE
379-EY-401K	0-RWR-V-105	1239372.3	657047.8	219+40.0	30" PLUG VALVE
	0-RWR-V-106	1239947.4	657171.8	225+30.6	30" PLUG VALVE
	0-RWR-V-107	1239976.2	657078.3	226+30.7	30" PLUG VALVE
379-EY-401M	0-RWR-V-108	1243941.6	657982.4	267+00.0	30" PLUG VALVE
379-EY-401N	0-RWR-V-109	1247879.8	658864.8	307+40.0	30" PLUG VALVE
	0-RWR-V-110	1248326.1	658973.5	312+05.0	30" PLUG VALVE
	0-RWR-V-111	1251442.1	660076.4	345+20.0	30" PLUG VALVE
379-EY-401R	0-RWR-V-112	1255616.8	661717.5	369+20.0	30" PLUG VALVE
379-EY-401S	0-RWR-V-113	1259620.4	661987.4	432+33.0	30" PLUG VALVE
	0-RWR-V-114	1259807.2	661977.5	432+20.0	30" PLUG VALVE
	0-RWR-V-115	1263381.9	662170.2	468+00.0	30" PLUG VALVE
379-EY-401V	0-RWR-V-116	1267878.1	662412.7	513+02.7	30" PLUG VALVE
379-EY-401W	0-RWR-V-117	1270513.6	662554.9	539+42.0	30" PLUG VALVE
379-EY-401X	0-RWR-V-118	1273607.1	662721.7	570+40.0	30" PLUG VALVE
379-EY-401Y	0-RWR-V-119	1275794.9	662839.7	592+31.0	30" PLUG VALVE
379-EY-401Z	0-RWR-V-120	1278361.2	663381.8	618+62.0	30" PLUG VALVE
	0-RWR-V-121	1280571.1	663447.5	620+82.0	30" PLUG VALVE
	0-RWR-V-122	1281651.6	664476.2	659+20.0	30" PLUG VALVE
379-EY-401AA	0-RWR-V-123	1285053.7	664713.5	687+47.0	30" PLUG VALVE
379-EY-401AB	0-RWR-V-124	1285080.8	664837.9	688+69.9	30" PLUG VALVE
	0-RWR-V-125	1285097.1	665086.4	691+40.0	30" PLUG VALVE
	0-RWR-V-126	1285106.5	665229.1	693+20.0	30" PLUG VALVE
379-EY-401AC	0-RWR-V-127	1285158.6	666024.4	700+80.0	30" PLUG VALVE
	0-RWR-V-128	1285182.7	666156.6	702+28.0	30" PLUG VALVE
	0-RWR-V-129	1289015.9	666301.1	741+00.0	30" PLUG VALVE
379-EY-401AF	0-RWR-V-130	1290938.9	667409.1	763+19.4	30" PLUG VALVE
379-EY-401AJ	0-RWR-V-131	1294175.4	669983.1	810+00.0	30" PLUG VALVE
	0-RWR-V-132	1294538.4	669981.5	813+05.2	30" PLUG VALVE
	0-RWR-V-133	1296053.8	670844.8	838+80.2	30" PLUG VALVE
379-EY-401AR	0-12-MWS-V100	1234512.4	657707.7	144+69.7	12" BUTTERFLY VALVE
379-EY-401AC	0-12-MWS-V110	1234512.4	657714.7	144+61.3	12" BUTTERFLY VALVE
	0-18-MWS-V120	1234512.7	658386.9	N/A	18" BUTTERFLY VALVE

ABBREVIATIONS

[illegible]

SURVEY CONTROL POINT TABLE			
POINT#	NORTHING	EASTING	ELEVATION
101	1232462.32	653495.08	142.91
102	1233533.47	654091.97	141.27
103	1234114.46	654834.35	142.19
104	1234512.70	655060.38	143.10
105	123535.13	655809.95	140.16
106	1236313.18	656227.06	137.18
107	1237340.71	656581.85	138.43
108	1238408.16	656725.93	145.33
109	1239599.90	657090.66	140.58
110	1240639.00	657248.32	147.65
111	1241789.03	657580.44	158.66
112	1242818.60	657723.60	141.14
113	1243867.52	658055.07	124.69
114	1244946.83	658221.81	121.10
115	1245972.55	658531.57	121.87
116	1247028.42	658692.74	123.96
117	1247890.19	658949.95	128.39
118	1248934.02	659129.76	123.06
119	1249908.85	659512.04	124.05
120	1250721.08	659779.59	125.54
121	1251659.85	660266.15	126.79
122	1252662.64	660627.25	125.56
123	1253616.53	661134.71	124.07
124	1254631.02	661490.53	124.32
125	1255640.14	661811.24	122.58
126	1256707.04	661833.37	130.68
127	1257801.25	661941.55	134.26
128	1258914.18	661927.59	138.13
129	1259920.95	662070.14	139.39
130	1260846.97	662034.49	137.77
131	1261868.34	662184.20	136.32
132	1262912.87	662166.22	137.73
133	1263946.34	662265.56	137.67
134	1264976.62	662281.68	138.04
135	1266035.08	662379.30	145.35
136	1267079.25	662392.39	151.42
137	1268112.66	662499.94	151.96
138	1269107.94	662503.05	153.36
139	1270137.87	662604.49	152.64
140	1271191.45	662582.31	151.36
141	1272206.83	662717.55	152.82
142	1273254.39	662730.20	160.63
143	1274021.16	662817.97	159.69
144	1275072.54	662829.34	147.39
145	1276078.16	662926.57	138.81
146	1277226.67	663078.97	134.02
147	1278233.22	663446.58	130.99
148	1279222.46	663655.61	129.93
149	1280153.83	664022.92	128.73
150	1281127.03	664234.11	125.84
151	1281969.24	664579.67	126.00
152	1282941.58	664724.48	125.39
153	1283864.51	664795.52	123.99
154	1284977.01	664744.90	125.19

LEGEND

[illegible]

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
ABBREVIATIONS, LEGEND AND
SURVEY CONTROL POINTS



AECON Technical Services, Inc.
10210 Highland Manor Drive, Suite 1
Tampa, Florida 33610
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FL Engineering Business No. EB-38
www.aecon.com

TEEE

	BY:	DA
APVD	RR	3/3
CHKD	RR	3/3

FILE NAME:	379-EY-401B	DWG. NO.
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GENERAL NOTES

1. ALL WORK INCLUDED IN THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE LATEST APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL TRENCH SAFETY ACTS, INCLUDING, BUT NOT LIMITED TO, THE "TRENCH SAFETY ACT", CHAPTER 90-96, FLORIDA STATUTES.
3. CALL SUNSHINE ONE CALL FOR ALL UTILITY LOCATES A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION AT 1-800-432-4770 OR 811.
4. CONTACT ALL LOCAL UTILITIES PRIOR TO CONSTRUCTION. BELOW IS A LIST OF SOME OF THE UTILITIES WITHIN THE PIPELINE CORRIDOR:
 - A. Kinder Morgan - Mark Clark (813) 241-1124
 - B. Tampa Bay Pipeline Corporation - Martin Goode (813) 623-2431
 - C. Florida Gas Transmission Company - Ezequiel Seneno (407) 838-7459 and Chad W. Horrell (813) 466-3326
5. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS HAVE BEEN ESTABLISHED BASED ON AVAILABLE INFORMATION AND LIMITED FIELD RECONNAISSANCE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT SIZE, LOCATION, DEPTH AND HEIGHT OF ALL UNDERGROUND AND OVERHEAD UTILITIES THAT ARE WITHIN THE LIMITS OF CONSTRUCTION.
6. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTOR IS DIRECTED TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO UPHOLD THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONDUCT SUBSURFACE UTILITY LOCATION IN ACCORDANCE WITH SECTION 02.32.19. THE NEED FOR SUBSURFACE UTILITY LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR, EXCEPT IN SPECIFIC AREAS WHERE NOTED ON THE CONSTRUCTION DRAWINGS WHERE THE CONTRACTOR IS REQUIRED TO FIELD VERIFY THE LOCATION OF GAS MAINS, ETHERAL PIPES, UNKNOWN PIPES, AND WATER PIPES PRIOR TO CONSTRUCTING THE NEW RECLAIMED WATER MAIN AND FIBER OPTIC CABLE.
7. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF EXISTING UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER. IN ADDITION, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITIES LOCATED WITHIN THE TRENCHING WIDTH FOR THE NEW RECLAIMED WATER PIPELINE AND THE NEW FIBER OPTIC CONDUITS. COSTS ASSOCIATED WITH REPAIR AND RELOCATION OF EXISTING UTILITIES SHALL BE INCLUDED WITHIN THE VARIOUS UNIT PRICE PIPING BID ITEMS AS DESCRIBED IN THE MEASUREMENT FOR PAYMENT.
8. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ALL STRUCTURES, MITTERED END SECTIONS AND DRAINAGE PIPES, REMOVED OR DAMAGED DURING CONSTRUCTION WITH LIKE MATERIALS. ALL DRAINAGE INFRASTRUCTURE SHALL BE REPLACED WITH NEW MATERIAL IN ACCORDANCE WITH THE CURRENT FOOT DESIGN STANDARDS, WHICH ARE PROVIDED ON DRAWINGS 379-EY-401AR, 379-EY-401AS, AND 379-EY-401AT FOR THE CONTRACTOR'S REFERENCE. THE CONTRACTOR SHALL NOTE THE DIFFERENCE BETWEEN CROSS DRAIN AND SIDE DRAIN DRAINAGE STRUCTURES AND SHALL MATCH ALL SLOPES, LENGTHS AND INVERTS AS EXISTS IN THE FIELD OR AS MANIFESTED BY THE STANDARD INDEX. REFER TO SECTION 32.01.16 FOR ADDITIONAL REQUIREMENTS.
9. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY, IN WRITING, OF ANY CONFLICTS BETWEEN WHAT IS SHOWN HEREIN AND ACTUAL CONDITIONS DISCOVERED DURING CONSTRUCTION.
10. IN ACCORDANCE WITH F.A.C. RULE 62-610, THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE PROPOSED RECLAIMED WATER MAIN AND EXISTING WATER PIPELINES AND SEWER LINES SHALL BE THREE FEET (OUTSIDE TO OUTSIDE).
11. IN ACCORDANCE WITH F.A.C. RULE 62-610, THE MINIMUM VERTICAL SEPARATION SHALL BE AS FOLLOWS: THE TOP OF THE RECLAIMED WATER LINE SHALL BE INSTALLED AT LEAST 18 INCHES BELOW THE BOTTOM OF THE EXISTING POTABLE WATER PIPES AND SEWER PIPES.
12. IN ACCORDANCE WITH F.A.C. RULE 62-610, ALL RECLAIMED WATER VALVES AND OUTLETS SHALL BE APPROPRIATELY TAGGED OR LABELED (BEARING THE WORDS IN ENGLISH AND SPANISH "DO NOT DRINK" TOGETHER WITH THE EQUIVALENT STANDARD INTERNATIONAL SYMBOL) TO WARN THE PUBLIC AND EMPLOYEES THAT THE WATER IS NOT INTENDED FOR DRINKING.
13. IN ACCORDANCE WITH F.A.C. RULE 62-610, ALL PIPING, PIPELINES, VALVES AND OUTLETS SHALL BE COLOR CODED, OR OTHERWISE MARKED TO DIFFERENTIATE RECLAIMED WATER FROM DOMESTIC OR OTHER WATER. REFER TO SECTION 10.14.13 FOR IDENTIFICATION TAPE, LOCATOR WIRE, COLOR CODING, AND MARKERS REQUIRED FOR THE NEW RECLAIMED WATER MAIN.
14. MINIMUM DEPTH OF COVER FROM FINISHED GRADE TO TOP OF PIPE SHALL BE 48-INCHES UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED BY THE OWNER'S REPRESENTATIVE.
15. ALL DISTURBED GRASS AREAS SHALL BE RESTORED PER SECTION 32.02.10.
16. ALL DISTURBED GRASS SHALL BE RESTORED TO ORIGINAL ELEVATION. ALL DITCHES AND SIDE SLOPES THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL ELEVATION AND CONFIGURATION.
17. CONTRACTOR SHALL CLEAR AND GRUB ALL EXISTING TREES, SHRUBS, AND LANDSCAPING AS NECESSARY FOR CONSTRUCTION OF THE NEW RECLAIMED WATER PIPE. CONTRACTOR SHALL PROTECT ALL TREES, SHRUBS AND OTHER LANDSCAPING OUTSIDE OF THE PUBLIC RIGHT-OF-WAYS AND THE CONSTRUCTION EXHAUSTS. REFER TO SECTION 31.10.00 FOR ADDITIONAL REQUIREMENTS.
18. THE CONTRACTOR SHALL REPLACE ALL ASPHALT AND CONCRETE ROADS AND DRIVEWAYS THAT ARE REMOVED OR DAMAGED AS A RESULT OF THE CONSTRUCTION ACTIVITIES. ASPHALT ROADS ARE TO BE REPAIRED IN ACCORDANCE WITH TYPE 1 DETAIL HEREIN. ASPHALT DRIVES ARE TO BE REPAIRED IN ACCORDANCE WITH THE TYPE 2 DETAIL HEREIN. IN ADDITION, REPAIRS SHALL BE DONE IN ACCORDANCE WITH SECTION 32.01.16.
19. THE CONTRACTOR SHALL REPLACE ALL EXISTING DIRT ROADS OR DRIVEWAYS REMOVED OR DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES WITH A GRAVEL ROADWAY PER SECTION 32.01.16. DIRT ROADS AND DRIVEWAYS WITHIN THE FOOT RIGHT OF WAY SHALL BE REPLACED FROM EDGE OF PAVEMENT TO THE RIGHT-OF-WAY LINE.
20. THE CONTRACTOR SHALL PROVIDE ALL Dewatering EQUIPMENT NECESSARY TO KEEP EXCAVATIONS DRY AND SHALL PROVIDE ALL SHEETING, SHORING, AND BRACING NECESSARY TO PROTECT ADJACENT STRUCTURES, UTILITIES, EXISTING PAVEMENT, Dewatering AND SHEETING, SHORING, AND BRACING SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, APPLICABLE PERMITS AND APPLICABLE REGULATIONS. CONTRACTOR SHALL MEET THE REQUIREMENTS OF SECTION 31.23.19 FOR Dewatering AND SECTION 31.50.00 FOR EXCAVATION SUPPORT SYSTEMS.
21. CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC IN ACCORDANCE WITH FOOT DESIGN STANDARDS, SERIES 600 OF THE INDICES, SOME OF WHICH ARE PROVIDED ON DETAIL 379-EY-401AT FOR THE CONTRACTOR'S REFERENCE. SUBMIT A MOT PLAN TO FDOT A MINIMUM OF TWO WEEKS PRIOR TO CONSTRUCTION, AND OBTAIN FDOT'S APPROVAL ON ALL MOT WITHIN THE FOOT RIGHT-OF-WAYS. REFER TO SECTION 01.55.26 FOR ADDITIONAL TRAFFIC REGULATION REQUIREMENTS.
22. CONTRACTOR SHALL PLACE TEMPORARY BARRIER WALLS PER FOOT AROUND JACK & BORE PITS AND HORIZONTAL DIRECTIONAL DRILLING PITS AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY FDOT OR THE OWNER'S REPRESENTATIVE.
23. TWO NEW FIBER OPTIC CONDUITS SHALL BE INSTALLED ADJACENT TO THE RECLAIMED WATER PIPE FOR THE EXISTING PIPELINE ROUTE LENGTH INCLUDED IN THIS CONTRACT IN ACCORDANCE WITH SECTION 27.13.23 AND THE CONSTRUCTION DETAILS. THE FIBER OPTIC CONDUITS WILL SERVE AS A BIPRODUCT PIPELINE FOR COMMUNICATION/DATA CABLE (PROVIDED BY OTHERS) FOR THIS PROJECT. FURNISH AND INSTALL PULL BOXES AS DESCRIBED IN SPECIFICATION 27.13.23 AND THESE CONSTRUCTION DRAWINGS.
24. INSTALL DETECTABLE LOCATING TAPE WITH METALLIC CORE THROUGHOUT THE ENTIRE LENGTH OF THE FIBER OPTIC CONDUITS AND A SEPARATE LOCATING TAPE WITH METALLIC CORE THROUGHOUT THE ENTIRE LENGTH OF THE RECLAIMED WATER PIPE.
25. THE CONTRACTOR SHALL CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER APPROVED METHODS AS REQUIRED.
26. JACKING AND RECORDING PIT DIMENSIONS AND LOCATIONS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE THE FINAL LOCATIONS AND DIMENSIONS NECESSARY FOR CONSTRUCTION.
27. CONTRACTOR SHALL ADHERE TO ALL OSHA STANDARDS FOR PROPER DISTANCES BETWEEN MACHINERY AND OVERHEAD ELECTRIC WIRES, SPECIFICALLY CODES 1910.333(C)(3)(II)(A) AND 1910.333(C)(3)(II)(A). CONTRACTOR SHALL COORDINATE WITH THE VARIOUS UTILITY COMPANIES REGARDING THE VOLTAGE OF OVERHEAD ELECTRIC WIRES PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES.
28. CARE AND PROTECTION OF PROPERTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE PROPERTY, AND SHALL USE EVERY PRECAUTION NECESSARY TO PREVENT DAMAGE THERETO. IF ANY DIRECT OR INDIRECT DAMAGE IS DONE TO PUBLIC OR PRIVATE PROPERTY BY OR ON ACCOUNT OF ANY ACT, OMISSION, NEGLIGENCE, OR MISCONDUCT IN THE EXECUTION OF THE WORK ON THE PART OF THE CONTRACTOR, SUCH PROPERTY SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE, TO A CONDITION SIMILAR OR EQUAL TO THAT EXISTING BEFORE THE DAMAGE WAS DONE, OR HE SHALL MAKE GOOD THE DAMAGE IN OTHER MANNER ACCEPTABLE TO THE OWNER'S REPRESENTATIVE.
29. TEST PITS. TEST PITS FOR THE PURPOSE OF LOCATING UNDERGROUND PIPELINE OR STRUCTURES IN ADVANCE OF THE CONSTRUCTION SHALL BE EXCAVATED AND BACKFILLED BY THE CONTRACTOR AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE. TEST PITS SHALL BE BACKFILLED IMMEDIATELY AFTER THEIR PURPOSE HAS BEEN SATISFIED AND THE SURFACE RESTORED AND MAINTAINED IN A MANNER SATISFACTORY TO THE OWNER'S REPRESENTATIVE. REFER TO SECTION 02.32.19.
30. DIMENSION OF EXISTING STRUCTURES. WHERE THE DIMENSIONS AND LOCATIONS OF EXISTING STRUCTURES ARE OF IMPORTANCE IN THE INSTALLATION OR CONNECTION OF ANY PART OF THE WORK, THE CONTRACTOR SHALL VERIFY SUCH DIMENSIONS AND LOCATIONS IN THE FIELD BEFORE THE FABRICATION OF ANY MATERIAL OR EQUIPMENT WHICH IS DEPENDENT ON THE CORRECTNESS OF SUCH INFORMATION.
31. THE RECLAIMED WATER PIPELINE PROJECT INCLUDES COORDINATION WITH CONSTRUCTION WORK BY OTHERS. THE NEW RECLAIMED WATER PIPELINE WILL CONNECT THE NEW WTS PUMP STATION (BY OTHERS) TO THE NEW RFP AT THE POLA POWER STATION (BY OTHERS). CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING THE TIE-IN LOCATIONS WITH THE OTHER CONTRACTORS. REFER TO THE CONSTRUCTION PLANS FOR TIE-IN LOCATIONS.
32. CONTRACTOR SHALL MAKE PROVISIONS FOR VEHICULAR INGRESS AND EGRESS AT ALL DRIVES CROSSED BY PIPELINE CONSTRUCTION ACTIVITIES AT ALL TIMES.
33. WHERE HORIZONTAL DEFLECTIONS ARE SHOWN TO BE IN EXCESS OF 1.5", THE CONTRACTOR SHALL DEFLECT A SUFFICIENT NUMBER OF PIPE JOINTS TO ACHIEVE THE TOTAL DEFLECTION SHOWN ON THE CONSTRUCTION DRAWINGS.

SEDIMENT AND EROSION CONTROL

1. THE CONTRACTOR SHALL NOT ENTER ANY WETLAND AREAS UNLESS ALLOWED BY THE ENVIRONMENTAL RESOURCE PERMIT ISSUED BY FDEP. ALL WORK IN THE VICINITY OF OPEN WATER AND WETLANDS IS TO BE PERFORMED IN COMPLIANCE WITH THE APPROVED PERMITS FOR THE PROJECT. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR FINES AND CORRECTIVE ACTIONS RESULTING FROM HIS VIOLATION OF ANY REGULATIONS AND PERMIT CONDITIONS.
2. ALL PRACTICABLE EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT MATERIALS TO STORM WATER INLETS, SURFACE DRAINS, DRAINAGE DITCHES, WETLANDS AND LAKE AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION EFFORTS THAT MAY BE REQUIRED.
3. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING A BEST MANAGEMENT PLAN (BMP) FOR SEDIMENT AND EROSION CONTROL. THE PLAN SHALL BE SUBMITTED FOR REVIEW TO THE OWNER'S REPRESENTATIVE AND FDOT TWO WEEKS PRIOR TO MOBILIZATION.
4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING NPDES PERMIT(S) AND COMPLYING WITH ALL REQUIREMENTS OF THE NPDES PERMIT(S).
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP) FOR THE DURATION OF THE PROJECT AND AS ADDITIONALLY SPECIFIED BY THE APPROVED NPDES PERMIT(S).
6. SILT FENCING IS SHOWN IN THE PLANS FOR ALL AREAS OF CONSTRUCTION. HOWEVER THE CONTRACTOR TO DETERMINE THE ACTUAL LOCATION AND LENGTH OF SILT FENCING REQUIRED FOR CONSTRUCTION ACTIVITIES.
7. CONTRACTOR SHALL INCORPORATE THE APPROPRIATE TURBIDITY BARRIOR AND TEMPORARY EROSION AND SEDIMENT CONTROL BASED UPON THE CONDITIONS DURING CONSTRUCTION.

STORM WATER BYPASS

1. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING A STORM WATER BYPASS PLAN TO BE SUBMITTED TO THE OWNER'S REPRESENTATIVE AND FDOT A MINIMUM OF TWO WEEKS PRIOR TO MOBILIZATION. SUBMITTAL OF THE PLAN DOES NOT RELIEVE THE CONTRACTOR FROM THE LIABILITY OF FLOODING PRIVATE PROPERTY OR ADJACENT ROADWAYS AS A RESULT OF THE PROPOSED STORM WATER BYPASS PLAN.
2. THE STORM WATER BYPASS PLAN SHALL DEMONSTRATE HOW THE CONTRACTOR WILL BYPASS STORM WATER FLOW WITHIN THE EXISTING DRAINAGE SYSTEMS AROUND THE LIMITS OF THE IMMEDIATE CONSTRUCTION ACTIVITIES AND INCLUDE SPECIFIC PLANS FOR JACK & BORE PITS.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ANY FLOW THAT MAY EXIST WITHIN THE DRAINAGE SYSTEMS AS WELL AS STORM WATER FLOWS AS A RESULT OF RAIN EVENTS THE BYPASS SHALL BE SUFFICIENT TO HANDLE AN EQUIVALENT HYDRAULIC CAPACITY AS THE EXISTING STORM WATER INFRASTRUCTURE.
4. UNLESS PART OF THE STORM WATER BYPASS PLAN, EXCAVATED MATERIAL SHALL NOT BE PLACED WITHIN THE FLOW LINE OF THE EXISTING DRAINAGE SYSTEMS.

GENERAL SURVEY NOTES

1. SURVEY INFORMATION WAS PROVIDED BY COMPASS POINT SURVEYORS 806 FRANKLIN STREET CLEARWATER, FL 33756 (FOR ENTIRE PIPELINE ROUTE EXCLUDING THE AREA ON TEC'S PROPERTY) AND EMM CONSULTANTS OF FLORIDA, INC. 7815 N. DALE MABRY HIGHWAY SUITE 200 TAMPA, FL 33614 (FOR AREA ON TEC'S PROPERTY AT THE POLA POWER STATION).
- DATE(S) OF SURVEY: SEPTEMBER 30, 2011 (COMPASS POINT), OCTOBER 6, 2011 (EMM).
2. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO ESTABLISH RIGHT-OF-WAY LINES, EASEMENTS, BASELINES, BENCHMARKS AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.
3. THE CONTRACTOR IS RESPONSIBLE FOR STAKING THE RIGHT-OF-WAYS, EASEMENT LIMITS, AND CENTERLINE OF THE PIPE PRIOR TO CONSTRUCTION.
4. ANY PUBLIC LAND CORNER, PROPERTY OR BENCHMARK WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY. ANY CORNER MONUMENT DESTROYED OR DISTURBED SHALL BE RESET AND CERTIFIED BY A PROFESSIONAL SURVEYOR AND MAPPER REGISTERED IN THE STATE OF FLORIDA AT THE CONTRACTOR'S EXPENSE.

SURVEYOR'S NOTES

DATA SOURCES

1. COORDINATES AND BEARINGS SHOWN HERE ON ARE IN FEET AND REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, FLORIDA WEST ZONE, NORTH AMERICAN DATUM 1983 (2007 ADJUSTMENT), UTILIZING A COMBINATION OF NGS ONLINE POSITIONING USER SERVICE (OPUS) GPS STATIC SESSIONS AND CROSS CHECKING CONTROL WITH THE LONGMANWAY GPS RINEX NETWORK. THE FOLLOWING NATIONAL GEODETIC SURVEY (NGS) PUBLISHED CONTROL MONUMENTATION WAS UTILIZED FOR THIS SURVEY: PD AF7268, DESIGNATION K014, NORTHING 1264684.65 FEET, EASTING 664833.37 FEET AND PD AF7569, DESIGNATION K015, NORTHING 1267372.86 FEET, EASTING 664834.05 FEET. THE BASIS OF BEARING BEING 4.0117701°E BETWEEN SAID NGS CONTROL MONUMENTS K014 AND K015.
2. ELEVATIONS SHOWN HERE ON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (N.A.V.D. 1988). PUBLISHED BENCHMARKS UTILIZED FOR THIS SURVEY: NOS PD D01462, DESIGNATION M 616, ELEVATION = 123.96 FEET, NOS PD D02164, DESIGNATION P 816, ELEVATION = 117.41 FEET, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) DESIGNATION N 708, ELEVATION = 141.76 FEET, AND FDEP DESIGNATION M 708, ELEVATION = 138.90 FEET.
3. AERIAL PHOTOGRAPHY AND LIDAR DATA (DIGITAL SURVEY DATA 1, 2 & 3) WERE PREPARED BY SOUTHERN RESOURCE MAPPING, INC., TEL. (954) 439-4848 AND UTILIZED IN THE PREPARATION OF THIS SURVEY.
4. SUBSURFACE UTILITY ENGINEERING AND LOCATIONS WERE PERFORMED BY GEOMASTERS, INC., TEL. (727) 772-1693 AND UTILIZED IN THE PREPARATION OF THIS SURVEY.
5. SOIL BORING LOCATIONS WERE PERFORMED BY NODARBE & ASSOCIATES, TEL. (813) 221-0050 AND UTILIZED IN THE PREPARATION OF THIS SURVEY.
6. WETLAND LOCATIONS WERE PERFORMED BY ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC., TEL. (813) 289-9338 AND UTILIZED IN THE PREPARATION OF THIS SURVEY.
7. FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) RIGHT-OF-WAY MAP NUMBERS 1625-102 AND 5687 FOR SR 37 WERE UTILIZED IN THE PREPARATION OF THIS SURVEY.
8. FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) RIGHT-OF-WAY MAP NUMBERS 1611-1222C, 16110-2112 AND 161110-2505 FOR SR 60 WERE UTILIZED IN THE PREPARATION OF THIS SURVEY.
9. CSX RAILROAD RIGHT-OF-WAY AND TRACK MAP NUMBERS V02127, V03089 AND V03107 WERE UTILIZED IN THE PREPARATION OF THIS SURVEY.
10. THAT CERTAIN BOUNDARY SURVEY FOR MALBERRY PHOSPHATES PREPARED BY PICKETT AND ASSOCIATES, INC., TELEPHONE NO. (863) 533-8095, PROJECT NO. 12076, DATED 04/30/02 WAS UTILIZED IN THE PREPARATION OF THIS SURVEY.
11. THAT CERTAIN BOUNDARY SURVEY FOR PROPOSED POLA POWER STATION SITE PREPARED BY ANDREW T. EDGEMON, PLS TELEPHONE NO. (813) 754-5621, DATED 12/17/93 WAS UTILIZED IN THE PREPARATION OF THIS SURVEY.
12. THAT CERTAIN BOUNDARY SURVEY FOR CITY OF LAKELAND PREPARED BY POST BUCKLEY, SCHUH & JERHMAN, INC., JOB NO. 07.001.66 DATED 10/01/85 WAS UTILIZED IN THE PREPARATION OF THIS SURVEY.
13. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF AN OWNERSHIP AND ENCUMBRANCE REPORT, PREPARED BY CHICAGO TITLE INSURANCE COMPANY, ORDER NO. 3444514, DATED MARCH 22, 2011.
14. POLA COUNTY PROPERTY APPRAISER GIS SECTION MAPS WERE UTILIZED IN THE PREPARATION OF THIS SURVEY.
15. LAST FIELD DATE OF SURVEY: DECEMBER 8, 2011 AS REFERENCED IN FIELD BOOK 248, PAGES 1-7. FIELD NOTES FOR THE TOPOGRAPHIC SURVEY WERE ALSO REFERENCED IN FIELD BOOK 016, PAGES 73-79, FIELD BOOK 220, PAGES 1-78 AND FIELD BOOK 224, PAGES 1-19.
16. APPARENT RIGHT-OF-WAY LINES AND PARCEL LINES SHOWN ON THE MAP OF SURVEY ARE BASED ON EXISTING MONUMENTATION AND OCCUPATION REFERENCING FDOT RIGHT-OF-WAY MAPS, CSX RIGHT-OF-WAY MAPS, POLA COUNTY GIS PROPERTY APPRAISER MAPS, PLATS, BOUNDARY SURVEYS BY OTHERS, INFORMATION PROVIDED BY THE GEO REALTY DEPARTMENT SUCH AS PROPERTY OWNERSHIP, EASEMENTS AND OTHER PERTINENT INFORMATION. THIS IS NOT A BOUNDARY OR RIGHT-OF-WAY SURVEY (DATA SOURCES 7, 8, 9, 10, 11, 12, 13, & 14).
17. ALL MARKING SHOWN REPRESENTS THE ACTUAL SITE CONDITIONS EXISTING AT THE TIME OF AERIAL PHOTOGRAPHY ACQUIRED 06/5/11 AND LIDAR DATA CAPTURED 06/15/11.



ISSUE	DESCRIPTION	DESIGN	OWN	CHKD	APRD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
GENERAL NOTES

AECOM

AECOM Technical Services, Inc.
12010 Highland Manor Drive, Suite 350
Tampa, Florida 33618
P: 813.421.2300 F: 813.421.2300
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www.aecom.com

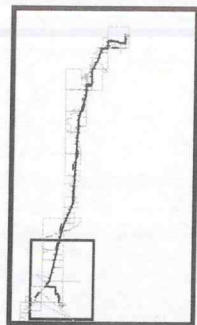
TECO
TAMPA ELECTRIC

BY: DATE
APVD: RR 3/30/12
CHKD: RR 3/26/12
OWN: JT 3/26/12
ESGN: NU 8/28/12

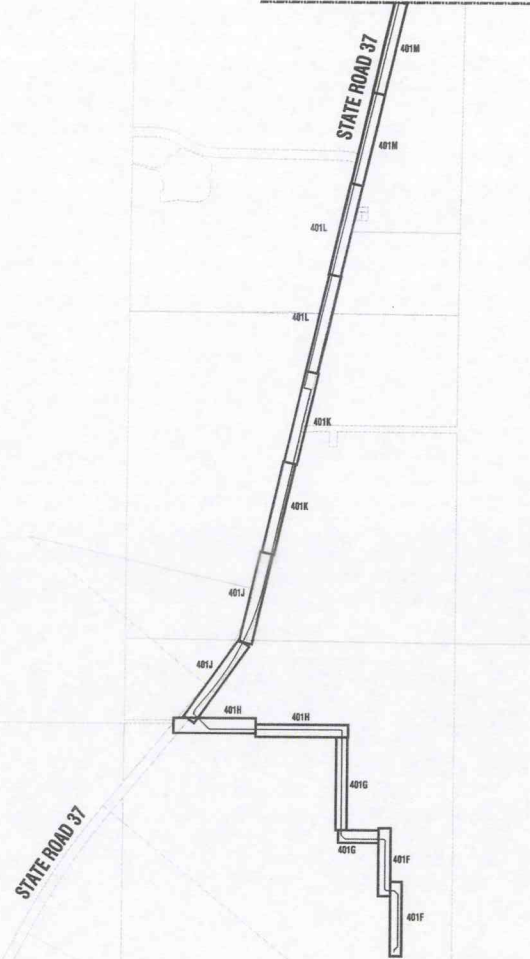
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SCALE: NONE

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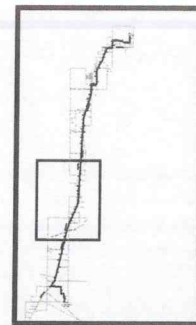
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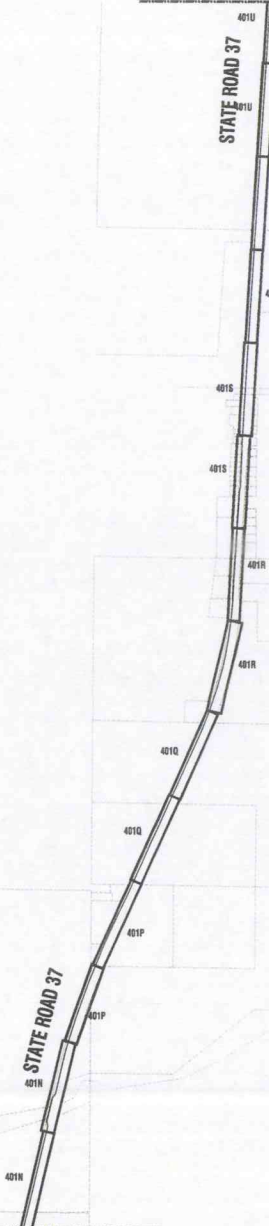
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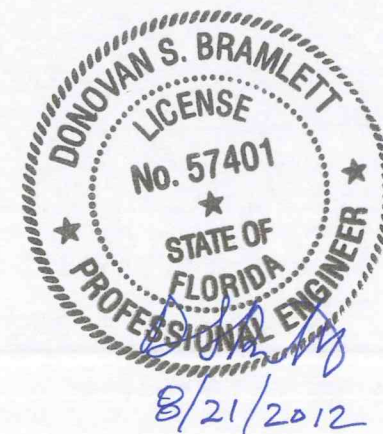
RTP SITE AT
POLK POWER
STATION



SEE MATCHLINE "B"
SHEET 379-EY-401E



SEE MATCHLINE "A"
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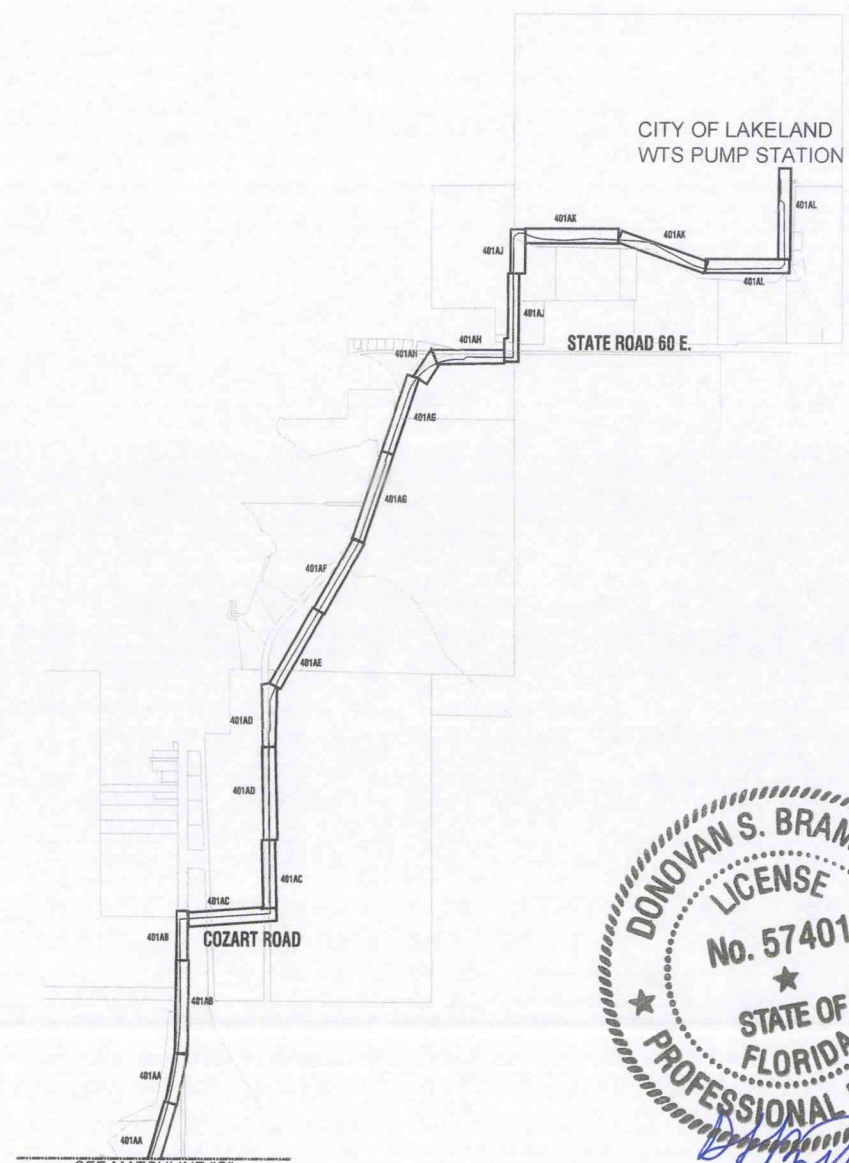
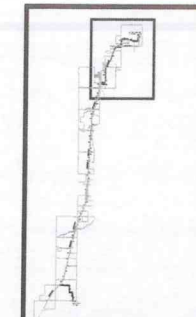
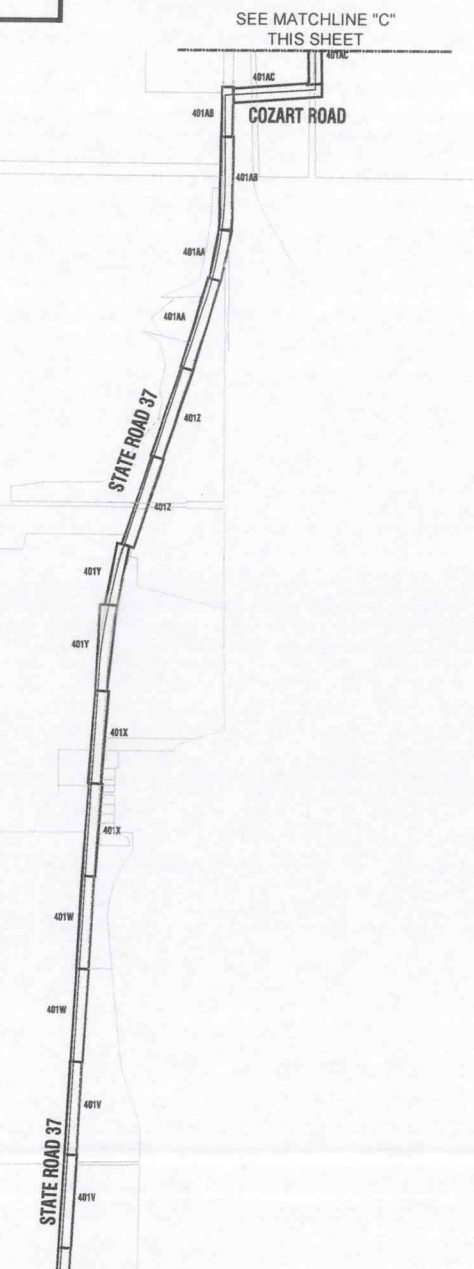
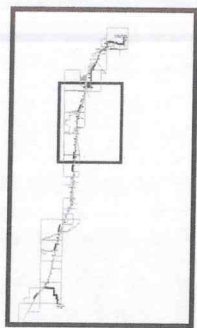
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B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12			
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11			
ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE			
TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING									
TAMPA ELECTRIC COMPANY RECLAIMED WATER PIPELINE DRAWING KEY SHEET I									

AECOM
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FL Engineering Business No. EB-38
www.aecom.com

TECO
TAMPA ELECTRIC

BY:	DATE:
APVD RR	3/26/12
CHKD RR	3/26/12
DWN JT	3/26/12
DSGN NU	5/26/12

FILE NAME	379-EY-401D.DWG	DWG. NO.	379-EY-401D	REV. NO.	0
SCALE	1" = 1000'				



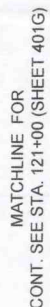
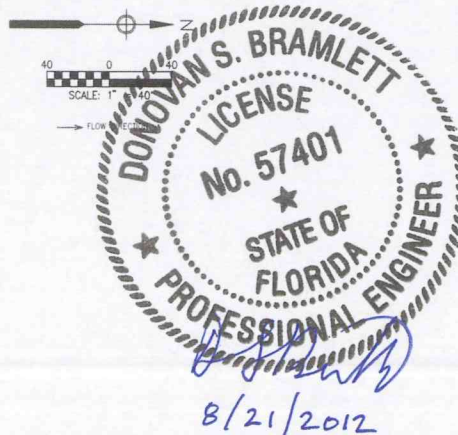
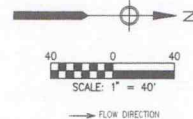
DONOVAN S. BRAMLETT
LICENSE
No. 57401
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
8/21/2012

ISSUE	DESCRIPTION	ISSN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

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TECO
TAMPA ELECTRIC

FILE NAME	379-EY-401E.DWG	DWG. NO.	379-EY-401E	REV. NO.	0
SCALE	1"=1000'				

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

AECOM

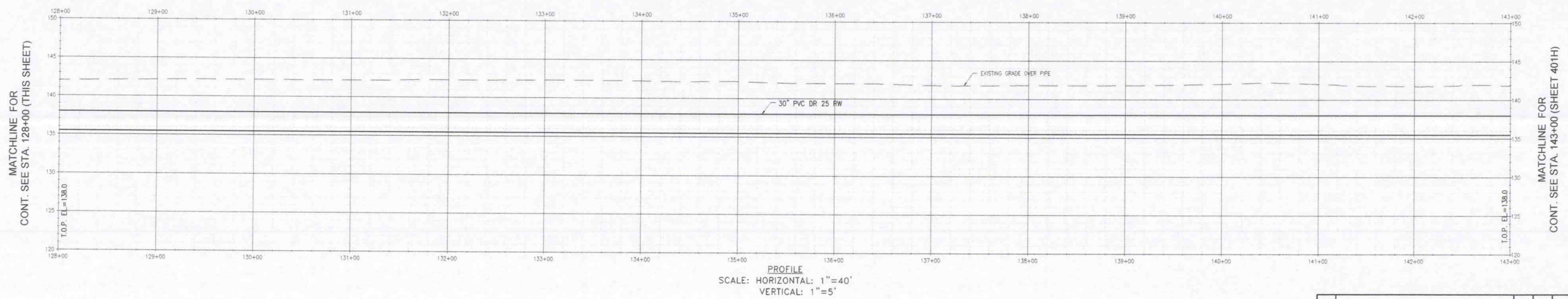
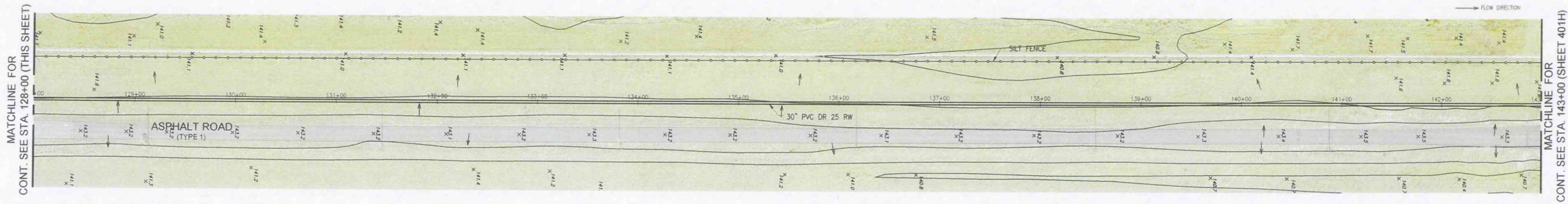
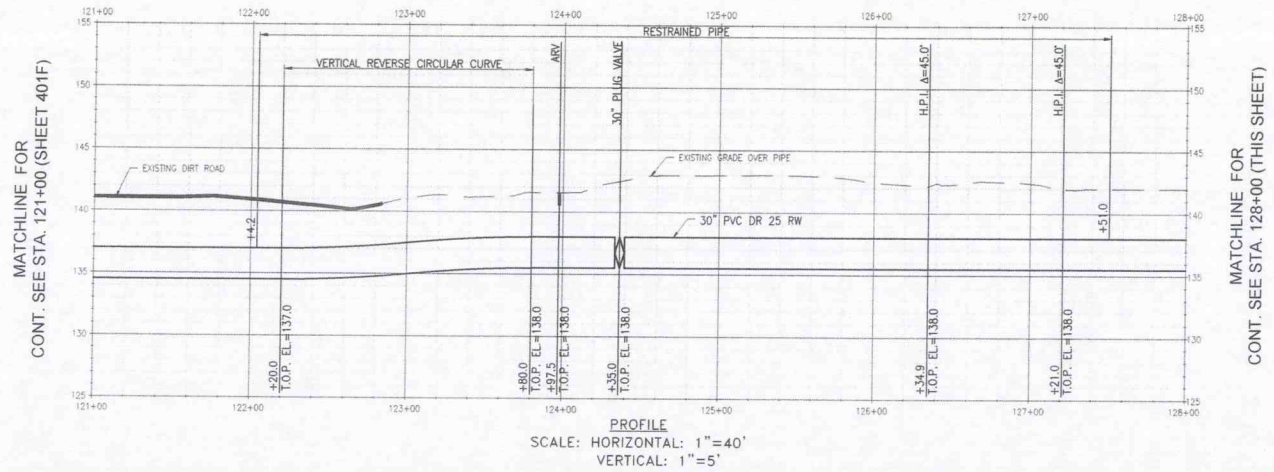
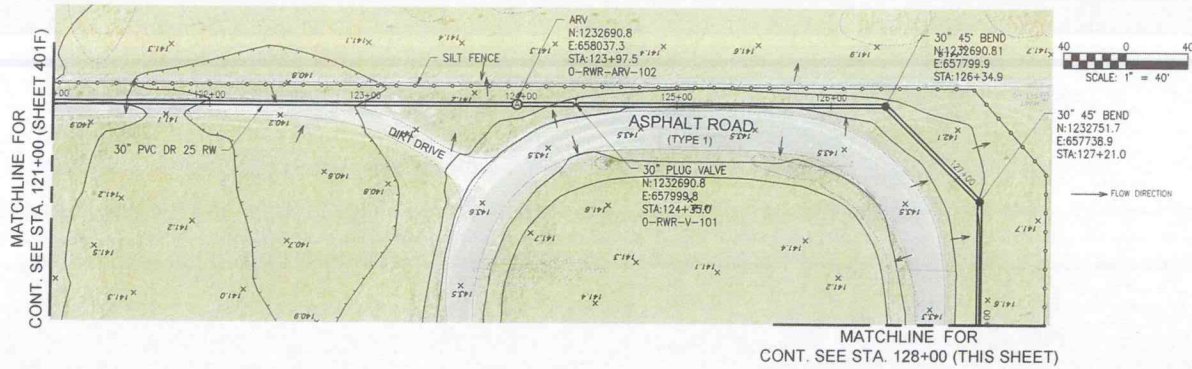
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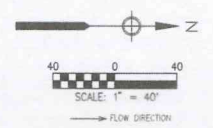
	BY:	DATE:
APVD RR	3/30	
CHKD RR	3/30	
DWGN JT	3/30	
DRWN MLI	3/30	

BY:	DATE:	FILE NAME:	379-EY-401F.DWG	DWG. NO.	379-EY-401F
APVD RR	3/30/12	SCALE:	1" = 40'		
CHKD RR	3/30/12				
DWN JT	3/30/12				
DCGM	3/30/12				

REV. NO. 0



DONOVAN S. BRAMLETT
 LICENSE
 No. 57401
 STATE OF
 FLORIDA
 PROFESSIONAL ENGINEER
 8/21/2012

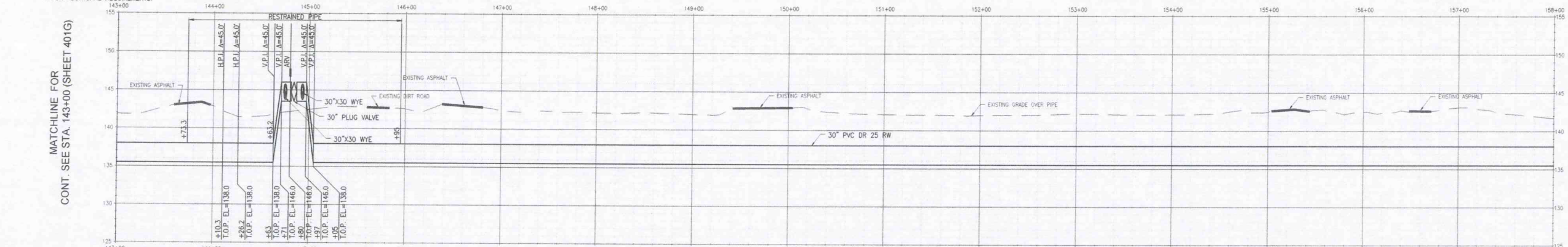
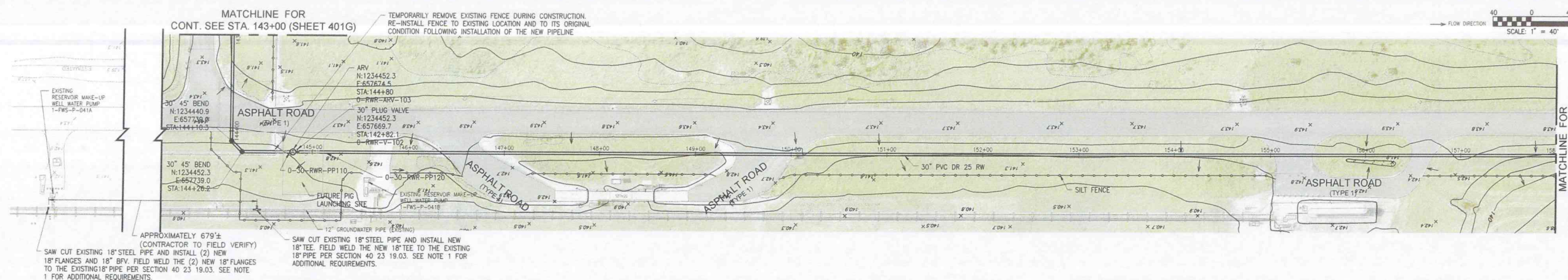


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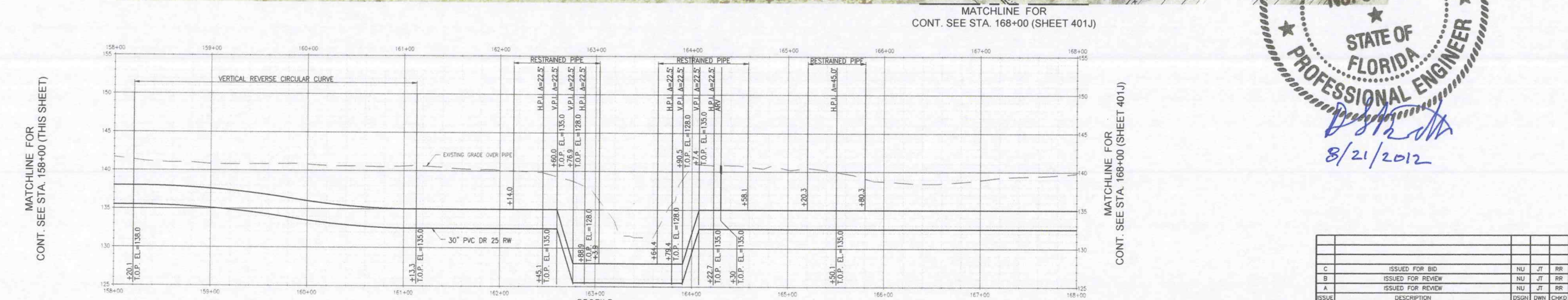
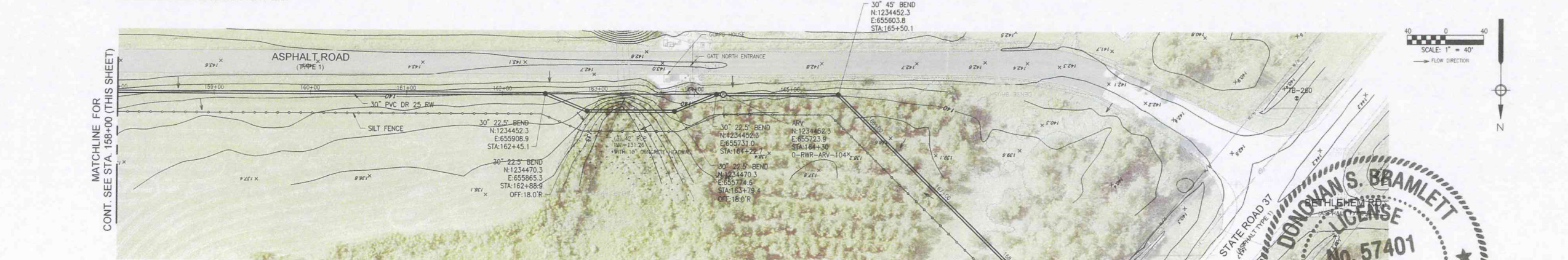
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 P: 813.620.2500 F: 813.621.2300
 FL Engineering Business No. EB-58
 www.aecom.com

TECO
 TAMPA ELECTRIC

FILE NAME	379-EY-401G	DWG. NO.	379-EY-401G	REV. NO.	0
SCALE	1" = 40'				

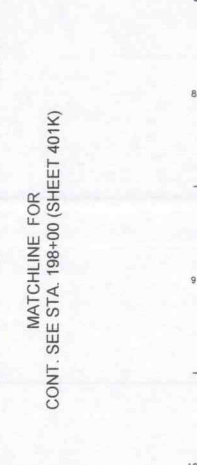
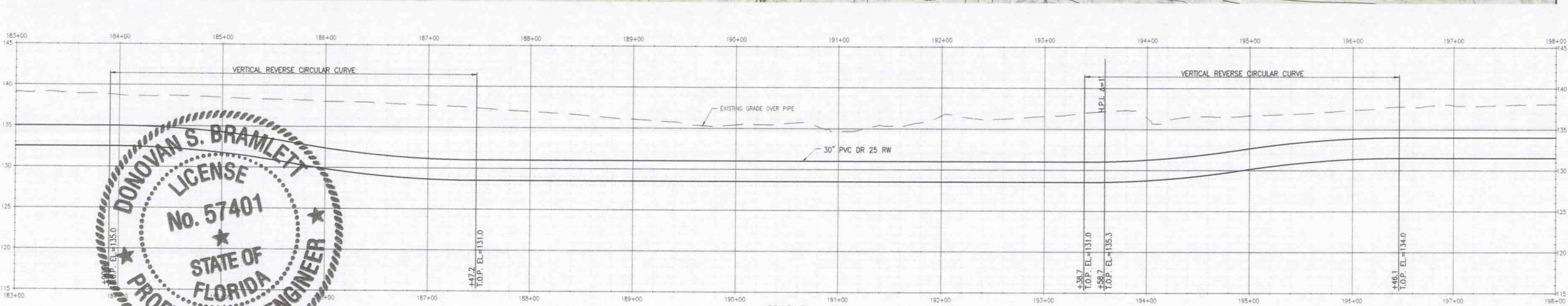
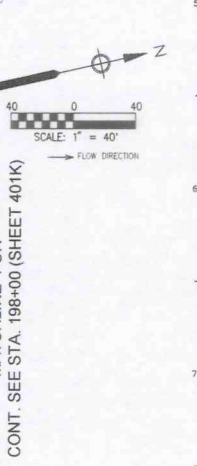
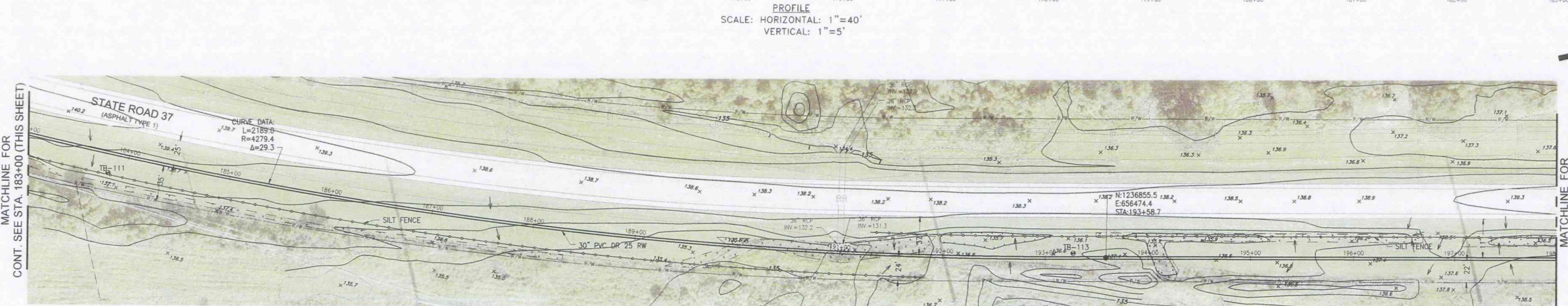
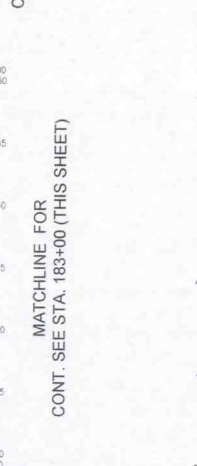
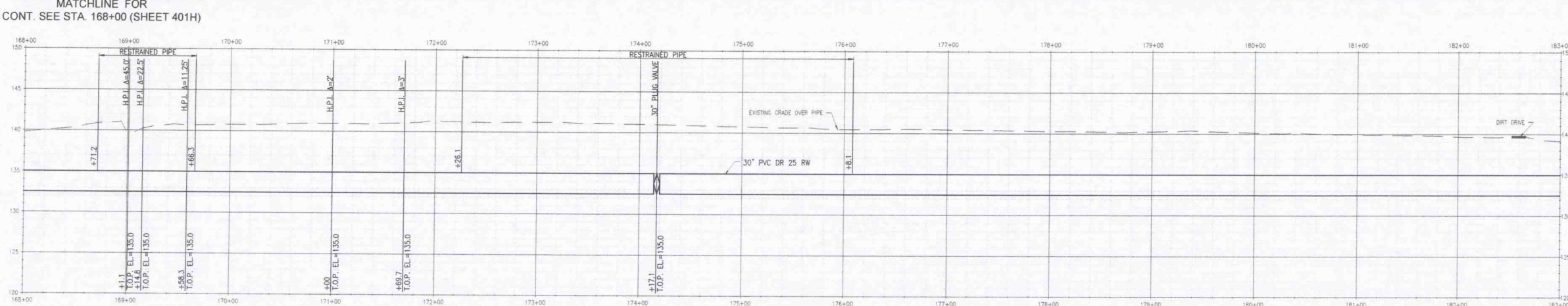
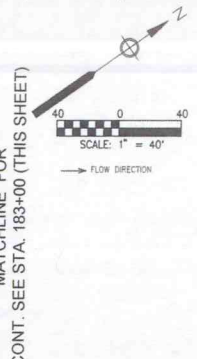
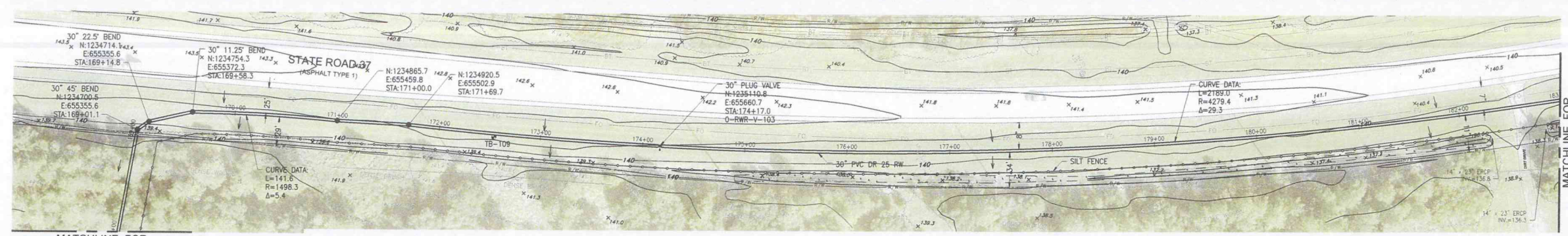


NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR ALL TIE-INS TO EXISTING PIPING. CONTRACTOR SHALL VERIFY LOCATION, SIZE, AND MATERIAL OF EXISTING PIPE PRIOR TO CONSTRUCTION. CONNECTIONS TO EXISTING PIPING SHALL BE COORDINATED AND SCHEDULED IN ADVANCE WITH TEC. ALL SUCH WORK SHALL BE DONE IN THE PRESENCE OF TEC. THE CONTRACTOR SHALL GIVE TEC NOTICE AT LEAST SEVEN DAYS PRIOR TO BEGINNING TIE-IN WORK.



ISSUE	DESCRIPTION	DSGN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	12/23/11
TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING					

AECOM		AECOM Technical Services, Inc. 6010 Highland Avenue, Suite 150 Tampa, Florida 33611 P: 813.630.2500 F: 813.621.2300 FL Engineering Business No. EB-38 www.aecom.com	
TEED TAMPA ELECTRIC		BY: DATE APVD: RR 3/30/12 CHKD: RR 3/30/12 DSGN: NU 3/30/12	FILE NAME: 379-EY-401H.DWG DWG. NO. 379-EY-401H SCALE: 1" = 40'
TAMPA ELECTRIC COMPANY RECLAIMED WATER PIPELINE STATION 143+00 TO 168+00 PLAN & PROFILE			REV. NO. 0



DONOVAN S. BRAMLETT
 LICENSE
 No. 57401
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 8/21/2012

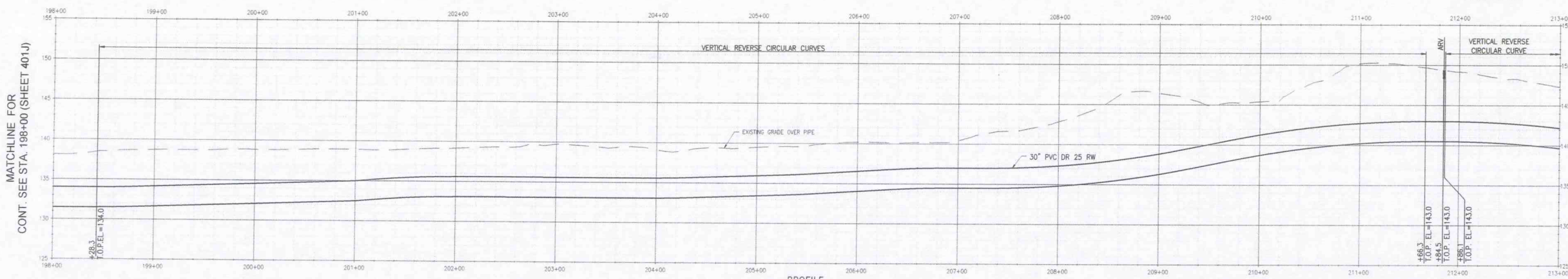
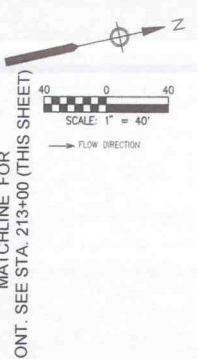
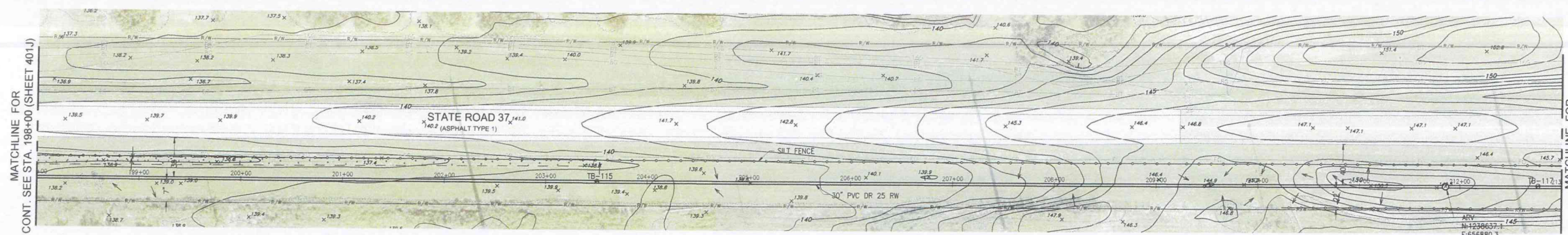
PROFILE
 SCALE: HORIZONTAL: 1"=40'
 VERTICAL: 1"=5'

ISSUE	DESCRIPTION	DESIGN	DRAWN	CHECKED	APPROVED	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

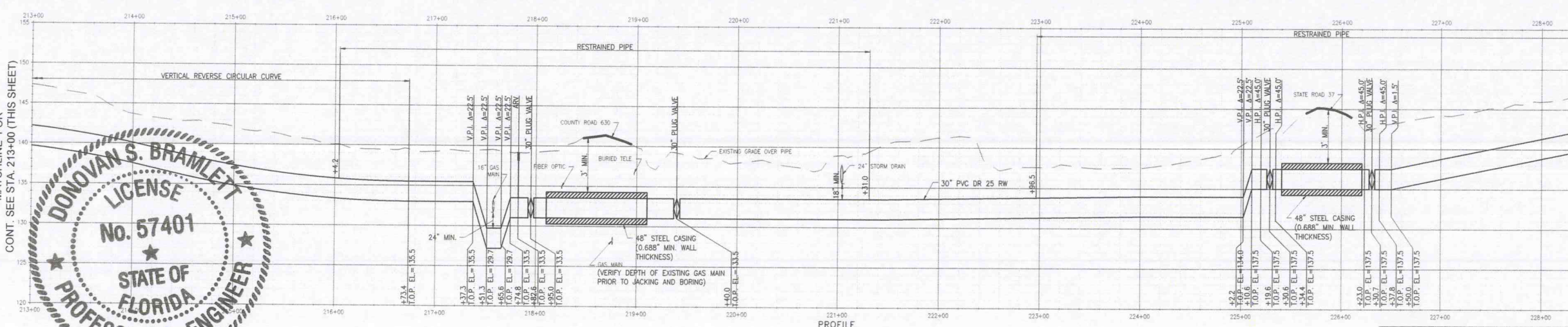
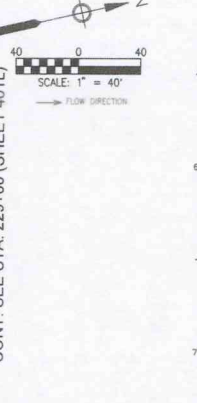
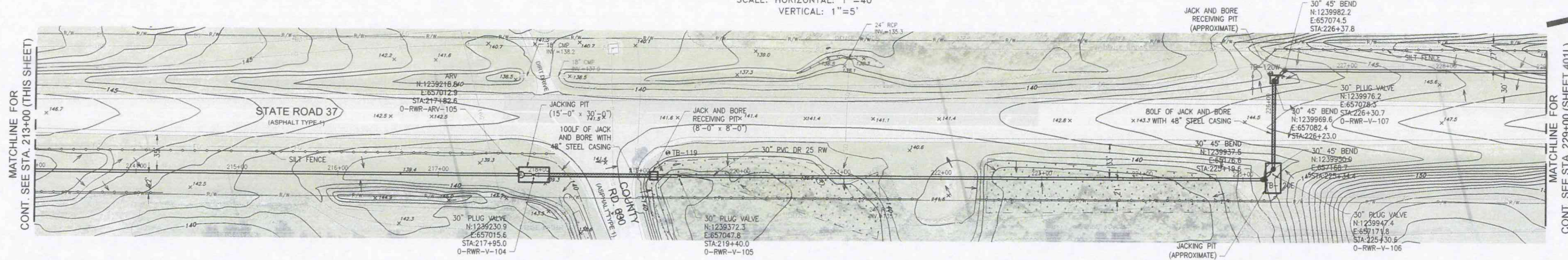
AECOM Technical Services, Inc.
 10210 Highland Manor Drive, Suite 150
 Tampa, Florida 33611
 P: 813.630.2500 F: 813.621.3300
 FL Engineering Business No. EB-38
 www.aecom.com

TAMPA ELECTRIC
 TAMPA ELECTRIC COMPANY
 RECLAIMED WATER PIPELINE
 STATION 168+00 TO 198+00
 PLAN & PROFILE

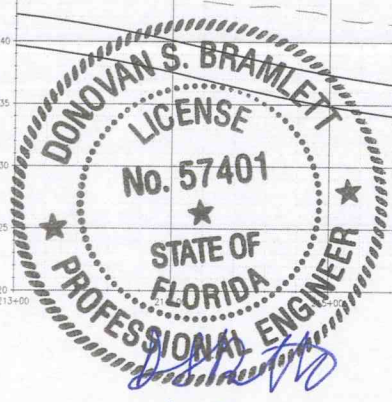
BY: DATE	FILE NAME	DWG. NO.	REV. NO.
APVD RR 3/30/12	379-EY-401J.DWG	379-EY-401J	0
CHKD RR 3/30/12	SCALE: 1"=40'		
DWN JT 3/30/12			
DSGN NU 12/30/11			



PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'



PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'



8/21/2012

ISSUE	DESCRIPTION	ISSUED FOR	BY	DATE
C	ISSUED FOR BID	NU	JT	RR 3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR 02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR 12/23/11
ISSUE	DESCRIPTION	ISSUED FOR	BY	DATE
TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING				

AECOM
AECOM Technical Services, Inc.
16100 Highway 19, Suite 350
Tampa, Florida 33613
P: 813.633.2500 F: 813.621.2300
www.aecom.com

TECO
TAMPA ELECTRIC

APPROVED	BY: JT	DATE: 3/30/12
CHANGED	BY: JT	DATE: 3/30/12
OWNED	BY: JT	DATE: 3/30/12
ISSUED	BY: JT	DATE: 3/30/12

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 198+00 TO 229+00
PLAN & PROFILE

FILE NAME: 379-EY-401K.DWG
DWG. NO.: 379-EY-401K
SCALE: 1" = 40'

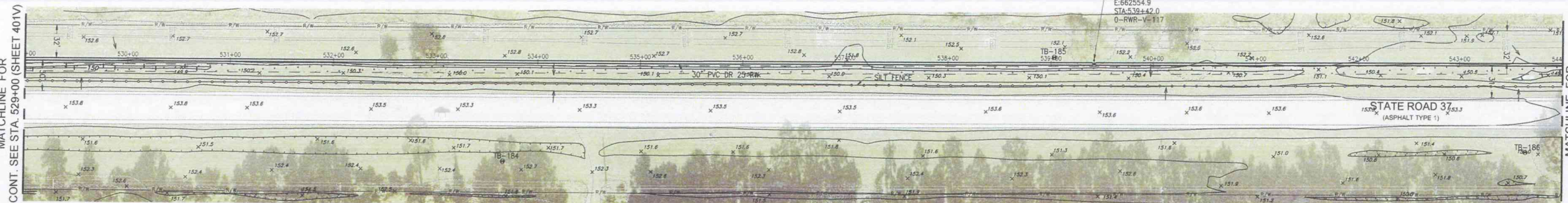
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MATCHLINE FOR
CONT. SEE STA. 529+00 (SHEET 401V)

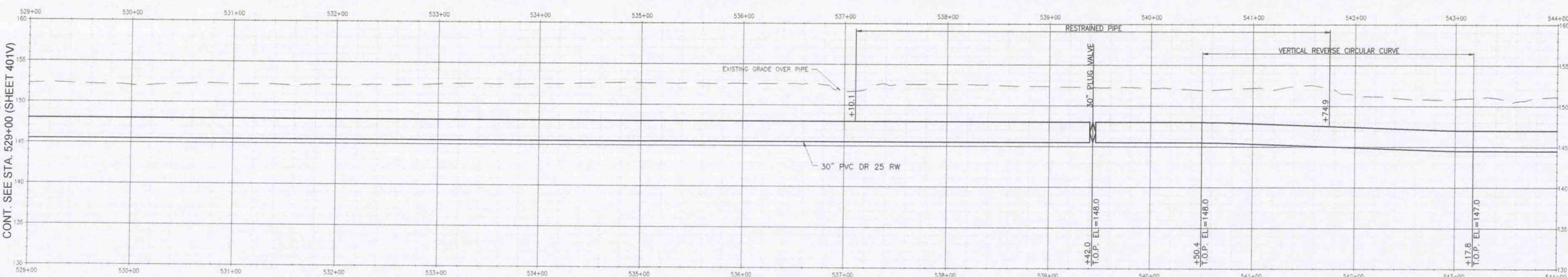
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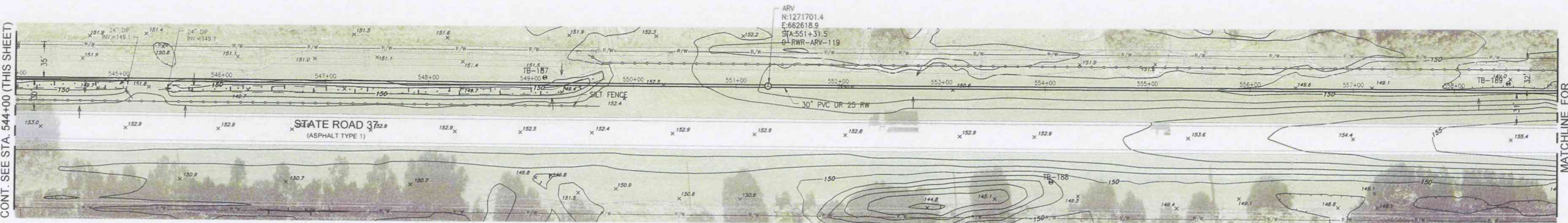
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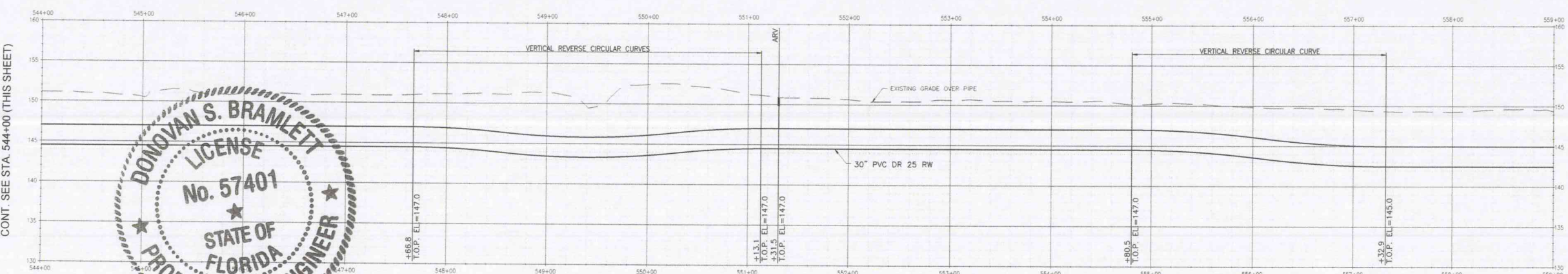
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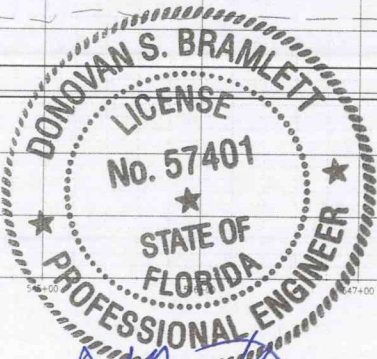
MATCHLINE FOR
CONT. SEE STA. 544+00 (THIS SHEET)



MATCHLINE FOR
CONT. SEE STA. 559+00 (SHEET 401X)



MATCHLINE FOR
CONT. SEE STA. 559+00 (SHEET 401X)



D. S. Bramlett
8/21/2012

AECOM

TECO
TAMPA ELECTRIC

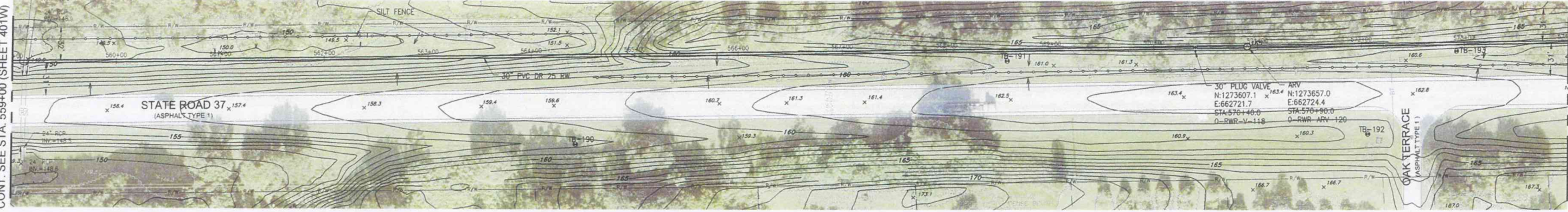
ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 529+00 TO 559+00
PLAN & PROFILE

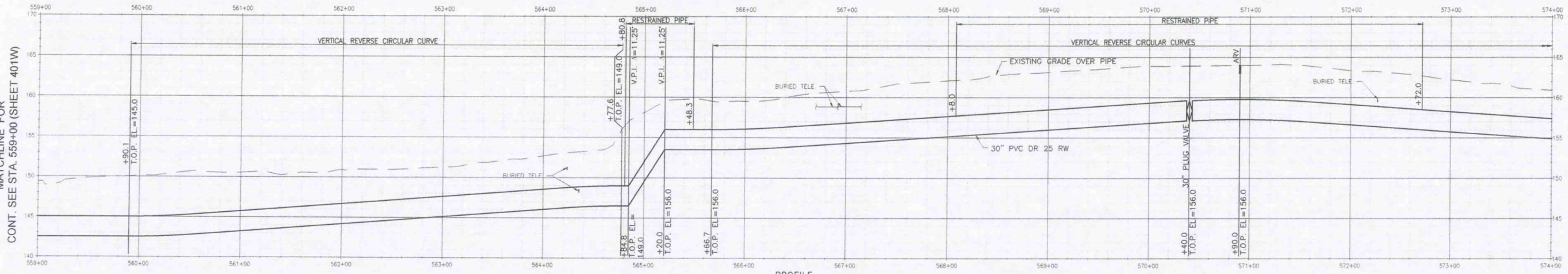
BY	DATE	FILE NAME	DWG. NO.	REV. NO.
APVD	RR	379-EY-401W.DWG	379-EY-401W	0
CHKD	RR			
DWN	LT			
DSGN	NU			

MATCHLINE FOR
CONT. SEE STA. 559+00 (SHEET 401W)



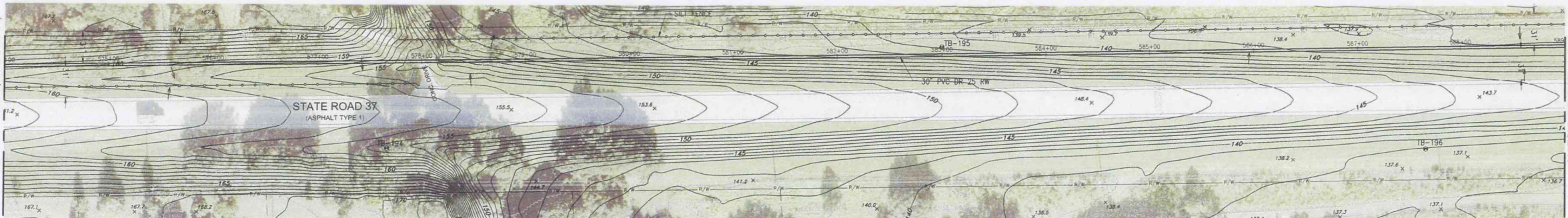
MATCHLINE FOR
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MATCHLINE FOR
CONT. SEE STA. 559+00 (SHEET 401W)



MATCHLINE FOR
CONT. SEE STA. 574+00 (THIS SHEET)

MATCHLINE FOR
CONT. SEE STA. 574+00 (THIS SHEET)



MATCHLINE FOR
CONT. SEE STA. 589+00 (SHEET 401Y)

MATCHLINE FOR
CONT. SEE STA. 574+00 (THIS SHEET)



MATCHLINE FOR
CONT. SEE STA. 589+00 (SHEET 401Y)



8/21/2012

ISSUE	DESCRIPTION	DESIGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

AECOM

AECOM Technical Services, Inc.
10210 Regency Manor Drive, Suite 350
Tampa, Florida 33616
P: 813.630.5500 F: 813.631.2300
www.aecom.com

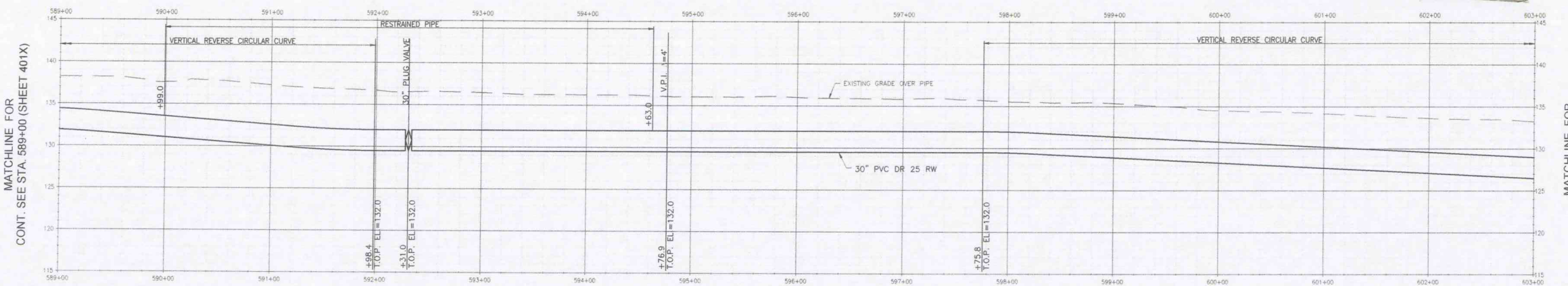
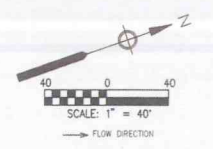
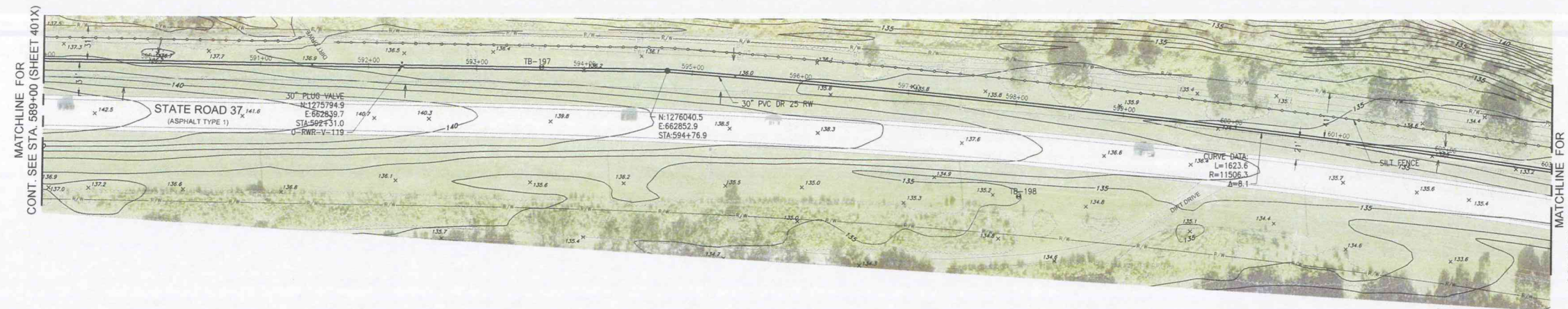
TECO
TAMPA ELECTRIC

BY: DATE
APVD RR 3/30/12
CHKD RR 3/30/12
DWN JT 3/30/12
DSGN NU 3/30/12

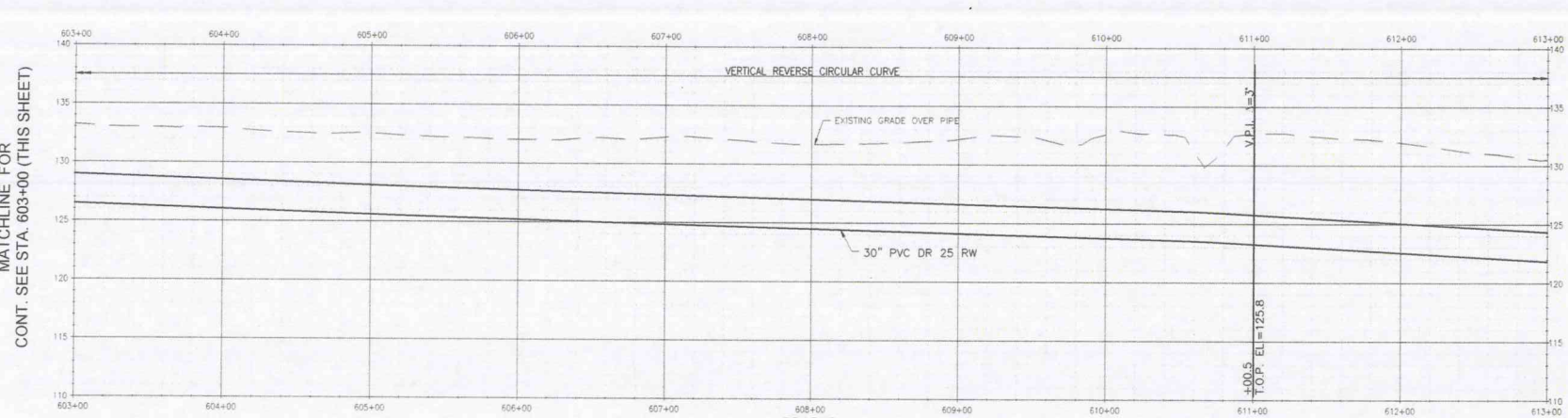
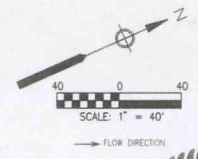
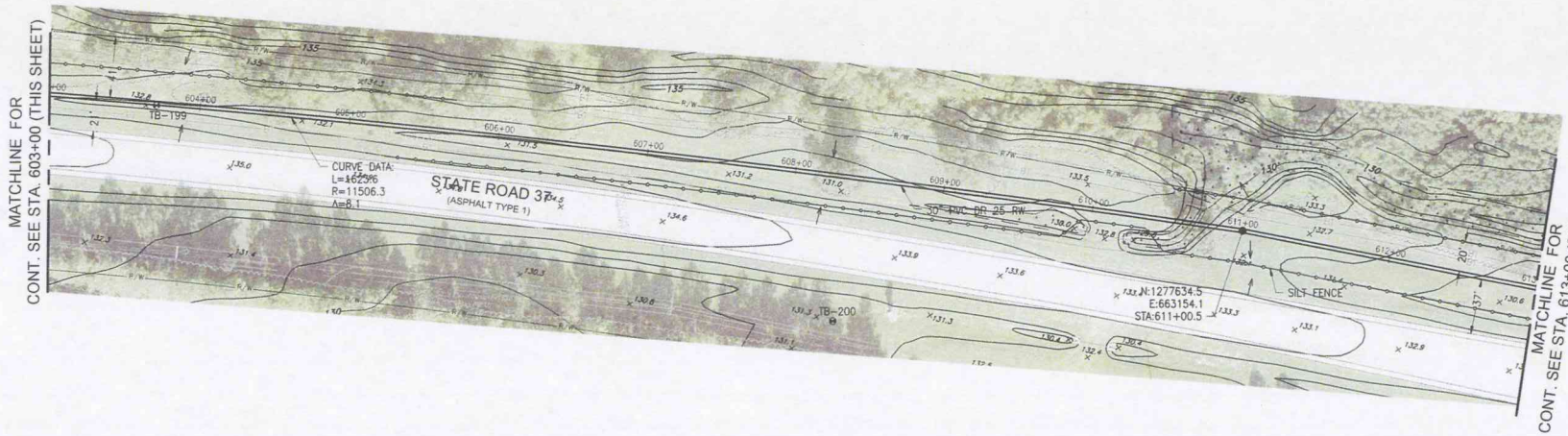
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SCALE: 1" = 40'

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 559+00 TO 589+00
PLAN & PROFILE

REV. NO. 0



PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'



PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'

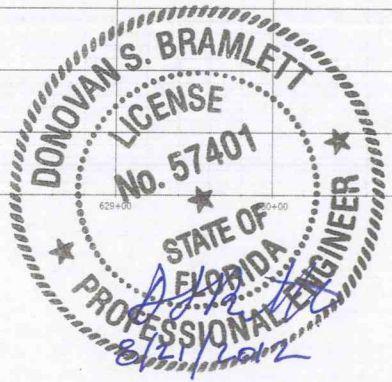
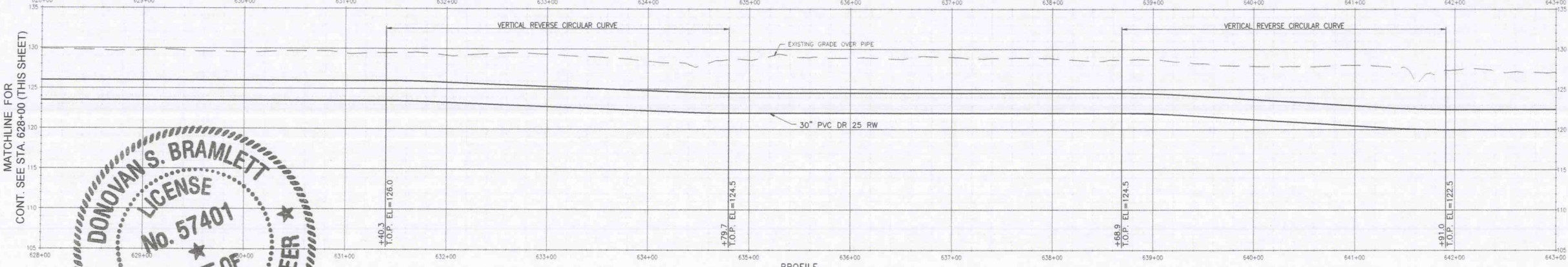
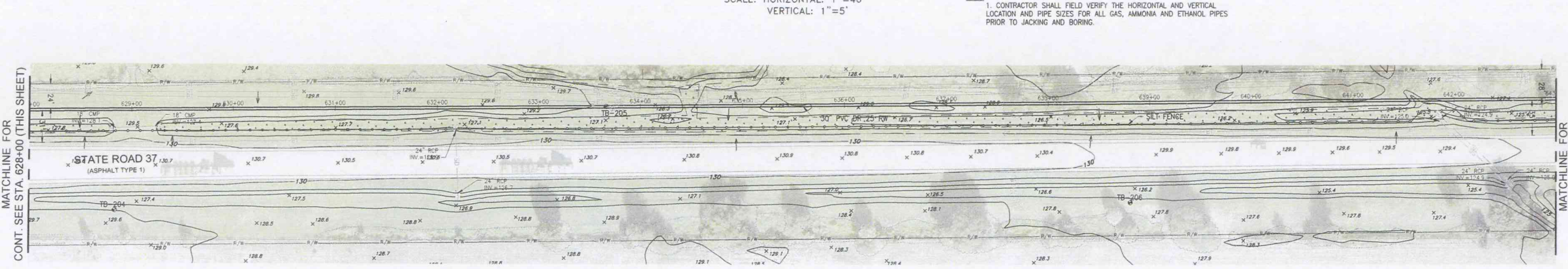
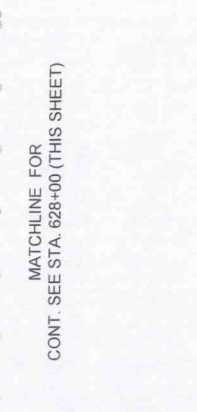
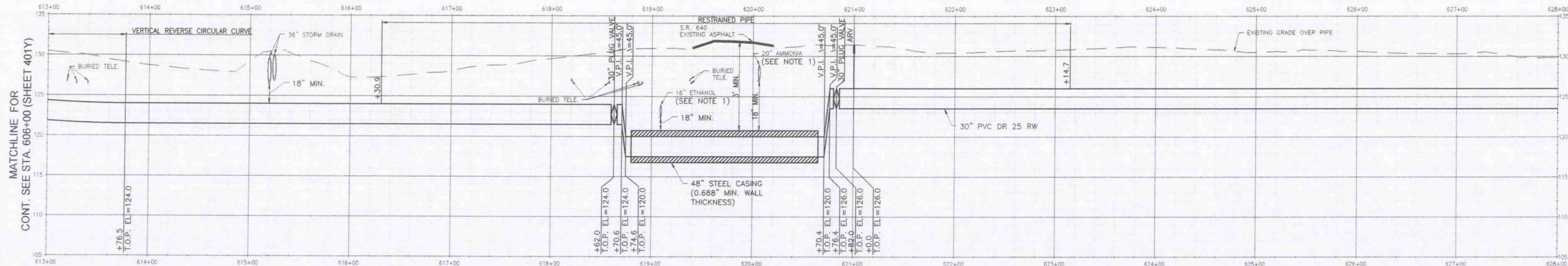
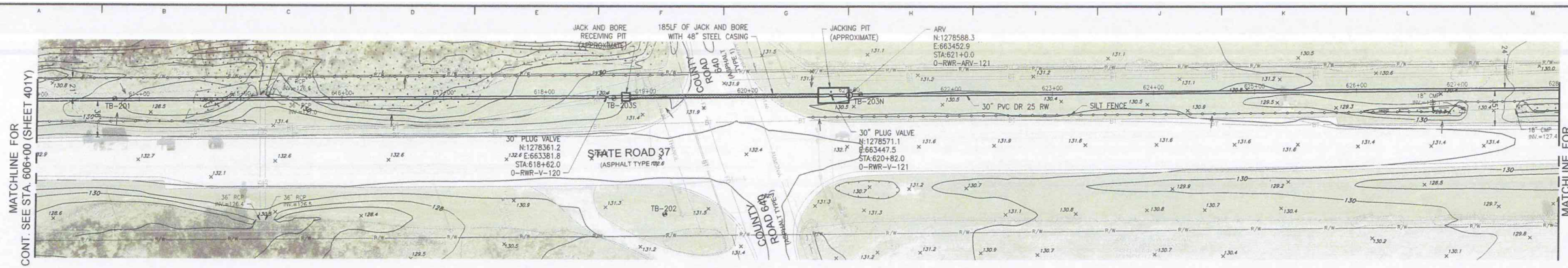


ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING			
TAMPA ELECTRIC COMPANY RECLAIMED WATER PIPELINE STATION 589+00 TO 613+00 PLAN & PROFILE			
APVD	RR	3/30/12	FILE NAME: 379-EY-401Y.DWG
CHKD	RR	3/30/12	DWG. NO. 379-EY-401Y
DWN	JT	3/30/12	REV. NO. 0
DSGN	NU	3/30/12	SCALE: 1" = 40'

AECOM
AECOM Technical Services, Inc.
10210 Highland Manor Drive, Suite 350
Tampa, Florida 33619
P: 813.630.2300 F: 813.621.2300
www.aecom.com

TECO
TAMPA ELECTRIC



NOTE:
1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION AND PIPE SIZES FOR ALL GAS, AMMONIA AND ETHANOL PIPES PRIOR TO JACKING AND BORING.

ISSUE	DESCRIPTION	DESIGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

AECOM

TECO
TAMPA ELECTRIC

ACCOM Technical Services, Inc.
10210 Highland Manor Drive, Suite 350
Tampa, Florida 33617
P: 813.830.2500 F: 813.621.2300
www.aecom.com

BY: DATE

APVD: RR 3/30/12

CHKD: RR 3/30/12

DWN: JT 3/30/12

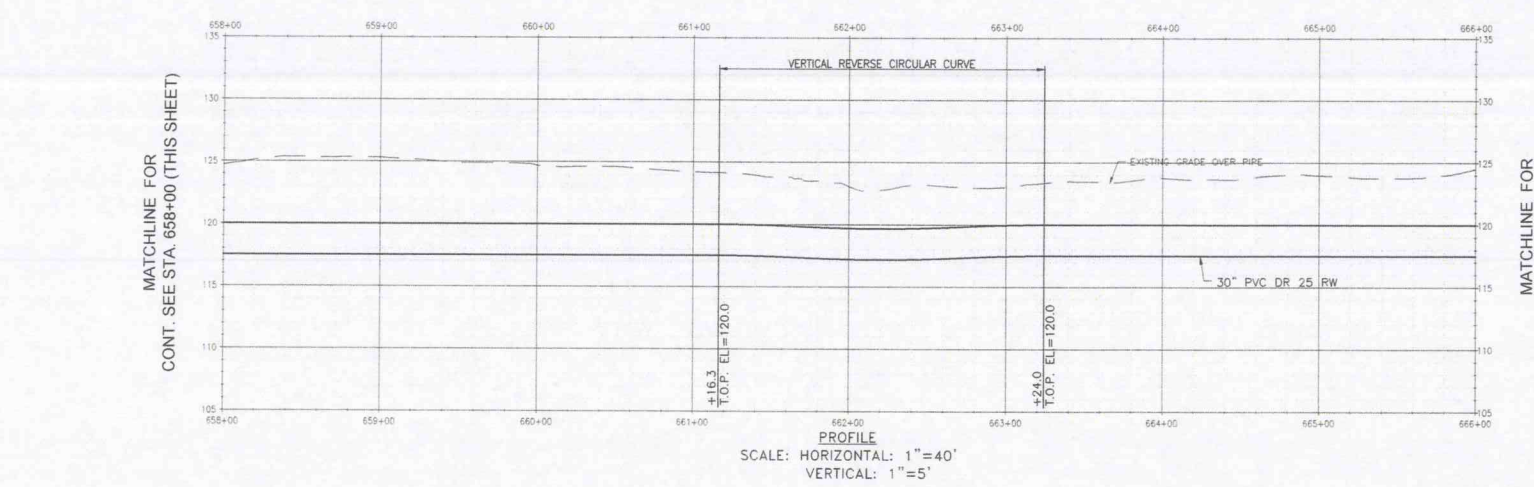
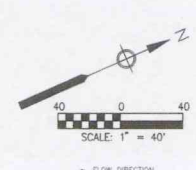
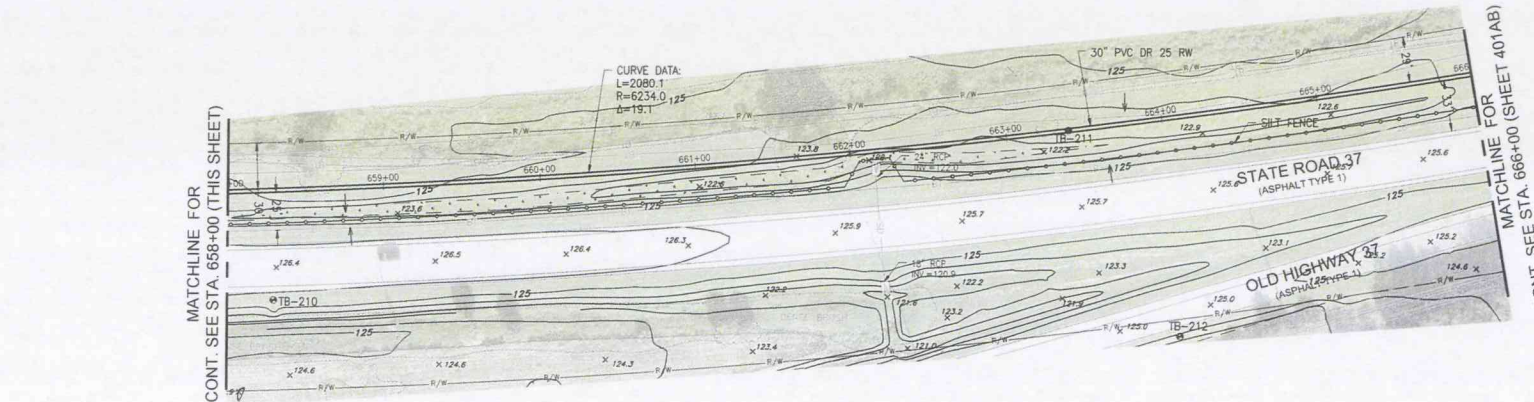
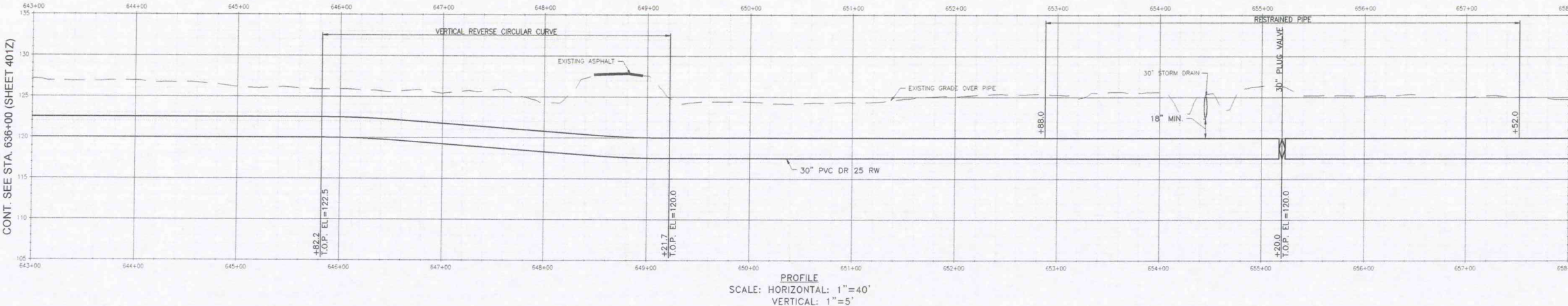
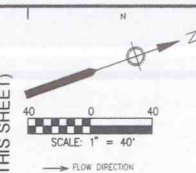
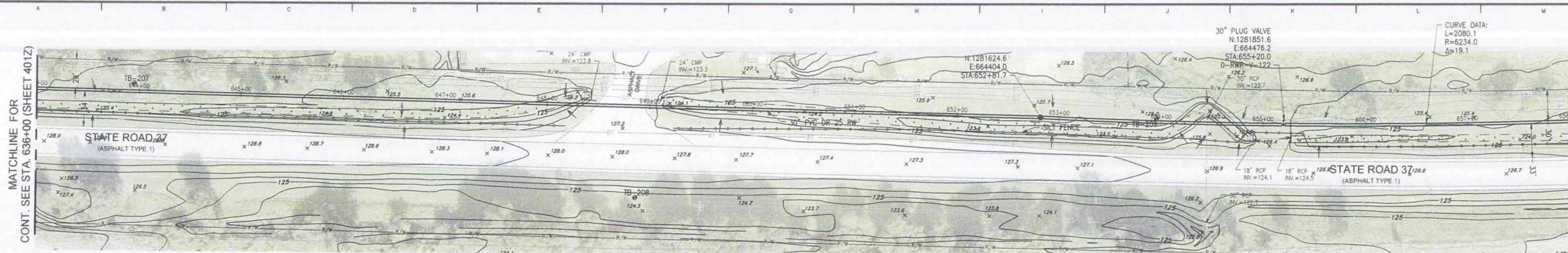
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FILE NAME: 379-EY-401Z.DWG

SCALE: 1" = 40'

DWG. NO. 379-EY-401Z

REV. NO. 0



ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

AECOM Technical Services, Inc.
10210 Hollywood Manor Drive, Suite 350
Tampa, Florida 33616
P: 813.635.2555 F: 813.621.1300
FL Engineering Business No. EB-38
www.aecom.com

BY: DATE

APVD RR 3/30/12

CHKD RR 3/30/12

DWN JT 3/30/12

DSGN NU 3/30/12

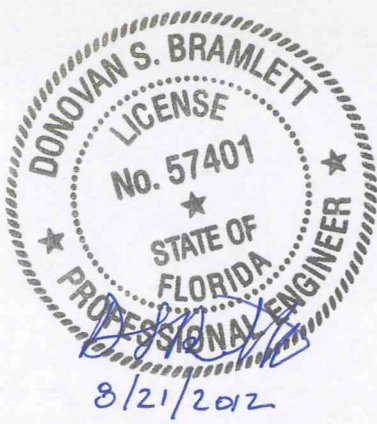
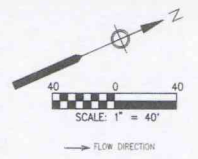
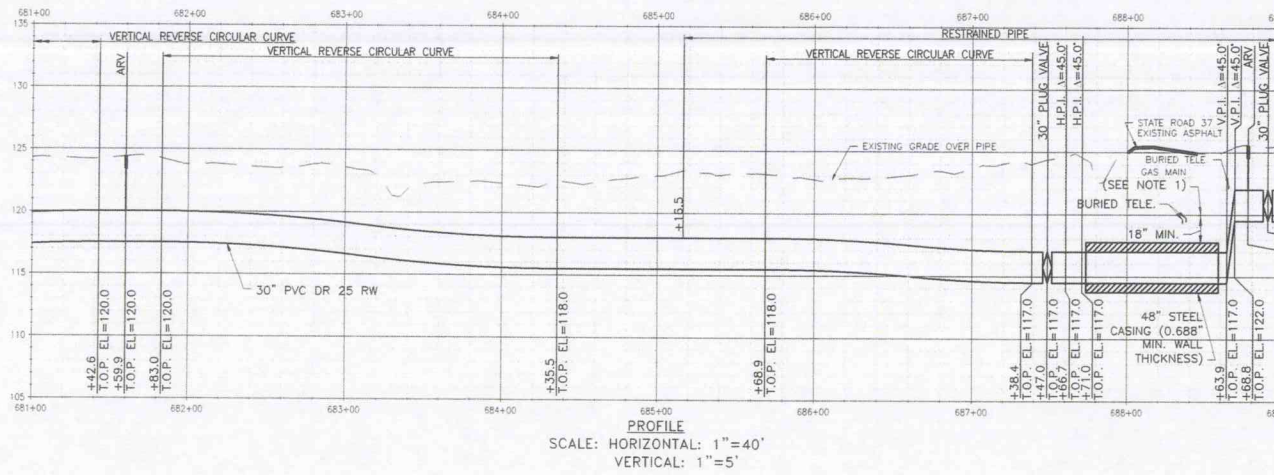
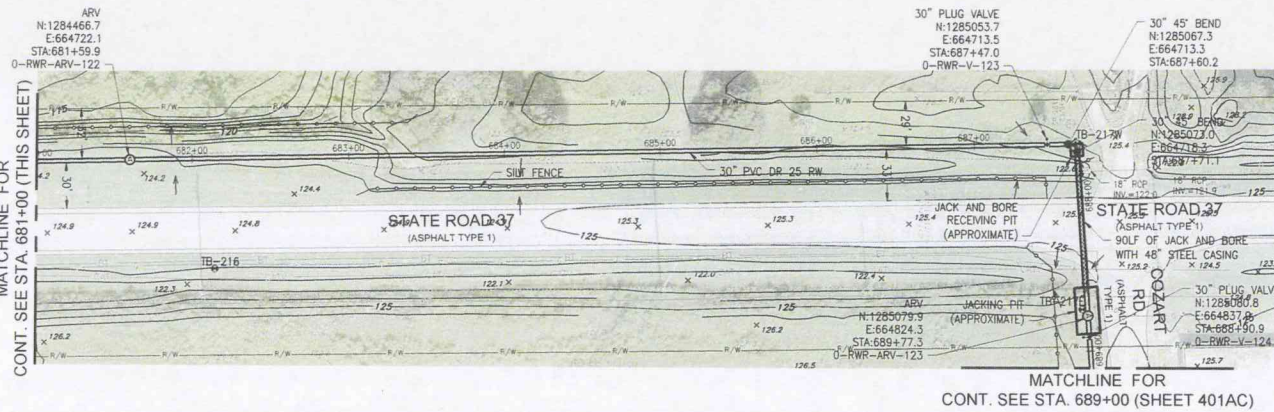
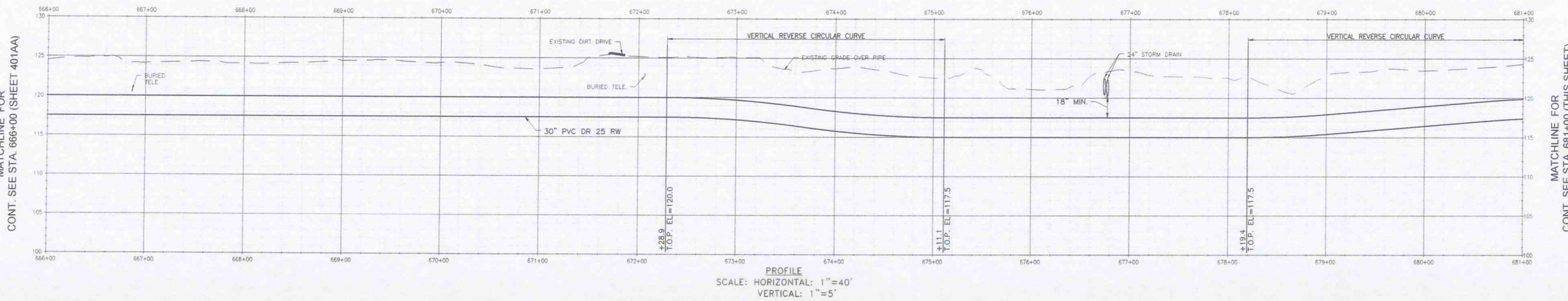
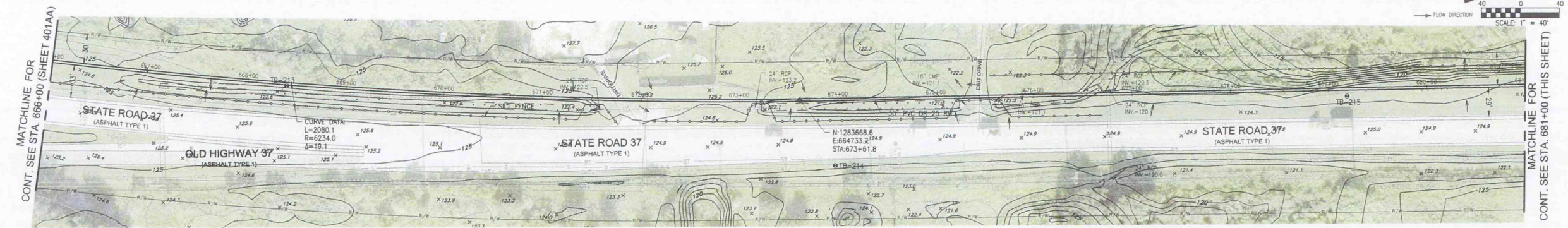
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SCALE: 1" = 40'

DWG. NO. 379-EY-401AA

REV. NO. 0

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 643+00 TO 666+00
PLAN & PROFILE



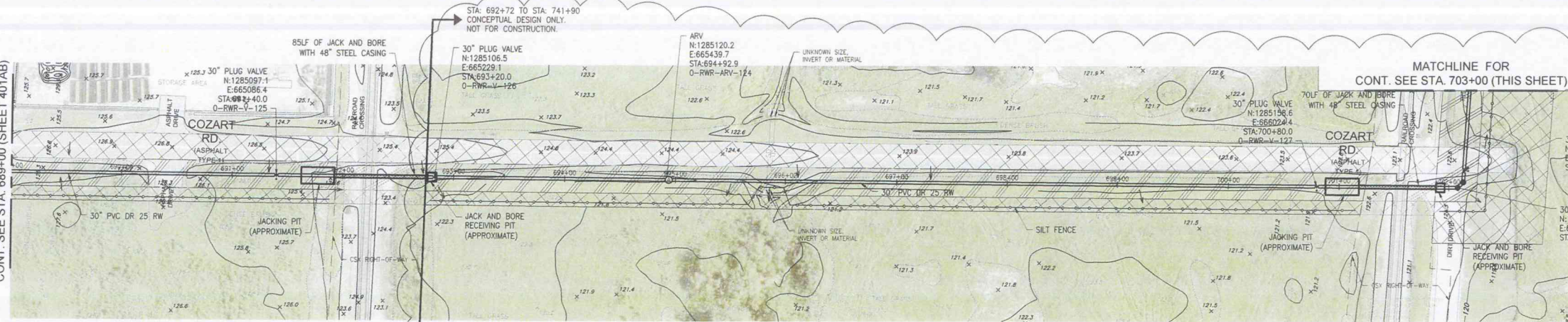
NOTE:
1. CONTRACTOR SHALL FIELD VERIFY THE
HORIZONTAL AND VERTICAL LOCATION
AND PIPE SIZE FOR ALL EXISTING GAS
MAINS PRIOR TO JACKING AND
BORING.

ISSUE	DESCRIPTION	DSGN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	12/23/11
TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING					
TAMPA ELECTRIC COMPANY RECLAIMED WATER PIPELINE STATION 666+00 TO 689+00 PLAN & PROFILE					
APVD	RR	3/26/12	FILE NAME	379-EY-401AB.DWG	DWG. NO.
CHKD	RR	3/26/12	SCALE	1" = 40'	REV. NO.
DSGN	NU	3/26/12			0

AECOM
40200 Technical Services, Inc.
50010 Highland Manor Drive, Suite 300
Tampa, Florida 33610
T: 813.430.2200 F: 813.621.2300
www.aecom.com

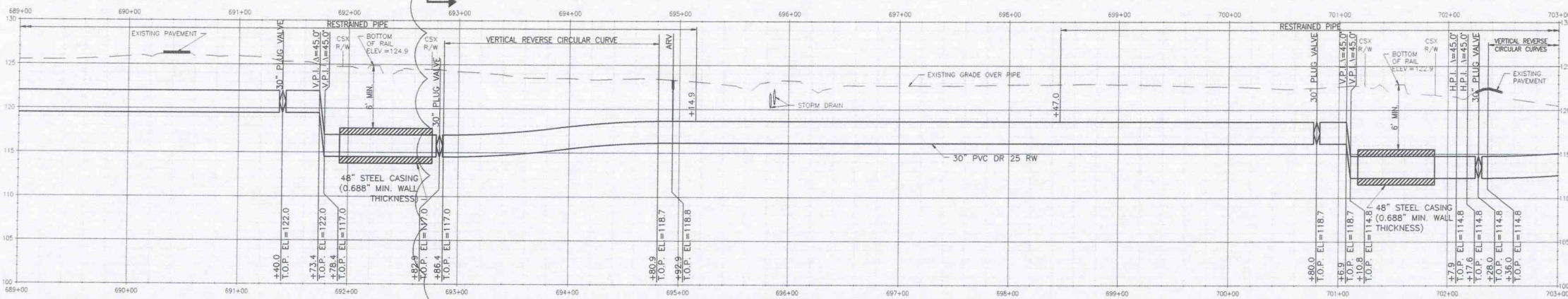
TECO
TAMPA ELECTRIC

MATCHLINE FOR
CONT. SEE STA. 689+00 (SHEET 401AB)



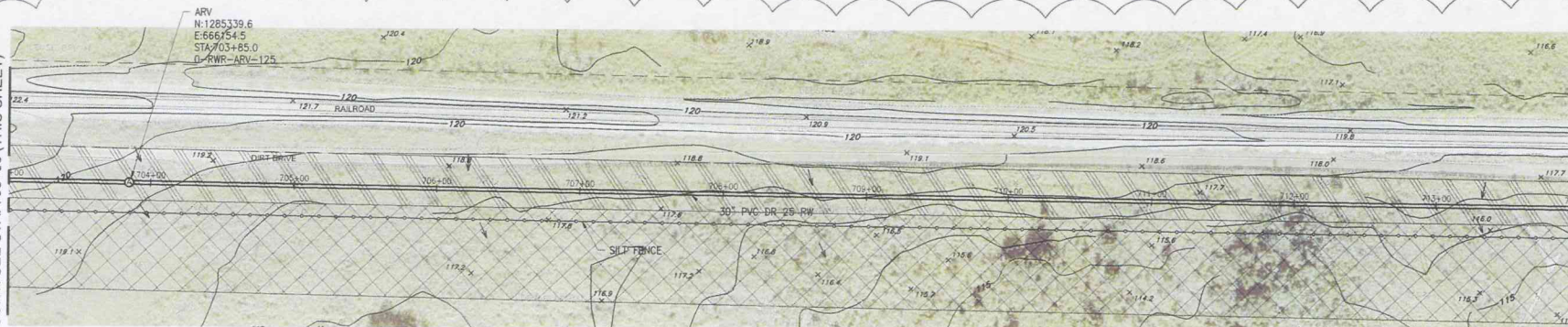
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MATCHLINE FOR
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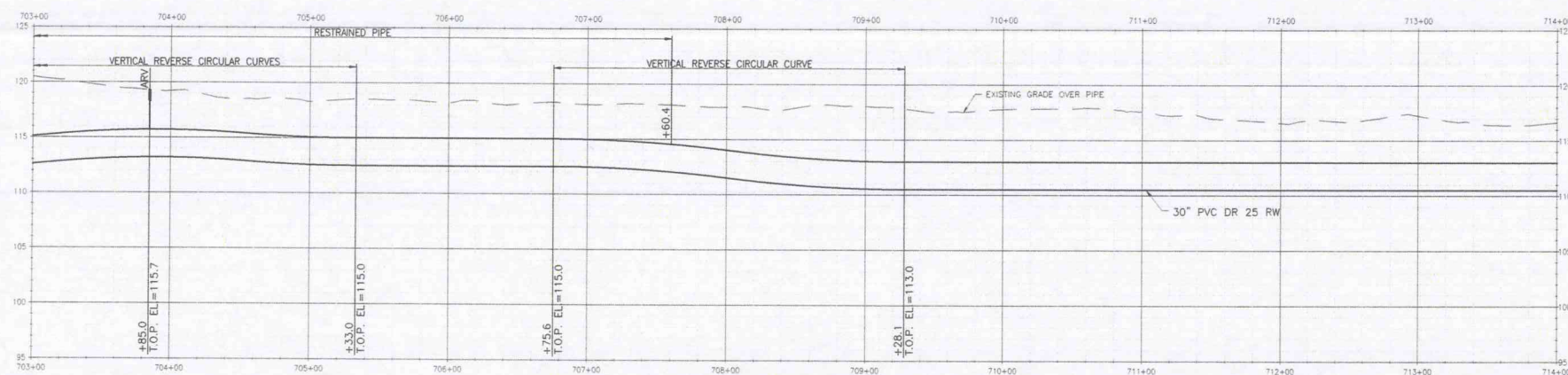
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MATCHLINE FOR
CONT. SEE STA. 703+00 (THIS SHEET)



MATCHLINE FOR
CONT. SEE STA. 714+00 (SHEET 401AD)

MATCHLINE FOR
CONT. SEE STA. 703+00 (THIS SHEET)



MATCHLINE FOR
CONT. SEE STA. 714+00 (SHEET 401AD)



STA: 692+72 TO STA: 741+90
CONCEPTUAL DESIGN ONLY.
NOT FOR CONSTRUCTION.

AECOM

TEED
TAMPA ELECTRIC

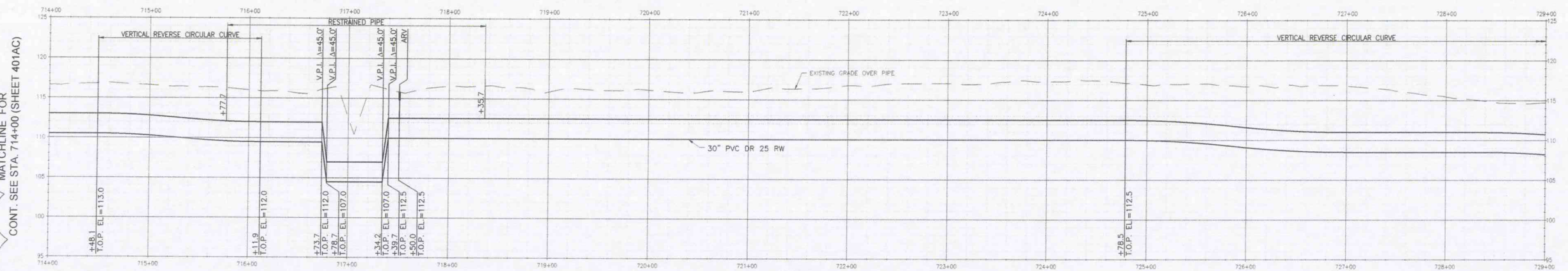
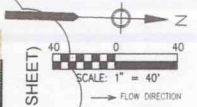
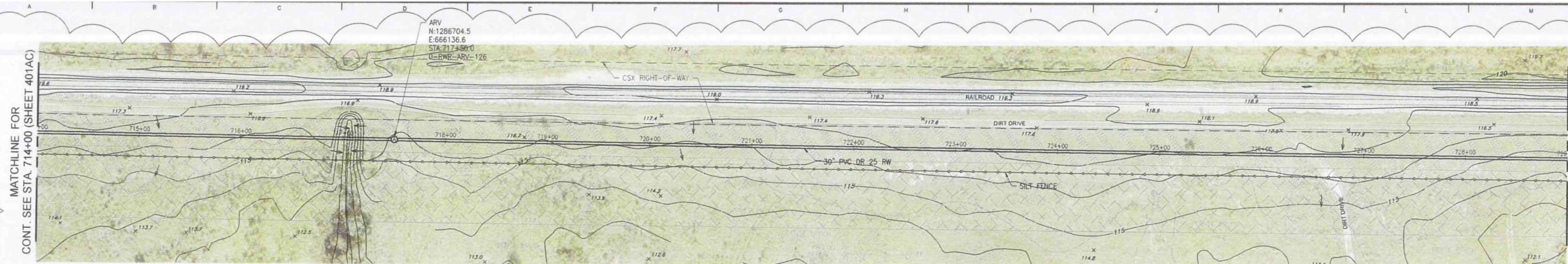
RECOM Technical Services, Inc.
10310 Highway 408, Suite 300
Tampa, Florida 33618
P: 813.638.2500 F: 813.621.2300
FL Engineering Business No. EB-38
www.recom.com

ISSUE	DESCRIPTION	DESIGN	OWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

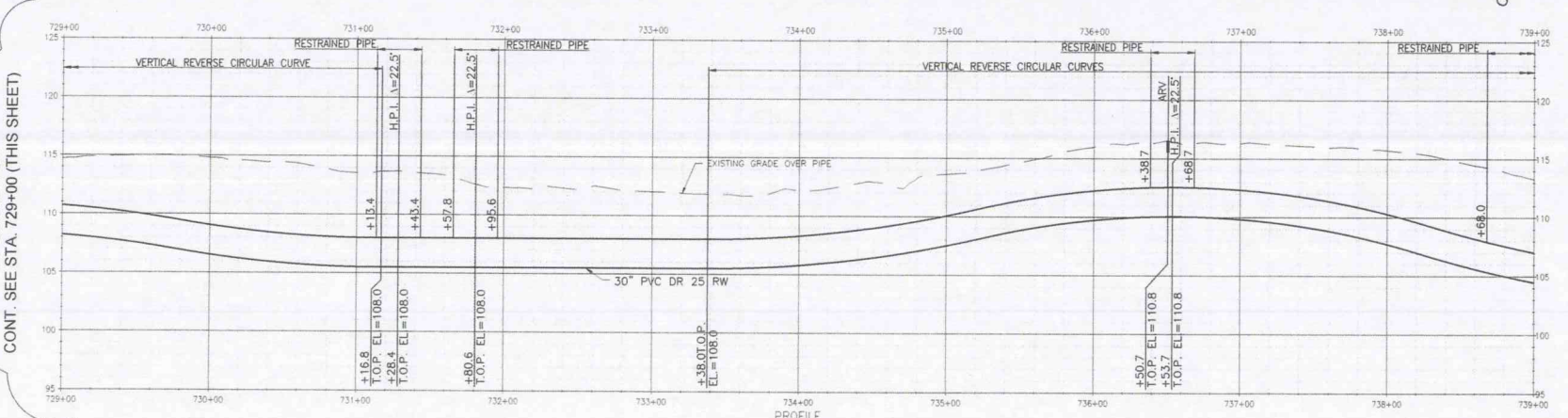
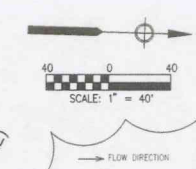
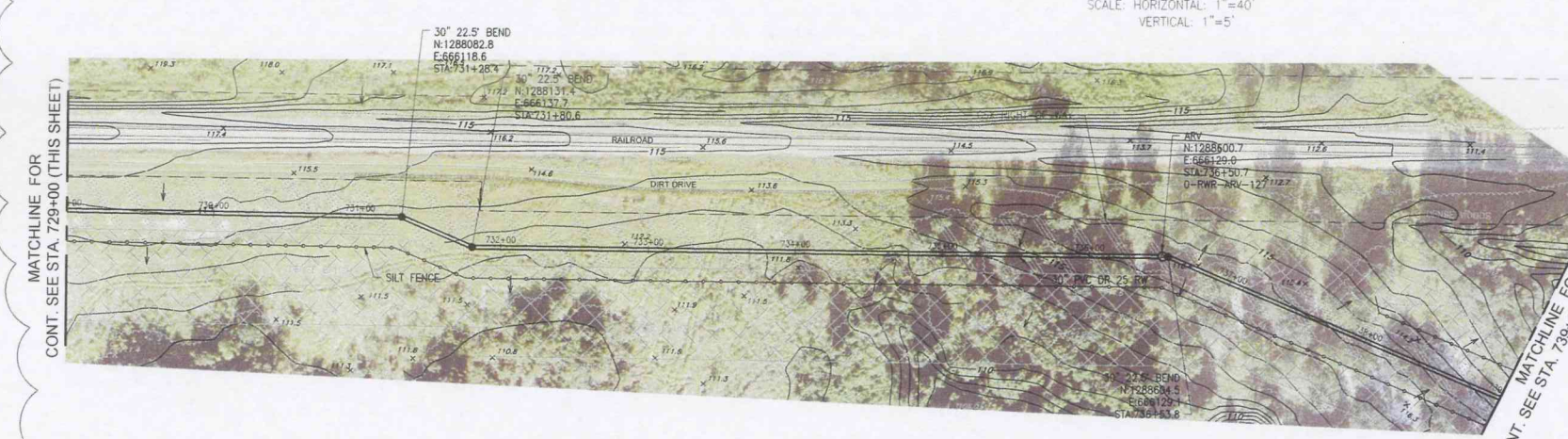
TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 689+00 TO 714+00
PLAN & PROFILE

FILE NAME	DWG NO.	REV. NO.
379-EY-401AC.DWG	379-EY-401AC	C



PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'



PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'



STA: 692+72 TO STA: 741+90
CONCEPTUAL DESIGN ONLY.
NOT FOR CONSTRUCTION.

ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

AECOM Technical Services, Inc.
10210 Highland Manor Drive, Suite 350
Tampa, Florida 33619
T: 813.630.2500 F: 813.621.2300
www.aecom.com

BY: DATE

APVD: RR 3/30/12

CHKD: RR 3/30/12

DWN: JT 3/30/12

DSGN: NU 3/30/12

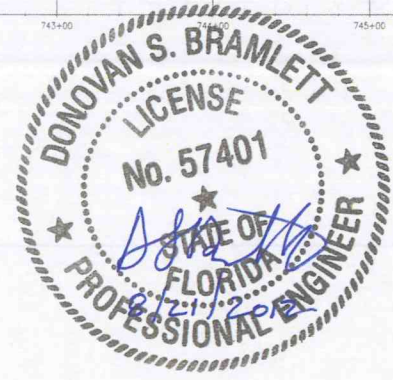
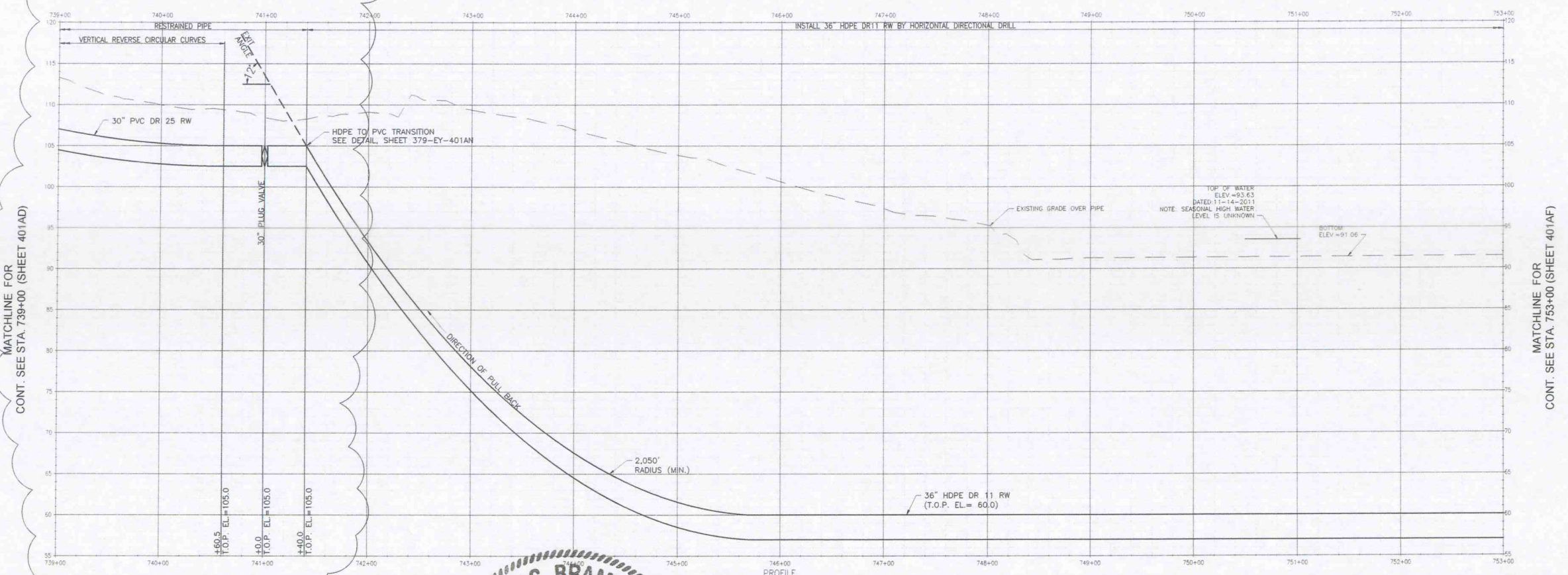
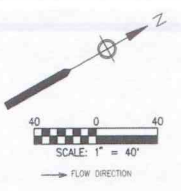
FILE NAME: 379-EY-401AD.DWG

SCALE: 1" = 40'

DWG. NO. 379-EY-401AD

REV. NO. C

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 714+00 TO 739+00
PLAN & PROFILE



STA: 692+72 TO STA: 741+90
CONCEPTUAL DESIGN ONLY.
NOT FOR CONSTRUCTION.

ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11
ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 739+00 TO 753+00
PLAN & PROFILE

FILE NAME: 379-EY-401AE.DWG
SCALE: 1" = 40'

REV. NO. C

AECOM

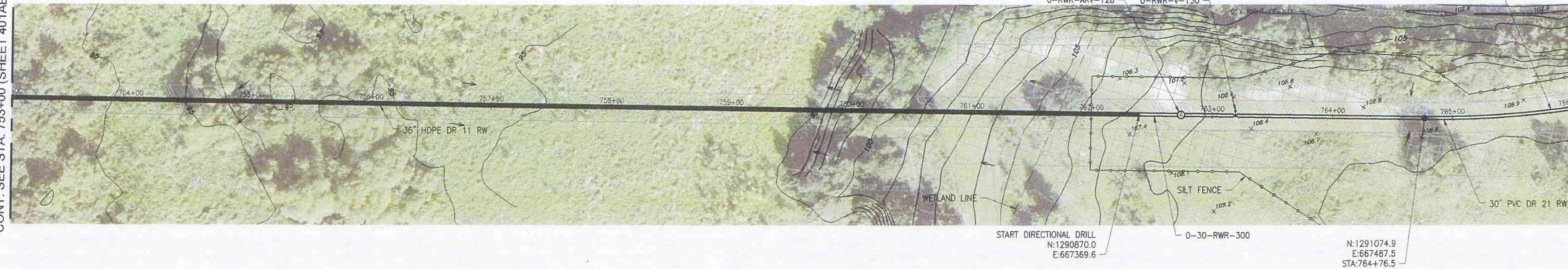
AECOM Technical Services, Inc.
10210 Highland Manor Drive, Suite 350
Tampa, Florida 33610
T: 813.630.2500 F: 813.621.2300
R: Engineering Business No. 68-36
www.aecom.com

TECO

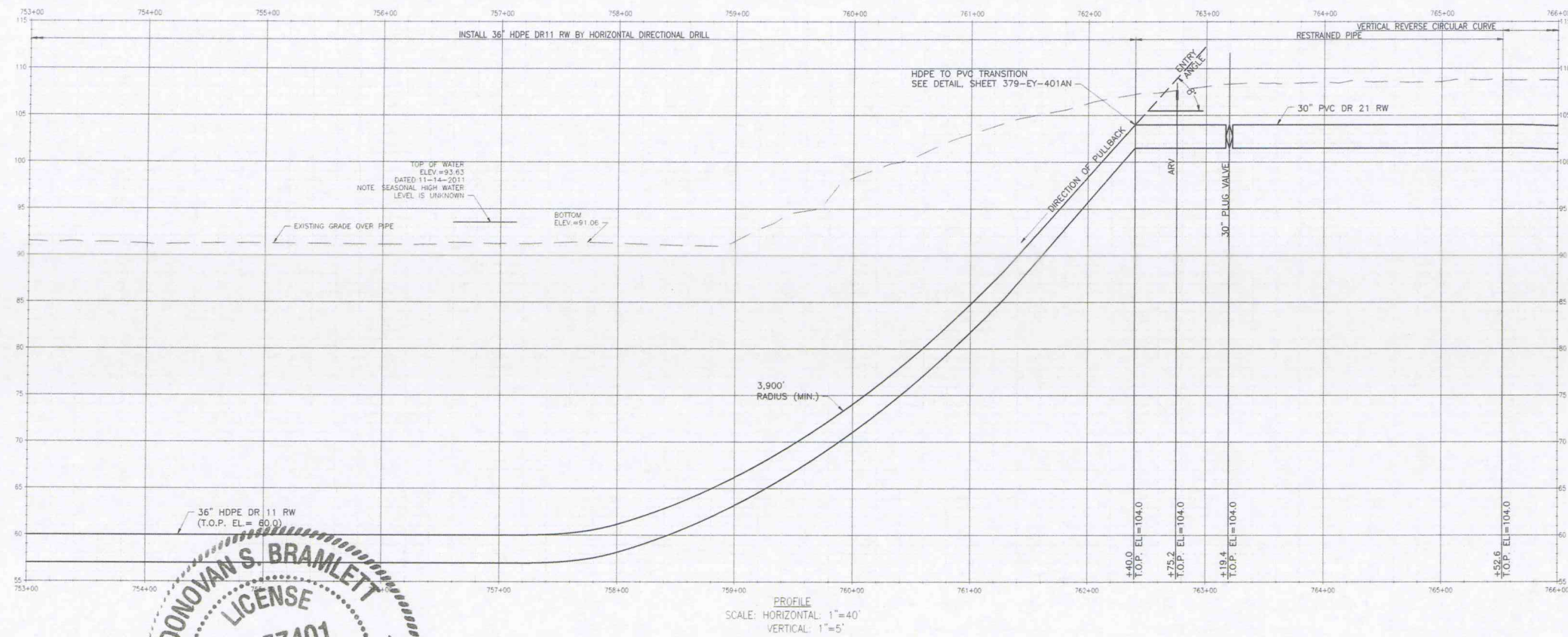
TAMPA ELECTRIC

BY: DATE
APVD: RR 3/30/12
CHKD: RR 3/29/12
DWN: JT 3/30/12
DSGN: NU 3/30/12

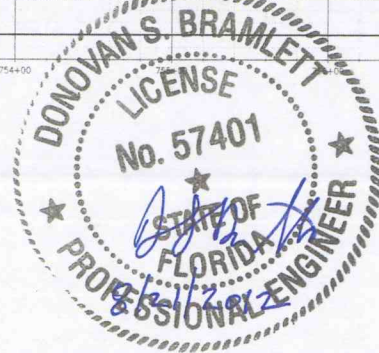
MATCHLINE FOR
CONT. SEE STA. 753+00 (SHEET 401AE)



MATCHLINE FOR
CONT. SEE STA. 753+00 (SHEET 401AE)



MATCHLINE FOR
CONT. SEE STA. 766+00 (SHEET 401AG)



NOTES:
MAXIMUM PIPE DRAG ON SURFACE DURING
PULLBACK MUST NOT EXCEED 400.0'.

ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/25/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

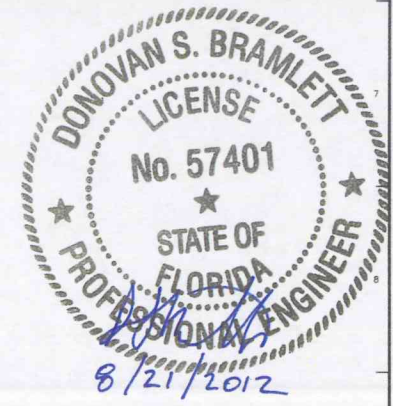
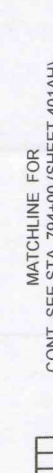
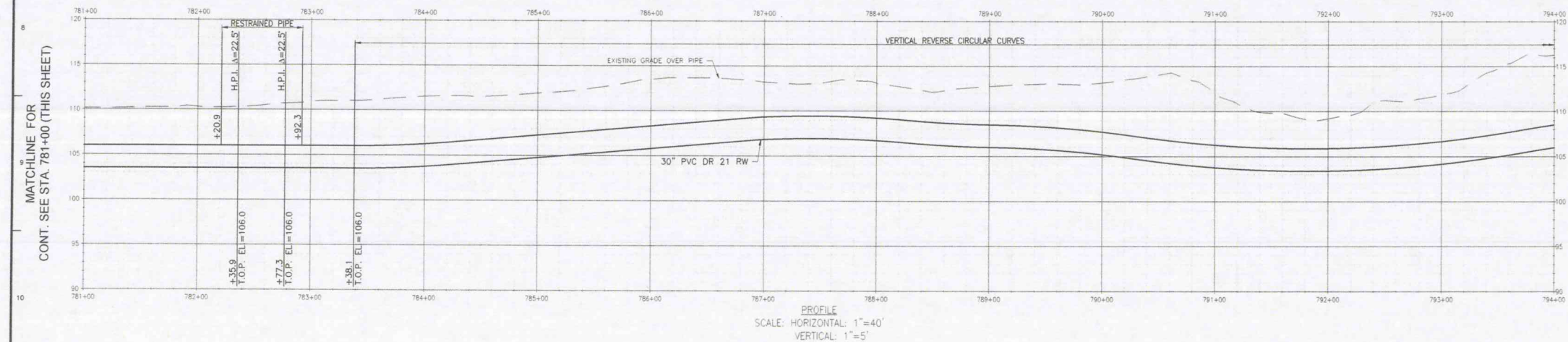
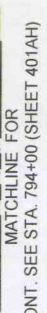
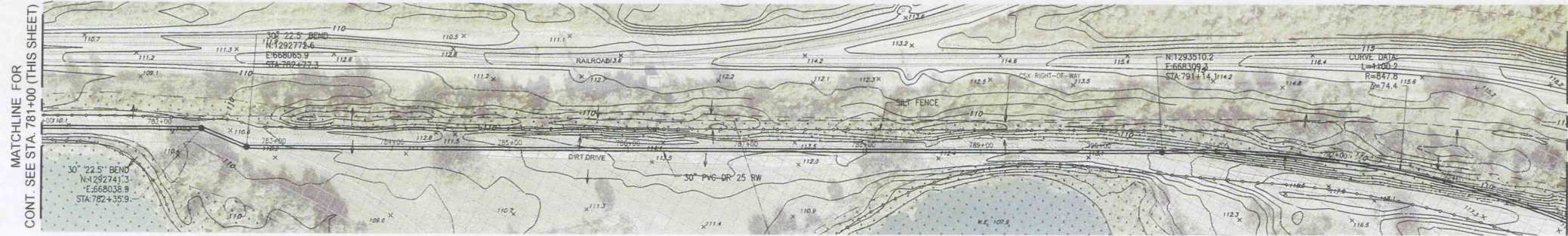
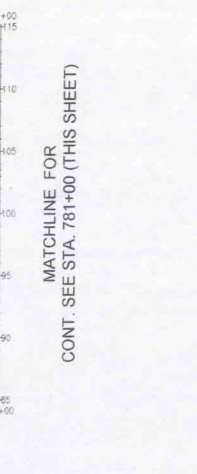
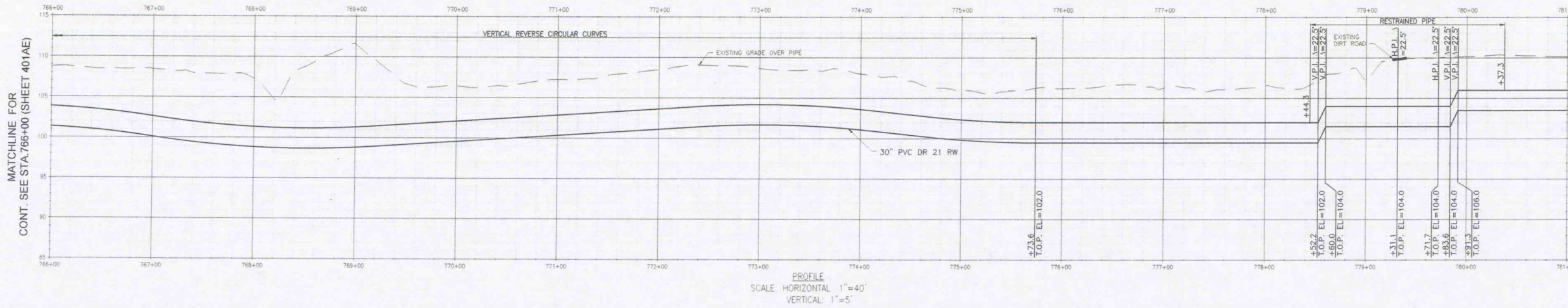
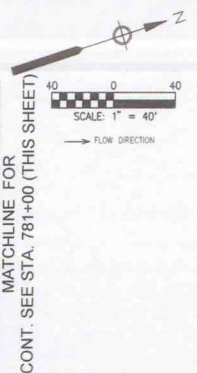
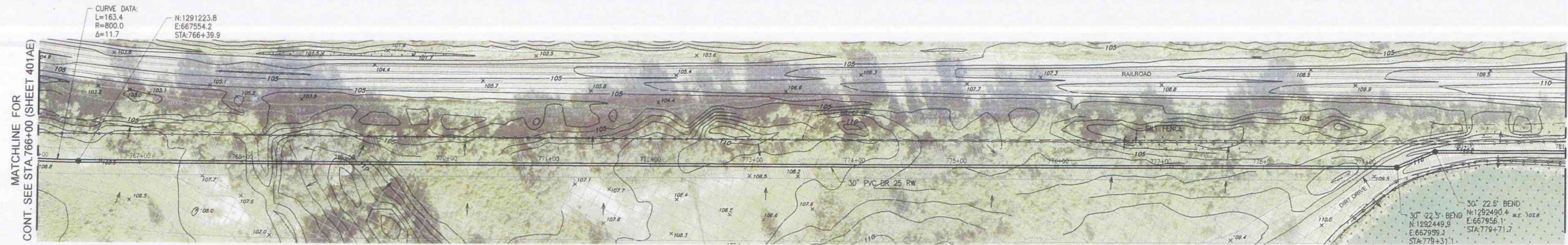


TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 753+00 TO 766+00
PLAN & PROFILE

APVD	RR	DATE
CHKD	RR	3/30/12
DWN	JT	3/30/12
DSGN	NU	3/30/12

FILE NAME: 379-EY-401AF.DWG
SCALE: 1" = 40'

DWG. NO. 379-EY-401AF
REV. NO. 0



ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

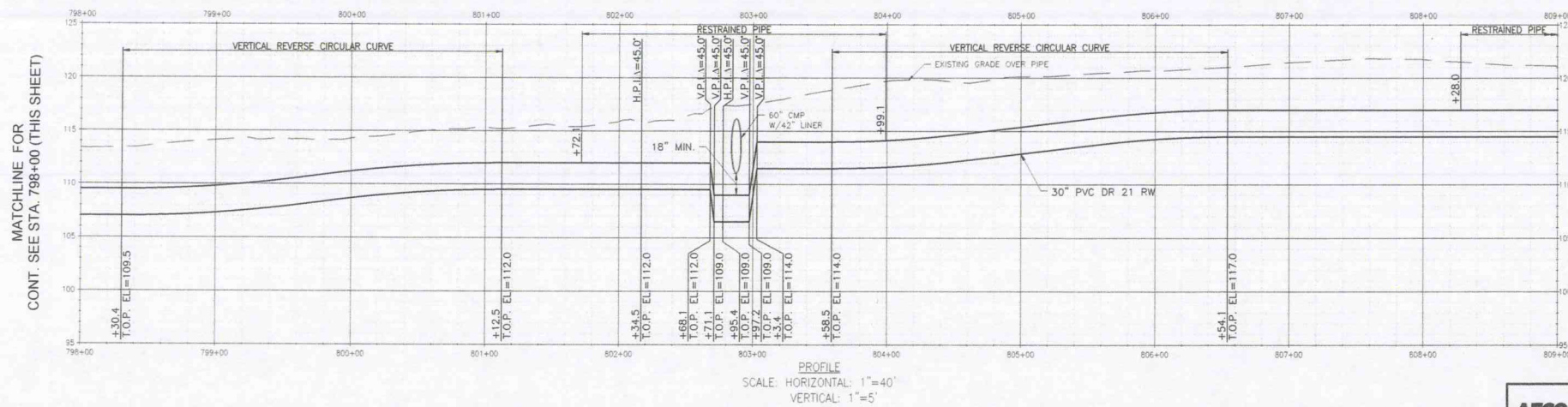
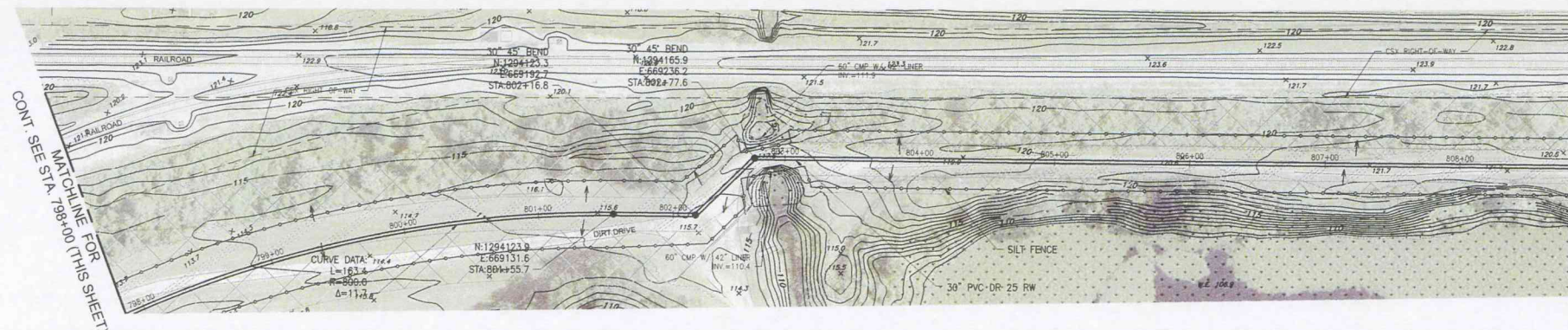
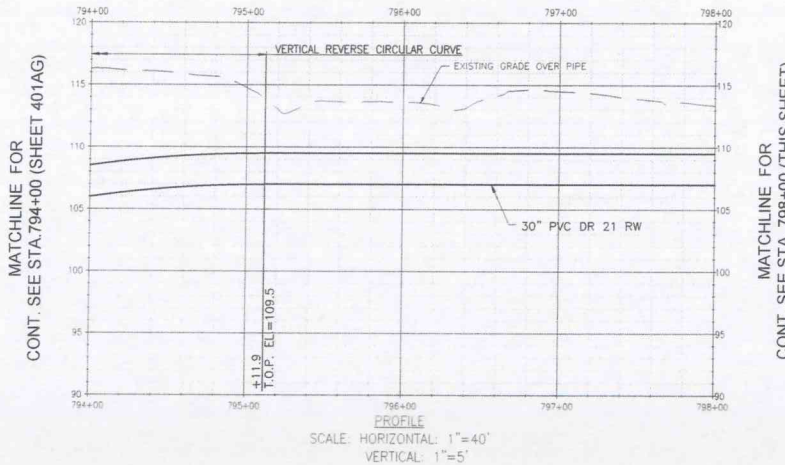
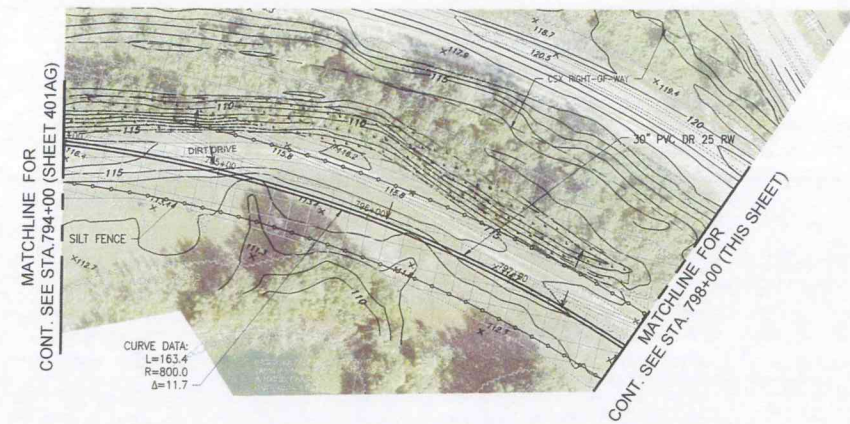
AECOM Technical Services, Inc.
10215 Highland Manor Drive, Suite 350
Tampa, Florida 33618
1-813-633-2000 F-813-621-2300
FL Engineering Business No. ES-38
www.aecom.com

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 766+00 TO 794+00
PLAN & PROFILE

BY: DATE
APVD: RR 3/30/12
CHKD: RR 3/30/12
DWN: JT 5/26/12
DSGN: NU 3/30/12

FILE NAME: 379-EY-401AG.DWG DWG. NO. 379-EY-401AG
SCALE: 1" = 40'

REV. NO. 0

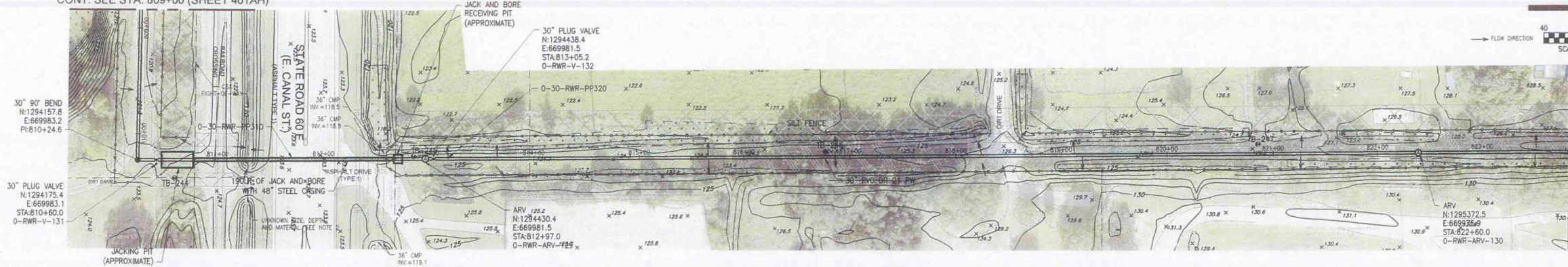


ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

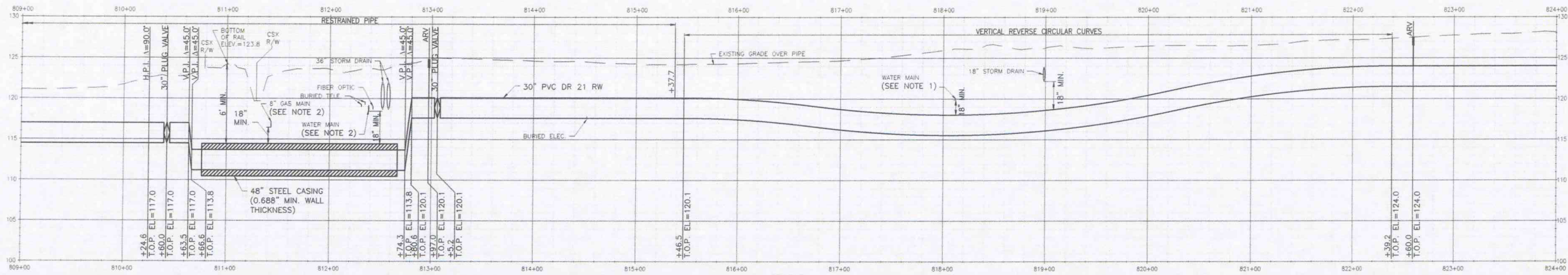
AECOM AECOM Technical Services, Inc. 12210 Highland Motor Drive, Suite 350 Tampa, Florida 33610 P: 813.532.2500 F: 813.621.2300 FL Engineering Business No. EB-38 www.aecom.com		TECO TAMPA ELECTRIC		BY: DATE APVD RR 3/30/12 CHKD RR 3/30/12 DWN JT 3/29/12 DSGN NU 3/26/12	FILE NAME: 379-EY-401AH.Dwg SCALE: 1" = 40'	DWG. NO. 379-EY-401AH REV. NO. 0
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TAMPA ELECTRIC COMPANY
 RECLAIMED WATER PIPELINE
 STATION 794+00 TO 809+00
 PLAN & PROFILE

MATCHLINE FOR
CONT. SEE STA. 809+00 (SHEET 401AH)

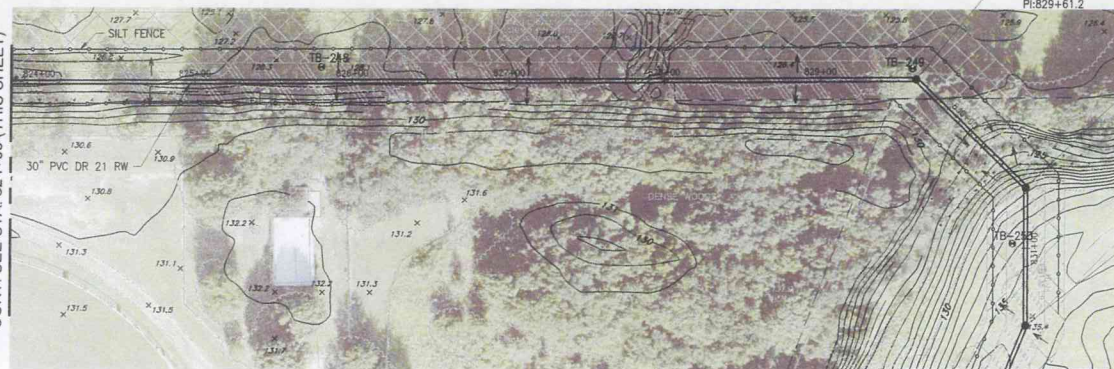


MATCHLINE FOR
CONT. SEE STA. 809+00 (SHEET 401AH)



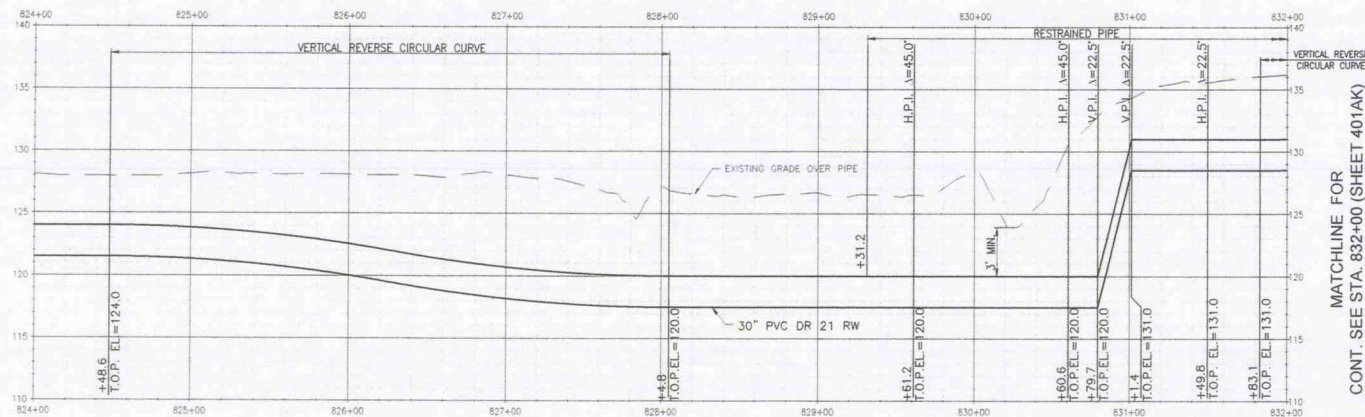
PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'

MATCHLINE FOR
CONT. SEE STA. 824+00 (THIS SHEET)



MATCHLINE FOR
CONT. SEE STA. 832+00 (SHEET 401AK)

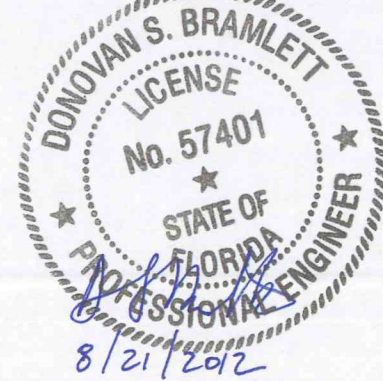
MATCHLINE FOR
CONT. SEE STA. 824+00 (THIS SHEET)



PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'

MATCHLINE FOR
CONT. SEE STA. 832+00 (SHEET 401AK)

- NOTE:
1. RELOCATE EXISTING WATER MAIN AS NECESSARY.
 2. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION AND PIPE SIZE FOR ALL EXISTING STORM AND GAS MAINS BEFORE BORING AND/OR OPEN-CUTTING.



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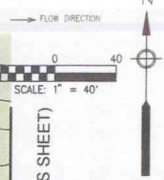
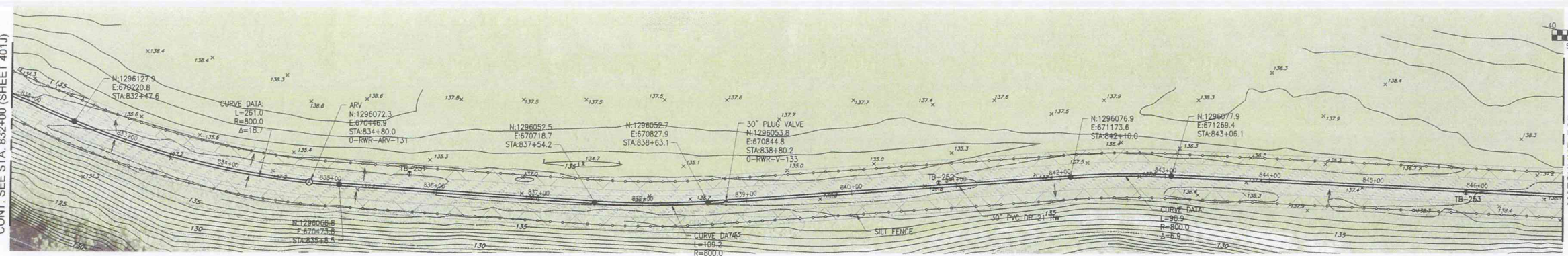
ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 809+00 TO 832+00
PLAN & PROFILE

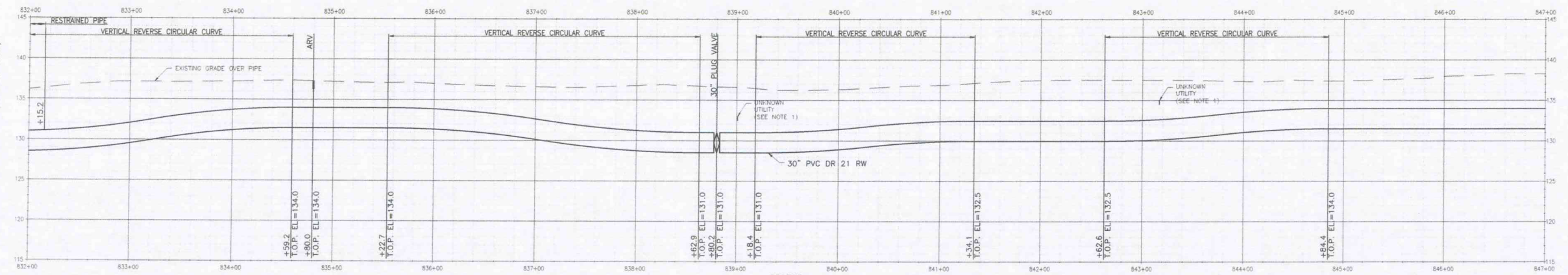
BY	DATE	FILE NAME	DWG. NO.	REV. NO.
APVD	RR	3/30/12	379-EY-401AJ	0
CHKD	RR	3/30/12		
DWN	JT	3/30/12		
DSGN	NU	3/30/12		

MATCHLINE FOR
CONT. SEE STA. 832+00 (SHEET 401J)



MATCHLINE FOR
CONT. SEE STA. 847+00 (THIS SHEET)

MATCHLINE FOR
CONT. SEE STA. 832+00 (SHEET 401J)



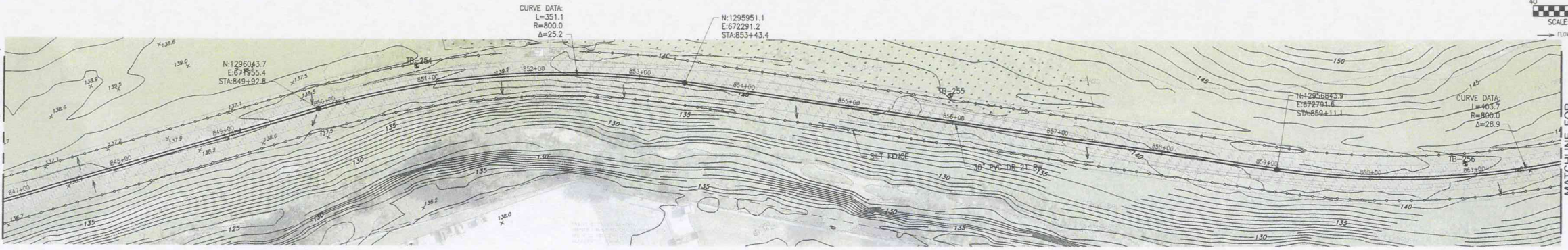
PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'

NOTE:
1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION AND TYPE AND SIZE FOR ALL EXISTING UNKNOWN UTILITIES PRIOR TO OPEN-CUTTING.



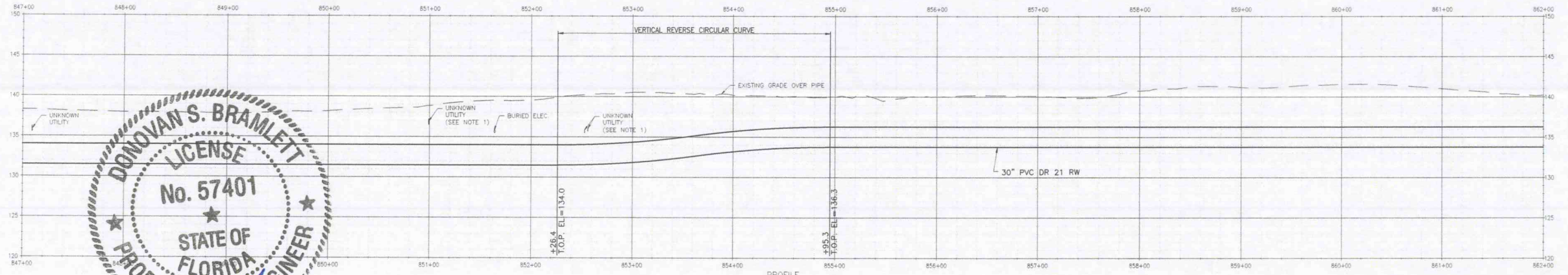
MATCHLINE FOR
CONT. SEE STA. 847+00 (THIS SHEET)

MATCHLINE FOR
CONT. SEE STA. 847+00 (THIS SHEET)



MATCHLINE FOR
CONT. SEE STA. 862+00 (SHEET 401A)

MATCHLINE FOR
CONT. SEE STA. 847+00 (THIS SHEET)



PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=5'

NOTE:
1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION AND TYPE AND SIZE FOR ALL EXISTING UNKNOWN UTILITIES PRIOR TO OPEN-CUTTING.



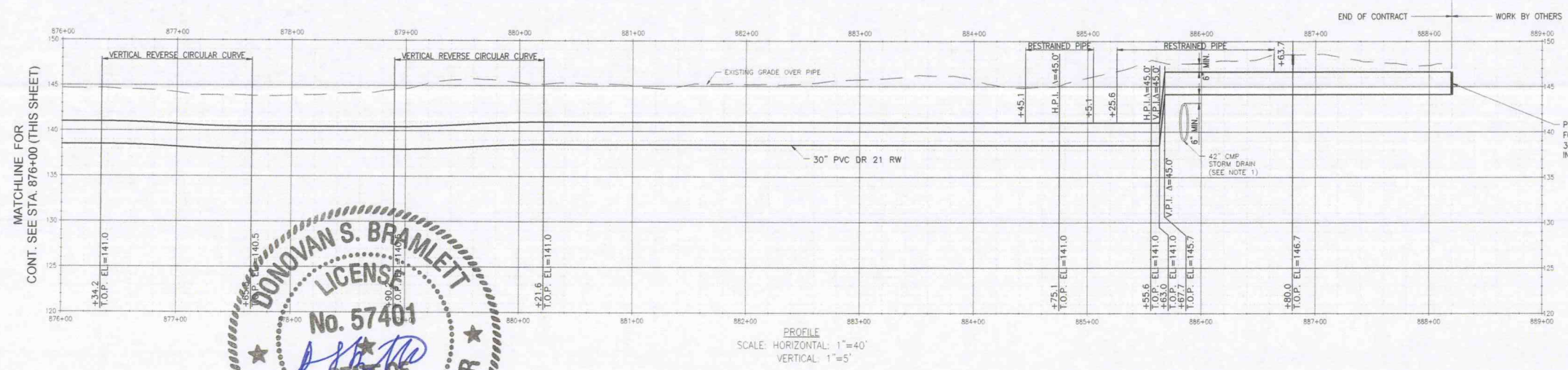
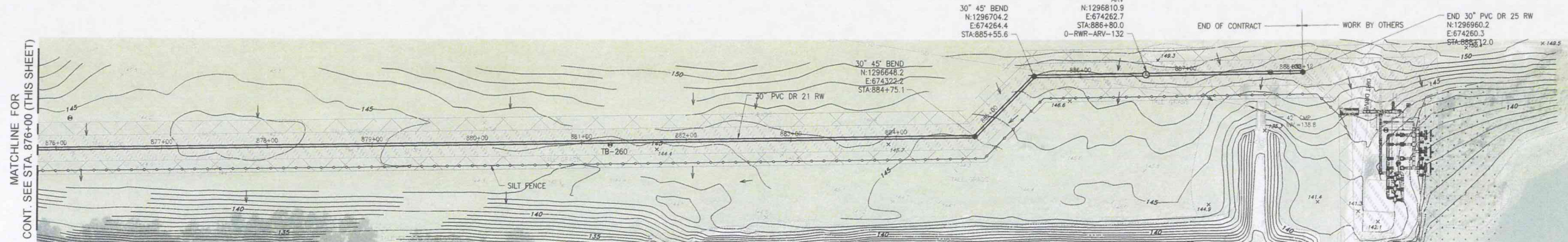
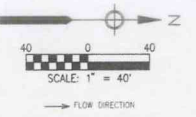
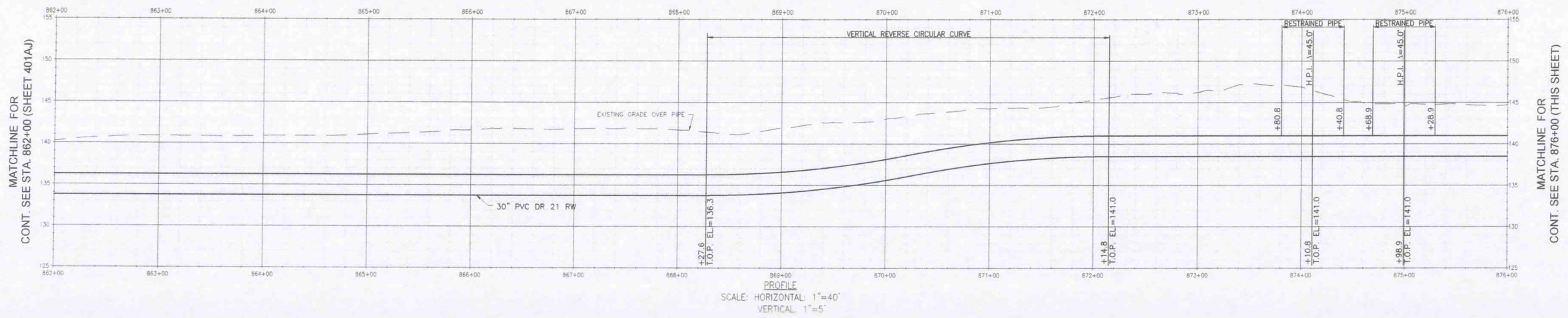
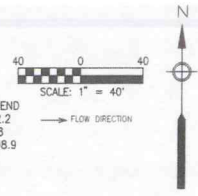
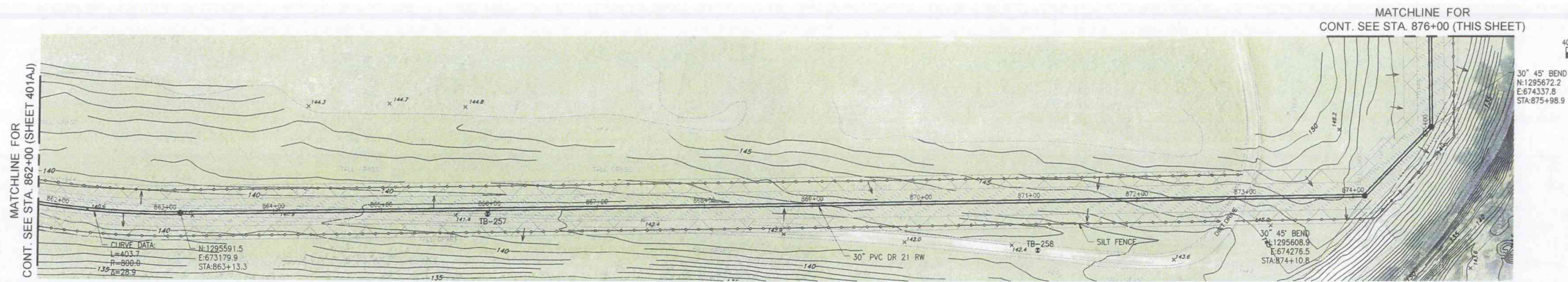
MATCHLINE FOR
CONT. SEE STA. 862+00 (SHEET 401A)

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING			
ISSUE	DESCRIPTION	DATE	
C	ISSUED FOR BID	3/30/12	
B	ISSUED FOR REVIEW	02/20/12	
A	ISSUED FOR REVIEW	12/23/11	
ISSUE	DESCRIPTION	DATE	
APVD	RR	3/30/12	
CHKD	RR	3/30/12	
OWN	RR	3/30/12	
DESIGN	RR	3/30/12	

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
STATION 832+00 TO 862+00
PLAN & PROFILE

FILE NAME: 379-EY-401A.DWG
DWG. NO. 379-EY-401A
REV. NO. 0





NOTE:
1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION AND PIPE SIZE FOR ALL EXISTING STORM AND GAS MAINS PRIOR TO JACKING AND BORING AND/OR OPEN-CUTTING.

PROVIDE MJ CAP AT STA:888+12 FOR CONNECTION TO A 30" 45' BEND. 30" 45' BEND IS BY OTHERS AND NOT IN CONTRACT.

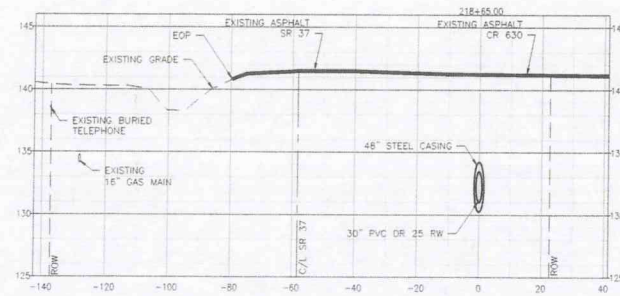


AECOM

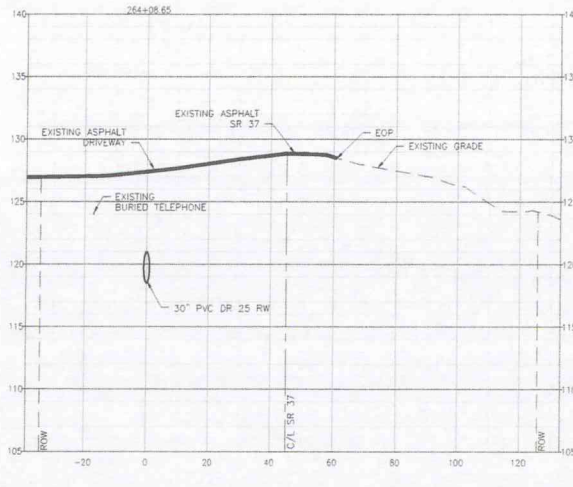
TECO
TAMPA ELECTRIC

400W Technical Services, Inc.
10210 Highway 19, Suite 350
Tampa, Florida 33619
P: 813.836.2500 F: 813.621.2300
FL Engineering Business No. EE-36
www.aecom.com

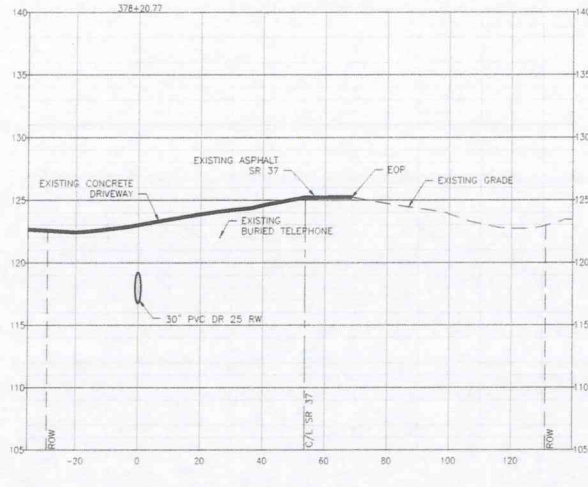
ISSUE	DESCRIPTION	DESIGN	OWN	CHKD	APVD	DATE
C	ISSUED FOR BID	NU	JT	RR	RR	3/30/12
B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11
TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING						
TAMPA ELECTRIC COMPANY RECLAIMED WATER PIPELINE STATION 862+00 TO 888+12 PLAN & PROFILE						
APVD	RR	3/30/12	FILE NAME	379-EY-401AL.DWG	DWG NO.	379-EY-401AL
CHKD	RR	3/30/12	SCALE	1" = 40'	REV. NO.	0
DWN	JT	3/30/12				
DSGN	NU	3/30/12				



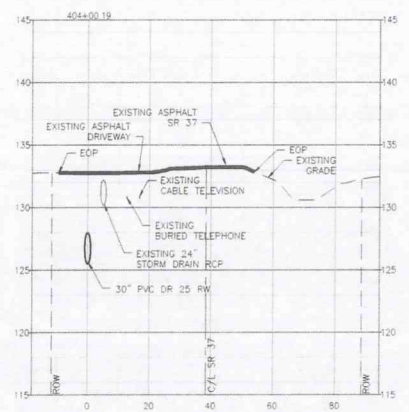
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40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



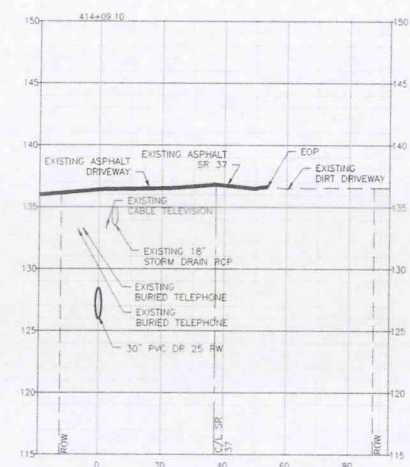
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40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



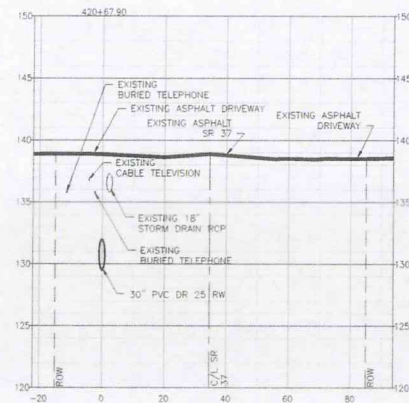
3 FDOT SECTION (STA. 378+20.77)
40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



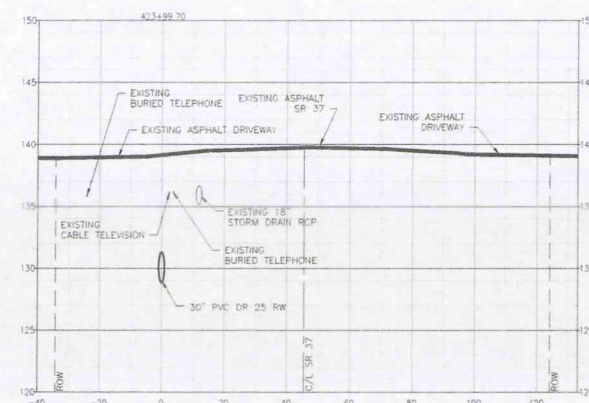
4 FDOT SECTION (STA. 404+00.19)
40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



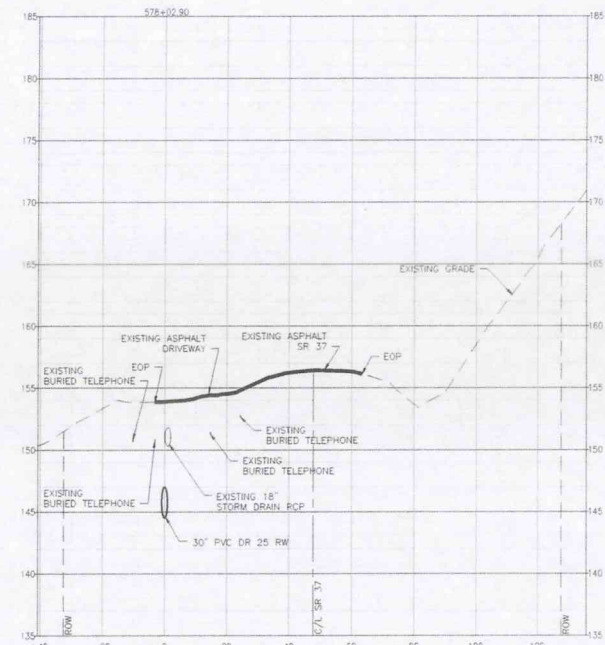
5 FDOT SECTION (STA. 414+90.10)
40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



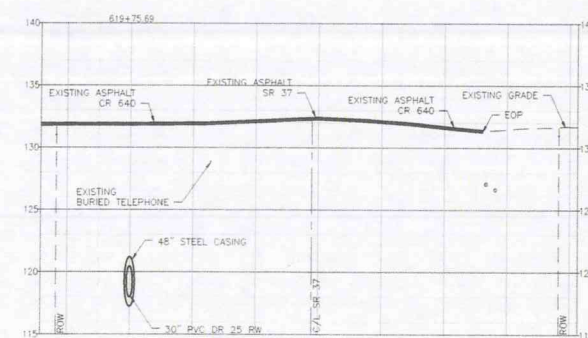
6 FDOT SECTION (STA. 420+67.90)
40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



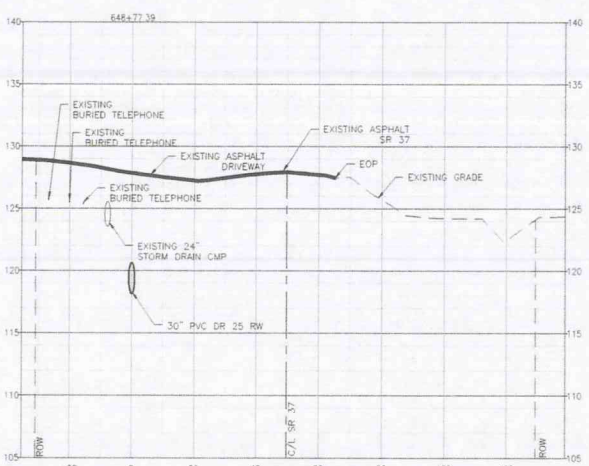
7 FDOT SECTION (STA. 423+99.70)
40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



8 FDOT SECTION (STA. 578+02.90)
40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



9 FDOT SECTION (STA. 619+75.69)
40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



10 FDOT SECTION (STA. 648+77.39)
40% SCALE: VERTICAL 1" = 5', HORIZONTAL 1" = 20'



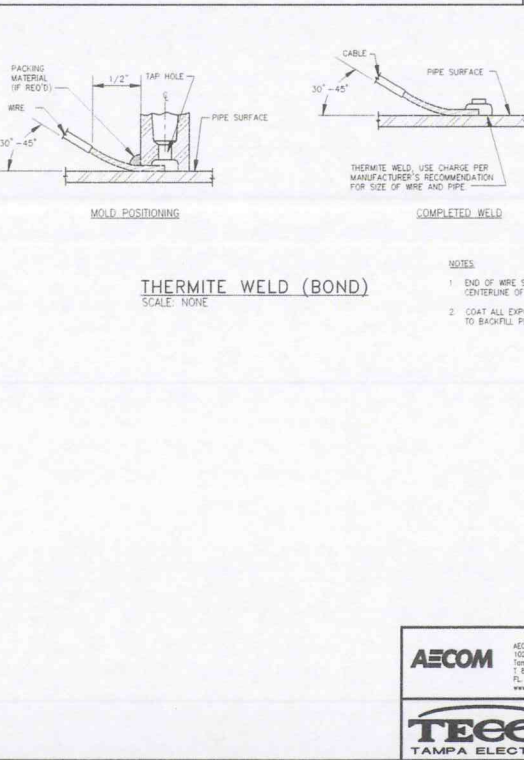
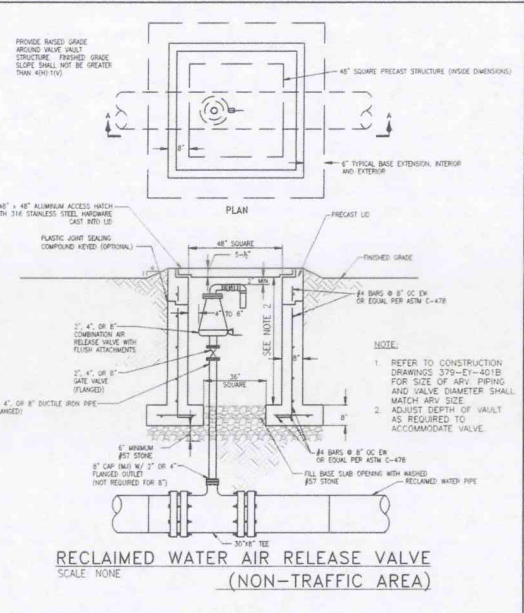
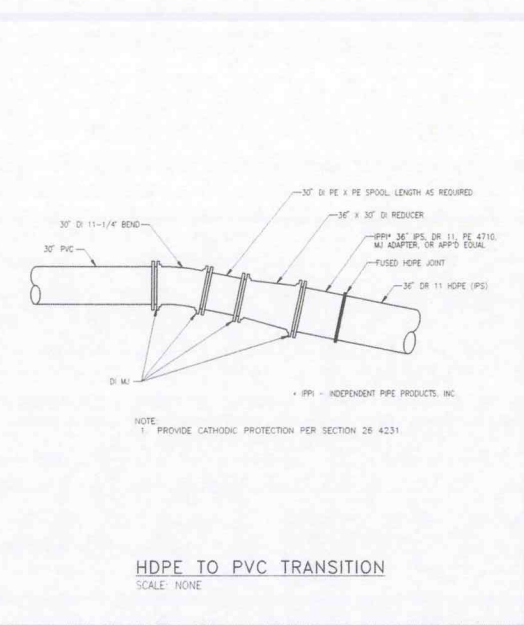
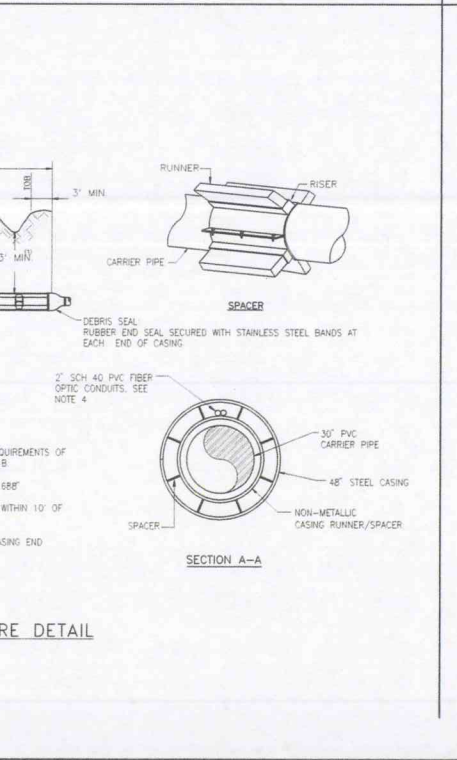
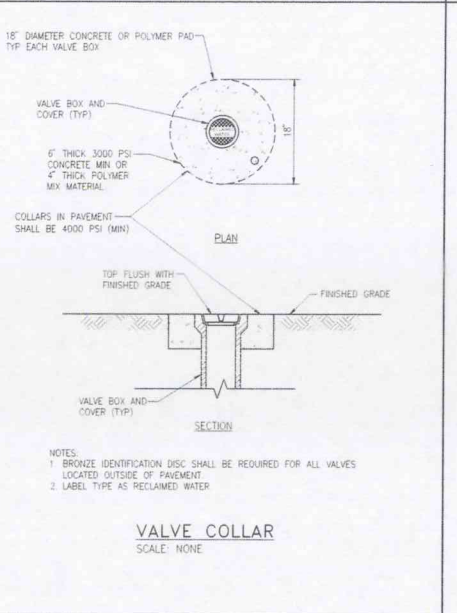
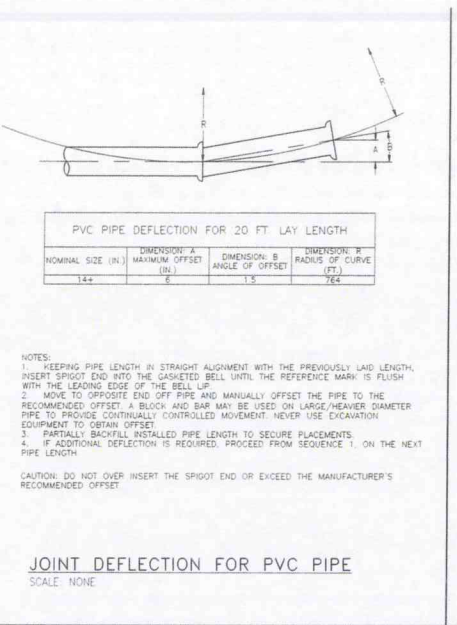
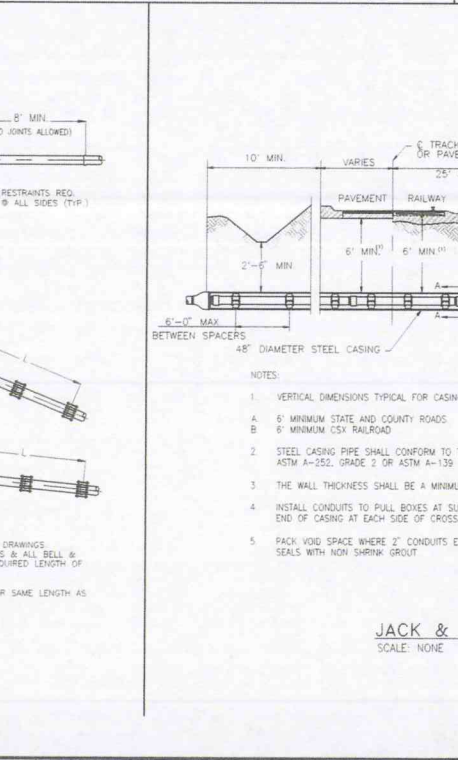
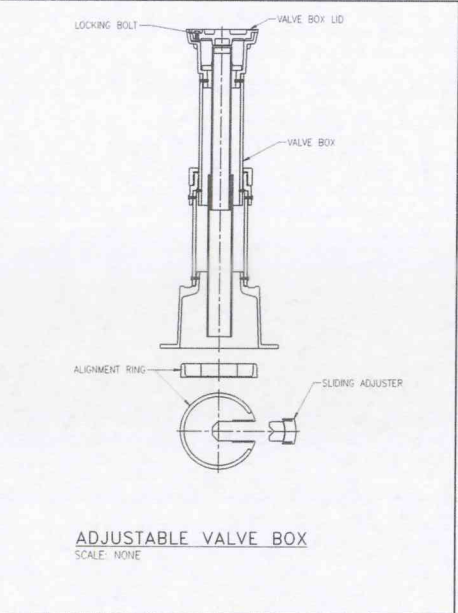
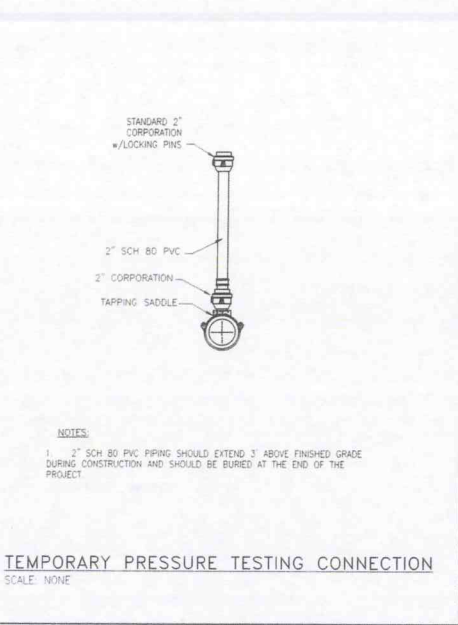
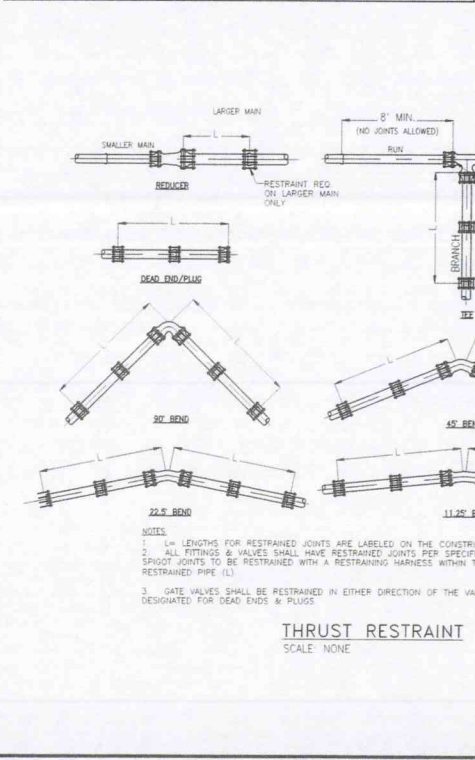
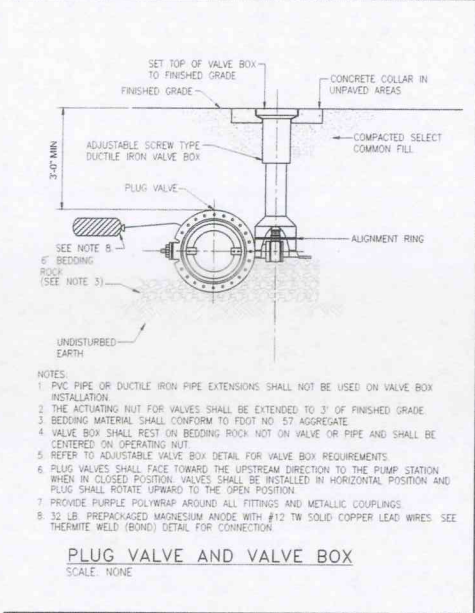
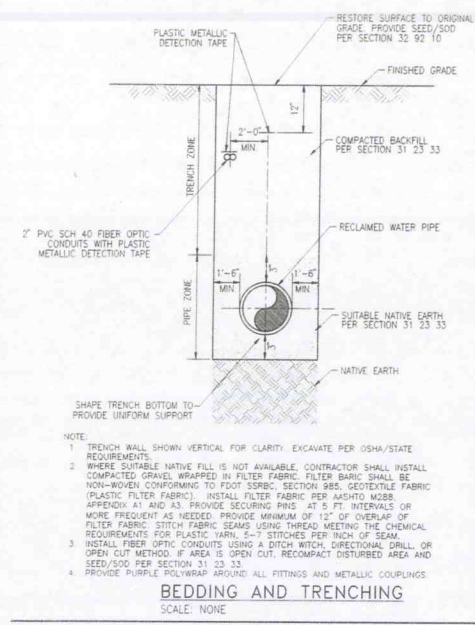
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B	ISSUED FOR REVIEW	NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NU	JT	RR	RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
SECTIONS

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BY	DATE	FILE NAME	DWG. NO.	REV. NO.
APVD	RR	3/30/12	379-EY-401AM.DWG	0
CHKD	RR	3/30/12		
DESIGN	NU	3/30/12		



DONOVAN S. BRAMLETT
LICENSE
No. 57401
8/21/2012
STATE OF FLORIDA
PROFESSIONAL ENGINEER

ISSUE	DESCRIPTION	ISSUED FOR	DATE
C	ISSUED FOR BID	NU JT RR	3/30/12
B	ISSUED FOR REVIEW	NU JT RR	02/20/12
A	ISSUED FOR REVIEW	NU JT RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING

TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
CIVIL DETAILS I

AECOM
AECOM Technical Services, Inc.
10510 Highway 19, Suite 350
Tampa, Florida 33610
P: 813.833.2550 F: 813.621.2300
FL Engineering Business No. EE-38
www.aecom.com

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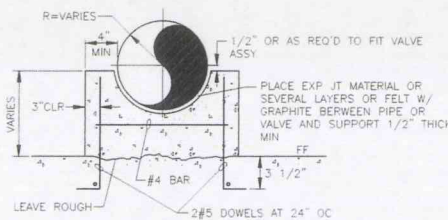
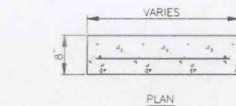
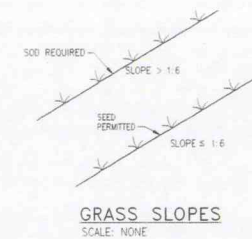
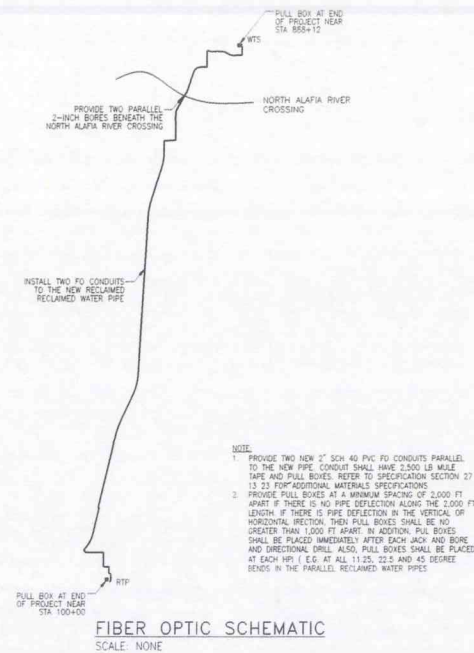
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CHKD RR	3/30/12
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DSN NU	3/30/12

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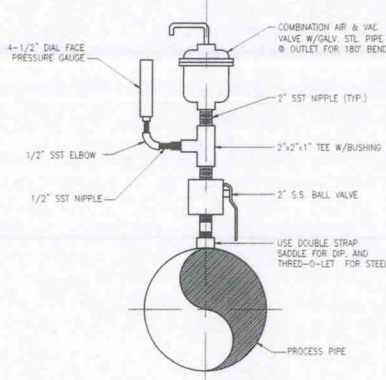
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TYP. DRIVEWAY PAVEMENT REPAIR DETAIL
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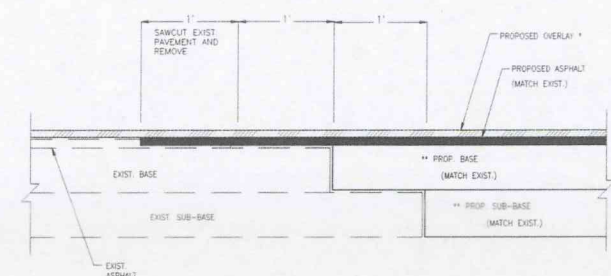
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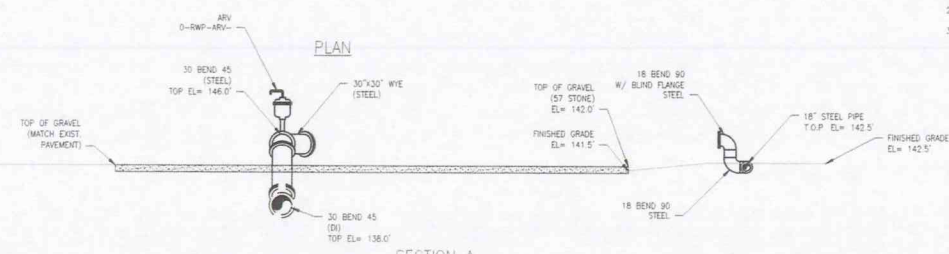
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SECTION A

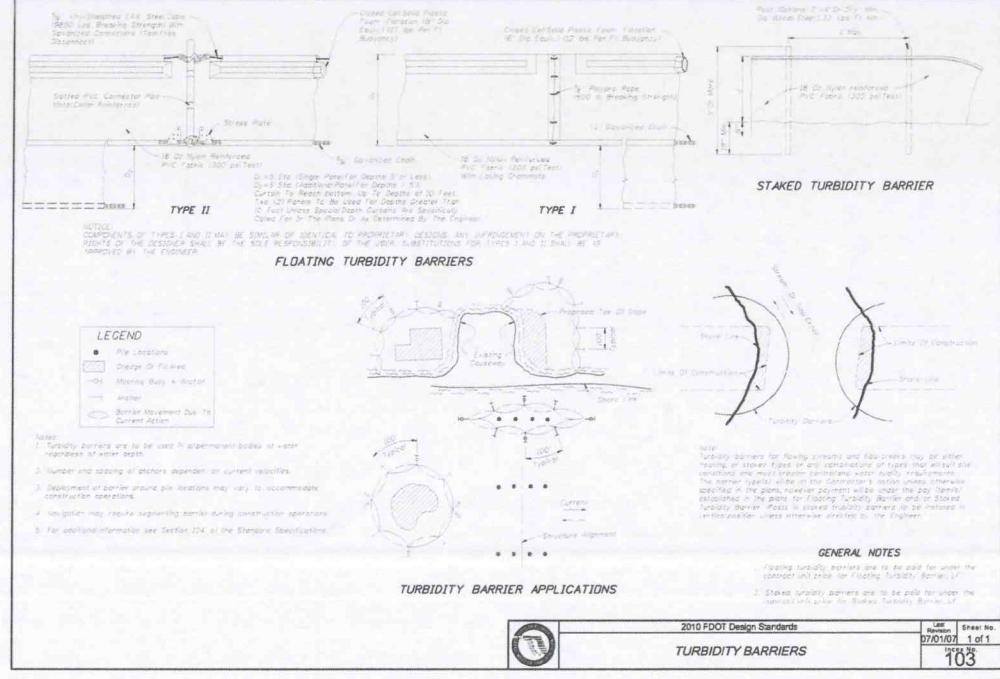
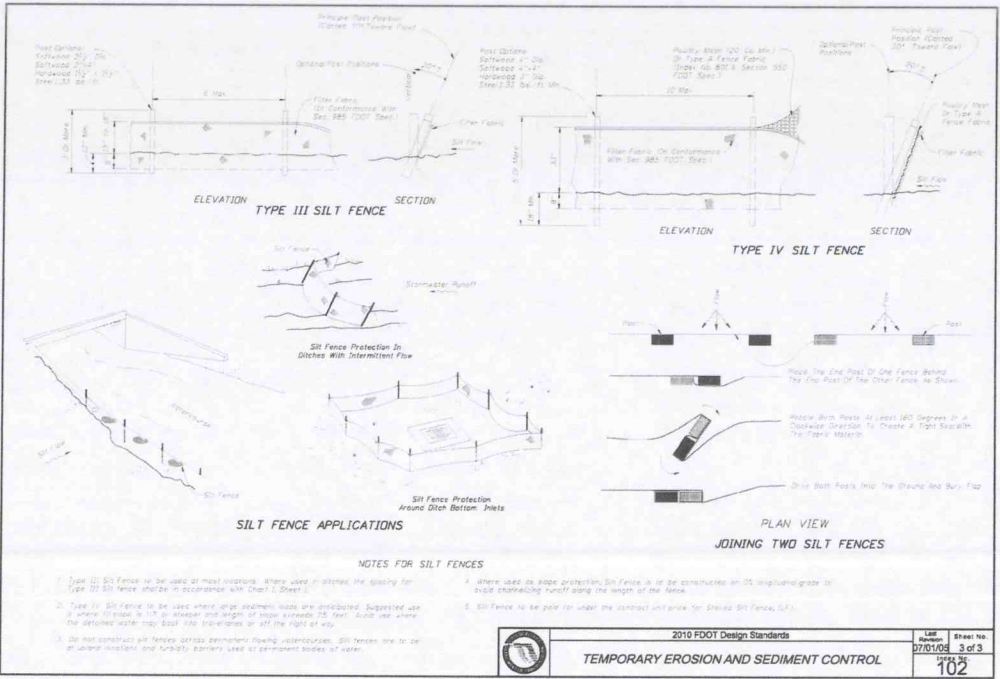
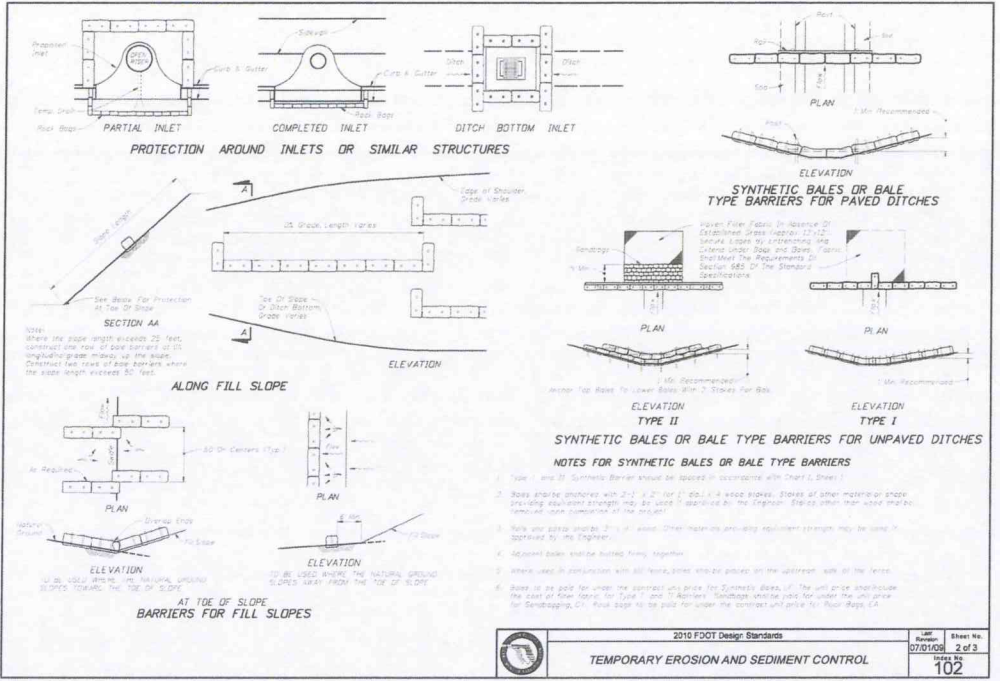
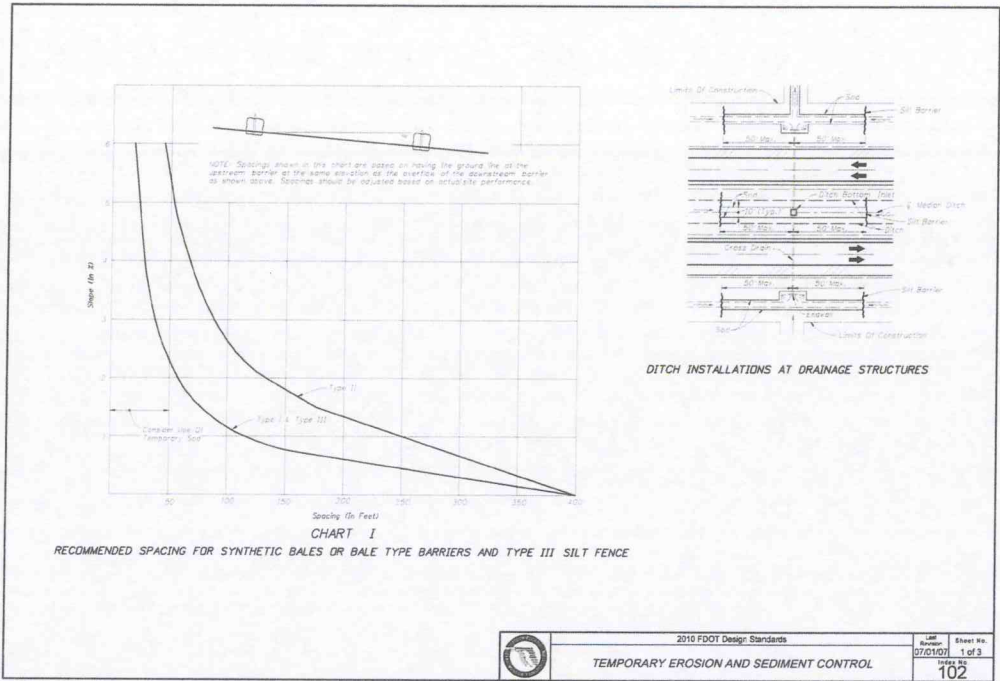
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TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
CIVIL DETAILS II

TEEO
TAMPA ELECTRIC

BY:	DATE		
APVD	RR	3/30/12	
CHKD	RR	3/30/12	
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DSGN	NU	3/30/12	
FILE NAME:		379-EY-401AP.DWG	DWG. NO. 379-EY-401AP
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BY: DATE
APVD: RR 3/26/12
CHKD: RR 3/26/12
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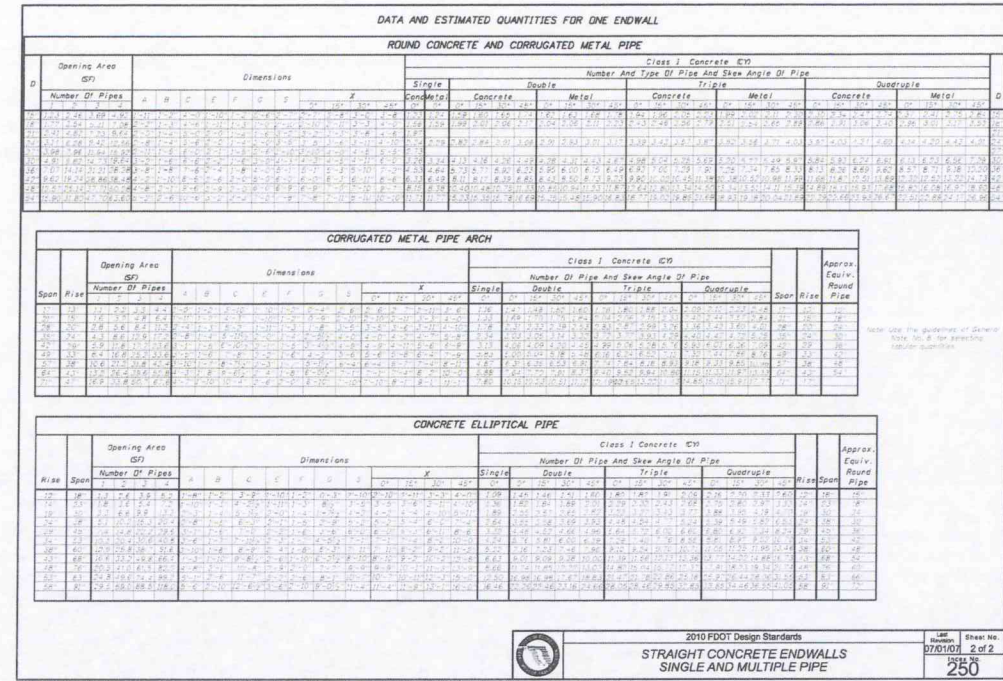
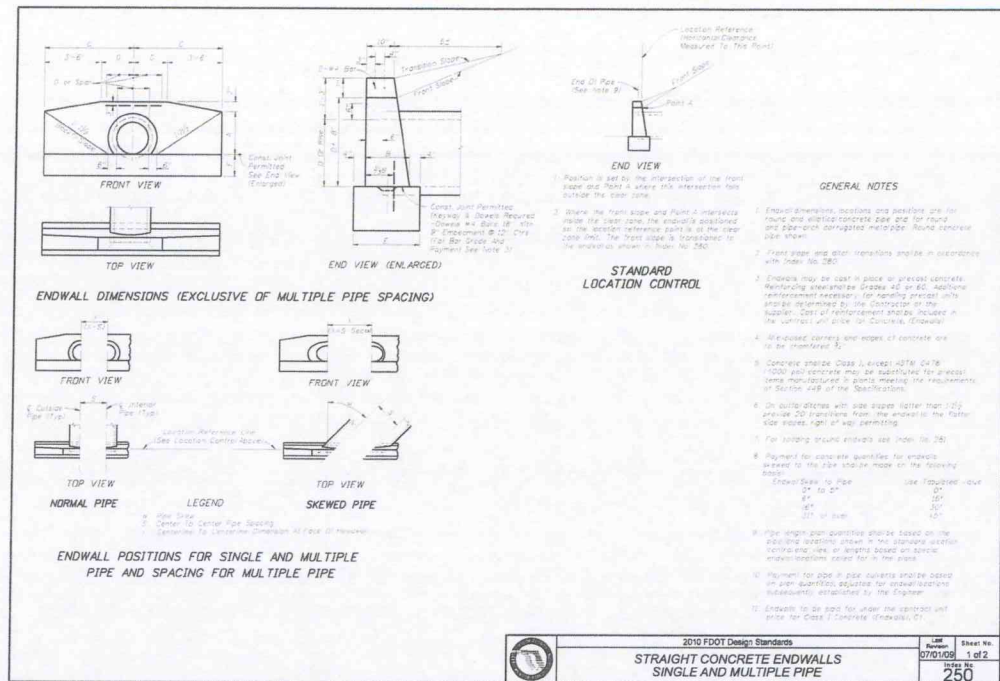
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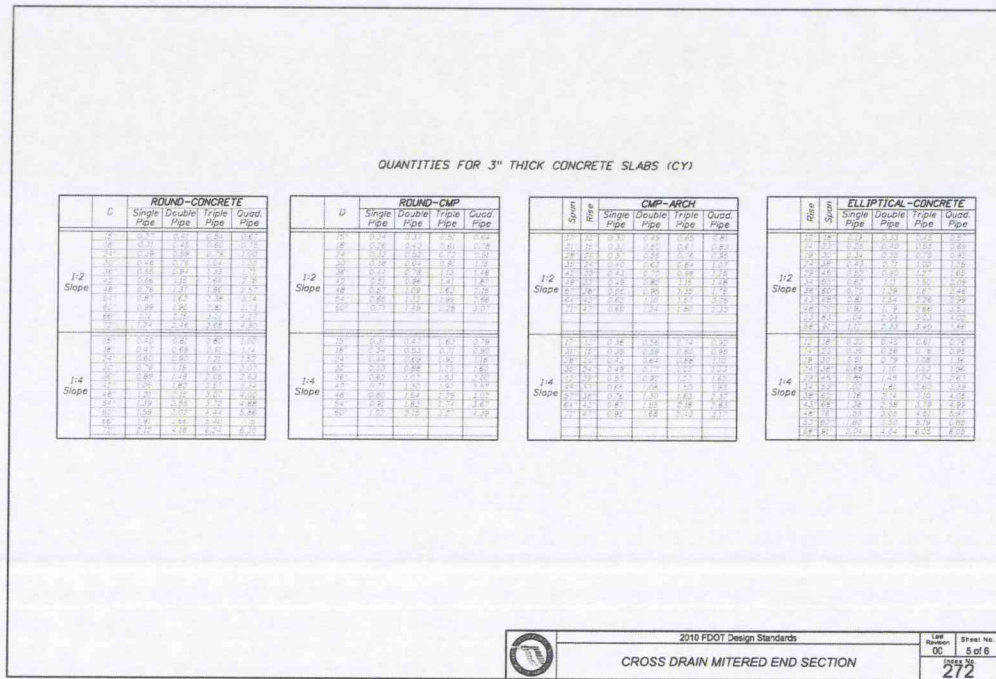
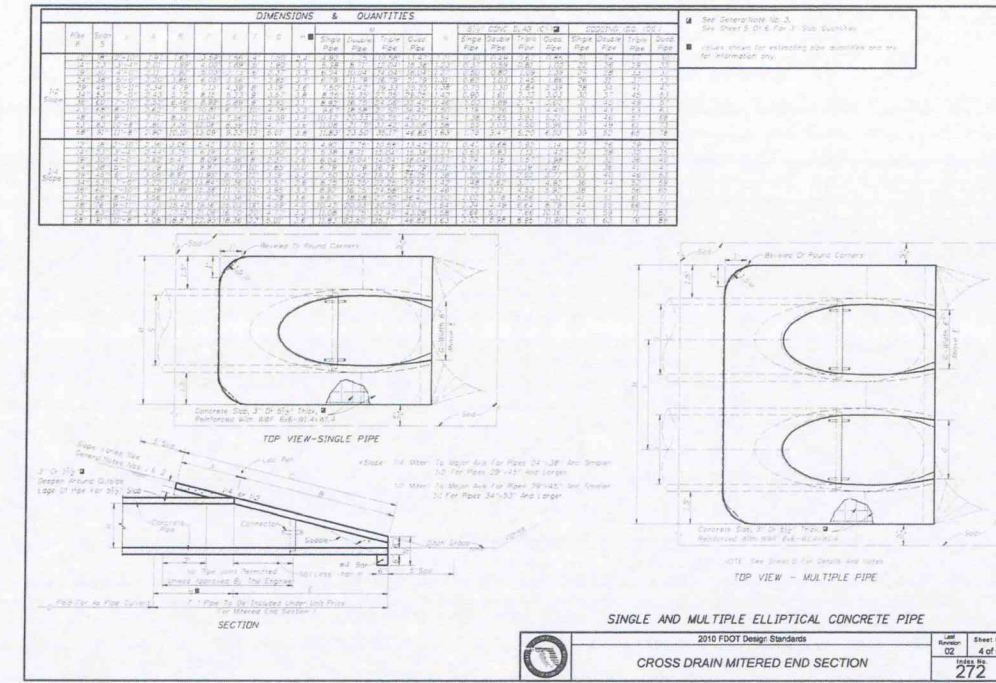
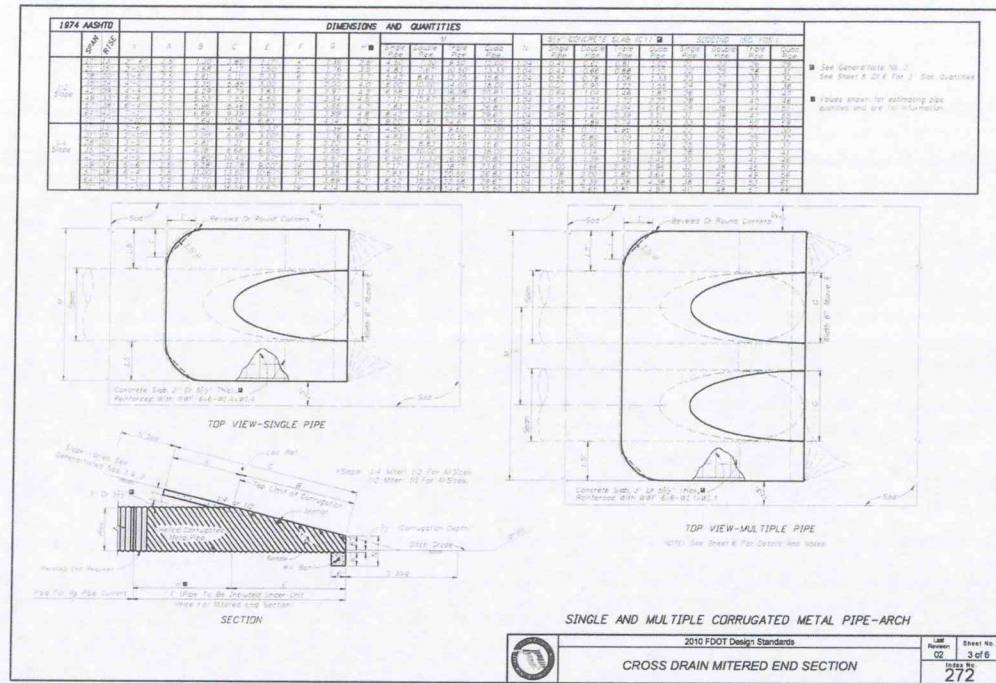
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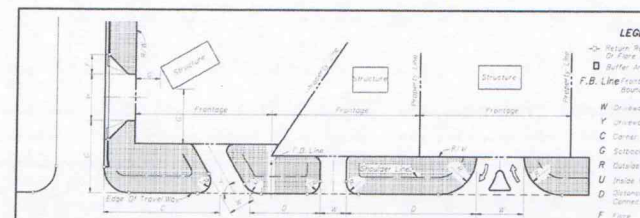
TAMPA ELECTRIC COMPANY
RECLAIMED WATER PIPELINE
CIVIL DETAILS III

ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
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B	ISSUED FOR REVIEW	NJ	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW	NJ	JT	RR	RR	12/23/11

TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING







SKETCH ILLUSTRATING DEFINITIONS

[illegible]NOT INTENDED FOR FULL INTERSECTION DESIGN
SUMMARY OF GEOMETRIC REQUIREMENTS FOR TURNOUTS

GENERAL NOTES

1. For definitions and descriptions of access connection "Categories" and access "Classifications" of highway segments, and for other detailed information on access to the State Highway System, refer to TDDT Rule Chapter 14-96, "State Highway Connection Permit Administrative Process" and Rule Chapter 14-87, "State Highway System Access Management Classification System and Standards."

2. For this index, the term, "turnout" applies to the portion of sidewalks, roads or streets adjoining the outer roadway. For this index the term "connection" encompasses a driveway, street or road and their apportioned islands, separators, transition features, curbside lanes, boulevard, flower, multiple pipes and structures, crosswalks, sidewalks, curb cut, ramps, signing, pavement marking, required segregation, maintenance of traffic or other means of access to or from controlled access facilities. The turnout requirements set forth in this index do not provide complete intersection design, construction or maintenance requirements.

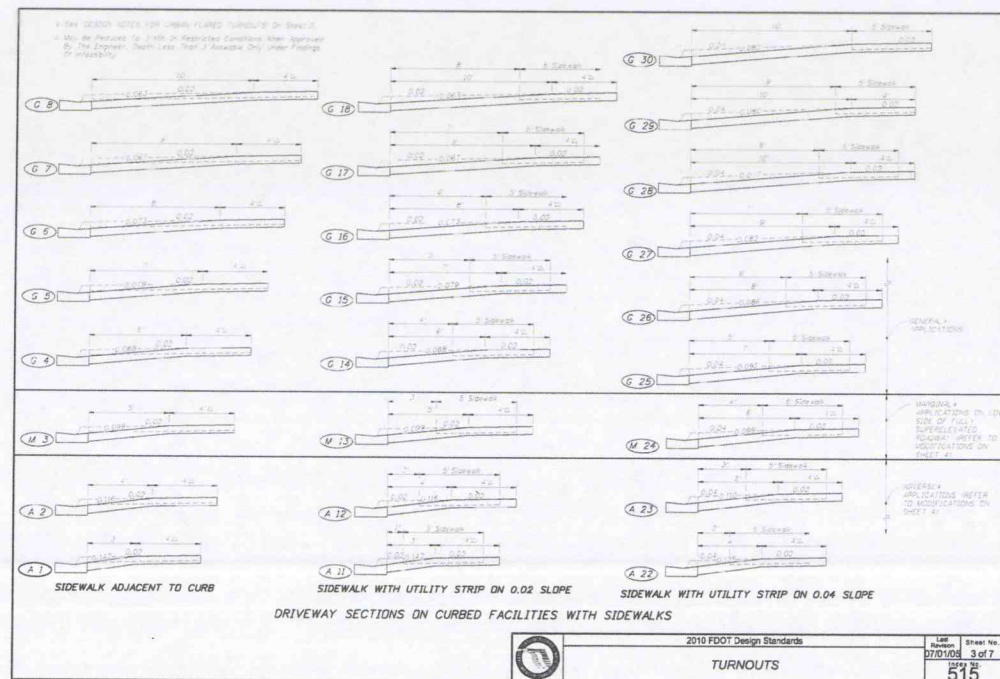
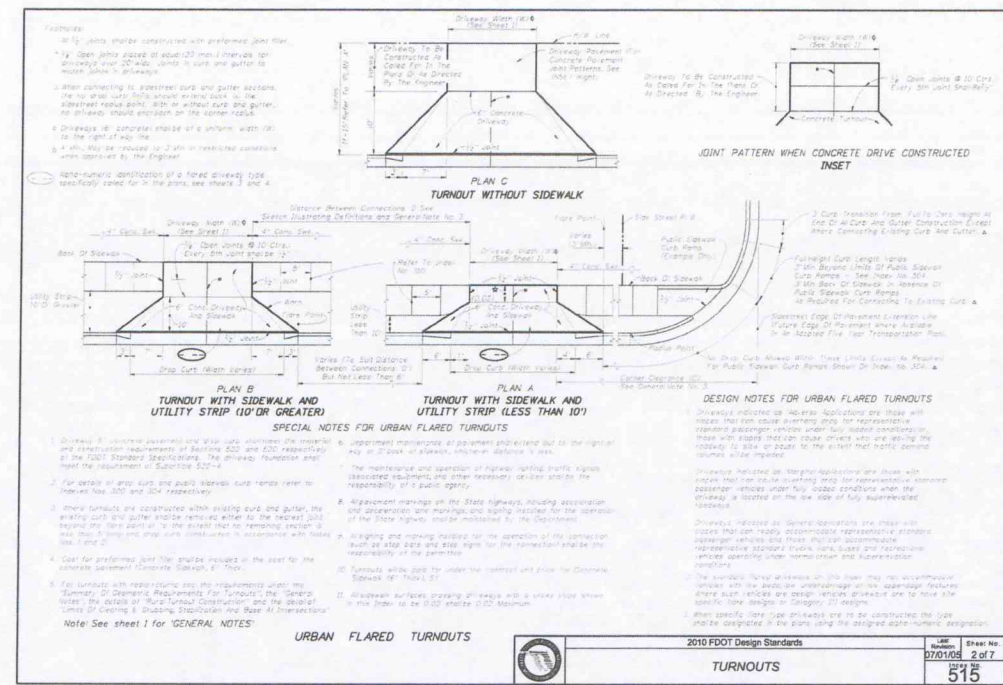
5. Driveways shall have sufficient length and size for all-enclosed dwelling, stacking, maneuvering, standing and parking to be carried out completely beyond the right of way line. Except for vehicles stopping to enter the highway, the turnout area and drives within the right of way shall be used only for moving vehicles entering or leaving the highway.

DESIGN NOTES

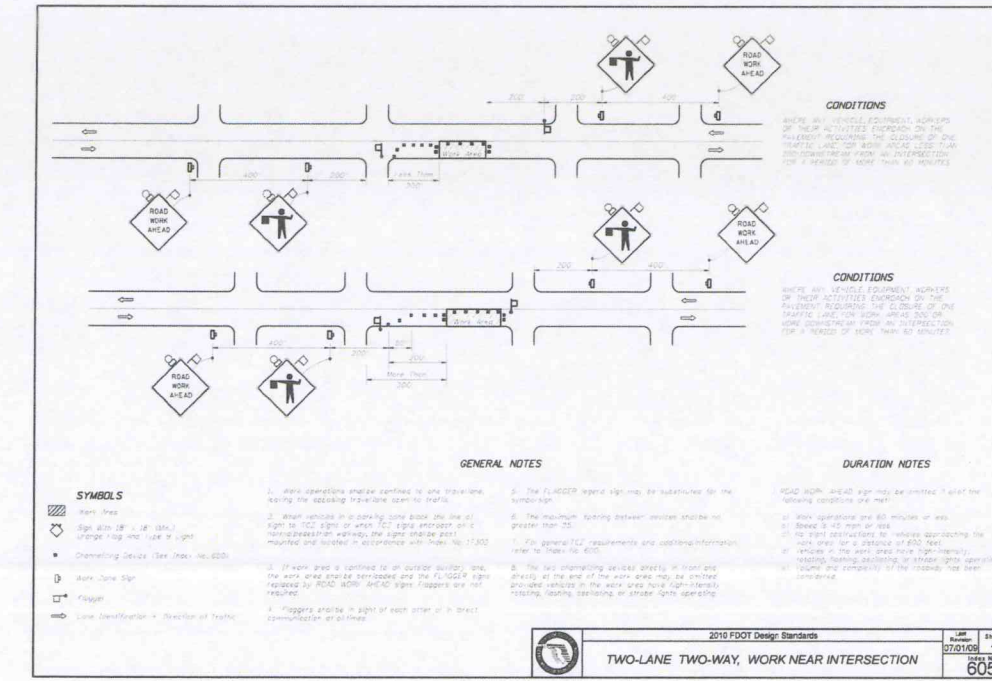
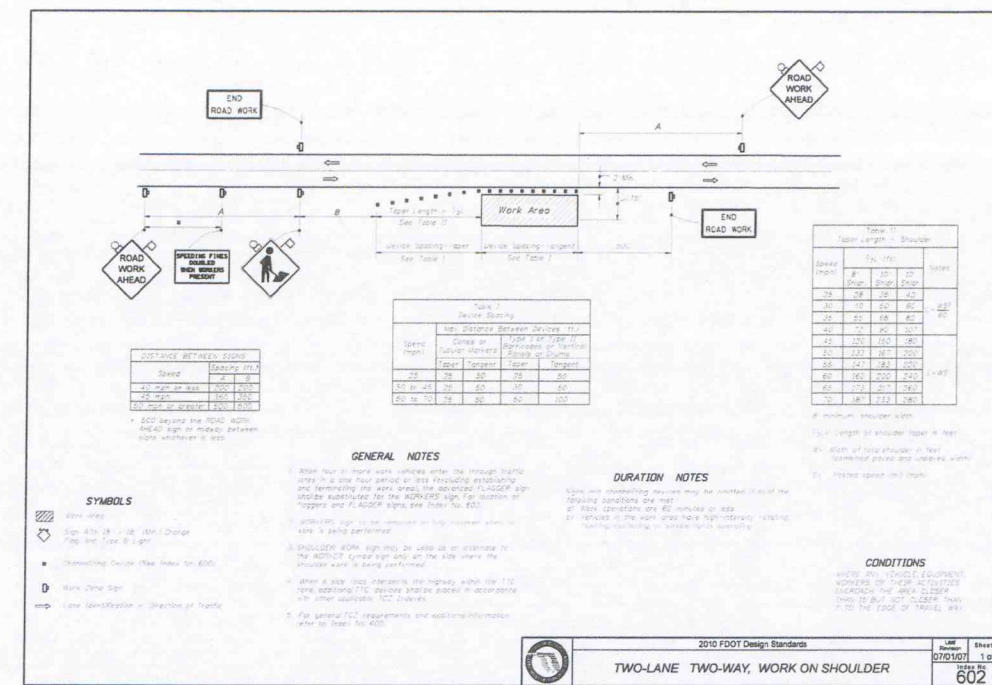
to the State Highway System, were defined and permitted by Classes. Connections have been defined by Categories under Rule 14-96 and the term "Class" has been applied to highway segments of the State Highway System as defined under Rule 14-97.

2010 FDOT Design Standards	LAST Revision	Sheet No.
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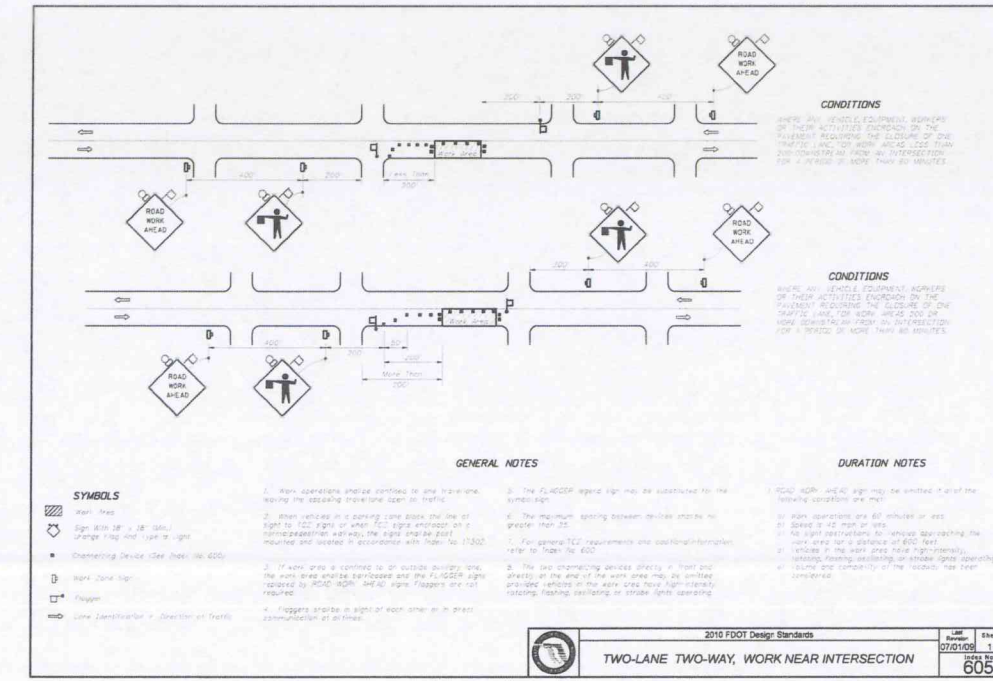
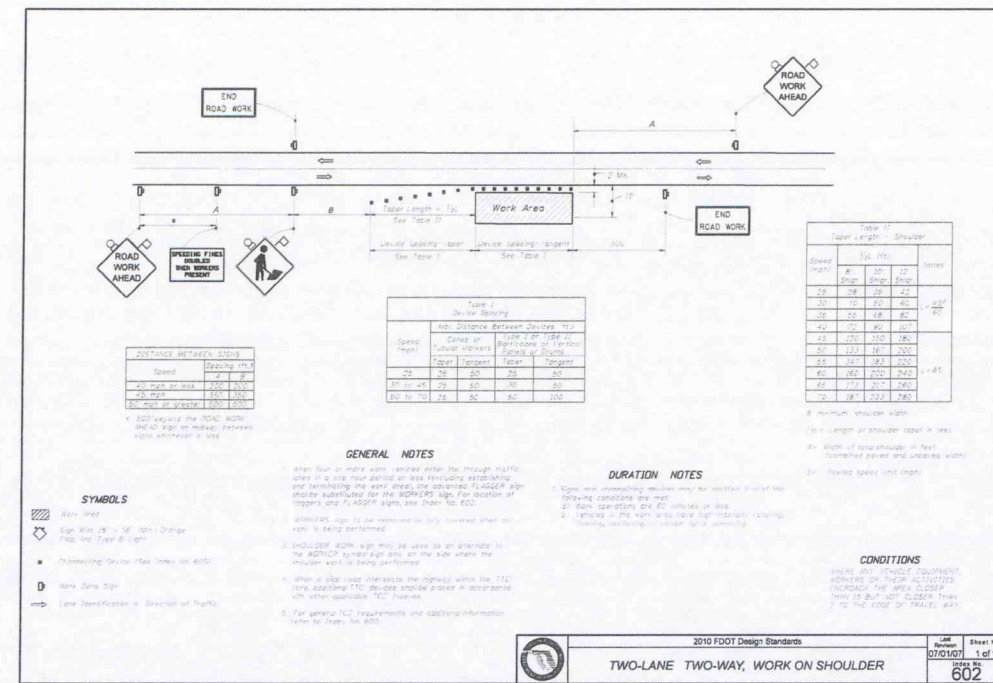
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	Index No 515	



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B	ISSUED FOR REVIEW				NU	JT	RR	RR	02/20/12
A	ISSUED FOR REVIEW				NU	JT	RR	RR	12/23/11
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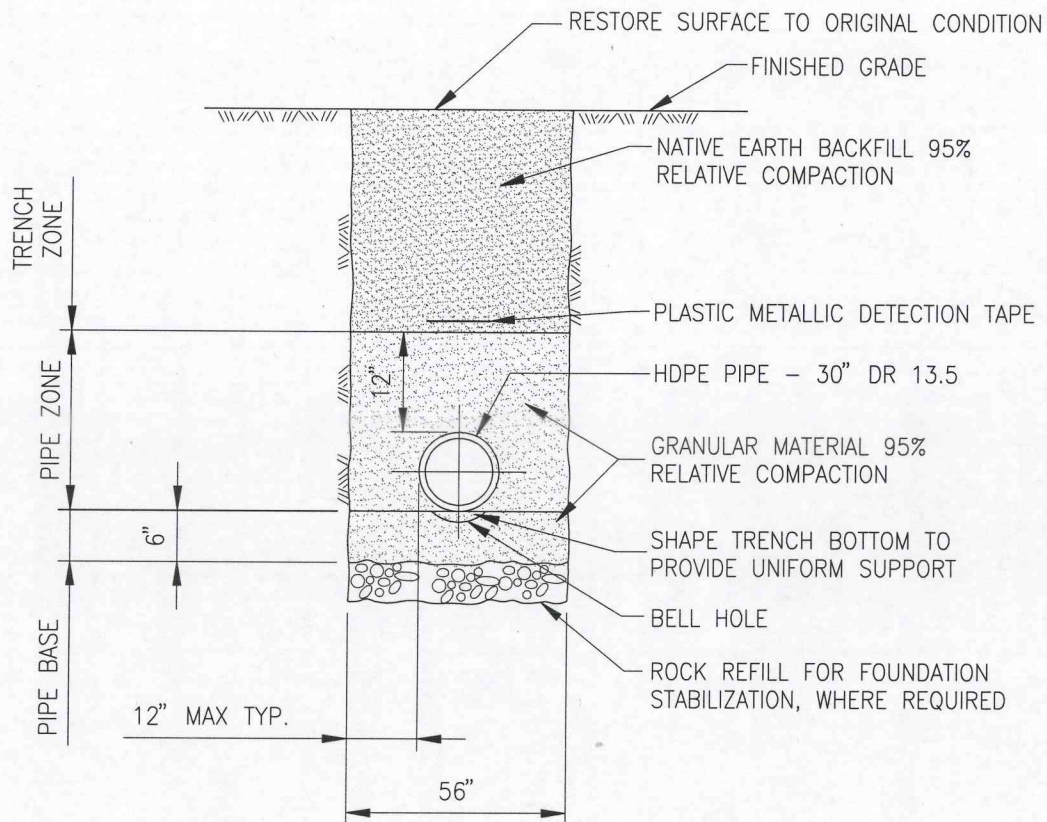


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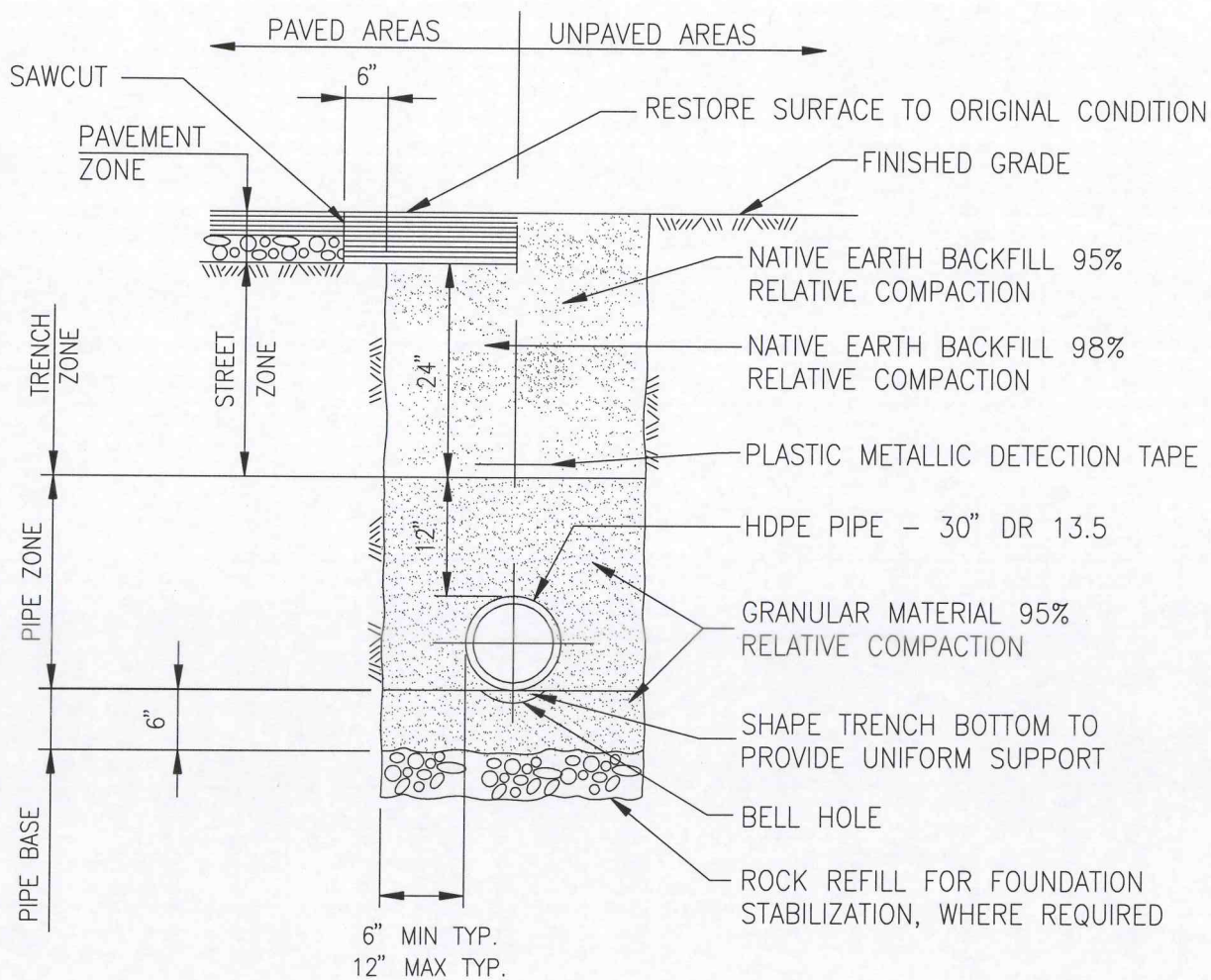
Appendix B

TYPICAL OPEN CUT TRENCH DETAIL - UNPAVED AREAS



NOTE:

1. TRENCH WALL SHOWN VERTICAL FOR CLARITY, EXCAVATE PER OSHA/STATE REQUIREMENTS.



NOTE:

1. TRENCH WALL SHOWN VERTICAL FOR CLARITY, EXCAVATE PER OSHA/STATE REQUIREMENTS.

Appendix C

**SECTION 31 23 19
DEWATERING****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. Design, furnish, operate, maintain, and remove temporary dewatering systems to control groundwater and surface water to maintain stable, undisturbed subgrades, and permit work to be performed under dry and stable conditions. Work to be done as part of dewatering includes, but is not limited to:
1. Lower the groundwater level.
 2. Lower hydrostatic pressure.
 3. Prevent surface water from entering the excavation during construction.
 4. Implement erosion control measures for disposing of discharge water.
 5. Provide groundwater recharging systems as specified and as indicated.
 6. Provide and monitor observation wells and geotechnical instrumentation as specified and indicated.
 7. Provide testing of groundwater samples on the Mulberry Corporation property as required by FDEP to determine if groundwater is contaminated.
 8. Provide special discharge procedures for any contaminated groundwater from the Mulberry Corporation property.
- B. Groundwater within the excavation area shall be lowered to at least 2 feet below the lowest excavation levels as specified and as indicated.
- C. Common dewatering methods include, but are not limited to, sump pumping, deep wells, well points, vacuum well points or combinations thereof.
- D. Common groundwater recharge methods include, but are not limited to, deep wells, large sumps or combination thereof.
- E. The Contractor shall obtain the required permits for discharge from the Contractor's dewatering systems in accordance with 40 CFR Part 122 and applicable project permits from FDEP. The discharge location shall be in accordance with permit requirements.

1.02 REFERENCES

- A. Code of Federal Regulations, Title 40 – Protection of Environment (CFR):
1. 40 CFR Part 122: EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.

1.03 SUBMITTALS

A. Submit shop drawings in accordance with Section 01 33 00 and the following:

1. Qualification of the Contractor's dewatering specialist's or firm's qualifications a minimum of 4 weeks prior to dewatering work. The submittal shall include, but not be limited to:
 - a. Qualifications of specialist's or firm's Registered Professional Engineer.
 - b. Qualifications of specialist's or firm's field representative who will oversee the installation, operation and maintenance of the dewatering system.
2. Submit a dewatering plan, and, if applicable, a groundwater recharge plan at least 2 weeks prior to start of dewatering work. Do not submit design calculations. The review will be only for the information of the Owner and third parties for an overall understanding of the project relating to access, maintenance of existing facilities and proper utilization of the site. The Contractor shall remain responsible for the adequacy and safety of the means, methods and sequencing of construction. The plan shall include the following items as a minimum:
 - a. Dewatering plan and details stamped and signed by a Registered Professional Engineer registered in the State of Florida.
 - b. Certificate of Design: Refer to Section 01 30 00.
 - c. A list of equipment including, but not limited to, pumps, prime movers, and standby equipment.
 - d. Detailed description of dewatering, maintenance, and system removal procedures.
 - e. Monitoring plan and details, including, but not limited to, number and locations of observation wells and geotechnical instruments such as settlement markers (reference points on structures; minimum of two per structure) and piezometers (minimum of one per wellpoint) and frequency of reading the monitoring devices.
 - f. Erosion and sedimentation control measures, and methods for disposal of pumped water.
 - g. List of all applicable laws, regulations, rules, and codes to which dewatering design conforms.
 - h. List of assumptions made for design of dewatering and for groundwater recharge systems, including but not limited to groundwater levels, soil profile, permeabilities, and duration of pumping and or recharge.
3. Submit a groundwater sampling plan as required by FDEP for the Mulberry Corporation property to determine if the groundwater is contaminated. Contractor shall provide documentation of FDEP's approval of the Contractor's groundwater sampling plan for the Mulberry Corporation property.

4. For groundwater samples taken on the Mulberry Corporation property, the Contractor shall submit sampling locations, dates, quantities, testing results from a NELAC certified laboratory, and a list of testing parameters that FDEP requires.
5. Submit a dewatering plan and discharge plan for the Mulberry Corporation property if FDEP determines that the groundwater is contaminated and will require special disposal/discharge.
6. Measurement records consisting of observation well groundwater records and the geotechnical instrumentation readings within one day of monitoring.
7. A modified dewatering plan within 24 hours, if open pumping from sumps and ditches results in boils, loss of fines or softening of the ground.

1.04 QUALITY ASSURANCE

- A. Employ the services of a dewatering specialist or firm having the following qualifications:
 1. Have completed at least five (5) successful dewatering projects of equal size and complexity and with equal systems within the last five (5) years.
 2. Retain the services of a Registered Professional Engineer (in the State of Florida) having a minimum of five (5) years experience in the design of well points, deep wells, recharge systems, or equal systems.
 3. Retain the services of a field representative having a minimum of five (5) years experience in installation of well points, deep wells, recharge systems, or equal systems.
- B. If subgrade soils are disturbed or become unstable due to dewatering operation or an inadequate dewatering system, notify the Engineer, stabilize the subgrade, and modify system to perform as specified.
- C. Notify the Engineer immediately if settlement or movement is detected on structures. If the settlement or movement is deemed by the Engineer to be related to the dewatering, take actions to protect the adjacent structures and submit a modified dewatering plan to the Engineer within 24 hours. Implement the modified plan and repair damage incurred to adjacent structures.
- D. Immediately notify the Engineer if oil or other hazardous materials are encountered after dewatering begins.

1.05 HYDRAULIC UPLIFT OF PIPES

- A. The Contractor shall be responsible for the protection of all pipes against hydraulic uplift until such structures have been accepted finally by the Owner.
- B. In this regard, the Contractor is advised that all tanks when completed are designed to resist hydraulic uplift from groundwater up to the elevation indicated on the structural drawings when the structure is completed. The concrete slab bottoms shall be placed in the dry, with the use of wellpoints or other dewatering means to keep the water elevation sufficiently low to carry on the work.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Comply with the requirements specified in Section 01 66 10.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide settlement markers, piezometers and other geotechnical instruments in accordance with the submitted dewatering plan or as specified.
- B. Provide casings, well screens, piping, fittings, pumps, power and other items required for dewatering system.
- C. Provide sand and gravel filter around the well screen. Wrapping geotextile fabric directly around the well screen shall not be allowed.
- D. When deep wells, well points, or vacuum well points are used, provide pumping units capable of maintaining high vacuum and handling large volumes of air and water at the same time.
- E. Provide auxiliary dewatering equipment in the event of breakdown. Equipment shall consist of pumps and hoses and be stored on site. Provide at least 1 pump for every 5 pumps used.
- F. Provide and maintain erosion and sedimentation control devices as indicated or specified and in accordance with the dewatering plan.
- G. Provide temporary pipes, hoses, flumes, or channels for the transport of discharge water to the discharge location.
- H. Provide cement grout having a water cement ratio of 1 to 1 by volume.

2.02 INSTALLATION

- A. Execution of earth excavation, installing earth retention systems, and dewatering shall not commence until the related submittals have been reviewed by the Engineer with all Engineer's comments satisfactorily addressed and the geotechnical instrumentation has been installed.
- B. Provide and maintain dewatering system in accordance with the dewatering plan.
- C. Carry out dewatering program in such a manner as to prevent undermining or disturbing foundations of existing structures or of work ongoing or previously completed.
- D. Do not excavate until the dewatering system is operational.
- E. Unless otherwise specified, continue dewatering uninterrupted until all structures, pipes, and appurtenances below groundwater level have been completed such that they will not be floated or otherwise damaged by an increase in groundwater elevation.
- F. Discontinue open pumping from sumps and ditches when such pumping results in boils, loss of fines, softening of the ground, or instability of the slopes. Modify dewatering plan and submit revised plan to the Engineer for acceptance.

- G. Where subgrade materials are disturbed or become unstable due to dewatering operations, remove and replace the materials in accordance with Section 31 23 00.
- H. Dewatering Discharge:
1. Install sand and gravel filters in conjunction with well points and deep wells to prevent the migration of fines from the existing soil during the dewatering operation.
 2. Transport pumped or drained water to discharge location without interference to other work, damage to pavement, other surfaces, or property.
 3. Provide separately controllable pumping lines.
 4. The Engineer and Owner reserves the right to sample discharge water at any time.
 5. Immediately notify the Engineer if suspected contaminated groundwater is encountered. Do not pump water found to be contaminated with oil or other hazardous material to the discharge locations.
 6. Contaminated groundwater on the Mulberry Corporation property shall be discharged in accordance with FDEP's requirements. Contractor shall coordinate with FDEP to determine proper disposal method and location of any contaminated groundwater encountered on the Mulberry Corporation property.
- I. Monitoring Devices and Records:
1. Install, maintain, monitor and take readings from the observation wells and geotechnical instruments in accordance with the dewatering plan.
 2. Install settlement markers on structures within the zone of influence for dewatering a distance equal to twice the depth of the excavation, from the closest edge of the excavation. Conduct and report settlement surveys to 1/8-inch .
 3. Refer to the Geotechnical Report in Appendix 2 for possible dewatering techniques that may be employed.
- J. Install and maintain erosion/sedimentation control devices at the point of discharge as indicated or specified and in accordance with the dewatering plan.
- K. Removal:
1. Do not remove dewatering system without written acceptance from the Owner's Representative.
 2. Backfill and compact sumps or ditches with screened gravel or crushed stone wrapped with geotextile fabric in accordance with Section 31 23 33.
 3. All dewatering wells shall be abandoned upon completion of the work, and completely backfilled with cement grout.

END OF SECTION

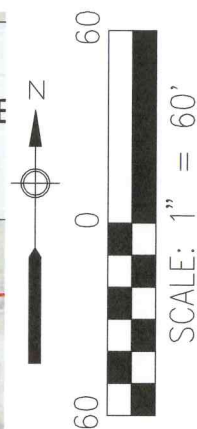
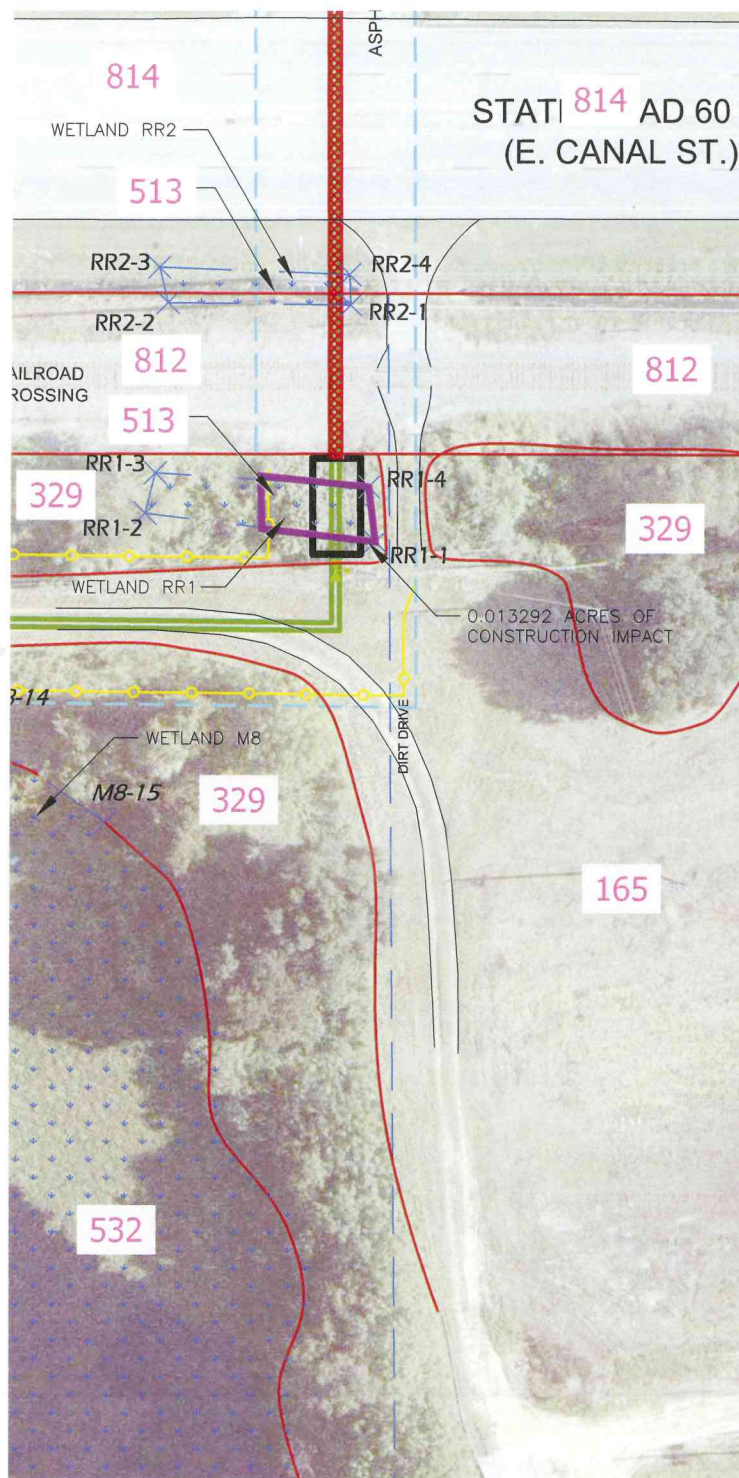
Appendix D

LEGEND

- RECLAIMED WATER MAIN (OPEN CUT)
- CONSTRUCTION AREA
- IMPACTED WETLAND
- PLUG VALVE
- AIR RELEASE
- 48" CASING (JACK & BORE)
- SILT FENCE
- JACKING/RECEIVING PIT
- FLUCFCS LINE
- WETLAND LINE/AREA
- 165 FLUCFCS CODE (SEE SHEET 1)



9/28/2012



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ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
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0	ISSUED FOR PERMITTING	JT	JT	RR	RR	5/1/12

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TAMPA ELECTRIC

BY:	DATE
APVD RR	5/1/12
CHKD RR	5/1/12
DWN JT	5/1/12
DSGN JT	5/1/12

FIGURE_196-208.DWG	60218603
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TAMPA ELECTRIC COMPANY POLK POWER STATION RECLAIMED WATER PIPELINE PROJECT PLAN VIEW POLK COUNTY, FLORIDA	
ENERGY SUPPLY - GENERATION ENGINEERING	
SHEET 203 OF 221	0

Appendix E

Tampa Electric Company
Polk Power Station Reclaimed Water Pipeline Project
Joint Environmental Resource Permit Application



PART 3:	
A. OWNER(S) OF LAND	B. ENTITY TO RECEIVE PERMIT (IF OTHER THAN OWNER)
Name Mr. David Lukcie	Name
Title and Company Manager of Environmental Projects Tampa Electric Company	Title and Company
Address P.O. Box 111	Address
City, State, Zip Tampa, Florida 33601	City, State, Zip
Telephone and Fax Phone: (813) 228-1095 Fax: (813) 228-1308	Telephone and Fax
C. AGENT AUTHORIZED TO SECURE PERMIT	D. CONSULTANT (IF DIFFERENT FROM AGENT)
Name	Name Mr. Anthony N. Arcuri
Title and Company	Title and Company Department Manager of Ecology and Permitting Environmental Consulting & Technology, Inc. (ECT)
Address	Address 1408 North Westshore Boulevard, Suite 115
City, State, Zip	City, State, Zip Tampa, Florida 33607
Telephone and Fax	Telephone and Fax Phone: (813) 289-9338 Fax: (813) 289-9388

PART 4: (Please provide metric equivalent for federally funded projects):

A. Name of Project, including phase if applicable: **Polk Power Station Reclaimed Water Pipeline Project**

B. Is this application for part of a multi-phase project?
☐ yes ☒ no

C. Total applicant-owned area contiguous to the project?
2,837 ac.; 1,148 ha.

D. Total area served by the system: **96.8 ac.; 39.17 ha.**

E. Impervious area for which a permit is sought: **0 ac.; 0 ha. (FDEP)**
0 ac.; 0 ha. (USACE)

F. Volume of water that the system is capable of impounding:
0 ac. ft.; 0 cu. m.

G. What is the total area of work in, on, or over wetlands or other surface waters?
7.047 ac.; 2.852 ha.; 306,967.32 sq. ft.; 28,518.20 sq. m. (FDEP)
7.047 ac.; 2.852 ha.; 306,967.32 sq. ft.; 28,518.20 sq. m. (USACE)

H. Total volume of material to be dredged: **0 cu. yd; 0 cu. m.**

I. Number of new boat slips proposed: **0 wet slips; 0 dry slips**

Tampa Electric Company
 Polk Power Station Reclaimed Water Pipeline Project
 Joint Environmental Resource Permit Application



TABLE 1
Project Impact Summary (FDEP/USACE)

WL & SW ID*	WL & SW TYPE	WL & SW SIZE (ac.) ONSITE	WL & SW AC.R.ES NOT IMPACTED	TEMPORARY IMPACTS TO WL & SW		PERMANENT IMPACTS TO WL & SW		MITIGATION ID **
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
PP1	513	0.014	0	0.014	F	N/A	N/A	Restored onsite
PP2	513/643	0.024	0	0.024	F	N/A	N/A	Restored onsite
PP3	643	0	0	N/A	N/A	N/A	N/A	N/A
PP4	647	0.060	0	0.060	F	0.060	C	PRMB
R1	513	0.027	0	0.027	F	N/A	N/A	Restored onsite
R2	513	0.002	0	0.002	F	N/A	N/A	Restored onsite
R3	513	0	0	N/A	N/A	N/A	N/A	N/A
R4	513	0.087	0	0.087	F	N/A	N/A	Restored onsite
R5	513	0.070	0	0.070	F	N/A	N/A	Restored onsite
R6	513	0.104	0	0.104	F	N/A	N/A	Restored onsite
R7	513	0	0	N/A	N/A	N/A	N/A	N/A
R8	647	0.152	0	0.152	F	0.152	C	PRMB
R9	647	0.197	0	0.197	F	0.197	C	PRMB
R10	513	0.010	0	0.010	F	N/A	N/A	Restored onsite
R11	513	0.006	0	0.006	F	N/A	N/A	Restored onsite
R12	647	0.109	0.109	N/A	N/A	N/A	N/A	N/A
R13	513	0.025	0	0.025	F	N/A	N/A	Restored onsite

Tampa Electric Company
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WL & SW ID*	WL & SW TYPE	WL & SW SIZE (ac.) ONSITE	WL & SW AC.R.ES NOT IMPACTED	TEMPORARY IMPACTS TO WL & SW		PERMANENT IMPACTS TO WL & SW		MITIGATION ID **
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
R14	513	0.094	0	0.094	F	N/A	N/A	Restored onsite
R15	513	0.159	0	0.159	F	N/A	N/A	Restored onsite
R16	513	0.041	0	0.041	F	N/A	N/A	Restored onsite
R17	513	0.128	0	0.128	F	N/A	N/A	Restored onsite
R18	513	0.057	0	0.057	F	N/A	N/A	Restored onsite
R19	513	0.039	0	0.039	F	N/A	N/A	Restored onsite
R20	513	0.001	0	0.001	F	N/A	N/A	Restored onsite
R21	513	0.026	0	0.026	F	N/A	N/A	Restored onsite
R22	513	0.029	0	0.029	F	N/A	N/A	Restored onsite
R23	513	0.013	0	0.013	F	N/A	N/A	Restored onsite
R24	513	0.002	0	0.002	F	N/A	N/A	Restored onsite
R25	513	0.006	0	0.006	F	N/A	N/A	Restored onsite
R26	513	0.072	0	0.072	F	N/A	N/A	Restored onsite
R27	513	0.091	0	0.091	F	N/A	N/A	Restored onsite
R28	513	0.051	0	0.051	F	N/A	N/A	Restored onsite
R29	513	0.117	0	0.117	F	N/A	N/A	Restored onsite
R30	513	0.743	0	0.743	F	N/A	N/A	Restored onsite
R31	513	0.057	0	0.057	F	N/A	N/A	Restored onsite

Tampa Electric Company
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WL & SW ID*	WL & SW TYPE	WL & SW SIZE (ac.) ONSITE	WL & SW AC.R.ES NOT IMPACTED	TEMPORARY IMPACTS TO WL & SW		PERMANENT IMPACTS TO WL & SW		MITIGATION ID **
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
R32	513	0.017	0	0.017	F	N/A	N/A	Restored onsite
R33	513	0.016	0	0.016	F	N/A	N/A	Restored onsite
R34	513	0.011	0	0.011	F	N/A	N/A	Restored onsite
R35	617	0.206	0	0.206	F	0.206	C	PRMB
R36	513	0.007	0	0.007	F	N/A	N/A	Restored onsite
R37	513	0.023	0	0.023	F	N/A	N/A	Restored onsite
R38	513	0.481	0	0.481	F	N/A	N/A	Restored onsite
R39	513	0.147	0	0.147	F	N/A	N/A	Restored onsite
R40	513	0.129	0	0.129	F	N/A	N/A	Restored onsite
R41	513	0.055	0	0.055	F	N/A	N/A	Restored onsite
R42	513	0.036	0	0.036	F	N/A	N/A	Restored onsite
R43	513	0.027	0	0.027	F	N/A	N/A	Restored onsite
W1	617	1.848	0	1.848	F	1.848	C	PRMB
W2	647	0	0	N/A	N/A	N/A	N/A	N/A
W3	647	0.102	0	0.102	F	0.102	C	PRMB
M1	617/641	1.425	1.425	N/A	N/A	N/A	N/A	N/A
M2	513	0.025	0	0.025	F	N/A	N/A	Restored onsite
M3	513	0.712	0	0.712	F	N/A	N/A	Restored onsite

Tampa Electric Company
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WL & SW ID*	WL & SW TYPE	WL & SW SIZE (ac.) ONSITE	WL & SW AC.R.ES NOT IMPACTED	TEMPORARY IMPACTS TO WL & SW		PERMANENT IMPACTS TO WL & SW		MITIGATION ID **
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
M4	532/647	0.125	0	0.125	F	0.125	C	PRMB
M5	532/647	0.076	0	0.076	F	0.076	C	PRMB
M6	534	0.017	0	0.017	F	N/A	N/A	Restored onsite
M7	534/647	0.034	0	0.034	F	0.034	C	PRMB
M8	532/647	0.016	0	0.016	F	0.016	C	PRMB
RR1	513	0.014	0	0.014	F	N/A	N/A	Restored onsite
RR2	513	0.023	0.023	N/A.	F	N/A	N/A	Restored onsite
S1	513	0.005	0	0.005	F	N/A	N/A	Restored onsite
S2	513	0.175	0	0.175	F	N/A	N/A	Restored onsite
S3	513	0.062	0	0.062	F	N/A	N/A	Restored onsite
S4	513	0.004	0	0.004	F	N/A	N/A	Restored onsite
S5	513	0.015	0	0.015	F	N/A	N/A	Restored onsite
S6	513	0.023	0	0.023	F	N/A	N/A	Restored onsite
S7	513	0.065	0	0.065	F	N/A	N/A	Restored onsite
L1	513	0.041	0	0.041	F	N/A	N/A	Restored onsite
L2	643	0.029	0	0.029	F	N/A	N/A	Restored onsite
TOTALS		8.604	1.557	7.047		2.816		

WL = Wetland; SW = Surface water; ID = Identification number, letter, etc.

Wetland Type: Use an established wetland classification system and, in the comments section below, indicate which classification system is being used.

Tampa Electric Company
Polk Power Station Reclaimed Water Pipeline Project
Joint Environmental Resource Permit Application



Impact Code (Type): D = dredge; F = fill; H = change hydrology; S = shading; C = clearing; O = other. Indicate the final impact if more than one impact type is proposed in a given area. For example, show F only for an area that will first be de-mucked and then backfilled.

Note: Multiple entries per cell are not allowed, except in the "Mitigation ID" column. Any given acreage of wetland should be listed in one row only, such that the total of all rows equals the project total for a given category (column). For example, if Wetland No. 1 includes multiple wetland types and multiple impact codes are proposed in each type, then each proposed impact in each wetland type should be shown on a separate row, while the size of each wetland type found in Wetland No. 1 should be listed in only one row.

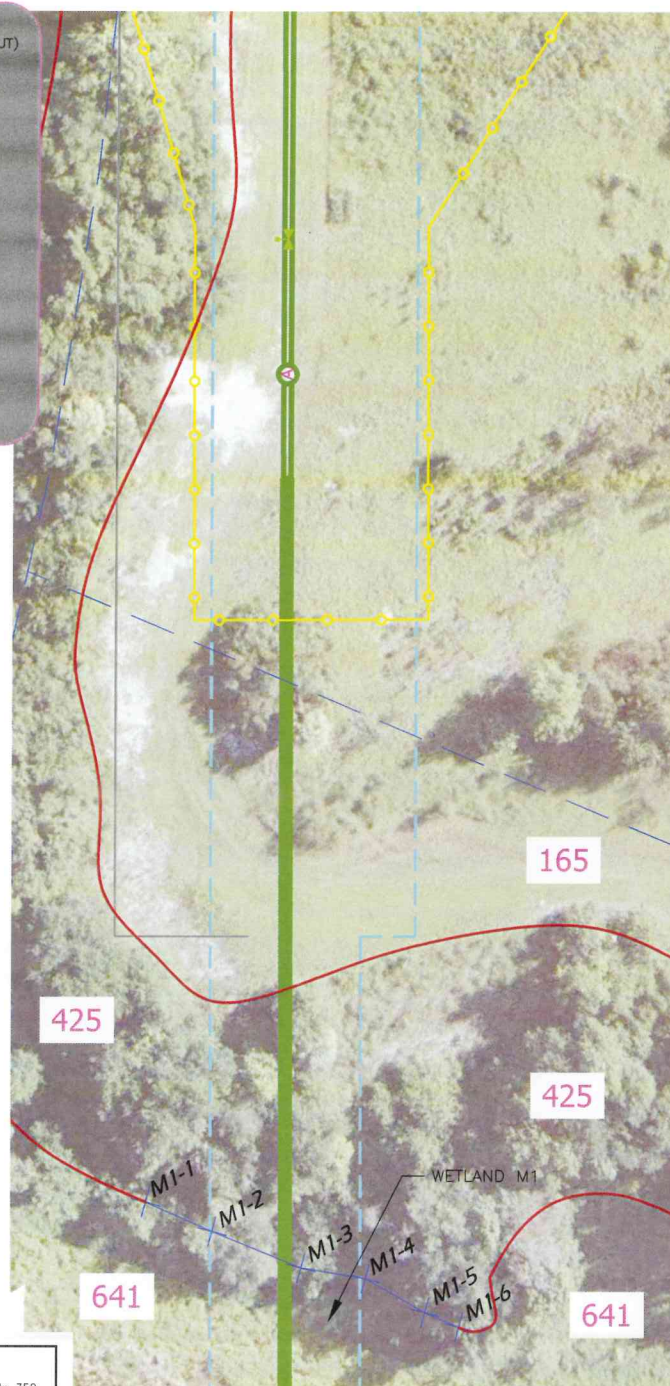
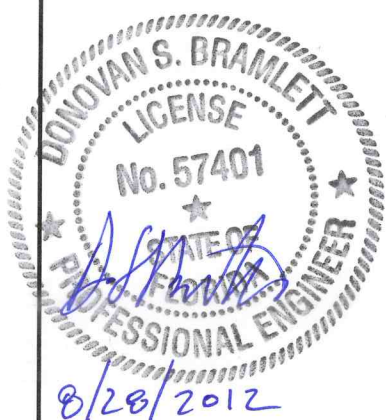
Comments: ** All impacts to man-made upland cut ditches, storm water and reclaimed mine ponds, graded slopes, and reclaimed/remnant wetlands will be mitigated by restoration onsite; long-term clearing/maintenance impacts to shrubby and forested wetlands will be provided additional mitigation through the purchase of mitigation credits from the Peace River Mitigation Bank (PRMB) (see Table 3). Since the jurisdictional area impacted will be the same area restored at each affected locale, the information provided in Table 1 is considered adequate and therefore, Table 2 was not completed. Wetlands PP3, R3, R7, and W2 did not occur within the project limits, but are present in proximity outside of the project limits.

Appendix F

LEGEND

- RECLAIMED WATER MAIN (OPEN CUT)
- CONSTRUCTION AREA
- HORIZONTAL DIRECTIONAL DRILL
- PLUG VALVE
- AIR RELEASE
- 48" CASING (JACK & BORE)
- SILT FENCE
- JACKING/RECEIVING PIT
- FLUCFCS LINE
- WETLAND LINE/AREA

165 FLUCFCS CODE (SEE SHEET 1)



AECOM

AECOM Technical Services, Inc.
10210 Highland Manor Drive, Suite 350
Tampa, Florida 33610
T 813.630.2500 F 813.621.2300
FL Engineering Business No. EB-38
www.aecom.com

FIGURE_181-195.DWG

60218603

FILE NAME

PROJECT NUMBER

TAMPA ELECTRIC COMPANY POLK POWER
STATION RECLAIMED WATER PIPELINE PROJECT
PLAN VIEW
POLK COUNTY, FLORIDA

ENERGY SUPPLY - GENERATION ENGINEERING

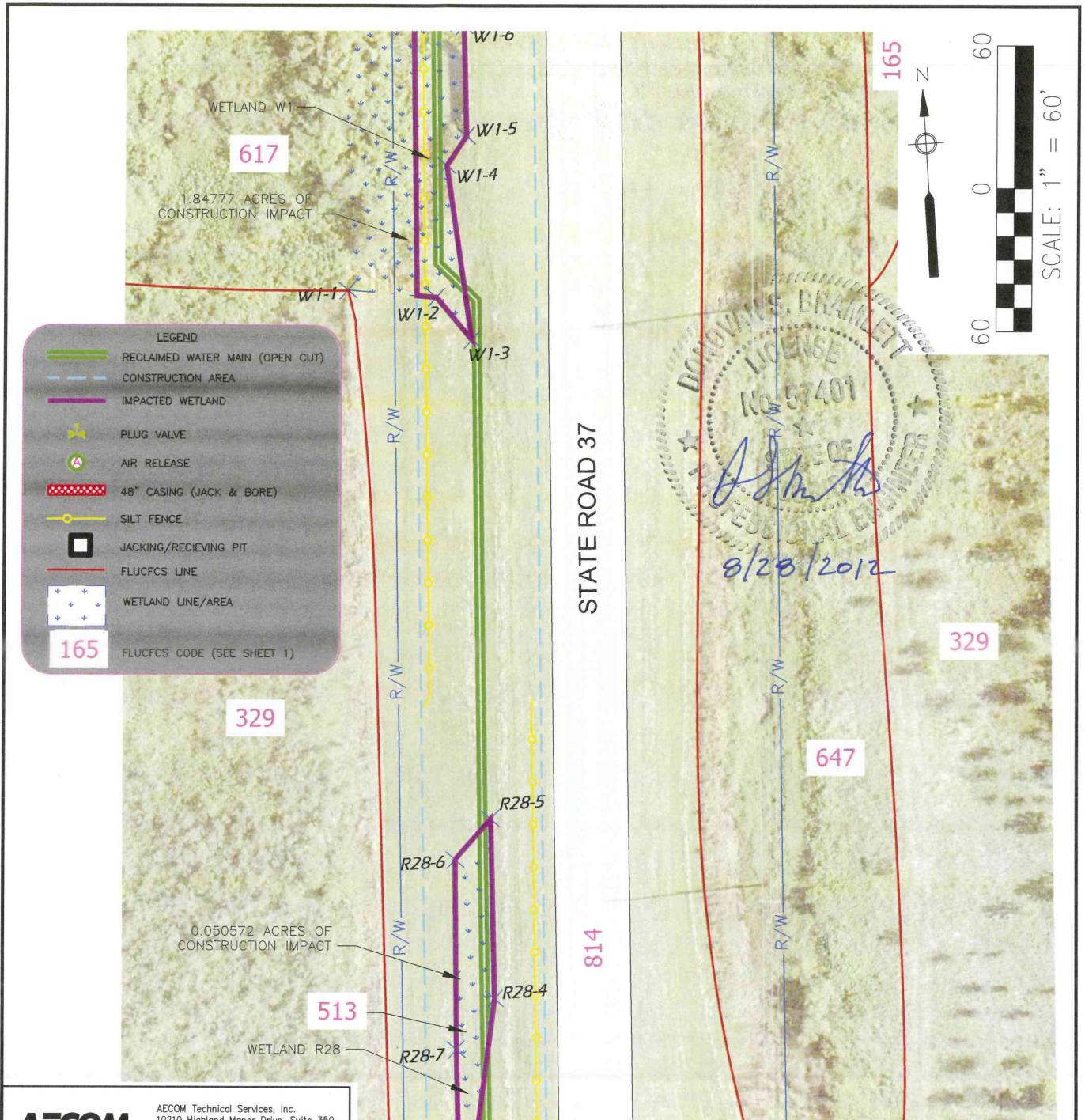
SHEET 189 OF 221

0

1	REVISED PER RAI No. 1	JA	JA	DB	DB	8/28/12
0	ISSUED FOR PERMITTING	JT	JT	RR	RR	5/1/12
ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
				BY:	DATE	
			APVD	RR	5/1/12	
			CHKD	RR	5/1/12	
			DWN	JT	5/1/12	
			DSGN	JT	5/1/12	

TECO
TAMPA ELECTRIC

Appendix G



AECOM

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FL Engineering Business No. EB-38
www.aecom.com

1	REVISED PER RAI No. 1	JA	JA	DB	DB	8/28/12
0	ISSUED FOR PERMITTING	JT	JT	RR	RR	5/1/12
ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
				BY:	DATE	
			APVD	RR	5/1/12	
			CHKD	RR	5/1/12	
			DWN	JT	5/1/12	
			DSGN	JT	5/1/12	

TECO
TAMPA ELECTRIC

FIGURE_94-106.DWG	60218603
FILE NAME	PROJECT NUMBER
TAMPA ELECTRIC COMPANY POLK POWER STATION RECLAIMED WATER PIPELINE PROJECT PLAN VIEW POLK COUNTY, FLORIDA	
ENERGY SUPPLY - GENERATION ENGINEERING	
SHEET 104 OF 221	0

LEGEND

- RECLAIMED WATER MAIN (OPEN CUT)
- CONSTRUCTION AREA
- IMPACTED WETLAND
- PLUG VALVE
- AIR RELEASE
- 48" CASING (JACK & BORE)
- SILT FENCE
- JACKING/RECEIVING PIT
- FLUCFCS LINE
- WETLAND LINE/AREA

165 FLUCFCS CODE (SEE SHEET 1)

617

WETLAND W1
1.84777 ACRES OF
CONSTRUCTION IMPACT

W1-8

W1-7

STATE ROAD 37

814

647

165

641



SCALE: 1" = 60'



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FL Engineering Business No. EB-38
www.aecom.com

FIGURE_107-121.DWG

60218603

FILE NAME

PROJECT NUMBER

TAMPA ELECTRIC COMPANY POLK POWER
STATION RECLAIMED WATER PIPELINE PROJECT
PLAN VIEW
POLK COUNTY, FLORIDA

ENERGY SUPPLY - GENERATION ENGINEERING

SHEET 107 OF 221

0

TECO
TAMPA ELECTRIC

1	REVISED PER RAI No. 1	JA	JA	DB	DB	8/28/12
0	ISSUED FOR PERMITTING	JT	JT	RR	RR	5/1/12
ISSUE	DESCRIPTION	DSGN	DWN	CHKD	APVD	DATE
				BY:		DATE
				APVD	RR	5/1/12
				CHKD	RR	5/1/12
				DWN	JT	5/1/12
				DSGN	JT	5/1/12

Appendix H

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name TEC PPS Reclaimed Water Pipeline Project		Application Number	Assessment Area Name or Number W1
FLUCCs code 617	Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site? Impact
Assessment Area Size 1.848 Acres			
Basin/Watershed Name/Number Alafia River	Affected Waterbody (Class) Class III	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Area drains via three large culverts under State Road 37.			
Assessment area description Historically, mining occurred completely around this large mixed hardwood swamp which is now reclaimed. Due to past and ongoing disturbances, this system is vegetated by Peruvian primrosewillow, dog fennel and other invasive species.			
Significant nearby features State Road 37		Uniqueness (considering the relative rarity in relation to the regional landscape.) None	
Functions BIOLOGICAL: Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macroinvertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. PHYSICAL/CHEMICAL: Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.		Mitigation for previous permit/other historic use No / Mining	
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Mammals: opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat, black bear; Birds: downy, hairy & pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Florida black bear (T, foraging, incidental), Florida panther (E, hunting, incidental), bald eagle (T, roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal)	
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Warblers, leopard frogs, and small game trails.			
Additional relevant factors: None.			
Assessment conducted by: Bryan Delius		Assessment date(s): 30-Nov-11	

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name TEC PPS Reclaimed Water Pipeline Project	Application Number	Assessment Area Name or Number W1
Impact or Mitigation Impact	Assessment conducted by: B. Delius	Assessment date: November 30, 2011

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current with 6 6	Area is surrounded by reclaimed land planted with oaks and pines, however, there is also a considerable ground cover of cogon grass. Major highway located along east side. However, the swamp is of considerable size and considered to be important wildlife habitat in the area.
.500(6)(b) Water Environment (n/a for uplands) w/o pres or current with 5 5	Area receives runoff from surrounding reclaimed land and highway. Hydrology supports existing community, but upland plants such as caesarsweed and dog fennel present. Trees appear to be stressed and many have split or scarred bark on trunks. System connects to other wetlands via culvert. Heavy amount of iron present in water. A narrow ditch occurs along the entire length of the system along State Road 37.
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 6 3	Area is a mixed hardwood swamp with gaps in the canopy; relatively young trees. Heavy vine cover and numerous nuisance species have recruited into the canopy gaps. Historically, mining occurred completely around this large mixed hardwood swamp which is now reclaimed. Due to past and ongoing disturbances, this system is vegetated by Peruvian primrosewillow, dog fennel and other invasive species.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.57	0.47

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas
FL = delta x acres = -0.10 x 1.848 = -0.185

Delta = [with-current]
-0.1

If mitigation
Time lag (t-factor) = N/A
Risk factor = N/A

For mitigation assessment areas
RFG = delta/(t-factor x risk) = N/A

Appendix I

August 16, 2012

Anthony N. Arcuri, M.A.
Ecology Department Manager
Principal Ecologist
Environmental Consulting & Technology, Inc.
1408 N. Westshore Blvd., Suite 115
Tampa, Florida 33607



Re: Use of Peace River Mitigation Bank Credits to Mitigate Wetland Impacts on Tampa Electric Company (TEC) Polk Power Station (PPS) Reclaimed Water Pipeline Project

Dear Tony:

This letter is prepared in response to your request for information regarding the appropriateness of the use of freshwater forested credits from the Peace River Mitigation Bank (PRMB) as compensation for impacts associated with the TEC PPS Reclaimed Water Pipeline Project (Project). As consultants and managers for the PRMB, EarthBalance® staff is intimately familiar with the habitats and their functions and values. We prepared the state and federal mitigation bank applications wherein we described and justified the UMAM values. We have also been actively restoring and managing the site for over five years and have spent thousands of man hours on site.

The wetland impact areas described in the UMAM datasheets for the project are generally low-quality roadside wetlands that are maintained by mowing, dominated by nuisance and exotic vegetation, and drained by roadside ditches. Conversely, the PRMB wetlands are well-located within the Peace River floodplain corridor, are managed with only minimal amounts of undesirable vegetation, and exhibit natural hydrology. Because the PRMB site is located in a natural corridor with sufficient upland buffering, it has the potential to provide support to the full suite of wetland dependent species from large to small and in all guilds. In addition, the PRMB exhibits natural hydrology and native vegetation and it provides functions to all of those species at the highest level. Because the two sites are comprised of very similar forested habitat, perform similar functions as identified in their respective Part 1 UMAM forms, and because the PRMB provides a similar or higher quality wetland resource, the use of forested freshwater credits from the PRMB adequately offsets the impacts to similar degraded habitat at the project site. The following sections describe the habitat and the associated functions at the PRMB.

PRMB Description

The PRMB site is comprised primarily of highly diverse mixed hardwood habitat with over 2.5 miles of riverfront along both banks of the Peace River. Approximately 369 acres of the site are floodplain wetlands that have been affected by frequent flooding and moving water, which has resulted in numerous ephemeral streams, deep river oxbows, ridges, and deeply scoured depressions. Resulting diverse habitats include deep popash depressions, cypress-lined creeks and oxbows, and slight ridges dominated by cabbage palms and oaks all in a diverse floodplain comprised of water hickory, cabbage palm, laurel oak, red maple, elm, sweetgum, water oak, and live oak. An additional 118 acres of upland habitat provide excellent buffering and support for wetland functions. Uplands are comprised of mesic

oak/cabbage hammock habitat in lower elevations and sandy xeric ridges that support gopher tortoises in the highest elevations.

The 487.3 acres of native upland and wetland communities adjacent to the Peace River provide valuable water quality, quantity, and wildlife habitat benefits to the regional Peace River watershed. The site's proximity to the river links it to a regional aquatic/terrestrial wildlife corridor and allows it to provide significant storage capacity when the Peace River cycles through flood level staging events. The vegetation on site filters floodwaters and prevents unnatural erosion of the river banks. The wetlands provide a buffer between nearby developed areas and the river, allowing conversion and dilution of nutrients and pollutants before entering the river.

At times, the site is nearly dry, with only sporadic popash ponds, oxbows, and narrow cypress-lined streams holding water. During the rainy season, most of the wetlands on site will flood in response to storm events. This fluctuation creates opportunities for wildlife and flushes detritus into the river, feeding the downstream estuary. The fluctuating hydrology of the site, in combination with undulating topography, provides a multitude of niche habitats that serve the full range of species from fish to large terrestrial species. The river corridor provides excellent connectivity to additional habitats up and down stream, allowing the transfer of genetic material to sustain healthy wildlife populations.

The varied topography within these expansive riverine forested wetlands creates a variety of micro-habitats including cypress strands, bay swamps, and bottomland hardwood forests. However, the most accurate general description of the area is a mixed hardwood forest dominated by a canopy of wetland hardwood species including: bald cypress (*Taxodium distichum*), pond cypress (*Taxodium ascendens*), sweetbay (*Magnolia virginiana*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), cabbage palm (*Sabal palmetto*), laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), live oak (*Quercus virginiana*), and Carolina willow (*Salix caroliniana*). The understory is sparse but contains a variety of herbaceous and shrubby species, including: netted chain fern (*Woodwardia areolata*), cinnamon fern (*Osmunda cinnamomea*), lizard's tail (*Saururus cernuus*), sour paspalum (*Paspalum conjugatum*), saw palmetto (*Serenoa repens*), dwarf palmetto (*Sabal minor*), wax myrtle (*Myrica cerifera*), buttonbush (*Cephalanthus occidentalis*), and elderberry (*Sambucus nigra*).

PRMB Wetland Functions and Values

The PRMB provides diverse wildlife habitat, water storage and treatment, detrital export, and flow modulation to downstream waters. The PRMB's location and diverse habitat support a variety of bird species including turkey, wood storks and other wading birds, vultures, cormorant, anhinga, crows, hawks and other raptors, songbirds, coots and gallinules, owls, and various duck species. Supported mammals include white-tailed deer, bobcat, black bear, raccoon, gray and flying squirrels, opossum, otter, and fox. A variety of frogs, snakes, turtles, and forage species such as fish, crayfish, and insects are all abundant in the deeper aquatic resources and creeks. Alligators are common in the oxbows, creeks, and river banks. All species except the black bear are seen commonly at the PRMB.

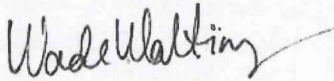
Specifically, the mixed hardwood forest provides nesting, denning, and feeding opportunities for the species listed above. Permanent water sources including deep oxbows, perennial creeks (Thompson Branch), and the Peace River provide permanent aquatic refugia in the dry season. The location of the PRMB along a major riverine wildlife corridor ensures that gene flow among resident and transient wildlife species remains high. Diverse buffering uplands provide dry resting and denning areas as well as diverse food sources to the wildlife using the site.

The wetland habitats and associated functions at both the impact and PRMB site appear to be very similar. Habitats are comprised of similar native vegetative species and similar wildlife are supported by these habitats. The attached Part 1 datasheet for the PRMB from the issued ERP is provided for comparison to the impact sites.

Therefore, as stated previously and based upon the analysis of both impact site wetlands and the wetland habitats associated with PRMB credits, the freshwater forested credits at the PRMB are appropriate to be used as mitigation to offset the mixed hardwood and shrubby wetland systems located along the project corridor.

If you have any questions at all, please feel free to call me.

Sincerely

A handwritten signature in dark ink, reading "Wade Waltemyer". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Wade Waltemyer, PMP
President

Attachment

UNIFORM MITIGATION ASSESSMENT WORKSHEET – PART I
Form 62-345.900(i), F.A.C. (See Section 62-345.400, F.A.C.)

Site/Project Names Peace River Mitigation Bank	Application Number	Assessment Area Name or Number AA 1 and 2 (All wetland habitats on site)	
FLUCCS Code 617	Further classification (optional)	Impact or Mitigation Site? Mitigation	Assessment Area Size Approximately 369.1 acres

Basin/Watershed Name/Number Peace River	Affected Waterbody (Class) Class III	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) NA
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Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetlands directly connected to Peace River. Floodplain swamp with numerous deep pools, bogs, streams, undulating topography. Two tributaries join the river through the site. Uplands exist along edge of floodplain and as islands within the floodplain. Peace River is primary focal point of the basin.

Assessment area description

AA 1 is floodplain hardwood swamp in more remote, southern portion of site. AA 2 supports similar habitat, but is adjacent to and closely associated with upland habitats in NW and SE portions of site. AA 4 is outer 100' buffer edge of bank, more susceptible to human disturbance. The varied topography within these riverine, forested wetlands creates a variety of microhabitats including: cypress bogs, bay swamps, and bottomland hardwood forests. However, the most accurate description of the area is a mixed hardwood forest dominated by a canopy of wetland hardwood species including: bald cypress (*Taxodium distichum*), pond cypress (*Taxodium ascendens*), sweetbay (*Magnolia virginiana*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), cabbage palm (*Sabal palmetto*), water oak (*Quercus nigra*), laurel oak (*Q. laurifolia*), live oak (*Q. virginiana*), and Carolina willow (*Salix caroliniana*). The understory is sparse but contains a variety of herbaceous and shrubby species, including: netted chain fern (*Woodwardia areolata*), cinnamon fern (*Osmunda cinnamomea*), lizard's tail (*Saururus cernuus*), hatpin (*Eriocaulon* spp.), yellow-eyed grass (*Xyris* spp.), saw palmetto (*Serenoa repens*), cabbage palm seedlings, wax myrtle (*Myrica cerifera*), and elderberry (*Sambucus nigra*).

Significant nearby features

Site is adjacent to Peace River, and part of large river corridor targeted for acquisition by SWFWMD. Hardee County School Board owns 96-acre parcel used for environmental education adjacent to the site on the east bank of the Peace River. City of Wauchula owns a 46-acre parcel between western boundary of site and US17. Approximately 40 acres of site contains wetlands that buffer the bank site. Hardee BOCC owns a 96-acre park just upstream from site containing large amount of wetland habitat.

Uniqueness (considering the relative rarity in relation to the regional landscape)

The Peace River is the focal wetland resource of the basin. The site is part of the unique bottomland river corridor along the only major river in the basin. Another unique feature is the relatively high amount (24%) of upland habitat on site that provides nesting, denning, and food sources to wetland dependant species using the corridor. The ridge near the river is high and dry enough to support gopher tortoises.

Functions

Feeding habitat for wading birds, songbirds, raptors, small to large mammals, reptiles, amphibians; potential nesting habitat for variety of bird species, alligators, snakes; denning and feeding opportunities for small to large mammals; corridor for terrestrial species. Provides critical detrital export to downstream estuary. Stores floodwaters during storm events, provides water quality treatment.

Mitigation for previous permit/other historic use
NA

Anticipated Wildlife utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)

Variety of wading birds such as white ibis, great egret, wood stork, snowy egret, tri colored heron, green heron, etc., wood ducks, limpkin, songbirds, woodpeckers, turkey, owls, raptors including a variety of hawks. Small to large mammals such as raccoon, opossum, bobcat, fox, gray and fox squirrels, otter, white-tailed deer, Florida black bear. Reptiles including cottonmouth, water snakes, box turtle, aquatic turtles; variety of frogs (leopard, bull, pig, etc.); food base organisms such as macroinvertebrates, forage fishes.

Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)

Birds: feeding, nesting: little blue heron (SSC), white ibis (SSC), wood stork (E), snowy egret (SSC), tri-colored heron (SSC), bald eagle (T), southeastern American kestrel(T)

Mammals: feeding, denning: round-tailed muskrat (T), Sherman's fox squirrel (SSC), Florida black bear (T)

Reptiles: feeding, nesting: alligator (SSC), eastern indigo snake (T)

Amphibians: feeding, breeding: gopher frog (SSC)

Observed Evidence of Wildlife Utilization (Listed species directly observed, or other signs such as tracks, droppings, casings, nests, etc.)

Great blue heron, white ibis, glossy ibis, red-bellied woodpecker, kingfisher, songbirds, red-shouldered hawk, alligator, barred owl, wild hog, variety of frogs, black racer, turtles, armadillo, raccoon, crayfish, forage fishes.

Additional relevant factors:

Assessment conducted by:

Wade Waltmyer, McLane Evans, Senior Biologists, EarthBalance

Assessment date(s):

October 26, 2005

UNIFORM MITIGATION ASSESSMENT WORKSHEET – PART I
Form 62-345.900(i), F.A.C. (See Section 62-345.400, F.A.C.)

Site/Project Names Peace River Mitigation Bank	Application Number	Assessment Area Name or Number AA. 3 and 4 (All upland habitats on site)	
FLUCCS Code 434	Further classification (optional)	Impact or Mitigation Site? Mitigation	Assessment Area Size Approximately 118.3 acres

Basin/Watershed Name/Number Peace River	Affected Waterbody (Class) Class III	Special Classification (i.a. OFW, AP, other local/state/federal designation of importance) NA
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Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Uplands exist along edge of floodplain and as islands within the floodplain. Floodplain swamp with numerous deep pools, bogs, streams, and undulating topography is directly connected to Peace River. Two tributaries join the river through the site. Major floodplain corridor exists along Peace River.

Assessment area description

AA 3 is comprised of interior uplands, while AA 4 is the exterior upland habitat contiguous with off site uplands. Uplands are dominated by a saw palmetto understory and a relatively open canopy stratum dominate the vegetation composition in these areas. Where present, the canopy is dominated by a mix of slash pine (*Pinus elliottii*), sweetgum, a variety of oak species (*Quercus spp.*) and cabbage palm. The overstory appears to have been cleared based on historical aerial reviews, and the tree canopy is generally young and mixed. Most of the upland areas on this site have moderate to significant vine coverage. Vine species present include grapevine (*Vitis spp.*), blackberry (*Rubus spp.*), poison ivy (*Toxicodendron radicans*) Virginia creeper (*Parthenocissus quinquefolia*), and greenbrier (*Smilax spp.*). Other species frequently present in the upland herbaceous stratum include dogfennel (*Eupatorium capillifolium*), ragweed (*Ambrosia artemisifolia*), winged sumac (*Rhus copallinum*), and saltbush (*Baccharis halimifolia*).

Significant nearby features

Site is adjacent to Peace River, and part of large river corridor targeted for acquisition by SWFWMD. Hardee County School Board owns 96-acre parcel used for environmental education adjacent to the site on the east bank of the Peace River. City of Wauchula owns a 46-acre parcel between western boundary of site and US17. Approximately 40 acres of site contains wetlands that buffer the bank site. Hardee BOCC owns a 96-acre park just downstream from site containing large amount of wetland habitat.

Uniqueness (considering the relative rarity in relation to the regional landscape)

The Peace River is the focal wetland resource of the basin. The site is part of the unique bottomland river corridor along the only major river in the basin. Another unique feature is the relatively high amount (25%) of upland habitat on site that provides nesting, denning, and food sources to wetland dependant species using the corridor. The ridge near the river is high and dry enough to support gopher tortoises.

Functions

Feeding habitat for, songbirds, raptors, owls, turkey, small to large mammals, reptiles, amphibians; potential nesting habitat for variety of bird species, alligators, snakes; denning and feeding opportunities for small to large mammals; dry resting place in corridor for variety of wildlife species, particularly during high stages.

Mitigation for previous permit/other historic use
NA

Anticipated Wildlife utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)

Variety of birds including songbirds, woodpeckers, turkey, owls, raptors including a variety of hawks. Small to large mammals such as raccoon, opossum, bobcat, fox, gray and fox squirrels, otter, white-tailed deer, Florida black bear. Reptiles including cottonmouth, Eastern indigo snake, water snakes, box turtle, aquatic turtles; variety of frogs (leopard, bull, pig, etc.).

Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)

Birds: feeding, nesting: bald eagle (T), southeastern American kestrel(T)

Mammals: feeding, denning: Sherman's fox squirrel (SSC), Florida black bear (T)

Reptiles: feeding, nesting: alligator (SSC), gopher tortoise (SSC), Eastern indigo snake (T)

Amphibians: feeding, breeding: gopher frog (SSC)

Observed Evidence of Wildlife Utilization (Listed species directly observed, or other signs such as tracks, droppings, casings, nests, etc.)
Wild hog, frogs, songbirds, woodpeckers, red-shouldered hawk, barred owl, armadillo, raccoon, black racer, gopher tortoise.

Additional relevant factors:

Assessment conducted by:

Wade Waltmyer, McLane Evans, Senior Biologists, EarthBalance

Assessment date(s):

October 26, 2005