ORIGINAL

BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION

DOCKET NO. 070098-EI
FLORIDA POWER & LIGHT COMPANY

IN RE: FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR FPL GLADES POWER PARK UNITS 1 AND 2 ELECTRICAL POWER PLANT

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DIRECT TESTIMONY & EXHIBIT OF:

JOSE COTO

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF JOSE COTO

DOCKET NO. 07_____-EI

JANUARY 29, 2007

Q. Please state your name and business address.

A. My name is Jose Coto. My business address is Florida Power and Light Company, Power System Engineering Division, 700 Universe Boulevard, Juno Beach, Florida 33408.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company (FPL) as Transmission Engineering Manager in the Transmission Group.

Q. Please describe your duties and responsibilities in that position.

A. I am responsible for the oversight of transmission engineers in the group in the performance of their duties associated with transmission system expansion projects which include:

- Support of transmission line route selection;
- Preparation of permit and license applications;
- Structure layout;
- Application of Standards;
- Preparation of Bill of Materials;

- Preparation of plans and specifications for right-of way preparation and line construction; and
- Preparation of cost estimates and project schedules.

In addition, I am also responsible for reviewing the feasibility of proposed transmission system expansion projects and associated costs of these expansions.

Q. Please describe your educational background and professional experience.

A. I obtained a Bachelor of Science Degree in Electrical Engineering from the University of Miami in December 1979. I am a registered Professional Engineer in the State of Florida and a member of the Institute of Electrical & Electronics Engineers (IEEE).

Since joining FPL in 1978, I have held various positions of increasing responsibility within Power Delivery, either in the Transmission or Substation Areas. From 1979 to 1985, I was a transmission line engineer. During this time, I engineered transmission line projects ranging in voltage from 69kV up to 500 kV. From 1985 to 1999, I held various supervisory positions in the Transmission Lines Group and the Transmission Substation Group. In 1999, I became Project Manager in the Transmission Projects Group responsible for the central area of FPL's service territory. As Project Manager, I was responsible

for the oversight of both transmission and substation projects. In March of 2006, I assumed my current position of Transmission Engineering Manager.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring an exhibit consisting of 7 documents attached to my direct testimony. Those 7 documents are:

- Document No. JC-1 Cross Sectional View of 350 Feet Right-of-Way
- Document No. JC-2 Cross Sectional View of 494 Feet Right-of-Way
- Document No. JC-3 Cross Sectional View of 330 Feet Right-of-Way
- Document No. JC-4 Cross Sectional View of 660 Feet Right-of-Way
- Document No. JC-5 One Line Diagram for FGPP
- Document No. JC-6 Geographical Map Showing the Locations of FGPP and the Transmission Line Corridors Associated with the Project
- Document No. JC-7 Summary of Required Transmission Facilities, Cost and Schedule for the Fuel Diversity Expansion Plan with Coal

Q. Are you sponsoring any sections in the Need Study document?

Yes. I sponsor Section III. D. 2. Transmission Facilities – Cost, Construction and Schedule. In addition, I sponsor Appendix I and co-sponsor Appendix O of the Need Study document.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the physical characteristics of the transmission facilities required to interconnect and integrate, into the transmission system, the two coal units at FPL's Glades Power Park (FGPP) and other non-coal units contained in the 2012-2016 generation plan

associated with FPL's Fuel Diversity Expansion Plan with Coal. Additionally, I discuss permitting requirements, engineering, construction, schedule and estimated costs associated with these transmission facilities.

Secondly, I will also provide an overview of the facilities required to interconnect and integrate the Expansion Plan without Coal into the transmission system.

The technical requirements of the facilities needed to interconnect and integrate the Fuel Diversity Expansion Plan with Coal and the Expansion Plan without Coal into FPL's transmission system were developed by and provided to me by Mr. Sanchez.

DESCRIPTION OF TRANSMISSION FACILITIES REQUIRED FOR THE FUEL DIVERSITY EXPANSION PLAN WITH COAL

Q. Please describe the transmission facilities required for the Fuel Diversity Expansion Plan with Coal.

A. The transmission facilities associated with the Fuel Diversity Expansion Plan with Coal are described below:

1. The connection of FGPP 1 and 2 Generator Step Up (GSU) transformers to the FGPP switchyard, and attendant bus equipment; (TF-1)
2. The FGPP switchyard; (TF-2)

3. The Hendry 500/230 kV Substation; (TF-3)
4. The two 500 kV transmission lines from the FGPP switchyard to the Hendry Substation; (TF-4)
5. The looping in of the Andytown to Orange River 500 kV and the Alva to Corbett 230 kV transmission lines into the Hendry substation; (TF-5)
6. A new 500 kV transmission circuit from the Hendry to Levee substations. This transmission line will be constructed between Hendry and Andytown substations and connected to an Andytown to Levee 500 kV line resulting in a Hendry to Levee 500 kV transmission line; (TF-6)
7. The connection of South Florida CC unit GSU transformers to the collector yard, including attendant bus equipment, the collector yard, and the string buses from the collector yard to the South Florida 230 kV substation; (TF-7)
8. The South Florida 230 kV substation; (TF-8)
9. The re-route of the Corbett-Green and the Corbett-Germantown 230 kV lines from Corbett substation to South Florida substation; (TF-9) and
10. The circuit breaker and overhead ground wire upgrades required. (TF-10)

Q. Please describe the physical characteristics of the facilities that connect FGPP 1 and FGPP 2 GSU transformers to the FGPP switchyard, and attendant bus equipment. (TF-1)

A. The GSU transformers are located in close proximity to the generator. The GSU transforms the output from the generator from a lower voltage to a higher voltage so that the power can be transmitted to the load. From the high

voltage side of the GSU transformers string buses will extend and connect to the FGPP switchyard.

Q. Please describe the physical characteristics of the FGPP switchyard. (TF-2)

A. The FGPP switchyard will be located at the FGPP site. It will be a fenced area approximately 600 by 800 feet that contains switches, circuit breakers, buses and other electrical equipment. The FGPP switchyard will have a total of six transmission terminals. Two of the terminals will be used to connect the GSU transformers for FGPP 1 and 2. The GSU transformers associated with FGPP 1 and 2 will be connected via string buses to the FGPP switchyard. Another two terminals will be used to connect to equipment used for the start-up power for FGPP 1 and 2 and the remaining two terminals are used for the 500 kV lines that will connect the FGPP switchyard and Hendry substation.

Q. Please describe the physical characteristics of the proposed Hendry substation. (TF-3)

A. Hendry substation will be a fenced area approximately 800 by 1,200 feet that contains switches, circuit breakers, buses, transformers and other electrical equipment. Hendry substation will have a 500 kV section (the 500 kV substation) and a 230 kV section (the 230 kV substation) connected via a 500/230 kV autotransformer. A total of five 500 kV and two 230 kV transmission lines will connect to Hendry substation. Two 500 kV lines will connect the Hendry substation to FGPP switchyard, two 500 kV lines will connect Hendry substation to Orange River and Andytown substations and a

fifth 500 kV transmission line will connect Hendry substation to Levee substation. The two 230 kV lines will connect Hendry substation to Alva and Corbett substations.

Q. Please describe the physical characteristics of the two proposed transmission lines required between FGPP switchyard and Hendry substation. (TF-4)

A. Two 500 kV transmission lines will connect the FGPP switchyard and Hendry substation. The distance between FGPP switchyard and Hendry substation is estimated to be approximately 25 miles, depending on the final route of the right-of-way for these transmission lines. These transmission lines will be located within a proposed right-of-way that will be 350 feet in width. The current plan is for these transmission lines to be constructed using H-frame type steel structures. The centerline to centerline spacing of the structures will be 144 feet. Structures will typically be spaced at approximately one quarter mile intervals, but this spacing may vary depending on existing land features. The typical structure will be approximately 125 feet in height. The transmission line conductors will consist of a bundle of three aluminum conductors per phase and will have a minimum clearance to ground of 35 feet. These two lines will each have two overhead ground wires. One of these overhead ground wires on each line will contain optical fibers that will be used for line communications and line protection.

The physical characteristics of the typical structures, spacing, span length and height, conductor configuration and ground clearance described above will be used for all other 500 kV lines on this project. Document No. JC-1, Cross Sectional View of 350 Feet Right-of-Way, provides a representative illustration of the right-of-way that I describe above.

Q. Please explain why the distance between structures may vary.

A. The distance between structures can vary for a number of reasons. For example, variations are often necessary in order to minimize impacts to wetlands or other land features, to provide proper clearances over roads and canals or other existing obstructions, or to reduce the height of structures where shorter structures are required. If spans are consistently shorter than anticipated, it would translate to more structures per mile and could have a direct impact on the total cost of the project.

Q. Please describe the physical characteristics of the proposed transmission lines that constitute the looping of the Orange River to Andytown 500 kV and the Alva to Corbett 230 kV transmission lines into the Hendry substation. (TF-5)

A. Two of the 500 kV transmission lines connecting to Hendry substation will result from looping in the Andytown-Orange River 500 kV line. The distance between Hendry substation and the Andytown-Orange River 500 kV right-of-way is estimated to be approximately 24 miles, depending on the final route of the right-of-way for these transmission lines. These 500 kV transmission lines will be located within a proposed right-of-way that will be 494 feet in width

spanning from Hendry Substation to the point where this new corridor intersects with the existing Andytown-Orange River transmission line right-of-way. These two 500 kV transmission lines will be constructed in the same manner with regard to structures, spacing, span length and height, conductor configuration and ground clearance as the previously described 500 kV transmission lines, except that the overhead ground wires will not contain optical fibers. Document No. JC-2, Cross Sectional View of 494 Feet Right-of-Way, provides a representative illustration of the right-of-way that I describe above.

Additionally, the Alva to Corbett 230 kV line, which is in close proximity to the proposed Hendry substation, will be looped into Hendry substation. The structures used to loop the Alva to Corbett 230 kV transmission line will be concrete poles. The typical structure will be approximately 85 to 100 feet above ground and spaced approximately 300 to 600 feet apart. The transmission line will have a single aluminum conductor per phase and will have a minimum clearance to ground of 25 feet.

Q. Please describe the physical characteristics of the proposed Hendry to Levee 500 kV transmission line segment between Hendry and Andytown 500 kV substations that will connect to the Andytown to Levee 500 kV transmission line. (TF-6)

A. From Hendry substation this transmission line will be located within the same 494 feet wide proposed right-of-way with the same spacing and configuration

as the looped Andytown-Orange River line from Hendry substation to the point where this corridor intersects with the existing Andytown-Orange River right-of-way. From this point, the Hendry-Levee 500 kV line will be located within the existing Andytown-Orange River right-of-way and continue to Andytown substation. The distance between the points where the new corridor intersects the existing Andytown-Orange River 500 kV right-of-way to Andytown substation is estimated to be approximately 50 miles. There are two basic configurations of the existing Andytown-Orange River 500 kV right-of-way that this line segment will follow, a 330 feet and a 660 feet right-of-way. Document Nos. JC-3, Cross Sectional View of 330 Feet Right-of-Way, and JC-4, Cross Sectional View of 660 Feet Right-of-Way, show a representative illustration of the right-of-ways that I describe above. This 500 kV transmission line will be constructed in the same manner as the previous 500 kV transmission lines that I discussed. One of the overhead ground wires installed will contain optical fibers that will be used for line communications and line protection.

Q. Please summarize the transmission facilities required to interconnect and integrate FGPP.

A. The project will require the construction of the following:

- Two string buses between the GSU transformers and FGPP switchyard;
- One 500 kV switchyard (FGPP);
- One 500/230 kV substation (Hendry);
- Five 500 kV lines or line sections totaling 172 circuit miles in length; and

- Looping of the Alva-Corbett 230 kV line.

Document No. JC-5, One Line Diagram for FGPP, provides a one line representation of the project with the distances between FGPP and the existing FPL infrastructure.

Q. Does the location of the FGPP site in relation to existing transmission infrastructure have a bearing on the extent of 500 kV transmission line construction required on this project?

A. Yes. The location of the FGPP site does have a bearing on the extent of 500 kV transmission lines required for this project. The amount of transmission line construction required is driven by the distance between the FGPP site and existing transmission infrastructure. This is depicted in Document No. JC-6, Geographical Map Showing the Locations of FGPP and the Transmission Line Corridors Associated with the Project.

Q. Please describe the physical characteristics of the facilities that connect South Florida CC unit GSU transformers to the South Florida substation, including the GSU transformers, attendant bus equipment, the collector yard and the string buses that connect the collector yard with South Florida substation. (TF-7)

A. The GSU transformers are located in close proximity to the generators. From the high voltage side of the GSU transformers, string buses will extend and connect to the collector yard. From the collector yard, there will be string buses that will connect to the South Florida 230 kV substation.

Q. Please describe the physical characteristics of the South Florida 230 kV substation. (TF-8)

A. The South Florida 230 kV substation will be located adjacent to and connected to the South Florida 500 kV substation. It will be located within a fenced area approximately 800 by 900 feet that contains switches, circuit breakers, buses and other electrical equipment. The 500 and 230 kV substations will be connected via a 500/230 kV autotransformer. The 230 kV substation will have a total of four transmission terminals. Two of the terminals will be used to connect the string buses coming from the collector buses of South Florida CC unit. The other two terminals will be used for the 230 kV lines that will connect South Florida substation to Green and Germantown substations.

Q. Please describe the physical characteristics of the re-route of the Corbett-Green and the Corbett-Germantown 230 kV lines from Corbett substation to South Florida substation. (TF-9)

A. The Corbett-Green and Corbett-Germantown 230 kV lines, which are in close proximity to South Florida substation, will be rerouted to terminate at South Florida instead of Corbett substation. The structures used to reroute these transmission lines will be concrete poles. The typical structure will be approximately 85 to 100 feet above ground and spaced approximately 300 to 600 feet apart. The transmission line conductors will consist of a single conductor per phase and will have a minimum clearance to ground of 25 feet

under maximum operating conditions. The structures will have one overhead ground wire.

Q. Please describe the physical characteristics of the circuit breaker and overhead ground wire upgrades required for short circuit duty associated with the addition of South Florida CC unit. (TF-10)

A. As a result of the interconnection and integration of the South Florida CC unit into the transmission system, the fault interruption capability of several 230 kV breakers will be exceeded and will require upgrading. In addition, sections of overhead ground wire on various transmission lines will need to be upgraded because their fault current carrying capacity will also be exceeded.

DISCUSSION OF PHASES OF CONSTRUCTION SCHEDULE, COST AND PERMITS REQUIRED FOR THE PROPOSED FACILITIES

Q. Please describe the approach FPL used in preparing the construction schedule and cost estimates for the transmission facilities required to interconnect and integrate FGPP.

A. As stated in Mr. Silva's testimony, FPL plans to bring FGPP 1 and 2 into service as soon as reasonably possible. FPL believes that the earliest possible date that it can place the first FGPP unit into service is during the second half of 2012, and the second unit during the latter half of 2013. In order to ensure that these transmission facilities will be available to deliver electricity from FGPP as soon as the units are available, FPL developed a transmission

facilities construction schedule sufficient to support an early in service date. However, for the purpose of the economic analysis performed in support of this filing, FPL used the in-service dates of June 2013 for FGPP 1 and June 2014 for FGPP 2. The cost estimates for the transmission facilities are also based on these in-service dates.

Q. Please describe the phases of construction for the facilities that connect FGPP 1 and FGPP 2 GSU transformers to the FGPP switchyard, and attendant bus equipment. (TF-1)

A. The site will be prepared by clearing and removing any undesirable material from the site. Fill material will then be hauled in, placed and compacted to the required elevation. The next step will be to install the foundations required to set the equipment. After the foundations have been installed, the structural and electrical equipment portion of the project begins. This will include the installation of the GSU transformers and attendant buses. This will be followed by the installation of the protective relay equipment and commissioning activities associated with placing equipment in-service.

Q. What is the schedule for the construction of this portion of the project?

A. Construction of this portion of the project is expected to begin once the Site Certification Order is issued, the land rights have been secured, post-certification reviews have been completed and all required federal permits have been obtained. At this time, FPL anticipates that construction will begin on or about September 2009 and be completed by November 2010. This

portion of the project is important since it will be required to provide power to the plant during testing prior to commercial operation.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The connection of FGPP 1 and 2 Generator Step Up ("GSU") transformers to the FGPP switchyard, and attendant bus equipment; (TF-1)		
String buses	$	2,295,000
Total	$	2,295,000

Q. Please describe the phases of construction for the FGPP switchyard. (TF-2)

A. The site will be prepared by clearing and removing any undesirable material from the site. Fill material will then be hauled in, placed and compacted to the required elevation. This area will have a perimeter fence installed and the relay vault will be constructed. The next step will be to install the foundations required to set the equipment. After the foundations have been installed, the structural and electrical equipment portion of the project begins. This will include the installation of structures, switches, circuit breakers, buses and other electrical equipment. This will be followed by the installation of the protective relay equipment and commissioning activities associated with placing equipment in-service.

Q. What is the schedule for the construction of this portion of the project?

A. Construction of the FGPP switchyard is expected to begin once the Site Certification Order is issued, the land rights have been secured, post-certification reviews have been completed and all required federal permits

have been obtained. At this time, FPL anticipates that construction will begin on or about September 2009 and be completed by November 2010. This portion of the project is important since it will also be required to provide power to the plant during testing prior to commercial operation.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The FGPP switchyard; (TF-2)		
Switchyard Construction	$	19,090,000
Total	$	19,090,000

Q. Please describe the phases of construction for the Hendry substation. (TF-3)

A. The phases of construction for the Hendry Substation will be accomplished in the same manner as the FGPP switchyard.

Q. What is the schedule for the construction of this portion of the project?

A. Construction of the Hendry Substation is expected to begin once the Site Certification Order is issued, the land rights have been secured and all required permits have been obtained. FPL anticipates that construction will begin on or about January 2009 and be completed by November 2010. This portion of the project will be required to provide power to the plant during testing prior to commercial operation.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The Hendry 500/230 kV Substation; (TF-3)		
Site Acquisition	$	1,560,000
Substation Construction	$	54,475,000
Total	$	56,035,000

Q. Please describe the phases of construction for the two 500 kV transmission lines from FGPP switchyard to Hendry substation. (TF-4)

A. The first step will be to clear the right-of-way of vegetation that might interfere with the safe and reliable operation of the transmission lines. Then, where roads are not available for access, new roads will need to be constructed. Roads will be constructed from fill material and will not be paved. Roads will provide a suitable driving surface that will be used for access during construction, future patrol and maintenance of the transmission lines. At structure locations, a structure pad will be constructed using the same process as the access roads. After the roads and pads have been built, foundations will be constructed at each structure location. Once foundations are completed, tubular steel structures will be hauled to the site, assembled, framed and erected on the foundations. Once the structures have been erected, the conductors and overhead ground wires will be installed.

Q. Where roads are constructed how will existing water flow be maintained?

A. Water flow will be maintained by avoiding road construction in wetlands areas wherever practicable. In addition, culverts or other drainage structures will be installed under the road as required to maintain flow.

Q. How will the location and size of culverts in the access roads ultimately be determined?

A. Engineering calculations will be performed to determine flow patterns, drainage areas and ultimately the size and location of culverts using field survey data, U.S. Geodetic surveys, aerial photographs and any other available data.

Q. What techniques will be used in order to minimize the potential for erosion of roads in areas adjacent to wetlands during construction?

A. Filtration devices such as fabric fences or straw bales will be used as required in order to minimize the potential for soil erosion from roads in areas adjacent to wetlands.

Q. Where there is an existing road, how will access to the structures be provided?

A. The existing road will be upgraded as required to provide a suitable driving surface. Then a finger road extending from the existing road to the structure pad will be constructed.

Q. What is the schedule for the construction of this portion of the project?

A. Construction of the FGPP to Hendry 500 kV lines is expected to begin once the Site Certification Order is issued, the land rights have been secured, post certification reviews have been completed, and all required federal permits have been obtained. FPL anticipates that construction will begin on or about March 2009 and be completed by November 2010 for one of the 500 kV transmission lines. This portion of the project will also be required to provide

power to the plant during testing prior to commercial operation. The second line is expected to be completed by November 2011, prior to commercial operation of FGPP 1.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The two 500 kV transmission lines from the FGPP switchyard to the Hendry Substation; (TF-4)		
Right of Way Acquisition	$	27,950,000
Transmission Line Construction	$	95,511,000
Total	$	123,461,000

Q. Please describe the phases of construction for the 500 kV transmission lines from Hendry Substation that connect to Orange River, Andytown and Levee substations and the looping of the Alva-Corbett 230 kV line. (TF-5) and (TF-6)

A. The phases of construction for the 500 kV transmission lines from Hendry Substation that connect to Orange River, Andytown and Levee substations will be accomplished in the same manner as the lines between FGPP switchyard and Hendry substation. The phases of construction for the Alva to Corbett 230 kV loop into the Hendry substation will be similar to the methods previously described; the main difference is that the 230 kV loop will be constructed using concrete poles rather than steel poles with foundations.

Q. What is the schedule for the construction of this portion of the project?

A. Construction of the loop of the existing Alva-Corbett 230 kV transmission line into the Hendry substation is expected to begin once the Site Certification Order is issued, the land rights have been secured, and all required local, state

and federal permits for the substation and loop have been obtained. FPL anticipates that construction for these lines will begin on or about May 2010 and be completed by November 2010. This portion of the project will be required to provide power to the plant during testing prior to commercial operation.

Construction of the lines from Hendry substation to the existing Andytown-Orange River right-of-way is expected to begin once the Site Certification Order is issued, the land rights have been secured, post certification reviews have been completed, and all required federal permits have been obtained. FPL anticipates that construction for these lines will begin on or about March 2009 and be completed by November 2011. This portion of the project will be required prior to FGPP 1 entering commercial operation. The construction of the Hendry to Levee 500 kV from Hendry to the intersection of the Andytown to Orange River right-of-way will follow the same schedule as the other two lines. However, from the intersection of the Andytown-Orange River right-of-way to Andytown substation, construction will continue and will be completed by November 2012. This portion of the project will be required prior to FGPP 2 entering commercial operation.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The looping in of the Alva to Corbett 230 kV and the Andytown to Orange River 500 kV transmission lines into the Hendry substation; (TF-5)		
Right of Way Acquisition	$	43,686,000
Transmission Line Construction	$	128,149,000
Remote Station Construction	$	731,000
Total	$	172,566,000

A new 500 kV transmission circuit from the Hendry to Levee substations. This transmission line will be constructed between Hendry and Andytown substations and connected to an existing Andytown to Levee 500 kV line resulting in a Hendry to Levee 500 kV transmission line; (TF-6)		
Transmission Line Construction	$	96,020,000
Total	$	96,020,000

Q. Please describe the costs associated with the facilities that connect South Florida CC unit GSU transformer to the South Florida substation, including GSU transformers, collector yard, attendant bus equipment and the string buses that connect the collector yard with South Florida substation. (TF-7).

A. The costs associated with this portion would be as follows:

The connection of South Florida CC unit GSU transformers to the collector yard, including attendant bus equipment, the collector yard and the string buses from the collector yard to the South Florida 230 kV substation; (TF-7)		
Collector yard and string buses	$	6,900,000
Total	$	6,900,000

Q. What would be the schedule for the construction of this portion of the project?

A. Construction for this portion of the project would begin on or about August 2013 and be completed by July 2014.

Q. Please describe the costs associated with construction for the South Florida 230 kV substation. (TF-8)

A. The costs associated with this portion would be as follows:

The South Florida 230 kV substation; (TF-8)		
Substation Construction	$	43,700,000
Total	$	43,700,000

Q. What would be the schedule for the construction of this portion of the project?

A. Construction for this portion of the project would begin on or about May 2013 and be completed by July 2014.

Q. Please describe the costs associated with the re-route of the Corbett-Green and the Corbett-Germantown 230 kV lines from Corbett substation to South Florida substation. (TF-9)

A. The costs associated with this portion would be as follows:

The re-route of the Corbett-Green and the Corbett-Germantown 230 kV lines from Corbett substation to South Florida substation; (TF-9)		
Transmission Line Construction	$	4,000,000
Total	$	4,000,000

Q. What would be the schedule for the construction of this portion of the project?

A. Construction for this portion of the project would begin on or about August 2013 and be completed by July 2014.

Q. Please describe the costs associated with the circuit breaker and overhead ground wire upgrades required. (TF-10)

A. The costs associated with this portion would be as follows:

The circuit breaker and overhead ground wire upgrades required; (TF-10)		
Substation Construction	$	2,700,000
Transmission Line Construction	$	1,100,000
Total	$	3,800,000

Q. What would be the schedule for the construction of this portion of the project?

A. Construction for this portion of the project would begin on or about January 2014 and be completed by April 2014.

Q. Please summarize the cost and schedule for the required transmission facilities for the Fuel Diversity Expansion Plan with Coal?

A. The total cost and schedule for the required transmission facilities for the Fuel Diversity Expansion Plan with Coal are shown on Document No. JC-7, Summary of Required Transmission Facilities for the Fuel Diversity Expansion Plan with Coal.

Q. Do you believe that the estimated total cost associated with the transmission facilities required for the interconnection and integration of FGPP are reasonable?

A. Yes. I believe that the estimated total cost of the transmission facilities are representative of what would be expected to interconnect and integrate the FGPP plant due to its remote location relative to FPL's existing transmission infrastructure.

In addition, to ensure the reasonableness of these estimated costs, FPL also hired the services of a consultant, Cummins & Barnard, who performed an independent detailed review of the installed cost estimate for interconnection and integration of FGPP. In his testimony, Mr. William Damon of Cummins & Barnard affirms that the estimates were found to be reasonable.

PERMIT REQUIREMENTS

Q. What permits will be required for the transmission facilities associated with this project and how long will it take to obtain these permits?

A. All State of Florida, local government and state agency permits for transmission lines associated with FGPP in new right-of-way, will be secured through the FGPP Site Certification approval process under the Florida Electrical Power Plant Siting Act (PPSA). However, if wetlands are impacted as a result of the construction of the structure pads and access roads, FPL will have to file for dredge and fill permits with the U.S. Army Corps of Engineers. Any applicable federal, State of Florida, local government and state agency permits and approvals required for the Hendry substation and Alva-Corbett 230 kV loop into that substation will also be secured through the appropriate governing agency. These non-PPSA permits may take up to 12 to 18 months to obtain.

FPL must also go through a formal consultation with the U.S. Fish and Wildlife service and obtain a Biological Opinion to determine if primary/secondary impacts to endangered species (e.g., Florida Panther) will occur during or after construction. The U.S. Army Corps will not issue the wetland dredge or fill permit without a Biological Opinion report from the U.S. Fish and Wildlife Service. The Biological Opinion report from the U.S. Fish and Wildlife Service may take from to 3-12 months to obtain.

Q. What are the consequences of a delay in obtaining approval from the U.S. Army Corps of Engineers for the dredge and fill permits associated with the construction of pads and access roads?

A. Any delay in issuing these permits will have a direct impact on the start of construction. The installation of the structure pads and access roads is one of the first activities to be completed. A delay of 30 days or less, should not have a serious impact on the project, however a longer delay could impact the completion date of the transmission line. If the construction of pads and roads are not permitted, construction access would have to be provided via temporary pads and access roads or by changing construction techniques or a combination of the two. Typically, temporary access is provided through the installation of matting or board roads which must be removed after construction. Generally speaking, in addition to the cost of temporary access, FPL can also expect to pay a premium for construction labor in this circumstance. These costs would be somewhat mitigated by the savings of not building the permanent structure pads and roads but depending on final

right-of-way alignment, FPL may experience an increase in the overall project cost. In addition, any future benefit associated with operation and maintenance activities of the transmission line would be lost if permanent structure pads and roads are not constructed.

An alternative to permanent access would be constructing the line using "road-less" construction techniques which would include using specialized equipment and helicopters. Similar to temporary access, the increased cost of using "road-less" construction techniques does not offset the savings of not building permanent access in most situations. Therefore, construction costs could increase without any corresponding future benefit.

Q. What are the consequences of a delay in obtaining approval from U.S. Army Corps of Engineers for the dredge and fill permits associated with the construction of Hendry substation?

A. If permits are required and they cannot be obtained within the allotted timeframe, FPL would not be able to start construction of the substation as scheduled. This could have an impact on the schedule to provide start up power for FGPP.

Q. What codes, standards, and industry guidelines will be used for the design and construction of the transmission facilities?

A. FPL's transmission facilities are designed to comply with all applicable codes, guidelines and standards. The primary code used in the design of the transmission line is the National Electrical Safety Code (NESC). The NESC

is an American National Standard Institute (ANSI) standard that covers electrical clearances, loading and strength requirements including extreme wind. There are other agencies and standard organizations that provide rules, guidelines and conditions for particulars not specified by the NESC, such as:

- Occupational Safety & Health Administration Rules (OSHA), provides requirements for safe minimum approach distances;
- American Society of Civil Engineers (ASCE) Manual 74, "Guidelines for Electrical Transmission Line Structural Loading" and Standard 48-05, "Design of Steel Transmission Pole Structures";
- Federal Aviation Administration (FAA) Guidelines, covers requirements in the vicinity of airports; and
- FPL Standards and Transmission Engineering Manual Documents.

These codes, guidelines and standards, discussed above, provide design parameters and guidelines with the primary goal of protecting public safety.

DISCUSSION OF DEVELOPMENT OF COST ESTIMATES AND THE UNCERTAINTY ASSOCIATED WITH THESE ESTIMATES.

Q. How were the estimates for the transmission facilities related to the substation portion of the project developed?

A. The estimates were developed using FPL's estimating processes, using current quotes received for similar transformers and other electrical equipment, and

projected labor rates for 2007. These estimates were then escalated to the year that the expense would be incurred.

Q. What are the uncertainties associated with the estimates for the transmission facilities related to the substation portion of the project?

A. A major driver for the uncertainties associated with substation estimates is associated with the costs for transformers and other major electrical equipment. Although our current estimates are based on the most current quotes for the type of transformer required, due to the limited number of suppliers and high global demand for this type of equipment, pricing can not be guaranteed until orders are actually placed. From 2005 to 2006, FPL experienced increases in some cases as high as 28 percent. Future increases of this magnitude would have a direct impact on total project costs.

Q. How were the estimates for the transmission facilities related to the transmission line portion of the project developed?

A. For the 500 kV lines, a preliminary design was developed for the typical tangent H-frame structure. Using the preliminary design weight of this structure, FPL estimated the design weight of the other structures by comparing to previous designs. A similar process was used to develop the preliminary foundation designs. FPL then obtained non-binding quotes for the major material components, such as fabricated steel, foundations (including concrete and steel) and the conductor. For the remainder of the materials, FPL used current pricing. FPL next obtained non-binding preliminary quotes for the labor to construct the access roads and transmission

line. All of these cost components were assembled to develop the per mile cost that was used in the estimates previously provided. All costs were estimated in 2007 dollars and then escalated to year that the expense would be incurred.

With regard to the estimates associated with the construction of the 230 kV line and upgrades, these estimates were developed using FPL's estimating processes, including projected labor rates for 2007. These costs were then escalated to the year that the expense would be incurred.

Q. What are the uncertainties associated with the transmission facilities related to the transmission line portion of the project?

A. The major drivers for the uncertainties associated with the transmission line estimates are associated with the cost of steel and zinc that is required for foundations, structures and hardware, the aluminum for the conductors and the concrete for the foundations. Although FPL's current estimate is based on current but non-binding quotes from vendors, the high global demand for these commodities can cause large price fluctuations. Pricing cannot be guaranteed until orders are placed. Although there are some indications that prices may have leveled off, if FPL experiences the spikes that were seen in 2004 and 2005, further increases would have a direct impact on total project cost.

The other large driver is the cost of labor associated with transmission line construction. Transmission line construction is done by a limited number of highly specialized workers and equipment. It is not uncommon for these workers to travel from job to job in a region and sometimes nationwide. The risk of price increases associated with transmission line construction labor will be directly related to the regional or national demand for transmission line construction services at the time the project is ready to be constructed. If there is a high level of transmission line construction in the U.S. at the time the project is scheduled, the labor costs would increase. Additionally, if a natural disaster similar to the ones that occurred in 2004 and 2005 re-occur during the construction time frames for this project, significant increases in labor costs are possible because of the high demand for services during those times. As an example, during the aftermath of Hurricane Wilma, FPL experienced labor costs increases of approximately 40%. Such an increase would have a direct impact on total project costs.

Q. How were the estimates for the real estate portion of the project developed?

A. The estimates for the real estate component of the project address all real estate acquisition costs for the project, including the estimated value of property interests to be acquired and associated title, survey, appraisal, and project management/administration expenses. These combined costs were used to calculate an estimated cost per acre for the project. A review of local market sales provided a range of land values dependent upon size, use and

location of the property. The estimated costs of title, survey, appraisal, management/administration fees are based on experience in recent acquisition projects.

Q. What are the uncertainties associated with the estimates for the real estate portion of the project?

A. Real estate values are affected by numerous market influences which are not always predictable. Uncertainty as to the willingness of property owners to convey necessary property interests also contributes uncertainty as to total acquisition costs. The current land uses in Glades and Hendry County are dominated by agriculture. These uses involve citrus, sugar cane, ornamental plant nurseries, and row crops, each being affected by various economic influences.

DESCRIPTION OF TRANSMISSION FACILITIES REQUIRED FOR THE EXPANSION PLAN WITHOUT COAL

Q. Please describe the transmission facilities required for the Expansion Plan without Coal.

A. The only difference between the facilities required for the Expansion Plan without Coal as compared to the Fuel Diversity Expansion Plan with Coal is that in the Expansion Plan without Coal, FGPP would be combined cycle gas fired units instead of coal units. The combined cycle units would require additional GSU transformers and a collector yard that would then connect to

FGPP switchyard via two string buses. This arrangement would be similar to the way South Florida CC unit is connected to the transmission system as previously discussed.

These facilities include:

1. The connection of FGPP 1 and FGPP 2 CC GSU transformers to the collector yard, including attendant bus equipment, the collector yard, and the string buses from the collector yard to the FGPP switchyard, and attendant bus equipment; (TFND-1)
2. The FGPP switchyard; (TFND-2)
3. The Hendry 500/230 kV Substation; (TFND-3)
4. The two 500 kV transmission lines from the FGPP switchyard to the Hendry Substation; (TFND-4)
5. The looping in of the Andytown to Orange River 500 kV and the Alva to Corbett 230 kV transmission lines into the Hendry substation; (TFND-5)
6. The creation of a new 500 kV transmission circuit spanning from the Hendry to Levee substations. This transmission line will be constructed between Hendry and Andytown substations and connected to an existing Andytown to Levee 500 kV line resulting in a Hendry to Levee 500 kV transmission line; (TFND-6)
7. The connection of South Florida CC unit GSU transformers to the collector yard, including attendant bus equipment, the collector yard, and

the string buses from the collector yard to the South Florida 230 kV substation; (TFND-7)

8. The South Florida 230 kV substation; (TFND-8)
9. The re-route of the Corbett-Green and the Corbett-Germantown 230 kV lines from Corbett substation to South Florida substation; (TFND-9) and
10. The circuit breaker and overhead ground wire upgrades required. (TFND-10)

Q. What is the schedule for the construction of the facilities associated with TFND-1?

A. At this time, FPL anticipates that construction of this portion of the project would begin on or about May 2012 and be completed by July 2013.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The connection of FGPP 1 and 2 CC unit GSU transformers to the collector yard, including attendant bus equipment, the collector yard and the string buses from the collector yard to the FGPP switchyard, and attendant bus equipment; (TFND-1)	
Substation Construction	$ 20,100,000
Total	$ 20,100,000

Q. What is the schedule for the construction of the facilities associated with TFND-2?

A. At this time, FPL anticipates that construction of this portion of the project would begin on or about May 2012 and be completed by July 2013.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The FGPP switchyard; (TFND-2)		
Switchyard Construction	$	24,000,000
Total	$	24,000,000

Q. What is the schedule for the construction of the facilities associated with TFND-3?

A. At this time, FPL anticipates that construction of this portion of the project would begin on or about September 2011 and be completed by July 2013.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The Hendry 500/230 kV Substation; (TFND-3)		
Site Acquisition	$	1,600,000
Substation Construction	$	60,000,000
Total	$	61,600,000

Q. What is the schedule for the construction of the facilities associated with TFND-4?

A. Construction of the FGPP to Hendry 500 kV lines is expected to begin on or about August 2011 and be completed by July 2013 for one of the 500 kV transmission lines. The second line is expected to be completed by May 2014, in time for the commercial operation of FGPP 1.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The two 500 kV transmission lines from the FGPP switchyard to the Hendry Substation; (TFND-4)		
Right of Way Acquisition	$	29,000,000
Transmission Line Construction	$	101,700,000
Total	$	130,700,000

Q. What is the schedule for the construction of the facilities associated with TFND-5?

A. Construction of the loop of the existing Alva-Corbett 230 kV transmission line is expected to begin on or about January 2013 and be completed by July 2013. Construction of the lines from Hendry substation to the existing Andytown-Orange River right-of-way is expected to begin on or about August 2011 and be completed by May 2014.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

The looping in of the Alva to Corbett 230 kV and the Andytown to Orange River 500 kV transmission lines into the Hendry substation; (TFND-5)		
Right of Way Acquisition	$	45,400,000
Transmission Line Construction	$	137,400,000
Remote Station Construction	$	800,000
Total	$	183,600,000

Q. What is the schedule for the construction of the facilities associated with TFND-6?

A. Construction of the line from Hendry substation to the existing Andytown-Orange River right-of-way is expected to begin on or about August 2011 and be completed by May 2014. The construction of the Hendry to Levee 500 kV from Hendry to the intersection of the Andytown to Orange River right-of-

way will follow the same schedule as the other two lines. However, from the intersection of the Andytown-Orange River right-of-way to Andytown substation, construction will be completed by November 2015.

Q. Please describe the costs associated with this portion of the project.

A. The costs associated with this portion are as follows:

A new 500 kV transmission circuit from the Hendry to Levee substations. This transmission line will be constructed between Hendry and Andytown substations and connected to an existing Andytown to Levee 500 kV line resulting in a Hendry to Levee 500 kV transmission line; (TFND-6)		
Transmission Line Construction	$	100,100,000
Total	$	100,100,000

Q. Please describe the costs of the facilities associated with the connection of South Florida CC unit GSU transformers to the collector yard, including attendant bus equipment, the collector yard and the string buses from the collector yard to the South Florida 230 kV substation (TFND-7).

A. The costs associated with this portion are as follows:

The connection of South Florida CC unit GSU transformers to the collector yard, including attendant bus equipment, the collector yard and the string buses from the collector yard to the South Florida 230 kV substation; (TFND-7)		
Substation Construction	$	6,100,000
Total	$	6,100,000

Q. What would be the schedule for the construction of this portion of the project?

A. Construction for this portion of the project would begin on or about August 2010 and be completed by July 2011.

Q. Please describe the costs associated with the South Florida 230 kV substation (TFND-8).

A. The costs associated with this portion are as follows:

The South Florida 230 kV substation; (TFND-8)		
Substation Construction	$	39,000,000
Total	$	39,000,000

Q. What would be the schedule for the construction of this portion of the project?

A. Construction for this portion of the project would begin on or about May 2010 and be completed by July 2011.

Q. Please describe the costs associated with the re-route of the Corbett-Green and the Corbett-Germantown 230 kV lines from Corbett substation to South Florida substation (TFND-9).

A. The costs associated with this portion are as follows:

The re-route of the Corbett-Green and the Corbett-Germantown 230 kV lines from Corbett substation to South Florida substation; (TFND-9)		
Transmission Line Construction	$	3,600,000
Total	$	3,600,000

Q. What would be the schedule for the construction of this portion of the project?

A. Construction for this portion of the project would begin on or about August 2010 and be completed by July 2011.

Q. Please describe the costs associated with the circuit breaker and overhead ground wire upgrades required (TFND-10).

A. The costs associated with this portion are as follows:

The circuit breaker and overhead ground wire upgrades required; (TFND-10)		
Substation Construction	$	2,400,000
Transmission Line Construction	$	1,000,000
Total	$	3,400,000

Q. What would be the schedule for the construction of this portion of the project?

A. Construction for this portion of the project would begin on or about January 2011 and be completed by April 2012.

Q. Please summarize your testimony.

A. My testimony provides a description of the physical characteristics, schedule and cost of the transmission facilities required to interconnect and integrate the Fuel Diversity Expansion Plan with Coal and the Expansion Plan without Coal into FPL's transmission system. Specifically, I discussed the transmission facilities required for FGPP, including:

- A 500 kV switchyard at FGPP
- A 500/230 kV substation at Hendry
- 172 circuit miles of 500 kV transmission lines including the looping of the Andytown-Orange River 500 kV line into Hendry substation
- The looping of the Alva-Corbett 230 kV line into Hendry substation

I discuss the phases of construction of each of the required portions of the proposed facilities and the associated permits required.

The estimated total cost of the transmission facilities associated with FGPP is $469 million. This cost is representative of the remote location of FGPP relative to the existing FPL transmission infrastructure that can support the amount of generation at FGPP.

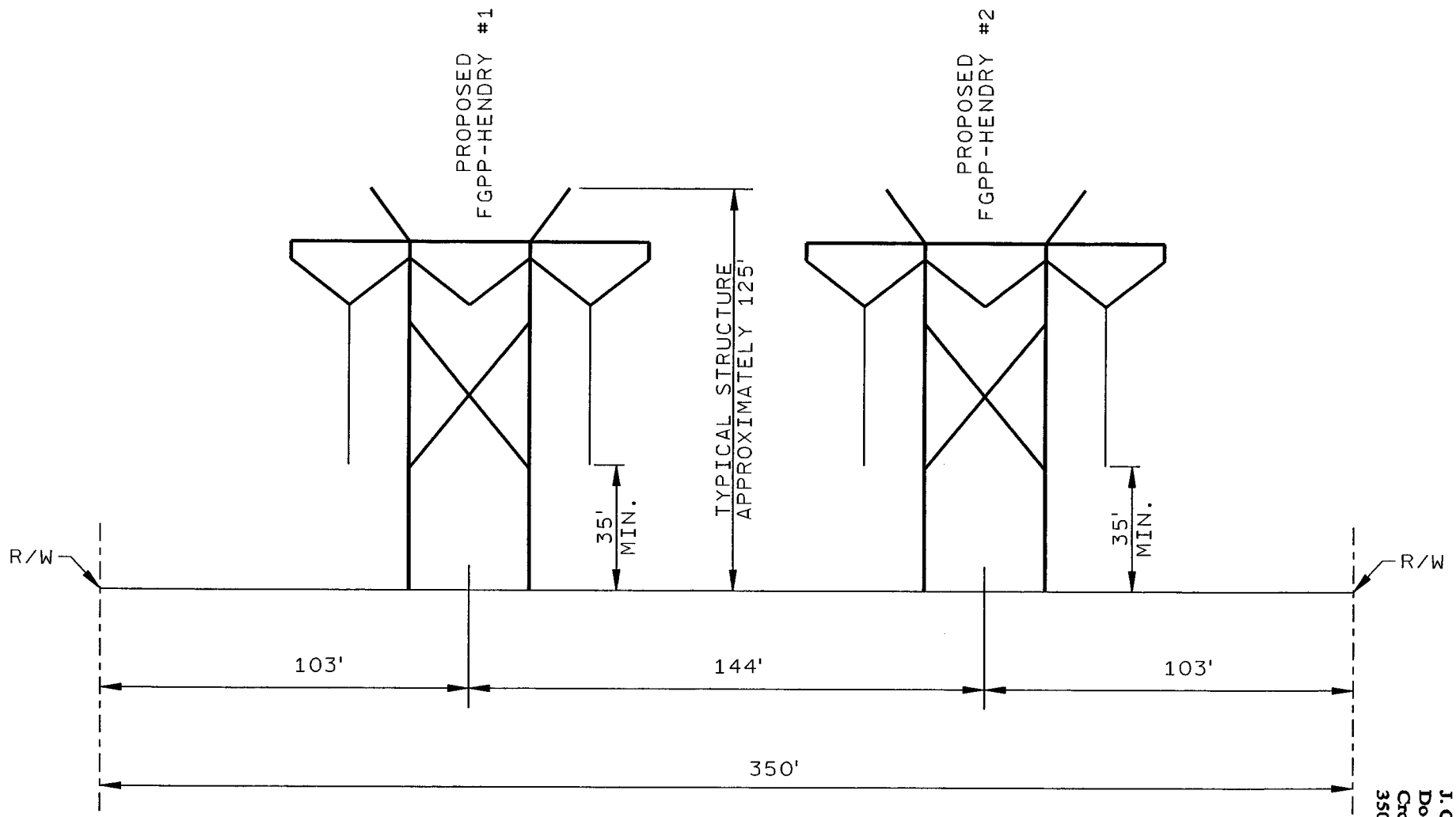
I discuss various uncertainties present at this time associated with the transmission facilities. First, there is the potential for the inability to acquire permits in a timely manner: for example, the U.S. Army Corps of Engineers dredge and fill permits that are required for the construction of the roads, pads and the Hendry substation. Secondly, the uncertainty associated with the cost of materials such as steel, zinc and aluminum which are needed for the construction of the required transmission facilities in significant quantities, which commodities can vary according to world markets, and labor which also can acutely increase under certain instances such as following hurricanes. Finally, I discuss how real estate values are affected by numerous market influences which are not always predictable and the uncertainty as to the willingness of property owners to convey necessary property interests also contributes uncertainty as to total acquisition costs.

Q. Does this conclude your testimony?

A. Yes.

PRELIMINARY REVISION ___

ENG 5/93



CROSS SECTIONAL VIEW OF 350 FEET RIGHT-OF-WAY

NOTE: FOUNDATION LENGTH WILL VARY DEPENDING ON SOIL CONDITIONS.

CADE

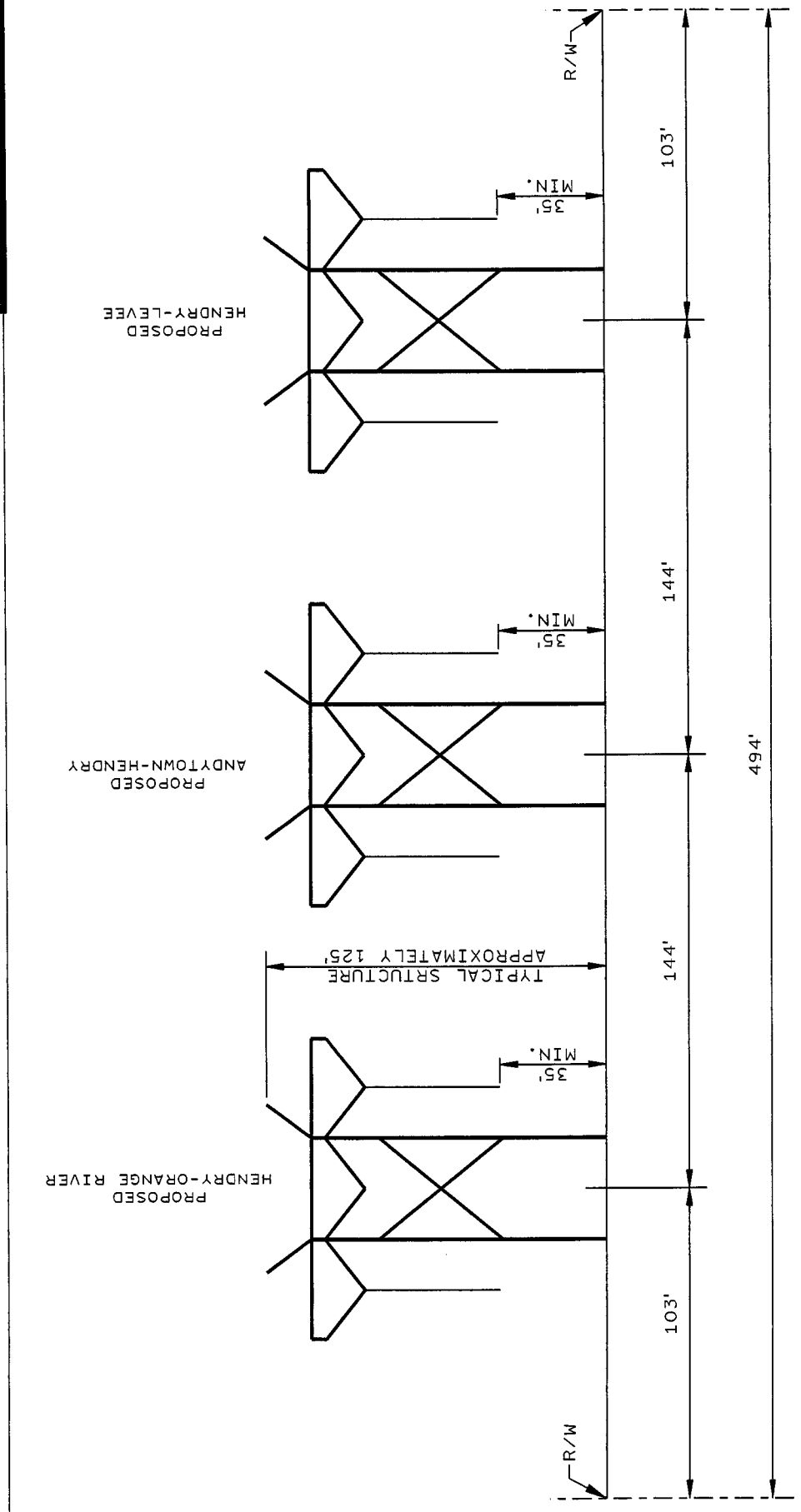
Docket No. 07____-EI
J. Coto, Exhibit No.___
Document No. JC-1, Page 1 of 1
Cross Sectional View of
350 Feet Right-of-Way

ENG 5/93

PRELIMINARY REVISION

SYTIME$$$$$$$$$$$ USERNAME$$$$$$$$

Docket No. 07____-EI
J. Coto, Exhibit No.___
Document No. JC-2, Page 1 of 1
Cross Sectional View of
494 Feet Right-of-Way



CROSS SECTIONAL VIEW OF 494 FEET RIGHT-OF-WAY

NOTE: FOUNDATION LENGTH WILL VARY DEPENDING ON SOIL CONDITIONS.

CADE

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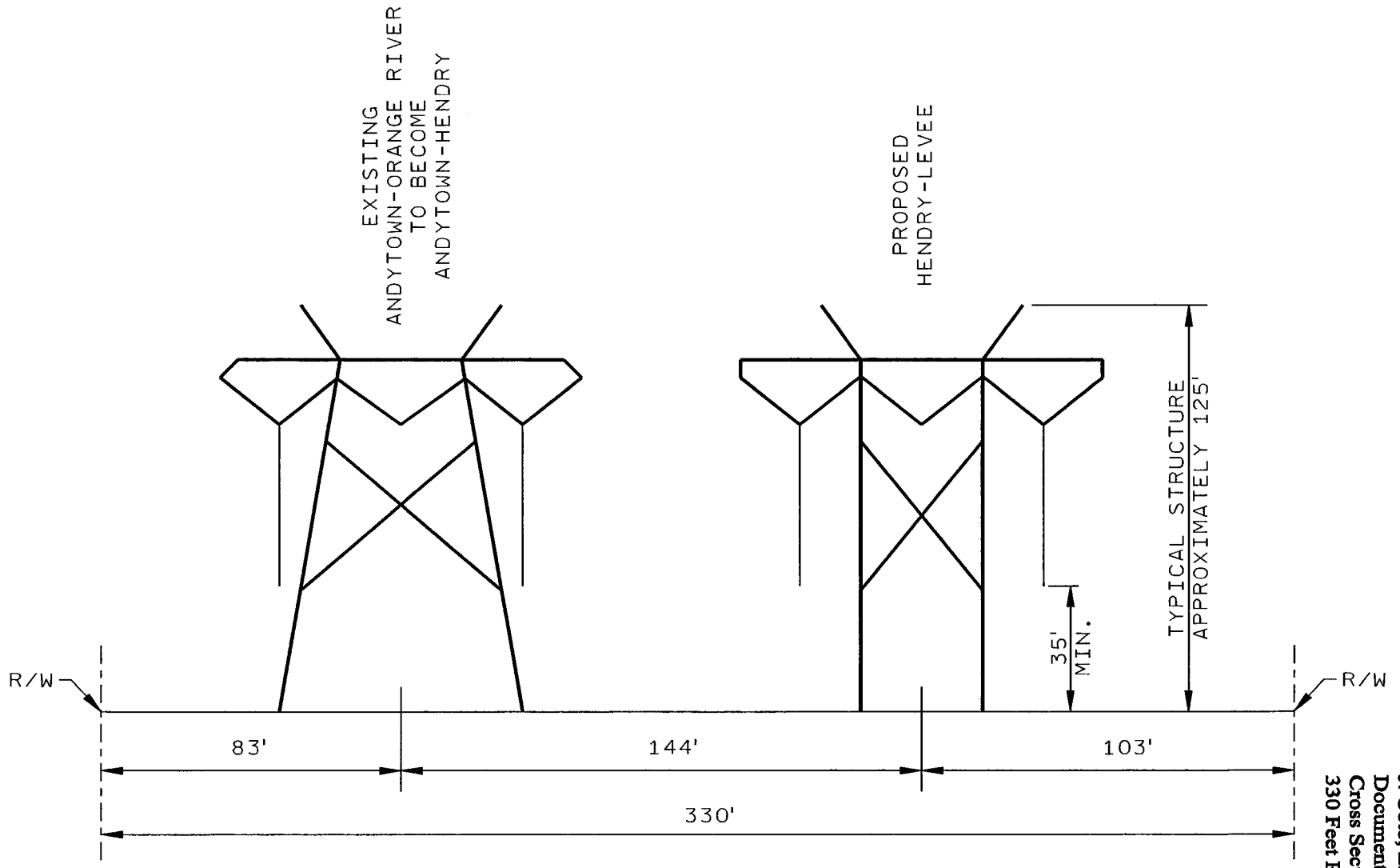
PRELIMINARY REVISION ___

ENG 5/93



CROSS SECTIONAL VIEW OF 330 FEET RIGHT-OF-WAY

NOTE: FOUNDATION LENGTH WILL VARY DEPENDING ON SOIL CONDITIONS.

CADE

Docket No. 07___-EI
J. Coto, Exhibit No.___
Document No. JC-3, Page 1 of 1
Cross Sectional View of
330 Feet Right-of-Way

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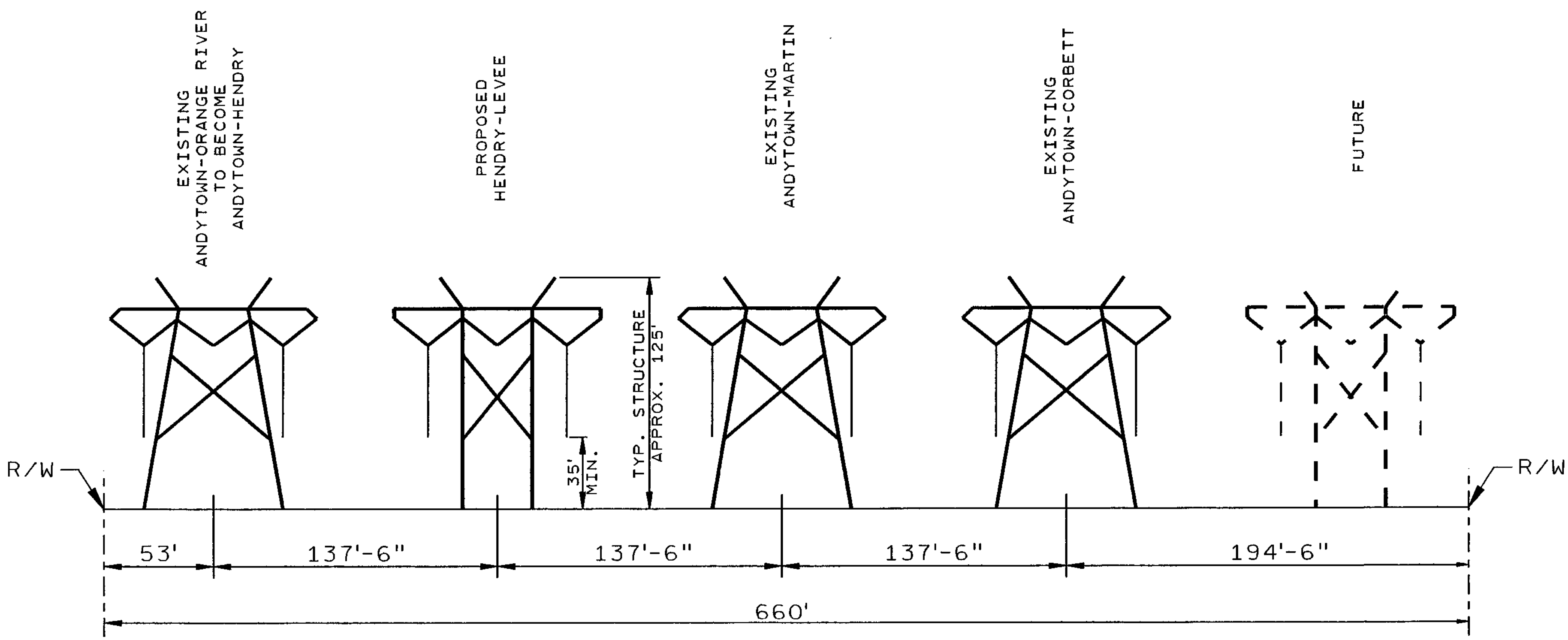
PRELIMINARY REVISION ___



CROSS SECTIONAL VIEW OF 660 FEET RIGHT-OF-WAY

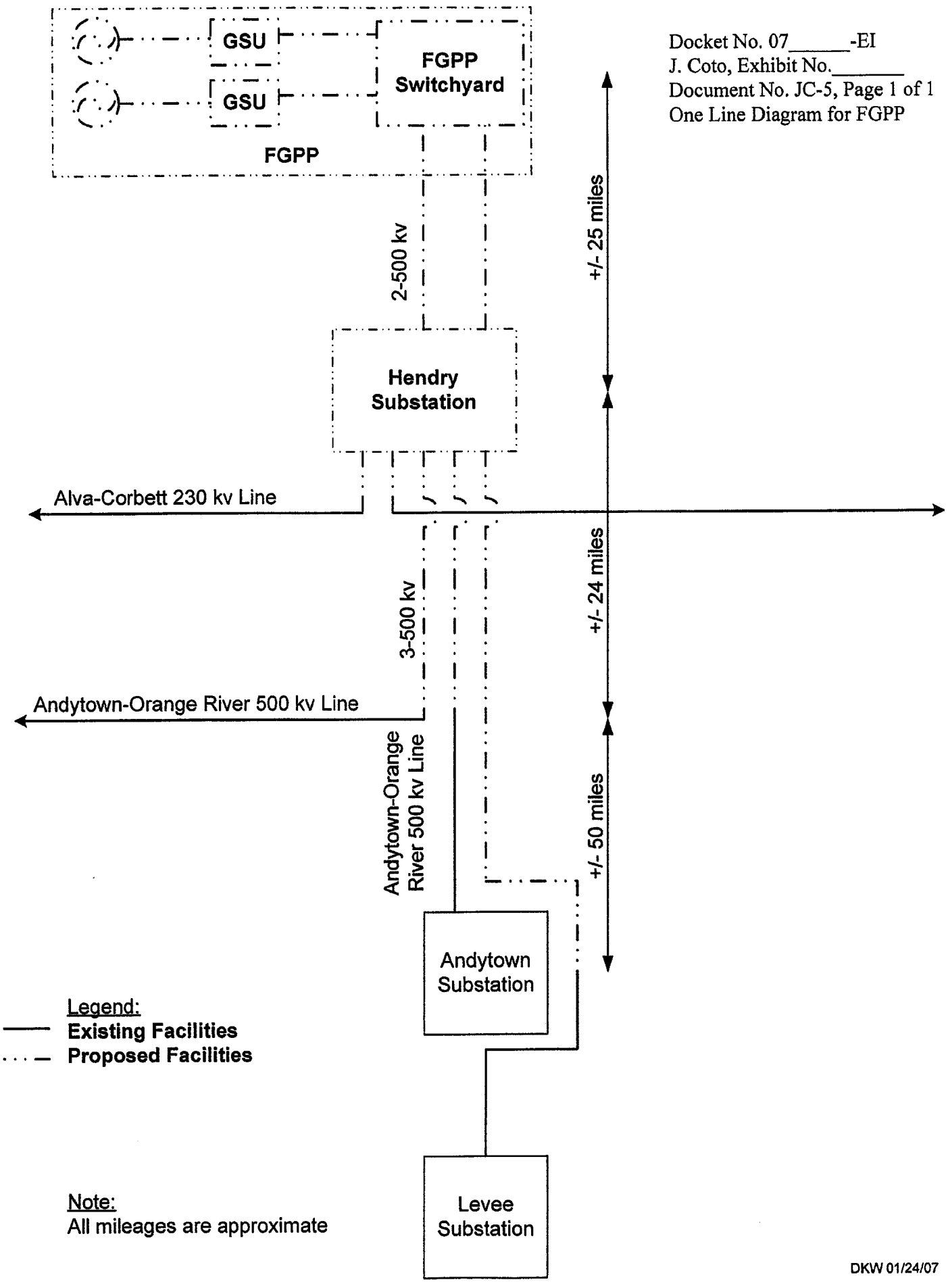
NOTE: FOUNDATION LENGTH WILL VARY DEPENDING ON SOIL CONDITIONS.

Docket No. 07____-EI
J. Coto, Exhibit No.___
Document No. JC-4, Page 1 of 1
Cross Sectional View of
660 Feet Right-of-Way

ENG 5/93

C A D E

Docket No. 07_____-EI
J. Coto, Exhibit No._____
Document No. JC-5, Page 1 of 1
One Line Diagram for FGPP



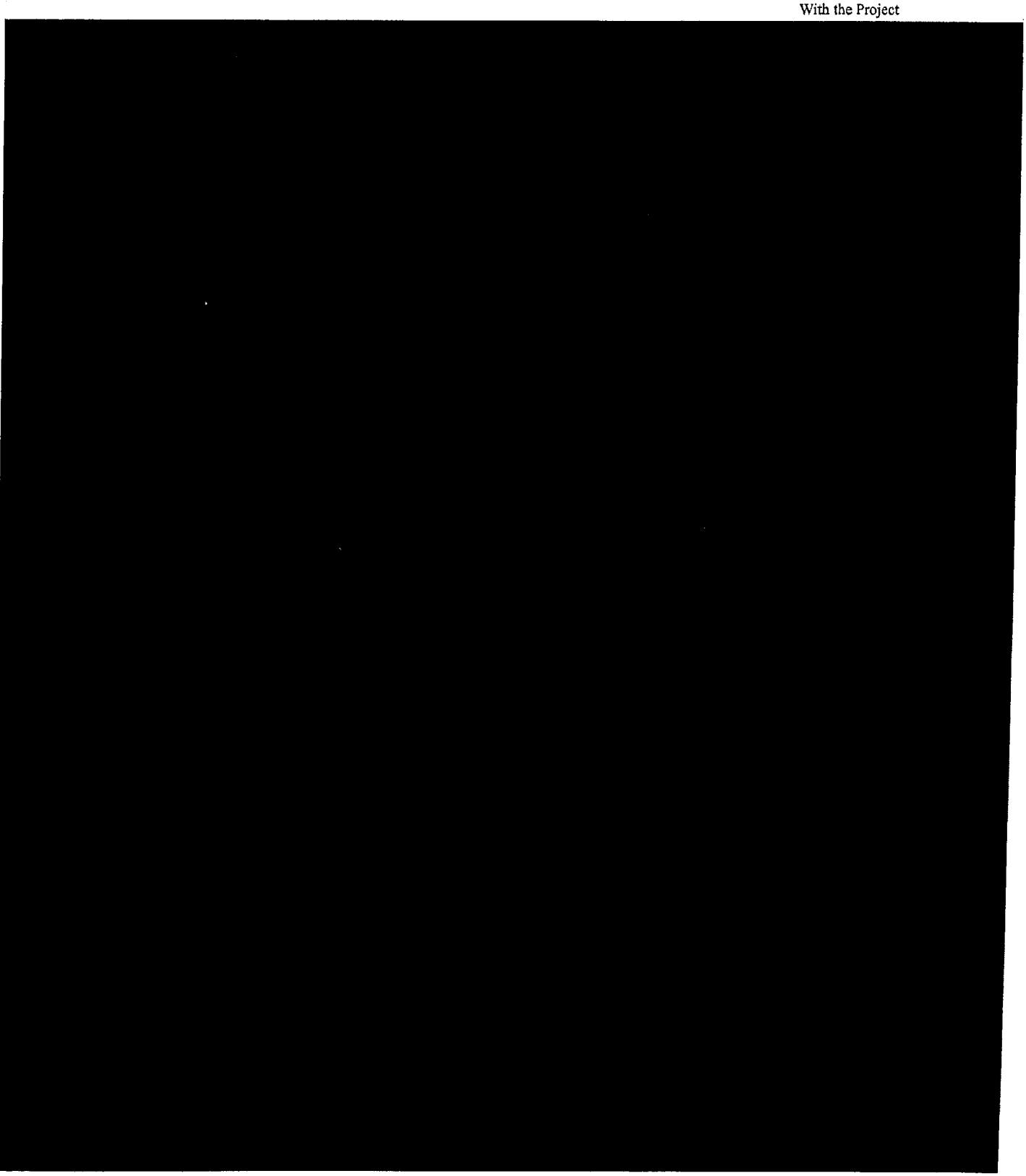
Legend:
Existing Facilities
Proposed Facilities

Note:
All mileages are approximate

DKW 01/24/07

Docket No. 07____-EI
J. Coto, Exhibit No.___
Document No. JC-6, Page 1 of 1
Geographical Map
Showing the Locations of
FGPP and the Transmission
Line Corridors Associated
With the Project

CONFIDENTIAL



Docket No. 07____-EI
J. Coto, Exhibit No. _____
Document No. JC-7, Page 1 of 1

Summary of Required Transmission Facilities, Cost and Schedule for the Fuel Diversity Expansion Plan with Coal

Summary of Required Transmission Facilities, Cost and Schedule for the Fuel Diversity Expansion Plan with Coal

Facility	Description		Total Cost	Construction Start	Construction Finish
TF-1	The connection of FGPP 1 and 2 Generator Step Up ("GSU") transformers to the FGPP switchyard, and attendant bus equipment; (TF-1)	$	2,295,000	September-2009	November-2010
TF-2	The FGPP switchyard; (TF-2)	$	19,090,000	September-2009	November-2010
TF-3	The Hendry 500/230 kV Substation; (TF-3)	$	56,035,000	January-2009	November-2010
TF-4	The two 500 kV transmission lines from the FGPP switchyard to the Hendry Substation; (TF-4)	$	123,461,000	March-2009 March-2009	November-2010 November-2011
TF-5	The looping in of the Alva to Corbett 230 kV and the Andytown to Orange River 500 kV transmission lines into the Hendry substation; (TF-5)	$	172,566,000	May-2010 March-2009	November-2010 November-2011
TF-6	A new 500 kV transmission circuit from the Hendry to Levee substations. This transmission line will be constructed between Hendry and Andytown substations and connected to an existing Andytown to Levee 500 kV line resulting in a Hendry to Levee 500 kV transmission line; (TF-6)	$	96,020,000	March-2009	November-2012
	Total FGPP	**$**	**469,467,000**		
TF-7	The connection of South Florida CC unit GSU transformers to the collector yard, including attendant bus equipment, the collector yard and the string buses from the collector yard to the South Florida 230 kV substation; (TF-7)	$	6,900,000	August-2013	July-2014
TF-8	The South Florida 230 kV substation; (TF-8)	$	43,700,000	May-2013	July-2014
TF-9	The re-route of the Corbett-Green and the Corbett-Germantown 230 kV lines from Corbett substation to South Florida substation; (TF-9)	$	4,000,000	August-2013	July-2014
TF-10	The circuit breaker and overhead ground wire upgrades required; (TF-10)	$	3,800,000	January-2014	April-2015
	Total South Florida CC unit	**$**	**58,400,000**		

Notes:
1. Costs were estimated in 2007 dollars and then escalated to the year that the expense would be incurred.
2. TF- Transmission Facilities for Fuel Diversisty Expansion Plan with Coal