BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20210034-EI

IN RE: PETITION FOR RATE INCREASE

BY TAMPA ELECTRIC COMPANY

PREPARED DIRECT TESTIMONY AND EXHIBIT

OF

C. DAVID SWEAT

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

C. DAVID SWEAT

Q. Please state your name, address, occupation, and employer.

A. My name is Cecil David Sweat. My business address is 702 N. Franklin Street, Tampa, Florida, 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") as Director of Renewable Energy.

Q. Please provide a brief outline of your educational background and business experience.

A. I have a bachelor's degree in Electrical Engineering and a master's degree in Engineering Management from the University of South Florida. I am a registered Professional Engineer in the state of Florida. I have more than 36 years of service with Tampa Electric working in the Substation, Transmission, Distribution, Meter, Grid Operations, Safety, Lighting, Vegetation Management, Skills Training and Renewable Energy areas.

Q. Have you previously testified or submitted written testimony before the Florida Public Service Commission ("Commission")?

A. Yes. I filed direct testimony in Docket No. 20000061-EI, which was a complaint against the company involving our commercial/industrial service rider. I have also participated in workshops regarding the company's storm preparedness plans and I participated in the agenda conference on Docket No. 20120038-EI, which involved the company's petition to modify its vegetation management plan.

Q. What are the purposes of your prepared direct testimony?

A. The purposes of my prepared direct testimony are to: (1) explain the company's plans to build 600 megawatts ("MW") of solar photovoltaic ("PV") generating facilities ("Future Solar") to serve its customers; (2) describe the Future Solar projects expected to be in service by December 1, 2021, December 1, 2022, and December 1, 2023, respectively; and (3) provide the projected installed costs for the projects.

Q. Have you prepared an exhibit to support your prepared

direct testimony?

A. Yes. Exhibit No. CDS-1 was prepared under my direction and supervision. The contents of my exhibit were derived from the business records of the company and are true and correct to the best of my information and belief. It consists of 12 documents, as follows:

Document No. 1	List of Minimum Filing Requirement Schedules Sponsored or Co-Sponsored by C. David Sweat
Document No. 2	Magnolia Solar Project Specifications and Projected Costs
Document No. 3	Mountain View Solar Project Specifications and Projected Costs
Document No. 4	Jamison Solar Project Specifications and Projected Costs
Document No. 5	Big Bend II Solar Project Specifications and Projected Costs
Document No. 6	Laurel Oaks Solar Project Specifications and Projected Costs
Document No. 7	Riverside Solar Project Specifications and Projected Costs
Document No. 8	Palm River Dairy Solar Project Specifications and Projected Costs

Document No. 9	Big Bend III Solar Project Specifications and Projected Costs
Document No. 10	Alafia Solar Project Specifications and Projected Costs
Document No. 11	Wheeler Solar Project Specifications and Projected Costs
Document No. 12	Dover Solar Project Specifications and Projected Costs

Q. Are you sponsoring any of Tampa Electric's Minimum Filing Requirements ("MFR") schedules?

A. Yes. I am sponsoring or co-sponsoring the MFR schedules listed in Document No. 1 of my exhibit. The contents of these MFR schedules were derived from the business records of the company and are true and correct to the best of my information and belief. MFRs B-11 and B-13 reflect the Future Solar projects described in my testimony.

Q. How does your prepared direct testimony relate to the prepared direct testimony of the company's other witnesses?

A. My direct testimony describes the utility-scale solar generation projects for which cost recovery is requested,

as well as the projected in-service dates and installed costs per kW_{ac}. These costs are incorporated in the revenue requirement and Generation Base Rate Adjustment ("GBRA") amounts requested for 2022, 2023, and 2024, as described in the direct testimony of Tampa Electric witnesses A. Sloan Lewis and Jeffrey S. Chronister, respectively, the cost-effectiveness analysis presented by Tampa Electric witness Jose A. Aponte, and the proposed customer rates and miscellaneous charges submitted by Tampa Electric witness William R. Ashburn.

TAMPA ELECTRIC'S SOLAR PLANS

Q. Please describe the company's plan to install 600 MW of Future Solar.

A. As part of our strategy of transitioning to a cleaner, greener, generating portfolio, Tampa Electric plans to add 1.6 million solar modules in 11 new solar PV projects across its service territory in West Central Florida through 2023. This amounts to a total of 600 MW of cost-effective solar PV energy, which is enough electricity to power more than 100,000 homes. When the projects are complete, about 14 percent of Tampa Electric's energy will come from the sun.

These solar additions are a continuation of Tampa Electric's long-standing commitment to clean energy. The company has long believed in the promise of renewable energy because it plays an important role in our energy future. As a member of the Emera family of companies, Tampa Electric is committed to transitioning its power generation to lower carbon emissions with projects that are cost-effective for customers. To learn more about how customers want Tampa Electric to invest in a cleaner, greener future, refer to the direct testimony of Tampa Electric witness Melissa L. Cosby.

As of January 2021, the company has 655 MW of cost-effective solar projects in its generation portfolio. The additional 600 MW of cost-effective solar PV will be added to the company's generating fleet in three tranches. Tranche One projects, consisting of 226.5 MW of solar generation, are planned to be in service by December 1, 2021. Tranche Two consists of 224 MW and four projects, which will be in service by December 1, 2022. Tranche Three, 149.5 MW of solar generation, includes three projects and will be in service by December 1, 2023.

Q. What benefits accrue to the company and its customers from the company's plans to build the Future Solar in 2021,

2022 and 2023?

A. There are several. First, we have just completed the SoBRA solar and are able to apply the experience we have gained building utility scale solar. Second, purchasing modules, trackers, inverters and generating step up transformers in-bulk has allowed us to procure this equipment at favorable prices and enjoy economies of scale, which lowers the costs to our customers. Third, when possible, staging the construction of projects concurrently or one after another allows our contractors to efficiently manage their labor and equipment resources and minimize the costs they charge the company. Finally, we executed contracts to purchase inverters and tracking systems to secure the 26 percent Investment Tax Credit for all three Tranches. The ITC lowers the cost to our customers and requires all the assets to be in service by 2023.

TRANCHE ONE PROJECTS

Q. Please describe the Tranche One solar projects.

A. The Magnolia Solar Project ("Magnolia Solar"), Mountain View Solar Project ("Mountain View Solar"), Jamison Solar Project ("Jamison Solar") and Big Bend II Solar Project ("Big Bend II Solar") will be included in the first

tranche. The projects use a single axis tracking system and design to optimize energy output for each site's conditions. Magnolia Solar is a 74.5 MW project located in Polk and Hillsborough Counties, Florida on approximately 577 acres of land. Mountain View Solar is a 52.5 MW project located in Pasco County, Florida on approximately 359 acres of land. Jamison Solar is a 74.5 MW project located in Polk County, Florida on approximately 695 acres of land. Big Bend II Solar is a 25 MW project located in Hillsborough County, Florida on approximately 191 acres of land. My exhibit contains project specifics, a general arrangement drawing, and projected installed costs in total and by category for each project.

Q. When does the company expect the Tranche One projects to begin commercial service?

A. Based on the current engineering, permitting, procurement, and construction schedules, the company expects the projects to be complete and in service on or before December 1, 2021.

Q. What arrangements has the company made to design and build the Tranche One projects?

A. The company used a competitive process to review qualifications and experience and identify and select full-service solar developers, followed by contract negotiations. To date, three full-service solar developers have been selected to provide project development and Engineering, Procurement, and Construction ("EPC") services for the first tranche of Tampa Electric solar projects.

Tampa Electric employed a Request for Information ("RFI") process to collect information from the bidders with respect to their qualifications, capabilities, and experience as full-service solar developers. The RFI was provided to more than 10 companies with whom Tampa Electric had met or discussed the development and construction of utility scale solar projects. Tampa Electric received 10 responses from the solar developers or solar EPC companies. The company used the information from the RFI responses to select a shortlist of six full-service solar developers.

The shortlisted developers were asked to provide pricing for solar PV projects that ranged in size from 25 to 75 MW. The pricing information was broken out for engineering and permitting, equipment, balance of system,

installation, and interconnection. The projects were based on sites that Tampa Electric has purchased or for which it has site control. The pricing evaluation was conducted during May 2020 and included interviews with each developer.

In addition, Tampa Electric employed a screening and due diligence process to select its solar sites that includes geotechnical studies, environmental surveys, and wetland delineation. Each of the Tranche One sites was evaluated and selected after considering environmental assessments, size of the project, proximity to Tampa Electric transmission facilities, cost of land, and suitability of the site for solar PV construction, and each site is located within the company's service territory.

After reviewing the qualifications, experience, safety record, and cost proposals from the EPC contractors, Tampa Electric executed contracts with a full-service solar developer for each Tranche One project.

Tampa Electric selected Black & Veatch for the Magnolia Solar project, DEPCOM for Mountain View Solar and Big Bend II Solar, and Ecoplexus for the Jamison Solar project.

Q. What safety protocols are in place for contractors involved in constructing the Future Solar Projects?

A. The company's Contractor Safety Program is used to manage contractor safety at the project sites. It details the steps required for the EPC to maintain a safe working environment. Before the project begins, a senior management level meeting is held with the EPC to set expectations for successful implementation of the Health, Safety, and Environmental program. This meeting is followed by safety orientations and review of all EPC safety documentation. Tampa Electric utilizes ISN, an online contractor and supplier management platform, to ensure the EPC is maintaining the Company's minimum safety requirements, including Days Away / Restricted or Transfer rate (DART) and the Total Recordable Incident Rate (TRIR), active insurance, and effective written safety programs. We assign safety professionals to each solar site to assist Construction Supervisors in monitoring project activities for compliance of both Tampa Electric's and EPC Health, Safety, and Environmental programs.

Q. Has the company procured the land necessary for the solar projects?

A. Yes. Tampa Electric purchased land for the 74.5 MW Magnolia Solar project, the 52.5 MW Mountain View Solar project, and the 74.5 MW Jamison Solar project. The Magnolia Solar site is approximately 577 acres in size, and the Mountain View site consists of about 359 acres. The Jamison site is approximately 695 acres.

Tampa Electric is using previously purchased land for the 25 MW Big Bend II Solar project. This site is approximately 191 acres.

Q. What is the status of project design and engineering for the Tranche One projects?

A. The engineering and design of the Magnolia Solar project is complete. The company received the environmental resource permit in January 2021, and the county permit is expected in early April. Site work will begin immediately thereafter.

The engineering and design of the Mountain View Solar project is complete. The company received the environmental resource permit, and the county permit is expected in April. Site work will begin immediately thereafter.

The engineering and design of the Big Bend II Solar project is complete. The environmental resource permit is expected in mid-April, and a county permit is not required. Site work will begin upon receipt of the environmental resource permit.

The engineering and design of the Jamison Solar project is complete. The company received the environmental resource permit in March, and the county permit in February 2021. Site work will begin in April 2021.

Q. Has the company purchased PV modules necessary to construct the projects?

A. Tampa Electric solicited pricing from several module manufacturers and determined First Solar to be the best value based on pricing and performance. Tampa Electric purchased First Solar series 6 and 6 Plus modules for the entire 600 MW of Future Solar. The modules are part of a bulk purchase from First Solar in 2019, which enabled the company to lock in competitive prices and production slots.

Q. What other benchmarks demonstrate that the costs of the projects are reasonable?

A. A January 2021 NREL report that benchmarks EPC solar costs, "U.S. Solar Photovoltaic System and Energy Storage Cost Benchmark: Q1 2020" shows 100 MW utility scale PV systems with single axis tracking costs average $1,350 per kW_{ac} excluding land costs. Tampa Electric's Tranche One EPC cost, excluding land costs, averages $1,187 per kW_{ac}.

PROJECTED INSTALLED COSTS

Q. What are the projected installed costs for the Tranche One projects?

A. The projected installed costs of the Tranche One projects with land are listed in the following table.

Magnolia	$ 1,186 per kW_{ac}
Mountain View	$ 1,333 per kW_{ac}
Jamison	$ 1,336 per kW_{ac}
Big Bend II	$ 1,352 per kW_{ac}

Q. What costs were included in these projections?

A. The projected total installed costs broken down by major category for the Tranche One projects are shown on Document Nos. 2 through 5 of my exhibit.

The projected costs shown in my exhibit reflect the company's best estimate of the cost of the projects; they include the types of costs that traditionally have been allowed in rate base and are eligible for cost recovery. These costs include EPC costs; development costs including third party development fees, if any; permitting and land acquisition costs; taxes; utility costs to support or complete development; transmission interconnection cost and modules and equipment costs; costs associated with electrical balance of system, structural balance of system; and other traditionally allowed rate base costs.

Q. Are Allowance for Funds Used During Construction ("AFUDC") costs included in your cost estimates?

A. No. Mr. Jose Aponte added AFUDC to the project costs I provided and used the total cost, including AFUDC, when analyzing project cost-effectiveness.

Q. How were the projected cost amounts in your exhibit developed?

A. Tampa Electric worked with developers and suppliers to determine the all-in costs for the Tranche One projects

and used an iterative approach to update project costs as site due diligence and engineering and design were conducted. This includes negotiating and executing agreements directly with manufacturers and suppliers for modules, inverters, trackers and racking, and Generator Step-up Unit ("GSU") transformers, reviewing equipment specifications and pricing, reviewing the scope of work and balance of system costs, and acquiring land and cost estimates to engineer, permit, and construct the projects. The fixed O&M amounts were developed by our solar operations group based on their experience operating our first 600 MW of solar, i.e., the SoBRA solar.

Q. How did the company calculate the cost of land to be used in the calculation of the project's projected installed cost?

A. The costs of the land for the project sites follow; they are calculated using the actual purchase price of the land. Big Bend II land is $0 because we used available buffer land at Big Bend Power Station.

Magnolia	$5,474,886 or $ 9,489 per acre
Mountain View	$7,618,517 or $21,221 per acre

Jamison	$9,708,545 or	$13,969 per acre
Big Bend II	$ 0	

TRANCHE TWO PROJECTS

Q. Please describe the Tranche Two solar projects.

A. The Laurel Oaks Solar Project ("Laurel Oaks Solar"), Riverside Solar Project ("Riverside Solar"), Palm River Dairy Solar Project ("Palm River Dairy Solar"), and Big Bend III Solar Project ("Big Bend III Solar") will be included in the second tranche. These projects will use a single axis tracking system and are designed to optimize energy output for each set of site conditions. Laurel Oaks Solar is a 66.8 MW project located in Hillsborough County, Florida on approximately 515 acres of land. Riverside Solar is a 65 MW project located in Hillsborough County, Florida on approximately 530 acres of land. Palm River Dairy Solar is a 70 MW project located in Pasco County, Florida on approximately 548 acres of land. Big Bend III Solar is a 22.2 MW project located in Hillsborough County, Florida on approximately 93 acres of land.

My exhibit contains project specifics, a general arrangement drawing, and projected installed costs in total and by category for each project.

Q. When does the company expect the Tranche Two projects to begin commercial service?

A. Based on the current engineering, permitting, procurement, and construction schedules, the company expects the projects to be complete and in service on or before December 1, 2022.

Q. What arrangements has the company made to design and build the Tranche Two projects?

A. The Tranche Two Solar projects: Laurel Oaks Solar, Riverside Solar, Big Bend III Solar, and Palm River Dairy Solar, were designed and will be built using the same general contractual arrangements and processes and competitive bid process that I described for the Tranche One projects.

Tampa Electric selected Black & Veatch and executed a contract for project development and EPC services for the Laurel Oaks Solar project. The selection process is currently underway for the remaining Tranche Two projects: Riverside Solar, Big Bend III Solar, and Palm River Dairy Solar.

Q. Has the company procured the land necessary for the solar projects?

A. Yes. Tampa Electric has purchased land for the Laurel Oaks Solar and Riverside Solar projects, and the company employed the same screening and due diligence process to select the Tranche Two project sites as I described for the Tranche One projects. The Laurel Oaks site is approximately 515 acres in size and is located in Tampa Electric's retail service territory. The Riverside Solar site is approximately 530 acres in size and is in the company's retail service territory.

Tampa Electric is utilizing existing buffer land for the 22.2 MW Big Bend III Solar project. The site is approximately 93 acres in size and is in Tampa Electric's retail service territory.

Tampa Electric has a purchase option on land for the Palm River Dairy Solar project and is completing its due diligence. Once the due diligence is completed the company plans to purchase the land in Q2 2021. The site is approximately 548 acres in size and is in the company's retail service territory.

Q. What is the status of project design and engineering for the Tranche Two projects?

A. The engineering and design of the Laurel Oaks Solar project is underway. The environmental resource permit is expected in May 2021 and the county permit is expected in June 2021. Site work will begin first quarter of 2022.

The engineering and design of the Riverside Solar project will begin in the second quarter of 2021. Tampa Electric expects to submit permit applications during the second quarter of 2021. Site work will begin first quarter of 2022.

The engineering and design of the Big Bend III Solar project will begin in the second quarter of 2021. The company will submit permit applications during the second quarter of 2021. Site work will begin first quarter of 2022.

The engineering and design of the Palm River Dairy Solar project will begin once the land purchase has been finalized. Tampa Electric expects to submit permit applications in the second quarter of 2021. Site work will begin first quarter of 2022.

Q. What other benchmarks demonstrate that the costs of the projects are reasonable?

A. Tampa Electric's Tranche Two project EPC cost averages $1,111 per kW_{ac}, excluding land costs. This compares favorably to the January 2021 NREL report benchmark's cost of $1,350 per kW_{ac} excluding land costs, which I previously discussed.

TRANCHE TWO PROJECTED INSTALLED COSTS

Q. What are the projected installed costs for the Tranche Two projects?

A. The projected installed costs of the Tranche Two projects are as follows.

Laurel Oaks	$1,170 per kW_{ac}
Riverside	$1,241 per kW_{ac}
Palm River Dairy	$1,183 per kW_{ac}
Big Bend III	$1,275 per kW_{ac}

Q. Did you include the same types of costs and use the same cost estimation techniques for Tranche Two projects that you described for the Tranche One projects earlier in your testimony?

A. Yes. The projected total installed costs broken down by major category for the Tranche Two projects are shown on Document Nos. 6 through 9 of my exhibit.

The project land costs follow.

Laurel Oaks	$4,473,025 or $ 8,692 per acre
Riverside	$8,835,441 or $16,671 per acre
Palm River Dairy	$7,830,000 or $14,288 per acre
Big Bend III	$ 0

TRANCHE THREE PROJECTS

Q. Please describe the Tranche Three solar projects.

A. The Alafia Solar Project ("Alafia Solar"), Wheeler Solar Project ("Wheeler Solar"), and Dover Solar Project ("Dover Solar") will be included in the third tranche. These are single axis tracking configurations that will be designed to optimize energy output, given site-specific conditions. Alafia Solar is a 50 MW project located in Polk County, Florida on approximately 408 acres of land. Wheeler Solar is a 74.5 MW project located in Polk County, Florida on approximately 464 acres of land. Dover Solar is a 25 MW project located in Hillsborough County, Florida on approximately 177 acres of land.

My exhibit contains project specifics, a general arrangement drawing, and projected installed costs in total and by category for each Tranche Three project.

Q. When does the company expect the Tranche Three projects to begin commercial service?

A. Based on the current engineering, permitting, procurement, and construction schedules, the company expects the projects to be complete and in service on or before December 1, 2023.

Q. What arrangements has the company made to design and build the Tranche Three projects?

A. The Tranche Three Solar projects: Alafia Solar, Wheeler Solar, and Dover Solar will be designed and built using the same general contractual arrangements and processes and competitive bid process that I described for the Tranche One and Tranche Two projects.

The EPC selection process is ongoing for each Tranche Three project.

Q. Has the company purchased land for the Tranche Three solar projects?

A. Yes. Tampa Electric purchased land for the Alafia and Dover projects and entered a purchase option on the land for the third project. The company employed the same screening and due diligence process to select the Tranche Three project sites as I described for the Tranche One and Tranche Two sites. The Alafia site is approximately 408 acres in size and is located in Tampa Electric's retail service territory. The Dover site is approximately 177 acres in size and is within the company's service territory.

Tampa Electric has a purchase option on land for the Wheeler Solar project and is completing its due diligence. Once the due diligence is completed the company plans to purchase the land in Q2 2021. The Wheeler site is approximately 464 acres in size and is within the Tampa Electric service territory.

Q. What is the status of project design and engineering for the Tranche Three projects?

A. Tampa Electric expects the Alafia Solar engineering and design to begin during the third quarter of 2021, and permit applications will be submitted thereafter. Site work will begin during the first quarter of 2023.

Tampa Electric will begin engineering and design of the Wheeler Solar project after the site is purchased. Permit applications will be submitted thereafter, and site work will begin in the first quarter of 2023.

The Dover Solar project engineering and design will begin in the fourth quarter of 2021. Permit applications also will be submitted in the fourth quarter of 2021. Site work will begin first quarter of 2023.

Q. What other benchmarks did the company use to ensure that the costs of the Future Solar projects are reasonable?

A. Tampa Electric's Tranche Three project EPC cost averages $1,087 per kW_{ac}, excluding land costs. This compares favorably to the January 2021 NREL report benchmark cost of $1,350 per kW_{ac} excluding land costs, which I previously discussed.

TRANCHE THREE PROJECTED INSTALLED COSTS

Q. What are the projected installed costs for the Tranche Three projects?

A. The projected installed costs of the Tranche Three projects follow.

Alafia $ 1,252 per kW_{ac}

Wheeler $ 1,154 per kW_{ac}

Dover $ 1,375 per kW_{ac}

Q. Did you include the same types of costs and use the same cost estimation techniques for Tranche Three projects that you described for the Tranche One and Two projects earlier in your testimony?

A. Yes. The projected total installed costs broken down by major category for the Tranche Three projects are shown on Document Nos. 10 through 12 of my exhibit.

The Tranche Three project land costs are as listed below.

Alafia $6,376,864 or $15,630 per acre

Wheeler $9,475,578 or $20,422 per acre

Dover $4,520,591 or $25,505 per acre

TRANCHES ONE, TWO, AND THREE PROJECTED COSTS

Q. Are the project costs reasonable?

A. Yes. Our track record estimating and controlling the costs associated with our first 600 MW of SoBRA solar projects is good. The actual costs of the projects in the first

three traches came in very close to our estimates. We have used the same cost estimating and control procedures for our Future Solar projects. We control project costs using competitive bidding processes, diligent oversight of EPC contractors, negotiation of cost-effective equipment purchases to include ITC credits for inverters and tracking systems, and project management to ensure the projects remain on time and on budget. These project costs are below recent benchmark prices, as I previously discussed.

SUMMARY

Q. Please summarize your prepared direct testimony.

A. Tampa Electric is building three tranches totaling 600 MW of solar generation projects. The first, second, and third tranches consist of single axis tracking solar PV projects in 226.5 MW, 224 MW, and 149.5 MW increments, respectively. The projects of each tranche will enter service at one-year intervals beginning in December 2021. Tranche One includes Magnolia Solar in Polk and Hillsborough Counties with 74.5 MW of capacity on 577 acres; Mountain View Solar in Pasco County providing 52.5 MW of capacity on 359 acres; the 74.5 MW Jamison Solar project in Polk County on 695 acres; and Big Bend II Solar

in Hillsborough County with 25 MW on 191 acres. The projected costs of Magnolia Solar, Mountain View Solar, Jamison Solar, and Big Bend II Solar are $1,186, $1,333, $1,336, and $1,352 per kW_{ac}, respectively.

Tampa Electric will build the Laurel Oaks Solar project in Hillsborough County with 66.8 MW on 515 acres; the Riverside Solar project in Hillsborough County providing 65 MW of capacity on 530 acres; Palm River Dairy Solar in Pasco County 70 MW of capacity on 548 acres; and Big Bend III Solar in Hillsborough County providing 22.2 MW of capacity on 93 acres. The projected costs of Laurel Oaks Solar, Riverside Solar, Jamison Solar, and Big Bend III Solar are $1,170, $1,241, $1,183, and $1,275 per kW_{ac}, respectively.

Tranche Three includes the 50 MW Alafia Solar project in Polk County on 408 acres; Wheeler Solar in Polk County, which adds 74.5 MW of capacity on 464 acres; and the 25 MW Dover Solar project in Hillsborough County on 177 acres. The projected costs of Alafia Solar, Wheeler Solar, and Dover Solar are $1,252, $1,154, and $1,375 per kW_{ac}, respectively.

Tampa Electric controls project costs using competitive

bidding processes, diligent oversight of EPC contractors, negotiation of cost-effective equipment purchases, and project management to ensure the projects remain on time and on budget. These project costs are below recent benchmark prices.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

EXHIBIT

OF

C. DAVID SWEAT

Table of Contents

LIST OF MINIMUM FILING REQUIREMENT SCHEDULES

SPONSORED OR CO-SPONSORED BY C. DAVID SWEAT

MFR Schedule	Title
B-07	PLANT BALANCES BY ACCOUNT AND SUB-ACCOUNT
B-11	CAPITAL ADDITIONS AND RETIREMENTS
B-12	PRODUCTION PLANT ADDITIONS
B-13	CONSTRUCTION WORK IN PROGRESS
B-15	PROPERTY HELD FOR FUTURE USE-13 MONTH AVERAGE

Magnolia Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Magnolia Solar
(2)	Net Capability	74.5 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	April 2021
	B. Commercial In-Service Date	December 1, 2021
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	577 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	$1,186
	Direct Construction Cost ($/kW)	$1,138
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	10.91
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.

SYSTEM SPECIFICATION	
CLIENT	TAMPA ELECTRIC (TECO)
PROPERTY LINE SETBACK (FT)	50
SYSTEM DC RATING (MW)	88.4
SYSTEM AC RATING AT POI (MW)	74.9
SYSTEM DC/AC RATIO	1.18
MODULE MODEL	FIRST SOLAR FS-6435
MODULE STC DC RATING (W)	435 AND 440
435W MODULE COUNT	51414
440W MODULE COUNT	150312
MODULE COUNT	201726
MODULE PER STRING	6
TOTAL # STRING RACKS	353
TOTAL # STRING RACKS	518
TOTAL 13 STRING RACKS	2119
STRING COUNT	33621
INVERTER MODEL	TMEIC NYNJA
FULL SKID INVERTER RATING (VA)	4.2 @ 25C AND 3.825 @ 50C
QUANTITY OF INVERTER SKID	19
QUANTITY OF TRANSFORMER	19
DC SYSTEM VOLTAGE (V)	1500
INTERCONNECTION VOLTAGE (KV)	69
RACKING SYSTEM	ATI TRACKER
TRACKING UNIT	52
AZIMUTH	180
GCR	0.4

LEGEND

- PROPERTY BOUNDARY
- COUNTY SEPARATION LINE
- 50' PROPERTY BOUNDARY SETBACK
- FENCE LINE
- PV ARRAY BLOCK DELINEATION
- FEMA 100 YEAR FLOOD ZONE
- EXISTING OVERHEAD LINE
- 435W MODULES
- REFERENCE CELL W/ RTD'S
- MET/SOLINX STATION
- WETLAND WITH 25' BUFFER
- PV MODULES
- INVERTER SKID
- INV-XX INVERTER SKID IDENTIFIER
- 440W MODULES

NOTES

1. SEE CSTF-S0000 SERIES DRAWINGS FOR GRADING AND DRAINAGE, ROADS AND FENCE PLANS.

ISSUED FOR PERMITTING

THESE DRAWINGS ARE PRELIMINARY AND ARE NOT TO BE USED FOR CONSTRUCTION. THE USER SHALL VERIFY THAT HE/SHE HAS THE LATEST APPROVED VERSION.

TAMPA ELECTRIC (TECO)
MAGNOLIA SOLAR PROJECT

SITE ARRANGEMENT

405789-CGAU-G1000

REV 1

BLACK & VEATCH

DESIGNED: ASD DRAWN: AAC CHECKED: DC DATE:

PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA

REG NO. DATE SIGNED

NO	DATE	DESCRIPTION	DRWN	DES	CHK	APP
1	06/04/21	ISSUED FOR PERMITTING	AAC	ASD	DC	MG
0	09/07/20	ISSUED FOR PERMITTING	AAC	ASD	DC	MG

REVISIONS AND RECORD OF ISSUE

jax77599 ANSI D 34x22 11/26/2020 02:29 AM MicroStation v8.11.9.606 1"=1" Full Size

Magnolia Solar

Projected Installed Costs ($ Million)	
Project Output (MW)	74.5
Major Equipment[1]	34.1
Balance of System[2]	43.2
Development[3]	0.5
Transmission Interconnect	3.6
Land	5.5
Owners Costs	1.5
Total Installed Cost ($ Million)	88.4
Total ($ per kW_{ac})	1,186

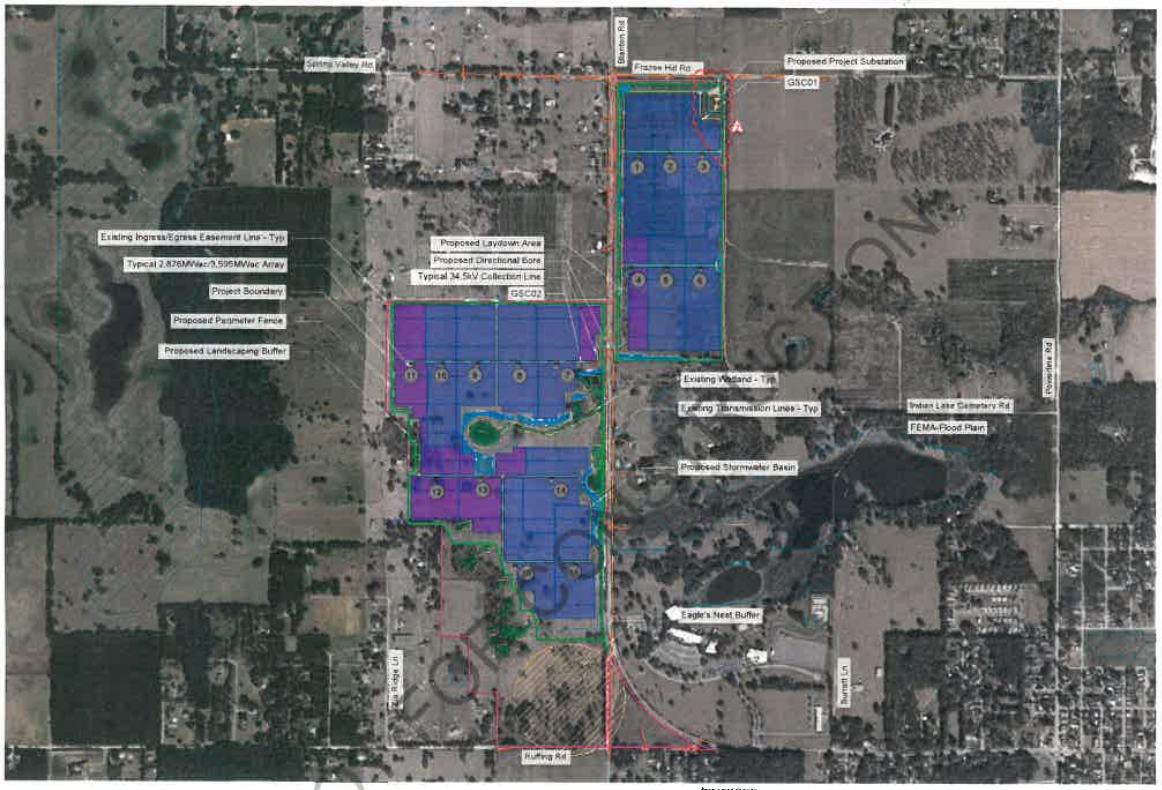
[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Mountain View Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Mountain View Solar
(2)	Net Capability	52.5 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	April 2021
	B. Commercial In-Service Date	December 1, 2021
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	359 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	$1,333
	Direct Construction Cost ($/kW)	$1,304
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	10.91
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.

TAMPA ELECTRIC COMPANY
DOCKET NO. 20210034-EI
EXHIBIT NO. CDS-1
WITNESS: SWEAT
DOCUMENT NO. 3
PAGE 2 OF 3
FILED: 04/09/2021



Imperial Scale

Site Plan

Scale: 1" = 600'

Scale: 1" = 600'

AC Capacity at Point of Interconnection: 52.1MWac

Information used to prepare this drawing		
Item	Source	Date Received
Site Boundary	ALTA by Pickett and Associates, Inc.	6/20/2018
FDEP	Enviromental Resource Permit, DEP Project No. 51-0364915-002-EI	7/5/2019
Geotech	Geotechnical Engineering Report by Terracon Project No. H4175182	5/8/2018
FEMA	Panel: 12101C0115F	9/25/2014
Topographic Survey	ALTA by Pickett and Associates, Inc.	6/20/2018
Hydrology	Hydrology Report by Wood. Project No. 60058.11	2/1/2019
Wetlands	ALTA by Pickett and Associates, Inc.	6/20/2018
POI Location	None	N/A
Aerial Imagery	USGS via Bing Maps	N/A
ASHRAE	http://ashrae-meteo.info/index.php	ASHRAE 2017
Wind Load Source	https://hazards.atcouncil.org/	(ASCE7-10)
Snow Load Source	https://hazards.atcouncil.org/	(ASCE7-10)
Seismic Load Source	https://hazards.atcouncil.org/	(ASCE7-10)

*Files are based on State Plane Coordinate System NAD83

GSC	2.872 MWac	3.590 MWac	MWdc	MWac	dc/ac Ratio
1	0	6	24.67	20.82	1.1850
2	4	6	39.95	33.75	1.1837
Total Capacity	4	12	64.62	54.57	1.1842

Mountainview Solar

Dade City, Pasco County, Florida

Owner/Developer:

TECO

Project Site Description:

Latitude:	28.387000°
Longitude:	-82.220850°
Elevation:	52 ft min - 248 ft max
Total Site Area - Available:	359.3 ± Acres
Total Buildable Area:	223.6 ± Acres
Total Fenced Acres:	255.4 ± Acres
Total Array Footprint:	212.4 ± Acres

Annual Cooling Design Temp: 92.8° F
Extreme Annual Min DB MeanTemp: 23.1° F
(ASHRAE 2017)

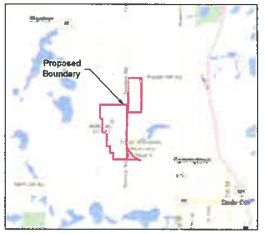
Wind Load: 127, Risk Category I
Snow Load: 0psf
Seismic Load: SS= 0.069g, S1= 0.035g

Interconnection Data:

Transmission Provider: TECO
Interconnection Voltage: 69kV
Offtaker: TECO
Point of Interconnection: 69kV via 1,000ft Gen-Tie.

Legend

- Property Line
- Underground AC Line
- OH — Overhead AC Line
- DB — Directional Bore
- X — Perimeter Fence
- Existing Ingress/Egress Easement
- Existing Overhead Line
- Wetlands
- 100-YR FEMA Flood Plain
- 660' Eagle's Nest Buffer
- Proposed Landscape Buffer
- 3.590MWac Array
- 2.872MWac Array



Key Map

Scale: 1" = 5,000±ref

DEPCOM POWER
9185 E PIMA CENTER PARKWAY #100
SCOTTSDALE, AZ 85258
PHONE: (480) 270-8910
WWW.DEPCOMPOWER.COM

TECO

TITLE: Mountainview Solar
Dade City, Pasco County, Florida

THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED "OK FOR CONSTRUCTION" ABOVE LAST REVISION

REV	DATE	REVISION DESCRIPTION	BY	CHK	APP
2	10-14-20	Revised Access Road and Substation Area	MP	RR	RR
1	12-7-20	Revised Access Road and Substation Area	CF	MP	RR
0	11-2-20	Issued For Review	CF	MP	RR

DEPCOM JOB NUMBER: 0.000000
PROJECT CODE: MOU
PROJECT DIRECTOR: TBD
PROJECT MANAGER: TBD
SHEET TITLE: Site Plan
CHECKED BY: MP
DRAWN BY: CF
SCALE: AS NOTED
DRAWING NUMBER: SP-100-5-T
SHEET 1 OF 3

D:\DEPCOM Power Dev\CAD - PDE\Opportunities\TECO\Mountainview\Site Plans\WIP\Active Drawings\Mountainview SP-100-5-T - 12/16/2020 12:04 PM

Mountain View Solar

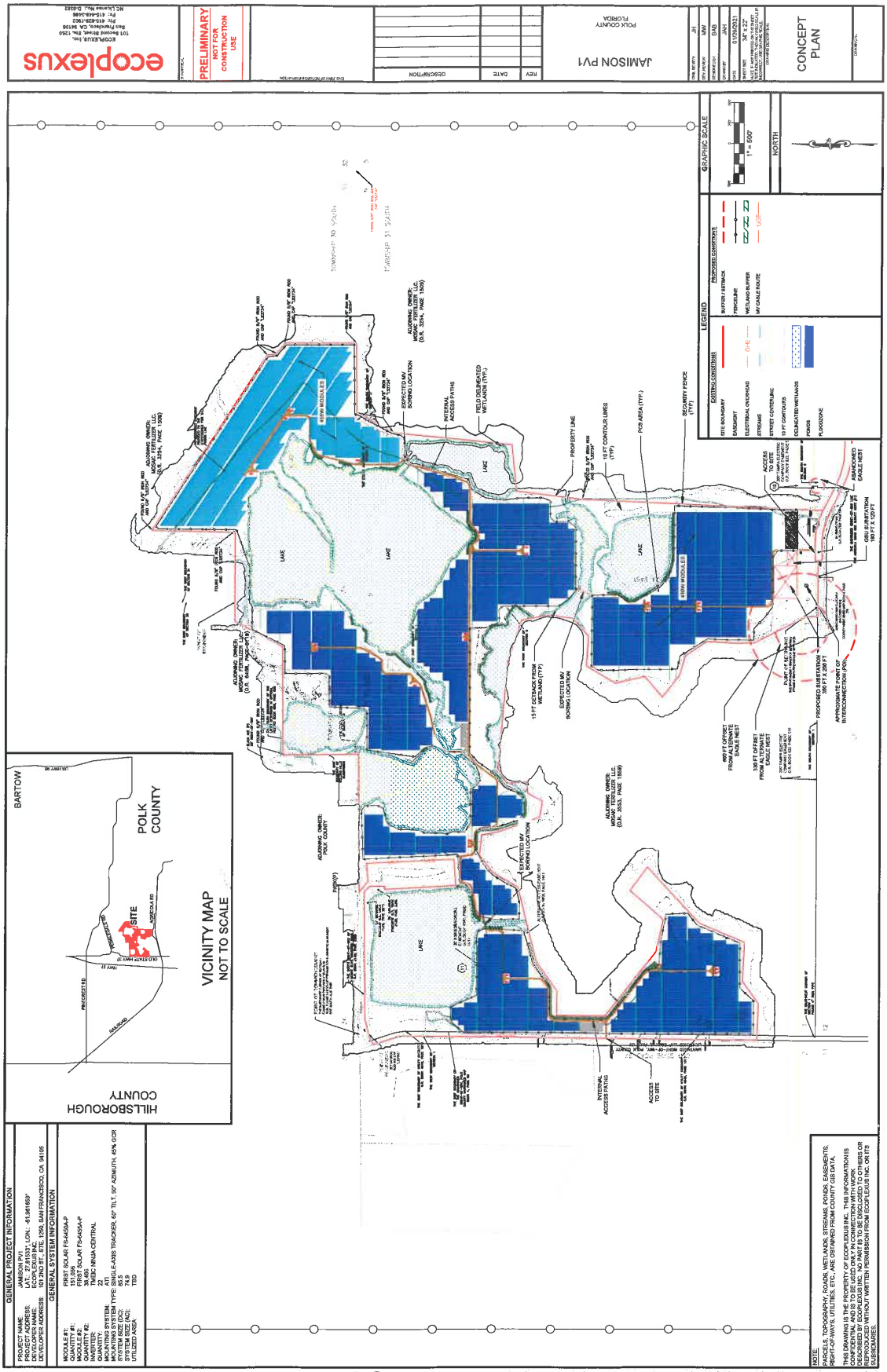
Projected Installed Costs ($ Million)	
Project Output (MW)	52.5
Major Equipment[1]	26.2
Balance of System[2]	32.4
Development[3]	0.5
Transmission Interconnect	1.5
Land	7.6
Owners Costs	1.7
Total Installed Cost ($ Million)	69.98
Total ($ per kW_{ac})	1,333

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Jamison Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Jamison Solar
(2)	Net Capability	74.5 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	April 2021
	B. Commercial In-Service Date	December 1, 2021
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	695 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	$1,336
	Direct Construction Cost ($/kW)	$1,262
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	10.91
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.


ecoplexus
PRELIMINARY
NOT FOR CONSTRUCTION USE
JAMISON PV1
POLK COUNTY
FLORIDA
CONCEPT PLAN
GRAPHIC SCALE
1" = 600'
NORTH
LEGEND
EXISTING CONDITIONS
SITE BOUNDARY
EASEMENT
ELECTRICAL OVERHEAD
STREAMS
STREET CENTERLINE
15 FT CONTOURS
DELINEATED WETLANDS
PONDS
FLOODZONE
PROPOSED CONDITIONS
BUFFER / SETBACK
FENCELINE
WETLAND BUFFER
MV CABLE ROUTE
VICINITY MAP
NOT TO SCALE
BARTOW
POLK COUNTY
HILLSBOROUGH COUNTY
SITE
GENERAL PROJECT INFORMATION
PROJECT NAME: JAMISON PV1
PROJECT ADDRESS: LAT: 27.81533°, LON: -81.96169°
DEVELOPER NAME: ECOPLEXUS INC.
DEVELOPER ADDRESS: 101 SECOND STREET, 12th, SAN FRANCISCO, CA 94105
GENERAL SYSTEM INFORMATION
MODULE #1: FIRST SOLAR FS-4459A-P
QUANTITY #1: 150,000
MODULE #2: FIRST SOLAR FS-4455A-P
QUANTITY #2: 34,416
INVERTER: TMEIC NINJA CENTRAL
QUANTITY: 22
RACKING SYSTEM:
MOUNTING SYSTEM TYPE: SINGLE-AXIS TRACKER, 60° TILT, 90° AZIMUTH, 45% GCR
SYSTEM SIZE (MW): 91.5
SYSTEM SIZE (AC): 91.9
UTILIZED AREA: TBD
NOTE:
PARCEL, TOPOGRAPHY, ROADS, WETLANDS, STREAMS, PONDS, EASEMENTS, AND UTILITIES ARE APPROXIMATE AND NOT SURVEY GRADE.
THIS DRAWING IS THE PROPERTY OF ECOPLEXUS INC. THIS INFORMATION IS CONFIDENTIAL AND IS TO BE USED ONLY IN CONNECTION WITH WORK DESCRIBED BY ECOPLEXUS INC. NO PART IS TO BE DISCLOSED TO OTHERS OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM ECOPLEXUS INC. OR ITS SUBSIDIARIES.

Jamison Solar

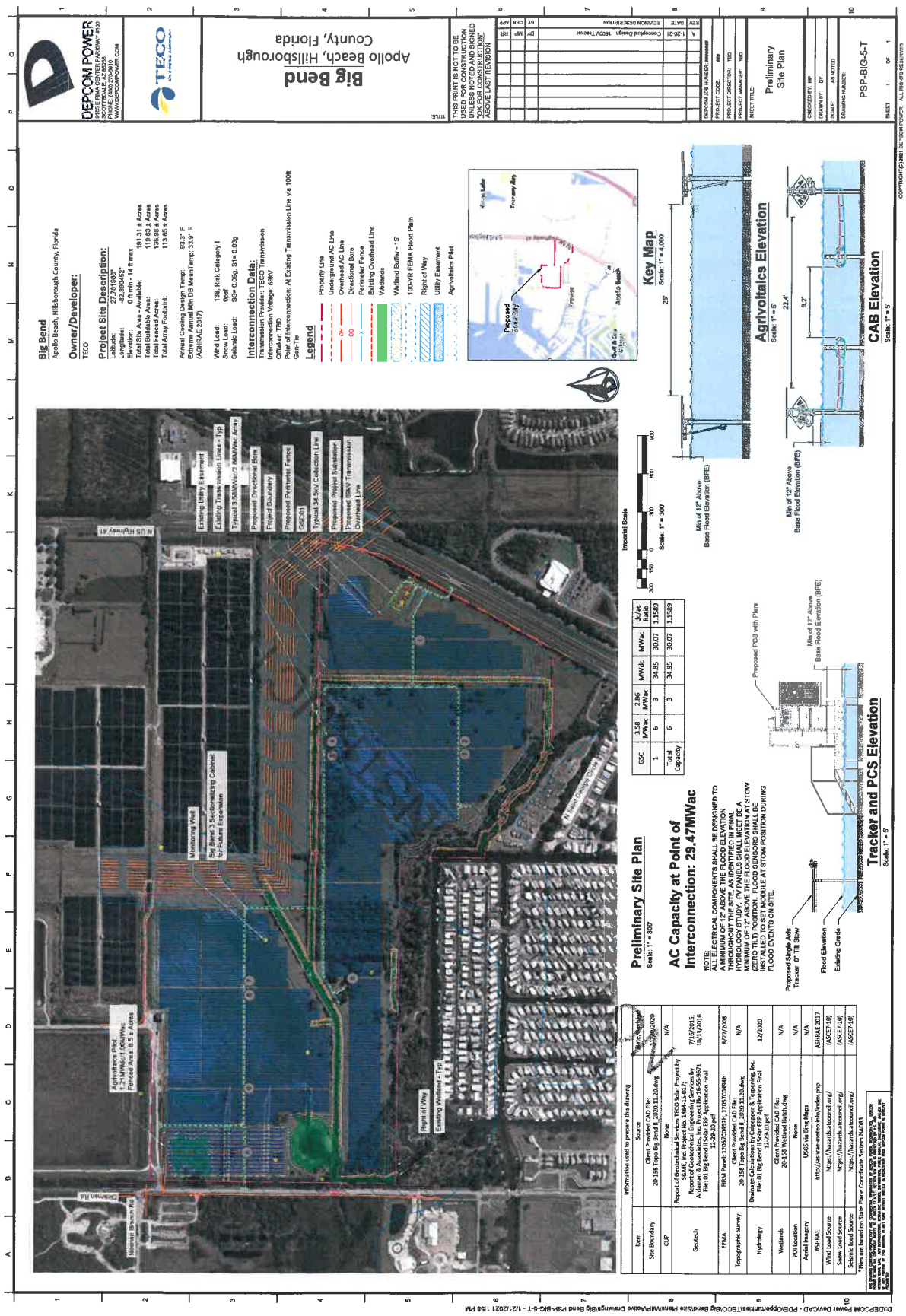
Projected Installed Costs ($ Million)	
Project Output (MW)	74.5
Major Equipment[1]	36.9
Balance of System[2]	45.4
Development[3]	0.5
Transmission Interconnect	5.5
Land	9.7
Owners Costs	1.5
Total Installed Cost ($ Million)	99.5
Total ($ per kW_{ac})	1,336

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Big Bend II Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Big Bend II Solar
(2)	Net Capability	25 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	April 2021
	B. Commercial In-Service Date	December 1, 2021
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	191 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	$1,352
	Direct Construction Cost ($/kW)	$1,236
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	10.91
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.


DEPCOM POWER
TECO
Big Bend
Apollo Beach, Hillsborough County, Florida
THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED BY CLIENT AS CONSTRUCTION CODE: ABOVE LAST REVISION
Preliminary Site Plan
PSP-BIG-S-T
Big Bend
Apollo Beach, Hillsborough
Owner/Developer:
TECO
Project Site Description:
Latitude: 27.781988°
Longitude: -82.390452°
Elevation: 21 ft min - 147 ft max
Total Site Area + Available: 181.31 ± Acres
Total Buildable Area: 119.63 ± Acres
Total Fenced Acres: 135.59 ± Acres
Total Array Footprint: 113.65 ± Acres
Annual Cooling Design Temp: 93.3° F
Extreme Annual Mth DB Mean Temp: 33.9° F
(ASHRAE 2017)
Wind Load: 136, Risk Category I
Snow Load: 0psf
Seismic Load: SDs: 0.06g, S1= 0.03g
Interconnection Data:
Transmission Provider: TECO Transmission
Interconnection Voltage: 69kV
Owner of TSU:
Point of Interconnection: At Existing Transmission Line via 100ft Gen-Tie
Legend
Property Line
Underground AC Line
Overhead AC Line
Directional Bore
Perimeter Fence
Existing Overhead Line
Wetlands
Wetland Buffer - 15'
100-YR FEMA Flood Plain
Right of Way
Utility Easement
Agrivoltaics Pilot
Key Map
Scale: 1" = 4,000'
Preliminary Site Plan
Scale: 1" = 300'
AC Capacity at Point of Interconnection: 29.47MWac
NOTE
ALL ELECTRICAL COMPONENTS SHALL BE DESIGNED TO A MINIMUM OF 12' ABOVE THE FLOOD ELEVATION THROUGHOUT THE SITE, AS IDENTIFIED IN FINAL HYDROLOGY STUDY. PV PANELS SHALL MEET A MINIMUM OF 2' ABOVE THE FLOOD ELEVATION AT STOW (ZERO TILT) POSITION. FLOOD SENSORS SHALL BE INSTALLED TO SET MODULE AT STOW POSITION DURING FLOOD EVENTS ON SITE.
Agrivoltaics Elevation
Scale: 1" = 5'
CAB Elevation
Scale: 1" = 5'
Tracker and PCS Elevation
Scale: 1" = 5'
Proposed PCS with Piers
Min of 12" Above Base Flood Elevation (BFE)
Proposed Single Axis Tracker 0° Tilt Skew
Flood Elevation
Existing Grade
Information used to prepare this drawing
Item
Source
Date Received
Site Boundary
Client Provided CAD File: 20-158 Topo Big Bend II_2020.11.20.dwg
Nov-20
CUP
None
N/A
Geotech
Report of Geotechnical Services TECO Solar Project by Ardaman & Associates, Inc. Project No. 16-55-9671 File: 01 Big Bend 13 Solar ERP Application Final
7/15/2015; 10/13/2016
FEMA
FIRM Panel: 12057C0457H, 12057C0454H
8/17/2008
Topographic Survey
Client Provided CAD File: 20-158 Topo Big Bend II_2020.11.20.dwg
N/A
Hydrology
Drainage Calculations by Cubesquare & Tarpaning, Inc. File: 01 Big Bend 13 Solar ERP Application Final
12/2020
Wetlands
Client Provided CAD File: 20-158 Wetland Hatch.dwg
N/A
POI Location
None
N/A
Aerial Imagery
USGS via Bing Maps
N/A
ASHRAE
http://ashrae-meteo.info/index.php
ASHRAE 2017
Wind Load Source
https://hazards.atcouncil.org/
(ASCE7-10)
Snow Load Source
https://hazards.atcouncil.org/
(ASCE7-10)
Seismic Load Source
https://hazards.atcouncil.org/
(ASCE7-10)
*Files are based on State Plane Coordinate System NAD83
Agrivoltaics Pilot: 1.21MWdc/1.00MWac Fenced Area: 8.5 ± Acres
Existing Wetland + Typ. Buffer
Right of Way
Monitoring Well
Big Bend 3 Switchgear Cabinet for Future Expansion
Existing Utility Easement
Existing Transmission Lines - Typ.
Typical 3.58MW DC/2.86MWAC Array
Proposed Directional Bore
Proposed Perimeter Fence
Proposed Project Boundary
GSCC1
Typical 34.5kV Collection Line
Proposed Project Substation
Proposed 69kV Transmission Overhead Line
Tampa Bay
Apollo Beach
Imperial Scale
Scale: 1" = 300'
GSC 3.58 MWac 2.86 MWac MWdc MWac dc/ac Ratio
1 6 3 34.85 30.07 1.1589
Total Capacity 6 3 34.85 30.07 1.1589
Min of 12" Above Base Flood Elevation (BFE)
Min of 12" Above Base Flood Elevation (BFE)
Min of 12" Above Base Flood Elevation (BFE)
Flood Elevation
Existing Grade
Proposed Single Axis Tracker 0° Tilt Skew
REV DATE DESCRIPTION BY CHK APP
A 1-20-21 Corresponded Design - 150GV Tracker SW
DEPCOM JOB NUMBER: ######
PROJECT CODE: ###
PROJECT DIRECTOR: TBD
PROJECT MANAGER: TBD
SHEET TITLE: Preliminary Site Plan
CHECKED BY: MP
DRAWN BY: DY
SCALE: AS NOTED
DRAWING NUMBER: PSP-BIG-S-T
SHEET 1 OF 1
COPYRIGHT © 2021 DEPCOM POWER. ALL RIGHTS RESERVED
D:\DEPCOM Power Dev\CAD - PDE\Opportunities\TECO\Big Bend\Site Plans\MPActive Drawing\Big Bend PSP-BIG-S-T - 1/21/2021 1:58 PM

Big Bend II Solar

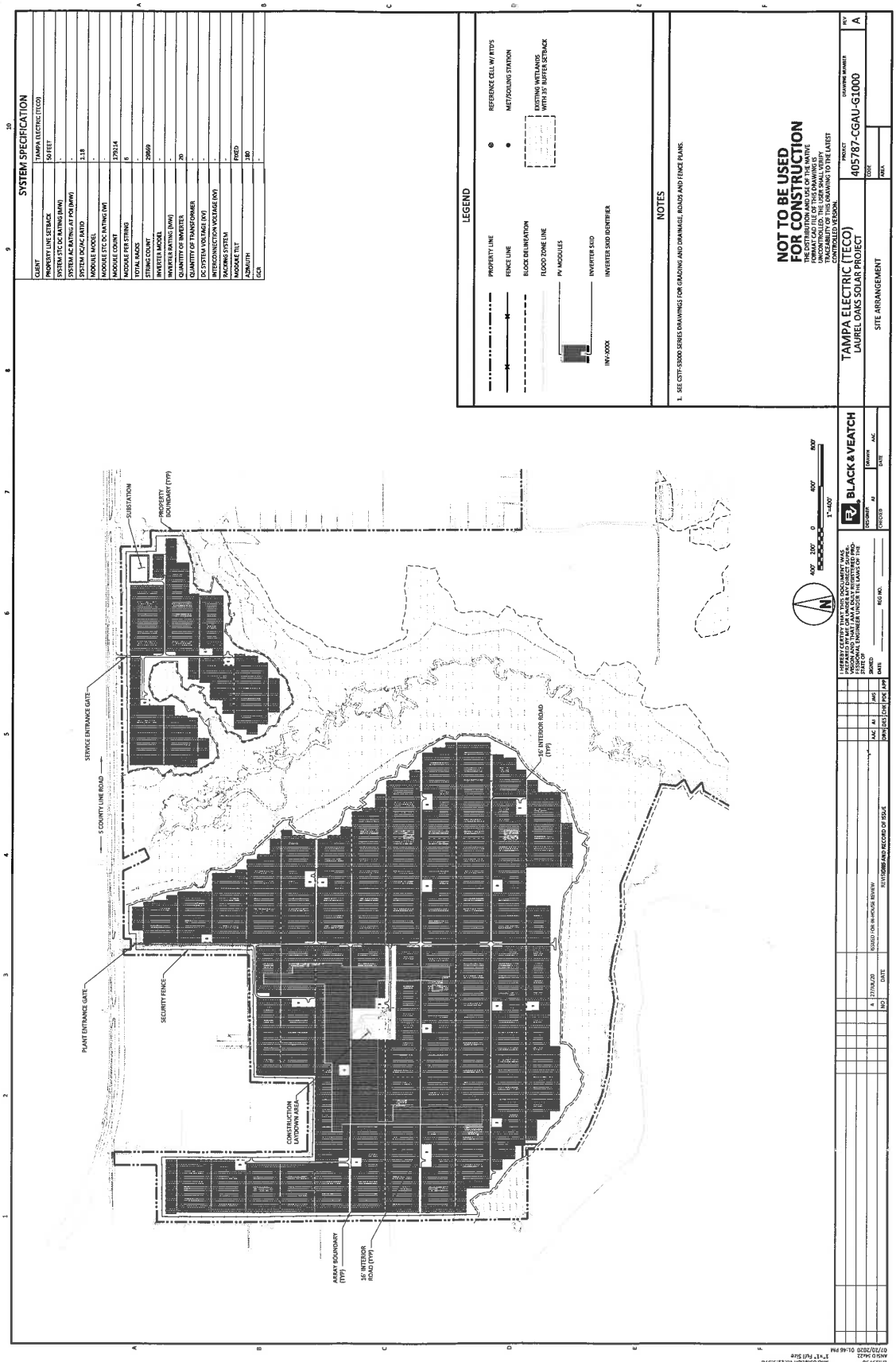
Projected Installed Costs ($ Million)	
Project Output (MW)	25
Major Equipment[1]	12.9
Balance of System[2]	17.4
Development[3]	0.4
Transmission Interconnect	2.9
Land	0
Owners Costs	0.2
Total Installed Cost ($ Million)	33.8
Total ($ per kW_{ac})	1,352

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Laurel Oaks Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Laurel Oaks Solar
(2)	Net Capability	66.8 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	Q1 2022
	B. Commercial In-Service Date	December 1, 2022
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	515 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	1,170
	Direct Construction Cost ($/kW)	1,100
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	11.15
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.


SYSTEM SPECIFICATION
CLIENT: TAMPA ELECTRIC (TECO)
PROPERTY LINE SETBACK: 50 FEET
SYSTEM STC DC RATING (MW): -
SYSTEM AC RATING AT POI (MW): -
SYSTEM DC/AC RATIO: 1.18
MODULE MODEL: -
MODULE STC DC RATING (W): -
MODULE COUNT: 179,14
MODULES PER STRING: 6
TOTAL RACKS: -
STRING COUNT: 29899
INVERTER MODEL: -
INVERTER RATING (MW): -
QUANTITY OF INVERTERS: 20
QUANTITY OF TRANSFORMERS: -
DC SYSTEM VOLTAGE (KV): -
INTERCONNECTION VOLTAGE (KV): -
RACKING SYSTEM: -
MODULE TILT: FIXED
AZIMUTH: 180
GCR: -
LEGEND
PROPERTY LINE
FENCE LINE
BLOCK DELINEATION
FLOOD ZONE LINE
PV MODULES
INVERTER SKID
INV-XXXX
INVERTER SKID IDENTIFIER
REFERENCE CELL W/ RTD'S
MET/SOILING STATION
EXISTING WETLANDS WITH 25' BUFFER SETBACK
NOTES
1. SEE CDTF-53000 SERIES DRAWINGS FOR GRADING AND DRAINAGE, ROADS AND FENCE PLANS.
NOT TO BE USED FOR CONSTRUCTION
THE DISTRIBUTION AND USE OF THE NATIVE FILE(S) ASSOCIATED WITH THIS DRAWING IS UNCONTROLLED. THE USER SHALL VERIFY THAT THEY ARE USING THE LATEST CONTROLLED VERSION.
TAMPA ELECTRIC (TECO)
LAUREL OAKS SOLAR PROJECT
SITE ARRANGEMENT
405787-CGAU-G1000
BLACK & VEATCH
SERVICE ENTRANCE GATE
SUBSTATION
PROPERTY BOUNDARY (TYP)
S COUNTY LINE ROAD
16' INTERIOR ROAD (TYP)
PLANT ENTRANCE GATE
SECURITY FENCE
CONSTRUCTION LAYDOWN AREA
ARRAY BOUNDARY (TYP)
16' INTERIOR ROAD (TYP)
400' 200' 0 400' 800'
1"=400'

Laurel Oaks Solar

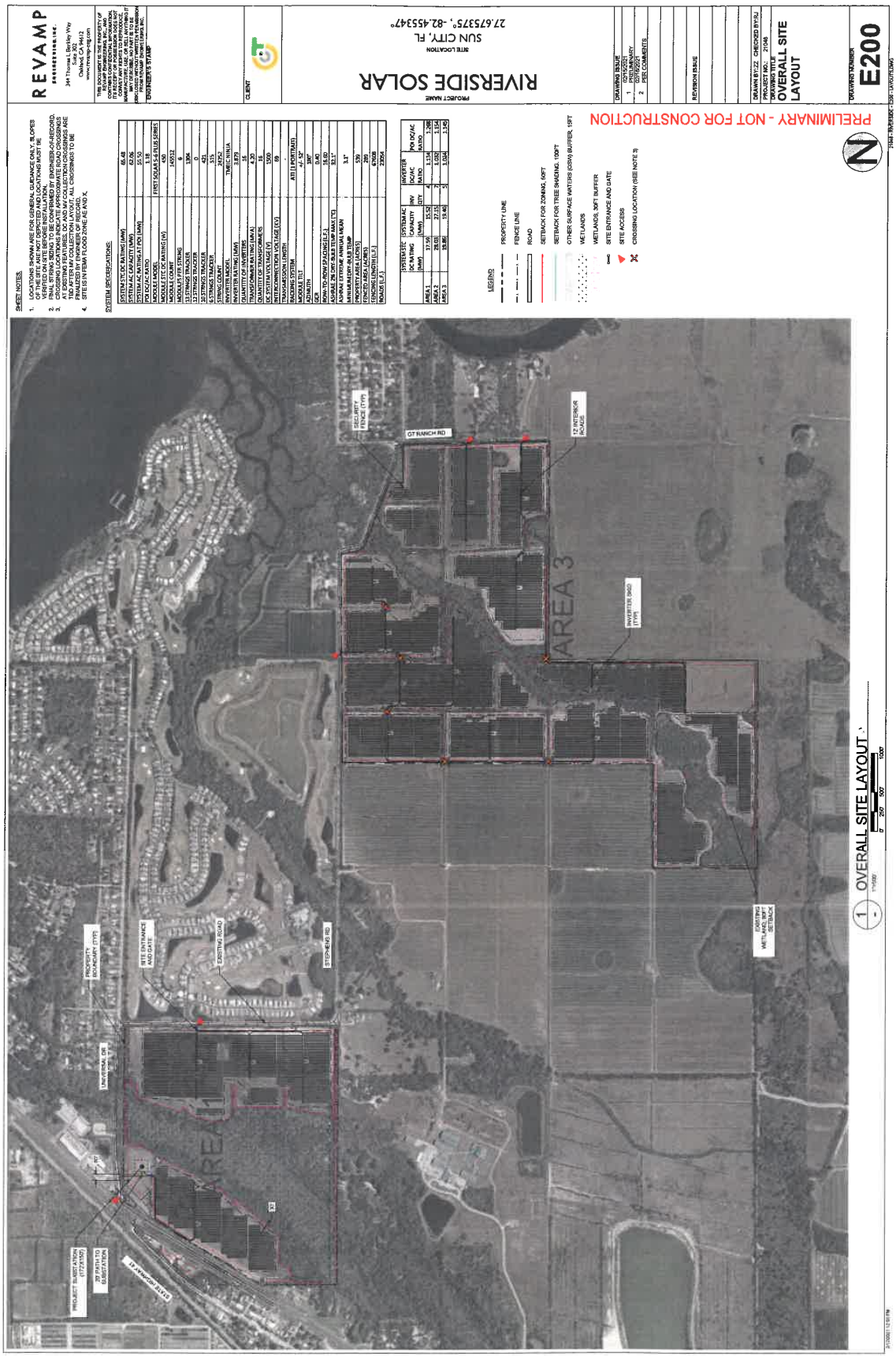
Projected Installed Costs ($ Million)	
Project Output (MW)	66.8
Major Equipment[1]	28.7
Balance of System[2]	38.6
Development[3]	0.5
Transmission Interconnect	4.7
Land	4.5
Owners Costs	1.3
Total Installed Cost ($ Million)	78.1
Total ($ per kW_{ac})	1,170

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Riverside Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Riverside Solar
(2)	Net Capability	65.0 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	Q1 2022
	B. Commercial In-Service Date	December 1, 2022
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	530 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	1,241
	Direct Construction Cost ($/kW)	1,156
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	11.15
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.


REVAMP
RIVERSIDE SOLAR
SITE LOCATION
SUN CITY, FL
27.673375°, -82.455347°
PRELIMINARY - NOT FOR CONSTRUCTION
OVERALL SITE LAYOUT
E200
SHEET NOTES:
SYSTEM SPECIFICATIONS:
LEGEND
PROPERTY LINE
FENCE LINE
ROAD
SETBACK FOR ZONING: 50FT
SETBACK FOR TREE SHADING: 100FT
OTHER SURFACE WATERS (OSW) BUFFER: 15FT
WETLANDS
WETLANDS: 30FT BUFFER
SITE ENTRANCE AND GATE
SITE ACCESS
CROSSING LOCATION (SEE NOTE 3)
AREA 1
AREA 2
AREA 3
SECURITY FENCE (TYP)
GT RANCH RD
12' INTERNAL ROAD
INVERTER PAD (TYP)
EXISTING WETLAND SETBACK
PROPERTY BOUNDARY (TYP)
SITE ENTRANCE AND GATE
EXISTING ROAD
STEPHENS RD
MORRISON DR
PROJECT SUBSTATION (TYP.)
39' PATH TO SUBSTATION
OVERALL SITE LAYOUT

Riverside Solar

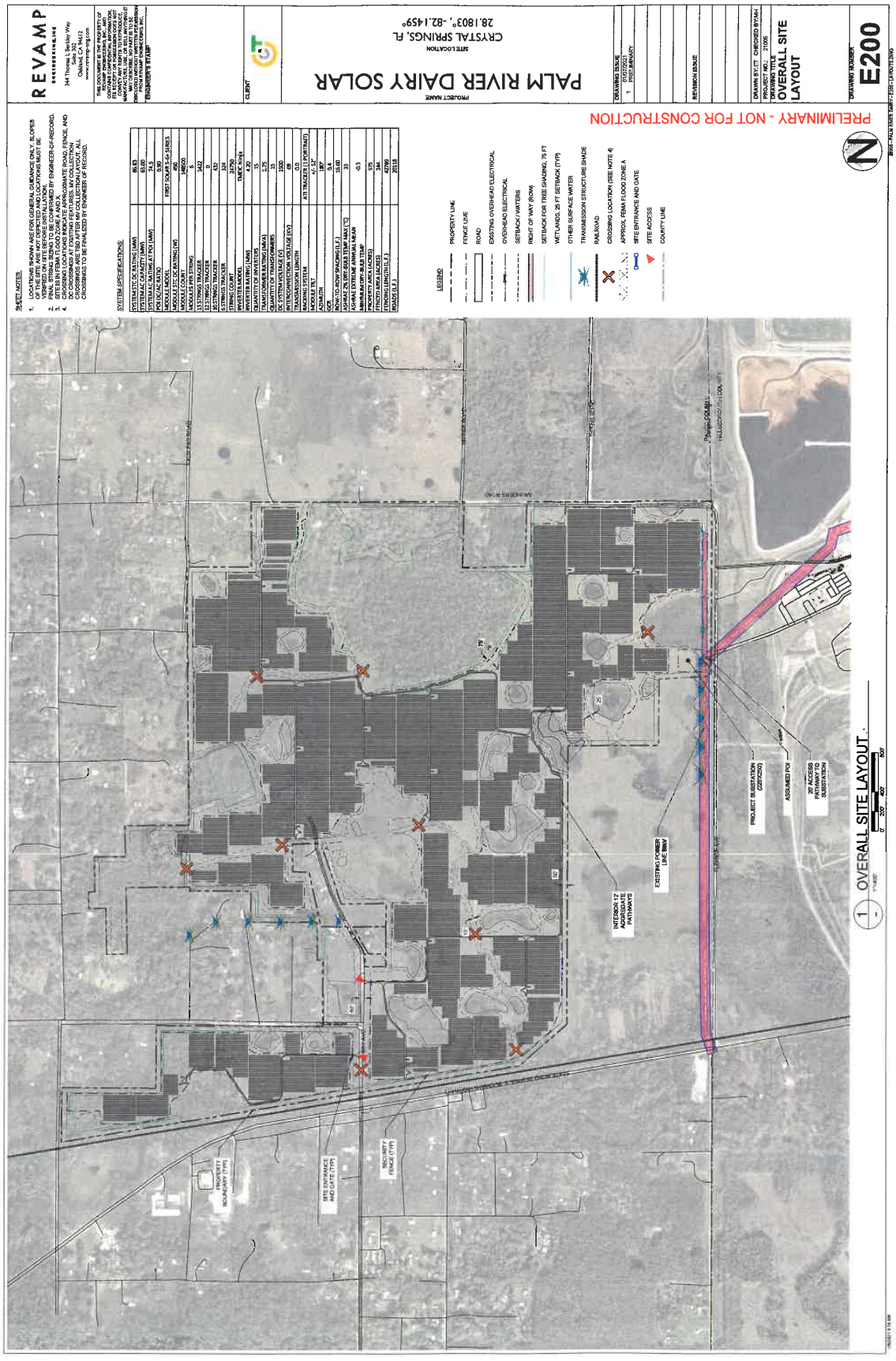
Projected Installed Costs ($ Million)	
Project Output (MW)	65.0
Major Equipment[1]	28.0
Balance of System[2]	36.5
Development[3]	0.5
Transmission Interconnect	5.5
Land	8.8
Owners Costs	1.4
Total Installed Cost ($ Million)	80.7
Total ($ per kW_{ac})	1,241

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Palm River Dairy Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Palm River Dairy Solar
(2)	Net Capability	70.0 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	Q1 2022
	B. Commercial In-Service Date	December 1, 2022
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	548 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	1,183
	Direct Construction Cost ($/kW)	1,118
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	11.15
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.


PALM RIVER DAIRY SOLAR
CRYSTAL SPRINGS, FL
28.1803°, -82.1459°
PRELIMINARY - NOT FOR CONSTRUCTION
OVERALL SITE LAYOUT
E200
REVAMP
SYSTEM SPECIFICATIONS:
LEGEND
PROPERTY LINE
FENCE LINE
ROAD
EXISTING OVERHEAD ELECTRICAL
OVERHEAD ELECTRICAL
SETBACK / WATERS
RIGHT OF WAY (ROW)
SETBACK FOR TREE SHADING, 75 FT
WETLANDS, 25 FT SETBACK (TYP)
OTHER SURFACE WATER
TRANSMISSION STRUCTURE SHADE
RAILROAD
CROSSING LOCATION (SEE NOTE 4)
APPROX. FEMA FLOOD ZONE A
SITE ENTRANCE AND GATE
SITE ACCESS
COUNTY LINE
PROJECT SUBSTATION (230/25kV)
ASSUMED POI
257 ACCESS PATHWAY TO SUBSTATION
EXISTING 500KV LINE
INTERIOR 12' ACCESS AISLE PATHWAYS
SITE ENTRANCE AND GATE (TYP)
SECURITY FENCE (TYP)
PROPERTY BOUNDARY (TYP)
OVERALL SITE LAYOUT
0 200 400 800

Palm River Dairy Solar

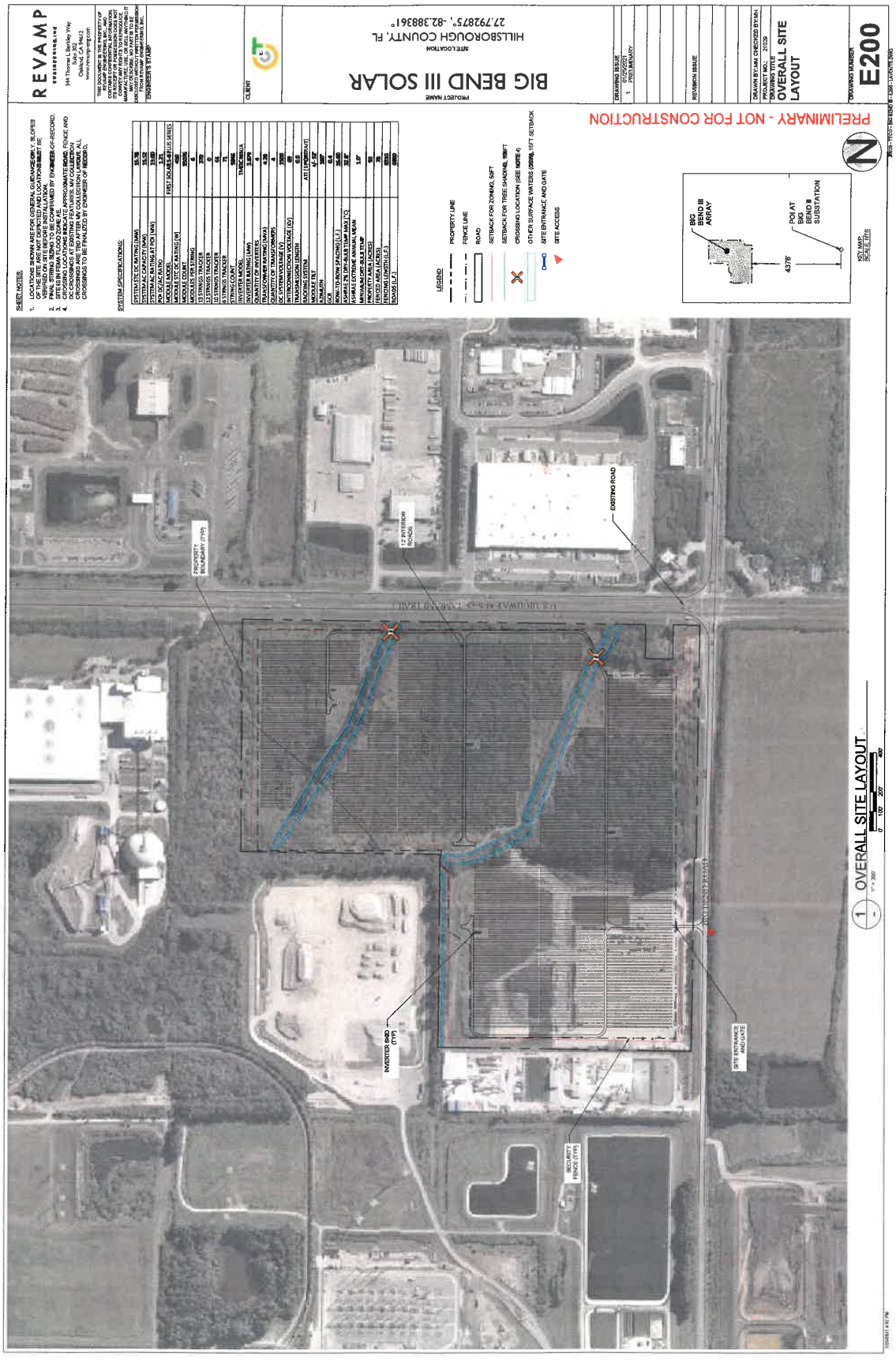
Projected Installed Costs ($ Million)	
Project Output (MW)	70.0
Major Equipment[1]	30.0
Balance of System[2]	38.5
Development[3]	0.5
Transmission Interconnect	4.6
Land	7.8
Owners Costs	1.4
Total Installed Cost ($ Million)	82.8
Total ($ per kW_{ac})	1,183

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Big Bend III Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Big Bend III Solar
(2)	Net Capability	22.2 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	Q1 2022
	B. Commercial In-Service Date	December 1, 2022
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	93 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	1,275
	Direct Construction Cost ($/kW)	1,159
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	11.15
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.


REVAMP
BIG BEND III SOLAR
HILLSBOROUGH COUNTY, FL
27.792875°, -82.388361°
PRELIMINARY - NOT FOR CONSTRUCTION
OVERALL SITE LAYOUT
E200
SHEET NOTES:
SYSTEM SPECIFICATIONS:
LEGEND
PROPERTY LINE
FENCE LINE
ROAD
SETBACK FOR ZONING, 50FT
SETBACK FOR TREE SHADING, 65FT
CROSSING LOCATION (SEE NOTE 4)
OTHER SURFACE WATERS (SWM), 15FT SETBACK
SITE ENTRANCE AND GATE
SITE ACCESS
EXISTING ROAD
PROPERTY BOUNDARY (TYP)
INVERTER PAD (TYP)
SITE ENTRANCE AND GATE
OVERALL SITE LAYOUT

Big Bend III Solar

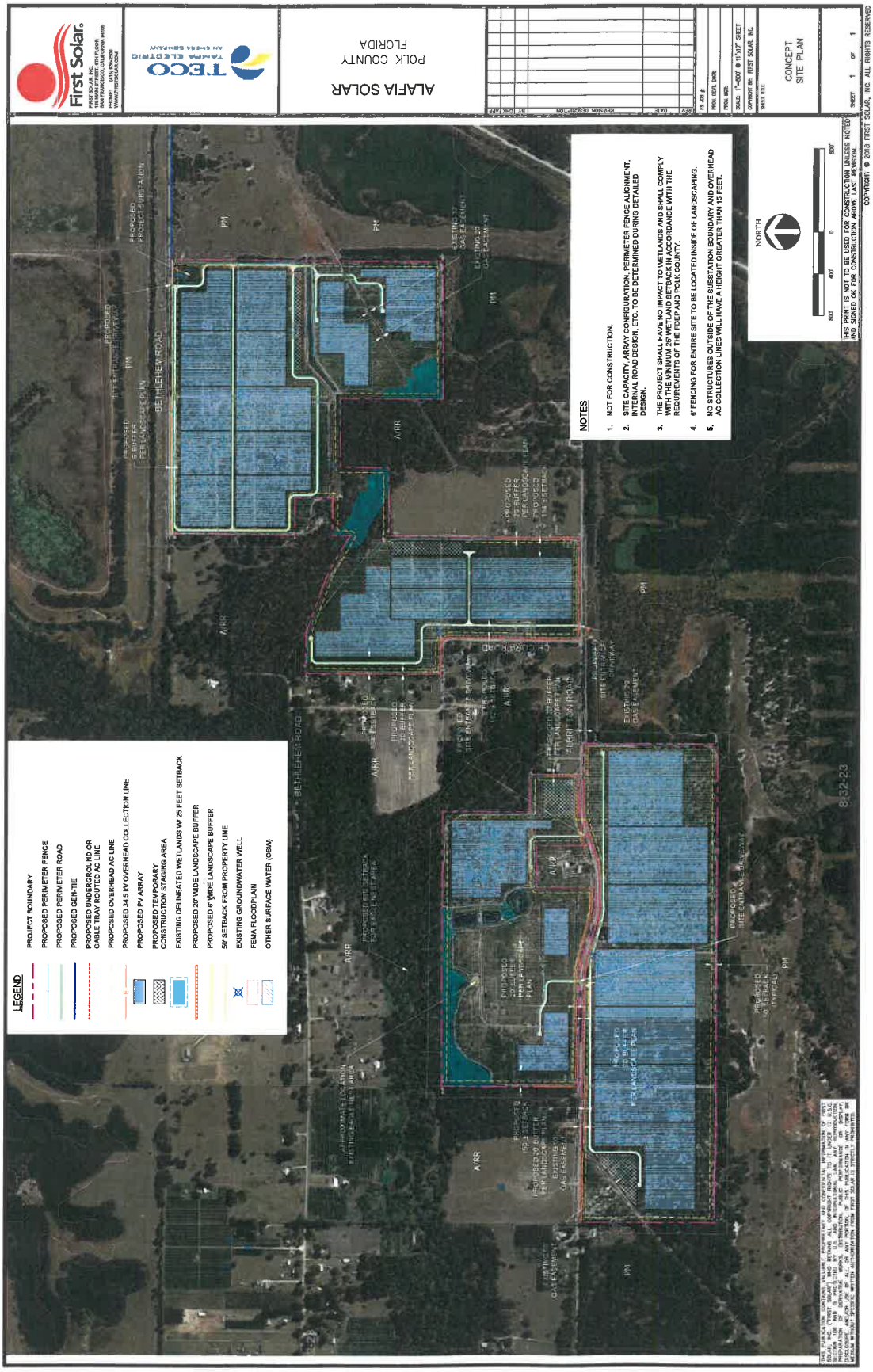
Projected Installed Costs ($ Million)	
Project Output (MW)	22.2
Major Equipment[1]	9.8
Balance of System[2]	15.3
Development[3]	0.4
Transmission Interconnect	2.6
Land	0
Owners Costs	0.2
Total Installed Cost ($ Million)	28.3
Total ($ per kW_{ac})	1,275

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Alafia Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Alafia Solar
(2)	Net Capability	50 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	Q1 2023
	B. Commercial In-Service Date	December 1, 2023
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	408 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	1,252
	Direct Construction Cost ($/kW)	1,119
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	11.39
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.


First Solar
TECO
TAMPA ELECTRIC
AN EMERA COMPANY
ALAFIA SOLAR
POLK COUNTY
FLORIDA
CONCEPT
SITE PLAN
LEGEND
PROJECT BOUNDARY
PROPOSED PERIMETER FENCE
PROPOSED PERIMETER ROAD
PROPOSED GEN-TIE
PROPOSED UNDERGROUND OR CABLE TRAY ROUTED AC LINE
PROPOSED OVERHEAD AC LINE
PROPOSED 34.5 KV OVERHEAD COLLECTION LINE
PROPOSED PV ARRAY
PROPOSED TEMPORARY CONSTRUCTION STAGING AREA
EXISTING DELINEATED WETLANDS W/ 25 FEET SETBACK
PROPOSED 20' WIDE LANDSCAPE BUFFER
PROPOSED 6' WIDE LANDSCAPE BUFFER
50' SETBACK FROM PROPERTY LINE
EXISTING GROUNDWATER WELL
FEMA FLOODPLAIN
OTHER SURFACE WATER (OSW)
NOTES
1. NOT FOR CONSTRUCTION.
2. SITE CAPACITY, ARRAY CONFIGURATION, PERIMETER FENCE ALIGNMENT, INTERNAL ROAD DESIGN, ETC. TO BE DETERMINED DURING DETAILED DESIGN.
3. THE PROJECT SHALL HAVE NO IMPACT TO WETLANDS AND SHALL COMPLY WITH THE MINIMUM 25' WETLAND SETBACK IN ACCORDANCE WITH THE REQUIREMENTS OF THE FDEP AND POLK COUNTY.
4. 6' FENCING FOR ENTIRE SITE TO BE LOCATED INSIDE OF LANDSCAPING.
5. NO STRUCTURES OUTSIDE OF THE SUBSTATION BOUNDARY AND OVERHEAD AC COLLECTION LINES WILL HAVE A HEIGHT GREATER THAN 15 FEET.
NORTH
800'
400'
0
800'
BETHLEHEM ROAD
PROPOSED PROJECT SUBSTATION
PROPOSED SITE ENTRANCE DRIVEWAY
EXISTING 230 KV TRANSMISSION LINE
EXISTING 100' GAS EASEMENT
PROPOSED 20' BUFFER PER LANDSCAPE PLAN
PROPOSED 50' SETBACK TYPICAL
A/RR
PM
8-32-23
THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED, OK FOR CONSTRUCTION ABOVE LAST REVISION.
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SHEET 1 OF 1

Alafia Solar

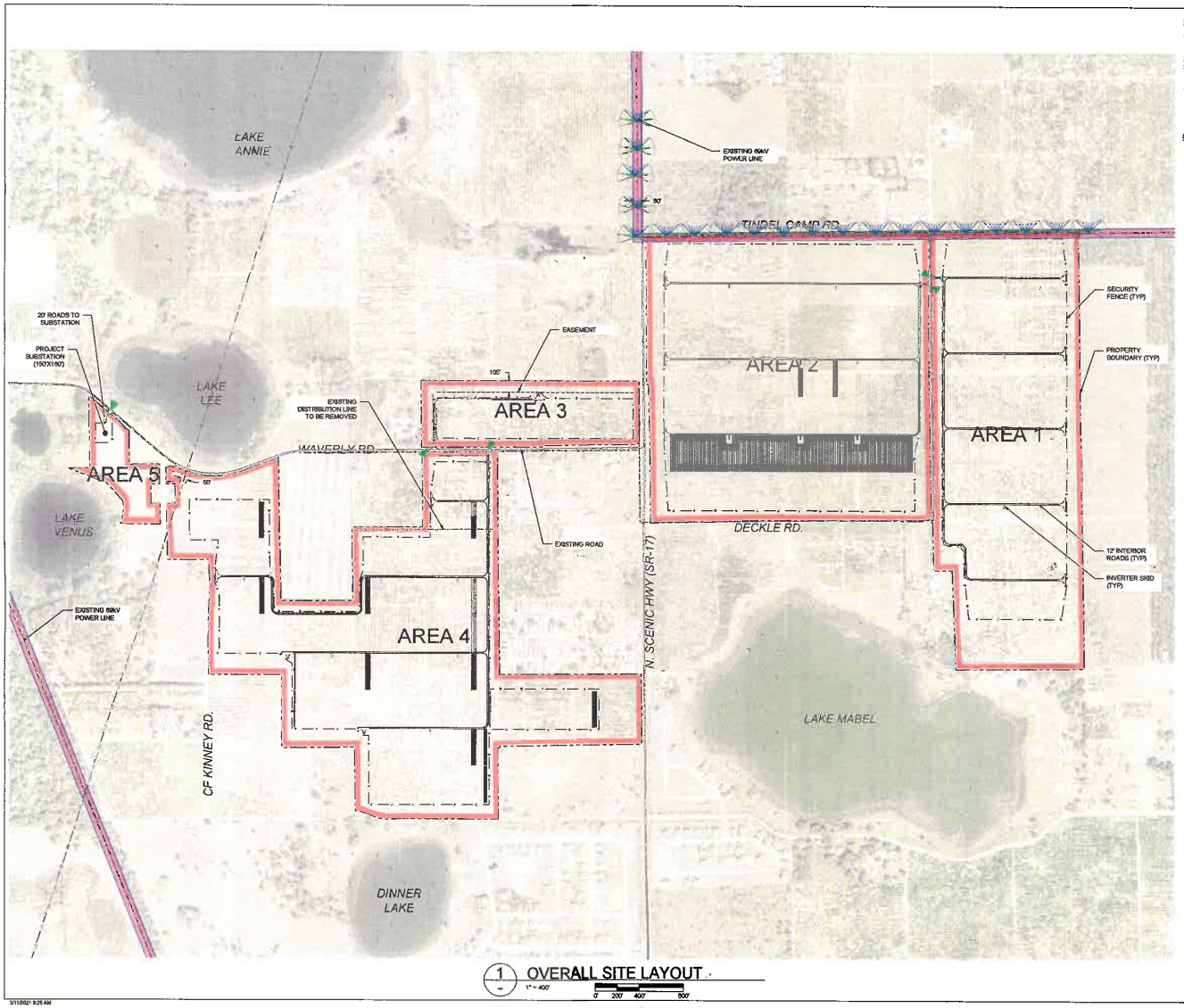
Projected Installed Costs ($ Million)	
Project Output (MW)	50
Major Equipment[1]	20.4
Balance of System[2]	27.1
Development[3]	0.5
Transmission Interconnect	6.6
Land	6.4
Owners Costs	1.6
Total Installed Cost ($ Million)	62.6
Total ($ per kW_{ac})	1,252

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Wheeler Solar Project Specifications

Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Wheeler Solar
(2)	Net Capability	74.5 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	Q1 2023
	B. Commercial In-Service Date	December 1, 2023
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	464 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	1,154
	Direct Construction Cost ($/kW)	1,077
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	11.39
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.



1 OVERALL SITE LAYOUT
1" = 400'
0 200' 400' 800'

SHEET NOTES:

1. LOCATIONS SHOWN ARE FOR GENERAL GUIDANCE ONLY. SLOPES OF THE SITE ARE NOT DEPICTED AND LOCATIONS MUST BE VERIFIED ON SITE BEFORE INSTALLATION.
2. FINAL STRING SIZING TO BE CONFIRMED BY ENGINEER-OF-RECORD.
3. MV COLLECTION CROSSINGS ARE TBD AFTER MV COLLECTION LAYOUT. ALL CROSSINGS TO BE FINALIZED BY ENGINEER OF RECORD.
4. SITE IS IN FEMA FLOOD ZONE A&X.

SYSTEM SPECIFICATIONS:

SYSTEM STC DC RATING (MW)	87.93
SYSTEM AC CAPACITY (MW)	81.46
SYSTEM AC RATING AT POI (MW)	74.50
POI DC/AC RATIO	1.18
MODULE MODEL	FIRST SOLAR S-6 PLUS
MODULE STC DC RATING (W)	465
MODULE COUNT	189090
MODULES PER STRING	6
13 STRINGS TRACKER	2375
30 STRINGS TRACKER	64
STRING COUNT	31515
INVERTER MODEL	TMEIC MINUA
INVERTER RATING (MW)	3.879
QUANTITY OF INVERTERS	21
TRANSFORMER RATING (MVA)	4.20
QUANTITY OF TRANSFORMERS	21
DC SYSTEM VOLTAGE (V)	1500
INTERCONNECTION VOLTAGE (KV)	69
TRANSMISSION LENGTH	
RACKING SYSTEM	ATI (1 PORTRAIT)
MODULE TILT	+/- 55°
AZIMUTH	180°
GCR	0.40
ROW-TO-ROW SPACING (L.F.)	16.60
ASHRAE 2% DRY-BULB TEMP MAX (°C)	33°
ASHRAE EXTREME ANNUAL MEAN MINIMUM DRY-BULB TEMP	-0.3°
PROPERTY AREA (ACRES)	471
FENCED AREA (ACRES)	344
FENCING LENGTH (L.F.)	39042
ROADS (L.F.)	28206

	SYSTEM STC DC RATING (MW)	SYSTEM AC CAPACITY (MW)	INV QTY	INVERTER DC/AC RATIO	POI DC/AC RATIO
AREA 1	21.13	19.40	5	1.089	1.191
AREA 2	33.57	31.03	8	1.082	1.183
AREA 3	3.85	3.86	1	0.997	1.085
AREA 4	29.38	27.15	7	1.082	1.183

LEGEND

- PROPERTY LINE
- FENCE LINE
- ROAD
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRICAL
- UNDERGROUND LINE
- RIGHT OF WAY (ROW)
- WETLANDS, 25' SETBACK (TYP)
- TRANSMISSION STRUCTURE SHADE
- FEMA FLOOD ZONE A
- SITE ENTRANCE AND GATE
- SITE ACCESS
- SETBACK FOR ZONING, 50FT

PRELIMINARY - NOT FOR CONSTRUCTION

REVAMP ENGINEERING INC.
344 Thomas L Berkley Way
Suite 302
Oakland, CA 94612
www.revamp-eng.com

ENGINEER'S STAMP

CLIENT

PROJECT NAME: WHEELER SOLAR

SITE LOCATION: POLK CO, FL
27.971019°, -81.601213°

DRAWING ISSUE

1	03/02/2021	PRELIMINARY
2	03/11/2021	105FT EASEMENT

REVISION ISSUE

DRAWN BY: ZZ CHECKED BY: MH

PROJECT NO.: 21065

DRAWING TITLE: OVERALL SITE LAYOUT

DRAWING NUMBER: E200

21065 - WHEELER - E200 - LAYOUTS.DWG

3/11/2021 8:29 AM

TAMPA ELECTRIC COMPANY
DOCKET NO. 20210034-EI
EXHIBIT NO. CDS-1
WITNESS: SWEAT
DOCUMENT NO. 11
PAGE 2 OF 3
FILED: 04/09/2021

Wheeler Solar

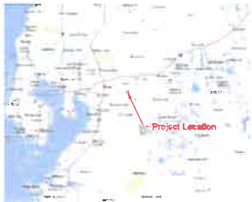
Projected Installed Costs ($ Million)	
Project Output (MW)	74.5
Major Equipment[1]	29.5
Balance of System[2]	39.0
Development[3]	0.5
Transmission Interconnect	5.8
Land	9.5
Owners Costs	1.7
Total Installed Cost ($ Million)	86.0
Total ($ per kW_{ac})	1,154

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.

Dover Solar Project Specifications

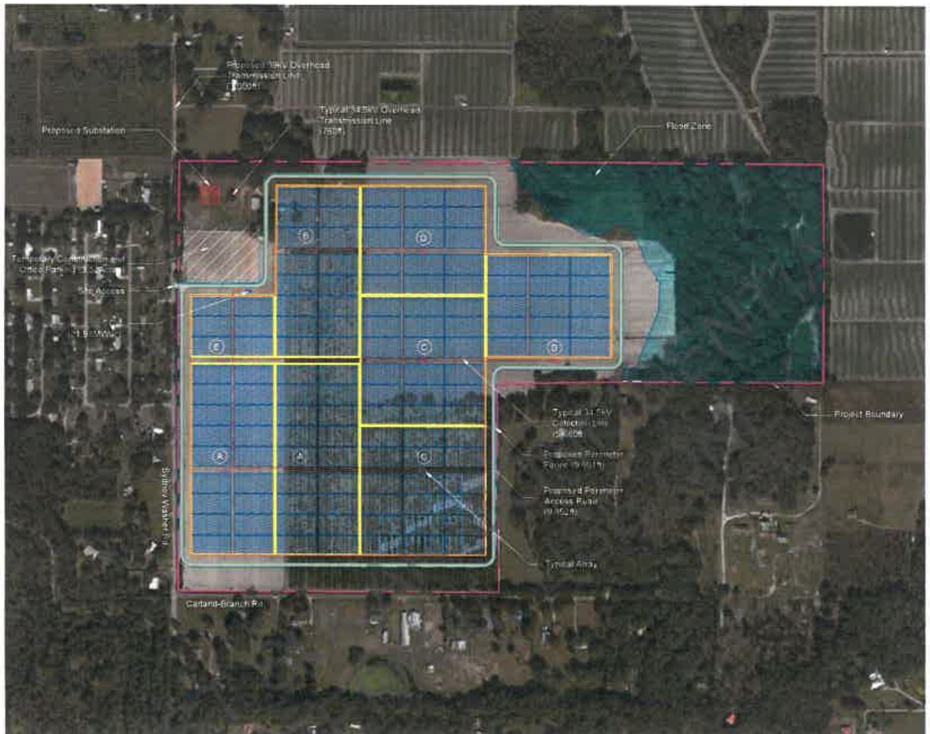
Specifications of Proposed Solar PV Generating Facilities		
(1)	Plant Name and Unit Number	Dover Solar
(2)	Net Capability	25 MW
(3)	Technology Type	Single Axis Tracker
(4)	Anticipated Construction Timing	
	A. Field Construction Start Date [1]	Q1 2023
	B. Commercial In-Service Date	December 1, 2023
(5)	Fuel	
	A. Primary Fuel	Solar
	B. Alternate Fuel	N/A
(6)	Air Pollution Control Strategy	N/A
(7)	Cooling Method	N/A
(8)	Total Site Area	177 Acres
(9)	Construction Status	Ongoing
(10)	Certification Status	N/A
(11)	Status with Federal Agencies	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF)	N/A
	Forced Outage Factor (FOF)	N/A
	Equivalent Availability Factor (EAF)	N/A
	Resulting Capacity Factor	26% (1st Full Yr Operation)
	Average Net Operating Heat Rate (ANOHR)	N/A
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW) [2]	1,375
	Direct Construction Cost ($/kW)	1,335
	Escalation ($/kW)	N/A
	Fixed O&M ($/kW-yr)	11.39
	Variable O&M ($/MWh)	0.0

1 Construction schedule includes engineering design and permitting.
2 Total installed cost includes transmission interconnection.

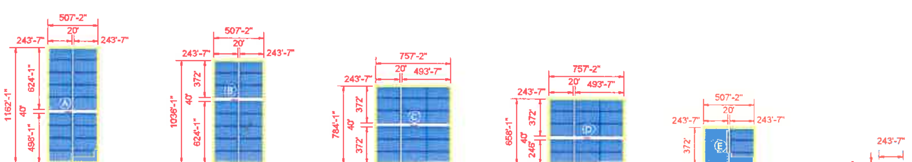


Key Plan
Scale NTS

Location Map
Scale NTS



Site Development Plan
Scale 1:300



Typical 2.9600 MWac ExoSun Tracker Array
3888.0 kWdc / 2.9600 MWac
1.3135 dc/ac Ratio
12'-6" RS
120.0 Watt Module - Series 4
15 Module/ String @ 3 x 30 Modules / Tables
20 Tables / Motor Block @ 10.80 kWdc / Table
18 Motor Block @ 216.0 kWdc / Motor Block / Array

Typical 2.9600 MWac ExoSun Tracker Array
3456.0 kWdc / 2.9600 MWac
1.1676 dc/ac Ratio
12'-6" RS
120.0 Watt Module - Series 4
15 Module/ String @ 3 x 30 Modules / Tables
20 Tables / Motor Block @ 10.80 kWdc / Table
16 Motor Block @ 216.0 kWdc / Motor Block / Array

Typical 2.9600 MWac ExoSun Tracker Array
3888.0 kWdc / 2.9600 MWac
1.3135 dc/ac Ratio
12'-6" RS
120.0 Watt Module - Series 4
15 Module/ String @ 3 x 30 Modules / Tables
20 Tables / Motor Block @ 10.80 kWdc / Table
18 Motor Block @ 216.0 kWdc / Motor Block / Array

Typical 2.9600 MWac ExoSun Tracker Array
3240.0 kWdc / 2.9600 MWac
1.0946 dc/ac Ratio
12'-6" RS
120.0 Watt Module - Series 4
15 Module/ String @ 3 x 30 Modules / Tables
20 Tables / Motor Block @ 10.80 kWdc / Table
15 Motor Block @ 216.0 kWdc / Motor Block / Array

Typical 1.259 MWac ExoSun Tracker Array
1296.0 kWdc / 1.259 MWac
1.0294 dc/ac Ratio
12'-6" RS
120.0 Watt Module - Series 4
15 Module/ String @ 3 x 30 Modules / Tables
20 Tables / Motor Block @ 10.80 kWdc / Table
6 Motor Block @ 216.0 kWdc / Motor Block / Array

Typical 20 Column ExoSun Motor Block
216.0 kWdc / Motor Block
120.0 Watt Module - Series 4
15 Modules / String @ 3 x 30 Modules / Table
20 Tables / Motor Block
10.80 kWdc/Table

Douglas A Holmberg
Dover, Hillsborough County, Florida

Product Offering
First Solar

Project Developer/Operator Owner
First Solar

Project Site Description
176.21	± Acre Site
94.35	± Acre Array
Latitude	27.957°
Longitude	82.184°
Elevation	74 ft.

Project Climatic Conditions
ASHRAE Station No. 747880

Extreme Max (50 year) Temp	100.3 °F
Extreme Min (50 year) Temp	23.1 °F
Annual Cooling Design Temp	92.6 °F
Annual Heating Design Temp	39.1 °F

(ASHRAE 2013)

Project Design Data
Snow Load	0PSF
Wind Load	129MPH Risk Cat. 1 (ASCE 7-10)
Seismic Load	Ss=0.064g, S1=0.033g

Project Interconnection
69kV Distribution / Transmission Line to line Tap

Photovoltaic System Parameters
21.96 - MWac System Capacity (Nominal Output)
26.78 - MWdc System Capacity (Nominal Output)
7 - 2960 kW / 3116 kVA Inverters (1500 Vdc x 630 Vac)
Inverter Model - PE FS3001CU15-HE
1 - 1259 kW / 1325 kVA Inverters (1500 Vdc x 630 Vac)
Inverter Model - PE FS1270CU15-HE
7 - 3.0 MVA Transformers (630 V x 34.5 kV)
1 - 1.3 MVA Transformers (630 V x 34.5 kV)
1 - 34.5 kV Sectionalizing Cabinet
1 - 34.5 kV x 69 kV Transformer

Array	Types	Qty
Standard	5	8
Sub-Array		
Custom		

Solar Production
ExoSun Mounting System
180° Azimuth
1500 Volt dc PV System Design
34.5 kV Collection System
69 kV Dist. or Trans. System

Legend:
- Project Boundary
- AC Elec. Collection Line (Underground)
- AC Elec. Collection Line (Overhead)
- AC Elec. Distribution / Transmission Line
- Existing Distribution / Transmission Line
- Perimeter Fence
- Proposed Access Road (Dirt)

SC	Array	Module	Row Spacing	# of 20 Table Motor Blocks per Array	# of Array Blocks	Total # of 20 Table Motor Blocks	MWac	MWdc	dc/ac Ratio
1	A	120.0	12'-6"	18	2	36	5.92	7.78	1.3135
	B	120.0	12'-6"	16	1	16	2.96	3.46	1.1676
	C	120.0	12'-6"	18	2	36	5.92	7.78	1.3135
	D	120.0	12'-6"	15	2	30	5.92	6.48	1.0946
	E	120.0	12'-6"	6	1	6	1.26	1.30	1.0294
SC 1 Sub Total					8	124	21.96	26.78	1.2186
Total Capacity							21.96	26.78	1.2186

Site Plan Data Source
Feature	Description
Boundary	Douglas A Holmberg KMZ
Coordinate System	NAD83 Florida State Planes, West Zone, US Foot
Topography	
Hydrology	
Wetlands	
Geotechnical	
Environmental Constraint	

THIS PRINT IS DESIGNED FOR 24" X 36" PLOTTING

THIS SITE DEVELOPMENT PLAN IS PRELIMINARY AND SUBJECT TO REVISION BASED ON, AMONG OTHER THINGS, CHANGES IN PROJECT SCHEDULE, TECHNOLOGY, AND/OR SITE SPECIFIC CONSTRAINTS.

THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED OK FOR CONSTRUCTION ABOVE LAST REVISION.

First Solar.
FIRST SOLAR, LLC
400 CROSSING BOULEVARD, 5TH FLOOR
BRIDGEWATER, NJ 08807
PHONE (908) 798-4000
WWW.FIRSTSOLAR.COM

PROFESSIONAL ENGR.

Douglas A Holmberg
Dover
Hillsborough County
Florida, USA
21.98MWac Capacity

REV	DATE	REVISION DESCRIPTION	BY	CHK	APP
A	6-27-17	Conceptual Design- ExoSun Tracker	DK	JO	SC

FS JOB #:	0000-0000-00
PROJ. DSGR:	Delva Kinneman
PROJ. ENGR:	
PROJ. MGR:	
PROJ. DIR:	John Hartelius, PE
SCALE:	AS NOTED

SHEET TITLE

Site Development Plan

SD-100-T

SHEET 1 OF 1

Y:\FS_Projects\FS Site Development\First Solar USTECO\Douglas A Holmberg\Active Drawings\Douglas A Holmberg SD-100-T.dwg FS116425 Jun 27, 2017 - 2:30pm

TAMPA ELECTRIC COMPANY
DOCKET NO. 20210034-EI
EXHIBIT NO. CDS-1
WITNESS: SWEAT
DOCUMENT NO. 12
PAGE 2 OF 3
FILED: 04/09/2021

Dover Solar

Projected Installed Costs ($ Million)	
Project Output (MW)	25
Major Equipment[1]	10.6
Balance of System[2]	17.3
Development[3]	0.5
Transmission Interconnect	1.0
Land	4.5
Owners Costs	0.5
Total Installed Cost ($ Million)	34.4
Total ($ per kW_{ac})	1,375

[1] Major Equipment includes modules, inverters, and transformers
[2] Balance of System includes racking, posts, collection cables, EPC contractor, and project management.
[3] Development includes environmental studies, boundary surveys, geotech, legal, and permitting costs.
Note: Totals may not sum due to rounding.