WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

REQUEST FOR PROPOSALS #20-01

SOLAR GROUND LEASES

Proposal Due Date: September 16, 2019

Pre-Proposal Conference Date: July 25, 2019

Issued By: Office of Real Estate & Parking

Date: July 16, 2019

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SECTION 1: EXECUTIVE SUMMARY

The Washington Metropolitan Area Transit Authority ("**WMATA**") is requesting proposals ("**Proposals**") from qualified solar developers ("**Developers**") to install solar photovoltaic ("**PV**") at WMATA-owned sites ("**Project Sites**"). Under this Request for Proposal ("**RFP**"), WMATA seeks a single solar developer to procure, design, construct, install, finance, own, operate, maintain, and decommission PV facilities on Project Sites (the "**Project**").

WMATA has conducted preliminary site assessments and has identified four (4) Project sites as feasible and appropriate locations to install PV systems. In total, WMATA estimates hosting approximately seven thousand (7,000) to nine thousand (9,000) kilowatts ("**kW**") of solar PV capacity at the Project Sites. One site is located within the geographic boundaries of the District of Columbia while the other three sites are in Prince George's County, Maryland. Based on preliminary analysis, WMATA believes the Maryland sites lie on DC electrical feeder lines and may be eligible for DC solar renewable energy credits ("**SREC**"). However, it is the responsibility of Developers to perform the necessary due diligence on this issue. Proposals may include offers to develop between two to four of the Project Sites, but, unless one or more of the Project Sites is shown to be unsuitable for the Project, WMATA strongly prefers Proposals to include development on all four available sites.

WMATA does not intend to purchase any power produced at the Project Sites. Instead, the sole solar developer selected by WMATA (the "**Selected Developer**") will interconnect directly to Pepco's distribution grid. Off-take options could include DC and Maryland Community Solar programs. The Selected Developer will execute a lease agreement ("**Lease**") with WMATA for each Project Site proposed by the Selected Developer for PV solar development.

Developers must demonstrate past success in the development, design, installation, operation and maintenance of PV systems on a similar scale and installation scope. Experience with projects in the DC metropolitan area involving surface parking lot and garage rooftop canopy structures is strongly preferred.

WMATA will offer a Lease with a term of fifteen (15) years with two five-year extension options granted to the Selected Developer. Exercise of the options will require an affirmative exercise by the Selected Developer; the extensions will not be automatic. In consideration for the Lease, WMATA is requesting, at a minimum, fixed annual cash payments. In addition to fixed payments, Developers may also offer variable or revenue participation payments.

Proposals are due by the Due Date stated on the cover page of this RFP. A pre-proposal conference and site visit is scheduled for the date stated on the cover page of this RFP.

In no event shall WMATA be bound by, or liable to any Developer or the Selected Developer for, any obligations with respect to the Project until such time (if at all) as WMATA negotiates, authorizes, and executes a Lease with the Selected Developer, the transaction is approved by WMATA's Board of Directors (if such approval is required), and WMATA has received concurrence for the transaction from the Federal Transit Administration ("**FTA**").

SECTION 2: BACKGROUND

2.1 About WMATA

WMATA is one of the largest transit organizations in the United States, formed in 1967 under an interstate compact (the **"WMATA Compact"**) among the District of Columbia, the State of Maryland, and the Commonwealth of Virginia. WMATA is therefore an independent quasi-governmental authority; WMATA is also an instrumentality and agency of the District of Columbia, Maryland, and the Commonwealth of Virginia. WMATA is exempt from taxation but that exemption will not extend to a Developer's property; see **Section 6.13** for more information about this.

WMATA's service area is approximately 1,500 square miles, with a population of approximately four million people. WMATA provides three core transit functions: Metrorail, Metrobus and MetroAccess paratransit services. Average weekday passenger trips on all three modes total approximately one million.

WMATA is also a major landowner in the Washington metropolitan region, with property interests along its 121 miles of Metrorail track right-of-way, hundreds of acres around 91 Metrorail stations, and hundreds of acres throughout the region where railyards, Metrobus garages, supply warehouses, and other support buildings are located. WMATA actively sells, leases, and otherwise utilizes its real estate holdings to generate revenue to support its transit mission. As the region's transit provider, WMATA is also deeply committed to achieving certain sustainability goals to support the region's clean energy goals, as highlighted in the 2025 Energy Action Plan and 2018 Annual Sustainability Report.

2.2 WMATA's Project Goals

This Project has the following goals and objectives:

- Take advantage of the current solar environment to generate lease revenue
- Implement a turn-key solution, to include financing, construction, maintenance and decommissioning
- Identify and work with a solar developer who will be a good long-term partner
- Support the region's clean energy goals
- Help support local green jobs

2.3 Project Sites

WMATA has conducted preliminary feasibility assessments at four (4) Metrorail station locations. These properties were analyzed for their potential to host solar PV arrays, ability to meet technical requirements, and ability to optimize economic value. Below are the Project Sites, a preliminary estimate of the potential kW solar capacity for each site, and the types of installation that WMATA has identified as suitable for PV installation. Additional information which includes DC feeder locations, indicative HelioScope reports, preliminary one-line drawings, indicative solar array layouts, and Pepco responses to interconnect pre-applications can be found in **Appendix C**. The Minimum Technical Requirements for the Project are listed in **Appendix D**. Developers are

expected to conduct their own site analysis for PV suitability and economic viability.

Project Sites (Metrorail Stations)	Location	Typology	Estimated Solar Potential (kW)
Anacostia	District of Columbia	Parking Garage Rooftop	1,800
Cheverly	Cheverly, MD	Surface Parking Lot	1,900
Naylor Road	Temple Hills, MD	Surface Parking Lot	1,900
Southern Avenue	Temple Hills, MD	Surface Parking Lot Parking Garage Rooftop	1,600 2,000

SECTION 3: PROPOSAL PREPARATION & SUBMISSION

3.1 Purpose and Scope. This RFP is intended to provide qualified solar developers with summary information about WMATA's requirements to facilitate preparation of a Proposal for the Project Sites. However, this document does not attempt to define all of WMATA's contract requirements. Those requirements will be addressed in full in the Lease and in any documents (such as a Maintenance of Traffic Plan) ancillary to the Lease.

3.2 Amendments and Supplements to the RFP. WMATA reserves the right to issue amendments and/or supplements to this RFP. Any amendments or supplements issued will be transmitted on WMATA's website for this RFP at www.wmata.com/realestate. If this RFP is amended or supplemented, Developers must submit the Amendment Acknowledgement Form attached hereto as **Appendix A** as part of their Proposal.

3.3 Acceptance of Terms and Conditions. By submitting a Proposal, the Developer is deemed to have agreed to and accepted all terms and conditions set forth in this RFP and any amendments or supplements issued before the Proposal is submitted. Again, to evidence that acceptance, if this RFP is amended or supplemented the Amendment Acknowledgement Form attached hereto as **Appendix A** must be submitted as part of a Proposal.

3.4 Acceptance/Rejection of Proposals. This RFP does not commit WMATA to designating a Selected Developer or to enter into a Lease. WMATA reserves the right to accept or reject any or all Proposals. Rejection of a Proposal need not be by an affirmative act on WMATA's part. WMATA reserves the right to withdraw and/or reissue this RFP at any time and for any reason, in WMATA's sole, absolute and subjective discretion.

3.5 Solicitation Timeline. WMATA is seeking to expedite the procurement and selection process to take advantage of the prevailing favorable market conditions. The milestones for the procurement process are set forth below.

Action	Date
RFP Issued	July 16, 2019
Pre-Proposal Conference and Site Visit	July 25, 2019

Deadline for Submission of Questions	August 23, 2019
WMATA Responses to Questions	August 30, 2019
Proposals Due	September 16, 2019
Oral Presentations (if needed)	October 3, 2019
WMATA designates Selected Developer	October 14, 2019

3.6 Selected Developer Status. A designation as Selected Developer for the Project Site is made by WMATA staff and provides no binding rights to the Selected Developer. Furthermore, designation as Selected Developer does not mean WMATA accepts the Proposal without further negotiation. Rather, the Proposal and the designation are the foundation for further negotiation. WMATA reserves the right to negotiate a Lease with a Selected Developer containing benefits to WMATA that exceed those set forth in the Proposal. Until such time as a Lease is negotiated, signed by both parties, approved by the WMATA Board of Directors (if required) and concurred by the FTA (if required), the Selected Developer has no vested rights by virtue of its designation as such.

3.7 Approvals. The terms of the Lease negotiated pursuant to this RFP may be subject to the approval of the WMATA Board of Directors and will be subject to the concurrence of the FTA.

3.8 Binding Agreement. An executed Lease approved by the WMATA Board of Directors (if such approval is required) and concurred in by the FTA is the only binding commitment of and by WMATA with respect to a Project Site. Designation of a Selected Developer or any conduct or oral representation by WMATA shall not in any way constitute a binding obligation or commitment by WMATA. By submitting a Proposal, the Developer acknowledges it will have no legal or equitable right to, or interest in, any Project Site except as set forth in such a Lease.

3.9 Costs. WMATA shall not be liable for any costs incurred by a Developer responding to this RFP or any costs incurred with respect to the negotiation, execution or implementation of the Lease. Each Developer shall bear all its/their own costs in that regard.

3.10 Pre-Proposal Conference and Project Site Visit. WMATA will host a pre-Proposal conference on **July 25, 2019 at 9:00am** at WMATA's headquarters building, located at 600 Fifth Street, N.W. in Washington, D.C., immediately followed by a Project Site visit. Developers are not required to attend the pre-Proposal conference or Project Site visit in order to submit a Proposal. Any presentation made and/or materials provided to the attendees of the pre-Proposal conference, the questions asked, and the answers provided shall be posted on WMATA's website at www.wmata.com/realestate.

To expedite check-in into WMATA, Developers interested in attending the pre-Proposal conference and Project Site visit are requested to RSVP by July 22, 2019 via email to realestate@wmata.com with the Subject line: "RFP #20-01, Pre-Proposal Conference RSVP". Please include in the email attendee names, titles, and company.

Pre-Proposal conference attendees will be meeting in Room 306 at WMATA's headquarters on July 25, 2019 at 9:00 am and should arrive no later than 10 minutes earlier (8:50 am) at the lobby to

be escorted to the conference room upstairs. Attendees will not be able to pass through security without an escort. Attendees should let the lobby receptionist know that they are at WMATA for the "Solar RFP Pre-Bid Conference" hosted by the Office of Real Estate & Parking. Upon completion of the pre-Proposal conference, WMATA shall provide bus transportation to the Project Sites. Attendees will have the opportunity to tour the Project Sites, locate interconnects, and ask questions. The bus will return attendees to WMATA headquarters no later than 1:00 p.m.

3.11 Inquiries. All inquiries concerning this RFP shall be submitted via email to realestate@wmata.com, with the subject line: "RFP #20-01: Solar RFP" no later than August 23, 2019 at 5:00pm. Answers to all questions submitted shall be posted online at www.wmata.com/realestate no later than August 30, 2019 at 5:00pm. Answers so posted constitute WMATA's official responses to Developers' questions. Any oral explanations or responses provided by WMATA staff during the pre-Proposal conference and/or Project Site visits or otherwise are not binding. WMATA assumes no responsibility for interpretations of this RFP made by Developers.

3.12 Deadline for Submission. Five (5) hard copies and one (1) electronic copy on a flash drive of the Proposal must be received by WMATA in a sealed package not later than **2:00 p.m. on September 16, 2019** to the address below. Developers are responsible for ensuring that their Proposals are received before the deadline. Mail or hand-deliver Proposals by the deadline to:

Washington Metropolitan Area Transit Authority
Office of Real Estate & Parking
600 Fifth Street, N.W.
Washington, DC 20001
REF: RFP #20-01: Solar Project RFP

3.13 Late Proposals. Any Proposal received by WMATA after the deadline set above shall be considered a late Proposal. A late Proposal may be accepted and evaluated, or rejected, by WMATA in WMATA's sole, absolute and subjective discretion.

3.14 WMATA Facilities. WMATA's transit and parking facilities (together, "**WMATA Facilities**") are critical to the efficient operation of the transit system. WMATA operations must be maintained throughout the Project development process. The Project will, necessarily, involve construction in operating parking facilities. While some disruption of parking operations is anticipated, any disruption must be planned in advance and documented to WMATA's satisfaction; such a document, whether part of the Lease or in a separate document, is referred to as a **"Maintenance of Traffic Plan"** (also referred to as an "**MOT Plan**") even if its subject matter extends well beyond traffic issues. At a minimum, Developers should assume that, except as may be set forth in a Maintenance of Traffic Plan, WMATA operations may not be disrupted and existing WMATA Facilities must be maintained in place or replaced at the Selected Developer's expense, and the Selected Developer must provide interim WMATA Facilities, if required, at its own expense. At this time, it is not expected or anticipated that any disruption of Metrorail, Metrobus or MetroAccess will be permitted as part of this Project. Any disruption of WMATA operations is subject to WMATA's approval in WMATA's sole, absolute and subjective discretion.

SECTION 4: PROPOSAL PROCESS AND PROCEDURES

4.1 Proposal Review Process. Each Proposal will be analyzed by members of a selection committee, which will consist of WMATA personnel, plus technical representatives, if any, designated by WMATA. WMATA's selection will be predicated on qualitative and quantitative evaluations based on the RFP criteria. WMATA shall designate a Selected Developer based on the Proposal that provides the Best Value (defined in **Section 4.3**) to WMATA. The criteria that are used to determine Best Value are set out in **Section 4.3**.

4.2 Oral Presentations. As part of the evaluation, WMATA may (but is not required to) request a short-list of Developers to participate in oral presentations. Assuming WMATA elects to hold oral presentations, it will hold them on October 3, 2019, and short-listed Developers will be notified on or before September 26, 2019.

4.3 Evaluation Criteria. Each Proposal will be evaluated with a view towards providing the best outcome for WMATA ("**Best Value**"), as determined in WMATA's sole, absolute and subjective discretion. An award will be determined by WMATA based upon its absolutely subjective determination of whatever factors most appeal to it. The evaluation criteria to be employed by the selection committee will include criteria such as, but not limited to, the following:

- Experience & Qualifications:
    - Developer capabilities
    - Meaningful inclusion in the Developer team and/or implementation plan of persons or companies who qualify as CBE companies in accordance with **Appendix G**
    - Project development experience
    - Extent to which the proposed team members have worked together in the past
    - Experience and expertise in providing similar services (financing, developing, owning and/or operating PV projects) of comparable size and scope
    - Experience and expertise in providing similar services in the Washington metropolitan area
    - Experience participating in DC and Maryland Community Solar programs and/or finding large off-take
    - Experience with carport canopy and garage canopy structures
    - Ability to bring roofing and structural engineering partners to perform key elements of the project
    - Operations and maintenance experience
    - Ability to perform required work activities and meet project objectives and timelines

- Implementation Plan and Schedule
    - *Implementation and Management Plan:* Evaluated on how complete, realistic and appropriate the proposed schedule and timetable are for the Project Sites.
    - *Development Plan:* Evaluated on how well the Proposal describes the development steps, including design considerations, interconnection, permitting, securing off-take and closing financing.

- *Construction Plan:* Evaluated on how well the Proposal describes solutions for management, staging, disruption of WMATA operations, and the use of subcontractors, etc.
- *Risk Management Plan:* Evaluated on how well the Proposal identifies potential risks and proposes solutions to minimize the impacts of those risks.
- *Changes to Ground Lease:* Evaluated on the nature and extent of Proposer's list of comments or changes (in redlined redraft) to WMATA's template lease form and their impact to WMATA.
- *Economic Inclusion Goals.* Evaluated on how well the Proposal evidences the ability to achieve or exceed the Project CBE Goals set forth in **Appendix G**.

- Technical Solar Experience. Proposals will be evaluated on how well the Developer demonstrates it has the technical experience and capability to realize the objectives set forth in this RFP, including systems and equipment proposed, equipment warranties offered, and monitoring systems. The following may be evaluated as part of the technical proposal:

  - *System Overview:* Evaluated on the completeness of information describing the system capacity factor, mounting approach, efficiency, degradation, system weight, single-line drawings, and shading study.
  - *Equipment List and Warranties:* Evaluated on how well the proposed equipment and corresponding warranties meet the technical requirements listed in **Appendix D**.
  - *Operations and Maintenance Plan:* Evaluated on how well the plan describes how the Developer will monitor and maintain the PV system to operate at optimum output.
  - *Decommissioning Plan:* Evaluated on the approach to decommission the Project at Project Sites at the end of each Lease term.

- Price. Proposals will be evaluated on the ability of the Developer to provide the highest Lease payments over the term of the Lease and to structure a financial plan that will be successful. Elements to be considered by WMATA include:

  - *Price:* Amount and timing of Lease payments.
  - *Financing Plan & Financing Partners:*
    - Developer's financial wherewithal to undertake the commitments presented in its proposal.
    - Developer's previous experience with the proposed financial partners.
    - Capability and assurance of Project financing feasibility as demonstrated by the Developer's financing plan submission, absence of a financing contingency, and /or committed debt facilities.
    - Financial strength and stability of financing sources.
    - Experience demonstrated by the financier to finance similar projects.
  - Reasonableness of capital costs, operating expenses, and revenue assumptions.
  - Letters of commitment, guarantees, and other demonstrated forms of commitment.

- Where its review concludes that two or more Proposals are of substantially similar value, WMATA will give preference to a Developer that maximizes opportunities for low-and moderate-income households to benefit from the Project.

4.4 Developer Certification Form. Each Developer must submit the Selected Developer Certification form found in **Appendix F** with its Proposal.

4.5 Notice of Acceptance or Rejection. Notice by WMATA of acceptance or rejection of a Proposal will be deemed to have been sufficiently given when e-mailed to the Developer at the address provided in its Proposal.

4.6 Continuing Offers. Unless a Proposal is withdrawn in accordance with the terms of this RFP, each Proposal received will be deemed to be a continuing offer good for one hundred and eighty (180) days from the Proposal Due Date.

4.7 Waiver of Irregularities. WMATA may, at its election, waive any minor informality or irregularity in Proposals received.

4.8 Post-Selection and Negotiation of Lease. Once WMATA designates a Selected Developer, WMATA will enter into exclusive negotiations with the Selected Developer for a period of one hundred twenty (120) days unless extended by the mutual consent of the parties to finalize the terms of the Lease. WMATA will provide a template Lease approximately fifteen (15) days prior to the Proposal Due Date and requests a list of comments to WMATA's template Lease, or a redlined redraft of the template Lease showing the changes proposed, be provided as part of the Developer's Proposal. If the Selected Developer needs access to one or more Project Sites to do any invasive work (such as test borings, environmental samplings, and entering electrical closets and telecommunications closets) after its designation as the Selected Developer, access can be provided via a WMATA's standard Real Estate Permit document; the Real Estate Permit form and the Application to obtain a Real Estate Permit can be found on WMATA's website at https://www.wmata.com/business/real-estate/policies-forms.cfm.

4.9 Security Deposit

4.9.1 Generally. Within fourteen (14) days following WMATA's notification to a Developer that it is the Selected Developer (estimated date is early November 2019), the Selected Developer must deliver to WMATA a security deposit in the sum of One Hundred Thousand Dollars ($25,000 per Project Site) (said amount, together with any interest accruing thereon, the "**Pre-Lease Deposit**"). The Pre-Lease Deposit may be posted either in cash or in the form of a letter of credit meeting the standards below (the "**Letter of Credit**"). Failure to deliver the Pre-Lease Deposit as required by this subsection will entitle WMATA to terminate the Selected Developer's status as such at any time until the Pre-Lease Deposit is paid, in WMATA's sole and absolute discretion. The Pre-Lease Deposit shall be held by WMATA as security for the Selected Developer's performance under this RFP. If the Pre-Lease Deposit is held in cash, WMATA will not be obligated to invest the Pre-Lease Deposit in an interest-bearing account. The Pre-Lease Deposit for each Project Site will be returned to the Selected Developer (i) upon both parties' signing a Lease, or (ii) if the Lease is not signed because of (x) WMATA's own default, (y) a delay beyond the reasonable control of the parties, or (z) the failure of Selected Developer to obtain sufficient off-take agreements on commercially reasonable terms despite diligent efforts to do so; if none of the foregoing grounds for returning the Pre-Lease Deposit exist and the Selected Developer is unable to demonstrate enough progress with lease negotiations, WMATA may

decide to negotiate with another Developer and seize the Pre-Lease Deposit for itself after the one hundred twenty (120) day exclusivity period. (Any security deposit required by the Lease is separate from the Pre-Lease Deposit as set forth in this paragraph and will be governed by the terms of the Lease.)

4.9.2 Letter of Credit

(i) The Letter of Credit shall be in the form of **Appendix H** or, in WMATA's sole and absolute discretion, may be in such other form but the Letter of Credit shall provide, at a minimum, the following: (i) the Letter of Credit must be issued by a commercial bank reasonably acceptable to WMATA and must be presentable in the Washington, D.C. metropolitan area; (ii) the Letter of Credit must be payable at sight without presentation of any other documents, statements, or authorizations and must allow for partial draws; (iii) the Letter of Credit must have a minimum term of one (1) year and provide for its automatic renewal on a year-to-year basis unless the issuer gives WMATA at least two (2) months' prior written notice of nonrenewal; and (iv) the Letter of Credit must be freely transferable to any successor of WMATA and the Developer shall be responsible for the payment of any transfer fee or other cost incident to such a transfer (or, in the alternative, the Developer must obtain a replacement Letter of Credit running to the benefit of a successor of WMATA, and the Developer shall be responsible for the cost thereof, and upon receipt of the replacement Letter of Credit by WMATA the prior Letter of Credit shall be returned and may be cancelled); if the Developer fails to make such payment, WMATA may do so at the Developer's expense and the Developer shall reimburse WMATA for the same.

(ii) The Letter of Credit may be drawn upon by WMATA if: (A) WMATA is entitled to the proceeds of the Pre-Lease Deposit pursuant to **Section 4.9.1**; or (B) if the issuer gives notice of non-renewal to WMATA and a replacement Letter of Credit (or the cash equivalent) is not delivered to WMATA at least thirty (30) days prior to the non-renewed Letter of Credit's expiration date; or (C) without notice of non-renewal having been given, the term of the Letter of Credit will expire within thirty (30) days and no replacement or renewal letter of credit (or cash equivalent) has been delivered to WMATA; or (D) there is a dispute between WMATA and the Selected Developer on the date which is thirty (30) days prior to the stated expiration date of the Letter of Credit; or (E) WMATA at any time reasonably determines that the issuer is not solvent or that the issuer has been put into conservatorship, receivership or any similar program by any governmental authority having jurisdiction over the issuer, or WMATA at any time reasonably determines that there is a likelihood for any other reason that the issue would not honor the Letter of Credit if it was presented for payment. If WMATA draws of the Letter of Credit at any time when WMATA is not otherwise entitled to the proceeds of the Letter of Credit, WMATA shall retain the proceeds of the Letter of Credit as a cash Pre-Lease Deposit until the first to occur of (X) a replacement Letter of Credit is delivered to WMATA, at which time WMATA shall return the cash to the Selected Developer, (Y) WMATA has rights to the Pre-Lease Deposit as set forth in this RFP, or (Z) the Selected Developer is entitled to the return of the Pre-Lease Deposit, at which time WMATA shall return the cash to the Selected Developer.

(iii) Notwithstanding anything to the contrary in the foregoing, it is

understood and agreed that WMATA's willingness to accept a Letter of Credit as the Pre-Lease Deposit in lieu of cash is an accommodation to the Selected Developer and the Selected Developer bears all risk of the issuer failing, refusing, or being unable to honor a draw on the Letter of Credit. If the issuer fails, refuses or is unable to honor a draw on the Letter of Credit, the Selected Developer shall be obligated to immediately, upon WMATA's giving written notice of such failure or refusal, deliver a replacement Letter of Credit meeting the terms of this subsection (or a cash equivalent) to serve as the Pre-Lease Deposit.

(iv) The Selected Developer waives any and all rights it may have to contest, enjoin, or otherwise interfere with the issuer's honoring a draw on the Letter of Credit. The Selected Developer's sole remedy shall be against WMATA directly via a claim that WMATA has made an improper draw.

4.10 Key Lease Terms

- **Initial Term:** The 15-year initial Lease term for each Project Site shall begin on the last to occur of (i) the date the Lease is signed by both the Selected Developer and WMATA, (ii) the date the Lease or the transaction evidenced by the Lease is approved by WMATA's Board of Directors (if such approval is required), (iii) the date the Lease or the transaction evidenced by the Lease is concurred in by the FTA, and (iv) the date on which WMATA approves the plans and specifications for the PV solar installations at the Project Sites, which date shall be established by a written notice by WMATA to the Selected Developer (a **"Notice to Proceed"**). The Lease term shall terminate on the fifteenth (15^{th}) anniversary of WMATA's issuance of the Notice to Proceed.

- **Renewal Term(s):** The Lease shall provide the tenant with two (2) options, of five (5) years each, to extend the term of the Lease. Each extension option will require six months advance notice of its exercise or the option will be forfeited.

- **Base Rent:** The payment of base rent (see **Appendix B**) shall commence on the date the Notice to Proceed is given (see "Initial Term," above). Base Rent shall be payable annually in advance at the start of each Lease year. Also see **Section 5.1 Tab 8** below.

- **Participation Rent:** The payment of any participation rent in the Developer's gross revenues or the proceeds of any capital event shall be made in accordance with the terms of the Selected Developer's Proposal. Also see **Section 5.1 Tab 8** below.

- **Security Deposit:** Upon signing the Lease, the Selected Developer shall remit a security deposit to WMATA equivalent to one (1) month's pro rata share of the Base Rent. This security deposit is in addition to the decommissioning security payment addressed below in this Section and will secure the Selected Developer's performance and rent payment obligations under each Lease.

- **System Installation Rights:** The Selected Developer will be provided a nonexclusive right to enter upon the Project Sites to install, construct, operate, maintain, replace and remove solar arrays.

- **Exclusive Right to Insolation:** The Selected Developer will be granted an exclusive right to utilize the full insolation available at each Project Site without obstruction or interference unless such construction or interference is due to WMATA's operations of the transit system and cannot be reasonably corrected.

- **Exclusive Right to Interconnection:** The Selected Developer shall be granted an exclusive right to install, construct and maintain interconnection lines from the Project Sites to Pepco interconnection equipment.

- **Decommissioning Security:** On the tenth (10th) anniversary of WMATA's issuance of the Notice to Proceed, the Selected Developer shall post cash collateral or other form of security acceptable to WMATA to secure the Selected Developer's obligation to dismantle and remove the solar arrays from the Project Sites at the end of the initial term. If the Lease term is extended (see "Renewal Term(s)" above), a condition of such extension shall be the posting of such cash collateral or other form of security as WMATA may then find acceptable to secure the Selected Developer's obligation to dismantle and remove the solar arrays from the Project Sites at the end of the applicable extended term.

- **Termination Provisions:** The Lease may be terminated by WMATA for the Selected Developer's failure to achieve commercial operation within twelve (12) months from the date of WMATA's issuance of a Notice to Proceed. Other usual and customary termination provisions will apply and will include the ability of WMATA to terminate or partially terminate the Lease. Unless the Lease is terminated as a result of a default by the Selected Developer or a casualty or condemnation (or a conveyance in lieu of condemnation), WMATA will make a termination payment to the Selected Developer based on the percentage of decreased generation capacity, the period in which the termination occurs and the Termination Liability schedule submitted by the Selected Developer in its response to this RFP.

- **Insurance**: Insurance coverage for the Project is required as set forth in **Appendix E**, Insurance Coverage Requirements.

4.11 WMATA Board and FTA Approvals. All leases valued over $1 million per year are required to receive WMATA Board of Directors approval. WMATA is also required to obtain FTA concurrence of this use as an "incidental use" of WMATA property. There is no binding agreement between the Selected Developer and WMATA until such time as the Lease is executed by WMATA and the Selected Developer, the WMATA Board of Directors (if required) has approved the execution of the Lease and the FTA has concurred to the transaction.

4.12 Approval and Permits. The Selected Developer shall apply for and obtain all necessary permits from applicable regulatory agencies including federal, state, and local jurisdictions and local utilities. The Selected Developer will be responsible for all activities related to interconnection and metering through local utilities. It shall be required to supply all equipment, materials and labor necessary for the installation of the PV systems. The Selected Developer shall be responsible for adherence to federal, state, and local building codes, environmental laws, rules and regulations, permitting and interconnection requirements of the local utility. All plans and specifications shall also be subject to WMATA's review and approval in accordance with **Section 6.2** below. Once the Lease has been fully executed, the WMATA Board of Directors has approved

the transaction (if such approval is required), the FTA has concurred in the transaction, all applicable permits and approvals have been obtained, and a Notice to Proceed from WMATA, the Selected Developer will be permitted to begin construction.

4.13 Public Access to Records Policy. The rules governing what information WMATA may hold confidential and what information WMATA must disclose are set forth in WMATA's "Public Access to Records Policy," which is available on WMATA's website, https://www.wmata.com/about/records/public_docs/upload/PI-209-203_Public-20Access-20to-20Records_FINAL-2001-2017-202019.pdf.

SECTION 5: PROPOSAL ELEMENTS

5.1 Mandatory Response Items. Developers must use the Proposal format below to respond to this RFP. Please be as specific and detailed as possible with your responses. Only information that is essential to understanding and evaluating the Proposal shall be submitted. Items not specifically and explicitly related to the RFP and Proposal (e.g. brochures, marketing material, etc.) may not be considered in WMATA's evaluation. A Proposal that does not include all information set forth below may be deemed non-responsive and subject to rejection.

Table of Contents. The Proposal shall include a table of contents listing the individual sections of the proposal and their corresponding page numbers. Tabs / page dividers shall separate each of the individual sections.

Tab 1: Cover Letter. Provide a cover letter that references this RFP #20-01 and sets out the following:

- Confirmation that the Developer agrees to be bound by the terms of the RFP.
- The name, telephone, fax, address, and e-mail address of one business person who is the organization's designated representative.
- An indication of what information, if any, in the proposal is proprietary and confidential. (See **Section 4.13** above.)
- The cover letter must be signed by a representative of the Developer authorized to bind the Developer contractually.

Tab 2: Amendment Acknowledgement Form. If this RFP is amended, the Developer must provide a signed Amendment Acknowledgement Form with its Proposal. This Form is found in **Appendix A**.

Tab 3: Developer Certification Form. The Developer must provide a signed Developer Certification Form with its Proposal. This form is found in **Appendix F.**

Tab 4: Executive Summary. Provide an overview of the Proposal (not to exceed two pages) summarizing how your firm will meet WMATA's goals for the Project. (See **Section 2.2** above.) The Executive Summary shall also highlight key features and distinguishing points of the Proposal and how the Proposal contributes the Best Value to

WMATA.

Tab 5: Experience & Qualifications. Provide the following information as applicable. Please mark "N/A" only if such information/experience is non-existent.

- *Section A: Team Capabilities*. Provide your firm's organizational chart that describes the reporting relationships of all key personnel and team members/partners. Specifically identify and describe the EPC that is included in the team. Describe the extent to which the team has worked together in the past. Include names and resumes of key personnel who will be assigned to the Project, including any known subcontractors. If the Developer is a team or joint venture of multiple companies, there will be an evaluation of the experience of each member of the team or joint venture considering their role in the proposed team or joint venture.

- *Section B: Project Development Experience*

    - Describe at a minimum, at least three (3) projects totaling at least five (5) mega-Watts ("**MW**") that the Developer has successfully financed, constructed, installed and operated within the past three (3) years that are in commercial operation at the time of the issuance of this RFP. At least one (1) of the projects must be a carport canopy project of at least 500 kW and at least one (1) of the projects must be a garage canopy project of at least 500 kW. Experience in the Washington metropolitan area is preferred. For each project provide references, customer details, details of the system including capacity, annual production, time taken to permit project, time taken from contract execution until the Commercial Operation Date, total development costs, and financial structure.
    - Describe your experience securing interconnect agreements. Highlight any experience with Pepco.

- *Section C: Financial Information*

    - Provide the Developer's most recent audited financial statements inclusive of notes. If the financial statements reflect the accounts of an affiliate entity or parent company, please describe the intracompany relationship and the extent to which the affiliate/parent will be funding and backing the solar development activities presented in your proposal. (If the financial statements are available on a publicly-accessible website, you may cross-reference the website instead of attaching the information.)
    - Provide the number of PV systems and total capacity that have been financed by the firm and the financing partner(s) proposed for this project. Describe the financing plans for three projects that are similar in size, scope and location as the Project.
    - Describe sources of committed capital, if any, that are available to the Developer for the Project (committed debt facilities, balance sheet resources, equity partners) and how such sources have been utilized on past projects. For committed credit lines, please describe investment criteria and credit approval steps. WMATA's objective in asking this question is to understand the

Developer's financial resources and contingencies.

WMATA reserves the right to request and receive from the Developer additional material as it may deem reasonably necessary to corroborate a Developer's ability to finance the contemplated Project as proposed by the Developer below in **Tab 6: Proposal Narrative, Section F: Financing Plan**. The failure to provide such information shall constitute grounds for WMATA to discontinue its consideration of a Developer's response.

- *Section D: Operations and Maintenance Experience*

  - Provide the number of operational PV systems, locations, number of years managed, and total nameplate MW for which your firm currently provides operational and maintenance services.
  - Provide system performance data for at least three systems to-date (expected vs. actual energy production) that were installed by your firm.
  - Provide three (3) references from customers who are currently receiving operations and maintenance service from your firm.
  - Describe the software and monitoring systems that your firm uses to verify system performance.
  - Describe the methodology and frequency of solar energy production reporting employed by your firm.

- *Section E: Energy Production Assurance*

  - Provide specific information regarding your firm's experience with guarantees/warranties for equipment performance and expected energy production.
  - Describe any consequences, fines, claims, or penalties your firm has incurred because a PV system did not produce energy as expected.
  - Describe any third-party verification of predicated or actual energy production used by your firm.

Tab 6: Proposal Narrative. Present a clear and concise description of the Developer's overall approach of its understanding and ability to meet WMATA's objectives and requirements. The Developer shall clearly articulate its objectives, goals, and strategy to successfully implement this Project. The Proposal narrative shall, at a minimum, address the following items:

- *Section A: Implementation and Management Plan Schedule*. The Developer shall provide a GANTT style schedule showing the timelines for all stages of development to include the design, design review, permitting, financing, approvals, environmental, interconnection, installation, and commissioning. Indicate the critical path elements and task dependencies.

- *Section B: Development Plan*. The Developer shall provide a detailed narrative description of the development steps shown in the Implementation and Management

Plan Schedule.

- *Section C: Construction Plan*. The Developer shall provide a detailed narrative description of the approach to be taken in installing the proposed arrays, including how the Developer will work with WMATA and other relevant stakeholders. The Proposal shall describe the approach to construction management, staging, addressing on-site environmental concerns, equipment installation, commissioning and acceptance testing, project close-out document control, quality assurance procedures, safety plans, and project administration. If the Developer plans to use subcontractors, describe how the Developer plans to manage subcontractors. The description shall include the organization of the team, including subcontractors, and a description of the services to be performed by the subcontractors and a description and representation of accountability and lines of authority of the Developer's team. During construction, the Selected Developer shall minimize disruptions to WMATA's parking and traffic operations, the manner of doing so which will be addressed more fully in the Lease or in a separate Maintenance of Traffic Plan between WMATA and the Selected Developer. For planning purposes, WMATA prefers to maintain available two-thirds (67%) of the parking spaces at each site during construction.

- *Section D: Risk Management Plan*. The Developer shall identify any risks associated with the Project and the strategies to mitigate these risks.

- *Section E: Communications Plan*. The Developer shall describe the communication needs and expectations for the project team. At a minimum, the communications plan shall include methods of communicating with WMATA. The communication plan shall include regular meetings between the Developer and WMATA as well as periodic written reports provided to WMATA to provide updates on the progress and status relative to the schedule, any proposed changes, any actual or anticipated problems or delays, and actions or solution to resolve issues.

- *Section F: Financing Plan*. The Developer shall comprehensively address how it expects or anticipates that the Project will be financed. The Project financing plan elements include:

    - List all proposed sources of funding by provider, aggregate amount and type. Include a schedule showing the expected amount and timing of Project funding by source (sponsor equity, tax equity, and construction and term debt from the development period through the Commercial Operation Date). Provide a quarterly "sources and uses" of funds statement for the construction period, showing the timing and amount of expected funding by source.
    - Identify the terms of the Developer's expected or anticipated debt and equity financing sources, highlighting any terms that are subject to change prior to award. Provide information on the other types of expected or anticipated borrowing, including type(s) of credit instrument(s) to be issued and the security to be pledged for such borrowing.
    - Describe whether the Project financing(s) are expected or anticipated to be

secured for each individual Project Site or as an integrated project covering all Project Sites. If the former, please describe how you will assure that all Project Sites get developed and financed.

- Provide financial information on each known financing participant, including financial wherewithal, financing experience and financial statements for the most recently completed fiscal year.
- Describe any funding commitments already in place and available to the Developer for the Project. Describe any conditions to funding from such sources.
- Describe any known, expected or anticipated contingencies related to each source of funding and the Developer's plan for mitigating risks associated with project financing.
- Describe any funding that is not yet committed, and which will need to be raised prior to closing and the conditions necessary for achieving financial close.
- Identify and describe the circumstances surrounding any projects that have been awarded to your firm in the past five years that have failed to reach financial close.
- Identify all known financial partners that will be involved in the Project and note whether there will be a guarantor standing behind any specific financial obligations, including security on Project milestones. If there is no financing partner, WMATA will evaluate the financial plan of the Developer itself.
- Describe in this plan all available tax credits, incentives, and subsidies that will be used to finance the project. Indicate whether the Project will qualify for 30% or 26% investment tax credits. If 30% investment tax credits are anticipated, indicate why you believe the Project will qualify for 30% investment tax credits.
- Provide a termination schedule by Project Site for each year of each Lease indicating WMATA's payment obligations in the event of a termination. This should be consistent with the requirements in **Section 4.10 - Termination Provisions**.

- *Section G: Pro Forma.* The Developer shall submit a financial *pro forma*, developed using Microsoft Excel software, illustrating the economic viability of the Project and containing the following elements:

  - Assumptions Worksheet – Shall be linked to all other worksheets within the pro forma, and wherein all financial assumptions (i.e., solar array output, CAPEX, SREC values, OPEX, interconnection costs, financing costs, etc.) can be manipulated to produce varying results during the evaluation of submittals. Provide support for each assumption.
  - Construction Budget – A line item construction budget that reflects all expected construction costs by major trades/milestones, and that are detailed for each month of the construction period through completion. This budget shall also reflect drawdowns on the construction loan(s) and equity contributions as they occur and shall be linked to the assumptions worksheet and shall contain formulae so that cell references and calculations can be verified.
  - Sources and Uses Statement – A statement that reflects all expected transaction costs (i.e., hard, soft, financing, and closing fees, etc.), and the sources to fund

these costs. This statement shall be linked to the assumptions worksheet and shall contain formulae so that cell references and calculations can be verified.

- Annual Cash Flow Statement (for each year of the Lease term) – A statement that reflects line item Project revenues and expenses for each year of the proposed Lease term. This statement shall be linked to the assumptions worksheet and shall contain formulae so that cell references and calculations can be verified. Specifically, the statement provided shall include the following on an annual basis:
  - Line item description and dollar amount for each source of revenue – SREC and off-take revenue that is linked to production output.
  - Line item description and dollar amount for each Project expense item to include contributions to any reserve accounts.
  - Net Operating Income projection for each year of the term of the Lease based on items above.
  - Line item description and dollar amount of all debt service payments.
  - Line item description and dollar amount of all capital costs.
  - Line item description and proposed cash payments to WMATA.

- *Section H: Off-take Plan*. All power generated by the Project shall be sold to a third-party off-taker with the Developer responsible for identifying and securing all off-take. The Developer shall provide an off-take plan that describes the Developer's strategy and schedule to obtain off-take agreements, including a detailed summary of the risks within its strategy. Anticipated terms for any off-take agreement shall be provided. Submission requirements must include, but are not limited to:

  - An explanation of the current off-take market identifying and explaining the rationale for the expected schedule to finalize a financeable off-take agreement.

  - Independent third-party credit ratings of the off-taker(s). If a third-party credit report is not available (i.e., when no Nationally Recognized Statistical Rating Organization ("**NRSRO**") has assessed an off-taker), the Developer shall submit its own financial summary on each off-taker, including total assets and liabilities and annual revenues and EBITDA for the past three (3) years. If the credit rating of the proposed off-taker is rated below investment grade, the Developer may provide a narrative describing why they believe this off-taker is credible and creditworthy.

- *Section I: Operations and Maintenance Plan*. The Developer shall provide operation and maintenance (**"O&M"**) services for the full term of the Lease. Please describe the proposed O&M procedures for the system, detailing duties performed and if the contract will be maintained with the Developer or a third-party provider. Describe how O&M will not interfere with or affect WMATA on-site operations.

- *Section J: Decommissioning Plan*. The Developer shall provide information regarding the proposed approach to system decommissioning, including a plan for ensuring that funding will be available to decommission the system at the end of the

Lease term. All decommissioning responsibilities and associated fees will be the sole responsibility of the Developer.

- *Section K: Economic Inclusion Plan*. Provide information evidencing the Developer's plan to achieve or exceed the Project CBE Goals set forth in **Appendix G**.

Tab 7: Technical Proposal. All PV systems proposed under this RFP must conform to industry best practices and must meet all minimum technical requirements as set forth in **Appendix D**. Proposals should include as part of the RFP response the engineering and design submittals specified in **Appendix D**. The Developer shall provide a narrative that describes its Proposal for design, permitting, interconnection, and choice of equipment. Include the following sections:

- *Section A: Proposed System Overview for each Proposed Project Site*. Technical narrative that describes the proposed systems, including but not limited to:

  - Annual capacity factor (%) for PV expected first-year generation (MWh/Year)
  - Mounting approach
  - Proposed system efficiency (kWh/kW/Year)
  - Predicted annual degradation rate (%)
  - Expected system weight, including ballast (PSF)
  - Single-line electrical diagram of proposed systems
  - Shading study

- *Section B: Proposed Equipment List*. Explain why each of these types of equipment were selected as the optimal choice. The technical Proposal shall also describe the availability, supply and quality of proposed equipment, and lead time for ordering key items.

  - Inverter
    - Make/Model
    - Specifications/standards
    - Efficiency
  - PV Modules
    - Make/Model
    - Type
    - Rating in Watts DC
  - Racking/Mounting system
    - Make/model if not custom engineered product
    - If canopy mount, make/model/coating specification of embedded post design
    - Tilt and Azimuth: Explain reason for selection of tilt and azimuth
  - Revenue Grade Meter
    - Make/Model
    - Guaranteed Accuracy
    - Revenue grade specifications

- *Section C: Proposed Equipment Warranties.* Provide warranties for all major system components including modules, inverters, monitoring systems, tracking systems and mounting structures. Documentation must describe the duration of the warranty, and the nature of the performance guarantee(s). For all equipment, include the manufacturer and/or model information, the equipment, and labor warranties, and details on insurance to protect WMATA from installation failures and whether the Developer is bonded.

- *Section D: Monitoring System.* The Developer shall provide system performance monitoring via a data acquisition system (**"DAS"**). Describe how the proposed DAS meets requirements as described in this RFP. Confirm that all PV system performance data will be transmitted in the format and at the intervals set out in this RFP and the Minimum Technical Requirements (see **Appendix D**).

  Provide an overview of the proposed DAS, including quantity and model of proposed sensors, data acquisition hardware and software, screen shots of proposed solutions, and IT requirements. Include specifications of proposed monitoring software, including screenshots of user interface and system diagnostic capabilities, as well as hosting requirements, performance data, and processes.

Tab 8: Price. The Developer shall submit its proposed Lease payment schedule using the form found in **Appendix B**. Provide a separate sheet for each site. Developers must offer an annual payment at the beginning of each year of the full 15-year Initial Term. For the two (2) five-year options, Developers may also offer fixed annual payments for the two (2) five-year options, but this is not a requirement. Developers shall decide whether to escalate Base Rent in their Proposals and on what basis.

Developers may also offer variable participation payments in addition to (but not instead of) base rent. If the Developer offers participation payments, payments must be calculated as a percentage of gross revenue and/or as a percentage of the proceeds of capital transactions (after deducting normal and reasonable closing costs and other closing prorations as shown on a settlement statement). If a Developer offers participation payments, then as part of **Appendix B** the Developer shall provide a narrative that explains the payment calculations.

The fixed payments and any estimated participation payments shall also be clearly identified in the pro forma submitted as per **Tab 5, Section G** above.

SECTION 6: NON-NEGOTIABLE REQUIREMENTS AND CONDITIONS

The following requirements and conditions are nonnegotiable and will be included in the Lease and final documentation executed by the Selected Developer and WMATA. By submitting a Proposal in response to this RFP, a Developer is agreeing to accept and comply with these nonnegotiable requirements and conditions.

6.1 WMATA's Reserved Areas and Interests

The location of WMATA's reserved areas and interests shall be determined by WMATA in its sole, absolute and subjective discretion. The lease of any WMATA property shall be subject to a reservation by WMATA of a permanent, exclusive and irrevocable covenant, restriction, reserved area and/or easement for the operation and maintenance of present and future WMATA Facilities. The nature and method of WMATA's operations shall be determined from time to time by WMATA, in its sole, absolute and subjective discretion.

6.2 WMATA's Approval Rights and Adjacent Construction Requirements

The following rights and requirements apply to the Project:

6.2.1 Approval Rights. WMATA shall have the right to approve in its sole, absolute and subjective discretion:

i. Matters that affect the integrity, functionality, efficiency, safety, operation, maintenance, legal compliance, cost or profitability of WMATA's business, customers, operations or activities;
ii. Matters that affect WMATA Facilities, including (without limitation) ingress/egress to WMATA Facilities;
iii. Matters that affect any of WMATA's adjacent property;
iv. The design and construction of interim and permanent WMATA Facilities; and
v. Matters that affect the Selected Developer's obligations as they relate to changes in Project schedule and performance.

6.2.2 WMATA's Comment Rights. WMATA shall have the right to comment on the development plan/site plan and on other matters concerning the Project which do not fall within the categories set forth in **Section 6.2.1** above. The Selected Developer shall be obligated to consider WMATA's comments and to respond reasonably.

6.2.3 WMATA's Construction Requirements. Projects must be built in compliance with WMATA's adjacent construction criteria as contained in WMATA's then-current Adjacent Construction Project Manual (available on WMATA's website at https://www.wmata.com/business/adjacent-construction/upload/ACPM-Rev-5a-09-21-15.pdf) and WMATA's Manual of Design Criteria (available upon written request). Developers are advised that the Adjacent Construction Project Manual requires the payment of review, coordination and, if entry on WMATA Facilities is involved, escort fees to WMATA. Additionally, Developers must comply with WMATA's requirements for the relocation and maintenance of operations during construction, which include the uninterrupted and unimpeded operation of WMATA Facilities. WMATA will review and approve Developer plans in accordance with established WMATA procedures.

6.2.4 Relocation or Replacement of WMATA Facilities. If a Project requires the relocation or replacement of any WMATA Facility on a permanent or interim basis, the

cost shall be borne solely by the Selected Developer. Except as may be set forth in a WMATA-approved Maintenance of Traffic Plan, no WMATA Facility may be taken out of service unless a permanent or interim replacement facility is already available, such that there will be no disruption to WMATA operations. Additionally, the configuration of the relocated or replaced WMATA Facility must be agreed to by WMATA in writing. WMATA shall own and operate any permanent relocated or replaced WMATA Facility.

6.3 No Subordination of WMATA's Fee Interest

WMATA will not subordinate its fee interest in its property. WMATA will permit *bona fide* lenders to have a leasehold security interest in the Project, which security interest will be subordinate to WMATA's fee interest in the Project Site and to the terms of the Lease (including any right to cure and/or to obtain a replacement Lease granted to the lender).

6.4 Federal Transit Administration Requirements

WMATA is subject to applicable FTA regulations and, as such, the Project is considered an "incidental use" of WMATA property, which requires FTA review and concurrence.

6.5 Americans with Disabilities Act

All Projects shall be constructed in compliance with Titles II and III of the Americans with Disabilities Act, 42 USCA Section 12101, et seq., as amended, and any regulations promulgated thereunder ("**ADA**"). Developers are also referred to WMATA's Manual of Design Criteria (available upon request) for WMATA's own accessibility standards. Whenever WMATA's standards and the ADA differ, the more stringent standard shall apply. Additionally, if a Project or any subsequent addition, modification or alteration triggers accessibility-related improvements to the Metrorail station, the Selected Developer shall be responsible for the costs of such improvements. The only exceptions are when the accessibility-related improvements are required to be made regardless of the Project or constitute accessibility related improvements that WMATA is implementing at Metrorail stations in general as part of its system-wide improvements or alterations.

6.6 Other Laws, Regulations and Requirements

Developers are responsible for being fully informed of and complying with the requirements of applicable federal, state, and local jurisdictional laws and regulations. Additionally, the Selected Developer shall be responsible for obtaining, at its own cost and expense, all requisite approvals, licenses and permits.

6.7 WMATA's Indemnification Policy

The Selected Developer and its contractors and subcontractors shall indemnify WMATA against all claims, liabilities and costs of whatsoever kind and nature, including environmental claims, which may be imposed upon, or incurred by, or asserted against WMATA in connection with the Selected Developer's performance under the Lease. Developers are advised that WMATA is generally precluded from indemnifying them.

6.8 WMATA's Insurance Requirements

The Selected Developer and its contractors and subcontractors must procure and maintain insurance coverage in amounts determined by WMATA. See **Appendix E** for the insurance requirements applicable to the Lease that is anticipated to implement this RFP.

6.9 Payment and Performance Bonds

If there are replacement WMATA Facilities (interim and/or permanent) being constructed, WMATA requires the Selected Developer to secure and file with WMATA payment and performance bonds equal to one hundred percent (100%) of the hard costs of the replacement WMATA Facilities. These bonds shall name WMATA as the sole obligee for the completion of the replacement WMATA Facilities.

All bonds must be from a federally approved surety company with sufficient assets. All bonds must be in a form acceptable to WMATA and countersigned by a State of Maryland or District of Columbia, as applicable to the Project Site, resident agent of the surety, with a copy of the agent's license as issued by the appropriate Insurance Commissioner.

Alternatively, the Selected Developer may escrow the entire cost of the replacement WMATA Facilities in cash with WMATA or a third-party escrow agent (who may be the Selected Developer's construction lender) approved by WMATA. Funds may be drawn from this escrow by the Selected Developer upon submission of draw requests to WMATA and WMATA's approval thereof solely to pay, in arrears, the Selected Developer's actual costs incurred in designing and constructing the replacement WMATA Facilities (excluding any fees or other compensation to the Selected Developer or its affiliates until final completion occurs). Should the Selected Developer fail to finally complete the replacement WMATA Facilities as designed and approved by WMATA and on the agreed-upon schedule, WMATA may use the escrowed funds for that purpose. Neither the establishment nor use of the escrowed funds shall be deemed to be liquidated damages or WMATA's sole and exclusive remedy.

6.10 Disclaimer of Liability

WMATA disclaims all responsibility and liability for the completeness or accuracy of any information that it provides. Any error or omission will not constitute grounds or reason for nonperformance by a Developer or be grounds for a claim for allowance, refund or deduction.

6.11 Inspection of Accounting Records

The Selected Developer will be required to permit WMATA, or any of its duly authorized representatives, at reasonable times and places, access to any books, documents, papers and records, including certified financial statements, which are directly pertinent to the Lease. WMATA shall be permitted to audit, inspect, examine, copy and transcribe such books, documents, papers and records. The Selected Developer shall retain all records for three years after submission of any statement required for determining any payment obligations under the Lease.

6.12 WMATA's Tax-Exempt Status

WMATA is tax exempt pursuant to the WMATA Compact. Any taxes, assessments or impositions on the Project, the Project Sites or the Lease, including (without limitation) real estate taxes, special assessments, and any transfer, recordation, grantor's, stamp, or other documentary taxes, shall be assumed and paid by the Selected Developer. In no event shall the Selected Developer assert or attempt to assert for its own benefit an exemption or immunity available to WMATA under the WMATA Compact.

6.13 Financing Requirements

6.13.1 Obtaining Financing. The Selected Developer shall be obligated to obtain the requisite financing commitments to consummate the Lease(s) of the Project Site(s) and the development, construction and final completion of the Project by a reasonable date certain or WMATA may terminate the Lease.

6.13.2 No Cross-Collateralization. The Project may not be cross-collateralized or cross-defaulted with any property, project or other assets that is or are not part of the Project. This prohibition shall be included in the Lease. However, if there is more than one Project Site and the Lease is actually a separate lease agreement for each Project Site, then those lease agreements for different Project Sites may be cross-collateralized and cross-defaulted with each other.

SECTION 7: MONITORING AND DATA ACQUISITION SYSTEM

Selected Developers must install a DAS to measure and monitor the PV system performance. The DAS may be integrated into the inverter and system or externally interfaced with the PV system to collect required data. The DAS shall include instrumentation (with a stability < 2% change over a one-year period) that allows the measurement of:

- Plane-of-array irradiance (W/m2, ±2%)
- Ambient temperature (sensor to be placed in a shaded location) (°C ±2°)
- PV module temperature (sensor to be adhered to underside of module; encapsulation must not be damaged) (°C ±2°)
- Wind speed (starting threshold 2.98 mph & accuracy < 2%)
- Wind direction: (range 360° - accuracy ± 2%)
- PV array voltage(s) (VDC, ±2%)
- PV array current(s) (IDC, ±2%)
- Revenue grade AC kWh electric meter (0.2% accuracy per ANSI C12.20)
- Power production from the PV system (AC kW, ±2%)

WMATA wishes to access performance data through a publicly facing website. The DAS shall store all recorded variables in non-volatile memory. The Selected Developer will verify, download, and archive monthly data files for backup purposes for five (5) years following system acceptance. The Selected Developer will ensure that automatic communication between the PV system's DAS is established and that downloads of the raw DAS data takes place to archive data throughout the

useful life of the PV system. The DAS system shall record and maintain historical data for the life of the agreement at one (1) minute intervals for the following:

- Solar PV production in kWh
- Utility grid in and out in kWh
- Environmental data including solar irradiance, ambient temperature, panel temperature, wind speed and wind direction

The PV system performance may be accessed by WMATA through a publicly-facing web site. The DAS shall maintain time synchronization across all meters. The DAS shall support a variety of sample rates with a minimum of one-minute intervals and delivery rates with a minimum of five-minute intervals. The DAS shall have the ability to push data via one of the following protocols: ftp, sftp, http, https and from behind network firewalls using either DHCP or static IP assignments. The protocol must be authenticated. The DAS shall provide metadata to identify system and panel locations (e.g. agency, sub-agency, campus, building, location, description, etc.). This metadata will be provided for each PV system and must be programmed during or prior to installation. The data format must be plain text, character separated values or XML.

SECTION 8: DEFINED TERMS

The following capitalized terms are used in this RFP and are defined as follows:

ADA – Defined in **Section 6.5**.

Best Value – Defined in **Section 4.3**.

CBE – Defined in **Appendix G**.

CGL – Defined in **Appendix E**.

COI – Defined in **Appendix E**.

DAS – Defined in **Section 5.1, Tab 7 Section D**.

Developer(s) – Defined in **Section 1**.
FTA – Defined in **Section 1**.

kW – Defined in **Section 1**.

Lease – Defined in **Section 1**.

Letter of Credit – Defined in **Section 4.9**.

Maintenance of Traffic Plan – Defined in **Section 3.14**.

Notice to Proceed – Defined in **Section 4.10**.

O&M – Defined in **Section 5.1, Tab 6 Section I**.

Project – Defined in **Section 1**.

Project CBE Goal – Defined in **Appendix G**.

Project Site(s) – Defined in **Section 1**.

Proposals – Defined in **Section 1**.

PV – Defined in **Section 1**.

Pre-Lease Deposit – Defined in **Section 4.9**.

RFP – Defined in **Section 1**.

RRP – Defined in **Appendix E**.

Selected Developer – Defined in **Section 1**.

SREC – Defined in **Section 1**.

WMATA – Defined in **Section 1**.

WMATA Compact – Defined in **Section 2.1**.

WMATA Facilities – Defined in **Section 3.14**.

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APPENDIX A: AMENDMENT ACKNOWLEDGEMENT FORM

The undersigned acknowledges receipt of the following amendments to RFP #20-01.

Amendment Number _____Dated _____

Amendment Number _____Dated _____

Amendment Number _____Dated _____

Amendment Number _____Dated _____

Amendment Number _____Dated _____

Amendment Number _____Dated _____

Failure to acknowledge receipt of all amendments may render the offer unacceptable.

_____
Authorized Signature

_____
Company Name

_____
Date

APPENDIX B: PRICE

Fill out the following chart with Developer's Proposal of Base Rent, including escalations to Base Rent. Provide Developer's narrative explanation of calculation of participation rent, if any is proposed.

Year of Term	Base Rent (required)	Estimated Participation Rent (optional)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
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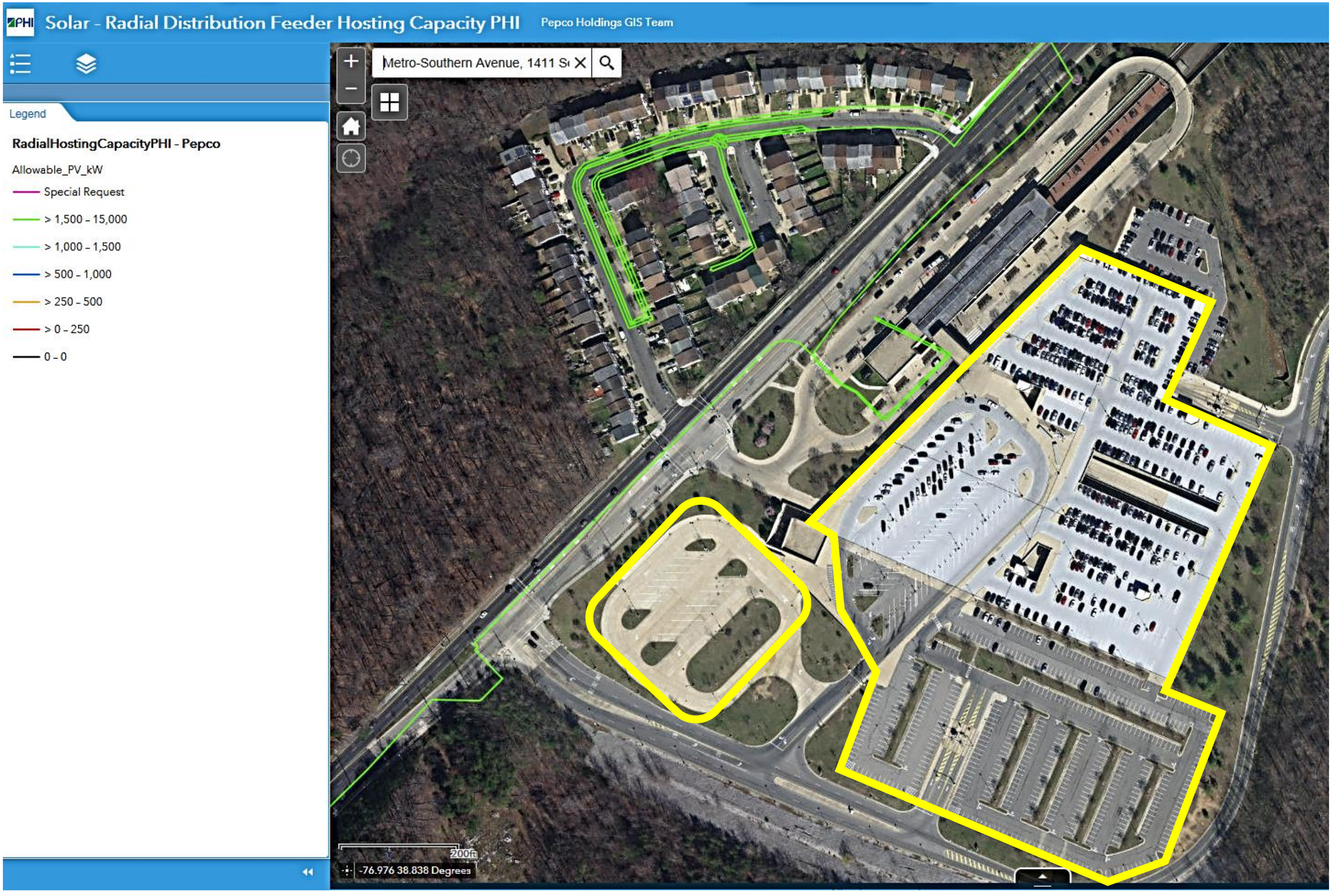
25		

APPENDIX C: WMATA DUE DILIGENCE

WMATA engaged professionals to conduct preliminary engineering due diligence at all four (4) Project Sites to help determine project feasibility. However, Developers are expected to conduct their own site analysis to determine PV suitability and economic viability.

Due diligence documents are organized by Metrorail station site: Southern Avenue, Naylor Road, Anacostia, and Cheverly. The provided documents include:

- Pepco electrical feeder map for each site
- Indicative solar array layout for each site
- Indicative HelioScope report for each site
- Pepco Response to Interconnect Pre-application for each site
- Preliminary One-line diagrams for each site (included together at the end)



Thick Yellow line - solar array location. Thin line - Pepco feeder, check color scheme at left.

GENERAL NOTES:

1. REFER TO SHEET E01 AND E01.1 FOR SINGLE LINE DIAGRAM, PV DIAGRAM, LEGEND AND DETAILS.

ELECTRICAL SITE PLAN
SOUTHERN STATION - PG MAX

0 30' 60' 120'

N

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Description	Date
A	DRAWING CREATED	6/24/19
B	REVISED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropolitan Area Transit Authority

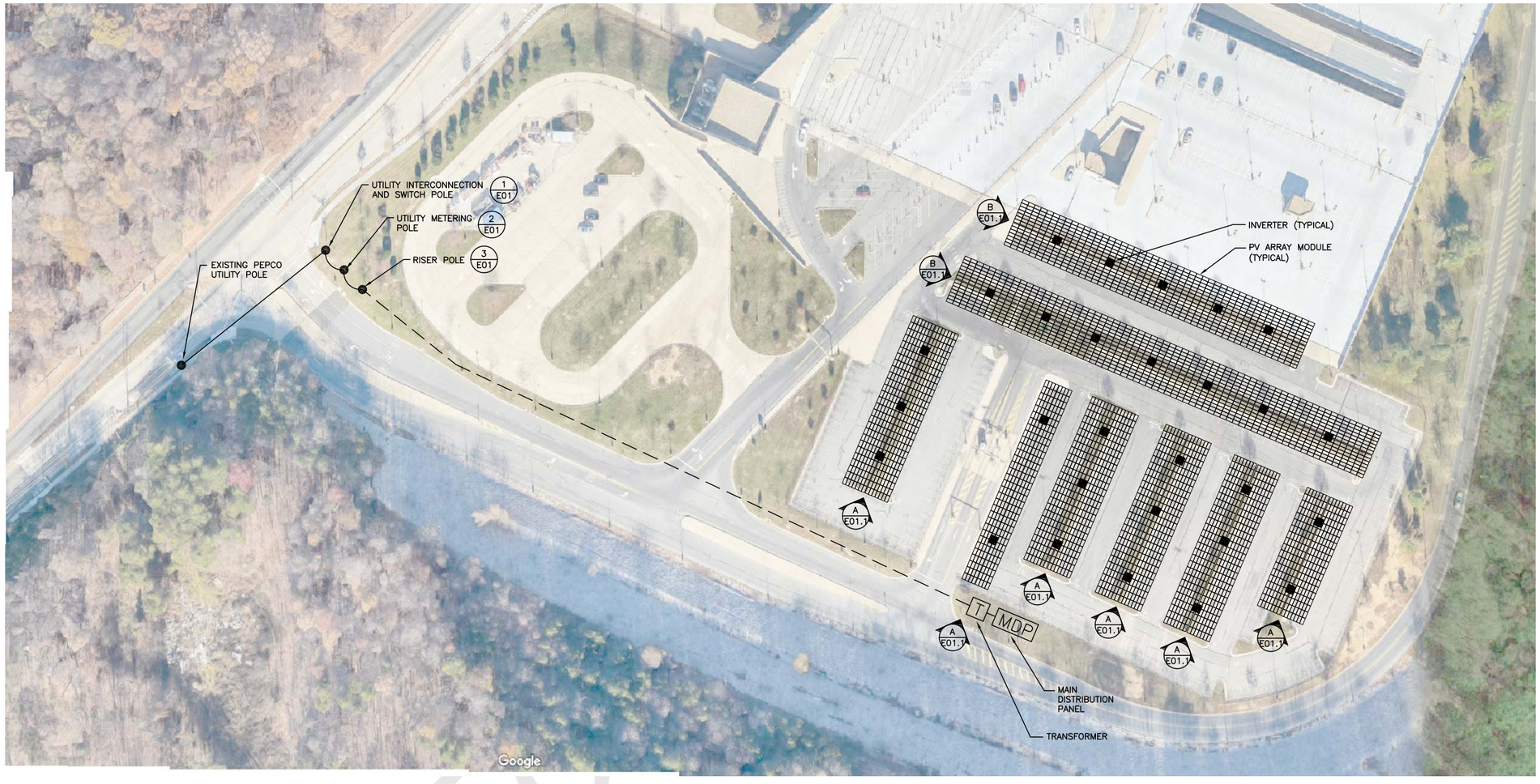
WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL SITE PLAN
SOUTHERN STATION - PG MAX

WMATA-001
E04
REV. 0

GENERAL NOTES:

1. REFER TO SHEET E01 AND E01.1 FOR SINGLE LINE DIAGRAM, PV DIAGRAM, LEGEND AND DETAILS.



ELECTRICAL SITE PLAN
SOUTHERN STATION - SURFACE LOT

0 30' 60' 120'

N

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Description	Date
A	DRAWING CREATED	6/24/19
B	REVISED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropoliton Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL SITE PLAN
SOUTHERN STATION - SURFACE LOT

WMATA-001
E04.1
REV. 0

F08 Max Area Design 3 F08 Southern Ave, f08 Southern ave SL, 1411 Southern Avenue, Temple Hill, MD

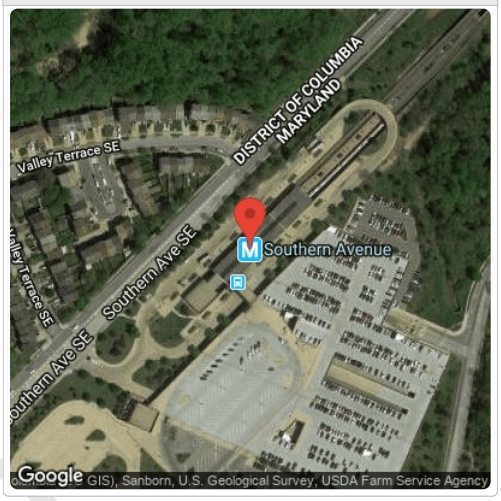
Report

Project Name	F08 Southern Ave
Project Address	f08 Southern ave SL, 1411 Southern Avenue, Temple Hill, MD
Prepared By	Jorge Dias diasj@ctc.com

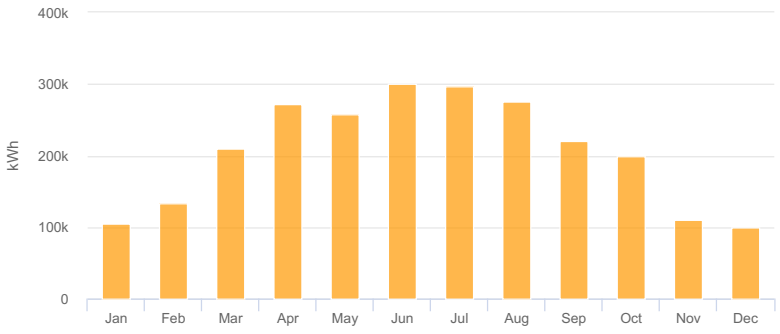
System Metrics

Design	F08 Max Area Design 3
Module DC Nameplate	1.96 MW
Inverter AC Nameplate	1.65 MW Load Ratio: 1.19
Annual Production	2.482 GWh
Performance Ratio	83.7%
kWh/kWp	1,265.4
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Simulator Version	db84f8921b-c21f1de102-98b5db5763-5f526bfa4f

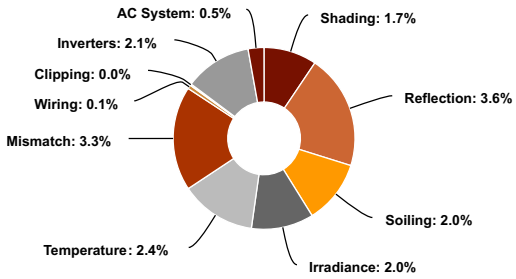
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,456.5	
	POA Irradiance	1,511.8	3.8%
	Shaded Irradiance	1,486.5	-1.7%
	Irradiance after Reflection	1,432.9	-3.6%
	Irradiance after Soiling	1,404.3	-2.0%
	Total Collector Irradiance	**1,404.3**	**0.0%**
Energy (kWh)	Nameplate	2,757,722.6	
	Output at Irradiance Levels	2,703,634.8	-2.0%
	Output at Cell Temperature Derate	2,639,348.7	-2.4%
	Output After Mismatch	2,552,734.8	-3.3%
	Optimal DC Output	2,549,726.4	-0.1%
	Constrained DC Output	2,548,540.2	0.0%
	Inverter Output	2,494,590.0	-2.1%
	Energy to Grid	**2,482,120.0**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		16.6 °C
	Avg. Operating Cell Temp		24.1 °C
Simulation Metrics			
	Operating Hours		4422
	Solved Hours		4422

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
2	2	2	2	2	2	2	2	2	2	2	2

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	-2.5% to 2.5%
AC System Derate	0.50%

Module Characterizations

Module	Characterization
SPR-A440-COM (SunPower)	Sunpower_SPR_A440_COM_Preliminary.PAN, PAN

Component Characterizations

Device	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	33 (1.65 MW)
Transformer	Primary Side: Medium Voltage (13.2kV), Secondary: 480Y/277V	1
Strings	8 AWG (Copper)	290 (40,055.5 ft)
Module	SunPower, SPR-A440-COM (440W)	4,458 (1.96 MW)

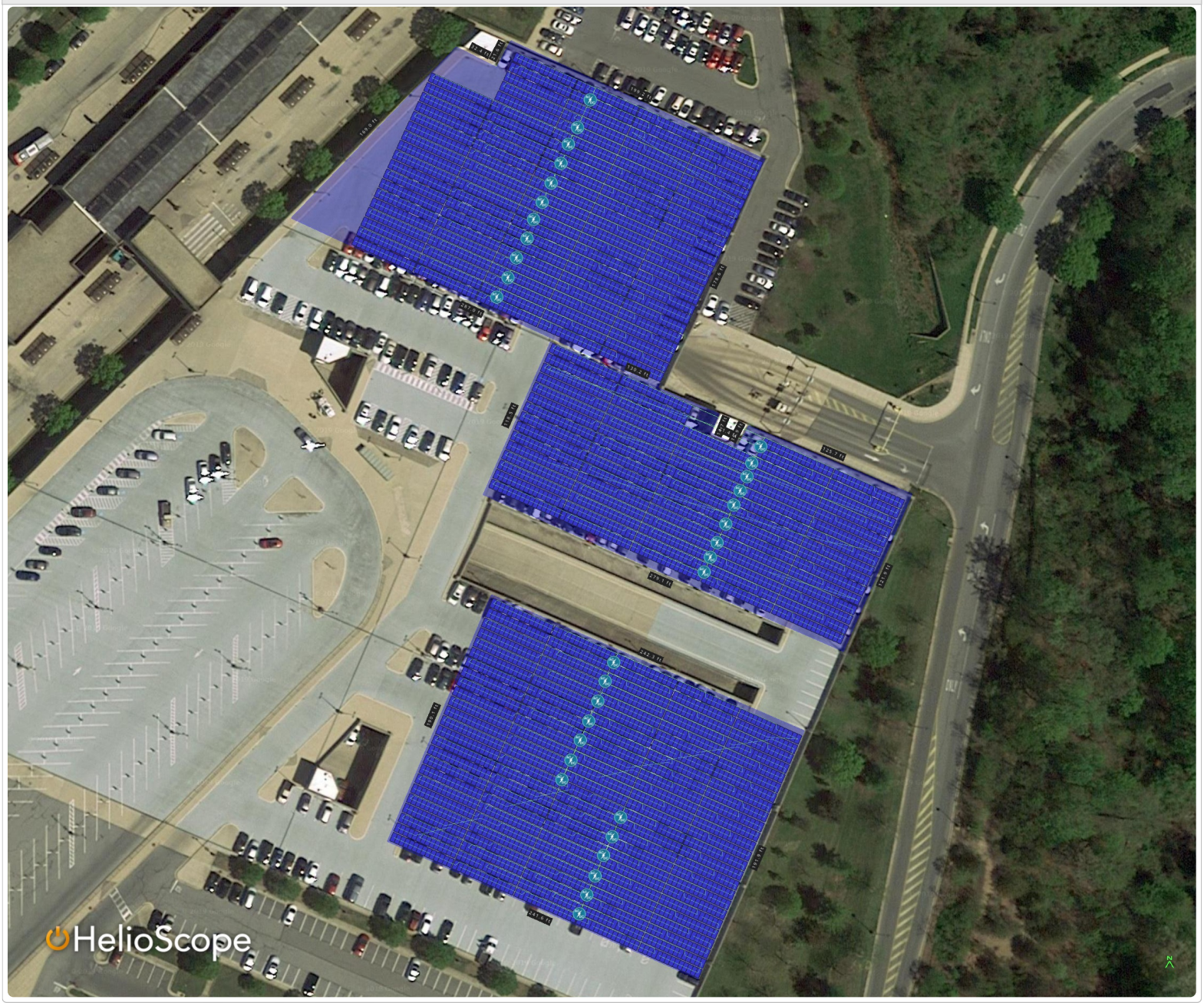
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Northern Wiring Zone	12	4-17	Along Racking
Eastern Wiring Zone	12	4-17	Along Racking
Southern Wiring Zone	12	4-17	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Eastern Array	Fixed Tilt	Portrait (Vertical)	5°	204°	1.0 ft	1x16	73	1,168	513.9 kW
Southern Array	Fixed Tilt	Portrait (Vertical)	5°	204°	1.0 ft	1x14	125	1,750	770.0 kW
Northern Array	Fixed Tilt	Portrait (Vertical)	5°	204°	1.0 ft	1x14	110	1,540	677.6 kW

Detailed Layout



F08 Southern Lot Carport Modified E/W Design F08 Southern Ave, f08 Southern ave SL, 1411 Southern Avenue, Temple Hill, MD

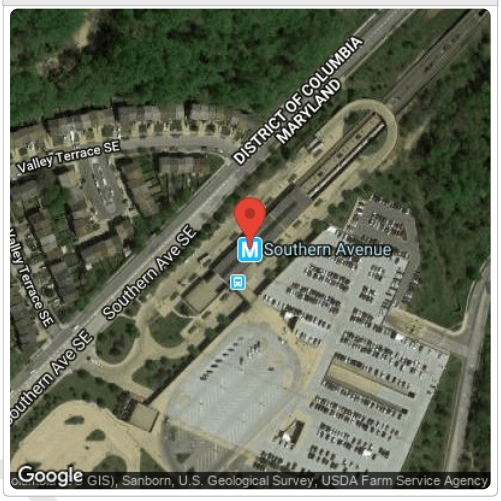
Report

Project Name	F08 Southern Ave
Project Address	f08 Southern ave SL, 1411 Southern Avenue, Temple Hill, MD
Prepared By	Jorge Dias diasj@ctc.com

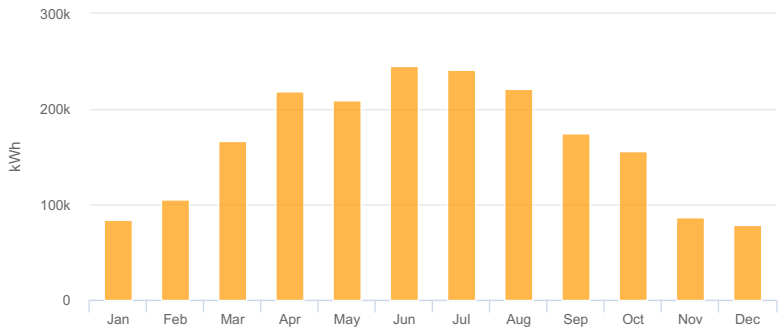
System Metrics

Design	F08 Southern Lot Carport Modified E/W Design
Module DC Nameplate	1.59 MW
Inverter AC Nameplate	1.40 MW Load Ratio: 1.14
Annual Production	1.987 GWh
Performance Ratio	84.9%
kWh/kWp	1,248.8
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Simulator Version	db84f8921b-c21f1de102-98b5db5763-5f526bfa4f

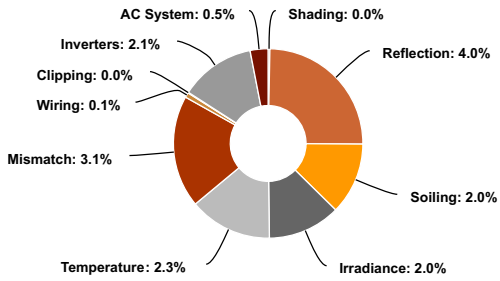
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,456.5	
	POA Irradiance	1,471.6	1.0%
	Shaded Irradiance	1,470.9	0.0%
	Irradiance after Reflection	1,411.4	-4.0%
	Irradiance after Soiling	1,383.2	-2.0%
	Total Collector Irradiance	**1,383.1**	**0.0%**
Energy (kWh)	Nameplate	2,203,179.5	
	Output at Irradiance Levels	2,158,586.3	-2.0%
	Output at Cell Temperature Derate	2,108,733.7	-2.3%
	Output After Mismatch	2,042,743.0	-3.1%
	Optimal DC Output	2,040,003.6	-0.1%
	Constrained DC Output	2,039,653.8	0.0%
	Inverter Output	1,996,880.0	-2.1%
	Energy to Grid	**1,986,900.0**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		16.6 °C
	Avg. Operating Cell Temp		24.0 °C
Simulation Metrics			
	Operating Hours		4422
	Solved Hours		4422

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
2	2	2	2	2	2	2	2	2	2	2	2

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	-2.5% to 2.5%
AC System Derate	0.50%

Module Characterizations

Module	Characterization
SPR-A440-COM (SunPower)	Sunpower_SPR_A440_COM_Preliminary.PAN, PAN

Component Characterizations

Device	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	28 (1.40 MW)
Strings	8 AWG (Copper)	231 (22,761.9 ft)
Module	SunPower, SPR-A440-COM (440W)	3,616 (1.59 MW)

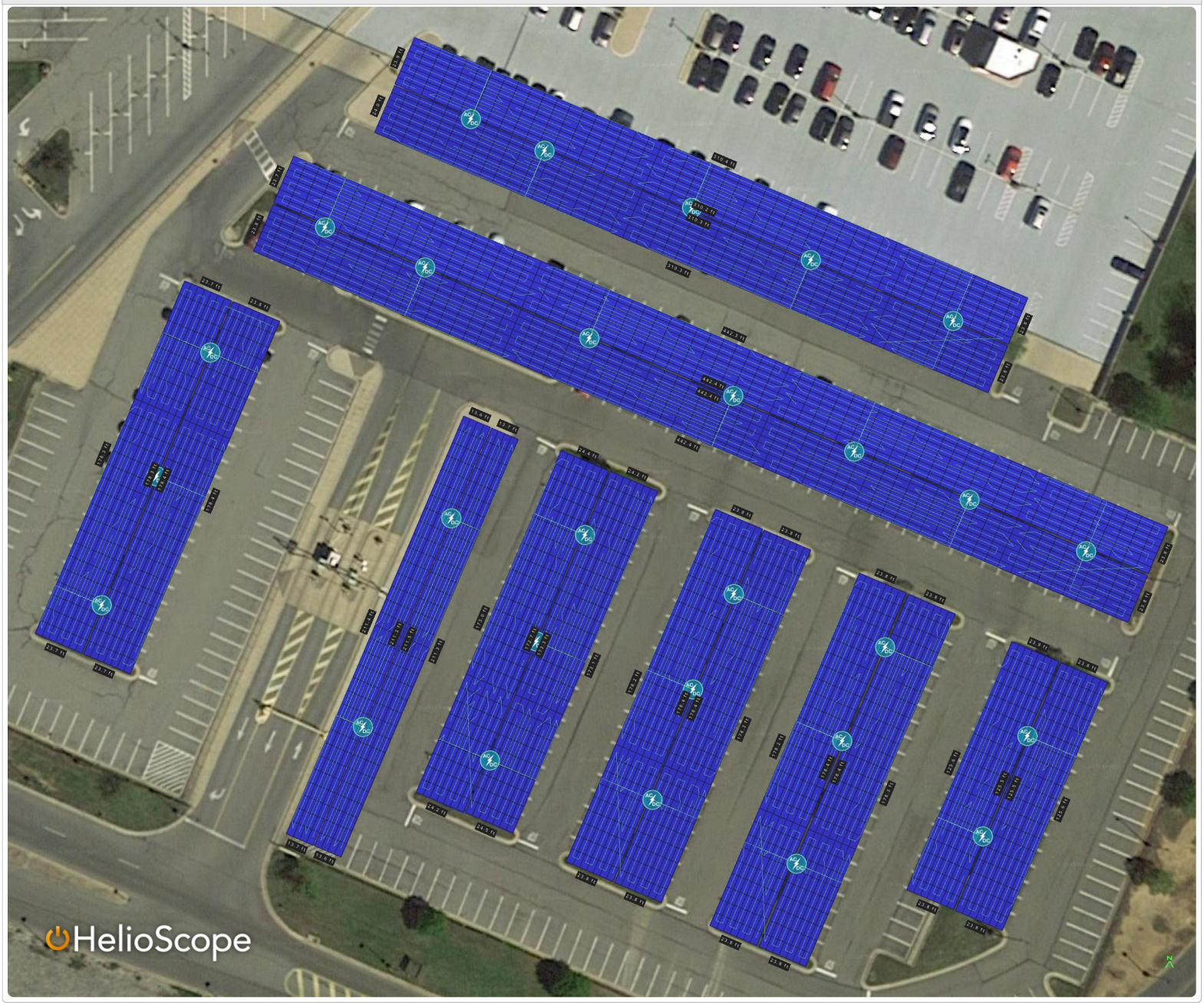
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Southern Wiring Zone 6	12	4-17	Along Racking
Northern Wiring Zone 1	12	4-17	Along Racking
Southern Wiring Zone 1	12	4-17	Along Racking
Southern Wiring Zone 4	12	4-17	Along Racking
Southern Wiring Zone 2	12	4-17	Along Racking
Southern Wiring Zone 3	12	4-17	Along Racking
Southern Wiring Zone 5	12	4-17	Along Racking
Northern Wiring Zone 2	12	4-17	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Southern Array 1 West	Carport	Landscape (Horizontal)	3°	113°	1.0 ft	7x1	27	189	83.2 kW
Southern Array 3 West	Carport	Landscape (Horizontal)	3°	113°	0.1 ft	7x1	26	182	80.1 kW
Southern Array 4 West	Carport	Landscape (Horizontal)	3°	113°	1.0 ft	7x1	27	189	83.2 kW
Northern Array 2-1	Carport	Landscape (Horizontal)	7.4°	203°	1.0 ft	7x1	67	469	206.4 kW
Northern Array 1-1	Carport	Landscape (Horizontal)	7.4°	203°	1.0 ft	7x1	47	329	144.8 kW
Southern Array 2 West	Carport	Landscape (Horizontal)	3°	113°	1.0 ft	4x1	32	128	56.3 kW
Southern Array 3 East	Carport	Landscape (Horizontal)	3°	293°	0.1 ft	7x1	26	182	80.1 kW
Southern Array 1 East	Carport	Landscape (Horizontal)	3°	293°	1.0 ft	7x1	27	189	83.2 kW
Southern Array 2 East	Carport	Landscape (Horizontal)	3°	293°	1.0 ft	4x1	32	128	56.3 kW
Southern Array 4 East	Carport	Landscape (Horizontal)	3°	293°	1.0 ft	7x1	27	189	83.2 kW
Southern Array 5 East	Carport	Landscape (Horizontal)	3°	293°	1.0 ft	7x1	27	189	83.2 kW
Southern Array 5 West	Carport	Landscape (Horizontal)	3°	113°	1.0 ft	7x1	27	189	83.2 kW
Southern Array 6 East	Carport	Landscape (Horizontal)	3°	293°	1.0 ft	7x1	19	133	58.5 kW
Southern Array 6 West	Carport	Landscape (Horizontal)	3°	113°	1.0 ft	7x1	19	133	58.5 kW
Northern Array 1-2	Carport	Landscape (Horizontal)	1.2°	23°	1.0 ft	7x1	47	329	144.8 kW
Northern Array 2-2	Carport	Landscape (Horizontal)	1.2°	23°	1.0 ft	7x1	67	469	206.4 kW

Detailed Layout



An Exelon Company

June 24, 2019

To: Washington Metropolitan Area Transit Authority
From: Pepco, Distributed Energy Resource Planning & Analytics
Subject: Pre-Application Request

Thank you for submitting a pre-application request. Please note that the results of this report are non-binding. Information provided below is subject to change. This report does not guarantee interconnection of a generator of any size. It is informative in nature only and does not hold a position in the interconnection queue.

Customer System Information
Address or POI Information: 1411 Southern Ave SE, Hillcrest Heights, MD 20748
Account Number: N/A
System Information: Max Size Available

Distribution System Information
Circuit Number: 15166 / 15171
Voltage Level: 13.8 kV
Class of Service at POI: N/A (High voltage Primary or Secondary available)
Current Number of Phases to POI: 3 Phase
Any Known Circuit Restrictions: None
Substation Name: Alabama Avenue
Distance from Substation to POI: 9000'

Secondary System Characteristics
Existing Distribution Transformer Size: N/A
Required Transformer Size for New System: Depending on system size of installation

For Systems Over 250 kW
DER Criteria found below were used to determine the largest size DER (AC Rating) that could be interconnected at the POI specified by the customer without any system modifications. Power Factor mitigation has been incorporated when it would allow a larger system.

			15166		15171
Remaining Circuit Capacity for Large DERs			3000	kW	3000 kW
Remaining Substation Transformer Capacity for Large DERs			30000	kW	30000 kW
Installed Generation on Circuit	673.22	kW			163.14 kW
Pending Generation on Circuit	13.6	kW			52.36 kW
Size Limit based on Voltage Fluctuation			3000	kW	3000 kW
Size Limit based on Steady State High Voltage			3000	kW	3000 kW
Size Limit based on Reverse Power Flow			3000	kW	3000 kW
DER Size Limit at POI with no sys mods			**3000**	**kW**	3000 kW

Known Constraints preventing a larger DER installation:

This is at the end of a feeder which could cause some issues but initial screen revealed no major problems.

Some criteria violations can be corrected with system modifications which were not evaluated as part of the pre-application process. If an application is submitted, further analysis will take place which may result in a larger or smaller approved generator size. Examples of more detailed analysis include protection reviews, transformer configurations, Distribution Automation impact and other location specific analysis.

Dave Wilson , Engineer
Distributed Energy Resource Planning & Analytics
Phone: 202-331-6694
Email: ddwilson@pepco.com

Explanation of Criteria

Remaining Circuit Capacity – The aggregate limit of large (250 kW and over) generators running in parallel with a single existing distribution circuit is 0.5 MWs on the 4 kV, 3 MWs on the 12 kV, 6 MWs on the 25 kV, and 10 MWs on the 34 kV. Applications for generators smaller than 250 kW are possible on a circuit restricted to 250 kW. Express circuits can be requested for larger systems.

Remaining Substation Transformer Capacity - The aggregate limit of large (250 kW and over) generators to a single distribution transformer is 10 MWs. Applications for generators smaller than 250 kW are possible on a transformer restricted to 250 kW.

Voltage Fluctuation Limit – DERs are permitted to cause up to 2% voltage fluctuation at the Point of Interconnection and ½ the bandwidth of any voltage regulator or ½ the net dead bandwidth of a capacitor bank. This metric quantifies the difference in feeder voltage when the system is running at full output versus when the generation has been suddenly lost. If this criterion can't be met with power factor mitigation, an impact study will be required to ensure that voltage can be maintained within applicable standards.

Steady State High Voltage Limit – DERs in maximum output are permitted to raise feeder voltage to the ANSI or state limit, whichever is more conservative. A simulation is performed which predicts how high the voltage will rise at a point in time when energy consumption is lowest on the feeder and the DER is injecting power. The system is simulated in a normal, steady state and abnormalities are not accounted for. In some cases, steady state high voltage can be mitigated by changing settings on voltage regulation equipment.

Reverse Power Flow Limit – Some devices may require setting changes, a re-evaluation of their control scheme, or replacement if they experience reverse power flow. The sum total of the full output capacity of all downstream DERs shall be kept to a maximum of 80% of the daytime (9am – 3pm) minimum load of the lowest loaded phase of the distribution system element.

Closed Circuits – Given current technology, each distribution circuit will have a limit to the amount of distributed generation that can be accommodated before operating violations occur. When the installed plus pending generation on a circuit has reached its maximum, and no further applications can be accepted, without cost prohibitive upgrades in relation to the project, the circuit is declared closed or restricted to all sizes.

Restricted Circuits – Circuits which have active and/or pending generation that exceeds the allowable amount of large DERs, are restricted to generators with AC ratings of 250 kW or less.

Solar - Radial Distribution Feeder Hosting Capacity PHI Pepco Holdings GIS Team

Naylor Road Metro

Legend

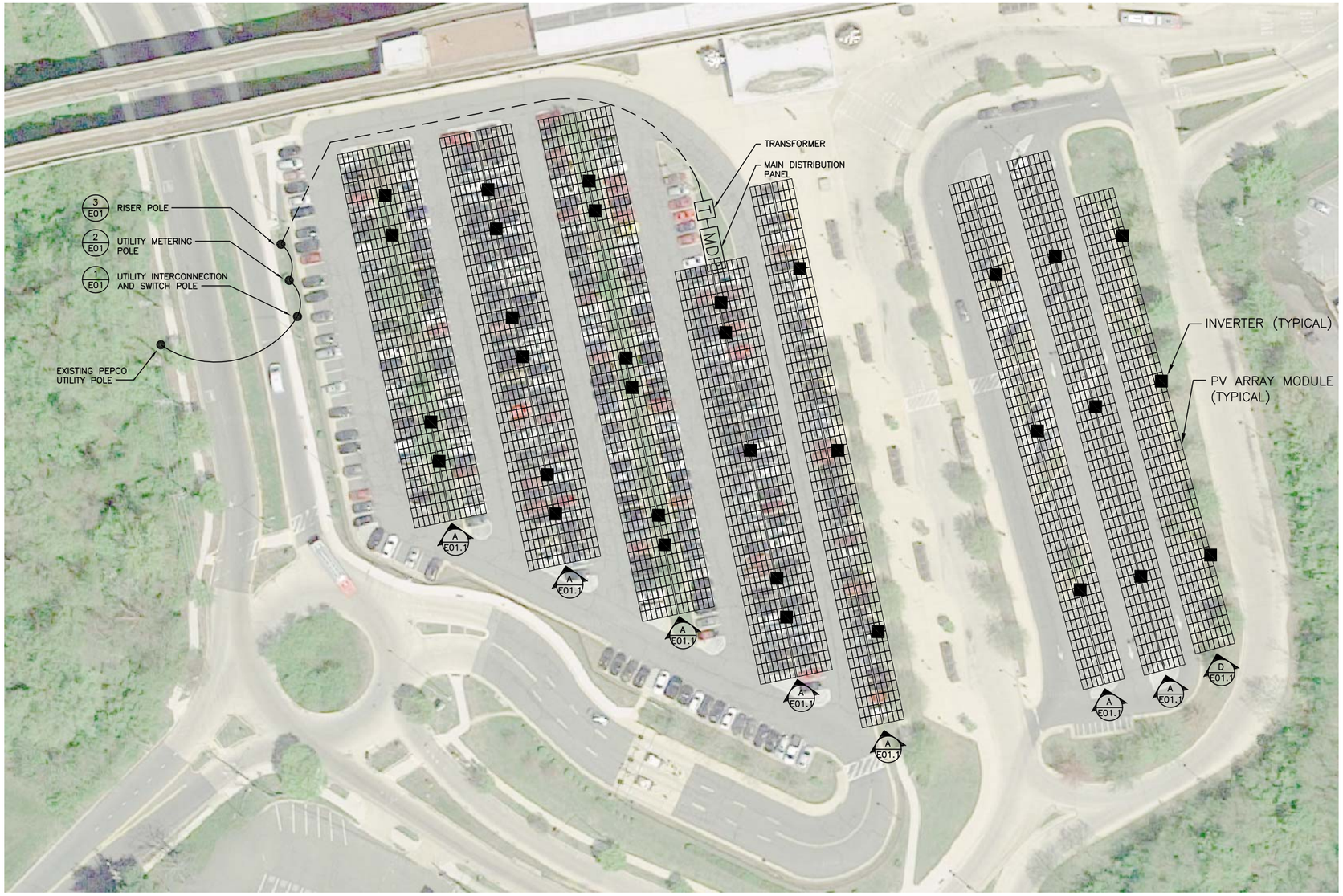
RadialHostingCapacityPHI - Pepco

Allowable_PV_kW

- Special Request
- > 1,500 - 15,000
- > 1,000 - 1,500
- > 500 - 1,000
- > 250 - 500
- > 0 - 250
- 0 - 0

60ft

-76.956 38.849 Degrees



ELECTRICAL SITE PLAN
NAYLOR STATION - SURFACE LOT

0 20' 40' 80'

N

GENERAL NOTES:

1. REFER TO SHEET E01 AND E01.1 FOR SINGLE LINE DIAGRAM, PV DIAGRAM, LEGEND AND DETAILS.

Rev	Description	Date
A	DRAWING CREATED	6/24/19
B	REVISED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropolitan Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL SITE PLAN
NAYLOR STATION

PRELIMINARY
NOT FOR CONSTRUCTION

WMATA-001
E05
REV. 0

Surface Lot Wye Carport Design F09 Naylor Road Surface Lot, F09 Naylor Road SL; KR, 3101 Branch Ave, Temple Hills, MD

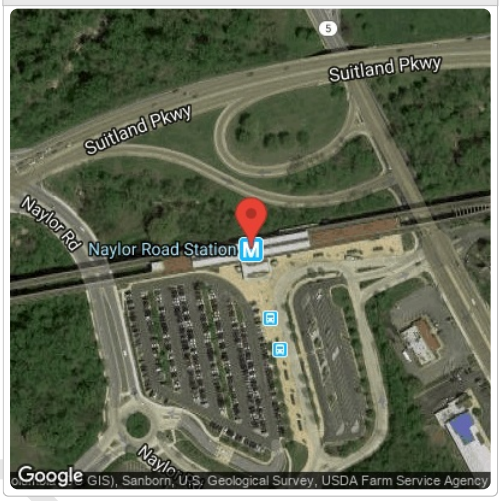
Report

Project Name	F09 Naylor Road Surface Lot
Project Address	F09 Naylor Road SL; KR, 3101 Branch Ave, Temple Hills, MD
Prepared By	Jorge Dias diasj@ctc.com

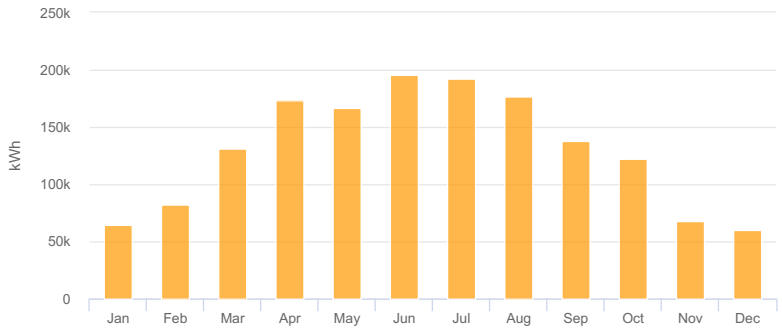
System Metrics

Design	Surface Lot Wye Carport Design
Module DC Nameplate	1.27 MW
Inverter AC Nameplate	1.20 MW Load Ratio: 1.06
Annual Production	1.569 GWh
Performance Ratio	84.7%
kWh/kWp	1,234.2
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Simulator Version	b622d594f7-c05f75f7b4-cc2ff0b7b7-91c3ac5fcd

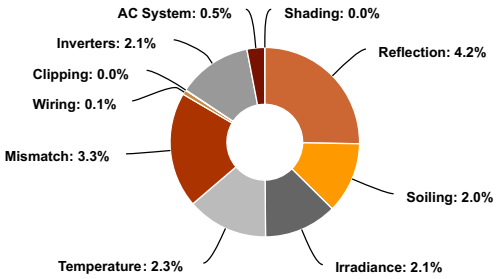
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,456.5	
	POA Irradiance	1,457.3	0.1%
	Shaded Irradiance	1,457.2	0.0%
	Irradiance after Reflection	1,396.5	-4.2%
	Irradiance after Soiling	1,368.6	-2.0%
	Total Collector Irradiance	**1,368.6**	**0.0%**
Energy (kWh)	Nameplate	1,742,338.5	
	Output at Irradiance Levels	1,706,478.6	-2.1%
	Output at Cell Temperature Derate	1,667,444.4	-2.3%
	Output After Mismatch	1,613,206.1	-3.3%
	Optimal DC Output	1,611,160.0	-0.1%
	Constrained DC Output	1,610,937.7	0.0%
	Inverter Output	1,577,310.0	-2.1%
	Energy to Grid	**1,569,430.0**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		16.6 °C
	Avg. Operating Cell Temp		23.9 °C
Simulation Metrics			
	Operating Hours		4422
	Solved Hours		4422

Condition Set

Description	Washington DC Reagan AP
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
2	2	2	2	2	2	2	2	2	2	2	2

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	-2.5% to 2.5%
AC System Derate	0.50%

Module Characterizations

Module	Characterization
SPR-A440-COM (SunPower)	Sunpower_SPR_A440_COM_Preliminary.PAN, PAN

Component Characterizations

Device	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	24 (1.20 MW)
Strings	8 AWG (Copper)	182 (16,384.8 ft)
Module	SunPower, SPR-A440-COM (440W)	2,890 (1.27 MW)

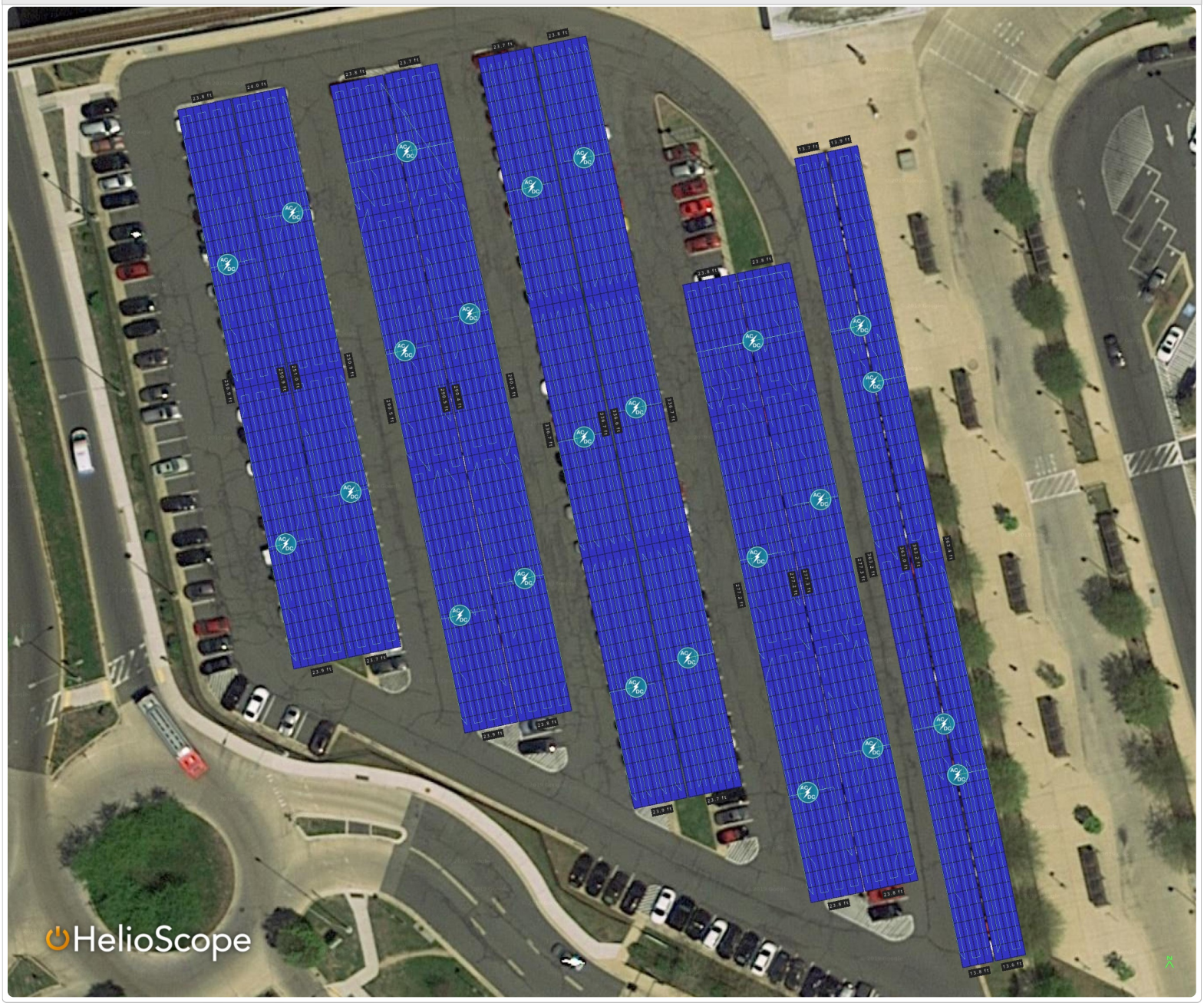
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone 4	12	4-17	Along Racking
Wiring Zone 3	12	4-17	Along Racking
Wiring Zone 2	12	4-17	Along Racking
Wiring Zone 5	12	4-17	Along Racking
Wiring Zone 6	12	4-17	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Array 2-1	Carport	Landscape (Horizontal)	3°	78.2447°	0.0 ft	7x1	38	266	117.0 kW
Array 2-2	Carport	Landscape (Horizontal)	3°	258.245°	0.0 ft	7x1	38	266	117.0 kW
Array 3-1	Carport	Landscape (Horizontal)	3°	78.2447°	0.0 ft	7x1	44	308	135.5 kW
Array 3-2	Carport	Landscape (Horizontal)	3°	258.246°	0.0 ft	7x1	44	308	135.5 kW
Array 4-1	Carport	Landscape (Horizontal)	3°	78.2447°	0.0 ft	7x1	51	357	157.1 kW
Array 4-2	Carport	Landscape (Horizontal)	3°	258.248°	0.0 ft	7x1	51	357	157.1 kW
Array 5-1	Carport	Landscape (Horizontal)	3°	78.2447°	0.0 ft	7x1	42	294	129.4 kW
Array 5-2	Carport	Landscape (Horizontal)	3°	258.244°	0.0 ft	7x1	42	294	129.4 kW
Array 6-1	Carport	Landscape (Horizontal)	3°	78.2447°	0.0 ft	4x1	55	220	96.8 kW
Array 6-2	Carport	Landscape (Horizontal)	3°	258.257°	0.0 ft	4x1	55	220	96.8 kW

Detailed Layout



F09 Naylor Road Kiss & Ride F09 Naylor Road Surface Lot, F09 Naylor Road SL; KR, 3101 Branch Ave, Temple Hills, MD

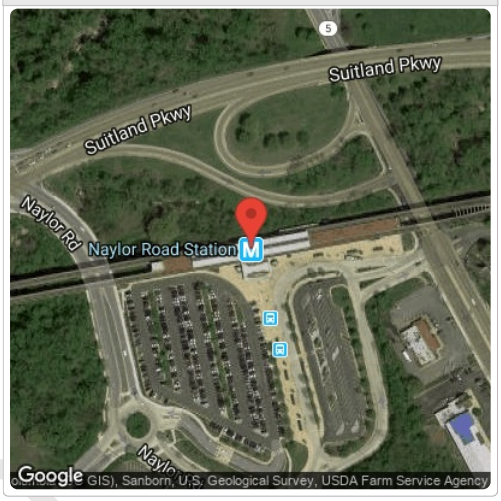
Report

Project Name	F09 Naylor Road Surface Lot
Project Address	F09 Naylor Road SL; KR, 3101 Branch Ave, Temple Hills, MD
Prepared By	Jorge Dias diasj@ctc.com

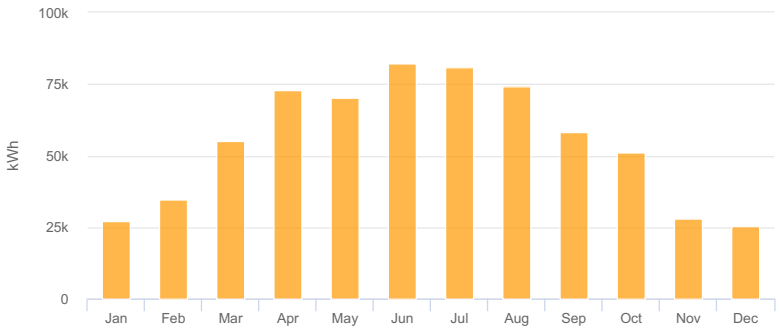
System Metrics

Design	F09 Naylor Road Kiss & Ride
Module DC Nameplate	535.0 kW
Inverter AC Nameplate	450.0 kW Load Ratio: 1.19
Annual Production	659.3 MWh
Performance Ratio	84.7%
kWh/kWp	1,232.2
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Simulator Version	0869ac0ca0-7c463587f7-5f73a2c7b8-07cea4ae2e

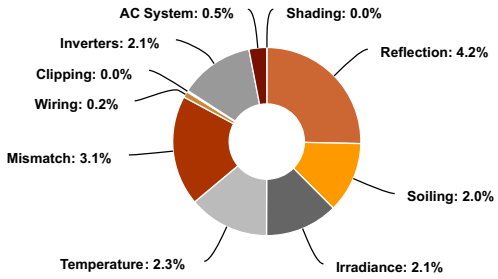
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,456.5	
	POA Irradiance	1,454.2	-0.2%
	Shaded Irradiance	1,454.0	0.0%
	Irradiance after Reflection	1,393.5	-4.2%
	Irradiance after Soiling	1,365.7	-2.0%
	Total Collector Irradiance	**1,365.7**	**0.0%**
Energy (kWh)	Nameplate	731,526.2	
	Output at Irradiance Levels	716,430.8	-2.1%
	Output at Cell Temperature Derate	700,098.1	-2.3%
	Output After Mismatch	678,304.9	-3.1%
	Optimal DC Output	677,141.6	-0.2%
	Constrained DC Output	676,885.7	0.0%
	Inverter Output	662,592.0	-2.1%
	Energy to Grid	**659,279.0**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		16.6 °C
	Avg. Operating Cell Temp		23.9 °C
Simulation Metrics			
	Operating Hours		4422
	Solved Hours		4422

Condition Set

Description	Washington DC Reagan AP
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
2	2	2	2	2	2	2	2	2	2	2	2

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	-2.5% to 2.5%
AC System Derate	0.50%

Module Characterizations

Module	Characterization
SPR-A440-COM (SunPower)	Sunpower_SPR_A440_COM_Preliminary.PAN, PAN

Component Characterizations

Device	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	9 (450.0 kW)
Strings	8 AWG (Copper)	79 (11,746.0 ft)
Module	SunPower, SPR-A440-COM (440W)	1,216 (535.0 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone 1	12	4-17	Along Racking
Wiring Zone 2	12	4-17	Along Racking
Wiring Zone 3	12	4-17	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Array 1-1	Carport	Landscape (Horizontal)	3°	75.0288°	0.0 ft	4x1	52	208	91.5 kW
Array 2-1	Carport	Landscape (Horizontal)	3°	75.0369°	0.0 ft	4x1	53	212	93.3 kW
Array 3	Carport	Landscape (Horizontal)	3°	75.0369°	0.0 ft	1x1	376	376	165.4 kW
Array 1-2	Carport	Landscape (Horizontal)	3°	255.05°	0.0 ft	4x1	52	208	91.5 kW
Array 2-2	Carport	Landscape (Horizontal)	3°	255.06°	0.0 ft	4x1	53	212	93.3 kW

Detailed Layout

An Exelon Company

6/25/2019

To: Washington Metropolitan Area Transit Authority
From: Pepco, Distributed Energy Resource Planning & Analytics
Subject: Pre-Application Request

Thank you for submitting a pre-application request. Please note that the results of this report are non-binding. Information provided below is subject to change. This report does not guarantee interconnection of a generator of any size. It is informative in nature only and does not hold a position in the interconnection queue.

Customer System Information
Address or POI Information: 3101 Branch Ave, Hillcrest Heights, MD 20748
Account Number: N/A
System Information: Max Size Available

Distribution System Information
Circuit Number: 14261 / 14032
Voltage Level: 13.8 kV
Class of Service at POI: Option of 13.8 KV service for >/= 1MW and 480V for below
Current Number of Phases to POI: 3 Phase
Any Known Circuit Restrictions: None
Substation Name: Beech Road / Suitland
Distance from Substation to POI: 12633' / 11554'

Secondary System Characteristics
Existing Distribution Transformer Size: N/A
Required Transformer Size for New System: Depending on system size of installation

For Systems Over 250 kW
DER Criteria found below were used to determine the largest size DER (AC Rating) that could be interconnected at the POI specified by the customer without any system modifications. Power Factor mitigation has been incorporated when it would allow a larger system.

			fdr 14261		fdr 14032
Remaining Circuit Capacity for Large DERs			3000	kW	3000 kW
Remaining Substation Transformer Capacity for Large DERs			29400	kW	28200 kW
Installed Generation on Circuit	170	kW			90 kW
Pending Generation on Circuit	167	kW			623 kW
Size Limit based on Voltage Fluctuation			3000	kW	3000 kW
Size Limit based on Steady State High Voltage			3000	kW	1300 kW
Size Limit based on Reverse Power Flow			3000	kW	3000 kW
DER Size Limit at POI with no sys mods			**3000**	**kW**	1300 kW

Known Constraints preventing a larger DER installation:

Some criteria violations can be corrected with system modifications which were not evaluated as part of the pre-application process. If an application is submitted, further analysis will take place which may result in a larger or smaller approved generator size. Examples of more detailed analysis include protection reviews, transformer configurations, Distribution Automation impact and other location specific analysis.

Luan Watson , Engineer
Distributed Energy Resource Planning & Analytics
Phone: 202-872-4286
Email: luan.watson@exeloncorp.com

Explanation of Criteria

Remaining Circuit Capacity – The aggregate limit of large (250 kW and over) generators running in parallel with a single existing distribution circuit is 0.5 MWs on the 4 kV, 3 MWs on the 12 kV, 6 MWs on the 25 kV, and 10 MWs on the 34 kV. Applications for generators smaller than 250 kW are possible on a circuit restricted to 250 kW. Express circuits can be requested for larger systems.

Remaining Substation Transformer Capacity - The aggregate limit of large (250 kW and over) generators to a single distribution transformer is 10 MWs. Applications for generators smaller than 250 kW are possible on a transformer restricted to 250 kW.

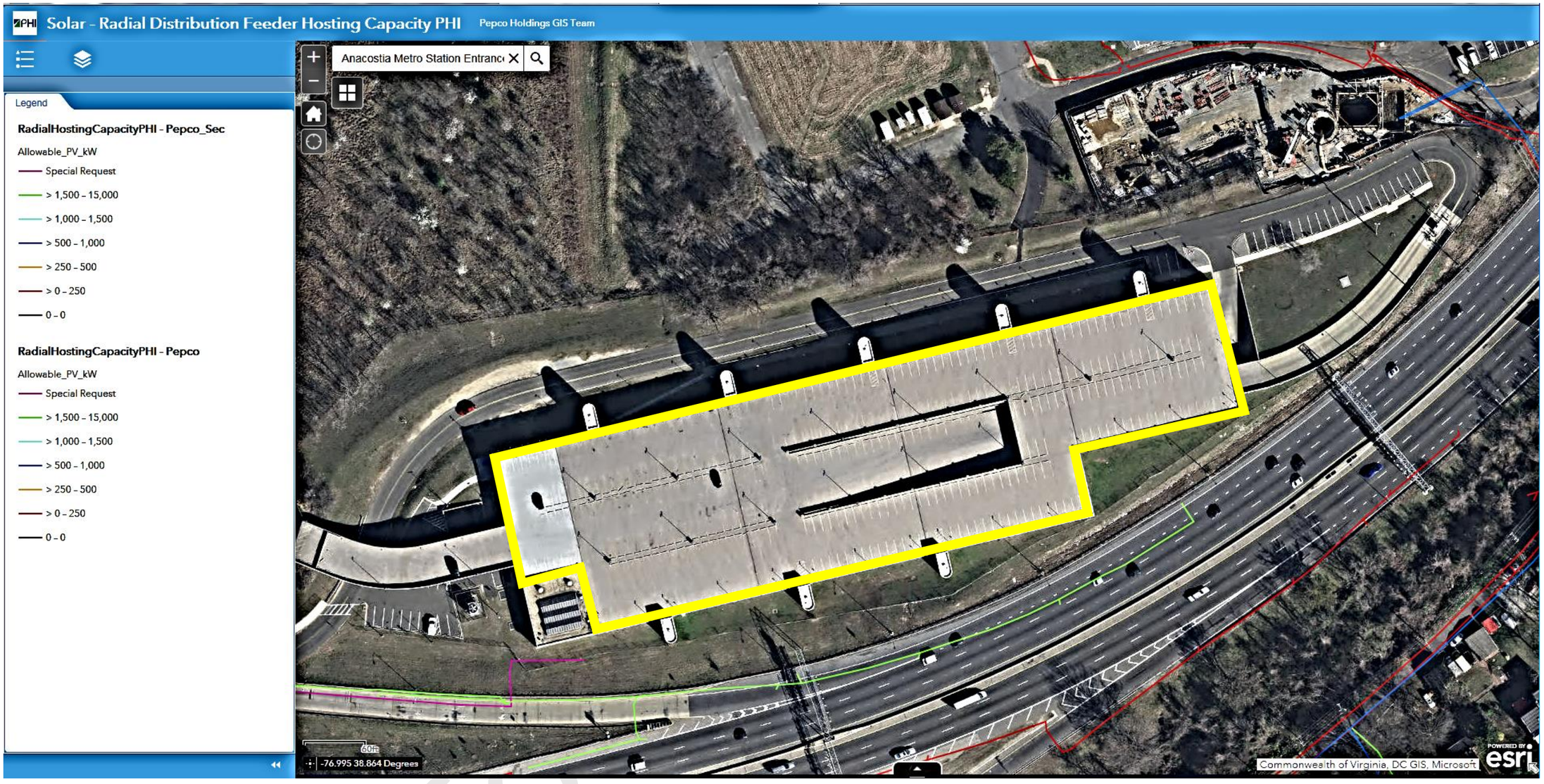
Voltage Fluctuation Limit – DERs are permitted to cause up to 2% voltage fluctuation at the Point of Interconnection and ½ the bandwidth of any voltage regulator or ½ the net dead bandwidth of a capacitor bank. This metric quantifies the difference in feeder voltage when the system is running at full output versus when the generation has been suddenly lost. If this criterion can't be met with power factor mitigation, an impact study will be required to ensure that voltage can be maintained within applicable standards.

Steady State High Voltage Limit – DERs in maximum output are permitted to raise feeder voltage to the ANSI or state limit, whichever is more conservative. A simulation is performed which predicts how high the voltage will rise at a point in time when energy consumption is lowest on the feeder and the DER is injecting power. The system is simulated in a normal, steady state and abnormalities are not accounted for. In some cases, steady state high voltage can be mitigated by changing settings on voltage regulation equipment.

Reverse Power Flow Limit – Some devices may require setting changes, a re-evaluation of their control scheme, or replacement if they experience reverse power flow. The sum total of the full output capacity of all downstream DERs shall be kept to a maximum of 80% of the daytime (9am – 3pm) minimum load of the lowest loaded phase of the distribution system element.

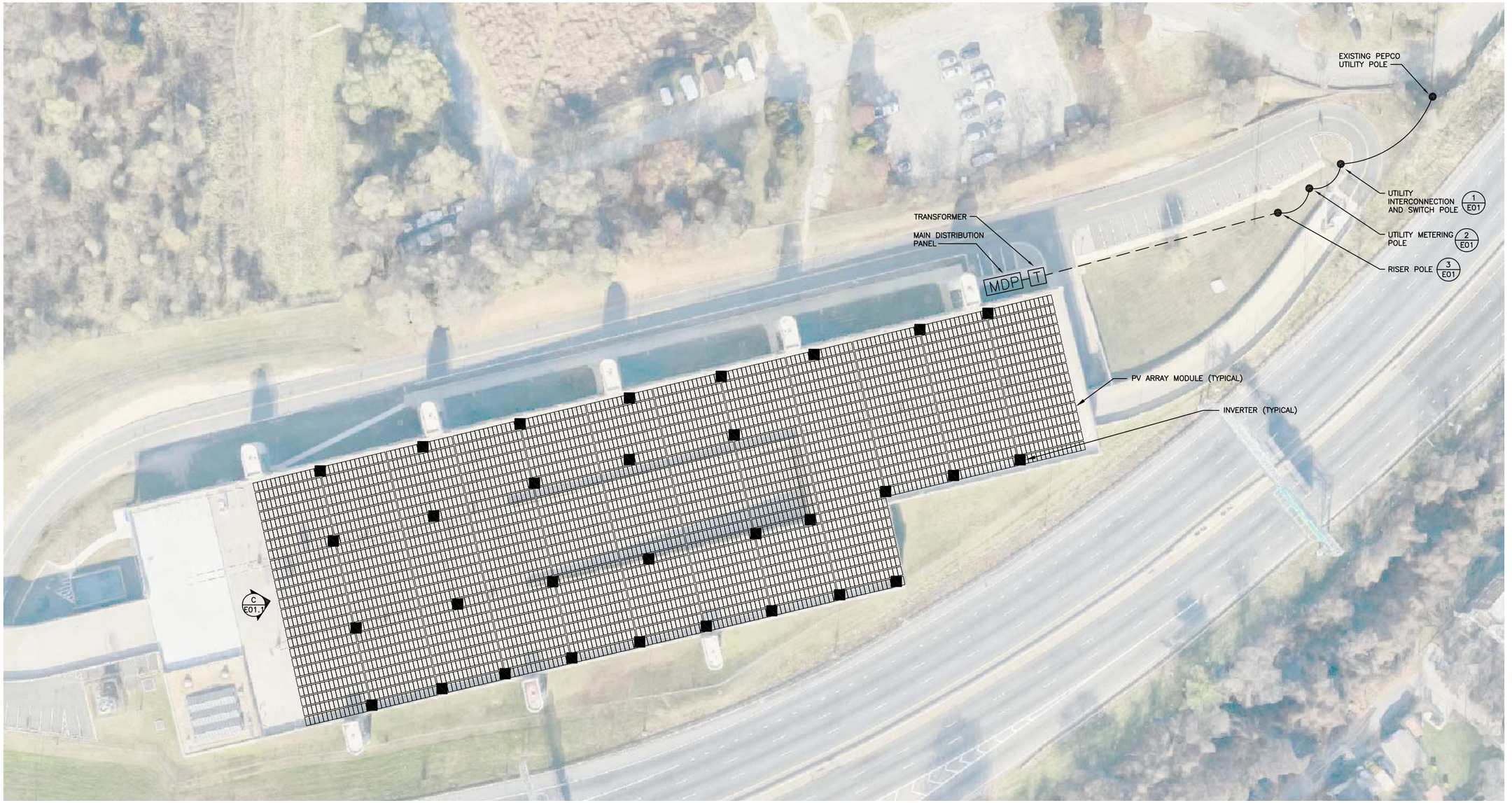
Closed Circuits – Given current technology, each distribution circuit will have a limit to the amount of distributed generation that can be accommodated before operating violations occur. When the installed plus pending generation on a circuit has reached its maximum, and no further applications can be accepted, without cost prohibitive upgrades in relation to the project, the circuit is declared closed or restricted to all sizes.

Restricted Circuits – Circuits which have active and/or pending generation that exceeds the allowable amount of large DERs, are restricted to generators with AC ratings of 250 kW or less.


Solar - Radial Distribution Feeder Hosting Capacity PHI
Pepco Holdings GIS Team
Anacostia Metro Station Entranc
Legend
RadialHostingCapacityPHI - Pepco_Sec
Allowable_PV_kW
Special Request
> 1,500 - 15,000
> 1,000 - 1,500
> 500 - 1,000
> 250 - 500
> 0 - 250
0 - 0
RadialHostingCapacityPHI - Pepco
Allowable_PV_kW
Special Request
> 1,500 - 15,000
> 1,000 - 1,500
> 500 - 1,000
> 250 - 500
> 0 - 250
0 - 0
60ft
-76.995 38.864 Degrees
Commonwealth of Virginia, DC GIS, Microsoft
POWERED BY esri

GENERAL NOTES:

1. REFER TO SHEET E01 AND E01.1 FOR SINGLE LINE DIAGRAM, PV DIAGRAM, LEGEND AND DETAILS.



ELECTRICAL SITE PLAN
ANACOSTIA STATION - PARKING GARAGE

0 20' 40' 80'

N

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Description	Date
A	DRAWING CREATED	6/24/19
B	REVISED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropoliton Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL SITE PLAN
ANACOSTIA STATION

WMATA-001
E02
REV. 0

Full Surface Design Anacostia Parking Garage, 1101 Howard Rd SE, Washington, DC 20020

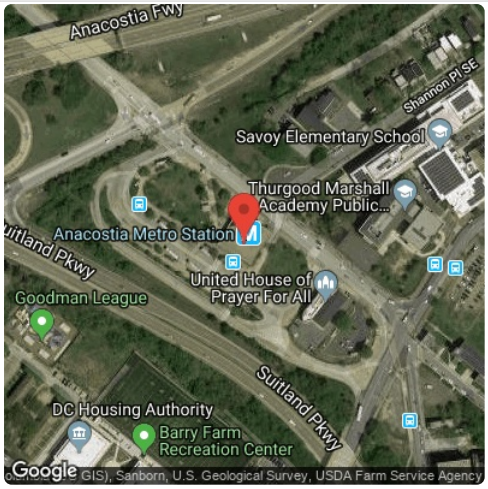
Report

Project Name	Anacostia Parking Garage
Project Address	1101 Howard Rd SE, Washington, DC 20020
Prepared By	Jorge Dias diasj@ctc.com

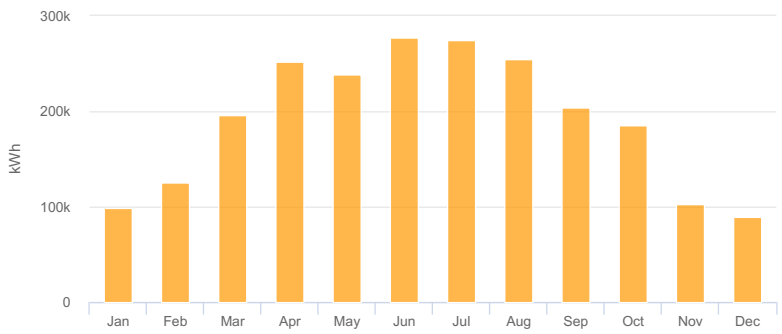
System Metrics

Design	Full Surface Design
Module DC Nameplate	1.80 MW
Inverter AC Nameplate	1.55 MW Load Ratio: 1.16
Annual Production	2.298 GWh
Performance Ratio	84.2%
kWh/kWp	1,275.4
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Simulator Version	db84f8921b-c21f1de102-98b5db5763-5f526bfa4f

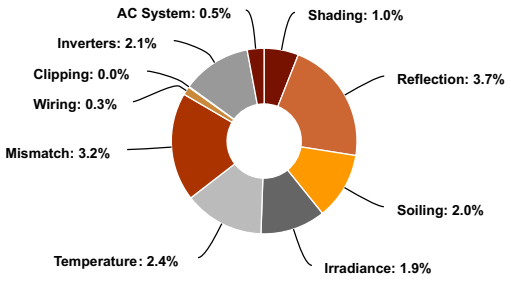
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,456.5	
	POA Irradiance	1,514.4	4.0%
	Shaded Irradiance	1,498.9	-1.0%
	Irradiance after Reflection	1,443.9	-3.7%
	Irradiance after Soiling	1,415.0	-2.0%
	Total Collector Irradiance	**1,415.0**	**0.0%**
Energy (kWh)	Nameplate	2,552,551.9	
	Output at Irradiance Levels	2,503,041.8	-1.9%
	Output at Cell Temperature Derate	2,443,383.4	-2.4%
	Output After Mismatch	2,364,566.5	-3.2%
	Optimal DC Output	2,358,578.6	-0.3%
	Constrained DC Output	2,358,169.4	0.0%
	Inverter Output	2,309,530.0	-2.1%
	Energy to Grid	**2,297,980.0**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		16.6 °C
	Avg. Operating Cell Temp		24.1 °C
Simulation Metrics			
	Operating Hours		4422
	Solved Hours		4422

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
	East-West	-3.56	-0.075	3°C								
	Carport	-3.56	-0.075	3°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module	Characterization										
	SPR-A440-COM (SunPower)	Sunpower_SPR_A440_COM_Preliminary.PAN, PAN										
Component Characterizations	Device	Characterization										
	Sunny Tripower_Core1 50-US-41 (SMA)	Default Characterization										

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	31 (1.55 MW)
Strings	8 AWG (Copper)	248 (93,344.5 ft)
Module	SunPower, SPR-A440-COM (440W)	4,095 (1.80 MW)

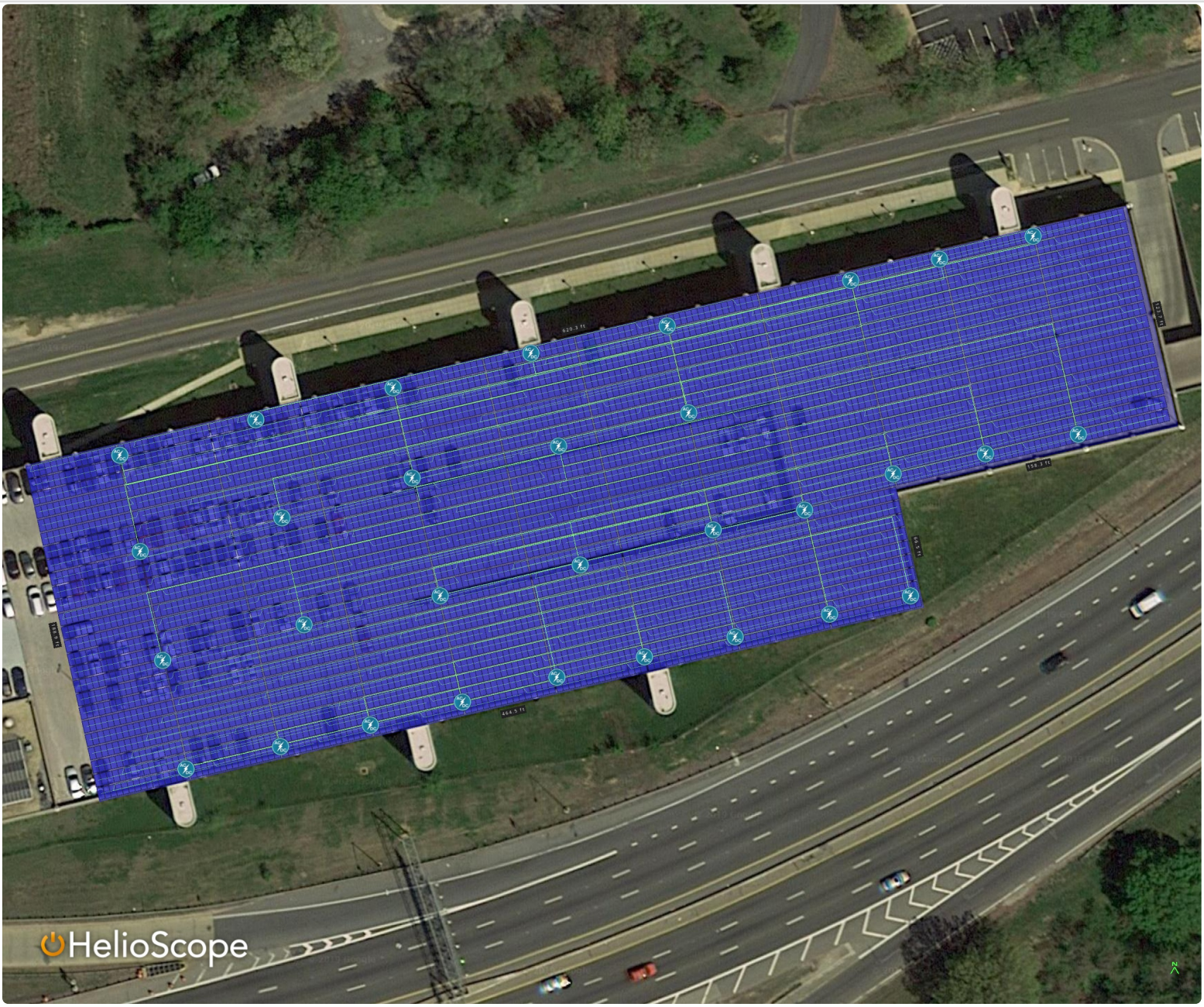
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone 1	20	4-17	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Array 1	Fixed Tilt	Portrait (Vertical)	5°	166.727°	1.0 ft	1x15	273	4,095	1.80 MW

Detailed Layout



An Exelon Company

6/25/2019

To: Washington Metropolitan Area Transit Authority
From: Pepco, Distributed Energy Resource Planning & Analytics
Subject: Pre-Application Request

Thank you for submitting a pre-application request. Please note that the results of this report are non-binding. Information provided below is subject to change. This report does not guarantee interconnection of a generator of any size. It is informative in nature only and does not hold a position in the interconnection queue.

Customer System Information
Address or POI Information: 1101 Howard Rd SE, Washington, DC 20020
Account Number: N/A
System Information: Max Size Available

Distribution System Information
Circuit Number: 15177
Voltage Level: 13.8 kV
Class of Service at POI: N/A (High voltage Primary or Secondary available)
Current Number of Phases to POI: 3 Phase
Any Known Circuit Restrictions: None
Substation Name: Alabama Avenue
Distance from Substation to POI: 10223'

Secondary System Characteristics
Existing Distribution Transformer Size: N/A
Required Transformer Size for New System: Depending on system size of installation

For Systems Over 250 kW
DER Criteria found below were used to determine the largest size DER (AC Rating) that could be interconnected at the POI specified by the customer without any system modifications. Power Factor mitigation has been incorporated when it would allow a larger system.

Remaining Circuit Capacity for Large DERs			3000	kW
Remaining Substation Transformer Capacity for Large DERs			30000	kW
Installed Generation on Circuit	126.97	kW		
Pending Generation on Circuit	278.63	kW		
Size Limit based on Voltage Fluctuation			3000	kW
Size Limit based on Steady State High Voltage			3000	kW
Size Limit based on Reverse Power Flow			3000	kW
DER Size Limit at POI with no sys mods			**3000**	**kW**

Known Constraints preventing a larger DER installation:
You noted 14702 as the interconnect feeder but the nearest feeder is 15177 which we studied

Some criteria violations can be corrected with system modifications which were not evaluated as part of the pre-application process. If an application is submitted, further analysis will take place which may result in a larger or smaller approved generator size. Examples of more detailed analysis include protection reviews, transformer configurations, Distribution Automation impact and other location specific analysis.

Dave Wilson , Engineer
Distributed Energy Resource Planning & Analytics
Phone: 202-331-6694
Email: ddwilson@pepco.com

Explanation of Criteria

Remaining Circuit Capacity – The aggregate limit of large (250 kW and over) generators running in parallel with a single existing distribution circuit is 0.5 MWs on the 4 kV, 3 MWs on the 12 kV, 6 MWs on the 25 kV, and 10 MWs on the 34 kV. Applications for generators smaller than 250 kW are possible on a circuit restricted to 250 kW. Express circuits can be requested for larger systems.

Remaining Substation Transformer Capacity - The aggregate limit of large (250 kW and over) generators to a single distribution transformer is 10 MWs. Applications for generators smaller than 250 kW are possible on a transformer restricted to 250 kW.

Voltage Fluctuation Limit – DERs are permitted to cause up to 2% voltage fluctuation at the Point of Interconnection and ½ the bandwidth of any voltage regulator or ½ the net dead bandwidth of a capacitor bank. This metric quantifies the difference in feeder voltage when the system is running at full output versus when the generation has been suddenly lost. If this criterion can't be met with power factor mitigation, an impact study will be required to ensure that voltage can be maintained within applicable standards.

Steady State High Voltage Limit – DERs in maximum output are permitted to raise feeder voltage to the ANSI or state limit, whichever is more conservative. A simulation is performed which predicts how high the voltage will rise at a point in time when energy consumption is lowest on the feeder and the DER is injecting power. The system is simulated in a normal, steady state and abnormalities are not accounted for. In some cases, steady state high voltage can be mitigated by changing settings on voltage regulation equipment.

Reverse Power Flow Limit – Some devices may require setting changes, a re-evaluation of their control scheme, or replacement if they experience reverse power flow. The sum total of the full output capacity of all downstream DERs shall be kept to a maximum of 80% of the daytime (9am – 3pm) minimum load of the lowest loaded phase of the distribution system element.

Closed Circuits – Given current technology, each distribution circuit will have a limit to the amount of distributed generation that can be accommodated before operating violations occur. When the installed plus pending generation on a circuit has reached its maximum, and no further applications can be accepted, without cost prohibitive upgrades in relation to the project, the circuit is declared closed or restricted to all sizes.

Restricted Circuits – Circuits which have active and/or pending generation that exceeds the allowable amount of large DERs, are restricted to generators with AC ratings of 250 kW or less.

Solar - Radial Distribution Feeder Hosting Capacity PHI

Pepco Holdings GIS Team

Metro-Cheverly, 5501 Columbia

Legend

RadialHostingCapacityPHI - Pepco

Allowable_PV_kW

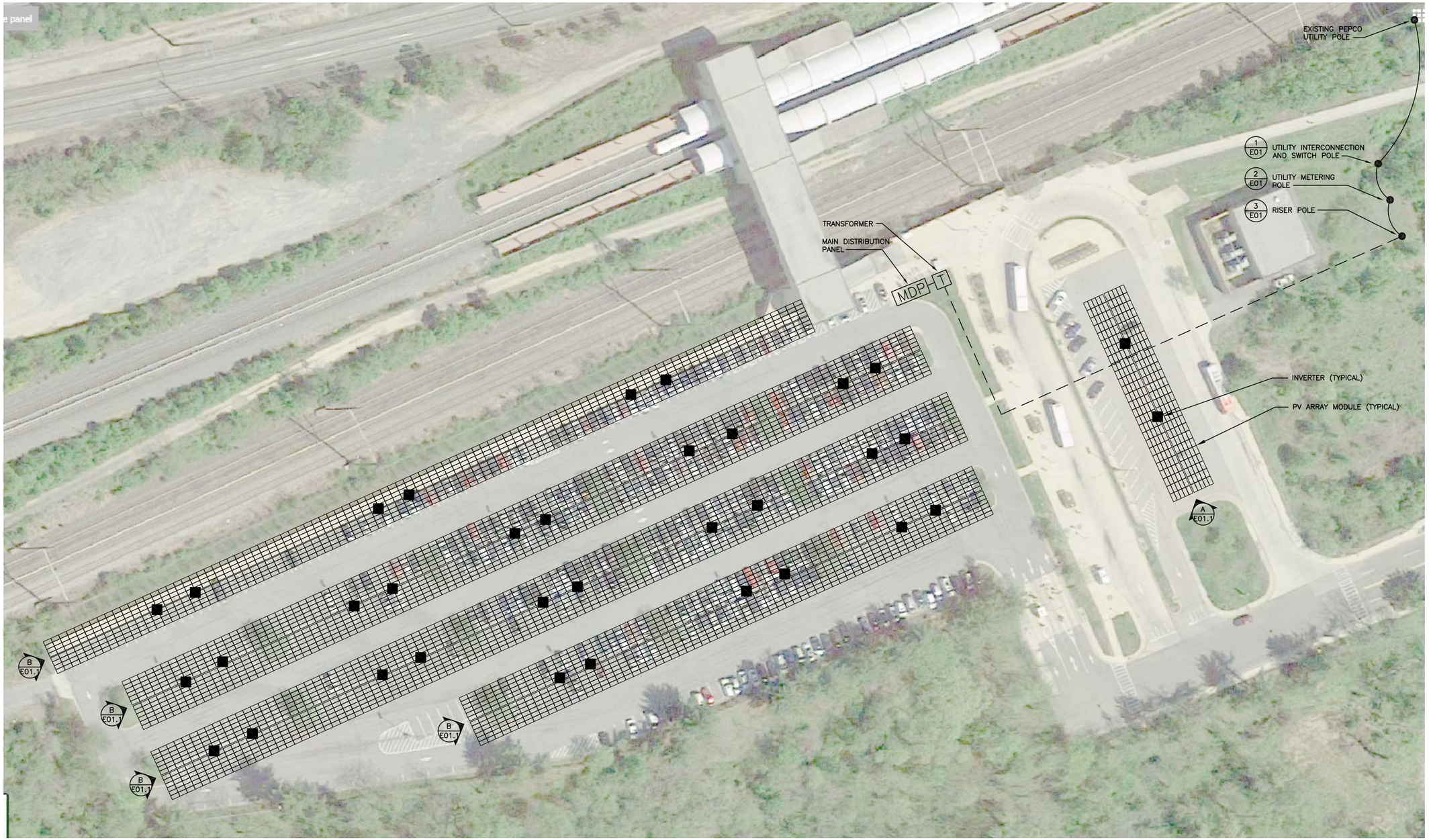
- Special Request
- > 1,500 – 15,000
- > 1,000 – 1,500
- > 500 – 1,000
- > 250 – 500
- > 0 – 250
- 0 – 0

200ft

-76.914 38.914 Degrees

GENERAL NOTES:

1. REFER TO SHEET E01 AND E01.1 FOR SINGLE LINE DIAGRAM, PV DIAGRAM, LEGEND AND DETAILS.



ELECTRICAL SITE PLAN
CHEVERLY STATION

0 20' 40' 80'

N

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Description	Date
A	DRAWING CREATED	6/24/19
B	REVISED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropolitan Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL SITE PLAN
CHEVERLY STATION

WMATA-001
E03
REV. 0

Wye Carport Design D11 Cheverly, D11 Cheverly SL; KR, 5501 Columbia Park , Cheverly, MD

Report

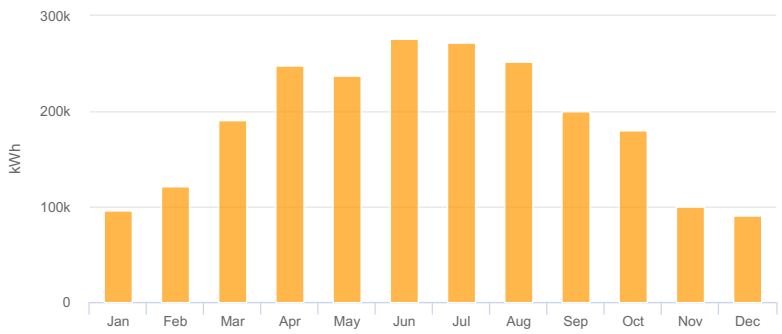
Project Name	D11 Cheverly
Project Address	D11 Cheverly SL; KR, 5501 Columbia Park , Cheverly, MD
Prepared By	Jorge Dias diasj@ctc.com

System Metrics

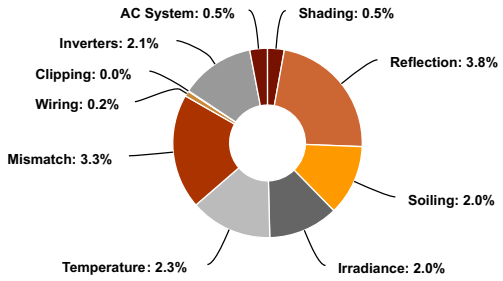
Design	Wye Carport Design
Module DC Nameplate	1.80 MW
Inverter AC Nameplate	1.60 MW Load Ratio: 1.12
Annual Production	2.262 GWh
Performance Ratio	84.6%
kWh/kWp	1,259.9
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Simulator Version	db84f8921b-c21f1de102-98b5db5763-5f526bfa4f

Project Location

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,456.5	
	POA Irradiance	1,488.7	2.2%
	Shaded Irradiance	1,481.7	-0.5%
	Irradiance after Reflection	1,425.7	-3.8%
	Irradiance after Soiling	1,397.2	-2.0%
	Total Collector Irradiance	**1,397.2**	**0.0%**
Energy (kWh)	Nameplate	2,511,203.8	
	Output at Irradiance Levels	2,461,417.3	-2.0%
	Output at Cell Temperature Derate	2,404,198.8	-2.3%
	Output After Mismatch	2,325,839.7	-3.3%
	Optimal DC Output	2,322,285.4	-0.2%
	Constrained DC Output	2,321,898.9	0.0%
	Inverter Output	2,273,070.0	-2.1%
	Energy to Grid	**2,261,700.0**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		16.6 °C
	Avg. Operating Cell Temp		24.0 °C
Simulation Metrics			
	Operating Hours		4422
	Solved Hours		4422

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
	East-West	-3.56	-0.075	3°C								
	Carport	-3.56	-0.075	3°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module	Characterization										
	SPR-A440-COM (SunPower)	Sunpower_SPR_A440_COM_Preliminary.PAN, PAN										
Component Characterizations	Device									Characterization		
	Sunny Tripower_Core1 50-US-41 (SMA)									Default Characterization		

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	32 (1.60 MW)
Strings	10 AWG (Copper)	54 (5,447.0 ft)
Strings	8 AWG (Copper)	208 (21,081.3 ft)
Module	SunPower, SPR-A440-COM (440W)	4,080 (1.80 MW)

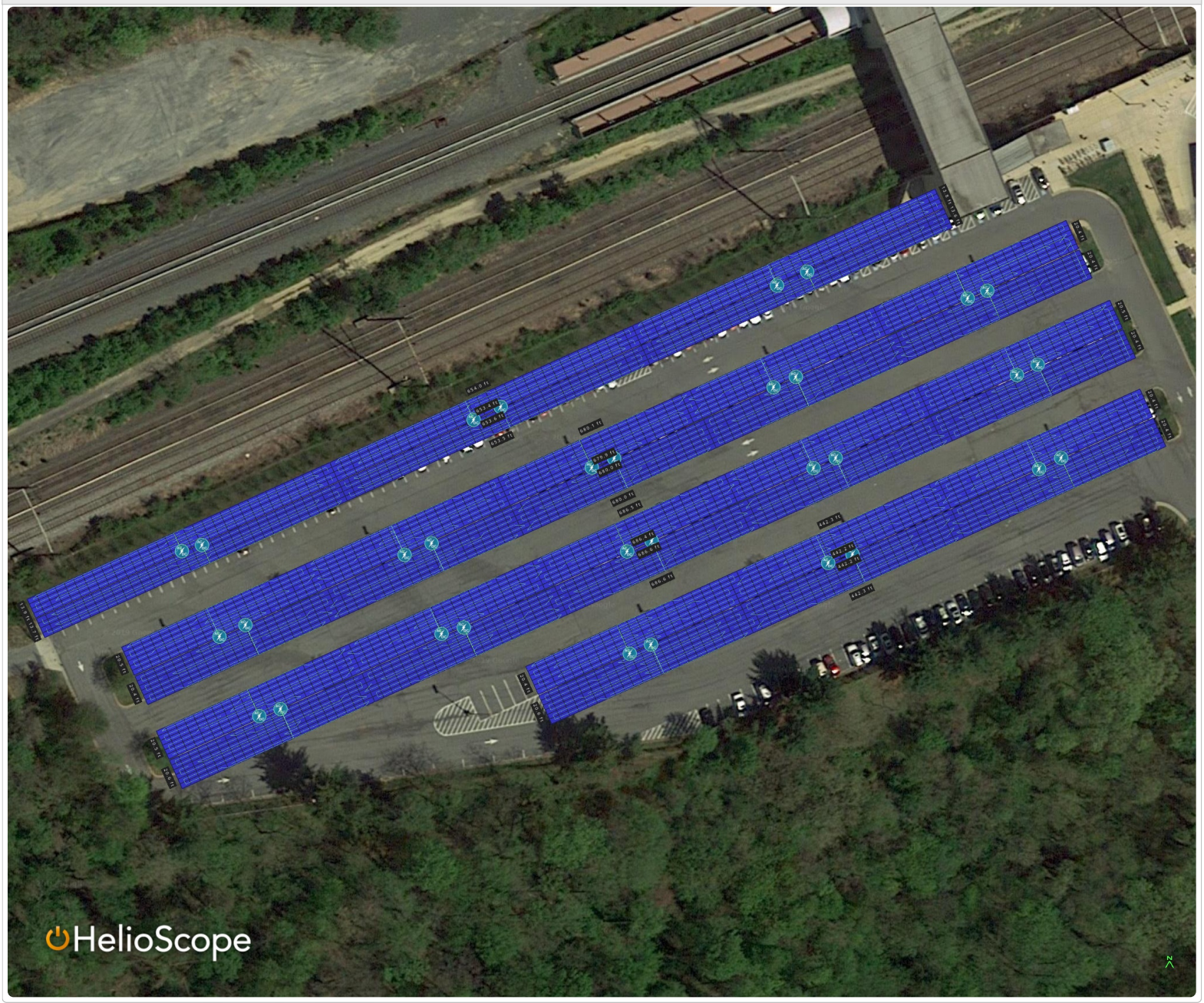
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone 1	12	4-17	Along Racking
Wiring Zone 2	12	4-17	Along Racking
Wiring Zone 3	12	4-17	Along Racking
Wiring Zone 4	12	4-17	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Array 1-1	Carport	Landscape (Horizontal)	7.4°	155.689°	1.0 ft	4x1	99	396	174.2 kW
Array 1-2	Carport	Landscape (Horizontal)	1.2°	335.698°	1.0 ft	4x1	99	396	174.2 kW
Array 2-1	Carport	Landscape (Horizontal)	7.4°	155.689°	1.0 ft	6x1	103	618	271.9 kW
Array 2-2	Carport	Landscape (Horizontal)	1.2°	335.698°	1.0 ft	6x1	103	618	271.9 kW
Array 3-1	Carport	Landscape (Horizontal)	7.4°	155.689°	1.0 ft	6x1	104	624	274.6 kW
Array 3-2	Carport	Landscape (Horizontal)	1.2°	335.698°	1.0 ft	6x1	104	624	274.6 kW
Array 4-1	Carport	Landscape (Horizontal)	7.4°	155.689°	1.0 ft	6x1	67	402	176.9 kW
Array 4-2	Carport	Landscape (Horizontal)	1.2°	335.698°	1.0 ft	6x1	67	402	176.9 kW

Detailed Layout



D11 Cheverly Kiss & Ride

D11 Cheverly, D11 Cheverly SL; KR, 5501 Columbia Park , Cheverly, MD

Report

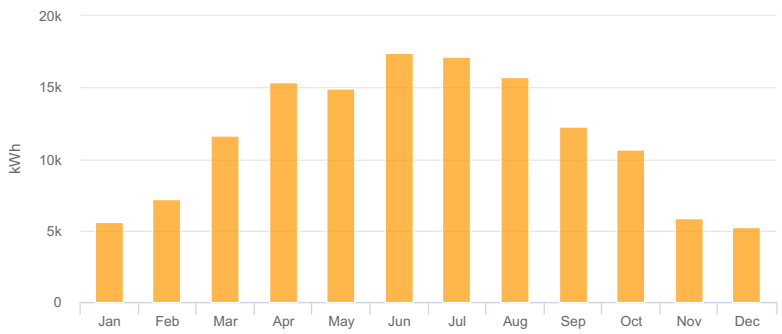
Project Name	D11 Cheverly
Project Address	D11 Cheverly SL; KR, 5501 Columbia Park , Cheverly, MD
Prepared By	Jorge Dias diasj@ctc.com

System Metrics

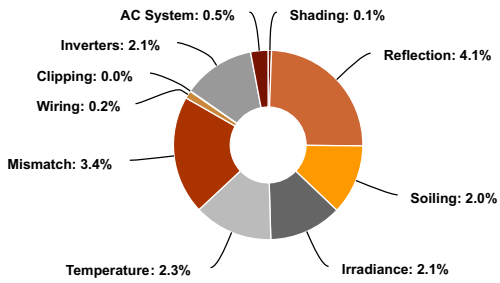
Design	D11 Cheverly Kiss & Ride
Module DC Nameplate	114.4 kW
Inverter AC Nameplate	100.0 kW Load Ratio: 1.14
Annual Production	139.1 MWh
Performance Ratio	84.5%
kWh/kWp	1,216.0
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)
Simulator Version	db84f8921b-c21f1de102-98b5db5763-5f526bfa4f

Project Location

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,456.5	
	POA Irradiance	1,439.6	-1.2%
	Shaded Irradiance	1,438.2	-0.1%
	Irradiance after Reflection	1,379.0	-4.1%
	Irradiance after Soiling	1,351.4	-2.0%
	Total Collector Irradiance	**1,351.4**	**0.0%**
Energy (kWh)	Nameplate	154,783.1	
	Output at Irradiance Levels	151,546.8	-2.1%
	Output at Cell Temperature Derate	148,125.3	-2.3%
	Output After Mismatch	143,098.6	-3.4%
	Optimal DC Output	142,781.5	-0.2%
	Constrained DC Output	142,763.7	0.0%
	Inverter Output	139,813.0	-2.1%
	Energy to Grid	**139,114.0**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		16.6 °C
	Avg. Operating Cell Temp		23.8 °C
Simulation Metrics			
	Operating Hours		4422
	Solved Hours		4422

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, WASHINGTON DC REAGAN AP, NSRDB (tmy3, I)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
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	East-West	-3.56	-0.075	3°C								
	Carport	-3.56	-0.075	3°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
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Irradiation Variance	5%											
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Module Characterizations	Module	Characterization										
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Component Characterizations	Device									Characterization		
	Sunny Tripower_Core1 50-US-41 (SMA)									Default Characterization		

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	2 (100.0 kW)
Strings	10 AWG (Copper)	16 (1,892.1 ft)
Module	SunPower, SPR-A440-COM (440W)	260 (114.4 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	4-17	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Eastern Array	Carport	Landscape (Horizontal)	1.2°	245.64°	1.0 ft	5x1	26	130	57.2 kW
Eastern Array (copy)	Carport	Landscape (Horizontal)	7.4°	65.64°	1.0 ft	5x1	26	130	57.2 kW

Detailed Layout

An Exelon Company

6/25/2019

To: Washington Metropolitan Area Transit Authority
From: Pepco, Distributed Energy Resource Planning & Analytics
Subject: Pre-Application Request

Thank you for submitting a pre-application request. Please note that the results of this report are non-binding. Information provided below is subject to change. This report does not guarantee interconnection of a generator of any size. It is informative in nature only and does not hold a position in the interconnection queue.

Customer System Information
Address or POI Information: 5501 Columbia Park Rd, Cheverly, MD 20785
Account Number: N/A
System Information: Max Size Available

Distribution System Information
Circuit Number: 14111 / 14108 / 14102
Voltage Level: 13.8 kV
Class of Service at POI: N/A (High voltage Primary or Secondary available)
Current Number of Phases to POI: 3 Phase
Any Known Circuit Restrictions: None
Substation Name: Tuxedo
Distance from Substation to POI: 1450'

Secondary System Characteristics
Existing Distribution Transformer Size: N/A
Required Transformer Size for New System: Depending on system size of installation

For Systems Over 250 kW
DER Criteria found below were used to determine the largest size DER (AC Rating) that could be interconnected at the POI specified by the customer without any system modifications. Power Factor mitigation has been incorporated when it would allow a larger system.

			14111		14108	14102
Remaining Circuit Capacity for Large DERs			3000	kW	3000 kW	3000 kW
Remaining Substation Transformer Capacity for Large DERs			20000	kW	20000 kW	30000 kW
Installed Generation on Circuit	10.04	kW			65.70 kW	343.18 kW
Pending Generation on Circuit	0.00	kW			7.50 kW	778.63 kW
Size Limit based on Voltage Fluctuation			3000	kW	3000 kW	3000 kW
Size Limit based on Steady State High Voltage			3000	kW	3000 kW	3000 kW
Size Limit based on Reverse Power Flow			3000	kW	3000 kW	3000 kW
DER Size Limit at POI with no sys mods			**3000**	**kW**	3000 kW	3000 kW

Known Constraints preventing a larger DER installation:

Only feeder 14102 is a cross-border feeder. 750 kW project recently dropped out of the queue, increasing large generation capacity.

All three feeders are firm and without major issues.

Some criteria violations can be corrected with system modifications which were not evaluated as part of the pre-application process. If an application is submitted, further analysis will take place which may result in a larger or smaller approved generator size. Examples of more detailed analysis include protection reviews, transformer configurations, Distribution Automation impact and other location specific analysis.

Dave Wilson , Engineer
Distributed Energy Resource Planning & Analytics
Phone: 202-331-6694
Email: ddwilson@pepco.com

Explanation of Criteria

Remaining Circuit Capacity – The aggregate limit of large (250 kW and over) generators running in parallel with a single existing distribution circuit is 0.5 MWs on the 4 kV, 3 MWs on the 12 kV, 6 MWs on the 25 kV, and 10 MWs on the 34 kV. Applications for generators smaller than 250 kW are possible on a circuit restricted to 250 kW. Express circuits can be requested for larger systems.

Remaining Substation Transformer Capacity - The aggregate limit of large (250 kW and over) generators to a single distribution transformer is 10 MWs. Applications for generators smaller than 250 kW are possible on a transformer restricted to 250 kW.

Voltage Fluctuation Limit – DERs are permitted to cause up to 2% voltage fluctuation at the Point of Interconnection and ½ the bandwidth of any voltage regulator or ½ the net dead bandwidth of a capacitor bank. This metric quantifies the difference in feeder voltage when the system is running at full output versus when the generation has been suddenly lost. If this criterion can't be met with power factor mitigation, an impact study will be required to ensure that voltage can be maintained within applicable standards.

Steady State High Voltage Limit – DERs in maximum output are permitted to raise feeder voltage to the ANSI or state limit, whichever is more conservative. A simulation is performed which predicts how high the voltage will rise at a point in time when energy consumption is lowest on the feeder and the DER is injecting power. The system is simulated in a normal, steady state and abnormalities are not accounted for. In some cases, steady state high voltage can be mitigated by changing settings on voltage regulation equipment.

Reverse Power Flow Limit – Some devices may require setting changes, a re-evaluation of their control scheme, or replacement if they experience reverse power flow. The sum total of the full output capacity of all downstream DERs shall be kept to a maximum of 80% of the daytime (9am – 3pm) minimum load of the lowest loaded phase of the distribution system element.

Closed Circuits – Given current technology, each distribution circuit will have a limit to the amount of distributed generation that can be accommodated before operating violations occur. When the installed plus pending generation on a circuit has reached its maximum, and no further applications can be accepted, without cost prohibitive upgrades in relation to the project, the circuit is declared closed or restricted to all sizes.

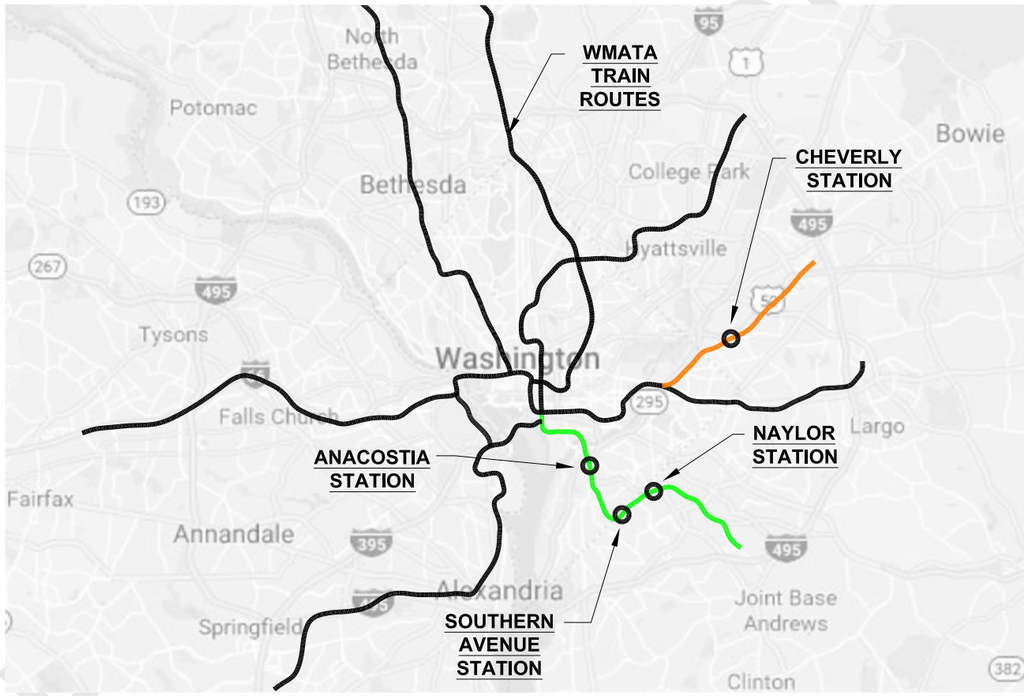
Restricted Circuits – Circuits which have active and/or pending generation that exceeds the allowable amount of large DERs, are restricted to generators with AC ratings of 250 kW or less.

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY (WMATA)

PHOTOVOLTAIC INSTALLATIONS

THIS DRAWING SET REPRESENTS THE PRELIMINARY DESIGN FOR THE INSTALLATION OF PHOTOVOLTAIC ARRAYS FOR WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY LOCATIONS INDICATED. PHOTOVOLTAIC PANELS, PANEL MOUNTING AND ORIENTATION, INVERTER CONFIGURATION, ARRAY LOCATIONS AND UTILITY INTERCONNECTIONS SHALL SERVE AS CONCEPTUAL THAT WILL BE REVISED AND/OR OPTIMIZED. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

- COMPLIANCE WITH ALL STATE, LOCAL CODES INCLUDING THE LOCALLY ADOPTED VERSION OF THE NATIONAL ELECTRIC CODE.
- COMPLETE PHOTOVOLTAIC SYSTEM DESIGN AND INSTALLATION INCLUDING CARPORTS AND PARKING STRUCTURE MODIFICATIONS.
- STRUCTURAL ANALYSIS AND DESIGN RELATED TO SURFACE LOT CARPORT STRUCTURES AND EXISTING PARKING GARAGE PV MOUNTING SYSTEMS.
- COORDINATION WITH PEPCO WITH RESPECT TO PHYSICAL INTERCONNECTION LOCATIONS AND INSTALLATION REQUIREMENTS AND UTILITY INTERCONNECTION AGREEMENTS.
- COORDINATION WITH WMATA REQUIREMENTS SUCH AS DESIGN CRITERIA, MANUAL AND SPECIFICATIONS.
- VEHICLE PROTECTION OF ALL ELECTRICAL EQUIPMENT INSTALLED, SUCH AS BOLLARDS AND BARRIERS.
- TRENCHING AND UNDERGROUND CONDUCTOR PROTECTION.
- TRANSFORMER AND MAIN DISTRIBUTION PANEL CONCRETE PADS AND MOUNTING
- MANHOLES AND PULL BOXES.



PROJECT AREA MAP

SHEET LIST INDEX:

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Description	Date
A	DRAWING CREATED	7/3/19
B	REVISED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropoliton Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

COVER SHEET

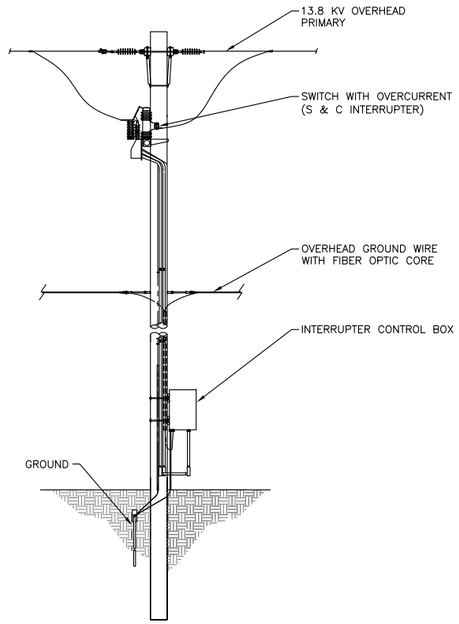
WMATA-001
CS
REV. 0

GENERAL NOTES

1. REFER TO SHEETS E02, E03, E04, E04.1 AND E05

LEGEND

- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC SLACK SPAN
- ELECTRIC POLE
- MDP — MAIN DISTRIBUTION PANEL
- T — TRANSFORMER
- INVERTER
- 1 / E01 — DETAIL NUMBER / SHEET NUMBER LOCATION
- 1 / E01 — ELEVATION NUMBER / SHEET NUMBER LOCATION

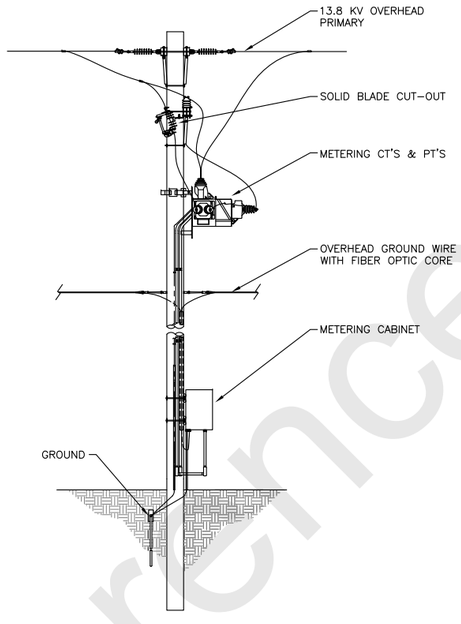


UTILITY INTERCONNECT POLE WITH SWITCH & OVERCURRENT

1 / E01

NOT TO SCALE

NOTE:
PROVIDES OVERCURRENT PROTECTION, 3-GANG OPEN DISCONNECT AND TELEMETRY CONTROL

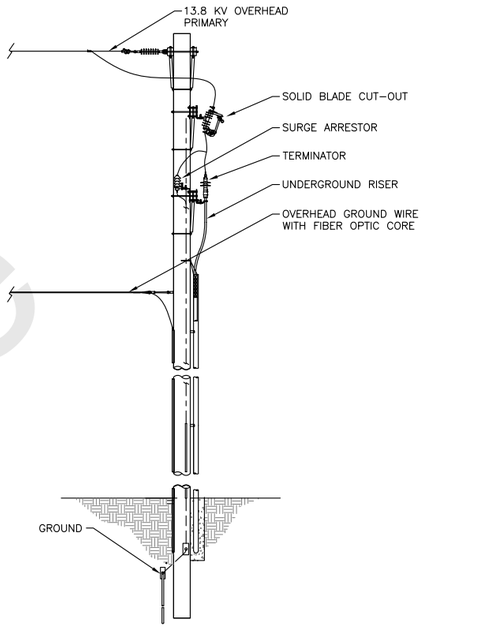


POLE WITH UTILITY (PEPCO) METER

2 / E01

NOT TO SCALE

NOTE:
CT'S & PT'S PROVIDED BY PEPCO AND INSTALLED BY CONTRACTOR



DEAD END RISER POLE

3 / E01

NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Description	Date
A	DRAWING CREATED	6/24/19
B	REVISED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropoliton Area Transit Authority

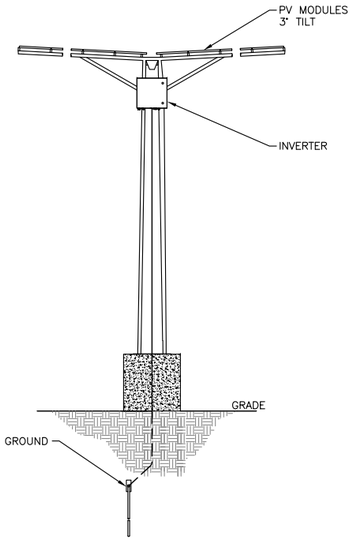
WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL
DETAILS AND NOTES

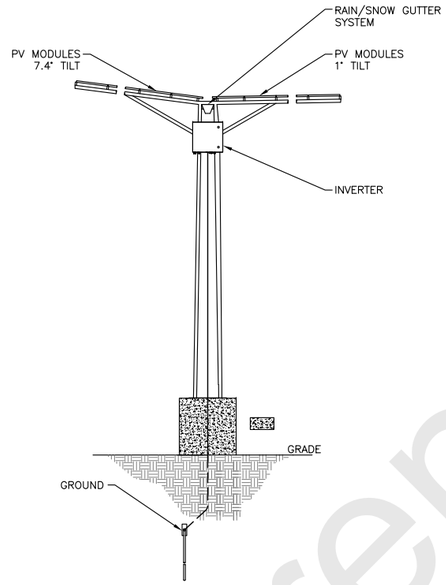
WMATA-001
E01
REV. 0

GENERAL NOTES

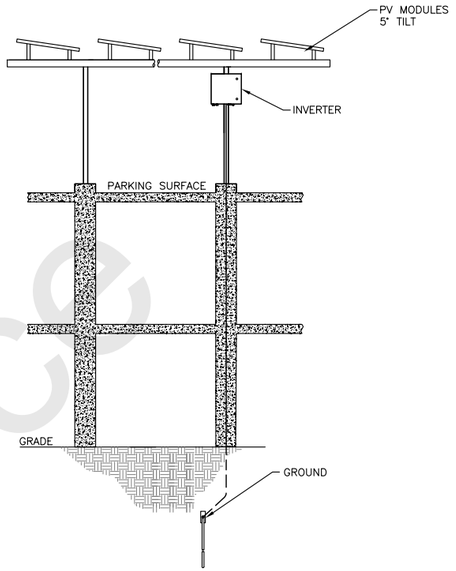
1. REFER TO SHEETS E02, E03, E04, E04.1 AND E05



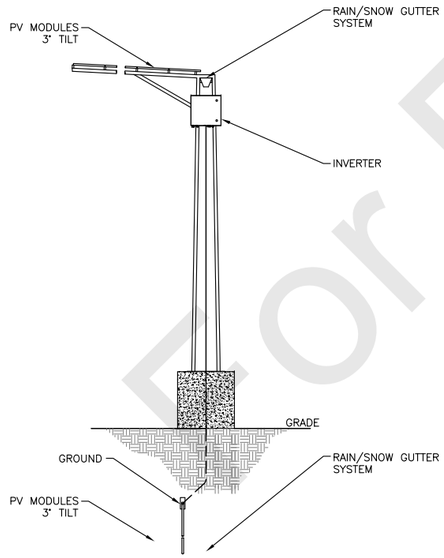
"Y" CARPORT PV ARRAY MOUNTING ELEVATION (A / E01.1)
NOT TO SCALE



"Y" CARPORT PV ARRAY MOUNTING ELEVATION (B / E01.1)
NOT TO SCALE



FIXED TILT PV ARRAY MOUNTING ELEVATION (C / E01.1)
NOT TO SCALE



WEST HALF "Y" CARPORT PV ARRAY MOUNTING ELEVATION (D / E01.1)
NOT TO SCALE

Rev	Description	Date
A	DRAWING CREATED	7/3/19
B	REVISED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

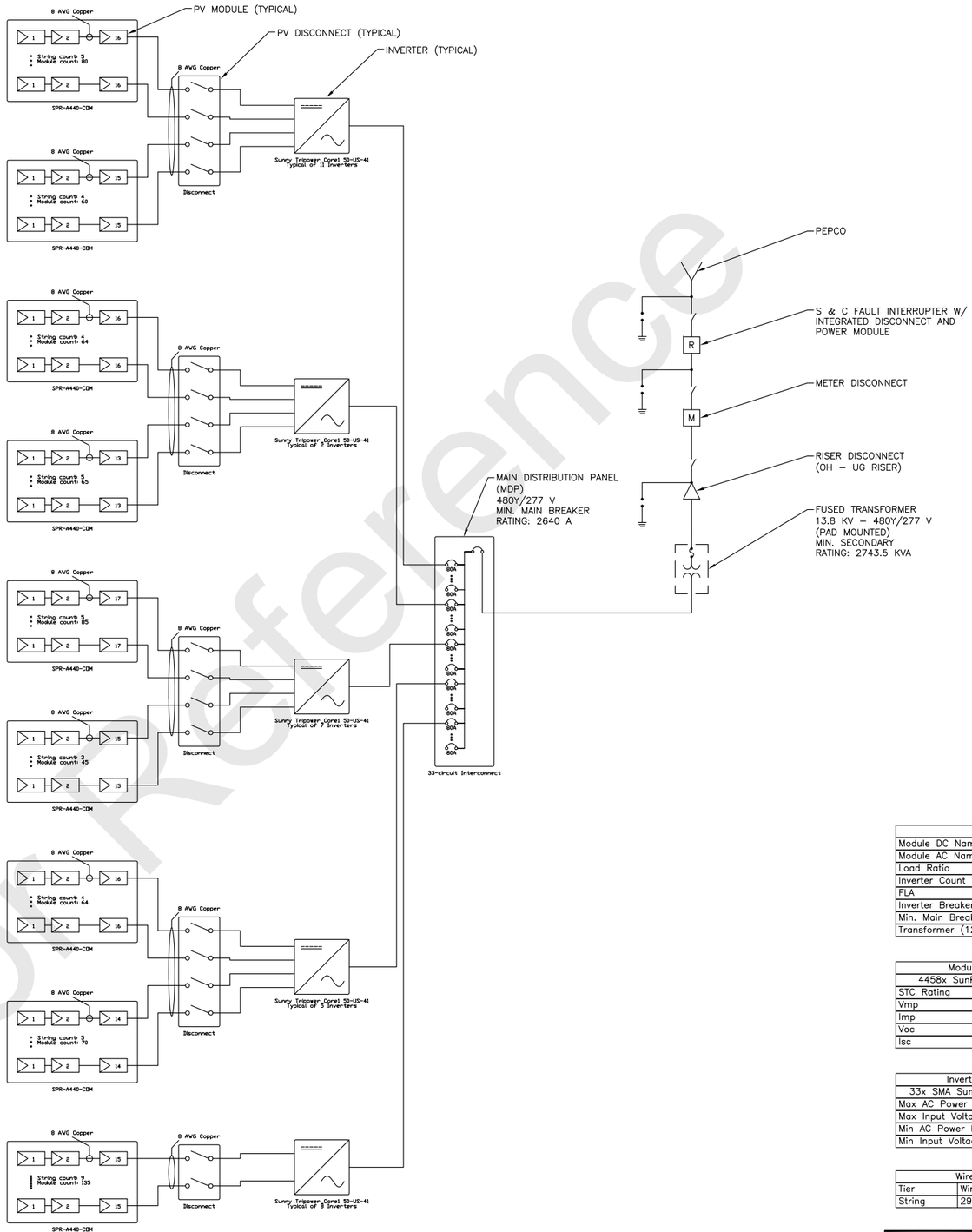
Washington Metropoliton Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL ELEVATION
DETAILS AND NOTES

PRELIMINARY
NOT FOR CONSTRUCTION

WMATA-001
E01.1
REV. 0



SINGLE LINE DIAGRAM

NO SCALE

System Metrics	
Module DC Nameplate	1.96 MW
Module AC Namplate	1.65 MW
Load Ratio	1.19
Inverter Count	33
FLA	2112 Amps
Inverter Breaker Size	80 Amps per Inverter
Min. Main Breaker Size	2640 Amps
Transformer (125%)	2743.5 KVA

Module Specifications	
4458x SunPower SPR-A440-COM	
STC Rating	440 W
Vmp	43.4 V
Imp	10.15 A
Voc	51.6 V
Isc	10.9 A

Inverter Specifications	
33x SMA Sunny Tripower_Core1 50-US-41	
Max AC Power Rating	50 kW
Max Input Voltage	1,000 V
Min AC Power Rating	160 W
Min Input Voltage	150 V

Wire Schedule		
Tier	Wire	Length
String	290x 8 AWG	40056ft

PRELIMINARY

NOT FOR CONSTRUCTION

Rev	Description	Date
A	DRAWING CREATED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropolitan Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN

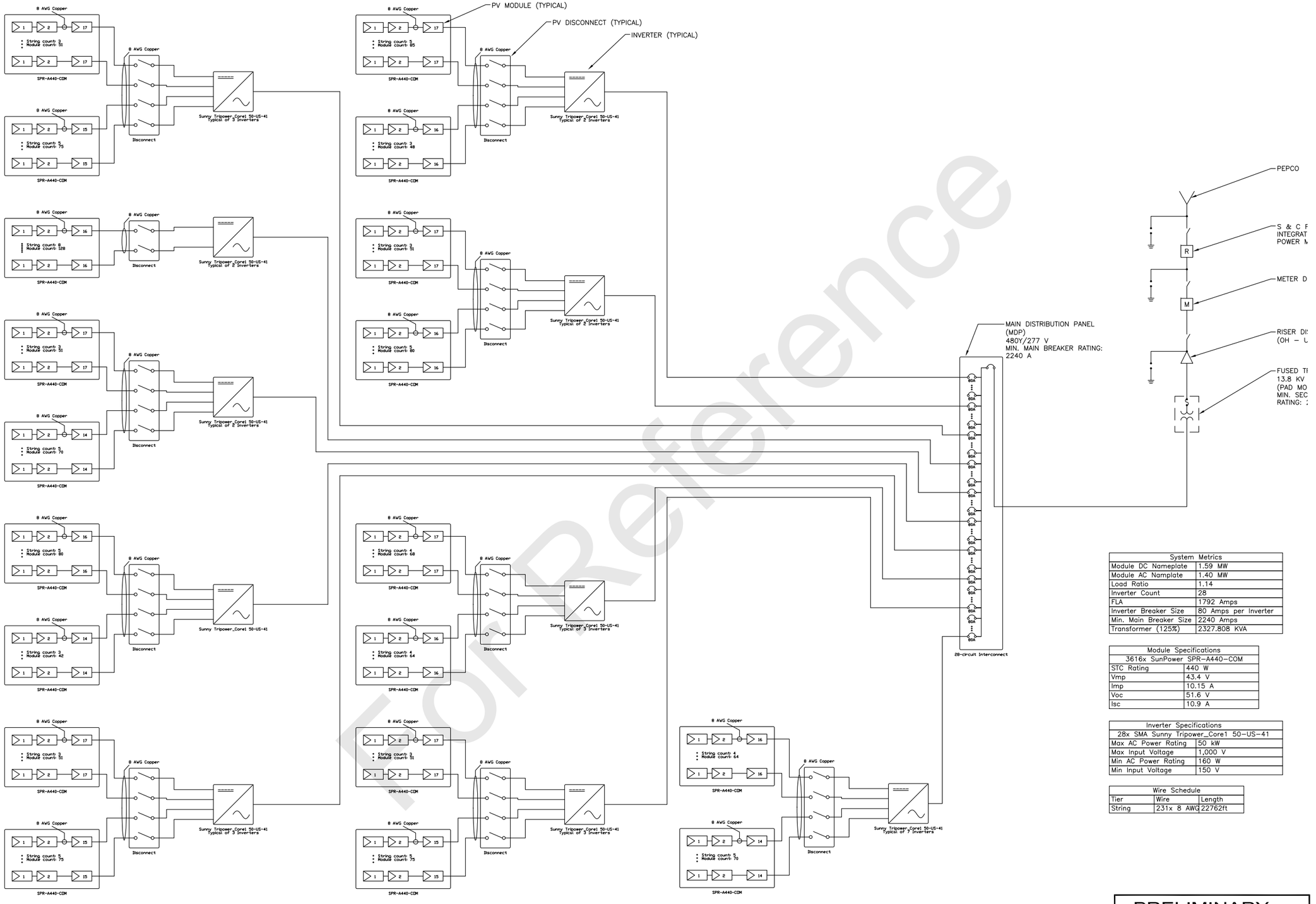
WASHINGTON D.C. AREA

ELECTRICAL SINGLE LINE DIAGRAM
SOUTHERN STATION - PG MAX

WMATA-001

E01.4

REV. 0



System Metrics	
Module DC Nameplate	1.59 MW
Module AC Namplate	1.40 MW
Load Ratio	1.14
Inverter Count	28
FLA	1792 Amps
Inverter Breaker Size	80 Amps per Inverter
Min. Main Breaker Size	2240 Amps
Transformer (125%)	2327.808 KVA

Module Specifications	
3616x SunPower SPR-A440-COM	
STC Rating	440 W
Vmp	43.4 V
Imp	10.15 A
Voc	51.6 V
Isc	10.9 A

Inverter Specifications	
28x SMA Sunny Tripower_Core1 50-US-41	
Max AC Power Rating	50 kW
Max Input Voltage	1,000 V
Min AC Power Rating	160 W
Min Input Voltage	150 V

Wire Schedule		
Tier	Wire	Length
String	231x 8 AWG	22762ft

SINGLE LINE DIAGRAM

NO SCALE

PRELIMINARY

NOT FOR CONSTRUCTION

Rev	Description	Date
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Washington Metropoliton Area Transit Authority

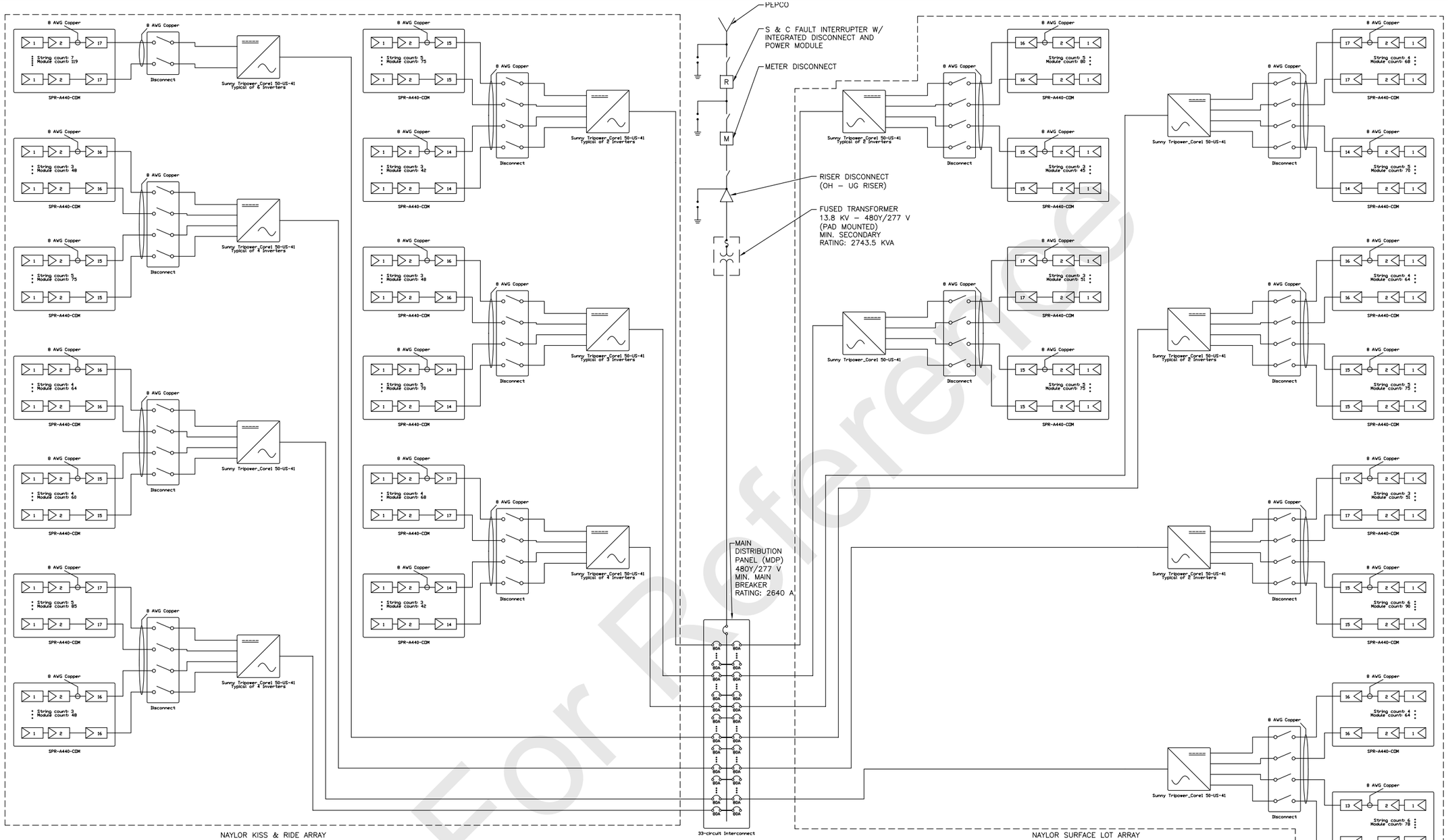
WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL SINGLE LINE DIAGRAM
SOUTHERN STATION - SURFACE LOT

WMATA-001

E01.5

REV. 0



KISS & RIDE ARRAY

Module Specifications	
1216x SunPower SPR-A440-COM	
STC Rating	440 W
Vmp	43.4 V
Imp	10.15 A
Voc	51.6 V
Isc	10.9 A

Inverter Specifications	
9x SMA Sunny Tripower_Core1 50-US-41	
Max AC Power Rating	50 kW
Max Input Voltage	1,000 V
Min AC Power Rating	160 W
Min Input Voltage	150 V

Wire Schedule		
Tier	Wire	Length
String	79x 8 AWG	11746ft

System Metrics	
Module DC Nameplate	535.0 kW
Module AC Namplate	450.0 kW
Load Ratio	1.19
Inverter Count	9
FLA	576 Amps
Inverter Breaker Size	80 Amps per Inverter
Min. Main Breaker Size	720 Amps
Transformer (125%)	748.224 KVA

SINGLE LINE DIAGRAM

NO SCALE

SURFACE LOT ARRAY

Module Specifications	
2890x SunPower SPR-A440-COM	
STC Rating	440 W
Vmp	43.4 V
Imp	10.15 A
Voc	51.6 V
Isc	10.9 A

Inverter Specifications	
24x SMA Sunny Tripower_Core1 50-US-41	
Max AC Power Rating	50 kW
Max Input Voltage	1,000 V
Min AC Power Rating	160 W
Min Input Voltage	150 V

Wire Schedule		
Tier	Wire	Length
String	182x 8 AWG	16385ft

System Metrics	
Module DC Nameplate	1.27 MW
Module AC Namplate	1.20 MW
Load Ratio	1.06
Inverter Count	24
FLA	1536 Amps
Inverter Breaker Size	80 Amps per Inverter
Min. Main Breaker Size	1920 Amps
Transformer (125%)	1995.264 KVA

PRELIMINARY
NOT FOR CONSTRUCTION

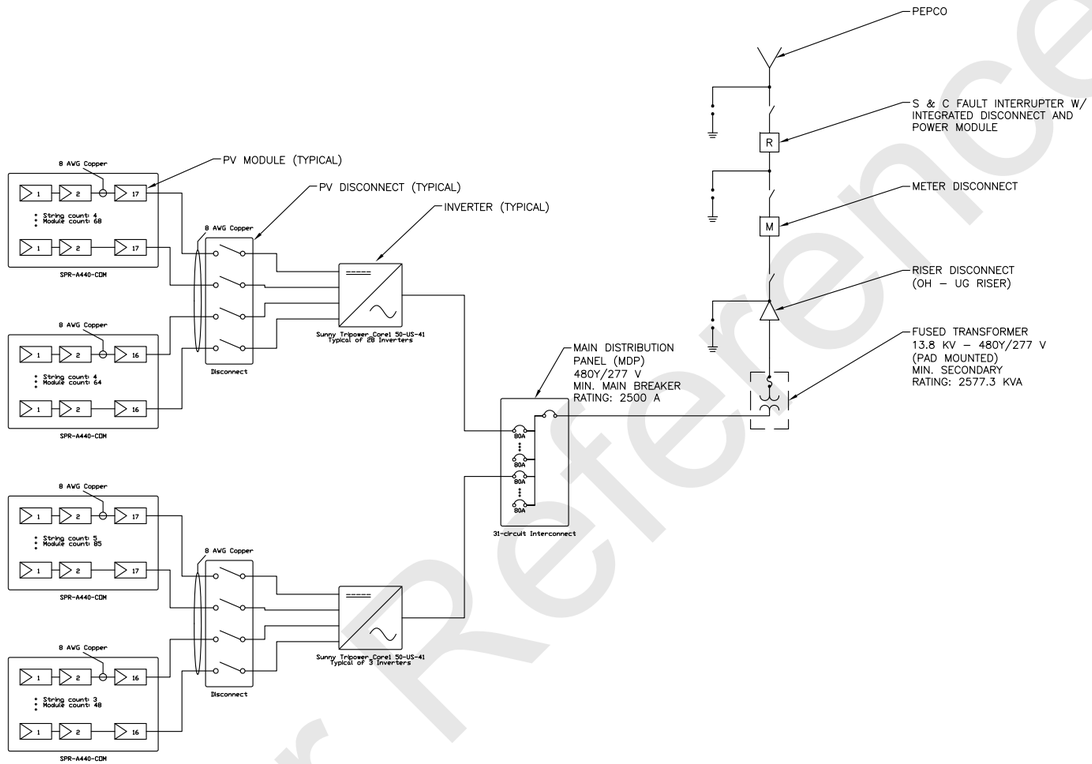
Rev	Description	Date
A	DRAWING CREATED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropoliton Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL SINGLE LINE DIAGRAM
NAYLOR STATION

WMATA-001
E01.6
REV. 0



SINGLE LINE DIAGRAM

NO SCALE

System Metrics	
Module DC Nameplate	1.80 MW
Module AC Namplate	1.55 MW
Load Ratio	1.16
Inverter Count	31
FLA	1984 Amps
Inverter Breaker Size	80 Amps per Inverter
Min. Main Breaker Size	2500 Amps
Transformer (125%)	2577.3 KVA

Module Specifications	
4095x SunPower SPR-A440-COM	
STC Rating	440 W
Vmp	43.4 V
Imp	10.15 A
Voc	51.6 V
Isc	10.9 A

Inverter Specifications	
31x SMA Sunny Tripower_Core1 50-US-41	
Max AC Power Rating	50 kW
Max Input Voltage	1,000 V
Min AC Power Rating	160 W
Min Input Voltage	150 V

Wire Schedule		
Tier	Wire	Length
String	248x 8 AWG	93344ft

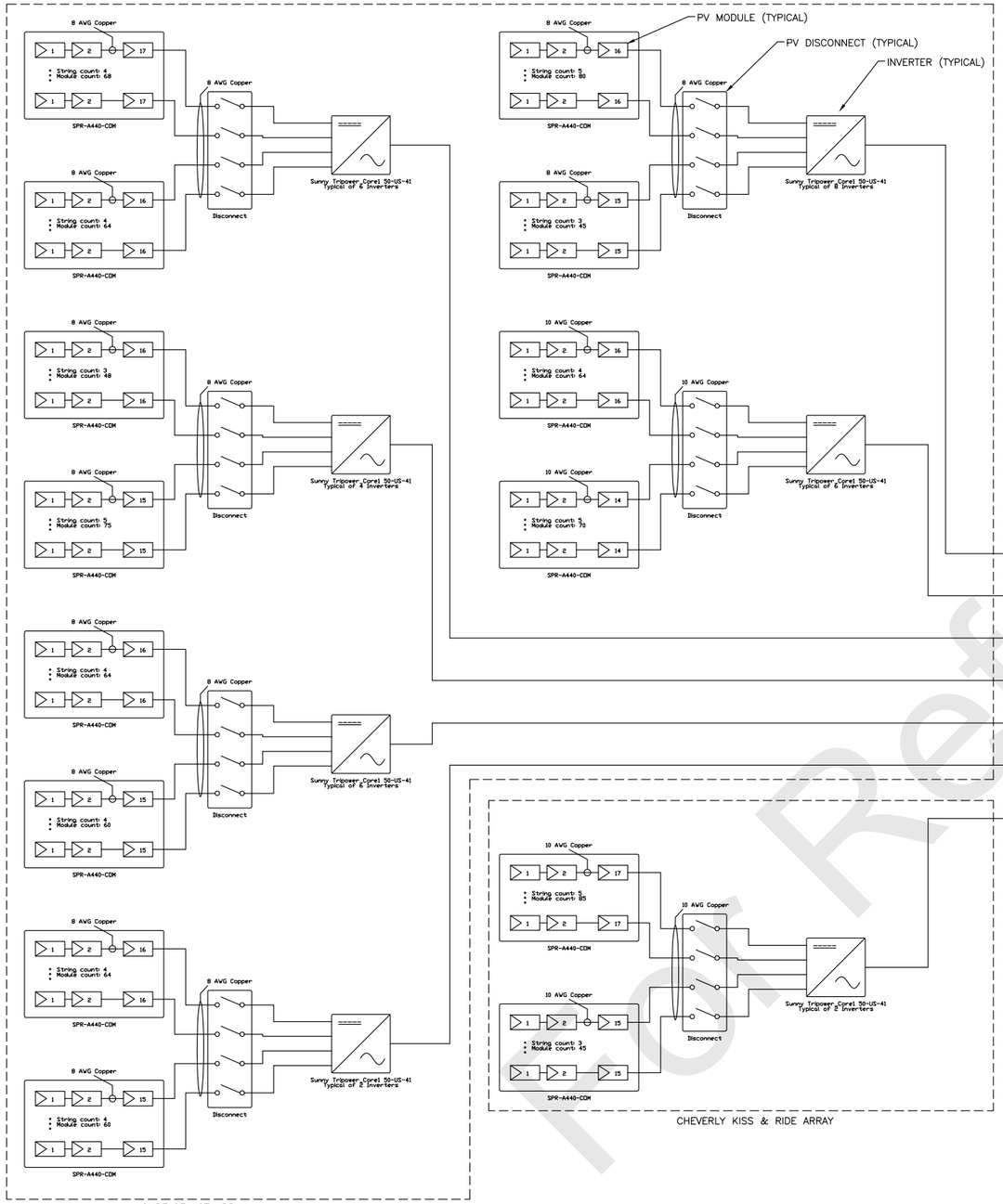
Rev	Description	Date
A	DRAWING CREATED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropoliton Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA
ELECTRICAL SINGLE LINE DIAGRAM
ANACOSTIA

PRELIMINARY
NOT FOR CONSTRUCTION

WMATA-001
E01.2
REV. 0



SINGLE LINE DIAGRAM

NO SCALE

SURFACE LOT ARRAY

Module Specifications	
4080x SunPower SPR-A440-COM	
STC Rating	440 W
Vmp	43.4 V
Imp	10.15 A
Voc	51.6 V
Isc	10.9 A

Inverter Specifications	
32x SMA Sunny Tripower_Core1 50-US-41	
Max AC Power Rating	50 kW
Max Input Voltage	1,000 V
Min AC Power Rating	160 W
Min Input Voltage	150 V

Wire Schedule		
Tier	Wire	Length
String	262x 8 AWG	26528ft

System Metrics	
Module DC Nameplate	1.80 MW
Module AC Namplate	1.60 MW
Load Ratio	1.12
Inverter Count	32
FLA	128 Amps
Inverter Breaker Size	80 Amps per Inverter

KISS & RIDE ARRAY

Module Specifications	
260x SunPower SPR-A440-COM	
STC Rating	440 W
Vmp	43.4 V
Imp	10.15 A
Voc	51.6 V
Isc	10.9 A

Inverter Specifications	
2x SMA Sunny Tripower_Core1 50-US-41	
Max AC Power Rating	50 kW
Max Input Voltage	1,000 V
Min AC Power Rating	160 W
Min Input Voltage	150 V

Wire Schedule		
Tier	Wire	Length
String	16x 10 AWG	1892ft

System Metrics	
Module DC Nameplate	114.4 kW
Module AC Namplate	100 kW
Load Ratio	1.14
Inverter Count	2
FLA	128 Amps
Inverter Breaker Size	80 Amps per Inverter

PRELIMINARY

NOT FOR CONSTRUCTION

Rev	Description	Date
A	DRAWING CREATED	7/10/19
0	PRELIMINARY DRAWING ISSUE	7/12/19

Washington Metropoliton Area Transit Authority

WMATA PV INSTALLATIONS
PRELIMINARY DESIGN
WASHINGTON D.C. AREA

ELECTRICAL SINGLE LINE DIAGRAM
CHEVERLY STATION

WMATA-001
E01.3
REV. 0

APPENDIX D: MINIMUM TECHNICAL REQUIREMENTS

This Appendix D provides the technical requirements for the Project. This Appendix D by no means covers every aspect of the solar PV industry best practices and/or state-of-art technologies. Nonetheless, Developers, at a minimum, shall use it as a guideline in preparing Proposals.

GENERAL PROJECT REQUIREMENTS

a) Solar PV systems must comply will all applicable local, state, and federal regulations, in addition to any specific requirements within the WMATA Adjacent Construction Project Manual and WMATA Design Criteria/Specifications.
b) In the event of discrepancy between the requirements of this project and WMATA standards (the Adjacent Construction Project Manual and the WMATA Design Criteria/Specifications) and accepted solar engineering and installation best practices, prior to taking any further action the Selected Developer shall submit any discrepancies in writing to WMATA for resolution, which resolution shall be in WMATA's sole, absolute and subjective discretion.
a) WMATA shall be informed of meetings with review agencies and may, at its discretion, elect to participate in such meetings. WMATA will provide assistance to the Selected Developer as it relates to providing required information for the permitting process and attending required meetings that are appropriate or otherwise aiding the communication with permitting agencies. WMATA shall have the right to review and comment on permit applications and supporting materials submitted by the Selected Developer during the permitting process.
b) The cost and expense of obtaining all governmental approvals and/or permits including all application fees, shall be the Selected Developer's responsibility.
c) Pepco Interconnect Agreement
    i. The solar PV systems shall interconnect directly to a utility feeder or its secondary distribution system equipment. These solar PV systems will **NOT** tie into WMATA electrical equipment/connections but instead export all power generated. Installations must satisfy all Pepco interconnection requirements. All costs associated with utility interconnection shall be borne by the Selected Developer.
    ii. Developers are required to make their own determinations on suitable system interconnection points that shall comply with all regulations and applicable WMATA standards. The Selected Developer shall be responsible for engaging Pepco, providing all documentation to Pepco, obtaining and complying with all obligations established by the Pepco Interconnection Agreement, and all Pepco study and design costs.

SOLAR SYSTEM REQUIREMENTS/CONSTRAINTS

a) Carport/canopy steel members shall be corrosion resistant and suitable for solar PV systems. All steel components shall be G90 galvanization or equivalent. Canopy structures must be galvanized and use stainless steel hardware fasteners to avoid galvanic corrosion between dissimilar materials. See WMATA Adjacent Construction Manual Section 3.3 (Corrosion Protection). All metals used in the construction of the system including, but

not limited to, PV modules and array support structures shall be warranted against degradation for the Project term.

b) Developers shall obtain necessary geotechnical information to ensure there will be no subsurface/underground issues during construction and throughout the Project's life. Any underground obstacles, including but not limited to utilities conduit, cables and sub-surface structures, must be located during surveys and addressed during the design phase to mitigate risk. Geotechnical evaluation shall be based on WMATA's Standard Design Specifications and the WMATA Design Criteria. No racking system or solar array support columns shall be within 10 feet of a fire hydrant.

c) Proposed PV structural systems at parking garages (the Anacostia and Southern Avenue Project Sites) should not in any way jeopardize overall garage stability. Connections to building or parking garage structural members shall not damage or reduce the structural members' carrying capacity. Structural members shall be protected from degradation over the Project term. If degradation is found, the Selected Developer will be required to make necessary repairs. Structural evaluation shall be based on WMATA's Standard Design Specifications and the WMATA Design Criteria.

d) Energy efficient lighting shall be provided for illumination under solar carports/garage canopy per the WMATA Design Criteria and WMATA Adjacent Construction Manual Section 3.29 (Lighting Standards). Lighting under solar carports/garage canopies shall comply with interior parking garage lighting levels. A photometric study (site lighting plan with projected lighting illumination level, wattage, etc.) is required. Lighting must have a dedicated AC power source from an adjacent WMATA facility electrical room, i.e. the power source for this lighting must be WMATA's internal system, not an external power source. The Selected Developer will own the lighting, conduit and related facilities and be responsible for operating, maintaining, repairing and replacing the solar carport/canopy lighting system, including the light fixtures, all at the Selected Developer's expense.

e) The solar carport/canopy system will be designed and constructed to be Closed Circuit Television (CCTV) ready per the WMATA Design Criteria and WMATA Adjacent Construction Manual. The Selected Developer shall provide, install, and bear the cost of conduits and/or raceways for CCTV electrical cable/communication wires so that WMATA can pull wires and install devices concurrently during solar construction work or at a later stage. However, the Selected Developer will not be responsible for purchasing or installing the CCTV cameras themselves, which will be WMATA's responsibility. Power for cameras shall be run from the CCTV to an adjacent WMATA facility electrical room on a dedicated AC power source, i.e. the power source for this CCTV must be WMATA's internal system, not an external power source. Unlike the under-canopy lighting, conduits and related facilities in the preceding subsection, WMATA will own the CCTV cameras, CCTV conduits/raceways and related facilities and be responsible for operating, maintaining, repairing and replacing the CCTV system, including the cameras, at WMATA's own and separate expense. The costs of CCTV system operation and maintenance, as well as the capital and installation costs of the cameras themselves, should not be factored in (as a deduction, credit or otherwise) to the compensation being offered to WMATA.

f) The PV system shall be configured to prevent ice or snow shedding and runoff from precipitation from making walkways unsafe or damaging vehicles/equipment located beneath or adjacent to the PV system. The PV system shall adopt carport/canopy solar

industrial best practice to safely manage precipitation such as storm water and snow.

g) The solar carport/canopy system shall provide a minimum 11.5 feet clearance at the leading edge.
h) All exposed or concealed wiring shall be warranted against UV degradation for the Project term.
i) Steel column should be protected with concrete such as Sonotube or equivalent.
j) The Selected Developer will bear the expense of removing existing light poles or similar structures that need to be removed due to the installation of the solar array.
k) Existing parking spaces shall not be eliminated, i.e., the current total number of parking spaces shall be maintained once construction is completed. This does not require that all existing parking spaces be maintained during construction; the temporary elimination of existing parking spaces during construction may be permitted if so provided in the Maintenance of Traffic Plan.
l) The Federal Aviation Authority (FAA) wants to ensure solar projects are sited properly and do not create glint or glare conditions which can cause safety problems for aviation or otherwise interfere with aeronautical and airport activities. The Selected Developer shall submit adequate construction notice to the FAA if required under 14 Code of Federal Regulations (CFR) Part 77 or any other applicable FAA regulations.

PHOTOVOLTAIC EQUIPMENT

a) All equipment must meet or exceed applicable codes and standards, including:
    i. Electrical components UL listed or recognized
    ii. Racking components manufactured and tested in accordance with UL 2703 for grounding
    iii. PV modules listed to UL 1703 and tested and constructed in accordance with IEC 61215 and 61730 standards
    iv. Smart Inverters conform to IEEE 1547/UL 1741
    v. ASTM standards for steel and other materials
b) Tier 1, bankable, CEC listed poly or mono crystalline 72-cell solar modules with a minimum 20-year/80% production warranties. Main stream solar module manufacturers which have been operating for more than 10 years are preferred.
c) Smart Inverters conform to IEEE 1547/UL 1741, CEC listed, and produced by a mainstream producer with standard warranties. Warranty beyond 10-years is preferred.
d) All equipment, materials and components must be new (not placed into service at any other location), designed and tested for the intended use. Balance of system (BOS) must be sourced from reputable suppliers or vendors with traceable quality control records.
e) Components of the solar equipment and connections should be commercially available to allow for maintenance and replacement as needed. Adequate but not excessive spare parts in stock per industrial practice, especially for solar modules, shall be included to avoid supply shortage and any array equipment irregularities.
f) All PV Modules and inverters shall remain in operation for the Project term with allowances for normal degradation not to exceed 1% annually, i.e. system should perform and possess at least 80% design capacity after a 20-year duration.

RFP SOLAR SYSTEM ENGINEERING AND DESIGN SUBMITTALS

a) Developers shall adopt solar industry best practices to prepare for RFP responses -

including but not limited to designing solar systems to operate with a maximum voltage of 1,000Vdc and using commercially available tools, devices or programs to verify site suitability, system size, shading concerns, and any planning/zoning issues or environmental concerns. Solar specific technical deliverables shall include:

i. HelioScope Report
ii. PVSyst Report
iii. Electrical 1-line and Schematic Array Plan (10% drawings)
iv. Schematic Design, Site Plan and Preliminary Array Plans (30% drawings). (Optional but strongly recommended.)
    a. Including but not limited to survey documentation, site plan with array layouts, limit of disturbance, existing and proposed electrical diagrams, locate interconnection point, description of system, structural concept and preliminary calculations, shading analysis, risk analysis and project schedule, all stipulated relevant reports, with a 30% level of architecture, structural, civil and electrical documentation development.
    b. Solar array layout shall be to scale showing its relative position on the site as well as on an aerial map to indicate solar module physical location, spacing between rows and modules and the module count and location of main AC run (in relation to adjacent streets).
    c. Describe inverters and other key components to be used. Provide a site plan including location of inverter(s), utility disconnect, meter, point of interconnection (POI) or point of common coupling (PCC), panelboard and step up transformer (if applicable).
    d. Include module make/model, nameplate, tilt, azimuth, production per kW (specific yield in kWh AC/kWp), and annual kWh production.

b) Developers are encouraged to submit 3-D renderings for both solar canopy atop parking garages and ground mount carports. These renderings will provide WMATA with valuable insights on the functionality of the system and how it will appear visually to transit customers.

POST SELECTION SOLAR SYSTEM ENGINEERING AND DESIGN SUBMITTALS

a) Developers shall follow the WMATA Adjacent Construction Project Manual for project review, approval and operational support processes.
b) Following contract award, the Selected Proposer shall submit a 50% design within one month after award for interconnect application and a 90% design within two months for permitting, including but not limited to:
    i. A 50% design development drawing package shall at a minimum include status of approvals, relevant structural and mounting details, project phasing, project schedule, foundation layout, 50% level construction documentation of architectural, structural, civil, and electrical.
    ii. System specification and layout, which identifies PV system size and kWh produced (daily, monthly and annual) over the Project term. Include expected hourly energy production over five consecutive days with a minimum 4-hour period each test day during the performance test period.
    iii. Description of PV system equipment (module, inverter, and monitoring system), structure/mounting system and amount of parking area utilized. Shading analysis

via commercially available program and impact to kWh production is required.

iv. Description of the interconnection process. Include descriptions of anticipated utility power outages (shutdown) during tie-in to the distribution system and any impact to local customer/ power users.

v. Description of discretionary and administrative permitting processes at applicable levels including local, state and federal.

vi. Timeline/project schedule in GANTT chart, using MS Project, outlining time for design, procurement, construction/commissioning, and target commercial operation date.

c) A Project Management Plan (PMP), including:
   i. Organization/ project team structure, key personnel.
   ii. Project management and coordination approach.
   iii. Timeline showing milestones to achieve system operating status.
   iv. Risk management approach identifying key concerns and mitigation measures.
   v. Design (10%, 30%, 50%, 90%, IFC) management process and delivery approach.
   vi. Operations and Maintenance (O&M) management approach.
   vii. Ability to operate and maintain facility in compliance with all local, state and federal regulations.

d) 100% Construction Drawings produced shall require a stamp by applicable Licensed Professional Engineer, in the pertinent area of expertise. "100% Construction Drawings" means 100% design, ready for construction, i.e. Issue for Construction (IFC).

e) Deliverables shall be considered those tangible resulting work products which are to be delivered to WMATA, such as reports, draft documents, data, interim findings, drawings, schematics, meeting presentations, final drawings and reports. All deliverables and resulting work products will become the property of WMATA.

f) Prior to commencing construction activities, WMATA shall be provided for review and acceptance the following documentation:
   i. Photovoltaic system equipment details and descriptions.
   ii. Plans with PV system layout, including racking, module placement, conduit/raceways, conduit sizes, modules spacing, structural supports, etc.
   iii. Single line diagrams indicating system layout and all required connections to the utility, specifying the inverter models and ratings.
   iv. Licensed Professional Engineer verification that the system will meet wind load, seismic, and structural requirements.
   v. Electrical grid interconnection and approved agreement with the local utility.
   vi. Controls, monitors and instrumentation, including Web based monitoring.
   vii. Mounting details and appropriate certification.
   viii. System manuals and proposed preventative maintenance program.
   ix. An approved copy of each interconnect agreement and supporting documentation

COMMISSIONING, SYSTEM MONITORING AND REPORTING

a) Provide Commissioning Plan to include functional, start-up and performance test during various construction stages to validate system design parameters.

b) Equipment data acquisition system (DAS) for monitoring and reporting:
   i. Output at the array and subarray/panelboard level.
   ii. Inverter faults, service codes, and output at the inverter level.

iii. Revenue grade meter (ANSI 0.2% accuracy) for reporting.
iv. Weather station with sensors for monitoring weather parameters.
v. Data needed to meet industrial and/or DC/MD State requirements.
vi. Allow for system troubleshooting during routine or targeted O&M.
vii. Reporting on comparison of expected to actual production (performance ratio calculation) based on weather conditions.
viii. Documentation detailing assumptions in expected revenue and output.

c) During the system start-up, WMATA reserves the right to observe and verify each system's performance. Procedural information shall be provided that will be needed for emergency and/or shut down conditions that occur during install and interconnect. All testing shall be at the Selected Developer's expense. WMATA shall have the right to observe and confirm testing results. Required commissioning and acceptance test services include:
   i. Start up the solar PV system until it achieves a delivery of expected average hourly production for the applicable month of startup.
   ii. Successful registration for the Renewable Energy Credits with the District of Columbia and Maryland Public Service Commission as well as a signed Interconnect Agreement with all applicable requirements.
   iii. Provide electrical inspection certificate.
d) While WMATA will not own the solar systems installed by developer, it will only allow the system at a Project Site to go into commercial operation in its entirety upon verification of performance and operational testing periods. There will be no partial acceptance of the system at a Project Site, but WMATA may allow the system to go into operation on a Project Site-by-Project Site basis.
e) Within forty-five (45) days following the final Commercial Operation Date at any Project Site, the Selected Developer shall furnish one complete hard copy and an electronic copy of the solar PV system Operation and Maintenance Manual for that Project Site to WMATA.

OPERATION AND MAINTENANCE

a) Provide a written operation and maintenance plan to address items including but not limited to inspection procedures, including thermal/IR, electrical testing and re-torque, system performance evaluation, parts in need/spares in stock, cleaning/washing frequency, preventive maintenance, and emergency response/repair procedure.
b) No spare PV system equipment may be stored on WMATA property.
c) The entire solar PV system shall be inspected annually, and findings reported to WMATA. Any signs of corrosion or damage identified in the report or by WMATA shall be repaired within forty-five (45) days.
d) The Selected Developer shall be responsible for operation and maintenance of the solar PV system, including the lighting system (but not including the CCTV system) that is owned by WMATA. The maintenance shall be coordinated with WMATA at least forty-eight (48) hours in advance of the scheduled maintenance and in accordance with all requirements specified in the Contract Documents. Exceptions shall be granted for non-scheduled repairs, but the Selected Developer shall contact WMATA and coordinate site access.
e) WMATA will maintain landscaping on properties it owns or controls located adjacent to solar PV systems.

APPENDIX E: INSURANCE COVERAGE REQUIREMENTS

MINIMUM REQUIRED INSURANCE: MINIMUM LIMITS OF INSURANCE

INSURANCE TYPE	LIMITS	BASIS
Workers' Compensation	Statutory	
Employers' Liability	$500,000	Each Accident
	$500,000	Disease Policy Limit
	$500,000	Disease Each Employee
Commercial General Liability	$2,000,000	Each Occurrence Limit
	$4,000,000	General Aggregate Limit
	$2,000,000	Products-Completed Operations Limit
Business Auto Liability	$2,000,000	Combined Single Limit
Railroad Protective Liability Insurance (RRP)	$2,000,000	Each Occurrence Limit
For work within 50 feet of track only	$6,000,000	Aggregate Limit
Professional Liability	$5,000,000	Each Claim
Pollution Liability	$1,000,000	Each Claim

MINIMUM REQUIRED INSURANCE: MINIMUM INSURANCE COVERAGES AND COVERAGE PROVISIONS

- Selected Developer is required to maintain the prescribed insurance outlined in this Appendix during the entire period of performance under this Lease and will not be allowed to begin the Project work until all required insurance has been approved by WMATA.
- The prescribed insurance coverage and limits of insurance are minimum required coverages and limits. Selected Developer is encouraged, at its sole cost and expense, to purchase any additional insurance coverages and or limits of insurance that Selected Developer deems prudent and necessary to manage risk in the completion of this Lease.
- Upon written request from WMATA, Selected Developer shall provide copies of any requested insurance policies, including applicable endorsements, within five (5) business days of such request.
- Receipt, review or communications regarding certificates of insurance (**"COI"**), insurance policies, endorsements, or other materials utilized to document compliance

with these Minimum Insurance Requirements does not constitute acceptance by WMATA.

- Insurance companies must be acceptable to WMATA and must have an A.M. Best rating of at least A- VII.
- Unless otherwise noted, "Claims Made" insurance policies are not acceptable.
- Any insurance policy utilizing a Self-Insured Retention (SIR) requires written approval from WMATA.
- Selected Developer must incorporate these Minimum Insurance Requirements into contract requirements of all contractors and subcontractors of every tier; however, Selected Developer, at its sole peril, may amend these Minimum Insurance Requirements for its contractors and subcontractors, but doing so does not relieve Selected Developer from its own liability to WMATA.
- Compliance with these Minimum Insurance Requirements does not relieve Selected Developer from Selected Developer's own liability to WMATA, even if that liability exceeds the Minimum Insurance Requirements.

COVERAGE-SPECIFIC REQUIREMENTS

Commercial General Liability

- Commercial General Liability (**"CGL"**) shall be written on ISO Occurrence Form CG0001 (12/04) or its equivalent. Equivalency determination shall be made in WMATA's sole and unreviewable discretion.
- Required minimum limits of coverage may be achieved through a combination of the aforementioned CGL coverage form and an Umbrella/Excess Liability coverage form(s), provided that the Umbrella/Excess Liability coverage form(s) provides the same or broader coverage than the prescribed CGL coverage form.
- Policy shall be endorsed with Additional Insured Endorsement(s) in compliance with the "Additional Insured" section below.
- Policy shall be endorsed with a Waiver of Subrogation Endorsement(s) in compliance with the "Waiver of Subrogation" section below.
- The definition of "Insured Contract" shall be modified to provide coverage for contractual liability for any contracts involving construction or demolition operations that are within 50 feet of a railroad. Evidence of this modification shall be provided to WMATA along with all other required documents.
- Explosion, Collapse and Underground (XCU) activities shall be included.
- Defense Costs (Allocated Loss Adjustment Expense) must be included and outside of the policy limits for all primary liability and Umbrella/Excess Liability policies.

Business Auto Liability

- Business Auto Liability insurance shall be written on ISO Business Auto Coverage Form CA 00 01 03 06, or its equivalent. Equivalency determination shall be made in WMATA's sole and unreviewable discretion.
- Policy shall be endorsed with Additional Insured Endorsement(s) in compliance with the "Additional Insured" section below.

- Policy shall be endorsed with a Waiver of Subrogation Endorsement(s) in compliance with the "Waiver of Subrogation" section below.
- Business Auto Liability minimum Combined Single Limit requirements may be obtained through the combination of a primary business auto liability policy and an Umbrella/Excess Liability policy, provided that the Umbrella/Excess Liability policy complies with the two immediately preceding bullet points.
- MCS-90 Endorsement for work involving the transportation or disposal of any hazardous material or waste off of the jobsite. If the MCS-90 Endorsement is required, minimum auto liability limits of $5,000,000 per occurrence are also required as is form CA 99 48, broadened coverage for pollution liability.
- Non-Owned Disposal Site (NODS) Endorsement is required providing coverage for Selected Developer's legal liability arising out of pollution conditions at the designated non-owned disposal site.

Railroad Protective Liability

- Railroad Protective Liability Insurance (**"RRP"**) is required for any work within 50 feet of WMATA railroad tracks or work within Metrorail stations.
- The RRP policy must be on a policy form and with an insurance company that is acceptable to WMATA.
- WMATA shall be the Named Insured.
- The original RRP policy shall be sent to WMATA at following address:

  Washington Metropolitan Area Transit Authority
  Office of Insurance, Room 8F
  600 Fifth Street, NW
  Washington, DC 20001

- WMATA Blanket RRP Program Option: WMATA may offer to waive the requirement for the Selected Developer to procure RRP if i) the work qualifies for coverage under WMATA's blanket RRP program, and ii) Selected Developer prepays the RRP premium, which shall be determined by the rate schedule promulgated by the insurer in effect as of the effective date of this Lease. Selected Developer shall be advised of and pay the applicable premium.

Professional Liability Insurance

- Selected Developer, any contractor of any tier, or any supplier providing design services or the services of a professional engineer, including, but not limited to stamping, sealing, or certifying blueprints or other related documents, are required to maintain Professional Liability Insurance as follows:

  - Actual coverage or tail coverage must be purchased and maintained at least up to the statute of repose.
  - Coverage can be written on an "occurrence" or "claims-made" basis.
  - Coverage can be written on "non-admitted" paper.

Pollution Liability Insurance

- Selected Developer, any contractor of any tier, or any supplier performing work that may in any way involve contact with, exposure to or release of hazardous materials including but not limited to construction, soil testing and demolition, is required to maintain Pollution Liability insurance as follows:

    - Coverage can be written on an "occurrence" or "claims-made" basis.
    - Coverage can be written on "non-admitted" paper.
    - Policy shall be endorsed with Additional Insured Endorsement(s) in compliance with the "Additional Insured" section below.

ADDITIONAL INSURED

- Selected Developer and contractors of every tier are required to add WMATA and the WMATA Board of Directors as additional insured on all required insurance including excess liability policies, with the exception of Workers' Compensation and Professional Liability.
- Coverage provided to Additional Insured shall be primary and non-contributory to any other insurance available to the Additional Insured, including coverage afforded to WMATA as an additional insured by subcontractors and from other third parties.
- Coverage provided to any Additional Insured shall be for claims arising out of both ongoing operations and products and completed operations hazard.
- Coverage available to any Additional Insured under the products and completed operations hazard can only be limited to the applicable statute of repose in the jurisdiction(s) where the Work takes place.
- Commercial General Liability and Umbrella/Excess Liability forms must provide defense coverage for additional insureds. The Additional Insured Endorsement shall provide coverage for Ongoing as well as Products and Completed Operations with no limitation on when claims can be made.

WAIVER OF SUBROGATION

- Selected Developer and contractors of every tier are required to have all insurance policies except Professional Liability endorsed to waive the respective insurance company's rights of recovery against WMATA and the WMATA Board of Directors.
- Waiver shall be provided on an endorsement that is acceptable to WMATA.

CERTIFICATE OF INSURANCE (COI)

- Selected Developer shall provide WMATA an ACORD Certificate of Insurance and copies of all required endorsements as evidence that the insurance requirements of this Appendix have been satisfied. Certificates of Insurance shall reference "Station Solar Development" in the "Description of Operations" box and be sent to WMATA. The Certificate Holder box should read:

Washington Metropolitan Area Transit Authority
Office of Insurance, Room 8F
600 Fifth Street, NW
Washington, DC 20001

- Proposed material modifications to required insurance, including notice of cancellation, must be received by WMATA in writing at least thirty (30) days prior to the effective date of such change or cancellation.
- WMATA's receipt of copies of any COI, policy endorsements, or policies does not relieve Selected Developer of the obligation to remain in compliance with the requirements of this Appendix at all times. Selected Developer's failure to comply with these insurance requirements shall constitute a material breach of the Lease.
- Receipt of the COI does not constitute acceptance of the insurance outlined above.

APPENDIX F: DEVELOPER CERTIFICATION FORM

With respect to the undersigned's agreements to install photovoltaic and related facilities on sites owned by WMATA and to obtain a lease(s) in connection therewith pursuant to a Request for Proposals #20-01, the undersigned hereby certifies to the best of its knowledge and belief to WMATA that the undersigned and any of its principals:

1. Is/are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from an award of contracts by any governmental entity.

2. Has/have not within the past ten (10) years been convicted of or had a civil judgment rendered against it for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a contract or subcontract with any governmental entity; violation of antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating criminal tax laws, or receiving stolen property.

3. Is/are not presently indicted for or otherwise criminally or civilly charged by a governmental entity with commission of any of the offenses enumerated in the previous paragraph.

4. Is/are not in arrears or default of payment of any money or obligation of a value greater than Three Thousand Dollars ($3,000) to a governmental entity.

5. Has/have no adjudicated violations nor has paid penalties during the past ten (10) years relating to the housing and building laws, regulations, codes and ordinances of any governmental entity.

6. During the past ten (10) years has/have not had a license revoked that was issued in accordance with the housing, building or professional licensing laws, regulations, codes and ordinances of any governmental entity.

"Principal" means a partner, member, shareholder, officer, director, manager or other person with management or supervisory responsibilities or who is otherwise in a position to control or significantly influence the undersigned's activities or finances.

The undersigned further certifies:

a. It has not employed or retained any company or persons (other than a full-time, bona fide employee working solely for it) to solicit or secure an award pursuant to the RFP; and

b. It has not paid or agreed to pay, and shall not pay or give, any company or person (other than a full-time, bona fide employee working solely for it) any fee, commission, percentage, or brokerage fee contingent upon or resulting from an award

pursuant to the RFP; and

c. No person or entity currently employed by or under contract with WMATA, or employed by or under contract with WMATA within the past twelve (12) months, or with material input into the matters covered by the RFP and employed by or under contract with WMATA at any time in the past: has provided any information to it that was not also available to all other persons who responded to the RFP; is affiliated with or employed by it or has any financial interest in it; provided any assistance to it or its parent, subsidiary or affiliates in responding to the RFP; or will benefit financially from the project contemplated by the RFP; and

d. Neither the undersigned nor any of its employees, representatives or agents have offered or given gratuities or will offer or give gratuities (in the form of entertainment, gifts or otherwise) to any director, officer or employee of WMATA with the view toward securing favorable treatment in the selection of a awardee pursuant to the RFP or in any determination made with respect to the selection of the awardee, or in the negotiation, amendment or performance of any contractual agreement arising from the RFP; and

e. It agrees to furnish information relating to the above as requested by WMATA.

If the undersigned is unable to certify to the foregoing in whole or in part, the undersigned has attached an explanation to this certification.

The undersigned further certifies that:

a. It is aware of and accepts all of the terms of the lease(s) and other agreements between WMATA and the undersigned or the undersigned's affiliates as outlined in the RFP; and

b. It has the power and authority to enter into the foregoing lease(s) and other agreements required by WMATA without the consent or joinder of any other party or authority (except as envisioned by the RFP).

These certifications are a material representation of fact upon which reliance will be placed by WMATA. The undersigned shall provide immediate written notice to WMATA if at any time it learns that its certification was erroneous when submitted or has become erroneous since that time. If it is later determined that the undersigned knowingly rendered an erroneous certification or failed to notify WMATA if and when the undersigned gained knowledge that its certification was erroneous when submitted or has become erroneous since that time, then, in addition to any other remedies available to WMATA, WMATA may in its sole, absolute and subjective discretion terminate negotiations of, or the actual, foregoing lease(s) and other agreements.

[NAME OF DEVELOPER]

By: _____
Name:
Title:

Date: _____, 20__

APPENDIX G: ECONOMIC INCLUSION GOALS

1. **Definition. "CBE"** means a company certified by one or more of any of the following government agencies as a local, small, women-owned, minority-owned, disabled-owned, and/or veteran-owned firm:

    a. U.S. Small Business Administration
    b. U.S. Department of Transportation
    c. D.C. Department of Small Local Business Development
    d. Maryland Governor's Office of Small Minority & Women Business Affairs
    e. Maryland Department of Transportation
    f. Women's Business Enterprise National Council
    g. Capital Region Minority Supplier Development Council
    h. Prince Georges County's Supplier Development and Diversity Division
    i. Virginia Department of Small Business and Supplier Diversity
    j. Metropolitan Washington Unified Certification Program

2. **CBE Goals**. WMATA has established a twenty percent (20%) CBE goal for the Project. That is, it is WMATA's goal that twenty percent (20%) of the final Project budget (the "**Project CBE Goal**") be contracted with and/or expended on CBE firms. This is a goal, not a requirement. Line items such as insurance, permits, regulatory fees, contingency are not required to be included in the final Project budget for purposes of calculating the Project CBE Goal. No other budget line items may be excluded from the final Project budget for purposes of calculating the Project CBE Goal without WMATA approval.

3. **CBE Plan.** No later than signing the Lease, the Selected Developer shall submit to WMATA for approval its CBE plan that identifies, at a minimum: (i) the Selected Developer's marketing plan to promote the Project's contracting opportunities for CBEs; (ii) a list of trades, goods, services and/or other contracts to be targeted to achieve the Project CBE Goal; (iii) a compliance and reporting plan; and (iv) the inclusion of applicable provisions from WMATA's "Disadvantaged Business Enterprise" guidelines. This CBE plan may be updated from time to time by the Selected Developer, but each such update must be submitted to and approved by WMATA before it may be implemented.

4. **Reporting.** The Selected Developer shall maintain thorough records of all Project costs throughout the term of the Project. The Selected Developer shall submit a quarterly report with the amount of money contracted (planned and actual) with CBEs against the overall Project budget, as well as against the general contractor's contract sum. The quarterly report will include the list of CBE companies that have been contracted with, the amount expended on each contract to date, the certification status they enjoy (e.g., MBE, WBE, DBE, etc.), affirmation that the certification is current, and the agency that provided the certification.

APPENDIX H: APPROVED FORM OF LETTER OF CREDIT FOR SECURITY DEPOSIT

[NAME AND ADDRESS OF ISSUING BANK]
NOTE: ADDRESS MUST BE IN THE WASHINGTON, D.C. METROPOLITAN AREA]

STANDBY IRREVOCABLE LETTER OF CREDIT

[Date]

[Reference Number]

Washington Metropolitan Area Transit Authority
600 Fifth Street, N.W.
Washington, D.C. 20001
Attn: Vice President, Office of Real Estate and Parking

Gentlemen:

By the order of _____ (the "Applicant"), we hereby open in your favor our irrevocable letter of credit for the amount of _____ Dollars (U.S.) (U.S. $_____), available by your draft(s) at sight drawn on us at the above address and accompanied by a statement purportedly signed by an authorized signer on your behalf substantially in the form of Exhibit A attached hereto. All drafts drawn in compliance with the terms of this instrument will be duly honored upon presentation. Drafts need not be endorsed on this letter of credit itself and the original of this letter of credit need not accompany any presentment. Presentation may be made in person, by messenger or by overnight courier service, or by mail. Presentation shall be made to us at the following address:

_____

.

This initial term of this letter of credit expires on _____, 20__ and shall automatically be renewed from year-to-year thereafter, without amendment or notice to you or to the Applicant, unless we give you actual written notice of nonrenewal at least two (2) months prior to any annual expiration date. Such notice of nonrenewal shall be given by Registered Mail or by overnight courier to your address as stated above or to such other address as you give us notice of, as stated below. Upon your receipt of such notice, you

may draw on us prior to the then-relevant expiration date for the unused balance of this letter of credit. If an expiration date is a Saturday, Sunday, legal holiday or other day on which we are not open for business for the presentment of letters of credit, the expiration date shall automatically be extended to our next business day.

We agree to deliver payment in full of each draft made on this instrument, without any processing, check, renegotiation or other fees whatsoever, to your offices set forth above, or to such account as you may give us wiring instructions, within thirty-six (36) hours (not including Saturdays, Sundays or legal holidays) after the time of presentment.

We will accept any and all presentations and statements delivered pursuant to this instrument as conclusive, binding and correct. We have no duty to investigate, and shall not investigate or be responsible for, the accuracy, truthfulness, correctness or validity of any such presentment or statement, notwithstanding the claim of any person to the contrary.

Partial drawings are permitted. Draws under this letter of credit will be honored in the order received, as determined by us (any such determination to be conclusive), and to the extent that there remains an amount available to satisfy the most recent draw.

You may change your address for receipt of notices under this letter of credit by giving us notice of your changed address.

Notwithstanding Article 38D of the UCP (as defined below), this letter of credit is transferable, without any transfer fee, and may be transferred successively by subsequent transferees. Transfers shall be effectuated upon presentation of the original of this letter of credit and any amendments hereto, accompanied by our transfer form appropriately completed.

Except to the extent inconsistent with the express terms of this letter of credit, this letter of credit shall be governed by the Uniform Customs and Practices for Documentary Credits (2007 Rev.), International Chamber of Commerce Publication No. 600 (the "UCP") and, to the extent not so governed, by the statutes and case law of the District of Columbia.

Very truly yours,

[NAME OF ISSUING BANK]

By: _____
Name:
Title:

Exhibit A to
Letter of Credit

[Date]

[NAME OF ISSUING BANK]
[ADDRESS OF ISSUING BANK]

Attn: _____

Subject: Your letter of credit number _____
dated _____, 20__ (the "Letter of Credit")

Gentlemen:

The undersigned hereby certifies that it is entitled to draw on the Letter of Credit under the terms of either (i) that certain Joint Development Agreement dated as of _____, 20__ between the Washington Metropolitan Area Transit Authority and _____, as it may have been amended, supplemented, assigned or otherwise modified to date, or (ii) the Letter of Credit itself, as it may have been amended, supplemented, assigned or otherwise modified to date.

The undersigned hereby presents the Letter of Credit for payment in the amount of _____ Dollars ($_____).

Very truly yours,

[NAME OF THEN-CURRENT BENEFICIARY]

By: _____
Name:
Title: