

**BEFORE THE
NEW JERSEY BOARD OF PUBLIC UTILITIES**

**IN THE MATTER OF THE PETITION OF OCEAN WIND LLC
PURSUANT TO N.J.S.A. 48:3-87.1(F) FOR A DETERMINATION
THAT CERTAIN EASEMENTS AND CONSENTS NEEDED FOR
CERTAIN ENVIRONMENTAL PERMITS IN, AND WITH RESPECT
TO, THE COUNTY OF CAPE MAY ARE REASONABLY
NECESSARY FOR THE CONSTRUCTION OR OPERATION OF
THE OCEAN WIND 1 QUALIFIED OFFSHORE WIND PROJECT**

Direct Testimony

of

Jason Kalwa

**Re: Ocean Wind 1 Onshore Transmission
and Interconnection Related Facilities to be
Constructed and Installed in
Cape May County, New Jersey**

Dated: May 20, 2022

1

2 **I. INTRODUCTION AND BACKGROUND**

3 **Q. Please state your name and business address.**

4 A. My name is Jason Kalwa. My business address is 80 Park Plaza, Newark, NJ
5 07101.

6 **Q. By whom are you employed and in what capacity?**

7 A. I am employed by the Public Service Enterprise Group (“PSEG”) based in Newark,
8 New Jersey as a Director – Projects Onshore Technical. With the team of
9 professionals reporting to me, I am responsible for managing the scope, schedule,
10 and budget for the construction of the onshore transmission and interconnection
11 related facilities associated with Ocean Wind LLC’s (“Ocean Wind”) Qualified
12 Offshore Wind Project (“QOWP”), as well as other non-Project related
13 responsibilities for PSEG.

14 **Q. Please describe your professional experience and educational background.**

15 A. I have been employed by PSEG since 2006 in various roles involving the
16 construction and maintenance of transmission facilities. My educational
17 background includes earning a Bachelor of Science degree in Computer
18 Engineering from the New Jersey Institute of Technology, and a Master of Business
19 Administration from Rutgers, The State University of New Jersey. My education,
20 experience and qualifications are fully set forth in Appendix A to my testimony.

21 **Q. Have you previously testified in Board of Public Utilities (“Board” or “BPU”)**
22 **proceedings?**

1 A. Yes. I submitted pre-filed testimony in support of Ocean Wind’s Petition to the
2 Board in BPU Docket No. QO22020041.

3 **Q. What is the purpose of your testimony?**

4 A. I am testifying on behalf of the petitioner, Ocean Wind, in support of its Petition
5 seeking a determination that certain easements, and certain consents for New Jersey
6 Department of Environmental Protection (“NJDEP”) permits in the County of Cape
7 May, New Jersey (“Cape May County,” or “County”) are reasonably necessary for
8 the construction or operation of the Ocean Wind 1 QOWP (“Ocean Wind 1”;
9 “Project”). More specifically, my testimony will describe the onshore export cable,
10 onshore substation, and grid interconnection line, which comprise the onshore
11 transmission and interconnection-related facilities (the “Facilities”) to be
12 constructed near, in, and through Cape May County, including, for purposes of
13 demarcation and clarity, Ocean City, New Jersey (“Ocean City”), as part of the
14 Project. I will describe the development and construction of the Project Facilities
15 in and through Cape May County along certain routes as described in the Petition,
16 also including an overview of the County street/road opening permit(s) necessary
17 for such construction, and, where necessary, the engineering specifications for, the
18 methods to be deployed in, as well as the proposed interconnection and operation
19 of the Facilities along the Project route, the selection of which is discussed and
20 explained by witness Pilar Patterson in her direct testimony filed in this proceeding
21 as Exhibit OW-2.

22

1 **Q. Can you explain PSEG’s involvement in and with Ocean Wind 1 Project?**

2 A. Yes. PSEG Renewable Generation, LLC owns a 25% equity interest in Ocean
3 Wind, which is developing the Project. For Ocean Wind 1, PSEG will use its
4 substantial experience in constructing and operating transmission infrastructure
5 throughout New Jersey, to lead the development, permitting and construction of the
6 onshore portions of the Ocean Wind 1 Project’s onshore transmission and
7 interconnection-related facilities, including the Facilities. PSEG is a diversified
8 energy company, with operations primarily in the Northeastern and Mid-Atlantic
9 regions of the United States.

10 **Q. Can you elaborate briefly on your specific role on the Project?**

11 A. Yes. As I indicated above, I am the onshore substations and export cables lead for
12 the Project. In that capacity, I manage the scope, schedule, and budget for the
13 Facilities. These responsibilities entail managing a team of professionals
14 comprised of Project Managers, Project Engineers, and Project Controls (cost and
15 schedule) staff that assist me in carrying out those responsibilities. More
16 specifically, these responsibilities include overseeing the ongoing engineering and
17 construction of the Facilities and providing support to our permitting groups who
18 ensure that the permits associated with my areas of responsibility, and that are
19 reasonably necessary for the Project, are timely obtained to allow for the
20 commencement and completion of construction and operation of, in this case, the
21 Facilities, which are necessary for the operation of the Project.

22

1 **II. OVERVIEW OF THE ONSHORE FACILITIES.**

2 **Q. Please generally describe the onshore Facilities required by Ocean Wind 1.**

3 A. Generally speaking, the Ocean Wind 1 Project, which is an approximate 1,100 MW
4 offshore wind farm that will generate electricity for delivery to the PJM grid, will
5 require electrical facilities onshore to transmit the offshore wind farm's generation
6 to an onshore point of interconnection with the electrical grid. In the case of the
7 Project, that will require electric transmission export cables (sometimes also
8 referred to as generator leads, comprised of an offshore undersea section and an
9 onshore underground section), that together will create a circuit that will transmit
10 electrical output from the offshore wind farm substation to the onshore substation,
11 and then from the onshore substation to the PJM grid connection point. The
12 undersea section of the export cables will come ashore in Ocean City, from which
13 point the onshore section of the export cables will run underground under public
14 streets and roads in Ocean City and then through other parts of Cape May County.
15 In this case, the onshore export cables will ultimately connect to a substation,
16 comprised of switchgear and transformers, which, in turn, will interconnect to the
17 PJM grid.

18 **Q. What is meant by the PJM grid?**

19 A. PJM Interconnection, L.L.C. ("PJM") is a regional transmission organization that
20 coordinates the movement of wholesale electricity, including the interconnection
21 of generators (such as the Project) to the electric grid, in all or parts of Delaware,
22 Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina,
23 Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of

1 Columbia. Since 2018, Ocean Wind has been engaged with PJM regarding the
2 interconnection requests for the Project.

3 **III. FACILITIES DETAIL**

4 **Q. Please provide a more detailed description of the components of the Facilities**
5 **mentioned in your general description, beginning with the cable.**

6 A. For purposes of the Project's PJM grid connection through Cape May County, the
7 transmission export cables, or generator lead, will connect the wind farm's offshore
8 substation to the Project's onshore substation in Upper Township in Cape May
9 County. From there, a grid interconnection line, also sometimes referred to as a
10 generator lead, will connect the Project's onshore substation to the onshore point
11 of interconnection, delivering the electricity from the offshore wind farm to the
12 PJM grid. The onshore section of the export cables is currently planned to be
13 comprised of buried cable, while the grid interconnection line, which only exists in
14 Upper Township (and is not at issue in this Petition), is comprised of both buried
15 cable and overhead lines. The overhead portion of the grid interconnection line is
16 relatively short and located directly adjacent to Atlantic City Electric's ("ACE")
17 B.L. England Substation in Upper Township, New Jersey. All of the onshore export
18 cable through Cape May County is expected to be situated underground.

19 **Q. Will the cable be direct buried or installed in conduit?**

20 A. The onshore export cables construction is expected to be a configuration of duct
21 banks to help to ensure that the onshore cables and conduits are appropriately
22 situated within existing road right-of-ways as much as feasible and, to the extent
23 possible, to minimize disturbance using conventional construction activities

1 utilizing standard traffic management arrangements. At (i) the planned landfall at
2 35th St. in Ocean City, (ii) the crossing of Crook Horn Creek near Roosevelt
3 Boulevard, and (iii) where the cables traverse the properties near the onshore
4 substation, it is planned that the onshore export cables will also be underground in
5 conduit (but not in duct banks) using trenchless underground construction
6 techniques.

7 **Q. Please describe the dimensions of the conduit/duct work.**

8 A. The onshore export cable duct bank, which is a reinforced concrete container that
9 will house the three conduits containing the export cables (one cable per conduit),
10 is expected to be about 4 feet wide and buried with a target burial depth of 3 feet.
11 Please see Appendix B for a representative cross section of the duct bank design.
12 Please note, however, that the design is not yet finalized but is expected to be
13 similar to what is shown. The grid interconnection duct bank may have additional
14 conduits as 6 cables may be needed for that circuit. The duct bank serves as a form
15 of further protection for the conduit and the cable contained within the conduit.
16 There will also be accessible splice vaults installed along the export cables route to
17 facilitate the splicing (or joining) of cable sections. The splice vaults will also be
18 buried underground with only the access lids (or manhole covers) visible from the
19 surface. Where, as mentioned above, it is anticipated that trenchless underground
20 techniques will also be utilized for installing and routing the onshore export cables,
21 conduit (but not duct banks) will be used.

22

1 **Q. Please describe and explain the voltage and size of the cables to be utilized.**

2 A. The voltage of the onshore export cables is expected to be 275 kV with each of the
3 three terrestrial cables expected to be about 6 inches in diameter. The cable
4 themselves are insulated. The landfall export cable voltage is also expected to be
5 275 kV, with an overall diameter of about 15 inches since the landfall export cables
6 are bundled together as opposed to being separated as is the case for the onshore
7 export cables. The landfall export cables are also insulated and are designed for a
8 marine environment. The grid interconnection circuit (which is not at issue in this
9 proceeding) is expected to be 138 kV and, as discussed above, a portion of it is
10 planned to be overhead with the remaining portion expected to be underground.
11 The overhead portion in Upper Township is expected to be about 100 feet long
12 while the underground portion is about 1000 feet long. For the underground
13 portion, each of the potentially six terrestrial cables is expected to be about 6 inches
14 in diameter and these cables are also insulated. For the overhead portion each of
15 the wires is expected to be less than 3 inches in diameter per wire.

16 **Q. Please describe the substation.**

17 A. The onshore substation is planned as a 275 kV-138 kV substation comprised of
18 various pieces of equipment, all of which will be designed to provide the required
19 functionality to achieve local grid code compliance. I want to note that the onshore
20 substation is to be located in Upper Township and is not part of this Petition;
21 however, I am providing details of the substation as part of the overall description
22 of the onshore cable route for purposes of demarcation and clarity.

1 **Q. Please generally describe the equipment associated with the substation.**

2 A. The substation, which will transform the voltage of the electricity from the wind
3 farm’s offshore substation to the voltage compatible with the grid interconnection
4 line to which it interconnects, will be comprised of various pieces of equipment
5 typically associated with any substation, such as transformers, circuit breakers, and
6 switchgear. The substation is also planned to include harmonic filters, reactors, and
7 a static synchronous compensator or “STATCOM,” which is used for voltage
8 regulation.

9 **Q. Please describe the point of interconnection and the purpose of it.**

10 A. The point of interconnection is at the existing ACE B.L. England substation, to
11 which the Project’s new onshore substation will connect.

12 **Q. Has the Ocean Wind 1 Project procured any of these Facilities as of this time?**
13 **If so, please describe what has been procured. If not, please explain the**
14 **anticipated timeline, and process, for procuring the Facilities.**

15 A. Consistent with the Project planning timeline, contracts covering the engineering,
16 procurement, and installation of the onshore substation, grid interconnection, and
17 onshore export cables in Cape May County have been executed. This will support
18 the planned construction schedule.

19 **IV. CONSTRUCTION PLAN AND PERMITTING**

20 **Q. Please describe and explain the planned onshore route and/or location for the**
21 **Facilities.**

22 A. While Witness Patterson (in her direct testimony filed in this proceeding as Exhibit
23 OW-2) will discuss the route selection process, I will describe and explain the

1 construction related to two alternatives under consideration for the bridge crossing
2 of Crook Horn Creek (at Peck's Bay), (which are referred to herein as "Alternative
3 1" and "Alternative 2"). I also note that as between Alternative 1 and Alternative
4 2, neither substantially changes the engineering, design or construction of the
5 onshore export cables. It is also helpful to recognize that Alternative 1 and
6 Alternative 2 are substantially the same route except that Alternative 1 passes to the
7 north of the Roosevelt Blvd bridge while Alternative 2 passes to the south of the
8 bridge. Please reference Appendix C, which shows Alternative 1 and Alternative
9 2, along with designations of the planned approximate location of the Facilities –
10 the exact locations will be finalized as the design and construction progresses. As
11 mentioned earlier, the offshore export cables from the offshore substation, which is
12 connected to the wind farm, is planned to come onshore at 35th St. in Ocean City
13 and from there will be connected to the onshore export cables, which will follow
14 either Alternative 1 or Alternative 2, using easements and public road rights-of-way
15 ("ROW"), as the case may be, in and through Cape May County, and will connect
16 with the onshore substation in Upper Township, New Jersey. To be clear, in any
17 locations where the route of the export cables does not utilize public ROW, then,
18 as discussed in Ms. Patterson's testimony, easement rights and/or other consents
19 (which are the focus of this proceeding) will be obtained.

20 **Q. Are there any differences in impact on traffic as well as public access, especially**
21 **as it relates to tourism? How did these impacts weigh in the cable route**
22 **selection process?**

1 A. In terms of the route selection process, impacts from construction methods,
2 including impacts on traffic and tourism, are taken into account, with the intent to
3 minimize such impacts consistent with Ms. Patterson's testimony. In addition, the
4 Project's construction schedule attempts to reduce impacts on both tourism and
5 traffic by optimizing the off-peak season to the extent feasible, practicable and on
6 a timeline consistent with meeting Project construction milestones.

7 **Q. Earlier in your testimony, you referred to distinguishing between those**
8 **segments of the route that are exclusively related to Cape May County, as**
9 **opposed to the route that is unique and distinct to Ocean City. Can you provide**
10 **that distinction now?**

11 A. Yes. Please refer to Appendix C, which provides the demarcation of the various
12 segments, in light of our understanding from the County that Cape May County
13 maintains jurisdiction over a portion of 35th St., Bay Avenue, and Roosevelt
14 Boulevard in Ocean City, while Ocean City itself has jurisdiction over the remaining
15 portion of 35th St. Appendix C is comprised of 5 pages. The first page provides an
16 overall map view of the route and the Alternative 1 and Alternative 2 segments. The
17 next four pages provide a closer and more detailed view with useful annotations and
18 explanatory legend, note and references.

19 **Q. Please discuss the engineering design features of the onshore routing and**
20 **location of the Facilities.**

21 A. In Cape May County, including, for purposes of demarcation and clarity, Ocean
22 City, the export cables are planned to be underground cables, operated at 275 kV,
23 and is mostly expected to be in a concrete-encased duct bank. As indicated above,

1 at the Crook Horn Creek crossing and landfall, it is expected that the export cables
2 will be in conduit most likely using a trenchless technology for the underground
3 installation. The location is mainly expected to be within public roadways except
4 as explained above.

5 **Q. How will the Facilities to be located within Cape May County, along the routes**
6 **described in the Petition, be constructed and installed?**

7 A. The export cable construction will follow typical utility construction techniques.
8 The duct bank portion will mostly involve creating a trench, installing the facilities,
9 and then back-filling and restoring the area (*e.g.*, paving). The duct bank installation
10 will be performed using conventional construction equipment (*e.g.*, hydraulic
11 excavators, and dump trucks). As indicated earlier, at landfall, the Crook Horn Creek
12 crossing, and near the substation in Upper Township, trenchless construction
13 methods are planned.

14 **Q. You have made several references to the use of trenchless technologies or**
15 **trenchless construction techniques. Can you please elaborate on what you**
16 **mean and what is entailed in the deployment of such techniques?**

17 A. Yes. Trenchless construction is a type of underground construction that requires
18 few or no trenches at the surface or street level. This type of construction where it
19 can be utilized efficiently can be less disruptive than traditional underground
20 construction techniques. For our purposes, we are talking about horizontal
21 directional drilling. This technique will require an entry and exit pit, which involves
22 small temporary excavations to facilitate the utilization of a surface-launched
23 drilling rig. The support equipment and materials, includes the drilling rig, which

1 sits behind the entry pit, and a second drill rig, or sometimes an excavator or similar
2 equipment, sits at the exit pit. Between these two pits, the cables can be installed
3 without ongoing disturbance to the surface.

4 **Q. Can you further explain the use of the trenchless construction methods for the**
5 **crossing at Crook Horn Creek?**

6 **A.** Yes. For Alternative 1, it is anticipated that (i) the entry pit necessary with the use
7 of this technology will be located on the west side of Crook Horn Creek within the
8 footprint of the existing marina, and (ii) the corresponding exit pit will be located
9 on the east side in proximity to the Roosevelt Blvd northern turnaround. For
10 Alternative 2, it is anticipated that (i) the entry pit will be located on the west side
11 of Crook Horn Creek within the footprint of the highway maintenance facilities
12 property, a portion of which is leased by the Ocean City Crew Boosters, Inc. (or its
13 successor, if any) for use by the Ocean City High School Crew Team, and (ii) the
14 corresponding exit pit will be located on the east side in proximity to Nautilus Drive.
15 Current engineering planning anticipates that the trenchless directional drilling
16 approach at Crook Horn Creek would be undertaken during the off-season (*i.e.*,
17 during an approximately six-month window) and should result in only short-term,
18 temporary impacts on the ordinary use of the area. We expect the process to take
19 about 3-6 months within that window. Later in my testimony I outline how such
20 impacts will be addressed.

1 **Q. Who will manage the construction of the Facilities?**

2 A. My team and I are responsible for managing the construction of the Facilities on
3 behalf of the Project utilizing a variety of resources including construction
4 contractors.

5 **Q. Can you be more specific about the complement of contractors to be deployed?**

6 A. The plan is to use a variety of contractors that have experience in the construction
7 of electrical facilities, utilizing local union labor.

8 **Q. Please provide the anticipated time that will be needed to begin and complete
9 the construction and installation within Cape May County.**

10 A. The Project is anticipated to be complete with testing and energization,
11 approximately 2 years after the start of construction. The associated onshore export
12 cable installation is anticipated to be completed within that same period.

13 **Q. Does Ocean Wind know at what point in the projected timeline for completion
14 of the Project, will the construction and installation of the Facilities take place
15 within Cape May County?**

16 A. Yes. As indicated above, the Project is expected to take approximately 2 years to
17 complete with the associated construction within Cape May County, being
18 completed within that time frame. Construction of the Project after all approvals
19 and permits are secured is anticipated to begin in 2023. Construction work with
20 respect to the onshore export cables is anticipated to be in an approximate range of
21 from 1 to 2 years.

22 **Q Are the construction and installation methods you describe consistent with
23 applicable industry and other applicable standards? Please explain.**

1 A. Yes, the methods I describe and that will be utilized are consistent with typical
2 industry-wide underground transmission construction, and in New Jersey as well.

3 **Q. Will the streets and roads within Cape May County be disturbed by the**
4 **construction and installation of the Facilities? If so, how will they be restored**
5 **after construction is complete?**

6 A. Yes, to install the Facilities, a trench will need to be opened in the roadways for a
7 period of time for the duct-bank and splice vaults to be installed. In the areas where
8 the trenchless techniques are planned, temporary openings of slightly longer
9 duration are expected near the entrance and exit pits to facilitate trenchless
10 construction. After installation, the area will be restored (for instance, in County
11 roadways, the area will be paved). In addition, temporary lane and road closures are
12 expected to facilitate and expedite safe and efficient construction of the Facilities.

13 **Q. Will the streets and roadways along the described routes that are disturbed be**
14 **restored? How and when and to what standards?**

15 A. Yes, as indicated above, the affected area of the County roadways will be paved per
16 standard specifications, which will be coordinated with Cape May County.

17 **Q. Are there existing pipes, wires and cables in place under the streets and roads**
18 **of Cape May County along the routes described in the Petition?**

19 A. Yes. Gas, electric, water, sewer equipment and facilities are common beneath the
20 roads and streets of, not only Cape May County, but all counties and municipalities
21 in the State of New Jersey.

22 **Q. Do those facilities include the use of conduit and/or duct banks?**

23 A. Yes.

1 **Q. Can there be conflicts between these various uses within the same roads and**
2 **streets and how are such conflicts managed or avoided?**

3 A. In general, such conflicts can occur but are generally managed or avoided through
4 cooperation and communication among the interested and affected parties.

5 **Q. Does the Project have a plan for addressing, managing and avoiding such**
6 **conflicts with respect to the Facilities to be located in Cape May County along**
7 **the routes described in the Petition? If so, please describe it.**

8 A. Yes, as the design progresses, as is typical with similar utility installations,
9 investigations will be performed where necessary to verify the location of existing
10 facilities. The Project will coordinate with the interested and affected parties to
11 manage or avoid such conflicts, and come up with plans to deal with potential
12 conflicts that arise during construction. This includes avoiding disturbance to the
13 maximum extent practicable to temporary structures, public use, or other leased or
14 permitted use(s) of the public ROW (such as, for example, the area leased by Ocean
15 City Crew Boosters, Inc.). Where necessary, steps will be taken to ensure
16 arrangements are made for temporary facilities and equivalent use to the extent
17 practicable, through direct engagement with affected parties. The direct testimony
18 of Madeline Urbish filed in this proceeding as Exhibit OW-3 also discusses the
19 outreach to affected parties, such as Ocean City Crew Boosters, Inc. Mitigation
20 plans resulting from such collaboration would emphasize public safety and control
21 of the worksite for the duration required to complete all activities near or on the
22 affected areas.

1 **Q. Aside from the permits and approvals discussed in witness Pilar Patterson’s**
2 **direct testimony, does the Project require construction-related street/road**
3 **opening permits?**

4 A. Yes, for proposes of constructing and installing the onshore Facilities that will be
5 located within the Cape May County roadways, a road opening permit from Cape
6 May County will be necessary.

7 **Q. Has the Project applied for such permit?**

8 A. Not as of yet. In general, the application of the actual street opening permit occurs
9 relatively closer in time to the commencement of construction, which in this case
10 with respect to the Facilities is expected to begin in 2023. However, the Project
11 has consulted with and engaged in discussions and meetings as detailed in the
12 testimony of Witness Madeline Urbish in her direct testimony filed in this
13 proceeding as Exhibit OW-3, so that Cape May County is aware that construction
14 in the County’s public road ROW will be necessary for the Project.

15 **Q. Are you aware of any technical, safety, or operational impediment to the**
16 **installation of the Facilities in Cape May County along the routes described in**
17 **the Petition?**

18 A. No. We do not expect there to be any public safety or other safety issues or concerns
19 or any technical or operational impediment, as construction of the Facilities involves
20 standard regularly deployed utility-type construction similar to what already exists
21 in Cape May County and throughout New Jersey. As is typical of such types of
22 construction projects, the Project generally consults and discusses its anticipated
23 construction plans with Cape May County. The construction planning for the

Facilities takes into account Cape May County's general construction requirements, including any fees. As indicated above, the Project has reached out to, and will continue to engage in communications with, the County engineering department regarding these kind of requirements before and during the permitting process. To the extent that Cape May County provides reasonable feedback regarding the Project's plans for constructing the Facilities, such feedback will also be taken into account. Construction plans for the Facilities are planned to be completed well in advance of the actual planned time for commencing construction, and the Project will submit plans or drawings to Cape May County as required.

V. OPERATION AND MAINTENANCE OF THE FACILITIES

Q. Please describe the operation and maintenance of the Facilities to be situated within Cape May County along the routes described in the Petition.

A. The operation and maintenance to the facilities within Cape May County is expected to involve routine inspection of the Facilities, which will involve, for example, workers entering the splice vaults through the access lids that will be visible on the roadway. This is typical of underground transmission maintenance in the industry and in New Jersey.

Q. Will the operation of the Facilities within Cape May County along the routes described in the Petition be obvious to the residents of the County?

A. No, the operation is expected to be similar to other underground utilities, in particular, other underground electric facilities within Cape May County. The underground configuration and operation of these Facilities is virtually invisible to

1 local residents and passers-by. Only during periods of repair or replacement might
2 there be any noticeable presence by inspectors, line workers, or other contractors.

3 **Q. What is the anticipated frequency of maintenance activities on or with respect**
4 **to the Facilities located within Cape May County along the routes described in**
5 **the Petition?**

6 A. For routine maintenance, it is expected inspections may occur a few times per year.

7 **Q. On average, based on industry experience, what kinds of failures can be, and**
8 **with what frequency are failures, anticipated to the types of Facilities to be**
9 **located in Cape May County along the routes described in the Petition, over**
10 **the lifetime of the Project?**

11 A. Failures on the cables themselves are not anticipated, but can occur and are most
12 likely to occur at the splice points where cables are joined together. Failures can
13 also occur along the length of the cable. Overall, the risk of failures is expected to
14 be minimal over the lifetime of the Project.

15 **Q. What maintenance or repair work is likely to be required and how evident will**
16 **such work be to the residents of Cape May County?**

17 A. For cable repairs or where cable replacement may be required, most of the work is
18 likely to take place near the splice vaults where the cable can be accessed, repaired
19 and/or replaced as needed. In a scenario where the conduit may have been
20 damaged, a spot excavation and repair may be needed along the route. Therefore,
21 the work will likely be more localized to the area directly surrounding the splice
22 vaults or spot repair and, therefore, would not be expected to have wide spread
23 impacts to the residents of Cape May County.

1 **Q Does the Project require an interconnection agreement in order to interconnect**
2 **with the existing electric grid?**

3 A Yes, as I discuss above, the Facilities will be connected to a substation to be located
4 in Upper Township, New Jersey. That substation, in turn, will interconnect with the
5 ACE transmission system. Therefore, a PJM Interconnection Agreement involving
6 Ocean Wind, ACE and PJM is required.

7 **Q. What is the status of that Interconnection Agreement?**

8 A. It has been executed.

9 **Q. At what voltage will the Ocean Wind onshore facilities interconnect with ACE's**
10 **electric system?**

11 A. 138 kV.

12 **VI. CONCLUSION**

13 **Q. Can you please summarize your testimony?**

14 A. Yes. I have summarized or described the onshore transmission and interconnection
15 related Facilities associated with the Project. The Facilities through Cape May
16 County will be constructed, operated and maintained similar to other underground
17 utility and utility-like facilities in Cape May County and throughout New Jersey.
18 Similar to other types of underground electric transmission line facilities, the
19 construction of the Facilities will require a road opening permit from the Cape May
20 County Engineering Department for the construction of the portion of the onshore
21 cable route within and through the Cape May County streets and roads and the
22 Project will continue to engage in communications with the County engineering

1 department regarding the County's general construction-related requirements before
2 and during the permitting process.

3 **Q. Does this conclude your direct testimony?**

4 A. Yes, it does.

5

Experience and Qualifications of Jason Kalwa

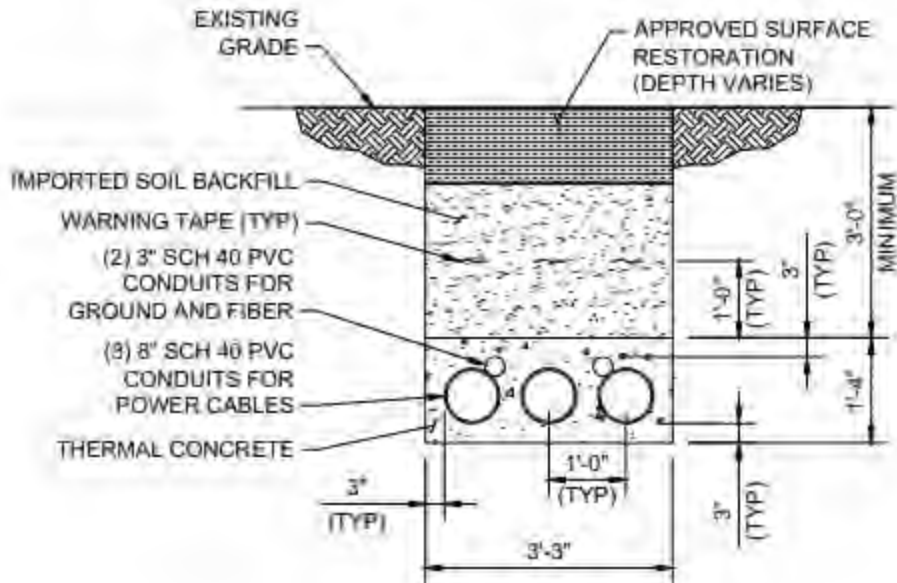
I am the Director, Offshore Wind Department for PSEG Services, a subsidiary of PSEG. I have held this position since July 2021. My responsibilities include overseeing a team of project management, project engineering, and project controls personnel involved in the development and execution of the scope, schedule, and budget of portions of various offshore wind projects, including providing support for the execution of the Ocean Wind Project, due diligence on a potential investment in other offshore wind projects, as well as development of a bid PSEG submitted with Orsted proposing an expansion to the transmission system supporting offshore wind development in NJ. My support is specifically focused on the onshore aspects of the projects (e.g. onshore substation and onshore transmission lines). Prior to that, from January 2021 to July, 2021, I was Senior Project Manager, Offshore Wind Department in which position I also supported the execution of the Ocean Wind Project, due diligence on a potential investment in other offshore wind projects, as well as development of a bid PSEG submitted with Orsted proposing an expansion to the transmission system supporting offshore wind development in NJ.

Prior to January 2021, I was Senior Project Manager, in the Delivery Projects and Construction Department at Public Service Electric and Gas Company (PSE&G) a position I held since January 2017. In that position, I was responsible, among other things, for the execution of various electric transmission projects and support of offshore wind projects. Such projects included the installation of electric transmission lines (230kV and 345kV). Prior to that I have also held a variety of positions at PSE&G; namely, (i) Project Manager, Delivery Projects and Construction Department from March 2014 to January 2017, when I worked on various electric transmission projects (138kV, 230kV, 345kV, and 500kV) and co-lead the department's Summer

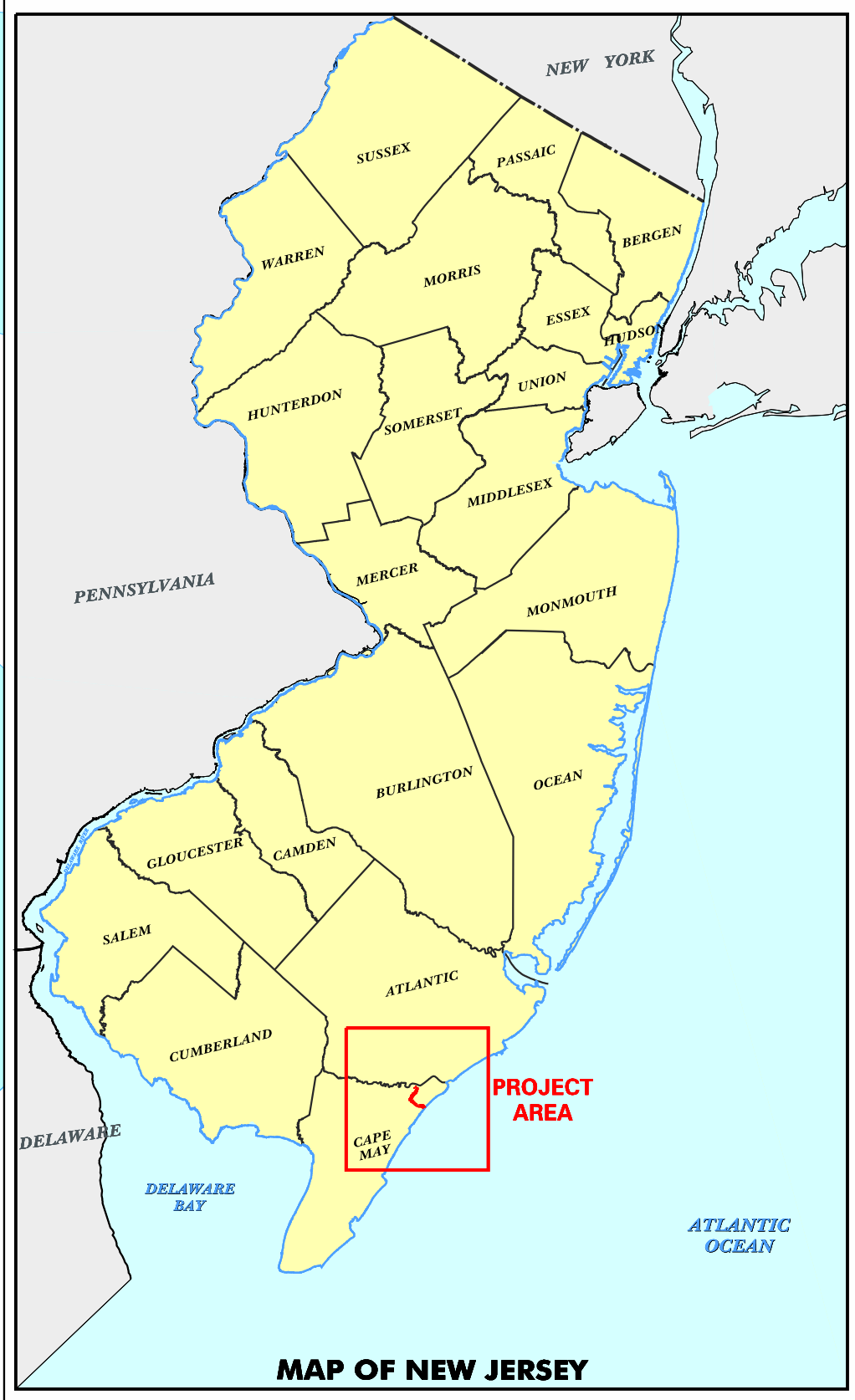
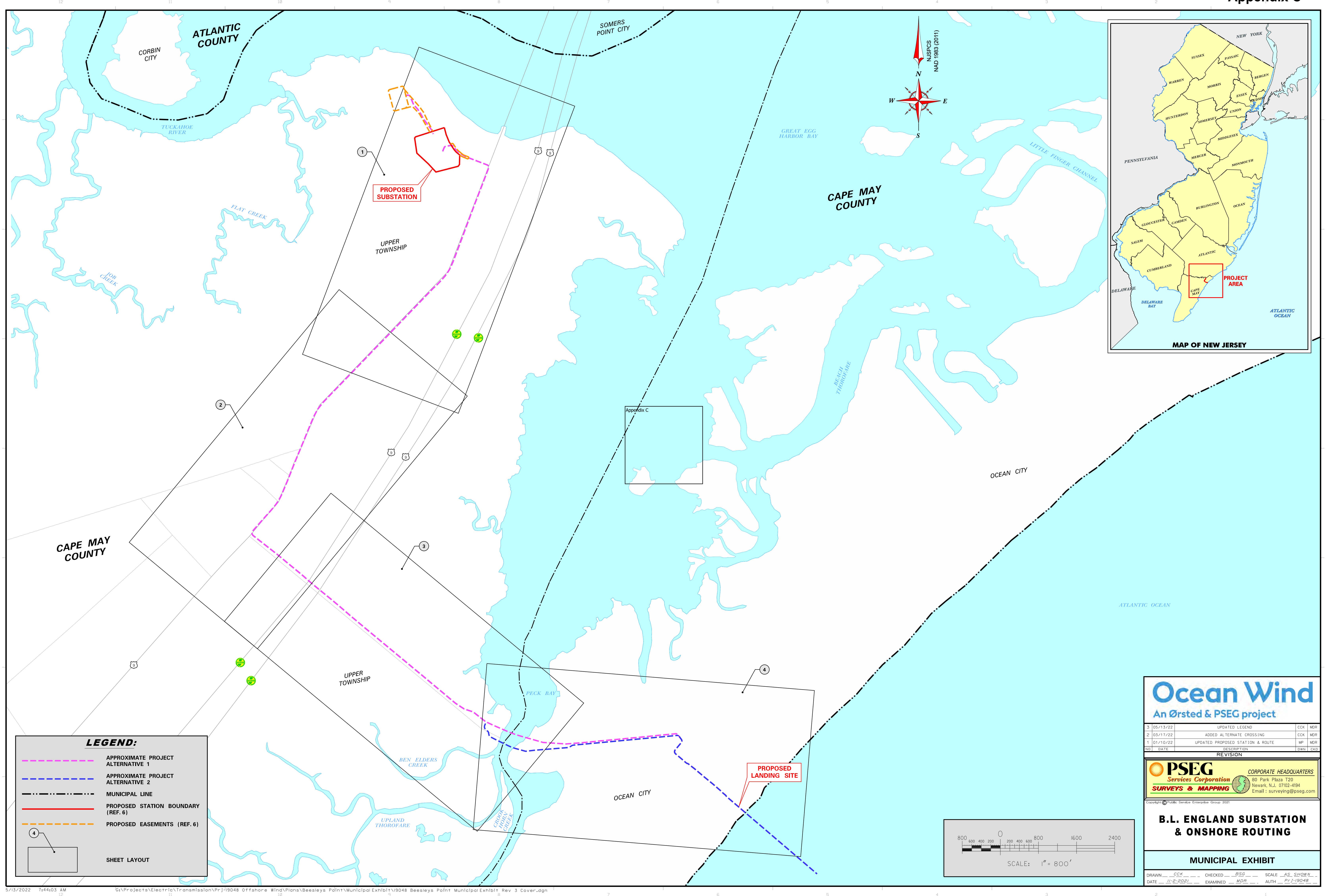
internship program, (ii) Supervising Engineer, Delivery Projects and Construction Department from December 2010 to March 2014, when I supported the execution of PSE&G's portfolio of projects within PJM Interconnection's Regional Transmission Expansion Plan (RTEP) and provided guidance to the department's engineers and staff engineers, (iii) Engineer, Electric Transmission Construction and Maintenance Department from May 2008 to December 2010, when, among other things, I acted in a construction management role for various electric transmission projects, such as the construction of new electric transmission lines as part of RTEP, to ensure their successful completion and supported the inspection and maintenance of existing electric transmission lines to guarantee the reliability of the PSE&G electric system; and (iv) Technical Intern, Electric Transmission Construction and Maintenance Department from June 2006 to May 2008 when I updated and maintained the records of PSE&G's transmission assets utilizing a geographic information system (GIS), and maintained an electronic database of the transmission line inspection records.

I have a Master of Business Administration from Rutgers University with a concentration in Strategy and Leadership, and a Bachelor of Science from New Jersey Institute of Technology: Albert Dorman Honors College, in Computer Engineering. I am a certified as a Project Management Professional (PMP), by the Project Management Institute (PMI).

Appendix B



**ONSHORE TRANSMISSION SINGLE-CIRCUIT
DUCT BANK SECTION**
NOT TO SCALE



Ocean Wind
An Ørsted & PSEG project

3	09/13/22	UPDATED LEGEND	CCX	MDR
2	03/17/22	ADDED ALTERNATE CROSSING	CCX	MDR
1	01/10/22	UPDATED PROPOSED STATION & ROUTE	MP	MDR
NO	DATE	DESCRIPTION	DWN	CKD

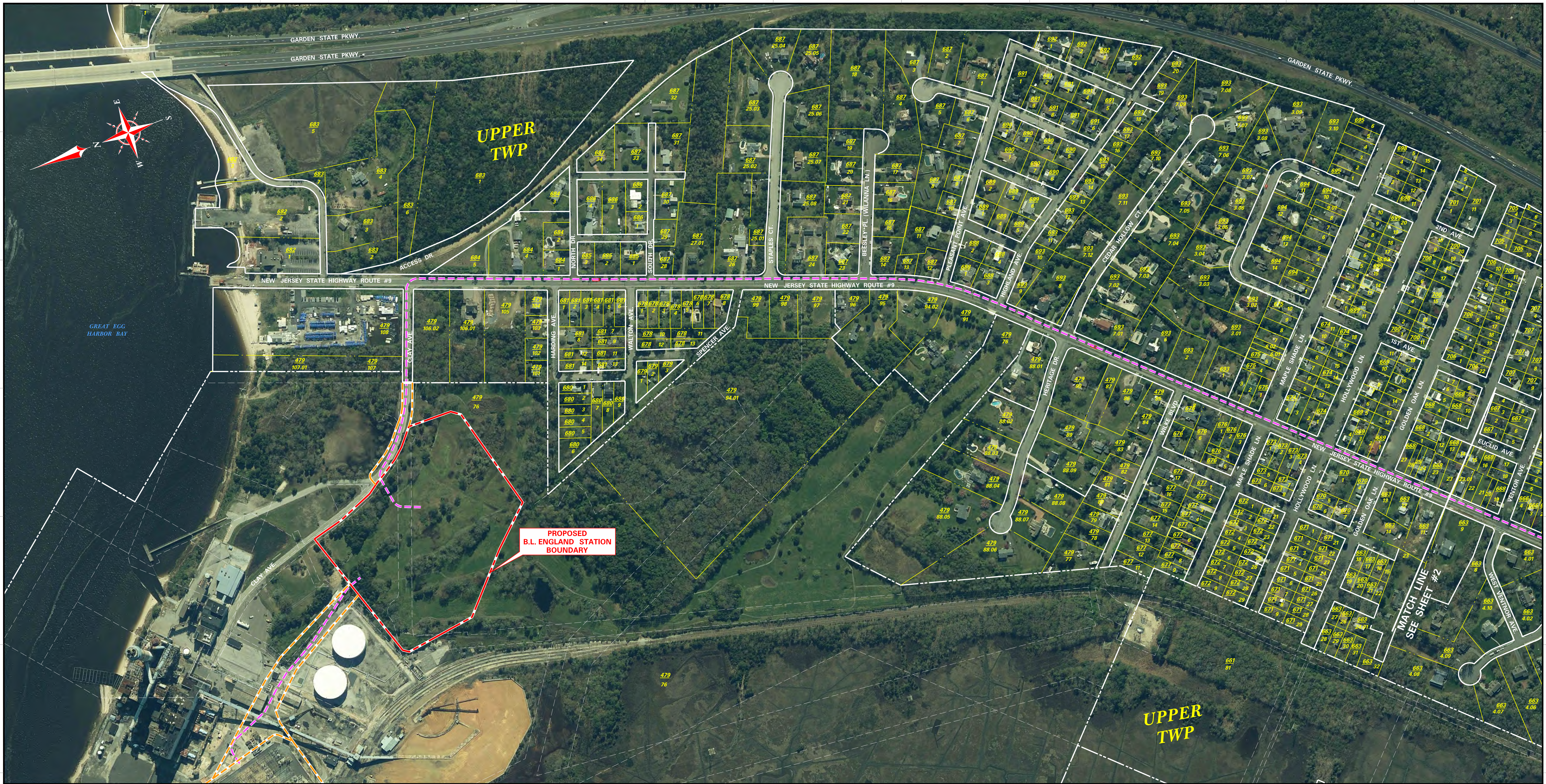
**PSEG**
Services Corporation
SURVEYS & MAPPING

CORPORATE HEADQUARTERS
80 Park Plaza T20
Newark, N.J. 07102-4194
Email : surveying@pseg.com

**B.L. ENGLAND SUBSTATION
& ONSHORE ROUTING**

MUNICIPAL EXHIBIT

DRAWN CCX CHECKED BSG SCALE AS SHOWN
DATE 11-2-2021 EXAMINED MDR AUTH PRJ-19048



LEGEND	
NOT ALL ITEMS ARE TO SCALE	
	APPROXIMATE PROJECT ALTERNATIVE 1
	APPROXIMATE PROJECT ALTERNATIVE 2
	PROPOSED STATION PROPERTY BOUNDARY (REF. 6)
	PROPOSED EASEMENTS (REF. 6)
	MUNICIPAL LINE
	TAX BLOCK LINE & NUMBER
	TAX LOT LINE & NUMBER
	UTILITY EASEMENTS

NOTES:

1. MAPPING IS BASED ON THE NJ STATE PLANE COORDINATE SYSTEM. HORIZONTAL DATUM = NAD-83(2011) UNITS = U.S. FOOT

2. THESE PLANS ARE FOR DISPLAY PURPOSES ONLY AND NOT INTENDED FOR CONSTRUCTION.

REFERENCES:

1. RIGHT OF WAY INFORMATION BASED ON SURVEYS PREPARED THROUGH AUGUST 24, 2021, BY FRAUNGER ENGINEERING, BRIDGEFORD, NJ.

2. NEW JERSEY STATE ORTHOPHOTOGRAPHY WAS CAPTURED IN APRIL AND MAY 2016, AND PRODUCED AT A SCALE OF 1:2400 (1"=200') WITH A 1 FOOT PIXEL RESOLUTION, PROVIDED BY NJ OFFICE OF INFORMATION TECHNOLOGY (NJ.OIT), OFFICE OF GEOGRAPHIC INFORMATION.

3. TOWNSHIP OF UPPER TAX MAP SHEETS 27.01, 27.02, 27.03, 27.04, 27, 28.01, 28.02, 28.03, 28.04, 28 & 29.

4. OCEAN CITY TAX MAP SHEETS 2, 27, 28, 33, 34, 35 & 335.

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6. OPTION AGREEMENT TO PURCHASE BETWEEN RC CAPE MAY HOLDINGS, LLC AND OCEAN WIND LLC DATED AS OF JANUARY 31, 2020

Ocean Wind

An Ørsted & PSEG project

3	09/13/22	UPDATED LEGEND	CCK	MDR
2	03/17/22	ADDED ALTERNATE CROSSING	CCK	MDR
1	01/10/22	UPDATED PROPOSED STATION & ROUTE	MP	MDR
NO	DATE	DESCRIPTION	OWN	CHKD
REVISION				

Services Corporation

SURVEYS & MAPPING

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Newark, N.J. 07102-4194

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B.L. ENGLAND SUBSTATION
& ONSHORE ROUTING

UPPER TWP

CAPE MAY CO., N.J.

MUNICIPAL EXHIBIT

DRAWN: CCK

CHECKED: BSG

SCALE: AS SHOWN

DATE: 11-2-2021

EXAMINED: MDR

AUTH: PR-19048

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SHEET 1



LEGEND	
NOT ALL ITEMS ARE TO SCALE	
	APPROXIMATE PROJECT ALTERNATIVE 1
	APPROXIMATE PROJECT ALTERNATIVE 2
	PROPOSED STATION PROPERTY BOUNDARY (REF. 6)
	PROPOSED EASEMENTS (REF. 6)
	MUNICIPAL LINE
	TAX BLOCK LINE & NUMBER
	TAX LOT LINE & NUMBER
	UTILITY EASEMENTS

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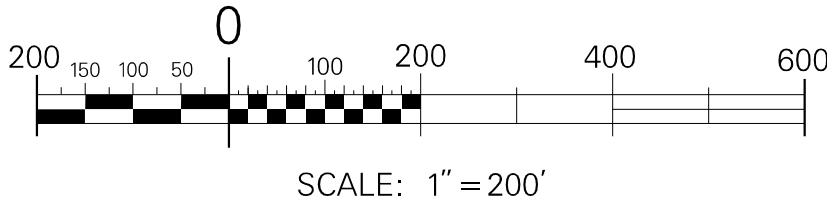
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Ocean Wind

An Ørsted & PSEG project

30/13/22

03/17/22

01/10/22

UPDATED LEGEND

ADDED ALTERNATE CROSSING

UPDATED PROPOSED STATION & ROUTE

CKK

CKK

MDR

MDR

OWN

CKD

PSEG

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Newark, N.J. 07102-4194

Email: surveying@pseg.com

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& ONSHORE ROUTING

UPPER TWP

CAPE MAY CO., N.J.

MUNICIPAL EXHIBIT

DRAWN: CKK
DATE: 11-2-2021

CHECKED: BSG
EXAMINED: MDR

SCALE: AS SHOWN
AUTH: PRJ-19048

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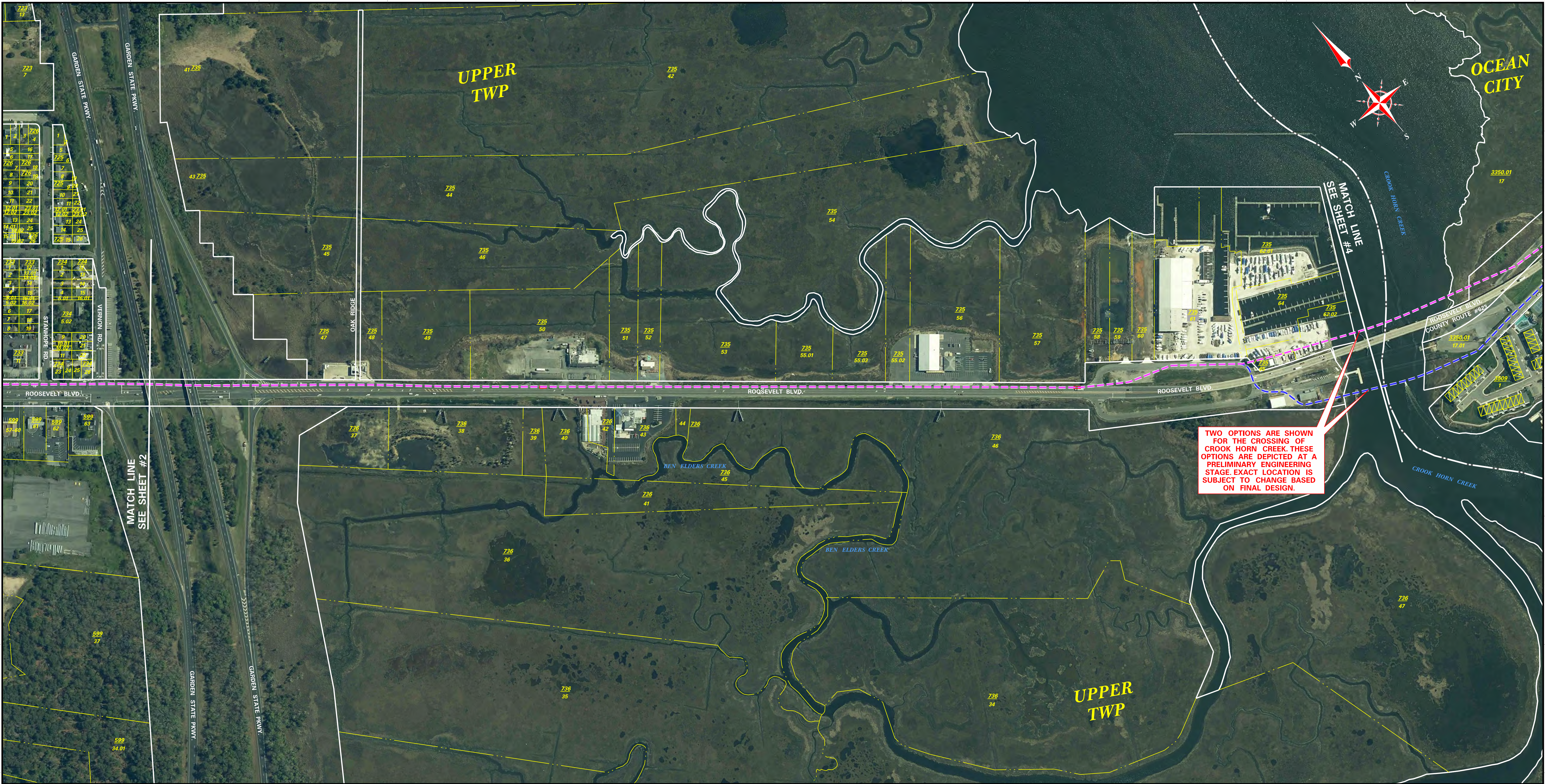
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SHEET 2



TWO OPTIONS ARE SHOWN FOR THE CROSSING OF CROOK HORN CREEK. THESE OPTIONS ARE DEPICTED AT A PRELIMINARY ENGINEERING STAGE. EXACT LOCATION IS SUBJECT TO CHANGE BASED ON FINAL DESIGN.

LEGEND	
NOT ALL ITEMS ARE TO SCALE	
	APPROXIMATE PROJECT ALTERNATIVE 1
	APPROXIMATE PROJECT ALTERNATIVE 2
	PROPOSED STATION PROPERTY BOUNDARY (REF. 6)
	PROPOSED EASEMENTS (REF. 6)
	MUNICIPAL LINE
	TAX BLOCK LINE & NUMBER
	TAX LOT LINE & NUMBER
	UTILITY EASEMENTS

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1	01/10/22	UPDATED PROPOSED STATION & ROUTE	MP	MDR
NO	DATE	DESCRIPTION	OWN	CKD
REVISION				

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Newark, N.J. 07102-4194

Email : surveying@pseg.com

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& ONSHORE ROUTING

OCEAN CITY
UPPER TWP

CAPE MAY CO., N.J.
CAPE MAY CO., N.J.

MUNICIPAL EXHIBIT

DRAWN CCK

CHECKED BSG

SCALE AS SHOWN

DATE 11-2-2021

EXAMINED MDR

AUTH PRJ-19048

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SHEET 3



LEGEND	
NOT ALL ITEMS ARE TO SCALE	
	APPROXIMATE PROJECT ALTERNATIVE 1
	APPROXIMATE PROJECT ALTERNATIVE 2
	PROPOSED STATION PROPERTY BOUNDARY (REF. 6)
	PROPOSED EASEMENTS (REF. 6)
	MUNICIPAL LINE
	TAX BLOCK LINE & NUMBER
	TAX LOT LINE & NUMBER
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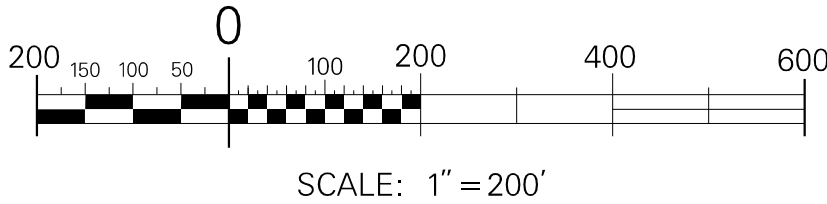
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Ocean Wind

An Ørsted & PSEG project

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1	01/10/22	UPDATED PROPOSED STATION & ROUTE	MDR	MDR
NO	DATE	DESCRIPTION	MDR	CKD
REVISION				

PSEG
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UPPER TWP

CAPE MAY CO., N.J.
CAPE MAY CO., N.J.

MUNICIPAL EXHIBIT

DRAWN	CKK	CHECKED	BSG	SCALE	AS SHOWN
DATE	11-2-2021	EXAMINED	MDR	AUTH	PR-19048