June 2023

BEACON WIND PROJECT:
Beacon Wind 1 and Beacon Wind 2

CONSTRUCTION AND OPERATIONS PLAN

VOLUME 2C: Cultural Resources

Prepared for

Beacon Wind LLC

Submitted to

Bureau of Ocean Energy Management

Prepared by

AECOM

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6.0 Cultural Resources

Cultural resources include archaeological sites, historic standing structures, objects, districts, and traditional cultural properties that illustrate or represent important aspects of precontact (before circa [ca.] Anno Domini [AD] 1600) or history (after ca. AD 1600) or that have important and long-standing cultural associations with established communities or social groups. Significant archaeological and architectural properties are generally defined by the eligibility criteria for listing in the National Register of Historic Places (NRHP). Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108) is triggered when projects require federal permits, receive federal funding, or occur on federal lands. Such federal undertakings require consultation by federal agencies with the applicable State Historic Preservation Office (SHPO) and interested Native American Tribes. In 2016, BOEM executed a Programmatic Agreement with the State Historic Preservation Officers of New Jersey and New York, the Shinnecock Indian Nation, and the Advisory Council on Historic Preservation (ACHP) to formalize agency jurisdiction and coordination for the review of offshore renewable energy development regarding cultural resources. The Programmatic Agreement recognized that issuing renewable energy leases in the OCS constituted an undertaking subject to Section 106 of the NHPA. BOEM, as lead federal agency in this process, has the authority to initiate consultations with the New York and New Jersey SHPOs, and to consult with interested Native American Tribes (BOEM 2016a). These consultations identify the area of potential effects (APE) and potential impact-producing factors to historic properties, as defined in 36 CFR 800.16(l), that are listed in, or are potentially eligible for listing in, the NRHP.

BOEM is the lead federal agency for the Project, which is considered an undertaking pursuant to Section 106 (54 USC § 300101) of the NHPA and the *Programmatic Agreement Among The U.S. Department of the Interior, Bureau of Ocean Energy Management, The State Historic Preservation Officers of New Jersey and New York, The Shinnecock Indian Nation, and The Advisory Council on Historic Preservation Regarding Review of Outer Continental Shelf Renewable Energy Activities Offshore New Jersey and New York Under Section 106 of the National Historic Preservation Act* (BOEM 2016a). BOEM will initiate Section 106 consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) which acts as the New York State Historic Preservation Office (NY SHPO), the Connecticut State Historic Preservation Office (CT SHPO), and the Massachusetts State Historic Preservation Office (MA SHPO), as well as federally recognized Native American Tribes and other consulting parties. Those consultation and engagement activities conducted to date with the NY SHPO, the CT SHPO, the MA SHPO, and Tribal Governments are addressed in **Appendix B Summary of External Engagement Activities**.

Beacon Wind proposes to develop the entire Lease Area with up to two individual wind farms for BW1 and BW2, with a submarine export cable route for BW1 to Queens, New York and a submarine export cable route for BW2 to either Queens, New York or to Waterford, Connecticut. Two locations are under consideration in Queens, New York (NYPA and AGRE, which includes AGRE East and AGRE West) for the single proposed BW1 landfall and onshore substation facility. The Queens, New York onshore substation facility site that is not used for BW1 (NYPA, AGRE East, or AGRE West) will remain under consideration, in addition to the Waterford, Connecticut site, for the single proposed BW2 onshore substation facility.

This section discusses cultural resources including marine and terrestrial archaeological resources as well as architectural resources. Potential impacts to cultural resources resulting from the construction, operations, and conceptual decommissioning of the Project are discussed. Proposed Project-specific measures adopted by Beacon Wind are also described, which are intended to avoid, minimize, and/or mitigate potential impacts to cultural resources.

This COP includes three subsets of historic properties, each discussed in separate sections and Appendices:

- Marine Archaeological Resources (**Section 6.1** and **Appendix U Marine Archaeological Resources Assessment**);
- Terrestrial Archaeological Resources (**Section 6.2** and **Appendix V Terrestrial Archaeological Resources Assessment**); and
- Above-ground Historic Properties (**Section 6.3** and **Appendix W** Historic Resources Visual Effects **Analysis**).

In addition, other resources and assessments detailed within this COP that are related to historic properties include:

- Visual Resources (**Section 7)**; and
- Seascape, Landscape, and Visual Impact Assessment (**Appendix X**).

6.1 Marine Archaeological Resources

This section discusses marine archaeological resources within and surrounding the offshore portions of the Project Area for the Lease Area and along the BW1 and BW2 submarine export cable corridor to Queens, New York and/or Waterford, Connecticut. Potential impacts to marine archaeological resources resulting from construction, operations, and decommissioning of the Project are discussed. Proposed Project-specific measures adopted by Beacon Wind are also described, which are intended to avoid, minimize, and/or mitigate potential impacts to significant marine archaeological resources (see **Sections 6.1.1**, **6.1.2**, and **6.1.3**).

Other resources and assessments detailed within this COP that are related to marine archaeological resources include:

- Marine Archaeological Resources Assessment (**Appendix U**).

The marine archaeological resources assessment is being performed pursuant to 30 CFR § 585.626(a)(5); 30 § 585.627(a)(6); BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (BOEM 2020); *Programmatic Agreement Among The U.S. Department of the Interior, Bureau of Ocean Energy Management, The State Historic Preservation Officers of New Jersey and New York, The Shinnecock Indian Nation, and The Advisory Council on Historic Preservation Regarding Review of Outer Continental Shelf Renewable Energy Activities Offshore New Jersey and New York Under Section 106 of the National Historic Preservation Act* (BOEM 2016a); Section 106 of the National Historic Preservation Act (54 USC § 300101) and its implementing regulations at 36 CFR 800; the Secretary of the Interior's Standards and Guidelines (48 FR44738-44739); the Archaeological Resources Protection Act (ARPA) of 1979; and the Abandoned Shipwrecks Act of 1988 (43 USC 2101-2106).

Data Relied Upon and Studies Completed

This section was prepared in accordance with 30 CFR § 585.627(a)(6) to support BOEM's review of the COP through the NEPA and NHPA processes. A multi-factor approach is being undertaken to identify marine archaeological resources that are listed in, eligible for listing in, or potentially eligible for listing in the NRHP within the marine archaeological preliminary APE (PAPE). Because BOEM has not yet defined a specific APE for the Project and Project design has not been finalized, the marine archaeological APE is referred to as the PAPE. This approach included a literature review of previous investigations and external data sources as well as on-going analysis of geophysical, geotechnical, and other field and lab collected data to identify unknown marine archaeological resources and to identify areas within the PAPE that have a high potential to contain unknown marine archaeological resources, which are discussed in **Appendix U Marine Archaeological Resources Assessment**.

The PAPE (171,922 ac [69,574 ha]) includes the surveyed areas within which offshore Project components may be constructed and consists of two major components including the Lease Area and submarine export cable corridor (**Figure 6.1-1** and **Table 6.1-1**). Project components within the Lease Area (128,811 ac [52,128 ha]) will consist of up to 155 wind turbines and up to two offshore substation facilities for a total of up to 157 foundations. In addition, there will be up to 373 mi (324 nm, 600 km) of interarray cables, all of which will be in federal waters within the Lease Area. Wind turbine foundations are anticipated to have a vertical impact of 66 to 262 ft (20 to 80 m), while offshore substation foundations are anticipated to have a vertical impact of 59 or 328 ft (18 or 100 m), based on the chosen foundation design. The maximum impact due to interarray cables will be a depth of 8.0 ft (2.4 m), no anchoring will occur during interarray cable installation. Anchoring (jack up vessels) within the Lease Area will occur within a 656 ft (200 m) radius circular work zone around each wind turbine foundation and a 984 ft (300 m) radius circular work zone around each offshore substation foundation.[1]

In addition to the Lease Area, the Project will consist of two submarine export cables (BW1 and BW2) within a single submarine export cable corridor to New York and/or Connecticut (43,111 ac [17,446 ha]) to deliver power from the Lease Area to onshore POIs (see **Figure 6.1-1, Figure 6.1-2**, and **Table 6.1-1**). The submarine export cable corridor has a maximum width of 1,640 ft (500 m) (820 ft [250 m] on either side of the centerline). The maximum cable depth is up to 18 ft (5.5 m), with a target burial depth of 3.0-6.0 ft (0.9-1.8 m) and 15 ft (4.6 m) in federally maintained navigation channels.[2] Anchoring within the submarine export cable corridor will have a maximum vertical impact of 49 ft (15 m).

[1] Engineering leg penetration analysis to determine maximum vertical impacts of jack up vessels is ongoing, but will not exceed the current maximum impacts due to wind turbine and offshore substation foundations.

[2] Beacon Wind is in coordination with the USACE as it relates to future plans associated with these USACE-managed areas, and the potential for an increase in the authorized depths. Final burial depth will be based upon the cable burial risk assessments and is subject to regulatory approval.

TABLE 6.1-1. SUMMARY OF MARINE ARCHAEOLOGICAL PAPE a/

Project Component	Maximum Horizontal Effect	Maximum Vertical (Depth) Effect
Lease Area	128,811 ac (52,128 ha)	328 ft (100 m)
Submarine Export Cable Corridor to Queens, New York (Total length of 202 nm [375 km]) (BW1 and BW2) or to Waterford, Connecticut (Total length of 113 nm [209 km]) (BW2)	1,640 ft (500 m)	49 ft (15 m)

Notes:
a/ This table details the Marine Archaeological PAPE associated with installation activities; Project operations and maintenance activities will occur within this maximum horizontal and vertical effects, as detailed in this table. The BW2 submarine export cable will be installed no less than 33 ft (10 m) and no greater than 164 ft (50 m) from the adjacent BW1 submarine export cable.

External data sources consulted for the marine archaeological analysis and the **Appendix U Marine Archaeological Resources Assessment** include:

- BOEM *Commercial Wind Lease Issuance and Site Assessment Activities on the Outer Continental Shelf Offshore New York: Revised Environmental Assessment* (BOEM 2016b);
- New York State Historic Preservation Office (NYSHPO);
- Connecticut State Historic Preservation Office (CTSHPO);
- NOAA Automated Wreck and Obstruction Information System (AWOIS) (NOAA 2021a)
- NOAA Electronic Navigational Charts (ENC) (NOAA 2021b).
- Global Maritime Wrecks Database (GMWD); and
- BOEM Atlantic Shipwreck Database.

Field data collection and analysis efforts for the **Appendix U Marine Archaeological Resources Assessment** include utilizing data from the HRG survey campaign and the geotechnical coring campaign. The HRG survey instruments included multibeam echo sounder, side-scan sonar, sub-bottom profiler, and gradiometer data collection that will be utilized to identify shipwrecks, submerged aircraft, and other maritime resources and aid in reconstructing the paleolandscape. The HRG and geotechnical survey plans were developed in consultation with a qualified marine archeologist (QMA), as required by BOEM. The HRG survey campaign for the Lease Area and the submarine export cable corridor have been completed. The geotechnical survey campaign for the Lease Area and submarine export cable corridor are on-going and collected data will be utilized, in conjunction with the HRG data, to develop a paleolandscape model for the PAPE and identify former subaerial paleolandscapes with potential to contain intact precontact cultural deposits (**Table 6.1-1**). Identification of potential historic marine archaeological resources will rely heavily on gradiometer and side-scan data, while identification of pre-contact submerged archaeological resources will rely heavily on sub-bottom profiler imagery and geotechnical data.

FIGURE 6.1-1. MARINE ARCHAEOLOGICAL PAPE

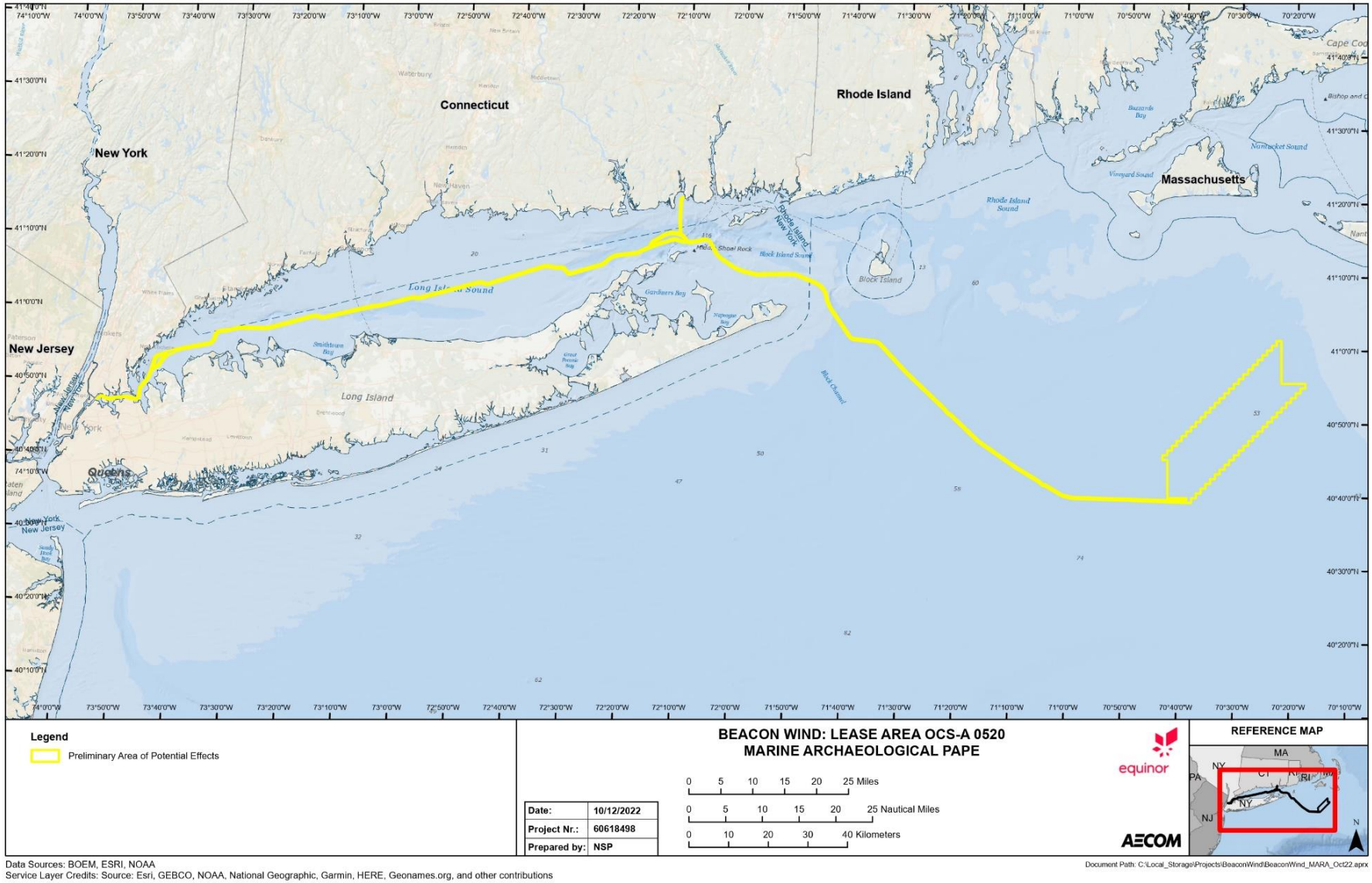
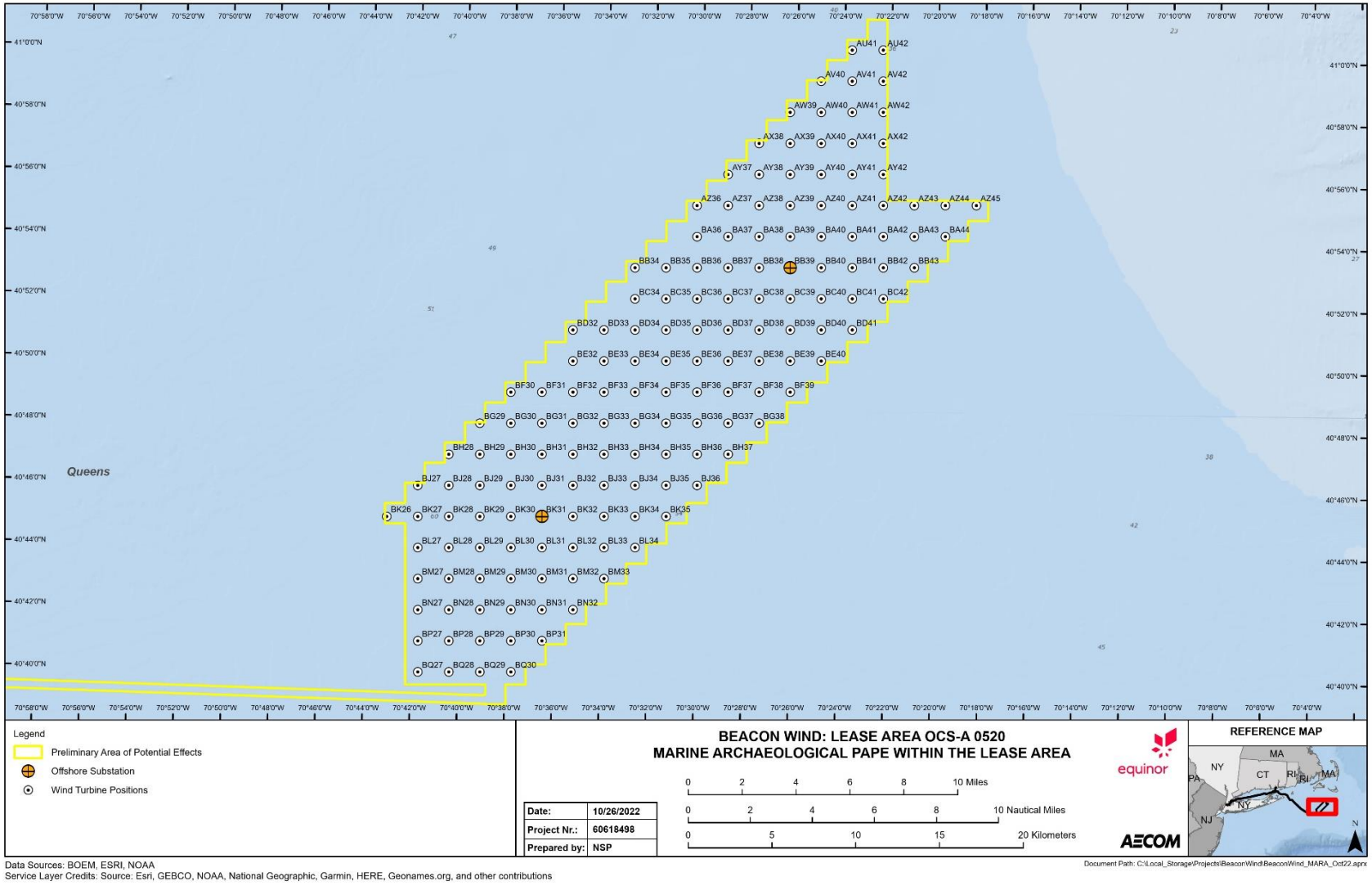


FIGURE 6.1-2. MARINE ARCHAEOLOGICAL PAPE WITHIN THE LEASE AREA



6.1.1 Affected Environment

The affected environment for marine architectural resources, as described in the subsequent text, corresponds to the entire Lease Area and the submarine export cable corridor and includes the offshore areas where marine archaeological resources are located or have the potential to exist that may be directly or indirectly affected by Project construction, operations, and decommissioning activities (**Figure 6.1-1**). Such activities include, but are not limited to: installation of foundations for wind turbines and the offshore substation facilities; grapnel runs, route clearance and boulder removal, pre-sweeping, dredging, and pre-trenching for cables; plowing, jetting, trenching, and/or dredging for cable placement; and installation of cable protection and scour protection. Permits necessary for the improvement of port and construction/staging facilities will be the responsibility of the owners of these facilities.

When discussing marine archaeological resources, the affected environment is referred to as the APE. Federal regulations define the APE as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR § 800.16[d]). For the purposes of this section, the term APE refers exclusively to the Marine Archaeological APE. Because BOEM has not defined a specific APE, the Marine Archaeological APE is referred to as the PAPE in the remainder of this section. The PAPE for marine archaeological resources was analyzed pursuant to 30 CFR § 585 and BOEM guidelines under the supervision of the QMA. This analysis will be presented in **Appendix U Marine Archaeological Resources Assessment**, which contains more specific information regarding the potential for submerged cultural resources to be located within the PAPE. **Figure 6.1-1** and **Figure 6.1-2** depict the marine archaeological PAPE, while **Table 6.1-2** provides a summary of proposed activities.

TABLE 6.1-2. MAXIMUM DISTURBANCE FOR MARINE PROJECT COMPONENTS WITHIN THE MARINE ARCHAEOLOGICAL PAPE a/

Project Component	Maximum Horizontal Area of Disturbance	Maximum Depth of Disturbance
Lease Area – Wind Turbines		
Monopile	43 ft (13 m) diameter / 0.033 ac (0.013 ha)	180 ft (55 m)
Piled Jacket (each leg, up to 4 legs per turbine)	14.7 ft (4.5 m) diameter / 0.0039 ac (0.0016 ha)	229.6 ft (70 m)
Suction Bucket (each leg, up to 4 legs per turbine)	66 ft (20 m) diameter / 0.079 ac (0.032 ha)	66 ft (20 m)
Lease Area - Offshore Substation Facilities		
Piled Jacket (each corner leg, up to 8 legs per)	9.8 ft (3 m) diameter / 0.0017 ac (0.00069 ha)	328 ft (100 m)
Suction Bucket (each corner leg, up to 8 legs per)	65 ft (20 m) diameter / 0.076 ac (0.031 ha)	59 ft (18 m)
Lease Area – Scour Protection		
Wind Turbine (each)	4.0 ac (1.6 ha)	11.5 ft (3.5 m)
Offshore Substation Facilities (each)	5.20 ac (2.1 ha)	11.5 ft (3.5 m)
Lease Area - Other Components		
Interarray Cables	324 nm (600 km) x 5 ft (1.5 m)	8 ft (2.4 m)
Work Zone (Anchoring) b/	984 ft (300 m) radius or 656 ft (200 m) radius	To be Determined

Project Component	Maximum Horizontal Area of Disturbance	Maximum Depth of Disturbance
Submarine Export Cable Corridor – BW1 to Queens, New York		
Submarine Export Cable Corridor c/	202 nm (375 km) x 1,640 ft (500 m)	18 ft (5.5 m)
Dredging and Pre-Sweeping d/	202 nm (375 km) x 500 ft (152 m)	18 ft (5.5 m)
Submarine Export Cable	202 nm (375 km) x 21.3 ft (6.5 m)	18 ft (5.5 m)
Cable Protection Measures e/	36 ft (11 m) x Length to be determined as needed	5 ft (1.5 m)
HDD Casing pipe and goalposts	60 ft (18 m) x 7 ft (2 m)	16.4 ft (5 m)
Submarine Export Cable Corridor – BW2 to Queens, New York		
Submarine Export Cable Corridor c/	202 nm (375 km) x 1,640 ft (500 m))	18 ft (5.5 m)
Dredging and Pre-Sweeping d/	202 nm (375 km) x 500 ft (152 m)	18 ft (5.5 m)
Submarine Export Cable	202 nm (375 km) x 21.3 ft (6.5 m)	18 ft (5.5 m)
Cable Protection Measures e/	36 ft (11 m) x Length to be determined as needed	5 ft (1.5 m)
HDD Cofferdam	60 ft (18 m) x 7 ft (2 m)	16.4 ft (5 m)
Submarine Export Cable Corridor – BW2 to Waterford, Connecticut		
Submarine Export Cable Corridor c/	113 nm (209 km) x 1,640 ft (500 m))	18 ft (5.5 m)
Dredging and Pre-Sweeping d/	113 nm (209 km) x 500 ft (152 m)	18 ft (5.5 m)
Submarine Export Cable	113 nm (209 km) x 21.3 ft (6.5 m)	18 ft (5.5 m)
Cable Protection Measures e/	36 ft (11 m) x Length to be determined as needed	5 ft (1.5 m)
HDD Cofferdam	60 ft (18 m) x 7 ft (2 m)	16.4 ft (5 m)
Submarine Export Cable Corridor – Other Impacts		
Anchoring	269 ft^2 (25 m^2)	49 ft (15 m)

Note:

a/ Project operations and maintenance activities will occur within this maximum horizontal and vertical effects, as detailed in this table.

b/ Anchoring (jack up vessels) within the Lease Area will occur within a 656 ft (200 m) radius circular work zone around each wind turbine foundation and a 984 ft (300 m) radius circular work zone around each offshore substation foundation. Engineering leg penetration analysis to determine maximum vertical impacts of jack up vessels is ongoing, but will not exceed the current maximum impacts due to wind turbine and offshore substation foundations.

c/ The area in which the submarine export cable installation will occur. The extent of the corridor will be limited to the area of survey coverage that has been cleared, with the ability to utilize, if necessary for Micrositing.

d/ The maximum horizontal and vertical effects from dredging and pre-sweeping will vary depending on the location in which these activities occur but will not exceed the maximum width and depth of the submarine export cable dimensions.

e/ It is estimated that approximately 10 percent of the submarine export cable and 10 percent of the interarray cables will require cable protection measures.

6.1.2 Impacts Analysis for Construction, Operations, and Decommissioning

The potential impacts resulting from the construction, operations, and decommissioning of the Project, are based on the maximum design scenario from the PDE (see **Section 3 Project Description**). For marine archaeological resources, the maximum design scenario is the greatest amount of ground-disturbing activities associated with installation of new fixed structures and cables offshore (i.e., wind turbines, offshore substation facilities, and submarine export and interarray cables), as described in **Table 6.1-3**, below. The parameters provided in **Table 6.1-3** represent the maximum potential impact from the full build-out of BW1 and BW 2 and incorporates a total of up to 157 structures within the Lease Area (made up of up to 155 wind turbines and two offshore substation facilities) with one submarine export cable route to Queens, New York for BW1 and one submarine export cable route to Queens, New York or Waterford, Connecticut for BW2 (single submarine export cable corridor).

TABLE 6.1-3. SUMMARY OF MAXIMUM DESIGN SCENARIO PARAMETERS FOR MARINE ARCHAEOLOGICAL RESOURCES

Parameter	Maximum Design Scenario	Rationale
Construction		
Offshore structures	Based on full build-out of the Project (BW1 and BW2) (155 wind turbines and two offshore substation facilities).	Representative of the maximum number of structures, which would result in the greatest seabed disturbance.
Submarine export cable	Based on full build-out of the Project (BW1 and BW2): • BW1 to Queens, New York (202 nm [375 km]) • BW2: o To Queens, New York (202 nm [375 km]), or o To Waterford, Connecticut (113 nm [209 km]).	Representative of the maximum length of new submarine export cables to be installed, which would result in the greatest seabed disturbance.
Interarray cables	Based on full build-out of the Project: • BW1: 162 nm (300 km) • BW2: 162 nm (300 km)	Representative of the maximum number and length of interarray cables to be installed, which would result in the greatest seabed disturbance.
Wind turbine foundation horizontal disturbance	Jacket (Piled or Suction Bucket)	Representative of the foundations that would result in the maximum horizontal area of seabed disturbance during installation.
Foundation installation method vertical depth disturbance	Piled Jacket	Representative of the foundation installation method that would result in the maximum vertical depth of seabed disturbance during installation.

Parameter	Maximum Design Scenario	Rationale
Project-related vessels	Based on full build-out of the Project (BW1 and BW2), which corresponds to the maximum number of structures (155 wind turbines and two offshore substation facilities), submarine export cables (BW1 and BW2), interarray cables, and maximum associated vessels.	Representative of the maximum predicted Project-related vessels, which will result in the maximum construction and installation footprint to the seabed.
Operations and Maintenance		
Project-related vessels	Based on full build-out of the Project (BW1 and BW2), which corresponds to the maximum number of structures (155 wind turbines and two offshore substation facilities), submarine export cables (BW1 and BW2), and associated interarray cables. Based on maximum number of vessels and movements for servicing and inspection.	Representative of the maximum predicted Project-related vessels, which will result in the maximum operations and maintenance disturbance footprint to the seabed.
Wind turbine and offshore substation facilities foundation and scour protection	Wind Turbine Based on suction bucket jacket, which represents the maximum overall footprint (155 x 3.0 ac [1.2 ha] with scour protection). Total 465 ac (188 ha) including scour protection. Offshore Substation Facilities Based on suction bucket jacket, which represents the maximum overall footprint (2 x 5.2 ac [2.1 ha] with scour protection). Total 10.4 ac (4.2 ha) including scour protection.	Representative of the maximum area of foundation and scour protection installed and the maximum long-term seabed disturbance.

6.1.2.1 Construction

During construction, the potential impact-producing factors to marine archaeological resources may include:

- Installation of the offshore components, including the foundations, wind turbines, offshore substation facilities, submarine export cables, and interarray cables and the associated anchoring of working vessels and Project infrastructure.

The following impact may occur as a consequence of factors identified above:

- Disturbance to known and/or unknown submerged marine archaeological resources.

Disturbance to any known and/or unknown submerged marine archaeological resources

During construction, the installation of the foundations, wind turbines, offshore substation facilities, submarine export cables, and interarray cables, as well as vessel and infrastructure anchoring will result in the temporary disturbance of the seafloor and the potential for permanent disturbance of marine archaeological resources. Based on the results of the survey activities and marine archaeological analysis completed to date, 67 potential marine archaeological resources have been identified within the PAPE. In order to avoid, minimize, and mitigate impacts, a horizontal avoidance zone of 98 to 230 ft (30 to 70 m) will be applied around identified targets, as described in **Appendix U**

Marine Archaeological Resources Assessment, unless additional investigation and/or consultation with the appropriate authorities determines that a smaller zone may be appropriate and/or unnecessary.

Additionally, 45 ancient submerged landform features (ASLFs) capable of containing intact precontact deposits were identified in the PAPE (**Appendix U Marine Archaeological Resources Assessment**). The ASLF's represent former subaerial paleolandforms with archaeological potential. Avoidance buffers are based on recorded characteristics for each identified potential resource and include a horizontal buffer of 164 to 656 ft (50 to 200 m) will be applied around ASLFs, as described in **Appendix U Marine Archaeological Resources Assessment**, unless additional investigation and/or consultation with the appropriate authorities determines that a smaller buffer may be appropriate and/or unnecessary.

6.1.2.2 Operations and Maintenance

During operations, activities that disturb the seabed (i.e., repairing of the submarine export and/or interarray cables or the utilization of a jack-up vessel) have the potential to disturb submerged marine archaeological resources. These activities will be limited to areas previously assessed for potential resources. Therefore, no additional impacts are anticipated. In order to avoid, minimize, and mitigate any potential impacts, avoidance zones will be implemented around identified potential submerged cultural resources, to the extent practicable.

6.1.2.3 Decommissioning

Impacts during decommissioning are expected to be similar to or less than those experienced during construction, as described in **Section 6.1.2.1**. It is important to note that advances in decommissioning methods/technologies are expected to occur throughout the operations phase of the Project. A full decommissioning plan will be approved by BOEM prior to any decommissioning activities, and potential impacts will be re-evaluated at that time. For additional information on the decommissioning activities that Beacon Wind anticipates will be needed for the Project, please see **Section 3 Project Description**.

6.1.3 Summary of Avoidance, Minimization, and Mitigation Measures

In order to mitigate the potential impact-producing factors described in **Section 6.1.2**, Beacon Wind is proposing to implement the following avoidance, minimization, and mitigation measures. Additional measures are being discussed as part of Beacon Wind's ongoing engagement with cultural resources stakeholders and Tribal Governments. Updates will be provided to BOEM, as appropriate.

6.1.3.1 Construction

During construction, Beacon Wind will commit to the following avoidance, minimization, and mitigation measures to mitigate the impacts described in **Section 6.1.2.1**:

- Avoidance of culturally sensitive marine archaeological resources by siting Project components to avoid and minimize impacts to potential marine archaeological sites, including shipwrecks and ASLFs, to the extent practicable, with continued oversight by a QMA;
- Implementation of a horizontal avoidance zone of 98 to 230 ft (30 to 70 m) around identified potential submerged archaeological resources with the minimum recommended size and configuration of these areas individually based on characterization of the site and delineation

of the site's horizontal and vertical boundaries, unless further investigation and/or consultation with the appropriate authorities deems this unnecessary;

- Implementation of a horizontal buffer of 164 to 656 ft (50 to 200 m) will be applied around ASLFs with the minimum recommended size and configuration of these areas individually based on characterization of the site and delineation of the site's horizontal and vertical boundaries, unless further investigation and/or consultation with the appropriate authorities deems this unnecessary;
- Native American Tribes will continue to be provided opportunities for involvement in marine survey protocol design, execution of the surveys, and interpretation of the results;
- Beacon Wind will ensure Tribes have further opportunities to participate in the development of detailed property specific mitigation planning and execution related to submerged historic properties that may be affected by the Project and the interpretation of data collected through mitigation efforts;
- A plan for vessels will be developed prior to construction to identify no-anchorage areas to avoid documented sensitive resources and will be implemented by construction and operation phase vessels; and
- Additional evaluation of appropriate measures regarding paleolandscape features to be addressed with regulatory authorities and informed by engagement with cultural resource stakeholders and Tribal Governments.

Depending on the results of the CBRA and ability to avoid all targets and avoidance zones, additional archaeological investigation including, but not limited to, remotely operated vehicle surveys are being considered for 2023 that could reveal that some of the identified targets do not represent potentially sensitive marine archaeological resources.

6.1.3.2 Operations and Maintenance

During operations, Beacon Wind will commit to the following avoidance, minimization, and mitigation measures to mitigate the impacts described in **Section 6.1.2.2**:

- Implementation of a horizontal avoidance zone of 98 to 230 ft (30 to 70 m) around identified potential submerged archaeological resources, unless further investigation and/or consultation with the appropriate authorities deems this unnecessary; and
- Implementation of a horizontal buffer of 164 to 656 ft (50 to 200 m) will be applied around ASLFs and additional evaluation of appropriate measures regarding paleolandscape features to be addressed with regulatory authorities and informed by engagement with cultural resource stakeholders and Tribal Governments.

6.1.3.3 Decommissioning

Avoidance, minimization, and mitigation measures proposed to be implemented during decommissioning are expected to be similar to those implemented during construction and operations, as described in **Section 6.1.3.1** and **Section 6.1.3.2**. A full decommissioning plan will be approved by BOEM prior to any decommissioning activities, and avoidance, minimization, and mitigation measures for decommissioning activities will be proposed at that time.

6.1.4 References

TABLE 6.1-4. DATA SOURCES

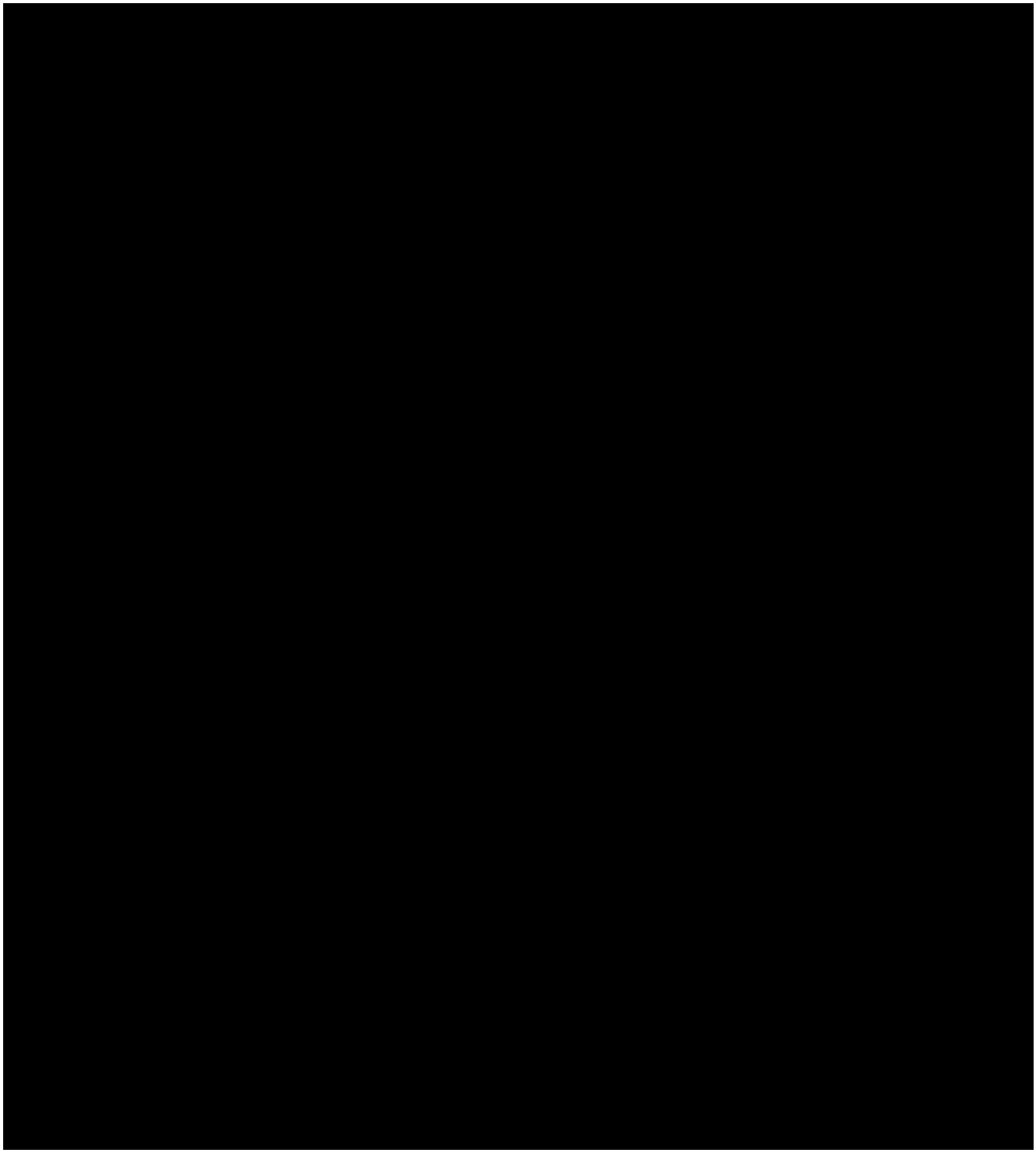
Source	Includes	Available at	Metadata Link
NY SHPO	State Territorial Waters	https://cris.parks.ny.gov/. Accessed November 12, 2021	N/A
CTDEEP	State Territorial Waters	https://portal.ct.gov/-/media/DEEP/fishing/saltwater/Stateline_6_ConnecticutRiver_ThamesRiver.pdf. Accessed March 7, 2021	N/A
National Oceanic and Atmospheric Administration (NOAA) 2021a	"Automated Wreck and Obstruction Information System (AWOIS)."	https://nauticalcharts.noaa.gov/data/wrecks-and-obstructions.html. Accessed November 12, 2021	N/A
NOAA 2021b	"NOAA ENC-Electronic Navigational Charts."	https://nauticalcharts.noaa.gov/charts/noaa-enc.html. Accessed November 12, 2021	N/A

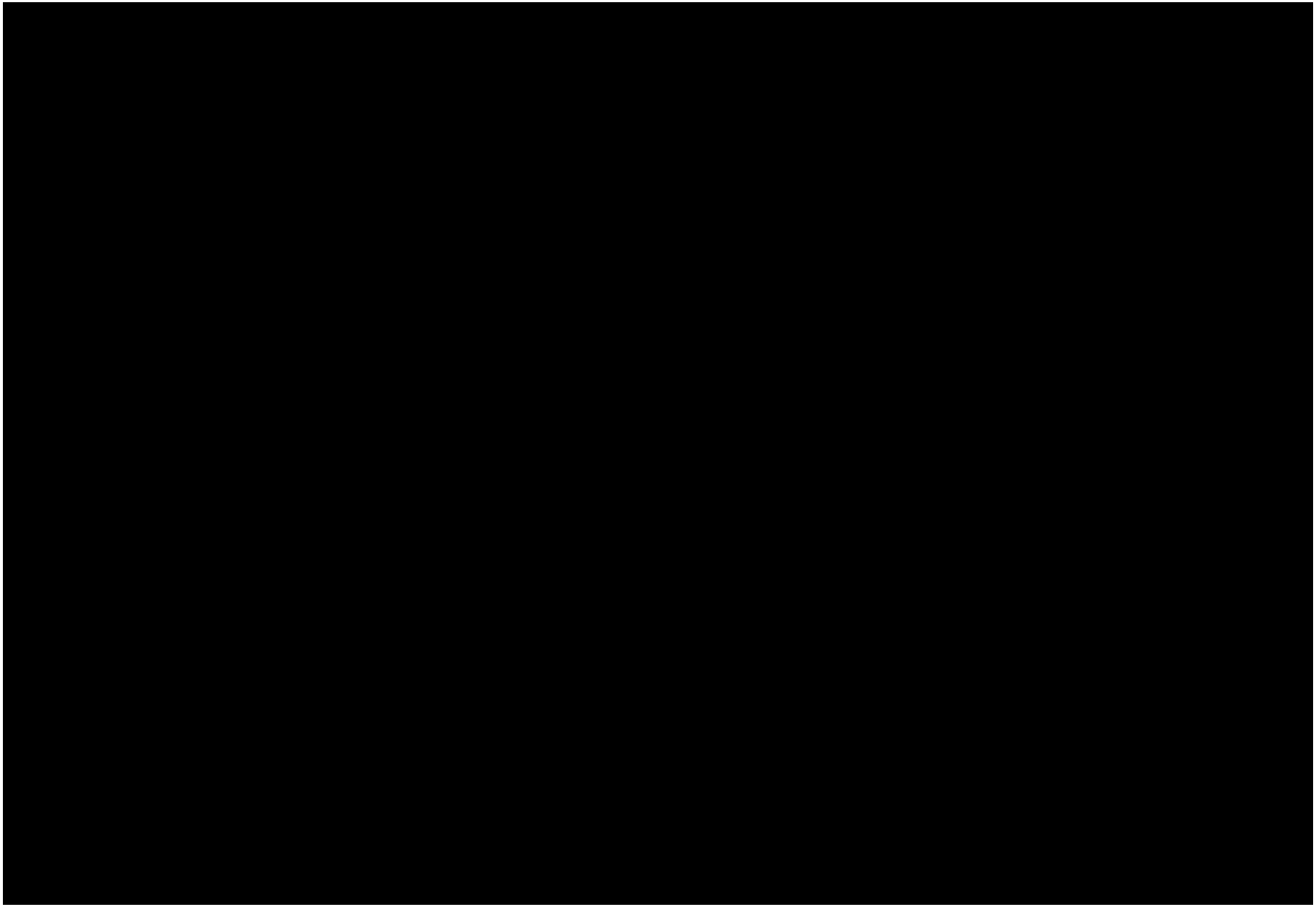
BOEM (Bureau of Ocean Energy Management). 2020. *Guidelines for Providing Archaeological and Historic Properties Information Pursuant to 30 CFR Part 585*. Available online at: https://www.boem.gov/sites/default/files/documents/about-boem/Archaeology%20and%20Historic%20Property%20Guidelines.pdf. Accessed August 1, 2021.

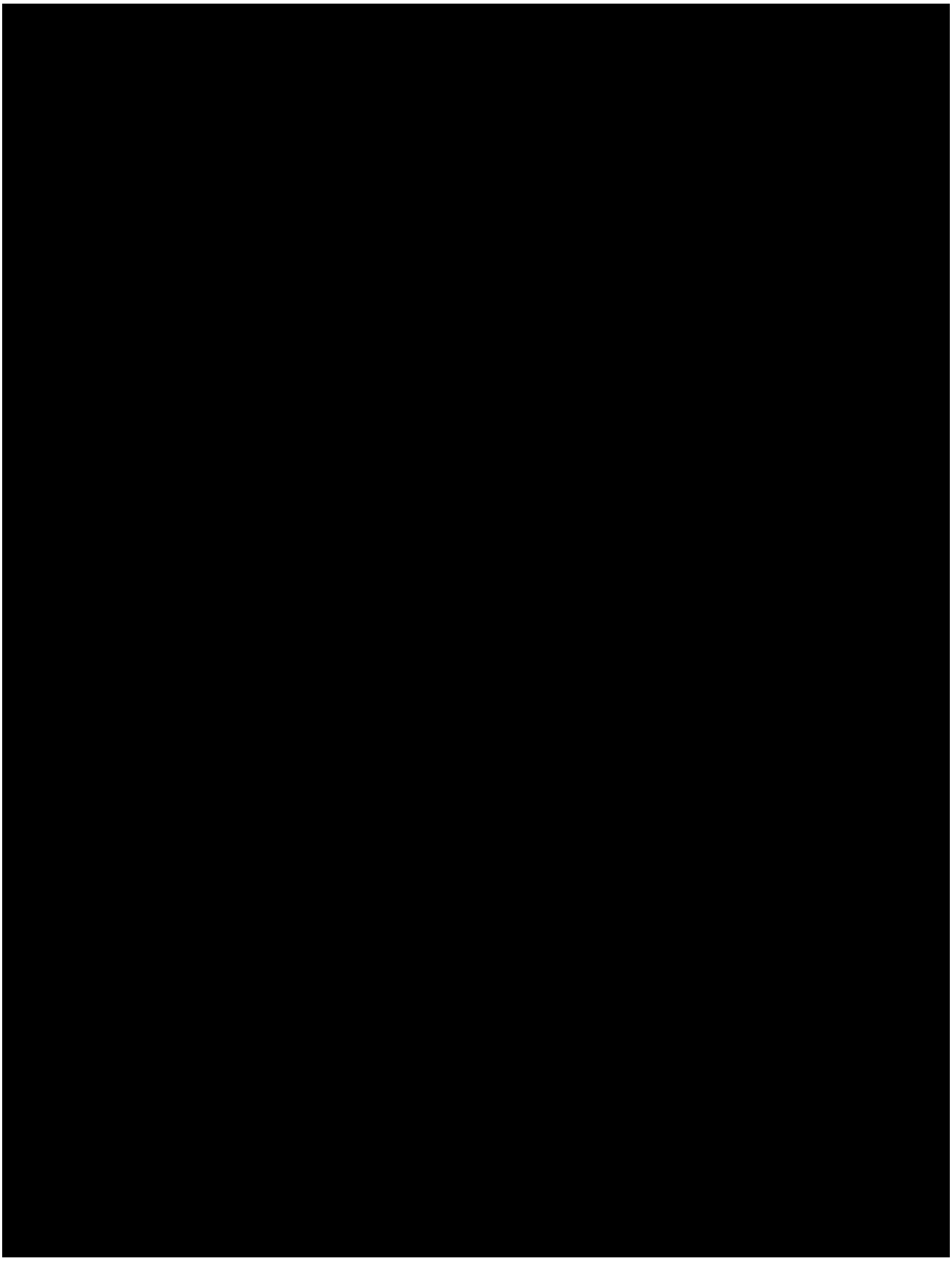
BOEM. 2016a. Programmatic Agreement Among The U.S. Department of the Interior, Bureau of Ocean Energy Management, The State Historic Preservation Officers of New Jersey and New York, The Shinnecock Indian Nation, and The Advisory Council on Historic Preservation Regarding Review of Outer Continental Shelf Renewable Energy Activities Offshore New Jersey and New York Under Section 106 of the National Historic Preservation Act. Available online at: https://www.boem.gov/sites/default/files/documents//Programmatic%20Agreement%20BOEM%20NY%20%26amp%3B%20NJ%20NHPA%202016-06-03.pdf. Accessed August 1, 2021.

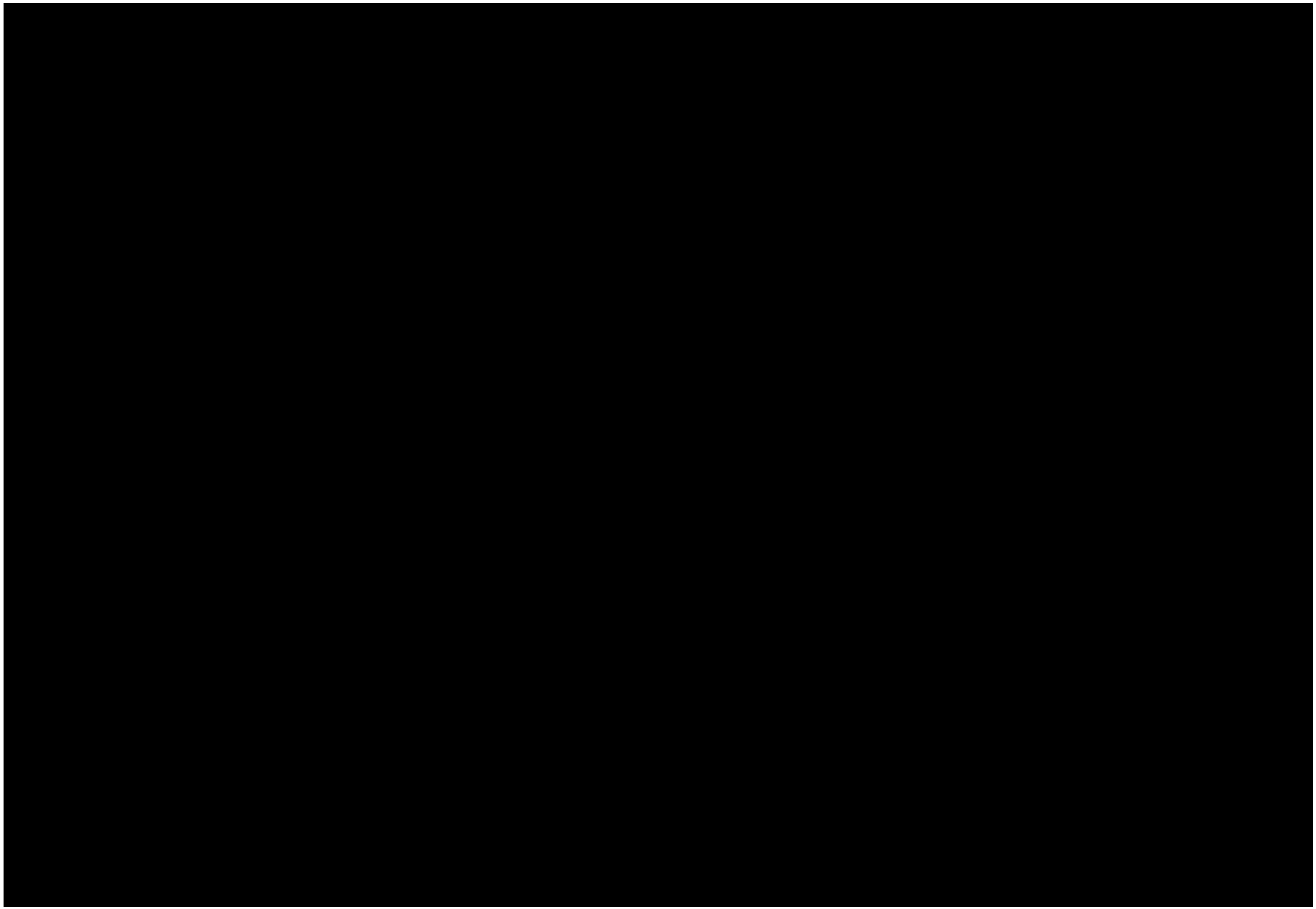
BOEM. 2016b. Commercial Wind Lease Issuance and Site Assessment Activities on the Outer Continental Shelf Offshore New York: Revised Environmental Assessment (2016). Available online at: https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/NY/NY_Revised_EA_FONSI.pdf. Accessed August 1, 2021.

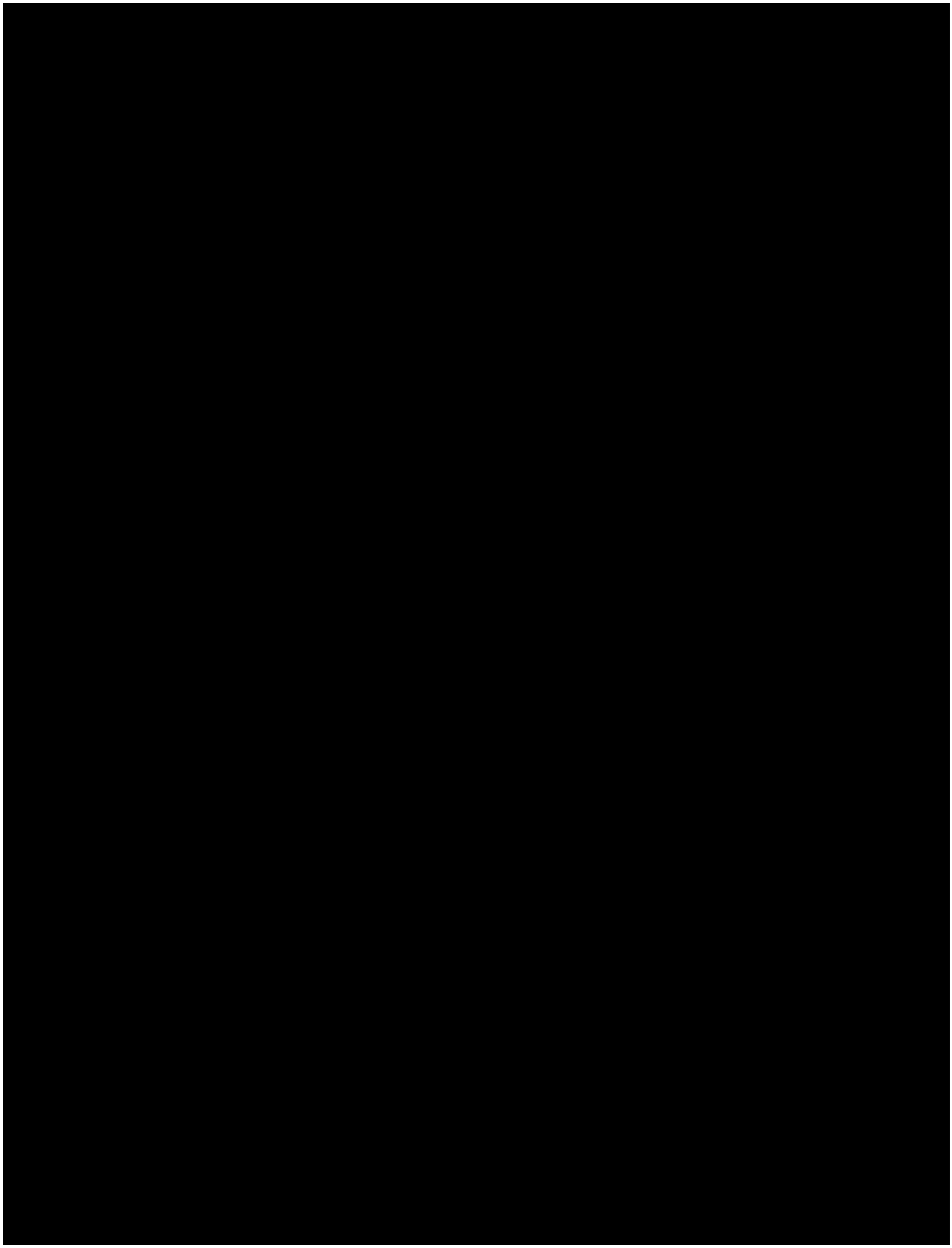
6.2 Terrestrial Archaeological Resources

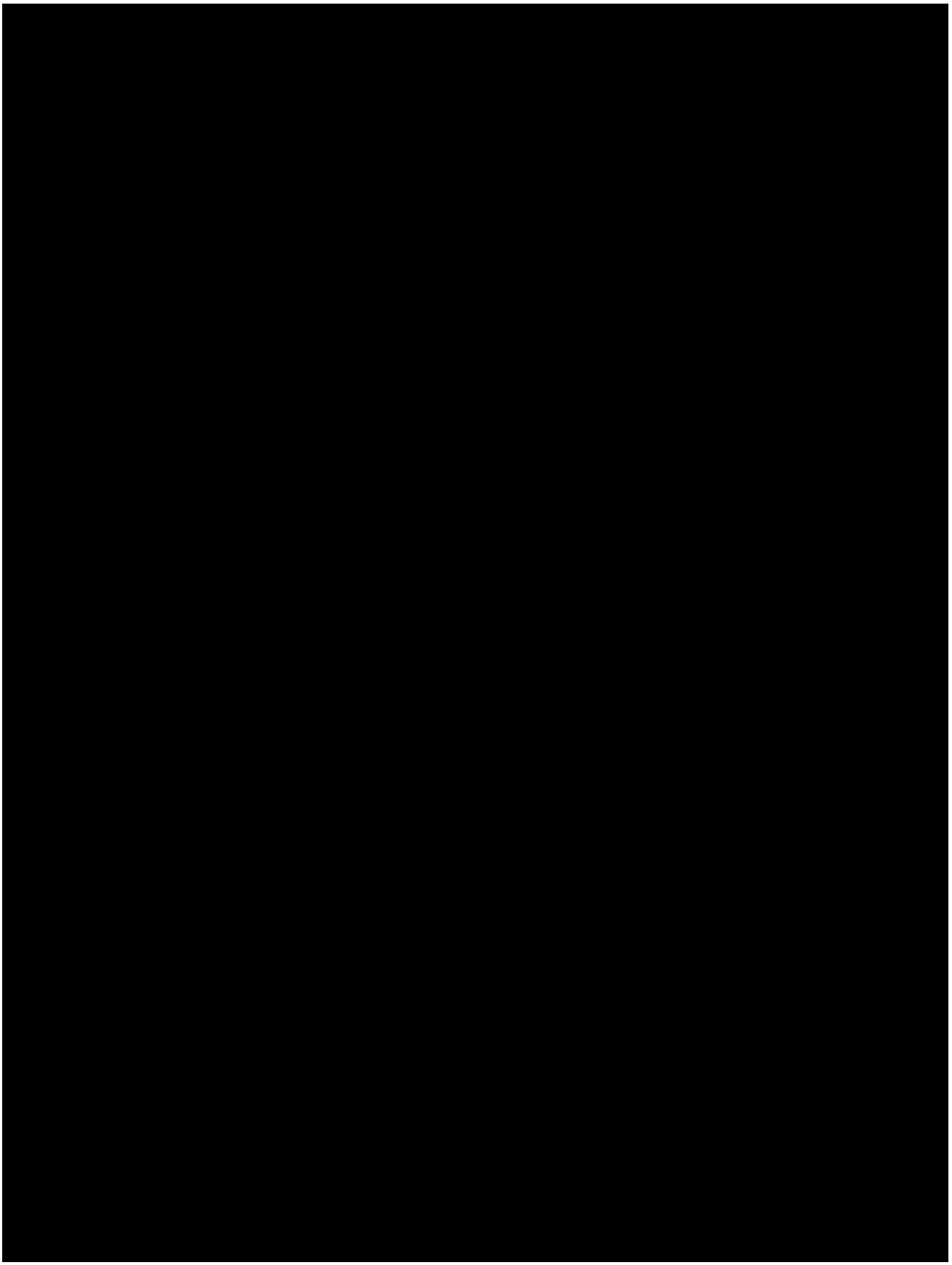


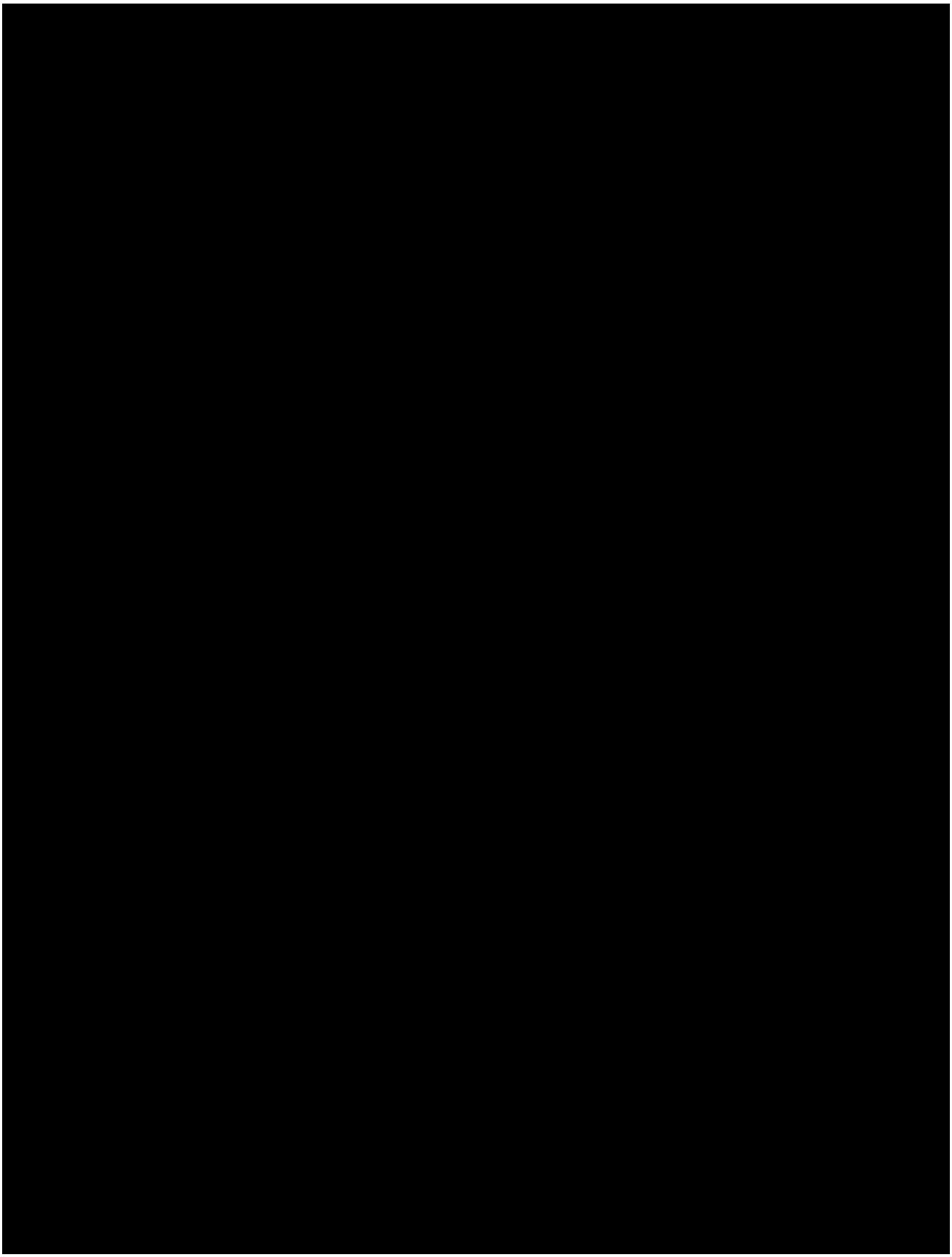


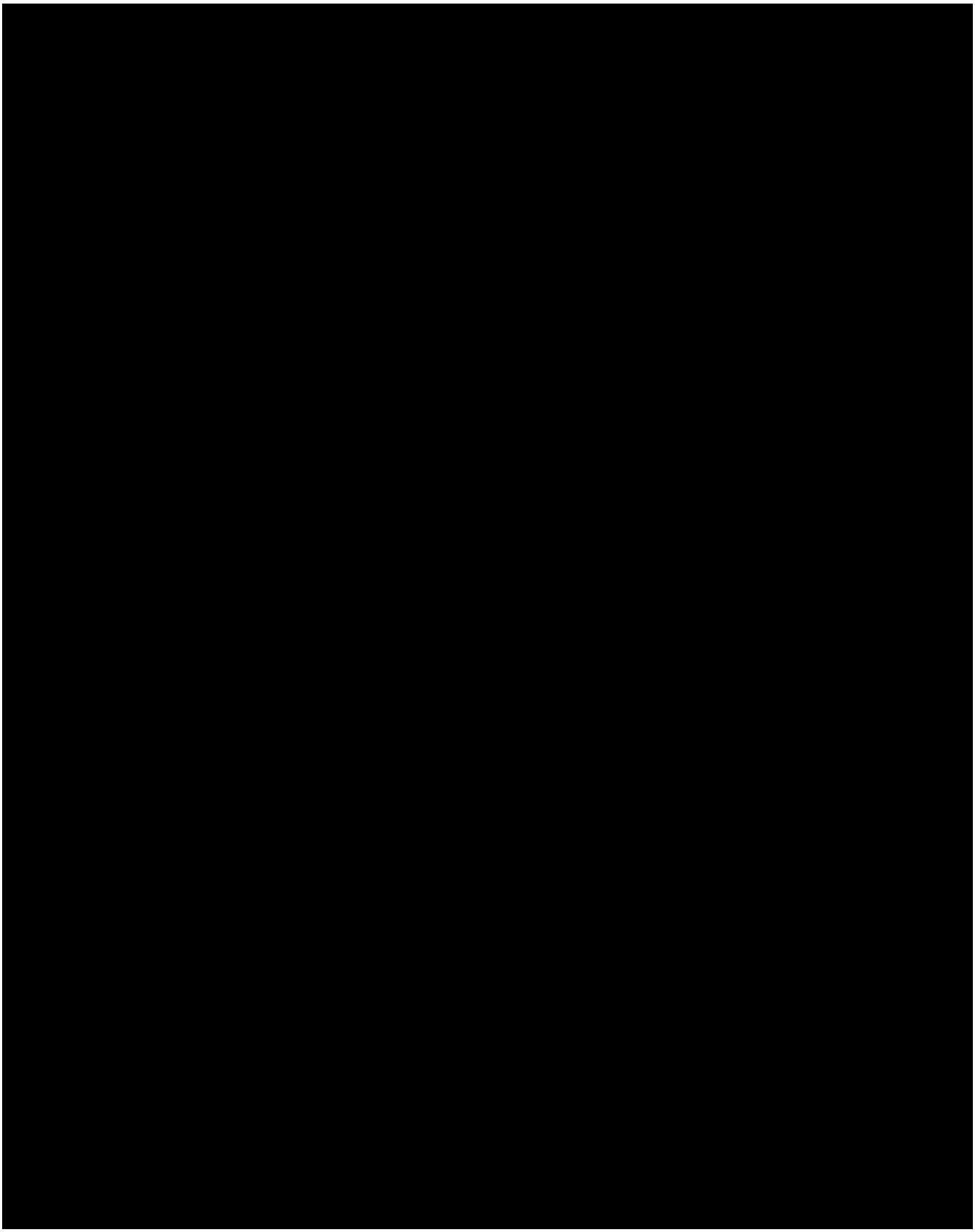


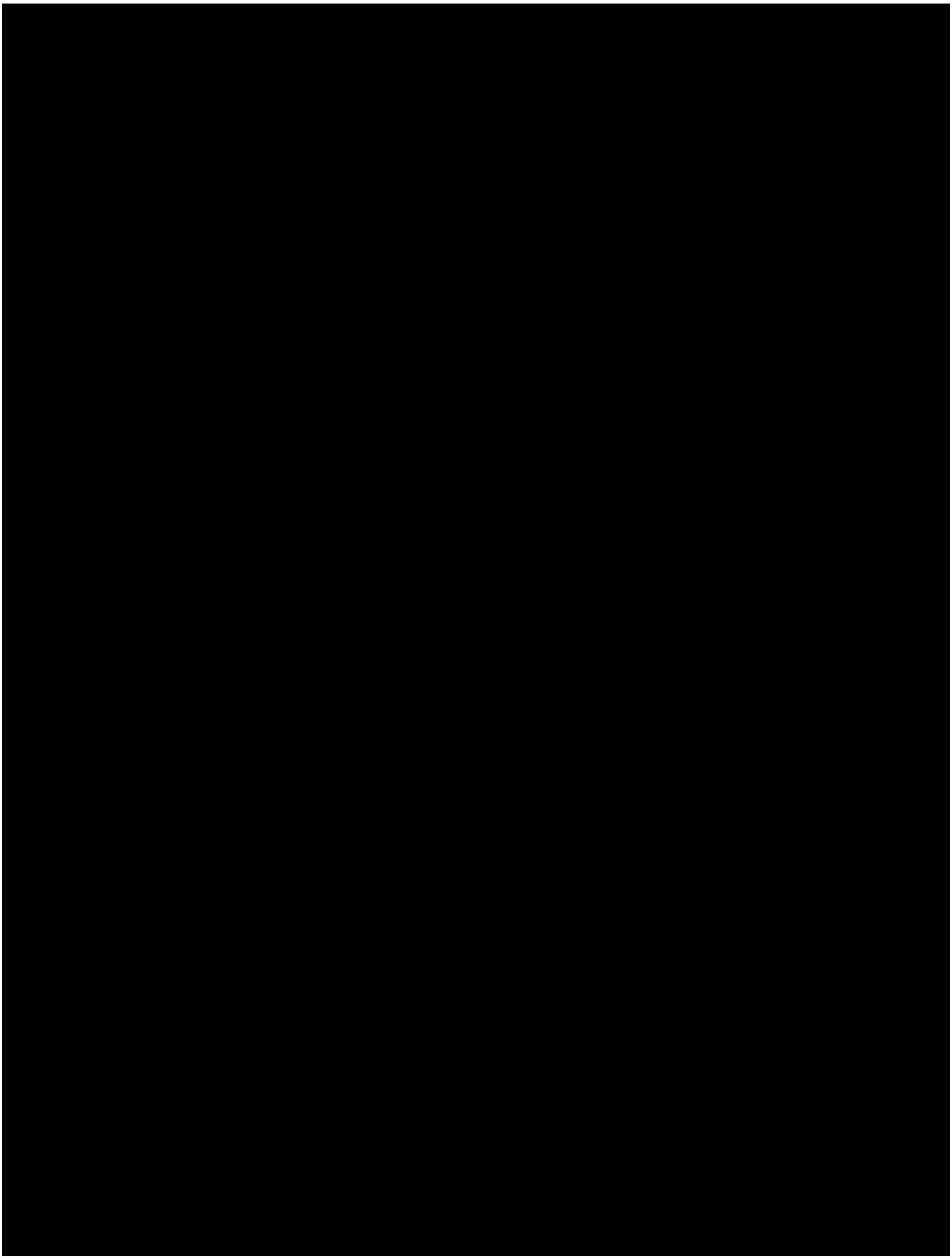


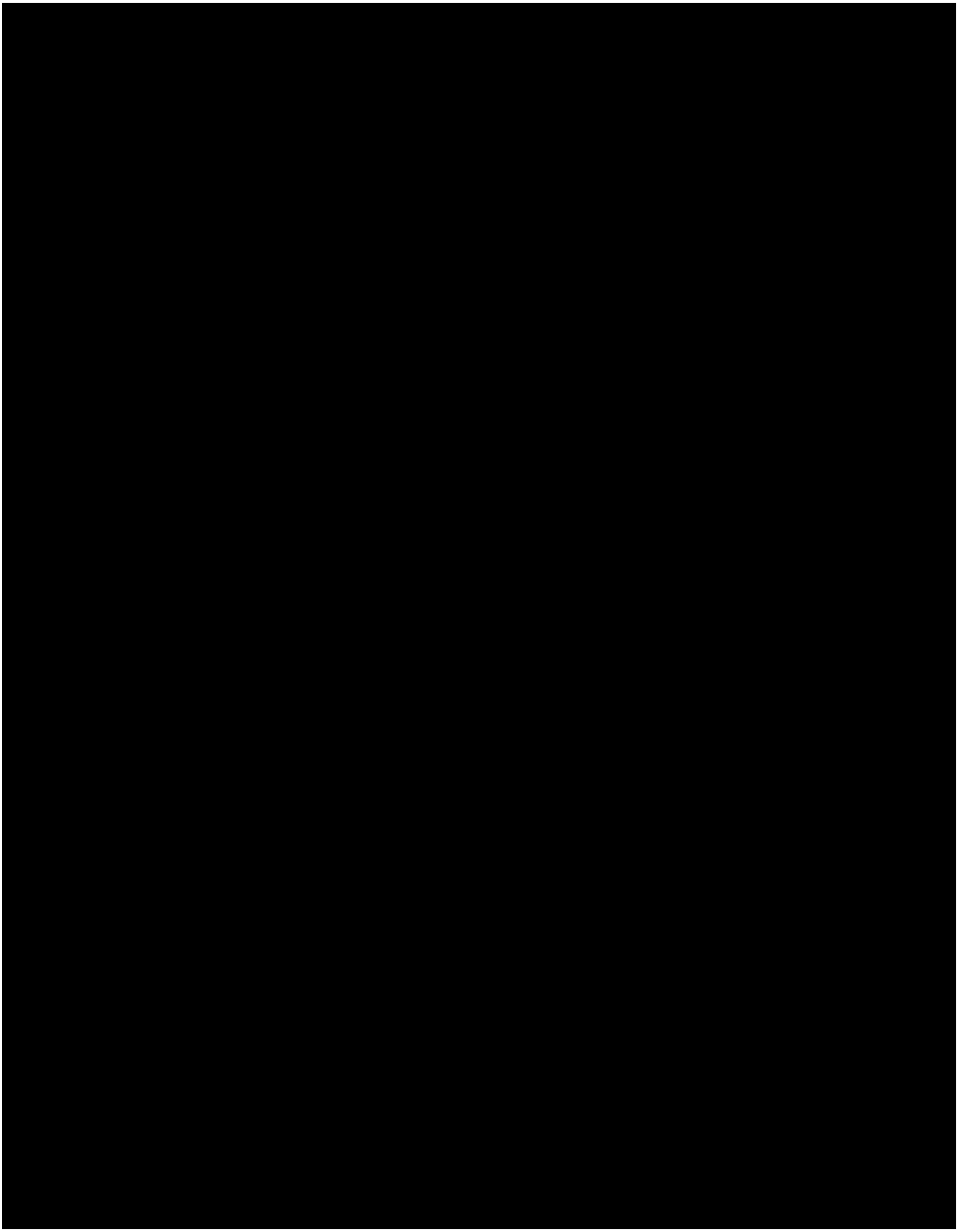


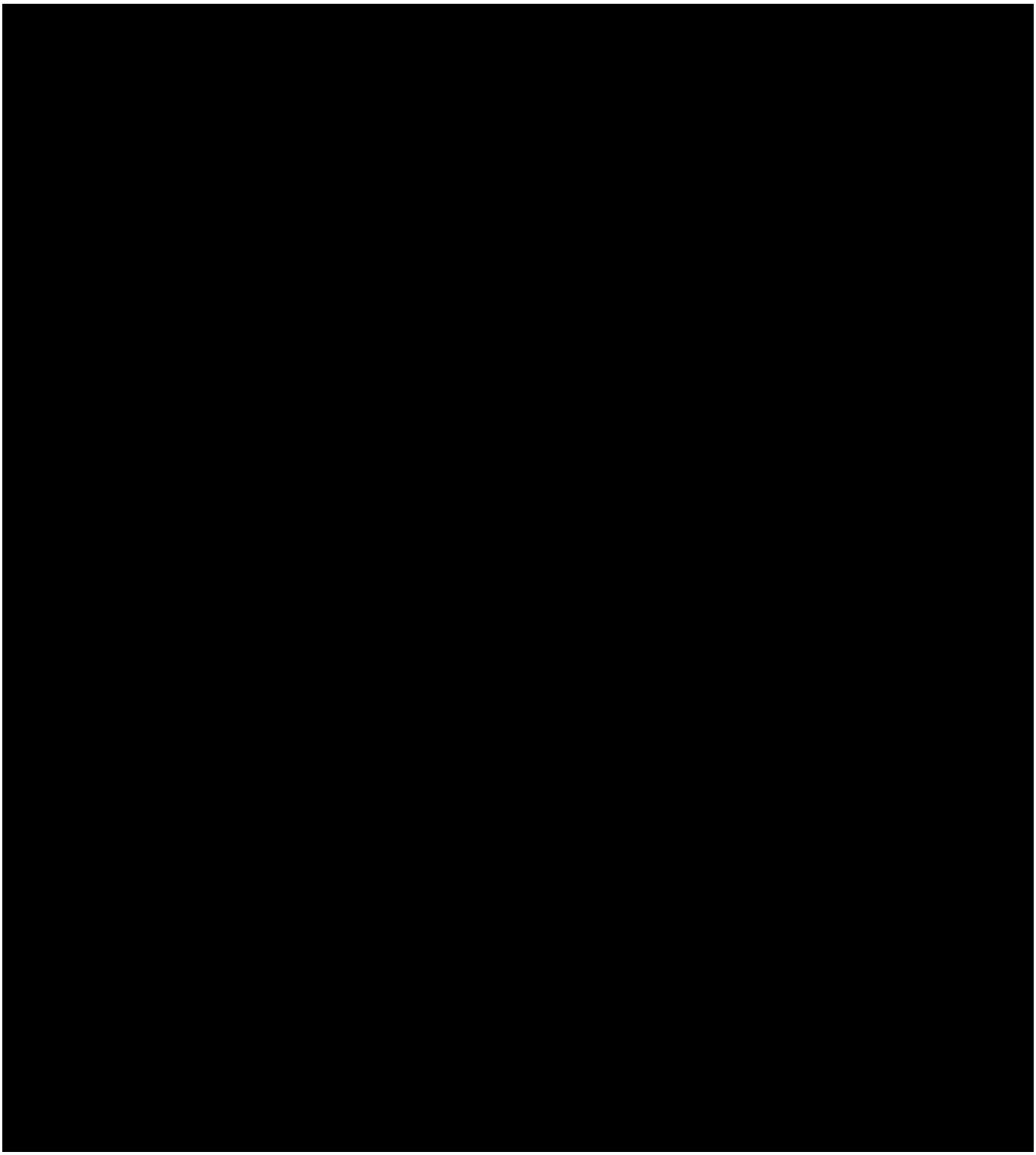


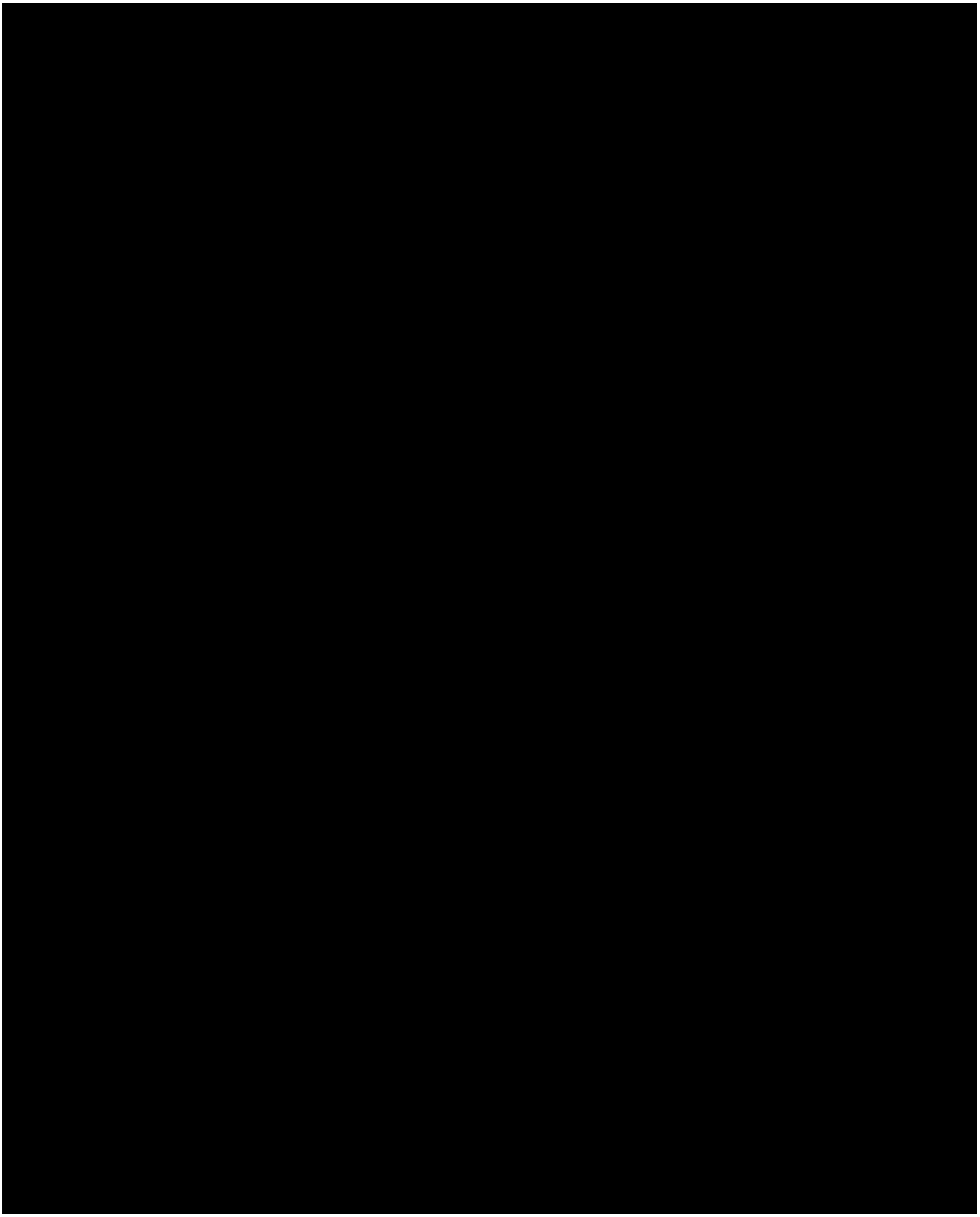


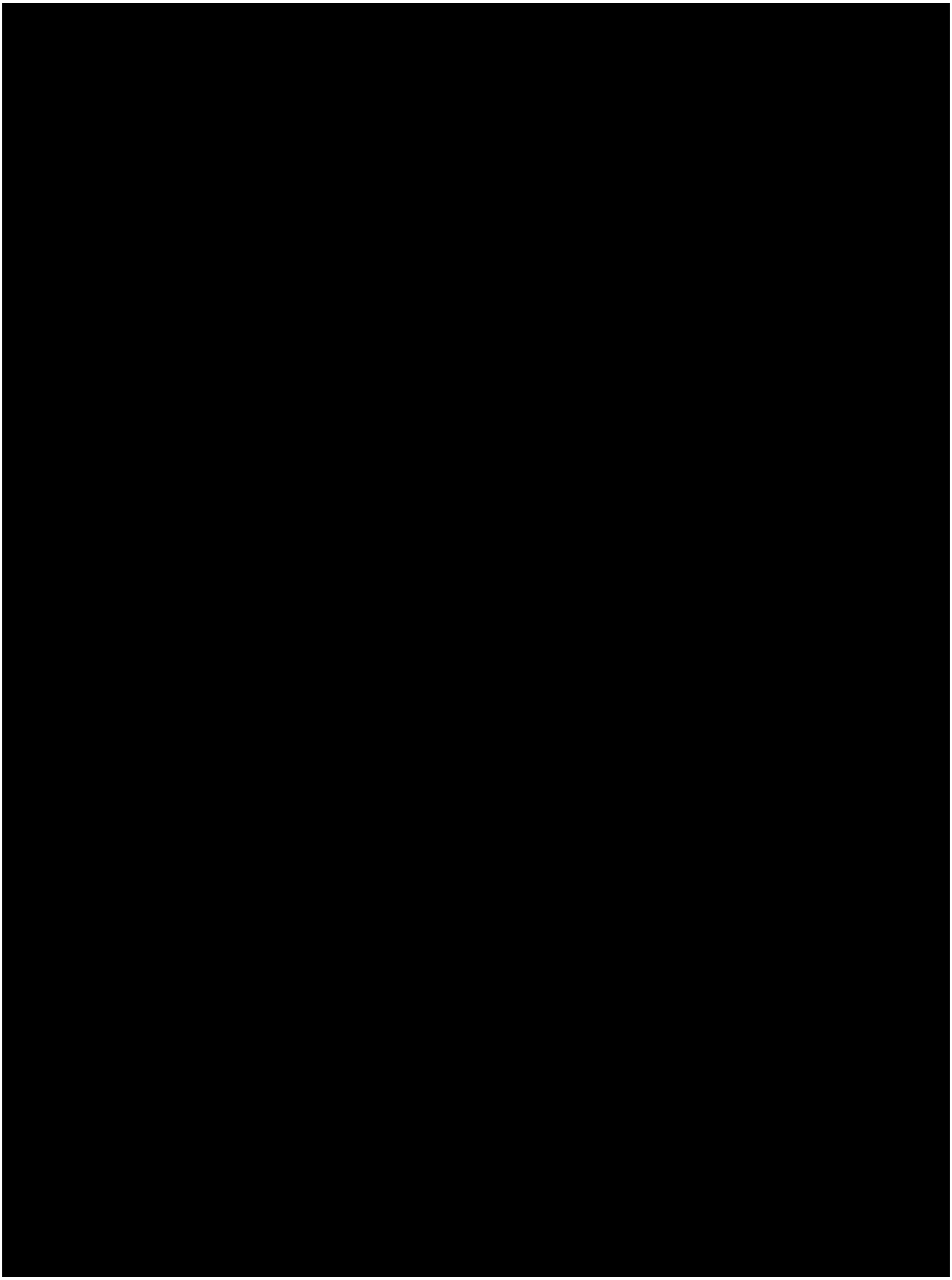


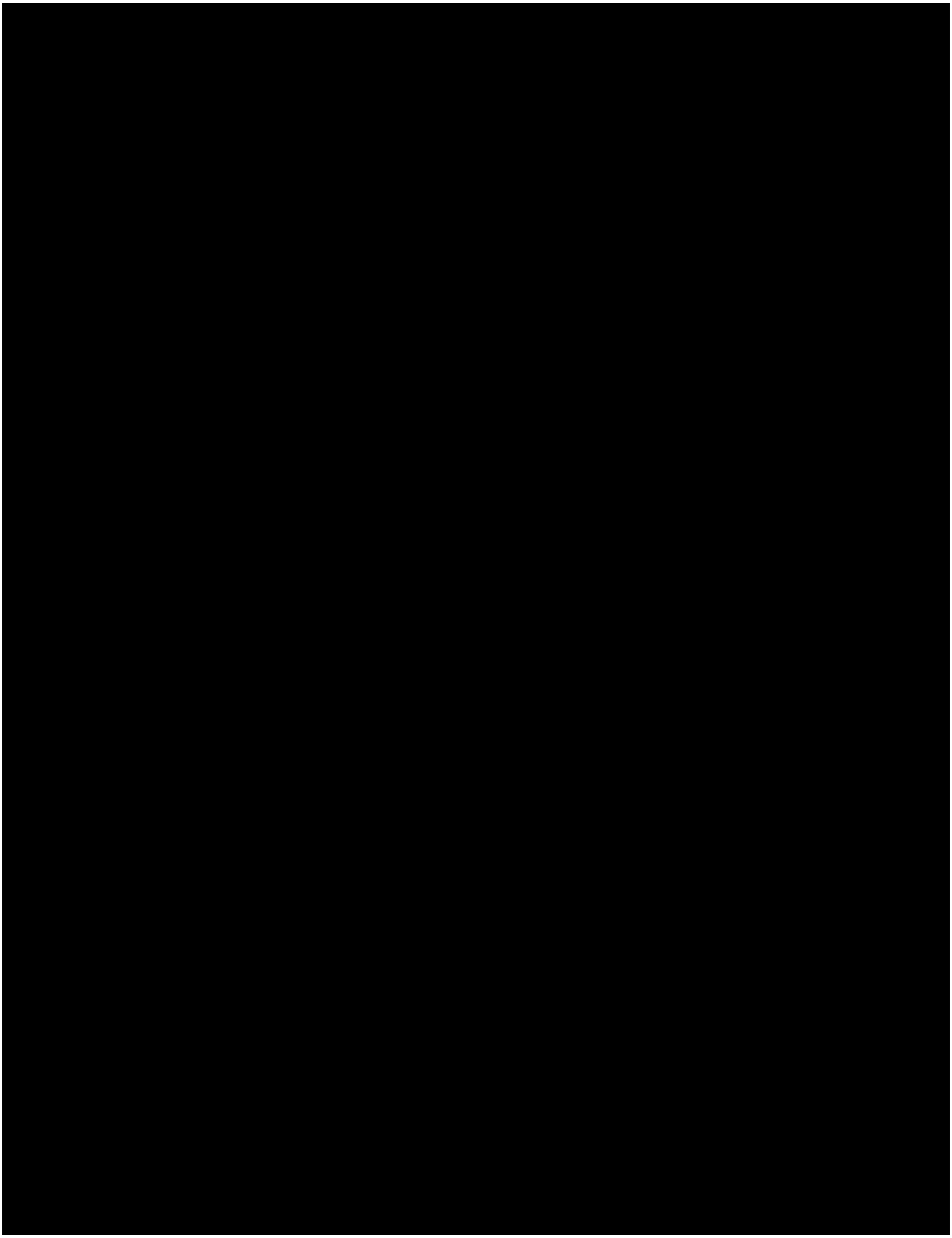












6.3 Above-Ground Historic Properties

This section discusses above-ground historic properties within or surrounding the Project Area, which includes the Lease Area, submarine export cable corridors, and onshore substation facilities. Above-ground historic properties are defined as districts, buildings, structures, objects, or sites that are listed in or eligible for the NRHP. Historic properties also include Traditional Cultural Properties (TCPs), which are defined as properties of traditional religious and cultural importance to a Native American Tribe or Native Hawaiian organization and that meet the National Register criteria. Potential impacts to historic properties resulting from construction, operations, and decommissioning of the Project are discussed. Proposed Project-specific measures adopted by Beacon Wind are also described, which are intended to avoid, minimize, and/or mitigate potential impacts to historic properties.

Other resources and assessments detailed within this COP that are related to historic properties include:

- Marine Archaeological Resources (**Section 6.1**);
- Terrestrial Archaeological Resources **(Section 6.2**);
- Visual Resources (**Section 7**);
- Marine Archaeological Resources Assessment (**Appendix U**);
- Terrestrial Archaeological Resources Assessment, New York (**Appendix V1**);
- Terrestrial Archaeological Resources Assessment, Connecticut (**Appendix V2**);
- Historic Resources Visual Effects Assessment (**Appendix W**); and
- Seascape, Landscape, and Visual Impact Assessment (**Appendix X**).

Assessments of effects on historic properties are required to support BOEM's NEPA review and consultation process under Section 106 of the NHPA. BOEM provides recommended approaches for assessing impacts to historic properties during the wind energy permitting process in *Guidelines for Providing Archaeological and Historical Property Information Pursuant to 30 CFR Part 585* (BOEM 2020). The guidelines state that a Historic Resources Visual Effects Assessment (HRVEA) should be conducted in a manner acceptable to the relevant SHPO for the state(s) within the areas that will have a view of the Project's onshore or offshore components (see **Appendix W Historic Resources Visual Effects Assessment**).

BOEM is the lead federal agency for the Project and will initiate Section 106 consultation with the Massachusetts Historical Commission (MHC), the New York State OPRHP, and the Connecticut Department of Economic and Community Development (CT DECD). MHC is the Massachusetts SHPO, OPRHP is the New York SHPO, and CT DECD is the Connecticut SHPO. This section was prepared to support BOEM's NEPA and NHPA review of the COP, in accordance with 30 CFR Part 585.627(a)(6). The identification of historic properties was based on standard practices within the discipline.

Data Relied Upon and Studies Completed

For the purposes of this section, the Study Area includes the coastal areas that may be directly and/or indirectly impacted by the offshore components, including the foundations, wind turbines, and offshore substation facilities, the onshore components, including the onshore export and interconnection cable routes and the onshore substation facilities, and the staging and construction areas associated with

the construction, operations, and decommissioning of the Project (see **Figure 6.3-1, Figure 6.3-3,** and, **Figure 6.3-4** below).

The following approach was taken to identify HRVEA study areas for historic properties and to define the PAPEs for visual effects from offshore and onshore Project components. The identification of the study area and PAPEs was guided by visual studies being conducted to determine the Project's Area of Potential Seascape, Landscape and Visual Impact (APSLVI). The APSLVI describes the area within which the Project may be visible by key receptors with consequent effect and, therefore, could be seen and contribute a level of visual change within an existing setting. The APSLVI is the Project's theoretical viewshed encompassing the geographic area within which the Project may be visible, and was defined as a 46-mi (74-km) buffer around the Lease Area. A GIS-based model was used to generate the APSLVI for both offshore and onshore Project components. The APSLVI was modeled using the maximum project parameters defined in the PDE including maximum turbine hub heights, turbine blade tip heights, and structures associated with the onshore substation facility. Maximum design heights and bare earth topography (i.e., no benefit of screening from intervening vegetation or other structures) were used to develop a zone of theoretical visibility (ZTV), a conservative delineation of the APSLVI. A second analysis using high-resolution Light Detection Ranging (LIDAR) point cloud data taken from the National Map produced by the USGS was used to create a digital surface model (DSM), which incorporates vegetation screening and structures to delineate the APSLVI. Further details regarding the APSLVI are included in **Section 7 Visual Resources** and **Appendix X Seascape, Landscape, and Visual Impact Assessment**.

For the purposes of this section, the offshore historic properties currently presented within the COP are based on an initial Study Area consisting of a 46-mi (74-km) buffer (consistent with the APSLVI) around the Lease Area. Through desktop research and fieldwork, the Study Area was refined to a smaller visibility-based PAPE (HRVEA Offshore PAPE; see **Figure 6.3-2**). For onshore historic properties, the PAPE was defined as a 1-mi (1.6-km) buffer around each of the three locations under consideration for the BW1 and BW2 landfalls and substation facilities in New York and Connecticut (HRVEA Onshore PAPE; see **Figure 6.3-3** and **Figure 6.3-4**). The HRVEA Offshore PAPE includes the areas from which the offshore Project components (e.g., wind turbines and offshore substation facilities) are potentially visible. The HRVEA Onshore PAPE includes the areas from which the onshore Project components (e.g., the onshore substation facilities) are visible. As other components of the Project, such as submarine export and interarray cables, will be installed below ground or below the ocean surface and will not be visible except temporarily during construction, they were excluded from the analysis. The onshore export cable from the landfall locations to the onshore substation facilities and interconnection cables from the onshore substation facilities to the POIs (at Queens, New York and/or Waterford, Connecticut) are proposed to be underground and, therefore, are excluded from the analysis.[3] Further, the proposed Astoria East POI and Astoria West POI, consisting of the two substations within the Astoria power complex, and the proposed Waterford POI, consisting of one substation within the Waterford power complex, are existing utility features present within the current visual landscape. Use of these POIs would not result in visual changes to the existing infrastructure and, therefore, do not require analysis.

[3] The installation of underground cables can potentially require effects analysis if the undertaking is taking place within a historic district where streetscape features are a contributing element or a character-defining feature to the historic district, however those conditions do not apply in the Queens, New York or Waterford, Connecticut locations.

HRVEA Offshore PAPE

Determination of the HRVEA Offshore APE for visual effects took into consideration the maximum theoretical visibility of the Wind Development Area and maximum turbine blade tip height relative to curvature of the earth, optimal visibility conditions, and terrain (see **Figure 6.3-2**). The offshore Project components considered include up to 157 foundations including 155 wind turbines and two supporting offshore substation facilities structures based on a 1x1 nautical mile (nm) (1.9x1.9 km) layout.

Field visits were conducted by visual effects specialists in Massachusetts in June 2021 to assess the actual viewshed against the desktop research to refine the 46-mi (74-km) HRVEA Offshore Study Area. This ground-truthing effort identified that many areas identified by digital modeling as having visibility of the Project area in fact did not. For offshore structures, there is likely little to no potential visibility in areas identified by the viewshed models as having theoretical views of TOB only, and possibly no potential visibility in areas identified as having theoretical views of turbine hubs. Given that ground-truthing indicates that Project views are unlikely in areas identified as having theoretical TOB visibility and, even if visible, would be distant enough to prevent noticeable changes, and given that night lighting is mounted on the hubs of the wind turbines and is likely to be visible from a distance, the PAPE was refined to include only areas identified in viewshed models as having hub visibility.

HRVEA Onshore PAPE

The HRVEA Onshore PAPE for the Project was defined as a 1-mi (1.6-km) radius around each of the two locations in Queens, New York and the one location in Waterford, Connecticut under consideration for the proposed onshore landfalls and onshore substation facilities for BW1 and BW2 (see **Figure 6.3-2, Figure 6.3-3** and **Figure 6.3-4**). The Queens, New York and Waterford, Connecticut onshore landfall components being considered include one onshore substation facility for BW1 and one onshore substation facility for BW2, with each including a building with a maximum height of 87 ft (26.5 m), adjacent alternating current (AC) and direct current (DC) yards, transformers, a diesel generator, overhead transmission lines, and other exterior power structures as detailed in **Section 3.3.2.2 Project Description**. The locations for consideration at Queens, New York include the 11 ac (4.5 ha) NYPA site and the 16 ac (6.5 ha) AGRE site; the AGRE site consists of AGRE East encompassing approximately 8.9 ac (6.4 ha) and AGRE West encompassing approximately 7.1 ac (2.9 ha). Both the NYPA and AGRE sites are situated within existing power facilities. These HRVEA Onshore PAPEs are based upon anticipated visibility within the relatively flat and extremely dense area within which the onshore substation facility is proposed. In addition, NYOPRHP recommends a 1-mile buffer APE for projects involving modifications to existing transmission substations and connecting distribution lines, so this PAPE is also consistent with available state guidance for electrical transmission projects (NYOPRHP 2018). Due to the overhead transmission lines proposed for the AGRE East/AGRE West site, the 1-mi buffer was calculated from the farthest points associated with the site and the transmission lines.

The location for consideration at Waterford, Connecticut includes the 7.1 ac (2.9 ha) Waterford site, situated within an existing power complex on a peninsula in Long Island Sound. The HRVEA Onshore PAPE at Waterford is based upon anticipated visibility within the surrounding land and waterfront areas. The existing power complex is screened from the adjacent mainland by a wooded area, and the proposed onshore substation site is screened from more-distant waterfront areas to the east and west by tree cover.

FIGURE 6.3-1. PROJECT OVERVIEW

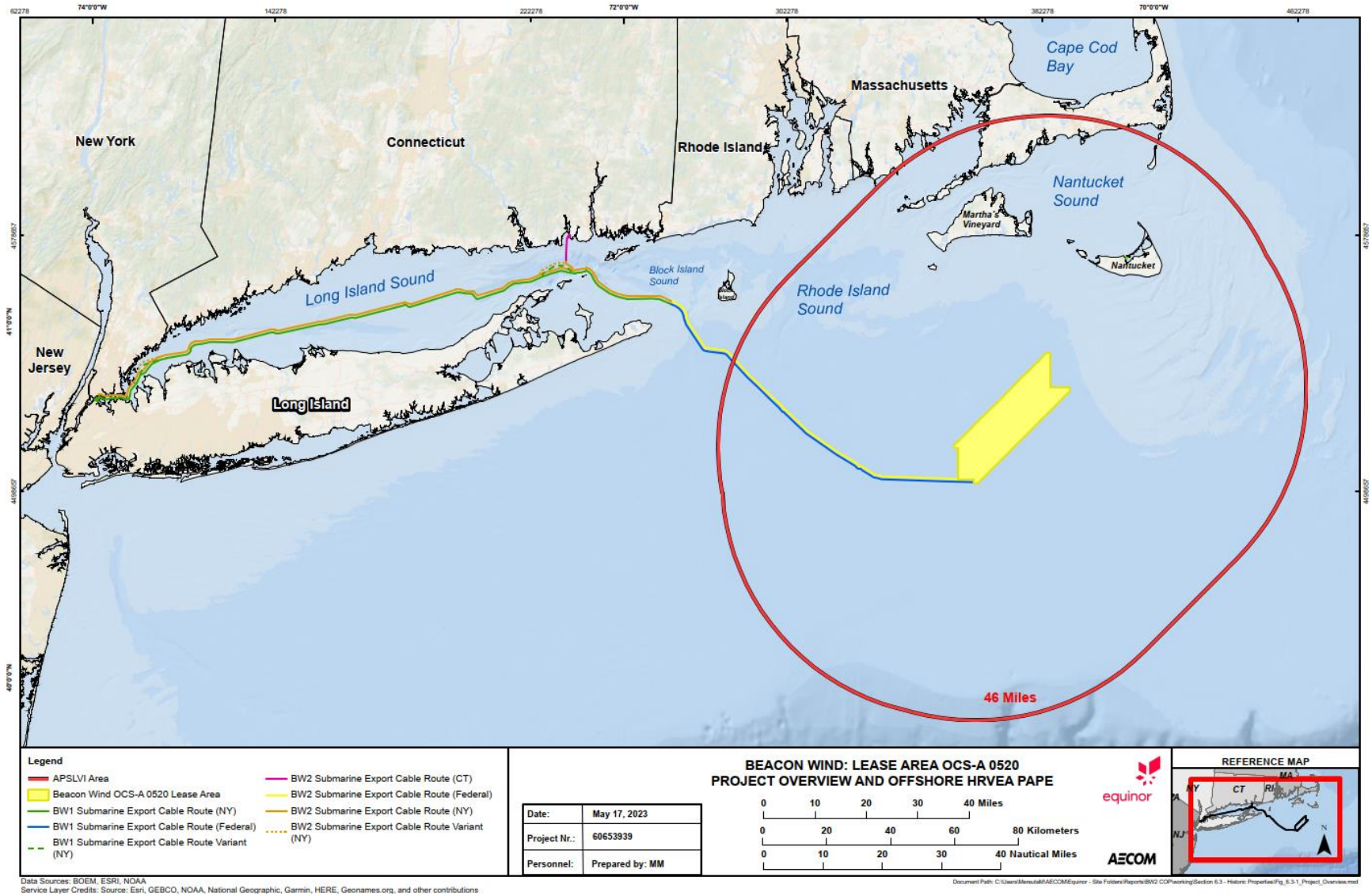


FIGURE 6.3-2. OFFSHORE HRVEA PAPE

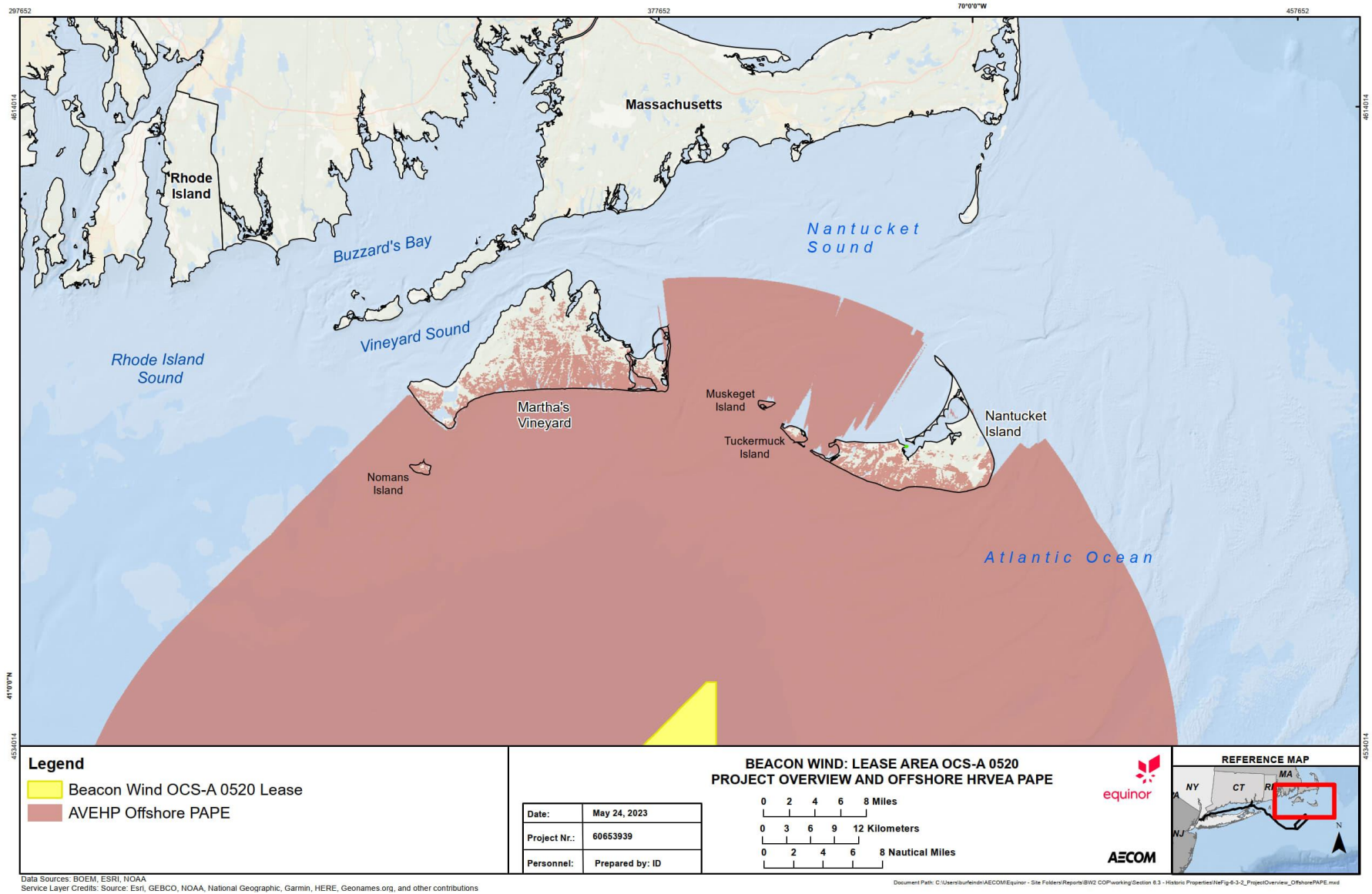


FIGURE 6.3-3. ONSHORE HRVEA PAPE – QUEENS, NEW YORK

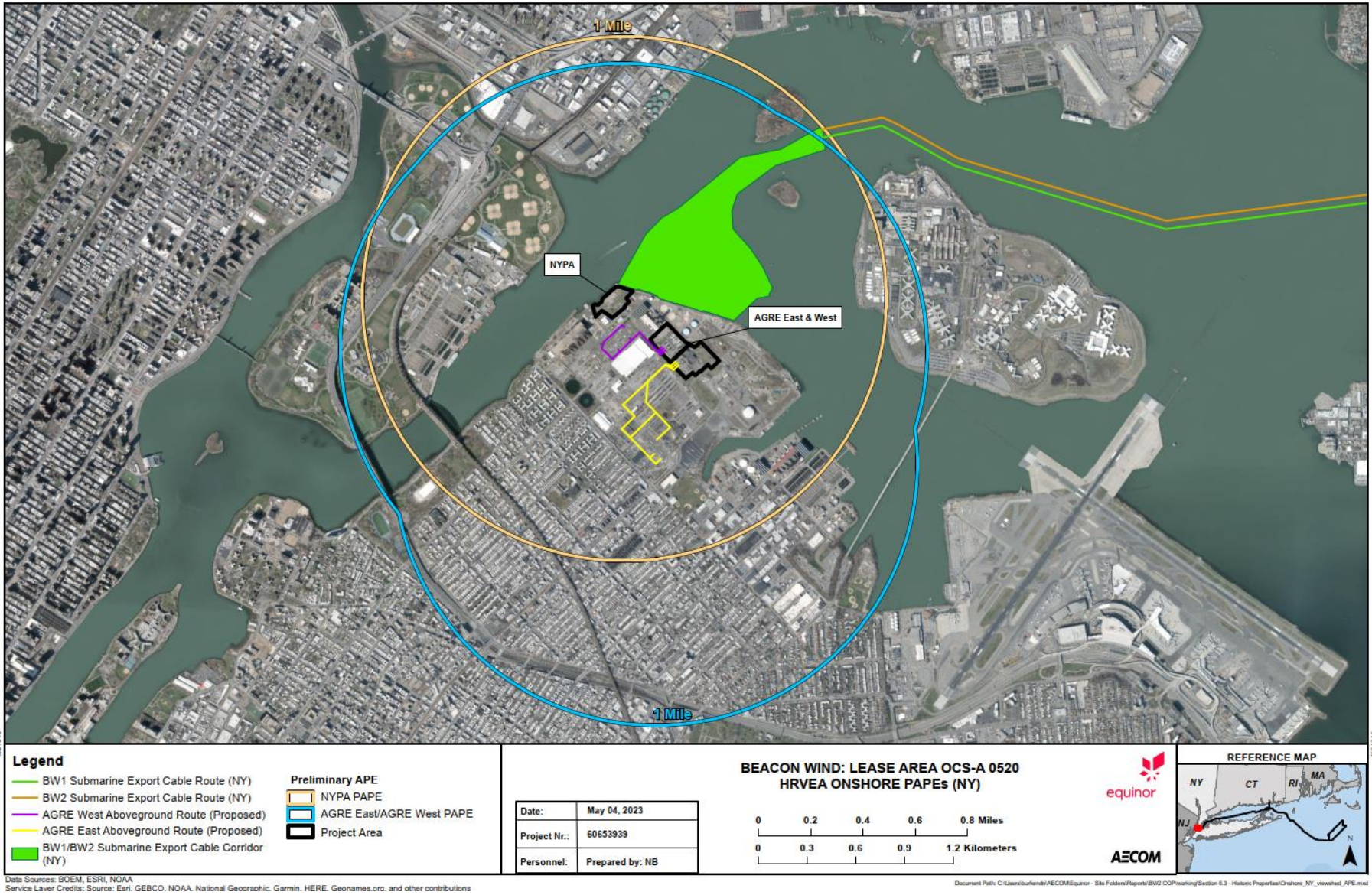
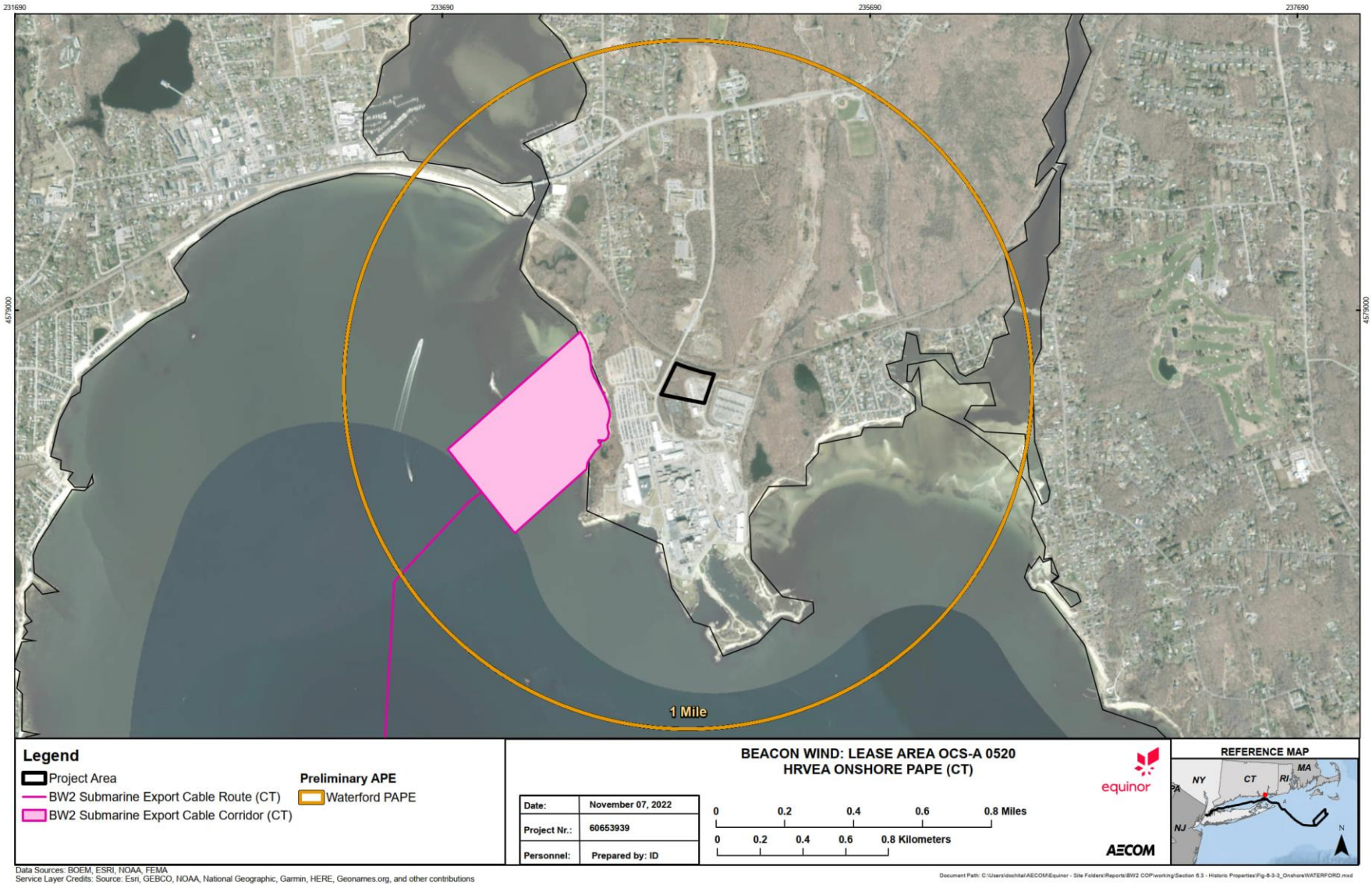


FIGURE 6.3-4. ONSHORE HRVEA PAPE – WATERFORD, CONNECTICUT



6.3.1 Affected Environment

The affected environment is defined as the onshore areas where above-ground historic resources have the potential to be directly or indirectly affected by the construction, operations, and decommissioning of the Project. In the context of cultural resources, the term 'affected environment' refers to the APE, which is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16d). The APE is the maximum geographic area where an undertaking may potentially affect historic properties. The APE will be determined by BOEM once the Section 106 process is formally initiated; therefore, this section describes the PAPE identified by Beacon Wind.

Permits necessary for the improvement of port and construction/staging facilities will be the responsibility of the owners of these facilities. Beacon Wind expects such improvements will broadly support the offshore wind industry and will be governed by applicable environmental standards, which Beacon Wind will comply with in using the facilities.

To be considered historic, a property must be at least 50 years old, must exhibit a high degree of physical integrity, and must be associated with historically significant events, people, or achievements. In some instances, the latter characteristic may override the age requirement. Eligibility for the NRHP is determined by significance, which is based upon the following criteria:

A. Association with events that have made a significant contribution to the broad patterns of our history; or
B. Association with the lives of persons significant to the past; or
C. Embodiment of distinctive characteristics of a type, period, or method of construction, or representation of the work of a master, or possession of a high artistic value, or representation of a significant and distinguishable entity whose components may lack individual distinction; or
D. Have yielded or may yield information that is important to history or prehistory.

Online research, desktop analysis, and field investigation were used to determine the presence of 21 historic properties in the offshore PAPE in Massachusetts (**Figure 6.3-5**, **Figure 6.3-6**), and 11 historic properties within the onshore PAPE in Queens, New York, and Waterford, Connecticut (**Figure 6.3-7**, and **Figure 6.3-8**). **Table 6.3-1** and **Table 6.3-2** list the historic properties in the HRVEA Offshore and Onshore PAPEs, respectively, and provide the pertinent NRHP criteria and a brief statement of significance for each property. See **Appendix W Historic Resources Visual Effects Assessment** for detailed information on each property included in the analysis.

FIGURE 6.3-5. HISTORIC PROPERTIES WITHIN THE OFFSHORE HRVEA PAPE - NANTUCKET, MASSACHUSETTS

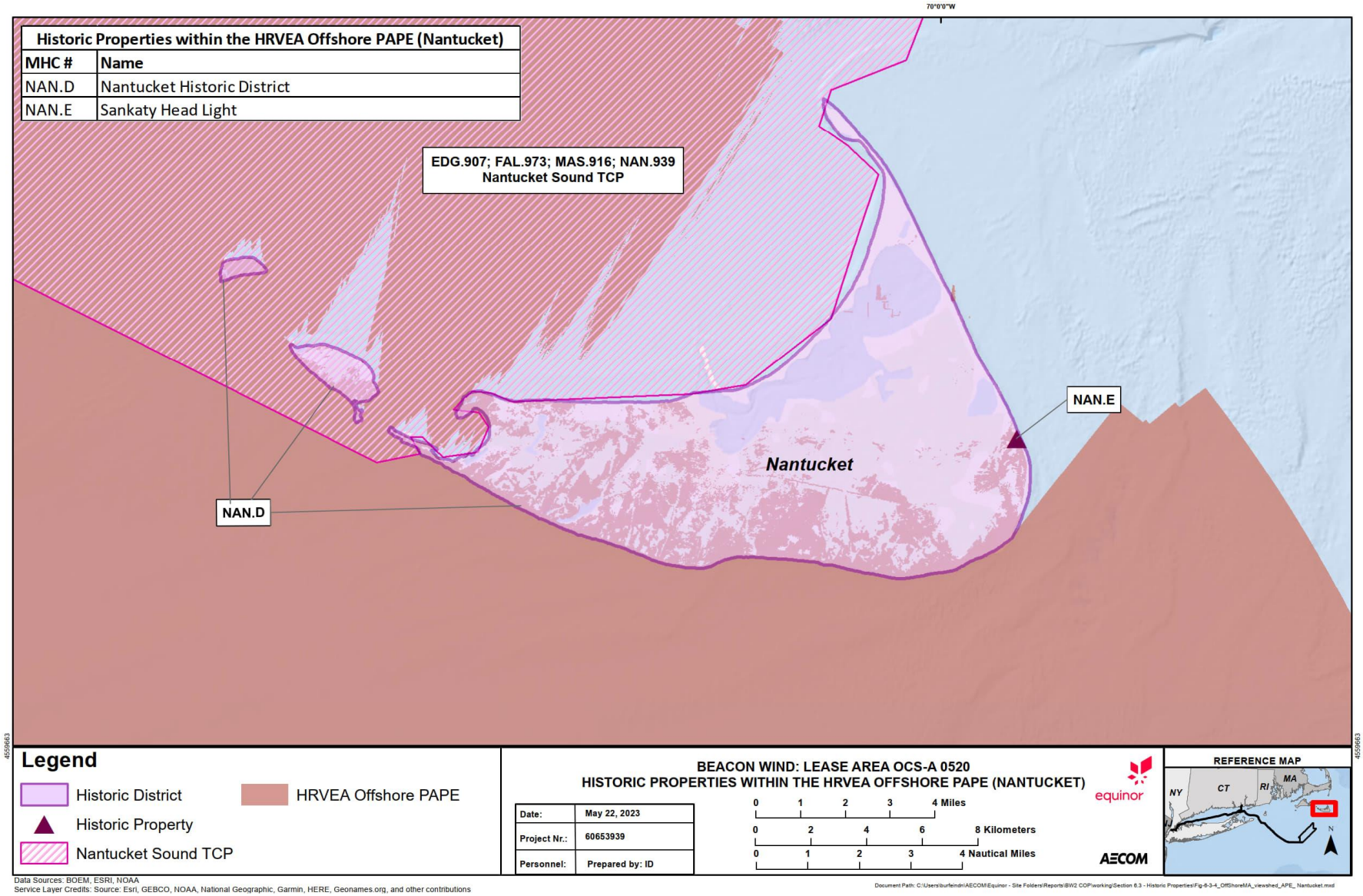


FIGURE 6.3-6. HISTORIC PROPERTIES WITHIN THE OFFSHORE HRVEA PAPE - MARTHA'S VINEYARD, MASSACHUSETTS

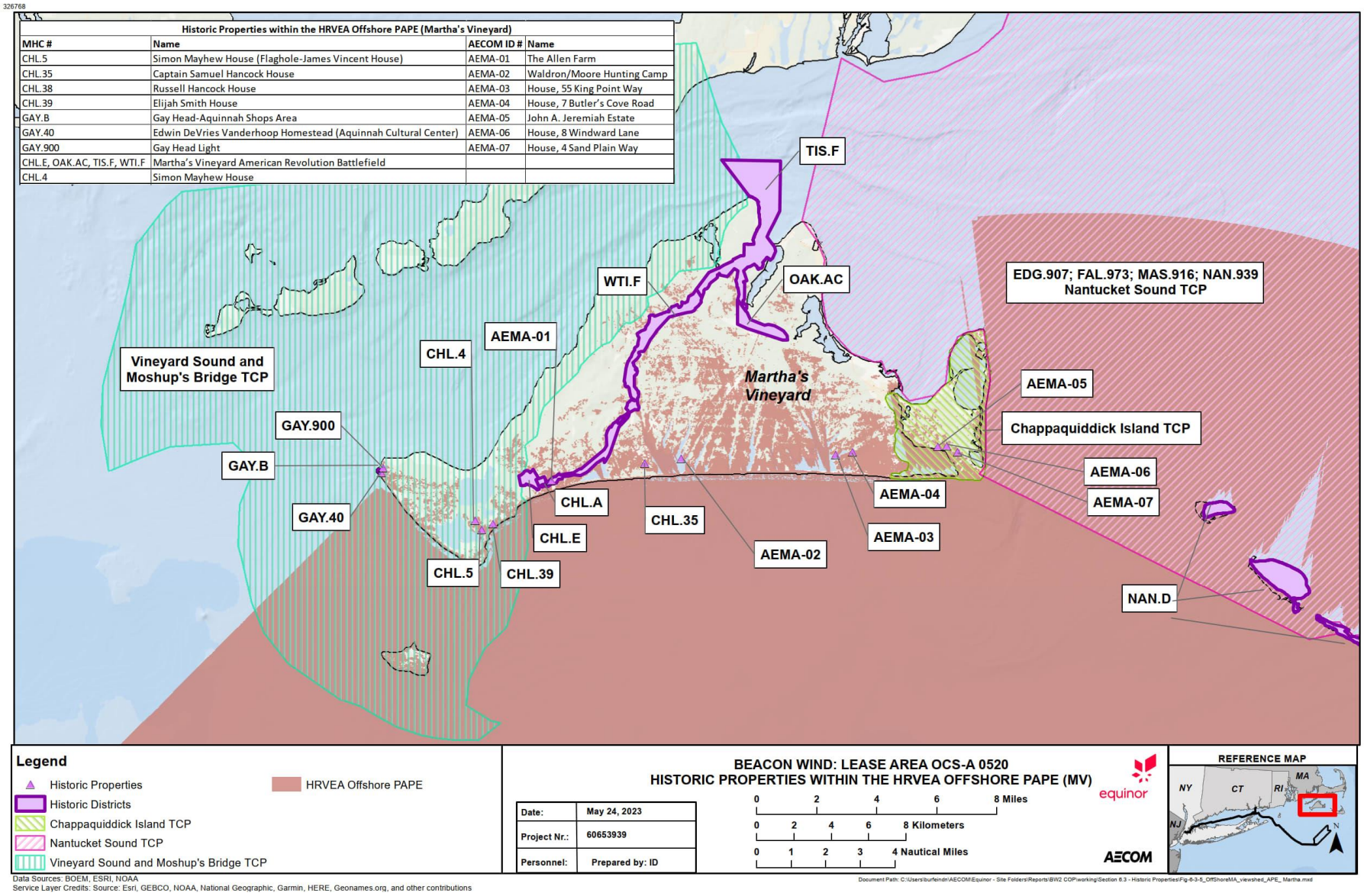


FIGURE 6.3-7. HISTORIC PROPERTIES WITHIN THE ONSHORE HRVEA PAPE - QUEENS, NEW YORK

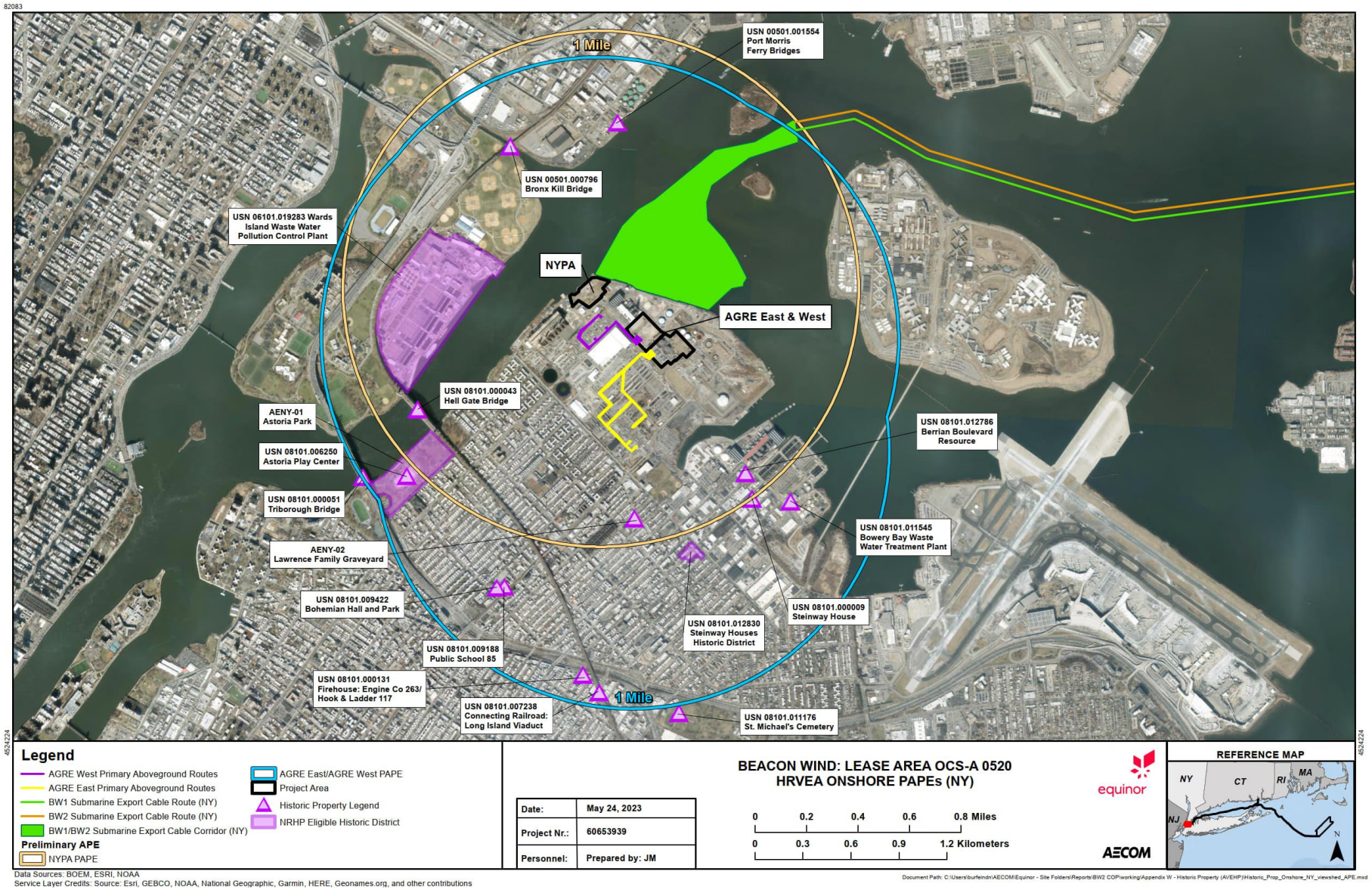


FIGURE 6.3-8. HISTORIC PROPERTIES WITHIN THE ONSHORE HRVEA PAPE - WATERFORD, CONNECTICUT

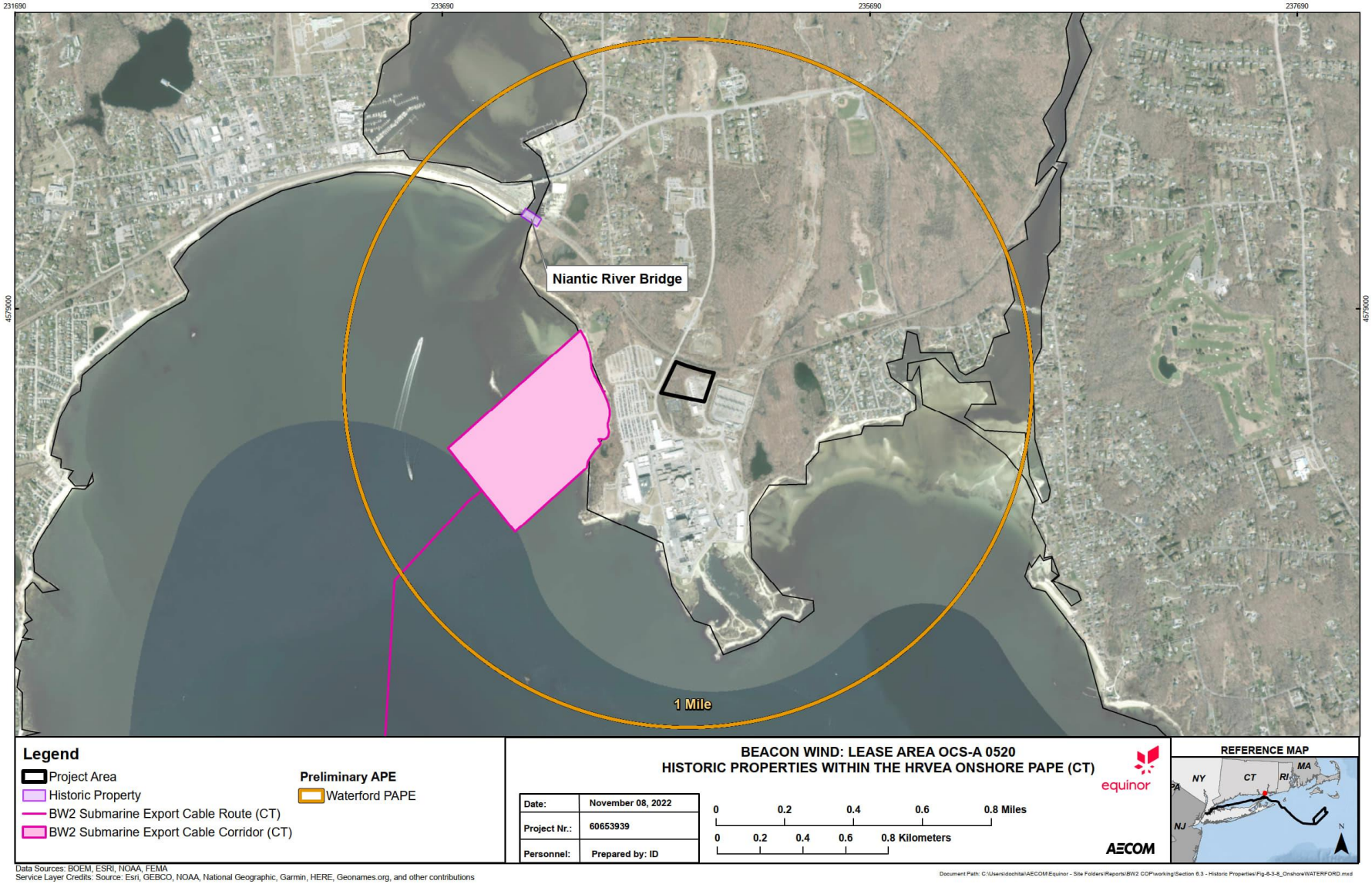


TABLE 6.3-1. HISTORIC PROPERTIES WITHIN THE OFFSHORE HRVEA PAPE

Property Name (Figure No.)	Location (Town)	SHPO/ Survey No.	NRHP Status	NRHP Criteria	Significance
Massachusetts					
Nantucket Historic District (**Figure 6.3-5.**)	Nantucket	NAN.D	NRHP-Listed; NHL	A, C, D	Association with the whaling industry in New England; for the array of well-preserved properties reflecting a range of architectural styles and eras; and for important cultural and historical data it has yielded or may yield.
Sankaty Head Light **(Figure 6.3-5.)**	Nantucket	NAN.E	NRHP-Listed	A, C	Association with the island's maritime history and as an aid to navigation and for its architecture.
Martha's Vineyard American Revolution Battlefield (**Figure 6.3-6**)	Chilmark, Oak Bluffs, Tisbury, West Tisbury	CHL.E, OAK.AC, TIS.F, WTI.F	Inventory	A, C	Association with the important event of the 1778 raid of the British on the island, and as a collection of historic properties dating from the eighteenth century.
Simon Mayhew House (**Figure 6.3-6**)	Chilmark	CHL.4	Inventory	B, C	Association with the Mayhew family and as an example of an eighteenth-century Colonial Cape dwelling.
Simon Mayhew House (Flaghole-James Vincent House) (**Figure 6.3-6**)	Chilmark	CHL.5	Inventory	B, C	Association with Simon Mayhew and as an example of an early eighteenth-century Colonial Cape.
Captain Samuel Hancock House (**Figure 6.3-6**)	Chilmark	CHL.35	NRHP-Eligible	A, C	Association with local maritime history, and as a rare intact example of early timber frame architecture in Chilmark.
Russell Hancock House (**Figure 6.3-6**)	Chilmark	CHL.38	Inventory	C	As an example of a rural Greek Revival-style dwelling.
Elijah Smith House (**Figure 6.3-6**)	Chilmark	CHL.39	Inventory	B, C	Association with Elijah Smith and as an example of an eighteenth-century vernacular dwelling.
Gay Head-Aquinnah Shops Area **(Figure 6.3-6)**	Aquinnah	GAY.B	Inventory	A	Association with the expansion of tourism on the island in the early 20th century.

Property Name (Figure No.)	Location (Town)	SHPO/ Survey No.	NRHP Status	NRHP Criteria	Significance
Massachusetts					
Edwin DeVries Vanderhoop Homestead (Aquinnah Cultural Center) (**Figure 6.3-6**)	Aquinnah	GAY.40	NRHP-Listed	A, C	Association with the Vanderhoop family of the Wampanoag Tribe of Aquinnah, for its association with civic and social life in the Aquinnah sections of Martha's Vineyard, and for architectural characteristics, which represent late 19th-century residential design on Martha's Vineyard.
Gay Head Light (**Figure 6.3-6**)	Aquinnah	GAY.900	NRHP-Listed	A, C	Association with island's maritime history and as an aid to navigation and as an example of a 19th-century maritime structure constructed of bricks utilizing the clay from the Gay Head Cliffs.
The Allen Farm (**Figure 6.3-6**)	Chilmark	AEMA-01	Newly Identified	A, C	Association with island agriculture and as an example of an 18th-century farmhouse.
Waldron/Moore Hunting Camp (**Figure 6.3-6**)	West Tisbury	AEMA-02	Newly Identified	C	Significant as an example of a duck hunting camp.
House, 55 King Point Way (**Figure 6.3-6**)	Edgartown	AEMA-03	Newly Identified	C	Significant as an example of a mid-twentieth-century Cape-style dwelling.
House, 7 Butler's Cove Road (**Figure 6.3-6**)	Edgartown	AEMA-04	Newly Identified	C	Significant as an extant 19th-century vernacular dwelling.
John A. Jeremiah Estate (**Figure 6.3-6**)	Edgartown	AEMA-05	Newly Identified	A, C	Association with the development of Chappaquiddick as a summer retreat and as an example of a turn-of-the-century summer home.
House, 8 Windward Lane (**Figure 6.3-6**)	Edgartown	AEMA-06	Newly Identified	C	Significant as an intact example of an early-20th-century dwelling on Martha's Vineyard
House, 4 Sand Plain Way (**Figure 6.3-6**)	Edgartown	AEMA-07	Newly Identified	C	Significant as a late-19th-century dwelling.
Chappaquiddick Island TCP (**Figure 6.3-6**)	Chappaquiddick Island, Martha's Vineyard	No ID	NRHP-Eligible	A	Association with and importance in maintaining the continuing cultural identity of the community.

Property Name (Figure No.)	Location (Town)	SHPO/ Survey No.	NRHP Status	NRHP Criteria	Significance
Massachusetts					
Nantucket Sound TCP (**Figure 6.3-5, Figure 6.3-6**)	Waters between Cape Cod, Nantucket, and Martha's Vineyard	EDG.907; NAN.939; FAL.973; MAS.916	NRHP-Eligible	A, B, C, D	Associations with Native American history and settlement, for association with Maushop and Squant, as an integral entity to the Wampanoags, and for cultural, historical, and scientific information it has yielded or may yield.
Vineyard Sound and Moshups Bridge TCP (**Figure 6.3-6**)	Coasts and waters between Martha's Vineyard and Islands (Nomans Land, Cuttyhunk, Nashawena, Pasque, Naushon, Nonamesset) and Woods Hole, Massachusetts	No ID	NRHP-Eligible	A, B, C, D	Associated with ancient and historic Native American events, with Moshup, as a component of Aquinnah lifeways, and for potential to yield information about history and prehistory.

TABLE 6.3-2. HISTORIC PROPERTIES WITHIN THE ONSHORE HRVEA PAPES

Property Name (Figure No.)	Location (County)	SHPO/Survey No.	NRHP Status	NRHP Criteria	Significance
New York					
Bronx Kill Bridge (**Figure 6.3-7**)	Bronx	0501.000796	NRHP-Eligible	A, C	Association with patterns of transportation development and as an example of railroad bridge design and engineering dating to the early twentieth century
Port Morris Ferry Bridges (**Figure 6.3-7**)	Bronx	0501.001554	NRHP-Listed	A, C	Passenger waterway transportation in New York City; distinctive 20th century industrial design.
Hell Gate Bridge (**Figure 6.3-7**)	Bronx/Queens	06101.007332	NRHP-Eligible	A, C	The longest steel arch bridge in the world at the time of construction and significant for transportation and industrial engineering technology
Wards Island Wastewater Pollution Control Plant (**Figure 6.3-7**)	Queens	06101.019283	NRHP-Eligible	A, C	Association with the history of sanitation and pollution control in the New York City, and for Neoclassical-style architecture.
Steinway House (**Figure 6.3-7**)	Queens	08101.000009	NRHP-Listed	A, C	Excellent example of its architectural style and evocative of the original rural quality of the location; representative of development, heritage, and cultural characteristics of New York City.
Triborough Bridge (**Figure 6.3-7**)	Queens	08101.000051	NRHP-Eligible	A, C	Association with team of engineers who constructed bridges for interconnection throughout the city; outstanding example of 20th century engineering design
Astoria Play Center (**Figure 6.3-7**)	Queens	08101.006250	NRHP-Eligible	A, B, C	An intact example of a WPA project; association with Robert Moses; shared design aesthetics with other WPA pools that include Art Deco and Art Moderne elements.
Public School 85 (**Figure 6.3-7**)	Queens	08101.009188	NRHP-Eligible	A, C	Association with the response of the city to the expanding school-age population and educational reform movement; an example of early 20th-century educational architecture.

Property Name (Figure No.)	Location (County)	SHPO/Survey No.	NRHP Status	NRHP Criteria	Significance
New York					
Bohemian Hall and Park(**Figure 6.3-7**)	Queens	08101.009422	NRHP-Eligible	A, C	Association with the history of Czech and other Slavic immigrants, association with the ethnic heritage and social history of the city, association with the history of recreation in the city; also as an early twentieth-century meeting hall, and important as the only surviving beer-garden landscape of its kind.
Bowery Bay Wastewater Treatment Plant (**Figure 6.3-7**)	Queens	08101.011545	NRHP-Eligible	C	An excellent example of Works Progress Administration (WPA)-style public architecture
Berrian Boulevard Resource (**Figure 6.3-7**)	Queens	08101.012786	NRHP-Eligible	A, C	Significant as part of history of New York water supply infrastructure, and as an example of Beaux Arts architecture.
Steinway Houses Historic District (**Figure 6.3-7**)	Queens	08101.01283	NRHP-Eligible	A, C	Community planning and social history as a company town; and as a row of intact late-19th-century row houses.
Astoria Park (**Figure 6.3-7**)	Queens	AENY-01	Newly Identified	A, C	Association with New York City parks development and as an example of WPA-era park and building design.
Lawrence Family Graveyard (**Figure 6.3-7**)	Queens	AENY-02	Newly Identified	B, C	Association with prominent Astoria residents and as an example of an early-18th-century cemetery used continuously for over 250 years.
Firehouse: Engine Co. 263/ Hook & Ladder 17 (**Figure 6.3-7**)	Queens	08101.000131	NRHP-Eligible	A, C	Intact example of firehouse built after the 1898 consolidation of the metropolitan fire-fighting system; one of the earliest examples of a fire house designed in-house by the Fire Department; excellent example of civic design for function.
NY Connecting Railroad: Long Island Viaduct (**Figure 6.3-7**)	Queens	08001.007238	NRHP-Eligible	A, C	Association with team of engineers who constructed bridges for interconnection throughout the city; outstanding example of 20th century engineering design
St. Michael's Cemetery (**Figure 6.3-7**)	Queens	08101.011176	NRHP-Eligible	A, C	Good example of cemetery that was established in response to the Rural Cemetery Act of 1847;

Property Name (Figure No.)	Location (County)	SHPO/Survey No.	NRHP Status	NRHP Criteria	Significance
New York					
					intact design features including meandering paths and delineated internments reflect a typical cemetery of the mid-19th-century cemetery.

Property Name (Figure No.)	Location (Town)	SHPO No.	NRHP Status	NRHP Criteria	Significance
Connecticut					
Niantic River Bridge (**Figure 6.3-8.**)	East Lyme	27694	NRHP-Eligible	A, C	Significant as an important link on the former New York, New Haven & Hartford Railroad Shore Line and technologically as the only chain-driven example among the seven Scherzer rolling-lift bridge spans on the Northeast Corridor.

6.3.2 Impacts Analysis for Construction, Operations, and Decommissioning

The potential impacts resulting from the construction, operations, and decommissioning of the Project are based on the maximum design scenario from the PDE (see **Section 3 Project Description**). For historic properties, the maximum design scenario is the presence of new fixed structures offshore (e.g., wind turbines and offshore substation facilities) and onshore (e.g., onshore substation facility), as described in **Table 6.3-3**. This design concept incorporates the full build-out and includes a total of up to 157 structures within the Lease Area (made up of up to 155 wind turbines and two offshore substation facilities), one submarine export cable route to Queens, New York for BW1 and one submarine export cable route to Queens, New York or Waterford, Connecticut for BW2, and the associated onshore substation facilities.

TABLE 6.3-3. SUMMARY OF MAXIMUM DESIGN SCENARIO PARAMETERS FOR HISTORIC PROPERTIES

Parameter	Maximum Design Scenario	Rationale
Construction		
Duration offshore construction	Based on full build-out of the Project (BW1 and BW2) which corresponds to the maximum number of structures (155 wind turbines and two offshore substation facilities) and maximum period of cumulative duration for installation.	Representative of the maximum period required to install the offshore components, which has the potential to visually impact historic properties in the Project Area.
Duration onshore construction	Based on full build-out of the Project: BW1 to Queens, New York and BW2 to Queens, New York or Waterford, Connecticut, which includes construction and installation of export cable landfalls, onshore export and interconnection cables, and onshore substation facilities.	Representative of the maximum period required to install the onshore components, which has the potential to visually impact historic properties in the Project Area.
Operations and Maintenance		
Wind turbines	Based on full build-out of the Project (BW1 and BW2) (155 wind turbines).	Representative of the presence of new fixed structures in an area that previously had none.
Offshore substation facilities	Based on full build-out of the Project (BW1 and BW2), which includes up to two offshore substation facilities.	Representative of the presence of new fixed structures in an area that previously had none.

Onshore Substation facilities	Based on full build-out of the Project (BW1 and BW2):
	• BW1 to Queens, New York (up to a 7 ac [2.8 ha] area).
	• BW2:
	  ○ Queens, New York (up to a 7 ac [2.8 ha] area) or
	  ○ Waterford, Connecticut (up to a 7 ac [2.8 ha] area).
		Representative of the presence of new structures in an area that previously had none.

Under Section 106, an adverse effect may occur when an undertaking alters "directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR 800).

Adverse effects to historic properties include, but are not limited to:

- Physical destruction of, or damage to, all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access that is not consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of the property, which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American Tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (36 CFR 800.5[a]) (36 CFR 800).

6.3.2.1 Construction

During construction, the potential impact-producing factors to historic properties may include:

- Installation of offshore Project components, including wind turbines, offshore substation facilities, submarine export cables, and interarray cables;
- Project staging activities, such as storage, transportation, or assembly of Project components at applicable facilities or areas; and
- Construction of BW1 and BW2 onshore components, including the onshore export cable landfalls, onshore interconnection cables, and onshore substation facilities.

The following impacts may occur as a consequence of the factors identified above:

- Short-term visual impacts during offshore installation activities; and
- Short-term visual impacts during onshore construction activities.

No physical impacts to historic properties are anticipated as part of onshore construction activities[4]; therefore, physical impacts are not a part of this analysis. However, visual impacts were assessed.

[4] The existing power plant at the AGRE site was built c. 1970 by Con Ed and has been altered over time such that it lacks physical integrity and thus potential historic significance.

Short-term visual impacts during offshore installation activities: During installation, vessels will be present within and traversing the waters to and from the Lease Area and along the submarine export cable routes between the Lease Area and the Queens, New York and/or Waterford, Connecticut landfalls. As these areas of the Atlantic Ocean and Long Island Sound already experience considerable vessel traffic, it is not anticipated that Project-related activities will alter or substantially increase traffic in these areas. It is anticipated that most vessels used for the Project will be similar in size and form to existing commercial vessels. Visual impacts to the casual observer are not anticipated.

Larger vessels, such as barges or jack-up vessels, may be more noticeable to onshore viewers due to their size relative to existing watercraft. However, visual effects will be short-term and limited to the time it takes for such vessels to travel to and from the offshore Project installation areas or to complete installation tasks. Viewers along the south shores of Martha's Vineyard and Nantucket may experience limited temporary views of installation vessels beyond 15 mi (24 km) offshore within the northern portion of the Lease Area. These visual effects will be minor and short-term and will not be present once installation is complete.

Vessels installing the submarine export cables will be present closer to shore, particularly along the northern and eastern shores of Long Island and at Waterford, Connecticut, the south shore of Connecticut in the area of Niantic Bay. While these vessels will be easily visible from onshore vantage points, they will not remain at one location for more than several weeks. These visual effects will be short-term and are not anticipated to impact historic properties.

Nighttime installation activities are anticipated to occur as part of the Project. Navigation lights on large vessels and lighting necessary to complete installation tasks may be visible from shoreline vantage points. However, visual effects resulting from nighttime installation activities will be limited to select locations within the Project Area. These effects will be temporary and limited to the duration of installation and will not be present once installation is complete.

Short-term visual impacts during onshore construction activities: During construction of the onshore landfalls and onshore substation facilities, there would be potential temporary visual effects to historic properties from construction activities, project staging, and the presence of work equipment, vehicles, and construction workers. Onshore construction activities associated with the Project would include: surveying, grading, and excavation; removal of existing structures and vegetation; construction of foundations and superstructure; erection of onshore substation facility equipment; placement of perimeter fencing and other site work; and landscaping installation (if required). The onshore Project locations under consideration in Queens, New York (NYPA and AGRE) are both within an existing riverfront industrial zone characterized by active power generation and electrical infrastructure facilities, above-ground storage tanks, factories, and other industrial structures. Existing vegetation is minimal if present, so removal of vegetation as part of construction will not affect viewsheds. Field investigations indicated that no identified historic properties have direct views of the AGRE site. Four historic properties have views across the East River toward the NYPA site; however, this is already an active power-generation area and the temporary presence of construction activities and equipment would not be noticeable or create impacts to historic properties. Similarly, the Waterford site at Waterford, Connecticut is within an existing power complex with multiple multistory industrial structures. The Waterford site is located on a peninsula mostly screened from nearby areas by vegetation and physically distant from developed areas across Niantic Bay. There are no historic properties with views of the construction site. Onshore substation facility construction would occur

partly within existing cleared areas centrally located within the existing Astoria power complex and would not occur in peripheral areas; as such, removal of vegetation as part of the construction process will not affect viewsheds from surrounding land areas in proximity. As such, short-term construction activities and equipment are unlikely to be noticeable or impact historic properties.

6.3.2.2 Operations and Maintenance

During operations, the potential impact-producing factors to historic properties may include:

- The presence of new fixed structures offshore (e.g., wind turbines and offshore substation facilities); and
- The presence of new fixed structures onshore (e.g., onshore substation facilities).

The following impacts to historic properties may occur as a consequence of the above factors:

- Long-term visual impacts resulting from the presence of new fixed structures offshore (e.g., wind turbines and offshore substation facilities); and
- Long-term visual impacts resulting from the presence of new fixed structures onshore (e.g., onshore substation facilities).

Long-term visual impacts resulting from the presence of new fixed structures offshore: Historic properties in the HRVEA Offshore PAPE could potentially be affected by visual effects caused by the Project's changes to the baseline conditions. Views of the ocean from historic properties may be altered by the presence of the Project's fixed offshore structures, including wind turbines and offshore substation facilities. In some cases, these viewshed changes may create adverse effects to a historic property by altering the characteristics that contribute to its significance under NRHP criteria. Given that there are no physical effects from Project components in close proximity to the historic properties, and effects are anticipated to be visual, the historic properties most likely to be affected by the Project are those where the maritime setting or historic association with maritime activities are a key aspect of the property's historic significance. As such, the assessment of the Project's effects on historic properties focused on how the Project affects the significance of a property's historic setting or its association with maritime activities.

As described in **Section 6.3.1** and **Appendix W Historic Resources Visual Effects Assessment**, the analysis of data identified 21 historic properties in Massachusetts with potential Project views in the HRVEA Offshore PAPE. These historic properties include individual properties, historic districts of varying sizes, and three TCPs. For some of these properties, the maritime setting with unobstructed views to the horizon forms a key character-defining aspect of the property's historic significance. Light stations, such as Gay Head Light and Sankaty Head Light, are significant as historic maritime navigational aids, characterized by their expansive views of the ocean. The Nantucket Historic District, which includes the entirety of the island of Nantucket and its two smaller islands, Muskeget and Tuckernuck, derives its significance from being a historic whaling center and more recently, a tourism destination centered around its maritime setting. Unobstructed views of the ocean from beaches and waterfront areas are important to Nantucket's significance in tourism. On the mainland, several historic districts derive significance from their historic association with maritime industries, and/or their history of summer resort development based upon their oceanfront setting.

The historic properties in the HRVEA Offshore PAPE include three TCPs: the Chappaquiddick Island TCP, the Nantucket Sound TCP, and the Vineyard Sound and Moshup's Bridge TCP. These three

TCPs cover large expanses of land and/or water and derive their significance from their setting and association with Wampanoag religious and cultural beliefs, traditions, and folklore centered on the natural landforms and water bodies.

Among the 21 historic properties evaluated in the HRVEA Offshore PAPE, 11 are significant for their maritime setting and/or their association with maritime activities. Of these 11, field survey ascertained that all had views of the Project's proposed offshore fixed structures. Of the 11 historic properties, six may be subject to effects that may alter their characteristics in a manner that diminishes their integrity of setting or association. **Figure 6.3-5.** and **Figure 6.3-6** show the historic properties within the HRVEA Offshore PAPE on Nantucket and Martha's Vineyard, respectively. **Table 6.3-4** summarizes the 21 historic properties evaluated, including whether they derive significance from maritime setting or association and the anticipated effects of the Project. Further information on the historic properties is available in **Appendix W Historic Resources Visual Effects Assessment**.

Long-term visual impacts resulting from the presence of new fixed structures onshore: Within the HRVEA Onshore PAPE in Queens, New York, 17 historic properties are located within 1 mi (1.6 km) of the AGRE and NYPA locations. These properties include residential properties, parkland, a cemetery, historic municipal and energy facilities, and bridges. Within the HRVEA Onshore PAPE in Waterford, Connecticut, one historic property, a bridge, is located within 1 mi (1.6 km) of the Waterford site.

As with historic properties in the HRVEA Offshore PAPE, the assessment of visual effects on 17 historic properties in the HRVEA Onshore PAPEs focused on changes affecting their integrity of setting, feeling, and association. Of the 17 historic properties assessed at Queens, New York, all 17 fall within the PAPE for the AGRE site, while eight fall within the PAPE of the NYPA site. Field assessments indicated that of the 17 properties within the PAPE of the AGRE site, three (Bronx Kill Bridge, Port Morris Ferry Bridges, and Wards Island Waste Water Pollution Control Plant) have full or partial views of this site. The remaining 14 properties do not have views due to topography and the existing and dense built environment. Of the eight properties within the PAPE of the NYPA site, four (Hell Gate Bridge, Bronx Kill Bridge, Port Morris Ferry Bridges, and Wards Island Waste Water Pollution Control Plant) have full or partial views of the NYPA site, and the remaining four properties do not have views. However, the addition of Project structures at the NYPA and AGRE sites would not alter any characteristics of these historic properties, as the new Project components would be added to an existing and dense industrial landscape already containing many modern structures, and as such would not affect these historic properties' integrity of setting, feeling, or association. At Waterford, Connecticut, one historic property in the PAPE (Niantic River Bridge) was evaluated. The property does not have a view of the Project due to intervening tree cover; as such, the Project would not alter the integrity of the bridge's setting, feeling or association. Further information on the historic properties is available in **Appendix W Historic Resources Visual Effects Assessment**.

Figure 6.3-7, and **Figure 6.3-8** show the historic properties within the HRVEA Onshore PAPEs in Queens, New York and Waterford, Connecticut, respectively. **Table 6.3-5** summarizes the nine properties, including whether they derive significance from their setting, feeling, or association, whether they have direct views of the Project, and the anticipated effects of the Project.

6.3.2.3 Decommissioning

Impacts during decommissioning are expected to be similar to or less than those experienced during construction, as described in **Section 6.3.2.1**. It is important to note that advances in decommissioning methods/technologies are expected to occur throughout the operations phase of the Project. A full

decommissioning plan will be approved by BOEM prior to the commencement of any decommissioning activities, and potential impacts to historic properties will be re-evaluated at that time. For additional information on the decommissioning activities that Beacon Wind anticipates will be needed for the Project, please see **Section 3 Project Description**.

TABLE 6.3-4. EFFECTS TO HISTORIC PROPERTIES WITHIN THE HRVEA OFFSHORE PAPE IN MASSACHUSETTS

SHPO/Survey No.	Property Name	NRHP Status	Distance to Project (mi/km)	Significant for Maritime Setting/Association?	View of Project?	Adverse Effect?
Nantucket						
NAN.D	Nantucket Historic District	NRHP-Listed and NHL	19.6 mi (31.5 km)	Yes	Yes	Yes
NAN.E	Sankaty Head Light	NRHP-Listed	27.9 mi (45.0 km)	Yes	Yes	No
Martha's Vineyard						
CHL.E, OAK.AC, TIS.F, WTI.F	Martha's Vineyard American Revolution Battlefield	Inventoried	28.3 mi (45.5 km)	No	Yes	No
CHL.4	Simon Mayhew House	Inventoried	29.4 mi (47.3 km)	No	Yes	No
CHL.5	Simon Mayhew House (Flaghole-James Vincent House)	Inventoried	29 mi (46.7 km)	No	Yes	No
CHL.35	Captain Samuel Hancock House	NRHP-Eligible	27.5 mi (44.3 km)	No	Yes	No
CHL.38	Russell Hancock House	Inventoried	27.5 mi (44.3 km)	No	Yes	No
CHL.39	Elijah Smith House	Inventoried	29.2 mi (47 km)	No	Yes	No
GAY.B	Gay Head-Aquinnah Shops Area	Inventoried	32.8 mi (52.8 km)	Yes	Yes	No
GAY.40	Edwin DeVries Vanderhoop Homestead (Aquinnah Cultural Center)	NRHP-Listed	32.7 mi (52.6 km)	Yes	Yes	Yes
GAY.900	Gay Head Light	NRHP-Listed	32.9 mi (53.0 km)	Yes	Yes	Yes
AEMA-01	The Allen Farm	Newly Identified	18.9 mi (30.4 km)	No	Yes	No
AEMA-02	Waldron/Moore Hunting Camp	Newly Identified	17.1 mi (27.5 km)	No	Yes	No
AEMA-03	House, 55 King Point Way	Newly Identified	15.5 mi (24.9 km)	No	Yes	No

SHPO/Survey No.	Property Name	NRHP Status	Distance to Project (mi/km)	Significant for Maritime Setting/Association?	View of Project?	Adverse Effect?
AEMA-04	House, 7 Butler's Cove Road	Newly Identified	15.5 mi (24.9 km)	No	Yes	No
AEMA-05	John A. Jeremiah Estate	Newly Identified	15.6 mi (25.1 km)	No	Yes	No
AEMA-06	House, 8 Windward Lane	Newly Identified	15.5 mi (24.9 km)	No	Yes	No
AEMA-07	House, 4 Sand Plain Way	Newly Identified	15.1 mi (24.3 km)	No	Yes	No
Traditional Cultural Properties (TCPs)						
Unassigned	Chappaquiddick Island (TCP)	NRHP-Eligible	23.2 mi (37.3 km)	Yes	Yes	Yes
EDG.907; NAN.939; FAL.973; MAS.916	Nantucket Sound (TCP)	NRHP-Eligible	20.6 mi (33.2 km)	Yes	Yes	Yes
Unassigned	Vineyard Sound and Moshup's Bridge (TCP)	NRHP-Eligible	24.6 mi (39.6 km)	Yes	Yes	Yes

TABLE 6.3-5. EFFECTS TO HISTORIC PROPERTIES WITHIN THE HRVEA ONSHORE PAPES

SHPO/Survey No.	Property Name	NRHP Status	Distance to Project (mi/km)	Significant for Setting/Association?	View of Project?	Adverse Effect?
New York						
501.000796	Bronx Kill Bridge	NRHP-Eligible	0.5 mi (1.0 km)	Yes	Yes	No
501.001554	Port Morris Ferry Bridges	NRHP-Listed	0.6 mi (1 km)	Yes	Yes	No
6101.007332	Hell Gate Bridge	NRHP-Eligible	0.7 mi (1.1 km)	Yes	Yes	No
6101.019283	Wards Island Wastewater Pollution Control Plant	NRHP-Eligible	0.3 mi (0.5 km)	No	Yes	No
8101.000009	Steinway House	NRHP-Listed	0.6 mi (1 km)	No	No	No
08101.000051	Triborough Bridge	NRHP-Eligible	1 mi (1.5 km)	Yes	Yes	No
08101.006250	Astoria Play Center	NRHP-Eligible	0.8 mi (1.3 km)	No	No	No
08101.009188	Public School 85	NRHP-Eligible	1 mi (1.5 km)	No	No	No
08101.009422	Bohemian Hall and Park	NRHP-Listed	1 mi (1.5 km)	No	No	No
8101.011545	Bowery Bay Wastewater Treatment Plant	NRHP-Eligible	0.8 mi (1.3 km)	No	No	No
8101.012786	Berrian Boulevard Resource	NRHP-Eligible	0.6 mi (1 km)	No	No	No
8101.01283	Steinway Houses Historic District	NRHP-Eligible	0.8 mi (1.3 km)	No	No	No
AENY-01	Astoria Park	Newly Identified	0.7 mi (1.1 km)	No	No	No
AENY-02	Lawrence Family Graveyard	Newly Identified	0.5 mi (0.8 km)	No	No	No
08101.000131	Firehouse: Engine Co. 263/ Hook & Ladder 17	NRHP-Eligible	1.6 mi (2.5 km)	No	No	No

SHPO/Survey No.	Property Name	NRHP Status	Distance to Project (mi/km)	Significant for Setting/Association?	View of Project?	Adverse Effect?
08001.007238	NY Connecting Railroad: Long Island Viaduct	NRHP-Eligible	0.9 mi (1.4 km)	Yes	No	No
08101.011176	St. Michael's Cemetery (1852)	NRHP-Eligible	1.5 mi (2.5 km)	No	No	No
Connecticut						
27694	Niantic River Bridge	NRHP-Eligible	0.6 mi (1 km)	No	No	No

6.3.3 Summary of Avoidance, Minimization, and Mitigation Measures

In order to mitigate the potential impact-producing factors described in **Section 6.3.2**, Beacon Wind is proposing to implement the following avoidance, minimization, and mitigation measures. A more detailed Avoidance, Minimization and Mitigation Plan will be prepared as part of the DEIS process.

6.3.3.1 Construction

During construction, Beacon Wind will commit to the following avoidance, minimization, and mitigation measures to mitigate the impacts described in **Section 6.3.2.1**:

- Location of the onshore Project components within existing highly developed and non-historic industrial settings of Queens, New York and Waterford, Connecticut, where historic properties are not present and visual impacts to historic properties are avoided;
- The Project will utilize an existing O&M Base and will not require construction of a new O&M Base in the State of New York, therefore avoiding additional potential impacts to historic resources or their visual viewshed as a result of new construction; and
- Continued outreach and engagement with relevant agencies, interested Tribal Governments, and stakeholders throughout the planning and construction process to identify appropriate mitigation measures during ground-disturbing activities, if deemed necessary.

6.3.3.2 Operations and Maintenance

During operations, Beacon Wind will commit to the following avoidance, minimization, and mitigation measures to mitigate the impacts described in **Section 6.3.2.2**:

- Marking and lighting of above-water offshore Project components will be consistent with regulatory requirements and guidance (see **Section 3 Project Description** for additional details on proposed marking and lighting measures). Beacon Wind is considering the use of agency-approved-ADLS and is actively completing an evaluation to determine the impacts of the implementation of this system. This minimization commitment is subject to final Project evaluation and agency approval; and
- Wind turbine design and appearance will be in line with best practices and mitigation measures recommended by BOEM (BOEM 2007) and may incorporate visual minimization techniques (paint color, etc.) consistent with what was developed assigned as mitigation for the adjacent Vineyard Wind I project (BOEM 2019) and/or other permitted wind projects in the adjacent region, as available. Key design elements for consideration include visual uniformity, use of tubular towers, and color of turbines.

In addition, Beacon Wind is considering a range of specific mitigations to address adverse impacts to the Nantucket Historic District, Gay Head Light, the Edwin DeVries Vanderhoop Homestead, the Chappaquiddick Island TCP, Nantucket Sound TCP and Vineyard Sound, and Moshup's Bridge TCP. Beacon Wind plans to engage with the stakeholders and Tribal Governments associated with these historic resources in order to understand which type of mitigation would best meet their needs.

Potential mitigation measures specific to the Nantucket Historic District for discussion may include:

- Funding of a historic preservation initiative, such as the development of maintenance plans, brick and mortar restoration, etc.

- Preparation of public educational materials, such as interpretive exhibits or other materials that highlight the history of a particular property.
- Thematic Studies of under-documented Nantucket historic properties (Native American, African American, tourism-hotels, mid-century/recent past).
- The preparation of historical survey documentation, such as State Historic Preservation Office Inventory Forms and/or National Register of Historic Places nominations, for discrete locations on the island such as Tom Nevers Park.

Potential mitigation measures specific to Gay Head Light and Edwin DeVries Vanderhoop Homestead may include:

- Funding lighthouse and homestead maintenance and/or restoration projects identified through input provided by the Town of Aquinnah and the Gay Head Light Advisory Committee.

Potential mitigation measures specific to the three TCPs may include:

- Oral history interviews to document the histories of the Tribes.
- Ethnographic studies.
- Purchase of open space for natural and cultural preservation.
- Education and training programs for tribal nations to be applied to certain mitigation approaches, such as technical trades that could be applied to the Project or academic courses for Ethnographic studies and methodologies.
- Sustainable cultural heritage project that seeks to increase usage of a tribal museum (if applicable) by financial assistance to increase cultural and historical resources that can be accessed through community-driven, intergenerational programming, and outreach.
- Fund a “traveling trunk” or “installation” that would be developed by the Tribe(s) and could be loaned or rented out to schools and museums to educate the non-Indigenous public about tribal issues, histories, lifeways, etc.

6.3.3.3 Decommissioning

Avoidance, minimization, and mitigation measures proposed to be implemented during decommissioning are expected to be similar to those implemented during construction and operations, as described in **Section 6.3.3.1** and **Section 6.3.3.2**. A full decommissioning plan will be approved by BOEM prior to any decommissioning activities, and avoidance, minimization, and mitigation measures for decommissioning activities will be proposed at that time.

6.3.4 References

TABLE 6.3-6. DATA SOURCES

Source	Includes	Available at	Metadata Link
BOEM	Lease Area	https://www.boem.gov/BOEM-Renewable-Energy-Geodatabase.zip	N/A
BOEM	State Territorial Waters Boundary	https://www.boem.gov/Oil-and-Gas-Energy-Program/Mapping-and-Data/ATL_SLA(3).aspx	http://metadata.boem.gov/geospatial/OCS_SubmergedLandsActBoundary_Atlantic_NAD83.xml

Source	Includes	Available at	Metadata Link
CT SHPO	NRHP Listed/Eligible Districts/Properties	https://portal.ct.gov/DECD/Content/Historic-Preservation/03_Technical_Assistance_Research/Research/Historic-Property-Database	N/A
NRHP	NRHP Listed/Eligible Districts/Properties	https://www.nps.gov/subjects/nationalregister/data-downloads.htm	N/A
MA SHPO	NRHP Listed/Eligible/ Unevaluated Districts/Properties	https://maps.mhc-macris.net/	N/A
NY SHPO	NRHP Listed/Eligible Districts/Properties	https://cris.parks.ny.gov/Login.aspx?ReturnUrl=%2f	N/A

36 CFR 800 – Protection of Historic Properties, incorporating amendments effective August 5, 2004. Available on-line at https://www.achp.gov/digital-library-section-106-landing/section-106-regulations. Accessed April 1, 2022.

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BOEM. 2019. Finding of Adverse Effect for the Vineyard Wind Construction and Operations Plan, April 10, 2019. United States Department of the Interior. Washington, D.C. Available online at: https://www.boem.gov/sites/default/files/documents/oil-gas-energy/Vineyard-Wind-Finding-of-Adverse-Effect.pdf. Accessed November 8, 2021.

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