

**National Park Service  
US Department of the Interior**



**Cape Hatteras National Seashore  
North Carolina**

**Finding of No Significant Impact  
Ocracoke Light Station Rehabilitation Project Environmental  
Assessment**

**August 2022**

Recommended:

**DAVID HALLAC** Digitally signed by DAVID HALLAC  
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Date

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## FINDING OF NO SIGNIFICANT IMPACT

The National Park Service (NPS) prepared an environmental assessment (EA) to evaluate the impacts of rehabilitating the Ocracoke Light Station at Cape Hatteras National Seashore (the Seashore), Hyde County, North Carolina. Buildings and structures associated with the Ocracoke Light Station include the Double Keepers' Quarters, Carpenter's Shop, Store House, Cisterns, Privy, Oil House, and Generator House; all of which are contributing to the historic property, except for the Generator House. This project is being undertaken because the structures of the Light Station have been damaged from recent storms and, if the structures are left as they are, it is expected they will be damaged further by future storms that could be exacerbated by climate change and sea level rise. The project is also needed because the rehabilitation of these structures is needed to assist with storm recovery and preservation and to adapt the structures to coastal hazards as exacerbated by climate change and sea level rise.

The EA was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 United States Code [USC] 4321 et seq.) and the 2020 Council on Environmental Quality National Environmental Policy Act (NEPA) implementing regulations (40 Code of Federal Regulations [CFR] 1500-1508); the Department of the Interior NEPA regulations (43 CFR Part 46); and with NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* (2011) and its accompanying handbook (2015). The statements and conclusions reached in this finding of no significant impact (FONSI) are based on the documentation and analysis provided in the EA and associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference below.

### SELECTED ALTERNATIVE

The EA analyzed three alternatives (alternative A – no-action alternative, alternative B – elevate some structures, and alternative C – ghost structure) and the potential impacts of these alternatives on the environment. Based on the analysis presented in the EA, the National Park Service has selected alternative B – elevate some structures. The selected alternative is described below and was identified as the proposed action and the preferred alternative in the EA.

### Selected Alternative Description

Under the selected alternative, the Ocracoke Lighthouse will be rehabilitated to include the following actions:

- Remove the shotcrete from the exterior of the Lighthouse and replace it with a coating that will allow appropriate protection of the masonry and moisture control
- Replace damaged masonry, including bricks and mortar (estimated to be approximately 20% of the existing bricks)
- Repair or replace all windows with historically appropriate windows
- Repair leaks at the top lantern and repaint
- Recoat interior masonry

- Expose the original stone foundation
- As an option, replace the interior metal staircase with a wooden spiral staircase to match the original material and orientation.

The selected alternative will elevate some of the structures (Double Keepers' Quarters, Carpenter's Shop, Store House, Privy, and Generator House) at the Ocracoke Light Station; the Lighthouse and Oil House will not be elevated. The storm damage to existing structures at the Ocracoke Light Station (Double Keepers' Quarters, Carpenter's Shop, Store House, Oil House, Generator House, and Privy) will be repaired. These repairs will address exterior and interior storm damage as well as painting the buildings and structures. Other repairs, replacements, and upgrades will occur to the electrical and plumbing systems after the buildings are elevated. Lead-based paint will be removed from the structures, mold and mildew will be removed from the Oil House and Double Keepers' Quarters, asbestos will be removed from the Double Keepers' Quarters if necessary, and the Store House will be reoriented back to its original location. All repairs will be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*.

Some existing non-historic trees and vegetation around the structures will be pruned or removed to prepare for construction. The Double Keepers' Quarters will be elevated approximately 4 feet. Before raising the building, the National Park Service will document it in accordance with the *Secretary of the Interior's Standards for Architectural and Engineering Documentation*. The Double Keepers' Quarters will be separated from its foundations, raised, and held by temporary supports while a new foundation is constructed below the building. The existing foundation will be removed, and a new foundation of materials such as timber pile foundations or masonry brick piers on top of concrete footers will be installed. Other architecturally appropriate alterations will be made to generally match the look and feel of the exterior of the building. For example, a masonry foundation wall may be constructed around the new crawl space formed by elevating the Double Keepers' Quarters to conceal the crawl space. The screening material for the crawl space could be brick, wood lattice, or solid breakaway panels; details such as this will be decided as the design is finalized. If a solid masonry foundation wall is selected, either an open pattern or flood vents will be installed to allow the flow of water during flood events, protecting the structure from becoming inundated by floodwater. The Double Keepers' Quarters will have stairs for each of the existing entry points to the structure. An elevated Architectural Barriers Act-compliant wheelchair lift station to meet the floor level of the building will be added to the Double Keepers' Quarters to provide accessibility. A new accessible concrete sidewalk will be added to provide access from the driveway around the side of the Double Keepers' Quarters to the new lift station. Details on the design of the rehabilitation to the Double Keepers' Quarters will be addressed in the ongoing Section 106 consultation. Where appropriate, utilities will be reworked to the elevated structures.

The Store House, Carpenter's Shop, Generator House, and Privy will be elevated approximately 1 to 2 feet on concrete masonry piers with concrete footers. The piers will be masked by historically appropriate material. Stairs and handrails will be constructed to the entrance of the structures; the stairs will be scaled to the size of the structure. The Privy will be relocated south of the existing site where a previous privy was located. The Carpenter's Shop will be shifted 1 to 3 feet westward and the live oak tree adjacent to the Carpenter's Shop will be trimmed to avoid contact with the roof.

The existing Oil House, Cisterns, boardwalk, and driveway will remain in place. The existing paths among the structures will be replaced in kind. The septic system and leach field will remain in place and the domestic water, and electric lines at the Ocracoke Light Station will be repaired. Following construction, the disturbed areas will be revegetated with vegetation that is suitable for current growing conditions at the site and compatible with recommendations in the *Ocracoke Light Station Cultural Landscape Report* (Hitchcock 2016).

## **RATIONALE FOR DECISION**

The National Park Service selected alternative B – elevate some structures for implementation - because it will sustainably rehabilitate the buildings and structures at the Ocracoke Light Station and provide some additional flood protection from future storms. The Ocracoke Light Station is at low elevation and the buildings frequently are inundated with rainwater and surge associated with storms and tidal flooding during exceptionally high tides. Climate change and resulting sea level rise will likely increase the frequency and magnitude of flooding events in the future. Sea level rise in the vicinity of the Ocracoke Light Station is projected to increase 2 to 3 feet over the next 50 years or 10-14" by 2050 (Sweet et al 2022). As the sea level rises, the site's vulnerability to coastal storms and the associated surges would also increase, putting the historic structures at a heightened level of risk during severe weather events. Repairing existing storm damage, rehabilitating the buildings and structures, and elevating potentially susceptible buildings and structures will allow for continued interpretation of the Ocracoke Light Station for visitors. Long-term, and as the sea level rises, the park will need to re-evaluate the vulnerability of the light station and determine if and how it can be sustainably preserved on Ocracoke Island. Although implementing the selected alternative will cause minor adverse impacts to the historic buildings and structures and the cultural landscape, these impacts are small compared with the overall benefit of retaining the Ocracoke Light Station in its historic location with the integrity and character-defining features of the buildings/structures and cultural landscape intact.

## **RESOURCE PROTECTION MEASURES**

To avoid, minimize, and mitigate impacts related to the selected alternative, the Seashore will commit to the following measures during the planning and implementation of the Ocracoke Light Station Rehabilitation Project. Subject to the final design and approval of plans by relevant agencies, mitigation measures will include, but will not be limited to, the items listed below.

- Ground disturbance will be minimized to the extent possible in the vicinity of the Double Keepers' Quarters (DKQ) where there is a potential to encounter artifacts.
- During the development of the DKQ foundation design, should the potential of ground disturbance to buried cultural material be determined likely, NPS shall prepare a Data Recovery Plan to submit to the State Historic Preservation Office (SHPO). To ensure that construction activities do not have impacts to unknown archeological resources, NPS shall ensure that archaeological monitoring occurs during ground-disturbing activities related to construction in the immediate vicinity of the DKQ and that this monitoring shall be overseen by a qualified Archeologist. In the event of a post-review discovery, NPS shall follow the Inadvertent Discoveries Stipulation (VI) of the Nationwide Programmatic

Agreement. If required, NPS shall undertake data recovery pursuant to the approved Data Recovery Plan, and all work shall be overseen by a qualified Archeologist.

- As the project's effects on historic properties cannot be fully determined prior to the approval of the project, NPS is utilizing a Programmatic Agreement to resolve effects under Section 106, in accordance with 36 CFR § 800.14 (b)(1)(ii) and (b)(3); the NPS has stipulated in this agreement that the later phases of design development will include the professional expertise of a historic architect and historic landscape architect, and plans will be provided for review and comment by SHPO in order to continue consultation with SHPO through the final design phases of the project.
- During final design and construction, the National Park Service will follow the guidance of *The Secretary of the Interior's Standards for the Treatment of Historic Properties, specifically Rehabilitation, and Guidelines on Flood Adaptation for Rehabilitating Historic Buildings*, as well as specific recommendations contained in the Historic Structures Report and the Cultural Landscape Report, to ensure rehabilitation and adaptation measures do not adversely affect historic buildings and structures and cultural landscapes. The National Park Service will also include considerations to avoid impacts to the Ocracoke Historic District.
- A historic landscape architect will work as part of the team during the design development and construction phases to identify the vegetation to be removed/trimmed based on designs and identify appropriate replacement vegetation that is suitable for current growing conditions at the site, based on the recommendations in the *Ocracoke Light Station Cultural Landscape Report* (Hitchcock 2016). (The National Park Service anticipates that replanting with existing tree and shrub taxa may be unsuccessful due to the high groundwater table and salt-water intrusion.) A professional arborist will be used to trim and remove trees, where needed, within the project area. A tree and shrub protection plan will also be prepared during the design phase.
- Ground protection mats, or similar ground covering, will be placed in the construction and demolition areas to reduce trampling impacts on vegetation from heavy machinery.
- To minimize the risk of invasive species being introduced or spread, all construction vehicles will be washed and inspected before use in the project area.
- During design development, a structural engineer will inspect the Double Keepers' Quarters for soundness with regard to elevating the structure.
- Construction and demolition work will be limited to daylight hours in the project area to avoid night-time noise disruption. Construction equipment will be properly maintained to minimize noise.
- To minimize possible fluid leaks from construction equipment, the contractor will regularly monitor and check construction equipment to identify and repair any leaks.
- Before any work in the Double Keepers' Quarters, an accredited inspector will do testing to determine if asbestos-containing material, lead paint, or other hazardous materials are present.
- The boardwalk will remain open during construction, so visitors could still visit the Ocracoke Light Station. The parking lot will be used as a staging area for construction vehicles and materials. To protect visitors, the parking lot will be fenced during construction.

- Demolition and construction contractor(s) will implement best management practices, such as appropriately handling and disposing of packing materials and other debris to ensure it does not mobilize beyond the construction limits.
- All construction debris will be properly disposed of in an approved landfill.

## FINDING OF NO SIGNIFICANT IMPACT

As documented in the EA, negative impacts on historic buildings and structures and the cultural landscape will occur from the implementation of the selected alternative; however, the impacts will not be significant when assessed under NEPA. For the purposes of satisfying the requirements of Section 106 of the National Historic Preservation Act (54 U.S.C. 306108), the NPS, SHPO and Advisory Council on Historic Preservation (ACHP) have signed a project-specific Programmatic Agreement (Appendix D) to define the process to complete consultation with the SHPO for the purposes of the EA and commit to continue to consult with the SHPO through the 100% design development. The PA identifies stipulations to maintain during the development of the project to continue to resolve effects as agreed upon by the NPS, SHPO, and ACHP.

**Historic Buildings and Structures.** The rehabilitation of the Ocracoke Lighthouse under the selected alternative will have beneficial effects on the structure. The repairs to the Double Keepers' Quarters and outbuildings and the elevation of some of these buildings and structures will be undertaken in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties, specifically Rehabilitation, and Guidelines on Flood Adaptation for Rehabilitating Historic Buildings*. These actions will repair impacts from previous storm damage and reduce the risk of flooding and inundation from future storms. Although the Carpenter's Shop will be shifted slightly from its current location and the Privy will be moved to another historically-documented location, these changes will only minimally affect the overall integrity and character-defining features of these buildings and structures. The overall relationship of the buildings and structures to each other within the setting will be maintained, the characteristics that qualify these buildings for inclusion in the National Register of Historic Places (NRHP) will not be diminished, and the integrity of the properties' locations, designs, settings, materials, workmanship, feeling, and association will remain relatively intact. Therefore, the impacts on historic buildings and structures will not be significant when assessed under NEPA.

**Cultural Landscapes.** The Ocracoke Light Station is a cultural landscape comprised of historic buildings and structures as well as contributing landscape characteristics and features. Ocracoke Light Station is also part of the larger Ocracoke Historic District. The selected alternative will have minimal effects on these cultural landscapes. The overall relationship of the buildings and structures to each other within the setting will be maintained, the characteristics that qualify this landscape for inclusion in the NRHP will not be diminished, and the integrity of the properties' locations, designs, settings, materials, workmanship, feeling, and association will remain relatively intact. The views of the Ocracoke Light Station from the Ocracoke Historic District will be similar to what they are today. The views from within the Ocracoke Light Station to other parts of the Ocracoke Historic District will not be affected. The selected alternative will not have significant impacts on cultural landscapes when assessed under NEPA.

## PUBLIC AND AGENCY INVOLVEMENT

The National Park Service initiated stakeholder meetings beginning in February 2021 with the State Historic Preservation Office, Hyde County, Outer Banks Lighthouse Society, Ocracoke Preservation Society, and the US Coast Guard. The National Park Service presented the preliminary alternatives through two civic engagement meetings, one in-person and one virtual on May 6 and 10, 2021. The EA was provided for formal public and agency review for 30 days March 14 through April 13, 2022 and the National Park Service held two public presentations on March 28, 2022. A total of 19 pieces of correspondence were received during the public review period. Most of the comments were in favor of the project, and no comments were substantive to warrant substantial modification or additional environmental analysis. However, the National Park Service has elected to respond to comments that reasonably questioned the project or were a frequent comment in Appendix B, Response to Public Comments. Minor editorial changes are reflected in an Errata, attached as Appendix C.

### Agency Consultation

**National Historic Preservation Act, Section 106.** As required by Section 106 of the National Historic Preservation Act, the Seashore consulted with the North Carolina SHPO through a notification provided in February of 2021. The SHPO responded on March 24, 2021, stating they concur that the undertaking will affect the historic property and look forward to providing meaningful comments. In addition, the Seashore provided notification letters to the Coast Guard, Outer Banks Lighthouse Society (April 21, 2021), and Ocracoke Preservation Society (April 21, 2021). The Seashore had an update meeting with the SHPO to provide an outline of the alternatives discussed in the EA (November 30, 2021). On March 10, 2022, the SHPO and ACHP were contacted regarding the park's proposal to conclude the Section 106 process to support the EA and FONSI through the development of a project-specific Programmatic Agreement (PA) and invited to participate in the development of the agreement. On March 23, 2022, the SHPO responded that the ACHP would participate in the consultation to develop the Section 106 agreement. The SHPO and ACHP continued to work with the NPS in developing the PA to appropriately address the effects the project may have to cultural resources and provide stipulations to complete Section 106 consultation through this agreement. NPS has initiated consultation with tribal partners for the project, and these tribal partners include the Absentee Shawnee tribe, the Catawba Indian Nation, the Eastern Shawnee tribe, the Shawnee tribe, and the United Keetoowah Band of Cherokee Indians. NPS provided notification of the project to these tribes through correspondence dated June 13, 2022, and received responses from the United Keetoowah Band of Cherokee Indians (June 16, 2022) and the Eastern Shawnee (July 11, 2022), Catawba Indian Nation (July 19, 2022), expressing no concerns with the project as well as the finding that the project posed no endangerment to known sites of interest to these tribes; however, expressing interest in continuing consultation, especially in circumstances involving inadvertent discovery of human remains and/or associated funerary objects. The project-specific PA has been signed by the SHPO, ACHP, and NPS and satisfies the requirements of Section 106 of the NHPA.

## CONCLUSION

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires the preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA. Based on the foregoing, it has been determined that an EIS is not required for this project and, thus, will not be prepared.

## REFERENCES

Hitchcock, S.

2016      *Ocracoke Light Station Cultural Landscape Report, Cape Hatteras National Seashore*. National Park Service. National Park Service Southeast Region, Cultural Resources, Partnerships & Science. January.

Sweet, W.V., B.D. Hamlington, R.E. Kopp, C.P. Weaver, P.L. Barnard, D. Bekaert, W. Brooks, M. Craghan, G. Dusek, T. Frederikse, G. Garner, A.S. Genz, J.P. Krasting, E. Larour, D. Marcy, J.J. Marra, J. Obeysekera, M. Osler, M. Pendleton, D. Roman, L. Schmied, W. Veatch, K.D. White, and C. Zuzak

2022      Global and Regional Sea Level Rise Scenarios for the United States: Updated Mean Projections and Extreme Water Level Probabilities Along U.S. Coastlines. NOAA Technical Report NOS 01. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD, 111 pp.

Documents appended to the FONSI include:

- Appendix A: Non-Impairment Determination
- Appendix B: Response to Substantive Public Comments
- Appendix C: Errata Indicating Text Changes to EA
- Appendix D: Programmatic Agreement



## APPENDIX A: NON-IMPAIRMENT DETERMINATION

By enacting the National Park Service (NPS) Organic Act of 1916 (Organic Act), Congress directed the US Department of Interior and the National Park Service to manage units “to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations” (54 USC 100101). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the National Park Service must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (54 USC 100101).

NPS *Management Policies 2006*, Section 1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the Nation Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

### IMPAIRMENT DETERMINATION

The National Park Service has determined that rehabilitation of the buildings and structures at the Ocracoke Light Station and elevation of some of those buildings and structures to protect them from future storm damage will not result in impairment of park resources and values. This determination on impairment has been prepared for the selected alternative described in this Finding of No Significant Impact. An impairment determination is made for the following resource topics: historic buildings and structures and cultural landscapes. These cultural resources are considered fundamental to the Ocracoke Light Station of Cape Hatteras National Seashore (Seashore).

#### Cultural Resources

As described in the EA, the selected action will have a minimal effect on the park’s cultural and historic resources. The actions of the selected alternative will be implemented in accordance with *The Secretary of the Interior’s Standards for the Treatment of Historic Properties, specifically Rehabilitation, and Guidelines on Flood Adaptation for Rehabilitating Historic Buildings*. The rehabilitation of the Ocracoke Lighthouse will result in beneficial effects, as will the repair of previous storm damage on the Double Keepers’ Quarters and the outbuildings. Elevating some of the buildings and structures will prevent damage from future flooding and inundation events. The selected alternative will only minimally affect the overall integrity and character-defining features of the buildings and structures of the Ocracoke Light Station. The overall relationship of the

buildings and structures to each other within the setting will be maintained, the characteristics that qualify these buildings for inclusion in the NRHP will not be diminished, and the integrity of the properties' locations, designs, settings, materials, workmanship, feeling, and association will remain relatively intact. Further, the views of the Ocracoke Light Station from the Ocracoke Historic District will be similar as they are today, and the views from within the Ocracoke Light Station to other parts of the Ocracoke Historic District will not be affected. Therefore, implementing the selected alternative will not result in impairment of cultural resources (historic buildings and structures and cultural landscapes).

## **SUMMARY**

The National Park Service has determined that the implementation of the NPS selected alternative will not constitute an impairment of the resources or values of the Seashore. As described above, implementing the selected alternative is not anticipated to impair resources or values that are essential to the purposes identified in the establishing legislation of the park, key to the natural or cultural integrity of the park, or identified as significant in the park's relevant planning documents. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the EA, the comments provided by the public and others, and the professional judgment of the decision-maker guided by the direction of the NPS *Management Policies 2006*.

## APPENDIX B: RESPONSE TO PUBLIC COMMENTS

The following response to comment, together with the FONSI and the EA, describe the final decision of the National Park Service for rehabilitating the Ocracoke Light Station at Cape Hatteras National Seashore. On March 15, 2022, the National Park Service released the Ocracoke Light Station Rehabilitation Project Environmental Assessment for public review and comment. The EA was available for public and agency review through April 15, 2022. The Seashore accepted comments through the NPS's online Planning, Environmental, and Public Comment (PEPC) system and by letter.

A total of 19 pieces of correspondence were received during the public review period. Correspondences were received from North Carolina, Maryland, Virginia, and Ohio. All correspondences will be maintained in the project decision file.

Response to public comments addresses substantive comments that were received during the public review period. Substantive comments are those that: "1) question, with reasonable basis, the accuracy of the information in the NEPA document; 2) question, with reasonable basis, the adequacy of the environmental analysis; 3) present reasonable alternatives other than those presented in the NEPA document; or 4) cause changes or revisions in the proposal." The majority of comments were in favor of the project, and no comments were substantive to warrant changes to the environmental assessment. However, a few comments that reasonably questioned the project or were a frequent comment are addressed below.

### ALTERNATIVES: PROPOSED ACTION

**Concern Statement:** Commenters would like the Double Keepers Quarters to be open to visitors or available as much needed park housing.

**NPS Response:** The repair project will provide flexibility for the Seashore to use the facilities for both purposes. Future operational needs will guide the use of each side of the DKQ. Ideally, the park will keep one side of the structure - the original 1823 side - open to the public and use the other side to fill critical park housing needs.

**Concern Statement:** Commentors are concerned that proposed elevations would not be high enough to protect the structures from future flooding.

**NPS Response:** The Seashore balanced the need to elevate the Double Keepers Quarters and protect it from floodwaters while attempting to retain its historic character. The size, scale, height, and massing of a building will affect how much change in height may be acceptable without impacting the historic character of the property (refer to the 2019 *Guidelines on Flood Adaptation for Rehabilitating Historic Buildings*). Ocracoke light station outbuildings are simple buildings with unfinished interiors. Elevating the structures by only 1-2 feet will keep them off the ground to prevent contact with wet soils and wood rot, allow for air flow under the buildings, provide modest flood protection associated with minor storm surge and high tide flooding. Following repairs with treated wood, the buildings should be able to withstand periodic flooding that may occur with larger storm surges and flooding events. By only elevating the structures by 1-2', the Seashore can minimize the need for large and unsightly stairways and access ramps that may detract from the historic character of these buildings and structures as well as the setting of the site.

**Concern Statement:** The commentor wants to know where the responsibility lies for the Lighthouse functioning, that would reasonably also include the maintenance of the structure itself.

**NPS Response:** The National Park Service has an agreement with the US Coast Guard to maintain and operate the light beacons on the three lighthouses of Cape Hatteras National Seashore. The Ocracoke Lighthouse light beacon continues to function. The NPS has the responsibility to maintain and conduct repairs to the lighthouse structure itself. The Ocracoke Lighthouse structure has deteriorated from storm events and over time with the placement of the shotcrete which is now cracking. This shotcrete creates a barrier to and doesn't allow the brick lighthouse to breathe. Corrosion from the coastal elements have also deteriorated the metal work. None of these structural elements prevent the operation of the light beacon itself.

**Concern Statement:** The commenters ask whether given the projected future conditions, are there any actions proposed to address future impacts on the septic system, leach field, domestic water, and electric lines at the Ocracoke Light Station beyond basic repair?

**NPS Response:** The Seashore replaced and adapted the septic system and leach field at the light station approximately 3 years ago. As part of that project, the drain-field was elevated by approximately 24" to improve its function given the frequent flooding events at the site and reasonably foreseeable increases in groundwater elevation that may be associated with sea level rise. Domestic water supply is provided to the property by the Ocracoke Sanitary District and the Seashore is not aware of any waterline projects planned for the near future. Electrical service to the light station is provided by Tideland Electrical Membership Corporation through buried transmission lines. The current delivery method to the light station appears to be resilient to coastal hazards, such as high winds and falling trees and branches.

**Concern statement:** The commentors expressed concern about the life span of installing a new wooden stair for the lighthouse in the stressed environmental conditions.

**NPS Response:** The Seashore acknowledges that environmental conditions, such as high humidity, may present a challenge to maintaining a wooden staircase inside the lighthouse. Following the completion of the Environmental Assessment process, the Seashore will develop detailed designs and plans, including a thorough evaluation of resilient wood materials, to restore the lighthouse. If historic architects and engineers determine that the wooden stair will be difficult to maintain given the environmental conditions in the lighthouse, the Seashore may retain and refurbish the existing metal staircase.

#### **ISSUES CONSIDERED AND DISMISSED: SOILS AND VEGETATION**

**Concern statement:** Commenters expressed that the topic of soils and vegetation deserves assessment and consideration of actions. The EA identifies various types of vegetation on the project site and acknowledges the trees and other vegetation are contributing to the landscape and would be impacted by project activities.

**NPS response:** The topic of Soils and Vegetation was considered but dismissed from further analysis since the project area does not contain any unique geologic features or soils. The vegetation communities at the project site are a mix of natural and maintained. Additionally, best

management practices (to be determined at the time of design before construction) would be taken to minimize damage to soils and vegetation. CEQ regulations state analysis in an EA should focus on significant or pivotal issues (1501.7 (a)(3) and only discuss insignificant issues briefly (1502.2(b)). Individual trees could be affected by project activities and these impacts to trees are discussed in the analysis under the topics of Historic Structures and Cultural Landscapes in chapter 3.

## APPENDIX C: ERRATA INDICATING TEXT CHANGES TO EA

This Errata contains corrections and minor revisions to the Ocracoke Light Station Rehabilitation Project Environmental Assessment. Page number, section, and sentence locations referenced below pertain to the EA. Added text is represented with an underline. The edits and corrections in this Errata do not result in any substantial modification to the Selected Alternative, and it has been determined that these revisions do not require additional environmental analysis.

When combined with the EA, the Errata comprise the only amendments deemed necessary for the purpose of completing compliance and documentation for the project.

### Text Changes

Page 4, Chapter 1: Climate Change and Sea Level Rise. Vulnerability to flooding at the low-elevation Ocracoke Light Station landscape is projected to increase with local estimates of 2 to 3 feet of sea level rise over the next 50 years or 10-12" by 2050 (Sweet et al. 2022).

Page 11, Chapter 2: Alternatives, Common to All Alternatives. Under all alternatives, the Ocracoke Lighthouse would be rehabilitated, which would include the following actions:

- Remove the shotcrete from the exterior of the Lighthouse and replace it with a coating that will allow appropriate protection of the masonry and moisture control
- Replace damaged masonry, including bricks and mortar (estimated to be approximately 20% of the existing bricks)
- Repair or replace all windows with historically appropriate windows
- Repair leaks at the top lantern and repaint
- Recoat interior masonry
- Expose the original stone foundation
- As an option, replace the interior metal staircase with a wooden spiral staircase to match the original material and orientation.

Page 12, Chapter 2: Alternative B, Elevate Some Structures (Proposed Action/Preferred Alternative), paragraph 1. The repair of the buildings (Double Keepers' Quarters, Carpenter's Shop, Store House, Oil House, Generator House, and Privy) would include addressing the exterior and interior storm damage, as described under alternative A. Other repairs, replacements, and upgrades will occur to the electrical and plumbing systems after the buildings are elevated.

Page 12, Chapter 2: Alternative B, Elevate Some Structures (Proposed Action/Preferred Alternative), paragraph 2. The Double Keepers' Quarters will be separated from its foundations, ~~raised on hydraulic jacks~~, and held by temporary supports while a new foundation is constructed below the building.

Page 12, Chapter 2: Alternative B, Elevate Some Structures (Proposed Action/Preferred Alternative), paragraph 2. An elevated ~~Americans with Disabilities Act~~ Architectural Barriers Act-compliant wheelchair lift station to meet the floor level of the building would be added to the Double Keepers' Quarters to provide accessibility.

## APPENDIX D: PROGRAMMATIC AGREEMENT

**PROGRAMMATIC AGREEMENT  
AMONG THE U.S. DEPARTMENT OF INTERIOR, NATIONAL PARK SERVICE,  
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER,  
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,  
FOR THE REHABILITATION OF AND FLOOD ADAPTATION MEASURES AT THE  
OCRACOCKE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**WHEREAS**, this Programmatic Agreement (PA or Agreement), inclusive of all attachments, is made as of this 1st day of August, 2022, by the United States (U.S.) Department of Interior-National Park Service (NPS), the North Carolina State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation (ACHP) (Signatories or individually, Signatory) pursuant to Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108), and implementing regulations (36 C.F.R. Part 800); and

**WHEREAS**, NPS is the federal agency that has administrative control and custody of the Cape Hatteras National Seashore (CAHA), of which the Ocracoke Light Station (Ocracoke Light Station or Property) is a unit, located in Ocracoke, Hyde County, North Carolina; and the light within Ocracoke Lighthouse, which is a c. 1890's fourth-order Fresnel lens, is an Aid to Navigation (ATON) owned and maintained by the U.S. Coast Guard (USCG). The operation of the light shall remain unaffected by this Undertaking (hereinafter defined), and the USCG does not propose any activity with regard to the light in association with this Undertaking (hereinafter defined); and

**WHEREAS**, the Nationwide PA among NPS, the ACHP and the National Conference of State Historic Preservation Officers (Nationwide PA, 2008) sets forth a program for compliance with Section 110 of the NHPA (54 U.S.C. § 306101) and Section 106 of the NHPA for management and operations of properties eligible for or included in the National Register of Historic Places (NRHP)(hereinafter, historic property or historic properties), and stipulates that programmatic agreements should be developed for specific projects (IX.B); and

**WHEREAS**, the Ocracoke Light Station was damaged by Hurricanes Matthew, Florence, and Dorian (2016 to 2019) and is susceptible to future flooding due to climate change factors, including sea level rise and storm surge, based on projections which are detailed in the NPS report, "Identify Cultural Resources Sites Affected by Sea-Level Rise at Cape Hatteras National Seashore" (2017), and specifically as shown in the sea level rise (SLR) and storm surge inundation model graphic from the NPS *Value Analysis Report* (Attachment A), which describes the Property's established flood risk level based on the projections as well as a 2020 topographic subsurface utility survey; and

**WHEREAS**, NPS plans to rehabilitate and complete flood adaptation measures at the Ocracoke Light Station, in accordance with both the *Secretary of the Interior's Standards for*

*Rehabilitation* (Secretary’s Standards) and the *Guidelines on Flood Adaptation for Rehabilitating Historic Buildings* (Flood Adaptation Guidelines), which includes eleven different approaches for reducing flood risk and maintaining historic character, and which would constitute an undertaking subject to review under Section 106 and 36 CFR Part 800 (Undertaking); and

**WHEREAS**, this Undertaking is referred to as Alternative B, NPS’s preferred alternative, in the Environmental Assessment *Ocracoke Light Station Rehabilitation Project* (EA) published on NPS’s Planning, Environment, and Public Comment (PEPC) system on March 15, 2022, pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. § 4331 et. seq.), and the implementing regulations (40 C.F.R. Parts 1500-1508). Alternatives A and C were also described in the EA; and

**WHEREAS**, NPS acknowledges that during the EA public comment period, which was coordinated with Section 106 compliance and closed April 13, 2022, comments largely supported selection of Alternative B; and

**WHEREAS**, in consultation, NPS also considered the potential to affect historic properties and alternatives to avoid, minimize, or mitigate adverse effects to historic properties for Alternatives A and C, but NPS acknowledges that further analysis and consultation would be required in order to complete the process of identifying, assessing, and resolving any adverse effects on historic properties that would result from selection of Alternative A or C; and

**WHEREAS**, informed by consultation and public comments, NPS anticipates selecting Alternative B in the forthcoming Finding of No Significant Impact (FONSI); and

**WHEREAS**, NPS identified two historic properties within the Undertaking’s Area of Potential Effects (APE) (Attachment B) and of these, the Ocracoke Light Station is a complex of historic buildings listed in the NRHP (1977; NR 77000110, hereinafter referred to as the complex) which includes the Ocracoke Lighthouse, Double Keepers’ Quarters (DKQ), Carpenter’s Shop, Store House, Cisterns, Privy, and Oil House as contributing structures, and a Generator House as non-contributing. The Ocracoke Light Station is located within and is a contributing site to the Ocracoke Historic District, also listed on the NRHP (1990; NR 90001465) and encompassing 228 contributing buildings, 15 contributing sites, and 4 contributing structures on Ocracoke Island in Ocracoke Village; and

**WHEREAS**, NPS completed the *Ocracoke Light Station Historic Structures Report* (HSR) (Oppermann 2015) and *Ocracoke Light Station Cultural Landscape Report* (CLR) (Hitchcock 2016), which provide documentation of the site’s history, layout, evaluations of the conditions and integrity of the buildings, structures and landscape, identification of character-defining features within the historic district complex (Attachment C), and treatment recommendations, but predate the damage associated with the aforementioned hurricanes; and

**WHEREAS**, NPS completed hazardous materials testing in March of 2021, and the



resulting *Hazardous Materials Assessment* informs repairs involving asbestos-containing material, mold, and lead paint; however, some concealed areas were noted as untested in the report and may thus require testing; and

**WHEREAS**, NPS completed a geotechnical study and the resulting report on *Geotechnical Exploration* from February of 2021 provides subsurface site information; and

**WHEREAS**, as is described in the *Ocracoke Light Station Cultural Landscape Report* (Hitchcock 2016), NPS Southeast Archeological Center (SEAC) archeologists monitored ground-disturbing utility work being done at the DKQ in June 1987 and uncovered cultural materials at depths of approximately 2.5 and 3 feet, including observing *in situ* features of a pre-addition midden dating to the mid-19<sup>th</sup> century and an earlier concrete walk, but the significance and integrity of these deposits is unknown, while other areas of the site were noted to have been redeposited with little potential. Based on these investigations, NPS determined that buried cultural material may be present in the immediate vicinity of the foundation to the DKQ, the Undertaking may include ground disturbance in this area, but the extent of the ground disturbance is unknown until a foundation design has been developed by NPS as part of DDs (hereinafter defined); and

**WHEREAS**, NPS completed Schematic Design for Alternative B (Schematic Design) (Attachment D); and

**WHEREAS**, as the Undertaking's effects on historic properties cannot be fully determined prior to the approval of the Undertaking, NPS is utilizing this PA to resolve effects, in accordance with 36 CFR § 800.14 (b)(1)(ii) and (b)(3); specifically, NPS has not yet confirmed the feasibility of certain aspects of Alternative B including and not limited to structural engineering details, foundation design, and requirements for alterations associated with accessibility standards set forth in the Americans with Disabilities Act (ADA) (42 § U.S.C. 12102), but intends to do so by advancing Alternative B, in coordination with SHPO per this PA, from Schematic Design to Design Development (DDs) and Construction Documents (CDs); and

**WHEREAS**, NPS formally initiated consultation with SHPO for the Undertaking on February 9, 2021, and received a response to this notification on March 24, 2021, and after meeting with the SHPO on November 30, 2021 to discuss the Alternatives under consideration, NPS notified SHPO of NPS's intent to prepare a PA to resolve effects on March 10, 2022; and

**WHEREAS**, ACHP was notified of NPS's intent to prepare a PA to resolve effects on March 10, 2022, and the ACHP chose to participate in consultation (response dated March 23, 2022); and

**WHEREAS**, other consulting parties include the Outer Banks Lighthouse Society, Ocracoke Preservation Society, the USCG, and Hyde County (together with NPS, ACHP, and SHPO, Consulting Parties); and

**WHEREAS**, NPS has initiated consultation with tribal partners for the Undertaking, and these tribal partners include the Absentee Shawnee tribe, the Catawba Indian Nation, the Eastern Shawnee tribe, the Shawnee tribe, and the United Keetoowah Band of Cherokee Indians. NPS provided notification of the Undertaking to these tribes through correspondence dated June 13, 2022, and received responses from the United Keetoowah Band of Cherokee Indians (June 16, 2022), the Catawba Indian Nation (July 19, 2022), and the Eastern Shawnee (July 11, 2022), expressing no concerns with the Undertaking as well as the finding that the Undertaking posed no endangerment to known sites of religious or cultural significance to these tribes; however, expressing interest in continuing consultation, especially in circumstances involving inadvertent discovery of human remains and/or associated funerary objects; and

**NOW, THEREFORE**, NPS, SHPO, and ACHP agree that the Undertaking shall be implemented in accordance with the following stipulations to take into account the effects of this Undertaking on historic properties.

## STIPULATIONS

NPS shall ensure that the following measures are carried out:

### I. Standards, Conditions, and Documentation

- A. Professional Standards and Qualifications: All historic preservation work performed by NPS, or on its behalf pursuant to this PA, shall be accomplished by or under the direct supervision of a person or persons who meets the pertinent qualifications in Secretary of the Interior's Professional Standards (formerly 36 CFR Part 61) (*Federal Register* Volume 62, Number 119, 1997) (Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines (nps.gov)), and, with regard to landscape architectural work, established professional standards and qualifications such as those developed by the International Society of Arboriculture (including the American National Standard for Tree Care Operations [ANSI]).
- B. Other Standards, Codes, and Recommendations: NPS shall follow the Secretary's Standards and the Flood Adaptation Guidelines; the HSR and CLR; as well as the recommendations of NPS's qualified structural engineer, communications, fire and life safety and ADA compliance coordinators, heating, ventilation, and air conditioning (HVAC) consultants, and others.
- C. Current Conditions: Since the HSR and CLR predate the damage associated with the aforementioned hurricanes, NPS shall provide with the plans for submittal coordinated with SHPO per Stipulation IV information on structure and landscape existing conditions, keyed with a plan of the Property, and including location, extent, and condition of interior and exterior materials to be repaired or replaced, along with a copy of the trip report analyzing DKQ flooding and mold issues, which was completed by the NPS Historic Preservation Training Center (HPTC) post-hurricanes in 2020.
- D. Documentation: NPS shall also document the Property's contributing features, in accordance with the *Secretary of the Interior's Standards for Architectural and Engineering Documentation for the Historic American Landscapes Survey (HALS)* and the *Historic American Buildings Survey (HABS)*, at Level III. Field data for the documentation shall be obtained prior to the commencement of any construction activities for Alternative B involving structure elevation or landscape adaptation. NPS shall ensure that final copies of this documentation are sent, no later than twelve (12) months after commencement of construction, to SHPO and to the Library of Congress.

### II. General Avoidance Measures

- A. General Avoidance Measures: The NPS shall continue consultation with Consulting Parties, to advance Alternative B from Schematic Design to DDs and CDs, provide submittals for review and comment as specified in Stipulation IV as well as coordinating SHPO's

participation in site visits and meetings. NPS shall ensure that the DDs and CDs shall be based on the existing Schematic Design and shall include the professional services of a historical architect and historical landscape architect to coordinate with the consulting architect/engineer project design team. Further, NPS shall ensure that the NPS cultural resource management (CRM) team from CAHA and the Southeast Regional Office (SERO) shall review all proposed DDs and CDs in advance of their transmission by NPS to SHPO and provide any immediate concerns to SHPO along with the submittal of documents. NPS and SHPO shall concurrently review and provide comments on the provided documents as is specified in Stipulation IV. NPS shall ensure the following general avoidance measures are included in the DDs and CDs, respective to the appropriate phase, coordinated with SHPO as specified in Stipulation IV, and implemented accordingly:

1. Construction Staging and Access: NPS shall ensure that construction staging and access areas are properly identified in the DDs and CDs. Staging plans for temporary equipment and materials storage shall be based on the Staging Plan in the Schematic Design, shall utilize the on-site parking lot and off-site parking areas if additional areas are determined by NPS to be required, and shall be fenced during construction. Best management practices shall be utilized in staging and equipment storage and construction access to minimize ground disturbance and avoid adverse effects to historic properties.
2. Structure and Landscape Protection: To avoid adverse effects to historic properties, NPS shall ensure that measures for structure stabilization, support, and protection are detailed in DDs and CDs. NPS shall ensure that a tree and shrub protection plan is prepared separately during the DDs, and this plan shall be provided to SHPO for review and comment along with plans submittals per Stipulation IV. This plan shall outline potential effects to the landscape, compatible replacement materials as needed, as well as protection measures and best practices for avoidance of adverse effects to historic properties.
3. Archaeology: NPS shall ensure that ground disturbance shall be minimized to the extent possible in the vicinity of the DKQ, where buried cultural material is known to be present, in the development of the foundation design, as part of the DDs and CDs. Should the potential of ground disturbance to buried cultural material be determined likely, by NPS, in the development of the foundation design, NPS shall prepare a Data Recovery Plan to submit to SHPO as specified in Stipulation IV. NPS shall ensure that archaeological monitoring occurs during ground-disturbing activities related to construction in the immediate vicinity of the DKQ and that this monitoring shall be overseen by a qualified Archeologist (Stipulation I.A). In the event of a post-review discovery, NPS shall follow the Inadvertent Discoveries Stipulation (VI) of the Nationwide PA. If required, NPS shall undertake data recovery pursuant to the approved Data Recovery Plan, and all work shall be overseen by a qualified Archeologist (Stipulation I.A).

### **III. Specific Avoidance Measures**

A. Specific Avoidance Measures: NPS shall ensure the following specific avoidance measures are included in the DDs and CDs, respective to the appropriate phase, coordinated with SHPO as specified in Stipulation IV, and implemented accordingly:

1. DKQ Measures: Options related to elevating the DKQ, re-designing its foundation, and re-placing the DKQ on a new foundation shall be informed by an analysis, by a licensed structural engineer with substantive historic building experience, of the DKQ's structural integrity. The DKQ's readiness for a structural move shall be detailed on the DDs and CDs and in the structural calculations. The two major construction increments of the DKQ (1823 and 1929) shall be addressed separately. Stabilization of chimneys and interior structural elements shall be addressed. CDs shall detail how chimneys shall be braced, how the frame structure shall be kept rigid and plumb during the structural move, and how floor framing and perimeter beams shall be assessed for capacity to handle the structural move. NPS shall ensure the foundation design includes detailing that conveys the major construction increments of the DKQ and minimizes ground disturbance to the extent possible within the vicinity of the DKQ; the geotechnical report shall be utilized in the foundation design development. NPS shall ensure DD options and CDs for the design of stairs, rails, a wheelchair lift, and the foundation system, and any foundation infill panels, shall be informed by functional requirements and compatibility with historic character.
2. Historic District Measures: With regard to shifting laterally the Carpenter's Shop – a maximum of 36" to protect the health of an adjacent contributing tree, in realigning the Store House onto its foundation, and in moving laterally the Privy to a previously documented historic location, and in elevating buildings and structures within the complex, NPS shall ensure DDs and CDs do not substantially diminish in integrity the spatial patterns and sightlines among buildings, circulation paths, vegetation types and patterns, nor the overall elevation of the Ocracoke Light Station and its views/vistas, all considered significant landscape characteristics of the historic property.
3. Landscape Planning Measures: NPS shall ensure plans and activities for trimming, removal, and introduction of compatible replacement vegetation, as part of DDs and CDs, shall follow the ANSI standard and best practices, shall be performed by qualified personnel, and shall be informed by a historical landscape architect, working with the consulting architect/engineer project design team, to identify such vegetation, specifically replacement vegetation that is suitable for current growing conditions at the site (i.e., higher groundwater table and more regular salt-water intrusion) and that exhibits the form and character of historic vegetation as described in the CLR. Vegetation shall only be trimmed/removed as required by plans coordinated with SHPO per Stipulation IV, and ground protection measures, such as mats, shall be included in the DDs and CDs to minimize disturbances to the extent

possible in the vicinity of the DKQ, as well as in areas required for staging and construction access.

4. Hazardous Materials Abatement and Code Compliance: Additional hazardous materials testing may occur in previously concealed areas, and NPS shall ensure the resulting report informs proposed repairs involving asbestos-containing material, mold, and lead paint. An accredited inspector shall perform any required additional testing to determine if hazardous materials are present, and NPS shall ensure treatment plans will be documented in DDs and CDs and coordinated with SHPO per Stipulation IV. Plans for replacement, upgrade, and elevation of any electrical, water, sewer, HVAC, and communications systems and components shall follow Stipulation I.A. and will be documented in DDs and CDs coordinated with SHPO per Stipulation IV.

#### **IV. SUBMITTALS**

- A. Separate Specialized Plan Documents, such as Tree and Shrub Protection Plan or Data Recovery Plan: SHPO shall have 30 calendar days, after confirmed receipt of any specialized planning documents, which may be submitted separately from DDs and CDs, to provide review and comment to NPS. Should SHPO respond in writing within the authorized time period, NPS shall take SHPO's comments into consideration and consult with SHPO, as needed. If any comments are not resolved through consultation, NPS shall consult with the ACHP and then seek resolution in accordance with Stipulation VII.
- B. Design Review: NPS shall refine the Schematic Design, in accordance with Stipulations I-III, and shall provide SHPO an opportunity to review and comment on the DDs. NPS shall provide the SHPO with DDs as noted, or on a modified review schedule agreed upon in writing by NPS and SHPO: DDs (provided at approximately 70% design) and 100% Draft CDs.
- C. Review Time and Response to Comments: SHPO shall have 30 calendar days, after confirmed receipt of the submitted DDs and CDs, for review and comment. Should SHPO respond in writing within the authorized time period, NPS shall take SHPO's comments into consideration and consult with SHPO, as needed. If any comments are not resolved through consultation, NPS shall consult with the ACHP and then seek resolution in accordance with Stipulation VII.
- D. Design Modifications and Changes Following DDs and CDs: If, after receiving SHPO's comments on the DDs and CDs, integrating comments, and providing the Final CDs to SHPO for their records, NPS desires any material additions thereto or deletions therefrom, NPS shall furnish SHPO with a statement of the requested changes, additions and/or deletions, with appropriate plans, specifications or other documentation for review and comment for no more than fifteen (15) calendar days. If SHPO does not respond in writing within 15 days to provide comments or to request up to an additional 15 calendar days to

prepare a response, NPS shall move forward with no further consideration. NPS shall take into consideration any written comments received from SHPO and shall notify the SHPO of its intentions, in writing, within five (5) calendar days of receiving SHPO's comments.

## **V. ALTERNATIVES, EFFECTS, AND MITIGATION**

- A. Alternatives and Effects: If NPS determines that material modifications to the Undertaking, as described above, shall have an adverse effect on historic properties, or selects any alternative other than Alternative B (i.e., A or C), then prior to amending this Agreement pursuant to Stipulation VII, the NPS shall initiate consultation with the Consulting Parties to identify, assess and consider measures to resolve any potential effects to historic properties. If the NPS determines that further consultation would not be effective and an amendment to this Agreement is not feasible, then it shall notify the ACHP and consider terminating this Agreement and seek the comments of the ACHP pursuant to 36 CFR § 800.7.
- B. Mitigation: If the Undertaking is implemented as described above, no mitigation beyond what is listed in this Agreement shall be completed. However, with regard to Stipulation V.A., if the Undertaking shall be materially modified, mitigation options which may be associated with Alternative B may include the following: an additional level of HABS and/or HALS documentation, archeological data recovery, and/or interpretive wayside panels.

## **VI. COMMUNICATIONS AND REPORTING**

- A. Communications: It is the responsibility of each Consulting Party to inform NPS of any change in name, address, email address, or phone number of any point-of-contact. NPS shall also maintain a list of Consulting Party contact information and shall provide this information upon request. Any notice or other communication under this PA required or permitted to be given by the Signatories, shall be sufficiently given or delivered if dispatched by hand; by certified mail, return receipt requested; by overnight delivery service with confirmed receipt; or, via e-mail with the submittal directed to the environmental review mailbox and copied to the assigned reviewer, noting the name of this PA in the subject line or memo.
- B. Annual Reporting: Each year, following the execution of this PA until it expires or is terminated, NPS shall provide the Signatories a summary report by e-mail or schedule a meeting, either virtually or as part of an on-site visit, detailing work carried out pursuant to its terms, which will promptly be made available to the Consulting Parties and the public upon written request to the NPS. Such report shall include any proposed scheduling changes, any problems encountered, and any disputes or objections received in NPS's efforts to carry out the terms of this PA. If a meeting is held in lieu of a report, meeting minutes will be e-mailed to the Signatories by NPS within one (1) month of the meeting and will promptly be made available to the Consulting Parties and the public upon written request to the NPS.

- C. Site Visits – In a timely fashion and via e-mail, NPS shall provide notice of planned NPS site visits associated with the Undertaking to SHPO as an invitation to participate. Site visits may include NPS and contract personnel and may be completed for the purposes of kick-off, investigations, documentation, and plans reviews such as page turns for the DDs and CDs.

## **VII. DISPUTE RESOLUTION**

Should any Signatory to this PA object at any time to any actions proposed or the manner in which the terms of this PA are implemented, NPS shall consult with such party to resolve the objection. If NPS determines that such objection cannot be resolved, NPS shall:

- A. ACHP Advice or Comments: Forward all documentation relevant to the dispute, including NPS's proposed resolution, to ACHP, with copies delivered to SHPO and Consulting Parties. ACHP shall provide NPS with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, NPS shall prepare a written response that takes into account any timely advice or comments regarding the dispute from ACHP, the SHPO, and Consulting Parties, and provide them with a copy of this written response. NPS shall then proceed according to its final decision.
- B. Final Decision: If ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time period, NPS may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, NPS shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories to the PA and provide them and ACHP with a copy of such written response.
- C. Other Actions: NPS's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

## **VIII. AMENDMENTS**

This PA may be amended when such an amendment is agreed to in writing by all Signatories. Any amendments shall be effective on the date a copy signed by all of the Signatories is filed with ACHP.

## **IX. DURATION**

This PA shall become effective immediately upon signature of the ACHP, which shall retain a copy for its files. This PA shall expire five (5) years from the date of its execution. Prior to expiration, if all parties agree in writing, the length of this agreement may be extended for one (1) additional year. Prior to expiration, including the aforementioned one (1) year extension if it occurred, NPS may consult with the other Signatories to reconsider the terms of the PA and amend it in accordance with Stipulation VIII.



## **X. EMERGENCIES**

Emergency response undertakings are those actions deemed necessary by NPS as an essential and immediate response to a disaster or emergency declared by the President, a tribal government, or the Governor of the State of North Carolina, or another immediate threat to life or property. In the event of an emergency, NPS shall follow the Emergency Actions Stipulation (VII) of the Nationwide PA.

## **XI. TERMINATION**

If any Signatory to this PA determines that its terms shall not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per the Stipulation VIII above. If within thirty calendar (30) days (or another time period agreed to by all Signatories) an amendment cannot be reached, any Signatory may terminate the PA upon written notification to the other Signatories.

Once the PA is terminated, and prior to work continuing for the Undertaking, NPS must either: (a) execute a memorandum of agreement or another programmatic agreement pursuant to 36 CFR § 800.6; or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. NPS shall notify the Signatories as to the course of action it will pursue.

Execution of this PA by the NPS, SHPO, and ACHP and implementation of its terms evidence that NPS has taken into account the effects of this Undertaking on historic properties and afforded the ACHP an opportunity to comment.

**PROGRAMMATIC AGREEMENT  
AMONG THE U.S. DEPARTMENT OF INTERIOR, NATIONAL PARK SERVICE,  
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER,  
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,  
FOR THE REHABILITATION OF AND FLOOD ADAPTATION MEASURES AT THE  
OCRACOCKE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**SIGNATORY:**

**U.S. Department of Interior, National Park Service**



David E. Hallac, Superintendent,  
National Parks of Eastern North Carolina

7/26/2022

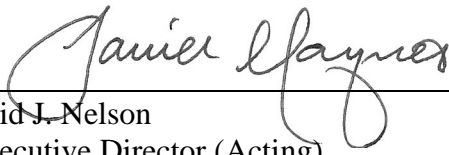
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**PROGRAMMATIC AGREEMENT  
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OCRACOE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**SIGNATORY:**

**Advisory Council on Historic Preservation**

8/1/2022

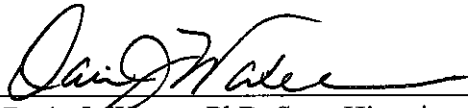
*for*   
\_\_\_\_\_  
Reid J. Nelson  
Executive Director (Acting),  
Advisory Council on Historic Preservation

Date

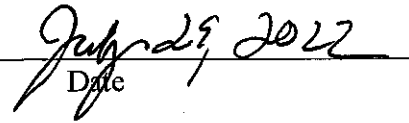
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OCRACOE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**SIGNATORY:**

**North Carolina State Historic Preservation Officer**



Darin J. Waters, PhD, State Historic  
Preservation Officer, North Carolina

  
Date

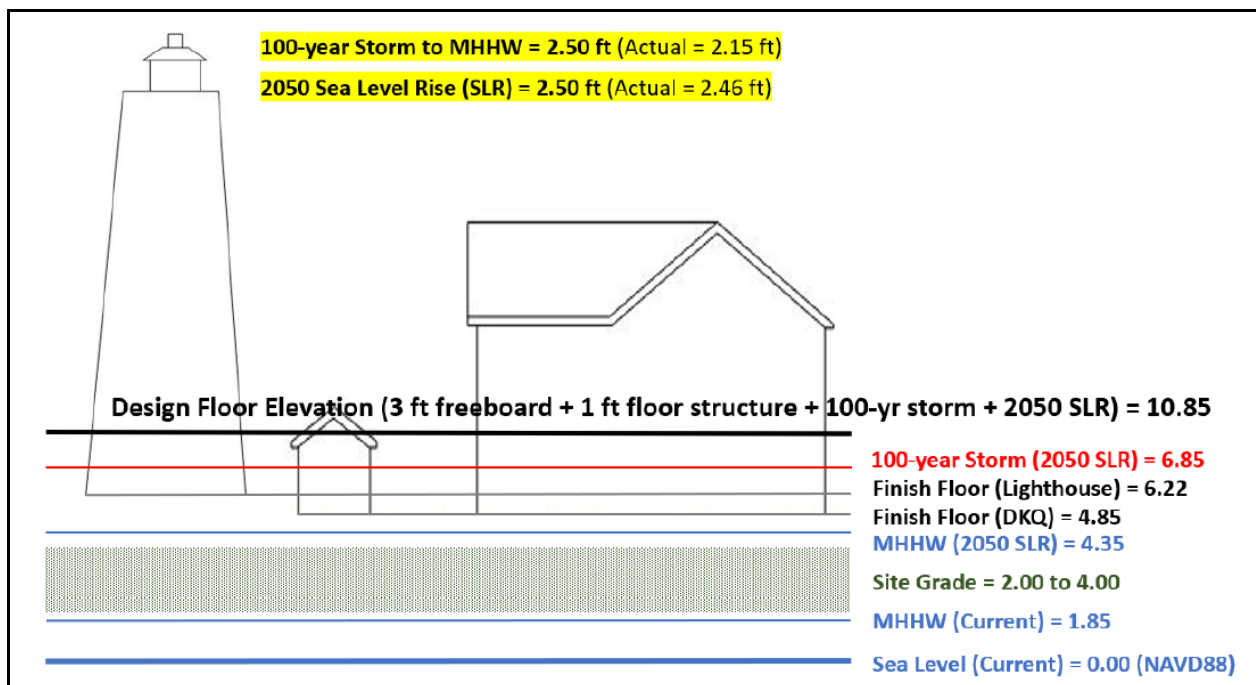
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OCRACOCK LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**ATTACHMENTS**

- A. Established Flood Risk Level, Sea Level Rise (SLR) and Storm Surge Inundation Model Graphic from Value Analysis (2021)
- B. Area of Potential Effects and Historic Properties
- C. Existing and Historic Site Layouts of Ocracoke Light Station and Tables listing Important Character-Defining Features of the Buildings/Structures and Contributing Resources and Features in the Cultural Landscape
- D. Schematic Design Documents for Alternative B

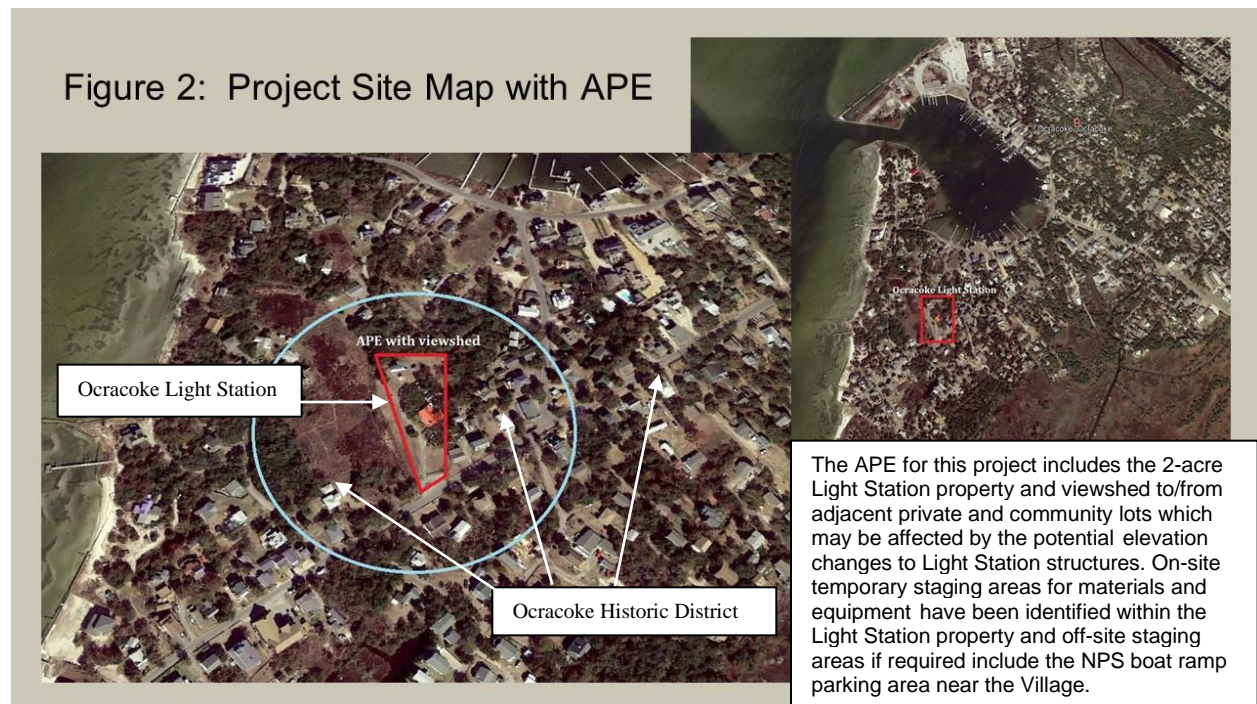
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OCRACOKE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**ATTACHMENT A – Sea Level Rise (SLR) and Storm Surge Inundation Model Graphic  
from NPS Value Analysis (2021)**



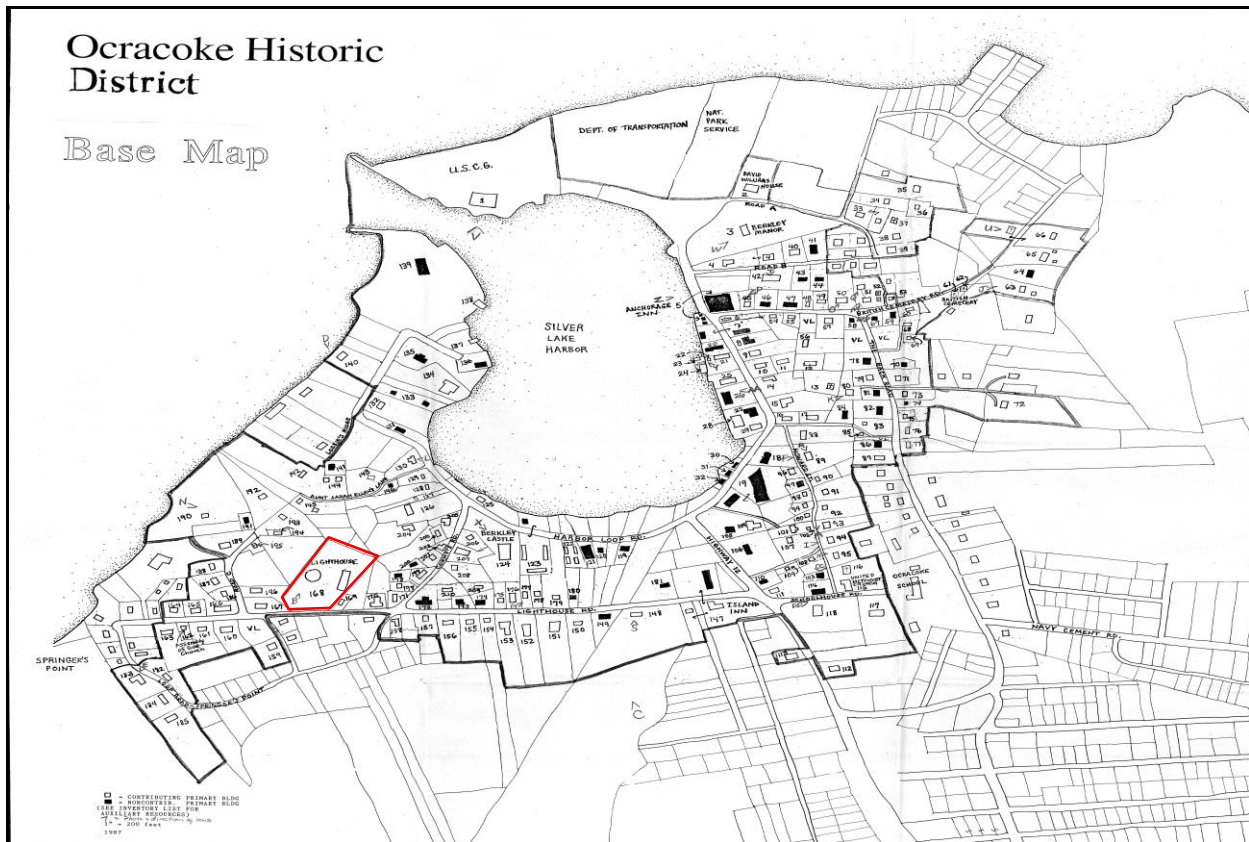
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OCRACOKE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**ATTACHMENT B – Area of Potential Effects (APE) and Historic Properties**



# Ocracoke Historic District

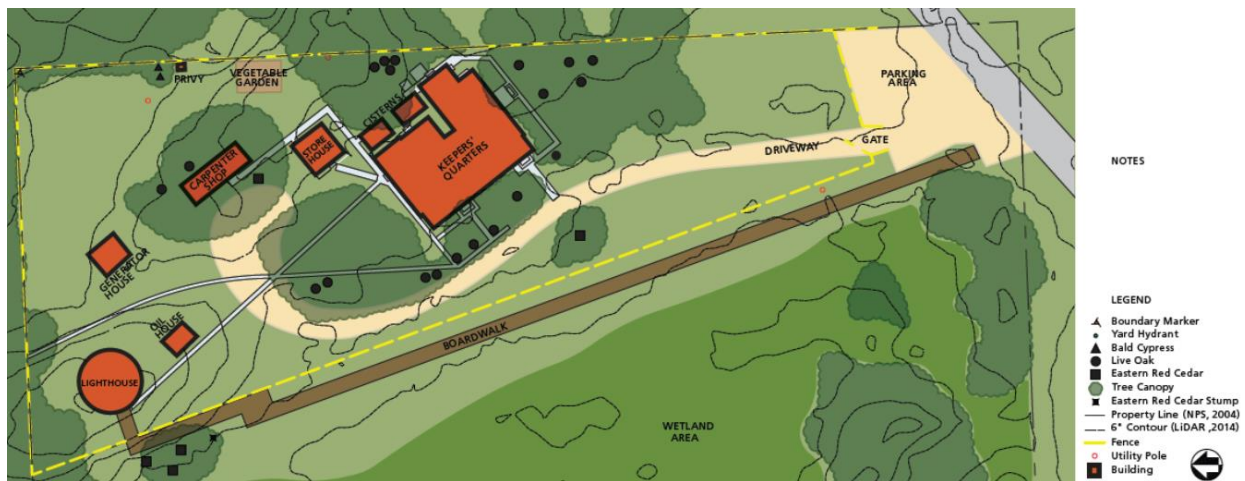
## Base Map



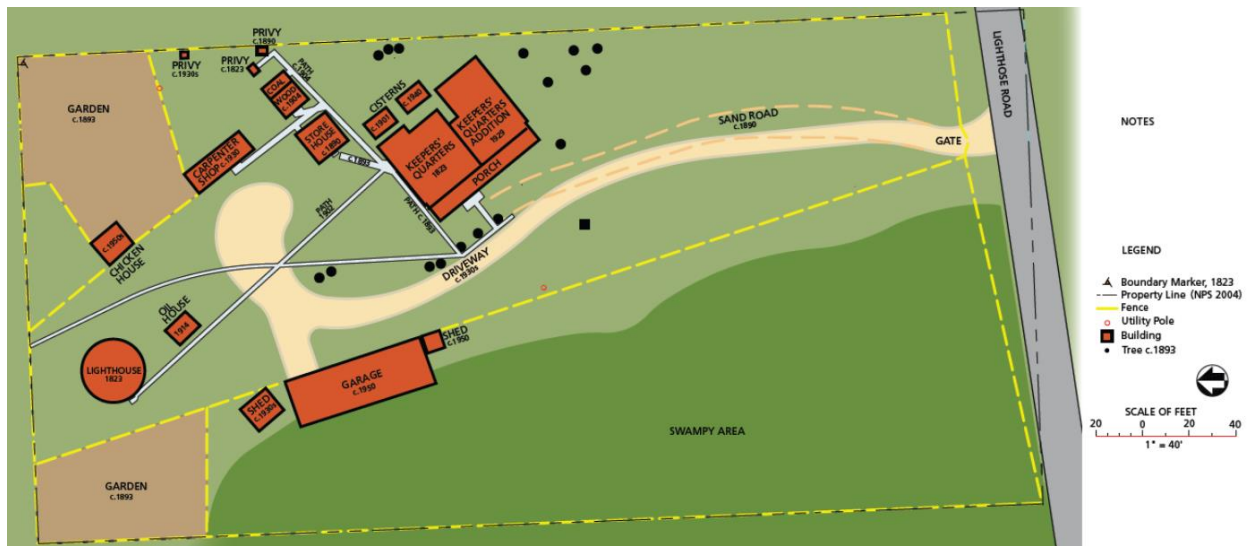


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AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,  
FOR THE REHABILITATION OF AND FLOOD ADAPTATION MEASURES AT THE  
OCRACOKE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**ATTACHMENT C - Existing and Historic Site Layouts of Ocracoke Light Station and  
Tables listing Important Character-Defining Features of the Buildings/Structures and  
Contributing Resources and Features in the Cultural Landscape**



A. Existing structures and vegetation (Note: Some current locations are not shown; slight movement occurred due to prior storm damage, as is noted in Schematic Design)



B. Historic structures and vegetation

**PROGRAMMATIC AGREEMENT  
AMONG THE U.S. DEPARTMENT OF INTERIOR, NATIONAL PARK SERVICE,  
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER,  
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,  
FOR THE REHABILITATION OF AND FLOOD ADAPTATION MEASURES AT THE  
OCRACOCKE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**Table 1. Important Character-Defining Features**

Building/ Structure	Important Character-Defining Features
Ocracoke Lighthouse	<ul style="list-style-type: none"> <li>•Historic design of the entry-level door</li> <li>•Original stone/brick entry step beneath the modern wood entrance ramp</li> <li>•Tapering conical brick shell wall of the Lighthouse tower</li> <li>•White paint color of the exterior walls</li> <li>•Historic design of the six-over-six-light wood double sash windows</li> <li>•Brick corbelling supporting the lantern deck balcony</li> <li>•Pargeted stone lantern deck balcony</li> <li>•Offset 1854 lantern</li> <li>•Ferrous-based framing and dome of the lantern</li> <li>•Black paint color of the lantern</li> <li>•Trapezoidal window design of the lantern</li> <li>•Vented finial crowning the lantern dome</li> <li>•Cemented patches where the original wood staircase attached to the exterior wall</li> <li>•Domed ceiling supporting the lantern room</li> <li>•1890s fourth-order Fresnel lens in the lantern room</li> <li>•Three brass vents in the masonry wall of the lantern room</li> <li>•Steel floor hatch providing entry into the lantern room</li> <li>•Cast-iron door providing entry to the lantern balcony</li> <li>•Design of the historic iron post-and railing system of the lantern balcony</li> </ul>

Building/ Structure	Important Character-Defining Features
Original Keeper's Quarters (1823, 1897, 1929, 1940, 1950)	<ul style="list-style-type: none"> <li>•Original brick walls of the first floor</li> <li>•Wood mantels in Rooms 101 and 103</li> <li>•Wood four-panel interior doors and remaining early door hardware</li> <li>•Wood-shingled second-story exterior walls</li> <li>•Board-and-batten interior walls</li> <li>•Historic design of the six-over-six-light wood double sash windows</li> <li>•3-inch-wide pine flooring on the second floor</li> <li>•Southeast shed addition</li> <li>•Screened-in front (east) porch</li> <li>•Brick chimneys with corbelled caps</li> <li>•Wood staircase</li> <li>•Ceramic tiled second-floor bathroom</li> <li>•2.25-inch-wide oak flooring of the first floor</li> </ul>
Assistant Keeper's Quarters (1929)	<ul style="list-style-type: none"> <li>•Stuccoed first-story exterior walls</li> <li>•Wood-shingled second-story exterior walls</li> <li>•Cornice molding delineating the first and second stories</li> <li>•Historic design of the six-over-six-light wood double sash windows</li> <li>•Multi-light quarter-round attic-level windows on the gable ends</li> <li>•Gable roof</li> <li>•Brick chimneys with corbelled caps</li> <li>•Screened-in west porch</li> <li>•Original fifteen-light wood sash doors</li> <li>•Original five-horizontal panel wood doors</li> <li>•Original door hardware</li> <li>•Original 2.5-inch-wide pine flooring</li> <li>•Ceramic tiled second-floor bathroom</li> </ul>
All Outbuildings	<ul style="list-style-type: none"> <li>•Proximity of the outbuildings and ancillary structures to the Lighthouse and the Double Keepers' Quarters</li> </ul>
Carpenter's Shop	<ul style="list-style-type: none"> <li>•Board-and-batten cladding</li> <li>•Shingled gable roof</li> <li>•Exposed framing of the interior</li> <li>•Fenestration and sash pattern</li> </ul>
Store House	<ul style="list-style-type: none"> <li>•Board-and-batten cladding</li> <li>•Wood shingled gable roof</li> <li>•Fenestration and sash pattern</li> <li>•Open-stringer wood entrance steps</li> <li>•2.5- to 3-inch-wide tongue-and-groove floorboards</li> <li>•Interior beaded-board wall and ceiling cladding</li> </ul>

Building/ Structure	Important Character-Defining Features
Oil House	<ul style="list-style-type: none"> <li>•Poured-in-place concrete walls and roof</li> <li>•Original sheet-iron door</li> <li>•Original cast-iron wall vents</li> <li>•Fenestration and sash pattern</li> <li>•Pargeted interior walls and faux painted baseboard</li> </ul>
Privy	<ul style="list-style-type: none"> <li>•Historic design and proportion of the exterior, based on an earlier outbuilding in the same location</li> <li>•Board-and-batten cladding</li> <li>•Wood shingled shed roof</li> <li>•Historic design of the two-hole Privy seat</li> </ul>
Cisterns	<ul style="list-style-type: none"> <li>•Pargeted brick walls of the earlier northern Cistern</li> <li>•Cast-in-place walls of the later southern Cistern</li> <li>•Cast-concrete sloped lids of both Cisterns</li> </ul>

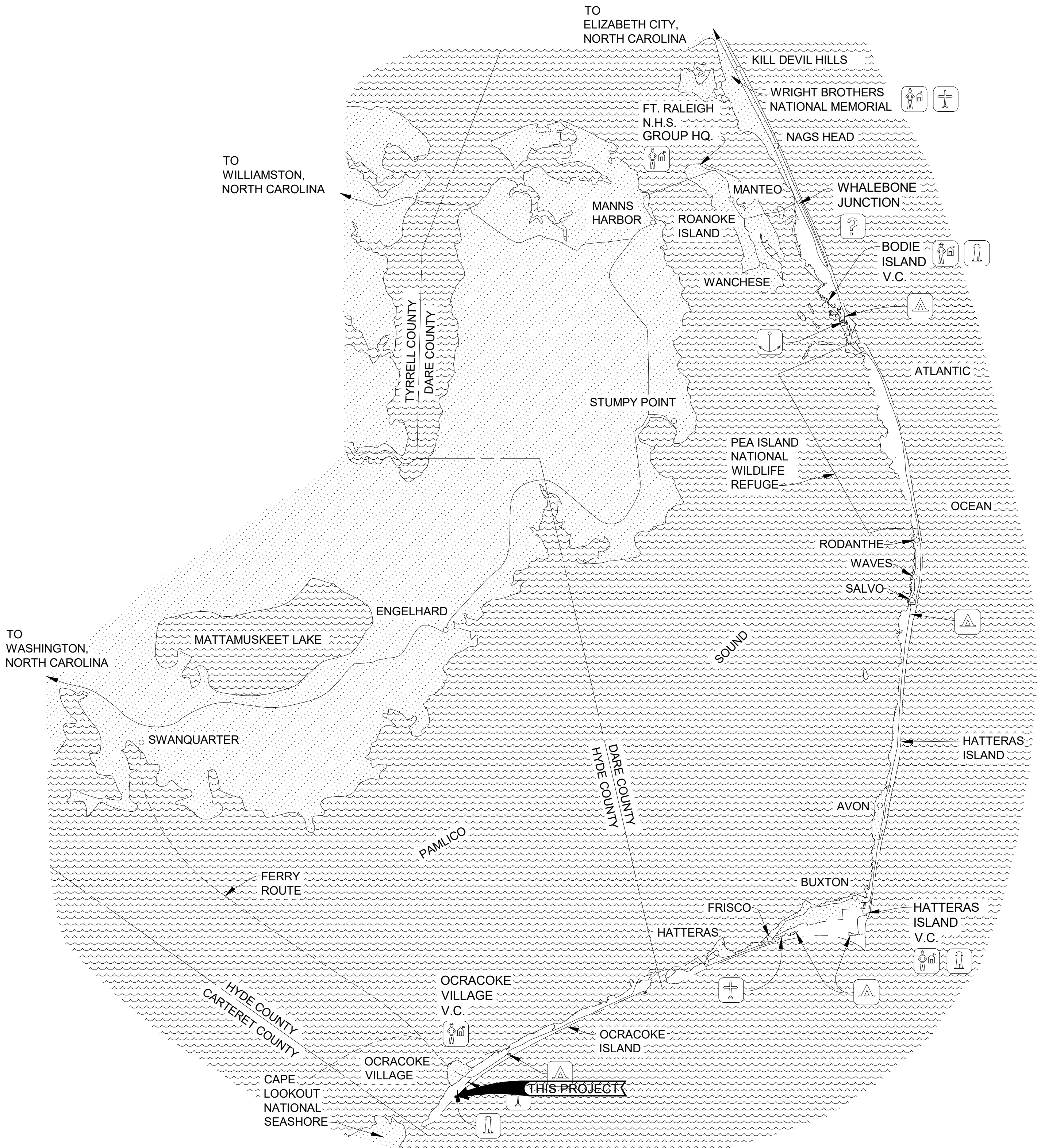
**Table 2. Contributing Resources and Features in the Cultural Landscape**

<b>Feature</b>	<b>Construction Date</b>
Ocracoke Lighthouse	1823
Double Keepers' Quarters	1823 and 1929
Carpenter's Shop	1930
Store House	1890
Concrete Oil House	1914
Privy	1823
Cisterns	1893-1916
Spatial pattern between buildings	1823
Concrete sidewalks	1916-1929
Driveway into station	1897
Higher elevation of the Ocracoke Light Station	1823
Open expanse of lawn	1823
Native marsh grasses	1823
Pattern of live oak, cedars, and bald cypress	1890s for some live oaks
Sightlines along a central northeast to southwest axis aligned with the Double Keepers' Quarters and a cross-axis northwest	1823
Views to the Pamlico Sound	1823
360-degree view from the top of Lighthouse	1823
Views of Silver Lake	1823
Hydrant	Unknown
Boundary marker	1823

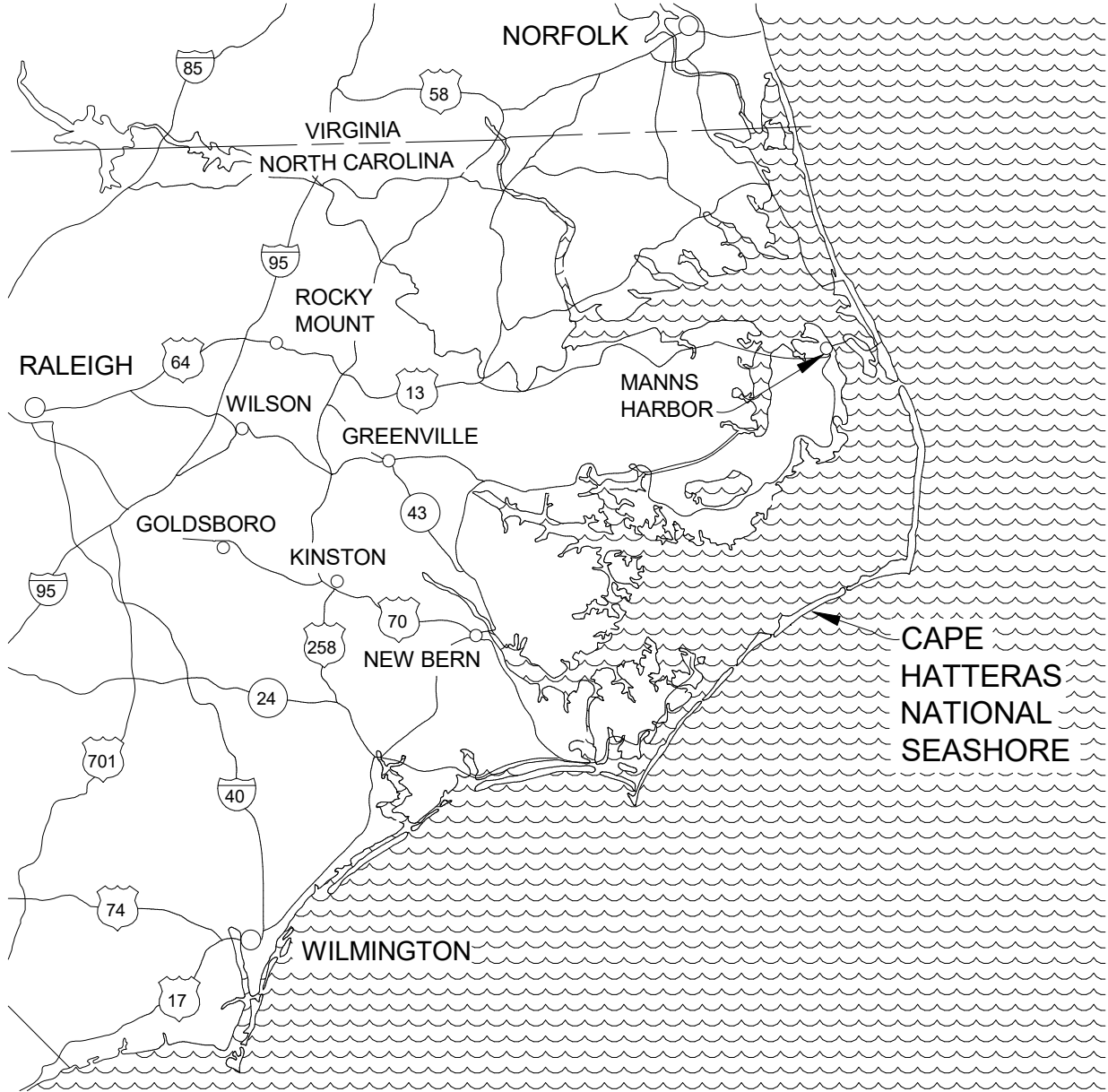
**PROGRAMMATIC AGREEMENT  
AMONG THE U.S. DEPARTMENT OF INTERIOR, NATIONAL PARK SERVICE,  
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER,  
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,  
FOR THE REHABILITATION OF AND FLOOD ADAPTATION MEASURES AT THE  
OCRACOE LIGHT STATION  
CAPE HATTERAS NATIONAL SEASHORE,  
HYDE COUNTY, NORTH CAROLINA**

**ATTACHMENT D – Schematic Design Documents for Alternative B\***

**\*General Notes for Schematic Designs were coordinated prior to full development of the Programmatic Agreement and reflect 30% conceptual design. General Notes for DDs and CDs to be further coordinated during design development by NPS with the executed Programmatic Agreement.**



CAPE HATTERAS NATIONAL SEASHORE



REGION  
NORTH CAROLINA

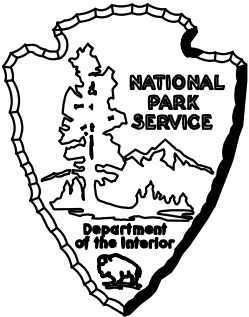
INDEX OF DRAWINGS		
SHEET	SUB SHEET	TITLE OF SHEET
GENERAL		
1	CS	COVER SHEET
ARCHITECTURAL SITE		
2	AS101	ARCHITECTURAL SITE PLAN & STAGING PLAN
ARCHITECTURAL		
3	A101	FLOOR PLANS
4	A201	EXTERIOR ELEVATIONS
5	A202	EXTERIOR ELEVATIONS - DKQ
6	A203	EXTERIOR ELEVATIONS - DKQ
7	A204	EXTERIOR ELEVATION & BUILDING SECTION
Grand total: 7		

01/28/2022

CROFT & ASSOCIATES - 140P2019D0008 PRIME / ARCH / MEP: CROFT & ASSOCIATES KENNESAW, GEORGIA	Mark	Sheet	REVISION	Date	Initial

RECOMMENDED: \_\_\_\_\_ Date \_\_\_\_\_  
Project Manager

APPROVED: \_\_\_\_\_ Date \_\_\_\_\_  
Superintendent



30% DESIGN

UNITED STATES  
DEPARTMENT OF THE INTERIOR

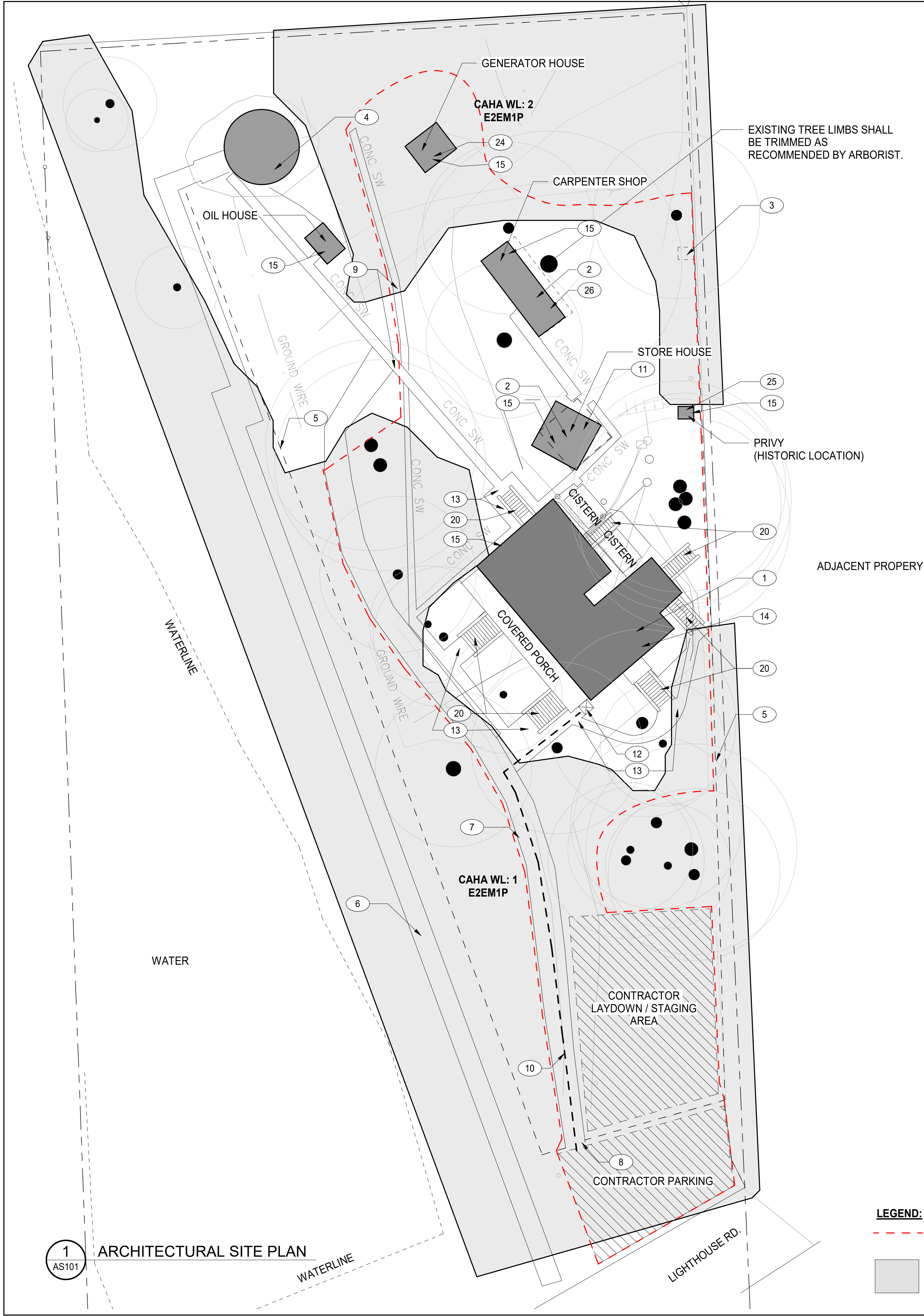
NATIONAL PARK SERVICE  
DENVER SERVICE CENTER

TITLE OF PROJECT  
REPAIR OF OCKRACOKE  
LIGHTHOUSE AND DKQ  
LOCATION WITHIN PARK  
CAPE HATTERAS NATIONAL SEASHORE  
NAME OF PARK  
CAPE HATTERAS NATIONAL SEASHORE  
REGION COUNTY STATE  
SOUTHEAST HYDE NC

DRAWING NO.  
XX  
XXXXXX  
PMS/PKG NO.  
254061  
SHEET  
1 OF 7



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SITE PLAN KEYNOTES

- DKQ DWELLING; ELEVATE STRUCTURE APPROX. 4' ABOVE EXISTING ELEVATION, ON PILE FOUNDATIONS, OR MASONRY PILASTER WITH CONCRETE FOUNDATIONS.
- ELEVATE STRUCTURES APPROX. 1'-2' ABOVE EXISTING ELEVATION
- EXISTING PRIVY RELOCATE TO HISTORIC LOCATION.
- EXISTING LIGHTHOUSE. F.F.E. 6.22'
- EXISTING PICKET FENCE
- EXISTING ELEVATED BOARDWALK
- EXISTING GRAVEL PATH
- EXISTING GATE
- EXISTING CONCRETE SIDEWALK
- ABA PATH TO WHEELCHAIR LIFT
- ROTATE STRUCTURE BACK TO ORIGINAL ORIENTATION. REPAIR AND REPAINT SIDING, REPAIR WINDOW TRIM AND CASINGS, AND REPLACE ROOF SHAKES.
- ABA WHEELCHAIR LIFT
- NEW CONCRETE SIDEWALK
- REPAIR STORM DAMAGE, INCLUDING BUT NOT LIMITED TO: ELECTRICAL FIXTURES AND SYSTEM, OAK WOOD FLOORS, PLASTER WALL FINISH, THERMAL INSULATION, WOOD TRIM, MILLWORK, AND EXTERIOR CEDAR SHAKE SIDING, AND SCREENED PORCH.
- REPAIR DETERIORATING WOOD SIDING AND TRIM & REPLACE SHAKES
- NEW MASONRY STEPS WITH RAILINGS AND MASONRY END WALLS ON CONCRETE FOUNDATIONS. RAILINGS SHALL BE THAT OF APPROPRIATE HISTORIC CHARACTER PERIOD TO COMPLY WITH THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION.
- ELEVATE APPROXIMATELY 2FT AND PROVIDE ADDITIONAL FLOOD VENTS OR WETPROOFING ACTIONS. REPLACE ROOF SHAKES AND REPAINT SIDING.
- ELEVATE APPROXIMATELY 2FT ON CMU PIERS WITH CONCRETE FOOTER
- MOVE STRUCTURE BETWEEN 12"-36" WESTWARD TO ENSURE A SAFE DISTANCE BETWEEN THE TRUNK OF THE EXISTING LIVE OAK.

ADJACENT PROPERTY

LEGEND:

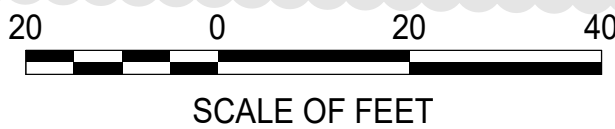
--- LIMITS OF CONSTRUCTION

WETLAND BOUNDARY  
REF: WETLAND DELINEATION REPORT,  
TSANG, NOVEMBER 2020

GENERAL SITE NOTES:

- SITE PLAN IS PROVIDED FOR CONTEXT ONLY. THERE ARE NO PLANNED UPGRADES TO UTILITY INFRASTRUCTURE SYSTEMS FOR THIS PROJECT.
- CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING CONDITIONS. DAMAGE SHALL BE RESTORED TO MATCH EXISTING OR BETTER.
- CONTRACTOR IS RESPONSIBLE FOR REPAIRING DAMAGE TO EXISTING LANDSCAPING ONCE PROJECT IS COMPLETE. COORDINATE WITH PARK TO IDENTIFY LANDSCAPE CONDITIONS TO BE RESTORED.
- CONTRACTOR IS TO STORE ALL MATERIALS AND EQUIPMENT AT DESIGNATED ON-SITE AND OFF-SITE STAGING AREAS. OFF-SITE TO BE THE NPS BOAT RAMP PARKING AREA NEAR THE VILLAGE FOR LONG-TERM STORAGE OF MATERIALS AND EQUIPMENT.
- SUMMARY SCOPE OF WORK FOR STORM DAMAGE REPAIR AT DKQ AND SUPPORTING STRUCTURES:
  - INSULATION – REPLACE EXISTING THERMAL BATT INSULATION IN EXTERIOR WALLS AT THE MAIN LEVEL.
  - GYPSUM WALL PANELING – REPLACE APPROX. 50% OF PANELING AT MAIN LEVEL .
  - FLOOR FINISH – REPLACE APPROX. 70% OF WOOD FLOOR AT THE MAIN LEVEL.
  - FLOORING – REPLACE APPROX. 50% OF AREA IN OUTBUILDINGS.
  - PAINTING – ALL INTERIOR AND EXTERIOR WALLS AT DKQ BUILDING
  - ELECTRICAL – REPLACE APPROX. 60% OF ELECTRICAL WIRING AT THE DKQ BUILDING. ELECTRICAL PANELS TO REMAIN.
  - HVAC – REPLACE 100% DUCTWORK AND DIFFUSERS, AND 50% OF SYSTEMS AT DKQ BUILDING.
  - CASEWORK/MILLWORK – REPLACE (APPROX. 42 LINEAR FOOT) BASE AND UPPER CABINETS AT DKQ BUILDING.
  - SCREENED PORCH – REPLACE SCREENING AND FRAMEWORK AT DKQ BUILDING.
  - DOORS – REPLACE ALL INTERIOR AND EXTERIOR DOORS AT DKQ & OUTBUILDINGS.
  - WINDOWS – REPAIR ALL WINDOWS AT DKQ BUILDING & OUTBUILDINGS.
  - SIDING - REPLACE APPROXIMATELY 60% OF SIDING AT DKQ & OUTBUILDINGS. ASSUME APPROXIMATELY 30% EXTERIOR SHEATHING REPAIR/REPLACEMENT. INSTALLING NEW EXTERIOR SHINGLES AT DKQ BUILDING.
  - ALL OUTBUILDINGS TO INCLUDE REPAIRS TO ROOFING, EXTERIOR SIDING, WINDOWS, DOORS, AND INTERIOR FINISHES CAUSED BY STORM DAMAGE AND FLOODING.
- ALL REPAIR AND REPLACEMENT WORK SHALL FOLLOW THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION. APPLICABLE STANDARDS ARE AS FOLLOWS:
  - THE HISTORIC CHARACTER OF A PROPERTY SHALL BE RETAINED AND PRESERVED. THE REMOVAL OF HISTORIC MATERIALS OR ALTERATION OF FEATURES AND SPACES THAT CHARACTERIZE A PROPERTY SHALL BE AVOIDED.
  - EACH PROPERTY SHALL BE RECOGNIZED AS A PHYSICAL RECORD OF ITS TIME, PLACE, AND USE. CHANGES THAT CREATE A FALSE SENSE OF HISTORICAL DEVELOPMENT, SUCH AS ADDING CONJECTURAL FEATURES OR ARCHITECTURAL ELEMENTS FROM OTHER BUILDINGS, SHALL NOT BE UNDERTAKEN.
  - MOST PROPERTIES CHANGE OVER TIME; THOSE CHANGES THAT HAVE ACQUIRED HISTORIC SIGNIFICANCE IN THEIR OWN RIGHT SHALL BE RETAINED AND PRESERVED.
  - DISTINCTIVE FEATURES, FINISHES, AND CONSTRUCTION TECHNIQUES OR EXAMPLES OF CRAFTSMANSHIP THAT CHARACTERIZE A HISTORIC PROPERTY SHALL BE PRESERVED. REFER TO HSR AND CLR.
  - DETERIORATED HISTORIC FEATURES SHALL BE REPAIRED RATHER THAN REPLACED. WHERE THE SEVERITY OF DETERIORATION REQUIRES REPLACEMENT OF A DISTINCTIVE FEATURE, THE NEW FEATURE SHALL MATCH THE OLD IN DESIGN, COLOR, TEXTURE, AND OTHER VISUAL QUALITIES AND, WHERE POSSIBLE, MATERIALS. REPLACEMENT OF MISSING FEATURES SHALL BE SUBSTANTIATED BY DOCUMENTARY, PHYSICAL, OR PICTORIAL EVIDENCE.
  - CHEMICAL OR PHYSICAL TREATMENTS, SUCH AS SANDBLASTING, THAT CAUSE DAMAGE TO HISTORIC MATERIALS SHALL NOT BE USED. THE SURFACE CLEANING OF STRUCTURES, IF APPROPRIATE, SHALL BE UNDERTAKEN USING THE GENTLEST MEANS POSSIBLE.
  - NEW ADDITIONS, EXTERIOR ALTERATIONS, OR RELATED NEW CONSTRUCTION SHALL NOT DESTROY HISTORIC MATERIALS THAT CHARACTERIZE THE PROPERTY. THE NEW WORK SHALL BE DIFFERENTIATED FROM THE OLD AND SHALL BE COMPATIBLE WITH THE MASSING, SIZE, SCALE, AND ARCHITECTURAL FEATURES TO PROTECT THE HISTORIC INTEGRITY OF THE PROPERTY AND ITS ENVIRONMENT.
  - NEW ADDITIONS AND ADJACENT OR RELATED NEW CONSTRUCTION SHALL BE UNDERTAKEN IN SUCH A MANNER THAT IF REMOVED IN THE FUTURE, THE ESSENTIAL FORM AND INTEGRITY OF THE HISTORIC PROPERTY AND ITS ENVIRONMENT WOULD BE UNIMPAIRED.
  - DURING THE DESIGN DEVELOPMENT PHASE MULTIPLE OPTIONS FOR THE DESIGN OF THE STAIRS, RAMPS, THE FOUNDATION AND IN THE FILL PANELS WILL BE STUDIED AND THE FINAL SELECTION WILL BE A DESIGNED THAT BEST FITS FUNCTIONAL REQUIREMENTS AND IS MOST COMPATIBLE WITH THE HISTORIC CHARACTER OF THE BUILDING FOR THE LONG-TERM VISUAL EFFECTS.
  - DURING THE DESIGN DEVELOPMENT AND CONSTRUCTION DESIGN PHASES THE REQUIRED STRUCTURED STABILIZATION OF THE HISTORIC BUILDING IN READINESS FOR STRUCTURAL MOVE WILL BE DETAILED ON THE PLANS AND IN THE STRUCTURAL CALCULATIONS. THE TWO MAJOR CONSTRUCTION INCREMENTS OF THE DKQ WILL BE ADDRESSED SEPARATELY. STABILIZATION OF CHIMNEYS AND INTERIOR STRUCTURAL ELEMENTS WILL BE ADDRESSED.
  - DURING THE DESIGN AND CONSTRUCTION DEVELOPMENT PHASES A HISTORICAL LANDSCAPE ARCHITECT WILL WORK AS PART OF THE DESIGN TEAM TO IDENTIFY THE TYPE OF VEGETATION TO BE REMOVED/TRIMMED BASED ON DESIGNS, AND TO IDENTIFY APPROPRIATE REPLACEMENT VEGETATION THAT IS SUITABLE FOR CURRENT GROWING CONDITIONS AT THE SITE. NPS ANTICIPATES THAT REPLANTING WITH EXISTING TREE AND SHRUB TAXA WILL BE UNSUCCESSFUL DUE TO THE HIGH GROUND WATER TABLE AND SALT WATER INTRUSION.
  - APPROPRIATE PLANT SPECIES AS IDENTIFIED IN THE CLR WILL NEED TO BE INCORPORATED INTO THE LANDSCAPE IF IMPACTED BY THE PROJECT AFTER THE STRUCTURES HAVE BEEN ELEVATED.
- A TREE AND SHRUB PROTECTION PLAN SHALL BE DEVELOPED AS PART OF THE FINAL CONSTRUCTION DESIGN PLANS.
- A CERTIFIED ARBORIST SHALL CONDUCT NECESSARY TREE TRIMMING AND/OR REMOVAL.
- MONITORING OF ALL GROUND DISTURBING WORK WILL BE DONE BY A SOI QUALIFIED ARCHAEOLOGIST.

TRUE NORTH



SCALE OF FEET

A/E FIRM <b>CROFT &amp; ASSOCIATES</b>  KENNESAW, GEORGIA	DESIGNED: D. ESTERLINE M. LAROSA TECH REVIEW: D. ESTERLINE DATE: 01/28/2022	SUB SHEET NO.  <b>AS101</b>	LOCATION WITHIN PARK LOCATION WITHIN PARK  TITLE OF SHEET <b>ARCHITECTURAL SITE PLAN &amp; STAGING PLAN</b>  CAPE HATTERAS NATIONAL SEASHORE	DRAWING NO. <b>XX XXXXXX</b> PMIS/PKG NO. 254061 SHEET <b>2</b> OF <b>7</b>



GENERAL DEMOLITION NOTES:

- A. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR USING TEMPORARY PROTECTION THROUGHOUT THE PROJECT TO SAFEGUARD THE SURFACE QUALITY OF FINISHES TO REMAIN.
- B. CLEAN JOB SITE DAILY BY REMOVING SCRAPS, DEBRIS, AND WASTE MATERIALS.
- C. ANY ITEM DEMOLISHED OR DAMAGED BY DEMOLITION SHALL BE REPLACED WITH AN EQUAL ITEM OR BETTER AS APPROVED BY THE CONTRACTING OFFICER AT NO COST TO OWNER.
- D. REVIEW HABS AND HALS DOCUMENTATION PRIOR TO DEMOLITION.

DEMOLITION FLOOR PLAN KEYNOTES



- D1 DEMOLISH EXISTING STEPS
- D2 DEMOLISH PORTION OF SCREEN FOR NEW DOOR AND LIFT ENTRANCE.

DEMOLITION PLAN LEGEND:

EXISTING TO REMAIN (SOLID GRAY LINES)

EXISTING TO BE DEMOLISHED (DASHED LINES)

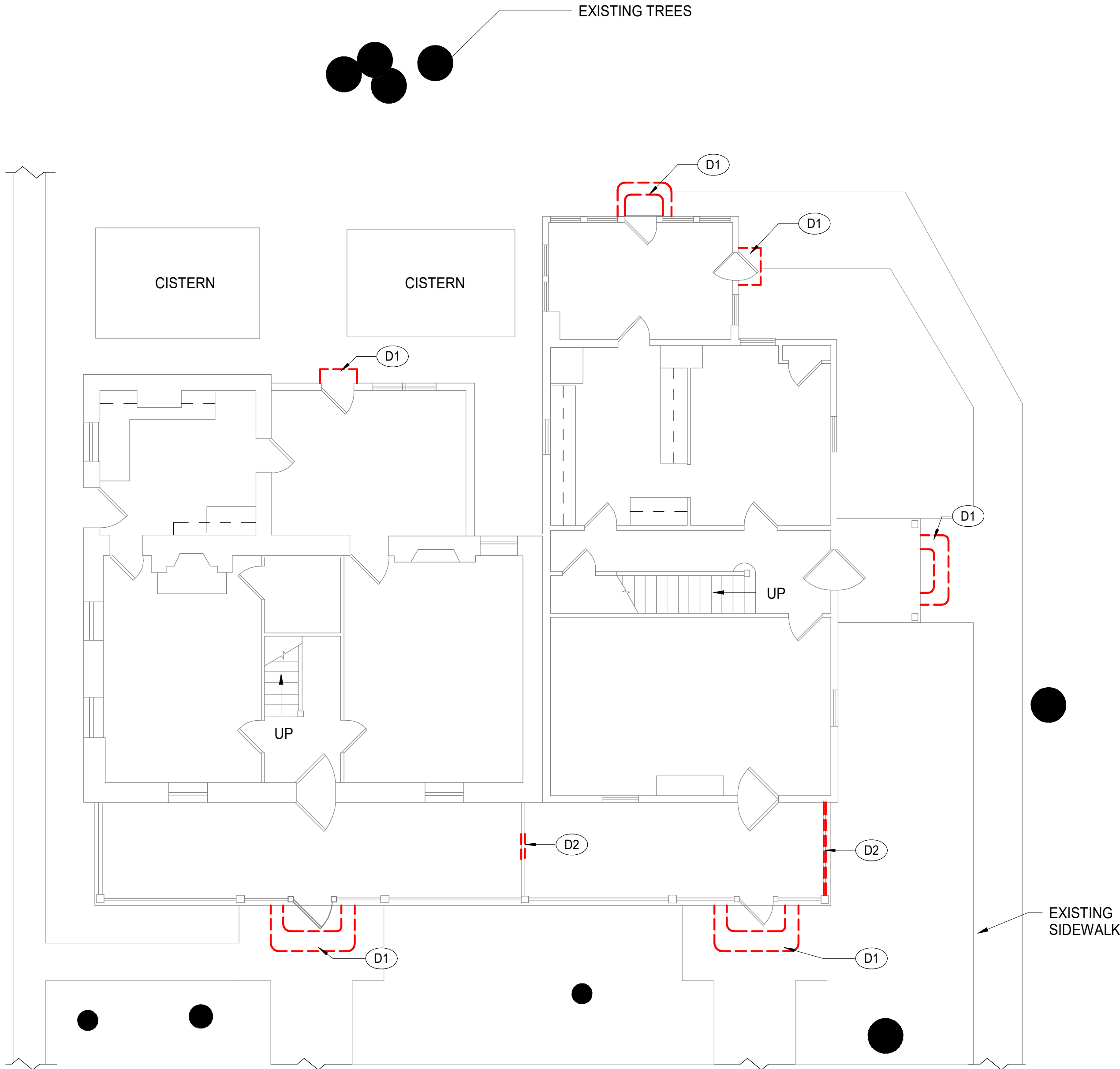
GENERAL FLOOR PLAN NOTES:

- A. DO NOT SCALE DRAWINGS. USE DIMENSIONS ONLY.
- B. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND JOB CONDITIONS AND NOTIFY THE CONTRACTING OFFICER IMMEDIATELY OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
- C. NO CHANGES, MODIFICATIONS OR DEVIATIONS SHALL BE MADE FROM THE DRAWINGS WITHOUT FIRST SECURING WRITTEN PERMISSION FROM THE CONTRACTING OFFICER.
- D. REQUEST WRITTEN INTERPRETATION FROM THE CONTRACTING OFFICER FOR ANY LACK OF OR AMBIGUITY OF INFORMATION IN THE DRAWINGS PRIOR TO PROCEEDING WITH THAT PORTION OF THE WORK.
- E. DIMENSIONS ARE TO FACE OF STUD OR MASONRY OR GRIDLINE U.N.O.
- F. ALL REPAIR AND REPLACEMENT WORK SHALL FOLLOW THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION.
- G. DURING THE DESIGN DEVELOPMENT PHASE MULTIPLE OPTIONS FOR THE DESIGN OF THE STAIRS, RAMPS, THE FOUNDATION AND IN THE FILL PANELS WILL BE STUDIED AND THE FINAL SELECTION WILL BE A DESIGNED THAT BEST FITS FUNCTIONAL REQUIREMENTS AND IS MOST COMPATIBLE WITH THE HISTORIC CHARACTER OF THE BUILDING FOR THE LONG-TERM VISUAL EFFECTS.
- H. NEW AND UPDATED LIFE SAFETY SYSTEMS REQUIRED FOR THE PUBLIC AND PARK USE OF THE BUILDING WILL NEED TO BE FURTHER DEVELOPED DURING THE DESIGN DEVELOPMENT PHASE, AND SHALL COMPLY WITH THE SECRETARY OF INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION.

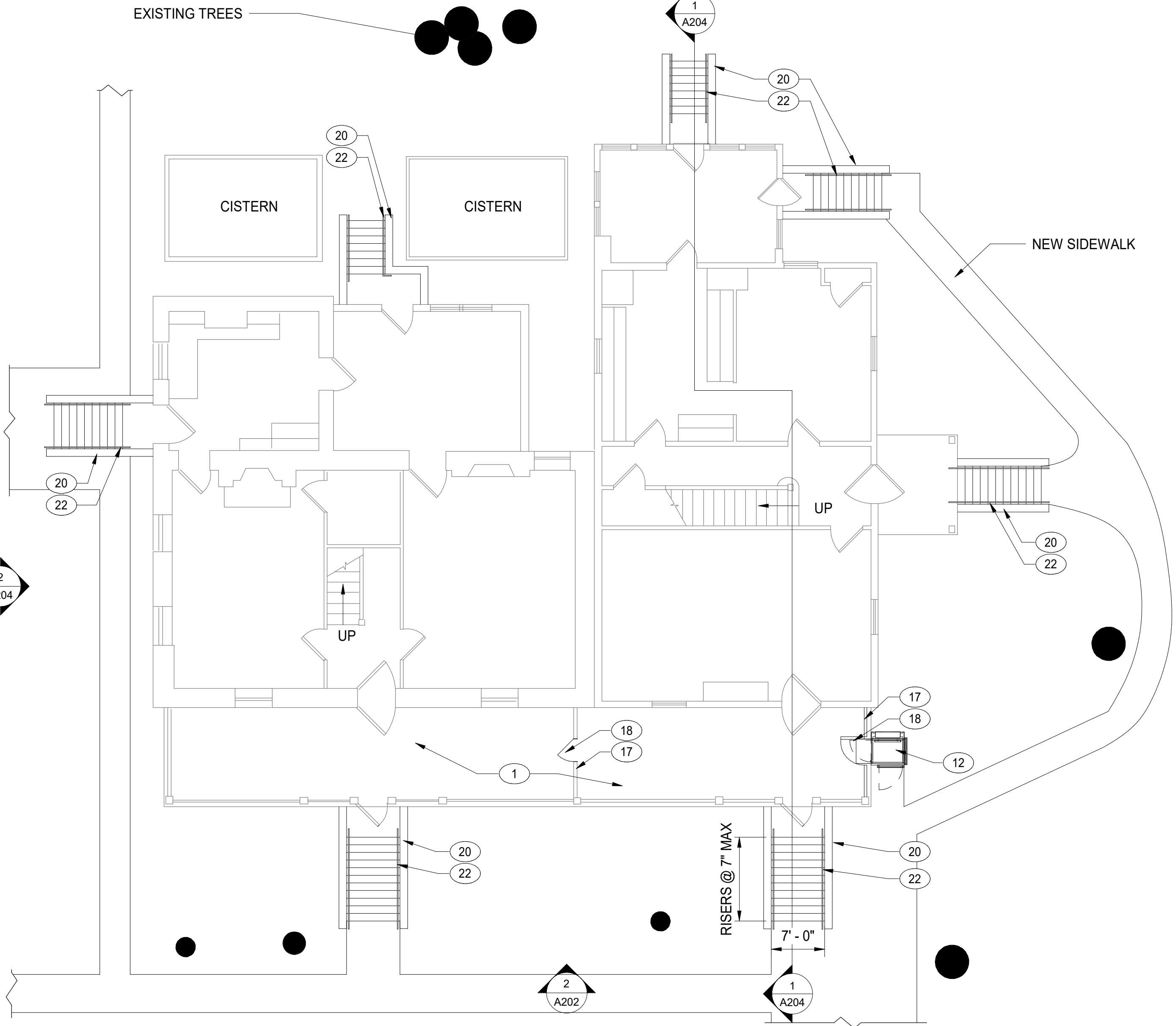
FLOOR PLAN KEYNOTES



- 1 DKQ DWELLING; ELEVATE STRUCTURE APPROX. 4' ABOVE EXISTING ELEVATION, ON PILE FOUNDATIONS, OR MASONRY PILASTER WITH CONCRETE FOUNDATIONS.
- 12 ABA WHEELCHAIR LIFT
- 17 FILL IN/REPLACE SCREEN. MATCH EXISTING.
- 18 NEW 36 INCH WIDE SCREEN DOOR
- 20 NEW MASONRY STEPS WITH RAILINGS AND MASONRY END WALLS ON CONCRETE FOUNDATIONS. RAILINGS SHALL BE THAT OF APPROPRIATE HISTORIC CHARACTER PERIOD TO COMPLY WITH THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION.
- 22 NEW HANDRAILING

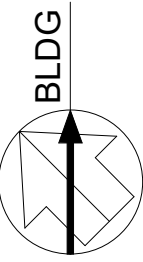


2 DKQ DEMOLITION FLOOR PLAN  
A101



1 DKQ FLOOR PLAN  
A101

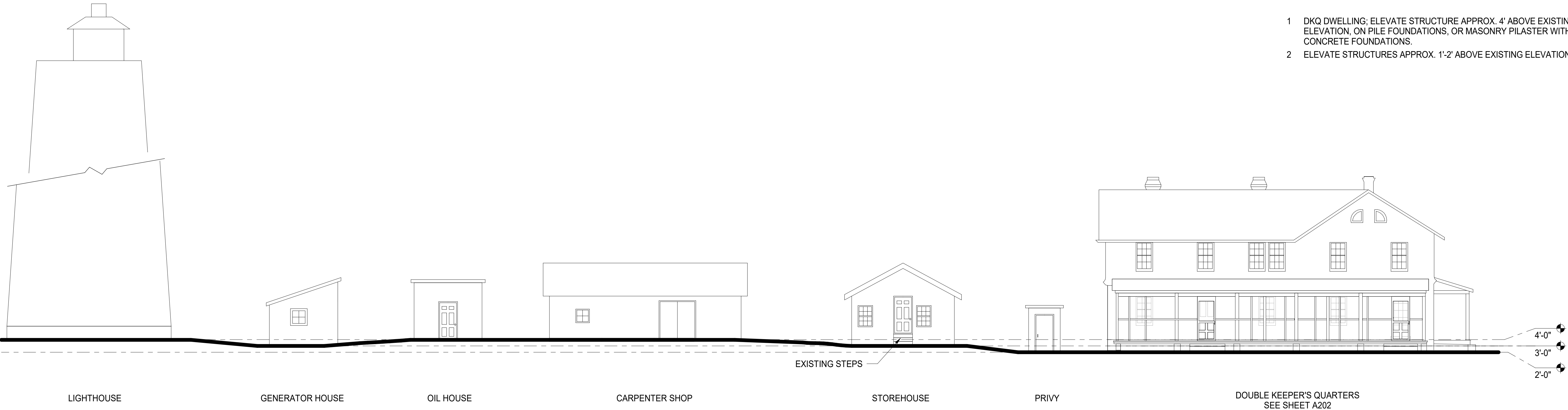
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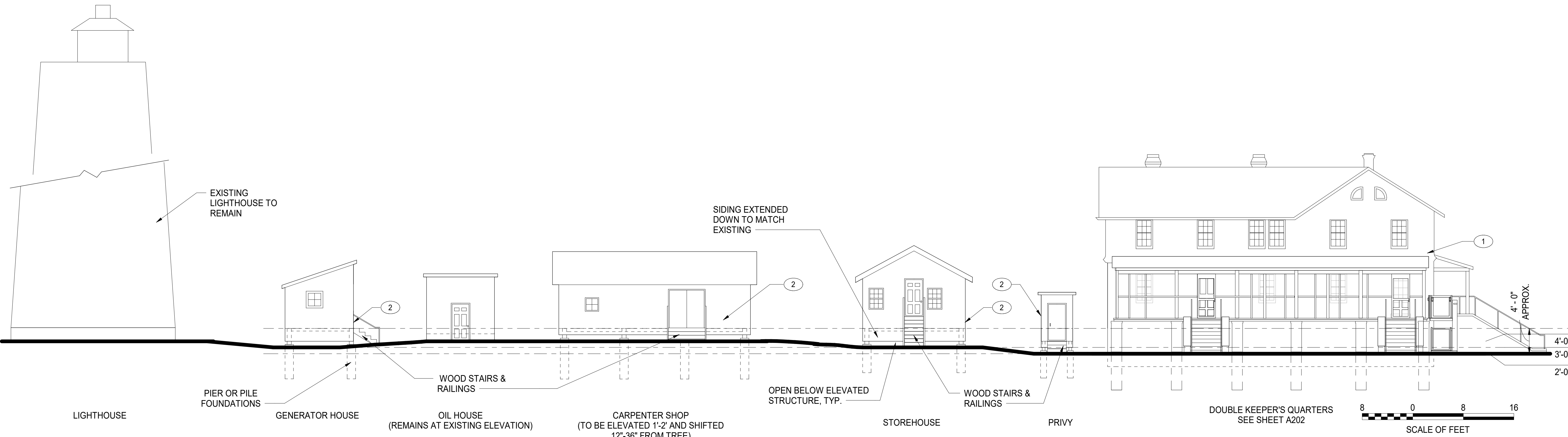
A/E FIRM <b>CROFT &amp; ASSOCIATES</b>  KENNESAW, GEORGIA	DESIGNED: D. ESTERLINE  M. LAROSA TECH REVIEW: D. ESTERLINE DATE: 01/28/2022	SUB SHEET NO.  <b>A101</b>	LOCATION WITHIN PARK LOCATION WITHIN PARK TITLE OF SHEET <b>FLOOR PLANS</b>  CAPE HATTERAS NATIONAL SEASHORE	DRAWING NO. <b>XX</b> <b>XXXXXX</b> PMIS/PKG NO. 254061 SHEET <b>3</b> OF <b>7</b>

ELEVATION KEYNOTES

- 1 DKQ DWELLING: ELEVATE STRUCTURE APPROX. 4' ABOVE EXISTING ELEVATION, ON PILE FOUNDATIONS, OR MASONRY PILASTER WITH CONCRETE FOUNDATIONS.
- 2 ELEVATE STRUCTURES APPROX. 1'-2' ABOVE EXISTING ELEVATION



1 TYP. EXISTING BUILDING



2 TYP. EXISTING BUILDING - ELEVATED

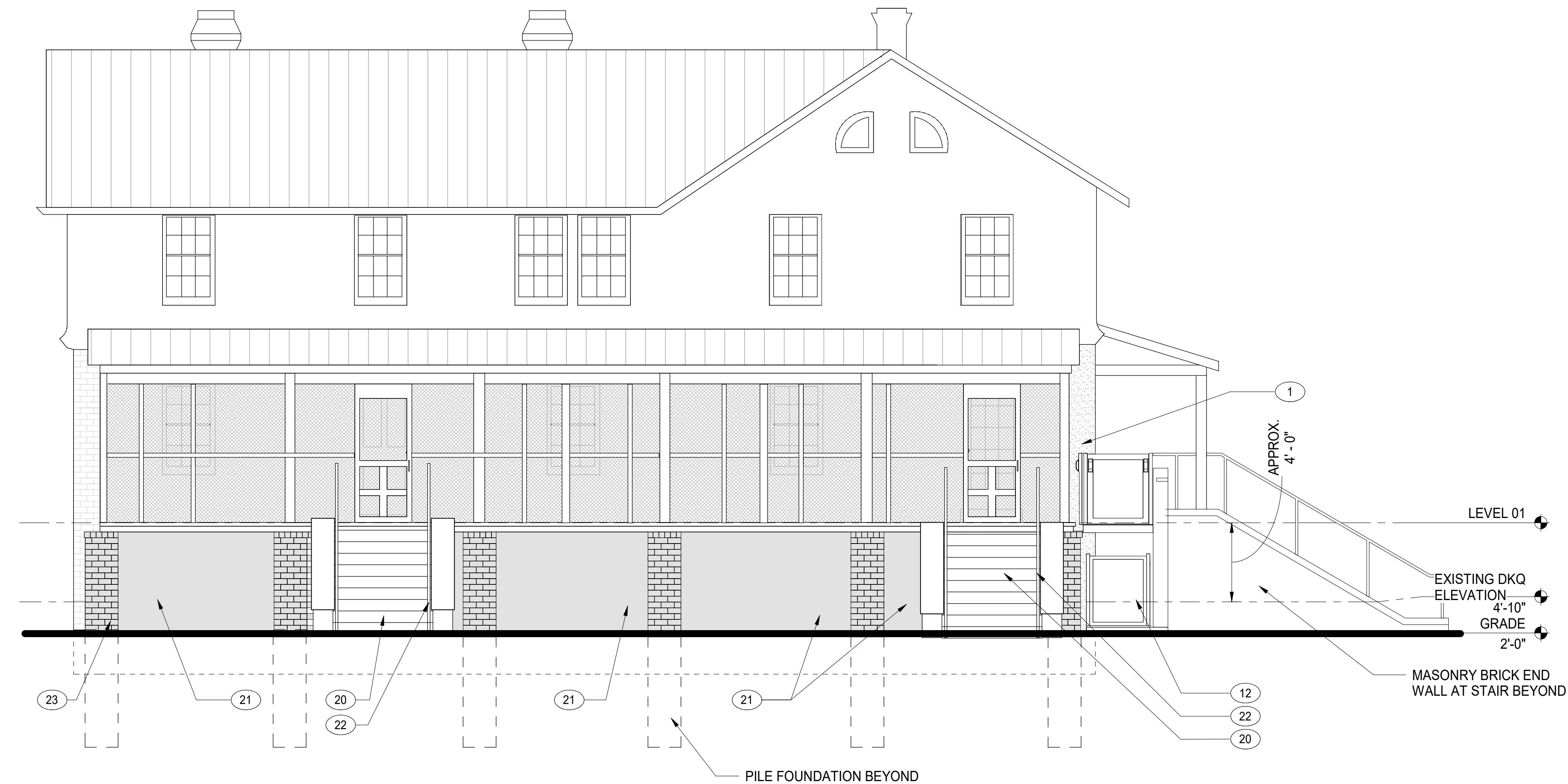
A/E FIRM <b>CROFT &amp; ASSOCIATES</b>  KENNESAW, GEORGIA	DESIGNED: D.ESTERLINE M.LAROSA TECH REVIEW: D.ESTERLINE DATE: 01/28/2022	SUB SHEET NO.  <b>A201</b>	LOCATION WITHIN PARK LOCATION WITHIN PARK TITLE OF SHEET <b>EXTERIOR ELEVATIONS</b>  CAPE HATTERAS NATIONAL SEASHORE	DRAWING NO. <b>XX</b> <b>XXXXXX</b>
				PMIS/PKG NO. 254061
				SHEET
				4 OF 7



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1  
A202  
EXISTING DKQ WEST ELEVATION



2  
A202  
DKQ WEST ELEVATION

#### ELEVATION KEYNOTES

- 1 DKQ DWELLING; ELEVATE STRUCTURE APPROX. 4' ABOVE EXISTING ELEVATION, ON PILE FOUNDATIONS, OR MASONRY PILASTER WITH CONCRETE FOUNDATIONS.
- 12 ABA WHEELCHAIR LIFT
- 20 NEW MASONRY STEPS WITH RAILINGS AND MASONRY END WALLS ON CONCRETE FOUNDATIONS. RAILINGS SHALL BE THAT OF APPROPRIATE HISTORIC CHARACTER PERIOD TO COMPLY WITH THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION.
- 21 INFILL OPTIONS SHALL COMPLY WITH THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION:  
1. PERFORATED BRICK SCREENING, 2. CUSTOM WOOD LATTICE (ORTHAGONAL PATTERN), 3. SOLID BREAKAWAY PANEL. FINISH TO BE DETERMINED IN DESIGN DEVELOPMENT.
- 22 NEW HANDRAILING
- 23 MASONRY BRICK PILASTER WITH CMU BACKUP ON REINFORCED CONCRETE FOOTER

#### GENERAL ELEVATION PLAN NOTES:

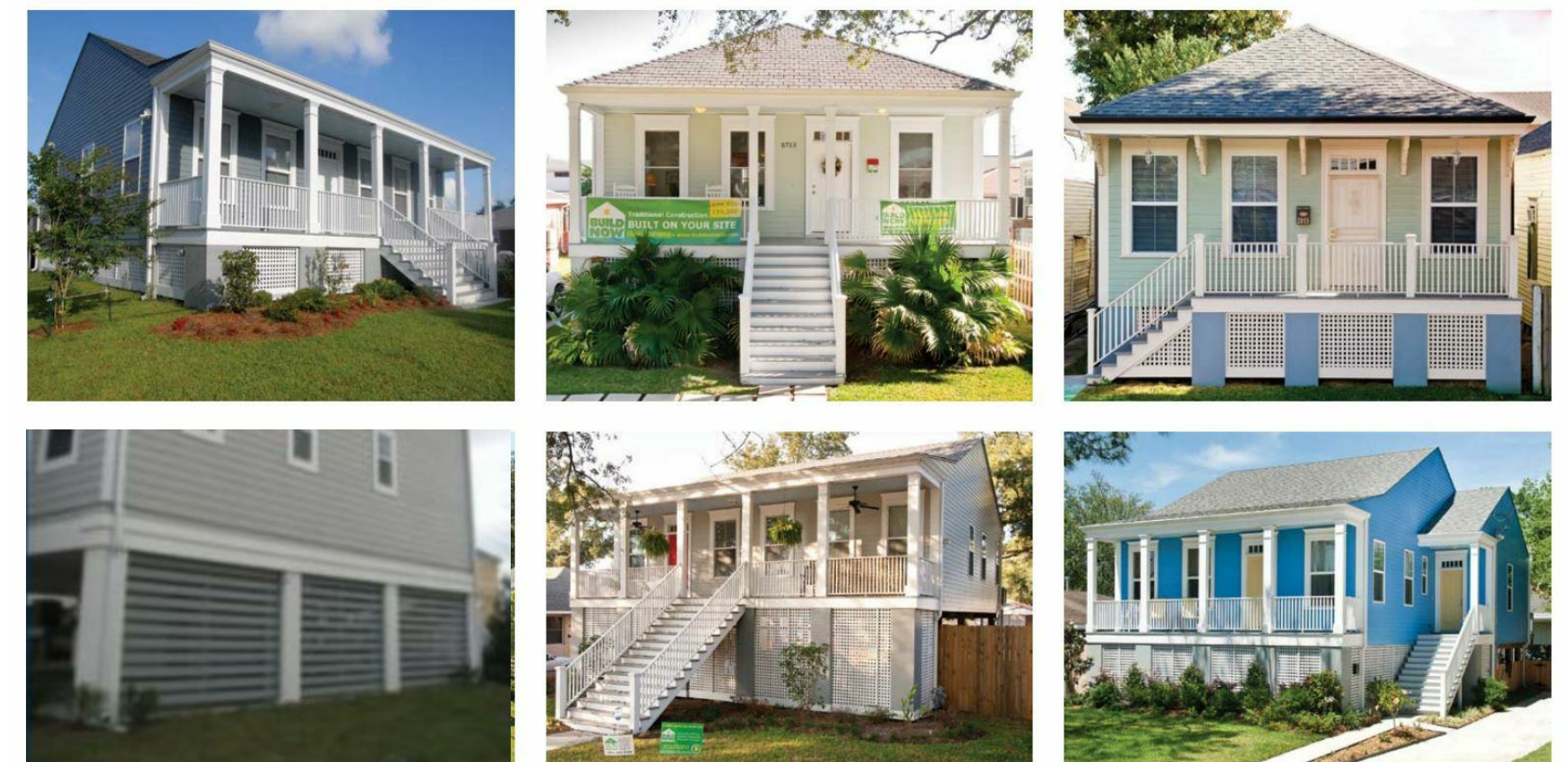
- A. DO NOT SCALE DRAWINGS. USE DIMENSIONS ONLY.
- B. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND JOB CONDITIONS AND NOTIFY THE CONTRACTING OFFICER IMMEDIATELY OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
- C. NO CHANGES, MODIFICATIONS OR DEVIATIONS SHALL BE MADE FROM THE DRAWINGS WITHOUT FIRST SECURING WRITTEN PERMISSION FROM THE CONTRACTING OFFICER.
- D. REQUEST WRITTEN INTERPRETATION FROM THE CONTRACTING OFFICER FOR ANY LACK OF OR AMBIGUITY OF INFORMATION IN THE DRAWINGS PRIOR TO PROCEEDING WITH THAT PORTION OF THE WORK.
- E. DIMENSIONS ARE TO FACE OF STUD OR MASONRY OR GRIDLINE U.N.O.
- F. REFER TO EXISTING HISTORIC STRUCTURES REPORT, DECEMBER 2015, FOR MORE INFORMATION FOR EXISTING HISTORIC STRUCTURES.
- G. FOUNDATION SYSTEM TO BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER. REFER TO GEOTECHNICAL REPORT, FEBRUARY 2021, FOR SUBSURFACE INFORMATION.
- H. ALL REPAIR AND REPLACEMENT WORK SHALL FOLLOW THE SECRETARY OF INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION.
- I. DURING THE DESIGN DEVELOPMENT PHASE MULTIPLE OPTIONS FOR THE DESIGN OF THE STAIRS, RAMPS, THE FOUNDATION AND IN THE FILL PANELS WILL BE STUDIED AND THE FINAL SELECTION WILL BE A DESIGNED THAT BEST FITS FUNCTIONAL REQUIREMENTS AND IS MOST COMPATIBLE WITH THE HISTORIC CHARACTER OF THE BUILDING FOR THE LONG-TERM VISUAL EFFECTS.

#### PERIMETER INFILL SCREEN WALL OPTIONS:

DESIGN TO BE FURTHER DEVELOPED DURING DESIGN DEVELOPMENT PHASE AND SHALL COMPLY WITH SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION



1. PERFORATED BRICK SCREENING



2. CUSTOM WOOD LATTICE (ORTHAGONAL PATTERN)



3. SOLID BREAKAWAY PANEL

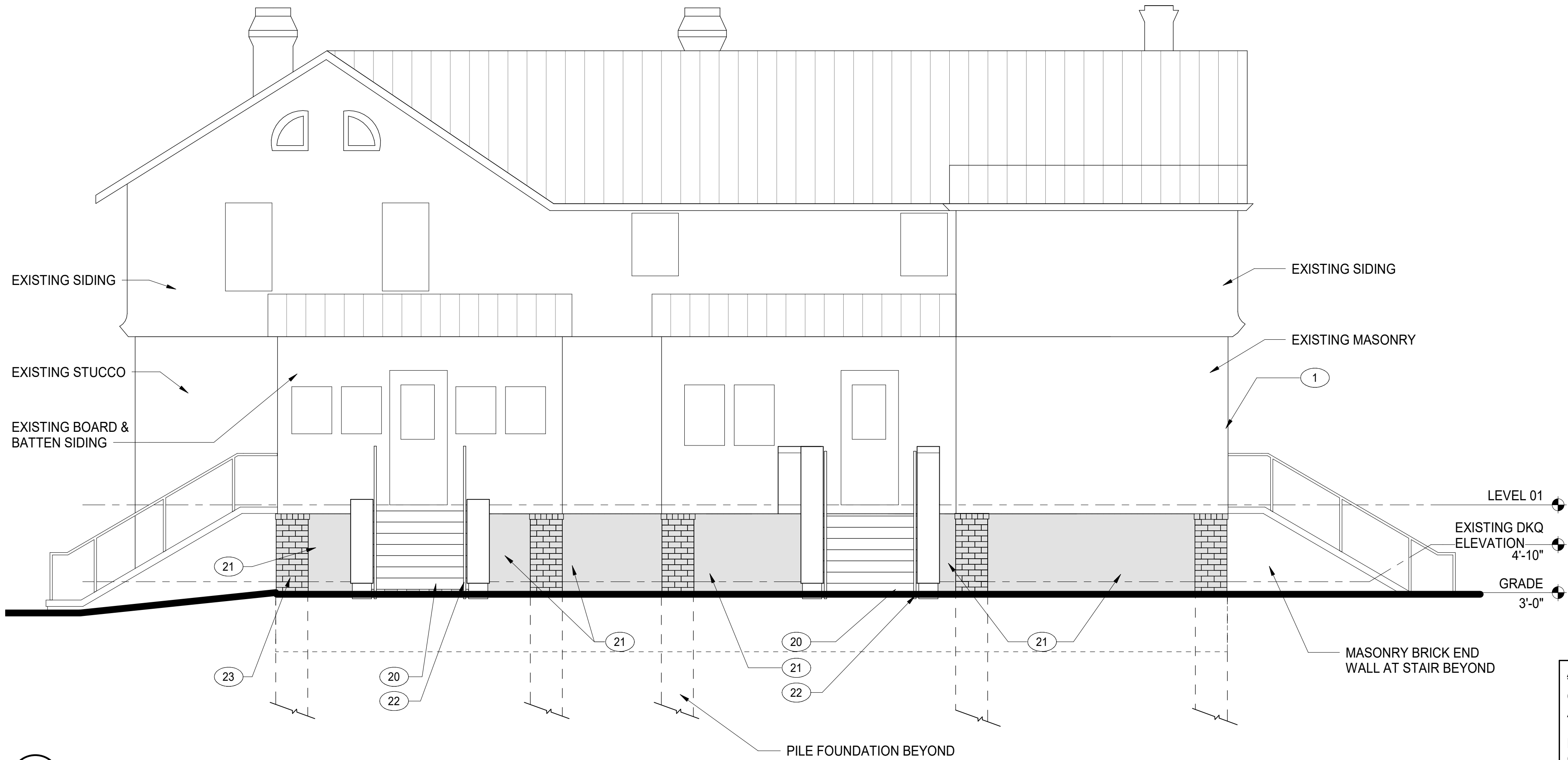
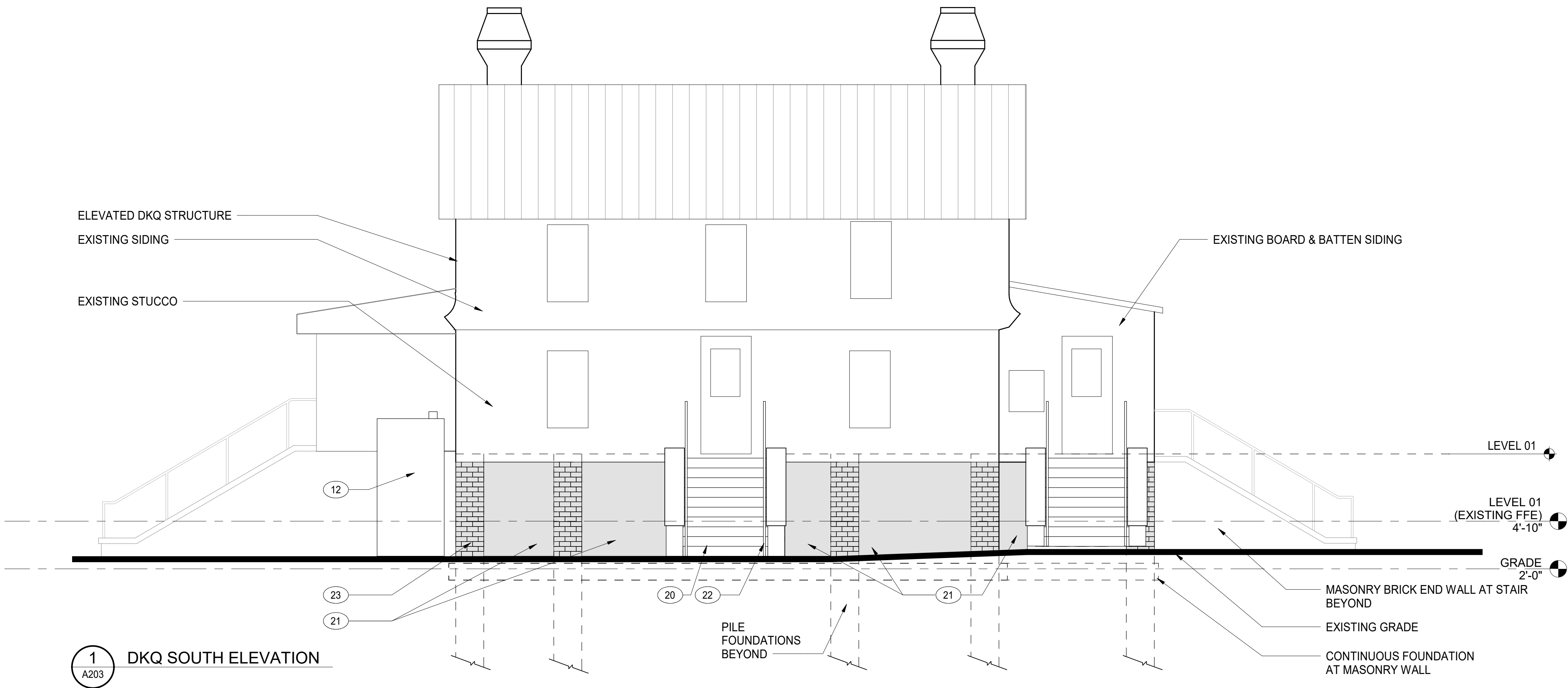
A/E FIRM <b>CROFT &amp; ASSOCIATES</b>  KENNESAW, GEORGIA	DESIGNED: D.ESTERLINE M.LAROSA TECH REVIEW: D.ESTERLINE DATE: 01/28/2022	SUB SHEET NO.  <b>A202</b>	LOCATION WITHIN PARK LOCATION WITHIN PARK TITLE OF SHEET <b>EXTERIOR ELEVATIONS - DKQ</b> CAPE HATTERAS NATIONAL SEASHORE	DRAWING NO. <b>XX</b> <b>XXXXXX</b>
				PMIS/PKG NO. 254061
				SHEET
				<b>5</b> OF <b>7</b>





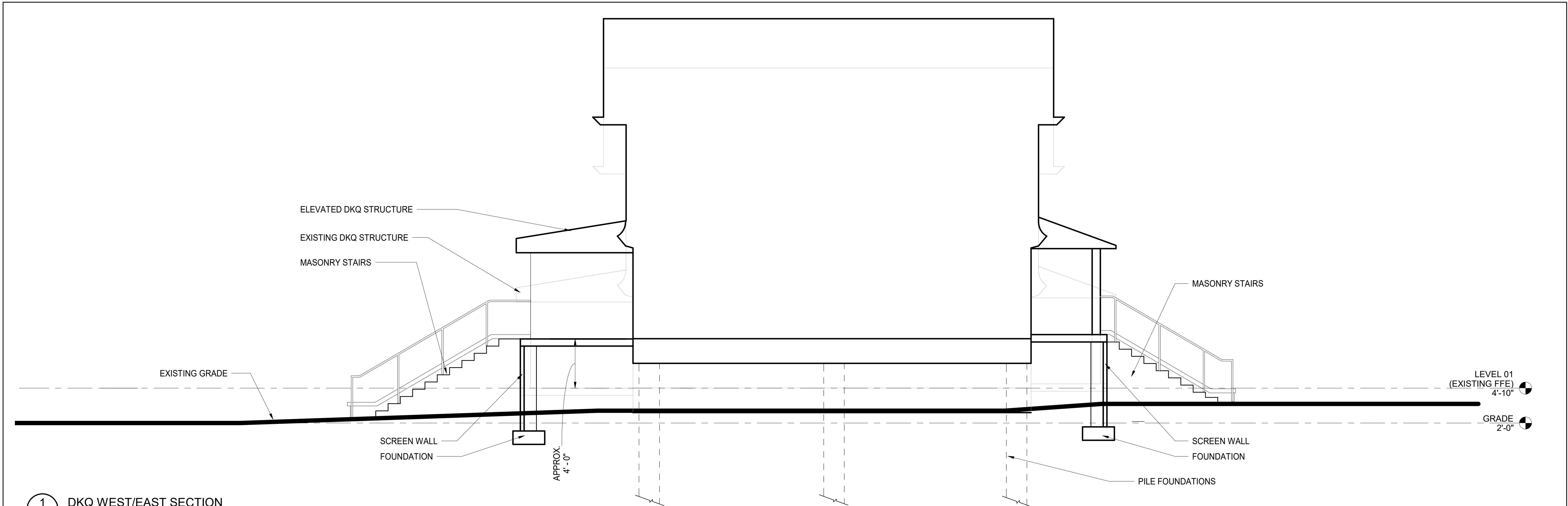
ELEVATION KEYNOTES

- 1 DKQ DWELLING; ELEVATE STRUCTURE APPROX. 4' ABOVE EXISTING ELEVATION, ON PILE FOUNDATIONS, OR MASONRY PILASTER WITH CONCRETE FOUNDATIONS.
- 12 ABA WHEELCHAIR LIFT
- 20 NEW MASONRY STEPS WITH RAILINGS AND MASONRY END WALLS ON CONCRETE FOUNDATIONS. RAILINGS SHALL BE THAT OF APPROPRIATE HISTORIC CHARACTER PERIOD TO COMPLY WITH THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION.
- 21 INFILL OPTIONS SHALL COMPLY WITH THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION: 1. PERFORATED BRICK SCREENING, 2. CUSTOM WOOD LATTICE (ORTHAGONAL PATTERN), 3. SOLID BREAKAWAY PANEL. FINISH TO BE DETERMINED IN DESIGN DEVELOPMENT.
- 22 NEW HANDRAILING
- 23 MASONRY BRICK PILASTER WITH CMU BACKUP ON REINFORCED CONCRETE FOOTER

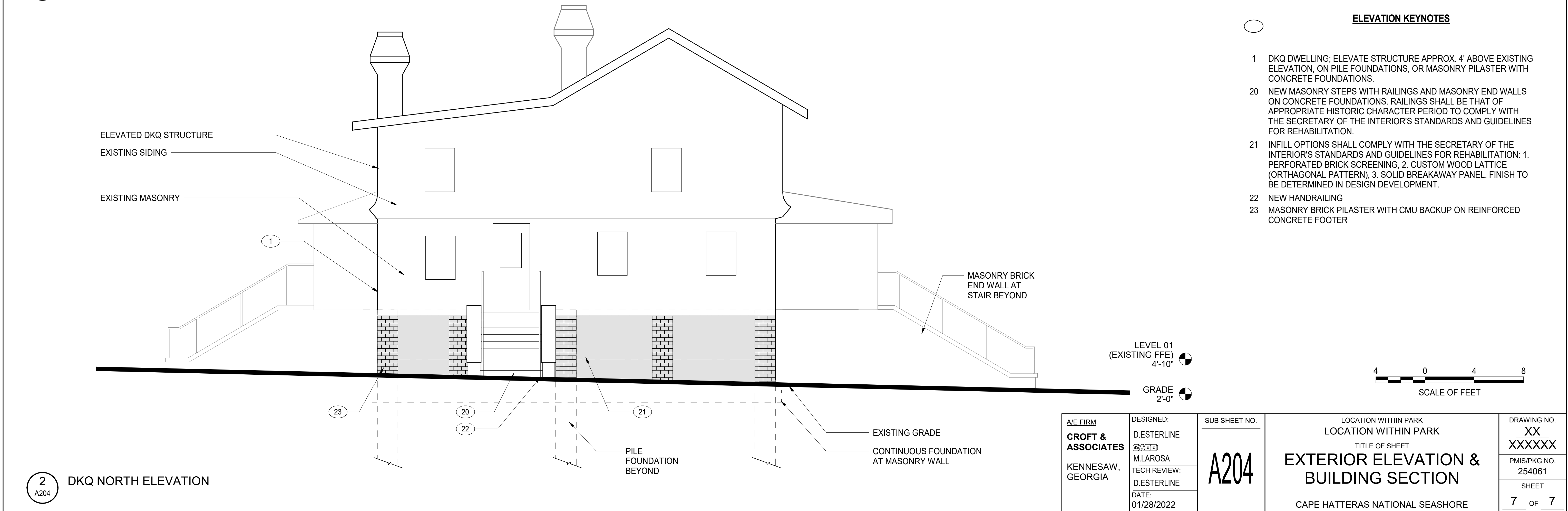


A/E FIRM <b>CROFT &amp; ASSOCIATES</b> KENNESAW, GEORGIA	DESIGNED: D.ESTERLINE M.LAROSA TECH REVIEW: D.ESTERLINE DATE: 01/28/2022	SUB SHEET NO. <b>A203</b>	LOCATION WITHIN PARK LOCATION WITHIN PARK TITLE OF SHEET	DRAWING NO. <b>XX XXXXXX</b>
			<b>EXTERIOR ELEVATIONS - DKQ</b>	PMIS/PKG NO. 254061
			CAPE HATTERAS NATIONAL SEASHORE	SHEET
				<b>6</b> OF <b>7</b>

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1 DKQ WEST/EAST SECTION



2 DKQ NORTH ELEVATION

ELEVATION KEYNOTES

- 1 DKQ DWELLING; ELEVATE STRUCTURE APPROX. 4' ABOVE EXISTING ELEVATION, ON PILE FOUNDATIONS, OR MASONRY PILASTER WITH CONCRETE FOUNDATIONS.
- 20 NEW MASONRY STEPS WITH RAILINGS AND MASONRY END WALLS ON CONCRETE FOUNDATIONS. RAILINGS SHALL BE THAT OF APPROPRIATE HISTORIC CHARACTER PERIOD TO COMPLY WITH THE SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR REHABILITATION.
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<div>A/E FIRM</div> <div>CROFT &amp; ASSOCIATES</div> <div>KENNESAW, GEORGIA</div>	DESIGNED: <div>D. ESTERLINE</div> <div> M. LAROSA</div> <div>TECH REVIEW:<div>D. ESTERLINE</div></div> <div>DATE:<div>01/28/2022</div></div>	SUB SHEET NO. <div>A204</div>	<div>LOCATION WITHIN PARK</div> <div>LOCATION WITHIN PARK</div> <div>TITLE OF SHEET</div> <div>EXTERIOR ELEVATION &amp; BUILDING SECTION</div> <div>CAPE HATTERAS NATIONAL SEASHORE</div>	<div>DRAWING NO.</div> <div>XX</div> <div>XXXXXX</div> <div>PMIS/PKG NO.</div> <div>254061</div> <div>SHEET</div> <div>7 OF 7</div>