Section 106 Consultation Case Study Report

TOWN OF BAY HARBOR ISLANDS

BROAD CAUSEWAY BRIDGE REPLACEMENT
PROJECT DEVELOPMENT & ENVIRONMENT STUDY

Prepared for:

Town of Bay Harbor Islands, Florida
May 16, 2024

Financial Project Identification Number:	452428-1-21-01
Federal Project Number:	N/A
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Town of Bay Harbor Islands Project Number:	BC-160

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The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being or have been carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated May 26, 2022, and executed by Federal Highway Administration (FHWA) and FDOT.

Prepared for:
Town of Bay Harbor Islands

Prepared by:
AtkinsRéalis

EXECUTIVE SUMMARY

On behalf of the Town of Bay Harbor Islands and the Florida Department of Transportation (FDOT) District 6, AtkinsRéalis has prepared this Section 106 Consultation Case Study Report for the Broad Causeway Bridge Replacement Project Development and Environment (PD&E) Study, Financial Project Identification (FPID) No. 452428-1-21-01, in Miami-Dade County, Florida (see **Figure 1-1**). The existing Broad Causeway Bridge (Florida Master Site File [FMSF] Number [No.] 8DA10123, FDOT Bridge No. 875101) crosses the Intracoastal Waterway and connects the City of North Miami with the Town of Bay Harbor Islands. It consists of four undivided, 10-foot-wide travel lanes (two in each direction), outside travel lanes with shared-use markings to accommodate bicycles, and raised sidewalks bordering each side of the travel lanes. The bridge is approximately 0.35 miles in length.

The objective of the PD&E study is to evaluate three bridge replacement alternatives: a No-Build (Repair) Alternative, a Mid-Level Moveable Bridge Alternative, and a High-Level Fixed Bridge Alternative. The No-Build (Repair) Alternative consists of repairs to the Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) to address ongoing maintenance of the 72-year-old structure. The Mid-Level Moveable Bridge Alternative involves replacing the Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) with a moveable-span bridge with a minimum clearance of 40 feet above the mean high water (MHW) level when the bascule leaves are lowered. The High-Level Fixed Bridge Alternative involves the replacement of the current Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) with a fixed-span bridge with a vertical navigational clearance of 65 feet over the Intracoastal Waterway navigation channel. The established vertical clearance of the Mid-Level Moveable Bridge Alternative and the High-Level Fixed Bridge Alternative will both be set by the United States Coast Guard (USCG). See **Section 5.0** for a detailed description of each alternative.

This Case Study Report evaluates the potential primary and secondary effects of the proposed undertaking on the National Register of Historic Places (NRHP)-eligible resources (and resources presumed eligible that have insufficient information for a definitive NRHP determination) documented within the project area of potential effect (APE). The Cultural Resource Assessment Survey (CRAS) determined that thirteen (13) historic resources are eligible for listing in the NRHP individually or as part of a historic district. These identified resources include one (1) linear resource (Broad Causeway [8DA10123, FDOT Bridge No. 875101]), eight (8) historic structures (9700 W Broadview Drive [8DA10435], Citgo [8DA10436], 2395 Bayview Lane [8DA21593], Whitehouse Inn on the Bay [8DA21598], and Majorca Towers [8DA21599], 9600 Broadview Terrace [8DA21630], 1371 96th Street [8DA21606], and 1330 96th Street [8DA21607]), and four (4) resource groups (Bay Harbor Islands Historic District [9DA10515], Keystone Islands [8DA11549], Broad Causeway Island [8DA21594], and Indian Creek Country Club Golf Course [8DA21608]) (see **Table 4-1** and **Table 4-2**). No archaeological sites that are eligible for listing in the NRHP within the archaeological APE were identified during the CRAS study. The location of the identified NRHP-eligible historic resources can be seen in **Figure 4-1**.

Potential effects to these historic resources were evaluated in accordance with Section 106 of the *National Historic Preservation Act* (NHPA) of 1966 (Public Law 89-665), as amended, as implemented by 36 Code of Federal Regulations (CFR) 800 (Protection of Historic Properties, effective August 2004), as well as Chapter 267, *Florida Statutes* (FS), Chapter 1A-46, *Florida Administrative Code* (FAC), and Stipulation VII of the *Section 106 Programmatic Agreement* among the Federal Highway Administration (FHWA), the Florida Department of Transportation (FDOT), the Advisory Council on Historic Preservation (ACHP), and the Florida State Historic Preservation Officer (SHPO) regarding Implementation of the Federal-aid Highway Program in Florida (2023 PA).

All work is performed in accordance with the standards outlined in the *Cultural Resources Management Standards and Operational Manual* (Florida Division of Historical Resources [FDHR], 2003), the *Cultural Resource Management Handbook* (Florida Department of Transportation [FDOT] 2013), and the *Project Development and Environment Manual* (FDOT 2023). All work also conforms to professional guidelines set forth in the *Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716, as amended and annotated). Principal Investigators meet the *Secretary of the Interior's Professional Qualification Standards* (48 FR 44716) for archaeology, history, architecture, architectural history, or historic architecture. Historic resource investigations were conducted under the direction of Jo-Anne Peck, MFA HP. Archaeological investigations were conducted under the direction of Joshua Goodwin, MA RPA.

The criteria of adverse effect found in 36 CFR Part 800.5 were applied to the thirteen (13) NRHP-eligible historic resources located within the project APE. Based on the proposed undertaking to replace the Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101), the findings presented in this study indicate that the proposed replacement bridge alternatives will have an **adverse effect** on the individually NRHP eligible Broad Causeway (8DA10123) linear resource, the individually NRHP eligible Citgo/1501 Broad Causeway (8DA10436) historic structure, and the potentially NRHP eligible Bay Harbor Islands Historic District (8DA10515). Furthermore, it is anticipated that this undertaking will have **no adverse effect** on the individually NRHP eligible 2395 Bayview Lane (8DA21593), Whitehouse Inn on the Bay (8DA21598), and Majorca Towers (8DA21599) historic structures, nor the Indian Creek Country Club Golf Course (8DA21608) and Keystone Islands (8DA11549) resource groups. Additionally, there is **no adverse effect** to the following contributing resources in the Bay Harbor Islands Historic District (8DA10515) located within the APE: 9700 W Broadview Drive (8DA10435), Broad Causeway Island (8DA21594), 1371 96th Street (8DA21606), 1330 96th Street (8DA21607), and 9600 Broadview Terrace (8DA21630). There are no NRHP-eligible archaeological sites within the archaeological APE that will be affected by this undertaking. A table summarizing the findings can be found in **Table 8-1**.

Recommendations for mitigating the adverse effects identified in this Case Study are included in **Section 6.0**. Further coordination and consultation will occur among the SHPO, the Town of Bay Harbor Islands with FDOT District 6, the Advisory Council on Historic Preservation, other potential consulting parties, as well as the public to fulfill the Section 106 requirements to resolve the adverse effects. The result of the consultation will be recorded in a Memorandum of Agreement (MOA).

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ACRONYMS AND ABBREVIATIONS

A	**ACHP**	Advisory Council on Historic Preservation
	AD	Anno Domini
	ADA	Americans with Disabilities Act of 1990
	APE	Area of Potential Effect
	AtkinsRéalis	AtkinsRéalis North America, Inc.
B	**BAR**	Bureau of Archaeological Research
	BP	Before Present
C	**CIP**	Capital Improvements Program
	CRAS	Cultural Resource Assessment Survey
D	**DOE**	Determination of Eligibility
	DSM	Digital Surface Model
E	**ESRI**	Environmental Systems Research Institute
F	**FAC**	Florida Administrative Code
	FDEP	Florida Department of Environmental Protection
	FDHR	Florida Division of Historical Resources
	FDOT	Florida Department of Transportation
	FHWA	Federal Highway Administration
	FIND	Florida Inland Navigation District
	FMSF	Florida Master Site File
	FR	Federal Register
	FS	Florida Statutes
	ft.	Feet
G	**GIS**	Geographic Information Systems
	GLO	General Land Office
I	**in.**	Inches
L	**LABINS**	Land Boundary Information System
	LIDAR	Light Detection and Ranging
M	**m.**	Meters

	MiMo	Miami Modern
	MLRA	Major Land Resource Area
	mm.	Millimeters
	MHW	Mean High Water
	MLW	Mean Low Water
	MV	Masonry Vernacular
N	**NHPA**	National Historic Preservation Act of 1966 as Amended
	No.	Number
	NOAA	National Oceanic and Atmospheric Administration
	NRHP	National Register of Historic Places
P	**PD&E**	Project Development and Environmental
	PR	Photorevised
R	**ROW**	Right-of-Way
S	**SHPO**	State Historic Preservation Officer
	SR	State Road
T	**Town**	Town of Bay Harbor Islands
U	**USACE**	United States Army Corps of Engineers
	USCG	United States Coast Guard
	USDA	United States Department of Agriculture
	USGS	United States Geological Survey
Z	**ZAP**	Zones of Archaeological Potential

1.0 INTRODUCTION

On behalf of the Town of Bay Harbor Islands and the Florida Department of Transportation (FDOT) District 6, AtkinsRéalis has prepared this Section 106 Consultation Case Study for the Broad Causeway Bridge Replacement Project Development and Environment (PD&E) Study, Financial Project Identification (FPID) No. 452428-1-21-01, in Miami-Dade County Florida (see **Figure 1-1**). The current bridge (8DA10123, FDOT Bridge No. 875101) crosses the Intracoastal Waterway, consists of four undivided, 10-foot-wide travel lanes (two in each direction), and outside travel lanes that include shared-use markings to accommodate bicycles and raised sidewalks adjacent to each side of the travel lanes. The bridge is approximately 0.35 miles in length. The purpose of the project is to assess the potential effects of bridge replacement alternatives that meet current design standards and United States Coast Guard (USCG) requirements, incorporate dedicated bicycle lanes and sidewalks to increase safety for pedestrians and cyclists, and comply with the Americans with Disabilities Act of 1990 (ADA).

This Case Study Report evaluates the potential primary and secondary effects of the proposed undertaking on the National Register of Historic Places (NRHP)-eligible resources (and resources presumed eligible that have insufficient information for a definitive NRHP determination) documented within the project area of potential effect (APE). The study evaluates three alternative bridge replacement alternatives: a No-Build (Repair) Alternative, a Mid-Level Moveable Bridge Alternative, and a High-Level Fixed Bridge Alternative. The No-Build (Repair) Alternative consists of repairs to the Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) to address ongoing maintenance of the 72-year-old structure. The Mid-Level Moveable Bridge Alternative involves replacing the Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) with a moveable-span bridge with a minimum clearance of 40 feet above the mean high water (MHW) level when the bascule leaves are lowered. The preferred High-Level Fixed Bridge Alternative involves the replacement of the current Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) with a fixed-span bridge with a vertical navigational clearance of 65 feet over the Intracoastal Waterway navigation channel. See **Section 5.0** for a further description of each alternative.

As part of the PD&E Study, a Cultural Resources Research Design and Survey Methodology was prepared for this project in May 2023, and a Cultural Resource Assessment Survey (CRAS) in April 2024. The objective of the CRAS was to locate and identify any archeological sites or historic resources located within the project's APE and to assess their significance as per the criteria of eligibility for listing in the National Register of Historic Places (NRHP).

Because the anticipated changes could potentially affect existing historic districts and other cultural resources by impacting the visual setting of the area, the historical APE for the CRAS was developed through a viewshed analysis using the Geodesic Viewshed tool in the Environmental Systems Research Institute (ESRI) ArcGIS Pro proprietary software. Conceptual bridge locations were extracted from the concept designs developed by AtkinsRéalis, and the visual impacts were evaluated to establish the historical APE for the project using the Geodesic Viewshed tool. The APE was then refined to include only parcels within a ½ mile radius that orient towards the project area. Based upon the scale and nature of the activities, the archaeological APE was limited to the

parcels in which potential ground disturbance may take place. The APE map can be seen in **Figure 1-2**.

The CRAS determined that thirteen (13) historic resources are eligible for listing in the NRHP either individually or as part of a historic district within the APE (or have insufficient information to fully determine eligibility). These identified resources include one (1) linear resource (Broad Causeway [8DA10123, FDOT Bridge No. 875101]), eight (8) historic structures (9700 W Broadview Drive [8DA10435], Citgo [8DA10436], 2395 Bayview Lane [8DA21593], Whitehouse Inn on the Bay [8DA21598], and Majorca Towers [8DA21599], 9600 Broadview Terrace [8DA21630], 1371 96th Street [8DA21606], and 1330 96th Street [8DA21607]), and four (4) resource groups (Bay Harbor Islands Historic District [9DA10515], Keystone Islands [8DA11549], Broad Causeway Island [8DA21594], and Indian Creek Country Club Golf Course [8DA21608]) (see **Table 4-1** and **Table 4-2**). No archaeological sites that are eligible for listing in the NRHP within the archaeological APE were identified during the CRAS study. The location of the identified NRHP-eligible historic resources can be seen in **Figure 4-1**.

The objective of this Section 106 Consultation Case Study Report is to evaluate the potential primary and secondary effects of the proposed undertaking on NRHP-eligible historic resources located within the project APE. Potential effects to these historic resources were assessed in accordance with Section 106 of the *National Historic Preservation Act* (NHPA) of 1966 (Public Law 89-665), as amended, as implemented by 36 Code of Federal Regulations (CFR) 800 (Protection of Historic Properties, effective August 2004), as well as Chapter 267, *Florida Statutes* (FS), Chapter 1A-46, *Florida Administrative Code* (FAC), and Stipulation VII of the *Section 106 Programmatic Agreement* among the Federal Highway Administration (FHWA), the Florida Department of Transportation (FDOT), the Advisory Council on Historic Preservation (ACHP), and the Florida State Historic Preservation Officer (SHPO) regarding Implementation of the Federal-aid Highway Program in Florida (2023 PA).

All work is in accordance with the standards outlined in the *Cultural Resources Management Standards and Operational Manual* (Florida Division of Historical Resources [FDHR], 2003), the *Cultural Resource Management Handbook* (Florida Department of Transportation [FDOT] 2013), and the *Project Development and Environment Manual* (FDOT 2023). The work also conforms to professional guidelines set forth in the *Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716, as amended and annotated). Principal Investigators meet the *Secretary of the Interior's Professional Qualification Standards* (48 FR 44716) for archaeology, history, architecture, architectural history, or historic architecture. Historic resource investigations were conducted under the direction of Jo-Anne Peck, MFA HP. Archaeological investigations were conducted under the direction of Joshua Goodwin, MA RPA.

This report applies the Criteria of Adverse Effect found in Section 106 of the NHPA, 36 CFR Part 800.5 to the NRHP-eligible historic resources located within the project APE. This Section 106 Consultation Case Study Report provides information for consultation with the SHPO and FDOT District 6. Based on the proposed undertaking to replace the historic Broad Causeway (8DA10123, FDOT Bridge No. 875101), the findings presented in this study indicate that the preferred replacement bridge alternative will have an ***adverse effect*** on the individually NRHP-eligible

Broad Causeway (8DA10123) linear resource, the individually NRHP-eligible Citgo/1501 Broad Causeway (8DA10436) historic structure, and the potentially NRHP-eligible Bay Harbor Islands Historic District (8DA10515). Furthermore, it is anticipated that this undertaking will have ***no adverse effect*** on the individually NRHP-eligible 2395 Bayview Lane (8DA21593), Whitehouse Inn on the Bay (8DA21598), and Majorca Towers (8DA21599) historic structures, nor the Indian Creek Country Club Golf Course (8DA21608) and Keystone Islands (8DA11549) resource groups. Additionally, there is ***no adverse effect*** to the following contributing resources in the Bay Harbor Islands Historic District (8DA10515) located within the APE: 9700 W Broadview Drive (8DA10435), Broad Causeway Island (8DA21594), 1371 96th Street (8DA21606), 1330 96th Street (8DA21607), and 9600 Broadview Terrace (8DA21630. There are no NRHP-eligible archaeological sites that are within the archaeological APE that will be affected by this undertaking.

Figure 1-1: Project Location Map.

Figure 1-2: Area of Potential Effect (APE) Map.

2.0 PROJECT DESCRIPTION

The project involves the potential replacement of the Broad Causeway Bridge connecting the Town of Bay Harbor Islands (Town) with the City of North Miami within Miami-Dade County. The bridge is part of Broad Causeway, a roadway classified as "Urban Minor Arterial". This arterial also begins in Bal Harbour/Surfside and connects those commuters to the mainland. The specific limits of the project extend from the Broad Causeway Island (25°53'19.41"N, 80° 8'54.52"W) on the west side and (25°53'11.30"N, 80° 8'18.93"W) to east of West Broadview Drive within Section 27 of Township 52 South, Range 42 East. The improvements include the bridge approaches and Broad Causeway Island circulation. The FDOT Bridge Identification (ID) Number (No.) is 875101. A graphic depicting the bridge's location is provided in **Figure 1-1**. The project is approximately 0.77 miles in length.

The existing bridge consists of four undivided lanes (two in each direction). The four travel lanes are 10 ft. wide, without a raised median. The outside travel lanes also include shared-use markings to accommodate bicycles. In addition, a raised sidewalk is present on each side of the bridge, with a width that varies from 22 to 36 inches. There are no guardrails separating the sidewalk from the travel lane. Crossing over the Intracoastal Waterway (ICWW), the bridge has a horizontal clearance of 79.7 ft., a maximum vertical clearance of 18.0 ft. at Mean Low Water (MLW), and a minimum vertical clearance of 15.7 ft. at Mean High Water (MHW) at the Bascule crossing. The ICWW at the bridge crossings is deemed a navigable waterway by the United States Coast Guard (USCG). The bridge bascule is required by the USCG to open twice per hour on the quarter and three-quarter hour but only opens if vessels are waiting.

The existing bridge, constructed in 1951, has been determined to be functionally obsolete with fracture critical components based on a Bridge Inspection Report prepared in January 2023 and determined to be structurally deficient based on a Bridge Inspection Report prepared in January 2024 by FDOT. In 2017, major structural repairs were performed to the bridge at a construction cost of approximately $17 million. As a result of a 2020 inspection carried out by FDOT, a design to address additional repairs has been completed, and it has been determined that the cost of performing these repairs will amount to $3.0 million. As a result of the 2024 inspection, temporary emergency repairs will be completed. One lane of the bridge is closed until repairs are complete. It is expected that major costly repairs will be needed more frequently as the bridge ages to prevent closure or severe damage. Because of the structure type, the number of structural deficiencies, and high maintenance costs, the Town is considering replacement of the bridge.

The PD&E Study is being conducted to address the structural and functional deficiencies of the existing Broad Causeway Bridge and to evaluate and compare the feasibility of continued rehabilitation and repair versus replacement of the bridge. Bridge concepts will include provisions for new pedestrian and bicycle accommodations to comply with Americans with Disabilities Act (ADA) requirements and guardrails for the safety of pedestrians.

Existing right-of-way (ROW), owned by the Town, is anticipated to accommodate the replacement bridge and approaches. Included in the Town Charter by the 1953 Senate Bill No. 865, the State of Florida surrendered and granted to the Town any claim or control over all tidewaters and other

lands, and all bayous and bay bottoms, beaches, waters, waterways and water bottoms, and all riparian rights within and adjacent to the Town limits for municipal purposes only, a strip of 300 ft. wide from Kane Concourse, westwardly across Biscayne Bay to approximately 123rd Street in the City of North Miami. Therefore, the replacement bridge will be built within the 300 ft. strip over Biscayne Bay under claim or control by the Town.

2.1 Project Status

The project is a priority for the Town of Bay Harbor Islands and is included in their current Capital Improvements Program (CIP) with the following allocations to date for the PD&E phase:

- Fiscal Year (FY) 2021-2022 - $500,000
- FY 2022-2023 - $2,300,000
- FY 2023 – 2024 - $2,800,000

The project was approved by the Miami-Dade Transportation Planning Organization (TPO) on November 3, 2022 (TPO's Resolution #46-2022), to be added to the 2045 Long Range Transportation Plan (LRTP) and FY 24 Transportation Improvement Program (TIP) Amendments. Future project phases are currently not funded. The Town is seeking Federal, state, and local funds and applying for all applicable grants.

2.2 Project Purpose and Need

The purpose of this project is to address the structural and functional deficiencies of the existing Broad Causeway Bridge. The need for the project is to improve bridge deficiencies because the 73-year-old bridge is structurally deficient, functionally obsolete, and contains fracture-critical components; improve safety since there have been several vehicular crashes in the project corridor, many involving bicycles and pedestrians that resulted in injuries; improve flow of traffic along the project corridor which has high traffic volumes and frequent bridge openings; and to maintain emergency evacuation.

2.2.1 Bridge Deficiencies

Constructed in 1951, the 73-year-old bridge was determined to be functionally obsolete with fracture-critical components based on a Bridge Inspection Report prepared in January 2023 and structurally deficient based on a Bridge Inspection Report prepared in January 2024 by the FDOT. According to the Federal Highway Administration (FHWA), functionally obsolete means that the bridge was built to standards that are not used today. The Broad Causeway Bridge does not meet current design standards for lane widths, or shoulder widths, or serve current or future traffic demand. A bridge is Structurally Deficient if it is in relatively poor condition or has an insufficient load-carry capacity. The bridge received a Sufficiency Rating of 11.1 (on a scale of 0 percent (poor) to 100 percent (very good). The Sufficiency Rating is essentially an overall rating of a bridge's fitness to remain in service. A low Sufficiency Rating may qualify a bridge for State or Federal replacement funds.

As part of the inspection process, several components were evaluated and assigned a rank or condition based on the National Bridge Inventory (NBI) system. The system was established to evaluate existing bridge deficiencies to ensure safety for the traveling public. The ranks/conditions were based on a scale of zero through nine. A rank of zero generally means that the bridge is out

of service, beyond corrective action, and in need of replacement; a rank of nine means the bridge is in excellent conditionand no deficiencies have been identified. The ranks/conditions for the components examined in the reports are as follows:

Bridge ID Nos. 875101 (FDOT Inspection Date – January 19, 2024)

- Bridge Railings: 0 (Does not meet currently acceptable standards)
- Transitions: 1 (Meets currently acceptable standards)
- Approach Guardrails: 1 (Meets currently acceptable standards)
- Bridge Guardrails Ends: 0 (Does not meet currently acceptable standards)
- Deck: 4 (Poor)
- Superstructure: 5 (Fair)
- Substructure: 3 (Serious)
- Performance Rating: Poor
- Chanel: 7 (Minor Damage)
- Deck Geometry Appraisal: 2 (Intolerable; Replace)
- Approach Alignment Appraisal: 4 (Minimum Tolerable)
- Scour Critical: 5 (Stable within footing)

In 2017, major structural repairs were performed to the bridge at a construction cost of approximately $17 million. As a result of a 2020 inspection carried out by FDOT, a design to address additional repairs identified by the 2020 inspection was completed. Estimated costs to perform these repairs amount to $3.0 million. As a result of the 2024 inspection, temporary emergency repairs will be completed. One lane of the bridge is closed until the repairs are complete. As the structure continues to age, frequent, costly repairs will be needed to prevent closure or severe damages.

2.2.2 Transportation Demand

The Broad Causeway and Kane Concourse corridor have high traffic volumes since they connect the beach communities and Bay Harbor Islands to the mainland. The a.m. and p.m. peak hours are times of high congestion, and future traffic volumes are anticipated to continue to increase. Since the ICWW at the bridge crossing is deemed a navigable waterway by the USCG, the bridge bascule is required by the USCG to open twice per hour on the quarter and three-quarter hour but only opens if vessels are waiting. Having the bridge open potentially twice per hour further compounds traffic congestion. Having free flow of vehicular traffic or infrequent bridge openings will help relieve congestion and facilitate emergency evacuation.

2.2.3 Safety

Broad Causeway Bridge is a high vehicle crash location with many bicycle crashes. Based on information from the Signal4 Analytics database, between 2018 and 2023, 47 total vehicle crashes occurred within the project limits, of which 26 were on the undivided bridge and approach sections. The highest concentration of crashes was near West Broadview Drive. The study area exhibited a majority of the crashes, which were sideswipe crashes (28%) and rear-end crashes (26%). The high occurrence of rear-end and sideswipe crashes can be indicative of congestion along the corridor. Of the 47 vehicle crashes, none resulted in a fatality, but two resulted in serious

injury and 18 resulted in injuries. While vehicle to vehicle crash rate of 1.90 for the undivided bridge section is below the statewide average (7.30) for this type of urban facility, vehicle to bicycle crashes are exponentially higher.

The outside travel lanes on Broad Causeway Bridge include shared-use markings to accommodate bicycles, but there are conflicting signs on each side of the bridge that direct bicyclists to get off the bicycle and walk. According to the FDOT's Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Florida Department of Transportation 2018), the minimum width of a shared traffic/bicycle lane is 14 ft. The existing lane width on Broad Causeway Bridge is only 10 ft. Therefore, bicycles share 30 mile per hour (mph) travel lanes with vehicles on lane widths that do not meet current standards. As a result, there have been nine vehicle crashes involving bicycles. All nine crashes resulted in injury and occurred on the undivided bridge and approach sections. Vehicle to bicycle interactions account for 19% of the total crashes occurring within the project limits. This is 17.8% higher than the 1.2% average representing crashes involving a bicycle in 2022 for Miami-Dade County urban, non-interstate facilities (Signal Four Analytics 2024).

In addition, pedestrians use a raised maintenance area with a width varying from 22 to 36 inches on each side of the bridge. There are no guardrails separating the raised maintenance area from the travel lane. The west side of the bridge has a 6-inch curb to enter the maintenance area that does not provide ADA access. This creates an unsafe condition for pedestrians particularly if two pedestrians are walking across the bridge in opposite directions and need to pass each other. There are no sidewalks on the Causeway Island west of the bridge.

Serving as part of the emergency evacuation route network designated by the Florida Division of Emergency Management (FDEM) and Miami-Dade County, Broad Causeway Bridge plays a critical role in facilitating traffic between the beaches and the mainland of Miami during emergency evacuation periods. The project is needed to maintain emergency evacuation capabilities for approximately 40,000 residents from the municipalities of Bay Harbor Islands, Bal Harbour, Surfside, Miami Beach, and Sunny Isles Beach. When winds are higher than 35 mph, the USCG requires the bridge to be closed (down position) to avoid damage to the wings. When there is an emergency evacuation situation, the USCG starts closing (down position) the movable bridges from the south and moving north. Typically, the Broad Causeway Bridge remains closed until the USCG contacts the Town of Bay Harbor Islands to open it for certain hours.

The existing structure and some of the mechanical components are over 70 years old and are failing. The Town of Bay Harbor Islands has completed numerous repairs in recent years to keep the bridge operational. As time passes, repairs will be needed more frequently and at a higher cost. In addition, the Broad Causeway Bridge has only one undersized emergency generator. When the generator is needed to run the bascule portion of the bridge, the two wings cannot open at the same time, hence delaying the opening-closing cycle. If the bridge is stuck open because of mechanical failure or is damaged due to a hurricane, a direct emergency evacuation route for these communities will be eliminated. The detour route for those on the east end of the bridge heading north counterclockwise to the west end of the bridge would be 9.4 miles, and heading south (clockwise) would be 11.12 miles. The detour route for those on the west

end of the bridge heading north clockwise to the east end of the bridge would be 9.26 miles and heading south (counterclockwise) would be 11.29 miles.

3.0 CULTURAL SETTING

A comprehensive cultural and historical context for this project area is included in the CRAS report prepared for the PD&E Study in April 2024. However, a summary of the historical development within the project area is provided below to provide context for the resources discussed.

Modern development that shaped the project area began with the creation of the roughly 300-acre Indian Creek Island. In February 1929, the United Dredging Company of Miami began dredging Biscayne Bay under the direction of Miami engineer Milton (M.B.) Garris (who also later oversaw the creation of the Bay Harbor Islands and Broad Causeway). With an estimated initial construction cost of roughly $400,000, the island was laid out with 40 large waterfront lots surrounding a golf course designed by prominent landscape architect William Flynn (*Golf Digest* 2023; *Miami News and Metropolis* 1929).

Following the success of Indian Creek Island, the 300-acre Bay Harbor Islands (formerly known as Bailey's Island) development began when Broad Causeway namesake and New York attorney Shepard Broad joined with his business partner Benjamin N. Kane (for whom the Kane Concourse was named) to plat the Town of Bay Harbor Islands in 1946 (*Miami Daily News*, 1947,1950; Tolf, 2000). Residents of the adjacent Surfside community are said to have welcomed the development of the island, as they claimed it had been nothing more than "a mosquito breeding ground for 20 years." Plans called for the submerged lands to be filled to expand the island, but the developers agreed that a 17-acre strip at its center (which later became known as the Bay Harbor Waterway) would be retained as a channel (*Fort Myers News-Press* 1946). Once the island was divided, a business district was planned for the larger eastern portion, while its western counterpart was slated for single-family residential development (*Miami Daily News* 1947).

The Town of Bay Harbor Islands was incorporated on April 27, 1947, with Shepard Broad as its first mayor (Town of Bay Harbor Islands 2023). A two-lane wooden bridge was constructed across the Bay Harbor Waterway, and the first structure built on the islands, an eight-unit apartment building, was underway by May 1947 (*Miami Daily News*, 1947; SEARCH, 2018). Later that year, the Florida Legislature authorized the construction of the Broad Causeway. The Causeway was constructed at a cost of $2.15 million in 1951 (*Miami Daily News* 1951). It officially opened on October 14, 1951, and was promoted in local newspapers as "the new…quick…scenic link between the mainland and the beach" (*Miami Daily News* 1951). Development was rapid in the Town, with nearly all of the lots built on prior to the 1970s.

The Keystone Point (also known as the Keystone Islands) residential subdivision also began to take shape by 1951. The neighborhood was heralded by its developers as the "last bay front subdivision north of Miami" (*Miami Sunday News* 1951). Roughly 550 acres of Keystone Point were dredged to form six 25-foot-deep canals lined with residential lots. Once dredged, the Keystone Point residential development spanned approximately one mile along Biscayne Bay and 5,000 feet along Northeast 123rd Street. The area was transformed from a mangrove swamp to an airport to

a residential subdivision in less than a decade. Like the Town of Bay Harbor Islands, the Keystone Point subdivision was mainly built out by the early 1970s.

Infrastructural improvements in the late 1950s included widening the Kane Concourse/96th Street and the replacement of the wooden bridge crossing the Bay Harbor Waterway with FDOT Bridge 875102 (8DA13364) (SEARCH 2018). The Citgo (8DA10436) historic structure was constructed on Broad Causeway Island in 1955 to service bridge traffic, along with toll booths to support maintenance costs for the bridge.

The creation of the Bay Harbor Islands, Keystone Islands, and Indian Creek Village, combined with the construction of the Broad Causeway, rapidly transformed what was once a mangrove-covered swamp into modern residential housing developments, a business district, and roadways that substantially transformed the landscape of the project area from the 1920s through the 1960s.

4.0 EXISTING SIGNIFICANT HISTORIC RESOURCES

The CRAS determined that thirteen (13) historic resources are eligible for listing in the NRHP either individually or as part of a historic district. These identified resources include one (1) linear resource (Broad Causeway [8DA10123, FDOT Bridge No. 875101]), eight (8) historic structures (9700 W Broadview Drive [8DA10435], Citgo [8DA10436], 2395 Bayview Lane [8DA21593], Whitehouse Inn on the Bay [8DA21598], and Majorca Towers [8DA21599], 9600 Broadview Terrace [8DA21630], 1371 96th Street [8DA21606], and 1330 96th Street [8DA21607]), and four (4) resource groups (Bay Harbor Islands Historic District [9DA10515], Keystone Islands [8DA11549], Broad Causeway Island [8DA21594], and Indian Creek Country Club Golf Course [8DA21608]). The details of the individually eligible resources can be found in **Table 4-1,** and their locations are georeferenced in **Figure 4-1**. Details of the resources that are contributing to a historic district can be found in **Table 4-2,** and their locations are also georeferenced in **Figure 4-1**. A summary, history, and importance of these resources follow.

Table 4-1: Individually NRHP-Eligible Resources within the Project APE

FMSF No.	Address/Name	Construction Date	Resource Type	NRHP Eligibility/ Determination Date
8DA10123	*Broad Causeway/ FDOT Bridge No. 875101*	*c. 1951*	*Linear Resource*	*NRHP Eligible/ August 15, 2018*
8DA10436	*Citgo/1501 Broad Causeway*	*c. 1951*	*Structure*	*NRHP Eligible/ August 15, 2018*
8DA10515	*Bay Harbor Islands Historic District*	*c.1940s–1960s*	*Resource Group*	*Insufficient Information/ August 15, 2018*
8DA11549	*Keystone Islands*	*c. 1948–1964*	*Resource Group*	*Insufficient Information*
8DA21593	*2395 Bayview Lane*	*1973*	*Structure*	*NRHP Eligible*
8DA21598	*White House Inn on the Bay*	*1969*	*Structure*	*NRHP Eligible*
8DA21599	*Majorca Towers*	*1969*	*Structure*	*NRHP Eligible*
8DA21608	*Indian Creek Country Club Golf Course*	*1930*	*Resource Group*	*Insufficient Information*

Table 4-2: Contributing Resources to a Historic District within the APE

FMSF No.	Address/Name	Construction Date	Resource Type	Historic District	NRHP Eligibility/ Determination Date
8DA10123	Broad Causeway/ FDOT Bridge No. 875101	c. 1951	Linear Resource	Bay Harbor Islands Historic District (8DA10515)	Individually NRHP Eligible & Contributing/ August 15, 2018
8DA10435	9700 W Broadview Drive	c. 1955	Structure	Bay Harbor Islands Historic District (8DA10515)	Contributing Resource
8DA10436	Citgo/1501 Broad Causeway	c. 1951	Structure	Bay Harbor Islands Historic District (8DA10515)	Individually NRHP Eligible & Contributing/ August 15, 2018
8DA21594	Broad Causeway Island	1951	Resource Group	Bay Harbor Islands Historic District (8DA10515)	Contributing Resource
8DA21603	9600 Broadview Terrace	c.1971	Structure	Bay Harbor Islands Historic District (8DA10515)	Contributing Resource
8DA21606	1371 96th Street	c. 1961	Structure	Bay Harbor Islands Historic District (8DA10515)	Contributing Resource
8DA21607	1330 96th Street	1971	Structure	Bay Harbor Islands Historic District (8DA10515)	Contributing Resource

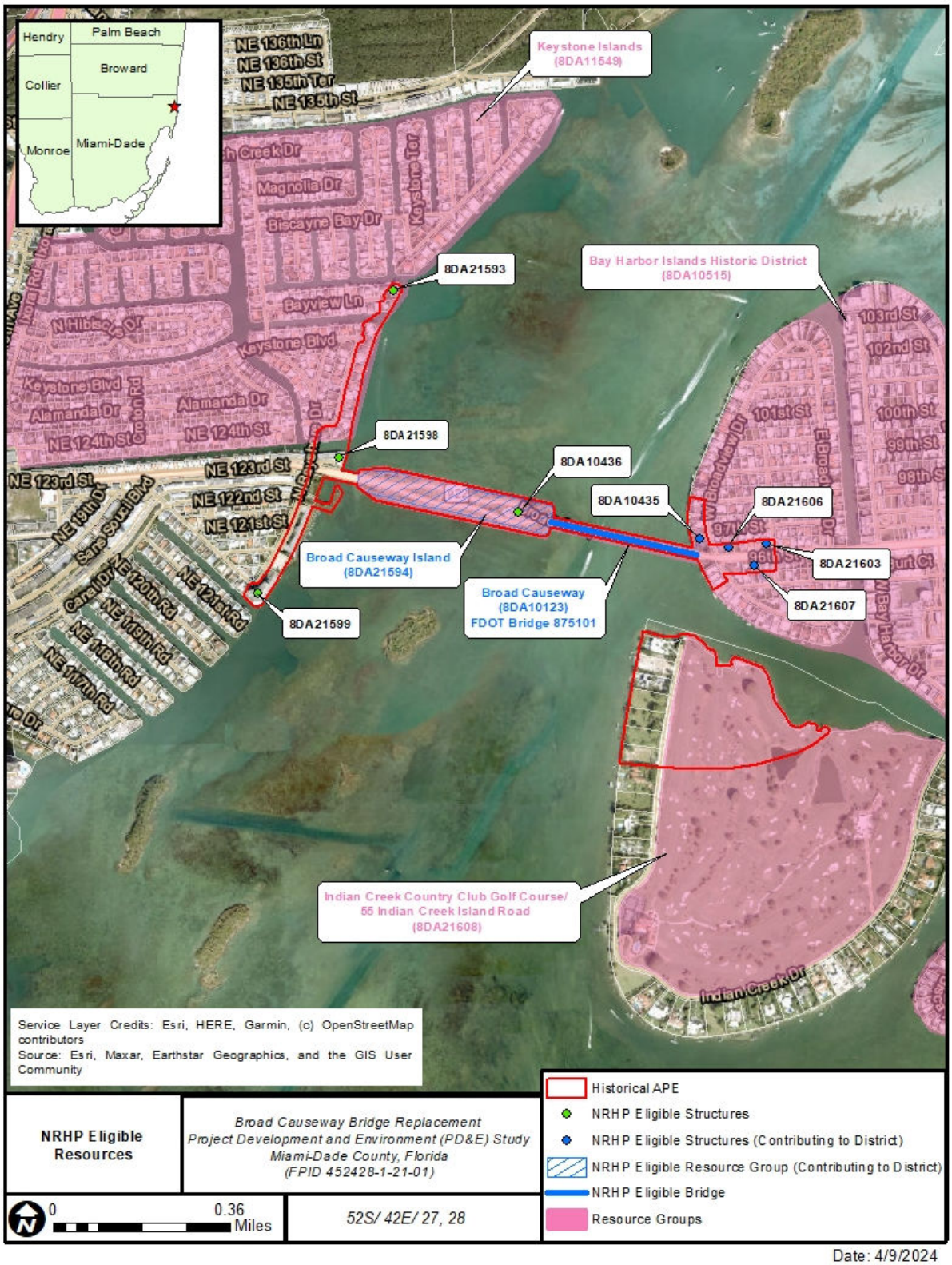

Figure 4-1: NRHP-Eligible Resources within the project APE.

4.1 Broad Causeway (8DA10123, FDOT Bridge No. 875101)

The Broad Causeway (8DA10123, FDOT Bridge No. 875101) linear resource spans from the man-made Broad Causeway Island (8DA21594) in the Intracoastal Waterway to the western Bay Harbor Island. Broad Causeway Bridge (**Figure 4-2**) is a movable Bascule steel and poured concrete bridge that features Miami Modern (MiMo) style elements and two tender stations west of the movable span. The rectangular-shaped man-made Broad Causeway Island (8DA21594) to its west contains the Citgo (1501 Broad Causeway [8DA10436]) historic structure. The Broad Causeway linear resource was first recorded as part of Survey No. 13458 (GAI Consultants, Inc. 2006) and was **determined individually NRHP-eligible by SHPO** under Criterion A for its association with the development of the Bay Harbor Islands during the post-World War II Boom as part of Survey 25327 (SEARCH 2018) on August 15, 2018. Additionally, Broad Causeway (8DA10123) is a contributing resource to the Bay Harbor Islands Historic District (8DA10515).

The Broad Causeway (**Figure 4-3**), consisting of a fixed bridge, man-made island (Broad Causeway Island, 8DA21594), and bascule bridge (Broad Causeway, 8DA10123, FDOT Bridge No. 875101), was initially constructed at a cost of $2.15 million by the Alleghany Asphalt and Paving Company, Incorporated of Pittsburgh, Pennsylvania for the Town of Bay Harbor Islands to meet the growing transportation demands of North Miami, Bay Harbor Islands, Surfside, and Bal Harbour in 1951 (*Miami Sunday News* 1950; *Miami Daily News* 1951). Spanning nearly 4,000 feet from North Miami to the Bay Harbor Islands, the Causeway's leading proponents were mayor and developer of the Town of Bay Harbor Islands, Shepard Broad (for whom it was named) and his business partner and Kane Concourse namesake, Benjamin Kane, who first platted the town in 1946 after two small islands were enlarged by dredging the Intracoastal Waterway/Biscayne Bay (*Fort Myers News-Press* 1946; Tolf 2000). The *Miami Daily News* documented its progress, including aerial photographs of the Causeway under construction (*Miami Daily News* 1951). It officially opened on October 14, 1951, and was promoted in local newspapers as "the new…quick…scenic link between the mainland and the beach" (**Figure 4-4**; *Miami Daily News* 1951). By the following week, as many as 5,000 vehicles crossed the Causeway daily (*Miami Daily News* 1951).

Within less than two decades, the Broad Causeway Bridge began to show signs of structural fatigue. By that time, $300,000 had been spent to repair corroded underwater steel piles, and engineers recommended rebuilding and widening its bascule segment (8DA10123, FDOT Bridge 875101) within five to ten years. Operational costs rose to more than $370,000 by 1968, shortly after the Town of Bay Harbor Islands celebrated the 20th anniversary of its incorporation (Williams, The Broad Causeway: A Broad Bonanza for Town 1968). By 1970, the construction costs of the Broad Causeway had been recouped, as $2.9 million in tolls had been collected (*Orlando Sentinel* 1970). Repairs were made once again in 1984, but it would be another five years before the Broad Causeway underwent a toll-increase funded, $3 million renovation (which included the addition of a computerized toll system, new lighting, landscaping, roadway resurfacing, and a reconstructed toll booth) in 1989 (*Miami News* 1984; Nevins 1987; *Tampa Tribune* 1989). By the following year, the Broad Causeway toll plaza was recognized by the Florida Power & Light Company as one of 20 structures for its beauty as part of the company's "Night Beautiful" competition, which recognized "ingenuity, creativity, energy efficiency, and excellence and originality in design," along with Freedom Tower and other historic Miami structures (*Fort*

Lauderdale Sun Sentinel 1990). Further structural deficiencies of the Broad Causeway, described as "fracture critical" by the *Tampa Tribune*, were documented by a study of Florida bridges conducted by the Associated Press in 2013, and by 2016, a new bridge (FDOT Bridge No. 875105) replaced the fixed span at its western end (*Tampa Tribune* 2013; FDOT 2023).

Figure 4-2: Broad Causeway Bridge facing east from Broad Causeway Island (2023).

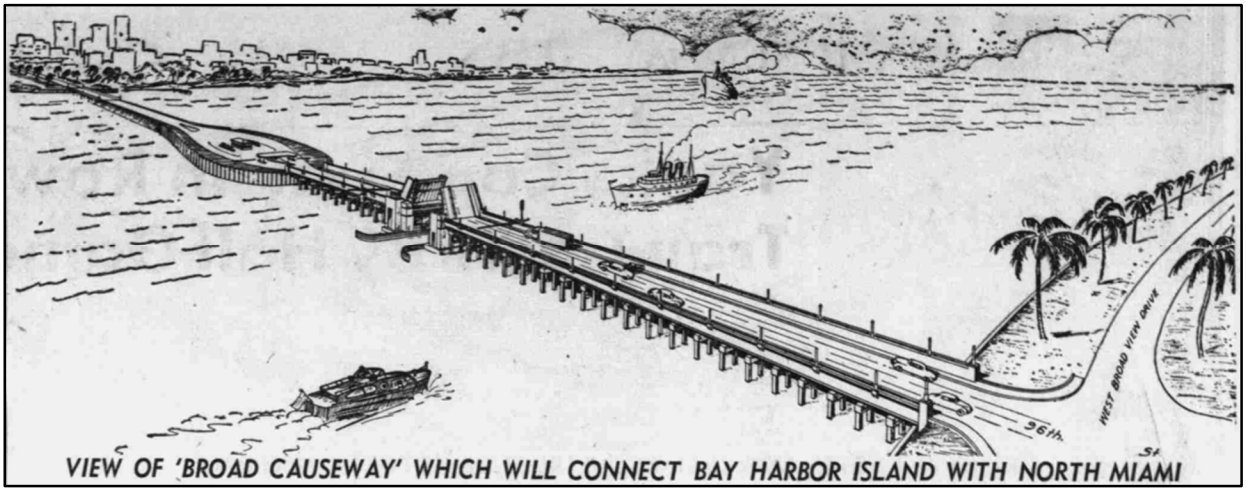

Figure 4-3: Artist rendering of the Broad Causeway from the Miami Sunday News, c. 1950 (Miami Sunday News 1950).

Figure 4-4: Local newspaper advertisement for the opening of the Broad Causeway Bridge (Miami Daily News 1951).

4.2 Citgo/1501 Broad Causeway (8DA10436)

The Citgo (8DA10436) historic structure, located at 1501 Broad Causeway, is a MiMo masonry vernacular auto repair/gas station constructed on the man-made Broad Causeway Island (8DA21594) that leads to the Broad Causeway (8DA10123, FDOT Bridge No. 875101) c. 1951 (see **Figure 4-5**). It was first recorded as part of Survey No. 13458 (GAI Consultants, Inc. 2006) and is the only fueling/service station within the Town of Bay Harbor Islands. Designed by award winning industrial designer, Henry Dreyfuss, it retains much of its original design integrity and is a contributing resource to the Bay Harbor Islands Historic District (8DA10515). According to Survey 25327 (SEARCH 2018), the building is individually eligible for the NRHP under criteria A and C for its association with the development of northern Miami, its association with the importance of the automobile in the mid-twentieth century, and its architecture with Modern stylistic details, typifying gas stations of the time period. The structure was **determined NRHP-eligible by SHPO** on August 15, 2018.

The Citgo (1501 Broad Causeway [8D10436]) historic structure was constructed on land leased from the Town of Bay Harbor Islands in 1951 and first opened as the Broad Causeway Cities Service station in April 1952 (*Miami Daily News* 1952; Miami-Dade Property Appraiser 2023). Local newspapers featured advertisements for the opening, which noted its location and its "dramatic design and striking features" (**Figure 4-6**) (*Miami Daily News* 1952; USDA 1951). The station was initially opened with a planned staff of nine employees, including "7 white attendants, 1 colored porter," and "1 colored car washer" (*Miami Daily News* 1952). By January 1953, an "information center" co-sponsored by the Bay Harbor Islands Chamber of Commerce and the Town of Bay Harbor Islands was opened at the Broad Causeway Cities Service station, offering free information and Florida orange juice to visitors and tourists (Miami Daily News 1953). Business at the station was "booming" within a few months, as the information center had welcomed over 1,000 tourists who reportedly had consumed 6,300 free servings of orange juice by April of that year (Miami Daily News 1953).

Alteration to the Broad Causeway Cities Service station includes the replacement of the original hairpin style columns sometime after the 1960s with round concrete columns. The building was expanded when two bays were added to its western end in 1961, providing an additional 864 square feet of service area for the station (Miami-Dade Property Appraiser 2023). The Broad Causeway toll plaza was located to the west of the service station (**Figure 4-7**). The toll plaza was renovated in 1968 (**Figure 4-8**) and once again in 1990 before ultimately being removed around 2017. The Broad Causeway Cities Service station became the Broad Causeway Citgo around 1968 and remained in operation through the mid-1970s before becoming the Amoco of Bay Harbor Islands in 1977 (*Miami Herald* 1975; *Miami News* 1973, 1977). The structure continued as the Amoco of Bay Harbor Islands through the early 1980s and ultimately became Broad Causeway Chevron by mid-decade (V. Williams 1985).

Figure 4-5: Citgo/1501 Broad Causeway, facing southwest (2023).

Figure 4-6: Broad Causeway Cities Service Station, c. early 1950s (State Library and Archives of Florida 1952).

Figure 4-7: View of original toll plaza from Broad Causeway Cities service station, c. late 1950s (Town of Bay Harbor Islands 2023).

Figure 4-8: Broad Causeway toll plaza adjacent to the west of Broad Causeway Citgo service station, c. early 1970s (Town of Bay Harbor Islands 2023).

4.3 2395 Bayview Lane (8DA21593)

Located in the Keystone Islands (8DA11549) neighborhood, 2395 Bayview Lane is a two-story, single-family Classical Revival residence built in 1973 for Daniel M. Rosso (**Figure 4-9**). Rosso was President of Fidelity Bank of Beverly Hills, CA, before moving to Florida. He later served as president of the Miami National Bank, J.I. Kislak Mortgage Co., and American Bancshares, Inc. The central two-story building mass is rectangular, with two one-story wings forming a front courtyard. The building has a flat roof with simple cornice parapets. The paired front entry doors are flanked with a classical surround with three columns above supporting a gable pediment. Windows are set in pairs with Doric pilasters. The building walls are clad in a mix of brick and stucco.

The building is a high-style example of 1970s Classical Revival architecture, which is often considered a return to Jeffersonian Classicism. Jeffersonian Classicism began in the late 1700s during the American Revolution and is associated with the work of Thomas Jefferson (City of Urbana 2016). As the bicentennial of the United States approached in 1976, more architects incorporated the Greek and Roman styles of the buildings Jefferson designed to house the nation's government in Washington, DC in their work. It was a reflection of American patriotism but also a reaction to the modernist architectural style of the previous decades, which some architects felt had failed in its promise of social change (Simonson 2020). Never falling out of fashion within mainstream America for residential work but shunned by "serious" architects post WWII, classical architecture regained popularity in the United States in the 1970s among architects in part due to the growing historic preservation movement, which focused on Colonial and early

American buildings. Additionally, architecture and antique magazines in the 1960s and 70s increasingly promoted classical and colonial interiors and decoration (Wilson 2004).

2395 Bayview Lane appears to be an architect-designed residence that exemplifies the 1970s Classical Revival style. The structure's dominant front entry with columns supporting a gable pediment is reflective of the classical Greek and Roman styles. As such, and since the structure has undergone minimal character-altering changes, **8DA21593 is individually eligible for listing in the NRHP under Criterion C.**

Figure 4-9: 2395 Bayview Lane, facing east (2023).

4.4 White House Inn on the Bay (8DA21598)

White House Inn on the Bay (8DA21598) is located at 2305 NE 123rd Street on waterfront property facing Biscayne Bay (**Figure 4-10)**. Built in 1969 in Colonial Revival style as the White House Inn Motel, by 1974, the two-story stucco structure was advertised as an "Exciting New Concept" (**Figure 4-11**) that offered would-be tenants an option to buy rather than rent its studio apartments (*Miami News* 1974). The structure has been vacant since 2014. The building has a V-shaped plan laid out to fit the property. The flat roof building has a mansard roof with S-tile along the street elevation. A curved entrance is located in the vertex of the V with two-story fluted Doric columns and curved stairs. Walkways extend along both floors of the building on both the street and waterside elevations, raised on a continuous foundation. The walkways on the street elevation are supported by simple round concrete columns and feature cast concrete balusters. The waterside elevations have cantilevered walkways and a more stylized cast concrete railing design.

Although vacant and boarded, the building is in fair condition with few apparent exterior alterations and no additions. As such, 8DA21598 is representative of 1960s hotel architecture and development patterns in South Florida and **is eligible for the National Register of Historic Places under Criteria A and C.** It was approved for demolition in May 2023 (Alvarado 2023).

Figure 4-10: White House Inn on the Bay/ 2305 NE 123rd Street, facing north (2023).

Figure 4-11: Newspaper advertisement touting the White House Inn studio apartments as an "Exciting New Concept" that offered tenants an option to buy rather than rent (Miami News 1974).

4.5 Majorca Towers (8DA21599)

Majorca Towers (8DA21599; **Figure 4-12**) is located at 11930 N Bayshore Drive on waterfront property facing Biscayne Bay. Built in 1969, the 14-story condominium building has 120 units and reportedly combined the "flair, daring and charm of 'Old Spain' with conveniences of the 'New World" (*Miami News* 1968). The project was developed by Robert L. Siegel, president of Majorca Developers, with Arkin Construction Company as the general contractor (*Miami News* 1968). Siegel's wife and son also served as company officers (Gardner 1968). The development was one of a handful of condominiums awarded Florida Power & Light Company's "Gold Medallion" award for its incorporation of reverse-cycle air conditioning and other energy-saving amenities in 1970 (*Fort Lauderdale News* 1970). Siegel went on to develop other condominiums in the area, including the Plaza Del Prado in Adventura, FL (*Miami News* 1969). It was designed by North Miami Beach architect Phillip Pearlman, who designed many of the apartment and condominium buildings in South Florida during this time period, including other projects for Siegel.

The construction of condominiums in South Florida during the late 1960s was fueled by a desire for a more affordable, leisurely waterfront lifestyle and a new sense of community. Condominiums were initially considered a creative solution to a lack of adequate housing, driven by cultural forces that emerged during the postwar era. The first condominium in the United States was built in Manhattan in 1881, but its real popularity came after World War II. By the late 1950s, developers began covering the shoreline with two and three-story complexes and offering units for sale. The first waterfront high-rises constructed in South Florida included the Coral Sea Towers "cooperative

apartment building" on the eastern Bay Harbor Island, built just across Biscayne Bay from the future site of Majorca Towers in 1957. Other residential towers soon crowded South Florida's "Gold Coast" in the years that followed, including Miami Beach, prompting developers to seek new areas for development. Following the establishment of the San Souci Estates residential development in the 1950s, developer Robert L. Siegel and his son selected nearby Bayshore Drive as the site for Majorca Towers (Lassner and Moore 2023, *Miami Daily News* 1957, *Miami News* 1968).

By that time, the sense of community that condominiums offered, combined with an affordable waterfront view, appealed to retirees who often lived independently in their homes far from their children. By creating what some describe as "a community of strangers," condominiums helped elderly residents escape loneliness and enjoy a moderate yet comfortable lifestyle in a sunny environment in places like South Florida. Northern transplants commonly guided each other as they planned to move South and offered support once they arrived. Among those influencing the popularity of condominiums in Miami was its growing Jewish American population, who first vacationed in the area seasonally as "snowbirds" before permanently relocating. Many came from New York, where they shared swimming pools, lobbies, and card tables while living in apartment buildings. The condominium offered similar amenities but in an environment better suited to retirement living. Today, condominiums such as Majorca Towers and a host of others continue to cover the shorelines of Miami-Dade County. They are now home to a more diverse population that includes younger generations, families, and a variety of ethnic groups (Lassner and Moore 2023).

The building is an example of Mid-Century Modern style with elements such as a double barrel vault roof porte-cochère, rounded building corners, and round balconies. Built from the beginning as condominium units, the building was touted as having individual water heaters and reverse-cycle air conditioning. The building received Gold Medallion status from Florida Power & Light for its use of clean electricity (Florida Power & Light Company 1970). The high-rise building has a flat roof and is constructed of cast concrete. Windows are either 2/2 or 1/1 metal single hung and are set in groups of 3 within the wall area and in groups of 4 that wrap the building corners. Balconies are set at the building corners and mid-wall as small, round individual balconettes.

Majorca Towers, once heralded as a "new luxury landmark", has few apparent exterior alterations and no additions. It was built during a time when condominiums were fast becoming prevalent in South Florida in order to maximize waterfront property. In addition, it is an intact example of an architect-designed Mid-Century Modern multi-story multi-family residential building. **As such, 8DA21599 is eligible for the National Register of Historic Places under Criteria A and C.**

Figure 4-12: Majorca Towers/ 11930 N Bayshore Drive, facing southeast (2023).

4.6 Bay Harbor Islands Historic District (8DA11549)

The Bay Harbor Islands Historic District (8DA10515) resource group is a well-preserved example of a post-World War II development located on the eastern side of the current project APE (**Figure 4-13**). Shepard Broad and Benjamin N. Kane designed and planned the Town of Bay Harbor Islands as a resort-style community in 1945. The Town sought to attract returning veterans who yearned for a more relaxing living community. Broad and Kane assembled a team of engineers and surveyors the following year who dredged and filled the land. Soon after that, lots were laid out and developed. The Town of Bay Harbor Islands was first incorporated on April 27, 1947. Following its incorporation, Broad realized he needed to connect the islands to the mainland. The Florida legislature authorized the construction of Broad Causeway later that year, and it was opened in 1951 (Town of Bay Harbor Islands 2023).

According to the FMSF form (8DA10515), the Bay Harbor Islands Historic District resource group consists of 312 residential and commercial structures representing MiMo, Ranch, and Masonry Vernacular styles constructed from the 1940s through 1957. It is bounded by Indian Creek on the east, by Biscayne Bay and North Miami on the west, Biscayne Bay on the north, and Indian Creek on the south. It was first recorded during Survey No. 13458 (GAI Consultants, Inc. 2006), and is significant for World War II and Aftermath (1941–1950) and Post-World War II (1940s–1960s) time periods in the areas of Architecture and Community Planning and Development. It was recommended as NRHP-eligible in Survey No. 25327 (SEARCH 2018). SHPO determined that there was **insufficient information regarding the NRHP eligibility** of the resource group as part of

Survey 25327 (SEARCH 2018) on August 15, 2018. Since the majority of this resource group is outside the APE for this project, there will be no further assessment of NRHP eligibility. The **8DA10515 resource group will be evaluated for this project as if determined NRHP-eligible**.

The creation of the 300-acre Bay Harbor Islands (formerly known as Bailey's Island) development began when Broad Causeway namesake and New York attorney Shepard Broad joined with his business partner Benjamin N. Kane (for whom the Kane Concourse was named) to plat the Town of Bay Harbor Islands in 1946 (*Miami Daily News*, 1947,1950; Tolf, 2000). Thomas H. Horobin's purchase of 63 acres of submerged land surrounding the island north of Indian Creek Village on behalf of a party he "declined to identify" followed soon after. However, some sources claim Broad traded his interest in the Biscayne Building for the island (GAI Consultants, Inc. 2006). Residents of the adjacent Surfside community are said to have welcomed the development of the island, as they claimed it had been nothing more than "a mosquito breeding ground for 20 years." Plans called for the mangroves to be filled to expand the island, but the developers agreed that a 17-acre strip at its center (which later became known as the Bay Harbor Waterway) would be retained as a channel (*Fort Myers News-Press* 1946). Once the island was divided, a business district was planned for the larger eastern portion, while its western counterpart was slated for single-family residential development (*Miami Daily News* 1947).

The Town of Bay Harbor Islands was incorporated on April 27, 1947, with Shepard Broad as its first mayor (Town of Bay Harbor Islands 2023). A two-lane wooden bridge had been constructed across the Bay Harbor Waterway by that time (**Figure 4-14**), and the first structure built on the islands, an eight-unit apartment building, was underway by May 1947 (*Miami Daily News*, 1947; SEARCH, 2018). Later that year, the Florida Legislature authorized the construction of the Broad Causeway, which linked the western island with North Miami. Just over 500 residents occupied 46 private residences within four years of the Town's incorporation (Town of Bay Harbor Islands 2023). Following the completion of the Broad Causeway, the number of single-family residences on the western island nearly tripled by 1953, while duplexes, apartment buildings, and commercial structures provided around 600 units on its eastern counterpart. Other amenities and retail buildings were also built on the eastern island, including a private school, a cabana club with a swimming pool, and a large office building and store (GAI Consultants, Inc. 2006). However, only a third of the two islands' 300 acres were developed by that time (*Miami Daily News* 1953).

An ordinance passed by the town council in 1956 limited the height of buildings on the eastern island. The Bay Harbor Islands were nearly fully developed by the late 1950s and had become home to over 2,600 residents (**Figure 4-15**) (Berend 1958). Infrastructural improvements at that time included widening the Kane Concourse/96th Street and the replacement of the wooden bridge crossing the Bay Harbor Waterway with FDOT Bridge 875102 (8DA13364) by 1958 (SEARCH 2018). The development of the Bay Harbor Islands residential district continued on its western island, while commercial development and construction of apartments and condominiums covered its eastern counterpart through the 1970s and 1980s. Today, the Town is home to about 6,000 residents, while over 20,000 vehicles cross the Broad Causeway daily (Town of Bay Harbor Islands 2023).

Seven (7) historic resources were identified within the APE that contribute to the Bay Harbor Islands Historic District (8DA10515). This includes five (5) structures (9700 W Broadview Drive [8DA10435], Citgo [8DA10436], 9600 Broadview Terrace [8DA21630], 1371 96th Street [8DA21606], and 1330 96th Street [8DA21607]), one (1) linear resource (Broad Causeway [8DA10123, FDOT Bridge No. 875101]), and one (1) resource group (Broad Causeway Island [8DA21594]). Two (2) of these contributing resources are also individually eligible for listing in the NRHP (Broad Causeway [8DA10123, FDOT Bridge No. 875101] and Citgo [8DA10436]). Impacts on the contributing resources within the APE will be evaluated as part of the district as a whole.

Figure 4-13: Entry sign to Bay Harbor Islands from Broad Causeway (2023).

Figure 4-14: The original two-lane wooden bridge crossing the Bay Harbor Waterway, facing northwest c. early 1950s (Town of Bay Harbor Islands 2023).

Figure 4-15: Aerial view of Bay Harbor Islands, facing southeast, c. 1959 (State Library and Archives of Florida 1959).

4.7 Keystone Islands (8DA11549)

The Keystone Islands (8DA11549) resource group is a post-World War II historic neighborhood recorded during Phase II of the Miami-Dade County Historic Property Assessment (Janus Research 2009). According to the FMSF form from 2006, the historic district consists of a total of 890 structures, 564 of which were considered contributing to the historic district. The resource group is significant under Criterion A in the area of community planning and development, and its unique, man-made islands set the neighborhood apart from other similar Miami area developments constructed during the same time period. The neighborhood is bounded by Biscayne Bay to the east, NE 124th Street to the south, Ixora Road to the west, and Arch Creek Drive to the north. Due to **insufficient information to determine NRHP eligibility**, SHPO has not evaluated the resource group. Since the majority of this resource group is outside the APE for this project, there will be no further assessment of NRHP eligibility. For the purposes of this evaluation, the **8DA11549 resource group will be treated as if determined NRHP-eligible**.

Construction of the Keystone Islands began with the development of an area known as Keystone Point (**Figure 4-16**), which consisted of approximately 468 acres bordered by Biscayne Boulevard (US Highway 1), NE 123rd Street, NE137th Street, and Biscayne Bay in 1949 (Forbes 1949). Keystone Point, Incorporated purchased the tract formerly belonging to John F. Keefe that had served as the Miami Aviation Center (an exclusive private facility that featured two 2,500-foot runways and plans for a restaurant, stores, clubhouse, apartments, seaplane base, and community hangar) to that point in August of that year and soon announced its plans to construct a $250,000,000 residential housing development at the site (Leyden 1949). By October, 20 of the planned 1,400 homes were built and priced at less than $15,000 each (**Figure 4-17**). Meanwhile, approximately 30 private airplanes at the site awaited removal by their owners (*Miami Daily News* 1949).

The first model home (**Figure 4-18**) opened in December 1949, and within two years, the Keystone Point developers had invested $1.5 million into the former Aviation Center property. Over three miles of streets were paved by that time, and plans called for an additional seven miles of roads to be constructed. More than five miles of bulkheads were built along four of six 25-foot-deep canals dredged to form the man-made "finger" islands, which later became known as Little Arch Creek. One hundred homes were occupied by that time, and another 35 were under construction. The development was praised by the *Miami Sunday News* for its "curving streets" and little parks "here and there." The developer established a covenant to maintain a consistency of architectural styles as well as the value of all homes in the neighborhood. Lots measured a minimum of 75 by 110 feet, and homes were built by the Headley Construction Company, a subsidiary of Keystone Point, Incorporated. Houses were only sold to potential buyers once they had been constructed to ensure what Keystone Point, Incorporated president John F. Keefe described as a "harmonious community" (Forbes 1951).

By 1955, the General Electric Company debuted its first "completely equipped, all-electric Wonder Home" in Florida when it opened a model home at 12415 Keystone Island Drive to the public. Designed by architect R.M. Little and constructed by the Headley Construction Company, the house featured several modern conveniences, including a quick-recovery water heater, remote control wiring, scientific light conditioning, and a portable, waterproof telephone for poolside

conversations (*Miami Daily News* 1955). The home (8DA21587) was included as part of the CRAS prepared by AtkinsRéalis in April 2024, which determined that the structure had lost its historic significance due to alterations. Construction of new homes in Keystone Point grew through the 1950s as residents continued to seek a more exclusive neighborhood overlooking Biscayne Bay. A "well-known builder" placed his Bay Harbor Islands home for sale in March 1956 in order to build a new one on Keystone Point, not because he needed the funds, but rather because he preferred the location of the neighborhood (*Miami Sunday News* 1956).

The surge of homebuilding in the Keystone Islands that began in the postwar era continued into the 1960s and 1970s, as the neighborhood's "secure island-type of living" combined with the "moderate price range" of its homes attracted buyers that could not afford the prestige of other more exclusive communities, such as Indian Creek Village (*Miami News* 1968, 1976; *Miami Sunday News* 1956). By the late 20th century, the more than 800 homes scattered along the canals of the Keystone Islands were selling for $200,000 to $300,000 and had become home to over 4,000 residents. However, the homes' waterfront location made them more vulnerable for burglaries by the 1980s, at which time the City of North Miami's Marine Patrol began regularly policing Little Arch Creek. Unlike Indian Creek Village, which continued its growth as the "billionaire bunker," the Keystone Point neighborhood attracted all types of people from various backgrounds to offer what the *Miami News* described as "a little Venice in North Miami." As one of its Black residents once commented, the neighborhood was "absolutely fantastic" and welcomed anyone "as long as you keep up your property and keep the laws." Much of the neighborhood's lasting success can also be attributed to its homeowner's association. Aside from preserving the aesthetics of the area by preventing the construction of highrises, the association also enriched the life of its residents by helping to create public amenities such as North Bayshore Park and matching city funds for beautification projects in North Miami (Orovitz 1981).

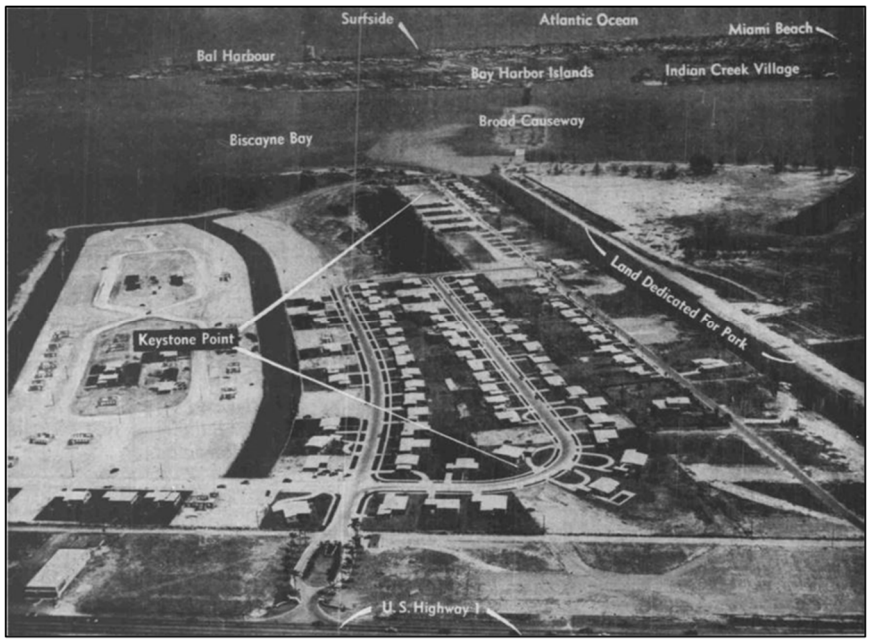

Figure 4-16: Newspaper aerial photograph illustrating the construction of the Keystone Point/Islands residential neighborhood, facing east (Miami Sunday News 1951).

Figure 4-17: Classified advertisement promoting location and affordability of homes in the Keystone Point development on the Keystone Islands, c. 1949 (Miami Sunday News 1949).

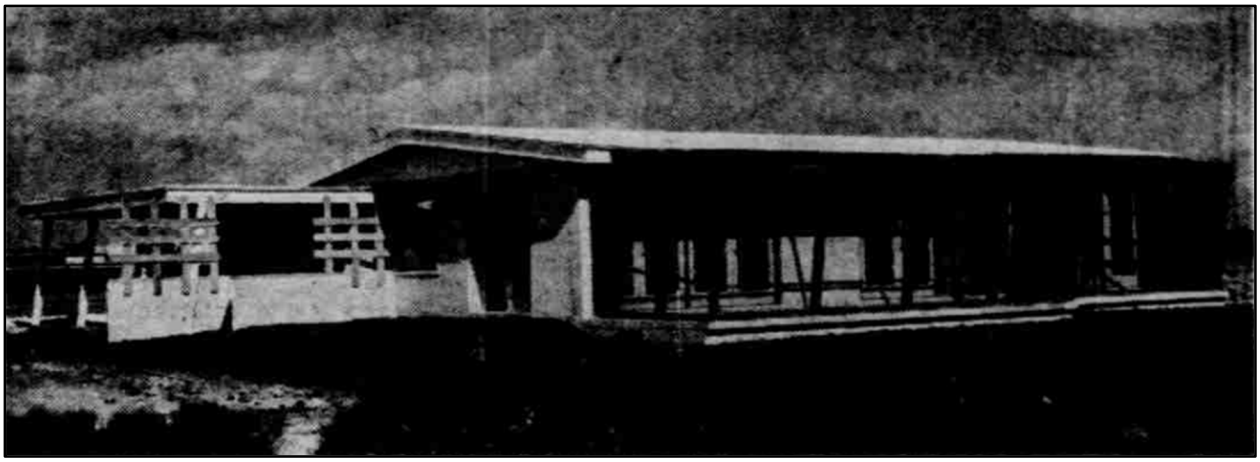

Figure 4-18: Newspaper photograph of Keystone Point model home showing rear porch extending full length of the single-story structure (Miami Sunday News 1949).

4.8 Indian Creek Country Club Golf Course (8DA21608)

The creation of the 300-acre island that would later host the Indian Creek Country Club began when the United Dredging Company of Miami started dredging Biscayne Bay under the direction of Miami engineer Milton (M.B.) Garris (who also later oversaw the creation of the Bay Harbor Islands and Broad Causeway) in February 1929 (*Miami Daily News* 1929; **Figure 4-19**). With an estimated initial construction cost of roughly $400,000, it was expected to become "one of the showplaces of metropolitan Miami" upon completion (*Miami Daily News and Metropolis* 1929; *Miami News* 1965). The construction of the island seawall was contracted by April, at which point 40 lots were made available to Indian Creek Country Club members at a cost of $20,000 each. All were quickly sold, and the golf course, designed by prominent golf course architect William Flynn, was expected to open within two years (*Golf Digest* 2023; *Miami News and Metropolis* 1929).

By March 1930, roughly $1.5 million had been spent on dredging, pumping, and grading the golf course, which was scheduled to open by the following year. Those who had already secured memberships to the soon-to-be-completed course proclaimed it to be "one of the best layouts in the world" at the time (*Miami Daily News* 1930a:1). The first nine holes of the course opened on December 27, 1929. The remaining nine holes were scheduled to open ten days later, making it the tenth course to open in the Miami district (*Miami Daily News* 1930b:11). The course's clubhouse, the Indian Creek Country Club, followed on January 11, 1932. Described by the *Miami Daily News* as "Greater Miami's newest society rendezvous," the opening was attended by some of the area's most noteworthy residents, including Robert Law, E.R. Thomas, James H. Hammond, Edward Grasselli, and a host of others (*Miami Daily News* 1932:7).

The Indian Creek Country Club Golf Course began hosting annual golf tournaments by the 1930s (**Figure 4-20**). By the postwar era, its Country Club continued to be a site of "many social gatherings for both winter residents and Miamians" alike (*Miami Daily News*, 1939; 1948). A hurricane struck Indian Creek Village in 1947, but the golf course sustained little damage, with only about ten percent of its trees downed and debris covering its links (*Miami Daily News* 1947). The Indian Creek Golf Club's "massive Mediterranean-style" clubhouse, designed by famed international architect Maurice Fatio, is said to have lost the shine of some of its original architecture by this time, as William Flynn's former associate, Dick Wilson, struggled to address its drainage issues (*Golf Digest* 2023). The Indian Creek Country Club retained its exclusive nature throughout the mid-to-late twentieth century (**Figure 4-21**) by continuing to restrict membership to residents of Indian Creek Village. By the 1990s, homes on the island sold for as much as $2.52 million, perpetuating the neighborhood's reputation as a "billionaire bunker" in the following decades (*Sun Sentinel* 1994; *Discover Homes Miami* 2021). The golf course was rebuilt by Andrew Green in 2022, with bunkers that are described as resembling William Flynn's original design. Despite these changes, the Indian Creek Country Club Golf Course is still considered one of the best courses in Florida to this day (*Golf Digest* 2023).

The Indian Creek Country Club Golf Course (**Figure 4-22**, **Figure 4-23**) was not accessible during the fieldwork for the CRAS. Repeated requests for background information from the Club on the changes that have occurred over the years were also not answered. Therefore, for the purposes

of this project, it is assumed that **8DA21608 is eligible for listing on the NRHP** and will be treated as such.

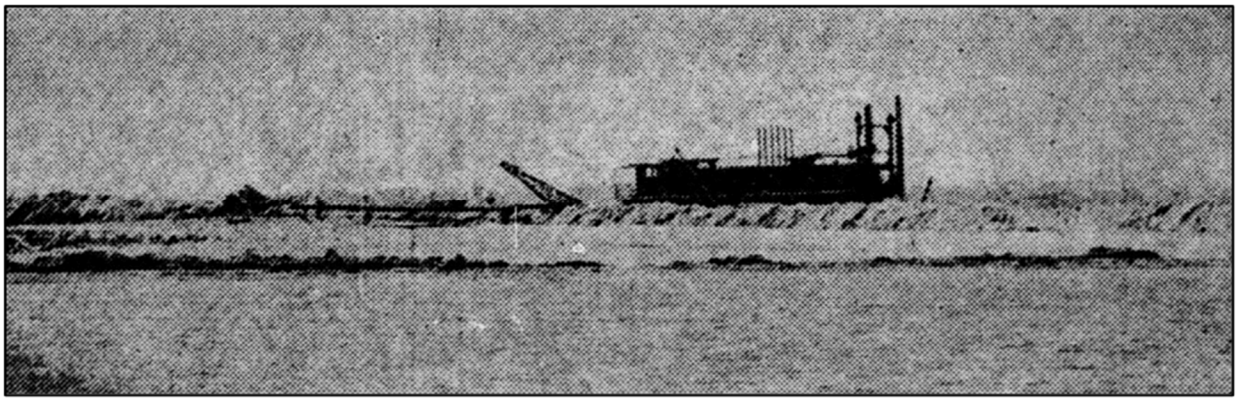

Figure 4-19: Newspaper clipping of photograph of United Dredging Company of Miami creating the island that would later host the Indian Creek Golf Club (Miami Daily News 1929).

Figure 4-20: Aerial view of Surfside with recently completed Indian Creek Village Country Club Golf Course in background, c. 1935, facing west (State Library and Archives of Florida 1935).

Figure 4-21: Gated entrance to Indian Creek Village at west end of 91st Street/Surfside Boulevard, facing east, c. early 1970s (State Library and Archives of Florida n.d.).

Figure 4-22: Aerial view of Indian Creek Village and the Indian Creek Country Club Golf Course, facing east (State Library and Archives of Florida 1969).

Figure 4-23: View of Indian Creek Country Club Golf Course from Broad Causeway Bridge (2023).

5.0 PROJECT ALTERNATIVES

The Broad Causeway Bridge Replacement PD&E study evaluates three bridge improvement alternatives based on the ability to meet the project needs. These alternatives, outlined below, include a No-Build (Repair) Alternative, a Mid-Level Moveable Bridge Alternative, and a High-Level Fixed Bridge Alternative. These three alternatives provide a range of vertical clearances that will be considered for the purposes of this Section 106 Consultation Case Study Report.

For both Build Alternatives under consideration, the new bridge alignment would be located to the south of the existing bridge, allowing for traffic to be maintained along the existing bridge while the proposed bridge is constructed. Demolition of the existing bridge would be phased so that traffic would be maintained within the existing corridor for most of the construction duration and progressively transferred from the existing bridge to the new bridge. Emergency vehicles would have 24/7 access to pass through the corridor, and should a hurricane warning be issued, the corridor would still be used as a Hurricane Evacuation Route during construction as it is today.

5.1 Bridge Study Alternatives

5.1.1 No Build (Repair) Alternative

The No Build (Repair) Alternative, referred to as the No Build Alternative, consists of keeping the existing Broad Causeway (8DA10123, FDOT Bridge No. 875101) movable bridge in place and not constructing a new bridge. The Town would continue regular maintenance and make repairs of the existing bridge in its current configuration while keeping the bridge operating in a safe condition and maintaining the existing typical section. Repairs would include: repairing the concrete (sealing cracks, patching spalls, etc.) in the piles, pile caps, deck, beams, and traffic railing; repairing the fender system; and repairing the drawbridge operational machinery in order to extend the service life 15 to 25 years.

The No Build Alternative requires closure of the bridge for an undetermined amount of time based on repairs needed. An extensive rehabilitation, decommissioning, or replacement of the bridge would be required at the end of the service life period. An 11-mile detour to the south and a 9-mile detour to the north would have to be utilized if the bridge is decommissioned or closed for extensive repairs. The No Build Alternative does not require stormwater management facilities (SMFs) since it does not alter the existing roadway or add additional capacity; therefore, no treatment of the runoff would occur. The existing bridge would remain in its current configuration, and no additional travel lanes would be proposed.

Although the No Build Alternative does not meet the purpose and need for this project, it will remain under consideration and serve as a baseline for comparison against the other alternatives throughout the PD&E Study.

5.1.2 No Build (Rehabilitation) Alternative

A No Build (Rehabilitation) Alternative was also considered as part of the PD&E study. Rehabilitating the bridge would eliminate substandard issues; however, to provide wider sidewalks, lanes, and shoulders, the bridge would be widened to one or both sides. Widening to

the north impacts the Section 4(f) Tot Lot and existing 30-inch water main. Widening to the south affects the existing bridge tender house and electrical room. Rehabilitation also calls for deck replacement, mechanical and electrical upgrades, major repairs such as providing pile jackets to the existing piles, and full zinc metalizing to slow down corrosion. Rehabilitation of the existing bridge would include extensive traffic rerouting, including lane closures and detours for all the existing bridge users. The rehabilitation costs are significant and lead to a 40-year estimated service life. Also, the rehabilitation does not meet the purpose and need since it does not improve the vehicular flow of traffic since the bascule would remain. Therefore, it was not considered to be a viable alternative. For these reasons, the No Build (Rehabilitation) Alternative was eliminated from further consideration.

5.1.3 Build Alternative 1 (Mid-Level Movable Bridge)

The Mid-Level Movable Bridge Alternative would replace the existing Broad Causeway (8DA10123, FDOT Bridge No. 875101) bridge with a movable bridge with a vertical navigational clearance of 40 ft. and meet all governing design standards and regulations. Based on data provided by the existing bridge tender house and allowing for tidal fluctuations, this height would allow approximately 70 to 80 percent of the waterway users that currently require the bridge to open to pass without opening. The new bridge would include adequate lane widths and shoulders and a shared-use path.

5.1.4 Build Alternative 2 (High-Level Fixed Bridge)

The High-Level Fixed Bridge Alternative would replace the existing movable Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) with a fixed structure featuring a vertical navigational clearance of 65 ft. to allow waterway users safe passage under the bridge. The new fixed bridge would include widened lane widths and shoulders and a shared-use path for pedestrians and bicyclists that meets current standards.

5.2 Preferred Alternative

In order to evaluate the study alternatives, an evaluation matrix was prepared using criteria from the following categories: Ability to Meet Purpose and Need, Bridge Features, Traffic Operations, Social and Cultural Resources, Natural and Physical Resources, Right-of-Way, and Project Costs. Figure 5-1 compares each alternative evaluated in detail, including the No Build (Repair), the Mid-Level Movable Bridge, and the High-Level Fixed Bridge. This matrix was presented at the Alternatives Public Workshops on September 26, 2023, and September 28, 2023.

After comparing and weighing the benefits and impacts of the No Build Alternative and the two feasible Build Alternatives, the Town identified the High-Level Fixed Bridge as the Preferred Alternative, subject to public review of the environmental document and completion of the public comment period after the Public Hearing. As stated in the May 26, 2022 Memorandum of Understanding (MOU) between FDOT and the FHWA, the FDOT Office of Environment (OEM) will approve the final alternative when the environmental review is complete. Below is a general description of the Preferred Alternative followed by a summary of why this alternative addresses the purpose and need for the project and overall Town vision.

The Preferred Alternative consists of a new 65 ft. High-Level Fixed Bridge on a southern alignment that replaces the existing Broad Causeway Bridge. The new bridge includes a 4-lane divided roadway with two 11 ft. lanes in each direction separated by 4 ft. inside shoulders and a 2 ft. concrete barrier wall. The outside shoulders are 8 ft. wide, adjacent to concrete barrier walls. A 14 ft. shared-use path along the north side of the new bridge accommodates pedestrians and bicycles with a 1.33 ft. barrier wall to safely separate travel lanes and the path. See **Figure 5-2** for an image of the proposed bridge typical section. The design and posted speed would be 30 mph, as it is today.

On Broad Causeway Island (8DA21594), west of the bridge, new two-way ingress/egress access ramps are proposed to and from the existing service station, as well as safer pedestrian facilities. The Preferred Alternative provides extra greenspace along the north side of the causeway island to provide an opportunity for new park and/or fitness destinations.

The existing median opening east of the bridge on State Road (SR) 922 at Broadview Terrace will remain open for U-turn only movements. A mid-block pedestrian crosswalk is proposed on Kane Concourse (SR 922) between the bridge and the existing median opening. The mid-block crossing will include a push-button crossing to allow pedestrians and bicyclists to cross the roadway. During design, the mid-block crossing will be further analyzed to determine what the safest and most efficient option will be for pedestrian and bicycle crossing. Potential design options include Rapid Rectangular Flashing Beacons and overhead pedestrian signals. Extensive wayfinding signs will be included to direct pedestrian and bicycle movement in the vicinity of the bridge. A detailed description of the Preferred Alternative is located in the *Draft Preliminary Engineering Report (December 2023)*.

Criteria/Category		No Build Alternative	Alternative 1 High-Level Fixed Bridge	Alternative 2 Mid-Level Movable Bridge
ABILITY TO MEET PURPOSE AND NEED	Address Bridge Deficiencies			
	Improve Safety			
	Improve Flow of Traffic			
	Maintain Emergency Evacuation			
BRIDGE FEATURES	Vertical Navigational Clearance Above Mean High Water	15.7 ft.	65 ft.	40 ft.
	Horizontal Clearance (between fenders)	79.7 ft.	90 ft.	90 ft.
	Bridge Profile Grade (West side / East side)	3.44% / 1.55%	5.00% / 5.85%[1]	2.60% / 4.15%
	Improved Waiting Time for Marine Traffic	No	Yes	Yes
	Temporary Bridge Required During Construction	N/A	No	No
	Bridge Closure or Detour During Construction	N/A	No	No
TRAFFIC OPERATIONS	Bridge Opening	Yes	No	Yes
	Benefit to Vehicular Traffic	No	Yes	Yes
	Evacuation / Emergency Response (Improved)	No	Yes	Yes
SOCIAL & CULTURAL RESOURCES	Potential Impacts to Archaeological Resources	N/A	Low	Low
	Potential Impacts to Historic Resources	N/A	High	High
	Potential Impacts to Parks/Recreation Areas (#)	0	1	1
	Town of Bay Harbor Islands Tot Lot	No	No	No
	Florida Circumnavigational Saltwater Paddling Trail[2]	No	Yes	Yes
	Aesthetic/Visual Changes	No	Yes	Yes
	Pedestrian and Bicycle Facility Improvements	No	Yes	Yes
NATURAL & PHYSICAL RESOURCES	Potential Total Impacts to Wetlands (acres)	0	0.279	0.417
	Potential Total Impacts to Essential Fish Habitat (acres)	0	4.62	5.62
	Threatened/Endangered Species Potential	N/A	Medium[3]	Medium[3]
	Potential Impacts to Sovereign Submerged Lands	No	No	Yes
	Potential Noise Sensitive Sites (#)	0	233	233
	Potential Contamination Sites (#High / #Medium)	0	1 / 1	1 / 1
RIGHT-OF-WAY	Relocations (#)	0	0	0
	Right-of-Way to be acquired (acres)	0	0	0
	Lifespan of Alternative (Estimated Years) ★	25	75	75
ESTIMATED PROJECT COSTS[4] (2023 Dollars, in millions)	Design	N/A	$15.9	$31.8
	Mitigation	N/A	TBD	TBD
	Construction	N/A	$226.7	$356.1
	Bridge Tender	$30.7	$0	$30.7
	Inspection & Maintenance	$41.7	$4.8	$22.3
	TOTAL	**$72.4**	**$247.4**	**$440.9**

★Toll bridge to be closed with "No Build Alternative".

[1] The bridge sidewalks will comply with ADA requirements.

[2] Temporary impacts during construction only.

[3] Medium assigned based on mitigation and minimization measures that will be implemented based on regulatory agency coordination.

[4] Preliminary estimates are for planning purposes only. Costs shown are 2023 dollars through 2048 with 3% inflation. Utility relocation costs are not included on the cost estimate.

Figure 5-1: Matrix of Alternatives Options.

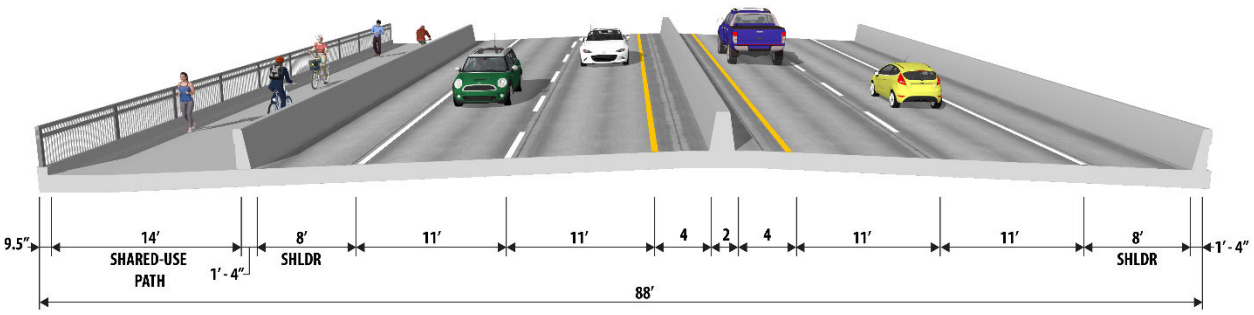

Figure 5-2: Proposed High-Level Fixed-Bridge Alternative Typical Section.

The High-Level Fixed Bridge Alternative was selected as the Preferred Alternative for the following reasons:

- The 65 ft High-Level Fixed Bridge allows all anticipated waterway users to be able to safely navigate through the proposed structure and pass under the new bridge without any delay to roadway traffic, compared to the movable bridge in Alternative 1. Without the need to stop automobiles, bicyclists, or pedestrians for bridge opening cycles, the traffic would be presented with free flow conditions to accommodate projected high traffic volumes that connect beach communities and Bay Harbor Islands to the mainland. Bicyclists and pedestrians would have continuous, safe access without bridge opening delays.
- In emergency situations and during evacuation events, a high-level fixed bridge would play a critical role in facilitating the evacuation of approximately 40,000 residents from the municipalities of Bay Harbor Islands, Bal Harbour, Surfside, Miami Beach, and Sunny Isles Beach.
- A high-level fixed bridge does not have any mechanical moving parts or an electrical system that could malfunction and close the bridge. Without the chance of human error operating a drawbridge, the high-level fixed bridge would maintain operational reliability.
- The High-Level Fixed Bridge Alternative includes adequate lane widths and shoulders and a shared-use path. These features improve safety for both motorized and non-motorized roadway users by correcting existing roadway deficiencies.
- The High-Level Fixed Bridge is proposed within the existing right-of-way, owned by the Town, making it a feasible option for the Town to address bridge deficiencies.

Details on the evaluation and selection of the Preferred Alternative, along with the Concept Plans and Profile, are included in the *Draft Preliminary Engineering Report (December 2023)* and as Appendix A of the project CRAS.

Because it was selected as the Preferred Alternative and is the option with the potential for the most visual impacts on identified resources, the 65 ft High-Level Fixed Bridge is the alternative used to evaluate the potential adverse effects on NRHP-eligible resources identified within the APE in this report.

6.0 EVALUATION OF EFFECTS

This section applies the Criteria of Adverse Effect (36CFR Part 800.5(a)) to the thirteen (13) historic resources eligible for listing in the NRHP either individually or as part of a historic district identified within the CRAS APE:

- Broad Causeway (8DA10123, FDOT Bridge No. 875101)
- Citgo/1501 Broad Causeway (8DA10436)
- 2395 Bayview Lane (8DA21593)
- Whitehouse Inn on the Bay (8DA21598)
- Majorca Towers (8DA21599)
- Bay Harbor Islands Historic District (8DA10515)
    - 9700 W Broadview Drive (8DA10435)
    - Broad Causeway Island (8DA21594)
    - 9600 Broadview Terrace (8DA21630)
    - 1371 96th Street (8DA21606)
    - 1330 96th Street (8DA21607)
- Keystone Islands (8DA11549)
- Indian Creek Country Club Golf Course (8DA21608)

The evaluation will discuss the impacts of the No Build (Repair) Alternative and the preferred High-Level Fixed Bridge Alternative.

This section also offers possible measures to minimize or mitigate the impacts on the NRHP-eligible historic resources identified as having adverse effects due to the proposed alternates. These measures will be considered, along with other ideas, during continuing coordination and consultation that will occur among the SHPO, the Town of Bay Harbor Islands, FDOT District 6, other interested consulting parties, and the public to fulfill the Section 106 requirements to resolve the adverse effects. The Advisory Council on Historic Preservation will be notified of the adverse effects through their online process. Section 106 consultation for this project will continue through the Summer of 2024 with the discussion of minimization and mitigation measures to resolve adverse effects to the identified historic properties. The result of the consultation will be developed into a Memorandum of Agreement (MOA).

6.1 Criteria of Adverse Effect (36CFR Part 800.5(a))

Section 106 of the National Historic Preservation Act of 1966 (NHPA), 36CFR Part 800.5(a) states that:

> An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National

Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

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

(i) Physical destruction of or damage to all or part of the property;

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;

(iii) Removal of the property from its historic location;

(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

6.2 Resources Outside of the Project Area

For each NRHP-eligible resource identified in the CRAS, the Criteria of Adverse Effect were applied to evaluate the potential primary and secondary effects of the proposed undertaking. This section discusses the effects on resources located entirely outside the project area but within the project APE. Since each resource outside the project area is not directly impacted through destruction, alteration, removal, or changes to access, the evaluations for each identified resource below focus on potential impacts on audible and visual elements.

A Noise Study Report (NSR) was prepared as part of the PD&E. Noise sensitive sites were evaluated as part of the study. For each of the following resources outside the project area, the NSR indicated that noise levels do not approach, meet, or exceed the Noise Abatement Criteria (NAC) at any property outside the project area. Furthermore, the resources are not expected to have a substantial noise increase over existing conditions. Should the project parameters or design change, these resources would be reassessed for potential impacts.

6.2.1 2395 Bayview Lane (8DA21593)

The 2395 Bayview Lane (8DA21593) historic structure is located in the Keystone Islands (8DA11549) resource group, northwest of the Broad Causeway (8DA10123). It is approximately 0.4 mile from the closest portion of the bridge project and over a half-mile from the bridge itself. As

such, none of the proposed alternatives will physically impact 2395 Bayview Lane (8DA21593) or change access to the resource.

In order to review potential visual impacts, a computer rendering of the High-Level Fixed Bridge Alternative was generated (see **Figure 6-1**). Due to the distance from the resource, it was determined that the proposed project will not negatively impact the viewshed from 2395 Bayview Lane (8DA21593).

Based on the Criteria of Adverse Effect, the proposed undertaking will have ***No Adverse Effect*** on the potentially NRHP-eligible 2395 Bayview Lane (8DA21593) historic structure.

Figure 6-1: Computer-generated view of the proposed High-Level Fixed Bridge Alternative as seen from 2395 Bayview Lane (8DA21593).

6.2.2 White House Inn on the Bay (8DA21598)

The White House Inn on the Bay (8DA21598) historic structure is located directly northwest of the Broad Causeway (8DA10123, FDOT Bridge No. 875101). In direct line with the bridge, the resource is approximately a half-mile from the bridge and 1/10 of a mile from the western end of the project area. The project work closest to the White House Inn on the Bay (8DA21598) is limited in nature and will not impact the resource physically nor alter access to the resource.

In order to review potential visual impacts as seen from the resource, a computer rendering of the High-Level Fixed Bridge Alternative was generated (see **Figure 6-2**). Since White House Inn on the Bay (8DA21598) is so closely aligned with the bridge roadway, neither bridge alternative will be visible from the resource and, therefore, will have no impact on the viewshed.

Based on the Criteria of Adverse Effect, the proposed undertaking will have ***No Adverse Effect*** on the NRHP-eligible White House Inn on the Bay (8DA21598) historic structure.

Figure 6-2: Computer-generated view towards the proposed High-Level Fixed Bridge Alternative from White House Inn on the Bay with the existing non-historic bridge (not in the project limits) in the foreground (8DA21598).

6.2.3 Majorca Towers (8DA21599)

The Majorca Towers (8DA21599) historic structure is located southwest of the Broad Causeway (8DA10123). It is located approximately a quarter-mile from the closest portion of the bridge project and over a half-mile from the bridge itself. As such, none of the proposed alternatives will impact Majorca Towers (8DA21599) physically or change access to the resource.

In order to review potential visual impacts, a computer rendering of the High-Level Fixed Bridge Alternative as seen from the property was generated (see **Figure 6-3**). Due to the distance from the resource, it was determined that the proposed project will not negatively impact the viewshed from Majorca Towers (8DA21599).

Based on the Criteria of Adverse Effect, the proposed undertaking will have ***No Adverse Effect*** on the NRHP-eligible Majorca Towers (8DA21599) historic structure.

Figure 6-3: Computer-generated view looking towards the proposed High-Level Fixed Bridge Alternative from the Majorca Towers (8DA21599) property.

6.2.4 Keystone Islands (8DA11549)

The Keystone Islands (8DA11549) resource group is located to the northwest of the project corridor. The CRAS did not identify any contributing resources within the project APE within the Keystone Islands Historic District. Therefore, the proposed alternatives will have no physical, visual, auditory, or access impacts on contributing resources within the historic district or as a whole. The proposed bridge alternatives will not be visible from the majority of the historic district. Therefore, it will not alter the existing visual and aesthetic conditions of the resource group, its viewshed or setting, and will not introduce any new visually intrusive elements that will affect the resource group.

Based on the Criteria of Adverse Effect, the proposed undertaking appears to have ***No Adverse Effect*** on the potentially NRHP-eligible Keystone Islands Historic District (8DA11549) resource group.

6.2.5 Indian Creek Country Club Golf Course (8DA21608)

The Indian Creek Country Club Golf Course (8DA21608) resource group is located on the Indian Creek Village Island, southeast of the project corridor. The private island is accessed from the mainland via a bridge from the western side of the island, away from the project area. A portion of the golf course can be seen from the existing Broad Causeway bridge, and per a site visit by Town of Bay Harbor Islands engineer Rodney Carrero-Santana, the existing bridge can only be seen from a small area of the resource due to the homes and vegetation built along the perimeter of the island (see **Figure 6-4**). A computer-generated image shows what the Preferred High-Level

Fixed Bridge Alternative would look like from the same vantage point as the image provided by the Golf Course management in **Figure 6-5**. Due to the sheltered views from the golf course, the proposed bridge alternatives will not result in any significant changes to the viewshed from the Indian Creek Village Country Club Golf Course (8DA21608). Therefore, it will not alter the existing visual and aesthetic conditions of the resource group, its viewshed or setting, and will not introduce any new visually intrusive elements that will affect the resource group.

Based on the Criteria of Adverse Effect, the proposed undertaking appears to have ***No Adverse Effect*** on the potentially NRHP-eligible Indian Creek Village Country Club Golf Course (8DA21608) resource group.

Figure 6-4: Existing view of the Broad Causeway Bridge from the Indian Creek Country Club Golf Course, facing northwest (Image courtesy of Indian Creek Country Club, 2023).

Figure 6-5: Computer rendering of the Preferred High-Level Fixed Bridge Alternative as seen from the Indian Creek Country Club Golf Course, facing northwest.

6.3 Resources Within the Project Area

This section applies the Criteria of Adverse Effect to the three (3) NRHP-eligible resources that are located within or partially within the project area: Broad Causeway (8DA10123, FDOT Bridge No. 875101), Citgo (8DA10436), and Bay Harbor Islands Historic District (9DA10515). The potential impacts of both the No-Build (Repair) Alternative and the preferred High-Level Fixed Bridge Alternatives are analyzed in this section.

6.3.1 Broad Causeway (8DA10123, FDOT Bridge No. 875101)

6.3.1.1 Effects of Alternatives

The No-Build (Repair) Alternative would avoid the replacement of the existing bridge and loss of the linear resource by performing as-needed repairs and updates to the existing Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) to extend its service life. This option would require ongoing and costly repairs which may result in the loss of character-defining features of the bridge over time. The expected lifespan of the existing bridge with routine maintenance is 15 to 25 years, at which time the structure would ultimately need to be decommissioned or replaced. The No-Build (Repair) Alternative would have No Adverse Effect on the Broad Causeway Bridge (8DA10123, FDOT Bridge No. 875101) for this undertaking.

As noted in Section 5.1.2, full rehabilitation of the bridge was eliminated from consideration due to its high cost and, inability to meet the project purpose and need for improved traffic flow due to the waterway clearance height. Additionally, in order to meet standard safety requirements, the

bridge would have to be widened on one or both sides, impacting the existing bridge design significantly and most likely causing the loss of character-defining features.

The preferred High-Level Fixed Bridge Alternative proposes to remove and reconstruct the Broad Causeway Bridge (8DA10123, FDOT Bridge 875101) with a fixed-span bridge with a vertical navigational clearance level of 65 feet above the MHW level. Based on the Criteria of Adverse Effect, the High-Level Fixed Bridge Replacement Alternative would have an ***Adverse Effect*** on the NRHP-eligible Broad Causeway (8DA10123, FDOT Bridge No. 875101) resource since it requires the demolition of the existing bridge. **Table 6-1** summarizes the effects evaluation for the No-Build (Repair) Alternative and the preferred High-Level Fixed Bridge Alternative.

Table 6-1: Effects of Alternatives on Broad Causeway (8DA10123, FDOT Bridge No. 875101)

Alternative	*Summary of Effects*	*Impact Type*	*Effect*
No-Build (Repair) Alternative	*The alternative would avoid the removal of the historic bridge by repairing the existing structure. This alternative would retain the historic bridge, its viewshed, and its setting, but repairs may impact the qualities for which it was determined NRHP-eligible over time.*		*No Adverse Effect*
High-Level Fixed Bridge (Preferred Alternative)	*Construction of this alternative will require the demolition of the existing bridge.*	*Physical destruction of or damage to all or part of the property*	***Adverse Effect***

6.3.1.2 Potential Mitigation Options

While continuing consultation will occur between the SHPO, the Town of Bay Harbor Islands, FDOT District 6, other interested consulting parties, and the public to resolve the adverse effects, the following as some recommended avoidance and minimization options for the Broad Causeway (8DA10123, FDOT Bridge No. 875101). These options, along with others developed during consultation will be considered to draft an MOA.

Avoidance

- Avoidance of the demolition of Broad Causeway (8DA10123, FDOT Bridge No. 875101) is not possible with the replacement bridge alternative. The No-Build (Repair) Alternative is not considered a prudent avoidance option since it will still result in the bridge eventually being unusable.

Mitigation

In order to minimize the loss of the Broad Causeway (8DA100123, FDOT Bridge No. 875101), the following mitigation measures are proposed:

Replacement Bridge Design

- Design the replacement bridge with enhanced access for pedestrians and bicyclists to Broad Causeway Island (8DA21594).
- Design the replacement bridge design and other improvements incorporating MiMo architectural design elements common to the historic area and existing bridge.
- Maintain access from both the east- and westbound lanes of the replacement bridge to Broad Causeway Island (8DA21594).

Documentation

- Prepare HABS/HAER documentation of the bridge prior to starting the replacement bridge project. This may include scans of original construction documents, large-format photography, and a historical narrative of the bridge and area history.
- Provide documentation to the Library of Congress, SHPO, and a local historic preservation organization.

Salvage

- Salvage the existing commemorative plaques from the bridge and reinstall on the new bridge or incorporate into the enhanced pedestrian and bicycling areas on Broad Causeway Island (8DA21594) (see **Figure 6-6**).

Public Education

- Prepare a historical narrative for a Florida Historical Marker highlighting the developmental history of Bay Harbor Islands and the Broad Causeway Bridge. The marker is to be placed on Broad Causeway Island (8DA21594) near public amenities.

Figure 6-6: One of several commemorative plaques on the Broad Causeway Bridge (2023).

6.3.2 Citgo/1501 Broad Causeway (8DA10436)

6.3.2.1 Effects of Alternatives

The No-Build (Repair) Alternative would have No Adverse Effect on the Citgo/1501 Broad Causeway (8DA10436) resource.

The preferred High-Level Fixed Bridge Alternative was carefully designed to avoid removing Citgo/1501 Broad Causeway (8DA10436) in whole or in part. However, each bridge design does so by starting the elevated bridge approach further west on Broad Causeway Island and flying over a portion of the Citgo/1501 Broad Causeway (8DA10436) (**Figure 6-7**). While this design is able to avoid all direct physical impacts to the buildings and does not require the use of the Citgo property, it does change the historic setting of the resource, which has always been a visually open island with no other structures than toll booths (now removed) in the vicinity (**Figure 6-8**).

The proposed undertaking will also remove the existing at-grade access to Citgo/1501 Broad Causeway (8DA10436) and require ramps from the proposed elevated bridge to access the resource. This visual impact can be seen in additional computer-generated images of the proposed bridge flyover (see **Figure 6-9** through **Figure 6-11**). This change in setting will adversely impact the viewshed from three sides of the building. Additionally, the building was historically sited centrally between the east and westbound lanes, with access to the gas pumps

laid out in response to the roadway access. In the preferred alternative, the proposed roadway alignment will be located to the south of the Citgo/1501 Broad Causeway (8DA10436). This change will not impact the architectural integrity of the Mid-Century resource, nor its ability to continue to function as a gas station. However, it does change the relationship between the resource and the roadway and bridge alignment. In spite of this, the Citgo/1501 Broad Causeway (8DA10436) resource would likely remain individually eligible for listing on the NRHP under Criteria A and C since the resource still maintains its architectural integrity and ability to convey the relationship to its transportation and community development history. Additionally, the resource would remain a contributing resource to the Bay Harbor Islands Historic District (8DA10515).

A Noise Study Report (NSR) was prepared as part of the PD&E. Noise sensitive sites were evaluated as part of the study. The Citgo/1501 Broad Causeway (8DA10436) resource was not individually studied in the NSR; however, according to the report, substantial increases in traffic noise are not expected as a result of this project.

Based on the Criteria of Adverse Effect, the preferred High-Level Fixed Bridge Alternative would have an ***Adverse Effect*** on the NRHP-eligible Citgo/1501 Broad Causeway (8DA10436) resource. **Table 6-2** gives a summary of the effects evaluation for the No-Build (Repair) Alternative and the preferred High-Level Fixed Bridge Alternative.

Figure 6-7: Computer rendering of the Preferred High-Level Fixed Bridge Alternative over Citgo with elevated access ramp seen to the left (8DA10436), facing southwest.

Figure 6-8: Existing site conditions at Citgo/1501 Broad Causeway (8DA10436), facing east towards the Town of Bay Harbor Islands.

Figure 6-9: Computer rendering of the preferred High-Level Fixed Bridge Alternative over Citgo/1501 Broad Causeway (8DA10436) with helix multi-use path, facing east.

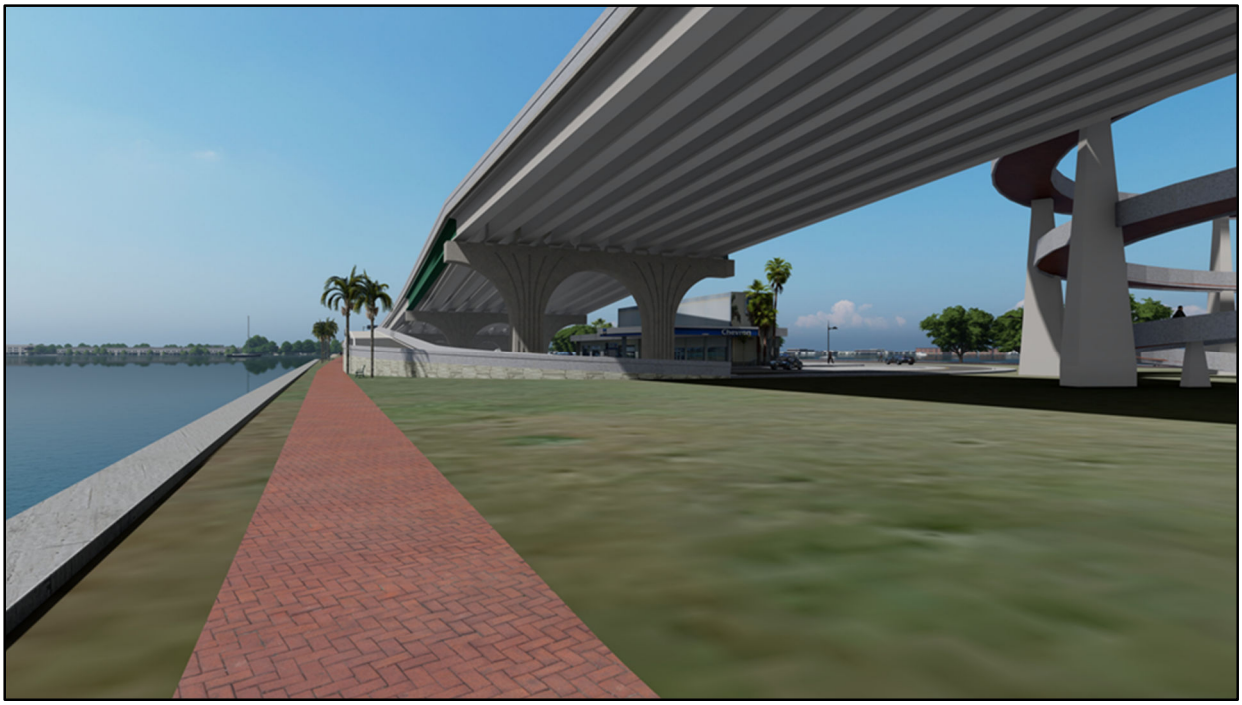

Figure 6-10: Computer rendering of the preferred High-Level Fixed Bridge Alternative over Citgo/1501 Broad Causeway (8DA10436) with an access ramp to the resource seen on the left, facing northwest.

Figure 6-11: Computer rendering from the east end of Citgo/1501 Broad Causeway (8DA10436) with access ramp seen on the far side, facing south.

Table 6-2: Effects of Alternatives on Citgo/1501 Broad Causeway (8DA10436)

Alternative	Summary of Effects	Impact Type	Effect
No-Build (Repair) Alternative	*Leaving the existing bridge in place would result in no changes to the historical setting of the resource.*		*No Adverse Effect*
High-Level Fixed Bridge (Preferred Alternative)	*This alternative will not physically impact the structure; however, the flyover design of the bridge will change the historic setting of the property.*	*Visual/setting*	***Adverse Effect***
	The at-grade vehicular access approach to the service station will be modified, but will remain accessible form both the east and west-bound lanes.	*Access*	***Adverse Effect***

6.3.2.2 Potential Avoidance, Minimization, and Mitigation Options

Recommended avoidance and minimization options to consider for Citgo/1501 Broad Causeway (8DA10436) include the following:

Avoidance

- The proposed replacement bridge alternatives have been designed in a manner that avoids removal in whole or in part of Citgo/1501 Broad Causeway (8DA10436).
- No feasible avoidance options have been identified in order to avoid the viewshed impacts.

Minimization

In order to minimize the impacts on Citgo/1501 Broad Causeway (8DA10436), the following measures are proposed:

Replacement Bridge Design

- Design the bridge in a manner that avoids Citgo/1501 Broad Causeway (8DA10436) and minimizes the portion of the bridge that is directly over the structure.
- Minimize the bridge supports size and locations to keep the site viewshed as open as possible, allowing the waterway to be visible from as many vantage points as possible.
- Include vehicular access from both the west- and eastbound lanes to Citgo/1501 Broad Causeway (8DA10436). Minimize the ramp designs to keep the open feeling of the site.

Mitigation

In order to mitigate the impacts on the Citgo/1501 Broad Causeway (8DA10436), the following measures are proposed:

Design

- Place landscaping enhancements, as well as pedestrian and bicycle trails on Broad Causeway Island (8DA21594) and near Citgo/1501 Broad Causeway (8DA10436) to support the continued use of the building.

Public Education

- Prepare a historical narrative for a Florida Historical Marker highlighting the developmental history of Bay Harbor Islands and the Broad Causeway Bridge. The marker is to be placed on Broad Causeway Island (8DA21594) near public amenities.

6.3.3 Bay Harbor Islands Historic District (8DA10515)

6.3.3.1 Effects of Alternatives

The Bay Harbor Islands Historic District (8DA10515) is located at the eastern end of the project corridor and is connected to the man-made Broad Causeway Island (8DA21594) by the Broad Causeway Bridge (8DA10123, FDOT Bridge 875101). Both the individually NRHP-eligible Broad Causeway (8DA10123, FDOT Bridge No. 8751010) and Citgo/1501 Broad Causeway (8DA10436) are contributing resources to the historic district. Additionally, the following resources were identified within the APE that are not individually NRHP-eligible but contribute to the Bay Harbor Islands Historic District (8DA10515): 9700 W Broadview Drive (8DA10435), Broad Causeway Island (8DA21594), 9600 Broadview Terrace (8DA21630), 1371 96th Street (8DA21606), and 1330 96th Street (8DA21607).

The Bay Harbor Islands Historic District (8DA10515) was originally recorded as having 312 contributing resources built in or prior to 1957. Additional resources would likely be considered contributing if an updated survey was conducted due to the large number of original buildings and structures built during the 1960s and early 1970s that have not been recorded but which fall within the early developmental history of the Town. A survey update would also note the loss of some previously recorded resources as development pressure continues for coastal property in Miami-Dade County.

The No Build (Repair) Alternate would have No Adverse Effect on the Bay Harbor Islands Historic District (8DA10515); however, it could result in the Broad Causeway Bridge (8DA10123, FDOT Bridge 875101) losing contributing status if cumulative repairs alter the character-defining elements of the bridge.

The loss of Broad Causeway Bridge (8DA10123, FDOT Bridge 875101) would occur with the construction of the preferred High-Level Fixed Bridge Alternative and would have an adverse effect on the Bay Harbor Islands Historic District (8DA10515) since it would remove a contributing resource that is directly tied to its early developmental history. Due to the size and number of resources within the historic district, the Bay Harbor Islands Historic District (8DA10515) would remain eligible for listing in the NRHP.

Additionally, the changes resulting from the replacement bridge alternative will change the circulation patterns and viewshed for contributing resources Citgo/1501 Broad Causeway (8DA10436) and Broad Causeway Island (8DA21594). However, it is unlikely that these changes would render either of these resources non-contributing to the historic district as a result. Impacts to the individual eligibility of Citgo/1501 Broad Causeway (8DA10436) are discussed in **Section 6.3.2.**

No other physical or access impacts were identified that would negatively impact the qualities that render the other contributing resources identified in the CRAS eligible as contributing resources to the historic district (9700 W Broadview Drive [8DA10435], 9600 Broadview Terrace [8DA21630], 1371 96th Street [8DA21606], and 1330 96th Street [8DA21607]).

The replacement bridge alternatives will not be visible from the majority of the Historic District. Therefore, it will not alter the existing visual and aesthetic conditions of the resource group as a whole, its viewshed or setting, and will not introduce any new visually intrusive elements that will affect the resource group.

Access to and from the Bay Harbor Islands Historic District (8DA10515) to the Causeway would remain similar, but there would be a slight realignment and rise difference approaching from the Town of Bay Harbor Islands. This will not impact the characteristics that make the historic district NRHP-eligible (see **Figure 6-12** and **Figure 6-13**).

The NSR identified that exterior traffic noise levels will approach, meet or exceed the NAC at the residences within the study area northeast and southeast of the project area. Therefore, a noise barrier for these residences was considered. However, noise barriers were not found to be a reasonable or feasible form of abatement due to openings in the noise barrier, which would be needed to accommodate driveway access requirements. Additionally, height limitations along the canal would prevent the noise barrier from providing any noise reduction to residences located above ground floors. Therefore, a noise barrier for these residences is not recommended. The increase in noise levels will not adversely impact the qualities that make the district NRHP-eligible.

Based on the Criteria of Adverse Effect, the High-Level Fixed Bridge Alternative would have an ***Adverse Effect*** on the NRHP-eligible Bay Harbor Islands Historic District (8DA10515) resource group due to the loss of the contributing Broad Causeway Bridge (8DA10123, FDOT Bridge 875101) linear resource. The proposed project would not cause the loss of any other contributing resources to the district nor impact the characteristics that render the area eligible for listing in the NRHP. A summary of effects can be seen in **Table 6-3.**

Figure 6-12: Computer rendering showing the proposed elevated approach to the High-Level Fixed Bridge Alternative from the Bay Harbor Islands Historic District (8DA10515).

Figure 6-13: Existing at-grade bridge approach from the Bay Harbor Islands Historic District (8DA10515).

Table 6-3: Effects of Alternatives on Bay Harbor Islands Historic District (8DA10515)

Alternative	Summary of Effects	Impact Type	Effect
No-Build (Repair) Alternative	*Leaving the existing bridge in place would result in no changes to the historic district. However, potential changes due to repairs could alter the resources and result in it losing its contributing status.*		*No Adverse Effect*
High-Level Fixed Bridge (Preferred Alternative)	*The demolition of the existing bridge removes a contributing resource from the district.*	*Physical destruction to part of the property*	***Adverse Effect***
	Alteration to the access and circulation on Broad Causeway Island impacts contributing resources to the historic district.	*Access*	*No Adverse Effect*
	An increase in noise levels is anticipated for the historic district.	*Noise*	*No Adverse Effect*

6.3.3.2 Potential Avoidance, Minimization, and Mitigation Options

Recommended avoidance and minimization options to consider for the Bay Harbor Islands Historic District (8DA10515) include the following:

Avoidance

- The bridge replacement alternatives have been designed to avoid the removal in whole or in part of NRHP-eligible and contributing resources within the Bay Harbor Islands Historic District (8DA10515), with the exception of the Broad Causeway Bridge (8DA10123, FDOT Bridge 875101).

Minimization

In order to minimize the impacts on the Bay Harbor Islands Historic District (8DA10515), the following measures are proposed:

Replacement Bridge Design

- Implement the recommendations for the replacement bridge design listed for both Broad Causeway (8DA10123, FDOT Bridge 875101) and Citgo/1501 Broad Causeway (8DA10436).

Mitigation

In order to mitigate the impacts on the Bay Harbor Islands Historic District (8DA10515), the following measures are proposed:

Design

- Provide enhanced pedestrian and bicycle trails with landscaping to enhance Broad Causeway Island (8DA21594) and support its use as a public amenity.

Survey

- Update the historic district survey and fully evaluate its potential for listing in the NRHP.

- Make recommendations for creating a local historic district to help reduce the loss of contributing resources.

Public Education

- In addition to the Florida Historical Marker recommended for placement on Broad Causeway Island (8DA21594), develop and install a second marker to be placed within the Town focused on the developmental and architectural history of the Town.

7.0 COORDINATION

7.1 Public Coordination

Public workshops involving Federal, State, and Local stakeholders for this project were held in-person on September 26, 2023, and virtually on September 28, 2023. The information provided included a project overview and a presentation of the proposed alternatives and their evaluation. The meeting also included information on how to stay informed of the project's progress, how to comment on the project, as well as a question-and-answer session. The meeting was also recorded for those unable to attend and was made available on the Town of Bay Harbor Islands website for the project. Additional public meetings are planned for the summer of 2024.

7.2 Public Outreach Coordination

Public coordination for this project included the following:

- Letters to Local Property Owners and Tenants
- Email Messages
- Postings on the Town of Bay Harbor Islands website
- Updates to the Florida Administrative Register
- Newspaper Advertisements
- Social Media

7.3 Community Engagement

The public was advised of the purpose and need of the project, the three proposed project alternatives, and the potential effects of each alternative. The next steps and PD&E schedule for the project were also discussed, as well as the ways for the public to stay engaged.

A project-specific webpage was established on the Town of Bay Harbor Islands website (www.bayharborislands-fl.gov) at the beginning of the PD&E Study to provide updated information about the project and upcoming activities for the duration of the study. Comments and questions are forwarded to the project team by email via the contact page on the website. Website visitors are also encouraged to email, write, or call the District Project Manager with questions and/or concerns. The project schedule, newsletters, and meeting exhibits are posted on the website as part of regular updates. The site is periodically updated with current related information, including the project description, schedule, alignment concepts, comment forms, and staff contact information.

7.4 Local CLG Contact

The CRAS report was provided to the Miami-Dade Office of Historic Preservation by the Town of Bay Harbor Islands for their review and comments in December 2023. Sara Cody, Historic Preservation Chief of the Miami-Dade Office of Historic Preservation, replied on January 11, 2024, stating that they had no comments or concerns with the information presented in the CRAS. This Case Study report will also be provided to the Miami-Dade Office of Historic Preservation for their review.

8.0 CONCLUSIONS

The Criteria of Adverse Effect (36 CFR Part 800.5) was applied to the thirteen (13) historic resources identified as eligible for listing in the NRHP either individually or as part of a historic district in the project CRAS APE.

Based on the proposed undertaking to replace the historic Broad Causeway (8DA10123, FDOT Bridge No. 875101), the findings presented in this study indicate that the proposed High-Level Fixed Replacement Bridge Alternative will have an ***Adverse Effect*** on the individually NRHP-eligible Broad Causeway (8DA10123) linear resource, the individually NRHP-eligible Citgo/1501 Broad Causeway (8DA10436) historic structure, and the potentially NRHP-eligible Bay Harbor Islands Historic District (8DA10515). Furthermore, it is anticipated that this undertaking will have ***No Adverse Effect*** on the individually NRHP-eligible 2395 Bayview Lane (8DA21593), Whitehouse Inn on the Bay (8DA21598), and Majorca Towers (8DA21599) historic structures, as well as the Indian Creek Country Club Golf Course (8DA21608), Keystone Islands (8DA11549), and Broad Causeway Island (8DA21594) resource groups. Additionally, there is ***No Adverse Effect*** to four (4) of the identified contributing structures to the Bay Harbor Islands Historic District (8DA10515): 9700 W Broadview Drive (8DA10435), 1371 96th Street (8DA21606), 1330 96th Street (8DA21607), and 9600 Broadview Terrace (8DA21630). There are no previously recorded or unrecorded NRHP-eligible, NRHP-listed, or potentially NRHP-eligible archaeological sites within the archaeological APE that will be affected by this undertaking. A summary of the findings can be found in **Table 8-1**.

Table 8-1: Summary of Findings of Effects

FMSF No.	Address/Name	Construction Date	Resource Type	Finding of Effect
8DA10123	*Broad Causeway/ FDOT Bridge No. 875101*	*c. 1951*	*Linear Resource*	***Adverse effect***
8DA10436	*Citgo/1501 Broad Causeway*	*c.1951*	*Structure*	***Adverse effect***
8DA10515	*Bay Harbor Islands Historic District*	*c.1940s–1960s*	*Resource Group*	***Adverse effect***
8DA10435	*9700 W Broadview Drive*	*1955*	*Contributing Structure*	*No Adverse Effect*
8DA21594	*Broad Causeway Island*	*1951*	*Contributing Resource Group*	*No Adverse Effect*
8DA21603	*9600 Broadview Terrace*	*1971*	*Contributing Structure*	*No Adverse Effect*
8DA21606	*1371 96th Street*	*1961*	*Contributing Structure*	*No Adverse Effect*
8DA21607	*1330 96th Street*	*1971*	*Contributing Structure*	*No Adverse Effect*

8DA11549	*Keystone Islands*	*c. 1948–1964*	*Resource Group*	*No Adverse Effect*
8DA21593	*2395 Bayview Lane*	*1973*	*Structure*	*No Adverse Effect*
8DA21598	*White House Inn on the Bay*	*1969*	*Structure*	*No Adverse Effect*
8DA21599	*Majorca Towers*	*1969*	*Structure*	*No Adverse Effect*
8DA21608	*Indian Creek Country Club Golf Course*	*1930*	*Resource Group*	*No Adverse Effect*

8.1 Continued Coordination

Considerations for mitigating the adverse effects identified in this Case Study are included in **Section 6.0**; these recommendations will be considered, along with others developed during consultation among the SHPO, the Town of Bay Harbor Islands with FDOT District 6, other potential consulting parties, and the public. The result of the consultation will be developed as a Memorandum of Agreement (MOA).

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10.0 APPENDICES

Appendix A: Preferred Alternative Plans

BAY HARBOR ISLANDS

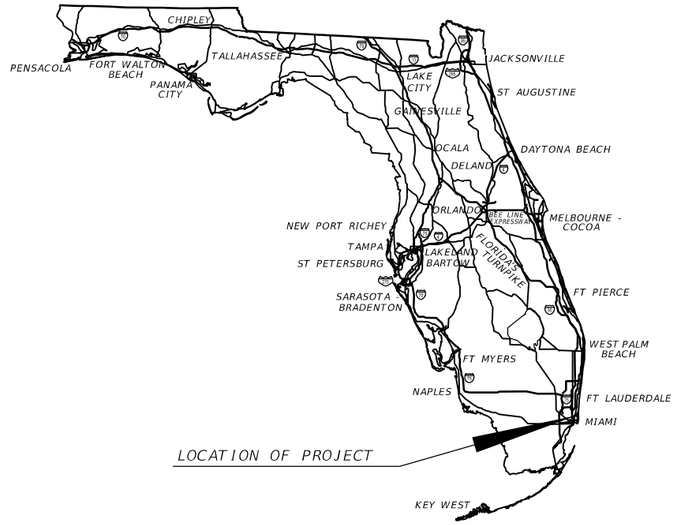
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 425428-1-21-01

MIAMI-DADE COUNTY

BROAD CAUSEWAY / KANE CONCOURSE



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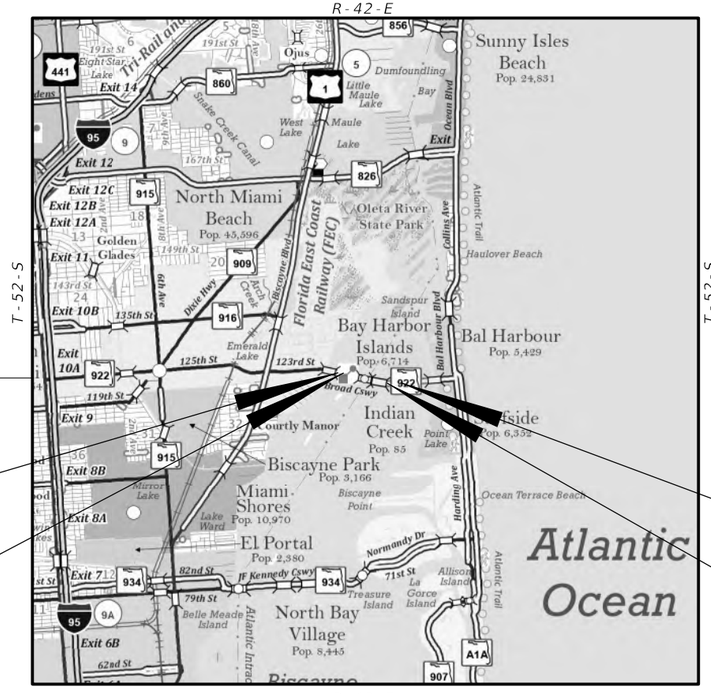
T-52-S



CITY OF NORTH MIAMI

BEGIN PROJECT:
STA. 105+21.37
℄ CONST. FL-922

BEGIN BRIDGE:
STA. 109+71.97
℄ CONST. FL-922

END PROJECT:
STA. 145+56.01
℄ CONST. FL-922

END BRIDGE:
STA. 141+39.63
℄ CONST. FL-922

R-42-E

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2 - 4	TYPICAL SECTION EXISTING
5 - 8	TYPICAL SECTION PROPOSED
9	PROJECT LAYOUT
10 - 15	PLAN SHEETS
16 - 19	BROAD CAUSEWAY PROFILE
20 - 21	WB RAMP PROFILE
22 - 24	EB RAMP PROFILE

GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY2023-24 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: http://www.fdot.gov/design/standardplans

Standard Plans for Bridge Construction are included in the Structures Plans Component

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, June 2023 Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

ROADWAY PLANS ENGINEER OF RECORD:

RYAN M. JENSEN, P.E.
P.E. LICENSE NUMBER 86609
ATKINS NORTH AMERICA
800 WATERFORD WAY, SUITE 700
MIAMI, FL 33126
CONTRACT NO.: C0000
VENDOR NO.: 99-999999

FDOT PROJECT MANAGER:

ROBERT T. MCMULLEN

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
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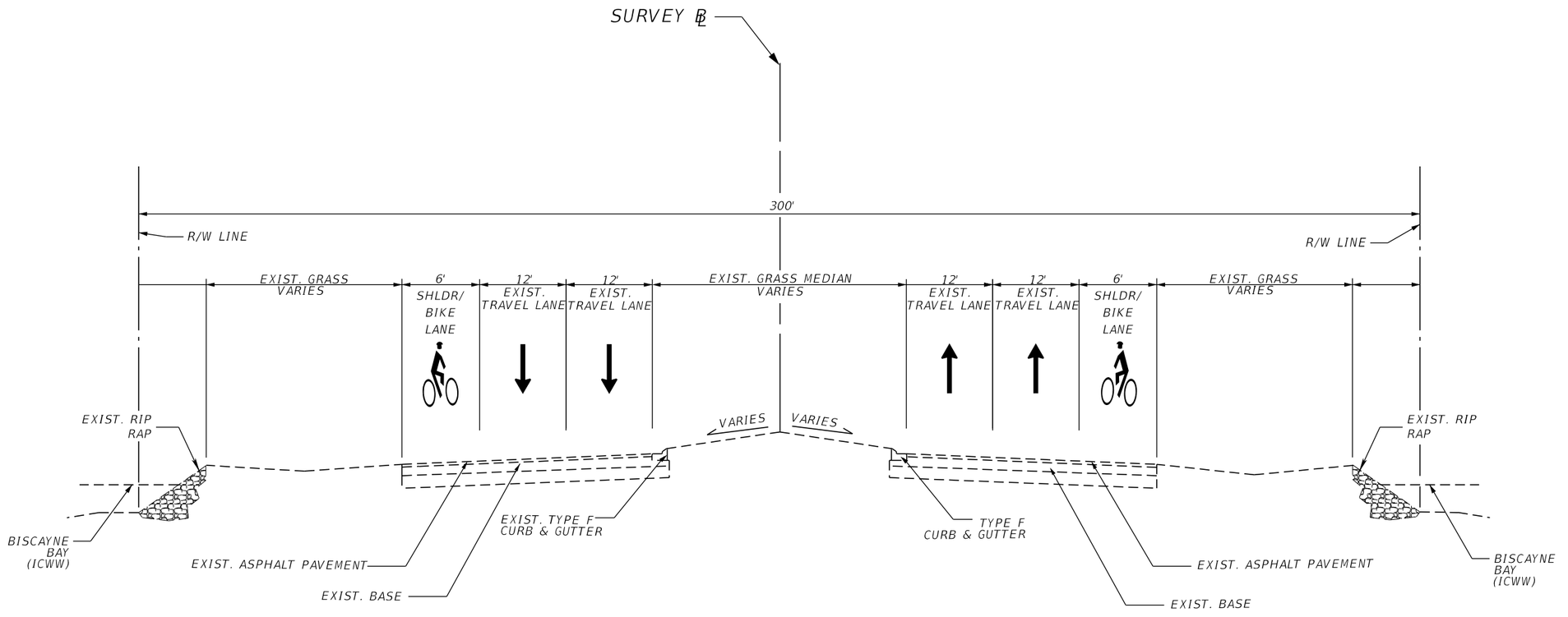

EXIST. TYPICAL SECTION NO. 1
BROAD CAUSEWAY BRIDGE/SR-922
STA. 105+21.37 TO STA. 123+85.28

NOT TO SCALE

REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION				SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	RYAN M. JENSEN LICENSE NUMBER: 86609 ATKINS NORTH AMERICA, INC 800 WATERFORD WAY SUITE 700 MIAMI, FL 33126	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	EXISTING TYPICAL SECTION	2
					SR-922	MIAMI-DADE	425428-1-21-01		

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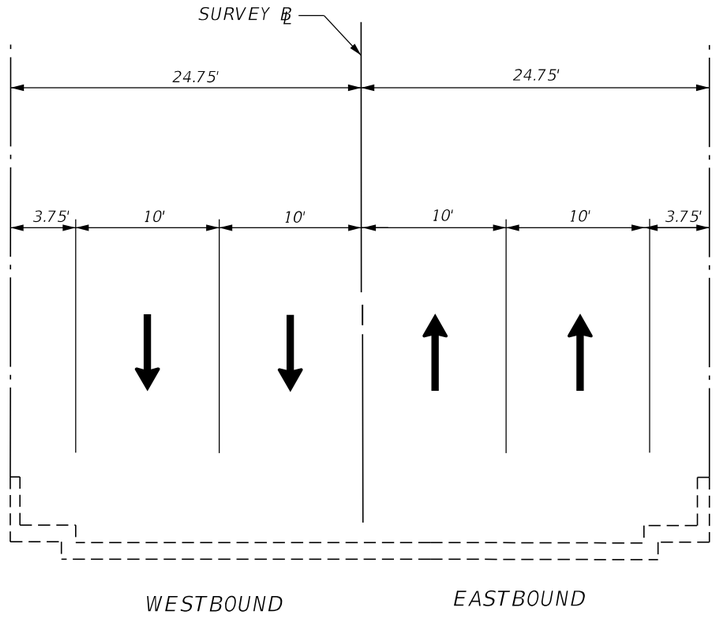

EXIST. TYPICAL SECTION NO.2
BROAD CAUSEWAY BRIDGE NO. 875101
STA. 123+85.28 TO STA. 141+41.25

NOT TO SCALE

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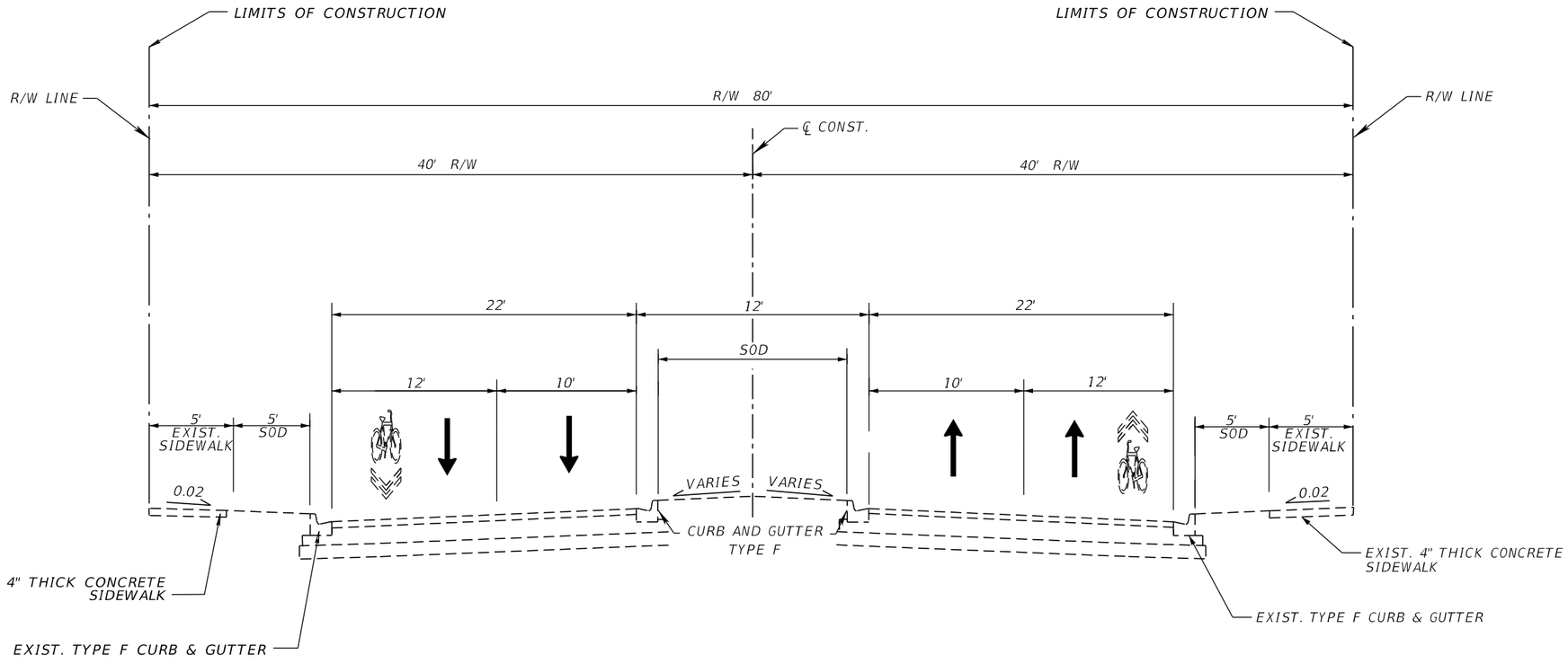

EXIST. TYPICAL SECTION NO. 3
KANE CONCOURSE
STA. 141+41.25 TO STA. 145+56.01

NOT TO SCALE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

EXISTING TYPICAL SECTION

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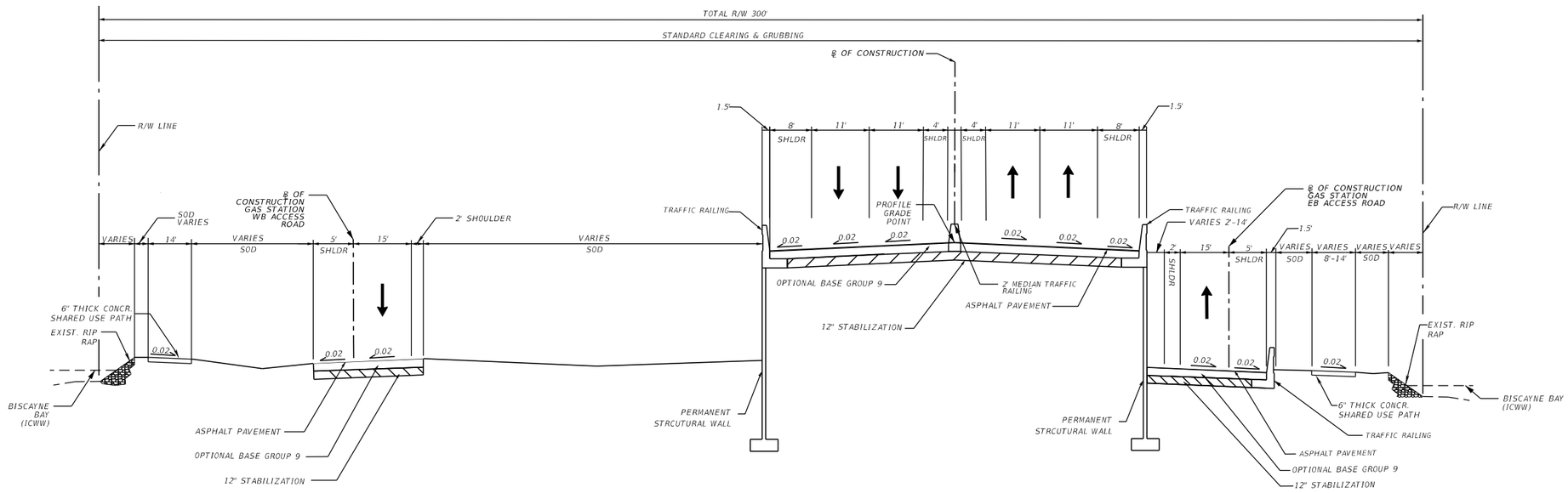

PROP. TYPICAL SECTION NO. 1
BROAD CAUSEWAY WALL PORTION WEST OF ICWW
MSE ROAD TRANSITION FROM EXISTING GRADE TO PROP. BRIDGE ELEVATION
STA. 105+21.37 TO STA. 111+79.50

NOT TO SCALE

REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PROPOSED TYPICAL SECTION	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	RYAN M. JENSEN LICENSE NUMBER: 86609 ATKINS NORTH AMERICA, INC 800 WATERFORD WAY SUITE 700 MIAMI, FL 33126	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		5
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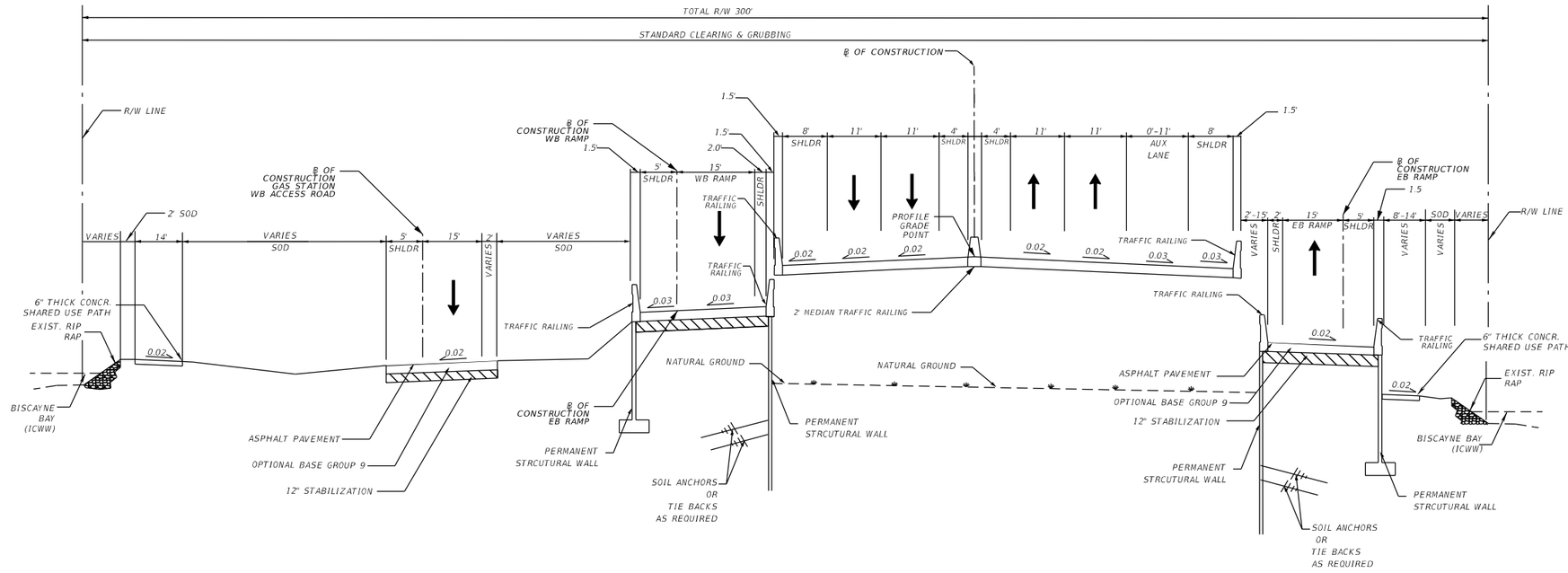

PROP. TYPICAL SECTION NO. 2

BROAD CAUSEWAY WESTBOUND AND EASTBOUND RAMP OF ICWW

STA. 111+79.50 TO STA. 124+00.00

NOT TO SCALE

REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PROPOSED TYPICAL SECTION	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	RYAN M. JENSEN LICENSE NUMBER: 86609 ATKINS NORTH AMERICA, INC 800 WATERFORD WAY SUITE 700 MIAMI, FL 33126	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		6
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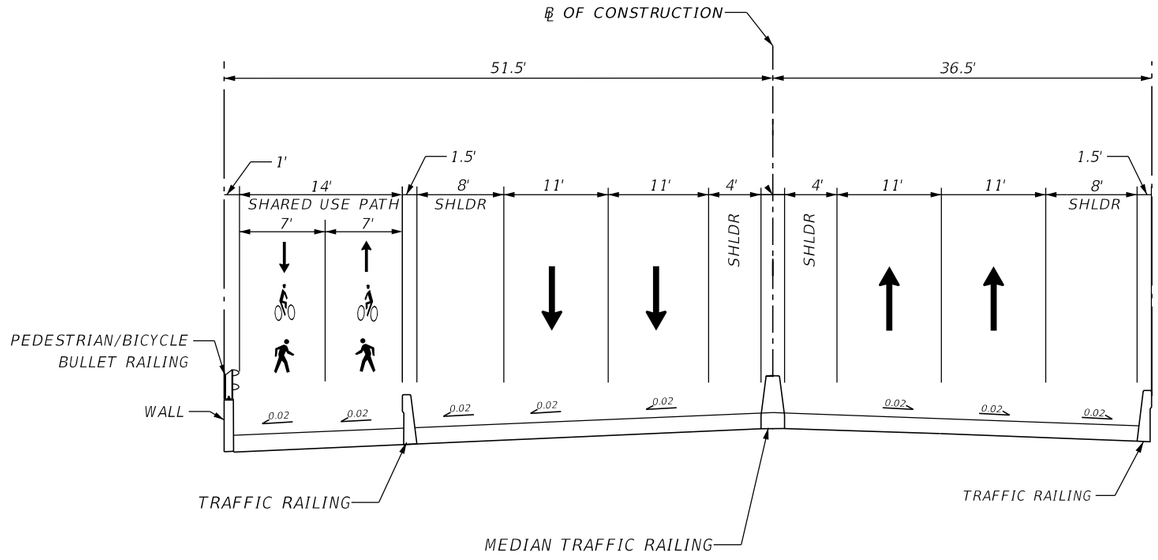

PROP. TYPICAL SECTION NO.3
BROAD CAUSEWAY BRIDGE OVER ICWW
STA. 124+00.00 TO STA. 141+41.25

NOT TO SCALE

REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PROPOSED TYPICAL SECTION	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	RYAN M. JENSEN LICENSE NUMBER: 86609 ATKINS NORTH AMERICA, INC 800 WATERFORD WAY SUITE 700 MIAMI, FL 33126	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		7
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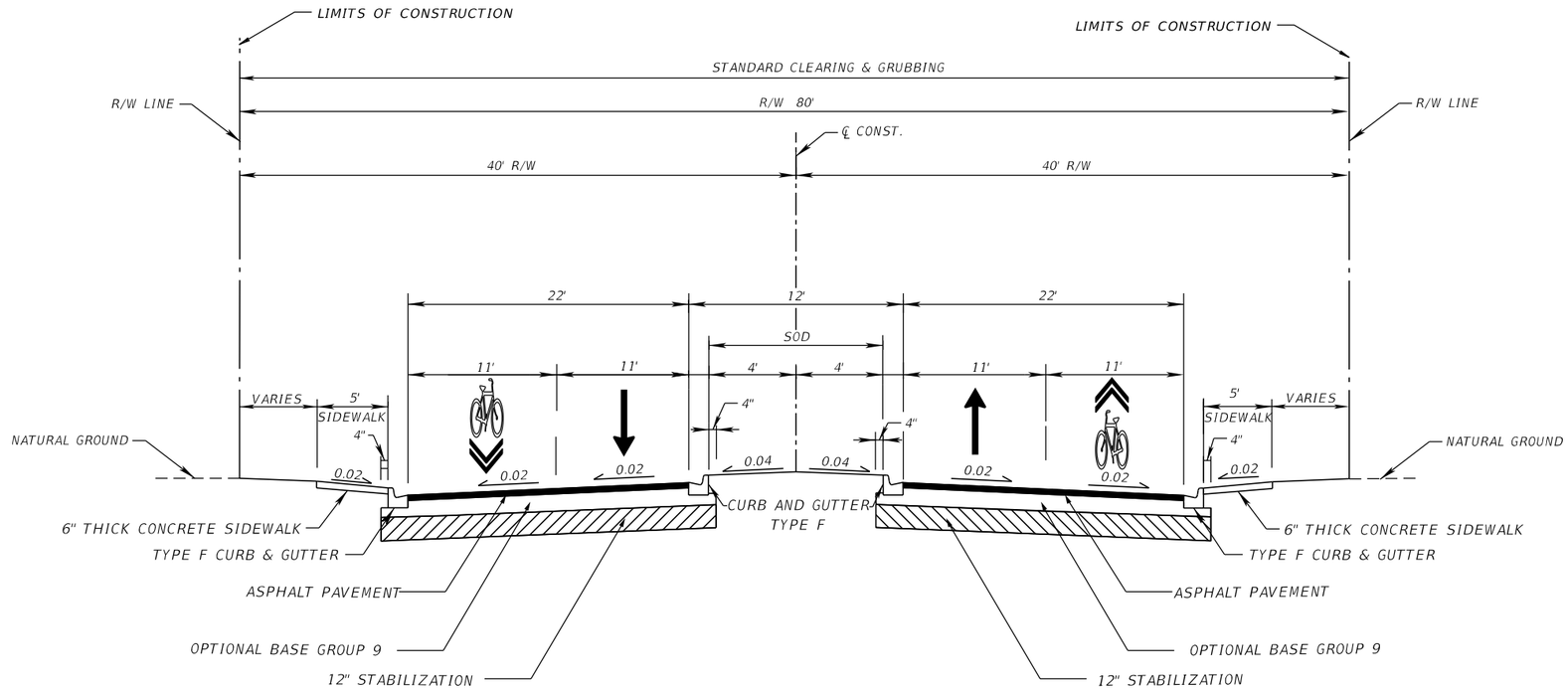

PROP. TYPICAL SECTION NO. 4
KANE CONCOURSE EAST OF ICWW
ROAD RECOSTRUCTION
STA. 141+41.25 TO STA. 145+56.01

NOT TO SCALE

REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PROPOSED TYPICAL SECTION	SHEET NO.
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

PROJECT LAYOUT

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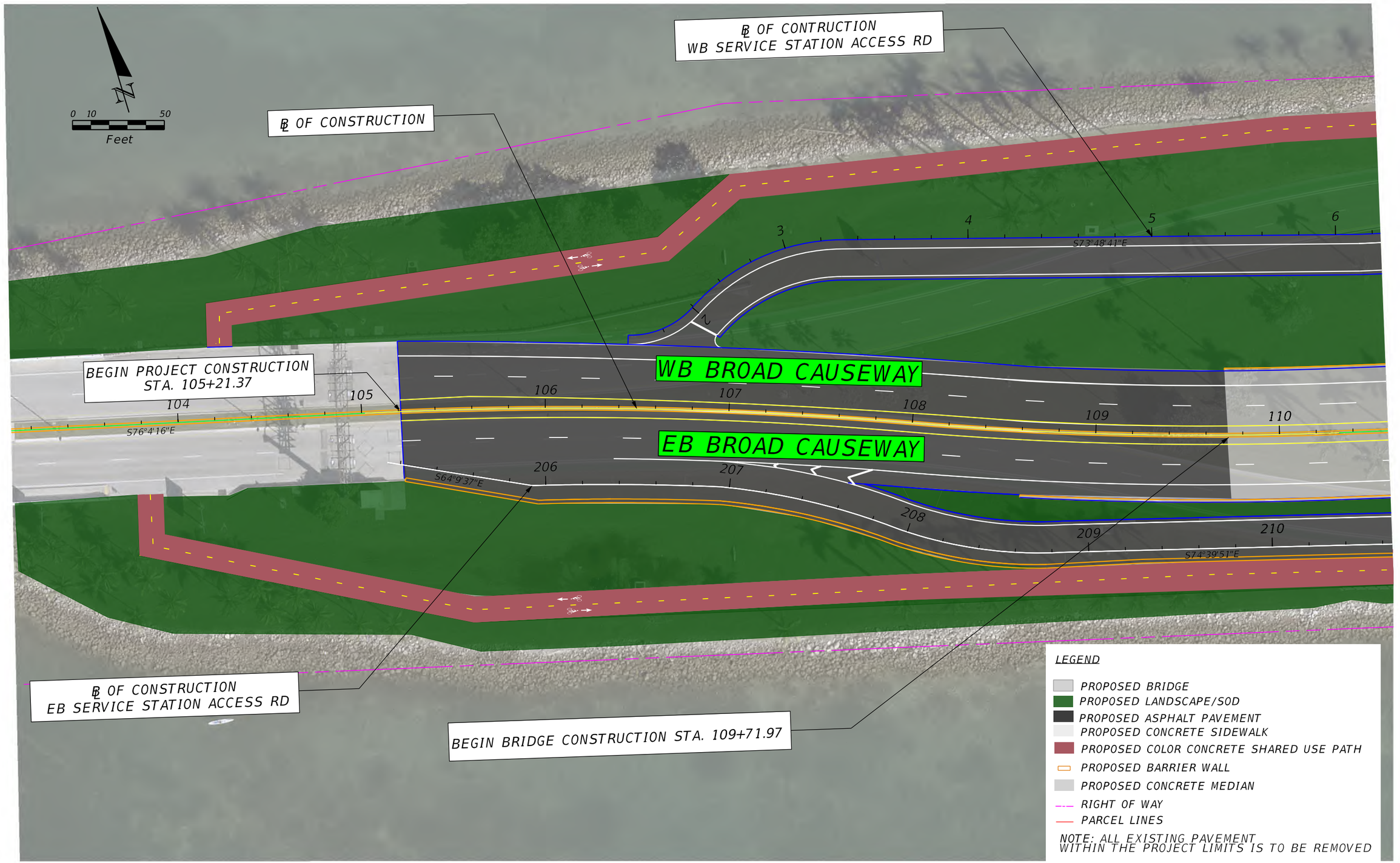

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℄ OF CONSTRUCTION

WB SERVICE STATION ACCESS RD

℄ OF CONSTRUCTION WB RAMP
BEGIN BRIDGE STA 315+68.25

℄ OF CONSTRUCTION
WB SERVICE STATION ACCESS RD

N

0 10 50
Feet

7 8 9 10 11 12 13

S75°50'55"E

313 314 315 316 317 318

S74°6'39"E

S75°25'5"E

WB BROAD CAUSEWAY

111 112 113 114 115 116 117 118

S75°25'5"E

EB BROAD CAUSEWAY

211 212 213 214 215 216 217 218

S74°31'16"E

END EB RAMP STA 218+15.36

EB RAMP

℄ OF CONSTRUCTION EB
SERVICE STATION ACCESS RD

BEGIN BRIDGE STA 215+00.00

LEGEND

- PROPOSED BRIDGE
- PROPOSED LANDSCAPE/SOD
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED COLOR CONCRETE SHARED USE PATH
- PROPOSED BARRIER WALL
- PROPOSED CONCRETE MEDIAN
- RIGHT OF WAY
- PARCEL LINES

NOTE: ALL EXISTING PAVEMENT WITHIN THE PROJECT LIMITS IS TO BE REMOVED

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

PLAN SHEET (2)

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WB SERVICE STATION ACCESS RD

EXIST. SERVICE GAS STATION

℄ OF CONSTRUCTION WB RAMP

EXIST. BRIDGE TO BE REMOVED

WB BROAD CAUSEWAY

EB BROAD CAUSEWAY

EB SERVICE STATION ACCESS RD

℄ OF CONSTRUCTION

℄ OF CONSTRUCTION EB
SERVICE STATION ACCESS RD

N

0 10 50
Feet

14 319 320 321 119 120 121 122 123 124 125 219 220 221 222

S72°56'53"E

S75°1'36"E

LEGEND

- PROPOSED BRIDGE
- PROPOSED LANDSCAPE/SOD
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED COLOR CONCRETE SHARED USE PATH
- PROPOSED BARRIER WALL
- PROPOSED CONCRETE MEDIAN
- RIGHT OF WAY
- PARCEL LINES

NOTE: ALL EXISTING PAVEMENT WITHIN THE PROJECT LIMITS IS TO BE REMOVED

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

PLAN SHEET (3)

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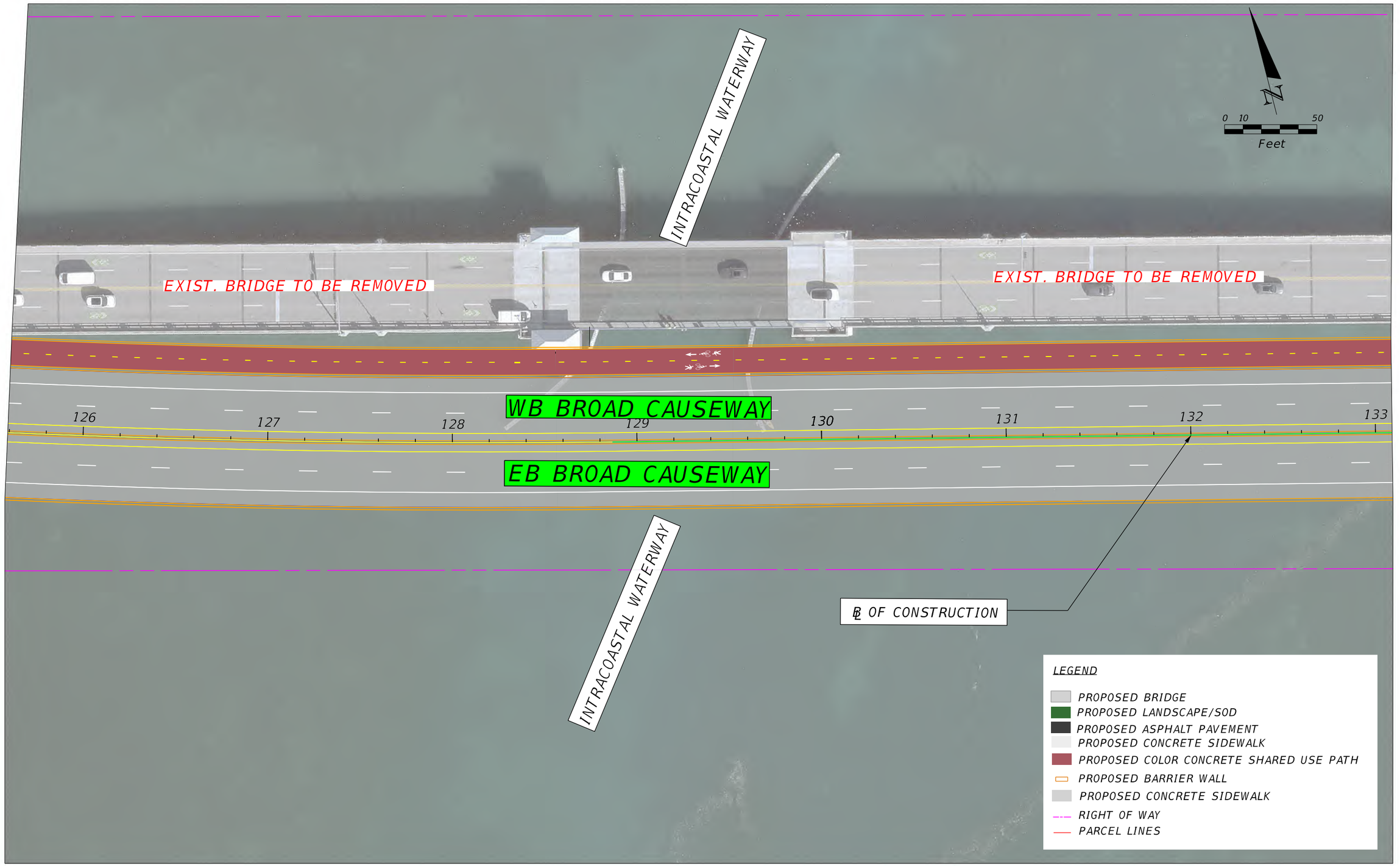

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

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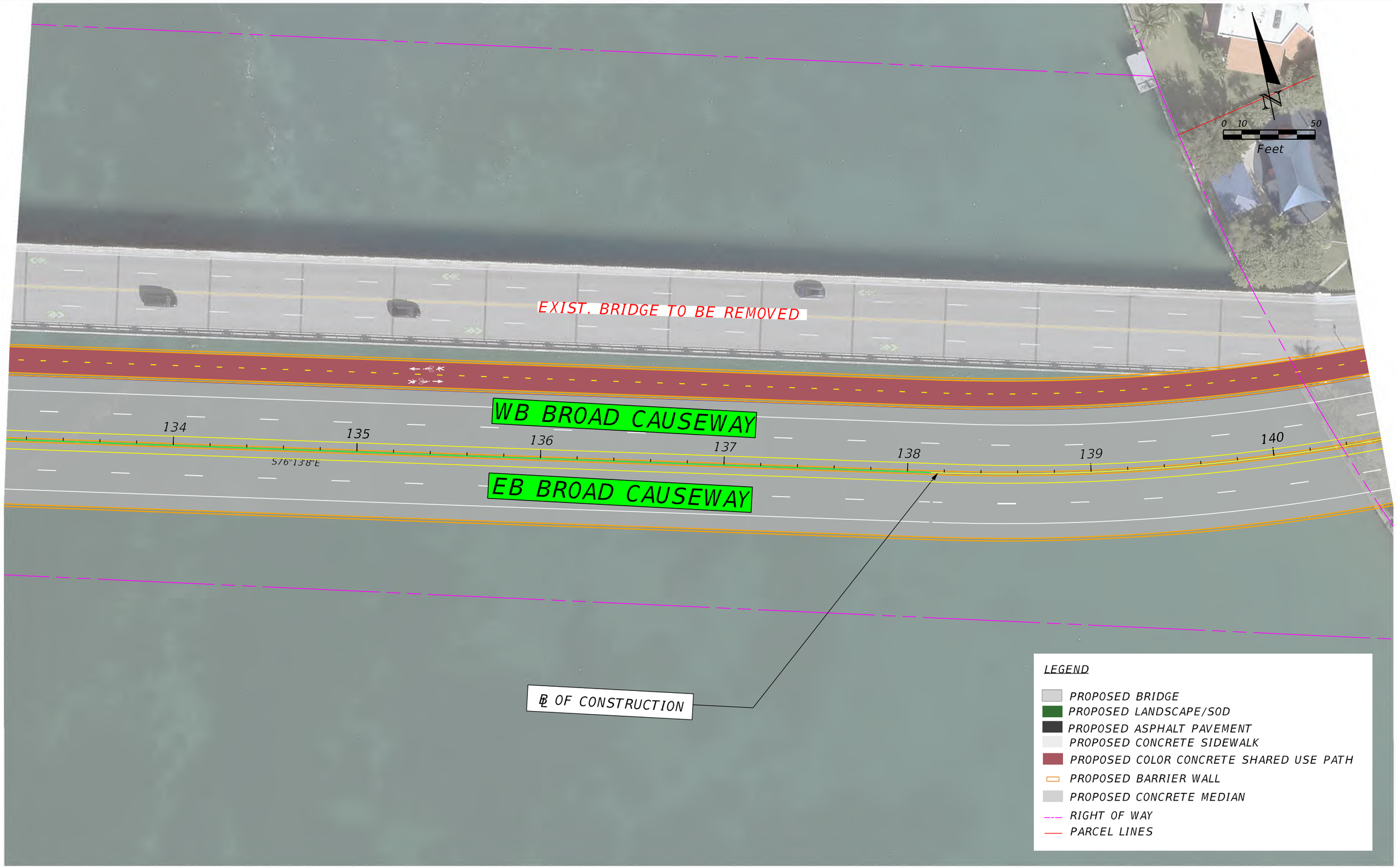

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

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BAY HARBOR ISLANDS TOT LOT

W. BROADVIEW DR.

℄ OF CONSTRUCTION

EXIST. BRIDGE TO BE REMOVED

KANE CONCOURSE

KANE CONCOURSE

141 142 143 144 145 146 147 148

END PROJECT CONSTRUCTION
STA. 145+56.01
MATCH EXISTING

END BRIDGE CONSTRUCTION
STA. 141+39.63

W. BROADVIEW DR.

N

0 10 50
Feet

LEGEND

- PROPOSED BRIDGE
- PROPOSED LANDSCAPE/SOD
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED COLOR CONCRETE SHARED USE PATH
- PROPOSED BARRIER WALL
- PROPOSED CONCRETE MEDIAN
- RIGHT OF WAY
- PARCEL LINES

NOTE: ALL EXISTING PAVEMENT WITHIN THE PROJECT LIMITS IS TO BE REMOVED

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

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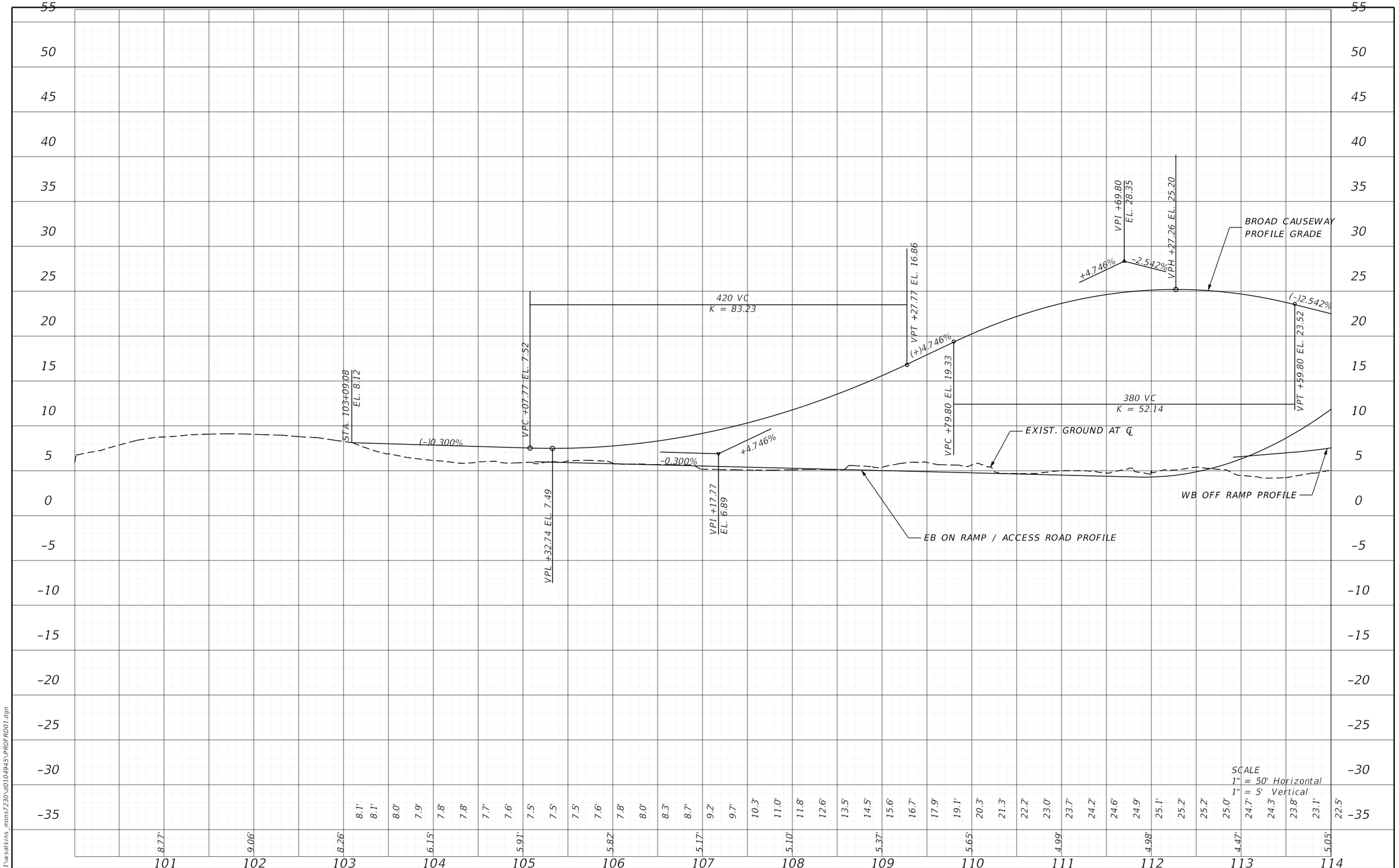

SCALE
1" = 50' Horizontal
1" = 5' Vertical

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

BROAD CAUSEWAY PROFILE

SHEET NO. 16

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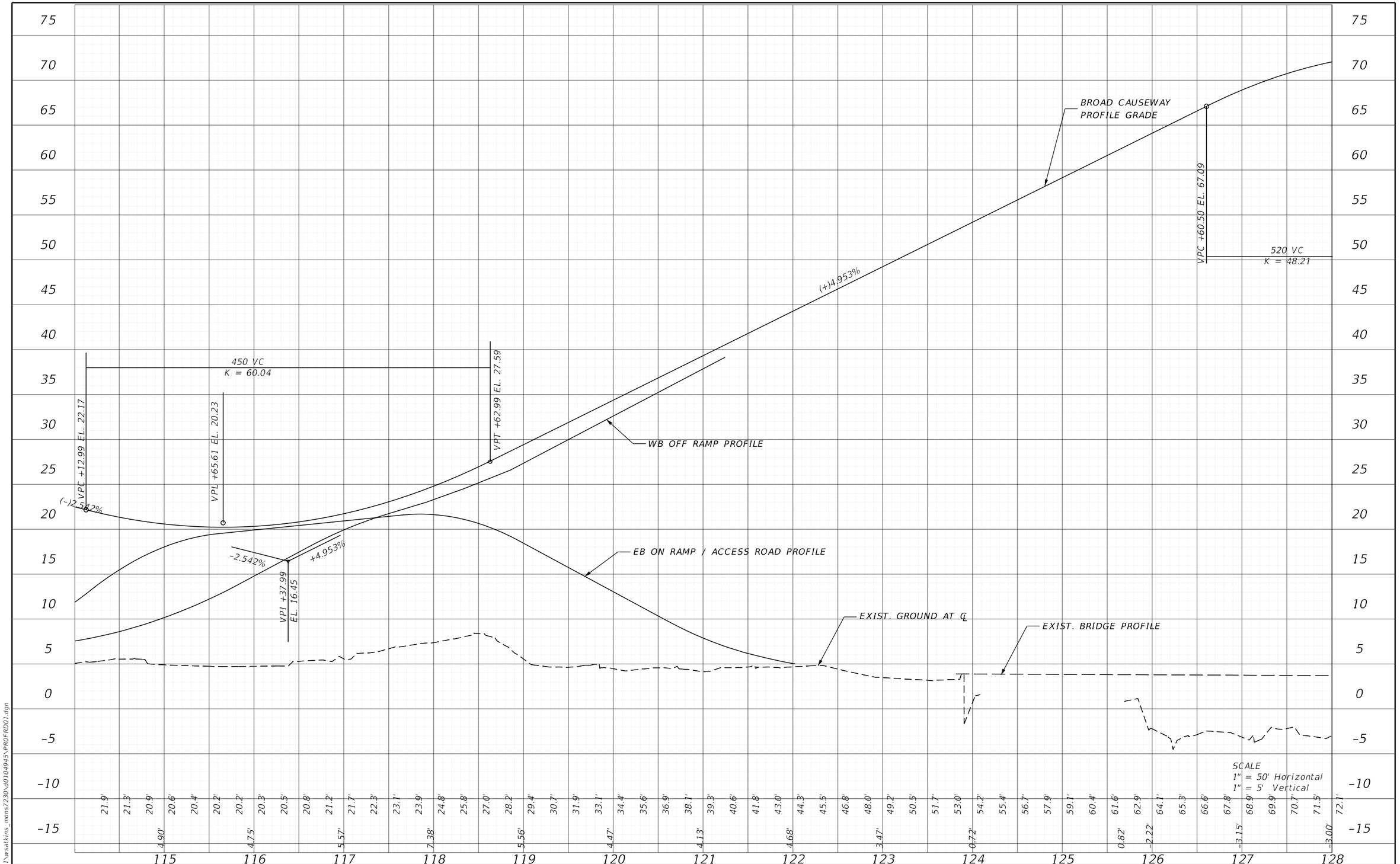

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

BROAD CAUSEWAY PROFILE

SHEET NO. 17

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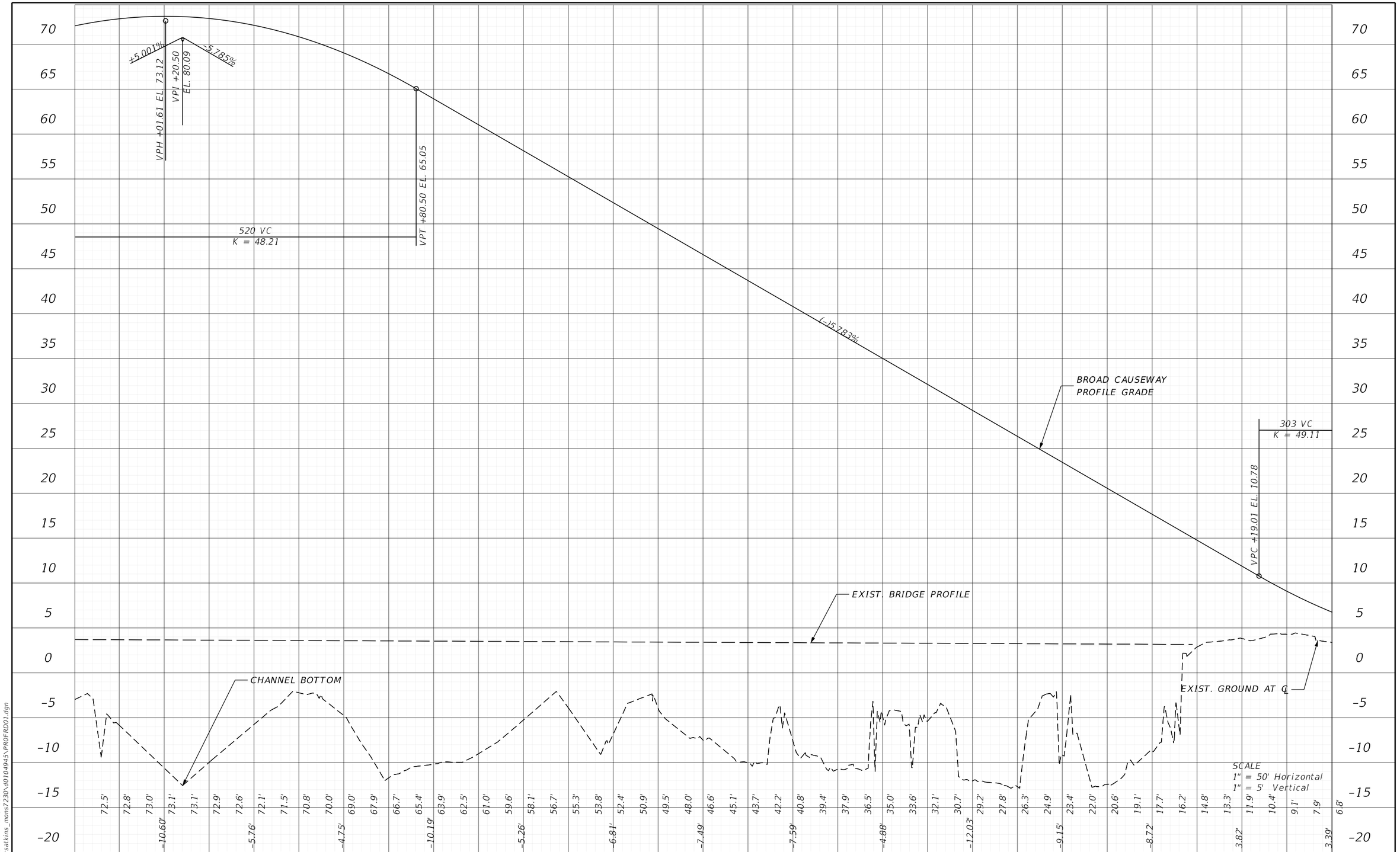

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

BROAD CAUSEWAY PROFILE

SHEET NO. 18

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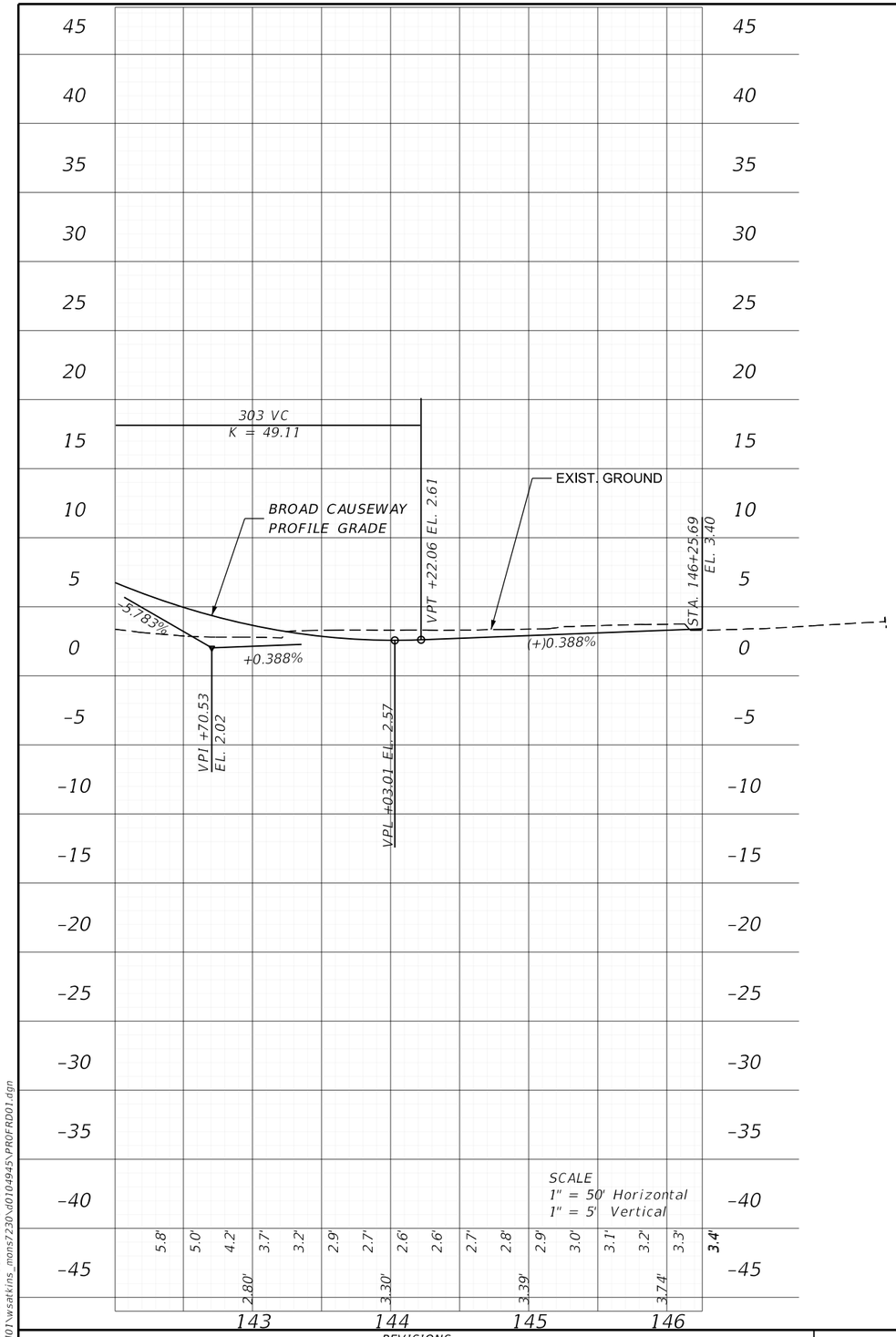

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN M. JENSEN
LICENSE NUMBER: 86609
ATKINS NORTH AMERICA, INC
800 WATERFORD WAY SUITE 700
MIAMI, FL 33126

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

BROAD CAUSEWAY PROFILE

SHEET NO. 19

11/16/2023 2:59:21 PM USER: MONS7230
c:\pw_work\atkinafl01\wsatkins_mons7230\d0104945\PROFRD01.dgn

BROAD CAUSEWAY
PROFILE GRADE

WB OFF RAMP PROFILE

EXIST. GROUND AT ℄ OF RAMP

STA. 312+83.25
EL. 6.50

(+)0.805%

VPC +58.09 EL. 7.10

225 VC
K = 49.24

VPT +83.46 EL. 14.08

(+)5.382%

VPI +70.74
EL. 8.01

+0.805%

+5.382%

VPI +99.71
EL. 20.33

+3.026%

VPC +54.71 EL. 17.91

90 VC
K = 38.20

VPT +44.71 EL. 21.69

(+)3.026%

STA. 317+87.88
EL. 23.00

(+)3.570%

STA. 318+30.56
EL. 24.52

(+)3.965%

STA. 318+82.85
EL. 26.60

(+)5.191%

SCALE
1" = 50' Horizontal
1" = 5' Vertical

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

N/A

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

WB OFF RAMP PROFILE

SHEET NO. 20

12/5/2023 4:32:23 PM MONS7230
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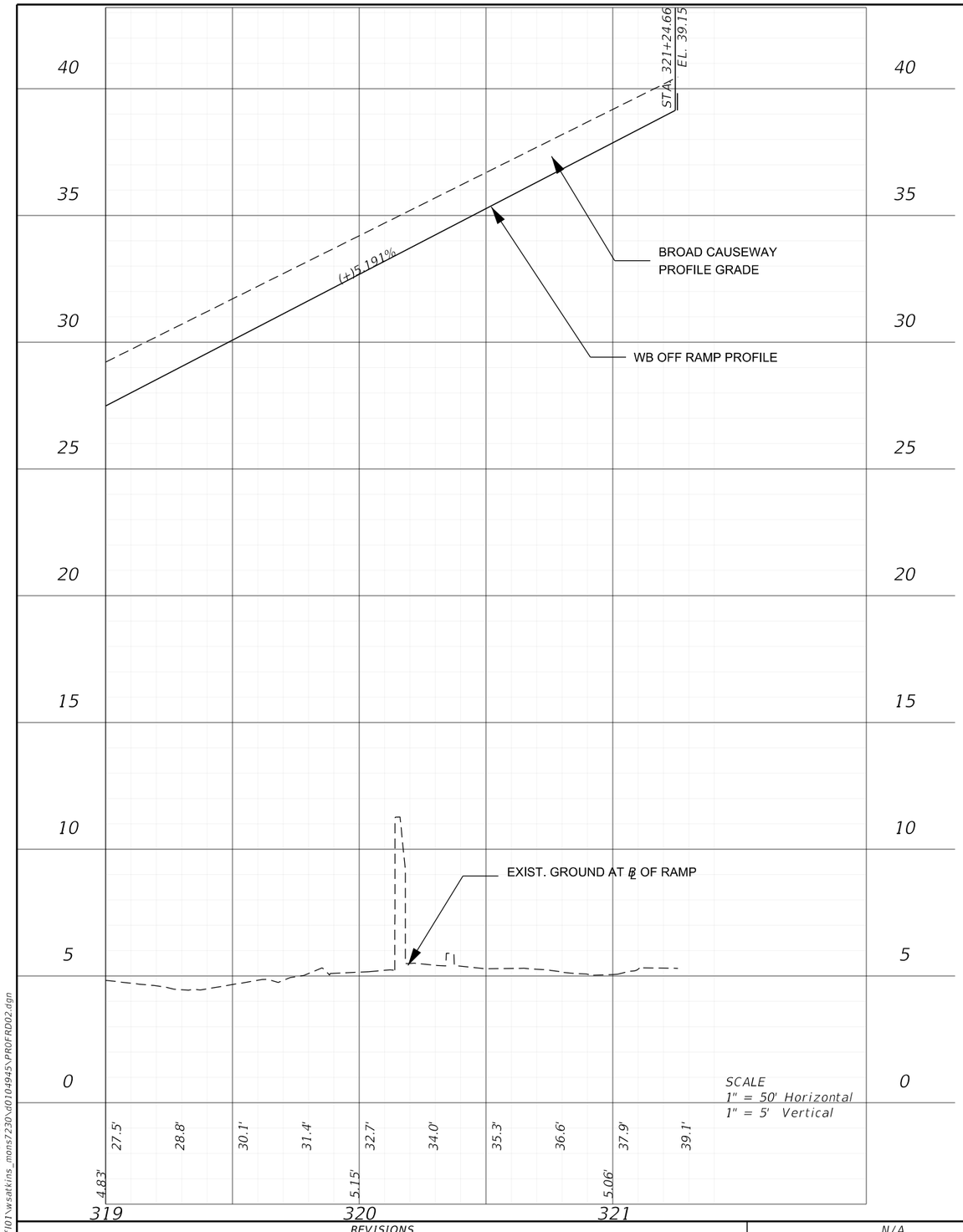

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

N/A

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

WB OFF RAMP PROFILE

SHEET NO. 21

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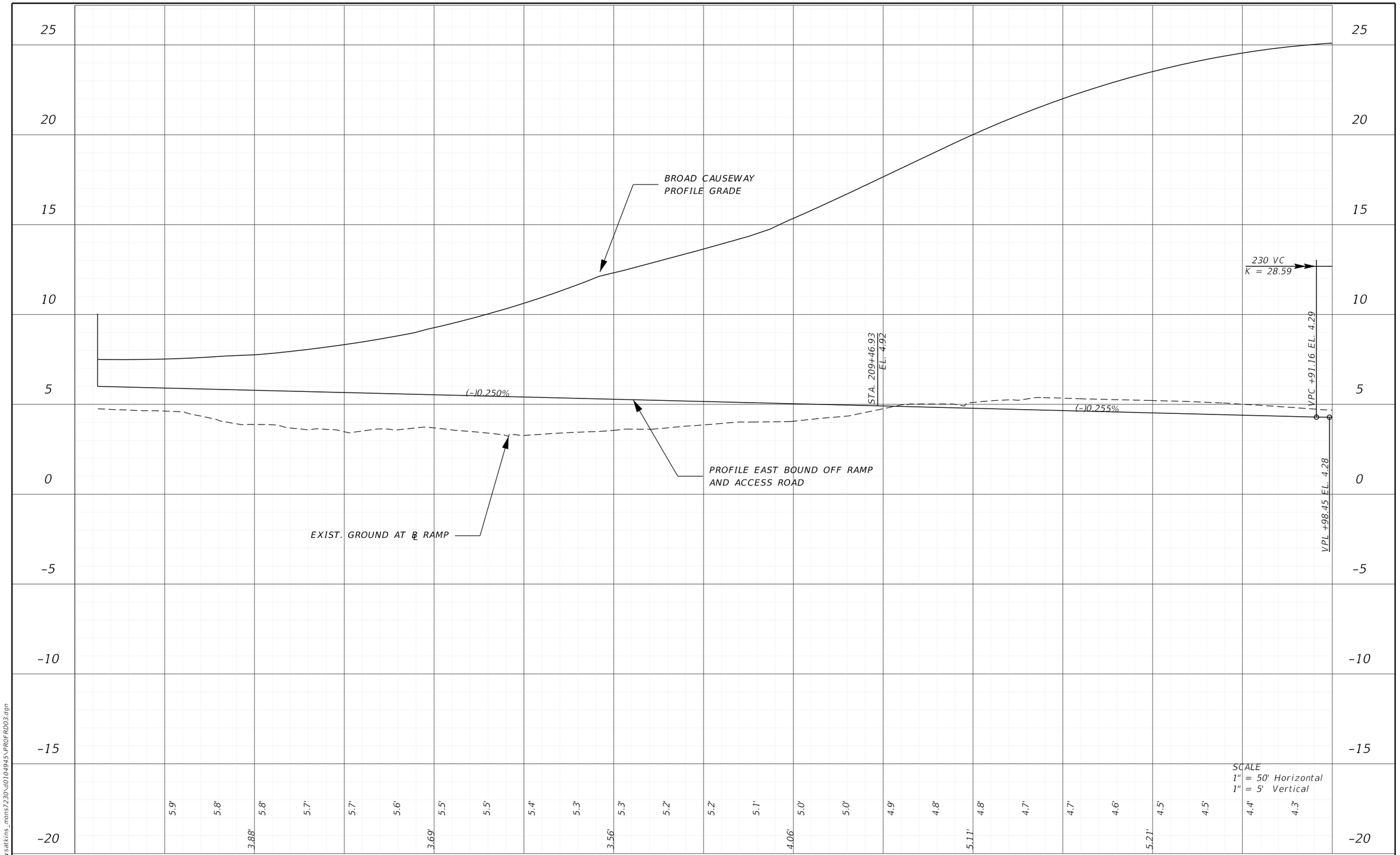

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

N/A

RYAN M. JENSEN
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

EB RAMP PROFILE

SHEET NO.
22

12/5/2023 4:32:37 PM MONS7230
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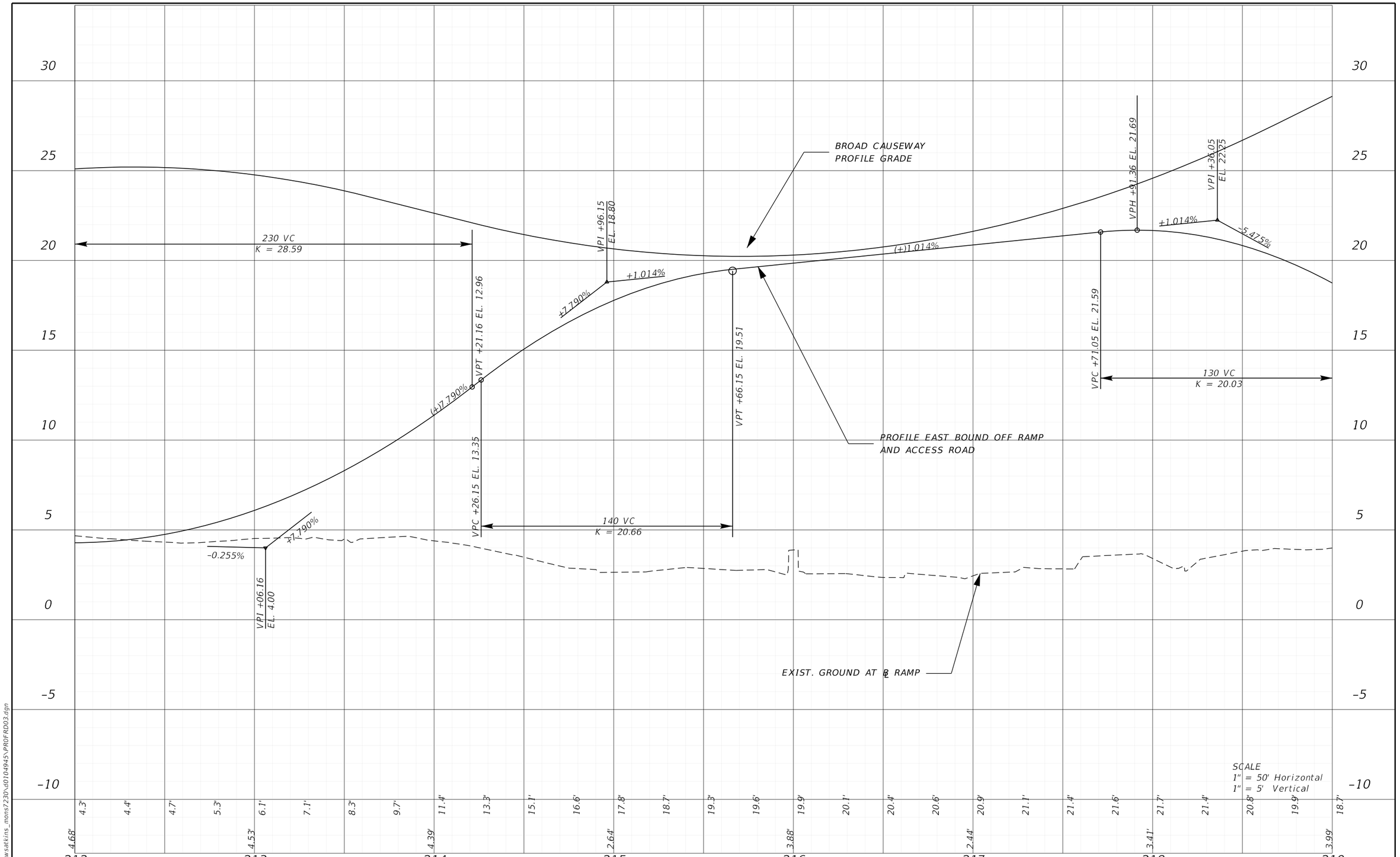

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

N/A

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-922	MIAMI-DADE	425428-1-21-01

EB RAMP PROFILE

SHEET NO. 23

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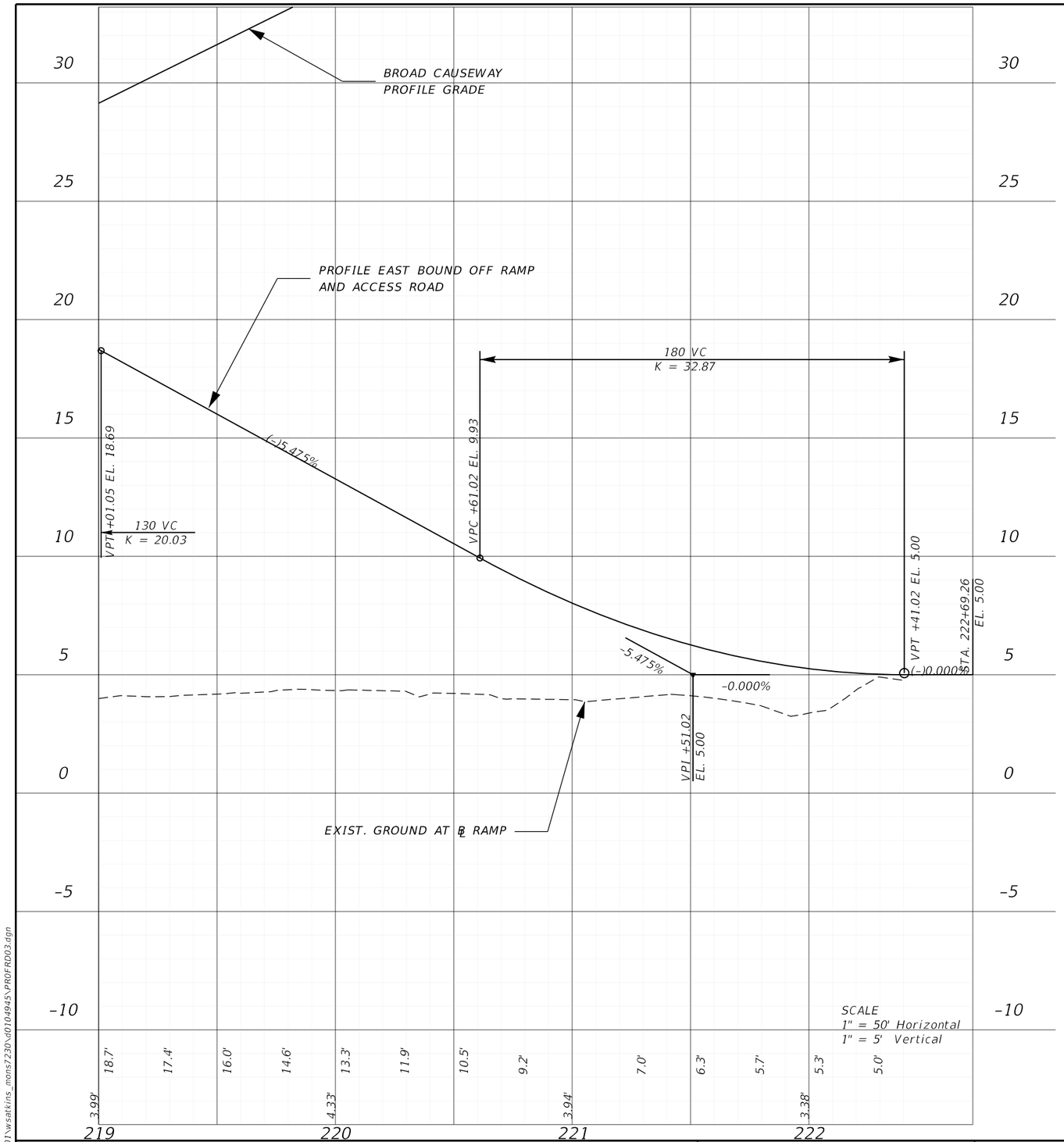

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

N/A

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EB RAMP PROFILE

SHEET NO. 24