

ENVIRONMENTAL IMPACT STATEMENT

SPACEX STARSHIP-SUPER HEAVY LAUNCH VEHICLE AT LAUNCH COMPLEX 39A

at the Kennedy Space Center, Merritt Island, Florida

Final, Volume II, Appendix B.3, Part 6

January 2026



**Federal Aviation
Administration**

THIS PAGE INTENTIONALLY LEFT BLANK.

TABLE OF CONTENTS

Appendix B	Regulatory Consultations	B-1
B.3	National Historic Preservation Act Section 106 Consultation (Florida SHPO)	B-1
B.3.1	NHPA Section 106 Programmatic Agreement	B-7
B.3.2	NHPA Section 106 Correspondence	B-37
B.3.3	NHPA Section 106 Cultural Resources Assessment.....	B-394

THIS PAGE INTENTIONALLY LEFT BLANK.

4 BACKGROUND RESEARCH

This section presents a synthesis of the background research that assisted in the development of the survey methodologies and provided data to support the results. The background research included research of the FMSF data from January 2025 to identify previously conducted cultural resource surveys and recorded cultural resources within the APE, previously recorded cultural resource surveys documented with KSC after 2001, Integrated Cultural Resources Management Plans (ICRMP) for NASA KSC and CCSFS, and historic maps and aerial photography.

4.1 PREVIOUSLY CONDUCTED CULTURAL RESOURCE SURVEYS

4.1.1 Cultural Resource Surveys Recorded in the FMSF

SEARCH determined 210 previous cultural resource surveys have been conducted within the APEs and are documented in the FMSF. These surveys are summarized in **Table 4-1**.

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
260	Cultural Resource Reconnaissance of Merritt Island National Wildlife Refuge	1978	Griffin, John W. and Miller, James J.
261	Archaeological Survey Report: NASA Space Shuttle Runway Project on Merritt Island, Florida	1973	Smith, Richard L.
421	Cultural Resource Assessment of Chemical Waste Disposal Facilities, Kennedy Space Center	1977	Martinez, Carlos A.
422	Cultural Resource Assessment of the Hypergol Logistics Facility, Kennedy Space Center	1977	Martinez, Carlos A.
498	Kennedy Space Center Chemical Waste Disposal Facilities	1979	Miller, James J.
516	Cultural Resource Potential of the Proposed Service Complex and Visitor Center, MINWR	1981	Miller, James J.
751	Archaeological and Historical Survey of the United Space Booster Facility Tract, Merritt Island	1982	Miller, James J.
961	Archaeological survey report: NASA Space Shuttle solid rocket booster facility site on Merritt Island, Florida	1974	Smith, Richard L.
1150	An architectural and engineering survey and evaluation of facilities at Cape Canaveral Air Force Station, Brevard County, Florida	1984	Barton, David F.
1339	Canaveral National Seashore: assessment of archaeological and historical resources.	1976	Ehrenhard, John E.
1545	Report of an archaeological site assessment survey on the Indian Bay Estates, Phase II project on Merritt Island, Florida	1988	Johnson, William G.
1567	Historic properties survey, Titusville, Florida	1987	Historic Property Associates, Inc.
1611	Cultural resources assessment of state project #70140-1514	1988	Browning, William D.
1675	Redfish hatcheries near Old Haulover Canal, Merritt Island National Wildlife Refuge, Titusville, Florida	1988	Ehrenhard, John E.
1676	A cultural resource survey of three project areas at Merritt Island National Wildlife Refuge, Brevard County, Florida	1988	Ehrenhard, John E.

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
2376	Archeological investigations of packages 107 and 300(1) Canaveral National Seashore, Brevard and Volusia Counties, Florida	1989	Bryne, Stephen C.
2391	Archaeological Assessment of Six Selected areas in Brevard County: A First Generation Model	1990	Bense, Judith A.
2410	An Archaeological Survey of Cape Canaveral Air Force Station, Brevard County, Florida	1984	Barton, David F.
2471	Archaeological survey to establish zones of archaeological potential (ZAPs) in the VAB and industrial areas of the Kennedy Space Center.	1990	Archaeological Consultants, Inc.
2689	Archaeological Survey for the VIP Viewing Area, Kennedy Space Center	1991	Deming, Joan G.
2775	Cultural Resource Assessment Survey of SR A1A from North 1st Street in Cocoa Beach to SR-400 in the City of Cape Canaveral, Brevard County, Florida	1991	McMurray, Carl
2844	Historic Building Survey: Merritt Island, Florida	1991	Historic Property Associates, Inc.
2860	Historic Resources Survey: Payload Spintest Facility, Cape Canaveral Air Force Station, Brevard County, Florida	1991	Neilson, Jerry
2947	Historic Resources Survey, Chemical Testing Laboratory, Wastewater Treatment Facility, Command Control Building Addition Fence, Cape Canaveral Air Force Station, Brevard County, Florida	1991	Neilson, Jerry
2992	Archaeological Survey for Established Zones of Archaeological Potential (ZAPs) in the Launch Complex Area (Option 1), of the Kennedy Space Center	1991	Deming, Joan G.
3271	Archaeological Survey to Establish Zones of Archaeological Potential (ZAPS) in the KSC North Area (Option 3) of the Kennedy Space Center	1992	Deming, Joan G.
3447	Archaeological Survey to Establish Zones of Archaeological Potential (ZAPS) in the Shuttle Landing and KSC South Area (Option 2) of the Kennedy Space Center	1991	Archaeological Consultants, Inc.
3664	Cultural Resource Assessment Survey of a Proposed Landfill Site, Kennedy Space Center, Brevard County, Florida	1993	Deming, Joan G.
3820	Historic Properties Survey, Cape Canaveral Air Force Station, Cape Canaveral, Florida	1993	Cantley, Charles E.
4045	An Archeological Site Assessment Survey of the Sandlake Estates Project, Brevard County, Florida	1994	Johnson, Robert E.
4129	Historic Properties Investigations of a Proposed Security Fence for Fuel Storage Area #1, Cape Canaveral Air Force Station, Brevard County, Florida	1988	Robinson, Neil D.
4491	Archaeological Survey of the Orbiter GSE Storage Facility Area, Order No. CC-77745B	1996	Deming, Joan G.
4598	Archaeological Survey of the Spoil Site 2B Construction Area	1996	Deming, Joan G.
5025	Submerged Historic Properties Survey, Canaveral Harbor Entrance Channel Widener, Brevard County, Florida	1997	Tubby, Raymond
5069	A Cultural Resource Assessment Survey of the Proposed BV-11 Dredged Material Management Area, Brevard County, Florida	1997	Ashley, Keith H.
5114	Archaeological Investigations within Florida Power & light Company's 115-kV Transmission Line Right-of-Way, Cape Canaveral Air Force Station, Brevard County, Florida	1996	Bellomo, Randy V.
5188	Underwater Archaeological Investigations of Four Potentially Significant Remote Sensing Targets, Canaveral Harbor Entrance Channel Widener, Brevard County, Florida	1998	Mid-Atlantic Technology

Background Research

4-2

SEARCH

CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025

Final Report

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
5474	Survey and Evaluation of the Historic Facilities within the Industrial, Launch Complex 39 (LC-39), Vehicle Assembly Building (VAB), and Shuttle Landing Facility (SLF) areas of the John F. Kennedy Space Center (KSC), Brevard County, Florida	1998	Delahaye, Daniel
5555	A Submerged Cultural Resources Remote Sensing Survey of Four Proposed Borrow Areas and Archaeological Diver Identification and Evaluation of Eight Potentially Significant Submerged Targets for the Brevard County Shore Protection Project	1999	Tubby, Raymond
5718	Cultural Resource Assessment Survey for the State Road (SR) 3 Design Project from SR 520 to SR 528 and the SR 3/SR 528 Interchange Project Brevard County, Florida	1998	JANUS Research
5840	Cultural Resources Assessment Survey of the Proposed Buccaneer Gas Pipeline, Florida [Volume 1: Final Report of Findings; Volume 2: Appendices]	2000	Estabrook, Richard W.
6591	Cultural Resource Assessment Survey for The SR528 Westbound Bridge Replacement in Brevard County, Florida	2000	JANUS Research
6619	Archaeological Investigations within the Enchanted Forest Sanctuary, Brevard County, Florida	2001	Newman, Christine
6730	Archaeological Diver Identification and Evaluation of Fourteen Potentially Significant Submerged Targets for the Brevard County Shore Protection Project, Brevard County, Florida	2000	Watts, Gordon
6850	Phase I Cultural Resource Survey of Florida Gas Transmission Company Phase VI Expansion Loop C, Loop D, Loop E, Leesburg Lateral Loop, Cape Kennedy Lateral Loop, and Stanton Lateral	2001	Pochurek, James
7456	A Cultural Resources Assessment Survey of the Proposed Merritt Glen Residential Subdivision, Merritt Island, Brevard County, Florida	2003	Penders, Thomas E.
7557	An Intensive Cultural Resource Assessment Survey of the Solana on the River Tract, Brevard County, Florida	2003	Handley, Brent
7651	Sunset Lakes - West Development Cultural Resources Study	2000	Ellis, Gary
7732	Cultural Resource Assessment Survey of the A. Max Brewer Bridge and Causeway (FDOT Bridge #: 704049, 704125, 704048) County: Brevard	2002	Daniel, Susan, Hochberg
7782	Cultural Resource Survey: Proposed Cell Tower #812297 Cape Canaveral, Brevard County, Florida	2001	Carlson, Betsy
7980	A Historical Reconnaissance Survey of the Proposed ME-025 Sand Point Tower Location in Brevard County, Florida	2001	Batategas, Juliet T.
8398	A Cultural Resources Reconnaissance Survey of the Cidco Road Tower Site County: Brevard	2001	Luxon, Tiffany L.
8821	An Intensive Cultural Resource Assessment Survey of the Willow Creek Commercial Center, Brevard County, Florida	2003	Handley, Brent
8846	An Archaeological Reconnaissance Survey of the Proposed Plantation Oaks Development, Titusville, Brevard County, Florida	2003	Penders, Thomas
9183	An Intensive Cultural Resource Assessment Survey of the Willow Creek Residential Tract, St. Johns County, Florida	2003	Handley, Brent
9548	An Intensive Cultural Resource Assessment Survey of the Riveredge Drive Property in Brevard County, Florida	2003	Handley, Brent M.
9619	Phase I Cultural Resource Survey of the Riverfront Development Property, Brevard County, Florida	2003	Stokes, Anne V.
10368	A Preliminary Archaeological Investigation of the Pine Island Conservation Area, Merritt Island, Brevard County, Florida	2004	Gross, Bob

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
10606	Assessment of Potential Effects upon Historic Properties: Proposed 150-Foot Marshall Manufacturing Wireless Telecommunications Tower (Verizon Wireless 082552-3), Brevard County, Florida	2004	Parker, Brian T.
10681	An Intensive Cultural Resource Assessment Survey of the Tico Tract, Brevard County, Florida	2004	Groff, Amanda T.
10889	A Cultural Resource Assessment Survey of the Proposed Preserve Pointe Residential Development, Merritt Island, Brevard County, Florida	2004	Penders, Thomas E.
11096	An Archaeological and Historical Survey of the Proposed Merritt Crossing Tower Location in Brevard County, Florida	2005	Hughes, Skye W.
11239	Multiple Property Submission for Historic Cultural Resources of the John F. Kennedy Space Center, Florida	1991	Delahaye, Daniel
11302	An Archaeological and Historical Survey of the Proposed Titusville-Cocoa Airport Tower Location in Brevard County, Florida	2005	Hughes, Skye W, RPA
11443	A Cultural Resource Assessment Survey of the Winslow Beach Tract Brevard County, Florida	2005	Nash, Jennifer L.F.
11516	Archaeological Remote Sensing Survey and Diver Investigation of a Proposed Sediment Trap at Port Canaveral South Jetty, Brevard County, Florida	2005	Tubby, Raymond
11594	Cultural Resource Assessment Survey for the State Road 528 PD&E Study from State Road 520 to the Port Canaveral Terminal B Interchange, Orange and Brevard Counties	2005	JANUS Research
12204	A Cultural resources Assessment Survey of Brooks Landing, Brevard County, Florida	2005	Penders, Thomas E.
12460	A Cultural Resources Assessment Survey of Mission Estates, Merritt Island, Brevard County, Florida	2005	Penders, Thomas E.
12463	A Cultural Resource Assessment Survey of the Enchanted Oaks Project Area in Brevard County, Florida	2006	Hughes, Skye W.
12927	Cultural Resource Assessment Survey of I-95 from SR50 in Volusia County to North of SR600/US92 in Brevard County Project Development and Environment Study	2006	Chambless, Elisabeth
13048	Cultural Resources Survey and Assessment MC Cotter Property Brevard County, Florida	2006	Dickinson, Martin F.
13111	A Phase I Archaeological Assessment of the NOTU Site, 8BR1641, Brevard County, Florida	2006	Stickler, Justin
13215	Phase I Archaeological Survey NRO Substation at Cape Canaveral Air Force Station, Brevard County, Florida	2006	Smith, Greg C.
13600	Launch Complex 21/22 District, Cape Canaveral Air Force Station, Brevard County, Florida	2006	Penders, Thomas E.
13673	A Cultural Resources Assessment Survey of the Proposed Enhanced use Lease Agreement North Campus, Cape Canaveral Air Force Station, Brevard County, Florida	2006	Penders, Thomas E.
13707	Pine Island Conservation Area Archaeological Project, Merritt Island, Brevard County, Florida Season 2 Report Sams Creek Fossil Site (8 BR 1890)	2006	Penders, Thomas E.
13871	An Intensive Cultural Resource Assessment Survey of the Cabo Verde Tract, Brevard County, Florida	2006	Nash, Jennifer L.F.
13917	A Cultural Resources Assessment Survey of the Proposed Industrial Area Stormwater Retention Pond, Cape Canaveral Air Force Station, Florida	2007	Penders, Thomas E.
13925	Addendum Corridor Study NRO Substation at Cape Canaveral, Brevard County, Florida	2006	Smith, Greg C.

Background Research

4-4

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
14021	Archaeological Survey Report: NASA Space Shuttle Runway Project on Merritt Island, Florida	1973	Smith, Richard L.
14073	Section 106 Review of Proposed Tower Site Verizon Wireless Personal Communications LP Tower Site - Kennedy Space Center (No. 082525-1) Kennedy Space Center, Merritt Island, Brevard County, Florida	2006	Florida Archaeological Consulting, Inc.
14138	Historic Properties Survey Cape Canaveral Air Station, Brevard County, Florida	1994	Cantley, Charles E.
14176	A Cultural Resources Assessment Survey of the Proposed Mitchell Ellington Park, Merritt Island, Brevard County, Florida	2004	Penders, Thomas E.
15146	A Cultural Resource Assessment Survey of 20 Acres within the Magruder-Smith Farms, Inc. Property, Brevard County, Florida	2008	Arbuthnot, Michael A.
15805	Cultural Resource Review for the FPL Cape Canaveral Plant	2008	Janus Research
15836	An Archaeological and Historical Survey of the Water Mark Estates Project Area in Brevard County, Florida	2008	Carty, Thomas J.
15892	An Archaeological and Historical Survey of the 10019999 - NASA Traffic Tower in Brevard County, Florida FCC Form 620	2008	Bland and Associates, Inc.
15932	Cultural Resource Assessment Survey of the Proposed Commercial Vertical Launch Complex at the John F. Kennedy Space Center Brevard County, Florida	2008	ACI
16157	Archaeological Survey to Establish Zones of Archaeological Potential in the KSC North Area (East of State Road 3) (Basic Contract Area) of the Kennedy Space Center	1996	Deming, Joan
16231	Determination of Eligibility for Launch Complex 25/29, Cape Canaveral Air Force Station, Brevard County, Florida	2010	Penders, Thomas E.
16377	A Cultural Resources Assessment Survey of the Pritchard House (8 BR 524 & 8 BR 1964), Titusville, Florida	2009	Penders, Thomas E.
16535	Pine Island Conservation Area Archaeological Project, Merritt Island, Brevard County, Florida 2003-2008 Volume I: Report Volume II: Appendices	2009	Austin, Robert
16559	A Cultural Resource Magnetometer Survey of Coastal Waters, Vicinity of Cape Canaveral, Brevard County, Florida	2000	Oceanic Retrievals, Inc.
16800	Level II Documentation of Launch Complex 31/32, Cape Canaveral Air Force Station, Florida	2008	Enscore, Susan I.
17298	A Cultural Resources Assessment Survey of Land Management Unit 89, Cape Canaveral Air Force Station, Brevard County, Florida	2010	Penders, Thomas E.
17299	A Cultural Resources Assessment Survey of Land Management Units 75 and 157, Cape Canaveral Air Force Station Brevard County, Florida	2010	Penders, Thomas E.
17300	A Cultural Resources Assessment Survey of Land Management Unit 109, Cape Canaveral Air Force Station, Brevard County, Florida	2010	Penders, Thomas E.
17406	Trip Report on archeological site identification and marking prior to the demolition of the dikes around the T41, T42, and T43 mosquito control impoundments at Canaveral National Seashore, Brevard County, Florida, Oct. 13-15, 2009. SEAC ACC. 2270	2009	Lawson, Charles F.
17665	A Cultural Resources Assessment Survey of Land Management Unit 84, Cape Canaveral Air Force Station, Brevard County, Florida	2010	Penders, Thomas E.
17880	Cultural Resources Evaluations of the Original Lighthouse Site (8BR234), the Cape Canaveral Lighthouse Site (BR212), and the New Lighthouse Site (BR1660), Cape Canaveral Air Force Station, Brevard County, Florida	2006	Baxter, Carey L.

October 2025
Final ReportSEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida**Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.**

FMSF No.	Title	Year	Consultant/Author
18019	Phase I Cultural Resource Assessment Survey of the East Central Florida Regional Rail Trail in Brevard and Volusia Counties, Florida	2010	Brouwer, Kaitlyn T.
18046	Historical Survey and Evaluation of the Space Station Processing Facility, John F. Kennedy Space Center, Brevard County, Florida	2010	Deming, Joan
18077	A Cultural Resources Assessment Survey, Jupiter Missile Crash Site (8BR2087), Cape Canaveral Air Force Station Brevard County, Florida	2010	Penders, Thomas E.
18367	Proposed 150-Foot Overall Height Monopole Telecommunications Structure	2011	Bazzill, Dina M.
18826	A Cultural Resource Assessment Survey of Land Management Unit 5, Cape Canaveral Air Force Station, Brevard County, Florida	2012	Penders, Thomas E.
18829	A Cultural Resource Assessment Survey of Land Management Unit 6, Cape Canaveral Air Force Station, Brevard County, Florida	2011	Penders, Thomas E.
18917	A Cultural Resources Magnetometer Survey of Coastal Waters, Vicinity of Cape Canaveral, Brevard County, Florida	2004	T9S, Inc.
19482	Historical Survey and Evaluation of the Jay Jay Bridge, Railroad System, and Locomotives, John F. Kennedy Space Center, Brevard County, Florida	2012	Archaeological Consultants, Inc.
19642	Determination of Eligibility for Area 55: Delta Operations Support Area, Cape Canaveral Air Force Station, Brevard County, Florida	2012	Penders, Thomas E.
19644	Determination of Eligibility for the Facility 49800: Heavy Equipment Shop (8BR2480), Cape Canaveral Air Force Station, Brevard County, Florida	2012	Penders, Thomas E.
19775	Cultural Resource Assessment Survey of the Florida Power & Light Company (FPL) Cape Canaveral Energy Center Project: Brevard County	2009	Janus Research
20016	Cultural Resource Assessment of Proposed Navigation Improvements Canal Port Authority of Port Canaveral, Brevard County, Florida	2007	Terzis, Lee
20233	A Cultural Resources Assessment Survey FP&L Substation South Location, Cape Canaveral Air Force Station, Brevard County, Florida	2010	Penders, Thomas E.
20495	Cultural Resource Assessment Report for the All-Aboard Florida Passenger Rail Project from Orlando to West Palm Beach	2013	Janus Research
20582	A Phase I Cultural Assessment Survey of the Proposed Payload Processing Operations Facility, Cape Canaveral Air Force Station, Brevard County, Florida	2005	Koski, Steven
20609	A Cultural Resource Assessment Survey of the Flores Del Sol Project Area in Brevard County, Florida	2013	Mikell, Gregory
20733	A Cultural Resource Assessment Survey of the Proposed Precision Fabricating and Cleaning Site Improvements, Cocoa, Brevard County, Florida	2014	Penders, Thomas E.
20744	Architectural Survey and Evaluation of 45 Facilities that have reached the age of 45-50 years, John F. Kennedy Space Center, Brevard County, Florida	2013	Price, David L.
20760	Architectural Survey and Evaluation of NASA- owned Facilities at Cape Canaveral Air Force Station	2013	Price, David L.
20766	A Cultural Resources Assessment Survey for the New Space X Hangar Complex, Cape Canaveral Air Force Station, Brevard County, Florida	2013	Penders, Thomas E.
20772	Determination of Eligibility for the Launch Complex 5/6 Spin Test Facility, Cape Canaveral Air Force Station, Brevard County, Florida	2014	Penders, Thomas E.
20796	Determination of No Adverse Effect: Painting of Four Facilities within the Cape Canaveral Air Force Station (CCAFS) Industrial Area, CCAFS, Brevard County, Florida	2014	Penders, Thomas E.
20863	Cultural Resource Assessment Survey of the Proposed TMDL Pond, Cape Canaveral Air Force Station, Brevard County, Florida	2013	Arbuthnot, Michael

SEARCH

CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025

Final Report

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
20929	A Cultural Resources Assessment Survey of Land Management Units 50 and 166, Cape Canaveral Air Force Station, Brevard County, Florida	2014	Penders, Thomas E.
20957	Submerged Cultural Resources Remote Sensing Survey of the Canaveral Shoals Borrow Areas 1 & 2, Brevard County, Florida	2013	Faught, Michael K.
21128	GME Global Marine Exploration, Inc. Remote Sensing Archaeological Survey Report Permit #2014.01 - Brevard County, Florida	2014	Global Marine Exploration, Inc.
21172	Cultural Resource Assessment Survey for the Proposed Falcon Vertical Landing Site, Cape Canaveral Air Force Station, Brevard County, Florida	2014	Penders, Thomas E.
21251	Historic Properties Investigations of Centaur Processing Facility Interim Spin Test Facility Missile Assembly Building Parking Cape Canaveral Air Force Station Brevard County, Florida	1990	U.S. Army Corps of Engineers
21470	Proposed 150-Foot Overall Height Monopole Telecommunications Structure	2014	Beazley, Matthew
21513	Submerged Cultural Resources Remote Sensing Survey and Diver Identifications, 21st Century Channel, Port Canaveral, Brevard, Florida	2014	Gifford, Matt
21561	The Dunal Ridge Midden (8 BR 3274): a Phase I Investigation of the B&B Enterprises/Cumberland Farms Tract-an Addendum to Environmental Services Inc.'s 2006 Report on the Cabo Verde Tract (FMSF #13871)	2015	Brech, Alan
21579	City of Titusville CRA Historic Property Survey, Brevard County, Florida	2012	JANUS Research
21667	Determination of Eligibility for Launch Complex 20 (8BR3272), Cape Canaveral Air Force Station, Brevard County, Florida	2015	Penders, Thomas E.
22210	A Beach-Face Magnetometer Survey at Canaveral National Seashore: A Regional Archaeological Survey Program Project	1998	Brewer, David
22248	Phase I Cultural Resource Assessment Survey of the Space Coast Regional Airport, Brevard County, Florida	2015	Archaeological Consultants, Inc.
22417	Year End Summary of Activities and Archaeological Assessment of a Suspected Historic Period Shipwreck "Lantana Site" 2012.06	2014	Sinclair, James
22418	Dig and Identify Report 06-19-2015 through 09-31-2015 Permit #2015.02 - Brevard County, Florida	2015	Pritchett, Robert
22419	Dig and Identify Report 06-19-2015 through 09-31-2015 Permit #2015.02 - Brevard County, Florida	2015	Pritchett, Robert
22420	Remote Sensing Archaeological Survey Report Permit #2015.04 - Brevard County, FL	2015	Pritchett, Robert
22421	Remote Sensing Cultural Resources Survey Report & Request for Dig ID and Addendum	2015	Pritchett, Robert
22422	Archaeological Dig and Identify Report for Permit #2014.01 - Brevard County, Florida	2014	Pritchett, Robert
22423	Supplemental Dig and Identify Report Update #2 Final Report 03-30-2015 through 04-04-2015 Permit #2014.01 - Brevard County, Florida	2014	Pritchett, Robert
22424	Remote Sensing Archaeological Survey Permit #2014.01 - Brevard County, FL Final Report / Request for Dig & Identify Addendum	2014	Pritchett, Robert
22425	Remote Sensing Archaeological Survey Report Permit #2015.03 - Brevard County, FL	2015	Pritchett, Robert
22465	Cultural Resource Assessment Survey of the Proposed FPL Mars Substation at the John F. Kennedy Space Center, Brevard County, Florida	2015	Archaeological Consultants, Inc.
22500	Remote Sensing Archaeological Survey Permit #2014.05 - Brevard County, FL Final Report / Request for Dig & Identify Addendum	2014	Pritchett, Robert
22501	Dig and Identify Report 10-17-2015 through 06-14-2015 Permit #2014.05 - Brevard County, Florida	2015	Pritchett, Robert

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
22502	Remote Sensing Archaeological Cultural Resource Survey Report Permit #2014.06 - Brevard County Florida	2014	Pritchett, Robert
22503	Dig and Identify Report 05-13-2015 through 07-05-2015 Permit #2014.06 - Brevard County, Florida	2015	Pritchett, Robert
22746	Inventory and Evaluation of Buildings in the Industrial Area, Cape Canaveral Air Force Station	2015	Enscore, Susan I.
23234	TECHNICAL MEMORANDUM: MARINE REMOTE-SENSING SURVEY OF SR 528 FROM WEST OF SR 524 (INDUSTRY ROAD) TO EAST OF SR 3 AND SR 528 FROM EAST OF SR 3 TO PORT CANAVERAL INTERCHANGE BREVARD COUNTY, FLORIDA	2016	Hanks, Matthew
23537	Phase I Archaeological Survey of Biolab Boat Ramp Project, Merritt Island National Wildlife Refuge, Brevard County, Florida: Negative Finding Report	2015	Kanaski, Richard S.
23553	Cape Canaveral Air Station Launch Complexes 11 and 36 Phase I Cultural Resources Assessment Survey	2016	Healey, Martin
23563	TECHNICAL MEMORANDUM: CULTURAL RESOURCE ASSESSMENT SURVEY OF STATE ROAD 528 FROM EAST OF STATE ROAD 3 TO PORT CANAVERAL INTERCHANGE, BREVARD COUNTY, FLORIDA	2016	Dye, Melissa
23663	Phase I Archaeological and Historical Survey, Forest Trace Subdivision, Brevard County, Florida	2017	Mikell, Gregory A.
24166	Cultural Resources Assessment Surveys for the Proposed Skid Strip Area Development Plan, Cape Canaveral Air Force Station, Brevard County, Florida Volume I: Report, Volume II: Supporting Documents	2017	Penders, Thomas E
24358	Cultural Resource Reconnaissance Survey for the Hopkins Avenue Complete Streets Project, City of Titusville, Brevard County, Florida	2017	Armstrong, Kirsten
24478	Phase I Archaeological Testing for Visitor Center at Merritt Island National Wildlife Refuge, Brevard County, Florida - A Negative Findings Report	2017	William Brant
24494	Archaeological Survey and Evaluation for the Post-Hurricane Sandy Dune Repair Project, John F. Kennedy Space Center, Brevard County, Florida	2013	Deming, Joan
24517	Phase I Cultural Resources Assessment Survey of Florida Power and Light Glenn Substation and Transmission Lines Right-of-Way Corridor, Cape Canaveral Air Force Station, Brevard County, Florida	2017	Banguilan, Alvin
24721	3D Digital Documentation of Historic Launch Complex Structures at CCAFS: A Workflow Methodology for Cultural Resource Documentation LCA. 19 and LC34 Areas of Interest	2016	Collins, Lori
24848	A CULTURAL RESOURCE ASSESSMENT SURVEY OF LUNA TRAILS BREVARD COUNTY, FLORIDA	2017	Handley, Brent
25006	Cape Canaveral Air Force Station Launch Complex 34 Hot Spot Area 6 Cultural Resource Assessment Survey	2018	Lackett, Matthew M.
25307	City of Titusville Survey of Historical Resources	2017	Meghan Powell
25528	A CULTURAL RESOURCES ASSESSMENT SURVEY FOR THE PROPOSED BLUE WATER POINTE DEVELOPMENT, MERRITT ISLAND, BREVARD COUNTY, FLORIDA	2017	Penders, Thomas E.
25799	Cold War Era Historic Architectural Survey for the CCASF, Brevard County, Florida	2018	Ellen Turco
25880	Cultural Resource Assessment Survey of the NASA Causeway Bridge Project Development and Environment (PD&E) Study, FM No. 440424-1-22-01, Brevard County, Florida	2018	JANUS Research

Background Research

4-8

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
25916	Phase I Cultural Resources Assessment Survey, 101 and 131 River Park Boulevard Titusville, Brevard County, Florida	2019	Ben DiBiase
25935	Canaveral Harbor Sand Bypass Submerged Cultural Resources Survey and Archaeological Reconnaissance Survey, Brevard County, Florida	2018	Gifford, Erica K.
26082	CULTURAL RESOURCE ASSESSMENT SURVEY OF SR 528 FROM EAST OF SR 524 (INDUSTRY ROAD) TO EAST OF SR 3, BREVARD COUNTY, FLORIDA	2019	Armstrong, Kirsten
26120	A Cultural Resources Assessment Survey of the Armen Grove Project Parcel, Smith Road, N. Merritt Island, Brevard County, Florida	2019	Mankowski, Joseph F.
26191	Cultural Resource Reconnaissance Survey for the State Road 528 over Indian River and Banana River Relief Bulkhead Repair, Brevard County, Florida	2019	Armstrong, Kirsten
26235	Cultural Resource Reconnaissance Survey for the State Road 3 Improvements Project, Brevard County, Florida	2019	Fish, Jessica
26295	A Cultural Resources Assessment for the Proposed Silver Horseshoe Development Archaeological Survey, Merritt Island, Brevard County, Florida	2019	Penders, Thomas E.
26641	Cultural Resource Assessment Survey of the Space Coast Trail within the Merritt Island National Wildlife Refuge and the Canaveral National Seashore, Brevard and Volusia Counties, Florida	2018	Archaeological Consultants Inc.
26676	An Archaeological Investigation of Cape Fish Company (8BR239) and Surrounding Area on Cape Canaveral Air Force Station, Brevard County, Florida	2019	Collins, Lori D.
26677	An Archaeological Survey South of Launch Complex 37 [Land Management Units 8-12] at Cape Canaveral Air Force Station, Brevard County, Florida	2019	Collins, Lori D.
26810	Cultural Resource Assessment Survey of the Discovery Solar Energy Center Property, Brevard County, Florida	2019	Archaeological Consultants Inc.
27093	Cultural Resources Assessment Survey, City Point to South Cape Transmission Line Pole Locations 87F11A/F11, 88F3A and 89F10A/F10, Brevard County, Florida	2020	Wayne, Lucy B.
27137	Technical Memorandum: Cultural Resource Assessment Survey in Support of the Florida Coast to Coast Trailhead at Parrish Park, Brevard County, Florida	2020	Bennett, Sarah
27192	Global Marine Exploration, Inc. Dig and Identify Report 08-19-2015 through 09-19-2015 Permit # 2015.04 - Brevard County, Florida	2015	Global Marine Exploration Inc.
27193	Global marine Exploration, Inc. Remote Sensing Survey Report Permit #2015.03 - Brevard County, Florida. Addendum Request	2015	Global Marine Exploration, Inc.
27491	A Cultural Resources Assessment for the Proposed Outback Reserve Development, Merritt Island, Brevard County, Florida	2020	Penders, Thomas E.
27494	Cultural Resources Assessment Survey (CRAS) Prior to Contaminated Soil Removal at Cape Canaveral Air Force Station Launch Complex 41, Brevard County, Florida	2020	Bach, Jaime
27738	Phase I Archaeological Survey of 2138.3 Acres at Cape Canaveral Air Force Station, Brevard County, Florida	2019	Brian Snyder
27798	Historic Building Inventory and Evaluation of Space Launch Complexes 37, 40, 41, and 46, Cape Canaveral Space Force Station, Brevard County, Florida	2021	Andrew B. Orr
27855	Cultural Resource Assessment Survey of the Tulsa Barna-Roadway Improvement Area, Brevard County, Florida IO#T24103	2020	Archaeological Consultants, Inc.
27962	Phase I Cultural Resources Assessment Survey along ICBM Road, Cape Canaveral Air Force Station, Brevard County, Florida	2020	Collins, Lori
27963	Canaveral Harbor Sand Bypass, Submerged Cultural Resources Survey and Diver Identification and Evaluation, Brevard County, Florida	2021	Gifford, Erica K.

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-1. Previous Cultural Resources Assessment Surveys recorded in the FMSF within the APEs.

FMSF No.	Title	Year	Consultant/Author
28010	Cultural Resource Assessment Survey for Space Commerce Way from NASA Parkway West to Kennedy Parkway, Brevard County, Florida	2022	IANUS Research
28044	Cultural Resource Assessment Survey in Support of the SR 401 Bridge Replacements Project Development and Environment (PD&E) Study, Brevard County, Florida	2022	Angela Matusik
28057	Cultural Resource Assessment Survey in Support of the State Road A1A Urbanization Project, Brevard County, Florida	2021	Angela Matusik
28108	Phase I Cultural Resources Assessment Survey of Exploration Park North Expansion EA Brevard County, Florida	2020	Lombardi, Kathryn
28168	An Archaeological Reconnaissance Survey for the Proposed Parrish Landing Development, Mims, Brevard County, Florida	2021	Penders, Thomas E.
28176	Cultural Resource Assessment Survey in Support of the State Road (SR) Improvements, Brevard County, Florida	2022	Matusik, Angela
28260	Phase I Cultural Resources Assessment Survey of Land Management Units 13-17, Cape Canaveral Space Force Station, Brevard County, Florida	2020	Collins, Lori
28287	Cultural Resource Assessment Survey for the SR 5 Lighting Project, Brevard County, Florida	2022	Matusik, Angela
28520	Cultural Resources Assessment Survey, Pine Island Road, Brevard County, Florida.	2022	Rudewicz, Joel D.
28952	A Cultural Resources Assessment Survey of Five Improvement Locations on the NASA Causeway, Brevard County, Florida	2020	Mark F. Martinkovic
28954	Cultural Resource Assessment Survey of the Proposed International Space Research Park at the John F. Kennedy Space Center, Brevard County, Florida	2004	Archaeological Consultants, Inc.
28963	Cultural Resource Assessment Survey Saturn Substation and Distribution Project in Brevard County, Florida	2023	Archaeological Consultants, Inc.
28997	Cultural Resource Assessment Survey for ITS Improvements on Movable Bridges on SR 3, SR 40, and SR 44, Brevard, Lake, and Volusia Counties, Florida	2023	Matusik, Angela
29098	Phase I Cultural Resources Assessment Survey of the DNC Retail Warehouse Pre-Con Site, Brevard County, Florida	2023	Zieschang, Elizabeth
29158	Cultural Resource Assessment Survey for the Districtwide Rumble Stripes Bundle 5A, Brevard, Orange, and Seminole Counties, Florida	2023	Matusik, Angela
29255	Cultural Resource Assessment Survey of SR 5 (US 1) at Fay Boulevard, Brevard County, Florida	2022	Matusik, Angela
29357	Final Cultural Resources Technical Report Reactivation of Space Launch Complex 14, Cape Canaveral Space Force Station, Brevard County, Florida	2024	Penders, Thomas E.
29388	Cultural Resource Assessment Survey for SR 5 at US 1 Southbound Lanes from the Florida East Coast Railway Bridge to Grace Road Brevard County, Florida	2024	Ferlend, Kyle
29422	Cultural Resources Assessment Survey for the Roberts Road North Expansion Area and NASA Parkway Connector at Kennedy Space Center, Brevard County, Florida	2022	Newton, Jason
29511	A Phase I Archaeological Survey of Parcel 103 at Cape Canaveral Space Force Station Brevard County, Florida	2023	Nelson, Blue

4.1.2 Previous Cultural Resources Surveys On-file With KSC

There are 28 cultural resource surveys conducted after 2001 that are on file at KSC and not documented in the FMSF (Table 4-2).

Table 4-2. Previous Cultural Resources Assessment Surveys Documented at KSC within the APEs.

Title	Year	Author
Survey and Evaluation of NASA Facilities Within the Cape Canaveral Air Force Station	2001	Hinder, Kimberly et al.
NASA-Wide Survey and Evaluation of Historic Facilities and Properties in the Context of the U.S. Space Shuttle Program, John F. Kennedy Space Center, Brevard County, Florida	2007	Deming, Joan and Patricia Slovinac
Canaveral National Seashore Historic Resource Study	2008	Parker, Susan
Archaeological Survey and Evaluation of the Bottle Dump Site (8BR2364), John F. Kennedy Space Center, Brevard County Florida	2009	Deming et al.
A Cultural Resource Assessment Survey of the Clifton Schoolhouse, Brevard County, Florida	2009	Penders, Thomas E.
Trip Report for an Archaeological Survey of Mosquito Lagoon, Canaveral National Seashore undertaken March 8-19 and June 22-July 2, 2009, SEAC Acc. 2227	2009	Hellman, Robert
Demolition of Facilities, Design Package One (FY 2012)	2010	Naylor, Barabara A.
Demolition of Facilities, Design Package Two (FY 2011)	2010	Naylor, Barabara A.
Demolition of Additional Facilities, Design Package One (FY 2012)	2011	Naylor, Barabara A.
Internal Evaluation and Historic Survey of NASA Owned Real Properties that have Reached the Age of 45- 50 Years John F. Kennedy Space Center, Brevard County	2011	Naylor, Barabara A.
Historical Survey and Evaluation of Facility 49635/Environmental Health/Health Physics Facility (BOSU), Cape Canaveral Air Force Station, Brevard County, Florida	2012	Deming, Joan and Patricia Slovinac
Management Summary: History Survey and Evaluation Hypergol Module Processing South (M7-1212) and Boresight Control Building (M7-0867) John F. Kennedy Space Center, Brevard County	2012	Price, David
Canaveral National Seashore Volusia and Brevard County, Florida	2013	Hellmann, Robert and David Brewer
Archeological Investigations Prior to Boardwalk Rehabilitation at Canaveral National Seashore (CANA), Titusville, Florida	2015	Simmons, Rusty L.
The Search for the Lost French Fleet of 1565: Report on 2014 Archaeological Investigations by Chuck Meide, Samuel P. Turner, P. Brendan Burke, and Olivia McDaniel; Grant No: S1506	2015	Meide, Chuck et al.
In-House Survey of NASA Owned Facilities/ Structures Built in the 1970s at the Kennedy Space Center	2015	Naylor, Barabara A.
2016 In-House Survey of NASA-Owned Real Property Located at the Kennedy Space Center and the Cape Canaveral Air Force Station in Florida	2016	Naylor, Barabara A.
Phase II Archaeological Survey of Selected Sites in Mosquito Lagoon, Canaveral National Seashore (SEAC Accession 2776)	2019	Hellman, Robert and Alexandra Parsons
A Cultural Resource Assessment Survey for the Proposed Roberts Road Site Florida Power and Light (FPL) Feeder Line Brevard County, Florida	2020	Keel, Frank
Cultural Resource Assessment Survey of the Space Coast Trail within the Merritt Island National Wildlife Refuge and the Canaveral National Seashore Brevard and Volusia Counties, Florida	2020	Almy, Marion et al.
Cultural Resource Assessment Survey of Transmission Corridor T21584 in Brevard County, Florida	2020	Almy, Marion et al.

October 2025
Final ReportSEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida**Table 4-2. Previous Cultural Resources Assessment Surveys Documented at KSC within the APEs.**

Title	Year	Author
Demolition of KSC Visitor Center Administration Buildings and Construction of a New Exhibit Building Kennedy Space Center, Brevard County	2023	Maggioni, Joseph Paul and Sierra DeVanie
Cultural Resource Assessment Survey, Wetland Mitigation Sites, Kennedy Space Center, Brevard County, Florida	2023	Davidson, John H. et al.
An Archaeological Survey of the Kennedy Space Center Spaceport Growth Boundaries Districts 1, 2, 3, and 4, Brevard County, Florida	2024	Handley et al.
Phase I Cultural Resources Assessment Survey of the Visitor Complex PEA Boundary Site, Merritt Island, Brevard County, Florida	2024	Keel, Frank
Cultural Resource Assessment Survey of the Schwartz Road Property at the John F. Kennedy Space Center, Brevard County, Florida	2024	Altes, Kristina
Archaeological Survey of the LC-39A Landing Pad Project, Kennedy Space Center, Brevard County, Florida	2024	Mahoney, Leeanne

4.1.3 Cultural Resources Recorded in the FMSF (Non-Federal Properties)

There are 355 archaeological sites and 1,592 previously recorded architectural history resources recorded in the FMSF on non-federal property within the APEs. Previously recorded historic resources located on federal lands or federally owned parcels; and linear resources such as roads, railroads and canals within the APE were omitted from this section and are discussed elsewhere. The archaeological sites data provide results and contribute to interpretations and is presented in Section 6.2.

SEARCH determined there are 1,592 previously recorded architectural history resources within the APE (Table 4-3). Of these, 18 resources are National Register of Historic Places (NRHP)-listed; SHPO previously determined that 27 architectural history resources are eligible for NRHP inclusion; 525 are ineligible for NRHP inclusion; and 1,022 resources have not been evaluated.

Table 4-3. Previously Recorded Historic Resource Types within the APEs.

Resource Type	Total
Buildings or Structures	1567
Resource Groups	11
Cemeteries	14
Total	1592

4.2 PREVIOUSLY RECORDED CULTURAL RESOURCES AT NASA KSC AND CCSFS

NASA KSC and CCSFS are within the APE. Both NASA KSC and the Department of the Air Force (DAF), CCSFS have updated their ICRMPs (NASA KSC in 2024 and DAF in 2023). Inventories and descriptions of architectural history resources are included in these documents. Data on historic resources from the ICRMPs and from the FMSF database comprise the following sections. NRHP-listed, NRHP-eligible, and contributing elements to listed and eligible resources are discussed below. Figures depicting the locations of previously recorded cultural resources at NASA KSC and SSFS are included in Appendix A.

4.2.1 Documented Cultural Resources at NASA KSC or Owned/Controlled by NASA KSC on Other Federal Property

Since 1972, numerous architectural surveys and NRHP-nominations have been carried out at NASA KSC. Presently, 24 historic properties associated with NASA KSC are determined to be individually eligible or listed in the NRHP, with 22 properties located at NASA KSC and two located at CCSFS. A further 86 properties are determined to be contributing elements to seven listed or eligible historic districts, two of which are located at CCSFS. The FMSF includes four cemeteries on KSC. **Table 4-4** quantifies resource types by category at KSC, and **Table 4-6** lists previously recorded NRHP-listed and NRHP-eligible resources at KSC. Note that some historic properties owned and under NASA KSC control are located with the Merritt Island National Wildlife Refuge, Canaveral National Seashore, and CCSFS. All such resources are mapped in **Appendix A**.

One NRHP-listed resource at NASA KSC, Launch Complex 39 Pad A (LC-39-A) Historic District (8BR1686/NRHP #99001638) is within the 130 dB Lmax contour, and is within the construction APE. The LC 39A Historic District has approximately 24 contributing resources (e.g., camera pads, LOX/LH₂ facility, support buildings, etc.). LC-39A was the site of the first Saturn V launch in 1967, the Apollo 4 mission, and the Apollo 11 mission in 1969, which took astronauts Armstrong, Aldrin, and Collins to the moon. In total, 11 Apollo missions and one Skylab mission, all using the Saturn V rocket, were launched at LC-39A. On April 14, 1981, the first Space Shuttle was launched from LC-39A, followed by an additional 80 launches.

Historic American Engineering Record (HAER FL-8-11-F), at a Level II, for LC-39A was completed in 2010 to mitigate for “adverse effects” that might occur with post Shuttle Program redevelopment. The Florida SHPO, in a letter dated May 10, 2013, concurred future consultation is not required for the reuse of LC-39A by a commercial entity (Bendus 2013), (NASA 2019). As such, LC-39A is well documented and no further identification or evaluation of LC-39A is proposed. Furthermore, it is anticipated that proposed new construction associated with the operation of the SSH will be compatible with the characteristics of other launch complex infrastructure and will not pose viewshed effects to historic properties.

Table 4-4. Historic Resource Types on KSC within the APE.

Resource Type	Total
Buildings or Structures	110
Resource Groups	8
Cemeteries	4
Total	122

4.2.2 Documented Resources at CCSFS

Since 1980, several efforts to identify historic properties at CCSFS have resulted in the recordation of numerous resources associated with the early United States space program. These resources are inventoried and described in the 2023 ICRMP, and in most instances the resources are included in the FMSF. They include one National Historic Landmark (NHL), 23 eligible or unevaluated historic districts, 153 properties considered contributing elements to the NHLs and historic districts, and eight cemeteries (**Table 4-5**). Some of these properties are documented

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

resources at NASA KSC (owned and controlled by NASA KSC, but within the boundaries of CCSF) and are referenced in Section 4.2.1 and Table 4-6.

Notably, Cape Canaveral Air Force Station was designated a NHL in 1984 for its association with the early space program (DAF 2023). CCSFS is not within the 130 dB Lmax contour for the undertaking but is within the 4-6 psf sonic-boom overpressure contour. Table 4-7 provides a list of NRHP-listed, NRHP-eligible and unevaluated resources located at CCSFS and their NRHP status.

Table 4-5. Historic Resource Types on CCSF within the APE.

Resource Type	Total
Buildings or Structures	153
Resource Groups	24
Cemeteries	8
Total	185

4.3 TRADITIONAL CULTURAL PLACES

A traditional cultural place (TCP) is generally defined as a property that is eligible for the NRHP because of its association with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community (see criteria in 36 CFR §60.4 and NPS 2025). When evaluating TCPs, it is important to note that significance derives from past and continuous use of the site for specific cultural practices. TCPs are typically identified through consultation with tribes or other consulting parties that have cultural affiliation with the APE. There are no previously recorded TCPs, or resources described as TCPs in the FMSF, within the APE.

4.4 HISTORIC MAP AND AERIAL PHOTOGRAPH REVIEW

SEARCH examined historic maps and aerial photographs to identify past land use within the operational APE. The earliest detailed maps consulted were General Land Office (GLO) survey maps. Government surveyors created GLO maps during the nineteenth century as part of the surveying, platting, and sale of public lands. In Florida, these maps characteristically show landscape features such as vegetation, bodies of water, roads, and Spanish land grants. The level of detail in GLO maps varies, with some also depicting structures, Native American villages, railroads, and agricultural fields. GLO maps of Florida Townships 18 through 26 South, Ranges 34 through 38 East and Townships 30 and 31 South, Ranges 37 through 39 East show all land within the APE is platted for sale. A total of 11 land grants are within the APE including several large tracts belonging to Joseph Delespine and his heirs. A northwest-southeast road extended through the APE west of the Indian River and was labeled both Hernandez Trail and Road to Haulover (Appendix B) (GLO 1845a, 1945b, 1845c, 1845c, 1845d, 1845e, 1846a, 1846b, 1846c, 1846d, 1846e, 1846f, 1848a, 1848b, 1848c, 1848d, 1849, 1850a, 1850b, 1850c, 1852a, 1852b, 1852c, 1852d, 1852e, 1852f, 1852g, 1852h, 1852i, 1959a, 1859b, 1859c, 1859d, 1859e, 1859f, 1859g, 1860a, 1960b, 1960c, 1960d).

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

In 1860, the only development within the APE is the northwest-southeast road, which is not depicted by 1871 (Asher and Adams 1871a, 1871b; Johnson 1860). The settlements of Titusville, Rockledge, and City Point are labeled within the APE in 1880 (Leslie-Judge Company 1880a, 1880b). By 1890, the towns of Mims and Titusville are stops on the Jacksonville, Tampa and Key West Railroad within the APE. The towns of Cocoa, Courtenay, Canaveral, and Micco are labeled within the APE (Norton 1890). The Florida East Coast Railroad intersected the entire APE west of the Indian River with stops at numerous towns west of the Indian River in 1900 (Rand McNally and Company 1900). In 1910, the towns of Mims, LaGrange, Titusville, Pritchards, Frontenac, City Point, Cocoa, and Rockledge are within the APE west of the river and connected by the Florida East Coast Railroad. The towns of Nathan, Canaveral and Artesia are within the APE east of the Indian River (C. S. Hammond and Company 1910). A state road map created in 1917 shows a northwest-southeast road intersected the APE on the present-day alignment of US 1. A bridge from Cocoa connected US 1 with a north-south road on Merritt Island where the towns of Audubon, Indianola, and Merritt are labeled (FSRD 1917).

By 1935, US 1 is labeled within the APE. More than 400 individual buildings are illustrated within the APE as part of the towns of Scottsmoor, Shiloh, Aurantia, Mims, LaGrange, Alenhurst, Wilson, Indian River City, Frontenac, Sharpes, Orsino, Courtenay, Audubon, Canaveral, City Point, Indianola, Merritt Island, Footman, Bonaventure, Artesia, Georgiana, Lotus, and Micco. The three largest cities are Titusville, Cocoa, and Rockledge and are represented by shaded areas. Additional roads within the APE include two on the present-day alignments of Cape Road/Samuel C. Phillips Parkway and Courtenay Parkway east of the Indian River on the out islands. Development is limited to areas accessible by the major roads (see **Appendix B**) (FSRD 1935a, 1935b).

By the early 1950s, Titusville, Cocoa, and Rockledge remained the largest cities with hundreds of individual buildings depicted. A bridge connected Titusville to Merritt Island on the present-day alignment of SR 406. Three airports are labeled within the APE near Titusville and Cocoa. Numerous orchards are apparent throughout the APE. West of Cocoa and Rockledge, a system of canals and levees has drained former marshland for agricultural and residential use. The Whispering Hills Golf Estates is labeled as a planned community within the APE further into the interior of the county. A US Military Reservation is labeled in the present-day location of Patrick Space Force Base (see **Appendix B**) (US Geological Survey [USGS] 1949a, 1949b, 1949c, 1949d, 1949e, 1949f, 1949g, 1949h, 1949i, 1949j, 1949k, 1949l, 1949m, 1949n, 1949o, 1949p, 1949q, 1950a, 1950b, 1950c, 1950d, 1951, 1953a, 1953b, 1953c).

By 1970, Interstate 95 is evident on its present-day alignment within the APE. Several planned communities are apparent west of US 1 and on the outer islands. The outer islands are extensively developed with residential areas and Partick Air Force Base. Areas shaded to indicate high population density show several of these communities had large numbers of residents by 1970. Shaded areas in Titusville and Cocoa show the cities continued to expand along US 1 to the north and south (see **Appendix B**) (USGS 1970a, 1970b, 1970c, 1970d, 1970e, 1970f, 1970g, 1970h, 1970i, 1970j, 1970k, 1970l, 1970l, 1970m, 1970n, 1970o, 1970p, 1970q, 1970r, 1970s, 1970t, 1970u, 1970v, 1970w, 1970x, 1970y).

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

This page intentionally left blank.

Background Research

4-16

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-6. Previously Recorded NRHP-listed and -eligible Historic Resources at KSC, Including Resources that were Demolished or Removed from KSC.

FMSF/NRHP Number	Resource Name	psf Threshold	Associated Programs	Year Built/Period of Significance	NRHP Status
Resource Groups					
8BR1686/NRHP #99001638	Launch Complex (LC) 39 Pad A Historic District	20 psf	Apollo/SSP	1967-85	NRHP Listed
8BR1687/NRHP #99001639	Launch Complex 39 Pad B Historic District	20 psf	Apollo/SSP	1967-85	NRHP Listed
8BR1986	Shuttle Landing Facility (SLF) Historic District	6 psf	SSP	1969-2010	Eligible
8BR1990	Orbiter Processing Historic District	10 psf	SSP	1969-2010	Eligible
8BR2932	NASA KSC Railroad System Historic District	10 psf	SSP	1978-2010	Eligible
8BR1996	Solid Rocket Booster (SRB) Disassembly and Refurbishment Complex Historic District	10 psf	SSP	1962-2011	Eligible
8BR2015*	Hypergolic Maintenance and Checkout Area Historic District	6 psf	SSP	1969-2011	Not Eligible
8BR3073	NASA-owned Cape Canaveral Air Force Station Industrial Area Historic District	6 psf	Mercury/ELV/SSP	1958-Present	Eligible
Buildings/Structures (Individually Eligible or Listed)					
-	Orbiter Atlantis	4 psf	SSP	1984	Eligible
8BR1684	Vehicle Assembly Building	10 psf	Apollo/SSP	1962-66	NRHP Listed
8BR3150	VAB Utility Annex	10 psf	Apollo	1966	NRHP Listed
8BR2986	Barge Terminal Facility	10 psf	Apollo/SSP	1965	Eligible
8BR1685	Launch Control Center	10 psf	Apollo/SSP	1966	NRHP Listed
8BR1689	Crawlerway	20 psf	Apollo/SSP	1963-65	NRHP Listed
8BR1688	Crawler Transporter 1 & 2	20 psf	Apollo/SSP	1965	NRHP Listed
8BR1690	Press Site: Clock and Flag Pole	4 psf	Apollo	1969	NRHP Listed
8BR1691*	Headquarters Building	-	Apollo	1965	Not Eligible

October 2025
Final ReportSEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida**Table 4-6. Previously Recorded NRHP-listed and -eligible Historic Resources at KSC, Including Resources that were Demolished or Removed from KSC.**

FMSF/NRHP Number	Resource Name	psf Threshold	Associated Programs	Year Built/Period of Significance	NRHP Status
8BR1693	Neil Armstrong Operations and Checkout (O & C) Building	6 psf	Apollo	1964	NRHP Listed
8BR1692*	Central Instrumentation Facility	-	Apollo	1965	Not Eligible
8BR1998	Manufacturing Building/Booster Fabrication Facility (BFF)	6 psf	SSP	1986	Eligible
8BR2014*	Parachute Refurbishment Facility	-	SSP	1964	Not Eligible
8BR2016	Canister Rotation Facility (aka Launch Abort System Facility)	6 psf	SSP	1993	Eligible
8BR2017*	Payload Cannister 1 & 2	-	SSP	1978	Eligible
8BR2019*	Retrieval Ship, Liberty Star	-	SSP	1980-81	Eligible
8BR2020*	Retrieval Ship, Freedom Star	-	SSP	1980-81	Eligible
8BR2021	Mobile Launcher Platforms 1, 2, and 3	10 psf	SSP	1963-68	Eligible
8BR1997	Rotation/Processing Facility	10 psf	SSP	1984	Eligible
8BR2671	Space Station Processing Facility	6 psf	ISS	1992	Eligible
-	Ammonia Vapor Containment Building	10 psf	ISS	2006	Eligible
8BR2905*	Bioastronautics Operations Support Unit (BOSU)	-	Apollo	1965	Not Eligible
8BR2990	Beach House	10 psf	Apollo/SSP	1962	Eligible
8BR2969	Engineering Development Lab	6 psf	Apollo	1966	Eligible
Historic Bridges					
8BR2956*	Indian River Bridge	-	Apollo/SSP/ISS	1964	Not Eligible
8BR2957	Haulover Canal Bridge	2 psf	Apollo/SSP/ISS	1965	Eligible
8BR2955	Banana River Bridge	6 psf	Apollo/SSP/ISS	1964	Eligible
Buildings/Structures (Contributors to Resource Groups)					
8BR1995	Launch Complex 39 Pad A	20 psf	Apollo/SSP	1967-1985	NRHP Listed (Contributor to RG)

Background Research

4-18

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-6. Previously Recorded NRHP-listed and -eligible Historic Resources at KSC, Including Resources that were Demolished or Removed from KSC.

FMSF/NRHP Number	Resource Name	psf Threshold	Associated Programs	Year Built/Period of Significance	NRHP Status
8BR2010	Launch Complex 39 Pad B	20 psf	Apollo/SSP	1967-1985	NRHP Listed (Contributor to RG)
8BR2094	High Pressure GH2 Facility	20 psf	Apollo/SSP	1968	NRHP Listed (Contributor to RG)
8BR2095	Liquid Oxygen (LOX) Facility	20 psf	Apollo/SSP	1966	NRHP Listed (Contributor to RG)
8BR2096	A-1 Operations Support Building	20 psf	Apollo/SSP	1966	NRHP Listed (Contributor to RG)
8BR2102	A-2 Operations Support Building	20 psf	Apollo/SSP	1966	NRHP Listed (Contributor to RG)
8BR2097	Camera Pad No. 1	20 psf	Apollo/SSP	1966	NRHP Listed (Contributor to RG)
8BR2105	Camera Pad No. 2	20 psf	Apollo/SSP	1965	NRHP Listed (Contributor to RG)
8BR2107	Camera Pad No. 3	20 psf	Apollo/SSP	1965	NRHP Listed (Contributor to RG)
8BR2106	Camera Pad No. 4	20 psf	Apollo/SSP	1965	NRHP Listed (Contributor to RG)
8BR2100	Camera Pad No. 6	20 psf	Apollo/SSP	1965	NRHP Listed (Contributor to RG)
8BR2098	LH2 Facility	20 psf	Apollo/SSP	1965	NRHP Listed (Contributor to RG)
8BR2101	Electrical Equipment Building No. 1	20 psf	Apollo/SSP	1979	NRHP Listed (Contributor to RG)
8BR2099	Electrical Equipment Building No. 2	20 psf	Apollo/SSP	1979	NRHP Listed (Contributor to RG)
8BR2110*	Electrical Equipment Building No. 3	-	SSP	1979	Not Eligible
8BR2111	Electrical Equipment Building No. 4	20 psf	SSP	1979	Eligible (Contributor to RG)
8BR2103	Slidewire Termination Facility	20 psf	Apollo/SSP	1965	NRHP Listed

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-6. Previously Recorded NRHP-listed and -eligible Historic Resources at KSC, Including Resources that were Demolished or Removed from KSC.

FMSF/NRHP Number	Resource Name	psf Threshold	Associated Programs	Year Built/Period of Significance	NRHP Status
8BR2104	Water Chiller Building	20 psf	Apollo/SSP	1968	NRHP Listed
8BR2108	Water Tank	20 psf	SSP	1980	NRHP Listed (Contributor to RG)
8BR2109	Flare Stack	20 psf	SSP	1985	NRHP Listed (Contributor to RG)
8BR2113	Hypergol Fuel Facility	20 psf	SSP	1979	Eligible (Contributor to RG)
8BR2112*	Hypergol Oxidizer Facility	-	SSP	1979	Not Eligible
-	Foam Building	10 psf	Apollo	1965	NRHP Listed (Contributor to RG)
-	Pump House	10 psf	Apollo	1964	NRHP Listed
-	Compressed Air Building	10 psf	Apollo	1965	NRHP Listed (Contributor to RG)
-	Remote Air Intake Building	10 psf	Apollo	1965	NRHP Listed (Contributor to RG)
_*	Azimuth Alignment Station	-	Apollo	1965	NRHP Listed (Contributor to RG)
8BR2114	B-1 Operations Support Building	10 psf	Apollo/SSP	1967	NRHP Listed (Contributor to RG)
8BR2122	B-2 Operations Support Building	20 psf	Apollo/SSP	1967	NRHP Listed (Contributor to RG)
8BR2115*	High Pressure GH2 Facility	-	Apollo/SSP	1967	Not Eligible
8BR2116	LOX Facility	10 psf	Apollo/SSP	1967	NRHP Listed (Contributor to RG)
8BR2118	Camera Pad B No. 1	10 psf	Apollo/SSP	1968	NRHP Listed (Contributor to RG)
8BR2124	Camera Pad B No. 2	20 psf	Apollo/SSP	1967	NRHP Listed (Contributor to RG)
8BR2127	Camera Pad B No. 3	20 psf	Apollo/SSP	1968	NRHP Listed (Contributor to RG)

Background Research

4-20

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-6. Previously Recorded NRHP-listed and -eligible Historic Resources at KSC, Including Resources that were Demolished or Removed from KSC.

FMSF/NRHP Number	Resource Name	psf Threshold	Associated Programs	Year Built/Period of Significance	NRHP Status
8BR2126	Camera Pad B No. 4	20 psf	Apollo/SSP	1968	NRHP Listed (Contributor to RG)
8BR2117	Camera Pad B No. 6	10 psf	Apollo/SSP	1968	NRHP Listed (Contributor to RG)
8BR2119	LH2 Facility	20 psf	Apollo/SSP	1967	NRHP Listed (Contributor to RG)
8BR2121	Electrical Equipment Building No. 1	20 psf	Apollo/SSP	1967	NRHP Listed (Contributor to RG)
8BR2120	Electrical Equipment Building No. 2	10 psf	Apollo/SSP	1967	NRHP Listed (Contributor to RG)
8BR2123	Slidewire Termination Facility	10 psf	Apollo/SSP	1967	NRHP Listed (Contributor to RG)
8BR2128	Flarestack	20 psf	SSP	1985	Eligible (Contributor to RG)
8BR2125	Water Chiller Building	20 psf	Apollo/SSP	1968	NRHP Listed (Contributor to RG)
8BR2129	Water Tank	20 psf	SSP	1981	Eligible (Contributor to RG)
8BR3046	Foam Building	20 psf	Apollo	1968	NRHP Listed (Contributor to RG)
8BR2130*	Hypergol Oxidizer Facility	-	SSP	1981	Not Eligible
8BR2132*	Hypergol Fuel Facility	-	SSP	1981	Not Eligible
8BR2131*	Electrical Equipment No. 3	-	SSP	1981	Not Eligible
8BR2133*	Electrical Equipment No. 4	-	SSP	1981	Not Eligible
-	Compressed Air Building	10 psf	Apollo	1967	NRHP Listed (Contributor to RG)
-	Azimuth Alignment Station	10 psf	Apollo	1967	NRHP Listed (Contributor to RG)
-	Remote Air Intake Building	10 psf	Apollo	1967	NRHP Listed (Contributor to RG)

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-6. Previously Recorded NRHP-listed and -eligible Historic Resources at KSC, Including Resources that were Demolished or Removed from KSC.

FMSF/NRHP Number	Resource Name	psf Threshold	Associated Programs	Year Built/Period of Significance	NRHP Status
8BR1987	Shuttle Landing Runway	6 psf	SSP	1976	Eligible (Contributor to RG)
8BR1988	Landing Aids Control Building	6 psf	SSP	1976	Eligible (Contributor to RG)
8BR1989*	Mate-Demate Device	-	SSP	1977-1978	Not Eligible
8BR1991	Orbiter Processing Facility	10 psf	SSP	1977	Eligible (Contributor to RG)
8BR1992	Orbiter Processing Facility High Bay 3 (includes the Space Shuttle Main Engine Processing Facility)	10 psf	SSP	1987	Eligible (Contributor to RG)
8BR1994	Thermal Protection System Facility	10 psf	SSP	1988	Eligible (Contributor to RG)
8BR2001	Hangar AF	10 psf	SSP	1962	Eligible (Contributor to RG)
8BR2002	High Pressure Gas Facility	10 psf	SSP	1963	Eligible (Contributor to RG)
8BR2003	High Pressure Wash Facility	10 psf	SSP	1979	Eligible (Contributor to RG)
8BR2004*	First Wash Building	-	SSP	1979	Not Eligible
8BR2005	SRB Recovery Slip	10 psf	SSP	1979	Eligible (Contributor to RG)
8BR2006	SRB Paint Building	10 psf	SSP	1984	Eligible (Contributor to RG)
8BR2007*	Robot Wash Building	-	SSP	1987	Not Eligible
8BR2008	Thrust Vector Control Deservicing Building	10 psf	SSP	1985	Eligible (Contributor to RG)
8BR2009	Multi-Media Blast Facility	10 psf	SSP	1992	Eligible (Contributor to RG)
8BR2931	Railroad Track	6 psf	SSP	ca. 1963	Eligible (Contributor to RG)

Background Research

4-22

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-6. Previously Recorded NRHP-listed and -eligible Historic Resources at KSC, Including Resources that were Demolished or Removed from KSC.

FMSF/NRHP Number	Resource Name	psf Threshold	Associated Programs	Year Built/Period of Significance	NRHP Status
8BR2906	Jay Jay Bridge	10 psf	SSP	1963	Eligible (Contributor to RG)
8BR2908	70-Ton Aft Skirt Car	10 psf	SSP	1985	Eligible (Contributor to RG)
8BR3042*	70-Ton Aft Skirt Car	-	SSP	1985	Eligible (Contributor to RG)
8BR2923*	Locomotive 1	-	SSP	1968	Eligible (Contributor to RG)
8BR3043*	Locomotive 2	-	SSP	1970	Eligible (Contributor to RG)
8BR3044*	Locomotive 3	-	SSP	1970	Eligible (Contributor to RG)
8BR1993*	Hypergol Module Processing North	-	SSP	1964	Not Eligible
8BR2933*	Hypergol Module Processing South	-	SSP	1964	Not Eligible
8BR2000*	Hypergol Support Building	-	SSP	1964	Not Eligible
8BR3069	Hangar N	6 psf	SSP	1958	Eligible (Contributor to RG)
8BR2190	Little N Storage Building	6 psf	SSP	1958	Eligible (Contributor to RG)
8BR2972*	Hangar M Annex	-	SSP	1963	Not Eligible
8BR2977*	Solar Array Test Building	-	ELV	1966	Not Eligible
8BR2975	E&O Building	6 psf	Mercury/ELV	1961	Eligible (Contributor to RG)
8BR2976	Missile Assembly Building AE	6 psf	ELV	1959	Eligible (Contributor to RG)
8BR3070	Hangar S	6 psf	Mercury	1959	Eligible (Contributor to RG)
Cemeteries					

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-6. Previously Recorded NRHP-listed and -eligible Historic Resources at KSC, Including Resources that were Demolished or Removed from KSC.

FMSF/NRHP Number	Resource Name	psf Threshold	Associated Programs	Year Built/Period of Significance	NRHP Status
8BR0191	African American Graves/New Haulover 2	2 psf	-	1880	Not Evaluated By SHPO
8BR0186	Campbell-Jackson Cemetery	2 psf	-	1913	Not Evaluated By SHPO
8BR1626	Crook/Watton Cemetery	2 psf	-	1915	Not Evaluated By SHPO
8BR1624	Emma Watton Cemetery	2 psf	-	1882	Not Evaluated By SHPO

**Notes as demolished or removed from KSC in KSC ICRMP.*

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
Resource Groups				
8BR00216/NRHP #84003872	Cape Canaveral Space Force Station National Historic Landmark	6/4 psf	1950-Present	NHL and NRHP Listed
8BR03034	Delta II Solid Rocket Motor Area Historic District	6 psf	1963-1965	Eligible
8BR02269	Launch Complex 19	6 psf	1956-1966	Eligible
8BR03036	Delta Spin Test Facility Historic District	6 psf	1966-2010	Eligible
8BR02272	Launch Complex 30	6 psf	1950-Present	Eligible
8BR02209	Launch Complex 14	6 psf	1957-1966	Eligible
8BR00198	Launch Complex 13	6 psf	1956-1966	Eligible
8BR02518	Launch Complex 25	6 psf	1958-1969	Eligible
8BR02022/8BR1985	Launch Complex 21/22	6 psf	1950-Present	Eligible
8BR02033	Cape Canaveral Lighthouse Station Historic District	4 psf	1861-1865	Not Evaluated By SHPO

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR03166	Skid Strip Historic District	6 psf	1950-Present	Eligible
8BR03433	Control Tower Road Tracking Site	6 psf	1950-Present	Eligible
8BR2170	Patrick Air Force Base Missile Instrumentation Station Historic District	<2 psf	-	Eligible
8BR2181	Bomarc-SAGE Tracking Facility Historic District	6 psf	-	Eligible
8BR2438	Patrick Air Force Base Facilities Landplace Historic District	Less than 2 psf	-	Eligible
8BR03369	Cape Canaveral Air Force Station Industrial Area Historic District	6 psf	1946-1989	Eligible
8BR02369	Launch Complex 17	6 psf	1957-1960	Eligible
8BR02279	Launch Complex 34	6 psf	1961-1971	Eligible
8BR03034	Delta II Solid Rocket Motor Area	6 psf	1963-1965	Eligible
8BR03036	Delta Spin Test Facility	6 psf	1966-2010	Eligible
8BR2440	Patrick Air Force Base Administrative Historic District	Less than 2 psf	-	Eligible
8R02515	Launch Complex 31/32	6 psf	1950-Present	Eligible
8BR2076	High Explosive Storage Facility Historic District	6 psf	-	Eligible
8BR1975	Banana River Naval Air Station Seaplane Historic District	Less than psf	-	Eligible
Buildings/Structures				
8BR0174	Air Force Space Museum/LC-26	6 psf	1958	NHL Listed
8BR0212	Cape Canaveral Lighthouse	Less than 2 psf	1867	Eligible
8BR1970	Seaplane Ramp	<2 psf	-	NHL Listed (Contributor to RG)
8BR1971	Seaplane Ramp	<2 psf	-	Eligible (Contributor to RG)
8BR1972	Seaplane Ramp	<2 psf	-	NHL Listed (Contributor to RG)

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR1974	A&R Shop	<2 psf	-	Eligible (Contributor to RG)
8BR1980	Hangar C	4 psf	1953	Eligible (Contributor to RG)
8BR1981	Launch Building 21/22	6 psf	1958	Eligible (Contributor to RG)
8BR1982	CX 21/22 Utility Room	4 psf	1958	Eligible (Contributor to RG)
8BR1983	LC-21/22 Blockhouse	4 psf	1958	Eligible (Contributor to RG)
8BR1984	Storage Building	6 psf	-	Eligible (Contributor to RG)
8BR02001*	Hangar AF	6 psf	1962	Eligible (Contributor to RG)
8BR02002*	High Pressure Gas Building	6 psf	1963	Eligible (Contributor to RG)
8BR02003*	High Pressure Wash Facility	6 psf	1979	Eligible (Contributor to RG)
8BR02004*	First Wash Building	6 psf	1979	Eligible (Contributor to RG)
8BR02006*	SRB Paint Building	6 psf	1984	Eligible (Contributor to RG)
8BR02007*	Robot Wash Building	6 psf	1987	Eligible (Contributor to RG)
8BR02008*	Thrust Vector Control Deservicing Building	6 psf	1985	Eligible (Contributor to RG)
8BR02009*	Multi-Media Blast Facility	6 psf	1982	Eligible (Contributor to RG)
8BR2025	Seaside Chapel	<2 psf	-	Eligible (Contributor to RG)

Background Research

4-26

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR02031	Oil House at Cape Canaveral Lighthouse	4 psf	1868	Not Evaluated By SHPO
8BR02032	Storage Shed at Cape Canaveral Lighthouse	4 psf	1865	Eligible (Contributor to RG)
8BR2034	Inert Storage Magazine	<2 psf	-	Eligible (Contributor to RG)
8BR2035	Inert Storage Magazine	<2 psf	-	Eligible (Contributor to RG)
8BR2036	Inert Storage Magazine	<2 psf	-	Eligible (Contributor to RG)
8BR2045	45th Space Wing Headquarters	<2 psf	-	Eligible (Contributor to RG)
8BR2046	Administrative Building	<2 psf	-	Eligible (Contributor to RG)
8BR2136	AFTAC	<2 psf	-	Eligible (Contributor to RG)
8BR2144	LC-18 Blockhouse	6 psf	1956	Eligible (Contributor to RG)
8BR2183	LC-9 Launch Platform	4 psf	1953	Eligible (Contributor to RG)
8BR2185	LC-9/10 Blockhouse	4 psf	1953	Eligible (Contributor to RG)
8BR2186	LC-9/10 Pumphouse	6 psf	1953	Eligible (Contributor to RG)
8BR2190*	Little N Storage Building	6 psf	1958	Eligible (Contributor to RG)
8BR2200	LC-13 Launch Pad and Ramp	6 psf	c. 1956	Eligible (Contributor to RG)
8BR2201	LC-13 Flume and Skimming Basin	6 psf	c. 1956	Eligible (Contributor to RG)

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR2202	LC-13 LOX Storage Area	6 psf	c. 1956	Eligible (Contributor to RG)
8BR2203	LC-13 Guard Shack	6 psf	c. 1956	Eligible (Contributor to RG)
8BR2204	LC-13 POL Building	6 psf	1960	Eligible (Contributor to RG)
8BR2205	LC-13 Water Demineralization Building	6 psf	1957	Eligible (Contributor to RG)
8BR2206	LC-13 Gantry Rails and Parking Area	6 psf	c. 1956	Eligible (Contributor to RG)
8BR2207	LC-13 Propellant Facility	6 psf	c. 1956	Eligible (Contributor to RG)
8BR2208	LC-13 POL Building	6 psf	c. 1956	Eligible (Contributor to RG)
8BR2210	LC-14 Launch Pad and Ramp	6 psf	1957	NHL Listed (Contributor to RG)
8BR2211	LC-14 Propellant Transfer Unit	6 psf	1957	NHL Listed (Contributor to RG)
8BR2212	LC-14 JP-4 Facility	6 psf	1957	NHL Listed (Contributor to RG)
8BR2214	LC-14 LOX Storage Area	6 psf	1957	NHL Listed (Contributor to RG)
8BR2215	LC-14 Flume and Skimming Basin	6 psf	1957	NHL Listed (Contributor to RG)
8BR2216	LC-14 Blockhouse	6 psf	1957	NHL Listed (Contributor to RG)
8BR2217	LC-14 Ready Building	6 psf	1957	NHL Listed (Contributor to RG)
8BR2218	LC-14 Communications Cable Building	6 psf	1957	NHL Listed (Contributor to RG)

Background Research

4-28

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR2219	LC-14 Water Demineralization Building	6 psf	1957	NHL Listed (Contributor to RG)
8BR2220	LC-14 LOX Storage Area	6 psf	1957	NHL Listed (Contributor to RG)
8BR2221	Mercury Memorial	6 psf	1957	NHL Listed (Contributor to RG)
8BR2233	Recreational Storage Building	6 psf	1958	Eligible
8BR2236	LC-3/4 Blockhouse	4 psf	1951	Eligible (Contributor to RG)
8BR2237	LC-3 Launch Pad	4 psf	1951	Eligible (Contributor to RG)
8BR2238	LC-4 Launch Pad	4 psf	1950	Eligible (Contributor to RG)
8BR2240	Bomare Building	4 psf	1955	Eligible (Contributor to RG)
8BR2241	Comp. and Cool Building	4 psf	1955	Eligible (Contributor to RG)
8BR2242	High Pressure Air Facility	6 psf	1951	Eligible (Contributor to RG)
8BR2249	LC-1/2 Blockhouse	4 psf	1951	Eligible (Contributor to RG)
8BR2250	LC-1 Launch Pad	4 psf	1951	Eligible (Contributor to RG)
8BR2251	LC-2 Launch Pad	4 psf	1951	Eligible (Contributor to RG)
8BR2252	Transformer Building	6 psf	1951	Eligible (Contributor to RG)
8BR2253	LC-23/24 Snark Pad	4 psf	1953	Eligible (Contributor to RG)
8BR2261	LC-19 Blockhouse	6 psf	1959	NHL Listed (Contributor to RG)

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR2262	LC-19 Cableway	6 psf	1959	NHL Listed (Contributor to RG)
8BR2263	LC-19 Decontamination Building	6 psf	1959	NHL Listed (Contributor to RG)
8BR2264	LC-19 Launch Stand and Ramp	6 psf	1959	NHL Listed (Contributor to RG)
8BR2266	LC-19 Instrumentation Building	6 psf	1959	NHL Listed (Contributor to RG)
8BR2267	LC-19 Oxidizer Holding Area	6 psf	1959	NHL Listed (Contributor to RG)
8BR2268	LC-19 Theodolite Building No. 1	6 psf	1959	NHL Listed (Contributor to RG)
8BR2269	LC-19 Fuel Holding Area	6 psf	1959	NHL Listed (Contributor to RG)
8BR2270	LC-19 Flume and Catchment Building	6 psf	c. 1956	NHL Listed (Contributor to RG)
8BR2271	LC-19 Theodolite Building No. 2	6 psf	1961	NHL Listed (Contributor to RG)
8BR2280	LC-34 Blockhouse	6 psf	1969	NHL Listed (Contributor to RG)
8BR2281	LC-34 High Pressure Gas Storage Facility	6 psf	1960	NHL Listed (Contributor to RG)
8BR2282	LC-34 Oxidizer Storage Facility	6 psf	1959	NHL Listed (Contributor to RG)
8BR2283	LC-34 Oxygen Storage Building	6 psf	1959	NHL Listed (Contributor to RG)
8BR2284	LC-34 Theodolite Building	6 psf	1965	NHL Listed (Contributor to RG)
8BR2285	LC-34 Toxic Vapor Disposal Pad	6 psf	1959	NHL Listed (Contributor to RG)

Background Research

4-30

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR2286	LC-34 RP-1 Storage Facility	6 psf	1960	NHL Listed (Contributor to RG)
8BR2287	LC-34 RP-1 Electrical Equipment Building	6 psf	1960	NHL Listed (Contributor to RG)
8BR2288	LC-34 RP-1 Special Liquids Storage Building	6 psf	1960	NHL Listed (Contributor to RG)
8BR2289	LC-34 Cableway	6 psf	1960	NHL Listed (Contributor to RG)
8BR2290	LC-34 Launch Pad	6 psf	1959	NHL Listed (Contributor to RG)
8BR2291	LC-34 Mobile Service Tower Parking Area	6 psf	1959	NHL Listed (Contributor to RG)
8BR2292	LC-34 Launch Pedestal	6 psf	1959	NHL Listed (Contributor to RG)
8BR2293	LC-34 Flame Deflectors and Deflector Parking Area	6 psf	1959	NHL Listed (Contributor to RG)
8BR2294	LC-34 Launch Pad Environmental Control Building	6 psf	1959	NHL Listed (Contributor to RG)
8BR2295	LC-34 Flume and Catchment Basin	6 psf	1961	NHL Listed (Contributor to RG)
8BR2296	LC-34 Liquid Hydrogen Electrical Equipment Building	6 psf	1963	NHL Listed (Contributor to RG)
8BR2297	LC-34 High Pressure Hydrogen Storage Facility	6 psf	1965	NHL Listed (Contributor to RG)
8BR2298	LC-34 Automatic Ground Control Station	6 psf	1959	NHL Listed (Contributor to RG)
8BR2299	LC-34 Liquid Hydrogen Storage Facility	6 psf	1963	NHL Listed (Contributor to RG)
8BR2300	LC-34 High Pressure Gas Storage Battery	6 psf	1959	NHL Listed (Contributor to RG)

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR2322	LC-16 Blockhouse	6 psf	1959	Eligible (Contributor to RG)
8BR2333	LC-36 Blockhouse	4 psf	1959	Eligible (Contributor to RG)
8BR2348	NRC Experimentation Facility	4 psf	1952	Eligible (Contributor to RG)
8BR2353	Hangar K	6 psf	1957	Eligible (Contributor to RG)
8BR2370	LC-17 Blockhouse	6 psf	c. 1956	Eligible (Contributor to RG)
8BR2371	LC-17 Alignment Building	4 psf	1970	Eligible (Contributor to RG)
8BR2372	LC-17B Launch Pad	4 psf	1959	Eligible (Contributor to RG)
8BR2373	LC-17B Mobile Service Tower	4 psf	1959	Eligible (Contributor to RG)
8BR2374	LC-17B Umbilical Tower	4 psf	1956	Eligible (Contributor to RG)
8BR2375	LC-17 Deluge Basin	6 psf	1956	Eligible (Contributor to RG)
8BR2376	LC-17A Launch Pad	6 psf	1959	Eligible (Contributor to RG)
8BR2377	LC-17A Mobile Service Tower	4 psf	1956	Eligible (Contributor to RG)
8BR2378	LC-17A Umbilical Tower	4 psf	1956	Eligible (Contributor to RG)
8BR2379	LC-17A Deluge Basin	4 psf	1956	Eligible (Contributor to RG)
8BR2380	LC-17 Switch Control Building	4 psf	1958	Eligible (Contributor to RG)

Background Research

4-32

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR2381	LC-17 Electrical Distribution Building	4 psf	1958	Eligible (Contributor to RG)
8BR2382	LC-17 Change and Rest Home	4 psf	1968	Eligible (Contributor to RG)
8BR2383	LC-17 Cases Storage Area	4 psf	1956	Eligible (Contributor to RG)
8BR2384	LC-17B DIGs Building	4 psf	1973	Eligible (Contributor to RG)
8BR2385	LC-17A DIGs Building	6 psf	1973	Eligible (Contributor to RG)
8BR2386	LC-17 Chiller Building	4 psf	1994	Eligible (Contributor to RG)
8BR2387	LC-17 UPS Building	4 psf	1969	Eligible (Contributor to RG)
8BR2388	LC-17 RP-1 Storage Building	6 psf	1956	Eligible (Contributor to RG)
8BR2389	LC-17 LH2 Storage Area	4 psf	1956	Eligible (Contributor to RG)
8BR2390	LC-17 Paint, Oil, and Lubricant Building	6 psf	1967	Eligible (Contributor to RG)
8BR2391	LC-17 Delta Operations Building	4 psf	1958	Eligible (Contributor to RG)
8BR2392	LC-17 Battery Laboratory	4 psf	1958	Eligible (Contributor to RG)
8BR2393	LC-17 Electrical Distribution Building	4 psf	1958	Eligible (Contributor to RG)
8BR2394	LC-17 Locker and Storage Facility	6 psf	1958	Eligible (Contributor to RG)
8BR2397	GPI Camera Pad	6 psf	c. 1956	Eligible (Contributor to RG)

October 2025
Final ReportSEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida**Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.**

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR2398	GPI Camera Pad	6 psf	c. 1956	Eligible (Contributor to RG)
8BR2454	Hangar AO	6 psf	c. 1964	Not Evaluated By SHPO
8BR2480	Heavy Equipment Shop	6 psf	1956	Eligible (Contributor to RG)
8BR2516	LC-32 Blockhouse	6 psf	1959	Not Evaluated By SHPO
8BR2517	LC-31 Blockhouse	4 psf	1959	Not Evaluated By SHPO
8BR2519	LC-25 Blockhouse	6 psf	1958	Eligible (Contributor to RG)
8BR2520	LC-25 Electrical Distribution Building	6 psf	1958	Eligible (Contributor to RG)
8BR2021	LC-25 Substation	6 psf	1958	Eligible (Contributor to RG)
8BR2022	LC-25 Pad A/B Instrumentation Ditches	6 psf	1958	Eligible (Contributor to RG)
8BR2523	LC-25 Pad A	6 psf	1958	Eligible (Contributor to RG)
8BR2524	LC-25 Pad B	6 psf	1958	Eligible (Contributor to RG)
8BR2525	LC-25 Pad C/D Instrumentation Ditches	6 psf	1958	Eligible (Contributor to RG)
8BR2526	LC-25 Pad C/D	6 psf	1958	Eligible (Contributor to RG)
8BR2527	LC-25 C Missile Access Stand	6 psf	1958	Eligible (Contributor to RG)
8BR2528	Pad Service Building	6 psf	1958	Eligible (Contributor to RG)
8BR2530	LC-29 Blockhouse	6 psf	1960	Eligible (Contributor to RG)
8BR2531	LC-29 Substation	6 psf	1960	Eligible (Contributor to RG)

Background Research

4-34

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report

Table 4-7. Previously Recorded NRHP-listed and NRHP-eligible Resources at CCSFS.

FMSF/NRHP Number	Resource Name	PSF Threshold	Year Built/Period of Significance	SEARCH Recommendation
8BR2532	LC-29 Instrumentation Tunnel	6 psf	1960	Eligible (Contributor to RG)
8BR2533	LC-29 Pad A	6 psf	1960	Eligible (Contributor to RG)
8BR2536	Hangar AA	6 psf	1959	Eligible (Contributor to RG)
8BR2537	Hangar AM	6 psf	1964	Eligible (Contributor to RG)
8BR2538	Satellite Processing Facility	6 psf	1964	Eligible (Contributor to RG)
8BR2546	Hangar F	6 psf	1955	Eligible (Contributor to RG)
8BR2587	Hangar G	6 psf	1956	Eligible (Contributor to RG)
8BR2588	Hangar U	6 psf	1958	Eligible (Contributor to RG)
8BR2590	Mission Control Center	6 psf	1956	Eligible (Contributor to RG)
8BR2905*	BOSU	6 psf	1964	Not Evaluated By SHPO
Cemeteries				
8BR2354	Penny Cemetery	6 psf	c. 1890	Insufficient Information
8BR2355	Quartermen North Cemetery	6 psf	c. 1920	Not Evaluated By SHPO
8BR2356	Quartermen South Cemetery	6 psf	c. 1869	Not Evaluated By SHPO
8BR3366	Wilson Cemetery	4 psf	c. 1940	Insufficient Information
8BR2352	Burnham Cemetery	4 psf	c. 1866	Insufficient Information
8BR0233	Cape Road Cemetery	4 psf	c. 1894	Insufficient Information
8BR2358	Stinktown Cemetery	4 psf	1913	Eligible
8BR2357	Osman Cemetery	6 psf	c. 1913	Eligible

*NASA KSC resources within CCSFS. Also included in Table 4-6.

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

This page intentionally left blank.

Background Research

4-36

5 RESEARCH DESIGN

Because thousands of unrecorded buildings and structures are within the operational APE, NASA KSC, in consultation with the FAA and the Florida SHPO, developed an identification approach to make a reasonable and good faith effort to identify historic properties within the APE that may be affected by the undertaking. Identification efforts focused on historic properties greater than 45 years of age, in areas that have not been surveyed within the last 10 years and limited to those historic properties and potential historic properties that may reasonably be affected by the undertaking. This identification and evaluation approach is aligned with standard FAA practice for compliance with Section 106 of the NHPA and its implementing regulations and is consistent with Chapter 8 of the FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* (FAA 2015).

This research design and the methods presented in this section were discussed with and presented in a technical report to the Florida SHPO, who concurred with the approach in a meeting on January 23, 2025.

5.1 POTENTIAL FOR ADVERSE EFFECTS

Per 36 Code of Federal Regulations 800.5, a federal undertaking has an adverse effect on a historic property when it diminishes one or more aspects of integrity to the extent that the property no longer conveys its significance per Criteria A–D for listing in the NRHP. NRHP eligibility is defined in 36 Code of Federal Regulations 60.4, under the authority of the National Historic Preservation Act of 1972, as amended: The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,

- **Criterion A** (Event). Association with one or more events that have made a significant contribution to the broad patterns of national, state, or local history.
- **Criterion B** (Person). Association with the lives of persons significant in the past.
- **Criterion C** (Design/Construction). Embodiment of distinctive characteristics of a type, period, or method of construction; or representation of the work of a master; or possession of high artistic values; or representation of a significant and distinguishable entity whose components may lack individual distinction.
- **Criterion D** (Information Potential). Properties that yield, or are likely to yield, information important in prehistory or history. Criterion D is most often (but not exclusively) associated with archaeological resources. To be considered eligible under Criterion D, sites must be associated with specific or general patterns in the development of the region. Therefore, sites become significant when they are seen within the larger framework of local or regional development.

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

The increased vibratory impacts from the undertaking have the potential to cause adverse effects to cultural resources, including archaeological sites, buildings, structures, objects, and historic districts. While there is the potential for such adverse effects due to the vibratory and sonic-boom overpressure events related to SSH activities, notably, no studies have been completed in Florida, to date, that examine these types of impacts to cultural resources. In 2021 an analysis was conducted that specifically addressed potential impacts on cultural resources from engine noise and sonic booms associated with static tests and launches from the proposed Blue Origin Orbital Launch Site in Santa Barbara County, California (Nocerino et al. 2021). The results of this analysis and few other studies inform this section to posit some of the impacts that could be expected and outline what impacts would be considered an adverse effect to a historic property. It is also important to acknowledge that some adverse effects to cultural resources are more obvious than others; while a broken window can be identified immediately following a launch, for example, an alteration to subsurface archaeological deposits at a site due to vibration or overpressure events cannot be readily ascertained. This section will examine what is known, and unknown, concerning vibratory and overpressure impacts, and potential adverse effects to cultural resources.

For above-ground resources, including buildings, structures, objects, and historic districts, an understanding of the resource's character-defining features is integral to assessing adverse effects. Such features could include neon signage or a rural setting. For an archaeological resource, adverse effects are typically physical impacts that alter features or archaeological deposits and thus reduce the site's research potential.

Current literature does indicate that high sound pressure levels and vibrations have the potential to cause building/structural damage. In general, however, structural damage to buildings due to propulsion/engine noise is rare. The historic building element "most susceptible to damage from launch vehicle noise [are] windows, and more infrequently, plastered walls and ceilings" (Nocerino et al. 2021:15). Masonry buildings and structures are most susceptible to vibration damage through the "wearing of joints...which can cause load to be redistributed due to a weakening of a structural member" (National Cooperative Highway Research Program [NCHRP] 2012a:35). Further, vibration effects may be greatest to "non-structural building elements [such as] fragile glass, loose plaster mosaics or pieces of stone" (NCHRP 2012a:36). Previous analysis also indicates "wood and steel are more elastic than masonry, such as brick and stone" (NCHRP 2012a:2). Therefore, increased exposure to vibration may diminish the integrity of a resource's significant historic features.

Sonic booms also have the potential to result in structural damage. A large degree of variability exists in the possible effects of a sonic boom. For example, the probability of a window breaking when exposed to a sonic boom of 1 psf ranges from one in a billion to one in a million (Sutherland 1990) with much of the variability depending upon the condition of the glass. At 10 psf, the probability of glass breaking is between 1 in 100 and 1 in 1,000. Laboratory tests involving glass have shown that properly installed glass will not break at overpressures below 10 psf, even when exposed to repeated sonic booms (White 1972). Damage to plaster has the potential to occur in the same range of overpressures as damage to glass. Plaster often cracks due to shrinkage over

time or due to structural settling. Sonic-boom damage to plaster may occur when internal stresses are already high as a result of these processes. In general, for well-maintained structures, the threshold for potential damage from sonic booms is 2 psf; below 2 psf, damage is unlikely (Haber et al. 1989).

Additionally, the setting and feeling of historic properties may be temporarily altered by the visual, audible, and vibratory effects of the undertaking. Setting refers to the physical environment of a resource, while feeling refers to the aesthetic qualities of a resource as they relate to the specific time during which the resource became significant. The setting and feeling of historic properties may be permanently altered as repeated launches, and the visual, audible, and vibration effects, could have a cumulative impact.

Concerning archaeological resources, there is no research to support that archaeological deposits at or below ground surface are affected by vibratory effects or overpressure effects of increased sonic-boom exposure. Archaeological sites that consist of only surface and/or buried archaeological material were excluded from 2021 analysis of potential impacts at the Blue Origin Orbital Launch Site because it was assumed that soil would protect materials in place (Nocerino et al. 2021). Although there is no research to support that assumption, as it relates to archaeological sites, sound dB and sonic boom overpressure would be significantly lower underground due to sound attenuation, and variables in the air depending on factors such as humidity, temperature and wind profiles (Leal et al. 2021), passing through the interface of the air and ground, and in the soil depending on conditions such as moisture and sediment type. Ground motion resulting from a sonic boom is rare (United States Air Force 2024). Aboveground components of archaeological sites, such as building remains, have the potential to be affected by vibratory or overpressure effects like those described for buildings, structures, objects, and historic districts. These aboveground components of archaeological sites may contribute to their NRHP eligibility. Native American mounds are aboveground features and may have an unstable soil matrix due to lack of sufficient vegetation cover, human or animal disturbances, or are influenced by natural erosion processes and could be vulnerable to vibratory or overpressure effects. In addition, some sites within the APE have the potential to contain interred human remains and the vibratory or overpressure effects have the potential, although low, to compromise the integrity of their deposition. Concerning submerged archaeological deposits, there is limited understanding of how they could be affected by vibratory effects or overpressure effects. A portion of a sound wave that originates above the water would be reflected into the air at the water and air interface depending on the angle of incidence. Water is acoustically dense, and the remaining portion of the sound wave would continue to travel but a sound wave has a higher dB in the air than in water (National Oceanic Atmospheric Administration [NOAA] 2022). Therefore, vibratory and overpressure effects are likely to be significantly less underwater from a sound that originates in the air.

The National Park Service (NPS) provides guidelines for interpreting the seven aspects of integrity (location, design, setting, materials, workmanship, feeling, and association) as they relate to the potential effects of an undertaking (NPS 1995:45). The effects of the undertaking examined in this report are unlikely to impact the location or association of historic properties within the APE.

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

As noted above, there are limited circumstances in which the effects of vibration may result in damage to above-ground structures. Such damage may potentially affect the design, materials, and workmanship of historic properties, particularly as they relate to exterior and ornamental detailing and other character-defining features.

Physical adverse effects that could occur due to the proposed undertaking include, but are not limited to:

- Damage to glass elements, including original single-pane units and stained glass windows;
- Damage to neon signage on commercial buildings;
- Weakening to the structural members of a building, including joints;
- Damage to plaster elements, including plaster and lathe walls and decorative plaster medallions;
- Damage to fragile roof elements, including steeples, clay tiles, and slate shingles;
- Damage to poorly mixed or poorly maintained concrete elements, including within structures, headstones, and cemetery vaults;
- Damage to the loose matrix of a shell midden or mound; and
- Disarticulation of fragile and fragmentary human remains, within both cemeteries and archaeological sites.

Importantly, there are likely adaptation efforts already in place in this region of Florida that reduce the potential for adverse effects. For example, due to the known, ongoing risk of hurricanes, many buildings in Florida, including historic-age buildings, have been constructed or modified using concrete that is able to withstand powerful storms, and, if properly built, these buildings are less likely to be impacted by vibratory effects. Additional storm proofing for buildings could include reinforced roofs with additional tie-ins, metal strapping to trusses and joints throughout the structure, and the addition of storm shutters, all of which may reduce the risk of structural damage and window breakage. Since this review does not include interviews with building owners or materials analysis, SEARCH cannot know if these measures have been added to or retrofitted onto historic buildings within the APE. Similarly, many of the buildings and structures built for launch and space-related activities at NASA KSC and CCSFS were constructed to withstand concussive forces resulting from launches and engine tests.

5.2 METHODS

5.2.1 Architectural History Field Methods

Due to the size of the APE and the unique nature of the undertaking, a specialized approach for the identification of historic properties was developed for this study. The architectural history field methods consisted of an intensive architectural survey of previously recorded architectural resources and a windshield survey of unrecorded architectural resources that are likely to be 45 years or older. SEARCH conducted research in the FMSF to inform the strategy of the field methods. In addition, SEARCH reviewed USGS quadrangle maps and available parcel data

(Brevard County Property Appraiser 2025) for buildings and/or structures built prior to 1980 and created color-coded “heat maps” to identify areas of concentration in which previously unrecorded structures that are likely to be 45 years or older to further inform general interpretations on architectural styles, integrity, and development patterns.

Following the background research, architectural history fieldwork was conducted by three teams of two surveyors. One team was tasked with the intensive architectural survey focused on previously recorded architectural resources within the APE, and two teams were tasked with the windshield survey focused on previously unrecorded architectural resources that are likely to be 45 years or older within the APE. Additional windshield survey efforts used heat maps to identify concentrated areas of unrecorded resources, focus the effort, and inform interpretations on architectural styles, distinguishing characteristics, integrity, and notable development patterns. Following fieldwork completion, field notes, field maps, photo logs, and digital photographs returned to SEARCH offices for analysis.

Previously Recorded Resources

1. One team of two architectural historians completed an intensive architectural survey of previously recorded resources that was informed by the results of the research of the FMSF;
2. SEARCH omitted the following previously recorded FMSF resources from the survey:
 - a. Previously recorded resources located on federal lands or federally owned parcels, including NASA KSC and CCSFS (these resources are discussed in **Section 4**).
 - b. Certain previously recorded linear resource groups, such as roads and canals, which are considered unlikely to be effected by sonic boom overpressure, vibratory, and auditory effects based on existing literature, discussed above;
 - c. Previously recorded resources without SHPO determinations which previous surveyors recommended “ineligible” for NRHP inclusion (including five previously recorded bridges [8BR03009, 8BR03011, 8BR03013, 8BR03938, 8BR04019]), both individually and as resource group contributors; and
 - d. Previously recorded resources without SHPO determinations recommended as “Potential Resource Group contributors” but located outside existing resource group boundaries.
3. All NRHP-listed properties and historic properties previously determined NRHP eligible or “potentially eligible” were field verified during intensive survey for character-defining features that may be susceptible to damage.
 - a. SEARCH collected digital photographs and notes about integrity and architectural features from the public Right of Way (ROW).
 - b. SEARCH used these field notes to concur with previous eligibility determinations, or provide updated recommendations, as applicable.
 - c. SEARCH recommends whether or not the SSH activities possess the potential for adverse effects to these resources.
4. FMSF resources without SHPO determinations which surveyors previously recommended individually eligible or “potentially eligible” during previous survey were field verified

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

- during intensive survey for character-defining features that may be susceptible to damage.
- a. SEARCH collected digital photographs and notes about integrity and architectural features from the public ROW.
 - b. SEARCH used these field notes to concur with previous eligibility determinations, or provide updated recommendations, as applicable.
 - c. SEARCH recommends whether or not the SSH activities possess the potential for adverse effects to these resources.
5. FMSF resources located within existing resource group boundaries which were previously recommended as “Potential contributor to NR districts” were surveyed at the resource group level.
- a. SEARCH collected digital photographs and notes about integrity and architectural features from SEARCH vehicles.
 - b. SEARCH used these field notes to concur with previous resource group contributor eligibility recommendations or provide updated recommendations, as applicable.
 - c. SEARCH recommended whether or not the SSH activities possess the potential for adverse effects to eligible or listed resource groups.
6. Individual resources documented in the FMSF without SHPO determinations, surveyor recommendations, or sufficient information were surveyed from SEARCH vehicles to understand development trends, but were not surveyed or recorded individually.
7. SEARCH surveyed cemeteries and resource groups without SHPO determinations, surveyor recommendations, or sufficient information. SEARCH entered cemeteries with public access to record notes and digital photographs. SEARCH surveyed resource groups from SEARCH vehicles to record notes and representative digital photographs.
8. Previously recorded bridges were identified in the FMSF, and all are associated with KSC. The FDOT bridge inventory was also reviewed to identify any potential historic bridges within the APE outside of federal land holdings. The FDOT bridge inventory did not identify any bridges in the APE constructed prior to 1945. For the purposes of this project, NASA is following guidance within FHWA’s *Program Comment for Common-1945 Concrete and Steel Bridges* for the purposes to identify potentially significant bridges. The FHWA program comment codifies a way for FHWA to process Section 106 of the NHPA for concrete or steel bridges constructed after 1945 that are unexceptional examples of common bridge engineering of the time. It also documents the historic context of post war transportation patterns and exceptional, rare examples, which are then excepted from the streamlining provided by the comment. Florida has identified nineteen bridges that are exceptional examples and excepted from the streamlined process; none of them are located in the APE. As all but four bridges within the APE were constructed after 1945 and do not represent significant patterns of history, associations with significant people, or represent distinctive engineering, as documented with the historic context developed for Florida’s implementation of the FHWA program comment, no bridges were newly recorded.

Windshield Survey for Unrecorded Resources

1. Two teams of two architectural historians conducted a windshield survey of previously unrecorded architectural resources likely to be 45 years or older within the operational APE. Heat maps depicting areas with a high concentration of previously unrecorded resources were used to inform an additional windshield survey effort to characterize architectural styles, distinguishing characteristics, integrity, and identify notable development patterns;
 - a. Resources were identified by parcel and broken down into four construction periods: Pre-1930, 1931-1945, 1946-1970, and 1971-1979 using historic aerial imagery and topographic maps;
 - b. One survey team covered the area of north of Titusville and Merritt Island;
 - c. One survey team covered the area south of Titusville, as well as Titusville proper;
 - d. Survey teams collected notes and representative digital photographs from SEARCH vehicles.
2. SEARCH omitted the following resources from the APE windshield survey:
 - a. All resources located on federal lands or federally owned parcels, including previously recorded resources (these resources are discussed in **Section 4**);
 - b. Specific linear resource groups, such as roads and canals, including previously recorded resources, which are considered unlikely to be effected by sonic boom overpressure, vibratory, and auditory effects based on existing literature, discussed above;
3. Areas with a high concentration of previously unrecorded resources were spot checked as informed by the heat maps to identify distinguishing characteristics, integrity, and how these resources participated in the general development of these areas;
 - a. SEARCH collected digital photographs and notes on specific architectural styles, distinguishing characteristics, integrity, and notable development patterns from SEARCH vehicles;
 - b. Additional digital photographic documentation took place from SEARCH vehicles for resources that possessed materials or craftsmanship that may be susceptible to damage (i.e., stained-glass windows, exterior decorative woodwork, etc.);
4. Based on the data collected during the survey, SEARCH developed an analysis of general patterns of development for areas of the APE, as well as notable architectural styles and significant alterations to identify resources, materials, and/or architectural characteristics that may be affected by the undertaking.

5.2.2 Archaeological Desktop Analysis Methods

The FMSF Geographic Information System database was researched to identify all archaeological sites that are previously documented within the operational APE. Archaeological sites with aboveground components have the potential to be affected by vibratory and overpressure effects like those described for architectural resources. Sites in the FMSF that include a site type description with a clear aboveground component such as precontact mound, building remains, or structures were further researched. Sites that were previously found to be ineligible for listing in the NRHP presumably lack integrity, significant historical associations, and information

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

potential, and were excluded because impacts to these sites are not likely to be significant. In summary, archaeological sites that met all the following criteria within the APE were considered to have the potential for aboveground components that could contribute to NRHP eligibility and be affected by vibratory and overpressure effects:

- A site type description with a clear aboveground component such as precontact mound, building remains, or structures, and also;
- Sites that the SHPO has not evaluated or determined the site to be eligible or potentially eligible for listing in the NRHP

Sites that have the potential to contain human remains were accounted for regardless of the presence of aboveground components or NRHP eligibility due to their sensitive nature. For sites that met the above criteria, modern aerial imagery (Google Earth Pro 2025) and site details recorded in the FMSF for the last field visit were reviewed to assess the likelihood for aboveground components to be extant that may contribute to NRHP eligibility.

5.2.3 Certified Local Government Consultation

The City of Titusville is within the APE and is a Certified Local Government (CLG). KSC NASA has initiated Section 106 consultation via the submittal of project information and has requested the CLG's participation as a consulting party to the Section 106 consultation.

6 RESULTS

This section presents the results of the intensive architectural history survey that followed the background research, the windshield survey of previously unrecorded resources that are likely to be 45 years old or older, and the archaeological desktop analysis within the operational APE.

6.1 ARCHITECTURAL HISTORY SURVEY RESULTS

6.1.1 Intensive Survey of Previously Recorded Resources

Background research identified 1,592 total previously recorded architectural resources located outside federal lands or federally owned parcels within the APE. SEARCH completed an intensive architectural history survey within the APE following the methodology outlined in **Section 5.2**. The intensive architectural history survey included verifying if resources that were determined eligible or potentially eligible by SHPO and those that were recommended as such but do not have SHPO determinations have character defining features that may be susceptible to damage. The intensive architectural history survey also included identifying if resources located within existing resource group boundaries, those without determinations or recommendations, and cemeteries without determinations or recommendations could be adversely affected by SSH activities. The results of this survey are summarized below.

Resources Determined NRHP Eligible or Potentially Eligible by SHPO or Recommended NRHP Eligible or Potentially Eligible without SHPO Determinations

SEARCH completed intensive architectural history survey and NRHP evaluation for 97 previously recorded resources, including 18 NRHP-listed resources or resource groups, 35 resources or resource groups previously determined eligible or “potentially eligible” by SHPO, and 43 resources without SHPO determinations which were previously recommended “NRHP eligible” by previous surveys (**Table 6-1**). During survey, SEARCH determined three of these resources are misplotted in FMSF data (8BR00465, 8BR00468, and 8BR00678). These resource locations have been updated on results figures included in **Appendix C**.

Of the 97 previously recorded architectural resources intensively surveyed, SEARCH:

- confirmed seven resources are no longer extant (8BR00681, 8BR00759, 8BR00946, 8BR00953, 8BR01762, 8BR1763, and 8BR01764);
- recommends all 18 NRHP-listed resources or resource groups retain sufficient integrity to remain NRHP listed;
- concurs with previous SHPO determinations that 28 resources, including three cemeteries (8BR01705, 8BR01724, and 8BR01777), one railroad (8BR01870), and four bridges (8BR02906, 8BR02956, 8BR02955, 8BR02957) are “NRHP Eligible”; and recommends the resources remain eligible for NRHP inclusion;
- recommends one resource previously determined “NRHP eligible” by SHPO is no longer eligible for NRHP inclusion (8BR01765);

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

- concluded one resource previously determined “Potentially Eligible for NRHP” by SHPO is not visible from Right of Way (ROW) (8BR01812). Therefore, its current NRHP eligibility could not be evaluated/updated;
- recommends 36 resources without SHPO determinations which were recommended “NRHP eligible” by previous surveys are eligible for NRHP inclusion;
- recommends one resource without a SHPO determination, which was recommended “NRHP eligible” by previous surveys, is eligible for NRHP inclusion only as a resource group contributor (8BR00703); and,
- recommends 5 resources without SHPO determinations, which were recommended “NRHP eligible” by previous surveys, are not eligible for NRHP inclusion.

Effects Evaluation

When exposed to levels between 2 and 4 psf, structural components, including glass and plaster, demonstrate damage at a higher rate than expected due to natural wear in well-maintained structures (Haber et al. 1989). Activities associated with SSH operation have the potential to impact historic properties in the APE, although the precise nature of adverse effects to individual historic properties is unknown. Therefore, SEARCH assessed, to the extent feasible, the types of previously recorded resources that could be affected, based on their architectural characteristics, materials, alterations and/or architectural styles. For NRHP-eligible or listed resources without photographic access during survey, SEARCH used previous FMSF documentation and photographs to understand the potential for adverse effects to these historic properties.

SEARCH determined the majority of extant NRHP-listed or eligible buildings are Frame Vernacular style (27 resources) (**Table 6-1**). This style is characterized by balloon-frame construction, simple rectangular or square plans, one- or two-story heights, wood siding, and minimal exterior ornamentation (McAlester 2013). Frame Vernacular style buildings are common throughout Florida. This architectural style typically does not include attached exterior ornamentation that may be adversely affected by SSH-related vibration or overpressure events. Additionally, during intensive survey SEARCH observed many of the resources throughout the APE no longer retained original wood frame sash windows, which have been replaced over time with metal frame or vinyl frame sash windows.

Additional styles, including Georgian Revival (10 resources), Mediterranean Revival (7 resources), Queen Anne Revival (6 resources), Neoclassical Revival (2 resources), Gothic Revival (1 resource) and others, were observed during intensive survey in lesser numbers throughout the APE (see **Table 6-1**). Though styles like Queen Anne Revival, Neoclassical Revival, and Gothic Revival styles do feature exterior ornamentation, SEARCH determined during survey that the buildings representative of these styles within the APE do not possess plentiful ornamentation or high style decorative elements. Additionally, many of these buildings no longer possess their original wood frame sash windows. Original multi-light, stained glass windows found on Gothic Revival style buildings (8BR00177/St. Gabriel’s Episcopal Church [2 psf]) are enclosed by fixed plexiglass panels or modern glass panes. Additionally, other NRHP listed or eligible buildings - such as the Queen Anne Revival 8BR00524/Pritchard House (2 psf) and 8BR00699/27 Barton Avenue (2 psf), and the

Results

6-2

Georgian Revival 8BR00721/1125 Rockledge Drive (2 psf) - possess functional louvered storm shutters or fixed fiberglass storm shutters.

SEARCH identified 8BR00444, a ca. 1915 Craftsman style residence at 1423 Main Street (2 psf) on the western outer range of the historic core of Titusville. The resource has been previously recorded and recommended NRHP eligible for its significance under Criterion C but lacks a SHPO eligibility determination. Resource 8BR00444 is a good local example of the Craftsman style. Similar examples of smaller Craftsman houses were observed throughout the APE but not in the frequency as Spanish Revival or Mission styles of similar massing. Of those observed, this resource embodies the characteristics of the style, such as low-pitched gable roof, unenclosed eave overhang, braces or brackets, large, dominant incised porches, tapered columns, dormers and balconies (McAlester 2013). One of the distinctive features of this example is the leaded, multipaned sash over a single pane. SEARCH recommends the resource is eligible for NRHP inclusion for its significance under Criterion C; and recommends it retains sufficient integrity to convey that significance.

The three cemeteries included in intensive survey (8BR01705/Indianola Pioneer Cemetery [2 psf], 8BR01724/Hilltop Cemetery [2 psf], and 8BR01777/Cocoa Cemetery [2 psf]) do not possess any high styles (see **Table 6-1**). Markers are primarily vernacular, low profile stone or concrete headstones, slabs, or vaults. SEARCH determined during survey these cemeteries do not possess intentional landscape design, are not intended to serve recreational purposes, and are located within maintained vegetated areas.

The five resource groups included in intensive survey (8BR00560/Titusville Commercial District [2 psf], 8BR01611/Rockledge Drive Residential District [2 psf], 8BR01612/Valencia Subdivision Residential District [2 psf], 8BR01613/Barton Avenue Residential District [2 psf], and 8BR04229/Johnathan H. Sams Farmstead [4 psf]) are primarily Frame Vernacular, Mediterranean Revival, Queen Anne Revival, and/or Spanish Colonial Revival in style (see **Table 6-1**). Frame Vernacular, Mediterranean Revival and Spanish Revival styles are not characterized by ornate exterior ornamentation. Additionally, many original wood-frame sash or casement windows throughout the resource groups have been replaced over time with metal or vinyl frame types.

The two bridges included in intensive survey (8BR02906/Jay Jay [2 psf] and 8BR02957/Haulover Canal [2 psf]) are two bascule bridges built in the 1960s. Two additional bridges (8BR02955/Banana River Bridge and 8BR02956/Indian River [demolished]) are located in the APE. These are discussed in **Section 4.2.1** and **Table 4.6**.

SSH-related operational activities will result in vibratory and sonic-boom overpressure events that would meet or exceed 2 psf. Events at the 2 psf threshold have a 1:10,000 chance of breaking windows. As such, the undertaking may possess the potential for adverse effects to Resource 8BR00444. The breakage of leaded glass windows would be considered an adverse effect under Section 106 of the NHPA. Additionally, SEARCH identified terra cotta barrel tiles often used for Spanish Revival and Mission Revival roofing material may be adversely affected by SSH activities.

October 2025
Final Report

SEARCH
CRAS For SSH At LC-39A, Kennedy Space Center, Brevard County, Florida

This page intentionally left blank.






Results

6-4

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report






Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
Resource Groups							
8BR00560/NRHP #89002164	Titusville Commercial District	2 psf	Spanish Colonial Revival; Neoclassical Revival	1890–1930	NRHP Listed	NRHP Listed	
8BR01611/NRHP #92001045	Rockledge Drive Residential District	2 psf	Frame Vernacular; Colonial Revival; Queen Anne; Mediterranean Revival; Bungalow	1880–1926	NRHP Listed	NRHP Listed	
8BR01612/NRHP #92001047	Valencia Subdivision Residential District	2 psf	Mediterranean Revival; Mission Revival	1924–1926	NRHP Listed	NRHP Listed	
8BR01613/NRHP #92001046	Barton Avenue Residential District	2 psf	Frame Vernacular; Colonial Revival; Queen Anne; Mediterranean Revival; Bungalow	1884–1926	NRHP Listed	NRHP Listed	
8BR04229	Jonathan H. Sams Farmstead	4 psf	Frame Vernacular	1878	Eligible	Eligible	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR01870	Florida East Coast Railroad	2 psf	N/A	1821-1929	Eligible	Eligible	No Photo
Buildings							
8BR00177/NRHP #72000302	St. Gabriel's Episcopal Church	2 psf	Gothic Revival	1887	NRHP Listed	NRHP Listed	
8BR00211/NRHP #86000023	E.P. Porcher House	2 psf	Georgian Revival	1916	NRHP Listed	NRHP Listed	
8BR00278/NRHP #100003581	Cocoa Junior High	2 psf	Masonry vernacular	ca. 1924	NRHP Listed	NRHP Listed	
8BR00282/NRHP #91001541	Aladdin Theater Building	2 psf	Italian Renaissance Revival	1924	NRHP Listed	NRHP Listed	
8BR00397/NRHP #89002165	Wager House	2 psf	Frame Vernacular	ca. 1891	NRHP Listed	NRHP Listed	






Results

6-6

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report






Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00399/NRHP #89002168	Judge George Robbins House	2 psf	Georgian Revival	ca. 1892	NRHP Listed	NRHP Listed	
8BR00480/NRHP #89002166	Spell House	2 psf	Queen Anne	ca. 1911	NRHP Listed	NRHP Listed	
8BR00524/NRHP #89002167	Pritchard House	2 psf	Queen Anne	1891	NRHP Listed	NRHP Listed	
8BR00581/NRHP #90000848	St. Luke's Episcopal Church	4 psf	Frame Vernacular	1889	NRHP Listed	NRHP Listed	
8BR00860/NRHP #93000819	Dr. George E. Hill House	2 psf	Frame Vernacular	ca. 1880	NRHP Listed	NRHP Listed	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR01657/NRHP #95000731	City Point Community Church	2 psf	Frame Vernacular	1885	NRHP Listed	NRHP Listed	
8BR01702/NRHP #97001121	J.R. Field Homestead	2 psf	Frame Vernacular	ca. 1900	NRHP Listed	NRHP Listed	
8BR01825/NRHP #100003582	Cocoa Post Office	2 psf	Art Deco	1940	NRHP Listed	NRHP Listed	
8BR04215/NRHP #100006776	Imperial Towers	2 psf	Mid-Century Modern	ca. 1963	NRHP Listed	NRHP Listed	
8BR00425	422 Julia Street	2 psf	Mission	1926	Eligible	Eligible	






Results

6-8

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report


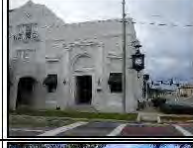



Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00426	428 Julia Street	2 psf	Masonry Vernacular	1905	Eligible	Eligible	
8BR00430	423 Main Street	2 psf	Frame Vernacular	ca. 1910	Eligible	Eligible	
8BR00444	1423 Main Street	2 psf	Craftsman	ca. 1915	Not Evaluated	Eligible	
8BR00465	Brevard County Courthouse	2 psf	Neo-Classical Revival	ca. 1912	Eligible	Eligible	
8BR00467	423 Palm Avenue	2 psf	Masonry Vernacular	1901	Not Evaluated	Eligible	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00468	420 Pine Street	2 psf	Mission Revival	1925	Eligible	Eligible	
8BR00508	300 Washington Avenue S	2 psf	Beaux Arts Eclecticism	ca. 1925	Not Evaluated	Eligible	
8BR00586	351 Rockledge Drive	2 psf	Georgian Revival	1923	Not Evaluated	Eligible	
8BR00617	515 Rockledge Drive	2 psf	Frame Vernacular	ca. 1925	Not Evaluated	Eligible	
8BR00620	Dr. S.D. Rambo Residence	2 psf	Frame Vernacular	ca. 1900	Not Evaluated	Eligible	






Results

6-10

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report






Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00640	635 Rockledge Drive	2 psf	Stick	ca. 1905	Not Evaluated	Eligible	
8BR00641	633 Rockledge Drive	2 psf	Georgian Revival	ca. 1910	Not Evaluated	Eligible	
8BR00642	629 Rockledge Drive	2 psf	Queen Anne	ca. 1915	Not Evaluated	Eligible	
8BR00644	621 Rockledge Drive	2 psf	Frame Vernacular	ca. 1890	Not Evaluated	Eligible	
8BR00648	709 Rockledge Drive	2 psf	Mediterranean Revival	ca. 1915	Not Evaluated	Eligible	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00668	106 Valencia Road	2 psf	Beaux Arts Eclecticism	ca. 1925	Not Evaluated	Eligible	
8BR00678	133 Valencia Road	2 psf	Mediterranean Revival	ca. 1925	Not Evaluated	Eligible	
8BR00681	825 Osceola Drive	2 psf	Mediterranean Revival	ca. 1926	Eligible	Not Eligible (Demolished)	
8BR00685	26 Orange Avenue	2 psf	Mission Revival	ca. 1925	Not Evaluated	Eligible	
8BR00698	23 Barton Avenue	2 psf	Frame Vernacular	ca. 1890	Not Evaluated	Eligible	






Results

6-12

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report






Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00699	27 Barton Avenue	2 psf	Queen Anne	ca. 1890	Not Evaluated	Eligible	
8BR00700	White's Cottage	2 psf	Frame Vernacular	ca. 1875	Not Evaluated	Eligible	
8BR00702	Andrew Anderson Jr. Residence	2 psf	Queen Anne	ca. 1890	Not Evaluated	Eligible	
8BR00703	34 Barton Avenue	2 psf	Queen Anne	ca. 1890	Not Evaluated	Eligible as RG Contributor (Barton Avenue Residential District)	
8BR00705	39 Barton Avenue	2 psf	Frame Vernacular	ca. 1890	Not Evaluated	Eligible	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00715	St. Mary's Catholic Church	2 psf	Frame Vernacular	ca. 1917	Not Evaluated	Eligible	
8BR00719	1101 Rockledge Drive	2 psf	Frame Vernacular	ca. 1900	Not Evaluated	Eligible	
8BR00720	1119 Rockledge Drive	2 psf	Georgian Revival	ca. 1910	Not Evaluated	Not Eligible (lack of significant associations or distinctive characteristics)	
8BR00721	1125 Rockledge Drive	2 psf	Georgian Revival	ca. 1910	Not Evaluated	Not Eligible (lack of significant associations or distinctive characteristics)	
8BR00724	Troy E. Caldwell Residence	2 psf	Georgian Revival	ca. 1905	Eligible	Eligible	






Results

6-14

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report






Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00729	1273 Rockledge Drive	2 psf	Frame Vernacular	ca. 1905	Potentially Eligible for NRHP	Eligible	
8BR00730	1277 Rockledge Drive	2 psf	Frame Vernacular	ca. 1915	Eligible	Eligible	
8BR00731	1279 Rockledge Drive	2 psf	Frame Vernacular	ca. 1887	Potentially Eligible	Eligible	
8BR00743	1341 Rockledge Drive	2 psf	Mediterranean Revival	ca. 1920	Potentially Eligible	Eligible	
8BR00759	Marion S. Whaley Citrus Packing House	2 psf	Frame Vernacular	1930	Eligible	Not Eligible (demolished)	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR00871	John Miot House	2 psf	Frame Vernacular	1920	Potentially Eligible	Eligible	
8BR00889	6195 N Tropical Trail	4 psf	Frame Vernacular	ca. 1882	Not Evaluated	Eligible	
8BR00946	Melissa Moore house	2 psf	Frame Vernacular	ca. 1890	Not Evaluated	Not Eligible (Demolished)	
88BR00953	Mt. Moriah AME Church	2 psf	Gothic Revival	1923	Eligible	Not Eligible (Demolished)	
8BR00991	Old Weathers House	2 psf	Masonry Vernacular	ca. 1930	Not Evaluated	Eligible	






Results

6-16

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report






Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR01023	Snider House	2 psf	Mediterranean Revival	ca. 1915	Not Evaluated	Eligible	
8BR01035	Claranet Inn	2 psf	Georgian Revival	ca. 1924	Not Evaluated	Eligible	
8BR01039	E.C. Johnson House	2 psf	Georgian Revival	ca. 1905	Not Evaluated	Eligible	
8BR01046	719 Forest Avenue	2 psf	Mediterranean Revival	ca. 1930	Not Evaluated	Eligible	
8BR01066	Charles B. Provost House	2 psf	Frame Vernacular	ca. 1910	Not Evaluated	Eligible	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR01071	Gertrude Alfred House	2 psf	Neo-Classical Revival	1938	Not Evaluated	Not Eligible (lack of significant associations or distinctive characteristics)	
8BR01076	John D'Albora House	2 psf	Georgian Revival	ca. 1935	Not Evaluated	Eligible	
8BR01078	Charles Smith House	2 psf	Georgian Revival	ca. 1938	Not Evaluated	Eligible	
8BR01082	Carl Schnabel House	2 psf	Frame Vernacular	ca. 1895	Not Evaluated	Eligible	
8BR01084	Norman Clinden House	2 psf	Bungalow	ca. 1908	Not Evaluated	Eligible	






Results

6-18

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report





Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR01086	3113 Indian River Drive	2 psf	Mediterranean Revival	1900	Potentially Eligible	Eligible	
8BR01094	2515 McFarland Drive	2 psf	Mediterranean Revival	ca. 1924	Not Evaluated	Not Eligible (lack of significant associations or distinctive characteristics)	
8BR01096	2415 McFarland Drive	2 psf	Georgian Revival	ca. 1924	Not Evaluated	Eligible	
8BR01101	2205 McFarland Drive	2 psf	Masonry Vernacular	ca. 1926	Not Evaluated	Eligible	
8BR01163	Mattie Lamar House	2 psf	Frame Vernacular	1917	Eligible	Eligible	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR01723	Cocoa Cemetery Storage Building	2 psf	Masonry Vernacular	ca. 1931	Eligible	Eligible	
8BR01739	Ashley's Café and Lounge	2 psf	Tudor Revival	ca. 1932	Eligible	Eligible	
8BR01741	Rockledge Gardens Nursery and Landscaping	2 psf	Industrial Vernacular	ca. 1930	Eligible	Eligible	
8BR01762	Reynolds Oil Gasoline Tanks	2 psf	Industrial Vernacular	ca. 1927	Potentially Eligible	Not Eligible (Demolished)	No Photo
8BR01763	Reynolds Oil Pump House	2 psf	Industrial Vernacular	ca. 1927	Potentially Eligible	Not Eligible (Demolished)	No Photo
8BR01764	Reynolds Oil Office/Warehouse	2 psf	Industrial Vernacular	ca. 1927	Potentially Eligible	Not Eligible (Demolished)	No Photo
8BR01765	Bohn Equipment Company	2 psf	Industrial Vernacular	ca. 1927	Eligible	Not Eligible (lack of significant associations or distinctive characteristics)	
8BR01812	1265 Rockledge Drive "Hunting Lodge"	2 psf	Frame Vernacular	ca. 1905	Potentially Eligible	No Access	No Photo






Results

6-20

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

October 2025
Final Report





Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR01873	John Sam's House	4 psf	Frame Vernacular	ca. 1875	Not Evaluated	Eligible	
8BR02704	400 Lucerne Drive	2 psf	Mid-Century Modern	ca. 1966	Eligible	Eligible	
8BR02779	317 Rosa Jones Drive	2 psf	Masonry vernacular	1962	Eligible	Eligible	
8BR03378	Cape Canaveral Original City Hall	4 psf	Mid-Century Modern	1965	Not Evaluated	Not Eligible (lack of significant associations or distinctive characteristics)	
8BR03614	The Norwood House	2 psf	Frame Vernacular	1920	Not Evaluated	Eligible	

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

Table 6-1. Intensive Architectural History Survey Results Summary.

FMSF/NRHP Number	Name/Address	psf Threshold	Style	Year Built	Prior SHPO Determination	SEARCH Recommendation	Resource Photograph
8BR03955	2460 Courtenay Parkway N	2 psf	Mid-Century Modern	ca. 1965	Eligible	Eligible	
Cemeteries							
8BR01705	Indianola Pioneer Cemetery	2 psf	N/A	ca. 1890	Eligible (6/24/2022)	Eligible	
8BR01724	Hilltop Cemetery	2 psf	N/A	ca. 1887	Eligible (6/24/2011)	Eligible	
8BR01777	Cocoa Cemetery	2 psf	N/A	ca. 1890	Eligible (10/01/2010)	Eligible	
Bridges							
8BR02906	Jay Jay	2 psf	Bascule	ca. 1963	Eligible	Eligible	No Photo
8BR02957	Haulover Canal	2 psf	Bascule	1965	Eligible	Eligible	No Photo

Results

6-22

Resources Within Existing Resource Group Boundaries, Those Without Determinations or Recommendations, and Cemeteries Without Determinations or Recommendations

There are 142 previously recorded resources, within existing resource group boundaries without determinations or recommendations, or cemeteries without determinations or recommendations including:

- 125 resources within existing resource group boundaries but without SHPO determinations recommended by previous surveyors as “NRHP Eligible as Potential Resource Group Contributors;”
- 11 cemeteries without SHPO determinations noted in FMSF data as having “insufficient information” for eligibility determinations, or no recorded surveyor data; and,
- Six resource groups without SHPO determinations noted in FMSF data as having “insufficient information” for eligibility determinations, or no recorded surveyor data.

Background research identified 164 additional previously recorded resources without SHPO determinations that were recommended by previous surveyors as “NRHP Eligible as Potential Resource Group Contributors.” However, these resources are not located within any existing resource group boundaries identified in FMSF data. Therefore, the data does not reflect if the resources are contributors to existing resource groups, which would require a reevaluation of existing resource group boundaries. As this additional research and survey was outside the scope of the current project, these outside existing resource group boundaries were omitted from intensive survey. Additionally, 379 individual FMSF resources without SHPO determinations, surveyor recommendations, or sufficient information were quantified during background research and intensive architectural survey to identify regional development trends but were not individually recorded or evaluated for NRHP eligibility. A representative sample of resource photographs are included in **Table 6-2**. Results figures are included in **Appendix D**.

SEARCH recommends that 123 of the 125 resources within existing resource group boundaries are NRHP-eligible as resource group contributors; and one resource (8BR00716/St. Mary’s Church Rectory [2 psf]) is ineligible for NRHP inclusion, neither individually nor as a resource group contributor, as it is not extant (see **Table 6-2**). Additionally, SEARCH recommends one of these resources (8BR00514/Walker Apartment Building [2 psf]) is individually eligible for NRHP inclusion for its significance under Criterion C (see **Table 6-2**).

SEARCH recommends six of the 11 cemeteries are eligible for NRHP inclusion (8BR02401, 8BR02406, 8BR02411, 8BR02808, 8BR04482, and 8BR04574); three cemeteries are ineligible for NRHP inclusion (8BR02785, 8BR02786, and 8BR03000); and two cemeteries remain unevaluated due to a lack of survey access (8BR01979 and 8BR03334) (see **Table 6-2**). Background research determined:

- Resource 8BR02401/White Lily Cemetery (2 psf) is associated with Bethel African Methodist Episcopal Church of Merritt Island, and with late nineteenth century Black

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

history in Brevard County. SEARCH recommends the resource is significant under Criterion A for this association.

- Resource 8BR02406/Mt. Carmel Missionary Baptist Church Cemetery (2 psf) is associated with Mt. Carmel Missionary Baptist Church, St. Paul's African Methodist Episcopal (AME) Church, and with early twentieth century Black history in Brevard County. SEARCH recommends the resource is significant under Criterion A for this association.
- Resource 8BR02411/Dennis Sawyer Cemetery (2 psf) is associated with mid-twentieth century Black history in Brevard County; and with Edwin Dennis Sawyer, who is interred within the cemetery. Sawyer immigrated to Florida from the Bahamas in the late nineteenth century. In 1898, Sawyer relocated to Cocoa, Florida, and established Mt. Olive AME Church in 1908, Sawyer Hall, Merritt Junior High. Sawyer was also a noted advocate for Black residents of Merritt Island throughout the twentieth century until his death in 1964 (Historical Marker Database 2022). SEARCH recommends the resource is significant under Criterion A and Criterion B for these associations.
- Resource 8BR02808/Pinecrest Colored Cemetery (2 psf) is associated with mid-nineteenth through the twentieth century Black history in Brevard County. Previous documentation indicates the cemetery includes the mid-nineteenth century interments of enslaved Brevard County residents. The cemetery remained in use through the late nineteenth century into the twentieth century by their descendants (Goodson and Harding 2011). SEARCH recommends the resource is significant under Criterion A for this association.
- Resource 8BR04482/Davis Memorial Cemetery (2 psf) is associated with early to mid-twentieth century Black history in Brevard County. Previous documentation also indicates members of the Fayson family, a Black pioneer family significant to local history, are interred within the cemetery (FMSFweb 2025). SEARCH recommends the resource is significant under Criterion A for this association.
- Resource 8BR04574/Oak Ridge Cemetery (2 psf) is associated with early to mid-twentieth century Black history in Brevard County. SEARCH recommends the resource is significant under Criterion A for this association.

Additionally, SEARCH recommends Resources 8BR02401, 8BR02406, 8BR02411, 8BR02808, 8BR04482, and 8BR04574 fulfill Criterion Consideration D as they possess "important historic associations from a community's early period of settlement" and historic associations with "an ethnic or cultural group whose impact on the community or region was significant but is not well documented in other resources" (NPS 1992: 17).

SEARCH recommends two of the six resource groups are eligible for NRHP inclusion (8BR00564 and 8BR02935); two resource groups are ineligible for NRHP inclusion (8BR03407 and 8BR03921); and one resource group remains unevaluated due to lack of survey access (8BR02143). SEARCH determined during survey one resource group (8BR03345) is no longer extant and is therefore not eligible for NRHP inclusion (see **Table 6-2**).

Results

6-24

Effects Evaluation

When exposed to levels between 2 and 4 psf, structural components, including glass and plaster, demonstrate damage at a higher rate than expected due to natural wear in well-maintained structures (Haber et al. 1989). Activities associated with SSH operation have the potential to impact historic properties in the APE, although the precise nature of adverse effects to individual historic properties is unknown. Therefore, SEARCH assessed, to the extent feasible, the types of previously recorded resources that could be affected, based on their architectural characteristics, materials, alterations and/or architectural styles. For NRHP-eligible or listed resources without photographic access during survey, SEARCH used previous FMSF documentation and photographs.

SEARCH determined the majority of extant NRHP-eligible resources/resource group contributors are Frame Vernacular (41 resources), Mediterranean Revival (27 resources), and Masonry Vernacular (26 resources) styles (see **Table 6-2**). The Frame Vernacular and Masonry Vernacular styles are characterized by balloon frame or concrete block masonry construction, simple rectangular or square plans, one- or two-story heights, wood or concrete cladding, and minimal exterior ornamentation (McAlester 2013). Frame Vernacular and Masonry Vernacular style buildings are common throughout Florida. Mediterranean Revival style buildings are characterized by stucco cladding, roof tiles, ironwork details, and arched windows (McAlester 2013). These architectural styles typically do not include attached exterior ornamentation that may be adversely affected by SSH-related vibration. Additionally, during the intensive architectural survey SEARCH observed that many of the resources throughout the APE no longer retained original wood frame sash windows, which have been replaced over time with metal frame or vinyl frame sash windows.

Other styles, including Georgian Revival (9 resources), Bungalow (7 resources), Queen Anne Revival (6 resources), and others, were observed during the intensive architectural survey in lesser numbers throughout the APE (see **Table 6-2**). Though styles like Queen Anne Revival do feature exterior ornamentation, SEARCH determined that the buildings representative of these styles within the APE do not possess plentiful ornamentation or high style decorative elements. Additionally, many of these buildings no longer possess their original wood frame sash windows.

The six cemeteries recommended NRHP eligible following the intensive architectural survey (8BR02401/White Lily [4 psf], 8BR02406/Mt. Carmel Missionary Baptist Church Cemetery [2 psf], 8BR02411/Dennis Sawyer Cemetery [2 psf], 8BR02808/Pinecrest Colored Cemetery [2 psf], 8BR04482/Davis Memorial Cemetery [2 psf], and 8BR04575/Oak Ridge Cemetery [2 psf]) do not possess any high styles (see **Table 6-2**). Markers are primarily vernacular, low profile stone or concrete headstones and slabs. SEARCH determined an additional character defining feature of these cemeteries are raised, case concrete vaults with decorative cast concrete festoon details. SEARCH determined during survey that these cemeteries do not possess intentional landscape design, are not intended to serve recreational purposes, and are located within densely vegetated areas.

October 2025
Final Report

SEARCH
EIS Support for SSH, LC-39A, Kennedy Space Center, Brevard County, Florida

The two resource groups recommended NRHP eligible following the intensive architectural survey (8BR00564/Cocoa Historic District [2 psf] and 8BR02935/Titusville Downtown Residential District [2 psf]) are primarily Frame Vernacular, Masonry Vernacular, Mediterranean Revival, Queen Anne Revival, and/or Ranch in style (see **Table 6-2**). Frame Vernacular, Masonry Vernacular, Mediterranean Revival and Ranch styles are not characterized by ornate exterior ornamentation. The only Queen Anne style contributing resource identified within 8BR02935/Titusville Downtown Residential District (2 psf) does not possess high style elements (8BR00393/602 Indian River Avenue [2 psf]). Additionally, many original wood frame sash or casement windows throughout the resource groups have been replaced over time with metal or vinyl frame types.

Results

6-26