EXCAVATION AND WAIVER PROCESS

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National Aeronautics and Space Administration

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EXCAVATION AND WAIVER PROCESS

1.0 PURPOSE

To ensure consistent communication for preparation and application of excavation permits, utility locates, and waivers, this Kennedy Documented Procedure (KDP) provides guidance and instruction to ensure the safety of personnel and infrastructure at Kennedy Space Center (KSC). The associated Site Plan process is documented in KDP-KSC-P-1303, Site Planning.

2.0 APPLICABILITY

This KDP applies to all KSC civil servants, commercial partners as specified in their agreements, and contractor organizations needing to perform excavation activities within the boundaries of KSC. In this procedure, all mandatory actions (i.e., requirements) are denoted by statements containing the term “shall”. The terms “may” or “can” denote discretionary privilege or permissions; “should” denotes a good practice and is recommended, but not required; “will” denotes expected outcome; and “are/is” denotes descriptive material.

3.0 APPLICABLE DOCUMENTS AND FORMS

a. KDP-KSC-P-1303, Site Planning

b. KSC Form 50-1, Excavation Category Waiver

4.0 EXCAVATION PERMITS

An approved Excavation Permit Request (EPR) is required prior to performing any modifications to an existing grade or area storm drainage profile by digging, cutting, probing, drilling, installing tie-down rods, driving grounding rods, trenching, back-filling, land clearing, and all other penetrations to subsurface areas at KSC. This includes all National Aeronautics and Space Administration (NASA) KSC property, including out-grants and leases, and also pertains to excavation that may be performed within a building structure.

4.1 Requestor

To ensure the most direct method of communication, the person responsible for the excavation activity should be the requestor of the EPR. It is recognized that this will not always be the case, and when circumstances require others to submit the request, the requestor will be required to promptly relay any communication related to the EPR or policy changes to the entity performing the excavation, including the operator of the equipment.

4.2 Excavation Permit Request

4.2.1 The requestor shall submit an EPR at least five business days prior to any intended excavation to allow adequate time for review and processing.

4.2.1.1 Electronic submittal is performed via the internal or external web sites:

a. Internal Site: https://epr.ksc.nasa.gov/Home/

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b. External Site: https://extapps.ksc.nasa.gov/EPR/Home/

4.2.2 Each EPR submittal (regardless of the method of submittal) shall include a full description of the work to be performed and include a map or drawing of the excavation area and any other applicable documentation, e.g. environmental checklists. It should be noted that the external site does not allow attachments and the requestor will be contacted via email to complete the process.

4.2.3 For large areas, the permit should be broken into multiple smaller permits consisting of work that could reasonably be completed within two weeks to ensure proper locating and management of activities and infrastructure changes. The Base Operations and Support Services (BOSS) Site Services Office can assist with determining appropriate submittal details. Contact via email at KSC-BOSS-DigPermit@mail.nasa.gov, or phone 321-867-2406.

4.2.4 An EPR may be requested for a period of up to six months and shall expire on the stated end date. If excavation work has not been completed, the requestor must submit a new EPR.

4.2.5 No EPR shall be extended.

4.2.6 Each EPR shall be reviewed by:

a. BOSS Survey/Locate Office –

1. KSC Utility Locator (also referred to as Excavation Permit Inspector (EPI)) shall review for EPR completeness and determine and assign the proper excavation category for the request (categories are defined in Section 4.2.6.).

2. To minimize confusion, only one category shall be assigned to each new EPR.

b. NASA Environmental Office or designated contractor-alternate, NASA Environmental and Medical Contract, shall review to determine potential environmental impacts and whether additional forms or information are required.

c. BOSS Master Planning Administrator –

1. Shall review to determine if the EPR requires a Site Plan.

2. If the request is part of a larger effort for which an approved Site Plan does not already exist, the requestor shall be notified to submit a Site Plan request.

4.2.7 Excavation Category

a. Category A – These areas have been determined to contain no critical underground utilities with the potential to impact launch or other mission operations. Therefore, work is typically unrestricted except for any stipulations identified by the KSC Utility Locator on the approved permit.

b. Category B – Launch, Landing, and Mission Operations – Work in areas in this category has the potential to impact critical utilities that support mission operations. During specified periods related to launch and other mission operations, excavation will not be allowed in those areas.

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4.2.8 Following coordination and acceptance, the KSC EPR Administrator shall place the EPR in “Pending” status. The system delivers an email to the requestor with the status “Pending” in the subject line, a copy of the preliminary EPR attached, and includes additional instructions to be followed for approval.

4.3 Excavation Permit Request Approval

4.3.1 The requestor will receive a system-generated email identifying the current status of the EPR in the subject (Pending, Approved, Suspended, or Closed) as well as pertinent instructions throughout the process.

4.3.2 The requestor shall review the information contained within the “Pending” email and the attached permit. Requestor’s acceptance and use of the permit process indicate agreement to abide by the instructions and procedures. Failure to do so may result in safety risks, work stoppages, and other consequences, including financial.

4.3.3 No earlier than 21 days, and no later than 72 hours before the intended start date for the excavation work, the Requestor shall:

a. Print a copy of the EPR, which is attached to the “Pending” email.

b. The requestor/excavator shall designate the route or area to be located and excavated using water-based white marking paint to clearly identify the proposed work area. This assists with communicating the intended work area to ensure accurate utility locates are performed.

c. Contact Sunshine 811 One-Call at 800-432-4770, 811 on a cell phone, or www.sunshine811.com to initiate the request for commercial utility locates for the intended work area. The requestor shall:

1. Provide a clear description of the work area/permit location and the nearest intersections, dates of expected work, and provide contact information.

2. Obtain the 811-ticket number and enter on the printed EPR.

4.3.4 Upon completion of the 811 locate, the requestor shall contact the KSC Utility Locator to schedule the KSC utility locate and approve the EPR.

a. Primary Contact: 321-749-4840

b. Alternate Contact: 321-529-4796

4.3.5 On the scheduled date, the requestor shall meet the KSC Utility Locator at the excavation site with a printed copy of the permit clearly showing the 811-ticket number and a map for all work to be performed under the EPR.

4.3.6 The KSC Utility Locator shall perform the required utility locate activities, annotate any restrictions, such as “hand dig”, and sign the permit to indicate approval.

4.3.7 Following field locate and approval, the KSC EPR Administrator shall place the EPR in “Approved” status.

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4.3.8 The requestor will receive a system-generated email with the status “Approved” in the subject line, a photo of the signed EPR and notes and a PDF copy of the approved EPR attached, and important process reminders.

4.3.9 Once the EPR is signed, the requestor is authorized to begin excavation, following any and all excavation restrictions guidelines, including those in Appendix A.

4.3.10 All EPRs will be automatically closed by the system 185 days after approval and an email sent to the requestor notifying them of the status change to “Closed”. If the work has not been completed, the requestor must submit a new EPR.

4.3.11 No EPR shall be extended.

4.4 Excavation

4.4.1 The excavator shall maintain a signed/approved copy of the EPR on-site at all times when performing excavation activities.

4.4.2 If excavation does not begin within 21 days from approval, the permit shall be suspended.

4.4.2.1 The KSC EPR Administrator shall change the status of the EPR to “Suspended” status.

4.4.2.2 The system delivers an email to the requestor with the status “Suspended” in the subject line along with an attached pending permit to be approved and signed by the KSC Utility Locator once all non-compliant issues are resolved.

4.4.2.3 The requestor shall schedule a new utility locate (beginning with paragraph 4.3.3) to reactivate the EPR. A minimum of 72 hours should be allowed between the call to schedule a repeat locate and the intended start of excavation.

4.4.3 The excavator shall maintain the locate paint marking at the job site until excavation is complete.

4.4.4 Failure to maintain locate paint markings at the job site shall result in the EPR being suspended and work will not be permitted until new 811 and KSC utility locates are performed.

4.4.5 If the scope of work changes, the requestor shall contact the KSC Permit Office at KSC-BOSS-DigPermit@mail.nasa.gov or 321-867-2406 to determine what action is to be taken.

4.4.6 General Excavation Cautions

a. Do not remove or disturb thrust blocks.

b. When excavating soil at locations known to contain buried water or sewer lines, do not remove any buried concrete without prior approval.

c. Excavate only within the area and scope of work shown on the approved EPR.

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d. Hand dig within 24 inches in all directions of any KSC utility locate paint mark to identify and minimize damage to existing utilities.

e. Hand dig around Sunshine 811 marked utilities per their requirements/instructions listed at the website, www.sunshine811.com.

f. If wildlife is encountered, allow time for the animal(s) to vacate the area before resuming activity. If assistance is required for removal, contact the BOSS Spaceport Integration Center (SIC)/Duty Office at 321-861-5050.

g. The Excavator shall observe a tolerance zone which is comprised of the width of the utility plus 24 inches on each side of the outside edge of the underground utility.

h. Hand dig within 36 inches of building walls or overhangs.

i. Hand dig as directed by the KSC Utility Locator on approved excavation permits near buildings, structures, and utilities to eliminate mismarked utilities due to equipment limitations.

NOTE: In the event of a contract or other work instructions governing the work being performed, precedence is given to whichever requirement is more restrictive.

4.4.7 To ensure the KSC Geographic Information System (GIS) contains the most accurate data concerning utility location at KSC, the excavator shall contact the KSC Survey Office to schedule a utility survey prior to directional boring of all new utilities and backfilling for any utility installation.

a. Primary: 321-288-3031

b. Alternate: 321-749-2474

4.4.8 Upon completion of the work associated with an EPR, the requestor shall contact the KSC Permit Office, 321-867-2406, to close the permit.

4.5 Obtaining Excavation Restriction Status

4.5.1 The excavation category is identified within the permit, and also provides information to the excavator.

4.5.2 Category B permit holders shall verify excavation restriction status on any day(s) they intend to perform excavation work at KSC. The preferred method is for the permit holder to visit the external website https://extapps.ksc.nasa.gov/EPR/Home/ and enter the permit number in the upper-right corner, which will return the excavation restriction status for that permit (red indicates excavation restrictions are in place; green indicates no restrictions).

a. Alternatively, the permit holder may contact the BOSS SIC/Duty Office at 321-861-5050 to verify excavation restriction status for that day. See 4.6.1 for information on status update schedule.

4.5.3 Category A permit holders are encouraged to verify excavation restriction status but are not required to do so at this time.

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4.6 Excavation Restriction Status Update

4.6.1 BOSS SIC personnel will update the excavation restriction status at least twice daily at 0500 and 1800 hours. The status is also updated when scheduled events, such as launch or major testing, require excavation restrictions to begin or end.

4.7 Incidents

4.7.1 In the event a utility line is accidentally cut or damaged:

a. For all utilities except gas lines, stop work and contact the BOSS SIC, 321-861-5050, and follow incident reporting protocol in the applicable contract governing the work. Provide all pertinent information to ensure appropriate action is taken.

b. For gas lines, evacuate the area immediately. Call 911 (landline) or 321-867-7911 (mobile), and then contact the BOSS SIC, 321-861-5050, and follow incident reporting protocol in the applicable contract governing the work.

4.8 General Guidance

4.8.1 If any of the rules associated with the EPR are not followed, the status of the EPR shall be changed to “Suspended.” The requestor, excavator, and NASA point of contact (POC) identified on the permit will receive an email indicating the status change. The requestor must contact the KSC EPR Administrator to reactivate the EPR, which may require a new 811 call and KSC utility locate to be performed.

4.8.2 Examples of reasons for suspension include, but are not limited to:

a. Excavation performed prior to approval of the EPR

b. Excavation during established Excavation Restriction period

c. Excavation does not begin within 21 days of the KSC utility locate and permit approval

d. Excavator does not maintain paint markings following the utility locate and prior to completion of excavation tasks

4.8.3 All EPRs will be automatically closed by the system 185 days after approval and an email sent to the requestor notifying them of the status change. If the work has not been completed, the requestor must submit a new EPR.

4.8.4 No EPR shall be extended.

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5.0 EXCAVATION RESTRICTIONS

5.1 Categories are assigned based on the location of the excavation and the presence of utilities supporting missions or operations that could negatively impact safety or operations if a critical utility was damaged. Excavation Restriction (No-Dig) periods typically apply to work being performed in areas designated as Category B. Under special circumstances, an excavation restriction may be required to cover all excavation at KSC. Methods identified in Section 8.0, Communications, will be employed to communicate the decision.

5.2 All excavation for Category B permits, with the exception of emergency excavations or those with an approved Waiver (see Section 6.0), shall cease during the time periods referenced in Appendix A. The Spaceport Integrated Master Schedule (SIMS) will be updated as conditions change and will reflect the current manifest and subsequent excavation restrictions. The SIMS can be found on the Scheduling drop-down menu on the Spaceport Integration Center website, https://simso.ksc.nasa.gov/.

5.3 Each program and commercial partner performing launch and mission-related activities is considered an active partner. To ensure the safety of operations, each shall identify a POC who will be responsible for providing detailed schedule information to the SIMS Coordinator, KSC-SIMSCoord@mail.nasa.gov, as soon as practical but at least 30 days in advance of the activities to allow update of the SIMS and adequate planning and communication.

5.3.1 As schedules change, updates shall also be provided. This will be particularly important for on-orbit activities which are not easily tracked.

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6.0 EXCAVATION CATEGORY WAIVER

6.1 It is recognized that some normal work must be completed and may be able to be performed safely during identified excavation restriction (No-Dig) periods.

6.2 A KSC Form 50-1, may be submitted by the requestor, typically the approved EPR permit holder, specifying the exception being requested.

6.2.1 A waiver request should be submitted no later than three business days prior to the expected need date to allow adequate time for processing.

6.2.2 The requested time period for the waiver shall not exceed eight weeks.

6.2.3 The waiver request provides the following information:

a. Requestor Name (typically the approved EPR requestor), phone number, and email

b. Excavation Permit Number (required) – Identify the approved Category B EPR in this field. Only one EPR is allowed on a waiver request

c. Contractor/Excavator Company Name – Identify the contractor/excavator who will be performing the work during the requested waiver period

d. Project Title/Scope – Provide a brief title or description of the project for which the waiver is being requested

e. Location (attach map) – The location of the work to be performed shall be described in sufficient detail to allow proper evaluation. An actual map or sketch of the work area should also be attached using the “Attachments” button on the form.

f. Requested Waiver Period – Requestor shall identify the specific date(s) excavation work is intended during the restricted period. Typically, the information available concerning upcoming restricted periods would be approximately two weeks ahead of the restricted period.

1. For large construction projects with a lengthy implementation period, such as Construction of Facilities (CoF) projects, the length of time desired for the waiver, not to exceed eight weeks or two months, shall be identified.

g. Launch/Mission/Operation – Requestor should identify any known conflicts based on published mission schedules and may identify multiple scheduled activities on the same waiver request.

h. Rationale/Justification – Requestor shall provide a thorough explanation of why excavation is being requested during a restricted time, including specific consequences if the waiver is not granted (excluding loss of workdays).

1. The task being supported, the intended method of excavation, and a detailed description of the proposed mitigations to ensure identified critical utility infrastructure that could impact operational, launch, and mission essential activities are not damaged, shall be identified in sufficient detail to allow evaluation of the request. This should include verification that utility locates have been completed and that the markings have been maintained.

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NOTE: Directional boring is not permitted unless explicitly authorized by this waiver, once approved.

6.3 Waiver Review/Approval Process

6.3.1 Each waiver request shall be submitted to the KSC EPR Administrator at KSC-BOSS-DigPermit@mail.nasa.gov.

6.3.2 The KSC EPR Administrator shall forward the waiver request to the Spaceport Management and Integration Division (SI-I) Coordinator for initial review.

6.3.3 The SI-I Coordinator shall send the waiver request to NASA Center Services Division, Communications Infrastructure Services Division, and appropriate SI-I customer advocate(s) stakeholders for assessment.

6.3.4 Each stakeholder shall coordinate within their area(s) as necessary, returning an email of concurrence or non-concurrence, along with any comments or stipulations, to the SI-I Coordinator.

6.3.5 A single non-concur, if unable to be resolved, causes the waiver to be denied.

6.3.6 The SI-I Coordinator receives the stakeholder assessments and approves or denies the waiver request based upon the stakeholder input.

6.3.7 The SI-I Coordinator sends the dispositioned waiver and supporting documentation to the KSC EPR Administrator for distribution and record retention.

6.3.8 The KSC EPR Administrator sends the dispositioned waiver to the requestor as notification of approval of denial, and the stakeholders and BOSS SIC for reference.

6.3.9 The requestor shall maintain a copy of the approved waiver request in the field with the approved EPR at all times excavation is being performed.

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7.0 EMERGENCY LOCATE REQUESTS

7.1 Emergency Locate Requests are used to locate utilities in an emergency situation such as a water main break, a chemical spill, or an unintentional utility outage due to a cut. The KSC Utility Locators locate utilities surrounding the emergency area to prevent further damage.

7.1.1 Emergency locate requests for incidents such as line breaks causing service interruptions take priority over scheduled work to ensure safety and minimal customer impact.

7.1.2 An existing approved permit is not required prior to an emergency locate. However, once an emergency locate is requested, the requestor will apply for an excavation permit through the regular EPR process on the next business day to document the activity.

7.2 Once the requestor has determined an Emergency Locate Request is necessary, the requestor shall contact the BOSS SIC, 321-861-5050, and provide the following information:

a. Name, organization, and phone number

b. Emergency description and justification

c. Detailed location of the utility locate/excavation site

d. Associated EPR number, if applicable

7.3 The BOSS SIC shall process the emergency locate request, notifying the KSC Utility Locator with requester information via cell phone.

7.4 The excavator shall:

a. Meet the KSC Utility Locator at the emergency site

b. Notify the KSC EPR Administrator of the type of emergency locate

c. Submit the EPR form and map/sketch to the KSC EPR Administrator the next business day

d. Contact Sunshine 811 One-Call at 800-432-4770, 811 (cell), or www.sunshine811.com to locate non-KSC managed utilities that may be present at the emergency site

7.5 The KSC Utility Locator shall:

a. Meet requestor and/or excavator at the emergency site

b. Inform requestor and/or excavator of required precautions

c. Instruct requestor and/or excavator to submit an electronic EPR no later than the next business day (see 4.2.1.1 for links)

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8.0 COMMUNICATIONS

8.1 As described above, email is a standard method of communication with the requestor to advise of EPR status changes.

8.2 If a decision is made to restrict all excavation at KSC for a particular event or period, or process changes are made, the following communications methods will be used as required:

a. Email to active EPR permit holders

b. Special Security Notice emailed to all KSC personnel (must be a safety or security topic)

c. KSC Daily News (if necessary, NASA can request items be run more than the two days specified in the publishing guidelines)

d. Email to CoF, NASA Engineering, the Institutional Projects Branch, and any government or commercial partner performing projects

e. Email to Contracting Officer’s Representatives and SI-I

f. Posting No-Dig notice on electronic signs at KSC entry gates by coordinating with the Protective Services Office

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9.0 UTILITY LOCATE FOR DESIGN WORK

9.1 Utility Locate requests to support design work and engineering studies, where excavation is not performed, are performed by the same KSC Utility Locate personnel. These requests shall be initiated through the BOSS Electronic Work Request System and not through the EPR system.

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APPENDIX A: EXCAVATION RESTRICTION MATRIX

EVENT	PAD	PRIOR TO EVENT	FOLLOWING EVENT
Uncrewed Launch	Varies	12 hours prior to opening of the launch window	2.5 hours after closure of the launch window
Uncrewed Mission Static Test Fire	Varies	12 hours prior to opening of the test window	2.5 hours after closure of the test window
SpaceX Crewed Launch	Launch Complex (LC)-39A	1 Calendar Day prior to opening of the launch window	2.5 hours after crew is safely aboard International Space Station (ISS) (hatch open)
SpaceX Crewed Mission Static Test Fire	LC-39A	1 Calendar Day prior to opening of the test window	2.5 hours after closure of the test window
SpaceX Crewed Wet Dress Rehearsal	LC-39A	1 Calendar Day prior to opening of the test window	2.5 hours after closure of the test window
SpaceX Crewed Dry Dress Rehearsal	LC-39A	1 Calendar Day prior to opening of the test window	2.5 hours after closure of the test window
SpaceX On-Orbit Port Relocation		2 hours prior to port relocation event hatch closure	4 hours after docking (hatch open)
SpaceX Crewed Landing		NONE	
Boeing Commercial Crew Program (CCP) Crewed Launch/Test Flight	Space Launch Complex (SLC)-41	48 hours prior to opening of the launch window	6 hours after crew is safely aboard ISS (hatch open)
Boeing CCP Wet Dress Rehearsal	SLC-41	1 Calendar Day prior to opening of the test window	2.5 hours after closure of the test window
Boeing CCP Dry Dress Rehearsal	SLC-41	1 Calendar Day prior to opening of the test window	2.5 hours after closure of the test window
Boeing CCP On-Orbit Port Relocation		2 hours prior to port relocation hatch closure	6 hours after docking (hatch open)
Boeing CCP Crewed/Test Flight Landing		2 hours prior to event hatch closure	3 hours after landing
Artemis Launch/Test Flight		48 hours prior to opening of the launch window	6 hours after closure of the launch window
Artemis Wet Dress Rehearsal		48 hours prior to opening of the test window	6 hours after closure of the test window

Note: Boeing and Artemis excavation restrictions apply to Crewed or Uncrewed missions.

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APPENDIX B: ACRONYMS

BOSS	Base Operations and Spaceport Services
CCP	Commercial Crew Program
CoF	Construction of Facilities
EPI	Excavation Permit Inspector (KSC Utility Locator)
EPR	Excavation Permit Request
GIS	Geographic Information System
ISS	International Space Station
KDP	Kennedy Documented Procedure
KSC	Kennedy Space Center
LC	Launch Complex
NASA	National Aeronautics and Space Administration
POC	Point of Contact
SIC	Spaceport Integration Center
SIMS	Spaceport Integrated Master Schedule
SI-I	NASA Spaceport Management and Integration Division
SLC	Space Launch Complex

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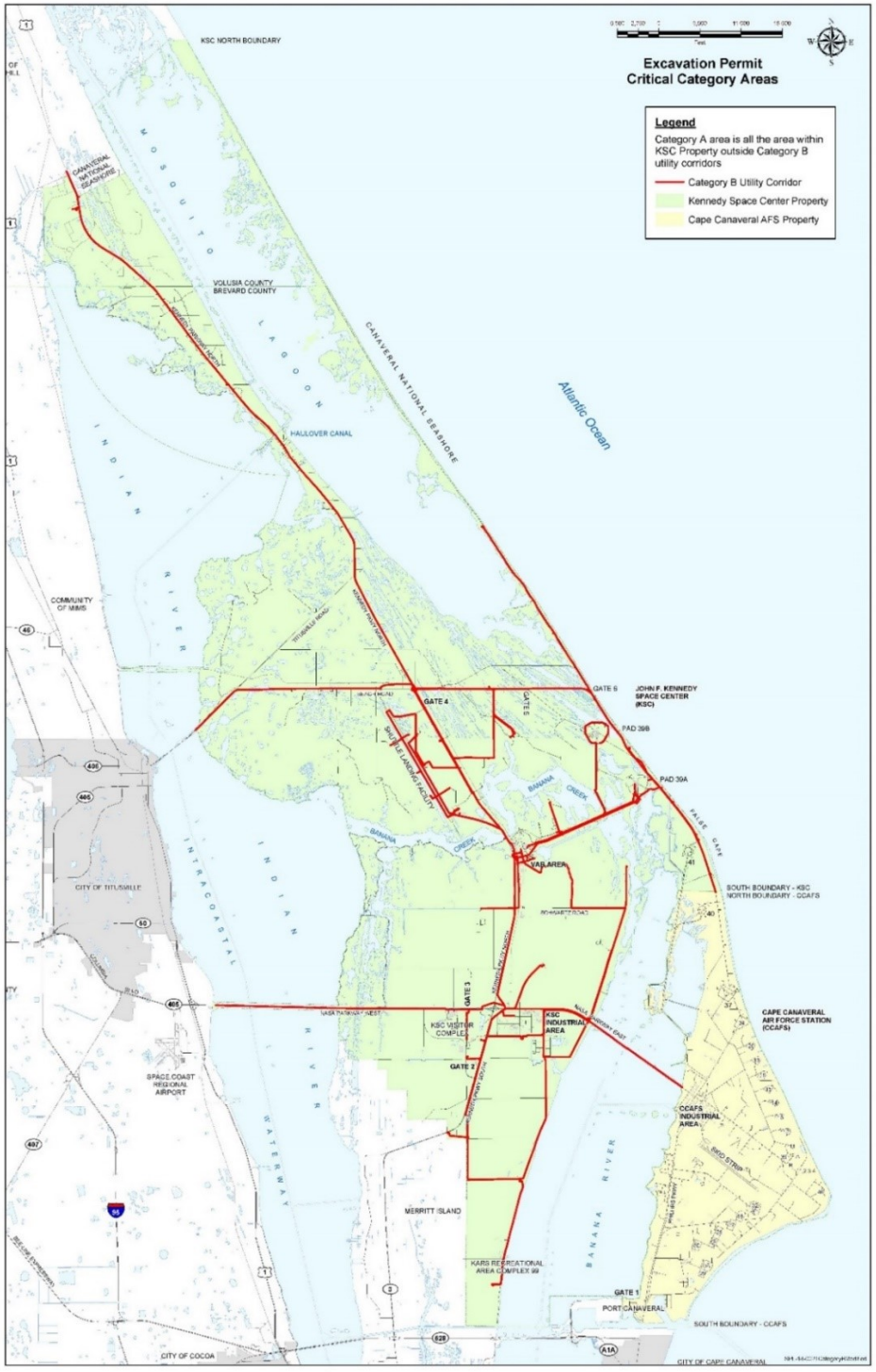
APPENDIX C: DEFINITIONS

Calendar Day – For the purposes of this document, a calendar day is defined as the time period from 0001 to 2400 hours, the entire day prior to a crewed launch or operation.

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APPENDIX D: CATEGORY CLARIFICATION

This map is provided for general informational purposes only. Red lines in the chart below designate the Category B utility corridor. Category A is all area within KSC property outside the Category B utility corridors. Actual category codes are assigned to permits at the discretion and authority of the KSC Utility Locator/EPI.



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