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Cape Canaveral Spaceport Development Manual

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Forward

The Cape Canaveral Spaceport Development Manual is a living document prepared and updated as needed by Space Florida. Its purpose is to assist users in understanding the processes, procedures, standards, and design criteria applicable to projects which are designed and constructed on sites under Space Florida's control located upon federal property within the boundary of the Cape Canaveral Spaceport (CCS).

The CCS is defined within Space Florida's authorizing statute as a geographical area that includes the entirety of NASA's John F. Kennedy Space Center (KSC) and the U.S. Air Force's Cape Canaveral Air Force Station (CCAFS). While both installations remain federal land, Space Florida is granted development rights, and the right to permit others to develop sites and projects, under the terms of numerous property agreements with NASA and the USAF. These property agreements define the land that has been made available for Space Florida's use, and define the processes which Space Florida will use to guide, review, and approve development projects.

It is Space Florida's intent to streamline the design and construction of commercial and other non-governmental projects on sites under its control within the CCS. Space Florida operates as an Independent Special District, with statutory authorities similar to those of a municipality with regard to land planning and adoption of design and construction standards, reviews, and approvals applicable to CCS sites and projects under its control. There is no other county or municipal development code jurisdiction or approval processes.

Except for defined Florida Building Codes and Life Safety Codes as governed by Space Florida's federal property use agreements, it is intended the development and design standards identified in this document establish general criteria to be used in directing future building placement and design, as well as site design at the CCS complex. It is Space Florida's preference to not prescribe specific design solutions, but rather suggest directions for those who will design and manage the facilities. While each new project will present its own set of unique circumstances, development and design standards should allow projects to exhibit a desired degree of consistency in form and character required by Space Florida and land owners, while simultaneously allowing flexibility to meet customer needs.

If you have any questions/comments regarding these documents you can contact Space Florida at 321-730-5301, or at their Corporate Office, located at 505 Odyssey Way, Suite 300, Exploration Park, Florida 32953.



JAMES M. KUZMA
Chief Operating Officer
Space Florida



Cape Canaveral Spaceport Development Manual

VOLUME 1

CAPE CANAVERAL SPACEPORT

CHAPTER 1 OVERVIEW

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VERSION 1.1

CHAPTER 1 - OVERVIEW

1.1 Introduction

The intent of this Cape Canaveral Spaceport Development Manual is to provide Space Florida's Tenants and contractors with an understanding of the criteria for the development of infrastructure and facility projects within Cape Canaveral Spaceport (CCS), Florida. The CCS consists of facilities and properties within Kennedy Space Center (KSC) which is primarily governed by the National Aeronautics and Space Administration (NASA) and Cape Canaveral Air Force Station (CCAFS) which is primarily governed by the United States Air Force (USAF). Agreements are in place between SPFL, NASA, and USAF that transfer the responsibility for certain facilities and land areas to SPFL. These Agreements include design/construction standards and approval processes required by NASA and USAF that must be followed by SPFL and its Tenants. This Development Manual includes the standards and processes required by these agreements by specific description or reference. Regardless of the standards or processes within this document, Space Florida will have authority and responsibility, as the point of contact for the Tenant, and will issue all approvals to the Tenant. Any reviews or approvals required under the agreements with NASA or USAF will be coordinated by SPFL. Development Standards and Design Criteria described in this document shall:

- ✓ Establish general criteria to be used in directing future facilities placement and design, and site design.
- ✓ Outline the specific development and design requirements mandated by the NASA and Space Florida Agreements, which Space Florida's potential customers are required to comply with.
- ✓ Outline the specific development and design requirements mandated by the USAF-CCAFS and Space Florida Agreements, which Space Florida's potential customers are required to comply with.
- ✓ Provide the framework for coherent development such that each new project and phase of development is consistent with the Cape Canaveral Spaceport's (CCS) overarching plan and vision.
- ✓ Avoid prescribing specific design solutions, but rather provide standards to those who will design and manage the facilities and infrastructure.

It is understood that each new project presents its own unique set of requirements and challenges. Therefore, these Development Standards are intended to allow projects to develop and exhibit a desired degree of consistency in form and character, while simultaneously allowing flexibility for positive innovation.

Note: The abbreviations used in this document are defined in Appendix 1A.

1.2 Development Manual Organization

The Development Manual for CCS consists of a series of volumes and chapters enabling the distribution of applicable development processes, procedures, standards, and criteria to CCS Tenants and contractors engaged in site development and/or facility design/construction. Site and building development requirements, together with applicable processes and standards, are generally site or CCS area specific. To simplify the user's understanding of what applies to their specific project, Space Florida will furnish only those volumes and chapters applicable to the area of the planned development project. CCS Development Manual Volumes and Chapters

and a brief description are as follows:

Volume 1: Cape Canaveral Spaceport – General overview and introductory information related to Space Florida administered development projects at CCS.

Volume 2: Kennedy Space Center – Processes and standards applicable for Space Florida-administered development within the KSC portion of the CCS.

- ✓ Chapter 1: General Requirements – Common processes and standards for all Space Florida administered development within KSC.
- ✓ Chapter 2: Shuttle Landing Facility – Additional processes and standards specific to the Shuttle Landing Facility (SLF).
- ✓ Chapter 3: Exploration Park – Additional processes and standards specific to Exploration Park.
- ✓ Chapter 4: Processing and Other Facilities – Additional processes and standards specific to processing and other facilities.
- ✓ Chapter 5: Launch Complexes – Additional processes and standards specific to launch complexes.

Volume 3: Cape Canaveral Air Force Station – Processes and standards applicable for Space Florida administered development within the CCAFS portion of the CCS.

- ✓ Chapter 1: General Requirements – Common processes and standards for all Space Florida administered development within CCAFS.
- ✓ Chapter 2: Processing and Other Facilities – Additional processes and standards specific to processing and other facilities.
- ✓ Chapter 3: Launch Complexes – Additional processes and standards specific to Launch Complexes.

Volume 4: Design Criteria – Specific technical requirements associated with infrastructure improvements as defined by Space Florida partnering agencies and the Construction Specification Institute's (CSI) Standard Construction Specifications.

- ✓ Chapter 1: Space Florida adopted Design Criteria and Development Standards (adapted from City of Titusville)
- ✓ Chapter 2: Technical Specifications

Volume 5: Space Florida Projects – Specific requirements for Space Florida procured projects.

- ✓ Chapter 1: General Requirements – Standards and processes applicable for development of Space Florida procured projects.

1.3 Scope and Purpose

This Development Manual establishes specific design/construction standards and criteria for infrastructure, buildings, and other facilities, which are owned, operated, funded or maintained by Space Florida within the spaceport territory boundary of CCS. It also serves to provide design/construction standards and criteria for all other facilities constructed within the boundaries of property which has been out-granted to Space Florida's use and development pursuant to land lease, easement, or other agreement. This includes launch and integration complexes at CCS

under the management of Space Florida.

It is not Space Florida's intent to limit or dismiss the experience, knowledge or talent of the designer or contractor. Therefore, Space Florida encourages developers, engineers, contractors and customers to recommend alternative solutions where deviations are beneficial. However, adherence to these standards and criteria will result in project development that conforms to the goals and objectives of Space Florida and complies with its various property agreements with partner agencies.

The facilities located on CCS for which Space Florida maintains responsibility as asset owner or development administrator are located on property owned by the U.S. Government under the jurisdiction of NASA or the USAF. As such, the property owners maintain certain access rights to all facilities and may have a limited role in project coordination and the approval process; however, Space Florida remains the approval authority, primary coordinator, and point of contact for all development projects implemented under its authorities and responsibilities within the CCS.

1.4 Space Florida Organization

Space Florida is an Independent Special District of the State of Florida, created by Chapter 331, Part II, Florida Statutes (FS), for the purpose of fostering the growth and development of a sustainable and world-leading space industry in Florida. Space Florida uniquely serves as the single point of contact for all space-related functions of the State to strengthen Florida's position as a global leader in aerospace research, investment, exploration and commerce. Space Florida has a variety of agreements for the use and management of land, facilities and campuses within the CCS, either with NASA or USAF. These agreements provide Space Florida with the right to use and develop defined areas of the CCS, and also specify Space Florida's responsibilities in managing design and construction activities carried out by Space Florida itself or others (e.g. Tenants) under its administration.

The CCS spaceport territory is defined in Chapter 331, Part II, FS with a geographic territory that includes all of KSC and CCAFS. The CCS also consists of infrastructure and physical assets which are designed, constructed, and operated under the authority of Space Florida. Space Florida prepares and periodically updates a Cape Canaveral Spaceport Complex Master Plan to define goals and strategies for the modernization and expansion of CCS in support of both commercial space activities and U.S. Government space missions. For additional information about the CCS Complex Master Plan and Space Florida, refer to <http://www.spaceflorida.gov/>.

Space Florida is specifically chartered and directed to develop partnerships to renew and upgrade infrastructure at KSC and CCAFS, improving access for commercial launch activities and pursuing the development of commercial spaceport capabilities. It is empowered to acquire and develop property, infrastructure, and facilities to carry out these and other duties. As an Independent Special District, Space Florida has powers and authorities similar to those of a municipality with regard to its administration of development activities, and is empowered to enter into cooperative agreements with local government entities as it finds appropriate to carry out its responsibilities. Tables 1 and 2 show key Space Florida Personnel and CCS Facilities/Assets leased or owned by Space Florida. Figure 1 shows a map of the CCS and Vicinity with major areas and complexes identified.

Table 1: Space Florida Key Personnel

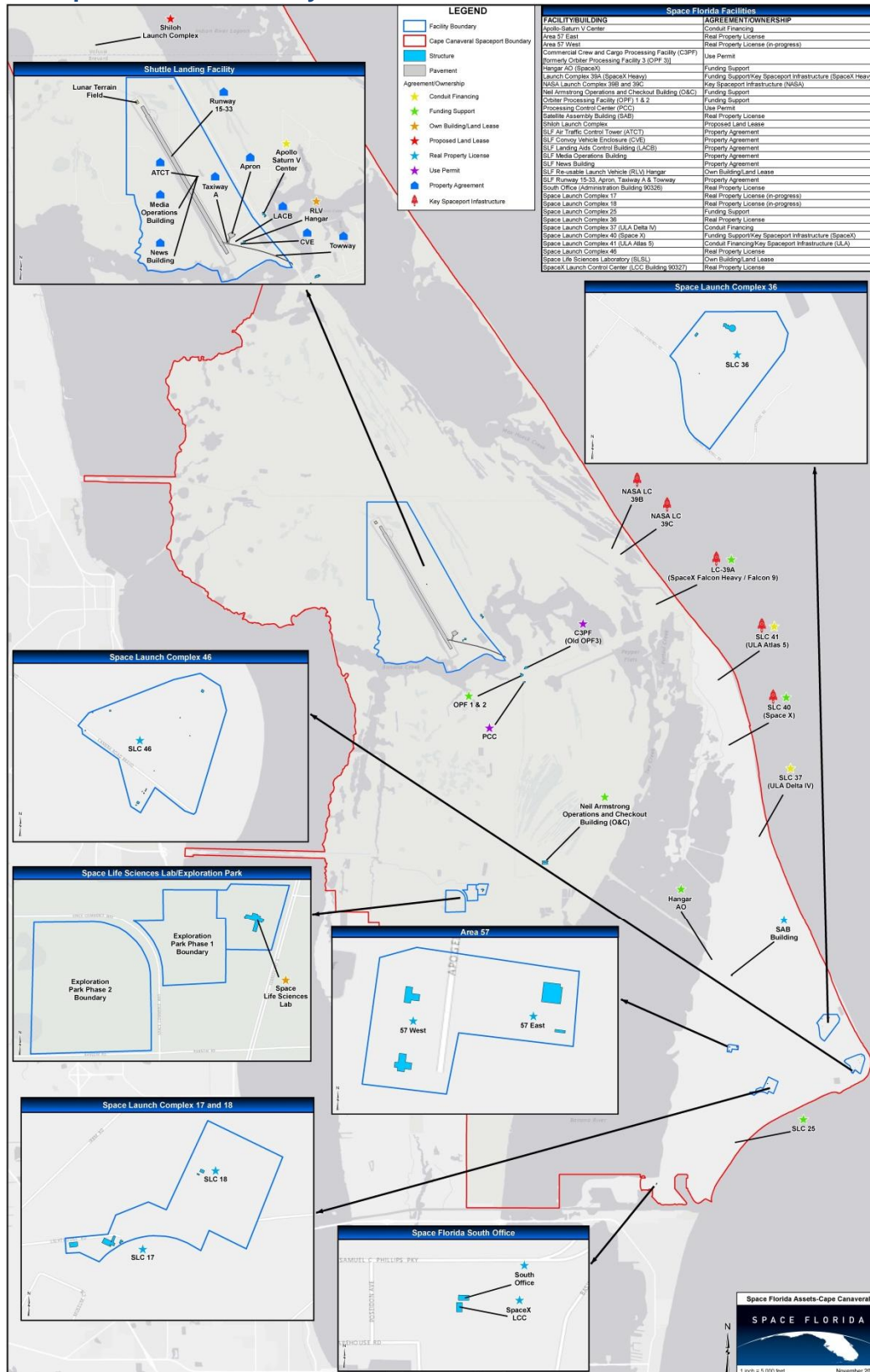
Name	Title
Frank DiBello	President and Chief Executive Officer
Jim Kuzma	Sr. Vice President and Chief Operations Officer
Mark Bontrager	Vice President Spaceport Operations
Pat McCarthy	Director of Spaceport Operations
James Moffit	SLF Airfield Manager
Steve Szabo	Spaceport Development Program Manager & Building Official
Pete Eggert	Spaceport Health, Safety and Environmental
Ted Beerman	Spaceport Facilities Operations and Maintenance

Table 2: Space Florida's CCS Facilities/Assets

Facility	Facility Description	KSC/CCAFS
Area 57 East	Vehicle Integration	CCAFS
Area 57 West	Vehicle Integration	CCAFS
Processing Control Center (PCC)	Launch Team Training; Launch Processing System Maintenance	KSC
Satellite Assembly Building (SAB)	Vehicle Processing	KSC
Shiloh Launch Complex	Vertical Launch/Vertical Landing	KSC
SLF Air Traffic Control Tower (ATCT)	Air Traffic Control	KSC
SLF Convoy Vehicle Enclosure (CVE)	Hangar; Storage	KSC
SLF Landing Aids Control Building (LACB)	SLF Control Center; Office Space; SLF Terminal	KSC
SLF Media Operations Building	Office Space; Operations; Observations	KSC
SLF News Building	Storage; Office Space	KSC
SLF Re-usable Launch Vehicle (RLV) Hangar	Vehicle Processing; Office Space; Operations and Maintenance Facility	KSC
SLF Runway 15-33, Apron, Taxiway A & Towway (concrete pavement)	Horizontal Launch and Landing Facility	KSC
Space Launch Complex 17 (partial)	Vertical Launch	CCAFS
Space Launch Complex 18	Vertical Launch	CCAFS
Space Launch Complex 36	Vertical Launch	CCAFS
Space Launch Complex 46	Vertical Launch	CCAFS
SpaceX Launch Control Center (LCC)*	Office Space and Launch Controls	CCAFS
South Campus Office (Administration Building 90326)*	Office Space	CCAFS
Exploration Park Space Life Sciences Laboratory (SLSL)*	Research and Development; Office Space; Space Florida Headquarters	KSC
Exploration Park Phases 1 and 2*	Office and Vehicle Integration	KSC

* These facilities are located outside the secured boundary limits of KSC and CCAFS which can be accessed by the general public.

Figure 1: Map of CCS and Vicinity



1.5 Authority of Space Florida

No building or other improvements will be erected, constructed, placed, removed, occupied or permitted to exist on any land parcel under Space Florida's management responsibility until:

- ✓ The proposed use of such building or improvement has been approved by Space Florida in writing;
- ✓ Schematic designs and plans, in compliance with this Development Manual, have been submitted to and approved in writing by Space Florida; and
- ✓ Final plans and specifications in the form and content provided in this Development Manual, have been submitted to and approved in writing by Space

It will not be necessary to submit and have approved by Space Florida designs and plans relating solely to a non-structural, interior alteration to any Building.

Space Florida may appoint professional consultants, authorized agents and representatives at their discretion to assist in performing duties on their behalf, including, but not limited to, any necessary inspection of a parcel or improvement.

1.6 Request for Variances and/or Interpretation Statement

It is recognized that variances to the referenced standards and/or other design criteria in this document may be necessary to meet the unique needs of clients and their projects. A request for variance shall be submitted along with any substantiating documentation to Space Florida's Chief Operations Officer (COO). Any request to Space Florida for variance from requirements enforced by NASA, USAF, Florida Department of Transportation (FDOT), St. Johns River Water Management District (SJRWMD), Federal Aviation Administration (FAA) and other applicable regulatory agencies will require documented concurrence from that agency.

1.7 Procedures for Changes to this Manual

Proposed changes to this manual should be submitted to Space Florida. Requests for changes, additions, or deletions shall include a justification for the proposed change with a complete description of the change proposed and shall be accompanied by sufficient technical analyses to support the change or addition. This Development Manual will be updated and modified on a routine basis by Space Florida.

1.8 Space Florida Insurance and Bond Requirements

The following paragraphs outline the general insurance requirements for Space Florida Tenants at CCS. The specific insurance requirements will be as documented in the lease agreement between Space Florida and the Tenant. Unless otherwise specified, all insurance limits shall be determined by Space Florida based on the specific Tenant project and usage. The limits, so determined, shall be escalated every fifth year as reasonably determined by Space Florida using appropriate indices to generally ensure that the amounts are increased to keep up with currency inflation.



1.8.1. General Requirements

- a. All insurance and all renewals shall be issued by companies with a rating of at least "A-" "VIII" (or its equivalent successor) or better in the current edition of Best's Insurance Reports and be licensed to do and is doing business in Florida.
- b. Each policy shall be endorsed to provide that the policy shall not be cancelled or materially altered without thirty (30) days prior written notice to Space Florida and shall remain in effect notwithstanding any such cancellation or alteration until such notice shall have been given to Space Florida and such period of thirty (30) days shall have expired.

1.8.2. General Contractor Insurance Requirements

A current insurance certificate(s) is required for every developer or contractor performing work on the premises of CCS. The minimum coverage required is as follows:

- a. Commercial general liability insurance, including contractual liability, broad form property damage liability, fire legal liability, products and completed operations, and medical payments;
- b. Business auto liability insurance;
- c. Workers' compensation insurance for all of its employees in statutory limits as required by Florida law; and
- d. **Employer's liability insurance which affords not less than five hundred thousand dollars (\$500,000) for each employee.**

1.8.3. Tenant or Operator Insurance Requirements

For all Tenants or operators, a current insurance certificate is required to cover the loss of or damage to U.S. Government (USG) property as a result of any activities conducted by the Tenant.

The Tenant or Operator shall maintain insurance to protect against loss or damage to improvements, whether the improvements are Space Florida, Tenant, or operator improvements, as a result of any activities conducted by the Tenant or operator.

Insurance coverage in general shall meet statutory minimums as applicable. Prior to activities at CCS, Tenant or operator shall provide proof of adequate insurance for damage to USG property and Space Florida improvements. Based on the Tenant or operator planned activities, the insurance requirements necessary or appropriate will be determined based on the risks to USG property and Space Florida improvements.

If applicable, the Tenant or operator shall provide separate insurance coverage for actual space launch activities as required by their launch operator license issued by the FAA.

1.8.4. Performance and Payment Bonds

Prior to beginning of construction, the construction contractor shall provide to Space Florida, in a form acceptable to Space Florida, two bonds for each contract; specifically, a performance bond and a payment bond, each with good and sufficient surety or sureties acceptable to Space Florida. For projects within the KSC boundary, Space Florida and NASA shall be named on such bonds as co-payees.

The penal amount for each performance bond shall be one hundred (100) percent of the contract value at the time of the award. Performance bonds shall be submitted in the form and following the procedures in Federal Acquisition Regulation (FAR) 52.228-15 and FAR Part 28.

Payment bonds shall be one hundred (100) percent of the contract value at the time of the award. Payment bonds shall be submitted in the form and following the procedures in FAR 52.228-15 and FAR Part 28.

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APPENDIX 1A – ABBREVIATIONS

The following table of abbreviations applies to the entire Cape CCS Development Manual. Some abbreviations may not apply to certain facilities within the CCS.

Acronym	Description
ACC	Accessibility Compliance Checklist
AHJ	Authority Having Jurisdiction
AIA	American Institute of Architects
ASAF	Airspace Study Application Form
ASME	American Society of Mechanical Engineers
AST	Aboveground Storage Tank
ATCT	Air Traffic Control Tower
BO	Biological Opinion
BOT	Build-Operate-Transfer
CCAFS	Cape Canaveral Air Force Station
CCR	Covenants Conditions and Restrictions
CCS	Cape Canaveral Spaceport
CCTV	Closed Circuit TV
CD	Compact Disc
CFPS	Construction and Fire Prevention Standards
CFR	Code of Federal Regulations
CM	Construction Manager
CO/U	Certificate of Occupancy/Use
CPP	Commissioning Policy and Procedures
CPTED	Crime Prevention Through Environmental Design
CSA	Commercial Space Activities
CSC	Certificate of Substantial Completion
CSI	Construction Specification Institute
CVE	Convoy Vehicle Enclosure
DB	Design-Build
DBB	Design-Bid-Build
DBOM	Design-Build-Operate-Maintain
DCP	Development Concept Plan
DDESB	Department Of Defense Explosives Safety Board
DOT	Department of Transportation
DSH	Design Standards Handbook
DSM	Development Standards Manual
EAB	Environmental Assurance Branch
EBS	Environmental Baseline Survey
ECC	Environmental Compliance Checklist
ECOC	Environmental Close-Out Checklist
EIFS	Exterior Insulation And Finish Systems
ERP	Environmental Resource Permit
ESP	Explosive Site Plan
EUL	Enhanced Use Lease
The Park	Exploration Park
FS	Florida Statutes

Acronym	Description
FAA	Federal Aviation Administration
FAA/AST	Federal Aviation Administration Office of Commercial Space Transportation
FAC	Florida Administrative Code
FAR	Federal Acquisition Regulation
FBC	Florida Building Code
FCAA	Federal Clean Air Act
FCCNA	Florida Consultant's Competitive Negotiations Act
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FGBC	Florida Green Building Coalition
FGCBS	Florida Green Commercial Building Standard
FM	Facility Manager
FNPS	Florida Native Plant Society
FOD	Foreign Object Damage
FWS	US Fish And Wildlife Service
GBIGG	Green Building Initiative's Green Globes
GPS	Global Positioning System
HSE	Health, Safety and Environmental
HSPD	Homeland Security Presidential Directive
HVAC	Heating, Ventilation, Air Conditioning
IGCC	International Green Construction Code
IPD	Integrated Project Delivery
ISC	Institutional Services Contract
KCA	Kennedy Center Agreement
KNPR	Kennedy NASA Procedural Requirements
KSC	Kennedy Space Center
LACB	Landing Aids Control Building
LCC	Launch Control Center
LEED	Leadership In Energy and Environmental Design
LMPs	Light Management Plans
LPS	Low-Pressure Sodium
MINWR	Merritt Island National Wildlife Refuge
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
NAS	National Air Space
NASA	National Aeronautics and Space Administration
NAVAIDS	Navigational Aids
NBS	National Bureau of Standards
NCS	National Canaveral Seashore
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Administration
NGVD	National Geodetic Vertical Datum (1929 or 1983 as applicable)
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPR	NASA Procedural Requirements
NRHP	National Registry of Historic Places

Acronym	Description
O&MM	Operations & Maintenance Manuals
OM	Operations Manual
OSHA	Occupational Safety and Health Administration
P3	Public Private Partnership
PA	Programmatic Agreement
PCC	Processing Control Center
PDF	Portable Document Format
PE	Professional Engineer
PIR	Pollution Incident Report
PM	Project Manager
POC	Point of Contact
PSO	Protective Services Office
QD	Quantity-Distance
R&D	Research & Development
REC	Record of Environmental Checklist
RFSPR	Range Flight Safety Program Requirements
RLV	Re-usable Launch Vehicle
RQ	Reportable Quantity
RSAA	Reimbursable Space Act Agreement
S&MA	Safety & Mission Assurance
SAB	Satellite Assembly Building
SHPO	State Historic Preservation Office
SIR	Shell Isolation Rating
SJRWMD	St. Johns River Water Management District
SLC	Space Launch Complex
SLF	Shuttle Landing Facility
SLSL	Space Life Sciences Laboratory
SME	Subject Matter Expert
SOQ	Statement of Qualifications
SPCC	Spill Prevention, Control, and Countermeasures
SPFLP	Space Florida Projects
SWPPP	Stormwater Pollution Prevention Plan
TP	Tenant Projects
UAS	Unmanned Aerial Systems
USAF	U.S. Air Force
USDC	U.S. Department of Commerce
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGBC	United States Green Building Council
UST	Underground Storage Tank



Cape Canaveral Spaceport Development Manual

VOLUME 2

KENNEDY SPACE CENTER

CHAPTER 1 GENERAL REQUIREMENTS

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SECTION 1 – INTRODUCTION

1.1 Introduction

The intent of this Chapter is to highlight the common requirements associated with the processes and design/construction standards for development of CCS infrastructure and facility projects on land under the responsibility of Space Florida within the boundaries of Kennedy Space Center (KSC).

This includes required reviews by NASA and compliance with specific NASA standards mandated by the specific Property Agreements between NASA and Space Florida. In all cases, Space Florida will be the final approval authority and will perform required coordination with NASA.

The majority of processes and standards presented in this Chapter are common to all development within CCS with modification depending if development is within the KSC or CCAFS property boundary. When CCS is referenced in this Chapter, it shall be interpreted as that portion of the CCS within the boundary of KSC only.

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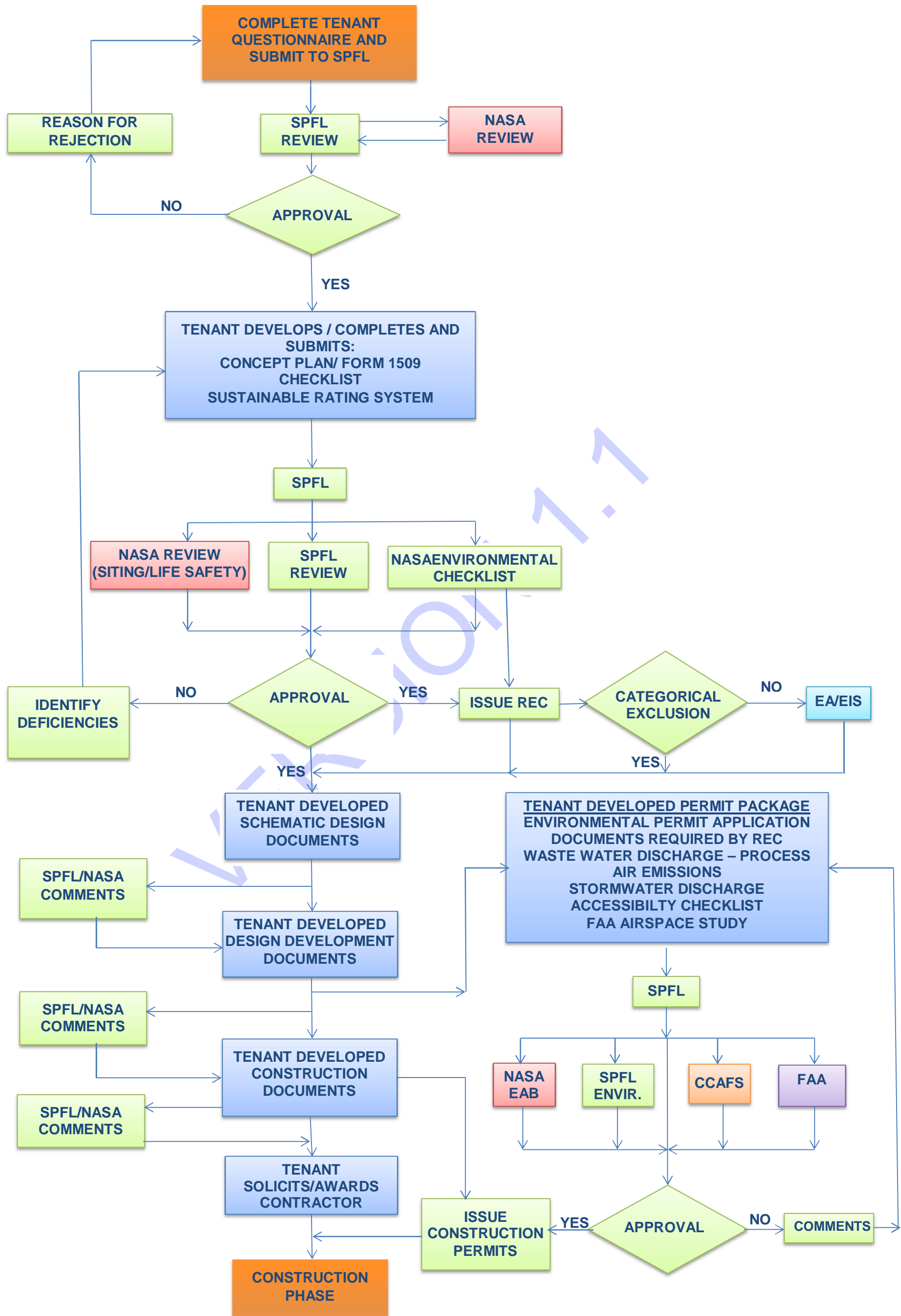
SECTION 2 – PROJECT REVIEW & CONSTRUCTION PROCESSES

The following flow chart shows the general process for obtaining review and approval for all Tenant projects at Cape Canaveral Spaceport (CCS). Depending on the specific project and its location, exceptions to the process, primarily with respect to outside reviews, may occur. A review of the process shall take place during the initial meetings with the Tenant to address any exceptions or possible additions to the process based on the specific project.

Where NASA is referenced, Space Florida is the point of contact and governing authority. NASA is included by reference to indicate its involvement in reviews and approvals as may be mandated by agreements between Space Florida and NASA. If required, those interactions with NASA will be coordinated by Space Florida.

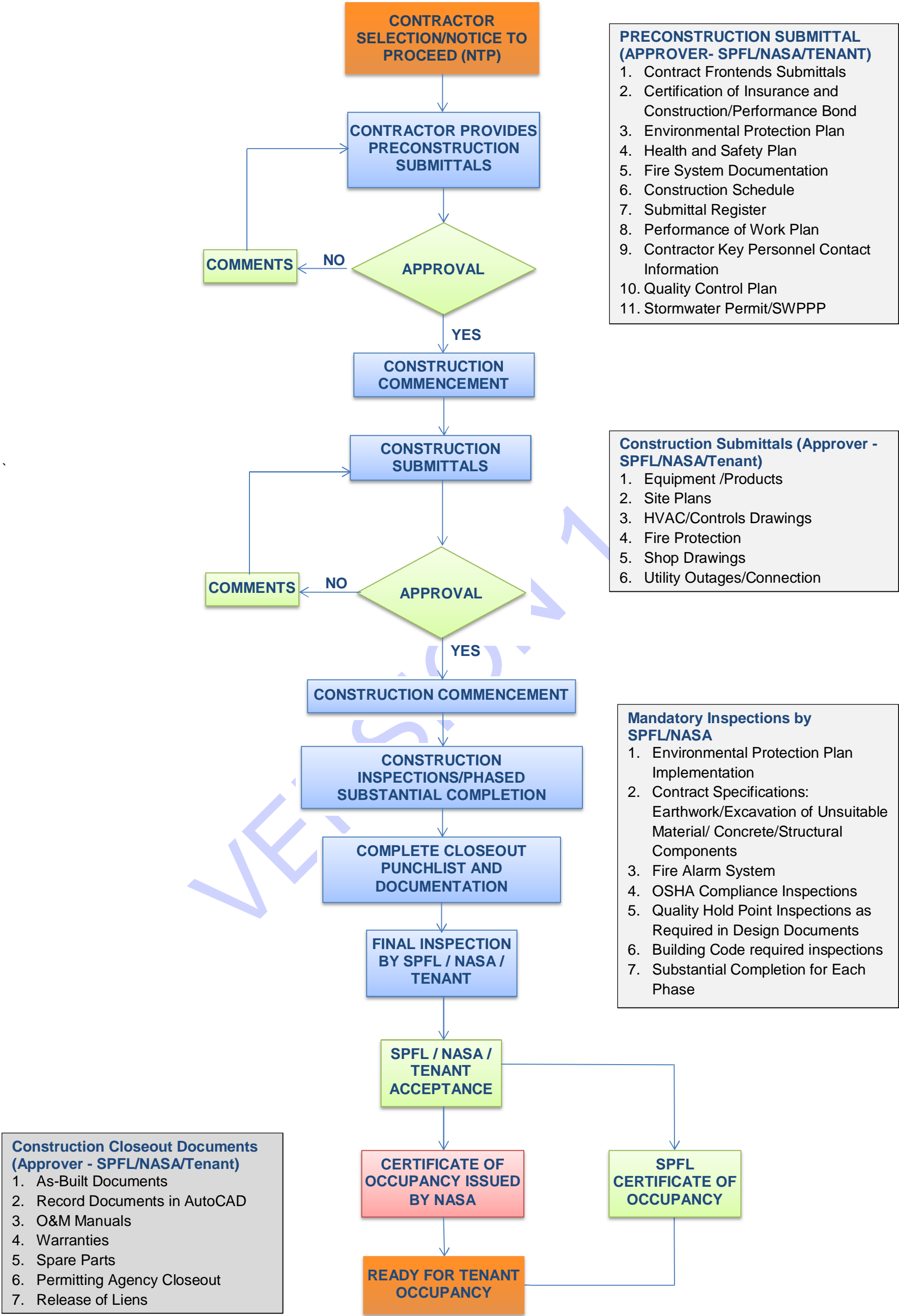
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CAPE CANAVERAL SPACEPORT SITE DEVELOPEMENT PROCESS



Note: Some steps may not be necessary depending on the project and Space Florida's discretion.

CAPE CANAVERAL SPACEPORT CONSTRUCTION PHASE PROCESS



Note: Some of these steps may not be necessary depending on the project and Space Florida’s discretion.

2.1 Project Approval, Planning, and Coordination

2.1.1 Project Approval

Prior to commencing the design and construction of an improvement project within CCS, Tenant must first submit a New Tenant Questionnaire and obtain Space Florida/NASA-written concurrence to proceed with the planned improvement. In addition, the Tenant must submit a completed Form 1509 Template describing any improvement equal to or greater than \$100,000. Refer to Appendix 1A – Forms for the New Tenant Questionnaire and Form 1509.

2.1.2 Project Coordination

2.2 Design Review and Approval

Space Florida shall serve as the **Building Official** and is responsible for code compliance on all construction at CCS. Tenant shall submit deliverables at milestones established during the delivery of the project to Space Florida and other regulatory governing agencies. Space Florida shall provide independent design review for compliance with these standards and Florida Building Codes (FBC), as well as independent construction inspection for code compliance. This review and inspection does not relieve the Tenant from the responsibility of performing quality control assurance reviews and inspections on all design and construction work.

Space Florida shall perform independent inspections, as necessary, of Tenant construction projects implemented on the facilities/property for which they are responsible. The independent inspections do not replace or relieve the Tenant's obligation to develop and implement a quality control program for their construction projects.

NASA's limited design review/approval and inspection of construction shall be required only for the determination of life safety code compliance of the site infrastructure and building construction as necessary to support a certification of occupancy. At NASA's sole discretion, NASA contractors may be used to perform design reviews for code compliance and inspect construction to support the issuance of a certificate of occupancy. Design documents shall be provided for review and comment at up to three design review intervals in order for any NASA concerns to be identified in a timely manner.

Table 1: Summary of Approvals

APPROVALS AND INSPECTIONS	SPFL	NASA	USAF	FDEP	SJRWMD
<u>APPROVALS - DESIGN PHASE</u>					
Tenant Questionnaire	✓	✓			
Concept Plan	✓	✓			
Environmental Checklist	✓	✓			
<u>PLANS</u>					
Form 1509 (Including Sustainable Rating System selection)	✓	✓			
Schematic Design Package (30%)	✓	✓			
Design Development Package (60%, 90%)	✓	✓			
Construction Documents	✓	✓			
<u>PERMITS</u>					
Environmental Permit Application	✓	✓			
Wastewater Discharge Permit	✓	✓	✓	✓	
Stormwater Discharge Permit	✓	✓			✓
Air Emissions Permit	✓			✓	
Potable Water Construction Permit	✓	✓	✓	✓	
Accessibility Checklist	✓				
Construction Building Permit	✓				
Dig Permit (KSC Form 26-312V3 NS)	✓	✓			
<u>APPROVALS CONSTRUCTION PHASE</u>					
Environmental Protection Plan	✓				
Fire System Documents	✓	✓			
Health and Safety Plan	✓				
Stormwater Pollution Prevention Plan (SWPPP)	✓				
Submittals Required by Contract Documents	✓				
Close-out Documents	✓				
Life Safety Plan		✓			
<u>MANDATORY INSPECTIONS</u>					
Environmental Protection Plan Implementation	✓				
Cast-in-place Concrete Formwork and Reinforcement Placement	✓				
Excavation of Unsuitable Material	✓				
Fire Protection System (Fire Alarm and Suppression)	✓	✓			

2.3 Environmental Compliance and Reporting

Tenant shall be responsible for preparation of all environmental documentation, including Environmental Assessments (EA) or Environmental Impact statements (EIS) required by regulatory agencies to support its development and/or operations and for obtaining all necessary approvals of the same. Preparation of documents shall be coordinated with Space Florida Health, Safety, and Environmental Manager and follow regulatory processes.

Tenant shall obtain all required environmental permits, licenses, registrations, and approvals for their site activities. Tenant shall prepare all permit applications and pay all permit application fees directly to the regulatory agency. If required by the permit application, the NASA Environmental Assurance Branch (EAB) shall sign permit applications as the landowner or utility system owner. Tenant shall submit courtesy copies of all submitted permit applications to Space Florida within fourteen (14) calendar days after submission to the regulatory agency. Tenant shall submit courtesy copies of all permits, licenses, registrations, and approvals to Space Florida within fourteen (14) calendar days after receipt from the regulatory agency. Tenant shall ensure that all operations, activities, equipment, and facilities are in full compliance with all permit conditions.

2.3.1 Air Permit

NASA holds a facility-wide Federal Clean Air Act (FCAA) Title V Air Operation Permit issued by the Florida Department of Environmental Protection (FDEP) that governs air emissions from dozens of regulated emission sources and hundreds of insignificant emission sources across NASA. NASA intends for SPFL and its Tenants to be independent regarding air emissions permitting and compliance. Tenant shall contact Space Florida prior to:

- a) The operation, reactivation, or modification of an existing emission source/activity,
- b) The construction of any new air emission source, or
- c) The initiation of an activity producing air emissions.

2.3.2 Stormwater Permits

The Surface Water and Stormwater Management System within CCS are under the jurisdiction of the St. Johns River Water Management District (SJRWMD). Each Tenant shall provide the necessary means to assure complete drainage within and immediately adjacent to its leased parcel and provide adequate storm water control facilities to accomplish such objective in accordance with the requirements of the SJRWMD.

2.3.3 Water and Wastewater Permits

The water and wastewater permits within CCS are under the jurisdiction of NASA and FDEP. Wastewater permits also need to be approved by the USAF for discharge to their wastewater treatment plant. Each Tenant shall provide the necessary means to assure proposed water and wastewater systems meet the requirements stated within the applicable permit.

2.4 Regulation of Construction Overview

2.4.1 Construction and Fire Protection Standards

Space Florida regulates construction within the boundaries of properties under its responsibility and includes the adoption of the FBC. In addition, the following NASA standards apply to all facilities within the boundaries of properties for which Space Florida is responsible.

- ❖ NASA-STD-8719.11, Safety Standard for Fire Protection, as it relates to fire sprinkler and fire alarm systems, associated occupancy and hazard classifications. This standard also serves as a simple NASA specific reference to those FBC and National Fire Protection Administration (NFPA) requirements that are applicable at KSC, or to cover situations where there are no applicable codes.
- ❖ KSC-STD-E-0012, Facility Grounding and Lightning Protection, latest edition if facility presents an explosive hazard to NASA facilities or personnel, or can impact NASA mission related operations.

2.4.2 Construction Permit Required

A Construction Permit must be obtained from the Space Florida Building Official in order to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system or to perform any other construction work on property for which Space Florida is responsible.

2.4.3 Submittals

The Applicant shall submit to the Space Florida Building Official the following items.

- a. Complete and dated plans and specifications (including traffic control plans if applicable) of sufficient clarity to indicate the location, nature and extent of the work proposed and with sufficient detail to indicate that the proposed work conforms to the provisions of the Florida Building Code (FBC), the Development Manual (DM), and other applicable codes, laws, statutes, orders, and regulations. The Tenant shall submit plans, in Portable Document Format (PDF) with one hard copy, for review at the following levels of completion; Schematic/Conceptual Design, Design Development, and Construction Documents as defined by American Institute of Architects (AIA) standards. All plans shall be 22 x 34 inch format. Plans and specifications shall be prepared by an architect or engineer or other design professional licensed in the State of Florida to practice as such and shall bear the seal of the design professional responsible for preparation of the plans and specifications. Submit PDF and eight (8) hard copy sets of construction documents. The Space Florida Building Official may accept half-size prints for plan review.
- b. Completion of an Accessibility Compliance Checklist (ACC) (refer to Appendix

- 1A) is required for all projects. Submit required documents per the ACC with this Application. A construction permit cannot be issued until all required information has been received and approved.
- c. If applicable, the completion of Airspace Study Application Form (ASAF) (refer to Appendix 1A. Approval from the Federal Aviation Administration (FAA) is required for projects resulting in a change in the SLF Layout Plan or for the use of cranes and certain other construction equipment. Permits for construction shall be limited until required FAA approvals are obtained.
 - d. Applicant is required to submit an Environmental Compliance Checklist (ECC) (refer to Appendix 1A) to the Spaceport Health, Safety and Environmental Manager (HSE). The purpose of the ECC is to identify the environmental regulations that apply to the proposed construction or to the operation of the completed work, structure, or facility. A Record of Environmental Checklist (REC) shall be issued by SPFL outlining specific requirements to be implemented in the Tenant's development. The Tenant must submit to the Space Florida Building Official all applicable documentation required by the REC. A Construction Permit cannot be issued until all required information has been received and approved.
 - e. A check payable to Space Florida for payment of Plan Review and Permit Fees must be paid at the Space Florida Building Official's office prior to issuance of a Construction Permit. Furnish to the Space Florida Building Official a Certification Letter (internal memorandum or e-mail for Space Florida projects) stating the estimated cost of construction, which will be used to calculate the plan review cost and construction permit fee.
 - f. Prior to proceeding with the installation of fire protection or fire alarm systems, three (3) full-size sets of shop drawings, hydraulic calculations and related submittal data must be submitted to Space Florida, who shall forward them to NASA. Any state required permits or presence of state required inspectors shall be coordinated by the Tenant. Work related to these systems may not proceed until the related shop drawings have been approved by NASA.
 - g. Tenant shall complete and submit the Design Submittal Content Checklist (Appendix 1D) with each major design submittal.

2.4.4 Building Construction Projects

For building construction projects, provide the following information on the cover sheet of the drawings:

- a) Project Number
- b) Structure ID Number
- c) Tenant contact information name, address and phone number
- d) Design consultant name, address and phone number
- e) The edition of the codes under which the project is designed
- f) Sustainable Rating System

- g) Building Code Use and Occupancy Classification
- h) Building Code Construction Type
- i) Design Occupant Load and Exiting Analysis
- j) Whether an automatic sprinkler system is provided
- k) U-factors of building envelope systems and a statement signed and sealed by the architect of record that the building envelope complies with the Energy Code
- l) Tabulation of building components and systems and a statement signed and sealed by the Engineer of Record that all building components and systems comply with the Energy Code.

2.4.5 Construction Permit Issued

A Construction Permit, in the form of an approval letter, shall be issued when the following has been determined:

- Plans for the proposed project are in compliance with the Florida Building Code and all other applicable code requirements;
- DM and that of all other regulatory requirements have been met;
- Space Florida Building Official has approved the Construction Application.

2.4.6 Dig Permits

All excavations, cores, bores, and digging operations associated with construction require a Dig Permit requested using “KSC Form 26-312V3 NS (Rev.08/09)” (refer to Appendix 1A). Before any excavations or digging activities occur the Tenant is required to perform utility sweeps of the impacted area. Tenants shall coordinate all digging activities with ISC Duty Office Support, 321-861-5050 and Sunshine 811, each day prior to commencing any digging or excavation work. An approved Dig Permit number shall be required for permission to proceed.

2.5 Project Construction and Inspection

2.5.1. Pre-construction Coordination

Through the approval letter, the Tenant is given instructions to contact the Space Florida Building Official for the purpose of scheduling a pre-construction conference. The conference should include the Tenant, the Tenant's Contractor and the Contractor's major Subcontractors. The Contractor will be briefed on rules, regulations and procedures to be followed for construction projects at CCS. The Contractor must submit an emergency phone list, any required submittals and a construction schedule. After posting the Construction Permit and placing approved construction documents at the project site, the Contractor may begin construction.

2.5.2. Project Construction Inspection

An inspection is required by Space Florida Building Official and others as applicable before covering or concealing any electrical, plumbing, utility, mechanical, fire sprinkler,

fire alarm or structural systems. Work may not progress beyond any point for which an inspection is required until the Contractor receives an approved inspection report for the inspected work. Prior to completion of construction, a punch list inspection shall be performed with Space Florida personnel or their representative. All punch list items shall be addressed prior to final completion of construction activities. A Copy of the Inspection Checklist is attached as Appendix 1E.

2.5.3. Punch Lists

Depending on the complexity of the construction project, Space Florida reserves the rights to issue construction phase(s) dependent punch lists. The punch list shall be documented in electronic format editable by others. At substantial completion of the overall construction project, Space Florida shall issue a final substantial completion punch list. Upon a mutually agreed time frame, between substantial completion and final completion, Space Florida and Tenant shall conduct a pre-final completion inspection at which time a final punch list shall be prepared. All punch list items shall be completed prior to final completion of the project.

2.6 Contract Closeout and Closeout Documentation

2.6.1 Record Documents

Record documents (as-constructed) reflecting the final installation after all modifications and changes shall be furnished to the Space Florida Contact at the end of each construction project. Record specifications shall be those used for the actual construction, marked with changes made by addendum, change order, or product substitution. Provide hard copy originals and electronic media of record specifications. Record drawings shall be provided in AutoCAD, ARCGIS and PDF formats. All file transfers shall be written to Digital Versatile Disk (DVD) or other Space Florida approved storage devices. All files shall be uncompressed in the file format specified by Space Florida. The DVD shall be in a DVD jewel case, and both the DVD and the case shall be appropriately labeled. The record drawings shall include the following information:

- a) The final location, alignments and material type of all underground utilities.
- b) The final location of all structures, buildings, roads, parking areas, and other elements of the project.
- c) The final locations of all heating and air conditioning equipment, ductwork, air devices, piping, or other devices necessary to the operation of the Heating, Ventilation, and Air Conditioning (HVAC) systems.
- d) The final locations of all plumbing equipment, pumps, piping, necessary for the operation of the plumbing systems.
- e) The final locations of all the electrical equipment, devices, wiring sequences, wiring methods and connections of component systems as installed. The drawings shall include color codes, panel identification, and any other information necessary to identify and locate the equipment.
- f) All initiating devices such as flow switches/pressure switches for fire protection systems.
- g) Initiating devices, wiring sequence, wiring method, and connections of the

components of the protective signaling system as installed. The drawings shall include color codes and terminal identifications.

- h) The final locations of all the communications equipment, devices, wiring sequences, wiring methods and connections of component systems as installed. The drawings shall include color codes.
- i) The final locations of all the security equipment, wiring sequences, wiring methods and connections of component systems as installed. The drawings shall include color codes.
- j) All abandoned piping and underground utilities or structures.
- k) Location of any identified, but undisturbed asbestos remaining encapsulated.

2.6.2 Operations and Maintenance Manuals and Warranties

For Space Florida projects records transfer shall also include Operations and Maintenance Manuals (O&MM) for all systems and equipment; copies of all approved construction submittals and change orders; all acceptance test records and construction approvals; all manufacturer and contractor warranties; and any other documents required by the contract documents.

2.6.3 Contract Closeout and Records Transfer

Upon completion of any Tenant or Space Florida construction or improvement project, a full set of record drawings and technical specifications showing As-Built conditions shall be provided to Space Florida in electronic format. The electronic files of drawings shall be in both PDF and AutoCAD format.

For Space Florida projects records transfer shall also include O&MM for all systems and equipment; copies of all approved construction submittals and change orders; all acceptance test records and construction approvals; all manufacturer and contractor warranties; and any other documents required by the contract documents.

2.7 Certificates of Occupancy/Use

The Contractor must deliver to the Space Florida Building Official the completed Environmental Close-Out Checklist (ECOC), refer to Appendix 1A, (including Material Safety Data Sheets (MSDS) for all materials used in the construction) at the close of construction. Upon acceptance of the ECOC, other required submittals and acceptance of the work following all required inspections, the Space Florida Building Official shall issue a Certificate of Substantial Completion (CSC). After receipt of the required As-Built, Record Documents and correction or completion of any outstanding items of work as listed in the CSC, the Space Florida Building Official shall issue the Certificate of Occupancy/Use (CO/U).

SECTION 3 – DESIGN STANDARDS

3.1 Design Standards Introduction

Designers are encouraged to consider demonstration projects that engage new technologies in partnership with entities around CCS and Space Florida.

It shall be noted that within the general context of promoting a cohesive physical environment, this Development Manual is nevertheless meant to encourage the creativity of building and site designers. This Development Manual is not prescriptive in its definition of absolute requirements for what constitutes visual interest or most effectively promotes interaction. Rather, it recommends that such issues be addressed with thoughtfulness and care. Instead of providing a rigid set of rules, this manual is intended to allow the designers as much flexibility as possible to achieve the ultimate goals and concepts described herein. Accordingly, a variety of design expressions are both desirable and encouraged. Nevertheless, by adhering to the key principles defined above, CCS shall develop, over time, a strong contextual tie to the environment, a coherent identity and a distinct sense of place.

3.2 Design of Streets and Roadways

FDOT Manual of Minimum Uniform Standards for Design, Construction and Maintenance for Streets and Highways, latest version, shall govern the design of streets, parking lots, and roadways. These standards can be obtained via the FDOT website: <http://www.dot.state.fl.us/>

3.3 NASA Standards

The following Kennedy NASA Procedural Requirements (KNPR) and NASA Procedural Requirements (NPR) apply to development and operation of facilities at the CCS. Copies of the standards can be obtained from the following web site:
<https://tdglobal.ksc.nasa.gov/ReferencedDocuments/>

Table 2: NASA Procedural Requirements

SECTION	DESCRIPTION	SLF	EP	PF	LC
KNPR 8715.3-3	KSC Safety Procedural Requirements	X	X	X	X
KNPR 8715.5	Range Flight Safety Program Requirements	X			X
KNPR 1860.1	KSC Radiation Protection Program	X	X	X	X
KNPR 1860.2	KSC Nonionizing Radiation Protection Program	X	X	X	X
NASA Form 1509	Facility Project - Brief Project Document	X	X	X	X
NASA Form 1510	Facility Project Cost Estimate	X	X	X	X
NASA STD 8719.11	Safety Standard for Fire Protection	X	X	X	X
KSC STD E-0012	Facility Grounding and Lightning Protection	X		X	X
KNPR 9715.2	Comprehensive Emergency Management Plan	X	X	X	X
KSC Form 21-608	NASA-KSC Environmental Checklist	X	X	X	X
KCA 4185	Programmatic Agreement for Management of Historic Properties	X	X		X
KSC Form 21-555	NASA-KSC Pollution Incident Report	X		X	X
NASA Form 1046,	Transfer and/or Notification of Acceptance of Accountability of Real Property.	X	X	X	X

SLF: Shuttle Landing Facility; EP: Exploration Park; PF: Processing and Other Facilities; LC: Launch Complexes

3.4 Laws and Regulations

The following laws, regulations and statutes shall apply to all projects where applicable.

Table 3: Laws and Regulations

Regulation	Reference	Description	SLF	EP	PF	LC
Davis Bacon Act*	40 U.S.C. 3141-3148	Local prevailing wages on public works projects for laborers and mechanics	X	X	X	X
Florida Statute	255.253	Sustainable Building Rating	X	X	X	X
Protection of Historic Properties	36 CFR Part 800	Protection of Historical Properties	X			X
Florida Statute	373	Water Resources	X	X	X	X
29 U.S. Code	Chapter 15	Occupational Safety and Health	X	X	X	X
Hazardous Materials	40 CFR Part 302	Designation of Hazardous Substances	X		X	X
	40 CFR Part 355	Emergency Planning and Notification	X		X	X
	49 CFR Parts 171-180	Hazardous Materials Regulations	X		X	X
	Title 40 Part 112	Oil Pollution Prevention	X		X	X
10 U.S Code	Section 2692	Storage, Treatment and Disposal of Non-Defense Toxic and Hazardous Materials		X		
Florida Administrative Code	FAC Chapter 62-150	Hazardous Substance Release Notification	X		X	X
	FAC Chapter 62-770	Petroleum Contamination Site Cleanup Criteria	X		X	X
Petroleum Storage Tanks	FAC Chapter 62-761	Underground Storage Tank (UST) Systems	X	X	X	X
	FAC Chapter 62-762	Aboveground Storage Tank (AST) Systems	X	X	X	X

- SLF: Shuttle Landing Facility; EP: Exploration Park; PF: Processing and Other Facilities; LC: Launch Complexes
- *Use Davis Bacon Act wage rates only when applicable.

3.5 Codes and Standards

The design and construction of all facilities and improvements shall be in compliance with all applicable local, state, and federal laws and regulations, including Chapter 373, Florida Statutes; and in conformance to the latest edition of the Florida Building Code and other design and construction standards adopted by the State, and in effect prior to the start of design. Some of these requirements may include industry standards from the following organizations.

Table 4: Organization Acronym's

ACRONYM	STANDARD DESCRIPTION
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute International
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers (ASME)
ASSE/SAFE	American Society of Safety Engineers
ASTM	American Society of Testing and Materials
AWWA	American Water Works Association
AWS	American Welding Society
ASDA	Americans With Disabilities Act Accessibility Standards
CFR	Code of Federal Regulation
DOD	Department of Defense
EPA	Environmental Protection Agency
FAR	Federal Acquisition Regulations
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FAC	Florida Administrative Code
FBC	Florida Building Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
IES	Illuminating Engineering Society of North America
NETA	International Electrical Testing Association
IEC	International Electrotechnical Commission
KNPR	Kennedy NASA Procedural Requirements
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
SJRWMD	St. Johns River Water Management District
UL	Underwriters Laboratories
USAF	United States Air Force
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture

3.6 Sustainability

Space Florida is committed to conserving energy and natural resources by applying sustainable design practices intended to conserve energy, water, and other renewable and non-renewable resources. Tenants shall incorporate the adopted State of Florida Sustainability Standards into design and construction of their facilities. The Tenant has the option of selecting one of the rating systems approved for use in FS Section 255.253.

From FS 255.253:

“Sustainable building rating or national model green building code” means a rating system established by the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system, the International Green Construction Code (IGCC), the Green Building Initiative’s Green Globes (GBIGG) rating system, the Florida Green Building Coalition (FGBC) standards, or a nationally recognized, high-performance green building rating system as approved by the department.” The IGCC is not a standard, but is intended to be used as a jurisdictional and municipal building code for new construction and major renovations.

The selected rating system and rating tier shall be listed in the submitted Form 1509 Template (of equivalent form) in Appendix 1A. Refer to Appendices 1B for more information on the acceptable sustainability standards.

Designers are encouraged to consider demonstration projects that engage new technologies. Projects should also be respectful of their location within the Merritt Island Wildlife Refuge (MIWR) and the National Canaveral Seashore (NCS), through restoration of habitat and use of native materials.

3.7 Site Development – City of Titusville Support

Space Florida has an Interlocal Agreement with the City of Titusville to perform building code reviews and inspections for vertical construction governed by the FBC. Space Florida is the Building Official and writes the permits and CO/U. The City of Titusville has no authority over Space Florida Projects, but their code reviews, inspections, and recommendations will be taken into account by Space Florida.

3.7.1 Stormwater

Any construction activity, with more than 1,000 square feet of new impervious surface, requires a stormwater management report signed and sealed by a Professional Engineer (PE). All projects must have a legal positive outfall or retain the 100-year storm event.

3.7.2 Fire Hydrant Determination

Use International Organization for Standardization (ISO) method per NFPA.

3.7.3 Hydraulic Analysis

Hydrant flow tests should be requested at the pre-application conference. A hydraulic analysis should be completed for any system requiring a main extension to the potable water system (private or public).

3.7.4 Water Demand Calculations

Calculations shall show all water demand requirements within the structures and methodology used for determination of meter size and service lateral size.

3.7.5 Lift Station Calculations

Calculations shall include estimated sewer flows, peak factor used, velocities, head loss, pump selection information, pump curve, run time in both minimum and maximum cycles, wet well capacity and size, pumps on levels, pumps off levels, lag times and buoyancy calculations.

3.7.6 Parking Requirements

The documentation shall include the number of spaces per square foot required and proposed, handicap spaces required and proposed, bicycle spaces required and proposed, and totals.

3.7.7 Spread Calculations

This is required for any new or extension of roads and shall include the following minimum requirements. A 10-year, 24-hour tail water condition shall be used. The rainfall intensity shall be four inches/hour. A minimum of one travel lane (12 feet wide) will be required to be maintained in the worse condition. The hydraulic grade line shall be six (6) inches below the inlet invert.

3.7.8 FDEP – NPDES (NATIONAL POLLUTANTS DISCHARGE ELIMINATION SYSTEM) NOTICE OF INTENT

All construction sites that disturb one acre or greater of land are required to obtain coverage under the Generic Permit for Stormwater Discharge from Large and Small Construction Activities. DEP 62-621.300(4) (a). Sites one acre or greater must complete a Notice of Intent (NOI) - DEP form 62- 621.300(4) (b) to comply with FDEP National Pollutant Discharge Elimination System (NPDES) Phase II Construction Permit. A copy of the NOI and SWPPP must be submitted to the Space Florida prior to construction. FDEP is the agency responsible for reviewing, processing, and issuing NPDES permits. The NOI and the permit application fee must be submitted to FDEP for issuance of the NPDES Permit.

3.7.9 ST. JOHNS RIVER WATER MANAGEMENT DISTRICT PERMITTING

The St. Johns River Water Management District (SJRWMD) regulates construction of drainage systems, storm water treatment ponds, large uses of water, and other types of projects, in order to protect the State's water resources and the rights of existing water

users. Space Florida will not make any determination of SJRWMD permit requirements. With advanced notification to Space Florida and NASA tenants shall contact the SJRWMD Palm Bay Office for any permit determinations or requirements.

3.7.10 Standard Construction Details

During the design preparation phases of projects which require, Space Florida permitting/approval or for information purposes, Tenants and Tenant's design teams shall review the standard construction details provided on the City of Titusville website: <http://www.titusville.com/Page.asp?NavID=2110>. These details provide standards associated with common and potable water; pervious concrete; erosion control; lift station; reclaimed water; sanitary sewer; and, water resources technical specifications.

3.8 Architecture

3.8.1 Building Aesthetics

Recognizing Tenant buildings need to be designed to meet the operational needs of the specific Tenant, the following standards are provided relative to the aesthetics of the structures.

- a) Single large box-like building masses should be avoided where the operational space requirements allow for changes in building mass and appearance. Changes in building mass should not be cosmetic or decorative in nature.
- b) Durable materials shall be used for building exteriors including architectural precast, natural metals, anodized aluminum, clear glass and natural stone. Differentiation of material to accent the public entrance side of the building is suggested. Front entries shall be enhanced areas of the building facades. Accessible routes and equipment shall be integrated with the entries and building design.
- c) Painted materials should be finished in shades of gray, silver, or light colors. Painted brick, stone and concrete are not permitted. The use of bold or bright colors on painted materials shall be limited and subject to Space Florida approval. Reflective glass and Exterior Insulation and Finish Systems (EIFS) shall not be permitted.
- d) Roof top mechanical equipment should be positioned or screened from view. Ground level mechanical and electrical equipment should be enclosed in a structure integrated into the building design, where possible, or screened. Direct sightlines from public ways to mechanical equipment, tanks, transformers, generators and the like shall not be allowed.
- e) Truck delivery / loading areas shall be located at the sides or rear of the building where possible, with visual screening provided to any delivery/loading area that is visible from the front of the building. Long-term truck parking areas shall be screened visually with fencing or landscaping.
- f) Waste and recycling areas on the site shall be visually screened.

3.8.2 Architectural Design

Architecture and building material selection shall be compatible with the CCS Master Plan context and Florida coastal location.

- a) New construction and rehabilitation shall comply with the FBC with regard to environmental design factors such as wind damage prevention, mold prevention, and insect protection.
- b) Non-combustible construction is recommended.
- c) Site design shall be compatible with the building type, geometry and convenient accessible routes to building entries.
- d) Energy saving features and sustainable design features beyond building code requirements are recommended.
- e) Front entries of buildings shall provide overhead weather protection and window openings shall have sun protection. General shading of areas close to the building is recommended.
- f) Roof drainage shall be compatible with the proposed building envelope, site drainage plan and directing water away from high pedestrian traffic areas.
- g) Noise-producing operations related to building function, internal or external, shall have acoustic noise reduction measures provided.
- h) Building and site security measures shall be discreet in design and placement. Razor-wire and similar security fence measures are prohibited.
- i) Buildings close to flight lines or runway access shall have Foreign Object Damage (FOD) prevention measures.

3.8.3 Signage

Tenant shall not use NASA or Space Florida name or logo in any form on any signage. Signage on the exterior of buildings or free standing signage within the lease area is limited to Tenant company name and logo (commercial signage) except for way finding and code required signage.

Way finding and code required exterior signage shall be approved by Space Florida including graphics, fonts, and color. Building shall have appropriate building number or street number indicated on front of the building.

The location, size and construction of commercial signs will be subject to the prior approval of Space Florida. Internally illuminated signs must be approved by Space Florida and the requirements of paragraph 3.8.8 Exterior Lighting. All wall signs must be mounted flat on the surface of the walls and may not project above the roof line of any building nor extend more than twelve inches from the building wall on which it is located. No hand-painted, animated or flashing signs will be permitted. Each lease parcel may have one free standing sign located at the primary entrance to the lease parcel. The sign must be no closer than ten feet to the entrance drive and must be set back no less than 10 feet from the lease boundary line. The design of the entrance sign shall be consistent with these standards and will require specific written approval from Space Florida. Each building will be permitted one additional free standing or fascia type sign at the primary entrance to such building. No part of any free standing sign may exceed an above-grade height of six (6) feet.

No more than four colors (including black and white) will be permitted on any sign. Exceptions may be made by Space Florida for company logos, so long as the Tenant of the Parcel obtains the prior written approval of Space Florida for such variance. No signs using vacuum-formed plastic lettering or day-glow colors will be permitted on any Parcel.

3.8.4 Landscaping

Landscaping in the form of turf, shrubs, and plants shall be utilized in all non-paved areas within the Tenant's leased area. Plant and shrub material shall be selected based on soil conditions, low water requirements/summer drought tolerance, ease of maintenance, and compatibility with the native vegetation in the surrounding area. Use of xeriscape is encouraged. For acceptable materials consult the Florida Native Plant Society (FNPS). Maximum grades for landscaping areas shall be 1:3. Landscaping breaks at large vehicle parking areas or linear rows of parking spaces are recommended.

3.8.5 Noise

All structures, whose primary function is to house people-oriented activities, shall be designed with a suitable combination of building materials and execution of construction details in accordance with established architectural and acoustical principles to reduce the noise between the outside and inside of the building to the following levels.

The methodology to be used shall be the Shell Isolation Rating (SIR) method set out by the U.S. Department of Commerce (USDC), National Bureau of Standards (NBS) *"Design Guide for Reducing Transportation Noise In and Around Buildings"* - Publication: Building Science Series No. 84.

The design shall take into account all possible paths into the facility to include, but not limited to walls, roofs, windows, doors and ventilation openings.

3.8.6 Curb Cuts

The location of all curb cuts and any driveway connection serving any Parcel must be approved by Space Florida.

3.8.7 Exterior Lighting

Exterior lighting on a Tenant lease shall be limited to internal lighting of signs, security and safety illuminations of adjacent streets, parking areas, loading areas, service areas, access drives, walkways and building entrances and exterior lighting of overall building surfaces. The location, design, materials and type of any exterior lighting shall be subject to the approval of Space Florida. Such lighting shall not produce any excessive glare or reflection onto any portion of any adjacent street or parcel or into the path of any oncoming or passing vehicle. No flashing, animated or intermittent lighting shall be visible from the exterior of any building. All parking lots, loading areas, service areas, pedestrian walkways and security lights, whether wall-mounted or free-standing, must be concealed source fixtures, where the lenses do not project below the opaque section of the fixture. Lighting fixtures for parking areas shall be selected from Space Florida standards and may only be varied with the prior approval from Space Florida. All lighting on a parcel shall be coordinated as to intensity to provide for an attractive overall lighting plan and must be approved in writing by Space Florida.

Refer to Appendix 1C KSC Exterior Lighting Requirement prepared by NASA for additional details.

3.9 Hazardous Material, Fuel, and Propellant Storage

Storage of hazardous materials, fuel and propellants shall be in accordance with all Federal and State regulations and applicable codes and only if approved by Space Florida.

3.10 Utility Connections

All utility services located on or adjacent to any parcel, including, without limitation, any telephone, gas, water, sewer, cable TV, or electric lines or connections, shall be located underground.

3.11 Explosive Siting and Range Safety

Explosive siting shall be in accordance with Air Force Manual 91-201 and CFR 14 Chapter III Part 420. Range Safety shall be in accordance with CFR 14 Chapter III Parts 415, 417, 420 and 431.

3.12 Safety Reporting – Mishaps and Close Calls

All occupants of CCS shall comply with Kennedy NASA Procedural Requirements (KNPR) 8715.3-3, KSC Safety Procedural Requirements for Space Florida Organization's Operating in Exclusive-Use Facilities, with the tailored version of KNPR 8715.3-3 Chapter 7 replacing Chapter 7 of the KNPR. Refer to Appendix 1A for additional details.

NASA shall provide fire and emergency response services for CCS in accordance with the service levels specified in the Reimbursable Space Act Agreement (RSAA) on the basis of developed square footage of buildings and structures, the building types, and types of occupancy.

3.13 Security and Security Badging

NASA-KSC shall provide security and emergency response services for CCS in accordance with the service levels specified in the RSAA for routine patrols of the vicinity and premises of CCS, and shall coordinate law enforcement activities with the Brevard County Sheriff's Office. Security for entry to, or activities within, individual Tenant facilities shall be the responsibility of the individual Tenants.

3.14 Environmental Compliance and Reporting

Refer to Appendix 1A for environmental compliance requirements and reporting.

APPENDIX 1A – FORMS

1. Tenant Questionnaire (to be provided in the future)
2. NASA Form 1509 Facility Project - Brief Project Document
3. NASA Form 1510 Facility Project Cost Estimate
4. KSC Form 26-312V3 NS Utility Locate/Excavation Permit Request
5. KSC 21-608V2 NS Environmental Compliance Checklist
6. KSC Form 21-555 NASA KSC Pollution Incident Report (to be provided in the future)
7. Accessibility Checklist (to be provided in the future)
8. Airspace Study Application (to be provided in the future)
9. Environmental Close-out Checklist (to be provided in the future)
10. Space Florida Construction Application (to be provided in the future)

VERSION 1.1

Commercial Aerospace 1509 Template Information Template for Proposed Facility Modifications Requiring NASA Approval

Date:

Location: Kennedy Space Center, Florida

Agreement # KCA-

Facility Number / Name:

Project Title:

Scope / Description:

Provide full description of any proposed construction, alteration, or repair work. Include full description of any proposed demolition work, including specific facilities, structures, facility systems, or collateral equipment to be removed.

Justification:

Technical Point of Contact:

Schedule Dates:

Design Phase

Construction Phase

Summary of Estimated Costs:

Design:

Construction:


Demolition:

VERSION 1.1

NASA: NASA_1510

U.S. Federal Form: NASA: NASA_1510

FORM NUMBER:	NASA_1510
FORM TITLE:	U.S. Federal Form: NASA: NASA_1510
U.S. GOVERNMENT AGENCY:	NASA
POINTS OF CONTACT:	Agency Forms Management Officer
USERS:	NASA
FILE FORMATS:	PDF
OPTIMIZED?	<input checked="" type="checkbox"/>
PRINTABLE?	<input checked="" type="checkbox"/>
FILLABLE?	<input checked="" type="checkbox"/>
SAVABLE?	<input checked="" type="checkbox"/>
OBTAINING FROM:	(1) USA-Federal-Forms.com, (2) Fillable.com
ISSUANCES:	
ADOPTED?	<input type="checkbox"/>
PREScribed?	<input type="checkbox"/>
PREVIOUS EDITIONS ACCEPTED?	<input type="checkbox"/>
FORM CONTROLLED?	<input type="checkbox"/>
SPONSOR:	
SUBSPONSOR:	
FUNCTION CODE:	
MANDATORY PRINT SPECIFICATIONS:	
PRIVACY ACT IMPLICATIONS?	<input type="checkbox"/>
RCS:	
IRCN:	
OMB:	

 National Aeronautics and Space Administration		<h2 style="margin: 0;">Facility Project Cost Estimate</h2>			
INSTALLATION/PROGRAM OFFICE		DATE			
PROJECT TITLE		SUBMISSION/REVISION			
		PROJECT CODE			
BASIS OF COST ESTIMATE		PROJECT ID			
I. SUMMARY OF COST ESTIMATE					
DESCRIPTION	AMOUNT a.	PERCENT b.			
1 ENGINEERING ESTIMATE					
2 COST ADJUSTMENT <i>(Enter percentage of item 1a to right in col. 2b)</i>					
3 SUBTOTAL (1+2)					
4 CONTINGENCIES <i>(Enter percentage of item 3 to right in col. 4b)</i>					
5 SUPERVISION, INSPECTION AND ENGINEERING SERVICES <i>(Enter percentage of items 3a and 4a to right in col. 5b)</i>					
6 OTHER BURDEN COSTS					
7 TOTAL BUDGET ESTIMATE (3+4+5+6) SAY					
8 IDENTIFICATION OF COST ADJUSTMENT (item 2, above) AND OTHER BURDEN COSTS (item 6, above)					
II. PLANNING AND DESIGN					
DESCRIPTION	STATUS				
	NEEDED a.	IN-WORK b.	COMPLETE c.	IN-HOUSE/ AE d.	COST e.
1 PRELIMINARY ENGINEERING REPORT					
2 SPECIAL STUDIES <i>(Specify)</i>					
3 FINAL DESIGN					
4 SUPERVISION AND ADMINISTRATION OF DESIGN SERVICES					
5 TOTAL PLANNING AND DESIGN COST					
III. RELATED COST DATA <i>(Not included in this Approved Facility Cost Estimate, but required to make the facility initially operable.)</i>					
1. RELATED COSTS INVOLVED <input type="checkbox"/> a. YES <i>(Identify in items 2 through 10)</i> <input type="checkbox"/> b. NONE			2. PER (Amount)		3. DESIGN (Amount)
OTHER RELATED EQUIPMENT	ITEM	AMOUNT	ITEM	AMOUNT	
	4. TO BE PURCHASED		8. ACTIVATION		
	5. TRANSFER TO EXCESS		9. OTHER REAL ESTATE		
	6. EXISTING		10. OTHER <i>(Specify)</i>		
	7. FUTURE FUNDING				

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KSC Form 26-312V3 NS Utility Locate/Excavation Permit Request

UTILITY LOCATE/EXCAVATION PERMIT REQUEST				
1. Date	2. Master Planning Site Plan No.	3. Project (PCN) No.	4. Work Order No.	5. Check One <input checked="checked" type="checkbox"/> Permit to Dig <input type="checkbox"/> Locate Only/ <input type="checkbox"/> No Digging
6. Requester's Name (REQUIRED)		7. Email (REQUIRED)	8. Phone No. (REQUIRED)	9. Fax No. (REQUIRED)
10. Requester's Company (REQUIRED)			11. Mail Code/Address	
12. Technical Contact (REQUIRED)	13. Email (REQUIRED)	14. Phone No. (REQUIRED)	15. Fax No. (REQUIRED)	
16. KSC NASA Contact Name (REQUIRED)		17. Email (REQUIRED)	18. Phone No. (REQUIRED)	
19. Building No. (REQUIRED)	20. Grid No. (REQUIRED)	21. Secondary Location (Bldg. No./Add. Info.) (REQUIRED)		
22. Estimated Start Date (REQUIRED)		23. Estimated End Date (REQUIRED)		
24. Emergency request justification <i>(if required)</i>				
25. Reason for permit/Statement of work (REQUIRED)				
MAP/SKETCH, WITH AREA TO BE LOCATED/EXCAVATED CLEARLY MARKED, IS ATTACHED (REQUIRED)				

See next page for completion and process instructions.

KSC FORM 26-312V3 NS (REV.08/09) PREVIOUS EDITIONS ARE OBSOLETE

INSTRUCTIONS

Please complete as many fields as possible.

NOTE: ALL FIELDS INDICATING "(REQUIRED)" MUST PROVIDE INFORMATION.

- Block 1 Date submitted.
- Block 2-4 Provide related Site Plan, PCN or Work Order Numbers.
- Block 5 Check one. If you are NOT going to dig, but need an underground utility locate, check "Locate Only".
- Block 6-18 Enter the name, email address, phone, fax number, company name, and address of the person who will be receiving this permit including KSC NASA Contact for Project.
- Block 19-20 Enter the building number where work will be performed (or closest building number).
- Block 21 Enter additional information as necessary.
- Block 22 Enter the date excavation is expected to begin.
- Block 23 Enter the date excavation is expected to be complete. Permit will be closed on this date. End date may not be longer than one year from the start date.
- Block 24 If excavation is of an emergency nature and requires priority, enter justification.
- Block 25 Enter a description of why this permit is being requested, i.e., what work will be performed and why.

REQUIRED: ATTACH A MAP/SKETCH WITH AREA TO BE LOCATED/EXCAVATED CLEARLY MARKED.

1. Email, fax or hand-carry this request, along with a map, drawing or sketch to the Excavation Permit Request (EPR) Administrator using the contact information below.
2. You may contact the EPR Administrator using the contact information below if you have any questions on the dig permit process.
3. To schedule an appointment with the Excavation Permit Inspectors to locate underground utilities and/or obtain an approval signature on this permit to dig, Requester should phone the Excavation Permit Inspectors' Office (321-476-4494/3799) at least 72 hours prior to digging.
4. Requester should notify the EPR Administrator when excavation is complete.
5. Permits may be extended for up to one year by calling the EPR Administrator, but all permits will be closed upon expiration unless notified.

EPR Administrator

Location	KSC Headquarters, M6-0399, Room 3145
Mail Code	ISC-4026
Phone	(321)867-2406
Fax	(321)867-1175
Email	<u>KSC-ISC-DIGPERMIT@mail.nasa.gov</u>

Emergency requests will be processed on a real time basis
through the ISC Duty Office 861-5050, Fax (861-1627)
or Email - KSC-ISC-DutyOffice@mail.nasa.gov

KSC ENVIRONMENTAL CHECKLIST		
1. PROJECT TITLE: _____		PROJECT NO.: _____
3. PROJECT LOCATION: <input type="checkbox"/> KSC <input type="checkbox"/> CCAFS <input type="checkbox"/> PAFB <input type="checkbox"/> OTHER: _____		4. FACILITY NAME/NO.: _____
5. REQUESTOR/PROJECT LEAD: _____ ORG/MAIL CODE: _____		6. PHONE NO.: _____
7. PREPARER OF CHECKLIST: _____ ORG/MAIL CODE: _____		8. PHONE NO.: _____
9. PROJECT DESCRIPTION: (Provide site plans, maps, etc. as separate attachment(s)) 		
10. a-r. Check the appropriate box (Yes, No, Undetermined) to identify if any component of the proposed project (including, but not limited to construction, installation, demolition, removal, activation or operation) will involve any of the items listed. Use the attached instructions. Provide more specific information for each item marked Yes or Undetermined in the third column.		
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	a. <u>Construction/Modification/Demolition</u> : Constructing, altering, expanding, modifying (other than routine maintenance) or demolishing any building, pavement or structure.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	b. <u>Land Impacts</u> : Land disturbance, soil addition or removal, digging, grading, trenching, alteration or removal of vegetation, equipment/material staging area required, stockpiling and any activity in or near surface water (including ditches and low-lying areas).	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	c. <u>Hazardous Material and Hazardous, Controlled, or Universal Waste</u> : Use, storage, generation and/or disposal of any hazardous or toxic material, petroleum products or paint coatings.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	d. <u>Asbestos Containing Material (ACM)</u> : Disturbance of construction material that may contain asbestos (i.e., roofs, walls, ceilings, floor tile, piping insulation, caulk, etc.).	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	e. <u>PCBs</u> : Disturbance or replacement of electrical distribution systems, communication systems, lightning protection, transformers, non-liquid PCB materials or any other items believed to contain PCBs, including paint coatings.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	f. <u>Painting</u> : Initial application or repainting of a facility (interior or exterior), structure or utility.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	g. <u>Paint, Sealant, Caulking Removal</u> : Includes surface preparation such as sandblasting, scraping, water blasting or chemical stripping of existing paint coatings. Specify method.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	h. <u>Dewatering</u> : Use of conventional wellpoints, hydraulic pumps, or other means to transfer groundwater (including water in utility manholes) for project activities including utility trenching, foundation work, roadbed construction, stormwater treatment pond, and borrow excavation.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	i. <u>Stormwater</u> : Construction of new building, pavement, impervious or semi-impervious surface and/or modification of an existing stormwater system. Give approximate number of square feet of impervious surface being added.	sq. ft.
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	j. <u>Drinking/FIREX Water</u> : Installation or modification of potable water system. Include diameter of new water piping if known.	inches
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	k. <u>Domestic/Industrial Wastewater</u> : Installation or modification of domestic sewer system, including septic tank systems, generation of process wastewater or modification to a system that handles or transports wastewater, including condensate lines, washdowns, outfalls, holding ponds and non-point source discharges associated with industrial applications/processes.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	l. <u>Air Emissions</u> : Installation or alteration of a stack, scrubber, exhaust fan, vent, generator, fume hood, cooling tower, boiler, halon fire suppression system, HVAC system, refrigeration system, or discharge from painting or sandblasting. Describe emission source.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	m. <u>Open Burning</u> : Burning of any land clearing debris.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	n. <u>Tanks</u> : Construction, modification, or repair of above or underground storage tanks (including piping and/or containment). Type commodity stored and capacity here.	gallons

KSC FORM 21-608V2 NS (REV. 01/08) PREVIOUS EDITIONS ARE OBSOLETE

Page 1

<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	o. <u>Transformers/Generators</u> : Installation, replacement or repair of transformers, generators, or any other oil-filled equipment. Give capacity.	gallons
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	p. <u>Exterior Lighting</u> : Installation, refurbishment or modification of exterior lighting.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	q. <u>Radiation</u> : Generation of ionizing or non-ionizing radiation or use of any radiation source.	
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED	r. <u>Other</u> : Please describe any other aspect of the proposed action that could potentially affect the environment. Use separate sheet if necessary.	

ENVIRONMENTAL CHECKLIST PREPARATION INSTRUCTIONS

1. **Project Title:** Title of proposed action as it appears on the work order or programming document.
2. **Project Number:** Insert SON, WON, PCN, DBEH, SXHT, MAXIMO or other authorized work identification number, as appropriate.
3. **Project Location:** Check box for applicable installation where work will be conducted. For off-site work, identify location.
4. **Facility Name/Number:** Use the proper name for the facility where work is being conducted and the assigned facility number. If proposed action is not directly associated with a facility, use the closest facility for reference.
5. **Requestor/Project Lead:** List name of individual who has requested the proposed action. If this individual cannot be identified, or no single individual is responsible for submitting the work requirement, then list the person who is most familiar with the proposed action, such as the design engineer or project lead, and their mail code.
6. **Phone Number:** Telephone number of individual identified in #5.
7. **Preparer of Checklist:** List name of individual who completed the checklist and their mail code.
8. **Phone Number:** Telephone number of individual identified in #7.
9. **Project Description:** Provide a brief, complete description of the proposed project. Include size of project and site, proposed uses, and any known plans for the future. Attach additional information including site plans, maps, statement of work, etc.
- 10 a.-r. The items listed in this section could be included in, or result from, the work that is being proposed. To the best of your knowledge, indicate by checking the applicable box if any of these items could be affected by the proposed work. Check the "UNDETERMINED" box if you are not certain. If further information is required to complete items 10 a. - r., please reference the additional instruction sheet.

ENVIRONMENTAL CHECKLIST ADDITIONAL INFORMATION AND INSTRUCTIONS

SECTION 10a. -r.

The following additional information/instructions should be applied to Environmental Checklist Section 10a – r.

- a. **Construction:** Some proposed construction activities may not have their scope defined well enough to allow easy identification of potential environmental concerns, and certain facilities and certain types of construction activities have restrictions or constraints that may not be easily identifiable. An example may be disposal of wastes from a construction or demolition project as opposed to waste generated from normal operations and maintenance (O&M) type projects. Types of waste accepted at the KSC Class III Schwartz Road Landfill are listed on the EPB web page at <http://environmental.ksc.nasa.gov/permitting/wastePermit.htm>. The proposed project must reflect the proper disposal method in the design specifications to ensure compliance with existing permits.
- b. **Land Impacts:** Areas of major environmental concern associated with this item include the loss of vegetation and disturbance of land that may provide habitat for various types of wildlife. Disturbance of the ground could impact burrowing animals, such as the gopher tortoise. Other issues include the disposal of vegetation from land clearing, underground utilities, archaeological sites, wetlands, etc. If your project includes any type of vegetation removal, land clearing, tree trimming (other than routine landscape maintenance), digging, grading or activity in or near wetlands/surface waters, check yes for this item.
- c. **Hazardous Material and Hazardous, Controlled, or Universal Waste:** A number of items have the potential to adversely affect the natural environment. Consequently, use of these items in the construction and/or operation of the proposed project will require special storage, handling and disposal. Hazardous materials usually constitute items that possess any one or more of the following characteristics: corrosive, flammable, toxic and/or reactive. If you are not sure, contact the EPB to determine if hazardous materials may be used in your project. In addition, should hazardous materials be included in your proposed project, the environmental office may be able to identify an acceptable non-hazardous alternative through the Pollution Prevention (P2) program. Wastes generated from use of hazardous materials will generally be classified as hazardous wastes, which require special handling and disposal.
- d. **Asbestos Containing Material (ACM):** Due to the age of many of the buildings and structures on KSC and CCAFS, it is likely that if your project affects an existing facility, ACM may be encountered. If the project involves new construction or is remote from existing structures and/or utilities then it is unlikely that any ACM would be disturbed by your action(s). Many of the existing facilities have already been sampled and the ACM has been identified. Contact the KSC Industrial Hygiene Office at 867-2400 to determine if the project will impact a known ACM source or access the KSC on-line ACM survey database at <http://amis>. If the potential for the presence of ACM exists, sampling must be requested so a determination can be made for all possible sources.
- e. **PCBs:** Polychlorinated biphenyls (PCBs) are chemicals that are primarily found in some types of fluids used in electrical equipment, i.e., electrical transformers, switches, ballasts, etc. Non-liquid PCBs may also be present in older paint coatings, caulking and other materials. Consequently, all projects or jobs that will come in contact with any fluid-filled electrical equipment or non-liquid materials suspected of containing PCBs should include sampling and analysis for PCBs. A current analysis (within six months) must accompany each fluid-containing piece of electrical equipment requiring disposal.
- f. **Painting:** Painting, depending on the method and contents of the paint, can pose significant human health risks as well as generate hazardous or controlled wastes. Use of paint thinner and chemical stripper typically results in generation of wastes requiring special handling and disposal. If known, please indicate if these painting related materials are to be used. If your project includes any painting check yes for this item and include specific information regarding paint contents, other hazardous materials to be used and painting methodology, as applicable.
- g. **Paint, Sealant, Caulking Removal:** Removal of existing paint coatings, sealants and caulking can generate hazardous or controlled wastes. In some cases, old paint coatings containing lead and/or other metals as well as non-liquid PCBs will require specific abatement procedures and special disposal of wastes generated. If your project includes any paint, sealant, or caulking removal activities check yes for this item and include specific information regarding paint contents, other hazardous materials to be used, and paint or sealant removal methodology.
- h. **Dewatering:** If the proposed project will require the pumping of water to support construction activities, a permit may be required. There are a number of variances and quantity thresholds based upon the amount of water being transferred and the area where the water will be discharged. Therefore, if your project requires dewatering, check yes and the EPB will determine permit applicability.

- i. **Stormwater:** Stormwater, i.e., rain, is an environmental concern primarily due to potential impacts of rainwater run off from an impervious surface into the surrounding area. Secondly, an impervious surface prevents stormwater from percolating into the ground. Consequently, the St. Johns River Water Management District (SJRWMD) requires a permit to be obtained and a stormwater management system to be constructed when a large impervious surface is created. The threshold for obtaining a permit varies from 4000 square feet for surfaces specifically supporting vehicular traffic, such as roads, parking lots, stabilized areas, etc., to 9000 square feet for buildings inclusive of all other impervious surfaces. The permit threshold can also be “tripped” by adding to or modifying an existing impervious surface, so do not assume the project will not require permitting if new impervious area is below the above thresholds. If you check “yes”, please identify the number of square feet involved.
- j. **Drinking/FIREX Water:** Check yes if the proposed project involves work that would affect a potable water line. Environmental concerns with work that affects water lines are: 1. The disturbance of a water line typically lowers water quality and therefore, requires disinfection and sampling prior to use; 2. Some connections and/or additions to the existing water system require a permit. Supply as much design information as possible relating to potable water system changes (e.g., new vs. extension, pipe diameter, etc.). Permit determinations and applications will be handled by the Environmental Program Branch (EPB).
- k. **Domestic Wastewater/ Industrial Wastewater:** Environmental concerns include potential impacts to the operation of the Wastewater Treatment Plant and Florida Department of Environmental Protection (FDEP) permit conditions. New connections and septic tank installations may require permitting, inspection, and/or certification. Therefore, check yes if the proposed project will involve installation of new wastewater sources or in any way effect the existing sanitary sewer system. Industrial wastewater is any water-based waste stream, discharge, wash water, deluge outfall, etc., that would result from conducting an industrial-type operation. The source of this wastewater typically requires permitting and therefore, must be identified to the environmental office as soon as possible. In addition, early environmental coordination could result in the identification of a process alternative that may preclude or minimize the waste stream.
- l. **Air Emissions:** If the project (either during construction or operation) would discharge any substance into the air, other than vehicular or normal construction equipment exhaust, check yes and describe the source of the emission. Some emission sources may require State and/or Federal permitting for both construction and operation.
- m. **Open Burning:** If any land clearing debris will be burned during construction, check yes. The Florida Department of Forestry requires notification in accordance with FAC 51-2 Open Burning. coordination with the KSC Fire Marshall is also required
- n. **Tanks:** Any vessel that stores liquids, other than drinking water, must be evaluated for potential environmental effects. Some tanks require registration with the State based upon the quantity and type of material being stored. All tanks must be identified in the tank management program and various containment and piping requirements may apply. If you suspect the involvement of any new or existing tanks, including associated piping or containment, check yes and the environmental tank program managers will identify any regulatory requirements.
- o. **Transformers/Generators:** If any oil-filled equipment is to be modified, replaced or installed, check yes. There are specific handling, removal and waste disposal guidelines to follow as well as Spill Prevention, Control and Countermeasures (SPCC) requirements to be met.
- p. **Exterior Lighting:** Exterior lights at or near Atlantic coastal beaches in Florida have been proven to disrupt sea turtle nesting. Consequently, NASA has developed exterior lighting policies to minimize adverse impacts to threatened and endangered sea turtles that nest KSC beaches. Should the project include exterior lights, either new or replacement of existing, check yes and the EPB will monitor the design of your project to ensure compliance with the applicable policies. Typically, exterior lights that are not directly related to a color rendition or explosion proof requirement will be the lowest wattage, low pressure sodium fixtures that meet the needs of your request. Exterior lighting requirements are located on the EPB web page at: <http://environmental.ksc.nasa.gov/projects/documents/ExteriorLightingGuidelines.pdf>.
- q. **Radiation:** Various types of mission related equipment have the potential to emit radiation that could affect human health and the well being of other living organisms. Typically, the project/job requestor is aware of the dangers associated with the equipment being constructed, installed or worked on. However, in some cases, work may be requested that would take place within a zone of influence for an existing piece of equipment, thereby requiring shut-down or some other operational constraint. Therefore, if you know the project will involve a radiation source, or is in the vicinity of a potential source of radiation (radar, microwave transmitter, etc.) check yes.
- r. **Other:** If aspects of the proposed project do not fit into any of the above categories, but may have an effect on the natural environment, explain in the space provided. This space should also be used to explain or identify specific aspects of the above items, as necessary. If there is not enough space to adequately explain the item you are describing, please attach an additional sheet and reference a continuation sheet in case they should become separated.

APPENDIX 1B – SUSTAINABILITY STANDARDS

The following standards shall be implemented by the Tenant with regards to sustainable design practices and project certification for design and construction associated with CCS. The 2008 Florida Energy Conservation and Sustainable Buildings Act requires Florida agencies to use one of the sustainable rating systems approved in FS Section 255.253. There are four different systems that can be used.

Space Florida Goal

Tenants shall be allowed to choose the system that is most applicable for the planned improvements. This shall allow Tenant flexibility for selecting the system that best meets their project needs. The project, at a minimum, shall be certified by one of the rating systems provided below.

Space Florida shall require Tenants follow FS 255.253 which states:

“Sustainable building rating or national model green building code” means a rating system established by the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system, the International Green Construction Code (IGCC), the Green Building Initiative’s Green Globes rating system, the Florida Green Building Coalition standards, or a nationally recognized, high-performance green building rating system as approved by the department.” The IGCC is not a standard, but is intended to be used as a jurisdictional and municipal building code for new construction and major renovations.

Tenant shall submit records showing adherence to the sustainability standards set forth within this Development Manual.

Construction in Exploration Park shall meet, as a minimum, the sustainable design standards represented by one of the three sustainable rating systems identified in section 255.253, Florida Statutes, that are also identified below as NASA-approved. Rating system standards approved by NASA include United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) NC rating system, the Green Building Initiative's (GBI) Green Globes NC rating system, and the Florida Green Building Coalition (FGBC) commercial standards. The latest released version of the selected rating system in effect at the time design work commences on a given project shall be utilized for that project. Construction shall meet, as a minimum, one of the following levels under the selected rating system: LEED “Silver,” FGBC “Silver,” or GBI “2 Globes”, unless it has been clearly demonstrated that such levels are not feasible due to the nature of the construction or planned operations, and a waiver has been granted by NASA-KSC. Each Form 1509 submittal shall be accompanied by information identifying which sustainable building rating system is being followed, which rating level is being pursued, what specific track and or level within the applicable sustainable building rating system is being followed (e.g. Building Design and Construction, Commercial Building, etc.) and if certification is or is not being pursued. NASA-KSC will review the proposed level to determine whether it meets the requirements of this Section 6.3 before approving the NASA Form 1509. Certification of the project by the rating system organization is not mandatory but is strongly encouraged. In lieu of certification, a qualified third party under direction from the Space Florida building official may perform rating system verification checks during planning, design, construction and operational phases to score and certify the project using the selected rating system scorecard/checklist. Credentials for the qualified third-party shall be provided to NASA KSC. The project will be registered with the rating system agency and the scoring

documentation demonstrating that the project meets the agreed upon rating level shall be provided to NASA-KSC prior to the certificate of occupancy being issued by Space Florida. Appropriate credit for Space Florida's Exploration Park infrastructure design and site features may be counted toward each facility project's score in determining compliance with the selected rating system.

Rating System Overview

Each system uses its own set of criteria for the purpose of rating. Each has a different point system, professional accreditation requirements, application methods, and cost. Side-by-side comparisons are difficult since each project is unique. A summary of each system is presented below.

1. Green Building Initiative's Green Globes rating system

Several years ago, U.S. General Services Administration elevated Green Building Initiative's Green Globes (GBIGG) to the same status as LEED as the two recommended third-party certifications systems for the U.S. government. GBIGG certification has one of four levels (i.e., 1 to 4 globes) and requires achieving minimum thresholds up to 1,000 points. It has no minimum criteria, but instead rates buildings on the green building practices that the builder has chosen to include resulting in more flexibility. It does not require any ongoing documentation, but documentation is required as proof of compliance during the third-party assessment. GBIGG requires third-party design review of building documentation and onsite assessment(s). Subject areas include:

Sustainable sites

- Energy efficiency
- Water efficiency
- Materials and resource use
- Indoor environmental quality
- Emissions
- Project/environmental management

2. USGBC LEED Rating System

LEED covers the design, construction, and operations of all types of buildings. LEED points are awarded on a 100-point scale, and credits are weighted to reflect their potential environmental impacts. Ten bonus credits are available, four of which address regionally specific environmental issues. A project must satisfy all prerequisites and earn a minimum number of points to be certified. Third-party certification is required. It includes four levels of certification—Certified, Silver, Gold, or Platinum. Subject areas are very similar to GBIGG and IGCC including:

- Sustainable sites
- Energy efficiency
- Water efficiency
- Materials and resource use
- Indoor environmental quality
- Emissions
- Operations and maintenance

3. FGBC Rating System

The Florida Green Commercial Building Standard covers all commercial occupancies listed in the Florida Building Code. It uses a tiered rating system. Certification is awarded at different levels

according to points achieved over the project's adjusted minimum required points. Bronze = 0 - 50 points over min., Silver = 51-100 points over min., Gold = 101-150 points over min., and Platinum = 150 > points over min. Subject areas are very similar to Green Globes, IGCC, and LEED including:

- Energy efficiency
- Water conservation
- Site preservation
- Health
- Materials selection
- Project management
- Disaster mitigation

VERSION 1.1

APPENDIX 1C – KSC EXTERIOR LIGHTING REQUIREMENT

VERSION 1.1

KSC EXTERIOR LIGHTING REQUIREMENT

SECTION 1.0 REQUIREMENT AND REGULATIONS

Kennedy Space Center (KSC) is required to protect marine turtle nesting habitat by the National Environmental Policy Act (NEPA) and the U.S. Fish and Wildlife Service (FWS) through the Endangered Species Act (ESA). The NEPA of 1969, as amended (42 U.S.C. 4321-4370d), and according to the procedures of implementation of NEPA for NASA [[Title 14, Code of Federal Regulations, part 1216](#) subparts 1216.1 and 1216.3], requires federal agencies to assess how programs and associated actions may affect the environment. As part of this assessment, KSC has coordinated with the FWS on the effects of exterior lighting on protected species. The FWS has issued an interim biological opinion (BO) based on their review of historical and anticipated future light management activities by KSC, and the associated effects on the loggerhead (*Caretta caretta*), green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), and Kemp's ridley (*Lepidochelys kempii*) sea turtles in accordance with Section 7 of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq*).

SECTION 2.0 PURPOSE

The purpose of this Requirement is: 1) to insure that KSC is compliant with the special conditions of the BO (Attachments 1 and 2) to provide clear guidance to project and/or facility managers who are required to comply with the KSC exterior lighting requirements.

Light Management Plans (LMPs) will be developed in accordance with this light management policy at KSC for all new facilities that are in close proximity to the beach, have lighting directly visible from the beach, and/or may cause significant sky glow. LMPs will be submitted to the Environmental Management Branch (EMB) for review and approval.

SECTION 3.0 IMPLEMENTATION

- 3.1 All projects that will be installing exterior lighting or lighting that is visible from outside the building must submit an environmental checklist to EMB ([KSC Form 21-608V2 NS](#)) ([KDP-P-1727](#)). The checklist is submitted by the project manager, facility manager, or the equivalent (PM) to EMB.
- 3.2 Within seven days of submittal of the checklist, the PM will receive either a request for further information or a record of environmental consideration (REC) from EMB.
 - 3.2.1 If the REC determines that there will be no adverse affect on the sea turtles no further action will be required. However, if the REC determines that there may be an adverse affect on sea turtles (i.e. a violation of the BO) a LMP will be required.
- 3.3 The PM will be responsible for the development of a LMP that meets the criteria set forth in Section 5.0 of this Requirement. EMB will have a subject matter expert (SME) available to assist the PM with the plan.

- 3.4 The PM will submit the proposed lighting plan to EMB for review and comment.
 - 3.4.1 If the LMP meets the guidelines, then a memorandum of acceptance will be generated by EMB and sent to the PM.
 - 3.4.2 If the LMP does not meet the guidelines, EMB will provide comments for plan revision by the PM.
- 3.5 In some cases, safety for employees and/or the program assets may supersede the FWS BO requirements; and a variance from the LMP requirements must be requested (see Section 6.0 of this policy).
 - 3.5.1 LMPs that include variances from the guidelines established herein will be reviewed by both the EMB and the FWS. This review cycle will continue until the EMB has satisfied its reporting requirements to the FWS.
 - 3.5.2 Notification of approval will be sent to the PM by EMB.
- 3.6 The final approved plan will be cataloged in the EMB Light Plan Compliance electronic data file and the PM should retain a copy for future reference.
- 3.7 Any modifications to the project site/structure(s) that result in exterior lighting changes must go through the process again as outlined above.

SECTION 4.0 COMPLIANCE COORDINATION

- 4.1 Once every two years, the appropriate personnel, including but not limited to, engineers, facility managers, and any other representatives that design and/or enforce lighting at KSC, will attend a sea turtle lighting workshop conducted by EMB or its agent.
- 4.2 These same personnel will allow EMB and/or agents of EMB to post educational data and notices related to sea turtle nesting season at their facilities as indicated in the BO.
- 4.3 Affected facilities will be inspected annually by EMB, their agents, or FWS. EMB is required to conduct periodic compliance inspections and report all findings to FWS on an annual basis.
- 4.4 Currently, hatchling or adult sea turtle disorientation rates cannot exceed 3%, as described in the BO. If that occurs, the FWS will require reinitiating consultation and a review of the reasonable and prudent measures KSC has taken. Any changes that result from the consultation will be incorporated into this Requirement and will affect all existing and future projects.

SECTION 5.0 GENERAL EXTERIOR LIGHTING DESIGN GUIDELINES

- 5.1 The LMP must, at a minimum, identify on a plan drawing all exterior lighting fixtures and other lights that may be visible at night. The plan must include details of each type of fixture to be used, such as lamp type, wattage, installation height, and proposed operation schedule.
- 5.2 Facilities that are in close proximity to the beach, have lighting directly visible from the beach, and/or may cause significant sky glow will prohibit use of exterior lights between 9 p.m. and dawn from May 1 through October 31. If night activities that are essential to safety/security, support launch-related activities at active launch complexes, or night operations training require exterior lighting at night the PM may apply for a variance from these lighting restrictions as described in Section 6.0.
- 5.3 Lights with wavelengths from 585 - 590 nm and lowest wattage possible should be used for all exterior lighting applications. Lights with wavelengths between 320 and 560 nm, such as metal halide and mercury vapor lights, should not be used in any exterior lighting applications. Low-pressure sodium (LPS) lights are preferred if LPS can meet operational requirements. In cases where there are specific requirements calling for the discernment of colors, the PM may apply for a variance from the LMP as described in Section 6.0 below.
- 5.4 Energy conservation standards will be incorporated into all lighting designs.
- 5.5 All exterior light fixtures should be positioned so that:
 - 5.5.1 The point source of light or any reflective surface of the light fixture is not directly visible from the beach.
 - 5.5.2 Areas seaward of the frontal dune are not illuminated. Frontal dune is defined as the first natural or manmade mound of sand that is located landward of the beach and has sufficient vegetation, height, continuity, and configuration to offer protective value.
 - 5.5.3 Light is directed downward and away from the beach at beachfront facilities and downward and in the direction of the task being performed at non-beachfront facilities.
 - 5.5.4 All lights should be shielded and/or recessed.
 - 5.5.5 Photocells should only be used to support security or other mission-specific requirements that occur on a regular schedule each night (e.g., parking lots will not routinely utilize photocells unless mission operations occur 24 hours a day, 7 days a week). Automatic timers can be used instead of, or in addition to, photocells to control lighting during actual hours of operation. Timers can also be used in locations where personnel are not readily available to manually extinguish lights. Where random security

monitoring is required, motion detector switches that keep lights off except when approached can be used. Such switches should turn lights on for the minimum duration possible.

- 5.6 Task lighting should be used for temporary operational activities rather than permanent light fixtures. Task lighting must conform to the same restrictions as permanent lighting. Switches should be used rather than timers or photocells.
- 5.7 Exceptions to the guidelines will be evaluated on a case-by-case basis through the variance process described in Section 6.0 below.

SECTION 6.0: VARIANCE PROCESS

- 6.1 Exceptions to the guidelines in Section 5.0 above will be evaluated by EMB and FWS.
- 6.2 The PM will submit a narrative documenting the necessity for using a light source that does not meet the requirements of the KSC Exterior Lighting Guidelines. The documentation of the variance request will include, but not be limited to, the regulation, Requirement, protocol requirement for the light source, and description of the specific circumstances surrounding the need.
- 6.3 The PM, with the assistance of EMB, will be responsible for mitigating any negative effects that may result from light use approved through the variance process. Corrective actions for negative effects will be determined by the EMB throughout consultation with the FWS.
- 6.4 EMB will concur/non-concur with variance request via email notification to PM.

APPENDIX 1D – DESIGN SUBMITTAL CONTENT CHECKLIST

Design Submittal Content Checklist				
Item #	Conceptual Plan Submittal Content Description	Included in Submittal?		
		YES	NO	N/A
1	Tenant Questionnaire (incl. proposed parcel use, proposed activities and operations, and indicate proposed sustainable bldg. rating system)			
2	Conceptual Site Plan (indicate proposed sustainable bldg. rating system)			
3	NASA 1509 Form			
4	NASA Environmental Checklist			
5	Completed Responses to Requests for Additional Information (if applicable)			
Item #	Schematic Designs & Plans Submittal Content Description	Included in Submittal?		
		YES	NO	N/A
1	Updated description of parcel use, parcel activities and operations, and indicate selected sustainable building rating system			
2	Schematic Design Drawings (single line drawings)			
a	- Civil Plans (incl. site plan, location of utilities)			
b	- Landscape & Irrigation description			
c	- Architectural Plans (incl. floor plans, rendering of building and ext. improvements with building material info and signage)			
d	- Structural, Fire Protection, Plumbing, Mechanical, Electrical, and Site Lighting descriptions			
3	Applicable Building Rating System Sustainability Checklist and Supporting Documentation (as required)			
4	Completed Responses to Requests for Additional Information (if applicable)			
Item #	Design Development Plans Submittal Content Description	Included in Submittal?		
		YES	NO	N/A
1	Design Development Plan Drawings			
a	- Civil Plans (incl. site plan, location of utilities)			
b	- Landscape Plans (incl. irrigation plan)			
c	- Architectural Plans (incl. floor plans, life safety plans, rendering of building and ext. improvements with building material info and signage)			
d	- Structural Plans			
e	- Fire Protection Plans (incl. fire suppression, fire alarm and other life safety systems as required.)			
f	- Plumbing Plans			
g	- Mechanical Plans			
h	- Electrical Plans (incl. exterior lighting plan)			
2	Design Development Specifications			
3	Tenant Developed Permit Package			
a	- Environmental Permit Application			
b	- Documents Required by NASA Record of Environmental Consideration (REC)			
c	- Waste Water Discharge Permit Application			
d	- Air Emissions Permit Application			
e	- Potable Water Permit Application			
f	- Stormwater Discharge Permit Application			
3	Updated Building Rating System Sustainability Checklist and Supporting Documentation (as required)			
4	Completed Responses to Requests for Additional Information (if required)			
Item #	Final/Construction Plans & Specifications Submittal Content Description	Included in Submittal?		
		YES	NO	N/A
1	Final Construction Plan Drawings			
a	- Civil Plans (incl. site plan, utility plans, grading/drainage plans, and details of exterior features i.e.- walks, courtyards, screening, etc.)			
b	- Landscape Plans (incl. irrigation plan)			
c	- Architectural Plans (incl. floor plans, life safety plans, rendering of building and ext. improvements with building material info and signage plan)			
d	- Structural Plans			
e	- Fire Protection Plans (incl. fire suppression, fire alarm and other life safety systems as required.)			
f	- Plumbing Plans			
g	- Mechanical Plans			
h	- Electrical Plans (incl. exterior lighting plan)			
2	Construction Plan Specifications			
3	Final Building Rating System Sustainability Checklist and Supporting Documentation (as required)			
4	Completed Responses to Requests for Additional Information (if required)			

NOTE: All NASA and Space Florida reviews of the above submittals are intended for code compliance, life safety, environmental, site work and

APPENDIX 1E – INSPECTION CHECKLIST

X	BUILDING	BY	DATE	X	PLUMBING	BY	DATE	X	MOBILE HOMES / TRAILERS	BY	DATE
	Erosion Controls				Sewer Tap/Trench				Blocking/Tie Down		
	Setbacks				Pre-Slab				Stairs		
	Footings				Rough				Final		
	Termite Treatment				Water Service				Other:		
	Pre-Slab/Slab				Above Ceiling				POOLS	BY	DATE
	Mono				Solar				Steel Bonding		
	Piers				Medical Gas				Pre-deck		
	Lintel/Tie Beam				Final				Pressure Test		
	Grout/Bond Beam				Other:				Barrier/alarms		
	Partial Rough				MECHANICAL	BY	DATE		Final		
	Rough/Framing				Pre-Slab				Other:		
	Bucks				Rough				SIGNS	BY	DATE
	Wall Sheathing Nailing				Duct				Setbacks		
	Stucco/Lath				Above Ceiling				Footings		
	Separation Framing				Solar				Set-Up		
	Separation Insulation				Fuel Tanks				Final		
	Separation Wallboard				Dispensers				Other:		
	Insulation				Final				SMOKE/CO'S	BY	DATE
	Above Ceiling				Other:				Rough		
	Solar				GAS	BY	DATE		Final		
	Grade/Drainage				Underground/Trench				FIRE SYSTEMS	BY	DATE
	Building Final				Pressure Test				Alarm Rough		
	Pre-Roof Over				Rough				Alarm Final/Test		
	Roof Deck Fastening				Tank				System Hydro		
	Roof Dry In/Flashing				Above Ceiling				System Flush Test		
	Roof final				Final				Above Ceiling		
	MISC.	BY	DATE		Other:				Pump Final		
	Driveway Pre-Pour				ELECTRICAL	BY	DATE		System Final		
	Driveway Pre-Pavers				Underground/Slab				Other:		
	Driveway Final				Rough						
	Sidewalk Pre-Pour				Bonding						
	Sidewalk Final				Above Ceiling						
	Fence Final				Pre-Power						
	Shed Final				Solar						
	Tent Set-up				Temporary Power						
	Tent Final				Service Change						
	BTR Inspection				Final						
	Site Visit				Other:						

This card must be returned to the Space Florida at the completion of this project.
Call 321-730-5301 to schedule inspections.



Cape Canaveral Spaceport Development Manual

VOLUME 2

KENNEDY SPACE CENTER

CHAPTER 2 SHUTTLE LANDING FACILITY

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VERSION 1.1

SECTION 1 – INTRODUCTION

1.1 Introduction

Refer to Volume 1 Cape Canaveral Spaceport Chapter 1 Overview for general information on development within CCS. Refer to Volume 2 Kennedy Space Center Chapter 1 General Requirement for information associated with development within the confines of KSC.

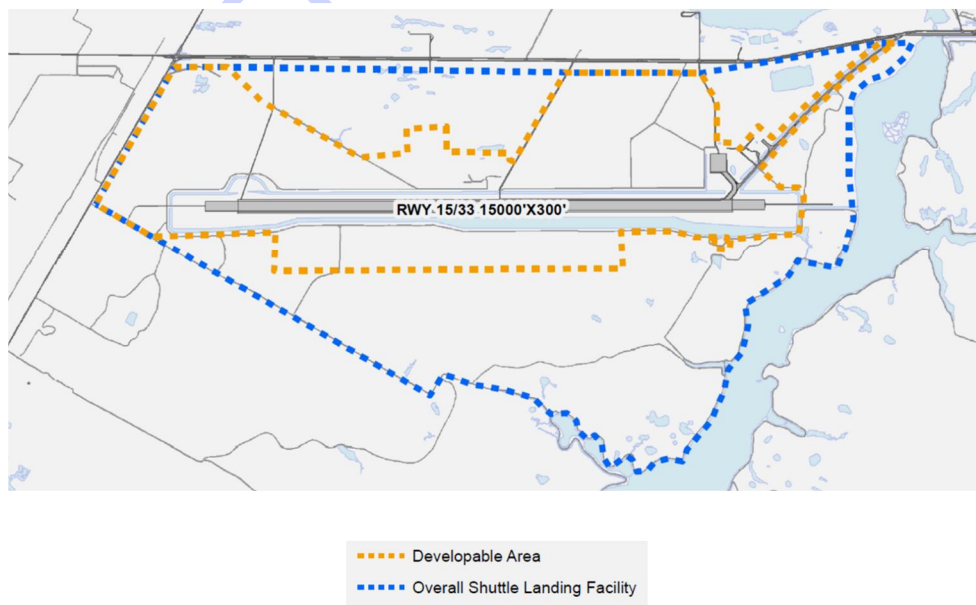
The Development Standards establish general criteria to be used in directing future building placement and design, and site design as the CCS Shuttle Landing Facility (SLF) Development Concept is implemented. Refer to Appendix A for the SLF Development Concept Plan.

Potential Space Florida Tenants can request to review the agreement between Space Florida and NASA titled, *“The Property Agreement between the National Aeronautics and Space Administration John F Kennedy Space Center and Space Florida for the Transfer of Operations and management of the Shuttle Landing Facility”*, dated June 22, 2015 from Space Florida, herein referred to as the Agreement.

1.2 SLF Area Overview and Description

The land area that has been transferred to Space Florida’s management and development responsibility encompasses approximately 4,432 acres as shown in Figure 2 below. This includes the former SLF runway and associated support facilities used during NASA’s Space Shuttle Program and a defined area of about 2,077 acres available for future development. Space Florida has registered the SLF as a Private Florida Airport and is currently in the process of preparing applications to the FAA for issuance of a Launch Site Operators License (LSOL) and as a Reentry Site to support planned commercial space transportation operations.

Figure 2: SLF Property Area



SECTION 2 – PROCESSES

2.1. SLF Project Type, Permitted Uses and Prohibited Uses

All Space Florida Tenants shall adhere to the following project types, permitted uses, and prohibited uses as mandated by the Agreement.

2.1.1. Project Types

Facilities designed, developed, or constructed by Space Florida shall be referred to as "Space Florida Projects (SPFLP's)." All other construction projects shall be referred to as "Tenant Projects (TP)."

2.1.2. Permitted Uses

The following Commercial Space Activities (CSA) are permitted at the SLF consistent with current applicable laws.

1. Processing, flight, and refurbishment of commercial and Government suborbital and orbital launch systems requiring horizontal takeoff and/or recovery;
2. Processing and integration, and/or recovery and storage, of space mission payloads requiring use of permitted flight systems;
3. Advanced aerospace vehicle flight testing and operations, including Unmanned Aerial Systems (UAS) and spaceflight training or development-related experimental aircraft;
4. Commercial and Government spaceflight or aerospace research mission support aviation operations;
5. Commercial and Government mission management and program support aircraft operations;
6. Chartered air service, including passenger aircraft associated directly with CSA;
7. Spaceflight vehicle or payload hardware delivery cargo aircraft operations;
8. Other cargo operations supporting the CSA or other activities at KSC or Cape Canaveral Air Force Station (CCAFS);
9. Aviation flight test and development;
10. Advance air traffic or space traffic management systems development and testing, including but not limited to development of systems and technologies to integrate UAS and commercial space transportation into the National Air Space (NAS) system;
11. Straight line aerodynamic and engine technology vehicle testing;
12. Related manufacturing, assembly, and storage of materials, components, and flight or ground support equipment;
13. Related warehousing and logistics;
14. Related development, construction, and operation of common area improvements (e.g., aprons, taxiways, fuel and commodity storage areas, and space launch vehicle preparation areas);
15. Related development, construction, and operation of user parking areas, offices and support facilities, visitor facilities including but not limited to those designed for tourism (e.g., flight viewing and educational exhibits);
16. Related administrative, operations, and support facilities; and,
17. High energy systems research, development, and testing.

All Tenants, and use on the SLF are subject to the approval of both Space Florida and NASA. The enumerated CSA are intended to operate as specific guidelines on the types of activities that Space Florida and NASA consider desirable, and are not intended to operate as a limitation on Space Florida's and NASA's right to approve or disapprove other uses, occupancies, or activities at the SLF.

2.1.3. SLF Prohibited Uses

The following are not permitted at the SLF.

1. General Aviation Businesses;
2. Scheduled passenger air service (except for chartered passenger air service as described above); and,
3. Industrial manufacturing unrelated to space transportation, aerospace flight systems, or space mission payloads.

2.1.4. Space Florida Qualifications

Space Florida shall request Tenants to submit:

- a Tenant Questionnaire Application (to be provided in the future) for
- Accessibility Checklist (to be provided in the future)
- Airspace Study Application (to be provided in the future)
- Environmental Close-out Checklist (to be provided in the future)

Refer to Appendix 2B.

SECTION 3 – DESIGN STANDARDS

3.1. FAA Licensing

Space Florida is currently in the process of seeking an FAA LSOL for operation of the SLF in support of commercial space transportation activities.

In addition, Tenants and users of the SLF planning to engage in commercial spaceflight operations will be required to obtain the appropriate FAA license and/or permit. The FAA issues a commercial launch operator license or experimental permit when it is determined that a launch or reentry proposal or I to test equipment, design or operating techniques will not jeopardize public health and safety, property, U.S. national security or foreign policy interests, or international obligations of the United States. Each launch operator shall obtain a commercial launch operator's license from the Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST) in accordance with CFR Title 14 Chapter III Parts 413, 415, 417, and 431. These standards and licensing guidance are available from the FAA/AST and may be obtained from the FAA website: <http://www.faa.gov>

3.2. Airfield Design

All airfield improvements including aprons and taxiways shall be in accordance with the latest edition of the applicable FAA Advisory Circulars identified in Table 5. On an as needed basis, Space Florida and Tenant shall utilize additional design standards associated with airfield infrastructure development from the FAA website:

http://www.faa.gov/regulations_policies/advisory_circulars/

Table 5: Airport Design Guidelines

Advisory Circular	Title
150/5300-13A	Airport Design
150/5370-10G	Standards for Specifying Construction of Airports

3.3. Architectural

3.3.1. Building Height and Setbacks

Building heights are limited to Line-of-Sight requirements associated with the Air Traffic Control Tower (ATCT) and airfield safety surfaces as defined under FAR part 77. Tenant shall provide its ATCT Line-of-Sight study and FAR Part 77 documentation for proposed building as required by Space Florida.

Building setbacks shall meet the following minimum distances:

- Runway Centerline: 1,500 feet
- Taxiway Centerline: Aircraft Design Group VI Object Free Area as defined in FAA Advisory Circular 150/5300-13A Airport Design
- Lease/property line: 25 feet (Note: Building Code separations may supersede).

3.3.2. Glare

It is imperative that all structures be glare controlled. Inherently high reflective materials, such as glass veneered curtain walls, shall not be used as a major building element. It is preferable to use non-reflective bronze glass as opposed to highly reflective silver or gold glass. All high sheen materials such as aluminum or stainless steel panels must be coated or clad with light-absorbing finish. Light colored aggregates on roofs are acceptable. Designers should review FAA requirements prior to final design.

3.4. Utility Demarcations

Space Florida and Space Florida Tenant shall be responsible to coordinate all infrastructure improvements requiring electrical, communication, water and sewer with NASA. Appendix 2C SLF Utility Demarcations identifies the existing demarcations specified in the Agreement.

3.5. SLF Operations

Appendix 2D is provided for informational purposes and highlights some of the operational requirements that were mandated in the Agreement.

VERSION 1.1

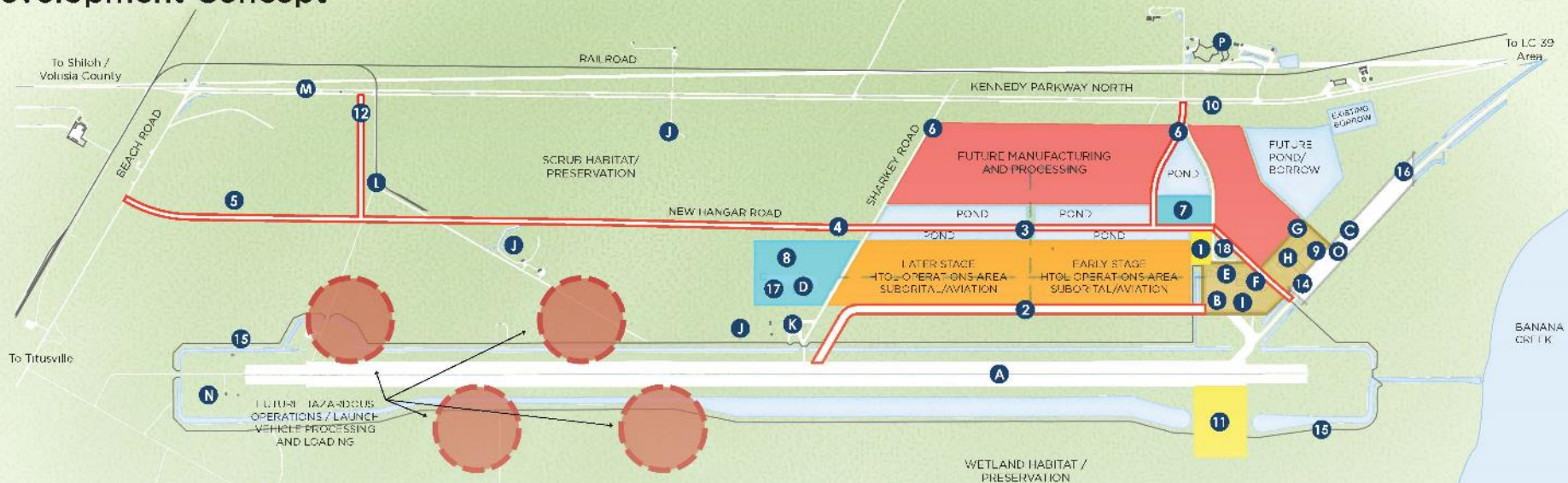
APPENDIX 2A – SLF EXHIBITS

1. SLF Development Concept (Master Plan)
2. SLF Overall Layout Plan
3. SLF South-Field Layout Plan
4. SLF Mid-Field Layout Plan

VERSION 1.1

Shuttle Landing Facility (SLF) Development Concept

Space Florida Concept Plan



Existing Facilities and Infrastructure

- A Runway - 15,000' x 300' (concrete)
- B Apron - 480' x 540' (concrete)
- C Taxiway (Towway) to LC-39 Area (concrete)
- D Air Traffic Control Tower / Media Operations Building
- E Flight Operations Building and Parking Area
- F Fire Station (ARFF)
- G RLV Hangar (Space Florida asset)
- H Convoy Vehicle Enclosure (equipment storage)
- I Covered Equipment Storage
- J Weather / Radar Sites Operated by Others
- K Equipment Parking and Weather Instrumentation
- L Railroad Service
- M Security Gate
- N Vertical Landing Test Facility (to be removed by others)
- O Security Gate
- P KSC Visitor Complex Tour Stop

Capital Improvement Projects

- 1 Fuel Farm
- 2 Taxiway Extension
- 3 Southfield Roadway / Utility / Railroad / Drainage Corridor
- 4 Midfield Roadway / Utility / Railroad / Drainage Corridor
- 5 Northfield Roadway / Utility / Railroad / Drainage Corridor
- 6 Entry Feature / Roadway
- 7 Administrative / Guest Area
- 8 Guest Viewing and Parking Area
- 9 Operations Hangar (renovate Convoy Vehicle Enclosure)
- 10 Security Gate (notional)
- 11 Propellant and Fuel Loading Area
- 12 Existing Road Improvements
- 13 Off-site Wetlands Mitigation / Preservation (not shown)
- 14 Taxiway (Towway) Widening to RLV Hangar
- 15 Airfield Security Fencing
- 16 Suborbital Rocket Test Stand
- 17 New Flight Operations Facility
- 18 Maintenance & Storage Facility

MAP LEGEND

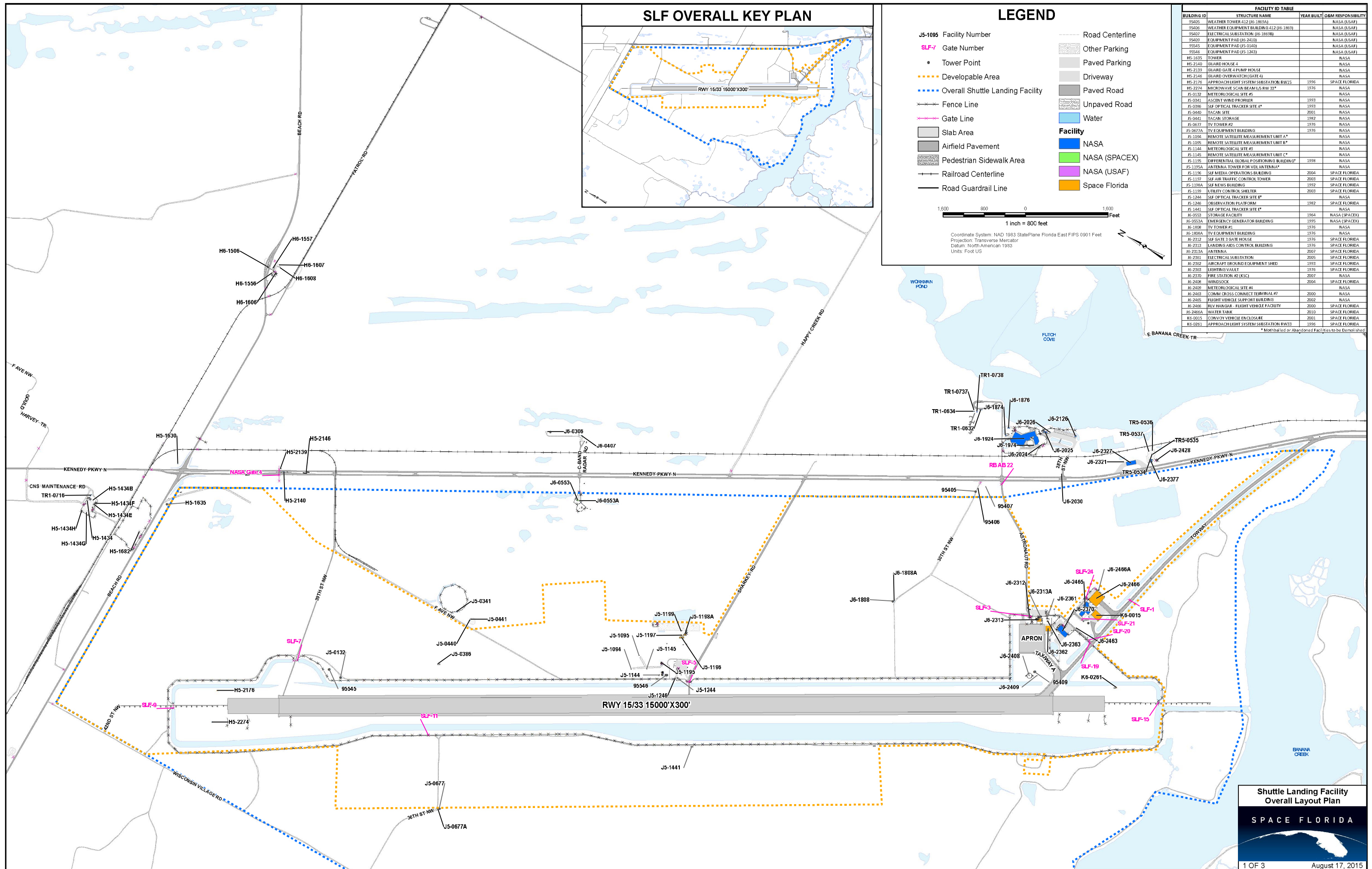
- Manufacturing/Processing
- Suborbital/Specialized Aviation
- Existing Operations
- Operations/Guest
- Fueling
- Pavement - Airfield and Roads
- Hazardous Operations/ Launch Vehicle Processing

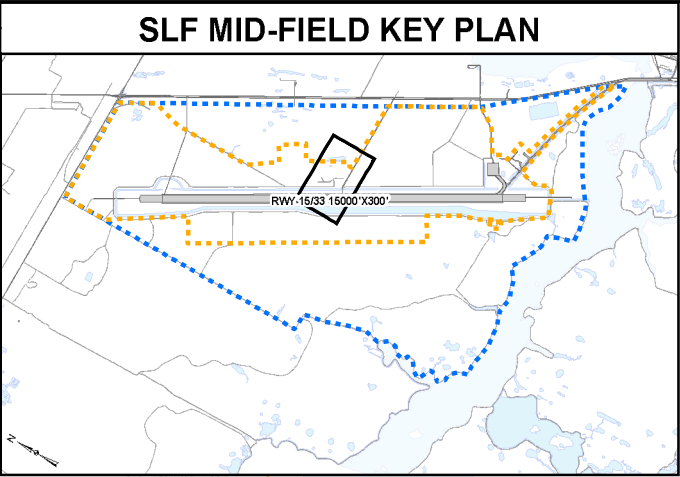
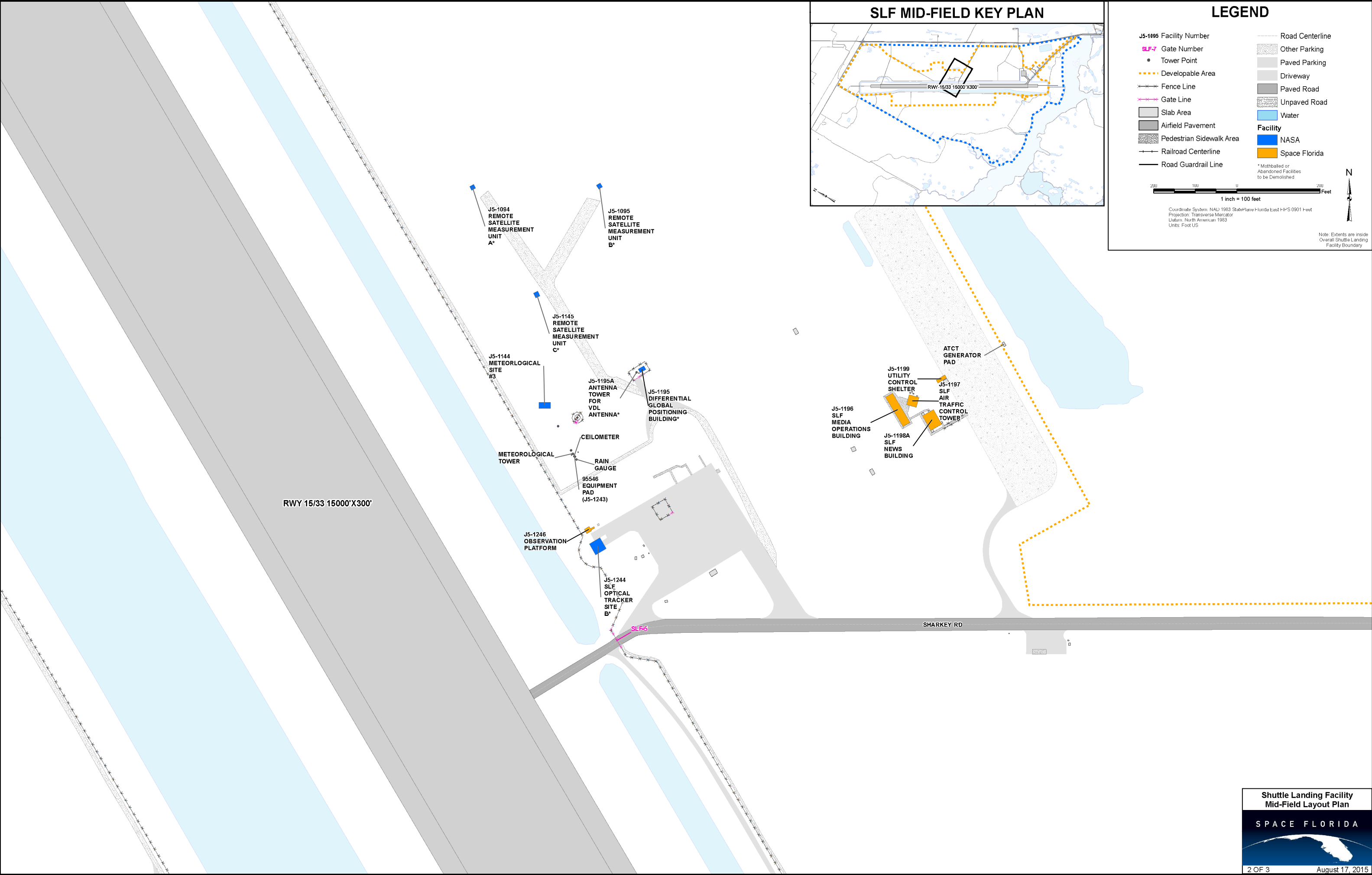
Cape Canaveral Spaceport Horizontal Launch & Landing Facility

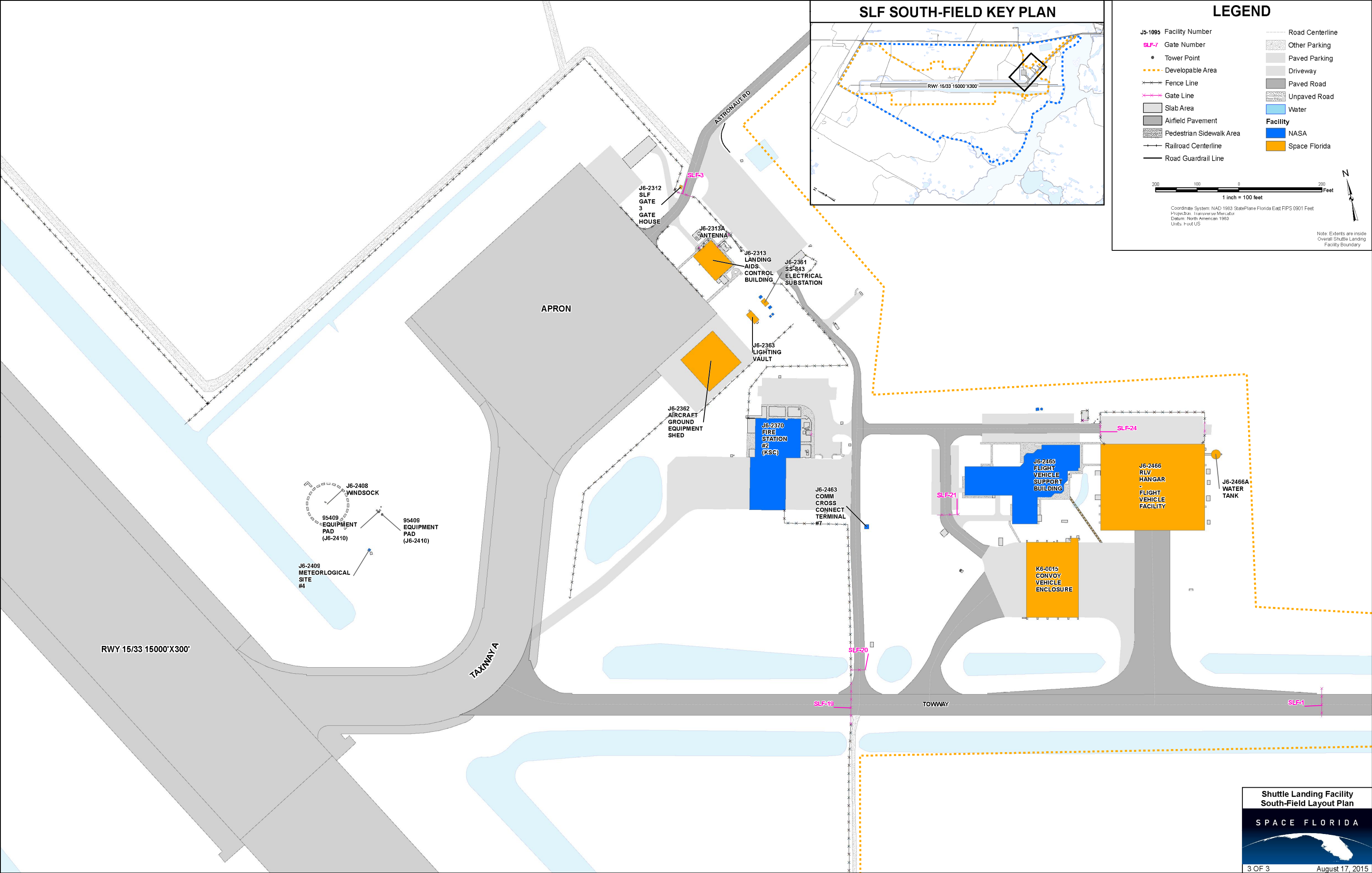


Space Transportation and
Technologies Support Systems









APPENDIX 2B – FORMS

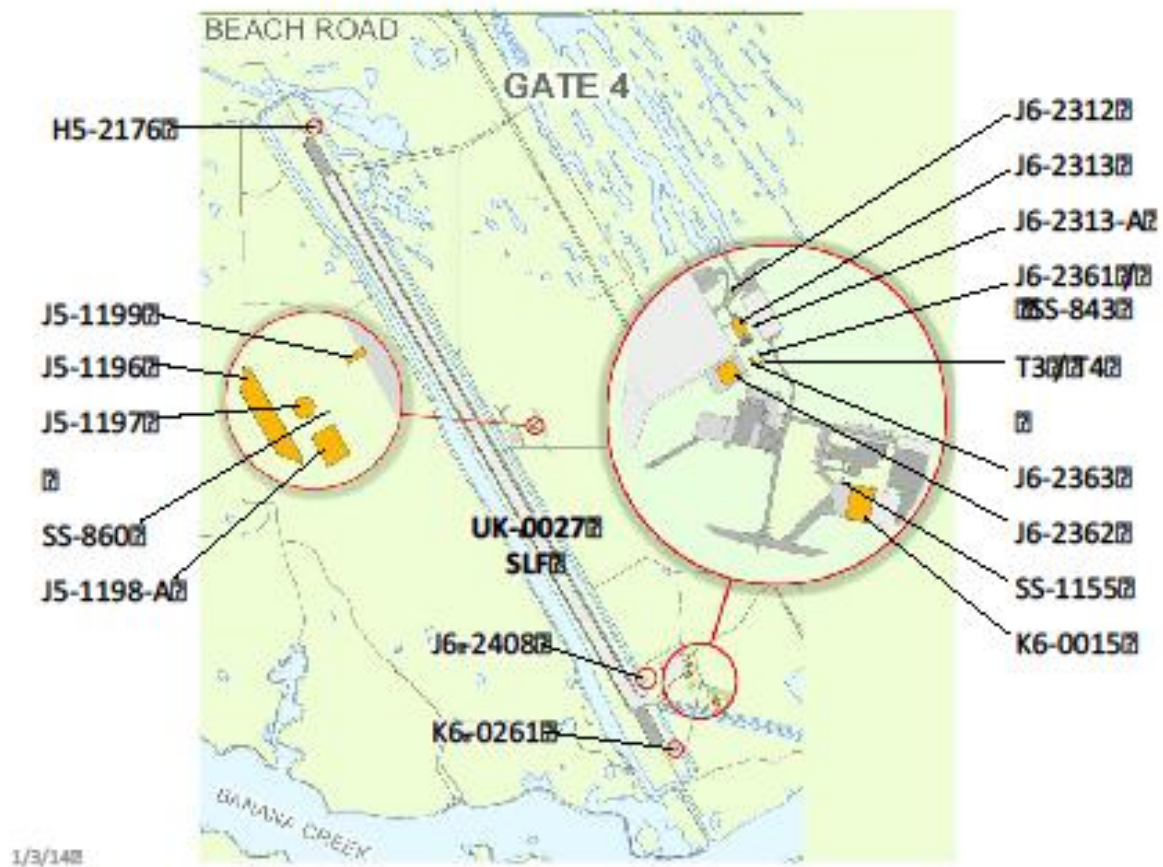
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2. Accessibility Checklist (to be provided in the future)
3. Airspace Study Application (to be provided in the future)
4. Environmental Close-out Checklist (to be provided in the future)

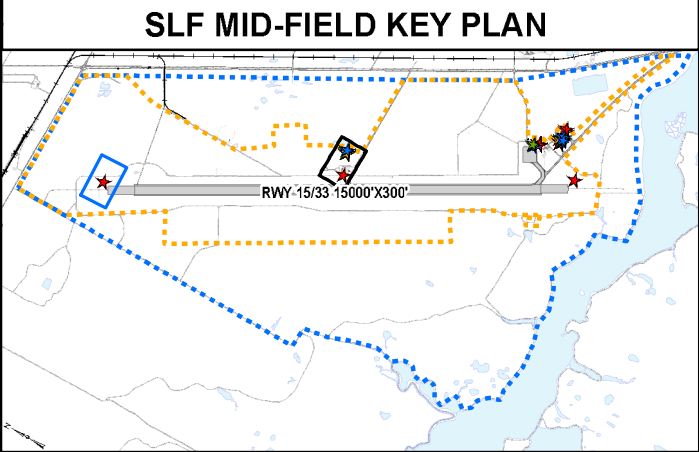
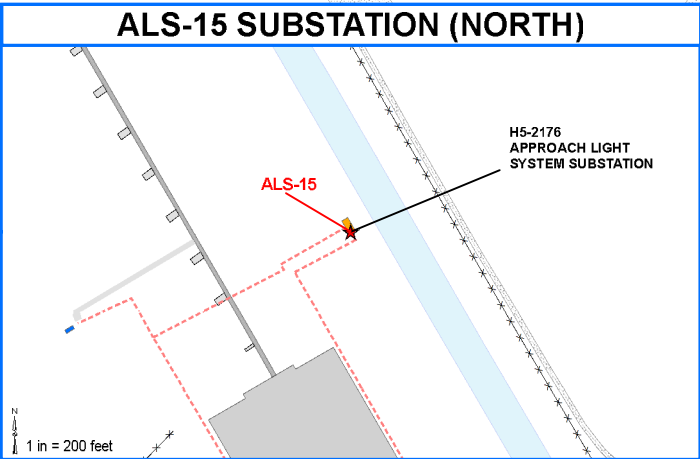
VERSION 1.1

APPENDIX 2C: SLF DEMARCATIONS PLANS

VERSION 1.1

SLF Demarcation Points





LEGEND

J5-1096 Facility Number
SLF-7 Gate Number

- Tower Point
- Developable Area
- Electrical Ductbank Line
- Storm Sewer Culvert Line
- Storm Sewer Open Drainage Line
- Water Line
- Fence Line
- Gate Line
- Slab Area
- Airfield Pavement
- Pedestrian Sidewalk Area
- Railroad Centerline
- Road Guardrail Line

Road Centerline
Other Parking
Paved Parking
Driveway
Paved Road
Unpaved Road
Water

Facility

- NASA
- Space Florida

Utility Demarcation

- IT
- Power
- Sewer
- Water

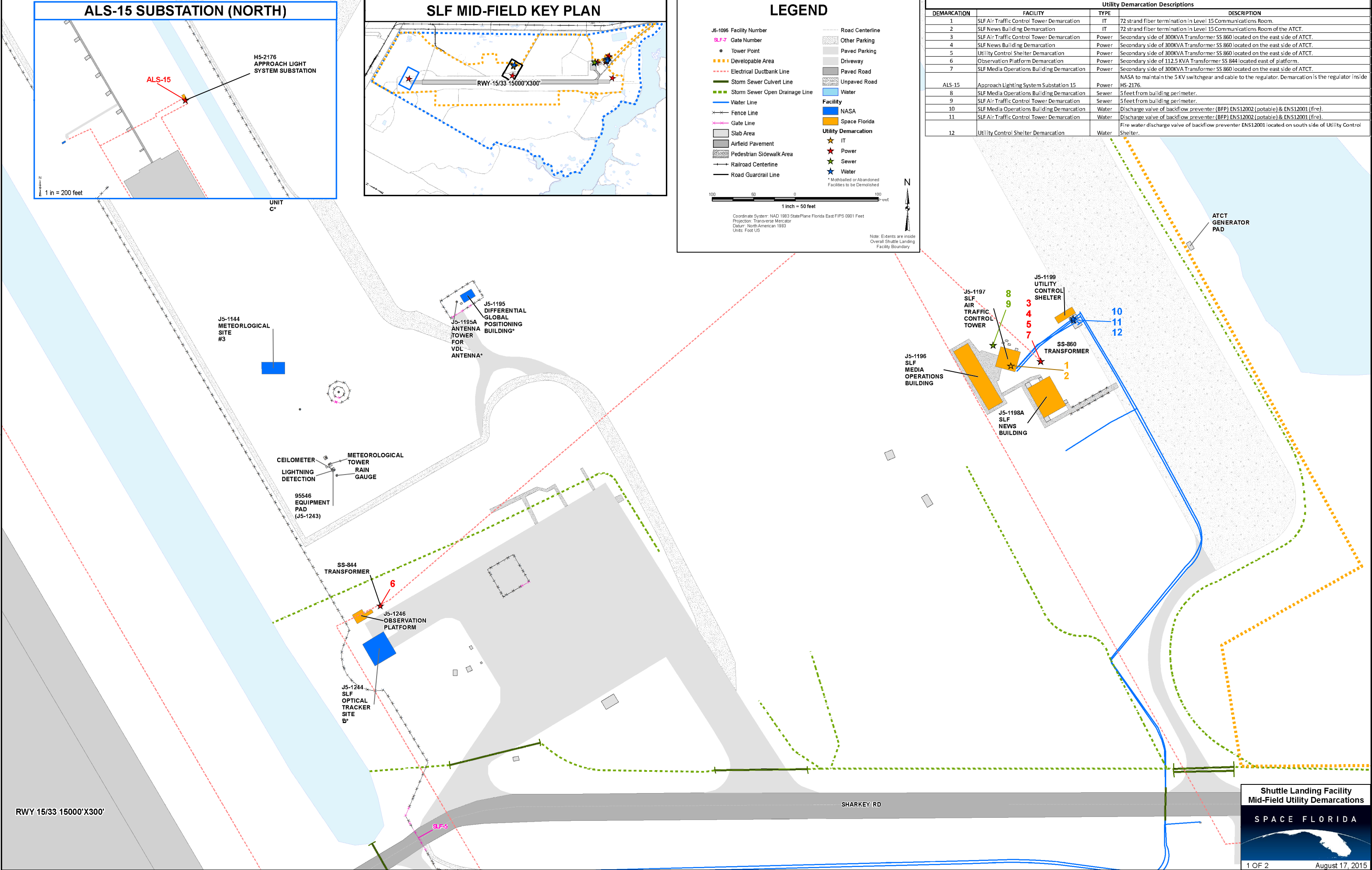
* Mothballed or Abandoned Facilities to be Demolished

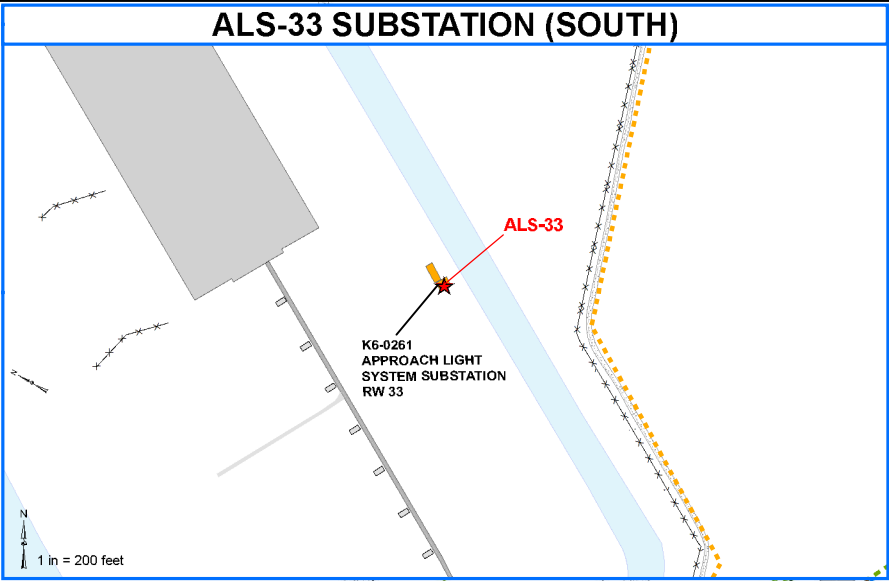
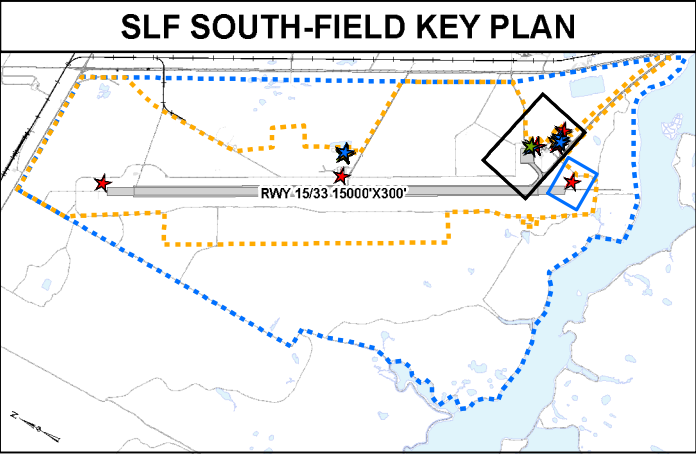
100 50 0 100 Feet
1 inch = 50 feet

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0801 Feet
Projection: Transverse Mercator
Datum: North American 1983
Units: Foot US

Note: Extents are inside Overall Shuttle Landing Facility Boundary

Utility Demarcation Descriptions			
DEMARCATION	FACILITY	TYPE	DESCRIPTION
1	SLF Air Traffic Control Tower Demarcation	IT	72 strand fiber termination in Level 15 Communications Room.
2	SLF News Building Demarcation	IT	72 strand fiber termination in Level 15 Communications Room of the ATCT.
3	SLF Air Traffic Control Tower Demarcation	Power	Secondary side of 300KVA Transformer SS 860 located on the east side of ATCT.
4	SLF News Building Demarcation	Power	Secondary side of 300KVA Transformer SS 860 located on the east side of ATCT.
5	Utility Control Shelter Demarcation	Power	Secondary side of 300KVA Transformer SS 860 located on the east side of ATCT.
6	Observation Platform Demarcation	Power	Secondary side of 112.5 KVA Transformer SS 844 located east of platform.
7	SLF Media Operations Building Demarcation	Power	Secondary side of 300KVA Transformer SS 860 located on the east side of ATCT.
ALS-15	Approach Lighting System Substation 15	Power	NASA to maintain the 5 KV switchgear and cable to the regulator. Demarcation is the regulator inside HS-2176.
8	SLF Media Operations Building Demarcation	Sewer	5 feet from building perimeter.
9	SLF Air Traffic Control Tower Demarcation	Sewer	5 feet from building perimeter.
10	SLF Media Operations Building Demarcation	Water	Discharge valve of backflow preventer (BFP) ENS12002 (potable) & ENS12001 (fire).
11	SLF Air Traffic Control Tower Demarcation	Water	Discharge valve of backflow preventer (BFP) ENS12002 (potable) & ENS12001 (fire).
12	Utility Control Shelter Demarcation	Water	Fire water discharge valve of backflow preventer ENS12001 located on south side of Utility Control Shelter.





LEGEND

J5-1095 Facility Number

- SLF-7 Gate Number
- Tower Point
- Developable Area
- Storm Sewer Open Drainage Line
- Storm Sewer Culvert Line
- Wastewater Line
- Electrical Ductbank Line
- Water Line
- Natural Gas Line
- Fence Line
- Gate Line
- Slab Area
- Airfield Pavement
- Pedestrian Sidewalk Area
- Railroad Centerline

Road Guardrail Line

Road Centerline

Other Parking

Paved Parking

Driveway

Paved Road

Unpaved Road

Water

Facility

- NASA
- Space Florida

Utility Demarcation

- IT
- Power
- Sewer
- Water

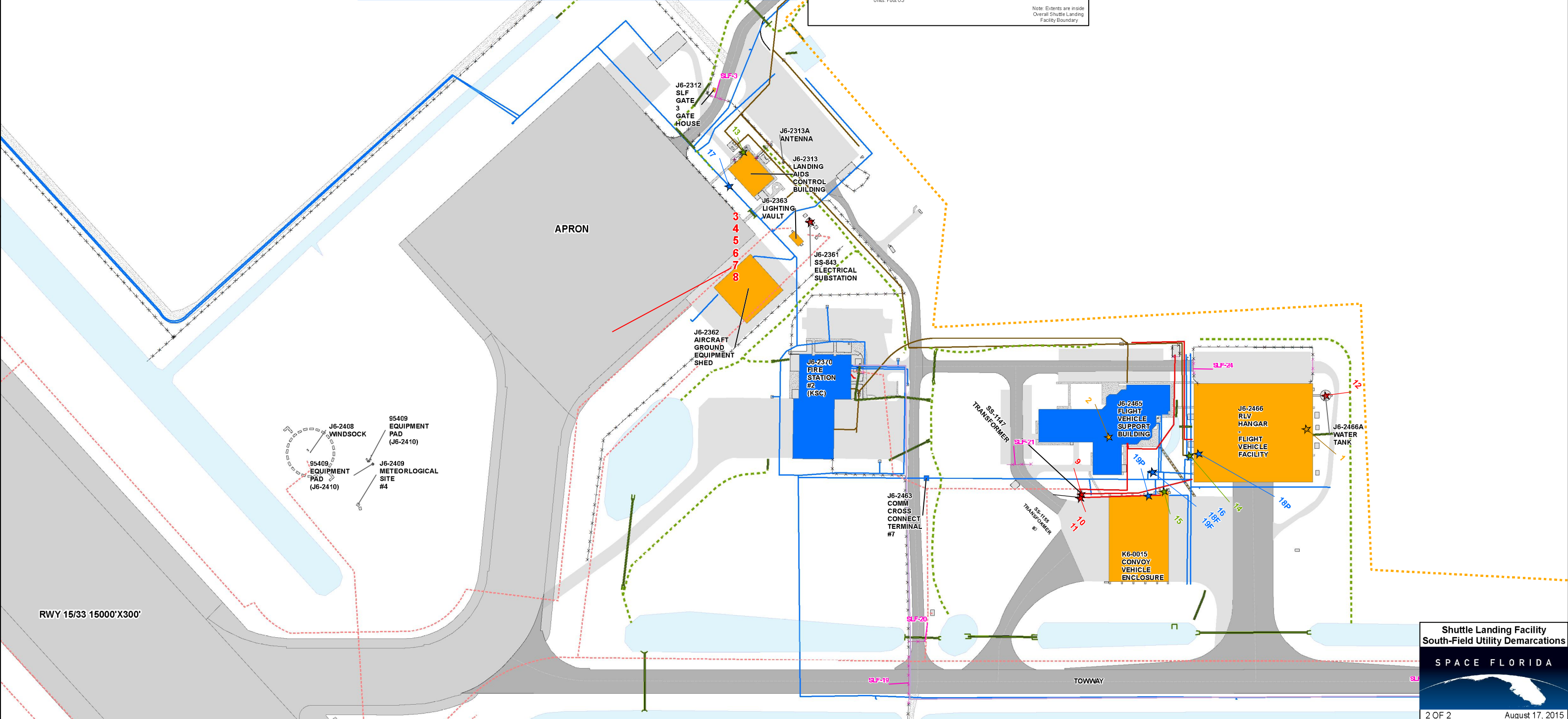
* Mothballed or Abandoned Facilities to be Demolished

1 inch = 100 feet

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet
Projection: Transverse Mercator
Datum: North American 1983
Units: Foot US

Note: Extents are inside Overall Shuttle Landing Facility Boundary

Utility Demarcation Descriptions			
DEMARCATION	FACILITY	TYPE	DESCRIPTION
1	RLV Hanger - Flight Vehicle Facility Demarcation	IT	Outside plant terminations in the communications area on the east side of building.
2	Flight Vehicle Support Building Demarcation	IT	Outside plant terminations in the communications room.
3	SLF Gate 3 Gate House Demarcation	Power	Secondary side of SS 843 breaker feeding the associated power panel.
4	Landing Aids Control Building Demarcation	Power	Secondary side of SS 843 breaker feeding the associated power panel.
5	Antenna Demarcation	Power	Secondary side of SS 843 breaker feeding the associated power panel.
6	Electrical Substation SS 843 Demarcation	Power	NASA maintains the substation and all the switches including transformers T3 and T4 and all pad mounted transformers to secondary side of transformers.
7	Airfield Ground Equipment Shed Demarcation	Power	Secondary side of SS 843 breaker feeding the associated power panel.
8	Lighting Vault Demarcation	Power	Secondary side of SS 843 breaker feeding the associated power panel.
9	RLV Hanger - Flight Vehicle Facility Demarcation	Power	Power from 1000 KVA transformer SS 1147 located off the northwest corner of Convoy Vehicle enclosure. NASA maintains all power including hanger low voltage.
10	Convoy Vehicle Enclosure Demarcation	Power	Secondary side of 750 KVA transformer SS 1155 located off the northwest corner of Convoy Vehicle Enclosure.
11	Flight Vehicle Support Building Demarcation	Power	Secondary side of 750 KVA transformer SS 1155 located on the south side of Flight Vehicle Support Building.
12	Water Tank Demarcation	Power	NASA maintains power.
ALS-33	Approach Lighting System Substation 33	Power	NASA to maintain the SWI switchgear and cable to the regulator. Demarcation is the regulator inside K6-0261.
13	Landing Aids Control Building Demarcation	Sewer	5 feet from building perimeter.
14	RLV Hanger - Flight Vehicle Facility Demarcation	Sewer	5 feet from building perimeter.
15	Convoy Vehicle Enclosure Demarcation	Sewer	Sewer is a 2-inch line from the electric water cooler and lies into system at the Flight Vehicle Support Building.
16	Water Tank Demarcation	Water	Downstream side of PIV PIV6-2466-F1 located in area between RLV Hanger and Flight Support Building.
17	Landing Aids Control Building Demarcation	Water	Potable: downstream side of PIV PIV6-2313-F1. Fire: 6" DC.
18F	RLV Hanger - Flight Vehicle Facility Demarcation	Water	Fire: downstream side of PIV PIV6-2466-F1 located in area between RLV Hanger and Flight Support Building.
18P	RLV Hanger - Flight Vehicle Facility Demarcation	Water	Potable: downstream side of potable water valve west side of building. Fire: downstream side of PIV PIV6-0015-F1.
19P	Convoy Vehicle Enclosure Demarcation	Water	Fire: downstream side of PIV PIV6-0015-F1.
19P	Convoy Vehicle Enclosure Demarcation	Water	Potable: downstream side of B/P 16S 12035. Fire: downstream side of PIV PIV6-0015-F1.



APPENDIX 2D: OPERATIONS RELATED STANDARDS (TO BE UPDATED)

1.1 Safety reporting – Mishaps and Close Calls

All occupants of the SLF shall comply with Kennedy NASA Procedural Requirements (KNPR) 8715.3-3, KSC Safety Procedural Requirements for Space Florida Organization's Operating in Exclusive-Use Facilities, with the tailored version of KNPR 8715.3-3 Chapter 7 replacing Chapter 7 of the KNPR.

Compliance with the tailored version of KNPR 8715.3 - 3, Chapter 7 Mishaps and Close Calls is as follows:

1. KSC-Reportable Mishaps are unplanned events arising from the acts or omissions of Space Florida or its employees, agents, Related Entities, SLF Site Occupants, or invited guests that result in at least one of the following:
 - The death of an individual.
 - Injury or illness to any individual that is not employed by Space Florida or its agents, Related Entities, SLF Site Occupants, or invited guests.
 - Damage to property outside the Space Florida's defined area.
 - High visibility or high public interest event, including events that could bring Occupational Safety and Health Administration (OSHA) or media attention to NASA.
 - a. Space Florida shall report all KSC-Reportable Mishaps to NASA, within a reasonable time upon the event being known (after appropriate emergency/medical response is notified and prior to the notification of OSHA) by telephoning the NASA Center Safety Office at 321-867-7233 (321-867-SAFE) and by notifying the appropriate NASA Point of Contact (POC) as identified in the Agreement.
 - b. Space Florida will support the safety culture at KSC, and report any unsafe activity, condition, event, or source of danger that they observe at KSC to the NASA Safety Office.
 - c. If Space Florida conducts an independent mishap investigation, the Space Florida shall provide a copy of the final mishap report to the appropriate NASA POC(s) as identified in the Agreement.
2. For KSC-Reportable Mishaps that involve at least one of the following:
 - Death, injury or illness of a NASA employee/NASA Related Entity employee.
 - Damage to NASA real or personal property inside the Space Florida's defined area that has not been "loaned/permitted" to the Space Florida.
 - Damage to property outside the Space Florida's defined area and within KSC property.
 - a. NASA Safety & Mission Assurance (S&MA) reserves the right to investigate (which may include an interim investigation response, data and artifact impoundment, and control of the scene) in accordance with Center policies and procedures. Space Florida shall cooperate in any such investigation.

- b. Space Florida shall report any close call (“near miss”) to the appropriate NASA POC(s) as identified in the Agreement and the NASA Center Safety Office.

1.2 Flight Safety Compliance

Space Florida shall follow a tailored version of NPR 8715.5, Range Flight Safety Program Requirements (RFSPR). The tailoring process shall be where Space Florida and NASA S&MA review and jointly document applicable requirements and responsibilities for SLF operations based on the terms below:

- a) All FAA Licensed Commercial Launch Operations shall be conducted in accordance with KCA-4394 MOU between 45th Space Wing and NASA on Enabling Range Flight Safety Services for FAA Licensed Launch Operations from KSC.
- b) Space Florida will be responsible for ensuring risk analysis is performed for all flight activities occurring at the SLF (excluding conventional piloted aircraft). Space Florida shall provide the risk analysis and NASA facility impact probabilities to NASA for Class C and D activities as defined in Exhibit H.
- c) NASA will be responsible for reviewing and verifying all provided data, and verifying all risk to NASA personnel and property is acceptable. NASA shall provide the results of their analysis to Space Florida. Flight activities will not occur for Class C and D activity (as defined in Exhibit H), until NASA has deemed the risk to NASA personnel and property is acceptable.

1.3 Security and Security Badging

The NASA Protective Services Office (PSO) security forces will provide twenty-four (24) hours per day, seven (7) days per week routine patrols and response to security emergencies and traffic incidents. Escorts of hazardous, wide, and/or heavy loads coordinated through the KSC Institutional Services Contract (ISC) Duty Office will be provided to Space Florida and its Tenants on a reimbursable basis.

- a) Space Florida or its Tenants may hire non-NASA unarmed security personnel inside the SLF Property at their discretion. Any Space Florida or Tenant facility requiring the use of an armed officer must utilize the NASA PSO. Requests that exceed baseline service levels as determined by NASA PSO will be provided to Space Florida or its Tenants on a reimbursable basis.
- b) Space Florida and its Tenants shall comply with NASA regulations that prohibit weapons or dangerous materials from being carried, transported, introduced, stored or used without specific authorization by the NASA Chief of Security. SPFL, Tenant, and guest personnel are also subject to inspection when inside the secure perimeter gates of KSC in accordance with 14 CFR, 1204.1003.
- c) Space Florida on-site management or NASA PSO will, without delay, report all acts of workplace violence to the NASA PSO; this includes any employee who exhibits behaviors of concern. Space Florida will immediately notify the NASA PSO when an employee is terminated for any issue relating to workplace violence. The NASA PSO will support, upon request, any assistance with any terminations to include escorting employees from the Center. Space Florida personnel are encouraged to participate in

various NASA PSO security related training and seminars that are offered to NASA and Related Entity employees (e.g., prevention of workplace violence and loss prevention).

- d) Space Florida will comply with the requirements of Homeland Security Presidential Directive (HSPD) 12 and NASA administrative procedures for access to KSC. Space Florida shall participate in the current NASA Identity and Access Management system, badging process, and automated access control. Space Florida shall reimburse NASA a processing fee, per employee, for each employee requiring access for more than one hundred seventy-nine (179) days. This allows Space Florida personnel and occupants to access KSC and the SLF through all KSC gates. Badging shall be available for permanent personnel, as well as subcontractors, construction crews, flight crews, and visitors.

1.4 Environmental Compliance and Reporting

1.4.1 Definitions

- a) **Hazardous Material:** any substance that is (a) defined under any Environmental Law (as defined below) as a hazardous substance, hazardous waste, hazardous material, pollutant, or contaminant; (b) a petroleum hydrocarbon, including crude oil or any fraction or mixture thereof; (c) hazardous, toxic, corrosive, flammable, explosive, infectious, radioactive, carcinogenic, or a reproductive toxicant; or (d) otherwise regulated pursuant to any Environmental Law.
- b) **Environmental Law:** all Federal, State, and local laws, statutes, ordinances, regulations, rules, judicial and administrative orders and decrees, permits, licenses, approvals, authorizations, and similar requirements of all Federal, State, and local governmental agencies (including NASA) or other governmental authorities pertaining to the protection of human health and safety or the environment, now existing or later adopted.
- c) **Agreement Activities:** the activities that are part of the ordinary course of Space Florida's business in accordance with the Permitted Uses.
- d) **Materials:** the materials handled, used, or stored in the ordinary course of conducting Agreement Activities.
- e) **Permit Applications:** permit application forms and supporting documentation, Notice of Intent forms and supporting documentation, registration forms, license forms, or other regulatory approval requests.

1.4.2 Environmental Baseline Survey (EBS)

An EBS dated February 28, 2014 has been prepared for the SLF and represents environmental conditions and matters affecting the SLF as of June 22, 2015. Any potential soil or water contamination not identified in the EBS shall be immediately reported to Space Florida.

Upon vacating a facility or lease area, the Tenant shall prepare an updated EBS for that facility or lease area to set forth the environmental conditions and matters affecting SLF at the time of the vacation. The updated EBS shall be submitted to Space Florida for approval

and acknowledgement by NASA. Sampling of soil and/or surface and ground water may be required to verify environmental conditions. The Tenant shall be liable for and required to remedy any environmental conditions and matters affecting the SLF that are found to be a result of the Tenant's activities.

1.4.3 General Compliance

All operations, activities, equipment, and facilities shall be in compliance with all Federal, State of Florida, and local environmental laws, statutes, regulations, and ordinances. Tenant shall be solely responsible for compliance with aforementioned environmental regulatory requirements including environmental permits. If formal enforcement actions are taken against Space Florida/NASA for environmental violations due to Tenant actions or inactions, Tenant shall reimburse Space Florida/NASA for any fines or penalties assessed.

1.4.4 Environmental Checklist

Prior to commencing any activities, the Tenant shall complete an initial NASA Environmental Checklist (EC) (KSC Form 21-608) for all activities and submit it to Space Florida for evaluation. The Tenant shall also complete NASA ECs prior to the initiation of the following actions, projects, activities, or circumstances and submit them to Space Florida for evaluation.

- a) Construction, demolition, or facility modification projects (major or minor).
- b) Excavations, land clearing, or grading.
- c) Connecting, disconnecting, or modifying the configuration or operation of a NASA owned system, utility, or stormwater management system.
- d) Changes in operations, activities, facility operator, or Site Occupant.

The Tenant shall comply with all the environmental requirements and direction provided by Space Florida in the checklist response.

1.4.5 National Environmental Policy Act (NEPA)

The Tenant is responsible for funding, implementing, and maintaining any environmental mitigation measures identified in applicable NEPA documentation associated with its activities that are not covered under the current NASA Record of Environmental Checklist (REC). Shall Tenant activities trigger the need for NEPA documentation that did not already exist prior to commencement of the activity, the Tenant is responsible to fund those NEPA requirements, and assist Space Florida/NASA throughout the process as necessary.

1.4.6 Historical and Cultural Resources

The SLF has been deemed eligible for listing on the National Registry of Historic Places (NRHP). Prior to any modifications, repairs, improvements, alterations, the undertaking must be coordinated with Space Florida/NASA using the NASA EC process, for evaluation to determine if the proposed project will have an adverse effect to the historic properties under the National Historic Preservation Act (NHPA), implementing regulations (36 CFR Part 800, Protection of Historic Properties), or Programmatic Agreement for Management of Historic Properties at KSC (KCA-4185). If an adverse effect is determined by Space

Florida/NASA, Space Florida/NASA shall identify the effect of the activity on the historic property and consult with State Historic Preservation Office (SHPO) as appropriate in accordance with the Programmatic Agreement. Any adverse effect determination may take up to three (3) to six (6) months depending on the complexity of the project.

The Tenant shall not remove or disturb, or cause or permit to be removed or disturbed, any historical, archaeological, architectural, or other cultural artifacts, relics, vestiges, remains, or objects of antiquity. In the event such items are discovered at the SLF, the Tenant shall cease its activities at the site, immediately notify Space Florida, and protect the site and material from further disturbance until Space Florida/NASA give clearance to proceed. Any costs resulting from this delay shall be the responsibility of Tenant.

1.4.7 Waste Management and Disposal

All wastes generated by the Tenant shall be properly containerized, stored, labeled, manifested, shipped, and disposed of by the Tenant in full regulatory compliance at the Tenant expense. Hazardous wastes generated by the Tenant shall be manifested, shipped, and disposed of under the Tenant U. S. Environmental Protection Agency (USEPA) hazardous waste generator identification number.

1.4.8 Spill Reporting and Cleanup

Tenant shall take measures to prevent the release of hazardous materials at, about, or beneath SLF facilities. The liability of the Tenant under this section shall survive the termination of its lease with respect to acts or omissions that occur before such termination.

1.4.8.1 Spill Reporting and Notifications

Tenant shall immediately report spills, releases, or emissions of hazardous materials that exceed a Reportable Quantity to Space Florida and the following entities:

- a. NASA emergency responders by calling (321) 867-7911;
- b. Off-site agencies or authorities (such as the National Response Center, Florida State Watch Office, and Florida Department of Environmental Protection) as required by Federal and State of Florida regulations; and,
- c. NASA EAB by calling (321) 867-9005.

Reportable Quantities for hazardous materials are defined by various federal and State of Florida regulations such as, but not limited to, 40 CFR Part 302, 40 CFR Part 355, 49 CFR Parts 171-180, Florida Administrative Code (FAC) Chapter 62-150, and FAC Chapter 62-770.

Tenant shall also immediately report any spill or release of hazardous materials (regardless of quantity) to pervious surfaces or environmental media (such as grass, soil, groundwater, surface water, sediment, and gravel) to Space Florida and the NASA EAB by calling (321) 867-9005.

Pavement with unsealed cracks or expansion joints can be considered pervious surfaces if hazardous materials can migrate to environmental media below. A spill to impervious surface that is not adequately cleaned up within a reasonable timeframe (not to exceed six (6) hours) or prior to a storm event is considered a spill to pervious surface for purposes of this section.

Whenever Tenant is required to report a spill or release to Space Florida and NASA, Tenant shall also complete a written NASA Pollution Incident Report (KSC Form 21-555) and submit it to Space Florida and the NASA EAB within three (3) calendar days after the incident or discovery.

1.4.8.2 Spill Cleanup

Tenant shall clean up all spills regardless of media impacted and quantity spilled. Tenant has the discretion to utilize their own spill cleanup capability or to request support (via the emergency operator) from the NASA spill team to clean up the spill. Whenever the NASA spill team responds to a spill, Tenant shall either reimburse NASA for those costs or establish a support agreement directly with the NASA spill team company. Tenant shall be responsible for shipment and disposal of all cleanup waste and contaminated environmental media as described in paragraph 1.22.7 Waste Management and Disposal.

All spills and releases to pervious surfaces or environmental media (such as grass, soil, groundwater, surface water, sediment, and gravel) shall be cleaned up to State of Florida residential standards unless approved in writing by Space Florida and the NASA EAB. After the cleanup action has been completed, Tenant shall prepare a written cleanup report (which includes a description of the corrective actions taken, a map showing the spill location, general dimensions of the affected area using Global Positioning System (GPS) coordinates, photos of the spill before and after cleanup, and confirmatory sampling results providing evidence of adequate cleanup). For cleanup actions completed during a calendar quarter, Tenant shall deliver cleanup reports to Space Florida no later than the end of the following calendar quarter.

1.4.9 Spill Prevention, Control, and Countermeasures (SPCC)

Tenant shall comply with applicable oil pollution prevention regulations under Title 40 Part 112 of the CFR. If required, Tenant shall develop, maintain, and implement a SPCC plan for its oil storage activities.

1.4.10 Registered Petroleum Storage Tank System

Tenant shall comply with applicable petroleum storage tank system regulations (FAC Chapters 62-761 and 62-762). For new petroleum storage tank systems, Tenant shall register the system with the Florida Department of Environmental Protection (FDEP) and arrange for required installation inspections with the Brevard County Natural Resource Management Office prior to putting the tank system into service. If control and operation of an existing registered petroleum storage tank system is being transferred as a part of the facilities involved in the lease agreement, Tenant shall transfer the registration from Space Florida to Tenant and become responsible for maintaining compliance. Tenant shall provide a copy of all storage tanks registration forms to Space Florida and the NASA EAB.

1.4.11 Sanitary Sewer Discharges

The domestic wastewater system and treatment serving the SLF is operated and maintained by NASA. Wastewater collection from Tenant/lease holder facilities is the responsibility of the Tenant from the facility to a designated demarcation point on the SLF from which NASA assumes responsibility.

Prior to discharging any non-domestic wastewater into the sanitary sewer system, Tenant shall obtain a written discharge approval from Space Florida and both the NASA domestic wastewater collection/transmission system operator and the CCAFS domestic wastewater treatment plant operator. Costs associated with obtaining a written discharge approval shall be on a reimbursable basis to NASA. Otherwise the wastewater must be containerized and shipped to an off-site treatment or disposal facility.

1.4.12 Recordkeeping

Tenant shall maintain copies of all required environmental permits, licenses, registrations, regulatory approvals, waste manifests, laboratory analyses, reports, plans, compliance records, NASA ECs, and regulatory notifications on-site and make them available for review by Space Florida upon request.

1.4.13 NASA Compliance Oversight

As the landowner, NASA has a responsibility to ensure that SLF Tenant is complying with environmental laws and regulations. NASA and Space Florida shall participate in periodic environmental audits of SLF operations to exchange information; review current and future SLF activities; confirm compliance with environmental regulations and permits; review environmental spills and remediation progress; discuss regulatory agency inspections and findings; coordinate on air permitting; etc. In addition, Space Florida Tenants shall allow NASA personnel access to conduct spot inspections of Tenants facilities, systems, compliance records, or wastes if NASA personnel have reason to believe that a potential environmental non-compliance situation exists or that an unpermitted spill or release to the environment has occurred. Tenant shall attend all spot inspections of their facilities and provide corrective action responses for all identified violations, findings, and deficiencies by the due date in the inspection letter. Tenant shall be responsible for immediately correcting all violations, findings, and deficiencies identified in the inspection letter at Tenant's expense.

1.4.14 Other Agency Inspections

Tenant/lease holders shall report findings of all other regulatory agency inspections or audits. Including, but not limited to EPA, FDEP, Brevard County Natural Resources, etc. Additionally, any notices of violation must be reported to Space Florida and cured as soon as practicable.

1.4.15 Environmental Land Management

The land surrounding the SLF is part of the Merritt Island National Wildlife Refuge (MINWR). The U. S. Fish & Wildlife Services (USFWS) perform habitat management per a long-standing interagency agreement (KCA 1649 rev B) between NASA and the USFWS. The USFWS conducts prescriptive burns to effectively maintain and enhance wildlife habitat and reduce the occurrence and severity of wildfires. The USFWS has primary responsibility for wildfire suppression on KSC. Prescribed burn approval shall be coordinated with NASA under established procedures, with notification to Space Florida and its Tenants of scheduled burns within the SLF lands. A list of SLF fire management units scheduled for prescribed burning shall be provided to NASA and Space Florida each calendar year. Prescribed burns shall be conducted under specific conditions to avoid impacts to the SLF. Additionally, the USFWS is responsible for treatment and removal of non-native invasive

plants and animals on refuge lands. MINWR shall continue to provide nuisance wildlife response within the SLF boundary.

1.5 Licensing, Airfield Operations and Management

Refer to Space Florida Operations Manual (OM).

- a. Licensing: All space vehicle launch and reentry operators and individual launch operations shall be licensed by the FAA. Copies of all FAA licenses shall be provided to Space Florida prior to any launch or reentry operations.
- b. Launch and Airfield Operations: Refer to Space Florida OM.

1.6 Hazardous Material, Fuel, and Propellant Storage

Storage of hazardous materials, fuel and propellants shall be in accordance with all Federal and State regulations and applicable codes and as approved by Space Florida.

Proposed propellant storage shall be accompanied by an Explosive Site Plan (ESP) with appropriate Quantity-Distance (QD) calculations in accordance with Air Force Manual 91-201. The ESP will be subject to review and approval of the 45th Space Wing and the Department of Defense Explosives Safety Board (DDESB). Proposed propellant storage shall not adversely impact any other Tenant or operations at the SLF.

1.7 Explosive Siting and Range Safety

Explosive siting shall be in accordance with Air Force Manual 91-201 and CFR 14 Chapter III Part 420. Range Safety shall be in accordance with CFR 14 Chapter III Parts 415, 417, 420 and 431. The approval process of Explosive Siting and Range Safety will include Space Florida, USAF 45th Space Wing FAA, and DDESB as applicable.



Cape Canaveral Spaceport Development Manual

VOLUME 2

KENNEDY SPACE CENTER

CHAPTER 3 EXPLORATION PARK

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SECTION 1 - INTRODUCTION

1.1 Introduction

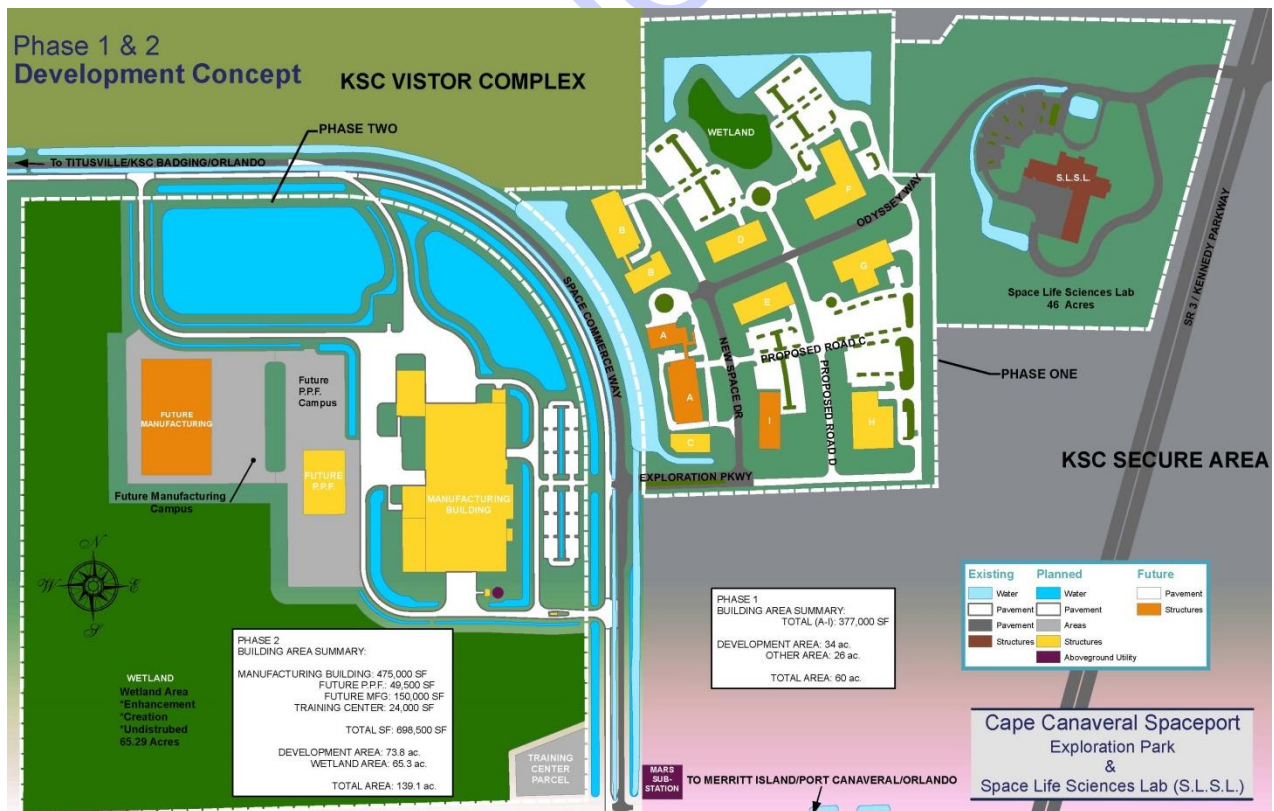
Exploration Park (“Exploration Park” or “the Park”) is a leading-edge research and innovation park at Kennedy Space Center KSC, located within Cape Canaveral Spaceport (CCS), Florida. Exploration Park shall possess an evident sense of place, character and functionality representing the priorities and aspirations of Space Florida, National Aeronautics and Space Administration Kennedy Space Center NASA, and its Tenants. Refer to Appendix 3A for the Park's Development Concept Plan.

Potential Exploration Park Tenants can request to review the agreement between Space Florida and NASA titled, “NASA John F. Kennedy Space Center Enhanced Use Lease”, dated December 19, 2008 from Space Florida. Potential Exploration Park Tenants should also review the “Exploration Park at Kennedy Space Center Declaration of Covenants, Conditions, and Restrictions” (CCRs), dated September 20, 2012, herein referred to as the Agreement

1.2 Exploration Park Area Overview and Description

The land area that is owned by Space Florida comprises of the SLSL, Phase 1, and Phase 2. The SLSL is approximately 45 acres, Phase 1 is approximately 60 acres, and Phase 2 is approximately 139 acres. Figure 3 below shows these areas within Exploration Park.

Figure 3: Exploration Park Property Areas



SECTION 2 - PROCESSES

2.1 Tenant Eligibility and Park Use Guidelines

Space Florida in conjunction with NASA shall have the right to approve, disapprove, or approve subject to conditions, all uses and Tenants for Exploration Park. Without limiting NASA's right or discretion to approve or disapprove each use and Tenant, the following criteria shall serve as a guideline for Tenant eligibility to sublease from Space Florida, a dedicated development site, building, or space within a multi-Tenant facility. The criteria which serve as guidelines are:

- a) Activities which have a requirement or demonstrated benefit for close proximity to Kennedy Space Center (KSC) / Cape Canaveral Air Force Station CCAFS facilities or personnel, are related to the NASA mission, or are related to space commerce and commercialization;
- b) Activities related to research and technology development with known or potential application to activities in space or improvement of life on earth, including but not limited to, energy-related, life sciences, or environmental activities;
- c) Activities of an academic/educational nature with current or potential partnership with NASA/CCAFS;
- d) Activities offering support services that may reasonably be required by Park Tenants or resident Government and contractor organizations of KSC/CCAFS, e.g. technical support, business services, and incidental, limited retail support services as deemed appropriate to support the needs of Tenants. Retail sales shall not significantly compete with merchandise sales of the KSC Visitor Complex.

The above criteria are intended to operate as general description of the types of Exploration Park activities which Space Florida considers desirable and are not intended to operate as a limitation on Space Florida's right to approve or disapprove uses, Tenants, or activities within the Park. The above criteria are not intended to grant any rights or benefits to, or be enforceable by, any Exploration Tenants, users, occupants, or any third party

2.2 Project Type, Permitted Uses and Prohibited Uses

Tenants shall adhere to the following project types, permitted uses, and prohibited uses as mandated by the Agreement.

2.2.1 Permitted Uses

Space Florida has the right to approve all uses and Tenants in Exploration Park. Subject to such approval, each parcel and the improvements constructed thereon may be used for light manufacturing and assembly, office, processing, professional, laboratory, research, development, education and such other uses and activities as are permitted under those laws or ordinances which may be appropriated to such parcel and which are expressly sanctioned and approved by Space Florida. Such uses will be undertaken

subject to the terms of this declaration and the limitations imposed by applicable laws and ordinances and the Agreement. The existence of a less stringent requirement under applicable laws and ordinances will not excuse adherence to any stricter requirement under this Declaration.

2.2.2 Prohibited Uses

The Agreement prohibits certain uses in Exploration Park including highly hazardous activities; heavy industrial manufacturing; warehousing as a stand-alone use; hotels or other major tourist facilities; and political, social or religious affiliated organizations. In addition to those uses prohibited by the Agreement, the following uses are prohibited:

- a) The manufacture, storage or distribution of products which increase fire, explosion or other hazards on adjacent parcels or areas adjacent to the property;
- b) Any business or operation which creates a public or private nuisance or the emission of a dust, odor, smoke or gases deemed by Space Florida to be hazardous or unreasonable;
- c) Any residential dwelling or hotels or motels;
- d) Any amusements or game rooms or similar establishments including, without limitation to, the use of pinball machines, electronic games or similar apparatus;
- e) Any building, improvement or use which violates applicable federal, state or local law;
- f) Mobile home parks or trailer courts, either temporary or permanent;
- g) Junkyard;
- h) Vehicle or equipment disassembly, provided that vehicle service maintenance performed entirely in an enclosed building may be proposed as a permitted use subject to approval by Space Florida;
- i) Mining or drilling for and/or removal of coal, oil, gas or other minerals;
- j) Commercial excavation of building or construction materials or quarrying of any materials;
- k) Composting;
- l) Dumping, disposal, incineration or reduction of garbage, sewage, offal or other refuse;
- m) Husbandry of animals, fowl or fish;
- n) Any activity involving the generation, storage, treatment, disposal, handling or use of hazardous waste, hazardous substances, toxic substances or hazardous materials which are in violation of applicable federal, state or local laws or regulations; and,
- o) The installation of storage tanks, including, without limitation, those used for storage of water, propane gas or other fuels or chemicals, unless first approved in writing by Space Florida.

SECTION 3 – DESIGN STANDARDS

3.1 Key Design Principles

There are four key design principles that govern the organization and character of open spaces and buildings for Exploration Park: Connectivity, Community, Cohesiveness, and Sustainability. These principles establish consistency and evoke a distinctive setting and sense of place across the Park's development.

3.1.1. Connectivity

Both physical and visual connections are encouraged to facilitate movement throughout the Park and to foster a sense of unity. A network of roadway and pedestrian circulation systems serves to physically link buildings and open spaces throughout the Park. While the predominant roadway system provides a sense of order and organization to the development of the Park, the freedom of pedestrian movement shall be given priority. Connectivity is achieved by establishing an axis of sightlines that visually links focal points throughout the Park.

3.1.2. Community

The guidelines support a hierarchy of communal spaces that encourages interaction among the Park's users. These spaces shall be organized around specific program clusters, re-orienting individuals in laboratories and offices to larger communities within their respective areas. These communal spaces, in turn, are visually and physically connected to larger, more collective space. They also provide a favorable image of the Park's mission to the surrounding KSC and Central Florida – Space Coast community.

3.1.3. Cohesiveness

Cohesiveness aims to promote visual consistency among the Park's architecture and landscape over the course of development. Collectively, adjacent buildings maintain similarity by abiding to a common strategy of massing, orientation, and general organization. Building designers are encouraged to incorporate a complementary palette of materials and colors. The Park's landscape maintains cohesiveness through the consistent use of native plant material, paving materials, signage and lighting. Cohesiveness among the Park's buildings and open space enhances the legibility and identity of the Park and promotes collaboration among its users. Through the review process of Space Florida, the Park's cohesiveness shall be ensured.

3.1.4 Sustainability

Construction in Exploration Park shall meet, as a minimum, the sustainable design standards represented by one of the three sustainable rating systems identified in section 255.253, Florida Statutes, that are also identified below as NASA-approved. Rating system standards approved by NASA include United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) NC rating system, the Green Building Initiative's (GBI) Green Globes NC rating system, and the Florida Green Building Coalition (FGBC) commercial standards. The latest released version of the selected rating system in effect at the time design work commences on a

given project shall be utilized for that project. Construction shall meet, as a minimum, one of the following levels under the selected rating system: LEED “Silver,” FGBC “Silver,” or GBI “2 Globes”, unless it has been clearly demonstrated that such levels are not feasible due to the nature of the construction or planned operations, and a waiver has been granted by NASA-KSC. Each Form 1509 submittal shall be accompanied by information identifying which sustainable building rating system is being followed, which rating level is being pursued, what specific track and or level within the applicable sustainable building rating system is being followed (e.g. Building Design and Construction, Commercial Building, etc.) and if certification is or is not being pursued. NASA-KSC will review the proposed level to determine whether it meets the requirements of this Section 6.3 before approving the NASA Form 1509. Certification of the project by the rating system organization is not mandatory but is strongly encouraged. In lieu of certification, a qualified third party under direction from the Space Florida building official may perform rating system verification checks during planning, design, construction and operational phases to score and certify the project using the selected rating system scorecard/checklist. Credentials for the qualified third-party shall be provided to NASA KSC. The project will be registered with the rating system agency and the scoring documentation demonstrating that the project meets the agreed upon rating level shall be provided to NASA-KSC prior to the certificate of occupancy being issued by Space Florida. Appropriate credit for Space Florida’s Exploration Park infrastructure design and site features may be counted toward each facility project’s score in determining compliance with the selected rating system.

Designers are encouraged to consider demonstration projects that engage new technologies in partnership with NASA and Exploration Park. Projects should also be respectful of their location within the Merritt Island Wildlife Refuge and the National Seashore, through restoration of habitat and use of native materials.

3.2 Planning Guidelines

The guidelines below address recommended strategies for both Phase 1 and 2 of the Park. Phase 1 of the Park is intended to be a campus setting consisting of offices and Research & Development (R&D) facilities for the advancement of space-related research.

Phase 2 of the Park is intended for space craft fabrication, assembly, and processing in larger and more isolated facilities. Therefore, some of the recommended guidelines for Phase 1 are not applicable to Phase 2. Recommendations that are not applicable to Phase 2 are shown in *italics*.

3.2.1. Key Design Principles

The Open Space Guidelines recommend strategies for the creation of inviting outdoor spaces that contribute to the interaction of all users of the Park. The adoption of these recommendations will positively influence the ways in which these spaces are used, the frequency of their use, and their impact for a healthy work environment. Well-articulated open space, defined either by adjacent buildings, landscape elements, or pedestrian paths, and should serve as places of respite and engagement with colleagues. Open spaces and building courtyards should be designed as intentional places, enhancing connectivity between and among buildings, not as “land left over”. Recommendations fostering a secure, comfortable, and welcoming atmosphere for open space activity will contribute to the Park’s overall sense of community. Durability and ease of maintenance

will ensure the long-term success of these important outdoor spaces.

The Park lies within the Merritt Island Wildlife Refuge and natural habitat protection and restoration should also be part of the overall open space strategy. Existing wetlands should be protected and enhanced through integrated stormwater management and treatment plans that capture runoff from the developed areas. Landscape materials located along the drainage courses should be native to the area further expanding the existing habitat. The following recommendations should be used as guidelines for design at Exploration Park:

- a) *Categorize outdoor areas by their likely or intended use and level of activity: direct pedestrian transit, casual pedestrian passage, personal solitude, quiet reflection, informal social engagement by both small and large groups, and structured activities (i.e. scheduled discussion, recreation, social gatherings).*
- b) *Develop outdoor rooms (courts, arcades, cloisters, plazas) in locations that will invite convenient access and use.*
- c) *Outdoor spaces should be scaled and proportional in response to their intended or presumed use: smaller spaces for intimate gatherings, large spaces for collective social uses.*
- d) *While preserving the continuity of experience and expression in the design of all open space, such areas should also be individualized, both in response to their intended use and as a means to grant each a unique identity. Landscape features such as fountains and other water elements, sculptures, framed vistas, and specialized planting areas may be employed as focal signatures for individual outdoor spaces.*
- e) *Where large-scaled activities and social uses are anticipated, create broadly open, flat lawns or plazas. Provide shaded edges with seating for passive outdoor activities.*
- f) *Identify areas of highest population density and pedestrian traffic (particularly those adjacent to major building entries) and consider them for use as outdoor cafés and meeting areas. Based on anticipated intensity of use, provide adequately scaled seating, lighting, power and data resources, and shade structures.*
- g) *Provide comfortable outdoor seating. Although the scale, configuration and design of this seating should vary in response to each open space's intended or anticipated use, the style, color, and materials of the seating should be drawn from a common design vocabulary. Provide appropriate outdoor accessories: trash receptacles, information kiosks, and directional signage, also drawn from a common design vocabulary.*
- h) *Orient open space to take best advantage of solar warming in winter and conversely, provide such spaces with areas of shade in summer, either through the use of landscape elements or physical structures (trellises, overhangs, canopies, shelters, and other building elements). Anticipate the effect of adverse*

weather events – for example wind and/or rain and provide appropriately scaled and oriented responses: screening or shelter and solar orientation.

- i) Screen outdoor spaces from adjacent distractions through the use of arcades, colonnades, gateways, plantings, walls or fences while still preserving an inviting, welcoming character.
- j) If the specific building design includes an arrival forecourt, provide outdoor space features to accommodate both passive and active uses as they relate to the building. Consider including site walls to define edges and bollards to define limits for vehicles. Achieve a pedestrian-scale arrival that reduces the scale of buildings; strategies include an overhead plane of trees and seating areas.
- k) For the construction of all outdoor spaces, use durable materials including masonry, architectural concrete, break-resistant glazing and non-corrosive metals. The colors and finishes of these materials are to be drawn from a common and complementary palette subject to approval by Space Florida.

3.2.2. Pedestrian Accommodation

To the extent that pedestrian pathways offer opportunities for incidental social interaction, accommodations are also recommended to foster collaboration by incorporating shaded respites and break points. The following recommendations shall be used as guidelines for design at Exploration Park:

- a) *At major pedestrian intersections, strategically position breakout areas designed to offer seating and collaborative opportunities.*
- b) *Safety and security should be a primary design consideration; include security 'blue light' call boxes appropriately space along walkways.*

3.2.3. Vehicular Accommodations

These vehicular accommodations link campus destinations, but are subordinate to pedestrian movement as a means to promote connectivity. The following recommendations shall be used as guidelines for design at Exploration Park:

- a) *Develop a hierarchy of vehicular use based on the anticipated volume and specific need for access including daily commuting, alternative non-pedestrian transit (bicycles), visitor arrival and departure, service and delivery access and emergency access. This hierarchy shall discourage intra-campus vehicular transit and limit the intersection of roadways with major pedestrian paths, favoring pedestrians and bicycles over service and private vehicles in multi-modal areas. Utilize this hierarchical system to inform the specific design of each roadway.*
- b) Design streets throughout the Park for safe multi-modal movement. Where feasible, segregate commuter and visitor traffic from service and delivery traffic.
- c) Provide facilities and amenities that promote alternative means of travel to and from the Park, such as car-pool information kiosks, ride share programs, bulletin boards, bus shelters, shuttle stops, maps, and visitor directions.

- d) *Place required bicycle parking areas along multi-modal streets and near major activity centers, building entryways and major open spaces.*
- e) Establish drop-off zones near major activity centers and building entries for convenient use. Provide shelter and seating for waiting areas, attractive landscaping, and adequate lighting.

3.3 Security and Life Safety

To promote community, designs shall address the Crime Prevention through Environmental Design (CPTED) principles of informal surveillance, lighting, defensible space, appropriate landscaping and logical way-finding. Design shall maximize visibility and foster positive interactions among the users of the Park, except for required utility screening. In addition, certain hazardous materials will not be permitted in Exploration Park and are addressed in the Exploration Park Covenants Conditions and Restrictions (CCR). Any design issues pertaining to life safety and security are to be coordinated with Space Florida and meet the requirements of the FBC.

3.4 Architectural

3.4.1. Building Aesthetics

Recognizing Tenant buildings need to be designed to meet the operational needs of the specific Tenant, the following guidelines are provided relative to the aesthetics of the structures.

- a) *The designs of buildings within the Park are to be timeless and not connected to a specific style of architecture. New buildings shall reflect a ‘family resemblance’ to existing buildings in the Park through common references to size, scale, massing of similar forms, and compatible building materials.*
- b) *Program requirements should be balanced with the desire to maintain the overall Park sense of place, so that buildings should generally respond to the heights of buildings around them. Heights of buildings organized around defined open-spaces or corridors shall be in the same range to ensure consistency and legibility of the buildings edge.*
- c) *Building widths will be determined by the optimal floor-plates of their specific use and program requirements. Building design should allow for optimized daylighting. Overall building length shall be limited to avoid excessive consumption of land and to avoid creating a barrier-effect.*
- d) *To assist with campus way-finding, building entries shall be obvious, accessible and clearly visible from the main corridors and access routes.*
- e) *Primary building facades should avoid long or massive uninterrupted walls with no relationship to human scale and shall, therefore, be articulated through changes in material, color texture, or planes.*

3.4.2. Signage

Signage shall conform to the requirements of Chapter 1 section 3 Design Standards paragraph 3.8.3 Signage.

Signs should be designed to signal the Park's entry, convey information and assist with way-finding, promoting the Park's connectivity and collegiality. The standards further promote cohesiveness by providing a consistent approach to the design of signs. Standards for the use of legible, durable and low maintenance signs will contribute to the Park's cohesiveness. The design of the sign family should have an obvious continuity and relationship to one another through the use of branding designations, font, color, materials, profile and scale.

3.5 Buffer Areas/Irrigation

Unless otherwise expressly approved in writing by Space Florida, each parcel shall have landscaped buffer areas along its boundary lines as follows:

- a) 25 feet adjacent to the curb of all streets; and
- b) 15 feet along Parcel lot lines adjacent to other Parcels.

All of the above buffer areas located within any parcel shall be landscaped and maintained by the lessee of such parcel. All such buffer areas which are located adjacent to any of the identified roads or streets (including, without limitation, the portion thereof located within any public right-of-way) shall be required to be irrigated at the cost of the lessee of such parcel. Parking shall not be permitted within these buffer areas, but vehicular access will be permitted to cross the buffers in such locations as are approved by Space Florida.

APPENDIX 3A – EXPLORATION PARK LEGAL DESCRIPTIONS

(Per NASA John F. Kennedy Space Center Enhanced Use Lease”, dated December 19, 2008)

1. Phases 1, 1a, 1b and 2
2. Site Development Master Plan

VERSION 1.1

SKETCH OF DESCRIPTION

EXPLORATION PARK

PHASE 1

LAND DESCRIPTION

A TRACT OF LAND LYING ON THE JOHN F. KENNEDY SPACE CENTER IN SECTION 1, TOWNSHIP 23 SOUTH, RANGE 36 EAST AND IN SECTION 6, TOWNSHIP 23 SOUTH, RANGE 37 EAST, BREVARD COUNTY, FLORIDA, AND BEING MORE FULLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF SAID SECTION 6, TOWNSHIP 23 SOUTH, RANGE 37 EAST, SAID CORNER HAVING A FLORIDA STATE PLANE COORDINATE VALUE OF NORTH 1517391.76 AND EAST 760442.16, AS DERIVED FROM A NATIONAL GEODETIC SURVEY TRIANGULATION STATION "STATIC 1965", THENCE N00°08'54"E ALONG THE WEST LINE OF SAID SECTION 6, FOR A DISTANCE OF 1321.03 FEET TO THE POINT OF BEGINNING; THENCE N00°19'12"E, FOR A DISTANCE OF 212.47 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 1325.00 FEET; THENCE NORTH-WESTERLY 1304.55 FEET ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 56°24'42" TO A POINT ON THE NORTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 36 EAST; THENCE N88°58'45"E, ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, FOR A DISTANCE OF 596.06 FEET TO THE SOUTHWEST CORNER OF GOVERNMENT LOT 14, SECTION 6, TOWNSHIP 23 SOUTH, RANGE 37 EAST; THENCE N00°34'28"W, ALONG THE WEST LINE OF SAID GOVERNMENT LOT 14, FOR A DISTANCE OF 714.28 FEET; THENCE N88°00'43"E, FOR A DISTANCE OF 1077.62 FEET; THENCE S01°00'02"W, FOR A DISTANCE OF 698.50 FEET; THENCE S89°02'59"E, FOR A DISTANCE OF 180.90 FEET; THENCE S00°37'54"E, FOR A DISTANCE OF 1331.85 FEET; THENCE S88°00'43"W, FOR A DISTANCE OF 1255.33 FEET TO THE POINT OF BEGINNING.

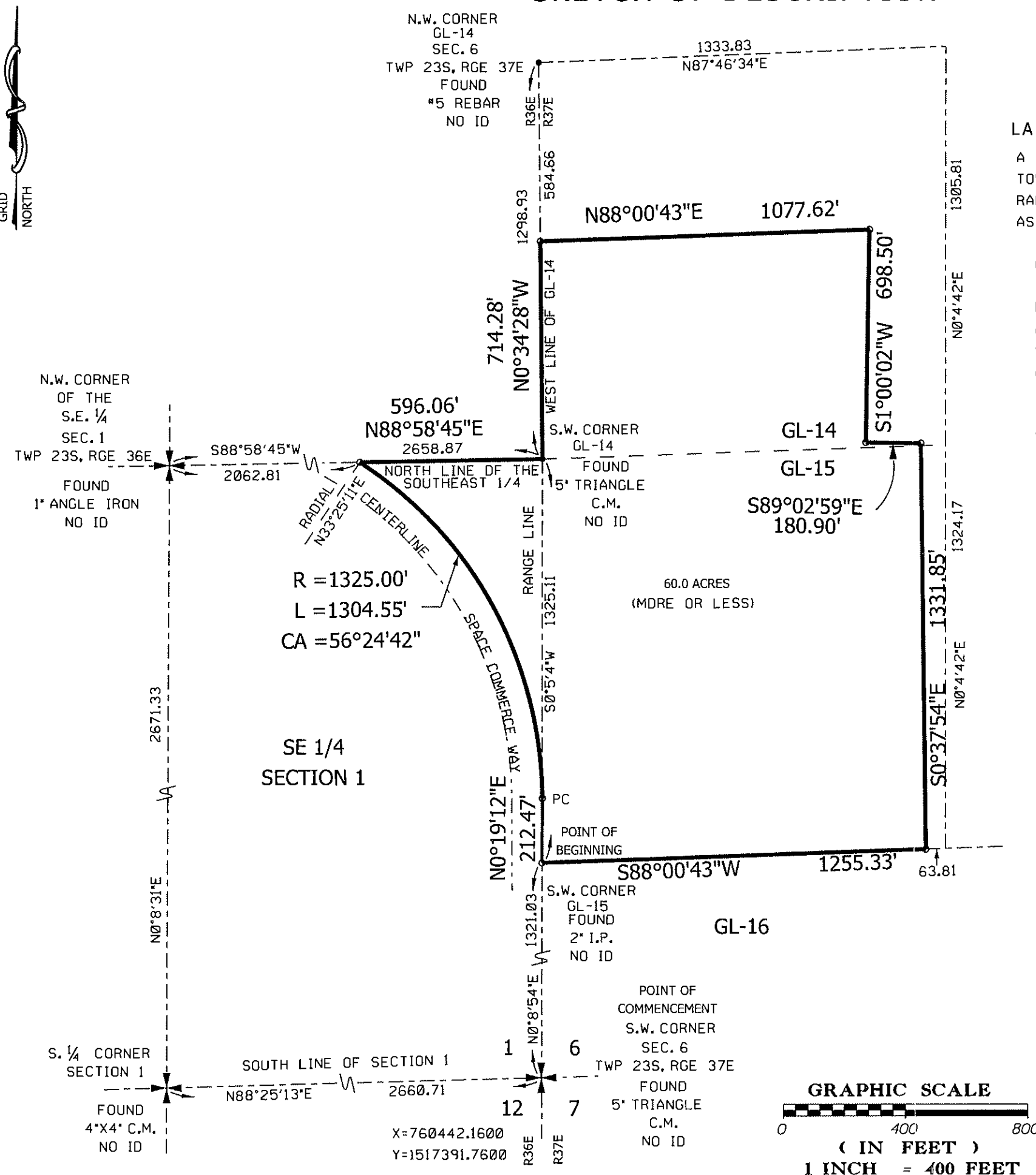
CONTAINING 60.0 ACRES MORE OR LESS.

NOTES:

1. FLORIDA STATE PLANE COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (1990).
2. BEARINGS, DISTANCES, COORDINATES AND ACREAGE REFER TO GRID.
3. BEARING REFERENCE LINE: N0°08'54"E, THE WEST LINE OF GL-16.
4. NOT A BOUNDARY SURVEY.

ABBREVIATIONS

PC	POINT OF CURVATURE
IP	IRON PIPE
GL	GOVERNMENT LOT
CM	CONCRETE MONUMENT
NGS	NATIONAL GEODETIC SURVEY



ISC

INSTITUTIONAL SERVICES CONTRACT
60650, E&O BUILDING
KENNEDY SPACE CENTER, FLORIDA 32815

SPECIFICATION:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

EXPORATION PARK
PHASE I

[illegible][illegible]

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CAD DWG NO: 98K01980

CAO FILE NO:	F0198000.001
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ENGINEER

1012

DESCRIPTION

PAGE NO. 105

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SHEET 1 of 1

SKETCH OF DESCRIPTION

EXPLORATION PARK

PHASE 1a

ISC

INSTITUTIONAL SERVICES CONTRACT
90650, E&O BUILDING
KENNEDY SPACE CENTER, FLORIDA 32815

LAND DESCRIPTION PHASE 1a

A TRACT OF LAND LYING ON THE JOHN F. KENNEDY SPACE CENTER IN SECTION 1, TOWNSHIP 23 SOUTH, RANGE 36 EAST AND IN SECTION 6, TOWNSHIP 23 SOUTH, RANGE 37 EAST, BREVARD COUNTY, FLORIDA, AND BEING MORE FULLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF SAID SECTION 6, TOWNSHIP 23 SOUTH, RANGE 37 EAST, SAID CORNER HAVING A FLORIDA STATE PLANE COORDINATE VALUE OF NORTH 1517391.76 AND EAST 760442.16, AS DERIVED FROM A NATIONAL GEODETIC SURVEY TRIANGULATION STATION "STATIC 1965". THENCE N00°08'54"E ALONG THE WEST LINE OF SAID SECTION 6, FOR A DISTANCE OF 1321.03 FEET; THENCE S88°00'43"W, FOR A DISTANCE OF 562.08 FEET THE POINT OF BEGINNING, ALSO BEING THE BEGINNING OF A NON-TANGENT CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 1895.00 FEET AND TO WHICH A RADIAL LINE BEARS S84°16'27"E; THENCE NORTHERLY 536.01 FEET ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 16°12'23" TO A POINT ON A RADIAL LINE; THENCE S79°31'10"W, ALONG SAID RADIAL LINE FOR A DISTANCE OF 310.00 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 1895.00 FEET; THENCE SOUTHERLY 1277.75 FEET ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 33°12'06" TO A NON-RADIAL LINE; THENCE N0°34'28"W, ALONG SAID NON-RADIAL LINE FOR A DISTANCE OF 317.56 FEET; THENCE N88°00'43"E FOR A DISTANCE OF 804.59 FEET; THENCE S01°00'02"W, FOR A DISTANCE OF 698.50 FEET; THENCE S89°02'59"E, FOR A DISTANCE OF 180.09 FEET; THENCE S0°37'54"E, FOR A DISTANCE OF 1331.85 FEET; THENCE S88°00'43"W, FOR A DISTANCE OF 693.25 FEET TO THE POINT OF BEGINNING.

CONTAINING 30.53 ACRES MORE OR LESS.

ABBREVIATIONS

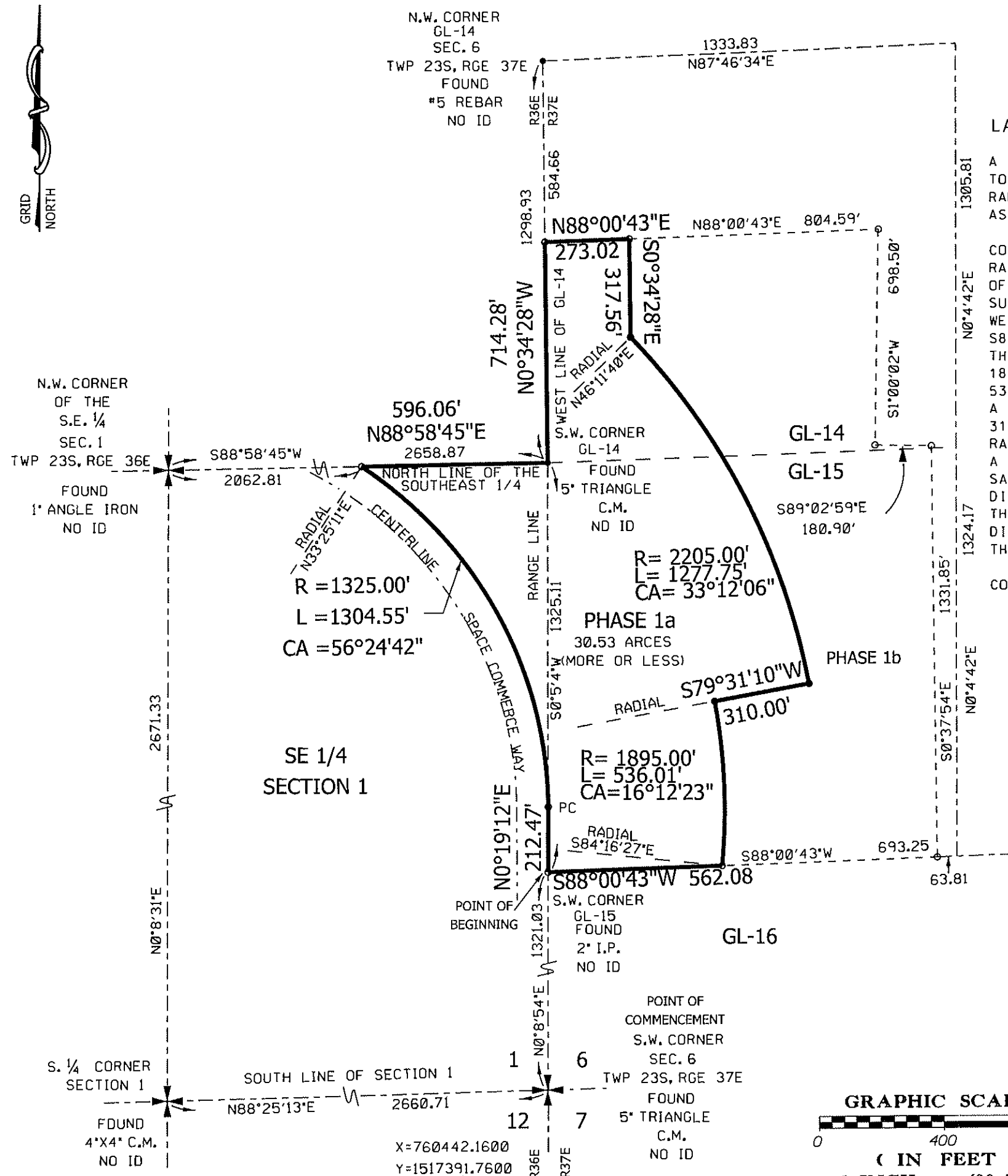
PC POINT OF CURVATURE
IP IRON PIPE
GL GOVERNMENT LOT
CM CONCRETE MONUMENT
NGS NATIONAL GEODETIC SURVEY

NOTES:

1. FLORIDA STATE PLANE COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (1990).
2. BEARINGS, DISTANCES, COORDINATES AND ACREAGE REFER TO GRID.
3. BEARING REFERENCE LINE: N0°08'54"E, THE WEST LINE OF GL-16.
4. NOT A BOUNDARY SURVEY.

GRAPHIC SCALE

0 400 800
(IN FEET)
1 INCH = 400 FEET



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, FLORIDA

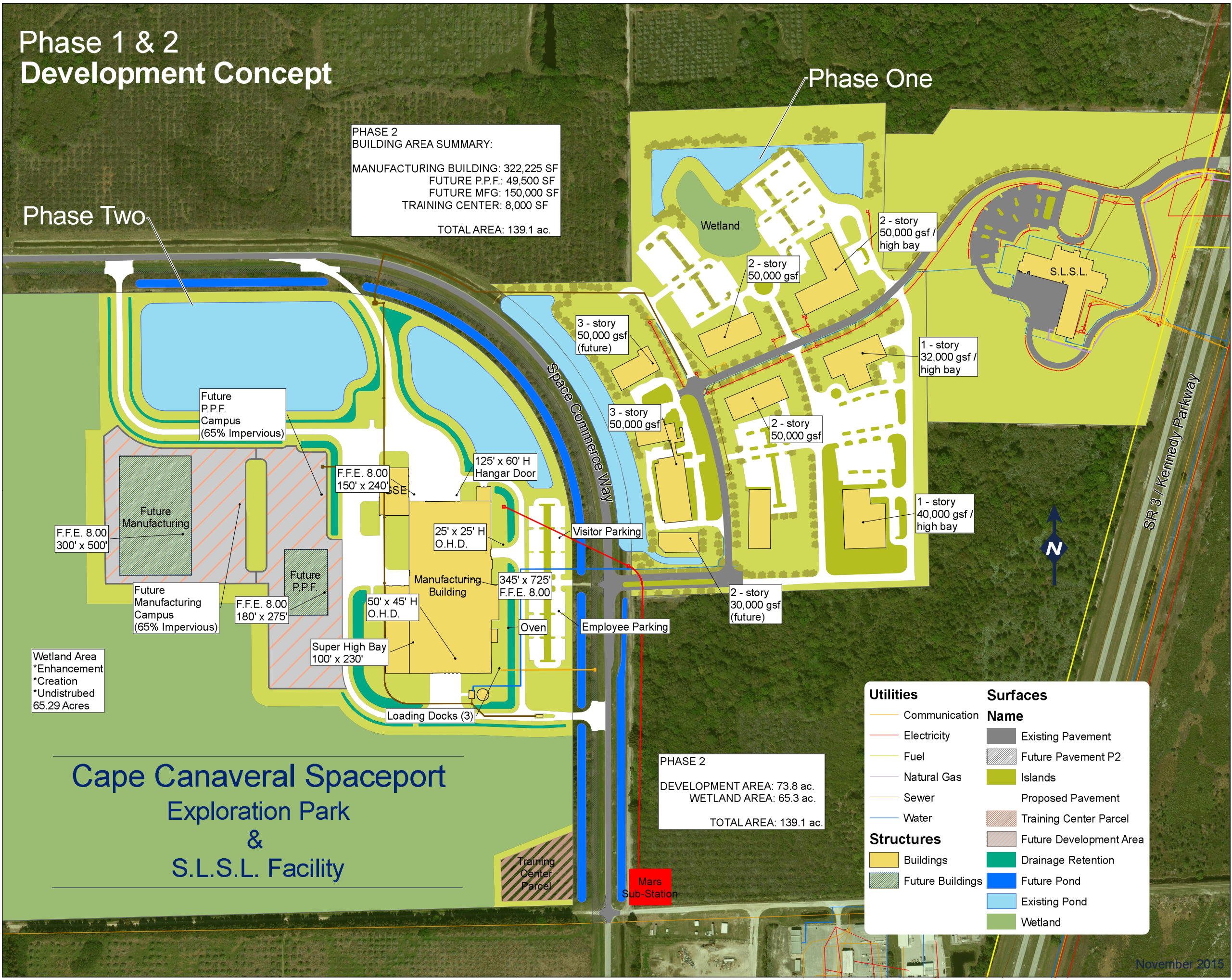
EXPLORATION PARK
PHASE 1a

REVISIONS
DATE
BY
REASON

10 GENERAL INFORMATION		
WON NO:		10174726
CAD DWG NO:		98K01980
CAD FILE NO:		F0198000.001
NAME	SIGNATURE	DATE
ENGINEER		
DRAWN BY		
DRAFTER		
CHECKED BY		
CHECKER		
APPROVED BY		
SUPERVISOR		
REMARKS BY		
DATE		

DESCRIPTION

Phase 1 & 2
Development Concept



THESE CHAPTERS WILL BE PROVIDED IN THE FUTURE.

Chapter 4 – Launch Complexes

Chapter 5 – Processing and Other Facilities

VERSION 1.1



Cape Canaveral Spaceport Development Manual

VOLUME 3

CAPE CANAVERAL AIR FORCE STATION

THIS VOLUME WILL BE PROVIDED IN THE FUTURE.

Chapter 1 – General Requirements

Chapter 2 – Space Launch Complexes

Chapter 3 – Processing and Other Facilities

VERSION 1.1



Cape Canaveral Spaceport Development Manual

VOLUME 4

DESIGN CRITERIA

VERSION 4.1

THIS VOLUME WILL BE PROVIDED IN THE FUTURE.

Chapter 1 – City of Titusville

Space Florida shall be the building official for all infrastructure projects. They will rely on recommendations and standards, as applicable to Space Florida's needs, from the City of Titusville.

Tenants are recommended to review the following design criteria:

<http://www.titusville.com/Files/Development%20Guide%20and%20Policies.pdf>
<http://www.titusville.com/Page.asp?NavID=2110>

Chapter 2 – Technical Specifications

It is Space Florida's intent to have Tenants adhere to the Construction Specifications Institute (CSI) Master Format. As applicable and per CSI the following technical specifications shall be considered by Space Florida Tenants:

Division 00 — Procurement and Contracting Requirements

General Requirements Subgroup

Division 01 — General Requirements (**this document**)

Facility Construction Subgroup

Division 02 — Existing Conditions

Division 03 — Concrete

Division 04 — Masonry

Division 05 — Metals

Division 06 — Wood, Plastics, and Composites

Division 07 — Thermal and Moisture Protection

Division 08 — Openings

Division 09 — Finishes

Division 10 — Specialties

Division 11 — Equipment

Division 12 — Furnishings

Division 13 — Special Construction

Division 14 — Conveying Equipment

Division 15 — RESERVED FOR FUTURE EXPANSION

Division 16 — RESERVED FOR FUTURE EXPANSION

Facility Services Subgroup:

Division 20 — RESERVED FOR FUTURE EXPANSION

Division 21 — Fire Suppression

Division 22 — Plumbing

Division 23 — Heating Ventilating and Air Conditioning

Division 24 — RESERVED FOR FUTURE EXPANSION

Division 25 — Integrated Automation

Division 26 — Electrical

Division 27 — Communications

Division 28 — Electronic Safety and Security

Division 29 — RESERVED FOR FUTURE EXPANSION

Site and Infrastructure Subgroup:

Division 30 — RESERVED FOR FUTURE EXPANSION

Division 31 — Earthwork

Division 32 — Exterior Improvements

Division 33 — Utilities

Division 34 — Transportation

Division 35 — Waterways and Marine Construction

Division 36 — RESERVED FOR FUTURE EXPANSION

Division 37 — RESERVED FOR FUTURE EXPANSION

Division 38 — RESERVED FOR FUTURE EXPANSION

Division 39 — RESERVED FOR FUTURE EXPANSION

Process Equipment Subgroup:

Division 40 — Process Integration

Division 41 — Material Processing and Handling Equipment

Division 42 — Process Heating, Cooling, and Drying Equipment

Division 43 — Process Gas and Liquid Handling, Purification and Storage Equipment

Division 44 — Pollution Control Equipment

Division 45 — Industry-Specific Manufacturing Equipment

Division 46 — Water and Wastewater Equipment

Division 47 — RESERVED FOR FUTURE EXPANSION

Division 48 — Electrical Power Generation

Division 49 — RESERVED FOR FUTURE EXPANSION



Cape Canaveral Spaceport Development Manual

VOLUME 5

SPACE FLORIDA PROJECTS

VERSION 1.1

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SECTION 1 – GENERAL REQUIREMENTS

1.1 Project Process Overview

The following overview describes in general the process used for design and construction of Space Florida projects. It also provides information pertaining to design consultants for Space Florida Projects (SPFLP) and their services.

1.1.1 Project Types

Facilities designed, developed, or constructed by Space Florida shall be referred to as SPFLP. All other construction projects shall be referred to as Tenant Projects (TP). All Space Florida Projects shall be in accordance with Space Florida requirements and shall be subject to the Florida Consultant's Competitive Negotiations Act (FCNA) (Florida Statute (FS) 287.055).

The contract/delivery method for Space Florida projects will be determined on a case by case basis which may include:

- ❖ Design-Bid-Build (DBB)
- ❖ DBB with Construction Management (DBB with CM)
- ❖ Design-Build (DB)
- ❖ Design-Build-Operate-Maintain (DBOM)
- ❖ Build-Operate-Transfer (BOT)
- ❖ Integrated Project Delivery (IPD)
- ❖ Public Private Partnership (P3)

1.1.2 Commissioning Policy and Procedures

Reference is made to the Space Florida Commissioning Policy and Procedures (CPP), which requires commissioning of all Space Florida construction projects, including development, maintenance and renovation, having a construction budget greater than \$500,000 or Space Florida building construction projects, including new construction and modifications, having a construction budget greater than \$50,000. For Space Florida construction projects subject to the CPP, the Space Florida Building Official shall not issue a construction permit until the Commissioning Authority has approved the Commissioning Plan. The Space Florida Building Official shall not issue a certificate of occupancy/use until all pre-occupancy commissioning activities identified in the Commissioning Plan have been successfully completed.

1.1.3 Selection of Consultant(s)

All SPFLP shall be in accordance with State of Florida procurement requirements. All projects will be subject to Consultant's Competitive Negotiations Act (CCNA). Proposals are solicited for professional services through advertisements. A "short list" of candidates is selected after a careful review of the Statements of Qualifications (SOQ) that are submitted. These "short listed" firms are usually asked to make a presentation to a selection committee, which will make the recommendation for final selection.

1.1.4 Consultant Contract

After completion of the selection process, the first-rated consultant(s) enter into contract negotiations with Space Florida representatives. If negotiations with the first-rated firm(s) are unsuccessful, negotiations may be terminated, and the Space Florida representatives may begin negotiations with the next highest rated firm(s). Once an agreement is successfully negotiated, the final contract will be approved by Space Florida and a notice to proceed with design will be issued.

1.1.5 Project Initiation

At the beginning of every design project, a pre-design conference will be scheduled to be attended by the Project Manager (PM), Contract Administrator (CA), other Space Florida representatives and pertinent members of the design team. During this meeting, discussion will include the program for the design, the project budget and the project schedule.

1.1.6 Design Milestones

Design review submittals are required at the Schematic, Design Development and Construction Document levels of completion. Specific information on the requirements and level of detail required for each of these submittals is described in the following sections.

1.1.7 Project Review

Normally, two weeks should be allowed for Space Florida staff review of each submittal. However, additional time may be required under certain circumstances, particularly if there are interfaces with other projects, or if outside agency approvals are necessary.

1.1.8 Review Comments

The consultant must respond to all review comments. Copies of these responses shall be turned in to the PM with the next submittal. Review comments noted directly on the submitted drawings do not require written responses, but the consultant may be asked to return the previously reviewed plans temporarily to verify responses to specific review comments.

1.1.9 Consultant Participation During Bid Phase

In general, the following process is usually followed in the selection of contractors. Construction bids are solicited through general advertisements. A pre-bid conference is conducted prior to the opening of the bids to discuss the scope of the work and answer questions from bidders. The design consultant is expected to conduct or participate in this conference to provide answers to pertinent questions and to assist in preparing any resulting contract addenda. At the advertised time, the bids that have been received will be opened and read aloud. The consultant may be asked to assist in analyzing the bids to determine the responsive low bidder. A notice to proceed with construction will be issued after Space Florida approval of the final construction contract.

1.1.10 Consultant Participation During Construction Process

Prior to the start of construction, a pre-construction conference is held to review contract requirements, operational and site restrictions, notification procedures and required inspections. Depending upon contract scope requirements, the consultant may be responsible for assisting in the review of shop drawings, submittals, change orders and other documents and may be required to attend periodic or regular construction progress meetings. On some projects, partnering sessions may be conducted. Space Florida representatives, the consultant, the contractor and/or the CM and the major sub-contractors will be included in the partnering sessions.

1.1.11 Consultant Participation at Completion of Construction

Depending upon contract requirements, the consultant generally participates in a final project “walk-through” at the completion of construction and is usually responsible for reviewing the contractor’s certified as-built drawings and specifications submittal and for preparing the final record drawings.

1.2 Software Requirements and Project Design Delivery

Production and maintenance of project documentation shall comply with the Space Florida Development Standards. The final deliverables shall consist of the construction Contract Documents which shall be complete and shall set forth in detail all work required for the architectural, civil, structural, mechanical, plumbing, electrical, fire protection and fire detection, communication, security and utility service systems, including transportation interfaces, site work, and all necessary bidding information.

1.3 Design Calculations

Most design projects require that various engineering calculations be performed and/or design criteria/material cut sheets be assembled that provide the basis for information on the construction plans and specifications. These values and calculations shall be assembled in a “Basis of Design Manual” for each project. These documentation requirements will vary for each specific design discipline.

1.4 Required Submittals

During the planning and design stages of project development, certain submittals are required in bound form for review and approval. The submittals described below should be considered as the minimum. Intermediate reviews may be required, only if the scope of the project has been changed or if an earlier review found the plans and specifications unacceptable, either as a whole or in part. The required stage of completion of the plans and specifications shall be as hereinafter outlined.

1.4.1 Schematic Design Phase (early-review)

For all Space Florida projects the schematic plans and specifications shall include:

- a) A boundary survey and/or site topographic survey shall be made on the ground

of the proposed building or construction site. All points shall be tied to the existing Survey Coordinate System. Ground survey verification of existing utility alignments and flow lines may be required.

- b) All existing buildings, facilities, contours, roadways, utilities, or signs in the immediate area of the project site or relevant to the proposed work should be shown on a preliminary site plan.
- c) Layouts of the proposed roadways, access drives, parking areas, site utilities and building locations should be shown.

1.4.2 Schematic Plans and Specifications for Airfield Projects

- a) All existing facilities, runways, taxiways, taxi lanes, aprons, ground support equipment areas, emergency roads, buildings and structures, contours, underground utilities, or signs in the immediate area of the project site or relevant to the proposed work should be shown.
- b) All existing Navigational Aids (NAVAIDS), duct banks, guidance signs, lighting fixtures, electrical ducts, vaults, handholds, and circuit locations should be shown and identified.
- c) Layouts of proposed paving, drainage, and electrical improvements.
- d) Limits and dimensions of all object free areas, safety areas, exclusion zones, NAVAIDS, critical areas, and FAR part 77 airspace surfaces that affect project site.
- e) Locations of proposed buildings, signs, NAVAIDS, Security fences, and other site structures.

1.4.3 Schematic Plans and Specifications for Buildings

- a) Building code summary on cover sheet showing governing codes and requirements for building and site.
- b) Site plan showing building footprint, vehicle access / parking and landscaping.
- c) Floor plans and roof plan.
- d) Building elevations.
- e) Schedule of materials to be used.
- f) Building Design Data - The building program and any special studies which will affect the project design.
- g) Tower Line-of-Sight Studies (if required).
- h) Service entrances, trash locations.
- i) Design live loads.

1.4.4 Schematic Plans and Specifications for HVAC

- a) Mechanical rooms.
- b) Location of all chases required for air conditioning systems.
- c) Location of all air handling and refrigeration equipment.
- d) Narrative description of the proposed systems including a schematic diagram of air flow through the various system components (the general scheme outlined in the narrative must be previously discussed with the Space Florida Contact and agreed to at the Pre-design Conference).

1.4.5 Schematic Plans and Specifications for Plumbing

- a) A brochure defining all plumbing fixtures.
- b) Narrative description of plumbing systems proposed, including source of exterior services.
- c) Location of janitorial closets.

1.4.6 Schematic Plans and Specifications for Electrical

- a) Electrical rooms.
- b) Narrative description of the proposed systems including a schematic diagram of the distribution system (the general scheme outlined in the narrative must be previously discussed with the Space Florida Contact and agreed to at the Pre-Design Conference).
- c) Preliminary lighting layout showing general types of illumination to be used such as fluorescent, high-intensity discharge lamp, or others.
- d) Tabulation of lighting levels to be used for the design of the lighting system.
- e) A sample lighting calculation for a typical room or area (exterior lighting projects).

1.4.7 Schematic Plans and Specifications for Fire Protection

- a) Fire vehicle access.
- b) Narrative description of fire protection systems proposed, including source of exterior fire protection services such as water mains.
- c) Schematic fire protection drawings with identification of all sprinkled areas and areas protected by other automatic suppression systems.
- d) Drawings shall be drawn to a scale of 1/8"=1'-0".

1.4.8 Schematic Plans and Specifications for Communications

- a) Communication rooms.
- b) Narrative description of the proposed systems including a schematic diagram of the communication system (the general scheme outlined in the narrative must be previously discussed with the Space Florida Contact and agreed to at the Pre-design Conference).

1.4.9 Schematic Plans and Specifications for Security

- a) Site security.
- b) Closed Circuit TV (CCTV)/monitor and equipment rooms.
- c) Narrative description of the proposed systems including a schematic diagram of the security system (the general scheme outlined in the narrative must be previously discussed with the Space Florida Contact and agreed to at the Pre-design Conference).

1.4.10 Number of Submittals

Submit the number of sets of schematic plans required by the designer's contract to the Space Florida Contact for review and approval before proceeding to Design Development stage.

1.4.11 Design Development Phase (mid-review)

For all Space Florida projects the Design Development plans and specifications shall include all information in previous submittals plus all annotated comments from previous submittals and shall indicate:

- a) Proposed landscaping, exterior signing, exterior lighting, fencing or other site elements.
- b) Preliminary horizontal and vertical alignments for all roadways, drainage systems, and applicable exterior utilities tied into the coordinate system.
- c) Preliminary paving and parking layouts with horizontal and vertical ties to site survey and representative cross-sections.
- d) Preliminary Cost Estimates and Construction Schedule.
- e) Perspective Rendering - May be required if the project has visual impact on the Cape Canaveral Spaceport (CCS) development as a whole.
- f) Design data and analysis.
- g) Soil tests data and analysis.
- h) Outline Specifications.

1.4.12 Design Development Plans and Specifications for Airfield Projects

- a) Horizontal and vertical layouts for all proposed airfield paving, emergency roads, and drainage features.
- b) Layouts for proposed airfield electrical circuits, NAVAIDS, and underground utilities.
- c) Typical sections for each type of paving, including surface drainage.
- d) Site access points and haul routes.
- e) Typical details for all paving, jointing, sealing, drainage, electrical, utilities, etc.

1.4.13 Design Development Plans and Specifications for Buildings

- a) Floor plans.
- b) Framing plans.
- c) Ceiling plans.
- d) Roof plans.
- e) Sections and elevations.
- f) Details of typical conditions.

1.4.14 Design Development Plans and Specifications for HVAC

- a) Mechanical rooms with all equipment and required connecting ductwork drawn to scale (this requirement is mandatory to establish the space needs for mechanical equipment).
- b) Routing of major piping systems when space is a consideration; and ductwork for remainder of project in one-line form to indicate the breakdown of proposed zones.
- c) Report on design criteria and system loads.
- d) Specifications shall be in the form of an outline covering all Heating Ventilation & Air Conditioning (HVAC) equipment and materials to be used in the project.

1.4.15 Design Development Plans and Specifications for Plumbing

- a) All plumbing fixtures including those for disabled persons drawn to scale.
- b) Roof drains and route of storm drains to storm sewer.
- c) Sump pump and sewage ejector locations.
- d) One typical riser diagram for each type of system.
- e) Report on design criteria and system loads.
- f) Specifications shall be in the form of an outline covering all plumbing equipment and materials to be used in the project.

1.4.16 Design Development (DD) Plans and Specifications for Electrical

- a) Electrical rooms with all equipment drawn to scale (this requirement is mandatory to establish the space needs for electrical equipment).
- b) Routing of feeder and service conduit systems when space is a consideration.
- c) A one-line diagram of distribution system shall indicate approximate equipment and service size.
- d) Lighting layout for projects, including exterior systems, with tabulated loads.
- e) A brochure showing cut sheets on all lighting fixtures (and poles) proposed for project. Submit five (5) sets of DD electrical systems plans for review and approval before proceeding to final working drawings (Contract Bid Documents).
- f) Specifications shall be in the form of an outline covering all electrical equipment and materials to be used in the project.

1.4.17 Design Development Plans and Specifications for Fire Protection

- a) Fire protection plans shall indicate all underground water mains and their sizes.
- b) Fire hydrant locations.
- c) Proposed water supply connections to sprinkler systems.
- d) Control valve locations.
- e) Fire alarm panel locations.
- f) Smoke control/removal systems layout.
- g) Underground valve meter pit.
- h) Standpipe locations.
- i) Specifications shall be in the form of an outline covering all fire protection items, equipment and materials including manufacturers and model numbers to be used in the project (this shall include smoke/heat detectors and pressure, flow, and tamper switches).

1.4.18 Design Development Plans and Specifications for Communications

- a) Communication rooms with all equipment drawn to scale (this requirement is mandatory to establish the space needs for equipment).
- b) One-line diagram of communication system shall indicate intercom, speakers, equipment, terminal boards and cabinets.
- c) Specifications shall be in the form of an outline covering all communication equipment and materials to be used in the project.

1.4.19 Design Development Plans and Specifications for Security

- a) CCTV/monitor and equipment rooms with all equipment drawn to scale (this

- requirement is to establish the space needs for equipment). Provide adequate working clearance for monitors and operator console.
- b) One-line diagram of security system shall indicate control panels, sensors, cameras, monitors, telephone interface, and any other system devices critical to operation.
 - c) Specifications shall be in the form of an outline covering all security equipment and materials to be used in the project.

1.4.20 Number of Submittals

Submit the number of sets of Design Development plans required by the designer's contract, to the Space Florida Contact for review and approval before proceeding to Construction Documents stage.

1.4.21 Construction Document Phase (Final Review)

For all Space Florida projects the Construction Document plans and specifications shall include all information in previous submittals plus all annotated comments from previous submittals and shall include:

- a) Complete drawings with all plan, profile, detail, section, schedule, calculation and miscellaneous sheets included.
- b) Specifications complete in final typed form.
- c) Final Construction schedule.
- d) Final cost estimate.
- e) Storm water pollution prevention plan.

1.4.22 Construction Document Plans and Specifications for Airfield Projects

- a) All proposed paving and facilities.
- b) Proposed grading and surface contours.
- c) Final profiles and flow lines for all drainage systems.
- d) All required sections and details.

1.4.23 Architectural Construction Document Plans and Specifications

- a) Building code summary on cover sheet showing governing codes and requirements for building and site.
- b) Index, Symbols, Abbreviations, Key Plan Notes.
- c) Demolition, Site Plan, Temp Work.
- d) Site plan showing building footprint, vehicle access / parking and landscaping.
- e) Building elevations.
- f) Building Program Design Data.
- g) Design live loads.
- h) Material Schedule, Door Schedule, Key Drawing.
- i) Sections, Exterior Elevations.
- j) Detailed Floor Plans.
- k) Interior Elevations.
- l) Reflected Ceiling Plans.
- m) Vertical Circulation, Stairs, Elevators, Escalators.

- n) Exterior Details.
- o) Interior Details.

1.4.24 Structural Construction Document Plans and Specifications

- a) Index, Symbols, Abbreviations, Key Plan, Notes, Loading Criteria.
- b) Demolition Site Work.
- c) Foundation Plans and Details, Foundation Design Criteria.
- d) Framing Plans and Details.
- e) Elevations.
- f) Details.
- g) Schedules.
- h) Special Design.

1.4.25 Construction Document Plans and Specifications for HVAC

- a) All air conditioning systems drawn to scale, including all ductwork in two-lines with all fittings to scale.
- b) Sections through mechanical rooms to adequately describe the construction requirements.
- c) Schedule of all major items of equipment drawn on the plan sheets to indicate performance characteristics.
- d) All piping systems complete with necessary sections to clarify routing.
- e) Applicable details, including those included in the Design Criteria modified to suit project.
- f) Flow diagrams for each piping system except drains.
- g) A copy of the HVAC load calculations shall be furnished for future reference. Calculations shall clearly indicate all zoning requirements, etc.
- h) The type and contents of the Test and Balance Reports to be furnished shall coincide with the work scope of the system being designed.

1.4.26 Construction Document Plans and Specifications for Plumbing

- a) All plumbing fixtures shown and identified by a number.
- b) Riser diagrams in isometric form for all plumbing risers in the building.
- c) Flow diagrams for all pressure systems including hot and cold water, gas, oxygen, air vacuum, etc.
- d) Details such as lavatory connection, pump connection, hot water generator, water softener, sewer manholes, backflow prevention, water header, etc.
- e) Schedule all major equipment on drawings.
- f) Plumbing fixtures may be scheduled, but must also be described in detail in the specifications.

1.4.27 Construction Document Plans and Specifications for Electrical

- a) All electrical systems drawn to scale including light fixtures, distribution equipment and other miscellaneous system components.
- b) Schedule of all light fixtures, switchboards and motor control centers.
- c) Schedule of all panel boards which include connected loads and demand loads.
- d) One-line diagram of electrical distribution system including all equipment,

feeder, service ratings and available symmetrical three-phase fault current at each device.

- e) Applicable standard details from these guidelines modified to suit project.
- f) One-line diagrams for each system.
- g) Include all information in previous submittals plus annotated comments from last submission review.

1.4.28 Construction Document Plans and Specifications for Fire Protection

- a) All fire risers shown and identified by a number.
- b) Flow diagrams for fire protection pressure systems.
- c) Details such as fire hose cabinets, fire hydrants, fire pumps, fire department connections, backflow prevention, water header, connections, cathodic protection and riser insulation, etc.
- d) Schedule all major equipment on drawings; fire sprinkler drawings will include all piping sizes and locations, drawn to scale of no less than 1/8 inch equals one foot.

1.4.29 Construction Document Plans and Specifications for Communications

- a) All communication system equipment, cabinets, boards drawn to scale, telephone outlets, intercom stations, repeater stations, etc.; one-line diagram of communication systems.
- b) Applicable standard details from these guidelines modified to suit project.

1.4.30 Construction Document Plans and Specifications for Security

- a) All security system control and monitoring equipment drawn to scale, sensor locations and types.
- b) Applicable standard details from these guidelines modified to suit project.
- c) Security devices.
- d) Security signage.
- e) Individual zone location and designation, with all alarm device locations, including the security alarm and data panel, annunciators, and any other devices necessary for the operation of the system.

1.4.31 Number of Submittals

Submit the number of sets of Contract Bid Documents required by the Designer's Contract, for review and approval before printing for distribution to bidders.

The documents at this point should be ready to be signed and sealed pending approval by the Space Florida Contact. Once these documents are approved, signed and sealed, they can be provided to contractors for bidding purposes.

1.5 Specification Format

Specifications shall be in accordance with the latest Construction Specification Institute (CSI) division standards. For all airfield construction projects, contract documents shall be prepared in accordance with the latest edition of FAA Advisory Circular 150/5370-10 Standards for

Specifying Construction of Airports. Division 0, including Notice to Bidders, Instructions to Bidders, Proposal Forms, Bid Schedule Forms, Bond Forms, General and Special Provisions of the contract documents shall be prepared based on guidance and direction from the Space Florida Building Official.

1.6 Coordination of Design

Every effort shall be made to coordinate the design between disciplines.

1.6.1 HVAC

The final HVAC drawings at a minimum shall be checked for the following:

- a) Electrical lighting fixtures shall be checked for conflict with air diffusers, ceiling grilles, sprinkler heads, ceiling type speakers, and other ceiling mounted devices.
- b) Ductwork shall be checked for clearance between ceiling construction and underside of beams, recessed lighting fixtures and other interferences where space is limited.
- c) Large mechanical system piping shall be coordinated with building structure to assure clearances and accessibility for maintenance. Piping and electrical switchgear locations are to be coordinated.
- d) Coordinate requirements for louvers, equipment supports and other devices serving mechanical systems, but furnished under the general construction section of the project.
- e) Coordinate special types of or Board furnished equipment for correct rough-in requirements.
- f) Plans and specifications shall be checked for conflicts.
- g) Plans shall be coordinated for size and location of all chases.

1.6.2 Plumbing

The final Plumbing drawings at a minimum shall be checked for the following:

- a) Piping shall be coordinated with building construction, beams, etc., to assure clearances and accessibility for maintenance. Piping and electrical switchgear locations are to be coordinated.
- b) Piping shall be checked for clearance between ceiling construction and underside of beams, recessed lighting fixtures and other interferences where space is limited.
- c) Piping, ductwork, electrical conduits, etc. shall be checked for interferences that would prevent proper installation of each system.
- d) Coordinate special types of equipment for correct rough-in requirements.
- e) Plans shall be coordinated for size and location of all chases.

1.6.3 Electrical

The final Electrical drawings at a minimum shall be checked for the following:

- a) Electrical lighting fixtures shall be checked for conflict with air diffusers, ceiling

- grilles, sprinkler heads, ceiling type speakers, etc.
- b) Large electrical system conduit and pull boxes shall be coordinated with building construction, beams, etc., to assure clearances and accessibility. Piping and electrical switchgear locations are to be coordinated.
- c) Plans and specifications shall be checked for conflicts.
- d) Plans shall be coordinated for size and location of all chases.

1.6.4 Fire Protection

The final Fire Protection drawings at a minimum shall be checked for the following:

- a) Piping shall be coordinated with building construction, beams, etc., to assure clearances and accessibility for maintenance. Piping and electrical switchgear locations are to be coordinated.
- b) Routing of sprinkler piping shall have minimum turns to avoid building construction, etc.
- c) No areas are to be left without fire protection/detection, such as wedges in terminals and utility closets when one project is subdivided into several phases.

1.6.5 Communications

The final Communications Drawings, shall at a minimum, be checked for the following:

- a) Ceiling type speakers shall be checked for conflict with light fixtures, air diffusers, ceiling grilles, sprinkler heads, etc.
- b) Large communication system conduit and pull boxes shall be coordinated with building construction, beams, etc., to assure clearances and accessibility.

1.6.6 Security

The final Security drawings at a minimum shall be checked for the following:

- a) Security system components and types and locations shall be coordinated through the Space Florida Contact to properly interface with existing system.
- b) Coordinate design to allow for uninterrupted operation of existing security systems. Security must be maintained during construction.
- c) Large security system conduit and pull boxes shall be coordinated with building construction, beams, etc., to assure clearances and accessibility.

1.6.7 Exterior Utilities

The final Exterior Utility drawings at a minimum shall be checked for the following:

- a) Electrical lighting poles, manholes, handholds and underground conduit shall be coordinated with existing utility locations as well as installation of other new utilities.
- b) Plans and specifications shall be checked for conflicts.

1.7 Project Solicitation

Proposals shall be solicited in accordance with Florida Bidding Statutes. Space Florida will coordinate and be responsible for the contracting arrangements. Public Advertisement for Bids by the Space Florida will be run for two (2) consecutive Sundays in various local newspapers and listed in local plan rooms.

1.8 Sale and Issuance of Contract Documents to Contractors

Beginning on Tuesday after the first Sunday advertisement, bid packages will be available to bidders from a local reproduction company. The designer should confirm this procedure with the Space Florida Contact.

1.9 Pre-Bid Conference

Space Florida will conduct a Pre-Bid conference for the bidders. The designer will brief the bidders on the overall scope of the project, answer questions from bidders and arrange for and conduct a site tour.

1.10 Addenda

If questions come up during the Pre-Bid Conference or if there are clarifications required, the designer will provide answers to the Space Florida Contact. Space Florida is responsible for issuing all Addenda.

1.11 Bid Opening

Space Florida will conduct the bid opening at the designated location in the bid documents. After the bid opening, Space Florida will perform a bid analysis. Upon completion of the bid analysis a recommendation to award the contract to the lowest responsible bidder will be issued for approval.

1.12 Pre-Construction

Upon approval of the project, the applicant, the design agents, and the contractor shall meet with Space Florida appointed representatives for a pre-construction conference. At such time, principal aspects of coordination will be established: project schedule, coordination, and inspections, as well as any other items of a timely nature to the project.

1.13 Site Clean-up

The designer should specify that the Contractor will be responsible for maintaining an orderly and accommodative environment of the construction area and shall, prior to conclusion of the

work, remove all rubble, debris, and surplus material occasioned from the immediate site. In addition, the Contractor shall similarly render and restore all off-site areas disturbed during the construction of the facility.

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